Pantheon Report

Generated at 2018-09-12 01:53:54 (UTC).
Data path: GCE Iowa on ens4 (remote) → GCE London on ens4 (local).
Repeated the test of 18 congestion control schemes 5 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against time.google.com and have been applied to correct the timestamps in logs.

System info:
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651 381972

Git summary:
branch: muses @ f30bceca2aac2ef14a3cf71e25642f4a30905a03
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98e51712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e3b032143cedb7f9e562f4
third_party/indigo @ 2601c92a4a9d58d38dc44dfe0edc9f0c7e644d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3c3f
third_party/muses @ 65ac1b1b9b0d0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ cbfcede6b5ff5740dafe1771f813cd646339e1952
third_party/pcc @ 1af9c983fa0d6618b623c091a55fe972498151
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab924eb249f74ab
third_party/proto-quic @ 77961f1a82733aa86b42f1bc8143ebc978f3c442
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3db2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ 4d4447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
test from GCE Iowa to GCE London, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
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<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
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<td>664.93</td>
<td>545.13</td>
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<td>Indigo</td>
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<tr>
<td>PCC-Expr</td>
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<td>277.04</td>
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<td>WebRTC media</td>
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<td>1.87</td>
<td>1.21</td>
<td>0.49</td>
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Run 1: Statistics of TCP BBR

Start at: 2018-09-11 20:41:36
End at: 2018-09-11 20:42:06
Local clock offset: -0.469 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-09-11 23:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1037.84 Mbit/s
95th percentile per-packet one-way delay: 158.565 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 527.42 Mbit/s
95th percentile per-packet one-way delay: 162.874 ms
Loss rate: 1.30%
-- Flow 2:
Average throughput: 519.81 Mbit/s
95th percentile per-packet one-way delay: 153.654 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 498.83 Mbit/s
95th percentile per-packet one-way delay: 116.953 ms
Loss rate: 1.10%
Run 1: Report of TCP BBR — Data Link
Run 2: Statistics of TCP BBR

End at: 2018-09-11 21:14:03
Local clock offset: -0.087 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2018-09-11 23:32:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1067.26 Mbit/s
95th percentile per-packet one-way delay: 152.184 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 548.46 Mbit/s
95th percentile per-packet one-way delay: 159.478 ms
Loss rate: 1.21%
-- Flow 2:
Average throughput: 534.38 Mbit/s
95th percentile per-packet one-way delay: 131.957 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 494.82 Mbit/s
95th percentile per-packet one-way delay: 138.609 ms
Loss rate: 1.40%
Run 2: Report of TCP BBR — Data Link

![Diagram of throughput and per-packet one-way delay over time for three flows with different colors and markers.](image)

Legend:
- *Flow 1 ingress (mean 553.30 Mbit/s)*
- *Flow 1 egress (mean 548.46 Mbit/s)*
- *Flow 2 ingress (mean 536.64 Mbit/s)*
- *Flow 2 egress (mean 534.38 Mbit/s)*
- *Flow 3 ingress (mean 496.78 Mbit/s)*
- *Flow 3 egress (mean 494.82 Mbit/s)*

- *Flow 1 (95th percentile 159.48 ms)*
- *Flow 2 (95th percentile 131.96 ms)*
- *Flow 3 (95th percentile 138.61 ms)*
Run 3: Statistics of TCP BBR

Start at: 2018-09-11 21:45:34
End at: 2018-09-11 21:46:04
Local clock offset: -0.069 ms
Remote clock offset: 0.014 ms

# Below is generated by plot.py at 2018-09-11 23:32:22
# Datalink statistics
  -- Total of 3 flows:
  Average throughput: 1009.31 Mbit/s
  95th percentile per-packet one-way delay: 152.083 ms
  Loss rate: 1.29%
  -- Flow 1:
  Average throughput: 548.81 Mbit/s
  95th percentile per-packet one-way delay: 149.158 ms
  Loss rate: 1.10%
  -- Flow 2:
  Average throughput: 499.93 Mbit/s
  95th percentile per-packet one-way delay: 166.202 ms
  Loss rate: 1.64%
  -- Flow 3:
  Average throughput: 387.40 Mbit/s
  95th percentile per-packet one-way delay: 112.645 ms
  Loss rate: 1.22%
Run 3: Report of TCP BBR — Data Link

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

![Graph 2: Packet Delay vs Time](image2)
Run 4: Statistics of TCP BBR

Start at: 2018-09-11 22:17:21
End at: 2018-09-11 22:17:51
Local clock offset: -0.476 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2018-09-11 23:32:55
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1095.96 Mbit/s
  95th percentile per-packet one-way delay: 152.411 ms
  Loss rate: 1.21%
  -- Flow 1:
    Average throughput: 562.76 Mbit/s
    95th percentile per-packet one-way delay: 148.438 ms
    Loss rate: 0.71%
  -- Flow 2:
    Average throughput: 540.45 Mbit/s
    95th percentile per-packet one-way delay: 159.718 ms
    Loss rate: 1.23%
  -- Flow 3:
    Average throughput: 525.74 Mbit/s
    95th percentile per-packet one-way delay: 135.826 ms
    Loss rate: 2.75%
Run 4: Report of TCP BBR — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 564.85 Mbps)
  - Flow 1 egress (mean 562.76 Mbps)
  - Flow 2 ingress (mean 544.40 Mbps)
  - Flow 2 egress (mean 540.95 Mbps)
  - Flow 3 ingress (mean 535.11 Mbps)
  - Flow 3 egress (mean 525.74 Mbps)

- **RTT (ms):**
  - Flow 1 (95th percentile 148.44 ms)
  - Flow 2 (95th percentile 159.72 ms)
  - Flow 3 (95th percentile 135.83 ms)
Run 5: Statistics of TCP BBR

Local clock offset: -0.04 ms
Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-09-11 23:32:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1012.34 Mbit/s
95th percentile per-packet one-way delay: 158.830 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 554.53 Mbit/s
95th percentile per-packet one-way delay: 171.774 ms
Loss rate: 1.35%
-- Flow 2:
Average throughput: 479.62 Mbit/s
95th percentile per-packet one-way delay: 128.716 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 420.58 Mbit/s
95th percentile per-packet one-way delay: 88.468 ms
Loss rate: 1.03%
Run 5: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2018-09-11 20:38:18
End at: 2018-09-11 20:38:48
Local clock offset: 0.236 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2018-09-11 23:34:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 624.52 Mbit/s
95th percentile per-packet one-way delay: 78.857 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 364.40 Mbit/s
95th percentile per-packet one-way delay: 62.944 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 257.37 Mbit/s
95th percentile per-packet one-way delay: 76.200 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 269.56 Mbit/s
95th percentile per-packet one-way delay: 88.907 ms
Loss rate: 0.93%
Run 1: Report of Copa — Data Link

![Graphs showing data link performance metrics for different flows.]
Run 2: Statistics of Copa

Start at: 2018-09-11 21:10:16
End at: 2018-09-11 21:10:46
Local clock offset: -0.068 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2018-09-11 23:34:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 600.11 Mbit/s
95th percentile per-packet one-way delay: 63.200 ms
Loss rate: 0.56%

-- Flow 1:
Average throughput: 318.65 Mbit/s
95th percentile per-packet one-way delay: 58.218 ms
Loss rate: 0.33%

-- Flow 2:
Average throughput: 289.21 Mbit/s
95th percentile per-packet one-way delay: 67.920 ms
Loss rate: 0.56%

-- Flow 3:
Average throughput: 269.92 Mbit/s
95th percentile per-packet one-way delay: 72.950 ms
Loss rate: 1.36%
Run 2: Report of Copa — Data Link

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

- Flow 1 ingress (mean 318.64 Mbit/s)
- Flow 1 egress (mean 318.65 Mbit/s)
- Flow 2 ingress (mean 289.36 Mbit/s)
- Flow 2 egress (mean 289.21 Mbit/s)
- Flow 3 ingress (mean 270.87 Mbit/s)
- Flow 3 egress (mean 269.92 Mbit/s)

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

- Flow 1 (95th percentile 58.22 ms)
- Flow 2 (95th percentile 67.92 ms)
- Flow 3 (95th percentile 72.95 ms)
Run 3: Statistics of Copa

Local clock offset: -0.075 ms
Remote clock offset: 0.003 ms

# Below is generated by plot.py at 2018-09-11 23:34:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 585.56 Mbit/s
  95th percentile per-packet one-way delay: 69.440 ms
  Loss rate: 0.52%
-- Flow 1:
  Average throughput: 292.21 Mbit/s
  95th percentile per-packet one-way delay: 63.946 ms
  Loss rate: 0.35%
-- Flow 2:
  Average throughput: 309.97 Mbit/s
  95th percentile per-packet one-way delay: 71.425 ms
  Loss rate: 0.48%
-- Flow 3:
  Average throughput: 264.59 Mbit/s
  95th percentile per-packet one-way delay: 73.677 ms
  Loss rate: 1.15%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

End at: 2018-09-11 22:14:41
Local clock offset: -0.09 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2018-09-11 23:47:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 512.20 Mbit/s
95th percentile per-packet one-way delay: 77.897 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 277.46 Mbit/s
95th percentile per-packet one-way delay: 61.331 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 240.59 Mbit/s
95th percentile per-packet one-way delay: 79.357 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 225.76 Mbit/s
95th percentile per-packet one-way delay: 116.923 ms
Loss rate: 0.78%
Run 4: Report of Copa — Data Link

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

Flow 1 ingress (mean 277.31 Mbit/s)  |  Flow 1 egress (mean 277.46 Mbit/s)
Flow 2 ingress (mean 240.40 Mbit/s)  |  Flow 2 egress (mean 240.59 Mbit/s)
Flow 3 ingress (mean 225.92 Mbit/s)  |  Flow 3 egress (mean 225.76 Mbit/s)
Run 5: Statistics of Copa

