Pantheon Report

Generated at 2018-11-16 05:24:08 (UTC).
Data path: GCE Tokyo 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 @ d0153f8e594aa89e93b032143cedbde58e562f4
third_party/indigo @ 2601c92e4a9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-g6d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbedef0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55f5ec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bdc8143bec978f3c4f42
third_party/scream-reproduce @ f09911dda1421aa3131bf11ff1964974a1da3dbdb2
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 Tokyo to GCE Sydney, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
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<tr>
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<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
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</thead>
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<td>Indigo-Muses</td>
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<td>QUIC Cubic</td>
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<td>Sprout</td>
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<td>7.32</td>
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<td>211.74</td>
<td>131.50</td>
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<td>WebRTC media</td>
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<td>1.79</td>
<td>1.14</td>
<td>0.45</td>
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Run 1: Statistics of TCP BBR

Start at: 2018-11-16 00:19:26
End at: 2018-11-16 00:19:56
Local clock offset: -0.374 ms
Remote clock offset: -0.177 ms

# Below is generated by plot.py at 2018-11-16 03:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 949.44 Mbit/s
95th percentile per-packet one-way delay: 118.202 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 516.94 Mbit/s
95th percentile per-packet one-way delay: 104.006 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 437.16 Mbit/s
95th percentile per-packet one-way delay: 129.152 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 430.30 Mbit/s
95th percentile per-packet one-way delay: 110.543 ms
Loss rate: 1.60%
Run 1: Report of TCP BBR — Data Link

![Graph of Throughput over time for different flows]

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

Flow 1 ingress (mean 517.31 Mbps) Flow 1 egress (mean 516.94 Mbps)
Flow 2 ingress (mean 436.22 Mbps) Flow 2 egress (mean 437.16 Mbps)
Flow 3 ingress (mean 432.14 Mbps) Flow 3 egress (mean 430.30 Mbps)

Flow 1 (95th percentile 104.01 ms) Flow 2 (95th percentile 129.15 ms) Flow 3 (95th percentile 110.54 ms)
Run 2: Statistics of TCP BBR

Start at: 2018-11-16 00:52:41
End at: 2018-11-16 00:53:11
Local clock offset: -0.07 ms
Remote clock offset: 0.027 ms

# Below is generated by plot.py at 2018-11-16 03:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 923.12 Mbit/s
95th percentile per-packet one-way delay: 114.351 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 501.29 Mbit/s
95th percentile per-packet one-way delay: 102.019 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 448.37 Mbit/s
95th percentile per-packet one-way delay: 112.719 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 374.76 Mbit/s
95th percentile per-packet one-way delay: 123.743 ms
Loss rate: 1.89%
Run 2: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 501.71 Mbit/s) vs. egress (mean 501.29 Mbit/s)
- Flow 2 ingress (mean 449.37 Mbit/s) vs. egress (mean 448.37 Mbit/s)
- Flow 3 ingress (mean 371.82 Mbit/s) vs. egress (mean 374.76 Mbit/s)

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

- Flow 1 (95th percentile 102.02 ms) vs. Flow 2 (95th percentile 112.72 ms) vs. Flow 3 (95th percentile 123.74 ms)
Run 3: Statistics of TCP BBR

Start at: 2018-11-16 01:24:47
End at: 2018-11-16 01:25:17
Local clock offset: -0.43 ms
Remote clock offset: -0.276 ms

# Below is generated by plot.py at 2018-11-16 03:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.78 Mbit/s
95th percentile per-packet one-way delay: 149.744 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 479.91 Mbit/s
95th percentile per-packet one-way delay: 147.873 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 400.35 Mbit/s
95th percentile per-packet one-way delay: 180.788 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 380.78 Mbit/s
95th percentile per-packet one-way delay: 141.407 ms
Loss rate: 1.80%
Run 3: Report of TCP BBR — Data Link

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

- **Flow 1 ingress (mean 480.44 Mbit/s)**
- **Flow 1 egress (mean 479.91 Mbit/s)**
- **Flow 2 ingress (mean 401.66 Mbit/s)**
- **Flow 2 egress (mean 400.35 Mbit/s)**
- **Flow 3 ingress (mean 383.22 Mbit/s)**
- **Flow 3 egress (mean 380.78 Mbit/s)**
Run 4: Statistics of TCP BBR

Start at: 2018-11-16 01:56:58
End at: 2018-11-16 01:57:28
Local clock offset: -0.045 ms
Remote clock offset: -1.319 ms

# Below is generated by plot.py at 2018-11-16 03:13:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 937.11 Mbit/s
95th percentile per-packet one-way delay: 101.865 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 498.65 Mbit/s
95th percentile per-packet one-way delay: 103.940 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 458.47 Mbit/s
95th percentile per-packet one-way delay: 99.379 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 405.60 Mbit/s
95th percentile per-packet one-way delay: 101.131 ms
Loss rate: 1.76%
Run 4: Report of TCP BBR — Data Link

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

- **Flow 1 ingress (mean 499.08 Mbps)**
- **Flow 1 egress (mean 498.65 Mbps)**
- **Flow 2 ingress (mean 459.42 Mbps)**
- **Flow 2 egress (mean 458.47 Mbps)**
- **Flow 3 ingress (mean 408.00 Mbps)**
- **Flow 3 egress (mean 405.60 Mbps)**

![Graph 2: Per-packet round trip delay (ms)]

- **Flow 1 (95th percentile 103.94 ms)**
- **Flow 2 (95th percentile 99.38 ms)**
- **Flow 3 (95th percentile 101.13 ms)**
Run 5: Statistics of TCP BBR

Start at: 2018-11-16 02:30:53
End at: 2018-11-16 02:31:23
Local clock offset: -0.148 ms
Remote clock offset: -0.789 ms

# Below is generated by plot.py at 2018-11-16 03:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 977.37 Mbit/s
95th percentile per-packet one-way delay: 94.971 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 525.80 Mbit/s
95th percentile per-packet one-way delay: 86.025 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 453.55 Mbit/s
95th percentile per-packet one-way delay: 102.463 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 454.78 Mbit/s
95th percentile per-packet one-way delay: 91.959 ms
Loss rate: 1.57%
Run 5: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2018-11-16 00:17:14
End at: 2018-11-16 00:17:44
Local clock offset: -0.183 ms
Remote clock offset: 0.0 ms

# Below is generated by plot.py at 2018-11-16 03:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.24 Mbit/s
95th percentile per-packet one-way delay: 71.000 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 263.36 Mbit/s
95th percentile per-packet one-way delay: 65.770 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 238.01 Mbit/s
95th percentile per-packet one-way delay: 74.327 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 241.61 Mbit/s
95th percentile per-packet one-way delay: 80.323 ms
Loss rate: 1.29%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2018-11-16 00:50:35
End at: 2018-11-16 00:51:05
Local clock offset: -0.081 ms
Remote clock offset: -0.194 ms

# Below is generated by plot.py at 2018-11-16 03:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 497.54 Mbit/s
95th percentile per-packet one-way delay: 61.771 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 263.66 Mbit/s
95th percentile per-packet one-way delay: 60.577 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 233.41 Mbit/s
95th percentile per-packet one-way delay: 61.070 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 239.01 Mbit/s
95th percentile per-packet one-way delay: 65.391 ms
Loss rate: 0.99%
Run 2: Report of Copa — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 263.02 Mbps)
  - Flow 1 egress (mean 263.66 Mbps)
  - Flow 2 ingress (mean 233.01 Mbps)
  - Flow 2 egress (mean 233.41 Mbps)
  - Flow 3 ingress (mean 236.60 Mbps)
  - Flow 3 egress (mean 239.01 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 60.58 ms)
  - Flow 2 (95th percentile 61.07 ms)
  - Flow 3 (95th percentile 65.39 ms)
Run 3: Statistics of Copa

Start at: 2018-11-16 01:22:37
End at: 2018-11-16 01:23:07
Local clock offset: -0.328 ms
Remote clock offset: -0.245 ms

# Below is generated by plot.py at 2018-11-16 03:14:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 544.01 Mbit/s
95th percentile per-packet one-way delay: 69.469 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 289.86 Mbit/s
95th percentile per-packet one-way delay: 70.312 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 254.22 Mbit/s
95th percentile per-packet one-way delay: 68.305 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 258.15 Mbit/s
95th percentile per-packet one-way delay: 68.146 ms
Loss rate: 1.35%
Run 3: Report of Copa — Data Link

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

- **Flow 1 ingress** (mean 289.80 Mbit/s)
- **Flow 1 egress** (mean 289.86 Mbit/s)
- **Flow 2 ingress** (mean 253.88 Mbit/s)
- **Flow 2 egress** (mean 254.22 Mbit/s)
- **Flow 3 ingress** (mean 256.62 Mbit/s)
- **Flow 3 egress** (mean 256.15 Mbit/s)

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

- **Flow 1** (95th percentile 70.31 ms)
- **Flow 2** (95th percentile 68.31 ms)
- **Flow 3** (95th percentile 68.15 ms)
Run 4: Statistics of Copa

Start at: 2018-11-16 01:55:01
End at: 2018-11-16 01:55:31
Local clock offset: 0.17 ms
Remote clock offset: -0.235 ms

# Below is generated by plot.py at 2018-11-16 03:28:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 432.70 Mbit/s
95th percentile per-packet one-way delay: 71.573 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 225.02 Mbit/s
95th percentile per-packet one-way delay: 65.091 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 202.78 Mbit/s
95th percentile per-packet one-way delay: 81.001 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 221.37 Mbit/s
95th percentile per-packet one-way delay: 72.004 ms
Loss rate: 1.35%
Run 4: Report of Copa — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 224.97 Mbps)
  - Flow 1 egress (mean 225.02 Mbps)
  - Flow 2 ingress (mean 203.10 Mbps)
  - Flow 2 egress (mean 202.78 Mbps)
  - Flow 3 ingress (mean 221.78 Mbps)
  - Flow 3 egress (mean 221.37 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 65.09 ms)
  - Flow 2 (95th percentile 81.00 ms)
  - Flow 3 (95th percentile 72.00 ms)
Run 5: Statistics of Copa

