Pantheon Report

Generated at 2018-11-03 02:33:03 (UTC).
Data path: GCE Iowa on ens4 (remote) → GCE Sydney 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 @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f6e594aa89e93b032143c6bdf858e562f4
third_party/indigo @ 2601c92e4a9d58d38dc4defe0ecdf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8a0bcb967ed704b6a8f994ab95
third_party/libutp @ b346b942e2826f2b179eaab4a906ce6bb7pcf3cf
third_party/muses @ 65ac1b19bebfe0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866df58d27afed42717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fdec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e3a3f5f613e8a2d08f9ab92c4eb2f9f74ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc81439c978f3c0f42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bd8b2
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 @ d4b447ea74c6c60a261149af2629562539f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from GCE Iowa to GCE Sydney, 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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
</tr>
<tr>
<td>TCP BBR</td>
<td>5</td>
<td>381.92</td>
<td>369.88</td>
<td>337.33</td>
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<tr>
<td>Copa</td>
<td>3</td>
<td>310.61</td>
<td>261.89</td>
<td>207.86</td>
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<tr>
<td>TCP Cubic</td>
<td>3</td>
<td>389.01</td>
<td>376.52</td>
<td>343.66</td>
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<td>FillIP</td>
<td>4</td>
<td>282.73</td>
<td>358.11</td>
<td>243.16</td>
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<td>206.03</td>
<td>198.70</td>
<td>165.09</td>
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<td>253.96</td>
<td>251.47</td>
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<td>Indigo-Muses</td>
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<td>337.63</td>
<td>321.05</td>
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<td>PCC-Expr</td>
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<td>38.40</td>
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<td>Sprout</td>
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<td>4.30</td>
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<td>207.36</td>
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<td>368.93</td>
<td>332.95</td>
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<td>Verus</td>
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<td>219.86</td>
<td>152.29</td>
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<td>WebRTC media</td>
<td>5</td>
<td>1.81</td>
<td>1.12</td>
<td>0.41</td>
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Run 1: Statistics of TCP BBR

Start at: 2018-11-02 21:50:52
End at: 2018-11-02 21:51:22
Local clock offset: 0.174 ms
Remote clock offset: 0.327 ms

# Below is generated by plot.py at 2018-11-03 00:47:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 737.28 Mbit/s
95th percentile per-packet one-way delay: 88.228 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 383.10 Mbit/s
95th percentile per-packet one-way delay: 88.382 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 371.32 Mbit/s
95th percentile per-packet one-way delay: 88.248 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 327.46 Mbit/s
95th percentile per-packet one-way delay: 87.963 ms
Loss rate: 2.17%
Run 1: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 383.27 Mbps)
- Flow 1 egress (mean 383.10 Mbps)
- Flow 2 ingress (mean 371.68 Mbps)
- Flow 2 egress (mean 371.32 Mbps)
- Flow 3 ingress (mean 326.97 Mbps)
- Flow 3 egress (mean 327.46 Mbps)

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

- Flow 1 (95th percentile 88.38 ms)
- Flow 2 (95th percentile 88.25 ms)
- Flow 3 (95th percentile 87.96 ms)
Run 2: Statistics of TCP BBR

Local clock offset: 0.082 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2018-11-03 00:47:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 738.80 Mbit/s
95th percentile per-packet one-way delay: 86.961 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 382.26 Mbit/s
95th percentile per-packet one-way delay: 86.813 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 368.15 Mbit/s
95th percentile per-packet one-way delay: 87.236 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 342.13 Mbit/s
95th percentile per-packet one-way delay: 86.997 ms
Loss rate: 1.63%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2018-11-02 22:52:45
End at: 2018-11-02 22:53:15
Local clock offset: -0.007 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-11-03 00:48:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 740.50 Mbit/s
95th percentile per-packet one-way delay: 87.741 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 380.57 Mbit/s
95th percentile per-packet one-way delay: 87.430 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 374.76 Mbit/s
95th percentile per-packet one-way delay: 88.530 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 337.80 Mbit/s
95th percentile per-packet one-way delay: 87.416 ms
Loss rate: 1.99%
Run 4: Statistics of TCP BBR

Start at: 2018-11-02 23:23:29
End at: 2018-11-02 23:23:59
Local clock offset: 0.384 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2018-11-03 00:48:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 727.33 Mbit/s
95th percentile per-packet one-way delay: 90.338 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 375.76 Mbit/s
95th percentile per-packet one-way delay: 89.392 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 362.03 Mbit/s
95th percentile per-packet one-way delay: 90.850 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 337.83 Mbit/s
95th percentile per-packet one-way delay: 92.402 ms
Loss rate: 2.11%
Run 4: Report of TCP BBR — Data Link

![Graph showing throughput and per-packet size over time for different flows.](image-url)
Run 5: Statistics of TCP BBR

End at: 2018-11-02 23:56:05
Local clock offset: -0.114 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2018-11-03 00:48:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 747.88 Mbit/s
95th percentile per-packet one-way delay: 89.018 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 387.90 Mbit/s
95th percentile per-packet one-way delay: 88.376 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 373.16 Mbit/s
95th percentile per-packet one-way delay: 89.753 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 341.43 Mbit/s
95th percentile per-packet one-way delay: 88.983 ms
Loss rate: 2.09%
Run 5: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 388.06 Mbit/s)
- Flow 1 egress (mean 387.90 Mbit/s)
- Flow 2 ingress (mean 373.51 Mbit/s)
- Flow 2 egress (mean 373.16 Mbit/s)
- Flow 3 ingress (mean 342.88 Mbit/s)
- Flow 3 egress (mean 341.43 Mbit/s)

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

- Flow 1 (95th percentile 88.38 ms)
- Flow 2 (95th percentile 89.75 ms)
- Flow 3 (95th percentile 88.98 ms)
Run 1: Statistics of Copa

Start at: 2018-11-02 22:01:03
End at: 2018-11-02 22:01:33
Local clock offset: 0.266 ms
Remote clock offset: 0.431 ms

# Below is generated by plot.py at 2018-11-03 00:54:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 580.19 Mbit/s
95th percentile per-packet one-way delay: 127.203 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 318.67 Mbit/s
95th percentile per-packet one-way delay: 124.447 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 290.99 Mbit/s
95th percentile per-packet one-way delay: 137.261 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 207.98 Mbit/s
95th percentile per-packet one-way delay: 104.975 ms
Loss rate: 2.31%
Run 1: Report of Copa — Data Link

Throughput (Mbps):

- Flow 1 ingress (mean 318.73 Mbps)
- Flow 1 egress (mean 318.67 Mbps)
- Flow 2 ingress (mean 291.35 Mbps)
- Flow 2 egress (mean 290.99 Mbps)
- Flow 3 ingress (mean 209.24 Mbps)
- Flow 3 egress (mean 207.98 Mbps)

Per-packet one-way delay (ms):

- Flow 1 (95th percentile 124.45 ms)
- Flow 2 (95th percentile 137.26 ms)
- Flow 3 (95th percentile 104.97 ms)
Run 2: Statistics of Copa

Start at: 2018-11-02 22:31:43
End at: 2018-11-02 22:32:13
Local clock offset: 0.111 ms
Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2018-11-03 00:54:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 510.62 Mbit/s
95th percentile per-packet one-way delay: 141.624 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 301.86 Mbit/s
95th percentile per-packet one-way delay: 110.802 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 222.50 Mbit/s
95th percentile per-packet one-way delay: 156.100 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 185.92 Mbit/s
95th percentile per-packet one-way delay: 156.207 ms
Loss rate: 1.84%
Run 2: Report of Copa — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 301.76 Mbit/s)
Flow 1 egress (mean 301.86 Mbit/s)
Flow 2 ingress (mean 222.99 Mbit/s)
Flow 2 egress (mean 222.50 Mbit/s)
Flow 3 ingress (mean 186.13 Mbit/s)
Flow 3 egress (mean 185.92 Mbit/s)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 110.80 ms)
Flow 2 (95th percentile 156.10 ms)
Flow 3 (95th percentile 156.21 ms)
Run 3: Statistics of Copa

/home/ubuntu/pantheon/data/2018-11-02T21-46-GCE-Iowa-to-GCE-Sydney-5-runs-3-flows/copa_stats
Run 3: Report of Copa — Data Link

Figure is missing

Figure is missing
Run 4: Statistics of Copa

Start at: 2018-11-02 23:33:51
End at: 2018-11-02 23:34:21
Local clock offset: -0.071 ms
Remote clock offset: -0.038 ms

# Below is generated by plot.py at 2018-11-03 00:54:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.48 Mbit/s
95th percentile per-packet one-way delay: 119.886 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 311.31 Mbit/s
95th percentile per-packet one-way delay: 107.892 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 272.18 Mbit/s
95th percentile per-packet one-way delay: 138.086 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 229.69 Mbit/s
95th percentile per-packet one-way delay: 109.174 ms
Loss rate: 1.81%
Run 4: Report of Copa — Data Link

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

Flow 1 ingress (mean 311.40 Mbit/s)  
Flow 1 egress (mean 311.31 Mbit/s)  
Flow 2 ingress (mean 272.53 Mbit/s)  
Flow 2 egress (mean 272.18 Mbit/s)  
Flow 3 ingress (mean 229.91 Mbit/s)  
Flow 3 egress (mean 229.69 Mbit/s)

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

Flow 1 (95th percentile 107.89 ms)  
Flow 2 (95th percentile 138.09 ms)  
Flow 3 (95th percentile 109.17 ms)
Run 5: Statistics of Copa

