Pantheon Report

Data path: GCE Iowa Ethernet (local) → GCE Tokyo 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).

Git summary:
branch: master @ f23294ec38436c9f802847d477a41b7343ec76e6
third_party/calibrated_koho @ 3cb73c0d1c03222cdefae446ea37a522e53227db50
M datagrump/sender.cc
third_party/indigo @ a9b2060d39e4da2e8987e093e0eca26c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4e4230db7484501f82ce8b377695f266d
third_party/indigo-1-layer-32-unit @ 2601c92e4a39d58d38dc4dfe0e0c8b90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135e6b540c0f35b593952e2af5e
third_party/indigo-no-calib @ 722af2202ea8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303ae82ea080e6928ec4f1083a681
M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaaab3a6b7cf3cfc
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccf993
third_party/pcc @ 1af0c958fa0d66d18b623c091a55f3ce872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a8642f1bc8143ec978f3cfc42
third_party/scream @ c3370f7db7d17265a97aeb34e016ad23f5965889
third_party/sourdough @ f1a14bf7249737437f61b1eae9b3267cde681
third_party/sprout @ 6f2e4f2e6e088d90166a9f023df3755ee2665089ce
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562539f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 423cbca3e8ea1d599e7b5cfc725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
test from GCE Iowa Ethernet to GCE Tokyo 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>
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<td>flow 2</td>
<td>flow 3</td>
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<tr>
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<td>121.98</td>
<td>123.91</td>
<td>123.21</td>
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<td>142.50</td>
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<td>129.99</td>
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<td>10.75</td>
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<td>146.52</td>
<td>133.30</td>
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<td>Verus</td>
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<td>181.38</td>
<td>124.48</td>
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<td>Copa</td>
<td>10</td>
<td>73.36</td>
<td>70.28</td>
<td>66.53</td>
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<td>Indigo-2-256</td>
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<td>173.27</td>
<td>164.99</td>
<td>106.34</td>
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<td>Indigo-1-32</td>
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<td>184.16</td>
<td>164.71</td>
<td>130.64</td>
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<tr>
<td>Indigo-1-128</td>
<td>10</td>
<td>186.90</td>
<td>176.34</td>
<td>108.23</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-01-27 02:11:55
End at: 2018-01-27 02:12:25

# Below is generated by plot.py at 2018-01-27 05:52:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 190.15 Mbit/s
95th percentile per-packet one-way delay: 101.536 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 99.50 Mbit/s
95th percentile per-packet one-way delay: 98.522 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 91.44 Mbit/s
95th percentile per-packet one-way delay: 102.466 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 90.77 Mbit/s
95th percentile per-packet one-way delay: 108.292 ms
Loss rate: 0.03%
Run 1: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 99.61 Mbit/s)
- Flow 1 egress (mean 99.50 Mbit/s)
- Flow 2 ingress (mean 91.78 Mbit/s)
- Flow 2 egress (mean 91.44 Mbit/s)
- Flow 3 ingress (mean 90.80 Mbit/s)
- Flow 3 egress (mean 90.77 Mbit/s)

- Flow 1 (95th percentile 98.52 ms)
- Flow 2 (95th percentile 102.47 ms)
- Flow 3 (95th percentile 108.29 ms)
Run 2: Statistics of TCP BBR

Start at: 2018-01-27 02:25:56
End at: 2018-01-27 02:26:26

# Below is generated by plot.py at 2018-01-27 05:53:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 231.32 Mbit/s
95th percentile per-packet one-way delay: 79.091 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 102.75 Mbit/s
95th percentile per-packet one-way delay: 76.016 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 117.92 Mbit/s
95th percentile per-packet one-way delay: 79.437 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 151.48 Mbit/s
95th percentile per-packet one-way delay: 84.102 ms
Loss rate: 0.00%
Run 2: Report of TCP BBR — Data Link

[Graphs showing throughput and per-packet one-way delay over time for different flows, with performance statistics provided for each.]
Run 3: Statistics of TCP BBR

Start at: 2018-01-27 02:40:25
End at: 2018-01-27 02:40:55

# Below is generated by plot.py at 2018-01-27 05:53:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 262.36 Mbit/s
95th percentile per-packet one-way delay: 76.955 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 131.80 Mbit/s
95th percentile per-packet one-way delay: 75.689 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 112.00 Mbit/s
95th percentile per-packet one-way delay: 74.765 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 169.76 Mbit/s
95th percentile per-packet one-way delay: 82.106 ms
Loss rate: 0.50%
Run 3: Report of TCP BBR — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 131.71 Mbps)  Flow 1 egress (mean 131.80 Mbps)
Flow 2 ingress (mean 111.89 Mbps)  Flow 2 egress (mean 112.00 Mbps)
Flow 3 ingress (mean 170.79 Mbps)  Flow 3 egress (mean 169.76 Mbps)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 75.69 ms)  Flow 2 (95th percentile 74.77 ms)  Flow 3 (95th percentile 82.11 ms)
Run 4: Statistics of TCP BBR

Start at: 2018-01-27 02:55:04
End at: 2018-01-27 02:55:34

# Below is generated by plot.py at 2018-01-27 05:53:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 175.16 Mbit/s
95th percentile per-packet one-way delay: 75.740 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 85.47 Mbit/s
95th percentile per-packet one-way delay: 74.019 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 92.84 Mbit/s
95th percentile per-packet one-way delay: 75.629 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 84.94 Mbit/s
95th percentile per-packet one-way delay: 79.566 ms
Loss rate: 0.00%
Run 4: Report of TCP BBR — Data Link

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

- Throughput graph with lines for different flows indicating mean throughput.
- Per-packet one-way delay graph with similar lines for different flows.
Run 5: Statistics of TCP BBR

Start at: 2018-01-27 03:09:43
End at: 2018-01-27 03:10:13

# Below is generated by plot.py at 2018-01-27 05:53:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 234.44 Mbit/s
  95th percentile per-packet one-way delay: 77.119 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 120.44 Mbit/s
  95th percentile per-packet one-way delay: 73.524 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 129.05 Mbit/s
  95th percentile per-packet one-way delay: 80.326 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 86.14 Mbit/s
  95th percentile per-packet one-way delay: 77.449 ms
  Loss rate: 0.00%
Run 5: Report of TCP BBR — Data Link
Run 6: Statistics of TCP BBR

Start at: 2018-01-27 03:24:34
End at: 2018-01-27 03:25:04

# Below is generated by plot.py at 2018-01-27 05:54:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.46 Mbit/s
95th percentile per-packet one-way delay: 92.957 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 156.20 Mbit/s
95th percentile per-packet one-way delay: 90.535 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 168.33 Mbit/s
95th percentile per-packet one-way delay: 94.497 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 156.59 Mbit/s
95th percentile per-packet one-way delay: 94.139 ms
Loss rate: 0.00%
Run 6: Report of TCP BBR — Data Link

Graph 1: Throughput (Mbps) vs Time (s)

Graph 2: Per-packet RTT vs Time (s)

Legend:
- Flow 1 ingress (mean 156.21 Mbps)
- Flow 1 egress (mean 156.20 Mbps)
- Flow 2 ingress (mean 168.43 Mbps)
- Flow 2 egress (mean 168.33 Mbps)
- Flow 3 ingress (mean 156.55 Mbps)
- Flow 3 egress (mean 156.59 Mbps)
- Flow 1 (95th percentile 90.53 ms)
- Flow 2 (95th percentile 94.50 ms)
- Flow 3 (95th percentile 94.14 ms)
Run 7: Statistics of TCP BBR

Start at: 2018-01-27 03:39:06
End at: 2018-01-27 03:39:36

# Below is generated by plot.py at 2018-01-27 05:54:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 287.12 Mbit/s
95th percentile per-packet one-way delay: 86.303 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 134.67 Mbit/s
95th percentile per-packet one-way delay: 80.369 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 149.19 Mbit/s
95th percentile per-packet one-way delay: 86.714 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 161.97 Mbit/s
95th percentile per-packet one-way delay: 90.591 ms
Loss rate: 0.00%
Run 7: Report of TCP BBR — Data Link

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

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 134.75 Mbps)
Flow 1 egress (mean 134.67 Mbps)
Flow 2 ingress (mean 148.59 Mbps)
Flow 2 egress (mean 149.19 Mbps)
Flow 3 ingress (mean 162.08 Mbps)
Flow 3 egress (mean 161.97 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 80.37 ms)
Flow 2 (95th percentile 86.71 ms)
Flow 3 (95th percentile 90.59 ms)
Run 8: Statistics of TCP BBR

Start at: 2018-01-27 03:53:49
End at: 2018-01-27 03:54:19

# Below is generated by plot.py at 2018-01-27 05:54:50
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 205.73 Mbit/s
  95th percentile per-packet one-way delay: 77.263 ms
  Loss rate: 0.09%
-- Flow 1:
  Average throughput: 122.91 Mbit/s
  95th percentile per-packet one-way delay: 74.953 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 85.79 Mbit/s
  95th percentile per-packet one-way delay: 76.036 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 78.59 Mbit/s
  95th percentile per-packet one-way delay: 83.062 ms
  Loss rate: 0.69%
Run 8: Report of TCP BBR — Data Link

![Throughput Time Graph](image1)

- **Flow 1 ingress (mean 122.06 Mbit/s)**
- **Flow 1 egress (mean 122.91 Mbit/s)**
- **Flow 2 ingress (mean 85.48 Mbit/s)**
- **Flow 2 egress (mean 85.79 Mbit/s)**
- **Flow 3 ingress (mean 79.34 Mbit/s)**
- **Flow 3 egress (mean 78.59 Mbit/s)**

![Ping Time Graph](image2)

- Flow 1 (95th percentile 74.95 ms)
- Flow 2 (95th percentile 76.04 ms)
- Flow 3 (95th percentile 83.06 ms)
Run 9: Statistics of TCP BBR

Start at: 2018-01-27 04:08:32
End at: 2018-01-27 04:09:02

# Below is generated by plot.py at 2018-01-27 05:57:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 286.27 Mbit/s
95th percentile per-packet one-way delay: 79.847 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 159.60 Mbit/s
95th percentile per-packet one-way delay: 77.772 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 148.54 Mbit/s
95th percentile per-packet one-way delay: 80.128 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 85.18 Mbit/s
95th percentile per-packet one-way delay: 84.748 ms
Loss rate: 0.00%
Run 9: Report of TCP BBR — Data Link
Run 10: Statistics of TCP BBR

Start at: 2018-01-27 04:23:08
End at: 2018-01-27 04:23:38

# Below is generated by plot.py at 2018-01-27 05:57:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 257.27 Mbit/s
  95th percentile per-packet one-way delay: 80.984 ms
  Loss rate: 0.06%
-- Flow 1:
  Average throughput: 106.48 Mbit/s
  95th percentile per-packet one-way delay: 78.074 ms
  Loss rate: 0.10%
-- Flow 2:
  Average throughput: 143.97 Mbit/s
  95th percentile per-packet one-way delay: 81.187 ms
  Loss rate: 0.04%
-- Flow 3:
  Average throughput: 166.68 Mbit/s
  95th percentile per-packet one-way delay: 84.479 ms
  Loss rate: 0.00%
Run 10: Report of TCP BBR — Data Link

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

- **Flow 1 ingress** (mean 106.59 Mbit/s)
- **Flow 1 egress** (mean 106.48 Mbit/s)
- **Flow 2 ingress** (mean 144.03 Mbit/s)
- **Flow 2 egress** (mean 143.97 Mbit/s)
- **Flow 3 ingress** (mean 166.80 Mbit/s)
- **Flow 3 egress** (mean 166.68 Mbit/s)

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

- **Flow 1** (95th percentile 78.07 ms)
- **Flow 2** (95th percentile 81.19 ms)
- **Flow 3** (95th percentile 84.48 ms)
Run 1: Statistics of TCP Cubic

Start at: 2018-01-27 02:09:55
End at: 2018-01-27 02:10:25

# Below is generated by plot.py at 2018-01-27 05:57:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 235.91 Mbit/s
95th percentile per-packet one-way delay: 90.140 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 101.32 Mbit/s
95th percentile per-packet one-way delay: 76.981 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 119.93 Mbit/s
95th percentile per-packet one-way delay: 89.367 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 165.07 Mbit/s
95th percentile per-packet one-way delay: 103.104 ms
Loss rate: 0.00%
Run 1: Report of TCP Cubic — Data Link
Run 2: Statistics of TCP Cubic

Start at: 2018-01-27 02:24:03
End at: 2018-01-27 02:24:33

# Below is generated by plot.py at 2018-01-27 05:57:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 154.29 Mbit/s
  95th percentile per-packet one-way delay: 83.882 ms
  Loss rate: 0.03%
-- Flow 1:
  Average throughput: 99.59 Mbit/s
  95th percentile per-packet one-way delay: 86.713 ms
  Loss rate: 0.03%
-- Flow 2:
  Average throughput: 80.13 Mbit/s
  95th percentile per-packet one-way delay: 76.483 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 4.19 Mbit/s
  95th percentile per-packet one-way delay: 64.288 ms
  Loss rate: 0.12%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2018-01-27 02:38:17
End at: 2018-01-27 02:38:47

# Below is generated by plot.py at 2018-01-27 05:59:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 328.64 Mbit/s
  95th percentile per-packet one-way delay: 103.556 ms
  Loss rate: 0.08%
-- Flow 1:
  Average throughput: 173.33 Mbit/s
  95th percentile per-packet one-way delay: 101.331 ms
  Loss rate: 0.15%
-- Flow 2:
  Average throughput: 167.53 Mbit/s
  95th percentile per-packet one-way delay: 104.471 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 133.78 Mbit/s
  95th percentile per-packet one-way delay: 106.695 ms
  Loss rate: 0.00%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2018-01-27 02:53:08  
End at: 2018-01-27 02:53:38

# Below is generated by plot.py at 2018-01-27 05:59:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 164.82 Mbit/s
  95th percentile per-packet one-way delay: 69.704 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 103.37 Mbit/s
  95th percentile per-packet one-way delay: 67.393 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 42.86 Mbit/s
  95th percentile per-packet one-way delay: 67.321 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 99.39 Mbit/s
  95th percentile per-packet one-way delay: 71.227 ms
  Loss rate: 0.01%
Run 4: Report of TCP Cubic — Data Link
Run 5: Statistics of TCP Cubic

Start at: 2018-01-27 03:07:36
End at: 2018-01-27 03:08:06

# Below is generated by plot.py at 2018-01-27 05:59:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.13 Mbit/s
95th percentile per-packet one-way delay: 83.090 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 169.37 Mbit/s
95th percentile per-packet one-way delay: 81.029 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 152.18 Mbit/s
95th percentile per-packet one-way delay: 84.946 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 106.83 Mbit/s
95th percentile per-packet one-way delay: 83.660 ms
Loss rate: 0.00%
Run 5: Report of TCP Cubic — Data Link

[Graph showing throughput and packet loss over time for different flows]
Run 6: Statistics of TCP Cubic


# Below is generated by plot.py at 2018-01-27 06:01:08
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 332.69 Mbit/s
  95th percentile per-packet one-way delay: 101.409 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 173.76 Mbit/s
  95th percentile per-packet one-way delay: 99.542 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 166.26 Mbit/s
  95th percentile per-packet one-way delay: 100.784 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 145.52 Mbit/s
  95th percentile per-packet one-way delay: 105.594 ms
  Loss rate: 0.79%
Run 6: Report of TCP Cubic — Data Link

![Throughput vs Time Graph](image1)

