Pantheon Report

Generated at 2018-11-03 11:42:44 (UTC).
Data path: GCE Tokyo on ens4 (remote) → GCE Iowa on ens4 (local).
Repeated the test of 18 congestion control schemes 5 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against time.google.com and have been applied to correct the timestamps in logs.

System info:
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b0321a3c6dfe58e562f4
third_party/indigo @ 2601c92e4a9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8a60bbcb967ed70486b6a8f99abb95
third_party/libutp @ b3465b942e2826f2b179eaaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbededc6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
third_party/pcc @ 1af958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8a8d08f92c4eb24f974ab
third_party/proto-quic @ 77961f1a827333a86b42f1bc8143ebc978f3cfcf42
third_party/scream-reproduce @ f099118d1421a3131bf11ff1964974e1da3bd0b
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562539f9a494
M src/verus.hpp
M tools/plot.py
test from GCE Tokyo to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

FillP
Copa
Indigo
QUIC Cubic
TCP Cubic
Indigo-Muses
Sprout
Indigo-96d2da3
PCC-Vivace
SCReAM
TCP Vegas
TCP BBR
Verus
PCC-Allegro
PCC-Expr
WebRTC media
TaoVA-100x
LEDBAT

<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>5</td>
<td>499.55 478.46 442.33</td>
<td>83.47 91.96 87.98</td>
<td>0.47 0.60 1.61</td>
</tr>
<tr>
<td>Copa</td>
<td>5</td>
<td>295.89 289.54 249.24</td>
<td>77.78 80.17 101.68</td>
<td>0.38 0.56 1.40</td>
</tr>
<tr>
<td>TCP Cubic</td>
<td>5</td>
<td>503.38 472.78 439.74</td>
<td>82.65 86.98 90.62</td>
<td>0.43 0.69 1.54</td>
</tr>
<tr>
<td>FillIP</td>
<td>5</td>
<td>574.20 369.58 249.29</td>
<td>82.67 68.73 67.74</td>
<td>0.42 0.51 1.56</td>
</tr>
<tr>
<td>Indigo</td>
<td>5</td>
<td>211.74 198.40 175.81</td>
<td>64.57 65.06 64.83</td>
<td>0.43 0.62 1.40</td>
</tr>
<tr>
<td>Indigo-96d2da3</td>
<td>5</td>
<td>287.33 261.81 245.35</td>
<td>87.76 88.15 92.70</td>
<td>0.28 0.83 1.52</td>
</tr>
<tr>
<td>LEDBAT</td>
<td>5</td>
<td>22.60 15.50 7.55</td>
<td>64.29 63.94 63.94</td>
<td>0.78 1.27 2.57</td>
</tr>
<tr>
<td>Indigo-Muses</td>
<td>5</td>
<td>573.75 501.36 382.98</td>
<td>96.73 99.39 97.45</td>
<td>0.40 0.66 1.78</td>
</tr>
<tr>
<td>PCC-Allegro</td>
<td>5</td>
<td>417.86 295.17 246.24</td>
<td>178.81 135.16 148.33</td>
<td>4.11 1.67 2.82</td>
</tr>
<tr>
<td>PCC-Expr</td>
<td>5</td>
<td>289.79 257.19 177.20</td>
<td>141.70 157.17 96.20</td>
<td>2.65 1.42 1.88</td>
</tr>
<tr>
<td>QUIC Cubic</td>
<td>5</td>
<td>58.00 41.25 24.81</td>
<td>63.60 63.62 63.62</td>
<td>0.58 1.15 1.43</td>
</tr>
<tr>
<td>SCReAM</td>
<td>5</td>
<td>0.22 0.22 0.22</td>
<td>63.40 63.26 63.31</td>
<td>0.38 0.65 1.16</td>
</tr>
<tr>
<td>Sprout</td>
<td>5</td>
<td>6.81 6.73 6.38</td>
<td>63.49 63.49 63.61</td>
<td>0.39 0.63 1.38</td>
</tr>
<tr>
<td>TaoVA-100x</td>
<td>5</td>
<td>224.63 220.62 196.91</td>
<td>64.01 64.37 64.54</td>
<td>0.46 0.69 1.03</td>
</tr>
<tr>
<td>TCP Vegas</td>
<td>5</td>
<td>519.41 468.61 439.33</td>
<td>82.43 92.20 93.24</td>
<td>0.42 0.60 1.23</td>
</tr>
<tr>
<td>Verus</td>
<td>5</td>
<td>146.87 125.02 74.47</td>
<td>137.94 137.64 84.32</td>
<td>0.76 1.76 1.64</td>
</tr>
<tr>
<td>PCC-Vivace</td>
<td>5</td>
<td>330.73 227.23 151.41</td>
<td>84.71 103.21 95.59</td>
<td>0.72 1.08 2.62</td>
</tr>
<tr>
<td>WebRTC media</td>
<td>5</td>
<td>1.73 1.14 0.43</td>
<td>63.35 63.37 63.36</td>
<td>0.54 0.82 1.59</td>
</tr>
</tbody>
</table>
Run 1: Statistics of TCP BBR

Start at: 2018-11-03 06:43:23
End at: 2018-11-03 06:43:53
Local clock offset: -0.024 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-11-03 09:44:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 960.80 Mbit/s
95th percentile per-packet one-way delay: 92.085 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 493.73 Mbit/s
95th percentile per-packet one-way delay: 92.383 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 487.25 Mbit/s
95th percentile per-packet one-way delay: 91.229 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 434.25 Mbit/s
95th percentile per-packet one-way delay: 93.686 ms
Loss rate: 1.64%
Run 1: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 494.03 Mbit/s)
- Flow 1 egress (mean 493.73 Mbit/s)
- Flow 2 ingress (mean 487.73 Mbit/s)
- Flow 2 egress (mean 487.25 Mbit/s)
- Flow 3 ingress (mean 435.88 Mbit/s)
- Flow 3 egress (mean 434.25 Mbit/s)

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

- Flow 1 (95th percentile 92.38 ms)
- Flow 2 (95th percentile 91.23 ms)
- Flow 3 (95th percentile 93.69 ms)
Run 2: Statistics of TCP BBR

Start at: 2018-11-03 07:14:55
End at: 2018-11-03 07:15:25
Local clock offset: 0.003 ms
Remote clock offset: 0.457 ms

# Below is generated by plot.py at 2018-11-03 09:44:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 956.37 Mbit/s
95th percentile per-packet one-way delay: 91.916 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 488.69 Mbit/s
95th percentile per-packet one-way delay: 92.110 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 493.79 Mbit/s
95th percentile per-packet one-way delay: 90.673 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 425.36 Mbit/s
95th percentile per-packet one-way delay: 92.662 ms
Loss rate: 1.67%
Run 2: Report of TCP BBR — Data Link

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

Start at: 2018-11-03 07:46:34
End at: 2018-11-03 07:47:04
Local clock offset: -0.05 ms
Remote clock offset: 0.395 ms

# Below is generated by plot.py at 2018-11-03 09:45:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 987.30 Mbit/s
95th percentile per-packet one-way delay: 79.129 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 512.50 Mbit/s
95th percentile per-packet one-way delay: 74.157 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 486.49 Mbit/s
95th percentile per-packet one-way delay: 85.030 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 459.52 Mbit/s
95th percentile per-packet one-way delay: 82.611 ms
Loss rate: 1.55%
Run 3: Report of TCP BBR — Data Link

![Throughput Graph](image1)

![Delay Graph](image2)
Run 4: Statistics of TCP BBR

Start at: 2018-11-03 08:18:18
End at: 2018-11-03 08:18:48
Local clock offset: -0.14 ms
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2018-11-03 09:45:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 955.78 Mbit/s
95th percentile per-packet one-way delay: 83.980 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 500.68 Mbit/s
95th percentile per-packet one-way delay: 77.809 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 456.73 Mbit/s
95th percentile per-packet one-way delay: 88.470 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 458.96 Mbit/s
95th percentile per-packet one-way delay: 80.381 ms
Loss rate: 1.54%
Run 4: Report of TCP BBR — Data Link
Run 5: Statistics of TCP BBR

Start at: 2018-11-03 08:49:57
End at: 2018-11-03 08:50:27
Local clock offset: -0.068 ms
Remote clock offset: 1.401 ms

# Below is generated by plot.py at 2018-11-03 09:45:11
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 956.05 Mbit/s
  95th percentile per-packet one-way delay: 91.426 ms
  Loss rate: 0.74%
-- Flow 1:
  Average throughput: 502.15 Mbit/s
  95th percentile per-packet one-way delay: 80.869 ms
  Loss rate: 0.47%
-- Flow 2:
  Average throughput: 468.05 Mbit/s
  95th percentile per-packet one-way delay: 104.387 ms
  Loss rate: 0.76%
-- Flow 3:
  Average throughput: 433.58 Mbit/s
  95th percentile per-packet one-way delay: 90.547 ms
  Loss rate: 1.64%
Run 5: Report of TCP BBR — Data Link

![Graph 1: Throughput vs Time for Flow 1 and 2 Ingress and Egress with mean rates 502.41 Mbit/s and 468.67 Mbit/s respectively, and Flow 3 Ingress and Egress with mean rates 435.19 Mbit/s and 433.58 Mbit/s respectively.]

![Graph 2: Per-packet one-way delay vs Time for Flow 1 with 95th percentile 60.87 ms, Flow 2 with 95th percentile 104.39 ms, and Flow 3 with 95th percentile 90.55 ms.]

