Pantheon Report

Generated at 2018-01-16 02:17:36 (UTC).
Data path: AWS Brazil 2 Ethernet (local) → Colombia ppp0 (remote).
Repeated the test of 14 congestion control schemes 3 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
Tested BBR with qdisc of Fair Queuing (fq), and other schemes with the default Linux qdisc (pfifo_fast).
NTP offsets were measured against gps.ntp.br and have been applied to correct the timestamps in logs.

Git summary:
branch: master @ af8abdfba95588b0c5f2aeaca9e856a1656b0c598
third_party/calibrated_kohoto @ 3cb73c0d1c0322cdaae446ea37a522e53227db50
  M datagrummp/sender.cc
third_party/filip @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6a69e675f7177b69e622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/kohoccc @ f0f2e693303ae82aa808e6928eac4f1083a6681
  M datagrummp/sender.cc
third_party/libutp @ b3465b942b2826f2b179eab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da59ba9013db2674ccfcf93
third_party/pantheon-tunnel @ fb1053193c2861da59ba9013db2674ccfcf93
third_party/pcc @ 1af958fa0d66d18b623c091a55f3ec72b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quotic @ 77961f1a182733a86b42f1bc8143ebc978f3c4f2
third_party/scream @ c3370fd7bd17265a79ae34e016ad23f5965885
third_party/sourdough @ f1a14bfe749734737f611eaeeb30b267ede681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutcomm.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197edd041ace68a42849b2540ad834825f42
test from AWS Brazil 2 Ethernet to Colombia ppp0, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th-%ile delay (ms)</th>
<th>mean loss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP BBR</td>
<td>3</td>
<td>2.18/1.13/0.97</td>
<td>1456.14/1587.36/1581.74</td>
<td>2.02/4.37/19.97</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>3</td>
<td>2.81/0.89/0.19</td>
<td>1745.22/1805.26/1811.93</td>
<td>5.68/15.61/39.44</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>3</td>
<td>1.69/0.92/0.53</td>
<td>257.49/259.47/316.53</td>
<td>0.92/1.13/3.25</td>
</tr>
<tr>
<td>PCC</td>
<td>3</td>
<td>1.03/1.20/1.17</td>
<td>251.58/2155.35/2247.43</td>
<td>11.58/15.08/15.67</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>3</td>
<td>2.68/1.14/0.41</td>
<td>1194.04/1252.42/1287.91</td>
<td>4.51/7.50/16.39</td>
</tr>
<tr>
<td>SCReAM</td>
<td>3</td>
<td>0.08/0.18/0.16</td>
<td>129.05/155.22/127.49</td>
<td>0.13/0.06/0.11</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>3</td>
<td>1.18/0.38/0.09</td>
<td>310.23/290.76/266.56</td>
<td>3.36/5.88/9.61</td>
</tr>
<tr>
<td>Sprout</td>
<td>3</td>
<td>0.20/0.23/0.24</td>
<td>159.07/152.91/154.17</td>
<td>0.16/0.00/0.02</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>3</td>
<td>1.61/1.29/1.05</td>
<td>763.51/310.69/382.67</td>
<td>16.94/23.73/21.55</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>3</td>
<td>2.03/1.07/1.21</td>
<td>1063.58/990.20/940.48</td>
<td>2.64/3.61/6.35</td>
</tr>
<tr>
<td>Verus</td>
<td>3</td>
<td>3.34/0.01/0.01</td>
<td>1640.90/1759.84/1570.53</td>
<td>5.93/6.20/10.00</td>
</tr>
<tr>
<td>Copa</td>
<td>3</td>
<td>47.01/1.54/41.43</td>
<td>2384.00/168.52/147.09</td>
<td>0.00/7.40/17.10</td>
</tr>
<tr>
<td>FillP</td>
<td>1</td>
<td>2.15/1.26/0.58</td>
<td>3046.39/2365.78/2522.30</td>
<td>94.06/98.80/99.74</td>
</tr>
<tr>
<td>Indigo</td>
<td>3</td>
<td>1.66/0.86/1.12</td>
<td>236.48/215.33/200.01</td>
<td>0.92/1.67/5.13</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-01-16 01:29:59
End at: 2018-01-16 01:30:29
Local clock offset: 1.806 ms
Remote clock offset: 0.536 ms

# Below is generated by plot.py at 2018-01-16 02:16:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.15 Mbit/s
95th percentile per-packet one-way delay: 1930.242 ms
Loss rate: 5.90%
-- Flow 1:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 1631.967 ms
Loss rate: 1.41%
-- Flow 2:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 1963.259 ms
Loss rate: 7.02%
-- Flow 3:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 2040.994 ms
Loss rate: 26.33%
Run 1: Report of TCP BBR — Data Link

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

Legend:
- Flow 1 ingress (mean 2.14 Mbit/s)
- Flow 1 egress (mean 2.12 Mbit/s)
- Flow 2 ingress (mean 1.15 Mbit/s)
- Flow 2 egress (mean 1.12 Mbit/s)
- Flow 3 ingress (mean 1.35 Mbit/s)
- Flow 3 egress (mean 1.10 Mbit/s)
Run 2: Statistics of TCP BBR

