Pantheon Report

Generated at 2019-02-20 15:51:46 (UTC).
Data path: China on eno1 (remote) → AWS Korea on ens5 (local).
Repeated the test of 21 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 ntp.nict.jp and have been applied to correct the timestamps in logs.

System info:
Linux 4.15.0-1031-aws
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 @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e6594aa89e93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4a9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6b7cf3cf
third_party/muses @ 5ce721187ad823da209553737730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27af9d42717625ee3a354cc2e802bd
third_party/pcc @ 1af9c958fao06d6d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8ac08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3ccff42
third_party/scream-reproduce @ f09918d1421aa3131bf1ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562539f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
test from China to AWS Korea, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
<table>
<thead>
<tr>
<th>scheme</th>
<th># runs</th>
<th>mean avg tput (Mbit/s)</th>
<th>mean 95th%-ile delay (ms)</th>
<th>mean loss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>flow 1</td>
<td>flow 2</td>
<td>flow 3</td>
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<tr>
<td>TCP BBR</td>
<td>5</td>
<td>4.47</td>
<td>23.60</td>
<td>6.25</td>
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<tr>
<td>Copa</td>
<td>5</td>
<td>5.05</td>
<td>4.94</td>
<td>5.82</td>
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<tr>
<td>TCP Cubic</td>
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<td>0.11</td>
<td>0.36</td>
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<td>8.81</td>
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<td>Indigo</td>
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<td>9.35</td>
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<td>0.90</td>
<td>1.84</td>
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<td>0.10</td>
<td>0.11</td>
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<td>0.27</td>
<td>0.31</td>
<td>0.34</td>
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<td>TaoVA-100x</td>
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<td>0.01</td>
<td>13.70</td>
<td>13.07</td>
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<td>0.22</td>
<td>0.27</td>
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<tr>
<td>Verus</td>
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<td>14.54</td>
<td>16.13</td>
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<td>6.00</td>
<td>3.75</td>
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<tr>
<td>WebRTC media</td>
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<td>0.00</td>
<td>0.05</td>
<td>0.05</td>
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</table>
Run 1: Statistics of TCP BBR

Start at: 2019-02-20 09:53:57
End at: 2019-02-20 09:54:27
Local clock offset: 11.864 ms
Remote clock offset: -17.815 ms

# Below is generated by plot.py at 2019-02-20 15:48:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.26 Mbit/s
95th percentile per-packet one-way delay: 202.484 ms
Loss rate: 21.82%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 186.515 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 30.23 Mbit/s
95th percentile per-packet one-way delay: 204.146 ms
Loss rate: 20.60%
-- Flow 3:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 190.940 ms
Loss rate: 31.30%
Run 1: Report of TCP BBR — Data Link

![Graph 1: Throughput (Mbps)]

- Flow 1 ingress (mean 0.47 Mbps)
- Flow 1 egress (mean 0.01 Mbps)
- Flow 2 ingress (mean 37.61 Mbps)
- Flow 2 egress (mean 30.23 Mbps)
- Flow 3 ingress (mean 9.63 Mbps)
- Flow 3 egress (mean 0.79 Mbps)

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

- Flow 1 (95th percentile 186.51 ms)
- Flow 2 (95th percentile 204.15 ms)
- Flow 3 (95th percentile 190.94 ms)
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 10:53:14
End at: 2019-02-20 10:53:44
Local clock offset: 4.594 ms
Remote clock offset: -13.075 ms

# Below is generated by plot.py at 2019-02-20 15:48:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.34 Mbit/s
95th percentile per-packet one-way delay: 195.176 ms
Loss rate: 27.42%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 191.200 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 26.11 Mbit/s
95th percentile per-packet one-way delay: 201.611 ms
Loss rate: 25.08%
-- Flow 3:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 191.976 ms
Loss rate: 38.39%
Run 2: Report of TCP BBR — Data Link

![Graph showing throughput and delay over time for three flows with different mean speeds and 95th percentile delays.]

- Flow 1 ingress (mean 0.46 Mbit/s)
- Flow 1 egress (mean 0.01 Mbit/s)
- Flow 2 ingress (mean 34.40 Mbit/s)
- Flow 2 egress (mean 26.11 Mbit/s)
- Flow 3 ingress (mean 14.63 Mbit/s)
- Flow 3 egress (mean 9.25 Mbit/s)

- Flow 1 (95th percentile 191.20 ms)
- Flow 2 (95th percentile 201.61 ms)
- Flow 3 (95th percentile 191.98 ms)
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 12:08:50
End at: 2019-02-20 12:09:20
Local clock offset: -1.58 ms
Remote clock offset: -14.906 ms

# Below is generated by plot.py at 2019-02-20 15:48:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.05 Mbit/s
95th percentile per-packet one-way delay: 193.999 ms
Loss rate: 26.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 192.658 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 22.58 Mbit/s
95th percentile per-packet one-way delay: 194.178 ms
Loss rate: 25.73%
-- Flow 3:
Average throughput: 12.49 Mbit/s
95th percentile per-packet one-way delay: 193.880 ms
Loss rate: 26.93%
Run 3: Report of TCP BBR — Data Link

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

- Flow 1 ingress (mean 0.47 Mbit/s)
- Flow 1 egress (mean 0.01 Mbit/s)
- Flow 2 ingress (mean 30.01 Mbit/s)
- Flow 2 egress (mean 22.55 Mbit/s)
- Flow 3 ingress (mean 16.64 Mbit/s)
- Flow 3 egress (mean 12.49 Mbit/s)

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

- Flow 1 (95th percentile 192.66 ms)
- Flow 2 (95th percentile 194.18 ms)
- Flow 3 (95th percentile 193.08 ms)
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 13:25:29
End at: 2019-02-20 13:25:59
Local clock offset: 7.168 ms
Remote clock offset: -15.231 ms

# Below is generated by plot.py at 2019-02-20 15:48:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.08 Mbit/s
95th percentile per-packet one-way delay: 193.647 ms
Loss rate: 29.00%
-- Flow 1:
Average throughput: 22.32 Mbit/s
95th percentile per-packet one-way delay: 193.703 ms
Loss rate: 26.72%
-- Flow 2:
Average throughput: 10.72 Mbit/s
95th percentile per-packet one-way delay: 193.549 ms
Loss rate: 35.46%
-- Flow 3:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 193.422 ms
Loss rate: 26.72%
Run 4: Report of TCP BBR — Data Link

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

**Graph Details:***
- **Throughput (Mbps)**
- **Time (s)**
- **Legend:**
  - Flow 1 ingress (mean 30.19 Mbps)
  - Flow 1 egress (mean 22.32 Mbps)
  - Flow 2 ingress (mean 16.39 Mbps)
  - Flow 2 egress (mean 10.72 Mbps)
  - Flow 3 ingress (mean 2.66 Mbps)
  - Flow 3 egress (mean 2.00 Mbps)

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

**Graph Details:***
- **Per packet round-trip time (ms)**
- **Time (s)**
- **Legend:**
  - Flow 1 (95th percentile 193.70 ms)
  - Flow 2 (95th percentile 193.55 ms)
  - Flow 3 (95th percentile 193.42 ms)
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 14:40:04
End at: 2019-02-20 14:40:34
Local clock offset: 6.202 ms
Remote clock offset: -14.168 ms

# Below is generated by plot.py at 2019-02-20 15:48:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.03 Mbit/s
95th percentile per-packet one-way delay: 193.204 ms
Loss rate: 22.35%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 191.020 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 28.37 Mbit/s
95th percentile per-packet one-way delay: 193.318 ms
Loss rate: 22.35%
-- Flow 3:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 191.880 ms
Loss rate: 21.23%
Run 5: Report of TCP BBR — Data Link
Run 1: Statistics of Copa

Start at: 2019-02-20 10:47:23
End at: 2019-02-20 10:47:53
Local clock offset: 3.82 ms
Remote clock offset: -11.863 ms

# Below is generated by plot.py at 2019-02-20 15:48:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.12 Mbit/s
95th percentile per-packet one-way delay: 190.968 ms
Loss rate: 5.25%
-- Flow 1:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 190.987 ms
Loss rate: 4.55%
-- Flow 2:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 190.975 ms
Loss rate: 5.92%
-- Flow 3:
Average throughput: 4.63 Mbit/s
95th percentile per-packet one-way delay: 190.898 ms
Loss rate: 6.57%
Run 1: Report of Copa — Data Link

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**Throughput (Mbps)**

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

**Time (s)**

- **Flow 1 ingress** (mean 4.38 Mbps)
- **Flow 1 egress** (mean 4.21 Mbps)
- **Flow 2 ingress** (mean 2.22 Mbps)
- **Flow 2 egress** (mean 2.12 Mbps)
- **Flow 3 ingress** (mean 4.82 Mbps)
- **Flow 3 egress** (mean 4.63 Mbps)

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

0 5 10 15 20 25 30

- **Flow 1** (99th percentile 190.99 ms)
- **Flow 2** (99th percentile 190.97 ms)
- **Flow 3** (99th percentile 190.90 ms)
Run 2: Statistics of Copa

Start at: 2019-02-20 11:58:12
End at: 2019-02-20 11:58:42
Local clock offset: 3.847 ms
Remote clock offset: -14.554 ms

# Below is generated by plot.py at 2019-02-20 15:48:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 9.49 Mbit/s
  95th percentile per-packet one-way delay: 192.763 ms
  Loss rate: 9.22%
-- Flow 1:
  Average throughput: 2.88 Mbit/s
  95th percentile per-packet one-way delay: 192.806 ms
  Loss rate: 8.76%
-- Flow 2:
  Average throughput: 5.41 Mbit/s
  95th percentile per-packet one-way delay: 192.788 ms
  Loss rate: 8.77%
-- Flow 3:
  Average throughput: 9.13 Mbit/s
  95th percentile per-packet one-way delay: 192.703 ms
  Loss rate: 10.21%
Run 2: Report of Copa — Data Link

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

- **Flow 1 ingress (mean 3.11 Mbit/s)**
- **Flow 1 egress (mean 2.86 Mbit/s)**
- **Flow 2 ingress (mean 5.85 Mbit/s)**
- **Flow 2 egress (mean 5.41 Mbit/s)**
- **Flow 3 ingress (mean 9.91 Mbit/s)**
- **Flow 3 egress (mean 9.13 Mbit/s)**

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

- **Flow 1 (95th percentile 192.91 ms)**
- **Flow 2 (95th percentile 192.79 ms)**
- **Flow 3 (95th percentile 192.70 ms)**
Run 3: Statistics of Copa

Start at: 2019-02-20 13:18:19
End at: 2019-02-20 13:18:49
Local clock offset: 5.863 ms
Remote clock offset: -14.758 ms

# Below is generated by plot.py at 2019-02-20 15:48:27
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 6.93 Mbit/s
  95th percentile per-packet one-way delay: 192.630 ms
  Loss rate: 5.19%
-- Flow 1:
  Average throughput: 3.37 Mbit/s
  95th percentile per-packet one-way delay: 192.644 ms
  Loss rate: 4.58%
-- Flow 2:
  Average throughput: 3.87 Mbit/s
  95th percentile per-packet one-way delay: 192.633 ms
  Loss rate: 5.07%
-- Flow 3:
  Average throughput: 3.24 Mbit/s
  95th percentile per-packet one-way delay: 192.586 ms
  Loss rate: 7.51%
Run 3: Report of Copa — Data Link
Run 4: Statistics of Copa

Start at: 2019-02-20 14:30:53
End at: 2019-02-20 14:31:23
Local clock offset: -1.937 ms
Remote clock offset: -16.74 ms

# Below is generated by plot.py at 2019-02-20 15:48:41
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 20.65 Mbit/s
  95th percentile per-packet one-way delay: 193.141 ms
  Loss rate: 10.90%
-- Flow 1:
  Average throughput: 11.78 Mbit/s
  95th percentile per-packet one-way delay: 193.228 ms
  Loss rate: 11.20%
-- Flow 2:
  Average throughput: 10.30 Mbit/s
  95th percentile per-packet one-way delay: 192.835 ms
  Loss rate: 9.74%
-- Flow 3:
  Average throughput: 6.46 Mbit/s
  95th percentile per-packet one-way delay: 192.714 ms
  Loss rate: 12.85%
Run 4: Report of Copa — Data Link

![Graph 1: Throughput (Mbps)]

![Graph 2: Packet Loss Delay (ms)]
Run 5: Statistics of Copa

Start at: 2019-02-20 15:41:09
End at: 2019-02-20 15:41:39
Local clock offset: 3.929 ms
Remote clock offset: -15.955 ms

# Below is generated by plot.py at 2019-02-20 15:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 192.290 ms
Loss rate: 5.23%
-- Flow 1:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 192.348 ms
Loss rate: 4.98%
-- Flow 2:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 192.292 ms
Loss rate: 4.79%
-- Flow 3:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 192.198 ms
Loss rate: 6.09%
Run 5: Report of Copa — Data Link

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**Throughput (Mbps):**

<table>
<thead>
<tr>
<th>Flow 1 ingress (mean 3.16 Mbps)</th>
<th>Flow 1 egress (mean 3.03 Mbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 2 ingress (mean 3.12 Mbps)</td>
<td>Flow 2 egress (mean 3.01 Mbps)</td>
</tr>
<tr>
<td>Flow 3 ingress (mean 5.84 Mbps)</td>
<td>Flow 3 egress (mean 5.62 Mbps)</td>
</tr>
</tbody>
</table>

