Pantheon Report

Data path: GCE Tokyo on ens4 (remote) → GCE Iowa 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 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7e007e06a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbde58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e6d4
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994ab95
third_party/libutp @ b3465b942e2826f2b179eaab4a906e6bb7cf3cf
third_party/muses @ 65ac1b19bebed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
third_party/pcc @ lafc95b8a0d66d18b623c091a55feci872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8ac0d08f2c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3c0f24
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bd6b2
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 @ d4b447ea74c6c60a261149af2629562593f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from GCE Tokyo to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
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</thead>
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<td>454.69</td>
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<td>Copa</td>
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<td>PCC-Expr</td>
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<td>WebRTC media</td>
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<td>1.74</td>
<td>1.14</td>
<td>0.42</td>
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Run 1: Statistics of TCP BBR

Start at: 2018-11-15 14:58:02
End at: 2018-11-15 14:58:32
Local clock offset: -0.028 ms
Remote clock offset: 0.547 ms

# Below is generated by plot.py at 2018-11-15 17:43:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 969.77 Mbit/s
95th percentile per-packet one-way delay: 85.142 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 515.50 Mbit/s
95th percentile per-packet one-way delay: 86.033 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 452.68 Mbit/s
95th percentile per-packet one-way delay: 87.255 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 464.27 Mbit/s
95th percentile per-packet one-way delay: 74.740 ms
Loss rate: 1.53%
Run 1: Report of TCP BBR — Data Link
Run 2: Statistics of TCP BBR

Start at: 2018-11-15 15:29:23
End at: 2018-11-15 15:29:53
Local clock offset: 0.009 ms
Remote clock offset: -0.517 ms

# Below is generated by plot.py at 2018-11-15 17:43:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.23 Mbit/s
95th percentile per-packet one-way delay: 94.009 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 478.95 Mbit/s
95th percentile per-packet one-way delay: 92.112 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 368.94 Mbit/s
95th percentile per-packet one-way delay: 96.835 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 440.69 Mbit/s
95th percentile per-packet one-way delay: 98.482 ms
Loss rate: 1.53%
Run 3: Statistics of TCP BBR

Start at: 2018-11-15 16:00:50  
End at: 2018-11-15 16:01:20  
Local clock offset: -0.08 ms  
Remote clock offset: 0.193 ms

# Below is generated by plot.py at 2018-11-15 17:43:40  
# Datalink statistics

-- Total of 3 flows:
Average throughput: 942.48 Mbit/s
95th percentile per-packet one-way delay: 93.748 ms
Loss rate: 0.75%

-- Flow 1:
Average throughput: 488.56 Mbit/s
95th percentile per-packet one-way delay: 94.165 ms
Loss rate: 0.49%

-- Flow 2:
Average throughput: 455.36 Mbit/s
95th percentile per-packet one-way delay: 94.192 ms
Loss rate: 0.78%

-- Flow 3:
Average throughput: 458.89 Mbit/s
95th percentile per-packet one-way delay: 90.782 ms
Loss rate: 1.55%
Run 3: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 488.89 Mbit/s)
- Flow 1 egress (mean 488.56 Mbit/s)
- Flow 2 ingress (mean 456.07 Mbit/s)
- Flow 2 egress (mean 455.36 Mbit/s)
- Flow 3 ingress (mean 460.23 Mbit/s)
- Flow 3 egress (mean 458.89 Mbit/s)

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

- Flow 1 (95th percentile 94.17 ms)
- Flow 2 (95th percentile 94.19 ms)
- Flow 3 (95th percentile 90.78 ms)
Run 4: Statistics of TCP BBR

Start at: 2018-11-15 16:32:19
End at: 2018-11-15 16:32:49
Local clock offset: -0.053 ms
Remote clock offset: -0.125 ms

# Below is generated by plot.py at 2018-11-15 17:43:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 977.14 Mbit/s
95th percentile per-packet one-way delay: 96.977 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 501.67 Mbit/s
95th percentile per-packet one-way delay: 97.812 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 501.00 Mbit/s
95th percentile per-packet one-way delay: 85.856 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 432.37 Mbit/s
95th percentile per-packet one-way delay: 106.961 ms
Loss rate: 1.64%
Run 5: Statistics of TCP BBR

Start at: 2018-11-15 17:03:44
End at: 2018-11-15 17:04:14
Local clock offset: -0.056 ms
Remote clock offset: 0.567 ms

# Below is generated by plot.py at 2018-11-15 17:44:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 990.93 Mbit/s
95th percentile per-packet one-way delay: 83.641 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 508.06 Mbit/s
95th percentile per-packet one-way delay: 84.690 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 489.89 Mbit/s
95th percentile per-packet one-way delay: 84.983 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 477.23 Mbit/s
95th percentile per-packet one-way delay: 75.711 ms
Loss rate: 1.50%
Run 5: Report of TCP BBR — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 508.30 Mbps)
  - Flow 1 egress (mean 508.06 Mbps)
  - Flow 2 ingress (mean 496.29 Mbps)
  - Flow 2 egress (mean 489.89 Mbps)
  - Flow 3 ingress (mean 478.34 Mbps)
  - Flow 3 egress (mean 477.23 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 84.69 ms)
  - Flow 2 (95th percentile 84.98 ms)
  - Flow 3 (95th percentile 75.71 ms)
Run 1: Statistics of Copa

Start at: 2018-11-15 14:40:22
End at: 2018-11-15 14:40:52
Local clock offset: -0.037 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2018-11-15 17:45:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 599.47 Mbit/s
95th percentile per-packet one-way delay: 81.797 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 315.97 Mbit/s
95th percentile per-packet one-way delay: 83.154 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 305.71 Mbit/s
95th percentile per-packet one-way delay: 82.173 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 243.44 Mbit/s
95th percentile per-packet one-way delay: 77.383 ms
Loss rate: 1.56%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2018-11-15 15:11:39
End at: 2018-11-15 15:12:09
Local clock offset: -0.03 ms
Remote clock offset: -0.693 ms

# Below is generated by plot.py at 2018-11-15 17:45:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 577.82 Mbit/s
95th percentile per-packet one-way delay: 86.824 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 313.51 Mbit/s
95th percentile per-packet one-way delay: 80.847 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 272.03 Mbit/s
95th percentile per-packet one-way delay: 129.288 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 253.42 Mbit/s
95th percentile per-packet one-way delay: 74.506 ms
Loss rate: 1.30%
Run 3: Statistics of Copa

End at: 2018-11-15 15:43:23
Local clock offset: -0.054 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2018-11-15 17:45:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 527.54 Mbit/s
95th percentile per-packet one-way delay: 79.140 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 242.21 Mbit/s
95th percentile per-packet one-way delay: 70.438 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 303.80 Mbit/s
95th percentile per-packet one-way delay: 80.374 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 253.49 Mbit/s
95th percentile per-packet one-way delay: 84.740 ms
Loss rate: 1.51%
Run 3: Report of Copa — Data Link

![Graph of throughput and packet delay over time for different flows. The graphs show the mean throughput and 95th percentile delay for each flow.]
Run 4: Statistics of Copa

Start at: 2018-11-15 16:14:19
End at: 2018-11-15 16:14:49
Local clock offset: -0.1 ms
Remote clock offset: -0.911 ms

# Below is generated by plot.py at 2018-11-15 18:00:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 541.29 Mbit/s
95th percentile per-packet one-way delay: 68.474 ms
Loss rate: 0.72%
-- Flow 1:
  Average throughput: 266.34 Mbit/s
  95th percentile per-packet one-way delay: 67.760 ms
  Loss rate: 0.46%
-- Flow 2:
  Average throughput: 282.30 Mbit/s
  95th percentile per-packet one-way delay: 68.753 ms
  Loss rate: 0.73%
-- Flow 3:
  Average throughput: 264.81 Mbit/s
  95th percentile per-packet one-way delay: 69.593 ms
  Loss rate: 1.49%
Run 4: Report of Copa — Data Link

![Graph of throughput and per-packet one-way delay](image)
Run 5: Statistics of Copa

Start at: 2018-11-15 16:45:55
End at: 2018-11-15 16:46:25
Local clock offset: -0.008 ms
Remote clock offset: -0.157 ms

# Below is generated by plot.py at 2018-11-15 18:03:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 586.21 Mbit/s
95th percentile per-packet one-way delay: 73.772 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 307.56 Mbit/s
95th percentile per-packet one-way delay: 77.943 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 284.93 Mbit/s
95th percentile per-packet one-way delay: 68.390 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 271.17 Mbit/s
95th percentile per-packet one-way delay: 70.506 ms
Loss rate: 1.50%
Run 5: Report of Copa — Data Link

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

- **Flow 1 ingress (mean 307.66 Mbit/s)**
- **Flow 1 egress (mean 307.56 Mbit/s)**
- **Flow 2 ingress (mean 284.72 Mbit/s)**
- **Flow 2 egress (mean 284.93 Mbit/s)**
- **Flow 3 ingress (mean 271.79 Mbit/s)**
- **Flow 3 egress (mean 271.17 Mbit/s)**

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

- Flow 1 (95th percentile 77.94 ms)
- Flow 2 (95th percentile 68.39 ms)
- Flow 3 (95th percentile 70.51 ms)
Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 14:31:42
End at: 2018-11-15 14:32:12
Local clock offset: -0.059 ms
Remote clock offset: -0.144 ms

# Below is generated by plot.py at 2018-11-15 18:03:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1008.24 Mbit/s
  95th percentile per-packet one-way delay: 93.302 ms
  Loss rate: 0.70%
-- Flow 1:
  Average throughput: 526.79 Mbit/s
  95th percentile per-packet one-way delay: 81.799 ms
  Loss rate: 0.44%
-- Flow 2:
  Average throughput: 503.75 Mbit/s
  95th percentile per-packet one-way delay: 96.634 ms
  Loss rate: 0.70%
-- Flow 3:
  Average throughput: 445.85 Mbit/s
  95th percentile per-packet one-way delay: 107.507 ms
  Loss rate: 1.59%
Run 1: Report of TCP Cubic — Data Link

 através do clicar no gráfico acima e destacar o texto que descreve as linhas em azul, dourado e verde. O texto aparecerá na parte inferior do gráfico.
Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 15:02:59
End at: 2018-11-15 15:03:29
Local clock offset: -0.051 ms
Remote clock offset: -0.533 ms

# Below is generated by plot.py at 2018-11-15 18:03:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 989.08 Mbit/s
95th percentile per-packet one-way delay: 88.209 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 512.41 Mbit/s
95th percentile per-packet one-way delay: 88.929 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 497.58 Mbit/s
95th percentile per-packet one-way delay: 85.474 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 443.07 Mbit/s
95th percentile per-packet one-way delay: 89.230 ms
Loss rate: 1.60%
Run 2: Report of TCP Cubic — Data Link

![Graph showing network throughput and packet delay over time for three flows, with statistical summaries of mean and 95th percentile delays.]

