

Pantheon Report

Generated at 2018-11-15 13:23:06 (UTC).

Data path: Mexico on **em1** (*remote*) → AWS California 2 on **ens5** (*local*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

NTP offsets were measured against **time.stanford.edu** and have been applied to correct the timestamps in logs.

System info:

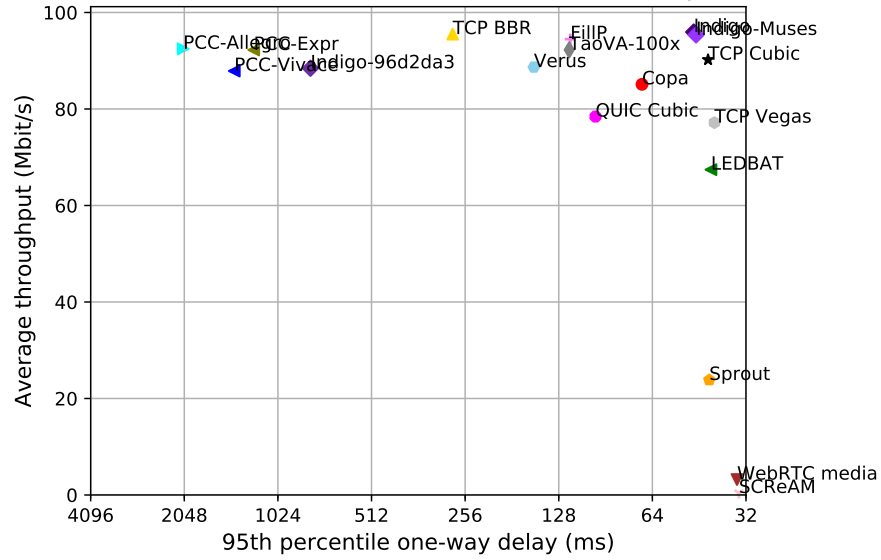
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