- **Flow 1 Ingress** (mean 173.95 Mbps)
- **Flow 1 Egress** (mean 173.76 Mbps)
- **Flow 2 Ingress** (mean 166.45 Mbps)
- **Flow 2 Egress** (mean 166.26 Mbps)
- **Flow 3 Ingress** (mean 146.72 Mbps)
- **Flow 3 Egress** (mean 145.52 Mbps)

![Delay vs Time Graph](image2)

- **Flow 1 (95th percentile 99.54 ms)**
- **Flow 2 (95th percentile 100.78 ms)**
- **Flow 3 (95th percentile 105.59 ms)**

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Run 7: Statistics of TCP Cubic

Start at: 2018-01-27 03:37:00
End at: 2018-01-27 03:37:30

# Below is generated by plot.py at 2018-01-27 06:01:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 326.07 Mbit/s
95th percentile per-packet one-way delay: 88.958 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 155.06 Mbit/s
95th percentile per-packet one-way delay: 82.588 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 173.58 Mbit/s
95th percentile per-packet one-way delay: 88.408 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 167.93 Mbit/s
95th percentile per-packet one-way delay: 92.888 ms
Loss rate: 0.00%
Run 7: Report of TCP Cubic — Data Link

![Graph of network performance](image1)

**Throughput (Mbps)**

- Flow 1 ingress (mean 155.06 Mbps)
- Flow 1 egress (mean 155.06 Mbps)
- Flow 2 ingress (mean 173.69 Mbps)
- Flow 2 egress (mean 173.58 Mbps)
- Flow 3 ingress (mean 168.04 Mbps)
- Flow 3 egress (mean 167.93 Mbps)

![Graph of packet delay](image2)

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

- Flow 1 (95th percentile 82.59 ms)
- Flow 2 (95th percentile 88.41 ms)
- Flow 3 (95th percentile 92.89 ms)
Run 8: Statistics of TCP Cubic

Start at: 2018-01-27 03:51:41
End at: 2018-01-27 03:52:11

# Below is generated by plot.py at 2018-01-27 06:02:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 328.71 Mbit/s
95th percentile per-packet one-way delay: 88.841 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 161.45 Mbit/s
95th percentile per-packet one-way delay: 87.766 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 170.28 Mbit/s
95th percentile per-packet one-way delay: 89.018 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 164.31 Mbit/s
95th percentile per-packet one-way delay: 90.805 ms
Loss rate: 0.18%
Run 8: Report of TCP Cubic — Data Link

![Graph 1: Throughput vs. Time](graph1)

- **Flow 1 Ingress (mean 161.47 Mbit/s)**
- **Flow 1 Egress (mean 161.45 Mbit/s)**
- **Flow 2 Ingress (mean 170.34 Mbit/s)**
- **Flow 2 Egress (mean 170.28 Mbit/s)**
- **Flow 3 Ingress (mean 164.85 Mbit/s)**
- **Flow 3 Egress (mean 164.31 Mbit/s)**

![Graph 2: Packet Delay vs. Time](graph2)

- **Flow 1 95th percentile 87.77 ms**
- **Flow 2 95th percentile 89.02 ms**
- **Flow 3 95th percentile 90.81 ms**
Run 9: Statistics of TCP Cubic

Start at: 2018-01-27 04:06:24
End at: 2018-01-27 04:06:54

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 330.77 Mbit/s
95th percentile per-packet one-way delay: 103.786 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 173.43 Mbit/s
95th percentile per-packet one-way delay: 101.761 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 165.23 Mbit/s
95th percentile per-packet one-way delay: 105.040 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 143.18 Mbit/s
95th percentile per-packet one-way delay: 105.074 ms
Loss rate: 0.00%
Run 9: Report of TCP Cubic — Data Link

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

- **Throughput (Mbps)**: The graph shows three lines, each representing a different flow. The lines are distinguished by their color and style, indicating different ingress and egress speeds.
  - Flow 1 ingress (mean 173.85 Mbps)
  - Flow 1 egress (mean 173.43 Mbps)
  - Flow 2 ingress (mean 165.48 Mbps)
  - Flow 2 egress (mean 165.23 Mbps)
  - Flow 3 ingress (mean 143.52 Mbps)
  - Flow 3 egress (mean 143.18 Mbps)

- **Per-packet one-way delay (ms)**: The graph shows the delay for each flow over time.
  - Flow 1 (95th percentile 101.76 ms)
  - Flow 2 (95th percentile 105.04 ms)
  - Flow 3 (95th percentile 105.07 ms)
Run 10: Statistics of TCP Cubic

Start at: 2018-01-27 04:21:07
End at: 2018-01-27 04:21:37

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 226.90 Mbit/s
  95th percentile per-packet one-way delay: 75.078 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 114.36 Mbit/s
  95th percentile per-packet one-way delay: 74.464 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 85.06 Mbit/s
  95th percentile per-packet one-way delay: 74.085 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 169.69 Mbit/s
  95th percentile per-packet one-way delay: 77.833 ms
  Loss rate: 0.00%
Run 10: Report of TCP Cubic — Data Link

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

Legend:
- Flow 1 ingress (mean 114.36 Mbit/s)
- Flow 1 egress (mean 114.36 Mbit/s)
- Flow 2 ingress (mean 85.06 Mbit/s)
- Flow 2 egress (mean 85.06 Mbit/s)
- Flow 3 ingress (mean 170.02 Mbit/s)
- Flow 3 egress (mean 169.69 Mbit/s)

For packet round trip delay (ms):
- Flow 1 (95th percentile 74.46 ms)
- Flow 2 (95th percentile 74.08 ms)
- Flow 3 (95th percentile 77.83 ms)
Run 1: Statistics of LEDBAT

Start at: 2018-01-27 02:00:19
End at: 2018-01-27 02:00:49

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.72 Mbit/s
95th percentile per-packet one-way delay: 64.314 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 5.84 Mbit/s
95th percentile per-packet one-way delay: 64.251 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 9.28 Mbit/s
95th percentile per-packet one-way delay: 64.347 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.20 Mbit/s
95th percentile per-packet one-way delay: 64.364 ms
Loss rate: 0.00%
Run 1: Report of LEDBAT — Data Link

![Graph 1: Throughput over time for different flows with mean rates]

![Graph 2: Per-packet end-to-end delay over time for different flows with 95th percentile]

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Run 2: Statistics of LEDBAT

Start at: 2018-01-27 02:14:31
End at: 2018-01-27 02:15:01

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.64 Mbit/s
95th percentile per-packet one-way delay: 66.731 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 7.36 Mbit/s
95th percentile per-packet one-way delay: 66.642 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 67.059 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 66.441 ms
Loss rate: 0.10%
Run 2: Report of LEDBAT — Data Link

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

- **Flow 1 ingress (mean 7.37 Mbps)**
- **Flow 1 egress (mean 7.36 Mbps)**
- **Flow 2 ingress (mean 4.12 Mbps)**
- **Flow 2 egress (mean 4.12 Mbps)**
- **Flow 3 ingress (mean 4.66 Mbps)**
- **Flow 3 egress (mean 4.67 Mbps)**

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

- **Flow 1 (95th percentile 66.64 ms)**
- **Flow 2 (95th percentile 67.06 ms)**
- **Flow 3 (95th percentile 66.44 ms)**
Run 3: Statistics of LEDBAT

Start at: 2018-01-27 02:28:35
End at: 2018-01-27 02:29:05

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 20.68 Mbit/s
  95th percentile per-packet one-way delay: 64.134 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 11.81 Mbit/s
  95th percentile per-packet one-way delay: 64.104 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 9.66 Mbit/s
  95th percentile per-packet one-way delay: 64.221 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 7.44 Mbit/s
  95th percentile per-packet one-way delay: 64.009 ms
  Loss rate: 0.00%
Run 4: Statistics of LEDBAT

Start at: 2018-01-27 02:43:13
End at: 2018-01-27 02:43:43

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.96 Mbit/s
95th percentile per-packet one-way delay: 64.152 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.24 Mbit/s
95th percentile per-packet one-way delay: 64.160 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.40 Mbit/s
95th percentile per-packet one-way delay: 64.171 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 7.51 Mbit/s
95th percentile per-packet one-way delay: 64.041 ms
Loss rate: 0.00%
Run 4: Report of LEDBAT — Data Link

![Graph showing throughput and per-packet one-way delay for three different flows. The graphs depict the time in seconds (x-axis) and throughput (y-axis) or per-packet one-way delay (y-axis).]

Legend:
- Blue dotted line: Flow 1 ingress (mean 9.24 Mbit/s)
- Blue solid line: Flow 1 egress (mean 9.24 Mbit/s)
- Green dotted line: Flow 2 ingress (mean 9.40 Mbit/s)
- Green solid line: Flow 2 egress (mean 9.40 Mbit/s)
- Red dotted line: Flow 3 ingress (mean 7.21 Mbit/s)
- Red solid line: Flow 3 egress (mean 7.21 Mbit/s)
Run 5: Statistics of LEDBAT

Start at: 2018-01-27 02:57:52
End at: 2018-01-27 02:58:22

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 17.47 Mbit/s
  95th percentile per-packet one-way delay: 62.387 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 10.65 Mbit/s
  95th percentile per-packet one-way delay: 62.460 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 8.04 Mbit/s
  95th percentile per-packet one-way delay: 62.261 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 4.49 Mbit/s
  95th percentile per-packet one-way delay: 62.361 ms
  Loss rate: 0.00%
Run 5: Report of LEDBAT — Data Link

![Graph of throughput vs time showing data link performance with various flow rates and delays.](image-url)

- **Flow 1**: Ingress (mean 10.65 Mbit/s), Egress (mean 10.65 Mbit/s)
- **Flow 2**: Ingress (mean 8.04 Mbit/s), Egress (mean 8.04 Mbit/s)
- **Flow 3**: Ingress (mean 4.49 Mbit/s), Egress (mean 4.49 Mbit/s)
Run 6: Statistics of LEDBAT

Start at: 2018-01-27 03:12:30
End at: 2018-01-27 03:13:00

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.27 Mbit/s
95th percentile per-packet one-way delay: 62.484 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 16.69 Mbit/s
95th percentile per-packet one-way delay: 62.491 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.00 Mbit/s
95th percentile per-packet one-way delay: 62.573 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.89 Mbit/s
95th percentile per-packet one-way delay: 62.050 ms
Loss rate: 0.00%
Run 6: Report of LEDBAT — Data Link

![Graph 1: Throughput vs Time]

![Graph 2: Packet One-Way Delay vs Time]

Legend:
- Flow 1 ingress (mean 16.69 Mbit/s)
- Flow 1 egress (mean 16.69 Mbit/s)
- Flow 2 ingress (mean 10.00 Mbit/s)
- Flow 2 egress (mean 10.00 Mbit/s)
- Flow 3 ingress (mean 5.89 Mbit/s)
- Flow 3 egress (mean 5.89 Mbit/s)

Flow 1 (95th percentile 62.49 ms)
- Flow 2 (95th percentile 62.57 ms)
- Flow 3 (95th percentile 62.05 ms)
Run 7: Statistics of LEDBAT

Start at: 2018-01-27 03:27:16
End at: 2018-01-27 03:27:47

# Below is generated by plot.py at 2018-01-27 06:02:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.02 Mbit/s
95th percentile per-packet one-way delay: 64.030 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.26 Mbit/s
95th percentile per-packet one-way delay: 63.950 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.58 Mbit/s
95th percentile per-packet one-way delay: 64.130 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 63.741 ms
Loss rate: 0.00%
Run 7: Report of LEDBAT — Data Link
Run 8: Statistics of LEDBAT

Start at: 2018-01-27 03:41:52
End at: 2018-01-27 03:42:22

# Below is generated by plot.py at 2018-01-27 06:02:43
# Datalink statistics
  -- Total of 3 flows:
    Average throughput: 19.24 Mbit/s
    95th percentile per-packet one-way delay: 62.322 ms
    Loss rate: 0.00%
  -- Flow 1:
    Average throughput: 11.15 Mbit/s
    95th percentile per-packet one-way delay: 62.369 ms
    Loss rate: 0.00%
  -- Flow 2:
    Average throughput: 8.84 Mbit/s
    95th percentile per-packet one-way delay: 62.259 ms
    Loss rate: 0.00%
  -- Flow 3:
    Average throughput: 6.78 Mbit/s
    95th percentile per-packet one-way delay: 62.266 ms
    Loss rate: 0.00%
Run 8: Report of LEDBAT — Data Link

[Graphs showing throughput and packet delay over time]
Run 9: Statistics of LEDBAT

Start at: 2018-01-27 03:56:29
End at: 2018-01-27 03:56:59

# Below is generated by plot.py at 2018-01-27 06:02:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.14 Mbit/s
95th percentile per-packet one-way delay: 63.690 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 17.55 Mbit/s
95th percentile per-packet one-way delay: 63.793 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.57 Mbit/s
95th percentile per-packet one-way delay: 62.712 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 62.253 ms
Loss rate: 0.00%
Run 9: Report of LEDBAT — Data Link
Run 10: Statistics of LEDBAT

Start at: 2018-01-27 04:11:16
End at: 2018-01-27 04:11:46

# Below is generated by plot.py at 2018-01-27 06:02:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 16.17 Mbit/s
  95th percentile per-packet one-way delay: 64.110 ms
  Loss rate: 0.23%
-- Flow 1:
  Average throughput: 8.97 Mbit/s
  95th percentile per-packet one-way delay: 64.141 ms
  Loss rate: 0.39%
-- Flow 2:
  Average throughput: 8.66 Mbit/s
  95th percentile per-packet one-way delay: 64.081 ms
  Loss rate: 0.05%
-- Flow 3:
  Average throughput: 4.41 Mbit/s
  95th percentile per-packet one-way delay: 63.953 ms
  Loss rate: 0.00%
Run 10: Report of LEDBAT — Data Link

![Graph 1: Throughput (Mbps)](image)
- Flow 1 ingress (mean 9.00 Mbps)
- Flow 1 egress (mean 8.97 Mbps)
- Flow 2 ingress (mean 8.67 Mbps)
- Flow 2 egress (mean 8.66 Mbps)
- Flow 3 ingress (mean 4.41 Mbps)
- Flow 3 egress (mean 4.41 Mbps)

![Graph 2: Per-packet one-way delay (ms)](image)
- Flow 1 (95th percentile 64.14 ms)
- Flow 2 (95th percentile 64.08 ms)
- Flow 3 (95th percentile 63.95 ms)
Run 1: Statistics of PCC

Start at: 2018-01-27 02:01:00
End at: 2018-01-27 02:01:30

# Below is generated by plot.py at 2018-01-27 06:07:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 392.51 Mbit/s
  95th percentile per-packet one-way delay: 158.292 ms
  Loss rate: 0.06%
-- Flow 1:
  Average throughput: 368.59 Mbit/s
  95th percentile per-packet one-way delay: 158.258 ms
  Loss rate: 0.06%
-- Flow 2:
  Average throughput: 34.87 Mbit/s
  95th percentile per-packet one-way delay: 158.125 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 2.26 Mbit/s
  95th percentile per-packet one-way delay: 165.250 ms
  Loss rate: 0.00%
Run 1: Report of PCC — Data Link
Run 2: Statistics of PCC

Start at: 2018-01-27 02:15:13
End at: 2018-01-27 02:15:43

# Below is generated by plot.py at 2018-01-27 06:07:01
# Datalink statistics
# Total of 3 flows:
Average throughput: 377.30 Mbit/s
95th percentile per-packet one-way delay: 234.975 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 271.28 Mbit/s
95th percentile per-packet one-way delay: 263.763 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 130.14 Mbit/s
95th percentile per-packet one-way delay: 191.167 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 59.42 Mbit/s
95th percentile per-packet one-way delay: 198.695 ms
Loss rate: 0.05%
Run 2: Report of PCC — Data Link
Run 3: Statistics of PCC

Start at: 2018-01-27 02:29:18
End at: 2018-01-27 02:29:48

# Below is generated by plot.py at 2018-01-27 06:08:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.98 Mbit/s
95th percentile per-packet one-way delay: 210.035 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 417.88 Mbit/s
95th percentile per-packet one-way delay: 210.112 ms
Loss rate: 1.89%
-- Flow 2:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 203.151 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 32.40 Mbit/s
95th percentile per-packet one-way delay: 178.870 ms
Loss rate: 0.05%
Run 3: Report of PCC — Data Link

![Graph showing network performance metrics over time.]

