# Pantheon Report

Generated at 2018-10-03 12:19:48 (UTC).

Data path: GCE Sydney on `ens4` (*local*) →GCE Tokyo on `ens4` (*remote*).

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.
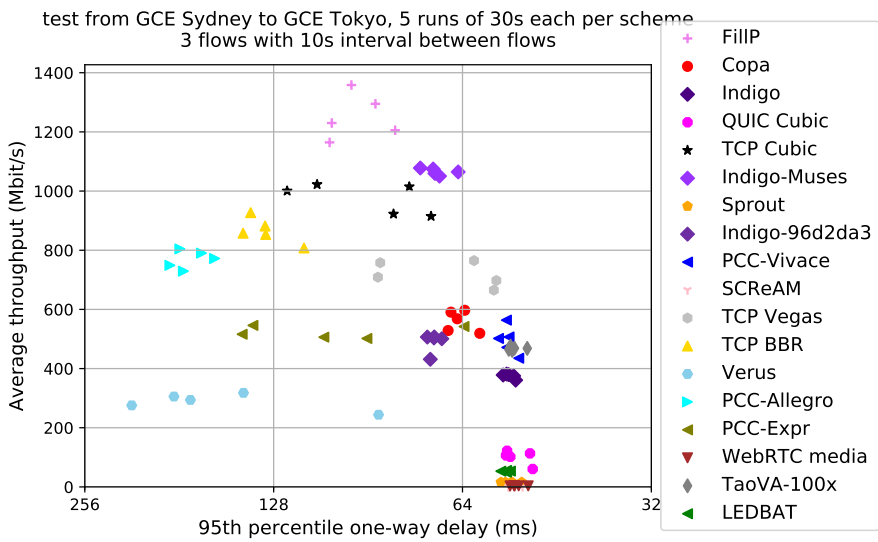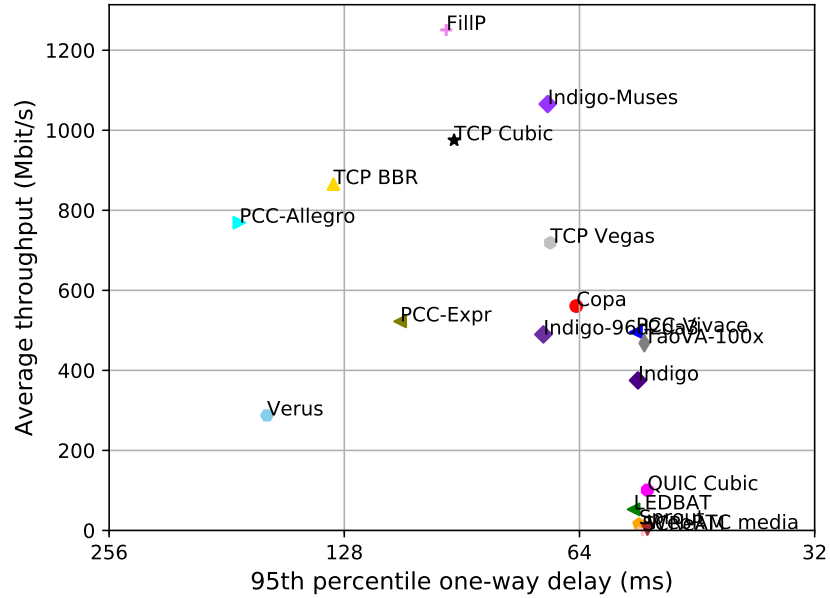
```
System info:
Linux 4.15.0-1019-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
```

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

## test from GCE Sydney to GCE Tokyo, 5 runs of 30s each per scheme
### 3 flows with 10s interval between flows (mean of all runs by scheme)



## test from GCE Sydney to GCE Tokyo, 5 runs of 30s each per scheme
### 3 flows with 10s interval between flows



3

| 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 | 446.58 | 442.78 | 373.34 | 133.18 | 135.69 | 93.11 | 0.26 | 0.20 | 0.08 |
| Copa | 5 | 296.78 | 273.10 | 247.56 | 63.06 | 64.48 | 68.40 | 0.00 | 0.00 | 0.00 |
| TCP Cubic | 5 | 477.96 | 515.03 | 463.45 | 78.26 | 80.22 | 99.60 | 0.04 | 0.04 | 0.26 |
| FillP | 5 | 682.84 | 601.91 | 502.59 | 98.86 | 86.85 | 70.91 | 0.13 | 0.09 | 0.10 |
| Indigo | 5 | 198.62 | 186.55 | 162.00 | 52.37 | 52.45 | 54.57 | 0.00 | 0.00 | 0.00 |
| Indigo-96d2da3 | 5 | 253.84 | 247.49 | 220.90 | 72.31 | 72.53 | 66.54 | 0.00 | 0.00 | 0.00 |
| LEDBAT | 5 | 33.84 | 22.63 | 11.37 | 53.19 | 53.61 | 52.67 | 0.00 | 0.00 | 0.00 |
| Indigo-Muses | 5 | 579.60 | 517.02 | 436.77 | 69.86 | 73.49 | 62.63 | 0.00 | 0.01 | 0.00 |
| PCC-Allegro | 5 | 440.10 | 355.70 | 281.12 | 172.99 | 115.66 | 136.96 | 2.46 | 1.48 | 1.61 |
| PCC-Expr | 5 | 287.47 | 258.15 | 191.59 | 98.51 | 116.11 | 59.91 | 0.35 | 0.11 | 0.00 |
| QUIC Cubic | 5 | 42.79 | 58.31 | 59.06 | 51.96 | 50.45 | 51.22 | 0.00 | 0.00 | 0.00 |
| SCReAM | 5 | 0.21 | 0.21 | 0.22 | 52.52 | 51.07 | 51.82 | 0.00 | 0.00 | 0.00 |
| Sprout | 5 | 8.12 | 8.02 | 7.80 | 52.59 | 53.11 | 52.37 | 0.00 | 0.00 | 0.00 |
| TaoVA-100x | 5 | 239.02 | 235.03 | 217.66 | 51.51 | 52.31 | 50.46 | 0.00 | 0.00 | 0.00 |
| TCP Vegas | 5 | 360.06 | 370.04 | 337.92 | 57.25 | 72.33 | 61.32 | 0.00 | 0.05 | 0.02 |
| Verus | 5 | 159.10 | 147.40 | 92.94 | 141.91 | 127.53 | 91.05 | 1.19 | 1.39 | 0.13 |
| PCC-Vivace | 5 | 288.08 | 262.26 | 100.95 | 52.63 | 54.13 | 51.70 | 0.00 | 0.00 | 0.00 |
| WebRTC media | 5 | 1.94 | 1.22 | 0.48 | 50.89 | 50.39 | 51.50 | 0.00 | 0.00 | 0.00 |

4

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-03 06:30:15
End at: 2018-10-03 06:30:45
Local clock offset: -0.309 ms
Remote clock offset: 1.16 ms


# Below is generated by plot.py at 2018-10-03 09:38:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 857.59 Mbit/s
95th percentile per-packet one-way delay: 143.174 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 398.80 Mbit/s
95th percentile per-packet one-way delay: 134.867 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 492.21 Mbit/s
95th percentile per-packet one-way delay: 159.020 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 393.92 Mbit/s
95th percentile per-packet one-way delay: 102.443 ms
Loss rate: 0.00%
```
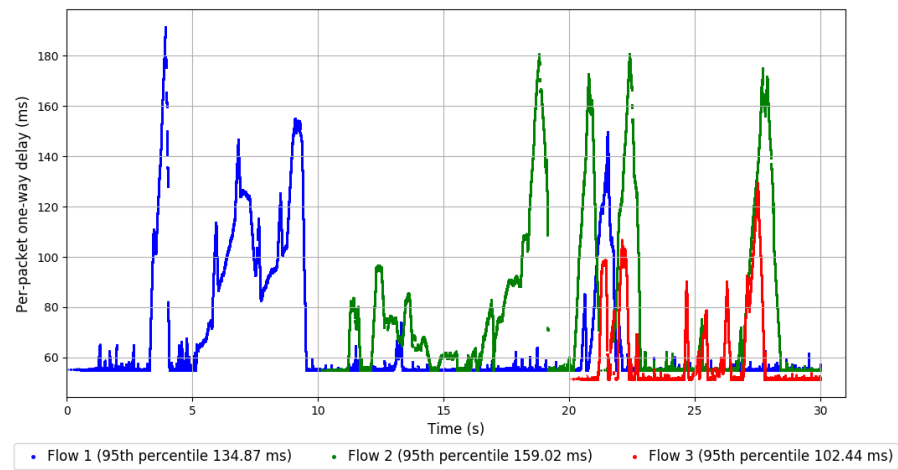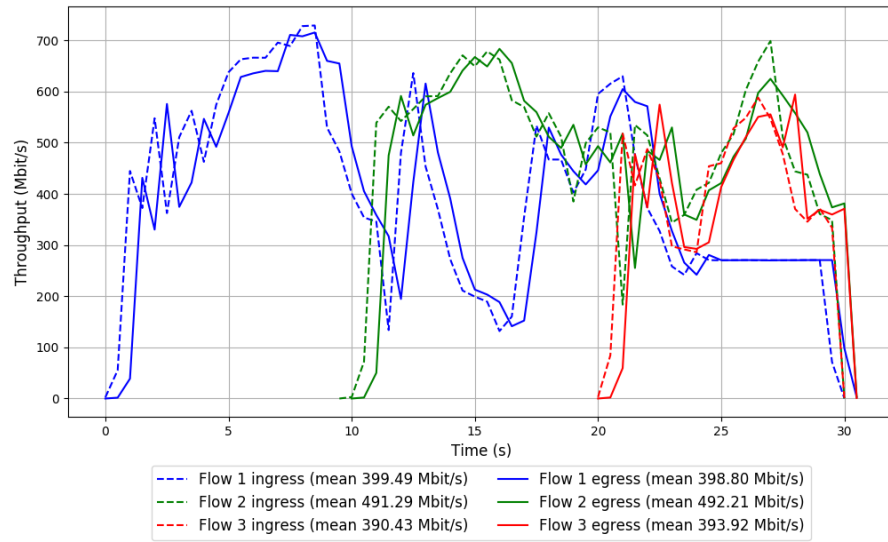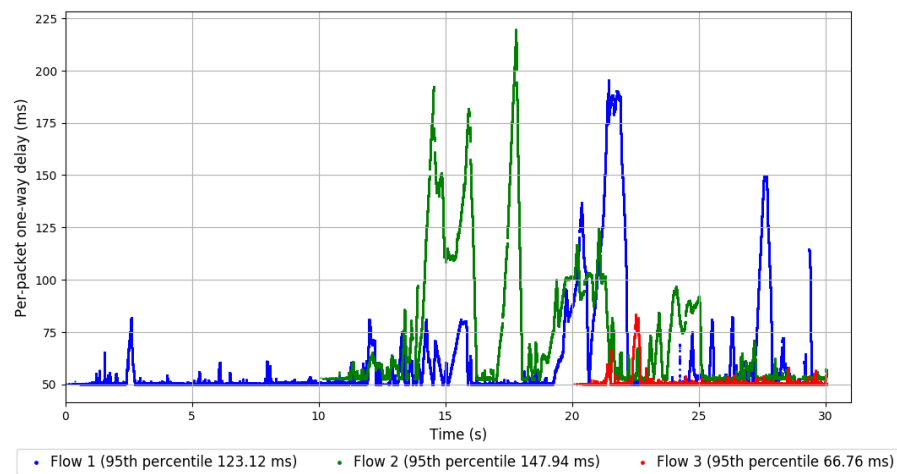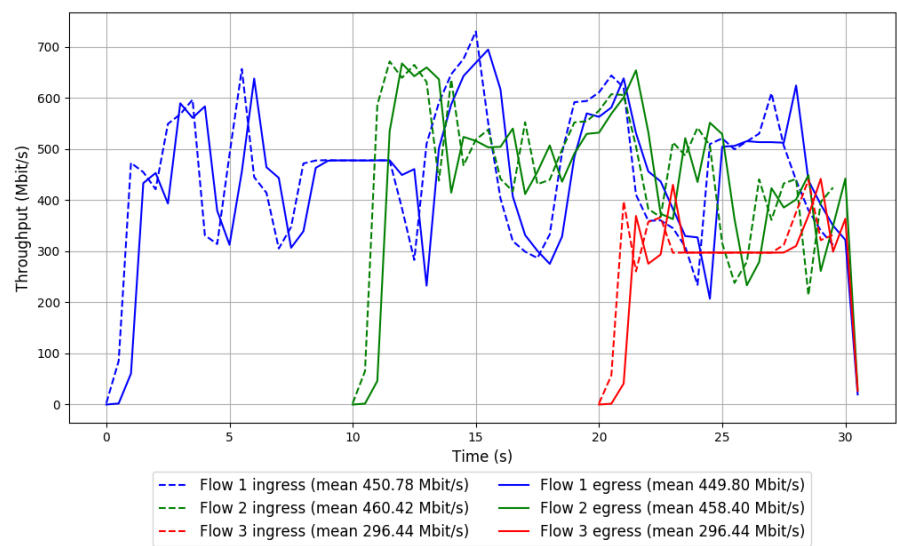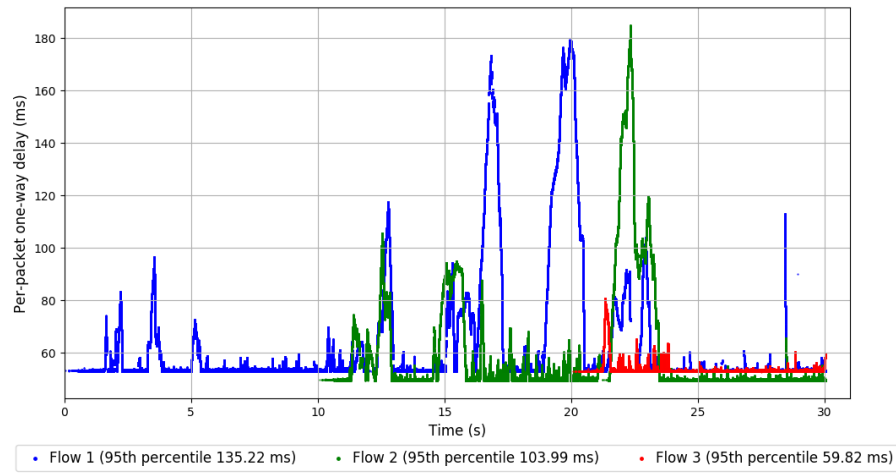
# Run 1: Report of TCP BBR — Data Link



Flow 1 ingress (mean 399.49 Mbit/s) — Flow 1 egress (mean 398.80 Mbit/s)
Flow 2 ingress (mean 491.29 Mbit/s) — Flow 2 egress (mean 492.21 Mbit/s)
Flow 3 ingress (mean 390.43 Mbit/s) — Flow 3 egress (mean 393.92 Mbit/s)



Flow 1 (95th percentile 134.87 ms)   Flow 2 (95th percentile 159.02 ms)   Flow 3 (95th percentile 102.44 ms)
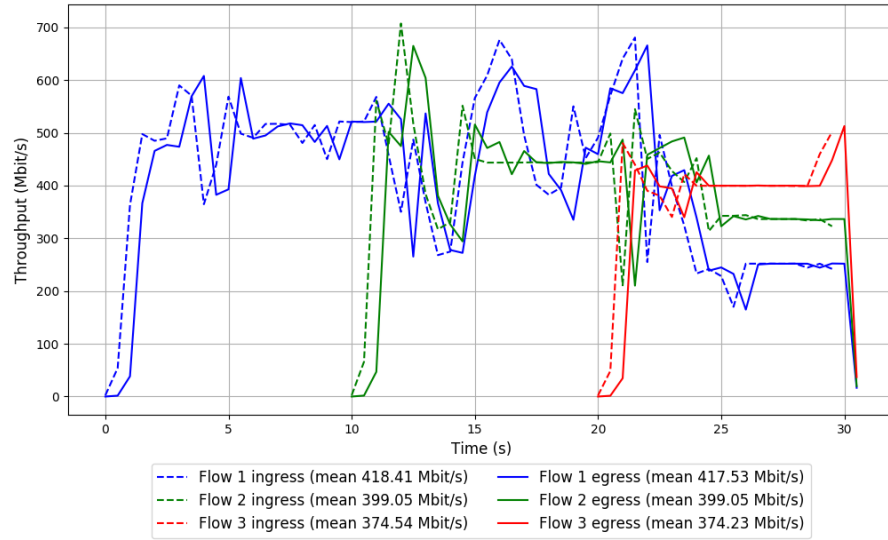
```
Run 2: Statistics of TCP BBR

