Pantheon Report

Data path: AWS California 1 Ethernet (local) → Stanford Ethernet (remote).
Repeated the test of 15 congestion control schemes 10 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
Tested BBR with qdisc of Fair Queuing (fq), and other schemes with the default Linux qdisc (pfifo_fast).
NTP offsets were measured against time.stanford.edu and have been applied to correct the timestamps in logs.

Git summary:
branch: master @ f23294ec38436c9f802847d477a41b7343ec76e6
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7f77b69c622f07da8
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0a9b
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d59d38c4df3e0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a77f5b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303ae82ea080e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a9066e6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1af9598fa066d18b623c091a55feca872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ec978f3cfc42
third_party/scream @ c3370fd7bd17265a79ae3e4016ad23f5965885
third_party/sourdough @ f1a14bff749737437f61b1ae3eb302b27cde681
third_party/sprout @ 6f2efe6e088d91066a9f023d3f75ee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 423cbca3e8e1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197dd041ace68a42849b2540ad834825f42
test from AWS California 1 Ethernet to Stanford Ethernet, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
</tr>
<tr>
<td>TCP BBR</td>
<td>10</td>
<td>505.37</td>
<td>355.14</td>
<td>313.46</td>
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<td>TCP Cubic</td>
<td>10</td>
<td>327.25</td>
<td>202.11</td>
<td>180.78</td>
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<td>LEDBAT</td>
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<td>294.04</td>
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<td>786.13</td>
<td>143.50</td>
<td>88.94</td>
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<td>N/A</td>
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<td>2.37</td>
<td>1.53</td>
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<td>Sprout</td>
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<td>24.71</td>
<td>24.58</td>
<td>24.43</td>
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<td>248.66</td>
<td>241.13</td>
<td>226.29</td>
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<td>182.45</td>
<td>140.07</td>
<td>157.59</td>
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<td>Verus</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Copa</td>
<td>10</td>
<td>103.23</td>
<td>101.48</td>
<td>108.51</td>
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<td>Indigo-2-256</td>
<td>10</td>
<td>195.32</td>
<td>182.64</td>
<td>171.19</td>
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<td>Indigo-1-32</td>
<td>10</td>
<td>192.74</td>
<td>186.62</td>
<td>175.89</td>
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<tr>
<td>Indigo-1-128</td>
<td>10</td>
<td>206.79</td>
<td>193.86</td>
<td>171.47</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-01-27 08:36:33
End at: 2018-01-27 08:37:03
Local clock offset: 3.166 ms

# Below is generated by plot.py at 2018-01-27 19:05:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 838.00 Mbit/s
95th percentile per-packet one-way delay: 28.865 ms
Loss rate: 4.65%
-- Flow 1:
Average throughput: 537.47 Mbit/s
95th percentile per-packet one-way delay: 31.180 ms
Loss rate: 3.23%
-- Flow 2:
Average throughput: 311.15 Mbit/s
95th percentile per-packet one-way delay: 22.049 ms
Loss rate: 6.33%
-- Flow 3:
Average throughput: 281.34 Mbit/s
95th percentile per-packet one-way delay: 22.060 ms
Loss rate: 8.73%
Run 1: Report of TCP BBR — Data Link
Run 2: Statistics of TCP BBR

Start at: 2018-01-27 09:27:17
End at: 2018-01-27 09:27:47
Local clock offset: -3.986 ms

# Below is generated by plot.py at 2018-01-27 19:05:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 845.70 Mbit/s
95th percentile per-packet one-way delay: 22.291 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 521.11 Mbit/s
95th percentile per-packet one-way delay: 25.631 ms
Loss rate: 2.78%
-- Flow 2:
Average throughput: 348.61 Mbit/s
95th percentile per-packet one-way delay: 15.021 ms
Loss rate: 5.69%
-- Flow 3:
Average throughput: 278.47 Mbit/s
95th percentile per-packet one-way delay: 15.032 ms
Loss rate: 6.78%
Run 2: Report of TCP BBR — Data Link
Run 3: Statistics of TCP BBR

Start at: 2018-01-27 10:17:57
End at: 2018-01-27 10:18:27
Local clock offset: -2.545 ms

# Below is generated by plot.py at 2018-01-27 19:05:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 854.01 Mbit/s
95th percentile per-packet one-way delay: 22.812 ms
Loss rate: 4.20%
-- Flow 1:
Average throughput: 525.14 Mbit/s
95th percentile per-packet one-way delay: 25.422 ms
Loss rate: 3.20%
-- Flow 2:
Average throughput: 329.45 Mbit/s
95th percentile per-packet one-way delay: 16.426 ms
Loss rate: 5.08%
-- Flow 3:
Average throughput: 329.50 Mbit/s
95th percentile per-packet one-way delay: 16.455 ms
Loss rate: 7.09%
Run 3: Report of TCP BBR — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 542.53 Mbit/s)  Flow 1 egress (mean 525.14 Mbit/s)
Flow 2 ingress (mean 347.11 Mbit/s)  Flow 2 egress (mean 329.45 Mbit/s)
Flow 3 ingress (mean 354.68 Mbit/s)  Flow 3 egress (mean 329.50 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 25.42 ms)  Flow 2 (95th percentile 16.43 ms)  Flow 3 (95th percentile 16.45 ms)
Run 4: Statistics of TCP BBR

Start at: 2018-01-27 11:08:39
End at: 2018-01-27 11:09:09
Local clock offset: 1.287 ms

# Below is generated by plot.py at 2018-01-27 19:05:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 854.90 Mbit/s
  95th percentile per-packet one-way delay: 31.534 ms
  Loss rate: 4.90%
-- Flow 1:
  Average throughput: 523.37 Mbit/s
  95th percentile per-packet one-way delay: 32.790 ms
  Loss rate: 4.01%
-- Flow 2:
  Average throughput: 362.14 Mbit/s
  95th percentile per-packet one-way delay: 20.806 ms
  Loss rate: 5.80%
-- Flow 3:
  Average throughput: 272.07 Mbit/s
  95th percentile per-packet one-way delay: 20.808 ms
  Loss rate: 7.50%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

End at: 2018-01-27 11:59:54
Local clock offset: 3.338 ms

# Below is generated by plot.py at 2018-01-27 19:05:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 847.74 Mbit/s
  95th percentile per-packet one-way delay: 33.537 ms
  Loss rate: 4.59%
-- Flow 1:
  Average throughput: 488.26 Mbit/s
  95th percentile per-packet one-way delay: 34.792 ms
  Loss rate: 3.53%
-- Flow 2:
  Average throughput: 394.01 Mbit/s
  95th percentile per-packet one-way delay: 21.513 ms
  Loss rate: 5.37%
-- Flow 3:
  Average throughput: 292.68 Mbit/s
  95th percentile per-packet one-way delay: 22.643 ms
  Loss rate: 7.67%
Run 5: Report of TCP BBR — Data Link

![Graph 1: Throughput vs Time]

- Flow 1 ingress (mean 506.15 Mbit/s)
- Flow 1 egress (mean 488.26 Mbit/s)
- Flow 2 ingress (mean 416.39 Mbit/s)
- Flow 2 egress (mean 394.01 Mbit/s)
- Flow 3 ingress (mean 316.98 Mbit/s)
- Flow 3 egress (mean 292.68 Mbit/s)

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

- Flow 1 (95th percentile 34.79 ms)
- Flow 2 (95th percentile 21.51 ms)
- Flow 3 (95th percentile 22.64 ms)
Run 6: Statistics of TCP BBR

Start at: 2018-01-27 12:50:04
End at: 2018-01-27 12:50:34
Local clock offset: -6.101 ms

# Below is generated by plot.py at 2018-01-27 19:05:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 842.05 Mbit/s
95th percentile per-packet one-way delay: 21.954 ms
Loss rate: 4.51%
-- Flow 1:
Average throughput: 472.87 Mbit/s
95th percentile per-packet one-way delay: 23.445 ms
Loss rate: 3.62%
-- Flow 2:
Average throughput: 388.56 Mbit/s
95th percentile per-packet one-way delay: 12.790 ms
Loss rate: 5.14%
-- Flow 3:
Average throughput: 331.80 Mbit/s
95th percentile per-packet one-way delay: 11.335 ms
Loss rate: 6.80%
Run 7: Statistics of TCP BBR

Local clock offset: -2.945 ms

# Below is generated by plot.py at 2018-01-27 19:05:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 846.83 Mbit/s
  95th percentile per-packet one-way delay: 23.695 ms
  Loss rate: 4.56%
-- Flow 1:
  Average throughput: 524.85 Mbit/s
  95th percentile per-packet one-way delay: 27.583 ms
  Loss rate: 3.12%
-- Flow 2:
  Average throughput: 327.08 Mbit/s
  95th percentile per-packet one-way delay: 15.994 ms
  Loss rate: 6.35%
-- Flow 3:
  Average throughput: 313.51 Mbit/s
  95th percentile per-packet one-way delay: 16.002 ms
  Loss rate: 7.81%
Run 7: Report of TCP BBR — Data Link
Run 8: Statistics of TCP BBR

Start at: 2018-01-27 14:31:01
End at: 2018-01-27 14:31:31
Local clock offset: 3.141 ms

# Below is generated by plot.py at 2018-01-27 19:05:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 834.34 Mbit/s
  95th percentile per-packet one-way delay: 26.662 ms
  Loss rate: 4.59%
  -- Flow 1:
  Average throughput: 475.20 Mbit/s
  95th percentile per-packet one-way delay: 28.314 ms
  Loss rate: 3.67%
  -- Flow 2:
  Average throughput: 366.21 Mbit/s
  95th percentile per-packet one-way delay: 22.016 ms
  Loss rate: 5.37%
  -- Flow 3:
  Average throughput: 346.53 Mbit/s
  95th percentile per-packet one-way delay: 20.619 ms
  Loss rate: 6.61%
Run 8: Report of TCP BBR — Data Link

[Graph 1: Throughput (Mbps) over time (s)]

Flow 1 ingress (mean 493.32 Mbps)• Flow 1 egress (mean 475.20 Mbps)
Flow 2 ingress (mean 386.98 Mbps)• Flow 2 egress (mean 366.21 Mbps)
Flow 3 ingress (mean 371.02 Mbps)• Flow 3 egress (mean 346.53 Mbps)

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

Flow 1 (95th percentile 28.31 ms)• Flow 2 (95th percentile 22.02 ms)• Flow 3 (95th percentile 20.62 ms)
Run 9: Statistics of TCP BBR

Local clock offset: 1.21 ms

# Below is generated by plot.py at 2018-01-27 19:16:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 848.58 Mbit/s
95th percentile per-packet one-way delay: 27.982 ms
Loss rate: 3.84%
-- Flow 1:
Average throughput: 538.07 Mbit/s
95th percentile per-packet one-way delay: 31.830 ms
Loss rate: 2.95%
-- Flow 2:
Average throughput: 328.92 Mbit/s
95th percentile per-packet one-way delay: 20.019 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 275.76 Mbit/s
95th percentile per-packet one-way delay: 20.074 ms
Loss rate: 6.70%
Run 10: Statistics of TCP BBR

Start at: 2018-01-27 16:12:23
End at: 2018-01-27 16:12:53
Local clock offset: -4.615 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 847.58 Mbit/s
  95th percentile per-packet one-way delay: 20.723 ms
  Loss rate: 4.44%
-- Flow 1:
  Average throughput: 447.33 Mbit/s
  95th percentile per-packet one-way delay: 25.246 ms
  Loss rate: 3.39%
-- Flow 2:
  Average throughput: 395.27 Mbit/s
  95th percentile per-packet one-way delay: 13.942 ms
  Loss rate: 5.03%
-- Flow 3:
  Average throughput: 412.93 Mbit/s
  95th percentile per-packet one-way delay: 14.069 ms
  Loss rate: 6.66%
Run 10: Report of TCP BBR — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2018-01-27 08:40:06
End at: 2018-01-27 08:40:36
Local clock offset: 2.499 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 604.69 Mbit/s
95th percentile per-packet one-way delay: 20.231 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 379.31 Mbit/s
95th percentile per-packet one-way delay: 20.402 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 222.52 Mbit/s
95th percentile per-packet one-way delay: 19.137 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 232.48 Mbit/s
95th percentile per-packet one-way delay: 17.757 ms
Loss rate: 0.11%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2018-01-27 09:30:52
End at: 2018-01-27 09:31:22
Local clock offset: ~4.148 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 415.88 Mbit/s
  95th percentile per-packet one-way delay: 13.759 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 252.08 Mbit/s
  95th percentile per-packet one-way delay: 13.788 ms
  Loss rate: 0.08%
-- Flow 2:
  Average throughput: 146.15 Mbit/s
  95th percentile per-packet one-way delay: 13.583 ms
  Loss rate: 0.11%
-- Flow 3:
  Average throughput: 200.20 Mbit/s
  95th percentile per-packet one-way delay: 13.816 ms
  Loss rate: 0.30%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2018-01-27 10:21:30
End at: 2018-01-27 10:22:00
Local clock offset: -2.621 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 517.44 Mbit/s
  95th percentile per-packet one-way delay: 15.066 ms
  Loss rate: 0.09%
-- Flow 1:
  Average throughput: 344.80 Mbit/s
  95th percentile per-packet one-way delay: 15.151 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 169.91 Mbit/s
  95th percentile per-packet one-way delay: 14.913 ms
  Loss rate: 0.12%
-- Flow 3:
  Average throughput: 179.25 Mbit/s
  95th percentile per-packet one-way delay: 14.857 ms
  Loss rate: 0.16%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2018-01-27 11:12:12
End at: 2018-01-27 11:12:42
Local clock offset: 1.92 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 552.54 Mbit/s
95th percentile per-packet one-way delay: 20.272 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 344.22 Mbit/s
95th percentile per-packet one-way delay: 20.345 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 213.19 Mbit/s
95th percentile per-packet one-way delay: 20.252 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 199.94 Mbit/s
95th percentile per-packet one-way delay: 18.854 ms
Loss rate: 0.14%
Run 5: Statistics of TCP Cubic