**End-to-End Delay (ms):**

| Flow 1 (95th percentile 192.35 ms) | Flow 2 (95th percentile 192.29 ms) | Flow 3 (95th percentile 192.20 ms) |

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Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 10:45:58
End at: 2019-02-20 10:46:28
Local clock offset: 3.279 ms
Remote clock offset: -12.594 ms

# Below is generated by plot.py at 2019-02-20 15:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 191.960 ms
Loss rate: 7.30%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 192.095 ms
Loss rate: 7.23%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 191.805 ms
Loss rate: 5.98%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 191.799 ms
Loss rate: 11.76%
Run 1: Report of TCP Cubic — Data Link

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

- **Flow 1 ingress** (mean 0.27 Mbit/s)
- **Flow 1 egress** (mean 0.25 Mbit/s)
- **Flow 2 ingress** (mean 0.32 Mbit/s)
- **Flow 2 egress** (mean 0.31 Mbit/s)
- **Flow 3 ingress** (mean 0.21 Mbit/s)
- **Flow 3 egress** (mean 0.19 Mbit/s)

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

- **Flow 1** (95th percentile 192.09 ms)
- **Flow 2** (95th percentile 191.81 ms)
- **Flow 3** (95th percentile 191.80 ms)
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 11:56:43
End at: 2019-02-20 11:57:13
Local clock offset: 3.752 ms
Remote clock offset: -15.434 ms

# Below is generated by plot.py at 2019-02-20 15:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 193.384 ms
Loss rate: 17.16%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 193.440 ms
Loss rate: 16.28%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 193.327 ms
Loss rate: 14.53%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 193.355 ms
Loss rate: 22.71%
Run 2: Report of TCP Cubic — Data Link

![Graph 1: Throughput (Mbps)]

- Blue dashed line: Flow 1 ingress (mean 0.12 Mbit/s)
- Blue solid line: Flow 1 egress (mean 0.10 Mbit/s)
- Green dashed line: Flow 2 ingress (mean 0.14 Mbit/s)
- Green solid line: Flow 2 egress (mean 0.12 Mbit/s)
- Red dashed line: Flow 3 ingress (mean 0.15 Mbit/s)
- Red solid line: Flow 3 egress (mean 0.15 Mbit/s)

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

- Blue circle: Flow 1 (95th percentile 193.44 ms)
- Green circle: Flow 2 (95th percentile 193.33 ms)
- Red circle: Flow 3 (95th percentile 193.35 ms)
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 13:16:52
End at: 2019-02-20 13:17:22
Local clock offset: 5.415 ms
Remote clock offset: -15.874 ms

# Below is generated by plot.py at 2019-02-20 15:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 193.872 ms
Loss rate: 8.23%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 192.699 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 193.881 ms
Loss rate: 6.46%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 193.792 ms
Loss rate: 9.09%
Run 3: Report of TCP Cubic — Data Link
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 14:29:28
End at: 2019-02-20 14:29:58
Local clock offset: -3.046 ms
Remote clock offset: -15.965 ms

# Below is generated by plot.py at 2019-02-20 15:48:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 193.542 ms
Loss rate: 8.42%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 193.622 ms
Loss rate: 7.22%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 193.432 ms
Loss rate: 11.87%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 193.373 ms
Loss rate: 7.12%
Run 4: Report of TCP Cubic — Data Link

![Graphs showing throughput and packet round-trip delay over time for different flows.]
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 15:39:39  
End at: 2019-02-20 15:40:09  
Local clock offset: 3.308 ms  
Remote clock offset: -16.428 ms

# Below is generated by plot.py at 2019-02-20 15:48:41  
# Datalink statistics
--- Total of 3 flows:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 192.943 ms
Loss rate: 4.97%
--- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 192.444 ms
Loss rate: 98.79%
--- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 192.921 ms
Loss rate: 4.82%
--- Flow 3:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 193.002 ms
Loss rate: 3.84%
Run 5: Report of TCP Cubic — Data Link
Run 1: Statistics of FillP

Start at: 2019-02-20 10:00:50
End at: 2019-02-20 10:01:20
Local clock offset: 11.262 ms
Remote clock offset: -18.424 ms

# Below is generated by plot.py at 2019-02-20 15:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.58 Mbit/s
95th percentile per-packet one-way delay: 196.959 ms
Loss rate: 20.13%
-- Flow 1:
Average throughput: 22.74 Mbit/s
95th percentile per-packet one-way delay: 197.373 ms
Loss rate: 18.09%
-- Flow 2:
Average throughput: 10.17 Mbit/s
95th percentile per-packet one-way delay: 195.504 ms
Loss rate: 25.58%
-- Flow 3:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 193.381 ms
Loss rate: 22.77%
Run 1: Report of FillP — Data Link
Run 2: Statistics of FillP

Start at: 2019-02-20 11:05:19
End at: 2019-02-20 11:05:49
Local clock offset: 6.162 ms
Remote clock offset: -13.791 ms

# Below is generated by plot.py at 2019-02-20 15:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.33 Mbit/s
95th percentile per-packet one-way delay: 195.496 ms
Loss rate: 20.62%
-- Flow 1:
Average throughput: 30.78 Mbit/s
95th percentile per-packet one-way delay: 195.660 ms
Loss rate: 20.24%
-- Flow 2:
Average throughput: 5.49 Mbit/s
95th percentile per-packet one-way delay: 192.757 ms
Loss rate: 21.79%
-- Flow 3:
Average throughput: 8.94 Mbit/s
95th percentile per-packet one-way delay: 193.168 ms
Loss rate: 22.99%
Run 2: Report of FillP — Data Link
Run 3: Statistics of FillP

Start at: 2019-02-20 12:24:44
End at: 2019-02-20 12:25:14
Local clock offset: -5.467 ms
Remote clock offset: -15.062 ms

# Below is generated by plot.py at 2019-02-20 15:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.13 Mbit/s
95th percentile per-packet one-way delay: 193.348 ms
Loss rate: 19.92%
-- Flow 1:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 193.323 ms
Loss rate: 16.82%
-- Flow 2:
Average throughput: 6.18 Mbit/s
95th percentile per-packet one-way delay: 193.405 ms
Loss rate: 21.68%
-- Flow 3:
Average throughput: 4.78 Mbit/s
95th percentile per-packet one-way delay: 193.245 ms
Loss rate: 27.29%
Run 3: Report of FillP — Data Link

[Graphs showing throughput and per-packet round-trip delay over time]
Run 4: Statistics of FillP

Start at: 2019-02-20 13:38:12
End at: 2019-02-20 13:38:42
Local clock offset: 5.193 ms
Remote clock offset: -11.044 ms

# Below is generated by plot.py at 2019-02-20 15:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 28.65 Mbit/s
95th percentile per-packet one-way delay: 193.476 ms
Loss rate: 22.47%
-- Flow 1:
Average throughput: 19.89 Mbit/s
95th percentile per-packet one-way delay: 193.899 ms
Loss rate: 21.54%
-- Flow 2:
Average throughput: 8.93 Mbit/s
95th percentile per-packet one-way delay: 191.324 ms
Loss rate: 23.63%
-- Flow 3:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 190.625 ms
Loss rate: 26.19%
Run 4: Report of FillP — Data Link

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

- **Throughput (Mbps)**
  - **Flow 1 ingress** (mean 25.15 Mbps)
  - **Flow 1 egress** (mean 19.89 Mbps)
  - **Flow 2 ingress** (mean 11.35 Mbps)
  - **Flow 2 egress** (mean 8.93 Mbps)
  - **Flow 3 ingress** (mean 11.46 Mbps)
  - **Flow 3 egress** (mean 8.69 Mbps)

- **Packet delivery delay (ms)**
  - **Flow 1 (95th percentile 193.90 ms)
  - **Flow 2 (95th percentile 191.32 ms)
  - **Flow 3 (95th percentile 190.62 ms)**
Run 5: Statistics of FillP

Start at: 2019-02-20 14:54:09
End at: 2019-02-20 14:54:39
Local clock offset: 10.838 ms
Remote clock offset: -15.284 ms

# Below is generated by plot.py at 2019-02-20 15:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.49 Mbit/s
95th percentile per-packet one-way delay: 196.955 ms
Loss rate: 24.24%
-- Flow 1:
Average throughput: 17.07 Mbit/s
95th percentile per-packet one-way delay: 197.345 ms
Loss rate: 21.97%
-- Flow 2:
Average throughput: 12.93 Mbit/s
95th percentile per-packet one-way delay: 196.172 ms
Loss rate: 28.51%
-- Flow 3:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 194.143 ms
Loss rate: 23.56%
Run 5: Report of FillP — Data Link

![Throughput Graph](attachment:image1)

- Flow 1 ingress (mean 21.70 Mbit/s)
- Flow 1 egress (mean 17.07 Mbit/s)
- Flow 2 ingress (mean 17.87 Mbit/s)
- Flow 2 egress (mean 12.93 Mbit/s)
- Flow 3 ingress (mean 7.16 Mbit/s)
- Flow 3 egress (mean 5.62 Mbit/s)

![Delay Graph](attachment:image2)

- Flow 1 (95th percentile 197.34 ms)
- Flow 2 (95th percentile 196.17 ms)
- Flow 3 (95th percentile 194.14 ms)
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 10:25:12
End at: 2019-02-20 10:25:42
Local clock offset: -4.895 ms
Remote clock offset: -10.639 ms

# Below is generated by plot.py at 2019-02-20 15:48:54
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 31.07 Mbit/s
  95th percentile per-packet one-way delay: 195.611 ms
  Loss rate: 12.55%
-- Flow 1:
  Average throughput: 22.39 Mbit/s
  95th percentile per-packet one-way delay: 195.968 ms
  Loss rate: 11.66%
-- Flow 2:
  Average throughput: 9.67 Mbit/s
  95th percentile per-packet one-way delay: 193.548 ms
  Loss rate: 13.89%
-- Flow 3:
  Average throughput: 6.97 Mbit/s
  95th percentile per-packet one-way delay: 192.784 ms
  Loss rate: 17.18%
Run 1: Report of FillP-Sheep — Data Link

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

![Graph 2: Per-packet one-way delay (ms)](image2)
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 11:31:40
End at: 2019-02-20 11:32:10
Local clock offset: 7.544 ms
Remote clock offset: -16.46 ms

# Below is generated by plot.py at 2019-02-20 15:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.50 Mbit/s
95th percentile per-packet one-way delay: 198.738 ms
Loss rate: 10.93%
-- Flow 1:
Average throughput: 16.09 Mbit/s
95th percentile per-packet one-way delay: 199.137 ms
Loss rate: 9.97%
-- Flow 2:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 196.763 ms
Loss rate: 12.11%
-- Flow 3:
Average throughput: 6.99 Mbit/s
95th percentile per-packet one-way delay: 196.045 ms
Loss rate: 14.25%
Run 2: Report of FillP-Sheep — Data Link

![Graphs showing data link performance](image-url)
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 12:58:06
End at: 2019-02-20 12:58:36
Local clock offset: -4.508 ms
Remote clock offset: -15.363 ms

# Below is generated by plot.py at 2019-02-20 15:49:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.51 Mbit/s
95th percentile per-packet one-way delay: 196.740 ms
Loss rate: 12.26%
-- Flow 1:
Average throughput: 28.17 Mbit/s
95th percentile per-packet one-way delay: 196.942 ms
Loss rate: 11.10%
-- Flow 2:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 193.802 ms
Loss rate: 16.94%
-- Flow 3:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 192.422 ms
Loss rate: 17.62%
Run 3: Report of FillP-Sheep — Data Link
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 14:08:17
End at: 2019-02-20 14:08:47
Local clock offset: 0.136 ms
Remote clock offset: -14.674 ms

# Below is generated by plot.py at 2019-02-20 15:49:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.31 Mbit/s
95th percentile per-packet one-way delay: 195.438 ms
Loss rate: 12.47%
-- Flow 1:
Average throughput: 16.89 Mbit/s
95th percentile per-packet one-way delay: 195.853 ms
Loss rate: 11.36%
-- Flow 2:
Average throughput: 13.54 Mbit/s
95th percentile per-packet one-way delay: 194.479 ms
Loss rate: 14.14%
-- Flow 3:
Average throughput: 4.45 Mbit/s
95th percentile per-packet one-way delay: 193.067 ms
Loss rate: 14.72%
Run 4: Report of FillP-Sheep — Data Link

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 18.90 Mbit/s)
Flow 1 egress (mean 16.89 Mbit/s)
Flow 2 ingress (mean 15.36 Mbit/s)
Flow 2 egress (mean 13.54 Mbit/s)
Flow 3 ingress (mean 5.09 Mbit/s)
Flow 3 egress (mean 4.45 Mbit/s)

Packet size vs. total delay (ms)

Time (s)

Flow 1 (95th percentile 195.85 ms)
Flow 2 (95th percentile 194.48 ms)
Flow 3 (95th percentile 193.07 ms)
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-20 15:21:00
End at: 2019-02-20 15:21:30
Local clock offset: -0.993 ms
Remote clock offset: -14.315 ms