- Flow 1 ing (mean 512.61 Mbit/s)
- Flow 1 egress (mean 512.41 Mbit/s)
- Flow 2 ing (mean 497.98 Mbit/s)
- Flow 2 egress (mean 497.58 Mbit/s)
- Flow 3 ing (mean 444.60 Mbit/s)
- Flow 3 egress (mean 443.07 Mbit/s)
Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 15:34:12
End at: 2018-11-15 15:34:42
Local clock offset: -0.042 ms
Remote clock offset: -1.102 ms

# Below is generated by plot.py at 2018-11-15 18:03:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 978.60 Mbit/s
  95th percentile per-packet one-way delay: 91.623 ms
  Loss rate: 0.72%
-- Flow 1:
  Average throughput: 512.68 Mbit/s
  95th percentile per-packet one-way delay: 78.299 ms
  Loss rate: 0.46%
-- Flow 2:
  Average throughput: 490.93 Mbit/s
  95th percentile per-packet one-way delay: 94.256 ms
  Loss rate: 0.73%
-- Flow 3:
  Average throughput: 423.44 Mbit/s
  95th percentile per-packet one-way delay: 95.735 ms
  Loss rate: 1.68%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 16:05:42
End at: 2018-11-15 16:06:12
Local clock offset: -0.088 ms
Remote clock offset: 0.399 ms

# Below is generated by plot.py at 2018-11-15 18:03:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 999.10 Mbit/s
95th percentile per-packet one-way delay: 84.922 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 508.79 Mbit/s
95th percentile per-packet one-way delay: 87.038 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 509.67 Mbit/s
95th percentile per-packet one-way delay: 76.522 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 459.13 Mbit/s
95th percentile per-packet one-way delay: 83.186 ms
Loss rate: 1.54%
Run 4: Report of TCP Cubic — Data Link
Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 16:37:17
End at: 2018-11-15 16:37:47
Local clock offset: ~0.064 ms
Remote clock offset: ~0.72 ms

# Below is generated by plot.py at 2018-11-15 18:03:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 982.99 Mbit/s
95th percentile per-packet one-way delay: 93.107 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 512.42 Mbit/s
95th percentile per-packet one-way delay: 92.615 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 498.94 Mbit/s
95th percentile per-packet one-way delay: 81.540 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 421.08 Mbit/s
95th percentile per-packet one-way delay: 98.327 ms
Loss rate: 1.69%
Run 5: Report of TCP Cubic — Data Link

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

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

Start at: 2018-11-15 14:51:44
End at: 2018-11-15 14:52:14
Local clock offset: -0.031 ms
Remote clock offset: 0.242 ms

# Below is generated by plot.py at 2018-11-15 18:03:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 740.27 Mbit/s
  95th percentile per-packet one-way delay: 71.508 ms
  Loss rate: 0.55%
-- Flow 1:
  Average throughput: 429.93 Mbit/s
  95th percentile per-packet one-way delay: 74.423 ms
  Loss rate: 0.31%
-- Flow 2:
  Average throughput: 339.00 Mbit/s
  95th percentile per-packet one-way delay: 67.369 ms
  Loss rate: 0.76%
-- Flow 3:
  Average throughput: 259.50 Mbit/s
  95th percentile per-packet one-way delay: 64.541 ms
  Loss rate: 1.20%
Run 1: Report of FillP — Data Link

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

- Flow 1 ingress (mean 429.63 Mbps)
- Flow 1 egress (mean 429.93 Mbps)
- Flow 2 ingress (mean 339.47 Mbps)
- Flow 2 egress (mean 339.00 Mbps)
- Flow 3 ingress (mean 259.13 Mbps)
- Flow 3 egress (mean 259.50 Mbps)

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

- Flow 1 (95th percentile 74.42 ms)
- Flow 2 (95th percentile 67.37 ms)
- Flow 3 (95th percentile 64.54 ms)
Run 2: Statistics of FillP

End at: 2018-11-15 15:23:25
Local clock offset: -0.016 ms
Remote clock offset: -0.177 ms

# Below is generated by plot.py at 2018-11-15 18:21:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 952.37 Mbit/s
95th percentile per-packet one-way delay: 87.721 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 591.44 Mbit/s
95th percentile per-packet one-way delay: 108.473 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 389.07 Mbit/s
95th percentile per-packet one-way delay: 71.979 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 312.54 Mbit/s
95th percentile per-packet one-way delay: 68.523 ms
Loss rate: 1.45%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2018-11-15 15:54:27
End at: 2018-11-15 15:54:57
Local clock offset: -0.057 ms
Remote clock offset: -1.067 ms

# Below is generated by plot.py at 2018-11-15 18:21:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 877.54 Mbit/s
95th percentile per-packet one-way delay: 71.241 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 566.29 Mbit/s
95th percentile per-packet one-way delay: 73.215 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 335.16 Mbit/s
95th percentile per-packet one-way delay: 66.961 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 269.90 Mbit/s
95th percentile per-packet one-way delay: 67.805 ms
Loss rate: 1.43%
Run 3: Report of FillP — Data Link

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

Flow 1 ingress (mean 565.35 Mbit/s) — Flow 1 egress (mean 566.29 Mbit/s)
Flow 2 ingress (mean 334.49 Mbit/s) — Flow 2 egress (mean 335.16 Mbit/s)
Flow 3 ingress (mean 270.62 Mbit/s) — Flow 3 egress (mean 269.90 Mbit/s)

![Graph showing packet loss and delay for different flows.]

Flow 1 (95th percentile 73.22 ms) — Flow 2 (95th percentile 66.96 ms) — Flow 3 (95th percentile 67.81 ms)
Run 4: Statistics of FillP

Start at: 2018-11-15 16:25:49
End at: 2018-11-15 16:26:19
Local clock offset: -0.05 ms
Remote clock offset: -0.777 ms

# Below is generated by plot.py at 2018-11-15 18:22:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 917.36 Mbit/s
  95th percentile per-packet one-way delay: 70.659 ms
  Loss rate: 0.43%
-- Flow 1:
  Average throughput: 580.95 Mbit/s
  95th percentile per-packet one-way delay: 72.415 ms
  Loss rate: 0.18%
-- Flow 2:
  Average throughput: 380.69 Mbit/s
  95th percentile per-packet one-way delay: 66.257 ms
  Loss rate: 0.65%
-- Flow 3:
  Average throughput: 254.78 Mbit/s
  95th percentile per-packet one-way delay: 64.699 ms
  Loss rate: 1.49%
Run 4: Report of FillP — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 Ingress (mean 579.90 Mbit/s)
- Flow 1 Egress (mean 580.95 Mbit/s)
- Flow 2 Ingress (mean 380.89 Mbit/s)
- Flow 2 Egress (mean 380.69 Mbit/s)
- Flow 3 Ingress (mean 255.02 Mbit/s)
- Flow 3 Egress (mean 254.78 Mbit/s)

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

- Flow 1 (95th percentile 72.42 ms)
- Flow 2 (95th percentile 66.26 ms)
- Flow 3 (95th percentile 64.70 ms)
Run 5: Statistics of FillP

Start at: 2018-11-15 16:57:19
End at: 2018-11-15 16:57:49
Local clock offset: -0.012 ms
Remote clock offset: -1.488 ms

# Below is generated by plot.py at 2018-11-15 18:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 920.53 Mbit/s
95th percentile per-packet one-way delay: 86.214 ms
Loss rate: 0.52%

-- Flow 1:
Average throughput: 572.93 Mbit/s
95th percentile per-packet one-way delay: 93.157 ms
Loss rate: 0.36%

-- Flow 2:
Average throughput: 397.65 Mbit/s
95th percentile per-packet one-way delay: 71.213 ms
Loss rate: 0.47%

-- Flow 3:
Average throughput: 255.45 Mbit/s
95th percentile per-packet one-way delay: 68.080 ms
Loss rate: 1.75%
Run 5: Report of FillP — Data Link

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

Legend:
- Dotted blue line: Flow 1 ingress (mean 572.28 Mb/s) and Flow 1 egress (mean 572.93 Mb/s)
- Dashed green line: Flow 2 ingress (mean 396.62 Mb/s) and Flow 2 egress (mean 397.65 Mb/s)
- Dotted red line: Flow 3 ingress (mean 256.28 Mb/s) and Flow 3 egress (mean 255.45 Mb/s)

![Graph showing per-packet one-way delay over time for different flow 95th percentiles.](image)

Legend:
- Blue star: Flow 1 (95th percentile 93.16 ms)
- Green square: Flow 2 (95th percentile 71.21 ms)
- Red triangle: Flow 3 (95th percentile 68.08 ms)

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Run 1: Statistics of Indigo

End at: 2018-11-15 14:50:23
Local clock offset: -0.027 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-11-15 18:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 422.83 Mbit/s
95th percentile per-packet one-way delay: 64.590 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 212.64 Mbit/s
95th percentile per-packet one-way delay: 64.476 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 209.58 Mbit/s
95th percentile per-packet one-way delay: 64.329 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 179.04 Mbit/s
95th percentile per-packet one-way delay: 65.298 ms
Loss rate: 1.49%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2018-11-15 15:21:04
End at: 2018-11-15 15:21:34
Local clock offset: -0.03 ms
Remote clock offset: -1.557 ms

# Below is generated by plot.py at 2018-11-15 18:22:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 399.03 Mbit/s
  95th percentile per-packet one-way delay: 66.226 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 217.77 Mbit/s
  95th percentile per-packet one-way delay: 66.366 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 192.03 Mbit/s
  95th percentile per-packet one-way delay: 66.049 ms
  Loss rate: 0.70%
-- Flow 3:
  Average throughput: 167.42 Mbit/s
  95th percentile per-packet one-way delay: 66.048 ms
  Loss rate: 1.53%
Run 2: Report of Indigo — Data Link

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

Legend:
- Flow 1 ingress (mean 217.64 Mbit/s)
- Flow 1 egress (mean 217.77 Mbit/s)
- Flow 2 ingress (mean 192.14 Mbit/s)
- Flow 2 egress (mean 192.03 Mbit/s)
- Flow 3 ingress (mean 167.83 Mbit/s)
- Flow 3 egress (mean 167.42 Mbit/s)
Run 3: Statistics of Indigo

