Pantheon Report

Generated at 2018-07-06 06:51:16 (UTC).
Data path: GCE Iowa Ethernet (remote) -> GCE London Ethernet (local).
Repeated the test of 17 congestion control schemes 10 times.
Each test lasted for 30 seconds running 1 flow.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
NTP offsets were measured against time.google.com and have been applied to correct the timestamps in logs.

Git summary:
branch: master @ 9250dbee7fb57193cddf1ba8c440b4e16ab30f0
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbdb834
third_party/fillp-sheep @ 37162fe9af85249a0eccac061c93e75640ef710b5
third_party/genericCC @ d0153f8e594a59e99e93b032143ceddbfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc44fe0e0c0f90c077e64d
third_party/libutp @ b3465b942e2826f2b179e9a4b906c4e6bb7cf3c
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
third_party/pcc @ 1af9c958fa0d66d18b623c091a55f8ec872b498e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd8f9b24f974ab
third_party/proto-quic @ 77961f18273a86b42f1bc8143edc978f3ccf42
third_party/scream-reproduce @ f099118d1421a33131bf11ff964974e1da3b4d2
  M src/ScreamClient
  M src/ScreamServer
third_party/sprout @ 366e35c617b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c660a266149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41f6f9dde473577d143a1fa2851
test from GCE Iowa to GCE London, 10 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>10</td>
<td>222.29</td>
<td>57.65</td>
<td>0.35</td>
</tr>
<tr>
<td>Copa</td>
<td>9</td>
<td>122.10</td>
<td>53.91</td>
<td>0.37</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>10</td>
<td>200.84</td>
<td>62.52</td>
<td>0.29</td>
</tr>
<tr>
<td>FillP</td>
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<td>589.70</td>
<td>235.93</td>
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</tr>
<tr>
<td>FillP-Sheep</td>
<td>10</td>
<td>606.21</td>
<td>259.91</td>
<td>2.19</td>
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<tr>
<td>Indigo</td>
<td>9</td>
<td>182.49</td>
<td>50.80</td>
<td>0.37</td>
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<tr>
<td>LEDBAT</td>
<td>10</td>
<td>34.17</td>
<td>52.07</td>
<td>0.68</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>10</td>
<td>289.82</td>
<td>86.44</td>
<td>0.45</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>10</td>
<td>243.56</td>
<td>82.24</td>
<td>0.54</td>
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<td>QUIC Cubic</td>
<td>9</td>
<td>67.95</td>
<td>50.63</td>
<td>0.39</td>
</tr>
<tr>
<td>SCRReAM</td>
<td>10</td>
<td>0.22</td>
<td>50.40</td>
<td>0.39</td>
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<tr>
<td>Sprout</td>
<td>10</td>
<td>6.29</td>
<td>51.52</td>
<td>0.26</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>10</td>
<td>223.08</td>
<td>51.06</td>
<td>0.32</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>10</td>
<td>124.98</td>
<td>54.89</td>
<td>0.30</td>
</tr>
<tr>
<td>Verus</td>
<td>10</td>
<td>229.88</td>
<td>105.10</td>
<td>0.55</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>10</td>
<td>312.68</td>
<td>59.62</td>
<td>0.40</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>9</td>
<td>1.94</td>
<td>50.83</td>
<td>0.39</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-07-06 01:43:32
End at: 2018-07-06 01:44:02
Local clock offset: 0.359 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 223.67 Mbit/s
95th percentile per-packet one-way delay: 59.905 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 223.67 Mbit/s
95th percentile per-packet one-way delay: 59.905 ms
Loss rate: 0.37%
Run 1: Report of TCP BBR — Data Link

![Graph of Throughput (Mbps) vs Time (s) with two series: Flow 1 ingress (mean 223.71 Mbit/s) and Flow 1 egress (mean 223.67 Mbit/s).]

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

Flow 1 (95th percentile 59.91 ms)
Run 2: Statistics of TCP BBR

Start at: 2018-07-06 02:04:55
End at: 2018-07-06 02:05:25
Local clock offset: 0.733 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.04 Mbit/s
95th percentile per-packet one-way delay: 60.872 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 222.04 Mbit/s
95th percentile per-packet one-way delay: 60.872 ms
Loss rate: 0.37%
Run 2: Report of TCP BBR — Data Link

![Throughput (Mbps)](image)

- Flow 1 ingress (mean 222.08 Mbit/s)
- Flow 1 egress (mean 222.04 Mbps)

![Packet one-way delay (ms)](image)

- Flow 1 (95th percentile 60.87 ms)
Run 3: Statistics of TCP BBR

Start at: 2018-07-06 02:26:20
End at: 2018-07-06 02:26:50
Local clock offset: 0.402 ms
Remote clock offset: -0.139 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 223.23 Mbit/s
95th percentile per-packet one-way delay: 58.809 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 223.23 Mbit/s
95th percentile per-packet one-way delay: 58.809 ms
Loss rate: 0.35%
Run 3: Report of TCP BBR — Data Link
Run 4: Statistics of TCP BBR

Start at: 2018-07-06 02:47:42
End at: 2018-07-06 02:48:12
Local clock offset: 0.105 ms
Remote clock offset: -0.283 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.11 Mbit/s
95th percentile per-packet one-way delay: 57.719 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 222.11 Mbit/s
95th percentile per-packet one-way delay: 57.719 ms
Loss rate: 0.35%
Run 4: Report of TCP BBR — Data Link

![Throughput Graph](image)

![Packet Delay Graph](image)
Run 5: Statistics of TCP BBR

Start at: 2018-07-06 03:09:20
End at: 2018-07-06 03:09:50
Local clock offset: -0.09 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.85 Mbit/s
95th percentile per-packet one-way delay: 59.059 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 220.85 Mbit/s
95th percentile per-packet one-way delay: 59.059 ms
Loss rate: 0.35%
Run 5: Report of TCP BBR — Data Link

![Graph 1](image1.png)

**Graph 1:** Throughput (Mbps) vs. Time (s)
- **Flow 1 ingress** (mean 220.91 Mbps)
- **Flow 1 egress** (mean 220.85 Mbps)

![Graph 2](image2.png)

**Graph 2:** Per-packet end-to-end delay (ms) vs. Time (s)
- **Flow 1** (95th percentile 59.06 ms)
Run 6: Statistics of TCP BBR

Start at: 2018-07-06 03:30:56
End at: 2018-07-06 03:31:26
Local clock offset: -0.323 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.90 Mbit/s
95th percentile per-packet one-way delay: 57.698 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 222.90 Mbit/s
95th percentile per-packet one-way delay: 57.698 ms
Loss rate: 0.35%
Run 6: Report of TCP BBR — Data Link

![Throughput Graph]

![Packet Delay Graph]

Flow 1 (95th percentile 57.70 ms)
Run 7: Statistics of TCP BBR

Start at: 2018-07-06 03:52:38
End at: 2018-07-06 03:53:08
Local clock offset: -0.497 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.49 Mbit/s
95th percentile per-packet one-way delay: 57.304 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 221.49 Mbit/s
95th percentile per-packet one-way delay: 57.304 ms
Loss rate: 0.35%
Run 7: Report of TCP BBR — Data Link
Run 8: Statistics of TCP BBR

Start at: 2018-07-06 04:14:06
End at: 2018-07-06 04:14:36
Local clock offset: -0.995 ms
Remote clock offset: 0.19 ms

# Below is generated by plot.py at 2018-07-06 05:26:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.01 Mbit/s
95th percentile per-packet one-way delay: 52.930 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 221.01 Mbit/s
95th percentile per-packet one-way delay: 52.930 ms
Loss rate: 0.35%
Run 8: Report of TCP BBR — Data Link

![Graph of throughput and round-trip time](image-url)

- **Flow 1 ingress (mean 221.05 Mbit/s)**
- **Flow 1 egress (mean 221.01 Mbit/s)**
Run 9: Statistics of TCP BBR

Start at: 2018-07-06 04:35:43
End at: 2018-07-06 04:36:13
Local clock offset: -1.153 ms
Remote clock offset: 0.364 ms

# Below is generated by plot.py at 2018-07-06 05:30:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.43 Mbit/s
95th percentile per-packet one-way delay: 52.681 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 225.43 Mbit/s
95th percentile per-packet one-way delay: 52.681 ms
Loss rate: 0.33%
Run 9: Report of TCP BBR — Data Link

![Graph 1: Throughput vs Time]

![Graph 2: Packet Delay vs Time]

Flow 1 (ingress mean 225.41 Mbit/s) vs Flow 1 egress (mean 225.43 Mbit/s)

Flow 1 (95th percentile 52.68 ms)
Run 10: Statistics of TCP BBR

Start at: 2018-07-06 04:57:14
End at: 2018-07-06 04:57:44
Local clock offset: -0.015 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-07-06 05:30:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.16 Mbit/s
95th percentile per-packet one-way delay: 59.524 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 220.16 Mbit/s
95th percentile per-packet one-way delay: 59.524 ms
Loss rate: 0.38%
Run 1: Statistics of Copa

Start at: 2018-07-06 01:48:50
End at: 2018-07-06 01:49:20
Local clock offset: 0.039 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2018-07-06 05:30:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 112.78 Mbit/s
95th percentile per-packet one-way delay: 53.330 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 112.78 Mbit/s
95th percentile per-packet one-way delay: 53.330 ms
Loss rate: 0.59%
Run 1: Report of Copa — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 113.08 Mbit/s)
- Flow 1 egress (mean 112.78 Mbit/s)

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

- Flow 1 (95th percentile 53.33 ms)
Run 2: Statistics of Copa

Start at: 2018-07-06 02:10:17
End at: 2018-07-06 02:10:47
Local clock offset: 0.034 ms
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2018-07-06 05:30:54
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 153.12 Mbit/s
  95th percentile per-packet one-way delay: 54.502 ms
  Loss rate: 0.17%
-- Flow 1:
  Average throughput: 153.12 Mbit/s
  95th percentile per-packet one-way delay: 54.502 ms
  Loss rate: 0.17%
Run 2: Report of Copa — Data Link
Run 3: Statistics of Copa

Start at: 2018-07-06 02:31:31
End at: 2018-07-06 02:32:01
Local clock offset: 0.061 ms
Remote clock offset: -0.156 ms

# Below is generated by plot.py at 2018-07-06 05:30:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 129.51 Mbit/s
95th percentile per-packet one-way delay: 52.850 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 129.51 Mbit/s
95th percentile per-packet one-way delay: 52.850 ms
Loss rate: 0.30%
Run 3: Report of Copa — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress (mean 129.47 Mbit/s)**
- **Flow 1 egress (mean 129.51 Mbit/s)**

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

*Flow 1 (95th percentile 52.85 ms)*
Run 4: Statistics of Copa

Start at: 2018-07-06 02:52:58
End at: 2018-07-06 02:53:28
Local clock offset: 0.502 ms
Remote clock offset: -0.291 ms

# Below is generated by plot.py at 2018-07-06 05:30:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 124.20 Mbit/s
95th percentile per-packet one-way delay: 52.325 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 124.20 Mbit/s
95th percentile per-packet one-way delay: 52.325 ms
Loss rate: 0.10%
Run 4: Report of Copa — Data Link

![Graph showing throughput and delay over time]

- Flow 1 ingress (mean 123.90 Mbit/s)
- Flow 1 egress (mean 124.20 Mbit/s)

- Flow 1 (95th percentile 52.33 ms)
Run 5: Statistics of Copa

Start at: 2018-07-06 03:14:39
End at: 2018-07-06 03:15:09
Local clock offset: -0.507 ms
Remote clock offset: 0.018 ms

# Below is generated by plot.py at 2018-07-06 05:30:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 133.30 Mbit/s
95th percentile per-packet one-way delay: 53.230 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 133.30 Mbit/s
95th percentile per-packet one-way delay: 53.230 ms
Loss rate: 0.31%
Run 5: Report of Copa — Data Link

![Graph showing the throughput and delay over time for Flow 1, with mean 133.27 Mbit/s for ingress and 133.30 Mbit/s for egress.](image)

![Graph showing the packet delay over time for Flow 1, with a 95th percentile delay of 53.23 ms.](image)
Run 6: Statistics of Copa

Start at: 2018-07-06 03:36:19
End at: 2018-07-06 03:36:49
Local clock offset: -0.74 ms
Remote clock offset: 0.107 ms

# Below is generated by plot.py at 2018-07-06 05:30:54
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 137.98 Mbit/s
  95th percentile per-packet one-way delay: 52.903 ms
  Loss rate: 0.28%
-- Flow 1:
  Average throughput: 137.98 Mbit/s
  95th percentile per-packet one-way delay: 52.903 ms
  Loss rate: 0.28%
Run 6: Report of Copa — Data Link
Run 7: Statistics of Copa