Start at: 2018-11-16 02:28:17
End at: 2018-11-16 02:28:47
Local clock offset: 0.317 ms
Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2018-11-16 03:30:55
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 486.37 Mbit/s
  95th percentile per-packet one-way delay: 71.907 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 257.29 Mbit/s
  95th percentile per-packet one-way delay: 63.099 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 217.83 Mbit/s
  95th percentile per-packet one-way delay: 112.257 ms
  Loss rate: 0.60%
-- Flow 3:
  Average throughput: 255.76 Mbit/s
  95th percentile per-packet one-way delay: 79.308 ms
  Loss rate: 1.35%
Run 5: Report of Copa — Data Link

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

- Flow 1 ingress (mean 257.25 Mbit/s)
- Flow 1 egress (mean 257.29 Mbit/s)
- Flow 2 ingress (mean 217.89 Mbit/s)
- Flow 2 egress (mean 217.83 Mbit/s)
- Flow 3 ingress (mean 256.30 Mbit/s)
- Flow 3 egress (mean 255.76 Mbit/s)

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

- Flow 1 (95th percentile 63.10 ms)
- Flow 2 (95th percentile 112.26 ms)
- Flow 3 (95th percentile 79.31 ms)
Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 23:59:34
End at: 2018-11-16 00:00:04
Local clock offset: -0.144 ms
Remote clock offset: -0.019 ms

# Below is generated by plot.py at 2018-11-16 03:32:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 951.63 Mbit/s
95th percentile per-packet one-way delay: 80.584 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 518.50 Mbit/s
95th percentile per-packet one-way delay: 84.154 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 465.61 Mbit/s
95th percentile per-packet one-way delay: 70.788 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 374.63 Mbit/s
95th percentile per-packet one-way delay: 78.042 ms
Loss rate: 1.17%
Run 1: Report of TCP Cubic — Data Link

![Graph of throughput vs. time for three flows]

- Flow 1 ingress (mean 518.50 Mbit/s)
- Flow 1 egress (mean 518.50 Mbit/s)
- Flow 2 ingress (mean 465.63 Mbit/s)
- Flow 2 egress (mean 465.61 Mbit/s)
- Flow 3 ingress (mean 375.09 Mbit/s)
- Flow 3 egress (mean 374.63 Mbit/s)

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

- Flow 1 (95th percentile 84.15 ms)
- Flow 2 (95th percentile 70.79 ms)
- Flow 3 (95th percentile 78.04 ms)
Run 2: Statistics of TCP Cubic

Start at: 2018-11-16 00:33:05
End at: 2018-11-16 00:33:35
Local clock offset: 0.024 ms
Remote clock offset: 0.122 ms

# Below is generated by plot.py at 2018-11-16 03:33:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 984.71 Mbit/s
95th percentile per-packet one-way delay: 114.290 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 532.39 Mbit/s
95th percentile per-packet one-way delay: 103.940 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 474.14 Mbit/s
95th percentile per-packet one-way delay: 128.324 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 415.98 Mbit/s
95th percentile per-packet one-way delay: 113.384 ms
Loss rate: 1.67%
Run 2: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 532.73 Mbit/s)
- Flow 1 egress (mean 532.99 Mbit/s)
- Flow 2 ingress (mean 474.98 Mbit/s)
- Flow 2 egress (mean 474.14 Mbit/s)
- Flow 3 ingress (mean 418.14 Mbit/s)
- Flow 3 egress (mean 415.98 Mbit/s)

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

- Flow 1 (95th percentile 103.94 ms)
- Flow 2 (95th percentile 128.32 ms)
- Flow 3 (95th percentile 113.38 ms)
Run 3: Statistics of TCP Cubic

Start at: 2018-11-16 01:05:15
End at: 2018-11-16 01:05:45
Local clock offset: -0.113 ms
Remote clock offset: -0.474 ms

# Below is generated by plot.py at 2018-11-16 03:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1006.20 Mbit/s
95th percentile per-packet one-way delay: 110.387 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 538.29 Mbit/s
95th percentile per-packet one-way delay: 106.732 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 479.02 Mbit/s
95th percentile per-packet one-way delay: 114.803 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 456.14 Mbit/s
95th percentile per-packet one-way delay: 95.728 ms
Loss rate: 1.52%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2018-11-16 01:37:14
End at: 2018-11-16 01:37:44
Local clock offset: 0.227 ms
Remote clock offset: -0.498 ms

# Below is generated by plot.py at 2018-11-16 03:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 929.13 Mbit/s
95th percentile per-packet one-way delay: 97.417 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 462.72 Mbit/s
95th percentile per-packet one-way delay: 104.640 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 474.08 Mbit/s
95th percentile per-packet one-way delay: 91.363 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 458.13 Mbit/s
95th percentile per-packet one-way delay: 90.147 ms
Loss rate: 1.54%
Run 4: Report of TCP Cubic — Data Link

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

- Flow 1 ingress (mean 462.35 Mbit/s)
- Flow 1 egress (mean 462.72 Mbit/s)
- Flow 2 ingress (mean 474.39 Mbit/s)
- Flow 2 egress (mean 474.08 Mbit/s)
- Flow 3 ingress (mean 459.96 Mbit/s)
- Flow 3 egress (mean 458.13 Mbit/s)

- Flow 1 (95th percentile 104.64 ms)
- Flow 2 (95th percentile 91.36 ms)
- Flow 3 (95th percentile 90.15 ms)
Run 5: Statistics of TCP Cubic

Start at: 2018-11-16 02:09:33
End at: 2018-11-16 02:10:03
Local clock offset: -0.598 ms
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-11-16 03:34:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 986.48 Mbit/s
95th percentile per-packet one-way delay: 97.169 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 509.46 Mbit/s
95th percentile per-packet one-way delay: 104.834 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 504.73 Mbit/s
95th percentile per-packet one-way delay: 80.521 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 428.81 Mbit/s
95th percentile per-packet one-way delay: 92.207 ms
Loss rate: 1.22%
Run 5: Report of TCP Cubic — Data Link

Throughput (Mbps)

Time (s)

0  5  10  15  20  25  30

Flow 1 ingress (mean 509.34 Mbps)  Flow 1 egress (mean 509.46 Mbps)
Flow 2 ingress (mean 504.59 Mbps)  Flow 2 egress (mean 504.73 Mbps)
Flow 3 ingress (mean 426.98 Mbps)  Flow 3 egress (mean 426.81 Mbps)

Per packet one-way delay (ms)

Time (s)

0  5  10  15  20  25  30

Flow 1 (95th percentile 104.83 ms)  Flow 2 (95th percentile 80.52 ms)  Flow 3 (95th percentile 92.21 ms)
Run 1: Statistics of FillP

Start at: 2018-11-16 00:23:27
End at: 2018-11-16 00:23:57
Local clock offset: -0.149 ms
Remote clock offset: -0.629 ms

# Below is generated by plot.py at 2018-11-16 03:37:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 959.19 Mbit/s
  95th percentile per-packet one-way delay: 100.514 ms
  Loss rate: 0.60%
-- Flow 1:
  Average throughput: 587.79 Mbit/s
  95th percentile per-packet one-way delay: 106.650 ms
  Loss rate: 0.53%
-- Flow 2:
  Average throughput: 424.76 Mbit/s
  95th percentile per-packet one-way delay: 65.746 ms
  Loss rate: 0.45%
-- Flow 3:
  Average throughput: 272.35 Mbit/s
  95th percentile per-packet one-way delay: 63.774 ms
  Loss rate: 1.49%
Run 1: Report of FillP — Data Link

![Throughput Graph](image)

- **Flow 1 Ingress** (mean 588.84 Mbit/s)
- **Flow 1 Egress** (mean 587.79 Mbit/s)
- **Flow 2 Ingress** (mean 424.38 Mbit/s)
- **Flow 2 Egress** (mean 424.76 Mbit/s)
- **Flow 3 Ingress** (mean 272.65 Mbit/s)
- **Flow 3 Egress** (mean 272.35 Mbit/s)

![Delay Graph](image)

- **Flow 1** (95th percentile 106.65 ms)
- **Flow 2** (95th percentile 65.73 ms)
- **Flow 3** (95th percentile 63.77 ms)
Run 2: Statistics of FillP

Start at: 2018-11-16 00:56:33
End at: 2018-11-16 00:57:03
Local clock offset: -0.115 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-11-16 03:50:14
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 856.06 Mbit/s
  95th percentile per-packet one-way delay: 75.602 ms
  Loss rate: 0.40%
-- Flow 1:
  Average throughput: 546.14 Mbit/s
  95th percentile per-packet one-way delay: 80.465 ms
  Loss rate: 0.24%
-- Flow 2:
  Average throughput: 345.91 Mbit/s
  95th percentile per-packet one-way delay: 66.247 ms
  Loss rate: 0.47%
-- Flow 3:
  Average throughput: 244.14 Mbit/s
  95th percentile per-packet one-way delay: 59.794 ms
  Loss rate: 1.30%
Run 2: Report of FillP — Data Link

Throughput (Mbps):

- Flow 1 ingress (mean 545.31 Mbps)
- Flow 1 egress (mean 546.14 Mbps)
- Flow 2 ingress (mean 345.34 Mbps)
- Flow 2 egress (mean 345.91 Mbps)
- Flow 3 ingress (mean 244.66 Mbps)
- Flow 3 egress (mean 244.14 Mbps)

Per-packet one way delay (ms):

- Flow 1 (95th percentile 80.47 ms)
- Flow 2 (95th percentile 66.25 ms)
- Flow 3 (95th percentile 59.79 ms)
Run 3: Statistics of FillP

Start at: 2018-11-16 01:28:27
End at: 2018-11-16 01:28:57
Local clock offset: -0.204 ms
Remote clock offset: 1.008 ms

# Below is generated by plot.py at 2018-11-16 03:53:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 866.79 Mbit/s
95th percentile per-packet one-way delay: 65.541 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 557.63 Mbit/s
95th percentile per-packet one-way delay: 67.905 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 344.43 Mbit/s
95th percentile per-packet one-way delay: 60.593 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 245.59 Mbit/s
95th percentile per-packet one-way delay: 58.472 ms
Loss rate: 1.17%
Run 3: Report of FillP — Data Link
Run 4: Statistics of FillP

Start at: 2018-11-16 02:00:52
End at: 2018-11-16 02:01:22
Local clock offset: 0.013 ms
Remote clock offset: -0.19 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 918.63 Mbit/s
95th percentile per-packet one-way delay: 80.844 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 577.43 Mbit/s
95th percentile per-packet one-way delay: 85.415 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 389.81 Mbit/s
95th percentile per-packet one-way delay: 63.552 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 249.83 Mbit/s
95th percentile per-packet one-way delay: 61.701 ms
Loss rate: 1.24%
Run 4: Report of FillP — Data Link