Start at: 2018-11-15 15:52:35
End at: 2018-11-15 15:53:05
Local clock offset: -0.065 ms
Remote clock offset: 0.467 ms

# Below is generated by plot.py at 2018-11-15 18:22:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 410.23 Mbit/s
  95th percentile per-packet one-way delay: 65.941 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 217.14 Mbit/s
  95th percentile per-packet one-way delay: 65.229 ms
  Loss rate: 0.45%
-- Flow 2:
  Average throughput: 210.35 Mbit/s
  95th percentile per-packet one-way delay: 71.552 ms
  Loss rate: 0.63%
-- Flow 3:
  Average throughput: 165.49 Mbit/s
  95th percentile per-packet one-way delay: 64.082 ms
  Loss rate: 1.39%
Run 3: Report of Indigo — Data Link

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

Legend:
- Flow 1 ingress (mean 217.19 Mbit/s)
- Flow 1 egress (mean 217.14 Mbit/s)
- Flow 2 ingress (mean 210.34 Mbit/s)
- Flow 2 egress (mean 210.35 Mbit/s)
- Flow 3 ingress (mean 165.63 Mbit/s)
- Flow 3 egress (mean 165.49 Mbit/s)
Run 4: Statistics of Indigo

End at: 2018-11-15 16:24:26
Local clock offset: -0.043 ms
Remote clock offset: 0.629 ms

# Below is generated by plot.py at 2018-11-15 18:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 405.06 Mbit/s
95th percentile per-packet one-way delay: 64.379 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 212.25 Mbit/s
95th percentile per-packet one-way delay: 64.173 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 208.68 Mbit/s
95th percentile per-packet one-way delay: 64.364 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 168.82 Mbit/s
95th percentile per-packet one-way delay: 64.989 ms
Loss rate: 1.52%
Run 4: Report of Indigo — Data Link

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Run 5: Statistics of Indigo

Local clock offset: -0.064 ms
Remote clock offset: -0.704 ms

# Below is generated by plot.py at 2018-11-15 18:29:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.85 Mbit/s
95th percentile per-packet one-way delay: 65.422 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 211.00 Mbit/s
95th percentile per-packet one-way delay: 65.153 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 209.54 Mbit/s
95th percentile per-packet one-way delay: 65.913 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 166.54 Mbit/s
95th percentile per-packet one-way delay: 65.284 ms
Loss rate: 1.45%
Run 5: Report of Indigo — Data Link

![Graph showing data link performance metrics over time.](image-url)
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-15 14:46:17
End at: 2018-11-15 14:46:47
Local clock offset: -0.026 ms
Remote clock offset: 0.021 ms

# Below is generated by plot.py at 2018-11-15 18:29:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 555.26 Mbit/s
  95th percentile per-packet one-way delay: 87.219 ms
  Loss rate: 0.48%
-- Flow 1:
  Average throughput: 280.07 Mbit/s
  95th percentile per-packet one-way delay: 85.681 ms
  Loss rate: 0.17%
-- Flow 2:
  Average throughput: 292.24 Mbit/s
  95th percentile per-packet one-way delay: 86.657 ms
  Loss rate: 0.42%
-- Flow 3:
  Average throughput: 247.21 Mbit/s
  95th percentile per-packet one-way delay: 96.507 ms
  Loss rate: 1.66%
Run 1: Report of Indigo-96d2da3 — Data Link
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 15:17:38
End at: 2018-11-15 15:18:08
Local clock offset: 0.007 ms
Remote clock offset: 0.3 ms

# Below is generated by plot.py at 2018-11-15 18:29:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.13 Mbit/s
95th percentile per-packet one-way delay: 86.917 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 287.86 Mbit/s
95th percentile per-packet one-way delay: 87.156 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 273.34 Mbit/s
95th percentile per-packet one-way delay: 86.044 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 257.94 Mbit/s
95th percentile per-packet one-way delay: 86.930 ms
Loss rate: 0.86%
Run 2: Report of Indigo-96d2da3 — Data Link

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**Throughput (Mb/s)**

- **Flow 1 ingress** (mean 288.26 Mb/s)
- **Flow 1 egress** (mean 287.86 Mb/s)
- **Flow 2 ingress** (mean 273.14 Mb/s)
- **Flow 2 egress** (mean 273.34 Mb/s)
- **Flow 3 ingress** (mean 256.84 Mb/s)
- **Flow 3 egress** (mean 257.04 Mb/s)

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

- **Flow 1** (95th percentile 87.16 ms)
- **Flow 2** (95th percentile 86.04 ms)
- **Flow 3** (95th percentile 86.93 ms)
Run 3: Statistics of Indigo-96d2da3

End at: 2018-11-15 15:49:17
Local clock offset: -0.097 ms
Remote clock offset: 0.798 ms

# Below is generated by plot.py at 2018-11-15 18:29:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 544.58 Mbit/s
95th percentile per-packet one-way delay: 92.481 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 287.44 Mbit/s
95th percentile per-packet one-way delay: 93.130 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 276.81 Mbit/s
95th percentile per-packet one-way delay: 94.044 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 224.88 Mbit/s
95th percentile per-packet one-way delay: 89.855 ms
Loss rate: 1.89%
Run 3: Report of Indigo-96d2da3 — Data Link

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

Throughput (Mbit/s)

Flow 1 ingress (mean 287.85 Mbit/s) - Flow 1 egress (mean 287.44 Mbit/s)
Flow 2 ingress (mean 276.34 Mbit/s) - Flow 2 egress (mean 276.81 Mbit/s)
Flow 3 ingress (mean 226.35 Mbit/s) - Flow 3 egress (mean 224.88 Mbit/s)

Per packet one way delay (ms)

Flow 1 (95th percentile 93.13 ms) - Flow 2 (95th percentile 94.04 ms) - Flow 3 (95th percentile 89.86 ms)
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 16:20:11
End at: 2018-11-15 16:20:41
Local clock offset: -0.059 ms
Remote clock offset: -0.269 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 556.07 Mbit/s
95th percentile per-packet one-way delay: 83.202 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 284.39 Mbit/s
95th percentile per-packet one-way delay: 81.759 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 279.19 Mbit/s
95th percentile per-packet one-way delay: 81.857 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 267.49 Mbit/s
95th percentile per-packet one-way delay: 89.627 ms
Loss rate: 0.86%
Run 4: Report of Indigo-96d2da3 — Data Link
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 16:51:47
End at: 2018-11-15 16:52:17
Local clock offset: -0.019 ms
Remote clock offset: 0.048 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 525.68 Mbit/s
  95th percentile per-packet one-way delay: 87.061 ms
  Loss rate: 0.82%
-- Flow 1:
  Average throughput: 271.80 Mbit/s
  95th percentile per-packet one-way delay: 85.327 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 257.66 Mbit/s
  95th percentile per-packet one-way delay: 89.311 ms
  Loss rate: 1.11%
-- Flow 3:
  Average throughput: 255.53 Mbit/s
  95th percentile per-packet one-way delay: 94.252 ms
  Loss rate: 1.67%
Run 5: Report of Indigo-96d2da3 — Data Link

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

- **Flow 1 ingress (mean 271.65 Mbit/s)**
- **Flow 1 egress (mean 271.80 Mbit/s)**
- **Flow 2 ingress (mean 259.01 Mbit/s)**
- **Flow 2 egress (mean 257.66 Mbit/s)**
- **Flow 3 ingress (mean 255.98 Mbit/s)**
- **Flow 3 egress (mean 255.53 Mbit/s)**

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

- **Flow 1** (95th percentile 85.33 ms)
- **Flow 2** (95th percentile 89.31 ms)
- **Flow 3** (95th percentile 94.25 ms)
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 14:39:05
End at: 2018-11-15 14:39:35
Local clock offset: -0.026 ms
Remote clock offset: -0.467 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 64.342 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 64.412 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.50 Mbit/s
95th percentile per-packet one-way delay: 64.098 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 64.204 ms
Loss rate: 2.58%
Run 1: Report of LEDBAT — Data Link

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**Graph 1: Throughput (Mbps/s)**

- **Flow 1 ingress (mean 23.36 Mbps/s)**
- **Flow 1 egress (mean 23.26 Mbps/s)**
- **Flow 2 ingress (mean 15.60 Mbps/s)**
- **Flow 2 egress (mean 15.50 Mbps/s)**
- **Flow 3 ingress (mean 7.69 Mbps/s)**
- **Flow 3 egress (mean 7.59 Mbps/s)**

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

- **Flow 1 (95th percentile 64.41 ms)**
- **Flow 2 (95th percentile 64.10 ms)**
- **Flow 3 (95th percentile 64.20 ms)**

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Run 2: Statistics of LEDBAT

Start at: 2018-11-15 15:10:23
End at: 2018-11-15 15:10:53
Local clock offset: -0.031 ms
Remote clock offset: -0.419 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.92 Mbit/s
95th percentile per-packet one-way delay: 64.186 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.31 Mbit/s
95th percentile per-packet one-way delay: 64.077 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.49 Mbit/s
95th percentile per-packet one-way delay: 64.278 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.22 Mbit/s
95th percentile per-packet one-way delay: 64.436 ms
Loss rate: 2.63%
Run 2: Report of LEDBAT — Data Link

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

- **Flow 1 ingress (mean 23.41 Mbit/s)**
- **Flow 1 egress (mean 23.31 Mbit/s)**
- **Flow 2 ingress (mean 15.38 Mbit/s)**
- **Flow 2 egress (mean 15.49 Mbit/s)**
- **Flow 3 ingress (mean 7.32 Mbit/s)**
- **Flow 3 egress (mean 7.22 Mbit/s)**

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

- **Flow 1 (95th percentile 64.08 ms)**
- **Flow 2 (95th percentile 64.28 ms)**
- **Flow 3 (95th percentile 64.44 ms)**
Run 3: Statistics of LEDBAT

Start at: 2018-11-15 15:41:36
End at: 2018-11-15 15:42:06
Local clock offset: -0.021 ms
Remote clock offset: -0.373 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.01 Mbit/s
95th percentile per-packet one-way delay: 64.298 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 64.320 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.47 Mbit/s
95th percentile per-packet one-way delay: 64.261 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 63.861 ms
Loss rate: 2.56%
Run 3: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 23.36 Mbps)
- Flow 1 egress (mean 23.26 Mbps)
- Flow 2 ingress (mean 15.57 Mbps)
- Flow 2 egress (mean 15.47 Mbps)
- Flow 3 ingress (mean 7.68 Mbps)
- Flow 3 egress (mean 7.58 Mbps)