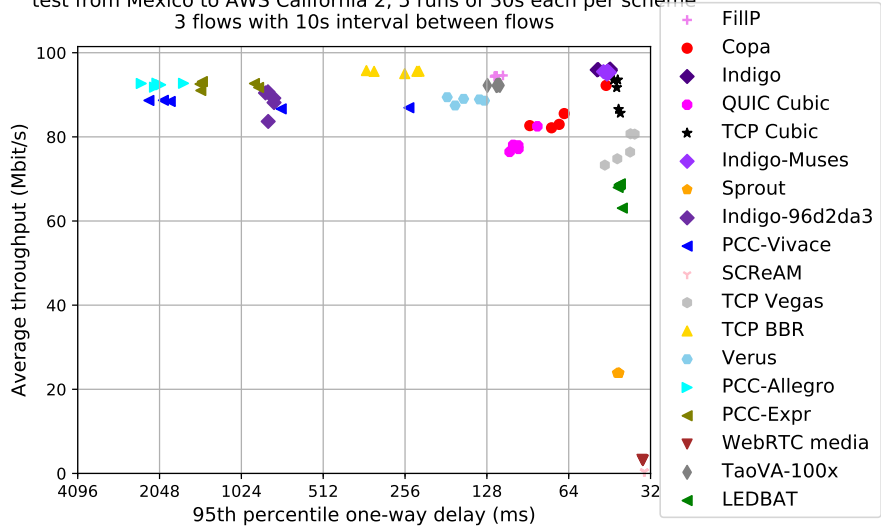
```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
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 @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from Mexico to AWS California 2, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from Mexico to AWS California 2, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows



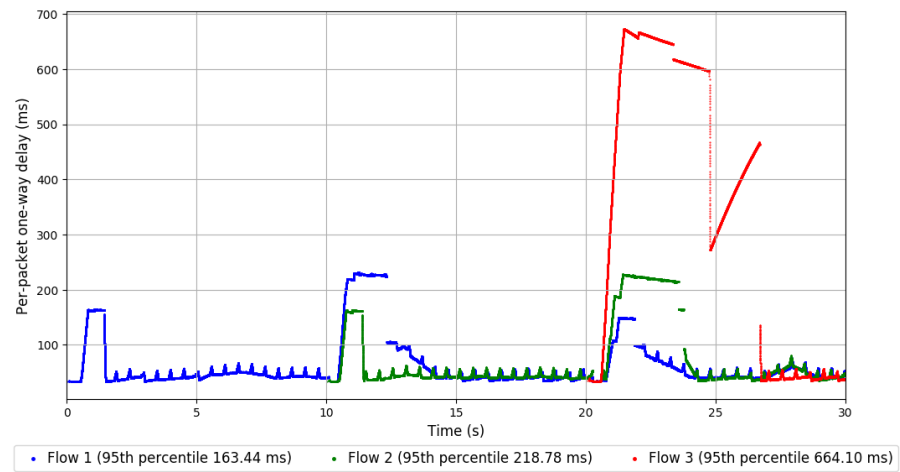
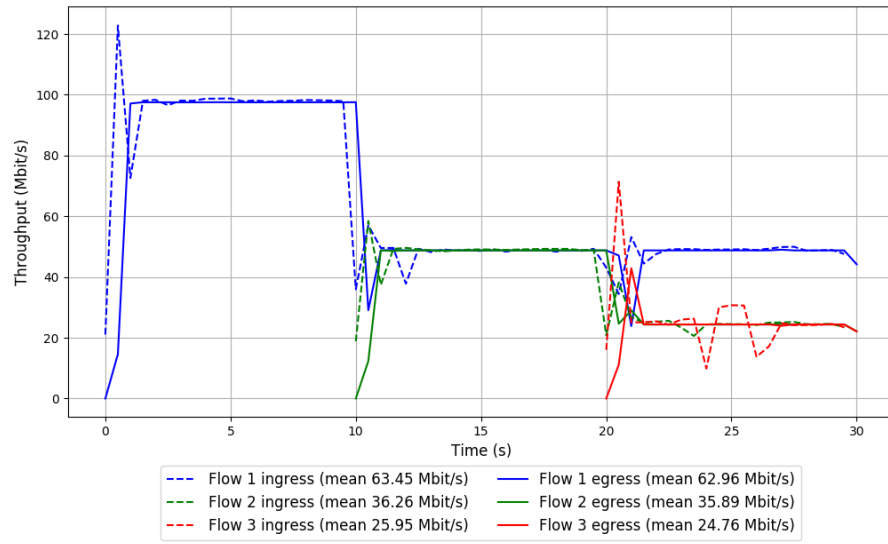
| scheme | # runs | mean avg tput (Mbit/s) | | | mean 95th-%ile delay (ms) | | | mean loss rate (%) | | |
|----------------|--------|------------------------|--------|--------|---------------------------|---------|--------|--------------------|--------|--------|
| | | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 |
| TCP BBR | 5 | 59.09 | 36.80 | 36.08 | 183.57 | 307.84 | 522.92 | 0.86 | 1.77 | 4.03 |
| Copa | 5 | 50.04 | 39.52 | 26.44 | 94.18 | 48.14 | 45.26 | 0.18 | 0.28 | 0.71 |
| TCP Cubic | 5 | 53.13 | 40.84 | 29.89 | 43.93 | 41.60 | 46.73 | 0.15 | 0.31 | 0.68 |
| FillP | 5 | 55.47 | 42.62 | 32.18 | 104.88 | 121.91 | 104.38 | 0.43 | 3.02 | 1.76 |
| Indigo | 5 | 59.42 | 38.65 | 33.16 | 46.19 | 51.48 | 47.29 | 0.20 | 0.38 | 0.79 |
| Indigo-96d2da3 | 5 | 55.82 | 35.26 | 27.80 | 678.52 | 846.01 | 951.86 | 3.27 | 4.37 | 8.61 |
| LEDBAT | 5 | 38.58 | 32.06 | 22.68 | 41.55 | 41.99 | 41.22 | 0.15 | 0.37 | 1.01 |
| Indigo-Muses | 5 | 59.40 | 38.08 | 32.25 | 45.86 | 46.25 | 49.56 | 0.14 | 0.27 | 0.74 |
| PCC-Allegro | 5 | 58.29 | 39.96 | 23.22 | 2108.44 | 1360.01 | 163.02 | 10.42 | 8.40 | 2.50 |
| PCC-Expr | 5 | 58.14 | 38.80 | 25.26 | 893.02 | 1103.95 | 128.33 | 31.77 | 10.85 | 1.67 |
| QUIC Cubic | 5 | 45.28 | 35.64 | 28.75 | 85.60 | 109.07 | 135.97 | 0.22 | 0.38 | 1.03 |
| SCReAM | 5 | 0.21 | 0.21 | 0.22 | 33.73 | 33.72 | 33.71 | 0.23 | 0.40 | 0.64 |
| Sprout | 5 | 12.03 | 11.93 | 11.83 | 41.51 | 42.38 | 42.70 | 0.28 | 0.37 | 0.81 |
| TaoVA-100x | 5 | 55.27 | 42.84 | 25.56 | 111.41 | 119.07 | 167.52 | 0.39 | 0.78 | 2.77 |
| TCP Vegas | 5 | 39.14 | 41.44 | 31.57 | 49.12 | 36.66 | 38.09 | 0.17 | 0.31 | 0.75 |
| Verus | 5 | 54.96 | 37.10 | 27.38 | 137.33 | 148.81 | 270.94 | 0.40 | 0.50 | 1.05 |
| PCC-Vivace | 5 | 55.36 | 36.29 | 25.48 | 1498.47 | 731.56 | 147.06 | 4.66 | 5.36 | 2.04 |
| WebRTC media | 5 | 1.79 | 1.00 | 0.41 | 34.17 | 34.23 | 34.23 | 0.09 | 0.21 | 0.32 |

Run 1: Statistics of TCP BBR

Start at: 2018-11-15 11:08:36
End at: 2018-11-15 11:09:06
Local clock offset: 0.213 ms
Remote clock offset: -4.556 ms

Below is generated by plot.py at 2018-11-15 13:11:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 256.699 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 62.96 Mbit/s
95th percentile per-packet one-way delay: 163.435 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 218.781 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 24.76 Mbit/s
95th percentile per-packet one-way delay: 664.101 ms
Loss rate: 5.21%

Run 1: Report of TCP BBR — Data Link

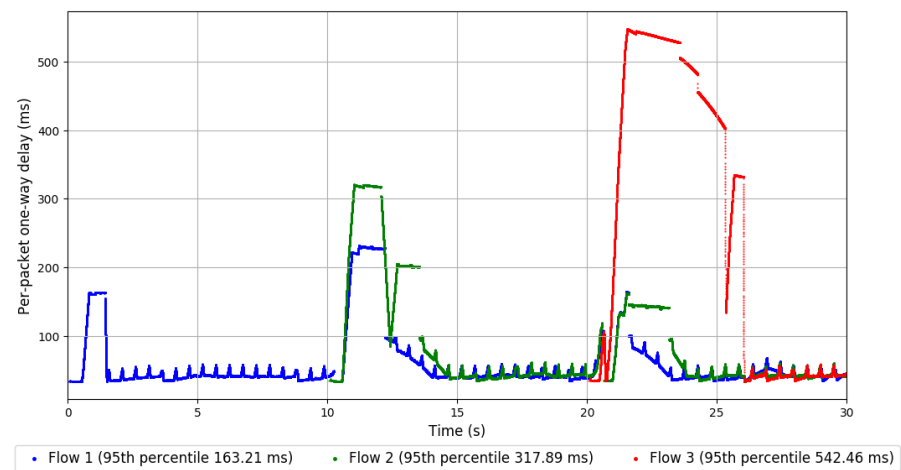
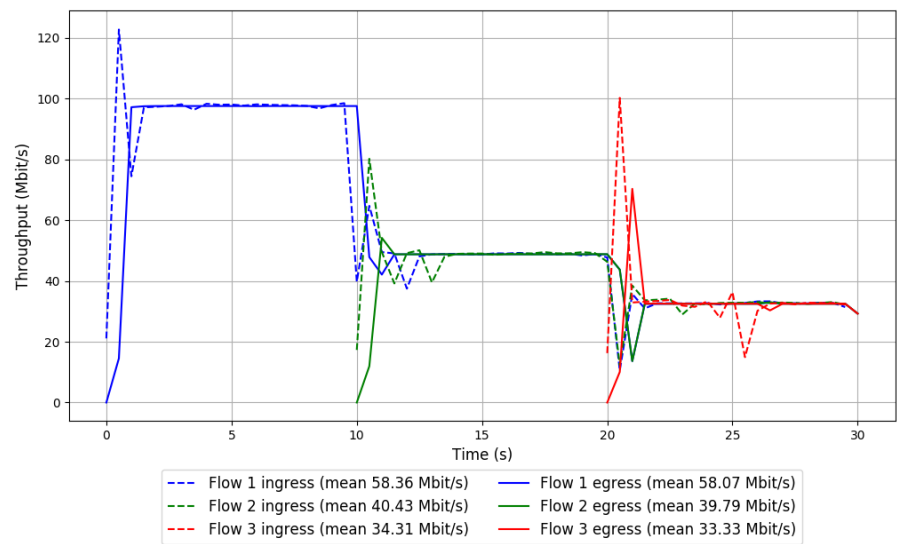


Run 2: Statistics of TCP BBR

Start at: 2018-11-15 11:33:27
End at: 2018-11-15 11:33:57
Local clock offset: 0.162 ms
Remote clock offset: -4.083 ms

Below is generated by plot.py at 2018-11-15 13:11:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.57 Mbit/s
95th percentile per-packet one-way delay: 332.744 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 58.07 Mbit/s
95th percentile per-packet one-way delay: 163.213 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 39.79 Mbit/s
95th percentile per-packet one-way delay: 317.891 ms
Loss rate: 1.90%
-- Flow 3:
Average throughput: 33.33 Mbit/s
95th percentile per-packet one-way delay: 542.457 ms
Loss rate: 3.48%

Run 2: Report of TCP BBR — Data Link

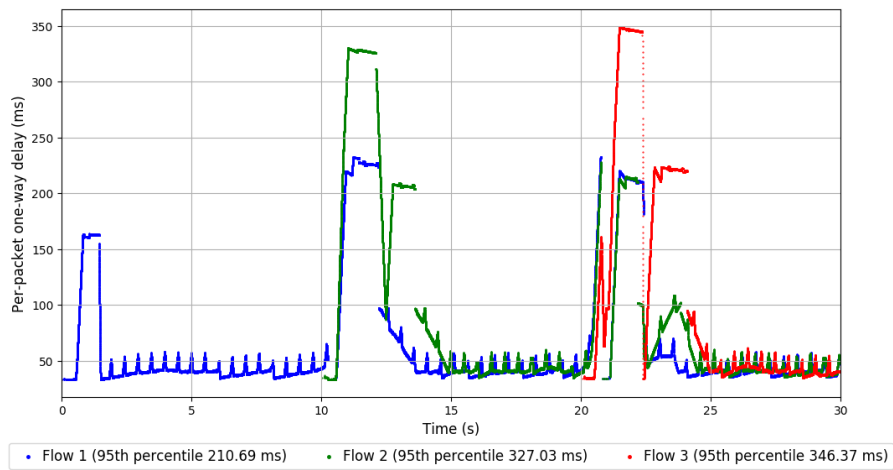
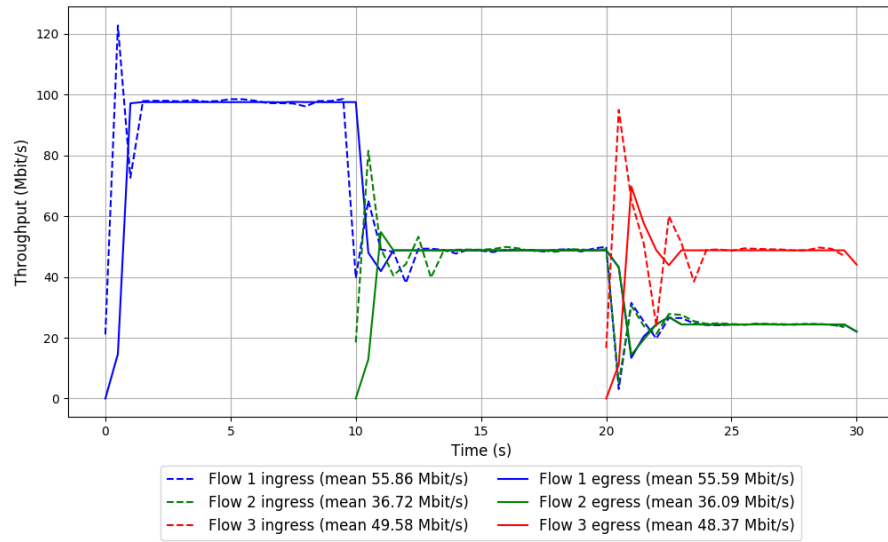


Run 3: Statistics of TCP BBR

Start at: 2018-11-15 11:58:37
End at: 2018-11-15 11:59:07
Local clock offset: 0.11 ms
Remote clock offset: -2.706 ms

Below is generated by plot.py at 2018-11-15 13:11:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.62 Mbit/s
95th percentile per-packet one-way delay: 227.350 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 55.59 Mbit/s
95th percentile per-packet one-way delay: 210.686 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 36.09 Mbit/s
95th percentile per-packet one-way delay: 327.034 ms
Loss rate: 2.05%
-- Flow 3:
Average throughput: 48.37 Mbit/s
95th percentile per-packet one-way delay: 346.367 ms
Loss rate: 3.07%

Run 3: Report of TCP BBR — Data Link

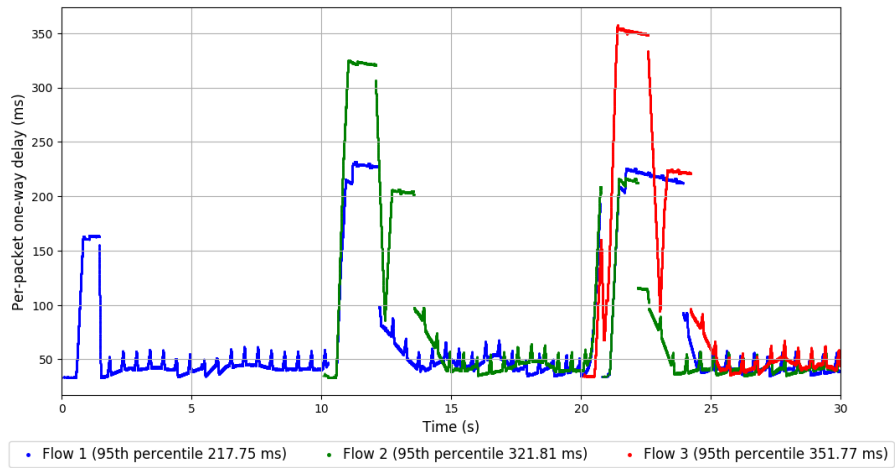
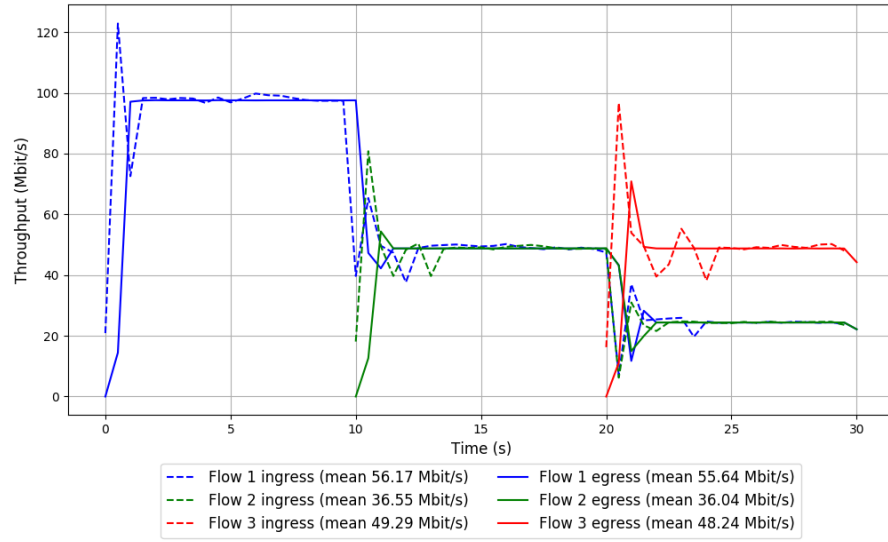


Run 4: Statistics of TCP BBR

Start at: 2018-11-15 12:23:44
End at: 2018-11-15 12:24:14
Local clock offset: 0.219 ms
Remote clock offset: -2.219 ms

Below is generated by plot.py at 2018-11-15 13:11:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.60 Mbit/s
95th percentile per-packet one-way delay: 231.569 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 55.64 Mbit/s
95th percentile per-packet one-way delay: 217.746 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 36.04 Mbit/s
95th percentile per-packet one-way delay: 321.812 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 48.24 Mbit/s
95th percentile per-packet one-way delay: 351.768 ms
Loss rate: 2.77%

Run 4: Report of TCP BBR — Data Link

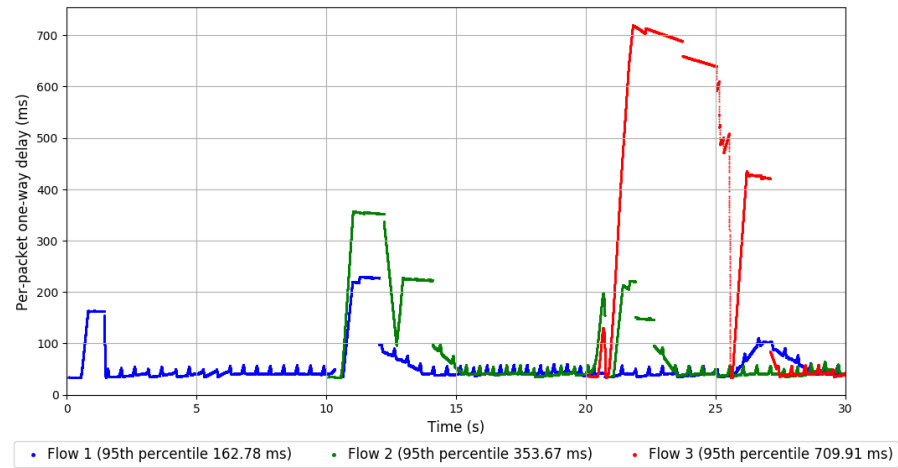
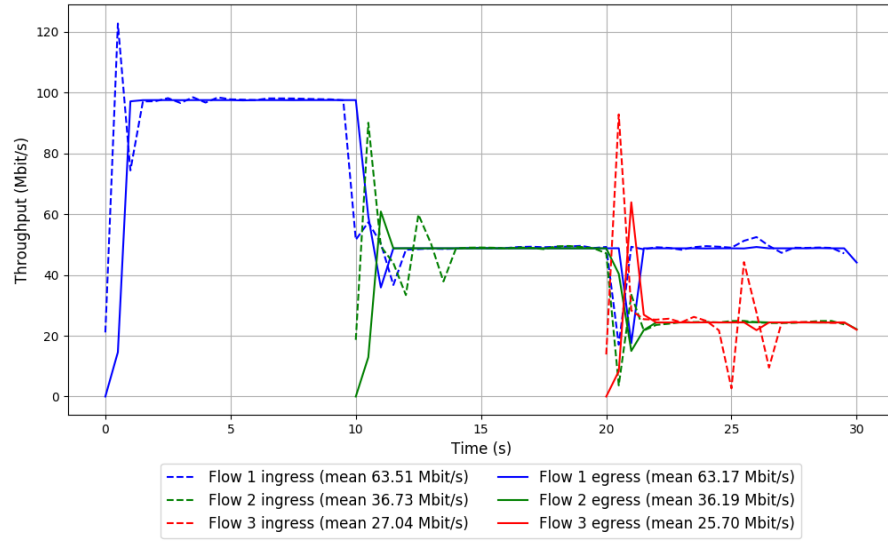


Run 5: Statistics of TCP BBR

Start at: 2018-11-15 12:48:32
End at: 2018-11-15 12:49:02
Local clock offset: -3.256 ms
Remote clock offset: -1.883 ms

Below is generated by plot.py at 2018-11-15 13:11:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 355.061 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 63.17 Mbit/s
95th percentile per-packet one-way delay: 162.781 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 36.19 Mbit/s
95th percentile per-packet one-way delay: 353.668 ms
Loss rate: 1.80%
-- Flow 3:
Average throughput: 25.70 Mbit/s
95th percentile per-packet one-way delay: 709.908 ms
Loss rate: 5.60%

Run 5: Report of TCP BBR — Data Link

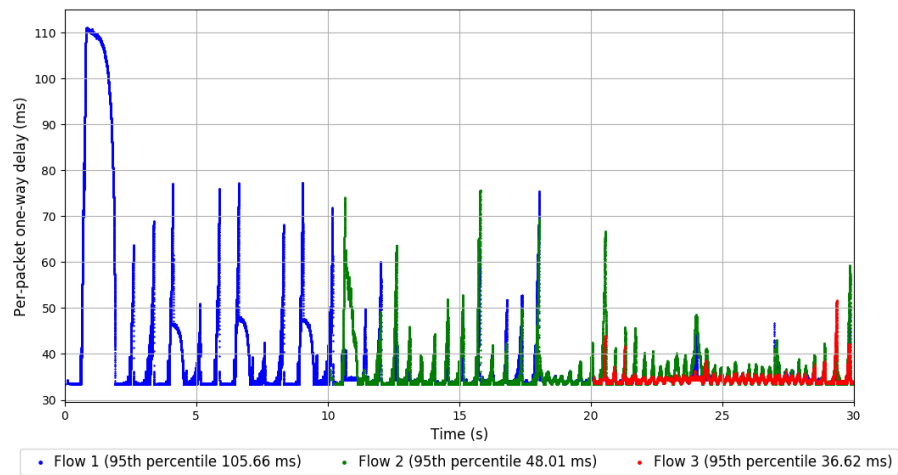
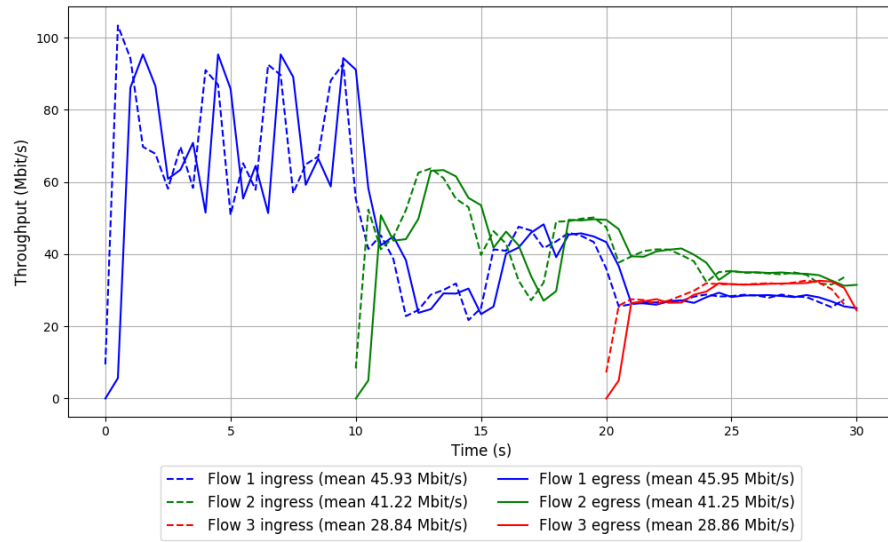


Run 1: Statistics of Copa

Start at: 2018-11-15 11:14:07
End at: 2018-11-15 11:14:37
Local clock offset: 0.224 ms
Remote clock offset: -4.488 ms

Below is generated by plot.py at 2018-11-15 13:12:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 82.96 Mbit/s
95th percentile per-packet one-way delay: 69.403 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 45.95 Mbit/s
95th percentile per-packet one-way delay: 105.660 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 41.25 Mbit/s
95th percentile per-packet one-way delay: 48.014 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 36.618 ms
Loss rate: 0.58%

Run 1: Report of Copa — Data Link

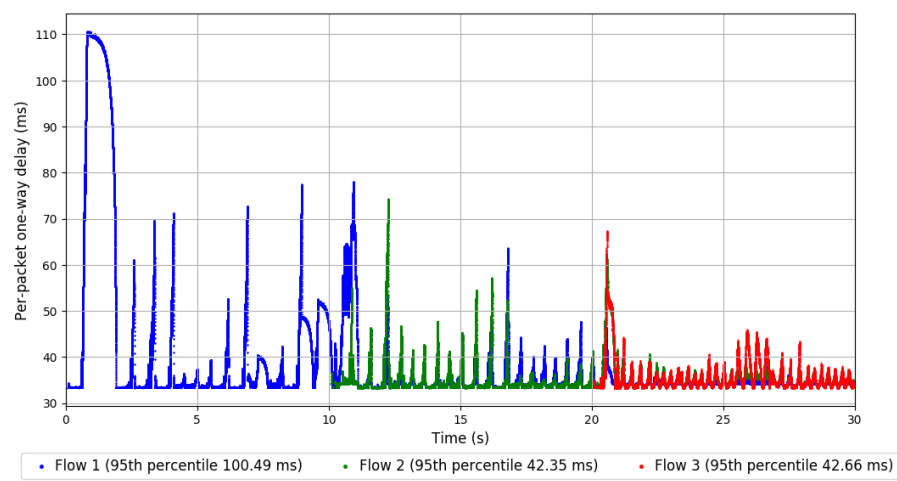
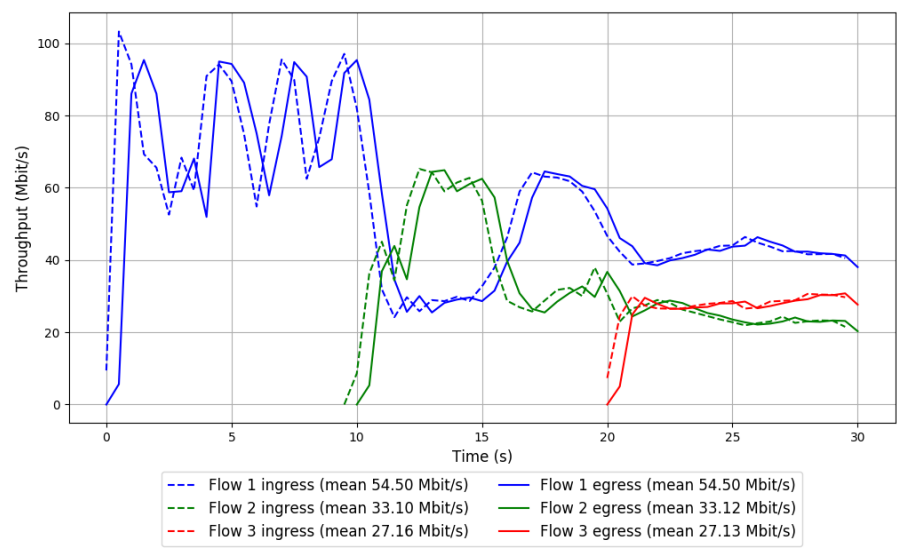


Run 2: Statistics of Copa

Start at: 2018-11-15 11:39:12
End at: 2018-11-15 11:39:42
Local clock offset: 0.117 ms
Remote clock offset: -3.467 ms

Below is generated by plot.py at 2018-11-15 13:12:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 85.54 Mbit/s
95th percentile per-packet one-way delay: 66.487 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 54.50 Mbit/s
95th percentile per-packet one-way delay: 100.486 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 33.12 Mbit/s
95th percentile per-packet one-way delay: 42.352 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 27.13 Mbit/s
95th percentile per-packet one-way delay: 42.661 ms
Loss rate: 0.75%

Run 2: Report of Copa — Data Link

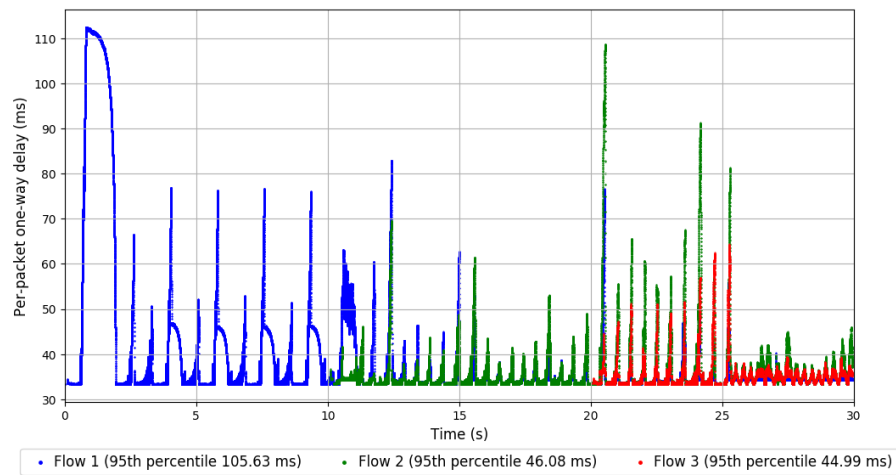
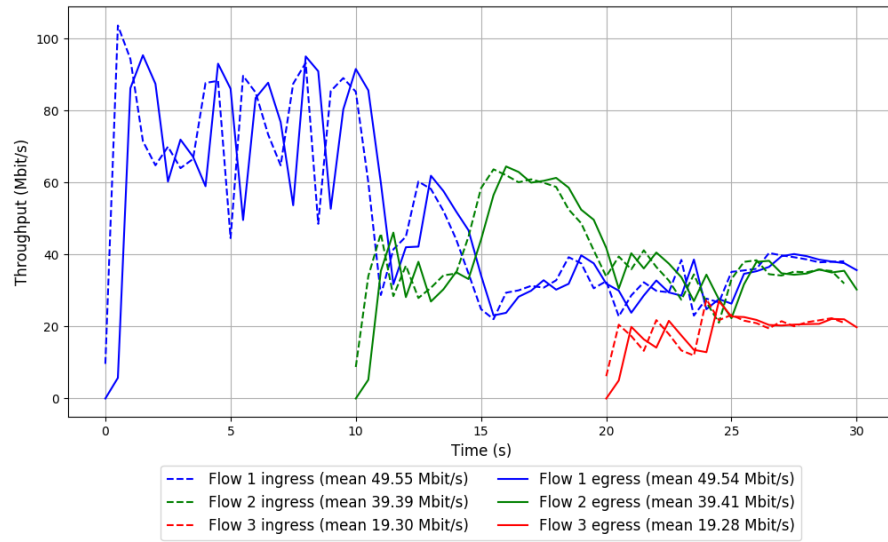


Run 3: Statistics of Copa

Start at: 2018-11-15 12:04:09
End at: 2018-11-15 12:04:39
Local clock offset: 0.101 ms
Remote clock offset: -2.555 ms

Below is generated by plot.py at 2018-11-15 13:12:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 82.16 Mbit/s
95th percentile per-packet one-way delay: 74.029 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 49.54 Mbit/s
95th percentile per-packet one-way delay: 105.629 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 46.079 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 19.28 Mbit/s
95th percentile per-packet one-way delay: 44.988 ms
Loss rate: 0.74%

Run 3: Report of Copa — Data Link

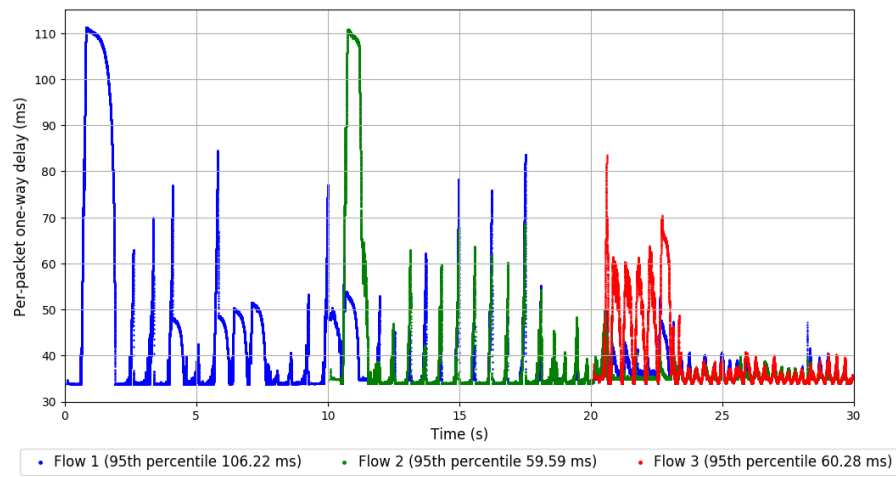
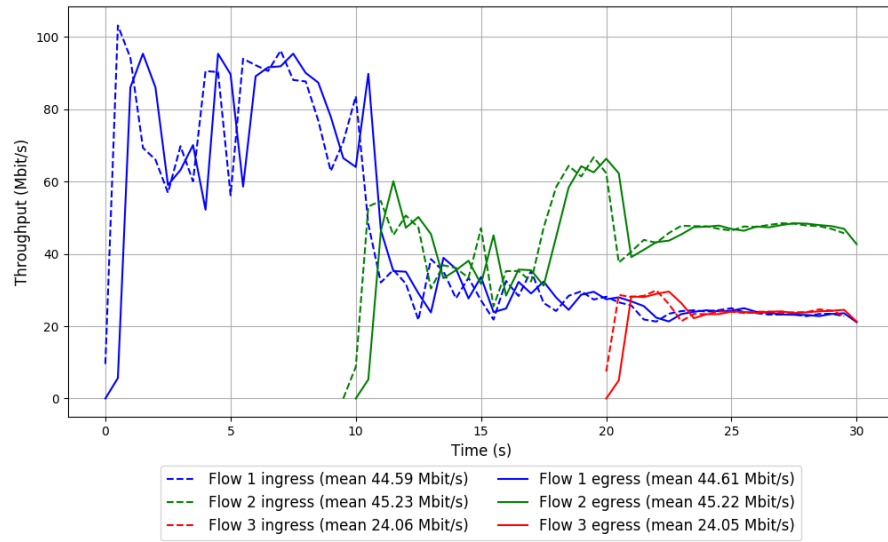


Run 4: Statistics of Copa

Start at: 2018-11-15 12:29:15
End at: 2018-11-15 12:29:45
Local clock offset: -0.607 ms
Remote clock offset: -2.407 ms

Below is generated by plot.py at 2018-11-15 13:13:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 82.67 Mbit/s
95th percentile per-packet one-way delay: 89.006 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 44.61 Mbit/s
95th percentile per-packet one-way delay: 106.221 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 45.22 Mbit/s
95th percentile per-packet one-way delay: 59.594 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 24.05 Mbit/s
95th percentile per-packet one-way delay: 60.278 ms
Loss rate: 0.68%

Run 4: Report of Copa — Data Link

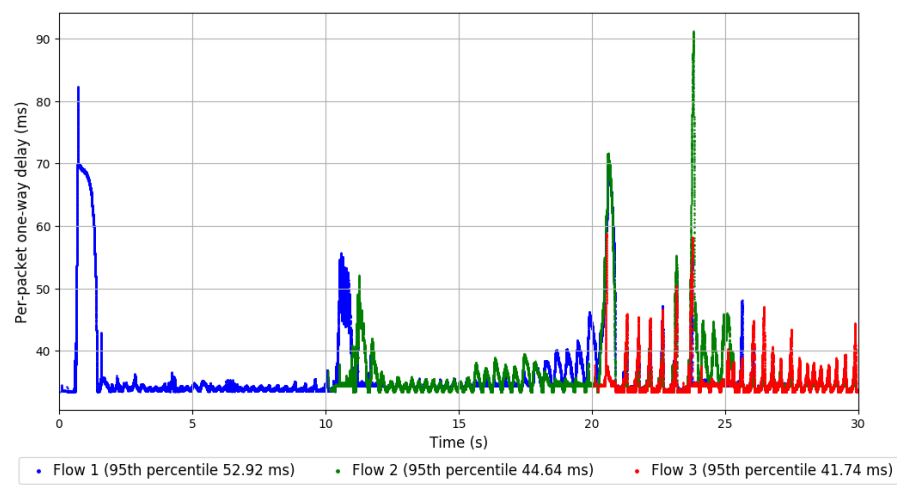
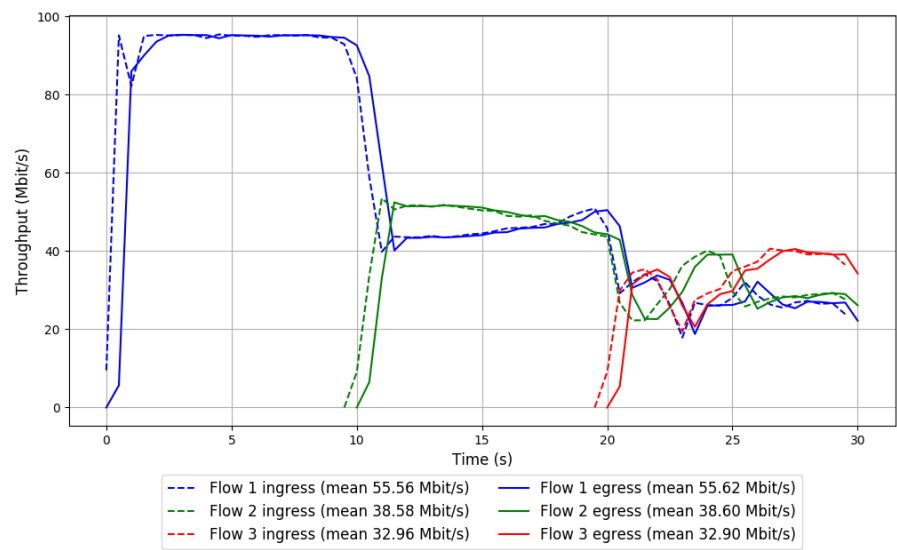


Run 5: Statistics of Copa

Start at: 2018-11-15 12:54:04
End at: 2018-11-15 12:54:34
Local clock offset: -3.585 ms
Remote clock offset: -1.869 ms

Below is generated by plot.py at 2018-11-15 13:13:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.23 Mbit/s
95th percentile per-packet one-way delay: 46.624 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 55.62 Mbit/s
95th percentile per-packet one-way delay: 52.921 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 38.60 Mbit/s
95th percentile per-packet one-way delay: 44.637 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 32.90 Mbit/s
95th percentile per-packet one-way delay: 41.737 ms
Loss rate: 0.79%

Run 5: Report of Copa — Data Link

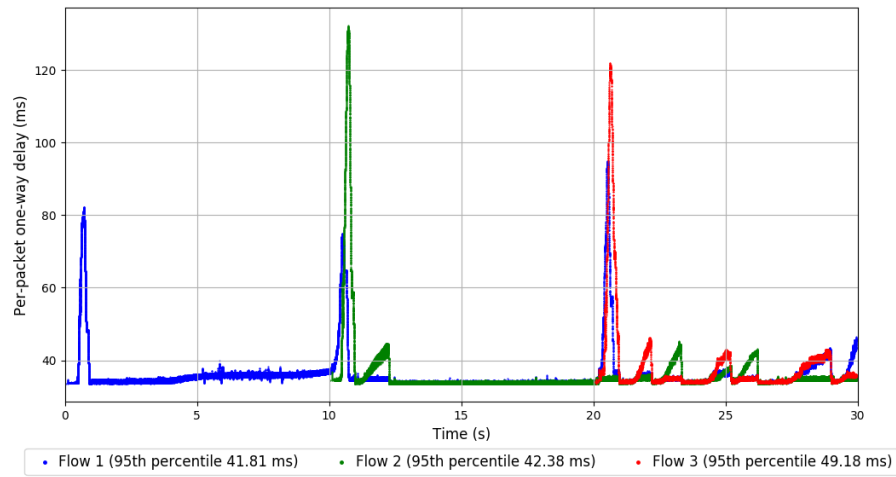
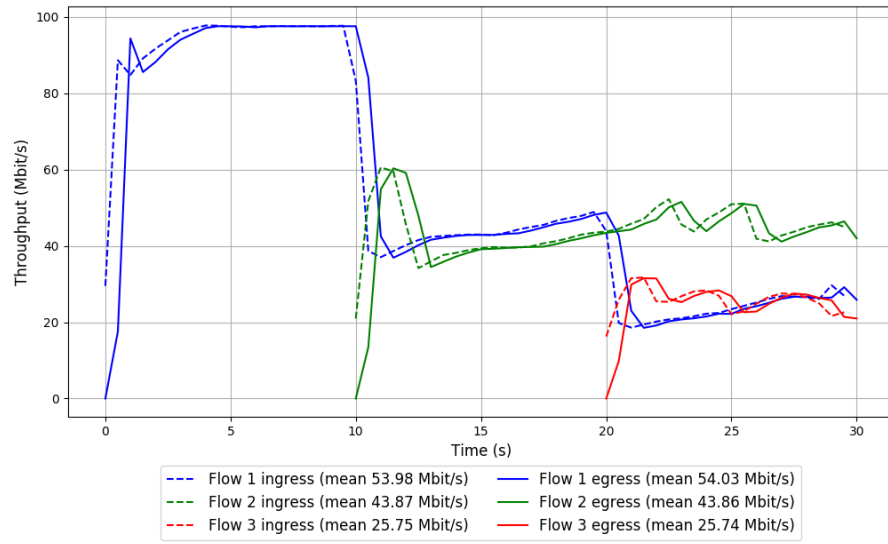


Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 11:27:54
End at: 2018-11-15 11:28:24
Local clock offset: 0.288 ms
Remote clock offset: -4.133 ms

Below is generated by plot.py at 2018-11-15 13:13:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.73 Mbit/s
95th percentile per-packet one-way delay: 42.606 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 54.03 Mbit/s
95th percentile per-packet one-way delay: 41.815 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 43.86 Mbit/s
95th percentile per-packet one-way delay: 42.385 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 25.74 Mbit/s
95th percentile per-packet one-way delay: 49.184 ms
Loss rate: 0.68%

Run 1: Report of TCP Cubic — Data Link

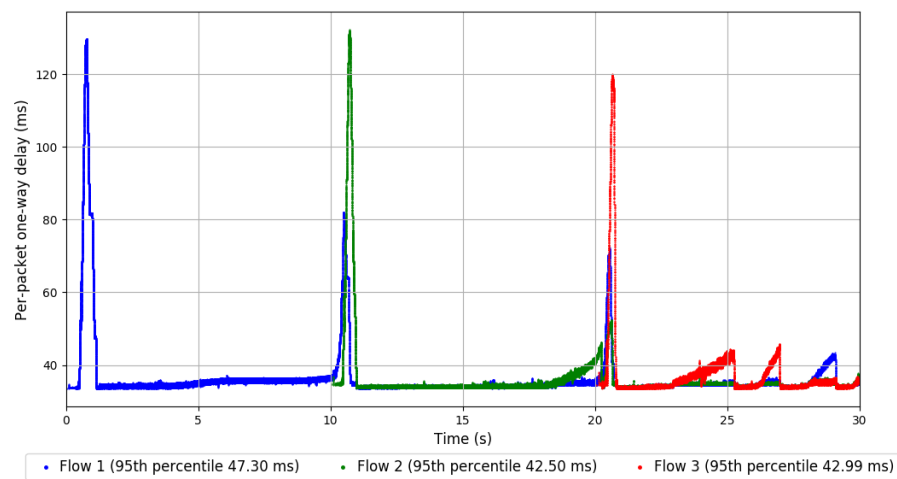
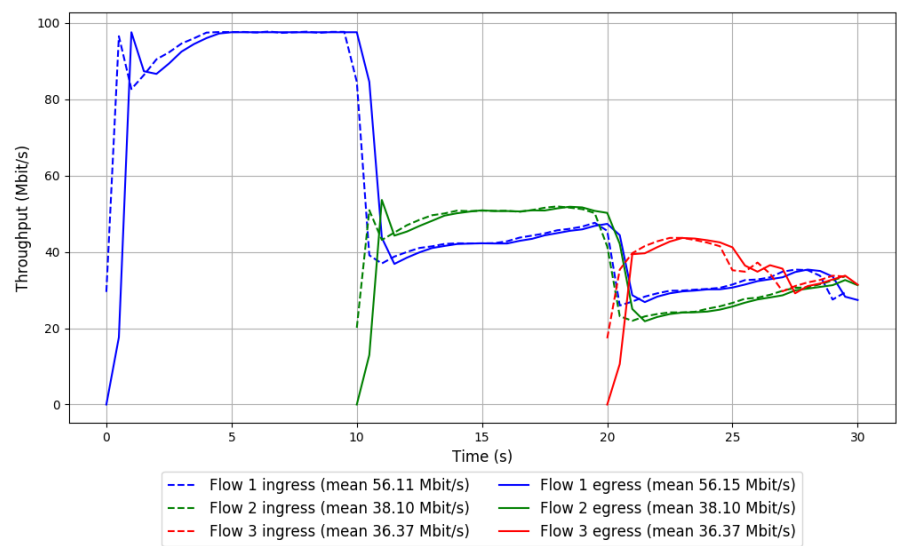


Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 11:53:07
End at: 2018-11-15 11:53:37
Local clock offset: 0.097 ms
Remote clock offset: -3.128 ms

Below is generated by plot.py at 2018-11-15 13:13:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.53 Mbit/s
95th percentile per-packet one-way delay: 43.724 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 56.15 Mbit/s
95th percentile per-packet one-way delay: 47.296 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 38.10 Mbit/s
95th percentile per-packet one-way delay: 42.498 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 36.37 Mbit/s
95th percentile per-packet one-way delay: 42.989 ms
Loss rate: 0.63%

Run 2: Report of TCP Cubic — Data Link

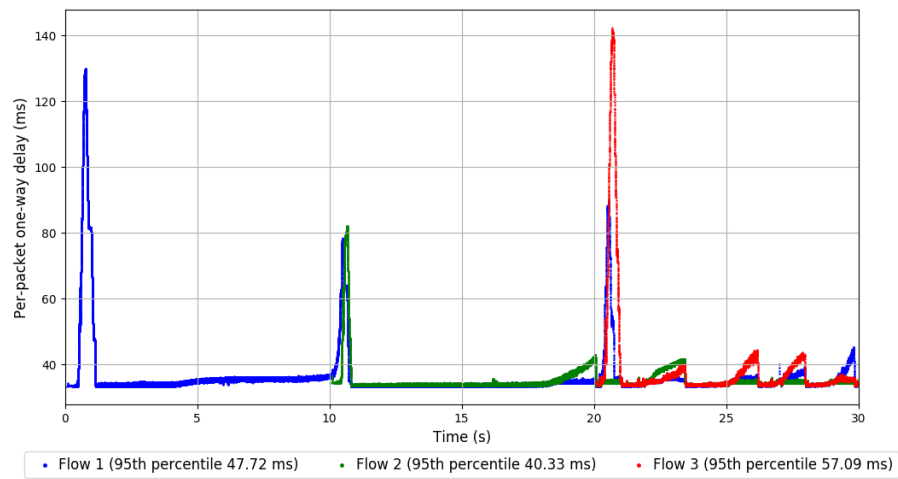
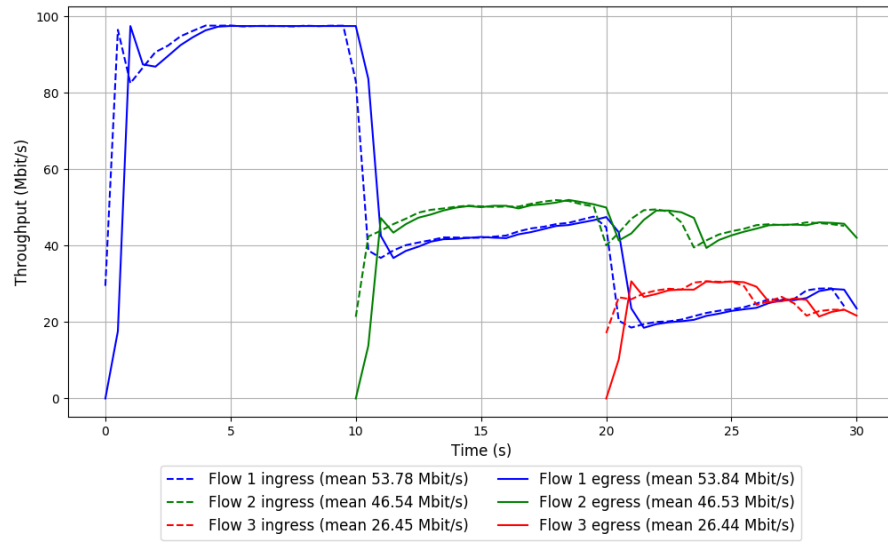


Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 12:18:00
End at: 2018-11-15 12:18:30
Local clock offset: 0.187 ms
Remote clock offset: -2.274 ms

Below is generated by plot.py at 2018-11-15 13:13:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.55 Mbit/s
95th percentile per-packet one-way delay: 42.270 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 53.84 Mbit/s
95th percentile per-packet one-way delay: 47.718 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 46.53 Mbit/s
95th percentile per-packet one-way delay: 40.333 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 26.44 Mbit/s
95th percentile per-packet one-way delay: 57.086 ms
Loss rate: 0.65%

Run 3: Report of TCP Cubic — Data Link

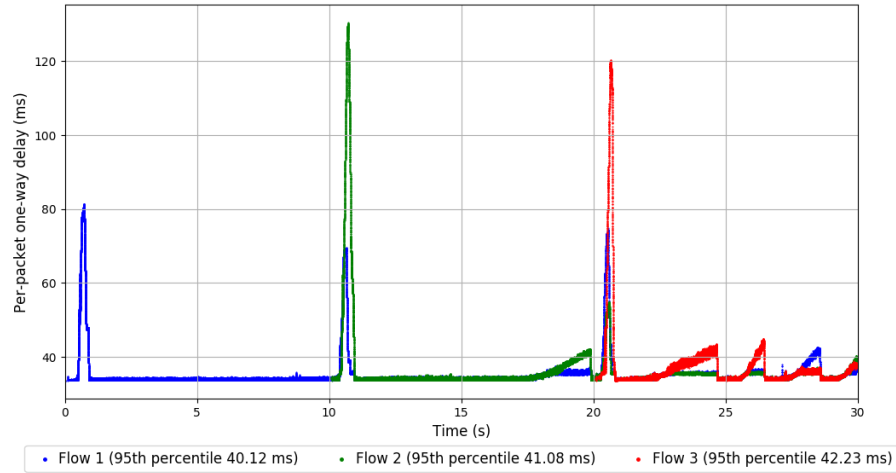
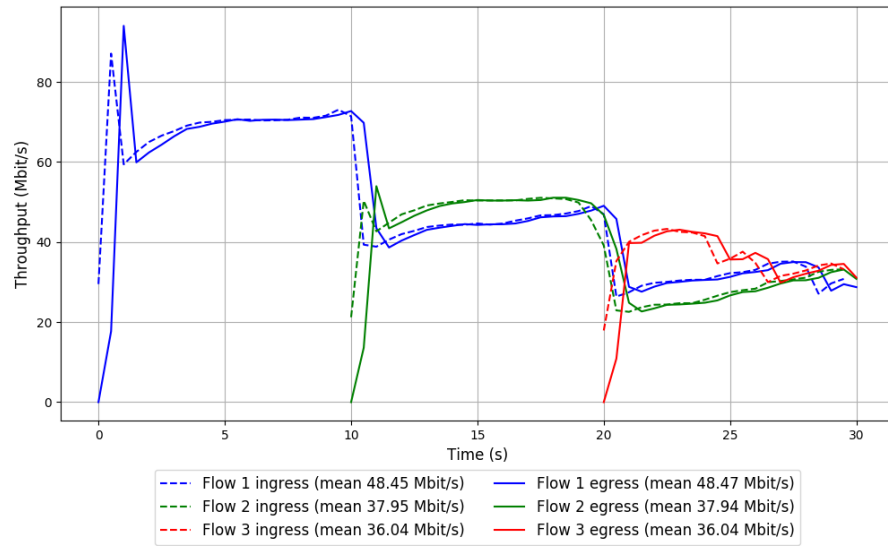


Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 12:43:03
End at: 2018-11-15 12:43:33
Local clock offset: -2.842 ms
Remote clock offset: -1.883 ms

Below is generated by plot.py at 2018-11-15 13:13:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 85.66 Mbit/s
95th percentile per-packet one-way delay: 41.324 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 48.47 Mbit/s
95th percentile per-packet one-way delay: 40.123 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 37.94 Mbit/s
95th percentile per-packet one-way delay: 41.080 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 36.04 Mbit/s
95th percentile per-packet one-way delay: 42.231 ms
Loss rate: 0.64%

Run 4: Report of TCP Cubic — Data Link

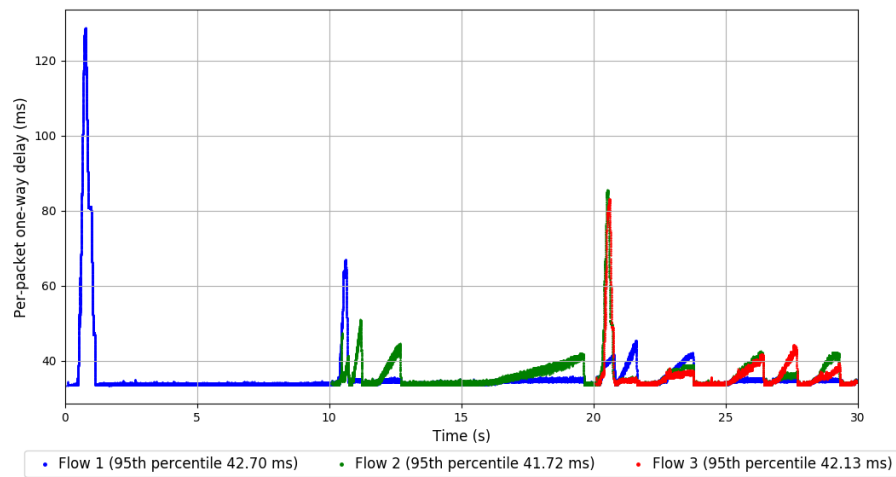
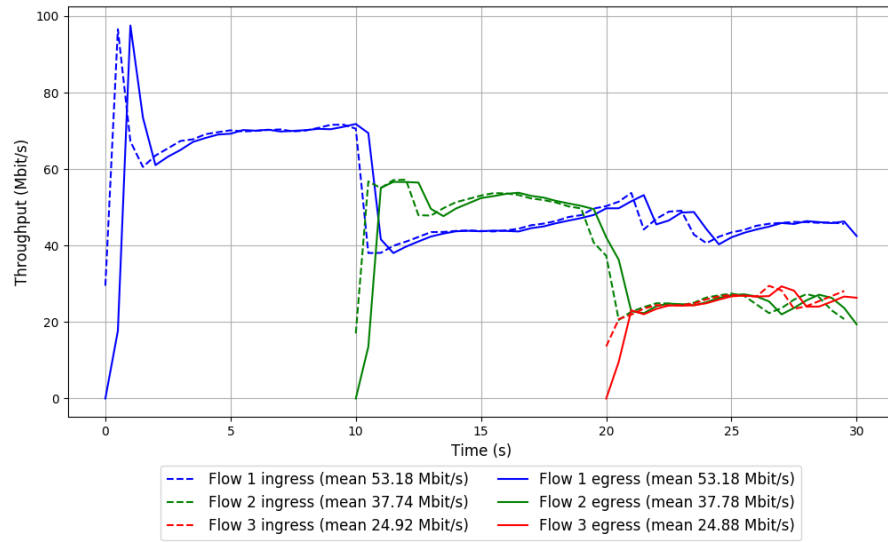


Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 13:07:52
End at: 2018-11-15 13:08:22
Local clock offset: -3.148 ms
Remote clock offset: -1.403 ms

Below is generated by plot.py at 2018-11-15 13:13:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 86.56 Mbit/s
95th percentile per-packet one-way delay: 41.958 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 53.18 Mbit/s
95th percentile per-packet one-way delay: 42.703 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 37.78 Mbit/s
95th percentile per-packet one-way delay: 41.720 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 24.88 Mbit/s
95th percentile per-packet one-way delay: 42.135 ms
Loss rate: 0.79%

Run 5: Report of TCP Cubic — Data Link

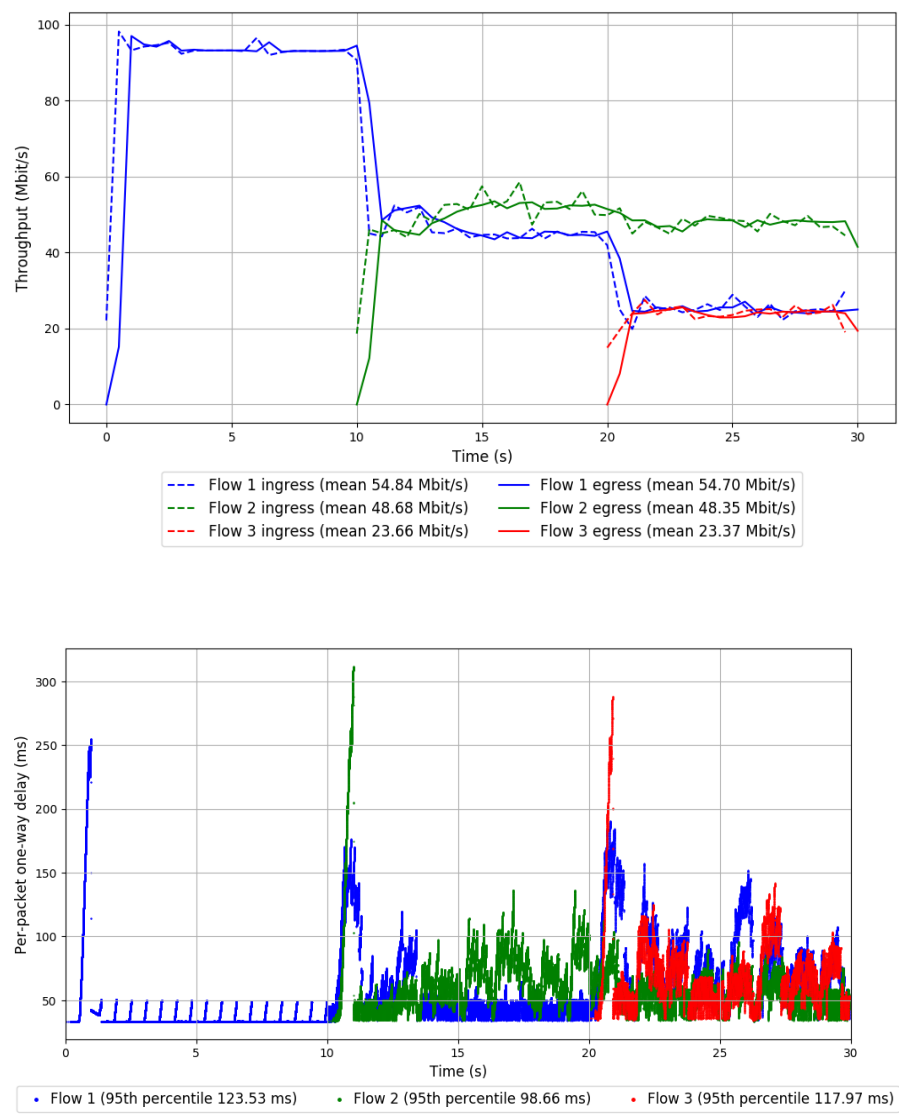


Run 1: Statistics of FillP

Start at: 2018-11-15 11:21:08
End at: 2018-11-15 11:21:38
Local clock offset: 0.274 ms
Remote clock offset: -4.214 ms

Below is generated by plot.py at 2018-11-15 13:13:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.60 Mbit/s
95th percentile per-packet one-way delay: 111.707 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 123.529 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 48.35 Mbit/s
95th percentile per-packet one-way delay: 98.656 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 23.37 Mbit/s
95th percentile per-packet one-way delay: 117.969 ms
Loss rate: 1.74%

Run 1: Report of FillP — Data Link

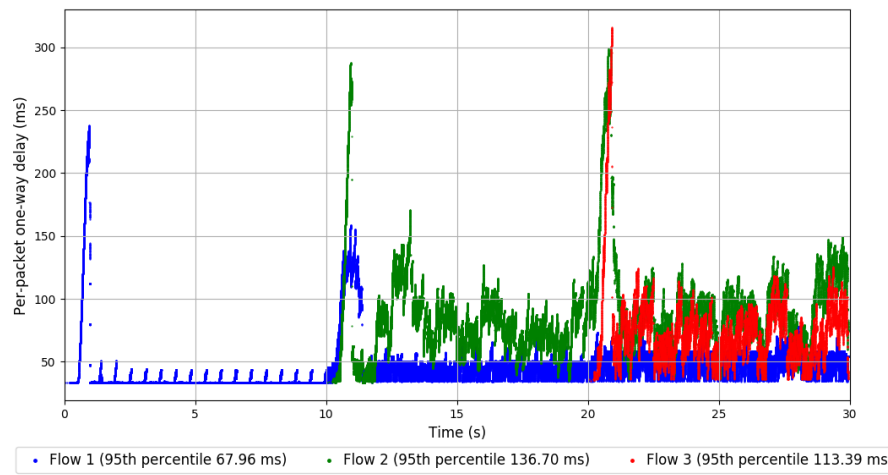
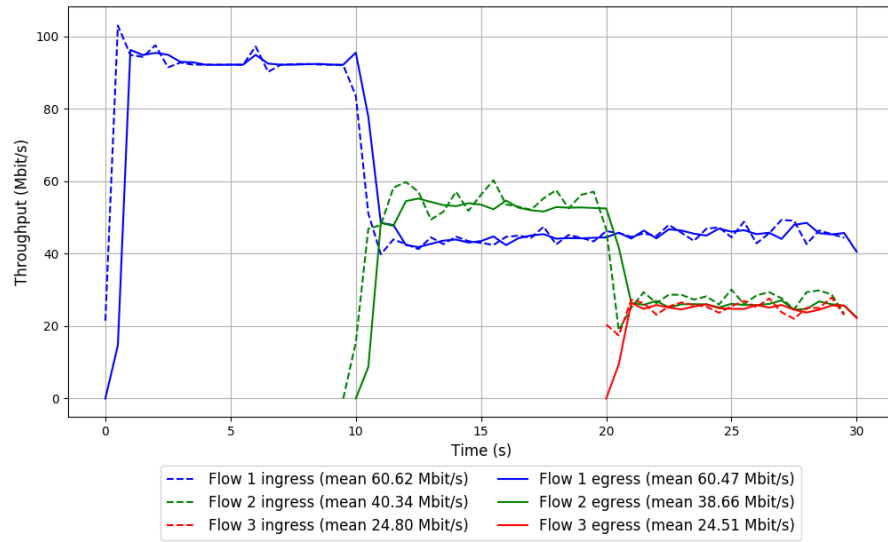


Run 2: Statistics of FillP

Start at: 2018-11-15 11:46:19
End at: 2018-11-15 11:46:49
Local clock offset: 0.09 ms
Remote clock offset: -3.236 ms

Below is generated by plot.py at 2018-11-15 13:14:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.31 Mbit/s
95th percentile per-packet one-way delay: 119.923 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 60.47 Mbit/s
95th percentile per-packet one-way delay: 67.958 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 38.66 Mbit/s
95th percentile per-packet one-way delay: 136.704 ms
Loss rate: 4.47%
-- Flow 3:
Average throughput: 24.51 Mbit/s
95th percentile per-packet one-way delay: 113.392 ms
Loss rate: 1.71%

Run 2: Report of FillP — Data Link

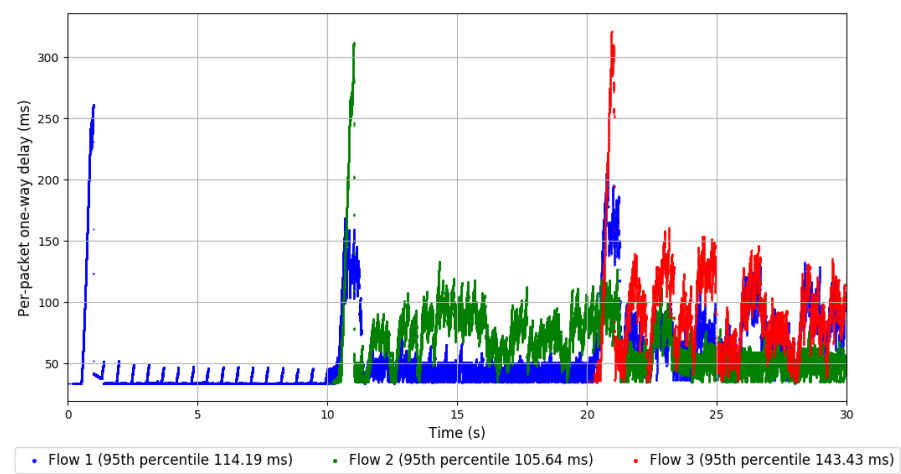
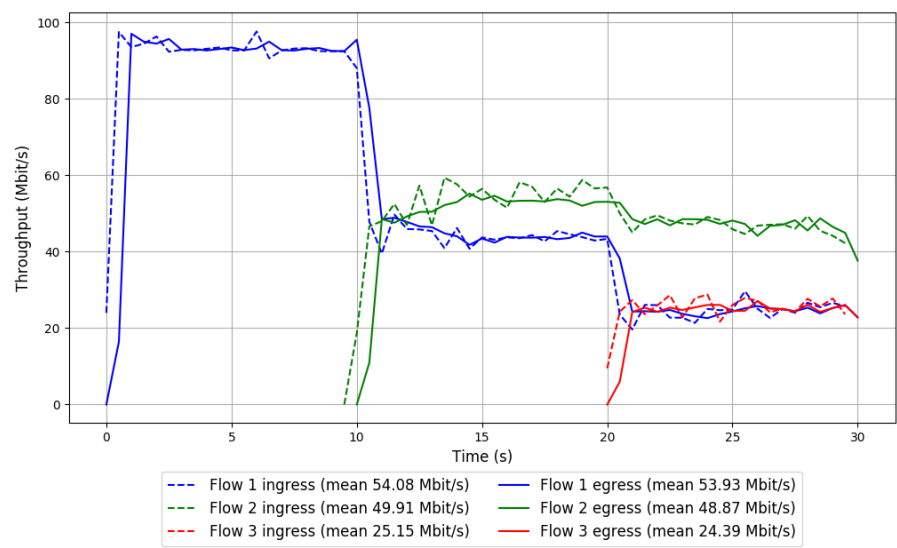


Run 3: Statistics of FillP

Start at: 2018-11-15 12:11:09
End at: 2018-11-15 12:11:39
Local clock offset: 0.16 ms
Remote clock offset: -2.593 ms

Below is generated by plot.py at 2018-11-15 13:14:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.52 Mbit/s
95th percentile per-packet one-way delay: 118.855 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 53.93 Mbit/s
95th percentile per-packet one-way delay: 114.195 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 48.87 Mbit/s
95th percentile per-packet one-way delay: 105.643 ms
Loss rate: 2.40%
-- Flow 3:
Average throughput: 24.39 Mbit/s
95th percentile per-packet one-way delay: 143.429 ms
Loss rate: 3.45%

Run 3: Report of FillP — Data Link

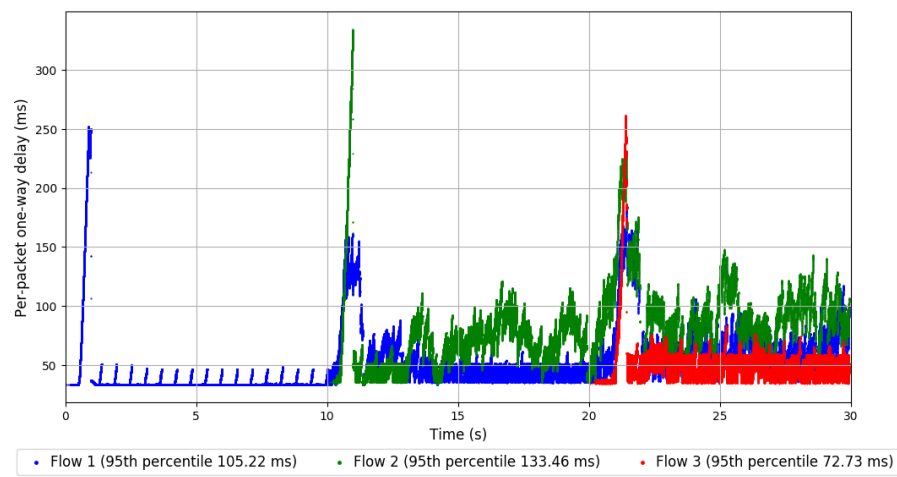
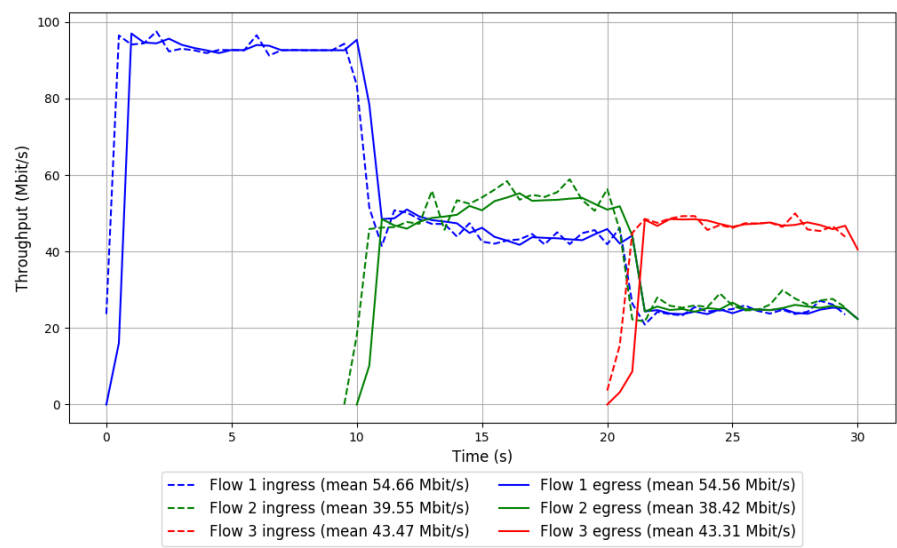


Run 4: Statistics of FillP

Start at: 2018-11-15 12:36:17
End at: 2018-11-15 12:36:47
Local clock offset: -2.081 ms
Remote clock offset: -1.999 ms

Below is generated by plot.py at 2018-11-15 13:14:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.47 Mbit/s
95th percentile per-packet one-way delay: 119.546 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 54.56 Mbit/s
95th percentile per-packet one-way delay: 105.215 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 133.462 ms
Loss rate: 3.14%
-- Flow 3:
Average throughput: 43.31 Mbit/s
95th percentile per-packet one-way delay: 72.733 ms
Loss rate: 1.03%

Run 4: Report of FillP — Data Link

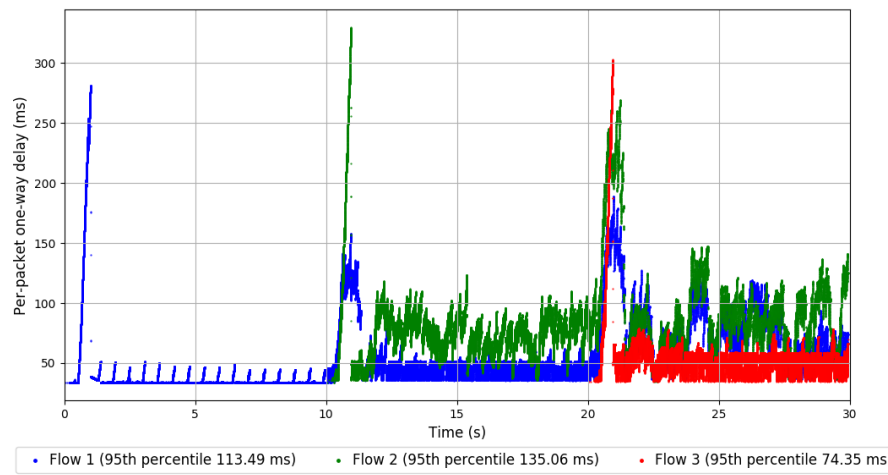
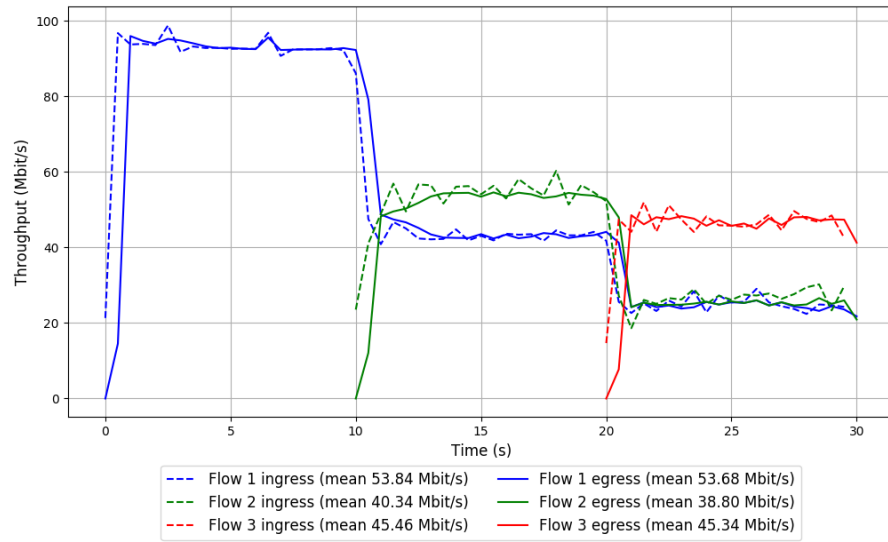


Run 5: Statistics of FillP

Start at: 2018-11-15 13:01:07
End at: 2018-11-15 13:01:37
Local clock offset: -3.378 ms
Remote clock offset: -1.916 ms

Below is generated by plot.py at 2018-11-15 13:14:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.49 Mbit/s
95th percentile per-packet one-way delay: 117.732 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 53.68 Mbit/s
95th percentile per-packet one-way delay: 113.492 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 38.80 Mbit/s
95th percentile per-packet one-way delay: 135.060 ms
Loss rate: 4.12%
-- Flow 3:
Average throughput: 45.34 Mbit/s
95th percentile per-packet one-way delay: 74.353 ms
Loss rate: 0.88%

Run 5: Report of FillP — Data Link

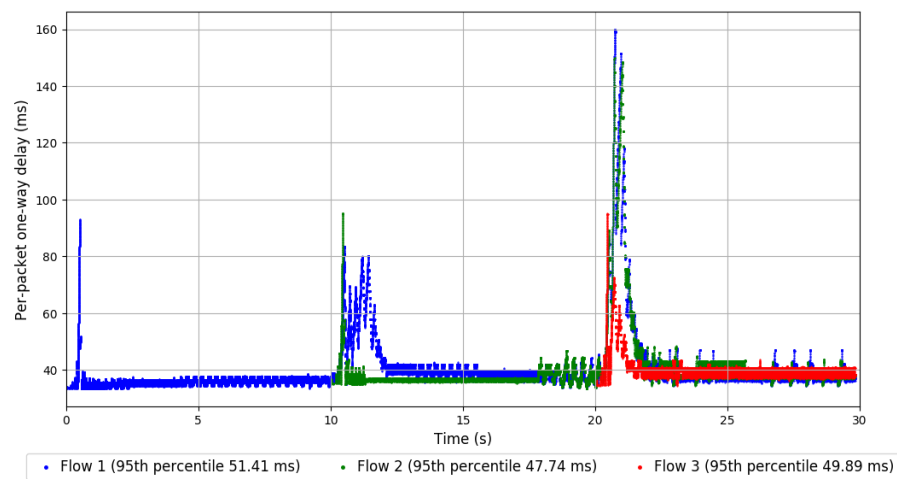
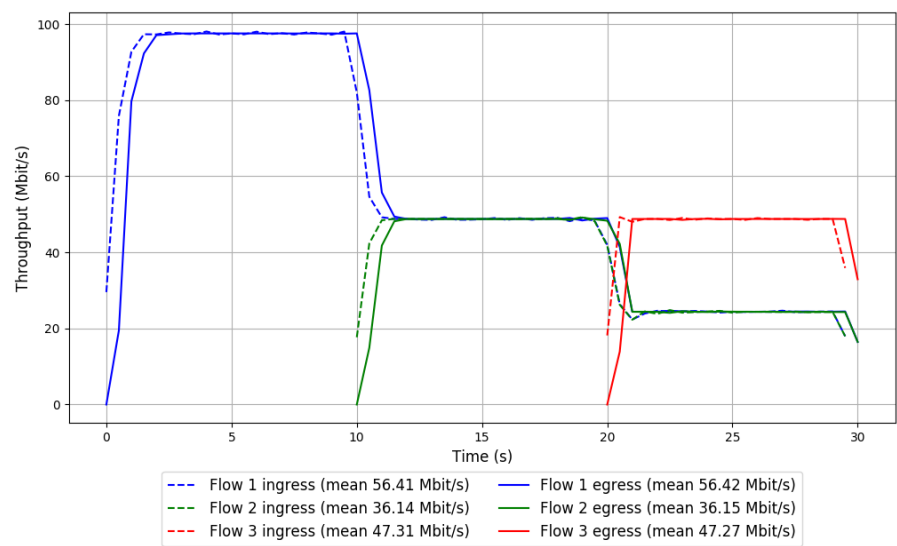



```
Run 1: Statistics of Indigo

Start at: 2018-11-15 11:26:29
End at: 2018-11-15 11:27:00
Local clock offset: 0.312 ms
Remote clock offset: -4.064 ms