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Run 1: Statistics of Copa

Start at: 2018-11-03 06:54:38
End at: 2018-11-03 06:55:08
Local clock offset: 0.009 ms
Remote clock offset: -0.071 ms

# Below is generated by plot.py at 2018-11-03 09:45:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 550.39 Mbit/s
95th percentile per-packet one-way delay: 84.731 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 287.50 Mbit/s
95th percentile per-packet one-way delay: 74.815 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 270.15 Mbit/s
95th percentile per-packet one-way delay: 92.901 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 253.29 Mbit/s
95th percentile per-packet one-way delay: 87.981 ms
Loss rate: 1.54%
Run 1: Report of Copa — Data Link

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

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

Start at: 2018-11-03 07:25:54
End at: 2018-11-03 07:26:24
Local clock offset: -0.03 ms
Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2018-11-03 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 597.17 Mbit/s
95th percentile per-packet one-way delay: 90.579 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 320.27 Mbit/s
95th percentile per-packet one-way delay: 92.522 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 290.74 Mbit/s
95th percentile per-packet one-way delay: 86.776 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 254.12 Mbit/s
95th percentile per-packet one-way delay: 91.055 ms
Loss rate: 1.35%
Run 2: Report of Copa — Data Link

[Graphs showing throughput and packet delay over time for different flows]
Run 3: Statistics of Copa

Start at: 2018-11-03 07:58:03
End at: 2018-11-03 07:58:33
Local clock offset: -0.126 ms
Remote clock offset: -0.489 ms

# Below is generated by plot.py at 2018-11-03 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 591.75 Mbit/s
95th percentile per-packet one-way delay: 72.314 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 307.78 Mbit/s
95th percentile per-packet one-way delay: 75.976 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 300.70 Mbit/s
95th percentile per-packet one-way delay: 69.709 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 254.93 Mbit/s
95th percentile per-packet one-way delay: 68.219 ms
Loss rate: 0.83%
Run 3: Report of Copa — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 307.17 Mbps)
Flow 1 egress (mean 307.78 Mbps)
Flow 2 ingress (mean 299.85 Mbps)
Flow 2 egress (mean 300.70 Mbps)
Flow 3 ingress (mean 253.79 Mbps)
Flow 3 egress (mean 254.93 Mbps)

Per-packet mean delay (ms)

Time (s)

Flow 1 (95th percentile 75.98 ms)
Flow 2 (95th percentile 69.71 ms)
Flow 3 (95th percentile 68.22 ms)
Run 4: Statistics of Copa

Start at: 2018-11-03 08:29:30
End at: 2018-11-03 08:30:00
Local clock offset: -0.06 ms
Remote clock offset: 0.155 ms

# Below is generated by plot.py at 2018-11-03 10:02:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 548.49 Mbit/s
  95th percentile per-packet one-way delay: 74.724 ms
  Loss rate: 0.75%
-- Flow 1:
  Average throughput: 277.26 Mbit/s
  95th percentile per-packet one-way delay: 73.527 ms
  Loss rate: 0.47%
-- Flow 2:
  Average throughput: 277.53 Mbit/s
  95th percentile per-packet one-way delay: 79.217 ms
  Loss rate: 0.69%
-- Flow 3:
  Average throughput: 263.83 Mbit/s
  95th percentile per-packet one-way delay: 74.368 ms
  Loss rate: 1.75%
Run 4: Report of Copa — Data Link

[Graph showing throughput and per-packet one-way delay over time.]
Run 5: Statistics of Copa

Start at: 2018-11-03 09:01:09
End at: 2018-11-03 09:01:39
Local clock offset: -0.06 ms
Remote clock offset: 0.474 ms

# Below is generated by plot.py at 2018-11-03 10:03:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 564.21 Mbit/s
95th percentile per-packet one-way delay: 77.873 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 286.64 Mbit/s
95th percentile per-packet one-way delay: 72.083 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 308.58 Mbit/s
95th percentile per-packet one-way delay: 72.233 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 220.01 Mbit/s
95th percentile per-packet one-way delay: 186.754 ms
Loss rate: 1.55%
Run 5: Report of Copa — Data Link
Run 1: Statistics of TCP Cubic

Start at: 2018-11-03 06:38:03
End at: 2018-11-03 06:38:33
Local clock offset: 0.003 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-11-03 10:03:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 883.59 Mbit/s
95th percentile per-packet one-way delay: 81.519 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 447.26 Mbit/s
95th percentile per-packet one-way delay: 76.346 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 446.60 Mbit/s
95th percentile per-packet one-way delay: 83.135 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 423.10 Mbit/s
95th percentile per-packet one-way delay: 66.746 ms
Loss rate: 1.33%
Run 1: Report of TCP Cubic — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 446.75 Mbit/s)
Flow 1 egress (mean 447.26 Mbit/s)
Flow 2 ingress (mean 446.72 Mbit/s)
Flow 2 egress (mean 446.60 Mbit/s)
Flow 3 ingress (mean 423.42 Mbit/s)
Flow 3 egress (mean 423.10 Mbit/s)

Per packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 76.35 ms)
Flow 2 (95th percentile 83.14 ms)
Flow 3 (95th percentile 66.75 ms)
Run 2: Statistics of TCP Cubic

Start at: 2018-11-03 07:09:27  
End at: 2018-11-03 07:09:57  
Local clock offset: 0.025 ms  
Remote clock offset: 1.161 ms

# Below is generated by plot.py at 2018-11-03 10:03:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1004.20 Mbit/s
95th percentile per-packet one-way delay: 85.694 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 527.21 Mbit/s
95th percentile per-packet one-way delay: 74.234 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 489.41 Mbit/s
95th percentile per-packet one-way delay: 89.026 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 460.39 Mbit/s
95th percentile per-packet one-way delay: 84.520 ms
Loss rate: 1.54%
Run 2: Report of TCP Cubic — Data Link
Run 3: Statistics of TCP Cubic

Start at: 2018-11-03 07:41:13
End at: 2018-11-03 07:41:43
Local clock offset: -0.075 ms
Remote clock offset: 0.156 ms

# Below is generated by plot.py at 2018-11-03 10:03:18
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 996.92 Mbit/s
  95th percentile per-packet one-way delay: 87.103 ms
  Loss rate: 0.70%
-- Flow 1:
  Average throughput: 516.93 Mbit/s
  95th percentile per-packet one-way delay: 90.456 ms
  Loss rate: 0.46%
-- Flow 2:
  Average throughput: 493.59 Mbit/s
  95th percentile per-packet one-way delay: 87.575 ms
  Loss rate: 0.72%
-- Flow 3:
  Average throughput: 460.96 Mbit/s
  95th percentile per-packet one-way delay: 79.474 ms
  Loss rate: 1.48%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2018-11-03 08:12:58
End at: 2018-11-03 08:13:28
Local clock offset: -0.144 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-11-03 10:03:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 983.23 Mbit/s
95th percentile per-packet one-way delay: 95.583 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 516.50 Mbit/s
95th percentile per-packet one-way delay: 86.010 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 487.11 Mbit/s
95th percentile per-packet one-way delay: 95.818 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 433.58 Mbit/s
95th percentile per-packet one-way delay: 118.247 ms
Loss rate: 1.63%
Run 4: Report of TCP Cubic — Data Link

**Throughput (Mbps)**

**Time (s)**

- Flow 1 ingress (mean 516.70 Mbit/s)
- Flow 1 egress (mean 516.50 Mbit/s)
- Flow 2 ingress (mean 487.62 Mbit/s)
- Flow 2 egress (mean 487.11 Mbit/s)
- Flow 3 ingress (mean 435.21 Mbit/s)
- Flow 3 egress (mean 433.58 Mbit/s)

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

- Flow 1 (95th percentile 66.01 ms)
- Flow 2 (95th percentile 95.82 ms)
- Flow 3 (95th percentile 118.25 ms)
Run 5: Statistics of TCP Cubic

Start at: 2018-11-03 08:44:37
End at: 2018-11-03 08:45:07
Local clock offset: -0.016 ms
Remote clock offset: -0.117 ms

# Below is generated by plot.py at 2018-11-03 10:04:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 944.98 Mbit/s
95th percentile per-packet one-way delay: 92.529 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 509.02 Mbit/s
95th percentile per-packet one-way delay: 86.218 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 447.20 Mbit/s
95th percentile per-packet one-way delay: 79.362 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 420.66 Mbit/s
95th percentile per-packet one-way delay: 104.118 ms
Loss rate: 1.70%
Run 5: Report of TCP Cubic — Data Link

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

- Flow 1 (mean 509.23 Mbit/s)
- Flow 1 egress (mean 509.02 Mbit/s)
- Flow 2 (mean 447.22 Mbit/s)
- Flow 2 egress (mean 447.20 Mbit/s)
- Flow 3 (mean 422.50 Mbit/s)
- Flow 3 egress (mean 420.66 Mbit/s)
Run 1: Statistics of FillP

Start at: 2018-11-03 06:52:45
End at: 2018-11-03 06:53:15
Local clock offset: 0.009 ms
Remote clock offset: -0.932 ms

# Below is generated by plot.py at 2018-11-03 10:06:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 903.34 Mbit/s
95th percentile per-packet one-way delay: 86.007 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 576.42 Mbit/s
95th percentile per-packet one-way delay: 90.905 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 372.08 Mbit/s
95th percentile per-packet one-way delay: 68.678 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 242.73 Mbit/s
95th percentile per-packet one-way delay: 70.420 ms
Loss rate: 1.71%
Run 1: Report of FillP — Data Link

![Graph showing data link performance over time.]
Run 2: Statistics of FillP

Start at: 2018-11-03 07:24:04
End at: 2018-11-03 07:24:34
Local clock offset: -0.014 ms
Remote clock offset: -0.274 ms

# Below is generated by plot.py at 2018-11-03 10:19:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 877.31 Mbit/s
95th percentile per-packet one-way delay: 70.497 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 545.76 Mbit/s
95th percentile per-packet one-way delay: 71.990 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 370.77 Mbit/s
95th percentile per-packet one-way delay: 68.920 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 260.58 Mbit/s
95th percentile per-packet one-way delay: 67.433 ms
Loss rate: 1.44%
Run 2: Report of FillP — Data Link

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

- **Flow 1 Ingress** (mean 544.65 Mbps)
- **Flow 1 Egress** (mean 545.76 Mbps)
- **Flow 2 Ingress** (mean 370.23 Mbps)
- **Flow 2 Egress** (mean 370.73 Mbps)
- **Flow 3 Ingress** (mean 261.28 Mbps)
- **Flow 3 Egress** (mean 260.58 Mbps)

### Throughput (Mbps)

- **Flow 1 Ingress** (mean 544.65 Mbps)
- **Flow 1 Egress** (mean 545.76 Mbps)
- **Flow 2 Ingress** (mean 370.23 Mbps)
- **Flow 2 Egress** (mean 370.73 Mbps)
- **Flow 3 Ingress** (mean 261.28 Mbps)
- **Flow 3 Egress** (mean 260.58 Mbps)

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

- **Flow 1** (95th percentile 71.99 ms)
- **Flow 2** (95th percentile 68.92 ms)
- **Flow 3** (95th percentile 67.43 ms)
Run 3: Statistics of FillP

Start at: 2018-11-03 07:56:14
End at: 2018-11-03 07:56:44
Local clock offset: -0.124 ms
Remote clock offset: -1.257 ms

# Below is generated by plot.py at 2018-11-03 10:21:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 865.42 Mbit/s
  95th percentile per-packet one-way delay: 70.312 ms
  Loss rate: 0.66%
-- Flow 1:
  Average throughput: 562.30 Mbit/s
  95th percentile per-packet one-way delay: 73.587 ms
  Loss rate: 0.61%
-- Flow 2:
  Average throughput: 331.71 Mbit/s
  95th percentile per-packet one-way delay: 69.280 ms
  Loss rate: 0.54%
-- Flow 3:
  Average throughput: 253.23 Mbit/s
  95th percentile per-packet one-way delay: 66.787 ms
  Loss rate: 1.36%
Run 3: Report of FillP — Data Link

