Pantheon Report

Data path: Colombia on p4p1 (remote) → AWS Brazil 2 on ens5 (local).
Repeated the test of 19 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 gps.ntp.br and have been applied to correct the timestamps in logs.

System info:
Linux 4.15.0-1029-aws
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 @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b909d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b32143cedbfe58e562f4
third_party/indigo @ 2601c92e4aa958d838dc4dfe0edcbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179ea9a4b906ce6bb7cf3cf
third_party/muses @ 65ac1b19b6fdec06349ae986009b48643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55f8e372b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08f9b2c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1b38143ebc9783f3ff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3db2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a6ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ 4db447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from Colombia to AWS Brazil 2, 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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<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
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<tr>
<td>TCP BBR</td>
<td>5</td>
<td>55.60</td>
<td>37.90</td>
<td>30.30</td>
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<td>Copa</td>
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<td>48.30</td>
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<td>TCP Cubic</td>
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<td>22.02</td>
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<td>22.35</td>
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<td>WebRTC media</td>
<td>5</td>
<td>1.69</td>
<td>0.92</td>
<td>0.37</td>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2019-01-03 09:52:24
End at: 2019-01-03 09:52:54
Local clock offset: -2.967 ms
Remote clock offset: 11.822 ms

# Below is generated by plot.py at 2019-01-03 11:42:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.53 Mbit/s
95th percentile per-packet one-way delay: 417.966 ms
Loss rate: 3.37%
-- Flow 1:
Average throughput: 55.24 Mbit/s
95th percentile per-packet one-way delay: 394.127 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 37.50 Mbit/s
95th percentile per-packet one-way delay: 443.956 ms
Loss rate: 5.29%
-- Flow 3:
Average throughput: 31.65 Mbit/s
95th percentile per-packet one-way delay: 416.144 ms
Loss rate: 6.13%
Run 1: Report of TCP BBR — Data Link

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

Legend:
- Flow 1 ingress (mean 56.00 Mbit/s)
- Flow 1 egress (mean 55.24 Mbit/s)
- Flow 2 ingress (mean 39.25 Mbit/s)
- Flow 2 egress (mean 37.50 Mbit/s)
- Flow 3 ingress (mean 33.12 Mbit/s)
- Flow 3 egress (mean 31.65 Mbit/s)
Run 2: Statistics of TCP BBR

Start at: 2019-01-03 10:16:49
End at: 2019-01-03 10:17:19
Local clock offset: -6.277 ms
Remote clock offset: 14.753 ms

# Below is generated by plot.py at 2019-01-03 11:42:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.23 Mbit/s
95th percentile per-packet one-way delay: 574.357 ms
Loss rate: 2.98%
-- Flow 1:
Average throughput: 56.69 Mbit/s
95th percentile per-packet one-way delay: 585.421 ms
Loss rate: 3.04%
-- Flow 2:
Average throughput: 37.66 Mbit/s
95th percentile per-packet one-way delay: 417.228 ms
Loss rate: 2.90%
-- Flow 3:
Average throughput: 29.02 Mbit/s
95th percentile per-packet one-way delay: 412.770 ms
Loss rate: 2.87%
Run 2: Report of TCP BBR — Data Link

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

- **Throughput (Mbps)**
- **Time (s)**
- **Flow 1 ingress (mean 58.12 Mbps)**
- **Flow 1 egress (mean 56.69 Mbps)**
- **Flow 2 ingress (mean 38.46 Mbps)**
- **Flow 2 egress (mean 37.66 Mbps)**
- **Flow 3 ingress (mean 29.36 Mbps)**
- **Flow 3 egress (mean 29.02 Mbps)**
Run 3: Statistics of TCP BBR

Start at: 2019-01-03 10:41:14
End at: 2019-01-03 10:41:44
Local clock offset: -8.016 ms
Remote clock offset: 11.755 ms

# Below is generated by plot.py at 2019-01-03 11:42:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.64 Mbit/s
95th percentile per-packet one-way delay: 418.511 ms
Loss rate: 3.47%
-- Flow 1:
Average throughput: 55.72 Mbit/s
95th percentile per-packet one-way delay: 424.641 ms
Loss rate: 2.20%
-- Flow 2:
Average throughput: 38.03 Mbit/s
95th percentile per-packet one-way delay: 415.072 ms
Loss rate: 3.79%
-- Flow 3:
Average throughput: 29.37 Mbit/s
95th percentile per-packet one-way delay: 412.743 ms
Loss rate: 9.49%
Run 3: Report of TCP BBR — Data Link
Run 4: Statistics of TCP BBR

Start at: 2019-01-03 11:05:39
End at: 2019-01-03 11:06:09
Local clock offset: -6.35 ms
Remote clock offset: 10.519 ms

# Below is generated by plot.py at 2019-01-03 11:42:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.91 Mbit/s
95th percentile per-packet one-way delay: 615.451 ms
Loss rate: 3.65%
-- Flow 1:
Average throughput: 54.82 Mbit/s
95th percentile per-packet one-way delay: 625.560 ms
Loss rate: 3.03%
-- Flow 2:
Average throughput: 38.24 Mbit/s
95th percentile per-packet one-way delay: 418.008 ms
Loss rate: 4.09%
-- Flow 3:
Average throughput: 29.53 Mbit/s
95th percentile per-packet one-way delay: 413.000 ms
Loss rate: 5.92%
Run 4: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 56.20 Mbit/s)
- Flow 1 egress (mean 54.82 Mbit/s)
- Flow 2 ingress (mean 39.53 Mbit/s)
- Flow 2 egress (mean 38.24 Mbit/s)
- Flow 3 ingress (mean 30.83 Mbit/s)
- Flow 3 egress (mean 29.53 Mbit/s)

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

- Flow 1 (95th percentile 625.56 ms)
- Flow 2 (95th percentile 418.01 ms)
- Flow 3 (95th percentile 412.00 ms)
Run 5: Statistics of TCP BBR

Start at: 2019-01-03 11:30:04
End at: 2019-01-03 11:30:34
Local clock offset: -5.767 ms
Remote clock offset: 9.574 ms

# Below is generated by plot.py at 2019-01-03 11:42:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.31 Mbit/s
95th percentile per-packet one-way delay: 467.759 ms
Loss rate: 4.15%
-- Flow 1:
Average throughput: 55.54 Mbit/s
95th percentile per-packet one-way delay: 441.809 ms
Loss rate: 2.85%
-- Flow 2:
Average throughput: 38.09 Mbit/s
95th percentile per-packet one-way delay: 532.009 ms
Loss rate: 5.08%
-- Flow 3:
Average throughput: 31.91 Mbit/s
95th percentile per-packet one-way delay: 518.008 ms
Loss rate: 8.46%
Run 5: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2019-01-03 09:40:58
End at: 2019-01-03 09:41:28
Local clock offset: -2.91 ms
Remote clock offset: 19.013 ms

# Below is generated by plot.py at 2019-01-03 11:43:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.01 Mbit/s
  95th percentile per-packet one-way delay: 216.622 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 53.60 Mbit/s
  95th percentile per-packet one-way delay: 226.222 ms
  Loss rate: 0.68%
-- Flow 2:
  Average throughput: 39.38 Mbit/s
  95th percentile per-packet one-way delay: 139.426 ms
  Loss rate: 0.96%
-- Flow 3:
  Average throughput: 25.08 Mbit/s
  95th percentile per-packet one-way delay: 95.692 ms
  Loss rate: 2.24%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2019-01-03 10:05:22
End at: 2019-01-03 10:05:52
Local clock offset: -5.857 ms
Remote clock offset: 10.56 ms

# Below is generated by plot.py at 2019-01-03 11:43:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.98 Mbit/s
95th percentile per-packet one-way delay: 216.485 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 50.94 Mbit/s
95th percentile per-packet one-way delay: 218.704 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 37.85 Mbit/s
95th percentile per-packet one-way delay: 142.010 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 203.376 ms
Loss rate: 2.01%
Run 2: Report of Copa — Data Link

[Graph 1: Throughput (Mbps)]

[Graph 2: Pre-packet one-way delay (ms)]
Run 3: Statistics of Copa

Start at: 2019-01-03 10:29:49
End at: 2019-01-03 10:30:19
Local clock offset: -6.805 ms
Remote clock offset: 15.162 ms

# Below is generated by plot.py at 2019-01-03 11:43:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.48 Mbit/s
95th percentile per-packet one-way delay: 213.703 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 44.84 Mbit/s
95th percentile per-packet one-way delay: 215.297 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 30.88 Mbit/s
95th percentile per-packet one-way delay: 154.269 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 24.73 Mbit/s
95th percentile per-packet one-way delay: 91.646 ms
Loss rate: 2.02%
Run 3: Report of Copa — Data Link

![Graph 1](image1)

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 44.86 Mbps)
Flow 1 egress (mean 44.84 Mbps)
Flow 2 ingress (mean 30.91 Mbps)
Flow 2 egress (mean 30.88 Mbps)
Flow 3 ingress (mean 24.81 Mbps)
Flow 3 egress (mean 24.73 Mbps)

![Graph 2](image2)

Per-packet round-trip delay (ms)

Time (s)

Flow 1 (95th percentile 215.30 ms)
Flow 2 (95th percentile 154.27 ms)
Flow 3 (95th percentile 91.65 ms)
Run 4: Statistics of Copa

Start at: 2019-01-03 10:54:13
End at: 2019-01-03 10:54:43
Local clock offset: -7.705 ms
Remote clock offset: 16.284 ms

# Below is generated by plot.py at 2019-01-03 11:44:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 78.32 Mbit/s
  95th percentile per-packet one-way delay: 213.424 ms
  Loss rate: 0.47%
  -- Flow 1:
     Average throughput: 45.51 Mbit/s
     95th percentile per-packet one-way delay: 215.118 ms
     Loss rate: 0.27%
  -- Flow 2:
     Average throughput: 37.18 Mbit/s
     95th percentile per-packet one-way delay: 175.213 ms
     Loss rate: 0.50%
  -- Flow 3:
     Average throughput: 24.68 Mbit/s
     95th percentile per-packet one-way delay: 112.615 ms
     Loss rate: 1.50%
Run 4: Report of Copa — Data Link

![Graph 1: Throughput (Mbps)]

- Blue dashed line: Flow 1 ingress (mean 45.37 Mbps)
- Blue solid line: Flow 1 egress (mean 45.51 Mbps)
- Green dashed line: Flow 2 ingress (mean 37.04 Mbps)
- Green solid line: Flow 2 egress (mean 37.18 Mbps)
- Red dashed line: Flow 3 ingress (mean 24.61 Mbps)
- Red solid line: Flow 3 egress (mean 24.68 Mbps)

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

- Blue line: Flow 1 (95th percentile 215.12 ms)
- Green line: Flow 2 (95th percentile 175.21 ms)
- Red line: Flow 3 (95th percentile 112.61 ms)
Run 5: Statistics of Copa

Start at: 2019-01-03 11:18:38
End at: 2019-01-03 11:19:08
Local clock offset: -5.954 ms
Remote clock offset: 9.891 ms