/home/ubuntu/pantheon/data/2018-11-02T21-46-GCE-Iowa-to-GCE-Sydney-5-runs-3-flows/copa_stats_run5.log does not exist
Run 5: Report of Copa — Data Link

Figure is missing

Figure is missing
Run 1: Statistics of TCP Cubic

Start at: 2018-11-02 21:57:13
End at: 2018-11-02 21:57:43
Local clock offset: -0.042 ms
Remote clock offset: 0.373 ms

# Below is generated by plot.py at 2018-11-03 01:03:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 754.58 Mbit/s
95th percentile per-packet one-way delay: 87.624 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 389.67 Mbit/s
95th percentile per-packet one-way delay: 87.633 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 379.64 Mbit/s
95th percentile per-packet one-way delay: 87.052 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 343.17 Mbit/s
95th percentile per-packet one-way delay: 89.904 ms
Loss rate: 2.08%
Run 1: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 389.81 Mbit/s) vs Flow 1 egress (mean 389.67 Mbit/s)
- Flow 2 ingress (mean 379.99 Mbit/s) vs Flow 2 egress (mean 379.64 Mbit/s)
- Flow 3 ingress (mean 344.57 Mbit/s) vs Flow 3 egress (mean 343.27 Mbit/s)

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

- Flow 1 (95th percentile 87.63 ms) vs Flow 2 (95th percentile 87.05 ms) vs Flow 3 (95th percentile 89.90 ms)
Run 2: Statistics of TCP Cubic

/home/ubuntu/pantheon/data/2018-11-02T21-46-GCE-Iowa-to-GCE-Sydney-5-runs-3-flows/cubic_stats_run2.log does not exist
Run 2: Report of TCP Cubic — Data Link

Figure is missing

Figure is missing
Run 3: Statistics of TCP Cubic

Start at: 2018-11-02 22:59:07
End at: 2018-11-02 22:59:37
Local clock offset: -0.206 ms
Remote clock offset: 0.075 ms

# Below is generated by plot.py at 2018-11-03 01:03:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 751.48 Mbit/s
95th percentile per-packet one-way delay: 88.016 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 389.62 Mbit/s
95th percentile per-packet one-way delay: 87.675 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 375.64 Mbit/s
95th percentile per-packet one-way delay: 88.300 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 343.92 Mbit/s
95th percentile per-packet one-way delay: 88.487 ms
Loss rate: 1.31%
Run 3: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 389.76 Mbit/s)
- Flow 1 egress (mean 389.62 Mbit/s)
- Flow 2 ingress (mean 376.87 Mbit/s)
- Flow 2 egress (mean 375.64 Mbit/s)
- Flow 3 ingress (mean 342.43 Mbit/s)
- Flow 3 egress (mean 343.92 Mbit/s)

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

- Flow 1 (95th percentile 87.67 ms)
- Flow 2 (95th percentile 88.30 ms)
- Flow 3 (95th percentile 88.49 ms)
Run 4: Statistics of TCP Cubic

Start at: 2018-11-02 23:29:53
End at: 2018-11-02 23:30:23
Local clock offset: 0.178 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2018-11-03 01:03:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 749.27 Mbit/s
95th percentile per-packet one-way delay: 88.874 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 387.73 Mbit/s
95th percentile per-packet one-way delay: 88.419 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 374.28 Mbit/s
95th percentile per-packet one-way delay: 89.631 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 343.90 Mbit/s
95th percentile per-packet one-way delay: 89.044 ms
Loss rate: 2.07%
Run 4: Report of TCP Cubic — Data Link

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

![Graph 2: Per-packet one-way delay vs Time](image2)
Run 5: Statistics of TCP Cubic

/home/ubuntu/pantheon/data/2018-11-02T21-46-GCE-Iowa-to-GCE-Sydney-5-runs-3-flows/cubic_stats_run5.log does not exist
Run 5: Report of TCP Cubic — Data Link

Figure is missing

Figure is missing
Run 1: Statistics of FillP

Start at: 2018-11-02 22:03:15
End at: 2018-11-02 22:03:45
Local clock offset: 0.553 ms
Remote clock offset: 0.435 ms

# Below is generated by plot.py at 2018-11-03 01:03:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 488.79 Mbit/s
95th percentile per-packet one-way delay: 96.111 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 192.02 Mbit/s
95th percentile per-packet one-way delay: 108.188 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 336.23 Mbit/s
95th percentile per-packet one-way delay: 88.526 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 228.09 Mbit/s
95th percentile per-packet one-way delay: 86.469 ms
Loss rate: 2.01%
Run 1: Report of FillP — Data Link

![Throughput Graph]

- **Flow 1 Ingress** (mean 190.40 Mbit/s)
- **Flow 1 Egress** (mean 192.02 Mbit/s)
- **Flow 2 Ingress** (mean 335.69 Mbit/s)
- **Flow 2 Egress** (mean 336.23 Mbit/s)
- **Flow 3 Ingress** (mean 229.06 Mbit/s)
- **Flow 3 Egress** (mean 228.09 Mbit/s)

![Packet Delay Graph]

- **Flow 1** (95th percentile 108.19 ms)
- **Flow 2** (95th percentile 88.53 ms)
- **Flow 3** (95th percentile 86.47 ms)

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Run 2: Statistics of FillP

/home/ubuntu/pantheon/data/2018-11-02T21-46-GCE-Iowa-to-GCE-Sydney-5-runs-3-flows/fillp_stats_run2.log does not exist
Run 2: Report of FillP — Data Link

Figure is missing

Figure is missing
Run 3: Statistics of FillP

Start at: 2018-11-02 23:04:32
End at: 2018-11-02 23:05:02
Local clock offset: 0.173 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-11-03 01:03:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 526.19 Mbit/s
95th percentile per-packet one-way delay: 89.661 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 203.81 Mbit/s
95th percentile per-packet one-way delay: 91.849 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 361.91 Mbit/s
95th percentile per-packet one-way delay: 88.882 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 250.91 Mbit/s
95th percentile per-packet one-way delay: 87.789 ms
Loss rate: 2.32%
Run 3: Report of FillP — Data Link

![Graph of Throughput vs. Time for different flows]

![Graph of Packet Delay vs. Time for different flows]

- Flow 1 ingress (mean 294.21 Mbit/s)
- Flow 1 egress (mean 203.81 Mbit/s)
- Flow 2 ingress (mean 362.68 Mbit/s)
- Flow 2 egress (mean 361.91 Mbit/s)
- Flow 3 ingress (mean 252.28 Mbit/s)
- Flow 3 egress (mean 250.01 Mbit/s)

- Flow 1 (95th percentile 91.85 ms)
- Flow 2 (95th percentile 88.88 ms)
- Flow 3 (95th percentile 87.79 ms)
Run 4: Statistics of FillP

Start at: 2018-11-02 23:36:03
End at: 2018-11-02 23:36:33
Local clock offset: -0.467 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2018-11-03 01:04:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 499.92 Mbit/s
95th percentile per-packet one-way delay: 92.961 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 183.96 Mbit/s
95th percentile per-packet one-way delay: 101.566 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 357.27 Mbit/s
95th percentile per-packet one-way delay: 90.601 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 241.88 Mbit/s
95th percentile per-packet one-way delay: 87.918 ms
Loss rate: 2.32%
Run 4: Report of FillP — Data Link

![Graph of Throughput and Packet Delay]

- **Flow 1 Ingress** (mean 182.64 Mbit/s)
- **Flow 1 Egress** (mean 183.96 Mbit/s)
- **Flow 2 Ingress** (mean 356.44 Mbit/s)
- **Flow 2 Egress** (mean 357.27 Mbit/s)
- **Flow 3 Ingress** (mean 243.83 Mbit/s)
- **Flow 3 Egress** (mean 241.88 Mbit/s)

![Graph of Packet Delay]

- **Flow 1** (95th percentile 101.57 ms)
- **Flow 2** (95th percentile 90.60 ms)
- **Flow 3** (95th percentile 87.92 ms)

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Run 5: Statistics of FillP

Start at: 2018-11-03 00:07:00
End at: 2018-11-03 00:07:30
Local clock offset: 0.37 ms
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2018-11-03 01:16:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 883.65 Mbit/s
95th percentile per-packet one-way delay: 132.193 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 551.11 Mbit/s
95th percentile per-packet one-way delay: 138.519 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 377.02 Mbit/s
95th percentile per-packet one-way delay: 92.609 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 251.75 Mbit/s
95th percentile per-packet one-way delay: 89.717 ms
Loss rate: 1.57%
Run 5: Report of FillP — Data Link

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

- Flow 1 ingress (mean 554.47 Mbps)
- Flow 1 egress (mean 551.11 Mbps)
- Flow 2 ingress (mean 376.55 Mbps)
- Flow 2 egress (mean 377.02 Mbps)
- Flow 3 ingress (mean 251.33 Mbps)
- Flow 3 egress (mean 251.75 Mbps)

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

- Flow 1 (95th percentile 138.52 ms)
- Flow 2 (95th percentile 92.61 ms)
- Flow 3 (95th percentile 89.72 ms)
Run 1: Statistics of Indigo

Start at: 2018-11-02 21:52:47
End at: 2018-11-02 21:53:17
Local clock offset: -0.209 ms
Remote clock offset: 0.379 ms

# Below is generated by plot.py at 2018-11-03 01:16:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 397.11 Mbit/s
95th percentile per-packet one-way delay: 86.978 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 204.86 Mbit/s
95th percentile per-packet one-way delay: 87.119 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 198.03 Mbit/s
95th percentile per-packet one-way delay: 86.878 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 170.07 Mbit/s
95th percentile per-packet one-way delay: 86.879 ms
Loss rate: 2.16%
Run 1: Report of Indigo — Data Link

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

Legend:
- Flow 1 ingress (mean 204.89 Mbit/s)
- Flow 1 egress (mean 204.86 Mbit/s)
- Flow 2 ingress (mean 198.17 Mbit/s)
- Flow 2 egress (mean 198.03 Mbit/s)
- Flow 3 ingress (mean 170.76 Mbit/s)
- Flow 3 egress (mean 170.07 Mbit/s)
Run 2: Statistics of Indigo

End at: 2018-11-02 22:24:19
Local clock offset: 0.451 ms
Remote clock offset: 0.087 ms

# Below is generated by plot.py at 2018-11-03 01:16:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 394.72 Mbit/s
95th percentile per-packet one-way delay: 88.532 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 211.79 Mbit/s
95th percentile per-packet one-way delay: 88.186 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 198.19 Mbit/s
95th percentile per-packet one-way delay: 88.731 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 162.60 Mbit/s
95th percentile per-packet one-way delay: 89.043 ms
Loss rate: 2.22%
Run 2: Report of Indigo — Data Link

[Graphs showing throughput and per-packet one-way delay over time for different data flows with mean rates and 95th percentile delay values listed for each flow.]