Start at: 2018-09-11 22:46:10
End at: 2018-09-11 22:46:40
Local clock offset: -0.105 ms
Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2018-09-11 23:50:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 618.89 Mbit/s
95th percentile per-packet one-way delay: 64.634 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 324.75 Mbit/s
95th percentile per-packet one-way delay: 64.802 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 310.52 Mbit/s
95th percentile per-packet one-way delay: 61.378 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 265.65 Mbit/s
95th percentile per-packet one-way delay: 71.297 ms
Loss rate: 1.14%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2018-09-11 20:31:23
End at: 2018-09-11 20:31:53
Local clock offset: -0.086 ms
Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-09-11 23:50:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1106.42 Mbit/s
95th percentile per-packet one-way delay: 154.686 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 563.74 Mbit/s
95th percentile per-packet one-way delay: 163.094 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 593.56 Mbit/s
95th percentile per-packet one-way delay: 97.289 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 448.33 Mbit/s
95th percentile per-packet one-way delay: 80.719 ms
Loss rate: 1.05%
Run 1: Report of TCP Cubic — Data Link

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

- Flow 1: Ingress (mean 564.05 Mbit/s), egress (mean 563.74 Mbit/s)
- Flow 2: Ingress (mean 593.96 Mbit/s), egress (mean 593.56 Mbit/s)
- Flow 3: Ingress (mean 448.51 Mbit/s), egress (mean 448.33 Mbit/s)

- Packet delay: Flow 1 (95th percentile 163.09 ms), Flow 2 (95th percentile 97.29 ms), Flow 3 (95th percentile 80.72 ms)
Run 2: Statistics of TCP Cubic

Start at: 2018-09-11 21:03:15
End at: 2018-09-11 21:03:45
Local clock offset: -0.087 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-09-11 23:50:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1050.70 Mbit/s
  95th percentile per-packet one-way delay: 96.636 ms
  Loss rate: 0.60%
-- Flow 1:
  Average throughput: 530.19 Mbit/s
  95th percentile per-packet one-way delay: 79.502 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 531.93 Mbit/s
  95th percentile per-packet one-way delay: 75.495 ms
  Loss rate: 0.56%
-- Flow 3:
  Average throughput: 504.51 Mbit/s
  95th percentile per-packet one-way delay: 117.494 ms
  Loss rate: 1.38%
Run 2: Report of TCP Cubic — Data Link

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**Throughput (Mbit/s)**

- **Flow 1 ingress** (mean 530.38 Mbit/s)
- **Flow 1 egress** (mean 530.19 Mbit/s)
- **Flow 2 ingress** (mean 532.27 Mbit/s)
- **Flow 2 egress** (mean 531.93 Mbit/s)
- **Flow 3 ingress** (mean 536.38 Mbit/s)
- **Flow 3 egress** (mean 504.51 Mbit/s)

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

- **Flow 1** (95th percentile 79.50 ms)
- **Flow 2** (95th percentile 75.50 ms)
- **Flow 3** (95th percentile 117.49 ms)
Run 3: Statistics of TCP Cubic

Start at: 2018-09-11 21:35:11
End at: 2018-09-11 21:35:41
Local clock offset: -0.073 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-09-11 23:51:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1105.19 Mbit/s
95th percentile per-packet one-way delay: 89.985 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 575.21 Mbit/s
95th percentile per-packet one-way delay: 78.466 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 559.03 Mbit/s
95th percentile per-packet one-way delay: 93.549 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 479.56 Mbit/s
95th percentile per-packet one-way delay: 89.525 ms
Loss rate: 1.05%
Run 3: Report of TCP Cubic — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Per-packet one-way delay (ms)]
Run 4: Statistics of TCP Cubic

Start at: 2018-09-11 22:07:14
End at: 2018-09-11 22:07:44
Local clock offset: -0.077 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-09-11 23:51:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1025.88 Mbit/s
95th percentile per-packet one-way delay: 93.747 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 522.32 Mbit/s
95th percentile per-packet one-way delay: 65.911 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 519.22 Mbit/s
95th percentile per-packet one-way delay: 102.746 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 479.44 Mbit/s
95th percentile per-packet one-way delay: 69.879 ms
Loss rate: 1.24%
Run 4: Report of TCP Cubic — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 522.57 Mbps)
- Flow 1 egress (mean 522.32 Mbps)
- Flow 2 ingress (mean 519.73 Mbps)
- Flow 2 egress (mean 519.22 Mbps)
- Flow 3 ingress (mean 480.57 Mbps)
- Flow 3 egress (mean 479.44 Mbps)

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

- Flow 1 (95th percentile 65.91 ms)
- Flow 2 (95th percentile 102.75 ms)
- Flow 3 (95th percentile 69.88 ms)
Run 5: Statistics of TCP Cubic

Local clock offset: -0.16 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-09-11 23:53:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1189.48 Mbit/s
95th percentile per-packet one-way delay: 119.328 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 650.72 Mbit/s
95th percentile per-packet one-way delay: 84.305 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 562.96 Mbit/s
95th percentile per-packet one-way delay: 137.901 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 497.74 Mbit/s
95th percentile per-packet one-way delay: 103.914 ms
Loss rate: 1.66%
Run 5: Report of TCP Cubic — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 650.73 Mbps)
  - Flow 1 egress (mean 650.72 Mbps)
  - Flow 2 ingress (mean 563.49 Mbps)
  - Flow 2 egress (mean 562.96 Mbps)
  - Flow 3 ingress (mean 501.11 Mbps)
  - Flow 3 egress (mean 497.74 Mbps)

- **Per-packet one way delay (ms):**
  - Flow 1 (95th percentile 84.31 ms)
  - Flow 2 (95th percentile 137.90 ms)
  - Flow 3 (95th percentile 103.91 ms)
Run 1: Statistics of FillP

Start at: 2018-09-11 20:26:15
End at: 2018-09-11 20:26:45
Local clock offset: -0.115 ms
Remote clock offset: -0.082 ms

# Below is generated by plot.py at 2018-09-12 00:00:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1339.37 Mbit/s
  95th percentile per-packet one-way delay: 126.861 ms
  Loss rate: 2.49%
-- Flow 1:
  Average throughput: 698.63 Mbit/s
  95th percentile per-packet one-way delay: 130.849 ms
  Loss rate: 2.98%
-- Flow 2:
  Average throughput: 688.70 Mbit/s
  95th percentile per-packet one-way delay: 124.208 ms
  Loss rate: 2.23%
-- Flow 3:
  Average throughput: 556.22 Mbit/s
  95th percentile per-packet one-way delay: 76.920 ms
  Loss rate: 1.27%
Run 1: Report of FillP — Data Link

![Graph 1: Throughput (Mbit/s)]
- Blue dashed line: Flow 1 ingress (mean 717.70 Mbit/s)
- Blue solid line: Flow 1 egress (mean 698.63 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 700.95 Mbit/s)
- Green solid line: Flow 2 egress (mean 688.70 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 557.64 Mbit/s)
- Red solid line: Flow 3 egress (mean 556.22 Mbit/s)

![Graph 2: Per-packet one-way delay (ms)]
- Blue circle: Flow 1 (95th percentile 130.85 ms)
- Green circle: Flow 2 (95th percentile 124.21 ms)
- Red circle: Flow 3 (95th percentile 76.92 ms)
Run 2: Statistics of FillP

Start at: 2018-09-11 20:58:05
End at: 2018-09-11 20:58:35
Local clock offset: -0.105 ms
Remote clock offset: -0.128 ms

# Below is generated by plot.py at 2018-09-12 00:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1424.24 Mbit/s
95th percentile per-packet one-way delay: 107.191 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 761.79 Mbit/s
95th percentile per-packet one-way delay: 105.822 ms
Loss rate: 1.42%
-- Flow 2:
Average throughput: 684.96 Mbit/s
95th percentile per-packet one-way delay: 117.545 ms
Loss rate: 1.88%
-- Flow 3:
Average throughput: 629.95 Mbit/s
95th percentile per-packet one-way delay: 97.063 ms
Loss rate: 1.28%
Run 2: Report of FillP — Data Link

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

- Flow 1 ingress (mean 770.17 Mbits/s)
- Flow 1 egress (mean 761.79 Mbits/s)
- Flow 2 ingress (mean 694.68 Mbits/s)
- Flow 2 egress (mean 694.96 Mbits/s)
- Flow 3 ingress (mean 631.61 Mbits/s)
- Flow 3 egress (mean 629.95 Mbits/s)

![Graph showing packet delay distribution for different flows.](image)

- Flow 1 (95th percentile 105.62 ms)
- Flow 2 (95th percentile 117.55 ms)
- Flow 3 (95th percentile 97.06 ms)
Run 3: Statistics of FillP

End at: 2018-09-11 21:30:29
Local clock offset: ~0.032 ms
Remote clock offset: ~0.005 ms

# Below is generated by plot.py at 2018-09-12 00:19:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1418.62 Mbit/s
95th percentile per-packet one-way delay: 121.003 ms
Loss rate: 2.48%
-- Flow 1:
Average throughput: 759.72 Mbit/s
95th percentile per-packet one-way delay: 127.741 ms
Loss rate: 3.16%
-- Flow 2:
Average throughput: 688.36 Mbit/s
95th percentile per-packet one-way delay: 104.743 ms
Loss rate: 1.99%
-- Flow 3:
Average throughput: 612.40 Mbit/s
95th percentile per-packet one-way delay: 70.046 ms
Loss rate: 0.95%
Run 3: Report of FillP — Data Link

![Graph of throughput and delay](image)

- Flow 1 ingress (mean 782.04 Mb/s) — Flow 1 egress (mean 759.72 Mb/s)
- Flow 2 ingress (mean 698.74 Mb/s) — Flow 2 egress (mean 688.36 Mb/s)
- Flow 3 ingress (mean 611.44 Mb/s) — Flow 3 egress (mean 612.40 Mb/s)

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

- Flow 1 (95th percentile 127.74 ms)
- Flow 2 (95th percentile 104.74 ms)
- Flow 3 (95th percentile 70.05 ms)
Run 4: Statistics of FillP

Start at: 2018-09-11 22:02:02
End at: 2018-09-11 22:02:32
Local clock offset: -0.058 ms
Remote clock offset: 0.032 ms

# Below is generated by plot.py at 2018-09-12 00:19:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1414.59 Mbit/s
95th percentile per-packet one-way delay: 126.942 ms
Loss rate: 3.39%
-- Flow 1:
Average throughput: 750.10 Mbit/s
95th percentile per-packet one-way delay: 130.462 ms
Loss rate: 3.99%
-- Flow 2:
Average throughput: 775.10 Mbit/s
95th percentile per-packet one-way delay: 109.128 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 452.39 Mbit/s
95th percentile per-packet one-way delay: 85.165 ms
Loss rate: 5.89%
Run 4: Report of FillP — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 778.62 Mb/s) - Flow 1 egress (mean 750.10 Mb/s)
Flow 2 ingress (mean 784.88 Mb/s) - Flow 2 egress (mean 775.10 Mb/s)
Flow 3 ingress (mean 475.70 Mb/s) - Flow 3 egress (mean 452.39 Mb/s)

