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

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babc2d2b090d2c64fd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedb5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38d4dfe0edbf90c077e64d
third_party/libutp @ b3465b942e28262f2b179eaab4a906ce6b7b7fc3cf
third_party/muses @ 5ce721187ad823da2095537730c74686ca4966
third_party/pantheon-tunnel @ f86663f58d27af0942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d6d18b2c091a55f8ec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acc08f92b9e24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3fc42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff19642974e1da3dbb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a6ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproubt2.cc
M src/network/sproutnetcomm.cc
third_party/verus @ 3d4b447ea74c6c60a261149af26295629939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
<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>522.74</td>
<td>149.10</td>
<td>1.11</td>
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<td>Copa</td>
<td>5</td>
<td>283.23</td>
<td>69.18</td>
<td>0.39</td>
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<td>TCP Cubic</td>
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<td>470.51</td>
<td>75.11</td>
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<td>103.06</td>
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<td>97.13</td>
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<td>59.07</td>
<td>0.00</td>
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Run 1: Statistics of TCP BBR

Start at: 2019-04-24 14:56:19
End at: 2019-04-24 14:56:49
Local clock offset: -0.455 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-04-24 17:24:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 527.21 Mbit/s
95th percentile per-packet one-way delay: 160.611 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 527.21 Mbit/s
95th percentile per-packet one-way delay: 160.611 ms
Loss rate: 1.07%
Run 1: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps)]

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

Local clock offset: -0.393 ms
Remote clock offset: -0.133 ms

# Below is generated by plot.py at 2019-04-24 17:24:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 523.62 Mbit/s
95th percentile per-packet one-way delay: 151.016 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 523.62 Mbit/s
95th percentile per-packet one-way delay: 151.016 ms
Loss rate: 0.78%
Run 2: Report of TCP BBR — Data Link

![Graph 1: Throughput vs Time]

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

- Flow 1 ingress (mean 52.65 Mb/s)
- Flow 1 egress (mean 523.62 Mb/s)

- Flow 1 (95th percentile 151.02 ms)
Run 3: Statistics of TCP BBR

End at: 2019-04-24 15:58:52
Local clock offset: 0.148 ms
Remote clock offset: -0.418 ms

# Below is generated by plot.py at 2019-04-24 17:24:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 525.43 Mbit/s
95th percentile per-packet one-way delay: 110.749 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 525.43 Mbit/s
95th percentile per-packet one-way delay: 110.749 ms
Loss rate: 0.67%
Run 3: Report of TCP BBR — Data Link

- Flow 1 ingress (mean 527.53 Mbit/s)
- Flow 1 egress (mean 525.43 Mbit/s)

- Flow 1 (95th percentile 110.75 ms)
Run 4: Statistics of TCP BBR

End at: 2019-04-24 16:30:06
Local clock offset: 0.107 ms
Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2019-04-24 17:24:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 528.32 Mbit/s
95th percentile per-packet one-way delay: 150.539 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 528.32 Mbit/s
95th percentile per-packet one-way delay: 150.539 ms
Loss rate: 1.19%
Run 4: Report of TCP BBR — Data Link

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![Graph 1](image1.png)

**Legend:**
- Solid line: Flow 1 ingress (mean 532.58 Mbit/s)
- Dashed line: Flow 1 egress (mean 528.32 Mbit/s)

![Graph 2](image2.png)

**Legend:**
- Dotted line: Flow 1 (95th percentile 150.54 ms)
Run 5: Statistics of TCP BBR

Start at: 2019-04-24 17:01:29
End at: 2019-04-24 17:01:59
Local clock offset: -0.381 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2019-04-24 17:24:39
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 509.12 Mbit/s
  95th percentile per-packet one-way delay: 172.573 ms
  Loss rate: 1.85%
-- Flow 1:
  Average throughput: 509.12 Mbit/s
  95th percentile per-packet one-way delay: 172.573 ms
  Loss rate: 1.85%
Run 5: Report of TCP BBR — Data Link

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

- **Throughput (Mbps)** over time for Flow 1 ingress (mean 516.59 Mbps) and Flow 1 egress (mean 509.12 Mbps).
- **Per packet one way delay (ms)** over time for Flow 1 (95th percentile 172.57 ms).
Run 1: Statistics of Copa

End at: 2019-04-24 14:37:43
Local clock offset: 0.266 ms
Remote clock offset: -0.216 ms

# Below is generated by plot.py at 2019-04-24 17:24:39
# Datalink statistics
  -- Total of 1 flow:
  Average throughput: 245.35 Mbit/s
  95th percentile per-packet one-way delay: 66.189 ms
  Loss rate: 0.33%
  -- Flow 1:
  Average throughput: 245.35 Mbit/s
  95th percentile per-packet one-way delay: 66.189 ms
  Loss rate: 0.33%
Run 1: Report of Copa — Data Link

![Graph of throughput over time showing two lines for flow ingress and egress, with peak values and fluctuations.]

![Graph of packet delay showing spikes at various time points.]
Run 2: Statistics of Copa

End at: 2019-04-24 15:08:23
Local clock offset: -0.174 ms
Remote clock offset: -0.161 ms

# Below is generated by plot.py at 2019-04-24 17:24:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 283.38 Mbit/s
95th percentile per-packet one-way delay: 64.301 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 283.38 Mbit/s
95th percentile per-packet one-way delay: 64.301 ms
Loss rate: 0.44%
Run 2: Report of Copa — Data Link

![Graph showing throughput and delay over time.]

Flow 1 ingress (mean 283.55 Mbit/s)  Flow 1 egress (mean 283.38 Mbit/s)

Flow 1 (95th percentile 64.30 ms)
Run 3: Statistics of Copa

Local clock offset: 0.091 ms
Remote clock offset: -0.143 ms

# Below is generated by plot.py at 2019-04-24 17:25:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 309.88 Mbit/s
95th percentile per-packet one-way delay: 65.493 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 309.88 Mbit/s
95th percentile per-packet one-way delay: 65.493 ms
Loss rate: 0.32%
Run 3: Report of Copa — Data Link

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

![Graph 2: Packet Delay over Time](image2)
Run 4: Statistics of Copa

End at: 2019-04-24 16:10:23
Local clock offset: -0.091 ms
Remote clock offset: -0.299 ms

# Below is generated by plot.py at 2019-04-24 17:32:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 299.96 Mbit/s
95th percentile per-packet one-way delay: 70.785 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 299.96 Mbit/s
95th percentile per-packet one-way delay: 70.785 ms
Loss rate: 0.38%
Run 4: Report of Copa — Data Link

The graphs show the throughput and packet delay for different flows. The throughput graph indicates a steady increase followed by fluctuations, while the packet delay graph shows spikes at various times.
Run 5: Statistics of Copa

End at: 2019-04-24 16:41:57
Local clock offset: 0.157 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-04-24 17:32:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 277.58 Mbit/s
95th percentile per-packet one-way delay: 79.127 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 277.58 Mbit/s
95th percentile per-packet one-way delay: 79.127 ms
Loss rate: 0.46%
Run 5: Report of Copa — Data Link

![Graph showing throughput and latency over time.]