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

- **Flow 1** (ingress mean 563.05 Mbps, egress mean 562.30 Mbps)
- **Flow 2** (ingress mean 332.27 Mbps, egress mean 332.71 Mbps)
- **Flow 3** (ingress mean 253.84 Mbps, egress mean 253.23 Mbps)

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

- **Flow 1** (95th percentile 73.59 ms)
- **Flow 2** (95th percentile 69.28 ms)
- **Flow 3** (95th percentile 66.70 ms)
Run 4: Statistics of FillP

Start at: 2018-11-03 08:27:39
End at: 2018-11-03 08:28:09
Local clock offset: -0.117 ms
Remote clock offset: -0.186 ms

# Below is generated by plot.py at 2018-11-03 10:22:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 896.87 Mbit/s
95th percentile per-packet one-way delay: 89.049 ms
Loss rate: 0.50%

-- Flow 1:
Average throughput: 577.72 Mbit/s
95th percentile per-packet one-way delay: 93.259 ms
Loss rate: 0.30%

-- Flow 2:
Average throughput: 363.61 Mbit/s
95th percentile per-packet one-way delay: 67.459 ms
Loss rate: 0.53%

-- Flow 3:
Average throughput: 238.57 Mbit/s
95th percentile per-packet one-way delay: 66.068 ms
Loss rate: 1.83%
Run 4: Report of FillP — Data Link

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

- Flow 1 Ingress (mean 576.68 Mbit/s)
- Flow 1 Egress (mean 577.72 Mbit/s)
- Flow 2 Ingress (mean 363.09 Mbit/s)
- Flow 2 Egress (mean 363.61 Mbit/s)
- Flow 3 Ingress (mean 240.33 Mbit/s)
- Flow 3 Egress (mean 238.57 Mbit/s)

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

- Flow 1 (95th percentile 93.26 ms)
- Flow 2 (95th percentile 67.46 ms)
- Flow 3 (95th percentile 66.07 ms)
Run 5: Statistics of FillP

Start at: 2018-11-03 08:59:16
End at: 2018-11-03 08:59:46
Local clock offset: -0.032 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2018-11-03 10:23:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 963.23 Mbit/s
95th percentile per-packet one-way delay: 73.870 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 608.81 Mbit/s
95th percentile per-packet one-way delay: 83.603 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 409.72 Mbit/s
95th percentile per-packet one-way delay: 69.302 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 251.34 Mbit/s
95th percentile per-packet one-way delay: 68.005 ms
Loss rate: 1.44%
Run 5: Report of FillP — Data Link

Throughput (Mbps):

- Flow 1 Ingress (mean 610.05 Mbps)
- Flow 1 Egress (mean 608.81 Mbps)
- Flow 2 Ingress (mean 438.86 Mbps)
- Flow 2 Egress (mean 409.72 Mbps)
- Flow 3 Ingress (mean 251.71 Mbps)
- Flow 3 Egress (mean 251.34 Mbps)

Packet delay (ms):

- Flow 1 (95th percentile 83.60 ms)
- Flow 2 (95th percentile 69.30 ms)
- Flow 3 (95th percentile 68.00 ms)
Run 1: Statistics of Indigo

Start at: 2018-11-03 06:48:55
End at: 2018-11-03 06:49:25
Local clock offset: ~0.015 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-11-03 10:23:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 396.00 Mbit/s
  95th percentile per-packet one-way delay: 66.758 ms
  Loss rate: 0.63%
-- Flow 1:
  Average throughput: 199.42 Mbit/s
  95th percentile per-packet one-way delay: 65.952 ms
  Loss rate: 0.41%
-- Flow 2:
  Average throughput: 195.09 Mbit/s
  95th percentile per-packet one-way delay: 69.749 ms
  Loss rate: 0.64%
-- Flow 3:
  Average throughput: 180.64 Mbit/s
  95th percentile per-packet one-way delay: 66.197 ms
  Loss rate: 1.34%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2018-11-03 07:20:19
End at: 2018-11-03 07:20:49
Local clock offset: 0.032 ms
Remote clock offset: 0.201 ms

# Below is generated by plot.py at 2018-11-03 10:23:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 397.62 Mbit/s
95th percentile per-packet one-way delay: 64.616 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 213.47 Mbit/s
95th percentile per-packet one-way delay: 64.568 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 190.65 Mbit/s
95th percentile per-packet one-way delay: 64.390 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 178.64 Mbit/s
95th percentile per-packet one-way delay: 65.409 ms
Loss rate: 1.26%
Run 2: Report of Indigo — Data Link
Run 3: Statistics of Indigo

Start at: 2018-11-03 07:52:25
End at: 2018-11-03 07:52:55
Local clock offset: -0.066 ms
Remote clock offset: -0.221 ms

# Below is generated by plot.py at 2018-11-03 10:23:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 410.84 Mbit/s
95th percentile per-packet one-way delay: 64.927 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 214.73 Mbit/s
95th percentile per-packet one-way delay: 65.039 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 212.68 Mbit/s
95th percentile per-packet one-way delay: 64.227 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 172.24 Mbit/s
95th percentile per-packet one-way delay: 65.609 ms
Loss rate: 1.54%
Run 3: Report of Indigo — Data Link
Run 4: Statistics of Indigo

Start at: 2018-11-03 08:23:52
End at: 2018-11-03 08:24:22
Local clock offset: -0.11 ms
Remote clock offset: 1.136 ms

# Below is generated by plot.py at 2018-11-03 10:23:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.27 Mbit/s
95th percentile per-packet one-way delay: 63.813 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 213.08 Mbit/s
95th percentile per-packet one-way delay: 64.013 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 206.67 Mbit/s
95th percentile per-packet one-way delay: 63.558 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 169.30 Mbit/s
95th percentile per-packet one-way delay: 63.475 ms
Loss rate: 1.34%
Run 4: Report of Indigo — Data Link

![Graph showing throughput and per-packet drop delays over time for different flows.](image_url)
Run 5: Statistics of Indigo

Start at: 2018-11-03 08:55:28
End at: 2018-11-03 08:55:58
Local clock offset: -0.037 ms
Remote clock offset: 1.306 ms

# Below is generated by plot.py at 2018-11-03 10:30:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 399.84 Mbit/s
95th percentile per-packet one-way delay: 63.331 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 217.98 Mbit/s
95th percentile per-packet one-way delay: 63.276 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 186.92 Mbit/s
95th percentile per-packet one-way delay: 63.372 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 178.24 Mbit/s
95th percentile per-packet one-way delay: 63.453 ms
Loss rate: 1.51%
Run 5: Report of Indigo — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 217.91 Mbit/s)  Flow 1 egress (mean 217.98 Mbit/s)
Flow 2 ingress (mean 186.93 Mbit/s)  Flow 2 egress (mean 186.92 Mbit/s)
Flow 3 ingress (mean 178.63 Mbit/s)  Flow 3 egress (mean 178.24 Mbit/s)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 63.28 ms)  Flow 2 (95th percentile 63.37 ms)  Flow 3 (95th percentile 63.45 ms)
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-03 06:56:43
End at: 2018-11-03 06:57:13
Local clock offset: 0.0 ms
Remote clock offset: -0.872 ms

# Below is generated by plot.py at 2018-11-03 10:30:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.63 Mbit/s
95th percentile per-packet one-way delay: 91.858 ms
Loss rate: 0.39%

-- Flow 1:
Average throughput: 283.74 Mbit/s
95th percentile per-packet one-way delay: 90.497 ms
Loss rate: 0.18%

-- Flow 2:
Average throughput: 254.04 Mbit/s
95th percentile per-packet one-way delay: 94.091 ms
Loss rate: 0.44%

-- Flow 3:
Average throughput: 237.86 Mbit/s
95th percentile per-packet one-way delay: 91.182 ms
Loss rate: 1.03%
Run 1: Report of Indigo-96d2da3 — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 283.00 Mbps)
  - Flow 1 egress (mean 283.74 Mbps)
  - Flow 2 ingress (mean 254.72 Mbps)
  - Flow 2 egress (mean 254.06 Mbps)
  - Flow 3 ingress (mean 237.95 Mbps)
  - Flow 3 egress (mean 237.86 Mbps)

- **Packet Size (ms):**
  - Flow 1 (95th percentile 90.50 ms)
  - Flow 2 (95th percentile 94.09 ms)
  - Flow 3 (95th percentile 91.18 ms)
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-03 07:28:23
End at: 2018-11-03 07:28:53
Local clock offset: -0.011 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2018-11-03 10:30:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.47 Mbit/s
95th percentile per-packet one-way delay: 86.536 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 298.62 Mbit/s
95th percentile per-packet one-way delay: 85.892 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 260.02 Mbit/s
95th percentile per-packet one-way delay: 87.048 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 254.12 Mbit/s
95th percentile per-packet one-way delay: 94.222 ms
Loss rate: 0.82%
Run 2: Report of Indigo-96d2da3 — Data Link
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-03 08:00:11
End at: 2018-11-03 08:00:41
Local clock offset: -0.1 ms
Remote clock offset: 1.117 ms

# Below is generated by plot.py at 2018-11-03 10:30:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 543.97 Mbit/s
  95th percentile per-packet one-way delay: 86.955 ms
  Loss rate: 0.94%
-- Flow 1:
  Average throughput: 283.99 Mbit/s
  95th percentile per-packet one-way delay: 86.303 ms
  Loss rate: 0.26%
-- Flow 2:
  Average throughput: 255.41 Mbit/s
  95th percentile per-packet one-way delay: 80.702 ms
  Loss rate: 0.94%
-- Flow 3:
  Average throughput: 276.48 Mbit/s
  95th percentile per-packet one-way delay: 98.047 ms
  Loss rate: 2.99%
Run 3: Report of Indigo-96d2da3 — Data Link

![Graph showing data link performance metrics including throughput and packet delay over time for different flows.](image)


- **Packet Delay**: Flow 1 (95th percentile 86.30 ms), Flow 2 (95th percentile 80.70 ms), Flow 3 (95th percentile 98.05 ms).
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-03 08:31:35
End at: 2018-11-03 08:32:05
Local clock offset: -0.081 ms
Remote clock offset: -0.717 ms