Packet delay (ms)

Time (s)

Flow 1 (95th percentile 130.46 ms) - Flow 2 (95th percentile 109.13 ms) - Flow 3 (95th percentile 85.17 ms)
Run 5: Statistics of FillP

End at: 2018-09-11 22:34:23  
Local clock offset: -0.151 ms  
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2018-09-12 00:20:16  
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1452.63 Mbit/s  
95th percentile per-packet one-way delay: 112.280 ms  
Loss rate: 2.18%
-- Flow 1:
Average throughput: 786.95 Mbit/s  
95th percentile per-packet one-way delay: 110.044 ms  
Loss rate: 1.77%
-- Flow 2:
Average throughput: 692.96 Mbit/s  
95th percentile per-packet one-way delay: 129.685 ms  
Loss rate: 3.27%
-- Flow 3:
Average throughput: 623.80 Mbit/s  
95th percentile per-packet one-way delay: 65.884 ms  
Loss rate: 1.29%
Run 5: Report of FillP — Data Link

![Graph of Throughput vs Time](image1)

- **Throughput (Mbps)**
- **Time (s)**
- **Legend:**
  - Flow 1 Ingress (mean 798.54 Mbps)
  - Flow 1 Egress (mean 786.95 Mbps)
  - Flow 2 Ingress (mean 712.75 Mbps)
  - Flow 2 Egress (mean 692.96 Mbps)
  - Flow 3 Ingress (mean 625.52 Mbps)
  - Flow 3 Egress (mean 623.80 Mbps)

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

- **Per-Packet One-Way Delay (ms)**
- **Time (s)**
- **Legend:**
  - Flow 1 (95th percentile 110.04 ms)
  - Flow 2 (95th percentile 129.69 ms)
  - Flow 3 (95th percentile 65.88 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-11 20:18:13
End at: 2018-09-11 20:18:43
Local clock offset: -0.108 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2018-09-12 00:20:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1314.79 Mbit/s
95th percentile per-packet one-way delay: 88.673 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 738.74 Mbit/s
95th percentile per-packet one-way delay: 79.569 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 617.50 Mbit/s
95th percentile per-packet one-way delay: 111.585 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 504.32 Mbit/s
95th percentile per-packet one-way delay: 61.663 ms
Loss rate: 1.15%
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-11 20:50:00
End at: 2018-09-11 20:50:30
Local clock offset: -0.109 ms
Remote clock offset: -0.138 ms

# Below is generated by plot.py at 2018-09-12 00:20:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1325.18 Mbit/s
95th percentile per-packet one-way delay: 92.699 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 710.82 Mbit/s
95th percentile per-packet one-way delay: 97.581 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 645.21 Mbit/s
95th percentile per-packet one-way delay: 92.273 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 566.39 Mbit/s
95th percentile per-packet one-way delay: 60.760 ms
Loss rate: 0.81%
Run 2: Report of FillP-Sheep — Data Link

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

- Flow 1 Ingress (mean 711.46 Mbit/s)
- Flow 1 Egress (mean 710.92 Mbit/s)
- Flow 2 Ingress (mean 644.63 Mbit/s)
- Flow 2 Egress (mean 645.23 Mbit/s)
- Flow 3 Ingress (mean 566.14 Mbit/s)
- Flow 3 Egress (mean 566.39 Mbit/s)
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-11 21:21:50
Local clock offset: -0.075 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2018-09-12 00:21:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1363.75 Mbit/s
  95th percentile per-packet one-way delay: 109.406 ms
  Loss rate: 0.69%
-- Flow 1:
  Average throughput: 740.78 Mbit/s
  95th percentile per-packet one-way delay: 115.342 ms
  Loss rate: 0.81%
-- Flow 2:
  Average throughput: 659.57 Mbit/s
  95th percentile per-packet one-way delay: 99.451 ms
  Loss rate: 0.39%
-- Flow 3:
  Average throughput: 559.26 Mbit/s
  95th percentile per-packet one-way delay: 98.589 ms
  Loss rate: 0.91%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-11 21:53:52
End at: 2018-09-11 21:54:22
Local clock offset: -0.081 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-09-12 00:33:53
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1407.44 Mbit/s
  95th percentile per-packet one-way delay: 109.395 ms
  Loss rate: 1.12%
-- Flow 1:
  Average throughput: 717.93 Mbit/s
  95th percentile per-packet one-way delay: 117.039 ms
  Loss rate: 1.23%
-- Flow 2:
  Average throughput: 742.49 Mbit/s
  95th percentile per-packet one-way delay: 94.666 ms
  Loss rate: 0.85%
-- Flow 3:
  Average throughput: 597.74 Mbit/s
  95th percentile per-packet one-way delay: 73.192 ms
  Loss rate: 1.41%
Run 4: Report of FillP-Sheep — Data Link

![Throughput Graph](image)

- Blue dotted line: Flow 1 Ingress (mean 724.50 Mbit/s)
- Blue solid line: Flow 1 Egress (mean 717.93 Mbit/s)
- Grey dotted line: Flow 2 Ingress (mean 744.97 Mbit/s)
- Grey solid line: Flow 2 Egress (mean 742.49 Mbit/s)
- Red dotted line: Flow 3 Ingress (mean 599.99 Mbit/s)
- Red solid line: Flow 3 Egress (mean 597.74 Mbit/s)

![Packet Delay Graph](image)

- Blue: Flow 1 (95th percentile 117.04 ms)
- Red: Flow 2 (95th percentile 94.67 ms)
- Green: Flow 3 (95th percentile 73.19 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-11 22:25:45
End at: 2018-09-11 22:26:15
Local clock offset: -0.15 ms
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1318.71 Mbit/s
95th percentile per-packet one-way delay: 91.673 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 716.94 Mbit/s
95th percentile per-packet one-way delay: 100.268 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 659.87 Mbit/s
95th percentile per-packet one-way delay: 81.873 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 497.93 Mbit/s
95th percentile per-packet one-way delay: 64.232 ms
Loss rate: 2.15%
Run 5: Report of FillP-Sheep — Data Link

Throughput (Mbps):

- Flow 1 ingress (mean 717.83 Mbps)
- Flow 1 egress (mean 716.94 Mbps)
- Flow 2 ingress (mean 663.05 Mbps)
- Flow 2 egress (mean 659.87 Mbps)
- Flow 3 ingress (mean 503.23 Mbps)
- Flow 3 egress (mean 497.93 Mbps)

Per-packet one-way delay (ms):

- Flow 1 (95th percentile 100.27 ms)
- Flow 2 (95th percentile 81.87 ms)
- Flow 3 (95th percentile 64.23 ms)
Run 1: Statistics of Indigo

Start at: 2018-09-11 20:33:28
End at: 2018-09-11 20:33:58
Local clock offset: 0.256 ms
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.93 Mbit/s
95th percentile per-packet one-way delay: 52.459 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 224.95 Mbit/s
95th percentile per-packet one-way delay: 51.917 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 206.45 Mbit/s
95th percentile per-packet one-way delay: 53.145 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 179.17 Mbit/s
95th percentile per-packet one-way delay: 51.177 ms
Loss rate: 1.10%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2018-09-11 21:05:17
End at: 2018-09-11 21:05:47
Local clock offset: -0.05 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.61 Mbit/s
95th percentile per-packet one-way delay: 51.478 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 211.85 Mbit/s
95th percentile per-packet one-way delay: 51.581 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 202.80 Mbit/s
95th percentile per-packet one-way delay: 50.645 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 180.69 Mbit/s
95th percentile per-packet one-way delay: 51.970 ms
Loss rate: 1.27%
Run 2: Report of Indigo — Data Link

![Throughtput and Delay Diagram](image)
Run 3: Statistics of Indigo

Start at: 2018-09-11 21:37:16
End at: 2018-09-11 21:37:46
Local clock offset: -0.065 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 417.24 Mbit/s
95th percentile per-packet one-way delay: 51.634 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 221.90 Mbit/s
95th percentile per-packet one-way delay: 51.799 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 207.35 Mbit/s
95th percentile per-packet one-way delay: 51.589 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 178.16 Mbit/s
95th percentile per-packet one-way delay: 50.878 ms
Loss rate: 1.22%
Run 3: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 221.86 Mbps)
- Flow 1 egress (mean 221.90 Mbps)
- Flow 2 ingress (mean 207.41 Mbps)
- Flow 2 egress (mean 207.35 Mbps)
- Flow 3 ingress (mean 178.48 Mbps)
- Flow 3 egress (mean 178.16 Mbps)

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

- Flow 1 (95th percentile 51.80 ms)
- Flow 2 (95th percentile 51.59 ms)
- Flow 3 (95th percentile 50.88 ms)
Run 4: Statistics of Indigo

Start at: 2018-09-11 22:09:15  
End at: 2018-09-11 22:09:45  
Local clock offset: -0.13 ms  
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-09-12 00:45:30  
# Datalink statistics
# Total of 3 flows:  
Average throughput: 411.49 Mbit/s  
95th percentile per-packet one-way delay: 51.295 ms  
Loss rate: 0.55%

-- Flow 1:  
Average throughput: 220.67 Mbit/s  
95th percentile per-packet one-way delay: 51.735 ms  
Loss rate: 0.37%

-- Flow 2:  
Average throughput: 202.54 Mbit/s  
95th percentile per-packet one-way delay: 49.619 ms  
Loss rate: 0.58%

-- Flow 3:  
Average throughput: 176.14 Mbit/s  
95th percentile per-packet one-way delay: 51.295 ms  
Loss rate: 1.18%
Run 4: Report of Indigo — Data Link

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

Legend:
- Flow 1 ingress (mean 220.74 Mbit/s)
- Flow 1 egress (mean 220.67 Mbit/s)
- Flow 2 ingress (mean 202.68 Mbit/s)
- Flow 2 egress (mean 202.54 Mbit/s)
- Flow 3 ingress (mean 176.43 Mbit/s)
- Flow 3 egress (mean 176.14 Mbit/s)
Run 5: Statistics of Indigo

Start at: 2018-09-11 22:41:17
End at: 2018-09-11 22:41:47
Local clock offset: 0.229 ms
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 390.91 Mbit/s
95th percentile per-packet one-way delay: 51.078 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 210.11 Mbit/s
95th percentile per-packet one-way delay: 49.923 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 193.00 Mbit/s
95th percentile per-packet one-way delay: 51.711 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 163.96 Mbit/s
95th percentile per-packet one-way delay: 51.273 ms
Loss rate: 1.21%
Run 5: Report of Indigo — Data Link

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

- **Flow 1** (ingress mean: 210.21 Mbps, egress mean: 210.11 Mbps)
- **Flow 2** (ingress mean: 192.96 Mbps, egress mean: 193.00 Mbps)
- **Flow 3** (ingress mean: 164.24 Mbps, egress mean: 163.96 Mbps)

![Graph showing packet round trip delay distribution over time for different flows.]

