Pantheon Report

Data path: GCE London 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 @ 7a686f7c2ed0a333082c5921ab47e6ee
third_party/fillp @ d6da1459332fee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babc2b090d264fcd45e12e923f9
third_party/genericCC @ d0153f8e99e89b0321453e58e652f4
third_party/indigo @ 2601c924a9d8d38d4dfe0ecdbf90c77e64d
third_party/libutp @ b3465b942e2826f2b179eab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955377730c746486ca4966
third_party/pantheon-tunnel @ f866d3f5827afd942717b25e3a354cc2e802bd
third_party/pcc @ 1afc958fa0d6d18b23071a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acc08f29b2e42f49f74ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ecb978f3cf42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1064974e1da3b4b2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e356c178b01e31d4a6ad18c74f9415f919a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9d8e4735770d143a1fa2851
test from GCE London 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>
</tr>
</thead>
<tbody>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>338.28</td>
<td>149.75</td>
<td>1.33</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>281.81</td>
<td>172.03</td>
<td>0.90</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>336.78</td>
<td>136.63</td>
<td>1.02</td>
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<tr>
<td>FillP</td>
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<td>544.19</td>
<td>173.55</td>
<td>1.23</td>
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<td>FillP-Sheep</td>
<td>5</td>
<td>349.26</td>
<td>184.44</td>
<td>1.26</td>
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<td>Indigo</td>
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<td>162.61</td>
<td>133.01</td>
<td>0.85</td>
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<td>Indigo-MusesC3</td>
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<td>162.32</td>
<td>1.06</td>
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<tr>
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<td>1.23</td>
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<td>179.54</td>
<td>1.09</td>
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<tr>
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<td>213.80</td>
<td>1.42</td>
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<td>5</td>
<td>5.23</td>
<td>134.16</td>
<td>1.79</td>
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<td>PCC-Allegro</td>
<td>5</td>
<td>344.29</td>
<td>210.11</td>
<td>2.12</td>
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<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>229.81</td>
<td>182.44</td>
<td>2.00</td>
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<td>54.76</td>
<td>132.68</td>
<td>1.33</td>
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<td>5</td>
<td>0.16</td>
<td>132.74</td>
<td>0.83</td>
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<td>Sprout</td>
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<td>0.65</td>
<td>132.89</td>
<td>0.93</td>
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<td>133.24</td>
<td>0.92</td>
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<td>298.88</td>
<td>136.17</td>
<td>0.88</td>
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<td>Verus</td>
<td>5</td>
<td>105.47</td>
<td>273.95</td>
<td>8.08</td>
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<td>PCC-Vivace</td>
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<td>270.56</td>
<td>133.02</td>
<td>1.03</td>
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<td>WebRTC media</td>
<td>4</td>
<td>0.05</td>
<td>133.21</td>
<td>0.00</td>
</tr>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2019-04-24 04:14:33
End at: 2019-04-24 04:15:03
Local clock offset: -0.533 ms
Remote clock offset: 0.084 ms

# Below is generated by plot.py at 2019-04-24 06:54:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 331.65 Mbit/s
95th percentile per-packet one-way delay: 135.945 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 331.65 Mbit/s
95th percentile per-packet one-way delay: 135.945 ms
Loss rate: 1.03%
Run 1: Report of TCP BBR — Data Link

![Throughput Graph](image)

![Delay Graph](image)
Run 2: Statistics of TCP BBR

Start at: 2019-04-24 04:45:27
End at: 2019-04-24 04:45:57
Local clock offset: -0.119 ms
Remote clock offset: 0.067 ms

# Below is generated by plot.py at 2019-04-24 06:54:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 308.21 Mbit/s
95th percentile per-packet one-way delay: 150.331 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 308.21 Mbit/s
95th percentile per-packet one-way delay: 150.331 ms
Loss rate: 1.37%
Run 2: Report of TCP BBR — Data Link

![Graph of network throughput and packet delay over time]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 309.73 Mbit/s)
  - Flow 1 egress (mean 308.21 Mbit/s)

- **Packet Delay (ms):**
  - Flow 1 (95th percentile 150.33 ms)
Run 3: Statistics of TCP BBR

Start at: 2019-04-24 05:16:39
End at: 2019-04-24 05:17:09
Local clock offset: -0.474 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2019-04-24 06:55:12
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 379.83 Mbit/s
  95th percentile per-packet one-way delay: 148.340 ms
  Loss rate: 1.26%
-- Flow 1:
  Average throughput: 379.83 Mbit/s
  95th percentile per-packet one-way delay: 148.340 ms
  Loss rate: 1.26%
Run 3: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 381.26 Mbit/s)
- Flow 1 egress (mean 379.83 Mbit/s)

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

- Flow 1 (95th percentile 148.34 ms)
Run 4: Statistics of TCP BBR

Start at: 2019-04-24 05:47:40
End at: 2019-04-24 05:48:10
Local clock offset: 0.083 ms
Remote clock offset: 0.002 ms

# Below is generated by plot.py at 2019-04-24 06:55:12
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 324.13 Mbit/s
  95th percentile per-packet one-way delay: 139.727 ms
  Loss rate: 1.25%
-- Flow 1:
  Average throughput: 324.13 Mbit/s
  95th percentile per-packet one-way delay: 139.727 ms
  Loss rate: 1.25%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2019-04-24 06:19:11
End at: 2019-04-24 06:19:41
Local clock offset: -0.008 ms
Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2019-04-24 06:55:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 347.59 Mbit/s
95th percentile per-packet one-way delay: 174.407 ms
Loss rate: 1.76%

-- Flow 1:
Average throughput: 347.59 Mbit/s
95th percentile per-packet one-way delay: 174.407 ms
Loss rate: 1.76%
Run 5: Report of TCP BBR — Data Link

![Graph of Throughput vs Time](image1)

- Flow 1 ingress (mean 350.68 Mbit/s)
- Flow 1 egress (mean 347.59 Mbit/s)

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

- Flow 1 (95th percentile 174.41 ms)
Run 1: Statistics of Copa

Start at: 2019-04-24 04:20:41
End at: 2019-04-24 04:21:11
Local clock offset: 0.115 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2019-04-24 06:58:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 305.87 Mbit/s
95th percentile per-packet one-way delay: 192.630 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 305.87 Mbit/s
95th percentile per-packet one-way delay: 192.630 ms
Loss rate: 0.98%
Run 1: Report of Copa — Data Link

Throughput (Mbps)

Flow 1 ingress (mean 306.14 Mbit/s)
Flow 1 egress (mean 305.87 Mbit/s)

Packet delay (ms)

Flow 1 (95th percentile 192.63 ms)
Run 2: Statistics of Copa

Start at: 2019-04-24 04:51:29
End at: 2019-04-24 04:51:59
Local clock offset: -0.347 ms
Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2019-04-24 06:58:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 299.60 Mbit/s
95th percentile per-packet one-way delay: 152.382 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 299.60 Mbit/s
95th percentile per-packet one-way delay: 152.382 ms
Loss rate: 1.02%
Run 2: Report of Copa — Data Link

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

- Flow 1 ingress (mean 300.00 Mbit/s)
- Flow 1 egress (mean 299.60 Mbit/s)

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

- Flow 1 (95th percentile 152.38 ms)
Run 3: Statistics of Copa

End at: 2019-04-24 05:23:18
Local clock offset: -0.134 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2019-04-24 06:58:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.85 Mbit/s
95th percentile per-packet one-way delay: 202.223 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 229.85 Mbit/s
95th percentile per-packet one-way delay: 202.223 ms
Loss rate: 0.47%
Run 3: Report of Copa — Data Link

![Graph 1: Throughput vs. Time]

- **Flow 1 ingress** (mean 228.88 Mbit/s)
- **Flow 1 egress** (mean 229.85 Mbit/s)