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Run 3: Statistics of Indigo

Start at: 2018-11-02 22:54:39
End at: 2018-11-02 22:55:09
Local clock offset: -0.396 ms
Remote clock offset: 0.07 ms

# Below is generated by plot.py at 2018-11-03 01:16:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.13 Mbit/s
95th percentile per-packet one-way delay: 87.622 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 203.70 Mbit/s
95th percentile per-packet one-way delay: 87.501 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 200.14 Mbit/s
95th percentile per-packet one-way delay: 87.819 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 175.46 Mbit/s
95th percentile per-packet one-way delay: 87.656 ms
Loss rate: 0.92%
Run 3: Report of Indigo — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 203.68 Mbps)
- Flow 1 egress (mean 203.70 Mbps)
- Flow 2 ingress (mean 200.15 Mbps)
- Flow 2 egress (mean 200.14 Mbps)
- Flow 3 ingress (mean 173.91 Mbps)
- Flow 3 egress (mean 175.46 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 87.50 ms)
- Flow 2 (95th percentile 87.82 ms)
- Flow 3 (95th percentile 87.66 ms)
Run 4: Statistics of Indigo

Start at: 2018-11-02 23:25:25
End at: 2018-11-02 23:25:55
Local clock offset: 0.324 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2018-11-03 01:18:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 392.06 Mbit/s
95th percentile per-packet one-way delay: 88.700 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 207.45 Mbit/s
95th percentile per-packet one-way delay: 88.402 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 200.90 Mbit/s
95th percentile per-packet one-way delay: 89.163 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 162.07 Mbit/s
95th percentile per-packet one-way delay: 88.435 ms
Loss rate: 2.19%
Run 4: Report of Indigo — Data Link

[Graphs showing throughput and packet delay over time for different flows, with annotations for mean throughput and 95th percentile delay.]
Run 5: Statistics of Indigo

Start at: 2018-11-02 23:57:31
End at: 2018-11-02 23:58:01
Local clock offset: -0.126 ms
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2018-11-03 01:18:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 382.56 Mbit/s
95th percentile per-packet one-way delay: 88.497 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 202.36 Mbit/s
95th percentile per-packet one-way delay: 88.001 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 196.25 Mbit/s
95th percentile per-packet one-way delay: 89.493 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 155.25 Mbit/s
95th percentile per-packet one-way delay: 88.171 ms
Loss rate: 2.12%
Run 5: Report of Indigo — Data Link

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

![Graph of Per-packet delay vs Time](image2.png)
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-02 22:06:13
End at: 2018-11-02 22:06:43
Local clock offset: 0.176 ms
Remote clock offset: 0.33 ms

# Below is generated by plot.py at 2018-11-03 01:18:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.88 Mbit/s
95th percentile per-packet one-way delay: 110.587 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 266.44 Mbit/s
95th percentile per-packet one-way delay: 107.955 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 257.15 Mbit/s
95th percentile per-packet one-way delay: 114.004 ms
Loss rate: 1.41%
-- Flow 3:
Average throughput: 217.97 Mbit/s
95th percentile per-packet one-way delay: 111.108 ms
Loss rate: 2.47%
Run 1: Report of Indigo-96d2da3 — Data Link

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

- **Throughput (Mbps)**
  - **Flow 1 ingress** (mean 267.51 Mbps)
  - **Flow 1 egress** (mean 266.44 Mbps)
  - **Flow 2 ingress** (mean 259.84 Mbps)
  - **Flow 2 egress** (mean 257.15 Mbps)
  - **Flow 3 ingress** (mean 219.57 Mbps)
  - **Flow 3 egress** (mean 217.97 Mbps)

- **Per-packet one-way delay (ms)**
  - **Flow 1 (95th percentile 107.95 ms)**
  - **Flow 2 (95th percentile 114.00 ms)**
  - **Flow 3 (95th percentile 111.11 ms)**
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-02 22:36:43
End at: 2018-11-02 22:37:13
Local clock offset: -0.148 ms
Remote clock offset: 0.151 ms

# Below is generated by plot.py at 2018-11-03 01:18:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.59 Mbit/s
95th percentile per-packet one-way delay: 111.136 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 265.66 Mbit/s
95th percentile per-packet one-way delay: 113.495 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 250.35 Mbit/s
95th percentile per-packet one-way delay: 109.919 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 216.33 Mbit/s
95th percentile per-packet one-way delay: 108.294 ms
Loss rate: 4.07%
Run 2: Report of Indigo-96d2da3 — Data Link

![Graph showing data link performance metrics for Run 2.]

- **Throughput (Mb/s):**
  - **Flow 1 ingress:** Mean 266.88 Mb/s
  - **Flow 1 egress:** Mean 265.66 Mb/s
  - **Flow 2 ingress:** Mean 248.53 Mb/s
  - **Flow 2 egress:** Mean 250.35 Mb/s
  - **Flow 3 ingress:** Mean 222.06 Mb/s
  - **Flow 3 egress:** Mean 216.33 Mb/s

- **Per-packet one-way delay (ms):**
  - **Flow 1 (95th percentile):** 113.50 ms
  - **Flow 2 (95th percentile):** 109.92 ms
  - **Flow 3 (95th percentile):** 108.29 ms
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-02 23:07:33
End at: 2018-11-02 23:08:03
Local clock offset: 0.051 ms
Remote clock offset: 0.13 ms

# Below is generated by plot.py at 2018-11-03 01:19:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 466.78 Mbit/s
  95th percentile per-packet one-way delay: 109.757 ms
  Loss rate: 1.17%
-- Flow 1:
  Average throughput: 239.35 Mbit/s
  95th percentile per-packet one-way delay: 109.593 ms
  Loss rate: 1.22%
-- Flow 2:
  Average throughput: 240.54 Mbit/s
  95th percentile per-packet one-way delay: 111.608 ms
  Loss rate: 0.86%
-- Flow 3:
  Average throughput: 210.05 Mbit/s
  95th percentile per-packet one-way delay: 106.234 ms
  Loss rate: 1.72%
Run 3: Report of Indigo-96d2da3 — Data Link

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

![Graph 2: Per-packet one-way delay vs. Time](image2.jpg)
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-02 23:39:03
End at: 2018-11-02 23:39:33
Local clock offset: 0.175 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2018-11-03 01:23:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 503.51 Mbit/s
95th percentile per-packet one-way delay: 113.574 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 248.16 Mbit/s
95th percentile per-packet one-way delay: 109.206 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 267.73 Mbit/s
95th percentile per-packet one-way delay: 114.898 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 240.65 Mbit/s
95th percentile per-packet one-way delay: 119.070 ms
Loss rate: 2.80%
Run 4: Report of Indigo-96d2da3 — Data Link
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-03 00:10:16
End at: 2018-11-03 00:10:46
Local clock offset: -0.113 ms
Remote clock offset: -0.053 ms

# Below is generated by plot.py at 2018-11-03 01:24:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 478.40 Mbit/s
95th percentile per-packet one-way delay: 111.373 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 250.20 Mbit/s
95th percentile per-packet one-way delay: 111.939 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 241.58 Mbit/s
95th percentile per-packet one-way delay: 110.688 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 209.85 Mbit/s
95th percentile per-packet one-way delay: 112.083 ms
Loss rate: 0.62%
Run 5: Report of Indigo-96d2da3 — Data Link

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

- **Flow 1 ingress (mean 251.23 Mbit/s)**
- **Flow 1 egress (mean 250.20 Mbit/s)**
- **Flow 2 ingress (mean 240.88 Mbit/s)**
- **Flow 2 egress (mean 241.58 Mbit/s)**
- **Flow 3 ingress (mean 207.49 Mbit/s)**
- **Flow 3 egress (mean 209.85 Mbit/s)**

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

- **Flow 1 (95th percentile 111.94 ms)**
- **Flow 2 (95th percentile 110.69 ms)**
- **Flow 3 (95th percentile 112.08 ms)**
Run 1: Statistics of LEDBAT

End at: 2018-11-02 21:56:26
Local clock offset: 0.084 ms
Remote clock offset: 0.384 ms

# Below is generated by plot.py at 2018-11-03 01:24:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.35 Mbit/s
95th percentile per-packet one-way delay: 86.513 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.53 Mbit/s
95th percentile per-packet one-way delay: 86.593 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 86.021 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.527 ms
Loss rate: 3.52%
Run 1: Report of LEDBAT — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 12.61 Mbps/s)
  - Flow 1 egress (mean 12.53 Mbps/s)
  - Flow 2 ingress (mean 8.38 Mbps/s)
  - Flow 2 egress (mean 8.31 Mbps/s)
  - Flow 3 ingress (mean 4.11 Mbps/s)
  - Flow 3 egress (mean 4.03 Mbps/s)

