Pantheon Report

Generated at 2018-07-12 23:08:24 (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 3 flows with 10-second interval between two flows.
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 @ 9250dbeec7fb57193cddf1ba8c440b4e16ab30f0
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ 37162fe9af85249aeeccac061c93e75640ef710b5
third_party/genericCC @ d0153f8e594aa89e93b032143cedbde58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4df0ecdf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f6b82cbe8f464b1b39
third_party/pcc @ 1af0958fa0d66d236b66c091a55efc872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08f92c4eb24f974ab
third_party/proto-quic @ 77961f1a8273a86b42f1bc8143ebc978f3ccff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3dbb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562593f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2ba8f45d1435ae071a32f96b7d8c504587f5d7f4
third_party/webtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from GCE Iowa to GCE London, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
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<td>272.75</td>
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<td>124.16</td>
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<td>WebRTC media</td>
<td>10</td>
<td>1.99</td>
<td>1.30</td>
<td>0.53</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-07-12 16:38:07
End at: 2018-07-12 16:38:37
Local clock offset: -0.179 ms
Remote clock offset: 0.034 ms

# Below is generated by plot.py at 2018-07-12 20:55:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 336.26 Mbit/s
  95th percentile per-packet one-way delay: 129.978 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 189.63 Mbit/s
  95th percentile per-packet one-way delay: 128.573 ms
  Loss rate: 0.43%
-- Flow 2:
  Average throughput: 157.52 Mbit/s
  95th percentile per-packet one-way delay: 130.098 ms
  Loss rate: 0.76%
-- Flow 3:
  Average throughput: 126.86 Mbit/s
  95th percentile per-packet one-way delay: 133.770 ms
  Loss rate: 1.87%
Run 1: Report of TCP BBR — Data Link

![Throughput Graph](image1)

- Flow 1 ingress (mean 189.90 Mbit/s)
- Flow 1 egress (mean 189.63 Mbit/s)
- Flow 2 ingress (mean 157.90 Mbit/s)
- Flow 2 egress (mean 157.52 Mbit/s)
- Flow 3 ingress (mean 127.96 Mbit/s)
- Flow 3 egress (mean 126.86 Mbit/s)

![Per-packet One-Way Delay Graph](image2)

- Flow 1 (95th percentile 128.57 ms)
- Flow 2 (95th percentile 130.10 ms)
- Flow 3 (95th percentile 133.77 ms)
Run 2: Statistics of TCP BBR

Start at: 2018-07-12 17:02:25
End at: 2018-07-12 17:02:55
Local clock offset: -0.143 ms
Remote clock offset: 0.072 ms

# Below is generated by plot.py at 2018-07-12 20:55:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 305.49 Mbit/s
95th percentile per-packet one-way delay: 145.106 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 167.15 Mbit/s
95th percentile per-packet one-way delay: 140.530 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 152.22 Mbit/s
95th percentile per-packet one-way delay: 144.838 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 112.32 Mbit/s
95th percentile per-packet one-way delay: 152.780 ms
Loss rate: 1.71%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2018-07-12 17:26:31
End at: 2018-07-12 17:27:01
Local clock offset: -0.224 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-07-12 20:55:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.23 Mbit/s
95th percentile per-packet one-way delay: 144.612 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 177.30 Mbit/s
95th percentile per-packet one-way delay: 141.453 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 154.67 Mbit/s
95th percentile per-packet one-way delay: 143.737 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 118.58 Mbit/s
95th percentile per-packet one-way delay: 149.876 ms
Loss rate: 2.06%
Run 3: Report of TCP BBR — Data Link

![Graph showing throughput and packet delay over time for Flow 1, Flow 2, and Flow 3 with specific throughput and delay metrics.]
Run 4: Statistics of TCP BBR

Start at: 2018-07-12 17:50:33
End at: 2018-07-12 17:51:03
Local clock offset: -0.157 ms
Remote clock offset: 0.054 ms

# Below is generated by plot.py at 2018-07-12 20:55:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 342.76 Mbit/s
95th percentile per-packet one-way delay: 120.373 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 188.23 Mbit/s
95th percentile per-packet one-way delay: 117.241 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 166.01 Mbit/s
95th percentile per-packet one-way delay: 120.257 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 133.78 Mbit/s
95th percentile per-packet one-way delay: 125.824 ms
Loss rate: 1.69%
Run 4: Report of TCP BBR — Data Link

![Graph of Throughput and Delay](image)

- Flow 1 ingress (mean 188.29 Mbit/s)
- Flow 1 egress (mean 188.23 Mbit/s)
- Flow 2 ingress (mean 166.25 Mbit/s)
- Flow 2 egress (mean 166.01 Mbit/s)
- Flow 3 ingress (mean 134.70 Mbit/s)
- Flow 3 egress (mean 133.78 Mbit/s)
Run 5: Statistics of TCP BBR

Start at: 2018-07-12 18:14:38
End at: 2018-07-12 18:15:08
Local clock offset: -0.511 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2018-07-12 20:55:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 311.26 Mbit/s
  95th percentile per-packet one-way delay: 147.000 ms
  Loss rate: 0.73%

-- Flow 1:
  Average throughput: 171.70 Mbit/s
  95th percentile per-packet one-way delay: 142.704 ms
  Loss rate: 0.42%

-- Flow 2:
  Average throughput: 148.24 Mbit/s
  95th percentile per-packet one-way delay: 147.296 ms
  Loss rate: 0.74%

-- Flow 3:
  Average throughput: 124.59 Mbit/s
  95th percentile per-packet one-way delay: 151.317 ms
  Loss rate: 1.99%
Run 6: Statistics of TCP BBR

Start at: 2018-07-12 18:38:18
End at: 2018-07-12 18:38:48
Local clock offset: -0.095 ms
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2018-07-12 20:55:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 338.07 Mbit/s
95th percentile per-packet one-way delay: 129.738 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 182.16 Mbit/s
95th percentile per-packet one-way delay: 123.143 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 167.44 Mbit/s
95th percentile per-packet one-way delay: 128.440 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 135.25 Mbit/s
95th percentile per-packet one-way delay: 137.840 ms
Loss rate: 1.91%
Run 6: Report of TCP BBR — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 182.36 Mbps)
  - Flow 1 egress (mean 182.16 Mbps)
  - Flow 2 ingress (mean 167.71 Mbps)
  - Flow 2 egress (mean 167.44 Mbps)
  - Flow 3 ingress (mean 136.48 Mbps)
  - Flow 3 egress (mean 135.25 Mbps)

- **Packet delay (ms)**
  - Flow 1 (95th percentile 123.14 ms)
  - Flow 2 (95th percentile 128.44 ms)
  - Flow 3 (95th percentile 137.84 ms)
Run 7: Statistics of TCP BBR

Start at: 2018-07-12 19:02:21
End at: 2018-07-12 19:02:51
Local clock offset: 0.251 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 20:55:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.92 Mbit/s
95th percentile per-packet one-way delay: 137.155 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 174.54 Mbit/s
95th percentile per-packet one-way delay: 133.655 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 141.97 Mbit/s
95th percentile per-packet one-way delay: 137.252 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 114.97 Mbit/s
95th percentile per-packet one-way delay: 144.515 ms
Loss rate: 1.89%
Run 7: Report of TCP BBR — Data Link

![Graph](image1)

![Graph](image2)
Run 8: Statistics of TCP BBR

Start at: 2018-07-12 19:26:25
End at: 2018-07-12 19:26:55
Local clock offset: -0.115 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-07-12 20:55:23
# Datalink statistics
   -- Total of 3 flows:
   Average throughput: 329.17 Mbit/s
   95th percentile per-packet one-way delay: 133.410 ms
   Loss rate: 0.68%
   -- Flow 1:
   Average throughput: 180.10 Mbit/s
   95th percentile per-packet one-way delay: 129.841 ms
   Loss rate: 0.40%
   -- Flow 2:
   Average throughput: 160.59 Mbit/s
   95th percentile per-packet one-way delay: 133.518 ms
   Loss rate: 0.70%
   -- Flow 3:
   Average throughput: 127.97 Mbit/s
   95th percentile per-packet one-way delay: 139.145 ms
   Loss rate: 1.81%
Run 8: Report of TCP BBR — Data Link

![Graph showing throughput and packet delay over time]

Legend:
- Flow 1 ingress (mean 180.21 Mbit/s)
- Flow 1 egress (mean 180.10 Mbit/s)
- Flow 2 ingress (mean 160.89 Mbit/s)
- Flow 2 egress (mean 160.59 Mbit/s)
- Flow 3 ingress (mean 129.00 Mbit/s)
- Flow 3 egress (mean 127.97 Mbit/s)

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![Graph showing packet delay over time]

Legend:
- Flow 1 (95th percentile 129.84 ms)
- Flow 2 (95th percentile 133.52 ms)
- Flow 3 (95th percentile 139.15 ms)
Run 9: Statistics of TCP BBR

Start at: 2018-07-12 19:50:35
End at: 2018-07-12 19:51:05
Local clock offset: -0.063 ms
Remote clock offset: -0.008 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 343.79 Mbit/s
  95th percentile per-packet one-way delay: 123.852 ms
  Loss rate: 0.67%
-- Flow 1:
  Average throughput: 184.41 Mbit/s
  95th percentile per-packet one-way delay: 120.301 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 170.01 Mbit/s
  95th percentile per-packet one-way delay: 123.895 ms
  Loss rate: 0.62%
-- Flow 3:
  Average throughput: 140.26 Mbit/s
  95th percentile per-packet one-way delay: 128.124 ms
  Loss rate: 1.78%
Run 9: Report of TCP BBR — Data Link

![Graph of Throughput (Mbps)]

- **Flow 1 ingress (mean 184.54 Mbps)**
- **Flow 1 egress (mean 184.41 Mbps)**
- **Flow 2 ingress (mean 170.20 Mbps)**
- **Flow 2 egress (mean 170.01 Mbps)**
- **Flow 3 ingress (mean 141.49 Mbps)**
- **Flow 3 egress (mean 140.26 Mbps)**

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

- **Flow 1 (95th percentile 120.30 ms)**
- **Flow 2 (95th percentile 123.89 ms)**
- **Flow 3 (95th percentile 128.12 ms)**
Run 10: Statistics of TCP BBR

Start at: 2018-07-12 20:14:31
End at: 2018-07-12 20:15:01
Local clock offset: -0.088 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.80 Mbit/s
95th percentile per-packet one-way delay: 136.694 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 173.30 Mbit/s
95th percentile per-packet one-way delay: 132.013 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 152.30 Mbit/s
95th percentile per-packet one-way delay: 136.911 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 118.81 Mbit/s
95th percentile per-packet one-way delay: 147.298 ms
Loss rate: 1.78%
Run 10: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2018-07-12 16:54:39
End at: 2018-07-12 16:55:09
Local clock offset: -0.129 ms
Remote clock offset: 0.025 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 152.77 Mbit/s
95th percentile per-packet one-way delay: 55.989 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 88.42 Mbit/s
95th percentile per-packet one-way delay: 54.961 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 63.73 Mbit/s
95th percentile per-packet one-way delay: 58.955 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 66.88 Mbit/s
95th percentile per-packet one-way delay: 54.098 ms
Loss rate: 0.88%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2018-07-12 17:18:48
End at: 2018-07-12 17:19:18
Local clock offset: -0.149 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 169.73 Mbit/s
95th percentile per-packet one-way delay: 56.020 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 106.02 Mbit/s
95th percentile per-packet one-way delay: 54.540 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 53.46 Mbit/s
95th percentile per-packet one-way delay: 57.959 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 88.28 Mbit/s
95th percentile per-packet one-way delay: 57.239 ms
Loss rate: 0.53%
Run 2: Report of Copa — Data Link

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

- Flow 1 ingress (mean 106.04 Mbps)
- Flow 1 egress (mean 106.02 Mbps)
- Flow 2 ingress (mean 53.47 Mbps)
- Flow 2 egress (mean 53.46 Mbps)
- Flow 3 ingress (mean 87.08 Mbps)
- Flow 3 egress (mean 88.28 Mbps)

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

- Flow 1 (95th percentile 54.54 ms)
- Flow 2 (95th percentile 57.96 ms)
- Flow 3 (95th percentile 57.24 ms)
Run 3: Statistics of Copa

Start at: 2018-07-12 17:42:50
End at: 2018-07-12 17:43:20
Local clock offset: 0.163 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 158.99 Mbit/s
95th percentile per-packet one-way delay: 54.750 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 99.26 Mbit/s
95th percentile per-packet one-way delay: 53.660 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 90.74 Mbit/s
95th percentile per-packet one-way delay: 53.925 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 46.84 Mbit/s
95th percentile per-packet one-way delay: 60.959 ms
Loss rate: 4.32%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2018-07-12 18:06:56
End at: 2018-07-12 18:07:26
Local clock offset: 0.198 ms
Remote clock offset: 0.036 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 163.89 Mbit/s
  95th percentile per-packet one-way delay: 57.161 ms
  Loss rate: 0.39%
-- Flow 1:
  Average throughput: 118.32 Mbit/s
  95th percentile per-packet one-way delay: 57.101 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 59.09 Mbit/s
  95th percentile per-packet one-way delay: 57.792 ms
  Loss rate: 0.72%
-- Flow 3:
  Average throughput: 40.79 Mbit/s
  95th percentile per-packet one-way delay: 55.875 ms
  Loss rate: 2.63%
Run 4: Report of Copa — Data Link
Run 5: Statistics of Copa

Start at: 2018-07-12 18:30:41
End at: 2018-07-12 18:31:11
Local clock offset: -0.133 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.46 Mbit/s
95th percentile per-packet one-way delay: 57.925 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 47.11 Mbit/s
95th percentile per-packet one-way delay: 59.085 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 79.51 Mbit/s
95th percentile per-packet one-way delay: 57.048 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 78.32 Mbit/s
95th percentile per-packet one-way delay: 57.804 ms
Loss rate: 0.48%
Run 5: Report of Copa — Data Link
Run 6: Statistics of Copa

Start at: 2018-07-12 18:54:40
End at: 2018-07-12 18:55:10
Local clock offset: -0.501 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-07-12 21:00:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 142.71 Mbit/s
  95th percentile per-packet one-way delay: 57.749 ms
  Loss rate: 0.42%
-- Flow 1:
  Average throughput: 99.78 Mbit/s
  95th percentile per-packet one-way delay: 55.986 ms
  Loss rate: 0.59%
-- Flow 2:
  Average throughput: 42.08 Mbit/s
  95th percentile per-packet one-way delay: 63.199 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 50.28 Mbit/s
  95th percentile per-packet one-way delay: 59.241 ms
  Loss rate: 0.00%
Run 6: Report of Copa — Data Link

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**Throughput (Mbps)**

- Flow 1 ingress (mean 100.05 Mbps)
- Flow 2 ingress (mean 42.11 Mbps)
- Flow 3 ingress (mean 50.43 Mbps)
- Flow 1 egress (mean 99.78 Mbps)
- Flow 2 egress (mean 42.08 Mbps)
- Flow 3 egress (mean 50.28 Mbps)

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

- Flow 1 (95th percentile 59.99 ms)
- Flow 2 (95th percentile 63.20 ms)
- Flow 3 (95th percentile 59.24 ms)
Run 7: Statistics of Copa

Start at: 2018-07-12 19:18:47
End at: 2018-07-12 19:19:17
Local clock offset: -0.137 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2018-07-12 21:01:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.13 Mbit/s
95th percentile per-packet one-way delay: 62.198 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 45.62 Mbit/s
95th percentile per-packet one-way delay: 61.337 ms
Loss rate: 1.57%
-- Flow 2:
Average throughput: 49.81 Mbit/s
95th percentile per-packet one-way delay: 63.631 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 59.34 Mbit/s
95th percentile per-packet one-way delay: 60.196 ms
Loss rate: 2.08%
Run 7: Report of Copa — Data Link

Throughput over Time:

- **Flow 1 ingress (mean 46.19 Mbit/s)**
- **Flow 1 egress (mean 45.62 Mbit/s)**
- **Flow 2 ingress (mean 49.84 Mbit/s)**
- **Flow 2 egress (mean 49.81 Mbit/s)**
- **Flow 3 ingress (mean 60.33 Mbit/s)**
- **Flow 3 egress (mean 59.34 Mbit/s)**

Per-packet one way delay over Time:

- **Flow 1 (95th percentile 61.34 ms)**
- **Flow 2 (95th percentile 63.63 ms)**
- **Flow 3 (95th percentile 60.20 ms)**
Run 8: Statistics of Copa

Start at: 2018-07-12 19:42:54
End at: 2018-07-12 19:43:24
Local clock offset: -0.116 ms
Remote clock offset: 0.057 ms

# Below is generated by plot.py at 2018-07-12 21:03:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.09 Mbit/s
95th percentile per-packet one-way delay: 56.759 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 60.99 Mbit/s
95th percentile per-packet one-way delay: 57.884 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 61.85 Mbit/s
95th percentile per-packet one-way delay: 55.484 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 72.81 Mbit/s
95th percentile per-packet one-way delay: 56.808 ms
Loss rate: 1.65%
Run 8: Report of Copa — Data Link
Run 9: Statistics of Copa

Start at: 2018-07-12 20:06:48
End at: 2018-07-12 20:07:18
Local clock offset: -0.091 ms
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-07-12 21:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 136.84 Mbit/s
95th percentile per-packet one-way delay: 56.431 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 84.67 Mbit/s
95th percentile per-packet one-way delay: 54.202 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 65.04 Mbit/s
95th percentile per-packet one-way delay: 58.528 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 79.15 Mbit/s
95th percentile per-packet one-way delay: 58.061 ms
Loss rate: 0.87%
Run 9: Report of Copa — Data Link

---

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

- Flow 1 ingress (mean 84.72 Mbit/s)
- Flow 1 egress (mean 84.67 Mbit/s)
- Flow 2 ingress (mean 65.26 Mbit/s)
- Flow 2 egress (mean 65.04 Mbit/s)
- Flow 3 ingress (mean 79.02 Mbit/s)
- Flow 3 egress (mean 79.15 Mbit/s)

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

- Flow 1 (95th percentile 54.20 ms)
- Flow 2 (95th percentile 58.53 ms)
- Flow 3 (95th percentile 58.06 ms)

---

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Run 10: Statistics of Copa

Start at: 2018-07-12 20:30:51
End at: 2018-07-12 20:31:21
Local clock offset: -0.454 ms
Remote clock offset: 0.018 ms

# Below is generated by plot.py at 2018-07-12 21:05:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 166.06 Mbit/s
  95th percentile per-packet one-way delay: 57.272 ms
  Loss rate: 0.62%
-- Flow 1:
  Average throughput: 64.56 Mbit/s
  95th percentile per-packet one-way delay: 57.182 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 119.47 Mbit/s
  95th percentile per-packet one-way delay: 58.539 ms
  Loss rate: 0.68%
-- Flow 3:
  Average throughput: 66.82 Mbit/s
  95th percentile per-packet one-way delay: 53.504 ms
  Loss rate: 0.78%
Run 10: Report of Copa — Data Link

[Graphs showing throughput and latency for different flows.]