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

- **Flow 1** (95th percentile 202.22 ms)
Run 4: Statistics of Copa

Start at: 2019-04-24 05:53:57
End at: 2019-04-24 05:54:27
Local clock offset: -0.269 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2019-04-24 07:03:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 299.75 Mbit/s
95th percentile per-packet one-way delay: 147.549 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 299.75 Mbit/s
95th percentile per-packet one-way delay: 147.549 ms
Loss rate: 1.02%
Run 4: Report of Copa — Data Link

- Flow 1 ingress (mean 300.15 Mbit/s)
- Flow 1 egress (mean 299.75 Mbit/s)

- Flow 1 (95th percentile 147.55 ms)
Run 5: Statistics of Copa

Start at: 2019-04-24 06:25:19
End at: 2019-04-24 06:25:49
Local clock offset: -0.1 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2019-04-24 07:03:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 273.97 Mbit/s
95th percentile per-packet one-way delay: 165.347 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 273.97 Mbit/s
95th percentile per-packet one-way delay: 165.347 ms
Loss rate: 1.00%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2019-04-24 04:08:33
End at: 2019-04-24 04:09:03
Local clock offset: -0.11 ms
Remote clock offset: 0.084 ms

# Below is generated by plot.py at 2019-04-24 07:03:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 379.47 Mbit/s
95th percentile per-packet one-way delay: 137.730 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 379.47 Mbit/s
95th percentile per-packet one-way delay: 137.730 ms
Loss rate: 1.07%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2019-04-24 04:39:51
End at: 2019-04-24 04:40:21
Local clock offset: 0.144 ms
Remote clock offset: 0.067 ms

# Below is generated by plot.py at 2019-04-24 07:03:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 338.72 Mbit/s
95th percentile per-packet one-way delay: 139.274 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 338.72 Mbit/s
95th percentile per-packet one-way delay: 139.274 ms
Loss rate: 1.25%
Run 2: Report of TCP Cubic — Data Link

![Graph](image1)

![Graph](image2)
Run 3: Statistics of TCP Cubic

Start at: 2019-04-24 05:10:32
End at: 2019-04-24 05:11:02
Local clock offset: -0.066 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2019-04-24 07:03:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 370.16 Mbit/s
95th percentile per-packet one-way delay: 139.438 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 370.16 Mbit/s
95th percentile per-packet one-way delay: 139.438 ms
Loss rate: 0.95%
Run 3: Report of TCP Cubic — Data Link

![Graph of TCP Cubic Data Link](image1)

- **Flow 1 ingress (mean 370.39 Mbit/s)**
- **Flow 1 egress (mean 370.16 Mbit/s)**

![Graph of TCP Cubic Data Link](image2)

- **Flow 1 (95th percentile 139.44 ms)**
Run 4: Statistics of TCP Cubic

Start at: 2019-04-24 05:41:38
End at: 2019-04-24 05:42:08
Local clock offset: -0.204 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2019-04-24 07:03:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 262.73 Mbit/s
95th percentile per-packet one-way delay: 132.991 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 262.73 Mbit/s
95th percentile per-packet one-way delay: 132.991 ms
Loss rate: 0.84%
Run 4: Report of TCP Cubic — Data Link

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

![Graph showing packet latency over time with a single line representing flow 1's 95th percentile]

Flow 1 ingress (mean 262.60 Mbit/s)  Flow 1 egress (mean 262.73 Mbit/s)

Flow 1 (95th percentile 132.99 ms)
Run 5: Statistics of TCP Cubic

Start at: 2019-04-24 06:13:03
End at: 2019-04-24 06:13:33
Local clock offset: 0.25 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2019-04-24 07:04:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 332.80 Mbit/s
95th percentile per-packet one-way delay: 133.732 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 332.80 Mbit/s
95th percentile per-packet one-way delay: 133.732 ms
Loss rate: 0.97%
Run 5: Report of TCP Cubic — Data Link
Run 1: Statistics of FillP

Start at: 2019-04-24 04:12:57
Local clock offset: ~0.03 ms
Remote clock offset: 0.122 ms

# Below is generated by plot.py at 2019-04-24 07:09:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 539.38 Mbit/s
95th percentile per-packet one-way delay: 187.704 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 539.38 Mbit/s
95th percentile per-packet one-way delay: 187.704 ms
Loss rate: 0.66%
Run 1: Report of FillP — Data Link

Time (s)

Throughput (Mbps)

Flow 1 ingress (mean 539.26 Mbps)  Flow 1 egress (mean 539.38 Mbps)

Per packet one-way delay (ms)

Flow 1 (95th percentile 187.70 ms)
Run 2: Statistics of FillP

Start at: 2019-04-24 04:44:10
End at: 2019-04-24 04:44:40
Local clock offset: -0.274 ms
Remote clock offset: 0.056 ms

# Below is generated by plot.py at 2019-04-24 07:09:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 130.09 Mbit/s
95th percentile per-packet one-way delay: 138.365 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 130.09 Mbit/s
95th percentile per-packet one-way delay: 138.365 ms
Loss rate: 0.01%
Run 2: Report of FillP — Data Link

![Graph showing data link throughput and delay](image-url)
Run 3: Statistics of FillP

Start at: 2019-04-24 05:14:58
End at: 2019-04-24 05:15:28
Local clock offset: 0.351 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2019-04-24 07:14:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 610.37 Mbit/s
95th percentile per-packet one-way delay: 193.031 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 610.37 Mbit/s
95th percentile per-packet one-way delay: 193.031 ms
Loss rate: 1.96%
Run 3: Report of FillP — Data Link

[Graph showing throughput and packet delay over time.]

Flow 1 ingress (mean 617.02 Mb/s)  Flow 1 egress (mean 610.37 Mb/s)
Run 4: Statistics of FillP

Start at: 2019-04-24 05:45:56
End at: 2019-04-24 05:46:26
Local clock offset: -0.413 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2019-04-24 07:16:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 694.61 Mbit/s
95th percentile per-packet one-way delay: 187.552 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 694.61 Mbit/s
95th percentile per-packet one-way delay: 187.552 ms
Loss rate: 2.29%
Run 4: Report of FillP — Data Link

![Graph showing throughput and per-packet one-way delay over time for Flow 1 with ingress and egress rates.](image)

- **Flow 1 Ingress (mean 705.14 Mbit/s)**
- **Flow 1 Egress (mean 694.61 Mbit/s)**

![Graph showing per-packet one-way delay for Flow 1 with 95th percentile at 187.55 ms.](image)
Run 5: Statistics of FillP

Start at: 2019-04-24 06:17:25
End at: 2019-04-24 06:17:55
Local clock offset: −0.437 ms
Remote clock offset: 0.108 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 746.52 Mbit/s
95th percentile per-packet one-way delay: 161.103 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 746.52 Mbit/s
95th percentile per-packet one-way delay: 161.103 ms
Loss rate: 1.25%
Run 5: Report of FillP — Data Link
Run 1: Statistics of FillP-Sheep

Start at: 2019-04-24 04:06:08
End at: 2019-04-24 04:06:38
Local clock offset: -0.379 ms
Remote clock offset: 0.09 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 63.32 Mbit/s
  95th percentile per-packet one-way delay: 188.616 ms
  Loss rate: 1.12%
-- Flow 1:
  Average throughput: 63.32 Mbit/s
  95th percentile per-packet one-way delay: 188.616 ms
  Loss rate: 1.12%
Run 1: Report of FillP-Sheep — Data Link

Throughput (Mbit/s) vs Time (s)

Flow 1 ingress (mean 63.90 Mbit/s)  \quad Flow 1 egress (mean 63.32 Mbit/s)

Packet Delay (ms) vs Time (s)