# Below is generated by plot.py at 2018-11-03 10:31:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 539.38 Mbit/s
95th percentile per-packet one-way delay: 89.548 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 278.10 Mbit/s
95th percentile per-packet one-way delay: 87.433 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 276.15 Mbit/s
95th percentile per-packet one-way delay: 91.181 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 239.44 Mbit/s
95th percentile per-packet one-way delay: 90.549 ms
Loss rate: 1.35%
Run 4: Report of Indigo-96d2da3 — Data Link
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-03 09:03:17
End at: 2018-11-03 09:03:47
Local clock offset: -0.076 ms
Remote clock offset: -0.124 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 537.57 Mbit/s
  95th percentile per-packet one-way delay: 88.350 ms
  Loss rate: 0.61%
-- Flow 1:
  Average throughput: 292.18 Mbit/s
  95th percentile per-packet one-way delay: 88.665 ms
  Loss rate: 0.40%
-- Flow 2:
  Average throughput: 263.42 Mbit/s
  95th percentile per-packet one-way delay: 87.749 ms
  Loss rate: 0.66%
-- Flow 3:
  Average throughput: 218.86 Mbit/s
  95th percentile per-packet one-way delay: 89.525 ms
  Loss rate: 1.39%
Run 5: Report of Indigo-96d2da3 — Data Link
Run 1: Statistics of LEDBAT

Start at: 2018-11-03 07:00:23
End at: 2018-11-03 07:00:53
Local clock offset: 0.037 ms
Remote clock offset: -0.66 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 35.89 Mbit/s
  95th percentile per-packet one-way delay: 65.037 ms
  Loss rate: 1.08%
-- Flow 1:
  Average throughput: 23.18 Mbit/s
  95th percentile per-packet one-way delay: 65.190 ms
  Loss rate: 0.84%
-- Flow 2:
  Average throughput: 15.51 Mbit/s
  95th percentile per-packet one-way delay: 64.528 ms
  Loss rate: 1.27%
-- Flow 3:
  Average throughput: 7.51 Mbit/s
  95th percentile per-packet one-way delay: 64.317 ms
  Loss rate: 2.57%
Run 1: Report of LEDBAT — Data Link

![Graph of throughput and packet delay over time for three flows with different mean rates.](image-url)
Run 2: Statistics of LEDBAT

Start at: 2018-11-03 07:32:08
End at: 2018-11-03 07:32:38
Local clock offset: -0.048 ms
Remote clock offset: 0.072 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.70 Mbit/s
95th percentile per-packet one-way delay: 63.818 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 20.00 Mbit/s
95th percentile per-packet one-way delay: 63.803 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 15.43 Mbit/s
95th percentile per-packet one-way delay: 63.803 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 63.885 ms
Loss rate: 2.56%
Run 2: Report of LEDBAT — Data Link

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**Throughput (Mbps)**

- **Flow 1 ingress (mean 20.00 Mbps)**
- **Flow 1 egress (mean 20.00 Mbps)**
- **Flow 2 ingress (mean 15.43 Mbps)**
- **Flow 2 egress (mean 15.43 Mbps)**
- **Flow 3 ingress (mean 7.67 Mbps)**
- **Flow 3 egress (mean 7.57 Mbps)**

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

- **Flow 1 (95th percentile 63.80 ms)**
- **Flow 2 (95th percentile 63.80 ms)**
- **Flow 3 (95th percentile 63.88 ms)**

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Run 3: Statistics of LEDBAT

Start at: 2018-11-03 08:03:55
End at: 2018-11-03 08:04:25
Local clock offset: -0.125 ms
Remote clock offset: -0.535 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.17 Mbit/s
95th percentile per-packet one-way delay: 64.448 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 23.32 Mbit/s
95th percentile per-packet one-way delay: 64.461 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 15.58 Mbit/s
95th percentile per-packet one-way delay: 64.581 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 7.61 Mbit/s
95th percentile per-packet one-way delay: 63.852 ms
Loss rate: 2.56%
Run 3: Report of LEDBAT — Data Link

![Graph](image1.png)

![Graph](image2.png)
Run 4: Statistics of LEDBAT

Start at: 2018-11-03 08:35:36
End at: 2018-11-03 08:36:06
Local clock offset: 0.004 ms
Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 64.066 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 64.124 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.49 Mbit/s
95th percentile per-packet one-way delay: 63.605 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 64.241 ms
Loss rate: 2.56%
Run 4: Report of LEDBAT — Data Link

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

- **Throughput**
  - Flow 1 ingress (mean 23.36 Mbit/s)
  - Flow 1 egress (mean 23.26 Mbit/s)
  - Flow 2 ingress (mean 15.59 Mbit/s)
  - Flow 2 egress (mean 15.49 Mbit/s)
  - Flow 3 ingress (mean 7.68 Mbit/s)
  - Flow 3 egress (mean 7.58 Mbit/s)

- **Delay**
  - Flow 1 (95th percentile 64.12 ms)
  - Flow 2 (95th percentile 63.60 ms)
  - Flow 3 (95th percentile 64.24 ms)
Run 5: Statistics of LEDBAT

Start at: 2018-11-03 09:06:56
End at: 2018-11-03 09:07:26
Local clock offset: -0.048 ms
Remote clock offset: 0.482 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.94 Mbit/s
95th percentile per-packet one-way delay: 63.737 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.22 Mbit/s
95th percentile per-packet one-way delay: 63.868 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.48 Mbit/s
95th percentile per-packet one-way delay: 63.161 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.49 Mbit/s
95th percentile per-packet one-way delay: 63.426 ms
Loss rate: 2.58%
Run 5: Report of LEDBAT — Data Link
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-03 06:34:44
End at: 2018-11-03 06:35:14
Local clock offset: -0.022 ms
Remote clock offset: 0.002 ms

# Below is generated by plot.py at 2018-11-03 10:45:12
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1077.01 Mbit/s
  95th percentile per-packet one-way delay: 96.174 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 591.42 Mbit/s
  95th percentile per-packet one-way delay: 95.153 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 522.75 Mbit/s
  95th percentile per-packet one-way delay: 110.362 ms
  Loss rate: 0.75%
-- Flow 3:
  Average throughput: 423.83 Mbit/s
  95th percentile per-packet one-way delay: 91.953 ms
  Loss rate: 1.52%
Run 1: Report of Indigo-Muses — Data Link
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-03 07:06:09
End at: 2018-11-03 07:06:39
Local clock offset: 0.034 ms
Remote clock offset: -0.085 ms

# Below is generated by plot.py at 2018-11-03 10:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1020.64 Mbit/s
95th percentile per-packet one-way delay: 105.764 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 573.87 Mbit/s
95th percentile per-packet one-way delay: 104.945 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 499.82 Mbit/s
95th percentile per-packet one-way delay: 106.138 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 354.09 Mbit/s
95th percentile per-packet one-way delay: 107.922 ms
Loss rate: 1.94%
Run 2: Report of Indigo-Muses — Data Link

![Throughput Graph](image1)

### Throughput Graph
- **Flow 1 ingress** (mean 573.57 Mbit/s)
- **Flow 1 egress** (mean 573.87 Mbit/s)
- **Flow 2 ingress** (mean 499.67 Mbit/s)
- **Flow 2 egress** (mean 499.82 Mbit/s)
- **Flow 3 ingress** (mean 356.39 Mbit/s)
- **Flow 3 egress** (mean 354.09 Mbit/s)

![Delay Graph](image2)

### Delay Graph
- **Flow 1** (95th percentile 104.94 ms)
- **Flow 2** (95th percentile 106.14 ms)
- **Flow 3** (95th percentile 107.92 ms)
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-03 07:37:54
End at: 2018-11-03 07:38:24
Local clock offset: -0.003 ms
Remote clock offset: 0.566 ms

# Below is generated by plot.py at 2018-11-03 10:45:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1071.13 Mbit/s
95th percentile per-packet one-way delay: 86.269 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 587.23 Mbit/s
95th percentile per-packet one-way delay: 91.445 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 528.09 Mbit/s
95th percentile per-packet one-way delay: 82.983 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 411.42 Mbit/s
95th percentile per-packet one-way delay: 78.576 ms
Loss rate: 1.92%
Run 3: Report of Indigo-Muses — Data Link
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-03 08:09:41
End at: 2018-11-03 08:10:11
Local clock offset: -0.131 ms
Remote clock offset: -0.589 ms

# Below is generated by plot.py at 2018-11-03 10:46:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1012.14 Mbit/s
95th percentile per-packet one-way delay: 91.495 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 554.60 Mbit/s
95th percentile per-packet one-way delay: 88.463 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 506.67 Mbit/s
95th percentile per-packet one-way delay: 97.927 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 376.89 Mbit/s
95th percentile per-packet one-way delay: 85.661 ms
Loss rate: 1.74%
Run 4: Report of Indigo-Muses — Data Link

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

- Flow 1 ingress (mean 554.35 Mbit/s) and egress (mean 554.60 Mbit/s)
- Flow 2 ingress (mean 597.11 Mbit/s) and egress (mean 506.67 Mbit/s)
- Flow 3 ingress (mean 378.55 Mbit/s) and egress (mean 376.89 Mbit/s)
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-03 08:41:22
End at: 2018-11-03 08:41:52
Local clock offset: -0.05 ms
Remote clock offset: -1.391 ms

# Below is generated by plot.py at 2018-11-03 10:46:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 972.10 Mbit/s
95th percentile per-packet one-way delay: 105.084 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 561.65 Mbit/s
95th percentile per-packet one-way delay: 103.647 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 449.47 Mbit/s
95th percentile per-packet one-way delay: 99.526 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 348.69 Mbit/s
95th percentile per-packet one-way delay: 123.137 ms
Loss rate: 1.77%
Run 5: Report of Indigo-Muses — Data Link
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-03 06:41:19
End at: 2018-11-03 06:41:49
Local clock offset: 0.009 ms
Remote clock offset: -0.706 ms

# Below is generated by plot.py at 2018-11-03 10:54:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 724.58 Mbit/s
95th percentile per-packet one-way delay: 191.363 ms
Loss rate: 6.13%
-- Flow 1:
Average throughput: 462.29 Mbit/s
95th percentile per-packet one-way delay: 195.112 ms
Loss rate: 8.25%
-- Flow 2:
Average throughput: 277.09 Mbit/s
95th percentile per-packet one-way delay: 145.280 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 240.74 Mbit/s
95th percentile per-packet one-way delay: 184.903 ms
Loss rate: 4.00%
Run 1: Report of PCC-Allegro — Data Link

**Throughput (Mbps):**
- Flow 1 ingress (mean 501.71 Mbps)
- Flow 1 egress (mean 462.29 Mbps)
- Flow 2 ingress (mean 279.10 Mbps)
- Flow 2 egress (mean 277.09 Mbps)
- Flow 3 ingress (mean 247.57 Mbps)
- Flow 3 egress (mean 240.74 Mbps)