Start at: 2018-07-06 03:58:01
End at: 2018-07-06 03:58:31
Local clock offset: -0.891 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2018-07-06 05:33:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 112.11 Mbit/s
95th percentile per-packet one-way delay: 54.395 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 112.11 Mbit/s
95th percentile per-packet one-way delay: 54.395 ms
Loss rate: 0.22%
Run 7: Report of Copa — Data Link

Throughput (Mbit/s)

Flow 1 ingress (mean 111.97 Mbit/s)  Flow 1 egress (mean 112.11 Mbit/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 54.40 ms)
Run 8: Statistics of Copa

Start at: 2018-07-06 04:19:31
End at: 2018-07-06 04:20:01
Local clock offset: -0.286 ms
Remote clock offset: 0.239 ms

# Below is generated by plot.py at 2018-07-06 05:33:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.16 Mbit/s
95th percentile per-packet one-way delay: 57.896 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 68.16 Mbit/s
95th percentile per-packet one-way delay: 57.896 ms
Loss rate: 0.94%
Run 8: Report of Copa — Data Link

![Graph 1: Throughput vs Time](chart1.png)

- **Flow 1 ingress (mean 68.58 Mbit/s)**
- **Flow 1 egress (mean 68.16 Mbit/s)**

![Graph 2: Per-packet end-to-end delay vs Time](chart2.png)

- **Flow 1 (95th percentile 57.90 ms)**
Run 9: Statistics of Copa

Start at: 2018-07-06 04:41:05
End at: 2018-07-06 04:41:35
Local clock offset: -0.074 ms
Remote clock offset: 0.245 ms
Run 9: Report of Copa — Data Link

![Graph of Throughput and Delay](image)

- **Throughput:**
  - Flow 1 ingress (mean 35.64 Mbit/s)
  - Flow 1 egress (mean 35.57 Mbit/s)

- **Delay:**
  - Flow 1 (95th percentile 60.97 ms)
Run 10: Statistics of Copa

Start at: 2018-07-06 05:02:35
End at: 2018-07-06 05:03:05
Local clock offset: 0.364 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2018-07-06 05:33:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 127.77 Mbit/s
95th percentile per-packet one-way delay: 53.761 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 127.77 Mbit/s
95th percentile per-packet one-way delay: 53.761 ms
Loss rate: 0.39%
Run 10: Report of Copa — Data Link

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

- Flow 1 ingress (mean 127.83 Mbit/s)
- Flow 1 egress (mean 127.77 Mbit/s)

- Flow 1 (95th percentile 53.76 ms)
Run 1: Statistics of TCP Cubic

Start at: 2018-07-06 01:51:10
End at: 2018-07-06 01:51:40
Local clock offset: 0.015 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2018-07-06 05:33:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 226.00 Mbit/s
95th percentile per-packet one-way delay: 63.238 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 226.00 Mbit/s
95th percentile per-packet one-way delay: 63.238 ms
Loss rate: 0.35%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2018-07-06 02:12:44
End at: 2018-07-06 02:13:14
Local clock offset: 0.375 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2018-07-06 05:33:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 226.81 Mbit/s
95th percentile per-packet one-way delay: 62.740 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 226.81 Mbit/s
95th percentile per-packet one-way delay: 62.740 ms
Loss rate: 0.35%
Run 2: Report of TCP Cubic — Data Link

![Graph of Throughput and Packet Delay]

- Flow 1 ingress (mean 226.85 Mbit/s)
- Flow 1 egress (mean 226.81 Mbit/s)

Flow 1 (95th percentile 62.74 ms)
Run 3: Statistics of TCP Cubic

Start at: 2018-07-06 02:33:56
End at: 2018-07-06 02:34:26
Local clock offset: 0.102 ms
Remote clock offset: -0.222 ms

# Below is generated by plot.py at 2018-07-06 05:33:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 194.56 Mbit/s
95th percentile per-packet one-way delay: 62.644 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 194.56 Mbit/s
95th percentile per-packet one-way delay: 62.644 ms
Loss rate: 0.25%
Run 3: Report of TCP Cubic — Data Link

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

- **Flow 1 ingress (mean 194.39 Mbit/s)**
- **Flow 1 egress (mean 194.56 Mbit/s)**

![Graph 2: End-to-End Delay](image2)

- **Flow 1 (95th percentile 62.64 ms)**
Run 4: Statistics of TCP Cubic

Start at: 2018-07-06 02:55:23
End at: 2018-07-06 02:55:53
Local clock offset: 0.031 ms
Remote clock offset: -0.249 ms

# Below is generated by plot.py at 2018-07-06 05:33:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 188.16 Mbit/s
95th percentile per-packet one-way delay: 61.889 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 188.16 Mbit/s
95th percentile per-packet one-way delay: 61.889 ms
Loss rate: 0.25%
Run 4: Report of TCP Cubic — Data Link

![Graph showing throughput and packet error delay over time for Run 4.]

- **Flow 1 ingress** (mean 188.00 Mbit/s)
- **Flow 1 egress** (mean 188.16 Mbit/s)

![Graph showing packet error delay over time for Run 4.]

- **Flow 1 (95th percentile 61.89 ms)**
Run 5: Statistics of TCP Cubic

Start at: 2018-07-06 03:17:04
End at: 2018-07-06 03:17:34
Local clock offset: -0.198 ms
Remote clock offset: 0.038 ms

# Below is generated by plot.py at 2018-07-06 05:33:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 173.45 Mbit/s
95th percentile per-packet one-way delay: 63.932 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 173.45 Mbit/s
95th percentile per-packet one-way delay: 63.932 ms
Loss rate: 0.28%
Run 5: Report of TCP Cubic — Data Link
Run 6: Statistics of TCP Cubic

Start at: 2018-07-06 03:38:44
End at: 2018-07-06 03:39:14
Local clock offset: -0.715 ms
Remote clock offset: 0.067 ms

# Below is generated by plot.py at 2018-07-06 05:34:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 166.00 Mbit/s
95th percentile per-packet one-way delay: 61.725 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 166.00 Mbit/s
95th percentile per-packet one-way delay: 61.725 ms
Loss rate: 0.45%
Run 6: Report of TCP Cubic — Data Link

[Graphs showing throughput and packet loss over time]
Run 7: Statistics of TCP Cubic

Start at: 2018-07-06 04:00:25
End at: 2018-07-06 04:00:55
Local clock offset: -0.524 ms
Remote clock offset: 0.15 ms

# Below is generated by plot.py at 2018-07-06 05:36:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 217.86 Mbit/s
95th percentile per-packet one-way delay: 62.738 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 217.86 Mbit/s
95th percentile per-packet one-way delay: 62.738 ms
Loss rate: 0.20%
Run 7: Report of TCP Cubic — Data Link

Throughput (Mbps) vs Time (s)

- Flow 1 ingress (mean 217.56 Mbit/s)
- Flow 1 egress (mean 217.86 Mbit/s)

Packet oneway delay (ms) vs Time (s)

- Flow 1 (95th percentile 62.74 ms)
Run 8: Statistics of TCP Cubic

Start at: 2018-07-06 04:21:50
End at: 2018-07-06 04:22:20
Local clock offset: -0.659 ms
Remote clock offset: 0.246 ms

# Below is generated by plot.py at 2018-07-06 05:36:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.96 Mbit/s
95th percentile per-packet one-way delay: 62.752 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 222.96 Mbit/s
95th percentile per-packet one-way delay: 62.752 ms
Loss rate: 0.14%
Run 8: Report of TCP Cubic — Data Link

---

**Deployment Environment**: 
- **Device**: Data Link
- **Protocols**: TCP Cubic

**Summary**:
- **Throughput**: The throughput chart shows a rapid increase in data transfer rates, reaching a peak and holding steady before declining.
- **Packet Delay**: The packet delay chart indicates fluctuations, with a noticeable peak occurring shortly after the throughput peak.

---

**Graphs**:
- **Throughput Chart**: The throughput chart displays a steep increase followed by stabilization and a steady decline.
- **Packet Delay Chart**: The packet delay chart shows varying packet delays, with a significant increase occurring shortly after the throughput peak.

---

**Legend**:
- **Flow 1 Ingress**: (Mean 222.53 Mbit/s)
- **Flow 1 Egress**: (Mean 222.96 Mbit/s)
- **Flow 1 (95th Percentile 62.75 ms)**
Run 9: Statistics of TCP Cubic

Start at: 2018-07-06 04:43:20
End at: 2018-07-06 04:43:50
Local clock offset: -0.333 ms
Remote clock offset: 0.163 ms

# Below is generated by plot.py at 2018-07-06 05:36:52
# Datalink statistics
  -- Total of 1 flow:
  Average throughput: 227.87 Mbit/s
  95th percentile per-packet one-way delay: 62.357 ms
  Loss rate: 0.12%
  -- Flow 1:
  Average throughput: 227.87 Mbit/s
  95th percentile per-packet one-way delay: 62.357 ms
  Loss rate: 0.12%
Run 9: Report of TCP Cubic — Data Link

![Graph of Throughput and Delay](image)

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 227.31 Mbit/s)
  - Flow 1 egress (mean 227.87 Mbit/s)

- **Delay (ms):**
  - Flow 1 (95th percentile 62.36 ms)
Run 10: Statistics of TCP Cubic

Start at: 2018-07-06 05:05:00
End at: 2018-07-06 05:05:30
Local clock offset: 0.089 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-07-06 05:36:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 164.73 Mbit/s
95th percentile per-packet one-way delay: 61.190 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 164.73 Mbit/s
95th percentile per-packet one-way delay: 61.190 ms
Loss rate: 0.54%
Run 10: Report of TCP Cubic — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 165.06 Mbit/s)
- Flow 1 egress (mean 164.73 Mbit/s)

![Delay Graph]

- Flow 1 (95th percentile 61.19 ms)
Run 1: Statistics of FillP

Start at: 2018-07-06 01:42:02
End at: 2018-07-06 01:42:32
Local clock offset: 0.745 ms
Remote clock offset: 0.019 ms

# Below is generated by plot.py at 2018-07-06 05:46:46
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 637.30 Mbit/s
  95th percentile per-packet one-way delay: 234.272 ms
  Loss rate: 1.12%
-- Flow 1:
  Average throughput: 637.30 Mbit/s
  95th percentile per-packet one-way delay: 234.272 ms
  Loss rate: 1.12%
Run 1: Report of FillP — Data Link

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

*Flow 1 ingress (mean 641.74 Mbit/s)  Flow 1 egress (mean 637.30 Mbit/s)*

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

*Flow 1 (95th percentile 234.27 ms)*
Run 2: Statistics of FillP

Start at: 2018-07-06 02:03:27
End at: 2018-07-06 02:03:57
Local clock offset: 0.383 ms
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2018-07-06 05:46:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 584.66 Mbit/s
95th percentile per-packet one-way delay: 236.683 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 584.66 Mbit/s
95th percentile per-packet one-way delay: 236.683 ms
Loss rate: 1.01%
Run 2: Report of FillP — Data Link

---

**Throughput (Mbps)**

- **Flow 1 ingress (mean 588.61 Mbps)**
- **Flow 1 egress (mean 584.66 Mbps)**

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

- **Flow 1 (95th percentile 236.68 ms)**
Run 3: Statistics of FillP

Start at: 2018-07-06 02:24:52
End at: 2018-07-06 02:25:22
Local clock offset: 0.422 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-07-06 05:46:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 581.54 Mbit/s
95th percentile per-packet one-way delay: 258.348 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 581.54 Mbit/s
95th percentile per-packet one-way delay: 258.348 ms
Loss rate: 0.85%
Run 3: Report of FillP — Data Link

---

**Graph 1:**
Throughput (Mbps) vs. Time (s)
- Flow 1 ingress (mean 584.58 Mbps)
- Flow 1 egress (mean 581.54 Mbps)

**Graph 2:**
Packet one-way delay (ms) vs. Time (s)
- Flow 1 (95th percentile 258.35 ms)
Run 4: Statistics of FillP

Start at: 2018-07-06 02:46:12
End at: 2018-07-06 02:46:42
Local clock offset: 0.094 ms
Remote clock offset: -0.264 ms

# Below is generated by plot.py at 2018-07-06 05:47:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 614.11 Mbit/s
95th percentile per-packet one-way delay: 234.996 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 614.11 Mbit/s
95th percentile per-packet one-way delay: 234.996 ms
Loss rate: 1.16%
Run 4: Report of FillP — Data Link

![Graph of Throughput and Packet Latency](image)

- **Throughput**:
  - Flow 1 ingress (mean 619.19 Mbit/s)
  - Flow 1 egress (mean 614.11 Mbit/s)

- **Packet Latency**: 95th percentile 235.60 ms
Run 5: Statistics of FillP

Start at: 2018-07-06 03:07:52
End at: 2018-07-06 03:08:22
Local clock offset: -0.443 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-07-06 05:47:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 557.37 Mbit/s
95th percentile per-packet one-way delay: 224.928 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 557.37 Mbit/s
95th percentile per-packet one-way delay: 224.928 ms
Loss rate: 0.80%
Run 5: Report of FillP — Data Link