Start at: 2018-01-16 01:48:52
End at: 2018-01-16 01:49:22
Local clock offset: 2.051 ms
Remote clock offset: 0.265 ms

# Below is generated by plot.py at 2018-01-16 02:16:53
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.19 Mbit/s
  95th percentile per-packet one-way delay: 1705.204 ms
  Loss rate: 5.29%
-- Flow 1:
  Average throughput: 2.31 Mbit/s
  95th percentile per-packet one-way delay: 1675.110 ms
  Loss rate: 3.78%
-- Flow 2:
  Average throughput: 0.97 Mbit/s
  95th percentile per-packet one-way delay: 1687.246 ms
  Loss rate: 1.52%
-- Flow 3:
  Average throughput: 0.92 Mbit/s
  95th percentile per-packet one-way delay: 1725.990 ms
  Loss rate: 21.58%
Run 2: Report of TCP BBR — Data Link

![Graph of throughput and per-packet one-way delay over time for three flows.]
Run 3: Statistics of TCP BBR

Start at: 2018-01-16 02:07:43
End at: 2018-01-16 02:08:13
Local clock offset: 1.873 ms
Remote clock offset: 0.35 ms

# Below is generated by plot.py at 2018-01-16 02:16:53
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.21 Mbit/s
  95th percentile per-packet one-way delay: 1091.628 ms
  Loss rate: 2.87%
-- Flow 1:
  Average throughput: 2.10 Mbit/s
  95th percentile per-packet one-way delay: 1061.347 ms
  Loss rate: 0.87%
-- Flow 2:
  Average throughput: 1.29 Mbit/s
  95th percentile per-packet one-way delay: 1111.585 ms
  Loss rate: 4.56%
-- Flow 3:
  Average throughput: 0.88 Mbit/s
  95th percentile per-packet one-way delay: 978.232 ms
  Loss rate: 12.01%
Run 3: Report of TCP BBR — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2018-01-16 01:37:30
End at: 2018-01-16 01:38:00
Local clock offset: 1.905 ms
Remote clock offset: -3.495 ms

# Below is generated by plot.py at 2018-01-16 02:16:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.76 Mbit/s
95th percentile per-packet one-way delay: 1876.915 ms
Loss rate: 9.33%
-- Flow 1:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 1873.967 ms
Loss rate: 7.12%
-- Flow 2:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 1915.870 ms
Loss rate: 21.31%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1895.908 ms
Loss rate: 51.76%
Run 1: Report of TCP Cubic — Data Link

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

- Blue dashed line: Flow 1 ingress (mean 3.60 Mbit/s)
- Blue solid line: Flow 1 egress (mean 3.26 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 0.93 Mbit/s)
- Green solid line: Flow 2 egress (mean 0.78 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 0.03 Mbit/s)
- Red solid line: Flow 3 egress (mean 0.01 Mbit/s)

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

- Blue line: Flow 1 (95th percentile 1873.97 ms)
- Green line: Flow 2 (95th percentile 1915.87 ms)
- Orange line: Flow 3 (95th percentile 1895.91 ms)
Run 2: Statistics of TCP Cubic

Start at: 2018-01-16 01:56:23
End at: 2018-01-16 01:56:53
Local clock offset: 1.95 ms
Remote clock offset: 1.065 ms

# Below is generated by plot.py at 2018-01-16 02:16:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 2006.919 ms
Loss rate: 8.11%
-- Flow 1:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 1997.238 ms
Loss rate: 7.01%
-- Flow 2:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2036.404 ms
Loss rate: 15.35%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1986.418 ms
Loss rate: 38.25%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2018-01-16 02:15:14
End at: 2018-01-16 02:15:44
Local clock offset: 1.743 ms
Remote clock offset: 2.103 ms

# Below is generated by plot.py at 2018-01-16 02:16:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 1423.920 ms
Loss rate: 6.70%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 1364.466 ms
Loss rate: 2.90%
-- Flow 2:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 1463.496 ms
Loss rate: 10.18%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1553.468 ms
Loss rate: 28.30%
Run 3: Report of TCP Cubic — Data Link
Run 1: Statistics of LEDBAT

Start at: 2018-01-16 01:35:00
End at: 2018-01-16 01:35:30
Local clock offset: 1.867 ms
Remote clock offset: 1.385 ms

# Below is generated by plot.py at 2018-01-16 02:16:54
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.02 Mbit/s
  95th percentile per-packet one-way delay: 271.725 ms
  Loss rate: 0.75%
-- Flow 1:
  Average throughput: 2.20 Mbit/s
  95th percentile per-packet one-way delay: 271.256 ms
  Loss rate: 0.60%
-- Flow 2:
  Average throughput: 1.00 Mbit/s
  95th percentile per-packet one-way delay: 271.941 ms
  Loss rate: 1.11%
-- Flow 3:
  Average throughput: 0.48 Mbit/s
  95th percentile per-packet one-way delay: 278.635 ms
  Loss rate: 1.23%
Run 1: Report of LEDBAT — Data Link

[Graph showing throughput and delay over time for different flows]
Run 2: Statistics of LEDBAT

Start at: 2018-01-16 01:53:53
End at: 2018-01-16 01:54:23
Local clock offset: 1.979 ms
Remote clock offset: 1.051 ms