Flow 1 (95th percentile 188.62 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2019-04-24 04:37:07
End at: 2019-04-24 04:37:37
Local clock offset: 0.107 ms
Remote clock offset: 0.08 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 488.39 Mbit/s
95th percentile per-packet one-way delay: 196.212 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 488.39 Mbit/s
95th percentile per-packet one-way delay: 196.212 ms
Loss rate: 1.52%
Run 2: Report of FillP-Sheep — Data Link

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

- **Flow 1 ingress (mean 491.53 Mb/s)**
- **Flow 1 egress (mean 488.89 Mb/s)**

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

- **Flow 1 (95th percentile 196.21 ms)**
Run 3: Statistics of FillP-Sheep

Start at: 2019-04-24 05:07:47
End at: 2019-04-24 05:08:17
Local clock offset: -0.037 ms
Remote clock offset: 0.002 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 536.32 Mbit/s
95th percentile per-packet one-way delay: 174.725 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 536.32 Mbit/s
95th percentile per-packet one-way delay: 174.725 ms
Loss rate: 0.10%
Run 3: Report of FillP-Sheep — Data Link

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

- Flow 1 ingress (mean 532.78 Mbps)
- Flow 1 egress (mean 536.32 Mbps)

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

- Flow 1 (95th percentile 174.72 ms)
Run 4: Statistics of FillP-Sheep

Start at: 2019-04-24 05:39:03
End at: 2019-04-24 05:39:33
Local clock offset: 0.192 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 281.36 Mbit/s
  95th percentile per-packet one-way delay: 174.468 ms
  Loss rate: 2.79%
-- Flow 1:
  Average throughput: 281.36 Mbit/s
  95th percentile per-packet one-way delay: 174.468 ms
  Loss rate: 2.79%
Run 4: Report of FillP-Sheep — Data Link

![Graph showing network throughput and packet delay over time with annotations for Flow 1 ingress and egress mean throughput and 95th percentile delay.]

- Flow 1 ingress (mean 287.22 Mbit/s)
- Flow 1 egress (mean 281.36 Mbit/s)
- Flow 1 (95th percentile 174.47 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2019-04-24 06:10:23
End at: 2019-04-24 06:10:53
Local clock offset: -0.048 ms
Remote clock offset: 0.09 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 376.89 Mbit/s
95th percentile per-packet one-way delay: 188.155 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 376.89 Mbit/s
95th percentile per-packet one-way delay: 188.155 ms
Loss rate: 0.76%
Run 5: Report of FillP-Sheep — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 376.39 Mbps)  Flow 1 egress (mean 376.89 Mbps)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 188.16 ms)
Run 1: Statistics of Indigo

Start at: 2019-04-24 04:10:06
End at: 2019-04-24 04:10:36
Local clock offset: 0.029 ms
Remote clock offset: 0.08 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 157.24 Mbit/s
  95th percentile per-packet one-way delay: 133.225 ms
  Loss rate: 0.89%
-- Flow 1:
  Average throughput: 157.24 Mbit/s
  95th percentile per-packet one-way delay: 133.225 ms
  Loss rate: 0.89%
Run 1: Report of Indigo — Data Link

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

Flow 1 ingress (mean 157.18 Mbit/s) and Flow 1 egress (mean 157.24 Mbit/s)

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

Flow 1 (95th percentile 133.22 ms)
Run 2: Statistics of Indigo

Start at: 2019-04-24 04:41:22
End at: 2019-04-24 04:41:52
Local clock offset: 0.061 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2019-04-24 07:18:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 168.96 Mbit/s
95th percentile per-packet one-way delay: 133.278 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 168.96 Mbit/s
95th percentile per-packet one-way delay: 133.278 ms
Loss rate: 0.82%
Run 2: Report of Indigo — Data Link
Run 3: Statistics of Indigo

Start at: 2019-04-24 05:12:04
End at: 2019-04-24 05:12:35
Local clock offset: -0.293 ms
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2019-04-24 07:18:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 162.18 Mbit/s
95th percentile per-packet one-way delay: 132.898 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 162.18 Mbit/s
95th percentile per-packet one-way delay: 132.898 ms
Loss rate: 0.85%
Run 3: Report of Indigo — Data Link

![Graph](image1)

![Graph](image2)
Run 4: Statistics of Indigo

Start at: 2019-04-24 05:43:05
End at: 2019-04-24 05:43:35
Local clock offset: -0.277 ms
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2019-04-24 07:18:40
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 154.10 Mbit/s
  95th percentile per-packet one-way delay: 133.069 ms
  Loss rate: 0.86%
-- Flow 1:
  Average throughput: 154.10 Mbit/s
  95th percentile per-packet one-way delay: 133.069 ms
  Loss rate: 0.86%
Run 4: Report of Indigo — Data Link
Run 5: Statistics of Indigo

Start at: 2019-04-24 06:14:34
End at: 2019-04-24 06:15:04
Local clock offset: -0.469 ms
Remote clock offset: 0.077 ms

# Below is generated by plot.py at 2019-04-24 07:19:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 170.56 Mbit/s
95th percentile per-packet one-way delay: 132.600 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 170.56 Mbit/s
95th percentile per-packet one-way delay: 132.600 ms
Loss rate: 0.82%
Run 5: Report of Indigo — Data Link
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-04-24 04:34:19
End at: 2019-04-24 04:34:49
Local clock offset: -0.093 ms
Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2019-04-24 07:23:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 505.32 Mbit/s
95th percentile per-packet one-way delay: 142.032 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 505.32 Mbit/s
95th percentile per-packet one-way delay: 142.032 ms
Loss rate: 1.17%
Run 1: Report of Indigo-MusesC3 — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 506.50 Mbit/s)  Flow 1 egress (mean 505.32 Mbit/s)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 142.03 ms)
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-04-24 05:04:56
End at: 2019-04-24 05:05:26
Local clock offset: -0.348 ms
Remote clock offset: 0.374 ms

# Below is generated by plot.py at 2019-04-24 07:25:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 562.68 Mbit/s
95th percentile per-packet one-way delay: 159.910 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 562.68 Mbit/s
95th percentile per-packet one-way delay: 159.910 ms
Loss rate: 1.06%
Run 2: Report of Indigo-MusesC3 — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 563.45 Mbit/s)
- Flow 1 egress (mean 562.68 Mbit/s)

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

- Flow 1 (95th percentile 159.91 ms)
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-04-24 05:36:12
End at: 2019-04-24 05:36:42
Local clock offset: 0.24 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2019-04-24 07:25:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 573.22 Mbit/s
95th percentile per-packet one-way delay: 166.570 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 573.22 Mbit/s
95th percentile per-packet one-way delay: 166.570 ms
Loss rate: 1.02%
Run 3: Report of Indigo-MusesC3 — Data Link

---

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

- **Flow 1 ingress (mean 573.73 Mbps)**
- **Flow 1 egress (mean 573.22 Mbps)**

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

- **Flow 1 (95th percentile 166.57 ms)**
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-04-24 06:07:33
End at: 2019-04-24 06:08:03
Local clock offset: ~0.293 ms
Remote clock offset: 0.096 ms

# Below is generated by plot.py at 2019-04-24 07:25:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 547.37 Mbit/s
95th percentile per-packet one-way delay: 166.751 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 547.37 Mbit/s
95th percentile per-packet one-way delay: 166.751 ms
Loss rate: 0.99%
Run 4: Report of Indigo-MusesC3 — Data Link

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

- Flow 1 ingress (mean 547.73 Mbit/s)
- Flow 1 egress (mean 547.37 Mbit/s)

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

- Flow 1 (95th percentile 166.75 ms)
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-04-24 06:39:06
End at: 2019-04-24 06:39:36
Local clock offset: -0.156 ms
Remote clock offset: 0.334 ms