# Below is generated by plot.py at 2018-11-15 13:14:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.93 Mbit/s
95th percentile per-packet one-way delay: 50.286 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 56.42 Mbit/s
95th percentile per-packet one-way delay: 51.415 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.15 Mbit/s
95th percentile per-packet one-way delay: 47.740 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 47.27 Mbit/s
95th percentile per-packet one-way delay: 49.890 ms
Loss rate: 0.75%
```

Run 1: Report of Indigo — Data Link

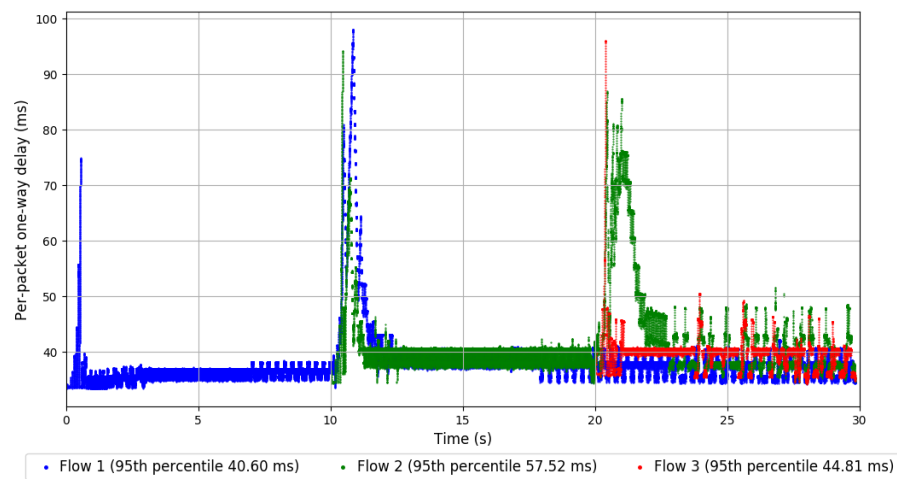
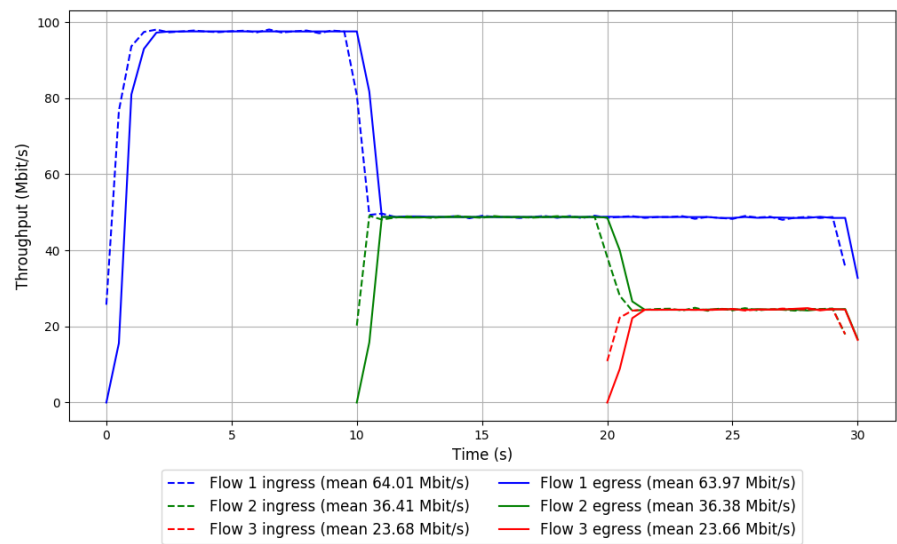


Run 2: Statistics of Indigo

Start at: 2018-11-15 11:51:42
End at: 2018-11-15 11:52:12
Local clock offset: 0.074 ms
Remote clock offset: -2.965 ms

Below is generated by plot.py at 2018-11-15 13:14:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.90 Mbit/s
95th percentile per-packet one-way delay: 45.471 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 63.97 Mbit/s
95th percentile per-packet one-way delay: 40.600 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 36.38 Mbit/s
95th percentile per-packet one-way delay: 57.516 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 23.66 Mbit/s
95th percentile per-packet one-way delay: 44.809 ms
Loss rate: 0.75%

Run 2: Report of Indigo — Data Link

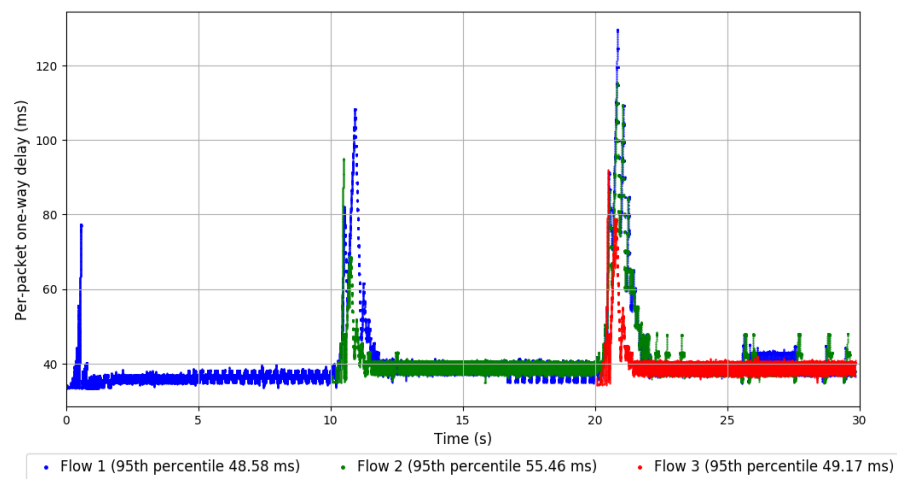
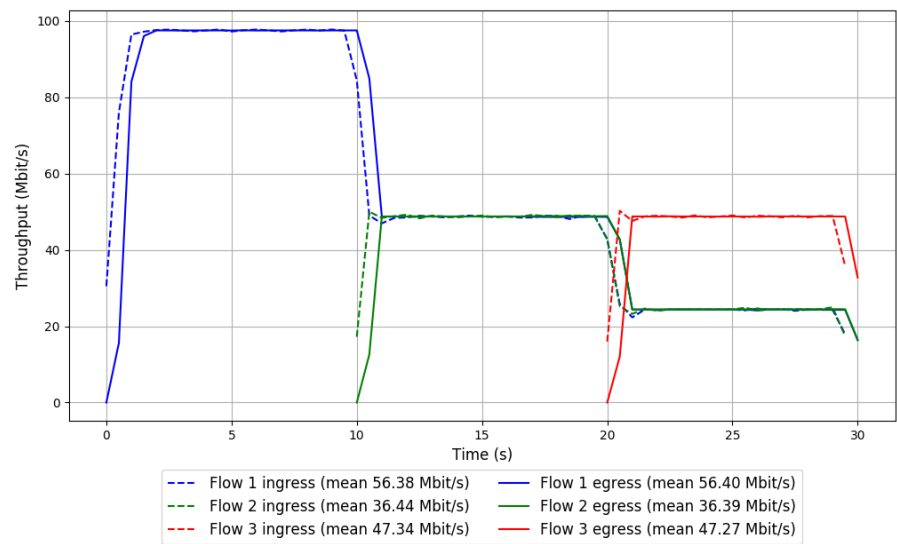


Run 3: Statistics of Indigo

Start at: 2018-11-15 12:16:31
End at: 2018-11-15 12:17:01
Local clock offset: 0.187 ms
Remote clock offset: -2.173 ms

Below is generated by plot.py at 2018-11-15 13:14:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 96.01 Mbit/s
95th percentile per-packet one-way delay: 49.872 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 56.40 Mbit/s
95th percentile per-packet one-way delay: 48.584 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 36.39 Mbit/s
95th percentile per-packet one-way delay: 55.461 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 47.27 Mbit/s
95th percentile per-packet one-way delay: 49.168 ms
Loss rate: 0.81%

Run 3: Report of Indigo — Data Link

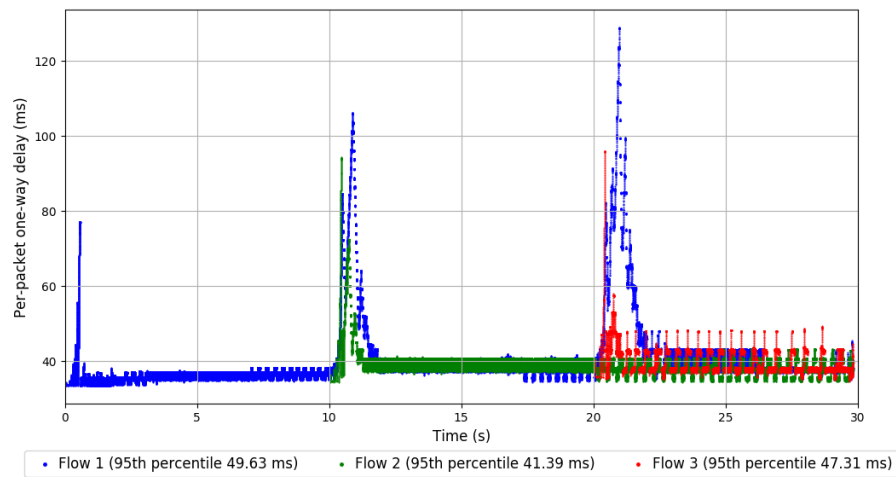
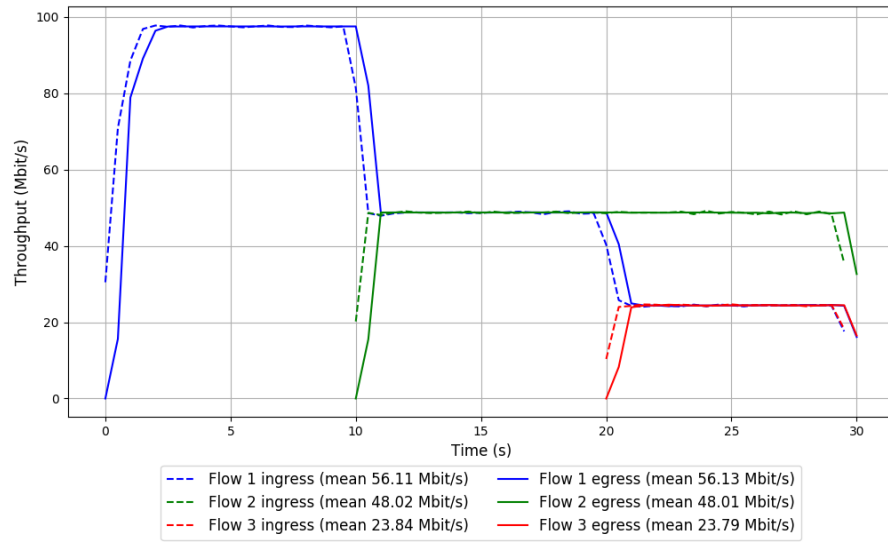


Run 4: Statistics of Indigo

Start at: 2018-11-15 12:41:38
End at: 2018-11-15 12:42:08
Local clock offset: -2.748 ms
Remote clock offset: -1.886 ms

Below is generated by plot.py at 2018-11-15 13:14:58
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.79 Mbit/s
95th percentile per-packet one-way delay: 44.966 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 56.13 Mbit/s
95th percentile per-packet one-way delay: 49.631 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 48.01 Mbit/s
95th percentile per-packet one-way delay: 41.390 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 23.79 Mbit/s
95th percentile per-packet one-way delay: 47.308 ms
Loss rate: 0.90%

Run 4: Report of Indigo — Data Link

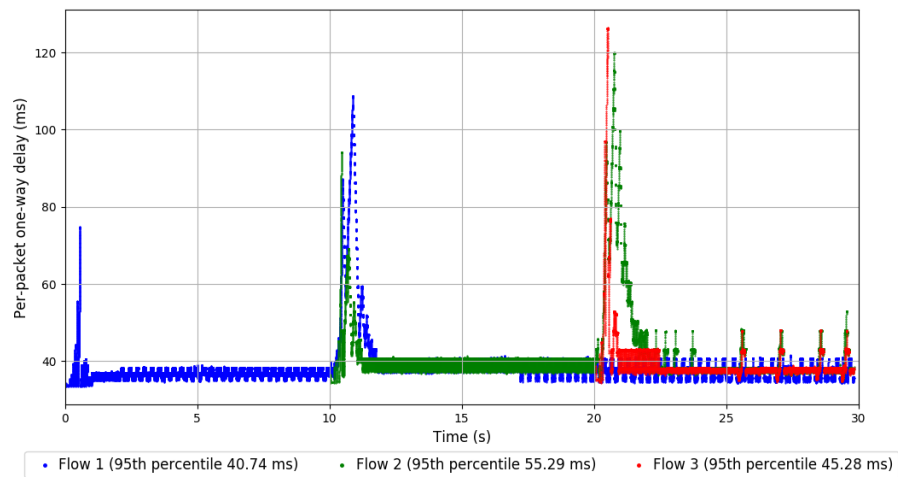
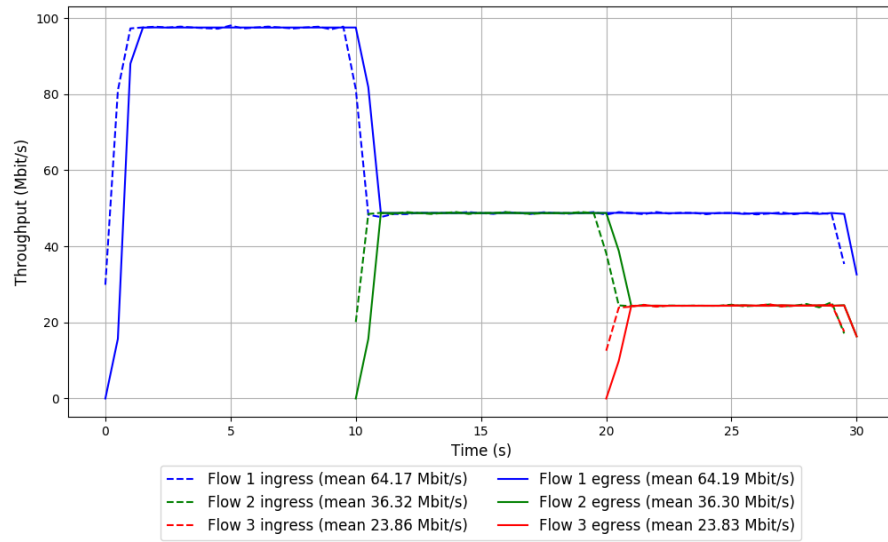


Run 5: Statistics of Indigo

Start at: 2018-11-15 13:06:28
End at: 2018-11-15 13:06:58
Local clock offset: -3.181 ms
Remote clock offset: -1.501 ms

Below is generated by plot.py at 2018-11-15 13:15:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 96.11 Mbit/s
95th percentile per-packet one-way delay: 45.044 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 64.19 Mbit/s
95th percentile per-packet one-way delay: 40.737 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.30 Mbit/s
95th percentile per-packet one-way delay: 55.292 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 23.83 Mbit/s
95th percentile per-packet one-way delay: 45.278 ms
Loss rate: 0.76%

Run 5: Report of Indigo — Data Link

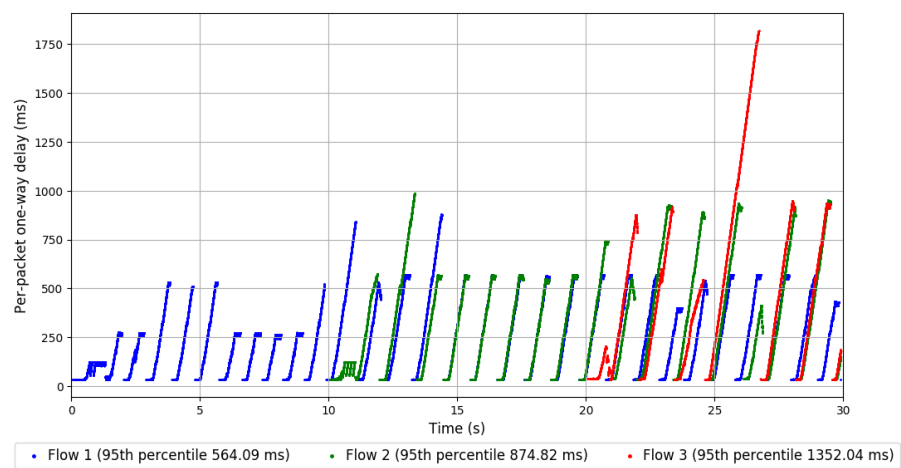
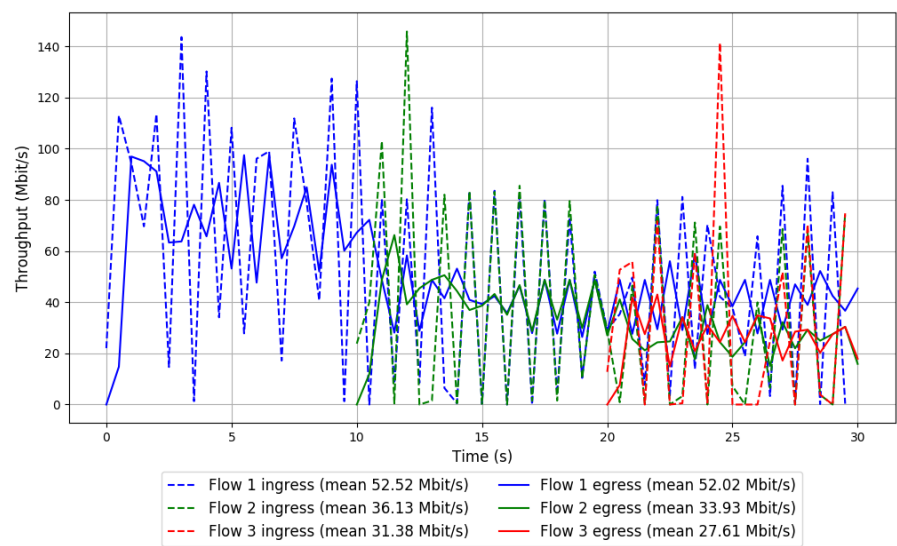


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-15 11:18:22
End at: 2018-11-15 11:18:52
Local clock offset: 0.246 ms
Remote clock offset: -4.512 ms

Below is generated by plot.py at 2018-11-15 13:15:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 83.67 Mbit/s
95th percentile per-packet one-way delay: 815.948 ms
Loss rate: 3.94%
-- Flow 1:
Average throughput: 52.02 Mbit/s
95th percentile per-packet one-way delay: 564.088 ms
Loss rate: 1.17%
-- Flow 2:
Average throughput: 33.93 Mbit/s
95th percentile per-packet one-way delay: 874.819 ms
Loss rate: 6.38%
-- Flow 3:
Average throughput: 27.61 Mbit/s
95th percentile per-packet one-way delay: 1352.042 ms
Loss rate: 12.35%

Run 1: Report of Indigo-96d2da3 — Data Link

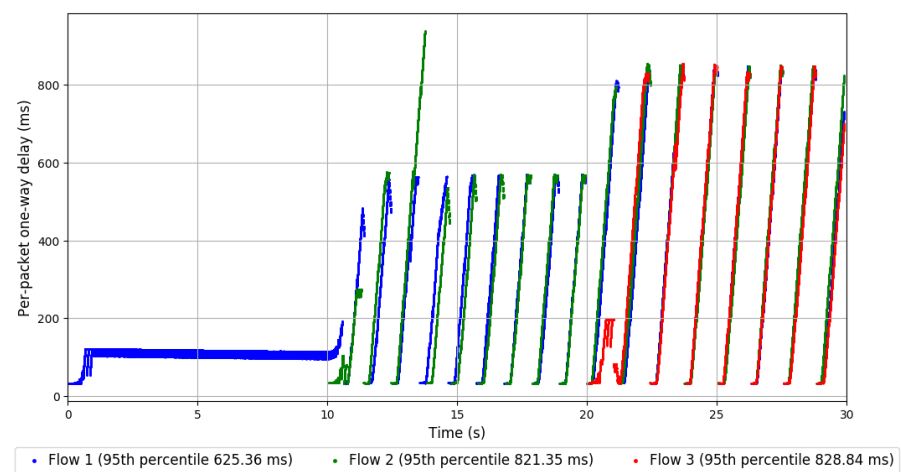
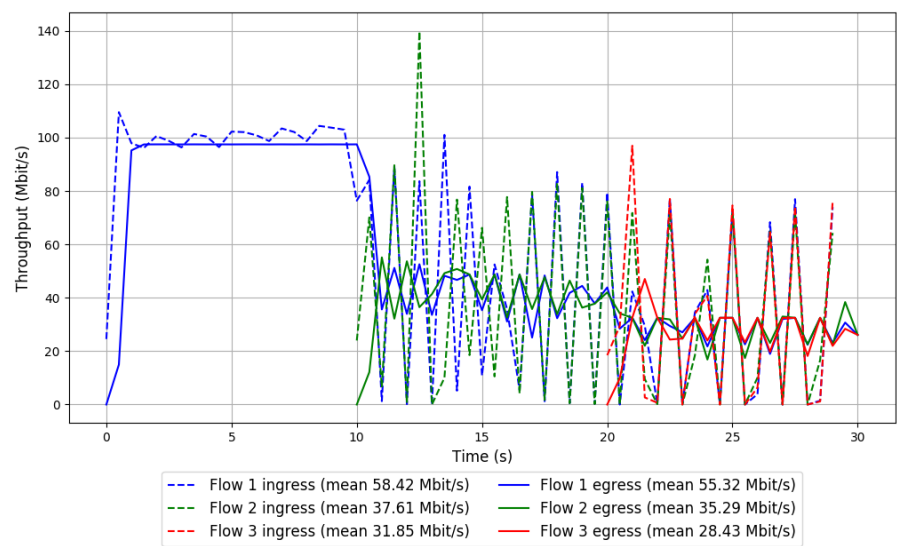


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 11:43:33
End at: 2018-11-15 11:44:03
Local clock offset: 0.099 ms
Remote clock offset: -3.398 ms

Below is generated by plot.py at 2018-11-15 13:15:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.15 Mbit/s
95th percentile per-packet one-way delay: 776.538 ms
Loss rate: 3.58%
-- Flow 1:
Average throughput: 55.32 Mbit/s
95th percentile per-packet one-way delay: 625.355 ms
Loss rate: 3.43%
-- Flow 2:
Average throughput: 35.29 Mbit/s
95th percentile per-packet one-way delay: 821.352 ms
Loss rate: 2.87%
-- Flow 3:
Average throughput: 28.43 Mbit/s
95th percentile per-packet one-way delay: 828.841 ms
Loss rate: 6.17%

Run 2: Report of Indigo-96d2da3 — Data Link

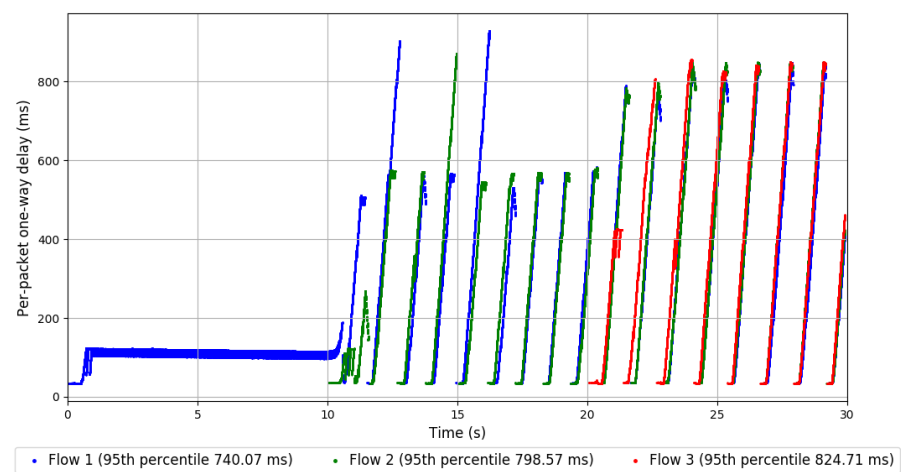
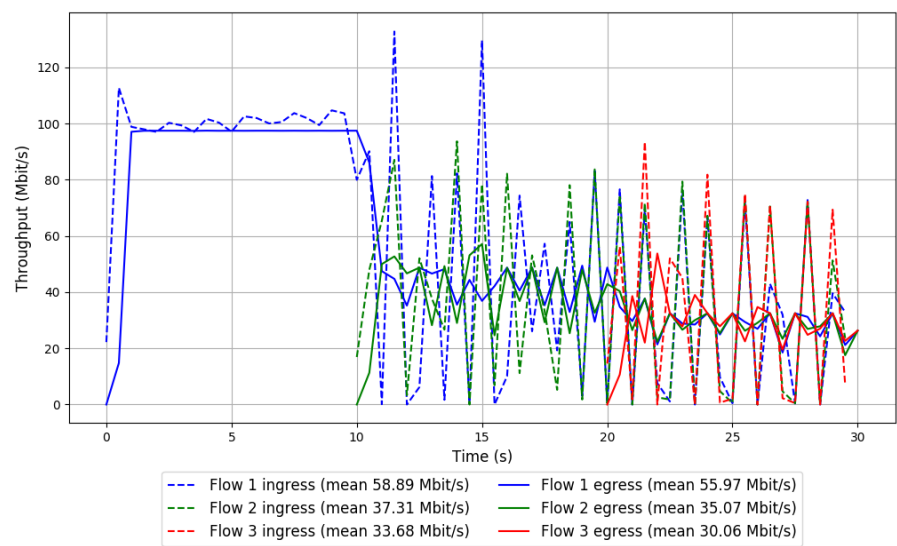


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-15 12:08:23
End at: 2018-11-15 12:08:53
Local clock offset: 0.129 ms
Remote clock offset: -2.527 ms

Below is generated by plot.py at 2018-11-15 13:15:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 89.20 Mbit/s
95th percentile per-packet one-way delay: 777.996 ms
Loss rate: 4.79%
-- Flow 1:
Average throughput: 55.97 Mbit/s
95th percentile per-packet one-way delay: 740.066 ms
Loss rate: 4.12%
-- Flow 2:
Average throughput: 35.07 Mbit/s
95th percentile per-packet one-way delay: 798.568 ms
Loss rate: 4.89%
-- Flow 3:
Average throughput: 30.06 Mbit/s
95th percentile per-packet one-way delay: 824.713 ms
Loss rate: 8.16%

Run 3: Report of Indigo-96d2da3 — Data Link

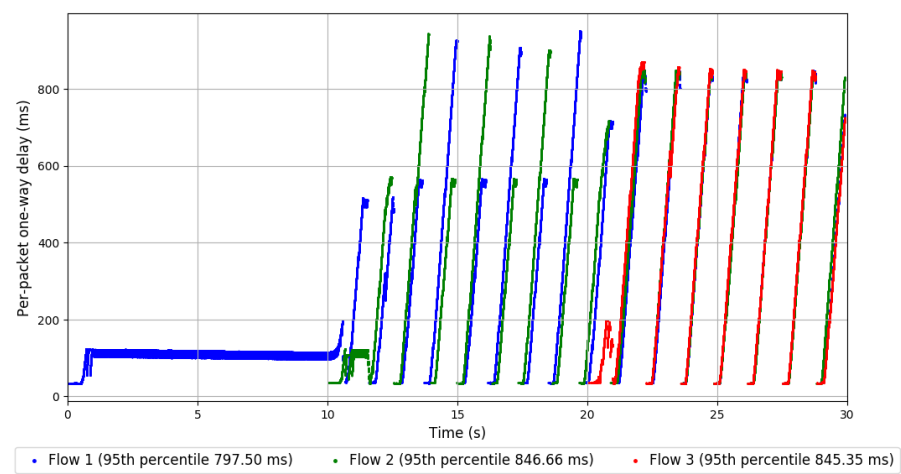
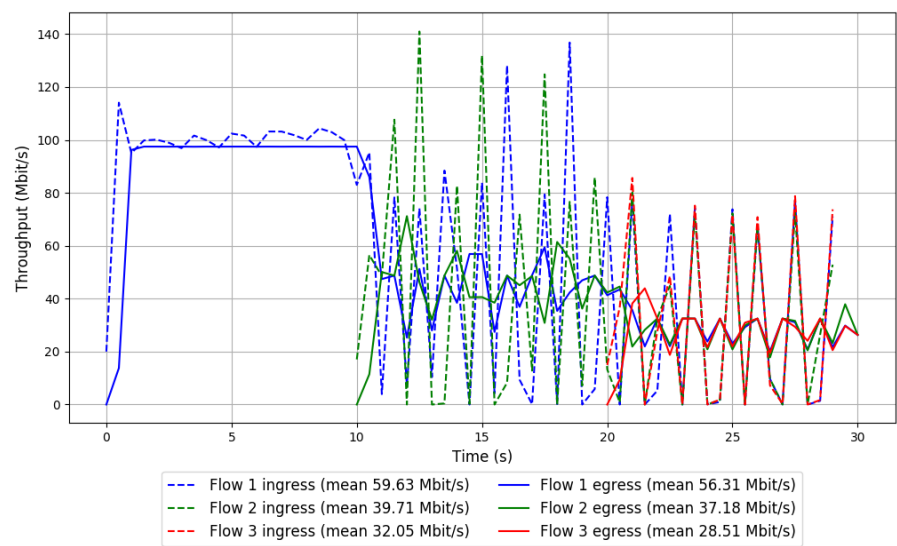


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 12:33:30
End at: 2018-11-15 12:34:00
Local clock offset: -1.628 ms
Remote clock offset: -1.995 ms

Below is generated by plot.py at 2018-11-15 13:15:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 90.44 Mbit/s
95th percentile per-packet one-way delay: 834.889 ms
Loss rate: 3.57%
-- Flow 1:
Average throughput: 56.31 Mbit/s
95th percentile per-packet one-way delay: 797.497 ms
Loss rate: 3.56%
-- Flow 2:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 846.664 ms
Loss rate: 2.82%
-- Flow 3:
Average throughput: 28.51 Mbit/s
95th percentile per-packet one-way delay: 845.354 ms
Loss rate: 5.54%

Run 4: Report of Indigo-96d2da3 — Data Link



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 12:58:20

End at: 2018-11-15 12:58:50

Local clock offset: -3.591 ms

Remote clock offset: -1.84 ms

Below is generated by plot.py at 2018-11-15 13:15:56

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.71 Mbit/s

95th percentile per-packet one-way delay: 817.790 ms

Loss rate: 4.93%

-- Flow 1:

Average throughput: 59.50 Mbit/s

95th percentile per-packet one-way delay: 665.617 ms

Loss rate: 4.08%

-- Flow 2:

Average throughput: 34.84 Mbit/s

95th percentile per-packet one-way delay: 888.641 ms

Loss rate: 4.91%

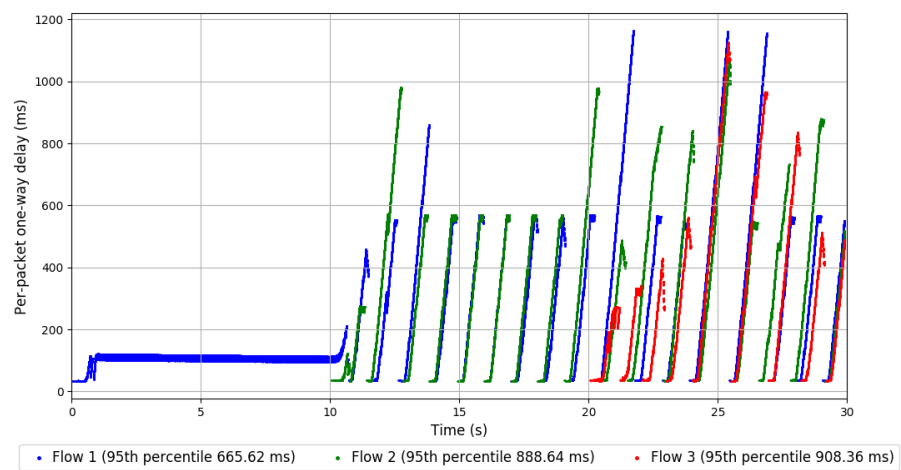
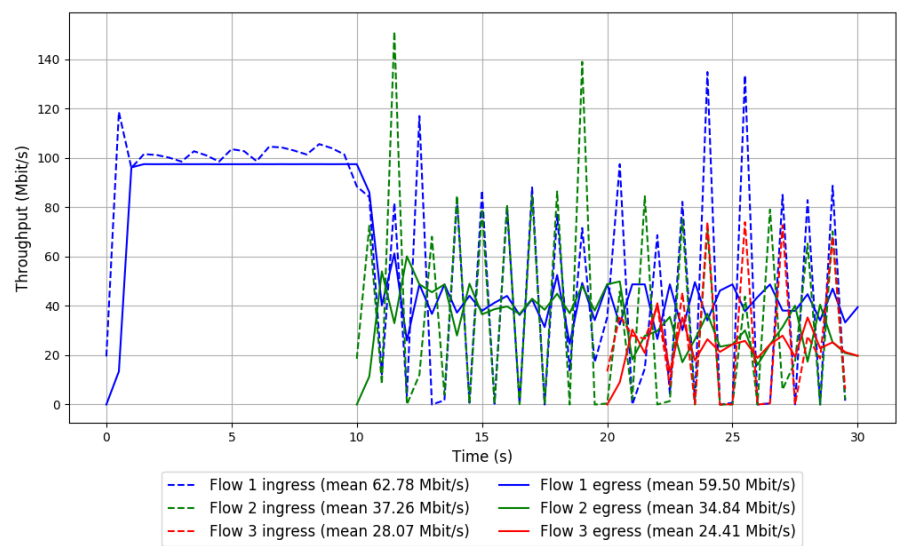
-- Flow 3:

Average throughput: 24.41 Mbit/s

95th percentile per-packet one-way delay: 908.358 ms

Loss rate: 10.81%

Run 5: Report of Indigo-96d2da3 — Data Link

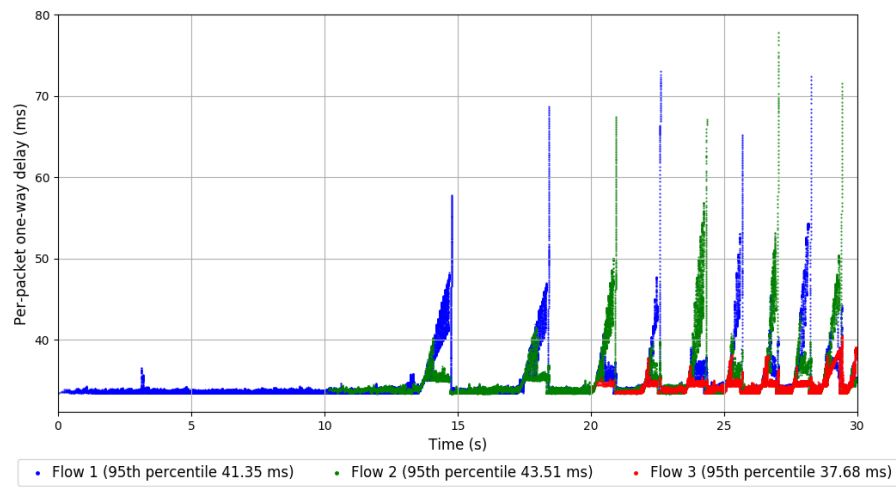
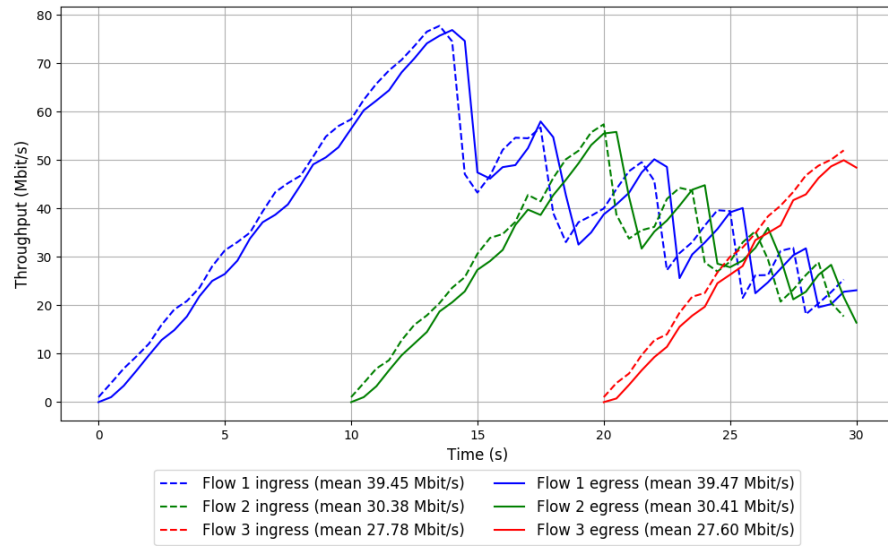


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 11:05:50
End at: 2018-11-15 11:06:20
Local clock offset: 0.212 ms
Remote clock offset: -4.522 ms

# Below is generated by plot.py at 2018-11-15 13:15:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.84 Mbit/s
95th percentile per-packet one-way delay: 41.340 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 39.47 Mbit/s
95th percentile per-packet one-way delay: 41.355 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 30.41 Mbit/s
95th percentile per-packet one-way delay: 43.510 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 27.60 Mbit/s
95th percentile per-packet one-way delay: 37.683 ms
Loss rate: 1.31%
```

Run 1: Report of LEDBAT — Data Link

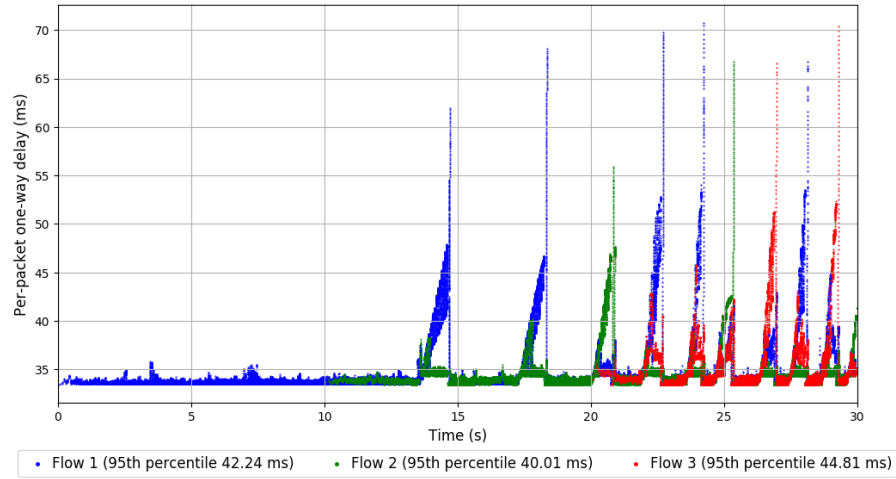
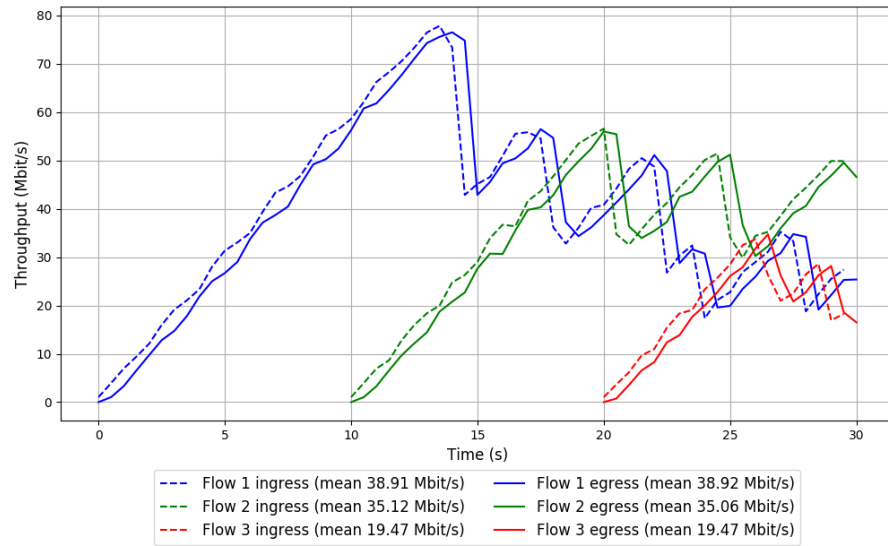


Run 2: Statistics of LEDBAT

Start at: 2018-11-15 11:30:39
End at: 2018-11-15 11:31:09
Local clock offset: 0.196 ms
Remote clock offset: -3.939 ms

Below is generated by plot.py at 2018-11-15 13:15:56
Datalink statistics
-- Total of 3 flows:
Average throughput: 68.70 Mbit/s
95th percentile per-packet one-way delay: 41.536 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 38.92 Mbit/s
95th percentile per-packet one-way delay: 42.239 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 35.06 Mbit/s
95th percentile per-packet one-way delay: 40.012 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 19.47 Mbit/s
95th percentile per-packet one-way delay: 44.808 ms
Loss rate: 0.67%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-11-15 11:55:52

End at: 2018-11-15 11:56:22

Local clock offset: 0.102 ms

Remote clock offset: -2.79 ms

Below is generated by plot.py at 2018-11-15 13:15:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 63.07 Mbit/s

95th percentile per-packet one-way delay: 40.649 ms

Loss rate: 0.32%

-- Flow 1:

Average throughput: 34.29 Mbit/s

95th percentile per-packet one-way delay: 40.222 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 32.35 Mbit/s