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

- Flow 1 ingress (mean 578.02 Mbit/s)
- Flow 1 egress (mean 577.43 Mbit/s)
- Flow 2 ingress (mean 389.63 Mbit/s)
- Flow 2 egress (mean 389.83 Mbit/s)
- Flow 3 ingress (mean 249.77 Mbit/s)
- Flow 3 egress (mean 249.83 Mbit/s)
Run 5: Statistics of FillP

Start at: 2018-11-16 02:35:15
End at: 2018-11-16 02:35:45
Local clock offset: -0.087 ms
Remote clock offset: 0.4 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 840.77 Mbit/s
95th percentile per-packet one-way delay: 68.050 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 545.86 Mbit/s
95th percentile per-packet one-way delay: 71.243 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 331.35 Mbit/s
95th percentile per-packet one-way delay: 60.957 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 227.73 Mbit/s
95th percentile per-packet one-way delay: 61.399 ms
Loss rate: 1.23%
Run 5: Report of FillP — Data Link

Throughput (Mbps):

Time (s):

- Flow 1 Ingress (mean 545.51 Mbps)
- Flow 1 Egress (mean 545.86 Mbps)
- Flow 2 Ingress (mean 330.92 Mbps)
- Flow 2 Egress (mean 331.35 Mbps)
- Flow 3 Ingress (mean 228.03 Mbps)
- Flow 3 Egress (mean 227.73 Mbps)

Per-packet one-way delay (ms):

Time (s):

- Flow 1 (95th percentile 71.24 ms)
- Flow 2 (95th percentile 60.96 ms)
- Flow 3 (95th percentile 61.40 ms)
Run 1: Statistics of Indigo

Start at: 2018-11-16 00:09:17
End at: 2018-11-16 00:09:47
Local clock offset: 0.265 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 401.66 Mbit/s
95th percentile per-packet one-way delay: 63.094 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 210.37 Mbit/s
95th percentile per-packet one-way delay: 63.365 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 200.27 Mbit/s
95th percentile per-packet one-way delay: 60.624 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 163.15 Mbit/s
95th percentile per-packet one-way delay: 63.883 ms
Loss rate: 1.44%
Run 1: Report of Indigo — Data Link

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

- **Flow 1**
  - Ingress: Mean 210.42 Mb/s
  - Egress: Mean 210.37 Mb/s
- **Flow 2**
  - Ingress: Mean 200.92 Mb/s
  - Egress: Mean 200.77 Mb/s
- **Flow 3**
  - Ingress: Mean 163.57 Mb/s
  - Egress: Mean 163.15 Mb/s

![Graph of packet loss over time for three flows](image)

- Flow 1 (95th percentile 63.31 ms)
- Flow 2 (95th percentile 60.62 ms)
- Flow 3 (95th percentile 63.88 ms)
Run 2: Statistics of Indigo

Start at: 2018-11-16 00:42:51
End at: 2018-11-16 00:43:21
Local clock offset: -0.572 ms
Remote clock offset: 0.194 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 369.27 Mbit/s
95th percentile per-packet one-way delay: 60.579 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 197.51 Mbit/s
95th percentile per-packet one-way delay: 58.613 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 177.83 Mbit/s
95th percentile per-packet one-way delay: 61.324 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 167.58 Mbit/s
95th percentile per-packet one-way delay: 59.216 ms
Loss rate: 1.28%
Run 2: Report of Indigo — Data Link

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

Legend:
- Flow 1 ingress (mean 197.52 Mbit/s)
- Flow 1 egress (mean 197.51 Mbit/s)
- Flow 2 ingress (mean 177.99 Mbit/s)
- Flow 2 egress (mean 177.83 Mbit/s)
- Flow 3 ingress (mean 167.75 Mbit/s)
- Flow 3 egress (mean 167.58 Mbit/s)

![Graph showing per-packet end-to-end delay over time]

Legend:
- Flow 1 (95th percentile 58.61 ms)
- Flow 2 (95th percentile 61.52 ms)
- Flow 3 (95th percentile 59.22 ms)
Run 3: Statistics of Indigo

Start at: 2018-11-16 01:14:42
End at: 2018-11-16 01:15:12
Local clock offset: -0.116 ms
Remote clock offset: -1.451 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 382.93 Mbit/s
95th percentile per-packet one-way delay: 60.761 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 211.42 Mbit/s
95th percentile per-packet one-way delay: 60.803 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 179.59 Mbit/s
95th percentile per-packet one-way delay: 60.806 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 165.81 Mbit/s
95th percentile per-packet one-way delay: 60.327 ms
Loss rate: 1.32%
Run 3: Report of Indigo — Data Link

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

- **Flow 1 ingress (mean 211.50 Mbit/s)**
- **Flow 1 egress (mean 211.42 Mbit/s)**
- **Flow 2 ingress (mean 179.60 Mbit/s)**
- **Flow 2 egress (mean 179.59 Mbit/s)**
- **Flow 3 ingress (mean 166.03 Mbit/s)**
- **Flow 3 egress (mean 165.81 Mbit/s)**
Run 4: Statistics of Indigo

Start at: 2018-11-16 01:46:46
End at: 2018-11-16 01:47:16
Local clock offset: -0.237 ms
Remote clock offset: -0.478 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 409.23 Mbit/s
95th percentile per-packet one-way delay: 62.863 ms
Loss rate: 0.58%

-- Flow 1:
Average throughput: 219.82 Mbit/s
95th percentile per-packet one-way delay: 63.539 ms
Loss rate: 0.35%

-- Flow 2:
Average throughput: 206.37 Mbit/s
95th percentile per-packet one-way delay: 60.410 ms
Loss rate: 0.64%

-- Flow 3:
Average throughput: 162.47 Mbit/s
95th percentile per-packet one-way delay: 62.777 ms
Loss rate: 1.40%
Run 4: Report of Indigo — Data Link

![Graph showing throughput and round-trip time for different flows.](image)

Legend:
- Flow 1 ingress (mean 219.72 Mbit/s)
- Flow 1 egress (mean 219.82 Mbit/s)
- Flow 2 ingress (mean 206.47 Mbit/s)
- Flow 2 egress (mean 206.37 Mbit/s)
- Flow 3 ingress (mean 162.78 Mbit/s)
- Flow 3 egress (mean 162.47 Mbit/s)

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

Legend:
- Flow 1 (95th percentile 63.54 ms)
- Flow 2 (95th percentile 60.41 ms)
- Flow 3 (95th percentile 62.78 ms)
Run 5: Statistics of Indigo

Start at: 2018-11-16 02:19:39
End at: 2018-11-16 02:20:09
Local clock offset: -0.103 ms
Remote clock offset: -0.146 ms

# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 392.33 Mbit/s
95th percentile per-packet one-way delay: 58.911 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 208.16 Mbit/s
95th percentile per-packet one-way delay: 58.714 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 191.35 Mbit/s
95th percentile per-packet one-way delay: 58.973 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 178.51 Mbit/s
95th percentile per-packet one-way delay: 59.421 ms
Loss rate: 1.30%
Run 5: Report of Indigo — Data Link

[Graph showing throughput and per-packet round-trip delay for different flows over time.]
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-16 00:21:33
End at: 2018-11-16 00:22:03
Local clock offset: 0.258 ms
Remote clock offset: 0.028 ms

# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 510.19 Mbit/s
  95th percentile per-packet one-way delay: 85.017 ms
  Loss rate: 0.48%
-- Flow 1:
  Average throughput: 263.74 Mbit/s
  95th percentile per-packet one-way delay: 81.281 ms
  Loss rate: 0.30%
-- Flow 2:
  Average throughput: 253.57 Mbit/s
  95th percentile per-packet one-way delay: 89.809 ms
  Loss rate: 0.22%
-- Flow 3:
  Average throughput: 238.76 Mbit/s
  95th percentile per-packet one-way delay: 93.287 ms
  Loss rate: 1.66%
Run 1: Report of Indigo-96d2da3 — Data Link
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-16 00:54:49
End at: 2018-11-16 00:55:19
Local clock offset: 0.068 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 509.24 Mbit/s
  95th percentile per-packet one-way delay: 87.713 ms
  Loss rate: 0.57%
-- Flow 1:
  Average throughput: 269.04 Mbit/s
  95th percentile per-packet one-way delay: 85.421 ms
  Loss rate: 0.71%
-- Flow 2:
  Average throughput: 245.36 Mbit/s
  95th percentile per-packet one-way delay: 87.449 ms
  Loss rate: 0.08%
-- Flow 3:
  Average throughput: 238.21 Mbit/s
  95th percentile per-packet one-way delay: 105.789 ms
  Loss rate: 1.10%
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-16 01:26:46
End at: 2018-11-16 01:27:16
Local clock offset: -0.16 ms
Remote clock offset: -0.771 ms

# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.86 Mbit/s
95th percentile per-packet one-way delay: 90.918 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 262.66 Mbit/s
95th percentile per-packet one-way delay: 98.885 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 259.21 Mbit/s
95th percentile per-packet one-way delay: 84.481 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 231.23 Mbit/s
95th percentile per-packet one-way delay: 81.697 ms
Loss rate: 0.13%
Run 3: Report of Indigo-96d2da3 — Data Link
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-16 01:59:03
End at: 2018-11-16 01:59:33
Local clock offset: 0.091 ms
Remote clock offset: -0.239 ms

# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 463.39 Mbit/s
  95th percentile per-packet one-way delay: 90.928 ms
  Loss rate: 0.73%
-- Flow 1:
  Average throughput: 250.99 Mbit/s
  95th percentile per-packet one-way delay: 94.829 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 222.83 Mbit/s
  95th percentile per-packet one-way delay: 90.789 ms
  Loss rate: 0.71%
-- Flow 3:
  Average throughput: 196.61 Mbit/s
  95th percentile per-packet one-way delay: 80.040 ms
  Loss rate: 2.01%
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-16 02:33:23
End at: 2018-11-16 02:33:53
Local clock offset: 0.084 ms
Remote clock offset: 0.476 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.85 Mbit/s
95th percentile per-packet one-way delay: 96.717 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 274.39 Mbit/s
95th percentile per-packet one-way delay: 95.226 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 259.19 Mbit/s
95th percentile per-packet one-way delay: 100.487 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 224.79 Mbit/s
95th percentile per-packet one-way delay: 96.845 ms
Loss rate: 0.56%
Run 5: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-11-16 00:14:42
End at: 2018-11-16 00:15:12
Local clock offset: 0.259 ms
Remote clock offset: -0.665 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.76 Mbit/s
95th percentile per-packet one-way delay: 62.156 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 28.13 Mbit/s
95th percentile per-packet one-way delay: 59.523 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 17.77 Mbit/s
95th percentile per-packet one-way delay: 62.407 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 8.66 Mbit/s
95th percentile per-packet one-way delay: 63.102 ms
Loss rate: 2.41%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

Start at: 2018-11-16 00:48:06
End at: 2018-11-16 00:48:36
Local clock offset: 0.313 ms
Remote clock offset: 0.006 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 41.52 Mbit/s
  95th percentile per-packet one-way delay: 61.987 ms
  Loss rate: 1.02%
-- Flow 1:
  Average throughput: 26.70 Mbit/s
  95th percentile per-packet one-way delay: 61.949 ms
  Loss rate: 0.79%
-- Flow 2:
  Average throughput: 17.78 Mbit/s
  95th percentile per-packet one-way delay: 62.158 ms
  Loss rate: 1.19%
-- Flow 3:
  Average throughput: 9.26 Mbit/s
  95th percentile per-packet one-way delay: 58.595 ms
  Loss rate: 2.33%
Run 2: Report of LEDBAT — Data Link

![Graph 1](image1)

![Graph 2](image2)
Run 3: Statistics of LEDBAT

Start at: 2018-11-16 01:20:07
End at: 2018-11-16 01:20:37
Local clock offset: 0.278 ms
Remote clock offset: 0.452 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.17 Mbit/s
95th percentile per-packet one-way delay: 58.212 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 26.67 Mbit/s
95th percentile per-packet one-way delay: 58.332 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 18.83 Mbit/s
95th percentile per-packet one-way delay: 57.859 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.24 Mbit/s
95th percentile per-packet one-way delay: 57.717 ms
Loss rate: 2.33%
Run 3: Report of LEDBAT — Data Link
Run 4: Statistics of LEDBAT

Start at: 2018-11-16 01:52:31
End at: 2018-11-16 01:53:01
Local clock offset: -0.481 ms
Remote clock offset: -0.361 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.40 Mbit/s
95th percentile per-packet one-way delay: 61.201 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 26.84 Mbit/s
95th percentile per-packet one-way delay: 61.383 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 57.901 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 57.895 ms
Loss rate: 2.32%
Run 4: Report of LEDBAT — Data Link

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

![Graph 2: Per-packet end-to-end delay vs Time for different flows](image)
Run 5: Statistics of LEDBAT

Start at: 2018-11-16 02:25:46
End at: 2018-11-16 02:26:16
Local clock offset: -0.126 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 43.13 Mbit/s
  95th percentile per-packet one-way delay: 57.908 ms
  Loss rate: 0.99%
-- Flow 1:
  Average throughput: 28.30 Mbit/s
  95th percentile per-packet one-way delay: 57.774 ms
  Loss rate: 0.76%
-- Flow 2:
  Average throughput: 17.80 Mbit/s
  95th percentile per-packet one-way delay: 58.290 ms
  Loss rate: 1.19%
-- Flow 3:
  Average throughput: 9.26 Mbit/s
  95th percentile per-packet one-way delay: 57.645 ms
  Loss rate: 2.33%
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-16 00:11:13
End at: 2018-11-16 00:11:43
Local clock offset: -0.145 ms
Remote clock offset: -1.393 ms

# Below is generated by plot.py at 2018-11-16 04:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 934.12 Mbit/s
95th percentile per-packet one-way delay: 93.633 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 516.48 Mbit/s
95th percentile per-packet one-way delay: 93.215 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 446.52 Mbit/s
95th percentile per-packet one-way delay: 104.237 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 372.07 Mbit/s
95th percentile per-packet one-way delay: 82.009 ms
Loss rate: 1.64%
Run 1: Report of Indigo-Muses — Data Link
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-16 00:44:46
End at: 2018-11-16 00:45:16
Local clock offset: -0.116 ms
Remote clock offset: 0.377 ms

# Below is generated by plot.py at 2018-11-16 04:18:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 954.63 Mbit/s
95th percentile per-packet one-way delay: 79.490 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 518.89 Mbit/s
95th percentile per-packet one-way delay: 80.296 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 496.22 Mbit/s
95th percentile per-packet one-way delay: 79.211 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 329.27 Mbit/s
95th percentile per-packet one-way delay: 77.634 ms
Loss rate: 1.89%
Run 2: Report of Indigo-Muses — Data Link

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

Start at: 2018-11-16 01:16:39
End at: 2018-11-16 01:17:09
Local clock offset: -0.29 ms
Remote clock offset: -0.124 ms

# Below is generated by plot.py at 2018-11-16 04:19:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 945.06 Mbit/s
  95th percentile per-packet one-way delay: 103.044 ms
  Loss rate: 0.69%
-- Flow 1:
  Average throughput: 542.09 Mbit/s
  95th percentile per-packet one-way delay: 105.243 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 419.75 Mbit/s
  95th percentile per-packet one-way delay: 109.129 ms
  Loss rate: 0.79%
-- Flow 3:
  Average throughput: 387.35 Mbit/s
  95th percentile per-packet one-way delay: 79.668 ms
  Loss rate: 1.67%
Run 3: Report of Indigo-Muses — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 542.18 Mbps) — Flow 1 egress (mean 542.09 Mbps)
Flow 2 ingress (mean 420.57 Mbps) — Flow 2 egress (mean 419.75 Mbps)
Flow 3 ingress (mean 389.20 Mbps) — Flow 3 egress (mean 387.35 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 105.24 ms) — Flow 2 (95th percentile 109.13 ms) — Flow 3 (95th percentile 79.67 ms)
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-16 01:48:47
End at: 2018-11-16 01:49:17
Local clock offset: -0.25 ms
Remote clock offset: -0.993 ms

# Below is generated by plot.py at 2018-11-16 04:20:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1002.51 Mbit/s
95th percentile per-packet one-way delay: 82.223 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 556.10 Mbit/s
95th percentile per-packet one-way delay: 79.641 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 476.72 Mbit/s
95th percentile per-packet one-way delay: 87.325 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 399.92 Mbit/s
95th percentile per-packet one-way delay: 81.506 ms
Loss rate: 1.64%
Run 4: Report of Indigo-Muses — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 556.02 Mbps) — Flow 1 egress (mean 556.10 Mbps)
Flow 2 ingress (mean 477.00 Mbps) — Flow 2 egress (mean 476.72 Mbps)
Flow 3 ingress (mean 401.78 Mbps) — Flow 3 egress (mean 399.92 Mbps)

Per packet one way delay (ms)

Time (s)
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-16 02:21:55
End at: 2018-11-16 02:22:25
Local clock offset: -0.334 ms
Remote clock offset: 1.072 ms

# Below is generated by plot.py at 2018-11-16 04:21:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1008.42 Mbit/s
95th percentile per-packet one-way delay: 79.038 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 561.33 Mbit/s
95th percentile per-packet one-way delay: 79.247 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 486.87 Mbit/s
95th percentile per-packet one-way delay: 81.304 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 381.21 Mbit/s
95th percentile per-packet one-way delay: 74.936 ms
Loss rate: 1.72%
Run 5: Report of Indigo-Muses — Data Link
Run 1: Statistics of PCC-Allegro

End at: 2018-11-15 23:57:54
Local clock offset: -0.162 ms
Remote clock offset: 0.223 ms

# Below is generated by plot.py at 2018-11-16 04:31:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 717.18 Mbit/s
95th percentile per-packet one-way delay: 159.770 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 439.24 Mbit/s
95th percentile per-packet one-way delay: 160.833 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 297.73 Mbit/s
95th percentile per-packet one-way delay: 130.112 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 246.29 Mbit/s
95th percentile per-packet one-way delay: 131.625 ms
Loss rate: 1.57%
Run 1: Report of PCC-Allegro — Data Link

![Graph showing data link performance metrics over time with throughput and per-packet one-way delay graphs. The graphs depict mean and 95th percentile values for different flows with line colors and legends indicating the mean throughput and delay values for each flow.]

Legend:
- Flow 1 ingress (mean 442.55 Mbit/s) — Flow 1 egress (mean 439.24 Mbit/s)
- Flow 2 ingress (mean 300.68 Mbit/s) — Flow 2 egress (mean 297.73 Mbit/s)
- Flow 3 ingress (mean 247.30 Mbit/s) — Flow 3 egress (mean 246.28 Mbit/s)

Legend:
- Flow 1 (95th percentile 160.83 ms)
- Flow 2 (95th percentile 130.11 ms)
- Flow 3 (95th percentile 131.62 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-16 00:30:29
End at: 2018-11-16 00:30:59
Local clock offset: -0.361 ms
Remote clock offset: -0.573 ms

# Below is generated by plot.py at 2018-11-16 04:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 722.28 Mbit/s
95th percentile per-packet one-way delay: 202.860 ms
Loss rate: 5.44%
-- Flow 1:
Average throughput: 446.83 Mbit/s
95th percentile per-packet one-way delay: 202.933 ms
Loss rate: 4.35%
-- Flow 2:
Average throughput: 298.39 Mbit/s
95th percentile per-packet one-way delay: 204.979 ms
Loss rate: 9.24%
-- Flow 3:
Average throughput: 237.41 Mbit/s
95th percentile per-packet one-way delay: 123.523 ms
Loss rate: 1.39%
Run 2: Report of PCC-Allegro — Data Link

![Throughput Graph](image1)

**Throughput (Mbps)**

- **Flow 1 ingress (mean 465.30 Mbps)**
- **Flow 1 egress (mean 446.83 Mbps)**
- **Flow 2 ingress (mean 326.81 Mbps)**
- **Flow 2 egress (mean 298.39 Mbps)**
- **Flow 3 ingress (mean 237.90 Mbps)**
- **Flow 3 egress (mean 237.41 Mbps)**

![Delay Graph](image2)