# Below is generated by plot.py at 2019-04-24 07:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 528.44 Mbit/s
95th percentile per-packet one-way delay: 176.342 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 528.44 Mbit/s
95th percentile per-packet one-way delay: 176.342 ms
Loss rate: 1.07%
Run 5: Report of Indigo-MusesC3 — Data Link

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

*Flow 1 ingress (mean 529.17 Mbps)  Flow 1 egress (mean 528.44 Mbps)*

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

*Flow 1 (95th percentile 176.34 ms)*
Run 1: Statistics of Indigo-MusesC5

End at: 2019-04-24 04:28:46
Local clock offset: -0.363 ms
Remote clock offset: 0.049 ms

# Below is generated by plot.py at 2019-04-24 07:27:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 521.28 Mbit/s
95th percentile per-packet one-way delay: 184.715 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 521.28 Mbit/s
95th percentile per-packet one-way delay: 184.715 ms
Loss rate: 1.14%
Run 1: Report of Indigo-MusesC5 — Data Link

![Graph of throughput vs time for flow 1 ingress and egress.](image1)

![Graph of per-packet one-way delay vs time for flow 1.](image2)

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Run 2: Statistics of Indigo-MusesC5

Start at: 2019-04-24 04:59:00
End at: 2019-04-24 04:59:30
Local clock offset: 0.261 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2019-04-24 07:27:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 518.45 Mbit/s
95th percentile per-packet one-way delay: 214.445 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 518.45 Mbit/s
95th percentile per-packet one-way delay: 214.445 ms
Loss rate: 1.08%
Run 2: Report of Indigo-MusesC5 — Data Link

![Throughput Graph](image1)

- Flow 1 ingress (mean 519.21 Mbit/s)
- Flow 1 egress (mean 518.45 Mbit/s)

![Delay Graph](image2)

- Flow 1 (95th percentile 214.44 ms)
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-04-24 05:30:22
End at: 2019-04-24 05:30:52
Local clock offset: 0.211 ms
Remote clock offset: -0.118 ms

# Below is generated by plot.py at 2019-04-24 07:28:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 532.79 Mbit/s
95th percentile per-packet one-way delay: 195.362 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 532.79 Mbit/s
95th percentile per-packet one-way delay: 195.362 ms
Loss rate: 1.26%
Run 3: Report of Indigo-MusesC5 — Data Link
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-04-24 06:01:40
End at: 2019-04-24 06:02:10
Local clock offset: 0.245 ms
Remote clock offset: 0.037 ms

# Below is generated by plot.py at 2019-04-24 07:32:29
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 500.23 Mbit/s
  95th percentile per-packet one-way delay: 207.019 ms
  Loss rate: 1.42%
-- Flow 1:
  Average throughput: 500.23 Mbit/s
  95th percentile per-packet one-way delay: 207.019 ms
  Loss rate: 1.42%
Run 4: Report of Indigo-MusesC5 — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 502.71 Mbit/s)  Flow 1 egress (mean 500.23 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 207.02 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-04-24 06:32:54
End at: 2019-04-24 06:33:24
Local clock offset: -0.256 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2019-04-24 07:34:51
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 564.26 Mbit/s
  95th percentile per-packet one-way delay: 161.450 ms
  Loss rate: 1.23%
-- Flow 1:
  Average throughput: 564.26 Mbit/s
  95th percentile per-packet one-way delay: 161.450 ms
  Loss rate: 1.23%
Run 5: Report of Indigo-MusesC5 — Data Link

![Graph showing throughput over time with annotations for flow ingress and egress speeds.](image1)

![Graph showing per-packet one-way delay over time with a 95th percentile value.](image2)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-04-24 04:17:50
End at: 2019-04-24 04:18:20
Local clock offset: -0.119 ms
Remote clock offset: 0.064 ms

# Below is generated by plot.py at 2019-04-24 07:34:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 542.48 Mbit/s
95th percentile per-packet one-way delay: 187.064 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 542.48 Mbit/s
95th percentile per-packet one-way delay: 187.064 ms
Loss rate: 1.00%
Run 1: Report of Indigo-MusesD — Data Link

![Graph showing throughput and packet delay over time for flow 1. The graph indicates fluctuations in the throughput and packet delay, with the throughput peak occurring around the 5th second and the packet delay peaking around the 15th second. The legend indicates that dashed lines represent the ingress (mean 542.87 Mbit/s) and solid lines represent the egress (mean 542.48 Mbit/s).]
Run 2: Statistics of Indigo-MusesD

End at: 2019-04-24 04:49:11
Local clock offset: -0.547 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2019-04-24 07:34:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 517.42 Mbit/s
95th percentile per-packet one-way delay: 177.110 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 517.42 Mbit/s
95th percentile per-packet one-way delay: 177.110 ms
Loss rate: 1.19%
Run 2: Report of Indigo-MusesD — Data Link

Throughput (kbps)

Time (s)

Flow 1 ingress (mean 518.76 Mbit/s)  Flow 1 egress (mean 517.42 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 177.11 ms)
Run 3: Statistics of Indigo-MusesD

Start at: 2019-04-24 05:19:57  
End at: 2019-04-24 05:20:27  
Local clock offset: -0.305 ms  
Remote clock offset: -0.019 ms

# Below is generated by plot.py at 2019-04-24 07:36:12  
# Datalink statistics
-- Total of 1 flow:  
Average throughput: 540.23 Mbit/s  
95th percentile per-packet one-way delay: 181.112 ms  
Loss rate: 1.06%  
-- Flow 1:  
Average throughput: 540.23 Mbit/s  
95th percentile per-packet one-way delay: 181.112 ms  
Loss rate: 1.06%
Run 3: Report of Indigo-MusesD — Data Link

![Graph of network throughput and packet delay over time]

- **Flow 1 ingress (mean 540.87 Mbit/s)**
- **Flow 1 egress (mean 540.23 Mbit/s)**

![Graph of packet delay distribution over time]

- **Flow 1 (95th percentile 181.11 ms)**
Run 4: Statistics of Indigo-MusesD

Start at: 2019-04-24 05:50:53
End at: 2019-04-24 05:51:23
Local clock offset: -0.037 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2019-04-24 07:36:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 532.57 Mbit/s
95th percentile per-packet one-way delay: 177.585 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 532.57 Mbit/s
95th percentile per-packet one-way delay: 177.585 ms
Loss rate: 1.09%
Run 4: Report of Indigo-MusesD — Data Link

Throughput

Time (s)

Flow 1 ingress (mean 533.41 Mbit/s)

Flow 1 egress (mean 532.57 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 177.59 ms)
Run 5: Statistics of Indigo-MusesD

Local clock offset: -0.279 ms
Remote clock offset: 0.1 ms

# Below is generated by plot.py at 2019-04-24 07:36:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 503.42 Mbit/s
95th percentile per-packet one-way delay: 174.808 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 503.42 Mbit/s
95th percentile per-packet one-way delay: 174.808 ms
Loss rate: 1.09%
Run 5: Report of Indigo-MusesD — Data Link
Run 1: Statistics of Indigo-MusesT

Start at: 2019-04-24 04:16:07
End at: 2019-04-24 04:16:37
Local clock offset: -0.379 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2019-04-24 07:37:52
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 544.31 Mbit/s
  95th percentile per-packet one-way delay: 184.499 ms
  Loss rate: 1.24%
-- Flow 1:
  Average throughput: 544.31 Mbit/s
  95th percentile per-packet one-way delay: 184.499 ms
  Loss rate: 1.24%
Run 1: Report of Indigo-MusesT — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress** (mean 545.98 Mbps)
- **Flow 1 egress** (mean 544.31 Mbps)