# Below is generated by plot.py at 2018-01-16 02:16:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 244.446 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 242.535 ms
Loss rate: 1.77%
-- Flow 2:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 244.497 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 403.868 ms
Loss rate: 3.17%
Run 2: Report of LEDBAT — Data Link

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

- **Flow 1**: Ingress (mean 1.00 Mbps), Egress (mean 0.98 Mbps)
- **Flow 2**: Ingress (mean 1.10 Mbps), Egress (mean 1.09 Mbps)
- **Flow 3**: Ingress (mean 0.71 Mbps), Egress (mean 0.69 Mbps)
Run 3: Statistics of LEDBAT

Start at: 2018-01-16 02:12:44
End at: 2018-01-16 02:13:14
Local clock offset: 1.809 ms
Remote clock offset: -4.445 ms

# Below is generated by plot.py at 2018-01-16 02:16:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 258.776 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 258.680 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 261.985 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 267.079 ms
Loss rate: 5.36%
Run 3: Report of LEDBAT — Data Link

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

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

Legend:
- Flow 1 ingress (mean 1.89 Mbit/s)
- Flow 1 egress (mean 1.89 Mbit/s)
- Flow 2 ingress (mean 0.66 Mbit/s)
- Flow 2 egress (mean 0.66 Mbit/s)
- Flow 3 ingress (mean 0.44 Mbit/s)
- Flow 3 egress (mean 0.42 Mbit/s)
Run 1: Statistics of PCC

Start at: 2018-01-16 01:32:30
End at: 2018-01-16 01:33:00
Local clock offset: 1.842 ms
Remote clock offset: 2.323 ms

# Below is generated by plot.py at 2018-01-16 02:16:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 2134.235 ms
Loss rate: 31.96%

-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 3007.915 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1850.535 ms
Loss rate: 11.01%

-- Flow 3:
Average throughput: 3.52 Mbit/s
95th percentile per-packet one-way delay: 2125.519 ms
Loss rate: 31.99%
Run 1: Report of PCC — Data Link

![Graph 1](image1.png)

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

Start at: 2018-01-16 01:51:22
End at: 2018-01-16 01:51:52
Local clock offset: 2.021 ms
Remote clock offset: -4.644 ms

# Below is generated by plot.py at 2018-01-16 02:17:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.41 Mbit/s
95th percentile per-packet one-way delay: 2077.948 ms
Loss rate: 23.11%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 2009.443 ms
Loss rate: 4.29%
-- Flow 2:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 2078.032 ms
Loss rate: 23.12%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 2093.391 ms
Loss rate: 7.24%
Run 2: Report of PCC — Data Link

Throughput (Mbit/s) vs. Time (s)

- Flow 1 ingress (mean 0.00 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 4.68 Mbit/s)
- Flow 2 egress (mean 3.66 Mbit/s)
- Flow 3 ingress (mean 0.00 Mbit/s)
- Flow 3 egress (mean 0.00 Mbit/s)

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

- Flow 1 95th percentile 2093.44 ms
- Flow 2 95th percentile 2078.03 ms
- Flow 3 95th percentile 2093.39 ms
Run 3: Statistics of PCC

Start at: 2018-01-16 02:10:14
End at: 2018-01-16 02:10:44
Local clock offset: 1.857 ms
Remote clock offset: -4.5 ms

# Below is generated by plot.py at 2018-01-16 02:17:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 2607.365 ms
Loss rate: 30.44%
-- Flow 1:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 2607.391 ms
Loss rate: 30.46%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 2537.476 ms
Loss rate: 11.10%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 2523.387 ms
Loss rate: 7.77%
Run 3: Report of PCC — Data Link

![Throughput Graph](image1)

![Delay Graph](image2)

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Flow 1 ingress (mean 4.35 Mbit/s)  
Flow 1 egress (mean 3.04 Mbit/s)  
Flow 2 ingress (mean 0.00 Mbit/s)  
Flow 2 egress (mean 0.00 Mbit/s)  
Flow 3 ingress (mean 0.00 Mbit/s)  
Flow 3 egress (mean 0.00 Mbit/s)  

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Flow 1 (95th percentile 2607.39 ms)  
Flow 2 (95th percentile 2537.48 ms)  
Flow 3 (95th percentile 2523.39 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2018-01-16 01:27:29
End at: 2018-01-16 01:27:59
Local clock offset: 1.705 ms
Remote clock offset: 0.665 ms

# Below is generated by plot.py at 2018-01-16 02:17:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.80 Mbit/s
95th percentile per-packet one-way delay: 661.375 ms
Loss rate: 5.35%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 650.644 ms
Loss rate: 4.69%
-- Flow 2:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 666.359 ms
Loss rate: 5.98%
-- Flow 3:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 678.498 ms
Loss rate: 8.17%
Run 1: Report of QUIC Cubic — Data Link

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

Legend:
- Flow 1 ingress (mean 2.38 Mbit/s)
- Flow 1 egress (mean 2.27 Mbit/s)
- Flow 2 ingress (mean 1.98 Mbit/s)
- Flow 2 egress (mean 1.86 Mbit/s)
- Flow 3 ingress (mean 0.75 Mbit/s)
- Flow 3 egress (mean 0.70 Mbit/s)