**Throughput (Mbps)**
- Flow 1 ingress (mean 277.80 Mbit/s)
- Flow 1 egress (mean 277.58 Mbit/s)

**Per packet one way delay (ms)**
- Flow 1 (95th percentile 79.13 ms)
Run 1: Statistics of TCP Cubic

End at: 2019-04-24 14:29:19  
Local clock offset: 0.024 ms  
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2019-04-24 17:32:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 478.23 Mbit/s  
95th percentile per-packet one-way delay: 65.223 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 478.23 Mbit/s  
95th percentile per-packet one-way delay: 65.223 ms  
Loss rate: 0.52%
Run 2: Statistics of TCP Cubic

End at: 2019-04-24 15:00:05
Local clock offset: 0.308 ms
Remote clock offset: -0.195 ms

# Below is generated by plot.py at 2019-04-24 17:32:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 380.69 Mbit/s
95th percentile per-packet one-way delay: 97.596 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 380.69 Mbit/s
95th percentile per-packet one-way delay: 97.596 ms
Loss rate: 0.42%
Run 2: Report of TCP Cubic — Data Link

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

- **Flow 1 ingress (mean 380.80 Mbit/s)**
- **Flow 1 egress (mean 380.69 Mbit/s)**

![Graph of packet delay](image)

- **Flow 1 (95th percentile 97.60 ms)**
Run 3: Statistics of TCP Cubic

Start at: 2019-04-24 15:30:27
End at: 2019-04-24 15:30:57
Local clock offset: 0.136 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2019-04-24 17:33:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 513.66 Mbit/s
95th percentile per-packet one-way delay: 67.818 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 513.66 Mbit/s
95th percentile per-packet one-way delay: 67.818 ms
Loss rate: 0.30%
Run 3: Report of TCP Cubic — Data Link

![Throughput plot](image1)

- Flow 1 ingress (mean 513.21 Mbit/s)
- Flow 1 egress (mean 513.66 Mbit/s)

![Latency plot](image2)

- Flow 1 (95th percentile 67.82 ms)
Run 4: Statistics of TCP Cubic

Start at: 2019-04-24 16:01:29
End at: 2019-04-24 16:01:59
Local clock offset: -0.511 ms
Remote clock offset: -0.181 ms

# Below is generated by plot.py at 2019-04-24 17:33:07
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 490.19 Mbit/s
  95th percentile per-packet one-way delay: 75.039 ms
  Loss rate: 0.41%
-- Flow 1:
  Average throughput: 490.19 Mbit/s
  95th percentile per-packet one-way delay: 75.039 ms
  Loss rate: 0.41%
Run 4: Report of TCP Cubic — Data Link

![Graph of Throughput vs Time](image1)

- **Flow 1 ingress (mean 490.29 Mbit/s)**
- **Flow 1 egress (mean 490.19 Mbit/s)**

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

- **Flow 1 (95th percentile 75.04 ms)**
Run 5: Statistics of TCP Cubic

Start at: 2019-04-24 16:32:50
Local clock offset: -0.188 ms
Remote clock offset: 0.023 ms

# Below is generated by plot.py at 2019-04-24 17:33:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 489.80 Mbit/s
95th percentile per-packet one-way delay: 69.875 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 489.80 Mbit/s
95th percentile per-packet one-way delay: 69.875 ms
Loss rate: 0.44%
Run 5: Report of TCP Cubic — Data Link

### Throughput

- **Flow 1 ingress (mean 490.00 Mbit/s)**
- **Flow 1 egress (mean 489.80 Mbit/s)**

### Per-packet one-way delay

- **Flow 1 (95th percentile 69.88 ms)**
Run 1: Statistics of FillP

Start at: 2019-04-24 14:43:00
End at: 2019-04-24 14:43:30
Local clock offset: -0.084 ms
Remote clock offset: 0.298 ms

# Below is generated by plot.py at 2019-04-24 17:42:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 916.82 Mbit/s
95th percentile per-packet one-way delay: 92.379 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 916.82 Mbit/s
95th percentile per-packet one-way delay: 92.379 ms
Loss rate: 0.47%
Run 1: Report of FillP — Data Link

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

[Graph showing per-packet one-way delay over time for Flow 1]
Run 2: Statistics of FillP

End at: 2019-04-24 15:14:16
Local clock offset: 0.315 ms
Remote clock offset: -0.124 ms

# Below is generated by plot.py at 2019-04-24 17:50:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 903.36 Mbit/s
95th percentile per-packet one-way delay: 100.810 ms
Loss rate: 0.47%

-- Flow 1:
Average throughput: 903.36 Mbit/s
95th percentile per-packet one-way delay: 100.810 ms
Loss rate: 0.47%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2019-04-24 15:44:50
End at: 2019-04-24 15:45:20
Local clock offset: -0.083 ms
Remote clock offset: -0.423 ms

# Below is generated by plot.py at 2019-04-24 17:50:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 855.10 Mbit/s
95th percentile per-packet one-way delay: 119.070 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 855.10 Mbit/s
95th percentile per-packet one-way delay: 119.070 ms
Loss rate: 0.86%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Local clock offset: 0.36 ms
Remote clock offset: 0.023 ms

# Below is generated by plot.py at 2019-04-24 17:51:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 905.57 Mbit/s
95th percentile per-packet one-way delay: 107.938 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 905.57 Mbit/s
95th percentile per-packet one-way delay: 107.938 ms
Loss rate: 0.83%
Run 4: Report of FillP — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 909.53 Mbps)
- Flow 1 egress (mean 905.57 Mbps)

![Graph 2: Per-Socket One-Way Delay (ms)]

- Flow 1 (95th percentile 107.94 ms)
Run 5: Statistics of FillP

Local clock offset: -0.097 ms
Remote clock offset: 0.049 ms

# Below is generated by plot.py at 2019-04-24 17:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 932.97 Mbit/s
95th percentile per-packet one-way delay: 95.092 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 932.97 Mbit/s
95th percentile per-packet one-way delay: 95.092 ms
Loss rate: 0.47%
Run 5: Report of FillP — Data Link
Run 1: Statistics of FillP-Sheep

Start at: 2019-04-24 14:47:44
Local clock offset: -0.275 ms
Remote clock offset: -0.158 ms

# Below is generated by plot.py at 2019-04-24 17:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 911.32 Mbit/s
95th percentile per-packet one-way delay: 93.092 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 911.32 Mbit/s
95th percentile per-packet one-way delay: 93.092 ms
Loss rate: 0.40%
Run 1: Report of FillP-Sheep — Data Link

[Graph showing throughput and delay over time]
Run 2: Statistics of FillP-Sheep

End at: 2019-04-24 15:19:12
Local clock offset: -0.338 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2019-04-24 17:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 858.71 Mbit/s
95th percentile per-packet one-way delay: 103.449 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 858.71 Mbit/s
95th percentile per-packet one-way delay: 103.449 ms
Loss rate: 0.60%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

End at: 2019-04-24 15:50:09
Local clock offset: -0.124 ms
Remote clock offset: -0.274 ms

# Below is generated by plot.py at 2019-04-24 17:51:55
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 850.22 Mbit/s
  95th percentile per-packet one-way delay: 95.029 ms
  Loss rate: 0.59%
-- Flow 1:
  Average throughput: 850.22 Mbit/s
  95th percentile per-packet one-way delay: 95.029 ms
  Loss rate: 0.59%
Run 3: Report of FillP-Sheep — Data Link

![Data Link Diagram]