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

- **Flow 1 (95th percentile 202.93 ms)**
- **Flow 2 (95th percentile 204.99 ms)**
- **Flow 3 (95th percentile 123.52 ms)**

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Run 3: Statistics of PCC-Allegro

Start at: 2018-11-16 01:03:20
End at: 2018-11-16 01:03:50
Local clock offset: -0.373 ms
Remote clock offset: -0.488 ms

# Below is generated by plot.py at 2018-11-16 04:32:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 635.38 Mbit/s
  95th percentile per-packet one-way delay: 198.329 ms
  Loss rate: 4.52%
-- Flow 1:
  Average throughput: 346.62 Mbit/s
  95th percentile per-packet one-way delay: 205.069 ms
  Loss rate: 3.68%
-- Flow 2:
  Average throughput: 313.37 Mbit/s
  95th percentile per-packet one-way delay: 190.054 ms
  Loss rate: 7.00%
-- Flow 3:
  Average throughput: 246.94 Mbit/s
  95th percentile per-packet one-way delay: 90.853 ms
  Loss rate: 1.50%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 358.42 Mbps)
Flow 1 egress (mean 346.62 Mbps)
Flow 2 ingress (mean 334.93 Mbps)
Flow 2 egress (mean 313.37 Mbps)
Flow 3 ingress (mean 247.78 Mbps)
Flow 3 egress (mean 246.94 Mbps)

Packet per one-way delay (ms)

Time (s)

• Flow 1 (95th percentile 205.07 ms)
• Flow 2 (95th percentile 190.05 ms)
• Flow 3 (95th percentile 90.85 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-16 01:35:14
End at: 2018-11-16 01:35:44
Local clock offset: -0.249 ms
Remote clock offset: -0.288 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 688.74 Mbit/s
  95th percentile per-packet one-way delay: 200.636 ms
  Loss rate: 6.24%
-- Flow 1:
  Average throughput: 418.94 Mbit/s
  95th percentile per-packet one-way delay: 205.783 ms
  Loss rate: 9.39%
-- Flow 2:
  Average throughput: 276.57 Mbit/s
  95th percentile per-packet one-way delay: 68.436 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 264.53 Mbit/s
  95th percentile per-packet one-way delay: 95.604 ms
  Loss rate: 1.46%
Run 4: Report of PCC-Allegro — Data Link
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-16 02:07:38
End at: 2018-11-16 02:08:08
Local clock offset: 0.138 ms
Remote clock offset: -0.228 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 648.00 Mbit/s
95th percentile per-packet one-way delay: 133.888 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 364.38 Mbit/s
95th percentile per-packet one-way delay: 140.380 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 300.34 Mbit/s
95th percentile per-packet one-way delay: 63.121 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 258.29 Mbit/s
95th percentile per-packet one-way delay: 136.523 ms
Loss rate: 1.44%
Run 5: Report of PCC-Allegro — Data Link

[Graphs showing throughput and packet delay over time for different flows]
Run 1: Statistics of PCC-Expr

Start at: 2018-11-16 00:07:12
End at: 2018-11-16 00:07:42
Local clock offset: -0.184 ms
Remote clock offset: 0.073 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.24 Mbit/s
95th percentile per-packet one-way delay: 176.529 ms
Loss rate: 3.77%
-- Flow 1:
Average throughput: 321.09 Mbit/s
95th percentile per-packet one-way delay: 184.823 ms
Loss rate: 5.46%
-- Flow 2:
Average throughput: 267.81 Mbit/s
95th percentile per-packet one-way delay: 76.519 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 59.51 Mbit/s
95th percentile per-packet one-way delay: 60.689 ms
Loss rate: 1.84%
Run 1: Report of PCC-Expr — Data Link

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

Flow 1 ingress (mean 338.32 Mbit/s)  Flow 1 egress (mean 321.09 Mbit/s)
Flow 2 ingress (mean 268.33 Mbit/s)  Flow 2 egress (mean 267.81 Mbit/s)
Flow 3 ingress (mean 59.90 Mbit/s)  Flow 3 egress (mean 59.51 Mbit/s)

Flow 1 (95th percentile 184.82 ms)  Flow 2 (95th percentile 76.52 ms)  Flow 3 (95th percentile 60.69 ms)
Run 2: Statistics of PCC-Expr

Start at: 2018-11-16 00:40:42
End at: 2018-11-16 00:41:12
Local clock offset: -0.145 ms
Remote clock offset: -0.153 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.99 Mbit/s
95th percentile per-packet one-way delay: 178.350 ms
Loss rate: 3.08%
-- Flow 1:
Average throughput: 277.77 Mbit/s
95th percentile per-packet one-way delay: 199.999 ms
Loss rate: 4.17%
-- Flow 2:
Average throughput: 271.99 Mbit/s
95th percentile per-packet one-way delay: 176.475 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 32.73 Mbit/s
95th percentile per-packet one-way delay: 57.456 ms
Loss rate: 1.51%
Run 2: Report of PCC-Expr — Data Link

The first graph shows the throughput over time for different flows, with the following details:
- **Flow 1 ingress** (mean 288.75 Mbit/s)
- **Flow 1 egress** (mean 277.77 Mbit/s)
- **Flow 2 ingress** (mean 274.33 Mbit/s)
- **Flow 2 egress** (mean 271.99 Mbit/s)
- **Flow 3 ingress** (mean 32.85 Mbit/s)
- **Flow 3 egress** (mean 32.73 Mbit/s)

The second graph shows the per-packet one-way delay over time for the same flows, with the following details:
- **Flow 1 (95th percentile 200.00 ms)**
- **Flow 2 (95th percentile 176.47 ms)**
- **Flow 3 (95th percentile 57.46 ms)**

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Run 3: Statistics of PCC-Expr

Start at: 2018-11-16 01:12:33
End at: 2018-11-16 01:13:03
Local clock offset: 0.281 ms
Remote clock offset: -0.184 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 524.88 Mbit/s
  95th percentile per-packet one-way delay: 187.463 ms
  Loss rate: 6.34%
-- Flow 1:
  Average throughput: 303.55 Mbit/s
  95th percentile per-packet one-way delay: 164.652 ms
  Loss rate: 2.73%
-- Flow 2:
  Average throughput: 250.71 Mbit/s
  95th percentile per-packet one-way delay: 215.681 ms
  Loss rate: 12.74%
-- Flow 3:
  Average throughput: 168.50 Mbit/s
  95th percentile per-packet one-way delay: 307.923 ms
  Loss rate: 4.73%
Run 3: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 310.85 Mbit/s)
- Flow 1 egress (mean 303.55 Mbit/s)
- Flow 2 ingress (mean 285.57 Mbit/s)
- Flow 2 egress (mean 250.71 Mbit/s)
- Flow 3 ingress (mean 174.78 Mbit/s)
- Flow 3 egress (mean 168.50 Mbit/s)

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

- Flow 1 (95th percentile 164.65 ms)
- Flow 2 (95th percentile 215.68 ms)
- Flow 3 (95th percentile 307.92 ms)
Run 4: Statistics of PCC-Expr

Start at: 2018-11-16 01:44:22
End at: 2018-11-16 01:44:52
Local clock offset: -0.464 ms
Remote clock offset: -0.675 ms

# Below is generated by plot.py at 2018-11-16 04:52:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 528.62 Mbit/s
95th percentile per-packet one-way delay: 134.288 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 290.44 Mbit/s
95th percentile per-packet one-way delay: 136.369 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 263.36 Mbit/s
95th percentile per-packet one-way delay: 143.151 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 191.15 Mbit/s
95th percentile per-packet one-way delay: 85.585 ms
Loss rate: 0.07%
Run 4: Report of PCC-Expr — Data Link

![Data Link Throughput Graph](image1)

![Data Link Delay Graph](image2)
Run 5: Statistics of PCC-Expr

Start at: 2018-11-16 02:17:07
End at: 2018-11-16 02:17:37
Local clock offset: ~0.101 ms
Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 547.42 Mbit/s
  95th percentile per-packet one-way delay: 177.167 ms
  Loss rate: 4.78%
-- Flow 1:
  Average throughput: 322.91 Mbit/s
  95th percentile per-packet one-way delay: 188.003 ms
  Loss rate: 6.93%
-- Flow 2:
  Average throughput: 260.67 Mbit/s
  95th percentile per-packet one-way delay: 164.977 ms
  Loss rate: 1.54%
-- Flow 3:
  Average throughput: 157.33 Mbit/s
  95th percentile per-packet one-way delay: 80.972 ms
  Loss rate: 1.43%
Run 5: Report of PCC-Expr — Data Link

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

Legend:
- Flow 1 ingress (mean 345.61 Mbit/s)
- Flow 1 egress (mean 322.91 Mbit/s)
- Flow 2 ingress (mean 263.21 Mbit/s)
- Flow 2 egress (mean 260.67 Mbit/s)
- Flow 3 ingress (mean 157.76 Mbit/s)
- Flow 3 egress (mean 157.33 Mbit/s)

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

Legend:
- Flow 1 (95th percentile 188.00 ms)
- Flow 2 (95th percentile 164.98 ms)
- Flow 3 (95th percentile 80.97 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-16 00:13:22
End at: 2018-11-16 00:13:52
Local clock offset: -0.124 ms
Remote clock offset: 0.58 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.42 Mbit/s
95th percentile per-packet one-way delay: 59.621 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 69.91 Mbit/s
95th percentile per-packet one-way delay: 56.431 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 59.749 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 29.98 Mbit/s
95th percentile per-packet one-way delay: 56.873 ms
Loss rate: 0.22%
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-16 00:46:48
End at: 2018-11-16 00:47:18
Local clock offset: -0.134 ms
Remote clock offset: 1.23 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.66 Mbit/s
95th percentile per-packet one-way delay: 56.100 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 49.54 Mbit/s
95th percentile per-packet one-way delay: 55.861 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 44.65 Mbit/s
95th percentile per-packet one-way delay: 56.180 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 19.83 Mbit/s
95th percentile per-packet one-way delay: 55.952 ms
Loss rate: 3.56%
Run 2: Report of QUIC Cubic — Data Link

![Graph showing throughput and per-packet round-trip delays for different flows.](image-url)
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-16 01:18:48
End at: 2018-11-16 01:19:18
Local clock offset: 0.321 ms
Remote clock offset: -0.551 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.59 Mbit/s
95th percentile per-packet one-way delay: 61.465 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 56.89 Mbit/s
95th percentile per-packet one-way delay: 61.519 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 31.92 Mbit/s
95th percentile per-packet one-way delay: 58.182 ms
Loss rate: 1.91%
-- Flow 3:
Average throughput: 19.88 Mbit/s
95th percentile per-packet one-way delay: 57.820 ms
Loss rate: 0.38%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-16 01:51:12
End at: 2018-11-16 01:51:42
Local clock offset: -0.112 ms
Remote clock offset: -0.969 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 99.47 Mbit/s
  95th percentile per-packet one-way delay: 61.515 ms
  Loss rate: 0.91%
-- Flow 1:
  Average throughput: 57.20 Mbit/s
  95th percentile per-packet one-way delay: 58.128 ms
  Loss rate: 0.65%
-- Flow 2:
  Average throughput: 37.95 Mbit/s
  95th percentile per-packet one-way delay: 58.424 ms
  Loss rate: 1.06%
-- Flow 3:
  Average throughput: 52.19 Mbit/s
  95th percentile per-packet one-way delay: 61.985 ms
  Loss rate: 1.57%
Run 4: Report of QUIC Cubic — Data Link

![Graph showing throughput and per-packet one-way delay over time for three flows. Each flow has different colors and is labeled with mean throughput values.]

