Pantheon Report

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

System info:
Linux 4.15.0-1026-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 @ c80a283586bf7b0cc1fe08c69c860d56488f81c
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943bab2d2b0902c64f3d5e2a923f9
third_party/genericCC @ d0153f8e594aa93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4aa958d38dc4dfe0ecdf90c077e6d4
third_party/libutp @ b3465b942e28262b179eab4a906eceb77cf3cf
third_party/muses @ c3ee875824760ec5b2fd207fefe166e1afe2170
third_party/pantheon-tunnel @ f866d3f58df27af942717625ee3a354cc2e802bd
third_party/pcc @ 1af958fa0d6618b623c091a55f8c872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8ac0d8f92c4e24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143e9c97fe3cf42
third_party/scream-reproduce @ f099118d1241aa3131bf11ff1964974e1da3dbd2
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 @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
test from GCE Tokyo to GCE Sydney, 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>
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<tbody>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>517.49</td>
<td>159.39</td>
<td>1.45</td>
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<td>Copa</td>
<td>5</td>
<td>284.50</td>
<td>65.00</td>
<td>0.37</td>
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<td>TCP Cubic</td>
<td>5</td>
<td>582.78</td>
<td>74.05</td>
<td>0.44</td>
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<td>FillP</td>
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<td>928.89</td>
<td>105.33</td>
<td>0.84</td>
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<td>922.59</td>
<td>101.77</td>
<td>0.94</td>
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<td>59.89</td>
<td>0.77</td>
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<td>57.78</td>
<td>0.53</td>
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<td>58.10</td>
<td>0.00</td>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2019-01-19 16:02:12
End at: 2019-01-19 16:02:42
Local clock offset: 0.436 ms
Remote clock offset: -0.711 ms

# Below is generated by plot.py at 2019-01-19 19:10:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 457.00 Mbit/s
95th percentile per-packet one-way delay: 150.529 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 457.00 Mbit/s
95th percentile per-packet one-way delay: 150.529 ms
Loss rate: 0.85%
Run 1: Report of TCP BBR — Data Link

![Graph showing throughput and delay over time]

- Flow 1 ingress (mean 459.08 Mbit/s)
- Flow 1 egress (mean 457.00 Mbit/s)

![Graph showing packet delay]

- Flow 1 (95th percentile 150.53 ms)
Run 2: Statistics of TCP BBR

Start at: 2019-01-19 16:35:48
End at: 2019-01-19 16:36:18
Local clock offset: -0.121 ms
Remote clock offset: 0.626 ms

# Below is generated by plot.py at 2019-01-19 19:12:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 549.76 Mbit/s
95th percentile per-packet one-way delay: 149.683 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 549.76 Mbit/s
95th percentile per-packet one-way delay: 149.683 ms
Loss rate: 1.38%
Run 2: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 555.31 Mbps)
- Flow 1 egress (mean 549.76 Mbps)

![Graph 2: RTT (ms)](image2)

- Flow 1 (95th percentile 149.68 ms)
Run 3: Statistics of TCP BBR

Start at: 2019-01-19 17:09:50
End at: 2019-01-19 17:10:20
Local clock offset: 0.087 ms
Remote clock offset: -0.139 ms

# Below is generated by plot.py at 2019-01-19 19:12:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 546.15 Mbit/s
95th percentile per-packet one-way delay: 147.340 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 546.15 Mbit/s
95th percentile per-packet one-way delay: 147.340 ms
Loss rate: 1.15%
Run 3: Report of TCP BBR — Data Link

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

- **Flow 1 ingress** (mean 550.37 Mbit/s)
- **Flow 1 egress** (mean 546.15 Mbit/s)

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

- **Flow 1** (95th percentile 147.34 ms)
Run 4: Statistics of TCP BBR

Start at: 2019-01-19 17:44:33
End at: 2019-01-19 17:45:03
Local clock offset: 0.06 ms
Remote clock offset: -0.207 ms

# Below is generated by plot.py at 2019-01-19 19:12:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 495.23 Mbit/s
95th percentile per-packet one-way delay: 197.482 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 495.23 Mbit/s
95th percentile per-packet one-way delay: 197.482 ms
Loss rate: 2.63%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2019-01-19 18:18:58
End at: 2019-01-19 18:19:28
Local clock offset: 0.443 ms
Remote clock offset: -0.283 ms

# Below is generated by plot.py at 2019-01-19 19:12:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 539.29 Mbit/s
95th percentile per-packet one-way delay: 151.932 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 539.29 Mbit/s
95th percentile per-packet one-way delay: 151.932 ms
Loss rate: 1.22%
Run 5: Report of TCP BBR — Data Link

![Graphs showing throughput and per-packet delay over time.]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 543.85 Mbps)
  - Flow 1 egress (mean 539.29 Mbps)

- **Per-packet delay (ms):**
  - Flow 1 (95th percentile 151.93 ms)
Run 1: Statistics of Copa

End at: 2019-01-19 16:23:08
Local clock offset: -0.284 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2019-01-19 19:12:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 258.36 Mbit/s
95th percentile per-packet one-way delay: 60.379 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 258.36 Mbit/s
95th percentile per-packet one-way delay: 60.379 ms
Loss rate: 0.28%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2019-01-19 16:56:44
End at: 2019-01-19 16:57:14
Local clock offset: -0.109 ms
Remote clock offset: -0.836 ms

# Below is generated by plot.py at 2019-01-19 19:12:02
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 280.45 Mbit/s
  95th percentile per-packet one-way delay: 71.062 ms
  Loss rate: 0.43%
-- Flow 1:
  Average throughput: 280.45 Mbit/s
  95th percentile per-packet one-way delay: 71.062 ms
  Loss rate: 0.43%
Run 2: Report of Copa — Data Link

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

Start at: 2019-01-19 17:30:57
End at: 2019-01-19 17:31:27
Local clock offset: -0.435 ms
Remote clock offset: 1.257 ms

# Below is generated by plot.py at 2019-01-19 19:12:05
# Datalink statistics
# Total of 1 flow:
Average throughput: 295.65 Mbit/s
95th percentile per-packet one-way delay: 58.880 ms
Loss rate: 0.37%
# Flow 1:
Average throughput: 295.65 Mbit/s
95th percentile per-packet one-way delay: 58.880 ms
Loss rate: 0.37%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2019-01-19 18:05:12
End at: 2019-01-19 18:05:42
Local clock offset: 0.252 ms
Remote clock offset: -0.997 ms

# Below is generated by plot.py at 2019-01-19 19:21:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 314.02 Mbit/s
95th percentile per-packet one-way delay: 65.791 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 314.02 Mbit/s
95th percentile per-packet one-way delay: 65.791 ms
Loss rate: 0.43%
Run 4: Report of Copa — Data Link

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

- **Flow 1 ingress (mean 314.15 Mbit/s)**
- **Flow 1 egress (mean 314.02 Mbit/s)**

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

- **Flow 1 (95th percentile 65.79 ms)**
Run 5: Statistics of Copa

End at: 2019-01-19 18:39:52
Local clock offset: -0.112 ms
Remote clock offset: -0.827 ms

# Below is generated by plot.py at 2019-01-19 19:21:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 274.03 Mbit/s
95th percentile per-packet one-way delay: 68.895 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 274.03 Mbit/s
95th percentile per-packet one-way delay: 68.895 ms
Loss rate: 0.35%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2019-01-19 16:11:10
End at: 2019-01-19 16:11:40
Local clock offset: -0.137 ms
Remote clock offset: -1.587 ms