Flow 1 ingress (mean 64.67 Mbit/s)
Flow 1 egress (mean 64.56 Mbit/s)
Flow 2 ingress (mean 119.72 Mbit/s)
Flow 2 egress (mean 119.47 Mbit/s)
Flow 3 ingress (mean 66.67 Mbit/s)
Flow 3 egress (mean 66.82 Mbit/s)
Run 1: Statistics of TCP Cubic

Start at: 2018-07-12 16:35:16
End at: 2018-07-12 16:35:46
Local clock offset: -0.201 ms
Remote clock offset: 0.073 ms

# Below is generated by plot.py at 2018-07-12 21:05:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 276.21 Mbit/s
95th percentile per-packet one-way delay: 89.366 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 138.39 Mbit/s
95th percentile per-packet one-way delay: 87.099 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 204.96 Mbit/s
95th percentile per-packet one-way delay: 90.805 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 88.894 ms
Loss rate: 4.02%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2018-07-12 16:59:33  
End at: 2018-07-12 17:00:03  
Local clock offset: -0.167 ms  
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2018-07-12 21:05:31  
# Datalink statistics

-- Total of 3 flows:
   Average throughput: 312.48 Mbit/s  
   95th percentile per-packet one-way delay: 91.759 ms  
   Loss rate: 0.52%

-- Flow 1:
   Average throughput: 173.94 Mbit/s  
   95th percentile per-packet one-way delay: 86.912 ms  
   Loss rate: 0.27%

-- Flow 2:
   Average throughput: 134.32 Mbit/s  
   95th percentile per-packet one-way delay: 92.043 ms  
   Loss rate: 0.78%

-- Flow 3:
   Average throughput: 149.12 Mbit/s  
   95th percentile per-packet one-way delay: 95.315 ms  
   Loss rate: 0.88%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2018-07-12 17:23:43
End at: 2018-07-12 17:24:13
Local clock offset: -0.515 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2018-07-12 21:05:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 260.72 Mbit/s
95th percentile per-packet one-way delay: 70.837 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 167.34 Mbit/s
95th percentile per-packet one-way delay: 71.340 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 138.21 Mbit/s
95th percentile per-packet one-way delay: 70.144 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 73.960 ms
Loss rate: 3.99%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2018-07-12 17:47:44
End at: 2018-07-12 17:48:14
Local clock offset: -0.185 ms
Remote clock offset: 0.018 ms

# Below is generated by plot.py at 2018-07-12 21:05:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 269.45 Mbit/s
95th percentile per-packet one-way delay: 73.904 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 162.68 Mbit/s
95th percentile per-packet one-way delay: 73.885 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 159.40 Mbit/s
95th percentile per-packet one-way delay: 73.904 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 74.168 ms
Loss rate: 3.20%
Run 4: Report of TCP Cubic — Data Link

![Graph showing throughput and latency over time for different flows]

- **Flow 1 ingress** (mean 162.36 Mbit/s)
- **Flow 1 egress** (mean 162.68 Mbit/s)
- **Flow 2 ingress** (mean 159.25 Mbit/s)
- **Flow 2 egress** (mean 159.40 Mbit/s)
- **Flow 3 ingress** (mean 3.65 Mbit/s)
- **Flow 3 egress** (mean 3.57 Mbit/s)

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

- **Flow 1** (95th percentile 73.89 ms)
- **Flow 2** (95th percentile 73.90 ms)
- **Flow 3** (95th percentile 74.17 ms)
Run 5: Statistics of TCP Cubic

Start at: 2018-07-12 18:11:51
End at: 2018-07-12 18:12:21
Local clock offset: -0.115 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2018-07-12 21:06:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 246.86 Mbit/s
95th percentile per-packet one-way delay: 72.346 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 140.50 Mbit/s
95th percentile per-packet one-way delay: 71.634 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 157.62 Mbit/s
95th percentile per-packet one-way delay: 73.917 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 5.00 Mbit/s
95th percentile per-packet one-way delay: 68.287 ms
Loss rate: 3.82%
Run 5: Report of TCP Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 140.87 Mbps)
Flow 1 egress (mean 140.50 Mbps)
Flow 2 ingress (mean 157.52 Mbps)
Flow 2 egress (mean 157.62 Mbps)
Flow 3 ingress (mean 5.15 Mbps)
Flow 3 egress (mean 5.00 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 71.63 ms)
Flow 2 (95th percentile 73.92 ms)
Flow 3 (95th percentile 68.29 ms)
Run 6: Statistics of TCP Cubic

Start at: 2018-07-12 18:35:32  
End at: 2018-07-12 18:36:02  
Local clock offset: -0.142 ms  
Remote clock offset: 0.032 ms

# Below is generated by plot.py at 2018-07-12 21:07:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 248.69 Mbit/s  
  95th percentile per-packet one-way delay: 65.361 ms  
  Loss rate: 0.52%  
-- Flow 1:
  Average throughput: 214.28 Mbit/s  
  95th percentile per-packet one-way delay: 64.955 ms  
  Loss rate: 0.20%  
-- Flow 2:
  Average throughput: 49.27 Mbit/s  
  95th percentile per-packet one-way delay: 67.126 ms  
  Loss rate: 2.38%  
-- Flow 3:
  Average throughput: 5.05 Mbit/s  
  95th percentile per-packet one-way delay: 65.203 ms  
  Loss rate: 3.72%
Run 6: Report of TCP Cubic — Data Link

![Graph 1: Throughput vs. Time]

- Flow 1 ingress (mean 214.00 Mbit/s)
- Flow 1 egress (mean 214.28 Mbit/s)
- Flow 2 ingress (mean 50.22 Mbit/s)
- Flow 2 egress (mean 49.27 Mbit/s)
- Flow 3 ingress (mean 5.19 Mbit/s)
- Flow 3 egress (mean 5.05 Mbit/s)

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

- Flow 1 (95th percentile 64.95 ms)
- Flow 2 (95th percentile 67.13 ms)
- Flow 3 (95th percentile 65.20 ms)
Run 7: Statistics of TCP Cubic

Start at: 2018-07-12 18:59:33
End at: 2018-07-12 19:00:03
Local clock offset: -0.165 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-07-12 21:08:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 262.54 Mbit/s
95th percentile per-packet one-way delay: 72.832 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 142.63 Mbit/s
95th percentile per-packet one-way delay: 71.717 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 178.03 Mbit/s
95th percentile per-packet one-way delay: 74.117 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 4.72 Mbit/s
95th percentile per-packet one-way delay: 66.845 ms
Loss rate: 4.11%
Run 7: Report of TCP Cubic — Data Link

![Graph of Throughput vs Time]

<table>
<thead>
<tr>
<th>Flow</th>
<th>Ingress (mean)</th>
<th>Egress (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 1</td>
<td>142.60 Mbit/s</td>
<td>142.63 Mbit/s</td>
</tr>
<tr>
<td>Flow 2</td>
<td>177.88 Mbit/s</td>
<td>178.03 Mbit/s</td>
</tr>
<tr>
<td>Flow 3</td>
<td>4.87 Mbit/s</td>
<td>4.72 Mbit/s</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Flow</th>
<th>95th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 1</td>
<td>71.72 ms</td>
</tr>
<tr>
<td>Flow 2</td>
<td>74.12 ms</td>
</tr>
<tr>
<td>Flow 3</td>
<td>66.84 ms</td>
</tr>
</tbody>
</table>
Run 8: Statistics of TCP Cubic

Start at: 2018-07-12 19:23:36
End at: 2018-07-12 19:24:06
Local clock offset: -0.128 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2018-07-12 21:09:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 270.59 Mbit/s
  95th percentile per-packet one-way delay: 100.191 ms
  Loss rate: 0.54%
-- Flow 1:
  Average throughput: 136.02 Mbit/s
  95th percentile per-packet one-way delay: 100.123 ms
  Loss rate: 0.33%
-- Flow 2:
  Average throughput: 184.89 Mbit/s
  95th percentile per-packet one-way delay: 100.374 ms
  Loss rate: 0.34%
-- Flow 3:
  Average throughput: 35.59 Mbit/s
  95th percentile per-packet one-way delay: 99.693 ms
  Loss rate: 4.88%
Run 8: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 136.02 Mbps)
- Flow 1 egress (mean 136.02 Mbps)
- Flow 2 ingress (mean 184.57 Mbps)
- Flow 2 egress (mean 184.89 Mbps)
- Flow 3 ingress (mean 37.03 Mbps)
- Flow 3 egress (mean 35.59 Mbps)

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

- Flow 1 (95th percentile 100.12 ms)
- Flow 2 (95th percentile 100.37 ms)
- Flow 3 (95th percentile 99.69 ms)
Run 9: Statistics of TCP Cubic

Start at: 2018-07-12 19:47:46
End at: 2018-07-12 19:48:16
Local clock offset: -0.109 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-07-12 21:09:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 281.85 Mbit/s
95th percentile per-packet one-way delay: 61.456 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 205.04 Mbit/s
95th percentile per-packet one-way delay: 61.753 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 112.92 Mbit/s
95th percentile per-packet one-way delay: 59.226 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 57.714 ms
Loss rate: 3.58%
Run 9: Report of TCP Cubic — Data Link

![Graph showing throughput and packet loss over time for three flows.](image)

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 294.47 Mbps)
  - Flow 1 egress (mean 205.04 Mbps)
  - Flow 2 ingress (mean 113.21 Mbps)
  - Flow 2 egress (mean 112.92 Mbps)
  - Flow 3 ingress (mean 5.41 Mbps)
  - Flow 3 egress (mean 5.27 Mbps)

- **Packet Loss:**
  - Flow 1 (95th percentile 61.75 ms)
  - Flow 2 (95th percentile 59.23 ms)
  - Flow 3 (95th percentile 57.71 ms)
Run 10: Statistics of TCP Cubic

Start at: 2018-07-12 20:11:40
End at: 2018-07-12 20:12:10
Local clock offset: -0.415 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-07-12 21:09:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.47 Mbit/s
95th percentile per-packet one-way delay: 112.039 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 151.37 Mbit/s
95th percentile per-packet one-way delay: 109.133 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 167.84 Mbit/s
95th percentile per-packet one-way delay: 113.385 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 77.72 Mbit/s
95th percentile per-packet one-way delay: 114.724 ms
Loss rate: 2.92%
Run 10: Report of TCP Cubic — Data Link
Run 1: Statistics of FillP

Start at: 2018-07-12 16:45:24
End at: 2018-07-12 16:45:54
Local clock offset: -0.157 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2018-07-12 21:26:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1090.00 Mbit/s
  95th percentile per-packet one-way delay: 235.821 ms
  Loss rate: 1.13%
-- Flow 1:
  Average throughput: 558.57 Mbit/s
  95th percentile per-packet one-way delay: 237.395 ms
  Loss rate: 0.99%
-- Flow 2:
  Average throughput: 493.92 Mbit/s
  95th percentile per-packet one-way delay: 237.194 ms
  Loss rate: 0.54%
-- Flow 3:
  Average throughput: 617.56 Mbit/s
  95th percentile per-packet one-way delay: 211.206 ms
  Loss rate: 2.46%
Run 1: Report of FillP — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.

- Flow 1 ingress: mean 562.22 Mbit/s
- Flow 1 egress: mean 558.57 Mbit/s
- Flow 2 ingress: mean 494.08 Mbit/s
- Flow 2 egress: mean 493.92 Mbit/s
- Flow 3 ingress: mean 626.67 Mbit/s
- Flow 3 egress: mean 617.56 Mbit/s

Throughput (Mbit/s)

Time (s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 237.40 ms)  
Flow 2 (95th percentile 237.19 ms)  
Flow 3 (95th percentile 211.21 ms)
Run 2: Statistics of FillP

Start at: 2018-07-12 17:09:31
End at: 2018-07-12 17:10:01
Local clock offset: -0.164 ms
Remote clock offset: 0.052 ms

# Below is generated by plot.py at 2018-07-12 21:28:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1127.04 Mbit/s
95th percentile per-packet one-way delay: 237.920 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 486.05 Mbit/s
95th percentile per-packet one-way delay: 247.249 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 670.14 Mbit/s
95th percentile per-packet one-way delay: 226.119 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 591.31 Mbit/s
95th percentile per-packet one-way delay: 191.782 ms
Loss rate: 1.80%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2018-07-12 17:33:29
End at: 2018-07-12 17:33:59
Local clock offset: -0.125 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-12 21:29:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1135.37 Mbit/s
95th percentile per-packet one-way delay: 240.447 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 545.49 Mbit/s
95th percentile per-packet one-way delay: 250.421 ms
Loss rate: 1.50%
-- Flow 2:
Average throughput: 607.67 Mbit/s
95th percentile per-packet one-way delay: 238.084 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 565.47 Mbit/s
95th percentile per-packet one-way delay: 147.124 ms
Loss rate: 1.97%
Run 3: Report of FillP — Data Link

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

- **Flow 1 ingress** (mean 551.91 Mbps)
- **Flow 1 egress** (mean 545.49 Mbps)
- **Flow 2 ingress** (mean 610.81 Mbps)
- **Flow 2 egress** (mean 607.67 Mbps)
- **Flow 3 ingress** (mean 570.82 Mbps)
- **Flow 3 egress** (mean 565.47 Mbps)

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

- **Flow 1** (95th percentile 250.42 ms)
- **Flow 2** (95th percentile 238.08 ms)
- **Flow 3** (95th percentile 147.12 ms)
Run 4: Statistics of FillP

Start at: 2018-07-12 17:57:40
End at: 2018-07-12 17:58:10
Local clock offset: -0.576 ms
Remote clock offset: 0.077 ms

# Below is generated by plot.py at 2018-07-12 21:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1141.78 Mbit/s
95th percentile per-packet one-way delay: 245.469 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 545.86 Mbit/s
95th percentile per-packet one-way delay: 260.132 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 626.84 Mbit/s
95th percentile per-packet one-way delay: 222.602 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 545.03 Mbit/s
95th percentile per-packet one-way delay: 247.265 ms
Loss rate: 3.23%
Run 4: Report of FillP — Data Link

[Graphs showing throughput and per-packet one-way delay over time for different flows.]
Run 5: Statistics of FillP

Start at: 2018-07-12 18:21:39
End at: 2018-07-12 18:22:09
Local clock offset: 0.196 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2018-07-12 21:31:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1132.61 Mbit/s
  95th percentile per-packet one-way delay: 233.468 ms
  Loss rate: 1.01%
-- Flow 1:
  Average throughput: 530.45 Mbit/s
  95th percentile per-packet one-way delay: 236.379 ms
  Loss rate: 0.47%
-- Flow 2:
  Average throughput: 632.77 Mbit/s
  95th percentile per-packet one-way delay: 223.119 ms
  Loss rate: 1.10%
-- Flow 3:
  Average throughput: 561.26 Mbit/s
  95th percentile per-packet one-way delay: 243.115 ms
  Loss rate: 2.37%
Run 5: Report of FillP — Data Link

[Graph showing network performance metrics over time]

[Graph showing per-packet one-way delay over time]
Run 6: Statistics of FillP

Start at: 2018-07-12 18:45:21
End at: 2018-07-12 18:45:51
Local clock offset: -0.525 ms
Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2018-07-12 21:34:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1234.71 Mbit/s
95th percentile per-packet one-way delay: 229.804 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 646.96 Mbit/s
95th percentile per-packet one-way delay: 225.781 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 621.89 Mbit/s
95th percentile per-packet one-way delay: 234.073 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 530.47 Mbit/s
95th percentile per-packet one-way delay: 222.113 ms
Loss rate: 2.08%
Run 6: Report of FillP — Data Link

![Data Link Throughput Graph](image1)

![Data Link Delay Graph](image2)
Run 7: Statistics of FillP

Start at: 2018-07-12 19:09:30
End at: 2018-07-12 19:10:00
Local clock offset: -0.508 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-07-12 21:34:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1112.05 Mbit/s
95th percentile per-packet one-way delay: 229.181 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 546.00 Mbit/s
95th percentile per-packet one-way delay: 231.249 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 585.57 Mbit/s
95th percentile per-packet one-way delay: 229.248 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 537.39 Mbit/s
95th percentile per-packet one-way delay: 224.372 ms
Loss rate: 3.39%
Run 7: Report of FillP — Data Link

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

- Flow 1 ingress (mean 547.65 Mbps)
- Flow 1 egress (mean 546.00 Mbps)
- Flow 2 ingress (mean 589.88 Mbps)
- Flow 2 egress (mean 585.57 Mbps)
- Flow 3 ingress (mean 550.57 Mbps)
- Flow 3 egress (mean 537.39 Mbps)

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

- Flow 1 (95th percentile 231.25 ms)
- Flow 2 (95th percentile 229.25 ms)
- Flow 3 (95th percentile 224.37 ms)
Run 8: Statistics of FillP

Start at: 2018-07-12 19:33:37
End at: 2018-07-12 19:34:07
Local clock offset: -0.475 ms
Remote clock offset: -0.038 ms

# Below is generated by plot.py at 2018-07-12 21:34:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1141.50 Mbit/s
95th percentile per-packet one-way delay: 252.326 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 677.03 Mbit/s
95th percentile per-packet one-way delay: 260.346 ms
Loss rate: 1.63%
-- Flow 2:
Average throughput: 430.45 Mbit/s
95th percentile per-packet one-way delay: 243.704 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 541.56 Mbit/s
95th percentile per-packet one-way delay: 224.077 ms
Loss rate: 3.06%
Run 8: Report of FillP — Data Link
Run 9: Statistics of FillP

Start at: 2018-07-12 19:57:45
End at: 2018-07-12 19:58:15
Local clock offset: -0.455 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 21:49:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1059.95 Mbit/s
95th percentile per-packet one-way delay: 231.783 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 509.57 Mbit/s
95th percentile per-packet one-way delay: 250.548 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 567.02 Mbit/s
95th percentile per-packet one-way delay: 225.432 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 530.95 Mbit/s
95th percentile per-packet one-way delay: 228.677 ms
Loss rate: 2.49%
Run 9: Report of FillP — Data Link

Throughput (Mbps)

Time (s)

- Flow 1 ingress (mean 509.09 Mbps)
- Flow 1 egress (mean 509.57 Mbps)
- Flow 2 ingress (mean 566.58 Mbps)
- Flow 2 egress (mean 567.02 Mbps)
- Flow 3 ingress (mean 530.84 Mbps)
- Flow 3 egress (mean 530.95 Mbps)

Per-packet one-way delay (ms)

Time (s)

- Flow 1 (95th percentile 250.55 ms)
- Flow 2 (95th percentile 225.43 ms)
- Flow 3 (95th percentile 228.68 ms)
Run 10: Statistics of FillP

Start at: 2018-07-12 20:21:32
End at: 2018-07-12 20:22:02
Local clock offset: -0.146 ms
Remote clock offset: 0.002 ms

# Below is generated by plot.py at 2018-07-12 21:52:53
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1177.21 Mbit/s
  95th percentile per-packet one-way delay: 238.993 ms
  Loss rate: 1.54%
-- Flow 1:
  Average throughput: 625.42 Mbit/s
  95th percentile per-packet one-way delay: 233.511 ms
  Loss rate: 0.80%
-- Flow 2:
  Average throughput: 615.81 Mbit/s
  95th percentile per-packet one-way delay: 260.963 ms
  Loss rate: 2.36%
-- Flow 3:
  Average throughput: 435.37 Mbit/s
  95th percentile per-packet one-way delay: 236.011 ms
  Loss rate: 2.36%
Run 10: Report of FillIP — Data Link
Run 1: Statistics of FillP-Sheep