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

Legend:
- Flow 1 (95th percentile 650.64 ms)
- Flow 2 (95th percentile 666.36 ms)
- Flow 3 (95th percentile 678.50 ms)
Run 2: Statistics of QUIC Cubic

Start at: 2018-01-16 01:46:21
End at: 2018-01-16 01:46:51
Local clock offset: 2.059 ms
Remote clock offset: -3.748 ms

# Below is generated by plot.py at 2018-01-16 02:17:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 1465.407 ms
Loss rate: 5.42%
-- Flow 1:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 1437.662 ms
Loss rate: 4.38%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 1498.962 ms
Loss rate: 7.74%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1539.059 ms
Loss rate: 19.70%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2018-01-16 02:05:13
End at: 2018-01-16 02:05:43
Local clock offset: 1.858 ms
Remote clock offset: -4.57 ms

# Below is generated by plot.py at 2018-01-16 02:17:06
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.55 Mbit/s
  95th percentile per-packet one-way delay: 1547.813 ms
  Loss rate: 5.47%
-- Flow 1:
  Average throughput: 3.04 Mbit/s
  95th percentile per-packet one-way delay: 1493.807 ms
  Loss rate: 4.47%
-- Flow 2:
  Average throughput: 0.64 Mbit/s
  95th percentile per-packet one-way delay: 1591.928 ms
  Loss rate: 8.77%
-- Flow 3:
  Average throughput: 0.26 Mbit/s
  95th percentile per-packet one-way delay: 1646.181 ms
  Loss rate: 21.29%
Run 3: Report of QUIC Cubic — Data Link
Run 1: Statistics of SCReAM

Start at: 2018-01-16 01:28:44
End at: 2018-01-16 01:29:14
Local clock offset: 1.73 ms
Remote clock offset: 1.472 ms

# Below is generated by plot.py at 2018-01-16 02:17:06
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 169.262 ms
  Loss rate: 0.12%
-- Flow 1:
  Average throughput: 0.08 Mbit/s
  95th percentile per-packet one-way delay: 131.227 ms
  Loss rate: 0.13%
-- Flow 2:
  Average throughput: 0.13 Mbit/s
  95th percentile per-packet one-way delay: 209.079 ms
  Loss rate: 0.17%
-- Flow 3:
  Average throughput: 0.15 Mbit/s
  95th percentile per-packet one-way delay: 128.296 ms
  Loss rate: 0.00%
Run 1: Report of SCReAM — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.08 Mbps)
Flow 1 egress (mean 0.08 Mbps)
Flow 2 ingress (mean 0.13 Mbps)
Flow 2 egress (mean 0.13 Mbps)
Flow 3 ingress (mean 0.15 Mbps)
Flow 3 egress (mean 0.15 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 131.23 ms)  Flow 2 (95th percentile 209.08 ms)  Flow 3 (95th percentile 128.30 ms)
Run 2: Statistics of SCReAM

Start at: 2018-01-16 01:47:37
End at: 2018-01-16 01:48:07
Local clock offset: 2.052 ms
Remote clock offset: -4.616 ms

# Below is generated by plot.py at 2018-01-16 02:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 126.983 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 126.997 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 126.967 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 126.198 ms
Loss rate: 0.33%
Run 2: Report of SCReAM — Data Link

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

- Throughput (kbps)
- Packet delay (ms)

Legend:
- Flow 1 ingress (mean 0.08 Mbps)
- Flow 1 egress (mean 0.08 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)

Note: The graphs illustrate the performance metrics of different flows over time, highlighting variations in throughput and packet delay.
Run 3: Statistics of SCReAM

Start at: 2018-01-16 02:06:28
End at: 2018-01-16 02:06:58
Local clock offset: 1.808 ms
Remote clock offset: -3.666 ms

# Below is generated by plot.py at 2018-01-16 02:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 128.930 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 128.927 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 129.605 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 127.971 ms
Loss rate: 0.00%
Run 1: Statistics of WebRTC media

Start at: 2018-01-16 01:24:58
End at: 2018-01-16 01:25:28
Local clock offset: 1.687 ms
Remote clock offset: 2.323 ms

# Below is generated by plot.py at 2018-01-16 02:17:07
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1.77 Mbit/s
  95th percentile per-packet one-way delay: 213.070 ms
  Loss rate: 6.69%
-- Flow 1:
  Average throughput: 1.31 Mbit/s
  95th percentile per-packet one-way delay: 210.130 ms
  Loss rate: 5.72%
-- Flow 2:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 228.950 ms
  Loss rate: 7.58%
-- Flow 3:
  Average throughput: 0.04 Mbit/s
  95th percentile per-packet one-way delay: 195.870 ms
  Loss rate: 24.75%
Run 1: Report of WebRTC media — Data Link
Run 2: Statistics of WebRTC media

Start at: 2018-01-16 01:43:51
End at: 2018-01-16 01:44:21
Local clock offset: 2.049 ms
Remote clock offset: 1.974 ms