- **Flow 1 Ingress (mean 851.90 Mbits)**
- **Flow 1 Egress (mean 850.22 Mbits)**

![Packet Delay Diagram]

- **Flow 1 (95th percentile 95.03 ms)**

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Run 4: Statistics of FillP-Sheep

Local clock offset: 0.193 ms
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2019-04-24 18:02:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 840.06 Mbit/s
95th percentile per-packet one-way delay: 101.668 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 840.06 Mbit/s
95th percentile per-packet one-way delay: 101.668 ms
Loss rate: 0.90%
Run 4: Report of FillP-Sheep — Data Link

![Throughput Graph](image)

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

- Flow 1 ingress (mean 844.20 Mb/s)
- Flow 1 egress (mean 840.06 Mb/s)

Flow 1 (95th percentile 101.67 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2019-04-24 16:52:42
End at: 2019-04-24 16:53:12
Local clock offset: -0.112 ms
Remote clock offset: -0.728 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 910.13 Mbit/s
95th percentile per-packet one-way delay: 92.421 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 910.13 Mbit/s
95th percentile per-packet one-way delay: 92.421 ms
Loss rate: 0.46%
Run 5: Report of FillP-Sheep — Data Link

![Graph of Throughput](image1)

- Flow 1 ingress (mean 910.77 Mbit/s)
- Flow 1 egress (mean 910.13 Mbit/s)

![Graph of Per-Packet End-to-End Delay](image2)

- Flow 1 (95th percentile 92.42 ms)
Run 1: Statistics of Indigo

Start at: 2019-04-24 14:44:45
End at: 2019-04-24 14:45:15
Local clock offset: -0.322 ms
Remote clock offset: -0.358 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 183.18 Mbit/s
95th percentile per-packet one-way delay: 57.656 ms
Loss rate: 0.43%

-- Flow 1:
Average throughput: 183.18 Mbit/s
95th percentile per-packet one-way delay: 57.656 ms
Loss rate: 0.43%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

End at: 2019-04-24 15:15:59
Local clock offset: -0.543 ms
Remote clock offset: -0.133 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.67 Mbit/s
95th percentile per-packet one-way delay: 58.054 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 220.67 Mbit/s
95th percentile per-packet one-way delay: 58.054 ms
Loss rate: 0.40%
Run 2: Report of Indigo — Data Link

![Graph showing throughput over time with two lines representing Flow 1 ingress and egress with mean throughput of 220.69 Mbit/s and 220.67 Mbit/s respectively.]

![Graph showing per-packet one-way delay over time with a 95th percentile delay of 58.05 ms for Flow 1.]
Run 3: Statistics of Indigo

End at: 2019-04-24 15:47:03
Local clock offset: -0.252 ms
Remote clock offset: -0.388 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 230.85 Mbit/s
95th percentile per-packet one-way delay: 58.269 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 230.85 Mbit/s
95th percentile per-packet one-way delay: 58.269 ms
Loss rate: 0.42%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-04-24 16:17:45
End at: 2019-04-24 16:18:16
Local clock offset: -0.261 ms
Remote clock offset: -0.228 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.57 Mbit/s
95th percentile per-packet one-way delay: 58.356 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 219.57 Mbit/s
95th percentile per-packet one-way delay: 58.356 ms
Loss rate: 0.40%
Run 4: Report of Indigo — Data Link

![Graph of throughput and delay over time]

Flow 1 ingress (mean 219.58 Mbit/s) and Flow 1 egress (mean 219.57 Mbit/s)

Flow 1 (95th percentile 58.36 ms)
Run 5: Statistics of Indigo

End at: 2019-04-24 16:50:07
Local clock offset: -0.123 ms
Remote clock offset: 0.49 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 218.75 Mbit/s
95th percentile per-packet one-way delay: 61.322 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 218.75 Mbit/s
95th percentile per-packet one-way delay: 61.322 ms
Loss rate: 0.43%
Run 5: Report of Indigo — Data Link

![Graph showing throughput and packet delay over time]

- Flow 1 ingress (mean 218.84 Mbit/s)
- Flow 1 egress (mean 218.75 Mbit/s)

![Graph showing packet delay over time]

- Flow 1 (95th percentile 61.32 ms)
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-04-24 14:52:07
End at: 2019-04-24 14:52:37
Local clock offset: 0.187 ms
Remote clock offset: 0.378 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 540.65 Mbit/s
95th percentile per-packet one-way delay: 73.595 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 540.65 Mbit/s
95th percentile per-packet one-way delay: 73.595 ms
Loss rate: 0.53%
Run 1: Report of Indigo-MusesC3 — Data Link

![Graph showing throughput](image1)

- **Flow 1 ingress (mean 541.21 Mbit/s)**
- **Flow 1 egress (mean 540.65 Mbit/s)**

![Graph showing packet delay](image2)

- **Flow 1 (95th percentile 73.59 ms)**
Run 2: Statistics of Indigo-MusesC3

Local clock offset: -0.113 ms
Remote clock offset: -0.204 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.20 Mbit/s
95th percentile per-packet one-way delay: 72.952 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 575.20 Mbit/s
95th percentile per-packet one-way delay: 72.952 ms
Loss rate: 0.49%
Run 2: Report of Indigo-MusesC3 — Data Link

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

- Flow 1 ingress (mean 575.61 Mbps)
- Flow 1 egress (mean 575.20 Mbps)

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

- Flow 1 (95th percentile 72.95 ms)
Run 3: Report of Indigo-MusesC3 — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 580.55 Mbit/s)  |  Flow 1 egress (mean 580.61 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 81.97 ms)
Run 4: Statistics of Indigo-MusesC3

End at: 2019-04-24 16:25:51
Local clock offset: -0.093 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 556.91 Mbit/s
95th percentile per-packet one-way delay: 79.574 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 556.91 Mbit/s
95th percentile per-packet one-way delay: 79.574 ms
Loss rate: 0.49%
Run 4: Report of Indigo-MusesC3 — Data Link

![Graph of throughput and packet delay over time]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 557.27 Mbps)
  - Flow 1 egress (mean 556.91 Mbps)

- **Packet delay (ms):**
  - Flow 1 (95th percentile 79.57 ms)
Run 5: Statistics of Indigo-MusesC3

End at: 2019-04-24 16:57:42
Local clock offset: -0.111 ms
Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 542.41 Mbit/s
95th percentile per-packet one-way delay: 75.317 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 542.41 Mbit/s
95th percentile per-packet one-way delay: 75.317 ms
Loss rate: 0.52%
Run 5: Report of Indigo-MusesC3 — Data Link

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

- **Flow 1 ingress (mean 542.93 Mbps)**
- **Flow 1 egress (mean 542.41 Mbps)**

![Graph of Per-Packet one-way delay (ms) vs Time (s)](image2)

- **Flow 1 (95th percentile 75.32 ms)**
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-04-24 14:32:43
Local clock offset: 0.091 ms
Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2019-04-24 18:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 591.76 Mbit/s
95th percentile per-packet one-way delay: 88.180 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 591.76 Mbit/s
95th percentile per-packet one-way delay: 88.180 ms
Loss rate: 0.48%
Run 1: Report of Indigo-MusesC5 — Data Link
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-04-24 15:03:23
End at: 2019-04-24 15:03:53
Local clock offset: -0.107 ms
Remote clock offset: 0.474 ms