# Below is generated by plot.py at 2019-01-03 11:44:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.23 Mbit/s
95th percentile per-packet one-way delay: 218.001 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 46.63 Mbit/s
95th percentile per-packet one-way delay: 219.609 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 36.86 Mbit/s
95th percentile per-packet one-way delay: 160.616 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 24.66 Mbit/s
95th percentile per-packet one-way delay: 112.573 ms
Loss rate: 0.96%
Run 5: Report of Copa — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 46.53 Mbps)
  - Flow 1 egress (mean 46.63 Mbps)
  - Flow 2 ingress (mean 36.66 Mbps)
  - Flow 2 egress (mean 36.86 Mbps)
  - Flow 3 ingress (mean 24.46 Mbps)
  - Flow 3 egress (mean 24.66 Mbps)

- **Delay (ms):**
  - Flow 1 (95th percentile 219.61 ms)
  - Flow 2 (95th percentile 160.62 ms)
  - Flow 3 (95th percentile 112.57 ms)
Run 1: Statistics of TCP Cubic

Start at: 2019-01-03 09:53:43
End at: 2019-01-03 09:54:13
Local clock offset: -2.965 ms
Remote clock offset: 11.366 ms

# Below is generated by plot.py at 2019-01-03 11:44:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 78.38 Mbit/s
  95th percentile per-packet one-way delay: 147.101 ms
  Loss rate: 0.74%
-- Flow 1:
  Average throughput: 43.01 Mbit/s
  95th percentile per-packet one-way delay: 180.736 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 35.84 Mbit/s
  95th percentile per-packet one-way delay: 133.786 ms
  Loss rate: 0.74%
-- Flow 3:
  Average throughput: 35.17 Mbit/s
  95th percentile per-packet one-way delay: 129.744 ms
  Loss rate: 2.03%
Run 1: Report of TCP Cubic — Data Link

![Graph of TCP Cubic throughputs and delays over time.](image)

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 42.93 Mbps)
  - Flow 1 egress (mean 43.01 Mbps)
  - Flow 2 ingress (mean 35.80 Mbps)
  - Flow 2 egress (mean 35.84 Mbps)
  - Flow 3 ingress (mean 35.28 Mbps)
  - Flow 3 egress (mean 35.17 Mbps)

- **Packet Delivery Delay (ms):**
  - Flow 1 (95th percentile 180.74 ms)
  - Flow 2 (95th percentile 133.79 ms)
  - Flow 3 (95th percentile 129.74 ms)
Run 2: Statistics of TCP Cubic

Start at: 2019-01-03 10:18:07
End at: 2019-01-03 10:18:37
Local clock offset: -6.302 ms
Remote clock offset: 14.753 ms

# Below is generated by plot.py at 2019-01-03 11:44:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.78 Mbit/s
95th percentile per-packet one-way delay: 150.254 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 42.46 Mbit/s
95th percentile per-packet one-way delay: 181.831 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 39.04 Mbit/s
95th percentile per-packet one-way delay: 138.252 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 134.080 ms
Loss rate: 2.06%
Run 2: Report of TCP Cubic — Data Link

[Graph showing throughput and packet delay over time for different flows.]
Run 3: Statistics of TCP Cubic

Start at: 2019-01-03 10:42:33
End at: 2019-01-03 10:43:03
Local clock offset: -8.007 ms
Remote clock offset: 12.001 ms

# Below is generated by plot.py at 2019-01-03 11:44:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.93 Mbit/s
95th percentile per-packet one-way delay: 154.450 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 42.52 Mbit/s
95th percentile per-packet one-way delay: 188.347 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 38.92 Mbit/s
95th percentile per-packet one-way delay: 147.279 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 35.21 Mbit/s
95th percentile per-packet one-way delay: 135.475 ms
Loss rate: 2.03%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2019-01-03 11:06:58
End at: 2019-01-03 11:07:28
Local clock offset: -6.998 ms
Remote clock offset: 10.493 ms

# Below is generated by plot.py at 2019-01-03 11:44:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.76 Mbit/s
95th percentile per-packet one-way delay: 155.418 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 42.35 Mbit/s
95th percentile per-packet one-way delay: 185.784 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 35.50 Mbit/s
95th percentile per-packet one-way delay: 148.058 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 36.06 Mbit/s
95th percentile per-packet one-way delay: 142.604 ms
Loss rate: 2.05%
Run 4: Report of TCP Cubic — Data Link

[Graphs showing throughput and packet delay over time for different flows, indicating mean throughput and 95th percentile delay for each flow.]
Run 5: Statistics of TCP Cubic

Start at: 2019-01-03 11:31:23
End at: 2019-01-03 11:31:53
Local clock offset: -5.666 ms
Remote clock offset: 13.172 ms

# Below is generated by plot.py at 2019-01-03 11:44:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.29 Mbit/s
95th percentile per-packet one-way delay: 145.516 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 42.89 Mbit/s
95th percentile per-packet one-way delay: 179.597 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 36.00 Mbit/s
95th percentile per-packet one-way delay: 139.111 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 35.04 Mbit/s
95th percentile per-packet one-way delay: 138.909 ms
Loss rate: 2.03%
Run 5: Report of TCP Cubic — Data Link
Run 1: Statistics of FillP

Start at: 2019-01-03 09:51:07
End at: 2019-01-03 09:51:37
Local clock offset: -2.145 ms
Remote clock offset: 12.182 ms

# Below is generated by plot.py at 2019-01-03 11:44:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 266.930 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 57.58 Mbit/s
95th percentile per-packet one-way delay: 274.623 ms
Loss rate: 1.36%
-- Flow 2:
Average throughput: 39.34 Mbit/s
95th percentile per-packet one-way delay: 250.332 ms
Loss rate: 2.83%
-- Flow 3:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 275.625 ms
Loss rate: 2.36%
Run 1: Report of FillP — Data Link

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

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

Start at: 2019-01-03 10:15:32
End at: 2019-01-03 10:16:02
Local clock offset: -6.136 ms
Remote clock offset: 10.65 ms

# Below is generated by plot.py at 2019-01-03 11:44:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.21 Mbit/s
95th percentile per-packet one-way delay: 260.436 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 57.45 Mbit/s
95th percentile per-packet one-way delay: 265.611 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 39.10 Mbit/s
95th percentile per-packet one-way delay: 252.902 ms
Loss rate: 2.72%
-- Flow 3:
Average throughput: 29.83 Mbit/s
95th percentile per-packet one-way delay: 299.087 ms
Loss rate: 3.27%
Run 2: Report of FillP — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 57.90 Mbps) — Flow 1 egress (mean 57.45 Mbps)
Flow 2 ingress (mean 39.85 Mbps) — Flow 2 egress (mean 39.10 Mbps)
Flow 3 ingress (mean 30.37 Mbps) — Flow 3 egress (mean 29.83 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 265.61 ms) — Flow 2 (95th percentile 252.90 ms) — Flow 3 (95th percentile 299.09 ms)
Run 3: Statistics of FillP

Start at: 2019-01-03 10:39:57
End at: 2019-01-03 10:40:27
Local clock offset: -7.205 ms
Remote clock offset: 11.942 ms

# Below is generated by plot.py at 2019-01-03 11:44:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.33 Mbit/s
95th percentile per-packet one-way delay: 262.560 ms
Loss rate: 1.86%
-- Flow 1:
Average throughput: 57.18 Mbit/s
95th percentile per-packet one-way delay: 265.562 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 258.148 ms
Loss rate: 3.29%
-- Flow 3:
Average throughput: 29.90 Mbit/s
95th percentile per-packet one-way delay: 278.329 ms
Loss rate: 3.92%
Run 3: Report of FillP — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 57.33 Mbit/s)
Flow 1 egress (mean 57.18 Mbit/s)
Flow 2 ingress (mean 40.63 Mbit/s)
Flow 2 egress (mean 39.59 Mbit/s)
Flow 3 ingress (mean 30.59 Mbit/s)
Flow 3 egress (mean 29.90 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 265.56 ms)
Flow 2 (95th percentile 258.15 ms)
Flow 3 (95th percentile 270.33 ms)
Run 4: Statistics of FillP

Start at: 2019-01-03 11:04:22
End at: 2019-01-03 11:04:52
Local clock offset: -7.146 ms
Remote clock offset: 10.494 ms

# Below is generated by plot.py at 2019-01-03 11:44:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.25 Mbit/s
95th percentile per-packet one-way delay: 302.498 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 57.18 Mbit/s
95th percentile per-packet one-way delay: 294.916 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 39.64 Mbit/s
95th percentile per-packet one-way delay: 320.404 ms
Loss rate: 5.95%
-- Flow 3:
Average throughput: 29.69 Mbit/s
95th percentile per-packet one-way delay: 304.533 ms
Loss rate: 3.04%
Run 4: Report of FillP — Data Link

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

- Flow 1 ingress (mean 57.31 Mbit/s)
- Flow 1 egress (mean 57.18 Mbit/s)
- Flow 2 ingress (mean 41.78 Mbit/s)
- Flow 2 egress (mean 39.64 Mbit/s)
- Flow 3 ingress (mean 30.11 Mbit/s)
- Flow 3 egress (mean 29.69 Mbit/s)

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

- Flow 1 (95th percentile 294.92 ms)
- Flow 2 (95th percentile 320.40 ms)
- Flow 3 (95th percentile 304.53 ms)
Run 5: Statistics of FillP

Start at: 2019-01-03 11:28:47
End at: 2019-01-03 11:29:17
Local clock offset: -6.519 ms
Remote clock offset: 13.661 ms

# Below is generated by plot.py at 2019-01-03 11:45:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.30 Mbit/s
95th percentile per-packet one-way delay: 278.013 ms
Loss rate: 2.07%
-- Flow 1:
Average throughput: 57.03 Mbit/s
95th percentile per-packet one-way delay: 267.156 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 280.083 ms
Loss rate: 4.04%
-- Flow 3:
Average throughput: 29.64 Mbit/s
95th percentile per-packet one-way delay: 353.352 ms
Loss rate: 3.40%
Run 5: Report of FillP — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 57.22 Mbps)  Flow 1 egress (mean 57.03 Mbps)
Flow 2 ingress (mean 41.34 Mbps)  Flow 2 egress (mean 39.97 Mbps)
Flow 3 ingress (mean 30.13 Mbps)  Flow 3 egress (mean 29.64 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 267.16 ms)  Flow 2 (95th percentile 280.08 ms)  Flow 3 (95th percentile 353.35 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2019-01-03 09:42:19
End at: 2019-01-03 09:42:49
Local clock offset: -2.228 ms
Remote clock offset: 15.738 ms

# Below is generated by plot.py at 2019-01-03 11:45:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.81 Mbit/s
95th percentile per-packet one-way delay: 310.519 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 323.019 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 39.22 Mbit/s
95th percentile per-packet one-way delay: 254.989 ms
Loss rate: 2.84%
-- Flow 3:
Average throughput: 29.88 Mbit/s
95th percentile per-packet one-way delay: 241.464 ms
Loss rate: 2.99%
Run 1: Report of FillP-Sheep — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.]
Run 2: Statistics of FillP-Sheep

Start at: 2019-01-03 10:06:43
End at: 2019-01-03 10:07:13
Local clock offset: -5.34 ms
Remote clock offset: 14.208 ms

# Below is generated by plot.py at 2019-01-03 11:45:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.13 Mbit/s
95th percentile per-packet one-way delay: 281.434 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 57.52 Mbit/s
95th percentile per-packet one-way delay: 296.213 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 232.793 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 30.77 Mbit/s
95th percentile per-packet one-way delay: 277.947 ms
Loss rate: 5.54%
Run 2: Report of FillP-Sheep — Data Link
Run 3: Statistics of FillP-Sheep