Start at: 2018-01-27 12:02:57
End at: 2018-01-27 12:03:27
Local clock offset: 3.375 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 498.67 Mbit/s
  95th percentile per-packet one-way delay: 20.190 ms
  Loss rate: 0.05%
-- Flow 1:
  Average throughput: 318.06 Mbit/s
  95th percentile per-packet one-way delay: 20.240 ms
  Loss rate: 0.05%
-- Flow 2:
  Average throughput: 205.16 Mbit/s
  95th percentile per-packet one-way delay: 18.701 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 132.47 Mbit/s
  95th percentile per-packet one-way delay: 18.565 ms
  Loss rate: 0.08%
Run 5: Report of TCP Cubic — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 318.22 Mbit/s)
Flow 1 egress (mean 318.06 Mbit/s)
Flow 2 ingress (mean 205.19 Mbit/s)
Flow 2 egress (mean 205.16 Mbit/s)
Flow 3 ingress (mean 132.57 Mbit/s)
Flow 3 egress (mean 132.47 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 20.24 ms)
Flow 2 (95th percentile 18.70 ms)
Flow 3 (95th percentile 18.57 ms)

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Run 6: Statistics of TCP Cubic

End at: 2018-01-27 12:54:07
Local clock offset: -6.347 ms

# Below is generated by plot.py at 2018-01-27 19:16:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 491.54 Mbit/s
  95th percentile per-packet one-way delay: 11.441 ms
  Loss rate: 0.08%
-- Flow 1:
  Average throughput: 324.46 Mbit/s
  95th percentile per-packet one-way delay: 11.490 ms
  Loss rate: 0.07%
-- Flow 2:
  Average throughput: 167.36 Mbit/s
  95th percentile per-packet one-way delay: 11.323 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 167.54 Mbit/s
  95th percentile per-packet one-way delay: 11.262 ms
  Loss rate: 0.16%
Run 6: Report of TCP Cubic — Data Link
Run 7: Statistics of TCP Cubic

End at: 2018-01-27 13:44:45
Local clock offset: -2.864 ms

# Below is generated by plot.py at 2018-01-27 19:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 480.94 Mbit/s
95th percentile per-packet one-way delay: 15.245 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 321.87 Mbit/s
95th percentile per-packet one-way delay: 15.240 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 149.11 Mbit/s
95th percentile per-packet one-way delay: 15.220 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 179.90 Mbit/s
95th percentile per-packet one-way delay: 15.302 ms
Loss rate: 0.11%
Run 7: Report of TCP Cubic — Data Link

![Graph showing throughput and packet round-trip time over time](image)

- **Throughput Graph**:
  - Flow 1 ingress (mean 321.96 Mbit/s)
  - Flow 1 egress (mean 321.87 Mbit/s)
  - Flow 2 ingress (mean 149.23 Mbit/s)
  - Flow 2 egress (mean 149.11 Mbit/s)
  - Flow 3 ingress (mean 190.12 Mbit/s)
  - Flow 3 egress (mean 179.99 Mbit/s)

- **Packet Round-Trip Time Graph**:
  - Flow 1 (95th percentile 15.24 ms)
  - Flow 2 (95th percentile 15.22 ms)
  - Flow 3 (95th percentile 15.30 ms)
Run 8: Statistics of TCP Cubic

Start at: 2018-01-27 14:34:32
End at: 2018-01-27 14:35:02
Local clock offset: 3.124 ms

# Below is generated by plot.py at 2018-01-27 19:20:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 566.11 Mbit/s
95th percentile per-packet one-way delay: 20.920 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 339.15 Mbit/s
95th percentile per-packet one-way delay: 20.949 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 241.19 Mbit/s
95th percentile per-packet one-way delay: 20.869 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 199.55 Mbit/s
95th percentile per-packet one-way delay: 20.837 ms
Loss rate: 0.15%
Run 8: Report of TCP Cubic — Data Link

**Throughput (Mbps)**

*Flow 1 ingress (mean 339.39 Mbps)***
*Flow 1 egress (mean 339.15 Mbps)***
*Flow 2 ingress (mean 241.32 Mbps)***
*Flow 2 egress (mean 241.19 Mbps)***
*Flow 3 ingress (mean 199.86 Mbps)***
*Flow 3 egress (mean 199.55 Mbps)***

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

*Flow 1 (95th percentile 20.95 ms)***
*Flow 2 (95th percentile 20.87 ms)***
*Flow 3 (95th percentile 20.84 ms)***
Run 9: Statistics of TCP Cubic

End at: 2018-01-27 15:25:45
Local clock offset: 1.226 ms

# Below is generated by plot.py at 2018-01-27 19:20:04
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 496.81 Mbit/s
  95th percentile per-packet one-way delay: 18.594 ms
  Loss rate: 0.11%
-- Flow 1:
  Average throughput: 290.35 Mbit/s
  95th percentile per-packet one-way delay: 17.496 ms
  Loss rate: 0.10%
-- Flow 2:
  Average throughput: 234.71 Mbit/s
  95th percentile per-packet one-way delay: 17.406 ms
  Loss rate: 0.12%
-- Flow 3:
  Average throughput: 151.15 Mbit/s
  95th percentile per-packet one-way delay: 18.848 ms
  Loss rate: 0.10%
Run 9: Report of TCP Cubic — Data Link

![Graph showing throughput and packet delay over time for different traffic flows.](image-url)
Run 10: Statistics of TCP Cubic

Start at: 2018-01-27 16:15:56
End at: 2018-01-27 16:16:26
Local clock offset: -4.47 ms

# Below is generated by plot.py at 2018-01-27 19:20:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 594.04 Mbit/s
95th percentile per-packet one-way delay: 12.574 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 358.15 Mbit/s
95th percentile per-packet one-way delay: 11.494 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 271.82 Mbit/s
95th percentile per-packet one-way delay: 11.494 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 165.33 Mbit/s
95th percentile per-packet one-way delay: 12.940 ms
Loss rate: 0.07%
Run 10: Report of TCP Cubic — Data Link

![Graph of network throughput and packet latency over time for Flow 1, Flow 2, and Flow 3.]

- Flow 1 ingress (mean 358.30 Mbit/s)
- Flow 1 egress (mean 358.15 Mbit/s)
- Flow 2 ingress (mean 271.93 Mbit/s)
- Flow 2 egress (mean 271.82 Mbit/s)
- Flow 3 ingress (mean 165.44 Mbit/s)
- Flow 3 egress (mean 165.33 Mbit/s)
Run 1: Statistics of LEDBAT

Start at: 2018-01-27 09:05:12
End at: 2018-01-27 09:05:42
Local clock offset: -2.28 ms

# Below is generated by plot.py at 2018-01-27 19:20:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 500.17 Mbit/s
  95th percentile per-packet one-way delay: 15.523 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 293.54 Mbit/s
  95th percentile per-packet one-way delay: 15.511 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 198.96 Mbit/s
  95th percentile per-packet one-way delay: 15.564 ms
  Loss rate: 0.05%
-- Flow 3:
  Average throughput: 223.58 Mbit/s
  95th percentile per-packet one-way delay: 15.503 ms
  Loss rate: 0.01%
Run 1: Report of LEDBAT — Data Link

![Graph showing throughput and latency over time for different flows.](image-url)
Run 2: Statistics of LEDBAT

End at: 2018-01-27 09:56:20
Local clock offset: -3.309 ms

# Below is generated by plot.py at 2018-01-27 19:20:57
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 532.40 Mbit/s
  95th percentile per-packet one-way delay: 14.736 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 303.04 Mbit/s
  95th percentile per-packet one-way delay: 14.892 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 259.06 Mbit/s
  95th percentile per-packet one-way delay: 13.412 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 171.09 Mbit/s
  95th percentile per-packet one-way delay: 13.454 ms
  Loss rate: 0.04%
Run 2: Report of LEDBAT — Data Link
Run 3: Statistics of LEDBAT

Start at: 2018-01-27 10:46:30
End at: 2018-01-27 10:47:00
Local clock offset: -4.003 ms

# Below is generated by plot.py at 2018-01-27 19:24:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 532.86 Mbit/s
95th percentile per-packet one-way delay: 13.863 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 288.76 Mbit/s
95th percentile per-packet one-way delay: 13.937 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 279.39 Mbit/s
95th percentile per-packet one-way delay: 12.728 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 175.10 Mbit/s
95th percentile per-packet one-way delay: 14.076 ms
Loss rate: 0.03%
Run 3: Report of LEDBAT — Data Link

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

- Flow 1 ingress (mean 288.78 Mbit/s)
- Flow 1 egress (mean 288.76 Mbit/s)
- Flow 2 ingress (mean 279.40 Mbit/s)
- Flow 2 egress (mean 279.59 Mbit/s)
- Flow 3 ingress (mean 175.14 Mbit/s)
- Flow 3 egress (mean 175.10 Mbit/s)

- Flow 1 (95th percentile 13.94 ms)
- Flow 2 (95th percentile 12.73 ms)
- Flow 3 (95th percentile 14.08 ms)
Run 4: Statistics of LEDBAT

End at: 2018-01-27 11:37:44
Local clock offset: 3.077 ms

# Below is generated by plot.py at 2018-01-27 19:24:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 495.99 Mbit/s
  95th percentile per-packet one-way delay: 21.033 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 287.39 Mbit/s
  95th percentile per-packet one-way delay: 21.011 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 237.14 Mbit/s
  95th percentile per-packet one-way delay: 21.007 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 152.81 Mbit/s
  95th percentile per-packet one-way delay: 21.294 ms
  Loss rate: 0.01%
Run 4: Report of LEDBAT — Data Link
Run 5: Statistics of LEDBAT

Local clock offset: -4.479 ms

# Below is generated by plot.py at 2018-01-27 19:24:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 482.78 Mbit/s
95th percentile per-packet one-way delay: 13.263 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 275.28 Mbit/s
95th percentile per-packet one-way delay: 13.330 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 224.45 Mbit/s
95th percentile per-packet one-way delay: 13.070 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 175.04 Mbit/s
95th percentile per-packet one-way delay: 13.367 ms
Loss rate: 0.02%
Run 5: Report of LEDBAT — Data Link
Run 6: Statistics of LEDBAT

Local clock offset: -5.072 ms

# Below is generated by plot.py at 2018-01-27 19:26:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.09 Mbit/s
95th percentile per-packet one-way delay: 13.233 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 303.42 Mbit/s
95th percentile per-packet one-way delay: 13.250 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 245.20 Mbit/s
95th percentile per-packet one-way delay: 13.203 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 155.32 Mbit/s
95th percentile per-packet one-way delay: 13.232 ms
Loss rate: 0.01%
Run 7: Statistics of LEDBAT

Start at: 2018-01-27 14:09:18
End at: 2018-01-27 14:09:48
Local clock offset: 2.927 ms

# Below is generated by plot.py at 2018-01-27 19:27:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 549.15 Mbit/s
95th percentile per-packet one-way delay: 20.971 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 322.25 Mbit/s
95th percentile per-packet one-way delay: 20.913 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 263.19 Mbit/s
95th percentile per-packet one-way delay: 21.005 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 155.84 Mbit/s
95th percentile per-packet one-way delay: 21.113 ms
Loss rate: 0.04%
Run 7: Report of LEDBAT — Data Link

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

![Graph 2: Per-packet one way delay vs. Time](image2)
Run 8: Statistics of LEDBAT

Start at: 2018-01-27 14:59:39
End at: 2018-01-27 15:00:09
Local clock offset: 2.668 ms

# Below is generated by plot.py at 2018-01-27 19:27:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 460.80 Mbit/s
  95th percentile per-packet one-way delay: 19.745 ms
  Loss rate: 0.03%
-- Flow 1:
  Average throughput: 265.90 Mbit/s
  95th percentile per-packet one-way delay: 18.733 ms
  Loss rate: 0.03%
-- Flow 2:
  Average throughput: 205.18 Mbit/s
  95th percentile per-packet one-way delay: 19.972 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 175.52 Mbit/s
  95th percentile per-packet one-way delay: 18.673 ms
  Loss rate: 0.04%
Run 8: Report of LEDBAT — Data Link

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**Throughput (Mbps)**

<table>
<thead>
<tr>
<th>Flow 1 ingress (mean 265.96 Mbps)</th>
<th>Flow 1 egress (mean 265.90 Mbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 2 ingress (mean 205.22 Mbps)</td>
<td>Flow 2 egress (mean 205.18 Mbps)</td>
</tr>
<tr>
<td>Flow 3 ingress (mean 175.60 Mbps)</td>
<td>Flow 3 egress (mean 175.52 Mbps)</td>
</tr>
</tbody>
</table>

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

| Flow 1 (95th percentile 18.73 ms) | Flow 2 (95th percentile 19.97 ms) | Flow 3 (95th percentile 18.67 ms) |

---

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Run 9: Statistics of LEDBAT

Start at: 2018-01-27 15:50:16
End at: 2018-01-27 15:50:46
Local clock offset: -4.837 ms

# Below is generated by plot.py at 2018-01-27 19:28:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.70 Mbit/s
95th percentile per-packet one-way delay: 12.316 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 315.84 Mbit/s
95th percentile per-packet one-way delay: 11.761 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 252.34 Mbit/s
95th percentile per-packet one-way delay: 12.534 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 165.31 Mbit/s
95th percentile per-packet one-way delay: 12.495 ms
Loss rate: 0.06%
Run 9: Report of LEDBAT — Data Link
Run 10: Statistics of LEDBAT

Start at: 2018-01-27 16:41:00
End at: 2018-01-27 16:41:30
Local clock offset: -4.249 ms

# Below is generated by plot.py at 2018-01-27 19:28:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 498.62 Mbit/s
  95th percentile per-packet one-way delay: 12.704 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 285.01 Mbit/s
  95th percentile per-packet one-way delay: 11.458 ms
  Loss rate: 0.02%
-- Flow 2:
  Average throughput: 246.68 Mbit/s
  95th percentile per-packet one-way delay: 12.867 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 149.14 Mbit/s
  95th percentile per-packet one-way delay: 12.975 ms
  Loss rate: 0.02%
Run 10: Report of LEDBAT — Data Link