# Below is generated by plot.py at 2018-01-16 02:17:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 385.167 ms
Loss rate: 5.20%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 397.490 ms
Loss rate: 4.16%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 300.256 ms
Loss rate: 9.48%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 238.226 ms
Loss rate: 1.71%
Run 2: Report of WebRTC media — Data Link

[Graph depicting throughput and packet delay over time for different flows.]
Run 3: Statistics of WebRTC media

Start at: 2018-01-16 02:02:43
End at: 2018-01-16 02:03:13
Local clock offset: 1.909 ms
Remote clock offset: -4.552 ms

# Below is generated by plot.py at 2018-01-16 02:17:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1.55 Mbit/s
  95th percentile per-packet one-way delay: 335.386 ms
  Loss rate: 0.48%
-- Flow 1:
  Average throughput: 1.05 Mbit/s
  95th percentile per-packet one-way delay: 323.074 ms
  Loss rate: 0.20%
-- Flow 2:
  Average throughput: 0.37 Mbit/s
  95th percentile per-packet one-way delay: 343.071 ms
  Loss rate: 0.58%
-- Flow 3:
  Average throughput: 0.15 Mbit/s
  95th percentile per-packet one-way delay: 365.599 ms
  Loss rate: 2.38%
Run 3: Report of WebRTC media — Data Link

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

- **Flow 1 ingress (mean 1.05 Mbit/s)**
- **Flow 1 egress (mean 1.05 Mbit/s)**
- **Flow 2 ingress (mean 0.37 Mbit/s)**
- **Flow 2 egress (mean 0.37 Mbit/s)**
- **Flow 3 ingress (mean 0.15 Mbit/s)**
- **Flow 3 egress (mean 0.15 Mbit/s)**
Run 1: Statistics of Sprout

Start at: 2018-01-16 01:36:16
End at: 2018-01-16 01:36:46
Local clock offset: 1.83 ms
Remote clock offset: -4.235 ms

# Below is generated by plot.py at 2018-01-16 02:17:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 152.244 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 159.828 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 150.606 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 151.979 ms
Loss rate: 0.03%
Run 1: Report of Sprout — Data Link
Run 2: Statistics of Sprout

Start at: 2018-01-16 01:55:08
End at: 2018-01-16 01:55:38
Local clock offset: 1.966 ms
Remote clock offset: 1.887 ms

# Below is generated by plot.py at 2018-01-16 02:17:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.42 Mbit/s
  95th percentile per-packet one-way delay: 157.171 ms
  Loss rate: 0.26%
-- Flow 1:
  Average throughput: 0.24 Mbit/s
  95th percentile per-packet one-way delay: 157.548 ms
  Loss rate: 0.46%
-- Flow 2:
  Average throughput: 0.18 Mbit/s
  95th percentile per-packet one-way delay: 146.668 ms
  Loss rate: 0.00%
-- Flow 3:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 149.604 ms
  Loss rate: 0.00%
Run 2: Report of Sprout — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 0.24 Mbit/s)
Flow 1 egress (mean 0.24 Mbit/s)
Flow 2 ingress (mean 0.18 Mbit/s)
Flow 2 egress (mean 0.18 Mbit/s)
Flow 3 ingress (mean 0.21 Mbit/s)
Flow 3 egress (mean 0.21 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 157.55 ms)
Flow 2 (95th percentile 146.67 ms)
Flow 3 (95th percentile 149.60 ms)
Run 3: Statistics of Sprout

Start at: 2018-01-16 02:13:59
End at: 2018-01-16 02:14:29
Local clock offset: 1.778 ms
Remote clock offset: 2.024 ms

# Below is generated by plot.py at 2018-01-16 02:17:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 160.990 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 159.848 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 161.448 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 160.933 ms
Loss rate: 0.03%
Run 3: Report of Sprout — Data Link

[Graph showing network performance metrics for different flows over time]
Run 1: Statistics of TaoVA-100x

Start at: 2018-01-16 01:23:42
End at: 2018-01-16 01:24:12
Local clock offset: 1.744 ms
Remote clock offset: 0.556 ms

# Below is generated by plot.py at 2018-01-16 02:17:16
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.16 Mbit/s
  95th percentile per-packet one-way delay: 354.802 ms
  Loss rate: 10.97%
-- Flow 1:
  Average throughput: 1.83 Mbit/s
  95th percentile per-packet one-way delay: 289.009 ms
  Loss rate: 10.49%
-- Flow 2:
  Average throughput: 1.35 Mbit/s
  95th percentile per-packet one-way delay: 331.363 ms
  Loss rate: 10.07%
-- Flow 3:
  Average throughput: 1.27 Mbit/s
  95th percentile per-packet one-way delay: 522.177 ms
  Loss rate: 15.15%
Run 1: Report of TaoVA-100x — Data Link
Run 2: Statistics of TaoVA-100x

Start at: 2018-01-16 01:42:34
End at: 2018-01-16 01:43:04
Local clock offset: 2.034 ms
Remote clock offset: -3.671 ms