---

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

- **Flow 1** (95th percentile 184.50 ms)
Run 2: Statistics of Indigo-MusesT

Local clock offset: -0.311 ms
Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2019-04-24 07:42:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 594.86 Mbit/s
95th percentile per-packet one-way delay: 222.061 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 594.86 Mbit/s
95th percentile per-packet one-way delay: 222.061 ms
Loss rate: 1.16%
Run 2: Report of Indigo-MusesT — Data Link

![Graph showing data link performance](image-url)

- **Flow 1 ingress (mean 596.25 Mbit/s)**
- **Flow 1 egress (mean 594.86 Mbit/s)**

![Graph showing packet delay distribution](image-url)

- **Flow 1 (95th percentile 222.06 ms)**
Run 3: Statistics of Indigo-MusesT

Start at: 2019-04-24 05:18:14
End at: 2019-04-24 05:18:44
Local clock offset: -0.439 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2019-04-24 07:44:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 597.43 Mbit/s
95th percentile per-packet one-way delay: 229.535 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 597.43 Mbit/s
95th percentile per-packet one-way delay: 229.535 ms
Loss rate: 1.62%
Run 3: Report of Indigo-MusesT — Data Link
Run 4: Statistics of Indigo-MusesT

Start at: 2019-04-24 05:49:10
End at: 2019-04-24 05:49:40
Local clock offset: 0.223 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2019-04-24 07:44:36
# Datalink statistics
-- Total of 1 flow:
 Average throughput: 593.68 Mbit/s
 95th percentile per-packet one-way delay: 209.932 ms
 Loss rate: 1.24%
-- Flow 1:
 Average throughput: 593.68 Mbit/s
 95th percentile per-packet one-way delay: 209.932 ms
 Loss rate: 1.24%
Run 4: Report of Indigo-MusesT — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 595.58 Mbit/s)
- Flow 1 egress (mean 593.68 Mbit/s)

![Delay Graph]

- Flow 1 (95th percentile 209.93 ms)
Run 5: Statistics of Indigo-MusesT

Start at: 2019-04-24 06:20:44
End at: 2019-04-24 06:21:14
Local clock offset: -0.031 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2019-04-24 07:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 628.20 Mbit/s
95th percentile per-packet one-way delay: 222.976 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 628.20 Mbit/s
95th percentile per-packet one-way delay: 222.976 ms
Loss rate: 1.82%
Run 5: Report of Indigo-MusesT — Data Link

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

- **Flow 1 ingress** (mean 633.88 Mbit/s)
- **Flow 1 egress** (mean 628.20 Mbit/s)

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

- **Flow 1** (95th percentile 222.98 ms)
Run 1: Statistics of LEDBAT

End at: 2019-04-24 04:26:02
Local clock offset: -0.208 ms
Remote clock offset: 0.06 ms

# Below is generated by plot.py at 2019-04-24 07:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.068 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.068 ms
Loss rate: 1.79%
Run 1: Report of LEDBAT — Data Link

---

**Graph 1:**

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 5.28 Mbps)
  - Flow 1 egress (mean 5.23 Mbps)

**Graph 2:**

- **Round trip time (ms):**
  - Flow 1 (95th percentile 134.07 ms)
Run 2: Statistics of LEDBAT

Start at: 2019-04-24 04:56:16
End at: 2019-04-24 04:56:46
Local clock offset: 0.143 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2019-04-24 07:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 134.237 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 134.237 ms
Loss rate: 1.79%
Run 3: Statistics of LEDBAT

Start at: 2019-04-24 05:27:34
End at: 2019-04-24 05:28:04
Local clock offset: -0.043 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2019-04-24 07:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.21 Mbit/s
95th percentile per-packet one-way delay: 134.102 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.21 Mbit/s
95th percentile per-packet one-way delay: 134.102 ms
Loss rate: 1.78%
Run 3: Report of LEDBAT — Data Link

![Graph of Throughput and Latency](chart.png)
Run 4: Statistics of LEDBAT

Start at: 2019-04-24 05:58:50
End at: 2019-04-24 05:59:20
Local clock offset: 0.205 ms
Remote clock offset: 0.049 ms

# Below is generated by plot.py at 2019-04-24 07:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 134.536 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 134.536 ms
Loss rate: 1.79%
Run 4: Report of LEDBAT — Data Link

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

- **Flow 1 ingress (mean 5.28 Mbit/s)**
- **Flow 1 egress (mean 5.24 Mbit/s)**

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

- **Flow 1 (95th percentile 134.54 ms)**
Run 5: Statistics of LEDBAT

Start at: 2019-04-24 06:30:07
End at: 2019-04-24 06:30:37
Local clock offset: -0.02 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2019-04-24 07:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 133.874 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 133.874 ms
Loss rate: 1.79%
Run 5: Report of LEDBAT — Data Link

![Graph of data link throughput and delay over time]

- Flow 1 ingress (mean 5.28 Mbit/s)
- Flow 1 egress (mean 5.23 Mbit/s)

![Graph of packet error rate over time]

- Flow 1 (95th percentile 133.87 ms)
Run 1: Statistics of PCC-Allegro

Local clock offset: -0.404 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2019-04-24 07:48:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 360.23 Mbit/s
95th percentile per-packet one-way delay: 191.752 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 360.23 Mbit/s
95th percentile per-packet one-way delay: 191.752 ms
Loss rate: 1.96%
Run 1: Report of PCC-Allegro — Data Link

![Graph showing throughput and delay over time]

- **Flow 1 ingress (mean 364.16 Mbit/s)**
- **Flow 1 egress (mean 360.23 Mbit/s)**

![Graph showing packet delay over time]

- **Flow 1 (95th percentile 191.75 ms)**
Run 2: Statistics of PCC-Allegro

Start at: 2019-04-24 04:54:43
Local clock offset: 0.31 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2019-04-24 07:48:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.06 Mbit/s
95th percentile per-packet one-way delay: 226.615 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 296.06 Mbit/s
95th percentile per-packet one-way delay: 226.615 ms
Loss rate: 2.77%
Run 2: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 301.78 Mbit/s)
- Flow 1 egress (mean 296.06 Mbit/s)

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

- Flow 1 (95th percentile 226.62 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-04-24 05:25:58
End at: 2019-04-24 05:26:28
Local clock offset: -0.244 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-04-24 07:48:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 335.66 Mbit/s
95th percentile per-packet one-way delay: 219.471 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 335.66 Mbit/s
95th percentile per-packet one-way delay: 219.471 ms
Loss rate: 1.94%
Run 3: Report of PCC-Allegro — Data Link

![Graph showing throughput and packet delay over time]

- Flow 1 ingress (mean 339.26 Mbit/s)
- Flow 1 egress (mean 335.66 Mbit/s)

![Graph showing packet delay distribution]

- Flow 1 (95th percentile 219.47 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2019-04-24 05:57:15
End at: 2019-04-24 05:57:45
Local clock offset: -0.033 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2019-04-24 07:48:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 320.64 Mbit/s
95th percentile per-packet one-way delay: 163.467 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 320.64 Mbit/s
95th percentile per-packet one-way delay: 163.467 ms
Loss rate: 1.95%
Run 4: Report of PCC-Allegro — Data Link

![Graph showing throughput and packet delay over time]

- **Throughput (Mbps)**
  - Y-axis: Throughput in Mbps
  - X-axis: Time in seconds
  - Legend:
    - Flow 1 ingress (mean 324.12 Mbps)
    - Flow 1 egress (mean 320.64 Mbps)

- **Packet delay (ms)**
  - Y-axis: Packet delay in ms
  - X-axis: Time in seconds
  - Legend:
    - Flow 1 (95th percentile 163.47 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2019-04-24 06:28:26
End at: 2019-04-24 06:28:56
Local clock offset: 0.125 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 408.88 Mbit/s
95th percentile per-packet one-way delay: 249.251 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 408.88 Mbit/s
95th percentile per-packet one-way delay: 249.251 ms
Loss rate: 1.98%
Run 5: Report of PCC-Allegro — Data Link
Run 1: Statistics of PCC-Expr