- Flow 1 ingress (mean 57.35 Mbit/s)
- Flow 1 egress (mean 57.20 Mbit/s)
- Flow 2 ingress (mean 38.14 Mbit/s)
- Flow 2 egress (mean 37.95 Mbit/s)
- Flow 3 ingress (mean 52.39 Mbit/s)
- Flow 3 egress (mean 52.19 Mbit/s)
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-16 02:24:24
End at: 2018-11-16 02:24:54
Local clock offset: 0.365 ms
Remote clock offset: -0.719 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 91.56 Mbit/s
  95th percentile per-packet one-way delay: 58.402 ms
  Loss rate: 0.74%
  -- Flow 1:
  Average throughput: 59.43 Mbit/s
  95th percentile per-packet one-way delay: 58.428 ms
  Loss rate: 0.63%
  -- Flow 2:
  Average throughput: 35.71 Mbit/s
  95th percentile per-packet one-way delay: 58.273 ms
  Loss rate: 0.16%
  -- Flow 3:
  Average throughput: 25.34 Mbit/s
  95th percentile per-packet one-way delay: 58.313 ms
  Loss rate: 3.13%
Run 5: Report of QUIC Cubic — Data Link

![Graphs showing throughput and per-packet one-way delay for different flows over time. The graphs display multiple lines for each flow, indicating ingress and egress data points with mean values.]
Run 1: Statistics of SCReAM

Start at: 2018-11-16 00:16:02
End at: 2018-11-16 00:16:32
Local clock offset: -0.169 ms
Remote clock offset: -0.703 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 61.159 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 61.195 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 58.029 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 57.958 ms
  Loss rate: 1.11%
Run 1: Report of SCReAM — Data Link

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**Throughput Graph**

- 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)

**Delay Graph**

- Flow 1 (95th percentile 61.20 ms)
- Flow 2 (95th percentile 58.03 ms)
- Flow 3 (95th percentile 57.96 ms)
Run 2: Statistics of SCReAM

Start at: 2018-11-16 00:49:23
End at: 2018-11-16 00:49:53
Local clock offset: -0.36 ms
Remote clock offset: -0.591 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.724 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.558 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.526 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.819 ms
Loss rate: 1.09%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2018-11-16 01:21:24
End at: 2018-11-16 01:21:54
Local clock offset: -0.304 ms
Remote clock offset: -0.794 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 58.170 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.188 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.209 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.778 ms
Loss rate: 1.09%
Run 3: Report of SCReAM — Data Link

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

- 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 completion delay (ms) vs. Time (s)]

- Flow 1 (95th percentile 58.19 ms)
- Flow 2 (95th percentile 58.21 ms)
- Flow 3 (95th percentile 57.78 ms)
Run 4: Statistics of SCReAM

Start at: 2018-11-16 01:53:49
End at: 2018-11-16 01:54:19
Local clock offset: -0.012 ms
Remote clock offset: -0.275 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 58.097 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.170 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.857 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.780 ms
Loss rate: 1.09%
Run 4: Report of SCReAM — Data Link

![Graph 1: Throughput (Mb/s) vs. Time (s)]

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

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

- Blue points: Flow 1 (95th percentile 58.17 ms)
- Green points: Flow 2 (95th percentile 57.86 ms)
- Red points: Flow 3 (95th percentile 57.78 ms)
Run 5: Statistics of SCReAM

Start at: 2018-11-16 02:27:05  
End at: 2018-11-16 02:27:35  
Local clock offset: -0.298 ms  
Remote clock offset: -0.034 ms  

# Below is generated by plot.py at 2018-11-16 04:54:05  
# Datalink statistics  
-- Total of 3 flows:  
95th percentile per-packet one-way delay: 57.432 ms  
Loss rate: 0.52%  
-- Flow 1:  
95th percentile per-packet one-way delay: 57.480 ms  
Loss rate: 0.38%  
-- Flow 2:  
95th percentile per-packet one-way delay: 57.038 ms  
Loss rate: 0.61%  
-- Flow 3:  
95th percentile per-packet one-way delay: 57.195 ms  
Loss rate: 0.73%
Run 5: Report of SCReAM — Data Link
Run 1: Statistics of Sprout

Start at: 2018-11-15 23:54:19
End at: 2018-11-15 23:54:49
Local clock offset: -0.142 ms
Remote clock offset: -0.177 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.45 Mbit/s
95th percentile per-packet one-way delay: 57.706 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 57.695 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 57.709 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 57.742 ms
Loss rate: 1.57%
Run 1: Report of Sprout — Data Link

[Graph showing throughput over time for different flows]

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

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Run 2: Statistics of Sprout

Start at: 2018-11-16 00:27:13
End at: 2018-11-16 00:27:43
Local clock offset: -0.12 ms
Remote clock offset: -1.508 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 14.55 Mbit/s
   95th percentile per-packet one-way delay: 62.619 ms
   Loss rate: 0.69%
-- Flow 1:
   Average throughput: 7.04 Mbit/s
   95th percentile per-packet one-way delay: 62.748 ms
   Loss rate: 0.48%
-- Flow 2:
   Average throughput: 7.70 Mbit/s
   95th percentile per-packet one-way delay: 59.284 ms
   Loss rate: 0.66%
-- Flow 3:
   Average throughput: 7.37 Mbit/s
   95th percentile per-packet one-way delay: 59.151 ms
   Loss rate: 1.38%
Run 2: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 7.04 Mbps)
- Flow 1 egress (mean 7.04 Mbps)
- Flow 2 ingress (mean 7.71 Mbps)
- Flow 2 egress (mean 7.70 Mbps)
- Flow 3 ingress (mean 7.36 Mbps)
- Flow 3 egress (mean 7.37 Mbps)

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

- Flow 1 (95th percentile 62.75 ms)
- Flow 2 (95th percentile 59.28 ms)
- Flow 3 (95th percentile 59.15 ms)
Run 3: Statistics of Sprout

Start at: 2018-11-16 01:00:21
End at: 2018-11-16 01:00:51
Local clock offset: -0.559 ms
Remote clock offset: -0.165 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.96 Mbit/s
95th percentile per-packet one-way delay: 57.419 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 57.478 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 7.63 Mbit/s
95th percentile per-packet one-way delay: 57.199 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 6.56 Mbit/s
95th percentile per-packet one-way delay: 57.371 ms
Loss rate: 1.56%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2018-11-16 01:32:03
End at: 2018-11-16 01:32:33
Local clock offset: -0.003 ms
Remote clock offset: -1.496 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.85 Mbit/s
95th percentile per-packet one-way delay: 62.132 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 59.187 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 62.295 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: 59.237 ms
Loss rate: 1.47%
Run 4: Report of Sprout — Data Link

![Graph of throughput and delay over time for different flows.](image)
Run 5: Statistics of Sprout

Start at: 2018-11-16 02:04:32
End at: 2018-11-16 02:05:02
Local clock offset: -0.403 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 60.836 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 60.942 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 57.303 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 57.152 ms
Loss rate: 1.40%
Run 5: Report of Sprout — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 7.03 Mbps)
- Flow 1 egress (mean 7.02 Mbps)
- Flow 2 ingress (mean 6.92 Mbps)
- Flow 2 egress (mean 7.15 Mbps)
- Flow 3 ingress (mean 7.30 Mbps)
- Flow 3 egress (mean 7.29 Mbps)

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

- Flow 1 (95th percentile 60.94 ms)
- Flow 2 (95th percentile 57.30 ms)
- Flow 3 (95th percentile 57.15 ms)
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-16 00:05:14
End at: 2018-11-16 00:05:44
Local clock offset: -0.378 ms
Remote clock offset: 0.023 ms

# Below is generated by plot.py at 2018-11-16 05:00:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 428.68 Mbit/s
95th percentile per-packet one-way delay: 61.802 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 219.64 Mbit/s
95th percentile per-packet one-way delay: 57.982 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 211.50 Mbit/s
95th percentile per-packet one-way delay: 61.093 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 207.41 Mbit/s
95th percentile per-packet one-way delay: 67.867 ms
Loss rate: 1.30%
Run 1: Report of TaoVA-100x — Data Link

![Throughput and Delay Graphs](image-url)

- Flow 1 ingress (mean 219.69 Mbit/s)
- Flow 1 egress (mean 219.64 Mbit/s)
- Flow 2 ingress (mean 211.47 Mbit/s)
- Flow 2 egress (mean 211.50 Mbit/s)
- Flow 3 ingress (mean 207.85 Mbit/s)
- Flow 3 egress (mean 207.41 Mbit/s)

![Per-packet one-way delay](image-url)

- Flow 1 (95th percentile 57.98 ms)
- Flow 2 (95th percentile 61.09 ms)
- Flow 3 (95th percentile 67.87 ms)
Run 2: Statistics of TaoVA-100x

Start at: 2018-11-16 00:38:38
End at: 2018-11-16 00:39:08
Local clock offset: -0.332 ms
Remote clock offset: -0.655 ms