# Below is generated by plot.py at 2018-01-16 02:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 648.720 ms
Loss rate: 19.82%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 796.367 ms
Loss rate: 15.99%
-- Flow 2:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 273.221 ms
Loss rate: 24.47%
-- Flow 3:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 253.172 ms
Loss rate: 23.24%
Run 2: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 1.74 Mbit/s)
- Flow 1 egress (mean 1.60 Mbit/s)
- Flow 2 ingress (mean 1.79 Mbit/s)
- Flow 2 egress (mean 1.36 Mbit/s)
- Flow 3 ingress (mean 1.36 Mbit/s)
- Flow 3 egress (mean 1.05 Mbit/s)

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

- Flow 1 (95th percentile 796.37 ms)
- Flow 2 (95th percentile 273.22 ms)
- Flow 3 (95th percentile 253.17 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2018-01-16 02:01:26  
End at: 2018-01-16 02:01:56  
Local clock offset: 1.912 ms  
Remote clock offset: -4.613 ms

# Below is generated by plot.py at 2018-01-16 02:17:18  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.45 Mbit/s  
95th percentile per-packet one-way delay: 889.001 ms  
Loss rate: 29.08%  
-- Flow 1:  
Average throughput: 1.39 Mbit/s  
95th percentile per-packet one-way delay: 1205.168 ms  
Loss rate: 24.35%  
-- Flow 2:  
Average throughput: 1.16 Mbit/s  
95th percentile per-packet one-way delay: 327.493 ms  
Loss rate: 36.66%  
-- Flow 3:  
Average throughput: 0.82 Mbit/s  
95th percentile per-packet one-way delay: 372.671 ms  
Loss rate: 26.26%
Run 3: Report of TaoVA-100x — Data Link

- **Throughput (Mb/s):**
  - Flow 1 ingress (mean 1.69 Mb/s)
  - Flow 1 egress (mean 1.39 Mb/s)
  - Flow 2 ingress (mean 1.83 Mb/s)
  - Flow 2 egress (mean 1.16 Mb/s)
  - Flow 3 ingress (mean 1.11 Mb/s)
  - Flow 3 egress (mean 0.82 Mb/s)

- **Ping-packet one-way delay (ms):**
  - Flow 1 (95th percentile 1205.17 ms)
  - Flow 2 (95th percentile 327.49 ms)
  - Flow 3 (95th percentile 372.67 ms)
Run 1: Statistics of TCP Vegas

Start at: 2018-01-16 01:31:15
End at: 2018-01-16 01:31:45
Local clock offset: 1.828 ms
Remote clock offset: 1.51 ms

# Below is generated by plot.py at 2018-01-16 02:17:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.72 Mbit/s
  95th percentile per-packet one-way delay: 705.714 ms
  Loss rate: 1.88%
-- Flow 1:
  Average throughput: 1.07 Mbit/s
  95th percentile per-packet one-way delay: 737.224 ms
  Loss rate: 2.10%
-- Flow 2:
  Average throughput: 1.50 Mbit/s
  95th percentile per-packet one-way delay: 456.502 ms
  Loss rate: 1.36%
-- Flow 3:
  Average throughput: 1.97 Mbit/s
  95th percentile per-packet one-way delay: 230.063 ms
  Loss rate: 2.29%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2018-01-16 01:50:07
End at: 2018-01-16 01:50:37
Local clock offset: 2.041 ms
Remote clock offset: 1.064 ms

# Below is generated by plot.py at 2018-01-16 02:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 900.845 ms
Loss rate: 2.71%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 881.115 ms
Loss rate: 1.55%
-- Flow 2:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 889.450 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 959.045 ms
Loss rate: 10.54%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2018-01-16 02:08:58
End at: 2018-01-16 02:09:28
Local clock offset: 1.775 ms
Remote clock offset: 2.015 ms

# Below is generated by plot.py at 2018-01-16 02:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 1605.179 ms
Loss rate: 5.14%
-- Flow 1:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 1572.410 ms
Loss rate: 4.28%
-- Flow 2:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 1624.660 ms
Loss rate: 8.72%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 1632.324 ms
Loss rate: 6.21%
Run 3: Report of TCP Vegas — Data Link
Run 1: Statistics of Verus

Start at: 2018-01-16 01:33:45
End at: 2018-01-16 01:34:15
Local clock offset: 1.84 ms
Remote clock offset: -4.324 ms

# Below is generated by plot.py at 2018-01-16 02:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 1717.877 ms
Loss rate: 8.04%
-- Flow 1:
Average throughput: 3.65 Mbit/s
95th percentile per-packet one-way delay: 1717.877 ms
Loss rate: 8.03%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 2001.461 ms
Loss rate: 9.09%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1532.543 ms
Loss rate: 10.00%
Run 1: Report of Verus — Data Link

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

[Graph 2: Per packet one-way delay (ms) vs Time (s)]
Run 2: Statistics of Verus

Start at: 2018-01-16 01:52:37
End at: 2018-01-16 01:53:07
Local clock offset: 2.003 ms
Remote clock offset: -3.851 ms

# Below is generated by plot.py at 2018-01-16 02:17:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.11 Mbit/s
  95th percentile per-packet one-way delay: 1639.690 ms
  Loss rate: 5.13%
  -- Flow 1:
    Average throughput: 3.10 Mbit/s
    95th percentile per-packet one-way delay: 1639.004 ms
    Loss rate: 5.13%
  -- Flow 2:
    Average throughput: 0.01 Mbit/s
    95th percentile per-packet one-way delay: 1653.135 ms
    Loss rate: 4.76%
  -- Flow 3:
    Average throughput: 0.01 Mbit/s
    95th percentile per-packet one-way delay: 1674.074 ms
    Loss rate: 10.00%
Run 2: Report of Verus — Data Link