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

- **Flow 1 ingress (mean 285.05 Mbit/s)**
- **Flow 1 egress (mean 285.01 Mbit/s)**
- **Flow 2 ingress (mean 246.71 Mbit/s)**
- **Flow 2 egress (mean 246.68 Mbit/s)**
- **Flow 3 ingress (mean 149.24 Mbit/s)**
- **Flow 3 egress (mean 149.14 Mbit/s)**
Run 1: Statistics of PCC

Start at: 2018-01-27 09:23:56
End at: 2018-01-27 09:24:26
Local clock offset: -3.773 ms

# Below is generated by plot.py at 2018-01-27 19:36:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 931.59 Mbit/s
95th percentile per-packet one-way delay: 17.003 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 823.17 Mbit/s
95th percentile per-packet one-way delay: 18.299 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 114.07 Mbit/s
95th percentile per-packet one-way delay: 14.909 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 98.71 Mbit/s
95th percentile per-packet one-way delay: 13.452 ms
Loss rate: 0.43%
Run 1: Report of PCC — Data Link

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

- Flow 1 Ingress (mean 827.34 Mbit/s) - Flow 1 Egress (mean 823.17 Mbit/s)
- Flow 2 Ingress (mean 114.44 Mbit/s) - Flow 2 Egress (mean 114.07 Mbit/s)
- Flow 3 Ingress (mean 99.14 Mbit/s) - Flow 3 Egress (mean 98.71 Mbit/s)
Run 2: Statistics of PCC

End at: 2018-01-27 10:15:05
Local clock offset: -2.568 ms

# Below is generated by plot.py at 2018-01-27 19:36:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 922.84 Mbit/s
95th percentile per-packet one-way delay: 16.362 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 768.75 Mbit/s
95th percentile per-packet one-way delay: 16.492 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 192.51 Mbit/s
95th percentile per-packet one-way delay: 16.156 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 79.23 Mbit/s
95th percentile per-packet one-way delay: 16.165 ms
Loss rate: 0.31%
Run 2: Report of PCC — Data Link

![Graph of Throughput (Mbps) over Time (s)]

- Flow 1 Ingress (mean 772.46 Mbps)
- Flow 1 Egress (mean 768.75 Mbps)
- Flow 2 Ingress (mean 193.01 Mbps)
- Flow 2 Egress (mean 192.51 Mbps)
- Flow 3 Ingress (mean 79.47 Mbps)
- Flow 3 Egress (mean 79.23 Mbps)

![Graph of Per-Packet One-Way Delay (ms) over Time (s)]

- Flow 1 (95th percentile 16.49 ms)
- Flow 2 (95th percentile 16.16 ms)
- Flow 3 (95th percentile 16.16 ms)
Run 3: Statistics of PCC

Start at: 2018-01-27 11:05:18  
End at: 2018-01-27 11:05:48  
Local clock offset: 0.505 ms  

# Below is generated by plot.py at 2018-01-27 19:36:40  
# Datalink statistics  
-- Total of 3 flows:  
  Average throughput: 914.30 Mbit/s  
  95th percentile per-packet one-way delay: 26.832 ms  
  Loss rate: 0.61%  
-- Flow 1:  
  Average throughput: 753.76 Mbit/s  
  95th percentile per-packet one-way delay: 29.195 ms  
  Loss rate: 0.65%  
-- Flow 2:  
  Average throughput: 198.19 Mbit/s  
  95th percentile per-packet one-way delay: 19.916 ms  
  Loss rate: 0.47%  
-- Flow 3:  
  Average throughput: 87.28 Mbit/s  
  95th percentile per-packet one-way delay: 19.860 ms  
  Loss rate: 0.32%
Run 3: Report of PCC — Data Link

![Graph of Throughput vs Time]

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

Legend:
- Flow 1 Ingress (mean 758.67 Mbit/s)
- Flow 1 Egress (mean 753.76 Mbit/s)
- Flow 2 Ingress (mean 199.12 Mbit/s)
- Flow 2 Egress (mean 198.19 Mbit/s)
- Flow 3 Ingress (mean 87.56 Mbit/s)
- Flow 3 Egress (mean 87.28 Mbit/s)
Run 4: Statistics of PCC

Start at: 2018-01-27 11:56:02
End at: 2018-01-27 11:56:32
Local clock offset: 3.125 ms

# Below is generated by plot.py at 2018-01-27 19:39:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 923.80 Mbit/s
  95th percentile per-packet one-way delay: 22.446 ms
  Loss rate: 0.42%
-- Flow 1:
  Average throughput: 827.64 Mbit/s
  95th percentile per-packet one-way delay: 22.476 ms
  Loss rate: 0.43%
-- Flow 2:
  Average throughput: 109.56 Mbit/s
  95th percentile per-packet one-way delay: 22.241 ms
  Loss rate: 0.29%
-- Flow 3:
  Average throughput: 70.81 Mbit/s
  95th percentile per-packet one-way delay: 22.240 ms
  Loss rate: 0.38%
Run 4: Report of PCC — Data Link
Run 5: Statistics of PCC

End at: 2018-01-27 12:47:14
Local clock offset: -5.897 ms

# Below is generated by plot.py at 2018-01-27 19:39:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 918.74 Mbit/s
95th percentile per-packet one-way delay: 20.752 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 818.82 Mbit/s
95th percentile per-packet one-way delay: 22.380 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 113.42 Mbit/s
95th percentile per-packet one-way delay: 12.668 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 74.49 Mbit/s
95th percentile per-packet one-way delay: 12.364 ms
Loss rate: 0.21%
Run 5: Report of PCC — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Per-packet one way delay (ms)]
Run 6: Statistics of PCC

End at: 2018-01-27 13:37:52
Local clock offset: -3.079 ms

# Below is generated by plot.py at 2018-01-27 19:41:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 913.21 Mbit/s
95th percentile per-packet one-way delay: 16.383 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 784.19 Mbit/s
95th percentile per-packet one-way delay: 18.761 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 113.85 Mbit/s
95th percentile per-packet one-way delay: 14.243 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 161.84 Mbit/s
95th percentile per-packet one-way delay: 15.693 ms
Loss rate: 0.73%
Run 6: Report of PCC — Data Link

![Graph showing network performance metrics over time.](Image)

**Throughput (Mbps)**

- **Flow 1 Ingress** (mean 788.51 Mbps)
- **Flow 1 Egress** (mean 784.19 Mbps)
- **Flow 2 Ingress** (mean 114.28 Mbps)
- **Flow 2 Egress** (mean 113.85 Mbps)
- **Flow 3 Ingress** (mean 163.03 Mbps)
- **Flow 3 Egress** (mean 161.84 Mbps)

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

- **Flow 1** (95th percentile 18.76 ms)
- **Flow 2** (95th percentile 14.24 ms)
- **Flow 3** (95th percentile 15.69 ms)
Run 7: Statistics of PCC

End at: 2018-01-27 14:28:09
Local clock offset: 3.345 ms

# Below is generated by plot.py at 2018-01-27 19:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 930.46 Mbit/s
95th percentile per-packet one-way delay: 22.000 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 768.08 Mbit/s
95th percentile per-packet one-way delay: 22.063 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 203.21 Mbit/s
95th percentile per-packet one-way delay: 21.876 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 83.00 Mbit/s
95th percentile per-packet one-way delay: 21.885 ms
Loss rate: 0.59%
Run 7: Report of PCC — Data Link

![Graph 1](image1)

![Graph 2](image2)
Run 8: Statistics of PCC

Local clock offset: 1.36 ms

# Below is generated by plot.py at 2018-01-27 19:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 875.91 Mbit/s
95th percentile per-packet one-way delay: 26.699 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 785.34 Mbit/s
95th percentile per-packet one-way delay: 28.756 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 96.37 Mbit/s
95th percentile per-packet one-way delay: 19.704 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 80.47 Mbit/s
95th percentile per-packet one-way delay: 18.322 ms
Loss rate: 0.22%
Run 8: Report of PCC — Data Link
Run 9: Statistics of PCC

Start at: 2018-01-27 16:09:04
End at: 2018-01-27 16:09:34
Local clock offset: -4.832 ms

# Below is generated by plot.py at 2018-01-27 19:48:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 864.24 Mbit/s
95th percentile per-packet one-way delay: 13.581 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 758.55 Mbit/s
95th percentile per-packet one-way delay: 13.619 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 121.66 Mbit/s
95th percentile per-packet one-way delay: 12.094 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 75.34 Mbit/s
95th percentile per-packet one-way delay: 13.549 ms
Loss rate: 0.63%
Run 9: Report of PCC — Data Link

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

- Flow 1 Ingress (mean 761.51 Mbit/s)
- Flow 1 Egress (mean 758.55 Mbit/s)
- Flow 2 Ingress (mean 122.10 Mbit/s)
- Flow 2 Egress (mean 123.66 Mbit/s)
- Flow 3 Ingress (mean 75.82 Mbit/s)
- Flow 3 Egress (mean 75.34 Mbit/s)
Run 10: Statistics of PCC

Start at: 2018-01-27 16:59:44
End at: 2018-01-27 17:00:14
Local clock offset: -3.954 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 913.23 Mbit/s
95th percentile per-packet one-way delay: 13.117 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 773.05 Mbit/s
95th percentile per-packet one-way delay: 12.346 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 172.16 Mbit/s
95th percentile per-packet one-way delay: 13.528 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 78.24 Mbit/s
95th percentile per-packet one-way delay: 13.525 ms
Loss rate: 0.22%
Run 10: Report of PCC — Data Link

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

Start at: 2018-01-27 09:11:44
End at: 2018-01-27 09:12:14
Local clock offset: -2.471 ms
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2018-01-27 10:02:23
End at: 2018-01-27 10:02:53
Local clock offset: -2.895 ms
Run 2: Report of QUIC Cubic — Data Link

---

Throughput (Mbps)

- Flow 1 ingress (mean 0.99 Mbps)
- Flow 1 egress (mean 0.99 Mbps)
- Flow 2 ingress (mean 0.99 Mbps)
- Flow 2 egress (mean 0.99 Mbps)
- Flow 3 ingress (mean 1.05 Mbps)
- Flow 3 egress (mean 1.05 Mbps)

---

One-packet one-way delay (ms)

- Flow 1 (95th percentile 14.64 ms)
- Flow 2 (95th percentile 14.60 ms)
- Flow 3 (95th percentile 13.20 ms)
Run 3: Statistics of QUIC Cubic

Start at: 2018-01-27 10:53:05
End at: 2018-01-27 10:53:35
Local clock offset: -4.066 ms
Run 3: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 0.98 Mbit/s)
- Flow 1 egress (mean 0.99 Mbit/s)
- Flow 2 ingress (mean 1.05 Mbit/s)
- Flow 2 egress (mean 1.05 Mbit/s)
- Flow 3 ingress (mean 0.99 Mbit/s)
- Flow 3 egress (mean 0.99 Mbit/s)
Run 4: Statistics of QUIC Cubic

End at: 2018-01-27 11:44:17
Local clock offset: 2.987 ms
Run 4: Report of QUIC Cubic — Data Link

Throughput [Mbit/s]

Time [s]

Flow 1 ingress (mean 1.05 Mbit/s) — Flow 1 egress (mean 1.05 Mbit/s)
Flow 2 ingress (mean 0.99 Mbit/s) — Flow 2 egress (mean 0.99 Mbit/s)
Flow 3 ingress (mean 0.98 Mbit/s) — Flow 3 egress (mean 0.99 Mbit/s)

Packet one way delay [ms]

Time [s]

Flow 1 (95th percentile 19.14 ms) — Flow 2 (95th percentile 20.66 ms) — Flow 3 (95th percentile 20.62 ms)
Run 5: Statistics of QUIC Cubic

Start at: 2018-01-27 12:34:30
End at: 2018-01-27 12:35:00
Local clock offset: -5.132 ms
Run 5: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 0.98 Mbps)
- Flow 1 egress (mean 0.98 Mbps)
- Flow 2 ingress (mean 0.99 Mbps)
- Flow 2 egress (mean 0.99 Mbps)
- Flow 3 ingress (mean 0.99 Mbps)
- Flow 3 egress (mean 0.99 Mbps)
Run 6: Statistics of QUIC Cubic

Local clock offset: -3.974 ms
Run 6: Report of QUIC Cubic — Data Link

![Graph representing network performance metrics over time, including throughput and latency for different flow ingress and egress rates. The graphs show data for flows 1 to 3 with specified throughput and latency values.]
Run 7: Statistics of QUIC Cubic

End at: 2018-01-27 14:15:58
Local clock offset: 3.646 ms
Run 7: Report of QUIC Cubic — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.99 Mbps)
Flow 1 egress (mean 0.99 Mbps)
Flow 2 ingress (mean 0.99 Mbps)
Flow 2 egress (mean 0.99 Mbps)
Flow 3 ingress (mean 0.99 Mbps)
Flow 3 egress (mean 0.99 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 21.06 ms)
Flow 2 (95th percentile 21.06 ms)
Flow 3 (95th percentile 21.06 ms)
Run 8: Statistics of QUIC Cubic

Start at: 2018-01-27 15:06:09
End at: 2018-01-27 15:06:39
Local clock offset: 1.802 ms
Run 8: Report of QUIC Cubic — Data Link

![Graph of Throughput vs. Time]

![Graph of Per-packet One-Way Delay vs. Time]

- Flow 1 Ingress (mean 0.99 Mbit/s)
- Flow 1 Egress (mean 0.99 Mbit/s)
- Flow 2 Ingress (mean 0.99 Mbit/s)
- Flow 2 Egress (mean 0.99 Mbit/s)
- Flow 3 Ingress (mean 0.99 Mbit/s)
- Flow 3 Egress (mean 0.99 Mbit/s)
Run 9: Statistics of QUIC Cubic

Start at: 2018-01-27 15:56:51
End at: 2018-01-27 15:57:21
Local clock offset: -5.478 ms
Run 9: Report of QUIC Cubic — Data Link
Run 10: Statistics of QUIC Cubic

End at: 2018-01-27 16:48:02
Local clock offset: -3.984 ms
Run 10: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 0.99 Mbit/s)
- Flow 1 egress (mean 0.99 Mbit/s)
- Flow 2 ingress (mean 0.98 Mbit/s)
- Flow 2 egress (mean 0.96 Mbit/s)
- Flow 3 ingress (mean 0.99 Mbit/s)
- Flow 3 egress (mean 0.99 Mbit/s)