- **Throughput (Mb/s):**
  - Flow 1 ingress (mean 425.83 Mb/s)
  - Flow 1 egress (mean 417.88 Mb/s)
  - Flow 2 ingress (mean 2.14 Mb/s)
  - Flow 2 egress (mean 2.13 Mb/s)
  - Flow 3 ingress (mean 32.41 Mb/s)
  - Flow 3 egress (mean 32.40 Mb/s)

- **Per-packet one-way delay (ms):**
  - Flow 1 (95th percentile 210.11 ms)
  - Flow 2 (95th percentile 203.15 ms)
  - Flow 3 (95th percentile 178.87 ms)
Run 4: Statistics of PCC

Start at: 2018-01-27 02:43:55
End at: 2018-01-27 02:44:25

# Below is generated by plot.py at 2018-01-27 06:08:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 368.52 Mbit/s
95th percentile per-packet one-way delay: 142.373 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 360.15 Mbit/s
95th percentile per-packet one-way delay: 142.748 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: 143.308 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 16.68 Mbit/s
95th percentile per-packet one-way delay: 116.573 ms
Loss rate: 0.44%
Run 4: Report of PCC — Data Link

![Graph showing throughput and round-trip delays for different flows.]

- Flow 1 ingress (mean 360.84 Mbit/s)
- Flow 1 egress (mean 360.15 Mbit/s)
- Flow 2 ingress (mean 4.34 Mbit/s)
- Flow 2 egress (mean 4.33 Mbit/s)
- Flow 3 ingress (mean 16.76 Mbit/s)
- Flow 3 egress (mean 16.68 Mbit/s)
Run 5: Statistics of PCC

Start at: 2018-01-27 02:58:34
End at: 2018-01-27 02:59:04

# Below is generated by plot.py at 2018-01-27 06:08:22
# Datalink statistics
# Total of 3 flows:
Average throughput: 386.66 Mbit/s
95th percentile per-packet one-way delay: 235.148 ms
Loss rate: 1.77%

-- Flow 1:
Average throughput: 298.20 Mbit/s
95th percentile per-packet one-way delay: 234.777 ms
Loss rate: 1.66%

-- Flow 2:
Average throughput: 123.18 Mbit/s
95th percentile per-packet one-way delay: 235.559 ms
Loss rate: 2.10%

-- Flow 3:
Average throughput: 3.93 Mbit/s
95th percentile per-packet one-way delay: 236.339 ms
Loss rate: 4.29%
Run 5: Report of PCC — Data Link
Run 6: Statistics of PCC

End at: 2018-01-27 03:13:43

# Below is generated by plot.py at 2018-01-27 06:10:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 405.69 Mbit/s
  95th percentile per-packet one-way delay: 179.121 ms
  Loss rate: 0.83%
-- Flow 1:
  Average throughput: 365.60 Mbit/s
  95th percentile per-packet one-way delay: 170.934 ms
  Loss rate: 0.77%
-- Flow 2:
  Average throughput: 58.27 Mbit/s
  95th percentile per-packet one-way delay: 208.673 ms
  Loss rate: 1.39%
-- Flow 3:
  Average throughput: 4.16 Mbit/s
  95th percentile per-packet one-way delay: 210.318 ms
  Loss rate: 1.90%
Run 6: Report of PCC — Data Link

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

- Flow 1 ingress (mean 368.46 Mbit/s)
- Flow 1 egress (mean 365.60 Mbit/s)
- Flow 2 ingress (mean 59.10 Mbit/s)
- Flow 2 egress (mean 58.27 Mbit/s)
- Flow 3 ingress (mean 4.24 Mbit/s)
- Flow 3 egress (mean 4.16 Mbit/s)

![Graph 2: One-way delay (ms)](image2)

- Flow 1 (95th percentile 170.93 ms)
- Flow 2 (95th percentile 208.67 ms)
- Flow 3 (95th percentile 210.32 ms)
Run 7: Statistics of PCC

Start at: 2018-01-27 03:27:59
End at: 2018-01-27 03:28:29

# Below is generated by plot.py at 2018-01-27 06:10:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 413.20 Mbit/s
95th percentile per-packet one-way delay: 207.807 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 382.16 Mbit/s
95th percentile per-packet one-way delay: 207.753 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 208.384 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 30.62 Mbit/s
95th percentile per-packet one-way delay: 208.365 ms
Loss rate: 2.28%
Run 7: Report of PCC — Data Link

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

- Flow 1 ingress (mean 386.41 Mbps)
- Flow 2 ingress (mean 31.98 Mbps)
- Flow 3 ingress (mean 31.35 Mbps)
- Flow 1 egress (mean 382.16 Mbps)
- Flow 2 egress (mean 31.54 Mbps)
- Flow 3 egress (mean 30.62 Mbps)

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

- Flow 1 (95th percentile 207.75 ms)
- Flow 2 (95th percentile 208.38 ms)
- Flow 3 (95th percentile 208.37 ms)
Run 8: Statistics of PCC

Start at: 2018-01-27 03:42:34
End at: 2018-01-27 03:43:04

# Below is generated by plot.py at 2018-01-27 06:11:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 465.31 Mbit/s
95th percentile per-packet one-way delay: 197.125 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 462.79 Mbit/s
95th percentile per-packet one-way delay: 197.136 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 2.64 Mbit/s
95th percentile per-packet one-way delay: 195.876 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 174.820 ms
Loss rate: 0.00%
Run 8: Report of PCC — Data Link

Throughput (Mbit/s):

- Flow 1 Ingress (mean 465.39 Mbit/s)
- Flow 1 Egress (mean 462.79 Mbit/s)
- Flow 2 Ingress (mean 2.64 Mbit/s)
- Flow 2 Egress (mean 2.64 Mbit/s)
- Flow 3 Ingress (mean 2.32 Mbit/s)
- Flow 3 Egress (mean 2.32 Mbit/s)

Per-packet one way delay (ms):

- Flow 1 (95th percentile 197.14 ms)
- Flow 2 (95th percentile 195.88 ms)
- Flow 3 (95th percentile 174.82 ms)
Run 9: Statistics of PCC

Start at: 2018-01-27 03:57:12
End at: 2018-01-27 03:57:42

# Below is generated by plot.py at 2018-01-27 06:15:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 447.43 Mbit/s
95th percentile per-packet one-way delay: 212.375 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 425.56 Mbit/s
95th percentile per-packet one-way delay: 212.812 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 155.499 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 61.82 Mbit/s
95th percentile per-packet one-way delay: 155.018 ms
Loss rate: 0.13%
Run 9: Report of PCC — Data Link

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

- Flow 1 ingress (mean 429.14 Mbit/s)
- Flow 1 egress (mean 425.56 Mbit/s)
- Flow 2 ingress (mean 2.27 Mbit/s)
- Flow 2 egress (mean 2.27 Mbit/s)
- Flow 3 ingress (mean 61.90 Mbit/s)
- Flow 3 egress (mean 61.82 Mbit/s)

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

- Flow 1 (95th percentile 212.81 ms)
- Flow 2 (95th percentile 155.50 ms)
- Flow 3 (95th percentile 155.02 ms)
Run 10: Statistics of PCC

Start at: 2018-01-27 04:11:58
End at: 2018-01-27 04:12:28

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 464.52 Mbit/s
95th percentile per-packet one-way delay: 211.645 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 455.53 Mbit/s
95th percentile per-packet one-way delay: 211.680 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 4.70 Mbit/s
95th percentile per-packet one-way delay: 211.551 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 17.82 Mbit/s
95th percentile per-packet one-way delay: 101.942 ms
Loss rate: 0.07%
Run 10: Report of PCC — Data Link
Run 1: Statistics of QUIC Cubic

Start at: 2018-01-27 02:09:14
End at: 2018-01-27 02:09:44
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2018-01-27 02:23:22
End at: 2018-01-27 02:23:52
Run 2: Report of QUIC Cubic — Data Link

Graph 1: Throughput vs Time

Graph 2: Per-packet one-way delay vs Time

Legend:
- Flow 1 ingress (mean 0.18 Mbps)
- Flow 1 egress (mean 0.18 Mbps)
- Flow 2 ingress (mean 0.18 Mbps)
- Flow 2 egress (mean 0.18 Mbps)
- Flow 3 ingress (mean 0.18 Mbps)
- Flow 3 egress (mean 0.18 Mbps)
Run 3: Statistics of QUIC Cubic

Start at: 2018-01-27 02:37:37
End at: 2018-01-27 02:38:07
Run 3: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 0.06 Mb/s)
- Flow 1 egress (mean 0.06 Mb/s)
- Flow 2 ingress (mean 0.18 Mb/s)
- Flow 2 egress (mean 0.18 Mb/s)
- Flow 3 ingress (mean 0.18 Mb/s)
- Flow 3 egress (mean 0.18 Mb/s)

![Graph showing per-packet round trip delay for different flows.]

- Flow 1 (95th percentile 63.38 ms)
- Flow 2 (95th percentile 63.72 ms)
- Flow 3 (95th percentile 63.85 ms)
Run 4: Statistics of QUIC Cubic

Start at: 2018-01-27 02:52:28
End at: 2018-01-27 02:52:58
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2018-01-27 03:06:55
End at: 2018-01-27 03:07:25
Run 5: Report of QUIC Cubic — Data Link
Run 6: Statistics of QUIC Cubic

Start at: 2018-01-27 03:21:45
End at: 2018-01-27 03:22:15
Run 6: Report of QUIC Cubic — Data Link
Run 7: Statistics of QUIC Cubic

Start at: 2018-01-27 03:36:20
End at: 2018-01-27 03:36:50
Run 7: Report of QUIC Cubic — Data Link

[Graph showing throughput and per-packet one-way delay over time for different flows, with annotations for each flow's mean throughput and 95th percentile delay.]
Run 8: Statistics of QUIC Cubic

Start at: 2018-01-27 03:51:01
End at: 2018-01-27 03:51:31
Run 8: Report of QUIC Cubic — Data Link
Run 9: Statistics of QUIC Cubic

Start at: 2018-01-27 04:05:43
End at: 2018-01-27 04:06:13
Run 9: Report of QUIC Cubic — Data Link

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

- Flow 1 ingress (mean 0.18 Mbit/s)
- Flow 1 egress (mean 0.18 Mbit/s)
- Flow 2 ingress (mean 0.18 Mbit/s)
- Flow 2 egress (mean 0.18 Mbit/s)
- Flow 3 ingress (mean 0.18 Mbit/s)
- Flow 3 egress (mean 0.18 Mbit/s)

- Flow 1 (95th percentile 61.30 ms)
- Flow 2 (95th percentile 63.92 ms)
- Flow 3 (95th percentile 63.85 ms)
Run 10: Statistics of QUIC Cubic

Start at: 2018-01-27 04:20:27
End at: 2018-01-27 04:20:57
Run 10: Report of QUIC Cubic — Data Link

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

![Graph 2: Per-packet one-way delay vs Time](image)
Run 1: Statistics of SCReAM

Start at: 2018-01-27 02:12:50
End at: 2018-01-27 02:13:20

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 63.945 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.434 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 64.010 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 64.034 ms
  Loss rate: 0.00%
Run 1: Report of SCReAM — Data Link

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

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

![Graph showing per-packet round-trip time over time]

- Flow 1 (95th percentile 62.43 ms)
- Flow 2 (95th percentile 64.01 ms)
- Flow 3 (95th percentile 64.03 ms)
Run 2: Statistics of SCReAM

Start at: 2018-01-27 02:26:53
End at: 2018-01-27 02:27:23

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.765 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.520 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.820 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.433 ms
Loss rate: 0.00%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2018-01-27 02:41:22
End at: 2018-01-27 02:41:52

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.602 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.968 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.473 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.425 ms
  Loss rate: 0.00%
Run 3: Report of SCReAM — Data Link

[Graph showing Throughput over time for different flows]

[Graph showing Per-packet one-way delay over time for different flows]
Run 4: Statistics of SCReAM

End at: 2018-01-27 02:56:28

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.418 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.422 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 61.698 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.462 ms
  Loss rate: 0.00%
Run 4: Report of SCReAM — Data Link

![Graph showing throughput and packet retry rate over time.]

- Throughput (Mbps):
  - Flow 1 ingress (mean 0.22 Mbps)
  - Flow 1 egress (mean 0.22 Mbps)
  - Flow 2 ingress (mean 0.22 Mbps)
  - Flow 2 egress (mean 0.22 Mbps)
  - Flow 3 ingress (mean 0.22 Mbps)
  - Flow 3 egress (mean 0.22 Mbps)

- Per packet retry rate (ms):
  - Flow 1 (95th percentile 63.42 ms)
  - Flow 2 (95th percentile 61.70 ms)
  - Flow 3 (95th percentile 61.46 ms)
Run 5: Statistics of SCReAM

Start at: 2018-01-27 03:10:40
End at: 2018-01-27 03:11:10

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.731 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.748 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.470 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.387 ms
Loss rate: 0.00%
Run 5: Report of SCReAM — Data Link

![Graph of Throughput vs Time](image)

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

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

- **Flow 1 (95th percentile 63.75 ms)**
- **Flow 2 (95th percentile 63.47 ms)**
- **Flow 3 (95th percentile 63.39 ms)**
Run 6: Statistics of SCReAM

Start at: 2018-01-27 03:25:35
End at: 2018-01-27 03:26:05

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.690 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.473 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.518 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.738 ms
Loss rate: 0.00%
Run 6: Report of SCReAM — Data Link

![Graph showing throughput and per-packet one-way 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)
Run 7: Statistics of SCReAM

Start at: 2018-01-27 03:40:04
End at: 2018-01-27 03:40:34

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.552 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.569 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.439 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.464 ms
  Loss rate: 0.00%
Run 7: Report of SCReAM — Data Link

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

![Graph of Per-packet delay (ms)](image2)
Run 8: Statistics of SCReAM

Start at: 2018-01-27 03:54:44
End at: 2018-01-27 03:55:14

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.814 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.567 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.496 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.914 ms
  Loss rate: 0.00%
Run 8: Report of SCReAM — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.22 Mbps)
Flow 1 egress (mean 0.22 Mbps)
Flow 2 ingress (mean 0.22 Mbps)
Flow 2 egress (mean 0.22 Mbps)
Flow 3 ingress (mean 0.22 Mbps)
Flow 3 egress (mean 0.22 Mbps)

Delay (ms)

Time (s)

Flow 1 (95th percentile 63.57 ms)
Flow 2 (95th percentile 63.50 ms)
Flow 3 (95th percentile 63.91 ms)
Run 9: Statistics of SCReAM

Start at: 2018-01-27 04:09:31
End at: 2018-01-27 04:10:01

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.723 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.359 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.753 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.438 ms
  Loss rate: 0.00%
Run 9: Report of SCReAM — Data Link
Run 10: Statistics of SCReAM

Start at: 2018-01-27 04:24:05
End at: 2018-01-27 04:24:35

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.592 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.486 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.626 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.581 ms
Loss rate: 0.00%
Run 10: Report of SCReAM — Data Link

![Throughput Graph](image1)