Start at: 2018-10-03 07:00:48
End at: 2018-10-03 07:01:18
Local clock offset: -0.328 ms
Remote clock offset: -0.648 ms


# Below is generated by plot.py at 2018-10-03 09:38:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.44 Mbit/s
95th percentile per-packet one-way delay: 131.777 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 449.80 Mbit/s
95th percentile per-packet one-way delay: 123.123 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 458.40 Mbit/s
95th percentile per-packet one-way delay: 147.936 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 296.44 Mbit/s
95th percentile per-packet one-way delay: 66.764 ms
Loss rate: 0.00%
```
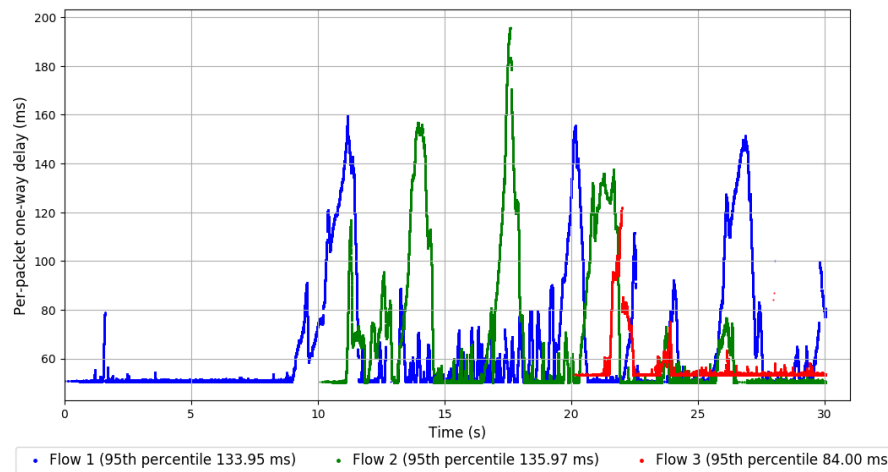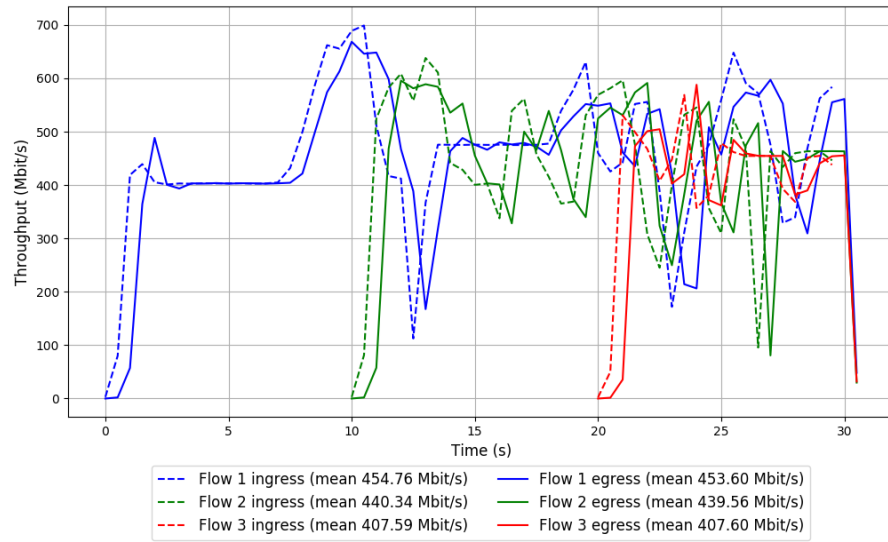
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-03 07:31:31
End at: 2018-10-03 07:32:01
Local clock offset: -0.163 ms
Remote clock offset: -0.802 ms


# Below is generated by plot.py at 2018-10-03 09:38:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 807.69 Mbit/s
95th percentile per-packet one-way delay: 114.510 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 417.53 Mbit/s
95th percentile per-packet one-way delay: 135.220 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 399.05 Mbit/s
95th percentile per-packet one-way delay: 103.987 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 374.23 Mbit/s
95th percentile per-packet one-way delay: 59.820 ms
Loss rate: 0.08%
```

Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-03 08:02:14
End at: 2018-10-03 08:02:44
Local clock offset: -0.303 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-10-03 09:39:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.83 Mbit/s
95th percentile per-packet one-way delay: 132.068 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 453.60 Mbit/s
95th percentile per-packet one-way delay: 133.950 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 439.56 Mbit/s
95th percentile per-packet one-way delay: 135.972 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 407.60 Mbit/s
95th percentile per-packet one-way delay: 84.002 ms
Loss rate: 0.00%
```
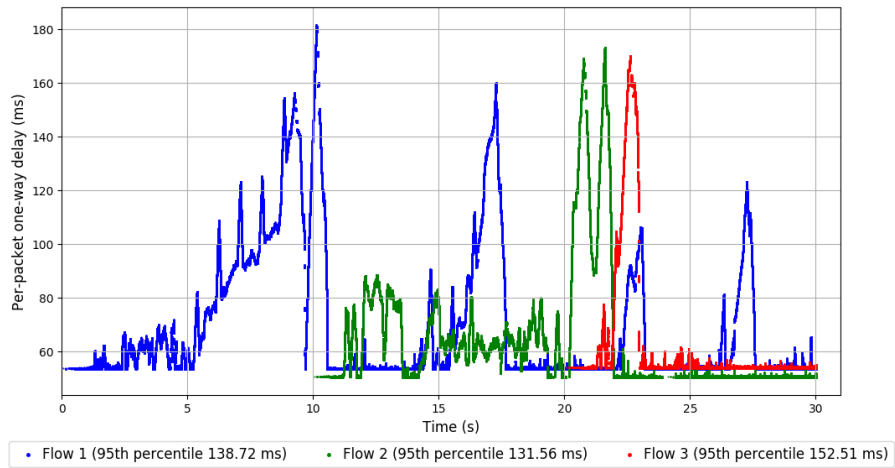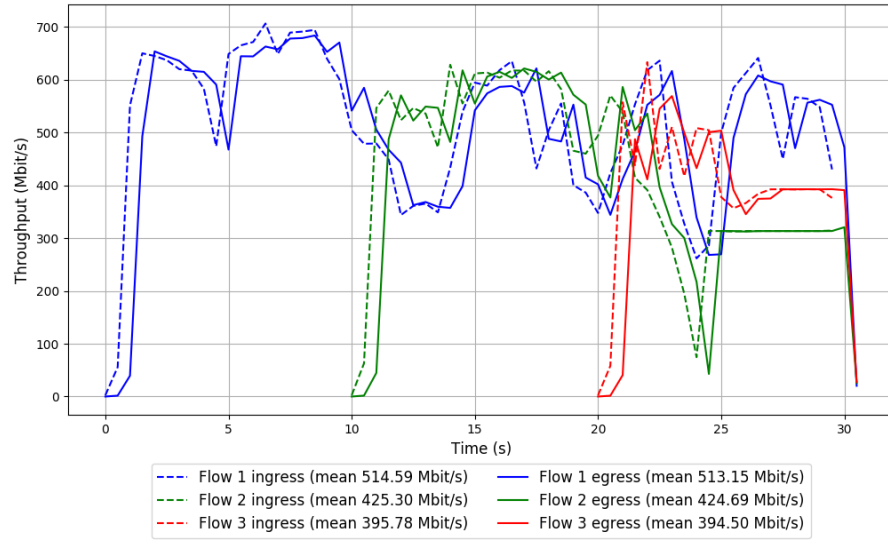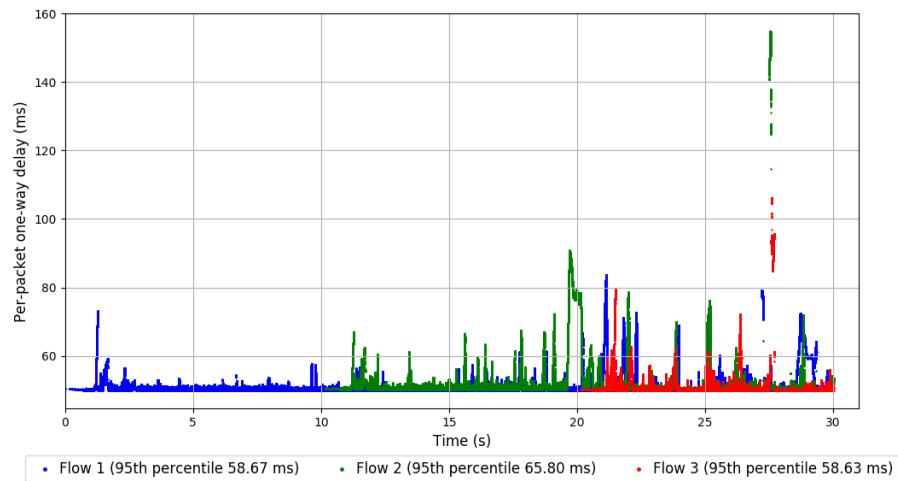
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-03 08:33:14
End at: 2018-10-03 08:33:44
Local clock offset: -0.362 ms
Remote clock offset: 0.148 ms


# Below is generated by plot.py at 2018-10-03 09:40:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 927.09 Mbit/s
95th percentile per-packet one-way delay: 139.276 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 513.15 Mbit/s
95th percentile per-packet one-way delay: 138.720 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 424.69 Mbit/s
95th percentile per-packet one-way delay: 131.556 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 394.50 Mbit/s
95th percentile per-packet one-way delay: 152.510 ms
Loss rate: 0.33%
```
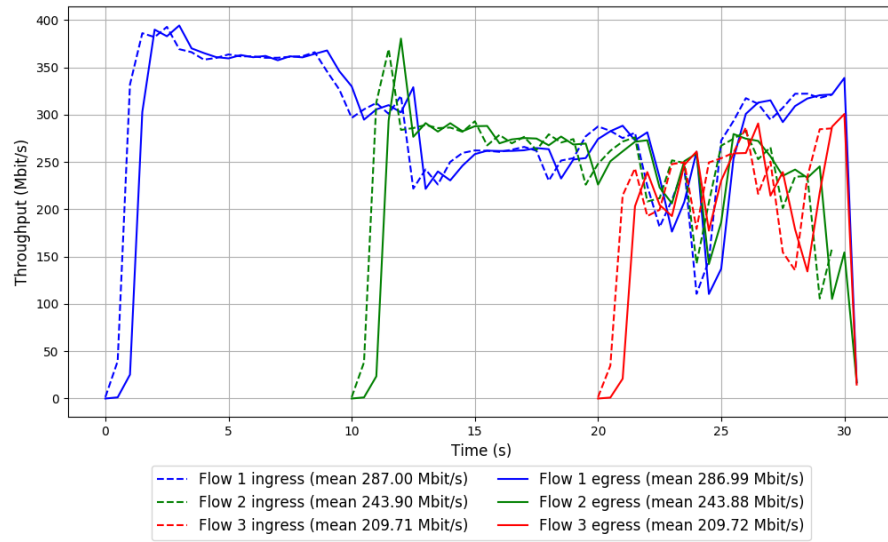
Run 5: Report of TCP BBR — Data Link