- **Flow 1** (95th percentile: 49.92 ms)
- **Flow 2** (95th percentile: 51.71 ms)
- **Flow 3** (95th percentile: 51.27 ms)
Run 1: Statistics of LEDBAT

Start at: 2018-09-11 20:21:30
End at: 2018-09-11 20:22:00
Local clock offset: 0.216 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.68 Mbit/s
95th percentile per-packet one-way delay: 51.734 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 36.53 Mbit/s
95th percentile per-packet one-way delay: 51.853 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 24.36 Mbit/s
95th percentile per-packet one-way delay: 51.092 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 51.011 ms
Loss rate: 2.04%
Run 1: Report of LEDBAT — Data Link

[Graph showing throughput over time with different flow rates for ingress and egress]

[Graph showing per-packet end-to-end delay over time with different flow rates]
Run 2: Statistics of LEDBAT

Start at: 2018-09-11 20:53:20
End at: 2018-09-11 20:53:50
Local clock offset: -0.112 ms
Remote clock offset: -0.091 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.31 Mbit/s
95th percentile per-packet one-way delay: 51.512 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 35.67 Mbit/s
95th percentile per-packet one-way delay: 51.666 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 25.11 Mbit/s
95th percentile per-packet one-way delay: 49.749 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 12.05 Mbit/s
95th percentile per-packet one-way delay: 50.953 ms
Loss rate: 2.04%
Run 2: Report of LEDBAT — Data Link

![Graph showing throughput and packet delay over time for different flows with mean rates and 95th percentile delays indicated.](image-url)
Run 3: Statistics of LEDBAT

Start at: 2018-09-11 21:25:12
End at: 2018-09-11 21:25:42
Local clock offset: 0.269 ms
Remote clock offset: 0.334 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.94 Mbit/s
95th percentile per-packet one-way delay: 51.846 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 36.10 Mbit/s
95th percentile per-packet one-way delay: 51.931 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 24.09 Mbit/s
95th percentile per-packet one-way delay: 51.773 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 51.366 ms
Loss rate: 2.06%
Run 3: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet one-way delay over time for Flow 1, Flow 2, and Flow 3.](image-url)
Run 4: Statistics of LEDBAT

Start at: 2018-09-11 21:57:15
End at: 2018-09-11 21:57:45
Local clock offset: -0.429 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.24 Mbit/s
95th percentile per-packet one-way delay: 50.627 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 38.11 Mbit/s
95th percentile per-packet one-way delay: 50.206 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 24.41 Mbit/s
95th percentile per-packet one-way delay: 50.892 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 50.282 ms
Loss rate: 2.04%
Run 4: Report of LEDBAT — Data Link

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

Flow 1 ingress (mean 38.23 Mbit/s)  Flow 1 egress (mean 38.11 Mbit/s)
Flow 2 ingress (mean 24.34 Mbit/s)  Flow 2 egress (mean 24.41 Mbit/s)
Flow 3 ingress (mean 12.15 Mbit/s)  Flow 3 egress (mean 12.02 Mbit/s)
Run 5: Statistics of LEDBAT

End at: 2018-09-11 22:29:34
Local clock offset: -0.469 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-09-12 00:45:30
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 55.52 Mbit/s
  95th percentile per-packet one-way delay: 51.005 ms
  Loss rate: 0.44%
-- Flow 1:
  Average throughput: 35.44 Mbit/s
  95th percentile per-packet one-way delay: 49.725 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 24.43 Mbit/s
  95th percentile per-packet one-way delay: 51.317 ms
  Loss rate: 1.01%
-- Flow 3:
  Average throughput: 11.82 Mbit/s
  95th percentile per-packet one-way delay: 51.197 ms
  Loss rate: 2.04%
Run 5: Report of LEDBAT — Data Link

![Graph of Throughput vs Time for different flows]

- Flow 1 ingress (mean 35.33 Mbit/s)
- Flow 1 egress (mean 35.44 Mbit/s)
- Flow 2 ingress (mean 24.35 Mbit/s)
- Flow 2 egress (mean 24.43 Mbit/s)
- Flow 3 ingress (mean 11.94 Mbit/s)
- Flow 3 egress (mean 11.82 Mbit/s)

![Graph of Per-packet round-trip delay vs Time for different flows]

- Flow 1 (95th percentile 49.73 ms)
- Flow 2 (95th percentile 51.32 ms)
- Flow 3 (95th percentile 51.20 ms)
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-11 20:45:49
End at: 2018-09-11 20:46:19
Local clock offset: 0.263 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2018-09-12 00:50:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1093.53 Mbit/s
95th percentile per-packet one-way delay: 74.501 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 595.02 Mbit/s
95th percentile per-packet one-way delay: 76.227 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 536.89 Mbit/s
95th percentile per-packet one-way delay: 71.723 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 434.67 Mbit/s
95th percentile per-packet one-way delay: 75.170 ms
Loss rate: 1.40%
Run 1: Report of Indigo-Muses — Data Link

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

- Flow 1 ingress (mean 595.17 Mbit/s) vs Flow 1 egress (mean 595.02 Mbit/s)
- Flow 2 ingress (mean 529.24 Mbit/s) vs Flow 2 egress (mean 536.89 Mbit/s)
- Flow 3 ingress (mean 436.31 Mbit/s) vs Flow 3 egress (mean 434.67 Mbit/s)

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

- Flow 1 (95th percentile 76.23 ms)
- Flow 2 (95th percentile 71.72 ms)
- Flow 3 (95th percentile 75.17 ms)
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-11 21:17:45
End at: 2018-09-11 21:18:15
Local clock offset: -0.011 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2018-09-12 00:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1091.08 Mbit/s
95th percentile per-packet one-way delay: 77.825 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 597.02 Mbit/s
95th percentile per-packet one-way delay: 77.716 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 535.26 Mbit/s
95th percentile per-packet one-way delay: 78.636 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 426.06 Mbit/s
95th percentile per-packet one-way delay: 75.563 ms
Loss rate: 1.35%
Run 2: Report of Indigo-Muses — Data Link
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-11 21:49:45
End at: 2018-09-11 21:50:15
Local clock offset: 0.242 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-09-12 00:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1085.07 Mbit/s
95th percentile per-packet one-way delay: 81.632 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 596.15 Mbit/s
95th percentile per-packet one-way delay: 76.857 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 518.04 Mbit/s
95th percentile per-packet one-way delay: 90.899 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 441.19 Mbit/s
95th percentile per-packet one-way delay: 86.316 ms
Loss rate: 0.92%
Run 3: Report of Indigo-Muses — Data Link

The graphs show the throughput and per-packet one-way delay over time for three different flows. The throughput graph indicates the mean data rate in Mbps for each flow, while the delay graph provides the 95th percentile delay time in milliseconds for each flow.
Run 4: Statistics of Indigo-Muses

Local clock offset: -0.462 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-09-12 00:52:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1121.28 Mbit/s
95th percentile per-packet one-way delay: 67.038 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 618.69 Mbit/s
95th percentile per-packet one-way delay: 67.655 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 553.30 Mbit/s
95th percentile per-packet one-way delay: 67.475 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 415.48 Mbit/s
95th percentile per-packet one-way delay: 62.698 ms
Loss rate: 1.48%
Run 5: Statistics of Indigo-Muses

End at: 2018-09-11 22:54:06
Local clock offset: -0.058 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2018-09-12 00:52:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1076.20 Mbit/s
95th percentile per-packet one-way delay: 69.968 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 600.16 Mbit/s
95th percentile per-packet one-way delay: 71.152 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 512.90 Mbit/s
95th percentile per-packet one-way delay: 69.644 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 415.02 Mbit/s
95th percentile per-packet one-way delay: 62.030 ms
Loss rate: 1.41%
Run 5: Report of Indigo-Muses — Data Link

![Graph](image)

- Flow 1 ingress (mean 600.27 Mbit/s)
- Flow 1 egress (mean 600.16 Mbit/s)
- Flow 2 ingress (mean 512.56 Mbit/s)
- Flow 2 egress (mean 512.90 Mbit/s)
- Flow 3 ingress (mean 416.59 Mbit/s)
- Flow 3 egress (mean 415.02 Mbit/s)

![Graph](image)

- Flow 1 (95th percentile 71.15 ms)
- Flow 2 (95th percentile 69.64 ms)
- Flow 3 (95th percentile 62.03 ms)
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-11 20:43:43
End at: 2018-09-11 20:44:13
Local clock offset: 0.197 ms
Remote clock offset: -0.132 ms

# Below is generated by plot.py at 2018-09-12 01:01:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 857.09 Mbit/s
95th percentile per-packet one-way delay: 176.577 ms
Loss rate: 4.12%
-- Flow 1:
Average throughput: 473.15 Mbit/s
95th percentile per-packet one-way delay: 179.740 ms
Loss rate: 5.08%
-- Flow 2:
Average throughput: 357.25 Mbit/s
95th percentile per-packet one-way delay: 184.017 ms
Loss rate: 2.70%
-- Flow 3:
Average throughput: 449.57 Mbit/s
95th percentile per-packet one-way delay: 153.621 ms
Loss rate: 3.25%
Run 1: Report of PCC-Allegro — Data Link