![Delay Graph](image2)
Run 1: Statistics of WebRTC media

Start at: 2018-01-27 02:02:50
End at: 2018-01-27 02:03:20

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.03 Mbit/s
  95th percentile per-packet one-way delay: 63.797 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.17 Mbit/s
  95th percentile per-packet one-way delay: 63.573 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.36 Mbit/s
  95th percentile per-packet one-way delay: 63.855 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.52 Mbit/s
  95th percentile per-packet one-way delay: 63.611 ms
  Loss rate: 0.00%
Run 1: Report of WebRTC media — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 2.17 Mbit/s) — Flow 1 egress (mean 2.17 Mbit/s)
Flow 2 ingress (mean 1.36 Mbit/s) — Flow 2 egress (mean 1.36 Mbit/s)
Flow 3 ingress (mean 0.52 Mbit/s) — Flow 3 egress (mean 0.52 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 63.57 ms) — Flow 2 (95th percentile 63.85 ms) — Flow 3 (95th percentile 63.61 ms)
Run 2: Statistics of WebRTC media

Start at: 2018-01-27 02:17:03
End at: 2018-01-27 02:17:33

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.50 Mbit/s
  95th percentile per-packet one-way delay: 64.418 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.00 Mbit/s
  95th percentile per-packet one-way delay: 64.308 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.18 Mbit/s
  95th percentile per-packet one-way delay: 64.612 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.33 Mbit/s
  95th percentile per-packet one-way delay: 64.349 ms
  Loss rate: 0.00%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2018-01-27 02:31:10
End at: 2018-01-27 02:31:40

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.12 Mbit/s
  95th percentile per-packet one-way delay: 63.448 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.21 Mbit/s
  95th percentile per-packet one-way delay: 61.776 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.38 Mbit/s
  95th percentile per-packet one-way delay: 63.498 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.56 Mbit/s
  95th percentile per-packet one-way delay: 63.323 ms
  Loss rate: 0.00%
Run 3: Report of WebRTC media — Data Link

![Graph 1: Throughput over time](image)
- **Flow 1 ingress (mean 2.21 Mbit/s)**
- **Flow 1 egress (mean 2.21 Mbit/s)**
- **Flow 2 ingress (mean 1.38 Mbit/s)**
- **Flow 2 egress (mean 1.38 Mbit/s)**
- **Flow 3 ingress (mean 0.56 Mbit/s)**
- **Flow 3 egress (mean 0.56 Mbit/s)**

![Graph 2: Per-packet one way delay over time](image)
- **Flow 1 (95th percentile 61.78 ms)**
- **Flow 2 (95th percentile 63.50 ms)**
- **Flow 3 (95th percentile 63.32 ms)**
Run 4: Statistics of WebRTC media

Start at: 2018-01-27 02:45:46
End at: 2018-01-27 02:46:16

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 4.15 Mbit/s
   95th percentile per-packet one-way delay: 63.503 ms
   Loss rate: 0.00%
   -- Flow 1:
   Average throughput: 2.20 Mbit/s
   95th percentile per-packet one-way delay: 63.510 ms
   Loss rate: 0.00%
   -- Flow 2:
   Average throughput: 1.40 Mbit/s
   95th percentile per-packet one-way delay: 63.505 ms
   Loss rate: 0.00%
   -- Flow 3:
   Average throughput: 0.57 Mbit/s
   95th percentile per-packet one-way delay: 63.356 ms
   Loss rate: 0.00%
Run 4: Report of WebRTC media — Data Link
Run 5: Statistics of WebRTC media

Start at: 2018-01-27 03:00:27
End at: 2018-01-27 03:00:57

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.17 Mbit/s
  95th percentile per-packet one-way delay: 63.454 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 2.22 Mbit/s
  95th percentile per-packet one-way delay: 63.437 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.40 Mbit/s
  95th percentile per-packet one-way delay: 63.433 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 0.57 Mbit/s
  95th percentile per-packet one-way delay: 63.488 ms
  Loss rate: 0.00%
Run 5: Report of WebRTC media — Data Link
Run 6: Statistics of WebRTC media

Start at: 2018-01-27 03:15:06
End at: 2018-01-27 03:15:36

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.14 Mbit/s
  95th percentile per-packet one-way delay: 63.397 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.21 Mbit/s
  95th percentile per-packet one-way delay: 63.420 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.39 Mbit/s
  95th percentile per-packet one-way delay: 61.804 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.57 Mbit/s
  95th percentile per-packet one-way delay: 61.763 ms
  Loss rate: 0.00%
Run 6: Report of WebRTC media — Data Link
Run 7: Statistics of WebRTC media

Start at: 2018-01-27 03:29:51
End at: 2018-01-27 03:30:21

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.14 Mbit/s
95th percentile per-packet one-way delay: 63.811 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 63.828 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 63.809 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 63.507 ms
Loss rate: 0.00%
Run 7: Report of WebRTC media — Data Link
Run 8: Statistics of WebRTC media

Start at: 2018-01-27 03:44:30
End at: 2018-01-27 03:45:00

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 63.515 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 63.535 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 61.362 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 63.419 ms
Loss rate: 0.00%
Run 8: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 2.21 Mbit/s)
- Flow 1 egress (mean 2.21 Mbit/s)
- Flow 2 ingress (mean 1.40 Mbit/s)
- Flow 2 egress (mean 1.40 Mbit/s)
- Flow 3 ingress (mean 0.58 Mbit/s)
- Flow 3 egress (mean 0.58 Mbit/s)

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

- Flow 1 (95th percentile 63.53 ms)
- Flow 2 (95th percentile 61.36 ms)
- Flow 3 (95th percentile 61.42 ms)
Run 9: Statistics of WebRTC media

Start at: 2018-01-27 03:59:06
End at: 2018-01-27 03:59:36

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 63.822 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.20 Mbit/s
95th percentile per-packet one-way delay: 63.543 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 63.846 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 69.615 ms
Loss rate: 0.00%
Run 9: Report of WebRTC media — Data Link

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

- **Flow 1** (mean 2.20 Mbps ingress, egress 2.20 Mbps)
- **Flow 2** (mean 1.39 Mbps ingress, egress 1.39 Mbps)
- **Flow 3** (mean 0.57 Mbps ingress, egress 0.57 Mbps)

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

- **Flow 1** (95th percentile 63.54 ms)
- **Flow 2** (95th percentile 63.85 ms)
- **Flow 3** (95th percentile 69.61 ms)
Run 10: Statistics of WebRTC media

End at: 2018-01-27 04:14:22

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.13 Mbit/s
  95th percentile per-packet one-way delay: 63.539 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 2.21 Mbit/s
  95th percentile per-packet one-way delay: 63.550 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.38 Mbit/s
  95th percentile per-packet one-way delay: 61.404 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.56 Mbit/s
  95th percentile per-packet one-way delay: 63.573 ms
  Loss rate: 0.00%
Run 10: Report of WebRTC media — Data Link
Run 1: Statistics of Sprout

Start at: 2018-01-27 02:06:24
End at: 2018-01-27 02:06:54

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 12.67 Mbit/s
  95th percentile per-packet one-way delay: 64.325 ms
  Loss rate: 0.62%
-- Flow 1:
  Average throughput: 6.34 Mbit/s
  95th percentile per-packet one-way delay: 64.325 ms
  Loss rate: 0.72%
-- Flow 2:
  Average throughput: 6.46 Mbit/s
  95th percentile per-packet one-way delay: 64.434 ms
  Loss rate: 0.11%
-- Flow 3:
  Average throughput: 6.21 Mbit/s
  95th percentile per-packet one-way delay: 64.067 ms
  Loss rate: 1.36%
Run 1: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 6.38 Mbit/s) and Flow 1 egress (mean 6.34 Mbit/s)
- Flow 2 ingress (mean 6.46 Mbit/s) and Flow 2 egress (mean 6.46 Mbit/s)
- Flow 3 ingress (mean 6.29 Mbit/s) and Flow 3 egress (mean 6.21 Mbit/s)

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

- Flow 1 (95th percentile 64.33 ms)
- Flow 2 (95th percentile 64.43 ms)
- Flow 3 (95th percentile 64.07 ms)
Run 2: Statistics of Sprout

Start at: 2018-01-27 02:20:34
End at: 2018-01-27 02:21:04

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.83 Mbit/s
95th percentile per.packet one-way delay: 64.972 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 6.16 Mbit/s
95th percentile per.packet one-way delay: 64.985 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 6.10 Mbit/s
95th percentile per.packet one-way delay: 64.720 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.88 Mbit/s
95th percentile per.packet one-way delay: 65.201 ms
Loss rate: 0.00%
Run 3: Statistics of Sprout

Start at: 2018-01-27 02:34:46
End at: 2018-01-27 02:35:16

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.12 Mbit/s
  95th percentile per-packet one-way delay: 64.662 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 6.59 Mbit/s
  95th percentile per-packet one-way delay: 64.657 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 6.61 Mbit/s
  95th percentile per-packet one-way delay: 64.697 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 6.46 Mbit/s
  95th percentile per-packet one-way delay: 64.609 ms
  Loss rate: 0.00%
Run 3: Report of Sprout — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Per packet one way delay (ms)]
Run 4: Statistics of Sprout

Start at: 2018-01-27 02:49:35
End at: 2018-01-27 02:50:05
Run 4: Report of Sprout — Data Link

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Figure is missing
Run 5: Statistics of Sprout

Start at: 2018-01-27 03:04:03
End at: 2018-01-27 03:04:33

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.02 Mbit/s
  95th percentile per-packet one-way delay: 63.226 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 6.62 Mbit/s
  95th percentile per-packet one-way delay: 63.044 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 6.57 Mbit/s
  95th percentile per-packet one-way delay: 63.262 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 6.13 Mbit/s
  95th percentile per-packet one-way delay: 63.360 ms
  Loss rate: 0.00%
Run 5: Report of Sprout — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 6: Statistics of Sprout

Start at: 2018-01-27 03:18:50
End at: 2018-01-27 03:19:20

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 12.80 Mbit/s
  95th percentile per-packet one-way delay: 64.332 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 6.54 Mbit/s
  95th percentile per-packet one-way delay: 64.358 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 6.42 Mbit/s
  95th percentile per-packet one-way delay: 64.399 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 6.08 Mbit/s
  95th percentile per-packet one-way delay: 63.445 ms
  Loss rate: 0.00%
Run 6: Report of Sprout — Data Link

![Diagram of network traffic and latency over time.](image)

Legend:
- Blue dashed line: Flow 1 ingress (mean 6.54 Mbit/s)
- Red dotted line: Flow 1 egress (mean 6.54 Mbit/s)
- Green solid line: Flow 2 ingress (mean 6.42 Mbit/s)
- Cyan dash-dotted line: Flow 2 egress (mean 6.42 Mbit/s)
- Black dotted line: Flow 3 ingress (mean 6.08 Mbit/s)
- Purple dashed-dotted line: Flow 3 egress (mean 6.08 Mbit/s)

![Diagram of packet latency over time.](image)

Legend:
- Blue circles: Flow 1 (95th percentile 64.36 ms)
- Green squares: Flow 2 (95th percentile 64.40 ms)
- Red triangles: Flow 3 (95th percentile 63.45 ms)
Run 7: Statistics of Sprout

Start at: 2018-01-27 03:33:29
End at: 2018-01-27 03:33:59

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 64.378 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 64.413 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.58 Mbit/s
95th percentile per-packet one-way delay: 64.402 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 63.826 ms
Loss rate: 0.00%
Run 7: Report of Sprout — Data Link
Run 8: Statistics of Sprout

Start at: 2018-01-27 03:48:09
End at: 2018-01-27 03:48:39

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 12.94 Mbit/s
  95th percentile per-packet one-way delay: 64.656 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 6.48 Mbit/s
  95th percentile per-packet one-way delay: 64.511 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 6.48 Mbit/s
  95th percentile per-packet one-way delay: 64.636 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 6.56 Mbit/s
  95th percentile per-packet one-way delay: 65.510 ms
  Loss rate: 0.00%
Run 8: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 6.48 Mbps/s)
- Flow 1 egress (mean 6.48 Mbps/s)
- Flow 2 ingress (mean 6.48 Mbps/s)
- Flow 2 egress (mean 6.48 Mbps/s)
- Flow 3 ingress (mean 6.56 Mbps/s)
- Flow 3 egress (mean 6.56 Mbps/s)

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

- Flow 1 (95th percentile 64.51 ms)
- Flow 2 (95th percentile 64.64 ms)
- Flow 3 (95th percentile 65.51 ms)
Run 9: Statistics of Sprout

Start at: 2018-01-27 04:02:49
End at: 2018-01-27 04:03:19

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.00 Mbit/s
95th percentile per-packet one-way delay: 62.865 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 62.857 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 62.735 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.21 Mbit/s
95th percentile per-packet one-way delay: 63.370 ms
Loss rate: 0.00%
Run 9: Report of Sprout — Data Link

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

- **Throughput (Mbps)**: The graph displays the throughput in Mbps over time for different flows.
- **Per-packet one-way delay (ms)**: The graph also shows the per-packet one-way delay in milliseconds over time for different flows.

Legend:
- Flow 1 ingress (mean 6.60 Mbit/s)
- Flow 1 egress (mean 6.60 Mbit/s)
- Flow 2 ingress (mean 6.55 Mbit/s)
- Flow 2 egress (mean 6.55 Mbit/s)
- Flow 3 ingress (mean 6.20 Mbit/s)
- Flow 3 egress (mean 6.21 Mbit/s)
Run 10: Statistics of Sprout

Start at: 2018-01-27 04:17:35
End at: 2018-01-27 04:18:05

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 13.02 Mbit/s
  95th percentile per-packet one-way delay: 64.322 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 6.62 Mbit/s
  95th percentile per-packet one-way delay: 64.400 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 6.47 Mbit/s
  95th percentile per-packet one-way delay: 64.355 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 6.35 Mbit/s
  95th percentile per-packet one-way delay: 63.441 ms
  Loss rate: 0.00%
Run 10: Report of Sprout — Data Link
Run 1: Statistics of TaoVA-100x

Start at: 2018-01-27 02:13:30
End at: 2018-01-27 02:14:00

# Below is generated by plot.py at 2018-01-27 06:15:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 200.40 Mbit/s
  95th percentile per-packet one-way delay: 99.234 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 97.63 Mbit/s
  95th percentile per-packet one-way delay: 90.075 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 100.51 Mbit/s
  95th percentile per-packet one-way delay: 110.005 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 135.01 Mbit/s
  95th percentile per-packet one-way delay: 90.156 ms
  Loss rate: 0.01%
Run 1: Report of TaoVA-100x — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 97.63 Mbit/s)
Flow 1 egress (mean 97.63 Mbit/s)
Flow 2 ingress (mean 100.52 Mbit/s)
Flow 2 egress (mean 100.51 Mbit/s)
Flow 3 ingress (mean 135.04 Mbit/s)
Flow 3 egress (mean 135.01 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 90.08 ms)
Flow 2 (95th percentile 110.00 ms)
Flow 3 (95th percentile 90.16 ms)

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Run 2: Statistics of TaoVA-100x

Start at: 2018-01-27 02:27:33
End at: 2018-01-27 02:28:03

# Below is generated by plot.py at 2018-01-27 06:16:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 228.08 Mbit/s
95th percentile per-packet one-way delay: 66.829 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 106.78 Mbit/s
95th percentile per-packet one-way delay: 66.005 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 138.92 Mbit/s
95th percentile per-packet one-way delay: 66.855 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 113.61 Mbit/s
95th percentile per-packet one-way delay: 70.829 ms
Loss rate: 0.00%
Run 2: Report of TaoVA-100x — Data Link

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Throughput (Mbit/s) vs Time (s)