Flow 1 ingress (mean 514.59 Mbit/s) --- Flow 1 egress (mean 513.15 Mbit/s)
Flow 2 ingress (mean 425.30 Mbit/s) --- Flow 2 egress (mean 424.69 Mbit/s)
Flow 3 ingress (mean 395.78 Mbit/s) --- Flow 3 egress (mean 394.50 Mbit/s)



Flow 1 (95th percentile 138.72 ms) · Flow 2 (95th percentile 131.56 ms) · Flow 3 (95th percentile 152.51 ms)
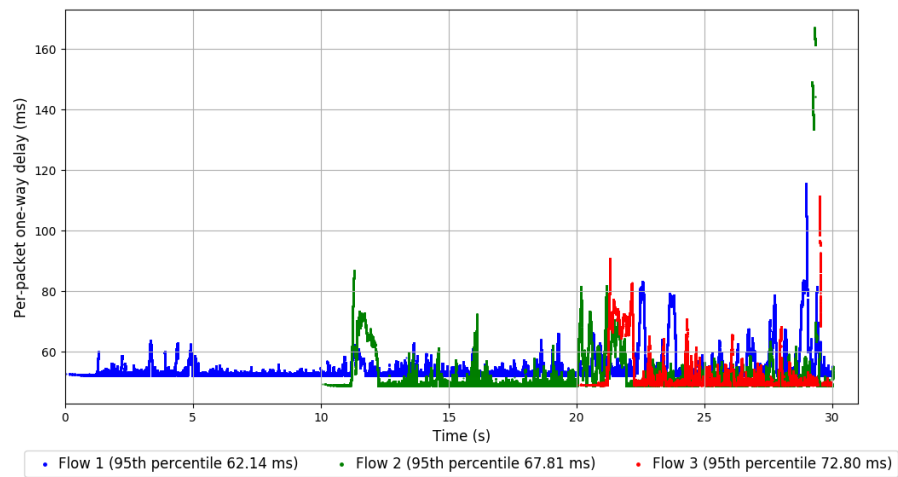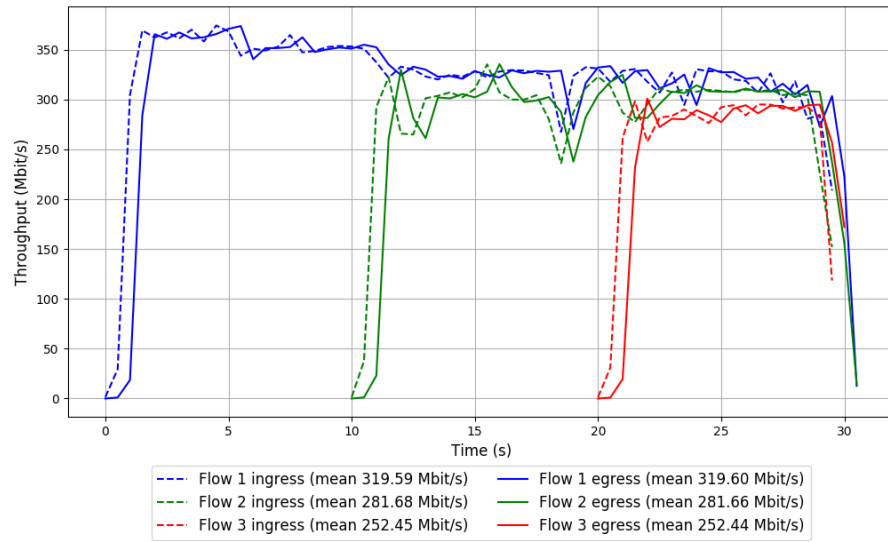
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```
Run 1: Statistics of Copa

Start at: 2018-10-03 06:40:35
End at: 2018-10-03 06:41:05
Local clock offset: -0.129 ms
Remote clock offset: -0.122 ms


# Below is generated by plot.py at 2018-10-03 09:41:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 519.10 Mbit/s
95th percentile per-packet one-way delay: 60.072 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 286.99 Mbit/s
95th percentile per-packet one-way delay: 58.668 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 243.88 Mbit/s
95th percentile per-packet one-way delay: 65.797 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 209.72 Mbit/s
95th percentile per-packet one-way delay: 58.627 ms
Loss rate: 0.00%
```
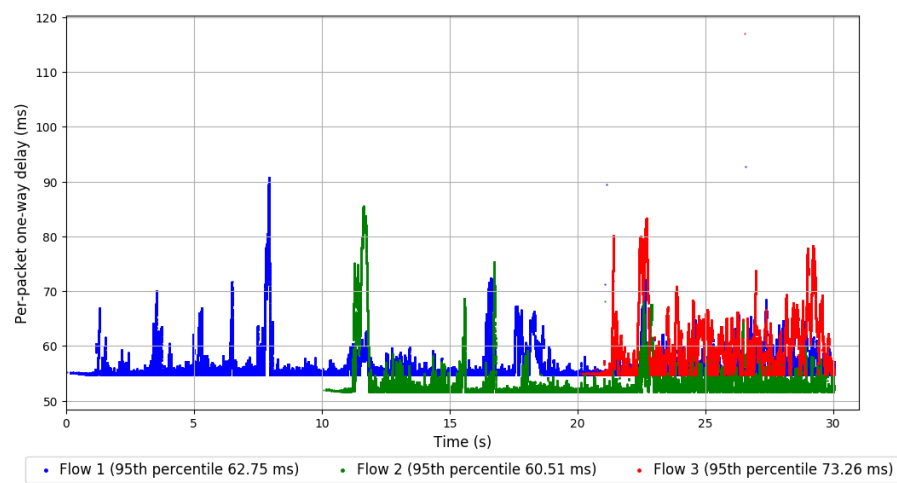
Run 1: Report of Copa — Data Link



Flow 1 ingress (mean 287.00 Mbit/s) --- Flow 1 egress (mean 286.99 Mbit/s)
Flow 2 ingress (mean 243.90 Mbit/s) --- Flow 2 egress (mean 243.88 Mbit/s)
Flow 3 ingress (mean 209.71 Mbit/s) --- Flow 3 egress (mean 209.72 Mbit/s)



Flow 1 (95th percentile 58.67 ms)   Flow 2 (95th percentile 65.80 ms)   Flow 3 (95th percentile 58.63 ms)

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```
Run 2: Statistics of Copa

Start at: 2018-10-03 07:11:02
End at: 2018-10-03 07:11:32
Local clock offset: -0.116 ms
Remote clock offset: -1.406 ms


# Below is generated by plot.py at 2018-10-03 09:43:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.66 Mbit/s
95th percentile per-packet one-way delay: 66.769 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 319.60 Mbit/s
95th percentile per-packet one-way delay: 62.144 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 281.66 Mbit/s
95th percentile per-packet one-way delay: 67.810 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 252.44 Mbit/s
95th percentile per-packet one-way delay: 72.803 ms
Loss rate: 0.00%
```
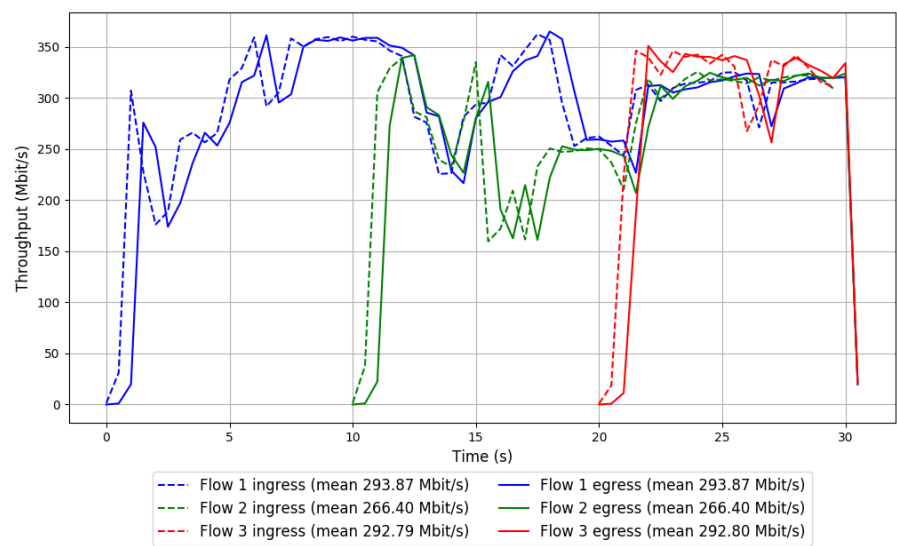
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-03 07:41:43
End at: 2018-10-03 07:42:13
Local clock offset: -0.323 ms
Remote clock offset: 1.14 ms