95th percentile per-packet one-way delay: 41.662 ms

Loss rate: 0.35%

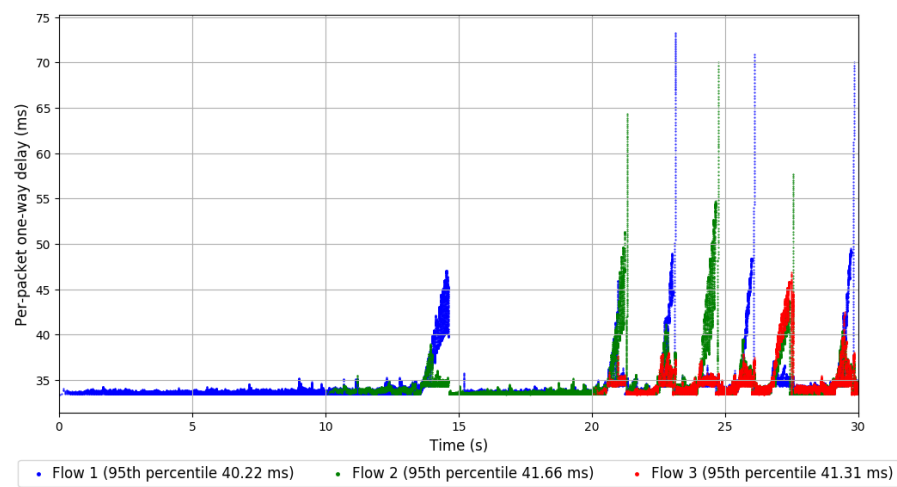
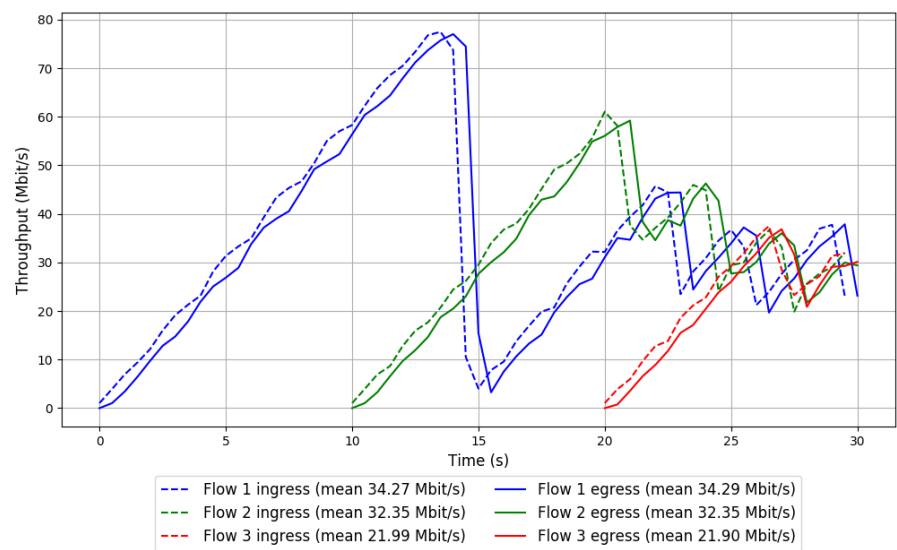
-- Flow 3:

Average throughput: 21.90 Mbit/s

95th percentile per-packet one-way delay: 41.307 ms

Loss rate: 1.04%

Run 3: Report of LEDBAT — Data Link

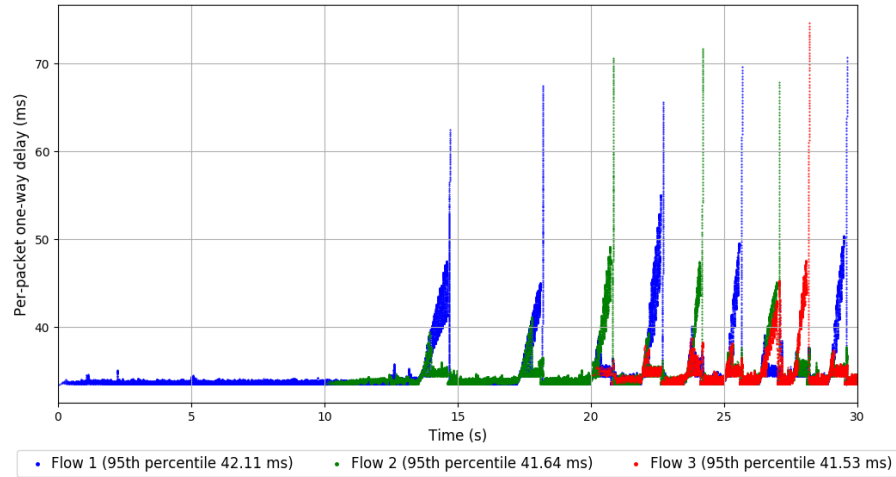
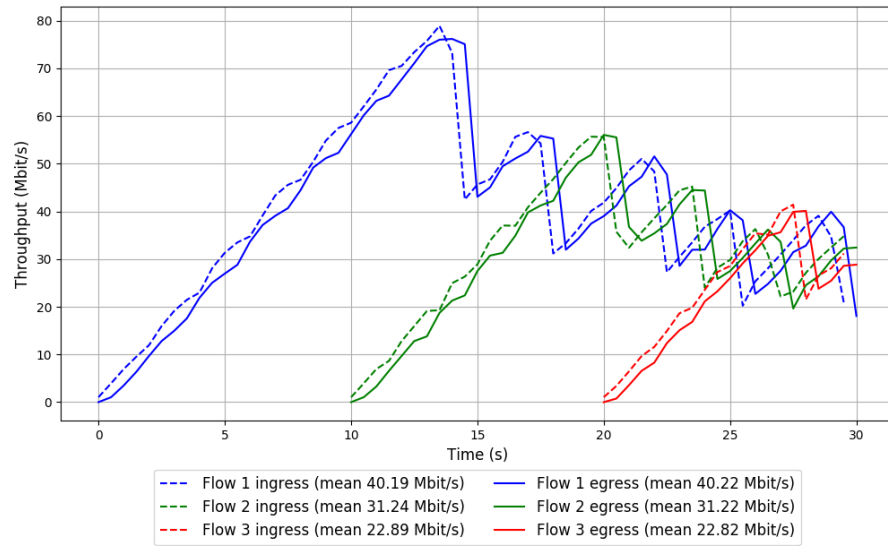


Run 4: Statistics of LEDBAT

Start at: 2018-11-15 12:20:54
End at: 2018-11-15 12:21:24
Local clock offset: 0.193 ms
Remote clock offset: -2.319 ms

Below is generated by plot.py at 2018-11-15 13:16:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 68.54 Mbit/s
95th percentile per-packet one-way delay: 41.806 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 40.22 Mbit/s
95th percentile per-packet one-way delay: 42.109 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 31.22 Mbit/s
95th percentile per-packet one-way delay: 41.638 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 22.82 Mbit/s
95th percentile per-packet one-way delay: 41.526 ms
Loss rate: 0.94%

Run 4: Report of LEDBAT — Data Link

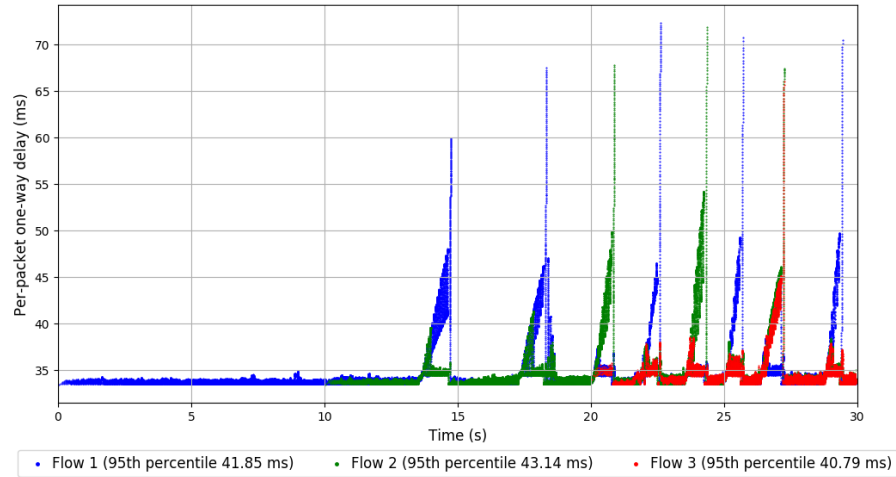
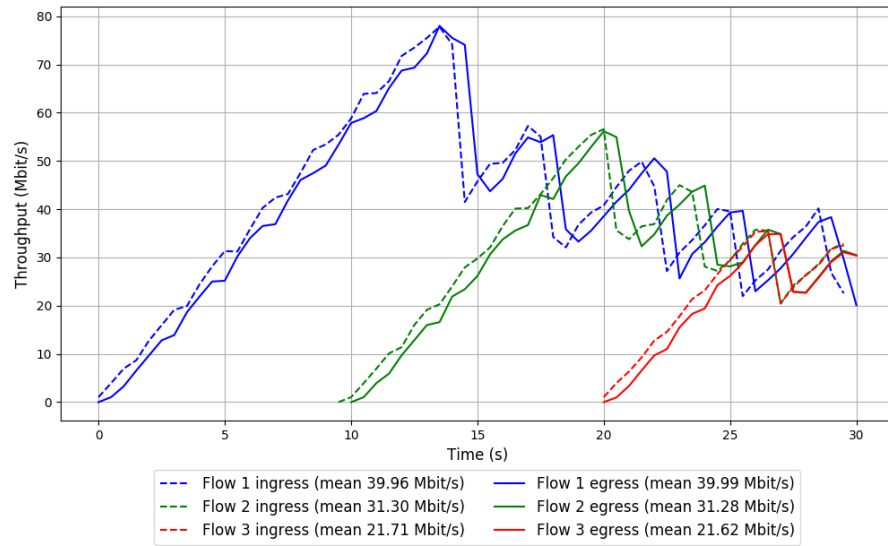


Run 5: Statistics of LEDBAT

Start at: 2018-11-15 12:45:47
End at: 2018-11-15 12:46:17
Local clock offset: -3.052 ms
Remote clock offset: -1.823 ms

Below is generated by plot.py at 2018-11-15 13:16:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 67.97 Mbit/s
95th percentile per-packet one-way delay: 42.116 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 39.99 Mbit/s
95th percentile per-packet one-way delay: 41.847 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 31.28 Mbit/s
95th percentile per-packet one-way delay: 43.143 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 21.62 Mbit/s
95th percentile per-packet one-way delay: 40.789 ms
Loss rate: 1.07%

Run 5: Report of LEDBAT — Data Link

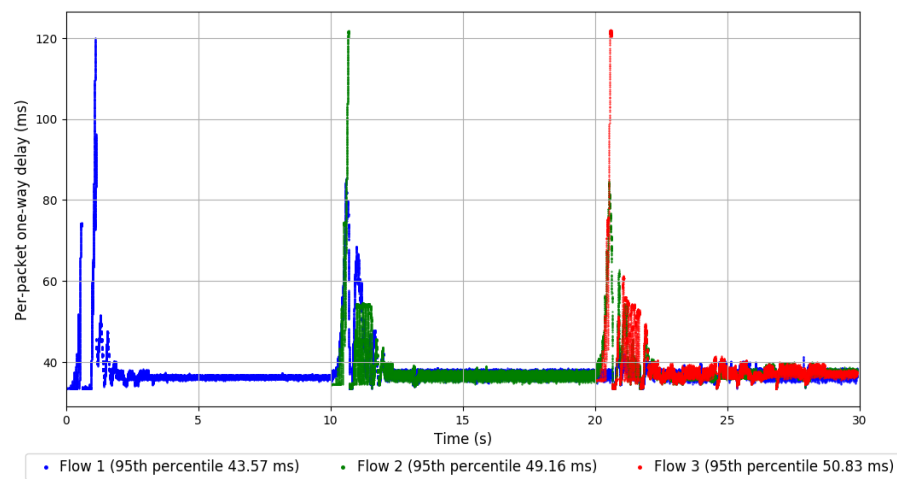
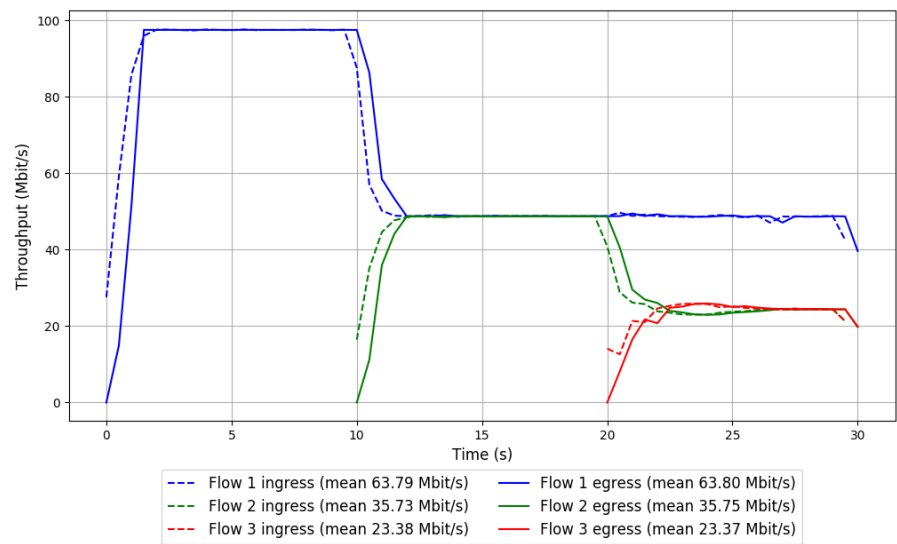


Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 11:07:13
End at: 2018-11-15 11:07:43
Local clock offset: 0.217 ms
Remote clock offset: -4.567 ms

Below is generated by plot.py at 2018-11-15 13:16:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.28 Mbit/s
95th percentile per-packet one-way delay: 45.392 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 63.80 Mbit/s
95th percentile per-packet one-way delay: 43.571 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 35.75 Mbit/s
95th percentile per-packet one-way delay: 49.157 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 23.37 Mbit/s
95th percentile per-packet one-way delay: 50.834 ms
Loss rate: 0.73%

Run 1: Report of Indigo-Muses — Data Link

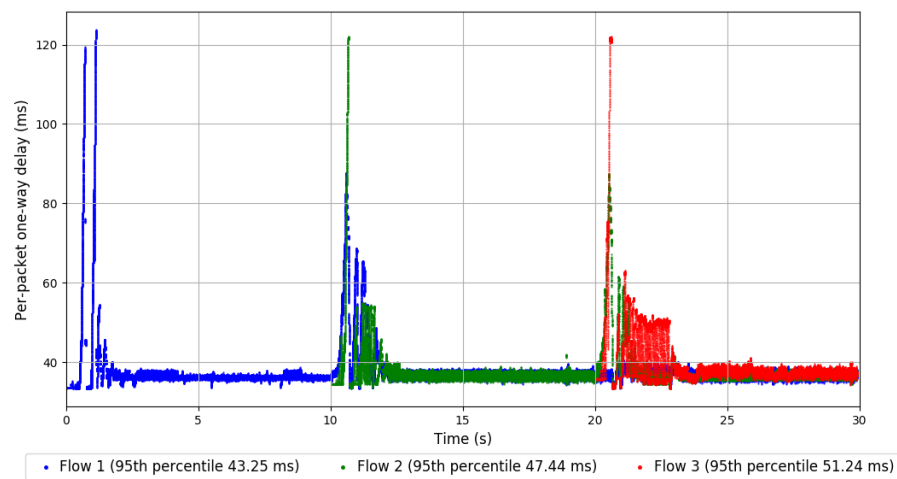
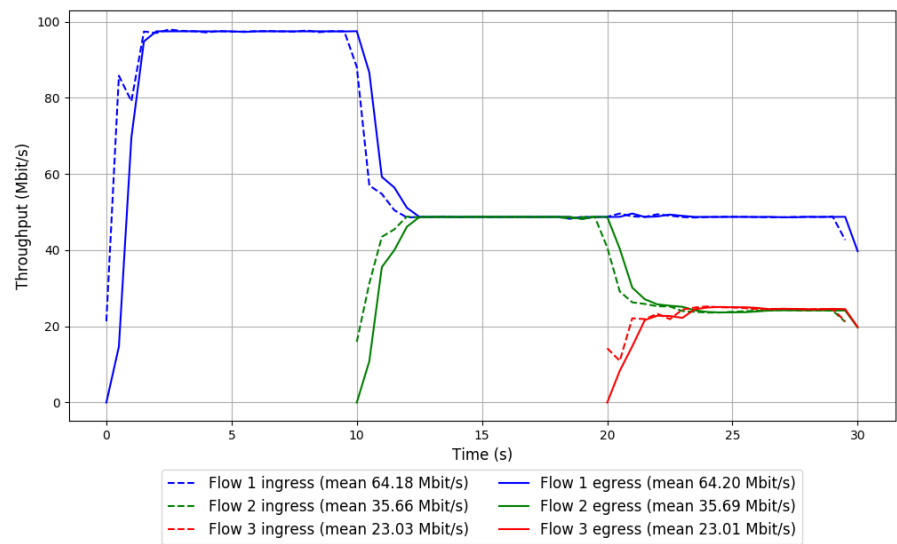


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 11:32:02
End at: 2018-11-15 11:32:33
Local clock offset: 0.187 ms
Remote clock offset: -3.891 ms

Below is generated by plot.py at 2018-11-15 13:16:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.52 Mbit/s
95th percentile per-packet one-way delay: 46.288 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 64.20 Mbit/s
95th percentile per-packet one-way delay: 43.246 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 35.69 Mbit/s
95th percentile per-packet one-way delay: 47.435 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 23.01 Mbit/s
95th percentile per-packet one-way delay: 51.238 ms
Loss rate: 0.75%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 11:57:15

End at: 2018-11-15 11:57:45

Local clock offset: 0.103 ms

Remote clock offset: -2.84 ms

Below is generated by plot.py at 2018-11-15 13:16:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 95.55 Mbit/s

95th percentile per-packet one-way delay: 45.860 ms

Loss rate: 0.24%

-- Flow 1:

Average throughput: 56.39 Mbit/s

95th percentile per-packet one-way delay: 47.823 ms

Loss rate: 0.12%

-- Flow 2:

Average throughput: 47.46 Mbit/s

95th percentile per-packet one-way delay: 40.755 ms

Loss rate: 0.33%

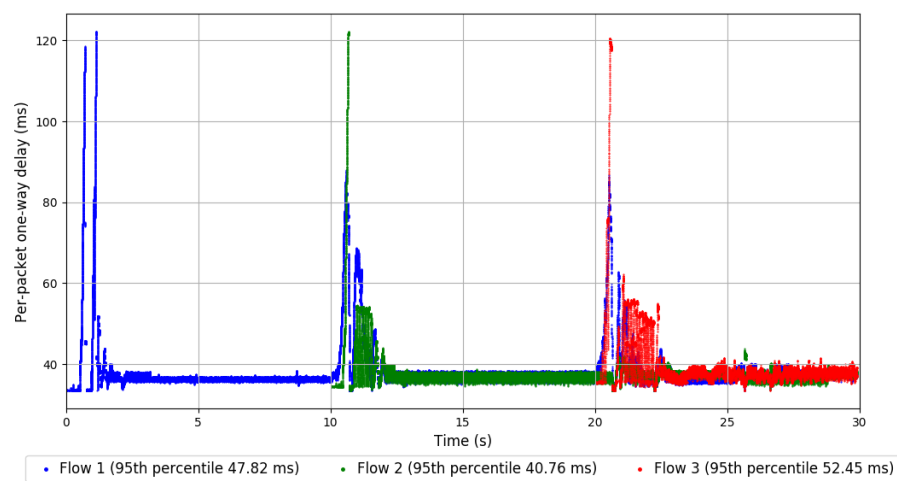
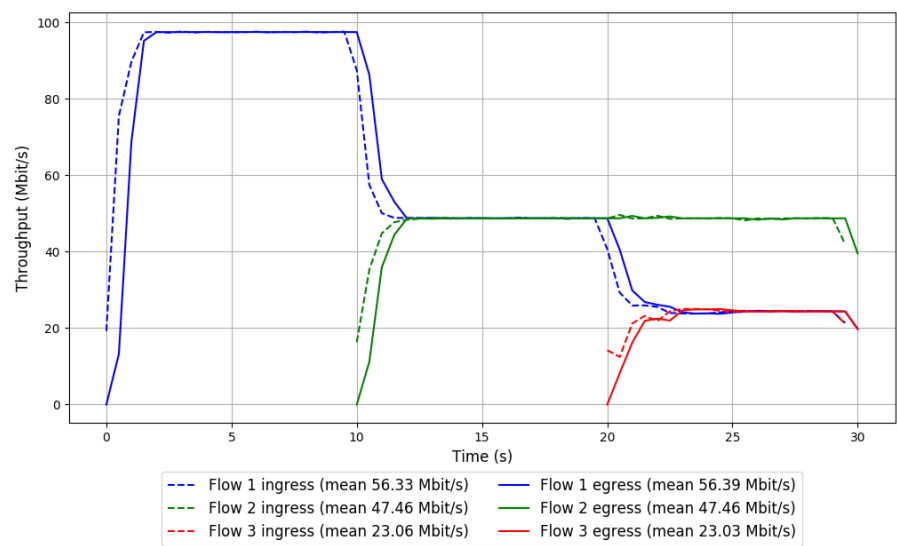
-- Flow 3:

Average throughput: 23.03 Mbit/s

95th percentile per-packet one-way delay: 52.446 ms

Loss rate: 0.75%

Run 3: Report of Indigo-Muses — Data Link

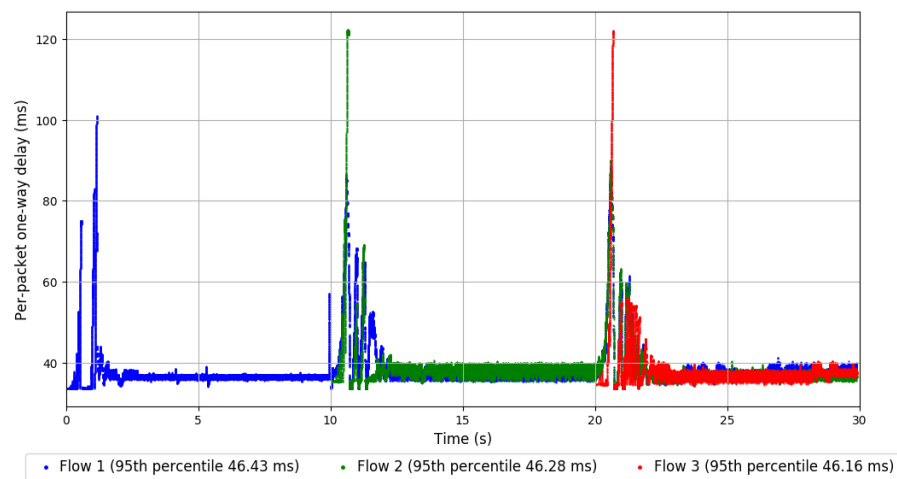
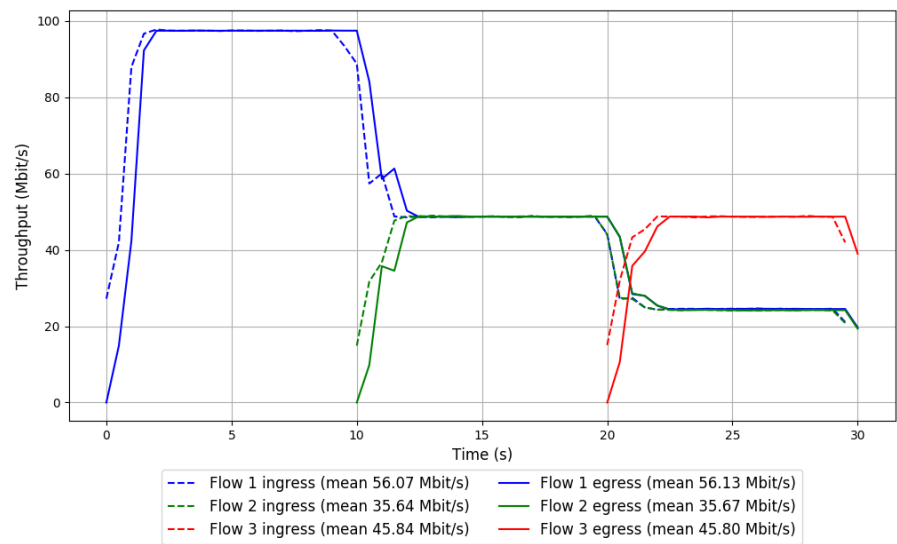


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 12:22:20
End at: 2018-11-15 12:22:50
Local clock offset: 0.197 ms
Remote clock offset: -2.454 ms

Below is generated by plot.py at 2018-11-15 13:17:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.92 Mbit/s
95th percentile per-packet one-way delay: 46.313 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 56.13 Mbit/s
95th percentile per-packet one-way delay: 46.427 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 35.67 Mbit/s
95th percentile per-packet one-way delay: 46.284 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 45.80 Mbit/s
95th percentile per-packet one-way delay: 46.156 ms
Loss rate: 0.73%

Run 4: Report of Indigo-Muses — Data Link

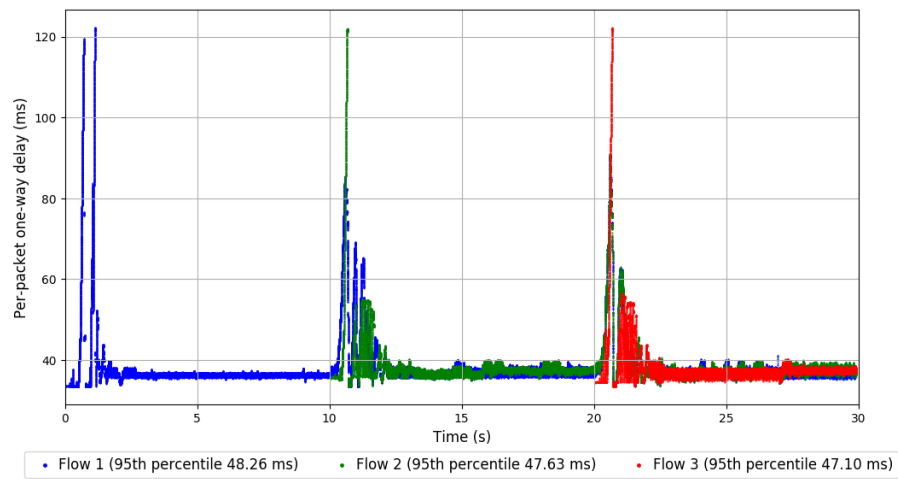
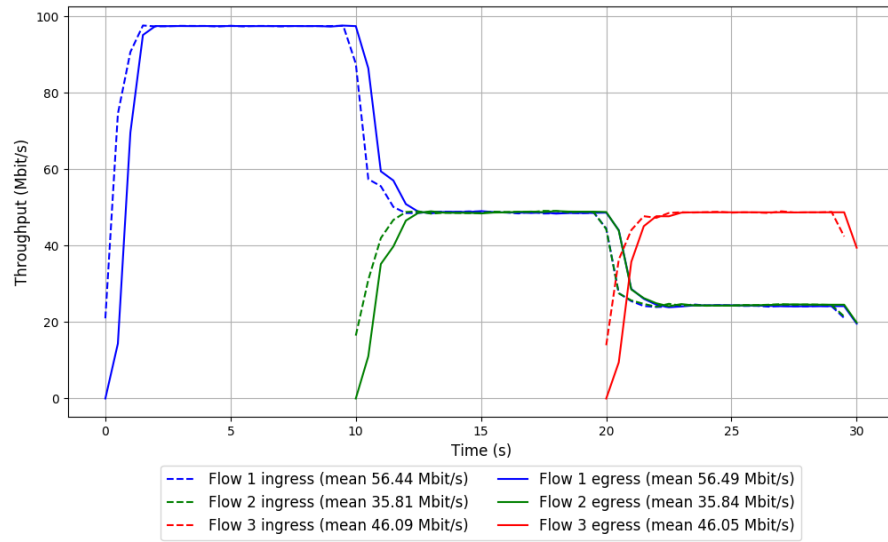


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 12:47:09
End at: 2018-11-15 12:47:39
Local clock offset: -3.159 ms
Remote clock offset: -1.906 ms

Below is generated by plot.py at 2018-11-15 13:17:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.51 Mbit/s
95th percentile per-packet one-way delay: 47.692 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 56.49 Mbit/s
95th percentile per-packet one-way delay: 48.257 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 35.84 Mbit/s
95th percentile per-packet one-way delay: 47.632 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 46.05 Mbit/s
95th percentile per-packet one-way delay: 47.105 ms
Loss rate: 0.73%

Run 5: Report of Indigo-Muses — Data Link

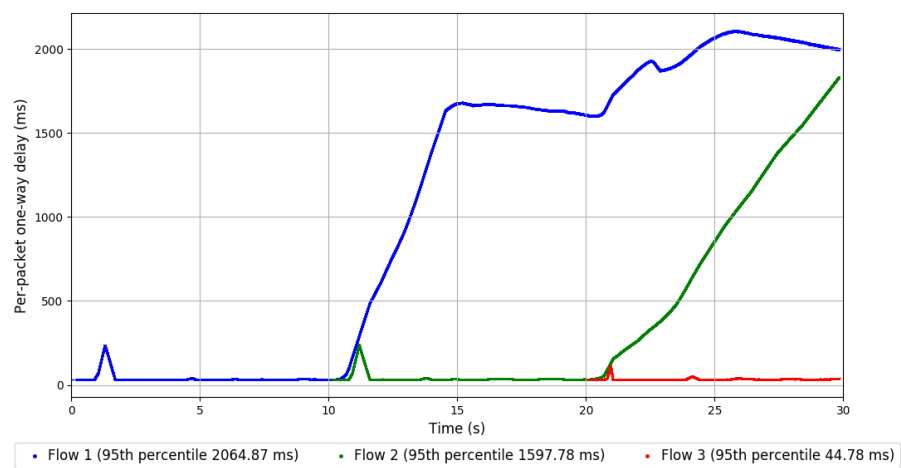
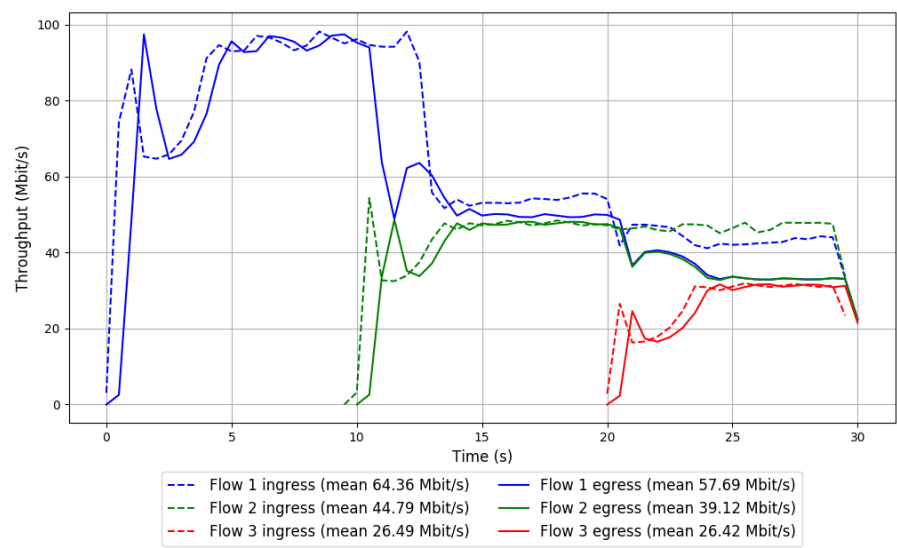


Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 11:04:27
End at: 2018-11-15 11:04:57
Local clock offset: 0.227 ms
Remote clock offset: -4.538 ms

Below is generated by plot.py at 2018-11-15 13:17:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.37 Mbit/s
95th percentile per-packet one-way delay: 2029.144 ms
Loss rate: 10.41%
-- Flow 1:
Average throughput: 57.69 Mbit/s
95th percentile per-packet one-way delay: 2064.867 ms
Loss rate: 10.54%
-- Flow 2:
Average throughput: 39.12 Mbit/s
95th percentile per-packet one-way delay: 1597.782 ms
Loss rate: 12.94%
-- Flow 3:
Average throughput: 26.42 Mbit/s
95th percentile per-packet one-way delay: 44.777 ms
Loss rate: 0.89%

Run 1: Report of PCC-Allegro — Data Link

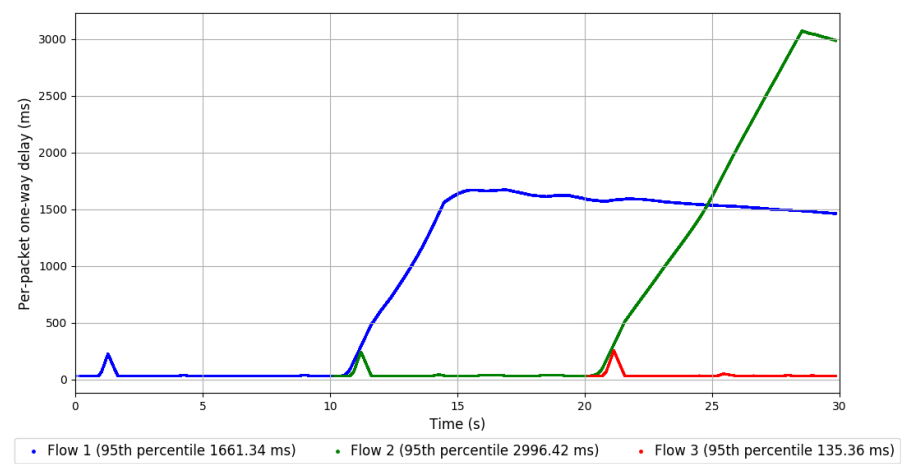
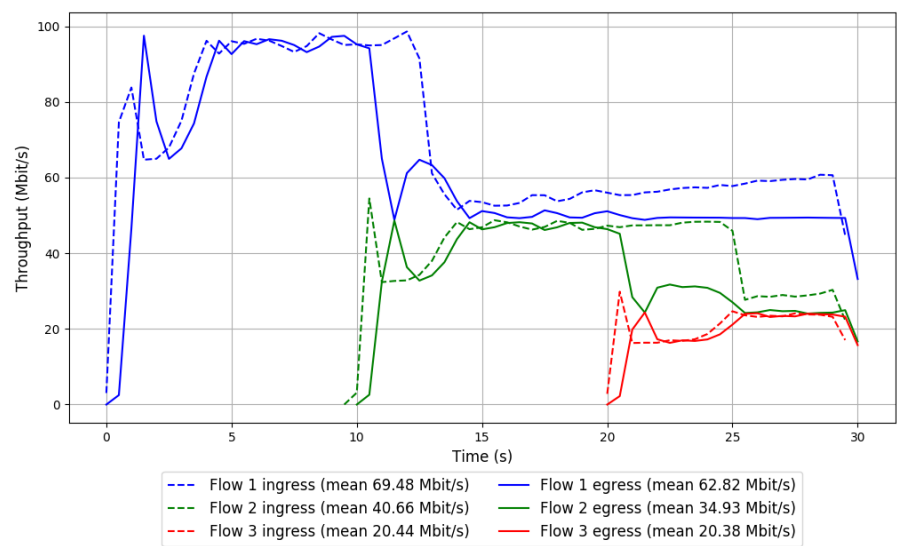


Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 11:29:16
End at: 2018-11-15 11:29:46
Local clock offset: 0.248 ms
Remote clock offset: -3.929 ms

Below is generated by plot.py at 2018-11-15 13:17:20
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.73 Mbit/s
95th percentile per-packet one-way delay: 1671.602 ms
Loss rate: 10.40%
-- Flow 1:
Average throughput: 62.82 Mbit/s
95th percentile per-packet one-way delay: 1661.336 ms
Loss rate: 9.77%
-- Flow 2:
Average throughput: 34.93 Mbit/s
95th percentile per-packet one-way delay: 2996.421 ms
Loss rate: 14.37%
-- Flow 3:
Average throughput: 20.38 Mbit/s
95th percentile per-packet one-way delay: 135.360 ms
Loss rate: 0.92%

Run 2: Report of PCC-Allegro — Data Link

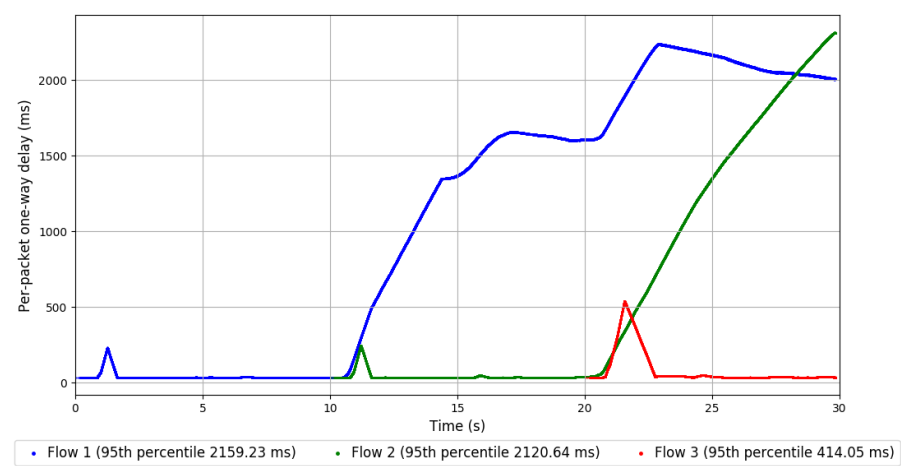
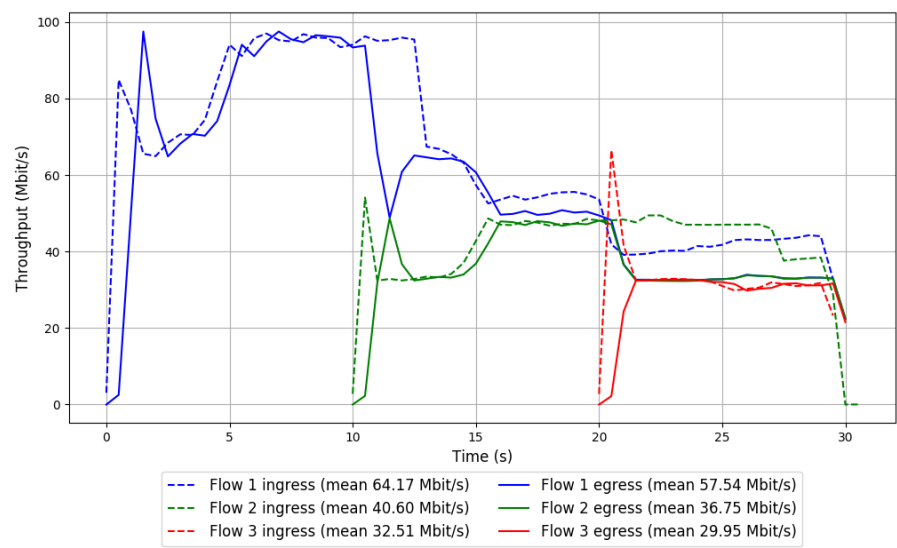


Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 11:54:30
End at: 2018-11-15 11:55:00
Local clock offset: 0.107 ms
Remote clock offset: -2.847 ms

Below is generated by plot.py at 2018-11-15 13:17:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.81 Mbit/s
95th percentile per-packet one-way delay: 2137.115 ms
Loss rate: 11.22%
-- Flow 1:
Average throughput: 57.54 Mbit/s
95th percentile per-packet one-way delay: 2159.232 ms
Loss rate: 10.51%
-- Flow 2:
Average throughput: 36.75 Mbit/s
95th percentile per-packet one-way delay: 2120.642 ms
Loss rate: 13.88%
-- Flow 3:
Average throughput: 29.95 Mbit/s
95th percentile per-packet one-way delay: 414.052 ms
Loss rate: 8.47%