Start at: 2018-07-12 16:51:16
End at: 2018-07-12 16:51:46
Local clock offset: -0.535 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-07-12 21:52:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1113.50 Mbit/s
95th percentile per-packet one-way delay: 234.534 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 584.04 Mbit/s
95th percentile per-packet one-way delay: 236.279 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 519.45 Mbit/s
95th percentile per-packet one-way delay: 237.615 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 560.43 Mbit/s
95th percentile per-packet one-way delay: 199.369 ms
Loss rate: 1.79%
Run 1: Report of FillP-Sheep — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 584.46 Mbps)
- Flow 1 egress (mean 584.04 Mbps)
- Flow 2 ingress (mean 522.68 Mbps)
- Flow 2 egress (mean 519.45 Mbps)
- Flow 3 ingress (mean 564.74 Mbps)
- Flow 3 egress (mean 560.43 Mbps)

**Delay (ms):**
- Flow 1 (95th percentile 236.28 ms)
- Flow 2 (95th percentile 237.62 ms)
- Flow 3 (95th percentile 199.37 ms)
Run 2: Statistics of FillP-Sheep

Start at: 2018-07-12 17:15:23
End at: 2018-07-12 17:15:53
Local clock offset: -0.138 ms
Remote clock offset: 0.058 ms

# Below is generated by plot.py at 2018-07-12 21:54:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1150.99 Mbit/s
  95th percentile per-packet one-way delay: 228.368 ms
  Loss rate: 1.06%
-- Flow 1:
  Average throughput: 603.94 Mbit/s
  95th percentile per-packet one-way delay: 239.804 ms
  Loss rate: 0.64%
-- Flow 2:
  Average throughput: 566.79 Mbit/s
  95th percentile per-packet one-way delay: 223.903 ms
  Loss rate: 1.10%
-- Flow 3:
  Average throughput: 518.10 Mbit/s
  95th percentile per-packet one-way delay: 217.661 ms
  Loss rate: 2.43%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2018-07-12 17:39:22
End at: 2018-07-12 17:39:52
Local clock offset: 0.224 ms
Remote clock offset: 0.054 ms

# Below is generated by plot.py at 2018-07-12 21:56:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1208.33 Mbit/s
95th percentile per-packet one-way delay: 268.109 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 640.86 Mbit/s
95th percentile per-packet one-way delay: 269.518 ms
Loss rate: 2.33%
-- Flow 2:
Average throughput: 592.72 Mbit/s
95th percentile per-packet one-way delay: 272.268 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 531.79 Mbit/s
95th percentile per-packet one-way delay: 180.902 ms
Loss rate: 0.92%
Run 3: Report of FillP-Sheep — Data Link

![Graph 1](image1)

![Graph 2](image2)

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Run 4: Statistics of FillP-Sheep

Start at: 2018-07-12 18:03:35
End at: 2018-07-12 18:04:05
Local clock offset: -0.144 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2018-07-12 21:56:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1135.85 Mbit/s
  95th percentile per-packet one-way delay: 270.074 ms
  Loss rate: 1.29%
-- Flow 1:
  Average throughput: 611.05 Mbit/s
  95th percentile per-packet one-way delay: 285.916 ms
  Loss rate: 1.00%
-- Flow 2:
  Average throughput: 567.00 Mbit/s
  95th percentile per-packet one-way delay: 261.028 ms
  Loss rate: 1.08%
-- Flow 3:
  Average throughput: 450.03 Mbit/s
  95th percentile per-packet one-way delay: 228.207 ms
  Loss rate: 3.00%
Run 4: Report of FillP-Sheep — Data Link

[Graph showing throughput and packet error rate over time for different flows.]
Run 5: Statistics of FillP-Sheep

Start at: 2018-07-12 18:27:28
End at: 2018-07-12 18:27:58
Local clock offset: -0.161 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2018-07-12 21:56:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 883.67 Mbit/s
95th percentile per-packet one-way delay: 280.344 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 391.59 Mbit/s
95th percentile per-packet one-way delay: 294.836 ms
Loss rate: 3.89%
-- Flow 2:
Average throughput: 454.96 Mbit/s
95th percentile per-packet one-way delay: 275.821 ms
Loss rate: 2.10%
-- Flow 3:
Average throughput: 577.64 Mbit/s
95th percentile per-packet one-way delay: 245.191 ms
Loss rate: 1.75%
Run 5: Report of FillP-Sheep — Data Link
Run 6: Statistics of FillP-Sheep

Start at: 2018-07-12 18:51:14
End at: 2018-07-12 18:51:44
Local clock offset: 0.195 ms
Remote clock offset: 0.025 ms

# Below is generated by plot.py at 2018-07-12 21:58:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1153.59 Mbit/s
95th percentile per-packet one-way delay: 280.317 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 602.14 Mbit/s
95th percentile per-packet one-way delay: 239.187 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 579.83 Mbit/s
95th percentile per-packet one-way delay: 300.775 ms
Loss rate: 3.54%
-- Flow 3:
Average throughput: 505.71 Mbit/s
95th percentile per-packet one-way delay: 200.024 ms
Loss rate: 1.02%
Run 6: Report of FillP-Sheep — Data Link

- Throughput (Mbps):
  - Flow 1 ingress: 602.20 Mbps
  - Flow 1 egress: 602.14 Mbps
  - Flow 2 ingress: 598.68 Mbps
  - Flow 2 egress: 579.83 Mbps
  - Flow 3 ingress: 505.64 Mbps
  - Flow 3 egress: 505.71 Mbps

- Per-packet one-way delay (ms):
  - Flow 1: 95th percentile 239.19 ms
  - Flow 2: 95th percentile 300.77 ms
  - Flow 3: 95th percentile 200.02 ms
Run 7: Statistics of FillP-Sheep

Start at: 2018-07-12 19:15:24
End at: 2018-07-12 19:15:54
Local clock offset: -0.52 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-07-12 22:14:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1156.43 Mbit/s
  95th percentile per-packet one-way delay: 228.847 ms
  Loss rate: 0.95%
-- Flow 1:
  Average throughput: 617.63 Mbit/s
  95th percentile per-packet one-way delay: 247.087 ms
  Loss rate: 0.66%
-- Flow 2:
  Average throughput: 566.28 Mbit/s
  95th percentile per-packet one-way delay: 209.350 ms
  Loss rate: 0.51%
-- Flow 3:
  Average throughput: 495.53 Mbit/s
  95th percentile per-packet one-way delay: 219.991 ms
  Loss rate: 3.03%
Run 7: Report of FillP-Sheep — Data Link

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

- **Throughput**: The graph shows the throughput in Mbit/s for different flows over time. The throughput is represented by lines of different colors, each corresponding to a specific flow:
  - Flow 1 ingress (mean 619.73 Mbit/s)
  - Flow 1 egress (mean 617.63 Mbit/s)
  - Flow 2 ingress (mean 566.23 Mbit/s)
  - Flow 2 egress (mean 566.28 Mbit/s)
  - Flow 3 ingress (mean 596.41 Mbit/s)
  - Flow 3 egress (mean 495.53 Mbit/s)

- **Per-packet one-way delay**: The second graph displays the per-packet one-way delay in milliseconds for different flows over time. The delay is represented by dots of different colors, each corresponding to a specific flow:
  - Flow 1 (95th percentile 247.09 ms)
  - Flow 2 (95th percentile 299.35 ms)
  - Flow 3 (95th percentile 219.99 ms)
Run 8: Statistics of FillP-Sheep

Start at: 2018-07-12 19:39:29
End at: 2018-07-12 19:39:59
Local clock offset: -0.135 ms
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-07-12 22:17:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1158.73 Mbit/s
95th percentile per-packet one-way delay: 255.177 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 609.23 Mbit/s
95th percentile per-packet one-way delay: 280.360 ms
Loss rate: 2.53%
-- Flow 2:
Average throughput: 575.59 Mbit/s
95th percentile per-packet one-way delay: 237.999 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 509.22 Mbit/s
95th percentile per-packet one-way delay: 206.989 ms
Loss rate: 1.38%
Run 8: Report of FillP-Sheep — Data Link

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

- **Throughput** (Mb/s):
  - Flow 1 Ingress (mean 622.96 Mb/s)
  - Flow 1 Egress (mean 609.23 Mb/s)
  - Flow 2 Ingress (mean 576.80 Mb/s)
  - Flow 2 Egress (mean 575.59 Mb/s)
  - Flow 3 Ingress (mean 511.01 Mb/s)
  - Flow 3 Egress (mean 509.22 Mb/s)

- **Per-packet one way delay (ms):**
  - Flow 1 (95th percentile 280.36 ms)
  - Flow 2 (95th percentile 238.00 ms)
  - Flow 3 (95th percentile 206.99 ms)
Run 9: Statistics of FillP-Sheep

Start at: 2018-07-12 20:03:30
End at: 2018-07-12 20:04:00
Local clock offset: -0.491 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-07-12 22:17:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 974.92 Mbit/s
  95th percentile per-packet one-way delay: 295.521 ms
  Loss rate: 3.51%
-- Flow 1:
  Average throughput: 483.93 Mbit/s
  95th percentile per-packet one-way delay: 300.561 ms
  Loss rate: 3.07%
-- Flow 2:
  Average throughput: 545.37 Mbit/s
  95th percentile per-packet one-way delay: 236.826 ms
  Loss rate: 4.26%
-- Flow 3:
  Average throughput: 397.75 Mbit/s
  95th percentile per-packet one-way delay: 234.728 ms
  Loss rate: 3.01%
Run 9: Report of FillP-Sheep — Data Link
Run 10: Statistics of FillP-Sheep

Start at: 2018-07-12 20:27:23
End at: 2018-07-12 20:27:53
Local clock offset: -0.136 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 22:19:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1185.26 Mbit/s
95th percentile per-packet one-way delay: 233.009 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 613.37 Mbit/s
95th percentile per-packet one-way delay: 246.790 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 599.53 Mbit/s
95th percentile per-packet one-way delay: 228.732 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 527.01 Mbit/s
95th percentile per-packet one-way delay: 202.072 ms
Loss rate: 2.09%
Run 10: Report of FillIP-Sheep — Data Link
Run 1: Statistics of Indigo

Start at: 2018-07-12 16:36:39
End at: 2018-07-12 16:37:09
Local clock offset: -0.154 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-07-12 22:19:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 300.19 Mbit/s
95th percentile per-packet one-way delay: 78.337 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 177.37 Mbit/s
95th percentile per-packet one-way delay: 75.946 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 144.95 Mbit/s
95th percentile per-packet one-way delay: 78.584 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 72.66 Mbit/s
95th percentile per-packet one-way delay: 93.047 ms
Loss rate: 1.17%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2018-07-12 17:00:58
End at: 2018-07-12 17:01:28
Local clock offset: -0.154 ms
Remote clock offset: 0.045 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 283.75 Mbit/s
95th percentile per-packet one-way delay: 91.963 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 157.93 Mbit/s
95th percentile per-packet one-way delay: 84.252 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 138.23 Mbit/s
95th percentile per-packet one-way delay: 91.814 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 105.31 Mbit/s
95th percentile per-packet one-way delay: 100.932 ms
Loss rate: 1.09%
Run 2: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 157.84 Mbps)
- Flow 1 egress (mean 157.93 Mbps)
- Flow 2 ingress (mean 138.10 Mbps)
- Flow 2 egress (mean 138.23 Mbps)
- Flow 3 ingress (mean 105.38 Mbps)
- Flow 3 egress (mean 105.31 Mbps)

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

- Flow 1 (95th percentile 84.25 ms)
- Flow 2 (95th percentile 91.81 ms)
- Flow 3 (95th percentile 100.93 ms)
Run 3: Statistics of Indigo

Start at: 2018-07-12 17:25:04
End at: 2018-07-12 17:25:34
Local clock offset: 0.178 ms
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 289.64 Mbit/s
  95th percentile per-packet one-way delay: 70.147 ms
  Loss rate: 0.42%
-- Flow 1:
  Average throughput: 178.12 Mbit/s
  95th percentile per-packet one-way delay: 68.805 ms
  Loss rate: 0.29%
-- Flow 2:
  Average throughput: 149.38 Mbit/s
  95th percentile per-packet one-way delay: 70.886 ms
  Loss rate: 0.59%
-- Flow 3:
  Average throughput: 38.23 Mbit/s
  95th percentile per-packet one-way delay: 73.769 ms
  Loss rate: 1.03%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2018-07-12 17:49:06
End at: 2018-07-12 17:49:36
Local clock offset: 0.209 ms
Remote clock offset: 0.022 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 288.16 Mbit/s
  95th percentile per-packet one-way delay: 68.766 ms
  Loss rate: 0.43%
-- Flow 1:
  Average throughput: 174.86 Mbit/s
  95th percentile per-packet one-way delay: 67.928 ms
  Loss rate: 0.31%
-- Flow 2:
  Average throughput: 153.04 Mbit/s
  95th percentile per-packet one-way delay: 69.707 ms
  Loss rate: 0.55%
-- Flow 3:
  Average throughput: 36.56 Mbit/s
  95th percentile per-packet one-way delay: 69.254 ms
  Loss rate: 1.14%
Run 4: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 174.80 Mbit/s)
- Flow 1 egress (mean 174.86 Mbit/s)
- Flow 2 ingress (mean 153.10 Mbit/s)
- Flow 2 egress (mean 153.04 Mbit/s)
- Flow 3 ingress (mean 36.59 Mbit/s)
- Flow 3 egress (mean 36.56 Mbit/s)

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

- Flow 1 (95th percentile 67.93 ms)
- Flow 2 (95th percentile 69.71 ms)
- Flow 3 (95th percentile 69.25 ms)
Run 5: Statistics of Indigo

Start at: 2018-07-12 18:13:11
End at: 2018-07-12 18:13:41
Local clock offset: ~0.172 ms
Remote clock offset: 0.064 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 287.06 Mbit/s
95th percentile per-packet one-way delay: 74.470 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 177.94 Mbit/s
95th percentile per-packet one-way delay: 72.702 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 141.14 Mbit/s
95th percentile per-packet one-way delay: 75.157 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 47.89 Mbit/s
95th percentile per-packet one-way delay: 78.234 ms
Loss rate: 1.18%
Run 5: Report of Indigo — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 177.92 Mbps)
- Flow 1 egress (mean 177.94 Mbps)
- Flow 2 ingress (mean 141.13 Mbps)
- Flow 2 egress (mean 141.14 Mbps)
- Flow 3 ingress (mean 47.96 Mbps)
- Flow 3 egress (mean 47.89 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 72.70 ms)
- Flow 2 (95th percentile 75.16 ms)
- Flow 3 (95th percentile 78.23 ms)
Run 6: Statistics of Indigo

Start at: 2018-07-12 18:36:52
End at: 2018-07-12 18:37:22
Local clock offset: -0.134 ms
Remote clock offset: 0.109 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 279.19 Mbit/s
95th percentile per-packet one-way delay: 86.630 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 149.27 Mbit/s
95th percentile per-packet one-way delay: 83.517 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 135.85 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 119.25 Mbit/s
95th percentile per-packet one-way delay: 94.963 ms
Loss rate: 1.13%
Run 6: Report of Indigo — Data Link

![Graphs showing throughput and per-packet round-trip delay over time for different flows.]

Throughput (Mbps)

- Flow 1 ingress (mean 149.19 Mbps)
- Flow 1 egress (mean 149.27 Mbps)
- Flow 2 ingress (mean 135.82 Mbps)
- Flow 2 egress (mean 135.85 Mbps)
- Flow 3 ingress (mean 119.38 Mbps)
- Flow 3 egress (mean 119.25 Mbps)

Per-packet round-trip delay (ms)

- Flow 1 (95th percentile 83.52 ms)
- Flow 2 (95th percentile 86.92 ms)
- Flow 3 (95th percentile 94.96 ms)
Run 7: Statistics of Indigo

Start at: 2018-07-12 19:00:54
End at: 2018-07-12 19:01:24
Local clock offset: -0.447 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.10 Mbit/s
95th percentile per-packet one-way delay: 74.450 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 171.37 Mbit/s
95th percentile per-packet one-way delay: 70.464 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 146.25 Mbit/s
95th percentile per-packet one-way delay: 74.808 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 61.61 Mbit/s
95th percentile per-packet one-way delay: 80.123 ms
Loss rate: 1.11%
Run 7: Report of Indigo — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 171.37 Mbit/s) — Flow 1 egress (mean 171.37 Mbit/s)
Flow 2 ingress (mean 146.31 Mbit/s) — Flow 2 egress (mean 146.25 Mbit/s)
Flow 3 ingress (mean 61.66 Mbit/s) — Flow 3 egress (mean 61.61 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 70.46 ms) — Flow 2 (95th percentile 74.81 ms) — Flow 3 (95th percentile 80.12 ms)
Run 8: Statistics of Indigo

Start at: 2018-07-12 19:24:58
End at: 2018-07-12 19:25:28
Local clock offset: 0.22 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 282.20 Mbit/s
95th percentile per-packet one-way delay: 78.881 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 165.56 Mbit/s
95th percentile per-packet one-way delay: 74.399 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 144.98 Mbit/s
95th percentile per-packet one-way delay: 79.877 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 63.19 Mbit/s
95th percentile per-packet one-way delay: 83.476 ms
Loss rate: 1.16%
Run 8: Report of Indigo — Data Link
Run 9: Statistics of Indigo

Start at: 2018-07-12 19:49:08
End at: 2018-07-12 19:49:38
Local clock offset: -0.47 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 286.68 Mbit/s
  95th percentile per-packet one-way delay: 70.104 ms
  Loss rate: 0.49%
-- Flow 1:
  Average throughput: 174.28 Mbit/s
  95th percentile per-packet one-way delay: 69.114 ms
  Loss rate: 0.34%
-- Flow 2:
  Average throughput: 136.76 Mbit/s
  95th percentile per-packet one-way delay: 70.345 ms
  Loss rate: 0.59%
-- Flow 3:
  Average throughput: 66.93 Mbit/s
  95th percentile per-packet one-way delay: 83.293 ms
  Loss rate: 1.25%
Run 9: Report of Indigo — Data Link
Run 10: Statistics of Indigo

Start at: 2018-07-12 20:13:04
End at: 2018-07-12 20:13:34
Local clock offset: -0.127 ms
Remote clock offset: -0.038 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 291.85 Mbit/s
95th percentile per-packet one-way delay: 75.686 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 179.36 Mbit/s
95th percentile per-packet one-way delay: 72.565 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 143.34 Mbit/s
95th percentile per-packet one-way delay: 77.784 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 53.38 Mbit/s
95th percentile per-packet one-way delay: 86.786 ms
Loss rate: 1.07%
Run 10: Report of Indigo — Data Link

![Graph showing throughput and per packet one way delay over time for different flows.](image)
Run 1: Statistics of LEDBAT