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

Legend:
- Flow 1 ingress (mean 3.25 Mbit/s)
- Flow 1 egress (mean 3.10 Mbit/s)
- Flow 2 ingress (mean 0.01 Mbit/s)
- Flow 2 egress (mean 0.01 Mbit/s)
- Flow 3 ingress (mean 0.01 Mbit/s)
- Flow 3 egress (mean 0.01 Mbit/s)
Run 3: Statistics of Verus

Start at: 2018-01-16 02:11:29
End at: 2018-01-16 02:11:59
Local clock offset: 1.845 ms
Remote clock offset: -4.496 ms

# Below is generated by plot.py at 2018-01-16 02:17:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.28 Mbit/s
95th percentile per-packet one-way delay: 1565.850 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 1565.832 ms
Loss rate: 4.62%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1624.923 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1504.981 ms
Loss rate: 10.00%
Run 3: Report of Verus — Data Link

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

- Flow 1 ingress (mean 3.38 Mbit/s)
- Flow 1 egress (mean 3.27 Mbit/s)
- Flow 2 ingress (mean 0.01 Mbit/s)
- Flow 2 egress (mean 0.01 Mbit/s)
- Flow 3 ingress (mean 0.01 Mbit/s)
- Flow 3 egress (mean 0.01 Mbit/s)

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

- Flow 1 95th percentile 1565.83 ms
- Flow 2 95th percentile 1624.92 ms
- Flow 3 95th percentile 1504.98 ms

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Run 1: Statistics of Copa

Start at: 2018-01-16 01:26:14
End at: 2018-01-16 01:26:44
Local clock offset: 1.778 ms
Remote clock offset: 2.336 ms

# Below is generated by plot.py at 2018-01-16 02:17:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 170.911 ms
Loss rate: 0.66%

-- Flow 1:
Average throughput: 137.14 Mbit/s
95th percentile per-packet one-way delay: 2328.757 ms
Loss rate: 0.00%

-- Flow 2:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 171.941 ms
Loss rate: 0.62%

-- Flow 3:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 160.939 ms
Loss rate: 0.80%
Run 1: Report of Copa — Data Link

![Throughput Graph]

![Round-Trip Time Graph]
Run 2: Statistics of Copa

Start at: 2018-01-16 01:45:06
End at: 2018-01-16 01:45:36
Local clock offset: 2.1 ms
Remote clock offset: 1.099 ms

# Below is generated by plot.py at 2018-01-16 02:17:23
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1.35 Mbit/s
  95th percentile per-packet one-way delay: 187.111 ms
  Loss rate: 0.48%
-- Flow 1:
  Average throughput: 2.60 Mbit/s
  95th percentile per-packet one-way delay: 2338.035 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 1.58 Mbit/s
  95th percentile per-packet one-way delay: 192.233 ms
  Loss rate: 0.48%
-- Flow 3:
  Average throughput: 1.01 Mbit/s
  95th percentile per-packet one-way delay: 157.524 ms
  Loss rate: 0.49%
Run 2: Report of Copa — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 0.01 Mbit/s)  Flow 1 egress (mean 2.60 Mbit/s)
Flow 2 ingress (mean 1.30 Mbit/s)  Flow 2 egress (mean 1.58 Mbit/s)
Flow 3 ingress (mean 1.01 Mbit/s)  Flow 3 egress (mean 1.01 Mbit/s)

Round-trip time (ms)

Time (s)

Flow 1 (95th percentile 2338.03 ms)  Flow 2 (95th percentile 192.23 ms)  Flow 3 (95th percentile 157.52 ms)
Run 3: Statistics of Copa

Start at: 2018-01-16 02:03:58  
End at: 2018-01-16 02:04:28  
Local clock offset: 1.877 ms  
Remote clock offset: -3.812 ms  

# Below is generated by plot.py at 2018-01-16 02:17:23  
# Datalink statistics  
-- Total of 3 flows: 
  Average throughput: 0.97 Mbit/s  
  95th percentile per-packet one-way delay: 141.462 ms  
  Loss rate: 21.10%  
-- Flow 1:  
  Average throughput: 1.29 Mbit/s  
  95th percentile per-packet one-way delay: 2485.212 ms  
  Loss rate: 0.00%  
-- Flow 2:  
  Average throughput: 1.45 Mbit/s  
  95th percentile per-packet one-way delay: 141.386 ms  
  Loss rate: 21.09%  
-- Flow 3:  
  Average throughput: 122.26 Mbit/s  
  95th percentile per-packet one-way delay: 122.802 ms  
  Loss rate: 50.00%
Run 3: Report of Copa — Data Link

Throughput (Mbps)

- Flow 1 ingress (mean 0.01 Mbps)
- Flow 1 egress (mean 1.29 Mbps)
- Flow 2 ingress (mean 1.74 Mbps)
- Flow 2 egress (mean 1.45 Mbps)
- Flow 3 ingress (mean 0.01 Mbps)
- Flow 3 egress (mean 122.26 Mbps)