- **Flow 1 ingress (mean 106.78 Mbit/s)**
- **Flow 1 egress (mean 106.78 Mbit/s)**
- **Flow 2 ingress (mean 138.91 Mbit/s)**
- **Flow 2 egress (mean 138.92 Mbit/s)**
- **Flow 3 ingress (mean 113.61 Mbit/s)**
- **Flow 3 egress (mean 113.61 Mbit/s)**

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Packet one-way delay (ms) vs Time (s)

- **Flow 1 (95th percentile 66.00 ms)**
- **Flow 2 (95th percentile 66.86 ms)**
- **Flow 3 (95th percentile 70.83 ms)**

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Run 3: Statistics of TaoVA-100x

Start at: 2018-01-27 02:42:03
End at: 2018-01-27 02:42:33

# Below is generated by plot.py at 2018-01-27 06:18:59
# Datalink statistics
-- Total of 3 flows:
 Average throughput: 316.67 Mbit/s
 95th percentile per-packet one-way delay: 64.999 ms
 Loss rate: 0.00%
-- Flow 1:
 Average throughput: 191.27 Mbit/s
 95th percentile per-packet one-way delay: 65.059 ms
 Loss rate: 0.00%
-- Flow 2:
 Average throughput: 125.12 Mbit/s
 95th percentile per-packet one-way delay: 65.061 ms
 Loss rate: 0.00%
-- Flow 3:
 Average throughput: 158.91 Mbit/s
 95th percentile per-packet one-way delay: 64.412 ms
 Loss rate: 0.00%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2018-01-27 02:56:38
End at: 2018-01-27 02:57:08

# Below is generated by plot.py at 2018-01-27 06:19:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 349.44 Mbit/s
  95th percentile per-packet one-way delay: 64.328 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 199.73 Mbit/s
  95th percentile per-packet one-way delay: 64.478 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 175.46 Mbit/s
  95th percentile per-packet one-way delay: 63.738 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 122.00 Mbit/s
  95th percentile per-packet one-way delay: 65.195 ms
  Loss rate: 0.00%
Run 4: Report of TaoVA-100x — Data Link

![Graph showing throughput and delay over time for different flows.](image)
Run 5: Statistics of TaoVA-100x

Start at: 2018-01-27 03:11:20
End at: 2018-01-27 03:11:50

# Below is generated by plot.py at 2018-01-27 06:19:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 295.61 Mbit/s
  95th percentile per-packet one-way delay: 64.227 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 192.74 Mbit/s
  95th percentile per-packet one-way delay: 64.089 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 107.35 Mbit/s
  95th percentile per-packet one-way delay: 64.395 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 119.69 Mbit/s
  95th percentile per-packet one-way delay: 65.810 ms
  Loss rate: 0.00%
Run 5: Report of TaoVA-100x — Data Link
Run 6: Statistics of TaoVA-100x

Start at: 2018-01-27 03:26:16
End at: 2018-01-27 03:26:46

# Below is generated by plot.py at 2018-01-27 06:19:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 191.85 Mbit/s
  95th percentile per-packet one-way delay: 63.519 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 89.47 Mbit/s
  95th percentile per-packet one-way delay: 63.532 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 151.89 Mbit/s
  95th percentile per-packet one-way delay: 63.496 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 17.26 Mbit/s
  95th percentile per-packet one-way delay: 68.205 ms
  Loss rate: 0.00%
Run 6: Report of TaoVA-100x — Data Link
Run 7: Statistics of TaoVA-100x

Start at: 2018-01-27 03:40:45
End at: 2018-01-27 03:41:15

# Below is generated by plot.py at 2018-01-27 06:23:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 265.27 Mbit/s
95th percentile per-packet one-way delay: 68.122 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 146.71 Mbit/s
95th percentile per-packet one-way delay: 63.486 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 64.125 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 200.88 Mbit/s
95th percentile per-packet one-way delay: 73.760 ms
Loss rate: 0.00%
Run 7: Report of TaoVA-100x — Data Link

![Graph showing throughput and packet delay over time for different flows.]
Run 8: Statistics of TaoVA-100x

End at: 2018-01-27 03:55:55

# Below is generated by plot.py at 2018-01-27 06:23:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 243.03 Mbit/s
95th percentile per-packet one-way delay: 64.376 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 151.62 Mbit/s
95th percentile per-packet one-way delay: 63.756 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 115.21 Mbit/s
95th percentile per-packet one-way delay: 65.233 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 61.63 Mbit/s
95th percentile per-packet one-way delay: 67.992 ms
Loss rate: 0.00%
Run 8: Report of TaoVA-100x — Data Link

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

Legend for throughput graph:
- Flow 1 ingress (mean 151.63 Mbit/s)
- Flow 1 egress (mean 151.62 Mbit/s)
- Flow 2 ingress (mean 115.22 Mbit/s)
- Flow 2 egress (mean 115.21 Mbit/s)
- Flow 3 ingress (mean 61.64 Mbit/s)
- Flow 3 egress (mean 61.63 Mbit/s)

Legend for per-packet one-way delay graph:
- Flow 1 (95th percentile 63.76 ms)
- Flow 2 (95th percentile 65.23 ms)
- Flow 3 (95th percentile 67.99 ms)
Run 9: Statistics of TaoVA-100x

Start at: 2018-01-27 04:10:11
End at: 2018-01-27 04:10:41

# Below is generated by plot.py at 2018-01-27 06:23:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 245.03 Mbit/s
  95th percentile per-packet one-way delay: 63.729 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 107.96 Mbit/s
  95th percentile per-packet one-way delay: 63.673 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 206.40 Mbit/s
  95th percentile per-packet one-way delay: 63.839 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 17.56 Mbit/s
  95th percentile per-packet one-way delay: 68.226 ms
  Loss rate: 0.00%
Run 10: Statistics of TaoVA-100x

Start at: 2018-01-27 04:24:46
End at: 2018-01-27 04:25:16

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 290.32 Mbit/s
  95th percentile per-packet one-way delay: 64.531 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 181.31 Mbit/s
  95th percentile per-packet one-way delay: 64.230 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 115.86 Mbit/s
  95th percentile per-packet one-way delay: 64.125 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 122.87 Mbit/s
  95th percentile per-packet one-way delay: 67.552 ms
  Loss rate: 0.00%
Run 10: Report of TaoVA-100x — Data Link

![Graph 1: Throughput (Mbps)]

- **Flow 1 ingress (mean 181.32 Mbps)**
- **Flow 1 egress (mean 181.31 Mbps)**
- **Flow 2 ingress (mean 115.86 Mbps)**
- **Flow 2 egress (mean 115.86 Mbps)**
- **Flow 3 ingress (mean 122.89 Mbps)**
- **Flow 3 egress (mean 122.87 Mbps)**

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

- **Flow 1 (95th percentile 64.23 ms)**
- **Flow 2 (95th percentile 64.12 ms)**
- **Flow 3 (95th percentile 67.55 ms)**
Run 1: Statistics of TCP Vegas

Start at: 2018-01-27 02:03:31
End at: 2018-01-27 02:04:01

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.76 Mbit/s
95th percentile per-packet one-way delay: 69.536 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 23.07 Mbit/s
95th percentile per-packet one-way delay: 66.514 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 83.39 Mbit/s
95th percentile per-packet one-way delay: 69.994 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 18.78 Mbit/s
95th percentile per-packet one-way delay: 64.203 ms
Loss rate: 0.00%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2018-01-27 02:17:44
End at: 2018-01-27 02:18:14

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 40.83 Mbit/s
  95th percentile per-packet one-way delay: 66.047 ms
  Loss rate: 0.26%
-- Flow 1:
  Average throughput: 12.87 Mbit/s
  95th percentile per-packet one-way delay: 65.279 ms
  Loss rate: 0.63%
-- Flow 2:
  Average throughput: 25.92 Mbit/s
  95th percentile per-packet one-way delay: 66.964 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 32.32 Mbit/s
  95th percentile per-packet one-way delay: 65.575 ms
  Loss rate: 0.20%
Run 2: Report of TCP Vegas — Data Link

![Graph 1: Throughout vs Time]

- Flow 1 ingress (mean 12.96 Mbit/s)
- Flow 1 egress (mean 12.87 Mbit/s)
- Flow 2 ingress (mean 25.93 Mbit/s)
- Flow 2 egress (mean 25.92 Mbit/s)
- Flow 3 ingress (mean 32.39 Mbit/s)
- Flow 3 egress (mean 32.32 Mbit/s)

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

- Flow 1 (95th percentile 65.20 ms)
- Flow 2 (95th percentile 66.96 ms)
- Flow 3 (95th percentile 65.58 ms)
Run 3: Statistics of TCP Vegas

Start at: 2018-01-27 02:31:51
End at: 2018-01-27 02:32:21

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 138.65 Mbit/s
  95th percentile per-packet one-way delay: 69.551 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 78.50 Mbit/s
  95th percentile per-packet one-way delay: 66.711 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 76.31 Mbit/s
  95th percentile per-packet one-way delay: 71.097 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 28.31 Mbit/s
  95th percentile per-packet one-way delay: 64.571 ms
  Loss rate: 0.00%
Run 3: Report of TCP Vegas — Data Link

[Graph 1: Throughput vs Time]

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

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Run 4: Statistics of TCP Vegas

Start at: 2018-01-27 02:46:27
End at: 2018-01-27 02:46:57

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 266.10 Mbit/s
  95th percentile per-packet one-way delay: 71.439 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 149.21 Mbit/s
  95th percentile per-packet one-way delay: 67.658 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 90.99 Mbit/s
  95th percentile per-packet one-way delay: 68.748 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 170.20 Mbit/s
  95th percentile per-packet one-way delay: 77.178 ms
  Loss rate: 0.00%
Run 4: Report of TCP Vegas — Data Link

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

- Flow 1 ingress (mean 149.22 Mbit/s)
- Flow 1 egress (mean 149.21 Mbit/s)
- Flow 2 ingress (mean 91.01 Mbit/s)
- Flow 2 egress (mean 90.99 Mbit/s)
- Flow 3 ingress (mean 170.33 Mbit/s)
- Flow 3 egress (mean 170.20 Mbit/s)

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

- Flow 1 (95th percentile 67.66 ms)
- Flow 2 (95th percentile 68.75 ms)
- Flow 3 (95th percentile 77.18 ms)
Run 5: Statistics of TCP Vegas

Start at: 2018-01-27 03:01:08
End at: 2018-01-27 03:01:38

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 194.61 Mbit/s
  95th percentile per-packet one-way delay: 63.631 ms
  Loss rate: 0.00%
  -- Flow 1:
    Average throughput: 93.01 Mbit/s
    95th percentile per-packet one-way delay: 65.443 ms
    Loss rate: 0.00%
  -- Flow 2:
    Average throughput: 150.57 Mbit/s
    95th percentile per-packet one-way delay: 62.908 ms
    Loss rate: 0.00%
  -- Flow 3:
    Average throughput: 4.00 Mbit/s
    95th percentile per-packet one-way delay: 63.475 ms
    Loss rate: 0.12%
Run 5: Report of TCP Vegas — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 93.01 Mbit/s)  Flow 1 egress (mean 93.01 Mbit/s)
Flow 2 ingress (mean 150.57 Mbit/s)  Flow 2 egress (mean 150.57 Mbit/s)
Flow 3 ingress (mean 4.00 Mbit/s)  Flow 3 egress (mean 4.00 Mbit/s)

Per-packet round-trip time (ms)

Time (s)

Fast 1 (95th percentile 65.44 ms)  Fast 2 (95th percentile 62.91 ms)  Fast 3 (95th percentile 63.48 ms)
Run 6: Statistics of TCP Vegas

Start at: 2018-01-27 03:15:47
End at: 2018-01-27 03:16:17

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 214.41 Mbit/s
95th percentile per-packet one-way delay: 71.565 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 122.20 Mbit/s
95th percentile per-packet one-way delay: 69.479 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 69.98 Mbit/s
95th percentile per-packet one-way delay: 70.157 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 137.60 Mbit/s
95th percentile per-packet one-way delay: 73.475 ms
Loss rate: 0.00%
Run 6: Report of TCP Vegas — Data Link

![Throughput Graph](image1)

![Delay Graph](image2)

Legend:
- Flow 1 ingress (mean 122.20 Mbit/s)
- Flow 1 egress (mean 122.20 Mbit/s)
- Flow 2 ingress (mean 69.98 Mbit/s)
- Flow 2 egress (mean 69.98 Mbit/s)
- Flow 3 ingress (mean 137.59 Mbit/s)
- Flow 3 egress (mean 137.60 Mbit/s)

Legend:
- Flow 1 (95th percentile 69.48 ms)
- Flow 2 (95th percentile 70.16 ms)
- Flow 3 (95th percentile 73.47 ms)
Run 7: Statistics of TCP Vegas

Start at: 2018-01-27 03:30:32
End at: 2018-01-27 03:31:02

# Below is generated by plot.py at 2018-01-27 06:25:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.08 Mbit/s
95th percentile per-packet one-way delay: 63.836 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 89.62 Mbit/s
95th percentile per-packet one-way delay: 63.838 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.72 Mbit/s
95th percentile per-packet one-way delay: 63.950 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 85.50 Mbit/s
95th percentile per-packet one-way delay: 63.565 ms
Loss rate: 0.00%
Run 7: Report of TCP Vegas — Data Link
Run 8: Statistics of TCP Vegas

Start at: 2018-01-27 03:45:11
End at: 2018-01-27 03:45:41

# Below is generated by plot.py at 2018-01-27 06:25:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 162.00 Mbit/s
95th percentile per-packet one-way delay: 73.620 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 43.25 Mbit/s
95th percentile per-packet one-way delay: 70.382 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 164.13 Mbit/s
95th percentile per-packet one-way delay: 74.298 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 28.98 Mbit/s
95th percentile per-packet one-way delay: 69.752 ms
Loss rate: 0.00%
Run 9: Statistics of TCP Vegas

Start at: 2018-01-27 03:59:47
End at: 2018-01-27 04:00:17

# Below is generated by plot.py at 2018-01-27 06:27:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 241.29 Mbit/s
  95th percentile per-packet one-way delay: 70.615 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 132.09 Mbit/s
  95th percentile per-packet one-way delay: 67.144 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 161.96 Mbit/s
  95th percentile per-packet one-way delay: 71.761 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 4.08 Mbit/s
  95th percentile per-packet one-way delay: 68.828 ms
  Loss rate: 0.12%
Run 9: Report of TCP Vegas — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 132.10 Mbit/s)  Flow 1 egress (mean 132.09 Mbit/s)
Flow 2 ingress (mean 161.96 Mbit/s)  Flow 2 egress (mean 161.96 Mbit/s)
Flow 3 ingress (mean 4.98 Mbit/s)    Flow 3 egress (mean 4.08 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 67.14 ms)  Flow 2 (95th percentile 71.76 ms)  Flow 3 (95th percentile 68.83 ms)
Run 10: Statistics of TCP Vegas

Start at: 2018-01-27 04:14:33
End at: 2018-01-27 04:15:03

# Below is generated by plot.py at 2018-01-27 06:27:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 208.56 Mbit/s
  95th percentile per-packet one-way delay: 69.878 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 107.71 Mbit/s
  95th percentile per-packet one-way delay: 67.865 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 65.77 Mbit/s
  95th percentile per-packet one-way delay: 69.688 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 172.73 Mbit/s
  95th percentile per-packet one-way delay: 70.585 ms
  Loss rate: 0.05%
Run 10: Report of TCP Vegas — Data Link

![Throughput and Delay Graphs]