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

- Flow 1 (95th percentile 12.44 ms)
- Flow 2 (95th percentile 12.47 ms)
- Flow 3 (95th percentile 12.41 ms)
Run 1: Statistics of SCReAM

Start at: 2018-01-27 08:52:46
End at: 2018-01-27 08:53:16
Local clock offset: -1.281 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 16.131 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 16.151 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 16.100 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 16.128 ms
  Loss rate: 0.00%
Run 1: Report of SCReAM — Data Link

![Graph showing network performance metrics over time.](Image)

- Throughput (Mbps): The upper graph tracks the throughput for different flows over time (s). Each line represents a flow with different ingress and egress speeds.
- Delay (ms): The lower graph shows the packet delay for each flow in ms. Each flow is represented by a specific marker indicating the 95th percentile delay time.
Run 2: Statistics of SCReAM

Start at: 2018-01-27 09:43:25
End at: 2018-01-27 09:43:55
Local clock offset: -4.628 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 13.169 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.130 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.202 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.182 ms
Loss rate: 0.00%
Run 2: Report of SCReAM — Data Link

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

- **Throughput (Mb/s)**
  - Flow 1 ingress (mean 0.22 Mb/s)
  - Flow 1 egress (mean 0.22 Mb/s)
  - Flow 2 ingress (mean 0.22 Mb/s)
  - Flow 2 egress (mean 0.22 Mb/s)
  - Flow 3 ingress (mean 0.22 Mb/s)
  - Flow 3 egress (mean 0.22 Mb/s)

- **Per-packet one-way delay (ms)**
  - Flow 1 (95th percentile 13.13 ms)
  - Flow 2 (95th percentile 13.20 ms)
  - Flow 3 (95th percentile 13.18 ms)
Run 3: Statistics of SCReAM

Start at: 2018-01-27 10:34:07
End at: 2018-01-27 10:34:37
Local clock offset: -3.492 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 14.124 ms
Loss rate: 0.00%

-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.113 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.134 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.122 ms
Loss rate: 0.00%
Run 3: Report of SCReAM — Data Link

![Diagram of throughput and packet delay over time for different flows]

- 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)

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

- Flow 1 (95th percentile 14.11 ms)
- Flow 2 (95th percentile 14.13 ms)
- Flow 3 (95th percentile 14.12 ms)
Run 4: Statistics of SCReAM

Start at: 2018-01-27 11:24:50
End at: 2018-01-27 11:25:21
Local clock offset: 3.298 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 21.392 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.389 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.379 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.414 ms
Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2018-01-27 12:15:33
End at: 2018-01-27 12:16:03
Local clock offset: -2.341 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 14.917 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 14.941 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 13.478 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 14.907 ms
  Loss rate: 0.00%
Run 5: Report of SCReAM — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Per-packet end-to-end delay (ms)]
Run 6: Statistics of SCReAM

End at: 2018-01-27 13:06:43
Local clock offset: -7.089 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 10.457 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 10.437 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 10.455 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 10.484 ms
Loss rate: 0.00%
Run 6: Report of SCReAM — Data Link
Run 7: Statistics of SCReAM

Local clock offset: 1.085 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 19.239 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 19.224 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 19.252 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 19.234 ms
  Loss rate: 0.00%
Run 7: Report of SCReAM — Data Link
Run 8: Statistics of SCReAM

Start at: 2018-01-27 14:47:12
End at: 2018-01-27 14:47:42
Local clock offset: 3.452 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 21.197 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.227 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.835 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 21.225 ms
Loss rate: 0.00%
Run 8: Report of SCReAM — Data Link

![Graph of throughput and delay](image-url)

- **Throughput (Mbps)**: Ranges from 0.18 to 0.26 Mbps.
- **Delay (ms)**: Ranges from 19.5 to 21.5 ms.

Legend:
- **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)**
Run 9: Statistics of SCReAM

Start at: 2018-01-27 15:37:51
End at: 2018-01-27 15:38:21
Local clock offset: -2.651 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 14.178 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 14.205 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 14.157 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 12.755 ms
  Loss rate: 0.00%
Run 9: Report of SCReAM — Data Link

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```
Run 10: Statistics of SCReAM

End at: 2018-01-27 16:29:05
Local clock offset: -4.436 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 12.486 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 12.488 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 12.490 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 12.479 ms
Loss rate: 0.00%
Run 10: Report of SCReAM — Data Link

[Graphs showing throughput and packet delay over time for different flows]
Run 1: Statistics of WebRTC media

Start at: 2018-01-27 09:21:01
End at: 2018-01-27 09:21:31
Local clock offset: -3.441 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.54 Mbit/s
  95th percentile per-packet one-way delay: 14.745 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.36 Mbit/s
  95th percentile per-packet one-way delay: 14.784 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.53 Mbit/s
  95th percentile per-packet one-way delay: 14.941 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.67 Mbit/s
  95th percentile per-packet one-way delay: 14.146 ms
  Loss rate: 0.00%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2018-01-27 10:11:40
End at: 2018-01-27 10:12:10
Local clock offset: -2.73 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 15.393 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.38 Mbit/s
95th percentile per-packet one-way delay: 15.324 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 15.346 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 15.841 ms
Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2018-01-27 11:02:23
End at: 2018-01-27 11:02:53
Local clock offset: -0.43 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 18.035 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 18.158 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 16.669 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 16.909 ms
Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

![Graph of throughput over time](image1)

![Graph of packet delay over time](image2)
Run 4: Statistics of WebRTC media

End at: 2018-01-27 11:53:37
Local clock offset: 3.14 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.54 Mbit/s
  95th percentile per-packet one-way delay: 22.758 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.37 Mbit/s
  95th percentile per-packet one-way delay: 22.498 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.53 Mbit/s
  95th percentile per-packet one-way delay: 22.493 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.66 Mbit/s
  95th percentile per-packet one-way delay: 23.468 ms
  Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link
Run 5: Statistics of WebRTC media

End at: 2018-01-27 12:44:18
Local clock offset: -5.781 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 12.992 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 13.400 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 12.919 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 10.711 ms
Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link
Run 6: Statistics of WebRTC media

Start at: 2018-01-27 13:34:26
End at: 2018-01-27 13:34:56
Local clock offset: -3.192 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 14.906 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 15.019 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 14.763 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 14.771 ms
Loss rate: 0.00%
Run 6: Report of WebRTC media — Data Link

![Graphs showing throughput and per-packet one-way delay over time for different flows with mean rates and 95th percentiles.]

- **Flow 1**: Ingress (mean 2.37 Mb/s) • Egress (mean 2.37 Mb/s)
- **Flow 2**: Ingress (mean 1.53 Mb/s) • Egress (mean 1.53 Mb/s)
- **Flow 3**: Ingress (mean 0.67 Mb/s) • Egress (mean 0.67 Mb/s)

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Run 7: Statistics of WebRTC media

Start at: 2018-01-27 14:24:44
End at: 2018-01-27 14:25:14
Local clock offset: 3.545 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 4.56 Mbit/s
   95th percentile per-packet one-way delay: 22.395 ms
   Loss rate: 0.00%
-- Flow 1:
   Average throughput: 2.37 Mbit/s
   95th percentile per-packet one-way delay: 21.840 ms
   Loss rate: 0.00%
-- Flow 2:
   Average throughput: 1.53 Mbit/s
   95th percentile per-packet one-way delay: 22.678 ms
   Loss rate: 0.00%
-- Flow 3:
   Average throughput: 0.67 Mbit/s
   95th percentile per-packet one-way delay: 23.820 ms
   Loss rate: 0.00%
Run 7: Report of WebRTC media — Data Link
Run 8: Statistics of WebRTC media

End at: 2018-01-27 15:15:57
Local clock offset: 1.359 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 19.526 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 19.644 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 19.164 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 20.324 ms
Loss rate: 0.00%
Run 8: Report of WebRTC media — Data Link

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

Legend:
- Flow 1 ingress (mean 2.37 Mbit/s)
- Flow 1 egress (mean 2.37 Mbit/s)
- Flow 2 ingress (mean 1.53 Mbit/s)
- Flow 2 egress (mean 1.53 Mbit/s)
- Flow 3 ingress (mean 0.67 Mbit/s)
- Flow 3 egress (mean 0.67 Mbit/s)

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

Legend:
- Flow 1 (95th percentile 19.64 ms)
- Flow 2 (95th percentile 19.16 ms)
- Flow 3 (95th percentile 20.32 ms)
Run 9: Statistics of WebRTC media

Start at: 2018-01-27 16:06:08
End at: 2018-01-27 16:06:38
Local clock offset: -5.353 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 13.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 13.417 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 12.664 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 14.934 ms
Loss rate: 0.00%
Run 10: Statistics of WebRTC media

Start at: 2018-01-27 16:56:49
End at: 2018-01-27 16:57:19
Local clock offset: -4.019 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 13.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 13.443 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 13.697 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 11.305 ms
Loss rate: 0.00%
Run 10: Report of WebRTC media — Data Link

![Graph of throughput and packet delay over time](image-url)

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 2.37 Mbps)
  - Flow 1 egress (mean 2.37 Mbps)
  - Flow 2 ingress (mean 1.53 Mbps)
  - Flow 2 egress (mean 1.52 Mbps)
  - Flow 3 ingress (mean 0.66 Mbps)
  - Flow 3 egress (mean 0.66 Mbps)

- **Packet Delay (ms):**
  - Flow 1 95th percentile 13.44 ms
  - Flow 2 95th percentile 13.70 ms
  - Flow 3 95th percentile 11.30 ms
Run 1: Statistics of Sprout

Start at: 2018-01-27 09:02:15
End at: 2018-01-27 09:02:45
Local clock offset: -2.102 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.95 Mbit/s
95th percentile per-packet one-way delay: 18.082 ms
Loss rate: 0.01%

-- Flow 1:
Average throughput: 24.70 Mbit/s
95th percentile per-packet one-way delay: 18.317 ms
Loss rate: 0.01%

-- Flow 2:
Average throughput: 24.26 Mbit/s
95th percentile per-packet one-way delay: 17.548 ms
Loss rate: 0.00%

-- Flow 3:
Average throughput: 24.56 Mbit/s
95th percentile per-packet one-way delay: 17.132 ms
Loss rate: 0.01%
Run 1: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 24.71 Mbps)
- Flow 1 egress (mean 24.70 Mbps)
- Flow 2 ingress (mean 24.27 Mbps)
- Flow 2 egress (mean 24.26 Mbps)
- Flow 3 ingress (mean 24.57 Mbps)
- Flow 3 egress (mean 24.56 Mbps)

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

- Flow 1 (95th percentile 18.32 ms)
- Flow 2 (95th percentile 17.55 ms)
- Flow 3 (95th percentile 17.13 ms)
Run 2: Statistics of Sprout

Start at: 2018-01-27 09:52:53
End at: 2018-01-27 09:53:23
Local clock offset: -3.629 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.24 Mbit/s
95th percentile per-packet one-way delay: 17.505 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 24.73 Mbit/s
95th percentile per-packet one-way delay: 17.575 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.69 Mbit/s
95th percentile per-packet one-way delay: 17.525 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 24.46 Mbit/s
95th percentile per-packet one-way delay: 17.261 ms
Loss rate: 0.00%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2018-01-27 10:43:34
End at: 2018-01-27 10:44:04
Local clock offset: -3.822 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.21 Mbit/s
95th percentile per-packet one-way delay: 16.548 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.73 Mbit/s
95th percentile per-packet one-way delay: 16.525 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.74 Mbit/s
95th percentile per-packet one-way delay: 16.758 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 24.36 Mbit/s
95th percentile per-packet one-way delay: 16.015 ms
Loss rate: 0.00%
Run 3: Report of Sprout — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 24.73 Mbit/s) — Flow 1 egress (mean 24.73 Mbit/s)
Flow 2 ingress (mean 24.74 Mbit/s) — Flow 2 egress (mean 24.74 Mbit/s)
Flow 3 ingress (mean 24.36 Mbit/s) — Flow 3 egress (mean 24.36 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 16.52 ms) — Flow 2 (95th percentile 16.76 ms) — Flow 3 (95th percentile 16.02 ms)
Run 4: Statistics of Sprout

Start at: 2018-01-27 11:34:18
End at: 2018-01-27 11:34:48
Local clock offset: 3.257 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 49.30 Mbit/s
  95th percentile per-packet one-way delay: 23.397 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 24.70 Mbit/s
  95th percentile per-packet one-way delay: 21.962 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 24.79 Mbit/s
  95th percentile per-packet one-way delay: 24.141 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 24.55 Mbit/s
  95th percentile per-packet one-way delay: 23.498 ms
  Loss rate: 0.00%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2018-01-27 12:25:02
Local clock offset: -4.164 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  95th percentile per-packet one-way delay: 16.188 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 24.81 Mbit/s
  95th percentile per-packet one-way delay: 16.511 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 24.41 Mbit/s
  95th percentile per-packet one-way delay: 15.472 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 24.61 Mbit/s
  95th percentile per-packet one-way delay: 15.953 ms
  Loss rate: 0.00%
Run 5: Report of Sprout — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 24.81 Mbps/s)
- Flow 1 egress (mean 24.81 Mbps/s)
- Flow 2 ingress (mean 24.41 Mbps/s)
- Flow 2 egress (mean 24.41 Mbps/s)
- Flow 3 ingress (mean 24.62 Mbps/s)
- Flow 3 egress (mean 24.61 Mbps/s)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 16.51 ms)
- Flow 2 (95th percentile 15.47 ms)
- Flow 3 (95th percentile 15.95 ms)
Run 6: Statistics of Sprout