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

Legend:
- Flow 1 ingress (mean 496.79 Mbit/s) — Flow 1 egress (mean 473.15 Mbit/s)
- Flow 2 ingress (mean 365.30 Mbit/s) — Flow 2 egress (mean 357.25 Mbit/s)
- Flow 3 ingress (mean 459.85 Mbit/s) — Flow 3 egress (mean 449.57 Mbit/s)
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-11 21:15:43
End at: 2018-09-11 21:16:13
Local clock offset: -0.078 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2018-09-12 01:01:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 805.15 Mbit/s
95th percentile per-packet one-way delay: 158.873 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 452.91 Mbit/s
95th percentile per-packet one-way delay: 162.309 ms
Loss rate: 2.05%
-- Flow 2:
Average throughput: 394.36 Mbit/s
95th percentile per-packet one-way delay: 121.678 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 276.65 Mbit/s
95th percentile per-packet one-way delay: 79.222 ms
Loss rate: 1.40%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

End at: 2018-09-11 21:48:09
Local clock offset: -0.051 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-09-12 01:15:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 843.43 Mbit/s
95th percentile per-packet one-way delay: 186.431 ms
Loss rate: 4.20%
-- Flow 1:
Average throughput: 463.20 Mbit/s
95th percentile per-packet one-way delay: 154.179 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 409.67 Mbit/s
95th percentile per-packet one-way delay: 196.404 ms
Loss rate: 9.25%
-- Flow 3:
Average throughput: 331.78 Mbit/s
95th percentile per-packet one-way delay: 162.818 ms
Loss rate: 4.46%
Run 3: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 465.77 Mbit/s)
- Flow 1 egress (mean 463.29 Mbit/s)
- Flow 2 ingress (mean 449.07 Mbit/s)
- Flow 2 egress (mean 409.67 Mbit/s)
- Flow 3 ingress (mean 343.64 Mbit/s)
- Flow 3 egress (mean 331.78 Mbit/s)

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

- Flow 1 (95th percentile 154.18 ms)
- Flow 2 (95th percentile 196.40 ms)
- Flow 3 (95th percentile 162.82 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-11 22:19:30
End at: 2018-09-11 22:20:00
Local clock offset: -0.44 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2018-09-12 01:21:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 854.82 Mbit/s
  95th percentile per-packet one-way delay: 185.406 ms
  Loss rate: 5.58%
-- Flow 1:
  Average throughput: 466.89 Mbit/s
  95th percentile per-packet one-way delay: 185.021 ms
  Loss rate: 4.82%
-- Flow 2:
  Average throughput: 449.93 Mbit/s
  95th percentile per-packet one-way delay: 187.103 ms
  Loss rate: 7.59%
-- Flow 3:
  Average throughput: 273.65 Mbit/s
  95th percentile per-packet one-way delay: 107.437 ms
  Loss rate: 2.54%
Run 4: Report of PCC-Allegro — Data Link

![Graph of Throughput vs. Time](image1)

![Graph of Per-packet one-way delay vs. Time](image2)
Run 5: Statistics of PCC-Allegro

End at: 2018-09-11 22:52:06
Local clock offset: -0.447 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2018-09-12 01:21:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 775.71 Mbit/s
95th percentile per-packet one-way delay: 167.808 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 401.54 Mbit/s
95th percentile per-packet one-way delay: 62.415 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 435.25 Mbit/s
95th percentile per-packet one-way delay: 183.330 ms
Loss rate: 4.22%
-- Flow 3:
Average throughput: 261.12 Mbit/s
95th percentile per-packet one-way delay: 152.808 ms
Loss rate: 2.71%
Run 5: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 401.63 Mbit/s)  Flow 1 egress (mean 401.54 Mbit/s)
Flow 2 ingress (mean 452.08 Mbit/s)  Flow 2 egress (mean 435.25 Mbit/s)
Flow 3 ingress (mean 265.58 Mbit/s)  Flow 3 egress (mean 261.12 Mbit/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 62.41 ms)  Flow 2 (95th percentile 183.33 ms)  Flow 3 (95th percentile 152.81 ms)
Run 1: Statistics of PCC-Expr

Start at: 2018-09-11 20:16:13
End at: 2018-09-11 20:16:43
Local clock offset: -0.171 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2018-09-12 01:21:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 556.75 Mbit/s
95th percentile per-packet one-way delay: 108.584 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 317.09 Mbit/s
95th percentile per-packet one-way delay: 139.704 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 257.40 Mbit/s
95th percentile per-packet one-way delay: 71.925 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 210.29 Mbit/s
95th percentile per-packet one-way delay: 54.903 ms
Loss rate: 1.24%
Run 1: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 319.84 Mbit/s)
- Flow 1 egress (mean 317.09 Mbit/s)
- Flow 2 ingress (mean 256.04 Mbit/s)
- Flow 2 egress (mean 257.40 Mbit/s)
- Flow 3 ingress (mean 210.75 Mbit/s)
- Flow 3 egress (mean 210.29 Mbit/s)
Run 2: Statistics of PCC-Expr

Start at: 2018-09-11 20:47:53
End at: 2018-09-11 20:48:23
Local clock offset: -0.438 ms
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-09-12 01:21:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 632.34 Mbit/s
  95th percentile per-packet one-way delay: 149.116 ms
  Loss rate: 2.96%
-- Flow 1:
  Average throughput: 355.83 Mbit/s
  95th percentile per-packet one-way delay: 156.939 ms
  Loss rate: 4.02%
-- Flow 2:
  Average throughput: 286.38 Mbit/s
  95th percentile per-packet one-way delay: 81.366 ms
  Loss rate: 1.83%
-- Flow 3:
  Average throughput: 263.02 Mbit/s
  95th percentile per-packet one-way delay: 95.584 ms
  Loss rate: 0.98%
Run 2: Report of PCC-Expr — Data Link

![Graphs showing throughput and per-packet end-to-end delay](image)
Run 3: Statistics of PCC-Expr

Start at: 2018-09-11 21:19:49
End at: 2018-09-11 21:20:19
Local clock offset: -0.414 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2018-09-12 01:21:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 554.83 Mbit/s
95th percentile per-packet one-way delay: 158.054 ms
Loss rate: 6.31%
-- Flow 1:
Average throughput: 302.15 Mbit/s
95th percentile per-packet one-way delay: 124.555 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 288.77 Mbit/s
95th percentile per-packet one-way delay: 165.565 ms
Loss rate: 15.23%
-- Flow 3:
Average throughput: 186.15 Mbit/s
95th percentile per-packet one-way delay: 56.183 ms
Loss rate: 1.29%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2018-09-11 21:51:49
End at: 2018-09-11 21:52:19
Local clock offset: -0.068 ms
Remote clock offset: 0.003 ms

# Below is generated by plot.py at 2018-09-12 01:21:34
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 584.34 Mbit/s
   95th percentile per-packet one-way delay: 142.328 ms
   Loss rate: 1.24%
-- Flow 1:
   Average throughput: 314.22 Mbit/s
   95th percentile per-packet one-way delay: 77.037 ms
   Loss rate: 0.41%
-- Flow 2:
   Average throughput: 270.68 Mbit/s
   95th percentile per-packet one-way delay: 161.686 ms
   Loss rate: 2.21%
-- Flow 3:
   Average throughput: 275.98 Mbit/s
   95th percentile per-packet one-way delay: 149.053 ms
   Loss rate: 2.11%
Run 4: Report of PCC-Expr — Data Link

[Graph showing throughput and packet delay over time for different flows]
Run 5: Statistics of PCC-Expr

Local clock offset: -0.119 ms
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 572.40 Mbit/s
95th percentile per-packet one-way delay: 85.111 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 318.27 Mbit/s
95th percentile per-packet one-way delay: 78.665 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 281.97 Mbit/s
95th percentile per-packet one-way delay: 97.218 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 204.46 Mbit/s
95th percentile per-packet one-way delay: 54.241 ms
Loss rate: 1.12%
Run 5: Report of PCC-Expr — Data Link

![Data Link Chart]

The charts above illustrate the throughput and packet loss delay for different network flows. The throughput chart shows the following:

- **Flow 1 Ingress**: Mean 318.36 Mbit/s
- **Flow 1 Egress**: Mean 318.27 Mbit/s
- **Flow 2 Ingress**: Mean 282.95 Mbit/s
- **Flow 2 Egress**: Mean 281.97 Mbit/s
- **Flow 3 Ingress**: Mean 204.81 Mbit/s
- **Flow 3 Egress**: Mean 204.46 Mbit/s

The packet loss delay chart shows the 95th percentile delays as follows:

- **Flow 1**: 78.67 ms
- **Flow 2**: 97.22 ms
- **Flow 3**: 54.24 ms
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-11 20:20:14
End at: 2018-09-11 20:20:44
Local clock offset: -0.149 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.11 Mbit/s
95th percentile per-packet one-way delay: 50.080 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 60.03 Mbit/s
95th percentile per-packet one-way delay: 49.402 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 59.75 Mbit/s
95th percentile per-packet one-way delay: 50.116 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 15.80 Mbit/s
95th percentile per-packet one-way delay: 50.132 ms
Loss rate: 0.54%
Run 1: Report of QUIC Cubic — Data Link

![Graphs showing throughput and per-packet one-way delay](image-url)
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-11 20:52:03
End at: 2018-09-11 20:52:33
Local clock offset: 0.231 ms
Remote clock offset: -0.135 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 117.97 Mbit/s
95th percentile per-packet one-way delay: 51.034 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 65.41 Mbit/s
95th percentile per-packet one-way delay: 51.058 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 68.61 Mbit/s
95th percentile per-packet one-way delay: 50.488 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 21.25 Mbit/s
95th percentile per-packet one-way delay: 50.541 ms
Loss rate: 4.85%
Run 3: Statistics of QUIC Cubic

End at: 2018-09-11 21:24:25
Local clock offset: 0.284 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 102.28 Mbit/s
  95th percentile per-packet one-way delay: 50.413 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 63.17 Mbit/s
  95th percentile per-packet one-way delay: 49.782 ms
  Loss rate: 0.56%
-- Flow 2:
  Average throughput: 49.59 Mbit/s
  95th percentile per-packet one-way delay: 50.444 ms
  Loss rate: 0.74%
-- Flow 3:
  Average throughput: 18.72 Mbit/s
  95th percentile per-packet one-way delay: 50.496 ms
  Loss rate: 0.45%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