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

- Flow 1 (95th percentile 64.32 ms)
- Flow 2 (95th percentile 64.26 ms)
- Flow 3 (95th percentile 63.86 ms)
Run 4: Statistics of LEDBAT

Start at: 2018-11-15 16:13:03
End at: 2018-11-15 16:13:33
Local clock offset: -0.086 ms
Remote clock offset: 0.921 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.48 Mbit/s
95th percentile per-packet one-way delay: 63.345 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 23.17 Mbit/s
95th percentile per-packet one-way delay: 63.427 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 14.93 Mbit/s
95th percentile per-packet one-way delay: 63.290 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 7.40 Mbit/s
95th percentile per-packet one-way delay: 62.376 ms
Loss rate: 2.60%
Run 4: Report of LEDBAT — Data Link

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

- **Flow 1 ingress** (mean 23.27 Mbit/s)
- **Flow 1 egress** (mean 23.17 Mbit/s)
- **Flow 2 ingress** (mean 15.03 Mbit/s)
- **Flow 2 egress** (mean 14.93 Mbit/s)
- **Flow 3 ingress** (mean 7.50 Mbit/s)
- **Flow 3 egress** (mean 7.40 Mbit/s)

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

- **Flow 1** (95th percentile 63.43 ms)
- **Flow 2** (95th percentile 63.29 ms)
- **Flow 3** (95th percentile 62.38 ms)

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Run 5: Statistics of LEDEBAT

Start at: 2018-11-15 16:44:38
End at: 2018-11-15 16:45:08
Local clock offset: -0.022 ms
Remote clock offset: -0.443 ms

# Below is generated by plot.py at 2018-11-15 18:31:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 35.93 Mbit/s
  95th percentile per-packet one-way delay: 64.706 ms
  Loss rate: 1.09%
-- Flow 1:
  Average throughput: 23.29 Mbit/s
  95th percentile per-packet one-way delay: 64.701 ms
  Loss rate: 0.84%
-- Flow 2:
  Average throughput: 15.30 Mbit/s
  95th percentile per-packet one-way delay: 64.769 ms
  Loss rate: 1.28%
-- Flow 3:
  Average throughput: 7.57 Mbit/s
  95th percentile per-packet one-way delay: 64.079 ms
  Loss rate: 2.56%
Run 5: Report of LEDBAT — Data Link

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

- **Flow 1 Ingress (mean 23.39 Mbit/s)**
- **Flow 1 Egress (mean 23.29 Mbit/s)**
- **Flow 2 Ingress (mean 15.40 Mbit/s)**
- **Flow 2 Egress (mean 15.30 Mbit/s)**
- **Flow 3 Ingress (mean 7.67 Mbit/s)**
- **Flow 3 Egress (mean 7.37 Mbit/s)**

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

- **Flow 1 (95th percentile 64.70 ms)**
- **Flow 2 (95th percentile 64.77 ms)**
- **Flow 3 (95th percentile 64.08 ms)**
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 14:36:59
End at: 2018-11-15 14:37:29
Local clock offset: -0.03 ms
Remote clock offset: 1.211 ms

# Below is generated by plot.py at 2018-11-15 18:44:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1052.84 Mbit/s
  95th percentile per-packet one-way delay: 88.083 ms
  Loss rate: 0.67%
-- Flow 1:
  Average throughput: 573.00 Mbit/s
  95th percentile per-packet one-way delay: 85.839 ms
  Loss rate: 0.44%
-- Flow 2:
  Average throughput: 532.13 Mbit/s
  95th percentile per-packet one-way delay: 93.594 ms
  Loss rate: 0.63%
-- Flow 3:
  Average throughput: 386.57 Mbit/s
  95th percentile per-packet one-way delay: 84.640 ms
  Loss rate: 1.79%
Run 1: Report of Indigo-Muses — Data Link

- Flow 1 ingress (mean 573.04 Mbit/s)
- Flow 1 egress (mean 573.00 Mbit/s)
- Flow 2 ingress (mean 532.68 Mbit/s)
- Flow 2 egress (mean 532.13 Mbit/s)
- Flow 3 ingress (mean 386.55 Mbit/s)
- Flow 3 egress (mean 386.57 Mbit/s)

- Flow 1 (95th percentile 85.84 ms)
- Flow 2 (95th percentile 93.59 ms)
- Flow 3 (95th percentile 84.64 ms)
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 15:08:18
End at: 2018-11-15 15:08:48
Local clock offset: -0.034 ms
Remote clock offset: 0.088 ms

# Below is generated by plot.py at 2018-11-15 18:45:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1028.41 Mbit/s
95th percentile per-packet one-way delay: 101.989 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 568.30 Mbit/s
95th percentile per-packet one-way delay: 103.185 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 505.64 Mbit/s
95th percentile per-packet one-way delay: 101.458 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 385.10 Mbit/s
95th percentile per-packet one-way delay: 91.317 ms
Loss rate: 1.77%
Run 2: Report of Indigo-Muses — Data Link

![Graph showing throughput and packet delay over time for different flows.](image-url)
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 15:39:30
End at: 2018-11-15 15:40:00
Local clock offset: 0.011 ms
Remote clock offset: 1.024 ms

# Below is generated by plot.py at 2018-11-15 18:45:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1032.50 Mbit/s
95th percentile per-packet one-way delay: 87.511 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 591.78 Mbit/s
95th percentile per-packet one-way delay: 90.022 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 490.07 Mbit/s
95th percentile per-packet one-way delay: 86.359 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 355.36 Mbit/s
95th percentile per-packet one-way delay: 79.038 ms
Loss rate: 2.00%
Run 3: Report of Indigo-Muses — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 591.64 Mbps)
- Flow 1 egress (mean 591.78 Mbps)
- Flow 2 ingress (mean 491.83 Mbps)
- Flow 2 egress (mean 490.07 Mbps)
- Flow 3 ingress (mean 357.69 Mbps)
- Flow 3 egress (mean 355.36 Mbps)

**Per-packet delay (ms):**
- Flow 1 (95th percentile 90.02 ms)
- Flow 2 (95th percentile 86.36 ms)
- Flow 3 (95th percentile 79.04 ms)
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 16:11:00
End at: 2018-11-15 16:11:30
Local clock offset: -0.139 ms
Remote clock offset: -1.612 ms

# Below is generated by plot.py at 2018-11-15 18:45:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 958.97 Mbit/s
95th percentile per-packet one-way delay: 93.604 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 535.70 Mbit/s
95th percentile per-packet one-way delay: 94.679 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 457.35 Mbit/s
95th percentile per-packet one-way delay: 90.773 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 366.32 Mbit/s
95th percentile per-packet one-way delay: 93.662 ms
Loss rate: 1.86%
Run 4: Report of Indigo-Muses — Data Link
Run 5: Statistics of Indigo-Muses

End at: 2018-11-15 16:43:03
Local clock offset: 0.01 ms
Remote clock offset: 1.104 ms

# Below is generated by plot.py at 2018-11-15 18:46:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1022.58 Mbit/s
95th percentile per-packet one-way delay: 87.480 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 572.15 Mbit/s
95th percentile per-packet one-way delay: 86.960 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 491.03 Mbit/s
95th percentile per-packet one-way delay: 87.495 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 386.69 Mbit/s
95th percentile per-packet one-way delay: 89.992 ms
Loss rate: 1.70%
Run 5: Report of Indigo-Muses — Data Link

![Graph showing network throughput and packet delay](image-url)
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 14:54:41
End at: 2018-11-15 14:55:11
Local clock offset: -0.068 ms
Remote clock offset: 0.453 ms

# Below is generated by plot.py at 2018-11-15 18:55:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 745.17 Mbit/s
95th percentile per-packet one-way delay: 199.756 ms
Loss rate: 3.35%
-- Flow 1:
Average throughput: 371.81 Mbit/s
95th percentile per-packet one-way delay: 203.031 ms
Loss rate: 4.03%
-- Flow 2:
Average throughput: 435.66 Mbit/s
95th percentile per-packet one-way delay: 183.656 ms
Loss rate: 2.99%
-- Flow 3:
Average throughput: 258.38 Mbit/s
95th percentile per-packet one-way delay: 119.730 ms
Loss rate: 1.50%
Run 1: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 385.79 Mbit/s)
- Flow 1 egress (mean 371.81 Mbit/s)
- Flow 2 ingress (mean 446.24 Mbit/s)
- Flow 2 egress (mean 435.66 Mbit/s)
- Flow 3 ingress (mean 256.83 Mbit/s)
- Flow 3 egress (mean 256.38 Mbit/s)

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

- Flow 1 (95th percentile 203.03 ms)
- Flow 2 (95th percentile 183.66 ms)
- Flow 3 (95th percentile 119.73 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 15:26:01
End at: 2018-11-15 15:26:31
Local clock offset: 0.002 ms
Remote clock offset: -0.838 ms

# Below is generated by plot.py at 2018-11-15 18:57:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 743.39 Mbit/s
95th percentile per-packet one-way delay: 190.013 ms
Loss rate: 2.30%
-- Flow 1:
Average throughput: 446.09 Mbit/s
95th percentile per-packet one-way delay: 189.962 ms
Loss rate: 2.95%
-- Flow 2:
Average throughput: 302.01 Mbit/s
95th percentile per-packet one-way delay: 198.113 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 297.10 Mbit/s
95th percentile per-packet one-way delay: 98.966 ms
Loss rate: 1.66%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 15:57:30
End at: 2018-11-15 15:58:00
Local clock offset: -0.129 ms
Remote clock offset: -0.271 ms

# Below is generated by plot.py at 2018-11-15 18:57:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 702.62 Mbit/s
95th percentile per-packet one-way delay: 183.154 ms
Loss rate: 2.73%
-- Flow 1:
Average throughput: 416.86 Mbit/s
95th percentile per-packet one-way delay: 184.530 ms
Loss rate: 3.60%
-- Flow 2:
Average throughput: 303.75 Mbit/s
95th percentile per-packet one-way delay: 86.928 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 257.81 Mbit/s
95th percentile per-packet one-way delay: 88.887 ms
Loss rate: 1.78%
Run 3: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 430.57 Mbit/s)
- Flow 1 egress (mean 416.86 Mbit/s)
- Flow 2 ingress (mean 305.76 Mbit/s)
- Flow 2 egress (mean 303.75 Mbit/s)
- Flow 3 ingress (mean 259.08 Mbit/s)
- Flow 3 egress (mean 257.81 Mbit/s)