![Graph 1: Throughput](image1)

![Graph 2: Packet Delay](image2)
Run 6: Statistics of FillP

Start at: 2018-07-06 03:29:25
End at: 2018-07-06 03:29:55
Local clock offset: -0.678 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2018-07-06 05:49:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 636.85 Mbit/s
95th percentile per-packet one-way delay: 227.597 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 636.85 Mbit/s
95th percentile per-packet one-way delay: 227.597 ms
Loss rate: 0.85%
Run 6: Report of FillP — Data Link

Throughput (Mbps)

Flow 1 ingress (mean 640.11 Mbit/s)  Flow 1 egress (mean 636.85 Mbit/s)

Round trip delay (ms)

Flow 1 (95th percentile 227.60 ms)
Run 7: Statistics of FillP

Start at: 2018-07-06 03:51:09
End at: 2018-07-06 03:51:39
Local clock offset: -0.469 ms
Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2018-07-06 05:49:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 616.75 Mbit/s
95th percentile per-packet one-way delay: 228.430 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 616.75 Mbit/s
95th percentile per-packet one-way delay: 228.430 ms
Loss rate: 0.67%
Run 7: Report of FillP — Data Link

**Throughput (Mbps)**

- Flow 1 ingress (mean 618.83 Mbit/s)
- Flow 1 egress (mean 616.75 Mbit/s)

**Round-trip delay (ms)**

- Flow 1 (95th percentile 228.43 ms)
Run 8: Statistics of FillP

Start at: 2018-07-06 04:12:42
End at: 2018-07-06 04:13:12
Local clock offset: -0.633 ms
Remote clock offset: 0.186 ms

# Below is generated by plot.py at 2018-07-06 05:49:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 475.96 Mbit/s
95th percentile per-packet one-way delay: 231.909 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 475.96 Mbit/s
95th percentile per-packet one-way delay: 231.909 ms
Loss rate: 0.79%
Run 8: Report of FillP — Data Link

---

**Throughput (Mbps)**

- Flow 1 ingress (mean 478.14 Mbit/s)
- Flow 1 egress (mean 475.96 Mbit/s)

---

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

- Flow 1 (95th percentile 231.93 ms)
Run 9: Statistics of FillP

Start at: 2018-07-06 04:34:13
End at: 2018-07-06 04:34:43
Local clock offset: -1.132 ms
Remote clock offset: 0.332 ms

# Below is generated by plot.py at 2018-07-06 05:57:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 626.13 Mbit/s
95th percentile per-packet one-way delay: 248.538 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 626.13 Mbit/s
95th percentile per-packet one-way delay: 248.538 ms
Loss rate: 0.98%
Run 9: Report of FillP — Data Link

[Graphs showing throughput and packet delay over time]

Flow 1 ingress (mean 630.21 Mbit/s), Flow 1 egress (mean 626.13 Mbit/s), Flow 1 (95th percentile 248.54 ms)
Run 10: Statistics of FillP

Start at: 2018-07-06 04:55:47
End at: 2018-07-06 04:56:17
Local clock offset: 0.278 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-07-06 05:57:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 566.33 Mbit/s
95th percentile per-packet one-way delay: 233.637 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 566.33 Mbit/s
95th percentile per-packet one-way delay: 233.637 ms
Loss rate: 0.83%
Run 10: Report of FillP — Data Link

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

- Flow 1 ingress (mean 569.15 Mbit/s)
- Flow 1 egress (mean 566.33 Mbit/s)

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

- Flow 1 (95th percentile 233.64 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2018-07-06 01:56:05
End at: 2018-07-06 01:56:35
Local clock offset: 0.351 ms
Remote clock offset: 0.027 ms

# Below is generated by plot.py at 2018-07-06 05:57:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.75 Mbit/s
95th percentile per-packet one-way delay: 273.609 ms
Loss rate: 3.93%
-- Flow 1:
Average throughput: 575.75 Mbit/s
95th percentile per-packet one-way delay: 273.609 ms
Loss rate: 3.93%
Run 1: Report of FillP-Sheep — Data Link

[Diagrams showing throughput and per-packet end-to-end delay over time]

Flow 1 ingress (mean 397.32 Mb/s)  Flow 1 egress (mean 575.75 Mb/s)

Flow 1 (95th percentile 273.61 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2018-07-06 02:17:34
End at: 2018-07-06 02:18:04
Local clock offset: 0.07 ms
Remote clock offset: -0.019 ms

# Below is generated by plot.py at 2018-07-06 05:57:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 530.26 Mbit/s
95th percentile per-packet one-way delay: 233.704 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 530.26 Mbit/s
95th percentile per-packet one-way delay: 233.704 ms
Loss rate: 0.79%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2018-07-06 02:38:43
End at: 2018-07-06 02:39:13
Local clock offset: 0.814 ms
Remote clock offset: -0.221 ms

# Below is generated by plot.py at 2018-07-06 05:59:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 608.92 Mbit/s
95th percentile per-packet one-way delay: 232.170 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 608.92 Mbit/s
95th percentile per-packet one-way delay: 232.170 ms
Loss rate: 0.90%
Run 3: Report of FillP-Sheep — Data Link

[Graph of throughput over time with labels: Flow 1 ingress (mean 612.34 Mbit/s), Flow 1 egress (mean 608.92 Mbit/s)]

[Graph of packet delay over time with label: Flow 1 (95th percentile 232.17 ms)]
Run 4: Statistics of FillP-Sheep

Start at: 2018-07-06 03:00:15
End at: 2018-07-06 03:00:45
Local clock offset: -0.212 ms
Remote clock offset: -0.135 ms

# Below is generated by plot.py at 2018-07-06 06:01:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 695.94 Mbit/s
95th percentile per-packet one-way delay: 284.655 ms
Loss rate: 5.62%
-- Flow 1:
Average throughput: 695.94 Mbit/s
95th percentile per-packet one-way delay: 284.655 ms
Loss rate: 5.62%
Run 4: Report of FillP-Sheep — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 734.83 Mbit/s)  Flow 1 egress (mean 695.94 Mbit/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 294.65 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2018-07-06 03:21:57
End at: 2018-07-06 03:22:27
Local clock offset: -0.259 ms
Remote clock offset: 0.032 ms

# Below is generated by plot.py at 2018-07-06 06:01:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.24 Mbit/s
95th percentile per-packet one-way delay: 243.106 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 595.24 Mbit/s
95th percentile per-packet one-way delay: 243.106 ms
Loss rate: 0.81%
Run 5: Report of FillP-Sheep — Data Link
Run 6: Statistics of FillP-Sheep

Start at: 2018-07-06 03:43:31
End at: 2018-07-06 03:44:01
Local clock offset: -0.762 ms
Remote clock offset: 0.097 ms

# Below is generated by plot.py at 2018-07-06 06:03:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 688.55 Mbit/s
95th percentile per-packet one-way delay: 292.969 ms
Loss rate: 2.78%
-- Flow 1:
Average throughput: 688.55 Mbit/s
95th percentile per-packet one-way delay: 292.969 ms
Loss rate: 2.78%
Run 6: Report of FillP-Sheep — Data Link
Run 7: Statistics of FillP-Sheep

Start at: 2018-07-06 04:05:14
End at: 2018-07-06 04:05:44
Local clock offset: -0.92 ms
Remote clock offset: 0.128 ms

# Below is generated by plot.py at 2018-07-06 06:09:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 589.51 Mbit/s
95th percentile per-packet one-way delay: 240.469 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 589.51 Mbit/s
95th percentile per-packet one-way delay: 240.469 ms
Loss rate: 0.91%
Run 7: Report of FillP-Sheep — Data Link

![Graph of throughput and latency over time]

Throughput (Mbps)

- Flow 1 ingress (mean 592.90 Mbps)
- Flow 1 egress (mean 589.51 Mbps)

Latency (ms)

Flow 1 (95th percentile 240.47 ms)
Run 8: Statistics of FillP-Sheep

Start at: 2018-07-06 04:26:43
End at: 2018-07-06 04:27:13
Local clock offset: ~0.693 ms
Remote clock offset: 0.22 ms

# Below is generated by plot.py at 2018-07-06 06:09:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.32 Mbit/s
95th percentile per-packet one-way delay: 242.728 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 595.32 Mbit/s
95th percentile per-packet one-way delay: 242.728 ms
Loss rate: 0.95%
Run 8: Report of FillP-Sheep — Data Link

![Graph of throughput and mean latency over time](image)

- **Flow 1 ingress** (mean 599.05 Mbit/s)
- **Flow 1 egress** (mean 595.32 Mbit/s)

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

- **Flow 1** (95th percentile 242.73 ms)
Run 9: Statistics of FillP-Sheep

Start at: 2018-07-06 04:48:14
End at: 2018-07-06 04:48:44
Local clock offset: -0.23 ms
Remote clock offset: 0.068 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 674.55 Mbit/s
95th percentile per-packet one-way delay: 281.843 ms
Loss rate: 3.05%
-- Flow 1:
Average throughput: 674.55 Mbit/s
95th percentile per-packet one-way delay: 281.843 ms
Loss rate: 3.05%
Run 9: Report of FillP-Sheep — Data Link

![Graph showing throughput over time]

**Throughput (Mbps)**

- Flow 1 ingress (mean 693.42 Mbps)
- Flow 1 egress (mean 674.55 Mbps)

![Graph showing packet drop rate over time]

**Packet drop rate (ms)**

- Flow 1 (95th percentile 281.84 ms)
Run 10: Statistics of FillP-Sheep

Start at: 2018-07-06 05:09:45
End at: 2018-07-06 05:10:15
Local clock offset: 0.083 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 508.10 Mbit/s
95th percentile per-packet one-way delay: 273.800 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 508.10 Mbit/s
95th percentile per-packet one-way delay: 273.800 ms
Loss rate: 2.11%
Run 10: Report of FillP-Sheep — Data Link

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

- Flow 1 ingress (mean 516.20 Mbps)
- Flow 1 egress (mean 508.10 Mbps)

![Graph showing per-packet one-way delay for Flow 1.]

- Flow 1 (95th percentile 273.80 ms)
Run 1: Statistics of Indigo

Start at: 2018-07-06 01:57:35
End at: 2018-07-06 01:58:05
Local clock offset: 0.363 ms
Remote clock offset: -0.034 ms
Run 1: Report of Indigo — Data Link

---

**Graph 1:**

- **Throughput (Mbits/s)** over time (s)
- **Flow 1 ingress (mean 0.00 Mbits/s)**
- **Flow 1 egress (mean 0.00 Mbits/s)**

**Graph 2:**

- **Per packet one-way delay (ms)** over time (s)
- **Flow 1 (95th percentile 50.38 ms)**
Run 2: Statistics of Indigo

Start at: 2018-07-06 02:19:00
End at: 2018-07-06 02:19:30
Local clock offset: 0.392 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.57 Mbit/s
95th percentile per-packet one-way delay: 50.800 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 61.57 Mbit/s
95th percentile per-packet one-way delay: 50.800 ms
Loss rate: 0.34%
Run 2: Report of Indigo — Data Link

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

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

Legend:
- Flow 1 ingress (mean 61.57 Mbit/s)
- Flow 1 egress (mean 61.57 Mbit/s)

Legend:
- Flow 1 (95th percentile 50.80 ms)
Run 3: Statistics of Indigo

Start at: 2018-07-06 02:40:12
End at: 2018-07-06 02:40:42
Local clock offset: 0.466 ms
Remote clock offset: -0.238 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 206.75 Mbit/s
  95th percentile per-packet one-way delay: 51.560 ms
  Loss rate: 0.37%
-- Flow 1:
  Average throughput: 206.75 Mbit/s
  95th percentile per-packet one-way delay: 51.560 ms
  Loss rate: 0.37%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2018-07-06 03:01:50
End at: 2018-07-06 03:02:20
Local clock offset: 0.085 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 193.41 Mbit/s
95th percentile per-packet one-way delay: 51.212 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 193.41 Mbit/s
95th percentile per-packet one-way delay: 51.212 ms
Loss rate: 0.38%
Run 4: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 193.49 Mbit/s)
- Flow 1 egress (mean 193.41 Mbit/s)

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

- Flow 1 (95th percentile 51.21 ms)
Run 5: Statistics of Indigo

Start at: 2018-07-06 03:23:26
End at: 2018-07-06 03:23:56
Local clock offset: -0.623 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.91 Mbit/s
95th percentile per-packet one-way delay: 50.889 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 186.91 Mbit/s
95th percentile per-packet one-way delay: 50.889 ms
Loss rate: 0.37%
Run 5: Report of Indigo — Data Link

![Graph of Throughput](image1)