# Below is generated by plot.py at 2019-04-24 18:10:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 565.42 Mbit/s
95th percentile per-packet one-way delay: 84.894 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 565.42 Mbit/s
95th percentile per-packet one-way delay: 84.894 ms
Loss rate: 0.49%
Run 2: Report of Indigo-MusesC5 — Data Link
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-04-24 15:34:22
End at: 2019-04-24 15:34:52
Local clock offset: -0.129 ms
Remote clock offset: -0.142 ms

# Below is generated by plot.py at 2019-04-24 18:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 601.50 Mbit/s
95th percentile per-packet one-way delay: 107.398 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 601.50 Mbit/s
95th percentile per-packet one-way delay: 107.398 ms
Loss rate: 0.57%
Run 3: Report of Indigo-MusesC5 — Data Link

![Graph 1](image)

**Graph 1:**
- **Flow 1 ingress** (mean 602.34 Mbit/s)
- **Flow 1 egress** (mean 601.50 Mbit/s)

![Graph 2](image)

**Graph 2:**
- **Flow 1** (95th percentile 107.40 ms)
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-04-24 16:05:22
End at: 2019-04-24 16:05:52
Local clock offset: ~0.131 ms
Remote clock offset: 0.421 ms

# Below is generated by plot.py at 2019-04-24 18:16:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 590.09 Mbit/s
95th percentile per-packet one-way delay: 113.943 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 590.09 Mbit/s
95th percentile per-packet one-way delay: 113.943 ms
Loss rate: 0.52%
Run 4: Report of Indigo-MusesC5 — Data Link

![Graph of throughput and RTT over time]

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 590.72 Mbps)
  - Flow 1 egress (mean 590.09 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 113.94 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-04-24 16:36:47
End at: 2019-04-24 16:37:17
Local clock offset: -0.096 ms
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2019-04-24 18:17:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.01 Mbit/s
95th percentile per-packet one-way delay: 83.992 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 575.01 Mbit/s
95th percentile per-packet one-way delay: 83.992 ms
Loss rate: 0.52%
Run 5: Report of Indigo-MusesC5 — Data Link

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

- Flow 1 ingress (mean 575.62 Mbps)
- Flow 1 egress (mean 575.01 Mbps)

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

- Flow 1 (95th percentile 83.99 ms)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-04-24 14:34:18
End at: 2019-04-24 14:34:48
Local clock offset: 0.341 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2019-04-24 18:17:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 502.76 Mbit/s
95th percentile per-packet one-way delay: 88.513 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 502.76 Mbit/s
95th percentile per-packet one-way delay: 88.513 ms
Loss rate: 0.60%
Run 1: Report of Indigo-MusesD — Data Link
Run 2: Statistics of Indigo-MusesD

Start at: 2019-04-24 15:04:57
End at: 2019-04-24 15:05:27
Local clock offset: -0.36 ms
Remote clock offset: -0.168 ms

# Below is generated by plot.py at 2019-04-24 18:17:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 437.78 Mbit/s
95th percentile per-packet one-way delay: 91.095 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 437.78 Mbit/s
95th percentile per-packet one-way delay: 91.095 ms
Loss rate: 0.61%
Run 2: Report of Indigo-MusesD — Data Link

![Graph of throughput and packet delay vs. time for Flow 1]
Run 3: Statistics of Indigo-MusesD

Start at: 2019-04-24 15:35:58
End at: 2019-04-24 15:36:28
Local clock offset: -0.568 ms
Remote clock offset: -0.173 ms

# Below is generated by plot.py at 2019-04-24 18:17:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 504.49 Mbit/s
95th percentile per-packet one-way delay: 66.479 ms
Loss rate: 0.50%

-- Flow 1:
Average throughput: 504.49 Mbit/s
95th percentile per-packet one-way delay: 66.479 ms
Loss rate: 0.50%
Run 3: Report of Indigo-MusesD — Data Link
Run 4: Statistics of Indigo-MusesD

Start at: 2019-04-24 16:06:58
End at: 2019-04-24 16:07:28
Local clock offset: -0.068 ms
Remote clock offset: -0.356 ms

# Below is generated by plot.py at 2019-04-24 18:18:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 523.07 Mbit/s
95th percentile per-packet one-way delay: 85.692 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 523.07 Mbit/s
95th percentile per-packet one-way delay: 85.692 ms
Loss rate: 0.60%
Run 4: Report of Indigo-MusesD — Data Link
Run 5: Statistics of Indigo-MusesD

End at: 2019-04-24 16:38:54
Local clock offset: 0.326 ms
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2019-04-24 18:19:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 502.78 Mbit/s
95th percentile per-packet one-way delay: 89.394 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 502.78 Mbit/s
95th percentile per-packet one-way delay: 89.394 ms
Loss rate: 0.50%
Run 5: Report of Indigo-MusesD — Data Link

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

- Flow 1 ingress (mean 503.20 Mbit/s)
- Flow 1 egress (mean 502.78 Mbit/s)

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

- Flow 1 (95th percentile 89.39 ms)
Run 1: Statistics of Indigo-MusesT

Start at: 2019-04-24 14:38:43
Local clock offset: 0.014 ms
Remote clock offset: -0.19 ms

# Below is generated by plot.py at 2019-04-24 18:24:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 608.69 Mbit/s
95th percentile per-packet one-way delay: 118.646 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 608.69 Mbit/s
95th percentile per-packet one-way delay: 118.646 ms
Loss rate: 0.55%
Run 1: Report of Indigo-MusesT — Data Link

![Graph 1: Throughput vs Time]

- **Flow 1 ingress (mean 609.44 Mbit/s)**
- **Flow 1 egress (mean 608.69 Mbit/s)**

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

- **Flow 1 (95th percentile 118.65 ms)**
Run 2: Statistics of Indigo-MusesT

Start at: 2019-04-24 15:09:26
End at: 2019-04-24 15:09:56
Local clock offset: 0.287 ms
Remote clock offset: 0.222 ms

# Below is generated by plot.py at 2019-04-24 18:25:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 625.95 Mbit/s
95th percentile per-packet one-way delay: 113.318 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 625.95 Mbit/s
95th percentile per-packet one-way delay: 113.318 ms
Loss rate: 0.60%
Run 2: Report of Indigo-MusesT — Data Link

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

- **Flow 1 ingress (mean 627.19 Mbit/s)**
- **Flow 1 egress (mean 625.95 Mbit/s)**

- **Flow 1 (95th percentile 113.32 ms)**
Run 3: Statistics of Indigo-MusesT

End at: 2019-04-24 15:41:02
Local clock offset: -0.318 ms
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2019-04-24 18:26:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 640.03 Mbit/s
95th percentile per-packet one-way delay: 111.116 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 640.03 Mbit/s
95th percentile per-packet one-way delay: 111.116 ms
Loss rate: 0.58%
Run 3: Report of Indigo-MusesT — Data Link

---

**Graph 1:**
- **Throughput (Mbps):**
  - **Flow 1 ingress (mean 641.06 Mbps):**
  - **Flow 1 egress (mean 640.03 Mbps):**

**Graph 2:**
- **Per-packet one-way delay (ms):**
  - **Flow 1 (95th percentile 111.12 ms):**
Run 4: Statistics of Indigo-MusesT

