

## Pantheon Report

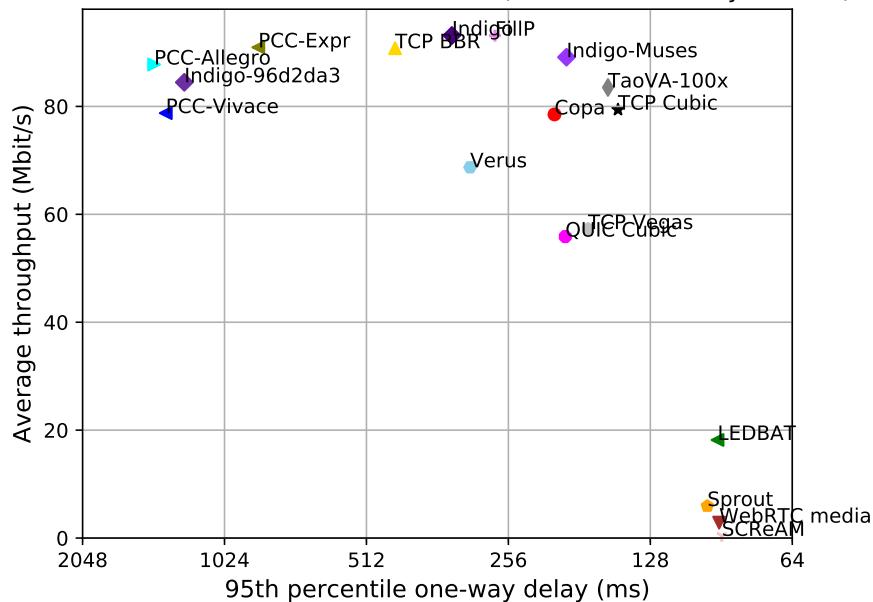
Generated at 2018-11-15 13:11:52 (UTC).  
Data path: Colombia on p4p1 (*remote*) → AWS Brazil 2 on ens5 (*local*).  
Repeated the test of 18 congestion control schemes 5 times.  
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.  
NTP offsets were measured against gps.ntp.br 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

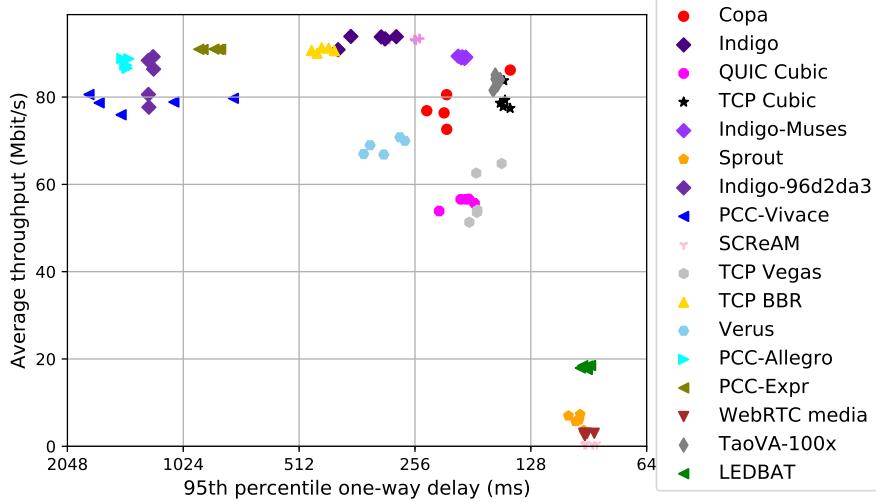
Git summary:  
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b  
third\_party/fillp @ d6da1459332fceef56963885d7eba17e6a32d4519  
third\_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4  
third\_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d  
third\_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95  
third\_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf  
third\_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a  
third\_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd  
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 Colombia to AWS Brazil 2, 5 runs of 30s each per scheme  
3 flows with 10s interval between flows (mean of all runs by scheme)



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



↳

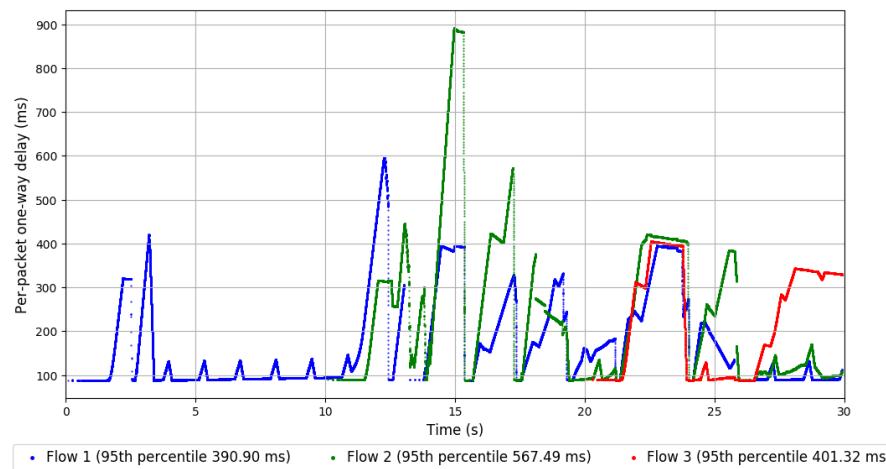
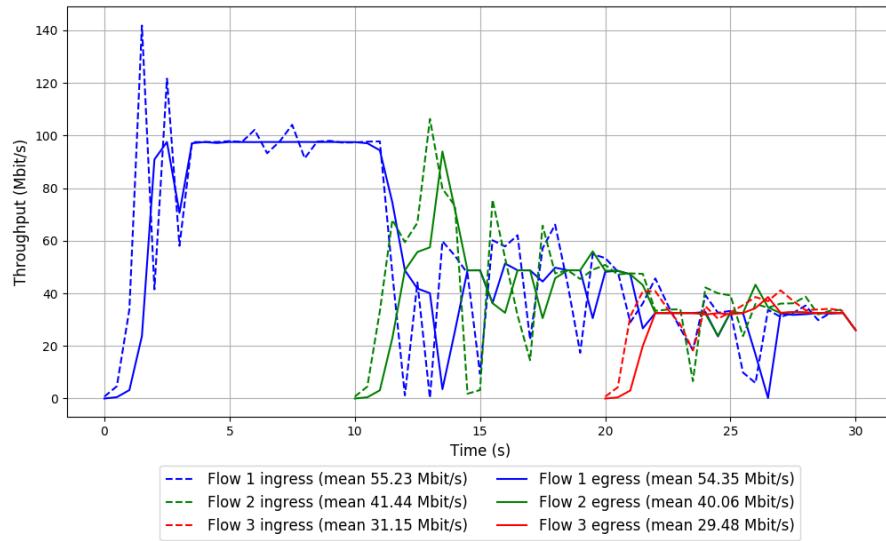
| scheme         | # runs | mean avg tput (Mbit/s) |        |        | mean 95th-%ile delay (ms) |         |         | mean loss rate (%) |        |        |
|----------------|--------|------------------------|--------|--------|---------------------------|---------|---------|--------------------|--------|--------|
|                |        | flow 1                 | flow 2 | flow 3 | flow 1                    | flow 2  | flow 3  | flow 1             | flow 2 | flow 3 |
| TCP BBR        | 5      | 55.37                  | 38.42  | 30.15  | 417.57                    | 490.93  | 471.23  | 2.41               | 5.17   | 7.55   |
| Copa           | 5      | 47.36                  | 33.08  | 27.92  | 203.99                    | 176.98  | 124.23  | 0.55               | 0.83   | 2.07   |
| TCP Cubic      | 5      | 43.79                  | 36.40  | 34.82  | 176.16                    | 144.21  | 134.34  | 0.36               | 0.77   | 2.04   |
| FillP          | 5      | 57.30                  | 39.13  | 29.85  | 281.50                    | 251.79  | 317.44  | 1.43               | 2.68   | 4.27   |
| Indigo         | 5      | 57.71                  | 38.99  | 29.49  | 362.84                    | 159.40  | 144.16  | 5.42               | 1.84   | 2.91   |
| Indigo-96d2da3 | 5      | 52.25                  | 34.74  | 28.06  | 1204.77                   | 1304.34 | 1308.09 | 24.41              | 32.22  | 41.40  |
| LEDBAT         | 5      | 11.83                  | 7.73   | 3.73   | 92.52                     | 91.47   | 91.31   | 1.14               | 1.68   | 3.56   |
| Indigo-Muses   | 5      | 55.71                  | 37.86  | 25.32  | 193.99                    | 177.43  | 184.46  | 0.98               | 2.04   | 3.59   |
| PCC-Allegro    | 5      | 55.39                  | 34.33  | 29.48  | 1498.39                   | 1139.03 | 1402.09 | 26.10              | 15.15  | 21.53  |
| PCC-Expr       | 5      | 57.10                  | 38.22  | 26.15  | 882.89                    | 712.83  | 240.50  | 28.32              | 4.27   | 2.45   |
| QUIC Cubic     | 5      | 37.24                  | 20.73  | 14.92  | 141.20                    | 225.02  | 336.66  | 0.47               | 1.10   | 2.77   |
| SCReAM         | 5      | 0.19                   | 0.21   | 0.21   | 89.97                     | 90.05   | 90.15   | 0.42               | 0.87   | 1.68   |
| Sprout         | 5      | 3.24                   | 2.97   | 2.25   | 96.02                     | 97.75   | 94.11   | 0.59               | 1.28   | 2.40   |
| TaoVA-100x     | 5      | 48.96                  | 37.38  | 29.55  | 151.16                    | 168.30  | 152.99  | 0.46               | 0.91   | 2.16   |
| TCP Vegas      | 5      | 31.95                  | 28.56  | 19.31  | 194.51                    | 151.66  | 173.76  | 0.40               | 0.75   | 1.95   |
| Verus          | 5      | 40.52                  | 30.73  | 23.83  | 291.70                    | 315.76  | 406.32  | 0.89               | 2.17   | 3.84   |
| PCC-Vivace     | 5      | 50.66                  | 31.77  | 22.55  | 1455.36                   | 977.96  | 337.91  | 6.17               | 6.57   | 2.40   |
| WebRTC media   | 5      | 1.57                   | 0.94   | 0.37   | 91.27                     | 91.22   | 91.39   | 0.38               | 0.66   | 2.03   |

Run 1: Statistics of TCP BBR

```
Start at: 2018-11-15 11:17:13
End at: 2018-11-15 11:17:43
Local clock offset: -1.061 ms
Remote clock offset: -1.889 ms

# Below is generated by plot.py at 2018-11-15 13:02:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.64 Mbit/s
95th percentile per-packet one-way delay: 414.366 ms
Loss rate: 3.28%
-- Flow 1:
Average throughput: 54.35 Mbit/s
95th percentile per-packet one-way delay: 390.900 ms
Loss rate: 2.14%
-- Flow 2:
Average throughput: 40.06 Mbit/s
95th percentile per-packet one-way delay: 567.493 ms
Loss rate: 4.16%
-- Flow 3:
Average throughput: 29.48 Mbit/s
95th percentile per-packet one-way delay: 401.325 ms
Loss rate: 6.98%
```

## Run 1: Report of TCP BBR — Data Link

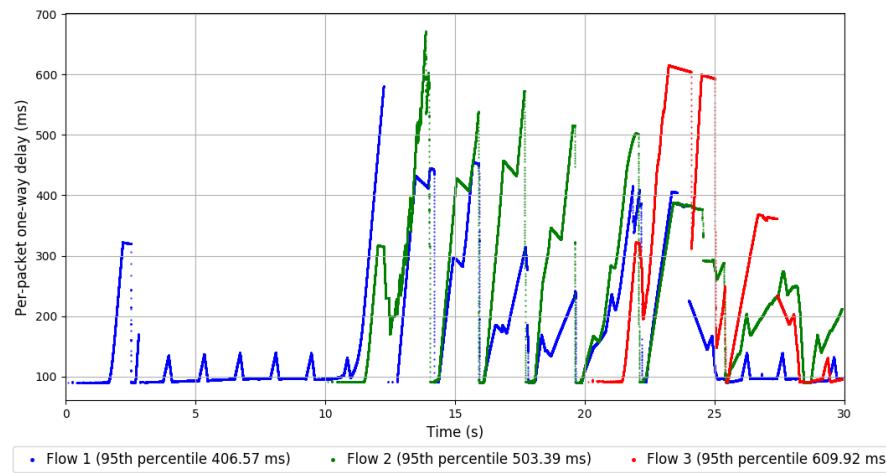
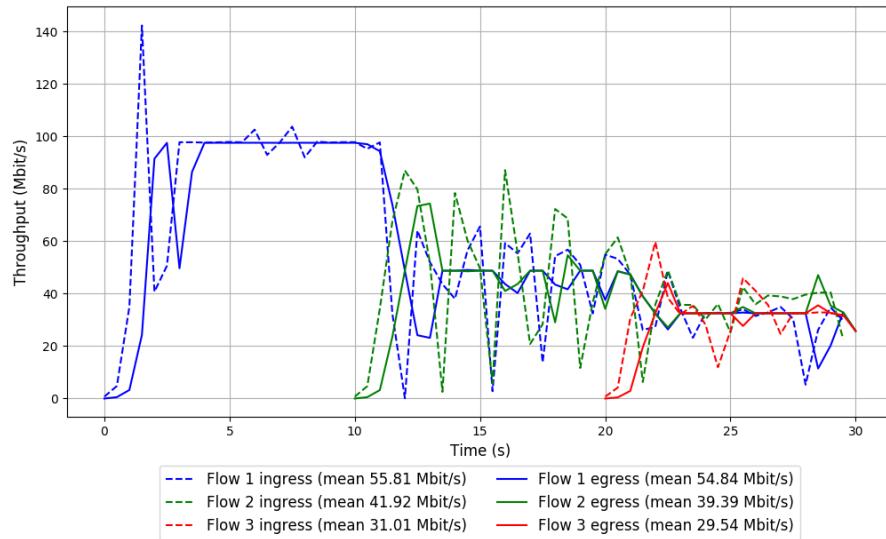


Run 2: Statistics of TCP BBR

```
Start at: 2018-11-15 11:40:20
End at: 2018-11-15 11:40:50
Local clock offset: -3.143 ms
Remote clock offset: -3.611 ms

# Below is generated by plot.py at 2018-11-15 13:02:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.70 Mbit/s
95th percentile per-packet one-way delay: 475.242 ms
Loss rate: 3.82%
-- Flow 1:
Average throughput: 54.84 Mbit/s
95th percentile per-packet one-way delay: 406.575 ms
Loss rate: 2.30%
-- Flow 2:
Average throughput: 39.39 Mbit/s
95th percentile per-packet one-way delay: 503.393 ms
Loss rate: 5.93%
-- Flow 3:
Average throughput: 29.54 Mbit/s
95th percentile per-packet one-way delay: 609.917 ms
Loss rate: 6.40%
```

## Run 2: Report of TCP BBR — Data Link

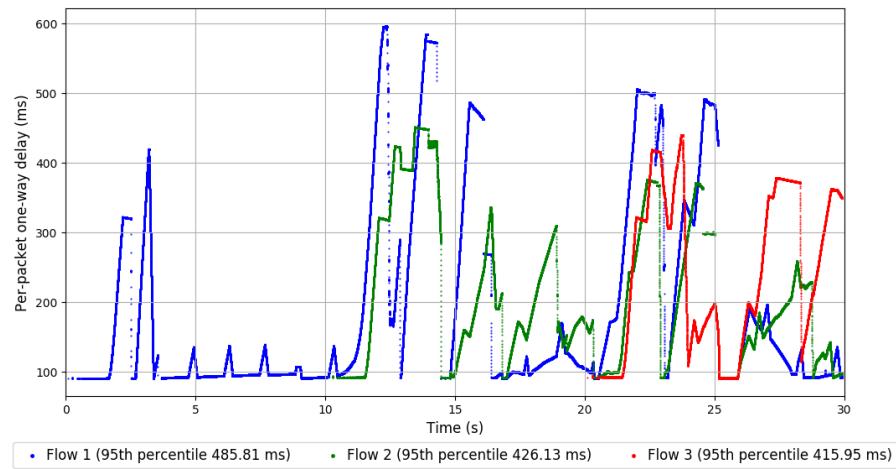
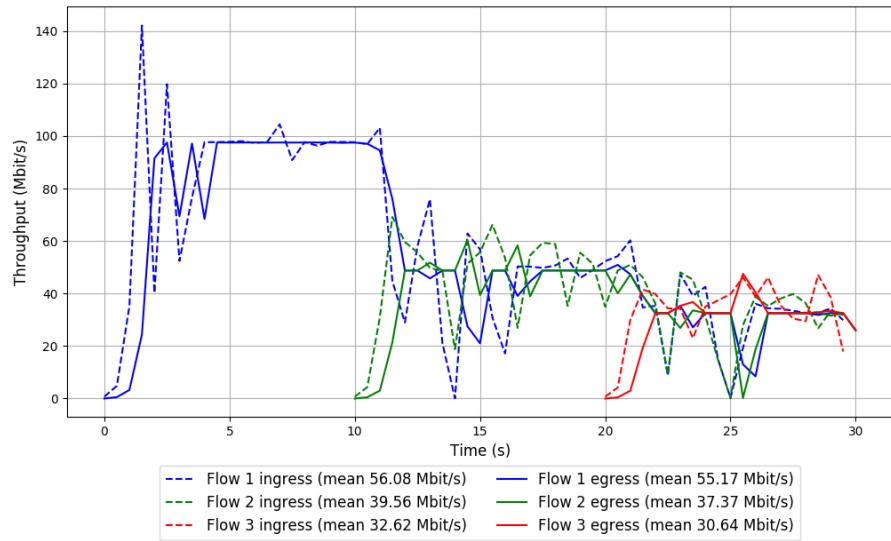


Run 3: Statistics of TCP BBR

```
Start at: 2018-11-15 12:03:26
End at: 2018-11-15 12:03:56
Local clock offset: -4.868 ms
Remote clock offset: -3.571 ms

# Below is generated by plot.py at 2018-11-15 13:02:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.06 Mbit/s
95th percentile per-packet one-way delay: 459.585 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 55.17 Mbit/s
95th percentile per-packet one-way delay: 485.807 ms
Loss rate: 2.17%
-- Flow 2:
Average throughput: 37.37 Mbit/s
95th percentile per-packet one-way delay: 426.135 ms
Loss rate: 6.36%
-- Flow 3:
Average throughput: 30.64 Mbit/s
95th percentile per-packet one-way delay: 415.947 ms
Loss rate: 7.67%
```

### Run 3: Report of TCP BBR — Data Link

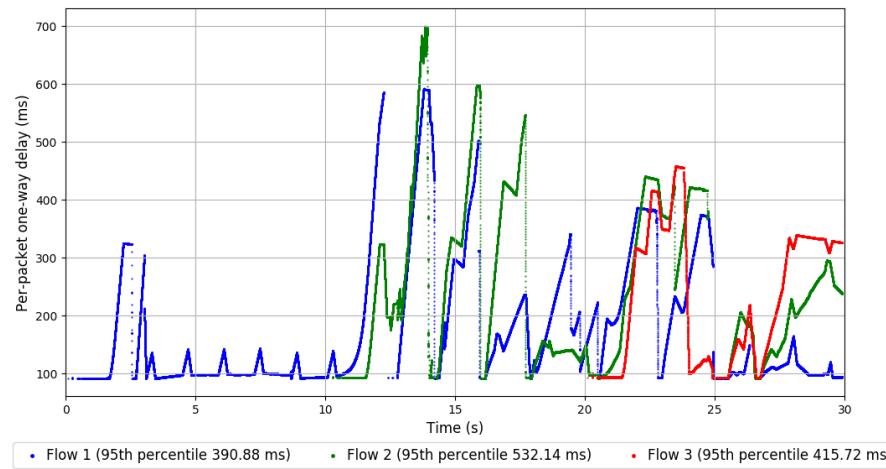
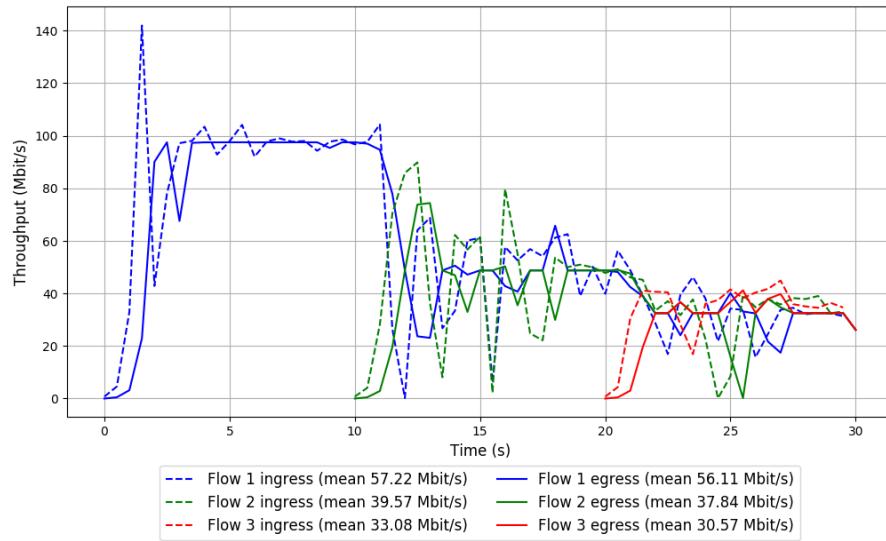


Run 4: Statistics of TCP BBR

```
Start at: 2018-11-15 12:26:33
End at: 2018-11-15 12:27:03
Local clock offset: -5.69 ms
Remote clock offset: -3.618 ms

# Below is generated by plot.py at 2018-11-15 13:02:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.30 Mbit/s
95th percentile per-packet one-way delay: 447.421 ms
Loss rate: 4.03%
-- Flow 1:
Average throughput: 56.11 Mbit/s
95th percentile per-packet one-way delay: 390.882 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 37.84 Mbit/s
95th percentile per-packet one-way delay: 532.142 ms
Loss rate: 5.19%
-- Flow 3:
Average throughput: 30.57 Mbit/s
95th percentile per-packet one-way delay: 415.721 ms
Loss rate: 9.19%
```

### Run 4: Report of TCP BBR — Data Link

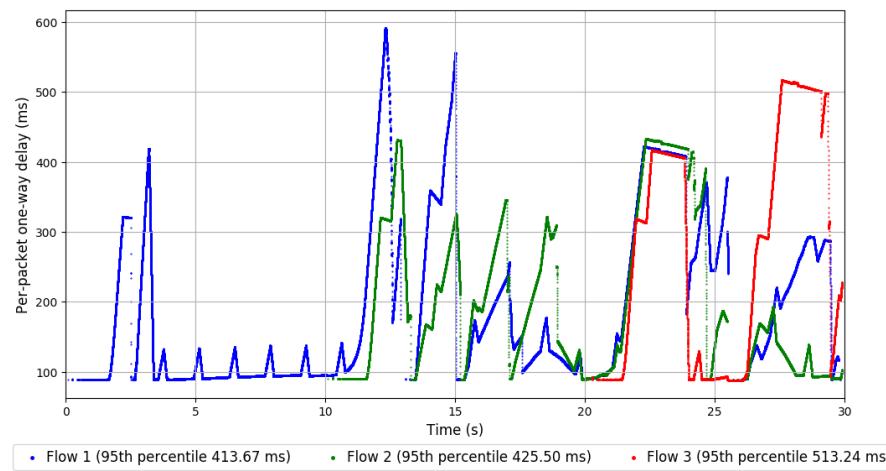
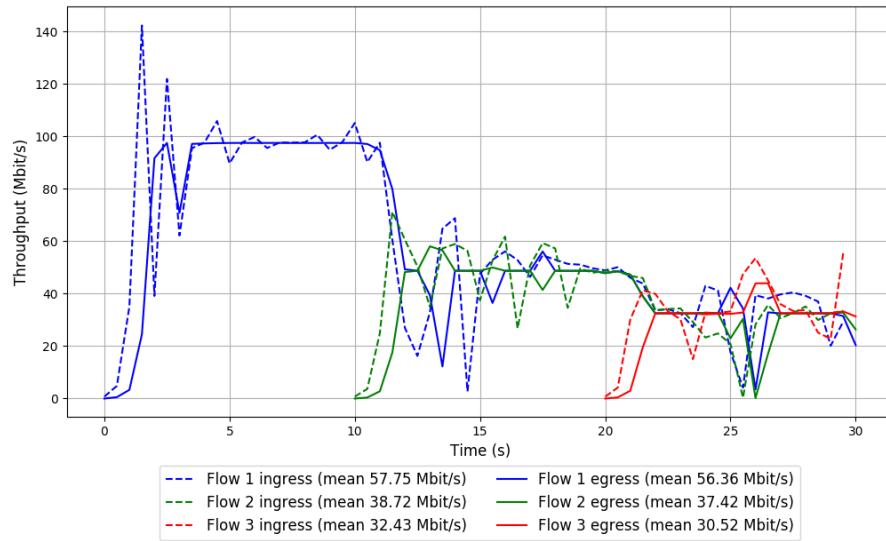


Run 5: Statistics of TCP BBR

```
Start at: 2018-11-15 12:49:39
End at: 2018-11-15 12:50:09
Local clock offset: -7.439 ms
Remote clock offset: -0.711 ms

# Below is generated by plot.py at 2018-11-15 13:02:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.23 Mbit/s
95th percentile per-packet one-way delay: 429.238 ms
Loss rate: 3.82%
-- Flow 1:
Average throughput: 56.36 Mbit/s
95th percentile per-packet one-way delay: 413.672 ms
Loss rate: 2.96%
-- Flow 2:
Average throughput: 37.42 Mbit/s
95th percentile per-packet one-way delay: 425.499 ms
Loss rate: 4.21%
-- Flow 3:
Average throughput: 30.52 Mbit/s
95th percentile per-packet one-way delay: 513.244 ms
Loss rate: 7.51%
```

## Run 5: Report of TCP BBR — Data Link

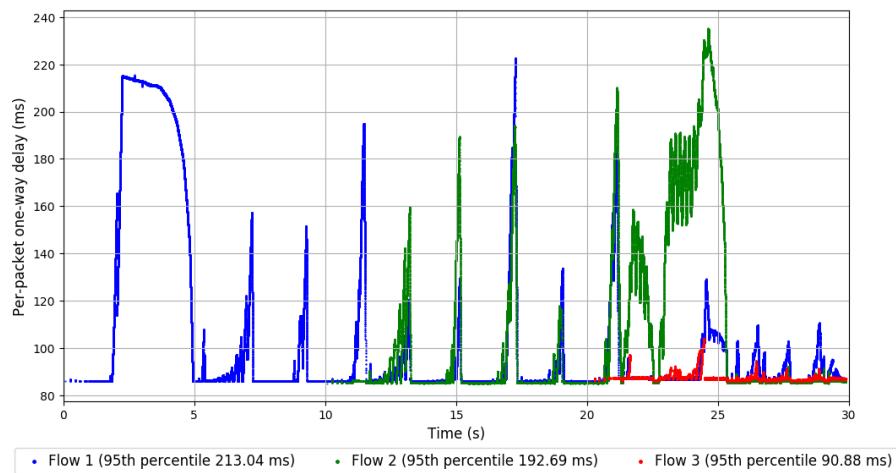
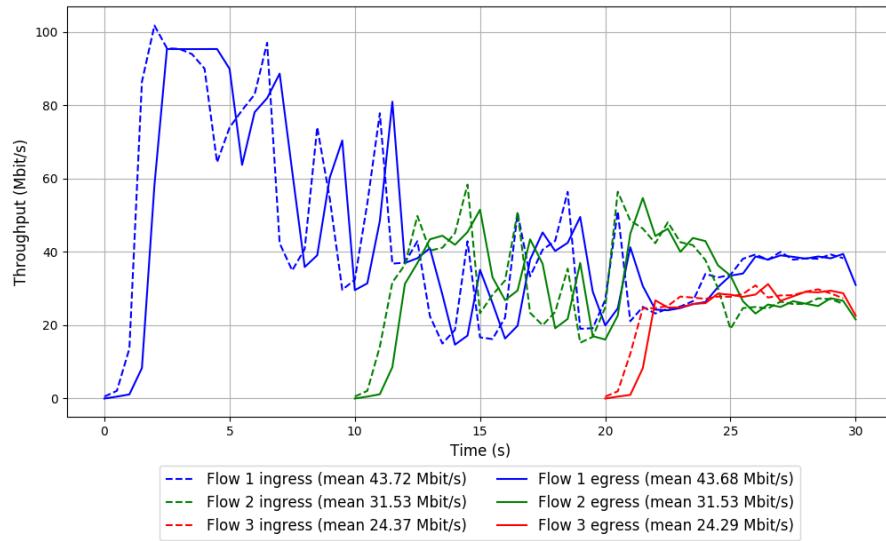


Run 1: Statistics of Copa

```
Start at: 2018-11-15 11:18:32
End at: 2018-11-15 11:19:02
Local clock offset: -1.807 ms
Remote clock offset: 0.245 ms

# Below is generated by plot.py at 2018-11-15 13:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.61 Mbit/s
95th percentile per-packet one-way delay: 211.665 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 43.68 Mbit/s
95th percentile per-packet one-way delay: 213.039 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 31.53 Mbit/s
95th percentile per-packet one-way delay: 192.686 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 24.29 Mbit/s
95th percentile per-packet one-way delay: 90.875 ms
Loss rate: 2.05%
```

## Run 1: Report of Copa — Data Link

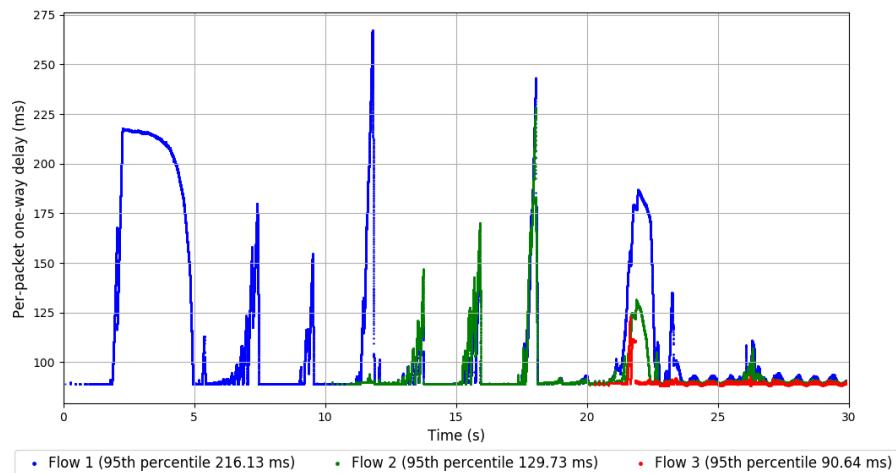
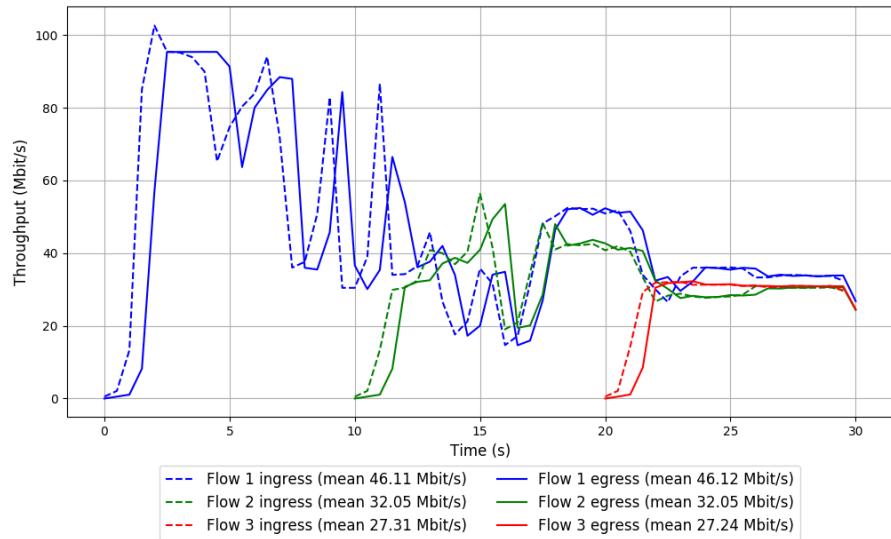


Run 2: Statistics of Copa

```
Start at: 2018-11-15 11:41:38
End at: 2018-11-15 11:42:08
Local clock offset: -2.446 ms
Remote clock offset: -0.881 ms

# Below is generated by plot.py at 2018-11-15 13:02:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.38 Mbit/s
95th percentile per-packet one-way delay: 215.059 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 46.12 Mbit/s
95th percentile per-packet one-way delay: 216.126 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 32.05 Mbit/s
95th percentile per-packet one-way delay: 129.727 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 27.24 Mbit/s
95th percentile per-packet one-way delay: 90.645 ms
Loss rate: 1.96%
```

## Run 2: Report of Copa — Data Link

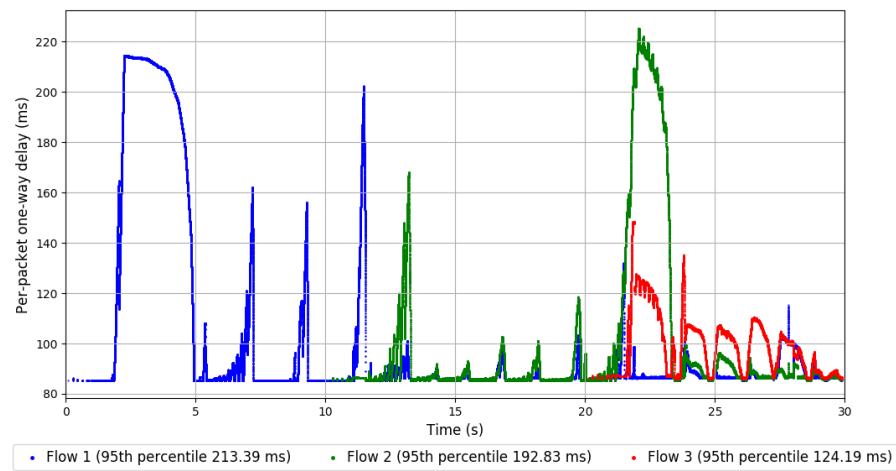
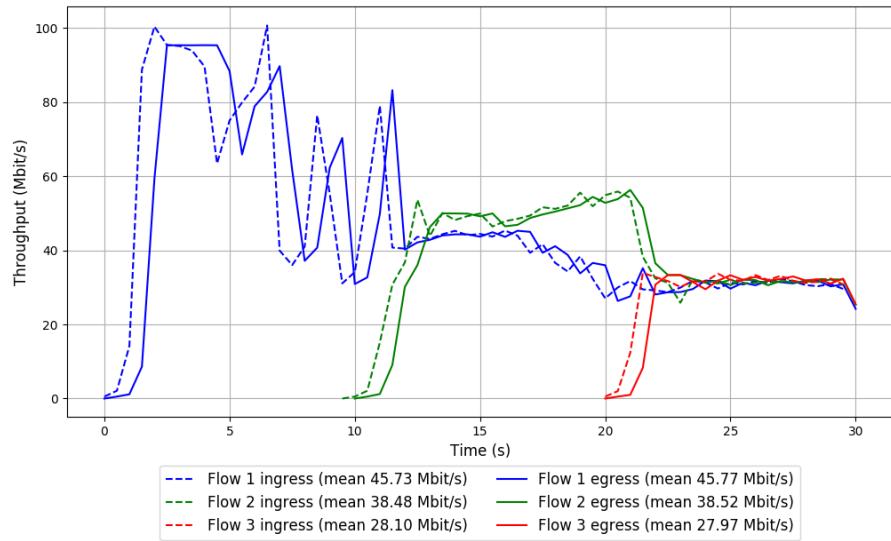


Run 3: Statistics of Copa

```
Start at: 2018-11-15 12:04:44
End at: 2018-11-15 12:05:14
Local clock offset: -5.124 ms
Remote clock offset: 1.332 ms

# Below is generated by plot.py at 2018-11-15 13:02:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.56 Mbit/s
95th percentile per-packet one-way delay: 211.879 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 45.77 Mbit/s
95th percentile per-packet one-way delay: 213.390 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 38.52 Mbit/s
95th percentile per-packet one-way delay: 192.833 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 27.97 Mbit/s
95th percentile per-packet one-way delay: 124.188 ms
Loss rate: 2.19%
```

### Run 3: Report of Copa — Data Link

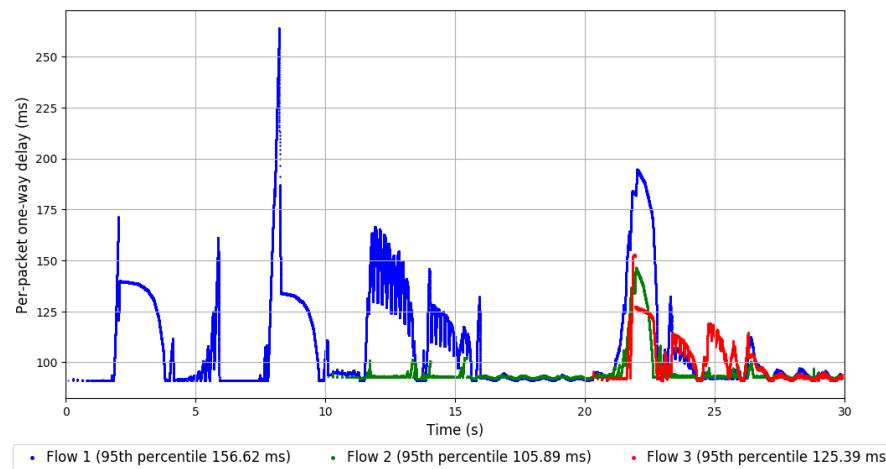
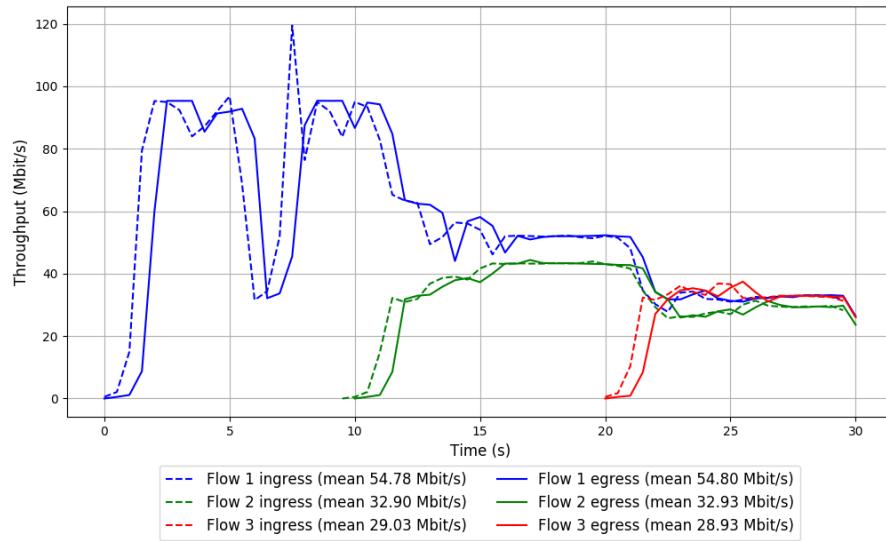


Run 4: Statistics of Copa

```
Start at: 2018-11-15 12:27:51
End at: 2018-11-15 12:28:21
Local clock offset: -6.61 ms
Remote clock offset: -4.642 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.19 Mbit/s
95th percentile per-packet one-way delay: 144.750 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 54.80 Mbit/s
95th percentile per-packet one-way delay: 156.621 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 32.93 Mbit/s
95th percentile per-packet one-way delay: 105.895 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 28.93 Mbit/s
95th percentile per-packet one-way delay: 125.385 ms
Loss rate: 2.05%
```