Start at: 2019-04-24 04:26:43
Local clock offset: 0.293 ms
Remote clock offset: 0.052 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 208.97 Mbit/s
95th percentile per-packet one-way delay: 135.226 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 208.97 Mbit/s
95th percentile per-packet one-way delay: 135.226 ms
Loss rate: 1.08%
Run 1: Report of PCC-Expr — Data Link

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

- **Flow 1 ingress (mean 209.37 Mbit/s)**
- **Flow 1 egress (mean 208.97 Mbit/s)**

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

- **Flow 1 (95th percentile 135.23 ms)**
Run 2: Statistics of PCC-Expr

End at: 2019-04-24 04:57:58
Local clock offset: -0.517 ms
Remote clock offset: 0.054 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 204.26 Mbit/s
95th percentile per-packet one-way delay: 135.015 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 204.26 Mbit/s
95th percentile per-packet one-way delay: 135.015 ms
Loss rate: 1.44%
Run 2: Report of PCC-Expr — Data Link

![Graph of Throughput (kbps) over Time (s) with legends: Flow 1 ingress (mean 205.38 Mbit/s) and Flow 1 egress (mean 204.26 Mbit/s).]

![Graph of Per-packet one-way delay (ms) over Time (s) with legend: Flow 1 (95th percentile 135.01 ms).]
Run 3: Statistics of PCC-Expr

Start at: 2019-04-24 05:28:46
End at: 2019-04-24 05:29:16
Local clock offset: -0.069 ms
Remote clock offset: -0.423 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 248.42 Mbit/s
95th percentile per-packet one-way delay: 198.346 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 248.42 Mbit/s
95th percentile per-packet one-way delay: 198.346 ms
Loss rate: 1.33%
Run 3: Report of PCC-Expr — Data Link

![Graph 1: Throughput comparison between Flow 1 ingress and egress](image1)

![Graph 2: Per-packet one-way delay distribution for Flow 1](image2)

Flow 1 ingress (mean 249.51 Mbit/s)  
Flow 1 egress (mean 248.42 Mbit/s)

Flow 1 (95th percentile 198.35 ms)
Run 4: Statistics of PCC-Expr

Start at: 2019-04-24 06:00:02
End at: 2019-04-24 06:00:32
Local clock offset: ~0.001 ms
Remote clock offset: 0.062 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 259.93 Mbit/s
95th percentile per-packet one-way delay: 195.547 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 259.93 Mbit/s
95th percentile per-packet one-way delay: 195.547 ms
Loss rate: 1.05%
Run 4: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 260.34 Mbit/s)
- Flow 1 egress (mean 259.93 Mbit/s)

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

- Flow 1 (95th percentile 195.55 ms)
Run 5: Statistics of PCC-Expr

Start at: 2019-04-24 06:31:19
End at: 2019-04-24 06:31:49
Local clock offset: -0.318 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 227.45 Mbit/s
95th percentile per-packet one-way delay: 248.061 ms
Loss rate: 5.08%
-- Flow 1:
Average throughput: 227.45 Mbit/s
95th percentile per-packet one-way delay: 248.061 ms
Loss rate: 5.08%
Run 5: Report of PCC-Expr — Data Link
Run 1: Statistics of QUIC Cubic

Start at: 2019-04-24 04:33:04
End at: 2019-04-24 04:33:34
Local clock offset: -0.056 ms
Remote clock offset: 0.083 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.49 Mbit/s
95th percentile per-packet one-way delay: 133.031 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 59.49 Mbit/s
95th percentile per-packet one-way delay: 133.031 ms
Loss rate: 1.19%
Run 1: Report of QUIC Cubic — Data Link

Graph: Throughput vs Time

Flow 1 ingress (mean 59.65 Mbit/s)
Flow 1 egress (mean 59.49 Mbit/s)

Graph: Per packet one-way delay vs Time

Flow 1 (95th percentile 133.03 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2019-04-24 05:03:41  
End at: 2019-04-24 05:04:11  
Local clock offset: -0.103 ms  
Remote clock offset: 0.013 ms

# Below is generated by plot.py at 2019-04-24 07:57:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 53.85 Mbit/s  
95th percentile per-packet one-way delay: 132.920 ms  
Loss rate: 1.28%  
-- Flow 1:  
Average throughput: 53.85 Mbit/s  
95th percentile per-packet one-way delay: 132.920 ms  
Loss rate: 1.28%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2019-04-24 05:34:57
End at: 2019-04-24 05:35:27
Local clock offset: -0.03 ms
Remote clock offset: -0.082 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.54 Mbit/s
95th percentile per-packet one-way delay: 132.926 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 52.54 Mbit/s
95th percentile per-packet one-way delay: 132.926 ms
Loss rate: 1.41%
Run 3: Report of QUIC Cubic — Data Link

[Graph showing throughput and packet delay over time]

- Flow 1 ingress (mean 52.81 Mbit/s)
- Flow 1 egress (mean 52.54 Mbit/s)

[Graph showing packet delay over time]

- Flow 1 (95th percentile 132.93 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2019-04-24 06:06:19
End at: 2019-04-24 06:06:49
Local clock offset: -0.267 ms
Remote clock offset: 0.035 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 50.37 Mbit/s
  95th percentile per-packet one-way delay: 132.787 ms
  Loss rate: 1.43%
-- Flow 1:
  Average throughput: 50.37 Mbit/s
  95th percentile per-packet one-way delay: 132.787 ms
  Loss rate: 1.43%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2019-04-24 06:37:51
End at: 2019-04-24 06:38:21
Local clock offset: -0.041 ms
Remote clock offset: 0.34 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.56 Mbit/s
95th percentile per-packet one-way delay: 131.725 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 57.56 Mbit/s
95th percentile per-packet one-way delay: 131.725 ms
Loss rate: 1.35%
Run 5: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 57.82 Mbps)
- Flow 1 egress (mean 57.56 Mbps)

![Graph 2: Round-trip packet delay (ms) vs Time (s)]

- Flow 1 (95th percentile 131.72 ms)
Run 1: Statistics of SCReAM

Start at: 2019-04-24 04:19:30
End at: 2019-04-24 04:20:00
Local clock offset: -0.102 ms
Remote clock offset: 0.097 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 133.060 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 133.060 ms
Loss rate: 0.90%
Run 1: Report of SCReAM — Data Link

![Graph of throughput over time with two lines representing flow ingress and egress with mean 0.21 Mbit/s each.]

![Graph of per-packet one-way delay with a single line representing flow 1 with 95th percentile 133.06 ms.]
Run 2: Statistics of SCReAM

Start at: 2019-04-24 04:50:19  
End at: 2019-04-24 04:50:49  
Local clock offset: 0.109 ms  
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2019-04-24 07:57:21  
# Datalink statistics
   -- Total of 1 flow:
      Average throughput: 0.14 Mbit/s  
      95th percentile per-packet one-way delay: 132.431 ms  
      Loss rate: 0.75%
   -- Flow 1:
      Average throughput: 0.14 Mbit/s  
      95th percentile per-packet one-way delay: 132.431 ms  
      Loss rate: 0.75%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2019-04-24 05:21:37
Local clock offset: -0.295 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.320 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.320 ms
Loss rate: 0.88%
Run 3: Report of SCReAM — Data Link

![Graph showing throughput and ping distribution over time for Flow 1 ingress and egress with a mean of 0.15 Mbps and a 95th percentile ping of 132.32 ms.]
Run 4: Statistics of SCReAM

Start at: 2019-04-24 05:52:47
End at: 2019-04-24 05:53:17
Local clock offset: -0.072 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2019-04-24 07:57:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.003 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.003 ms
Loss rate: 0.88%
Run 4: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.15 Mbps)
- Flow 1 egress (mean 0.15 Mbps)