# Below is generated by plot.py at 2019-02-20 15:49:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.58 Mbit/s
95th percentile per-packet one-way delay: 196.016 ms
Loss rate: 11.89%
-- Flow 1:
Average throughput: 33.65 Mbit/s
95th percentile per-packet one-way delay: 196.117 ms
Loss rate: 11.44%
-- Flow 2:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 192.174 ms
Loss rate: 14.64%
-- Flow 3:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 192.723 ms
Loss rate: 17.33%
Run 5: Report of FillP-Sheep — Data Link
Run 1: Statistics of Indigo

Start at: 2019-02-20 10:09:51
End at: 2019-02-20 10:10:21
Local clock offset: 1.18 ms
Remote clock offset: -14.721 ms

# Below is generated by plot.py at 2019-02-20 15:49:21
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 26.94 Mbit/s
  95th percentile per-packet one-way delay: 260.429 ms
  Loss rate: 68.24%
-- Flow 1:
  Average throughput: 23.80 Mbit/s
  95th percentile per-packet one-way delay: 262.427 ms
  Loss rate: 68.77%
-- Flow 2:
  Average throughput: 4.79 Mbit/s
  95th percentile per-packet one-way delay: 245.175 ms
  Loss rate: 63.37%
-- Flow 3:
  Average throughput: 0.53 Mbit/s
  95th percentile per-packet one-way delay: 242.883 ms
  Loss rate: 68.42%
Run 1: Report of Indigo — Data Link
Run 2: Statistics of Indigo

Start at: 2019-02-20 11:12:56
End at: 2019-02-20 11:13:26
Local clock offset: 7.079 ms
Remote clock offset: -14.743 ms

# Below is generated by plot.py at 2019-02-20 15:49:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 28.91 Mbit/s
95th percentile per-packet one-way delay: 240.836 ms
Loss rate: 61.11%
-- Flow 1:
Average throughput: 20.27 Mbit/s
95th percentile per-packet one-way delay: 230.578 ms
Loss rate: 54.80%
-- Flow 2:
Average throughput: 12.75 Mbit/s
95th percentile per-packet one-way delay: 259.886 ms
Loss rate: 70.80%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 218.638 ms
Loss rate: 66.26%
Run 2: Report of Indigo — Data Link
Run 3: Statistics of Indigo

Start at: 2019-02-20 12:33:42
End at: 2019-02-20 12:34:12
Local clock offset: -5.088 ms
Remote clock offset: -16.015 ms

# Below is generated by plot.py at 2019-02-20 15:49:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.16 Mbit/s
95th percentile per-packet one-way delay: 259.830 ms
Loss rate: 68.80%
-- Flow 1:
Average throughput: 20.39 Mbit/s
95th percentile per-packet one-way delay: 263.077 ms
Loss rate: 68.71%
-- Flow 2:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 250.298 ms
Loss rate: 69.77%
-- Flow 3:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 221.979 ms
Loss rate: 61.97%
Run 3: Report of Indigo — Data Link

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

- Flow 1 ingress (mean 64.71 Mbps)
- Flow 1 egress (mean 20.39 Mbps)
- Flow 2 ingress (mean 25.61 Mbps)
- Flow 2 egress (mean 7.84 Mbps)
- Flow 3 ingress (mean 4.60 Mbps)
- Flow 3 egress (mean 1.80 Mbps)

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

- Flow 1 (95th percentile 263.00 ms)
- Flow 2 (95th percentile 250.30 ms)
- Flow 3 (95th percentile 221.98 ms)
Run 4: Statistics of Indigo

Start at: 2019-02-20 13:46:45
End at: 2019-02-20 13:47:15
Local clock offset: 4.437 ms
Remote clock offset: -16.107 ms

# Below is generated by plot.py at 2019-02-20 15:49:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.00 Mbit/s
95th percentile per-packet one-way delay: 239.412 ms
Loss rate: 67.75%
-- Flow 1:
Average throughput: 22.34 Mbit/s
95th percentile per-packet one-way delay: 242.595 ms
Loss rate: 67.39%
-- Flow 2:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 231.582 ms
Loss rate: 69.65%
-- Flow 3:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 218.916 ms
Loss rate: 66.07%
Run 4: Report of Indigo — Data Link

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

Throughput (Mbps):
- Flow 1 ingress (mean 68.12 Mbps)
- Flow 1 egress (mean 22.34 Mbps)
- Flow 2 ingress (mean 21.04 Mbps)
- Flow 2 egress (mean 6.47 Mbps)
- Flow 3 ingress (mean 3.39 Mbps)
- Flow 3 egress (mean 1.16 Mbps)

Latency (ms):
- Flow 1 (95th percentile 242.59 ms)
- Flow 2 (95th percentile 231.58 ms)
- Flow 3 (95th percentile 218.92 ms)
Run 5: Statistics of Indigo

Start at: 2019-02-20 15:00:38
End at: 2019-02-20 15:01:08
Local clock offset: 10.82 ms
Remote clock offset: -14.316 ms

# Below is generated by plot.py at 2019-02-20 15:49:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.99 Mbit/s
95th percentile per-packet one-way delay: 246.544 ms
Loss rate: 66.84%
-- Flow 1:
Average throughput: 21.32 Mbit/s
95th percentile per-packet one-way delay: 242.291 ms
Loss rate: 65.67%
-- Flow 2:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 255.880 ms
Loss rate: 70.78%
-- Flow 3:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 219.144 ms
Loss rate: 67.63%
Run 5: Report of Indigo — Data Link

![Graph](image_url)

**Throughput (Mb/s)**

- Flow 1 ingress (mean 61.58 Mb/s)
- Flow 1 egress (mean 21.32 Mb/s)
- Flow 2 ingress (mean 26.99 Mb/s)
- Flow 2 egress (mean 8.01 Mb/s)
- Flow 3 ingress (mean 3.65 Mb/s)
- Flow 3 egress (mean 1.22 Mb/s)

![Graph](image_url)

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

- Flow 1 (95th percentile 242.29 ms)
- Flow 2 (95th percentile 255.88 ms)
- Flow 3 (95th percentile 219.14 ms)
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:49:34
End at: 2019-02-20 10:50:04
Local clock offset: 4.02 ms
Remote clock offset: -13.029 ms

# Below is generated by plot.py at 2019-02-20 15:49:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.50 Mbit/s
95th percentile per-packet one-way delay: 193.614 ms
Loss rate: 8.55%
-- Flow 1:
Average throughput: 24.17 Mbit/s
95th percentile per-packet one-way delay: 194.036 ms
Loss rate: 9.56%
-- Flow 2:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 192.395 ms
Loss rate: 4.42%
-- Flow 3:
Average throughput: 5.31 Mbit/s
95th percentile per-packet one-way delay: 192.041 ms
Loss rate: 7.73%
Run 1: Report of Indigo-MusesC3 — Data Link
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 12:02:28
End at: 2019-02-20 12:02:58
Local clock offset: 1.819 ms
Remote clock offset: -16.301 ms

# Below is generated by plot.py at 2019-02-20 15:49:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.80 Mbit/s
95th percentile per-packet one-way delay: 196.742 ms
Loss rate: 14.54%
-- Flow 1:
Average throughput: 24.06 Mbit/s
95th percentile per-packet one-way delay: 197.023 ms
Loss rate: 15.44%
-- Flow 2:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 195.538 ms
Loss rate: 10.21%
-- Flow 3:
Average throughput: 4.29 Mbit/s
95th percentile per-packet one-way delay: 195.693 ms
Loss rate: 11.92%
Run 2: Report of Indigo-MusesC3 — Data Link

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

![Graph 2: Packet Delay (ms)](image)
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 13:20:56
End at: 2019-02-20 13:21:26
Local clock offset: 6.605 ms
Remote clock offset: -14.596 ms

# Below is generated by plot.py at 2019-02-20 15:49:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.38 Mbit/s
95th percentile per-packet one-way delay: 194.846 ms
Loss rate: 9.73%
-- Flow 1:
Average throughput: 25.42 Mbit/s
95th percentile per-packet one-way delay: 194.916 ms
Loss rate: 10.37%
-- Flow 2:
Average throughput: 9.61 Mbit/s
95th percentile per-packet one-way delay: 194.805 ms
Loss rate: 6.91%
-- Flow 3:
Average throughput: 6.61 Mbit/s
95th percentile per-packet one-way delay: 193.956 ms
Loss rate: 9.99%
Run 3: Report of Indigo-MusesC3 — Data Link

Graph 1: Throughput (Mbps)
- Flow 1 ingress (mean 28.10 Mbps)
- Flow 1 egress (mean 25.42 Mbps)
- Flow 2 ingress (mean 10.18 Mbps)
- Flow 2 egress (mean 9.61 Mbps)
- Flow 3 ingress (mean 7.09 Mbps)
- Flow 3 egress (mean 6.61 Mbps)

Graph 2: Round-trip time (ms)
- Flow 1 (95th percentile 194.92 ms)
- Flow 2 (95th percentile 194.81 ms)
- Flow 3 (95th percentile 193.96 ms)
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 14:37:19
End at: 2019-02-20 14:37:49
Local clock offset: 4.505 ms
Remote clock offset: -13.908 ms

# Below is generated by plot.py at 2019-02-20 15:49:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.93 Mbit/s
95th percentile per-packet one-way delay: 192.207 ms
Loss rate: 11.16%
-- Flow 1:
Average throughput: 24.44 Mbit/s
95th percentile per-packet one-way delay: 192.506 ms
Loss rate: 12.17%
-- Flow 2:
Average throughput: 9.88 Mbit/s
95th percentile per-packet one-way delay: 191.462 ms
Loss rate: 7.56%
-- Flow 3:
Average throughput: 5.15 Mbit/s
95th percentile per-packet one-way delay: 190.826 ms
Loss rate: 8.54%
Run 4: Report of Indigo-MusesC3 — Data Link
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 15:43:16
End at: 2019-02-20 15:43:46
Local clock offset: 4.465 ms
Remote clock offset: -12.854 ms

# Below is generated by plot.py at 2019-02-20 15:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 33.39 Mbit/s
  95th percentile per-packet one-way delay: 192.130 ms
  Loss rate: 12.26%
-- Flow 1:
  Average throughput: 19.04 Mbit/s
  95th percentile per-packet one-way delay: 192.313 ms
  Loss rate: 11.71%
-- Flow 2:
  Average throughput: 20.18 Mbit/s
  95th percentile per-packet one-way delay: 192.123 ms
  Loss rate: 13.22%
-- Flow 3:
  Average throughput: 6.20 Mbit/s
  95th percentile per-packet one-way delay: 190.714 ms
  Loss rate: 11.17%
Run 5: Report of Indigo-MusesC3 — Data Link
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-20 09:58:17
End at: 2019-02-20 09:58:47
Local clock offset: 12.598 ms
Remote clock offset: -18.801 ms

# Below is generated by plot.py at 2019-02-20 15:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.40 Mbit/s
95th percentile per-packet one-way delay: 194.546 ms
Loss rate: 3.52%
-- Flow 1:
Average throughput: 26.74 Mbit/s
95th percentile per-packet one-way delay: 194.625 ms
Loss rate: 2.95%
-- Flow 2:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 192.094 ms
Loss rate: 10.83%
-- Flow 3:
Average throughput: 7.26 Mbit/s
95th percentile per-packet one-way delay: 193.804 ms
Loss rate: 8.11%
Run 1: Report of Indigo-MusesC5 — Data Link

[Graph showing throughput and one-way packet delay over time for various flows]
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:59:12
End at: 2019-02-20 10:59:42
Local clock offset: 5.054 ms
Remote clock offset: -15.752 ms

# Below is generated by plot.py at 2019-02-20 15:49:49
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 22.03 Mbit/s
  95th percentile per-packet one-way delay: 201.652 ms
  Loss rate: 18.82%
-- Flow 1:
  Average throughput: 18.29 Mbit/s
  95th percentile per-packet one-way delay: 202.711 ms
  Loss rate: 19.52%
-- Flow 2:
  Average throughput: 3.61 Mbit/s
  95th percentile per-packet one-way delay: 196.288 ms
  Loss rate: 14.82%
-- Flow 3:
  Average throughput: 5.47 Mbit/s
  95th percentile per-packet one-way delay: 196.959 ms
  Loss rate: 15.80%
Run 2: Report of Indigo-MusesC5 — Data Link

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

**Throughput (Mbps):**
- Flow 1 ingress (mean 22.52 Mbps)
- Flow 1 egress (mean 18.29 Mbps)
- Flow 2 ingress (mean 4.17 Mbps)
- Flow 2 egress (mean 3.61 Mbps)
- Flow 3 ingress (mean 6.28 Mbps)
- Flow 3 egress (mean 5.47 Mbps)

**Packet Loss Delay (ms):**
- Flow 1 (95th percentile 202.71 ms)
- Flow 2 (95th percentile 196.29 ms)
- Flow 3 (95th percentile 196.96 ms)
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 12:17:34
End at: 2019-02-20 12:18:04
Local clock offset: -4.073 ms
Remote clock offset: -14.038 ms