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

- Flow 1 (95th percentile 184.53 ms)
- Flow 2 (95th percentile 86.93 ms)
- Flow 3 (95th percentile 88.89 ms)
Run 4: Statistics of PCC-Allegro

End at: 2018-11-15 16:29:23
Local clock offset: -0.027 ms
Remote clock offset: -0.922 ms

# Below is generated by plot.py at 2018-11-15 19:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 744.34 Mbit/s
95th percentile per-packet one-way delay: 220.747 ms
Loss rate: 7.75%
-- Flow 1:
Average throughput: 430.44 Mbit/s
95th percentile per-packet one-way delay: 234.183 ms
Loss rate: 8.91%
-- Flow 2:
Average throughput: 351.91 Mbit/s
95th percentile per-packet one-way delay: 217.808 ms
Loss rate: 6.92%
-- Flow 3:
Average throughput: 245.99 Mbit/s
95th percentile per-packet one-way delay: 182.622 ms
Loss rate: 3.72%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 17:00:23
End at: 2018-11-15 17:00:53
Local clock offset: -0.063 ms
Remote clock offset: -0.331 ms

# Below is generated by plot.py at 2018-11-15 19:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 691.60 Mbit/s
95th percentile per-packet one-way delay: 198.233 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 412.41 Mbit/s
95th percentile per-packet one-way delay: 193.253 ms
Loss rate: 3.33%
-- Flow 2:
Average throughput: 304.63 Mbit/s
95th percentile per-packet one-way delay: 212.963 ms
Loss rate: 1.89%
-- Flow 3:
Average throughput: 236.23 Mbit/s
95th percentile per-packet one-way delay: 176.305 ms
Loss rate: 3.42%
Run 5: Report of PCC-Allegro — Data Link

![Graph 1: Throughput](image)

![Graph 2: Delay](image)
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 14:35:00
End at: 2018-11-15 14:35:30
Local clock offset: -0.041 ms
Remote clock offset: 0.106 ms

# Below is generated by plot.py at 2018-11-15 19:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 496.88 Mbit/s
95th percentile per-packet one-way delay: 143.892 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 298.84 Mbit/s
95th percentile per-packet one-way delay: 114.865 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 239.41 Mbit/s
95th percentile per-packet one-way delay: 159.699 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 119.77 Mbit/s
95th percentile per-packet one-way delay: 63.802 ms
Loss rate: 2.42%
Run 1: Report of PCC-Expr — Data Link

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

**Throughput (Mbit/s)**
- Flow 1 ingress (mean 298.62 Mbit/s)
- Flow 1 egress (mean 298.84 Mbit/s)
- Flow 2 ingress (mean 239.18 Mbit/s)
- Flow 2 egress (mean 239.41 Mbit/s)
- Flow 3 ingress (mean 121.17 Mbit/s)
- Flow 3 egress (mean 119.77 Mbit/s)

**Per-packet one-way delay (ms)**
- Flow 1 (95th percentile 114.86 ms)
- Flow 2 (95th percentile 159.70 ms)
- Flow 3 (95th percentile 63.80 ms)
Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 15:06:16
End at: 2018-11-15 15:06:46
Local clock offset: -0.058 ms
Remote clock offset: -0.282 ms

# Below is generated by plot.py at 2018-11-15 19:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.11 Mbit/s
95th percentile per-packet one-way delay: 155.403 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 292.09 Mbit/s
95th percentile per-packet one-way delay: 120.674 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 252.84 Mbit/s
95th percentile per-packet one-way delay: 113.179 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 251.40 Mbit/s
95th percentile per-packet one-way delay: 183.831 ms
Loss rate: 4.89%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 15:37:29
End at: 2018-11-15 15:37:59
Local clock offset: 0.006 ms
Remote clock offset: -0.286 ms

# Below is generated by plot.py at 2018-11-15 19:12:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 524.88 Mbit/s
  95th percentile per-packet one-way delay: 105.371 ms
  Loss rate: 1.04%
-- Flow 1:
  Average throughput: 310.97 Mbit/s
  95th percentile per-packet one-way delay: 117.937 ms
  Loss rate: 1.14%
-- Flow 2:
  Average throughput: 236.59 Mbit/s
  95th percentile per-packet one-way delay: 65.299 ms
  Loss rate: 0.67%
-- Flow 3:
  Average throughput: 173.94 Mbit/s
  95th percentile per-packet one-way delay: 65.123 ms
  Loss rate: 1.47%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 16:08:59
End at: 2018-11-15 16:09:29
Local clock offset: -0.103 ms
Remote clock offset: -0.384 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
- Total of 3 flows:
  Average throughput: 515.16 Mbit/s
  95th percentile per-packet one-way delay: 137.535 ms
  Loss rate: 1.21%
- Flow 1:
  Average throughput: 284.09 Mbit/s
  95th percentile per-packet one-way delay: 106.309 ms
  Loss rate: 0.82%
- Flow 2:
  Average throughput: 263.43 Mbit/s
  95th percentile per-packet one-way delay: 161.930 ms
  Loss rate: 1.76%
- Flow 3:
  Average throughput: 171.80 Mbit/s
  95th percentile per-packet one-way delay: 67.397 ms
  Loss rate: 1.49%
Run 4: Report of PCC-Expr — Data Link
Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 16:40:34
End at: 2018-11-15 16:41:04
Local clock offset: -0.041 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 496.59 Mbit/s
95th percentile per-packet one-way delay: 132.609 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 275.45 Mbit/s
95th percentile per-packet one-way delay: 156.425 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 210.93 Mbit/s
95th percentile per-packet one-way delay: 88.442 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 248.08 Mbit/s
95th percentile per-packet one-way delay: 117.111 ms
Loss rate: 1.62%
Run 5: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 277.38 Mbit/s)
- Flow 1 egress (mean 275.45 Mbit/s)
- Flow 2 ingress (mean 211.23 Mbit/s)
- Flow 2 egress (mean 210.93 Mbit/s)
- Flow 3 ingress (mean 248.94 Mbit/s)
- Flow 3 egress (mean 248.08 Mbit/s)
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 14:56:44
End at: 2018-11-15 14:57:14
Local clock offset: -0.051 ms
Remote clock offset: -0.804 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.21 Mbit/s
95th percentile per-packet one-way delay: 63.839 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 50.89 Mbit/s
95th percentile per-packet one-way delay: 63.864 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 52.19 Mbit/s
95th percentile per-packet one-way delay: 63.545 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 32.07 Mbit/s
95th percentile per-packet one-way delay: 63.829 ms
Loss rate: 0.86%
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 15:28:04
End at: 2018-11-15 15:28:34
Local clock offset: -0.023 ms
Remote clock offset: -0.753 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 112.28 Mbit/s
95th percentile per-packet one-way delay: 63.513 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 63.18 Mbit/s
95th percentile per-packet one-way delay: 63.382 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 44.15 Mbit/s
95th percentile per-packet one-way delay: 63.559 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 60.47 Mbit/s
95th percentile per-packet one-way delay: 63.563 ms
Loss rate: 0.87%
Run 2: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 62.95 Mbps)
Flow 1 egress (mean 63.18 Mbps)
Flow 2 ingress (mean 44.35 Mbps)
Flow 2 egress (mean 44.15 Mbps)
Flow 3 ingress (mean 60.69 Mbps)
Flow 3 egress (mean 60.47 Mbps)

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

Time (s)

Flow 1 (95th percentile 63.38 ms)
Flow 2 (95th percentile 63.56 ms)
Flow 3 (95th percentile 63.56 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 15:59:31
End at: 2018-11-15 16:00:01
Local clock offset: -0.101 ms
Remote clock offset: -0.522 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 105.06 Mbit/s
  95th percentile per-packet one-way delay: 63.546 ms
  Loss rate: 0.40%
-- Flow 1:
  Average throughput: 57.66 Mbit/s
  95th percentile per-packet one-way delay: 63.243 ms
  Loss rate: 0.65%
-- Flow 2:
  Average throughput: 59.94 Mbit/s
  95th percentile per-packet one-way delay: 63.645 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 23.50 Mbit/s
  95th percentile per-packet one-way delay: 63.514 ms
  Loss rate: 0.50%
Run 3: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 57.80 Mbit/s)
- Flow 1 egress (mean 57.66 Mbit/s)
- Flow 2 ingress (mean 59.94 Mbit/s)
- Flow 2 egress (mean 59.94 Mbit/s)
- Flow 3 ingress (mean 23.31 Mbit/s)
- Flow 3 egress (mean 23.50 Mbit/s)
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 16:30:59
End at: 2018-11-15 16:31:29
Local clock offset: -0.029 ms
Remote clock offset: -0.305 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 110.47 Mbit/s
95th percentile per-packet one-way delay: 63.366 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 54.55 Mbit/s
95th percentile per-packet one-way delay: 63.332 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 54.68 Mbit/s
95th percentile per-packet one-way delay: 63.236 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 59.77 Mbit/s
95th percentile per-packet one-way delay: 63.438 ms
Loss rate: 1.54%
Run 4: Report of QUIC Cubic — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 54.63 Mbps)
  - Flow 1 egress (mean 54.55 Mbps)
  - Flow 2 ingress (mean 54.83 Mbps)
  - Flow 2 egress (mean 54.65 Mbps)
  - Flow 3 ingress (mean 59.98 Mbps)
  - Flow 3 egress (mean 59.77 Mbps)

- **Packet Round Trip Time (ms):**
  - Flow 1 (95th percentile 63.33 ms)
  - Flow 2 (95th percentile 63.24 ms)
  - Flow 3 (95th percentile 63.44 ms)
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 17:02:24
End at: 2018-11-15 17:02:54
Local clock offset: -0.078 ms
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 122.53 Mbit/s
  95th percentile per-packet one-way delay: 63.372 ms
  Loss rate: 0.78%
-- Flow 1:
  Average throughput: 73.16 Mbit/s
  95th percentile per-packet one-way delay: 63.331 ms
  Loss rate: 0.40%
-- Flow 2:
  Average throughput: 45.15 Mbit/s
  95th percentile per-packet one-way delay: 63.434 ms
  Loss rate: 1.11%
-- Flow 3:
  Average throughput: 59.17 Mbit/s
  95th percentile per-packet one-way delay: 62.911 ms
  Loss rate: 1.68%
Run 5: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2018-11-15 14:53:28
End at: 2018-11-15 14:53:58
Local clock offset: -0.086 ms
Remote clock offset: -0.158 ms