# Below is generated by plot.py at 2019-01-19 19:22:04
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 569.32 Mbit/s
  95th percentile per-packet one-way delay: 66.625 ms
  Loss rate: 0.44%
-- Flow 1:
  Average throughput: 569.32 Mbit/s
  95th percentile per-packet one-way delay: 66.625 ms
  Loss rate: 0.44%
Run 1: Report of TCP Cubic — Data Link

![Graph showing throughput and delay over time for Flow 1.](image_url)
Run 2: Statistics of TCP Cubic

Start at: 2019-01-19 16:45:18
End at: 2019-01-19 16:45:48
Local clock offset: -0.135 ms
Remote clock offset: 0.119 ms

# Below is generated by plot.py at 2019-01-19 19:22:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 570.05 Mbit/s
95th percentile per-packet one-way delay: 60.331 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 570.05 Mbit/s
95th percentile per-packet one-way delay: 60.331 ms
Loss rate: 0.45%
Run 3: Statistics of TCP Cubic

Start at: 2019-01-19 17:19:03
End at: 2019-01-19 17:19:33
Local clock offset: -0.439 ms
Remote clock offset: -0.673 ms

# Below is generated by plot.py at 2019-01-19 19:23:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 612.13 Mbit/s
95th percentile per-packet one-way delay: 89.395 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 612.13 Mbit/s
95th percentile per-packet one-way delay: 89.395 ms
Loss rate: 0.49%
Run 3: Report of TCP Cubic — Data Link

[Graph showing throughput and packet delay over time]

Flow 1 ingress (mean 612.78 Mbit/s)  Flow 1 egress (mean 612.13 Mbit/s)

Flow 1 (95th percentile 89.39 ms)
Run 4: Statistics of TCP Cubic

Start at: 2019-01-19 17:53:44  
End at: 2019-01-19 17:54:14  
Local clock offset: -0.377 ms  
Remote clock offset: 0.457 ms

# Below is generated by plot.py at 2019-01-19 19:23:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 559.43 Mbit/s  
95th percentile per-packet one-way delay: 73.601 ms  
Loss rate: 0.49%  
-- Flow 1:  
Average throughput: 559.43 Mbit/s  
95th percentile per-packet one-way delay: 73.601 ms  
Loss rate: 0.49%
Run 4: Report of TCP Cubic — Data Link

![Graph 1: Throughput (Mbps)](image1)
- Flow 1 ingress (mean 559.98 Mbps)
- Flow 1 egress (mean 559.43 Mbps)

![Graph 2: Per-packet one-way delay (ms)](image2)
- Flow 1 (95th percentile 73.60 ms)
Run 5: Statistics of TCP Cubic

Start at: 2019-01-19 18:27:52
End at: 2019-01-19 18:28:22
Local clock offset: 0.355 ms
Remote clock offset: 0.582 ms

# Below is generated by plot.py at 2019-01-19 19:23:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 602.96 Mbit/s
95th percentile per-packet one-way delay: 80.274 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 602.96 Mbit/s
95th percentile per-packet one-way delay: 80.274 ms
Loss rate: 0.32%
Run 5: Report of TCP Cubic — Data Link
Run 1: Statistics of FillP

Start at: 2019-01-19 16:09:10
End at: 2019-01-19 16:09:40
Local clock offset: 0.221 ms
Remote clock offset: -0.764 ms

# Below is generated by plot.py at 2019-01-19 19:31:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 936.42 Mbit/s
95th percentile per-packet one-way delay: 108.353 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 936.42 Mbit/s
95th percentile per-packet one-way delay: 108.353 ms
Loss rate: 0.73%
Run 1: Report of FillP — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 940.12 Mbit/s)
- Flow 1 egress (mean 936.42 Mbit/s)

![Per-packet one-way delay Graph]

- Flow 1 (95th percentile 108.35 ms)
Run 2: Statistics of FillP

Start at: 2019-01-19 16:43:10
End at: 2019-01-19 16:43:40
Local clock offset: -0.136 ms
Remote clock offset: 0.193 ms

# Below is generated by plot.py at 2019-01-19 19:43:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 949.21 Mbit/s
95th percentile per-packet one-way delay: 89.889 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 949.21 Mbit/s
95th percentile per-packet one-way delay: 89.889 ms
Loss rate: 0.67%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2019-01-19 17:17:01
End at: 2019-01-19 17:17:31
Local clock offset: 0.158 ms
Remote clock offset: -0.626 ms

# Below is generated by plot.py at 2019-01-19 19:43:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 891.03 Mbit/s
95th percentile per-packet one-way delay: 120.479 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 891.03 Mbit/s
95th percentile per-packet one-way delay: 120.479 ms
Loss rate: 1.35%
Run 3: Report of FillP — Data Link

[Graph showing network throughput and packet delay over time]

- Flow 1 ingress (mean 899.71 Mbps)
- Flow 1 egress (mean 891.03 Mbps)

[Graph showing packet delay per session over time]

- Flow 1 (95th percentile 120.48 ms)
Run 4: Statistics of FillP

Start at: 2019-01-19 17:51:44
End at: 2019-01-19 17:52:14
Local clock offset: 0.047 ms
Remote clock offset: -0.558 ms

# Below is generated by plot.py at 2019-01-19 19:43:57
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 931.69 Mbit/s
  95th percentile per-packet one-way delay: 98.858 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 931.69 Mbit/s
  95th percentile per-packet one-way delay: 98.858 ms
  Loss rate: 0.53%
Run 4: Report of FillP — Data Link

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

- **Flow 1 ingress (mean 933.07 Mbps)**
- **Flow 1 egress (mean 931.69 Mbps)**

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

- **Flow 1 (95th percentile 98.86 ms)**
Run 5: Statistics of FillP

End at: 2019-01-19 18:26:23
Local clock offset: 0.352 ms
Remote clock offset: -1.011 ms

# Below is generated by plot.py at 2019-01-19 19:44:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 936.12 Mbit/s
95th percentile per-packet one-way delay: 109.078 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 936.12 Mbit/s
95th percentile per-packet one-way delay: 109.078 ms
Loss rate: 0.90%
Run 5: Report of FillP — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 941.77 Mbits)
- Flow 1 egress (mean 936.12 Mbits)

![Packet Delay Graph]

- Flow 1 (95th percentile 109.08 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2019-01-19 16:03:51
End at: 2019-01-19 16:04:21
Local clock offset: 0.208 ms
Remote clock offset: -0.99 ms

# Below is generated by plot.py at 2019-01-19 19:44:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 934.69 Mbit/s
95th percentile per-packet one-way delay: 92.231 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 934.69 Mbit/s
95th percentile per-packet one-way delay: 92.231 ms
Loss rate: 0.66%
Run 1: Report of FillP-Sheep — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 937.17 Mbps)  Flow 1 egress (mean 934.69 Mbps)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 92.23 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2019-01-19 16:37:45
End at: 2019-01-19 16:38:15
Local clock offset: -0.289 ms
Remote clock offset: 0.005 ms