# Below is generated by plot.py at 2019-02-20 15:49:51
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 30.15 Mbit/s
  95th percentile per-packet one-way delay: 197.867 ms
  Loss rate: 15.66%
-- Flow 1:
  Average throughput: 23.45 Mbit/s
  95th percentile per-packet one-way delay: 198.228 ms
  Loss rate: 16.81%
-- Flow 2:
  Average throughput: 7.23 Mbit/s
  95th percentile per-packet one-way delay: 195.063 ms
  Loss rate: 10.95%
-- Flow 3:
  Average throughput: 8.24 Mbit/s
  95th percentile per-packet one-way delay: 196.696 ms
  Loss rate: 12.29%
Run 3: Report of Indigo-MusesC5 — Data Link

Throughput (Mb/s)

Time (s)

Flow 1 ingress (mean 27.93 Mb/s)
Flow 1 egress (mean 23.45 Mb/s)
Flow 2 ingress (mean 8.00 Mb/s)
Flow 2 egress (mean 7.23 Mb/s)
Flow 3 ingress (mean 9.08 Mb/s)
Flow 3 egress (mean 8.24 Mb/s)

Per-packet one-way delay (ms)

Flow 1 (95th percentile 198.23 ms)
Flow 2 (95th percentile 195.06 ms)
Flow 3 (95th percentile 196.70 ms)
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 13:33:12
End at: 2019-02-20 13:33:42
Local clock offset: 6.373 ms
Remote clock offset: -14.35 ms

# Below is generated by plot.py at 2019-02-20 15:49:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.34 Mbit/s
95th percentile per-packet one-way delay: 197.171 ms
Loss rate: 14.53%
-- Flow 1:
Average throughput: 24.36 Mbit/s
95th percentile per-packet one-way delay: 197.377 ms
Loss rate: 15.29%
-- Flow 2:
Average throughput: 11.30 Mbit/s
95th percentile per-packet one-way delay: 195.246 ms
Loss rate: 11.07%
-- Flow 3:
Average throughput: 7.24 Mbit/s
95th percentile per-packet one-way delay: 199.071 ms
Loss rate: 17.12%
Run 4: Report of Indigo-MusesC5 — Data Link

![Graph of Throughput vs Time]

Throughput (Mbps)

Time (s)

- Flow 1 ingress (mean 28.50 Mbps/s)
- Flow 1 egress (mean 24.36 Mbps/s)
- Flow 2 ingress (mean 12.51 Mbps/s)
- Flow 2 egress (mean 11.30 Mbps/s)
- Flow 3 ingress (mean 8.44 Mbps/s)
- Flow 3 egress (mean 7.24 Mbps/s)

![Graph of Round-trip delay vs Time]

Round-trip delay (ms)

Time (s)

- Flow 1 (95th percentile 197.38 ms)
- Flow 2 (95th percentile 195.25 ms)
- Flow 3 (95th percentile 199.07 ms)
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 14:47:53
End at: 2019-02-20 14:48:23
Local clock offset: 9.123 ms
Remote clock offset: -15.135 ms

# Below is generated by plot.py at 2019-02-20 15:50:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.10 Mbit/s
95th percentile per-packet one-way delay: 199.190 ms
Loss rate: 23.23%
-- Flow 1:
Average throughput: 17.49 Mbit/s
95th percentile per-packet one-way delay: 199.673 ms
Loss rate: 21.83%
-- Flow 2:
Average throughput: 25.85 Mbit/s
95th percentile per-packet one-way delay: 198.854 ms
Loss rate: 24.26%
-- Flow 3:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 196.481 ms
Loss rate: 28.83%
Run 5: Report of Indigo-MusesC5 — Data Link

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Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:22:17
End at: 2019-02-20 10:22:47
Local clock offset: -4.303 ms
Remote clock offset: -9.78 ms

# Below is generated by plot.py at 2019-02-20 15:50:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 28.69 Mbit/s
95th percentile per-packet one-way delay: 192.057 ms
Loss rate: 6.48%
-- Flow 1:
Average throughput: 20.83 Mbit/s
95th percentile per-packet one-way delay: 191.936 ms
Loss rate: 6.67%
-- Flow 2:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 190.623 ms
Loss rate: 1.54%
-- Flow 3:
Average throughput: 19.16 Mbit/s
95th percentile per-packet one-way delay: 192.698 ms
Loss rate: 8.07%
Run 1: Report of Indigo-MusesD — Data Link

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

### Throughput (Mbps)
- **Flow 1 ingress (mean 22.11 Mbps)**
- **Flow 1 egress (mean 20.83 Mbps)**
- **Flow 2 ingress (mean 4.41 Mbps)**
- **Flow 2 egress (mean 4.40 Mbps)**
- **Flow 3 ingress (mean 20.16 Mbps)**
- **Flow 3 egress (mean 19.16 Mbps)**

### Packet Delay (ms)
- **Flow 1 (95th percentile 191.94 ms)**
- **Flow 2 (95th percentile 190.62 ms)**
- **Flow 3 (95th percentile 192.70 ms)**
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:26:58
End at: 2019-02-20 11:27:28
Local clock offset: 7.826 ms
Remote clock offset: -16.884 ms

# Below is generated by plot.py at 2019-02-20 15:50:08
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 31.61 Mbit/s
  95th percentile per-packet one-way delay: 197.297 ms
  Loss rate: 11.98%
-- Flow 1:
  Average throughput: 18.57 Mbit/s
  95th percentile per-packet one-way delay: 197.924 ms
  Loss rate: 12.34%
-- Flow 2:
  Average throughput: 17.60 Mbit/s
  95th percentile per-packet one-way delay: 196.993 ms
  Loss rate: 11.69%
-- Flow 3:
  Average throughput: 5.28 Mbit/s
  95th percentile per-packet one-way delay: 196.947 ms
  Loss rate: 9.55%
Run 2: Report of Indigo-MusesD — Data Link

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**Throughput (Mbps)**

![Throughput graph]

Legend:
- Blue dashed line: Flow 1 ingress (mean 21.00 Mbps)
- Blue solid line: Flow 1 egress (mean 18.57 Mbps)
- Green dashed line: Flow 2 ingress (mean 19.65 Mbps)
- Green solid line: Flow 2 egress (mean 17.60 Mbps)
- Red solid line: Flow 3 ingress (mean 5.62 Mbps)
- Red dashed line: Flow 3 egress (mean 5.28 Mbps)

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

![Per-packet delay graph]

Legend:
- Blue solid line: Flow 1 (95th percentile 197.92 ms)
- Green solid line: Flow 2 (95th percentile 196.99 ms)
- Red solid line: Flow 3 (95th percentile 196.95 ms)

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Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 12:54:29
End at: 2019-02-20 12:54:59
Local clock offset: -4.127 ms
Remote clock offset: -15.137 ms

# Below is generated by plot.py at 2019-02-20 15:50:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 36.18 Mbit/s
  95th percentile per-packet one-way delay: 194.027 ms
  Loss rate: 10.42%
-- Flow 1:
  Average throughput: 20.36 Mbit/s
  95th percentile per-packet one-way delay: 193.825 ms
  Loss rate: 10.19%
-- Flow 2:
  Average throughput: 21.12 Mbit/s
  95th percentile per-packet one-way delay: 194.185 ms
  Loss rate: 11.41%
-- Flow 3:
  Average throughput: 7.65 Mbit/s
  95th percentile per-packet one-way delay: 194.447 ms
  Loss rate: 5.70%

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Run 3: Report of Indigo-MusesD — Data Link
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 14:02:06
End at: 2019-02-20 14:02:36
Local clock offset: 2.701 ms
Remote clock offset: -14.404 ms

# Below is generated by plot.py at 2019-02-20 15:50:13
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 35.44 Mbit/s
  95th percentile per-packet one-way delay: 196.537 ms
  Loss rate: 9.71%
-- Flow 1:
  Average throughput: 23.04 Mbit/s
  95th percentile per-packet one-way delay: 195.875 ms
  Loss rate: 9.17%
-- Flow 2:
  Average throughput: 10.44 Mbit/s
  95th percentile per-packet one-way delay: 195.326 ms
  Loss rate: 5.46%
-- Flow 3:
  Average throughput: 20.69 Mbit/s
  95th percentile per-packet one-way delay: 208.223 ms
  Loss rate: 16.40%
Run 4: Report of Indigo-MusesD — Data Link
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 15:15:53
End at: 2019-02-20 15:16:23
Local clock offset: 0.157 ms
Remote clock offset: -15.705 ms

# Below is generated by plot.py at 2019-02-20 15:50:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.58 Mbit/s
95th percentile per-packet one-way delay: 198.156 ms
Loss rate: 13.68%
-- Flow 1:
Average throughput: 18.64 Mbit/s
95th percentile per-packet one-way delay: 197.089 ms
Loss rate: 10.27%
-- Flow 2:
Average throughput: 21.44 Mbit/s
95th percentile per-packet one-way delay: 200.623 ms
Loss rate: 18.46%
-- Flow 3:
Average throughput: 7.05 Mbit/s
95th percentile per-packet one-way delay: 195.204 ms
Loss rate: 8.17%
Run 5: Report of Indigo-MusesD — Data Link

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

![Graph 2: Round-Trip Delay vs. Time](image2.png)
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:32:14
End at: 2019-02-20 10:32:45
Local clock offset: -3.336 ms
Remote clock offset: -12.389 ms

# Below is generated by plot.py at 2019-02-20 15:50:22
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 34.94 Mbit/s
  95th percentile per-packet one-way delay: 196.612 ms
  Loss rate: 6.75%
-- Flow 1:
  Average throughput: 25.34 Mbit/s
  95th percentile per-packet one-way delay: 197.273 ms
  Loss rate: 7.68%
-- Flow 2:
  Average throughput: 11.73 Mbit/s
  95th percentile per-packet one-way delay: 193.992 ms
  Loss rate: 3.21%
-- Flow 3:
  Average throughput: 8.80 Mbit/s
  95th percentile per-packet one-way delay: 195.520 ms
  Loss rate: 7.55%
Run 1: Report of Indigo-MusesT — Data Link

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

- Flow 1 ingress (mean 27.18 Mbit/s)
- Flow 1 egress (mean 25.34 Mbit/s)
- Flow 2 ingress (mean 11.49 Mbit/s)
- Flow 2 egress (mean 11.73 Mbit/s)
- Flow 3 ingress (mean 8.34 Mbit/s)
- Flow 3 egress (mean 8.80 Mbit/s)

![Graph 2: Delay Over Time](image2)

- Flow 1 (95th percentile 197.27 ms)
- Flow 2 (95th percentile 193.99 ms)
- Flow 3 (95th percentile 195.52 ms)
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:41:06
End at: 2019-02-20 11:41:36
Local clock offset: 5.148 ms
Remote clock offset: -15.82 ms

# Below is generated by plot.py at 2019-02-20 15:50:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.52 Mbit/s
95th percentile per-packet one-way delay: 196.941 ms
Loss rate: 11.41%
-- Flow 1:
Average throughput: 21.92 Mbit/s
95th percentile per-packet one-way delay: 197.474 ms
Loss rate: 13.29%
-- Flow 2:
Average throughput: 13.21 Mbit/s
95th percentile per-packet one-way delay: 195.147 ms
Loss rate: 6.82%
-- Flow 3:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 195.980 ms
Loss rate: 8.83%
Run 2: Report of Indigo-MusesT — Data Link

![Graph showing throughput over time with different flow rates and delays]
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 13:04:49
End at: 2019-02-20 13:05:19
Local clock offset: 0.291 ms
Remote clock offset: -15.19 ms

# Below is generated by plot.py at 2019-02-20 15:50:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.34 Mbit/s
95th percentile per-packet one-way delay: 194.290 ms
Loss rate: 10.18%
-- Flow 1:
Average throughput: 20.78 Mbit/s
95th percentile per-packet one-way delay: 194.418 ms
Loss rate: 10.35%
-- Flow 2:
Average throughput: 19.60 Mbit/s
95th percentile per-packet one-way delay: 194.163 ms
Loss rate: 10.55%
-- Flow 3:
Average throughput: 8.41 Mbit/s
95th percentile per-packet one-way delay: 193.694 ms
Loss rate: 6.34%
Run 3: Report of Indigo-MusesT — Data Link

![Graph of throughput over time](image1)

![Graph of round-trip time over time](image2)
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 14:15:13
End at: 2019-02-20 14:15:43
Local clock offset: -1.388 ms
Remote clock offset: -15.348 ms

# Below is generated by plot.py at 2019-02-20 15:50:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.75 Mbit/s
95th percentile per-packet one-way delay: 195.626 ms
Loss rate: 14.93%
-- Flow 1:
Average throughput: 25.49 Mbit/s
95th percentile per-packet one-way delay: 195.577 ms
Loss rate: 17.68%
-- Flow 2:
Average throughput: 13.43 Mbit/s
95th percentile per-packet one-way delay: 195.614 ms
Loss rate: 7.94%
-- Flow 3:
Average throughput: 11.25 Mbit/s
95th percentile per-packet one-way delay: 195.912 ms
Loss rate: 8.13%
Run 4: Report of Indigo-MusesT — Data Link

**Throughput (Mbps)**

**Time (s)**

- **Flow 1 ingress** (mean 30.68 Mbps)
- **Flow 1 egress** (mean 25.49 Mbps)
- **Flow 2 ingress** (mean 14.37 Mbps)
- **Flow 2 egress** (mean 13.43 Mbps)
- **Flow 3 ingress** (mean 11.85 Mbps)
- **Flow 3 egress** (mean 11.25 Mbps)