Start at: 2019-01-03 10:31:09
End at: 2019-01-03 10:31:39
Local clock offset: -7.618 ms
Remote clock offset: 15.174 ms

# Below is generated by plot.py at 2019-01-03 11:45:32
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 93.04 Mbit/s
  95th percentile per-packet one-way delay: 273.111 ms
  Loss rate: 1.50%
-- Flow 1:
  Average throughput: 57.06 Mbit/s
  95th percentile per-packet one-way delay: 286.552 ms
  Loss rate: 0.79%
-- Flow 2:
  Average throughput: 39.44 Mbit/s
  95th percentile per-packet one-way delay: 242.660 ms
  Loss rate: 2.36%
-- Flow 3:
  Average throughput: 29.79 Mbit/s
  95th percentile per-packet one-way delay: 263.165 ms
  Loss rate: 3.21%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

End at: 2019-01-03 10:56:03
Local clock offset: -8.173 ms
Remote clock offset: 15.858 ms

# Below is generated by plot.py at 2019-01-03 11:45:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.88 Mbit/s
95th percentile per-packet one-way delay: 280.583 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 57.16 Mbit/s
95th percentile per-packet one-way delay: 301.699 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 38.83 Mbit/s
95th percentile per-packet one-way delay: 203.365 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 30.24 Mbit/s
95th percentile per-packet one-way delay: 364.932 ms
Loss rate: 2.56%
Run 4: Report of FillP-Sheep — Data Link

Throughput (Mb/s) vs Time (s)

Flow 1 ingress (mean 57.41 Mb/s)  Flow 1 egress (mean 57.16 Mb/s)
Flow 2 ingress (mean 39.11 Mb/s)  Flow 2 egress (mean 38.83 Mb/s)
Flow 3 ingress (mean 36.49 Mb/s)  Flow 3 egress (mean 30.24 Mb/s)

Not a table

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

Flow 1 (95th percentile 301.70 ms)  Flow 2 (95th percentile 203.37 ms)  Flow 3 (95th percentile 364.93 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2019-01-03 11:19:59
End at: 2019-01-03 11:20:29
Local clock offset: -5.936 ms
Remote clock offset: 9.82 ms

# Below is generated by plot.py at 2019-01-03 11:45:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.98 Mbit/s
95th percentile per-packet one-way delay: 279.543 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 56.93 Mbit/s
95th percentile per-packet one-way delay: 265.630 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 39.51 Mbit/s
95th percentile per-packet one-way delay: 289.431 ms
Loss rate: 3.03%
-- Flow 3:
Average throughput: 29.95 Mbit/s
95th percentile per-packet one-way delay: 204.968 ms
Loss rate: 3.62%
Run 5: Report of FillP-Sheep — Data Link

**Throughput (Mbps)**

- **Flow 1 ingress** (mean 57.03 Mbps)
- **Flow 1 egress** (mean 56.93 Mbps)
- **Flow 2 ingress** (mean 40.43 Mbps)
- **Flow 2 egress** (mean 39.51 Mbps)
- **Flow 3 ingress** (mean 30.52 Mbps)
- **Flow 3 egress** (mean 29.95 Mbps)

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

- **Flow 1** (95th percentile 265.63 ms)
- **Flow 2** (95th percentile 289.43 ms)
- **Flow 3** (95th percentile 204.97 ms)
Run 1: Statistics of Indigo

Start at: 2019-01-03 09:47:17
End at: 2019-01-03 09:47:47
Local clock offset: -2.936 ms
Remote clock offset: 13.439 ms

# Below is generated by plot.py at 2019-01-03 11:45:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.15 Mbit/s
95th percentile per-packet one-way delay: 384.326 ms
Loss rate: 9.19%
-- Flow 1:
Average throughput: 58.14 Mbit/s
95th percentile per-packet one-way delay: 413.789 ms
Loss rate: 13.03%
-- Flow 2:
Average throughput: 38.50 Mbit/s
95th percentile per-packet one-way delay: 144.226 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 29.18 Mbit/s
95th percentile per-packet one-way delay: 132.358 ms
Loss rate: 2.98%
Run 1: Report of Indigo — Data Link

**Throughput (Mbps)**

- Flow 1 ingress (mean 66.46 Mbps)
- Flow 1 egress (mean 58.14 Mbps)
- Flow 2 ingress (mean 38.80 Mbps)
- Flow 2 egress (mean 38.50 Mbps)
- Flow 3 ingress (mean 29.55 Mbps)
- Flow 3 egress (mean 29.18 Mbps)

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

- Flow 1 (95th percentile 413.79 ms)
- Flow 2 (95th percentile 144.23 ms)
- Flow 3 (95th percentile 132.36 ms)
Run 2: Statistics of Indigo

Start at: 2019-01-03 10:11:42
End at: 2019-01-03 10:12:12
Local clock offset: -6.59 ms
Remote clock offset: 14.586 ms

# Below is generated by plot.py at 2019-01-03 11:45:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.86 Mbit/s
95th percentile per-packet one-way delay: 384.325 ms
Loss rate: 4.76%
-- Flow 1:
Average throughput: 58.38 Mbit/s
95th percentile per-packet one-way delay: 415.972 ms
Loss rate: 6.15%
-- Flow 2:
Average throughput: 39.08 Mbit/s
95th percentile per-packet one-way delay: 200.806 ms
Loss rate: 2.12%
-- Flow 3:
Average throughput: 29.40 Mbit/s
95th percentile per-packet one-way delay: 142.356 ms
Loss rate: 3.14%
Run 2: Report of Indigo — Data Link

[Graphs showing throughput and per-packet latency over time for different flows.]
Run 3: Statistics of Indigo

Start at: 2019-01-03 10:36:07
End at: 2019-01-03 10:36:37
Local clock offset: -7.803 ms
Remote clock offset: 15.195 ms

# Below is generated by plot.py at 2019-01-03 11:46:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.90 Mbit/s
95th percentile per-packet one-way delay: 381.455 ms
Loss rate: 6.60%
-- Flow 1:
Average throughput: 58.70 Mbit/s
95th percentile per-packet one-way delay: 416.648 ms
Loss rate: 9.26%
-- Flow 2:
Average throughput: 38.86 Mbit/s
95th percentile per-packet one-way delay: 139.911 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 29.02 Mbit/s
95th percentile per-packet one-way delay: 144.766 ms
Loss rate: 2.99%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2019-01-03 11:00:32
End at: 2019-01-03 11:01:02
Local clock offset: -6.68 ms
Remote clock offset: 14.802 ms

# Below is generated by plot.py at 2019-01-03 11:46:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.85 Mbit/s
95th percentile per-packet one-way delay: 390.909 ms
Loss rate: 6.16%
-- Flow 1:
Average throughput: 58.60 Mbit/s
95th percentile per-packet one-way delay: 428.814 ms
Loss rate: 8.67%
-- Flow 2:
Average throughput: 38.83 Mbit/s
95th percentile per-packet one-way delay: 134.670 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 29.25 Mbit/s
95th percentile per-packet one-way delay: 142.188 ms
Loss rate: 3.12%
Run 4: Report of Indigo — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 63.80 Mbps)
- Flow 1 egress (mean 58.60 Mbps)
- Flow 2 ingress (mean 38.94 Mbps)
- Flow 2 egress (mean 38.83 Mbps)
- Flow 3 ingress (mean 29.65 Mbps)
- Flow 3 egress (mean 29.25 Mbps)

**Delay (ms):**
- Flow 1 (95th percentile 428.81 ms)
- Flow 2 (95th percentile 134.67 ms)
- Flow 3 (95th percentile 142.19 ms)
Run 5: Statistics of Indigo

Start at: 2019-01-03 11:24:57
End at: 2019-01-03 11:25:27
Local clock offset: -6.744 ms
Remote clock offset: 9.648 ms

# Below is generated by plot.py at 2019-01-03 11:46:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.88 Mbit/s
95th percentile per-packet one-way delay: 385.114 ms
Loss rate: 6.42%
-- Flow 1:
Average throughput: 58.51 Mbit/s
95th percentile per-packet one-way delay: 422.993 ms
Loss rate: 8.94%
-- Flow 2:
Average throughput: 39.03 Mbit/s
95th percentile per-packet one-way delay: 166.474 ms
Loss rate: 1.55%
-- Flow 3:
Average throughput: 29.25 Mbit/s
95th percentile per-packet one-way delay: 144.516 ms
Loss rate: 2.90%
Run 5: Report of Indigo — Data Link

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

![Graph 2: One-way delay (ms)](image2)
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-03 10:00:04
End at: 2019-01-03 10:00:34
Local clock offset: -4.857 ms
Remote clock offset: 14.617 ms

# Below is generated by plot.py at 2019-01-03 11:46:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.62 Mbit/s
  95th percentile per-packet one-way delay: 196.833 ms
  Loss rate: 1.65%
-- Flow 1:
  Average throughput: 55.91 Mbit/s
  95th percentile per-packet one-way delay: 198.908 ms
  Loss rate: 1.05%
-- Flow 2:
  Average throughput: 37.89 Mbit/s
  95th percentile per-packet one-way delay: 182.720 ms
  Loss rate: 2.23%
-- Flow 3:
  Average throughput: 26.12 Mbit/s
  95th percentile per-packet one-way delay: 182.256 ms
  Loss rate: 3.72%
Run 1: Report of Indigo-MusesD — Data Link
Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-03 10:24:30
End at: 2019-01-03 10:25:00
Local clock offset: -7.449 ms
Remote clock offset: 11.082 ms

# Below is generated by plot.py at 2019-01-03 11:46:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.83 Mbit/s
95th percentile per-packet one-way delay: 177.974 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 56.02 Mbit/s
95th percentile per-packet one-way delay: 180.202 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 36.60 Mbit/s
95th percentile per-packet one-way delay: 169.496 ms
Loss rate: 2.13%
-- Flow 3:
Average throughput: 26.04 Mbit/s
95th percentile per-packet one-way delay: 184.324 ms
Loss rate: 3.62%
Run 2: Report of Indigo-MusesD — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 56.14 Mbps)
- Flow 1 egress (mean 56.02 Mbps)
- Flow 2 ingress (mean 37.68 Mbps)
- Flow 2 egress (mean 36.60 Mbps)
- Flow 3 ingress (mean 26.54 Mbps)
- Flow 3 egress (mean 26.04 Mbps)

**Per-packet one-way delay (ms):**
- Flow 1 (95th percentile 180.20 ms)
- Flow 2 (95th percentile 169.50 ms)
- Flow 3 (95th percentile 184.32 ms)
Run 3: Statistics of Indigo-MusesD

End at: 2019-01-03 10:49:25
Local clock offset: -8.233 ms
Remote clock offset: 12.19 ms

# Below is generated by plot.py at 2019-01-03 11:46:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 88.74 Mbit/s
  95th percentile per-packet one-way delay: 176.627 ms
  Loss rate: 1.55%
-- Flow 1:
  Average throughput: 55.22 Mbit/s
  95th percentile per-packet one-way delay: 173.147 ms
  Loss rate: 0.85%
-- Flow 2:
  Average throughput: 38.24 Mbit/s
  95th percentile per-packet one-way delay: 175.854 ms
  Loss rate: 2.38%
-- Flow 3:
  Average throughput: 24.83 Mbit/s
  95th percentile per-packet one-way delay: 199.060 ms
  Loss rate: 3.63%
Run 3: Report of Indigo-MusesD — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-03 11:13:20
End at: 2019-01-03 11:13:50
Local clock offset: -6.039 ms
Remote clock offset: 10.029 ms