## Run 4: Report of Copa — Data Link

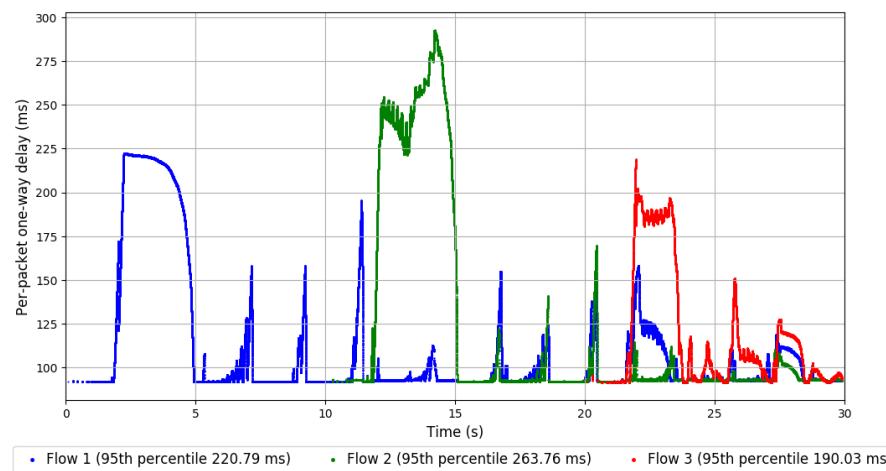
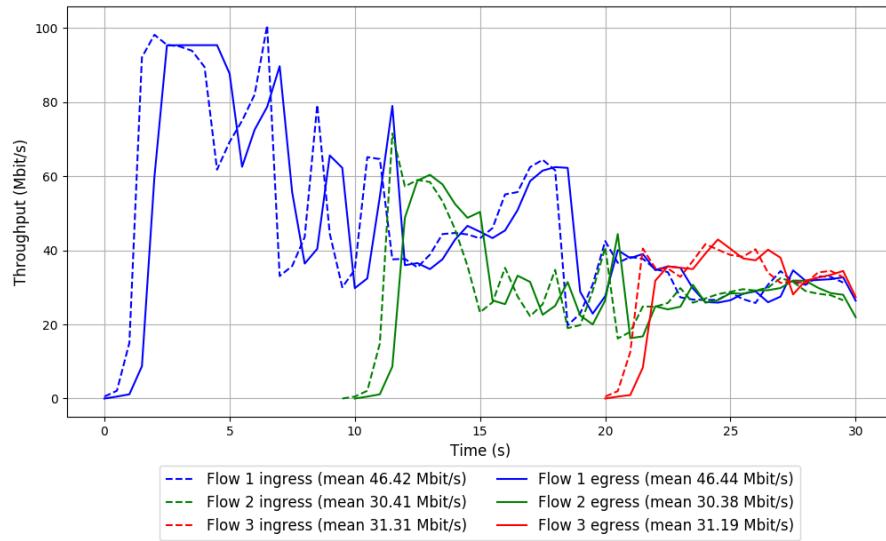


Run 5: Statistics of Copa

```
Start at: 2018-11-15 12:50:58
End at: 2018-11-15 12:51:28
Local clock offset: -8.24 ms
Remote clock offset: -4.4 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.88 Mbit/s
95th percentile per-packet one-way delay: 238.592 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 46.44 Mbit/s
95th percentile per-packet one-way delay: 220.793 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 30.38 Mbit/s
95th percentile per-packet one-way delay: 263.757 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 31.19 Mbit/s
95th percentile per-packet one-way delay: 190.034 ms
Loss rate: 2.10%
```

## Run 5: Report of Copa — Data Link

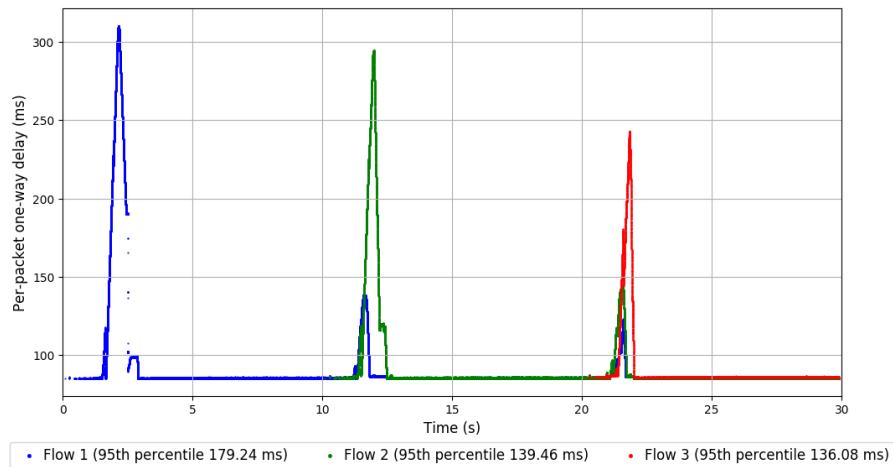
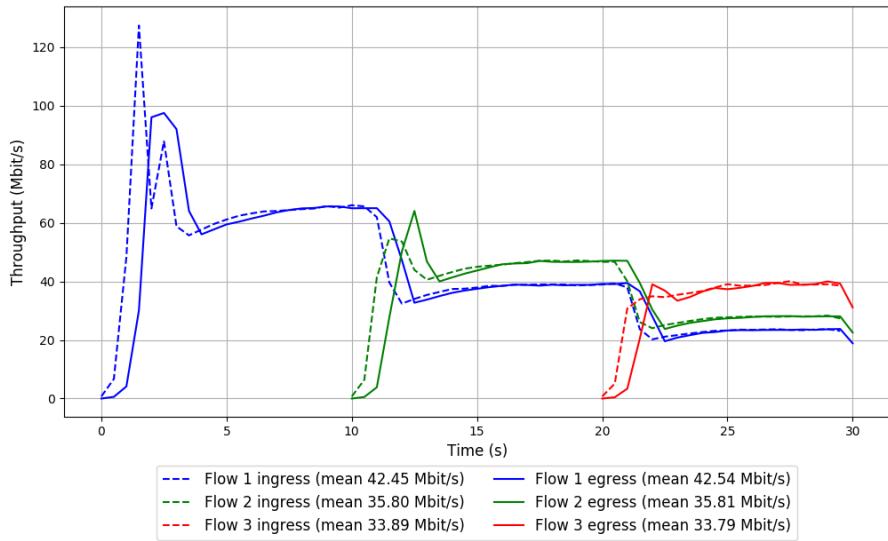


```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 11:22:20
End at: 2018-11-15 11:22:50
Local clock offset: -1.756 ms
Remote clock offset: 0.23 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.43 Mbit/s
95th percentile per-packet one-way delay: 144.873 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 42.54 Mbit/s
95th percentile per-packet one-way delay: 179.241 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 35.81 Mbit/s
95th percentile per-packet one-way delay: 139.458 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 33.79 Mbit/s
95th percentile per-packet one-way delay: 136.076 ms
Loss rate: 2.04%
```

Run 1: Report of TCP Cubic — Data Link

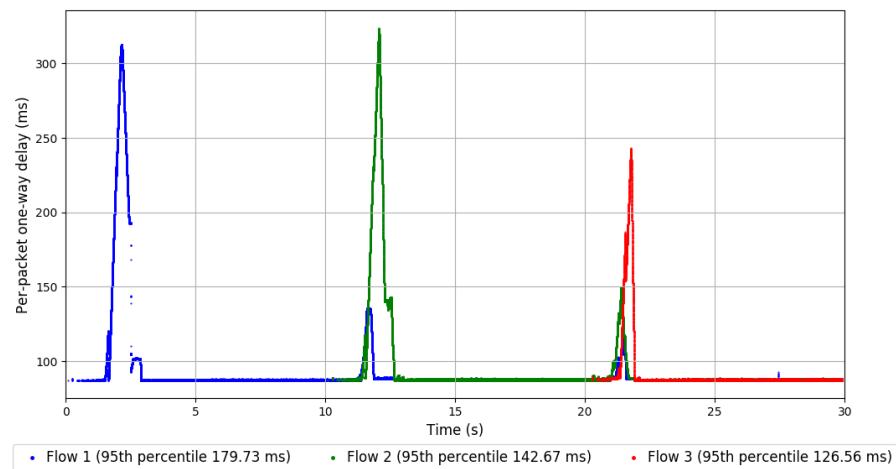
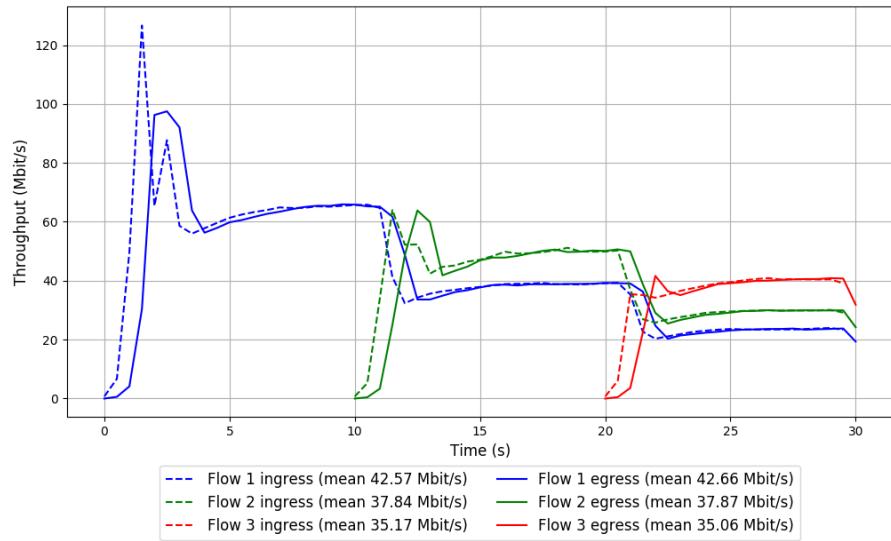


Run 2: Statistics of TCP Cubic

```
Start at: 2018-11-15 11:45:27
End at: 2018-11-15 11:45:57
Local clock offset: -3.301 ms
Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.32 Mbit/s
95th percentile per-packet one-way delay: 149.405 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 42.66 Mbit/s
95th percentile per-packet one-way delay: 179.726 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 37.87 Mbit/s
95th percentile per-packet one-way delay: 142.666 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 35.06 Mbit/s
95th percentile per-packet one-way delay: 126.559 ms
Loss rate: 2.03%
```

## Run 2: Report of TCP Cubic — Data Link

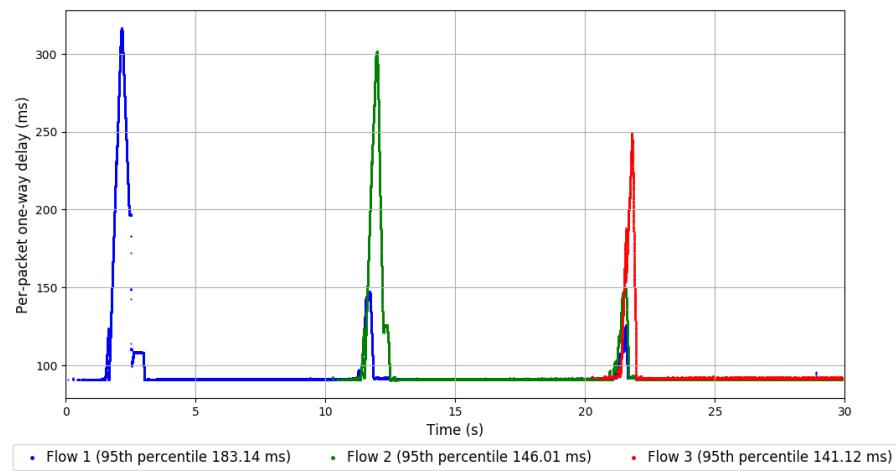
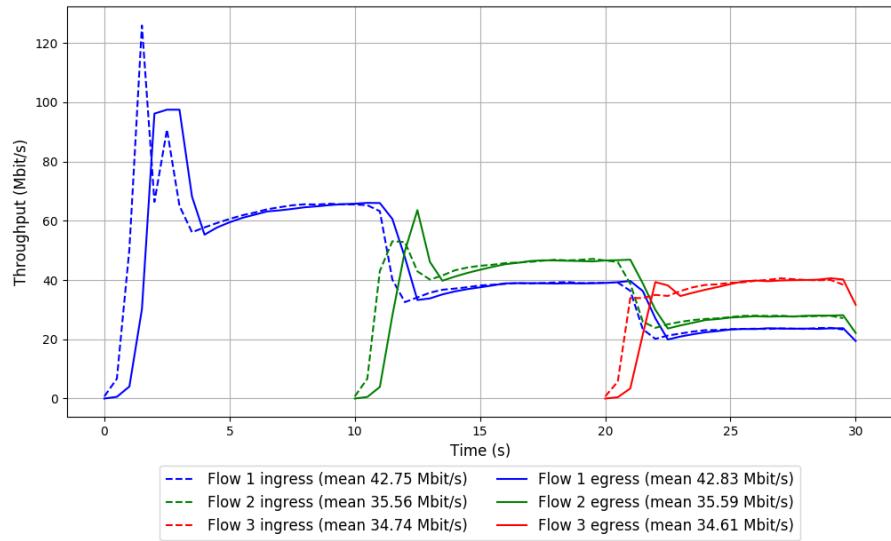


Run 3: Statistics of TCP Cubic

```
Start at: 2018-11-15 12:08:33
End at: 2018-11-15 12:09:03
Local clock offset: -4.774 ms
Remote clock offset: -3.523 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.84 Mbit/s
95th percentile per-packet one-way delay: 151.058 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 42.83 Mbit/s
95th percentile per-packet one-way delay: 183.143 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 35.59 Mbit/s
95th percentile per-packet one-way delay: 146.013 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 34.61 Mbit/s
95th percentile per-packet one-way delay: 141.124 ms
Loss rate: 2.08%
```

### Run 3: Report of TCP Cubic — Data Link

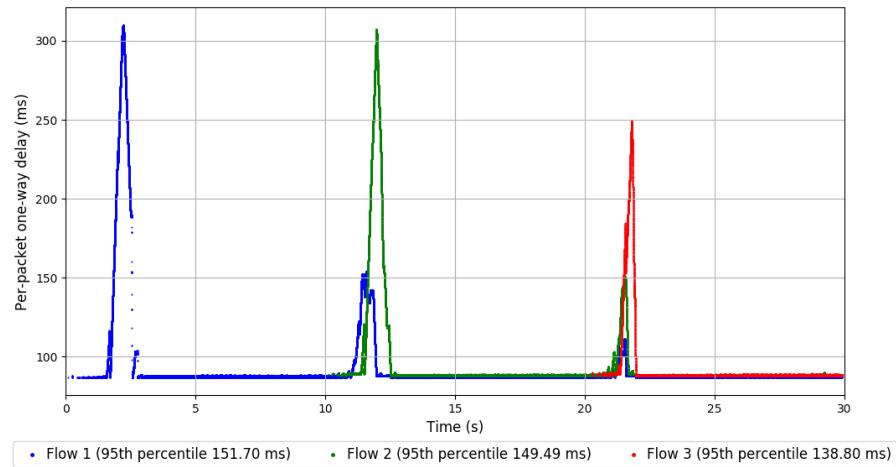
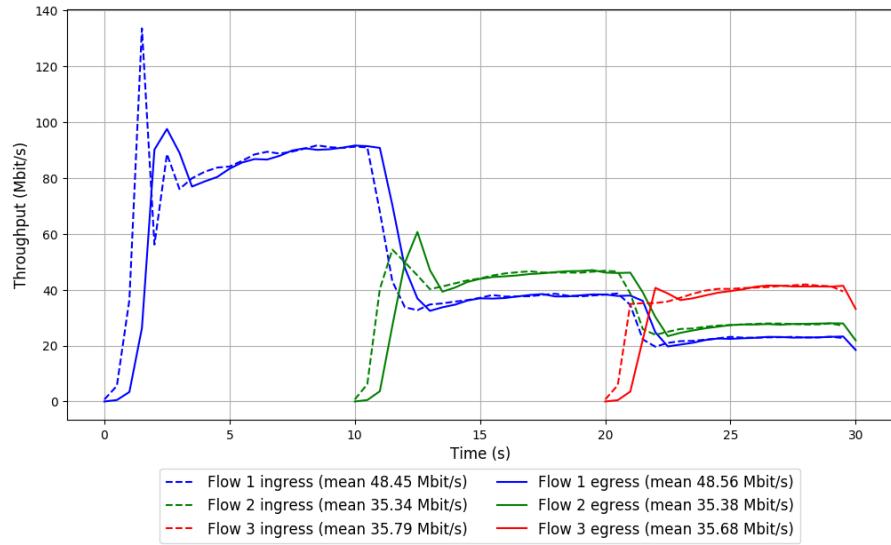


Run 4: Statistics of TCP Cubic

```
Start at: 2018-11-15 12:31:41
End at: 2018-11-15 12:32:11
Local clock offset: -6.294 ms
Remote clock offset: 0.287 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.78 Mbit/s
95th percentile per-packet one-way delay: 150.449 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 48.56 Mbit/s
95th percentile per-packet one-way delay: 151.699 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 35.38 Mbit/s
95th percentile per-packet one-way delay: 149.490 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 35.68 Mbit/s
95th percentile per-packet one-way delay: 138.801 ms
Loss rate: 2.03%
```

### Run 4: Report of TCP Cubic — Data Link

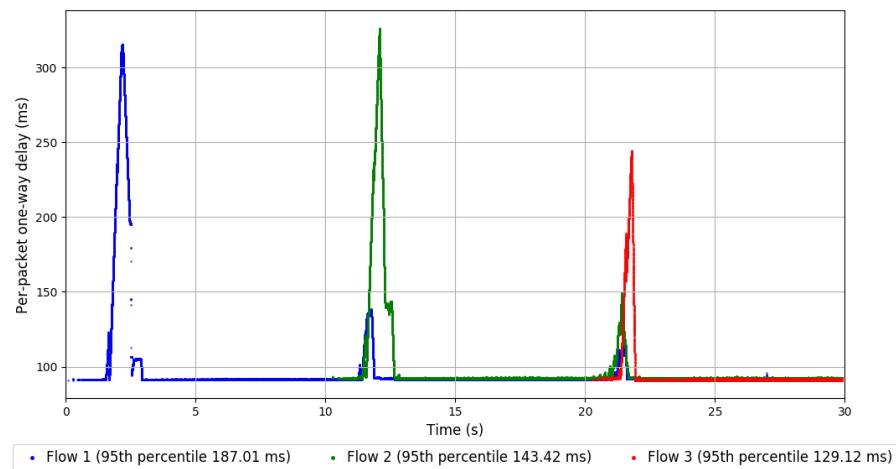
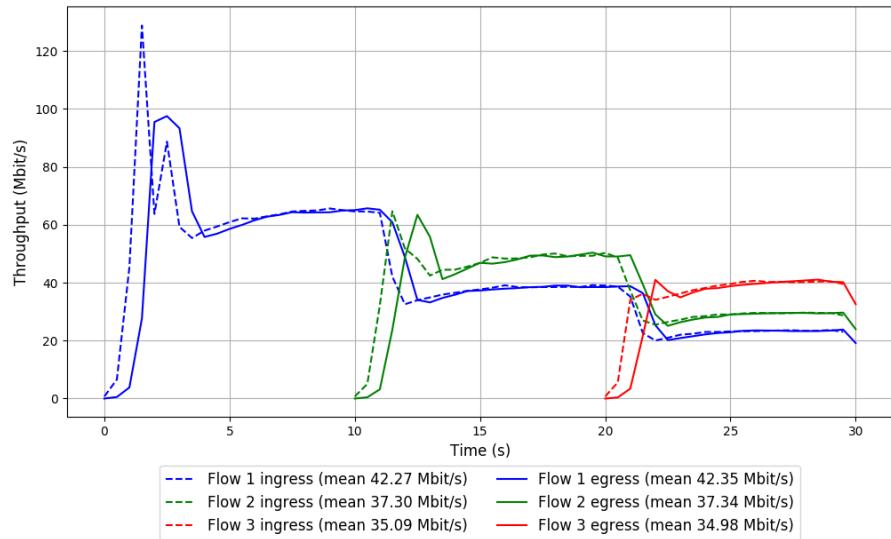


Run 5: Statistics of TCP Cubic

```
Start at: 2018-11-15 12:54:47
End at: 2018-11-15 12:55:17
Local clock offset: -7.653 ms
Remote clock offset: -3.444 ms

# Below is generated by plot.py at 2018-11-15 13:04:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.63 Mbit/s
95th percentile per-packet one-way delay: 153.716 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 42.35 Mbit/s
95th percentile per-packet one-way delay: 187.011 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 37.34 Mbit/s
95th percentile per-packet one-way delay: 143.418 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 34.98 Mbit/s
95th percentile per-packet one-way delay: 129.118 ms
Loss rate: 2.02%
```

### Run 5: Report of TCP Cubic — Data Link

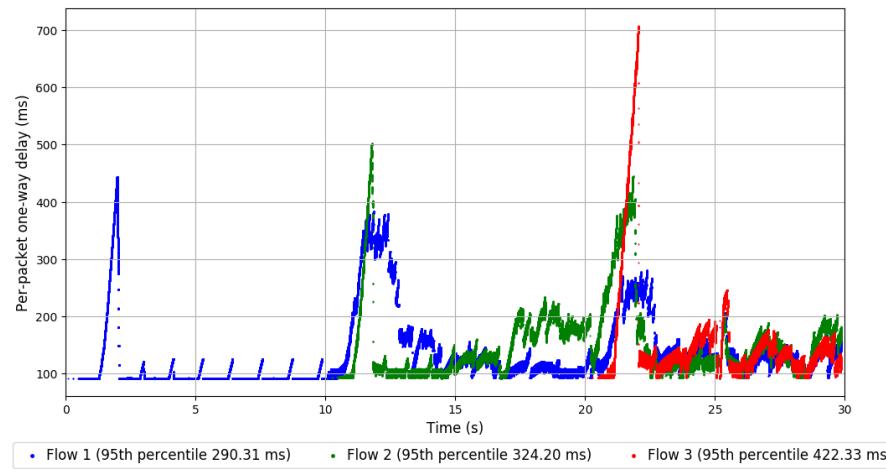
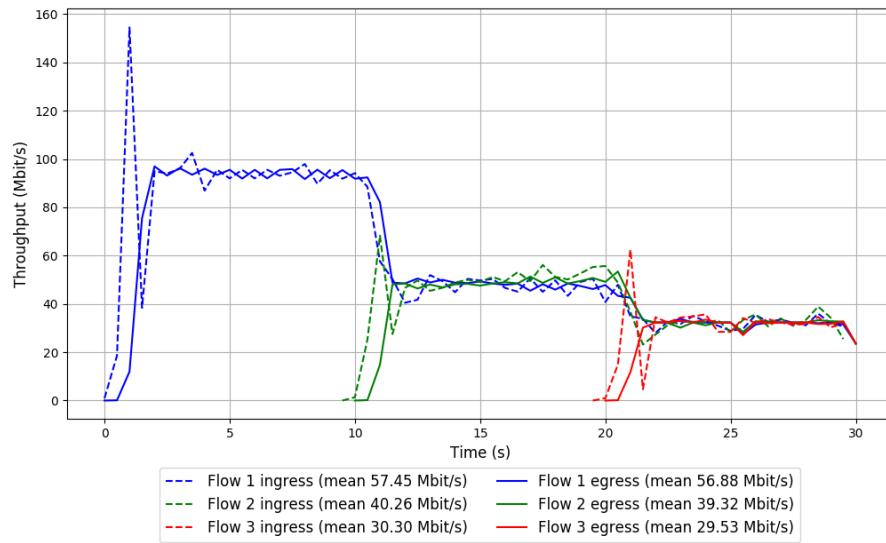


```
Run 1: Statistics of FillP
```

```
Start at: 2018-11-15 11:23:37
End at: 2018-11-15 11:24:07
Local clock offset: -0.968 ms
Remote clock offset: -5.6 ms

# Below is generated by plot.py at 2018-11-15 13:04:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.74 Mbit/s
95th percentile per-packet one-way delay: 308.001 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 56.88 Mbit/s
95th percentile per-packet one-way delay: 290.313 ms
Loss rate: 1.55%
-- Flow 2:
Average throughput: 39.32 Mbit/s
95th percentile per-packet one-way delay: 324.198 ms
Loss rate: 3.10%
-- Flow 3:
Average throughput: 29.53 Mbit/s
95th percentile per-packet one-way delay: 422.331 ms
Loss rate: 4.21%
```

Run 1: Report of FillP — Data Link

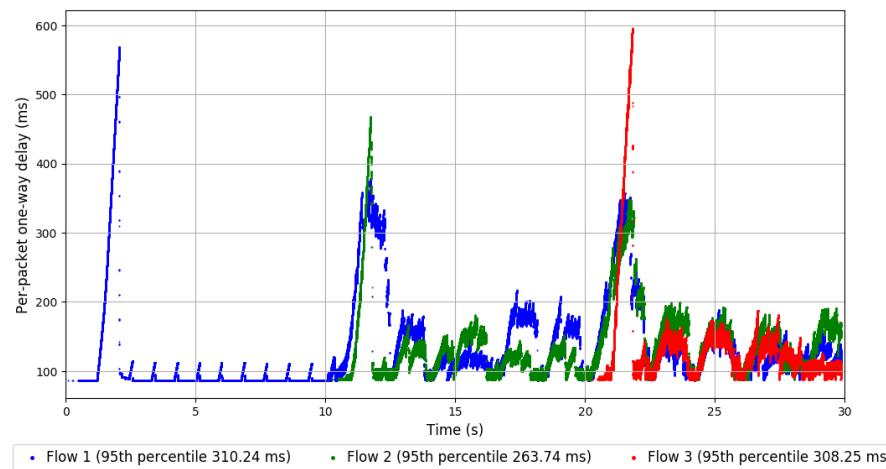
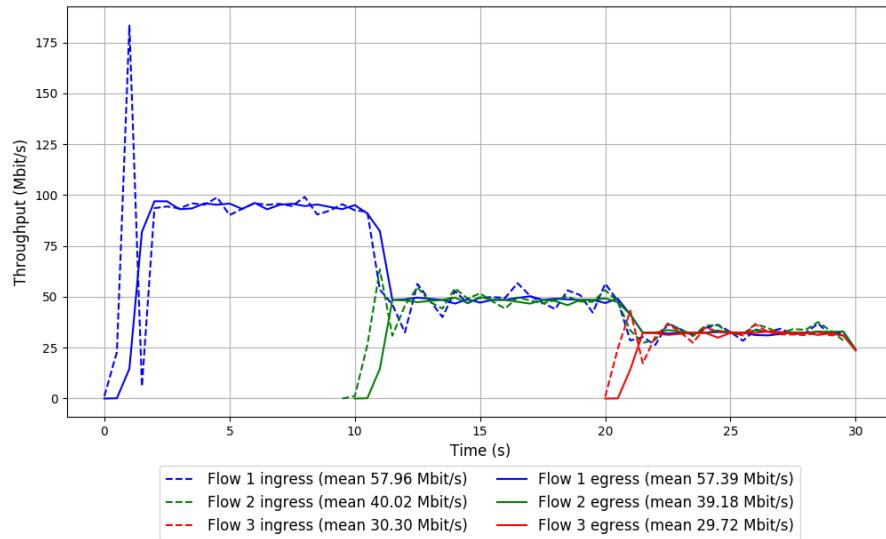


Run 2: Statistics of FillP

```
Start at: 2018-11-15 11:46:44
End at: 2018-11-15 11:47:14
Local clock offset: -3.327 ms
Remote clock offset: 0.104 ms

# Below is generated by plot.py at 2018-11-15 13:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.18 Mbit/s
95th percentile per-packet one-way delay: 298.447 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 57.39 Mbit/s
95th percentile per-packet one-way delay: 310.243 ms
Loss rate: 1.47%
-- Flow 2:
Average throughput: 39.18 Mbit/s
95th percentile per-packet one-way delay: 263.736 ms
Loss rate: 2.91%
-- Flow 3:
Average throughput: 29.72 Mbit/s
95th percentile per-packet one-way delay: 308.251 ms
Loss rate: 3.53%
```

## Run 2: Report of FillP — Data Link

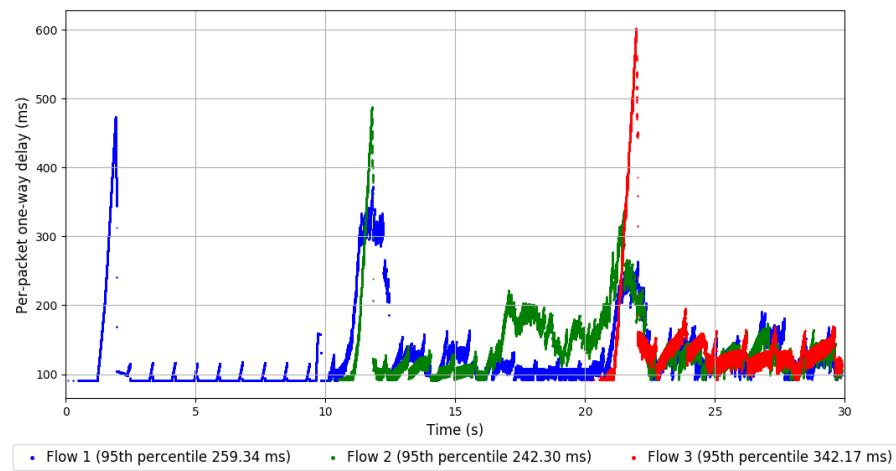
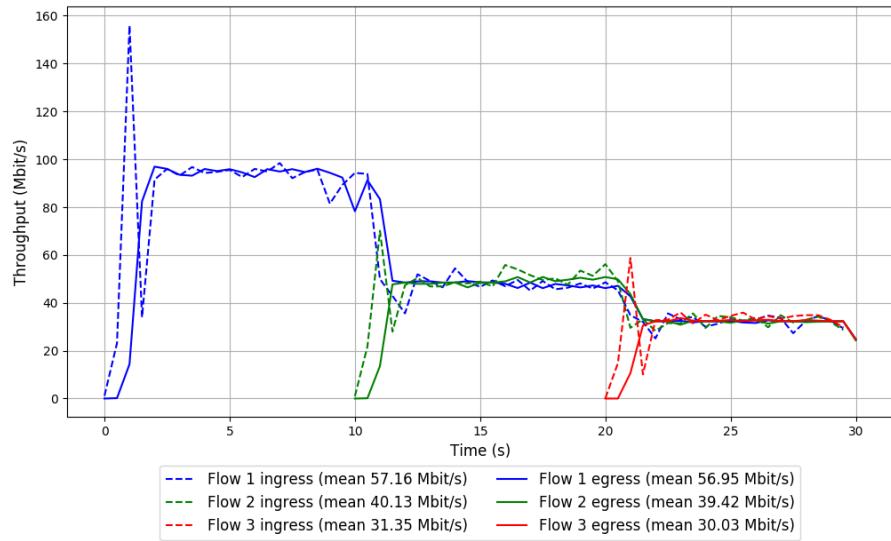


Run 3: Statistics of FillP

```
Start at: 2018-11-15 12:09:50
End at: 2018-11-15 12:10:20
Local clock offset: -4.909 ms
Remote clock offset: -3.556 ms

# Below is generated by plot.py at 2018-11-15 13:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.98 Mbit/s
95th percentile per-packet one-way delay: 254.762 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 259.340 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 39.42 Mbit/s
95th percentile per-packet one-way delay: 242.296 ms
Loss rate: 2.60%
-- Flow 3:
Average throughput: 30.03 Mbit/s
95th percentile per-packet one-way delay: 342.167 ms
Loss rate: 5.73%
```

### Run 3: Report of FillP — Data Link

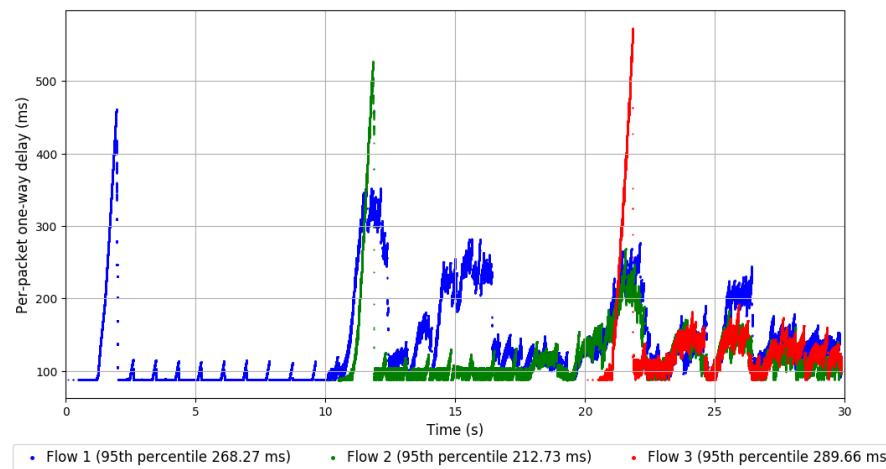
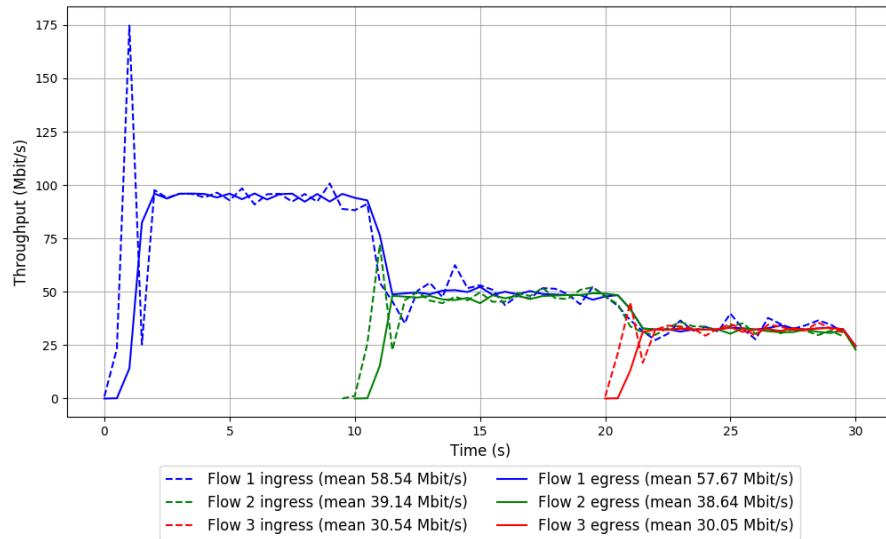


Run 4: Statistics of FillP

```
Start at: 2018-11-15 12:32:58
End at: 2018-11-15 12:33:28
Local clock offset: -6.42 ms
Remote clock offset: 0.248 ms

# Below is generated by plot.py at 2018-11-15 13:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.20 Mbit/s
95th percentile per-packet one-way delay: 256.721 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 57.67 Mbit/s
95th percentile per-packet one-way delay: 268.266 ms
Loss rate: 2.04%
-- Flow 2:
Average throughput: 38.64 Mbit/s
95th percentile per-packet one-way delay: 212.726 ms
Loss rate: 2.07%
-- Flow 3:
Average throughput: 30.05 Mbit/s
95th percentile per-packet one-way delay: 289.656 ms
Loss rate: 3.32%
```

## Run 4: Report of FillP — Data Link

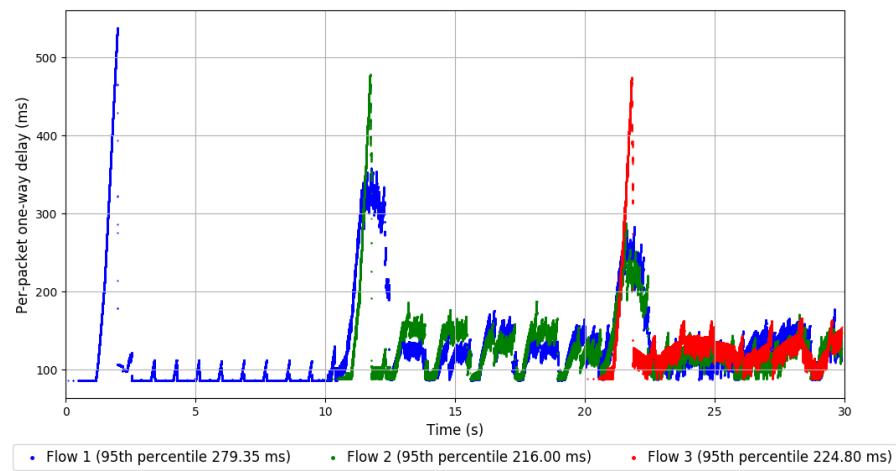
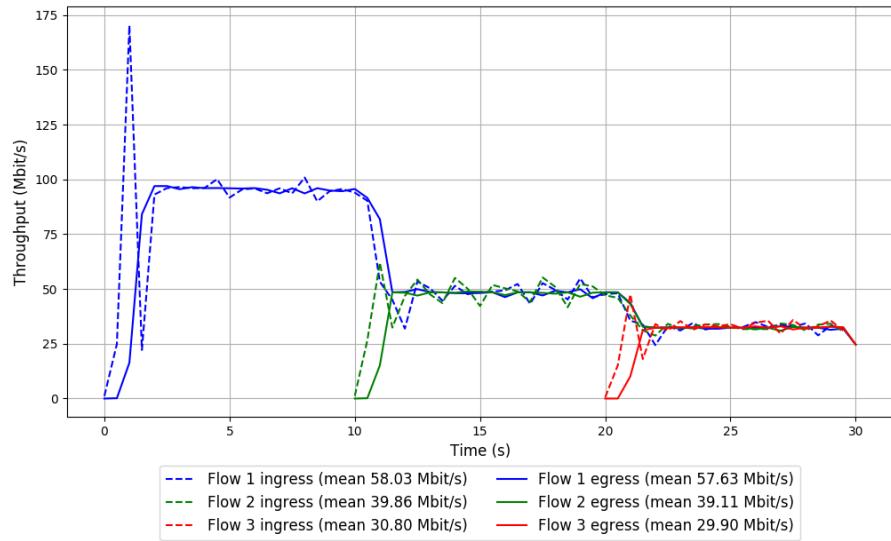


```
Run 5: Statistics of FillP
```

```
Start at: 2018-11-15 12:56:04
End at: 2018-11-15 12:56:34
Local clock offset: -7.706 ms
Remote clock offset: 1.517 ms

# Below is generated by plot.py at 2018-11-15 13:04:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.42 Mbit/s
95th percentile per-packet one-way delay: 248.960 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 57.63 Mbit/s
95th percentile per-packet one-way delay: 279.345 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 216.003 ms
Loss rate: 2.73%
-- Flow 3:
Average throughput: 29.90 Mbit/s
95th percentile per-packet one-way delay: 224.799 ms
Loss rate: 4.54%
```

## Run 5: Report of FillP — Data Link

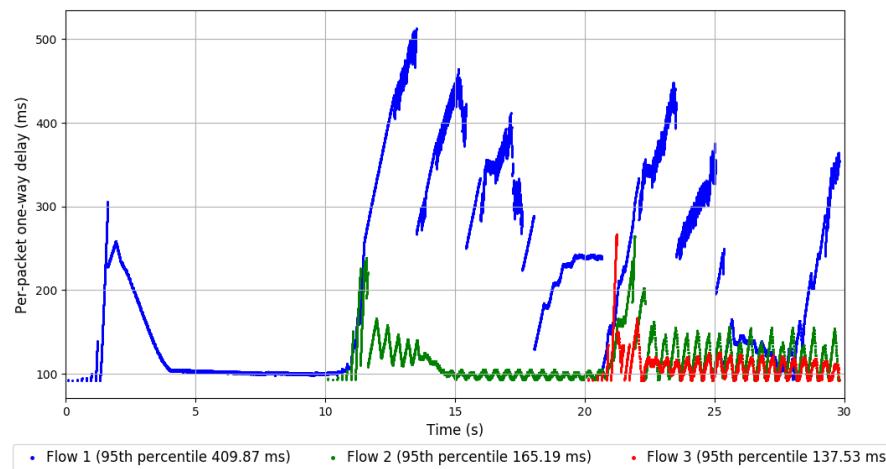
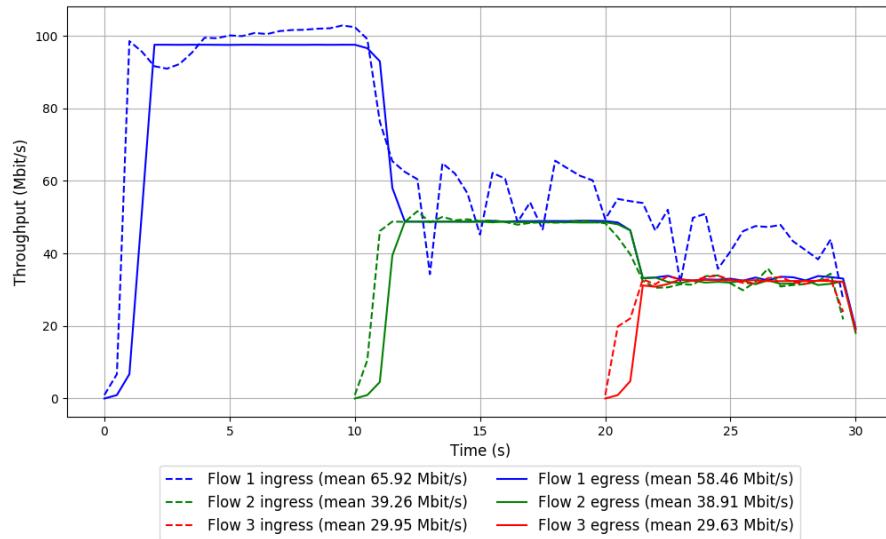