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

**Time (s)**

- **Flow 1 (95th percentile 195.58 ms)**
- **Flow 2 (95th percentile 195.61 ms)**
- **Flow 3 (95th percentile 195.91 ms)**
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 15:27:35  
End at: 2019-02-20 15:28:05  
Local clock offset: -2.379 ms  
Remote clock offset: -15.545 ms

# Below is generated by plot.py at 2019-02-20 15:50:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 37.68 Mbit/s  
95th percentile per-packet one-way delay: 195.176 ms  
Loss rate: 13.63%  
-- Flow 1:  
Average throughput: 25.60 Mbit/s  
95th percentile per-packet one-way delay: 195.773 ms  
Loss rate: 15.75%  
-- Flow 2:  
Average throughput: 14.60 Mbit/s  
95th percentile per-packet one-way delay: 193.721 ms  
Loss rate: 8.21%  
-- Flow 3:  
Average throughput: 11.48 Mbit/s  
95th percentile per-packet one-way delay: 194.849 ms  
Loss rate: 10.44%
Run 5: Report of Indigo-MusesT — Data Link

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

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

Start at: 2019-02-20 10:44:28
End at: 2019-02-20 10:44:58
Local clock offset: 3.17 ms
Remote clock offset: -11.946 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.51 Mbit/s
  95th percentile per-packet one-way delay: 191.182 ms
  Loss rate: 7.66%
-- Flow 1:
  Average throughput: 0.25 Mbit/s
  95th percentile per-packet one-way delay: 191.268 ms
  Loss rate: 6.36%
-- Flow 2:
  Average throughput: 0.26 Mbit/s
  95th percentile per-packet one-way delay: 190.941 ms
  Loss rate: 8.55%
-- Flow 3:
  Average throughput: 0.27 Mbit/s
  95th percentile per-packet one-way delay: 190.969 ms
  Loss rate: 9.43%
Run 1: Report of LEDBAT — Data Link
Run 2: Statistics of LEDBAT

End at: 2019-02-20 11:55:44
Local clock offset: 3.897 ms
Remote clock offset: -16.036 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 194.799 ms
Loss rate: 11.05%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 194.955 ms
Loss rate: 12.56%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 193.844 ms
Loss rate: 11.39%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 194.333 ms
Loss rate: 8.44%
Run 2: Report of LEDBAT — Data Link

[Graph 1: Throughput vs. Time]

[Graph 2: Per-packet one-way delay vs. Time]
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 13:15:21
End at: 2019-02-20 13:15:51
Local clock offset: 5.342 ms
Remote clock offset: -15.775 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.88 Mbit/s
  95th percentile per-packet one-way delay: 193.868 ms
  Loss rate: 4.14%
-- Flow 1:
  Average throughput: 0.46 Mbit/s
  95th percentile per-packet one-way delay: 193.885 ms
  Loss rate: 3.04%
-- Flow 2:
  Average throughput: 0.40 Mbit/s
  95th percentile per-packet one-way delay: 193.776 ms
  Loss rate: 4.53%
-- Flow 3:
  Average throughput: 0.50 Mbit/s
  95th percentile per-packet one-way delay: 193.882 ms
  Loss rate: 6.51%
Run 3: Report of LEDBAT — Data Link

![Graph of throughput vs time for different flows]

![Graph of per-packet delay vs time for different flows]
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 14:27:55
End at: 2019-02-20 14:28:25
Local clock offset: -2.917 ms
Remote clock offset: -16.802 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.90 Mbit/s
  95th percentile per-packet one-way delay: 194.346 ms
  Loss rate: 4.11%
-- Flow 1:
  Average throughput: 0.48 Mbit/s
  95th percentile per-packet one-way delay: 194.341 ms
  Loss rate: 3.70%
-- Flow 2:
  Average throughput: 0.43 Mbit/s
  95th percentile per-packet one-way delay: 194.195 ms
  Loss rate: 3.81%
-- Flow 3:
  Average throughput: 0.44 Mbit/s
  95th percentile per-packet one-way delay: 194.535 ms
  Loss rate: 6.03%
Run 5: Statistics of LEDBAT

Start at: 2019-02-20 15:38:13
End at: 2019-02-20 15:38:43
Local clock offset: 2.823 ms
Remote clock offset: -16.542 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.65 Mbit/s
  95th percentile per-packet one-way delay: 192.656 ms
  Loss rate: 3.77%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 191.337 ms
  Loss rate: 0.00%
-- Flow 2:
  Average throughput: 0.73 Mbit/s
  95th percentile per-packet one-way delay: 192.707 ms
  Loss rate: 3.09%
-- Flow 3:
  Average throughput: 0.52 Mbit/s
  95th percentile per-packet one-way delay: 192.103 ms
  Loss rate: 5.66%
Run 5: Report of LEDBAT — Data Link

---

**Throughput (Mbps)**

- Flow 1 ingress (mean 0.00 Mbps)
- Flow 1 egress (mean 0.00 Mbps)
- Flow 2 ingress (mean 0.75 Mbps)
- Flow 2 egress (mean 0.73 Mbps)
- Flow 3 ingress (mean 0.54 Mbps)
- Flow 3 egress (mean 0.52 Mbps)

---

**Round-trip one-way delay (ms)**

- Flow 1 (95th percentile 191.34 ms)
- Flow 2 (95th percentile 192.71 ms)
- Flow 3 (95th percentile 192.10 ms)
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-20 09:56:11
End at: 2019-02-20 09:56:41
Local clock offset: 12.412 ms
Remote clock offset: -17.465 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 23.32 Mbit/s
  95th percentile per-packet one-way delay: 190.934 ms
  Loss rate: 7.35%
-- Flow 1:
  Average throughput: 2.10 Mbit/s
  95th percentile per-packet one-way delay: 190.832 ms
  Loss rate: 4.35%
-- Flow 2:
  Average throughput: 29.98 Mbit/s
  95th percentile per-packet one-way delay: 191.020 ms
  Loss rate: 7.83%
-- Flow 3:
  Average throughput: 4.22 Mbit/s
  95th percentile per-packet one-way delay: 190.690 ms
  Loss rate: 4.66%
Run 1: Report of PCC-Allegro — Data Link

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**Throughput (Mbps)**

- **Flow 1 ingress** (mean 2.18 Mbps)
- **Flow 1 egress** (mean 2.10 Mbps)
- **Flow 2 ingress** (mean 32.12 Mbps)
- **Flow 2 egress** (mean 29.98 Mbps)
- **Flow 3 ingress** (mean 4.31 Mbps)
- **Flow 3 egress** (mean 4.22 Mbps)

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

- **Flow 1 (95th percentile 190.83 ms)**
- **Flow 2 (95th percentile 191.02 ms)**
- **Flow 3 (95th percentile 190.69 ms)**

---
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 10:56:45
End at: 2019-02-20 10:57:15
Local clock offset: 4.837 ms
Remote clock offset: -12.756 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.17 Mbit/s
95th percentile per-packet one-way delay: 191.001 ms
Loss rate: 5.49%
-- Flow 1:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 191.018 ms
Loss rate: 4.89%
-- Flow 2:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 191.001 ms
Loss rate: 5.60%
-- Flow 3:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 190.959 ms
Loss rate: 6.15%
Run 2: Report of PCC-Allegro — Data Link

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

- **Throughput (Mbps):**
  - Flow 1 ingress (mean 2.13 Mbps)
  - Flow 1 egress (mean 2.04 Mbps)
  - Flow 2 ingress (mean 4.31 Mbps)
  - Flow 2 egress (mean 4.13 Mbps)
  - Flow 3 ingress (mean 4.48 Mbps)
  - Flow 3 egress (mean 4.31 Mbps)

- **Per-packet round-trip delay (ms):**
  - Flow 1 (95th percentile 191.02 ms)
  - Flow 2 (95th percentile 191.00 ms)
  - Flow 3 (95th percentile 190.96 ms)
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 12:15:30
End at: 2019-02-20 12:16:00
Local clock offset: -3.739 ms
Remote clock offset: -16.54 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 195.402 ms
Loss rate: 12.25%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 195.385 ms
Loss rate: 11.85%
-- Flow 2:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 195.446 ms
Loss rate: 12.02%
-- Flow 3:
Average throughput: 3.83 Mbit/s
95th percentile per-packet one-way delay: 195.377 ms
Loss rate: 13.08%
Run 3: Report of PCC-Allegro — Data Link

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

- Flow 1 ingress (mean 2.15 Mbps)
- Flow 1 egress (mean 1.91 Mbps)
- Flow 2 ingress (mean 2.10 Mbps)
- Flow 2 egress (mean 1.87 Mbps)
- Flow 3 ingress (mean 4.30 Mbps)
- Flow 3 egress (mean 3.83 Mbps)

![Graph showing Packet Error Rate (PER) over Time (s)]

- Flow 1 (95th percentile 195.38 ms)
- Flow 2 (95th percentile 195.45 ms)
- Flow 3 (95th percentile 195.38 ms)
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 13:31:40
End at: 2019-02-20 13:32:10
Local clock offset: 7.06 ms
Remote clock offset: -12.964 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 2.03 Mbit/s
  95th percentile per-packet one-way delay: 191.472 ms
  Loss rate: 8.85%
-- Flow 1:
  Average throughput: 0.01 Mbit/s
  95th percentile per-packet one-way delay: 190.990 ms
  Loss rate: 70.09%
-- Flow 2:
  Average throughput: 2.08 Mbit/s
  95th percentile per-packet one-way delay: 191.472 ms
  Loss rate: 8.07%
-- Flow 3:
  Average throughput: 2.01 Mbit/s
  95th percentile per-packet one-way delay: 191.469 ms
  Loss rate: 10.41%
Run 4: Report of PCC-Allegro — Data Link

```
<table>
<thead>
<tr>
<th>Flow 1 ingress (mean 0.03 Mbit/s)</th>
<th>Flow 1 egress (mean 0.01 Mbit/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 2 ingress (mean 2.23 Mbit/s)</td>
<td>Flow 2 egress (mean 2.08 Mbit/s)</td>
</tr>
<tr>
<td>Flow 3 ingress (mean 2.19 Mbit/s)</td>
<td>Flow 3 egress (mean 2.01 Mbit/s)</td>
</tr>
</tbody>
</table>
```

```
| Flow 1 (95th percentile 190.99 ms) | Flow 2 (95th percentile 191.47 ms) | Flow 3 (95th percentile 191.47 ms) |
```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-20 14:44:46
End at: 2019-02-20 14:45:16
Local clock offset: 8.085 ms
Remote clock offset: -15.922 ms

# Below is generated by plot.py at 2019-02-20 15:50:46
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 18.62 Mbit/s
   95th percentile per-packet one-way delay: 194.031 ms
   Loss rate: 7.42%
-- Flow 1:
   Average throughput: 15.18 Mbit/s
   95th percentile per-packet one-way delay: 194.038 ms
   Loss rate: 7.17%
-- Flow 2:
   Average throughput: 4.19 Mbit/s
   95th percentile per-packet one-way delay: 193.990 ms
   Loss rate: 8.35%
-- Flow 3:
   Average throughput: 2.06 Mbit/s
   95th percentile per-packet one-way delay: 193.924 ms
   Loss rate: 9.26%
Run 5: Report of PCC-Allegro — Data Link

![Graph showing throughput and packet delay over time]

- Flow 1 ingress (mean 16.21 Mbit/s)
- Flow 1 egress (mean 15.18 Mbit/s)
- Flow 2 ingress (mean 4.51 Mbit/s)
- Flow 2 egress (mean 4.19 Mbit/s)
- Flow 3 ingress (mean 2.21 Mbit/s)
- Flow 3 egress (mean 2.06 Mbit/s)

- Per packet one way delay (ms)
  - Flow 1 (95th percentile 194.04 ms)
  - Flow 2 (95th percentile 193.99 ms)
  - Flow 3 (95th percentile 193.92 ms)
Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 10:38:05
End at: 2019-02-20 10:38:35
Local clock offset: 0.669 ms
Remote clock offset: -11.426 ms

# Below is generated by plot.py at 2019-02-20 15:51:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.76 Mbit/s
95th percentile per-packet one-way delay: 191.565 ms
Loss rate: 4.28%
-- Flow 1:
Average throughput: 10.09 Mbit/s
95th percentile per-packet one-way delay: 191.652 ms
Loss rate: 4.03%
-- Flow 2:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 191.265 ms
Loss rate: 4.20%
-- Flow 3:
Average throughput: 12.26 Mbit/s
95th percentile per-packet one-way delay: 191.342 ms
Loss rate: 4.99%
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 11:48:38
End at: 2019-02-20 11:49:08
Local clock offset: 4.141 ms
Remote clock offset: -15.944 ms

# Below is generated by plot.py at 2019-02-20 15:51:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.29 Mbit/s
95th percentile per-packet one-way delay: 193.747 ms
Loss rate: 8.74%
-- Flow 1:
Average throughput: 6.66 Mbit/s
95th percentile per-packet one-way delay: 193.768 ms
Loss rate: 8.29%
-- Flow 2:
Average throughput: 5.09 Mbit/s
95th percentile per-packet one-way delay: 193.670 ms
Loss rate: 8.35%
-- Flow 3:
Average throughput: 10.04 Mbit/s
95th percentile per-packet one-way delay: 193.765 ms
Loss rate: 10.05%
Run 2: Report of PCC-Expr — Data Link
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 13:08:32
End at: 2019-02-20 13:09:02
Local clock offset: 2.701 ms
Remote clock offset: -16.471 ms