![Graph of Packet Loss](image2)
Run 6: Statistics of Indigo

Start at: 2018-07-06 03:45:06
End at: 2018-07-06 03:45:36
Local clock offset: -0.437 ms
Remote clock offset: 0.091 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 198.04 Mbit/s
95th percentile per-packet one-way delay: 50.780 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 198.04 Mbit/s
95th percentile per-packet one-way delay: 50.780 ms
Loss rate: 0.36%
Run 7: Statistics of Indigo

Start at: 2018-07-06 04:06:42
End at: 2018-07-06 04:07:12
Local clock offset: -0.927 ms
Remote clock offset: 0.18 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 197.57 Mbit/s
95th percentile per-packet one-way delay: 50.573 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 197.57 Mbit/s
95th percentile per-packet one-way delay: 50.573 ms
Loss rate: 0.37%
Run 7: Report of Indigo — Data Link

Graph 1:
- **Flow 1 ingress** (mean 197.62 Mbit/s)
- **Flow 1 egress** (mean 197.57 Mbit/s)

Graph 2:
- **Flow 1** (95th percentile 50.57 ms)
Run 8: Statistics of Indigo

Start at: 2018-07-06 04:28:12
End at: 2018-07-06 04:28:42
Local clock offset: -1.108 ms
Remote clock offset: 0.291 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 205.44 Mbit/s
95th percentile per-packet one-way delay: 50.336 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 205.44 Mbit/s
95th percentile per-packet one-way delay: 50.336 ms
Loss rate: 0.40%
Run 8: Report of Indigo — Data Link
Run 9: Statistics of Indigo

Start at: 2018-07-06 04:49:48
End at: 2018-07-06 04:50:18
Local clock offset: 0.212 ms
Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.96 Mbit/s
95th percentile per-packet one-way delay: 50.680 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 186.96 Mbit/s
95th percentile per-packet one-way delay: 50.680 ms
Loss rate: 0.34%
Run 9: Report of Indigo — Data Link
Run 10: Statistics of Indigo

Start at: 2018-07-06 05:11:11
End at: 2018-07-06 05:11:41
Local clock offset: -0.259 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 205.79 Mbit/s
95th percentile per-packet one-way delay: 50.359 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 205.79 Mbit/s
95th percentile per-packet one-way delay: 50.359 ms
Loss rate: 0.36%
Run 10: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 205.83 Mbit/s)
- Flow 1 egress (mean 205.79 Mbit/s)

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

- Flow 1 (95th percentile 50.36 ms)
Run 1: Statistics of LEDBAT

Start at: 2018-07-06 01:40:54
End at: 2018-07-06 01:41:24
Local clock offset: 0.349 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.46 Mbit/s
95th percentile per-packet one-way delay: 52.466 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 34.46 Mbit/s
95th percentile per-packet one-way delay: 52.466 ms
Loss rate: 0.68%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2018-07-06 02:02:20
End at: 2018-07-06 02:02:50
Local clock offset: 0.034 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 31.93 Mbit/s
95th percentile per-packet one-way delay: 51.612 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 31.93 Mbit/s
95th percentile per-packet one-way delay: 51.612 ms
Loss rate: 0.70%
Run 2: Report of LEDBAT — Data Link

![Throughput Graph]

![Packet Delay Graph]

- Flow 1 ingress (mean 32.05 Mbit/s)
- Flow 1 egress (mean 31.93 Mbit/s)
- Flow 1 (95th percentile 51.61 ms)
Run 3: Statistics of LEDBAT

Start at: 2018-07-06 02:23:45
End at: 2018-07-06 02:24:15
Local clock offset: 0.445 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.23 Mbit/s
95th percentile per-packet one-way delay: 52.972 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 35.23 Mbit/s
95th percentile per-packet one-way delay: 52.972 ms
Loss rate: 0.67%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2018-07-06 02:45:05
End at: 2018-07-06 02:45:35
Local clock offset: 0.454 ms
Remote clock offset: -0.246 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.51 Mbit/s
95th percentile per-packet one-way delay: 52.475 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 34.51 Mbit/s
95th percentile per-packet one-way delay: 52.475 ms
Loss rate: 0.68%
Run 4: Report of LEDBAT — Data Link

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

![Graph 2: Per-Packet One-Way Delay vs Time](image2)
Run 5: Statistics of LEDBAT

Start at: 2018-07-06 03:06:45  
End at: 2018-07-06 03:07:15  
Local clock offset: -0.401 ms  
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
  -- Total of 1 flow:
  Average throughput: 35.02 Mbit/s  
  95th percentile per-packet one-way delay: 52.033 ms  
  Loss rate: 0.67%
  -- Flow 1:
  Average throughput: 35.02 Mbit/s  
  95th percentile per-packet one-way delay: 52.033 ms  
  Loss rate: 0.67%
Run 5: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 35.13 Mbps)
- Flow 1 egress (mean 35.02 Mbps)

![Graph 2: Packet Delay (ms)](image2)

- Flow 1 (95th percentile 52.03 ms)
Run 6: Statistics of LEDBAT

Start at: 2018-07-06 03:28:18
End at: 2018-07-06 03:28:48
Local clock offset: -0.311 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.49 Mbit/s
95th percentile per-packet one-way delay: 52.846 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 34.49 Mbit/s
95th percentile per-packet one-way delay: 52.846 ms
Loss rate: 0.68%
Run 6: Report of LEDBAT — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 34.60 Mbit/s)
- Flow 1 egress (mean 34.49 Mbit/s)

![Graph 2: Packet Delay vs Time]

- Flow 1 (95th percentile 52.85 ms)
Run 7: Statistics of LEDBAT

Start at: 2018-07-06 03:50:01
End at: 2018-07-06 03:50:31
Local clock offset: -0.808 ms
Remote clock offset: 0.032 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 34.32 Mbit/s
  95th percentile per-packet one-way delay: 51.799 ms
  Loss rate: 0.68%
-- Flow 1:
  Average throughput: 34.32 Mbit/s
  95th percentile per-packet one-way delay: 51.799 ms
  Loss rate: 0.68%
Run 7: Report of LEDBAT — Data Link
Run 8: Statistics of LEDBAT

Start at: 2018-07-06 04:11:35
End at: 2018-07-06 04:12:05
Local clock offset: -0.636 ms
Remote clock offset: 0.213 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.93 Mbit/s
95th percentile per-packet one-way delay: 51.908 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 34.93 Mbit/s
95th percentile per-packet one-way delay: 51.908 ms
Loss rate: 0.67%
Run 8: Report of LEDBAT — Data Link

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

Graph 1: Throughput vs Time

- **Flow 1 ingress (mean 35.04 Mbit/s)**
- **Flow 1 egress (mean 34.93 Mbit/s)**

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

Graph 2: Per-packet one-way delay

- **Flow 1 (95th percentile 51.91 ms)**
Run 9: Statistics of LEDBAT

Start at: 2018-07-06 04:33:06
End at: 2018-07-06 04:33:36
Local clock offset: -1.119 ms
Remote clock offset: 0.272 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 32.96 Mbit/s
  95th percentile per-packet one-way delay: 51.362 ms
  Loss rate: 0.69%
-- Flow 1:
  Average throughput: 32.96 Mbit/s
  95th percentile per-packet one-way delay: 51.362 ms
  Loss rate: 0.69%
Run 9: Report of LEDBAT — Data Link
Run 10: Statistics of LEDBAT

Start at: 2018-07-06 04:54:39
End at: 2018-07-06 04:55:09
Local clock offset: -0.473 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-07-06 06:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.88 Mbit/s
95th percentile per-packet one-way delay: 51.190 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 33.88 Mbit/s
95th percentile per-packet one-way delay: 51.190 ms
Loss rate: 0.68%
Run 10: Report of LEDBAT — Data Link

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

- **Flow 1 ingress** (mean 33.98 Mbit/s)
- **Flow 1 egress** (mean 33.88 Mbit/s)

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

- **Flow 1 (95th percentile 51.19 ms)**
Run 1: Statistics of PCC-Allegro

Start at: 2018-07-06 01:44:47
End at: 2018-07-06 01:45:17
Local clock offset: 0.351 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-07-06 06:14:21
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 280.70 Mbit/s
  95th percentile per-packet one-way delay: 96.631 ms
  Loss rate: 0.51%
-- Flow 1:
  Average throughput: 280.70 Mbit/s
  95th percentile per-packet one-way delay: 96.631 ms
  Loss rate: 0.51%
Run 1: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Flow 1 ingress (mean 281.18 Mbit/s)  Flow 1 egress (mean 280.70 Mbit/s)

Delay (ms)

Flow 1 (95th percentile 96.63 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2018-07-06 02:06:11
End at: 2018-07-06 02:06:41
Local clock offset: 0.35 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-07-06 06:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 295.58 Mbit/s
95th percentile per-packet one-way delay: 59.922 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 295.58 Mbit/s
95th percentile per-packet one-way delay: 59.922 ms
Loss rate: 0.43%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2018-07-06 02:27:36
End at: 2018-07-06 02:28:06
Local clock offset: 0.421 ms
Remote clock offset: -0.194 ms

# Below is generated by plot.py at 2018-07-06 06:15:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 306.42 Mbit/s
95th percentile per-packet one-way delay: 79.826 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 306.42 Mbit/s
95th percentile per-packet one-way delay: 79.826 ms
Loss rate: 0.52%
Run 3: Report of PCC-Allegro — Data Link

---

**Graph 1:**
Throughput (Mbps) vs. Time (s)
- **Flow 1 ingress (mean 306.98 Mbps)**
- **Flow 1 egress (mean 306.42 Mbps)**

**Graph 2:**
Per-packet one-way latency (ms)
- **Flow 1 (95th percentile 79.83 ms)**
Run 4: Statistics of PCC-Allegro

Start at: 2018-07-06 02:48:57
End at: 2018-07-06 02:49:27
Local clock offset: 0.436 ms
Remote clock offset: -0.291 ms

# Below is generated by plot.py at 2018-07-06 06:15:03
# Datalink statistics
   -- Total of 1 flow:
   Average throughput: 288.82 Mbit/s
   95th percentile per-packet one-way delay: 74.445 ms
   Loss rate: 0.39%
   -- Flow 1:
   Average throughput: 288.82 Mbit/s
   95th percentile per-packet one-way delay: 74.445 ms
   Loss rate: 0.39%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2018-07-06 03:10:35
End at: 2018-07-06 03:11:05
Local clock offset: -0.479 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2018-07-06 06:15:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.72 Mbit/s
95th percentile per-packet one-way delay: 77.295 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 296.72 Mbit/s
95th percentile per-packet one-way delay: 77.295 ms
Loss rate: 0.39%
Run 5: Report of PCC-Allegro — Data Link
Run 6: Statistics of PCC-Allegro

Start at: 2018-07-06 03:32:11
End at: 2018-07-06 03:32:41
Local clock offset: ~0.71 ms
Remote clock offset: 0.078 ms

# Below is generated by plot.py at 2018-07-06 06:15:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 250.06 Mbit/s
95th percentile per-packet one-way delay: 57.938 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 250.06 Mbit/s
95th percentile per-packet one-way delay: 57.938 ms
Loss rate: 0.43%
Run 6: Report of PCC-Allegro — Data Link
Run 7: Statistics of PCC-Allegro

Start at: 2018-07-06 03:53:53
End at: 2018-07-06 03:54:23
Local clock offset: -0.431 ms
Remote clock offset: 0.094 ms

# Below is generated by plot.py at 2018-07-06 06:16:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 299.45 Mbit/s
95th percentile per-packet one-way delay: 73.506 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 299.45 Mbit/s
95th percentile per-packet one-way delay: 73.506 ms
Loss rate: 0.47%
Run 7: Report of PCC-Allegro — Data Link

![Graph of Throughput](image)

- Flow 1 ingress (mean 299.84 Mbit/s)
- Flow 1 egress (mean 299.45 Mbit/s)

![Graph of Packet delay](image)

- Flow 1 (95th percentile 73.51 ms)
Run 8: Statistics of PCC-Allegro

Start at: 2018-07-06 04:15:21
End at: 2018-07-06 04:15:52
Local clock offset: -0.992 ms
Remote clock offset: 0.202 ms

# Below is generated by plot.py at 2018-07-06 06:17:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 274.35 Mbit/s
95th percentile per-packet one-way delay: 106.396 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 274.35 Mbit/s
95th percentile per-packet one-way delay: 106.396 ms
Loss rate: 0.38%
Run 8: Report of PCC-Allegro — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Per-packet one-way delay (ms)]
Run 9: Statistics of PCC-Allegro

Start at: 2018-07-06 04:36:59
End at: 2018-07-06 04:37:29
Local clock offset: -0.778 ms
Remote clock offset: 0.333 ms

# Below is generated by plot.py at 2018-07-06 06:18:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 303.59 Mbit/s
95th percentile per-packet one-way delay: 135.375 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 303.59 Mbit/s
95th percentile per-packet one-way delay: 135.375 ms
Loss rate: 0.53%
Run 9: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 304.09 Mbit/s)
- Flow 1 egress (mean 303.59 Mbit/s)

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

- Flow 1 (95th percentile 135.38 ms)
Run 10: Statistics of PCC-Allegro

Start at: 2018-07-06 04:58:29
End at: 2018-07-06 04:58:59
Local clock offset: 0.0 ms
Remote clock offset: 0.038 ms

# Below is generated by plot.py at 2018-07-06 06:18:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 302.48 Mbit/s
95th percentile per-packet one-way delay: 103.100 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 302.48 Mbit/s
95th percentile per-packet one-way delay: 103.100 ms
Loss rate: 0.45%
Run 10: Report of PCC-Allegro — Data Link

![Graph of Throughput (Mbps) over Time (s) showing two flows: Flow 1 ingress (mean 302.81 Mbit/s) and Flow 1 egress (mean 302.48 Mbit/s).]