- **Packet One-Way Delay (ms)**
  - Flow 1 (95th percentile 86.59 ms)
  - Flow 2 (95th percentile 86.02 ms)
  - Flow 3 (95th percentile 86.53 ms)
Run 2: Statistics of LEDBAT

Start at: 2018-11-02 22:26:59
End at: 2018-11-02 22:27:29
Local clock offset: 0.09 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-11-03 01:24:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.29 Mbit/s
95th percentile per-packet one-way delay: 87.236 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 87.340 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.28 Mbit/s
95th percentile per-packet one-way delay: 86.801 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.04 Mbit/s
95th percentile per-packet one-way delay: 86.639 ms
Loss rate: 3.52%
Run 2: Report of LEDBAT — Data Link

**Throughput (Mbps)**

- Flow 1 ingress (mean 12.57 Mbps/s)
- Flow 1 egress (mean 12.50 Mbps/s)
- Flow 2 ingress (mean 8.36 Mbps/s)
- Flow 2 egress (mean 8.28 Mbps/s)
- Flow 3 ingress (mean 4.11 Mbps/s)
- Flow 3 egress (mean 4.04 Mbps/s)

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

- Flow 1 (95th percentile 87.34 ms)
- Flow 2 (95th percentile 86.80 ms)
- Flow 3 (95th percentile 86.64 ms)
Run 3: Statistics of LEDBAT

Start at: 2018-11-02 22:57:50
End at: 2018-11-02 22:58:20
Local clock offset: 0.195 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2018-11-03 01:24:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.36 Mbit/s
95th percentile per-packet one-way delay: 87.058 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 86.908 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 87.420 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 4.04 Mbit/s
95th percentile per-packet one-way delay: 86.740 ms
Loss rate: 3.52%
Run 3: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet round trip delay over time for different flows.](image)
Run 4: Statistics of LEDBAT

Start at: 2018-11-02 23:28:36
End at: 2018-11-02 23:29:06
Local clock offset: -0.303 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2018-11-03 01:24:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.35 Mbit/s
95th percentile per-packet one-way delay: 86.680 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 86.634 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 86.777 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.297 ms
Loss rate: 3.52%
Run 4: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 12.61 Mbit/s)
- Flow 1 egress (mean 12.54 Mbit/s)
- Flow 2 ingress (mean 8.37 Mbit/s)
- Flow 2 egress (mean 8.29 Mbit/s)
- Flow 3 ingress (mean 4.11 Mbit/s)
- Flow 3 egress (mean 4.03 Mbit/s)
Run 5: Statistics of LEDBAT

Start at: 2018-11-03 00:00:40
End at: 2018-11-03 00:01:10
Local clock offset: -0.157 ms
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2018-11-03 01:24:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 19.33 Mbit/s
  95th percentile per-packet one-way delay: 87.091 ms
  Loss rate: 1.48%
-- Flow 1:
  Average throughput: 12.53 Mbit/s
  95th percentile per-packet one-way delay: 87.349 ms
  Loss rate: 1.15%
-- Flow 2:
  Average throughput: 8.29 Mbit/s
  95th percentile per-packet one-way delay: 86.692 ms
  Loss rate: 1.74%
-- Flow 3:
  Average throughput: 4.02 Mbit/s
  95th percentile per-packet one-way delay: 86.743 ms
  Loss rate: 3.52%
Run 5: Report of LEDBAT — Data Link
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-02 22:07:56
End at: 2018-11-02 22:08:26
Local clock offset: 0.129 ms
Remote clock offset: 0.218 ms

# Below is generated by plot.py at 2018-11-03 01:36:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 974.25 Mbit/s
95th percentile per-packet one-way delay: 133.326 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 543.46 Mbit/s
95th percentile per-packet one-way delay: 134.126 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 461.31 Mbit/s
95th percentile per-packet one-way delay: 140.618 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 382.94 Mbit/s
95th percentile per-packet one-way delay: 119.908 ms
Loss rate: 2.55%
Run 1: Report of Indigo-Muses — Data Link
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-02 22:38:26
End at: 2018-11-02 22:38:56
Local clock offset: 0.323 ms
Remote clock offset: 0.105 ms

# Below is generated by plot.py at 2018-11-03 01:36:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 917.71 Mbit/s
95th percentile per-packet one-way delay: 138.054 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 522.15 Mbit/s
95th percentile per-packet one-way delay: 137.093 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 437.15 Mbit/s
95th percentile per-packet one-way delay: 145.782 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 325.54 Mbit/s
95th percentile per-packet one-way delay: 131.837 ms
Loss rate: 2.91%
Run 2: Report of Indigo-Muses — Data Link

![Throughput Graph]

![Per-packet one-way delay Graph]
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-02 23:09:13
End at: 2018-11-02 23:09:43
Local clock offset: -0.224 ms
Remote clock offset: 0.08 ms

# Below is generated by plot.py at 2018-11-03 01:37:15
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 994.50 Mbit/s
  95th percentile per-packet one-way delay: 131.830 ms
  Loss rate: 1.03%
-- Flow 1:
  Average throughput: 549.38 Mbit/s
  95th percentile per-packet one-way delay: 126.814 ms
  Loss rate: 0.78%
-- Flow 2:
  Average throughput: 466.17 Mbit/s
  95th percentile per-packet one-way delay: 132.859 ms
  Loss rate: 1.05%
-- Flow 3:
  Average throughput: 417.23 Mbit/s
  95th percentile per-packet one-way delay: 146.987 ms
  Loss rate: 2.00%
Run 3: Report of Indigo-Muses — Data Link

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

- Flow 1 ingress (mean 550.48 Mbit/s)
- Flow 1 egress (mean 549.38 Mbit/s)
- Flow 2 ingress (mean 497.00 Mbit/s)
- Flow 2 egress (mean 466.17 Mbit/s)
- Flow 3 ingress (mean 416.18 Mbit/s)
- Flow 3 egress (mean 417.23 Mbit/s)

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

- Flow 1 (95th percentile 126.81 ms)
- Flow 2 (95th percentile 132.86 ms)
- Flow 3 (95th percentile 146.99 ms)
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-02 23:40:46
End at: 2018-11-02 23:41:16
Local clock offset: 0.201 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2018-11-03 01:37:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 958.52 Mbit/s
95th percentile per-packet one-way delay: 138.446 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 549.97 Mbit/s
95th percentile per-packet one-way delay: 140.838 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 466.14 Mbit/s
95th percentile per-packet one-way delay: 132.167 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 306.93 Mbit/s
95th percentile per-packet one-way delay: 139.597 ms
Loss rate: 1.93%
Run 4: Report of Indigo-Muses — Data Link

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

Start at: 2018-11-03 00:11:57
End at: 2018-11-03 00:12:27
Local clock offset: 0.052 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-11-03 01:37:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 983.30 Mbit/s
95th percentile per-packet one-way delay: 135.741 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 558.12 Mbit/s
95th percentile per-packet one-way delay: 137.426 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 461.16 Mbit/s
95th percentile per-packet one-way delay: 136.411 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 364.70 Mbit/s
95th percentile per-packet one-way delay: 127.003 ms
Loss rate: 2.35%
Run 5: Report of Indigo-Muses — Data Link
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-02 22:11:17
End at: 2018-11-02 22:11:47
Local clock offset: -0.074 ms
Remote clock offset: 0.163 ms

# Below is generated by plot.py at 2018-11-03 01:41:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 570.91 Mbit/s
95th percentile per-packet one-way delay: 216.140 ms
Loss rate: 6.14%
-- Flow 1:
Average throughput: 321.94 Mbit/s
95th percentile per-packet one-way delay: 205.222 ms
Loss rate: 1.57%
-- Flow 2:
Average throughput: 291.30 Mbit/s
95th percentile per-packet one-way delay: 237.764 ms
Loss rate: 13.69%
-- Flow 3:
Average throughput: 171.80 Mbit/s
95th percentile per-packet one-way delay: 100.515 ms
Loss rate: 2.80%
Run 1: Report of PCC-Allegro — Data Link
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-02 22:41:52
End at: 2018-11-02 22:42:22
Local clock offset: 0.451 ms
Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2018-11-03 01:46:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 595.29 Mbit/s
95th percentile per-packet one-way delay: 186.868 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 337.76 Mbit/s
95th percentile per-packet one-way delay: 191.428 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 274.43 Mbit/s
95th percentile per-packet one-way delay: 143.617 ms
Loss rate: 1.48%
-- Flow 3:
Average throughput: 232.68 Mbit/s
95th percentile per-packet one-way delay: 197.882 ms
Loss rate: 2.81%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-02 23:12:37
End at: 2018-11-02 23:13:07
Local clock offset: 0.006 ms
Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2018-11-03 01:47:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 626.67 Mbit/s
95th percentile per-packet one-way delay: 171.852 ms
Loss rate: 2.20%
-- Flow 1:
Average throughput: 333.95 Mbit/s
95th percentile per-packet one-way delay: 197.866 ms
Loss rate: 2.76%
-- Flow 2:
Average throughput: 326.63 Mbit/s
95th percentile per-packet one-way delay: 145.081 ms
Loss rate: 1.38%
-- Flow 3:
Average throughput: 233.95 Mbit/s
95th percentile per-packet one-way delay: 161.622 ms
Loss rate: 2.01%
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-02 23:44:09
End at: 2018-11-02 23:44:39
Local clock offset: 0.421 ms
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2018-11-03 02:03:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 687.35 Mbit/s
95th percentile per-packet one-way delay: 234.482 ms
Loss rate: 6.71%
-- Flow 1:
Average throughput: 344.38 Mbit/s
95th percentile per-packet one-way delay: 248.307 ms
Loss rate: 4.86%
-- Flow 2:
Average throughput: 386.22 Mbit/s
95th percentile per-packet one-way delay: 213.969 ms
Loss rate: 9.90%
-- Flow 3:
Average throughput: 267.62 Mbit/s
95th percentile per-packet one-way delay: 172.997 ms
Loss rate: 4.05%
Run 4: Report of PCC-Allegro — Data Link