Run 3: Report of PCC-Allegro — Data Link

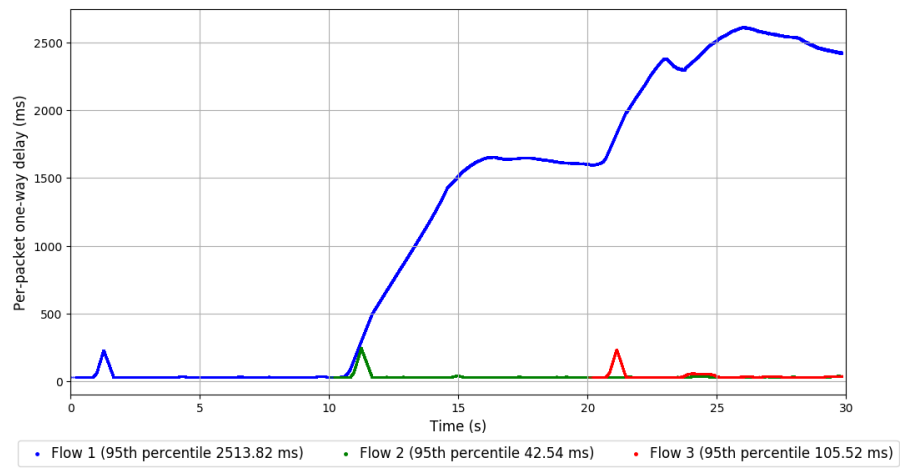
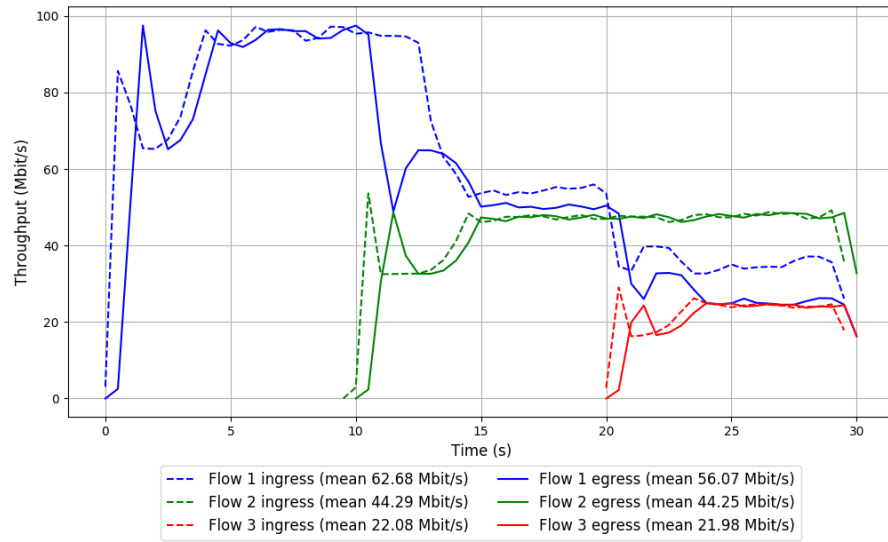


Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 12:19:26
End at: 2018-11-15 12:19:56
Local clock offset: 0.186 ms
Remote clock offset: -2.249 ms

Below is generated by plot.py at 2018-11-15 13:17:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.69 Mbit/s
95th percentile per-packet one-way delay: 2390.827 ms
Loss rate: 6.98%
-- Flow 1:
Average throughput: 56.07 Mbit/s
95th percentile per-packet one-way delay: 2513.825 ms
Loss rate: 10.74%
-- Flow 2:
Average throughput: 44.25 Mbit/s
95th percentile per-packet one-way delay: 42.543 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 21.98 Mbit/s
95th percentile per-packet one-way delay: 105.522 ms
Loss rate: 1.14%

Run 4: Report of PCC-Allegro — Data Link

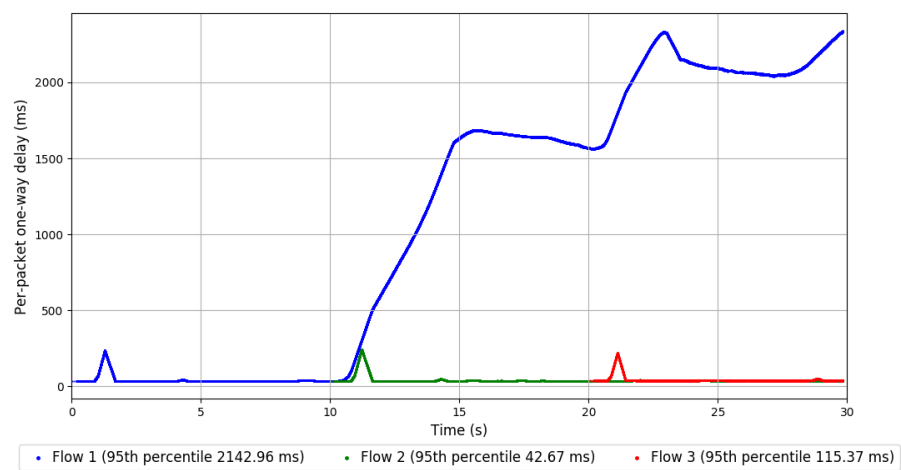
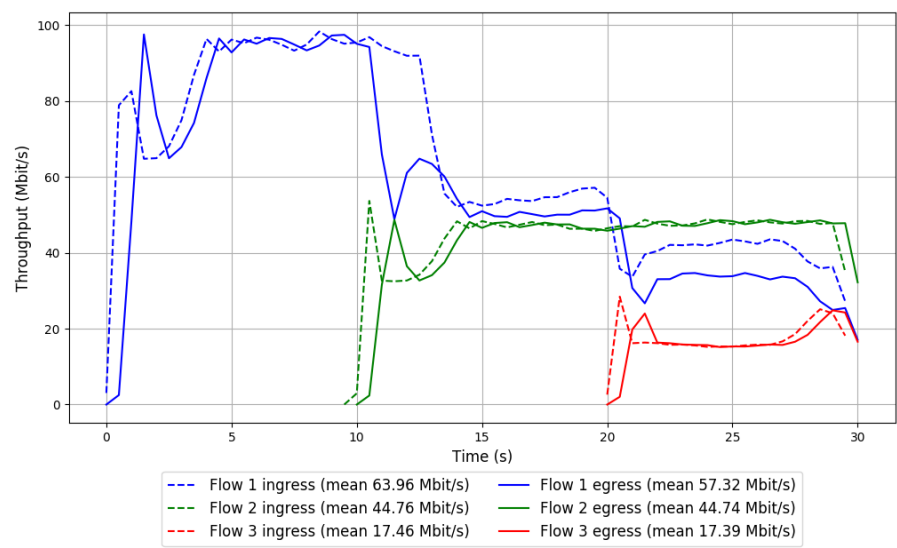


Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 12:44:25
End at: 2018-11-15 12:44:55
Local clock offset: -2.945 ms
Remote clock offset: -1.841 ms

Below is generated by plot.py at 2018-11-15 13:17:56
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.76 Mbit/s
95th percentile per-packet one-way delay: 2093.716 ms
Loss rate: 6.96%
-- Flow 1:
Average throughput: 57.32 Mbit/s
95th percentile per-packet one-way delay: 2142.957 ms
Loss rate: 10.55%
-- Flow 2:
Average throughput: 44.74 Mbit/s
95th percentile per-packet one-way delay: 42.669 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 17.39 Mbit/s
95th percentile per-packet one-way delay: 115.367 ms
Loss rate: 1.08%

Run 5: Report of PCC-Allegro — Data Link

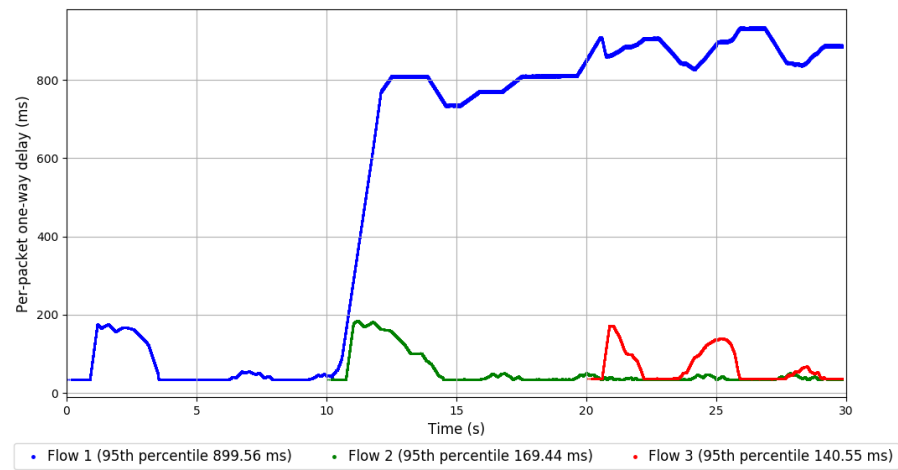
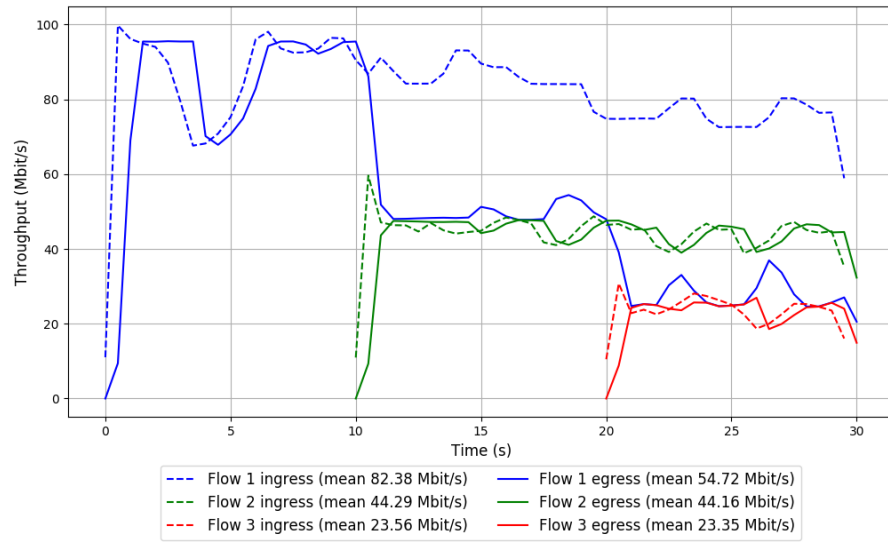


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 11:12:40
End at: 2018-11-15 11:13:10
Local clock offset: 0.229 ms
Remote clock offset: -4.484 ms

# Below is generated by plot.py at 2018-11-15 13:19:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.75 Mbit/s
95th percentile per-packet one-way delay: 885.108 ms
Loss rate: 23.47%
-- Flow 1:
Average throughput: 54.72 Mbit/s
95th percentile per-packet one-way delay: 899.558 ms
Loss rate: 33.73%
-- Flow 2:
Average throughput: 44.16 Mbit/s
95th percentile per-packet one-way delay: 169.443 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 23.35 Mbit/s
95th percentile per-packet one-way delay: 140.546 ms
Loss rate: 1.55%
```

Run 1: Report of PCC-Expr — Data Link

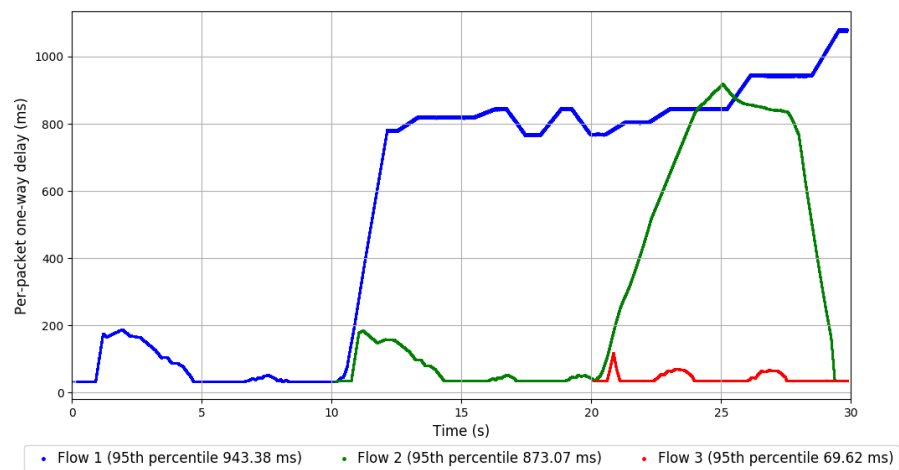
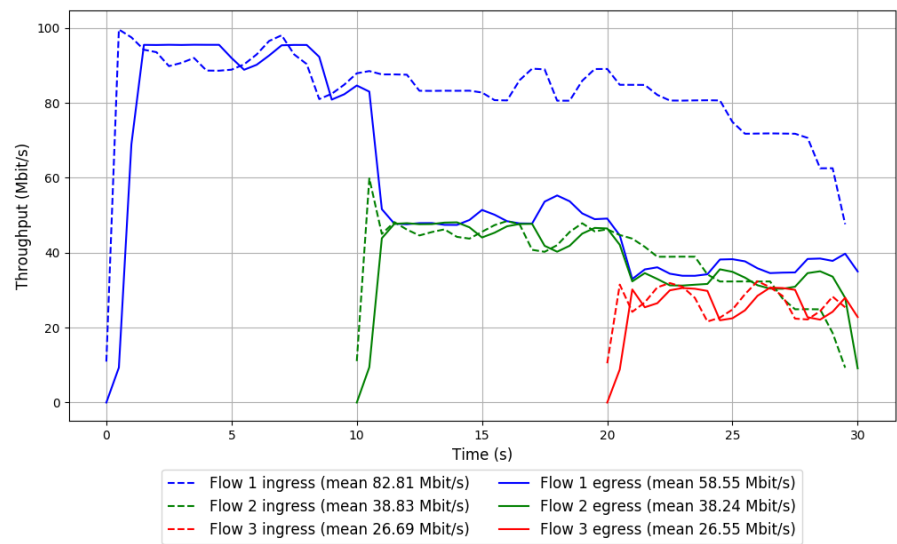


Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 11:37:41
End at: 2018-11-15 11:38:11
Local clock offset: 0.133 ms
Remote clock offset: -3.864 ms

Below is generated by plot.py at 2018-11-15 13:19:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.68 Mbit/s
95th percentile per-packet one-way delay: 916.854 ms
Loss rate: 21.25%
-- Flow 1:
Average throughput: 58.55 Mbit/s
95th percentile per-packet one-way delay: 943.379 ms
Loss rate: 29.45%
-- Flow 2:
Average throughput: 38.24 Mbit/s
95th percentile per-packet one-way delay: 873.067 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 26.55 Mbit/s
95th percentile per-packet one-way delay: 69.621 ms
Loss rate: 1.20%

Run 2: Report of PCC-Expr — Data Link

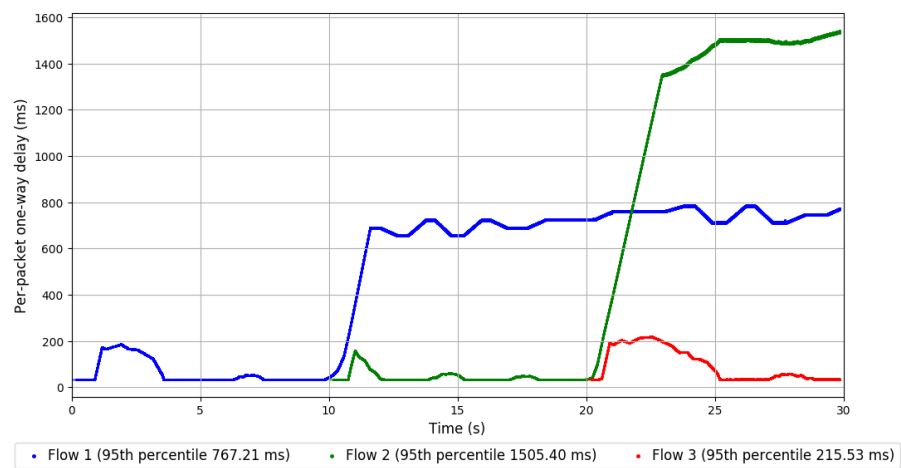
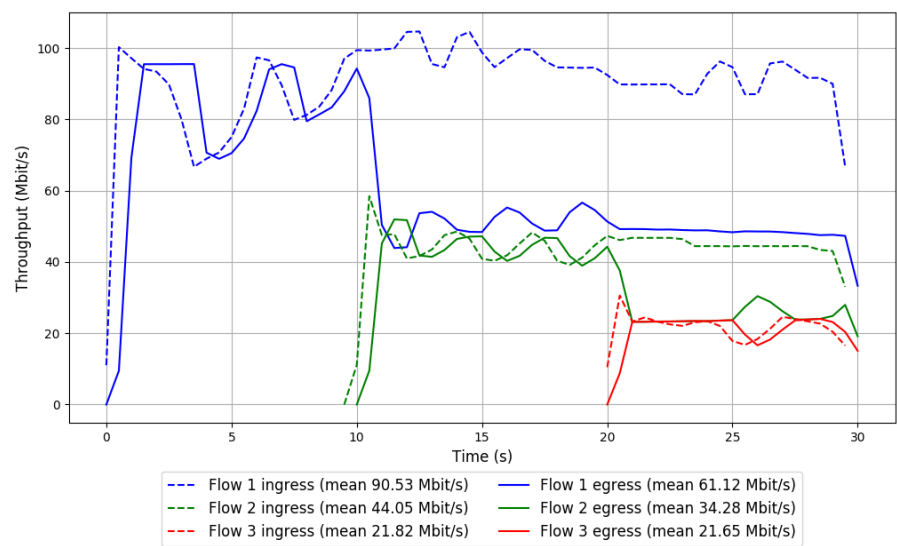


Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 12:02:41
End at: 2018-11-15 12:03:11
Local clock offset: 0.116 ms
Remote clock offset: -2.588 ms

Below is generated by plot.py at 2018-11-15 13:19:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.02 Mbit/s
95th percentile per-packet one-way delay: 1444.255 ms
Loss rate: 28.51%
-- Flow 1:
Average throughput: 61.12 Mbit/s
95th percentile per-packet one-way delay: 767.207 ms
Loss rate: 32.64%
-- Flow 2:
Average throughput: 34.28 Mbit/s
95th percentile per-packet one-way delay: 1505.404 ms
Loss rate: 22.42%
-- Flow 3:
Average throughput: 21.65 Mbit/s
95th percentile per-packet one-way delay: 215.529 ms
Loss rate: 1.43%

Run 3: Report of PCC-Expr — Data Link

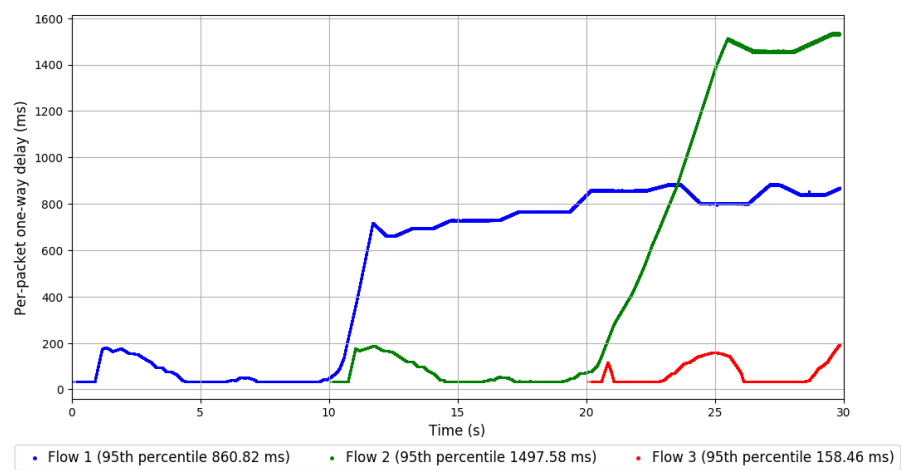
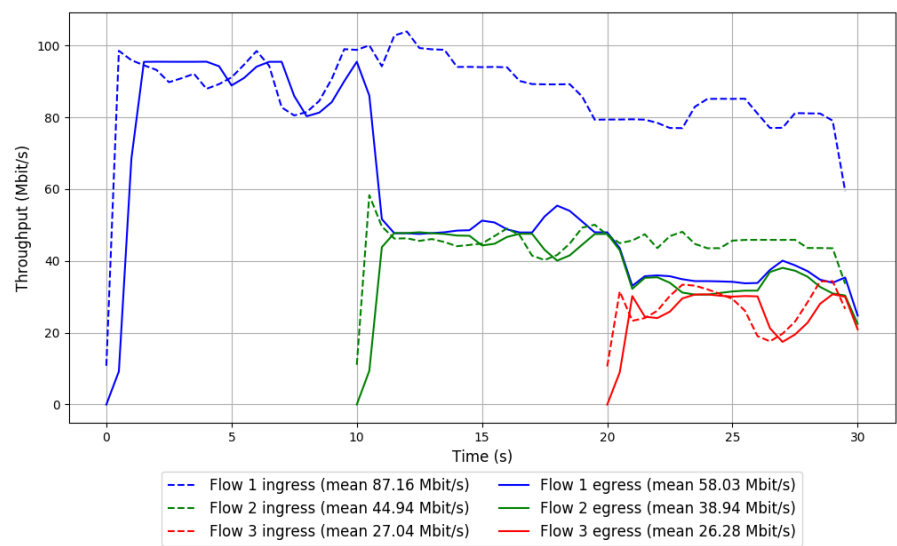


Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 12:27:48
End at: 2018-11-15 12:28:18
Local clock offset: -0.117 ms
Remote clock offset: -2.183 ms

Below is generated by plot.py at 2018-11-15 13:19:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.56 Mbit/s
95th percentile per-packet one-way delay: 1454.312 ms
Loss rate: 26.69%
-- Flow 1:
Average throughput: 58.03 Mbit/s
95th percentile per-packet one-way delay: 860.824 ms
Loss rate: 33.56%
-- Flow 2:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 1497.582 ms
Loss rate: 13.63%
-- Flow 3:
Average throughput: 26.28 Mbit/s
95th percentile per-packet one-way delay: 158.464 ms
Loss rate: 3.42%

Run 4: Report of PCC-Expr — Data Link

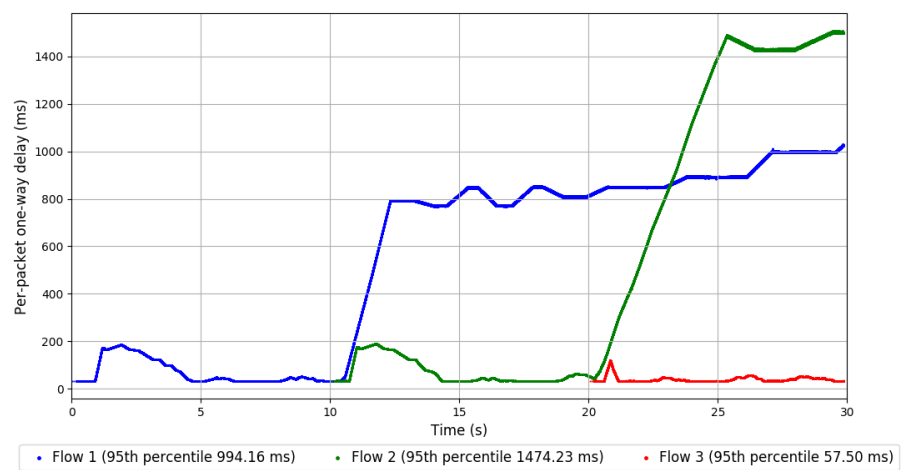
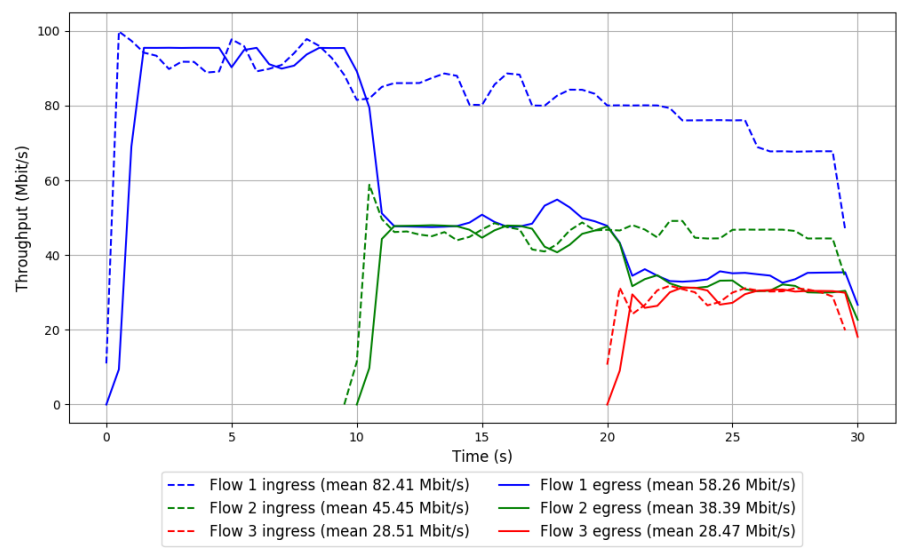


Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 12:52:37
End at: 2018-11-15 12:53:07
Local clock offset: -3.495 ms
Remote clock offset: -1.908 ms

Below is generated by plot.py at 2018-11-15 13:19:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.15 Mbit/s
95th percentile per-packet one-way delay: 1425.041 ms
Loss rate: 23.85%
-- Flow 1:
Average throughput: 58.26 Mbit/s
95th percentile per-packet one-way delay: 994.156 ms
Loss rate: 29.45%
-- Flow 2:
Average throughput: 38.39 Mbit/s
95th percentile per-packet one-way delay: 1474.235 ms
Loss rate: 15.79%
-- Flow 3:
Average throughput: 28.47 Mbit/s
95th percentile per-packet one-way delay: 57.502 ms
Loss rate: 0.76%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 11:10:00

End at: 2018-11-15 11:10:30

Local clock offset: 0.218 ms

Remote clock offset: -4.64 ms

Below is generated by plot.py at 2018-11-15 13:19:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.09 Mbit/s

95th percentile per-packet one-way delay: 102.434 ms

Loss rate: 0.36%

-- Flow 1:

Average throughput: 41.50 Mbit/s

95th percentile per-packet one-way delay: 101.767 ms

Loss rate: 0.18%

-- Flow 2:

Average throughput: 43.52 Mbit/s

95th percentile per-packet one-way delay: 93.996 ms

Loss rate: 0.41%

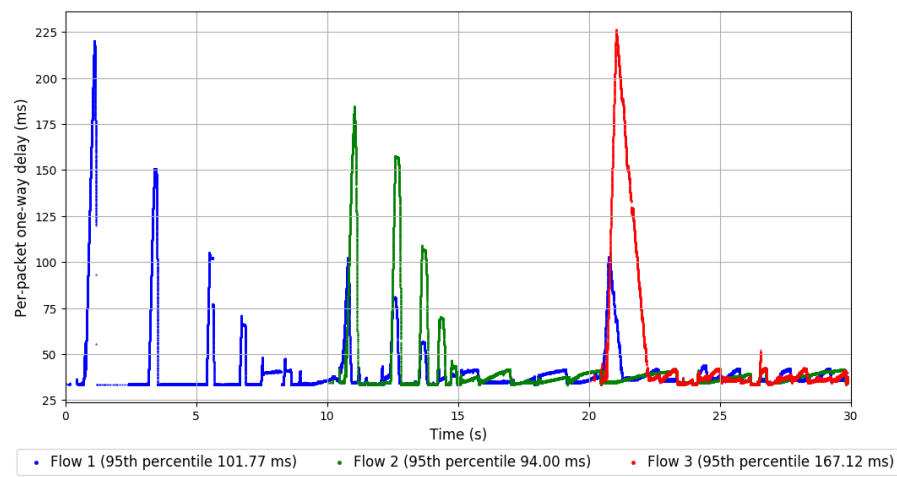
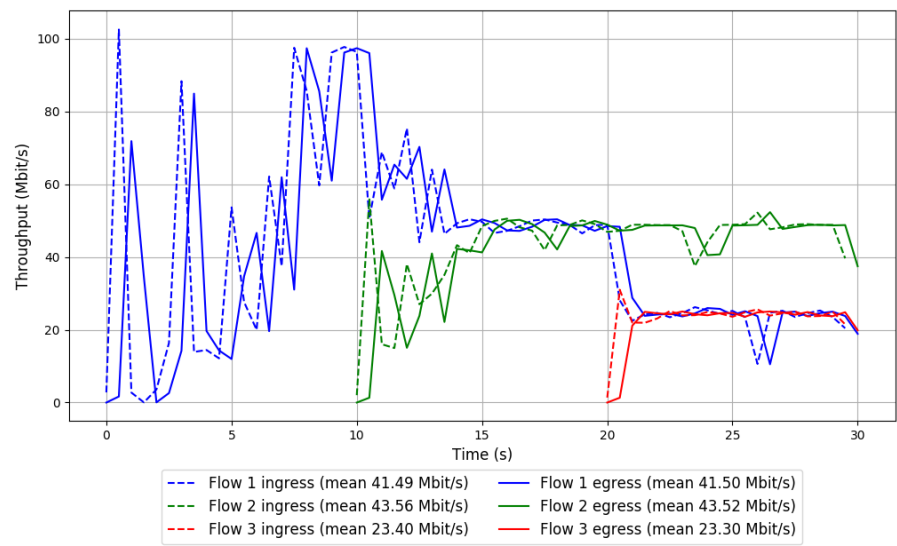
-- Flow 3:

Average throughput: 23.30 Mbit/s

95th percentile per-packet one-way delay: 167.124 ms

Loss rate: 1.10%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 11:34:58

End at: 2018-11-15 11:35:28

Local clock offset: 0.16 ms

Remote clock offset: -3.84 ms

Below is generated by plot.py at 2018-11-15 13:19:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 76.44 Mbit/s

95th percentile per-packet one-way delay: 105.575 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 48.25 Mbit/s

95th percentile per-packet one-way delay: 78.759 ms

Loss rate: 0.26%

-- Flow 2:

Average throughput: 30.81 Mbit/s

95th percentile per-packet one-way delay: 126.552 ms

Loss rate: 0.36%

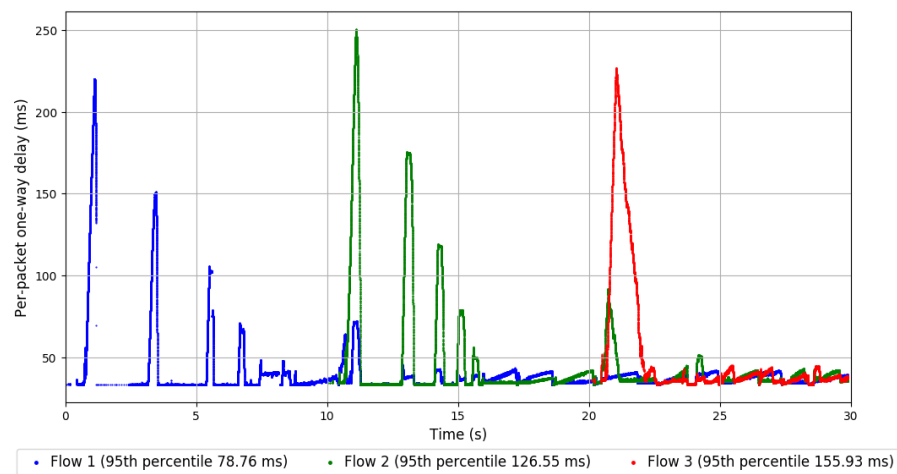
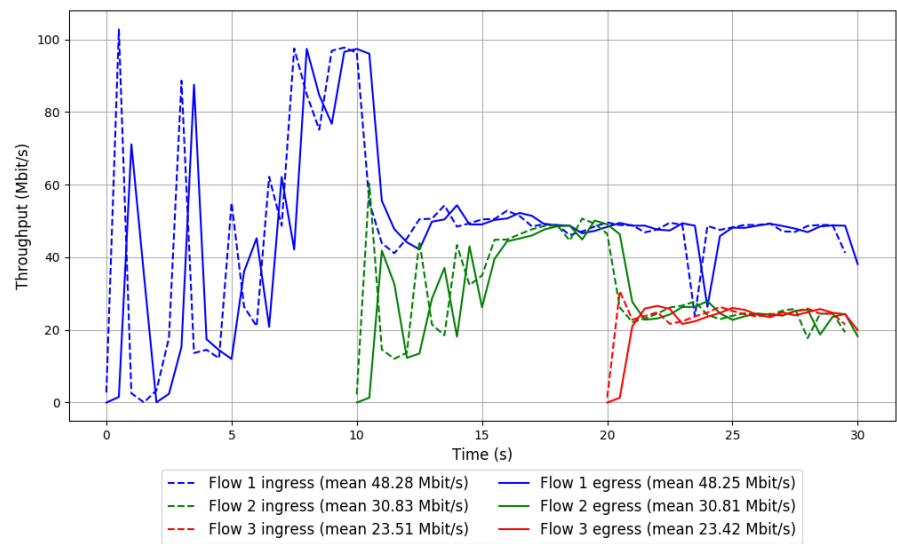
-- Flow 3:

Average throughput: 23.42 Mbit/s

95th percentile per-packet one-way delay: 155.930 ms

Loss rate: 1.05%

Run 2: Report of QUIC Cubic — Data Link

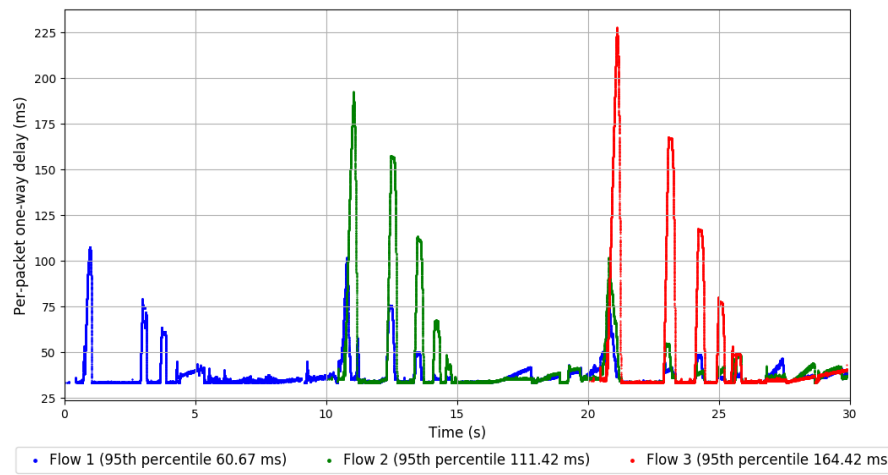
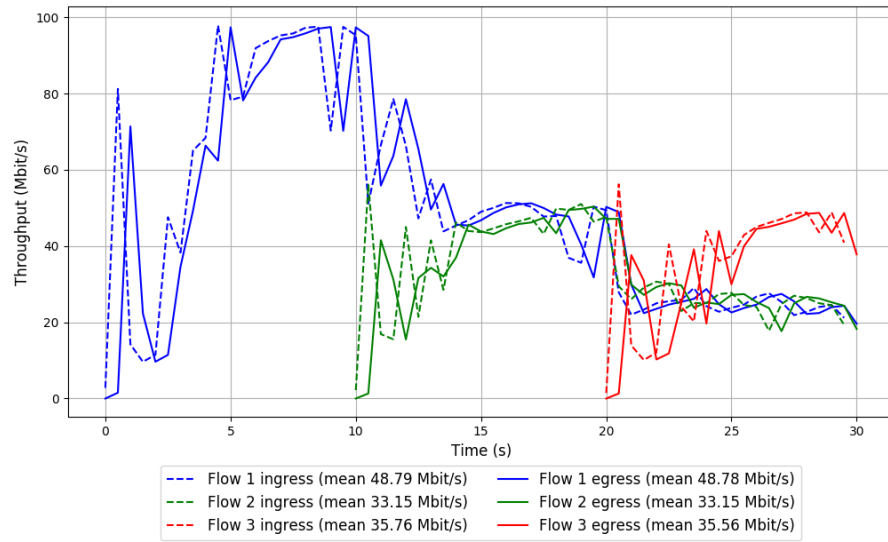


Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 12:00:01
End at: 2018-11-15 12:00:31
Local clock offset: 0.101 ms
Remote clock offset: -2.736 ms

Below is generated by plot.py at 2018-11-15 13:19:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 82.51 Mbit/s
95th percentile per-packet one-way delay: 83.475 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 48.78 Mbit/s
95th percentile per-packet one-way delay: 60.670 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 33.15 Mbit/s
95th percentile per-packet one-way delay: 111.415 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 35.56 Mbit/s
95th percentile per-packet one-way delay: 164.416 ms
Loss rate: 1.18%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 12:25:08

End at: 2018-11-15 12:25:38

Local clock offset: 0.209 ms

Remote clock offset: -2.12 ms

Below is generated by plot.py at 2018-11-15 13:19:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.96 Mbit/s

95th percentile per-packet one-way delay: 98.139 ms

Loss rate: 0.35%

-- Flow 1:

Average throughput: 44.41 Mbit/s

95th percentile per-packet one-way delay: 93.628 ms

Loss rate: 0.20%

-- Flow 2:

Average throughput: 35.26 Mbit/s

95th percentile per-packet one-way delay: 106.641 ms

Loss rate: 0.39%

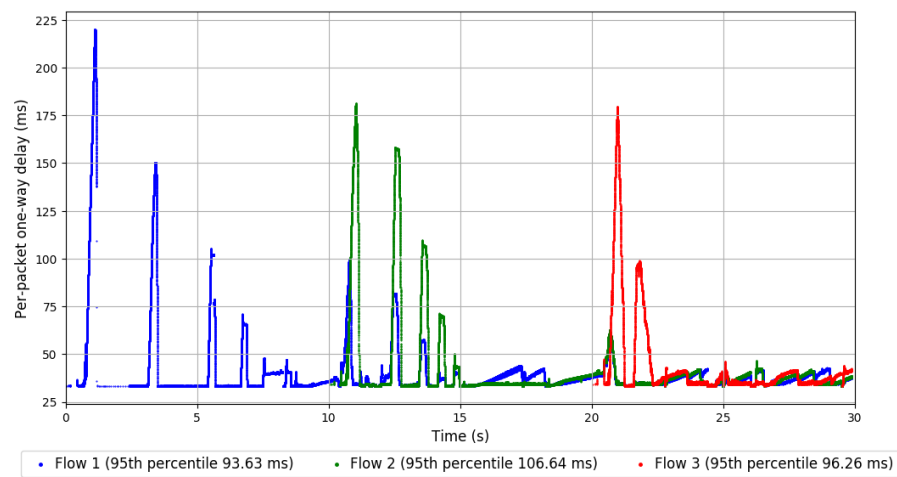
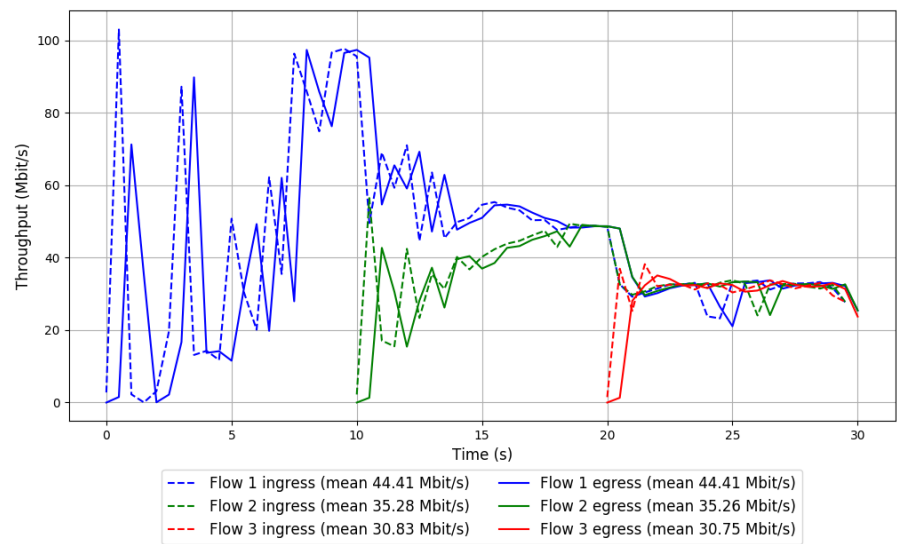
-- Flow 3:

Average throughput: 30.75 Mbit/s

95th percentile per-packet one-way delay: 96.260 ms

Loss rate: 0.91%

Run 4: Report of QUIC Cubic — Data Link

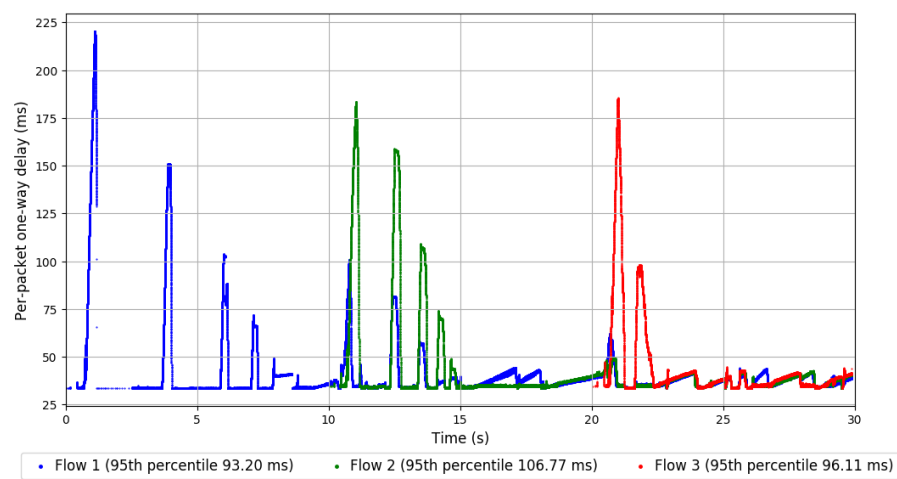
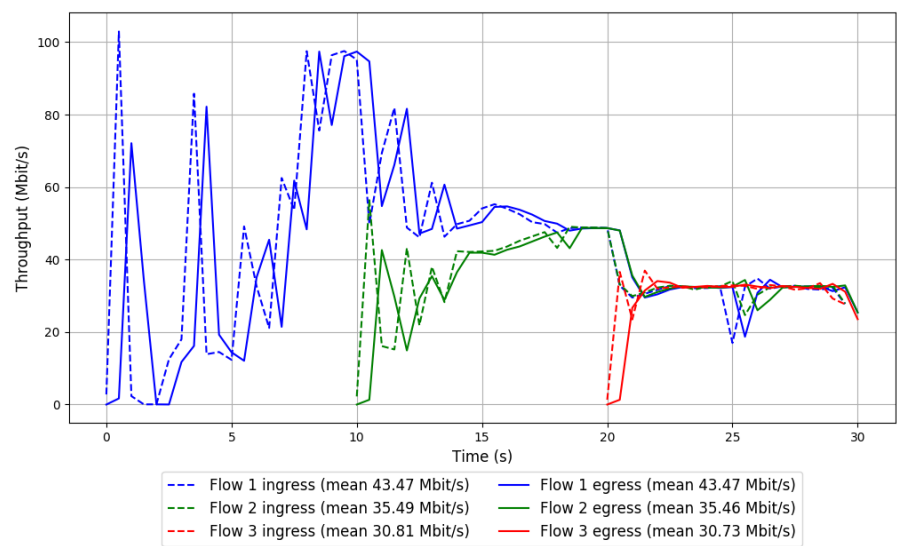


Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 12:49:56
End at: 2018-11-15 12:50:26
Local clock offset: -3.338 ms
Remote clock offset: -2.092 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 77.15 Mbit/s
95th percentile per-packet one-way delay: 98.005 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 43.47 Mbit/s
95th percentile per-packet one-way delay: 93.200 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 35.46 Mbit/s
95th percentile per-packet one-way delay: 106.768 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 30.73 Mbit/s
95th percentile per-packet one-way delay: 96.108 ms
Loss rate: 0.90%

Run 5: Report of QUIC Cubic — Data Link

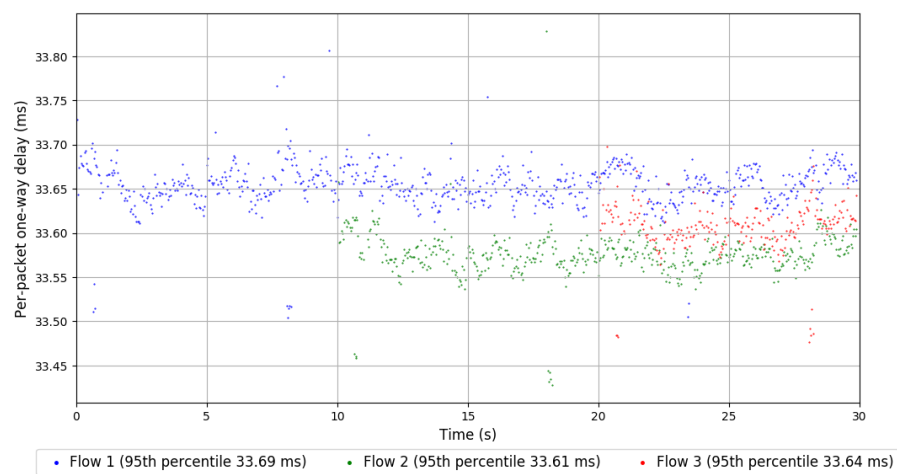
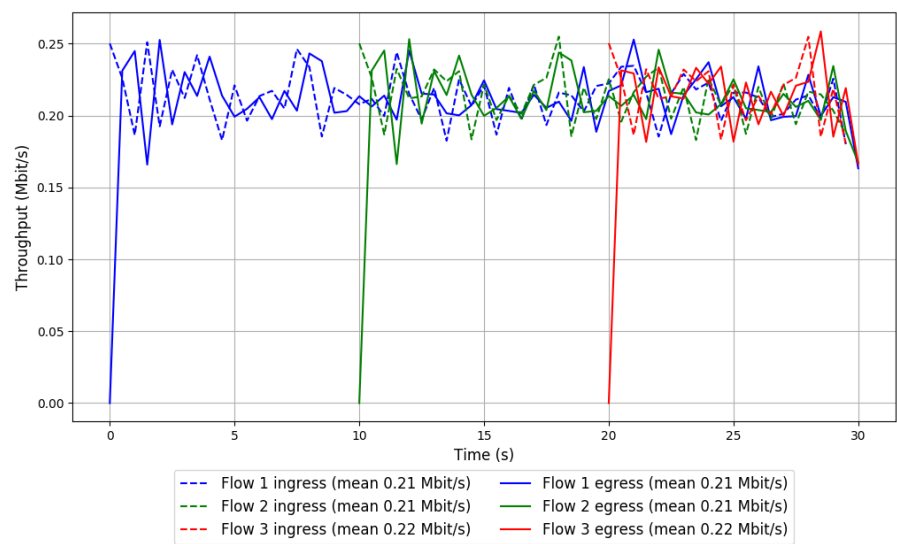