![Graph of Per Packet Drop with Delay (ms) over Time (s) showing Flow 1 (95th percentile 103.10 ms).]
Run 1: Statistics of PCC-Expr

Start at: 2018-07-06 01:39:30
End at: 2018-07-06 01:40:00
Local clock offset: 0.014 ms
Remote clock offset: 0.013 ms

# Below is generated by plot.py at 2018-07-06 06:21:57
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 237.38 Mbit/s
  95th percentile per-packet one-way delay: 52.332 ms
  Loss rate: 0.37%
-- Flow 1:
  Average throughput: 237.38 Mbit/s
  95th percentile per-packet one-way delay: 52.332 ms
  Loss rate: 0.37%
Run 1: Report of PCC-Expr — Data Link

![Graph of throughput over time showing two lines for ingress and egress with respective mean values.]

![Graph of packet delay over time showing a distribution with 95th percentile delay marked.]
Run 2: Statistics of PCC-Expr

Start at: 2018-07-06 02:00:52
End at: 2018-07-06 02:01:22
Local clock offset: 0.374 ms
Remote clock offset: -0.0 ms

# Below is generated by plot.py at 2018-07-06 06:23:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 283.40 Mbit/s
95th percentile per-packet one-way delay: 68.162 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 283.40 Mbit/s
95th percentile per-packet one-way delay: 68.162 ms
Loss rate: 0.37%
Run 3: Statistics of PCC-Expr

Start at: 2018-07-06 02:22:20
End at: 2018-07-06 02:22:50
Local clock offset: 0.381 ms
Remote clock offset: -0.047 ms

# Below is generated by plot.py at 2018-07-06 06:23:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 227.63 Mbit/s
95th percentile per-packet one-way delay: 51.333 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 227.63 Mbit/s
95th percentile per-packet one-way delay: 51.333 ms
Loss rate: 0.39%
Run 3: Report of PCC-Expr — Data Link

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

- **Flow 1 ingress (mean 227.75 Mbit/s)**
- **Flow 1 egress (mean 227.63 Mbit/s)**

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

- **Flow 1 (95th percentile 51.33 ms)**
Run 4: Statistics of PCC-Expr

Start at: 2018-07-06 02:43:42
End at: 2018-07-06 02:44:12
Local clock offset: 0.453 ms
Remote clock offset: -0.244 ms

# Below is generated by plot.py at 2018-07-06 06:23:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.03 Mbit/s
95th percentile per-packet one-way delay: 57.557 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 224.03 Mbit/s
95th percentile per-packet one-way delay: 57.557 ms
Loss rate: 0.52%
Run 4: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 224.44 Mbps)
- Flow 1 egress (mean 224.03 Mbps)

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

- Flow 1 (95th percentile 57.56 ms)
Run 5: Statistics of PCC-Expr

Start at: 2018-07-06 03:05:19
End at: 2018-07-06 03:05:49
Local clock offset: 0.003 ms
Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2018-07-06 06:23:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 252.32 Mbit/s
95th percentile per-packet one-way delay: 66.527 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 252.32 Mbit/s
95th percentile per-packet one-way delay: 66.527 ms
Loss rate: 0.48%
Run 5: Report of PCC-Expr — Data Link

[Graph 1: Throughput (Mbps) over time with two lines indicating Flow 1 ingress (mean 252.66 Mbps) and Flow 1 egress (mean 252.32 Mbps).]

[Graph 2: Per-packet one-way delay (ms) over time with a line indicating Flow 1 (95th percentile 66.53 ms).]
Run 6: Statistics of PCC-Expr

Start at: 2018-07-06 03:26:54
End at: 2018-07-06 03:27:24
Local clock offset: -0.307 ms
Remote clock offset: 0.079 ms

# Below is generated by plot.py at 2018-07-06 06:24:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 238.91 Mbit/s
95th percentile per-packet one-way delay: 141.186 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 238.91 Mbit/s
95th percentile per-packet one-way delay: 141.186 ms
Loss rate: 0.29%
Run 6: Report of PCC-Expr — Data Link
Run 7: Statistics of PCC-Expr

Start at: 2018-07-06 03:48:35
End at: 2018-07-06 03:49:05
Local clock offset: -0.814 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2018-07-06 06:28:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 293.97 Mbit/s
95th percentile per-packet one-way delay: 232.116 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 293.97 Mbit/s
95th percentile per-packet one-way delay: 232.116 ms
Loss rate: 1.82%
Run 7: Report of PCC-Expr — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 298.43 Mbit/s)  Flow 1 egress (mean 293.97 Mb/s)

Round-trip delay (ms)

Time (s)

Flow 1 (95th percentile 232.12 ms)
Run 8: Statistics of PCC-Expr

Start at: 2018-07-06 04:10:11  
End at: 2018-07-06 04:10:41  
Local clock offset: -0.97 ms  
Remote clock offset: 0.179 ms

# Below is generated by plot.py at 2018-07-06 06:28:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 235.17 Mbit/s  
95th percentile per-packet one-way delay: 51.162 ms  
Loss rate: 0.35%  
-- Flow 1:  
Average throughput: 235.17 Mbit/s  
95th percentile per-packet one-way delay: 51.162 ms  
Loss rate: 0.35%
Run 8: Report of PCC-Expr — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress (mean 235.20 Mbit/s)**
- **Flow 1 egress (mean 235.17 Mbit/s)**

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

- **Flow 1 (95th percentile 51.16 ms)**
Run 9: Statistics of PCC-Expr

Start at: 2018-07-06 04:31:41
End at: 2018-07-06 04:32:11
Local clock offset: -1.138 ms
Remote clock offset: 0.289 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 228.46 Mbit/s
95th percentile per-packet one-way delay: 50.999 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 228.46 Mbit/s
95th percentile per-packet one-way delay: 50.999 ms
Loss rate: 0.41%
Run 9: Report of PCC-Expr — Data Link

[Graph 1: Throughput (Mbps) vs Time (s) for Flow 1 ingress (mean 228.61 Mbps) and Flow 1 egress (mean 228.46 Mbps)]

[Graph 2: Per-packet end-to-end delay (ms) vs Time (s) for Flow 1 (95th percentile 51.00 ms)]
Run 10: Statistics of PCC-Expr

Start at: 2018-07-06 04:53:16
End at: 2018-07-06 04:53:46
Local clock offset: -0.071 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 214.35 Mbit/s
95th percentile per-packet one-way delay: 51.061 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 214.35 Mbit/s
95th percentile per-packet one-way delay: 51.061 ms
Loss rate: 0.39%
Run 10: Report of PCC-Expr — Data Link

![Graph showing throughput and delay over time for data link with flow ingress and egress data.]
Run 1: Statistics of QUIC Cubic

Start at: 2018-07-06 01:50:05
End at: 2018-07-06 01:50:35
Local clock offset: 0.714 ms
Remote clock offset: -0.05 ms
Run 1: Report of QUIC Cubic — Data Link

Graph showing throughput (Mbps) over time (s) for Flow 1 ingress (mean 0.06 Mbps) and Flow 1 egress (mean 0.06 Mbps).

Graph showing ping one-way delay (ms) over time (s) for Flow 1 (95th percentile 51.42 ms).
Run 2: Statistics of QUIC Cubic

Start at: 2018-07-06 02:11:35
End at: 2018-07-06 02:12:05
Local clock offset: 0.789 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.85 Mbit/s
95th percentile per-packet one-way delay: 50.885 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 69.85 Mbit/s
95th percentile per-packet one-way delay: 50.885 ms
Loss rate: 0.39%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2018-07-06 02:32:47
End at: 2018-07-06 02:33:17
Local clock offset: 0.469 ms
Remote clock offset: -0.229 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.70 Mbit/s
95th percentile per-packet one-way delay: 51.127 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 66.70 Mbit/s
95th percentile per-packet one-way delay: 51.127 ms
Loss rate: 0.39%
Run 3: Report of QUIC Cubic — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 65.73 Mbit/s)  
Flow 1 egress (mean 66.70 Mbit/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 51.13 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2018-07-06 02:54:14
End at: 2018-07-06 02:54:44
Local clock offset: 0.42 ms
Remote clock offset: -0.299 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 70.17 Mbit/s
  95th percentile per-packet one-way delay: 50.963 ms
  Loss rate: 0.35%
-- Flow 1:
  Average throughput: 70.17 Mbit/s
  95th percentile per-packet one-way delay: 50.963 ms
  Loss rate: 0.35%
Run 4: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress (mean 70.18 Mbps)**
- **Flow 1 egress (mean 70.17 Mbps)**

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

- **Flow 1 (95th percentile 50.96 ms)**
Run 5: Statistics of QUIC Cubic

Start at: 2018-07-06 03:15:55
End at: 2018-07-06 03:16:25
Local clock offset: -0.181 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.44 Mbit/s
95th percentile per-packet one-way delay: 50.918 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 65.44 Mbit/s
95th percentile per-packet one-way delay: 50.918 ms
Loss rate: 0.42%
Run 5: Report of QUIC Cubic — Data Link
Run 6: Statistics of QUIC Cubic

Start at: 2018-07-06 03:37:35
End at: 2018-07-06 03:38:05
Local clock offset: -0.755 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.53 Mbit/s
95th percentile per-packet one-way delay: 50.207 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 69.53 Mbit/s
95th percentile per-packet one-way delay: 50.207 ms
Loss rate: 0.38%
Run 6: Report of QUIC Cubic — Data Link

![Graph](image)

**Throughput (Mbps)**

- **Flow 1 ingress** (mean 69.56 Mbps)
- **Flow 1 egress** (mean 69.53 Mbps)

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

- **Flow 1** (95th percentile 50.21 ms)
Run 7: Statistics of QUIC Cubic

Start at: 2018-07-06 03:59:16
End at: 2018-07-06 03:59:46
Local clock offset: -0.53 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.09 Mbit/s
95th percentile per-packet one-way delay: 50.537 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 68.09 Mbit/s
95th percentile per-packet one-way delay: 50.537 ms
Loss rate: 0.43%
Run 7: Report of QUIC Cubic — Data Link

**Graph 1:**
Throughput (Mbps)
- **Flow 1 ingress** (mean 68.15 Mbps)
- **Flow 1 egress** (mean 68.09 Mbps)

**Graph 2:**
Packet round-trip delay (ms)
- **Flow 1 95th percentile** 50.54 ms
Run 8: Statistics of QUIC Cubic

Start at: 2018-07-06 04:20:41
End at: 2018-07-06 04:21:11
Local clock offset: -1.057 ms
Remote clock offset: 0.261 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.51 Mbit/s
95th percentile per-packet one-way delay: 50.423 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 67.51 Mbit/s
95th percentile per-packet one-way delay: 50.423 ms
Loss rate: 0.38%
Run 8: Report of QUIC Cubic — Data Link

![Graph showing throughput and packet delay over time]

- Flow 1 ingress (mean 67.53 Mbit/s)
- Flow 1 egress (mean 67.51 Mbit/s)

- Flow 1 (99th percentile 50.42 ms)
Run 9: Statistics of QUIC Cubic

Start at: 2018-07-06 04:42:11
End at: 2018-07-06 04:42:41
Local clock offset: -0.41 ms
Remote clock offset: 0.181 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.84 Mbit/s
95th percentile per-packet one-way delay: 50.268 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 66.84 Mbit/s
95th percentile per-packet one-way delay: 50.268 ms
Loss rate: 0.40%
Run 9: Report of QUIC Cubic — Data Link

![Graph 1](image1.png)

- Flow 1 ingress (mean 66.88 Mbit/s)
- Flow 1 egress (mean 66.84 Mbit/s)

![Graph 2](image2.png)

- Flow 1 (95th percentile 50.27 ms)
Run 10: Statistics of QUIC Cubic

Start at: 2018-07-06 05:03:51
End at: 2018-07-06 05:04:21
Local clock offset: 0.036 ms
Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 50.331 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 50.331 ms
Loss rate: 0.39%
Run 10: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress** (mean 67.49 Mbps)
- **Flow 1 egress** (mean 67.46 Mbps)