Run 1: Statistics of Indigo

```
Start at: 2018-11-15 11:04:22
End at: 2018-11-15 11:04:52
Local clock offset: -0.625 ms
Remote clock offset: -4.7 ms

# Below is generated by plot.py at 2018-11-15 13:04:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.90 Mbit/s
95th percentile per-packet one-way delay: 375.689 ms
Loss rate: 8.38%
-- Flow 1:
Average throughput: 58.46 Mbit/s
95th percentile per-packet one-way delay: 409.870 ms
Loss rate: 11.83%
-- Flow 2:
Average throughput: 38.91 Mbit/s
95th percentile per-packet one-way delay: 165.191 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 29.63 Mbit/s
95th percentile per-packet one-way delay: 137.525 ms
Loss rate: 2.79%
```

## Run 1: Report of Indigo — Data Link

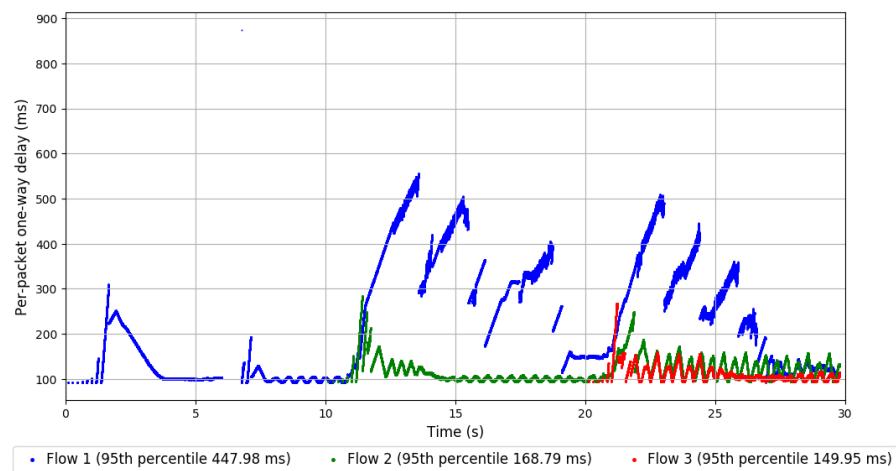
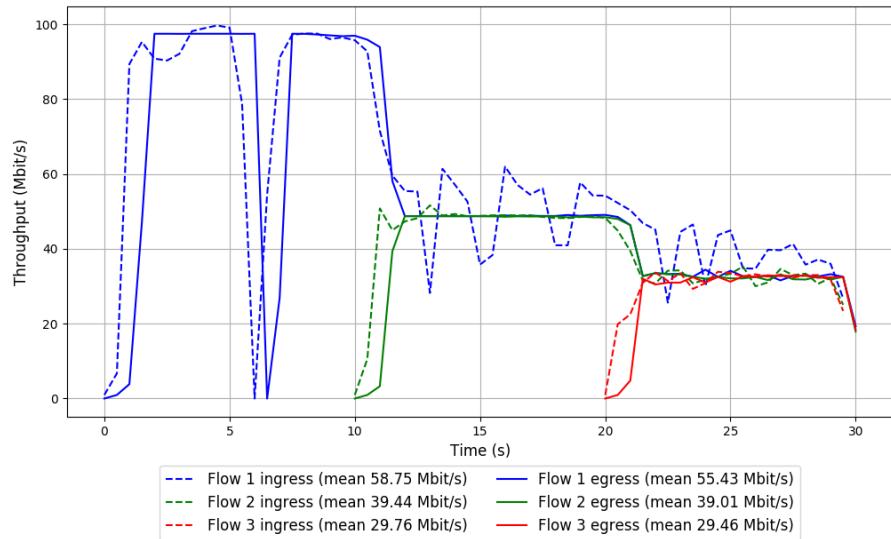


Run 2: Statistics of Indigo

```
Start at: 2018-11-15 11:27:28
End at: 2018-11-15 11:27:58
Local clock offset: -1.054 ms
Remote clock offset: -5.237 ms

# Below is generated by plot.py at 2018-11-15 13:04:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.86 Mbit/s
95th percentile per-packet one-way delay: 405.535 ms
Loss rate: 4.66%
-- Flow 1:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 447.982 ms
Loss rate: 6.19%
-- Flow 2:
Average throughput: 39.01 Mbit/s
95th percentile per-packet one-way delay: 168.788 ms
Loss rate: 1.94%
-- Flow 3:
Average throughput: 29.46 Mbit/s
95th percentile per-packet one-way delay: 149.952 ms
Loss rate: 2.73%
```

## Run 2: Report of Indigo — Data Link

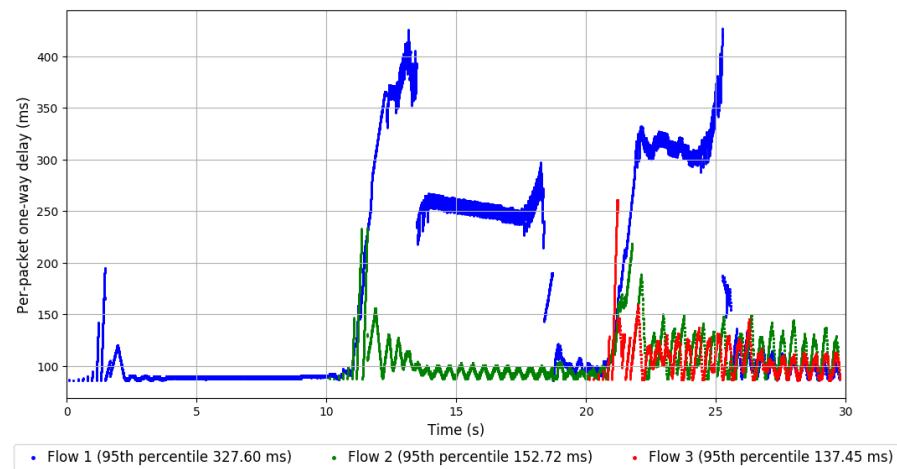
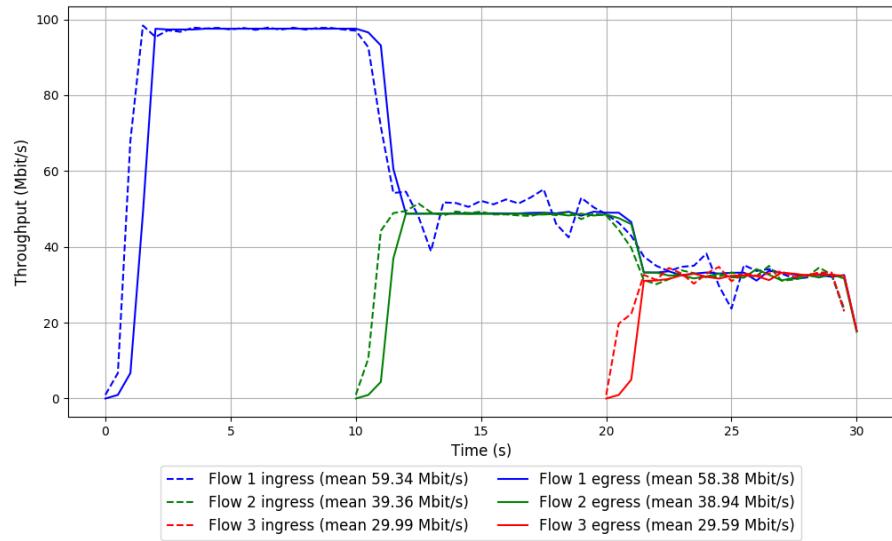


Run 3: Statistics of Indigo

```
Start at: 2018-11-15 11:50:35
End at: 2018-11-15 11:51:05
Local clock offset: -2.664 ms
Remote clock offset: 1.253 ms

# Below is generated by plot.py at 2018-11-15 13:05:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.79 Mbit/s
95th percentile per-packet one-way delay: 313.267 ms
Loss rate: 2.20%
-- Flow 1:
Average throughput: 58.38 Mbit/s
95th percentile per-packet one-way delay: 327.601 ms
Loss rate: 2.18%
-- Flow 2:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 152.725 ms
Loss rate: 1.94%
-- Flow 3:
Average throughput: 29.59 Mbit/s
95th percentile per-packet one-way delay: 137.449 ms
Loss rate: 3.03%
```

### Run 3: Report of Indigo — Data Link

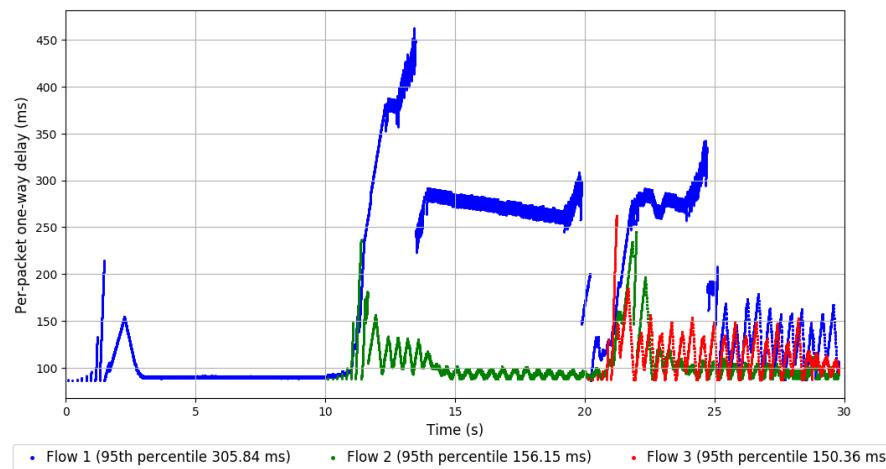
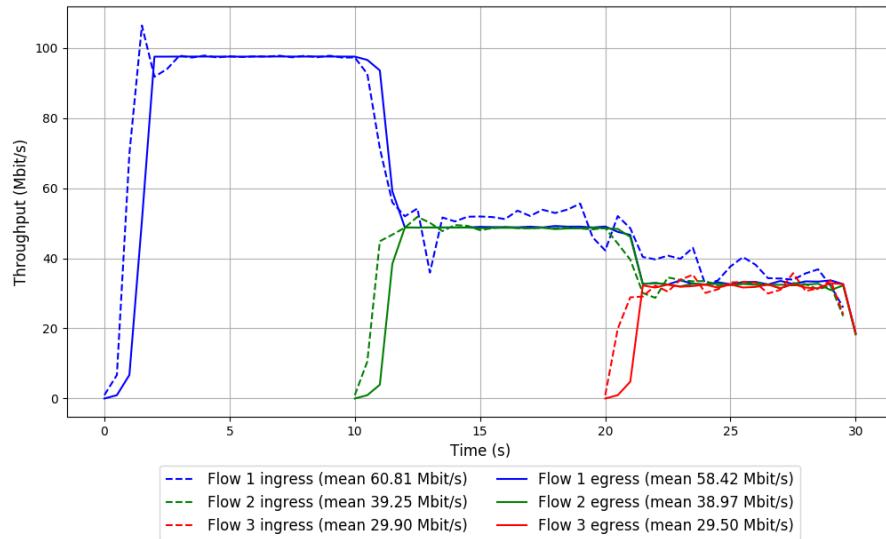


Run 4: Statistics of Indigo

```
Start at: 2018-11-15 12:13:41
End at: 2018-11-15 12:14:11
Local clock offset: -5.887 ms
Remote clock offset: 0.202 ms

# Below is generated by plot.py at 2018-11-15 13:05:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.84 Mbit/s
95th percentile per-packet one-way delay: 286.205 ms
Loss rate: 3.54%
-- Flow 1:
Average throughput: 58.42 Mbit/s
95th percentile per-packet one-way delay: 305.836 ms
Loss rate: 4.47%
-- Flow 2:
Average throughput: 38.97 Mbit/s
95th percentile per-packet one-way delay: 156.152 ms
Loss rate: 1.58%
-- Flow 3:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 150.363 ms
Loss rate: 3.05%
```

## Run 4: Report of Indigo — Data Link

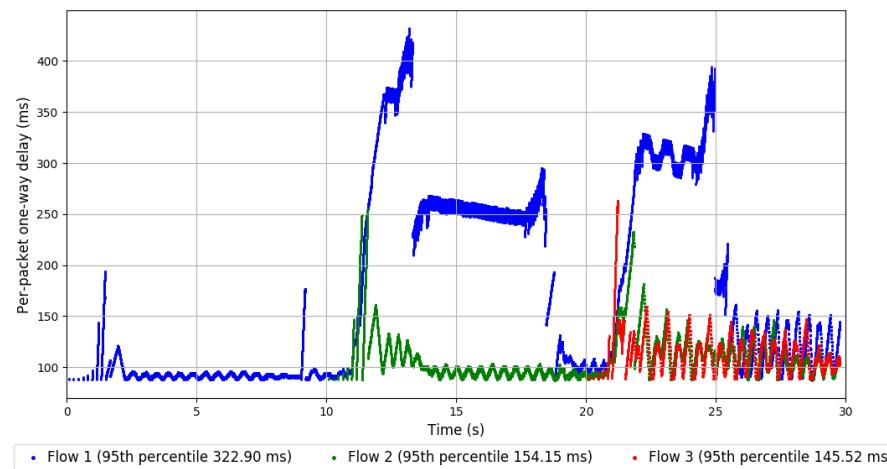
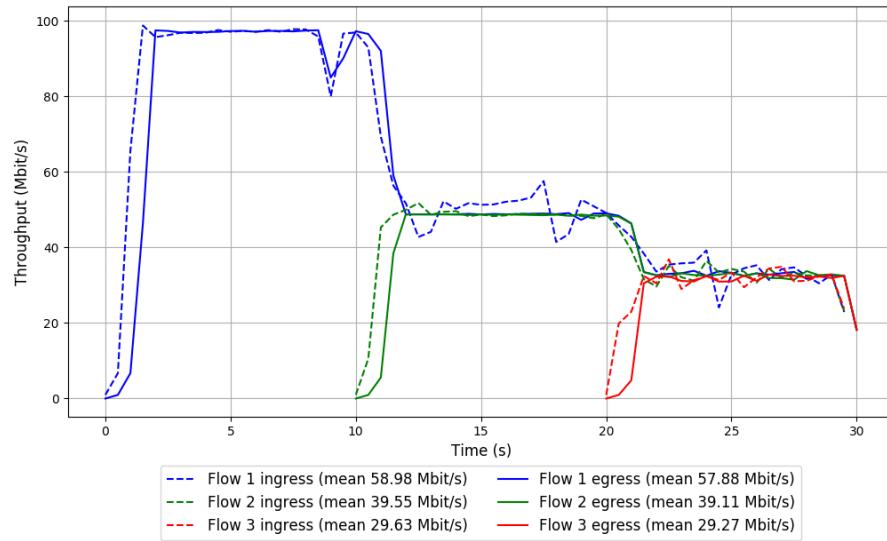


Run 5: Statistics of Indigo

```
Start at: 2018-11-15 12:36:49
End at: 2018-11-15 12:37:19
Local clock offset: -7.485 ms
Remote clock offset: -0.804 ms

# Below is generated by plot.py at 2018-11-15 13:05:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.34 Mbit/s
95th percentile per-packet one-way delay: 305.910 ms
Loss rate: 2.34%
-- Flow 1:
Average throughput: 57.88 Mbit/s
95th percentile per-packet one-way delay: 322.904 ms
Loss rate: 2.42%
-- Flow 2:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 154.147 ms
Loss rate: 1.95%
-- Flow 3:
Average throughput: 29.27 Mbit/s
95th percentile per-packet one-way delay: 145.521 ms
Loss rate: 2.95%
```

## Run 5: Report of Indigo — Data Link

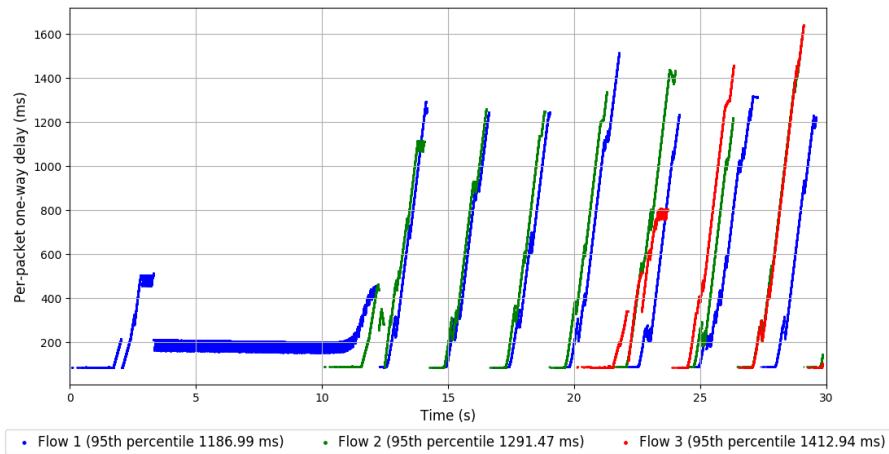
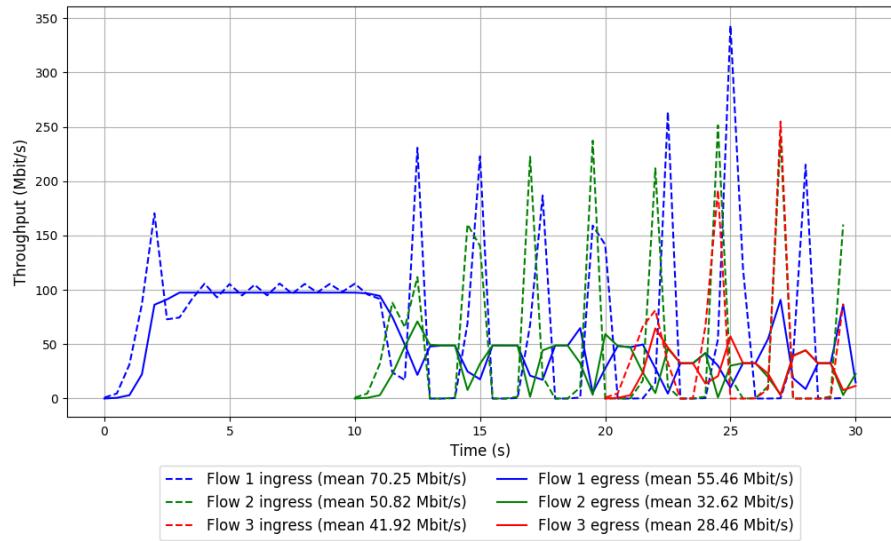


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-15 11:05:41
End at: 2018-11-15 11:06:11
Local clock offset: -1.502 ms
Remote clock offset: -1.954 ms

# Below is generated by plot.py at 2018-11-15 13:05:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.41 Mbit/s
95th percentile per-packet one-way delay: 1223.180 ms
Loss rate: 27.13%
-- Flow 1:
Average throughput: 55.46 Mbit/s
95th percentile per-packet one-way delay: 1186.986 ms
Loss rate: 21.52%
-- Flow 2:
Average throughput: 32.62 Mbit/s
95th percentile per-packet one-way delay: 1291.473 ms
Loss rate: 36.27%
-- Flow 3:
Average throughput: 28.46 Mbit/s
95th percentile per-packet one-way delay: 1412.939 ms
Loss rate: 33.28%
```

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

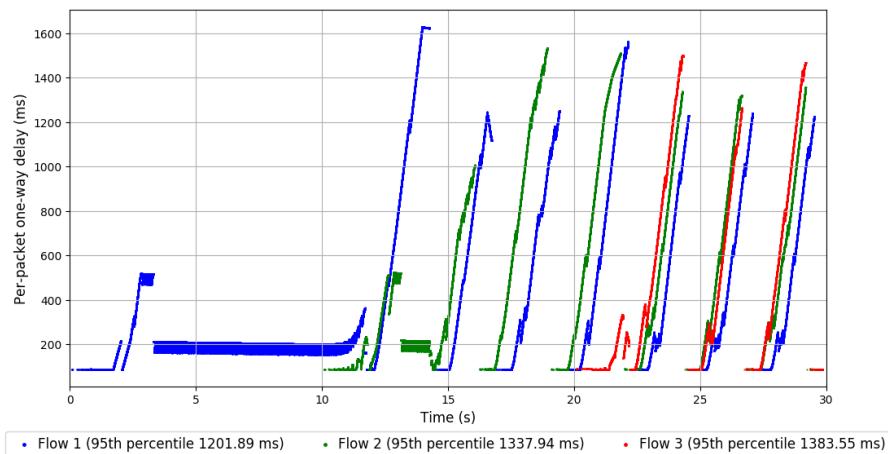
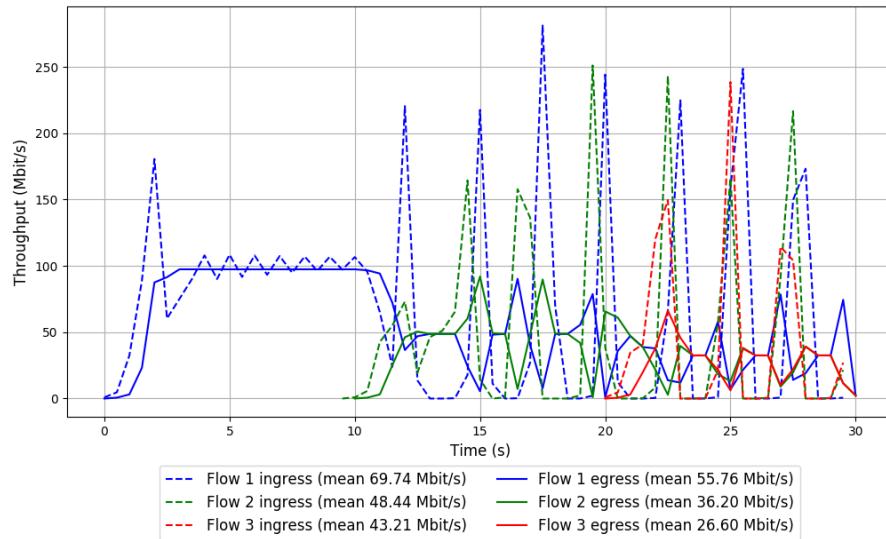


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 11:28:47
End at: 2018-11-15 11:29:17
Local clock offset: -1.328 ms
Remote clock offset: -0.255 ms

# Below is generated by plot.py at 2018-11-15 13:05:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.40 Mbit/s
95th percentile per-packet one-way delay: 1262.243 ms
Loss rate: 24.43%
-- Flow 1:
Average throughput: 55.76 Mbit/s
95th percentile per-packet one-way delay: 1201.890 ms
Loss rate: 20.65%
-- Flow 2:
Average throughput: 36.20 Mbit/s
95th percentile per-packet one-way delay: 1337.942 ms
Loss rate: 25.91%
-- Flow 3:
Average throughput: 26.60 Mbit/s
95th percentile per-packet one-way delay: 1383.553 ms
Loss rate: 39.50%
```

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

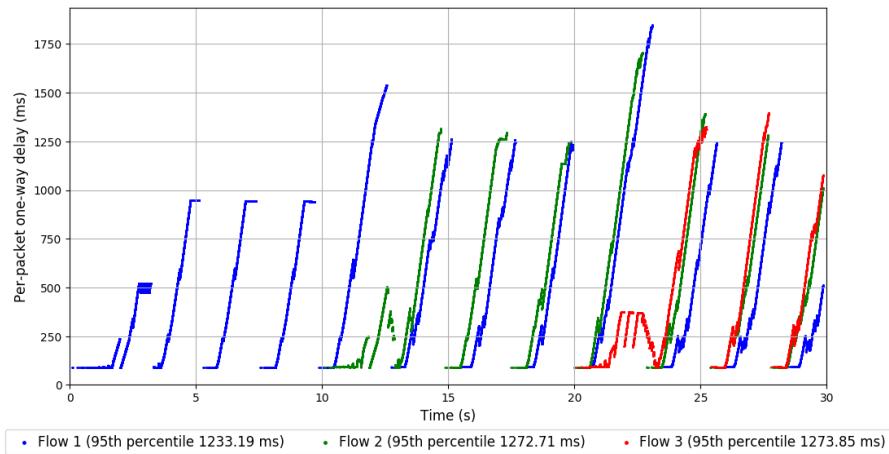
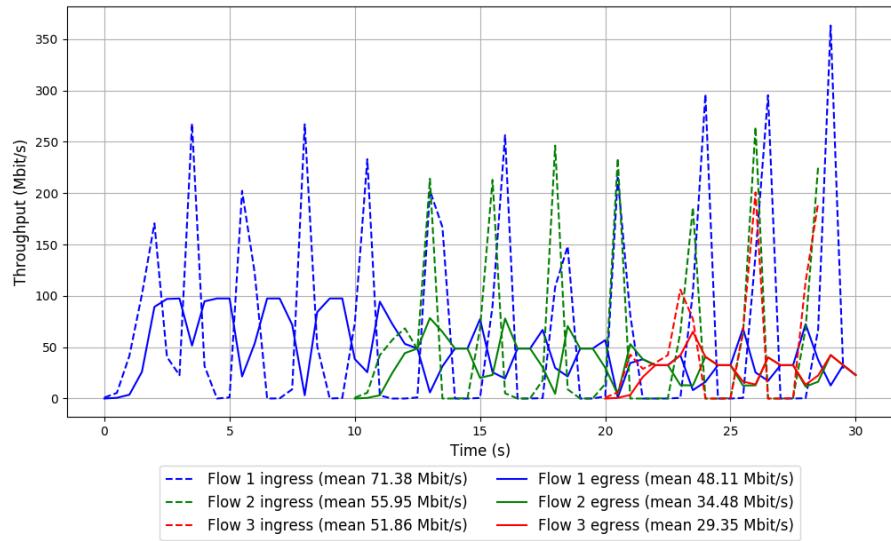


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 11:51:54
End at: 2018-11-15 11:52:24
Local clock offset: -2.63 ms
Remote clock offset: -3.599 ms

# Below is generated by plot.py at 2018-11-15 13:05:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.60 Mbit/s
95th percentile per-packet one-way delay: 1261.577 ms
Loss rate: 33.77%
-- Flow 1:
Average throughput: 48.11 Mbit/s
95th percentile per-packet one-way delay: 1233.187 ms
Loss rate: 32.07%
-- Flow 2:
Average throughput: 34.48 Mbit/s
95th percentile per-packet one-way delay: 1272.706 ms
Loss rate: 35.68%
-- Flow 3:
Average throughput: 29.35 Mbit/s
95th percentile per-packet one-way delay: 1273.854 ms
Loss rate: 37.18%
```

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

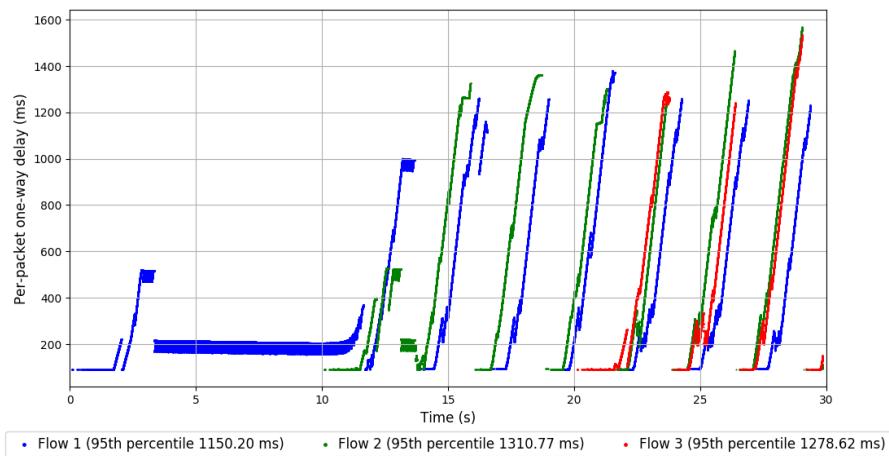
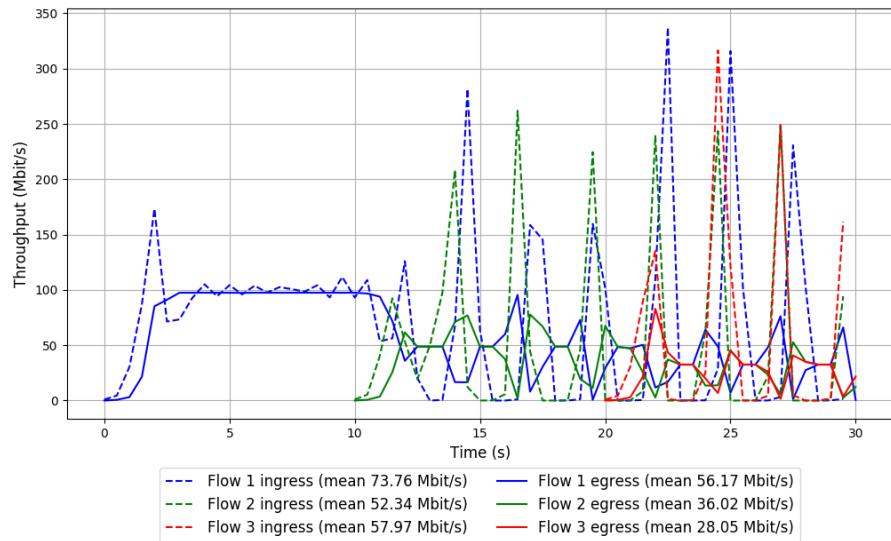


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 12:15:00
End at: 2018-11-15 12:15:30
Local clock offset: -5.269 ms
Remote clock offset: -4.836 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.25 Mbit/s
95th percentile per-packet one-way delay: 1226.005 ms
Loss rate: 30.54%
-- Flow 1:
Average throughput: 56.17 Mbit/s
95th percentile per-packet one-way delay: 1150.196 ms
Loss rate: 24.30%
-- Flow 2:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 1310.774 ms
Loss rate: 31.77%
-- Flow 3:
Average throughput: 28.05 Mbit/s
95th percentile per-packet one-way delay: 1278.615 ms
Loss rate: 52.35%
```

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

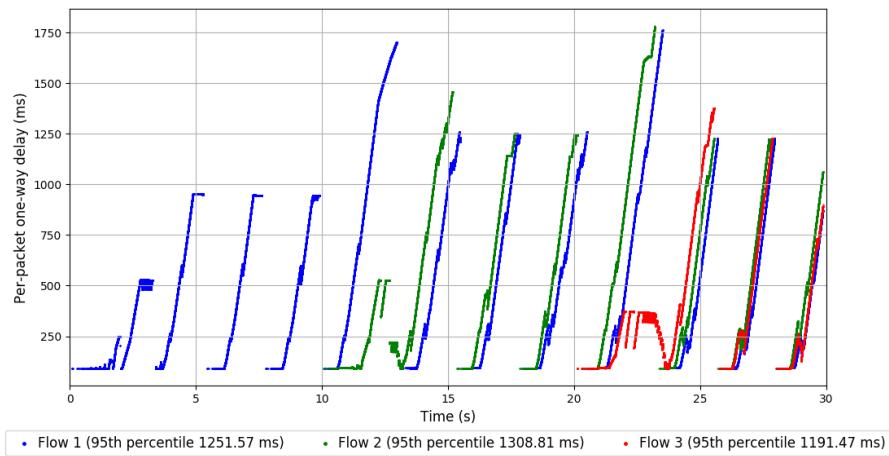
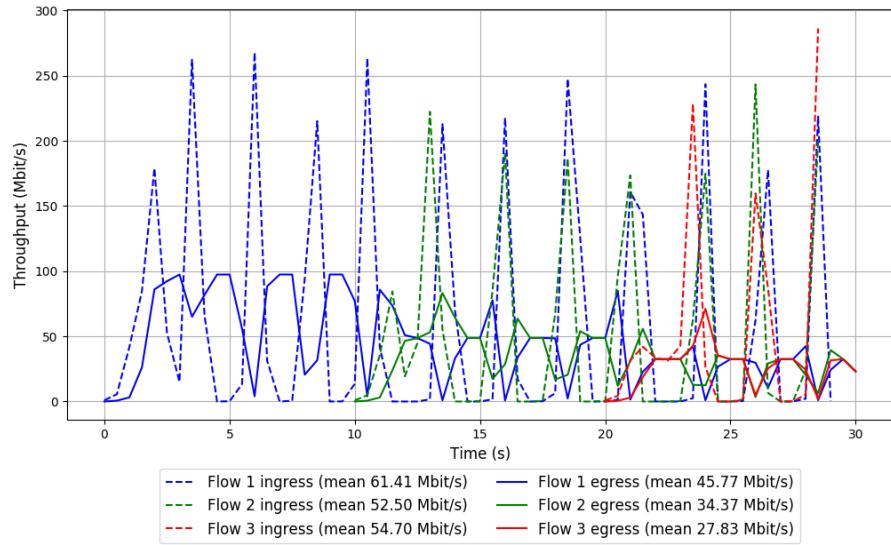


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 12:38:08
End at: 2018-11-15 12:38:38
Local clock offset: -6.831 ms
Remote clock offset: -4.531 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.68 Mbit/s
95th percentile per-packet one-way delay: 1257.868 ms
Loss rate: 29.12%
-- Flow 1:
Average throughput: 45.77 Mbit/s
95th percentile per-packet one-way delay: 1251.570 ms
Loss rate: 23.53%
-- Flow 2:
Average throughput: 34.37 Mbit/s
95th percentile per-packet one-way delay: 1308.811 ms
Loss rate: 31.47%
-- Flow 3:
Average throughput: 27.83 Mbit/s
95th percentile per-packet one-way delay: 1191.473 ms
Loss rate: 44.68%
```

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

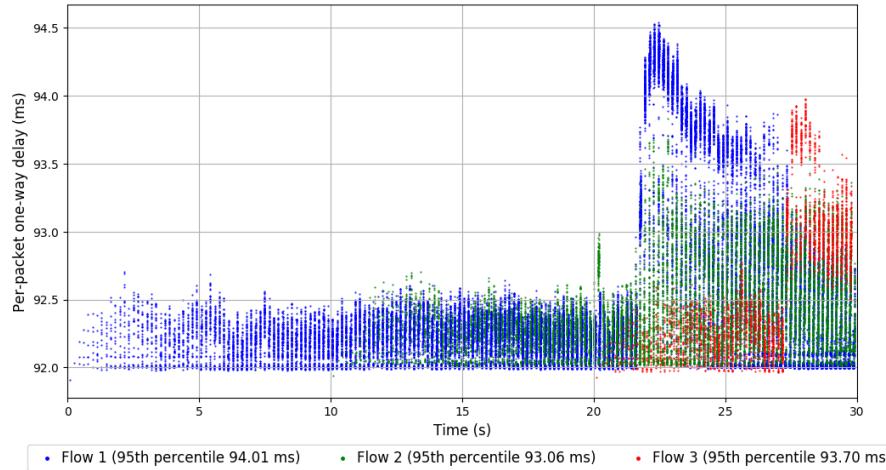
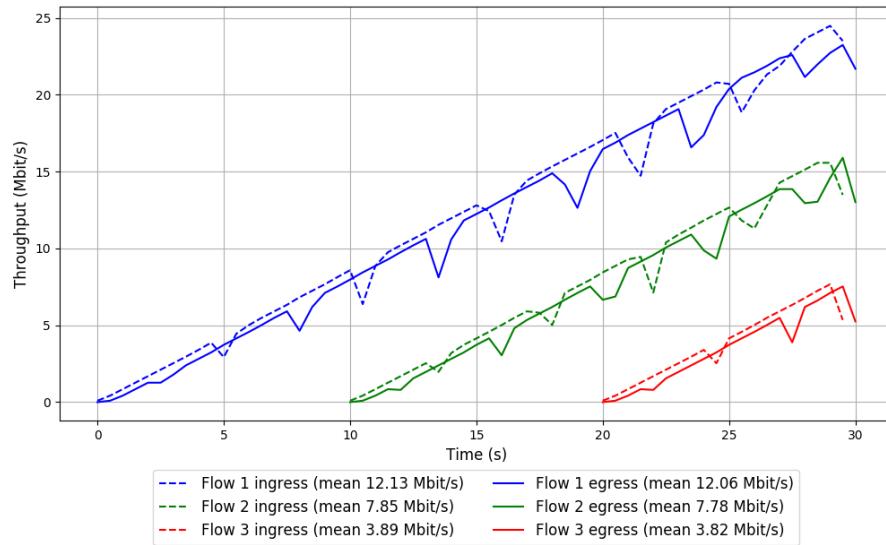


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 11:08:17
End at: 2018-11-15 11:08:47
Local clock offset: -1.668 ms
Remote clock offset: -5.77 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.47 Mbit/s
95th percentile per-packet one-way delay: 93.812 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 12.06 Mbit/s
95th percentile per-packet one-way delay: 94.013 ms
Loss rate: 1.14%
-- Flow 2:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 93.064 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 93.696 ms
Loss rate: 3.53%
```

Run 1: Report of LEDBAT — Data Link

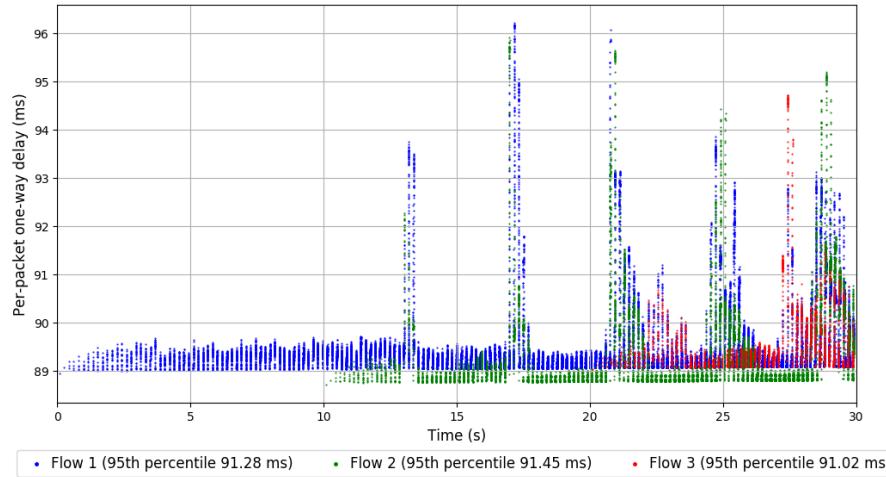
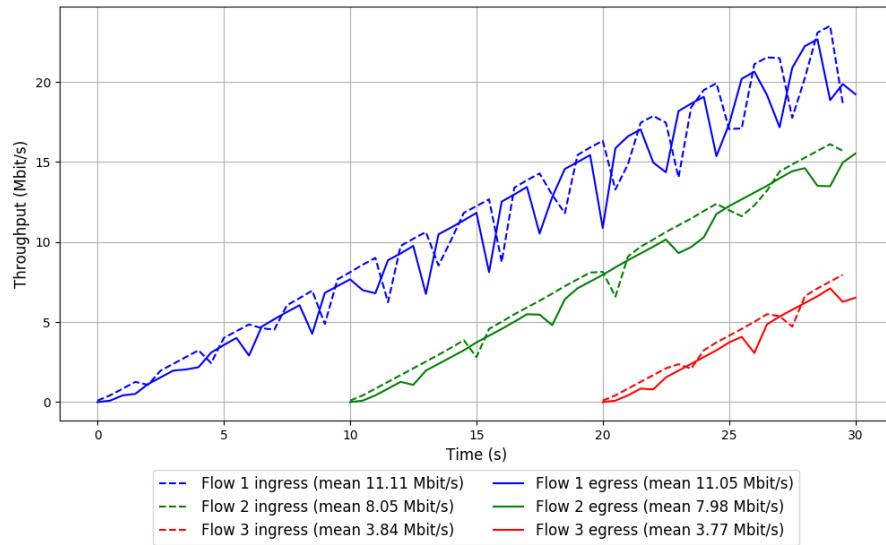