# Below is generated by plot.py at 2019-01-03 11:47:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.80 Mbit/s
95th percentile per-packet one-way delay: 198.281 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 56.46 Mbit/s
95th percentile per-packet one-way delay: 202.491 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 38.00 Mbit/s
95th percentile per-packet one-way delay: 162.313 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 24.80 Mbit/s
95th percentile per-packet one-way delay: 196.175 ms
Loss rate: 3.52%
Run 4: Report of Indigo-MusesD — Data Link
Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-03 11:37:45
End at: 2019-01-03 11:38:15
Local clock offset: -6.301 ms
Remote clock offset: 12.971 ms

# Below is generated by plot.py at 2019-01-03 11:47:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.75 Mbit/s
95th percentile per-packet one-way delay: 173.519 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 56.23 Mbit/s
95th percentile per-packet one-way delay: 173.296 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 36.99 Mbit/s
95th percentile per-packet one-way delay: 161.321 ms
Loss rate: 1.71%
-- Flow 3:
Average throughput: 24.36 Mbit/s
95th percentile per-packet one-way delay: 191.758 ms
Loss rate: 3.18%
Run 5: Report of Indigo-MusesD — Data Link
Run 1: Statistics of Indigo-MuseST

Start at: 2019-01-03 09:54:59
End at: 2019-01-03 09:55:30
Local clock offset: -2.38 ms
Remote clock offset: 11.319 ms

# Below is generated by plot.py at 2019-01-03 11:47:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.61 Mbit/s
95th percentile per-packet one-way delay: 1251.213 ms
Loss rate: 35.24%
-- Flow 1:
Average throughput: 58.07 Mbit/s
95th percentile per-packet one-way delay: 1102.420 ms
Loss rate: 29.48%
-- Flow 2:
Average throughput: 39.38 Mbit/s
95th percentile per-packet one-way delay: 1441.958 ms
Loss rate: 39.23%
-- Flow 3:
Average throughput: 31.92 Mbit/s
95th percentile per-packet one-way delay: 1099.713 ms
Loss rate: 50.62%
Run 1: Report of Indigo-MusesT — Data Link

![Data Link Graph](image1)

![Data Link Graph](image2)

- Flow 1 ingress (mean 81.86 Mbit/s)
- Flow 1 egress (mean 58.07 Mbit/s)
- Flow 2 ingress (mean 64.17 Mbit/s)
- Flow 2 egress (mean 39.38 Mbit/s)
- Flow 3 ingress (mean 63.40 Mbit/s)
- Flow 3 egress (mean 31.92 Mbit/s)

- Flow 1 95th percentile 1102.42 ms
- Flow 2 95th percentile 1441.98 ms
- Flow 3 95th percentile 1099.71 ms
Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-03 10:19:24
End at: 2019-01-03 10:19:54
Local clock offset: -6.381 ms
Remote clock offset: 14.592 ms

# Below is generated by plot.py at 2019-01-03 11:47:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.00 Mbit/s
95th percentile per-packet one-way delay: 1678.977 ms
Loss rate: 20.66%
-- Flow 1:
Average throughput: 62.77 Mbit/s
95th percentile per-packet one-way delay: 298.532 ms
Loss rate: 7.39%
-- Flow 2:
Average throughput: 36.00 Mbit/s
95th percentile per-packet one-way delay: 2109.173 ms
Loss rate: 8.16%
-- Flow 3:
Average throughput: 28.32 Mbit/s
95th percentile per-packet one-way delay: 1617.533 ms
Loss rate: 67.01%
Run 2: Report of Indigo-MusesT — Data Link
Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-03 10:43:50
End at: 2019-01-03 10:44:20
Local clock offset: -8.066 ms
Remote clock offset: 12.13 ms

# Below is generated by plot.py at 2019-01-03 11:47:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.76 Mbit/s
95th percentile per-packet one-way delay: 1246.818 ms
Loss rate: 31.75%
-- Flow 1:
Average throughput: 54.97 Mbit/s
95th percentile per-packet one-way delay: 1503.395 ms
Loss rate: 26.20%
-- Flow 2:
Average throughput: 45.26 Mbit/s
95th percentile per-packet one-way delay: 748.120 ms
Loss rate: 23.78%
-- Flow 3:
Average throughput: 26.74 Mbit/s
95th percentile per-packet one-way delay: 1463.802 ms
Loss rate: 63.76%
Run 3: Report of Indigo-MusesT — Data Link
Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-03 11:08:15
End at: 2019-01-03 11:08:45
Local clock offset: -6.167 ms
Remote clock offset: 10.31 ms

# Below is generated by plot.py at 2019-01-03 11:47:46
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 93.20 Mbit/s
 95th percentile per-packet one-way delay: 1433.440 ms
 Loss rate: 31.10%
-- Flow 1:
 Average throughput: 57.17 Mbit/s
 95th percentile per-packet one-way delay: 1247.475 ms
 Loss rate: 13.02%
-- Flow 2:
 Average throughput: 36.96 Mbit/s
 95th percentile per-packet one-way delay: 1633.162 ms
 Loss rate: 56.66%
-- Flow 3:
 Average throughput: 39.24 Mbit/s
 95th percentile per-packet one-way delay: 453.842 ms
 Loss rate: 13.94%
Run 4: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 65.08 Mbit/s)
- Flow 1 egress (mean 57.17 Mbit/s)
- Flow 2 ingress (mean 91.77 Mbit/s)
- Flow 2 egress (mean 36.96 Mbit/s)
- Flow 3 ingress (mean 45.15 Mbit/s)
- Flow 3 egress (mean 39.24 Mbit/s)

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

- Flow 1 (95th percentile 1247.47 ms)
- Flow 2 (95th percentile 1633.16 ms)
- Flow 3 (95th percentile 453.84 ms)
Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-03 11:32:40
End at: 2019-01-03 11:33:10
Local clock offset: -5.631 ms
Remote clock offset: 9.465 ms

# Below is generated by plot.py at 2019-01-03 11:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.14 Mbit/s
95th percentile per-packet one-way delay: 1184.439 ms
Loss rate: 21.87%
-- Flow 1:
Average throughput: 57.56 Mbit/s
95th percentile per-packet one-way delay: 1357.714 ms
Loss rate: 12.41%
-- Flow 2:
Average throughput: 44.36 Mbit/s
95th percentile per-packet one-way delay: 363.817 ms
Loss rate: 9.81%
-- Flow 3:
Average throughput: 27.95 Mbit/s
95th percentile per-packet one-way delay: 1528.855 ms
Loss rate: 64.08%
Run 5: Report of Indigo-MusesT — Data Link

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

- **Throughput (Mbps):**
  - **Flow 1 ingress** (mean 67.51 Mbps)
  - **Flow 1 egress** (mean 57.56 Mbps)
  - **Flow 2 ingress** (mean 48.74 Mbps)
  - **Flow 2 egress** (mean 44.36 Mbps)
  - **Flow 3 ingress** (mean 81.06 Mbps)
  - **Flow 3 egress** (mean 27.95 Mbps)

- **Per-packet one-way delay (ms):**
  - **Flow 1** (95th percentile 1357.71 ms)
  - **Flow 2** (95th percentile 363.82 ms)
  - **Flow 3** (95th percentile 1528.86 ms)
Run 1: Statistics of LEDBAT

Start at: 2019-01-03 09:48:36
End at: 2019-01-03 09:49:06
Local clock offset: -2.16 ms
Remote clock offset: 16.701 ms

# Below is generated by plot.py at 2019-01-03 11:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.37 Mbit/s
95th percentile per-packet one-way delay: 93.509 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 89.009 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 88.809 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 94.728 ms
Loss rate: 3.63%
Run 1: Report of LEDBAT — Data Link

**Throughput (Mbps)**

- Flow 1 ingress (mean 12.05 Mbps/s)
- Flow 1 egress (mean 11.98 Mbps/s)
- Flow 2 ingress (mean 7.96 Mbps/s)
- Flow 2 egress (mean 7.89 Mbps/s)
- Flow 3 ingress (mean 3.60 Mbps/s)
- Flow 3 egress (mean 3.34 Mbps/s)

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

- Flow 1 (95th percentile 89.01 ms)
- Flow 2 (95th percentile 88.81 ms)
- Flow 3 (95th percentile 94.73 ms)
Run 2: Statistics of LEDBAT

Start at: 2019-01-03 10:13:01
End at: 2019-01-03 10:13:31
Local clock offset: -6.006 ms
Remote clock offset: 10.573 ms

# Below is generated by plot.py at 2019-01-03 11:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.31 Mbit/s
95th percentile per-packet one-way delay: 92.409 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 11.85 Mbit/s
95th percentile per-packet one-way delay: 92.509 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 91.739 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 92.491 ms
Loss rate: 3.48%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDBAT

Start at: 2019-01-03 10:37:26
End at: 2019-01-03 10:37:56
Local clock offset: -7.066 ms
Remote clock offset: 15.701 ms

# Below is generated by plot.py at 2019-01-03 11:47:58
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 18.43 Mbit/s
  95th percentile per-packet one-way delay: 88.178 ms
  Loss rate: 1.49%
-- Flow 1:
  Average throughput: 11.97 Mbit/s
  95th percentile per-packet one-way delay: 87.680 ms
  Loss rate: 1.15%
-- Flow 2:
  Average throughput: 7.90 Mbit/s
  95th percentile per-packet one-way delay: 88.282 ms
  Loss rate: 1.75%
-- Flow 3:
  Average throughput: 3.82 Mbit/s
  95th percentile per-packet one-way delay: 88.233 ms
  Loss rate: 3.53%
Run 3: Report of LEDBAT — Data Link

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**Throughput (Mbps)**

- **Flow 1 Ingress** (mean 12.04 Mbps)
- **Flow 1 Egress** (mean 11.97 Mbps)
- **Flow 2 Ingress** (mean 7.97 Mbps)
- **Flow 2 Egress** (mean 7.90 Mbps)
- **Flow 3 Ingress** (mean 3.89 Mbps)
- **Flow 3 Egress** (mean 3.82 Mbps)

---

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

- **Flow 1** (95th percentile 87.68 ms)
- **Flow 2** (95th percentile 88.28 ms)
- **Flow 3** (95th percentile 88.23 ms)
Run 4: Statistics of LEDBAT

Start at: 2019-01-03 11:01:51
End at: 2019-01-03 11:02:21
Local clock offset: -7.364 ms
Remote clock offset: 10.822 ms

# Below is generated by plot.py at 2019-01-03 11:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.37 Mbit/s
95th percentile per-packet one-way delay: 91.696 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 91.620 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 92.351 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 3.80 Mbit/s
95th percentile per-packet one-way delay: 91.392 ms
Loss rate: 3.46%
Run 4: Report of LEDBAT — Data Link

![Graph of throughput over time for different flows]

**Throughput (Mbit/s)**

- Flow 1 ingress (mean 11.90 Mbit/s)
- Flow 1 egress (mean 11.83 Mbit/s)
- Flow 2 ingress (mean 8.08 Mbit/s)
- Flow 2 egress (mean 8.01 Mbit/s)
- Flow 3 ingress (mean 3.87 Mbit/s)
- Flow 3 egress (mean 3.80 Mbit/s)

![Graph of packet delay over time for different flows]