Start at: 2018-01-27 13:15:40
End at: 2018-01-27 13:16:10
Local clock offset: -5.977 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 49.15 Mbit/s
  95th percentile per-packet one-way delay: 14.752 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 24.72 Mbit/s
  95th percentile per-packet one-way delay: 13.820 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 24.48 Mbit/s
  95th percentile per-packet one-way delay: 15.370 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 24.67 Mbit/s
  95th percentile per-packet one-way delay: 14.204 ms
  Loss rate: 0.00%
Run 6: Report of Sprout — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 24.72 Mbps)
- Flow 1 egress (mean 24.72 Mbps)
- Flow 2 ingress (mean 24.49 Mbps)
- Flow 2 egress (mean 24.48 Mbps)
- Flow 3 ingress (mean 24.68 Mbps)
- Flow 3 egress (mean 24.67 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 13.82 ms)
- Flow 2 (95th percentile 15.37 ms)
- Flow 3 (95th percentile 14.20 ms)
Run 7: Statistics of Sprout

Start at: 2018-01-27 14:06:21
End at: 2018-01-27 14:06:51
Local clock offset: 2.677 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.05 Mbit/s
95th percentile per-packet one-way delay: 23.335 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.73 Mbit/s
95th percentile per-packet one-way delay: 23.518 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.64 Mbit/s
95th percentile per-packet one-way delay: 23.250 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 24.02 Mbit/s
95th percentile per-packet one-way delay: 22.407 ms
Loss rate: 0.00%
Run 7: Report of Sprout — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 24.73 Mbps)
  - Flow 2 ingress (mean 24.64 Mbps)
  - Flow 3 ingress (mean 24.02 Mbps)
  - Flow 1 egress (mean 24.73 Mbps)
  - Flow 2 egress (mean 24.64 Mbps)
  - Flow 3 egress (mean 24.02 Mbps)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 23.52 ms)
  - Flow 2 (95th percentile 23.25 ms)
  - Flow 3 (95th percentile 22.41 ms)
Run 8: Statistics of Sprout

Start at: 2018-01-27 14:56:42
End at: 2018-01-27 14:57:12
Local clock offset: 3.136 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
  -- Total of 3 flows:
    Average throughput: 48.84 Mbit/s
    95th percentile per-packet one-way delay: 23.220 ms
    Loss rate: 0.02%
  -- Flow 1:
    Average throughput: 24.49 Mbit/s
    95th percentile per-packet one-way delay: 22.782 ms
    Loss rate: 0.01%
  -- Flow 2:
    Average throughput: 24.50 Mbit/s
    95th percentile per-packet one-way delay: 23.487 ms
    Loss rate: 0.03%
  -- Flow 3:
    Average throughput: 24.35 Mbit/s
    95th percentile per-packet one-way delay: 23.498 ms
    Loss rate: 0.02%
Run 8: Report of Sprout — Data Link

---

[Graphs showing data link throughput and packet delay over time for three different flows.]
Run 9: Statistics of Sprout

End at: 2018-01-27 15:47:50
Local clock offset: -4.391 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.22 Mbit/s
95th percentile per-packet one-way delay: 15.402 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.76 Mbit/s
95th percentile per-packet one-way delay: 15.528 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.65 Mbit/s
95th percentile per-packet one-way delay: 15.256 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 24.42 Mbit/s
95th percentile per-packet one-way delay: 15.195 ms
Loss rate: 0.00%
Run 9: Report of Sprout — Data Link
Run 10: Statistics of Sprout

Start at: 2018-01-27 16:38:03
End at: 2018-01-27 16:38:33
Local clock offset: ~4.595 ms

# Below is generated by plot.py at 2018-01-27 19:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.10 Mbit/s
95th percentile per-packet one-way delay: 14.909 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 24.70 Mbit/s
95th percentile per-packet one-way delay: 15.048 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 24.61 Mbit/s
95th percentile per-packet one-way delay: 13.999 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 24.32 Mbit/s
95th percentile per-packet one-way delay: 15.318 ms
Loss rate: 0.09%
Run 10: Report of Sprout — Data Link
Run 1: Statistics of TaoVA-100x

End at: 2018-01-27 08:56:11
Local clock offset: -1.631 ms

# Below is generated by plot.py at 2018-01-27 19:52:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 470.07 Mbit/s
95th percentile per-packet one-way delay: 16.120 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 248.19 Mbit/s
95th percentile per-packet one-way delay: 15.871 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 243.34 Mbit/s
95th percentile per-packet one-way delay: 16.198 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 230.82 Mbit/s
95th percentile per-packet one-way delay: 16.895 ms
Loss rate: 0.00%
Run 1: Report of TaoVA-100x — Data Link

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

![Graph 2: Packet loss rate vs Time (s)]

Legend:
- Flow 1 ingress (mean 248.18 Mbps)
- Flow 1 egress (mean 248.19 Mbps)
- Flow 2 ingress (mean 243.38 Mbps)
- Flow 2 egress (mean 243.34 Mbps)
- Flow 3 ingress (mean 230.85 Mbps)
- Flow 3 egress (mean 230.82 Mbps)
Run 2: Statistics of TaoVA-100x

End at: 2018-01-27 09:46:50
Local clock offset: -4.613 ms

# Below is generated by plot.py at 2018-01-27 19:52:35
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 469.43 Mbit/s
   95th percentile per-packet one-way delay: 13.975 ms
   Loss rate: 0.01%
-- Flow 1:
   Average throughput: 246.57 Mbit/s
   95th percentile per-packet one-way delay: 13.539 ms
   Loss rate: 0.01%
-- Flow 2:
   Average throughput: 247.79 Mbit/s
   95th percentile per-packet one-way delay: 14.035 ms
   Loss rate: 0.01%
-- Flow 3:
   Average throughput: 225.54 Mbit/s
   95th percentile per-packet one-way delay: 15.325 ms
   Loss rate: 0.00%
Run 2: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 246.59 Mbit/s)
- Flow 1 egress (mean 246.57 Mbit/s)
- Flow 2 ingress (mean 247.81 Mbit/s)
- Flow 2 egress (mean 247.79 Mbit/s)
- Flow 3 ingress (mean 226.53 Mbit/s)
- Flow 3 egress (mean 226.54 Mbit/s)

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

- Flow 1 (95th percentile 13.54 ms)
- Flow 2 (95th percentile 14.04 ms)
- Flow 3 (95th percentile 15.32 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2018-01-27 10:37:02
End at: 2018-01-27 10:37:32
Local clock offset: -3.684 ms

# Below is generated by plot.py at 2018-01-27 19:52:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 445.26 Mbit/s
  95th percentile per-packet one-way delay: 13.881 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 248.75 Mbit/s
  95th percentile per-packet one-way delay: 13.897 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 204.68 Mbit/s
  95th percentile per-packet one-way delay: 12.528 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 229.09 Mbit/s
  95th percentile per-packet one-way delay: 14.244 ms
  Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

End at: 2018-01-27 11:28:16
Local clock offset: 3.546 ms

# Below is generated by plot.py at 2018-01-27 19:52:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 453.73 Mbit/s
  95th percentile per-packet one-way delay: 21.344 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 237.27 Mbit/s
  95th percentile per-packet one-way delay: 19.961 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 243.94 Mbit/s
  95th percentile per-packet one-way delay: 21.568 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 211.24 Mbit/s
  95th percentile per-packet one-way delay: 22.022 ms
  Loss rate: 0.01%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

End at: 2018-01-27 12:18:59
Local clock offset: -3.019 ms

# Below is generated by plot.py at 2018-01-27 19:52:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 465.42 Mbit/s
95th percentile per-packet one-way delay: 14.859 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 245.42 Mbit/s
95th percentile per-packet one-way delay: 14.519 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 240.27 Mbit/s
95th percentile per-packet one-way delay: 14.841 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 231.97 Mbit/s
95th percentile per-packet one-way delay: 15.782 ms
Loss rate: 0.05%
Run 5: Report of TaoVA-100x — Data Link
Run 6: Statistics of TaoVA-100x

Start at: 2018-01-27 13:09:08
Local clock offset: -7.265 ms

# Below is generated by plot.py at 2018-01-27 19:53:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 474.32 Mbit/s
  95th percentile per-packet one-way delay: 10.692 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 252.61 Mbit/s
  95th percentile per-packet one-way delay: 10.303 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 242.42 Mbit/s
  95th percentile per-packet one-way delay: 10.670 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 232.65 Mbit/s
  95th percentile per-packet one-way delay: 11.761 ms
  Loss rate: 0.00%
Run 6: Report of TaoVA-100x — Data Link
Run 7: Statistics of TaoVA-100x

End at: 2018-01-27 14:00:17
Local clock offset: 1.627 ms

# Below is generated by plot.py at 2018-01-27 20:00:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 476.76 Mbit/s
95th percentile per-packet one-way delay: 19.879 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 256.14 Mbit/s
95th percentile per-packet one-way delay: 19.801 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 243.69 Mbit/s
95th percentile per-packet one-way delay: 18.608 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 225.74 Mbit/s
95th percentile per-packet one-way delay: 21.285 ms
Loss rate: 0.00%
Run 7: Report of TaoVA-100x — Data Link
Run 8: Statistics of TaoVA-100x

Start at: 2018-01-27 14:50:07
End at: 2018-01-27 14:50:37
Local clock offset: 3.541 ms

# Below is generated by plot.py at 2018-01-27 20:01:52
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 488.32 Mbit/s
  95th percentile per-packet one-way delay: 21.783 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 260.48 Mbit/s
  95th percentile per-packet one-way delay: 21.394 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 253.18 Mbit/s
  95th percentile per-packet one-way delay: 21.849 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 230.39 Mbit/s
  95th percentile per-packet one-way delay: 22.878 ms
  Loss rate: 0.00%
Run 8: Report of TaoVA-100x — Data Link
Run 9: Statistics of TaoVA-100x

Start at: 2018-01-27 15:40:46
End at: 2018-01-27 15:41:16
Local clock offset: -3.455 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 476.67 Mbit/s
  95th percentile per-packet one-way delay: 13.661 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 253.61 Mbit/s
  95th percentile per-packet one-way delay: 13.581 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 252.32 Mbit/s
  95th percentile per-packet one-way delay: 13.873 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 214.97 Mbit/s
  95th percentile per-packet one-way delay: 13.184 ms
  Loss rate: 0.00%
Run 9: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 253.60 Mbit/s)
- Flow 1 egress (mean 253.61 Mbit/s)
- Flow 2 ingress (mean 252.31 Mbit/s)
- Flow 2 egress (mean 252.32 Mbit/s)
- Flow 3 ingress (mean 214.97 Mbit/s)
- Flow 3 egress (mean 214.97 Mbit/s)

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

- Flow 1 (95th percentile 13.58 ms)
- Flow 2 (95th percentile 13.87 ms)
- Flow 3 (95th percentile 13.18 ms)
Run 10: Statistics of TaoVA-100x

Start at: 2018-01-27 16:31:30
End at: 2018-01-27 16:32:00
Local clock offset: ~4.584 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 456.84 Mbit/s
95th percentile per-packet one-way delay: 12.414 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 237.56 Mbit/s
95th percentile per-packet one-way delay: 12.202 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 239.69 Mbit/s
95th percentile per-packet one-way delay: 12.406 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 230.49 Mbit/s
95th percentile per-packet one-way delay: 13.300 ms
Loss rate: 0.00%
Run 1: Statistics of TCP Vegas

Start at: 2018-01-27 09:14:39
End at: 2018-01-27 09:15:09
Local clock offset: -2.774 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 310.26 Mbit/s
  95th percentile per-packet one-way delay: 14.816 ms
  Loss rate: 0.05%
-- Flow 1:
  Average throughput: 154.79 Mbit/s
  95th percentile per-packet one-way delay: 14.829 ms
  Loss rate: 0.02%
-- Flow 2:
  Average throughput: 112.68 Mbit/s
  95th percentile per-packet one-way delay: 13.346 ms
  Loss rate: 0.10%
-- Flow 3:
  Average throughput: 242.26 Mbit/s
  95th percentile per-packet one-way delay: 14.883 ms
  Loss rate: 0.04%
Run 1: Report of TCP Vegas — Data Link

![Graph of throughput over time for different flows]

- Flow 1 ingress (mean 154.82 Mbit/s)
- Flow 1 egress (mean 154.79 Mbit/s)
- Flow 2 ingress (mean 112.79 Mbit/s)
- Flow 2 egress (mean 112.68 Mbit/s)
- Flow 3 ingress (mean 242.38 Mbit/s)
- Flow 3 egress (mean 242.26 Mbit/s)

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

- Flow 1 (95th percentile 14.83 ms)
- Flow 2 (95th percentile 13.35 ms)
- Flow 3 (95th percentile 14.88 ms)
Run 2: Statistics of TCP Vegas

Start at: 2018-01-27 10:05:18
End at: 2018-01-27 10:05:49
Local clock offset: -2.8 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 313.78 Mbit/s
  95th percentile per-packet one-way delay: 15.106 ms
  Loss rate: 0.03%
-- Flow 1:
  Average throughput: 169.44 Mbit/s
  95th percentile per-packet one-way delay: 13.753 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 71.96 Mbit/s
  95th percentile per-packet one-way delay: 15.075 ms
  Loss rate: 0.04%
-- Flow 3:
  Average throughput: 290.52 Mbit/s
  95th percentile per-packet one-way delay: 15.247 ms
  Loss rate: 0.08%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2018-01-27 10:56:00
End at: 2018-01-27 10:56:30
Local clock offset: -3.667 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 344.59 Mbit/s
95th percentile per-packet one-way delay: 14.237 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 230.79 Mbit/s
95th percentile per-packet one-way delay: 14.190 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 101.34 Mbit/s
95th percentile per-packet one-way delay: 14.211 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 139.53 Mbit/s
95th percentile per-packet one-way delay: 14.415 ms
Loss rate: 0.14%
Run 3: Report of TCP Vegas — Data Link

![Graph showing network traffic and packet delay over time.]

- Flow 1 ingress (mean 230.81 Mbit/s) vs Flow 1 egress (mean 230.79 Mbit/s)
- Flow 2 ingress (mean 101.42 Mbit/s) vs Flow 2 egress (mean 101.34 Mbit/s)
- Flow 3 ingress (mean 139.73 Mbit/s) vs Flow 3 egress (mean 139.53 Mbit/s)

![Graph showing packet delay statistics.]