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

- **Flow 1** (ingress: mean 359.88 Mbit/s, egress: mean 344.38 Mbit/s)
- **Flow 2** (ingress: mean 426.06 Mbit/s, egress: mean 386.22 Mbit/s)
- **Flow 3** (ingress: mean 273.97 Mbit/s, egress: mean 267.62 Mbit/s)

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

- **Flow 1** (95th percentile: 248.31 ms)
- **Flow 2** (95th percentile: 213.97 ms)
- **Flow 3** (95th percentile: 173.00 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-03 00:15:21
End at: 2018-11-03 00:15:51
Local clock offset: -0.382 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-11-03 02:03:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 646.38 Mbit/s
  95th percentile per-packet one-way delay: 206.609 ms
  Loss rate: 2.67%
  -- Flow 1:
  Average throughput: 350.13 Mbit/s
  95th percentile per-packet one-way delay: 202.866 ms
  Loss rate: 1.78%
  -- Flow 2:
  Average throughput: 326.66 Mbit/s
  95th percentile per-packet one-way delay: 242.492 ms
  Loss rate: 4.11%
  -- Flow 3:
  Average throughput: 245.24 Mbit/s
  95th percentile per-packet one-way delay: 175.624 ms
  Loss rate: 2.57%
Run 5: Report of PCC-Allegro — Data Link
Run 1: Statistics of PCC-Expr

Local clock offset: 0.033 ms
Remote clock offset: 0.143 ms

# Below is generated by plot.py at 2018-11-03 02:03:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 463.51 Mbit/s
95th percentile per-packet one-way delay: 119.724 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 273.04 Mbit/s
95th percentile per-packet one-way delay: 125.370 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 205.37 Mbit/s
95th percentile per-packet one-way delay: 123.133 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 166.55 Mbit/s
95th percentile per-packet one-way delay: 107.418 ms
Loss rate: 2.28%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

End at: 2018-11-02 22:44:25
Local clock offset: 0.043 ms
Remote clock offset: 0.113 ms

# Below is generated by plot.py at 2018-11-03 02:03:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.90 Mbit/s
95th percentile per-packet one-way delay: 192.644 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 277.81 Mbit/s
95th percentile per-packet one-way delay: 125.566 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 234.55 Mbit/s
95th percentile per-packet one-way delay: 211.181 ms
Loss rate: 6.00%
-- Flow 3:
Average throughput: 176.63 Mbit/s
95th percentile per-packet one-way delay: 91.115 ms
Loss rate: 2.26%
Run 2: Report of PCC-Expr — Data Link

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

- **Flow 1** (ingress mean 279.05 Mbit/s, egress mean 277.81 Mbit/s)
- **Flow 2** (ingress mean 247.36 Mbit/s, egress mean 234.55 Mbit/s)
- **Flow 3** (ingress mean 177.55 Mbit/s, egress mean 176.63 Mbit/s)

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

- **Flow 1** (95th percentile 125.57 ms)
- **Flow 2** (95th percentile 211.18 ms)
- **Flow 3** (95th percentile 91.11 ms)
Run 3: Statistics of PCC-Expr

Start at: 2018-11-02 23:14:37
End at: 2018-11-02 23:15:07
Local clock offset: -0.015 ms
Remote clock offset: 0.054 ms

# Below is generated by plot.py at 2018-11-03 02:03:22
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 513.06 Mbit/s
   95th percentile per-packet one-way delay: 198.390 ms
   Loss rate: 2.97%
-- Flow 1:
   Average throughput: 277.47 Mbit/s
   95th percentile per-packet one-way delay: 187.922 ms
   Loss rate: 2.00%
-- Flow 2:
   Average throughput: 231.90 Mbit/s
   95th percentile per-packet one-way delay: 154.106 ms
   Loss rate: 0.95%
-- Flow 3:
   Average throughput: 250.77 Mbit/s
   95th percentile per-packet one-way delay: 207.126 ms
   Loss rate: 9.48%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2018-11-02 23:46:14
End at: 2018-11-02 23:46:44
Local clock offset: 0.4 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2018-11-03 02:03:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 520.39 Mbit/s
95th percentile per-packet one-way delay: 200.234 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 309.49 Mbit/s
95th percentile per-packet one-way delay: 184.959 ms
Loss rate: 1.34%
-- Flow 2:
Average throughput: 235.65 Mbit/s
95th percentile per-packet one-way delay: 207.200 ms
Loss rate: 2.09%
-- Flow 3:
Average throughput: 167.61 Mbit/s
95th percentile per-packet one-way delay: 135.501 ms
Loss rate: 2.12%
Run 5: Statistics of PCC-Expr

Start at: 2018-11-03 00:17:22
End at: 2018-11-03 00:17:52
Local clock offset: -0.192 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 489.38 Mbit/s
  95th percentile per-packet one-way delay: 158.077 ms
  Loss rate: 1.19%
-- Flow 1:
  Average throughput: 292.40 Mbit/s
  95th percentile per-packet one-way delay: 127.055 ms
  Loss rate: 1.08%
-- Flow 2:
  Average throughput: 215.86 Mbit/s
  95th percentile per-packet one-way delay: 182.699 ms
  Loss rate: 1.02%
-- Flow 3:
  Average throughput: 165.21 Mbit/s
  95th percentile per-packet one-way delay: 110.204 ms
  Loss rate: 2.22%
Run 5: Report of PCC-Expr — Data Link

Throughput (Mbit/s)

Time (s)

- Flow 1 ingress (mean 293.88 Mbit/s)
- Flow 1 egress (mean 292.40 Mbit/s)
- Flow 2 ingress (mean 216.19 Mbit/s)
- Flow 2 egress (mean 215.86 Mbit/s)
- Flow 3 ingress (mean 166.02 Mbit/s)
- Flow 3 egress (mean 165.21 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

- Flow 1 (95th percentile 127.06 ms)
- Flow 2 (95th percentile 182.70 ms)
- Flow 3 (95th percentile 110.20 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-02 22:04:52
End at: 2018-11-02 22:05:22
Local clock offset: 0.171 ms
Remote clock offset: 0.339 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.46 Mbit/s
95th percentile per-packet one-way delay: 86.200 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 51.22 Mbit/s
95th percentile per-packet one-way delay: 86.224 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 51.62 Mbit/s
95th percentile per-packet one-way delay: 85.759 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 28.23 Mbit/s
95th percentile per-packet one-way delay: 86.198 ms
Loss rate: 4.47%
Run 1: Report of QUIC Cubic — Data Link

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

- **Throughput (Mb/s)**
  - Flow 1 ingress (mean 51.41 Mb/s)
  - Flow 1 egress (mean 51.22 Mb/s)
  - Flow 2 ingress (mean 51.79 Mb/s)
  - Flow 2 egress (mean 51.62 Mb/s)
  - Flow 3 ingress (mean 29.04 Mb/s)
  - Flow 3 egress (mean 28.23 Mb/s)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 86.22 ms)
  - Flow 2 (95th percentile 85.76 ms)
  - Flow 3 (95th percentile 86.20 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-02 22:35:23
End at: 2018-11-02 22:35:53
Local clock offset: -0.335 ms
Remote clock offset: 0.114 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.06 Mbit/s
95th percentile per-packet one-way delay: 85.846 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 54.25 Mbit/s
95th percentile per-packet one-way delay: 85.536 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 31.06 Mbit/s
95th percentile per-packet one-way delay: 85.944 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 31.24 Mbit/s
95th percentile per-packet one-way delay: 85.523 ms
Loss rate: 2.47%
Run 2: Report of QUIC Cubic — Data Link

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

Legend:
- Flow 1 ingress (mean 54.40 Mbit/s)
- Flow 1 egress (mean 54.25 Mbit/s)
- Flow 2 ingress (mean 30.98 Mbit/s)
- Flow 2 egress (mean 31.06 Mbit/s)
- Flow 3 ingress (mean 31.70 Mbit/s)
- Flow 3 egress (mean 31.24 Mbit/s)
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-02 23:06:12
End at: 2018-11-02 23:06:42
Local clock offset: 0.395 ms
Remote clock offset: 0.123 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.98 Mbit/s
95th percentile per-packet one-way delay: 86.581 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 51.37 Mbit/s
95th percentile per-packet one-way delay: 86.607 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 40.04 Mbit/s
95th percentile per-packet one-way delay: 86.252 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 33.90 Mbit/s
95th percentile per-packet one-way delay: 86.234 ms
Loss rate: 0.00%
Run 3: Report of QUIC Cubic — Data Link

![Graph showing throughput and packet size distribution over time with legends for different flows.]

- Flow 1 ingress (mean 51.50 Mbit/s)
- Flow 1 egress (mean 51.37 Mbit/s)
- Flow 2 ingress (mean 40.36 Mbit/s)
- Flow 2 egress (mean 40.04 Mbit/s)
- Flow 3 ingress (mean 33.61 Mbit/s)
- Flow 3 egress (mean 33.90 Mbit/s)

![Graph showing packet size distribution over time with markers for different flows.]