Start at: 2018-07-12 16:42:54
End at: 2018-07-12 16:43:24
Local clock offset: -0.52 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 53.45 Mbit/s
  95th percentile per-packet one-way delay: 51.980 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 34.62 Mbit/s
  95th percentile per-packet one-way delay: 51.895 ms
  Loss rate: 0.68%
-- Flow 2:
  Average throughput: 23.28 Mbit/s
  95th percentile per-packet one-way delay: 51.972 ms
  Loss rate: 1.01%
-- Flow 3:
  Average throughput: 10.31 Mbit/s
  95th percentile per-packet one-way delay: 52.837 ms
  Loss rate: 2.15%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2018-07-12 17:07:00
End at: 2018-07-12 17:07:30
Local clock offset: 0.236 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 53.22 Mbit/s
  95th percentile per-packet one-way delay: 52.562 ms
  Loss rate: 0.85%
-- Flow 1:
  Average throughput: 35.30 Mbit/s
  95th percentile per-packet one-way delay: 52.513 ms
  Loss rate: 0.67%
-- Flow 2:
  Average throughput: 23.80 Mbit/s
  95th percentile per-packet one-way delay: 52.600 ms
  Loss rate: 1.01%
-- Flow 3:
  Average throughput: 6.45 Mbit/s
  95th percentile per-packet one-way delay: 53.183 ms
  Loss rate: 2.69%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDBAT

Start at: 2018-07-12 17:31:02
End at: 2018-07-12 17:31:32
Local clock offset: 0.21 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.52 Mbit/s
95th percentile per-packet one-way delay: 52.378 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 35.03 Mbit/s
95th percentile per-packet one-way delay: 52.300 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 23.70 Mbit/s
95th percentile per-packet one-way delay: 52.564 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 11.39 Mbit/s
95th percentile per-packet one-way delay: 52.443 ms
Loss rate: 2.06%
Run 3: Report of LEDBAT — Data Link

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

**Legend:**
- Flow 1 ingress (mean 35.15 Mbit/s)
- Flow 1 egress (mean 35.03 Mbit/s)
- Flow 2 ingress (mean 23.82 Mbit/s)
- Flow 2 egress (mean 23.70 Mbit/s)
- Flow 3 ingress (mean 11.51 Mbit/s)
- Flow 3 egress (mean 11.39 Mbit/s)

![Graph 2: Per-packet end-to-end delay](image2)

**Legend:**
- Flow 1 (95th percentile 52.30 ms)
- Flow 2 (95th percentile 52.56 ms)
- Flow 3 (95th percentile 52.44 ms)
Run 4: Statistics of LEDBAT

Start at: 2018-07-12 17:55:09
End at: 2018-07-12 17:55:39
Local clock offset: -0.169 ms
Remote clock offset: 0.029 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 46.31 Mbit/s
  95th percentile per-packet one-way delay: 52.100 ms
  Loss rate: 0.95%
-- Flow 1:
  Average throughput: 27.14 Mbit/s
  95th percentile per-packet one-way delay: 52.226 ms
  Loss rate: 0.76%
-- Flow 2:
  Average throughput: 23.14 Mbit/s
  95th percentile per-packet one-way delay: 51.957 ms
  Loss rate: 1.02%
-- Flow 3:
  Average throughput: 11.58 Mbit/s
  95th percentile per-packet one-way delay: 51.529 ms
  Loss rate: 2.02%
Run 4: Report of LEDBAT — Data Link

![Graphs showing throughput and packet delay]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 27.25 Mbps)
  - Flow 1 egress (mean 27.14 Mbps)
  - Flow 2 ingress (mean 23.26 Mbps)
  - Flow 2 egress (mean 23.14 Mbps)
  - Flow 3 ingress (mean 11.69 Mbps)
  - Flow 3 egress (mean 11.58 Mbps)

- **Packet delay (ms):**
  - Flow 1 (95th percentile 52.23 ms)
  - Flow 2 (95th percentile 51.96 ms)
  - Flow 3 (95th percentile 51.53 ms)
Run 5: Statistics of LEDBAT

Start at: 2018-07-12 18:19:11
End at: 2018-07-12 18:19:41
Local clock offset: 0.214 ms
Remote clock offset: 0.029 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.29 Mbit/s
95th percentile per-packet one-way delay: 52.970 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 35.19 Mbit/s
95th percentile per-packet one-way delay: 53.011 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 23.07 Mbit/s
95th percentile per-packet one-way delay: 52.846 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 11.61 Mbit/s
95th percentile per-packet one-way delay: 53.081 ms
Loss rate: 2.04%
Run 5: Report of LEDBAT — Data Link

The first graph shows the throughput over time for different flows, indicating how much data was transmitted over the network.

The second graph illustrates the per-packet round-trip delay, giving insights into the latency of the network traffic in microseconds.

The graphs provide a comprehensive view of the network's performance and help in understanding the efficiency and latency of data transmission during Run 5.
Run 6: Statistics of LEDBAT

Start at: 2018-07-12 18:42:54
End at: 2018-07-12 18:43:24
Local clock offset: -0.139 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 44.43 Mbit/s
  95th percentile per-packet one-way delay: 52.602 ms
  Loss rate: 0.98%
-- Flow 1:
  Average throughput: 25.22 Mbit/s
  95th percentile per-packet one-way delay: 52.797 ms
  Loss rate: 0.79%
-- Flow 2:
  Average throughput: 23.18 Mbit/s
  95th percentile per-packet one-way delay: 52.397 ms
  Loss rate: 1.02%
-- Flow 3:
  Average throughput: 11.53 Mbit/s
  95th percentile per-packet one-way delay: 52.281 ms
  Loss rate: 2.04%
Run 6: Report of LEDBAT — Data Link

[Graphs showing throughput and packet delay over time for different flows with annotations for each flow's ingress and egress mean bit rates.]
Run 7: Statistics of LEDBAT

Start at: 2018-07-12 19:06:59
End at: 2018-07-12 19:07:29
Local clock offset: -0.159 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.39 Mbit/s
95th percentile per-packet one-way delay: 53.009 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 35.22 Mbit/s
95th percentile per-packet one-way delay: 53.283 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 52.632 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 11.41 Mbit/s
95th percentile per-packet one-way delay: 52.230 ms
Loss rate: 2.06%
Run 7: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 35.34 Mbit/s)
- Flow 1 egress (mean 35.22 Mbit/s)
- Flow 2 ingress (mean 23.38 Mbit/s)
- Flow 2 egress (mean 23.26 Mbit/s)
- Flow 3 ingress (mean 11.53 Mbit/s)
- Flow 3 egress (mean 11.41 Mbit/s)

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

- Flow 1 (95th percentile 51.28 ms)
- Flow 2 (95th percentile 52.63 ms)
- Flow 3 (95th percentile 52.23 ms)
Run 8: Statistics of LEDBAT

Start at: 2018-07-12 19:31:07
End at: 2018-07-12 19:31:37
Local clock offset: -0.555 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.85 Mbit/s
95th percentile per-packet one-way delay: 51.754 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 31.30 Mbit/s
95th percentile per-packet one-way delay: 51.693 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 23.75 Mbit/s
95th percentile per-packet one-way delay: 52.234 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 51.036 ms
Loss rate: 2.04%
Run 8: Report of LEDBAT — Data Link

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**Throughput (Mbps)**

- **Flow 1 ingress** (mean 31.41 Mbps)
- **Flow 1 egress** (mean 31.30 Mbps)
- **Flow 2 ingress** (mean 23.87 Mbps)
- **Flow 2 egress** (mean 23.75 Mbps)
- **Flow 3 ingress** (mean 11.69 Mbps)
- **Flow 3 egress** (mean 11.57 Mbps)

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

- **Flow 1** (95th percentile 51.69 ms)
- **Flow 2** (95th percentile 52.23 ms)
- **Flow 3** (95th percentile 51.04 ms)
Run 9: Statistics of LEDBAT

End at: 2018-07-12 19:55:45
Local clock offset: 0.26 ms
Remote clock offset: -0.009 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.69 Mbit/s
95th percentile per-packet one-way delay: 52.418 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 34.93 Mbit/s
95th percentile per-packet one-way delay: 52.261 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 23.16 Mbit/s
95th percentile per-packet one-way delay: 52.992 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 10.23 Mbit/s
95th percentile per-packet one-way delay: 52.232 ms
Loss rate: 2.16%
Run 9: Report of LEDBAT — Data Link

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

- **Flow 1 ingress** (mean 35.05 Mbit/s)
- **Flow 1 egress** (mean 34.93 Mbit/s)
- **Flow 2 ingress** (mean 23.28 Mbit/s)
- **Flow 2 egress** (mean 23.16 Mbit/s)
- **Flow 3 ingress** (mean 10.35 Mbit/s)
- **Flow 3 egress** (mean 10.23 Mbit/s)

![Graph 2: Per-packet End-to-End delay](#)

- **Flow 1** (99th percentile 52.26 ms)
- **Flow 2** (99th percentile 52.99 ms)
- **Flow 3** (99th percentile 52.23 ms)
Run 10: Statistics of LEDBAT

Start at: 2018-07-12 20:19:09
End at: 2018-07-12 20:19:39
Local clock offset: -0.114 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.42 Mbit/s
95th percentile per-packet one-way delay: 51.968 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 34.72 Mbit/s
95th percentile per-packet one-way delay: 51.943 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 17.64 Mbit/s
95th percentile per-packet one-way delay: 51.975 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 52.278 ms
Loss rate: 2.00%
Run 10: Report of LEDBAT — Data Link

![Graph showing throughput vs time for different flows]

Legend:
- Flow 1 ingress (mean 34.84 Mbit/s)
- Flow 1 egress (mean 34.72 Mbit/s)
- Flow 2 ingress (mean 17.74 Mbit/s)
- Flow 2 egress (mean 17.64 Mbit/s)
- Flow 3 ingress (mean 12.17 Mbit/s)
- Flow 3 egress (mean 12.04 Mbit/s)

![Graph showing per-packet one-way delay vs time for different flows]

Legend:
- Flow 1 (95th percentile 51.94 ms)
- Flow 2 (95th percentile 51.98 ms)
- Flow 3 (95th percentile 52.28 ms)
Run 1: Statistics of PCC-Allegro

Start at: 2018-07-12 16:48:47
End at: 2018-07-12 16:49:17
Local clock offset: -0.155 ms
Remote clock offset: 0.048 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
   -- Total of 3 flows:
   Average throughput: 313.77 Mbit/s
   95th percentile per-packet one-way delay: 115.461 ms
   Loss rate: 0.64%
   -- Flow 1:
   Average throughput: 292.13 Mbit/s
   95th percentile per-packet one-way delay: 115.584 ms
   Loss rate: 0.59%
   -- Flow 2:
   Average throughput: 16.41 Mbit/s
   95th percentile per-packet one-way delay: 114.589 ms
   Loss rate: 0.84%
   -- Flow 3:
   Average throughput: 32.81 Mbit/s
   95th percentile per-packet one-way delay: 114.107 ms
   Loss rate: 1.72%
Run 1: Report of PCC-Allegro — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 292.87 Mbps)
  - Flow 1 egress (mean 292.13 Mbps)
  - Flow 2 ingress (mean 16.46 Mbps)
  - Flow 2 egress (mean 16.41 Mbps)
  - Flow 3 ingress (mean 33.05 Mbps)
  - Flow 3 egress (mean 32.81 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 115.58 ms)
  - Flow 2 (95th percentile 114.59 ms)
  - Flow 3 (95th percentile 114.11 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2018-07-12 17:12:54
End at: 2018-07-12 17:13:24
Local clock offset: -0.191 ms
Remote clock offset: 0.044 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 335.89 Mbit/s
95th percentile per-packet one-way delay: 169.390 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 289.24 Mbit/s
95th percentile per-packet one-way delay: 169.442 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 62.52 Mbit/s
95th percentile per-packet one-way delay: 173.209 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 15.90 Mbit/s
95th percentile per-packet one-way delay: 85.741 ms
Loss rate: 1.03%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2018-07-12 17:36:53
End at: 2018-07-12 17:37:23
Local clock offset: 0.186 ms
Remote clock offset: 0.053 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 345.69 Mbit/s
95th percentile per-packet one-way delay: 110.649 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 319.47 Mbit/s
95th percentile per-packet one-way delay: 109.765 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 31.21 Mbit/s
95th percentile per-packet one-way delay: 111.938 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 16.85 Mbit/s
95th percentile per-packet one-way delay: 124.867 ms
Loss rate: 1.14%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 319.37 Mbps)
Flow 1 egress (mean 319.47 Mbps)
Flow 2 ingress (mean 31.22 Mbps)
Flow 2 egress (mean 31.21 Mbps)
Flow 3 ingress (mean 16.63 Mbps)
Flow 3 egress (mean 16.85 Mbps)

End-to-end delay (ms)

Time (s)

Flow 1 (95th percentile 109.77 ms)
Flow 2 (95th percentile 111.94 ms)
Flow 3 (95th percentile 124.87 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-07-12 18:01:05
End at: 2018-07-12 18:01:35
Local clock offset: -0.102 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 338.33 Mbit/s
  95th percentile per-packet one-way delay: 106.529 ms
  Loss rate: 0.34%
-- Flow 1:
  Average throughput: 312.58 Mbit/s
  95th percentile per-packet one-way delay: 106.647 ms
  Loss rate: 0.32%
-- Flow 2:
  Average throughput: 36.83 Mbit/s
  95th percentile per-packet one-way delay: 105.680 ms
  Loss rate: 0.56%
-- Flow 3:
  Average throughput: 4.19 Mbit/s
  95th percentile per-packet one-way delay: 80.227 ms
  Loss rate: 0.99%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2018-07-12 18:25:00
End at: 2018-07-12 18:25:30
Local clock offset: -0.496 ms
Remote clock offset: 0.059 ms

# Below is generated by plot.py at 2018-07-12 22:19:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 306.37 Mbit/s
  95th percentile per-packet one-way delay: 149.641 ms
  Loss rate: 0.44%
-- Flow 1:
  Average throughput: 261.11 Mbit/s
  95th percentile per-packet one-way delay: 149.781 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 66.08 Mbit/s
  95th percentile per-packet one-way delay: 148.849 ms
  Loss rate: 0.59%
-- Flow 3:
  Average throughput: 4.52 Mbit/s
  95th percentile per-packet one-way delay: 147.756 ms
  Loss rate: 1.09%
Run 5: Report of PCC-Allegro — Data Link

Throughput (Mb/s) vs Time (s)

- Flow 1 ingress (mean 261.28 Mb/s)
- Flow 1 egress (mean 261.11 Mb/s)
- Flow 2 ingress (mean 66.13 Mb/s)
- Flow 2 egress (mean 66.08 Mb/s)
- Flow 3 ingress (mean 4.52 Mb/s)
- Flow 3 egress (mean 4.52 Mb/s)

Per-packet one-way delay (ms) vs Time (s)

- Flow 1 (95th percentile 149.78 ms)
- Flow 2 (95th percentile 148.85 ms)
- Flow 3 (95th percentile 147.76 ms)
Run 6: Statistics of PCC-Allegro

Start at: 2018-07-12 18:48:46
End at: 2018-07-12 18:49:16
Local clock offset: -0.556 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2018-07-12 22:21:15
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 333.54 Mbit/s
  95th percentile per-packet one-way delay: 201.785 ms
  Loss rate: 0.66%
-- Flow 1:
  Average throughput: 279.91 Mbit/s
  95th percentile per-packet one-way delay: 200.575 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 16.76 Mbit/s
  95th percentile per-packet one-way delay: 202.582 ms
  Loss rate: 0.80%
-- Flow 3:
  Average throughput: 129.83 Mbit/s
  95th percentile per-packet one-way delay: 204.888 ms
  Loss rate: 1.74%
Run 6: Report of PCC-Allegro — Data Link
Run 7: Statistics of PCC-Allegro

Start at: 2018-07-12 19:12:55
End at: 2018-07-12 19:13:25
Local clock offset: -0.153 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-07-12 22:22:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 332.56 Mbit/s
  95th percentile per-packet one-way delay: 216.453 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 308.90 Mbit/s
  95th percentile per-packet one-way delay: 216.010 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 33.51 Mbit/s
  95th percentile per-packet one-way delay: 224.488 ms
  Loss rate: 0.78%
-- Flow 3:
  Average throughput: 4.36 Mbit/s
  95th percentile per-packet one-way delay: 202.092 ms
  Loss rate: 1.10%
Run 7: Report of PCC-Allegro — Data Link

![Graphs showing throughput and per-packet delivery delay over time for different flows.]
Run 8: Statistics of PCC-Allegro

Start at: 2018-07-12 19:37:01
End at: 2018-07-12 19:37:31
Local clock offset: -0.138 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-07-12 22:22:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 309.50 Mbit/s
95th percentile per-packet one-way delay: 82.366 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 282.96 Mbit/s
95th percentile per-packet one-way delay: 82.494 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 38.04 Mbit/s
95th percentile per-packet one-way delay: 81.576 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 4.09 Mbit/s
95th percentile per-packet one-way delay: 82.220 ms
Loss rate: 1.19%
Run 8: Report of PCC-Allegro — Data Link
Run 9: Statistics of PCC-Allegro

Start at: 2018-07-12 20:01:02
End at: 2018-07-12 20:01:32
Local clock offset: -0.106 ms
Remote clock offset: -0.047 ms

# Below is generated by plot.py at 2018-07-12 22:23:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 303.79 Mbit/s
95th percentile per-packet one-way delay: 85.894 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 276.14 Mbit/s
95th percentile per-packet one-way delay: 86.032 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 33.77 Mbit/s
95th percentile per-packet one-way delay: 83.808 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 16.13 Mbit/s
95th percentile per-packet one-way delay: 88.703 ms
Loss rate: 1.14%
Run 9: Report of PCC-Allegro — Data Link

![Throughput Graph](image1)

![Delay Per Packet Graph](image2)
Run 10: Statistics of PCC-Allegro

Start at: 2018-07-12 20:24:56
End at: 2018-07-12 20:25:26
Local clock offset: -0.12 ms
Remote clock offset: 0.022 ms

# Below is generated by plot.py at 2018-07-12 22:23:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 305.44 Mbit/s
95th percentile per-packet one-way delay: 87.436 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 273.75 Mbit/s
95th percentile per-packet one-way delay: 87.577 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 32.07 Mbit/s
95th percentile per-packet one-way delay: 86.124 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 31.86 Mbit/s
95th percentile per-packet one-way delay: 88.949 ms
Loss rate: 1.08%
Run 10: Report of PCC-Allegro — Data Link

[Graph showing throughput and packet loss over time]
Run 1: Statistics of PCC-Expr

Start at: 2018-07-12 16:39:32
End at: 2018-07-12 16:40:02
Local clock offset: ~0.175 ms
Remote clock offset: 0.029 ms

# Below is generated by plot.py at 2018-07-12 22:31:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 380.26 Mbit/s
95th percentile per-packet one-way delay: 197.144 ms
Loss rate: 4.49%
-- Flow 1:
Average throughput: 226.87 Mbit/s
95th percentile per-packet one-way delay: 195.999 ms
Loss rate: 3.49%
-- Flow 2:
Average throughput: 228.67 Mbit/s
95th percentile per-packet one-way delay: 200.300 ms
Loss rate: 5.96%
-- Flow 3:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 193.532 ms
Loss rate: 3.16%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2018-07-12 17:03:49
End at: 2018-07-12 17:04:19
Local clock offset: 0.229 ms
Remote clock offset: 0.079 ms

# Below is generated by plot.py at 2018-07-12 22:31:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 278.63 Mbit/s
95th percentile per-packet one-way delay: 85.268 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 193.86 Mbit/s
95th percentile per-packet one-way delay: 81.894 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 109.22 Mbit/s
95th percentile per-packet one-way delay: 88.296 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 37.47 Mbit/s
95th percentile per-packet one-way delay: 99.525 ms
Loss rate: 2.25%
Run 2: Report of PCC-Expr — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.]
Run 3: Statistics of PCC-Expr