End at: 2019-04-24 16:12:02
Local clock offset: 0.347 ms
Remote clock offset: -0.825 ms

# Below is generated by plot.py at 2019-04-24 18:26:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 638.08 Mbit/s
95th percentile per-packet one-way delay: 126.614 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 638.08 Mbit/s
95th percentile per-packet one-way delay: 126.614 ms
Loss rate: 0.55%
Run 4: Report of Indigo-MusesT — Data Link

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

![Graph 2: Packet Delay vs Time](image2)
Run 5: Statistics of Indigo-MuseST

Start at: 2019-04-24 16:43:06
End at: 2019-04-24 16:43:36
Local clock offset: -0.13 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2019-04-24 18:27:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 632.40 Mbit/s
95th percentile per-packet one-way delay: 115.703 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 632.40 Mbit/s
95th percentile per-packet one-way delay: 115.703 ms
Loss rate: 0.45%
Run 5: Report of Indigo-MusesT — Data Link

**Throughput (Mbps)**

- Flow 1 ingress (mean 632.62 Mbit/s)
- Flow 1 egress (mean 632.40 Mbit/s)

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

- Flow 1 (95th percentile 115.70 ms)
Run 1: Statistics of LEDBAT

Local clock offset: -0.321 ms
Remote clock offset: -0.221 ms

# Below is generated by plot.py at 2019-04-24 18:27:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 25.57 Mbit/s
95th percentile per-packet one-way delay: 58.530 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 25.57 Mbit/s
95th percentile per-packet one-way delay: 58.530 ms
Loss rate: 0.14%
Run 2: Statistics of LEDBAT

End at: 2019-04-24 15:20:57
Local clock offset: -0.363 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2019-04-24 18:27:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.14 Mbit/s
95th percentile per-packet one-way delay: 58.119 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 28.14 Mbit/s
95th percentile per-packet one-way delay: 58.119 ms
Loss rate: 0.76%
Run 2: Report of LEDBAT — Data Link

![Graph of Throughput vs Time](image1)

- Flow 1 ingress (mean 28.25 Mbit/s)
- Flow 1 egress (mean 28.14 Mbit/s)

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

- Flow 1 (95th percentile 58.12 ms)
Run 3: Statistics of LEDBAT

Local clock offset: -0.54 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2019-04-24 18:27:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.23 Mbit/s
95th percentile per-packet one-way delay: 57.476 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 28.23 Mbit/s
95th percentile per-packet one-way delay: 57.476 ms
Loss rate: 0.74%
Run 3: Report of LEDBAT — Data Link

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

- **Flow 1 ingress (mean 28.33 Mbit/s)**
- **Flow 1 egress (mean 28.23 Mbit/s)**
Run 4: Statistics of LEDBAT

End at: 2019-04-24 16:23:10
Local clock offset: -0.317 ms
Remote clock offset: -0.237 ms

# Below is generated by plot.py at 2019-04-24 18:27:14
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 28.18 Mbit/s
  95th percentile per-packet one-way delay: 58.216 ms
  Loss rate: 0.76%
-- Flow 1:
  Average throughput: 28.18 Mbit/s
  95th percentile per-packet one-way delay: 58.216 ms
  Loss rate: 0.76%
Run 4: Report of LEDBAT — Data Link

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

- **Throughput (Mbps)**
  - Y-axis: Throughput in Mbps
  - X-axis: Time in seconds (s)
  - Legend:
    - Blue dashed line: Flow 1 ingress (mean 28.29 Mbps)
    - Blue solid line: Flow 1 egress (mean 26.18 Mbps)

- **Packet delay (ms)**
  - Y-axis: Packet delay in milliseconds (ms)
  - X-axis: Time in seconds (s)
  - Legend:
    - Blue line: Flow 1 (95th percentile 58.22 ms)
Run 5: Statistics of LEDBAT

Start at: 2019-04-24 16:54:26
End at: 2019-04-24 16:54:56
Local clock offset: 0.073 ms
Remote clock offset: -0.129 ms

# Below is generated by plot.py at 2019-04-24 18:27:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.67 Mbit/s
95th percentile per-packet one-way delay: 62.664 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 26.67 Mbit/s
95th percentile per-packet one-way delay: 62.664 ms
Loss rate: 0.78%
Run 5: Report of LEDBAT — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 26.77 Mbps)
- Flow 1 egress (mean 26.67 Mbps)

Graph 2: Average packet one-way delay (ms)
- Flow 1 (95th percentile 62.66 ms)
Run 1: Statistics of PCC-Allegro

End at: 2019-04-24 14:41:57
Local clock offset: -0.083 ms
Remote clock offset: 0.101 ms

# Below is generated by plot.py at 2019-04-24 18:31:41
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 373.38 Mbit/s
  95th percentile per-packet one-way delay: 71.738 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 373.38 Mbit/s
  95th percentile per-packet one-way delay: 71.738 ms
  Loss rate: 0.53%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2019-04-24 15:12:11
End at: 2019-04-24 15:12:41
Local clock offset: -0.558 ms
Remote clock offset: -0.161 ms

# Below is generated by plot.py at 2019-04-24 18:33:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 399.59 Mbit/s
95th percentile per-packet one-way delay: 187.635 ms
Loss rate: 8.67%
-- Flow 1:
Average throughput: 399.59 Mbit/s
95th percentile per-packet one-way delay: 187.635 ms
Loss rate: 8.67%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Local clock offset: -0.376 ms
Remote clock offset: -0.187 ms

# Below is generated by plot.py at 2019-04-24 18:33:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 379.40 Mbit/s
95th percentile per-packet one-way delay: 94.490 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 379.40 Mbit/s
95th percentile per-packet one-way delay: 94.490 ms
Loss rate: 0.44%
Run 3: Report of PCC-Allegro — Data Link

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

![Graph 2: Per packet one-way delay (ms)](image2)
Run 4: Statistics of PCC-Allegro

End at: 2019-04-24 16:14:52
Local clock offset: -0.085 ms
Remote clock offset: 0.576 ms

# Below is generated by plot.py at 2019-04-24 18:37:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 386.10 Mbit/s
95th percentile per-packet one-way delay: 126.066 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 386.10 Mbit/s
95th percentile per-packet one-way delay: 126.066 ms
Loss rate: 1.02%
Run 4: Report of PCC-Allegro — Data Link

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

[Graph 2: RTT (ms) vs. Time (s)]
Run 5: Statistics of PCC-Allegro

Start at: 2019-04-24 16:45:58
Local clock offset: 0.126 ms
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2019-04-24 18:39:42
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 410.23 Mbit/s
  95th percentile per-packet one-way delay: 150.814 ms
  Loss rate: 0.50%
-- Flow 1:
  Average throughput: 410.23 Mbit/s
  95th percentile per-packet one-way delay: 150.814 ms
  Loss rate: 0.50%
Run 5: Report of PCC-Allegro — Data Link

![Graph 1: Throughput (Mbps)]

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

---

Flow 1 ingress (mean 410.66 Mbit/s)  Flow 1 egress (mean 410.23 Mbit/s)

Flow 1 (95th percentile 150.81 ms)
Run 1: Statistics of PCC-Expr

Local clock offset: -0.069 ms
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2019-04-24 18:39:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 297.94 Mbit/s
95th percentile per-packet one-way delay: 148.211 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 297.94 Mbit/s
95th percentile per-packet one-way delay: 148.211 ms
Loss rate: 0.91%
Run 1: Report of PCC-Expr — Data Link