- Flow 1 (95th percentile 86.61 ms)
- Flow 2 (95th percentile 86.25 ms)
- Flow 3 (95th percentile 86.23 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-02 23:37:42
End at: 2018-11-02 23:38:12
Local clock offset: 0.203 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.07 Mbit/s
95th percentile per-packet one-way delay: 86.181 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 62.05 Mbit/s
95th percentile per-packet one-way delay: 86.192 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 86.154 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 23.33 Mbit/s
95th percentile per-packet one-way delay: 86.157 ms
Loss rate: 0.83%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-03 00:08:55
End at: 2018-11-03 00:09:25
Local clock offset: 0.268 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.90 Mbit/s
95th percentile per-packet one-way delay: 86.538 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 53.21 Mbit/s
95th percentile per-packet one-way delay: 86.272 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 37.08 Mbit/s
95th percentile per-packet one-way delay: 86.351 ms
Loss rate: 1.84%
-- Flow 3:
Average throughput: 34.66 Mbit/s
95th percentile per-packet one-way delay: 86.604 ms
Loss rate: 0.00%
Run 5: Report of QUIC Cubic — Data Link

![Graphs showing network performance metrics over time.]
Run 1: Statistics of SCReAM

Start at: 2018-11-02 22:16:48
End at: 2018-11-02 22:17:18
Local clock offset: 0.215 ms
Remote clock offset: 0.103 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.579 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.608 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.191 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.220 ms
Loss rate: 1.85%
Run 1: Report of SCReAM — Data Link
Run 2: Statistics of SCReAM

Start at: 2018-11-02 22:47:38
End at: 2018-11-02 22:48:08
Local clock offset: 0.017 ms
Remote clock offset: 0.096 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
    Average throughput: 0.44 Mbit/s
    95th percentile per-packet one-way delay: 86.049 ms
    Loss rate: 0.84%
-- Flow 1:
    Average throughput: 0.22 Mbit/s
    95th percentile per-packet one-way delay: 85.980 ms
    Loss rate: 0.51%
-- Flow 2:
    Average throughput: 0.22 Mbit/s
    95th percentile per-packet one-way delay: 85.951 ms
    Loss rate: 0.82%
-- Flow 3:
    Average throughput: 0.22 Mbit/s
    95th percentile per-packet one-way delay: 86.106 ms
    Loss rate: 1.85%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2018-11-02 23:18:27
End at: 2018-11-02 23:18:57
Local clock offset: -0.397 ms
Remote clock offset: 0.044 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 85.650 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 85.673 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 85.569 ms
  Loss rate: 1.04%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 85.565 ms
  Loss rate: 1.85%
Run 3: Report of SCReAM — Data Link

![Graph of Throughput versus Time](image1)

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

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

- Flow 1 (95th percentile 85.67 ms)
- Flow 2 (95th percentile 85.57 ms)
- Flow 3 (95th percentile 85.56 ms)
Run 4: Statistics of SCReAM

/home/ubuntu/pantheon/data/2018-11-02T21-46-GCE-Iowa-to-GCE-Sydney-5-runs-3-flows/scream_stat...
Run 4: Report of SCReAM — Data Link

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Run 5: Statistics of SCReAM

Start at: 2018-11-03 00:20:59
End at: 2018-11-03 00:21:29
Local clock offset: -0.388 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 86.157 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 86.177 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 85.835 ms
  Loss rate: 1.04%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 85.795 ms
  Loss rate: 1.85%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2018-11-02 21:54:40
End at: 2018-11-02 21:55:10
Local clock offset: -0.201 ms
Remote clock offset: 0.36 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 8.43 Mbit/s
  95th percentile per-packet one-way delay: 86.371 ms
  Loss rate: 1.06%
-- Flow 1:
  Average throughput: 4.46 Mbit/s
  95th percentile per-packet one-way delay: 85.989 ms
  Loss rate: 0.76%
-- Flow 2:
  Average throughput: 4.24 Mbit/s
  95th percentile per-packet one-way delay: 86.526 ms
  Loss rate: 1.08%
-- Flow 3:
  Average throughput: 3.55 Mbit/s
  95th percentile per-packet one-way delay: 86.377 ms
  Loss rate: 2.12%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2018-11-02 22:25:43
End at: 2018-11-02 22:26:13
Local clock offset: 0.101 ms
Remote clock offset: 0.099 ms

# Below is generated by plot.py at 2018-11-03 02:05:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 7.32 Mbit/s
  95th percentile per-packet one-way delay: 86.782 ms
  Loss rate: 1.13%
-- Flow 1:
  Average throughput: 3.76 Mbit/s
  95th percentile per-packet one-way delay: 86.614 ms
  Loss rate: 0.57%
-- Flow 2:
  Average throughput: 4.02 Mbit/s
  95th percentile per-packet one-way delay: 86.943 ms
  Loss rate: 1.28%
-- Flow 3:
  Average throughput: 2.76 Mbit/s
  95th percentile per-packet one-way delay: 86.488 ms
  Loss rate: 2.97%
Run 2: Report of Sprout — Data Link

[Graph showing throughput over time with different flows and their respective ingress and egress speeds.]
Run 3: Statistics of Sprout

Start at: 2018-11-02 22:56:34
End at: 2018-11-02 22:57:04
Local clock offset: 0.184 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-11-03 02:05:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 8.84 Mbit/s
  95th percentile per-packet one-way delay: 86.949 ms
  Loss rate: 1.10%
-- Flow 1:
  Average throughput: 4.60 Mbit/s
  95th percentile per-packet one-way delay: 86.624 ms
  Loss rate: 0.71%
-- Flow 2:
  Average throughput: 4.58 Mbit/s
  95th percentile per-packet one-way delay: 87.125 ms
  Loss rate: 1.00%
-- Flow 3:
  Average throughput: 3.71 Mbit/s
  95th percentile per-packet one-way delay: 86.975 ms
  Loss rate: 2.77%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2018-11-02 23:27:20
End at: 2018-11-02 23:27:50
Local clock offset: -0.048 ms
Remote clock offset: 0.02 ms

# Below is generated by plot.py at 2018-11-03 02:05:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 86.858 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 86.717 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 86.880 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 2.90 Mbit/s
95th percentile per-packet one-way delay: 87.161 ms
Loss rate: 3.56%
Run 4: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 3.99 Mbit/s)
- Flow 1 egress (mean 3.98 Mbit/s)
- Flow 2 ingress (mean 4.33 Mbit/s)
- Flow 2 egress (mean 4.31 Mbit/s)
- Flow 3 ingress (mean 2.95 Mbit/s)
- Flow 3 egress (mean 2.90 Mbit/s)

[Graph showing per-packet one-way delay]

- Flow 1 (95th percentile 86.62 ms)
- Flow 2 (95th percentile 86.88 ms)
- Flow 3 (95th percentile 87.16 ms)
Run 5: Statistics of Sprout

Start at: 2018-11-02 23:59:25
End at: 2018-11-02 23:59:55
Local clock offset: -0.156 ms
Remote clock offset: -0.076 ms

# Below is generated by plot.py at 2018-11-03 02:05:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.92 Mbit/s
95th percentile per-packet one-way delay: 86.540 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 4.72 Mbit/s
95th percentile per-packet one-way delay: 86.562 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 86.532 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 86.454 ms
Loss rate: 2.89%
Run 5: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 4.72 Mbps)
- Flow 1 egress (mean 4.72 Mbps)
- Flow 2 ingress (mean 4.56 Mbps)
- Flow 2 egress (mean 4.57 Mbps)
- Flow 3 ingress (mean 3.62 Mbps)
- Flow 3 egress (mean 3.58 Mbps)

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

- Flow 1 (95th percentile 86.56 ms)
- Flow 2 (95th percentile 86.53 ms)
- Flow 3 (95th percentile 86.45 ms)
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-02 21:48:56
End at: 2018-11-02 21:49:26
Local clock offset: 0.579 ms
Remote clock offset: 0.335 ms

# Below is generated by plot.py at 2018-11-03 02:13:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 420.24 Mbit/s
95th percentile per-packet one-way delay: 86.773 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 217.05 Mbit/s
95th percentile per-packet one-way delay: 86.637 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 203.25 Mbit/s
95th percentile per-packet one-way delay: 86.909 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 207.63 Mbit/s
95th percentile per-packet one-way delay: 86.886 ms
Loss rate: 1.86%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2018-11-02 22:19:56
End at: 2018-11-02 22:20:26
Local clock offset: -0.39 ms
Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2018-11-03 02:14:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 422.16 Mbit/s
95th percentile per-packet one-way delay: 86.324 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 217.21 Mbit/s
95th percentile per-packet one-way delay: 86.334 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 212.28 Mbit/s
95th percentile per-packet one-way delay: 85.894 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 195.10 Mbit/s
95th percentile per-packet one-way delay: 87.643 ms
Loss rate: 2.03%
Run 2: Report of TaoVA-100x — Data Link

![Graphs showing throughput and packet delivery delay over time.](image-url)
Run 3: Statistics of TaoVA-100x

Start at: 2018-11-02 22:50:46
End at: 2018-11-02 22:51:16
Local clock offset: 0.001 ms
Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2018-11-03 02:14:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 428.03 Mbit/s
95th percentile per-packet one-way delay: 86.588 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 224.43 Mbit/s
95th percentile per-packet one-way delay: 86.148 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 205.12 Mbit/s
95th percentile per-packet one-way delay: 86.767 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 205.09 Mbit/s
95th percentile per-packet one-way delay: 86.938 ms
Loss rate: 1.80%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2018-11-02 23:21:31
End at: 2018-11-02 23:22:01
Local clock offset: -0.447 ms
Remote clock offset: 0.025 ms