# Below is generated by plot.py at 2019-01-19 19:44:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 904.42 Mbit/s
95th percentile per-packet one-way delay: 116.099 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 904.42 Mbit/s
95th percentile per-packet one-way delay: 116.099 ms
Loss rate: 1.53%
Run 2: Report of FillP-Sheep — Data Link

![Graph showing network performance metrics over time]

- **Flow 1 ingress (mean 914.95 Mbps)**
- **Flow 1 egress (mean 904.42 Mbps)**

![Graph showing packet delay distribution over time]

- **Flow 1 (95th percentile 116.10 ms)**
Run 3: Statistics of FillP-Sheep

Start at: 2019-01-19 17:11:37
End at: 2019-01-19 17:12:07
Local clock offset: 0.077 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2019-01-19 19:45:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 925.03 Mbit/s
95th percentile per-packet one-way delay: 85.179 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 925.03 Mbit/s
95th percentile per-packet one-way delay: 85.179 ms
Loss rate: 0.69%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

Start at: 2019-01-19 17:46:20
End at: 2019-01-19 17:46:50
Local clock offset: 0.278 ms
Remote clock offset: 1.285 ms

# Below is generated by plot.py at 2019-01-19 19:56:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 941.49 Mbit/s
95th percentile per-packet one-way delay: 108.227 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 941.49 Mbit/s
95th percentile per-packet one-way delay: 108.227 ms
Loss rate: 0.80%
Run 4: Report of FillP-Sheep — Data Link

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

- **Flow 1 Ingress (mean 945.45 Mbps)**
- **Flow 1 Egress (mean 941.49 Mbps)**

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

- **Flow 1 (95th percentile 108.23 ms)**
Run 5: Statistics of FillP-Sheep

Start at: 2019-01-19 18:20:46
End at: 2019-01-19 18:21:16
Local clock offset: -0.335 ms
Remote clock offset: -1.397 ms

# Below is generated by plot.py at 2019-01-19 20:04:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 907.33 Mbit/s
95th percentile per-packet one-way delay: 107.133 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 907.33 Mbit/s
95th percentile per-packet one-way delay: 107.133 ms
Loss rate: 1.00%
Run 5: Report of FillP-Sheep — Data Link

![Graph of Throughput and Delay](image)

Throughput (Mbps)

- Flow 1 ingress (mean 912.99 Mbps)
- Flow 1 egress (mean 907.33 Mbps)

Delay (ms)

- Flow 1 (95th percentile 107.13 ms)
Run 1: Statistics of Indigo

Start at: 2019-01-19 16:00:42
End at: 2019-01-19 16:01:12
Local clock offset: -0.013 ms
Remote clock offset: 0.664 ms

# Below is generated by plot.py at 2019-01-19 20:04:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 216.70 Mbit/s
95th percentile per-packet one-way delay: 56.794 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 216.70 Mbit/s
95th percentile per-packet one-way delay: 56.794 ms
Loss rate: 0.36%
Run 1: Report of Indigo — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 216.60 Mbit/s)**
- **Flow 1 egress (mean 216.70 Mbit/s)**

---

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

- **Flow 1 (95th percentile 56.79 ms)**
Run 2: Statistics of Indigo

Start at: 2019-01-19 16:34:15
End at: 2019-01-19 16:34:45
Local clock offset: 0.259 ms
Remote clock offset: -0.355 ms

# Below is generated by plot.py at 2019-01-19 20:04:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.26 Mbit/s
95th percentile per-packet one-way delay: 58.066 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 222.26 Mbit/s
95th percentile per-packet one-way delay: 58.066 ms
Loss rate: 0.40%
Run 2: Report of Indigo — Data Link
Run 3: Statistics of Indigo

Start at: 2019-01-19 17:08:16
End at: 2019-01-19 17:08:46
Local clock offset: 0.349 ms
Remote clock offset: 1.323 ms

# Below is generated by plot.py at 2019-01-19 20:04:30
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 214.24 Mbit/s
  95th percentile per-packet one-way delay: 60.945 ms
  Loss rate: 0.41%
-- Flow 1:
  Average throughput: 214.24 Mbit/s
  95th percentile per-packet one-way delay: 60.945 ms
  Loss rate: 0.41%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-01-19 17:42:59
End at: 2019-01-19 17:43:29
Local clock offset: -0.384 ms
Remote clock offset: -0.285 ms

# Below is generated by plot.py at 2019-01-19 20:04:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.33 Mbit/s
95th percentile per-packet one-way delay: 60.531 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 219.33 Mbit/s
95th percentile per-packet one-way delay: 60.531 ms
Loss rate: 0.46%
Run 4: Report of Indigo — Data Link
Run 5: Statistics of Indigo

Start at: 2019-01-19 18:17:05
End at: 2019-01-19 18:17:35
Local clock offset: 0.056 ms
Remote clock offset: 0.441 ms

# Below is generated by plot.py at 2019-01-19 20:04:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 215.37 Mbit/s
95th percentile per-packet one-way delay: 57.969 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 215.37 Mbit/s
95th percentile per-packet one-way delay: 57.969 ms
Loss rate: 0.36%
Run 5: Report of Indigo — Data Link

![Graph 1: Throughput (Mbps)]

Time (s)

Flow 1 ingress (mean 215.31 Mbps)  Flow 1 egress (mean 215.37 Mbps)

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

Time (s)

Flow 1 (95th percentile 57.97 ms)
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-19 16:20:54
End at: 2019-01-19 16:21:24
Local clock offset: -0.02 ms
Remote clock offset: -0.55 ms

# Below is generated by plot.py at 2019-01-19 20:04:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 579.52 Mbit/s
95th percentile per-packet one-way delay: 128.045 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 579.52 Mbit/s
95th percentile per-packet one-way delay: 128.045 ms
Loss rate: 0.53%
Run 1: Report of Indigo-MusesC3 — Data Link
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-19 16:54:51
Local clock offset: -0.136 ms
Remote clock offset: -0.624 ms

# Below is generated by plot.py at 2019-01-19 20:04:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 659.94 Mbit/s
95th percentile per-packet one-way delay: 92.767 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 659.94 Mbit/s
95th percentile per-packet one-way delay: 92.767 ms
Loss rate: 0.45%
Run 2: Report of Indigo-MusesC3 — Data Link
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-19 17:29:03
End at: 2019-01-19 17:29:33
Local clock offset: 0.406 ms
Remote clock offset: 0.991 ms

# Below is generated by plot.py at 2019-01-19 20:04:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 629.01 Mbit/s
95th percentile per-packet one-way delay: 86.399 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 629.01 Mbit/s
95th percentile per-packet one-way delay: 86.399 ms
Loss rate: 0.48%
Run 3: Report of Indigo-MusesC3 — Data Link

---

Graph 1: Throughput (Mbps)

Graph 2: Per packet one way delay (ms)

---

Flow 1 ingress (mean 629.51 Mbit/s)  Flow 1 egress (mean 629.01 Mbit/s)

Flow 1 (95th percentile 86.40 ms)
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-01-19 18:03:24  
End at: 2019-01-19 18:03:54  
Local clock offset: -0.207 ms  
Remote clock offset: -0.674 ms  

# Below is generated by plot.py at 2019-01-19 20:04:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 654.65 Mbit/s  
95th percentile per-packet one-way delay: 86.359 ms  
Loss rate: 0.46%  
-- Flow 1:  
Average throughput: 654.65 Mbit/s  
95th percentile per-packet one-way delay: 86.359 ms  
Loss rate: 0.46%
Run 4: Report of Indigo-MusesC3 — Data Link