```
Run 1: Statistics of SReAM

Start at: 2018-11-15 11:25:11
End at: 2018-11-15 11:25:41
Local clock offset: 0.308 ms
Remote clock offset: -4.185 ms

# Below is generated by plot.py at 2018-11-15 13:20:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.679 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.686 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.609 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.642 ms
Loss rate: 0.71%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SReAM

Start at: 2018-11-15 11:50:24

End at: 2018-11-15 11:50:54

Local clock offset: 0.085 ms

Remote clock offset: -3.26 ms

Below is generated by plot.py at 2018-11-15 13:20:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 33.771 ms

Loss rate: 0.31%

-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.819 ms

Loss rate: 0.13%

-- Flow 2:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.730 ms

Loss rate: 0.40%

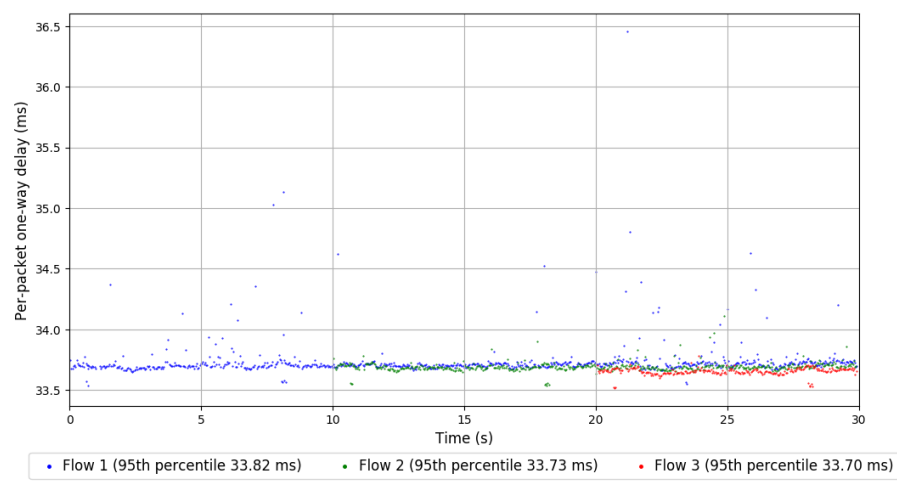
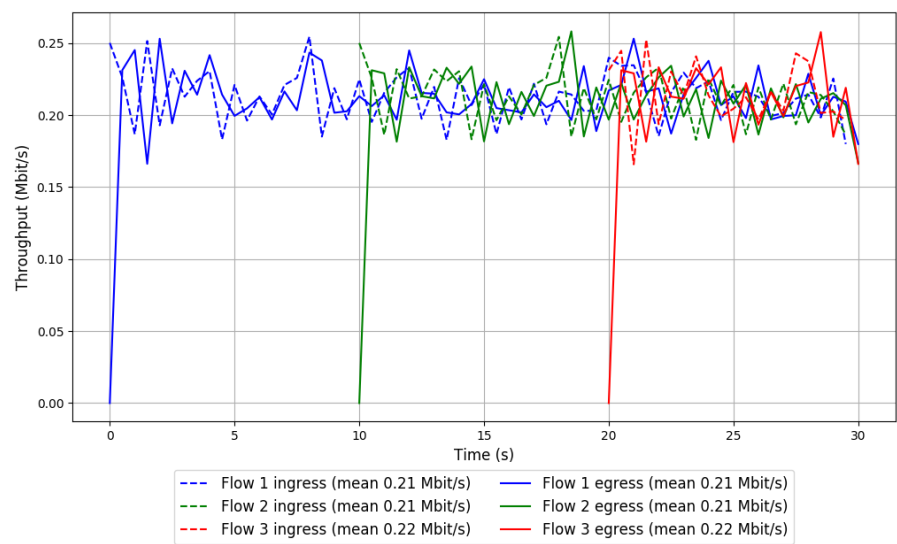
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 33.695 ms

Loss rate: 0.71%

Run 2: Report of SReAM — Data Link

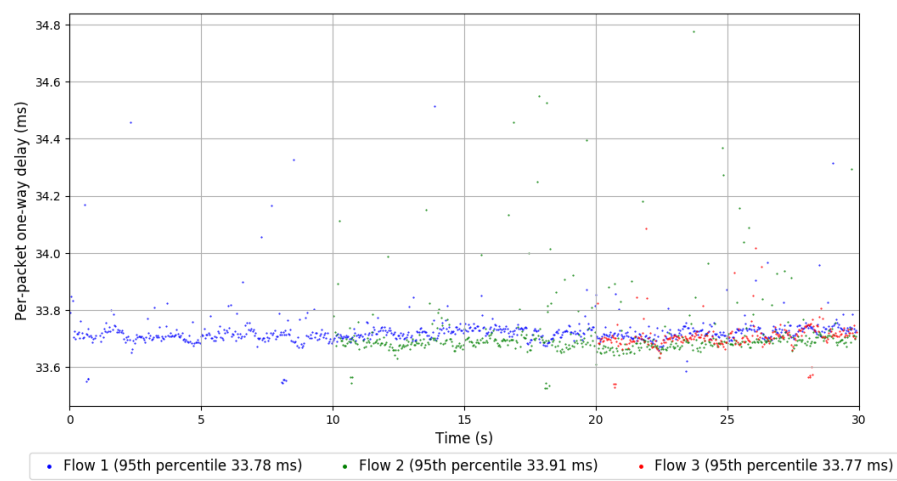
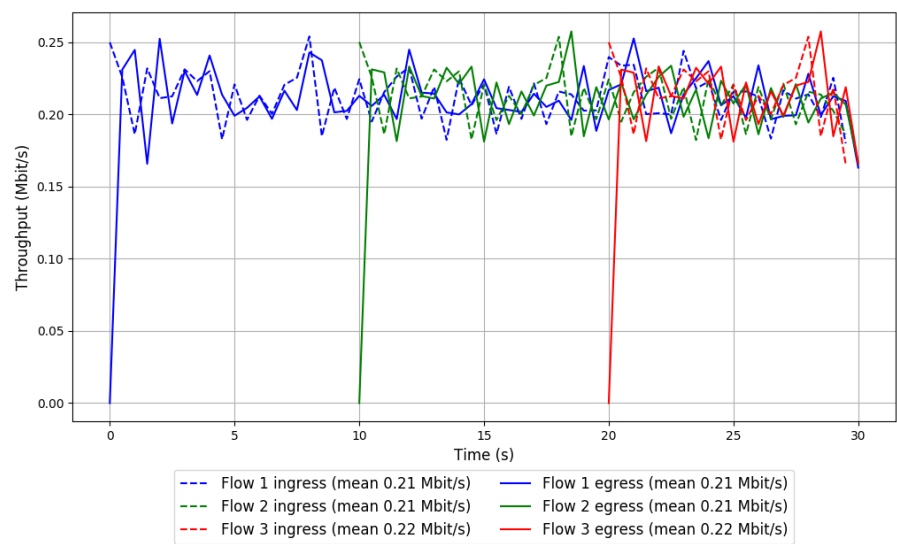


Run 3: Statistics of SReAM

Start at: 2018-11-15 12:15:13
End at: 2018-11-15 12:15:43
Local clock offset: 0.174 ms
Remote clock offset: -2.502 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.808 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.785 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.906 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.767 ms
Loss rate: 0.35%

Run 3: Report of SReAM — Data Link

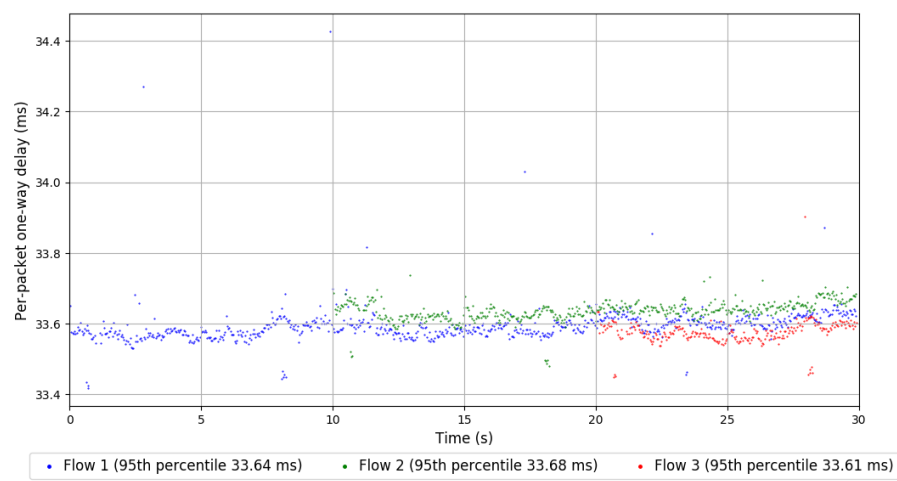
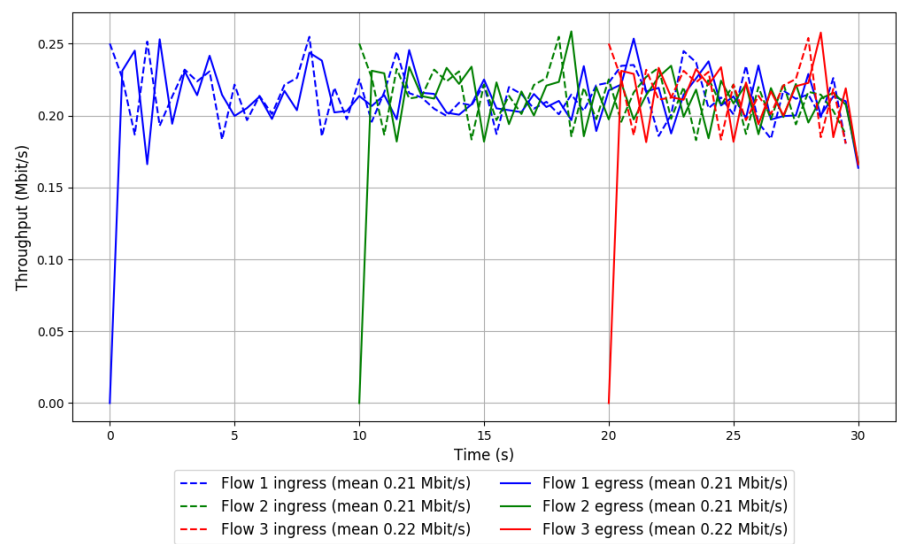


Run 4: Statistics of SReAM

Start at: 2018-11-15 12:40:20
End at: 2018-11-15 12:40:50
Local clock offset: -2.58 ms
Remote clock offset: -1.915 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.664 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.639 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.678 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.610 ms
Loss rate: 0.71%

Run 4: Report of SReAM — Data Link

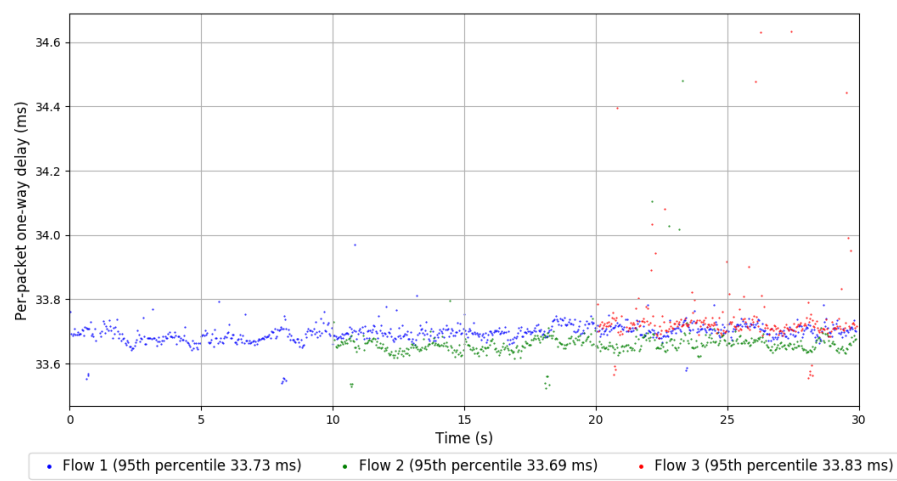
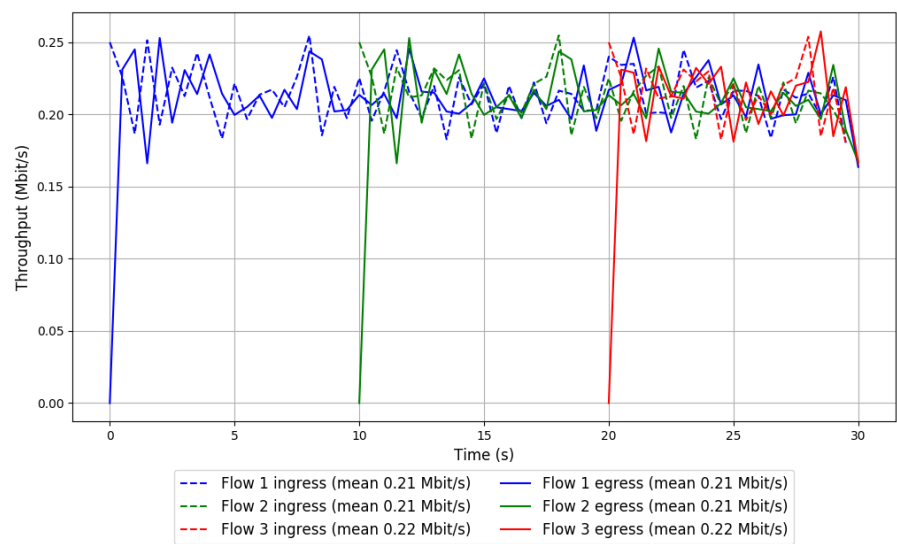


Run 5: Statistics of SReAM

Start at: 2018-11-15 13:05:10
End at: 2018-11-15 13:05:40
Local clock offset: -3.216 ms
Remote clock offset: -1.783 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.740 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.735 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.692 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.832 ms
Loss rate: 0.71%

Run 5: Report of SReAM — Data Link

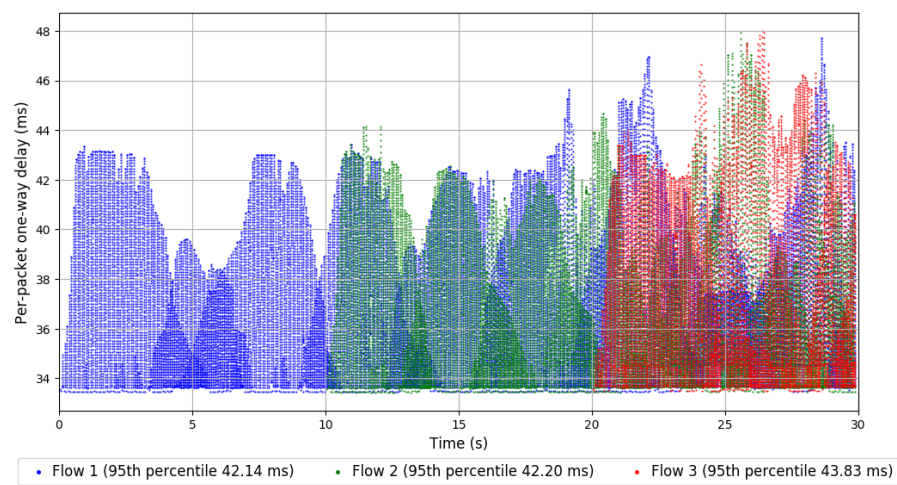
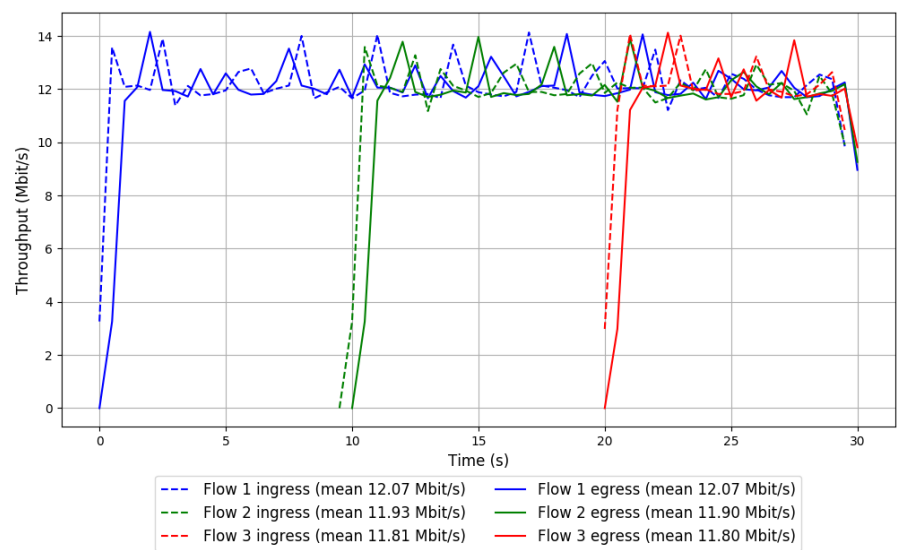


Run 1: Statistics of Sprout

Start at: 2018-11-15 11:23:52
End at: 2018-11-15 11:24:22
Local clock offset: 0.288 ms
Remote clock offset: -4.293 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 23.87 Mbit/s
95th percentile per-packet one-way delay: 42.449 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 12.07 Mbit/s
95th percentile per-packet one-way delay: 42.137 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.90 Mbit/s
95th percentile per-packet one-way delay: 42.203 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 43.830 ms
Loss rate: 0.72%

Run 1: Report of Sprout — Data Link

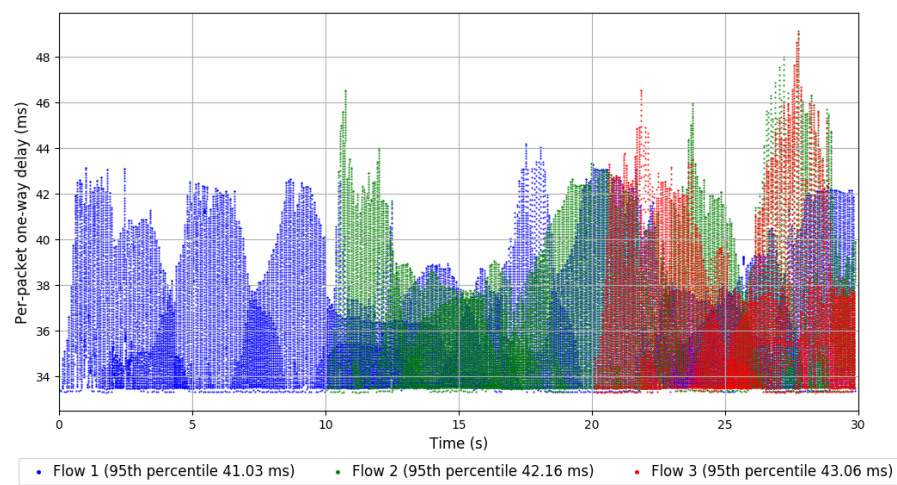
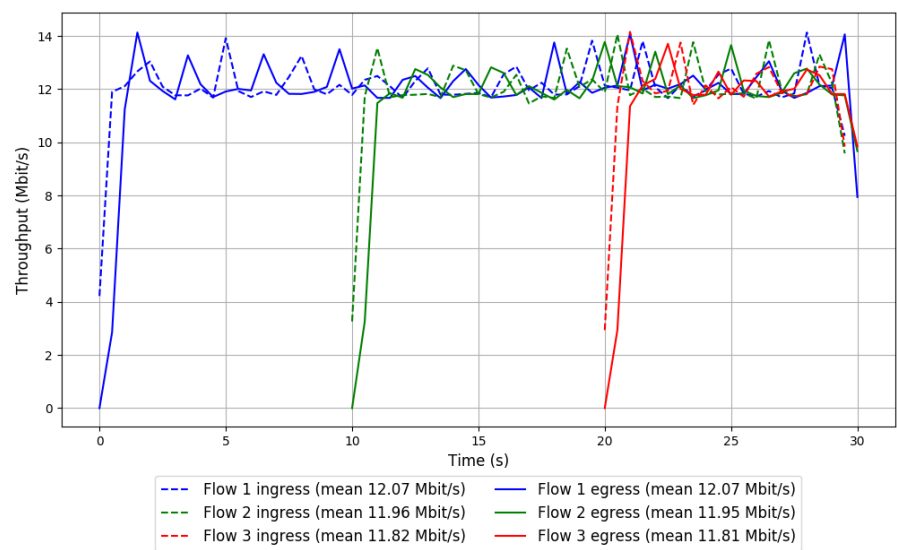


Run 2: Statistics of Sprout

Start at: 2018-11-15 11:49:04
End at: 2018-11-15 11:49:34
Local clock offset: 0.087 ms
Remote clock offset: -3.152 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 23.88 Mbit/s
95th percentile per-packet one-way delay: 41.748 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 12.07 Mbit/s
95th percentile per-packet one-way delay: 41.035 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 42.157 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 43.061 ms
Loss rate: 0.84%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-11-15 12:13:54

End at: 2018-11-15 12:14:24

Local clock offset: 0.185 ms

Remote clock offset: -2.22 ms

Below is generated by plot.py at 2018-11-15 13:20:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 23.81 Mbit/s

95th percentile per-packet one-way delay: 41.876 ms

Loss rate: 0.40%

-- Flow 1:

Average throughput: 11.98 Mbit/s

95th percentile per-packet one-way delay: 41.499 ms

Loss rate: 0.25%

-- Flow 2:

Average throughput: 11.95 Mbit/s

95th percentile per-packet one-way delay: 42.181 ms

Loss rate: 0.40%

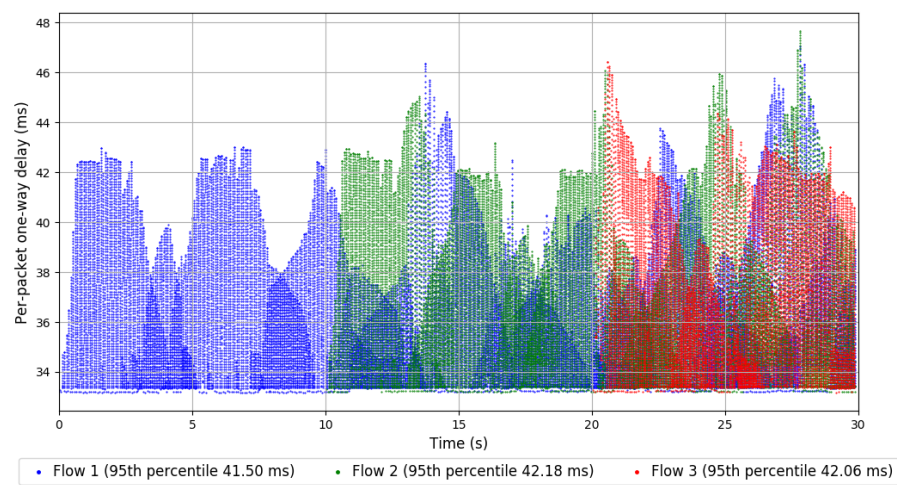
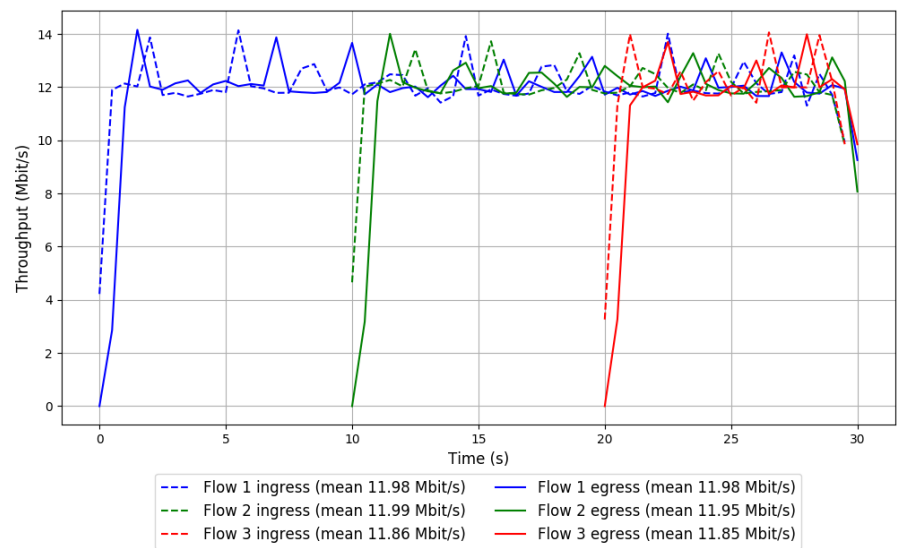
-- Flow 3:

Average throughput: 11.85 Mbit/s

95th percentile per-packet one-way delay: 42.062 ms

Loss rate: 0.84%

Run 3: Report of Sprout — Data Link

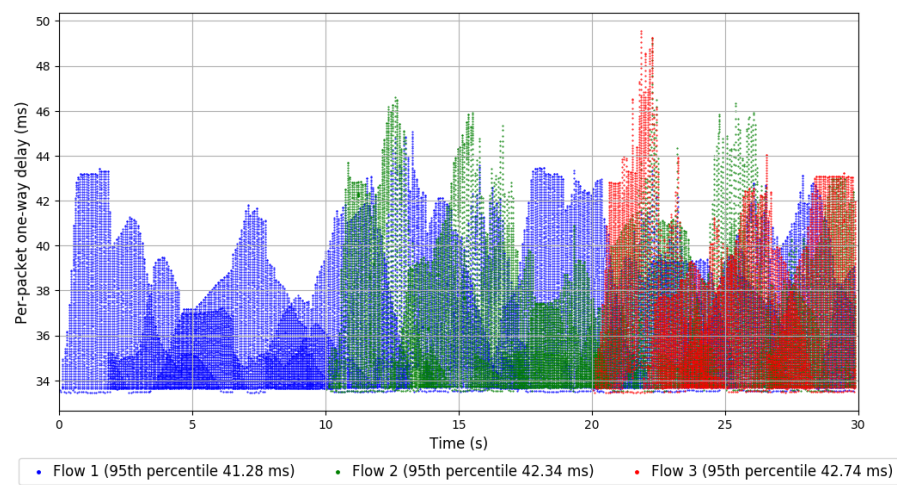
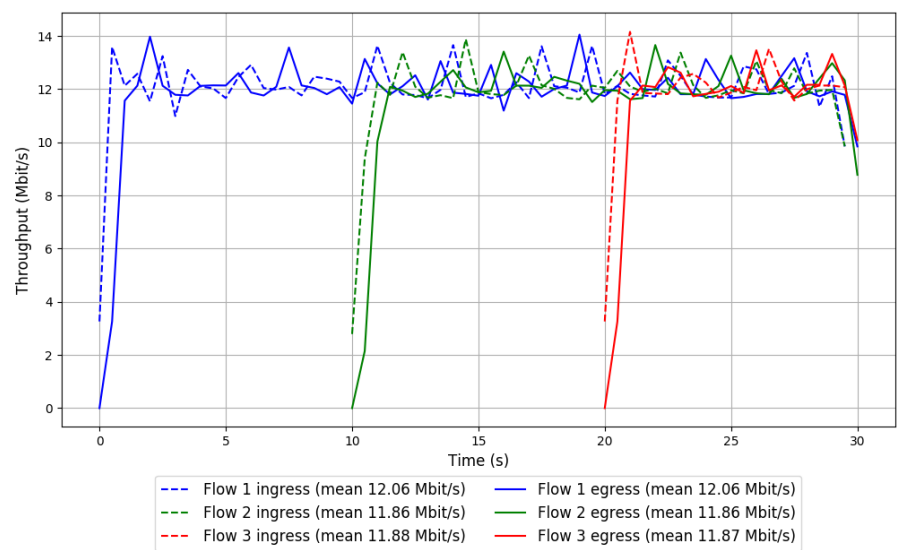


Run 4: Statistics of Sprout

Start at: 2018-11-15 12:39:01
End at: 2018-11-15 12:39:31
Local clock offset: -2.436 ms
Remote clock offset: -1.973 ms

Below is generated by plot.py at 2018-11-15 13:20:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 23.83 Mbit/s
95th percentile per-packet one-way delay: 41.894 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 12.06 Mbit/s
95th percentile per-packet one-way delay: 41.281 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.86 Mbit/s
95th percentile per-packet one-way delay: 42.343 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 11.87 Mbit/s
95th percentile per-packet one-way delay: 42.737 ms
Loss rate: 0.85%

Run 4: Report of Sprout — Data Link

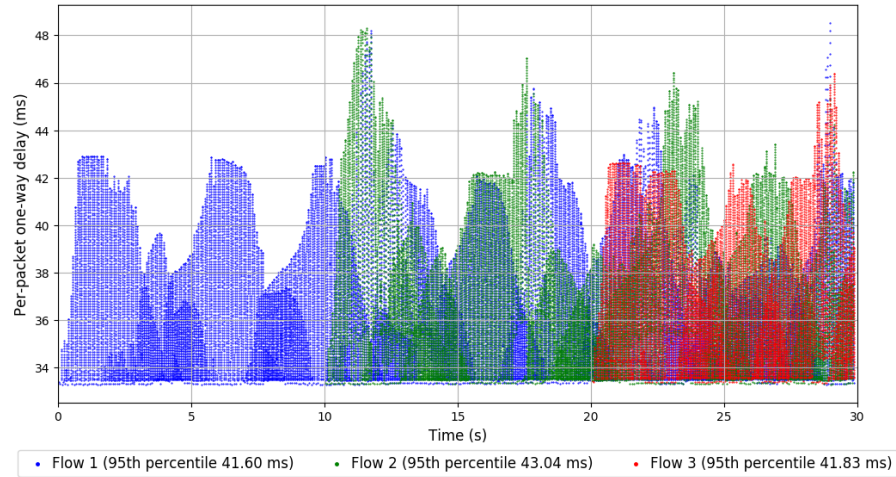
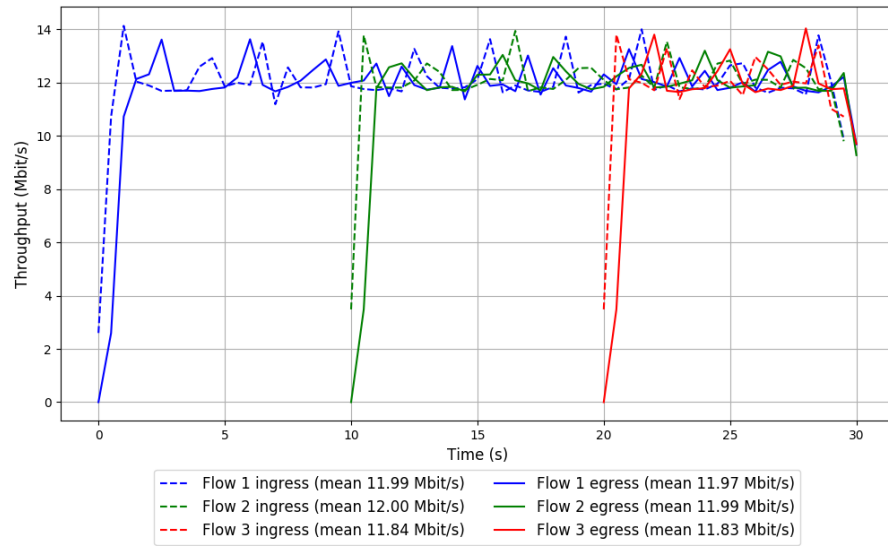


Run 5: Statistics of Sprout

Start at: 2018-11-15 13:03:51
End at: 2018-11-15 13:04:21
Local clock offset: -3.243 ms
Remote clock offset: -1.698 ms

```
# Below is generated by plot.py at 2018-11-15 13:20:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.81 Mbit/s
95th percentile per-packet one-way delay: 42.028 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 41.604 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 43.039 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 41.831 ms
Loss rate: 0.81%
```

Run 5: Report of Sprout — Data Link

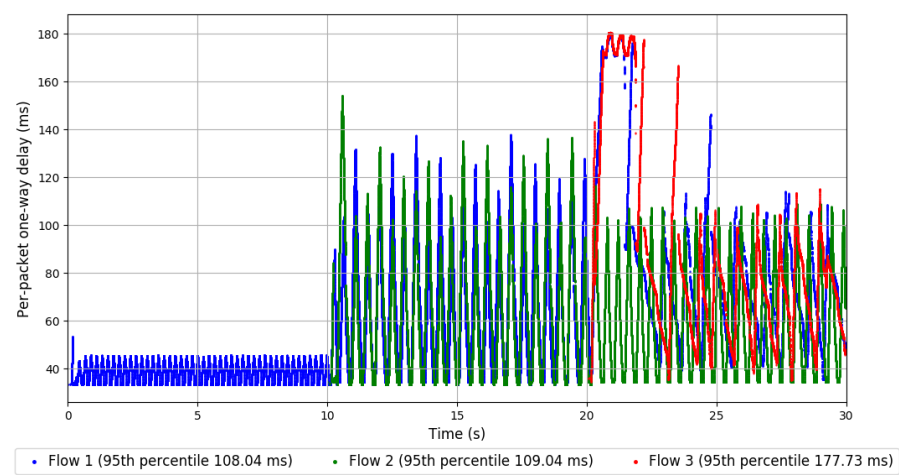
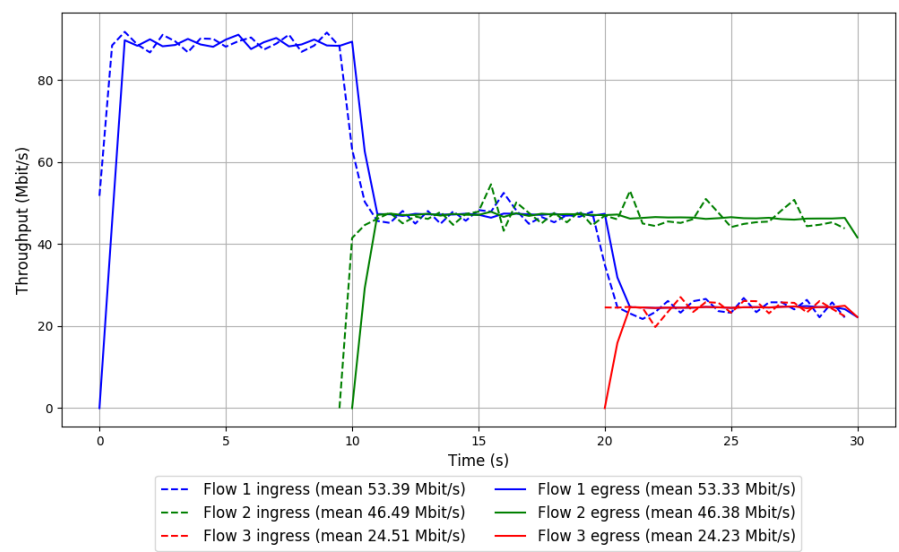


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 11:16:56
End at: 2018-11-15 11:17:26
Local clock offset: 0.244 ms
Remote clock offset: -4.355 ms