# Below is generated by plot.py at 2019-02-20 15:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.62 Mbit/s
95th percentile per-packet one-way delay: 193.910 ms
Loss rate: 4.69%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 193.943 ms
Loss rate: 4.21%
-- Flow 2:
Average throughput: 5.68 Mbit/s
95th percentile per-packet one-way delay: 193.818 ms
Loss rate: 5.03%
-- Flow 3:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 193.880 ms
Loss rate: 7.00%
Run 3: Report of PCC-Expr — Data Link
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 14:21:33
End at: 2019-02-20 14:22:03
Local clock offset: -2.187 ms
Remote clock offset: -16.231 ms

# Below is generated by plot.py at 2019-02-20 15:51:05
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 10.48 Mbit/s
  95th percentile per-packet one-way delay: 193.928 ms
  Loss rate: 7.59%
-- Flow 1:
  Average throughput: 4.85 Mbit/s
  95th percentile per-packet one-way delay: 193.922 ms
  Loss rate: 7.00%
-- Flow 2:
  Average throughput: 5.77 Mbit/s
  95th percentile per-packet one-way delay: 193.897 ms
  Loss rate: 8.07%
-- Flow 3:
  Average throughput: 6.11 Mbit/s
  95th percentile per-packet one-way delay: 193.984 ms
  Loss rate: 8.15%
Run 4: Report of PCC-Expr — Data Link

![Graph 1](image1.png)

12
10
8
6
4
2
0
0
5
10
15
20
25
30

Throughput (Mbit/s)

Time (s)

Flow 1 ingress (mean 5.18 Mbit/s)
Flow 1 egress (mean 4.85 Mbit/s)
Flow 2 ingress (mean 6.19 Mbit/s)
Flow 2 egress (mean 5.77 Mbit/s)
Flow 3 ingress (mean 6.48 Mbit/s)
Flow 3 egress (mean 6.11 Mbit/s)

![Graph 2](image2.png)

200
195
190
185
180
175
170
165
160
155
150
145
140
135
130
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0
5
10
15
20
25
30

Per-packet one way delay (ms)

Flow 1 (95th percentile 193.92 ms)
Flow 2 (95th percentile 193.90 ms)
Flow 3 (95th percentile 193.98 ms)
Run 5: Statistics of PCC-Expr

Start at: 2019-02-20 15:32:11
End at: 2019-02-20 15:32:41
Local clock offset: -0.612 ms
Remote clock offset: -15.874 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 191.936 ms
Loss rate: 6.36%
-- Flow 1:
Average throughput: 5.09 Mbit/s
95th percentile per-packet one-way delay: 191.998 ms
Loss rate: 5.45%
-- Flow 2:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 191.915 ms
Loss rate: 5.65%
-- Flow 3:
Average throughput: 12.57 Mbit/s
95th percentile per-packet one-way delay: 191.881 ms
Loss rate: 7.93%
Run 5: Report of PCC-Expr — Data Link

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

- Flow 1 ingress (mean 5.34 Mbit/s)
- Flow 1 egress (mean 5.09 Mbit/s)
- Flow 2 ingress (mean 4.39 Mbit/s)
- Flow 2 egress (mean 4.20 Mbit/s)
- Flow 3 ingress (mean 13.30 Mbit/s)
- Flow 3 egress (mean 12.57 Mbit/s)

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

- Flow 1 (95th percentile 192.00 ms)
- Flow 2 (95th percentile 191.91 ms)
- Flow 3 (95th percentile 191.88 ms)
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 10:18:03
End at: 2019-02-20 10:18:33
Local clock offset: -2.841 ms
Remote clock offset: -11.046 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 191.235 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 191.373 ms
Loss rate: 1.92%
-- Flow 2:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 191.164 ms
Loss rate: 2.64%
-- Flow 3:
Average throughput: 4.58 Mbit/s
95th percentile per-packet one-way delay: 191.050 ms
Loss rate: 2.50%
Run 1: Report of QUIC Cubic — Data Link
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 11:23:09
End at: 2019-02-20 11:23:39
Local clock offset: 7.875 ms
Remote clock offset: -16.063 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 194.169 ms
Loss rate: 5.77%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 193.828 ms
Loss rate: 4.66%
-- Flow 2:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 193.790 ms
Loss rate: 6.48%
-- Flow 3:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 194.451 ms
Loss rate: 7.73%
Run 2: Report of QUIC Cubic — Data Link
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 12:46:45
End at: 2019-02-20 12:47:15
Local clock offset: -4.166 ms
Remote clock offset: -17.949 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1.72 Mbit/s
  95th percentile per-packet one-way delay: 194.867 ms
  Loss rate: 5.30%
-- Flow 1:
  Average throughput: 0.75 Mbit/s
  95th percentile per-packet one-way delay: 194.765 ms
  Loss rate: 4.97%
-- Flow 2:
  Average throughput: 0.81 Mbit/s
  95th percentile per-packet one-way delay: 195.021 ms
  Loss rate: 5.23%
-- Flow 3:
  Average throughput: 1.35 Mbit/s
  95th percentile per-packet one-way delay: 194.371 ms
  Loss rate: 5.95%
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 13:57:09
End at: 2019-02-20 13:57:39
Local clock offset: 4.095 ms
Remote clock offset: -13.287 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 191.117 ms
Loss rate: 4.07%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 190.873 ms
Loss rate: 3.77%
-- Flow 2:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 191.294 ms
Loss rate: 3.86%
-- Flow 3:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 190.891 ms
Loss rate: 4.88%
Run 4: Report of QUIC Cubic — Data Link

The figure shows the throughput (Mbps) and per-packet one-way delay (ms) for three flows:

- **Flow 1**: Ingress (mean 0.85 Mbps) and Egress (mean 0.83 Mbps)
- **Flow 2**: Ingress (mean 1.00 Mbps) and Egress (mean 0.97 Mbps)
- **Flow 3**: Ingress (mean 1.43 Mbps) and Egress (mean 1.40 Mbps)
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 15:12:03
End at: 2019-02-20 15:12:33
Local clock offset: 1.548 ms
Remote clock offset: -14.382 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 1.51 Mbit/s
  95th percentile per-packet one-way delay: 192.984 ms
  Loss rate: 4.78%
-- Flow 1:
  Average throughput: 0.72 Mbit/s
  95th percentile per-packet one-way delay: 193.008 ms
  Loss rate: 4.48%
-- Flow 2:
  Average throughput: 0.68 Mbit/s
  95th percentile per-packet one-way delay: 192.587 ms
  Loss rate: 4.95%
-- Flow 3:
  Average throughput: 1.05 Mbit/s
  95th percentile per-packet one-way delay: 193.101 ms
  Loss rate: 5.18%
Run 5: Report of QUIC Cubic — Data Link

![Graph showing Throughput (Mbps) vs Time (s) with various flow ingress and egress data.]

![Graph showing Per packet one way delay (ms) vs Time (s) with 95th percentile delays for different flows.]
Run 1: Statistics of SCReAM

Start at: 2019-02-20 10:43:02
End at: 2019-02-20 10:43:32
Local clock offset: 2.477 ms
Remote clock offset: -12.299 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 191.548 ms
Loss rate: 5.90%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 191.634 ms
Loss rate: 7.39%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 191.430 ms
Loss rate: 4.83%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 190.899 ms
Loss rate: 4.38%
Run 1: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.09 Mbps)
- Flow 1 egress (mean 0.09 Mbps)
- Flow 2 ingress (mean 0.12 Mbps)
- Flow 2 egress (mean 0.11 Mbps)
- Flow 3 ingress (mean 0.12 Mbps)
- Flow 3 egress (mean 0.11 Mbps)

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

- Flow 1 (95th percentile: 191.63 ms)
- Flow 2 (95th percentile: 191.43 ms)
- Flow 3 (95th percentile: 190.90 ms)
Run 2: Statistics of SCReAM

Start at: 2019-02-20 11:53:51
End at: 2019-02-20 11:54:21
Local clock offset: 3.877 ms
Remote clock offset: -16.482 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.21 Mbit/s
  95th percentile per-packet one-way delay: 193.363 ms
  Loss rate: 4.56%
-- Flow 1:
  Average throughput: 0.10 Mbit/s
  95th percentile per-packet one-way delay: 193.150 ms
  Loss rate: 4.21%
-- Flow 2:
  Average throughput: 0.11 Mbit/s
  95th percentile per-packet one-way delay: 193.630 ms
  Loss rate: 4.80%
-- Flow 3:
  Average throughput: 0.12 Mbit/s
  95th percentile per-packet one-way delay: 193.112 ms
  Loss rate: 4.96%
Run 2: Report of SCReAM — Data Link
Run 3: Statistics of SCReAM

Start at: 2019-02-20 13:14:01
End at: 2019-02-20 13:14:31
Local clock offset: 4.79 ms
Remote clock offset: -17.112 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 194.739 ms
Loss rate: 3.86%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 194.794 ms
Loss rate: 3.43%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 194.695 ms
Loss rate: 4.94%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 194.605 ms
Loss rate: 3.39%
Run 3: Report of SCReAM — Data Link

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

- Flow 1 ingress (mean 0.11 Mbps)
- Flow 1 egress (mean 0.11 Mbps)
- Flow 2 ingress (mean 0.09 Mbps)
- Flow 2 egress (mean 0.09 Mbps)
- Flow 3 ingress (mean 0.13 Mbps)
- Flow 3 egress (mean 0.13 Mbps)

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

- Flow 1 (95th percentile 194.79 ms)
- Flow 2 (95th percentile 194.69 ms)
- Flow 3 (95th percentile 194.60 ms)
Run 4: Statistics of SCReAM

Start at: 2019-02-20 14:26:28
End at: 2019-02-20 14:26:58
Local clock offset: -2.768 ms
Remote clock offset: -16.004 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 193.374 ms
Loss rate: 5.08%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 193.226 ms
Loss rate: 4.90%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 193.349 ms
Loss rate: 5.02%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 193.566 ms
Loss rate: 5.43%
Run 4: Report of SCReAM — Data Link
Run 5: Statistics of SCReAM

Start at: 2019-02-20 15:36:46
End at: 2019-02-20 15:37:16
Local clock offset: 2.156 ms
Remote clock offset: -15.381 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 191.462 ms
Loss rate: 3.25%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 191.551 ms
Loss rate: 2.56%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 191.253 ms
Loss rate: 3.20%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 190.788 ms
Loss rate: 4.85%
Run 1: Statistics of Sprout

Start at: 2019-02-20 10:41:32
End at: 2019-02-20 10:42:02
Local clock offset: 2.39 ms
Remote clock offset: -10.944 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.34 Mbit/s
  95th percentile per-packet one-way delay: 190.542 ms
  Loss rate: 4.85%
-- Flow 1:
  Average throughput: 0.13 Mbit/s
  95th percentile per-packet one-way delay: 190.431 ms
  Loss rate: 24.38%
-- Flow 2:
  Average throughput: 0.33 Mbit/s
  95th percentile per-packet one-way delay: 190.589 ms
  Loss rate: 5.36%
-- Flow 3:
  Average throughput: 0.37 Mbit/s
  95th percentile per-packet one-way delay: 190.333 ms
  Loss rate: 3.62%
Run 1: Report of Sprout — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.17 Mbps)
Flow 1 egress (mean 0.13 Mbps)
Flow 2 ingress (mean 0.35 Mbps)
Flow 2 egress (mean 0.33 Mbps)
Flow 3 ingress (mean 0.37 Mbps)
Flow 3 egress (mean 0.37 Mbps)

Round-trip one way delay (ms)

Flow 1 (95th percentile 190.43 ms)
Flow 2 (95th percentile 190.59 ms)
Flow 3 (95th percentile 190.33 ms)
Run 2: Statistics of Sprout

Start at: 2019-02-20 11:52:27
End at: 2019-02-20 11:52:57
Local clock offset: 4.059 ms
Remote clock offset: -16.219 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 193.870 ms
Loss rate: 6.22%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 192.842 ms
Loss rate: 24.38%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 193.930 ms
Loss rate: 7.40%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 193.685 ms
Loss rate: 4.37%
Run 2: Report of Sprout — Data Link
Run 3: Statistics of Sprout

Start at: 2019-02-20 13:12:23
End at: 2019-02-20 13:12:53
Local clock offset: 4.134 ms
Remote clock offset: -14.894 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.52 Mbit/s
  95th percentile per-packet one-way delay: 192.436 ms
  Loss rate: 4.78%
-- Flow 1:
  Average throughput: 0.25 Mbit/s
  95th percentile per-packet one-way delay: 192.378 ms
  Loss rate: 3.94%
-- Flow 2:
  Average throughput: 0.31 Mbit/s
  95th percentile per-packet one-way delay: 192.088 ms
  Loss rate: 4.64%
-- Flow 3:
  Average throughput: 0.23 Mbit/s
  95th percentile per-packet one-way delay: 192.789 ms
  Loss rate: 7.80%
Run 3: Report of Sprout — Data Link
Run 4: Statistics of Sprout