![Throughput Graph]

![Delay Graph]
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-01-19 18:37:33
End at: 2019-01-19 18:38:03
Local clock offset: -0.172 ms
Remote clock offset: -1.057 ms

# Below is generated by plot.py at 2019-01-19 20:05:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 643.87 Mbit/s
95th percentile per-packet one-way delay: 89.834 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 643.87 Mbit/s
95th percentile per-packet one-way delay: 89.834 ms
Loss rate: 0.47%
Run 5: Report of Indigo-MusesC3 — Data Link
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-19 16:25:34
End at: 2019-01-19 16:26:04
Local clock offset: -0.242 ms
Remote clock offset: 0.112 ms

# Below is generated by plot.py at 2019-01-19 20:05:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 623.45 Mbit/s
95th percentile per-packet one-way delay: 118.910 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 623.45 Mbit/s
95th percentile per-packet one-way delay: 118.910 ms
Loss rate: 0.64%
Run 1: Report of Indigo-MusesC5 — Data Link
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-19 16:59:37
End at: 2019-01-19 17:00:07
Local clock offset: 0.105 ms
Remote clock offset: -0.207 ms

# Below is generated by plot.py at 2019-01-19 20:08:37
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 637.67 Mbit/s
  95th percentile per-packet one-way delay: 103.501 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 637.67 Mbit/s
  95th percentile per-packet one-way delay: 103.501 ms
  Loss rate: 0.53%
Run 2: Report of Indigo-MusesC5 — Data Link

Throughput vs. Time

- Flow 1 ingress (mean 638.51 Mbit/s)
- Flow 1 egress (mean 637.67 Mbit/s)

Round-trip latency vs. Time

- Flow 1 (95th percentile 103.50 ms)
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-19 17:33:59
End at: 2019-01-19 17:34:29
Local clock offset: 0.402 ms
Remote clock offset: 0.517 ms

# Below is generated by plot.py at 2019-01-19 20:08:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 626.79 Mbit/s
95th percentile per-packet one-way delay: 103.296 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 626.79 Mbit/s
95th percentile per-packet one-way delay: 103.296 ms
Loss rate: 0.55%
Run 3: Report of Indigo-MusesC5 — Data Link
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-01-19 18:08:04
End at: 2019-01-19 18:08:34
Local clock offset: -0.164 ms
Remote clock offset: -0.857 ms

# Below is generated by plot.py at 2019-01-19 20:16:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 633.63 Mbit/s
95th percentile per-packet one-way delay: 114.427 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 633.63 Mbit/s
95th percentile per-packet one-way delay: 114.427 ms
Loss rate: 0.58%
Run 4: Report of Indigo-MusesC5 — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 634.66 Mbps)
- Flow 1 egress (mean 633.63 Mbps)

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

- Flow 1 (95th percentile 114.43 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-01-19 18:42:15
End at: 2019-01-19 18:42:45
Local clock offset: 0.418 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2019-01-19 20:16:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 631.38 Mbit/s
95th percentile per-packet one-way delay: 124.687 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 631.38 Mbit/s
95th percentile per-packet one-way delay: 124.687 ms
Loss rate: 0.65%
Run 5: Report of Indigo-MusesC5 — Data Link

![Graph 1: Throughput vs Time]

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

- Flow 1 ingress (mean 632.94 Mbit/s)
- Flow 1 egress (mean 631.38 Mbit/s)
- Flow 1 (95th percentile 124.69 ms)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-19 16:30:57
End at: 2019-01-19 16:31:27
Local clock offset: -0.449 ms
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2019-01-19 20:16:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 441.01 Mbit/s
95th percentile per-packet one-way delay: 78.670 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 441.01 Mbit/s
95th percentile per-packet one-way delay: 78.670 ms
Loss rate: 0.60%
Run 1: Report of Indigo-MusesD — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 441.81 Mbps)
- Flow 1 egress (mean 441.01 Mbps)

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

- Flow 1 (95th percentile 78.67 ms)
Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-19 17:04:47
End at: 2019-01-19 17:05:17
Local clock offset: 0.104 ms
Remote clock offset: -0.78 ms

# Below is generated by plot.py at 2019-01-19 20:16:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 486.66 Mbit/s
95th percentile per-packet one-way delay: 87.518 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 486.66 Mbit/s
95th percentile per-packet one-way delay: 87.518 ms
Loss rate: 0.39%
Run 2: Report of Indigo-MusesD — Data Link

![Graph of throughput vs time for Flow 1 ingress and egress](image)

![Graph of packet delay vs time for Flow 1](image)

Flow 1 ingress (mean 486.57 Mbit/s)
Flow 1 egress (mean 486.66 Mbit/s)
Flow 1 (95th percentile 87.52 ms)
Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-19 17:39:30
End at: 2019-01-19 17:40:00
Local clock offset: -0.189 ms
Remote clock offset: -0.485 ms

# Below is generated by plot.py at 2019-01-19 20:16:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 457.72 Mbit/s
95th percentile per-packet one-way delay: 72.750 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 457.72 Mbit/s
95th percentile per-packet one-way delay: 72.750 ms
Loss rate: 0.63%
Run 3: Report of Indigo-MusesD — Data Link

---

**Throughput vs Time**

- **Flow 1 ingress (mean 458.76 Mbit/s)**
- **Flow 1 egress (mean 457.72 Mbit/s)**

---

**Packet Delay vs Time**

- **Flow 1 (95th percentile 72.75 ms)**
Run 4: Statistics of Indigo-MusesD

End at: 2019-01-19 18:14:05
Local clock offset: 0.209 ms
Remote clock offset: 0.614 ms

# Below is generated by plot.py at 2019-01-19 20:16:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 387.19 Mbit/s
95th percentile per-packet one-way delay: 89.733 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 387.19 Mbit/s
95th percentile per-packet one-way delay: 89.733 ms
Loss rate: 0.60%
Run 4: Report of Indigo-MusesD — Data Link

![Graph 1: Throughput vs. Time](image1)
Flow 1 ingress (mean 387.93 Mbit/s)  
Flow 1 egress (mean 387.19 Mbit/s)

![Graph 2: Per-packet one-way delay vs. Time](image2)
Flow 1 (95th percentile 89.73 ms)
Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-19 18:47:46
End at: 2019-01-19 18:48:16
Local clock offset: 0.015 ms
Remote clock offset: -0.309 ms

# Below is generated by plot.py at 2019-01-19 20:17:10
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 419.68 Mbit/s
  95th percentile per-packet one-way delay: 72.238 ms
  Loss rate: 0.50%
-- Flow 1:
  Average throughput: 419.68 Mbit/s
  95th percentile per-packet one-way delay: 72.238 ms
  Loss rate: 0.50%
Run 5: Report of Indigo-MusesD — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 420.07 Mbit/s)  Flow 1 egress (mean 419.68 Mbit/s)

Packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 72.24 ms)
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-19 16:07:20
End at: 2019-01-19 16:07:50
Local clock offset: 0.21 ms
Remote clock offset: -0.529 ms

# Below is generated by plot.py at 2019-01-19 20:20:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 638.24 Mbit/s
95th percentile per-packet one-way delay: 147.266 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 638.24 Mbit/s
95th percentile per-packet one-way delay: 147.266 ms
Loss rate: 0.70%
Run 1: Report of Indigo-MusesT — Data Link