- Flow 1 (95th percentile 14.19 ms) vs Flow 2 (95th percentile 14.21 ms) vs Flow 3 (95th percentile 14.41 ms)
Run 4: Statistics of TCP Vegas

Local clock offset: 2.928 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 390.00 Mbit/s
  95th percentile per-packet one-way delay: 21.122 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 200.58 Mbit/s
  95th percentile per-packet one-way delay: 21.125 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 218.93 Mbit/s
  95th percentile per-packet one-way delay: 21.110 ms
  Loss rate: 0.04%
-- Flow 3:
  Average throughput: 131.48 Mbit/s
  95th percentile per-packet one-way delay: 21.127 ms
  Loss rate: 0.04%
Run 4: Report of TCP Vegas — Data Link

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

- **Flow 1 ingress (mean 200.59 Mbit/s)**
- **Flow 1 egress (mean 200.58 Mbit/s)**
- **Flow 2 ingress (mean 219.03 Mbit/s)**
- **Flow 2 egress (mean 218.93 Mbit/s)**
- **Flow 3 ingress (mean 131.53 Mbit/s)**
- **Flow 3 egress (mean 131.48 Mbit/s)**
Run 5: Statistics of TCP Vegas

Local clock offset: -5.346 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 361.66 Mbit/s
95th percentile per-packet one-way delay: 12.532 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 157.02 Mbit/s
95th percentile per-packet one-way delay: 12.539 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 180.82 Mbit/s
95th percentile per-packet one-way delay: 12.582 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 253.65 Mbit/s
95th percentile per-packet one-way delay: 11.090 ms
Loss rate: 0.08%
Run 5: Report of TCP Vegas — Data Link
Run 6: Statistics of TCP Vegas

Local clock offset: -3.654 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 304.53 Mbit/s
  95th percentile per-packet one-way delay: 14.173 ms
  Loss rate: 0.05%
-- Flow 1:
  Average throughput: 105.38 Mbit/s
  95th percentile per-packet one-way delay: 14.273 ms
  Loss rate: 0.03%
-- Flow 2:
  Average throughput: 201.16 Mbit/s
  95th percentile per-packet one-way delay: 12.798 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 196.28 Mbit/s
  95th percentile per-packet one-way delay: 12.776 ms
  Loss rate: 0.06%
Run 6: Report of TCP Vegas — Data Link
Run 7: Statistics of TCP Vegas

End at: 2018-01-27 14:18:53
Local clock offset: 3.846 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 294.11 Mbit/s
95th percentile per-packet one-way delay: 21.664 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 222.03 Mbit/s
95th percentile per-packet one-way delay: 21.677 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 63.86 Mbit/s
95th percentile per-packet one-way delay: 21.505 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 89.02 Mbit/s
95th percentile per-packet one-way delay: 21.612 ms
Loss rate: 0.06%
Run 7: Report of TCP Vegas — Data Link
Run 8: Statistics of TCP Vegas

Start at: 2018-01-27 15:09:04
End at: 2018-01-27 15:09:34
Local clock offset: 1.668 ms

# Below is generated by plot.py at 2018-01-27 20:03:38
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 334.54 Mbit/s
  95th percentile per-packet one-way delay: 19.144 ms
  Loss rate: 0.04%
-- Flow 1:
  Average throughput: 178.41 Mbit/s
  95th percentile per-packet one-way delay: 17.754 ms
  Loss rate: 0.04%
-- Flow 2:
  Average throughput: 188.21 Mbit/s
  95th percentile per-packet one-way delay: 19.236 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 92.80 Mbit/s
  95th percentile per-packet one-way delay: 19.026 ms
  Loss rate: 0.14%
Run 9: Statistics of TCP Vegas

Start at: 2018-01-27 15:59:46
End at: 2018-01-27 16:00:16
Local clock offset: -5.85 ms

# Below is generated by plot.py at 2018-01-27 20:05:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 318.67 Mbit/s
95th percentile per-packet one-way delay: 11.387 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 211.44 Mbit/s
95th percentile per-packet one-way delay: 11.400 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 138.04 Mbit/s
95th percentile per-packet one-way delay: 11.361 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 46.14 Mbit/s
95th percentile per-packet one-way delay: 11.229 ms
Loss rate: 0.21%
Run 9: Report of TCP Vegas — Data Link

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

Flow 1 ingress (mean 211.54 Mbit/s)
Flow 1 egress (mean 211.44 Mbit/s)
Flow 2 ingress (mean 138.06 Mbit/s)
Flow 2 egress (mean 138.04 Mbit/s)
Flow 3 ingress (mean 46.24 Mbit/s)
Flow 3 egress (mean 46.14 Mbit/s)
Run 10: Statistics of TCP Vegas

Start at: 2018-01-27 16:50:27
End at: 2018-01-27 16:50:57
Local clock offset: -4.031 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 308.30 Mbit/s
95th percentile per-packet one-way delay: 12.898 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 194.66 Mbit/s
95th percentile per-packet one-way delay: 12.934 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 123.71 Mbit/s
95th percentile per-packet one-way delay: 11.316 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 94.23 Mbit/s
95th percentile per-packet one-way delay: 12.712 ms
Loss rate: 0.03%
Run 10: Report of TCP Vegas — Data Link

**Graph 1:**
Throughput (Mbps) vs. Time (s)
- Flow 1 ingress (mean 194.67 Mbps)
- Flow 1 egress (mean 194.66 Mbps)
- Flow 2 ingress (mean 123.79 Mbps)
- Flow 2 egress (mean 123.71 Mbps)
- Flow 3 ingress (mean 94.26 Mbps)
- Flow 3 egress (mean 94.23 Mbps)

**Graph 2:**
Per-packet one-way delay (ms) vs. Time (s)
- Flow 1 (95th percentile 12.93 ms)
- Flow 2 (95th percentile 11.32 ms)
- Flow 3 (95th percentile 12.71 ms)
Run 1: Statistics of Verus

Start at: 2018-01-27 08:43:23
Local clock offset: 0.945 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 18.082 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 18.118 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 17.378 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 17.354 ms
  Loss rate: 0.00%
Run 1: Report of Verus — Data Link

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

![Graph of per-packet one-way delay over time for different flows.](image)
Run 2: Statistics of Verus

Start at: 2018-01-27 09:34:02
End at: 2018-01-27 09:34:32
Local clock offset: ~4.322 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 13.772 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 13.805 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 13.187 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 13.194 ms
  Loss rate: 0.00%
Run 2: Report of Verus — Data Link
Run 3: Statistics of Verus

Start at: 2018-01-27 10:24:45
End at: 2018-01-27 10:25:15
Local clock offset: -2.901 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 14.854 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 14.926 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 13.151 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 14.357 ms
  Loss rate: 0.00%
Run 3: Report of Verus — Data Link

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

- **Flow 1 ing/egress** (mean 0.00 Mbit/s)
- **Flow 2 ing/egress** (mean 0.00 Mbit/s)
- **Flow 3 ing/egress** (mean 0.00 Mbit/s)

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

- **Flow 1 (95th percentile 14.93 ms)**
- **Flow 2 (95th percentile 13.15 ms)**
- **Flow 3 (95th percentile 14.36 ms)**
Run 4: Statistics of Verus

End at: 2018-01-27 11:15:58
Local clock offset: 2.418 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 20.831 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 20.867 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 20.168 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 20.250 ms
Loss rate: 0.00%
Run 4: Report of Verus — Data Link

![Graph of throughput over time for different flows.](image1)

![Graph of packet delay over time for different flows.](image2)
Run 5: Statistics of Verus

Start at: 2018-01-27 12:06:11
End at: 2018-01-27 12:06:41
Local clock offset: 1.514 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 18.354 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 18.455 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 17.653 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 16.232 ms
Loss rate: 0.00%
Run 5: Report of Verus — Data Link
Run 6: Statistics of Verus

Start at: 2018-01-27 12:56:50
Local clock offset: -6.535 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 11.337 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 11.352 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 10.657 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 10.755 ms
Loss rate: 0.00%
Run 6: Report of Verus — Data Link

---

**Graph 1:**
Throughput (Mbit/s) vs. Time (s)
- Flow 1 ingress (mean 0.00 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 0.00 Mbit/s)
- Flow 2 egress (mean 0.00 Mbit/s)
- Flow 3 ingress (mean 0.00 Mbit/s)
- Flow 3 egress (mean 0.00 Mbit/s)

**Graph 2:**
Packet one-way delay (ms) vs. Time (s)
- Flow 1 (95th percentile 11.35 ms)
- Flow 2 (95th percentile 10.66 ms)
- Flow 3 (95th percentile 10.76 ms)
Run 7: Statistics of Verus

Local clock offset: -2.108 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 16.414 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 15.620 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 16.416 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 17.112 ms
  Loss rate: 0.00%
Run 7: Report of Verus — Data Link
Run 8: Statistics of Verus

Start at: 2018-01-27 14:37:49
End at: 2018-01-27 14:38:19
Local clock offset: 3.221 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 21.090 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 21.151 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 20.486 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 19.081 ms
Loss rate: 0.00%
Run 8: Report of Verus — Data Link

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

- Flow 1 ingress (mean 0.00 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 0.00 Mbit/s)
- Flow 2 egress (mean 0.00 Mbit/s)
- Flow 3 ingress (mean 0.00 Mbit/s)
- Flow 3 egress (mean 0.00 Mbit/s)
Run 9: Statistics of Verus

Local clock offset: 1.177 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 17.532 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 17.664 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 16.910 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 16.923 ms
  Loss rate: 0.00%
Run 9: Report of Verus — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Per-packet one-way delay (ms)]
Run 10: Statistics of Verus

End at: 2018-01-27 16:19:43
Local clock offset: ~4.315 ms

# Below is generated by plot.py at 2018-01-27 20:05:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 12.563 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 13.234 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 12.436 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 10.891 ms
  Loss rate: 0.00%
Run 10: Report of Verus — Data Link

### Throughput (Mbit/s)

```
Throughput (Mbit/s)
```

### Packet Delivery Delay (ms)

```
Packet Delivery Delay (ms)
```

---

*Flow 1 (95th percentile 13.23 ms)  Flow 2 (95th percentile 12.44 ms)  Flow 3 (95th percentile 10.89 ms)*
Run 1: Statistics of Copa

Start at: 2018-01-27 08:59:07
End at: 2018-01-27 08:59:37
Local clock offset: -1.981 ms

# Below is generated by plot.py at 2018-01-27 20:06:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 201.12 Mbit/s
95th percentile per-packet one-way delay: 15.380 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 102.13 Mbit/s
95th percentile per-packet one-way delay: 15.391 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 100.65 Mbit/s
95th percentile per-packet one-way delay: 15.357 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 121.12 Mbit/s
95th percentile per-packet one-way delay: 15.381 ms
Loss rate: 0.01%
Run 1: Report of Copa — Data Link

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

Flow 1 ingress (mean 102.13 Mbit/s)  
Flow 1 egress (mean 102.13 Mbit/s)  
Flow 2 ingress (mean 100.65 Mbit/s)  
Flow 2 egress (mean 100.65 Mbit/s)  
Flow 3 ingress (mean 121.11 Mbit/s)  
Flow 3 egress (mean 121.12 Mbit/s)  

Flow 1 (95th percentile 15.39 ms)  
Flow 2 (95th percentile 15.36 ms)  
Flow 3 (95th percentile 15.38 ms)
Run 2: Statistics of Copa

Start at: 2018-01-27 09:49:45
End at: 2018-01-27 09:50:15
Local clock offset: -4.179 ms

# Below is generated by plot.py at 2018-01-27 20:06:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 201.93 Mbit/s
95th percentile per-packet one-way delay: 13.826 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 102.24 Mbit/s
95th percentile per-packet one-way delay: 13.821 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 102.50 Mbit/s
95th percentile per-packet one-way delay: 13.833 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 119.28 Mbit/s
95th percentile per-packet one-way delay: 13.827 ms
Loss rate: 0.00%
Run 2: Report of Copa — Data Link
Run 3: Statistics of Copa

Start at: 2018-01-27 10:40:26
End at: 2018-01-27 10:40:56
Local clock offset: -3.803 ms

# Below is generated by plot.py at 2018-01-27 20:06:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 198.67 Mbit/s
  95th percentile per-packet one-way delay: 13.643 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 99.78 Mbit/s
  95th percentile per-packet one-way delay: 13.667 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 103.25 Mbit/s
  95th percentile per-packet one-way delay: 12.263 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 115.03 Mbit/s
  95th percentile per-packet one-way delay: 13.690 ms
  Loss rate: 0.00%
Run 3: Report of Copa — Data Link

---

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 99.77 Mbps)
- Flow 1 egress (mean 99.78 Mbps)
- Flow 2 ingress (mean 103.25 Mbps)
- Flow 2 egress (mean 103.25 Mbps)
- Flow 3 ingress (mean 115.03 Mbps)
- Flow 3 egress (mean 115.03 Mbps)

Graph 2: Per packet one way delay (ms)
- Flow 1 (95th percentile 13.67 ms)
- Flow 2 (95th percentile 12.26 ms)
- Flow 3 (95th percentile 13.69 ms)
Run 4: Statistics of Copa

Start at: 2018-01-27 11:31:10
End at: 2018-01-27 11:31:40
Local clock offset: 3.441 ms

# Below is generated by plot.py at 2018-01-27 20:08:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 198.82 Mbit/s
  95th percentile per-packet one-way delay: 20.853 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 104.37 Mbit/s
  95th percentile per-packet one-way delay: 19.500 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 97.94 Mbit/s
  95th percentile per-packet one-way delay: 20.902 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 111.25 Mbit/s
  95th percentile per-packet one-way delay: 20.923 ms
  Loss rate: 0.01%
Run 4: Report of Copa — Data Link

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

Start at: 2018-01-27 12:21:54
Local clock offset: -3.629 ms

# Below is generated by plot.py at 2018-01-27 20:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 195.05 Mbit/s
95th percentile per-packet one-way delay: 13.643 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 100.21 Mbit/s
95th percentile per-packet one-way delay: 13.654 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 94.10 Mbit/s
95th percentile per-packet one-way delay: 13.623 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 121.15 Mbit/s
95th percentile per-packet one-way delay: 13.641 ms
Loss rate: 0.00%
Run 5: Report of Copa — Data Link
Run 6: Statistics of Copa