# Below is generated by plot.py at 2018-10-03 09:43:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 568.30 Mbit/s
95th percentile per-packet one-way delay: 65.242 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 293.87 Mbit/s
95th percentile per-packet one-way delay: 62.746 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 266.40 Mbit/s
95th percentile per-packet one-way delay: 60.506 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 292.80 Mbit/s
95th percentile per-packet one-way delay: 73.260 ms
Loss rate: 0.00%
```
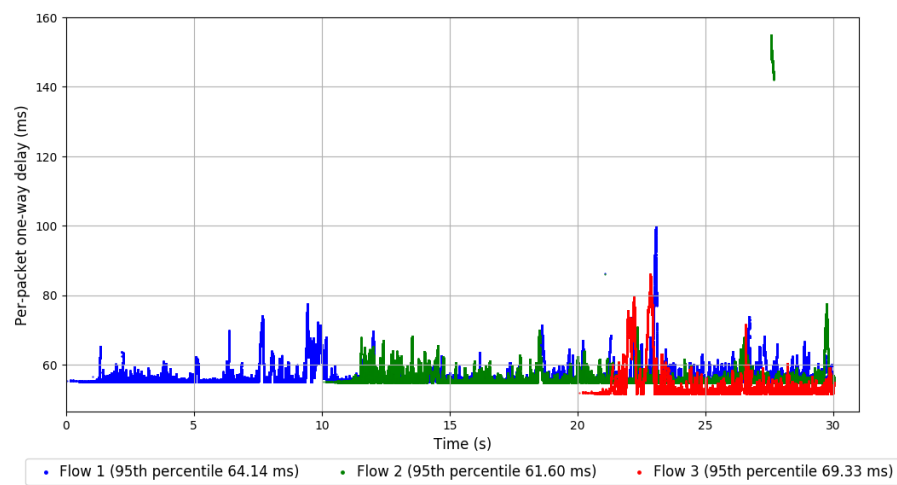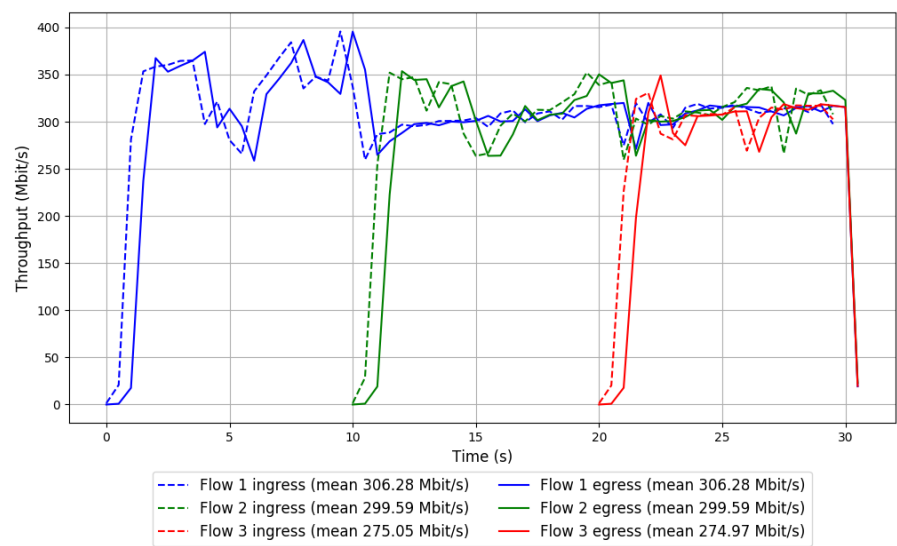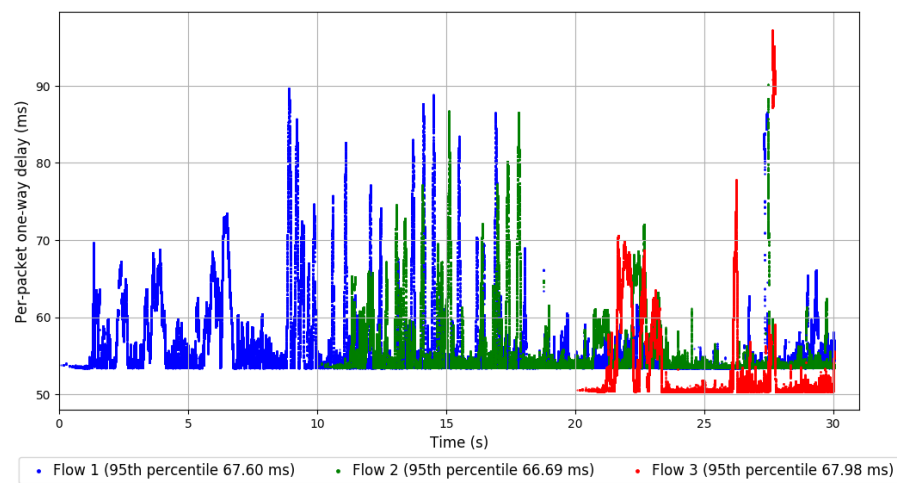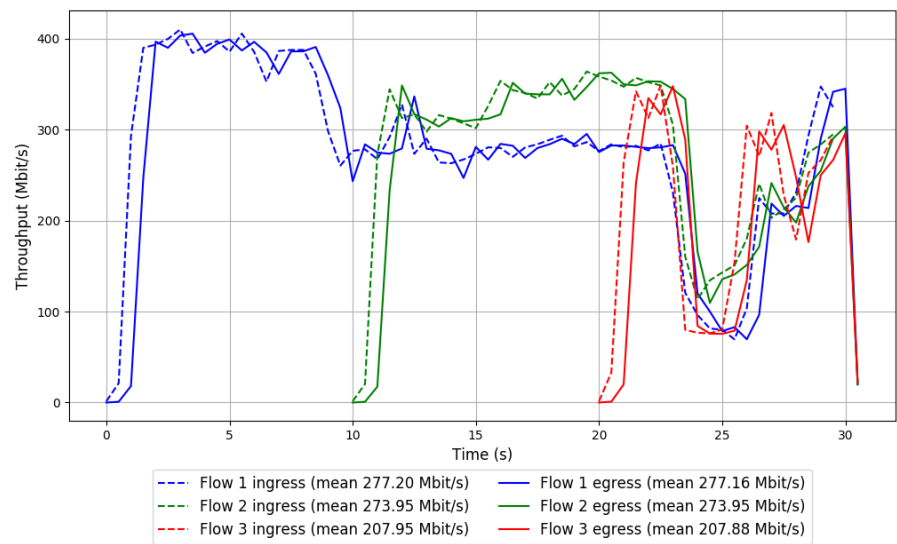
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-10-03 08:12:40
End at: 2018-10-03 08:13:10
Local clock offset: -0.263 ms
Remote clock offset: 1.381 ms


# Below is generated by plot.py at 2018-10-03 10:03:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 597.06 Mbit/s
95th percentile per-packet one-way delay: 63.482 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 306.28 Mbit/s
95th percentile per-packet one-way delay: 64.138 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 299.59 Mbit/s
95th percentile per-packet one-way delay: 61.601 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 274.97 Mbit/s
95th percentile per-packet one-way delay: 69.334 ms
Loss rate: 0.00%
```
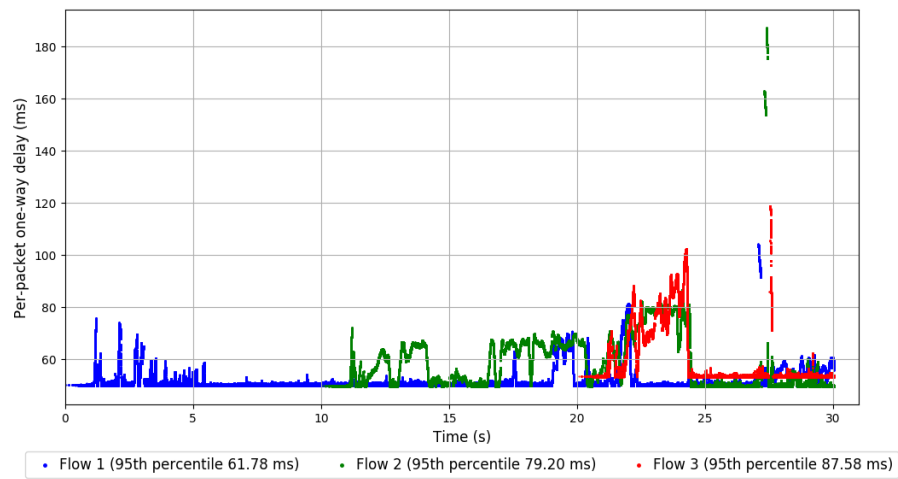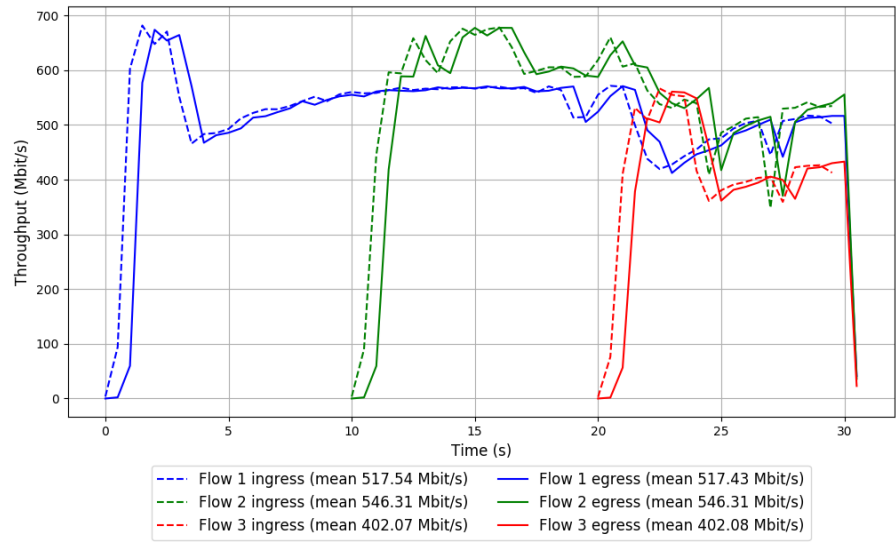
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-10-03 08:43:39
End at: 2018-10-03 08:44:09
Local clock offset: -0.202 ms
Remote clock offset: -0.153 ms


# Below is generated by plot.py at 2018-10-03 10:03:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 528.69 Mbit/s
95th percentile per-packet one-way delay: 67.468 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 277.16 Mbit/s
95th percentile per-packet one-way delay: 67.597 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 273.95 Mbit/s
95th percentile per-packet one-way delay: 66.691 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 207.88 Mbit/s
95th percentile per-packet one-way delay: 67.977 ms
Loss rate: 0.00%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-03 06:38:33
End at: 2018-10-03 06:39:03
Local clock offset: -0.014 ms
Remote clock offset: -0.123 ms


# Below is generated by plot.py at 2018-10-03 10:03:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1014.78 Mbit/s
95th percentile per-packet one-way delay: 77.793 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 517.43 Mbit/s
95th percentile per-packet one-way delay: 61.777 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 546.31 Mbit/s
95th percentile per-packet one-way delay: 79.199 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 402.08 Mbit/s
95th percentile per-packet one-way delay: 87.575 ms
Loss rate: 0.00%
```
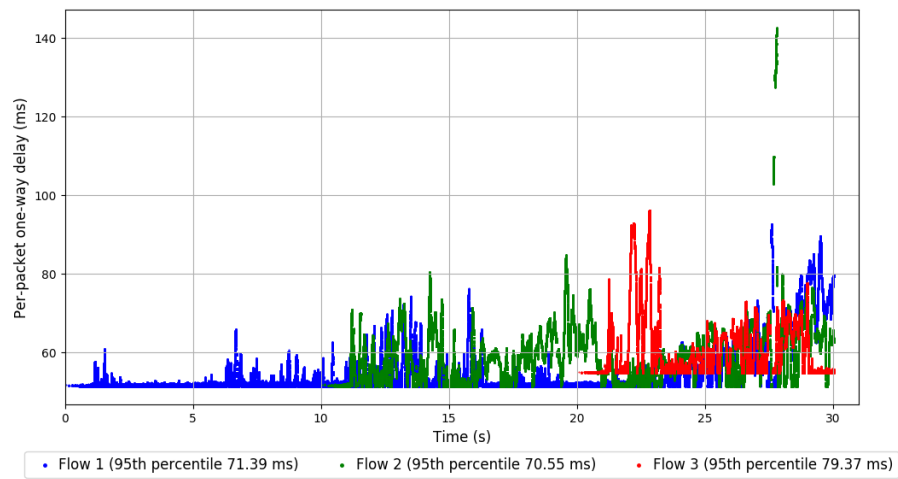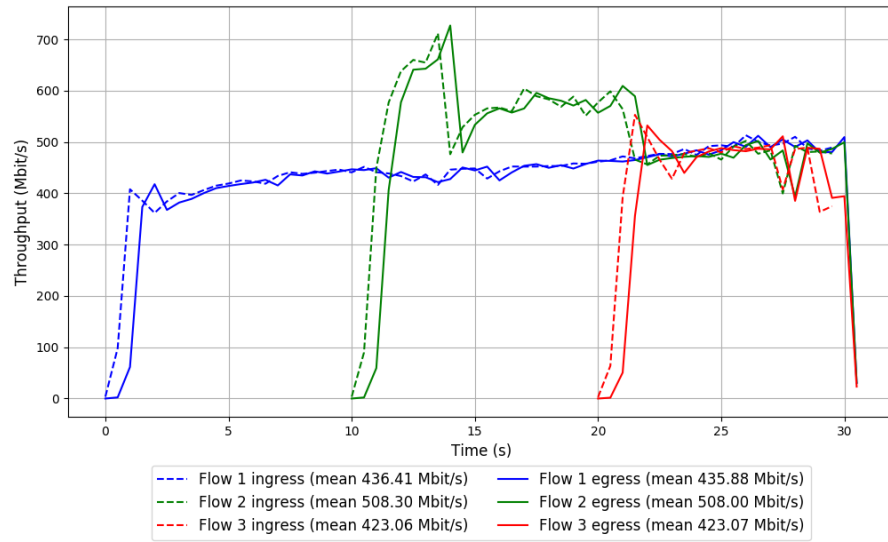
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-03 07:09:05
End at: 2018-10-03 07:09:35
Local clock offset: -0.099 ms
Remote clock offset: 1.212 ms


# Below is generated by plot.py at 2018-10-03 10:03:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 914.90 Mbit/s
95th percentile per-packet one-way delay: 71.829 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 435.88 Mbit/s
95th percentile per-packet one-way delay: 71.391 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 508.00 Mbit/s
95th percentile per-packet one-way delay: 70.553 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 423.07 Mbit/s
95th percentile per-packet one-way delay: 79.372 ms
Loss rate: 0.00%
```
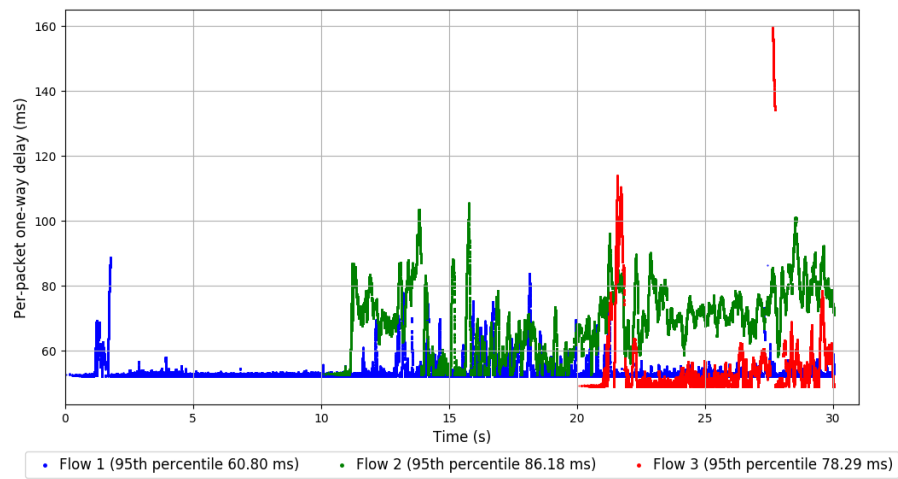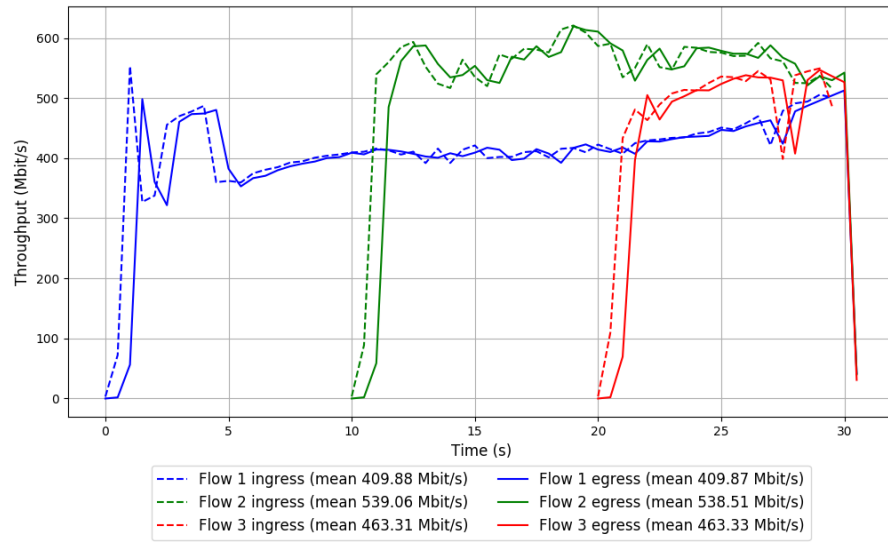
Run 2: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 436.41 Mbit/s) --- Flow 1 egress (mean 435.88 Mbit/s)
Flow 2 ingress (mean 508.30 Mbit/s) --- Flow 2 egress (mean 508.00 Mbit/s)
Flow 3 ingress (mean 423.06 Mbit/s) --- Flow 3 egress (mean 423.07 Mbit/s)