Start at: 2018-07-12 17:27:55
End at: 2018-07-12 17:28:25
Local clock offset: -0.108 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2018-07-12 22:31:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 251.16 Mbit/s
95th percentile per-packet one-way delay: 53.916 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 156.52 Mbit/s
95th percentile per-packet one-way delay: 53.280 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 135.43 Mbit/s
95th percentile per-packet one-way delay: 54.582 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 14.38 Mbit/s
95th percentile per-packet one-way delay: 57.190 ms
Loss rate: 1.40%
Run 3: Report of PCC-Expr — Data Link

Throughput (Mbit/s)

Flow 1 ingress (mean 156.36 Mbit/s)  
Flow 1 egress (mean 156.52 Mbit/s)  
Flow 2 ingress (mean 135.51 Mbit/s)  
Flow 2 egress (mean 135.43 Mbit/s)  
Flow 3 ingress (mean 14.44 Mbit/s)  
Flow 3 egress (mean 14.38 Mbit/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 53.28 ms)  
Flow 2 (95th percentile 54.58 ms)  
Flow 3 (95th percentile 57.19 ms)
Run 4: Statistics of PCC-Expr

Start at: 2018-07-12 17:51:58
End at: 2018-07-12 17:52:28
Local clock offset: 0.192 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2018-07-12 22:31:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 284.02 Mbit/s
95th percentile per-packet one-way delay: 53.728 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 179.93 Mbit/s
95th percentile per-packet one-way delay: 52.709 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 129.17 Mbit/s
95th percentile per-packet one-way delay: 55.781 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 56.03 Mbit/s
95th percentile per-packet one-way delay: 60.777 ms
Loss rate: 1.49%
Run 4: Report of PCC-Expr — Data Link

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

Start at: 2018-07-12 18:16:02
End at: 2018-07-12 18:16:32
Local clock offset: -0.51 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-07-12 22:31:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 245.72 Mbit/s
95th percentile per-packet one-way delay: 54.232 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 175.18 Mbit/s
95th percentile per-packet one-way delay: 54.029 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 80.63 Mbit/s
95th percentile per-packet one-way delay: 54.447 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 52.18 Mbit/s
95th percentile per-packet one-way delay: 55.001 ms
Loss rate: 1.13%
Run 5: Report of PCC-Expr — Data Link

**Graph 1:**
- **X-axis:** Time (s)
- **Y-axis:** Throughput (Mbit/s)
- Legend:
  - Flow 1 ingress (mean 175.11 Mbit/s)
  - Flow 1 egress (mean 175.18 Mbit/s)
  - Flow 2 ingress (mean 80.08 Mbit/s)
  - Flow 2 egress (mean 80.63 Mbit/s)
  - Flow 3 ingress (mean 52.23 Mbit/s)
  - Flow 3 egress (mean 52.18 Mbit/s)

**Graph 2:**
- **X-axis:** Time (s)
- **Y-axis:** Per-packet one-way delay (ms)
- Legend:
  - Flow 1 (95th percentile 54.03 ms)
  - Flow 2 (95th percentile 54.45 ms)
  - Flow 3 (95th percentile 55.00 ms)
Run 6: Statistics of PCC-Expr

Start at: 2018-07-12 18:39:43
End at: 2018-07-12 18:40:13
Local clock offset: 0.248 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-12 22:32:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 290.08 Mbit/s
95th percentile per-packet one-way delay: 76.387 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 195.42 Mbit/s
95th percentile per-packet one-way delay: 73.604 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 129.20 Mbit/s
95th percentile per-packet one-way delay: 78.539 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 27.12 Mbit/s
95th percentile per-packet one-way delay: 80.692 ms
Loss rate: 2.03%
Run 6: Report of PCC-Expr — Data Link
Run 7: Statistics of PCC-Expr

Start at: 2018-07-12 19:03:45
End at: 2018-07-12 19:04:15
Local clock offset: -0.473 ms
Remote clock offset: -0.024 ms

# Below is generated by plot.py at 2018-07-12 22:32:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 283.69 Mbit/s
95th percentile per-packet one-way delay: 58.324 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 187.93 Mbit/s
95th percentile per-packet one-way delay: 55.589 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 115.68 Mbit/s
95th percentile per-packet one-way delay: 61.571 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 57.84 Mbit/s
95th percentile per-packet one-way delay: 62.529 ms
Loss rate: 1.68%
Run 7: Report of PCC-Expr — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 187.66 Mbit/s)  Flow 1 egress (mean 187.93 Mbit/s)
Flow 2 ingress (mean 115.98 Mbit/s)  Flow 2 egress (mean 115.68 Mbit/s)
Flow 3 ingress (mean 58.22 Mbit/s)  Flow 3 egress (mean 57.84 Mbit/s)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 55.59 ms)  Flow 2 (95th percentile 61.57 ms)  Flow 3 (95th percentile 62.53 ms)
Run 8: Statistics of PCC-Expr

Start at: 2018-07-12 19:27:50
End at: 2018-07-12 19:28:20
Local clock offset: -0.142 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-07-12 22:32:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 250.80 Mbit/s
95th percentile per-packet one-way delay: 52.555 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 139.70 Mbit/s
95th percentile per-packet one-way delay: 52.434 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 137.25 Mbit/s
95th percentile per-packet one-way delay: 52.694 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 61.19 Mbit/s
95th percentile per-packet one-way delay: 52.625 ms
Loss rate: 1.41%
Run 8: Report of PCC-Expr — Data Link
Run 9: Statistics of PCC-Expr

Start at: 2018-07-12 19:52:00
End at: 2018-07-12 19:52:30
Local clock offset: -0.115 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 369.92 Mbit/s
  95th percentile per-packet one-way delay: 202.846 ms
  Loss rate: 3.65%
-- Flow 1:
  Average throughput: 276.57 Mbit/s
  95th percentile per-packet one-way delay: 206.385 ms
  Loss rate: 3.44%
-- Flow 2:
  Average throughput: 138.57 Mbit/s
  95th percentile per-packet one-way delay: 199.871 ms
  Loss rate: 4.25%
-- Flow 3:
  Average throughput: 4.23 Mbit/s
  95th percentile per-packet one-way delay: 199.481 ms
  Loss rate: 6.94%
Run 9: Report of PCC-Expr — Data Link

![Graph showing throughput and per-packet one-way delay for different flows.]

Detailed data for each flow (1 ingress, 2 ingress, 3 ingress, 1 egress, 2 egress, 3 egress) with specific data rates and mean values provided.
Run 10: Statistics of PCC-Expr

Start at: 2018-07-12 20:15:55
End at: 2018-07-12 20:16:25
Local clock offset: -0.113 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 270.27 Mbit/s
95th percentile per-packet one-way delay: 54.574 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 165.84 Mbit/s
95th percentile per-packet one-way delay: 53.323 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 126.64 Mbit/s
95th percentile per-packet one-way delay: 55.844 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 62.23 Mbit/s
95th percentile per-packet one-way delay: 61.724 ms
Loss rate: 2.88%
Run 10: Report of PCC-Expr — Data Link

![Data Link Throughput Graph](image1)

- Flow 1 ingress (mean 165.80 Mbit/s)
- Flow 1 egress (mean 165.84 Mbit/s)
- Flow 2 ingress (mean 126.65 Mbit/s)
- Flow 2 egress (mean 126.64 Mbit/s)
- Flow 3 ingress (mean 63.42 Mbit/s)
- Flow 3 egress (mean 62.23 Mbit/s)

![Data Link Delay Graph](image2)

- Flow 1 (95th percentile 53.32 ms)
- Flow 2 (95th percentile 55.84 ms)
- Flow 3 (95th percentile 61.72 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2018-07-12 16:56:01
End at: 2018-07-12 16:56:31
Local clock offset: 0.184 ms
Remote clock offset: 0.02 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 136.49 Mbit/s
95th percentile per-packet one-way delay: 51.171 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 71.74 Mbit/s
95th percentile per-packet one-way delay: 50.241 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 65.62 Mbit/s
95th percentile per-packet one-way delay: 51.218 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 58.11 Mbit/s
95th percentile per-packet one-way delay: 49.403 ms
Loss rate: 1.07%
Run 1: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress (mean 71.73 Mbit/s)**
- **Flow 1 egress (mean 71.74 Mbit/s)**
- **Flow 2 ingress (mean 65.61 Mbit/s)**
- **Flow 2 egress (mean 65.62 Mbit/s)**
- **Flow 3 ingress (mean 58.14 Mbit/s)**
- **Flow 3 egress (mean 50.11 Mbit/s)**

![Graph showing per-packet one-way delay over time for different flows.]

- **Flow 1 (95th percentile 50.24 ms)**
- **Flow 2 (95th percentile 51.22 ms)**
- **Flow 3 (95th percentile 49.40 ms)**
Run 2: Statistics of QUIC Cubic

Start at: 2018-07-12 17:20:10
End at: 2018-07-12 17:20:40
Local clock offset: -0.523 ms
Remote clock offset: 0.048 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 135.32 Mbit/s
95th percentile per-packet one-way delay: 50.396 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 74.83 Mbit/s
95th percentile per-packet one-way delay: 50.383 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 67.76 Mbit/s
95th percentile per-packet one-way delay: 50.435 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 47.32 Mbit/s
95th percentile per-packet one-way delay: 49.934 ms
Loss rate: 1.35%
Run 2: Report of QUIC Cubic — Data Link

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

- **Flow 1 Ingress (mean 74.86 Mbit/s)**
- **Flow 1 Egress (mean 74.83 Mbit/s)**
- **Flow 2 Ingress (mean 67.77 Mbit/s)**
- **Flow 2 Egress (mean 67.76 Mbit/s)**
- **Flow 3 Ingress (mean 47.49 Mbit/s)**
- **Flow 3 Egress (mean 47.32 Mbit/s)**

The graphs illustrate the throughput and packet delay for three different flows over time, showing fluctuations and varying speeds.
Run 3: Statistics of QUIC Cubic

Start at: 2018-07-12 17:44:12
End at: 2018-07-12 17:44:42
Local clock offset: -0.155 ms
Remote clock offset: 0.075 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 134.73 Mbit/s
95th percentile per-packet one-way delay: 50.830 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 72.86 Mbit/s
95th percentile per-packet one-way delay: 50.742 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 67.76 Mbit/s
95th percentile per-packet one-way delay: 50.877 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 51.55 Mbit/s
95th percentile per-packet one-way delay: 50.747 ms
Loss rate: 1.25%
Run 3: Report of QUIC Cubic — Data Link

![Graph 1: Throughput Over Time]

- **Flow 1 ingress (mean 72.89 Mbit/s)**
- **Flow 1 egress (mean 72.36 Mbit/s)**
- **Flow 2 ingress (mean 67.69 Mbit/s)**
- **Flow 2 egress (mean 67.76 Mbit/s)**
- **Flow 3 ingress (mean 51.67 Mbit/s)**
- **Flow 3 egress (mean 51.55 Mbit/s)**

![Graph 2: Per Packet End-to-End Delay]

- **Flow 1 (95th percentile 50.74 ms)**
- **Flow 2 (95th percentile 50.88 ms)**
- **Flow 3 (95th percentile 50.75 ms)**
Run 4: Statistics of QUIC Cubic

Start at: 2018-07-12 18:08:18
End at: 2018-07-12 18:08:48
Local clock offset: 0.181 ms
Remote clock offset: 0.058 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
95th percentile per-packet one-way delay: 51.205 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 70.03 Mbit/s
95th percentile per-packet one-way delay: 51.194 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 68.42 Mbit/s
95th percentile per-packet one-way delay: 51.234 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 50.47 Mbit/s
95th percentile per-packet one-way delay: 50.627 ms
Loss rate: 1.23%
Run 4: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 70.01 Mbps/s)
- Flow 1 egress (mean 70.03 Mbps/s)
- Flow 2 ingress (mean 68.31 Mbps/s)
- Flow 2 egress (mean 68.42 Mbps/s)
- Flow 3 ingress (mean 50.59 Mbps/s)
- Flow 3 egress (mean 50.47 Mbps/s)

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

- Flow 1 (95th percentile 51.19 ms)
- Flow 2 (95th percentile 51.23 ms)
- Flow 3 (95th percentile 50.63 ms)
Run 5: Statistics of QUIC Cubic

Start at: 2018-07-12 18:31:59
End at: 2018-07-12 18:32:29
Local clock offset: 0.243 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 131.01 Mbit/s
95th percentile per-packet one-way delay: 51.172 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 72.11 Mbit/s
95th percentile per-packet one-way delay: 51.204 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 64.97 Mbit/s
95th percentile per-packet one-way delay: 50.739 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 48.75 Mbit/s
95th percentile per-packet one-way delay: 50.704 ms
Loss rate: 1.29%
Run 6: Statistics of QUIC Cubic

Start at: 2018-07-12 18:56:01
End at: 2018-07-12 18:56:31
Local clock offset: -0.513 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.09 Mbit/s
95th percentile per-packet one-way delay: 51.521 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 71.52 Mbit/s
95th percentile per-packet one-way delay: 50.502 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 63.89 Mbit/s
95th percentile per-packet one-way delay: 52.225 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 45.90 Mbit/s
95th percentile per-packet one-way delay: 50.451 ms
Loss rate: 1.44%
Run 6: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 71.54 Mbit/s)
- Flow 2 ingress (mean 63.90 Mbit/s)
- Flow 3 ingress (mean 46.09 Mbit/s)
- Flow 1 egress (mean 71.52 Mbit/s)
- Flow 2 egress (mean 63.89 Mbit/s)
- Flow 3 egress (mean 45.90 Mbit/s)

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

- Flow 1 (95th percentile 50.50 ms)
- Flow 2 (95th percentile 52.23 ms)
- Flow 3 (95th percentile 50.45 ms)
Run 7: Statistics of QUIC Cubic

Start at: 2018-07-12 19:20:03
End at: 2018-07-12 19:20:33
Local clock offset: -0.493 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 134.54 Mbit/s
95th percentile per-packet one-way delay: 50.480 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 71.89 Mbit/s
95th percentile per-packet one-way delay: 50.403 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 63.19 Mbit/s
95th percentile per-packet one-way delay: 50.536 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 63.00 Mbit/s
95th percentile per-packet one-way delay: 50.427 ms
Loss rate: 0.18%
Run 7: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 71.94 Mbps) — Flow 1 egress (mean 71.89 Mbps)
Flow 2 ingress (mean 63.29 Mbps) — Flow 2 egress (mean 63.19 Mbps)
Flow 3 ingress (mean 62.47 Mbps) — Flow 3 egress (mean 63.00 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 50.40 ms) — Flow 2 (95th percentile 50.54 ms) — Flow 3 (95th percentile 50.43 ms)
Run 8: Statistics of QUIC Cubic

Start at: 2018-07-12 19:44:13
End at: 2018-07-12 19:44:43
Local clock offset: -0.095 ms
Remote clock offset: -0.014 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 131.19 Mbit/s
95th percentile per-packet one-way delay: 50.235 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 71.95 Mbit/s
95th percentile per-packet one-way delay: 50.271 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 64.80 Mbit/s
95th percentile per-packet one-way delay: 49.606 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 49.26 Mbit/s
95th percentile per-packet one-way delay: 50.280 ms
Loss rate: 1.30%
Run 8: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingress** (mean 71.99 Mbit/s)
- **Flow 1 egress** (mean 71.95 Mbit/s)
- **Flow 2 ingress** (mean 64.87 Mbit/s)
- **Flow 2 egress** (mean 64.80 Mbit/s)
- **Flow 3 ingress** (mean 49.42 Mbit/s)
- **Flow 3 egress** (mean 49.26 Mbit/s)

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

- **Flow 1** (95th percentile 50.27 ms)
- **Flow 2** (95th percentile 49.61 ms)
- **Flow 3** (95th percentile 50.28 ms)
Run 9: Statistics of QUIC Cubic

Start at: 2018-07-12 20:08:08
End at: 2018-07-12 20:08:38
Local clock offset: -0.487 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 123.97 Mbit/s
   95th percentile per-packet one-way delay: 49.824 ms
   Loss rate: 0.57%
-- Flow 1:
   Average throughput: 58.31 Mbit/s
   95th percentile per-packet one-way delay: 49.877 ms
   Loss rate: 0.33%
-- Flow 2:
   Average throughput: 70.12 Mbit/s
   95th percentile per-packet one-way delay: 49.593 ms
   Loss rate: 0.62%
-- Flow 3:
   Average throughput: 57.93 Mbit/s
   95th percentile per-packet one-way delay: 49.215 ms
   Loss rate: 1.18%
Run 9: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 58.30 Mbps)
- Flow 1 egress (mean 58.31 Mbps)
- Flow 2 ingress (mean 70.20 Mbps)
- Flow 2 egress (mean 70.12 Mbps)
- Flow 3 ingress (mean 58.03 Mbps)
- Flow 3 egress (mean 57.93 Mbps)

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

- Flow 1 (95th percentile 49.88 ms)
- Flow 2 (95th percentile 49.59 ms)
- Flow 3 (95th percentile 49.22 ms)
Run 10: Statistics of QUIC Cubic

Start at: 2018-07-12 20:32:14
End at: 2018-07-12 20:32:44
Local clock offset: 0.227 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 132.30 Mbit/s
95th percentile per-packet one-way delay: 50.522 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 70.24 Mbit/s
95th percentile per-packet one-way delay: 50.519 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 65.88 Mbit/s
95th percentile per-packet one-way delay: 50.512 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 55.70 Mbit/s
95th percentile per-packet one-way delay: 50.686 ms
Loss rate: 1.55%
Run 10: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2018-07-12 16:32:59
End at: 2018-07-12 16:33:29
Local clock offset: -0.122 ms
Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 50.622 ms
  Loss rate: 0.46%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.582 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.732 ms
  Loss rate: 0.62%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.558 ms
  Loss rate: 0.74%
Run 1: Report of SCReAM — Data Link

Throughput (Mbps)

Throughput (Mbps)

Delay (ms)

Delay (ms)

Flow 1 ingress (mean 0.22 Mbps)
Flow 1 egress (mean 0.22 Mbps)
Flow 2 ingress (mean 0.22 Mbps)
Flow 2 egress (mean 0.22 Mbps)
Flow 3 ingress (mean 0.22 Mbps)
Flow 3 egress (mean 0.22 Mbps)

Flow 1 (95th percentile 50.58 ms)
Flow 2 (95th percentile 50.73 ms)
Flow 3 (95th percentile 50.56 ms)
Run 2: Statistics of SCReAM

Start at: 2018-07-12 16:57:16
End at: 2018-07-12 16:57:46
Local clock offset: -0.501 ms
Remote clock offset: 0.12 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.548 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.451 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.584 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.960 ms
Loss rate: 1.09%
Run 2: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.22 Mbit/s)
- Flow 2 ingress (mean 0.22 Mbit/s)
- Flow 2 egress (mean 0.22 Mbit/s)
- Flow 3 ingress (mean 0.22 Mbit/s)
- Flow 3 egress (mean 0.22 Mbit/s)

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

- Flow 1 (95th percentile 50.45 ms)
- Flow 2 (95th percentile 50.58 ms)
- Flow 3 (95th percentile 49.96 ms)
Run 3: Statistics of SCReAM

Start at: 2018-07-12 17:21:26
End at: 2018-07-12 17:21:56
Local clock offset: -0.114 ms
Remote clock offset: 0.046 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 50.863 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.875 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.861 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.446 ms
  Loss rate: 1.09%
Run 3: Report of SCReAM — Data Link
Run 4: Statistics of SCReAM