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

- Flow 1 (95th percentile 133.00 ms)
Run 5: Statistics of SCReAM

Start at: 2019-04-24 06:24:08
End at: 2019-04-24 06:24:38
Local clock offset: -0.075 ms
Remote clock offset: 0.027 ms

# Below is generated by plot.py at 2019-04-24 07:57:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.872 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.872 ms
Loss rate: 0.75%
Run 5: Report of SCReAM — Data Link

![Graph 1: Throughput (Mbps)](image1)
Flow 1 ingress (mean 0.15 Mbit/s)  
Flow 1 egress (mean 0.15 Mbit/s)

![Graph 2: Per-packet end-to-end delay (ms)](image2)
Flow 1 (95th percentile 132.87 ms)
Run 1: Statistics of Sprout

Start at: 2019-04-24 04:07:22
End at: 2019-04-24 04:07:52
Local clock offset: -0.567 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2019-04-24 07:57:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 132.807 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 132.807 ms
Loss rate: 1.00%
Run 1: Report of Sprout — Data Link

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

**Throughput (Mbps)**

- Flow 1 ingress (mean 0.64 Mbit/s)
- Flow 1 egress (mean 0.64 Mbit/s)

**Packet one-way delay (ms)**

- Flow 1 (95th percentile 132.81 ms)
Run 2: Statistics of Sprout

Start at: 2019-04-24 04:38:40
End at: 2019-04-24 04:39:10
Local clock offset: -0.334 ms
Remote clock offset: 0.031 ms

# Below is generated by plot.py at 2019-04-24 07:57:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 132.899 ms
Loss rate: 0.93%

-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 132.899 ms
Loss rate: 0.93%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2019-04-24 05:09:22
End at: 2019-04-24 05:09:52
Local clock offset: -0.264 ms
Remote clock offset: -0.008 ms

# Below is generated by plot.py at 2019-04-24 07:57:22
# Datalink statistics
-- Total of 1 flow:
 Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 132.998 ms
Loss rate: 0.66%
-- Flow 1:
 Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 132.998 ms
Loss rate: 0.66%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2019-04-24 05:40:28
End at: 2019-04-24 05:40:58
Local clock offset: 0.26 ms
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2019-04-24 07:57:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 132.937 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 132.937 ms
Loss rate: 1.04%
Run 4: Report of Sprout — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.69 Mbit/s)  Flow 1 egress (mean 0.69 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 132.94 ms)
Run 5: Statistics of Sprout

Start at: 2019-04-24 06:11:52
End at: 2019-04-24 06:12:22
Local clock offset: 0.138 ms
Remote clock offset: 0.046 ms

# Below is generated by plot.py at 2019-04-24 07:57:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 132.809 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 132.809 ms
Loss rate: 1.04%
Run 1: Statistics of TaoVA-100x

End at: 2019-04-24 04:30:25
Local clock offset: -0.333 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2019-04-24 07:58:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 218.10 Mbit/s
95th percentile per-packet one-way delay: 132.918 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 218.10 Mbit/s
95th percentile per-packet one-way delay: 132.918 ms
Loss rate: 0.92%
Run 1: Report of TaoVA-100x — Data Link

![Graph](image1.png)
Flow 1 ingress (mean 218.15 Mbit/s)  
Flow 1 egress (mean 218.10 Mbit/s)

![Graph](image2.png)
Flow 1 (95th percentile 132.92 ms)
Run 2: Statistics of TaoVA-100x

Start at: 2019-04-24 05:00:39
End at: 2019-04-24 05:01:09
Local clock offset: -0.489 ms
Remote clock offset: 0.034 ms

# Below is generated by plot.py at 2019-04-24 07:58:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.24 Mbit/s
95th percentile per-packet one-way delay: 133.276 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 219.24 Mbit/s
95th percentile per-packet one-way delay: 133.276 ms
Loss rate: 0.94%
Run 2: Report of TaoVA-100x — Data Link

Graph 1: Throughput (Mbps)

Graph 2: Per-packet one-way delay (ms)
Run 3: Statistics of TaoVA-100x

Start at: 2019-04-24 05:32:02
End at: 2019-04-24 05:32:32
Local clock offset: -0.312 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2019-04-24 07:58:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 215.34 Mbit/s
95th percentile per-packet one-way delay: 132.990 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 215.34 Mbit/s
95th percentile per-packet one-way delay: 132.990 ms
Loss rate: 0.93%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2019-04-24 06:03:18
End at: 2019-04-24 06:03:48
Local clock offset: -0.206 ms
Remote clock offset: -0.312 ms

# Below is generated by plot.py at 2019-04-24 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 215.74 Mbit/s
95th percentile per-packet one-way delay: 133.595 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 215.74 Mbit/s
95th percentile per-packet one-way delay: 133.595 ms
Loss rate: 0.86%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2019-04-24 06:34:36
End at: 2019-04-24 06:35:06
Local clock offset: -0.343 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2019-04-24 08:01:06
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 216.32 Mbit/s
  95th percentile per-packet one-way delay: 133.417 ms
  Loss rate: 0.96%
-- Flow 1:
  Average throughput: 216.32 Mbit/s
  95th percentile per-packet one-way delay: 133.417 ms
  Loss rate: 0.96%
Run 5: Report of TaoVA-100x — Data Link

![Graph: Throughput vs Time](image1)

- Flow 1 ingress (mean 216.47 Mbit/s)
- Flow 1 egress (mean 216.32 Mbit/s)

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

- Flow 1 (95th percentile 133.42 ms)
Run 1: Statistics of TCP Vegas

End at: 2019-04-24 04:31:59
Local clock offset: -0.136 ms
Remote clock offset: 0.064 ms

# Below is generated by plot.py at 2019-04-24 08:02:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 428.38 Mbit/s
95th percentile per-packet one-way delay: 141.583 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 428.38 Mbit/s
95th percentile per-packet one-way delay: 141.583 ms
Loss rate: 1.00%
Run 2: Statistics of TCP Vegas

Start at: 2019-04-24 05:02:13
End at: 2019-04-24 05:02:43
Local clock offset: 0.306 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2019-04-24 08:02:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 294.16 Mbit/s
95th percentile per-packet one-way delay: 140.149 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 294.16 Mbit/s
95th percentile per-packet one-way delay: 140.149 ms
Loss rate: 0.95%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-04-24 05:33:35  
End at: 2019-04-24 05:34:05  
Local clock offset: -0.469 ms  
Remote clock offset: -0.095 ms

# Below is generated by plot.py at 2019-04-24 08:02:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 183.89 Mbit/s  
95th percentile per-packet one-way delay: 133.095 ms  
Loss rate: 0.87%  
-- Flow 1:  
Average throughput: 183.89 Mbit/s  
95th percentile per-packet one-way delay: 133.095 ms  
Loss rate: 0.87%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2019-04-24 06:04:52
End at: 2019-04-24 06:05:22
Local clock offset: -0.408 ms
Remote clock offset: 0.031 ms

# Below is generated by plot.py at 2019-04-24 08:03:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 268.16 Mbit/s
95th percentile per-packet one-way delay: 133.320 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 268.16 Mbit/s
95th percentile per-packet one-way delay: 133.320 ms
Loss rate: 0.58%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2019-04-24 06:36:10
End at: 2019-04-24 06:36:40
Local clock offset: -0.197 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2019-04-24 08:04:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 319.80 Mbit/s
95th percentile per-packet one-way delay: 132.685 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 319.80 Mbit/s
95th percentile per-packet one-way delay: 132.685 ms
Loss rate: 0.99%
Run 5: Report of TCP Vegas — Data Link

![Graph showing TCP Vegas data link throughput and delay](image)