- Flow 1 ingress (mean 107.55 Mbit/s)
- Flow 1 egress (mean 107.71 Mbit/s)
- Flow 2 ingress (mean 65.63 Mbit/s)
- Flow 2 egress (mean 65.77 Mbit/s)
- Flow 3 ingress (mean 172.90 Mbit/s)
- Flow 3 egress (mean 172.73 Mbit/s)

![Another Throughput and Delay Graphs]
Run 1: Statistics of Verus

Start at: 2018-01-27 02:04:17
End at: 2018-01-27 02:04:47

# Below is generated by plot.py at 2018-01-27 06:28:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.86 Mbit/s
95th percentile per-packet one-way delay: 149.303 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 157.25 Mbit/s
95th percentile per-packet one-way delay: 141.415 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 148.82 Mbit/s
95th percentile per-packet one-way delay: 157.825 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 101.20 Mbit/s
95th percentile per-packet one-way delay: 154.788 ms
Loss rate: 2.27%
Run 1: Report of Verus — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 157.38 Mb/s)
Flow 1 egress (mean 157.25 Mb/s)
Flow 2 ingress (mean 149.03 Mb/s)
Flow 2 egress (mean 148.82 Mb/s)
Flow 3 ingress (mean 101.56 Mb/s)
Flow 3 egress (mean 101.20 Mb/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 141.41 ms)
Flow 2 (95th percentile 157.82 ms)
Flow 3 (95th percentile 154.79 ms)
Run 2: Statistics of Verus

Start at: 2018-01-27 02:18:27
End at: 2018-01-27 02:18:57

# Below is generated by plot.py at 2018-01-27 06:29:17
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 279.84 Mbit/s
  95th percentile per-packet one-way delay: 138.890 ms
  Loss rate: 2.04%
-- Flow 1:
  Average throughput: 170.33 Mbit/s
  95th percentile per-packet one-way delay: 170.627 ms
  Loss rate: 3.26%
-- Flow 2:
  Average throughput: 141.05 Mbit/s
  95th percentile per-packet one-way delay: 124.281 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 48.89 Mbit/s
  95th percentile per-packet one-way delay: 119.067 ms
  Loss rate: 0.21%
Run 2: Report of Verus — Data Link

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

*Throughput (Mbps):* Flow 1 ingress (mean 176.08 Mbps), Flow 1 egress (mean 170.33 Mbps), Flow 2 ingress (mean 141.41 Mbps), Flow 2 egress (mean 141.05 Mbps), Flow 3 ingress (mean 48.90 Mbps), Flow 3 egress (mean 48.89 Mbps).

*Packet delivery delay (ms):* Flow 1 (95th percentile 170.63 ms), Flow 2 (95th percentile 124.28 ms), Flow 3 (95th percentile 119.07 ms).
Run 3: Statistics of Verus

Start at: 2018-01-27 02:32:41
End at: 2018-01-27 02:33:11

# Below is generated by plot.py at 2018-01-27 06:29:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 264.78 Mbit/s
95th percentile per-packet one-way delay: 152.297 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 143.83 Mbit/s
95th percentile per-packet one-way delay: 151.632 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 136.66 Mbit/s
95th percentile per-packet one-way delay: 155.107 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 91.62 Mbit/s
95th percentile per-packet one-way delay: 141.217 ms
Loss rate: 2.40%
Run 3: Report of Verus — Data Link

![Graph of throughput and per-packet one-way delay over time for different flows.]
Run 4: Statistics of Verus

Start at: 2018-01-27 02:47:24
End at: 2018-01-27 02:47:54

# Below is generated by plot.py at 2018-01-27 06:30:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 336.62 Mbit/s
  95th percentile per-packet one-way delay: 186.338 ms
  Loss rate: 1.75%
-- Flow 1:
  Average throughput: 225.39 Mbit/s
  95th percentile per-packet one-way delay: 177.868 ms
  Loss rate: 2.22%
-- Flow 2:
  Average throughput: 125.42 Mbit/s
  95th percentile per-packet one-way delay: 195.243 ms
  Loss rate: 0.93%
-- Flow 3:
  Average throughput: 84.85 Mbit/s
  95th percentile per-packet one-way delay: 199.663 ms
  Loss rate: 0.29%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2018-01-27 03:02:00
End at: 2018-01-27 03:02:30

# Below is generated by plot.py at 2018-01-27 06:30:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 247.51 Mbit/s
  95th percentile per-packet one-way delay: 197.194 ms
  Loss rate: 0.39%
-- Flow 1:
  Average throughput: 186.75 Mbit/s
  95th percentile per-packet one-way delay: 202.076 ms
  Loss rate: 0.36%
-- Flow 2:
  Average throughput: 63.87 Mbit/s
  95th percentile per-packet one-way delay: 149.881 ms
  Loss rate: 0.64%
-- Flow 3:
  Average throughput: 57.02 Mbit/s
  95th percentile per-packet one-way delay: 158.256 ms
  Loss rate: 0.10%
Run 5: Report of Verus — Data Link
Run 6: Statistics of Verus

Start at: 2018-01-27 03:16:41
End at: 2018-01-27 03:17:11

# Below is generated by plot.py at 2018-01-27 06:31:28
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 300.38 Mbit/s
  95th percentile per-packet one-way delay: 151.060 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 207.91 Mbit/s
  95th percentile per-packet one-way delay: 132.423 ms
  Loss rate: 0.25%
-- Flow 2:
  Average throughput: 105.78 Mbit/s
  95th percentile per-packet one-way delay: 180.831 ms
  Loss rate: 0.62%
-- Flow 3:
  Average throughput: 68.00 Mbit/s
  95th percentile per-packet one-way delay: 172.367 ms
  Loss rate: 3.36%
Run 6: Report of Verus — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows.](image)
Run 7: Statistics of Verus

Start at: 2018-01-27 03:31:21
End at: 2018-01-27 03:31:51

# Below is generated by plot.py at 2018-01-27 06:32:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 291.20 Mbit/s
  95th percentile per-packet one-way delay: 111.351 ms
  Loss rate: 0.01%
  -- Flow 1:
  Average throughput: 184.69 Mbit/s
  95th percentile per-packet one-way delay: 109.640 ms
  Loss rate: 0.00%
  -- Flow 2:
  Average throughput: 115.25 Mbit/s
  95th percentile per-packet one-way delay: 115.552 ms
  Loss rate: 0.00%
  -- Flow 3:
  Average throughput: 93.09 Mbit/s
  95th percentile per-packet one-way delay: 108.555 ms
  Loss rate: 0.12%
Run 7: Report of Verus — Data Link
Run 8: Statistics of Verus

Start at: 2018-01-27 03:46:02
End at: 2018-01-27 03:46:32

# Below is generated by plot.py at 2018-01-27 06:33:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 298.66 Mbit/s
95th percentile per-packet one-way delay: 244.405 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 156.99 Mbit/s
95th percentile per-packet one-way delay: 191.633 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 190.40 Mbit/s
95th percentile per-packet one-way delay: 280.744 ms
Loss rate: 3.11%
-- Flow 3:
Average throughput: 46.39 Mbit/s
95th percentile per-packet one-way delay: 233.342 ms
Loss rate: 4.19%
Run 8: Report of Verus — Data Link
Run 9: Statistics of Verus

Start at: 2018-01-27 04:00:42
End at: 2018-01-27 04:01:12

# Below is generated by plot.py at 2018-01-27 06:33:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 284.01 Mbit/s
  95th percentile per-packet one-way delay: 191.547 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 197.34 Mbit/s
  95th percentile per-packet one-way delay: 185.219 ms
  Loss rate: 0.47%
-- Flow 2:
  Average throughput: 87.29 Mbit/s
  95th percentile per-packet one-way delay: 209.019 ms
  Loss rate: 1.09%
-- Flow 3:
  Average throughput: 97.54 Mbit/s
  95th percentile per-packet one-way delay: 190.395 ms
  Loss rate: 0.67%
Run 9: Report of Verus — Data Link

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

- Flow 1 ingress (mean 198.76 Mbit/s)
- Flow 1 egress (mean 197.34 Mbit/s)
- Flow 2 ingress (mean 83.24 Mbit/s)
- Flow 2 egress (mean 87.29 Mbit/s)
- Flow 3 ingress (mean 98.21 Mbit/s)
- Flow 3 egress (mean 97.54 Mbit/s)

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

- Flow 1 (95th percentile 185.22 ms)
- Flow 2 (95th percentile 209.02 ms)
- Flow 3 (95th percentile 190.40 ms)
Run 10: Statistics of Verus

Start at: 2018-01-27 04:15:27
End at: 2018-01-27 04:15:57

# Below is generated by plot.py at 2018-01-27 06:34:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 304.64 Mbit/s
95th percentile per-packet one-way delay: 138.144 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 183.37 Mbit/s
95th percentile per-packet one-way delay: 126.963 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 130.29 Mbit/s
95th percentile per-packet one-way delay: 146.559 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 105.91 Mbit/s
95th percentile per-packet one-way delay: 153.047 ms
Loss rate: 0.00%
Run 1: Statistics of Copa

Start at: 2018-01-27 02:01:57
End at: 2018-01-27 02:02:27

# Below is generated by plot.py at 2018-01-27 06:34:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 115.38 Mbit/s
95th percentile per-packet one-way delay: 63.708 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 55.48 Mbit/s
95th percentile per-packet one-way delay: 63.799 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 68.18 Mbit/s
95th percentile per-packet one-way delay: 63.607 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 56.77 Mbit/s
95th percentile per-packet one-way delay: 63.730 ms
Loss rate: 0.00%
Run 1: Report of Copa — Data Link
Run 2: Statistics of Copa

Start at: 2018-01-27 02:16:10
End at: 2018-01-27 02:16:40

# Below is generated by plot.py at 2018-01-27 06:34:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 113.51 Mbit/s
95th percentile per-packet one-way delay: 63.733 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.92 Mbit/s
95th percentile per-packet one-way delay: 63.807 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 59.12 Mbit/s
95th percentile per-packet one-way delay: 63.662 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 58.69 Mbit/s
95th percentile per-packet one-way delay: 63.656 ms
Loss rate: 0.00%
Run 2: Report of Copa — Data Link

[Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 58.92 Mbps)
- Flow 1 egress (mean 58.92 Mbps)
- Flow 2 ingress (mean 59.12 Mbps)
- Flow 2 egress (mean 59.12 Mbps)
- Flow 3 ingress (mean 58.69 Mbps)
- Flow 3 egress (mean 58.69 Mbps)

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

- Flow 1 (95th percentile 63.61 ms)
- Flow 2 (95th percentile 63.66 ms)
- Flow 3 (95th percentile 63.66 ms)
Run 3: Statistics of Copa

Start at: 2018-01-27 02:30:16
End at: 2018-01-27 02:30:46

# Below is generated by plot.py at 2018-01-27 06:35:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 133.64 Mbit/s
95th percentile per-packet one-way delay: 63.490 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.99 Mbit/s
95th percentile per-packet one-way delay: 63.443 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 72.79 Mbit/s
95th percentile per-packet one-way delay: 63.531 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 70.21 Mbit/s
95th percentile per-packet one-way delay: 63.491 ms
Loss rate: 0.00%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2018-01-27 02:44:51
End at: 2018-01-27 02:45:21

# Below is generated by plot.py at 2018-01-27 06:36:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 140.84 Mbit/s
95th percentile per-packet one-way delay: 63.461 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 75.77 Mbit/s
95th percentile per-packet one-way delay: 63.381 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 79.18 Mbit/s
95th percentile per-packet one-way delay: 63.477 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 50.23 Mbit/s
95th percentile per-packet one-way delay: 63.596 ms
Loss rate: 0.00%
Run 4: Report of Copa — Data Link
Run 5: Statistics of Copa

Start at: 2018-01-27 02:59:30
End at: 2018-01-27 03:00:00

# Below is generated by plot.py at 2018-01-27 06:36:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 145.34 Mbit/s
  95th percentile per-packet one-way delay: 63.662 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 74.62 Mbit/s
  95th percentile per-packet one-way delay: 63.692 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 70.39 Mbit/s
  95th percentile per-packet one-way delay: 63.654 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 90.00 Mbit/s
  95th percentile per-packet one-way delay: 63.358 ms
  Loss rate: 0.00%
Run 5: Report of Copa — Data Link
Run 6: Statistics of Copa

Start at: 2018-01-27 03:14:10
End at: 2018-01-27 03:14:40

# Below is generated by plot.py at 2018-01-27 06:37:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 152.33 Mbit/s
  95th percentile per-packet one-way delay: 63.467 ms
  Loss rate: 0.00%
  -- Flow 1:
  Average throughput: 84.21 Mbit/s
  95th percentile per-packet one-way delay: 63.507 ms
  Loss rate: 0.00%
  -- Flow 2:
  Average throughput: 74.81 Mbit/s
  95th percentile per-packet one-way delay: 61.711 ms
  Loss rate: 0.00%
  -- Flow 3:
  Average throughput: 71.01 Mbit/s
  95th percentile per-packet one-way delay: 63.380 ms
  Loss rate: 0.00%
Run 6: Report of Copa — Data Link

![Graph showing throughput and delay over time for different flows.](image-url)
Run 7: Statistics of Copa

Start at: 2018-01-27 03:28:56
End at: 2018-01-27 03:29:26

# Below is generated by plot.py at 2018-01-27 06:37:34
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 132.19 Mbit/s
  95th percentile per-packet one-way delay: 63.558 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 76.10 Mbit/s
  95th percentile per-packet one-way delay: 63.533 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 71.16 Mbit/s
  95th percentile per-packet one-way delay: 63.503 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 36.79 Mbit/s
  95th percentile per-packet one-way delay: 63.826 ms
  Loss rate: 0.00%
Run 7: Report of Copa — Data Link

![Graphs showing throughput and per-packet one-way delay over time for different flows.](image-url)
Run 8: Statistics of Copa

Start at: 2018-01-27 03:43:34
End at: 2018-01-27 03:44:04

# Below is generated by plot.py at 2018-01-27 06:38:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 153.30 Mbit/s
  95th percentile per-packet one-way delay: 63.647 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 86.97 Mbit/s
  95th percentile per-packet one-way delay: 61.742 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 68.10 Mbit/s
  95th percentile per-packet one-way delay: 63.739 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 79.59 Mbit/s
  95th percentile per-packet one-way delay: 63.474 ms
  Loss rate: 0.02%
Run 8: Report of Copa — Data Link

![Throughput Graph](image1)

![Per-packet one way delay Graph](image2)
Run 9: Statistics of Copa

Start at: 2018-01-27 03:58:11
End at: 2018-01-27 03:58:41

# Below is generated by plot.py at 2018-01-27 06:38:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 149.49 Mbit/s
95th percentile per-packet one-way delay: 63.528 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 80.54 Mbit/s
95th percentile per-packet one-way delay: 63.574 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 75.68 Mbit/s
95th percentile per-packet one-way delay: 63.477 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 71.88 Mbit/s
95th percentile per-packet one-way delay: 62.256 ms
Loss rate: 0.00%
Run 9: Report of Copa — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 80.54 Mbps)
  - Flow 1 egress (mean 80.54 Mbps)
  - Flow 2 ingress (mean 75.68 Mbps)
  - Flow 2 egress (mean 75.68 Mbps)
  - Flow 3 ingress (mean 71.88 Mbps)
  - Flow 3 egress (mean 71.88 Mbps)

- **Packet Loss (ms)**
  - Flow 1 (95th percentile 63.57 ms)
  - Flow 2 (95th percentile 63.48 ms)
  - Flow 3 (95th percentile 62.26 ms)
Run 10: Statistics of Copa