Start at: 2018-01-27 13:12:34
Local clock offset: -7.072 ms

# Below is generated by plot.py at 2018-01-27 20:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 172.01 Mbit/s
95th percentile per-packet one-way delay: 11.312 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 106.08 Mbit/s
95th percentile per-packet one-way delay: 11.304 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 102.68 Mbit/s
95th percentile per-packet one-way delay: 11.322 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.66 Mbit/s
95th percentile per-packet one-way delay: 11.493 ms
Loss rate: 0.00%
Run 6: Report of Copa — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows. The graphs display data for flows 1, 2, and 3, showing variations in throughput and delay over time.]
Run 7: Statistics of Copa

Start at: 2018-01-27 14:03:13
End at: 2018-01-27 14:03:43
Local clock offset: 2.276 ms

# Below is generated by plot.py at 2018-01-27 20:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 206.46 Mbit/s
95th percentile per-packet one-way delay: 19.844 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 104.36 Mbit/s
95th percentile per-packet one-way delay: 18.538 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 103.60 Mbit/s
95th percentile per-packet one-way delay: 18.462 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 125.36 Mbit/s
95th percentile per-packet one-way delay: 19.943 ms
Loss rate: 0.00%
Run 7: Report of Copa — Data Link

![Graph of Throughput Over Time](image1)

- **Flow 1 Ingress (mean 104.35 Mbps)**
- **Flow 1 Egress (mean 104.36 Mbps)**
- **Flow 2 Ingress (mean 103.60 Mbps)**
- **Flow 2 Egress (mean 103.60 Mbps)**
- **Flow 3 Ingress (mean 125.40 Mbps)**
- **Flow 3 Egress (mean 125.36 Mbps)**

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

- **Flow 1 (95th percentile 18.54 ms)**
- **Flow 2 (95th percentile 18.46 ms)**
- **Flow 3 (95th percentile 19.94 ms)**
Run 8: Statistics of Copa

Start at: 2018-01-27 14:53:33
End at: 2018-01-27 14:54:03
Local clock offset: 3.733 ms

# Below is generated by plot.py at 2018-01-27 20:10:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 211.18 Mbit/s
95th percentile per-packet one-way delay: 20.568 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 104.43 Mbit/s
95th percentile per-packet one-way delay: 19.277 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.08 Mbit/s
95th percentile per-packet one-way delay: 19.252 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 127.28 Mbit/s
95th percentile per-packet one-way delay: 20.674 ms
Loss rate: 0.00%
Run 8: Report of Copa — Data Link

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

Throughput (Mbps)

Per packet one-way delay (ms)

Legend:
- Flow 1 ingress (mean 104.42 Mbps)
- Flow 1 egress (mean 104.43 Mbps)
- Flow 2 ingress (mean 110.07 Mbps)
- Flow 2 egress (mean 110.08 Mbps)
- Flow 3 ingress (mean 127.29 Mbps)
- Flow 3 egress (mean 127.28 Mbps)

Excel Original: Run 8 - COPA Data Link Measurement Results.xlsx
Run 9: Statistics of Copa

Start at: 2018-01-27 15:44:12
End at: 2018-01-27 15:44:42
Local clock offset: -4.068 ms

# Below is generated by plot.py at 2018-01-27 20:11:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 203.55 Mbit/s
95th percentile per-packet one-way delay: 12.811 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 106.33 Mbit/s
95th percentile per-packet one-way delay: 12.822 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 100.04 Mbit/s
95th percentile per-packet one-way delay: 12.825 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 116.28 Mbit/s
95th percentile per-packet one-way delay: 11.398 ms
Loss rate: 0.00%
Run 9: Report of Copa — Data Link
Run 10: Statistics of Copa

Start at: 2018-01-27 16:34:55
End at: 2018-01-27 16:35:25
Local clock offset: -4.677 ms

# Below is generated by plot.py at 2018-01-27 20:11:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 202.25 Mbit/s
95th percentile per-packet one-way delay: 12.035 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 102.36 Mbit/s
95th percentile per-packet one-way delay: 12.055 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 99.93 Mbit/s
95th percentile per-packet one-way delay: 10.640 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 125.74 Mbit/s
95th percentile per-packet one-way delay: 12.053 ms
Loss rate: 0.01%
Run 10: Report of Copa — Data Link

![Graph showing throughput and per-packet one-way delay](image)
Run 1: Statistics of Indigo-2-256

Start at: 2018-01-27 08:46:18
End at: 2018-01-27 08:46:48
Local clock offset: -0.091 ms

# Below is generated by plot.py at 2018-01-27 20:11:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 368.53 Mbit/s
95th percentile per-packet one-way delay: 17.738 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 194.23 Mbit/s
95th percentile per-packet one-way delay: 17.399 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 182.20 Mbit/s
95th percentile per-packet one-way delay: 17.792 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 167.08 Mbit/s
95th percentile per-packet one-way delay: 18.480 ms
Loss rate: 0.06%
Run 1: Report of Indigo-2-256 — Data Link

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

- Flow 1 ingress (mean 194.25 Mbps)
- Flow 1 egress (mean 194.23 Mbps)
- Flow 2 ingress (mean 182.22 Mbps)
- Flow 2 egress (mean 182.20 Mbps)
- Flow 3 ingress (mean 167.18 Mbps)
- Flow 3 egress (mean 167.08 Mbps)

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

- Flow 1 (95th percentile 17.40 ms)
- Flow 2 (95th percentile 17.79 ms)
- Flow 3 (95th percentile 18.48 ms)
Run 2: Statistics of Indigo-2-256

Start at: 2018-01-27 09:36:57
End at: 2018-01-27 09:37:27
Local clock offset: ~4.403 ms

# Below is generated by plot.py at 2018-01-27 20:13:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 372.47 Mbit/s
95th percentile per-packet one-way delay: 13.907 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 196.62 Mbit/s
95th percentile per-packet one-way delay: 12.800 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 182.87 Mbit/s
95th percentile per-packet one-way delay: 14.061 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 169.19 Mbit/s
95th percentile per-packet one-way delay: 15.028 ms
Loss rate: 0.03%
Run 2: Report of Indigo-2-256 — Data Link
Run 3: Statistics of Indigo-2-256

Start at: 2018-01-27 10:27:40
End at: 2018-01-27 10:28:10
Local clock offset: -3.13 ms

# Below is generated by plot.py at 2018-01-27 20:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 373.65 Mbit/s
95th percentile per-packet one-way delay: 14.843 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 198.22 Mbit/s
95th percentile per-packet one-way delay: 13.964 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 182.47 Mbit/s
95th percentile per-packet one-way delay: 15.237 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 170.87 Mbit/s
95th percentile per-packet one-way delay: 15.909 ms
Loss rate: 0.01%
Run 3: Report of Indigo-2-256 — Data Link
Run 4: Statistics of Indigo-2-256

End at: 2018-01-27 11:18:53
Local clock offset: 2.68 ms

# Below is generated by plot.py at 2018-01-27 20:13:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 371.47 Mbit/s
95th percentile per-packet one-way delay: 21.710 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 194.93 Mbit/s
95th percentile per-packet one-way delay: 21.378 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 183.17 Mbit/s
95th percentile per-packet one-way delay: 21.766 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 171.50 Mbit/s
95th percentile per-packet one-way delay: 22.417 ms
Loss rate: 0.01%
Run 4: Report of Indigo-2-256 — Data Link

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

- Flow 1 ingress (mean 194.98 Mbit/s)
- Flow 1 egress (mean 194.93 Mbit/s)
- Flow 2 ingress (mean 183.23 Mbit/s)
- Flow 2 egress (mean 183.17 Mbit/s)
- Flow 3 ingress (mean 171.48 Mbit/s)
- Flow 3 egress (mean 171.50 Mbit/s)

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

- Flow 1 (95th percentile 21.38 ms)
- Flow 2 (95th percentile 21.77 ms)
- Flow 3 (95th percentile 22.42 ms)
Run 5: Statistics of Indigo-2-256

Start at: 2018-01-27 12:09:06
End at: 2018-01-27 12:09:36
Local clock offset: -0.064 ms

# Below is generated by plot.py at 2018-01-27 20:15:08
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 369.20 Mbit/s
  95th percentile per-packet one-way delay: 17.189 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 193.52 Mbit/s
  95th percentile per-packet one-way delay: 16.963 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 181.39 Mbit/s
  95th percentile per-packet one-way delay: 17.623 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 172.23 Mbit/s
  95th percentile per-packet one-way delay: 16.745 ms
  Loss rate: 0.03%
Run 5: Report of Indigo-2-256 — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 193.53 Mbit/s)
Flow 1 egress (mean 193.52 Mbit/s)
Flow 2 ingress (mean 181.36 Mbit/s)
Flow 2 egress (mean 181.39 Mbit/s)
Flow 3 ingress (mean 172.31 Mbit/s)
Flow 3 egress (mean 172.23 Mbit/s)

Per-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 16.96 ms)
Flow 2 (95th percentile 17.62 ms)
Flow 3 (95th percentile 16.75 ms)
Run 6: Statistics of Indigo-2-256

Start at: 2018-01-27 12:59:45
End at: 2018-01-27 13:00:15
Local clock offset: -6.785 ms

# Below is generated by plot.py at 2018-01-27 20:15:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 373.83 Mbit/s
95th percentile per-packet one-way delay: 11.003 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 197.36 Mbit/s
95th percentile per-packet one-way delay: 10.252 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 183.20 Mbit/s
95th percentile per-packet one-way delay: 11.335 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 170.06 Mbit/s
95th percentile per-packet one-way delay: 11.161 ms
Loss rate: 0.01%
Run 6: Report of Indigo-2-256 — Data Link

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

- Flow 1 ingress (mean 197.42 Mbit/s)
- Flow 1 egress (mean 197.36 Mbit/s)
- Flow 2 ingress (mean 183.32 Mbit/s)
- Flow 2 egress (mean 183.20 Mbit/s)
- Flow 3 ingress (mean 170.08 Mbit/s)
- Flow 3 egress (mean 170.06 Mbit/s)
Run 7: Statistics of Indigo-2-256

Local clock offset: -0.767 ms

# Below is generated by plot.py at 2018-01-27 20:16:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 369.32 Mbit/s
95th percentile per-packet one-way delay: 18.747 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 192.78 Mbit/s
95th percentile per-packet one-way delay: 18.599 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 182.30 Mbit/s
95th percentile per-packet one-way delay: 18.511 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 172.43 Mbit/s
95th percentile per-packet one-way delay: 19.315 ms
Loss rate: 0.00%
Run 7: Report of Indigo-2-256 — Data Link

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

![Graph 2: Per-packet one-way delay](image2)
Run 8: Statistics of Indigo-2-256

Start at: 2018-01-27 14:40:45
End at: 2018-01-27 14:41:15
Local clock offset: 3.291 ms

# Below is generated by plot.py at 2018-01-27 20:16:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 368.31 Mbit/s
95th percentile per-packet one-way delay: 21.691 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 193.00 Mbit/s
95th percentile per-packet one-way delay: 21.530 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 181.66 Mbit/s
95th percentile per-packet one-way delay: 21.316 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 171.89 Mbit/s
95th percentile per-packet one-way delay: 22.658 ms
Loss rate: 0.01%
Run 8: Report of Indigo-2-256 — Data Link
Run 9: Statistics of Indigo-2-256

End at: 2018-01-27 15:31:54
Local clock offset: -0.521 ms

# Below is generated by plot.py at 2018-01-27 20:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 369.31 Mbit/s
95th percentile per-packet one-way delay: 16.499 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 193.80 Mbit/s
95th percentile per-packet one-way delay: 16.396 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 181.90 Mbit/s
95th percentile per-packet one-way delay: 16.738 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 172.18 Mbit/s
95th percentile per-packet one-way delay: 16.197 ms
Loss rate: 0.06%
Run 9: Report of Indigo-2-256 — Data Link

![Graph 1](image1)

![Graph 2](image2)
Run 10: Statistics of Indigo-2-256

Local clock offset: -4.316 ms

# Below is generated by plot.py at 2018-01-27 20:18:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 376.15 Mbit/s
95th percentile per-packet one-way delay: 12.925 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 197.77 Mbit/s
95th percentile per-packet one-way delay: 11.683 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 185.27 Mbit/s
95th percentile per-packet one-way delay: 12.373 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.51 Mbit/s
95th percentile per-packet one-way delay: 14.682 ms
Loss rate: 0.04%
Run 10: Report of Indigo-2-256 — Data Link
Run 1: Statistics of Indigo-1-32

Start at: 2018-01-27 08:49:32
End at: 2018-01-27 08:50:02
Local clock offset: -0.83 ms

# Below is generated by plot.py at 2018-01-27 20:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 374.60 Mbit/s
95th percentile per-packet one-way delay: 16.953 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 194.14 Mbit/s
95th percentile per-packet one-way delay: 16.776 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 186.51 Mbit/s
95th percentile per-packet one-way delay: 17.265 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 176.62 Mbit/s
95th percentile per-packet one-way delay: 16.635 ms
Loss rate: 0.00%
Run 1: Report of Indigo-1-32 — Data Link

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

- Flow 1 ingress (mean 194.14 Mbit/s)
- Flow 1 egress (mean 194.14 Mbit/s)
- Flow 2 ingress (mean 186.53 Mbit/s)
- Flow 2 egress (mean 186.51 Mbit/s)
- Flow 3 ingress (mean 176.58 Mbit/s)
- Flow 3 egress (mean 176.62 Mbit/s)
Run 2: Statistics of Indigo-1-32

Start at: 2018-01-27 09:40:11
End at: 2018-01-27 09:40:41
Local clock offset: -4.519 ms

# Below is generated by plot.py at 2018-01-27 20:18:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 372.31 Mbit/s
  95th percentile per-packet one-way delay: 13.926 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 193.00 Mbit/s
  95th percentile per-packet one-way delay: 13.328 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 185.57 Mbit/s
  95th percentile per-packet one-way delay: 14.126 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 175.57 Mbit/s
  95th percentile per-packet one-way delay: 14.799 ms
  Loss rate: 0.03%
Run 2: Report of Indigo-1-32 — Data Link
Run 3: Statistics of Indigo-1-32