**Packet delay (ms)**

- Flow 1 (95th percentile 91.62 ms)
- Flow 2 (95th percentile 92.35 ms)
- Flow 3 (95th percentile 91.39 ms)
Run 5: Statistics of LEDBAT

Start at: 2019-01-03 11:26:16
End at: 2019-01-03 11:26:46
Local clock offset: -5.838 ms
Remote clock offset: 9.847 ms

# Below is generated by plot.py at 2019-01-03 11:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.42 Mbit/s
95th percentile per-packet one-way delay: 93.543 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 93.601 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 92.658 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 92.240 ms
Loss rate: 3.54%
Run 5: Report of LEDBAT — Data Link
Run 1: Statistics of PCC-Allegro

Start at: 2019-01-03 09:49:50  
End at: 2019-01-03 09:50:20  
Local clock offset: -2.155 ms  
Remote clock offset: 12.706 ms

# Below is generated by plot.py at 2019-01-03 11:48:18  
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.70 Mbit/s
95th percentile per-packet one-way delay: 1433.349 ms
Loss rate: 22.00%
-- Flow 1:
Average throughput: 56.20 Mbit/s
95th percentile per-packet one-way delay: 1493.733 ms
Loss rate: 24.62%
-- Flow 2:
Average throughput: 34.52 Mbit/s
95th percentile per-packet one-way delay: 1213.862 ms
Loss rate: 15.38%
-- Flow 3:
Average throughput: 29.51 Mbit/s
95th percentile per-packet one-way delay: 1364.288 ms
Loss rate: 20.67%
Run 1: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 74.12 Mbit/s)
Flow 1 egress (mean 56.20 Mbit/s)
Flow 2 ingress (mean 40.44 Mbit/s)
Flow 2 egress (mean 34.52 Mbit/s)
Flow 3 ingress (mean 36.54 Mbit/s)
Flow 3 egress (mean 29.51 Mbit/s)

Packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 1493.73 ms)
Flow 2 (95th percentile 1213.86 ms)
Flow 3 (95th percentile 1364.29 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2019-01-03 10:14:15
End at: 2019-01-03 10:14:45
Local clock offset: -6.087 ms
Remote clock offset: 14.4 ms

# Below is generated by plot.py at 2019-01-03 11:48:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.08 Mbit/s
95th percentile per-packet one-way delay: 1472.961 ms
Loss rate: 22.13%
-- Flow 1:
Average throughput: 54.34 Mbit/s
95th percentile per-packet one-way delay: 1563.218 ms
Loss rate: 24.81%
-- Flow 2:
Average throughput: 34.86 Mbit/s
95th percentile per-packet one-way delay: 1161.644 ms
Loss rate: 15.11%
-- Flow 3:
Average throughput: 29.56 Mbit/s
95th percentile per-packet one-way delay: 1403.750 ms
Loss rate: 21.95%
Run 2: Report of PCC-Allegro — Data Link
Run 3: Statistics of PCC-Allegro

Start at: 2019-01-03 10:38:40
End at: 2019-01-03 10:39:10
Local clock offset: -7.94 ms
Remote clock offset: 15.6 ms

# Below is generated by plot.py at 2019-01-03 11:48:31
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 89.19 Mbit/s
  95th percentile per-packet one-way delay: 1412.654 ms
  Loss rate: 23.28%
-- Flow 1:
  Average throughput: 56.87 Mbit/s
  95th percentile per-packet one-way delay: 1463.378 ms
  Loss rate: 26.28%
-- Flow 2:
  Average throughput: 34.21 Mbit/s
  95th percentile per-packet one-way delay: 1142.943 ms
  Loss rate: 15.87%
-- Flow 3:
  Average throughput: 29.56 Mbit/s
  95th percentile per-packet one-way delay: 1347.119 ms
  Loss rate: 20.71%
Run 3: Report of PCC-Allegro — Data Link
Run 4: Statistics of PCC-Allegro

Start at: 2019-01-03 11:03:05
End at: 2019-01-03 11:03:35
Local clock offset: -7.289 ms
Remote clock offset: 10.614 ms

# Below is generated by plot.py at 2019-01-03 11:48:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.14 Mbit/s
95th percentile per-packet one-way delay: 1427.241 ms
Loss rate: 21.53%
-- Flow 1:
Average throughput: 55.29 Mbit/s
95th percentile per-packet one-way delay: 1423.328 ms
Loss rate: 24.77%
-- Flow 2:
Average throughput: 33.53 Mbit/s
95th percentile per-packet one-way delay: 1188.848 ms
Loss rate: 12.31%
-- Flow 3:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 1559.995 ms
Loss rate: 21.17%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2019-01-03 11:27:31
End at: 2019-01-03 11:28:01
Local clock offset: -6.544 ms
Remote clock offset: 9.777 ms

# Below is generated by plot.py at 2019-01-03 11:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.13 Mbit/s
95th percentile per-packet one-way delay: 1439.943 ms
Loss rate: 21.75%

-- Flow 1:
Average throughput: 55.01 Mbit/s
95th percentile per-packet one-way delay: 1445.240 ms
Loss rate: 24.94%

-- Flow 2:
Average throughput: 33.91 Mbit/s
95th percentile per-packet one-way delay: 1138.278 ms
Loss rate: 12.51%

-- Flow 3:
Average throughput: 29.54 Mbit/s
95th percentile per-packet one-way delay: 1529.489 ms
Loss rate: 22.08%
Run 5: Report of PCC-Allegro — Data Link
Run 1: Statistics of PCC-Expr

Start at: 2019-01-03 10:01:22
End at: 2019-01-03 10:01:52
Local clock offset: ~4.349 ms
Remote clock offset: 10.634 ms

# Below is generated by plot.py at 2019-01-03 11:49:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.98 Mbit/s
95th percentile per-packet one-way delay: 1348.733 ms
Loss rate: 8.38%
-- Flow 1:
Average throughput: 56.71 Mbit/s
95th percentile per-packet one-way delay: 1419.009 ms
Loss rate: 9.43%
-- Flow 2:
Average throughput: 38.93 Mbit/s
95th percentile per-packet one-way delay: 883.321 ms
Loss rate: 7.60%
-- Flow 3:
Average throughput: 25.89 Mbit/s
95th percentile per-packet one-way delay: 243.867 ms
Loss rate: 3.37%
Run 1: Report of PCC-Expr — Data Link

![Run 1: Report of PCC-Expr — Data Link](image-url)
Run 2: Statistics of PCC-Expr

Start at: 2019-01-03 10:25:47
End at: 2019-01-03 10:26:17
Local clock offset: -7.447 ms
Remote clock offset: 14.539 ms

# Below is generated by plot.py at 2019-01-03 11:49:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 90.93 Mbit/s
  95th percentile per-packet one-way delay: 860.367 ms
  Loss rate: 22.20%
-- Flow 1:
  Average throughput: 56.66 Mbit/s
  95th percentile per-packet one-way delay: 845.176 ms
  Loss rate: 29.35%
-- Flow 2:
  Average throughput: 38.94 Mbit/s
  95th percentile per-packet one-way delay: 895.126 ms
  Loss rate: 7.58%
-- Flow 3:
  Average throughput: 25.89 Mbit/s
  95th percentile per-packet one-way delay: 241.785 ms
  Loss rate: 3.37%
Run 2: Report of PCC-Expr — Data Link

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

Start at: 2019-01-03 10:50:12
End at: 2019-01-03 10:50:42
Local clock offset: -7.506 ms
Remote clock offset: 12.368 ms

# Below is generated by plot.py at 2019-01-03 11:50:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.00 Mbit/s
95th percentile per-packet one-way delay: 888.625 ms
Loss rate: 18.03%
-- Flow 1:
Average throughput: 56.72 Mbit/s
95th percentile per-packet one-way delay: 900.305 ms
Loss rate: 23.98%
-- Flow 2:
Average throughput: 38.91 Mbit/s
95th percentile per-packet one-way delay: 863.496 ms
Loss rate: 6.62%
-- Flow 3:
Average throughput: 25.91 Mbit/s
95th percentile per-packet one-way delay: 244.619 ms
Loss rate: 3.41%
Run 3: Report of PCC-Expr — Data Link

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

- **Flow 1** (ingress mean 74.18 Mbit/s; egress mean 56.72 Mbit/s)
- **Flow 2** (ingress mean 41.31 Mbit/s; egress mean 38.91 Mbit/s)
- **Flow 3** (ingress mean 26.35 Mbit/s; egress mean 25.91 Mbit/s)

- **Per-packet one-way delay** (ms):
  - **Flow 1** (95th percentile 900.30 ms)
  - **Flow 2** (95th percentile 863.50 ms)
  - **Flow 3** (95th percentile 244.62 ms)
Run 4: Statistics of PCC-Expr

Start at: 2019-01-03 11:14:38
End at: 2019-01-03 11:15:08
Local clock offset: -6.76 ms
Remote clock offset: 13.497 ms

# Below is generated by plot.py at 2019-01-03 11:50:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.94 Mbit/s
95th percentile per-packet one-way delay: 932.832 ms
Loss rate: 17.85%
-- Flow 1:
Average throughput: 56.86 Mbit/s
95th percentile per-packet one-way delay: 987.707 ms
Loss rate: 23.76%
-- Flow 2:
Average throughput: 39.24 Mbit/s
95th percentile per-packet one-way delay: 821.393 ms
Loss rate: 6.67%
-- Flow 3:
Average throughput: 24.67 Mbit/s
95th percentile per-packet one-way delay: 242.783 ms
Loss rate: 2.12%
Run 5: Statistics of PCC-Expr

Start at: 2019-01-03 11:39:02
End at: 2019-01-03 11:39:32
Local clock offset: -5.545 ms
Remote clock offset: 12.733 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.98 Mbit/s
95th percentile per-packet one-way delay: 838.852 ms
Loss rate: 22.37%
-- Flow 1:
Average throughput: 56.69 Mbit/s
95th percentile per-packet one-way delay: 821.402 ms
Loss rate: 29.51%
-- Flow 2:
Average throughput: 38.95 Mbit/s
95th percentile per-packet one-way delay: 886.875 ms
Loss rate: 7.82%
-- Flow 3:
Average throughput: 25.90 Mbit/s
95th percentile per-packet one-way delay: 230.450 ms
Loss rate: 3.40%
Run 5: Report of PCC-Expr — Data Link

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

Throughput (Mb/s) vs Time (s):
- Flow 1 ingress (mean 79.96 Mb/s)
- Flow 1 egress (mean 56.69 Mb/s)
- Flow 2 ingress (mean 41.88 Mb/s)
- Flow 2 egress (mean 38.95 Mb/s)
- Flow 3 ingress (mean 26.34 Mb/s)
- Flow 3 egress (mean 25.90 Mb/s)

Per-packet one-way delay (ms) vs Time (s):
- Flow 1 (95th percentile 821.40 ms)
- Flow 2 (95th percentile 886.88 ms)
- Flow 3 (95th percentile 230.45 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-03 09:43:36
End at: 2019-01-03 09:44:06
Local clock offset: -2.928 ms
Remote clock offset: 16.15 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 55.63 Mbit/s
  95th percentile per-packet one-way delay: 191.607 ms
  Loss rate: 0.83%
-- Flow 1:
  Average throughput: 36.86 Mbit/s
  95th percentile per-packet one-way delay: 135.694 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 20.62 Mbit/s
  95th percentile per-packet one-way delay: 196.128 ms
  Loss rate: 1.46%
-- Flow 3:
  Average throughput: 15.56 Mbit/s
  95th percentile per-packet one-way delay: 310.399 ms
  Loss rate: 1.55%
Run 1: Report of QUIC Cubic — Data Link