Start at: 2019-02-20 14:25:00
End at: 2019-02-20 14:25:30
Local clock offset: -2.543 ms
Remote clock offset: -15.131 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.32 Mbit/s
  95th percentile per-packet one-way delay: 193.205 ms
  Loss rate: 6.61%
-- Flow 1:
  Average throughput: 0.50 Mbit/s
  95th percentile per-packet one-way delay: 192.361 ms
  Loss rate: 7.69%
-- Flow 2:
  Average throughput: 0.31 Mbit/s
  95th percentile per-packet one-way delay: 193.235 ms
  Loss rate: 6.35%
-- Flow 3:
  Average throughput: 0.33 Mbit/s
  95th percentile per-packet one-way delay: 193.094 ms
  Loss rate: 7.06%
Run 4: Report of Sprout — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.54 Mbit/s)
Flow 1 egress (mean 0.50 Mbit/s)
Flow 2 ingress (mean 0.33 Mbit/s)
Flow 2 egress (mean 0.31 Mbit/s)
Flow 3 ingress (mean 0.35 Mbit/s)
Flow 3 egress (mean 0.33 Mbit/s)

Pre-packet one way delay (ms)

Time (s)

Flow 1 (95th percentile 192.36 ms)
Flow 2 (95th percentile 193.24 ms)
Flow 3 (95th percentile 193.09 ms)
Run 5: Statistics of Sprout

Start at: 2019-02-20 15:35:20
End at: 2019-02-20 15:35:50
Local clock offset: 1.633 ms
Remote clock offset: -14.871 ms

# Below is generated by plot.py at 2019-02-20 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 191.495 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 191.368 ms
Loss rate: 2.22%
-- Flow 2:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 191.613 ms
Loss rate: 4.16%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 191.029 ms
Loss rate: 2.59%
Run 5: Report of Sprout — Data Link
Run 1: Statistics of TaoVA-100x

Start at: 2019-02-20 10:04:37
End at: 2019-02-20 10:05:07
Local clock offset: 5.697 ms
Remote clock offset: -13.225 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.92 Mbit/s
95th percentile per-packet one-way delay: 196.897 ms
Loss rate: 4.51%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 186.259 ms
Loss rate: 92.42%
-- Flow 2:
Average throughput: 23.39 Mbit/s
95th percentile per-packet one-way delay: 196.666 ms
Loss rate: 4.30%
-- Flow 3:
Average throughput: 19.94 Mbit/s
95th percentile per-packet one-way delay: 197.301 ms
Loss rate: 4.98%
Run 1: Report of TaoVA-100x — Data Link

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### Throughput (Mbps)

- **Flow 1 ingress**: (mean 0.11 Mbps)
- **Flow 1 egress**: (mean 0.01 Mbps)
- **Flow 2 ingress**: (mean 24.39 Mbps)
- **Flow 2 egress**: (mean 23.39 Mbps)
- **Flow 3 ingress**: (mean 20.43 Mbps)
- **Flow 3 egress**: (mean 19.94 Mbps)

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### Packet overeway delay (ms)

- **Flow 1 (95th percentile)**: 186.26 ms
- **Flow 2 (95th percentile)**: 196.67 ms
- **Flow 3 (95th percentile)**: 197.30 ms

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Run 2: Statistics of TaoVA-100x

Start at: 2019-02-20 11:08:42
End at: 2019-02-20 11:09:12
Local clock offset: 6.779 ms
Remote clock offset: -12.886 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 192.144 ms
Loss rate: 9.78%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 191.560 ms
Loss rate: 88.63%
-- Flow 2:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 191.728 ms
Loss rate: 9.19%
-- Flow 3:
Average throughput: 11.50 Mbit/s
95th percentile per-packet one-way delay: 192.668 ms
Loss rate: 10.99%
Run 2: Report of TaoVA-100x — Data Link

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

**Throughput (Mbps/s)**
- Flow 1 Ingress (mean 0.10 Mbps/s)
- Flow 1 Egress (mean 0.01 Mbps/s)
- Flow 2 Ingress (mean 12.74 Mbps/s)
- Flow 2 Egress (mean 11.84 Mbps/s)
- Flow 3 Ingress (mean 12.57 Mbps/s)
- Flow 3 Egress (mean 11.50 Mbps/s)

**Latency (ms)**
- Flow 1 (95th percentile 191.56 ms)
- Flow 2 (95th percentile 191.73 ms)
- Flow 3 (95th percentile 192.67 ms)
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-20 12:28:01
End at: 2019-02-20 12:28:31
Local clock offset: -5.917 ms
Remote clock offset: -15.428 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.94 Mbit/s
95th percentile per-packet one-way delay: 197.998 ms
Loss rate: 17.26%

-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 193.289 ms
Loss rate: 85.39%

-- Flow 2:
Average throughput: 10.14 Mbit/s
95th percentile per-packet one-way delay: 195.749 ms
Loss rate: 17.13%

-- Flow 3:
Average throughput: 10.40 Mbit/s
95th percentile per-packet one-way delay: 200.582 ms
Loss rate: 17.52%
Run 3: Report of TaoVA-100x — Data Link

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

- Flow 1 ingress (mean 0.06 Mbit/s)
- Flow 1 egress (mean 0.01 Mbit/s)
- Flow 2 ingress (mean 12.07 Mbit/s)
- Flow 2 egress (mean 10.14 Mbit/s)
- Flow 3 ingress (mean 12.26 Mbit/s)
- Flow 3 egress (mean 10.40 Mbit/s)

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

- Flow 1 (95th percentile 193.29 ms)
- Flow 2 (95th percentile 195.75 ms)
- Flow 3 (95th percentile 200.58 ms)
Run 4: Statistics of TaoVA-100x

Start at: 2019-02-20 13:43:24
End at: 2019-02-20 13:43:54
Local clock offset: 4.593 ms
Remote clock offset: -13.848 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.41 Mbit/s
95th percentile per-packet one-way delay: 193.122 ms
Loss rate: 9.38%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 191.235 ms
Loss rate: 88.63%
-- Flow 2:
Average throughput: 11.47 Mbit/s
95th percentile per-packet one-way delay: 191.746 ms
Loss rate: 9.40%
-- Flow 3:
Average throughput: 11.90 Mbit/s
95th percentile per-packet one-way delay: 194.489 ms
Loss rate: 9.33%
Run 4: Report of TaoVA-100x — Data Link

**Graph 1:**
- X-axis: Time (s)
- Y-axis: Throughput (Mbit/s)
- Legend:
  - Flow 1 ingress (mean 0.10 Mbit/s)
  - Flow 1 egress (mean 0.01 Mbit/s)
  - Flow 2 ingress (mean 12.30 Mbit/s)
  - Flow 2 egress (mean 11.47 Mbit/s)
  - Flow 3 ingress (mean 12.70 Mbit/s)
  - Flow 3 egress (mean 11.90 Mbit/s)

**Graph 2:**
- X-axis: Time (s)
- Y-axis: Per-packet one-way delay (μs)
- Legend:
  - Flow 1 (95th percentile 191.24 ms)
  - Flow 2 (95th percentile 191.75 ms)
  - Flow 3 (95th percentile 194.49 ms)
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-20 14:57:12
End at: 2019-02-20 14:57:42
Local clock offset: 11.142 ms
Remote clock offset: -15.348 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.44 Mbit/s
95th percentile per-packet one-way delay: 194.539 ms
Loss rate: 8.75%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 193.057 ms
Loss rate: 88.63%
-- Flow 2:
Average throughput: 11.64 Mbit/s
95th percentile per-packet one-way delay: 193.687 ms
Loss rate: 8.62%
-- Flow 3:
Average throughput: 11.60 Mbit/s
95th percentile per-packet one-way delay: 196.219 ms
Loss rate: 9.02%
Run 5: Report of TaoVA-100x — Data Link

![Graph showing throughput and packet delay over time.]
Run 1: Statistics of TCP Vegas

Start at: 2019-02-20 10:16:41
End at: 2019-02-20 10:17:11
Local clock offset: -2.649 ms
Remote clock offset: -13.952 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.41 Mbit/s
  95th percentile per-packet one-way delay: 194.006 ms
  Loss rate: 6.09%
-- Flow 1:
  Average throughput: 0.01 Mbit/s
  95th percentile per-packet one-way delay: 181.682 ms
  Loss rate: 98.79%
-- Flow 2:
  Average throughput: 0.36 Mbit/s
  95th percentile per-packet one-way delay: 193.980 ms
  Loss rate: 5.24%
-- Flow 3:
  Average throughput: 0.52 Mbit/s
  95th percentile per-packet one-way delay: 194.022 ms
  Loss rate: 5.18%
Run 1: Report of TCP Vegas — Data Link

Throughput (Mb/s) vs Time (s)

- Flow 1 ingress (mean 0.48 Mb/s)
- Flow 1 egress (mean 0.01 Mb/s)
- Flow 2 ingress (mean 0.38 Mb/s)
- Flow 2 egress (mean 0.36 Mb/s)
- Flow 3 ingress (mean 0.34 Mb/s)
- Flow 3 egress (mean 0.52 Mb/s)

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

- Flow 1 (95th percentile 181.68 ms)
- Flow 2 (95th percentile 193.98 ms)
- Flow 3 (95th percentile 194.02 ms)
Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 11:21:43
Local clock offset: 7.568 ms
Remote clock offset: -16.92 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.23 Mbit/s
  95th percentile per-packet one-way delay: 194.751 ms
  Loss rate: 7.47%
-- Flow 1:
  Average throughput: 0.01 Mbit/s
  95th percentile per-packet one-way delay: 192.574 ms
  Loss rate: 98.79%
-- Flow 2:
  Average throughput: 0.24 Mbit/s
  95th percentile per-packet one-way delay: 194.778 ms
  Loss rate: 4.77%
-- Flow 3:
  Average throughput: 0.24 Mbit/s
  95th percentile per-packet one-way delay: 194.616 ms
  Loss rate: 8.21%
Run 2: Report of TCP Vegas — Data Link
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 12:45:20
End at: 2019-02-20 12:45:50
Local clock offset: -3.928 ms
Remote clock offset: -17.503 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 194.909 ms
Loss rate: 11.89%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 193.290 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 194.964 ms
Loss rate: 10.70%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 194.871 ms
Loss rate: 8.97%
Run 3: Report of TCP Vegas — Data Link
Run 4: Statistics of TCP Vegas

End at: 2019-02-20 13:56:13
Local clock offset: 4.145 ms
Remote clock offset: -12.17 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 190.339 ms
Loss rate: 13.17%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 188.728 ms
Loss rate: 98.79%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 190.352 ms
Loss rate: 11.37%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 190.180 ms
Loss rate: 11.79%
Run 4: Report of TCP Vegas — Data Link
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 15:10:34
End at: 2019-02-20 15:11:04
Local clock offset: 2.167 ms
Remote clock offset: -15.389 ms

# Below is generated by plot.py at 2019-02-20 15:51:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 194.483 ms
Loss rate: 10.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 193.331 ms
Loss rate: 99.37%
-- Flow 2:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 194.448 ms
Loss rate: 6.71%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 194.501 ms
Loss rate: 10.46%
Run 5: Report of TCP Vegas — Data Link

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

- **Throughput (Mbps)**
  - Flow 1 ingress (mean 0.47 Mbit/s)
  - Flow 1 egress (mean 0.00 Mbit/s)
  - Flow 2 ingress (mean 0.18 Mbit/s)
  - Flow 2 egress (mean 0.17 Mbit/s)
  - Flow 3 ingress (mean 0.21 Mbit/s)
  - Flow 3 egress (mean 0.19 Mbit/s)

- **Per-packet one way delay (ms)**
  - Flow 1 (95th percentile 193.33 ms)
  - Flow 2 (95th percentile 194.45 ms)
  - Flow 3 (95th percentile 194.50 ms)
Run 1: Statistics of Verus

Start at: 2019-02-20 10:28:34
End at: 2019-02-20 10:29:04
Local clock offset: -5.716 ms
Remote clock offset: -11.24 ms

# Below is generated by plot.py at 2019-02-20 15:51:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.41 Mbit/s
95th percentile per-packet one-way delay: 376.375 ms
Loss rate: 58.47%
-- Flow 1:
Average throughput: 5.55 Mbit/s
95th percentile per-packet one-way delay: 206.996 ms
Loss rate: 4.84%
-- Flow 2:
Average throughput: 31.49 Mbit/s
95th percentile per-packet one-way delay: 377.398 ms
Loss rate: 63.86%
-- Flow 3:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 308.097 ms
Loss rate: 41.41%
Run 1: Report of Verus — Data Link
Run 2: Statistics of Verus

Start at: 2019-02-20 11:36:22
End at: 2019-02-20 11:36:52
Local clock offset: 5.993 ms
Remote clock offset: -15.801 ms

# Below is generated by plot.py at 2019-02-20 15:51:43
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 27.68 Mbit/s
  95th percentile per-packet one-way delay: 338.184 ms
  Loss rate: 34.60%
-- Flow 1:
  Average throughput: 19.43 Mbit/s
  95th percentile per-packet one-way delay: 335.652 ms
  Loss rate: 32.62%
-- Flow 2:
  Average throughput: 12.44 Mbit/s
  95th percentile per-packet one-way delay: 346.131 ms
  Loss rate: 38.81%
-- Flow 3:
  Average throughput: 0.04 Mbit/s
  95th percentile per-packet one-way delay: 282.397 ms
  Loss rate: 50.00%
Run 2: Report of Verus — Data Link