End at: 2018-09-11 21:56:28
Local clock offset: 0.27 ms
Remote clock offset: 0.025 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 118.81 Mbit/s
95th percentile per-packet one-way delay: 50.369 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 81.28 Mbit/s
95th percentile per-packet one-way delay: 49.779 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 45.07 Mbit/s
95th percentile per-packet one-way delay: 50.408 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 19.20 Mbit/s
95th percentile per-packet one-way delay: 50.429 ms
Loss rate: 1.40%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Local clock offset: -0.13 ms  
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.36 Mbit/s
95th percentile per-packet one-way delay: 50.625 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 64.21 Mbit/s
95th percentile per-packet one-way delay: 50.642 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 33.94 Mbit/s
95th percentile per-packet one-way delay: 50.132 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 20.11 Mbit/s
95th percentile per-packet one-way delay: 48.753 ms
Loss rate: 0.45%
Run 5: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2018-09-11 20:35:16
End at: 2018-09-11 20:35:46
Local clock offset: 0.23 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 51.048 ms
  Loss rate: 0.52%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.964 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 51.088 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.948 ms
  Loss rate: 1.09%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

Start at: 2018-09-11 21:07:05
End at: 2018-09-11 21:07:35
Local clock offset: -0.075 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-09-12 01:22:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 50.788 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.597 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.826 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.538 ms
  Loss rate: 1.09%
Run 2: Report of SCReAM — Data Link

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**Throughput (Mbps)**

- **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)**

**Packet One-Way Delay (ms)**

- **Flow 1 (95th percentile 49.60 ms)**
- **Flow 2 (95th percentile 50.83 ms)**
- **Flow 3 (95th percentile 49.54 ms)**

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Run 3: Statistics of SCReAM

Start at: 2018-09-11 21:39:06
End at: 2018-09-11 21:39:36
Local clock offset: 0.262 ms
Remote clock offset: 0.046 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 50.603 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.612 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.620 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 50.335 ms
  Loss rate: 1.09%
Run 3: Report of SCReAM — Data Link

[Graph showing throughput and packet loss over time with various flow data points]

[Graph showing packet loss over time with various flow data points]
Run 4: Statistics of SCReAM

Start at: 2018-09-11 22:11:03
End at: 2018-09-11 22:11:33
Local clock offset: -0.086 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.224 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.227 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.791 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.264 ms
Loss rate: 1.09%
Run 4: Report of SCReAM — Data Link

![Graph showing throughput and per-packet error rate over time for different flows.](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)
Run 5: Statistics of SCReAM

Start at: 2018-09-11 22:43:03
End at: 2018-09-11 22:43:33
Local clock offset: 0.223 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 49.869 ms
  Loss rate: 0.51%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.166 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.898 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 49.190 ms
  Loss rate: 1.08%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2018-09-11 20:40:24
End at: 2018-09-11 20:40:54
Local clock offset: -0.456 ms
Remote clock offset: -0.107 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 16.21 Mbit/s
95th percentile per-packet one-way delay: 51.080 ms
 Loss rate: 0.63%
-- Flow 1:
 Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 49.332 ms
 Loss rate: 0.42%
-- Flow 2:
 Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 51.276 ms
 Loss rate: 0.64%
-- Flow 3:
 Average throughput: 7.88 Mbit/s
95th percentile per-packet one-way delay: 51.071 ms
 Loss rate: 1.30%
Run 1: Report of Sprout — Data Link

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

- **Throughput (Mbps)**
- **Time (s)**
- **Flow 1 ingress (mean 8.23 Mbps)**
- **Flow 1 egress (mean 8.21 Mbps)**
- **Flow 2 ingress (mean 8.16 Mbps)**
- **Flow 2 egress (mean 8.16 Mbps)**
- **Flow 3 ingress (mean 7.99 Mbps)**
- **Flow 3 egress (mean 7.88 Mbps)**

![Graph showing packet latency (ms) over time for different flows.](image)

- **Per packet end-to-end delay (ms)**
- **Time (s)**
- **Flow 1 (95th percentile 49.33 ms)**
- **Flow 2 (95th percentile 51.28 ms)**
- **Flow 3 (95th percentile 51.07 ms)**
Run 2: Statistics of Sprout

Start at: 2018-09-11 21:12:21
End at: 2018-09-11 21:12:51
Local clock offset: -0.048 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.19 Mbit/s
95th percentile per-packet one-way delay: 51.251 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 8.23 Mbit/s
95th percentile per-packet one-way delay: 51.331 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 50.262 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 7.80 Mbit/s
95th percentile per-packet one-way delay: 50.224 ms
Loss rate: 1.52%
Run 2: Report of Sprout — Data Link

![Data Link Graph]

- Flow 1 ingress (mean 8.23 Mbit/s)
- Flow 1 egress (mean 8.23 Mbit/s)
- Flow 2 ingress (mean 8.16 Mbit/s)
- Flow 2 egress (mean 8.16 Mbit/s)
- Flow 3 ingress (mean 7.86 Mbit/s)
- Flow 3 egress (mean 7.80 Mbit/s)

![Data Link Graph]

- Flow 1 (95th percentile 51.33 ms)
- Flow 2 (95th percentile 50.26 ms)
- Flow 3 (95th percentile 50.22 ms)
Run 3: Statistics of Sprout

Start at: 2018-09-11 21:44:22  
End at: 2018-09-11 21:44:52  
Local clock offset: -0.466 ms  
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2018-09-12 01:22:47  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 16.11 Mbit/s  
95th percentile per-packet one-way delay: 49.799 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 8.24 Mbit/s  
95th percentile per-packet one-way delay: 49.086 ms  
Loss rate: 0.42%  
-- Flow 2:  
Average throughput: 8.14 Mbit/s  
95th percentile per-packet one-way delay: 49.980 ms  
Loss rate: 0.65%  
-- Flow 3:  
Average throughput: 7.58 Mbit/s  
95th percentile per-packet one-way delay: 49.814 ms  
Loss rate: 1.31%
Run 4: Statistics of Sprout

Start at: 2018-09-11 22:16:09
End at: 2018-09-11 22:16:39
Local clock offset: -0.079 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 16.24 Mbit/s
  95th percentile per-packet one-way delay: 50.037 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 8.24 Mbit/s
  95th percentile per-packet one-way delay: 50.149 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 8.19 Mbit/s
  95th percentile per-packet one-way delay: 49.436 ms
  Loss rate: 0.64%
-- Flow 3:
  Average throughput: 7.86 Mbit/s
  95th percentile per-packet one-way delay: 49.349 ms
  Loss rate: 1.25%
Run 4: Report of Sprout — Data Link

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

![Graph of Per-packet one-way delay (ms)](image2)
Run 5: Statistics of Sprout

Local clock offset: 0.255 ms
Remote clock offset: -0.095 ms

# Below is generated by plot.py at 2018-09-12 01:22:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.17 Mbit/s
95th percentile per-packet one-way delay: 50.906 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 8.22 Mbit/s
95th percentile per-packet one-way delay: 49.617 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 8.05 Mbit/s
95th percentile per-packet one-way delay: 51.043 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 49.605 ms
Loss rate: 1.27%
Run 5: Report of Sprout — Data Link
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-11 20:28:19
End at: 2018-09-11 20:28:49
Local clock offset: -0.122 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2018-09-12 01:32:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 475.42 Mbit/s
95th percentile per-packet one-way delay: 50.504 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 242.17 Mbit/s
95th percentile per-packet one-way delay: 50.255 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 244.62 Mbit/s
95th percentile per-packet one-way delay: 49.866 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 213.93 Mbit/s
95th percentile per-packet one-way delay: 50.762 ms
Loss rate: 1.22%
Run 1: Report of TaoVA-100x — Data Link

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

- **Flow 1 ingress (mean 242.25 Mbit/s)**
- **Flow 1 egress (mean 242.17 Mbit/s)**
- **Flow 2 ingress (mean 244.66 Mbit/s)**
- **Flow 2 egress (mean 244.62 Mbit/s)**
- **Flow 3 ingress (mean 214.38 Mbit/s)**
- **Flow 3 egress (mean 213.93 Mbit/s)**

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

- **Flow 1 (95th percentile 50.26 ms)**
- **Flow 2 (95th percentile 49.87 ms)**
- **Flow 3 (95th percentile 50.76 ms)**
Run 2: Statistics of TaoVA-100x

Start at: 2018-09-11 21:00:12
End at: 2018-09-11 21:00:42
Local clock offset: -0.443 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2018-09-12 01:32:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 459.10 Mbit/s
  95th percentile per-packet one-way delay: 50.439 ms
  Loss rate: 0.43%
-- Flow 1:
  Average throughput: 237.32 Mbit/s
  95th percentile per-packet one-way delay: 50.507 ms
  Loss rate: 0.35%
-- Flow 2:
  Average throughput: 244.51 Mbit/s
  95th percentile per-packet one-way delay: 48.868 ms
  Loss rate: 0.52%
-- Flow 3:
  Average throughput: 180.40 Mbit/s
  95th percentile per-packet one-way delay: 49.230 ms
  Loss rate: 0.52%
Run 2: Report of TaoVA-100x — Data Link

![Graph showing throughput over time](image1)

![Graph showing per-packet one way delay over time](image2)
Run 3: Statistics of TaoVA-100x

Start at: 2018-09-11 21:32:06
End at: 2018-09-11 21:32:36
Local clock offset: -0.119 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-09-12 01:32:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 484.54 Mbit/s
95th percentile per-packet one-way delay: 50.864 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 245.98 Mbit/s
95th percentile per-packet one-way delay: 49.677 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 245.69 Mbit/s
95th percentile per-packet one-way delay: 51.142 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 227.75 Mbit/s
95th percentile per-packet one-way delay: 50.325 ms
Loss rate: 1.18%
Run 3: Report of TaoVA-100x — Data Link

Throughput (Mbit/s) vs Time (s)

- Flow 1 ingress (mean 246.02 Mbit/s)
- Flow 1 egress (mean 245.98 Mbit/s)
- Flow 2 ingress (mean 245.75 Mbit/s)
- Flow 2 egress (mean 245.69 Mbit/s)
- Flow 3 ingress (mean 226.13 Mbit/s)
- Flow 3 egress (mean 227.75 Mbit/s)