# Below is generated by plot.py at 2018-11-16 05:00:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.22 Mbit/s
95th percentile per-packet one-way delay: 61.676 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 217.38 Mbit/s
95th percentile per-packet one-way delay: 61.791 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 214.29 Mbit/s
95th percentile per-packet one-way delay: 61.614 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 201.17 Mbit/s
95th percentile per-packet one-way delay: 59.564 ms
Loss rate: 1.41%
Run 2: Report of TaoVA-100x — Data Link
Run 3: Statistics of TaoVA-100x

Start at: 2018-11-16 01:10:36
End at: 2018-11-16 01:11:06
Local clock offset: 0.153 ms
Remote clock offset: -0.449 ms

# Below is generated by plot.py at 2018-11-16 05:01:03
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 435.02 Mbit/s
  95th percentile per-packet one-way delay: 58.742 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 221.82 Mbit/s
  95th percentile per-packet one-way delay: 58.519 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 218.93 Mbit/s
  95th percentile per-packet one-way delay: 58.562 ms
  Loss rate: 0.67%
-- Flow 3:
  Average throughput: 205.16 Mbit/s
  95th percentile per-packet one-way delay: 60.252 ms
  Loss rate: 1.36%

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Run 3: Report of TaoVA-100x — Data Link

![Graph showing data link throughput and per-packet one-way delay](image-url)
Run 4: Statistics of TaoVA-100x

Start at: 2018-11-16 01:42:22
End at: 2018-11-16 01:42:52
Local clock offset: -0.11 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2018-11-16 05:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.45 Mbit/s
95th percentile per-packet one-way delay: 58.164 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 212.77 Mbit/s
95th percentile per-packet one-way delay: 58.242 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 214.41 Mbit/s
95th percentile per-packet one-way delay: 58.210 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 212.76 Mbit/s
95th percentile per-packet one-way delay: 57.785 ms
Loss rate: 1.27%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2018-11-16 02:14:54
End at: 2018-11-16 02:15:24
Local clock offset: -0.541 ms
Remote clock offset: -0.827 ms

# Below is generated by plot.py at 2018-11-16 05:04:12
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 435.96 Mbit/s
   95th percentile per-packet one-way delay: 58.353 ms
   Loss rate: 0.62%
-- Flow 1:
   Average throughput: 223.89 Mbit/s
   95th percentile per-packet one-way delay: 58.144 ms
   Loss rate: 0.42%
-- Flow 2:
   Average throughput: 214.32 Mbit/s
   95th percentile per-packet one-way delay: 58.516 ms
   Loss rate: 0.59%
-- Flow 3:
   Average throughput: 211.30 Mbit/s
   95th percentile per-packet one-way delay: 59.372 ms
   Loss rate: 1.30%
Run 5: Report of TaoVA-100x — Data Link

![Graph showing network throughput and delay](image-url)
Run 1: Statistics of TCP Vegas

Start at: 2018-11-16 00:03:06
End at: 2018-11-16 00:03:36
Local clock offset: -0.317 ms
Remote clock offset: -0.218 ms

# Below is generated by plot.py at 2018-11-16 05:07:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 932.16 Mbit/s
95th percentile per-packet one-way delay: 102.952 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 462.66 Mbit/s
95th percentile per-packet one-way delay: 79.570 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 499.33 Mbit/s
95th percentile per-packet one-way delay: 118.787 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 417.17 Mbit/s
95th percentile per-packet one-way delay: 81.744 ms
Loss rate: 1.39%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2018-11-16 00:36:29
End at: 2018-11-16 00:36:59
Local clock offset: 0.274 ms
Remote clock offset: 0.381 ms

# Below is generated by plot.py at 2018-11-16 05:11:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.88 Mbit/s
95th percentile per-packet one-way delay: 72.655 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 558.78 Mbit/s
95th percentile per-packet one-way delay: 73.666 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 246.77 Mbit/s
95th percentile per-packet one-way delay: 57.511 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 421.38 Mbit/s
95th percentile per-packet one-way delay: 72.326 ms
Loss rate: 1.35%
Run 2: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 558.96 Mbit/s)
- Flow 1 egress (mean 558.78 Mbit/s)
- Flow 2 ingress (mean 246.94 Mbit/s)
- Flow 2 egress (mean 246.77 Mbit/s)
- Flow 3 ingress (mean 422.22 Mbit/s)
- Flow 3 egress (mean 421.38 Mbit/s)

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

- Flow 1 (95th percentile 73.67 ms)
- Flow 2 (95th percentile 57.51 ms)
- Flow 3 (95th percentile 72.33 ms)
Run 3: Statistics of TCP Vegas

Start at: 2018-11-16 01:08:33
End at: 2018-11-16 01:09:03
Local clock offset: -0.112 ms
Remote clock offset: -0.21 ms

# Below is generated by plot.py at 2018-11-16 05:16:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 956.80 Mbit/s
  95th percentile per-packet one-way delay: 126.132 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 516.57 Mbit/s
  95th percentile per-packet one-way delay: 117.659 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 473.84 Mbit/s
  95th percentile per-packet one-way delay: 182.718 ms
  Loss rate: 0.75%
-- Flow 3:
  Average throughput: 379.65 Mbit/s
  95th percentile per-packet one-way delay: 112.919 ms
  Loss rate: 1.53%
Run 3: Report of TCP Vegas — Data Link

![Graph showing throughput and packet delay over time for flow 1, flow 2, and flow 3.](image)

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 516.49 Mbps)
  - Flow 1 egress (mean 516.57 Mbps)
  - Flow 2 ingress (mean 474.69 Mbps)
  - Flow 2 egress (mean 473.84 Mbps)
  - Flow 3 ingress (mean 181.01 Mbps)
  - Flow 3 egress (mean 379.65 Mbps)

- **Packet Delay (ms):**
  - Flow 1 (95th percentile 117.66 ms)
  - Flow 2 (95th percentile 182.72 ms)
  - Flow 3 (95th percentile 112.92 ms)
Run 4: Statistics of TCP Vegas

Start at: 2018-11-16 01:40:26
End at: 2018-11-16 01:40:56
Local clock offset: -0.478 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2018-11-16 05:18:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 840.52 Mbit/s
95th percentile per-packet one-way delay: 76.503 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 470.18 Mbit/s
95th percentile per-packet one-way delay: 76.807 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 396.71 Mbit/s
95th percentile per-packet one-way delay: 73.880 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 323.55 Mbit/s
95th percentile per-packet one-way delay: 88.474 ms
Loss rate: 0.89%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2018-11-16 02:12:51
End at: 2018-11-16 02:13:21
Local clock offset: -0.56 ms
Remote clock offset: -0.808 ms

# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 958.09 Mbit/s
95th percentile per-packet one-way delay: 95.048 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 515.30 Mbit/s
95th percentile per-packet one-way delay: 104.325 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 460.32 Mbit/s
95th percentile per-packet one-way delay: 73.723 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 415.12 Mbit/s
95th percentile per-packet one-way delay: 93.133 ms
Loss rate: 1.38%
Run 5: Report of TCP Vegas — Data Link
Run 1: Statistics of Verus

Start at: 2018-11-16 00:25:37
End at: 2018-11-16 00:26:07
Local clock offset: -0.523 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 224.06 Mbit/s
95th percentile per-packet one-way delay: 155.194 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 129.71 Mbit/s
95th percentile per-packet one-way delay: 187.983 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 111.52 Mbit/s
95th percentile per-packet one-way delay: 85.996 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 62.57 Mbit/s
95th percentile per-packet one-way delay: 64.416 ms
Loss rate: 0.55%
Run 1: Report of Verus — Data Link
Run 2: Statistics of Verus

Start at: 2018-11-16 00:58:35
End at: 2018-11-16 00:59:05
Local clock offset: -0.127 ms
Remote clock offset: -0.374 ms

# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 259.37 Mbit/s
95th percentile per-packet one-way delay: 152.045 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 161.12 Mbit/s
95th percentile per-packet one-way delay: 156.090 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 108.93 Mbit/s
95th percentile per-packet one-way delay: 84.342 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 78.54 Mbit/s
95th percentile per-packet one-way delay: 229.178 ms
Loss rate: 9.26%
Run 2: Report of Verus — Data Link

![Graph of data link throughput and delay over time for different flows.](image-url)
Run 3: Statistics of Verus

Start at: 2018-11-16 01:30:22
End at: 2018-11-16 01:30:52
Local clock offset: 0.08 ms
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.23 Mbit/s
95th percentile per-packet one-way delay: 116.394 ms
Loss rate: 0.58%

-- Flow 1:
Average throughput: 134.32 Mbit/s
95th percentile per-packet one-way delay: 110.478 ms
Loss rate: 0.51%

-- Flow 2:
Average throughput: 133.36 Mbit/s
95th percentile per-packet one-way delay: 126.146 ms
Loss rate: 0.43%

-- Flow 3:
Average throughput: 64.59 Mbit/s
95th percentile per-packet one-way delay: 67.352 ms
Loss rate: 1.70%
Run 3: Report of Verus — Data Link

![Graph showing throughput and per-packet one-way delay](image-url)
Run 4: Statistics of Verus

Start at: 2018-11-16 02:02:54
End at: 2018-11-16 02:03:24
Local clock offset: -0.419 ms
Remote clock offset: -0.611 ms

# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 257.58 Mbit/s
  95th percentile per-packet one-way delay: 154.068 ms
  Loss rate: 0.92%
-- Flow 1:
  Average throughput: 174.97 Mbit/s
  95th percentile per-packet one-way delay: 163.108 ms
  Loss rate: 1.32%
-- Flow 2:
  Average throughput: 95.41 Mbit/s
  95th percentile per-packet one-way delay: 84.503 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 58.78 Mbit/s
  95th percentile per-packet one-way delay: 64.926 ms
  Loss rate: 0.07%
Run 4: Report of Verus — Data Link

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

- Flow 1 ingress (mean 176.63 Mbit/s)
- Flow 1 egress (mean 174.97 Mbit/s)
- Flow 2 ingress (mean 94.91 Mbit/s)
- Flow 2 egress (mean 95.41 Mbit/s)
- Flow 3 ingress (mean 58.11 Mbit/s)
- Flow 3 egress (mean 58.78 Mbit/s)

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

- Flow 1 (95th percentile 163.11 ms)
- Flow 2 (95th percentile 84.50 ms)
- Flow 3 (95th percentile 64.93 ms)
Run 5: Statistics of Verus