![Graph 2: Average packet round trip delay (ms)](image2)

- **Flow 1 95th percentile** 50.33 ms
Run 1: Statistics of SCReAM

Start at: 2018-07-06 01:55:00
End at: 2018-07-06 01:55:30
Local clock offset: 0.029 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.641 ms
  Loss rate: 0.38%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.641 ms
  Loss rate: 0.38%
Run 1: Report of SCReAM — Data Link

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

Flow 1 ingress (mean 0.22 Mbit/s) and Flow 1 egress (mean 0.22 Mbit/s).
Run 2: Statistics of SCReAM

Start at: 2018-07-06 02:16:28
End at: 2018-07-06 02:16:58
Local clock offset: 0.763 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.117 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.117 ms
Loss rate: 0.38%
Run 3: Statistics of SCReAM

Start at: 2018-07-06 02:37:38
End at: 2018-07-06 02:38:08
Local clock offset: 0.446 ms
Remote clock offset: -0.204 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.259 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.259 ms
Loss rate: 0.39%
Run 3: Report of SCReAM — Data Link

---

**Graph 1:**

- X-axis: Time (s)
- Y-axis: Throughput (Mbps)
- Legend:
  - Flow 1 ingress (mean 0.22 Mbit/s)
  - Flow 1 egress (mean 0.22 Mbit/s)

**Graph 2:**

- X-axis: Time (s)
- Y-axis: Per-packet one-way delay (ms)
- Legend:
  - Flow 1 (95th percentile 49.26 ms)
Run 4: Statistics of SCReAM

Start at: 2018-07-06 02:59:09
End at: 2018-07-06 02:59:39
Local clock offset: 0.175 ms
Remote clock offset: -0.164 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.866 ms
  Loss rate: 0.38%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.866 ms
  Loss rate: 0.38%
Run 4: Report of SCReAM — Data Link

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

**Throughput (Mbps)**

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

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

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

- Flow 1 (95th percentile 50.87 ms)
Run 5: Statistics of SCReAM

Start at: 2018-07-06 03:20:52
End at: 2018-07-06 03:21:22
Local clock offset: -0.234 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-06 06:29:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.813 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.813 ms
Loss rate: 0.26%
Run 5: Report of SCReAM — Data Link

Throughput (Mbps) vs Time (s)

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

Packet delay (ms) vs Time (s)

- Flow 1 (95th percentile 49.81 ms)
Run 6: Statistics of SCReAM

Start at: 2018-07-06 03:42:25
End at: 2018-07-06 03:42:55
Local clock offset: -0.788 ms
Remote clock offset: 0.101 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 50.508 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 50.508 ms
Loss rate: 1.04%
Run 6: Report of SCReAM — Data Link
Run 7: Statistics of SCReAM

Start at: 2018-07-06 04:04:09
End at: 2018-07-06 04:04:39
Local clock offset: -0.902 ms
Remote clock offset: 0.149 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.052 ms
  Loss rate: 0.26%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.052 ms
  Loss rate: 0.26%
Run 7: Report of SCReAM — Data Link

![Graph showing network performance metrics](image)

**Throughput (Mbps)** vs **Time (s)**

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

**Per packet end-to-end delay (ms)** vs **Time (s)**

- Flow 1 (95th percentile 50.05 ms)
Run 8: Statistics of SCReAM

Start at: 2018-07-06 04:25:37
End at: 2018-07-06 04:26:07
Local clock offset: −0.333 ms
Remote clock offset: 0.29 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.782 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.782 ms
Loss rate: 0.26%
Run 8: Report of SCReAM — Data Link
Run 9: Statistics of SCReAM

Start at: 2018-07-06 04:47:09
End at: 2018-07-06 04:47:39
Local clock offset: ~0.219 ms
Remote clock offset: 0.096 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.994 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.994 ms
Loss rate: 0.26%
Run 9: Report of SCReAM — Data Link

![Throughput (Mbps)](image1)

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

![Packet Delay (ms)](image2)

- Flow 1 (95th percentile 50.99 ms)
Run 10: Statistics of SCReAM

Start at: 2018-07-06 05:08:40
End at: 2018-07-06 05:09:10
Local clock offset: -0.308 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.997 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.997 ms
Loss rate: 0.26%
Run 10: Report of SCReAM — Data Link

![Graph 1: Throughput Over Time]

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

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

- Flow 1 (95th percentile 50.00 ms)
Run 1: Statistics of Sprout

Start at: 2018-07-06 01:38:24
End at: 2018-07-06 01:38:54
Local clock offset: 0.735 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.77 Mbit/s
95th percentile per-packet one-way delay: 52.150 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 5.77 Mbit/s
95th percentile per-packet one-way delay: 52.150 ms
Loss rate: 0.59%
Run 1: Report of Sprout — Data Link

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

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

Start at: 2018-07-06 01:59:46
End at: 2018-07-06 02:00:16
Local clock offset: 0.397 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 6.91 Mbit/s
  95th percentile per-packet one-way delay: 51.505 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 6.91 Mbit/s
  95th percentile per-packet one-way delay: 51.505 ms
  Loss rate: 0.12%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2018-07-06 02:21:14
End at: 2018-07-06 02:21:44
Local clock offset: 0.425 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 51.368 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 51.368 ms
Loss rate: 0.01%
Run 3: Report of Sprout — Data Link

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**Throughput (Mbps)**

- **Flow 1 ingress (mean 3.91 Mbps)**
- **Flow 1 egress (mean 3.92 Mbps)**

---

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

- **Flow 1 (95th percentile 51.37 ms)**

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Run 4: Statistics of Sprout

Start at: 2018-07-06 02:42:36
End at: 2018-07-06 02:43:06
Local clock offset: 0.434 ms
Remote clock offset: -0.226 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 51.832 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 51.832 ms
Loss rate: 0.52%
Run 4: Report of Sprout — Data Link

![Graph of throughput and packet delay over time]

Throughput (Mbps):

- Flow 1 ingress (mean 7.30 Mbps)
- Flow 1 egress (mean 7.30 Mbps)

Packet delay (ms):

- Flow 1 95th percentile 51.83 ms
Run 5: Statistics of Sprout

Start at: 2018-07-06 03:04:13
End at: 2018-07-06 03:04:43
Local clock offset: 0.023 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 51.861 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 51.861 ms
Loss rate: 0.52%
Run 5: Report of Sprout — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 5.57 Mbit/s)  Flow 1 egress (mean 5.56 Mbit/s)

Packet one way delay (ms)

Time (s)

Flow 1 (99th percentile 31.86 ms)
Run 6: Statistics of Sprout

Start at: 2018-07-06 03:25:48
End at: 2018-07-06 03:26:18
Local clock offset: -0.283 ms
Remote clock offset: 0.077 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 52.048 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 52.048 ms
Loss rate: 0.00%
Run 6: Report of Sprout — Data Link

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

- **Flow 1 ingress (mean 5.79 Mbit/s)**
- **Flow 1 egress (mean 5.81 Mbit/s)**
Run 7: Statistics of Sprout

Start at: 2018-07-06 03:47:29
End at: 2018-07-06 03:47:59
Local clock offset: ~0.443 ms
Remote clock offset: 0.094 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 7.06 Mbit/s
  95th percentile per-packet one-way delay: 51.489 ms
  Loss rate: 0.20%
-- Flow 1:
  Average throughput: 7.06 Mbit/s
  95th percentile per-packet one-way delay: 51.489 ms
  Loss rate: 0.20%
Run 7: Report of Sprout — Data Link

Graph 1: Throughput (Mbps/s) over time (s) for Flow 1 ingress (mean 7.05 Mbps/s) and Flow 1 egress (mean 7.06 Mbps/s).

Graph 2: Packet error rate and one-way delay (ms) for Flow 1 (90th percentile 31.49 ms).
Run 8: Statistics of Sprout

Start at: 2018-07-06 04:09:05
End at: 2018-07-06 04:09:35
Local clock offset: -0.97 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 51.155 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 51.155 ms
Loss rate: 0.06%
Run 8: Report of Sprout — Data Link

![Graph of Throughput and Delay]

- **Throughput (Mbps)**: The graph shows the throughput over time for two data flows. The throughput fluctuates significantly, with both flows reaching peak values and experiencing drops.

- **Delay (ms)**: The lower graph illustrates the round-trip delay for the same data flows. The delay remains relatively consistent with some variation, indicating a stable link with occasional glitches.
Run 9: Statistics of Sprout

Start at: 2018-07-06 04:30:35  
End at: 2018-07-06 04:31:05  
Local clock offset: -0.76 ms  
Remote clock offset: 0.334 ms  

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 50.936 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 50.936 ms
Loss rate: 0.31%
Run 9: Report of Sprout — Data Link

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

- **Flow 1 ingress (mean 6.04 Mbit/s)**
- **Flow 1 egress (mean 6.04 Mbit/s)**

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

- **Flow 1 (99th percentile 50.94 ms)**
Run 10: Statistics of Sprout

Start at: 2018-07-06 04:52:10
End at: 2018-07-06 04:52:40
Local clock offset: -0.119 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2018-07-06 06:29:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.10 Mbit/s
95th percentile per-packet one-way delay: 50.865 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 7.10 Mbit/s
95th percentile per-packet one-way delay: 50.865 ms
Loss rate: 0.23%
Run 10: Report of Sprout — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 7.10 Mbps)
  - Flow 1 egress (mean 7.10 Mbps)

- **Packet Delay (ms):**
  - Flow 1 (95th percentile 50.87 ms)
Run 1: Statistics of TaoVA-100x

Start at: 2018-07-06 01:46:02
End at: 2018-07-06 01:46:32
Local clock offset: 0.325 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2018-07-06 06:33:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.60 Mbit/s
95th percentile per-packet one-way delay: 51.344 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 221.60 Mbit/s
95th percentile per-packet one-way delay: 51.344 ms
Loss rate: 0.34%
Run 1: Report of TaoVA-100x — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 221.60 Mbit/s)  Flow 1 egress (mean 221.60 Mbit/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 51.34 ms)
Run 2: Statistics of TaoVA-100x

Start at: 2018-07-06 02:07:26
End at: 2018-07-06 02:07:56
Local clock offset: 0.391 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2018-07-06 06:34:35
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 245.77 Mbit/s
  95th percentile per-packet one-way delay: 51.058 ms
  Loss rate: 0.35%
-- Flow 1:
  Average throughput: 245.77 Mbit/s
  95th percentile per-packet one-way delay: 51.058 ms
  Loss rate: 0.35%
Run 2: Report of TaoVA-100x — Data Link

![Graph of throughput and delay]

**Throughput (Mbps)**

- Flow 1 ingress (mean 245.81 Mbit/s)
- Flow 1 egress (mean 245.77 Mbit/s)

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

- Flow 1 (95th percentile 51.06 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2018-07-06 02:28:51
End at: 2018-07-06 02:29:21
Local clock offset: 0.022 ms
Remote clock offset: -0.188 ms

# Below is generated by plot.py at 2018-07-06 06:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 140.10 Mbit/s
95th percentile per-packet one-way delay: 50.860 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 140.10 Mbit/s
95th percentile per-packet one-way delay: 50.860 ms
Loss rate: 0.03%
Run 3: Report of TaoVA-100x — Data Link

![Graph 1: Throughput vs Time]

- **Flow 1 ingress (mean 139.66 Mbit/s)**
- **Flow 1 egress (mean 140.10 Mbit/s)**

![Graph 2: Packet Delay vs Time]

- **Flow 1 (95th percentile 50.86 ms)**
Run 4: Statistics of TaoVA-100x

Start at: 2018-07-06 02:50:12
End at: 2018-07-06 02:50:42
Local clock offset: 0.453 ms
Remote clock offset: -0.242 ms

# Below is generated by plot.py at 2018-07-06 06:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 241.42 Mbit/s
95th percentile per-packet one-way delay: 51.442 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 241.42 Mbit/s
95th percentile per-packet one-way delay: 51.442 ms
Loss rate: 0.33%
Run 4: Report of TaoVA-100x — Data Link

![Graph 1: Throughput (Mbps)]

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

Flow 1: Ingress (mean 241.38 Mbps) and Egress (mean 241.42 Mbps)

Flow 1: 95th percentile 51.44 ms
Run 5: Statistics of TaoVA-100x

Start at: 2018-07-06 03:11:51
End at: 2018-07-06 03:12:21
Local clock offset: -0.509 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-07-06 06:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.29 Mbit/s
95th percentile per-packet one-way delay: 51.185 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 184.29 Mbit/s
95th percentile per-packet one-way delay: 51.185 ms
Loss rate: 0.47%
Run 5: Report of TaoVA-100x — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 184.53 Mbit/s)  Flow 1 egress (mean 184.29 Mbit/s)

One-way delay (ms)

Time (s)