![Graph showing network throughput over time]

Flow 1 ingress (mean 295.45 Mbit/s)  
Flow 1 egress (mean 297.94 Mbit/s)

![Graph showing packet delay over time]

Flow 1 (95th percentile 148.21 ms)
Run 2: Statistics of PCC-Expr

End at: 2019-04-24 15:17:27
Local clock offset: -0.098 ms
Remote clock offset: -0.154 ms

# Below is generated by plot.py at 2019-04-24 18:39:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 256.73 Mbit/s
95th percentile per-packet one-way delay: 123.504 ms
Loss rate: 1.86%
-- Flow 1:
Average throughput: 256.73 Mbit/s
95th percentile per-packet one-way delay: 123.504 ms
Loss rate: 1.86%
Run 2: Report of PCC-Expr — Data Link

[Graph 1] Throughput (Mbps) over Time (s)

Flow 1 ingress (mean 260.55 Mbps) vs. Flow 1 egress (mean 256.73 Mbps)

[Graph 2] Per packet one way delay (ms) over Time (s)

Flow 1 (95th percentile 123.50 ms)
Run 3: Statistics of PCC-Expr

Start at: 2019-04-24 15:48:02
Local clock offset: 0.325 ms
Remote clock offset: -0.259 ms

# Below is generated by plot.py at 2019-04-24 18:39:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 316.16 Mbit/s
95th percentile per-packet one-way delay: 117.644 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 316.16 Mbit/s
95th percentile per-packet one-way delay: 117.644 ms
Loss rate: 0.56%
Run 3: Report of PCC-Expr — Data Link

![Graph showing throughput and delay over time]
Run 4: Statistics of PCC-Expr

Start at: 2019-04-24 16:19:16
End at: 2019-04-24 16:19:46
Local clock offset: -0.308 ms
Remote clock offset: -0.264 ms

# Below is generated by plot.py at 2019-04-24 18:41:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 261.74 Mbit/s
95th percentile per-packet one-way delay: 168.645 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 261.74 Mbit/s
95th percentile per-packet one-way delay: 168.645 ms
Loss rate: 2.08%
Run 4: Report of PCC-Expr — Data Link
Run 5: Statistics of PCC-Expr

Start at: 2019-04-24 16:51:06
End at: 2019-04-24 16:51:36
Local clock offset: -0.527 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 304.49 Mbit/s
95th percentile per-packet one-way delay: 157.649 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 304.49 Mbit/s
95th percentile per-packet one-way delay: 157.649 ms
Loss rate: 1.67%
Run 5: Report of PCC-Expr — Data Link
Run 1: Statistics of QUIC Cubic

End at: 2019-04-24 14:32:01
Local clock offset: -0.123 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 64.61 Mbit/s
  95th percentile per-packet one-way delay: 56.731 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 64.61 Mbit/s
  95th percentile per-packet one-way delay: 56.731 ms
  Loss rate: 0.63%
Run 1: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress (mean 64.75 Mbit/s)**
- **Flow 1 egress (mean 64.61 Mbit/s)**

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

- **Flow 1 (95th percentile 56.73 ms)**
Run 2: Statistics of QUIC Cubic

Start at: 2019-04-24 15:02:11
End at: 2019-04-24 15:02:41
Local clock offset: -0.121 ms
Remote clock offset: 0.097 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.71 Mbit/s
95th percentile per-packet one-way delay: 56.940 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 68.71 Mbit/s
95th percentile per-packet one-way delay: 56.940 ms
Loss rate: 0.60%
Run 2: Report of QUIC Cubic — Data Link

![Graph of Throughput and Packet One-way Delay]

Flow 1 ingress (mean 68.85 Mbit/s)  
Flow 1 egress (mean 68.71 Mbit/s)
Run 3: Statistics of QUIC Cubic

Local clock offset: -0.119 ms
Remote clock offset: -0.224 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.98 Mbit/s
95th percentile per-packet one-way delay: 57.086 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 62.98 Mbit/s
95th percentile per-packet one-way delay: 57.086 ms
Loss rate: 0.64%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2019-04-24 16:04:10
End at: 2019-04-24 16:04:40
Local clock offset: -0.219 ms
Remote clock offset: -0.335 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.50 Mbit/s
95th percentile per-packet one-way delay: 57.346 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 64.50 Mbit/s
95th percentile per-packet one-way delay: 57.346 ms
Loss rate: 0.64%
Run 4: Report of QUIC Cubic — Data Link

![Graph showing throughput and packet delay over time for different traffic flows.](image-url)
Run 5: Statistics of QUIC Cubic

Start at: 2019-04-24 16:35:35
End at: 2019-04-24 16:36:05
Local clock offset: -0.294 ms
Remote clock offset: -0.472 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.66 Mbit/s
95th percentile per-packet one-way delay: 56.990 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 66.66 Mbit/s
95th percentile per-packet one-way delay: 56.990 ms
Loss rate: 0.59%
Run 5: Report of QUIC Cubic — Data Link

![Graph showing throughput over time with two lines: one for ingress and one for egress, both with mean 66.80 Mbit/s and 66.66 Mbit/s respectively.]

![Graph showing per-packet one-way delay over time with a line indicating 95th percentile of 56.99 ms.]
Run 1: Statistics of SCReAM

Local clock offset: -0.481 ms
Remote clock offset: -0.302 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.544 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.544 ms
Loss rate: 0.39%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

Start at: 2019-04-24 15:26:04
End at: 2019-04-24 15:26:34
Local clock offset: -0.157 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.125 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.125 ms
Loss rate: 0.38%
Run 2: Report of SCReAM — Data Link

![Graph 1: Throughput (Mbps)]

Time (s)

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

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

Time (s)

Flow 1 (95th percentile 57.12 ms)
Run 3: Statistics of SCReAM

End at: 2019-04-24 15:57:44  
Local clock offset: -0.088 ms  
Remote clock offset: -0.247 ms

# Below is generated by plot.py at 2019-04-24 18:43:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 57.242 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 57.242 ms  
Loss rate: 0.38%
Run 3: Report of SCReAM — Data Link
Run 4: Statistics of SCReAM

Local clock offset: 0.354 ms
Remote clock offset: -0.248 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.816 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.816 ms
Loss rate: 0.38%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2019-04-24 17:00:21
End at: 2019-04-24 17:00:51
Local clock offset: ~0.123 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.220 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.220 ms
Loss rate: 0.38%
Run 5: Report of SCReAM — Data Link

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

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

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

- Flow 1 (95th percentile 57.22 ms)
Run 1: Statistics of Sprout

Start at: 2019-04-24 14:30:22
End at: 2019-04-24 14:30:52
Local clock offset: -0.079 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 7.56 Mbit/s
  95th percentile per-packet one-way delay: 57.668 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 7.56 Mbit/s
  95th percentile per-packet one-way delay: 57.668 ms
  Loss rate: 0.53%
Run 2: Statistics of Sprout

Start at: 2019-04-24 15:01:02
End at: 2019-04-24 15:01:32
Local clock offset: -0.091 ms
Remote clock offset: -0.305 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 58.014 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 58.014 ms
Loss rate: 0.42%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2019-04-24 15:32:02
Local clock offset: -0.556 ms
Remote clock offset: -0.173 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 60.813 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 60.813 ms
Loss rate: 0.43%
Run 3: Report of Sprout — Data Link