Start at: 2018-11-16 02:37:16
End at: 2018-11-16 02:37:46
Local clock offset: 0.256 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-11-16 05:22:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 306.12 Mbit/s
  95th percentile per-packet one-way delay: 217.497 ms
  Loss rate: 2.93%
-- Flow 1:
  Average throughput: 191.23 Mbit/s
  95th percentile per-packet one-way delay: 225.943 ms
  Loss rate: 3.67%
-- Flow 2:
  Average throughput: 149.09 Mbit/s
  95th percentile per-packet one-way delay: 146.960 ms
  Loss rate: 1.61%
-- Flow 3:
  Average throughput: 49.65 Mbit/s
  95th percentile per-packet one-way delay: 62.605 ms
  Loss rate: 2.05%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

End at: 2018-11-15 23:56:03
Local clock offset: 0.258 ms
Remote clock offset: -0.277 ms

# Below is generated by plot.py at 2018-11-16 05:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 438.72 Mbit/s
95th percentile per-packet one-way delay: 58.798 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 308.43 Mbit/s
95th percentile per-packet one-way delay: 59.178 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 154.35 Mbit/s
95th percentile per-packet one-way delay: 58.166 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 85.38 Mbit/s
95th percentile per-packet one-way delay: 58.075 ms
Loss rate: 1.65%
Run 1: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 308.35 Mbit/s)
- Flow 1 egress (mean 308.43 Mbit/s)
- Flow 2 ingress (mean 154.72 Mbit/s)
- Flow 2 egress (mean 154.35 Mbit/s)
- Flow 3 ingress (mean 85.90 Mbit/s)
- Flow 3 egress (mean 85.38 Mbit/s)

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

- Flow 1 (95th percentile 59.18 ms)
- Flow 2 (95th percentile 58.17 ms)
- Flow 3 (95th percentile 58.08 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-16 00:28:27
End at: 2018-11-16 00:28:57
Local clock offset: -0.142 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-11-16 05:22:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 528.27 Mbit/s
  95th percentile per-packet one-way delay: 65.399 ms
  Loss rate: 0.68%
-- Flow 1:
  Average throughput: 317.20 Mbit/s
  95th percentile per-packet one-way delay: 64.860 ms
  Loss rate: 0.42%
-- Flow 2:
  Average throughput: 233.10 Mbit/s
  95th percentile per-packet one-way delay: 111.916 ms
  Loss rate: 0.80%
-- Flow 3:
  Average throughput: 172.38 Mbit/s
  95th percentile per-packet one-way delay: 62.282 ms
  Loss rate: 1.78%
Run 2: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 317.20 Mbit/s)
- Flow 1 egress (mean 317.20 Mbit/s)
- Flow 2 ingress (mean 233.56 Mbit/s)
- Flow 2 egress (mean 233.10 Mbit/s)
- Flow 3 ingress (mean 173.40 Mbit/s)
- Flow 3 egress (mean 172.28 Mbit/s)
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-16 01:01:35
End at: 2018-11-16 01:02:05
Local clock offset: ~0.114 ms
Remote clock offset: ~0.041 ms

# Below is generated by plot.py at 2018-11-16 05:23:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.65 Mbit/s
95th percentile per-packet one-way delay: 65.717 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 341.81 Mbit/s
95th percentile per-packet one-way delay: 68.103 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 158.31 Mbit/s
95th percentile per-packet one-way delay: 57.804 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 63.37 Mbit/s
95th percentile per-packet one-way delay: 57.349 ms
Loss rate: 3.06%
Run 3: Report of PCC-Vivace — Data Link

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

- **Flow 1 ingress (mean 341.77 Mbit/s)**
- **Flow 1 egress (mean 341.81 Mbit/s)**
- **Flow 2 ingress (mean 158.64 Mbit/s)**
- **Flow 2 egress (mean 158.31 Mbit/s)**
- **Flow 3 ingress (mean 64.61 Mbit/s)**
- **Flow 3 egress (mean 63.37 Mbit/s)**
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-16 01:33:17
End at: 2018-11-16 01:33:47
Local clock offset: -0.415 ms
Remote clock offset: -0.316 ms

# Below is generated by plot.py at 2018-11-16 05:23:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.99 Mbit/s
95th percentile per-packet one-way delay: 71.223 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 341.83 Mbit/s
95th percentile per-packet one-way delay: 78.553 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 287.08 Mbit/s
95th percentile per-packet one-way delay: 61.263 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 179.18 Mbit/s
95th percentile per-packet one-way delay: 59.310 ms
Loss rate: 1.77%
Run 4: Report of PCC-Vivace — Data Link

![Graph showing network performance metrics over time.]
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-16 02:05:46
End at: 2018-11-16 02:06:16
Local clock offset: -0.2 ms
Remote clock offset: 1.127 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 558.99 Mbit/s
  95th percentile per-packet one-way delay: 161.580 ms
  Loss rate: 1.10%
-- Flow 1:
  Average throughput: 357.63 Mbit/s
  95th percentile per-packet one-way delay: 182.212 ms
  Loss rate: 1.10%
-- Flow 2:
  Average throughput: 225.85 Mbit/s
  95th percentile per-packet one-way delay: 57.889 ms
  Loss rate: 0.67%
-- Flow 3:
  Average throughput: 157.20 Mbit/s
  95th percentile per-packet one-way delay: 64.270 ms
  Loss rate: 2.36%
Run 5: Report of PCC-Vivace — Data Link
Run 1: Statistics of WebRTC media

Start at: 2018-11-16 00:01:54
End at: 2018-11-16 00:02:24
Local clock offset: -0.148 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.96 Mbit/s
  95th percentile per-packet one-way delay: 57.284 ms
  Loss rate: 0.66%
-- Flow 1:
  Average throughput: 1.43 Mbit/s
  95th percentile per-packet one-way delay: 57.262 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 1.12 Mbit/s
  95th percentile per-packet one-way delay: 57.327 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 57.174 ms
  Loss rate: 1.40%
Run 1: Report of WebRTC media — Data Link

![Throughput Graph]

Flow 1 ingress (mean 1.43 Mbit/s)  Flow 1 egress (mean 1.43 Mbit/s)
Flow 2 ingress (mean 1.12 Mbit/s)  Flow 2 egress (mean 1.12 Mbit/s)
Flow 3 ingress (mean 0.43 Mbit/s)  Flow 3 egress (mean 0.43 Mbit/s)

![Delay Graph]

Flow 1 (95th percentile 57.26 ms)  Flow 2 (95th percentile 57.33 ms)  Flow 3 (95th percentile 57.17 ms)
Run 2: Statistics of WebRTC media

Start at: 2018-11-16 00:35:17
End at: 2018-11-16 00:35:47
Local clock offset: -0.149 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.46 Mbit/s
95th percentile per-packet one-way delay: 60.762 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 57.375 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 57.863 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 61.117 ms
Loss rate: 0.97%
Run 2: Report of WebRTC media — Data Link

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

- **Flow 1** (ingress mean 1.88 Mbit/s, egress mean 1.88 Mbit/s)
- **Flow 2** (ingress mean 1.16 Mbit/s, egress mean 1.15 Mbit/s)
- **Flow 3** (ingress mean 0.45 Mbit/s, egress mean 0.45 Mbit/s)

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

- **Flow 1** (95th percentile 57.30 ms)
- **Flow 2** (95th percentile 57.86 ms)
- **Flow 3** (95th percentile 61.12 ms)
Run 3: Statistics of WebRTC media

Start at: 2018-11-16 01:07:20
End at: 2018-11-16 01:07:50
Local clock offset: 0.019 ms
Remote clock offset: -0.223 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 61.181 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 57.538 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 61.277 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 57.716 ms
Loss rate: 1.31%
Run 3: Report of WebRTC media — Data Link

![Throughput Graph]

![Delay Graph]

Legend:
- Flow 1 ingress (mean 1.87 Mbit/s)
- Flow 1 egress (mean 1.87 Mbit/s)
- Flow 2 ingress (mean 1.16 Mbit/s)
- Flow 2 egress (mean 1.15 Mbit/s)
- Flow 3 ingress (mean 0.44 Mbit/s)
- Flow 3 egress (mean 0.44 Mbit/s)
Run 4: Statistics of WebRTC media

Start at: 2018-11-16 01:39:14
End at: 2018-11-16 01:39:44
Local clock offset: 0.16 ms
Remote clock offset: -0.478 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 61.316 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 58.260 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 61.406 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 58.090 ms
Loss rate: 0.87%
Run 4: Report of WebRTC media — Data Link

![Graph of throughput and round-trip time over time for different flows.]

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 1.85 Mbps)
  - Flow 1 egress (mean 1.85 Mbps)
  - Flow 2 ingress (mean 1.15 Mbps)
  - Flow 2 egress (mean 1.15 Mbps)
  - Flow 3 ingress (mean 0.47 Mbps)
  - Flow 3 egress (mean 0.46 Mbps)

- **Round-trip time (ms):**
  - Flow 1 (95th percentile 58.26 ms)
  - Flow 2 (95th percentile 61.41 ms)
  - Flow 3 (95th percentile 58.09 ms)
Run 5: Statistics of WebRTC media

Start at: 2018-11-16 02:11:38
End at: 2018-11-16 02:12:08
Local clock offset: 0.102 ms
Remote clock offset: 0.511 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.48 Mbit/s
  95th percentile per-packet one-way delay: 60.428 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 1.91 Mbit/s
  95th percentile per-packet one-way delay: 60.450 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 1.14 Mbit/s
  95th percentile per-packet one-way delay: 60.426 ms
  Loss rate: 0.60%
-- Flow 3:
  Average throughput: 0.46 Mbit/s
  95th percentile per-packet one-way delay: 56.965 ms
  Loss rate: 1.78%
Run 5: Report of WebRTC media — Data Link

![Throughput Graph](chart1.png)

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 1.91 Mbps)
Flow 1 egress (mean 1.91 Mbps)
Flow 2 ingress (mean 1.14 Mbps)
Flow 2 egress (mean 1.14 Mbps)
Flow 3 ingress (mean 0.46 Mbps)
Flow 3 egress (mean 0.46 Mbps)

![Delay Graph](chart2.png)

Per-packet one-way delay (ms)

Time (s)

- Flow 1 (95th percentile 60.45 ms)
- Flow 2 (95th percentile 60.43 ms)
- Flow 3 (95th percentile 56.97 ms)