![Graphs showing throughput and per-packet one-way delay over time for different traffic flows.](image-url)
Run 2: Statistics of QUIC Cubic

Start at: 2019-01-03 10:08:00
End at: 2019-01-03 10:08:30
Local clock offset: -6.202 ms
Remote clock offset: 10.568 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.90 Mbit/s
95th percentile per-packet one-way delay: 185.102 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 33.92 Mbit/s
95th percentile per-packet one-way delay: 144.642 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 19.43 Mbit/s
95th percentile per-packet one-way delay: 251.229 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 21.69 Mbit/s
95th percentile per-packet one-way delay: 217.996 ms
Loss rate: 2.75%
Run 2: Report of QUIC Cubic — Data Link

[Graphs showing throughput and packet one-way delay over time for different flows (1-3) with specific mean rates (33.93, 19.55, 21.92 Mbit/s) and delay values (95th percentile: 144.64, 251.23, 218.00 ms).]
Run 3: Statistics of QUIC Cubic

Start at: 2019-01-03 10:32:25
End at: 2019-01-03 10:32:55
Local clock offset: -6.963 ms
Remote clock offset: 11.341 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.02 Mbit/s
95th percentile per-packet one-way delay: 146.469 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 31.97 Mbit/s
95th percentile per-packet one-way delay: 125.053 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 24.98 Mbit/s
95th percentile per-packet one-way delay: 179.702 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 22.83 Mbit/s
95th percentile per-packet one-way delay: 160.905 ms
Loss rate: 2.36%
Run 3: Report of QUIC Cubic — Data Link

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

- **Flow 1 ingresses** (mean 31.98 Mbit/s)
- **Flow 1 egresses** (mean 31.97 Mbit/s)
- **Flow 2 ingresses** (mean 25.07 Mbit/s)
- **Flow 2 egresses** (mean 24.96 Mbit/s)
- **Flow 3 ingresses** (mean 22.98 Mbit/s)
- **Flow 3 egresses** (mean 22.83 Mbit/s)

- **Flow 1** (95th percentile 125.05 ms)
- **Flow 2** (95th percentile 179.70 ms)
- **Flow 3** (95th percentile 160.91 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2019-01-03 10:56:50
End at: 2019-01-03 10:57:20
Local clock offset: -7.224 ms
Remote clock offset: 11.569 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.42 Mbit/s
95th percentile per-packet one-way delay: 189.606 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 39.20 Mbit/s
95th percentile per-packet one-way delay: 136.310 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 21.64 Mbit/s
95th percentile per-packet one-way delay: 237.961 ms
Loss rate: 1.46%
-- Flow 3:
Average throughput: 14.90 Mbit/s
95th percentile per-packet one-way delay: 344.678 ms
Loss rate: 1.43%
Run 4: Report of QUIC Cubic — Data Link

![Graph 1: Throughput](image1)

![Graph 2: Packet Delay](image2)
Run 5: Statistics of QUIC Cubic

Start at: 2019-01-03 11:21:15
End at: 2019-01-03 11:21:45
Local clock offset: -5.942 ms
Remote clock offset: 13.496 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.57 Mbit/s
95th percentile per-packet one-way delay: 181.720 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 36.68 Mbit/s
95th percentile per-packet one-way delay: 132.827 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 189.651 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 13.27 Mbit/s
95th percentile per-packet one-way delay: 428.526 ms
Loss rate: 2.23%
Run 5: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2019-01-03 09:44:52
End at: 2019-01-03 09:45:22
Local clock offset: -2.166 ms
Remote clock offset: 15.265 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 91.296 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.327 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.247 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.108 ms
Loss rate: 1.85%
Run 1: Report of SCReAM — Data Link

![Graph 1: Throughput vs Time (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)

![Graph 2: One-packet-end-to-end delay (ms)]

- Flow 1 (95th percentile 91.33 ms)
- Flow 2 (95th percentile 91.25 ms)
- Flow 3 (95th percentile 91.11 ms)
Run 2: Statistics of SCReAM

Start at: 2019-01-03 10:09:16
End at: 2019-01-03 10:09:46
Local clock offset: -6.358 ms
Remote clock offset: 10.614 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 96.594 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 90.885 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 90.837 ms
  Loss rate: 1.03%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 96.616 ms
  Loss rate: 1.84%
Run 2: Report of SCReAM — Data Link

[Graph of throughput vs. time with line styles and legends indicating flow ingress and egress rates and packet loss delays]

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Run 3: Statistics of SCReAM

Start at: 2019-01-03 10:33:41
End at: 2019-01-03 10:34:11
Local clock offset: -6.953 ms
Remote clock offset: 15.056 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  95th percentile per-packet one-way delay: 88.139 ms
  Loss rate: 0.84%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 87.616 ms
  Loss rate: 0.51%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 88.147 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 88.138 ms
  Loss rate: 1.85%
Run 3: Report of SCReAM — Data Link
Run 4: Statistics of SCReAM

Start at: 2019-01-03 10:58:06
End at: 2019-01-03 10:58:36
Local clock offset: -7.762 ms
Remote clock offset: 15.489 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 86.635 ms
  Loss rate: 0.85%
  -- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 86.123 ms
  Loss rate: 0.51%
  -- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 86.659 ms
  Loss rate: 1.04%
  -- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 86.150 ms
  Loss rate: 1.50%
Run 4: Report of SCReAM — Data Link

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

- **Throughput (Mbps)**
- **Time (s)**
- **Plot Details:**
  - 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)

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

- **Per-packet one-way delay (ms)**
- **Time (s)**
- **Plot Details:**
  - Flow 1 (95th percentile 86.12 ms)
  - Flow 2 (95th percentile 86.66 ms)
  - Flow 3 (95th percentile 86.15 ms)
Run 5: Statistics of SCReAM

Start at: 2019-01-03 11:22:32
End at: 2019-01-03 11:23:02
Local clock offset: -6.698 ms
Remote clock offset: 13.289 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.362 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.895 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.379 ms
Loss rate: 1.85%
Run 5: Report of SCReAM — Data Link

[Graphs showing throughput and per-packet round-trip delay over time for different flows.]
Run 1: Statistics of Sprout

Start at: 2019-01-03 09:57:35
End at: 2019-01-03 09:58:05
Local clock offset: -4.145 ms
Remote clock offset: 10.857 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.09 Mbit/s
  95th percentile per-packet one-way delay: 92.553 ms
  Loss rate: 1.15%
-- Flow 1:
  Average throughput: 1.07 Mbit/s
  95th percentile per-packet one-way delay: 92.394 ms
  Loss rate: 1.08%
-- Flow 2:
  Average throughput: 0.94 Mbit/s
  95th percentile per-packet one-way delay: 92.408 ms
  Loss rate: 1.10%
-- Flow 3:
  Average throughput: 1.22 Mbit/s
  95th percentile per-packet one-way delay: 93.158 ms
  Loss rate: 1.42%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2019-01-03 10:22:00
End at: 2019-01-03 10:22:30
Local clock offset: -6.588 ms
Remote clock offset: 10.877 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.08 Mbit/s
95th percentile per-packet one-way delay: 105.854 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 4.34 Mbit/s
95th percentile per-packet one-way delay: 106.776 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 103.334 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 94.273 ms
Loss rate: 2.77%
Run 2: Report of Sprout — Data Link

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

Legend:
- Flow 1 ingress (mean 4.34 Mbit/s)
- Flow 1 egress (mean 4.34 Mbit/s)
- Flow 2 ingress (mean 3.39 Mbit/s)
- Flow 2 egress (mean 3.38 Mbit/s)
- Flow 3 ingress (mean 1.54 Mbit/s)
- Flow 3 egress (mean 1.53 Mbit/s)
Run 3: Statistics of Sprout

Start at: 2019-01-03 10:46:26
End at: 2019-01-03 10:46:56
Local clock offset: -8.147 ms
Remote clock offset: 12.204 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.85 Mbit/s
  95th percentile per-packet one-way delay: 104.203 ms
  Loss rate: 0.92%
-- Flow 1:
  Average throughput: 0.87 Mbit/s
  95th percentile per-packet one-way delay: 91.816 ms
  Loss rate: 0.36%
-- Flow 2:
  Average throughput: 2.47 Mbit/s
  95th percentile per-packet one-way delay: 100.773 ms
  Loss rate: 1.95%
-- Flow 3:
  Average throughput: 4.10 Mbit/s
  95th percentile per-packet one-way delay: 106.387 ms
  Loss rate: 0.01%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2019-01-03 11:10:51
End at: 2019-01-03 11:11:21
Local clock offset: -6.832 ms
Remote clock offset: 9.93 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.09 Mbit/s
  95th percentile per-packet one-way delay: 95.201 ms
  Loss rate: 1.15%
-- Flow 1:
  Average throughput: 2.36 Mbit/s
  95th percentile per-packet one-way delay: 95.554 ms
  Loss rate: 0.87%
-- Flow 2:
  Average throughput: 1.59 Mbit/s
  95th percentile per-packet one-way delay: 94.918 ms
  Loss rate: 1.12%
-- Flow 3:
  Average throughput: 2.11 Mbit/s
  95th percentile per-packet one-way delay: 94.587 ms
  Loss rate: 2.13%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2019-01-03 11:35:16
End at: 2019-01-03 11:35:46
Local clock offset: -6.351 ms
Remote clock offset: 13.047 ms

# Below is generated by plot.py at 2019-01-03 11:50:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.75 Mbit/s
  95th percentile per-packet one-way delay: 91.905 ms
  Loss rate: 1.05%
-- Flow 1:
  Average throughput: 2.25 Mbit/s
  95th percentile per-packet one-way delay: 92.700 ms
  Loss rate: 0.96%
-- Flow 2:
  Average throughput: 2.89 Mbit/s
  95th percentile per-packet one-way delay: 91.739 ms
  Loss rate: 1.06%
-- Flow 3:
  Average throughput: 1.79 Mbit/s
  95th percentile per-packet one-way delay: 89.701 ms
  Loss rate: 1.37%
Run 5: Report of Sprout — Data Link

![Graph 1: Throughput (MB/s)]

- Flow 1 ingress (mean 2.26 MBits/s)
- Flow 1 egress (mean 2.25 MBits/s)
- Flow 2 ingress (mean 2.89 MBits/s)
- Flow 2 egress (mean 2.89 MBits/s)
- Flow 3 ingress (mean 1.78 MBits/s)
- Flow 3 egress (mean 1.79 MBits/s)

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

- Flow 1 (95th percentile 92.70 ms)
- Flow 2 (95th percentile 91.74 ms)
- Flow 3 (95th percentile 89.70 ms)
Run 1: Statistics of TaoVA-100x

Start at: 2019-01-03 09:39:37
End at: 2019-01-03 09:40:07
Local clock offset: -2.102 ms
Remote clock offset: 18.856 ms

# Below is generated by plot.py at 2019-01-03 11:51:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.36 Mbit/s
95th percentile per-packet one-way delay: 160.160 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 49.58 Mbit/s
95th percentile per-packet one-way delay: 154.775 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 36.49 Mbit/s
95th percentile per-packet one-way delay: 166.117 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 29.93 Mbit/s
95th percentile per-packet one-way delay: 152.651 ms
Loss rate: 1.71%
Run 1: Report of TaoVA-100x — Data Link