Start at: 2018-01-27 04:12:58

# Below is generated by plot.py at 2018-01-27 06:39:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 137.37 Mbit/s
95th percentile per-packet one-way delay: 63.681 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 73.99 Mbit/s
95th percentile per-packet one-way delay: 63.725 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 63.34 Mbit/s
95th percentile per-packet one-way delay: 63.422 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 80.14 Mbit/s
95th percentile per-packet one-way delay: 61.666 ms
Loss rate: 0.00%
Run 10: Report of Copa — Data Link

![Graph](image-url)
Run 1: Statistics of Indigo-2-256

Start at: 2018-01-27 02:07:05
End at: 2018-01-27 02:07:35

# Below is generated by plot.py at 2018-01-27 06:40:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 315.12 Mbit/s
  95th percentile per-packet one-way delay: 73.206 ms
  Loss rate: 0.10%
-- Flow 1:
  Average throughput: 173.84 Mbit/s
  95th percentile per-packet one-way delay: 71.584 ms
  Loss rate: 0.09%
-- Flow 2:
  Average throughput: 168.28 Mbit/s
  95th percentile per-packet one-way delay: 73.788 ms
  Loss rate: 0.13%
-- Flow 3:
  Average throughput: 91.78 Mbit/s
  95th percentile per-packet one-way delay: 75.472 ms
  Loss rate: 0.05%
Run 1: Report of Indigo-2-256 — Data Link
Run 2: Statistics of Indigo-2-256

Start at: 2018-01-27 02:21:16
End at: 2018-01-27 02:21:46

# Below is generated by plot.py at 2018-01-27 06:41:20
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 299.25 Mbit/s
  95th percentile per-packet one-way delay: 93.679 ms
  Loss rate: 0.01%
  -- Flow 1:
    Average throughput: 164.70 Mbit/s
    95th percentile per-packet one-way delay: 89.451 ms
    Loss rate: 0.01%
  -- Flow 2:
    Average throughput: 157.26 Mbit/s
    95th percentile per-packet one-way delay: 107.488 ms
    Loss rate: 0.01%
  -- Flow 3:
    Average throughput: 98.93 Mbit/s
    95th percentile per-packet one-way delay: 71.810 ms
    Loss rate: 0.02%
Run 2: Report of Indigo-2-256 — Data Link
Run 3: Statistics of Indigo-2-256

Start at: 2018-01-27 02:35:27
End at: 2018-01-27 02:35:57

# Below is generated by plot.py at 2018-01-27 06:42:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 314.26 Mbit/s
95th percentile per-packet one-way delay: 73.385 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 177.90 Mbit/s
95th percentile per-packet one-way delay: 71.338 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 165.90 Mbit/s
95th percentile per-packet one-way delay: 73.856 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 81.39 Mbit/s
95th percentile per-packet one-way delay: 85.761 ms
Loss rate: 0.09%
Run 3: Report of Indigo-2-256 — Data Link

![Graph showing throughput and round-trip delay over time for Flow 1, Flow 2, and Flow 3.]
Run 4: Statistics of Indigo-2-256

Start at: 2018-01-27 02:50:15
End at: 2018-01-27 02:50:45

# Below is generated by plot.py at 2018-01-27 06:43:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 327.21 Mbit/s
  95th percentile per-packet one-way delay: 71.059 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 173.93 Mbit/s
  95th percentile per-packet one-way delay: 69.658 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 170.34 Mbit/s
  95th percentile per-packet one-way delay: 71.218 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 136.86 Mbit/s
  95th percentile per-packet one-way delay: 73.527 ms
  Loss rate: 0.00%
Run 4: Report of Indigo-2-256 — Data Link
Run 5: Statistics of Indigo-2-256

Start at: 2018-01-27 03:04:45
End at: 2018-01-27 03:05:15

# Below is generated by plot.py at 2018-01-27 06:43:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 315.16 Mbit/s
95th percentile per-packet one-way delay: 76.625 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 165.31 Mbit/s
95th percentile per-packet one-way delay: 72.340 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 159.36 Mbit/s
95th percentile per-packet one-way delay: 77.190 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 136.30 Mbit/s
95th percentile per-packet one-way delay: 81.669 ms
Loss rate: 0.00%
Run 5: Report of Indigo-2-256 — Data Link
Run 6: Statistics of Indigo-2-256

Start at: 2018-01-27 03:19:31
End at: 2018-01-27 03:20:01

# Below is generated by plot.py at 2018-01-27 06:43:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 321.16 Mbit/s
  95th percentile per-packet one-way delay: 71.296 ms
  Loss rate: 0.02%
-- Flow 1:
  Average throughput: 180.94 Mbit/s
  95th percentile per-packet one-way delay: 69.663 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 167.80 Mbit/s
  95th percentile per-packet one-way delay: 72.054 ms
  Loss rate: 0.02%
-- Flow 3:
  Average throughput: 89.24 Mbit/s
  95th percentile per-packet one-way delay: 74.545 ms
  Loss rate: 0.00%
Run 6: Report of Indigo-2-256 — Data Link

![Graph 1: Throughput](image1)

![Graph 2: Delay](image2)
Run 7: Statistics of Indigo-2-256

Start at: 2018-01-27 03:34:10
End at: 2018-01-27 03:34:40

# Below is generated by plot.py at 2018-01-27 06:44:14
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 318.35 Mbit/s
  95th percentile per-packet one-way delay: 68.801 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 172.80 Mbit/s
  95th percentile per-packet one-way delay: 67.043 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 163.68 Mbit/s
  95th percentile per-packet one-way delay: 69.431 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 113.84 Mbit/s
  95th percentile per-packet one-way delay: 71.159 ms
  Loss rate: 0.00%
Run 7: Report of Indigo-2-256 — Data Link

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

Legend:
- Flow 1 ingress (mean 172.81 Mbit/s)
- Flow 1 egress (mean 172.80 Mbit/s)
- Flow 2 ingress (mean 163.69 Mbit/s)
- Flow 2 egress (mean 163.68 Mbit/s)
- Flow 3 ingress (mean 111.85 Mbit/s)
- Flow 3 egress (mean 111.84 Mbit/s)
Run 8: Statistics of Indigo-2-256

Start at: 2018-01-27 03:48:50
End at: 2018-01-27 03:49:21

# Below is generated by plot.py at 2018-01-27 06:44:59
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 313.07 Mbit/s
  95th percentile per-packet one-way delay: 71.421 ms
  Loss rate: 0.00%
  -- Flow 1:
    Average throughput: 177.60 Mbit/s
    95th percentile per-packet one-way delay: 69.210 ms
    Loss rate: 0.00%
  -- Flow 2:
    Average throughput: 164.58 Mbit/s
    95th percentile per-packet one-way delay: 72.215 ms
    Loss rate: 0.00%
  -- Flow 3:
    Average throughput: 83.82 Mbit/s
    95th percentile per-packet one-way delay: 74.716 ms
    Loss rate: 0.00%
Run 8: Report of Indigo-2-256 — Data Link

![Graph of Throughput (Mbps) vs Time (s)]
- Flow 1 ingress (mean 177.61 Mbps)
- Flow 1 egress (mean 177.60 Mbps)
- Flow 2 ingress (mean 164.58 Mbps)
- Flow 2 egress (mean 164.58 Mbps)
- Flow 3 ingress (mean 83.68 Mbps)
- Flow 3 egress (mean 83.82 Mbps)

![Graph of Per-packet one way delay (ms) vs Time (s)]
- Flow 1 (95th percentile 69.21 ms)
- Flow 2 (95th percentile 72.22 ms)
- Flow 3 (95th percentile 74.72 ms)
Run 9: Statistics of Indigo-2-256

Start at: 2018-01-27 04:03:30
End at: 2018-01-27 04:04:00

# Below is generated by plot.py at 2018-01-27 06:46:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 328.74 Mbit/s
95th percentile per-packet one-way delay: 70.934 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 180.92 Mbit/s
95th percentile per-packet one-way delay: 70.162 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 174.51 Mbit/s
95th percentile per-packet one-way delay: 71.108 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 99.12 Mbit/s
95th percentile per-packet one-way delay: 73.653 ms
Loss rate: 0.00%
Run 9: Report of Indigo-2-256 — Data Link

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

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 180.91 Mbps)
Flow 1 egress (mean 180.92 Mbps)
Flow 2 ingress (mean 174.51 Mbps)
Flow 2 egress (mean 174.51 Mbps)
Flow 3 ingress (mean 99.11 Mbps)
Flow 3 egress (mean 99.12 Mbps)

Per packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 70.16 ms)
Flow 2 (95th percentile 71.11 ms)
Flow 3 (95th percentile 73.65 ms)
Run 10: Statistics of Indigo-2-256

Start at: 2018-01-27 04:18:16
End at: 2018-01-27 04:18:46

# Below is generated by plot.py at 2018-01-27 06:46:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 317.05 Mbit/s
95th percentile per-packet one-way delay: 74.367 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 164.76 Mbit/s
95th percentile per-packet one-way delay: 73.422 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 158.17 Mbit/s
95th percentile per-packet one-way delay: 75.244 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 132.16 Mbit/s
95th percentile per-packet one-way delay: 74.948 ms
Loss rate: 0.04%
Run 10: Report of Indigo-2-256 — Data Link

![Graph of Throughput and Packet Delay]

**Throughput (Mbps):**
- Flow 1 ingress (mean 164.78 Mbps)
- Flow 1 egress (mean 164.76 Mbps)
- Flow 2 ingress (mean 158.15 Mbps)
- Flow 2 egress (mean 158.17 Mbps)
- Flow 3 ingress (mean 132.25 Mbps)
- Flow 3 egress (mean 132.16 Mbps)

**Packet Delay (ms):**
- Flow 1 (95th percentile 73.42 ms)
- Flow 2 (95th percentile 75.24 ms)
- Flow 3 (95th percentile 74.95 ms)
Run 1: Statistics of Indigo-1-32

Start at: 2018-01-27 02:08:09  
End at: 2018-01-27 02:08:39

# Below is generated by plot.py at 2018-01-27 06:48:21  
# Datalink statistics
-- Total of 3 flows:  
Average throughput: 326.70 Mbit/s  
95th percentile per-packet one-way delay: 82.480 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 186.22 Mbit/s  
95th percentile per-packet one-way delay: 82.063 ms  
Loss rate: 0.03%  
-- Flow 2:  
Average throughput: 155.39 Mbit/s  
95th percentile per-packet one-way delay: 82.223 ms  
Loss rate: 0.09%  
-- Flow 3:  
Average throughput: 119.94 Mbit/s  
95th percentile per-packet one-way delay: 83.885 ms  
Loss rate: 0.14%
Run 1: Report of Indigo-1-32 — Data Link

**Graph 1:**
- **Y-axis:** Throughput (Mbps)
- **X-axis:** Time (s)
- Legend:
  - Flow 1 ingress (mean 186.27 Mbps)
  - Flow 1 egress (mean 186.22 Mbps)
  - Flow 2 ingress (mean 155.32 Mbps)
  - Flow 2 egress (mean 155.39 Mbps)
  - Flow 3 ingress (mean 126.07 Mbps)
  - Flow 3 egress (mean 119.04 Mbps)

**Graph 2:**
- **Y-axis:** Per-packet round trip delay (ms)
- **X-axis:** Time (s)
- Legend:
  - Flow 1 (95th percentile 82.66 ms)
  - Flow 2 (95th percentile 82.22 ms)
  - Flow 3 (95th percentile 83.89 ms)
Run 2: Statistics of Indigo-1-32

Start at: 2018-01-27 02:22:19
End at: 2018-01-27 02:22:49

# Below is generated by plot.py at 2018-01-27 06:48:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 304.00 Mbit/s
  95th percentile per-packet one-way delay: 98.845 ms
  Loss rate: 0.12%
  -- Flow 1:
    Average throughput: 161.86 Mbit/s
    95th percentile per-packet one-way delay: 104.898 ms
    Loss rate: 0.08%
  -- Flow 2:
    Average throughput: 151.31 Mbit/s
    95th percentile per-packet one-way delay: 99.400 ms
    Loss rate: 0.15%
  -- Flow 3:
    Average throughput: 135.68 Mbit/s
    95th percentile per-packet one-way delay: 81.868 ms
    Loss rate: 0.22%
Run 2: Report of Indigo-1-32 — Data Link

[Graph showing throughput and per-packet one way delay for different flows over time]
Run 3: Statistics of Indigo-1-32

Start at: 2018-01-27 02:36:31
End at: 2018-01-27 02:37:01

# Below is generated by plot.py at 2018-01-27 06:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 323.27 Mbit/s
95th percentile per-packet one-way delay: 104.210 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 184.46 Mbit/s
95th percentile per-packet one-way delay: 100.798 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 163.55 Mbit/s
95th percentile per-packet one-way delay: 104.750 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 94.33 Mbit/s
95th percentile per-packet one-way delay: 109.101 ms
Loss rate: 0.06%
Run 3: Report of Indigo-1-32 — Data Link

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

- Flow 1 ingress (mean 184.53 Mbit/s)
- Flow 1 egress (mean 184.46 Mbit/s)
- Flow 2 ingress (mean 163.65 Mbit/s)
- Flow 2 egress (mean 163.55 Mbit/s)
- Flow 3 ingress (mean 94.44 Mbit/s)
- Flow 3 egress (mean 94.33 Mbit/s)

![Graph 2: Delay vs. Time](image2)

- Flow 1 (95th percentile 100.80 ms)
- Flow 2 (95th percentile 104.75 ms)
- Flow 3 (95th percentile 109.10 ms)
Run 4: Statistics of Indigo-1-32

Start at: 2018-01-27 02:51:21
End at: 2018-01-27 02:51:51

# Below is generated by plot.py at 2018-01-27 06:49:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 351.70 Mbit/s
  95th percentile per-packet one-way delay: 74.155 ms
  Loss rate: 0.00%
  -- Flow 1:
    Average throughput: 192.74 Mbit/s
    95th percentile per-packet one-way delay: 70.086 ms
    Loss rate: 0.00%
  -- Flow 2:
    Average throughput: 168.47 Mbit/s
    95th percentile per-packet one-way delay: 74.743 ms
    Loss rate: 0.00%
  -- Flow 3:
    Average throughput: 146.21 Mbit/s
    95th percentile per-packet one-way delay: 79.253 ms
    Loss rate: 0.00%
Run 4: Report of Indigo-1-32 — Data Link

Throughput (Mbps)

Time (s)

0 5 10 15 20 25 30

- Flow 1 ingress (mean 192.76 Mbps)
- Flow 1 egress (mean 192.74 Mbps)
- Flow 2 ingress (mean 168.51 Mbps)
- Flow 2 egress (mean 168.47 Mbps)
- Flow 3 ingress (mean 146.27 Mbps)
- Flow 3 egress (mean 146.21 Mbps)

Bit-packet one-way delay (ms)

0 5 10 15 20 25 30

- Flow 1 (95th percentile 70.09 ms)
- Flow 2 (95th percentile 74.74 ms)
- Flow 3 (95th percentile 79.25 ms)
Run 5: Statistics of Indigo-1-32

Start at: 2018-01-27 03:05:50
End at: 2018-01-27 03:06:20

# Below is generated by plot.py at 2018-01-27 06:50:00
# Datalink statistics
  -- Total of 3 flows:
    Average throughput: 326.93 Mbit/s
    95th percentile per-packet one-way delay: 82.922 ms
    Loss rate: 0.00%
  -- Flow 1:
    Average throughput: 187.60 Mbit/s
    95th percentile per-packet one-way delay: 77.600 ms
    Loss rate: 0.00%
  -- Flow 2:
    Average throughput: 146.24 Mbit/s
    95th percentile per-packet one-way delay: 83.926 ms
    Loss rate: 0.00%
  -- Flow 3:
    Average throughput: 130.97 Mbit/s
    95th percentile per-packet one-way delay: 87.745 ms
    Loss rate: 0.00%
Run 5: Report of Indigo-1-32 — Data Link