Flow 1 (95th percentile 71.39 ms)   Flow 2 (95th percentile 70.55 ms)   Flow 3 (95th percentile 79.37 ms)

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```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-03 07:39:46
End at: 2018-10-03 07:40:16
Local clock offset: -0.255 ms
Remote clock offset: -0.964 ms


# Below is generated by plot.py at 2018-10-03 10:03:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 922.58 Mbit/s
95th percentile per-packet one-way delay: 82.442 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 409.87 Mbit/s
95th percentile per-packet one-way delay: 60.805 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 538.51 Mbit/s
95th percentile per-packet one-way delay: 86.180 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 463.33 Mbit/s
95th percentile per-packet one-way delay: 78.287 ms
Loss rate: 0.00%
```
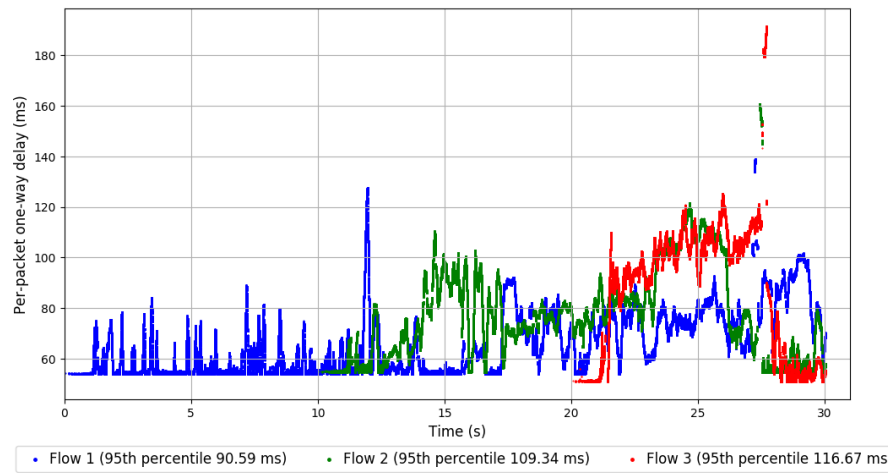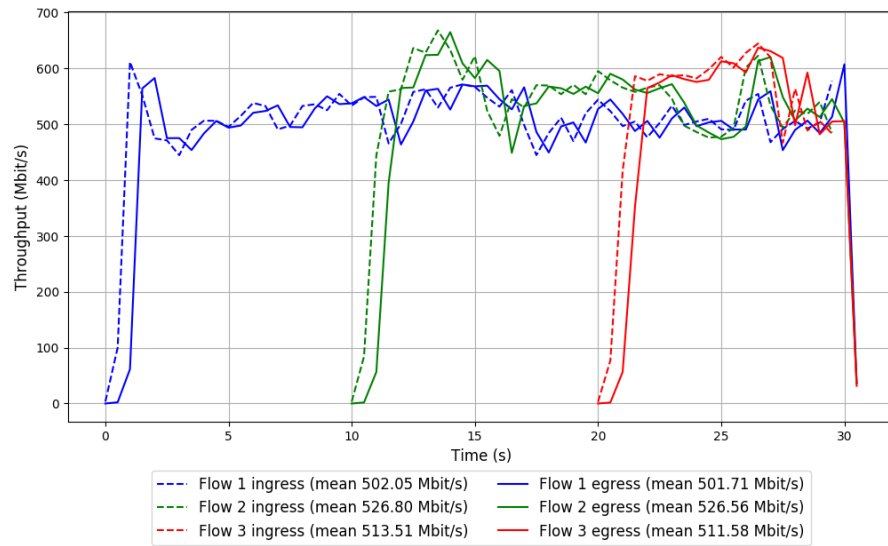
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-03 08:10:38
End at: 2018-10-03 08:11:08
Local clock offset: 0.024 ms
Remote clock offset: 1.058 ms


# Below is generated by plot.py at 2018-10-03 10:04:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1022.37 Mbit/s
95th percentile per-packet one-way delay: 109.138 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 501.71 Mbit/s
95th percentile per-packet one-way delay: 90.588 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 526.56 Mbit/s
95th percentile per-packet one-way delay: 109.345 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 511.58 Mbit/s
95th percentile per-packet one-way delay: 116.668 ms
Loss rate: 0.36%
```
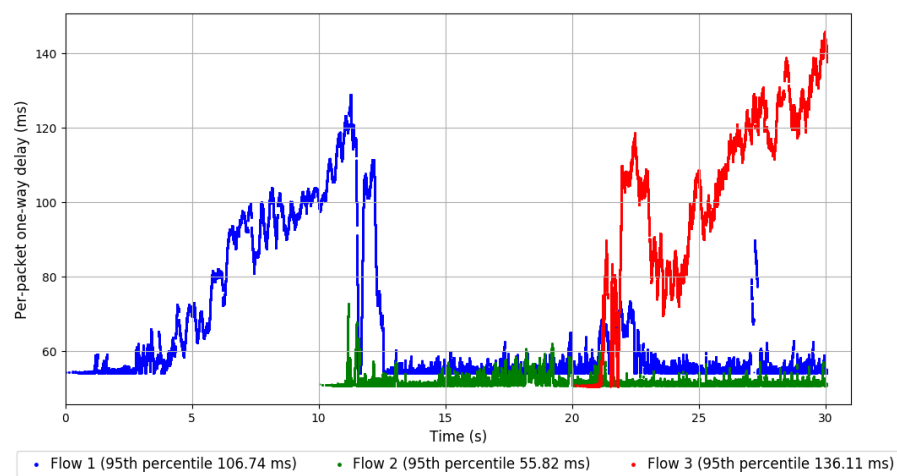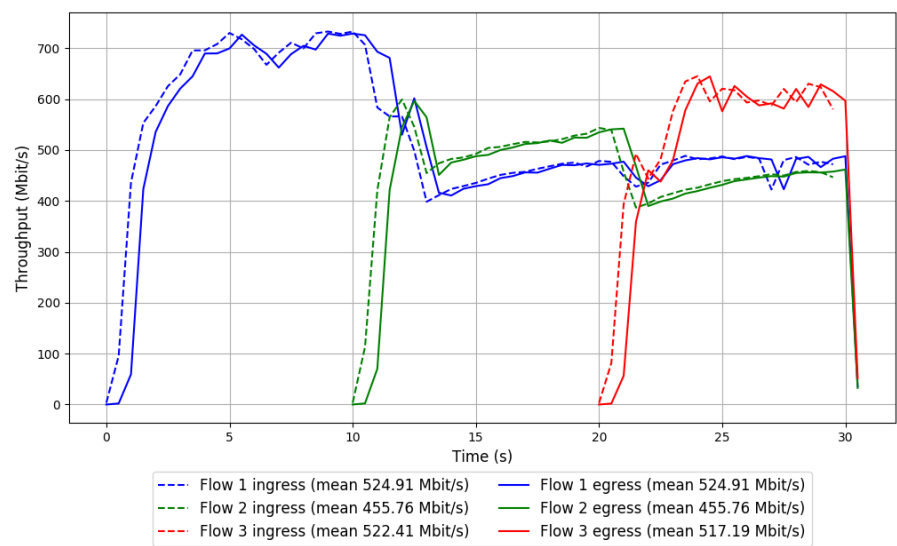
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-03 08:41:38
End at: 2018-10-03 08:42:08
Local clock offset: -0.095 ms
Remote clock offset: 0.32 ms


# Below is generated by plot.py at 2018-10-03 10:06:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1000.50 Mbit/s
95th percentile per-packet one-way delay: 121.820 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 524.91 Mbit/s
95th percentile per-packet one-way delay: 106.739 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 455.76 Mbit/s
95th percentile per-packet one-way delay: 55.823 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 517.19 Mbit/s
95th percentile per-packet one-way delay: 136.112 ms
Loss rate: 0.95%
```

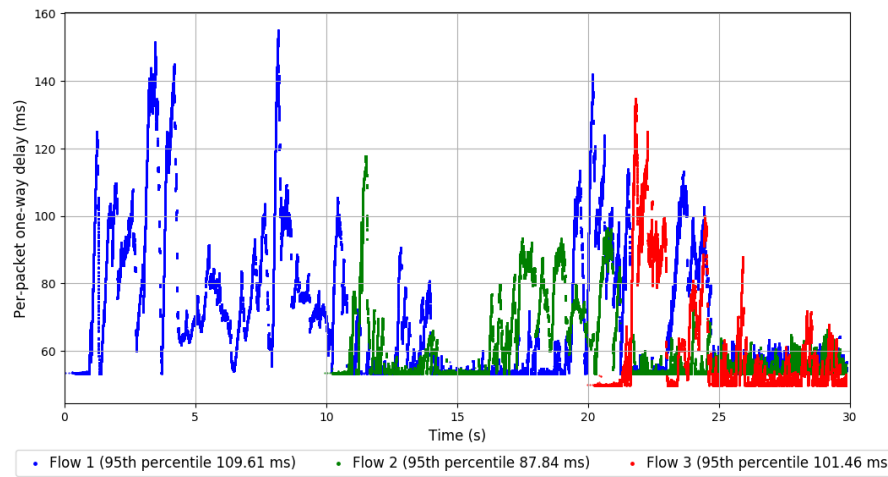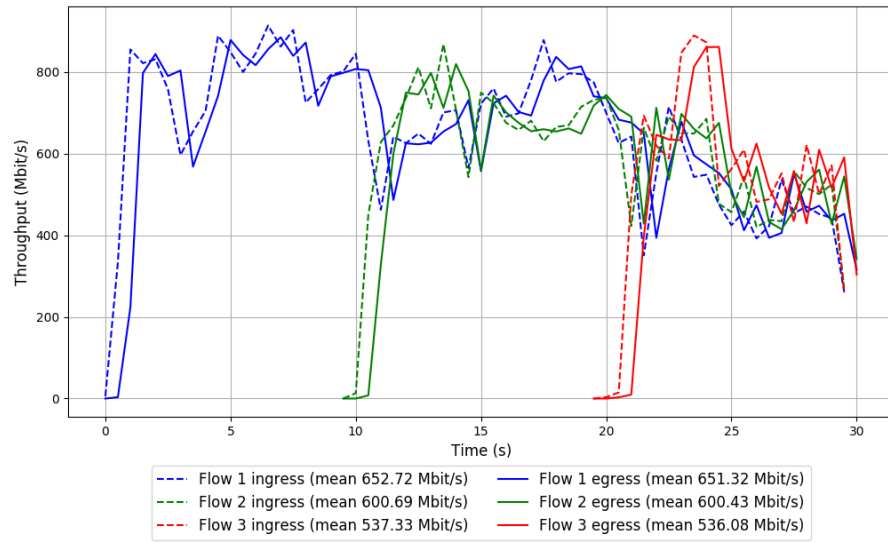## Run 5: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 524.91 Mbit/s) — Flow 1 egress (mean 524.91 Mbit/s)
Flow 2 ingress (mean 455.76 Mbit/s) — Flow 2 egress (mean 455.76 Mbit/s)
Flow 3 ingress (mean 522.41 Mbit/s) — Flow 3 egress (mean 517.19 Mbit/s)



• Flow 1 (95th percentile 106.74 ms)   • Flow 2 (95th percentile 55.82 ms)   • Flow 3 (95th percentile 136.11 ms)

34