Start at: 2018-07-12 17:45:28
End at: 2018-07-12 17:45:58
Local clock offset: 0.185 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 51.293 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.705 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.366 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.429 ms
Loss rate: 1.11%
Run 4: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.22 Mbps)
- Flow 2 ingress (mean 0.22 Mbps)
- Flow 3 ingress (mean 0.22 Mbps)
- Flow 1 egress (mean 0.22 Mbps)
- Flow 2 egress (mean 0.22 Mbps)
- Flow 3 egress (mean 0.22 Mbps)

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

- Flow 1 (95th percentile 50.70 ms)
- Flow 2 (95th percentile 51.37 ms)
- Flow 3 (95th percentile 49.43 ms)
Run 5: Statistics of SCReAM

Start at: 2018-07-12 18:09:34
End at: 2018-07-12 18:10:04
Local clock offset: 0.183 ms
Remote clock offset: 0.04 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 51.279 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.222 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.814 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.384 ms
Loss rate: 1.09%
Run 5: Report of SCReAM — Data Link
Run 6: Statistics of SCReAM

Start at: 2018-07-12 18:33:15
End at: 2018-07-12 18:33:45
Local clock offset: 0.213 ms
Remote clock offset: 0.014 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 51.215 ms
  Loss rate: 0.51%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.797 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 51.269 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.847 ms
  Loss rate: 1.09%
Run 6: Report of SCReAM — Data Link

**Throughput (Mbps)**

![Throughput Graph](image)

- **Flow 1 ingress (mean 0.22 Mbps)**
- **Flow 1 egress (mean 0.22 Mbps)**
- **Flow 2 ingress (mean 0.22 Mbps)**
- **Flow 2 egress (mean 0.22 Mbps)**
- **Flow 3 ingress (mean 0.22 Mbps)**
- **Flow 3 egress (mean 0.22 Mbps)**

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

![Delay Graph](image)

- **Flow 1 (95th percentile 50.80 ms)**
- **Flow 2 (95th percentile 51.27 ms)**
- **Flow 3 (95th percentile 50.85 ms)**
Run 7: Statistics of SCReAM

Start at: 2018-07-12 18:57:16
End at: 2018-07-12 18:57:46
Local clock offset: -0.094 ms
Remote clock offset: 0.04 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 50.802 ms
  Loss rate: 0.52%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.857 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.735 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.767 ms
  Loss rate: 1.09%
Run 7: Report of SCReAM — Data Link

[Graph showing throughput and per-packet one-way delay over time for different flows.]
Run 8: Statistics of SCReAM

Start at: 2018-07-12 19:21:19
End at: 2018-07-12 19:21:49
Local clock offset: 0.266 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 51.377 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.784 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.463 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.745 ms
Loss rate: 1.09%
Run 8: Report of SCReAM — Data Link

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

- Blue dashed line: Flow 1 ingress (mean 0.22 Mbit/s)
- Blue solid line: Flow 1 egress (mean 0.22 Mbit/s)
- Red dashed line: Flow 2 ingress (mean 0.22 Mbit/s)
- Red solid line: Flow 2 egress (mean 0.22 Mbit/s)
- Green dashed line: Flow 3 ingress (mean 0.22 Mbit/s)
- Green solid line: Flow 3 egress (mean 0.22 Mbit/s)

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

- Blue circle: Flow 1 (95th percentile 50.78 ms)
- Yellow circle: Flow 2 (95th percentile 51.46 ms)
- Magenta circle: Flow 3 (95th percentile 50.74 ms)
Run 9: Statistics of SCReAM

Start at: 2018-07-12 19:45:29
End at: 2018-07-12 19:45:59
Local clock offset: -0.444 ms
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 49.996 ms
  Loss rate: 0.52%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.762 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.036 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.441 ms
  Loss rate: 0.74%
Run 9: Report of SCReAM — Data Link

![Data Link Throughput Graph](image1)

![Data Link Round Trip Time Graph](image2)
Run 10: Statistics of SCReAM

Start at: 2018-07-12 20:09:23
End at: 2018-07-12 20:09:53
Local clock offset: -0.148 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.036 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.026 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.171 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.727 ms
Loss rate: 1.09%
Run 10: Report of SCReAM — Data Link

![Throughput Graph](image1)

- **Flow 1 ingress (mean 0.22 Mbit/s)**
- **Flow 1 egress (mean 0.22 Mbit/s)**
- **Flow 2 ingress (mean 0.22 Mbit/s)**
- **Flow 2 egress (mean 0.22 Mbit/s)**
- **Flow 3 ingress (mean 0.22 Mbit/s)**
- **Flow 3 egress (mean 0.22 Mbit/s)**

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

- **Flow 1 (95th percentile 50.03 ms)**
- **Flow 2 (95th percentile 50.17 ms)**
- **Flow 3 (95th percentile 49.73 ms)**
Run 1: Statistics of Sprout

Start at: 2018-07-12 16:34:07
End at: 2018-07-12 16:34:37
Local clock offset: -0.202 ms
Remote clock offset: 0.365 ms

# Below is generated by plot.py at 2018-07-12 22:40:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.22 Mbit/s
95th percentile per-packet one-way delay: 51.096 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 6.52 Mbit/s
95th percentile per-packet one-way delay: 51.108 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 7.33 Mbit/s
95th percentile per-packet one-way delay: 51.152 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 50.791 ms
Loss rate: 1.03%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2018-07-12 16:58:24
End at: 2018-07-12 16:58:54
Local clock offset: -0.189 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.19 Mbit/s
95th percentile per-packet one-way delay: 51.362 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 6.95 Mbit/s
95th percentile per-packet one-way delay: 51.422 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 7.19 Mbit/s
95th percentile per-packet one-way delay: 51.228 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 51.404 ms
Loss rate: 0.03%
Run 2: Report of Sprout — Data Link

[Graph showing throughput and delay over time for different flows]
Run 3: Statistics of Sprout

Start at: 2018-07-12 17:22:34
End at: 2018-07-12 17:23:04
Local clock offset: -0.129 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.02 Mbit/s
95th percentile per-packet one-way delay: 51.419 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 7.22 Mbit/s
95th percentile per-packet one-way delay: 51.434 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 7.31 Mbit/s
95th percentile per-packet one-way delay: 51.500 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 5.95 Mbit/s
95th percentile per-packet one-way delay: 51.112 ms
Loss rate: 1.24%
Run 3: Report of Sprout — Data Link

![Throughput Graph]

![Latency Graph]

Legend:
- Flow 1 ingress (mean 7.20 Mbit/s)
- Flow 2 ingress (mean 7.30 Mbit/s)
- Flow 3 ingress (mean 5.96 Mbit/s)
- Flow 1 egress (mean 7.22 Mbit/s)
- Flow 2 egress (mean 7.31 Mbit/s)
- Flow 3 egress (mean 5.95 Mbit/s)

Legend for Latency:
- Flow 1 (95th percentile 51.43 ms)
- Flow 2 (95th percentile 51.50 ms)
- Flow 3 (95th percentile 51.11 ms)
Run 4: Statistics of Sprout

Start at: 2018-07-12 17:46:36
End at: 2018-07-12 17:47:06
Local clock offset: -0.191 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 51.512 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 51.333 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 7.16 Mbit/s
95th percentile per-packet one-way delay: 51.528 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 6.10 Mbit/s
95th percentile per-packet one-way delay: 51.465 ms
Loss rate: 1.48%
Run 4: Report of Sprout — Data Link

![Data Link Graphs](image-url)
Run 5: Statistics of Sprout

Start at: 2018-07-12 18:10:42
End at: 2018-07-12 18:11:12
Local clock offset: -0.129 ms
Remote clock offset: 0.025 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.26 Mbit/s
  95th percentile per-packet one-way delay: 51.892 ms
  Loss rate: 0.54%
-- Flow 1:
  Average throughput: 6.42 Mbit/s
  95th percentile per-packet one-way delay: 51.873 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 6.87 Mbit/s
  95th percentile per-packet one-way delay: 51.898 ms
  Loss rate: 0.78%
-- Flow 3:
  Average throughput: 6.94 Mbit/s
  95th percentile per-packet one-way delay: 51.950 ms
  Loss rate: 0.54%
Run 5: Report of Sprout — Data Link

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

Throughput (Mbit/s) vs. Time (s)

- Flow 1 ingress (mean 6.42 Mbit/s)
- Flow 1 egress (mean 6.42 Mbit/s)
- Flow 2 ingress (mean 6.89 Mbit/s)
- Flow 2 egress (mean 6.87 Mbit/s)
- Flow 3 ingress (mean 6.93 Mbit/s)
- Flow 3 egress (mean 6.94 Mbit/s)

Per packet one way delay (ms) vs. Time (s)

- Flow 1 (95th percentile 51.87 ms)
- Flow 2 (95th percentile 51.90 ms)
- Flow 3 (95th percentile 51.95 ms)
Run 6: Statistics of Sprout

Start at: 2018-07-12 18:34:23
End at: 2018-07-12 18:34:53
Local clock offset: -0.121 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 10.27 Mbit/s
  95th percentile per-packet one-way delay: 51.931 ms
  Loss rate: 0.84%
-- Flow 1:
  Average throughput: 4.75 Mbit/s
  95th percentile per-packet one-way delay: 51.872 ms
  Loss rate: 0.70%
-- Flow 2:
  Average throughput: 5.40 Mbit/s
  95th percentile per-packet one-way delay: 51.963 ms
  Loss rate: 0.59%
-- Flow 3:
  Average throughput: 5.90 Mbit/s
  95th percentile per-packet one-way delay: 51.991 ms
  Loss rate: 1.64%
Run 6: Report of Sprout — Data Link

Throughput (Mbit/s)

Flow 1 ingress (mean 4.77 Mbit/s)
Flow 1 egress (mean 4.75 Mbit/s)
Flow 2 ingress (mean 5.41 Mbit/s)
Flow 2 egress (mean 5.40 Mbit/s)
Flow 3 ingress (mean 5.94 Mbit/s)
Flow 3 egress (mean 5.90 Mbit/s)

Per packet one-way delay [ms]

Flow 1 (95th percentile 51.87 ms)  Flow 2 (95th percentile 51.96 ms)  Flow 3 (95th percentile 51.99 ms)
Run 7: Statistics of Sprout

Start at: 2018-07-12 18:58:24
End at: 2018-07-12 18:58:54
Local clock offset: -0.451 ms
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.24 Mbit/s
95th percentile per-packet one-way delay: 51.168 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 50.948 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 7.03 Mbit/s
95th percentile per-packet one-way delay: 51.055 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 7.15 Mbit/s
95th percentile per-packet one-way delay: 51.539 ms
Loss rate: 1.08%
Run 7: Report of Sprout — Data Link
Run 8: Statistics of Sprout

Local clock offset: -0.058 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 12.17 Mbit/s
  95th percentile per-packet one-way delay: 51.381 ms
  Loss rate: 0.37%
-- Flow 1:
  Average throughput: 5.23 Mbit/s
  95th percentile per-packet one-way delay: 51.485 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 7.06 Mbit/s
  95th percentile per-packet one-way delay: 51.245 ms
  Loss rate: 0.30%
-- Flow 3:
  Average throughput: 6.86 Mbit/s
  95th percentile per-packet one-way delay: 51.388 ms
  Loss rate: 0.40%
Run 8: Report of Sprout — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 5.23 Mb/s)
Flow 1 egress (mean 5.23 Mb/s)
Flow 2 ingress (mean 7.05 Mb/s)
Flow 2 egress (mean 7.06 Mb/s)
Flow 3 ingress (mean 6.84 Mb/s)
Flow 3 egress (mean 6.86 Mb/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 51.48 ms)
Flow 2 (95th percentile 51.24 ms)
Flow 3 (95th percentile 51.39 ms)
Run 9: Statistics of Sprout

Start at: 2018-07-12 19:46:37
End at: 2018-07-12 19:47:07
Local clock offset: 0.266 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.90 Mbit/s
95th percentile per-packet one-way delay: 52.060 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 6.97 Mbit/s
95th percentile per-packet one-way delay: 52.014 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 7.48 Mbit/s
95th percentile per-packet one-way delay: 52.146 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 5.98 Mbit/s
95th percentile per-packet one-way delay: 51.982 ms
Loss rate: 1.08%
Run 9: Report of Sprout — Data Link

![Graph of throughput and packet delay over time for different flows.](image-url)

Legend:
- Blue dashed line: Flow 1 ingress (mean 6.86 Mbit/s) and egress (mean 6.97 Mbit/s)
- Green dotted line: Flow 2 ingress (mean 7.47 Mbit/s) and egress (mean 7.48 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 5.99 Mbit/s) and egress (mean 5.96 Mbit/s)
Run 10: Statistics of Sprout

Start at: 2018-07-12 20:10:31
End at: 2018-07-12 20:11:01
Local clock offset: -0.468 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-07-12 22:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.82 Mbit/s
95th percentile per-packet one-way delay: 51.349 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 6.10 Mbit/s
95th percentile per-packet one-way delay: 51.275 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 51.389 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 6.83 Mbit/s
95th percentile per-packet one-way delay: 51.444 ms
Loss rate: 1.48%
Run 10: Report of Sprout — Data Link

![Graph showing throughput and packet loss over time for different flows](image-url)

- **Flow 1 ingress** (mean 6.09 Mbit/s)
- **Flow 1 egress** (mean 6.10 Mbit/s)
- **Flow 2 ingress** (mean 6.74 Mbit/s)
- **Flow 2 egress** (mean 6.76 Mbit/s)
- **Flow 3 ingress** (mean 6.84 Mbit/s)
- **Flow 3 egress** (mean 6.83 Mbit/s)

![Graph showing packet loss over time for different flows](image-url)

- **Flow 1 (95th percentile 51.27 ms)**
- **Flow 2 (95th percentile 51.39 ms)**
- **Flow 3 (95th percentile 51.44 ms)**

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Run 1: Statistics of TaoVA-100x

Start at: 2018-07-12 16:47:19
End at: 2018-07-12 16:47:49
Local clock offset: -0.224 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2018-07-12 22:43:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 228.08 Mbit/s
  95th percentile per-packet one-way delay: 53.196 ms
  Loss rate: 0.34%
-- Flow 1:
  Average throughput: 120.29 Mbit/s
  95th percentile per-packet one-way delay: 52.583 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 117.29 Mbit/s
  95th percentile per-packet one-way delay: 54.052 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 90.12 Mbit/s
  95th percentile per-packet one-way delay: 53.605 ms
  Loss rate: 1.40%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2018-07-12 17:11:26
End at: 2018-07-12 17:11:56
Local clock offset: -0.15 ms
Remote clock offset: 0.036 ms

# Below is generated by plot.py at 2018-07-12 22:43:47
# Datalink statistics
  -- Total of 3 flows:
  Average throughput: 227.15 Mbit/s
  95th percentile per-packet one-way delay: 53.042 ms
  Loss rate: 0.40%
  -- Flow 1:
  Average throughput: 131.69 Mbit/s
  95th percentile per-packet one-way delay: 52.977 ms
  Loss rate: 0.05%
  -- Flow 2:
  Average throughput: 135.80 Mbit/s
  95th percentile per-packet one-way delay: 52.764 ms
  Loss rate: 0.52%
  -- Flow 3:
  Average throughput: 15.64 Mbit/s
  95th percentile per-packet one-way delay: 62.279 ms
  Loss rate: 7.03%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2018-07-12 17:35:23
End at: 2018-07-12 17:35:53
Local clock offset: -0.531 ms
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2018-07-12 22:44:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 240.48 Mbit/s
95th percentile per-packet one-way delay: 54.447 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 149.77 Mbit/s
95th percentile per-packet one-way delay: 53.374 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 95.07 Mbit/s
95th percentile per-packet one-way delay: 55.612 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 102.14 Mbit/s
95th percentile per-packet one-way delay: 56.564 ms
Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link

![Graph showing network throughput and delay over time for different flows.](image)

- Flow 1 ingress (mean 149.79 Mbit/s)
- Flow 1 egress (mean 149.77 Mbit/s)
- Flow 2 ingress (mean 94.67 Mbit/s)
- Flow 2 egress (mean 95.07 Mbit/s)
- Flow 3 ingress (mean 102.36 Mbit/s)
- Flow 3 egress (mean 102.14 Mbit/s)
Run 4: Statistics of TaoVA-100x

Start at: 2018-07-12 17:59:36
End at: 2018-07-12 18:00:06
Local clock offset: -0.179 ms
Remote clock offset: 0.031 ms

# Below is generated by plot.py at 2018-07-12 22:44:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.58 Mbit/s
95th percentile per-packet one-way delay: 53.107 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 165.33 Mbit/s
95th percentile per-packet one-way delay: 52.238 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 49.60 Mbit/s
95th percentile per-packet one-way delay: 56.682 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 150.28 Mbit/s
95th percentile per-packet one-way delay: 54.450 ms
Loss rate: 1.05%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2018-07-12 18:23:34
End at: 2018-07-12 18:24:04
Local clock offset: -0.138 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-07-12 22:44:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 208.94 Mbit/s
95th percentile per-packet one-way delay: 52.983 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 127.22 Mbit/s
95th percentile per-packet one-way delay: 52.839 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.26 Mbit/s
95th percentile per-packet one-way delay: 56.443 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 166.73 Mbit/s
95th percentile per-packet one-way delay: 52.374 ms
Loss rate: 0.76%
Run 5: Report of TaoVA-100x — Data Link

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

- **Flow 1 ingress (mean 126.90 Mbit/s)**
- **Flow 1 egress (mean 127.22 Mbit/s)**
- **Flow 2 ingress (mean 40.13 Mbit/s)**
- **Flow 2 egress (mean 40.26 Mbit/s)**
- **Flow 3 ingress (mean 166.27 Mbit/s)**
- **Flow 3 egress (mean 166.73 Mbit/s)**
Run 6: Statistics of TaoVA-100x

Start at: 2018-07-12 18:47:20
End at: 2018-07-12 18:47:50
Local clock offset: -0.15 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-12 22:44:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 207.72 Mbit/s
95th percentile per-packet one-way delay: 53.295 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 94.97 Mbit/s
95th percentile per-packet one-way delay: 53.081 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 110.62 Mbit/s
95th percentile per-packet one-way delay: 53.149 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 141.60 Mbit/s
95th percentile per-packet one-way delay: 53.900 ms
Loss rate: 0.90%
Run 6: Report of TaoVA-100x — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 95.39 Mbps/s) — Flow 1 egress (mean 94.97 Mbps/s)
Flow 2 ingress (mean 99.12 Mbps/s) — Flow 2 egress (mean 110.62 Mbps/s)
Flow 3 ingress (mean 141.42 Mbps/s) — Flow 3 egress (mean 141.60 Mbps/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 53.08 ms) — Flow 2 (95th percentile 53.15 ms) — Flow 3 (95th percentile 53.90 ms)
Run 7: Statistics of TaoVA-100x

Start at: 2018-07-12 19:11:25
End at: 2018-07-12 19:11:55
Local clock offset: -0.513 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2018-07-12 22:45:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 250.93 Mbit/s
95th percentile per-packet one-way delay: 52.579 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 104.61 Mbit/s
95th percentile per-packet one-way delay: 51.597 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 166.03 Mbit/s
95th percentile per-packet one-way delay: 52.412 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 108.77 Mbit/s
95th percentile per-packet one-way delay: 55.025 ms
Loss rate: 0.96%
Run 8: Statistics of TaoVA-100x