Flow 1 (99th percentile 51.19 ms)
Run 6: Statistics of TaoVA-100x

Start at: 2018-07-06 03:33:26
End at: 2018-07-06 03:33:56
Local clock offset: -0.716 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2018-07-06 06:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 235.54 Mbit/s
95th percentile per-packet one-way delay: 50.799 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 235.54 Mbit/s
95th percentile per-packet one-way delay: 50.799 ms
Loss rate: 0.37%
Run 6: Report of TaoVA-100x — Data Link
Run 7: Statistics of TaoVA-100x

Start at: 2018-07-06 03:55:14
End at: 2018-07-06 03:55:44
Local clock offset: -0.154 ms
Remote clock offset: 0.165 ms

# Below is generated by plot.py at 2018-07-06 06:36:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 236.77 Mbit/s
95th percentile per-packet one-way delay: 51.488 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 236.77 Mbit/s
95th percentile per-packet one-way delay: 51.488 ms
Loss rate: 0.35%
Run 7: Report of TaoVA-100x — Data Link
Run 8: Statistics of TaoVA-100x

Start at: 2018-07-06 04:16:36
End at: 2018-07-06 04:17:06
Local clock offset: -0.634 ms
Remote clock offset: 0.207 ms

# Below is generated by plot.py at 2018-07-06 06:37:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.19 Mbit/s
95th percentile per-packet one-way delay: 50.976 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 245.19 Mbit/s
95th percentile per-packet one-way delay: 50.976 ms
Loss rate: 0.30%
Run 8: Report of TaoVA-100x — Data Link
Run 9: Statistics of TaoVA-100x

Start at: 2018-07-06 04:38:14
End at: 2018-07-06 04:38:44
Local clock offset: -0.641 ms
Remote clock offset: 0.239 ms

# Below is generated by plot.py at 2018-07-06 06:39:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 242.49 Mbit/s
95th percentile per-packet one-way delay: 50.808 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 242.49 Mbit/s
95th percentile per-packet one-way delay: 50.808 ms
Loss rate: 0.39%
Run 9: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 242.61 Mbit/s)
- Flow 1 egress (mean 242.49 Mbit/s)

![Graph 2: Packet End-to-End Delay (ms)](image2)

- Flow 1 (95th percentile 50.81 ms)

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Run 10: Statistics of TaoVA-100x

Start at: 2018-07-06 04:59:45
End at: 2018-07-06 05:00:15
Local clock offset: -0.379 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 237.68 Mbit/s
95th percentile per-packet one-way delay: 50.640 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 237.68 Mbit/s
95th percentile per-packet one-way delay: 50.640 ms
Loss rate: 0.31%
Run 10: Report of TaoVA-100x — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 237.62 Mbps)
- Flow 1 egress (mean 237.68 Mbps)

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

- Flow 1 (95th percentile 50.64 ms)
Run 1: Statistics of TCP Vegas

Start at: 2018-07-06 01:53:48
End at: 2018-07-06 01:54:18
Local clock offset: 0.019 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 155.51 Mbit/s
95th percentile per-packet one-way delay: 51.464 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 155.51 Mbit/s
95th percentile per-packet one-way delay: 51.464 ms
Loss rate: 0.35%
Run 1: Report of TCP Vegas — Data Link

[Graph showing throughput and packet delay over time]

Flow 1 ingress (mean 155.54 Mbit/s) Flow 1 egress (mean 155.51 Mbit/s)

Flow 1 (95th percentile 51.46 ms)
Run 2: Statistics of TCP Vegas

Start at: 2018-07-06 02:15:18
End at: 2018-07-06 02:15:48
Local clock offset: 0.413 ms
Remote clock offset: -0.043 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 98.95 Mbit/s
95th percentile per-packet one-way delay: 51.603 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 98.95 Mbit/s
95th percentile per-packet one-way delay: 51.603 ms
Loss rate: 0.35%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2018-07-06 02:36:30
End at: 2018-07-06 02:37:00
Local clock offset: 0.452 ms
Remote clock offset: -0.208 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.33 Mbit/s
95th percentile per-packet one-way delay: 53.647 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 54.33 Mbit/s
95th percentile per-packet one-way delay: 53.647 ms
Loss rate: 0.24%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2018-07-06 02:57:54
End at: 2018-07-06 02:58:24
Local clock offset: 0.237 ms
Remote clock offset: -0.179 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 223.48 Mbit/s
95th percentile per-packet one-way delay: 63.356 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 223.48 Mbit/s
95th percentile per-packet one-way delay: 63.356 ms
Loss rate: 0.36%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2018-07-06 03:19:38
End at: 2018-07-06 03:20:08
Local clock offset: -0.236 ms
Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.93 Mbit/s
95th percentile per-packet one-way delay: 63.196 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 187.93 Mbit/s
95th percentile per-packet one-way delay: 63.196 ms
Loss rate: 0.16%
Run 5: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay over time for TCP Vegas with two graphs depicting flow ingress and egress. The graphs show a sudden drop in throughput and an increase in packet delay around the 25th second.]
Run 6: Statistics of TCP Vegas

Start at: 2018-07-06 03:41:16
End at: 2018-07-06 03:41:46
Local clock offset: -0.431 ms
Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.62 Mbit/s
95th percentile per-packet one-way delay: 58.883 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 77.62 Mbit/s
95th percentile per-packet one-way delay: 58.883 ms
Loss rate: 0.31%
Run 6: Report of TCP Vegas — Data Link

---

**Throughput (Mbps)**

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 1 ingress (mean 77.59 Mbit/s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow 1 egress (mean 77.62 Mbit/s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Per-packet delivery delay (ms)**

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 1 (95th percentile 58.88 ms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Run 7: Statistics of TCP Vegas

Start at: 2018-07-06 04:03:00
End at: 2018-07-06 04:03:30
Local clock offset: -0.549 ms
Remote clock offset: 0.096 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 70.01 Mbit/s
  95th percentile per-packet one-way delay: 52.049 ms
  Loss rate: 0.32%
-- Flow 1:
  Average throughput: 70.01 Mbit/s
  95th percentile per-packet one-way delay: 52.049 ms
  Loss rate: 0.32%
Run 8: Statistics of TCP Vegas

Start at: 2018-07-06 04:24:25
End at: 2018-07-06 04:24:55
Local clock offset: -1.057 ms
Remote clock offset: 0.27 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 158.20 Mbit/s
  95th percentile per-packet one-way delay: 51.002 ms
  Loss rate: 0.19%
-- Flow 1:
  Average throughput: 158.20 Mbit/s
  95th percentile per-packet one-way delay: 51.002 ms
  Loss rate: 0.19%
Run 8: Report of TCP Vegas — Data Link

![Graph of throughput over time with two lines representing flow ingress and egress, with mean values indicated.]

![Graph of packet delay per packet over time with a line representing the 95th percentile of delay.]
Run 9: Statistics of TCP Vegas

Start at: 2018-07-06 04:45:56
End at: 2018-07-06 04:46:26
Local clock offset: -0.28 ms
Remote clock offset: 0.153 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 160.98 Mbit/s
95th percentile per-packet one-way delay: 51.272 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 160.98 Mbit/s
95th percentile per-packet one-way delay: 51.272 ms
Loss rate: 0.36%
Run 9: Report of TCP Vegas — Data Link
Run 10: Statistics of TCP Vegas

Start at: 2018-07-06 05:07:31
End at: 2018-07-06 05:08:01
Local clock offset: 0.425 ms
Remote clock offset: 0.014 ms

# Below is generated by plot.py at 2018-07-06 06:40:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.75 Mbit/s
95th percentile per-packet one-way delay: 52.392 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 62.75 Mbit/s
95th percentile per-packet one-way delay: 52.392 ms
Loss rate: 0.32%
Run 10: Report of TCP Vegas — Data Link

![Graph 1: Throughput (Mbps)](chart1.png)

- **Flow 1 ingress (mean 62.74 Mbit/s)**
- **Flow 1 egress (mean 62.75 Mbit/s)**

![Graph 2: Per-packet one-way delay (ms)](chart2.png)

- **Flow 1 (95th percentile 52.39 ms)**
Run 1: Statistics of Verus

Start at: 2018-07-06 01:52:26
End at: 2018-07-06 01:52:56
Local clock offset: 0.387 ms
Remote clock offset: 0.06 ms

# Below is generated by plot.py at 2018-07-06 06:42:31
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 272.24 Mbit/s
  95th percentile per-packet one-way delay: 197.874 ms
  Loss rate: 0.39%
-- Flow 1:
  Average throughput: 272.24 Mbit/s
  95th percentile per-packet one-way delay: 197.874 ms
  Loss rate: 0.39%
Run 1: Report of Verus — Data Link

![Graph showing throughput and packet delay over time](image-url)
Run 2: Statistics of Verus

Start at: 2018-07-06 02:14:00
End at: 2018-07-06 02:14:30
Local clock offset: 0.759 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-07-06 06:42:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 217.08 Mbit/s
95th percentile per-packet one-way delay: 102.507 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 217.08 Mbit/s
95th percentile per-packet one-way delay: 102.507 ms
Loss rate: 0.93%
Run 2: Report of Verus — Data Link

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

- **Flow 1 ingress** (mean 218.36 Mbit/s)
- **Flow 1 egress** (mean 217.08 Mbit/s)

![Graph 2: Per-Packet One-Way Delay vs. Time](image2)

- **Flow 1 (95th percentile 102.53 ms)**
Run 3: Statistics of Verus

Start at: 2018-07-06 02:35:10
End at: 2018-07-06 02:35:40
Local clock offset: 0.441 ms
Remote clock offset: -0.21 ms

# Below is generated by plot.py at 2018-07-06 06:43:17
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 239.89 Mbit/s
  95th percentile per-packet one-way delay: 96.350 ms
  Loss rate: 0.34%
-- Flow 1:
  Average throughput: 239.89 Mbit/s
  95th percentile per-packet one-way delay: 96.350 ms
  Loss rate: 0.34%
Run 3: Report of Verus — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 240.35 Mbit/s)  Flow 1 egress (mean 239.89 Mbit/s)

Per packet one way delay (ms)

Flow 1 (95th percentile 96.35 ms)
Run 4: Statistics of Verus

Start at: 2018-07-06 02:56:37
End at: 2018-07-06 02:57:07
Local clock offset: 0.329 ms
Remote clock offset: -0.198 ms

# Below is generated by plot.py at 2018-07-06 06:43:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 185.08 Mbit/s
95th percentile per-packet one-way delay: 97.727 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 185.08 Mbit/s
95th percentile per-packet one-way delay: 97.727 ms
Loss rate: 0.02%
Run 4: Report of Verus — Data Link

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

- Flow 1 ingress (mean 184.48 Mbit/s)
- Flow 1 egress (mean 185.08 Mbit/s)

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

- Flow 1 (95th percentile 97.73 ms)
Run 5: Statistics of Verus

Start at: 2018-07-06 03:18:17
End at: 2018-07-06 03:18:47
Local clock offset: -0.284 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-06 06:43:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.95 Mbit/s
95th percentile per-packet one-way delay: 83.465 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 245.95 Mbit/s
95th percentile per-packet one-way delay: 83.465 ms
Loss rate: 0.74%
Run 5: Report of Verus — Data Link

![Graph of throughput and packet delay over time for flow 1, showing ingress and egress rates, and 95th percentile delay.](image-url)
Run 6: Statistics of Verus

Start at: 2018-07-06 03:39:57
End at: 2018-07-06 03:40:27
Local clock offset: -0.774 ms
Remote clock offset: 0.044 ms

# Below is generated by plot.py at 2018-07-06 06:43:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.92 Mbit/s
95th percentile per-packet one-way delay: 85.527 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 220.92 Mbit/s
95th percentile per-packet one-way delay: 85.527 ms
Loss rate: 0.86%
Run 6: Report of Verus — Data Link

![Graph of throughput and packet delay over time]

- Flow 1 ingress (mean 222.08 Mbit/s)
- Flow 1 egress (mean 220.92 Mbit/s)
- Flow 1 (95th percentile 85.53 ms)
Run 7: Statistics of Verus

Start at: 2018-07-06 04:01:40
End at: 2018-07-06 04:02:10
Local clock offset: -0.539 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-07-06 06:44:05
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 241.23 Mbit/s
  95th percentile per-packet one-way delay: 96.356 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 241.23 Mbit/s
  95th percentile per-packet one-way delay: 96.356 ms
  Loss rate: 0.71%
Run 7: Report of Verus — Data Link

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

- **Throughput (left graph):**
  - Flow 1 ingress (mean 242.14 Mbit/s)
  - Flow 1 egress (mean 241.23 Mbit/s)

- **Packet Delay (right graph):**
  - Flow 1 (95th percentile 98.36 ms)
Run 8: Statistics of Verus

Start at: 2018-07-06 04:23:06
End at: 2018-07-06 04:23:36
Local clock offset: -0.702 ms
Remote clock offset: 0.361 ms