# Below is generated by plot.py at 2018-11-15 20:14:59
# Datalink statistics
-- Total of 3 flows:
  95th percentile per-packet one-way delay: 63.519 ms
  Loss rate: 0.58%
-- Flow 1:
  95th percentile per-packet one-way delay: 63.545 ms
  Loss rate: 0.38%
-- Flow 2:
  95th percentile per-packet one-way delay: 63.343 ms
  Loss rate: 0.61%
-- Flow 3:
  95th percentile per-packet one-way delay: 63.190 ms
  Loss rate: 1.08%
Run 1: Report of SCReAM — Data Link

![Throughput and Delay Graphs](image-url)
Run 2: Statistics of SCReAM

Start at: 2018-11-15 15:24:48
End at: 2018-11-15 15:25:18
Local clock offset: 0.017 ms
Remote clock offset: -0.97 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 64.138 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 64.165 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.888 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.731 ms
Loss rate: 1.08%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2018-11-15 15:56:17
End at: 2018-11-15 15:56:47
Local clock offset: -0.039 ms
Remote clock offset: 0.993 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 62.508 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.416 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.617 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 61.828 ms
  Loss rate: 1.10%
Run 3: Report of SCReAM — Data Link

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

- **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)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 62.42 ms)
  - Flow 2 (95th percentile 62.62 ms)
  - Flow 3 (95th percentile 61.83 ms)
Run 4: Statistics of SCReAM

End at: 2018-11-15 16:28:11
Local clock offset: -0.058 ms
Remote clock offset: -0.215 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 63.218 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.237 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.180 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.160 ms
  Loss rate: 1.08%
Run 4: Report of SCReAM — Data Link

![Throughput Graph]

![Delay Graph]
Run 5: Statistics of SCReAM

Start at: 2018-11-15 16:59:11
End at: 2018-11-15 16:59:41
Local clock offset: -0.071 ms
Remote clock offset: 1.214 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 62.311 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.119 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 61.892 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.586 ms
  Loss rate: 1.10%
Run 5: Report of SCReAM — Data Link

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

- Throughput (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)

- Per-packet delay (ms):
  - Flow 1 (95th percentile 62.12 ms)
  - Flow 2 (95th percentile 61.89 ms)
  - Flow 3 (95th percentile 62.59 ms)
Run 1: Statistics of Sprout

Start at: 2018-11-15 15:01:45
End at: 2018-11-15 15:02:15
Local clock offset: -0.062 ms
Remote clock offset: 1.124 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.25 Mbit/s
  95th percentile per-packet one-way delay: 62.738 ms
  Loss rate: 0.75%
-- Flow 1:
  Average throughput: 6.74 Mbit/s
  95th percentile per-packet one-way delay: 62.793 ms
  Loss rate: 0.48%
-- Flow 2:
  Average throughput: 6.66 Mbit/s
  95th percentile per-packet one-way delay: 62.612 ms
  Loss rate: 0.73%
-- Flow 3:
  Average throughput: 6.39 Mbit/s
  95th percentile per-packet one-way delay: 62.482 ms
  Loss rate: 1.64%
Run 1: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 6.75 Mbit/s)
- Flow 1 egress (mean 6.74 Mbit/s)
- Flow 2 ingress (mean 6.66 Mbit/s)
- Flow 2 egress (mean 6.66 Mbit/s)
- Flow 3 ingress (mean 6.44 Mbit/s)
- Flow 3 egress (mean 6.39 Mbit/s)
Run 2: Statistics of Sprout

Start at: 2018-11-15 15:32:59
End at: 2018-11-15 15:33:29
Local clock offset: 0.016 ms
Remote clock offset: -0.388 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.41 Mbit/s
95th percentile per-packet one-way delay: 64.518 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 64.772 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 6.72 Mbit/s
95th percentile per-packet one-way delay: 63.992 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 64.093 ms
Loss rate: 1.60%
Run 2: Report of Sprout — Data Link

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

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

Legend:
- Blue dashed line: Flow 1 ingress (mean 6.82 Mbps)
- Blue solid line: Flow 1 egress (mean 6.84 Mbps)
- Green dashed line: Flow 2 ingress (mean 6.69 Mbps)
- Green solid line: Flow 2 egress (mean 6.72 Mbps)
- Red dashed line: Flow 3 ingress (mean 6.47 Mbps)
- Red solid line: Flow 3 egress (mean 6.46 Mbps)
Run 3: Statistics of Sprout

Start at: 2018-11-15 16:04:28
End at: 2018-11-15 16:04:58
Local clock offset: -0.129 ms
Remote clock offset: -0.983 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.28 Mbit/s
95th percentile per-packet one-way delay: 65.045 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 65.108 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 64.980 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 65.039 ms
Loss rate: 0.43%
Run 3: Report of Sprout — Data Link

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

**Throughput (Mbps)**

- **Flow 1 ingress (mean 6.77 Mbps)**
- **Flow 1 egress (mean 6.76 Mbps)**
- **Flow 2 ingress (mean 6.80 Mbps)**
- **Flow 2 egress (mean 6.79 Mbps)**
- **Flow 3 ingress (mean 6.11 Mbps)**
- **Flow 3 egress (mean 6.16 Mbps)**

**Packet Delay (ms)**

- **Flow 1 (95th percentile 65.11 ms)**
- **Flow 2 (95th percentile 64.98 ms)**
- **Flow 3 (95th percentile 65.04 ms)**
Run 4: Statistics of Sprout

Start at: 2018-11-15 16:36:03
End at: 2018-11-15 16:36:33
Local clock offset: -0.033 ms
Remote clock offset: 0.346 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.24 Mbit/s
  95th percentile per-packet one-way delay: 63.395 ms
  Loss rate: 0.55%
-- Flow 1:
  Average throughput: 6.74 Mbit/s
  95th percentile per-packet one-way delay: 63.326 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 6.63 Mbit/s
  95th percentile per-packet one-way delay: 63.455 ms
  Loss rate: 0.11%
-- Flow 3:
  Average throughput: 6.43 Mbit/s
  95th percentile per-packet one-way delay: 63.389 ms
  Loss rate: 1.59%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2018-11-15 17:07:32
End at: 2018-11-15 17:08:02
Local clock offset: -0.076 ms
Remote clock offset: -0.26 ms

# Below is generated by plot.py at 2018-11-15 19:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.26 Mbit/s
95th percentile per-packet one-way delay: 63.841 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 6.87 Mbit/s
95th percentile per-packet one-way delay: 63.893 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 63.707 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 63.849 ms
Loss rate: 0.31%
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 14:42:31
End at: 2018-11-15 14:43:01
Local clock offset: 0.002 ms
Remote clock offset: -0.327 ms

# Below is generated by plot.py at 2018-11-15 19:22:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 432.66 Mbit/s
95th percentile per-packet one-way delay: 63.963 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 222.90 Mbit/s
95th percentile per-packet one-way delay: 63.785 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 212.44 Mbit/s
95th percentile per-packet one-way delay: 64.166 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 208.27 Mbit/s
95th percentile per-packet one-way delay: 63.901 ms
Loss rate: 1.31%
Run 1: Report of TaoVA-100x — Data Link

![Throughput Graph]

- Flow 1 ingress (mean 222.61 Mbit/s)
- Flow 1 egress (mean 222.90 Mbit/s)
- Flow 2 ingress (mean 212.42 Mbit/s)
- Flow 2 egress (mean 212.44 Mbit/s)
- Flow 3 ingress (mean 208.33 Mbit/s)
- Flow 3 egress (mean 208.27 Mbit/s)

![Per-packet one-way delay Graph]

- Flow 1 (95th percentile 63.78 ms)
- Flow 2 (95th percentile 64.17 ms)
- Flow 3 (95th percentile 63.90 ms)
Run 2: Statistics of TaoVA-100x

End at: 2018-11-15 15:14:17
Local clock offset: -0.019 ms
Remote clock offset: -0.29 ms

# Below is generated by plot.py at 2018-11-15 19:22:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.55 Mbit/s
95th percentile per-packet one-way delay: 63.899 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 231.57 Mbit/s
95th percentile per-packet one-way delay: 63.750 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 223.28 Mbit/s
95th percentile per-packet one-way delay: 63.649 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 220.30 Mbit/s
95th percentile per-packet one-way delay: 65.117 ms
Loss rate: 1.46%
Run 2: Report of TaoVA-100x — Data Link

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

- Blue dashed line: Flow 1 ingress (mean 231.64 Mbit/s)
- Blue line: Flow 1 egress (mean 231.57 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 223.45 Mbit/s)
- Green line: Flow 2 egress (mean 223.28 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 220.72 Mbit/s)
- Red line: Flow 3 egress (mean 220.30 Mbit/s)

![Graph 2: Per-packet round-trip delay vs Time](image2.png)

- Blue line: Flow 1 (95th percentile 63.75 ms)
- Green line: Flow 2 (95th percentile 63.65 ms)
- Red line: Flow 3 (95th percentile 65.12 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 15:44:57
End at: 2018-11-15 15:45:27
Local clock offset: -0.044 ms
Remote clock offset: 0.409 ms

# Below is generated by plot.py at 2018-11-15 19:22:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 437.26 Mbit/s
95th percentile per-packet one-way delay: 62.885 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 227.62 Mbit/s
95th percentile per-packet one-way delay: 62.832 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 219.21 Mbit/s
95th percentile per-packet one-way delay: 62.804 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 194.00 Mbit/s
95th percentile per-packet one-way delay: 63.113 ms
Loss rate: 1.42%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 16:16:24
End at: 2018-11-15 16:16:54
Local clock offset: -0.085 ms
Remote clock offset: -0.216 ms

# Below is generated by plot.py at 2018-11-15 19:22:52
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 423.72 Mbit/s
  95th percentile per-packet one-way delay: 64.107 ms
  Loss rate: 0.39%
-- Flow 1:
  Average throughput: 218.39 Mbit/s
  95th percentile per-packet one-way delay: 63.740 ms
  Loss rate: 0.50%
-- Flow 2:
  Average throughput: 207.92 Mbit/s
  95th percentile per-packet one-way delay: 64.363 ms
  Loss rate: 0.22%
-- Flow 3:
  Average throughput: 204.19 Mbit/s
  95th percentile per-packet one-way delay: 64.890 ms
  Loss rate: 0.39%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

End at: 2018-11-15 16:48:34
Local clock offset: 0.004 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-11-15 19:26:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 423.90 Mbit/s
95th percentile per-packet one-way delay: 64.129 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 222.54 Mbit/s
95th percentile per-packet one-way delay: 63.496 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 196.75 Mbit/s
95th percentile per-packet one-way delay: 64.426 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 214.37 Mbit/s
95th percentile per-packet one-way delay: 65.251 ms
Loss rate: 1.41%
Run 5: Report of TaoVA-100x — Data Link
Run 1: Statistics of TCP Vegas

Local clock offset: -0.051 ms
Remote clock offset: -0.277 ms

# Below is generated by plot.py at 2018-11-15 19:28:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.26 Mbit/s
95th percentile per-packet one-way delay: 69.486 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 413.98 Mbit/s
95th percentile per-packet one-way delay: 77.626 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 432.28 Mbit/s
95th percentile per-packet one-way delay: 64.404 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 400.34 Mbit/s
95th percentile per-packet one-way delay: 64.993 ms
Loss rate: 1.47%
Run 1: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay over time for Flow 1, 2, and 3.]