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

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

- **Flow 1 ingress (mean 640.07 Mbit/s)**
- **Flow 1 egress (mean 638.24 Mbit/s)**
- **Flow 1 (95th percentile 147.27 ms)**
Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-19 16:41:16
End at: 2019-01-19 16:41:46
Local clock offset: -0.557 ms
Remote clock offset: -0.217 ms

# Below is generated by plot.py at 2019-01-19 20:25:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 652.92 Mbit/s
95th percentile per-packet one-way delay: 141.162 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 652.92 Mbit/s
95th percentile per-packet one-way delay: 141.162 ms
Loss rate: 0.71%
Run 2: Report of Indigo-MusesT — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 654.95 Mbit/s) - Flow 1 egress (mean 652.92 Mbit/s)

Packet per time delay (ms)

Time (s)

Flow 1 (95th percentile 141.16 ms)
Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-19 17:15:10  
End at: 2019-01-19 17:15:40  
Local clock offset: 0.156 ms  
Remote clock offset: 1.105 ms

# Below is generated by plot.py at 2019-01-19 20:25:39  
# Datalink statistics
-- Total of 1 flow:
Average throughput: 661.96 Mbit/s
95th percentile per-packet one-way delay: 136.034 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 661.96 Mbit/s
95th percentile per-packet one-way delay: 136.034 ms
Loss rate: 0.76%
Run 3: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 664.55 Mbps)
- Flow 1 egress (mean 661.96 Mbps)

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

- Flow 1 (95th percentile 136.03 ms)
Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-19 17:49:52
End at: 2019-01-19 17:50:22
Local clock offset: 0.415 ms
Remote clock offset: -0.486 ms

# Below is generated by plot.py at 2019-01-19 20:26:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 680.13 Mbit/s
95th percentile per-packet one-way delay: 120.183 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 680.13 Mbit/s
95th percentile per-packet one-way delay: 120.183 ms
Loss rate: 0.60%
Run 4: Report of Indigo-MusesT — Data Link

![Graph 1: Throughput vs. Time]

Throughput (Mbps)

Flow 1 ingress (mean 681.46 Mbit/s) — Flow 1 egress (mean 680.13 Mbit/s)

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

Per-packet one-way delay (ms)

Flow 1 (95th percentile 120.18 ms)
Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-19 18:24:03
End at: 2019-01-19 18:24:33
Local clock offset: 0.205 ms
Remote clock offset: 1.349 ms

# Below is generated by plot.py at 2019-01-19 20:26:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 669.03 Mbit/s
95th percentile per-packet one-way delay: 130.599 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 669.03 Mbit/s
95th percentile per-packet one-way delay: 130.599 ms
Loss rate: 0.66%
Run 5: Report of Indigo-MusesT — Data Link
Run 1: Statistics of LEDBAT

Start at: 2019-01-19 16:15:18
End at: 2019-01-19 16:15:48
Local clock offset: 0.011 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-01-19 20:26:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.80 Mbit/s
95th percentile per-packet one-way delay: 61.905 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 26.80 Mbit/s
95th percentile per-packet one-way delay: 61.905 ms
Loss rate: 0.78%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2019-01-19 16:49:16
End at: 2019-01-19 16:49:46
Local clock offset: 0.052 ms
Remote clock offset: -0.745 ms

# Below is generated by plot.py at 2019-01-19 20:26:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.79 Mbit/s
95th percentile per-packet one-way delay: 62.180 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 26.79 Mbit/s
95th percentile per-packet one-way delay: 62.180 ms
Loss rate: 0.78%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDBAT

Start at: 2019-01-19 17:23:07
End at: 2019-01-19 17:23:37
Local clock offset: -0.024 ms
Remote clock offset: -0.278 ms

# Below is generated by plot.py at 2019-01-19 20:26:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.33 Mbit/s
95th percentile per-packet one-way delay: 58.952 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 28.33 Mbit/s
95th percentile per-packet one-way delay: 58.952 ms
Loss rate: 0.76%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2019-01-19 17:57:51
End at: 2019-01-19 17:58:21
Local clock offset: 0.043 ms
Remote clock offset: 0.618 ms

# Below is generated by plot.py at 2019-01-19 20:26:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.34 Mbit/s
95th percentile per-packet one-way delay: 57.583 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 28.34 Mbit/s
95th percentile per-packet one-way delay: 57.583 ms
Loss rate: 0.76%
Run 4: Report of LEDBAT — Data Link
Run 5: Statistics of LEDEBAT

End at: 2019-01-19 18:32:25
Local clock offset: 0.037 ms
Remote clock offset: -0.873 ms

# Below is generated by plot.py at 2019-01-19 20:26:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.45 Mbit/s
95th percentile per-packet one-way delay: 58.834 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 28.45 Mbit/s
95th percentile per-packet one-way delay: 58.834 ms
Loss rate: 0.75%
Run 5: Report of LEDBAT — Data Link

- **Throughput (Mb/s)**
  - Flow 1 ingress (mean 28.56 Mb/s)
  - Flow 1 egress (mean 28.45 Mb/s)

- **Per-packet one-way delay (ms)**
  - Flow 1 (90th percentile 58.83 ms)
Run 1: Statistics of PCC-Allegro

End at: 2019-01-19 16:27:54
Local clock offset: -0.062 ms
Remote clock offset: -0.791 ms

# Below is generated by plot.py at 2019-01-19 20:36:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 474.01 Mbit/s
95th percentile per-packet one-way delay: 167.496 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 474.01 Mbit/s
95th percentile per-packet one-way delay: 167.496 ms
Loss rate: 2.42%
Run 1: Report of PCC-Allegro — Data Link

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

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 483.89 Mbit/s) vs Flow 1 egress (mean 474.01 Mbit/s)

Packet delay (ms)

Time (s)

Flow 1 (95th percentile 167.50 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2019-01-19 17:01:21
End at: 2019-01-19 17:01:51
Local clock offset: 0.385 ms
Remote clock offset: 0.601 ms

# Below is generated by plot.py at 2019-01-19 20:36:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 430.77 Mbit/s
95th percentile per-packet one-way delay: 165.693 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 430.77 Mbit/s
95th percentile per-packet one-way delay: 165.693 ms
Loss rate: 1.52%
Run 2: Report of PCC-Allegro — Data Link

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

Flow 1 ingress (mean 435.75 Mbit/s)  |  Flow 1 egress (mean 430.77 Mbit/s)

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

Flow 1 (95th percentile 165.69 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-01-19 17:35:50
End at: 2019-01-19 17:36:20
Local clock offset: -0.253 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2019-01-19 20:37:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 475.96 Mbit/s
95th percentile per-packet one-way delay: 155.702 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 475.96 Mbit/s
95th percentile per-packet one-way delay: 155.702 ms
Loss rate: 1.25%
Run 3: Report of PCC-Allegro — Data Link
Run 4: Statistics of PCC-Allegro

Start at: 2019-01-19 18:09:49
End at: 2019-01-19 18:10:19
Local clock offset: 0.034 ms
Remote clock offset: -1.505 ms