- **Flow 1 ingress (mean 320.14 Mbit/s)**
- **Flow 1 egress (mean 319.80 Mbit/s)**

![Graph showing TCP Vegas data link delay distribution](image)

- **Flow 1 (95th percentile 132.69 ms)**
Run 1: Statistics of Verus

Start at: 2019-04-24 04:11:33
End at: 2019-04-24 04:12:03
Local clock offset: -0.26 ms
Remote clock offset: 0.04 ms

# Below is generated by plot.py at 2019-04-24 08:04:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 109.94 Mbit/s
95th percentile per-packet one-way delay: 306.916 ms
Loss rate: 19.05%
-- Flow 1:
Average throughput: 109.94 Mbit/s
95th percentile per-packet one-way delay: 306.916 ms
Loss rate: 19.05%
Run 1: Report of Verus — Data Link

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

- Flow 1 ingress (mean 134.93 Mbit/s)
- Flow 1 egress (mean 109.94 Mbit/s)

Flow 1 (95th percentile 306.92 ms)
Run 2: Statistics of Verus

End at: 2019-04-24 04:43:20
Local clock offset: ~0.506 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2019-04-24 08:04:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.94 Mbit/s
95th percentile per-packet one-way delay: 265.314 ms
Loss rate: 5.59%
-- Flow 1:
Average throughput: 72.94 Mbit/s
95th percentile per-packet one-way delay: 265.314 ms
Loss rate: 5.59%
Run 2: Report of Verus — Data Link

![Graph showing throughput and packet delay over time]

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 76.17 Mbps)
  - Flow 1 egress (mean 72.94 Mbps)

- **Packet Delay (ms)**
  - Flow 1 (95th percentile 265.31 ms)
Run 3: Statistics of Verus

Start at: 2019-04-24 05:13:32
End at: 2019-04-24 05:14:02
Local clock offset: 0.1 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2019-04-24 08:05:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 136.24 Mbit/s
95th percentile per-packet one-way delay: 262.483 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 136.24 Mbit/s
95th percentile per-packet one-way delay: 262.483 ms
Loss rate: 2.65%
Run 3: Report of Verus — Data Link

[Graphs showing throughput and packet delay over time]
Run 4: Statistics of Verus

Start at: 2019-04-24 05:44:32
End at: 2019-04-24 05:45:02
Local clock offset: -0.036 ms
Remote clock offset: -0.419 ms

# Below is generated by plot.py at 2019-04-24 08:05:01
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 119.39 Mbit/s
  95th percentile per-packet one-way delay: 231.084 ms
  Loss rate: 0.33%
-- Flow 1:
  Average throughput: 119.39 Mbit/s
  95th percentile per-packet one-way delay: 231.084 ms
  Loss rate: 0.33%
Run 4: Report of Verus — Data Link

![Graph 1: Throughput vs. Time (Flow 1 Ingress vs. Egress)]

![Graph 2: Packet Delay vs. Time (Flow 1 95th Percentile)]
Run 5: Statistics of Verus

Start at: 2019-04-24 06:16:04
End at: 2019-04-24 06:16:34
Local clock offset: -0.184 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2019-04-24 08:05:01
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 88.86 Mbit/s
  95th percentile per-packet one-way delay: 303.929 ms
  Loss rate: 12.79%
-- Flow 1:
  Average throughput: 88.86 Mbit/s
  95th percentile per-packet one-way delay: 303.929 ms
  Loss rate: 12.79%
Run 5: Report of Verus — Data Link

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

End at: 2019-04-24 04:22:54
Local clock offset: -0.524 ms
Remote clock offset: 0.094 ms

# Below is generated by plot.py at 2019-04-24 08:05:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 240.15 Mbit/s
95th percentile per-packet one-way delay: 131.628 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 240.15 Mbit/s
95th percentile per-packet one-way delay: 131.628 ms
Loss rate: 1.09%
Run 1: Report of PCC-Vivace — Data Link
Run 2: Statistics of PCC-Vivace

Start at: 2019-04-24 04:53:12  
End at: 2019-04-24 04:53:42  
Local clock offset: -0.083 ms  
Remote clock offset: 0.071 ms

# Below is generated by plot.py at 2019-04-24 08:06:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 255.15 Mbit/s  
95th percentile per-packet one-way delay: 133.085 ms  
Loss rate: 1.33%  
-- Flow 1:  
Average throughput: 255.15 Mbit/s  
95th percentile per-packet one-way delay: 133.085 ms  
Loss rate: 1.33%
Run 2: Report of PCC-Vivace — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 256.29 Mbit/s)
- Flow 1 egress (mean 255.15 Mbit/s)

![Per-Packet Delay Graph]

- Flow 1 (95th percentile 133.09 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2019-04-24 05:24:23
End at: 2019-04-24 05:24:53
Local clock offset: -0.238 ms
Remote clock offset: -0.024 ms

# Below is generated by plot.py at 2019-04-24 08:06:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 312.73 Mbit/s
95th percentile per-packet one-way delay: 133.010 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 312.73 Mbit/s
95th percentile per-packet one-way delay: 133.010 ms
Loss rate: 0.71%
Run 3: Report of PCC-Vivace — Data Link

Graph 1: Throughput vs. Time (Mb/s)
- Flow 1 ingress (mean 312.16 Mb/s)
- Flow 1 egress (mean 312.73 Mb/s)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 133.01 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2019-04-24 05:55:40
End at: 2019-04-24 05:56:10
Local clock offset: -0.39 ms
Remote clock offset: 0.031 ms

# Below is generated by plot.py at 2019-04-24 08:06:45
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 322.30 Mbit/s
  95th percentile per-packet one-way delay: 133.405 ms
  Loss rate: 0.98%
-- Flow 1:
  Average throughput: 322.30 Mbit/s
  95th percentile per-packet one-way delay: 133.405 ms
  Loss rate: 0.98%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2019-04-24 06:26:58
End at: 2019-04-24 06:27:28
Local clock offset: 0.314 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2019-04-24 08:06:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.48 Mbit/s
95th percentile per-packet one-way delay: 133.965 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 222.48 Mbit/s
95th percentile per-packet one-way delay: 133.965 ms
Loss rate: 1.04%
Run 5: Report of PCC-Vivace — Data Link

![Graph showing throughput over time with two lines: one for flow ingress and one for egress. The graph indicates variations in throughput.]
Run 1: Statistics of WebRTC media

Start at: 2019-04-24 04:04:57
End at: 2019-04-24 04:05:27
Local clock offset: 0.045 ms
Remote clock offset: 0.084 ms
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2019-04-24 04:35:57
End at: 2019-04-24 04:36:27
Local clock offset: -0.177 ms
Remote clock offset: 0.025 ms

# Below is generated by plot.py at 2019-04-24 08:06:45
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 132.550 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 132.550 ms
  Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2019-04-24 05:06:37
End at: 2019-04-24 05:07:07
Local clock offset: 0.128 ms
Remote clock offset: 0.059 ms

# Below is generated by plot.py at 2019-04-24 08:06:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.362 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.362 ms
Loss rate: 0.00%
Run 3: 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 (90th percentile 133.36 ms)
Run 4: Statistics of WebRTC media

Start at: 2019-04-24 05:37:53
End at: 2019-04-24 05:38:23
Local clock offset: 0.201 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2019-04-24 08:06:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.218 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.218 ms
Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link
Run 5: Statistics of WebRTC media

Start at: 2019-04-24 06:09:13
End at: 2019-04-24 06:09:43
Local clock offset: 0.375 ms
Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2019-04-24 08:06:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.694 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.694 ms
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link

![Throughput graph with two lines indicating Flow 1 ingress and egress data transfer rates.]

![Packet one-way delay graph with data points indicating Flow 1 95th percentile delay.]

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