**Packet Delay (ms):**
- Flow 1 (95th percentile 195.11 ms)
- Flow 2 (95th percentile 145.28 ms)
- Flow 3 (95th percentile 104.90 ms)
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-03 07:12:52
End at: 2018-11-03 07:13:22
Local clock offset: 0.011 ms
Remote clock offset: -0.15 ms

# Below is generated by plot.py at 2018-11-03 10:55:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 714.12 Mbit/s
  95th percentile per-packet one-way delay: 183.995 ms
  Loss rate: 3.54%
-- Flow 1:
  Average throughput: 456.14 Mbit/s
  95th percentile per-packet one-way delay: 186.940 ms
  Loss rate: 4.56%
-- Flow 2:
  Average throughput: 267.16 Mbit/s
  95th percentile per-packet one-way delay: 106.011 ms
  Loss rate: 0.75%
-- Flow 3:
  Average throughput: 247.60 Mbit/s
  95th percentile per-packet one-way delay: 184.547 ms
  Loss rate: 3.71%
Run 2: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 475.90 Mbit/s)
- Flow 1 egress (mean 456.14 Mbit/s)
- Flow 2 ingress (mean 267.45 Mbit/s)
- Flow 2 egress (mean 267.16 Mbit/s)
- Flow 3 ingress (mean 253.76 Mbit/s)
- Flow 3 egress (mean 247.69 Mbit/s)

- Flow 1 (95th percentile 186.94 ms)
- Flow 2 (95th percentile 106.01 ms)
- Flow 3 (95th percentile 104.55 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-03 07:44:35
End at: 2018-11-03 07:45:05
Local clock offset: -0.038 ms
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2018-11-03 10:55:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 674.48 Mbit/s
95th percentile per-packet one-way delay: 201.241 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 404.51 Mbit/s
95th percentile per-packet one-way delay: 201.296 ms
Loss rate: 5.36%
-- Flow 2:
Average throughput: 286.41 Mbit/s
95th percentile per-packet one-way delay: 212.998 ms
Loss rate: 4.34%
-- Flow 3:
Average throughput: 245.51 Mbit/s
95th percentile per-packet one-way delay: 80.213 ms
Loss rate: 1.51%
Run 3: Report of PCC-Allegro — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 425.56 Mbps)  Flow 1 egress (mean 404.51 Mbps)
Flow 2 ingress (mean 297.46 Mbps)  Flow 2 egress (mean 286.41 Mbps)
Flow 3 ingress (mean 246.05 Mbps)  Flow 3 egress (mean 243.51 Mbps)

Round trip time (ms)

Time (s)

Flow 1 (95th percentile 201.30 ms)  Flow 2 (95th percentile 213.00 ms)  Flow 3 (95th percentile 80.21 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-03 08:16:20
End at: 2018-11-03 08:16:50
Local clock offset: -0.115 ms
Remote clock offset: 0.497 ms

# Below is generated by plot.py at 2018-11-03 11:09:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 667.69 Mbit/s
95th percentile per-packet one-way delay: 183.453 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 373.97 Mbit/s
95th percentile per-packet one-way delay: 189.576 ms
Loss rate: 1.92%
-- Flow 2:
Average throughput: 320.55 Mbit/s
95th percentile per-packet one-way delay: 127.790 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 248.66 Mbit/s
95th percentile per-packet one-way delay: 137.007 ms
Loss rate: 2.60%
Run 4: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 379.69 Mbit/s)
- Flow 1 egress (mean 373.97 Mbit/s)
- Flow 2 ingress (mean 320.87 Mbit/s)
- Flow 2 egress (mean 320.55 Mbit/s)
- Flow 3 ingress (mean 251.98 Mbit/s)
- Flow 3 egress (mean 248.66 Mbit/s)

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

- Flow 1 (95th percentile 189.58 ms)
- Flow 2 (95th percentile 127.79 ms)
- Flow 3 (95th percentile 137.01 ms)
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-03 08:47:58
End at: 2018-11-03 08:48:28
Local clock offset: -0.031 ms
Remote clock offset: -0.508 ms

# Below is generated by plot.py at 2018-11-03 11:10:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 688.75 Mbit/s
95th percentile per-packet one-way delay: 119.543 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 392.37 Mbit/s
95th percentile per-packet one-way delay: 121.132 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 324.63 Mbit/s
95th percentile per-packet one-way delay: 83.714 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 248.69 Mbit/s
95th percentile per-packet one-way delay: 154.964 ms
Loss rate: 2.27%
Run 5: Report of PCC-Allegro — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 392.46 Mb/s) | Flow 2 ingress (mean 326.48 Mb/s) | Flow 3 ingress (mean 251.22 Mb/s)
Flow 1 egress (mean 392.37 Mb/s) | Flow 2 egress (mean 324.63 Mb/s) | Flow 3 egress (mean 248.69 Mb/s)

Packet round-trip delay (ms)

Time (s)

Flow 1 (95th percentile 121.13 ms) | Flow 2 (95th percentile 83.71 ms) | Flow 3 (95th percentile 154.96 ms)
Run 1: Statistics of PCC-Expr

Start at: 2018-11-03 06:58:24
End at: 2018-11-03 06:58:54
Local clock offset: 0.026 ms
Remote clock offset: 0.47 ms

# Below is generated by plot.py at 2018-11-03 11:10:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 510.42 Mbit/s
95th percentile per-packet one-way delay: 144.888 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 288.40 Mbit/s
95th percentile per-packet one-way delay: 156.257 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 246.60 Mbit/s
95th percentile per-packet one-way delay: 117.718 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 178.63 Mbit/s
95th percentile per-packet one-way delay: 69.319 ms
Loss rate: 1.57%
Run 1: Report of PCC-Expr — Data Link
Run 2: Statistics of PCC-Expr

Start at: 2018-11-03 07:30:05
End at: 2018-11-03 07:30:35
Local clock offset: 0.008 ms
Remote clock offset: -0.697 ms

# Below is generated by plot.py at 2018-11-03 11:10:52
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 541.96 Mbit/s
  95th percentile per-packet one-way delay: 184.300 ms
  Loss rate: 2.80%
-- Flow 1:
  Average throughput: 319.71 Mbit/s
  95th percentile per-packet one-way delay: 188.927 ms
  Loss rate: 3.64%
-- Flow 2:
  Average throughput: 251.62 Mbit/s
  95th percentile per-packet one-way delay: 154.356 ms
  Loss rate: 1.60%
-- Flow 3:
  Average throughput: 168.94 Mbit/s
  95th percentile per-packet one-way delay: 98.042 ms
  Loss rate: 1.42%
Run 2: Report of PCC-Expr — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 330.39 Mbps)
  - Flow 1 egress (mean 319.71 Mbps)
  - Flow 2 ingress (mean 253.98 Mbps)
  - Flow 2 egress (mean 251.62 Mbps)
  - Flow 3 ingress (mean 169.17 Mbps)
  - Flow 3 egress (mean 168.94 Mbps)

- **Round-trip delay (ms):**
  - Flow 1 (95th percentile 188.93 ms)
  - Flow 2 (95th percentile 154.36 ms)
  - Flow 3 (95th percentile 98.04 ms)
Run 3: Statistics of PCC-Expr

Start at: 2018-11-03 08:01:52
End at: 2018-11-03 08:02:22
Local clock offset: -0.107 ms
Remote clock offset: -1.447 ms

# Below is generated by plot.py at 2018-11-03 11:10:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 550.77 Mbit/s
95th percentile per-packet one-way delay: 153.458 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 289.06 Mbit/s
95th percentile per-packet one-way delay: 103.000 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 264.73 Mbit/s
95th percentile per-packet one-way delay: 159.173 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 262.68 Mbit/s
95th percentile per-packet one-way delay: 172.087 ms
Loss rate: 3.13%
Run 3: Report of PCC-Expr — Data Link

![Graph showing throughput and per-packet one-way delay over time for different flows with their respective means and 95th percentiles.](image-url)
Run 4: Statistics of PCC-Expr

Start at: 2018-11-03 08:33:16
End at: 2018-11-03 08:33:46
Local clock offset: -0.076 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.10 Mbit/s
95th percentile per-packet one-way delay: 162.373 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 258.33 Mbit/s
95th percentile per-packet one-way delay: 80.822 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 290.04 Mbit/s
95th percentile per-packet one-way delay: 169.004 ms
Loss rate: 2.28%
-- Flow 3:
Average throughput: 172.08 Mbit/s
95th percentile per-packet one-way delay: 78.244 ms
Loss rate: 1.40%
Run 4: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 258.34 Mbit/s)
- Flow 1 egress (mean 258.33 Mbit/s)
- Flow 2 ingress (mean 294.90 Mbit/s)
- Flow 2 egress (mean 290.04 Mbit/s)
- Flow 3 ingress (mean 172.27 Mbit/s)
- Flow 3 egress (mean 172.08 Mbit/s)
Run 5: Statistics of PCC-Expr

Start at: 2018-11-03 09:04:58  
End at: 2018-11-03 09:05:28  
Local clock offset: -0.098 ms  
Remote clock offset: 1.162 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.94 Mbit/s
95th percentile per-packet one-way delay: 180.906 ms
Loss rate: 4.48%
-- Flow 1:
Average throughput: 293.46 Mbit/s
95th percentile per-packet one-way delay: 179.515 ms
Loss rate: 6.32%
-- Flow 2:
Average throughput: 232.94 Mbit/s
95th percentile per-packet one-way delay: 185.617 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 103.68 Mbit/s
95th percentile per-packet one-way delay: 63.330 ms
Loss rate: 1.90%
Run 5: Report of PCC-Expr — Data Link
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-03 06:40:01
End at: 2018-11-03 06:40:31
Local clock offset: -0.031 ms
Remote clock offset: -0.771 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 63.946 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 58.37 Mbit/s
95th percentile per-packet one-way delay: 63.912 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 43.14 Mbit/s
95th percentile per-packet one-way delay: 63.930 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 17.06 Mbit/s
95th percentile per-packet one-way delay: 64.058 ms
Loss rate: 0.07%
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-03 07:11:33
End at: 2018-11-03 07:12:03
Local clock offset: 0.009 ms
Remote clock offset: -1.346 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 106.28 Mbit/s
95th percentile per-packet one-way delay: 64.653 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 64.44 Mbit/s
95th percentile per-packet one-way delay: 64.644 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 44.03 Mbit/s
95th percentile per-packet one-way delay: 64.668 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 38.44 Mbit/s
95th percentile per-packet one-way delay: 64.664 ms
Loss rate: 2.59%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-03 07:43:17
End at: 2018-11-03 07:43:47
Local clock offset: -0.018 ms
Remote clock offset: -0.741 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 63.858 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 64.59 Mbit/s
95th percentile per-packet one-way delay: 63.668 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 35.47 Mbit/s
95th percentile per-packet one-way delay: 63.944 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 21.12 Mbit/s
95th percentile per-packet one-way delay: 63.680 ms
Loss rate: 0.23%
Run 3: Report of QUIC Cubic — Data Link
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-03 08:15:01
End at: 2018-11-03 08:15:31
Local clock offset: -0.169 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.67 Mbit/s
95th percentile per-packet one-way delay: 62.783 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 51.92 Mbit/s
95th percentile per-packet one-way delay: 62.789 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 51.16 Mbit/s
95th percentile per-packet one-way delay: 62.769 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 20.59 Mbit/s
95th percentile per-packet one-way delay: 62.789 ms
Loss rate: 0.66%
Run 4: Report of QUIC Cubic — Data Link
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-03 08:46:40
End at: 2018-11-03 08:47:10
Local clock offset: -0.023 ms
Remote clock offset: 0.032 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.00 Mbit/s
95th percentile per-packet one-way delay: 62.958 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 50.69 Mbit/s
95th percentile per-packet one-way delay: 62.980 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 32.46 Mbit/s
95th percentile per-packet one-way delay: 62.810 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 26.82 Mbit/s
95th percentile per-packet one-way delay: 62.928 ms
Loss rate: 3.61%
Run 5: Report of QUIC Cubic — Data Link