# Below is generated by plot.py at 2018-07-06 06:44:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.34 Mbit/s
95th percentile per-packet one-way delay: 96.084 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 219.34 Mbit/s
95th percentile per-packet one-way delay: 96.084 ms
Loss rate: 0.27%
Run 8: Report of Verus — Data Link
Run 9: Statistics of Verus

Start at: 2018-07-06 04:44:36
End at: 2018-07-06 04:45:06
Local clock offset: -0.315 ms
Remote clock offset: 0.099 ms

# Below is generated by plot.py at 2018-07-06 06:46:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.42 Mbit/s
95th percentile per-packet one-way delay: 93.964 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 239.42 Mbit/s
95th percentile per-packet one-way delay: 93.964 ms
Loss rate: 0.81%
Run 9: Report of Verus — Data Link

![Graph showing data throughput and packet delay over time. The graph has two lines indicating flow ingress and egress rates with mean values provided.](image-url)
Run 10: Statistics of Verus

Start at: 2018-07-06 05:06:13
End at: 2018-07-06 05:06:43
Local clock offset: 0.064 ms
Remote clock offset: 0.031 ms

# Below is generated by plot.py at 2018-07-06 06:46:15
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 217.65 Mbit/s
  95th percentile per-packet one-way delay: 101.186 ms
  Loss rate: 0.44%
-- Flow 1:
  Average throughput: 217.65 Mbit/s
  95th percentile per-packet one-way delay: 101.186 ms
  Loss rate: 0.44%
Run 10: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2018-07-06 01:47:26
End at: 2018-07-06 01:47:56
Local clock offset: 0.375 ms
Remote clock offset: 0.04 ms

# Below is generated by plot.py at 2018-07-06 06:47:41
# Datalink statistics
"""-- Total of 1 flow:
Average throughput: 297.08 Mbit/s
95th percentile per-packet one-way delay: 51.317 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 297.08 Mbit/s
95th percentile per-packet one-way delay: 51.317 ms
Loss rate: 0.34%"""
Run 1: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 297.06 Mbit/s)
- Flow 1 egress (mean 297.08 Mbit/s)

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

- Flow 1 (95th percentile 51.32 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-07-06 02:08:52
End at: 2018-07-06 02:09:22
Local clock offset: 0.451 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-07-06 06:48:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 312.21 Mbit/s
95th percentile per-packet one-way delay: 52.033 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 312.21 Mbit/s
95th percentile per-packet one-way delay: 52.033 ms
Loss rate: 0.40%
Run 2: Report of PCC-Vivace — Data Link

![Graph 1: Throughput vs Time]

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

Flow 1 ingress (mean 312.39 Mbit/s) and Flow 1 egress (mean 312.21 Mbit/s)

Flow 1 (95th percentile 52.03 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2018-07-06 02:30:08
End at: 2018-07-06 02:30:38
Local clock offset: 0.09 ms
Remote clock offset: -0.145 ms

# Below is generated by plot.py at 2018-07-06 06:48:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 277.04 Mbit/s
95th percentile per-packet one-way delay: 130.222 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 277.04 Mbit/s
95th percentile per-packet one-way delay: 130.222 ms
Loss rate: 0.41%
Run 3: Report of PCC-Vivace — Data Link

![Graph 1: Throughput (Mbps)]

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

- Flow 1 ingress (mean 277.24 Mbit/s)
- Flow 1 egress (mean 277.04 Mbit/s)
- Flow 1 (95th percentile 130.22 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2018-07-06 02:51:37
End at: 2018-07-06 02:52:07
Local clock offset: 0.412 ms
Remote clock offset: -0.254 ms

# Below is generated by plot.py at 2018-07-06 06:48:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.86 Mbit/s
95th percentile per-packet one-way delay: 51.717 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 245.86 Mbit/s
95th percentile per-packet one-way delay: 51.717 ms
Loss rate: 0.49%
Run 4: Report of PCC-Vivace — Data Link
Run 5: Statistics of PCC-Vivace

Start at: 2018-07-06 03:13:12
End at: 2018-07-06 03:13:42
Local clock offset: -0.548 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2018-07-06 06:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 352.23 Mbit/s
95th percentile per-packet one-way delay: 50.891 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 352.23 Mbit/s
95th percentile per-packet one-way delay: 50.891 ms
Loss rate: 0.40%
Run 5: Report of PCC-Vivace — Data Link

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

[Graph 2: Per packet one way delay (ms) vs Time (s)]
Run 6: Statistics of PCC-Vivace

Start at: 2018-07-06 03:34:51
End at: 2018-07-06 03:35:21
Local clock offset: -0.004 ms
Remote clock offset: 0.073 ms

# Below is generated by plot.py at 2018-07-06 06:50:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 353.60 Mbit/s
95th percentile per-packet one-way delay: 52.028 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 353.60 Mbit/s
95th percentile per-packet one-way delay: 52.028 ms
Loss rate: 0.35%
Run 6: Report of PCC-Vivace — Data Link

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

- **Flow 1 ingress (mean 353.62 Mbit/s)**
- **Flow 1 egress (mean 353.60 Mbit/s)**

- **Flow 1 (95th percentile 52.03 ms)**
Run 7: Statistics of PCC-Vivace

Start at: 2018-07-06 03:56:39
End at: 2018-07-06 03:57:09
Local clock offset: -0.512 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-07-06 06:50:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 271.52 Mbit/s
95th percentile per-packet one-way delay: 49.372 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 271.52 Mbit/s
95th percentile per-packet one-way delay: 49.372 ms
Loss rate: 0.43%
Run 7: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 271.79 Mbit/s)
- Flow 1 egress (mean 271.52 Mbit/s)

![Graph showing per packet one-way delay](image-url)

- Flow 1 (95th percentile 49.37 ms)
Run 8: Statistics of PCC-Vivace

Start at: 2018-07-06 04:18:01
End at: 2018-07-06 04:18:31
Local clock offset: -0.653 ms
Remote clock offset: 0.218 ms

# Below is generated by plot.py at 2018-07-06 06:51:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.65 Mbit/s
95th percentile per-packet one-way delay: 54.097 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 372.65 Mbit/s
95th percentile per-packet one-way delay: 54.097 ms
Loss rate: 0.37%
Run 8: Report of PCC-Vivace — Data Link
Run 9: Statistics of PCC-Vivace

Start at: 2018-07-06 04:39:40
End at: 2018-07-06 04:40:10
Local clock offset: -0.546 ms
Remote clock offset: 0.261 ms

# Below is generated by plot.py at 2018-07-06 06:51:11
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 318.40 Mbit/s
  95th percentile per-packet one-way delay: 53.642 ms
  Loss rate: 0.35%
-- Flow 1:
  Average throughput: 318.40 Mbit/s
  95th percentile per-packet one-way delay: 53.642 ms
  Loss rate: 0.35%
Run 9: Report of PCC-Vivace — Data Link

![Graph showing throughput and packet delay over time for two flows.](image)
Run 10: Statistics of PCC-Vivace

Start at: 2018-07-06 05:01:09
End at: 2018-07-06 05:01:39
Local clock offset: -0.015 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 326.17 Mbit/s
95th percentile per-packet one-way delay: 50.865 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 326.17 Mbit/s
95th percentile per-packet one-way delay: 50.865 ms
Loss rate: 0.47%
Run 10: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2018-07-06 01:37:19
End at: 2018-07-06 01:37:49
Local clock offset: -0.034 ms
Remote clock offset: -0.007 ms
Run 1: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 0.07 Mbit/s)
- Flow 1 egress (mean 0.07 Mbit/s)

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

- Flow 1 (95th percentile 71.59 ms)
Run 2: Statistics of WebRTC media

Start at: 2018-07-06 01:58:40  
End at: 2018-07-06 01:59:10  
Local clock offset: 0.684 ms  
Remote clock offset: 0.024 ms

# Below is generated by plot.py at 2018-07-06 06:51:13  
# Datalink statistics

-- Total of 1 flow:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 51.281 ms
Loss rate: 0.43%

-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 51.281 ms
Loss rate: 0.43%
Run 2: Report of WebRTC media — Data Link

```
<table>
<thead>
<tr>
<th>Time (s)</th>
<th>Throughput (Mbit/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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</tr>
<tr>
<td>5</td>
<td>2.5</td>
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<tr>
<td>10</td>
<td>1.5</td>
</tr>
<tr>
<td>15</td>
<td>1.0</td>
</tr>
<tr>
<td>20</td>
<td>0.5</td>
</tr>
<tr>
<td>25</td>
<td>0.0</td>
</tr>
<tr>
<td>30</td>
<td>0.0</td>
</tr>
</tbody>
</table>
```

**Flow 1 ingress** (mean 1.91 Mbit/s) vs **Flow 1 egress** (mean 1.91 Mbit/s)

```
<table>
<thead>
<tr>
<th>Time (s)</th>
<th>Per packet one-way delay (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>52</td>
</tr>
<tr>
<td>10</td>
<td>54</td>
</tr>
<tr>
<td>15</td>
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<td>58</td>
</tr>
<tr>
<td>25</td>
<td>60</td>
</tr>
<tr>
<td>30</td>
<td>62</td>
</tr>
</tbody>
</table>
```

**Flow 1** (95th percentile 51.28 ms)
Run 3: Statistics of WebRTC media

Start at: 2018-07-06 02:20:09
End at: 2018-07-06 02:20:39
Local clock offset: 0.452 ms
Remote clock offset: -0.039 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 51.090 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 51.090 ms
Loss rate: 0.37%
Run 3: Report of WebRTC media — Data Link
Run 4: Statistics of WebRTC media

Start at: 2018-07-06 02:41:30
End at: 2018-07-06 02:42:00
Local clock offset: 0.447 ms
Remote clock offset: -0.262 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 51.019 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 51.019 ms
Loss rate: 0.36%
Run 4: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.93 Mbit/s)
- Flow 1 egress (mean 1.93 Mbit/s)

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

- Flow 1 (95th percentile 51.02 ms)
Run 5: Statistics of WebRTC media

Start at: 2018-07-06 03:03:07
End at: 2018-07-06 03:03:37
Local clock offset: 0.038 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 50.983 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 50.983 ms
Loss rate: 0.48%
Run 5: Report of WebRTC media — Data Link
Run 6: Statistics of WebRTC media

Start at: 2018-07-06 03:24:42
End at: 2018-07-06 03:25:12
Local clock offset: -0.292 ms
Remote clock offset: 0.068 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 1.91 Mbit/s
  95th percentile per-packet one-way delay: 51.147 ms
  Loss rate: 0.37%
-- Flow 1:
  Average throughput: 1.91 Mbit/s
  95th percentile per-packet one-way delay: 51.147 ms
  Loss rate: 0.37%
Run 6: Report of WebRTC media — Data Link

![Graph showing throughput over time for WebRTC media]
Run 7: Statistics of WebRTC media

Start at: 2018-07-06 03:46:23
End at: 2018-07-06 03:46:53
Local clock offset: -0.445 ms
Remote clock offset: 0.203 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
  Average throughput: 1.96 Mbit/s
  95th percentile per-packet one-way delay: 50.405 ms
  Loss rate: 0.37%
-- Flow 1:
  Average throughput: 1.96 Mbit/s
  95th percentile per-packet one-way delay: 50.405 ms
  Loss rate: 0.37%
Run 7: Report of WebRTC media — Data Link

![Graph showing throughput and delay over time.]

**Throughput (Mbps)**

- **Flow 1 ingress (mean 1.96 Mbps)**
- **Flow 1 egress (mean 1.96 Mbps)**

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

- **Flow 1 (95th percentile 50.41 ms)**

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Run 8: Statistics of WebRTC media

Start at: 2018-07-06 04:07:59
End at: 2018-07-06 04:08:29
Local clock offset: -0.568 ms
Remote clock offset: 0.161 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 50.632 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 50.632 ms
Loss rate: 0.37%
Run 8: Report of WebRTC media — Data Link

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

- **Flow 1 ingress** (mean 1.96 Mbit/s)
- **Flow 1 egress** (mean 1.95 Mbit/s)

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

- **Flow 1 95th percentile** 50.63 ms
Run 9: Statistics of WebRTC media

Start at: 2018-07-06 04:29:29
End at: 2018-07-06 04:29:59
Local clock offset: -0.763 ms
Remote clock offset: 0.393 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 51.002 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 51.002 ms
Loss rate: 0.37%
Run 9: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.92 Mbit/s)
- Flow 1 egress (mean 1.92 Mbit/s)

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

- Flow 1 (95th percentile 51.00 ms)
Run 10: Statistics of WebRTC media

Start at: 2018-07-06 04:51:04
End at: 2018-07-06 04:51:34
Local clock offset: -0.142 ms
Remote clock offset: 0.116 ms

# Below is generated by plot.py at 2018-07-06 06:51:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 49.940 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 49.940 ms
Loss rate: 0.37%
Run 10: Report of WebRTC media — Data Link