Run 2: Statistics of LEDBAT

```
Start at: 2018-11-15 11:31:22
End at: 2018-11-15 11:31:52
Local clock offset: -1.694 ms
Remote clock offset: -1.188 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.58 Mbit/s
95th percentile per-packet one-way delay: 91.308 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 11.05 Mbit/s
95th percentile per-packet one-way delay: 91.281 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 7.98 Mbit/s
95th percentile per-packet one-way delay: 91.451 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 91.018 ms
Loss rate: 3.53%
```

Run 2: Report of LEDBAT — Data Link

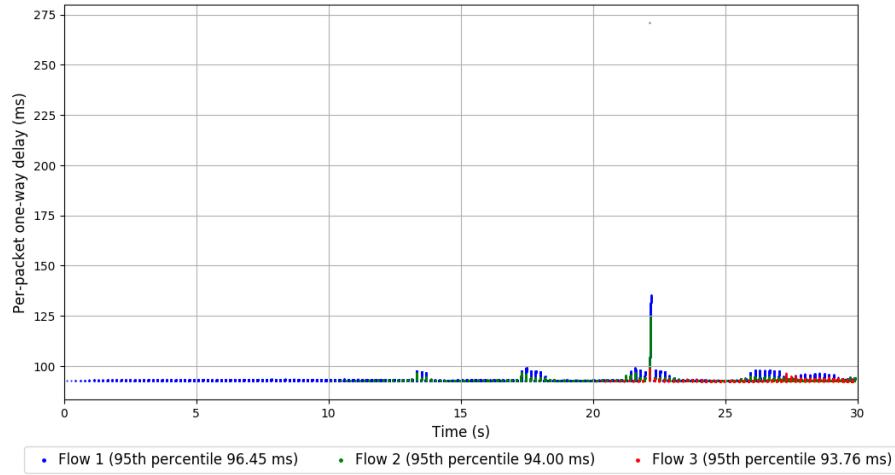
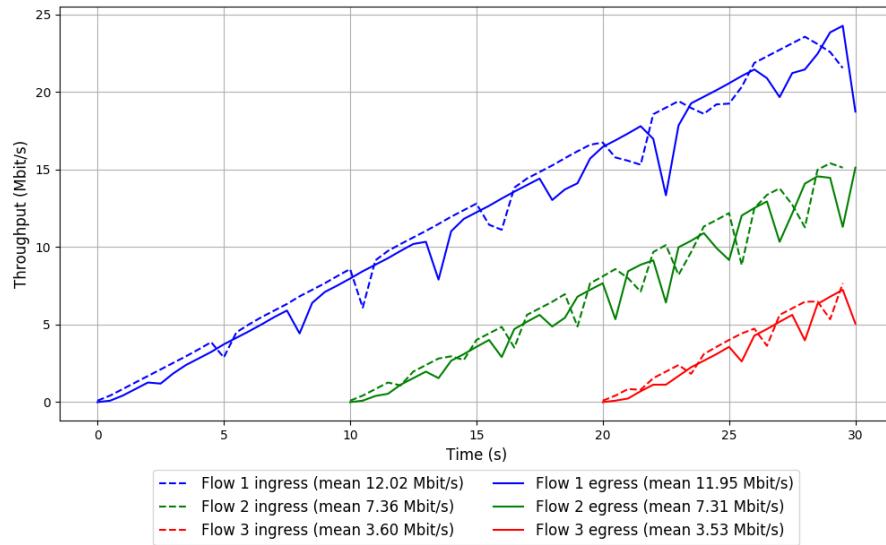


Run 3: Statistics of LEDBAT

```
Start at: 2018-11-15 11:54:30
End at: 2018-11-15 11:55:00
Local clock offset: -2.627 ms
Remote clock offset: -4.635 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.95 Mbit/s
95th percentile per-packet one-way delay: 95.235 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 96.455 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.31 Mbit/s
95th percentile per-packet one-way delay: 93.996 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 93.758 ms
Loss rate: 3.66%
```

### Run 3: Report of LEDBAT — Data Link

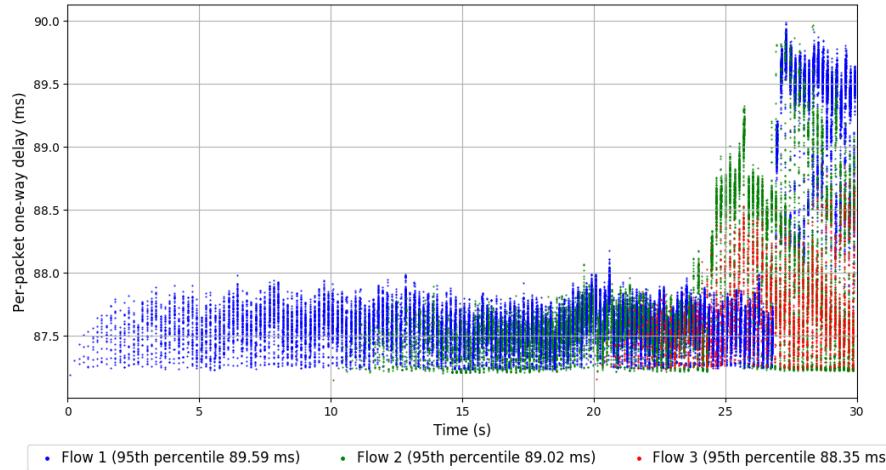
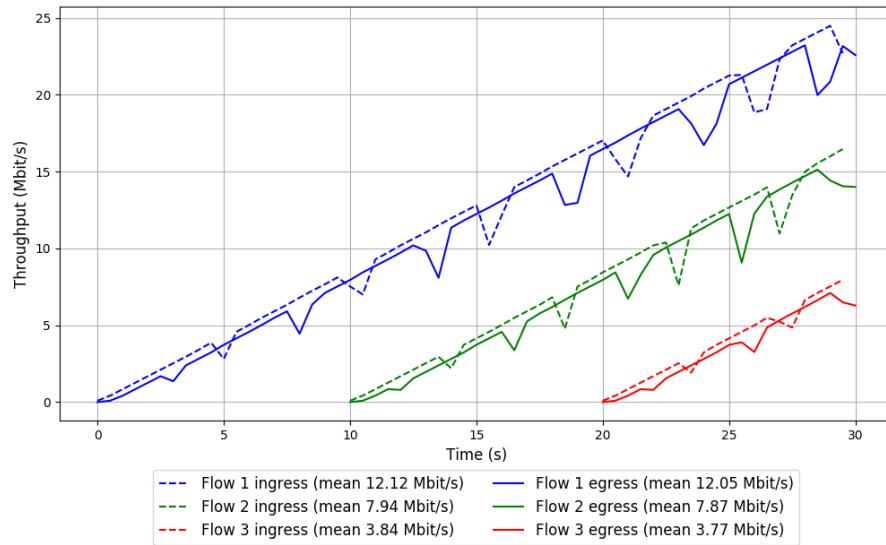


Run 4: Statistics of LEDBAT

```
Start at: 2018-11-15 12:17:36
End at: 2018-11-15 12:18:06
Local clock offset: -6.105 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.51 Mbit/s
95th percentile per-packet one-way delay: 89.529 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.05 Mbit/s
95th percentile per-packet one-way delay: 89.588 ms
Loss rate: 1.14%
-- Flow 2:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 89.016 ms
Loss rate: 1.75%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 88.351 ms
Loss rate: 3.53%
```

Run 4: Report of LEDBAT — Data Link

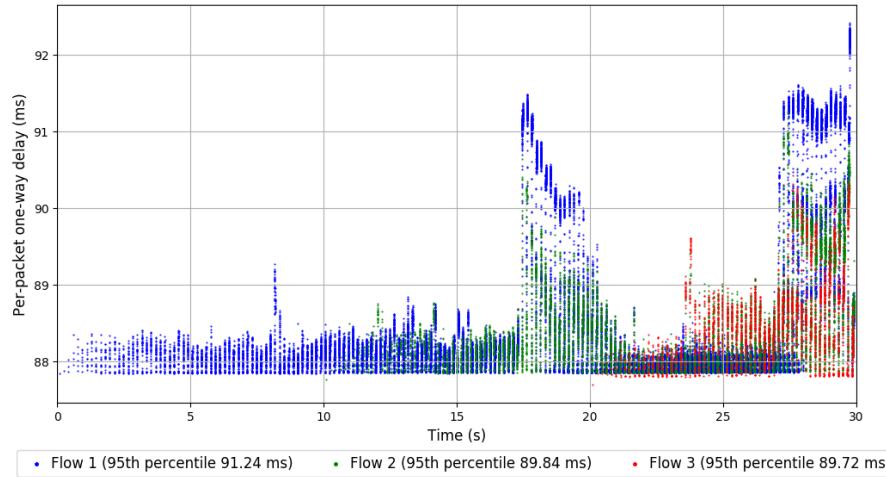
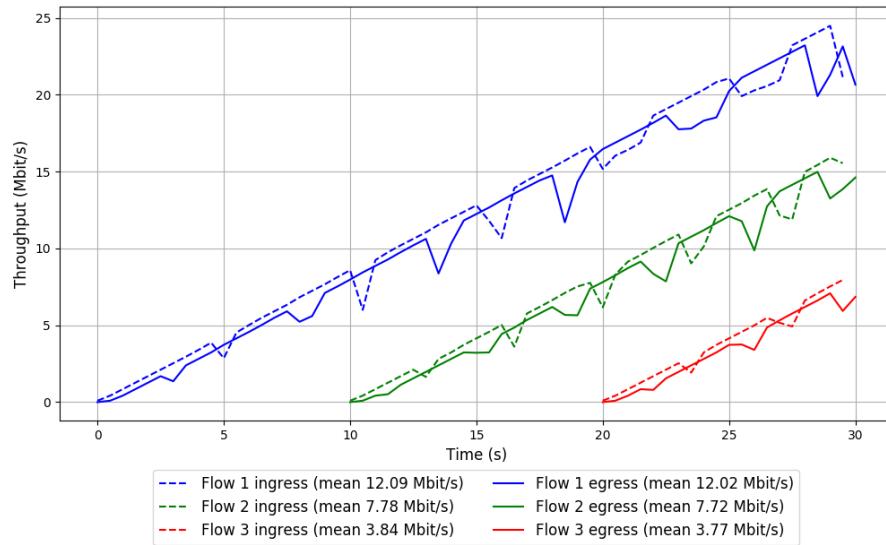


Run 5: Statistics of LEDBAT

```
Start at: 2018-11-15 12:40:43
End at: 2018-11-15 12:41:13
Local clock offset: -6.985 ms
Remote clock offset: 0.331 ms

# Below is generated by plot.py at 2018-11-15 13:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.38 Mbit/s
95th percentile per-packet one-way delay: 91.117 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 91.242 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 89.842 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 89.723 ms
Loss rate: 3.53%
```

Run 5: Report of LEDBAT — Data Link

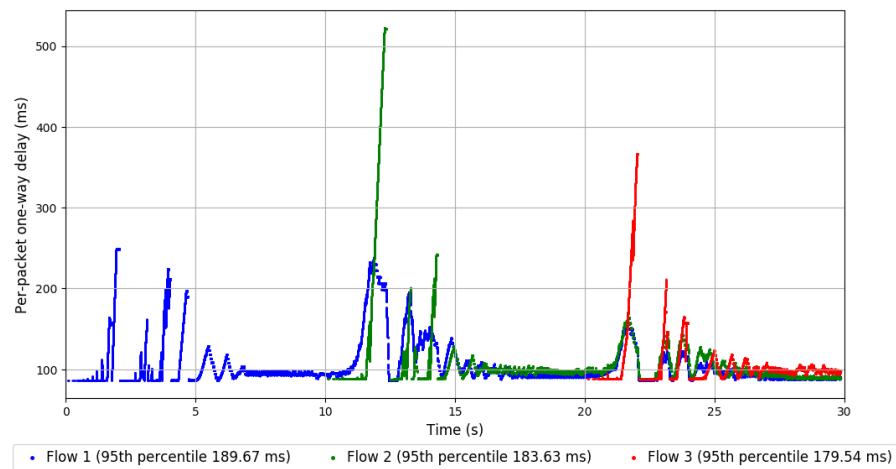
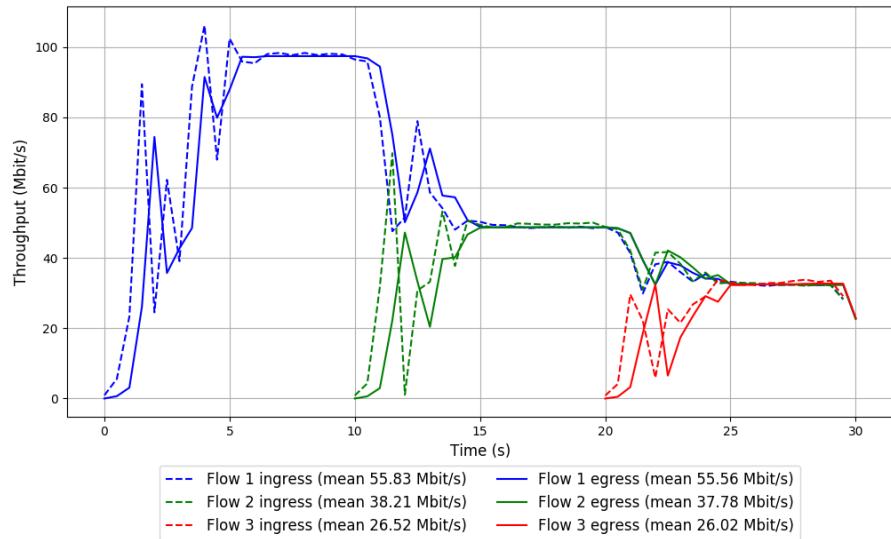


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-11-15 11:24:54
End at: 2018-11-15 11:25:24
Local clock offset: -1.692 ms
Remote clock offset: -0.577 ms

# Below is generated by plot.py at 2018-11-15 13:06:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.15 Mbit/s
95th percentile per-packet one-way delay: 188.910 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 55.56 Mbit/s
95th percentile per-packet one-way delay: 189.668 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 37.78 Mbit/s
95th percentile per-packet one-way delay: 183.629 ms
Loss rate: 1.98%
-- Flow 3:
Average throughput: 26.02 Mbit/s
95th percentile per-packet one-way delay: 179.544 ms
Loss rate: 3.58%
```

Run 1: Report of Indigo-Muses — Data Link

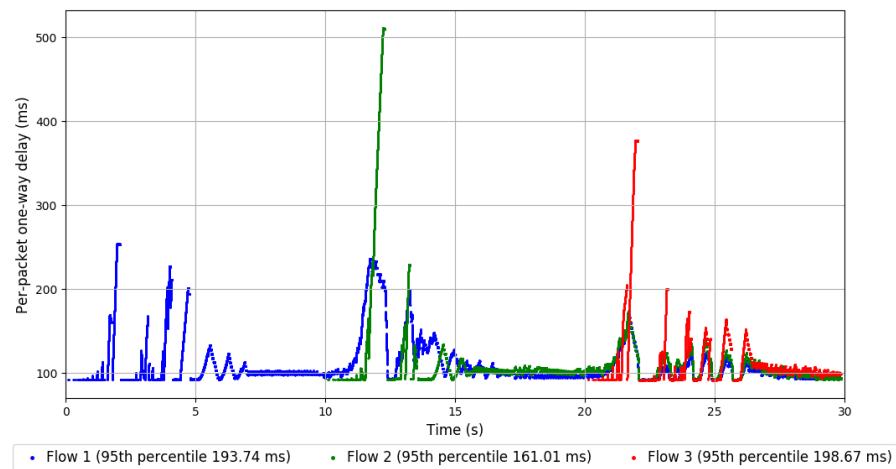
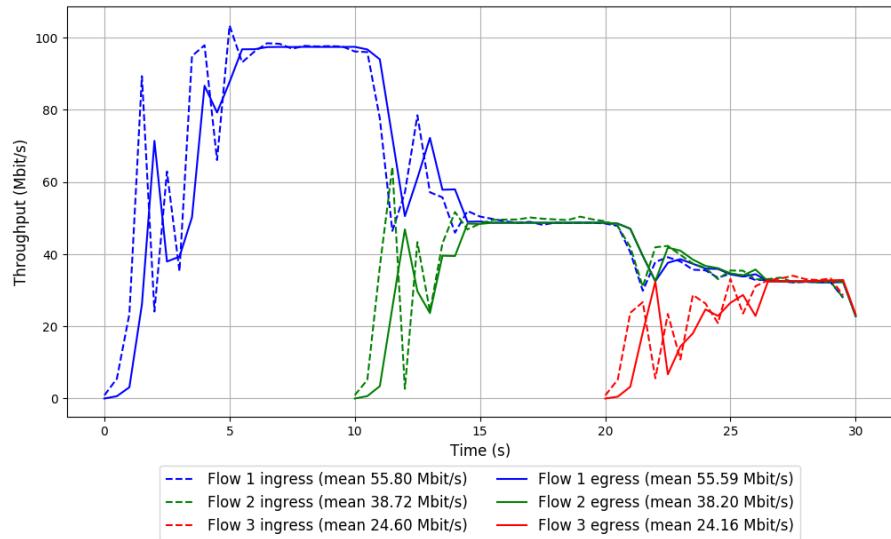


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-11-15 11:48:01
End at: 2018-11-15 11:48:31
Local clock offset: -3.339 ms
Remote clock offset: -4.747 ms

# Below is generated by plot.py at 2018-11-15 13:06:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.86 Mbit/s
95th percentile per-packet one-way delay: 190.217 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 55.59 Mbit/s
95th percentile per-packet one-way delay: 193.739 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 38.20 Mbit/s
95th percentile per-packet one-way delay: 161.006 ms
Loss rate: 2.20%
-- Flow 3:
Average throughput: 24.16 Mbit/s
95th percentile per-packet one-way delay: 198.669 ms
Loss rate: 3.49%
```

## Run 2: Report of Indigo-Muses — Data Link

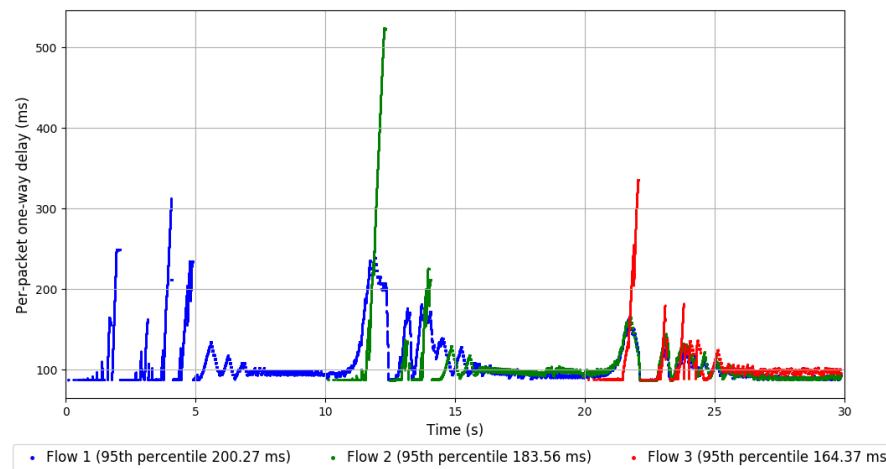
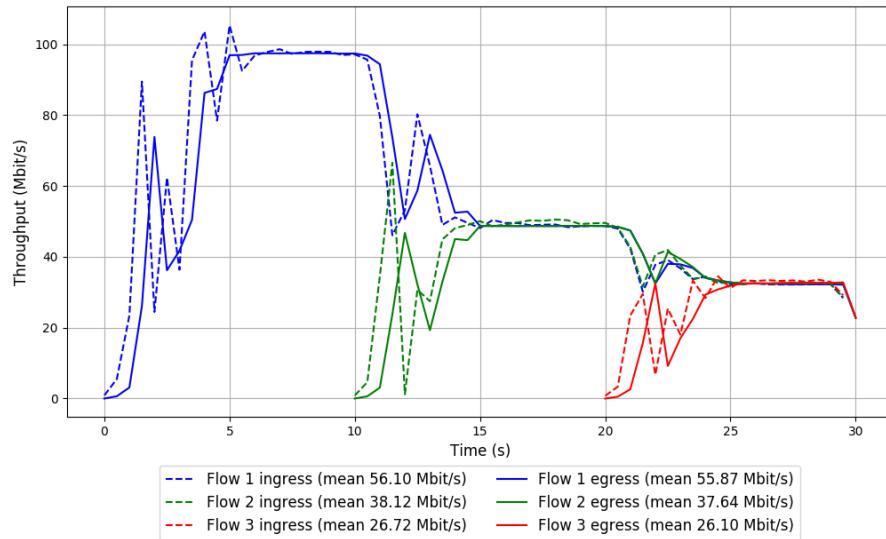


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-11-15 12:11:07
End at: 2018-11-15 12:11:37
Local clock offset: -4.94 ms
Remote clock offset: 1.216 ms

# Below is generated by plot.py at 2018-11-15 13:06:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.38 Mbit/s
95th percentile per-packet one-way delay: 197.736 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 55.87 Mbit/s
95th percentile per-packet one-way delay: 200.268 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 37.64 Mbit/s
95th percentile per-packet one-way delay: 183.555 ms
Loss rate: 2.11%
-- Flow 3:
Average throughput: 26.10 Mbit/s
95th percentile per-packet one-way delay: 164.374 ms
Loss rate: 4.03%
```

### Run 3: Report of Indigo-Muses — Data Link

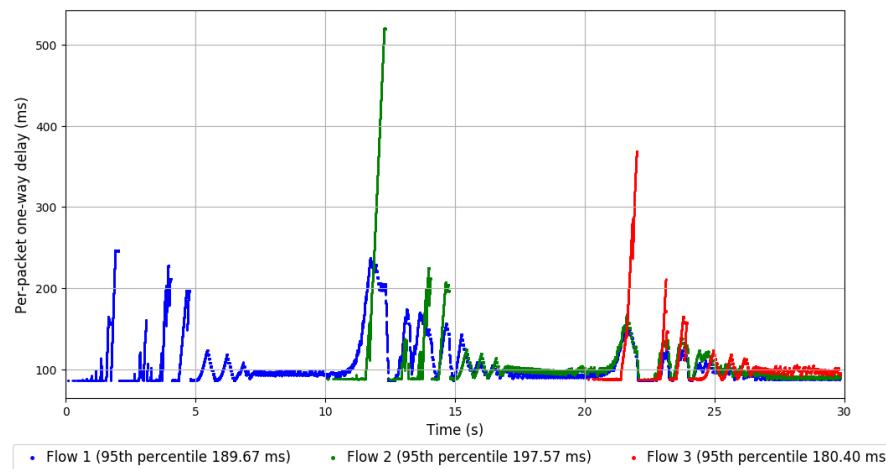
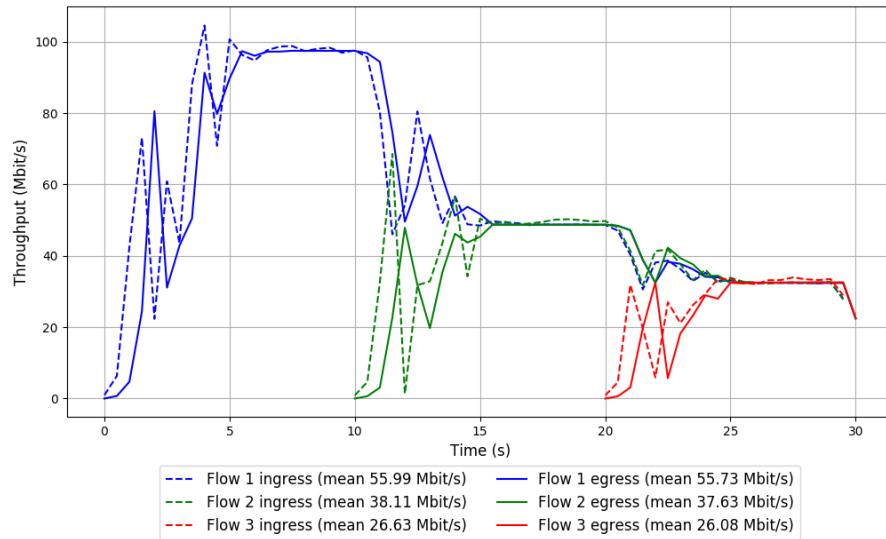


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-11-15 12:34:15
End at: 2018-11-15 12:34:45
Local clock offset: -7.299 ms
Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2018-11-15 13:06:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.23 Mbit/s
95th percentile per-packet one-way delay: 192.815 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 55.73 Mbit/s
95th percentile per-packet one-way delay: 189.666 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 37.63 Mbit/s
95th percentile per-packet one-way delay: 197.568 ms
Loss rate: 2.09%
-- Flow 3:
Average throughput: 26.08 Mbit/s
95th percentile per-packet one-way delay: 180.401 ms
Loss rate: 3.77%
```

## Run 4: Report of Indigo-Muses — Data Link

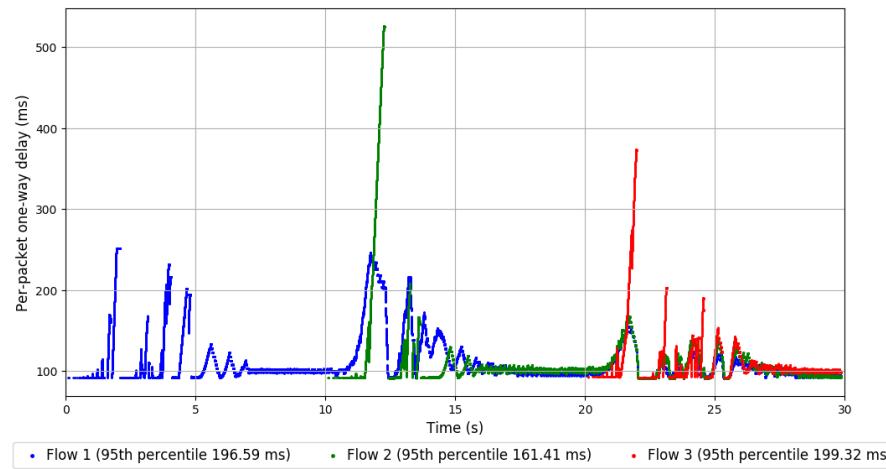
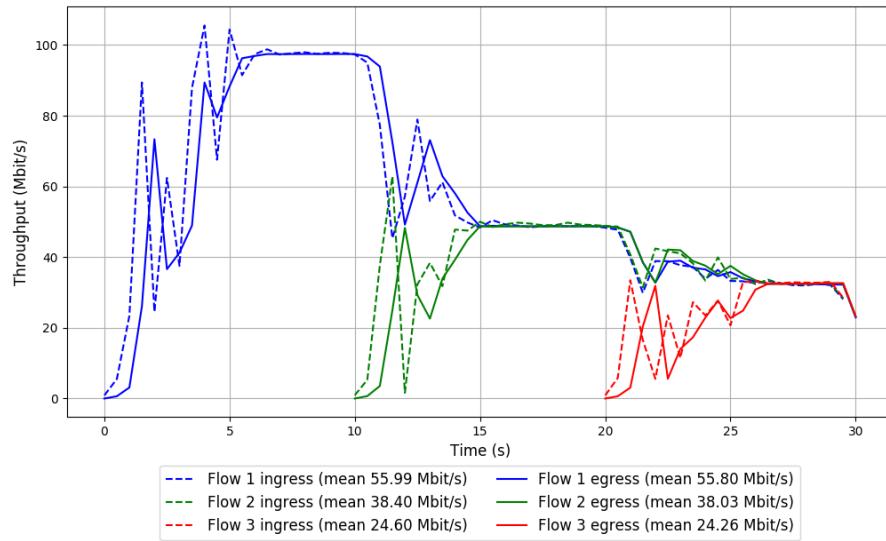


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-11-15 12:57:21
End at: 2018-11-15 12:57:51
Local clock offset: -7.891 ms
Remote clock offset: -4.518 ms

# Below is generated by plot.py at 2018-11-15 13:06:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.99 Mbit/s
95th percentile per-packet one-way delay: 194.156 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 55.80 Mbit/s
95th percentile per-packet one-way delay: 196.589 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 38.03 Mbit/s
95th percentile per-packet one-way delay: 161.408 ms
Loss rate: 1.81%
-- Flow 3:
Average throughput: 24.26 Mbit/s
95th percentile per-packet one-way delay: 199.316 ms
Loss rate: 3.06%
```

## Run 5: Report of Indigo-Muses — Data Link

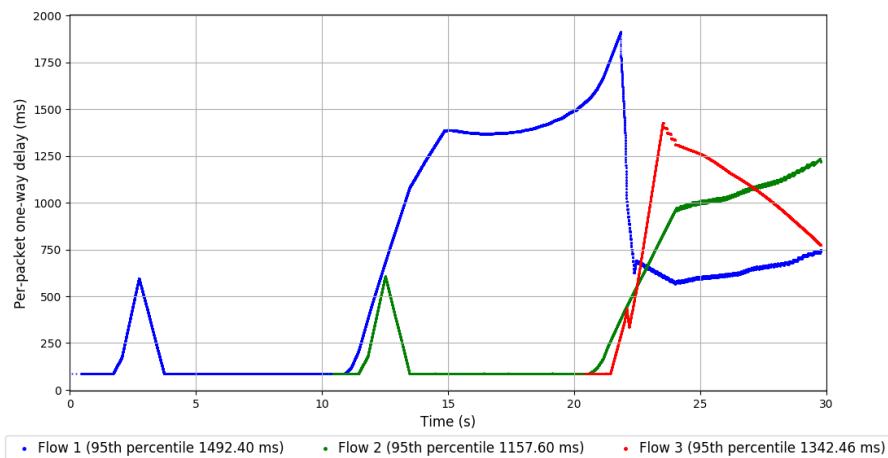
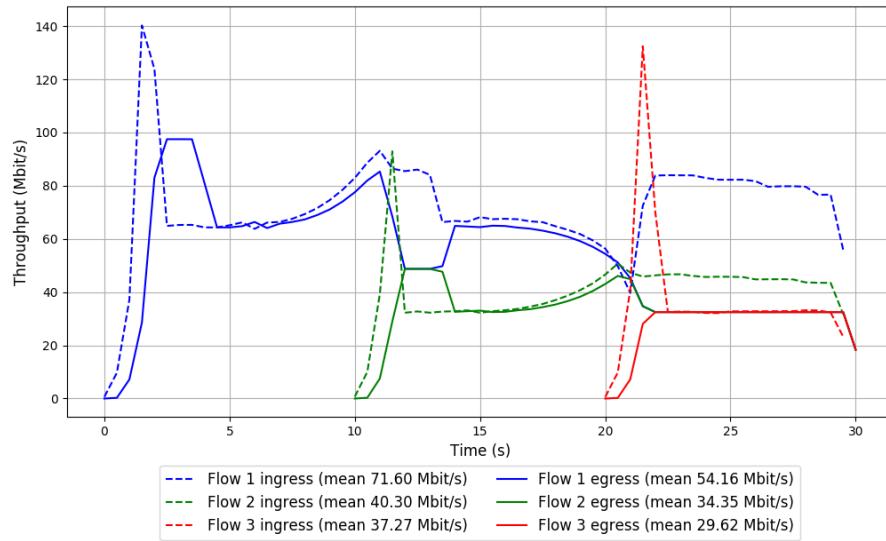


Run 1: Statistics of PCC-Allegro

```
Start at: 2018-11-15 11:26:11
End at: 2018-11-15 11:26:41
Local clock offset: -1.67 ms
Remote clock offset: -1.647 ms

# Below is generated by plot.py at 2018-11-15 13:07:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.60 Mbit/s
95th percentile per-packet one-way delay: 1433.349 ms
Loss rate: 22.22%
-- Flow 1:
Average throughput: 54.16 Mbit/s
95th percentile per-packet one-way delay: 1492.405 ms
Loss rate: 24.79%
-- Flow 2:
Average throughput: 34.35 Mbit/s
95th percentile per-packet one-way delay: 1157.598 ms
Loss rate: 15.51%
-- Flow 3:
Average throughput: 29.62 Mbit/s
95th percentile per-packet one-way delay: 1342.459 ms
Loss rate: 21.91%
```

## Run 1: Report of PCC-Allegro — Data Link

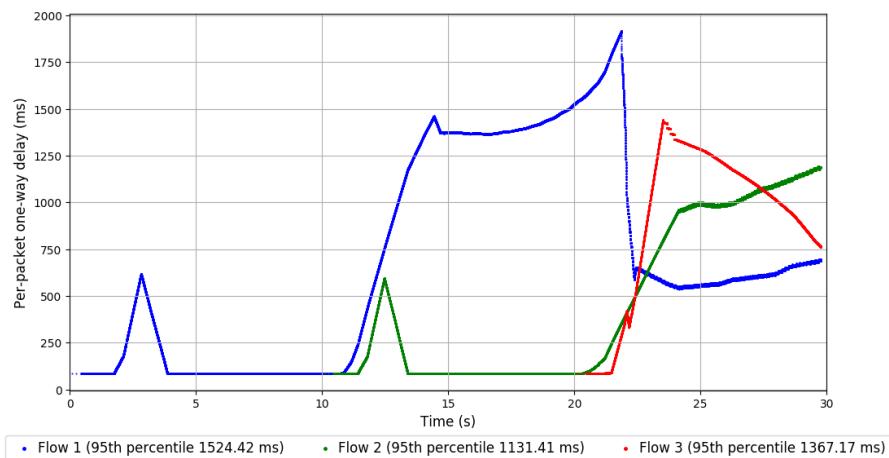
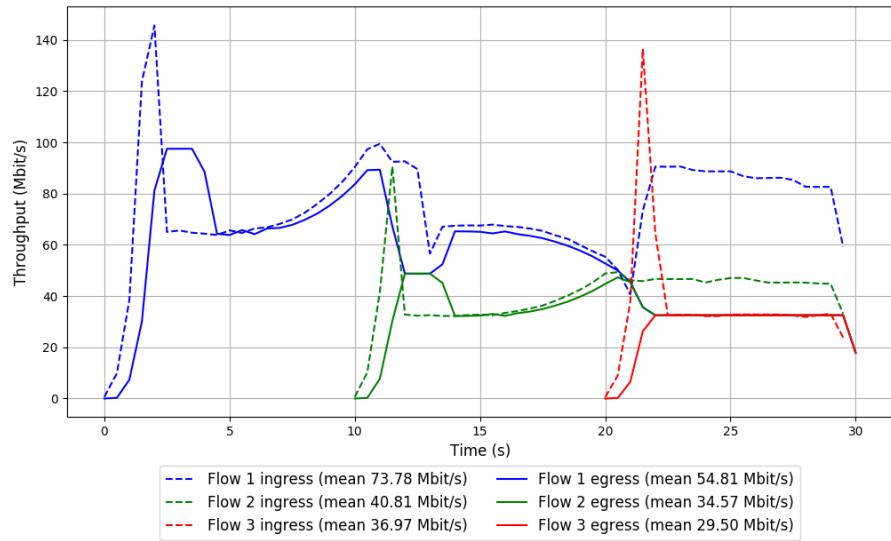


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-11-15 11:49:18
End at: 2018-11-15 11:49:48
Local clock offset: -3.358 ms
Remote clock offset: 0.112 ms

# Below is generated by plot.py at 2018-11-15 13:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.34 Mbit/s
95th percentile per-packet one-way delay: 1452.491 ms
Loss rate: 23.22%
-- Flow 1:
Average throughput: 54.81 Mbit/s
95th percentile per-packet one-way delay: 1524.417 ms
Loss rate: 26.13%
-- Flow 2:
Average throughput: 34.57 Mbit/s
95th percentile per-packet one-way delay: 1131.414 ms
Loss rate: 16.04%
-- Flow 3:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 1367.168 ms
Loss rate: 21.60%
```

## Run 2: Report of PCC-Allegro — Data Link

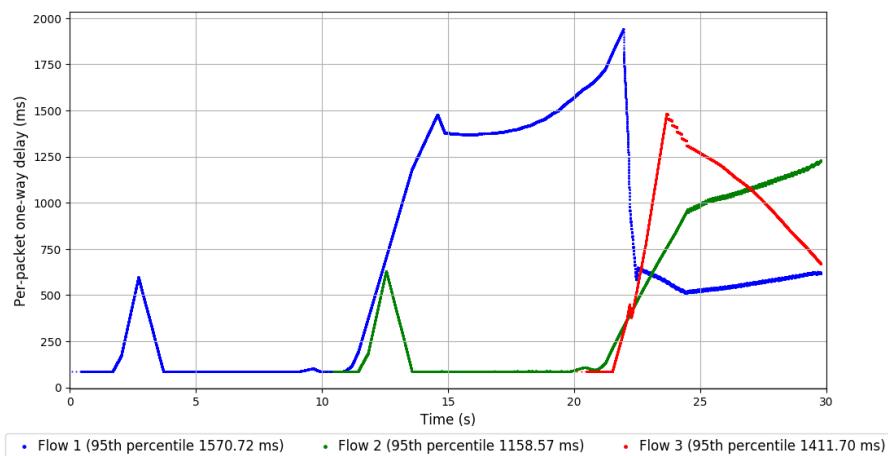
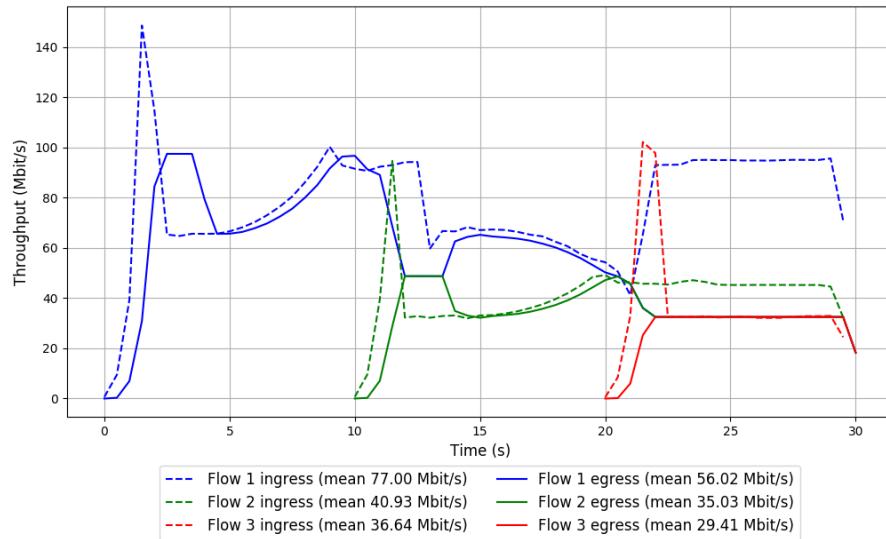