# Below is generated by plot.py at 2019-01-19 20:41:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 499.49 Mbit/s
95th percentile per-packet one-way delay: 167.673 ms
Loss rate: 3.21%
-- Flow 1:
Average throughput: 499.49 Mbit/s
95th percentile per-packet one-way delay: 167.673 ms
Loss rate: 3.21%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2019-01-19 18:44:06
End at: 2019-01-19 18:44:36
Local clock offset: 0.172 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2019-01-19 20:44:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 481.15 Mbit/s
95th percentile per-packet one-way delay: 172.213 ms
Loss rate: 3.53%
-- Flow 1:
Average throughput: 481.15 Mbit/s
95th percentile per-packet one-way delay: 172.213 ms
Loss rate: 3.53%
Run 5: Report of PCC-Allegro — Data Link

![Graph showing throughput and packet delay over time over 30 seconds.](image)

- **Flow 1 ingress (mean 496.75 Mbit/s)**
- **Flow 1 egress (mean 481.15 Mbit/s)**
- **Flow 1 (95th percentile 172.21 ms)**
Run 1: Statistics of PCC-Expr

Start at: 2019-01-19 15:59:02
End at: 2019-01-19 15:59:32
Local clock offset: 0.121 ms
Remote clock offset: -0.77 ms

# Below is generated by plot.py at 2019-01-19 20:44:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 336.98 Mbit/s
95th percentile per-packet one-way delay: 146.358 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 336.98 Mbit/s
95th percentile per-packet one-way delay: 146.358 ms
Loss rate: 1.68%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2019-01-19 16:32:30
End at: 2019-01-19 16:33:00
Local clock offset: 0.446 ms
Remote clock offset: -1.421 ms

# Below is generated by plot.py at 2019-01-19 20:44:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 336.03 Mbit/s
95th percentile per-packet one-way delay: 119.848 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 336.03 Mbit/s
95th percentile per-packet one-way delay: 119.848 ms
Loss rate: 1.03%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2019-01-19 17:06:27
End at: 2019-01-19 17:06:57
Local clock offset: 0.191 ms
Remote clock offset: 0.288 ms

# Below is generated by plot.py at 2019-01-19 20:44:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 336.43 Mbit/s
95th percentile per-packet one-way delay: 151.193 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 336.43 Mbit/s
95th percentile per-packet one-way delay: 151.193 ms
Loss rate: 1.88%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2019-01-19 17:41:15
End at: 2019-01-19 17:41:45
Local clock offset: 0.243 ms
Remote clock offset: -0.797 ms

# Below is generated by plot.py at 2019-01-19 20:49:03
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 346.75 Mbit/s
  95th percentile per-packet one-way delay: 134.993 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 346.75 Mbit/s
  95th percentile per-packet one-way delay: 134.993 ms
  Loss rate: 0.87%
Run 4: Report of PCC-Expr — Data Link

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

Start at: 2019-01-19 18:15:09
End at: 2019-01-19 18:15:39
Local clock offset: 0.066 ms
Remote clock offset: -0.841 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.82 Mbit/s
95th percentile per-packet one-way delay: 149.109 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 324.82 Mbit/s
95th percentile per-packet one-way delay: 149.109 ms
Loss rate: 0.97%
Run 5: Report of PCC-Expr — Data Link
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-19 16:24:21
End at: 2019-01-19 16:24:51
Local clock offset: 0.379 ms
Remote clock offset: -1.426 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.53 Mbit/s
95th percentile per-packet one-way delay: 58.663 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 81.53 Mbit/s
95th percentile per-packet one-way delay: 58.663 ms
Loss rate: 0.00%
Run 1: Report of QUIC Cubic — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 81.53 Mbit/s)
  - Flow 1 egress (mean 81.53 Mbit/s)

- **Packet delay (ms):**
  - Flow 1 (95th percentile 58.66 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2019-01-19 16:58:25
End at: 2019-01-19 16:58:55
Local clock offset: 0.086 ms
Remote clock offset: -0.927 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.42 Mbit/s
95th percentile per-packet one-way delay: 57.942 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 65.42 Mbit/s
95th percentile per-packet one-way delay: 57.942 ms
Loss rate: 0.56%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2019-01-19 17:32:47
End at: 2019-01-19 17:33:17
Local clock offset: 0.172 ms
Remote clock offset: 0.019 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.12 Mbit/s
95th percentile per-packet one-way delay: 57.179 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 51.12 Mbit/s
95th percentile per-packet one-way delay: 57.179 ms
Loss rate: 0.70%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2019-01-19 18:06:53
End at: 2019-01-19 18:07:23
Local clock offset: 0.096 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.07 Mbit/s
95th percentile per-packet one-way delay: 57.157 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 52.07 Mbit/s
95th percentile per-packet one-way delay: 57.157 ms
Loss rate: 0.66%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2019-01-19 18:41:03
End at: 2019-01-19 18:41:33
Local clock offset: 0.013 ms
Remote clock offset: -0.864 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.92 Mbit/s
95th percentile per-packet one-way delay: 57.979 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 51.92 Mbit/s
95th percentile per-packet one-way delay: 57.979 ms
Loss rate: 0.71%
Run 5: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2019-01-19 16:18:10  
End at: 2019-01-19 16:18:40  
Local clock offset: 0.411 ms  
Remote clock offset: -0.872 ms

# Below is generated by plot.py at 2019-01-19 20:49:23  
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 58.286 ms  
Loss rate: 0.38%

-- Flow 1:
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 58.286 ms  
Loss rate: 0.38%
Run 1: Report of SCReAM — Data Link

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

- **Flow 1** (95th percentile 58.29 ms)
Run 2: Statistics of SCReAM

Start at: 2019-01-19 16:52:02
End at: 2019-01-19 16:52:32
Local clock offset: -0.04 ms
Remote clock offset: -0.312 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.588 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.588 ms
Loss rate: 0.38%
Run 2: Report of SCReAM — Data Link

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

Throughput (Mbps)

Time (s)

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

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

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 57.59 ms)
Run 3: Statistics of SCReAM

Start at: 2019-01-19 17:25:59
End at: 2019-01-19 17:26:29
Local clock offset: 0.281 ms
Remote clock offset: 0.52 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.377 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.377 ms
Loss rate: 0.38%
Run 3: Report of SCReAM — Data Link

![Graph showing network performance metrics over time.](image-url)
Run 4: Statistics of SCReAM

Start at: 2019-01-19 18:00:37
End at: 2019-01-19 18:01:07
Local clock offset: -0.186 ms
Remote clock offset: -0.625 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.295 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.295 ms
Loss rate: 0.39%
Run 4: 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 One-Way Delay vs Time](image2)

- Flow 1 (95th percentile 57.30 ms)
Run 5: Statistics of SCReAM

Start at: 2019-01-19 18:34:47
End at: 2019-01-19 18:35:17
Local clock offset: 0.481 ms
Remote clock offset: -0.422 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.821 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.821 ms
Loss rate: 0.38%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2019-01-19 16:13:02  
Local clock offset: 0.081 ms  
Remote clock offset: -1.39 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 59.162 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 59.162 ms
Loss rate: 0.50%
Run 1: Report of Sprout — Data Link

![Graph of Throughput and Delay](image-url)
Run 2: Statistics of Sprout

End at: 2019-01-19 16:47:29
Local clock offset: 0.126 ms
Remote clock offset: -0.369 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 58.065 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 58.065 ms
Loss rate: 0.34%
Run 2: Report of Sprout — Data Link