Start at: 2018-01-27 10:30:53
Local clock offset: -3.41 ms

# Below is generated by plot.py at 2018-01-27 20:20:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 376.94 Mbit/s
95th percentile per-packet one-way delay: 14.576 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 194.98 Mbit/s
95th percentile per-packet one-way delay: 14.454 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 188.39 Mbit/s
95th percentile per-packet one-way delay: 13.541 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 178.52 Mbit/s
95th percentile per-packet one-way delay: 15.575 ms
Loss rate: 0.02%
Run 3: Report of Indigo-1-32 — Data Link

![Graph showing network throughput and packet delay over time for different flows.](image-url)
Run 4: Statistics of Indigo-1-32

Local clock offset: 3.016 ms

# Below is generated by plot.py at 2018-01-27 20:20:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 372.27 Mbit/s
95th percentile per-packet one-way delay: 20.308 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 197.37 Mbit/s
95th percentile per-packet one-way delay: 19.993 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 181.56 Mbit/s
95th percentile per-packet one-way delay: 20.321 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 171.60 Mbit/s
95th percentile per-packet one-way delay: 20.942 ms
Loss rate: 0.00%
Run 4: Report of Indigo-1-32 — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 197.38 Mbps)
Flow 1 egress (mean 197.37 Mbps)
Flow 2 ingress (mean 181.57 Mbps)
Flow 2 egress (mean 181.56 Mbps)
Flow 3 ingress (mean 171.81 Mbps)
Flow 3 egress (mean 171.60 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 19.99 ms)
Flow 2 (95th percentile 20.32 ms)
Flow 3 (95th percentile 20.94 ms)
Run 5: Statistics of Indigo-1-32

Start at: 2018-01-27 12:12:20
End at: 2018-01-27 12:12:50
Local clock offset: -1.442 ms

# Below is generated by plot.py at 2018-01-27 20:21:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 374.48 Mbit/s
95th percentile per-packet one-way delay: 16.080 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 192.61 Mbit/s
95th percentile per-packet one-way delay: 15.995 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 188.17 Mbit/s
95th percentile per-packet one-way delay: 16.335 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 177.29 Mbit/s
95th percentile per-packet one-way delay: 15.621 ms
Loss rate: 0.00%
Run 5: Report of Indigo-1-32 — Data Link
Run 6: Statistics of Indigo-1-32

Start at: 2018-01-27 13:02:59
End at: 2018-01-27 13:03:29
Local clock offset: -6.9 ms

# Below is generated by plot.py at 2018-01-27 20:21:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 367.85 Mbit/s
95th percentile per-packet one-way delay: 11.298 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 187.70 Mbit/s
95th percentile per-packet one-way delay: 10.935 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 186.40 Mbit/s
95th percentile per-packet one-way delay: 11.289 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 177.81 Mbit/s
95th percentile per-packet one-way delay: 11.999 ms
Loss rate: 0.01%
Run 6: Report of Indigo-1-32 — Data Link
Run 7: Statistics of Indigo-1-32

End at: 2018-01-27 13:54:08
Local clock offset: 0.276 ms

# Below is generated by plot.py at 2018-01-27 20:21:52
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 372.75 Mbit/s
  95th percentile per-packet one-way delay: 19.099 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 192.65 Mbit/s
  95th percentile per-packet one-way delay: 18.906 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 186.69 Mbit/s
  95th percentile per-packet one-way delay: 18.938 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 174.77 Mbit/s
  95th percentile per-packet one-way delay: 19.777 ms
  Loss rate: 0.00%
Run 7: Report of Indigo-1-32 — Data Link

Data Link Performance

Throughput (Mbps):
- Flow 1 ingress (mean 192.65 Mbps)
- Flow 1 egress (mean 192.65 Mbps)
- Flow 2 ingress (mean 186.70 Mbps)
- Flow 2 egress (mean 186.69 Mbps)
- Flow 3 ingress (mean 174.78 Mbps)
- Flow 3 egress (mean 174.77 Mbps)

Packet Error Rate (PER):
- Flow 1 (95th percentile 18.91 ms)
- Flow 2 (95th percentile 18.94 ms)
- Flow 3 (95th percentile 19.78 ms)
Run 8: Statistics of Indigo-1-32

End at: 2018-01-27 14:44:28
Local clock offset: 3.365 ms

# Below is generated by plot.py at 2018-01-27 20:23:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 369.22 Mbit/s
  95th percentile per-packet one-way delay: 21.307 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 189.88 Mbit/s
  95th percentile per-packet one-way delay: 19.875 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 187.28 Mbit/s
  95th percentile per-packet one-way delay: 21.465 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 174.27 Mbit/s
  95th percentile per-packet one-way delay: 22.274 ms
  Loss rate: 0.00%
Run 8: Report of Indigo-1-32 — Data Link

![Data Link Graph](image)

- **Flow 1**: Ingress (mean 189.88 Mbit/s), Egress (mean 189.88 Mbit/s)
- **Flow 2**: Ingress (mean 187.27 Mbit/s), Egress (mean 187.28 Mbit/s)
- **Flow 3**: Ingress (mean 174.28 Mbit/s), Egress (mean 174.27 Mbit/s)

![Packet Delay Graph](image)

- **Flow 1**: 95th percentile 19.38 ms
- **Flow 2**: 95th percentile 21.46 ms
- **Flow 3**: 95th percentile 22.27 ms
Run 9: Statistics of Indigo-1-32

Start at: 2018-01-27 15:34:37
End at: 2018-01-27 15:35:07
Local clock offset: -1.701 ms

# Below is generated by plot.py at 2018-01-27 20:23:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 372.52 Mbit/s
95th percentile per-packet one-way delay: 15.420 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 192.48 Mbit/s
95th percentile per-packet one-way delay: 15.230 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 188.29 Mbit/s
95th percentile per-packet one-way delay: 15.235 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 175.67 Mbit/s
95th percentile per-packet one-way delay: 16.286 ms
Loss rate: 0.00%
Run 9: Report of Indigo-1-32 — Data Link

![Graph showing throughput and packet delay data over time for different flows.](image)
Run 10: Statistics of Indigo-1-32

Start at: 2018-01-27 16:25:21
End at: 2018-01-27 16:25:51
Local clock offset: ~4.432 ms

# Below is generated by plot.py at 2018-01-27 20:23:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 373.61 Mbit/s
95th percentile per-packet one-way delay: 12.927 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 192.63 Mbit/s
95th percentile per-packet one-way delay: 12.890 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 187.31 Mbit/s
95th percentile per-packet one-way delay: 11.592 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 176.76 Mbit/s
95th percentile per-packet one-way delay: 13.875 ms
Loss rate: 0.04%
Run 10: Report of Indigo-1-32 — Data Link
Run 1: Statistics of Indigo-1-128

Start at: 2018-01-27 09:17:46
End at: 2018-01-27 09:18:16
Local clock offset: -3.123 ms

# Below is generated by plot.py at 2018-01-27 20:25:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 384.30 Mbit/s
95th percentile per-packet one-way delay: 15.316 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 205.08 Mbit/s
95th percentile per-packet one-way delay: 14.708 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 189.62 Mbit/s
95th percentile per-packet one-way delay: 15.526 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 168.61 Mbit/s
95th percentile per-packet one-way delay: 16.230 ms
Loss rate: 0.03%
Run 1: Report of Indigo-1-128 — Data Link
Run 2: Statistics of Indigo-1-128

Start at: 2018-01-27 10:08:26
End at: 2018-01-27 10:08:56
Local clock offset: -2.796 ms

# Below is generated by plot.py at 2018-01-27 20:26:03
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 386.63 Mbit/s
  95th percentile per-packet one-way delay: 15.938 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 202.13 Mbit/s
  95th percentile per-packet one-way delay: 15.346 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 193.01 Mbit/s
  95th percentile per-packet one-way delay: 16.161 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 176.02 Mbit/s
  95th percentile per-packet one-way delay: 16.879 ms
  Loss rate: 0.00%
Run 2: Report of Indigo-1-128 — Data Link
Run 3: Statistics of Indigo-1-128

Start at: 2018-01-27 10:59:08
End at: 2018-01-27 10:59:38
Local clock offset: -1.877 ms

# Below is generated by plot.py at 2018-01-27 20:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 392.56 Mbit/s
95th percentile per-packet one-way delay: 17.268 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 212.09 Mbit/s
95th percentile per-packet one-way delay: 16.015 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 190.14 Mbit/s
95th percentile per-packet one-way delay: 18.086 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 171.97 Mbit/s
95th percentile per-packet one-way delay: 17.274 ms
Loss rate: 0.01%
Run 4: Statistics of Indigo-1-128

Start at: 2018-01-27 11:49:52
End at: 2018-01-27 11:50:22
Local clock offset: 3.087 ms

# Below is generated by plot.py at 2018-01-27 20:27:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 390.34 Mbit/s
  95th percentile per-packet one-way delay: 21.917 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 204.15 Mbit/s
  95th percentile per-packet one-way delay: 21.601 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 195.95 Mbit/s
  95th percentile per-packet one-way delay: 20.967 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 175.99 Mbit/s
  95th percentile per-packet one-way delay: 23.390 ms
  Loss rate: 0.03%
Run 4: Report of Indigo-1-128 — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 204.16 Mbps)
- Flow 1 egress (mean 204.15 Mbps)
- Flow 2 ingress (mean 195.96 Mbps)
- Flow 2 egress (mean 195.95 Mbps)
- Flow 3 ingress (mean 176.07 Mbps)
- Flow 3 egress (mean 175.99 Mbps)

Graph 2: Per-packet one-way delay (ms)
- Flow 1 (95th percentile 21.60 ms)
- Flow 2 (95th percentile 20.97 ms)
- Flow 3 (95th percentile 23.39 ms)
Run 5: Statistics of Indigo-1-128

Start at: 2018-01-27 12:40:34
End at: 2018-01-27 12:41:04
Local clock offset: -5.486 ms

# Below is generated by plot.py at 2018-01-27 20:27:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 395.52 Mbit/s
95th percentile per-packet one-way delay: 13.054 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 208.05 Mbit/s
95th percentile per-packet one-way delay: 12.812 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 199.35 Mbit/s
95th percentile per-packet one-way delay: 12.919 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.76 Mbit/s
95th percentile per-packet one-way delay: 13.852 ms
Loss rate: 0.00%
Run 5: Report of Indigo-1-128 — Data Link

[Graph showing throughput and per-packet one-way delay over time for different flows, with legends indicating flow means and percentiles.]
Run 6: Statistics of Indigo-1-128

Local clock offset: -3.372 ms

# Below is generated by plot.py at 2018-01-27 20:28:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 390.63 Mbit/s
95th percentile per-packet one-way delay: 15.284 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 205.33 Mbit/s
95th percentile per-packet one-way delay: 14.576 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 196.69 Mbit/s
95th percentile per-packet one-way delay: 15.449 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 170.69 Mbit/s
95th percentile per-packet one-way delay: 16.379 ms
Loss rate: 0.00%
Run 6: Report of Indigo-1-128 — Data Link

![Graph](image-url)
Run 7: Statistics of Indigo-1-128

Start at: 2018-01-27 14:21:30
End at: 2018-01-27 14:22:00
Local clock offset: 3.903 ms

# Below is generated by plot.py at 2018-01-27 20:28:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 387.00 Mbit/s
95th percentile per-packet one-way delay: 22.073 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 204.72 Mbit/s
95th percentile per-packet one-way delay: 21.623 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 192.37 Mbit/s
95th percentile per-packet one-way delay: 22.114 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 172.31 Mbit/s
95th percentile per-packet one-way delay: 23.025 ms
Loss rate: 0.06%
Run 8: Statistics of Indigo-1-128

Start at: 2018-01-27 15:12:12
End at: 2018-01-27 15:12:42
Local clock offset: 1.41 ms

# Below is generated by plot.py at 2018-01-27 20:28:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 386.73 Mbit/s
95th percentile per-packet one-way delay: 19.869 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 203.59 Mbit/s
95th percentile per-packet one-way delay: 19.551 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 194.95 Mbit/s
95th percentile per-packet one-way delay: 19.867 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 167.40 Mbit/s
95th percentile per-packet one-way delay: 20.656 ms
Loss rate: 0.03%
Run 8: Report of Indigo-1-128 — Data Link
Run 9: Statistics of Indigo-1-128

Start at: 2018-01-27 16:02:53
End at: 2018-01-27 16:03:23
Local clock offset: -5.961 ms

# Below is generated by plot.py at 2018-01-27 20:28:48
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 388.15 Mbit/s
  95th percentile per-packet one-way delay: 12.725 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 206.35 Mbit/s
  95th percentile per-packet one-way delay: 12.257 ms
  Loss rate: 0.02%
-- Flow 2:
  Average throughput: 191.48 Mbit/s
  95th percentile per-packet one-way delay: 12.891 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 172.10 Mbit/s
  95th percentile per-packet one-way delay: 13.599 ms
  Loss rate: 0.02%
Run 10: Statistics of Indigo-1-128

Start at: 2018-01-27 16:53:34
End at: 2018-01-27 16:54:04
Local clock offset: -4.027 ms

# Below is generated by plot.py at 2018-01-27 20:28:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 388.57 Mbit/s
95th percentile per-packet one-way delay: 13.515 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 206.37 Mbit/s
95th percentile per-packet one-way delay: 13.272 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 195.09 Mbit/s
95th percentile per-packet one-way delay: 13.351 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 164.88 Mbit/s
95th percentile per-packet one-way delay: 14.468 ms
Loss rate: 0.02%
Run 10: Report of Indigo-1-128 — Data Link

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 206.38 Mbps)
  - Flow 1 egress (mean 206.37 Mbps)
  - Flow 2 ingress (mean 195.07 Mbps)
  - Flow 2 egress (mean 195.09 Mbps)
  - Flow 3 ingress (mean 164.92 Mbps)
  - Flow 3 egress (mean 164.88 Mbps)

- **Per packet one way delay (ms)**
  - Flow 1 (95th percentile 13.27 ms)
  - Flow 2 (95th percentile 13.35 ms)
  - Flow 3 (95th percentile 14.47 ms)