Start at: 2018-07-12 19:35:32
End at: 2018-07-12 19:36:02
Local clock offset: -0.504 ms
Remote clock offset: -0.039 ms

# Below is generated by plot.py at 2018-07-12 22:49:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 233.22 Mbit/s
95th percentile per-packet one-way delay: 52.085 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 168.61 Mbit/s
95th percentile per-packet one-way delay: 51.566 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 64.09 Mbit/s
95th percentile per-packet one-way delay: 53.131 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 66.64 Mbit/s
95th percentile per-packet one-way delay: 53.176 ms
Loss rate: 0.18%
Run 8: Report of TaoVA-100x — Data Link

[Graphs showing network performance metrics over time]

- Flow 1 ingress (mean 168.74 Mbit/s)
- Flow 1 egress (mean 168.61 Mbit/s)
- Flow 2 ingress (mean 64.22 Mbit/s)
- Flow 2 egress (mean 64.09 Mbit/s)
- Flow 3 ingress (mean 66.08 Mbit/s)
- Flow 3 egress (mean 66.64 Mbit/s)

[Graphs showing packet delay over time]

- Flow 1 (95th percentile 51.57 ms)
- Flow 2 (95th percentile 53.13 ms)
- Flow 3 (95th percentile 53.18 ms)
Run 9: Statistics of TaoVA-100x

Start at: 2018-07-12 19:59:37
End at: 2018-07-12 20:00:07
Local clock offset: -0.084 ms
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2018-07-12 22:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 198.83 Mbit/s
95th percentile per-packet one-way delay: 55.379 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 143.96 Mbit/s
95th percentile per-packet one-way delay: 54.980 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.56 Mbit/s
95th percentile per-packet one-way delay: 57.178 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 71.91 Mbit/s
95th percentile per-packet one-way delay: 55.465 ms
Loss rate: 3.33%
Run 9: Report of TaoVA-100x — Data Link

![Graph showing data link performance metrics for different flows over time. The graphs depict throughput and per-packet one-way delay.]
Run 10: Statistics of TaoVA-100x

Start at: 2018-07-12 20:23:29
End at: 2018-07-12 20:23:59
Local clock offset: -0.123 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 220.21 Mbit/s
95th percentile per-packet one-way delay: 52.980 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 174.18 Mbit/s
95th percentile per-packet one-way delay: 51.588 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 31.67 Mbit/s
95th percentile per-packet one-way delay: 55.498 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 87.36 Mbit/s
95th percentile per-packet one-way delay: 57.334 ms
Loss rate: 0.00%
Run 10: Report of TaoVA-100x — Data Link

[Graph depicting throughput and delay over time for different flows with specified mean values and percentiles.]
Run 1: Statistics of TCP Vegas

Start at: 2018-07-12 16:44:05
End at: 2018-07-12 16:44:35
Local clock offset: -0.53 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 215.49 Mbit/s
95th percentile per-packet one-way delay: 82.605 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 112.28 Mbit/s
95th percentile per-packet one-way delay: 79.209 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 101.17 Mbit/s
95th percentile per-packet one-way delay: 80.266 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 109.04 Mbit/s
95th percentile per-packet one-way delay: 87.116 ms
Loss rate: 0.73%
Run 1: Report of TCP Vegas — Data Link

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*Figure: Two graphs showing throughput and per-packet one-way delay.*

**Throughput (Mbps):**
- Solid blue line: Flow 1 ingress (mean 112.32 Mbps)
- Dashed blue line: Flow 1 egress (mean 112.28 Mbps)
- Solid green line: Flow 2 ingress (mean 101.16 Mbps)
- Dashed green line: Flow 2 egress (mean 101.17 Mbps)
- Solid red line: Flow 3 ingress (mean 106.72 Mbps)
- Dashed red line: Flow 3 egress (mean 109.04 Mbps)

**Per-packet one-way delay (ms):**
- Solid blue dots: Flow 1 (95th percentile 79.21 ms)
- Solid green dots: Flow 2 (95th percentile 80.27 ms)
- Solid red dots: Flow 3 (95th percentile 87.12 ms)
Run 2: Statistics of TCP Vegas

Start at: 2018-07-12 17:08:12
End at: 2018-07-12 17:08:42
Local clock offset: -0.494 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 226.94 Mbit/s
95th percentile per-packet one-way delay: 61.137 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 215.55 Mbit/s
95th percentile per-packet one-way delay: 61.188 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 58.827 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 10.83 Mbit/s
95th percentile per-packet one-way delay: 60.284 ms
Loss rate: 1.44%
Run 2: Report of TCP Vegas — Data Link

![Graph showing throughput over time for different flows]

- Flow 1 ingress (mean 215.13 Mbit/s)
- Flow 1 egress (mean 215.55 Mbit/s)
- Flow 2 ingress (mean 11.98 Mbit/s)
- Flow 2 egress (mean 11.95 Mbit/s)
- Flow 3 ingress (mean 10.98 Mbit/s)
- Flow 3 egress (mean 10.83 Mbit/s)

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

- Flow 1 (95th percentile 61.19 ms)
- Flow 2 (95th percentile 58.83 ms)
- Flow 3 (95th percentile 60.28 ms)
Run 3: Statistics of TCP Vegas

Start at: 2018-07-12 17:32:13
End at: 2018-07-12 17:32:43
Local clock offset: -0.17 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 154.65 Mbit/s
95th percentile per-packet one-way delay: 53.881 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 83.32 Mbit/s
95th percentile per-packet one-way delay: 53.411 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 76.46 Mbit/s
95th percentile per-packet one-way delay: 53.938 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 62.21 Mbit/s
95th percentile per-packet one-way delay: 57.667 ms
Loss rate: 0.92%
Run 3: Report of TCP Vegas — Data Link

[Graphs showing throughput and per-packet end-to-end delay for different flows during Run 3.]
Run 4: Statistics of TCP Vegas

Start at: 2018-07-12 17:56:20
End at: 2018-07-12 17:56:50
Local clock offset: -0.177 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 235.28 Mbit/s
95th percentile per-packet one-way delay: 61.914 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 85.46 Mbit/s
95th percentile per-packet one-way delay: 58.476 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 220.14 Mbit/s
95th percentile per-packet one-way delay: 62.567 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 10.76 Mbit/s
95th percentile per-packet one-way delay: 59.271 ms
Loss rate: 1.32%
Run 4: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 85.45 Mbit/s)
- Flow 1 egress (mean 85.46 Mbit/s)
- Flow 2 ingress (mean 219.42 Mbit/s)
- Flow 2 egress (mean 220.14 Mbit/s)
- Flow 3 ingress (mean 10.79 Mbit/s)
- Flow 3 egress (mean 10.76 Mbit/s)

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

- Flow 1 (95th percentile 58.48 ms)
- Flow 2 (95th percentile 62.57 ms)
- Flow 3 (95th percentile 59.27 ms)
Run 5: Statistics of TCP Vegas

Start at: 2018-07-12 18:20:22
End at: 2018-07-12 18:20:52
Local clock offset: -0.184 ms
Remote clock offset: 0.067 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 167.95 Mbit/s
95th percentile per-packet one-way delay: 53.801 ms
Loss rate: 0.52%

-- Flow 1:
Average throughput: 108.06 Mbit/s
95th percentile per-packet one-way delay: 53.828 ms
Loss rate: 0.38%

-- Flow 2:
Average throughput: 56.19 Mbit/s
95th percentile per-packet one-way delay: 53.566 ms
Loss rate: 0.63%

-- Flow 3:
Average throughput: 68.74 Mbit/s
95th percentile per-packet one-way delay: 54.063 ms
Loss rate: 1.01%
Run 5: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay over time for different flows.](image-url)
Run 6: Statistics of TCP Vegas

Start at: 2018-07-12 18:44:05
End at: 2018-07-12 18:44:35
Local clock offset: -0.455 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2018-07-12 22:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 164.94 Mbit/s
95th percentile per-packet one-way delay: 69.055 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 73.19 Mbit/s
95th percentile per-packet one-way delay: 63.908 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 76.03 Mbit/s
95th percentile per-packet one-way delay: 65.638 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 124.81 Mbit/s
95th percentile per-packet one-way delay: 72.124 ms
Loss rate: 0.63%
Run 6: Report of TCP Vegas — Data Link
Run 7: Statistics of TCP Vegas

Start at: 2018-07-12 19:08:11
End at: 2018-07-12 19:08:41
Local clock offset: 0.235 ms
Remote clock offset: 0.059 ms

# Below is generated by plot.py at 2018-07-12 22:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 232.14 Mbit/s
95th percentile per-packet one-way delay: 74.000 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 151.49 Mbit/s
95th percentile per-packet one-way delay: 63.864 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 80.62 Mbit/s
95th percentile per-packet one-way delay: 71.313 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 81.88 Mbit/s
95th percentile per-packet one-way delay: 80.948 ms
Loss rate: 0.78%
Run 7: Report of TCP Vegas — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 151.49 Mbit/s)
- Flow 1 egress (mean 151.49 Mbit/s)
- Flow 2 ingress (mean 80.62 Mbit/s)
- Flow 2 egress (mean 80.62 Mbit/s)
- Flow 3 ingress (mean 81.67 Mbit/s)
- Flow 3 egress (mean 81.68 Mbit/s)

![Graph 2: Packet Delay vs Time]

- Flow 1 (95th percentile 63.86 ms)
- Flow 2 (95th percentile 71.31 ms)
- Flow 3 (95th percentile 80.95 ms)
Run 8: Statistics of TCP Vegas

Start at: 2018-07-12 19:32:18
End at: 2018-07-12 19:32:48
Local clock offset: -0.507 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2018-07-12 22:51:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 203.72 Mbit/s
95th percentile per-packet one-way delay: 61.094 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 59.76 Mbit/s
95th percentile per-packet one-way delay: 58.074 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 213.64 Mbit/s
95th percentile per-packet one-way delay: 61.438 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 59.515 ms
Loss rate: 2.03%
Run 8: Report of TCP Vegas — Data Link
Run 9: Statistics of TCP Vegas

Start at: 2018-07-12 19:56:27
End at: 2018-07-12 19:56:57
Local clock offset: -0.458 ms
Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2018-07-12 22:51:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 195.60 Mbit/s
95th percentile per-packet one-way delay: 64.842 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 55.68 Mbit/s
95th percentile per-packet one-way delay: 61.136 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 147.02 Mbit/s
95th percentile per-packet one-way delay: 63.209 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 128.59 Mbit/s
95th percentile per-packet one-way delay: 67.907 ms
Loss rate: 1.11%
Run 9: Report of TCP Vegas — Data Link
Run 10: Statistics of TCP Vegas

Start at: 2018-07-12 20:20:20
End at: 2018-07-12 20:20:50
Local clock offset: 0.25 ms
Remote clock offset: 0.019 ms

# Below is generated by plot.py at 2018-07-12 22:51:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 73.38 Mbit/s
  95th percentile per-packet one-way delay: 52.648 ms
  Loss rate: 0.40%
-- Flow 1:
  Average throughput: 45.92 Mbit/s
  95th percentile per-packet one-way delay: 52.564 ms
  Loss rate: 0.34%
-- Flow 2:
  Average throughput: 38.21 Mbit/s
  95th percentile per-packet one-way delay: 52.855 ms
  Loss rate: 0.37%
-- Flow 3:
  Average throughput: 6.22 Mbit/s
  95th percentile per-packet one-way delay: 52.214 ms
  Loss rate: 1.97%
Run 10: Report of TCP Vegas — Data Link

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Throughput (Mbit/s)

![Graph of Throughput](image)

- **Flow 1 ingress (mean 45.93 Mbit/s)**
- **Flow 1 egress (mean 45.92 Mbit/s)**
- **Flow 2 ingress (mean 38.16 Mbit/s)**
- **Flow 2 egress (mean 36.21 Mbit/s)**
- **Flow 3 ingress (mean 6.28 Mbit/s)**
- **Flow 3 egress (mean 6.22 Mbit/s)**

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Per packet one way delay (ms)

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

- **Flow 1 (95th percentile 52.56 ms)**
- **Flow 2 (95th percentile 52.85 ms)**
- **Flow 3 (95th percentile 52.21 ms)**

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Run 1: Statistics of Verus

Start at: 2018-07-12 16:53:10
End at: 2018-07-12 16:53:40
Local clock offset: -0.148 ms
Remote clock offset: 0.037 ms

# Below is generated by plot.py at 2018-07-12 22:54:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 322.25 Mbit/s
95th percentile per-packet one-way delay: 169.058 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 227.52 Mbit/s
95th percentile per-packet one-way delay: 157.117 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 109.74 Mbit/s
95th percentile per-packet one-way delay: 178.128 ms
Loss rate: 1.48%
-- Flow 3:
Average throughput: 66.58 Mbit/s
95th percentile per-packet one-way delay: 215.560 ms
Loss rate: 2.22%
Run 1: Report of Verus — Data Link

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

Legend:
- Flow 1 ingress (mean 228.11 Mbit/s)
- Flow 1 egress (mean 227.52 Mbit/s)
- Flow 2 ingress (mean 110.87 Mbit/s)
- Flow 2 egress (mean 109.76 Mbit/s)
- Flow 3 ingress (mean 67.31 Mbit/s)
- Flow 3 egress (mean 66.58 Mbit/s)
Run 2: Statistics of Verus

Start at: 2018-07-12 17:17:18
End at: 2018-07-12 17:17:48
Local clock offset: -0.164 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-07-12 22:55:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 327.19 Mbit/s
95th percentile per-packet one-way delay: 148.327 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 190.88 Mbit/s
95th percentile per-packet one-way delay: 136.691 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 153.31 Mbit/s
95th percentile per-packet one-way delay: 151.875 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 105.02 Mbit/s
95th percentile per-packet one-way delay: 166.474 ms
Loss rate: 4.56%
Run 2: Report of Verus — Data Link

![Graph showing throughput and per-packet delay over time for different flow ingress and egress rates.]

- Flow 1 ingress (mean 191.64 Mbit/s)
- Flow 1 egress (mean 190.88 Mbit/s)
- Flow 2 ingress (mean 153.74 Mbit/s)
- Flow 2 egress (mean 153.31 Mbit/s)
- Flow 3 ingress (mean 106.49 Mbit/s)
- Flow 3 egress (mean 105.02 Mbit/s)
Run 3: Statistics of Verus

Start at: 2018-07-12 17:41:22
End at: 2018-07-12 17:41:52
Local clock offset: 0.214 ms
Remote clock offset: 0.054 ms

# Below is generated by plot.py at 2018-07-12 22:55:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 296.92 Mbit/s
95th percentile per-packet one-way delay: 166.869 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 185.84 Mbit/s
95th percentile per-packet one-way delay: 154.942 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 137.77 Mbit/s
95th percentile per-packet one-way delay: 187.222 ms
Loss rate: 2.07%
-- Flow 3:
Average throughput: 59.65 Mbit/s
95th percentile per-packet one-way delay: 158.976 ms
Loss rate: 5.83%
Run 3: Report of Verus — Data Link

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**Throughput (Mbps)**

- **Flow 1 ingress** (mean 186.12 Mbps)
- **Flow 1 egress** (mean 185.84 Mbps)
- **Flow 2 ingress** (mean 139.98 Mbps)
- **Flow 2 egress** (mean 137.77 Mbps)
- **Flow 3 ingress** (mean 62.30 Mbps)
- **Flow 3 egress** (mean 59.65 Mbps)

---

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

- **Flow 1** (95th percentile 154.94 ms)
- **Flow 2** (95th percentile 187.22 ms)
- **Flow 3** (95th percentile 158.98 ms)
Run 4: Statistics of Verus

Start at: 2018-07-12 18:05:30
End at: 2018-07-12 18:06:00
Local clock offset: -0.152 ms
Remote clock offset: 0.035 ms

# Below is generated by plot.py at 2018-07-12 22:55:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 263.64 Mbit/s
  95th percentile per-packet one-way delay: 161.298 ms
  Loss rate: 0.53%
-- Flow 1:
  Average throughput: 153.63 Mbit/s
  95th percentile per-packet one-way delay: 157.578 ms
  Loss rate: 0.27%
-- Flow 2:
  Average throughput: 128.77 Mbit/s
  95th percentile per-packet one-way delay: 164.526 ms
  Loss rate: 0.94%
-- Flow 3:
  Average throughput: 75.68 Mbit/s
  95th percentile per-packet one-way delay: 155.710 ms
  Loss rate: 0.69%
Run 4: Report of Verus — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image)
Run 5: Statistics of Verus

Start at: 2018-07-12 18:29:14
End at: 2018-07-12 18:29:44
Local clock offset: -0.084 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2018-07-12 22:55:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 284.93 Mbit/s
95th percentile per-packet one-way delay: 188.197 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 193.09 Mbit/s
95th percentile per-packet one-way delay: 148.102 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 74.73 Mbit/s
95th percentile per-packet one-way delay: 195.587 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 128.50 Mbit/s
95th percentile per-packet one-way delay: 206.476 ms
Loss rate: 3.72%
Run 5: Report of Verus — Data Link
Run 6: Statistics of Verus

Start at: 2018-07-12 18:53:10
End at: 2018-07-12 18:53:40
Local clock offset: -0.144 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-07-12 22:57:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 324.23 Mbit/s
95th percentile per-packet one-way delay: 194.817 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 177.68 Mbit/s
95th percentile per-packet one-way delay: 186.459 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 178.64 Mbit/s
95th percentile per-packet one-way delay: 198.844 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 85.90 Mbit/s
95th percentile per-packet one-way delay: 199.342 ms
Loss rate: 2.39%
Run 6: Report of Verus — Data Link
Run 7: Statistics of Verus

Start at: 2018-07-12 19:17:20
End at: 2018-07-12 19:17:50
Local clock offset: -0.182 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2018-07-12 22:57:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.18 Mbit/s
95th percentile per-packet one-way delay: 196.648 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 180.31 Mbit/s
95th percentile per-packet one-way delay: 185.521 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 125.92 Mbit/s
95th percentile per-packet one-way delay: 202.111 ms
Loss rate: 2.17%
-- Flow 3:
Average throughput: 73.47 Mbit/s
95th percentile per-packet one-way delay: 212.706 ms
Loss rate: 6.86%
Run 7: Report of Verus — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 182.00 Mbit/s)  Flow 1 egress (mean 180.31 Mbit/s)
Flow 2 ingress (mean 128.48 Mbit/s)  Flow 2 egress (mean 125.92 Mbit/s)
Flow 3 ingress (mean 78.99 Mbit/s)  Flow 3 egress (mean 73.47 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 185.52 ms)  Flow 2 (95th percentile 202.11 ms)  Flow 3 (95th percentile 212.71 ms)
Run 8: Statistics of Verus

Start at: 2018-07-12 19:41:25
End at: 2018-07-12 19:41:55
Local clock offset: -0.114 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-07-12 22:57:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 311.88 Mbit/s
95th percentile per-packet one-way delay: 130.193 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 198.07 Mbit/s
95th percentile per-packet one-way delay: 124.064 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 131.47 Mbit/s
95th percentile per-packet one-way delay: 143.124 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 81.12 Mbit/s
95th percentile per-packet one-way delay: 152.141 ms
Loss rate: 0.49%
Run 8: Report of Verus — Data Link