Per-packet one-way delay (ms)

- Flow 1 (95th percentile 2485.21 ms)
- Flow 2 (95th percentile 141.39 ms)
- Flow 3 (95th percentile 122.80 ms)
Run 1: Statistics of FillP

Start at: 2018-01-16 01:22:25
End at: 2018-01-16 01:22:55
Local clock offset: 1.742 ms
Remote clock offset: -4.254 ms

# Below is generated by plot.py at 2018-01-16 02:17:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.02 Mbit/s
95th percentile per-packet one-way delay: 2919.799 ms
Loss rate: 97.98%
-- Flow 1:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 3046.388 ms
Loss rate: 94.06%
-- Flow 2:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 2365.778 ms
Loss rate: 98.80%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 2522.303 ms
Loss rate: 99.74%
Run 1: Report of FillP — Data Link

Throughput (Mbps/s)

- Flow 1 ingress (mean 35.92 Mbps/s)
- Flow 1 egress (mean 2.15 Mbps/s)
- Flow 2 ingress (mean 92.56 Mbps/s)
- Flow 2 egress (mean 1.26 Mbps/s)
- Flow 3 ingress (mean 156.13 Mbps/s)
- Flow 3 egress (mean 0.58 Mbps/s)

Packet one-way delay (ms)

- Flow 1 (95th percentile 3046.39 ms)
- Flow 2 (95th percentile 2365.78 ms)
- Flow 3 (95th percentile 2522.30 ms)
Run 2: Statistics of FillP

Start at: 2018-01-16 01:41:17
End at: 2018-01-16 01:41:47
Local clock offset: 1.938 ms
Remote clock offset: 1.305 ms
Run 2: Report of FillP — Data Link

[Graph showing throughput over time with different flow rates and delays, with legend indicating mean data rates for ingress and egress.]
Run 3: Statistics of FillP

Start at: 2018-01-16 02:00:08
End at: 2018-01-16 02:00:38
Local clock offset: 1.907 ms
Remote clock offset: 1.079 ms
Run 3: Report of FillP — Data Link
Run 1: Statistics of Indigo

Start at: 2018-01-16 01:21:10
End at: 2018-01-16 01:21:40
Local clock offset: 1.741 ms
Remote clock offset: -3.532 ms

# Below is generated by plot.py at 2018-01-16 02:17:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.40 Mbit/s
  95th percentile per-packet one-way delay: 172.647 ms
  Loss rate: 0.80%
-- Flow 1:
  Average throughput: 1.46 Mbit/s
  95th percentile per-packet one-way delay: 172.335 ms
  Loss rate: 0.53%
-- Flow 2:
  Average throughput: 0.84 Mbit/s
  95th percentile per-packet one-way delay: 171.805 ms
  Loss rate: 1.60%
-- Flow 3:
  Average throughput: 1.18 Mbit/s
  95th percentile per-packet one-way delay: 173.974 ms
  Loss rate: 0.64%
Run 1: Report of Indigo — Data Link

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

Throughput (Mbps)

0 5 10 15 20 25 30

Time (s)

Flow 1 ingress (mean 1.46 Mbit/s) — Flow 1 egress (mean 1.46 Mbit/s)
Flow 2 ingress (mean 0.85 Mbit/s) — Flow 2 egress (mean 0.84 Mbit/s)
Flow 3 ingress (mean 1.19 Mbit/s) — Flow 3 egress (mean 1.18 Mbit/s)

Packet loss (percentage)

0 100 200 300 400 500 600 700

Time (s)

Flow 1 (95th percentile 172.34 ms) — Flow 2 (95th percentile 171.81 ms) — Flow 3 (95th percentile 173.97 ms)
Run 2: Statistics of Indigo

Start at: 2018-01-16 01:40:01
End at: 2018-01-16 01:40:31
Local clock offset: 1.984 ms
Remote clock offset: 1.25 ms

# Below is generated by plot.py at 2018-01-16 02:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 246.101 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 263.372 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 225.210 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 225.004 ms
Loss rate: 0.12%
Run 2: Report of Indigo — Data Link

![Graph showing throughput and packet one-way delay over time for different flows.](image-url)
Run 3: Statistics of Indigo

Start at: 2018-01-16 01:58:53
End at: 2018-01-16 01:59:23
Local clock offset: 1.931 ms
Remote clock offset: -4.666 ms

# Below is generated by plot.py at 2018-01-16 02:17:33
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.10 Mbit/s
  95th percentile per-packet one-way delay: 252.301 ms
  Loss rate: 4.11%
-- Flow 1:
  Average throughput: 2.02 Mbit/s
  95th percentile per-packet one-way delay: 273.719 ms
  Loss rate: 2.19%
-- Flow 2:
  Average throughput: 1.09 Mbit/s
  95th percentile per-packet one-way delay: 248.981 ms
  Loss rate: 3.40%
-- Flow 3:
  Average throughput: 1.13 Mbit/s
  95th percentile per-packet one-way delay: 201.040 ms
  Loss rate: 14.62%
Run 3: Report of Indigo — Data Link