Throughput (Mbps):
- Flow 1 ingress (mean 413.78 Mbps)
- Flow 1 egress (mean 413.98 Mbps)
- Flow 2 ingress (mean 432.46 Mbps)
- Flow 2 egress (mean 432.28 Mbps)
- Flow 3 ingress (mean 401.13 Mbps)
- Flow 3 egress (mean 400.34 Mbps)

Packet delay (ms):
- Flow 1 (95th percentile 77.63 ms)
- Flow 2 (95th percentile 64.40 ms)
- Flow 3 (95th percentile 64.99 ms)
Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 15:19:20
End at: 2018-11-15 15:19:50
Local clock offset: -0.003 ms
Remote clock offset: -0.0 ms

# Below is generated by plot.py at 2018-11-15 19:28:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 623.35 Mbit/s
95th percentile per-packet one-way delay: 64.977 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 255.75 Mbit/s
95th percentile per-packet one-way delay: 63.474 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 402.78 Mbit/s
95th percentile per-packet one-way delay: 65.915 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 302.48 Mbit/s
95th percentile per-packet one-way delay: 64.241 ms
Loss rate: 0.97%
Run 2: Report of TCP Vegas — Data Link

Graph 1: Throughput (Mbps) vs. Time (s)
- Flow 1 ingress (mean 255.19 Mbps)
- Flow 1 egress (mean 255.75 Mbps)
- Flow 2 ingress (mean 401.64 Mbps)
- Flow 2 egress (mean 402.78 Mbps)
- Flow 3 ingress (mean 301.57 Mbps)
- Flow 3 egress (mean 302.49 Mbps)

Graph 2: Per-packet round trip delay (ms) vs. Time (s)
- Flow 1 (95th percentile 63.47 ms)
- Flow 2 (95th percentile 65.92 ms)
- Flow 3 (95th percentile 64.24 ms)
Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 15:50:29
End at: 2018-11-15 15:50:59
Local clock offset: -0.081 ms
Remote clock offset: -0.223 ms

# Below is generated by plot.py at 2018-11-15 19:35:57
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1010.05 Mbit/s
  95th percentile per-packet one-way delay: 81.425 ms
  Loss rate: 0.66%
-- Flow 1:
  Average throughput: 514.00 Mbit/s
  95th percentile per-packet one-way delay: 83.356 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 517.93 Mbit/s
  95th percentile per-packet one-way delay: 76.058 ms
  Loss rate: 0.69%
-- Flow 3:
  Average throughput: 462.69 Mbit/s
  95th percentile per-packet one-way delay: 83.315 ms
  Loss rate: 1.54%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 16:21:54
Local clock offset: -0.063 ms
Remote clock offset: -0.357 ms

# Below is generated by plot.py at 2018-11-15 19:41:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 977.97 Mbit/s
95th percentile per-packet one-way delay: 96.659 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 507.37 Mbit/s
95th percentile per-packet one-way delay: 95.381 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 485.55 Mbit/s
95th percentile per-packet one-way delay: 101.862 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 448.43 Mbit/s
95th percentile per-packet one-way delay: 93.186 ms
Loss rate: 1.59%
Run 4: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 507.62 Mbit/s)
- Flow 1 egress (mean 507.37 Mbit/s)
- Flow 2 ingress (mean 486.06 Mbit/s)
- Flow 2 egress (mean 485.55 Mbit/s)
- Flow 3 ingress (mean 449.91 Mbit/s)
- Flow 3 egress (mean 448.43 Mbit/s)
Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 16:53:28
End at: 2018-11-15 16:53:58
Local clock offset: -0.038 ms
Remote clock offset: 0.539 ms

# Below is generated by plot.py at 2018-11-15 19:41:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 877.69 Mbit/s
95th percentile per-packet one-way delay: 80.145 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 513.78 Mbit/s
95th percentile per-packet one-way delay: 82.860 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 464.44 Mbit/s
95th percentile per-packet one-way delay: 69.199 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 167.21 Mbit/s
95th percentile per-packet one-way delay: 62.695 ms
Loss rate: 0.91%
Run 5: Report of TCP Vegas — Data Link

![Graph 1: Throughput (Mbps)]  
- **Flow 1 ingress (mean 514.60 Mbps)**  
- **Flow 1 egress (mean 513.78 Mbps)**  
- **Flow 2 ingress (mean 464.32 Mbps)**  
- **Flow 2 egress (mean 464.44 Mbps)**  
- **Flow 3 ingress (mean 166.62 Mbps)**  
- **Flow 3 egress (mean 167.21 Mbps)**

![Graph 2: Per-packet one-way delay (ms)]  
- **Flow 1 (95th percentile 82.86 ms)**  
- **Flow 2 (95th percentile 69.20 ms)**  
- **Flow 3 (95th percentile 62.70 ms)**
Run 1: Statistics of Verus

Start at: 2018-11-15 15:00:05
End at: 2018-11-15 15:00:35
Local clock offset: -0.083 ms
Remote clock offset: -0.913 ms

# Below is generated by plot.py at 2018-11-15 19:41:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 269.55 Mbit/s
95th percentile per-packet one-way delay: 187.418 ms
Loss rate: 3.01%
-- Flow 1:
Average throughput: 145.18 Mbit/s
95th percentile per-packet one-way delay: 223.842 ms
Loss rate: 4.54%
-- Flow 2:
Average throughput: 150.72 Mbit/s
95th percentile per-packet one-way delay: 165.065 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 75.46 Mbit/s
95th percentile per-packet one-way delay: 76.564 ms
Loss rate: 1.03%
Run 1: Report of Verus — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 150.59 Mbps)
Flow 1 egress (mean 145.18 Mbps)
Flow 2 ingress (mean 152.05 Mbps)
Flow 2 egress (mean 150.72 Mbps)
Flow 3 ingress (mean 76.11 Mbps)
Flow 3 egress (mean 75.46 Mbps)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 223.84 ms)
Flow 2 (95th percentile 165.06 ms)
Flow 3 (95th percentile 76.56 ms)
Run 2: Statistics of Verus

Start at: 2018-11-15 15:31:21
End at: 2018-11-15 15:31:51
Local clock offset: -0.012 ms
Remote clock offset: 0.443 ms

# Below is generated by plot.py at 2018-11-15 19:41:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 245.04 Mbit/s
95th percentile per-packet one-way delay: 155.190 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 103.17 Mbit/s
95th percentile per-packet one-way delay: 74.308 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 182.77 Mbit/s
95th percentile per-packet one-way delay: 168.542 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 62.18 Mbit/s
95th percentile per-packet one-way delay: 67.405 ms
Loss rate: 0.44%
Run 2: Report of Verus — Data Link

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

- **Flow 1 ing/egress (mean 103.12/103.17 Mbit/s)**
- **Flow 2 ing/egress (mean 184.20/182.77 Mbit/s)**
- **Flow 3 ing/egress (mean 62.33/62.18 Mbit/s)**

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

- **Flow 1 (95th percentile 74.31 ms)**
- **Flow 2 (95th percentile 168.54 ms)**
- **Flow 3 (95th percentile 67.41 ms)**
Run 3: Statistics of Verus

Start at: 2018-11-15 16:02:50
End at: 2018-11-15 16:03:20
Local clock offset: -0.072 ms
Remote clock offset: -1.278 ms

# Below is generated by plot.py at 2018-11-15 19:41:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 242.72 Mbit/s
95th percentile per-packet one-way delay: 124.270 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 123.92 Mbit/s
95th percentile per-packet one-way delay: 117.454 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 154.02 Mbit/s
95th percentile per-packet one-way delay: 135.348 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 52.20 Mbit/s
95th percentile per-packet one-way delay: 68.170 ms
Loss rate: 2.25%
Run 3: Report of Verus — Data Link
Run 4: Statistics of Verus

Start at: 2018-11-15 16:34:21
End at: 2018-11-15 16:34:51
Local clock offset: -0.032 ms
Remote clock offset: 1.061 ms

# Below is generated by plot.py at 2018-11-15 19:41:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 280.50 Mbit/s
  95th percentile per-packet one-way delay: 147.921 ms
  Loss rate: 1.48%
-- Flow 1:
  Average throughput: 147.99 Mbit/s
  95th percentile per-packet one-way delay: 106.414 ms
  Loss rate: 1.10%
-- Flow 2:
  Average throughput: 177.41 Mbit/s
  95th percentile per-packet one-way delay: 165.375 ms
  Loss rate: 1.97%
-- Flow 3:
  Average throughput: 46.13 Mbit/s
  95th percentile per-packet one-way delay: 70.059 ms
  Loss rate: 1.43%
Run 4: Report of Verus — Data Link

Graph 1: Throughput over time for different flows.

Graph 2: End-to-end delay measurements for different flows.