```
Run 1: Statistics of FillP

Start at: 2018-10-03 06:34:37
End at: 2018-10-03 06:35:07
Local clock offset: -0.036 ms
Remote clock offset: -0.133 ms


# Below is generated by plot.py at 2018-10-03 10:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1230.03 Mbit/s
95th percentile per-packet one-way delay: 103.412 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 651.32 Mbit/s
95th percentile per-packet one-way delay: 109.607 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 600.43 Mbit/s
95th percentile per-packet one-way delay: 87.838 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 536.08 Mbit/s
95th percentile per-packet one-way delay: 101.464 ms
Loss rate: 0.23%
```
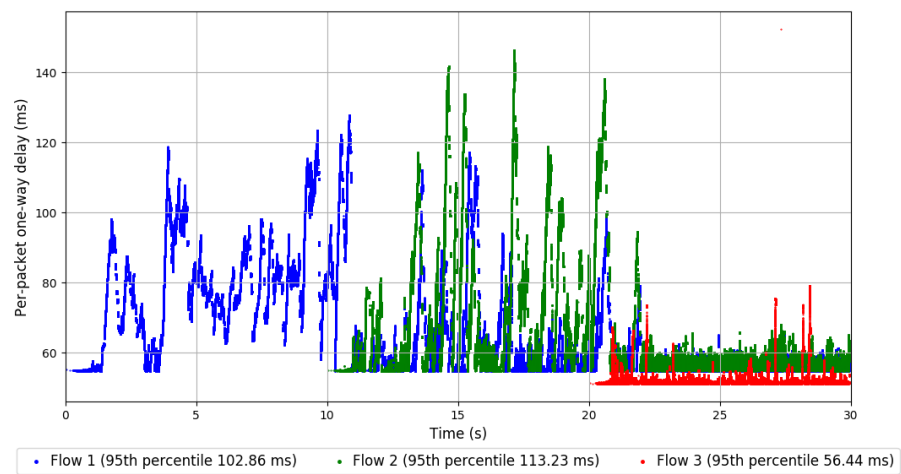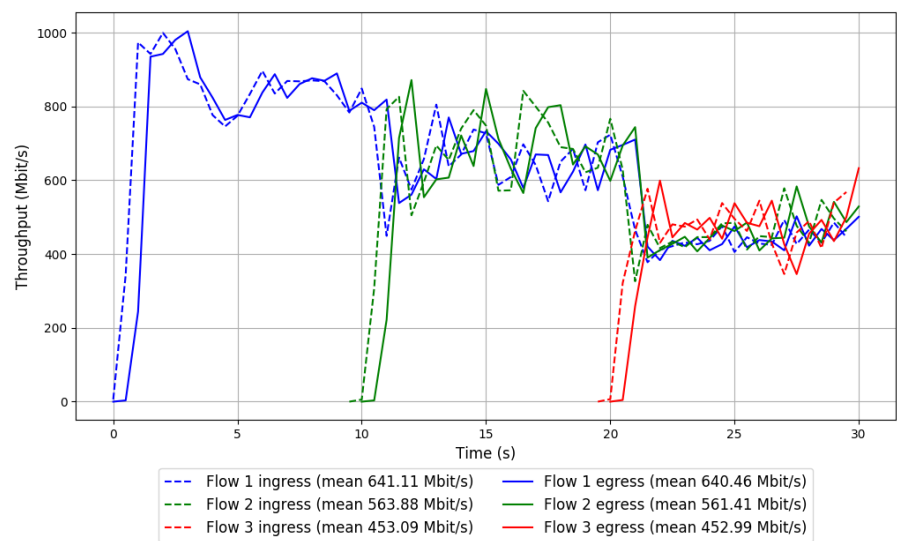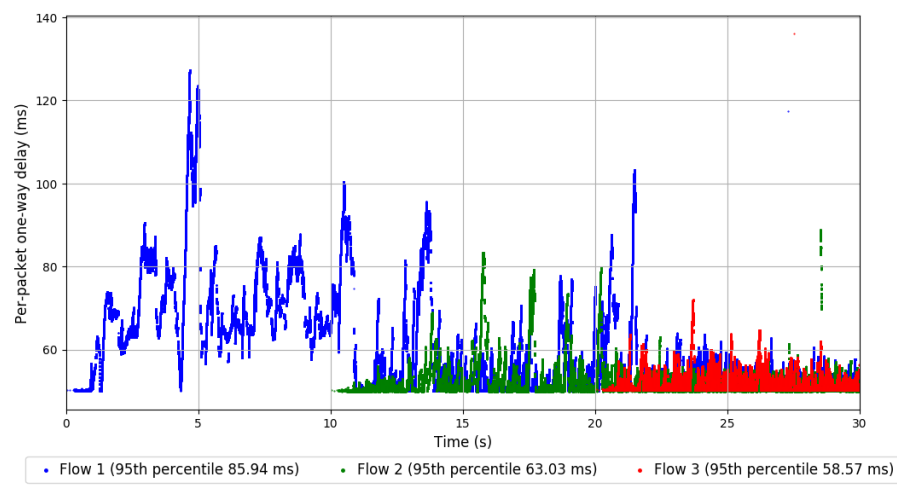
Run 1: Report of FillP — Data Link



Flow 1 ingress (mean 652.72 Mbit/s)    Flow 1 egress (mean 651.32 Mbit/s)
Flow 2 ingress (mean 600.69 Mbit/s)    Flow 2 egress (mean 600.43 Mbit/s)
Flow 3 ingress (mean 537.33 Mbit/s)    Flow 3 egress (mean 536.08 Mbit/s)



Flow 1 (95th percentile 109.61 ms)    Flow 2 (95th percentile 87.84 ms)    Flow 3 (95th percentile 101.46 ms)
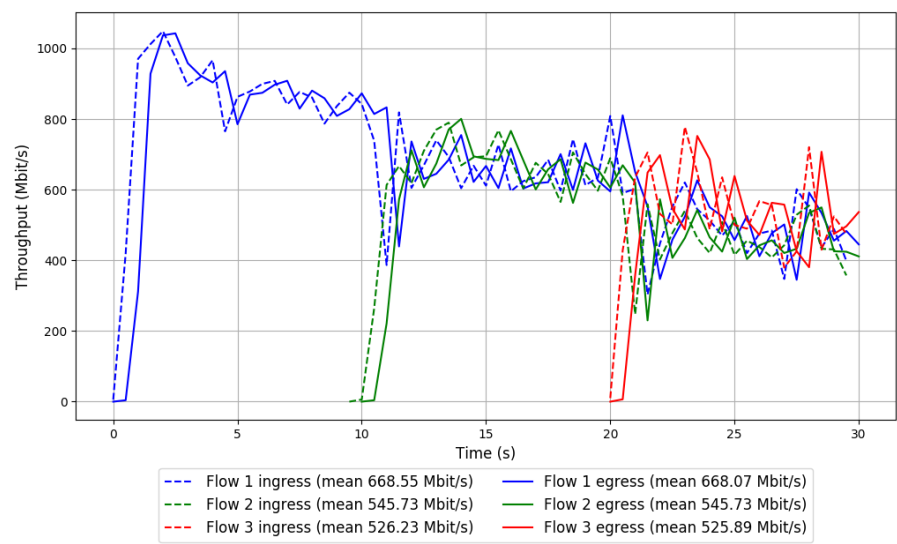
```
Run 2: Statistics of FillP

Start at: 2018-10-03 07:05:10
End at: 2018-10-03 07:05:40
Local clock offset: -0.129 ms
Remote clock offset: 1.26 ms


# Below is generated by plot.py at 2018-10-03 10:33:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1164.56 Mbit/s
95th percentile per-packet one-way delay: 104.231 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 640.46 Mbit/s
95th percentile per-packet one-way delay: 102.859 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 561.41 Mbit/s
95th percentile per-packet one-way delay: 113.235 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 452.99 Mbit/s
95th percentile per-packet one-way delay: 56.443 ms
Loss rate: 0.00%
```
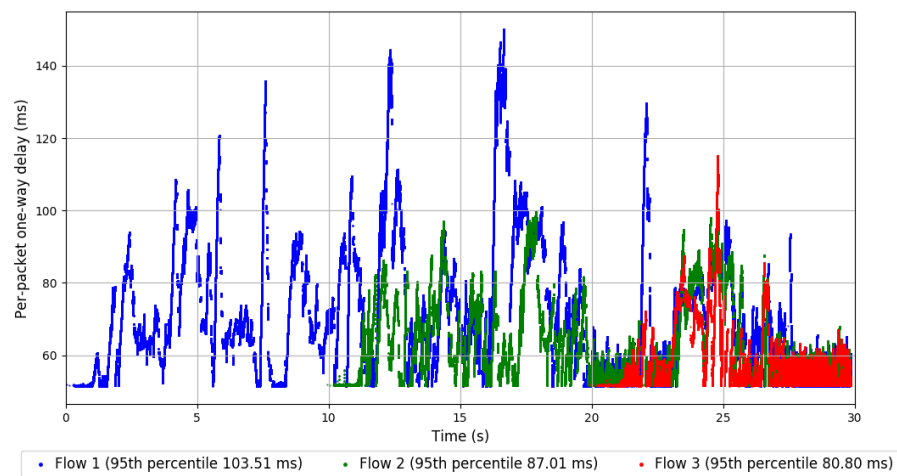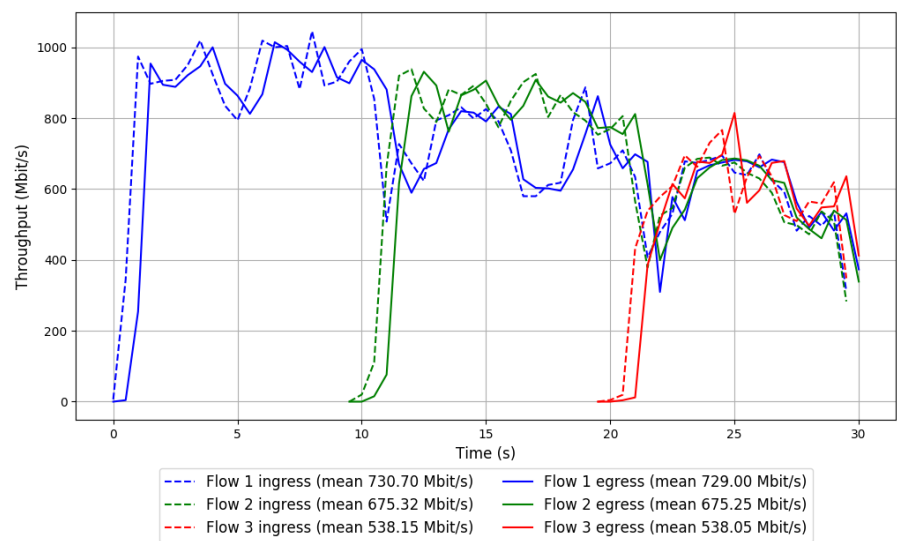
## Run 2: Report of FillP — Data Link



- - - - Flow 1 ingress (mean 641.11 Mbit/s) ——— Flow 1 egress (mean 640.46 Mbit/s)
- - - - Flow 2 ingress (mean 563.88 Mbit/s) ——— Flow 2 egress (mean 561.41 Mbit/s)
- - - - Flow 3 ingress (mean 453.09 Mbit/s) ——— Flow 3 egress (mean 452.99 Mbit/s)



- Flow 1 (95th percentile 102.86 ms)   • Flow 2 (95th percentile 113.23 ms)   • Flow 3 (95th percentile 56.44 ms)
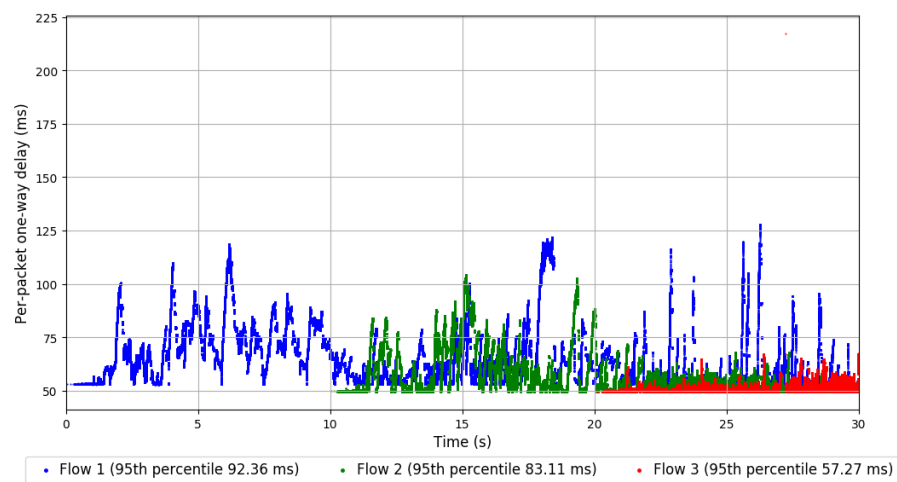
```
Run 3: Statistics of FillP

Start at: 2018-10-03 07:35:51
End at: 2018-10-03 07:36:21
Local clock offset: -0.459 ms
Remote clock offset: -0.263 ms