![Graphs showing throughput and packet delay](image-url)
Run 3: Statistics of Sprout

Start at: 2019-01-19 17:20:50
End at: 2019-01-19 17:21:20
Local clock offset: 0.053 ms
Remote clock offset: -0.422 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.80 Mbit/s
95th percentile per-packet one-way delay: 58.447 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 7.80 Mbit/s
95th percentile per-packet one-way delay: 58.447 ms
Loss rate: 0.42%
Run 3: Report of Sprout — Data Link

[Graphs showing throughput and per-packet one-way delay over time]
Run 4: Statistics of Sprout

Start at: 2019-01-19 17:55:34
End at: 2019-01-19 17:56:04
Local clock offset: -0.36 ms
Remote clock offset: -0.802 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 58.210 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 58.210 ms
Loss rate: 0.39%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2019-01-19 18:29:38
End at: 2019-01-19 18:30:08
Local clock offset: 0.092 ms
Remote clock offset: -0.862 ms

# Below is generated by plot.py at 2019-01-19 20:49:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 58.847 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 58.847 ms
Loss rate: 0.42%
Run 5: Report of Sprout — Data Link
Run 1: Statistics of TaoVA-100x

Start at: 2019-01-19 16:16:31
End at: 2019-01-19 16:17:01
Local clock offset: -0.009 ms
Remote clock offset: -0.463 ms

# Below is generated by plot.py at 2019-01-19 20:49:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.73 Mbit/s
95th percentile per-packet one-way delay: 57.504 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 225.73 Mbit/s
95th percentile per-packet one-way delay: 57.504 ms
Loss rate: 0.42%
Run 1: Report of TaoVA-100x — Data Link

![Graph showing throughput and packet delay over time. The graph includes two plots: one for throughput with two lines indicating different data flow rates, and another for packet delay with a line indicating the 95th percentile delay.]
Run 2: Statistics of TaoVA-100x

Start at: 2019-01-19 16:50:27
End at: 2019-01-19 16:50:57
Local clock offset: -0.117 ms
Remote clock offset: -0.839 ms

# Below is generated by plot.py at 2019-01-19 20:50:02
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 226.33 Mbit/s
  95th percentile per-packet one-way delay: 58.171 ms
  Loss rate: 0.40%
-- Flow 1:
  Average throughput: 226.33 Mbit/s
  95th percentile per-packet one-way delay: 58.171 ms
  Loss rate: 0.40%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2019-01-19 17:24:18
End at: 2019-01-19 17:24:48
Local clock offset: -0.192 ms
Remote clock offset: -0.292 ms

# Below is generated by plot.py at 2019-01-19 20:50:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.79 Mbit/s
95th percentile per-packet one-way delay: 60.975 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 224.79 Mbit/s
95th percentile per-packet one-way delay: 60.975 ms
Loss rate: 0.42%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2019-01-19 17:59:02
End at: 2019-01-19 17:59:32
Local clock offset: 0.069 ms
Remote clock offset: -0.811 ms

# Below is generated by plot.py at 2019-01-19 20:50:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.86 Mbit/s
95th percentile per-packet one-way delay: 61.482 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 225.86 Mbit/s
95th percentile per-packet one-way delay: 61.482 ms
Loss rate: 0.39%
Run 4: Report of TaoVA-100x — Data Link

![Graph of throughput over time]

- **Flow 1 ingress (mean 225.84 Mbit/s)**
- **Flow 1 egress (mean 225.86 Mbit/s)**

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

- **Flow 1 (95th percentile 61.48 ms)**
Run 5: Statistics of TaoVA-100x

Start at: 2019-01-19 18:33:06
End at: 2019-01-19 18:33:36
Local clock offset: 0.321 ms
Remote clock offset: 0.585 ms

# Below is generated by plot.py at 2019-01-19 20:50:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 232.12 Mbit/s
95th percentile per-packet one-way delay: 56.671 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 232.12 Mbit/s
95th percentile per-packet one-way delay: 56.671 ms
Loss rate: 0.38%
Run 5: Report of TaoVA-100x — Data Link
Run 1: Statistics of TCP Vegas

Start at: 2019-01-19 16:19:18
End at: 2019-01-19 16:19:48
Local clock offset: 0.026 ms
Remote clock offset: -0.254 ms

# Below is generated by plot.py at 2019-01-19 20:52:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 414.34 Mbit/s
95th percentile per-packet one-way delay: 58.829 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 414.34 Mbit/s
95th percentile per-packet one-way delay: 58.829 ms
Loss rate: 0.35%
Run 1: Report of TCP Vegas — Data Link

![Graph of TCP Vegas performance](image)

- **Flow 1 ingress** (mean 414.18 Mbit/s)
- **Flow 1 egress** (mean 414.34 Mbit/s)

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

- **Flow 1** (95th percentile 58.83 ms)
Run 2: Statistics of TCP Vegas

Start at: 2019-01-19 16:53:10
End at: 2019-01-19 16:53:40
Local clock offset: -0.58 ms
Remote clock offset: -1.387 ms

# Below is generated by plot.py at 2019-01-19 20:59:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 515.75 Mbit/s
95th percentile per-packet one-way delay: 65.993 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 515.75 Mbit/s
95th percentile per-packet one-way delay: 65.993 ms
Loss rate: 0.37%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-01-19 17:27:07
End at: 2019-01-19 17:27:37
Local clock offset: 0.149 ms
Remote clock offset: 0.15 ms

# Below is generated by plot.py at 2019-01-19 20:59:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 472.46 Mbit/s
95th percentile per-packet one-way delay: 61.343 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 472.46 Mbit/s
95th percentile per-packet one-way delay: 61.343 ms
Loss rate: 0.41%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2019-01-19 18:01:45
End at: 2019-01-19 18:02:15
Local clock offset: 0.253 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2019-01-19 20:59:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 390.44 Mbit/s
95th percentile per-packet one-way delay: 67.521 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 390.44 Mbit/s
95th percentile per-packet one-way delay: 67.521 ms
Loss rate: 0.40%
Run 4: Report of TCP Vegas — Data Link

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

- **Flow 1 ingress (mean 390.46 Mbit/s)**
- **Flow 1 egress (mean 390.44 Mbit/s)**

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

- **Flow 1 (95th percentile 67.52 ms)**

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Run 5: Statistics of TCP Vegas

Start at: 2019-01-19 18:35:55
End at: 2019-01-19 18:36:25
Local clock offset: 0.254 ms
Remote clock offset: 0.47 ms

# Below is generated by plot.py at 2019-01-19 20:59:15
# Datalink statistics
-- Total of 1 flow:
   Average throughput: 329.92 Mbit/s
   95th percentile per-packet one-way delay: 67.113 ms
   Loss rate: 0.30%
-- Flow 1:
   Average throughput: 329.92 Mbit/s
   95th percentile per-packet one-way delay: 67.113 ms
   Loss rate: 0.30%
Run 5: Report of TCP Vegas — Data Link

![Throughput Graph](Image)

![Packet End-to-End Delay](Image)
Run 1: Statistics of Verus

Start at: 2019-01-19 16:05:49
End at: 2019-01-19 16:06:19
Local clock offset: -0.037 ms
Remote clock offset: -1.398 ms