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-11-15 12:12:24
End at: 2018-11-15 12:12:54
Local clock offset: -5.794 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2018-11-15 13:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.83 Mbit/s
95th percentile per-packet one-way delay: 1478.490 ms
Loss rate: 24.05%
-- Flow 1:
Average throughput: 56.02 Mbit/s
95th percentile per-packet one-way delay: 1570.723 ms
Loss rate: 27.66%
-- Flow 2:
Average throughput: 35.03 Mbit/s
95th percentile per-packet one-way delay: 1158.566 ms
Loss rate: 15.16%
-- Flow 3:
Average throughput: 29.41 Mbit/s
95th percentile per-packet one-way delay: 1411.700 ms
Loss rate: 21.10%
```

### Run 3: Report of PCC-Allegro — Data Link

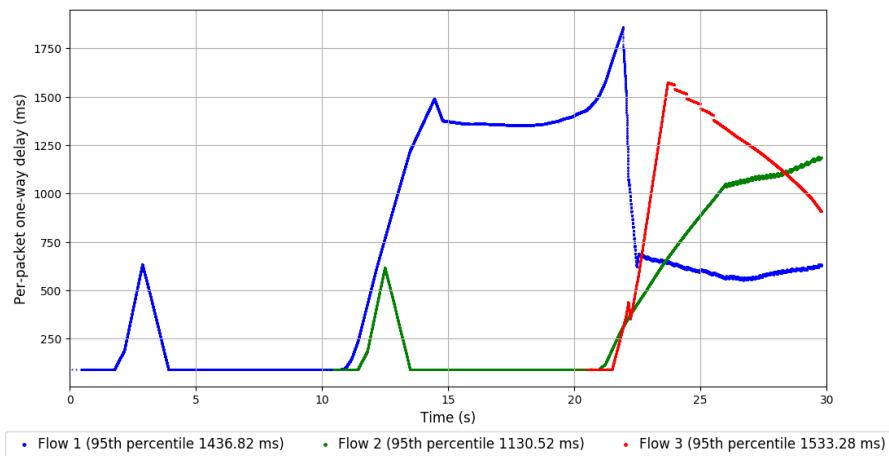
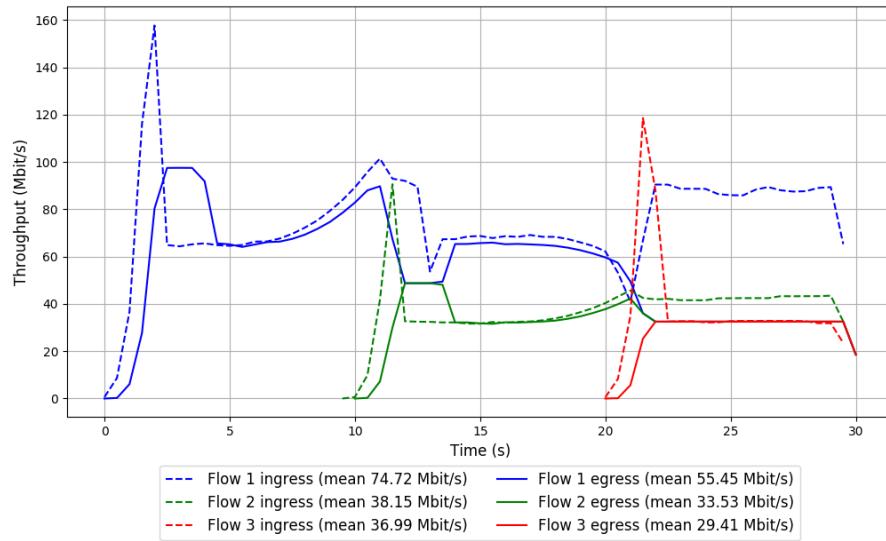


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-11-15 12:35:32
End at: 2018-11-15 12:36:02
Local clock offset: -7.387 ms
Remote clock offset: -4.74 ms

# Below is generated by plot.py at 2018-11-15 13:07:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.28 Mbit/s
95th percentile per-packet one-way delay: 1437.358 ms
Loss rate: 22.73%
-- Flow 1:
Average throughput: 55.45 Mbit/s
95th percentile per-packet one-way delay: 1436.824 ms
Loss rate: 26.22%
-- Flow 2:
Average throughput: 33.53 Mbit/s
95th percentile per-packet one-way delay: 1130.519 ms
Loss rate: 12.86%
-- Flow 3:
Average throughput: 29.41 Mbit/s
95th percentile per-packet one-way delay: 1533.282 ms
Loss rate: 21.89%
```

## Run 4: Report of PCC-Allegro — Data Link

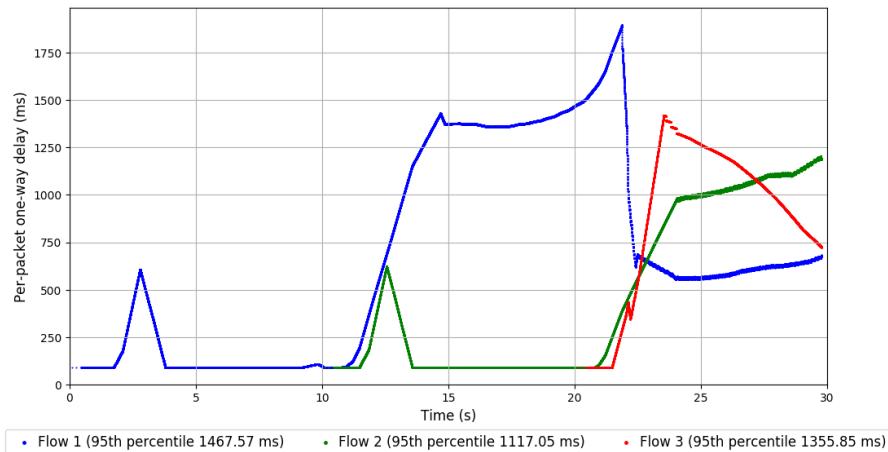
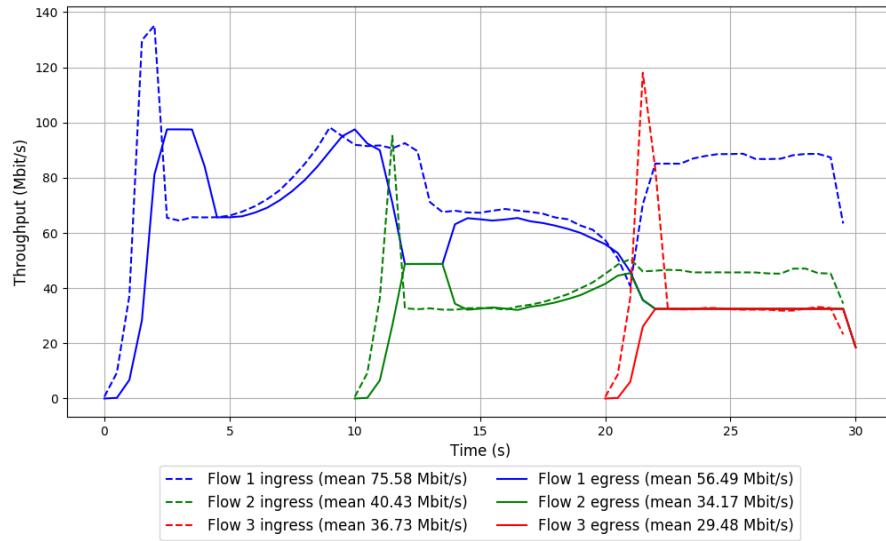


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-11-15 12:58:38
End at: 2018-11-15 12:59:08
Local clock offset: -6.954 ms
Remote clock offset: -4.394 ms

# Below is generated by plot.py at 2018-11-15 13:07:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.76 Mbit/s
95th percentile per-packet one-way delay: 1418.117 ms
Loss rate: 22.99%
-- Flow 1:
Average throughput: 56.49 Mbit/s
95th percentile per-packet one-way delay: 1467.567 ms
Loss rate: 25.70%
-- Flow 2:
Average throughput: 34.17 Mbit/s
95th percentile per-packet one-way delay: 1117.054 ms
Loss rate: 16.19%
-- Flow 3:
Average throughput: 29.48 Mbit/s
95th percentile per-packet one-way delay: 1355.848 ms
Loss rate: 21.15%
```

## Run 5: Report of PCC-Allegro — Data Link

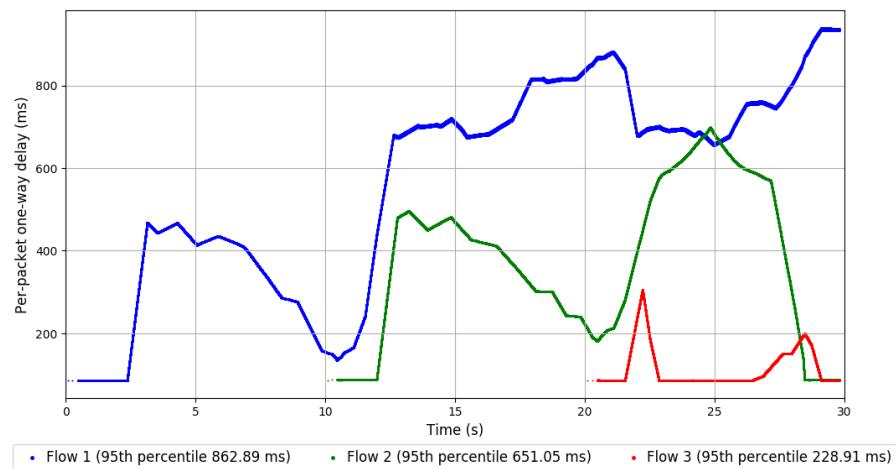
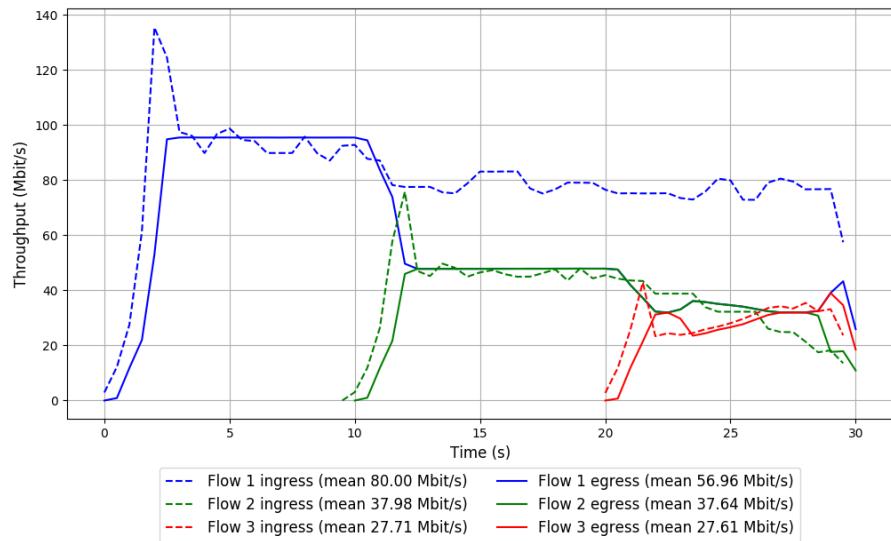


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-11-15 11:14:35
End at: 2018-11-15 11:15:05
Local clock offset: -1.825 ms
Remote clock offset: 0.303 ms

# Below is generated by plot.py at 2018-11-15 13:08:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.95 Mbit/s
95th percentile per-packet one-way delay: 818.849 ms
Loss rate: 20.97%
-- Flow 1:
Average throughput: 56.96 Mbit/s
95th percentile per-packet one-way delay: 862.888 ms
Loss rate: 29.20%
-- Flow 2:
Average throughput: 37.64 Mbit/s
95th percentile per-packet one-way delay: 651.047 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 27.61 Mbit/s
95th percentile per-packet one-way delay: 228.905 ms
Loss rate: 2.08%
```

Run 1: Report of PCC-Expr — Data Link

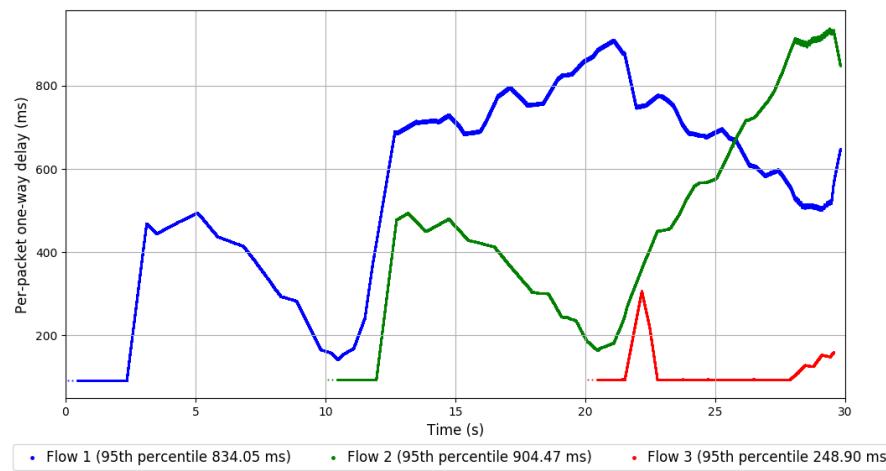
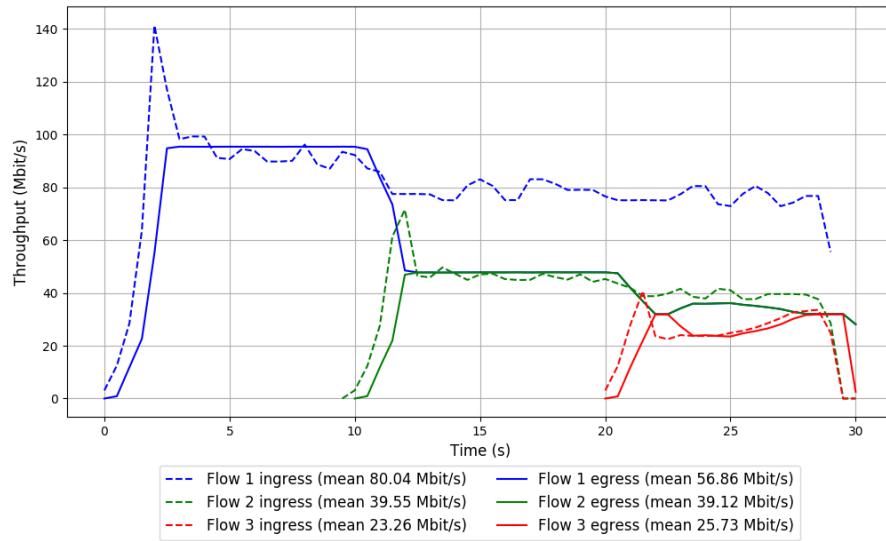


Run 2: Statistics of PCC-Expr

```
Start at: 2018-11-15 11:37:42
End at: 2018-11-15 11:38:12
Local clock offset: -2.312 ms
Remote clock offset: -4.816 ms

# Below is generated by plot.py at 2018-11-15 13:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.99 Mbit/s
95th percentile per-packet one-way delay: 852.030 ms
Loss rate: 20.57%
-- Flow 1:
Average throughput: 56.86 Mbit/s
95th percentile per-packet one-way delay: 834.047 ms
Loss rate: 28.16%
-- Flow 2:
Average throughput: 39.12 Mbit/s
95th percentile per-packet one-way delay: 904.474 ms
Loss rate: 4.69%
-- Flow 3:
Average throughput: 25.73 Mbit/s
95th percentile per-packet one-way delay: 248.903 ms
Loss rate: 0.08%
```

## Run 2: Report of PCC-Expr — Data Link

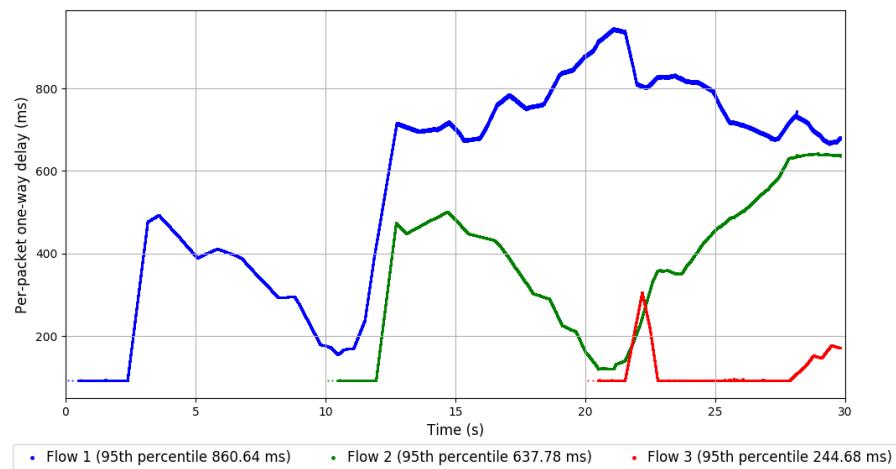
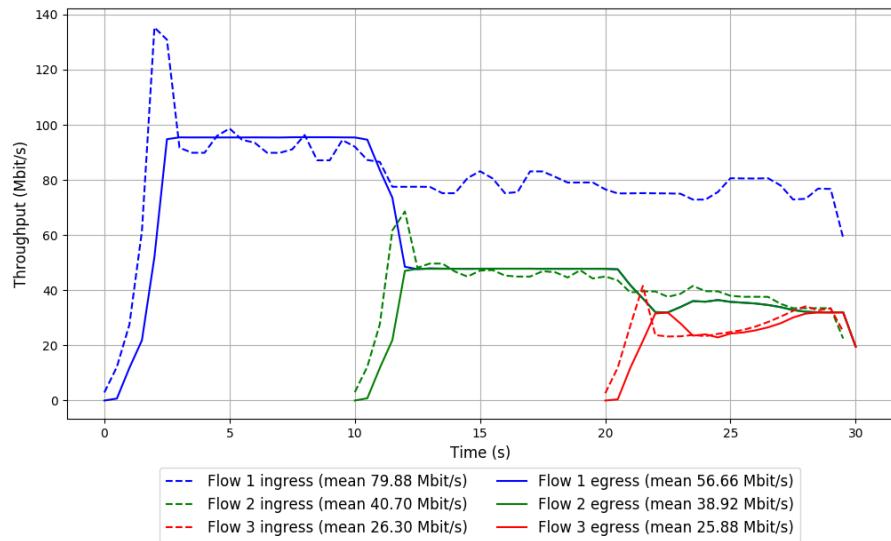


Run 3: Statistics of PCC-Expr

```
Start at: 2018-11-15 12:00:48
End at: 2018-11-15 12:01:18
Local clock offset: -3.64 ms
Remote clock offset: -4.581 ms

# Below is generated by plot.py at 2018-11-15 13:08:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.91 Mbit/s
95th percentile per-packet one-way delay: 828.457 ms
Loss rate: 21.83%
-- Flow 1:
Average throughput: 56.66 Mbit/s
95th percentile per-packet one-way delay: 860.637 ms
Loss rate: 29.48%
-- Flow 2:
Average throughput: 38.92 Mbit/s
95th percentile per-packet one-way delay: 637.784 ms
Loss rate: 5.20%
-- Flow 3:
Average throughput: 25.88 Mbit/s
95th percentile per-packet one-way delay: 244.675 ms
Loss rate: 3.32%
```

### Run 3: Report of PCC-Expr — Data Link

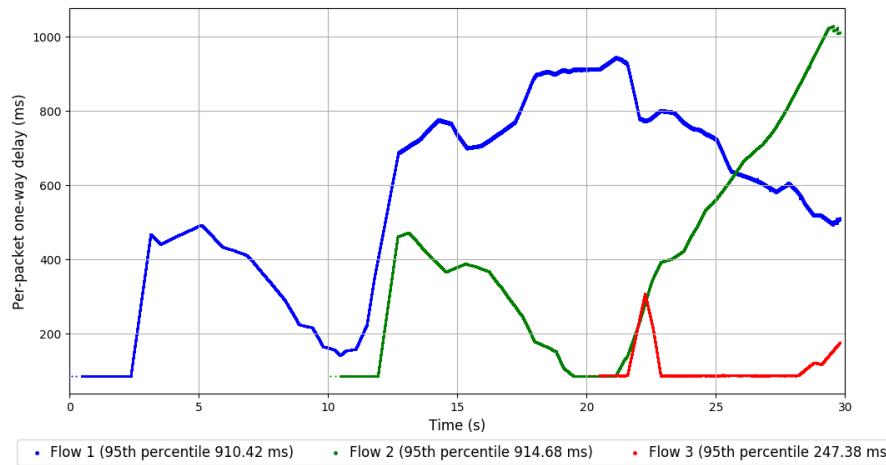
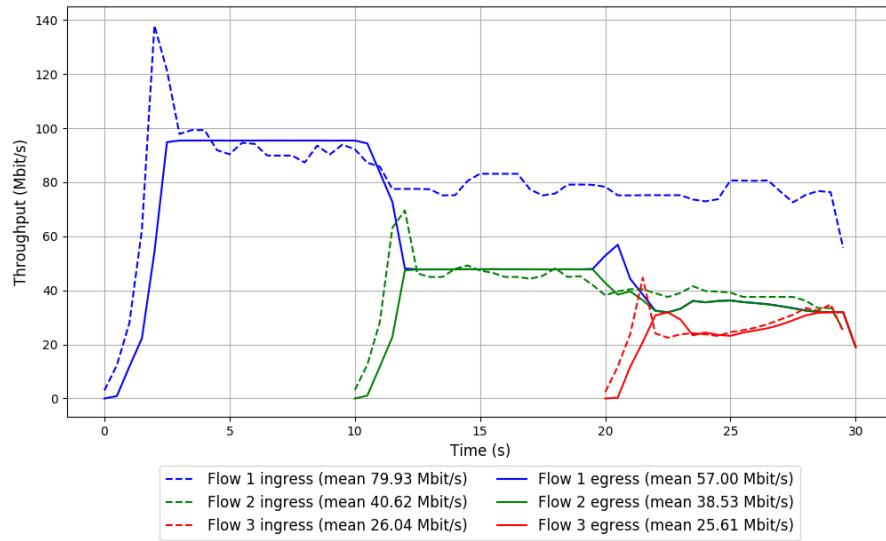


Run 4: Statistics of PCC-Expr

```
Start at: 2018-11-15 12:23:55
End at: 2018-11-15 12:24:25
Local clock offset: -6.387 ms
Remote clock offset: 0.142 ms

# Below is generated by plot.py at 2018-11-15 13:09:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.92 Mbit/s
95th percentile per-packet one-way delay: 909.522 ms
Loss rate: 21.76%
-- Flow 1:
Average throughput: 57.00 Mbit/s
95th percentile per-packet one-way delay: 910.417 ms
Loss rate: 29.09%
-- Flow 2:
Average throughput: 38.53 Mbit/s
95th percentile per-packet one-way delay: 914.684 ms
Loss rate: 5.94%
-- Flow 3:
Average throughput: 25.61 Mbit/s
95th percentile per-packet one-way delay: 247.376 ms
Loss rate: 3.36%
```

## Run 4: Report of PCC-Expr — Data Link

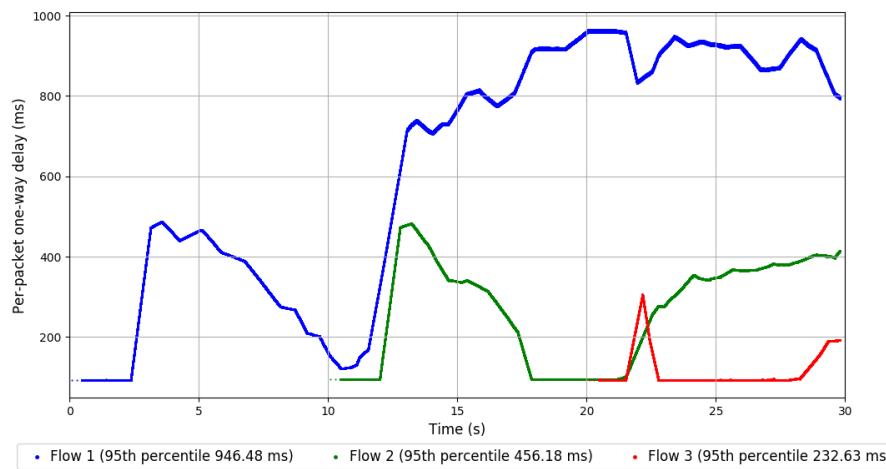
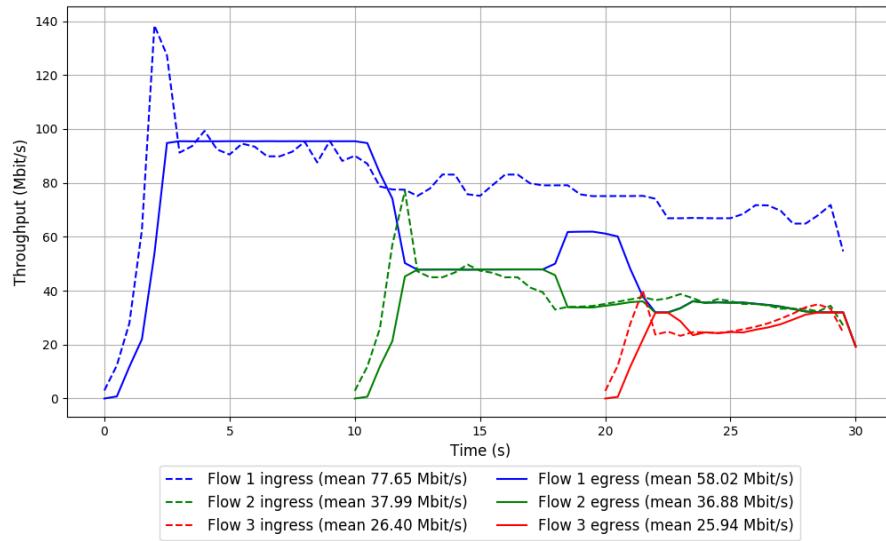


Run 5: Statistics of PCC-Expr

```
Start at: 2018-11-15 12:47:02
End at: 2018-11-15 12:47:32
Local clock offset: -7.318 ms
Remote clock offset: -4.477 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.95 Mbit/s
95th percentile per-packet one-way delay: 933.006 ms
Loss rate: 18.99%
-- Flow 1:
Average throughput: 58.02 Mbit/s
95th percentile per-packet one-way delay: 946.479 ms
Loss rate: 25.69%
-- Flow 2:
Average throughput: 36.88 Mbit/s
95th percentile per-packet one-way delay: 456.176 ms
Loss rate: 3.76%
-- Flow 3:
Average throughput: 25.94 Mbit/s
95th percentile per-packet one-way delay: 232.627 ms
Loss rate: 3.41%
```

Run 5: Report of PCC-Expr — Data Link

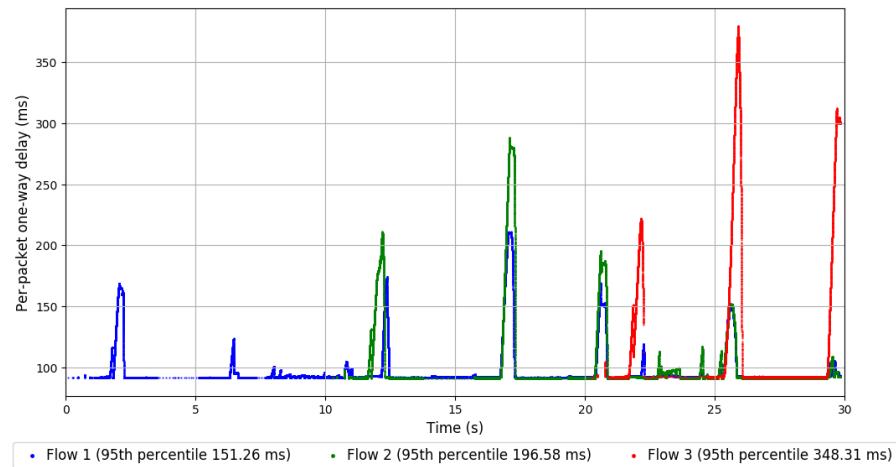
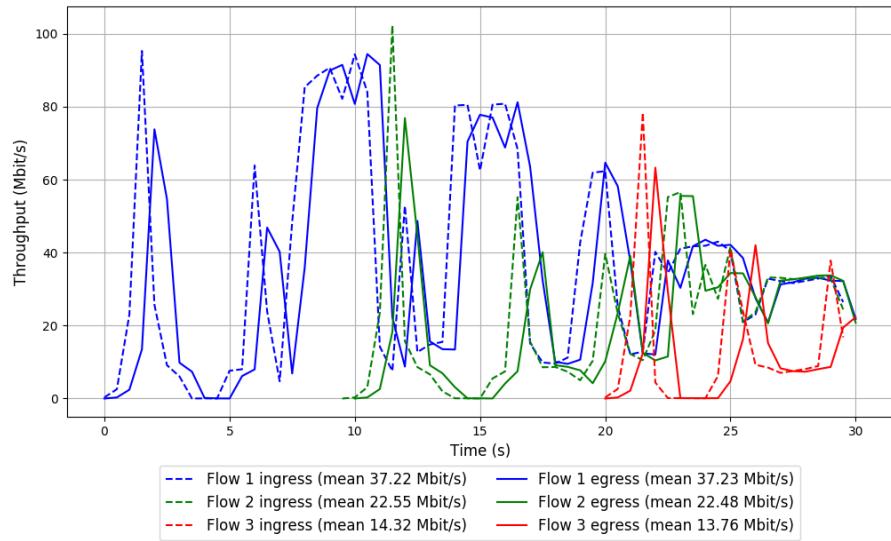


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2018-11-15 11:21:04
End at: 2018-11-15 11:21:34
Local clock offset: -1.014 ms
Remote clock offset: -4.664 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.65 Mbit/s
95th percentile per-packet one-way delay: 185.563 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 37.23 Mbit/s
95th percentile per-packet one-way delay: 151.261 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 22.48 Mbit/s
95th percentile per-packet one-way delay: 196.577 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 13.76 Mbit/s
95th percentile per-packet one-way delay: 348.309 ms
Loss rate: 5.52%
```

Run 1: Report of QUIC Cubic — Data Link

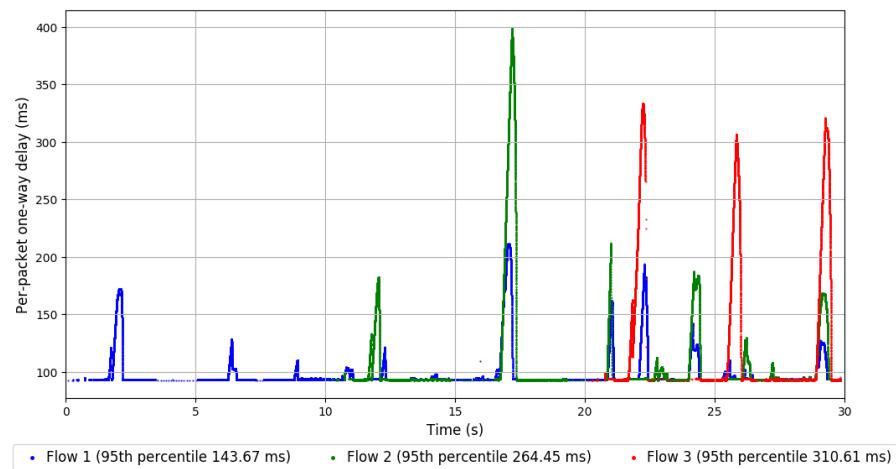
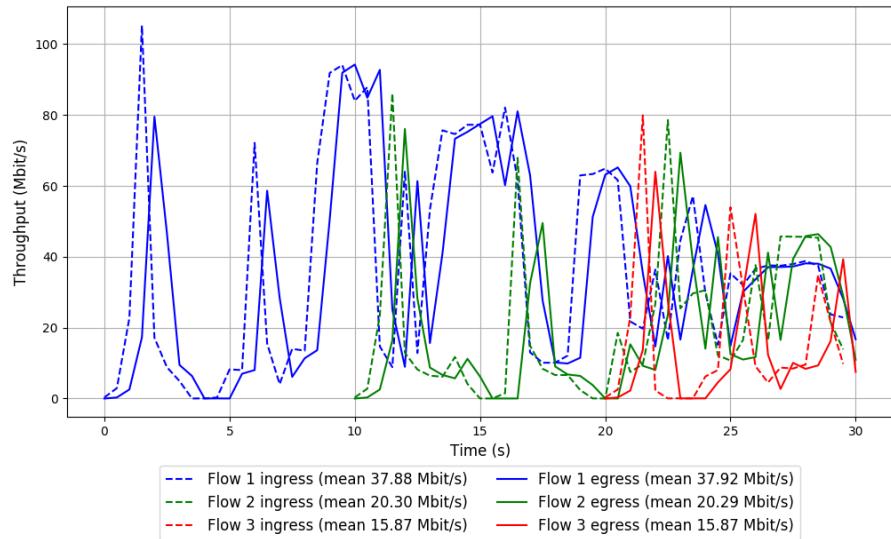


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-11-15 11:44:11
End at: 2018-11-15 11:44:41
Local clock offset: -2.514 ms
Remote clock offset: -4.801 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.57 Mbit/s
95th percentile per-packet one-way delay: 194.671 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 37.92 Mbit/s
95th percentile per-packet one-way delay: 143.670 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 20.29 Mbit/s
95th percentile per-packet one-way delay: 264.454 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 15.87 Mbit/s
95th percentile per-packet one-way delay: 310.612 ms
Loss rate: 1.71%
```

## Run 2: Report of QUIC Cubic — Data Link

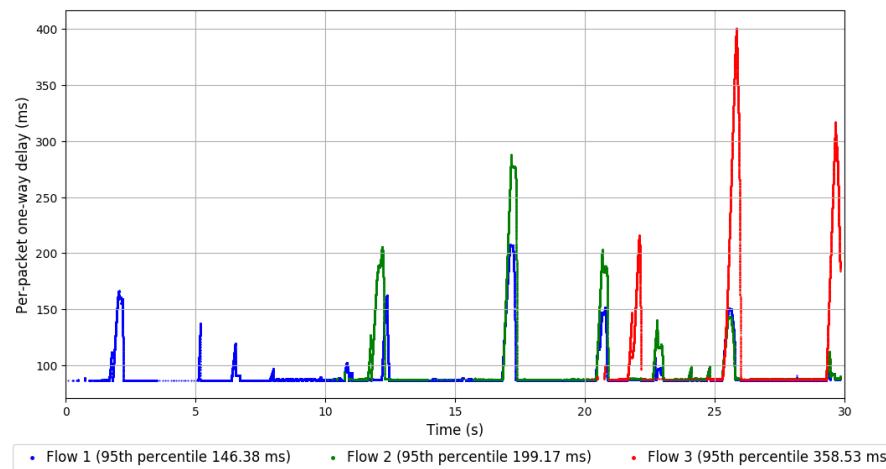
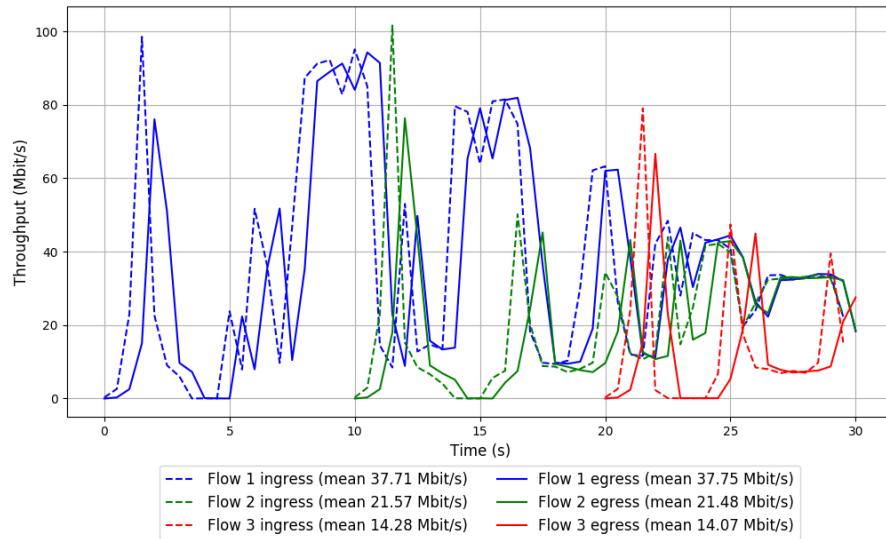


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-11-15 12:07:17
End at: 2018-11-15 12:07:47
Local clock offset: -5.372 ms
Remote clock offset: 0.171 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.59 Mbit/s
95th percentile per-packet one-way delay: 188.504 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 37.75 Mbit/s
95th percentile per-packet one-way delay: 146.379 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 21.48 Mbit/s
95th percentile per-packet one-way delay: 199.172 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 14.07 Mbit/s
95th percentile per-packet one-way delay: 358.534 ms
Loss rate: 3.15%
```

Run 3: Report of QUIC Cubic — Data Link

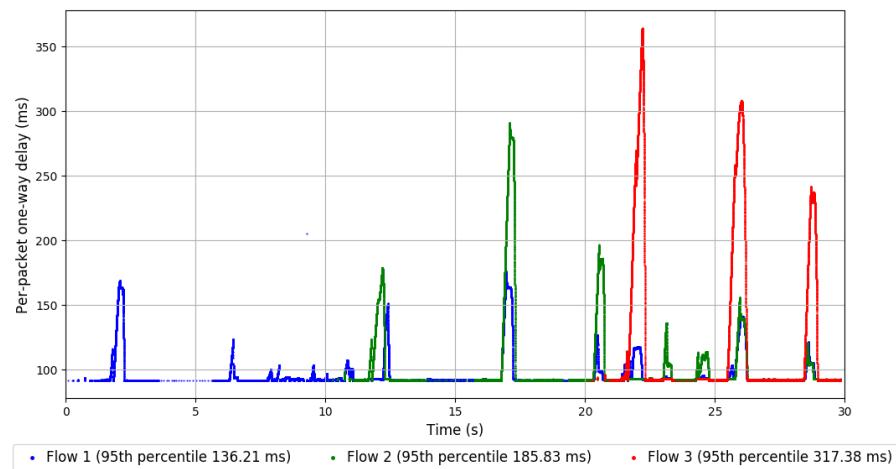
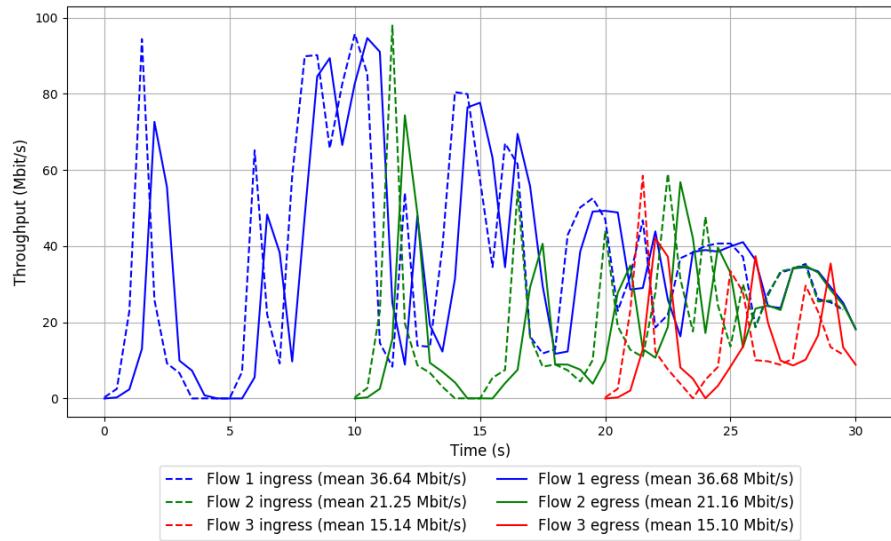


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-11-15 12:30:25
End at: 2018-11-15 12:30:55
Local clock offset: -6.94 ms
Remote clock offset: -4.592 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.66 Mbit/s
95th percentile per-packet one-way delay: 179.260 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 36.68 Mbit/s
95th percentile per-packet one-way delay: 136.213 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 21.16 Mbit/s
95th percentile per-packet one-way delay: 185.829 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 15.10 Mbit/s
95th percentile per-packet one-way delay: 317.383 ms
Loss rate: 1.96%
```