# Below is generated by plot.py at 2018-11-15 13:21:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.24 Mbit/s
95th percentile per-packet one-way delay: 114.580 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 53.33 Mbit/s
95th percentile per-packet one-way delay: 108.043 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 46.38 Mbit/s
95th percentile per-packet one-way delay: 109.041 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 24.23 Mbit/s
95th percentile per-packet one-way delay: 177.730 ms
Loss rate: 1.81%
```

Run 1: Report of TaoVA-100x — Data Link



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-15 11:42:06

End at: 2018-11-15 11:42:36

Local clock offset: 0.096 ms

Remote clock offset: -3.49 ms

Below is generated by plot.py at 2018-11-15 13:21:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.18 Mbit/s

95th percentile per-packet one-way delay: 118.087 ms

Loss rate: 0.73%

-- Flow 1:

Average throughput: 53.28 Mbit/s

95th percentile per-packet one-way delay: 111.596 ms

Loss rate: 0.47%

-- Flow 2:

Average throughput: 46.41 Mbit/s

95th percentile per-packet one-way delay: 112.193 ms

Loss rate: 0.60%

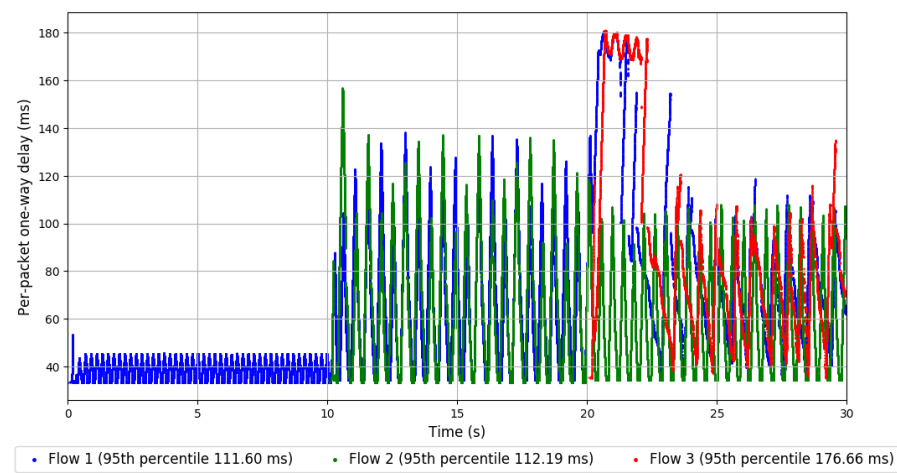
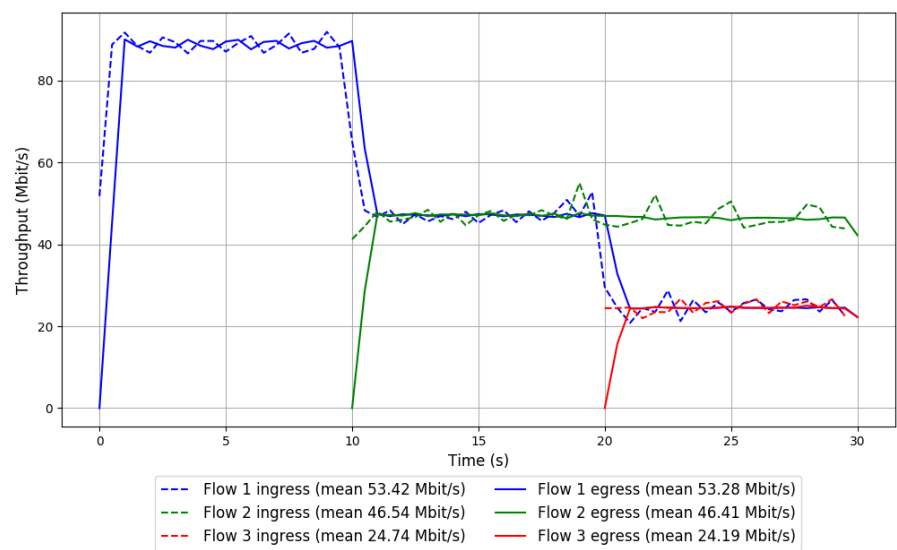
-- Flow 3:

Average throughput: 24.19 Mbit/s

95th percentile per-packet one-way delay: 176.658 ms

Loss rate: 2.88%

Run 2: Report of TaoVA-100x — Data Link

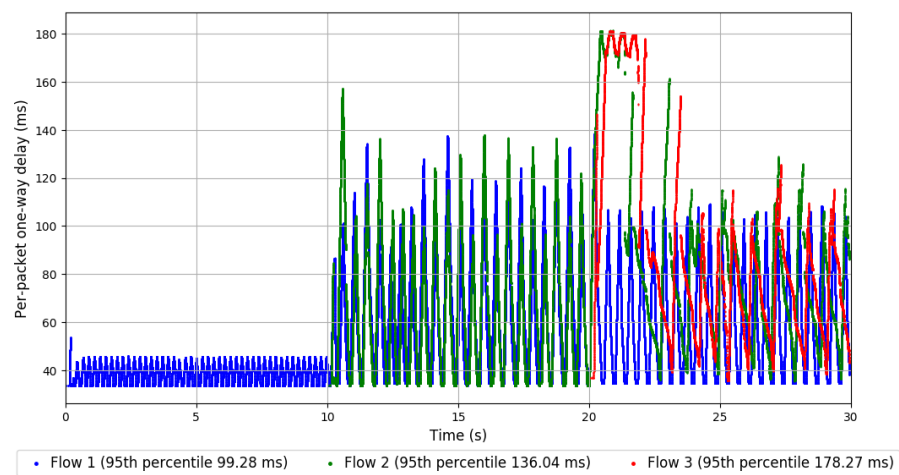
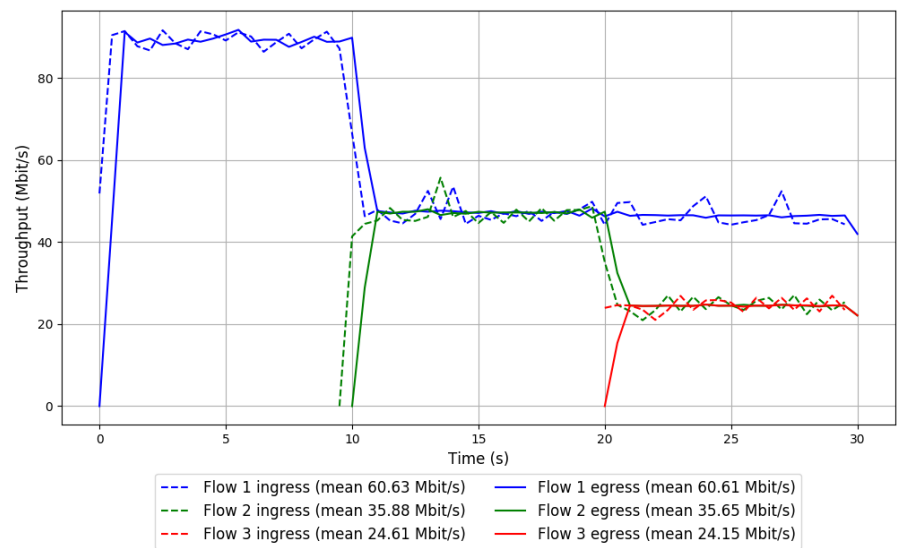


Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 12:06:58
End at: 2018-11-15 12:07:28
Local clock offset: 0.113 ms
Remote clock offset: -2.722 ms

Below is generated by plot.py at 2018-11-15 13:21:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.34 Mbit/s
95th percentile per-packet one-way delay: 115.406 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 60.61 Mbit/s
95th percentile per-packet one-way delay: 99.279 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 35.65 Mbit/s
95th percentile per-packet one-way delay: 136.039 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 24.15 Mbit/s
95th percentile per-packet one-way delay: 178.267 ms
Loss rate: 2.54%

Run 3: Report of TaoVA-100x — Data Link

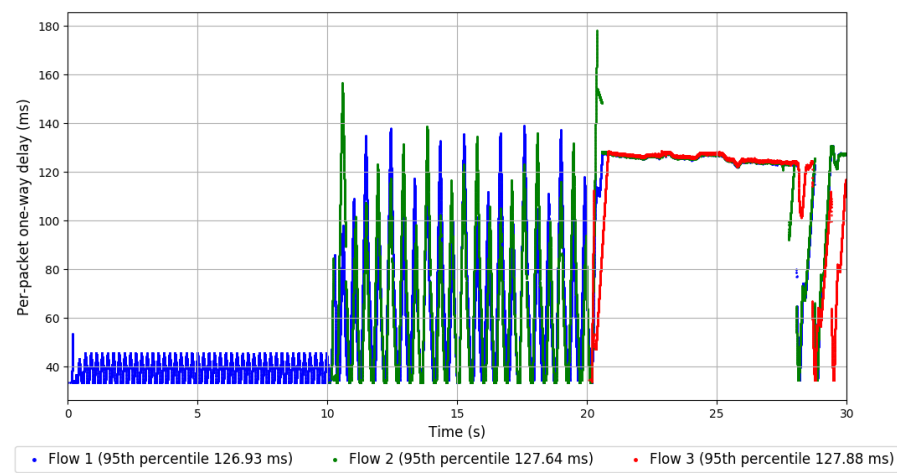
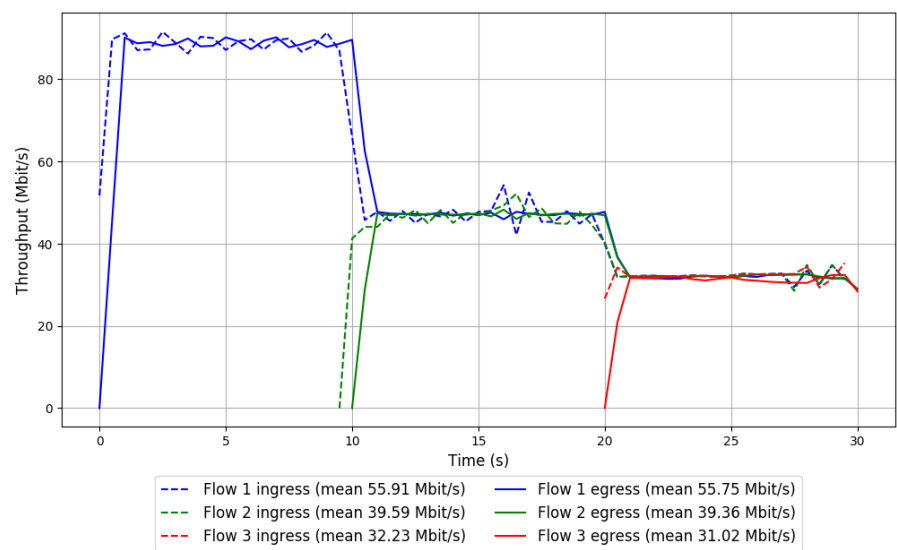


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 12:32:04
End at: 2018-11-15 12:32:34
Local clock offset: -1.358 ms
Remote clock offset: -2.154 ms

Below is generated by plot.py at 2018-11-15 13:21:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.23 Mbit/s
95th percentile per-packet one-way delay: 127.464 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 55.75 Mbit/s
95th percentile per-packet one-way delay: 126.933 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 39.36 Mbit/s
95th percentile per-packet one-way delay: 127.640 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 31.02 Mbit/s
95th percentile per-packet one-way delay: 127.876 ms
Loss rate: 4.38%

Run 4: Report of TaoVA-100x — Data Link

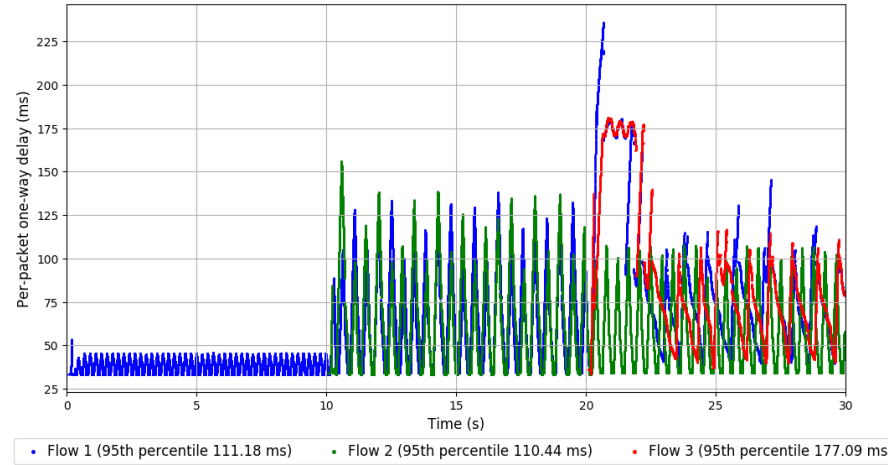
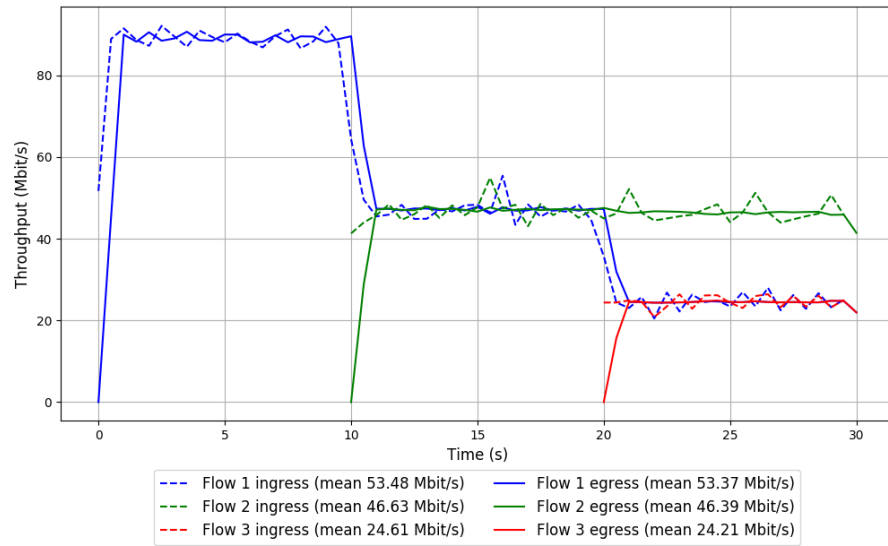


Run 5: Statistics of TaoVA-100x

Start at: 2018-11-15 12:56:54
End at: 2018-11-15 12:57:24
Local clock offset: -3.725 ms
Remote clock offset: -1.868 ms

Below is generated by plot.py at 2018-11-15 13:21:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.26 Mbit/s
95th percentile per-packet one-way delay: 116.926 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 53.37 Mbit/s
95th percentile per-packet one-way delay: 111.180 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 46.39 Mbit/s
95th percentile per-packet one-way delay: 110.445 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 24.21 Mbit/s
95th percentile per-packet one-way delay: 177.088 ms
Loss rate: 2.26%

Run 5: Report of TaoVA-100x — Data Link

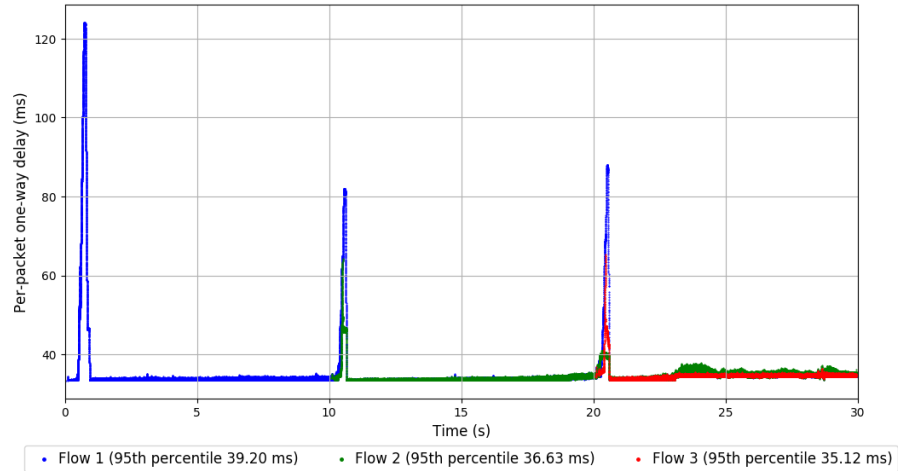
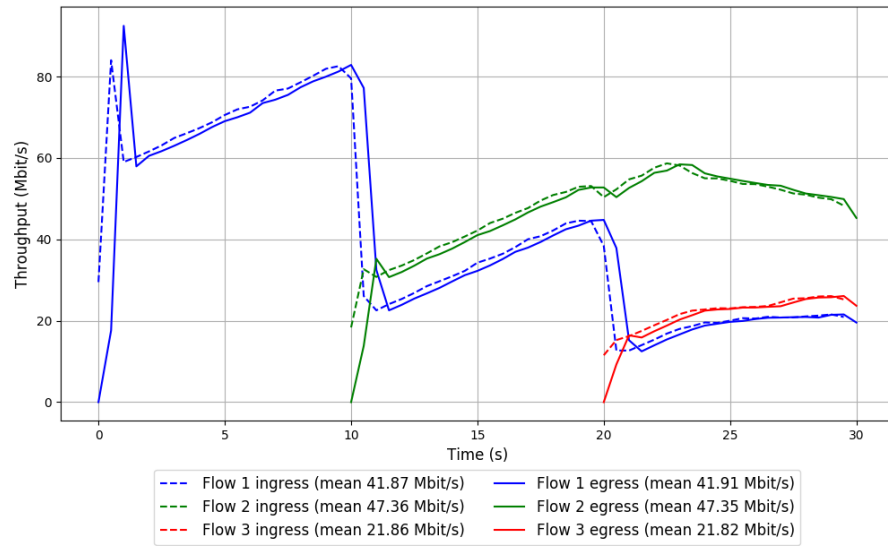


Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 11:22:30
End at: 2018-11-15 11:23:00
Local clock offset: 0.277 ms
Remote clock offset: -4.124 ms

Below is generated by plot.py at 2018-11-15 13:21:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 80.64 Mbit/s
95th percentile per-packet one-way delay: 36.619 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 41.91 Mbit/s
95th percentile per-packet one-way delay: 39.205 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 47.35 Mbit/s
95th percentile per-packet one-way delay: 36.633 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 21.82 Mbit/s
95th percentile per-packet one-way delay: 35.116 ms
Loss rate: 0.83%

Run 1: Report of TCP Vegas — Data Link

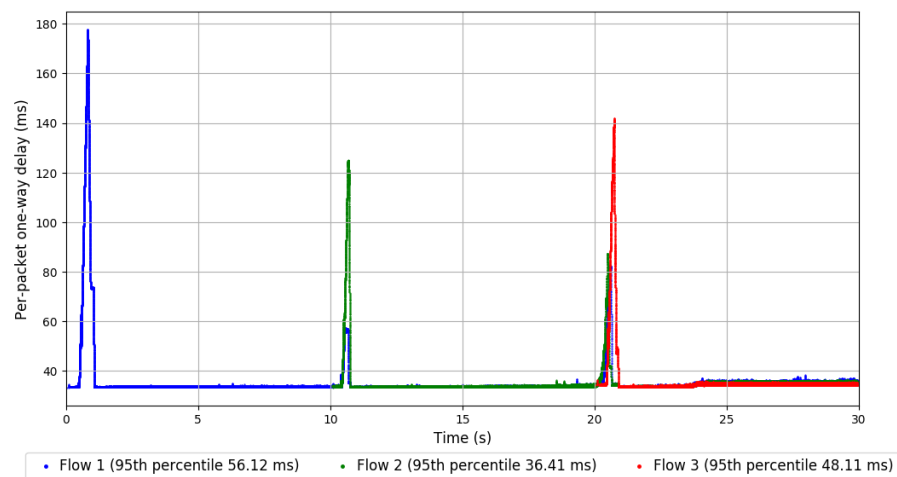
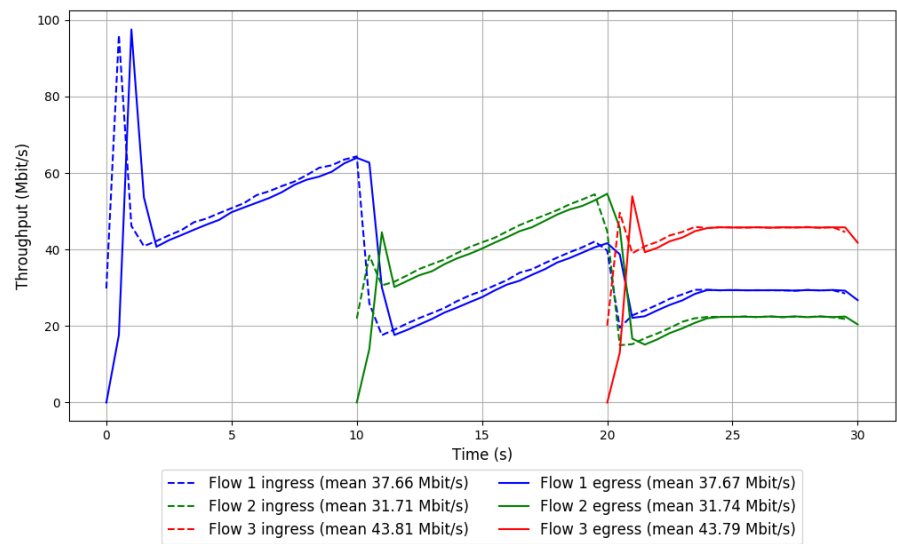


Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 11:47:42
End at: 2018-11-15 11:48:12
Local clock offset: 0.082 ms
Remote clock offset: -3.168 ms

Below is generated by plot.py at 2018-11-15 13:21:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 73.29 Mbit/s
95th percentile per-packet one-way delay: 47.135 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 37.67 Mbit/s
95th percentile per-packet one-way delay: 56.124 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 31.74 Mbit/s
95th percentile per-packet one-way delay: 36.410 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 43.79 Mbit/s
95th percentile per-packet one-way delay: 48.107 ms
Loss rate: 0.71%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 12:12:31

End at: 2018-11-15 12:13:01

Local clock offset: 0.166 ms

Remote clock offset: -2.54 ms

Below is generated by plot.py at 2018-11-15 13:21:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 74.80 Mbit/s

95th percentile per-packet one-way delay: 42.414 ms

Loss rate: 0.31%

-- Flow 1:

Average throughput: 37.28 Mbit/s

95th percentile per-packet one-way delay: 55.900 ms

Loss rate: 0.20%

-- Flow 2:

Average throughput: 37.78 Mbit/s

95th percentile per-packet one-way delay: 36.923 ms

Loss rate: 0.25%

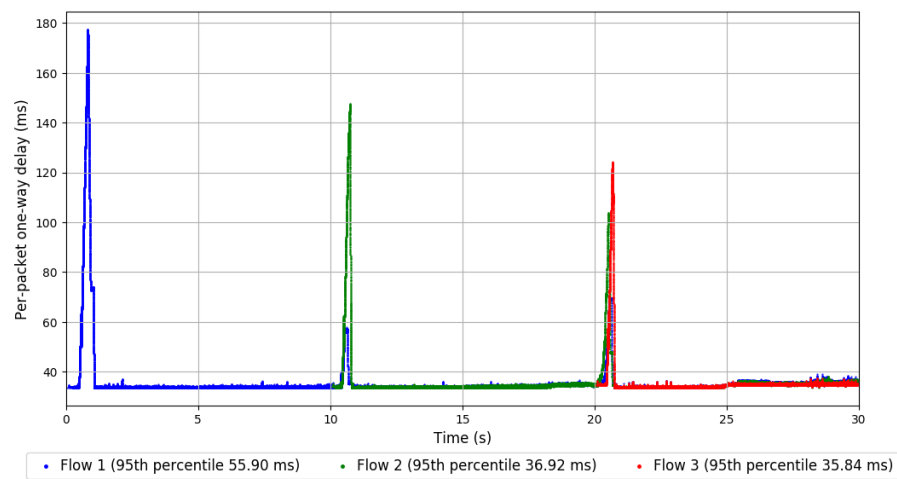
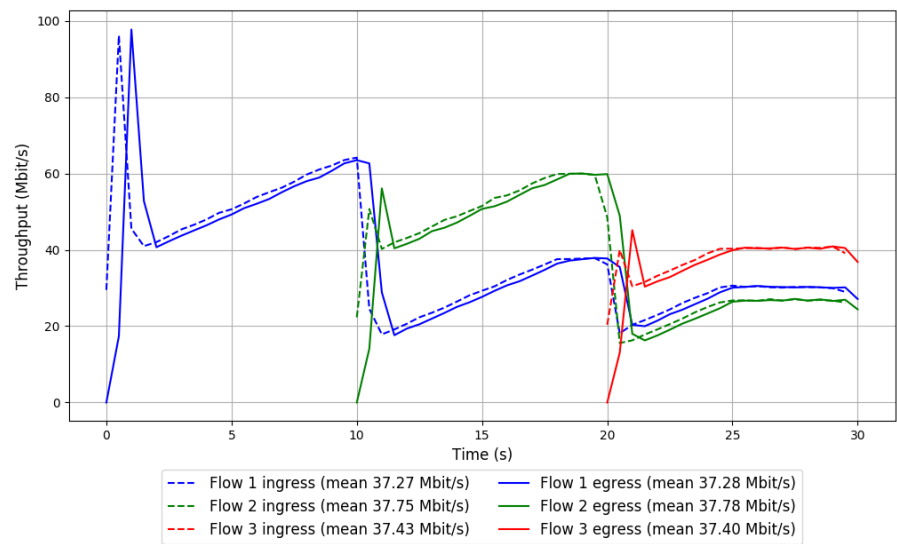
-- Flow 3:

Average throughput: 37.40 Mbit/s

95th percentile per-packet one-way delay: 35.836 ms

Loss rate: 0.72%

Run 3: Report of TCP Vegas — Data Link

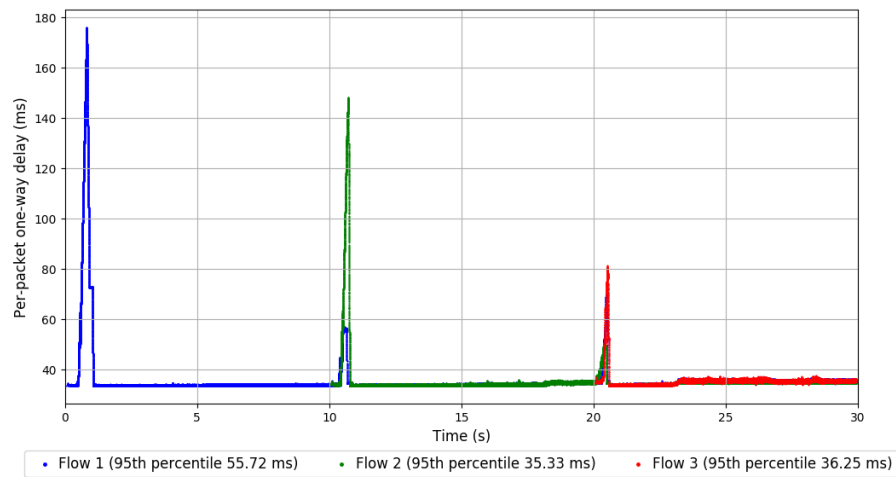
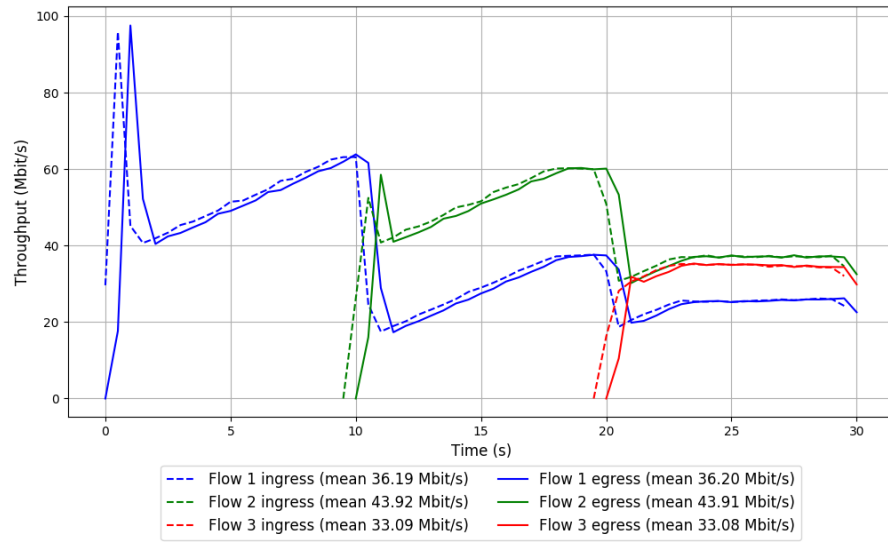


Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 12:37:39
End at: 2018-11-15 12:38:09
Local clock offset: -2.294 ms
Remote clock offset: -1.984 ms

Below is generated by plot.py at 2018-11-15 13:21:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 76.39 Mbit/s
95th percentile per-packet one-way delay: 38.046 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 36.20 Mbit/s
95th percentile per-packet one-way delay: 55.722 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 43.91 Mbit/s
95th percentile per-packet one-way delay: 35.334 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 33.08 Mbit/s
95th percentile per-packet one-way delay: 36.249 ms
Loss rate: 0.69%

Run 4: Report of TCP Vegas — Data Link

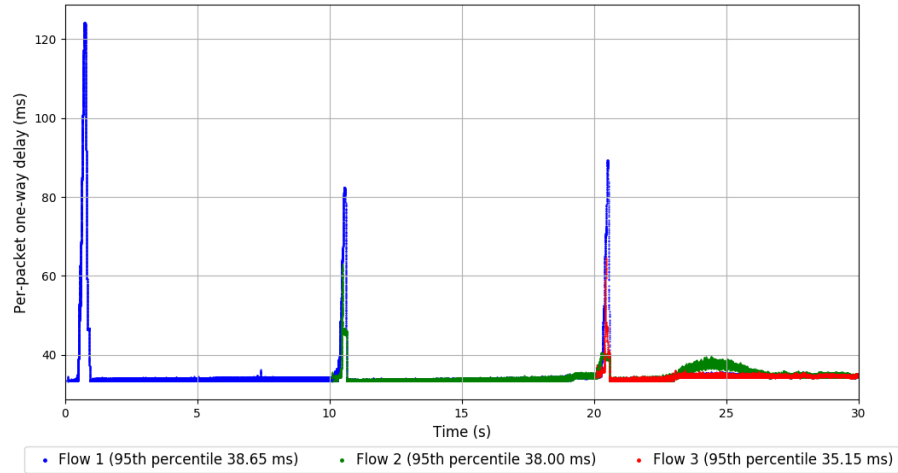
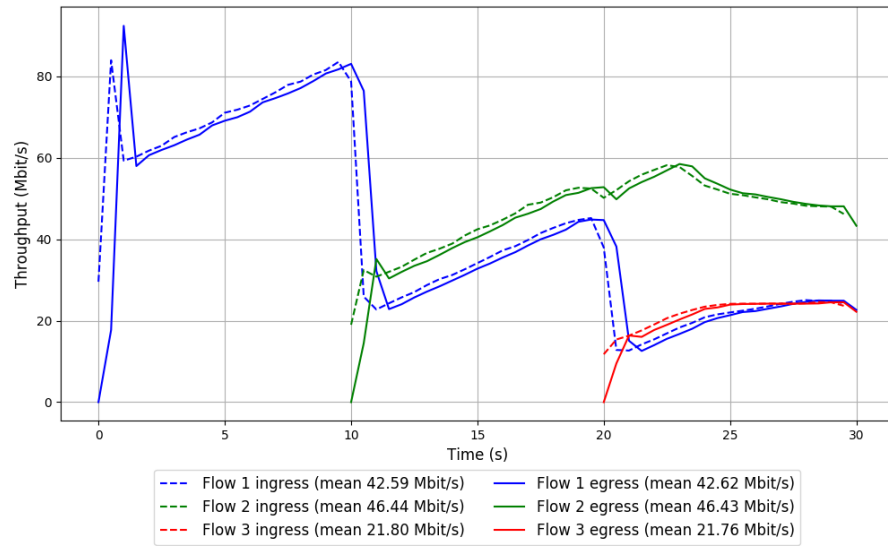


Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 13:02:29
End at: 2018-11-15 13:02:59
Local clock offset: -3.307 ms
Remote clock offset: -1.732 ms

Below is generated by plot.py at 2018-11-15 13:21:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 80.73 Mbit/s
95th percentile per-packet one-way delay: 37.922 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 42.62 Mbit/s
95th percentile per-packet one-way delay: 38.647 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 46.43 Mbit/s
95th percentile per-packet one-way delay: 38.003 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 21.76 Mbit/s
95th percentile per-packet one-way delay: 35.149 ms
Loss rate: 0.81%

Run 5: Report of TCP Vegas — Data Link

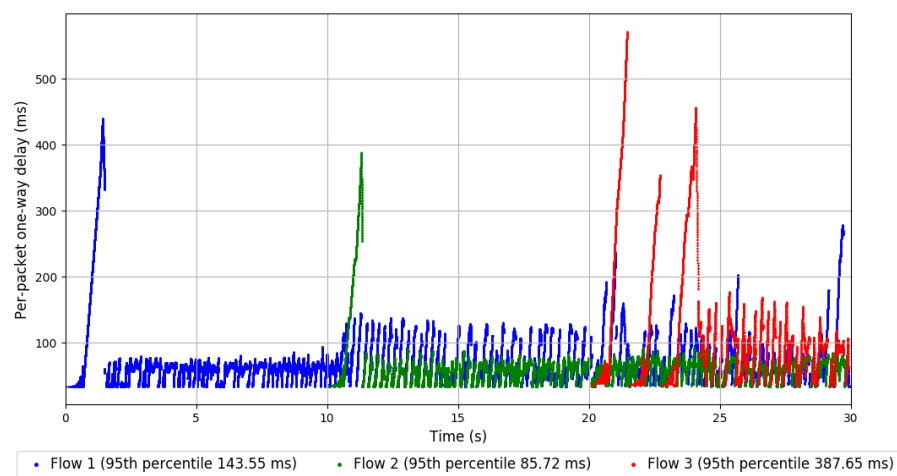
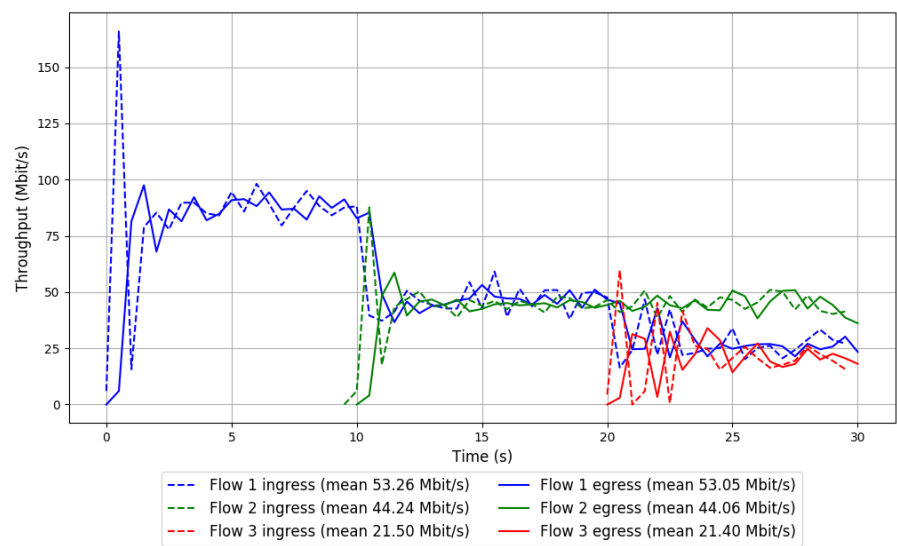


Run 1: Statistics of Verus

Start at: 2018-11-15 11:15:32
End at: 2018-11-15 11:16:02
Local clock offset: 0.228 ms
Remote clock offset: -4.414 ms

Below is generated by plot.py at 2018-11-15 13:22:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 89.43 Mbit/s
95th percentile per-packet one-way delay: 179.120 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 53.05 Mbit/s
95th percentile per-packet one-way delay: 143.553 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 44.06 Mbit/s
95th percentile per-packet one-way delay: 85.721 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 21.40 Mbit/s
95th percentile per-packet one-way delay: 387.649 ms
Loss rate: 1.46%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-11-15 11:40:41

End at: 2018-11-15 11:41:11

Local clock offset: 0.113 ms

Remote clock offset: -3.54 ms

Below is generated by plot.py at 2018-11-15 13:22:37

Datalink statistics

-- Total of 3 flows:

Average throughput: 88.90 Mbit/s

95th percentile per-packet one-way delay: 136.347 ms

Loss rate: 0.46%

-- Flow 1:

Average throughput: 57.91 Mbit/s

95th percentile per-packet one-way delay: 129.022 ms

Loss rate: 0.38%

-- Flow 2:

Average throughput: 34.87 Mbit/s

95th percentile per-packet one-way delay: 150.373 ms

Loss rate: 0.41%

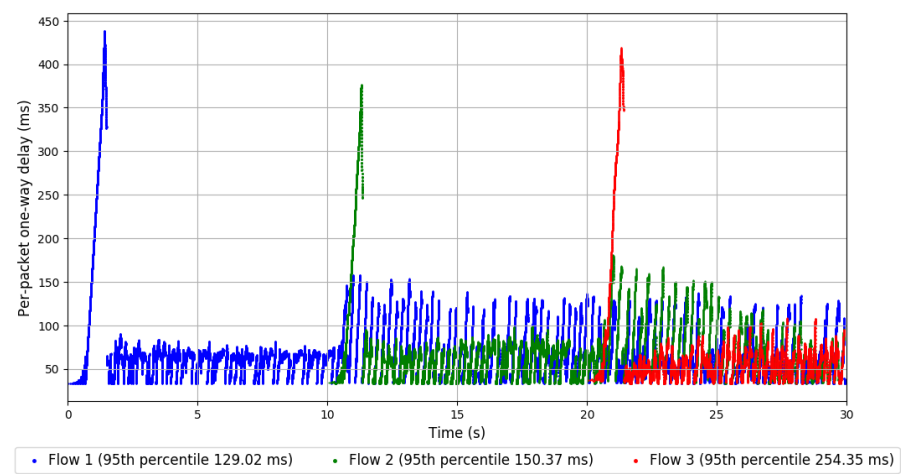
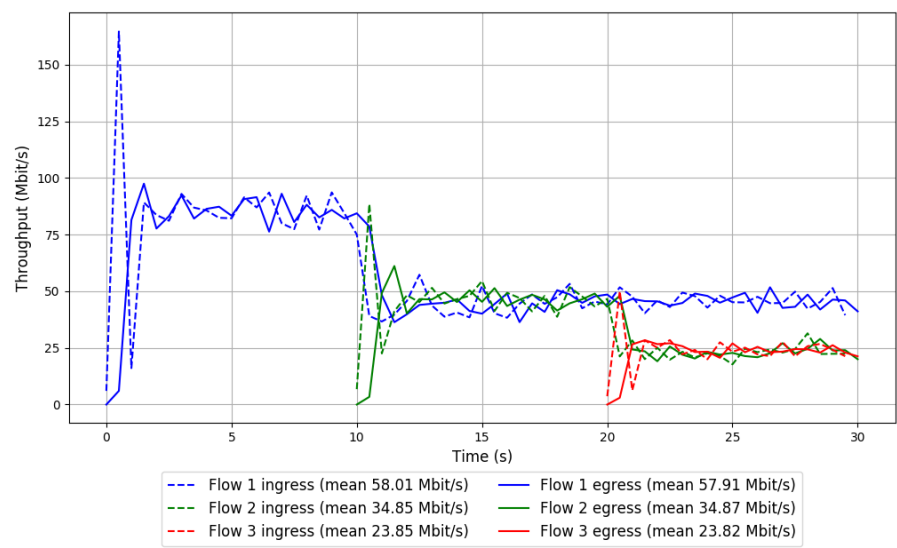
-- Flow 3:

Average throughput: 23.82 Mbit/s

95th percentile per-packet one-way delay: 254.355 ms

Loss rate: 1.20%

Run 2: Report of Verus — Data Link

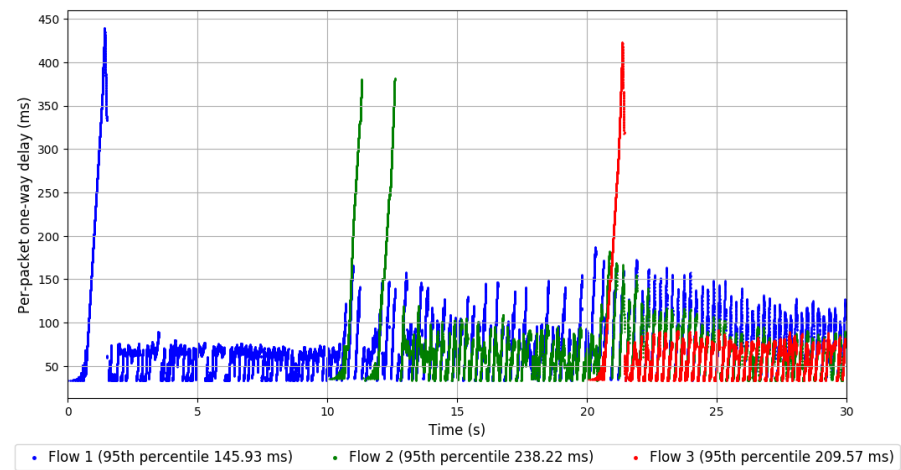
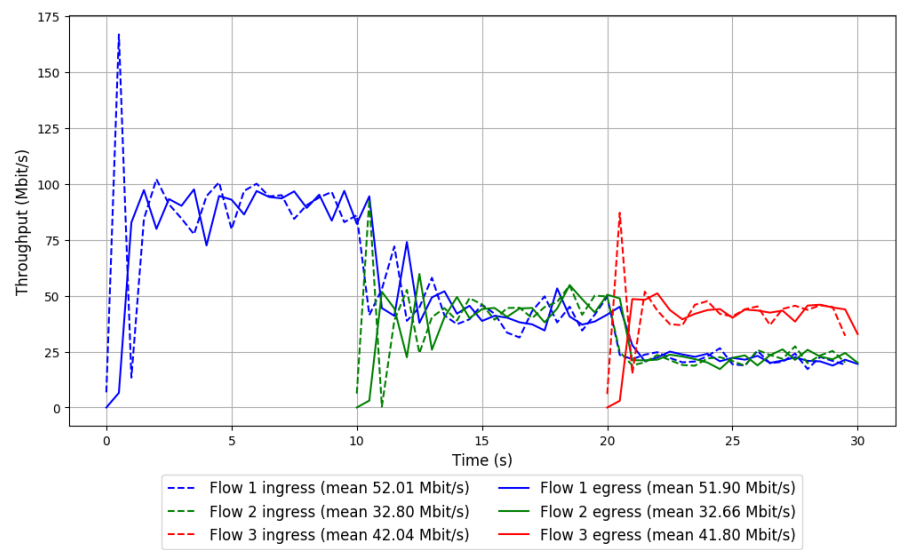


Run 3: Statistics of Verus