# Below is generated by plot.py at 2018-10-03 10:36:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1205.59 Mbit/s
95th percentile per-packet one-way delay: 81.943 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 668.07 Mbit/s
95th percentile per-packet one-way delay: 85.943 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 545.73 Mbit/s
95th percentile per-packet one-way delay: 63.031 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 525.89 Mbit/s
95th percentile per-packet one-way delay: 58.572 ms
Loss rate: 0.01%
```
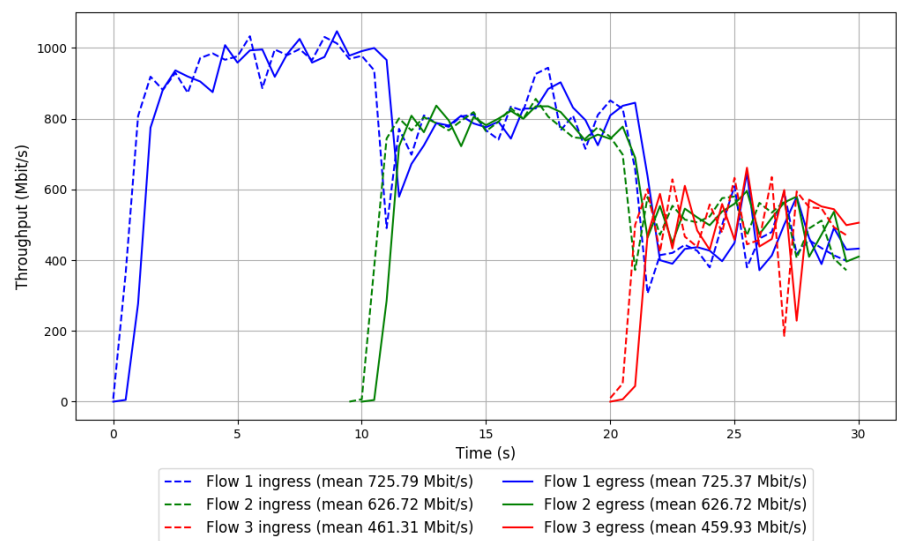
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-03 08:06:38
End at: 2018-10-03 08:07:08
Local clock offset: -0.097 ms
Remote clock offset: 1.217 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1358.46 Mbit/s
95th percentile per-packet one-way delay: 96.223 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 729.00 Mbit/s
95th percentile per-packet one-way delay: 103.512 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 675.25 Mbit/s
95th percentile per-packet one-way delay: 87.011 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 538.05 Mbit/s
95th percentile per-packet one-way delay: 80.800 ms
Loss rate: 0.00%
```
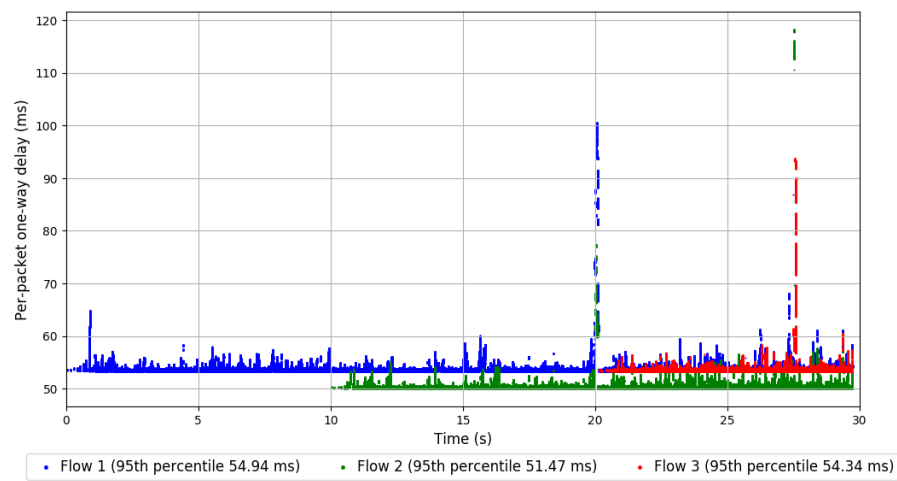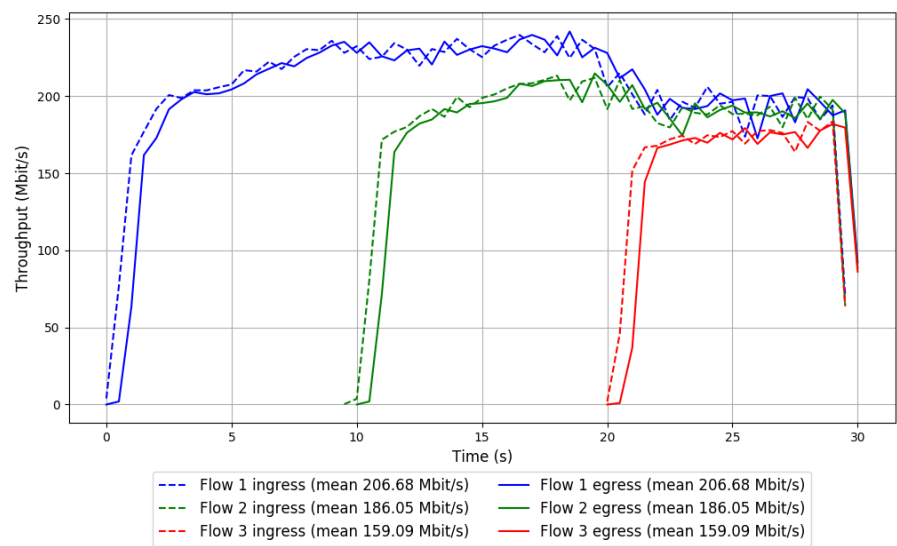
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-10-03 08:37:40
End at: 2018-10-03 08:38:10
Local clock offset: -0.429 ms
Remote clock offset: -0.787 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1294.85 Mbit/s
95th percentile per-packet one-way delay: 88.104 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 725.37 Mbit/s
95th percentile per-packet one-way delay: 92.362 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 626.72 Mbit/s
95th percentile per-packet one-way delay: 83.115 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 459.93 Mbit/s
95th percentile per-packet one-way delay: 57.273 ms
Loss rate: 0.25%
```
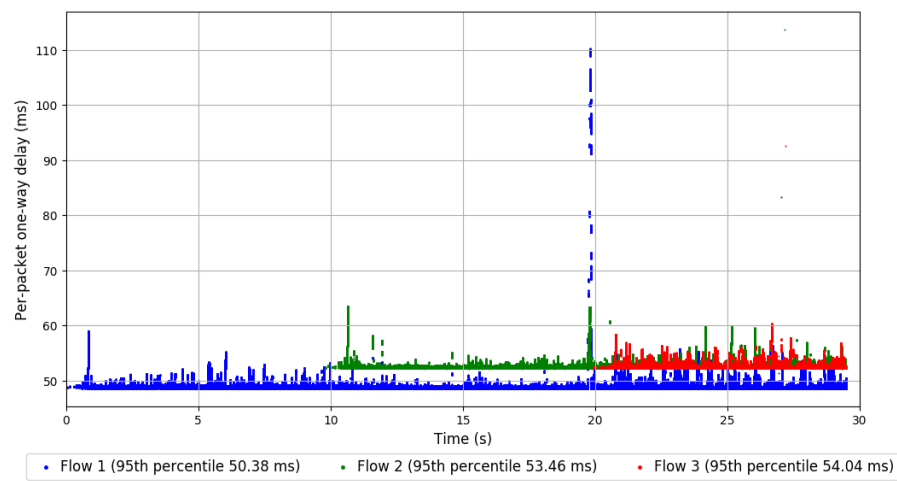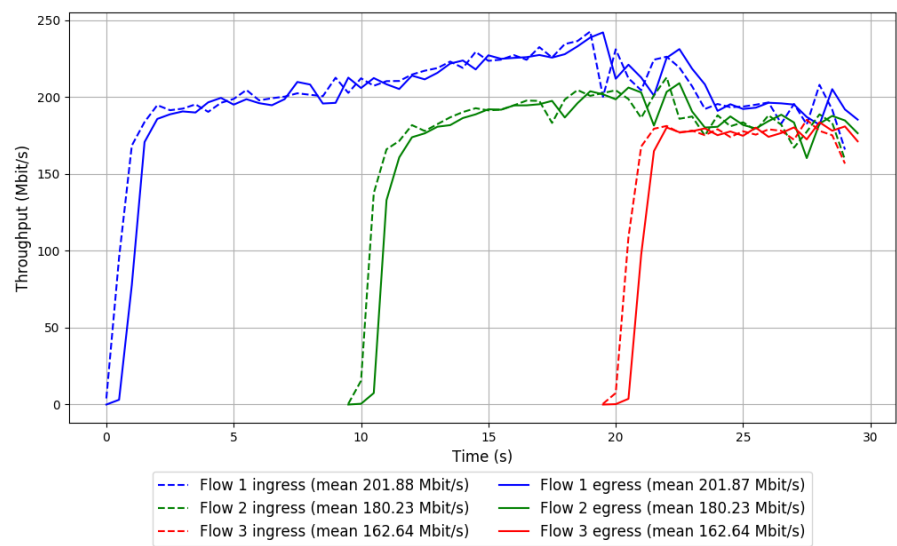
Run 5: Report of FillP — Data Link



Flow 1 ingress (mean 725.79 Mbit/s)    Flow 1 egress (mean 725.37 Mbit/s)
Flow 2 ingress (mean 626.72 Mbit/s)    Flow 2 egress (mean 626.72 Mbit/s)
Flow 3 ingress (mean 461.31 Mbit/s)    Flow 3 egress (mean 459.93 Mbit/s)



Flow 1 (95th percentile 92.36 ms)    Flow 2 (95th percentile 83.11 ms)    Flow 3 (95th percentile 57.27 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-10-03 06:52:39
End at: 2018-10-03 06:53:09
Local clock offset: -0.18 ms
Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 381.44 Mbit/s
95th percentile per-packet one-way delay: 54.446 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 206.68 Mbit/s
95th percentile per-packet one-way delay: 54.944 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 186.05 Mbit/s
95th percentile per-packet one-way delay: 51.465 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 159.09 Mbit/s
95th percentile per-packet one-way delay: 54.338 ms
Loss rate: 0.00%
```
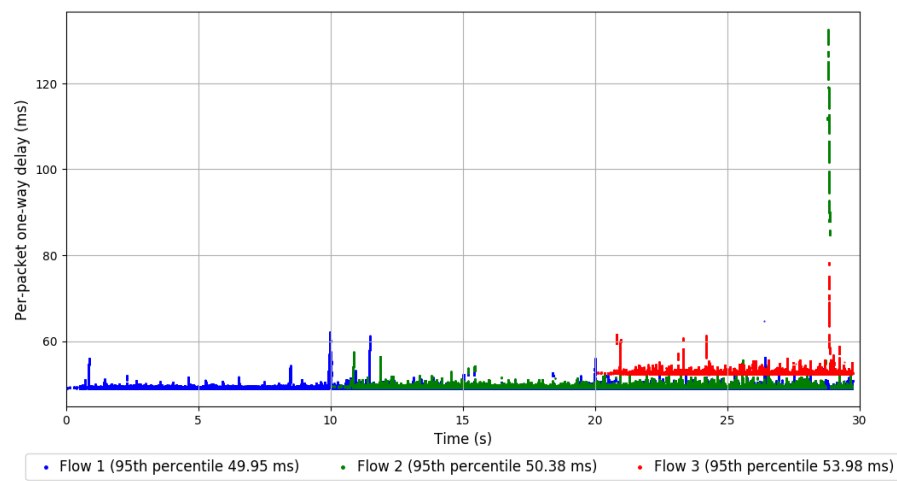
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-03 07:23:25
End at: 2018-10-03 07:23:55
Local clock offset: -0.081 ms
Remote clock offset: -1.198 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 375.10 Mbit/s