## Run 4: Report of QUIC Cubic — Data Link

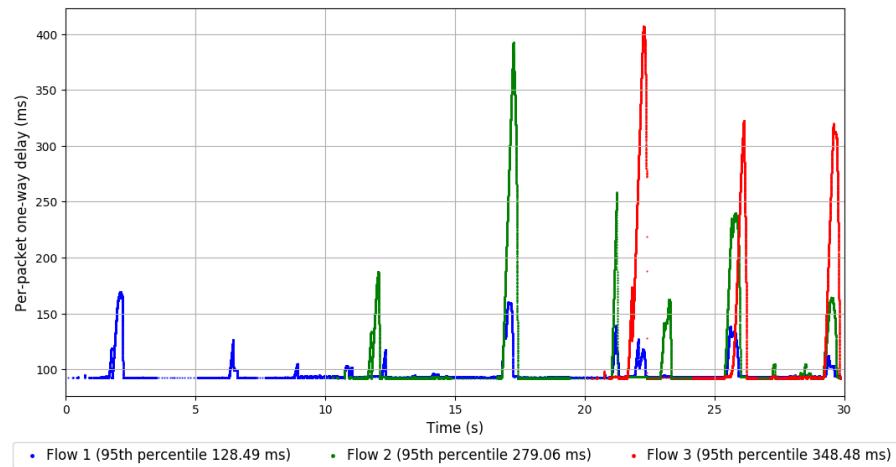
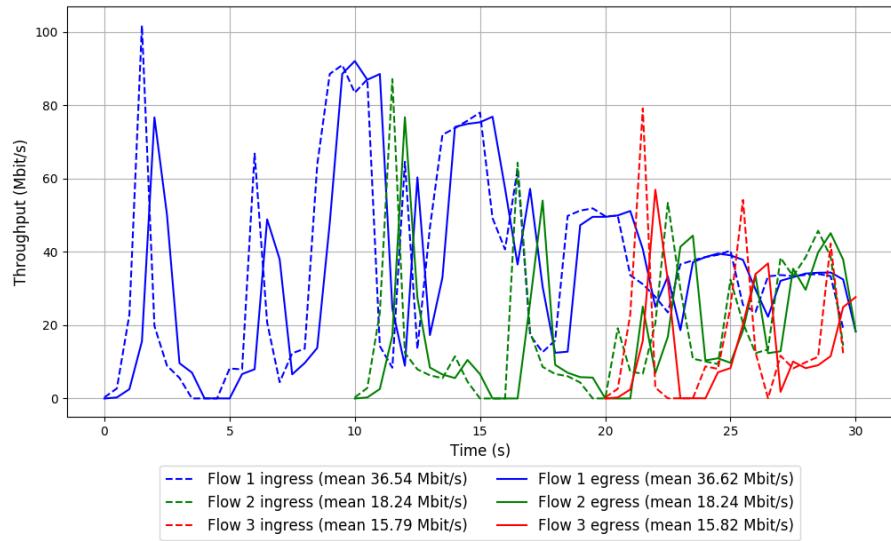


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-11-15 12:53:31
End at: 2018-11-15 12:54:01
Local clock offset: -7.604 ms
Remote clock offset: -4.589 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.89 Mbit/s
95th percentile per-packet one-way delay: 221.499 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 36.62 Mbit/s
95th percentile per-packet one-way delay: 128.486 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 18.24 Mbit/s
95th percentile per-packet one-way delay: 279.064 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 15.82 Mbit/s
95th percentile per-packet one-way delay: 348.482 ms
Loss rate: 1.51%
```

Run 5: Report of QUIC Cubic — Data Link

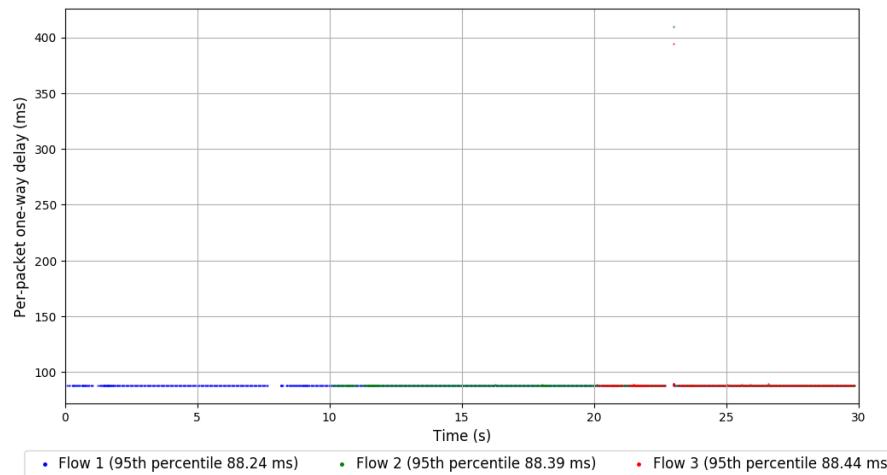
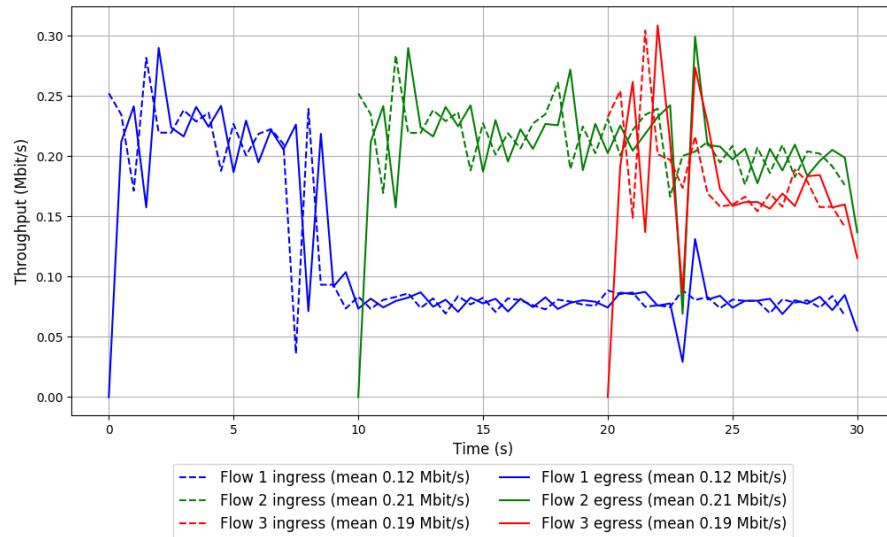


```
Run 1: Statistics of SCReAM
```

```
Start at: 2018-11-15 11:10:44
End at: 2018-11-15 11:11:14
Local clock offset: -1.772 ms
Remote clock offset: -2.116 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 88.389 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 88.239 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 88.388 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 88.435 ms
Loss rate: 1.37%
```

Run 1: Report of SCReAM — Data Link

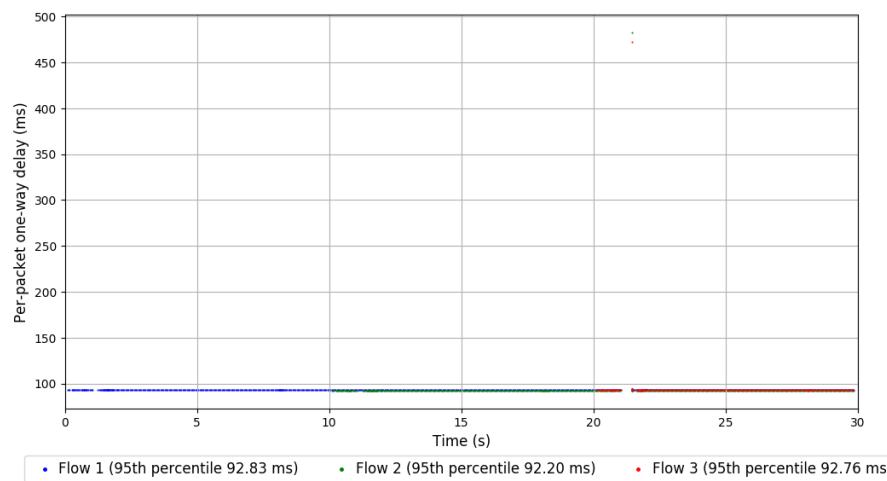
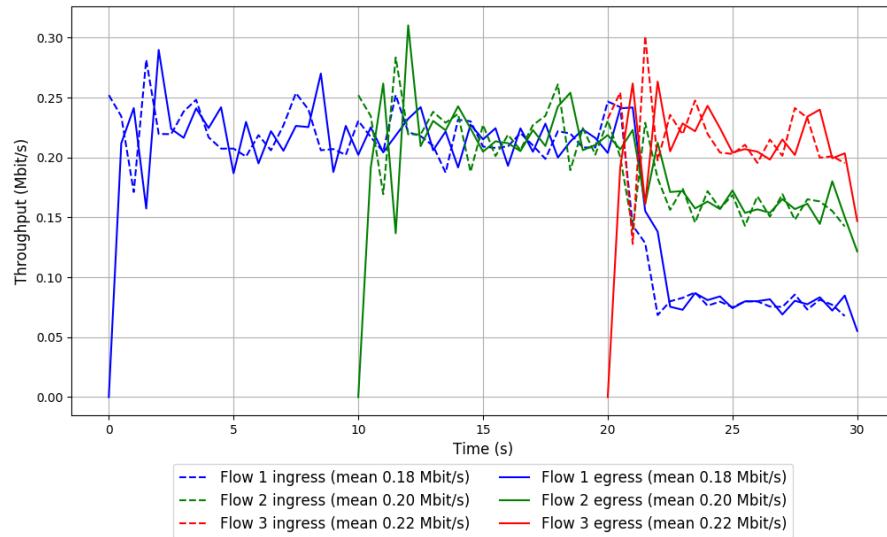


Run 2: Statistics of SCReAM

```
Start at: 2018-11-15 11:33:49
End at: 2018-11-15 11:34:19
Local clock offset: -1.947 ms
Remote clock offset: -4.824 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 92.823 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 92.834 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 92.197 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.758 ms
Loss rate: 1.83%
```

Run 2: Report of SCReAM — Data Link

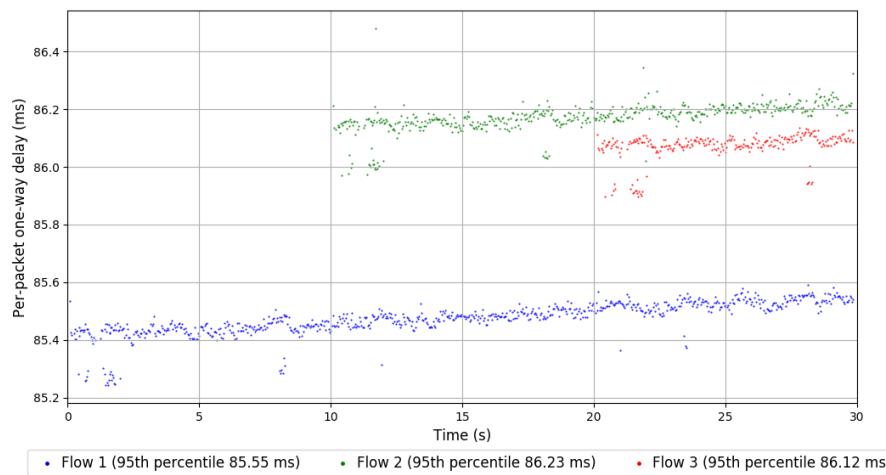
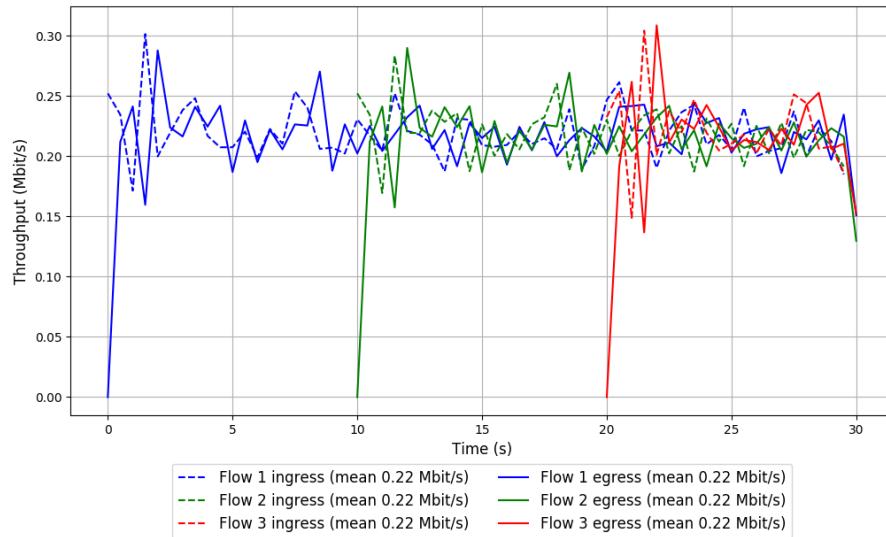


Run 3: Statistics of SCReAM

```
Start at: 2018-11-15 11:56:57
End at: 2018-11-15 11:57:27
Local clock offset: -3.444 ms
Remote clock offset: 1.415 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.209 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.550 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.228 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.116 ms
Loss rate: 1.50%
```

### Run 3: Report of SCReAM — Data Link

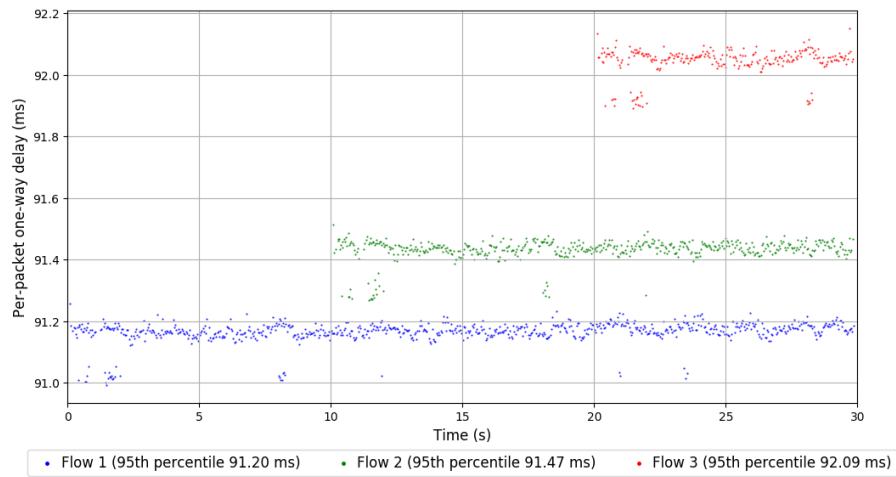
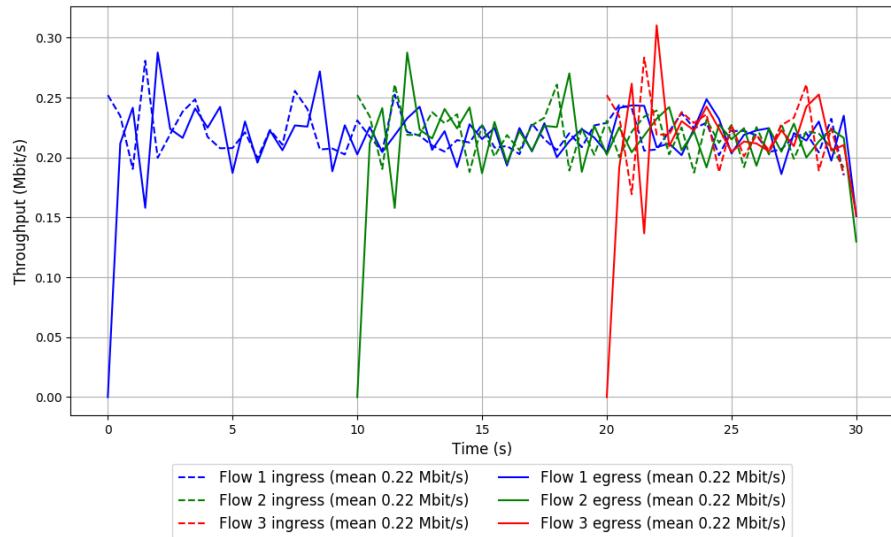


Run 4: Statistics of SCReAM

```
Start at: 2018-11-15 12:20:03
End at: 2018-11-15 12:20:33
Local clock offset: -6.216 ms
Remote clock offset: -4.819 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 92.064 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.202 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.466 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.089 ms
Loss rate: 1.85%
```

## Run 4: Report of SCReAM — Data Link

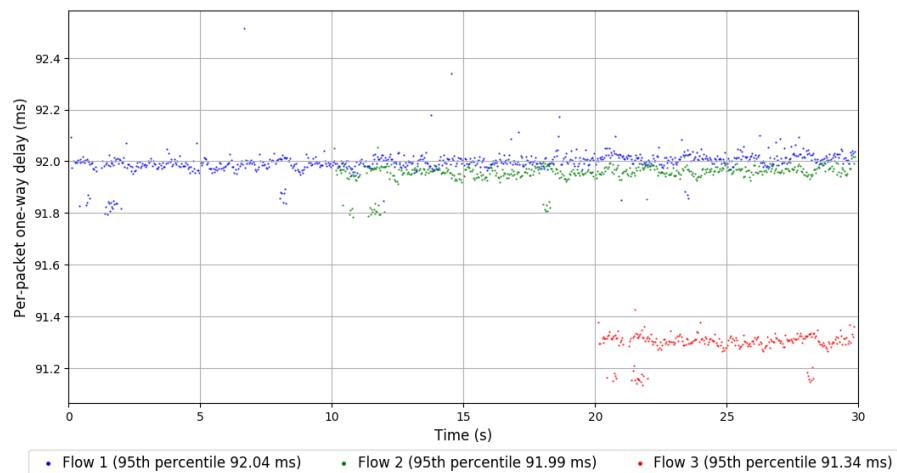
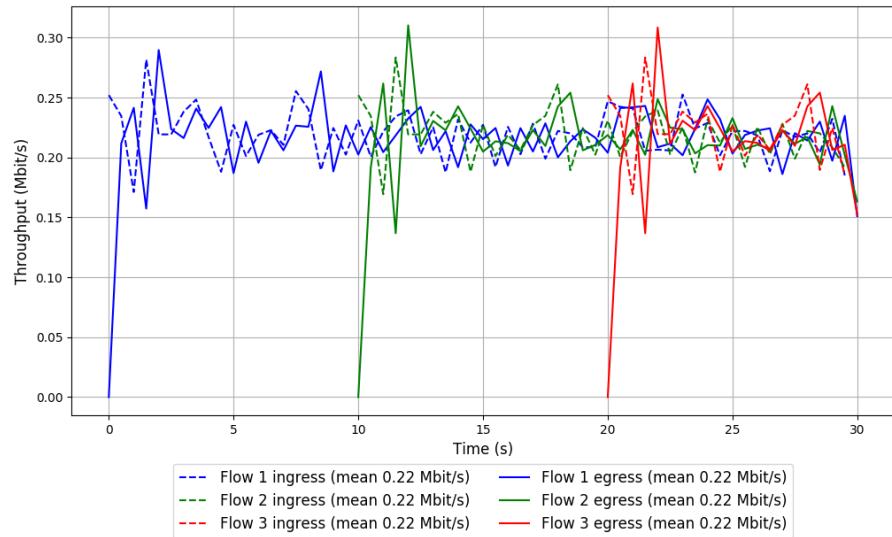


Run 5: Statistics of SCReAM

```
Start at: 2018-11-15 12:43:10
End at: 2018-11-15 12:43:40
Local clock offset: -7.872 ms
Remote clock offset: -4.57 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 92.028 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.041 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.991 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.339 ms
Loss rate: 1.85%
```

## Run 5: Report of SCReAM — Data Link

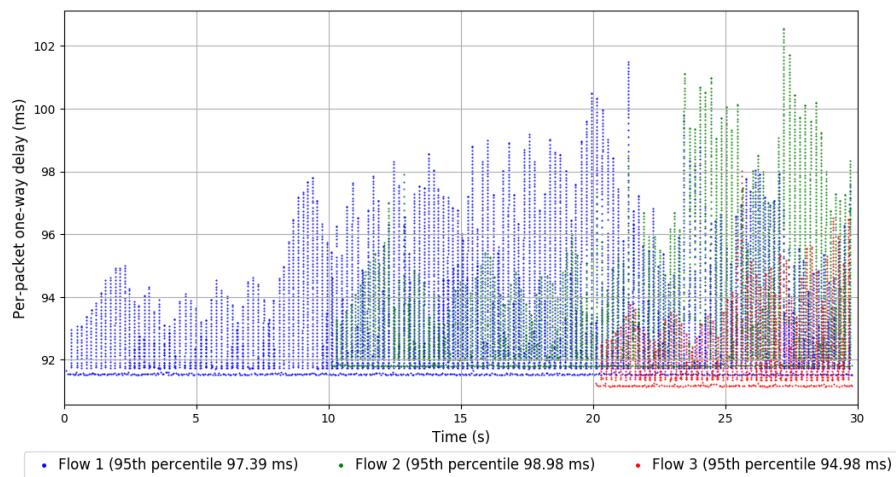
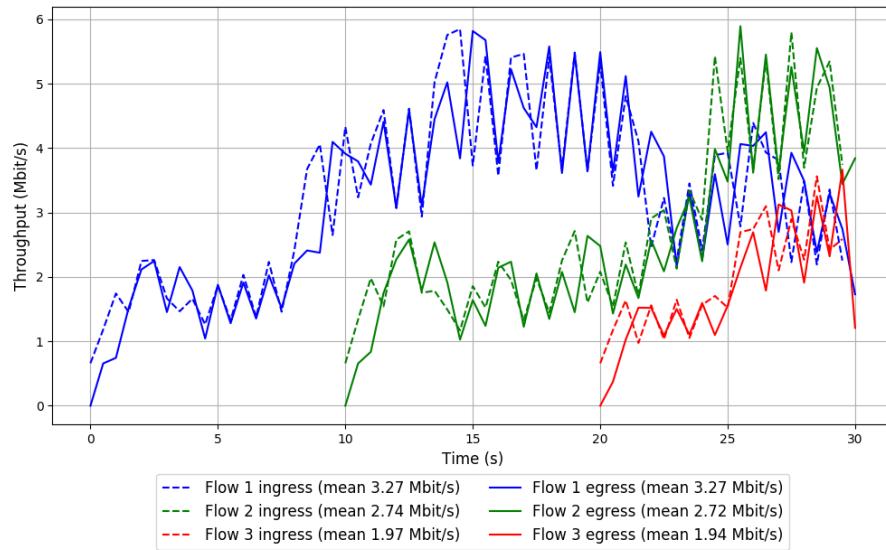


Run 1: Statistics of Sprout

```
Start at: 2018-11-15 11:19:51
End at: 2018-11-15 11:20:21
Local clock offset: -1.806 ms
Remote clock offset: -5.765 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.70 Mbit/s
95th percentile per-packet one-way delay: 97.847 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 97.394 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 98.977 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 94.985 ms
Loss rate: 3.56%
```

## Run 1: Report of Sprout — Data Link

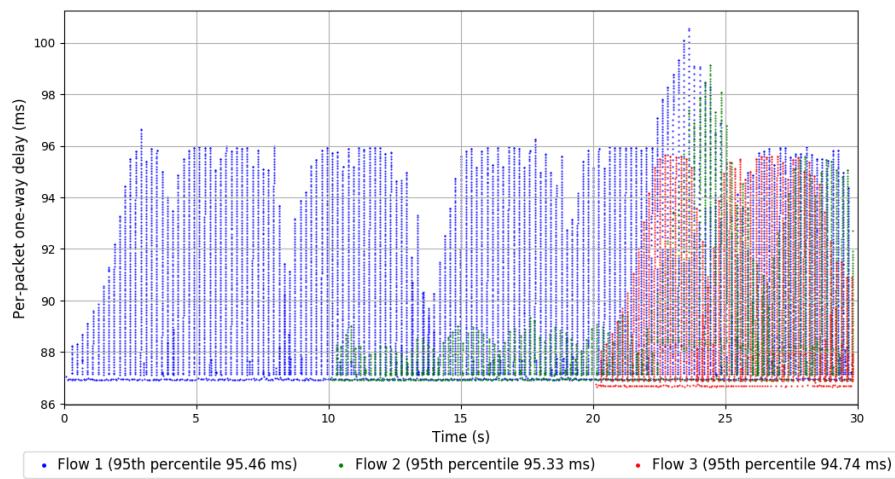
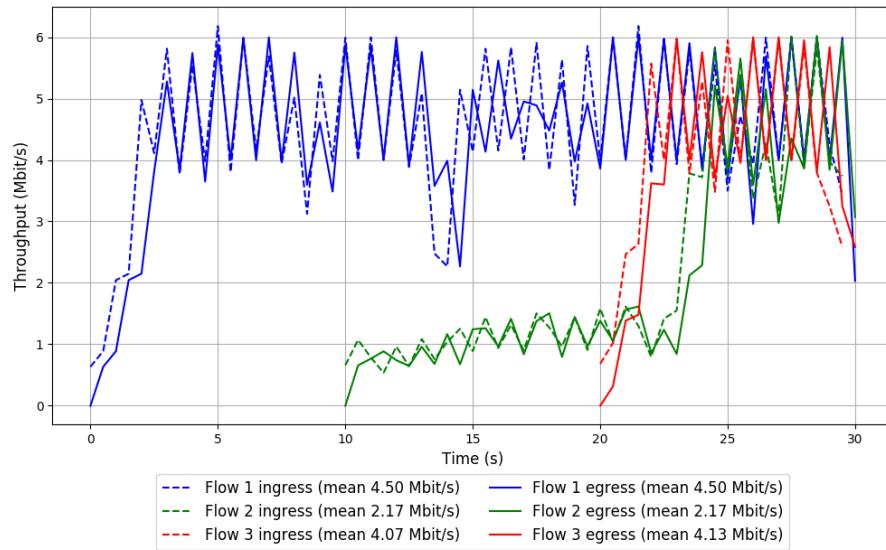


Run 2: Statistics of Sprout

```
Start at: 2018-11-15 11:42:58
End at: 2018-11-15 11:43:28
Local clock offset: -3.249 ms
Remote clock offset: 0.164 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 95.293 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 4.50 Mbit/s
95th percentile per-packet one-way delay: 95.462 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 95.332 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 94.743 ms
Loss rate: 0.01%
```

## Run 2: Report of Sprout — Data Link

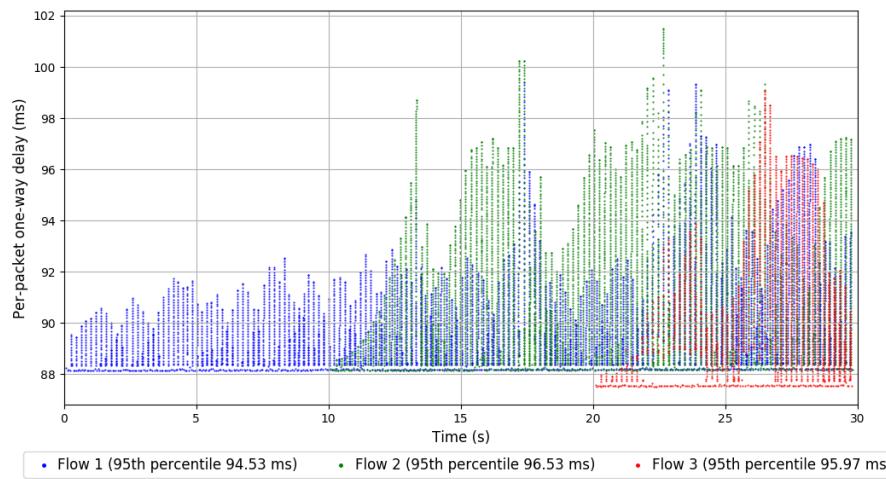
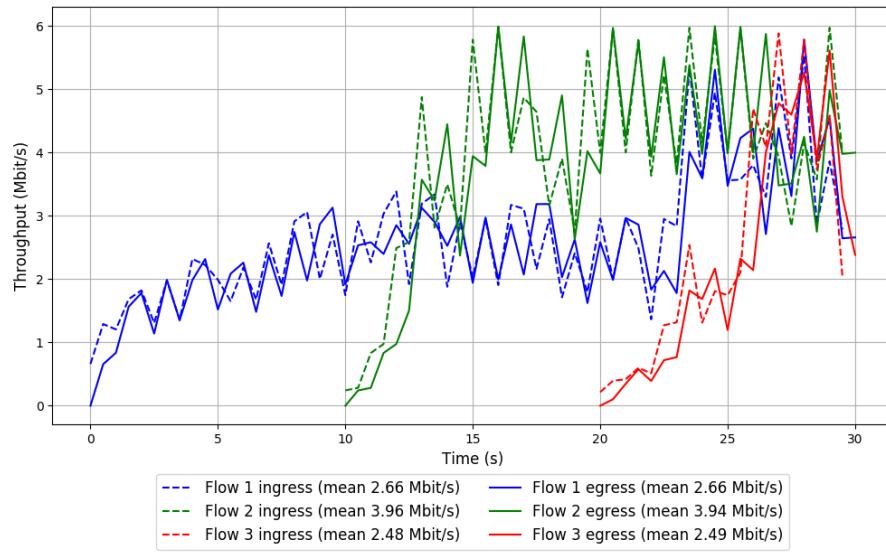


Run 3: Statistics of Sprout

```
Start at: 2018-11-15 12:06:04
End at: 2018-11-15 12:06:34
Local clock offset: -5.244 ms
Remote clock offset: -0.992 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.08 Mbit/s
95th percentile per-packet one-way delay: 95.974 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 2.66 Mbit/s
95th percentile per-packet one-way delay: 94.531 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 3.94 Mbit/s
95th percentile per-packet one-way delay: 96.526 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 2.49 Mbit/s
95th percentile per-packet one-way delay: 95.965 ms
Loss rate: 1.94%
```

### Run 3: Report of Sprout — Data Link

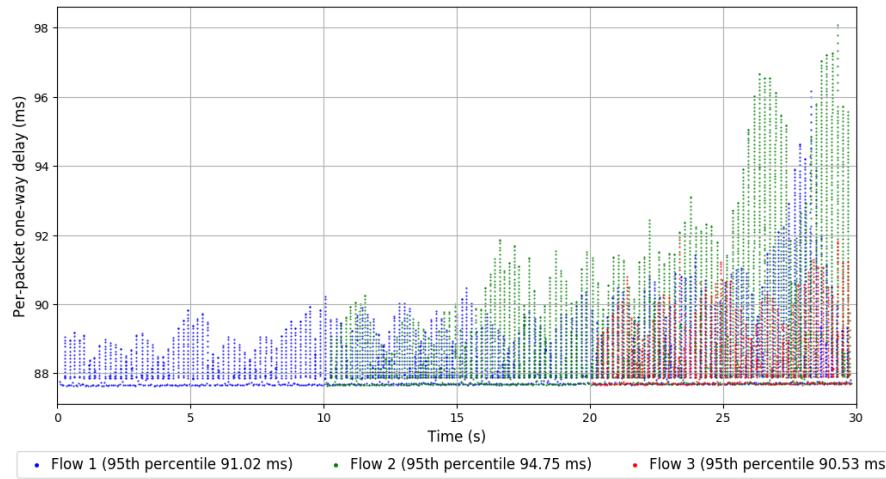
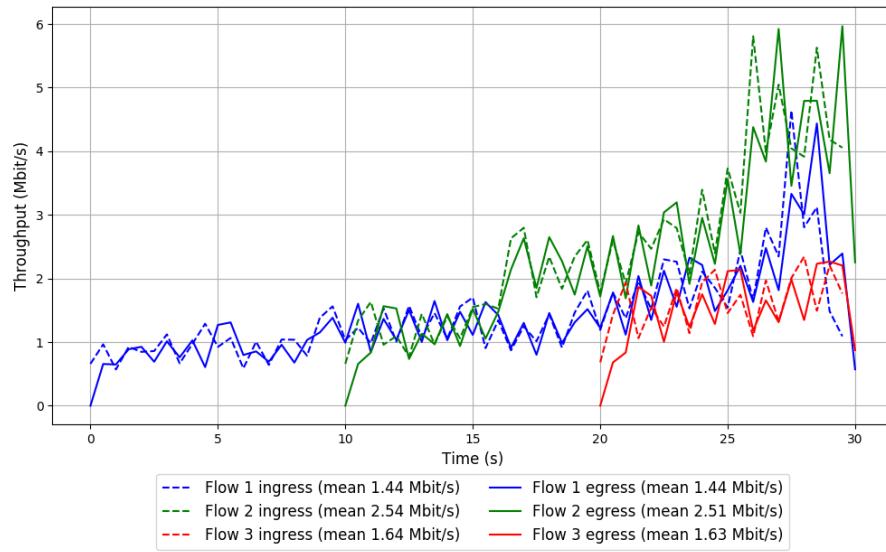


Run 4: Statistics of Sprout

```
Start at: 2018-11-15 12:29:12
End at: 2018-11-15 12:29:42
Local clock offset: -6.131 ms
Remote clock offset: 0.229 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.63 Mbit/s
95th percentile per-packet one-way delay: 93.258 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 91.023 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 94.753 ms
Loss rate: 1.98%
-- Flow 3:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 90.526 ms
Loss rate: 2.75%
```

Run 4: Report of Sprout — Data Link

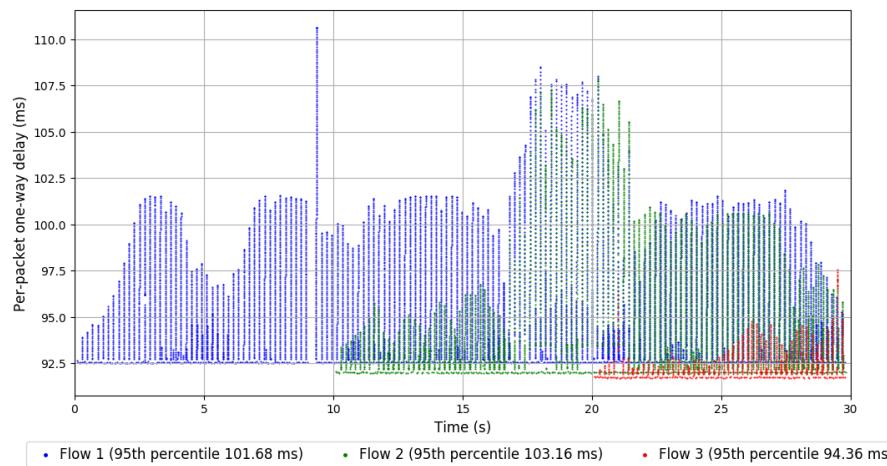
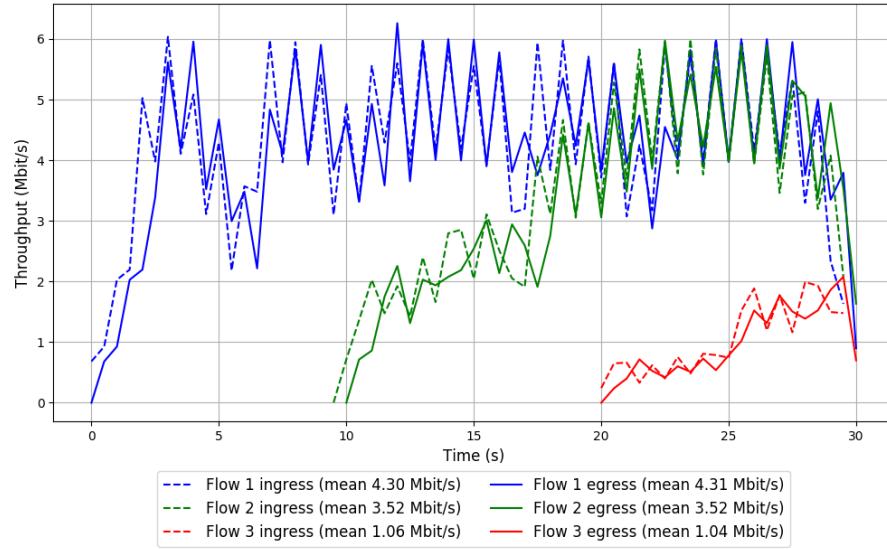


Run 5: Statistics of Sprout

```
Start at: 2018-11-15 12:52:18
End at: 2018-11-15 12:52:48
Local clock offset: -7.549 ms
Remote clock offset: -4.541 ms

# Below is generated by plot.py at 2018-11-15 13:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.98 Mbit/s
95th percentile per-packet one-way delay: 102.185 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 101.676 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 3.52 Mbit/s
95th percentile per-packet one-way delay: 103.161 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 94.356 ms
Loss rate: 3.74%
```

Run 5: Report of Sprout — Data Link

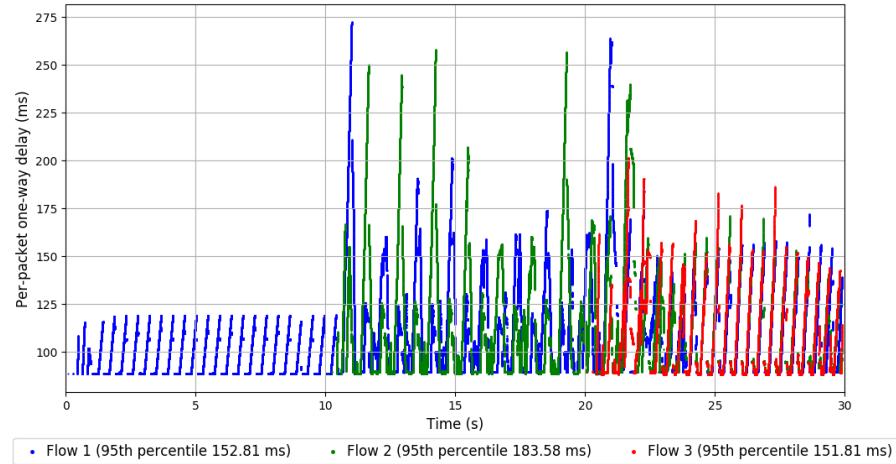
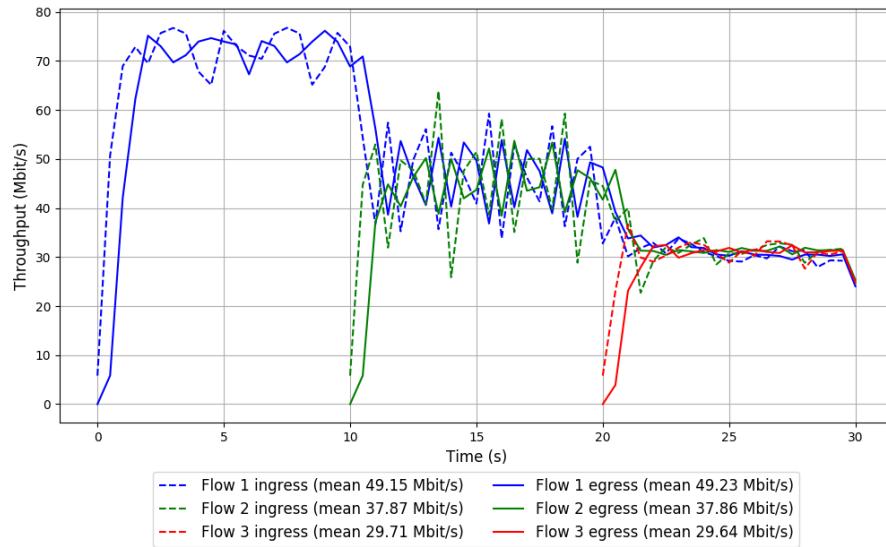


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-11-15 11:13:15
End at: 2018-11-15 11:13:45
Local clock offset: -1.105 ms
Remote clock offset: -2.084 ms

# Below is generated by plot.py at 2018-11-15 13:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.13 Mbit/s
95th percentile per-packet one-way delay: 158.465 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 49.23 Mbit/s
95th percentile per-packet one-way delay: 152.812 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 37.86 Mbit/s
95th percentile per-packet one-way delay: 183.579 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 29.64 Mbit/s
95th percentile per-packet one-way delay: 151.809 ms
Loss rate: 1.97%
```