![Graph 1](image1.png)

![Graph 2](image2.png)
Run 3: Statistics of Verus

Start at: 2019-02-20 13:00:30
End at: 2019-02-20 13:01:00
Local clock offset: -3.799 ms
Remote clock offset: -16.121 ms

# Below is generated by plot.py at 2019-02-20 15:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.63 Mbit/s
95th percentile per-packet one-way delay: 366.034 ms
Loss rate: 39.43%
-- Flow 1:
Average throughput: 29.99 Mbit/s
95th percentile per-packet one-way delay: 328.248 ms
Loss rate: 29.87%
-- Flow 2:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 446.842 ms
Loss rate: 79.75%
-- Flow 3:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 234.965 ms
Loss rate: 16.63%
Run 3: Report of Verus — Data Link

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

**Throughput (Mbit/s):**
- Flow 1 ingress (mean 42.38 Mbit/s)
- Flow 2 ingress (mean 15.73 Mbit/s)
- Flow 3 ingress (mean 2.02 Mbit/s)
- Flow 1 egress (mean 29.99 Mbit/s)
- Flow 2 egress (mean 3.25 Mbit/s)
- Flow 3 egress (mean 1.69 Mbit/s)

**Delay (ms):**
- Flow 1 (95th percentile 328.25 ms)
- Flow 2 (95th percentile 446.84 ms)
- Flow 3 (95th percentile 234.97 ms)
Run 4: Statistics of Verus

Start at: 2019-02-20 14:11:04
End at: 2019-02-20 14:11:34
Local clock offset: -0.516 ms
Remote clock offset: -15.394 ms

# Below is generated by plot.py at 2019-02-20 15:51:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 22.59 Mbit/s
  95th percentile per-packet one-way delay: 316.806 ms
  Loss rate: 12.50%
-- Flow 1:
  Average throughput: 10.07 Mbit/s
  95th percentile per-packet one-way delay: 319.310 ms
  Loss rate: 11.49%
-- Flow 2:
  Average throughput: 16.38 Mbit/s
  95th percentile per-packet one-way delay: 318.324 ms
  Loss rate: 13.85%
-- Flow 3:
  Average throughput: 4.34 Mbit/s
  95th percentile per-packet one-way delay: 206.634 ms
  Loss rate: 8.21%
Run 4: Report of Verus — Data Link
Run 5: Statistics of Verus

Start at: 2019-02-20 15:23:46
End at: 2019-02-20 15:24:16
Local clock offset: -1.751 ms
Remote clock offset: -15.812 ms

# Below is generated by plot.py at 2019-02-20 15:51:44
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 20.92 Mbit/s
   95th percentile per-packet one-way delay: 376.667 ms
   Loss rate: 39.93%
-- Flow 1:
   Average throughput: 7.64 Mbit/s
   95th percentile per-packet one-way delay: 378.820 ms
   Loss rate: 46.94%
-- Flow 2:
   Average throughput: 17.09 Mbit/s
   95th percentile per-packet one-way delay: 375.171 ms
   Loss rate: 20.17%
-- Flow 3:
   Average throughput: 8.01 Mbit/s
   95th percentile per-packet one-way delay: 374.647 ms
   Loss rate: 63.57%
Run 5: Report of Verus — Data Link

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

- Flow 1 ingress (mean 14.15 Mbit/s)
- Flow 1 egress (mean 7.64 Mbit/s)
- Flow 2 ingress (mean 20.98 Mbit/s)
- Flow 2 egress (mean 17.09 Mbit/s)
- Flow 3 ingress (mean 20.62 Mbit/s)
- Flow 3 egress (mean 8.01 Mbit/s)

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

- Flow 1 (95th percentile 378.82 ms)
- Flow 2 (95th percentile 375.17 ms)
- Flow 3 (95th percentile 374.65 ms)
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 10:19:38
End at: 2019-02-20 10:20:08
Local clock offset: -3.527 ms
Remote clock offset: -10.617 ms

# Below is generated by plot.py at 2019-02-20 15:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.77 Mbit/s
95th percentile per-packet one-way delay: 191.054 ms
Loss rate: 6.28%
-- Flow 1:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 190.558 ms
Loss rate: 2.42%
-- Flow 2:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 191.078 ms
Loss rate: 6.85%
-- Flow 3:
Average throughput: 5.92 Mbit/s
95th percentile per-packet one-way delay: 191.293 ms
Loss rate: 9.99%
Run 1: Report of PCC-Vivace — Data Link
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 11:24:52
End at: 2019-02-20 11:25:22
Local clock offset: 7.696 ms
Remote clock offset: -17.028 ms

# Below is generated by plot.py at 2019-02-20 15:51:44
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 4.21 Mbit/s
  95th percentile per-packet one-way delay: 194.465 ms
  Loss rate: 4.56%
-- Flow 1:
  Average throughput: 2.03 Mbit/s
  95th percentile per-packet one-way delay: 194.467 ms
  Loss rate: 4.00%
-- Flow 2:
  Average throughput: 1.99 Mbit/s
  95th percentile per-packet one-way delay: 194.495 ms
  Loss rate: 4.44%
-- Flow 3:
  Average throughput: 2.64 Mbit/s
  95th percentile per-packet one-way delay: 194.389 ms
  Loss rate: 6.04%
Run 2: Report of PCC-Vivace — Data Link

![Graph 1: Throughput](image1)

![Graph 2: Per-packet one-way delay](image2)
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 12:48:23
End at: 2019-02-20 12:48:53
Local clock offset: -4.023 ms
Remote clock offset: -14.839 ms

# Below is generated by plot.py at 2019-02-20 15:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.13 Mbit/s
95th percentile per-packet one-way delay: 191.510 ms
Loss rate: 5.57%
-- Flow 1:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 191.475 ms
Loss rate: 5.27%
-- Flow 2:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 191.585 ms
Loss rate: 5.55%
-- Flow 3:
Average throughput: 2.79 Mbit/s
95th percentile per-packet one-way delay: 191.484 ms
Loss rate: 6.54%
Run 3: Report of PCC-Vivace — Data Link

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

Flow 1 ingress (mean 3.01 Mbit/s) | Flow 1 egress (mean 2.87 Mbit/s)
Flow 2 ingress (mean 2.13 Mbit/s) | Flow 2 egress (mean 2.04 Mbit/s)
Flow 3 ingress (mean 2.91 Mbit/s) | Flow 3 egress (mean 2.79 Mbit/s)

Flow 1 (95th percentile 191.47 ms) | Flow 2 (95th percentile 191.59 ms) | Flow 3 (95th percentile 191.48 ms)
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 13:58:42
End at: 2019-02-20 13:59:12
Local clock offset: 4.226 ms
Remote clock offset: -13.782 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.23 Mbit/s
95th percentile per-packet one-way delay: 191.095 ms
Loss rate: 5.31%
-- Flow 1:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 191.238 ms
Loss rate: 5.61%
-- Flow 2:
Average throughput: 11.74 Mbit/s
95th percentile per-packet one-way delay: 190.972 ms
Loss rate: 4.70%
-- Flow 3:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 191.247 ms
Loss rate: 7.30%
Run 4: Report of PCC-Vivace — Data Link

![Throughput and Delay Graphs](image)

- **Throughput**: Shows the throughput over time for different flows.
- **Delay**: Displays the delay per packet for each flow.

Legend:
- Flow 1 ingress (mean 2.63 Mbit/s)
- Flow 1 egress (mean 2.51 Mbit/s)
- Flow 2 ingress (mean 12.16 Mbit/s)
- Flow 2 egress (mean 11.74 Mbit/s)
- Flow 3 ingress (mean 6.26 Mbit/s)
- Flow 3 egress (mean 5.96 Mbit/s)

- **Flow 1**: 95th percentile 191.24 ms
- **Flow 2**: 95th percentile 190.97 ms
- **Flow 3**: 95th percentile 191.25 ms
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 15:13:44
End at: 2019-02-20 15:14:14
Local clock offset: 1.008 ms
Remote clock offset: -15.111 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 193.504 ms
Loss rate: 4.47%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 193.528 ms
Loss rate: 4.22%
-- Flow 2:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 193.484 ms
Loss rate: 4.10%
-- Flow 3:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 193.450 ms
Loss rate: 6.22%
Run 5: Report of PCC-Vivace — Data Link

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

- Flow 1 ingress (mean 2.12 Mbps)
- Flow 1 egress (mean 2.05 Mbps)
- Flow 2 ingress (mean 1.35 Mbps)
- Flow 2 egress (mean 1.33 Mbps)
- Flow 3 ingress (mean 1.50 Mbps)
- Flow 3 egress (mean 1.44 Mbps)

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

- Flow 1 (95th percentile 193.53 ms)
- Flow 2 (95th percentile 193.48 ms)
- Flow 3 (95th percentile 193.45 ms)
Run 1: Statistics of WebRTC media

Start at: 2019-02-20 10:30:53
End at: 2019-02-20 10:31:23
Local clock offset: -5.121 ms
Remote clock offset: -5.667 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 185.423 ms
Loss rate: 4.06%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 185.470 ms
Loss rate: 90.59%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 185.617 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 184.727 ms
Loss rate: 0.05%
Run 1: Report of WebRTC media — Data Link

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

- **Flow 1 ingress** (mean 0.02 Mbit/s)
- **Flow 1 egress** (mean 0.00 Mbit/s)
- **Flow 2 ingress** (mean 0.05 Mbit/s)
- **Flow 2 egress** (mean 0.05 Mbit/s)
- **Flow 3 ingress** (mean 0.04 Mbit/s)
- **Flow 3 egress** (mean 0.05 Mbit/s)

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

- **Flow 1** (95th percentile 185.47 ms)
- **Flow 2** (95th percentile 185.62 ms)
- **Flow 3** (95th percentile 184.73 ms)
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 11:39:42
End at: 2019-02-20 11:40:12
Local clock offset: 5.247 ms
Remote clock offset: -13.451 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
   Average throughput: 0.09 Mbit/s
   95th percentile per-packet one-way delay: 191.783 ms
   Loss rate: 12.47%
-- Flow 1:
   Average throughput: 0.00 Mbit/s
   95th percentile per-packet one-way delay: 191.495 ms
   Loss rate: 90.11%
-- Flow 2:
   Average throughput: 0.05 Mbit/s
   95th percentile per-packet one-way delay: 191.721 ms
   Loss rate: 7.60%
-- Flow 3:
   Average throughput: 0.05 Mbit/s
   95th percentile per-packet one-way delay: 191.855 ms
   Loss rate: 10.65%
Run 2: Report of WebRTC media — Data Link
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 13:03:24
End at: 2019-02-20 13:03:54
Local clock offset: -0.83 ms
Remote clock offset: -16.356 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
  Average throughput: 0.09 Mbit/s
  95th percentile per-packet one-way delay: 193.576 ms
  Loss rate: 4.13%
-- Flow 1:
  Average throughput: 0.00 Mbit/s
  95th percentile per-packet one-way delay: 193.150 ms
  Loss rate: 90.59%
-- Flow 2:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 192.617 ms
  Loss rate: 0.11%
-- Flow 3:
  Average throughput: 0.05 Mbit/s
  95th percentile per-packet one-way delay: 194.177 ms
  Loss rate: 0.05%
Run 3: Report of WebRTC media — Data Link

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

- Flow 1 ingress (mean 0.03 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 0.05 Mbit/s)
- Flow 2 egress (mean 0.05 Mbit/s)
- Flow 3 ingress (mean 0.05 Mbit/s)
- Flow 3 egress (mean 0.05 Mbit/s)

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

- Flow 1 (95th percentile 193.15 ms)
- Flow 2 (95th percentile 192.62 ms)
- Flow 3 (95th percentile 194.18 ms)
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 14:13:48
End at: 2019-02-20 14:14:18
Local clock offset: -1.111 ms
Remote clock offset: -14.277 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 192.499 ms
Loss rate: 8.12%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 191.301 ms
Loss rate: 90.89%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 192.550 ms
Loss rate: 4.51%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 192.431 ms
Loss rate: 4.07%
Run 4: Report of WebRTC media — Data Link

Throughput (Mbps)

Time (s)

Flow 1 ingress (mean 0.03 Mbps)
Flow 1 egress (mean 0.00 Mbps)
Flow 2 ingress (mean 0.06 Mbps)
Flow 2 egress (mean 0.05 Mbps)
Flow 3 ingress (mean 0.05 Mbps)
Flow 3 egress (mean 0.05 Mbps)

Per-packet one-way delay (ms)

Time (s)

Flow 1 (95th percentile 191.30 ms)
Flow 2 (95th percentile 192.55 ms)
Flow 3 (95th percentile 192.43 ms)
Run 5: Statistics of WebRTC media

Start at: 2019-02-20 15:26:10
End at: 2019-02-20 15:26:40
Local clock offset: -1.928 ms
Remote clock offset: -13.619 ms

# Below is generated by plot.py at 2019-02-20 15:51:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 191.171 ms
Loss rate: 7.08%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 190.315 ms
Loss rate: 90.11%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 191.201 ms
Loss rate: 3.33%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 191.168 ms
Loss rate: 3.28%
Run 5: Report of WebRTC media — Data Link