![Graph showing network performance](image1)

*Throughput (Mbps)*

```
Flow 1 ingress (mean 49.06 Mbps)
Flow 1 egress (mean 49.58 Mbps)
Flow 2 ingress (mean 36.03 Mbps)
Flow 2 egress (mean 36.49 Mbps)
Flow 3 ingress (mean 29.18 Mbps)
Flow 3 egress (mean 29.93 Mbps)
```

![Graph showing packet delay](image2)

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

```
Flow 1 (95th percentile 154.78 ms)
Flow 2 (95th percentile 166.12 ms)
Flow 3 (95th percentile 152.65 ms)
```
Run 2: Statistics of TaoVA-100x

Start at: 2019-01-03 10:04:01
End at: 2019-01-03 10:04:31
Local clock offset: -5.626 ms
Remote clock offset: 10.514 ms

# Below is generated by plot.py at 2019-01-03 11:51:31
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.44 Mbit/s
  95th percentile per-packet one-way delay: 158.489 ms
  Loss rate: 0.90%
-- Flow 1:
  Average throughput: 49.02 Mbit/s
  95th percentile per-packet one-way delay: 155.934 ms
  Loss rate: 0.53%
-- Flow 2:
  Average throughput: 37.56 Mbit/s
  95th percentile per-packet one-way delay: 163.508 ms
  Loss rate: 1.02%
-- Flow 3:
  Average throughput: 28.82 Mbit/s
  95th percentile per-packet one-way delay: 151.959 ms
  Loss rate: 2.48%
Run 2: Report of TaoVA-100x — Data Link

[Graphs showing throughput and per-packet one-way delay progression over time for different flows.]
Run 3: Statistics of TaoVA-100x

End at: 2019-01-03 10:28:58
Local clock offset: -7.528 ms
Remote clock offset: 11.288 ms

# Below is generated by plot.py at 2019-01-03 11:51:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.81 Mbit/s
95th percentile per-packet one-way delay: 157.456 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 49.54 Mbit/s
95th percentile per-packet one-way delay: 153.952 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 37.11 Mbit/s
95th percentile per-packet one-way delay: 164.686 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 29.27 Mbit/s
95th percentile per-packet one-way delay: 151.580 ms
Loss rate: 1.97%
Run 3: Report of TaoVA-100x — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 49.64 Mbit/s)
Flow 1 egress (mean 9.54 Mbit/s)
Flow 2 ingress (mean 37.10 Mbit/s)
Flow 2 egress (mean 37.11 Mbit/s)
Flow 3 ingress (mean 29.34 Mbit/s)
Flow 3 egress (mean 29.27 Mbit/s)

Round trip time (ms)

Time (s)

Flow 1 (95th percentile 153.95 ms)
Flow 2 (95th percentile 164.69 ms)
Flow 3 (95th percentile 151.58 ms)
Run 4: Statistics of TaoVA-100x

Start at: 2019-01-03 10:52:52
End at: 2019-01-03 10:53:22
Local clock offset: -8.416 ms
Remote clock offset: 16.338 ms

# Below is generated by plot.py at 2019-01-03 11:51:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 83.84 Mbit/s
  95th percentile per-packet one-way delay: 157.100 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 49.49 Mbit/s
  95th percentile per-packet one-way delay: 154.280 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 37.21 Mbit/s
  95th percentile per-packet one-way delay: 162.867 ms
  Loss rate: 0.80%
-- Flow 3:
  Average throughput: 29.28 Mbit/s
  95th percentile per-packet one-way delay: 154.176 ms
  Loss rate: 1.96%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2019-01-03 11:17:17
End at: 2019-01-03 11:17:47
Local clock offset: -6.791 ms
Remote clock offset: 13.472 ms

# Below is generated by plot.py at 2019-01-03 11:51:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.30 Mbit/s
95th percentile per-packet one-way delay: 155.281 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 49.83 Mbit/s
95th percentile per-packet one-way delay: 148.299 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 37.31 Mbit/s
95th percentile per-packet one-way delay: 167.882 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 29.48 Mbit/s
95th percentile per-packet one-way delay: 153.031 ms
Loss rate: 1.87%
Run 5: Report of TaoVA-100x — Data Link
Run 1: Statistics of TCP Vegas

Start at: 2019-01-03 09:58:48
End at: 2019-01-03 09:59:18
Local clock offset: -4.455 ms
Remote clock offset: 14.839 ms

# Below is generated by plot.py at 2019-01-03 11:51:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.33 Mbit/s
95th percentile per-packet one-way delay: 172.063 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 29.73 Mbit/s
95th percentile per-packet one-way delay: 192.325 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 27.67 Mbit/s
95th percentile per-packet one-way delay: 153.275 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 18.92 Mbit/s
95th percentile per-packet one-way delay: 172.730 ms
Loss rate: 1.94%
Run 1: Report of TCP Vegas — Data Link

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

**Throughput (Mbps):**
- **Flow 1 ingress** (mean 29.74 Mbps)
- **Flow 1 egress** (mean 29.73 Mbps)
- **Flow 2 ingress** (mean 27.63 Mbps)
- **Flow 2 egress** (mean 27.67 Mbps)
- **Flow 3 ingress** (mean 18.96 Mbps)
- **Flow 3 egress** (mean 18.92 Mbps)

**Per-packet one-way delay (ms):**
- **Flow 1 (95th percentile 192.32 ms)**
- **Flow 2 (95th percentile 153.28 ms)**
- **Flow 3 (95th percentile 172.73 ms)**

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Run 2: Statistics of TCP Vegas

Start at: 2019-01-03 10:23:14
End at: 2019-01-03 10:23:44
Local clock offset: -7.332 ms
Remote clock offset: 15.031 ms

# Below is generated by plot.py at 2019-01-03 11:51:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 57.71 Mbit/s
  95th percentile per-packet one-way delay: 170.960 ms
  Loss rate: 0.87%
-- Flow 1:
  Average throughput: 36.56 Mbit/s
  95th percentile per-packet one-way delay: 171.686 ms
  Loss rate: 0.62%
-- Flow 2:
  Average throughput: 21.92 Mbit/s
  95th percentile per-packet one-way delay: 179.110 ms
  Loss rate: 1.00%
-- Flow 3:
  Average throughput: 20.06 Mbit/s
  95th percentile per-packet one-way delay: 153.495 ms
  Loss rate: 1.95%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-01-03 10:47:39
End at: 2019-01-03 10:48:09
Local clock offset: -8.19 ms
Remote clock offset: 12.06 ms

# Below is generated by plot.py at 2019-01-03 11:51:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.68 Mbit/s
95th percentile per-packet one-way delay: 188.884 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 195.688 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 22.23 Mbit/s
95th percentile per-packet one-way delay: 179.034 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 23.42 Mbit/s
95th percentile per-packet one-way delay: 189.492 ms
Loss rate: 1.93%
Run 3: Report of TCP Vegas — Data Link

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

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Run 4: Statistics of TCP Vegas

Start at: 2019-01-03 11:12:04
End at: 2019-01-03 11:12:34
Local clock offset: -6.057 ms
Remote clock offset: 13.765 ms

# Below is generated by plot.py at 2019-01-03 11:51:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 52.46 Mbit/s
  95th percentile per-packet one-way delay: 183.057 ms
  Loss rate: 0.55%
-- Flow 1:
  Average throughput: 29.49 Mbit/s
  95th percentile per-packet one-way delay: 205.344 ms
  Loss rate: 0.29%
-- Flow 2:
  Average throughput: 25.29 Mbit/s
  95th percentile per-packet one-way delay: 168.990 ms
  Loss rate: 0.50%
-- Flow 3:
  Average throughput: 18.82 Mbit/s
  95th percentile per-packet one-way delay: 170.298 ms
  Loss rate: 1.94%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2019-01-03 11:36:29
End at: 2019-01-03 11:36:59
Local clock offset: -6.386 ms
Remote clock offset: 12.88 ms

# Below is generated by plot.py at 2019-01-03 11:51:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.82 Mbit/s
95th percentile per-packet one-way delay: 179.611 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 37.08 Mbit/s
95th percentile per-packet one-way delay: 167.661 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 21.72 Mbit/s
95th percentile per-packet one-way delay: 189.133 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 22.28 Mbit/s
95th percentile per-packet one-way delay: 190.494 ms
Loss rate: 2.00%
Run 5: Report of TCP Vegas — Data Link

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

Legend:
- Flow 1 ingress (mean 37.11 Mbit/s)
- Flow 1 egress (mean 37.08 Mbit/s)
- Flow 2 ingress (mean 21.75 Mbit/s)
- Flow 2 egress (mean 21.72 Mbit/s)
- Flow 3 ingress (mean 22.34 Mbit/s)
- Flow 3 egress (mean 22.26 Mbit/s)
Run 1: Statistics of Verus

Start at: 2019-01-03 09:56:18
End at: 2019-01-03 09:56:48
Local clock offset: -3.675 ms
Remote clock offset: 11.058 ms

# Below is generated by plot.py at 2019-01-03 11:51:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.12 Mbit/s
95th percentile per-packet one-way delay: 493.070 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 35.25 Mbit/s
95th percentile per-packet one-way delay: 327.855 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 634.603 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 26.14 Mbit/s
95th percentile per-packet one-way delay: 294.368 ms
Loss rate: 2.52%
Run 1: Report of Verus — Data Link
Run 2: Statistics of Verus

Start at: 2019-01-03 10:20:43
Local clock offset: -6.447 ms
Remote clock offset: 14.746 ms

# Below is generated by plot.py at 2019-01-03 11:52:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.37 Mbit/s
95th percentile per-packet one-way delay: 313.399 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 46.90 Mbit/s
95th percentile per-packet one-way delay: 321.882 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 34.67 Mbit/s
95th percentile per-packet one-way delay: 308.307 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 16.74 Mbit/s
95th percentile per-packet one-way delay: 219.307 ms
Loss rate: 0.34%
Run 2: Report of Verus — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 47.10 Mbps)  Flow 1 egress (mean 46.90 Mbps)
Flow 2 ingress (mean 34.92 Mbps)  Flow 2 egress (mean 34.67 Mbps)
Flow 3 ingress (mean 16.50 Mbps)  Flow 3 egress (mean 16.74 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 321.08 ms)  Flow 2 (95th percentile 308.31 ms)  Flow 3 (95th percentile 219.31 ms)
Run 3: Statistics of Verus

Start at: 2019-01-03 10:45:08
End at: 2019-01-03 10:45:38
Local clock offset: -8.169 ms
Remote clock offset: 15.68 ms

# Below is generated by plot.py at 2019-01-03 11:52:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.14 Mbit/s
95th percentile per-packet one-way delay: 306.572 ms
Loss rate: 1.51%
-- Flow 1:
Average throughput: 48.46 Mbit/s
95th percentile per-packet one-way delay: 319.119 ms
Loss rate: 1.21%
-- Flow 2:
Average throughput: 31.25 Mbit/s
95th percentile per-packet one-way delay: 234.878 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 24.12 Mbit/s
95th percentile per-packet one-way delay: 214.604 ms
Loss rate: 2.84%
Run 3: Report of Verus — Data Link

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

- Flow 1 ingress (mean 49.13 Mbps)
- Flow 1 egress (mean 48.46 Mbps)
- Flow 2 ingress (mean 31.53 Mbps)
- Flow 2 egress (mean 31.25 Mbps)
- Flow 3 ingress (mean 24.51 Mbps)
- Flow 3 egress (mean 24.12 Mbps)