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

*Flow 1 ingress (mean 198.72 Mbit/s) — Flow 2 ingress (mean 131.43 Mbit/s) — Flow 3 ingress (mean 80.10 Mbit/s)*

*Flow 1 egress (mean 198.07 Mbit/s) — Flow 2 egress (mean 131.47 Mbit/s) — Flow 3 egress (mean 81.12 Mbit/s)*
Run 9: Statistics of Verus

Start at: 2018-07-12 20:05:21
End at: 2018-07-12 20:05:51
Local clock offset: -0.462 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-07-12 22:59:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 287.85 Mbit/s
95th percentile per-packet one-way delay: 185.828 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 201.38 Mbit/s
95th percentile per-packet one-way delay: 184.883 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 99.82 Mbit/s
95th percentile per-packet one-way delay: 187.395 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 62.59 Mbit/s
95th percentile per-packet one-way delay: 186.499 ms
Loss rate: 1.86%
Run 9: Report of Verus — Data Link
Run 10: Statistics of Verus

Start at: 2018-07-12 20:29:20
End at: 2018-07-12 20:29:50
Local clock offset: 0.265 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2018-07-12 23:00:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 341.93 Mbit/s
95th percentile per-packet one-way delay: 149.912 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 205.18 Mbit/s
95th percentile per-packet one-way delay: 146.968 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 142.87 Mbit/s
95th percentile per-packet one-way delay: 153.918 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 127.55 Mbit/s
95th percentile per-packet one-way delay: 150.921 ms
Loss rate: 2.01%
Run 10: Report of Verus — Data Link

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

- Flow 1 ingress (mean 294.74 Mbit/s)
- Flow 1 egress (mean 205.18 Mbit/s)
- Flow 2 ingress (mean 143.32 Mbit/s)
- Flow 2 egress (mean 142.87 Mbit/s)
- Flow 3 ingress (mean 126.44 Mbit/s)
- Flow 3 egress (mean 127.55 Mbit/s)

*Flow 1 (95th percentile 146.97 ms), Flow 2 (95th percentile 153.92 ms), Flow 3 (95th percentile 150.92 ms)*
Run 1: Statistics of PCC-Vivace

Start at: 2018-07-12 16:41:07
End at: 2018-07-12 16:41:37
Local clock offset: -0.552 ms
Remote clock offset: 0.044 ms

# Below is generated by plot.py at 2018-07-12 23:05:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 559.07 Mbit/s
95th percentile per-packet one-way delay: 51.492 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 328.71 Mbit/s
95th percentile per-packet one-way delay: 51.650 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 273.71 Mbit/s
95th percentile per-packet one-way delay: 51.538 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 148.45 Mbit/s
95th percentile per-packet one-way delay: 50.912 ms
Loss rate: 0.75%
Run 1: Report of PCC-Vivace — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 328.64 Mbps)
- Flow 1 egress (mean 328.71 Mbps)
- Flow 2 ingress (mean 273.81 Mbps)
- Flow 2 egress (mean 273.71 Mbps)
- Flow 3 ingress (mean 148.03 Mbps)
- Flow 3 egress (mean 148.45 Mbps)

![Graph 2: Packet Round Trip Time (ms)]

- Flow 1 (95th percentile 51.65 ms)
- Flow 2 (95th percentile 51.54 ms)
- Flow 3 (95th percentile 50.91 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-07-12 17:05:21
End at: 2018-07-12 17:05:51
Local clock offset: 0.217 ms
Remote clock offset: 0.041 ms

# Below is generated by plot.py at 2018-07-12 23:05:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 454.57 Mbit/s
95th percentile per-packet one-way delay: 52.119 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 246.09 Mbit/s
95th percentile per-packet one-way delay: 52.467 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 233.27 Mbit/s
95th percentile per-packet one-way delay: 51.367 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 163.84 Mbit/s
95th percentile per-packet one-way delay: 52.326 ms
Loss rate: 1.27%
Run 2: Report of PCC-Vivace — Data Link
Run 3: Statistics of PCC-Vivace

Start at: 2018-07-12 17:29:25
End at: 2018-07-12 17:29:55
Local clock offset: -0.147 ms
Remote clock offset: 0.013 ms

# Below is generated by plot.py at 2018-07-12 23:05:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 412.26 Mbit/s
95th percentile per-packet one-way delay: 50.934 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 241.59 Mbit/s
95th percentile per-packet one-way delay: 49.504 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 230.75 Mbit/s
95th percentile per-packet one-way delay: 51.063 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 53.32 Mbit/s
95th percentile per-packet one-way delay: 50.845 ms
Loss rate: 1.44%
Run 3: Report of PCC-Vivace — Data Link
Run 4: Statistics of PCC-Vivace

Start at: 2018-07-12 17:53:31
End at: 2018-07-12 17:54:01
Local clock offset: 0.162 ms
Remote clock offset: 0.034 ms

# Below is generated by plot.py at 2018-07-12 23:05:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 430.07 Mbit/s
95th percentile per-packet one-way delay: 51.033 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 258.70 Mbit/s
95th percentile per-packet one-way delay: 51.232 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 230.33 Mbit/s
95th percentile per-packet one-way delay: 49.505 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 56.58 Mbit/s
95th percentile per-packet one-way delay: 51.206 ms
Loss rate: 2.61%
Run 5: Statistics of PCC-Vivace

Start at: 2018-07-12 18:17:32
End at: 2018-07-12 18:18:02
Local clock offset: -0.487 ms
Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2018-07-12 23:05:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 450.66 Mbit/s
95th percentile per-packet one-way delay: 50.475 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 227.36 Mbit/s
95th percentile per-packet one-way delay: 50.323 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 253.71 Mbit/s
95th percentile per-packet one-way delay: 50.379 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 167.71 Mbit/s
95th percentile per-packet one-way delay: 55.652 ms
Loss rate: 1.30%
Run 5: Report of PCC-Vivace — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 227.48 Mbps) Flow 1 egress (mean 227.36 Mbps)
Flow 2 ingress (mean 254.11 Mbps) Flow 2 egress (mean 253.71 Mbps)
Flow 3 ingress (mean 168.33 Mbps) Flow 3 egress (mean 167.71 Mbps)

Per-packet end-to-end delay (ms)

Time (s)

Flow 1 (95th percentile 50.32 ms) Flow 2 (95th percentile 50.38 ms) Flow 3 (95th percentile 55.65 ms)
Run 6: Statistics of PCC-Vivace

Start at: 2018-07-12 18:41:16
End at: 2018-07-12 18:41:46
Local clock offset: -0.168 ms
Remote clock offset: 0.019 ms

# Below is generated by plot.py at 2018-07-12 23:05:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 437.21 Mbit/s
95th percentile per-packet one-way delay: 51.166 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 244.94 Mbit/s
95th percentile per-packet one-way delay: 50.894 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 264.48 Mbit/s
95th percentile per-packet one-way delay: 51.780 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 51.14 Mbit/s
95th percentile per-packet one-way delay: 50.470 ms
Loss rate: 2.23%
Run 6: Report of PCC-Vivace — Data Link

![Graph showing throughput and per-packet one-way delay over time.](image-url)
Run 7: Statistics of PCC-Vivace

Start at: 2018-07-12 19:05:17
End at: 2018-07-12 19:05:47
Local clock offset: -0.5 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2018-07-12 23:07:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 494.14 Mbit/s
95th percentile per-packet one-way delay: 54.892 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 276.31 Mbit/s
95th percentile per-packet one-way delay: 50.341 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 278.72 Mbit/s
95th percentile per-packet one-way delay: 59.191 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 100.14 Mbit/s
95th percentile per-packet one-way delay: 51.161 ms
Loss rate: 1.29%
Run 7: Report of PCC-Vivace — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 275.83 Mbps)
  - Flow 1 egress (mean 276.31 Mbps)
  - Flow 2 ingress (mean 278.71 Mbps)
  - Flow 2 egress (mean 278.72 Mbps)
  - Flow 3 ingress (mean 100.39 Mbps)
  - Flow 3 egress (mean 100.14 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 50.34 ms)
  - Flow 2 (95th percentile 59.19 ms)
  - Flow 3 (95th percentile 51.16 ms)
Run 8: Statistics of PCC-Vivace

Start at: 2018-07-12 19:29:20  
End at: 2018-07-12 19:29:50  
Local clock offset: -0.429 ms  
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2018-07-12 23:08:07  
# Datalink statistics
-- Total of 3 flows:
Average throughput: 559.35 Mbit/s
95th percentile per-packet one-way delay: 51.601 ms
Loss rate: 0.71%

-- Flow 1:
Average throughput: 303.07 Mbit/s
95th percentile per-packet one-way delay: 51.255 ms
Loss rate: 0.51%

-- Flow 2:
Average throughput: 283.97 Mbit/s
95th percentile per-packet one-way delay: 52.443 ms
Loss rate: 0.51%

-- Flow 3:
Average throughput: 206.67 Mbit/s
95th percentile per-packet one-way delay: 51.281 ms
Loss rate: 2.15%
Run 8: Report of PCC-Vivace — Data Link

![Graph showing network throughput and latency over time with specific lines for Flow 1 ingress and egress, Flow 2 ingress and egress, Flow 3 ingress and egress, each with mean throughput values provided.]

![Graph showing per-packet one-way delay over time with specific lines for Flow 1, Flow 2, and Flow 3, each with 95th percentile delay values provided.]
Run 9: Statistics of PCC-Vivace

Start at: 2018-07-12 19:53:34
End at: 2018-07-12 19:54:04
Local clock offset: -0.473 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2018-07-12 23:08:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 482.00 Mbit/s
  95th percentile per-packet one-way delay: 60.456 ms
  Loss rate: 0.57%
-- Flow 1:
  Average throughput: 296.31 Mbit/s
  95th percentile per-packet one-way delay: 50.681 ms
  Loss rate: 0.40%
-- Flow 2:
  Average throughput: 229.47 Mbit/s
  95th percentile per-packet one-way delay: 62.018 ms
  Loss rate: 0.69%
-- Flow 3:
  Average throughput: 102.20 Mbit/s
  95th percentile per-packet one-way delay: 50.092 ms
  Loss rate: 1.59%
Run 9: Report of PCC-Vivace — Data Link

![Graph showing data link performance metrics]

**Throughput (Mbps)**
- Flow 1 ingress (mean 296.49 Mbps)
- Flow 1 egress (mean 296.31 Mbps)
- Flow 2 ingress (mean 229.88 Mbps)
- Flow 2 egress (mean 229.47 Mbps)
- Flow 3 ingress (mean 102.78 Mbps)
- Flow 3 egress (mean 102.29 Mbps)

**Per-packet one-way delay (ms)**
- Flow 1 (95th percentile 50.68 ms)
- Flow 2 (95th percentile 62.02 ms)
- Flow 3 (95th percentile 50.09 ms)
Run 10: Statistics of PCC-Vivace

Start at: 2018-07-12 20:17:26
End at: 2018-07-12 20:17:56
Local clock offset: -0.489 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 516.62 Mbit/s
95th percentile per-packet one-way delay: 50.715 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 304.40 Mbit/s
95th percentile per-packet one-way delay: 50.883 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 225.27 Mbit/s
95th percentile per-packet one-way delay: 49.651 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 191.51 Mbit/s
95th percentile per-packet one-way delay: 50.648 ms
Loss rate: 1.49%
Run 10: Report of PCC-Vivace — Data Link

The upper graph shows the throughput (Mbps) over time for different flows, with the following key:
- Blue dashed line: Flow 1 ingress (mean 394.28 Mbps)
- Blue solid line: Flow 1 egress (mean 304.40 Mbps)
- Green dashed line: Flow 2 ingress (mean 225.39 Mbps)
- Green solid line: Flow 2 egress (mean 225.27 Mbps)
- Purple dashed line: Flow 3 ingress (mean 192.42 Mbps)
- Purple solid line: Flow 3 egress (mean 191.51 Mbps)

The lower graph displays the per-packet round-trip delay (ms) over time, with the following key:
- Blue line: Flow 1 (95th percentile 50.88 ms)
- Green line: Flow 2 (95th percentile 49.65 ms)
- Red line: Flow 3 (95th percentile 50.65 ms)
Run 1: Statistics of WebRTC media

Start at: 2018-07-12 16:50:07
End at: 2018-07-12 16:50:37
Local clock offset: 0.212 ms
Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 51.409 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 51.341 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 51.456 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 50.636 ms
Loss rate: 1.16%
Run 1: Report of WebRTC media — Data Link

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

- **Throughput**:
  - Flow 1 ingress (mean 1.71 Mb/s)
  - Flow 1 egress (mean 1.71 Mb/s)
  - Flow 2 ingress (mean 1.30 Mb/s)
  - Flow 2 egress (mean 1.30 Mb/s)
  - Flow 3 ingress (mean 0.53 Mb/s)
  - Flow 3 egress (mean 0.53 Mb/s)

- **Delay**:
  - Flow 1 (95th percentile 51.34 ms)
  - Flow 2 (95th percentile 51.46 ms)
  - Flow 3 (95th percentile 50.64 ms)
Run 2: Statistics of WebRTC media

Start at: 2018-07-12 17:14:14
End at: 2018-07-12 17:14:44
Local clock offset: -0.509 ms
Remote clock offset: 0.085 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.86 Mbit/s
  95th percentile per-packet one-way delay: 50.555 ms
  Loss rate: 0.67%
-- Flow 1:
  Average throughput: 2.04 Mbit/s
  95th percentile per-packet one-way delay: 50.377 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 1.30 Mbit/s
  95th percentile per-packet one-way delay: 50.630 ms
  Loss rate: 0.54%
-- Flow 3:
  Average throughput: 0.54 Mbit/s
  95th percentile per-packet one-way delay: 49.835 ms
  Loss rate: 1.67%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2018-07-12 17:38:13
End at: 2018-07-12 17:38:44
Local clock offset: 0.178 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.86 Mbit/s
  95th percentile per-packet one-way delay: 51.318 ms
  Loss rate: 0.60%
-- Flow 1:
  Average throughput: 2.02 Mbit/s
  95th percentile per-packet one-way delay: 51.336 ms
  Loss rate: 0.39%
-- Flow 2:
  Average throughput: 1.32 Mbit/s
  95th percentile per-packet one-way delay: 51.286 ms
  Loss rate: 0.71%
-- Flow 3:
  Average throughput: 0.54 Mbit/s
  95th percentile per-packet one-way delay: 51.167 ms
  Loss rate: 1.16%
Run 3: Report of WebRTC media — Data Link
Run 4: Statistics of WebRTC media

Start at: 2018-07-12 18:02:26
End at: 2018-07-12 18:02:56
Local clock offset: -0.156 ms
Remote clock offset: 0.041 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.78 Mbit/s
  95th percentile per-packet one-way delay: 51.113 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 2.01 Mbit/s
  95th percentile per-packet one-way delay: 51.145 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 1.27 Mbit/s
  95th percentile per-packet one-way delay: 51.047 ms
  Loss rate: 0.72%
-- Flow 3:
  Average throughput: 0.51 Mbit/s
  95th percentile per-packet one-way delay: 50.896 ms
  Loss rate: 1.20%
Run 4: Report of WebRTC media — Data Link

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

Flow 1 ingress (mean 2.01 Mbit/s) vs Flow 1 egress (mean 2.01 Mbit/s)
Flow 2 ingress (mean 1.28 Mbit/s) vs Flow 2 egress (mean 1.27 Mbit/s)
Flow 3 ingress (mean 0.52 Mbit/s) vs Flow 3 egress (mean 0.51 Mbit/s)

![Graph showing packet loss over time for different flows.]

Flow 1 (95th percentile 51.15 ms) vs Flow 2 (95th percentile 51.05 ms) vs Flow 3 (95th percentile 50.90 ms)
Run 5: Statistics of WebRTC media

Start at: 2018-07-12 18:26:20
End at: 2018-07-12 18:26:50
Local clock offset: 0.208 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.84 Mbit/s
95th percentile per-packet one-way delay: 51.298 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 51.326 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 51.155 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 51.207 ms
Loss rate: 1.18%
Run 5: Report of WebRTC media — Data Link

![Graph showing network throughput and packet loss over time]

**Throughput (Mbps)**
- **Flow 1 ing (mean 2.01 Mbps)**
- **Flow 1 egress (mean 2.01 Mbps)**
- **Flow 2 ing (mean 1.32 Mbps)**
- **Flow 2 egress (mean 1.31 Mbps)**
- **Flow 3 ing (mean 0.54 Mbps)**
- **Flow 3 egress (mean 0.53 Mbps)**

**Packet Loss (ms)**
- **Flow 1 95th percentile 51.33 ms**
- **Flow 2 95th percentile 51.16 ms**
- **Flow 3 95th percentile 51.21 ms**
Run 6: Statistics of WebRTC media

Start at: 2018-07-12 18:50:06
End at: 2018-07-12 18:50:36
Local clock offset: -0.143 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 50.997 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 51.049 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 50.827 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 49.846 ms
Loss rate: 1.66%
Run 6: Report of WebRTC media — Data Link
Run 7: Statistics of WebRTC media

Start at: 2018-07-12 19:14:15
End at: 2018-07-12 19:14:45
Local clock offset: -0.188 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.83 Mbit/s
95th percentile per-packet one-way delay: 50.993 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 50.686 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 50.582 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 51.150 ms
Loss rate: 1.27%
Run 7: Report of WebRTC media — Data Link

![Graph showing throughput and packet loss over time for different flows.](image-url)
Run 8: Statistics of WebRTC media

Start at: 2018-07-12 19:38:21
End at: 2018-07-12 19:38:51
Local clock offset: -0.501 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.87 Mbit/s
95th percentile per-packet one-way delay: 50.319 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 50.158 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 50.050 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 50.453 ms
Loss rate: 1.79%
Run 8: Report of WebRTC media — Data Link

![Graph showing throughput and packet delay over time for different flow ingress and egress, with specified mean throughputs for each flow: Flow 1 ingress (mean 2.05 Mbit/s), Flow 1 egress (mean 2.05 Mbit/s), Flow 2 ingress (mean 1.30 Mbit/s), Flow 2 egress (mean 1.30 Mbit/s), Flow 3 ingress (mean 0.54 Mbit/s), Flow 3 egress (mean 0.53 Mbit/s).]
Run 9: Statistics of WebRTC media

Start at: 2018-07-12 20:02:21
End at: 2018-07-12 20:02:51
Local clock offset: 0.255 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 50.430 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 50.125 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 50.536 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 51.144 ms
Loss rate: 2.12%
Run 9: Report of WebRTC media — Data Link
Run 10: Statistics of WebRTC media

Start at: 2018-07-12 20:26:15
End at: 2018-07-12 20:26:45
Local clock offset: 0.218 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-07-12 23:08:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.83 Mbit/s
  95th percentile per-packet one-way delay: 50.784 ms
  Loss rate: 0.94%
-- Flow 1:
  Average throughput: 2.03 Mbit/s
  95th percentile per-packet one-way delay: 50.323 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 1.28 Mbit/s
  95th percentile per-packet one-way delay: 50.792 ms
  Loss rate: 1.00%
-- Flow 3:
  Average throughput: 0.53 Mbit/s
  95th percentile per-packet one-way delay: 54.762 ms
  Loss rate: 2.52%
Run 10: Report of WebRTC media — Data Link