Start at: 2018-11-15 12:05:34
End at: 2018-11-15 12:06:04
Local clock offset: 0.12 ms
Remote clock offset: -2.538 ms

Below is generated by plot.py at 2018-11-15 13:22:38
Datalink statistics
-- Total of 3 flows:
Average throughput: 87.46 Mbit/s
95th percentile per-packet one-way delay: 167.511 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 51.90 Mbit/s
95th percentile per-packet one-way delay: 145.934 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 32.66 Mbit/s
95th percentile per-packet one-way delay: 238.220 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 41.80 Mbit/s
95th percentile per-packet one-way delay: 209.569 ms
Loss rate: 0.94%

Run 3: Report of Verus — Data Link

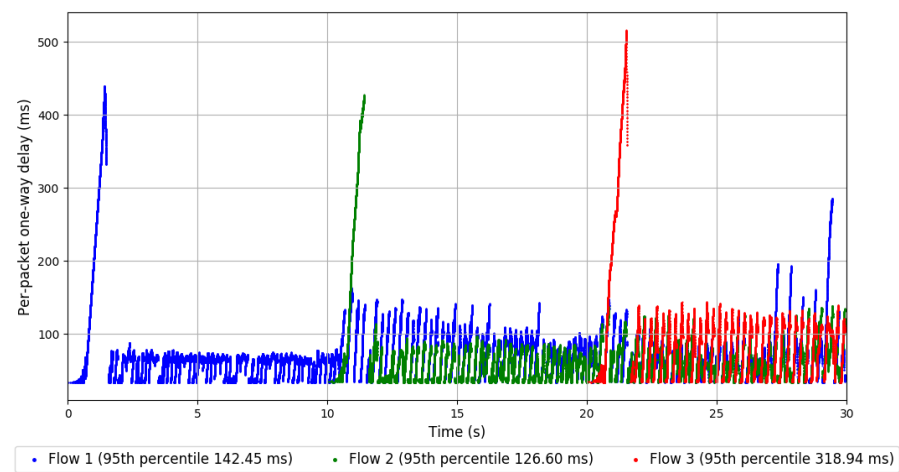
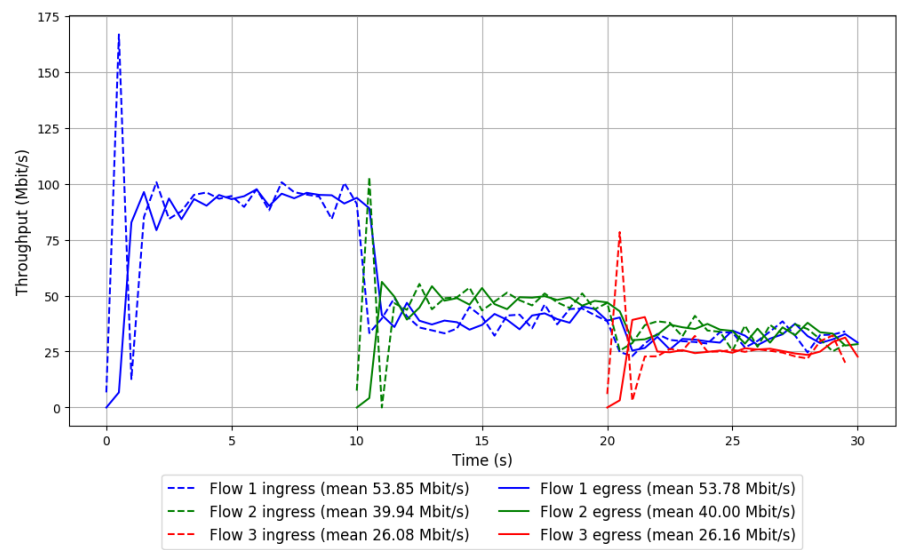


Run 4: Statistics of Verus

Start at: 2018-11-15 12:30:41
End at: 2018-11-15 12:31:11
Local clock offset: -1.004 ms
Remote clock offset: -2.104 ms

Below is generated by plot.py at 2018-11-15 13:22:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 89.03 Mbit/s
95th percentile per-packet one-way delay: 155.868 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 53.78 Mbit/s
95th percentile per-packet one-way delay: 142.451 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 40.00 Mbit/s
95th percentile per-packet one-way delay: 126.596 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 26.16 Mbit/s
95th percentile per-packet one-way delay: 318.942 ms
Loss rate: 0.52%

Run 4: Report of Verus — Data Link

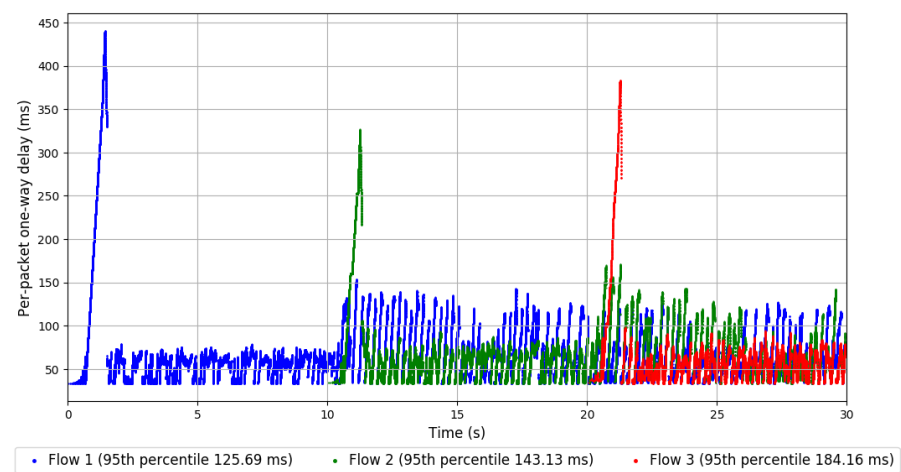
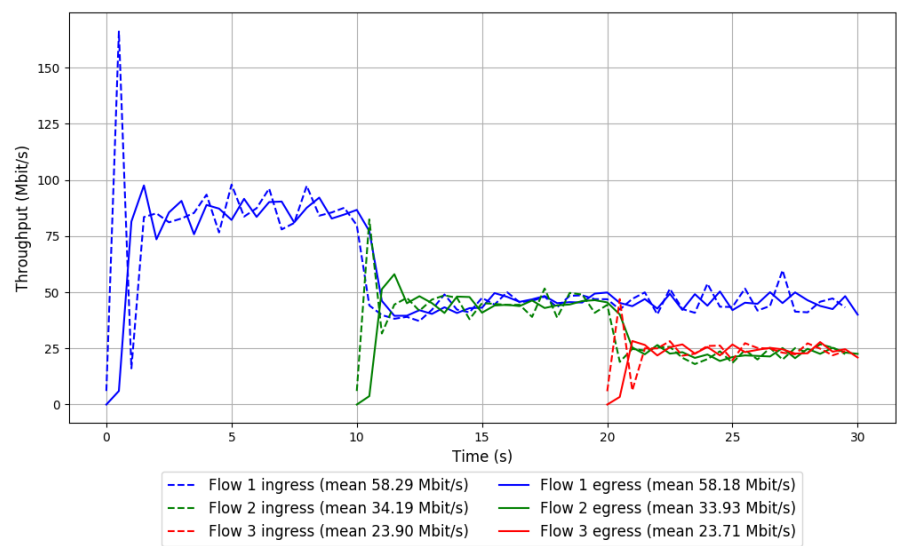


Run 5: Statistics of Verus

Start at: 2018-11-15 12:55:30
End at: 2018-11-15 12:56:00
Local clock offset: -3.668 ms
Remote clock offset: -1.889 ms

Below is generated by plot.py at 2018-11-15 13:22:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.60 Mbit/s
95th percentile per-packet one-way delay: 130.615 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 58.18 Mbit/s
95th percentile per-packet one-way delay: 125.690 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 33.93 Mbit/s
95th percentile per-packet one-way delay: 143.132 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 23.71 Mbit/s
95th percentile per-packet one-way delay: 184.164 ms
Loss rate: 1.12%

Run 5: Report of Verus — Data Link

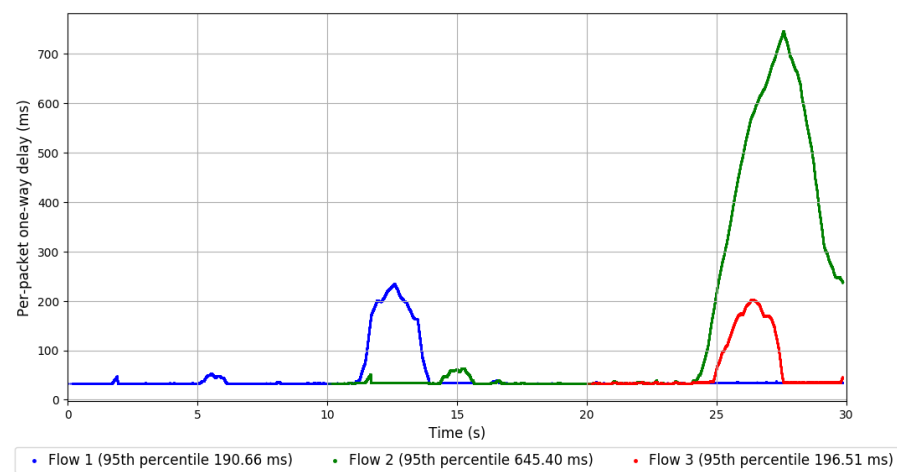
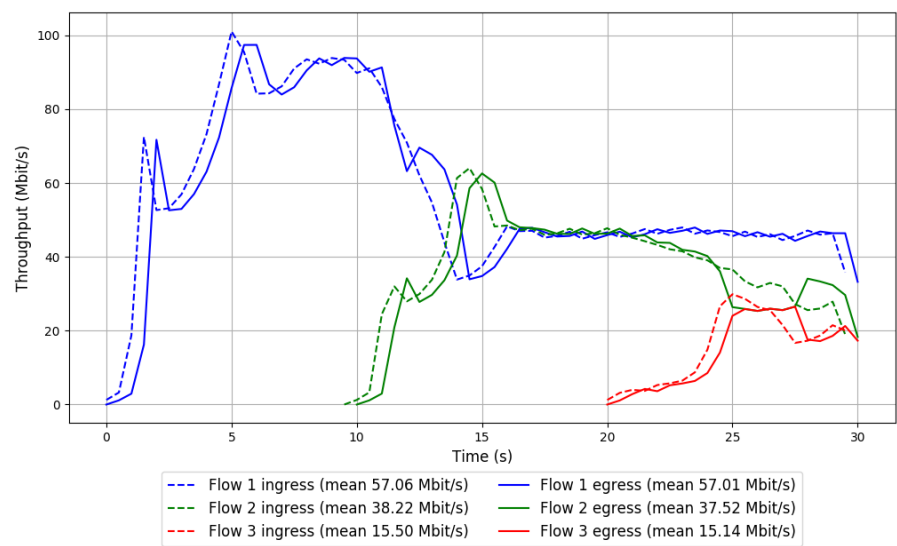


Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 11:19:45
End at: 2018-11-15 11:20:15
Local clock offset: 0.255 ms
Remote clock offset: -4.206 ms

Below is generated by plot.py at 2018-11-15 13:22:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 86.92 Mbit/s
95th percentile per-packet one-way delay: 247.848 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 57.01 Mbit/s
95th percentile per-packet one-way delay: 190.659 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 37.52 Mbit/s
95th percentile per-packet one-way delay: 645.403 ms
Loss rate: 2.13%
-- Flow 3:
Average throughput: 15.14 Mbit/s
95th percentile per-packet one-way delay: 196.514 ms
Loss rate: 2.97%

Run 1: Report of PCC-Vivace — Data Link

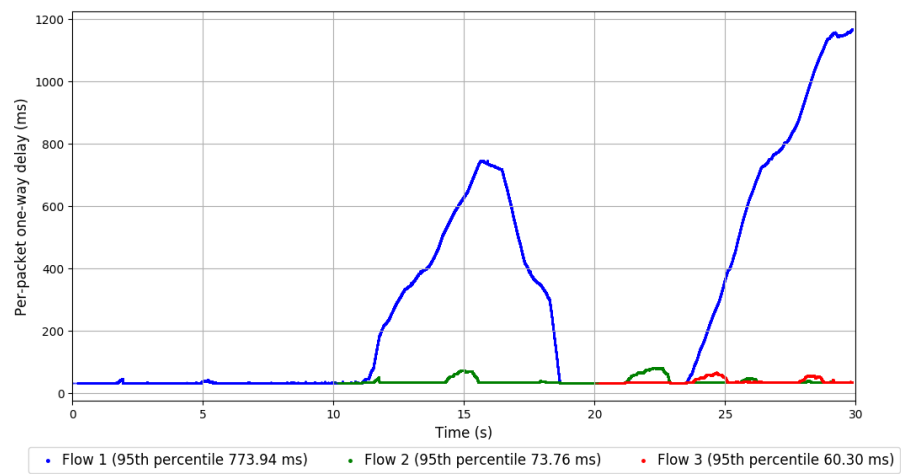
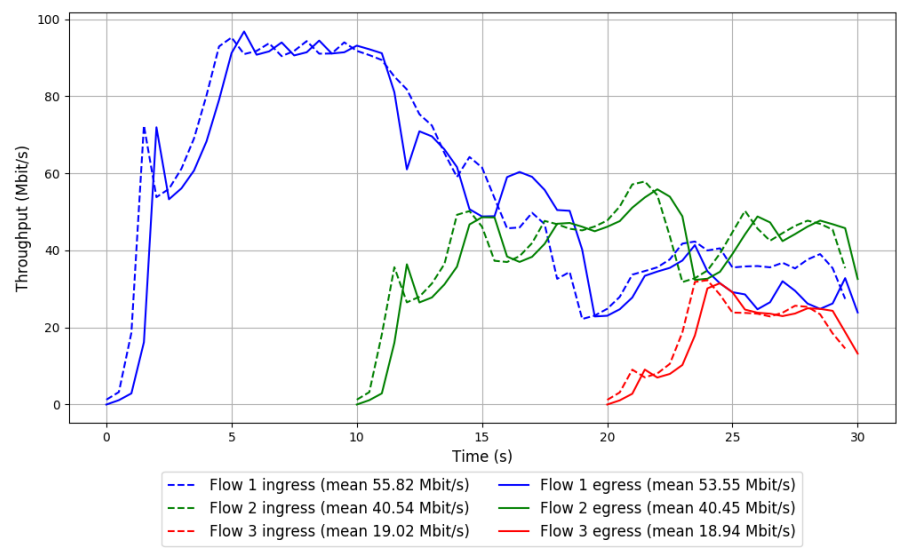


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 11:44:55
End at: 2018-11-15 11:45:25
Local clock offset: 0.094 ms
Remote clock offset: -3.551 ms

Below is generated by plot.py at 2018-11-15 13:22:53
Datalink statistics
-- Total of 3 flows:
Average throughput: 86.66 Mbit/s
95th percentile per-packet one-way delay: 730.868 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 53.55 Mbit/s
95th percentile per-packet one-way delay: 773.936 ms
Loss rate: 4.28%
-- Flow 2:
Average throughput: 40.45 Mbit/s
95th percentile per-packet one-way delay: 73.763 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 18.94 Mbit/s
95th percentile per-packet one-way delay: 60.295 ms
Loss rate: 1.08%

Run 2: Report of PCC-Vivace — Data Link

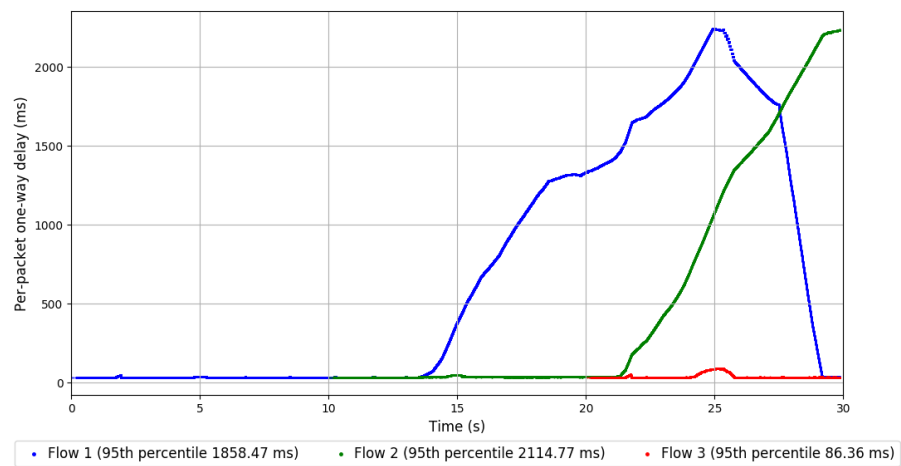
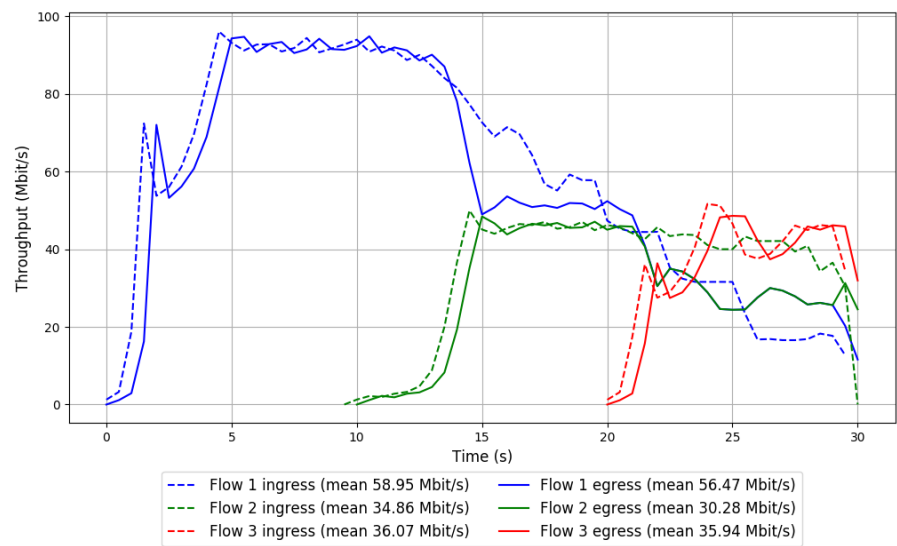


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 12:09:45
End at: 2018-11-15 12:10:15
Local clock offset: 0.144 ms
Remote clock offset: -2.423 ms

Below is generated by plot.py at 2018-11-15 13:22:57
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.42 Mbit/s
95th percentile per-packet one-way delay: 1871.108 ms
Loss rate: 6.69%
-- Flow 1:
Average throughput: 56.47 Mbit/s
95th percentile per-packet one-way delay: 1858.468 ms
Loss rate: 4.41%
-- Flow 2:
Average throughput: 30.28 Mbit/s
95th percentile per-packet one-way delay: 2114.774 ms
Loss rate: 15.23%
-- Flow 3:
Average throughput: 35.94 Mbit/s
95th percentile per-packet one-way delay: 86.362 ms
Loss rate: 1.02%

Run 3: Report of PCC-Vivace — Data Link

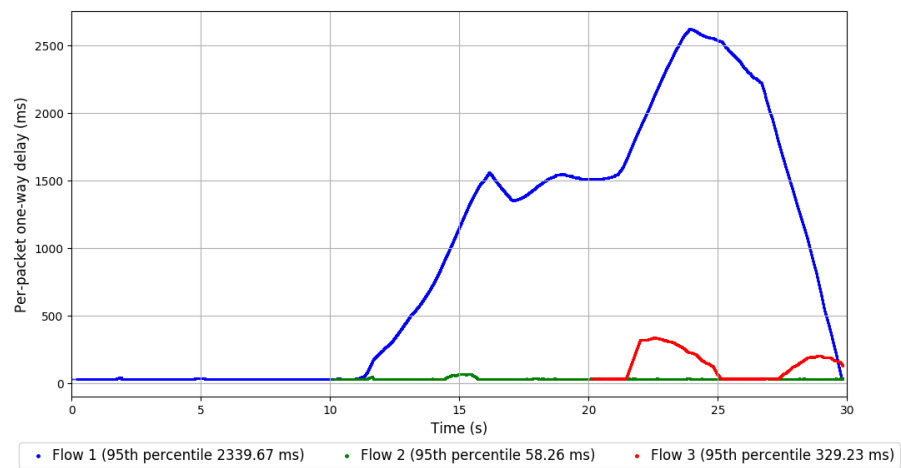
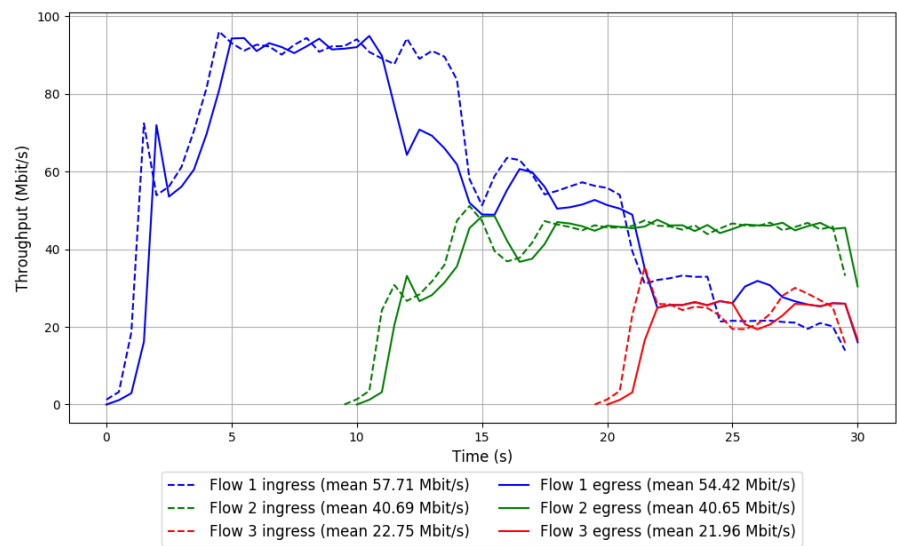


Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 12:34:53
End at: 2018-11-15 12:35:23
Local clock offset: -1.888 ms
Remote clock offset: -2.196 ms

Below is generated by plot.py at 2018-11-15 13:23:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.69 Mbit/s
95th percentile per-packet one-way delay: 1982.753 ms
Loss rate: 4.15%
-- Flow 1:
Average throughput: 54.42 Mbit/s
95th percentile per-packet one-way delay: 2339.669 ms
Loss rate: 5.90%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 58.260 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 21.96 Mbit/s
95th percentile per-packet one-way delay: 329.228 ms
Loss rate: 4.10%

Run 4: Report of PCC-Vivace — Data Link

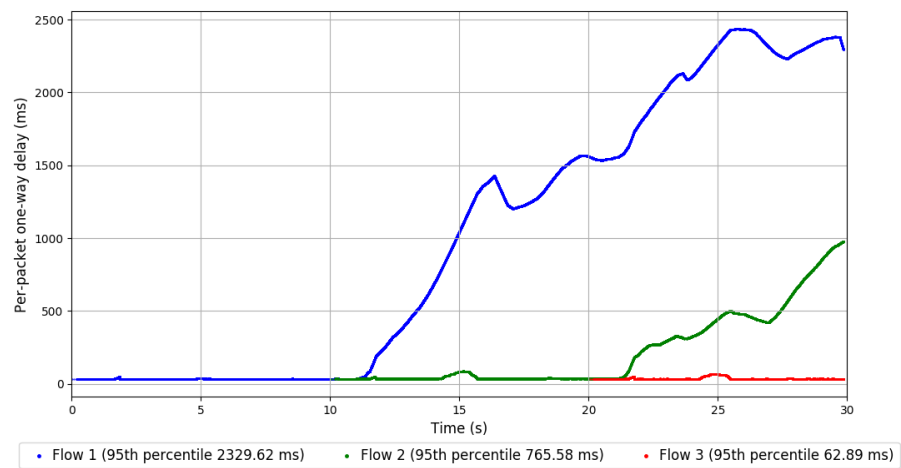
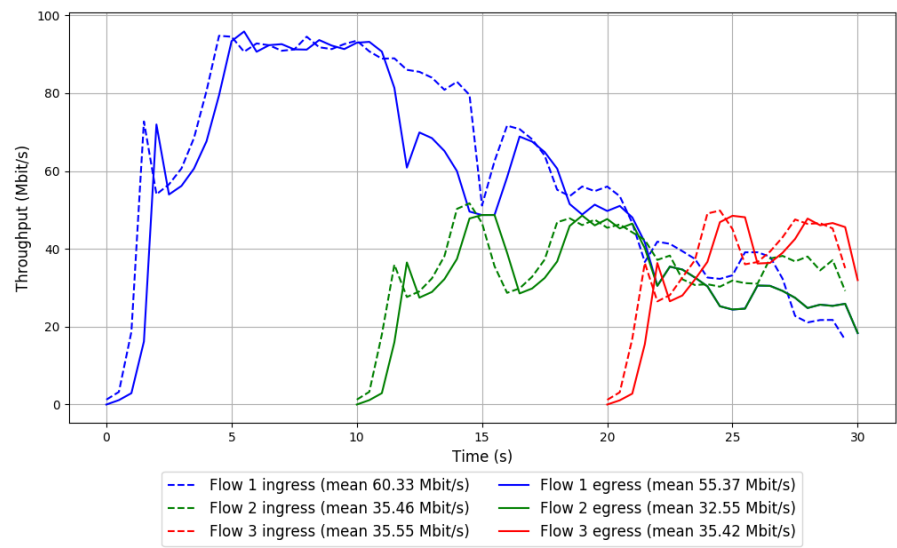


Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 12:59:42
End at: 2018-11-15 13:00:12
Local clock offset: -3.458 ms
Remote clock offset: -1.802 ms

Below is generated by plot.py at 2018-11-15 13:23:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.65 Mbit/s
95th percentile per-packet one-way delay: 2241.351 ms
Loss rate: 7.52%
-- Flow 1:
Average throughput: 55.37 Mbit/s
95th percentile per-packet one-way delay: 2329.623 ms
Loss rate: 8.41%
-- Flow 2:
Average throughput: 32.55 Mbit/s
95th percentile per-packet one-way delay: 765.579 ms
Loss rate: 8.49%
-- Flow 3:
Average throughput: 35.42 Mbit/s
95th percentile per-packet one-way delay: 62.894 ms
Loss rate: 1.01%

Run 5: Report of PCC-Vivace — Data Link

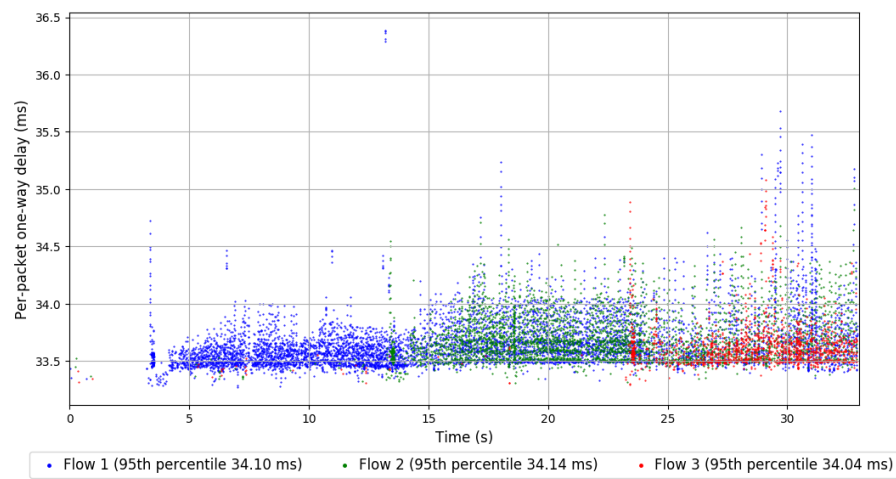
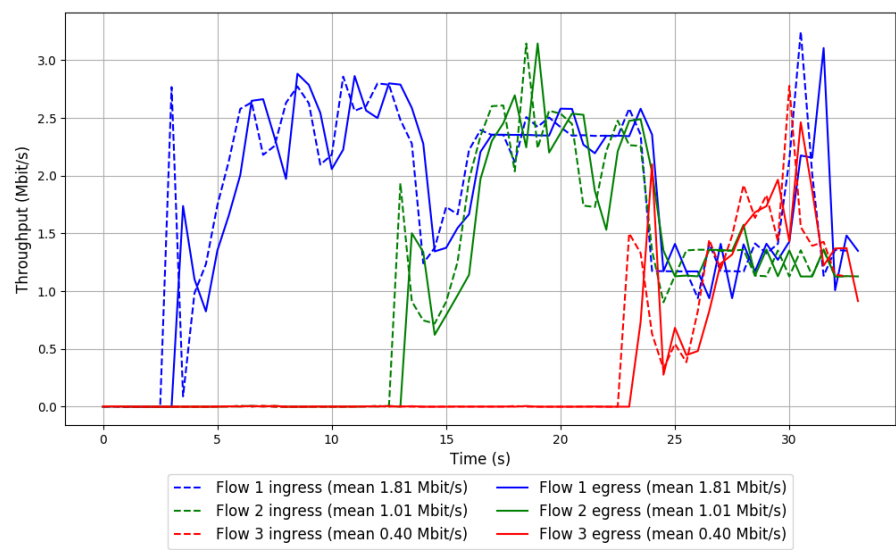


Run 1: Statistics of WebRTC media

Start at: 2018-11-15 11:11:22
End at: 2018-11-15 11:11:52
Local clock offset: 0.213 ms
Remote clock offset: -4.521 ms

Below is generated by plot.py at 2018-11-15 13:23:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.21 Mbit/s
95th percentile per-packet one-way delay: 34.114 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 34.105 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 34.143 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 34.039 ms
Loss rate: 0.82%

Run 1: Report of WebRTC media — Data Link

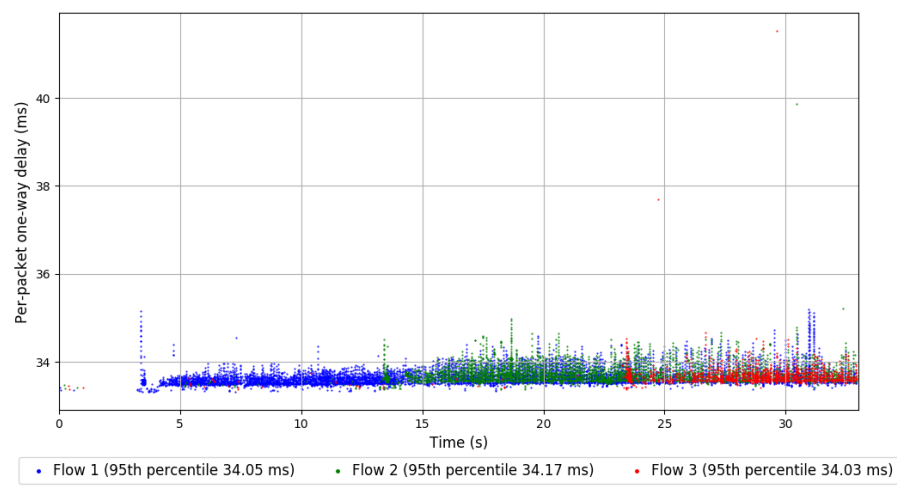
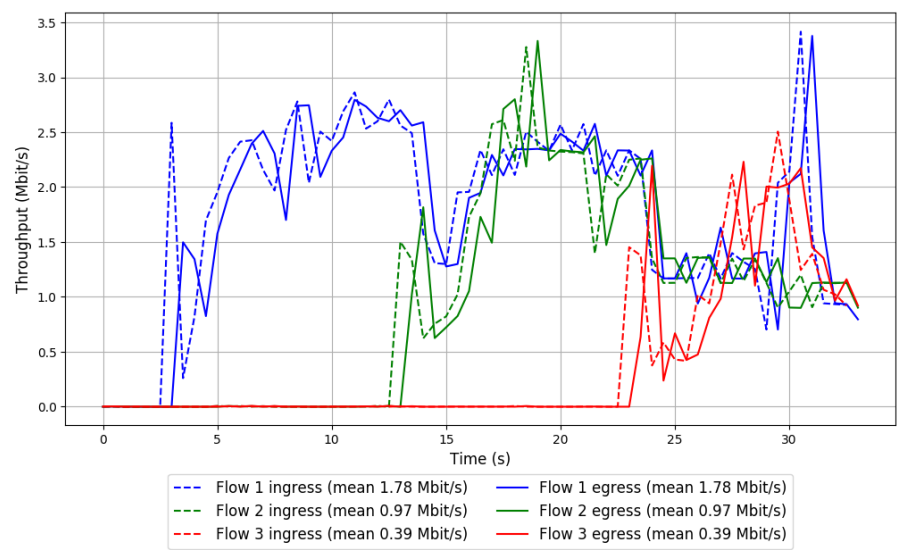


Run 2: Statistics of WebRTC media

Start at: 2018-11-15 11:36:23
End at: 2018-11-15 11:36:53
Local clock offset: 0.138 ms
Remote clock offset: -3.773 ms

Below is generated by plot.py at 2018-11-15 13:23:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.13 Mbit/s
95th percentile per-packet one-way delay: 34.094 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 34.049 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 34.173 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 34.032 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

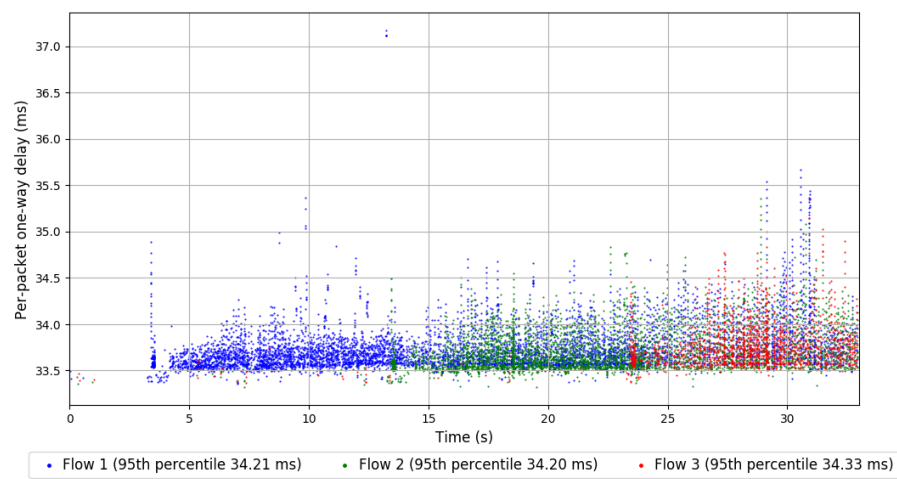
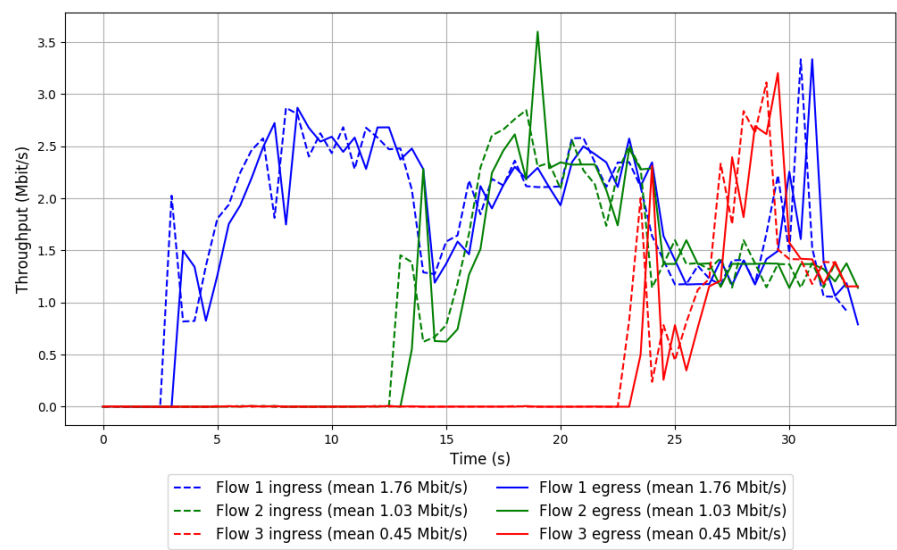


Run 3: Statistics of WebRTC media

Start at: 2018-11-15 12:01:23
End at: 2018-11-15 12:01:53
Local clock offset: 0.114 ms
Remote clock offset: -2.654 ms

Below is generated by plot.py at 2018-11-15 13:23:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 34.226 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 34.209 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 34.201 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 34.334 ms
Loss rate: 0.78%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-11-15 12:26:30

End at: 2018-11-15 12:27:00

Local clock offset: 0.208 ms

Remote clock offset: -2.22 ms

Below is generated by plot.py at 2018-11-15 13:23:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.04 Mbit/s

95th percentile per-packet one-way delay: 34.184 ms

Loss rate: 0.18%

-- Flow 1:

Average throughput: 1.71 Mbit/s

95th percentile per-packet one-way delay: 34.196 ms

Loss rate: 0.12%

-- Flow 2:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 34.209 ms

Loss rate: 0.37%

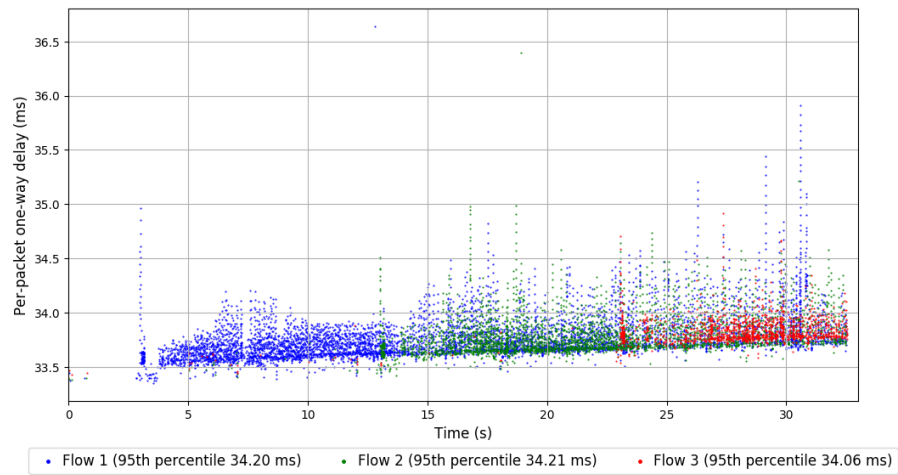
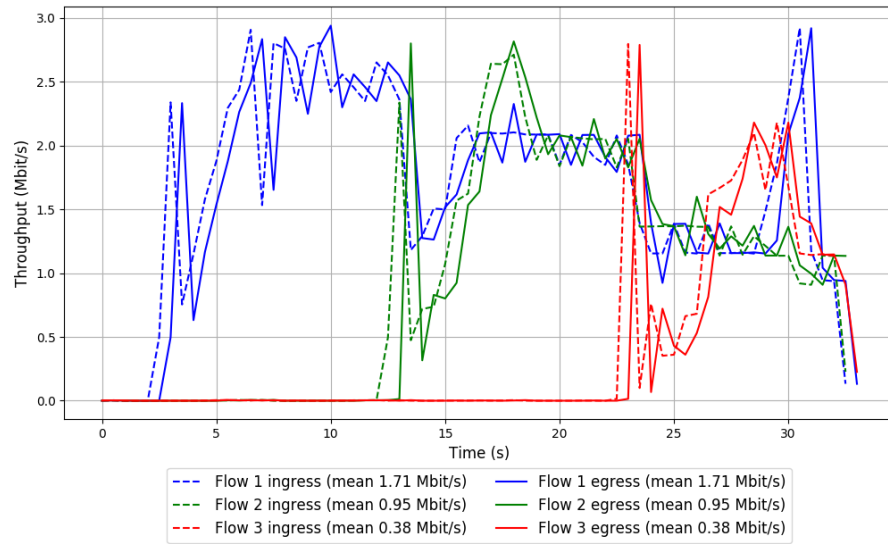
-- Flow 3:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 34.062 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-15 12:51:18

End at: 2018-11-15 12:51:48

Local clock offset: -3.444 ms

Remote clock offset: -2.07 ms

Below is generated by plot.py at 2018-11-15 13:23:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.35 Mbit/s

95th percentile per-packet one-way delay: 34.413 ms

Loss rate: 0.06%

-- Flow 1:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 34.287 ms

Loss rate: 0.11%

-- Flow 2:

Average throughput: 1.03 Mbit/s

95th percentile per-packet one-way delay: 34.431 ms

Loss rate: 0.00%

-- Flow 3:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 34.667 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