# Below is generated by plot.py at 2018-11-03 02:15:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 421.13 Mbit/s
95th percentile per-packet one-way delay: 86.008 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 220.22 Mbit/s
95th percentile per-packet one-way delay: 85.788 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 197.62 Mbit/s
95th percentile per-packet one-way delay: 86.221 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 212.10 Mbit/s
95th percentile per-packet one-way delay: 85.877 ms
Loss rate: 1.90%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2018-11-02 23:53:36
End at: 2018-11-02 23:54:06
Local clock offset: -0.477 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-11-03 02:19:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 436.86 Mbit/s
95th percentile per-packet one-way delay: 85.994 ms
Loss rate: 0.99%

-- Flow 1:
Average throughput: 221.44 Mbit/s
95th percentile per-packet one-way delay: 85.870 ms
Loss rate: 0.62%

-- Flow 2:
Average throughput: 218.52 Mbit/s
95th percentile per-packet one-way delay: 86.030 ms
Loss rate: 1.01%

-- Flow 3:
Average throughput: 214.02 Mbit/s
95th percentile per-packet one-way delay: 86.335 ms
Loss rate: 2.07%
Run 5: Report of TaoVA-100x — Data Link

[Graph showing throughput and packet delay over time for different flows.]
Run 1: Statistics of TCP Vegas

Start at: 2018-11-02 21:59:09
End at: 2018-11-02 21:59:39
Local clock offset: 0.089 ms
Remote clock offset: 0.393 ms

# Below is generated by plot.py at 2018-11-03 02:19:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 740.52 Mbit/s
95th percentile per-packet one-way delay: 91.337 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 382.28 Mbit/s
95th percentile per-packet one-way delay: 88.684 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 369.34 Mbit/s
95th percentile per-packet one-way delay: 95.809 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 343.64 Mbit/s
95th percentile per-packet one-way delay: 89.917 ms
Loss rate: 2.07%
Run 1: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 382.23 Mbit/s)
- Flow 1 egress (mean 382.28 Mbit/s)
- Flow 2 ingress (mean 369.73 Mbit/s)
- Flow 2 egress (mean 369.34 Mbit/s)
- Flow 3 ingress (mean 344.86 Mbit/s)
- Flow 3 egress (mean 343.64 Mbit/s)
Run 2: Statistics of TCP Vegas

Start at: 2018-11-02 22:29:49
End at: 2018-11-02 22:30:19
Local clock offset: 0.02 ms
Remote clock offset: 0.062 ms

# Below is generated by plot.py at 2018-11-03 02:19:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 721.14 Mbit/s
  95th percentile per-packet one-way delay: 89.094 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 385.94 Mbit/s
  95th percentile per-packet one-way delay: 88.854 ms
  Loss rate: 0.62%
-- Flow 2:
  Average throughput: 355.68 Mbit/s
  95th percentile per-packet one-way delay: 89.267 ms
  Loss rate: 0.83%
-- Flow 3:
  Average throughput: 301.15 Mbit/s
  95th percentile per-packet one-way delay: 90.306 ms
  Loss rate: 1.95%
Run 3: Statistics of TCP Vegas

Start at: 2018-11-02 23:01:03
End at: 2018-11-02 23:01:33
Local clock offset: 0.201 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2018-11-03 02:22:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 745.27 Mbit/s
95th percentile per-packet one-way delay: 90.966 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 386.49 Mbit/s
95th percentile per-packet one-way delay: 89.462 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 375.30 Mbit/s
95th percentile per-packet one-way delay: 92.572 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 333.60 Mbit/s
95th percentile per-packet one-way delay: 93.013 ms
Loss rate: 2.14%
Run 3: Report of TCP Vegas — Data Link

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

Flow 1 ingress (mean 386.63 Mbit/s)  
Flow 1 egress (mean 386.49 Mbit/s)  
Flow 2 ingress (mean 375.64 Mbit/s)  
Flow 2 egress (mean 375.50 Mbit/s)  
Flow 3 ingress (mean 335.00 Mbit/s)  
Flow 3 egress (mean 333.60 Mbit/s)

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

Flow 1 (95th percentile 89.46 ms)  
Flow 2 (95th percentile 92.57 ms)  
Flow 3 (95th percentile 93.01 ms)
Run 4: Statistics of TCP Vegas

End at: 2018-11-02 23:32:23
Local clock offset: -0.081 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2018-11-03 02:29:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 745.87 Mbit/s
95th percentile per-packet one-way delay: 90.457 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 383.81 Mbit/s
95th percentile per-packet one-way delay: 90.198 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 375.80 Mbit/s
95th percentile per-packet one-way delay: 89.736 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 342.20 Mbit/s
95th percentile per-packet one-way delay: 93.461 ms
Loss rate: 2.08%
Run 4: Report of TCP Vegas — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 383.98 Mbit/s)  Flow 1 egress (mean 383.81 Mbit/s)
Flow 2 ingress (mean 376.14 Mbit/s)  Flow 2 egress (mean 375.86 Mbit/s)
Flow 3 ingress (mean 343.43 Mbit/s)  Flow 3 egress (mean 342.20 Mbit/s)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 90.20 ms)  Flow 2 (95th percentile 89.74 ms)  Flow 3 (95th percentile 93.46 ms)
Run 5: Statistics of TCP Vegas

Start at: 2018-11-03 00:03:30
End at: 2018-11-03 00:04:00
Local clock offset: 0.232 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2018-11-03 02:29:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 744.26 Mbit/s
95th percentile per-packet one-way delay: 90.828 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 386.44 Mbit/s
95th percentile per-packet one-way delay: 89.454 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 368.52 Mbit/s
95th percentile per-packet one-way delay: 93.237 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 344.16 Mbit/s
95th percentile per-packet one-way delay: 90.065 ms
Loss rate: 2.07%
Run 5: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 386.58 Mbit/s)
- Flow 1 egress (mean 386.44 Mbit/s)
- Flow 2 ingress (mean 368.90 Mbit/s)
- Flow 2 egress (mean 368.52 Mbit/s)
- Flow 3 ingress (mean 345.37 Mbit/s)
- Flow 3 egress (mean 344.16 Mbit/s)
Run 1: Statistics of Verus

End at: 2018-11-02 22:15:43
Local clock offset: -0.084 ms
Remote clock offset: 0.139 ms

# Below is generated by plot.py at 2018-11-03 02:29:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 184.80 Mbit/s
95th percentile per-packet one-way delay: 112.659 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 123.34 Mbit/s
95th percentile per-packet one-way delay: 119.279 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 51.64 Mbit/s
95th percentile per-packet one-way delay: 90.795 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 84.37 Mbit/s
95th percentile per-packet one-way delay: 101.524 ms
Loss rate: 3.92%
Run 1: Report of Verus — Data Link

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

- Flow 1 ingress (mean 123.33 Mbit/s)
- Flow 1 egress (mean 123.34 Mbit/s)
- Flow 2 ingress (mean 51.41 Mbit/s)
- Flow 2 egress (mean 51.64 Mbit/s)
- Flow 3 ingress (mean 86.89 Mbit/s)
- Flow 3 egress (mean 84.37 Mbit/s)

- Flow 1 (95th percentile 119.28 ms)
- Flow 2 (95th percentile 90.80 ms)
- Flow 3 (95th percentile 101.52 ms)
Run 2: Statistics of Verus

Start at: 2018-11-02 22:45:58
Local clock offset: 0.276 ms
Remote clock offset: 0.083 ms

# Below is generated by plot.py at 2018-11-03 02:29:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 206.51 Mbit/s
95th percentile per-packet one-way delay: 176.580 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 82.44 Mbit/s
95th percentile per-packet one-way delay: 136.698 ms
Loss rate: 2.74%
-- Flow 2:
Average throughput: 139.67 Mbit/s
95th percentile per-packet one-way delay: 178.967 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 192.110 ms
Loss rate: 4.72%
Run 2: Report of Verus — Data Link
Run 3: Statistics of Verus

Start at: 2018-11-02 23:16:46
End at: 2018-11-02 23:17:16
Local clock offset: 0.039 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2018-11-03 02:29:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 196.95 Mbit/s
95th percentile per-packet one-way delay: 184.975 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 112.34 Mbit/s
95th percentile per-packet one-way delay: 124.197 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 58.36 Mbit/s
95th percentile per-packet one-way delay: 128.016 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 140.82 Mbit/s
95th percentile per-packet one-way delay: 235.326 ms
Loss rate: 0.87%
Run 3: Report of Verus — Data Link
Run 4: Statistics of Verus

End at: 2018-11-02 23:48:50
Local clock offset: -0.224 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2018-11-03 02:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 282.96 Mbit/s
95th percentile per-packet one-way delay: 200.783 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 143.39 Mbit/s
95th percentile per-packet one-way delay: 177.416 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 173.07 Mbit/s
95th percentile per-packet one-way delay: 215.287 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 75.25 Mbit/s
95th percentile per-packet one-way delay: 107.051 ms
Loss rate: 4.24%
Run 4: Report of Verus — Data Link

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

- **Flow 1 ingress (mean 144.23 Mbit/s)**
- **Flow 1 egress (mean 143.39 Mbit/s)**
- **Flow 2 ingress (mean 176.04 Mbit/s)**
- **Flow 2 egress (mean 173.07 Mbit/s)**
- **Flow 3 ingress (mean 77.32 Mbit/s)**
- **Flow 3 egress (mean 75.25 Mbit/s)**