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

- Flow 1 (95th percentile 49.68 ms)
- Flow 2 (95th percentile 51.14 ms)
- Flow 3 (95th percentile 50.33 ms)
Run 4: Statistics of TaoVA-100x

Start at: 2018-09-11 22:04:09
End at: 2018-09-11 22:04:39
Local clock offset: -0.079 ms
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2018-09-12 01:32:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 478.24 Mbit/s
95th percentile per-packet one-way delay: 50.470 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 242.51 Mbit/s
95th percentile per-packet one-way delay: 50.420 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 248.33 Mbit/s
95th percentile per-packet one-way delay: 50.612 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 214.29 Mbit/s
95th percentile per-packet one-way delay: 50.331 ms
Loss rate: 1.26%
Run 4: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 242.54 Mbit/s)
- Flow 1 egress (mean 242.51 Mbit/s)
- Flow 2 ingress (mean 248.36 Mbit/s)
- Flow 2 egress (mean 248.33 Mbit/s)
- Flow 3 ingress (mean 214.79 Mbit/s)
- Flow 3 egress (mean 214.29 Mbit/s)

[Graph showing packet delay distribution]

- Flow 1 (95th percentile 50.42 ms)
- Flow 2 (95th percentile 50.61 ms)
- Flow 3 (95th percentile 50.33 ms)

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Run 5: Statistics of TaoVA-100x

Start at: 2018-09-11 22:36:03
End at: 2018-09-11 22:36:33
Local clock offset: -0.515 ms
Remote clock offset: -0.081 ms

# Below is generated by plot.py at 2018-09-12 01:34:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 477.23 Mbit/s
95th percentile per-packet one-way delay: 50.634 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 241.50 Mbit/s
95th percentile per-packet one-way delay: 50.719 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 236.55 Mbit/s
95th percentile per-packet one-way delay: 49.400 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 237.54 Mbit/s
95th percentile per-packet one-way delay: 51.065 ms
Loss rate: 1.09%
Run 5: Report of TaoVA-100x — Data Link

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

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**Throughput (Mb/s)**

- Flow 1 ingress (mean 241.58 Mb/s)
- Flow 1 egress (mean 241.50 Mb/s)
- Flow 2 ingress (mean 236.23 Mb/s)
- Flow 2 egress (mean 236.55 Mb/s)
- Flow 3 ingress (mean 237.70 Mb/s)
- Flow 3 egress (mean 237.54 Mb/s)

**Packet delivery delay (ms)**

- Flow 1 (95th percentile 50.72 ms)
- Flow 2 (95th percentile 49.40 ms)
- Flow 3 (95th percentile 51.06 ms)
Run 1: Statistics of TCP Vegas

Start at: 2018-09-11 20:36:26
End at: 2018-09-11 20:36:56
Local clock offset: -0.163 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2018-09-12 01:36:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 829.81 Mbit/s
95th percentile per-packet one-way delay: 63.473 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 338.74 Mbit/s
95th percentile per-packet one-way delay: 64.779 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 542.25 Mbit/s
95th percentile per-packet one-way delay: 61.801 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 394.92 Mbit/s
95th percentile per-packet one-way delay: 54.510 ms
Loss rate: 0.71%
Run 1: Report of TCP Vegas — Data Link

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

- **Flow 1** (ingress: 338.47 Mbit/s, egress: 338.74 Mbit/s)
- **Flow 2** (ingress: 542.45 Mbit/s, egress: 542.25 Mbit/s)
- **Flow 3** (ingress: 393.77 Mbit/s, egress: 394.92 Mbit/s)
Run 2: Statistics of TCP Vegas

Start at: 2018-09-11 21:08:15
End at: 2018-09-11 21:08:45
Local clock offset: 0.297 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2018-09-12 01:40:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1041.46 Mbit/s
  95th percentile per-packet one-way delay: 75.798 ms
  Loss rate: 0.52%
-- Flow 1:
  Average throughput: 546.47 Mbit/s
  95th percentile per-packet one-way delay: 68.368 ms
  Loss rate: 0.36%
-- Flow 2:
  Average throughput: 522.99 Mbit/s
  95th percentile per-packet one-way delay: 79.132 ms
  Loss rate: 0.56%
-- Flow 3:
  Average throughput: 445.91 Mbit/s
  95th percentile per-packet one-way delay: 97.952 ms
  Loss rate: 1.06%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2018-09-11 21:40:16
End at: 2018-09-11 21:40:46
Local clock offset: 0.282 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2018-09-12 01:42:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1038.32 Mbit/s
95th percentile per-packet one-way delay: 66.584 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 541.47 Mbit/s
95th percentile per-packet one-way delay: 62.038 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 514.28 Mbit/s
95th percentile per-packet one-way delay: 66.418 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 469.46 Mbit/s
95th percentile per-packet one-way delay: 69.120 ms
Loss rate: 1.23%
Run 3: Report of TCP Vegas — Data Link

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

Flow 1 (ingress mean 541.58 Mbit/s, egress mean 541.47 Mbit/s)
Flow 2 (ingress mean 514.51 Mbit/s, egress mean 514.28 Mbit/s)
Flow 3 (ingress mean 470.54 Mbit/s, egress mean 469.46 Mbit/s)

Flow 1 (95th percentile 62.04 ms)
Flow 2 (95th percentile 66.42 ms)
Flow 3 (95th percentile 69.12 ms)
Run 4: Statistics of TCP Vegas

End at: 2018-09-11 22:12:43
Local clock offset: -0.436 ms
Remote clock offset: 0.024 ms

# Below is generated by plot.py at 2018-09-12 01:49:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 972.51 Mbit/s
95th percentile per-packet one-way delay: 60.803 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 548.32 Mbit/s
95th percentile per-packet one-way delay: 59.729 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 478.10 Mbit/s
95th percentile per-packet one-way delay: 55.052 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 321.87 Mbit/s
95th percentile per-packet one-way delay: 74.026 ms
Loss rate: 0.91%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

End at: 2018-09-11 22:44:43
Local clock offset: -0.454 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-09-12 01:49:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 943.34 Mbit/s
95th percentile per-packet one-way delay: 63.326 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 428.00 Mbit/s
95th percentile per-packet one-way delay: 63.192 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 519.68 Mbit/s
95th percentile per-packet one-way delay: 65.135 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 514.56 Mbit/s
95th percentile per-packet one-way delay: 57.663 ms
Loss rate: 1.12%
Run 5: Report of TCP Vegas — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 427.47 Mbps)
- Flow 1 egress (mean 428.00 Mbps)
- Flow 2 ingress (mean 519.88 Mbps)
- Flow 2 egress (mean 519.68 Mbps)
- Flow 3 ingress (mean 515.26 Mbps)
- Flow 3 egress (mean 514.56 Mbps)

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

- Flow 1 (95th percentile 63.19 ms)
- Flow 2 (95th percentile 65.14 ms)
- Flow 3 (95th percentile 57.66 ms)
Run 1: Statistics of Verus

End at: 2018-09-11 20:23:16
Local clock offset: 0.26 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2018-09-12 01:49:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 290.86 Mbit/s
95th percentile per-packet one-way delay: 135.070 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 152.51 Mbit/s
95th percentile per-packet one-way delay: 150.791 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 166.05 Mbit/s
95th percentile per-packet one-way delay: 90.389 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 84.80 Mbit/s
95th percentile per-packet one-way delay: 60.434 ms
Loss rate: 1.66%
Run 1: Report of Verus — Data Link
Run 2: Statistics of Verus

Start at: 2018-09-11 20:54:36
End at: 2018-09-11 20:55:06
Local clock offset: 0.253 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2018-09-12 01:49:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.55 Mbit/s
95th percentile per-packet one-way delay: 145.876 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 171.62 Mbit/s
95th percentile per-packet one-way delay: 138.085 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 157.00 Mbit/s
95th percentile per-packet one-way delay: 147.758 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 93.90 Mbit/s
95th percentile per-packet one-way delay: 184.157 ms
Loss rate: 4.59%
Run 2: Report of Verus — Data Link

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

- Flow 1 ingress (mean 171.63 Mbps)
- Flow 1 egress (mean 171.62 Mbps)
- Flow 2 ingress (mean 158.59 Mbps)
- Flow 2 egress (mean 157.00 Mbps)
- Flow 3 ingress (mean 97.41 Mbps)
- Flow 3 egress (mean 93.90 Mbps)

![Per-packet one-way delay (ms) graph.]

- Flow 1 (95th percentile 138.09 ms)
- Flow 2 (95th percentile 147.76 ms)
- Flow 3 (95th percentile 184.16 ms)
Run 3: Statistics of Verus

Start at: 2018-09-11 21:26:27
End at: 2018-09-11 21:26:57
Local clock offset: -0.037 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2018-09-12 01:49:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 287.64 Mbit/s
95th percentile per-packet one-way delay: 97.657 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 153.01 Mbit/s
95th percentile per-packet one-way delay: 108.766 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 155.88 Mbit/s
95th percentile per-packet one-way delay: 87.668 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 93.89 Mbit/s
95th percentile per-packet one-way delay: 87.553 ms
Loss rate: 3.60%
Run 3: Report of Verus — Data Link
Run 4: Statistics of Verus

Start at: 2018-09-11 21:58:31
End at: 2018-09-11 21:59:01
Local clock offset: -0.458 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-09-12 01:49:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 302.27 Mbit/s
95th percentile per-packet one-way delay: 127.990 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 153.72 Mbit/s
95th percentile per-packet one-way delay: 117.147 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 183.09 Mbit/s
95th percentile per-packet one-way delay: 141.717 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 81.41 Mbit/s
95th percentile per-packet one-way delay: 131.700 ms
Loss rate: 0.00%
Run 4: Report of Verus — Data Link

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

- **Flow 1 ingress** (mean 153.74 Mbps)
- **Flow 1 egress** (mean 153.72 Mbps)
- **Flow 2 ingress** (mean 184.36 Mbps)
- **Flow 2 egress** (mean 185.09 Mbps)
- **Flow 3 ingress** (mean 80.45 Mbps)
- **Flow 3 egress** (mean 81.41 Mbps)

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

- **Flow 1** (95th percentile 117.15 ms)
- **Flow 2** (95th percentile 141.72 ms)
- **Flow 3** (95th percentile 131.70 ms)
Run 5: Statistics of Verus