# Below is generated by plot.py at 2019-01-19 20:59:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 197.87 Mbit/s
95th percentile per-packet one-way delay: 169.410 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 197.87 Mbit/s
95th percentile per-packet one-way delay: 169.410 ms
Loss rate: 1.79%
Run 1: Report of Verus — Data Link

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

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

Start at: 2019-01-19 16:39:40
End at: 2019-01-19 16:40:10
Local clock offset: -0.364 ms
Remote clock offset: -1.179 ms

# Below is generated by plot.py at 2019-01-19 20:59:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 210.28 Mbit/s
95th percentile per-packet one-way delay: 187.056 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 210.28 Mbit/s
95th percentile per-packet one-way delay: 187.056 ms
Loss rate: 1.85%
Run 2: Report of Verus — Data Link

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

**Lines:**
- Dashed line: Flow ingress (mean 213.44 Mbps)
- Solid line: Flow egress (mean 210.28 Mbps)

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

**Legend:**
- Flow 1 (95th percentile 187.06 ms)
Run 3: Statistics of Verus

Start at: 2019-01-19 17:13:38  
End at: 2019-01-19 17:14:08  
Local clock offset: 0.131 ms  
Remote clock offset: -0.605 ms  

# Below is generated by plot.py at 2019-01-19 20:59:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 199.28 Mbit/s  
95th percentile per-packet one-way delay: 169.588 ms  
Loss rate: 1.81%  
-- Flow 1:  
Average throughput: 199.28 Mbit/s  
95th percentile per-packet one-way delay: 169.588 ms  
Loss rate: 1.81%
Run 3: Report of Verus — Data Link

![Graph showing throughput and packet delay over time for Flow 1 with ingress and egress data.]
Run 4: Statistics of Verus

Start at: 2019-01-19 17:48:24
End at: 2019-01-19 17:48:54
Local clock offset: 0.452 ms
Remote clock offset: -0.223 ms

# Below is generated by plot.py at 2019-01-19 20:59:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 151.73 Mbit/s
95th percentile per-packet one-way delay: 86.636 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 151.73 Mbit/s
95th percentile per-packet one-way delay: 86.636 ms
Loss rate: 0.81%
Run 4: Report of Verus — Data Link

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

- Flow 1 ingress (mean 152.39 Mbit/s)
- Flow 1 egress (mean 151.73 Mbit/s)

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

- Flow 1 (95th percentile 86.64 ms)
Run 5: Statistics of Verus

End at: 2019-01-19 18:23:05
Local clock offset: -0.195 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-01-19 21:01:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 174.03 Mbit/s
95th percentile per-packet one-way delay: 101.373 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 174.03 Mbit/s
95th percentile per-packet one-way delay: 101.373 ms
Loss rate: 0.60%
Run 5: Report of Verus — Data Link

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

- Flow 1 ingress (mean 174.41 Mbit/s)
- Flow 1 egress (mean 174.03 Mbit/s)

![Graph showing per packet one way delay with a single line representing flow 1's 95th percentile delay of 101.37 ms.]

Flow 1 (95th percentile 101.37 ms)
Run 1: Statistics of PCC-Vivace

End at: 2019-01-19 16:29:43
Local clock offset: -0.082 ms
Remote clock offset: -1.404 ms

# Below is generated by plot.py at 2019-01-19 21:04:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 402.09 Mbit/s
95th percentile per-packet one-way delay: 63.396 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 402.09 Mbit/s
95th percentile per-packet one-way delay: 63.396 ms
Loss rate: 0.40%
Run 1: Report of PCC-Vivace — Data Link

![Throughput Graph]

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![Delay Graph]

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Run 2: Statistics of PCC-Vivace

Start at: 2019-01-19 17:03:02
End at: 2019-01-19 17:03:32
Local clock offset: 0.345 ms
Remote clock offset: -0.248 ms

# Below is generated by plot.py at 2019-01-19 21:04:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 418.76 Mbit/s
95th percentile per-packet one-way delay: 62.104 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 418.76 Mbit/s
95th percentile per-packet one-way delay: 62.104 ms
Loss rate: 0.46%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Start at: 2019-01-19 17:37:43  
End at: 2019-01-19 17:38:13  
Local clock offset: 0.266 ms  
Remote clock offset: -0.673 ms

# Below is generated by plot.py at 2019-01-19 21:04:15
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 383.08 Mbit/s  
  95th percentile per-packet one-way delay: 62.008 ms  
  Loss rate: 0.45%
-- Flow 1:
  Average throughput: 383.08 Mbit/s  
  95th percentile per-packet one-way delay: 62.008 ms  
  Loss rate: 0.45%
Run 3: Report of PCC-Vivace — Data Link

![Graph 1](image1.png)

**Flow 1 ingress (mean 383.29 Mbit/s)**
**Flow 1 egress (mean 383.08 Mbit/s)**

![Graph 2](image2.png)

**Flow 1 (95th percentile 62.01 ms)**
Run 4: Statistics of PCC-Vivace

Start at: 2019-01-19 18:11:50
End at: 2019-01-19 18:12:20
Local clock offset: 0.212 ms
Remote clock offset: -1.374 ms

# Below is generated by plot.py at 2019-01-19 21:04:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 376.34 Mbit/s
95th percentile per-packet one-way delay: 61.769 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 376.34 Mbit/s
95th percentile per-packet one-way delay: 61.769 ms
Loss rate: 0.49%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2019-01-19 18:45:59
End at: 2019-01-19 18:46:29
Local clock offset: 0.084 ms
Remote clock offset: -0.825 ms

# Below is generated by plot.py at 2019-01-19 21:04:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 399.30 Mbit/s
95th percentile per-packet one-way delay: 59.141 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 399.30 Mbit/s
95th percentile per-packet one-way delay: 59.141 ms
Loss rate: 0.42%
Run 5: Report of PCC-Vivace — Data Link

![Graph of throughput and packet delay over time for Flow 1 ingress and egress.]
Run 1: Statistics of WebRTC media

Start at: 2019-01-19 16:14:10
End at: 2019-01-19 16:14:40
Local clock offset: -0.209 ms
Remote clock offset: -0.778 ms
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-01-19 16:48:08
End at: 2019-01-19 16:48:38
Local clock offset: 0.259 ms
Remote clock offset: -0.234 ms

# Below is generated by plot.py at 2019-01-19 21:04:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.636 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.636 ms
Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2019-01-19 17:21:59
End at: 2019-01-19 17:22:29
Local clock offset: 0.374 ms
Remote clock offset: -0.761 ms

# Below is generated by plot.py at 2019-01-19 21:04:17
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 58.360 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 58.360 ms
  Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

![Graph of throughput vs. time for WebRTC data link]

![Graph of per-packet one-way delay vs. time for WebRTC data link]
Run 4: Statistics of WebRTC media

Start at: 2019-01-19 17:56:43
End at: 2019-01-19 17:57:13
Local clock offset: -0.193 ms
Remote clock offset: -0.881 ms

# Below is generated by plot.py at 2019-01-19 21:04:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.043 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.043 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link

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

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

**Delay (ms):**
- Flow 1 (95th percentile 58.04 ms)
Run 5: Statistics of WebRTC media

Start at: 2019-01-19 18:30:47
End at: 2019-01-19 18:31:17
Local clock offset: 0.201 ms
Remote clock offset: -1.035 ms

# Below is generated by plot.py at 2019-01-19 21:04:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.344 ms
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link