[Graphs showing throughput and per-packet one-way delay for different flows over time]
Run 1: Statistics of SCReAM

Start at: 2018-11-03 06:36:51
End at: 2018-11-03 06:37:21
Local clock offset: -0.022 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 63.390 ms
  Loss rate: 0.64%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.448 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.174 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.296 ms
  Loss rate: 1.45%
Run 2: Statistics of SCReAM

Start at: 2018-11-03 07:08:14
End at: 2018-11-03 07:08:44
Local clock offset: 0.045 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 63.536 ms
  Loss rate: 0.65%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.559 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.245 ms
  Loss rate: 0.82%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.496 ms
  Loss rate: 1.10%
Run 2: Report of SCReAM — Data Link

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

- **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 one-way delay (ms)**
  - Flow 1 (95th percentile 63.56 ms)
  - Flow 2 (95th percentile 63.24 ms)
  - Flow 3 (95th percentile 63.50 ms)
Run 3: Statistics of SCReAM

Start at: 2018-11-03 07:40:01
End at: 2018-11-03 07:40:31
Local clock offset: -0.043 ms
Remote clock offset: -0.181 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 63.470 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.161 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.558 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 63.087 ms
  Loss rate: 1.08%
Run 3: Report of SCReAM — Data Link
Run 4: Statistics of SCReAM

Start at: 2018-11-03 08:11:45
End at: 2018-11-03 08:12:15
Local clock offset: -0.163 ms
Remote clock offset: 0.041 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 62.918 ms
  Loss rate: 0.58%
-- Flow 1:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.858 ms
  Loss rate: 0.38%
-- Flow 2:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.811 ms
  Loss rate: 0.61%
-- Flow 3:
  Average throughput: 0.22 Mbit/s
  95th percentile per-packet one-way delay: 62.984 ms
  Loss rate: 1.08%
Run 4: Report of SCReAM — Data Link

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

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

![Graph 2: End-to-end delay vs Time (ms)]

- Flow 1 (95th percentile 62.86 ms)
- Flow 2 (95th percentile 62.81 ms)
- Flow 3 (95th percentile 62.98 ms)
Run 5: Statistics of SCReAM

Start at: 2018-11-03 08:43:25
End at: 2018-11-03 08:43:55
Local clock offset: -0.048 ms
Remote clock offset: -0.556 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.952 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.972 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.527 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.662 ms
Loss rate: 1.10%
Run 5: 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 63.07 ms)  Flow 2 (95th percentile 63.53 ms)  Flow 3 (95th percentile 63.66 ms)
Run 1: Statistics of Sprout

Start at: 2018-11-03 07:01:40
End at: 2018-11-03 07:02:10
Local clock offset: 0.022 ms
Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.37 Mbit/s
95th percentile per-packet one-way delay: 63.629 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 63.699 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 63.361 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 63.587 ms
Loss rate: 1.70%
Run 1: Report of Sprout — Data Link

![Graph 1](image1)

Throughput (Mbit/s) vs Time (s):
- Flow 1 ingress (mean 6.89 Mbit/s)
- Flow 1 egress (mean 6.92 Mbit/s)
- Flow 2 ingress (mean 6.74 Mbit/s)
- Flow 2 egress (mean 6.74 Mbit/s)
- Flow 3 ingress (mean 6.12 Mbit/s)
- Flow 3 egress (mean 6.07 Mbit/s)

![Graph 2](image2)

Per-packet one-way delay (ms) vs Time (s):
- Flow 1 (95th percentile 63.70 ms)
- Flow 2 (95th percentile 63.36 ms)
- Flow 3 (95th percentile 63.59 ms)
Run 2: Statistics of Sprout

Start at: 2018-11-03 07:33:24
End at: 2018-11-03 07:33:54
Local clock offset: -0.067 ms
Remote clock offset: -0.483 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 63.893 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 6.81 Mbit/s
95th percentile per-packet one-way delay: 63.782 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 6.70 Mbit/s
95th percentile per-packet one-way delay: 63.840 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 6.53 Mbit/s
95th percentile per-packet one-way delay: 64.002 ms
Loss rate: 1.61%
Run 2: Report of Sprout — Data Link

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

- Flow 1 ingress (mean 6.82 Mbps)
- Flow 1 egress (mean 6.81 Mbps)
- Flow 2 ingress (mean 6.70 Mbps)
- Flow 2 egress (mean 6.70 Mbps)
- Flow 3 ingress (mean 6.54 Mbps)
- Flow 3 egress (mean 6.53 Mbps)

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

- Flow 1 (95th percentile 63.76 ms)
- Flow 2 (95th percentile 63.84 ms)
- Flow 3 (95th percentile 64.00 ms)
Run 3: Statistics of Sprout

Start at: 2018-11-03 08:05:12
End at: 2018-11-03 08:05:42
Local clock offset: -0.124 ms
Remote clock offset: 0.179 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.44 Mbit/s
95th percentile per-packet one-way delay: 63.833 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 63.906 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 63.419 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 64.151 ms
Loss rate: 1.44%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2018-11-03 08:36:53  
End at: 2018-11-03 08:37:23  
Local clock offset: -0.062 ms  
Remote clock offset: 1.135 ms

# Below is generated by plot.py at 2018-11-03 11:13:01  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 13.30 Mbit/s  
95th percentile per-packet one-way delay: 62.669 ms  
Loss rate: 0.58%  
-- Flow 1:  
Average throughput: 6.80 Mbit/s  
95th percentile per-packet one-way delay: 62.262 ms  
Loss rate: 0.49%  
-- Flow 2:  
Average throughput: 6.74 Mbit/s  
95th percentile per-packet one-way delay: 62.939 ms  
Loss rate: 0.26%  
-- Flow 3:  
Average throughput: 6.22 Mbit/s  
95th percentile per-packet one-way delay: 62.450 ms  
Loss rate: 1.58%
Run 4: Report of Sprout — Data Link
Run 5: Statistics of Sprout

Start at: 2018-11-03 09:08:13
End at: 2018-11-03 09:08:43
Local clock offset: -0.105 ms
Remote clock offset: -0.34 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.29 Mbit/s
95th percentile per-packet one-way delay: 63.861 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 63.818 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 63.903 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 63.861 ms
Loss rate: 0.56%
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-03 06:50:44
End at: 2018-11-03 06:51:14
Local clock offset: 0.009 ms
Remote clock offset: -0.745 ms

# Below is generated by plot.py at 2018-11-03 11:20:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 423.27 Mbit/s
95th percentile per-packet one-way delay: 64.670 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 214.81 Mbit/s
95th percentile per-packet one-way delay: 64.401 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 221.16 Mbit/s
95th percentile per-packet one-way delay: 64.607 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 186.24 Mbit/s
95th percentile per-packet one-way delay: 65.879 ms
Loss rate: 0.48%
Run 1: Report of TaoVA-100x — Data Link

![Graph 1: Throughput vs. Time]

- **Flow 1 ingress (mean 214.85 Mbit/s)**
- **Flow 1 egress (mean 214.81 Mbit/s)**
- **Flow 2 ingress (mean 221.27 Mbit/s)**
- **Flow 2 egress (mean 221.16 Mbit/s)**
- **Flow 3 ingress (mean 184.83 Mbit/s)**
- **Flow 3 egress (mean 186.24 Mbit/s)**

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

- **Flow 1 (95th percentile 64.40 ms)**
- **Flow 2 (95th percentile 64.61 ms)**
- **Flow 3 (95th percentile 65.88 ms)**
Run 2: Statistics of TaoVA-100x

Start at: 2018-11-03 07:22:10
End at: 2018-11-03 07:22:40
Local clock offset: -0.006 ms
Remote clock offset: -0.176 ms

# Below is generated by plot.py at 2018-11-03 11:21:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 435.17 Mbit/s
  95th percentile per-packet one-way delay: 63.330 ms
  Loss rate: 0.57%
-- Flow 1:
  Average throughput: 223.09 Mbit/s
  95th percentile per-packet one-way delay: 63.348 ms
  Loss rate: 0.49%
-- Flow 2:
  Average throughput: 219.79 Mbit/s
  95th percentile per-packet one-way delay: 63.316 ms
  Loss rate: 0.74%
-- Flow 3:
  Average throughput: 200.92 Mbit/s
  95th percentile per-packet one-way delay: 63.253 ms
  Loss rate: 0.48%
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-11-03 07:54:18
End at: 2018-11-03 07:54:48
Local clock offset: -0.079 ms
Remote clock offset: -1.59 ms

# Below is generated by plot.py at 2018-11-03 11:21:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 443.53 Mbit/s
95th percentile per-packet one-way delay: 64.854 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 233.60 Mbit/s
95th percentile per-packet one-way delay: 64.590 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 216.21 Mbit/s
95th percentile per-packet one-way delay: 64.914 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 201.30 Mbit/s
95th percentile per-packet one-way delay: 65.302 ms
Loss rate: 0.90%
Run 3: Report of TaoVA-100x — Data Link
Run 4: Statistics of TaoVA-100x