---

![Graph 1](image1.png)

**Graph 1:**
- **Y-axis:** Throughput (Mbps)
- **X-axis:** Time (s)
- **Legend:**
  - Flow 1 ingress (mean 6.82 Mbit/s)
  - Flow 1 egress (mean 6.82 Mbit/s)

---

![Graph 2](image2.png)

**Graph 2:**
- **Y-axis:** Per packet one-way delay (ms)
- **X-axis:** Time (s)
- **Legend:**
  - Flow 1 (95th percentile 60.81 ms)
Run 4: Statistics of Sprout

Start at: 2019-04-24 16:03:01
End at: 2019-04-24 16:03:31
Local clock offset: -0.322 ms
Remote clock offset: -0.214 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 57.250 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 57.250 ms
Loss rate: 0.44%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2019-04-24 16:34:26
End at: 2019-04-24 16:34:56
Local clock offset: -0.097 ms
Remote clock offset: 0.076 ms

# Below is generated by plot.py at 2019-04-24 18:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.99 Mbit/s
95th percentile per-packet one-way delay: 57.428 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 6.99 Mbit/s
95th percentile per-packet one-way delay: 57.428 ms
Loss rate: 0.48%
Run 5: Report of Sprout — Data Link

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

**Throughput (Mbps)**

- **Flow 1 ingress (mean 6.99 Mbps)**
- **Flow 1 egress (mean 6.99 Mbps)**

**Delay (ms)**

- **Flow 1 (95th percentile 57.43 ms)**

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Run 1: Statistics of TaoVA-100x

Start at: 2019-04-24 14:50:38
End at: 2019-04-24 14:51:08
Local clock offset: -0.078 ms
Remote clock offset: -0.356 ms

# Below is generated by plot.py at 2019-04-24 18:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 233.50 Mbit/s
95th percentile per-packet one-way delay: 57.686 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 233.50 Mbit/s
95th percentile per-packet one-way delay: 57.686 ms
Loss rate: 0.40%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Local clock offset: -0.078 ms
Remote clock offset: 0.288 ms

# Below is generated by plot.py at 2019-04-24 18:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 232.27 Mbit/s
95th percentile per-packet one-way delay: 56.966 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 232.27 Mbit/s
95th percentile per-packet one-way delay: 56.966 ms
Loss rate: 0.42%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2019-04-24 15:52:34
Local clock offset: 0.312 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2019-04-24 18:45:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 234.46 Mbit/s
95th percentile per-packet one-way delay: 57.791 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 234.46 Mbit/s
95th percentile per-packet one-way delay: 57.791 ms
Loss rate: 0.41%
Run 3: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 234.50 Mbps)
- Flow 1 egress (mean 234.46 Mbps)

![Graph 2: Latency (ms) vs Time (s)]

- Flow 1 (95th percentile 57.79 ms)
Run 4: Statistics of TaoVA-100x

End at: 2019-04-24 16:24:21
Local clock offset: -0.08 ms
Remote clock offset: 0.491 ms

# Below is generated by plot.py at 2019-04-24 18:45:50
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 236.64 Mbit/s
  95th percentile per-packet one-way delay: 56.941 ms
  Loss rate: 0.41%
-- Flow 1:
  Average throughput: 236.64 Mbit/s
  95th percentile per-packet one-way delay: 56.941 ms
  Loss rate: 0.41%
Run 4: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 236.67 Mbit/s)
- Flow 1 egress (mean 236.64 Mbit/s)

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

- Flow 1 (95th percentile 56.94 ms)
Run 5: Statistics of TaoVA-100x

End at: 2019-04-24 16:56:08  
Local clock offset: -0.383 ms  
Remote clock offset: -0.25 ms  

# Below is generated by plot.py at 2019-04-24 18:46:18  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 234.15 Mbit/s  
95th percentile per-packet one-way delay: 60.875 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 234.15 Mbit/s  
95th percentile per-packet one-way delay: 60.875 ms  
Loss rate: 0.43%
Run 5: Report of TaoVA-100x — Data Link

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

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

Start at: 2019-04-24 14:58:05
End at: 2019-04-24 14:58:35
Local clock offset: -0.518 ms
Remote clock offset: -0.203 ms

# Below is generated by plot.py at 2019-04-24 18:46:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 381.51 Mbit/s
95th percentile per-packet one-way delay: 63.505 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 381.51 Mbit/s
95th percentile per-packet one-way delay: 63.505 ms
Loss rate: 0.41%
Run 1: Report of TCP Vegas — Data Link

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

![Graph 2: Packet Loss (ms) vs Time (s)]
Run 2: Statistics of TCP Vegas

Local clock offset: -0.285 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2019-04-24 18:49:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 474.48 Mbit/s
95th percentile per-packet one-way delay: 65.116 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 474.48 Mbit/s
95th percentile per-packet one-way delay: 65.116 ms
Loss rate: 0.42%
Run 2: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay over time]

**Throughput (Mbps)**

- **Flow 1 ingress** (mean 474.61 Mb/s)
- **Flow 1 egress** (mean 474.48 Mb/s)

**Packet delay (ms)**

- **Flow 1** (95th percentile 65.12 ms)
Run 3: Statistics of TCP Vegas

Start at: 2019-04-24 16:00:00
End at: 2019-04-24 16:00:30
Local clock offset: -0.068 ms
Remote clock offset: -0.229 ms

# Below is generated by plot.py at 2019-04-24 18:51:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 420.93 Mbit/s
95th percentile per-packet one-way delay: 63.268 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 420.93 Mbit/s
95th percentile per-packet one-way delay: 63.268 ms
Loss rate: 0.41%
Run 3: Report of TCP Vegas — Data Link

![Graph of network throughput over time with two lines indicating ingress and egress traffic.]
Run 4: Statistics of TCP Vegas

Local clock offset: 0.318 ms
Remote clock offset: -0.983 ms

# Below is generated by plot.py at 2019-04-24 18:53:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 460.41 Mbit/s
95th percentile per-packet one-way delay: 64.527 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 460.41 Mbit/s
95th percentile per-packet one-way delay: 64.527 ms
Loss rate: 0.43%
Run 4: Report of TCP Vegas — Data Link

[Graph showing throughput (Mbps) over time for two flows: Flow 1 ingress (mean 460.52 Mbps) and Flow 1 egress (mean 460.41 Mbps).]