Start at: 2018-09-11 22:30:20
End at: 2018-09-11 22:30:50
Local clock offset: -0.145 ms
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2018-09-12 01:51:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 309.31 Mbit/s
95th percentile per-packet one-way delay: 149.478 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 194.01 Mbit/s
95th percentile per-packet one-way delay: 157.664 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 113.00 Mbit/s
95th percentile per-packet one-way delay: 102.243 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 122.24 Mbit/s
95th percentile per-packet one-way delay: 103.229 ms
Loss rate: 1.14%
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-11 20:24:24
End at: 2018-09-11 20:24:54
Local clock offset: 0.259 ms
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2018-09-12 01:52:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 605.14 Mbit/s
95th percentile per-packet one-way delay: 99.581 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 379.55 Mbit/s
95th percentile per-packet one-way delay: 129.240 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 313.37 Mbit/s
95th percentile per-packet one-way delay: 66.862 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 53.74 Mbit/s
95th percentile per-packet one-way delay: 49.960 ms
Loss rate: 1.27%
Run 1: Report of PCC-Vivace — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 379.06 Mbps)  Flow 1 egress (mean 379.55 Mbps)
Flow 2 ingress (mean 312.79 Mbps)  Flow 2 egress (mean 313.37 Mbps)
Flow 3 ingress (mean 53.98 Mbps)   Flow 3 egress (mean 53.74 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 129.24 ms)  Flow 2 (95th percentile 66.86 ms)  Flow 3 (95th percentile 49.96 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-11 20:56:15
End at: 2018-09-11 20:56:45
Local clock offset: -0.087 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-09-12 01:52:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 586.41 Mbit/s
95th percentile per-packet one-way delay: 63.615 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 278.73 Mbit/s
95th percentile per-packet one-way delay: 60.833 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 307.10 Mbit/s
95th percentile per-packet one-way delay: 58.268 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 316.61 Mbit/s
95th percentile per-packet one-way delay: 81.012 ms
Loss rate: 1.33%
Run 2: Report of PCC-Vivace – Data Link

[Graph showing throughput and packet loss over time]
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-11 21:28:05
Local clock offset: -0.055 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-09-12 01:53:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 646.06 Mbit/s
95th percentile per-packet one-way delay: 55.182 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 384.91 Mbit/s
95th percentile per-packet one-way delay: 57.443 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 349.61 Mbit/s
95th percentile per-packet one-way delay: 52.611 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 90.68 Mbit/s
95th percentile per-packet one-way delay: 51.162 ms
Loss rate: 1.27%
Run 3: Report of PCC-Vivace — Data Link

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

Throughput (Mbps):
- Flow 1 ingress (mean 385.20 Mbps)
- Flow 1 egress (mean 384.91 Mbps)
- Flow 2 ingress (mean 349.70 Mbps)
- Flow 2 egress (mean 349.61 Mbps)
- Flow 3 ingress (mean 90.90 Mbps)
- Flow 3 egress (mean 90.68 Mbps)

Packet delay (ms):
- Flow 1 (95th percentile 57.44 ms)
- Flow 2 (95th percentile 52.61 ms)
- Flow 3 (95th percentile 51.16 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-11 22:00:10
End at: 2018-09-11 22:00:40
Local clock offset: -0.45 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2018-09-12 01:53:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 613.41 Mbit/s
95th percentile per-packet one-way delay: 79.973 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 369.39 Mbit/s
95th percentile per-packet one-way delay: 54.269 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 341.67 Mbit/s
95th percentile per-packet one-way delay: 144.538 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 52.43 Mbit/s
95th percentile per-packet one-way delay: 48.526 ms
Loss rate: 1.45%
Run 4: Report of PCC-Vivace — Data Link

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**Graph 1:**
Throughput (Mbps)

- Flow 1 ingress (mean 369.45 Mbps)
- Flow 1 egress (mean 369.39 Mbps)
- Flow 2 ingress (mean 341.39 Mbps)
- Flow 2 egress (mean 341.67 Mbps)
- Flow 3 ingress (mean 52.65 Mbps)
- Flow 3 egress (mean 52.43 Mbps)

**Graph 2:**
Per-packet one way delay (ms)

- Flow 1 (95th percentile 54.27 ms)
- Flow 2 (95th percentile 144.54 ms)
- Flow 3 (95th percentile 48.53 ms)

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Run 5: Statistics of PCC-Vivace

Start at: 2018-09-11 22:32:00
End at: 2018-09-11 22:32:30
Local clock offset: 0.247 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2018-09-12 01:53:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 638.16 Mbit/s
95th percentile per-packet one-way delay: 59.424 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 373.59 Mbit/s
95th percentile per-packet one-way delay: 53.547 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 355.92 Mbit/s
95th percentile per-packet one-way delay: 71.201 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 86.44 Mbit/s
95th percentile per-packet one-way delay: 50.723 ms
Loss rate: 1.24%
Run 5: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2018-09-11 20:30:13
End at: 2018-09-11 20:30:43
Local clock offset: -0.105 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2018-09-12 01:53:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 50.553 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 49.701 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 49.718 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 50.651 ms
Loss rate: 0.46%
Run 1: Report of WebRTC media — Data Link

![Graph showing throughput and round-trip time over time for different flows. The graphs display data for up to 30 seconds, with throughput measured in Megabits per second (Mbps) and round-trip time in milliseconds.]
Run 2: Statistics of WebRTC media

Start at: 2018-09-11 21:02:05
End at: 2018-09-11 21:02:35
Local clock offset: -0.095 ms
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2018-09-12 01:53:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.60 Mbit/s
  95th percentile per-packet one-way delay: 50.227 ms
  Loss rate: 0.70%
-- Flow 1:
  Average throughput: 1.93 Mbit/s
  95th percentile per-packet one-way delay: 49.657 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 1.20 Mbit/s
  95th percentile per-packet one-way delay: 49.597 ms
  Loss rate: 0.60%
-- Flow 3:
  Average throughput: 0.48 Mbit/s
  95th percentile per-packet one-way delay: 50.323 ms
  Loss rate: 2.21%
Run 2: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.94 Mbit/s)
- Flow 1 egress (mean 1.93 Mbit/s)
- Flow 2 ingress (mean 1.20 Mbit/s)
- Flow 2 egress (mean 1.20 Mbit/s)
- Flow 3 ingress (mean 0.49 Mbit/s)
- Flow 3 egress (mean 0.48 Mbit/s)
Run 3: Statistics of WebRTC media

Start at: 2018-09-11 21:34:01
End at: 2018-09-11 21:34:31
Local clock offset: 0.289 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2018-09-12 01:53:50
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 3.61 Mbit/s
   95th percentile per-packet one-way delay: 49.930 ms
   Loss rate: 0.52%
-- Flow 1:
   Average throughput: 1.94 Mbit/s
   95th percentile per-packet one-way delay: 49.383 ms
   Loss rate: 0.48%
-- Flow 2:
   Average throughput: 1.20 Mbit/s
   95th percentile per-packet one-way delay: 49.303 ms
   Loss rate: 0.60%
-- Flow 3:
   Average throughput: 0.49 Mbit/s
   95th percentile per-packet one-way delay: 50.025 ms
   Loss rate: 0.45%
Run 3: Report of WebRTC media — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 1.94 Mbit/s)  Flow 1 egress (mean 1.94 Mbit/s)
Flow 2 ingress (mean 1.20 Mbit/s)  Flow 2 egress (mean 1.20 Mbit/s)
Flow 3 ingress (mean 0.49 Mbit/s)  Flow 3 egress (mean 0.49 Mbit/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 49.38 ms)  Flow 2 (95th percentile 49.30 ms)  Flow 3 (95th percentile 50.02 ms)
Run 4: Statistics of WebRTC media

Start at: 2018-09-11 22:06:04
End at: 2018-09-11 22:06:34
Local clock offset: -0.097 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-09-12 01:53:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.63 Mbit/s
  95th percentile per-packet one-way delay: 48.920 ms
  Loss rate: 0.72%
-- Flow 1:
  Average throughput: 1.94 Mbit/s
  95th percentile per-packet one-way delay: 48.909 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 1.22 Mbit/s
  95th percentile per-packet one-way delay: 48.939 ms
  Loss rate: 0.58%
-- Flow 3:
  Average throughput: 0.49 Mbit/s
  95th percentile per-packet one-way delay: 48.912 ms
  Loss rate: 2.26%
Run 4: Report of WebRTC media — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 1.94 Mbit/s)  
Flow 1 egress (mean 1.94 Mbit/s)  
Flow 2 ingress (mean 1.22 Mbit/s)  
Flow 2 egress (mean 1.22 Mbit/s)  
Flow 3 ingress (mean 0.50 Mbit/s)  
Flow 3 egress (mean 0.49 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 48.91 ms)  
Flow 2 (95th percentile 48.94 ms)  
Flow 3 (95th percentile 48.91 ms)
Run 5: Statistics of WebRTC media

End at: 2018-09-11 22:38:27
Local clock offset: 0.229 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2018-09-12 01:53:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.62 Mbit/s
  95th percentile per-packet one-way delay: 50.619 ms
  Loss rate: 0.55%
-- Flow 1:
  Average throughput: 1.95 Mbit/s
  95th percentile per-packet one-way delay: 50.025 ms
  Loss rate: 0.52%
-- Flow 2:
  Average throughput: 1.19 Mbit/s
  95th percentile per-packet one-way delay: 50.662 ms
  Loss rate: 0.59%
-- Flow 3:
  Average throughput: 0.50 Mbit/s
  95th percentile per-packet one-way delay: 49.984 ms
  Loss rate: 0.55%
Run 5: Report of WebRTC media — Data Link

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

Flow 1 ingress (mean 1.95 Mbit/s), Flow 1 egress (mean 1.95 Mbit/s), Flow 2 ingress (mean 1.20 Mbit/s), Flow 2 egress (mean 1.19 Mbit/s), Flow 3 ingress (mean 0.50 Mbit/s), Flow 3 egress (mean 0.50 Mbit/s)

Per-packet one-way delay (ms):
- Flow 1 (95th percentile 50.02 ms)
- Flow 2 (95th percentile 50.66 ms)
- Flow 3 (95th percentile 49.98 ms)