Start at: 2018-11-03 08:25:44
End at: 2018-11-03 08:26:14
Local clock offset: -0.103 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2018-11-03 11:21:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 432.06 Mbit/s
95th percentile per-packet one-way delay: 64.681 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 220.11 Mbit/s
95th percentile per-packet one-way delay: 64.310 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 217.19 Mbit/s
95th percentile per-packet one-way delay: 64.838 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 205.05 Mbit/s
95th percentile per-packet one-way delay: 65.361 ms
Loss rate: 1.56%
Run 4: Report of TaoVA-100x — Data Link
Run 5: Statistics of TaoVA-100x

Start at: 2018-11-03 08:57:20
End at: 2018-11-03 08:57:50
Local clock offset: -0.041 ms
Remote clock offset: 0.149 ms

# Below is generated by plot.py at 2018-11-03 11:24:47
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 446.42 Mbit/s
  95th percentile per-packet one-way delay: 63.619 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 231.53 Mbit/s
  95th percentile per-packet one-way delay: 63.378 ms
  Loss rate: 0.46%
-- Flow 2:
  Average throughput: 228.75 Mbit/s
  95th percentile per-packet one-way delay: 64.188 ms
  Loss rate: 0.67%
-- Flow 3:
  Average throughput: 191.05 Mbit/s
  95th percentile per-packet one-way delay: 62.904 ms
  Loss rate: 1.74%
Run 5: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 231.61 Mbit/s)
- Flow 1 egress (mean 231.53 Mbit/s)
- Flow 2 ingress (mean 228.85 Mbit/s)
- Flow 2 egress (mean 228.75 Mbit/s)
- Flow 3 ingress (mean 191.96 Mbit/s)
- Flow 3 egress (mean 191.05 Mbit/s)
Run 1: Statistics of TCP Vegas

Start at: 2018-11-03 06:32:43
End at: 2018-11-03 06:33:13
Local clock offset: -0.036 ms
Remote clock offset: 1.138 ms

# Below is generated by plot.py at 2018-11-03 11:29:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 971.29 Mbit/s
95th percentile per-packet one-way delay: 95.694 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 515.12 Mbit/s
95th percentile per-packet one-way delay: 89.631 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 468.75 Mbit/s
95th percentile per-packet one-way delay: 107.859 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 439.55 Mbit/s
95th percentile per-packet one-way delay: 95.832 ms
Loss rate: 1.33%
Run 1: Report of TCP Vegas — Data Link
Run 2: Statistics of TCP Vegas

Start at: 2018-11-03 07:04:07
End at: 2018-11-03 07:04:37
Local clock offset: 0.019 ms
Remote clock offset: -0.053 ms

# Below is generated by plot.py at 2018-11-03 11:31:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 958.59 Mbit/s
95th percentile per-packet one-way delay: 97.892 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 528.91 Mbit/s
95th percentile per-packet one-way delay: 76.298 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 426.32 Mbit/s
95th percentile per-packet one-way delay: 91.550 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 444.35 Mbit/s
95th percentile per-packet one-way delay: 118.882 ms
Loss rate: 1.60%
Run 2: Report of TCP Vegas — Data Link

![Graph 1: Throughput vs Time]

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

Legend:
- Flow 1 ingress (mean 529.05 Mbit/s)
- Flow 1 egress (mean 528.91 Mbit/s)
- Flow 2 ingress (mean 426.60 Mbit/s)
- Flow 2 egress (mean 426.32 Mbit/s)
- Flow 3 ingress (mean 445.88 Mbit/s)
- Flow 3 egress (mean 444.35 Mbit/s)
Run 3: Statistics of TCP Vegas

Start at: 2018-11-03 07:35:51
End at: 2018-11-03 07:36:21
Local clock offset: -0.035 ms
Remote clock offset: -0.283 ms

# Below is generated by plot.py at 2018-11-03 11:32:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 993.75 Mbit/s
95th percentile per-packet one-way delay: 82.622 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 509.89 Mbit/s
95th percentile per-packet one-way delay: 85.636 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 491.01 Mbit/s
95th percentile per-packet one-way delay: 81.958 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 478.17 Mbit/s
95th percentile per-packet one-way delay: 75.529 ms
Loss rate: 1.49%
Run 3: Report of TCP Vegas — Data Link

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

Throughput (Mbps):
- Flow 1 ingress (mean 509.26 Mbps)
- Flow 1 egress (mean 509.89 Mbps)
- Flow 2 ingress (mean 490.25 Mbps)
- Flow 2 egress (mean 491.01 Mbps)
- Flow 3 ingress (mean 479.27 Mbps)
- Flow 3 egress (mean 478.17 Mbps)

Per-packet one-way delay (ms):
- Flow 1 (95th percentile 85.64 ms)
- Flow 2 (95th percentile 83.96 ms)
- Flow 3 (95th percentile 75.53 ms)
Run 4: Statistics of TCP Vegas

Start at: 2018-11-03 08:07:39
End at: 2018-11-03 08:08:09
Local clock offset: -0.117 ms
Remote clock offset: -0.195 ms

# Below is generated by plot.py at 2018-11-03 11:40:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 979.69 Mbit/s
95th percentile per-packet one-way delay: 91.249 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 523.51 Mbit/s
95th percentile per-packet one-way delay: 76.822 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 471.08 Mbit/s
95th percentile per-packet one-way delay: 88.647 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 433.68 Mbit/s
95th percentile per-packet one-way delay: 104.309 ms
Loss rate: 0.28%
Run 4: Report of TCP Vegas — Data Link

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

Flow 1 ingress (mean 523.68 Mbit/s)  Flow 1 egress (mean 523.51 Mbit/s)
Flow 2 ingress (mean 470.46 Mbit/s)  Flow 2 egress (mean 471.08 Mbit/s)
Flow 3 ingress (mean 429.31 Mbit/s)  Flow 3 egress (mean 433.68 Mbit/s)
Run 5: Statistics of TCP Vegas

Start at: 2018-11-03 08:39:20
End at: 2018-11-03 08:39:50
Local clock offset: -0.058 ms
Remote clock offset: -0.945 ms

# Below is generated by plot.py at 2018-11-03 11:40:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 974.72 Mbit/s
  95th percentile per-packet one-way delay: 89.006 ms
  Loss rate: 0.69%
-- Flow 1:
  Average throughput: 519.63 Mbit/s
  95th percentile per-packet one-way delay: 83.767 ms
  Loss rate: 0.46%
-- Flow 2:
  Average throughput: 485.91 Mbit/s
  95th percentile per-packet one-way delay: 90.984 ms
  Loss rate: 0.73%
-- Flow 3:
  Average throughput: 400.89 Mbit/s
  95th percentile per-packet one-way delay: 71.647 ms
  Loss rate: 1.46%
Run 5: Report of TCP Vegas — Data Link
Run 1: Statistics of Verus

Start at: 2018-11-03 06:47:16
End at: 2018-11-03 06:47:46
Local clock offset: -0.029 ms
Remote clock offset: -0.321 ms

# Below is generated by plot.py at 2018-11-03 11:40:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 265.00 Mbit/s
  95th percentile per-packet one-way delay: 183.944 ms
  Loss rate: 1.18%
-- Flow 1:
  Average throughput: 176.52 Mbit/s
  95th percentile per-packet one-way delay: 192.367 ms
  Loss rate: 1.22%
-- Flow 2:
  Average throughput: 91.80 Mbit/s
  95th percentile per-packet one-way delay: 85.031 ms
  Loss rate: 1.26%
-- Flow 3:
  Average throughput: 84.43 Mbit/s
  95th percentile per-packet one-way delay: 74.500 ms
  Loss rate: 0.67%
Run 1: Report of Verus — Data Link

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

Legend:
- Flow 1 ingress (mean 179.11 Mbit/s)
- Flow 1 egress (mean 176.52 Mbit/s)
- Flow 2 ingress (mean 92.39 Mbit/s)
- Flow 2 egress (mean 91.80 Mbit/s)
- Flow 3 ingress (mean 83.63 Mbit/s)
- Flow 3 egress (mean 84.43 Mbit/s)

Per-packet end-to-end delay (ms):
- Flow 1 (95th percentile 192.37 ms)
- Flow 2 (95th percentile 85.03 ms)
- Flow 3 (95th percentile 74.50 ms)
Run 2: Statistics of Verus

Start at: 2018-11-03 07:18:42
End at: 2018-11-03 07:19:12
Local clock offset: -0.002 ms
Remote clock offset: 0.229 ms

# Below is generated by plot.py at 2018-11-03 11:40:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 242.87 Mbit/s
95th percentile per-packet one-way delay: 118.373 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 119.50 Mbit/s
95th percentile per-packet one-way delay: 143.755 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 155.43 Mbit/s
95th percentile per-packet one-way delay: 99.300 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 62.77 Mbit/s
95th percentile per-packet one-way delay: 70.940 ms
Loss rate: 1.26%
Run 2: Report of Verus — Data Link
Run 3: Statistics of Verus

Start at: 2018-11-03 07:50:47
End at: 2018-11-03 07:51:17
Local clock offset: -0.055 ms
Remote clock offset: 0.781 ms

# Below is generated by plot.py at 2018-11-03 11:40:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 256.94 Mbit/s
95th percentile per-packet one-way delay: 122.490 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 142.10 Mbit/s
95th percentile per-packet one-way delay: 105.264 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 112.59 Mbit/s
95th percentile per-packet one-way delay: 123.259 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 122.65 Mbit/s
95th percentile per-packet one-way delay: 138.434 ms
Loss rate: 1.77%
Run 3: Report of Verus — Data Link

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**Throughput** (Mbps):

- **Flow 1 ingress** (mean 142.88 Mbps)
- **Flow 1 egress** (mean 142.10 Mbps)
- **Flow 2 ingress** (mean 112.17 Mbps)
- **Flow 2 egress** (mean 112.59 Mbps)
- **Flow 3 ingress** (mean 126.17 Mbps)
- **Flow 3 egress** (mean 122.65 Mbps)

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

- **Flow 1** (95th percentile 105.26 ms)
- **Flow 2** (95th percentile 123.26 ms)
- **Flow 3** (95th percentile 138.43 ms)
Run 4: Statistics of Verus

Start at: 2018-11-03 08:22:14
End at: 2018-11-03 08:22:44
Local clock offset: -0.139 ms
Remote clock offset: 0.512 ms

# Below is generated by plot.py at 2018-11-03 11:40:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 259.77 Mbit/s
95th percentile per-packet one-way delay: 139.879 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 146.66 Mbit/s
95th percentile per-packet one-way delay: 145.032 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 144.29 Mbit/s
95th percentile per-packet one-way delay: 137.768 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 53.70 Mbit/s
95th percentile per-packet one-way delay: 68.075 ms
Loss rate: 1.60%
Run 4: Report of Verus — Data Link

[Graph showing throughput and per-packet end-to-end delay over time for different flows, with annotations for mean throughput and 95th percentile delay for each flow.]