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

- Flow 1 (95th percentile 319.12 ms)
- Flow 2 (95th percentile 234.88 ms)
- Flow 3 (95th percentile 214.60 ms)
Run 4: Statistics of Verus

Start at: 2019-01-03 11:09:33
End at: 2019-01-03 11:10:03
Local clock offset: -6.103 ms
Remote clock offset: 14.017 ms

# Below is generated by plot.py at 2019-01-03 11:52:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.22 Mbit/s
95th percentile per-packet one-way delay: 299.898 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 44.23 Mbit/s
95th percentile per-packet one-way delay: 301.733 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 32.62 Mbit/s
95th percentile per-packet one-way delay: 289.844 ms
Loss rate: 1.89%
-- Flow 3:
Average throughput: 19.40 Mbit/s
95th percentile per-packet one-way delay: 323.205 ms
Loss rate: 0.44%
Run 4: Report of Verus — Data Link

[Graphs showing data link performance metrics over time, with labels for different flows and their mean throughput and latency.]
Run 5: Statistics of Verus

Start at: 2019-01-03 11:33:58
End at: 2019-01-03 11:34:28
Local clock offset: -6.373 ms
Remote clock offset: 13.124 ms

# Below is generated by plot.py at 2019-01-03 11:52:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 65.03 Mbit/s
  95th percentile per-packet one-way delay: 394.486 ms
  Loss rate: 1.74%
-- Flow 1:
  Average throughput: 38.00 Mbit/s
  95th percentile per-packet one-way delay: 377.051 ms
  Loss rate: 1.31%
-- Flow 2:
  Average throughput: 32.30 Mbit/s
  95th percentile per-packet one-way delay: 414.396 ms
  Loss rate: 1.61%
-- Flow 3:
  Average throughput: 16.92 Mbit/s
  95th percentile per-packet one-way delay: 399.882 ms
  Loss rate: 5.03%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2019-01-03 09:38:18
End at: 2019-01-03 09:38:48
Local clock offset: -2.87 ms
Remote clock offset: 18.418 ms

# Below is generated by plot.py at 2019-01-03 11:52:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.74 Mbit/s
95th percentile per-packet one-way delay: 1979.618 ms
Loss rate: 5.83%
-- Flow 1:
Average throughput: 48.97 Mbit/s
95th percentile per-packet one-way delay: 511.513 ms
Loss rate: 1.66%
-- Flow 2:
Average throughput: 33.91 Mbit/s
95th percentile per-packet one-way delay: 2212.718 ms
Loss rate: 14.50%
-- Flow 3:
Average throughput: 22.34 Mbit/s
95th percentile per-packet one-way delay: 339.093 ms
Loss rate: 3.12%
Run 1: Report of PCC-Vivace — Data Link
Run 2: Statistics of PCC-Vivace

Start at: 2019-01-03 10:02:43
End at: 2019-01-03 10:03:13
Local clock offset: -4.609 ms
Remote clock offset: 14.353 ms

# Below is generated by plot.py at 2019-01-03 11:52:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 79.20 Mbit/s
  95th percentile per-packet one-way delay: 1947.328 ms
  Loss rate: 5.10%
-- Flow 1:
  Average throughput: 51.11 Mbit/s
  95th percentile per-packet one-way delay: 2051.745 ms
  Loss rate: 5.82%
-- Flow 2:
  Average throughput: 31.36 Mbit/s
  95th percentile per-packet one-way delay: 740.698 ms
  Loss rate: 4.03%
-- Flow 3:
  Average throughput: 22.31 Mbit/s
  95th percentile per-packet one-way delay: 347.968 ms
  Loss rate: 3.00%
Run 3: Statistics of PCC-Vivace

Start at: 2019-01-03 10:27:09
End at: 2019-01-03 10:27:39
Local clock offset: -6.714 ms
Remote clock offset: 11.196 ms

# Below is generated by plot.py at 2019-01-03 11:52:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.57 Mbit/s
95th percentile per-packet one-way delay: 1977.936 ms
Loss rate: 7.24%
-- Flow 1:
Average throughput: 51.52 Mbit/s
95th percentile per-packet one-way delay: 2054.462 ms
Loss rate: 9.06%
-- Flow 2:
Average throughput: 31.32 Mbit/s
95th percentile per-packet one-way delay: 740.982 ms
Loss rate: 3.91%
-- Flow 3:
Average throughput: 22.33 Mbit/s
95th percentile per-packet one-way delay: 346.463 ms
Loss rate: 3.07%
Run 3: Report of PCC-Vivace — Data Link

![Throughput Graph]

![Delay Graph]
Run 4: Statistics of PCC-Vivace

Start at: 2019-01-03 10:51:34
End at: 2019-01-03 10:52:04
Local clock offset: -7.558 ms
Remote clock offset: 12.456 ms

# Below is generated by plot.py at 2019-01-03 11:52:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.47 Mbit/s
95th percentile per-packet one-way delay: 1572.257 ms
Loss rate: 3.99%
-- Flow 1:
Average throughput: 49.09 Mbit/s
95th percentile per-packet one-way delay: 1613.244 ms
Loss rate: 4.52%
-- Flow 2:
Average throughput: 30.33 Mbit/s
95th percentile per-packet one-way delay: 677.451 ms
Loss rate: 3.11%
-- Flow 3:
Average throughput: 22.28 Mbit/s
95th percentile per-packet one-way delay: 344.801 ms
Loss rate: 2.86%
Run 4: Report of PCC-Vivace — Data Link

Throughput (Mbps) vs Time (s)

Flow 1 ingress (mean 51.11 Mbit/s)
Flow 1 egress (mean 49.09 Mbit/s)
Flow 2 ingress (mean 31.03 Mbit/s)
Flow 2 egress (mean 30.33 Mbit/s)
Flow 3 ingress (mean 22.54 Mbit/s)
Flow 3 egress (mean 22.28 Mbit/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 1613.24 ms)
Flow 2 (95th percentile 677.45 ms)
Flow 3 (95th percentile 344.80 ms)
Run 5: Statistics of PCC-Vivace

Start at: 2019-01-03 11:15:59
End at: 2019-01-03 11:16:29
Local clock offset: -6.748 ms
Remote clock offset: 9.901 ms

# Below is generated by plot.py at 2019-01-03 11:52:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.66 Mbit/s
95th percentile per-packet one-way delay: 621.447 ms
Loss rate: 2.34%
-- Flow 1:
Average throughput: 46.41 Mbit/s
95th percentile per-packet one-way delay: 561.635 ms
Loss rate: 1.71%
-- Flow 2:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 692.906 ms
Loss rate: 3.44%
-- Flow 3:
Average throughput: 22.49 Mbit/s
95th percentile per-packet one-way delay: 352.451 ms
Loss rate: 3.07%
Run 5: Report of PCC-Vivace — Data Link

![Graph 1](image1.png)

![Graph 2](image2.png)
Run 1: Statistics of WebRTC media

Start at: 2019-01-03 09:46:04
End at: 2019-01-03 09:46:34
Local clock offset: -2.947 ms
Remote clock offset: 14.383 ms

# Below is generated by plot.py at 2019-01-03 11:52:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 91.106 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 91.011 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 91.240 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 90.367 ms
Loss rate: 2.08%
Run 2: Statistics of WebRTC media

Start at: 2019-01-03 10:10:29
End at: 2019-01-03 10:10:59
Local clock offset: -6.478 ms
Remote clock offset: 14.604 ms

# Below is generated by plot.py at 2019-01-03 11:52:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.99 Mbit/s
  95th percentile per-packet one-way delay: 87.281 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 1.71 Mbit/s
  95th percentile per-packet one-way delay: 86.965 ms
  Loss rate: 0.35%
-- Flow 2:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 86.978 ms
  Loss rate: 0.72%
-- Flow 3:
  Average throughput: 0.37 Mbit/s
  95th percentile per-packet one-way delay: 87.760 ms
  Loss rate: 1.89%
Run 2: Report of WebRTC media — Data Link

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

- **Flow 1 ingress (mean 1.71 Mbit/s)**
- **Flow 1 egress (mean 1.71 Mbit/s)**
- **Flow 2 ingress (mean 0.92 Mbit/s)**
- **Flow 2 egress (mean 0.92 Mbit/s)**
- **Flow 3 ingress (mean 0.38 Mbit/s)**
- **Flow 3 egress (mean 0.37 Mbit/s)**

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

- **Flow 1 (95th percentile 86.97 ms)**
- **Flow 2 (95th percentile 86.98 ms)**
- **Flow 3 (95th percentile 87.76 ms)**
Run 3: Statistics of WebRTC media

Start at: 2019-01-03 10:34:54
End at: 2019-01-03 10:35:24
Local clock offset: -7.749 ms
Remote clock offset: 11.61 ms

# Below is generated by plot.py at 2019-01-03 11:52:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 91.523 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 91.413 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 91.600 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 91.464 ms
Loss rate: 1.37%
Run 3: Report of WebRTC media — Data Link

![Graph showing throughput and packet loss over time for different flows.](image-url)
Run 4: Statistics of WebRTC media

Start at: 2019-01-03 10:59:19  
End at: 2019-01-03 10:59:49  
Local clock offset: -7.594 ms  
Remote clock offset: 15.05 ms

# Below is generated by plot.py at 2019-01-03 11:52:46  
# Datalink statistics  
-- Total of 3 flows:  
  Average throughput: 2.99 Mbit/s  
  95th percentile per-packet one-way delay: 87.408 ms  
  Loss rate: 0.60%  
-- Flow 1:  
  Average throughput: 1.70 Mbit/s  
  95th percentile per-packet one-way delay: 86.786 ms  
  Loss rate: 0.23%  
-- Flow 2:  
  Average throughput: 0.92 Mbit/s  
  95th percentile per-packet one-way delay: 87.451 ms  
  Loss rate: 0.76%  
-- Flow 3:  
  Average throughput: 0.39 Mbit/s  
  95th percentile per-packet one-way delay: 88.109 ms  
  Loss rate: 1.85%
Run 4: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 1.70 Mbit/s)
- Flow 1 egress (mean 1.70 Mbit/s)
- Flow 2 ingress (mean 0.93 Mbit/s)
- Flow 2 egress (mean 0.92 Mbit/s)
- Flow 3 ingress (mean 0.39 Mbit/s)
- Flow 3 egress (mean 0.39 Mbit/s)

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

- Flow 1 (95th percentile 86.79 ms)
- Flow 2 (95th percentile 87.45 ms)
- Flow 3 (95th percentile 88.11 ms)
Run 5: Statistics of WebRTC media

Start at: 2019-01-03 11:23:44
End at: 2019-01-03 11:24:14
Local clock offset: -5.937 ms
Remote clock offset: 13.533 ms

# Below is generated by plot.py at 2019-01-03 11:52:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.94 Mbit/s
  95th percentile per-packet one-way delay: 88.454 ms
  Loss rate: 0.67%
-- Flow 1:
  Average throughput: 1.67 Mbit/s
  95th percentile per-packet one-way delay: 88.442 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 88.469 ms
  Loss rate: 0.76%
-- Flow 3:
  Average throughput: 0.37 Mbit/s
  95th percentile per-packet one-way delay: 88.465 ms
  Loss rate: 1.87%
Run 5: Report of WebRTC media — Data Link