![Graph showing throughput and per-packet one-way delays over time for three flows, with annotations for each flow's throughput and delay statistics.]
Run 6: Statistics of Indigo-1-32

Start at: 2018-01-27 03:20:37
End at: 2018-01-27 03:21:07

# Below is generated by plot.py at 2018-01-27 06:51:10
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 349.85 Mbit/s
  95th percentile per-packet one-way delay: 86.233 ms
  Loss rate: 0.01%
-- Flow 1:
  Average throughput: 187.07 Mbit/s
  95th percentile per-packet one-way delay: 83.398 ms
  Loss rate: 0.01%
-- Flow 2:
  Average throughput: 178.90 Mbit/s
  95th percentile per-packet one-way delay: 86.349 ms
  Loss rate: 0.01%
-- Flow 3:
  Average throughput: 137.52 Mbit/s
  95th percentile per-packet one-way delay: 90.762 ms
  Loss rate: 0.01%
Run 6: Report of Indigo-1-32 — Data Link

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

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

Flow 1 ingress (mean 187.14 Mbit/s)  
Flow 1 egress (mean 187.07 Mbit/s)  
Flow 2 ingress (mean 178.91 Mbit/s)  
Flow 2 egress (mean 178.90 Mbit/s)  
Flow 3 ingress (mean 137.53 Mbit/s)  
Flow 3 egress (mean 137.52 Mbit/s)  

Flow 1 (95th percentile 83.40 ms)  
Flow 2 (95th percentile 86.35 ms)  
Flow 3 (95th percentile 90.76 ms)
Run 7: Statistics of Indigo-1-32

Start at: 2018-01-27 03:35:15
End at: 2018-01-27 03:35:45

# Below is generated by plot.py at 2018-01-27 06:52:39
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 316.31 Mbit/s
  95th percentile per-packet one-way delay: 91.379 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 162.72 Mbit/s
  95th percentile per-packet one-way delay: 86.631 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 162.16 Mbit/s
  95th percentile per-packet one-way delay: 92.856 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 144.79 Mbit/s
  95th percentile per-packet one-way delay: 99.190 ms
  Loss rate: 0.00%
Run 7: Report of Indigo-1-32 — Data Link

Throughput (Mbps)

Time (s)

- Flow 1 ingress (mean 162.73 Mbps)
- Flow 1 egress (mean 162.72 Mbps)
- Flow 2 ingress (mean 162.23 Mbps)
- Flow 2 egress (mean 162.16 Mbps)
- Flow 3 ingress (mean 144.81 Mbps)
- Flow 3 egress (mean 144.79 Mbps)

Per-packet one-way delay (ms)

Time (s)

- Flow 1 (95th percentile 66.63 ms)
- Flow 2 (95th percentile 92.86 ms)
- Flow 3 (95th percentile 99.19 ms)
Run 8: Statistics of Indigo-1-32

Start at: 2018-01-27 03:49:54
End at: 2018-01-27 03:50:24

# Below is generated by plot.py at 2018-01-27 06:52:56
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 343.30 Mbit/s
  95th percentile per-packet one-way delay: 77.567 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 191.73 Mbit/s
  95th percentile per-packet one-way delay: 75.639 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 163.95 Mbit/s
  95th percentile per-packet one-way delay: 78.196 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 132.40 Mbit/s
  95th percentile per-packet one-way delay: 80.095 ms
  Loss rate: 0.00%
Run 8: Report of Indigo-1-32 — Data Link

![Data Link Throughput Graph](image1)

![Data Link Delay Graph](image2)

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Run 9: Statistics of Indigo-1-32

Start at: 2018-01-27 04:04:35
End at: 2018-01-27 04:05:05

# Below is generated by plot.py at 2018-01-27 06:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 358.63 Mbit/s
95th percentile per-packet one-way delay: 78.953 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 194.58 Mbit/s
95th percentile per-packet one-way delay: 75.772 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 183.68 Mbit/s
95th percentile per-packet one-way delay: 79.294 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 131.50 Mbit/s
95th percentile per-packet one-way delay: 83.629 ms
Loss rate: 0.00%
Run 9: Report of Indigo-1-32 — Data Link

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

**Throughput (Mb/s)**

- Flow 1 ing (mean 194.59 Mb/s)
- Flow 1 egress (mean 194.58 Mb/s)
- Flow 2 ing (mean 183.70 Mb/s)
- Flow 2 egress (mean 183.68 Mb/s)
- Flow 3 ing (mean 131.52 Mb/s)
- Flow 3 egress (mean 131.50 Mb/s)

**Packet Delay (ms)**

- Flow 1 (95th percentile 75.77 ms)
- Flow 2 (95th percentile 79.29 ms)
- Flow 3 (95th percentile 83.63 ms)
Run 10: Statistics of Indigo-1-32

End at: 2018-01-27 04:19:50

# Below is generated by plot.py at 2018-01-27 06:54:35
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 350.29 Mbit/s
  95th percentile per-packet one-way delay: 97.506 ms
  Loss rate: 0.05%
-- Flow 1:
  Average throughput: 192.58 Mbit/s
  95th percentile per-packet one-way delay: 93.509 ms
  Loss rate: 0.03%
-- Flow 2:
  Average throughput: 173.44 Mbit/s
  95th percentile per-packet one-way delay: 97.802 ms
  Loss rate: 0.04%
-- Flow 3:
  Average throughput: 133.06 Mbit/s
  95th percentile per-packet one-way delay: 102.454 ms
  Loss rate: 0.16%
Run 10: Report of Indigo-1-32 — Data Link

---

![Graph 1](image1)

**Throughput (Mb/s)** vs **Time (s)**

- Flow 1 ingress (mean 192.64 Mb/s)
- Flow 1 egress (mean 192.58 Mb/s)
- Flow 2 ingress (mean 173.53 Mb/s)
- Flow 2 egress (mean 173.44 Mb/s)
- Flow 3 ingress (mean 133.31 Mb/s)
- Flow 3 egress (mean 133.06 Mb/s)

![Graph 2](image2)

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

- Flow 1 (95th percentile 93.51 ms)
- Flow 2 (95th percentile 97.80 ms)
- Flow 3 (95th percentile 102.45 ms)

---

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Run 1: Statistics of Indigo-1-128

Start at: 2018-01-27 02:10:50
End at: 2018-01-27 02:11:20

# Below is generated by plot.py at 2018-01-27 06:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 330.66 Mbit/s
95th percentile per-packet one-way delay: 83.948 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 183.04 Mbit/s
95th percentile per-packet one-way delay: 83.744 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 173.69 Mbit/s
95th percentile per-packet one-way delay: 83.155 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 107.37 Mbit/s
95th percentile per-packet one-way delay: 85.442 ms
Loss rate: 0.07%
Run 1: Report of Indigo-1-128 — Data Link

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

- Flow 1 ingress (mean 183.08 Mbps)
- Flow 1 egress (mean 183.04 Mbps)
- Flow 2 ingress (mean 173.74 Mbps)
- Flow 2 egress (mean 173.69 Mbps)
- Flow 3 ingress (mean 107.48 Mbps)
- Flow 3 egress (mean 107.37 Mbps)

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

- Flow 1 (95th percentile: 83.74 ms)
- Flow 2 (95th percentile: 83.16 ms)
- Flow 3 (95th percentile: 85.44 ms)
Run 2: Statistics of Indigo-1-128

Start at: 2018-01-27 02:24:54
End at: 2018-01-27 02:25:24

# Below is generated by plot.py at 2018-01-27 06:55:00
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 292.67 Mbit/s
  95th percentile per-packet one-way delay: 102.536 ms
  Loss rate: 0.04%
-- Flow 1:
  Average throughput: 166.87 Mbit/s
  95th percentile per-packet one-way delay: 95.432 ms
  Loss rate: 0.03%
-- Flow 2:
  Average throughput: 158.90 Mbit/s
  95th percentile per-packet one-way delay: 114.943 ms
  Loss rate: 0.06%
-- Flow 3:
  Average throughput: 68.11 Mbit/s
  95th percentile per-packet one-way delay: 90.923 ms
  Loss rate: 0.01%
Run 2: Report of Indigo-1-128 — Data Link

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

- **Throughput**
  - Flow 1 ingress (mean 166.95 Mbit/s)
  - Flow 1 egress (mean 166.87 Mbit/s)
  - Flow 2 ingress (mean 159.02 Mbit/s)
  - Flow 2 egress (mean 158.90 Mbit/s)
  - Flow 3 ingress (mean 68.18 Mbit/s)
  - Flow 3 egress (mean 68.11 Mbit/s)

- **Delay**
  - Flow 1 (95th percentile 95.43 ms)
  - Flow 2 (95th percentile 114.94 ms)
  - Flow 3 (95th percentile 90.92 ms)
Run 3: Statistics of Indigo-1-128

Start at: 2018-01-27 02:39:19
End at: 2018-01-27 02:39:49

# Below is generated by plot.py at 2018-01-27 06:56:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 338.97 Mbit/s
95th percentile per-packet one-way delay: 69.635 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 180.30 Mbit/s
95th percentile per-packet one-way delay: 68.418 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 191.76 Mbit/s
95th percentile per-packet one-way delay: 70.121 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 100.05 Mbit/s
95th percentile per-packet one-way delay: 72.413 ms
Loss rate: 0.03%
Run 3: Report of Indigo-1-128 — Data Link

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

![Graph 2: Per-packet one way delay vs Time](image2)
Run 4: Statistics of Indigo-1-128

Start at: 2018-01-27 02:53:59
End at: 2018-01-27 02:54:29

# Below is generated by plot.py at 2018-01-27 06:57:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 340.53 Mbit/s
95th percentile per-packet one-way delay: 75.366 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.51 Mbit/s
95th percentile per-packet one-way delay: 71.505 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 172.91 Mbit/s
95th percentile per-packet one-way delay: 75.669 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 136.51 Mbit/s
95th percentile per-packet one-way delay: 78.817 ms
Loss rate: 0.00%
Run 4: Report of Indigo-1-128 — Data Link
Run 5: Statistics of Indigo-1-128

Start at: 2018-01-27 03:08:35
End at: 2018-01-27 03:09:05

# Below is generated by plot.py at 2018-01-27 06:58:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 362.06 Mbit/s
  95th percentile per-packet one-way delay: 76.635 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 191.50 Mbit/s
  95th percentile per-packet one-way delay: 72.131 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 195.81 Mbit/s
  95th percentile per-packet one-way delay: 76.942 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 126.27 Mbit/s
  95th percentile per-packet one-way delay: 85.103 ms
  Loss rate: 0.00%
Run 5: Report of Indigo-1-128 — Data Link
Run 6: Statistics of Indigo-1-128

End at: 2018-01-27 03:23:58

# Below is generated by plot.py at 2018-01-27 06:58:25
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 347.52 Mbit/s
  95th percentile per-packet one-way delay: 78.217 ms
  Loss rate: 0.00%
-- Flow 1:
  Average throughput: 198.61 Mbit/s
  95th percentile per-packet one-way delay: 75.000 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 175.95 Mbit/s
  95th percentile per-packet one-way delay: 79.085 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 99.78 Mbit/s
  95th percentile per-packet one-way delay: 81.701 ms
  Loss rate: 0.00%
Run 6: Report of Indigo-1-128 — Data Link
Run 7: Statistics of Indigo-1-128

Start at: 2018-01-27 03:38:00
End at: 2018-01-27 03:38:31

# Below is generated by plot.py at 2018-01-27 06:59:02
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 330.99 Mbit/s
  95th percentile per-packet one-way delay: 83.139 ms
  Loss rate: 0.07%
  -- Flow 1:
  Average throughput: 187.31 Mbit/s
  95th percentile per-packet one-way delay: 77.353 ms
  Loss rate: 0.03%
  -- Flow 2:
  Average throughput: 170.75 Mbit/s
  95th percentile per-packet one-way delay: 85.362 ms
  Loss rate: 0.11%
  -- Flow 3:
  Average throughput: 94.11 Mbit/s
  95th percentile per-packet one-way delay: 90.594 ms
  Loss rate: 0.17%
Run 7: Report of Indigo-1-128 — Data Link

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

- Flow 1 ingress (mean 187.38 Mbit/s)
- Flow 1 egress (mean 187.31 Mbit/s)
- Flow 2 ingress (mean 170.95 Mbit/s)
- Flow 2 egress (mean 170.75 Mbit/s)
- Flow 3 ingress (mean 94.36 Mbit/s)
- Flow 3 egress (mean 94.11 Mbit/s)

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

- Flow 1 (95th percentile 77.35 ms)
- Flow 2 (95th percentile 85.36 ms)
- Flow 3 (95th percentile 90.59 ms)
Run 8: Statistics of Indigo-1-128

Start at: 2018-01-27 03:52:42
End at: 2018-01-27 03:53:12

# Below is generated by plot.py at 2018-01-27 06:59:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 352.39 Mbit/s
  95th percentile per-packet one-way delay: 75.973 ms
  Loss rate: 0.16%
-- Flow 1:
  Average throughput: 196.15 Mbit/s
  95th percentile per-packet one-way delay: 73.982 ms
  Loss rate: 0.12%
-- Flow 2:
  Average throughput: 172.45 Mbit/s
  95th percentile per-packet one-way delay: 76.530 ms
  Loss rate: 0.15%
-- Flow 3:
  Average throughput: 132.44 Mbit/s
  95th percentile per-packet one-way delay: 83.996 ms
  Loss rate: 0.42%
Run 8: Report of Indigo-1-128 — Data Link

![Graphs showing network performance metrics for different flows.](image-url)
Run 9: Statistics of Indigo-1-128

Start at: 2018-01-27 04:07:25
End at: 2018-01-27 04:07:55

# Below is generated by plot.py at 2018-01-27 06:59:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 336.50 Mbit/s
95th percentile per-packet one-way delay: 73.314 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 191.68 Mbit/s
95th percentile per-packet one-way delay: 70.532 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 174.72 Mbit/s
95th percentile per-packet one-way delay: 74.141 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 89.62 Mbit/s
95th percentile per-packet one-way delay: 77.819 ms
Loss rate: 0.08%
Run 10: Statistics of Indigo-1-128

Start at: 2018-01-27 04:22:02

# Below is generated by plot.py at 2018-01-27 06:59:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 350.56 Mbit/s
  95th percentile per-packet one-way delay: 75.688 ms
  Loss rate: 0.08%
-- Flow 1:
  Average throughput: 192.06 Mbit/s
  95th percentile per-packet one-way delay: 73.973 ms
  Loss rate: 0.04%
-- Flow 2:
  Average throughput: 176.49 Mbit/s
  95th percentile per-packet one-way delay: 77.697 ms
  Loss rate: 0.08%
-- Flow 3:
  Average throughput: 128.01 Mbit/s
  95th percentile per-packet one-way delay: 76.242 ms
  Loss rate: 0.21%
Run 10: Report of Indigo-1-128 — Data Link

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

- **Throughput:**
  - Flow 1 ingress (mean 192.16 Mbit/s)
  - Flow 2 ingress (mean 176.65 Mbit/s)
  - Flow 3 ingress (mean 128.29 Mbit/s)
  - Flow 1 egress (mean 192.06 Mbit/s)
  - Flow 2 egress (mean 176.49 Mbit/s)
  - Flow 3 egress (mean 128.01 Mbit/s)

- **Per-packet one-way delay:**
  - Flow 1 (95th percentile 73.97 ms)
  - Flow 2 (95th percentile 77.70 ms)
  - Flow 3 (95th percentile 76.24 ms)