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

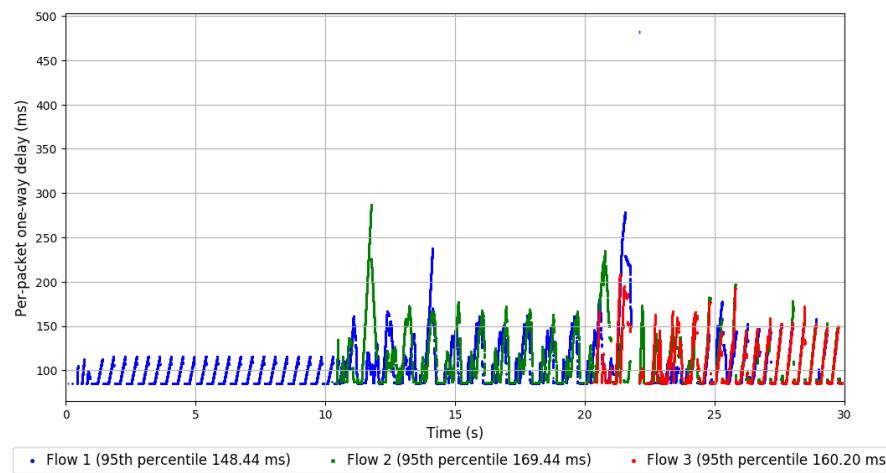
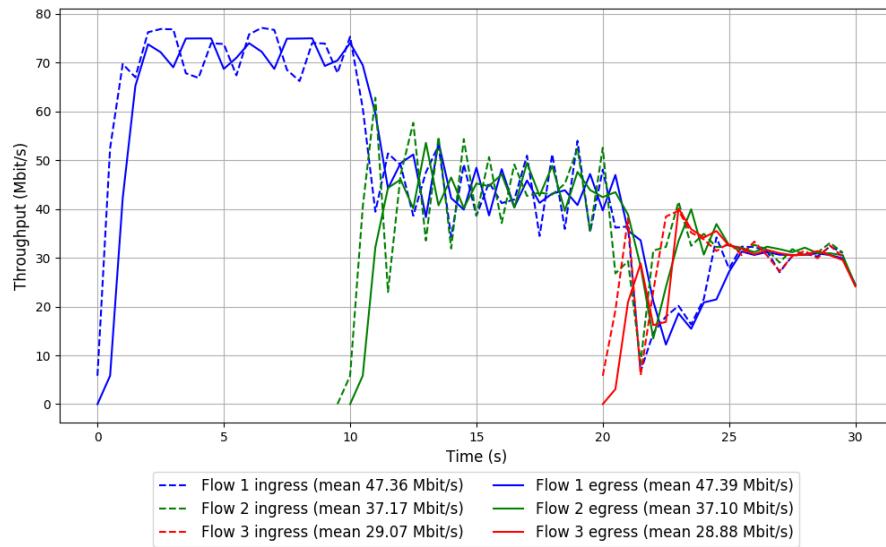


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-11-15 11:36:22
End at: 2018-11-15 11:36:52
Local clock offset: -2.922 ms
Remote clock offset: 1.204 ms

# Below is generated by plot.py at 2018-11-15 13:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.53 Mbit/s
95th percentile per-packet one-way delay: 160.285 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 47.39 Mbit/s
95th percentile per-packet one-way delay: 148.441 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 37.10 Mbit/s
95th percentile per-packet one-way delay: 169.441 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 28.88 Mbit/s
95th percentile per-packet one-way delay: 160.197 ms
Loss rate: 2.37%
```

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

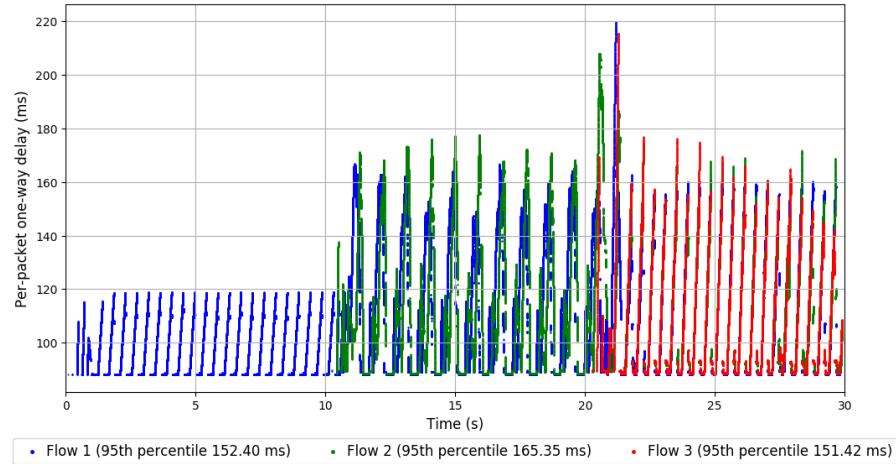
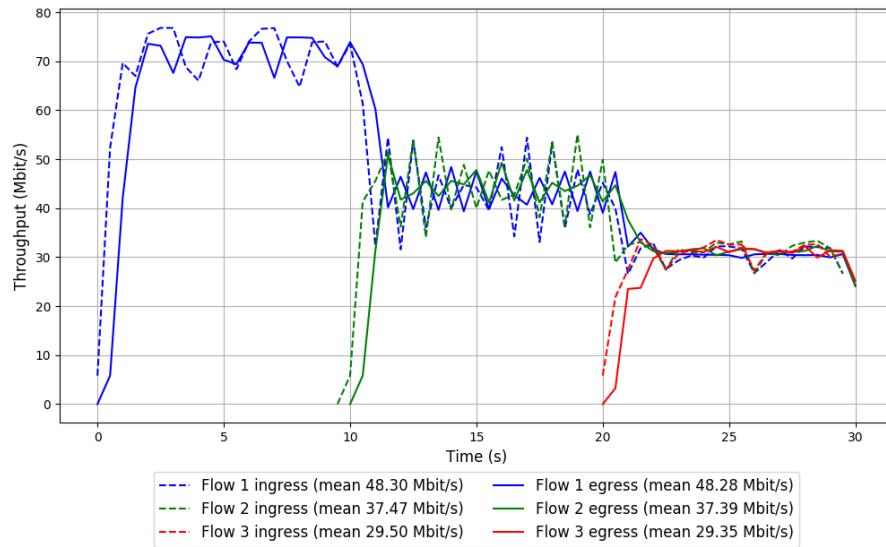


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-11-15 11:59:27
End at: 2018-11-15 11:59:57
Local clock offset: -3.355 ms
Remote clock offset: -0.909 ms

# Below is generated by plot.py at 2018-11-15 13:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.77 Mbit/s
95th percentile per-packet one-way delay: 156.393 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 48.28 Mbit/s
95th percentile per-packet one-way delay: 152.396 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 37.39 Mbit/s
95th percentile per-packet one-way delay: 165.347 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 29.35 Mbit/s
95th percentile per-packet one-way delay: 151.417 ms
Loss rate: 2.22%
```

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

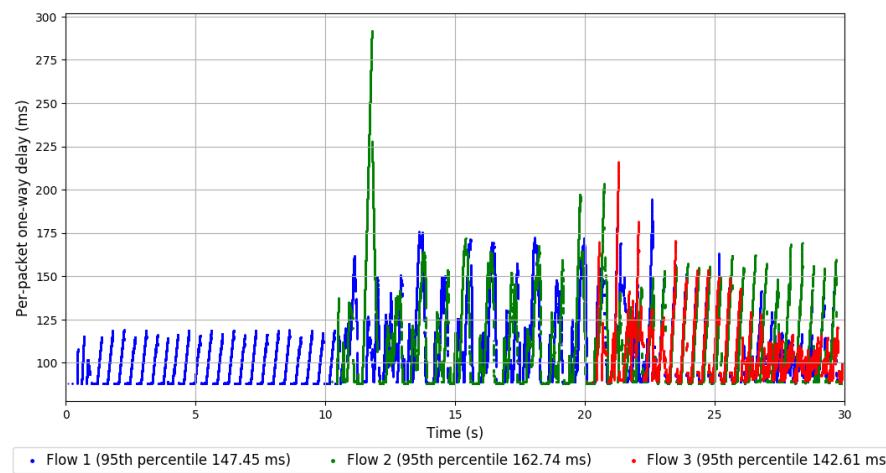
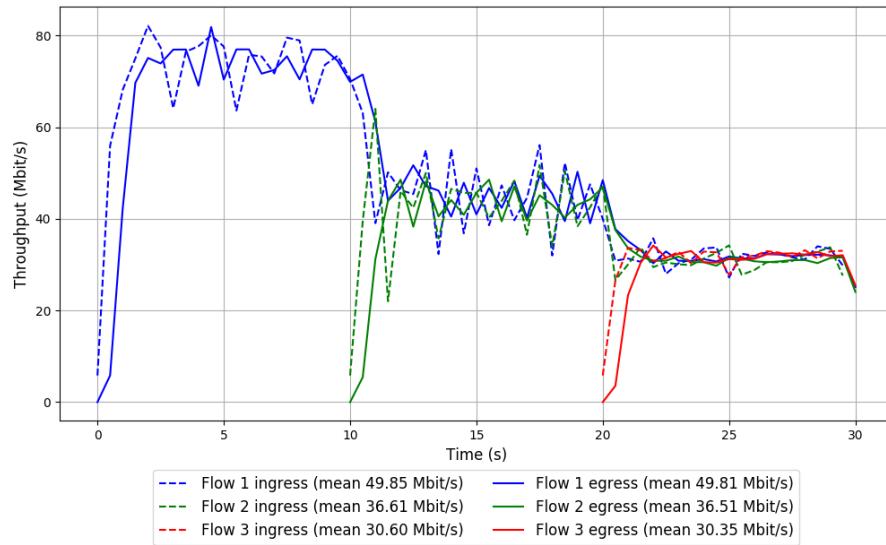


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-11-15 12:22:34
End at: 2018-11-15 12:23:04
Local clock offset: -5.566 ms
Remote clock offset: -0.956 ms

# Below is generated by plot.py at 2018-11-15 13:10:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.04 Mbit/s
95th percentile per-packet one-way delay: 153.679 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 49.81 Mbit/s
95th percentile per-packet one-way delay: 147.452 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 36.51 Mbit/s
95th percentile per-packet one-way delay: 162.744 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 30.35 Mbit/s
95th percentile per-packet one-way delay: 142.612 ms
Loss rate: 2.41%
```

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

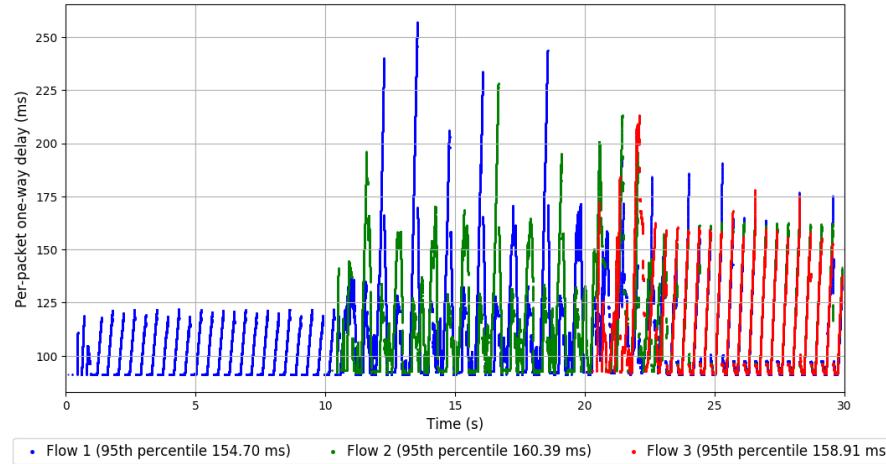
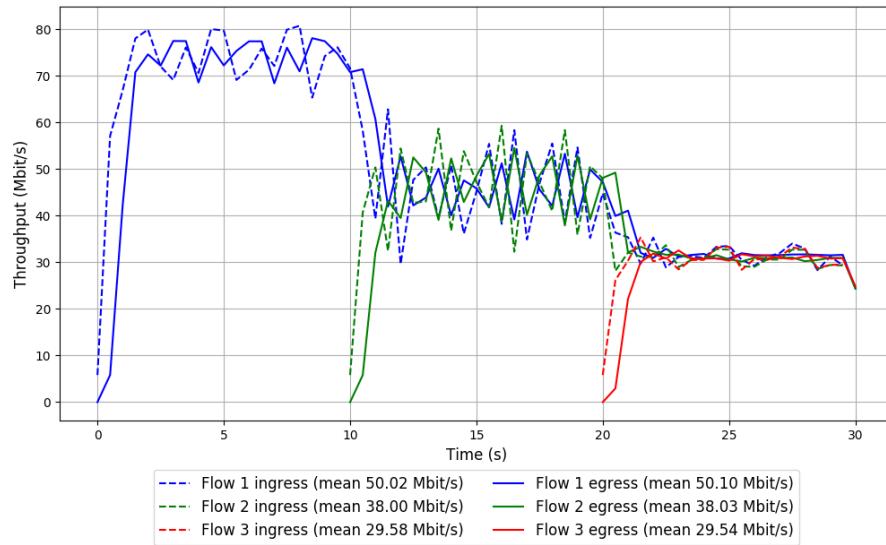


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-11-15 12:45:41
End at: 2018-11-15 12:46:11
Local clock offset: -8.005 ms
Remote clock offset: -4.493 ms

# Below is generated by plot.py at 2018-11-15 13:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.07 Mbit/s
95th percentile per-packet one-way delay: 158.280 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 50.10 Mbit/s
95th percentile per-packet one-way delay: 154.700 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 38.03 Mbit/s
95th percentile per-packet one-way delay: 160.390 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 29.54 Mbit/s
95th percentile per-packet one-way delay: 158.906 ms
Loss rate: 1.85%
```

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

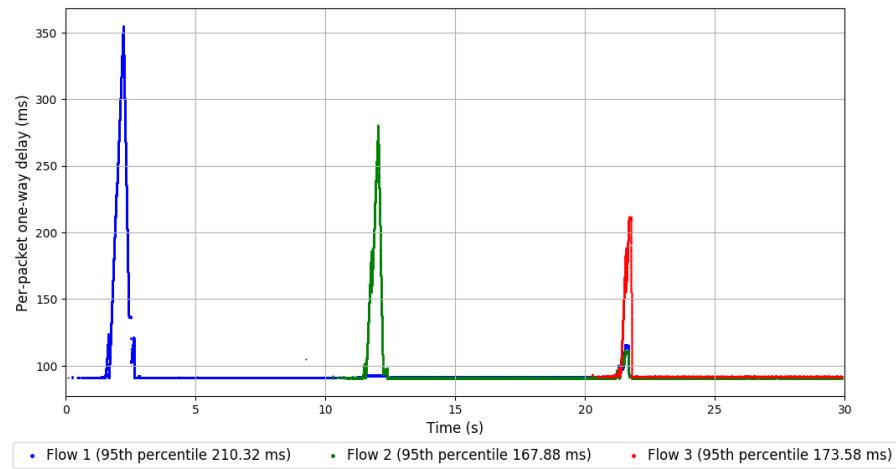
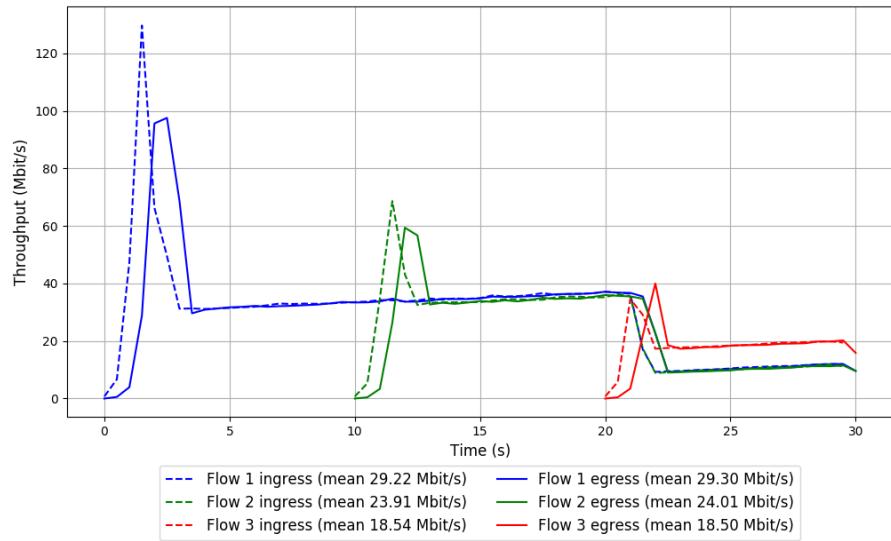


Run 1: Statistics of TCP Vegas

```
Start at: 2018-11-15 11:15:58
End at: 2018-11-15 11:16:28
Local clock offset: -1.074 ms
Remote clock offset: -4.668 ms

# Below is generated by plot.py at 2018-11-15 13:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.32 Mbit/s
95th percentile per-packet one-way delay: 184.931 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 29.30 Mbit/s
95th percentile per-packet one-way delay: 210.324 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 24.01 Mbit/s
95th percentile per-packet one-way delay: 167.882 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 18.50 Mbit/s
95th percentile per-packet one-way delay: 173.580 ms
Loss rate: 1.93%
```

Run 1: Report of TCP Vegas — Data Link

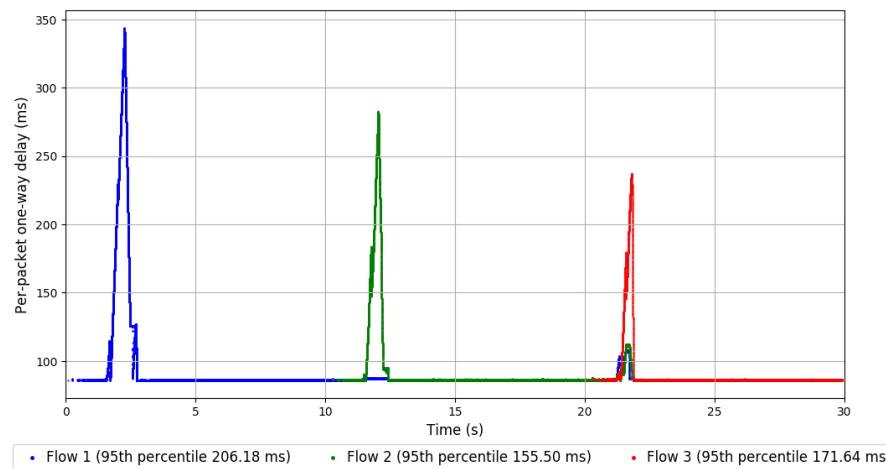
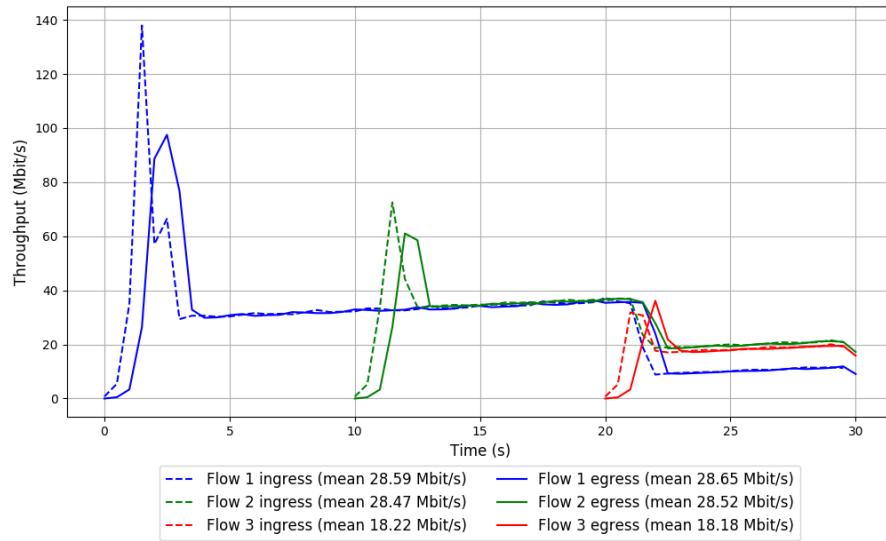


Run 2: Statistics of TCP Vegas

```
Start at: 2018-11-15 11:39:04
End at: 2018-11-15 11:39:34
Local clock offset: -3.099 ms
Remote clock offset: 1.348 ms

# Below is generated by plot.py at 2018-11-15 13:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.57 Mbit/s
95th percentile per-packet one-way delay: 176.779 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 28.65 Mbit/s
95th percentile per-packet one-way delay: 206.181 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 28.52 Mbit/s
95th percentile per-packet one-way delay: 155.496 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 18.18 Mbit/s
95th percentile per-packet one-way delay: 171.639 ms
Loss rate: 1.92%
```

Run 2: Report of TCP Vegas — Data Link

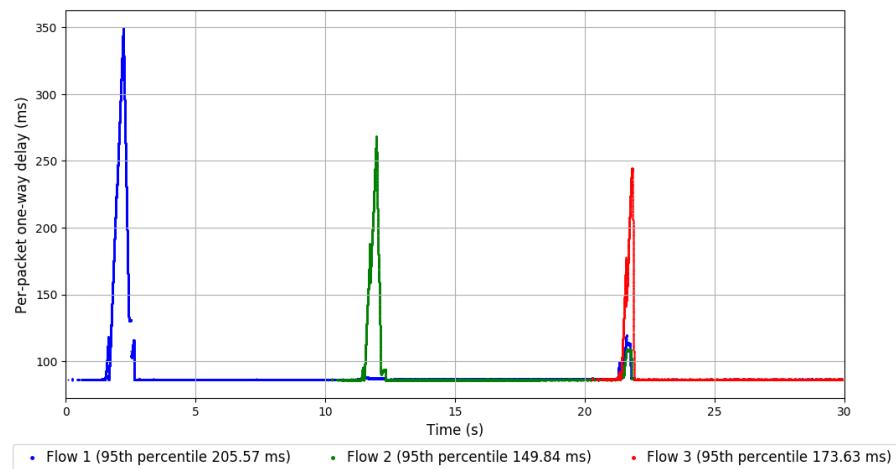
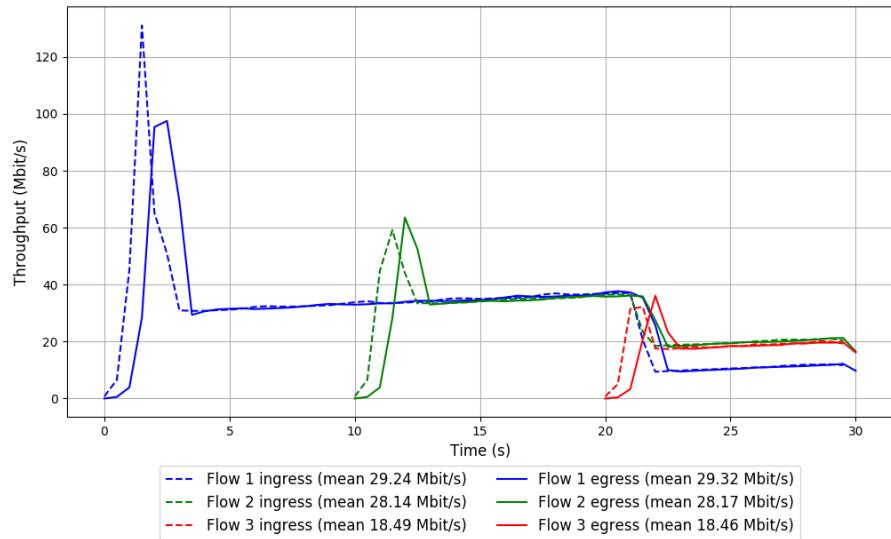


Run 3: Statistics of TCP Vegas

```
Start at: 2018-11-15 12:02:10
End at: 2018-11-15 12:02:40
Local clock offset: -3.924 ms
Remote clock offset: 1.338 ms

# Below is generated by plot.py at 2018-11-15 13:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.10 Mbit/s
95th percentile per-packet one-way delay: 176.127 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 29.32 Mbit/s
95th percentile per-packet one-way delay: 205.570 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 28.17 Mbit/s
95th percentile per-packet one-way delay: 149.845 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 18.46 Mbit/s
95th percentile per-packet one-way delay: 173.629 ms
Loss rate: 1.91%
```

Run 3: Report of TCP Vegas — Data Link

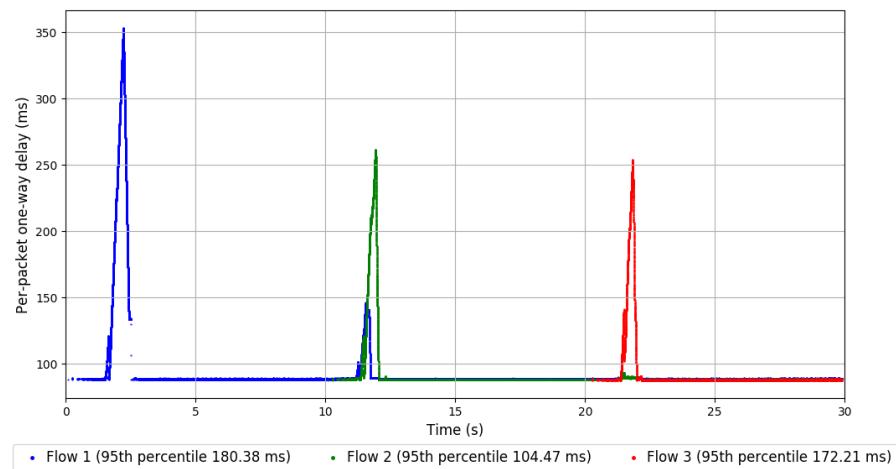
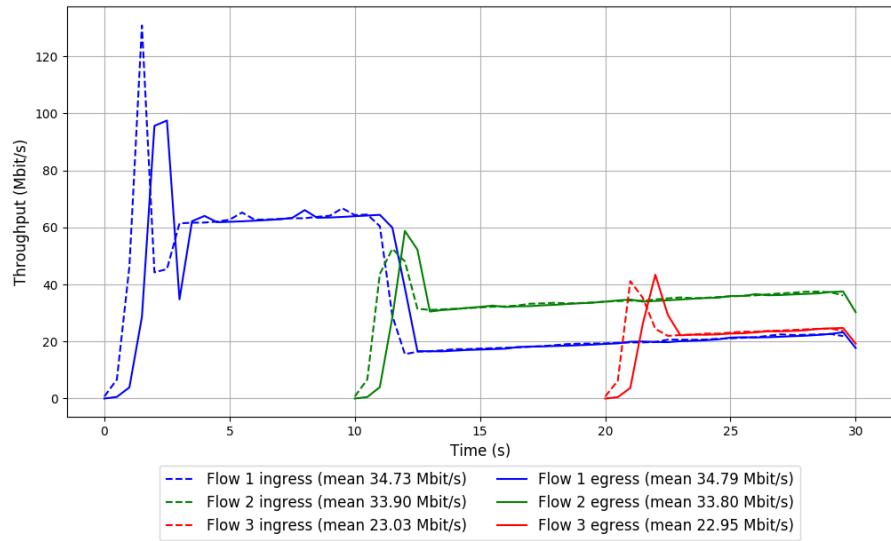


Run 4: Statistics of TCP Vegas

```
Start at: 2018-11-15 12:25:16
End at: 2018-11-15 12:25:46
Local clock offset: -6.477 ms
Remote clock offset: -1.026 ms

# Below is generated by plot.py at 2018-11-15 13:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.78 Mbit/s
95th percentile per-packet one-way delay: 152.421 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 34.79 Mbit/s
95th percentile per-packet one-way delay: 180.375 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 33.80 Mbit/s
95th percentile per-packet one-way delay: 104.472 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 22.95 Mbit/s
95th percentile per-packet one-way delay: 172.212 ms
Loss rate: 2.05%
```

Run 4: Report of TCP Vegas — Data Link

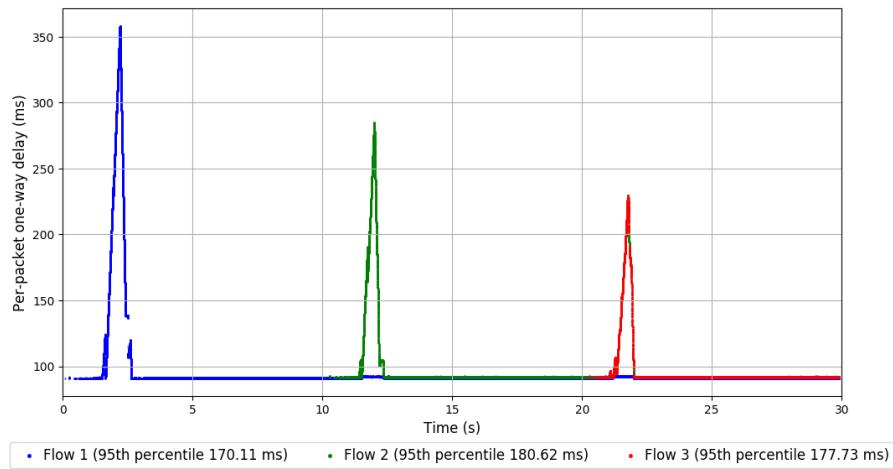
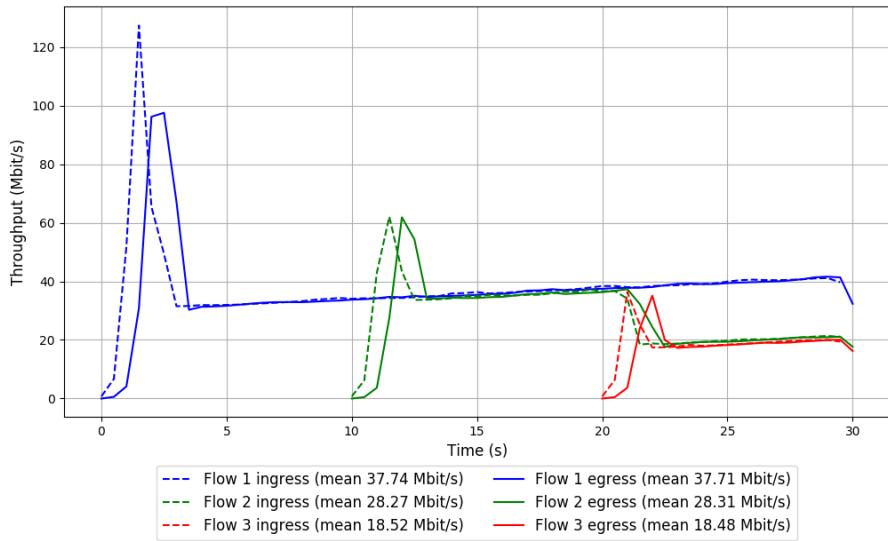


Run 5: Statistics of TCP Vegas

```
Start at: 2018-11-15 12:48:23
End at: 2018-11-15 12:48:53
Local clock offset: -7.37 ms
Remote clock offset: -3.353 ms

# Below is generated by plot.py at 2018-11-15 13:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.58 Mbit/s
95th percentile per-packet one-way delay: 177.431 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 37.71 Mbit/s
95th percentile per-packet one-way delay: 170.106 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 28.31 Mbit/s
95th percentile per-packet one-way delay: 180.616 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 18.48 Mbit/s
95th percentile per-packet one-way delay: 177.734 ms
Loss rate: 1.95%
```

Run 5: Report of TCP Vegas — Data Link

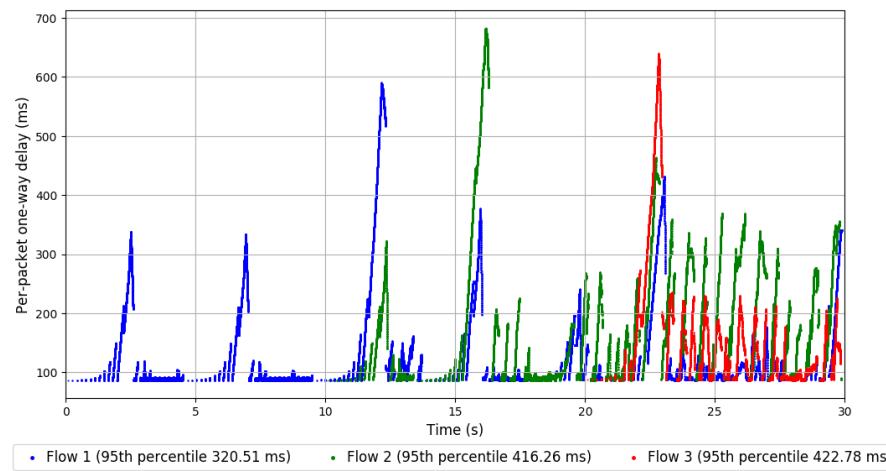
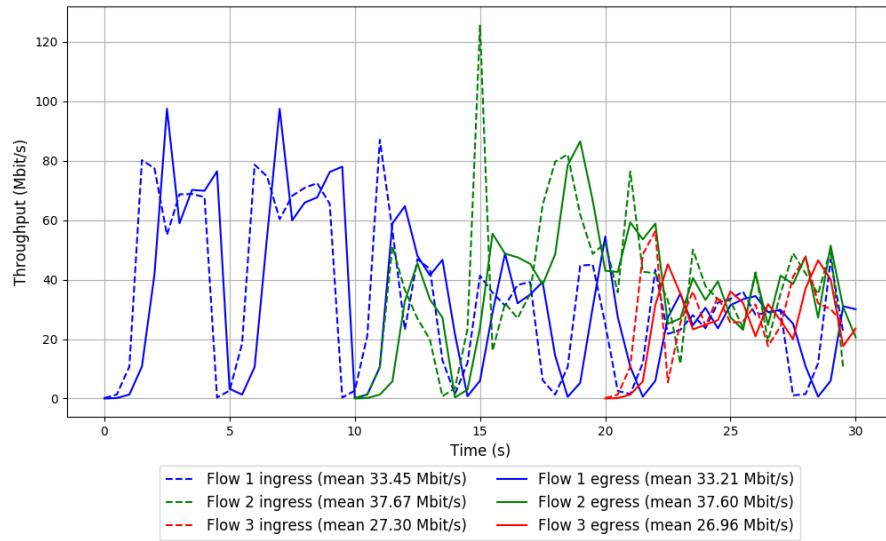


Run 1: Statistics of Verus

```
Start at: 2018-11-15 11:06:59
End at: 2018-11-15 11:07:29
Local clock offset: -0.832 ms
Remote clock offset: 0.321 ms

# Below is generated by plot.py at 2018-11-15 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.97 Mbit/s
95th percentile per-packet one-way delay: 347.926 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 320.515 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 37.60 Mbit/s
95th percentile per-packet one-way delay: 416.258 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 26.96 Mbit/s
95th percentile per-packet one-way delay: 422.776 ms
Loss rate: 3.29%
```

Run 1: Report of Verus — Data Link

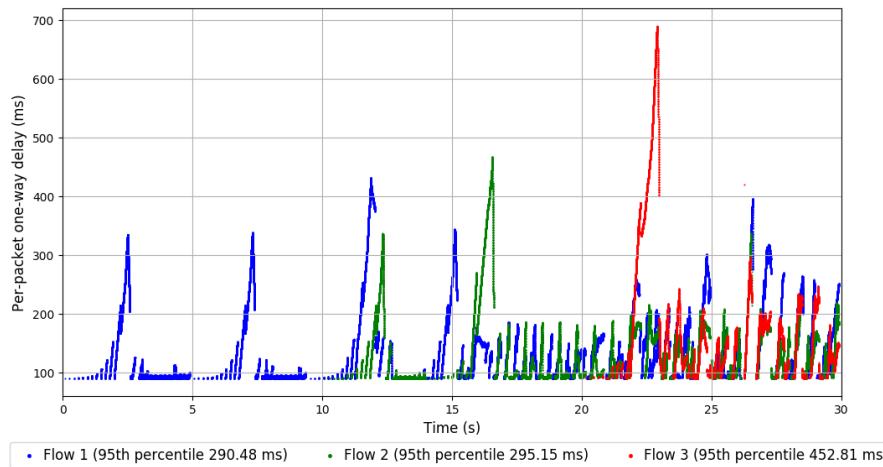
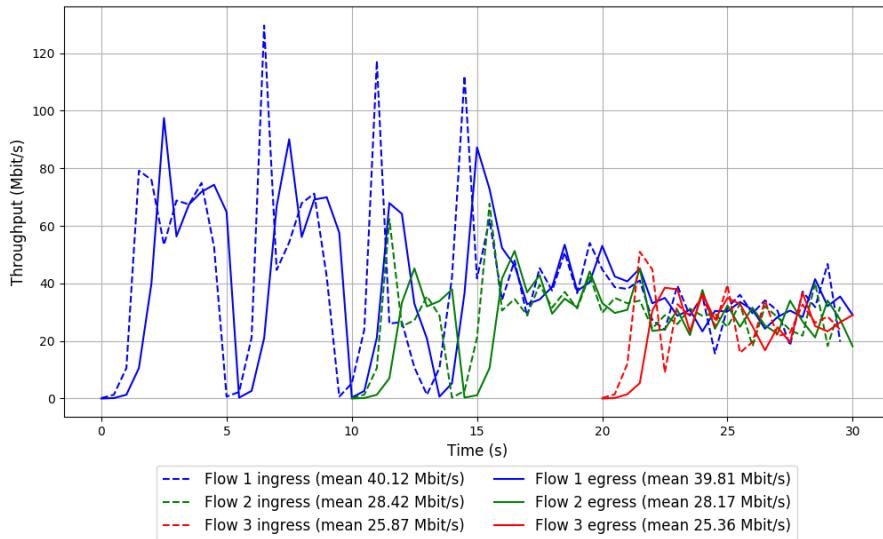


Run 2: Statistics of Verus

```
Start at: 2018-11-15 11:30:05
End at: 2018-11-15 11:30:35
Local clock offset: -2.302 ms
Remote clock offset: -3.911 ms

# Below is generated by plot.py at 2018-11-15 13:11:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.84 Mbit/s
95th percentile per-packet one-way delay: 308.509 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 39.81 Mbit/s
95th percentile per-packet one-way delay: 290.477 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 28.17 Mbit/s
95th percentile per-packet one-way delay: 295.150 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 25.36 Mbit/s
95th percentile per-packet one-way delay: 452.805 ms
Loss rate: 1.93%
```

## Run 2: Report of Verus — Data Link

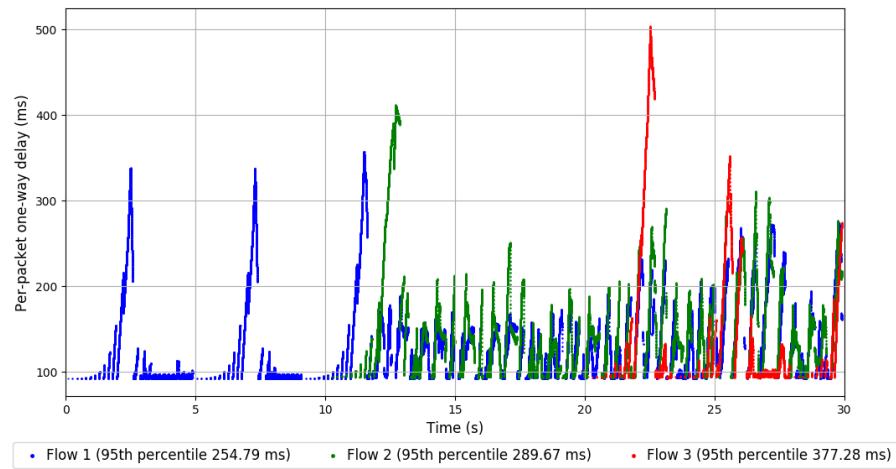
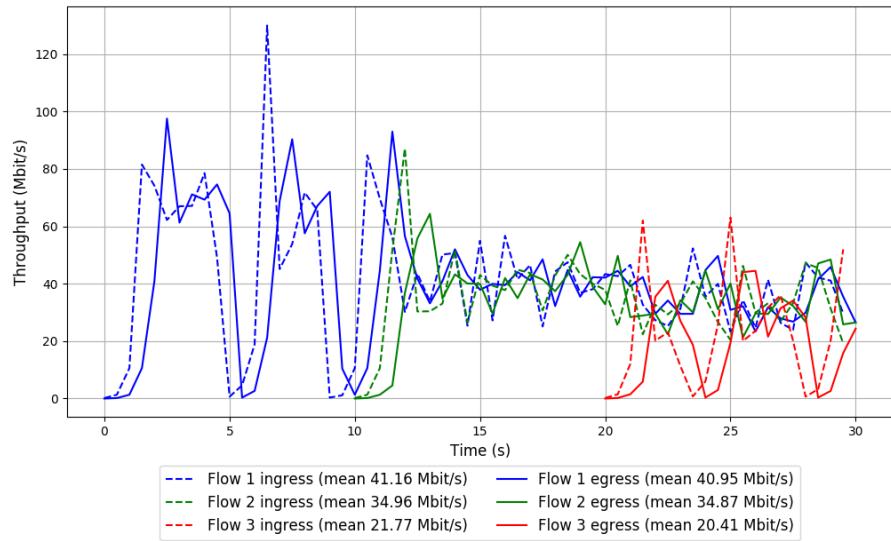