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

- **Flow 1 (95th percentile 177.42 ms)**
- **Flow 2 (95th percentile 215.29 ms)**
- **Flow 3 (95th percentile 107.05 ms)**
Run 5: Statistics of Verus

Start at: 2018-11-03 00:19:25
End at: 2018-11-03 00:19:55
Local clock offset: 0.098 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-11-03 02:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 175.02 Mbit/s
95th percentile per-packet one-way delay: 183.616 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 100.59 Mbit/s
95th percentile per-packet one-way delay: 150.528 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 66.35 Mbit/s
95th percentile per-packet one-way delay: 103.244 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 95.13 Mbit/s
95th percentile per-packet one-way delay: 233.850 ms
Loss rate: 1.56%
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-02 21:47:07
End at: 2018-11-02 21:47:37
Local clock offset: 0.595 ms
Remote clock offset: 0.345 ms

# Below is generated by plot.py at 2018-11-03 02:31:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 465.89 Mbit/s
  95th percentile per-packet one-way delay: 93.233 ms
  Loss rate: 0.95%
-- Flow 1:
  Average throughput: 285.30 Mbit/s
  95th percentile per-packet one-way delay: 90.208 ms
  Loss rate: 0.67%
-- Flow 2:
  Average throughput: 195.89 Mbit/s
  95th percentile per-packet one-way delay: 94.353 ms
  Loss rate: 1.04%
-- Flow 3:
  Average throughput: 155.82 Mbit/s
  95th percentile per-packet one-way delay: 163.250 ms
  Loss rate: 2.23%
Run 1: Report of PCC-Vivace — Data Link

![Data Link Throughput Chart]

- **Flow 1** ingress (mean 285.56 Mbit/s)
- **Flow 1** egress (mean 285.50 Mbit/s)
- **Flow 2** ingress (mean 196.23 Mbit/s)
- **Flow 2** egress (mean 195.89 Mbit/s)
- **Flow 3** ingress (mean 156.57 Mbit/s)
- **Flow 3** egress (mean 155.82 Mbit/s)

![Data Link Latency Chart]

- **Flow 1** (95th percentile 90.21 ms)
- **Flow 2** (95th percentile 94.35 ms)
- **Flow 3** (95th percentile 163.25 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-02 22:18:02
End at: 2018-11-02 22:18:32
Local clock offset: 0.194 ms
Remote clock offset: 0.116 ms

# Below is generated by plot.py at 2018-11-03 02:32:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 514.43 Mbit/s
95th percentile per-packet one-way delay: 128.540 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 335.78 Mbit/s
95th percentile per-packet one-way delay: 143.435 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 197.45 Mbit/s
95th percentile per-packet one-way delay: 106.377 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 146.28 Mbit/s
95th percentile per-packet one-way delay: 88.530 ms
Loss rate: 2.63%
Run 2: Report of PCC-Vivace — Data Link

![Throughput Graph](image)

- **Throughput (Mbps):**
  - **Flow 1 ingress** (mean 336.11 Mbit/s)
  - **Flow 1 egress** (mean 335.78 Mbit/s)
  - **Flow 2 ingress** (mean 197.53 Mbit/s)
  - **Flow 2 egress** (mean 197.45 Mbit/s)
  - **Flow 3 ingress** (mean 147.60 Mbit/s)
  - **Flow 3 egress** (mean 146.28 Mbit/s)

![Delay Graph](image)

- **Per-packet round-trip delay (ms):**
  - **Flow 1** (95th percentile 143.44 ms)
  - **Flow 2** (95th percentile 106.38 ms)
  - **Flow 3** (95th percentile 88.53 ms)
Run 3: Statistics of PCC-Vivace

Local clock offset: 0.232 ms
Remote clock offset: 0.059 ms

# Below is generated by plot.py at 2018-11-03 02:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 511.04 Mbit/s
95th percentile per-packet one-way delay: 88.597 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 316.78 Mbit/s
95th percentile per-packet one-way delay: 88.730 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 212.92 Mbit/s
95th percentile per-packet one-way delay: 88.921 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 162.63 Mbit/s
95th percentile per-packet one-way delay: 87.764 ms
Loss rate: 3.24%
Run 3: Report of PCC-Vivace — Data Link

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

- **Throughput Graph:**
  - Flow 1 ingress (mean 316.94 Mbit/s)
  - Flow 1 egress (mean 316.78 Mbit/s)
  - Flow 2 ingress (mean 213.59 Mbit/s)
  - Flow 2 egress (mean 212.92 Mbit/s)
  - Flow 3 ingress (mean 165.09 Mbit/s)
  - Flow 3 egress (mean 162.63 Mbit/s)

- **Per-packet one-way delay Graph:**
  - Flow 1 (95th percentile 88.73 ms)
  - Flow 2 (95th percentile 88.92 ms)
  - Flow 3 (95th percentile 87.76 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-02 23:19:41
End at: 2018-11-02 23:20:11
Local clock offset: -0.03 ms
Remote clock offset: -0.01 ms

# Below is generated by plot.py at 2018-11-03 02:32:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 423.99 Mbit/s
  95th percentile per-packet one-way delay: 87.165 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 251.33 Mbit/s
  95th percentile per-packet one-way delay: 87.116 ms
  Loss rate: 0.58%
-- Flow 2:
  Average throughput: 188.47 Mbit/s
  95th percentile per-packet one-way delay: 87.020 ms
  Loss rate: 0.93%
-- Flow 3:
  Average throughput: 146.30 Mbit/s
  95th percentile per-packet one-way delay: 87.850 ms
  Loss rate: 2.20%
Run 4: Report of PCC-Vivace — Data Link

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 251.33 Mbps)
  - Flow 1 egress (mean 251.33 Mbps)
  - Flow 2 ingress (mean 188.58 Mbps)
  - Flow 2 egress (mean 188.47 Mbps)
  - Flow 3 ingress (mean 146.98 Mbps)
  - Flow 3 egress (mean 146.39 Mbps)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 87.12 ms)
  - Flow 2 (95th percentile 87.02 ms)
  - Flow 3 (95th percentile 87.85 ms)
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-02 23:51:39
End at: 2018-11-02 23:52:09
Local clock offset: -0.245 ms
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2018-11-03 02:33:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.74 Mbit/s
95th percentile per-packet one-way delay: 174.841 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 302.67 Mbit/s
95th percentile per-packet one-way delay: 203.600 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 304.57 Mbit/s
95th percentile per-packet one-way delay: 151.682 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 150.44 Mbit/s
95th percentile per-packet one-way delay: 87.171 ms
Loss rate: 2.92%
Run 5: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2018-11-02 22:10:02
End at: 2018-11-02 22:10:32
Local clock offset: 0.127 ms
Remote clock offset: 0.196 ms

# Below is generated by plot.py at 2018-11-03 02:33:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.07 Mbit/s
  95th percentile per-packet one-way delay: 86.389 ms
  Loss rate: 1.20%
-- Flow 1:
  Average throughput: 1.54 Mbit/s
  95th percentile per-packet one-way delay: 86.414 ms
  Loss rate: 0.90%
-- Flow 2:
  Average throughput: 1.14 Mbit/s
  95th percentile per-packet one-way delay: 86.129 ms
  Loss rate: 0.99%
-- Flow 3:
  Average throughput: 0.42 Mbit/s
  95th percentile per-packet one-way delay: 86.111 ms
  Loss rate: 2.87%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2018-11-02 22:40:36
End at: 2018-11-02 22:41:06
Local clock offset: 0.068 ms
Remote clock offset: 0.104 ms

# Below is generated by plot.py at 2018-11-03 02:33:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.43 Mbit/s
95th percentile per-packet one-way delay: 86.128 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 86.134 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 86.134 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 86.051 ms
Loss rate: 2.93%
Run 2: Report of WebRTC media — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 1.90 Mbit/s)  Flow 1 egress (mean 1.90 Mbit/s)
Flow 2 ingress (mean 1.14 Mbit/s)  Flow 2 egress (mean 1.13 Mbit/s)
Flow 3 ingress (mean 0.43 Mbit/s)  Flow 3 egress (mean 0.42 Mbit/s)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 86.13 ms)  Flow 2 (95th percentile 86.13 ms)  Flow 3 (95th percentile 86.05 ms)
Run 3: Statistics of WebRTC media

Start at: 2018-11-02 23:11:22
End at: 2018-11-02 23:11:52
Local clock offset: 0.055 ms
Remote clock offset: 0.117 ms

# Below is generated by plot.py at 2018-11-03 02:33:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 86.189 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 86.212 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 86.128 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 86.313 ms
Loss rate: 2.99%
Run 4: Statistics of WebRTC media

Start at: 2018-11-02 23:42:54
End at: 2018-11-02 23:43:24
Local clock offset: 0.41 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2018-11-03 02:33:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.37 Mbit/s
  95th percentile per-packet one-way delay: 86.895 ms
  Loss rate: 1.14%
-- Flow 1:
  Average throughput: 1.86 Mbit/s
  95th percentile per-packet one-way delay: 86.923 ms
  Loss rate: 0.75%
-- Flow 2:
  Average throughput: 1.12 Mbit/s
  95th percentile per-packet one-way delay: 86.515 ms
  Loss rate: 0.95%
-- Flow 3:
  Average throughput: 0.41 Mbit/s
  95th percentile per-packet one-way delay: 86.605 ms
  Loss rate: 3.38%
Run 5: Statistics of WebRTC media

Start at: 2018-11-03 00:14:06
End at: 2018-11-03 00:14:36
Local clock offset: -0.161 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-11-03 02:33:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 86.055 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 86.033 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 86.082 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 86.022 ms
Loss rate: 2.43%
Run 5: Report of WebRTC media — Data Link

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