[Graph showing per-packet one-way delay (ms) over time for Flow 1 (95th percentile 64.53 ms).]
Run 5: Statistics of TCP Vegas

Start at: 2019-04-24 17:03:06
End at: 2019-04-24 17:03:36
Local clock offset: -0.116 ms
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2019-04-24 18:53:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 473.08 Mbit/s
95th percentile per-packet one-way delay: 66.317 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 473.08 Mbit/s
95th percentile per-packet one-way delay: 66.317 ms
Loss rate: 0.42%
Run 5: Report of TCP Vegas — Data Link

![Graph of throughput and packet delay over time for TCP Vegas]

- **Flow 1 ingress (mean 473.18 Mbit/s)**
- **Flow 1 egress (mean 473.08 Mbit/s)**

![Graph of packet delay over time for Flow 1]

- **Flow 1 (95th percentile 66.32 ms)**
Run 1: Statistics of Verus

Start at: 2019-04-24 14:35:49
End at: 2019-04-24 14:36:19
Local clock offset: 0.313 ms
Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2019-04-24 18:53:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 161.67 Mbit/s
95th percentile per-packet one-way delay: 145.429 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 161.67 Mbit/s
95th percentile per-packet one-way delay: 145.429 ms
Loss rate: 1.39%
Run 1: Report of Verus — Data Link

![Graph showing throughput and delay over time for Flow 1 ingress and egress.]
Run 2: Statistics of Verus

Start at: 2019-04-24 15:06:25
End at: 2019-04-24 15:06:55
Local clock offset: -0.087 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2019-04-24 18:53:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 203.04 Mbit/s
95th percentile per-packet one-way delay: 196.158 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 203.04 Mbit/s
95th percentile per-packet one-way delay: 196.158 ms
Loss rate: 3.02%
Run 2: Report of Verus — Data Link

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

- **Flow 1 ingress (mean 208.67 Mbit/s)**
- **Flow 1 egress (mean 203.04 Mbit/s)**

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

- **Flow 1 (95th percentile 196.16 ms)**
Run 3: Statistics of Verus

End at: 2019-04-24 15:37:59
Local clock offset: -0.086 ms
Remote clock offset: 0.529 ms

# Below is generated by plot.py at 2019-04-24 18:53:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 190.11 Mbit/s
95th percentile per-packet one-way delay: 173.621 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 190.11 Mbit/s
95th percentile per-packet one-way delay: 173.621 ms
Loss rate: 0.83%
Run 3: Report of Verus — Data Link

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

Start at: 2019-04-24 16:08:32
End at: 2019-04-24 16:09:02
Local clock offset: -0.084 ms
Remote clock offset: -0.652 ms

# Below is generated by plot.py at 2019-04-24 18:53:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 136.79 Mbit/s
95th percentile per-packet one-way delay: 81.347 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 136.79 Mbit/s
95th percentile per-packet one-way delay: 81.347 ms
Loss rate: 0.00%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

End at: 2019-04-24 16:40:27
Local clock offset: -0.089 ms
Remote clock offset: -0.125 ms

# Below is generated by plot.py at 2019-04-24 18:55:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 208.18 Mbit/s
95th percentile per-packet one-way delay: 149.783 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 208.18 Mbit/s
95th percentile per-packet one-way delay: 149.783 ms
Loss rate: 0.64%
Run 5: Report of Verus — Data Link

![Graphs showing throughput and packet delay over time.](image-url)
Run 1: Statistics of PCC-Vivace

Start at: 2019-04-24 14:53:40
End at: 2019-04-24 14:54:10
Local clock offset: 0.144 ms
Remote clock offset: -0.227 ms

# Below is generated by plot.py at 2019-04-24 18:56:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.86 Mbit/s
95th percentile per-packet one-way delay: 63.973 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 339.86 Mbit/s
95th percentile per-packet one-way delay: 63.973 ms
Loss rate: 0.51%
Run 1: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 340.23 Mbit/s)
- Flow 1 egress (mean 339.86 Mbit/s)

![Graph showing packet delay distribution for Flow 1]

- Flow 1 (95th percentile 63.97 ms)
Run 2: Statistics of PCC-Vivace

Local clock offset: -0.132 ms
Remote clock offset: -0.064 ms

# Below is generated by plot.py at 2019-04-24 18:56:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 205.72 Mbit/s
95th percentile per-packet one-way delay: 57.046 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 205.72 Mbit/s
95th percentile per-packet one-way delay: 57.046 ms
Loss rate: 0.47%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Local clock offset: -0.13 ms
Remote clock offset: -0.276 ms

# Below is generated by plot.py at 2019-04-24 18:56:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 328.40 Mbit/s
95th percentile per-packet one-way delay: 70.305 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 328.40 Mbit/s
95th percentile per-packet one-way delay: 70.305 ms
Loss rate: 0.37%
Run 4: Statistics of PCC-Vivace

Start at: 2019-04-24 16:26:56
End at: 2019-04-24 16:27:26
Local clock offset: 0.355 ms
Remote clock offset: -0.18 ms

# Below is generated by plot.py at 2019-04-24 18:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.42 Mbit/s
95th percentile per-packet one-way delay: 63.685 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 339.42 Mbit/s
95th percentile per-packet one-way delay: 63.685 ms
Loss rate: 0.50%
Run 5: Statistics of PCC-Vivace

Start at: 2019-04-24 16:58:50
Local clock offset: -0.462 ms
Remote clock offset: -0.678 ms

# Below is generated by plot.py at 2019-04-24 18:56:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 329.89 Mbit/s
95th percentile per-packet one-way delay: 64.062 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 329.89 Mbit/s
95th percentile per-packet one-way delay: 64.062 ms
Loss rate: 0.34%
Run 5: Report of PCC-Vivace — Data Link

![Graph of throughput and packet delay over time]

- Flow 1 ingress (mean 329.69 Mbit/s)
- Flow 1 egress (mean 329.89 Mbit/s)

![Graph of packet delay over time]

Flow 1 (95th percentile 64.06 ms)
Run 1: Statistics of WebRTC media

Start at: 2019-04-24 14:40:19
End at: 2019-04-24 14:40:49
Local clock offset: -0.324 ms
Remote clock offset: -0.225 ms
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-04-24 15:11:04
End at: 2019-04-24 15:11:34
Local clock offset: -0.063 ms
Remote clock offset: -0.286 ms

# Below is generated by plot.py at 2019-04-24 18:56:36
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 60.754 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 60.754 ms
  Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link

[Graph showing throughput over time for two flows: Flow 1 ingress (mean 0.05 Mbit/s) and Flow 1 egress (mean 0.05 Mbit/s).]

[Graph showing packet delay over time for Flow 1 with 99th percentile at 60.75 ms.]
Run 3: Statistics of WebRTC media

End at: 2019-04-24 15:42:40
Local clock offset: -0.349 ms
Remote clock offset: -0.381 ms

# Below is generated by plot.py at 2019-04-24 18:56:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.171 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.171 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

![Graph showing throughput and packet delay over time for a WebRTC media flow. The graph includes two lines for ingress and egress, with annotations for flow 1 ingress (mean 0.05 Mbit/s) and flow 1 egress (mean 0.05 Mbit/s) and a scatter plot showing packet delay with flow 1 (90th percentile 57.17 ms).]
Run 4: Statistics of WebRTC media

Local clock offset: -0.083 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2019-04-24 18:56:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.706 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.706 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link

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

- **Flow 1 ingress (mean 0.05 Mbps)**
- **Flow 1 egress (mean 0.05 Mbps)**

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

- **Flow 1 (95th percentile 60.7 ms)**
Run 5: Statistics of WebRTC media

Start at: 2019-04-24 16:44:50
End at: 2019-04-24 16:45:20
Local clock offset: 0.314 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2019-04-24 18:56:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.632 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.632 ms
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link

Throughput (Mbit/s)

0.0 0.5 1.0 1.5 2.0 2.5

Time (s)

0 5 10 15 20 25 30

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

Packet one way delay (ms)

0 5 10 15 20 25 30

Flow 1 (99th percentile 57.63 ms)

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