Run 3: Statistics of Verus

```
Start at: 2018-11-15 11:53:12
End at: 2018-11-15 11:53:42
Local clock offset: -2.631 ms
Remote clock offset: -4.591 ms

# Below is generated by plot.py at 2018-11-15 13:11:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.81 Mbit/s
95th percentile per-packet one-way delay: 280.123 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 40.95 Mbit/s
95th percentile per-packet one-way delay: 254.793 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 34.87 Mbit/s
95th percentile per-packet one-way delay: 289.671 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 20.41 Mbit/s
95th percentile per-packet one-way delay: 377.282 ms
Loss rate: 7.84%
```

Run 3: Report of Verus — Data Link

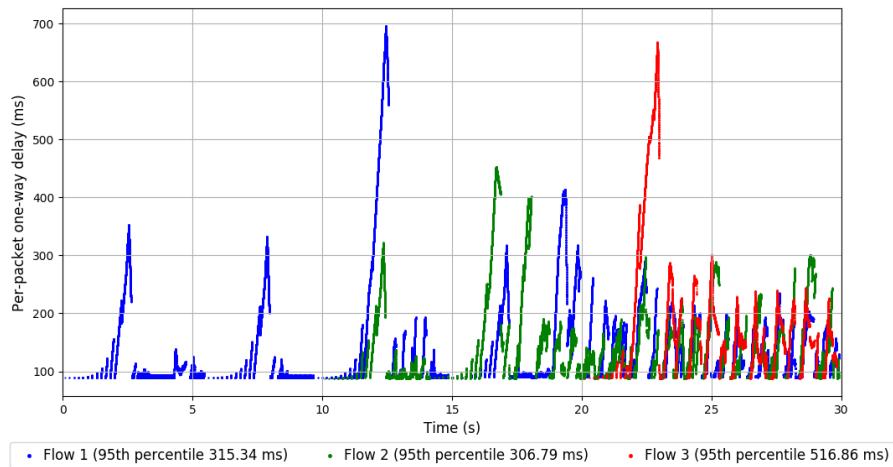
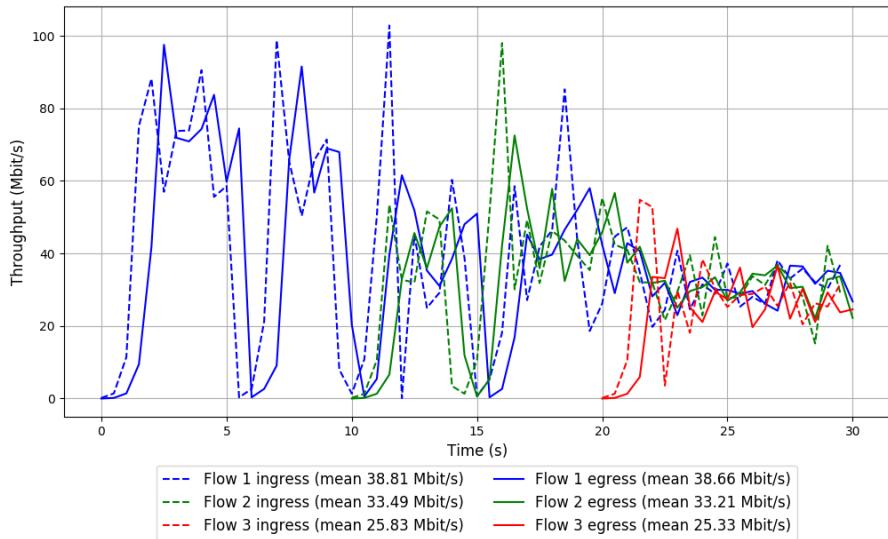


Run 4: Statistics of Verus

```
Start at: 2018-11-15 12:16:18
End at: 2018-11-15 12:16:48
Local clock offset: -5.288 ms
Remote clock offset: -1.034 ms

# Below is generated by plot.py at 2018-11-15 13:11:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.98 Mbit/s
95th percentile per-packet one-way delay: 334.873 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 38.66 Mbit/s
95th percentile per-packet one-way delay: 315.339 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 306.785 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 25.33 Mbit/s
95th percentile per-packet one-way delay: 516.856 ms
Loss rate: 4.36%
```

Run 4: Report of Verus — Data Link

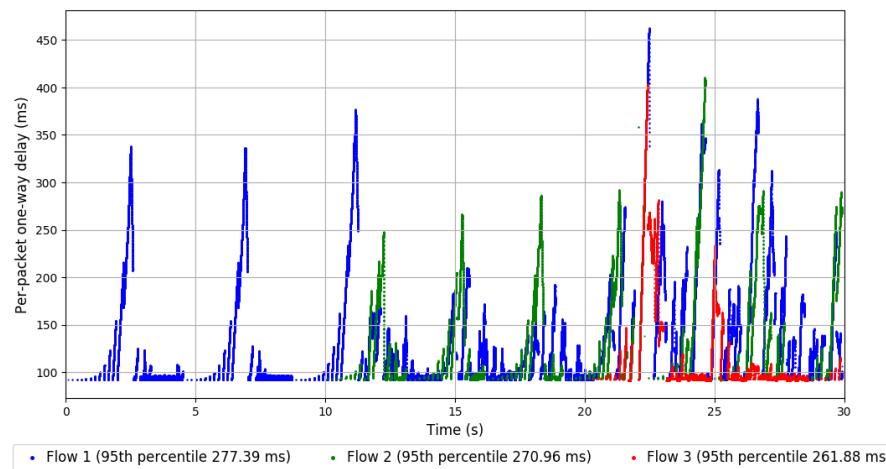
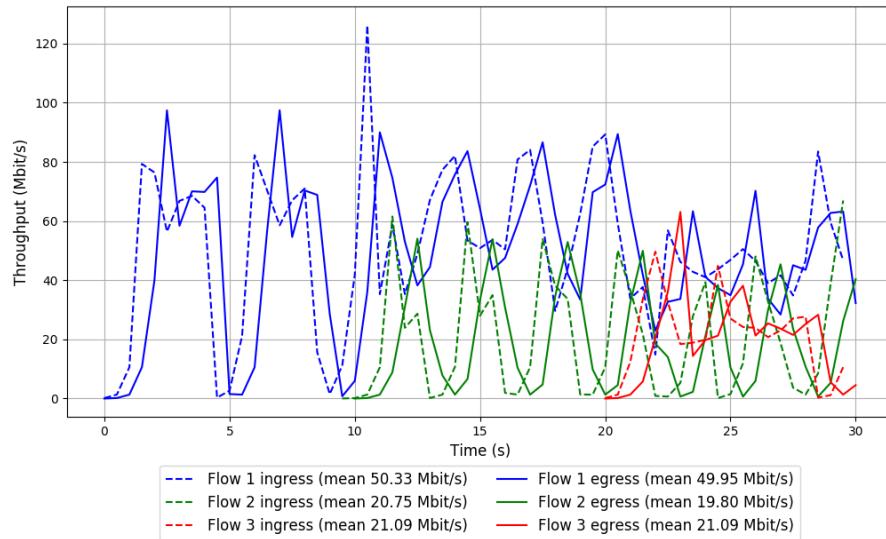


Run 5: Statistics of Verus

```
Start at: 2018-11-15 12:39:26
End at: 2018-11-15 12:39:56
Local clock offset: -7.661 ms
Remote clock offset: -4.598 ms

# Below is generated by plot.py at 2018-11-15 13:11:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.98 Mbit/s
95th percentile per-packet one-way delay: 271.945 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 49.95 Mbit/s
95th percentile per-packet one-way delay: 277.394 ms
Loss rate: 1.21%
-- Flow 2:
Average throughput: 19.80 Mbit/s
95th percentile per-packet one-way delay: 270.959 ms
Loss rate: 5.40%
-- Flow 3:
Average throughput: 21.09 Mbit/s
95th percentile per-packet one-way delay: 261.883 ms
Loss rate: 1.78%
```

Run 5: Report of Verus — Data Link

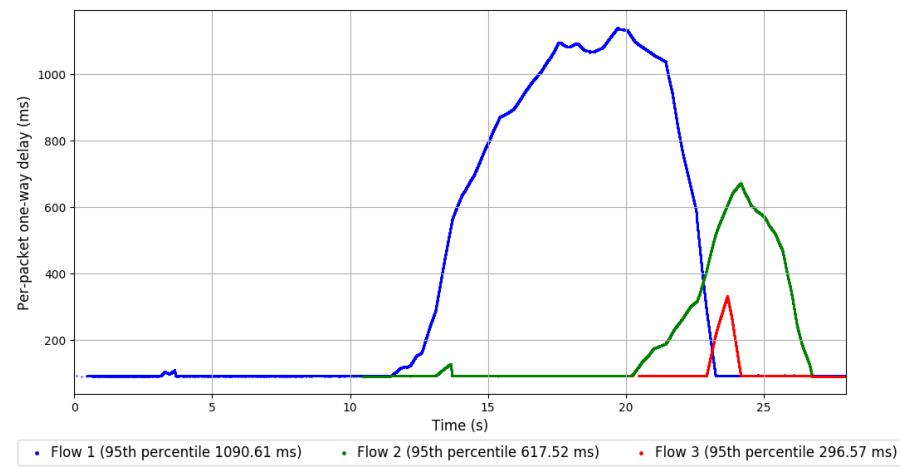
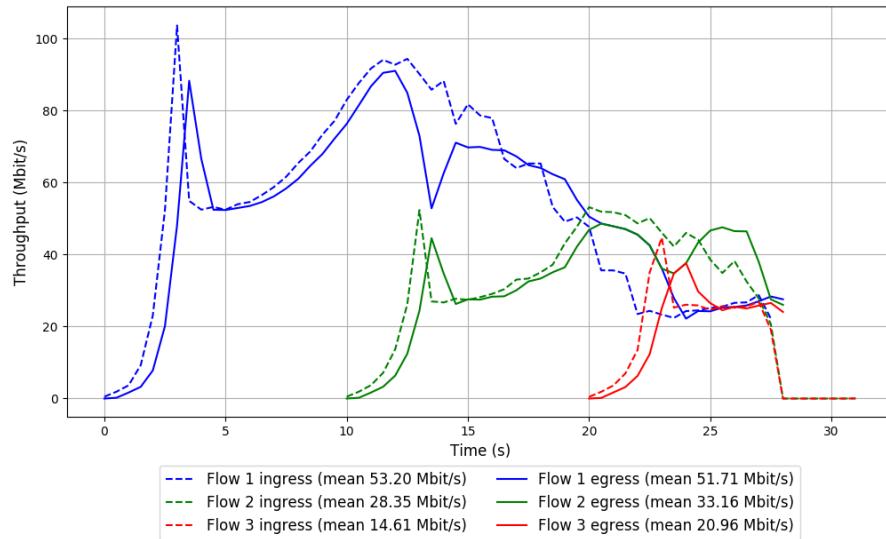


```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 11:11:56
End at: 2018-11-15 11:12:26
Local clock offset: -1.783 ms
Remote clock offset: -5.768 ms

# Below is generated by plot.py at 2018-11-15 13:11:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.87 Mbit/s
95th percentile per-packet one-way delay: 1083.332 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 51.71 Mbit/s
95th percentile per-packet one-way delay: 1090.606 ms
Loss rate: 2.80%
-- Flow 2:
Average throughput: 33.16 Mbit/s
95th percentile per-packet one-way delay: 617.516 ms
Loss rate: 2.05%
-- Flow 3:
Average throughput: 20.96 Mbit/s
95th percentile per-packet one-way delay: 296.575 ms
Loss rate: 0.49%
```

Run 1: Report of PCC-Vivace — Data Link

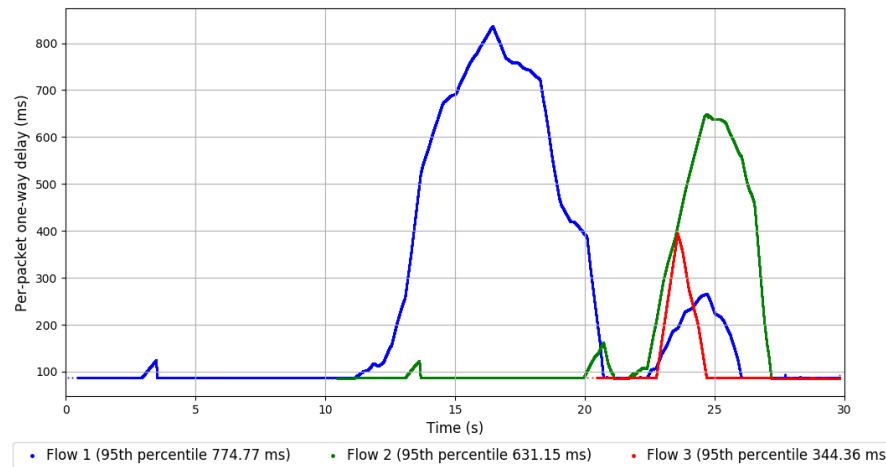
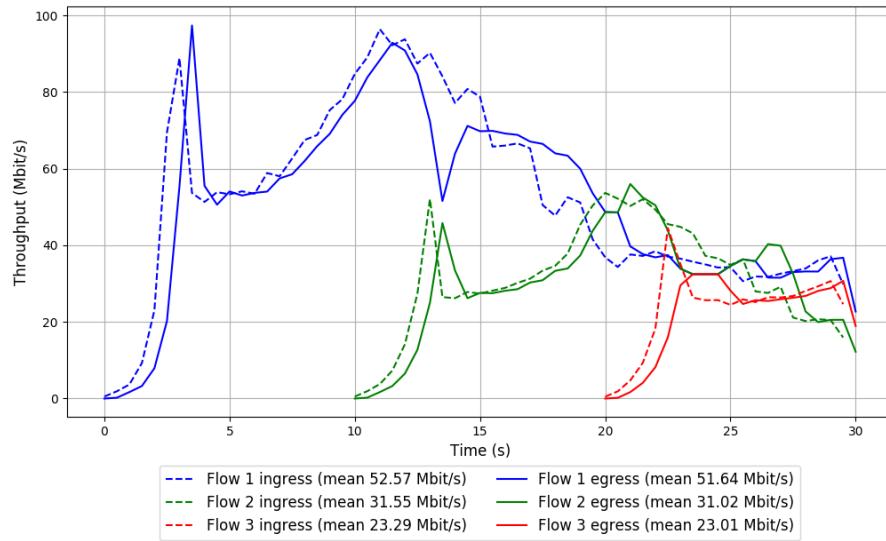


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-11-15 11:35:01
End at: 2018-11-15 11:35:31
Local clock offset: -2.831 ms
Remote clock offset: 1.139 ms

# Below is generated by plot.py at 2018-11-15 13:11:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.72 Mbit/s
95th percentile per-packet one-way delay: 758.910 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 51.64 Mbit/s
95th percentile per-packet one-way delay: 774.771 ms
Loss rate: 2.33%
-- Flow 2:
Average throughput: 31.02 Mbit/s
95th percentile per-packet one-way delay: 631.155 ms
Loss rate: 2.50%
-- Flow 3:
Average throughput: 23.01 Mbit/s
95th percentile per-packet one-way delay: 344.355 ms
Loss rate: 2.87%
```

## Run 2: Report of PCC-Vivace — Data Link

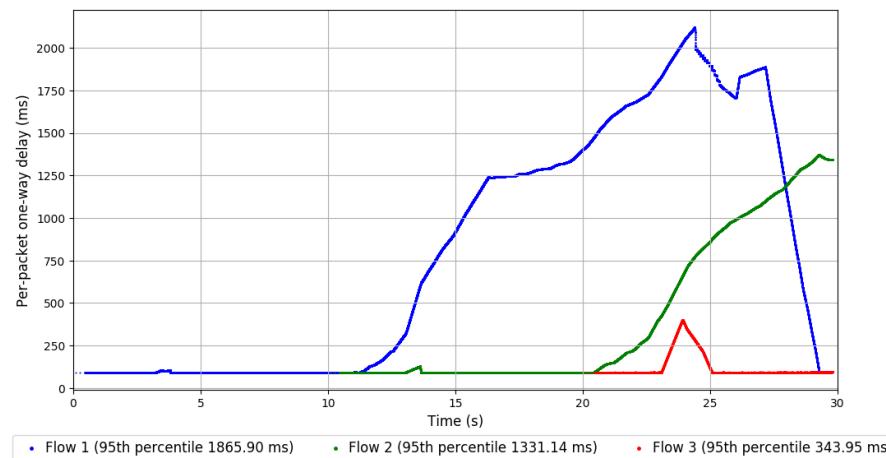
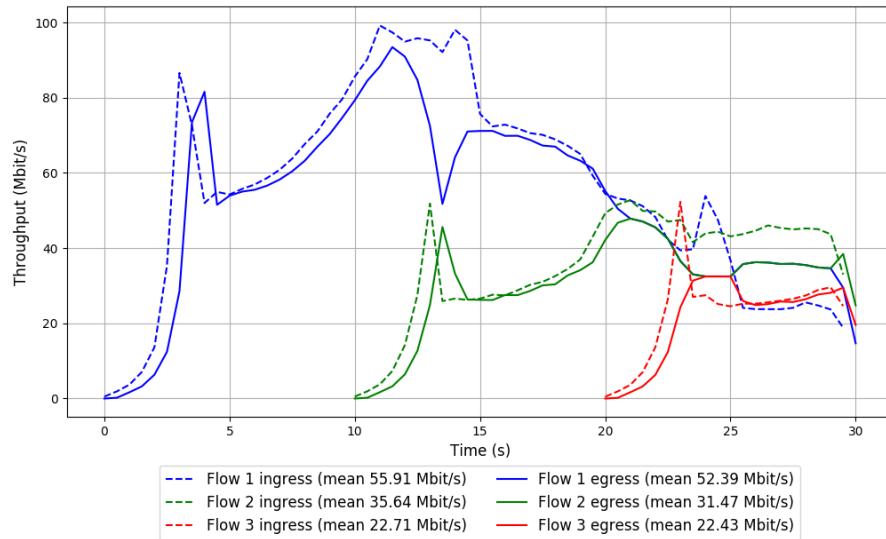


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-11-15 11:58:09
End at: 2018-11-15 11:58:39
Local clock offset: -3.013 ms
Remote clock offset: -4.7 ms

# Below is generated by plot.py at 2018-11-15 13:11:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.59 Mbit/s
95th percentile per-packet one-way delay: 1800.142 ms
Loss rate: 8.02%
-- Flow 1:
Average throughput: 52.39 Mbit/s
95th percentile per-packet one-way delay: 1865.901 ms
Loss rate: 6.83%
-- Flow 2:
Average throughput: 31.47 Mbit/s
95th percentile per-packet one-way delay: 1331.144 ms
Loss rate: 12.44%
-- Flow 3:
Average throughput: 22.43 Mbit/s
95th percentile per-packet one-way delay: 343.951 ms
Loss rate: 2.96%
```

### Run 3: Report of PCC-Vivace — Data Link

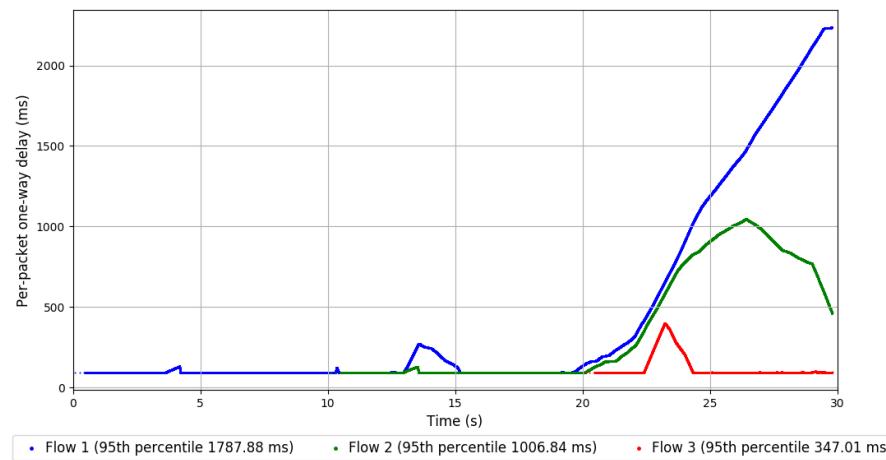
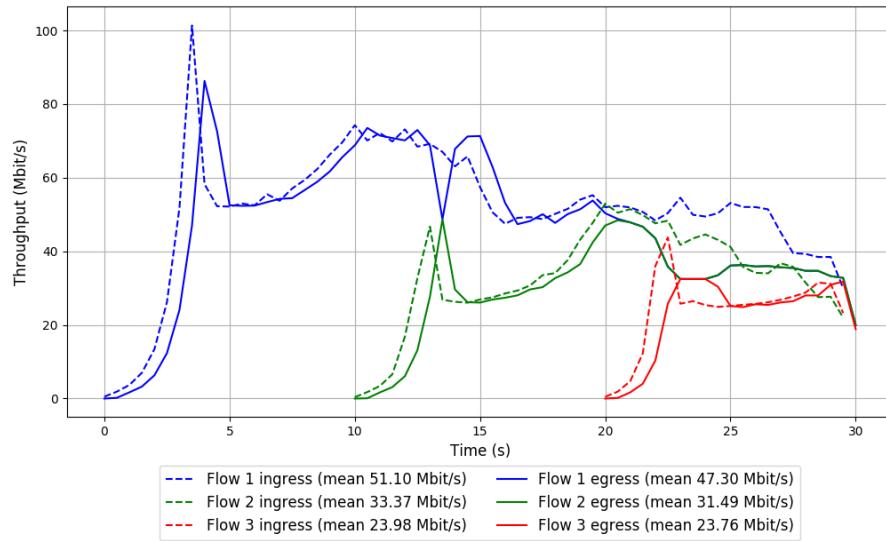


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-11-15 12:21:15
End at: 2018-11-15 12:21:45
Local clock offset: -5.577 ms
Remote clock offset: -4.667 ms

# Below is generated by plot.py at 2018-11-15 13:11:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.94 Mbit/s
95th percentile per-packet one-way delay: 1485.521 ms
Loss rate: 7.02%
-- Flow 1:
Average throughput: 47.30 Mbit/s
95th percentile per-packet one-way delay: 1787.885 ms
Loss rate: 7.96%
-- Flow 2:
Average throughput: 31.49 Mbit/s
95th percentile per-packet one-way delay: 1006.838 ms
Loss rate: 6.42%
-- Flow 3:
Average throughput: 23.76 Mbit/s
95th percentile per-packet one-way delay: 347.013 ms
Loss rate: 2.64%
```

Run 4: Report of PCC-Vivace — Data Link

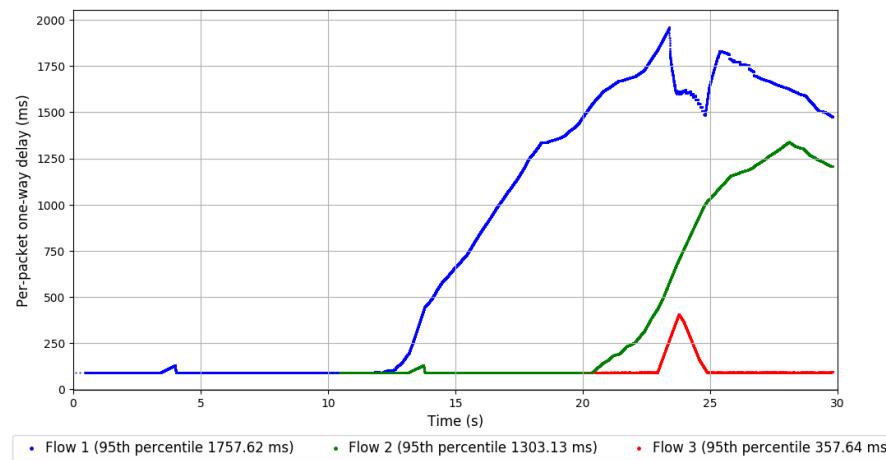
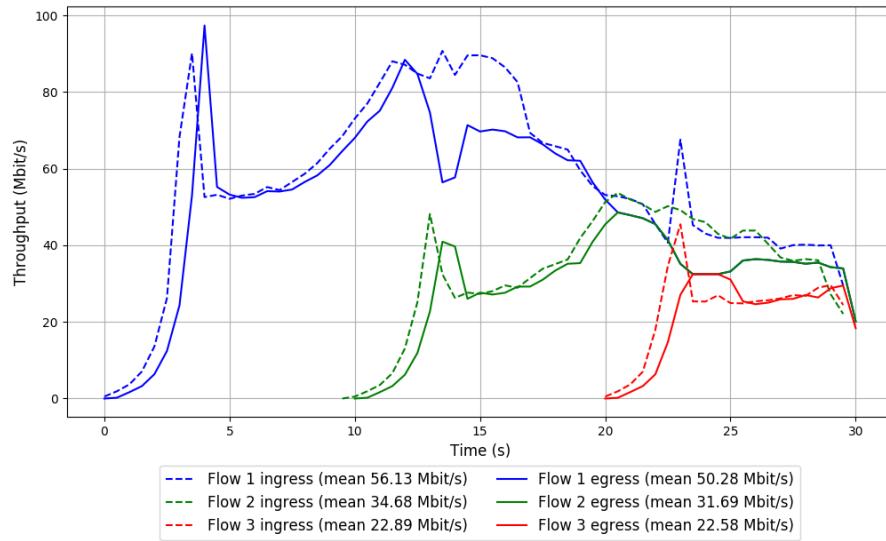


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-11-15 12:44:22
End at: 2018-11-15 12:44:52
Local clock offset: -7.955 ms
Remote clock offset: -4.528 ms

# Below is generated by plot.py at 2018-11-15 13:11:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.68 Mbit/s
95th percentile per-packet one-way delay: 1694.013 ms
Loss rate: 9.84%
-- Flow 1:
Average throughput: 50.28 Mbit/s
95th percentile per-packet one-way delay: 1757.625 ms
Loss rate: 10.92%
-- Flow 2:
Average throughput: 31.69 Mbit/s
95th percentile per-packet one-way delay: 1303.131 ms
Loss rate: 9.42%
-- Flow 3:
Average throughput: 22.58 Mbit/s
95th percentile per-packet one-way delay: 357.637 ms
Loss rate: 3.05%
```

Run 5: Report of PCC-Vivace — Data Link

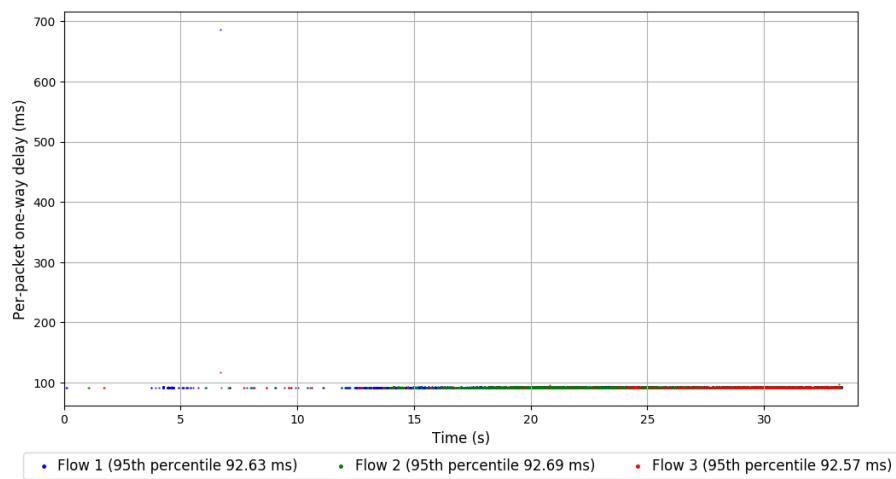
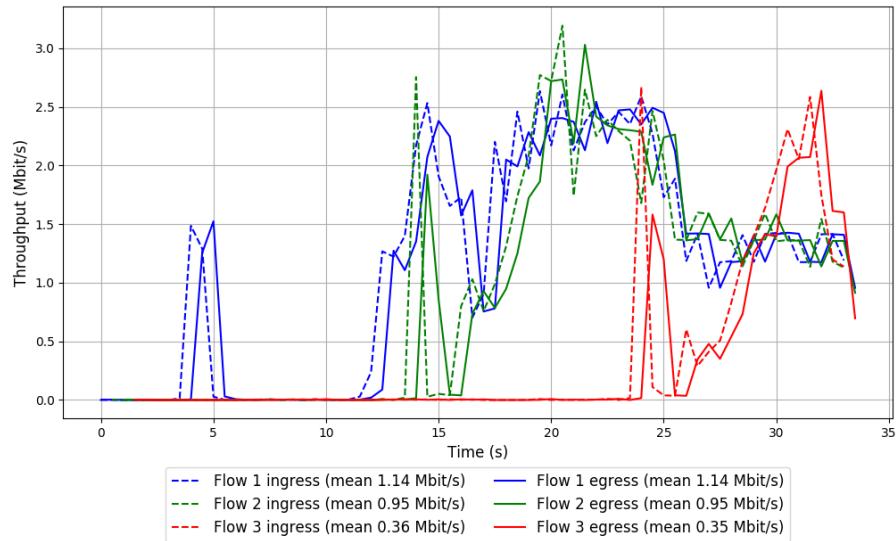


```
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 11:09:31
End at: 2018-11-15 11:10:01
Local clock offset: -1.724 ms
Remote clock offset: -5.859 ms

# Below is generated by plot.py at 2018-11-15 13:11:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.40 Mbit/s
95th percentile per-packet one-way delay: 92.650 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 92.632 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 92.687 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 92.566 ms
Loss rate: 2.96%
```

### Run 1: Report of WebRTC media — Data Link

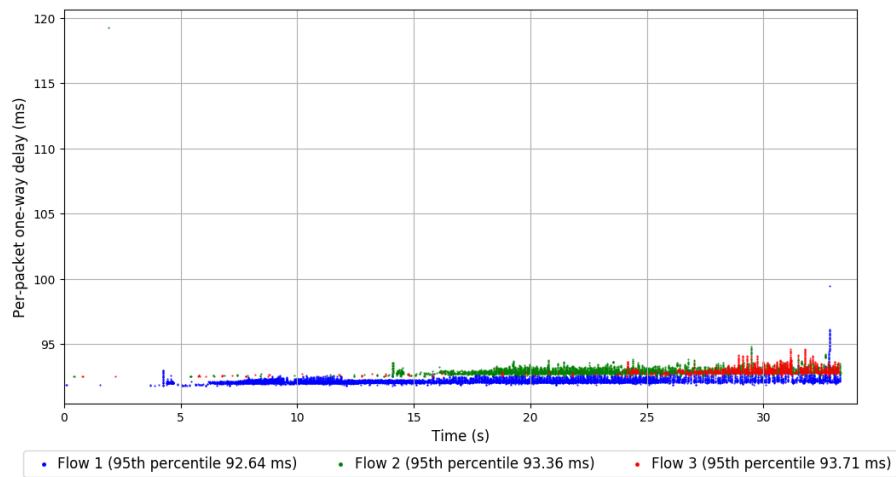
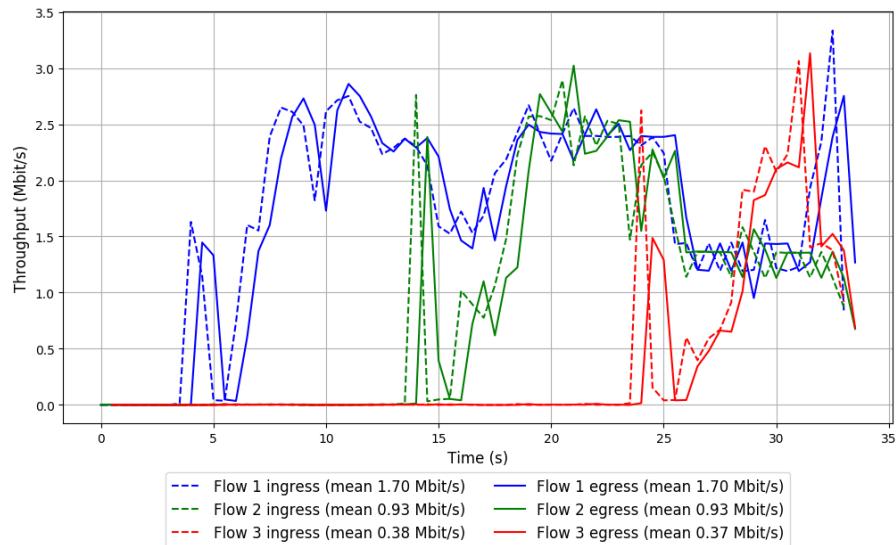


Run 2: Statistics of WebRTC media

```
Start at: 2018-11-15 11:32:36
End at: 2018-11-15 11:33:06
Local clock offset: -1.822 ms
Remote clock offset: -4.808 ms

# Below is generated by plot.py at 2018-11-15 13:11:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 93.287 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 92.640 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 93.362 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 93.714 ms
Loss rate: 1.84%
```

Run 2: Report of WebRTC media — Data Link

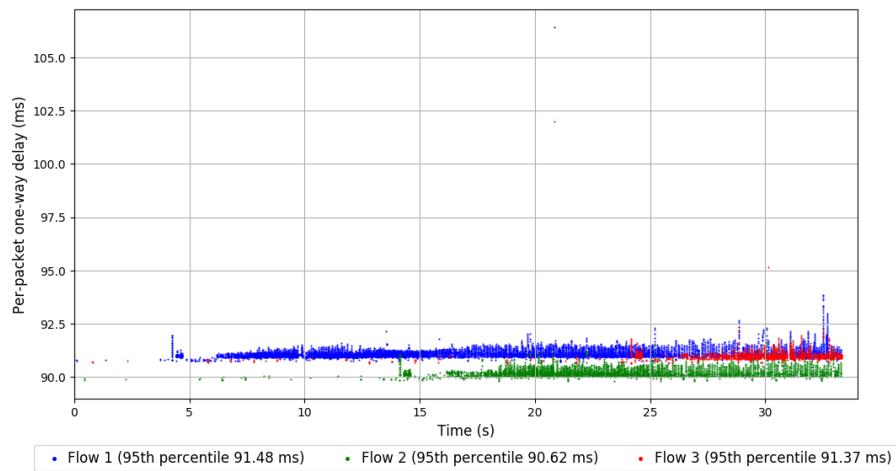
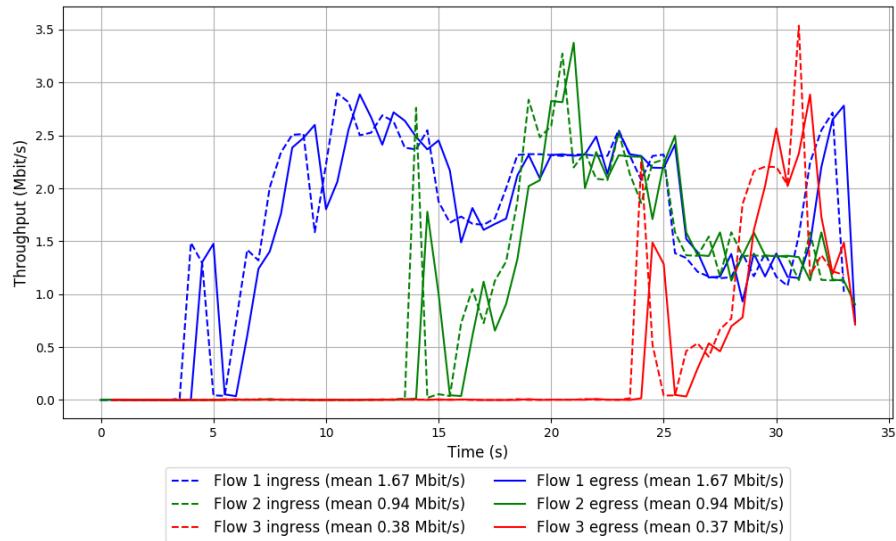


Run 3: Statistics of WebRTC media

```
Start at: 2018-11-15 11:55:44
End at: 2018-11-15 11:56:14
Local clock offset: -3.409 ms
Remote clock offset: -3.592 ms

# Below is generated by plot.py at 2018-11-15 13:11:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 91.414 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 91.482 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 90.621 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 91.368 ms
Loss rate: 1.91%
```

Run 3: Report of WebRTC media — Data Link

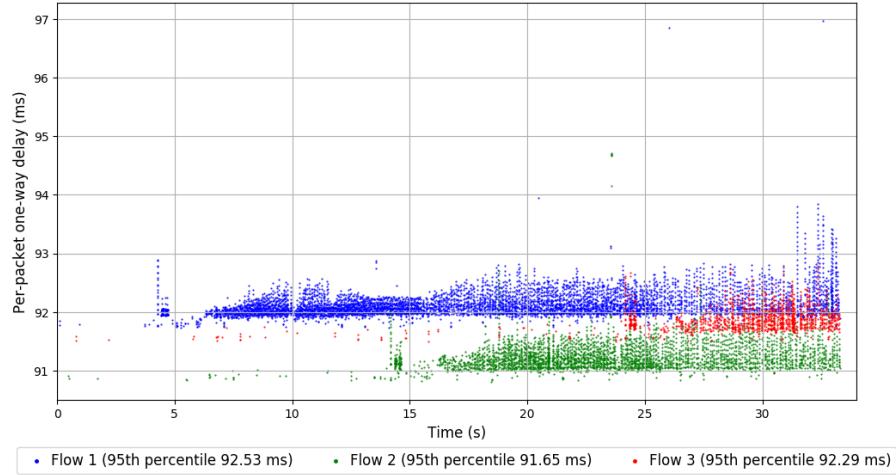
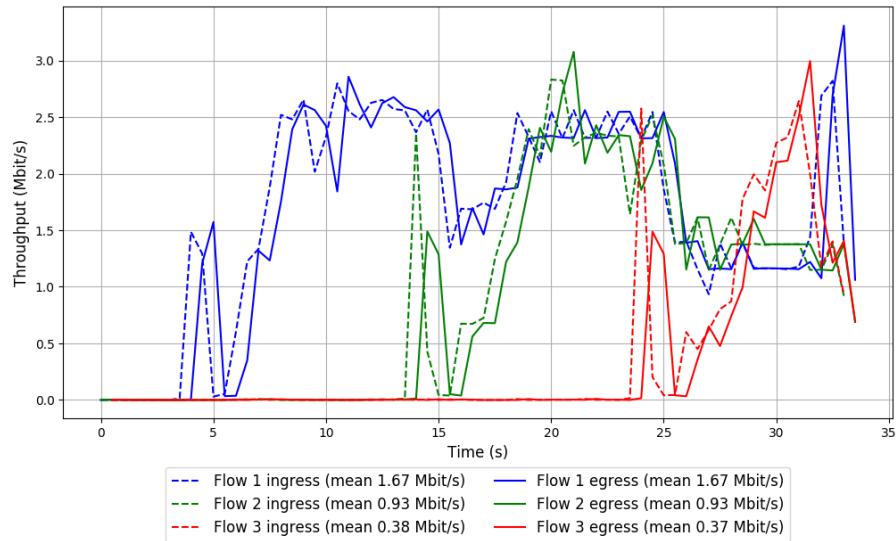


Run 4: Statistics of WebRTC media

```
Start at: 2018-11-15 12:18:50
End at: 2018-11-15 12:19:20
Local clock offset: -6.17 ms
Remote clock offset: -4.696 ms

# Below is generated by plot.py at 2018-11-15 13:11:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 92.447 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 92.532 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 91.653 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 92.292 ms
Loss rate: 1.89%
```

Run 4: Report of WebRTC media — Data Link



```
Run 5: Statistics of WebRTC media

Start at: 2018-11-15 12:41:57
End at: 2018-11-15 12:42:27
Local clock offset: -7.792 ms
Remote clock offset: 0.247 ms

# Below is generated by plot.py at 2018-11-15 13:11:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 87.580 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 87.075 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 87.755 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 87.002 ms
Loss rate: 1.56%
```

Run 5: Report of WebRTC media — Data Link