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Run 5: Statistics of Verus

Start at: 2018-11-03 08:53:51
End at: 2018-11-03 08:54:21
Local clock offset: -0.047 ms
Remote clock offset: -0.111 ms

# Below is generated by plot.py at 2018-11-03 11:40:51
# Datalink statistics
-- Total of 3 flows:
95th percentile per-packet one-way delay: 213.824 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 149.58 Mbit/s
95th percentile per-packet one-way delay: 103.262 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 120.97 Mbit/s
95th percentile per-packet one-way delay: 242.856 ms
Loss rate: 5.89%
-- Flow 3:
Average throughput: 48.78 Mbit/s
95th percentile per-packet one-way delay: 69.668 ms
Loss rate: 2.89%
Run 5: Report of Verus — Data Link
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-03 06:45:24
End at: 2018-11-03 06:45:54
Local clock offset: -0.008 ms
Remote clock offset: -0.243 ms

# Below is generated by plot.py at 2018-11-03 11:41:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 561.05 Mbit/s
  95th percentile per-packet one-way delay: 95.751 ms
  Loss rate: 0.55%
-- Flow 1:
  Average throughput: 316.29 Mbit/s
  95th percentile per-packet one-way delay: 68.440 ms
  Loss rate: 0.44%
-- Flow 2:
  Average throughput: 297.11 Mbit/s
  95th percentile per-packet one-way delay: 134.088 ms
  Loss rate: 0.43%
-- Flow 3:
  Average throughput: 145.31 Mbit/s
  95th percentile per-packet one-way delay: 80.943 ms
  Loss rate: 1.79%
Run 1: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 316.31 Mbit/s)
- Flow 1 egress (mean 316.29 Mbit/s)
- Flow 2 ingress (mean 296.46 Mbit/s)
- Flow 2 egress (mean 297.11 Mbit/s)
- Flow 3 ingress (mean 146.04 Mbit/s)
- Flow 3 egress (mean 145.31 Mbit/s)

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

- Flow 1 (95th percentile 68.44 ms)
- Flow 2 (95th percentile 134.09 ms)
- Flow 3 (95th percentile 80.94 ms)
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-03 07:16:57
End at: 2018-11-03 07:17:27
Local clock offset: -0.004 ms
Remote clock offset: -0.25 ms

# Below is generated by plot.py at 2018-11-03 11:41:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 455.24 Mbit/s
95th percentile per-packet one-way delay: 89.073 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 339.43 Mbit/s
95th percentile per-packet one-way delay: 102.753 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 120.72 Mbit/s
95th percentile per-packet one-way delay: 94.433 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 109.28 Mbit/s
95th percentile per-packet one-way delay: 64.238 ms
Loss rate: 1.92%
Run 2: Report of PCC-Vivace — Data Link

![Graph showing throughput and packet delay over time]

- **Throughput (Mbps):**
  - Flow 1 ingress: Mean 342.06 Mbps, Egress: Mean 339.43 Mbps
  - Flow 2 ingress: Mean 121.24 Mbps, Egress: Mean 120.72 Mbps
  - Flow 3 ingress: Mean 110.00 Mbps, Egress: Mean 109.28 Mbps

- **Packet Delay (ms):**
  - Flow 1 (95th percentile: 102.75 ms)
  - Flow 2 (95th percentile: 94.43 ms)
  - Flow 3 (95th percentile: 64.24 ms)
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-03 07:48:58
End at: 2018-11-03 07:49:28
Local clock offset: -0.025 ms
Remote clock offset: -0.189 ms

# Below is generated by plot.py at 2018-11-03 11:41:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 505.03 Mbit/s
  95th percentile per-packet one-way delay: 139.681 ms
  Loss rate: 1.68%
-- Flow 1:
  Average throughput: 325.93 Mbit/s
  95th percentile per-packet one-way delay: 75.578 ms
  Loss rate: 1.10%
-- Flow 2:
  Average throughput: 248.88 Mbit/s
  95th percentile per-packet one-way delay: 159.440 ms
  Loss rate: 2.44%
-- Flow 3:
  Average throughput: 42.86 Mbit/s
  95th percentile per-packet one-way delay: 175.172 ms
  Loss rate: 5.86%
Run 3: Report of PCC-Vivace — Data Link
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-03 08:20:20
End at: 2018-11-03 08:20:50
Local clock offset: -0.106 ms
Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2018-11-03 11:42:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 568.56 Mbit/s
95th percentile per-packet one-way delay: 68.931 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 335.98 Mbit/s
95th percentile per-packet one-way delay: 69.960 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 224.62 Mbit/s
95th percentile per-packet one-way delay: 63.949 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 255.32 Mbit/s
95th percentile per-packet one-way delay: 91.202 ms
Loss rate: 1.50%
Run 4: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 335.62 Mbit/s)
- Flow 1 egress (mean 335.98 Mbit/s)
- Flow 2 ingress (mean 224.57 Mbit/s)
- Flow 2 egress (mean 224.62 Mbit/s)
- Flow 3 ingress (mean 255.89 Mbit/s)
- Flow 3 egress (mean 255.32 Mbit/s)

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

- Flow 1 (95th percentile 69.96 ms)
- Flow 2 (95th percentile 63.95 ms)
- Flow 3 (95th percentile 91.20 ms)
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-03 08:51:58
End at: 2018-11-03 08:52:28
Local clock offset: -0.024 ms
Remote clock offset: 0.664 ms

# Below is generated by plot.py at 2018-11-03 11:42:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 565.28 Mbit/s
95th percentile per-packet one-way delay: 85.458 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 336.00 Mbit/s
95th percentile per-packet one-way delay: 106.823 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 244.81 Mbit/s
95th percentile per-packet one-way delay: 64.139 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 204.28 Mbit/s
95th percentile per-packet one-way delay: 66.396 ms
Loss rate: 2.01%
Run 5: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 336.42 Mbit/s), Flow 1 egress (mean 336.00 Mbit/s)
- Flow 2 ingress (mean 245.32 Mbit/s), Flow 2 egress (mean 244.81 Mbit/s)
- Flow 3 ingress (mean 295.79 Mbit/s), Flow 3 egress (mean 204.28 Mbit/s)

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

- Flow 1 (95th percentile 106.82 ms), Flow 2 (95th percentile 64.14 ms), Flow 3 (95th percentile 66.40 ms)
Run 1: Statistics of WebRTC media

Start at: 2018-11-03 07:02:54
End at: 2018-11-03 07:03:24
Local clock offset: 0.062 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2018-11-03 11:42:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.64 Mbit/s
  95th percentile per-packet one-way delay: 63.357 ms
  Loss rate: 0.75%
-- Flow 1:
  Average throughput: 1.13 Mbit/s
  95th percentile per-packet one-way delay: 63.225 ms
  Loss rate: 0.62%
-- Flow 2:
  Average throughput: 1.11 Mbit/s
  95th percentile per-packet one-way delay: 63.363 ms
  Loss rate: 0.63%
-- Flow 3:
  Average throughput: 0.41 Mbit/s
  95th percentile per-packet one-way delay: 63.398 ms
  Loss rate: 1.46%
Run 1: Report of WebRTC media — Data Link

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

- **Flow 1 ingress** (mean 1.14 Mbit/s)
- **Flow 1 egress** (mean 1.13 Mbit/s)
- **Flow 2 ingress** (mean 1.12 Mbit/s)
- **Flow 2 egress** (mean 1.11 Mbit/s)
- **Flow 3 ingress** (mean 0.42 Mbit/s)
- **Flow 3 egress** (mean 0.41 Mbit/s)

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

- **Flow 1 (95th percentile 63.23 ms)**
- **Flow 2 (95th percentile 63.36 ms)**
- **Flow 3 (95th percentile 63.40 ms)**
Run 2: Statistics of WebRTC media

Start at: 2018-11-03 07:34:38
End at: 2018-11-03 07:35:08
Local clock offset: -0.027 ms
Remote clock offset: -1.534 ms

# Below is generated by plot.py at 2018-11-03 11:42:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 64.686 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 64.662 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 64.521 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 64.767 ms
Loss rate: 1.87%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2018-11-03 08:06:26
End at: 2018-11-03 08:06:56
Local clock offset: -0.136 ms
Remote clock offset: 0.537 ms

# Below is generated by plot.py at 2018-11-03 11:42:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.47 Mbit/s
  95th percentile per-packet one-way delay: 62.871 ms
  Loss rate: 0.80%
-- Flow 1:
  Average throughput: 1.90 Mbit/s
  95th percentile per-packet one-way delay: 62.775 ms
  Loss rate: 0.61%
-- Flow 2:
  Average throughput: 1.14 Mbit/s
  95th percentile per-packet one-way delay: 62.920 ms
  Loss rate: 0.92%
-- Flow 3:
  Average throughput: 0.45 Mbit/s
  95th percentile per-packet one-way delay: 62.519 ms
  Loss rate: 1.35%
Run 3: Report of WebRTC media — Data Link
Run 4: Statistics of WebRTC media

Start at: 2018-11-03 08:38:07
End at: 2018-11-03 08:38:37
Local clock offset: -0.027 ms
Remote clock offset: 0.471 ms

# Below is generated by plot.py at 2018-11-03 11:42:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.47 Mbit/s
  95th percentile per-packet one-way delay: 62.971 ms
  Loss rate: 0.83%
-- Flow 1:
  Average throughput: 1.90 Mbit/s
  95th percentile per-packet one-way delay: 62.897 ms
  Loss rate: 0.54%
-- Flow 2:
  Average throughput: 1.16 Mbit/s
  95th percentile per-packet one-way delay: 63.015 ms
  Loss rate: 0.92%
-- Flow 3:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 62.857 ms
  Loss rate: 1.89%
Run 5: Statistics of WebRTC media

Start at: 2018-11-03 09:09:27
End at: 2018-11-03 09:09:57
Local clock offset: -0.067 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2018-11-03 11:42:40
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 3.44 Mbit/s
  95th percentile per-packet one-way delay: 63.193 ms
  Loss rate: 0.71%
-- Flow 1:
  Average throughput: 1.89 Mbit/s
  95th percentile per-packet one-way delay: 63.192 ms
  Loss rate: 0.37%
-- Flow 2:
  Average throughput: 1.13 Mbit/s
  95th percentile per-packet one-way delay: 63.036 ms
  Loss rate: 1.00%
-- Flow 3:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 63.246 ms
  Loss rate: 1.40%
Run 5: Report of WebRTC media — Data Link

![Graph of WebRTC media data link throughput and latency](image_url)