Legend:
- Flow 1 ingress (mean 148.51 Mbit/s)
- Flow 1 egress (mean 147.99 Mbit/s)
- Flow 2 ingress (mean 180.05 Mbit/s)
- Flow 2 egress (mean 177.41 Mbit/s)
- Flow 3 ingress (mean 46.22 Mbit/s)
- Flow 3 egress (mean 46.13 Mbit/s)

Legend for delay:
- Flow 1 (95th percentile 106.41 ms)
- Flow 2 (95th percentile 165.38 ms)
- Flow 3 (95th percentile 70.06 ms)
Run 5: Statistics of Verus

Start at: 2018-11-15 17:05:47
End at: 2018-11-15 17:06:17
Local clock offset: -0.071 ms
Remote clock offset: -0.195 ms

# Below is generated by plot.py at 2018-11-15 19:41:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 305.02 Mbit/s
95th percentile per-packet one-way delay: 226.219 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 194.84 Mbit/s
95th percentile per-packet one-way delay: 238.095 ms
Loss rate: 3.59%
-- Flow 2:
Average throughput: 134.88 Mbit/s
95th percentile per-packet one-way delay: 127.165 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 62.63 Mbit/s
95th percentile per-packet one-way delay: 75.269 ms
Loss rate: 4.11%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 14:44:25
End at: 2018-11-15 14:44:55
Local clock offset: -0.031 ms
Remote clock offset: -0.181 ms

# Below is generated by plot.py at 2018-11-15 19:42:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.80 Mbit/s
95th percentile per-packet one-way delay: 71.584 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 339.74 Mbit/s
95th percentile per-packet one-way delay: 66.344 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 240.54 Mbit/s
95th percentile per-packet one-way delay: 82.026 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 166.48 Mbit/s
95th percentile per-packet one-way delay: 66.431 ms
Loss rate: 1.90%
Run 1: Report of PCC-Vivace — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 339.46 Mbit/s)
Flow 1 egress (mean 339.74 Mbit/s)
Flow 2 ingress (mean 240.67 Mbit/s)
Flow 2 egress (mean 240.54 Mbit/s)
Flow 3 ingress (mean 167.48 Mbit/s)
Flow 3 egress (mean 166.48 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 66.34 ms)
Flow 2 (95th percentile 82.03 ms)
Flow 3 (95th percentile 86.43 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 15:15:43
End at: 2018-11-15 15:16:13
Local clock offset: -0.035 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-11-15 19:43:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 595.10 Mbit/s
95th percentile per-packet one-way delay: 67.099 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 353.94 Mbit/s
95th percentile per-packet one-way delay: 68.773 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 285.69 Mbit/s
95th percentile per-packet one-way delay: 65.476 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 157.72 Mbit/s
95th percentile per-packet one-way delay: 64.462 ms
Loss rate: 1.58%
Run 2: Report of PCC-Vivace — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 353.87 Mbps)
  - Flow 1 egress (mean 353.94 Mbps)
  - Flow 2 ingress (mean 286.08 Mbps)
  - Flow 2 egress (mean 285.69 Mbps)
  - Flow 3 ingress (mean 158.16 Mbps)
  - Flow 3 egress (mean 157.72 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 68.77 ms)
  - Flow 2 (95th percentile 65.48 ms)
  - Flow 3 (95th percentile 64.46 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 15:46:52
End at: 2018-11-15 15:47:22
Local clock offset: -0.065 ms
Remote clock offset: -0.349 ms

# Below is generated by plot.py at 2018-11-15 19:44:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 599.09 Mbit/s
  95th percentile per-packet one-way delay: 86.844 ms
  Loss rate: 0.42%
-- Flow 1:
  Average throughput: 325.45 Mbit/s
  95th percentile per-packet one-way delay: 110.091 ms
  Loss rate: 0.21%
-- Flow 2:
  Average throughput: 278.36 Mbit/s
  95th percentile per-packet one-way delay: 67.263 ms
  Loss rate: 0.44%
-- Flow 3:
  Average throughput: 271.28 Mbit/s
  95th percentile per-packet one-way delay: 76.555 ms
  Loss rate: 1.17%
Run 3: Report of PCC-Vivace — Data Link

![Graph 1: Throughput (Mbps)]

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

Legend:
- Flow 1 ingress (mean 325.06 Mbps)
- Flow 1 egress (mean 325.45 Mbps)
- Flow 2 ingress (mean 278.30 Mbps)
- Flow 2 egress (mean 278.36 Mbps)
- Flow 3 ingress (mean 271.21 Mbps)
- Flow 3 egress (mean 271.28 Mbps)

Legend for delay:
- Flow 1 (95th percentile 110.09 ms)
- Flow 2 (95th percentile 67.26 ms)
- Flow 3 (95th percentile 76.56 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 16:18:18
End at: 2018-11-15 16:18:48
Local clock offset: -0.077 ms
Remote clock offset: 1.155 ms

# Below is generated by plot.py at 2018-11-15 19:44:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 575.60 Mbit/s
95th percentile per-packet one-way delay: 63.650 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 328.09 Mbit/s
95th percentile per-packet one-way delay: 63.168 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 236.65 Mbit/s
95th percentile per-packet one-way delay: 63.327 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 276.18 Mbit/s
95th percentile per-packet one-way delay: 65.543 ms
Loss rate: 1.50%
Run 4: Report of PCC-Vivace — Data Link

[Graph showing throughput and packet loss over time]
Run 5: Statistics of PCC-Vivace

End at: 2018-11-15 16:50:29
Local clock offset: -0.033 ms
Remote clock offset: -1.429 ms

# Below is generated by plot.py at 2018-11-15 19:44:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 499.65 Mbit/s
  95th percentile per-packet one-way delay: 122.708 ms
  Loss rate: 0.47%
-- Flow 1:
  Average throughput: 291.86 Mbit/s
  95th percentile per-packet one-way delay: 143.688 ms
  Loss rate: 0.31%
-- Flow 2:
  Average throughput: 236.85 Mbit/s
  95th percentile per-packet one-way delay: 107.334 ms
  Loss rate: 0.45%
-- Flow 3:
  Average throughput: 155.69 Mbit/s
  95th percentile per-packet one-way delay: 69.158 ms
  Loss rate: 1.44%
Run 5: Report of PCC-Vivace — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 291.50 Mbps)
Flow 1 egress (mean 291.86 Mbps)
Flow 2 ingress (mean 236.39 Mbps)
Flow 2 egress (mean 236.85 Mbps)
Flow 3 ingress (mean 155.97 Mbps)
Flow 3 egress (mean 155.69 Mbps)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 143.69 ms)
Flow 2 (95th percentile 107.33 ms)
Flow 3 (95th percentile 69.16 ms)
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 14:33:47
End at: 2018-11-15 14:34:17
Local clock offset: ~0.07 ms
Remote clock offset: ~0.102 ms

# Below is generated by plot.py at 2018-11-15 19:44:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.62 Mbit/s
  95th percentile per-packet one-way delay: 63.384 ms
  Loss rate: 0.84%
-- Flow 1:
  Average throughput: 1.10 Mbit/s
  95th percentile per-packet one-way delay: 63.433 ms
  Loss rate: 0.66%
-- Flow 2:
  Average throughput: 1.10 Mbit/s
  95th percentile per-packet one-way delay: 63.298 ms
  Loss rate: 0.64%
-- Flow 3:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.087 ms
  Loss rate: 1.80%
Run 1: Report of WebRTC media — Data Link

![Throughput and Delay Plots]

- Flow 1 ingress (mean 1.10 Mbit/s)
- Flow 1 egress (mean 1.10 Mbit/s)
- Flow 2 ingress (mean 1.11 Mbit/s)
- Flow 2 egress (mean 1.10 Mbit/s)
- Flow 3 ingress (mean 0.45 Mbit/s)
- Flow 3 egress (mean 0.44 Mbit/s)

Per-packet one-way delay (ms)

- Flow 1 (95th percentile 63.43 ms)
- Flow 2 (95th percentile 63.30 ms)
- Flow 3 (95th percentile 63.09 ms)
Run 2: Statistics of WebRTC media

Start at: 2018-11-15 15:05:03
End at: 2018-11-15 15:05:33
Local clock offset: -0.051 ms
Remote clock offset: 0.084 ms

# Below is generated by plot.py at 2018-11-15 19:44:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.47 Mbit/s
  95th percentile per-packet one-way delay: 63.203 ms
  Loss rate: 0.72%
-- Flow 1:
  Average throughput: 1.90 Mbit/s
  95th percentile per-packet one-way delay: 63.208 ms
  Loss rate: 0.36%
-- Flow 2:
  Average throughput: 1.15 Mbit/s
  95th percentile per-packet one-way delay: 63.218 ms
  Loss rate: 0.92%
-- Flow 3:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.027 ms
  Loss rate: 1.80%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2018-11-15 15:36:16
End at: 2018-11-15 15:36:46
Local clock offset: 0.005 ms
Remote clock offset: -0.304 ms

# Below is generated by plot.py at 2018-11-15 19:44:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 63.637 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 63.722 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 63.508 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.439 ms
Loss rate: 0.93%
Run 3: Report of WebRTC media — Data Link

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

*Flow 1 ingress (mean 1.89 Mbit/s) - Flow 1 egress (mean 1.88 Mbit/s)*

*Flow 2 ingress (mean 1.14 Mbit/s) - Flow 2 egress (mean 1.14 Mbit/s)*

*Flow 3 ingress (mean 0.45 Mbit/s) - Flow 3 egress (mean 0.44 Mbit/s)*
Run 4: Statistics of WebRTC media

Start at: 2018-11-15 16:07:46
End at: 2018-11-15 16:08:16
Local clock offset: -0.152 ms
Remote clock offset: -0.217 ms

# Below is generated by plot.py at 2018-11-15 19:44:43
# Datalink statistics
-- Total of 3 flows:
Average throughput:  3.39 Mbit/s
95th percentile per-packet one-way delay: 63.345 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 63.200 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 63.407 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 63.402 ms
Loss rate: 2.05%
Run 4: Report of WebRTC media — Data Link

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

Start at: 2018-11-15 16:39:21
End at: 2018-11-15 16:39:51
Local clock offset: -0.042 ms
Remote clock offset: -0.143 ms

# Below is generated by plot.py at 2018-11-15 19:44:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.48 Mbit/s
  95th percentile per-packet one-way delay: 63.696 ms
  Loss rate: 0.85%
-- Flow 1:
  Average throughput: 1.91 Mbit/s
  95th percentile per-packet one-way delay: 63.802 ms
  Loss rate: 0.54%
-- Flow 2:
  Average throughput: 1.15 Mbit/s
  95th percentile per-packet one-way delay: 63.454 ms
  Loss rate: 0.84%
-- Flow 3:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.338 ms
  Loss rate: 2.25%
Run 5: Report of WebRTC media — Data Link

![Graph showing throughput and one-way delay]

- Flow 1 ingress (mean 1.91 Mbit/s)
- Flow 1 egress (mean 1.91 Mbit/s)
- Flow 2 ingress (mean 1.16 Mbit/s)
- Flow 2 egress (mean 1.15 Mbit/s)
- Flow 3 ingress (mean 0.45 Mbit/s)
- Flow 3 egress (mean 0.44 Mbit/s)