95th percentile per-packet one-way delay: 53.042 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 201.87 Mbit/s
95th percentile per-packet one-way delay: 50.384 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 180.23 Mbit/s
95th percentile per-packet one-way delay: 53.462 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 162.64 Mbit/s
95th percentile per-packet one-way delay: 54.037 ms
Loss rate: 0.00%
```
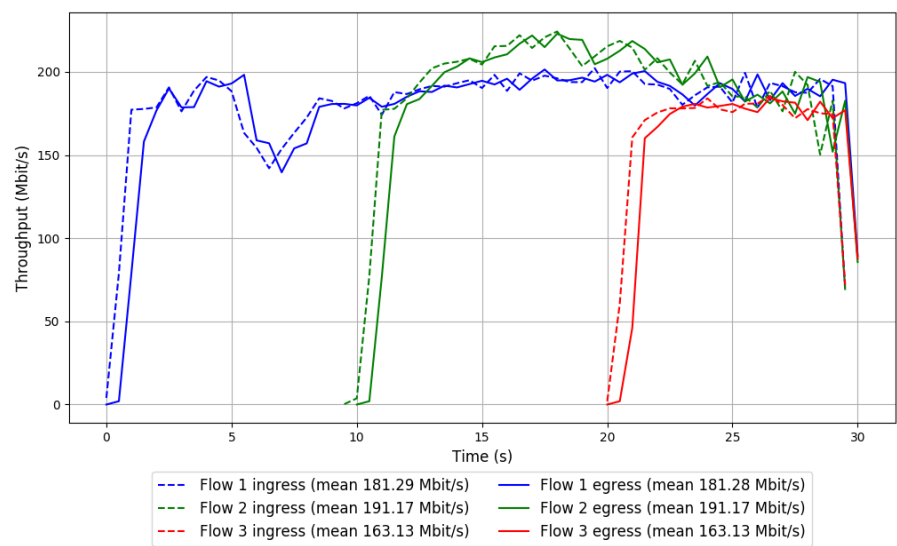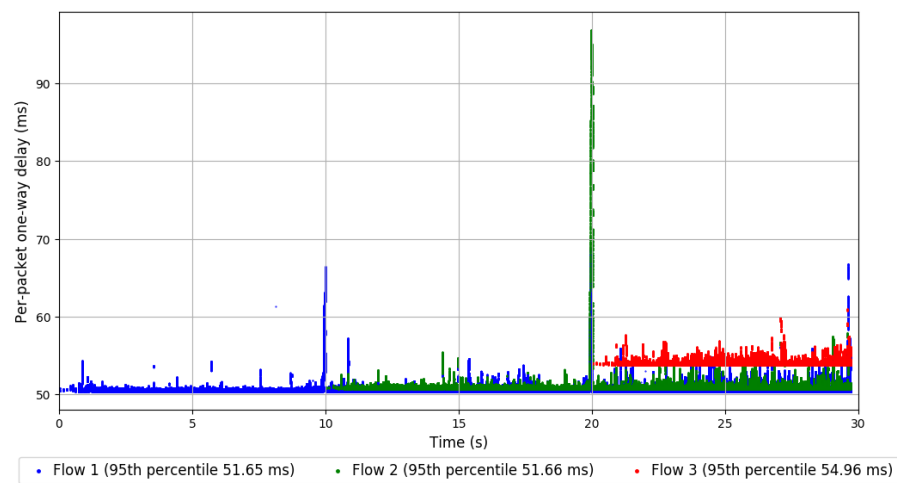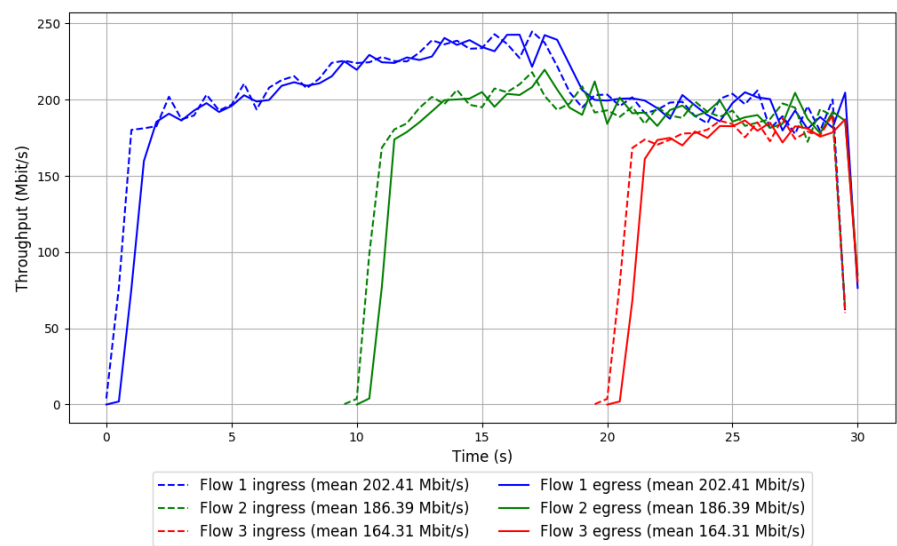
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-03 07:54:02
End at: 2018-10-03 07:54:32
Local clock offset: -0.156 ms
Remote clock offset: -1.23 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 360.92 Mbit/s
95th percentile per-packet one-way delay: 52.659 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.28 Mbit/s
95th percentile per-packet one-way delay: 49.952 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 191.17 Mbit/s
95th percentile per-packet one-way delay: 50.384 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 163.13 Mbit/s
95th percentile per-packet one-way delay: 53.984 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-03 08:25:01
End at: 2018-10-03 08:25:31
Local clock offset: -0.213 ms
Remote clock offset: 0.366 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 379.57 Mbit/s
95th percentile per-packet one-way delay: 54.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 202.41 Mbit/s
95th percentile per-packet one-way delay: 51.649 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 186.39 Mbit/s
95th percentile per-packet one-way delay: 51.665 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 164.31 Mbit/s
95th percentile per-packet one-way delay: 54.962 ms
Loss rate: 0.00%
```
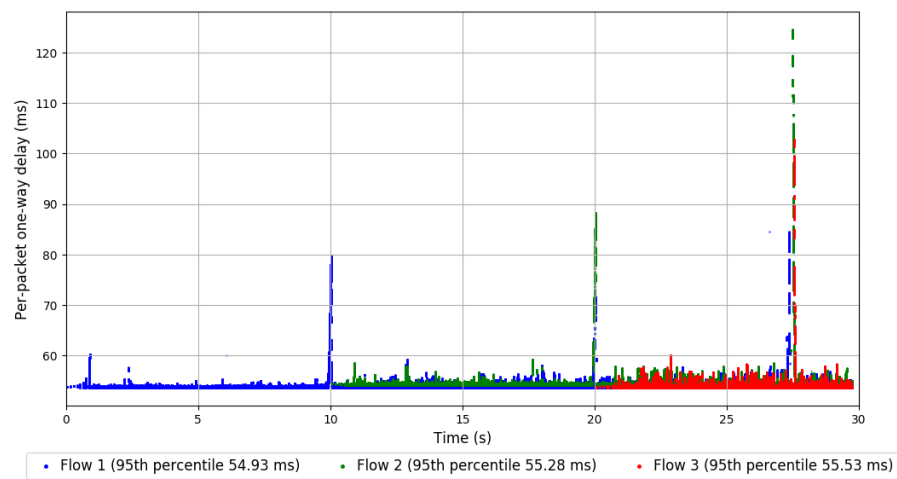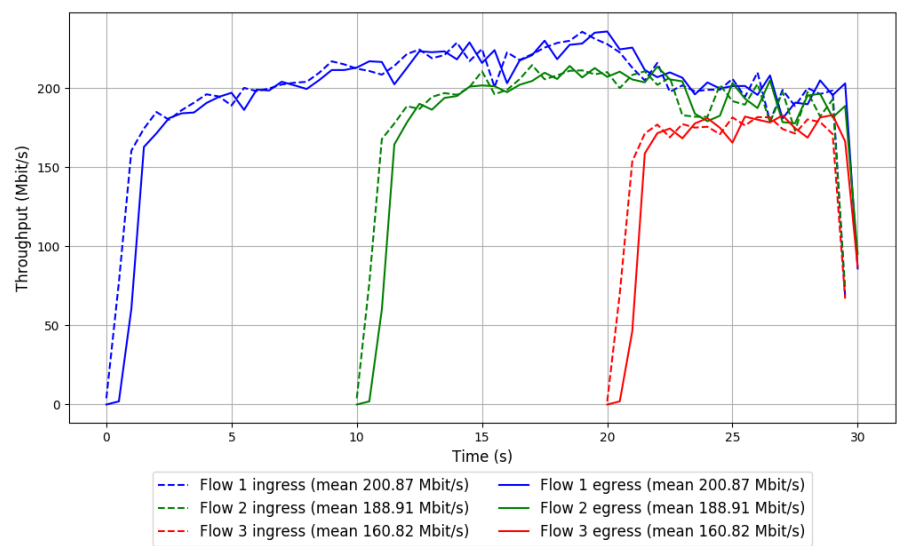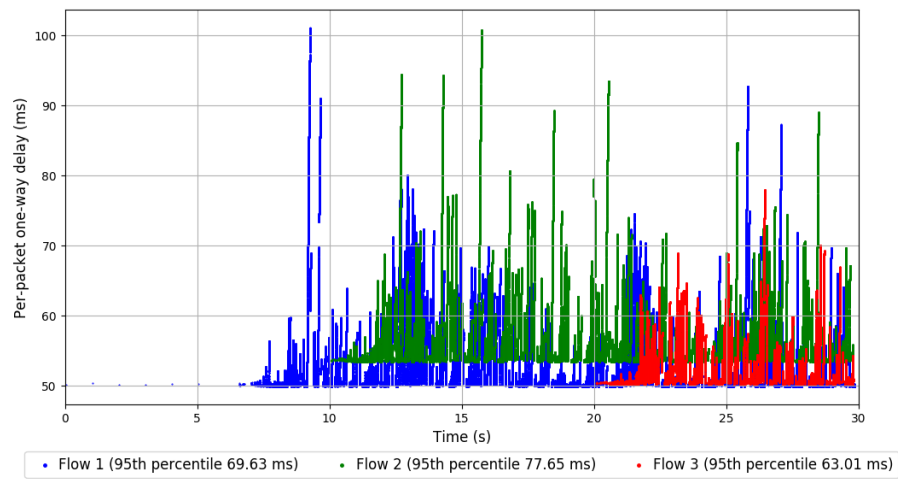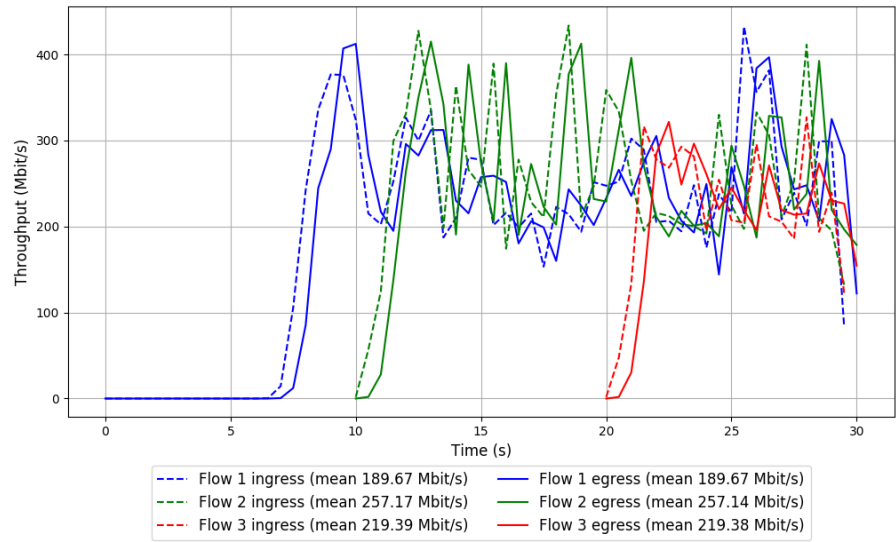
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-10-03 08:55:48
End at: 2018-10-03 08:56:18
Local clock offset: -0.117 ms
Remote clock offset: 0.507 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 378.29 Mbit/s
95th percentile per-packet one-way delay: 55.126 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.87 Mbit/s
95th percentile per-packet one-way delay: 54.927 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 188.91 Mbit/s
95th percentile per-packet one-way delay: 55.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 160.82 Mbit/s
95th percentile per-packet one-way delay: 55.531 ms
Loss rate: 0.00%
```
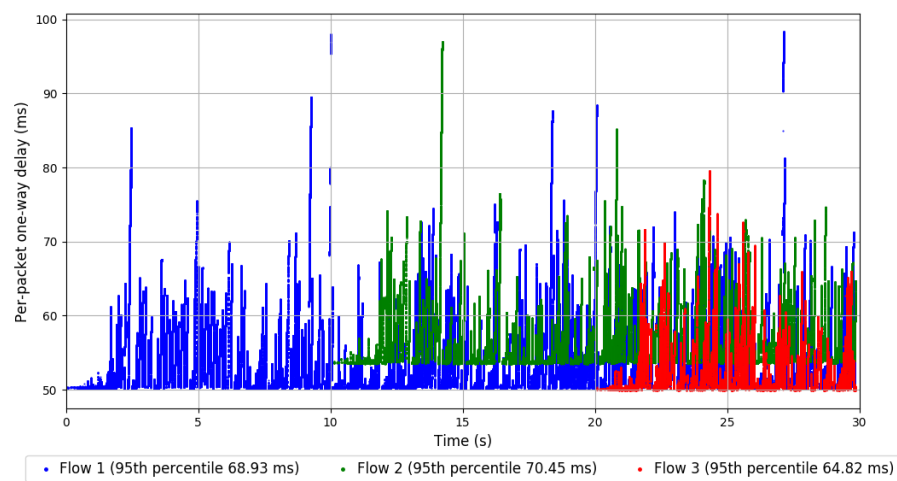
## Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-03 06:47:50
End at: 2018-10-03 06:48:20
Local clock offset: -0.173 ms
Remote clock offset: -0.111 ms


# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 431.40 Mbit/s
95th percentile per-packet one-way delay: 72.023 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 189.67 Mbit/s
95th percentile per-packet one-way delay: 69.631 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 257.14 Mbit/s
95th percentile per-packet one-way delay: 77.649 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 219.38 Mbit/s
95th percentile per-packet one-way delay: 63.012 ms
Loss rate: 0.00%
```

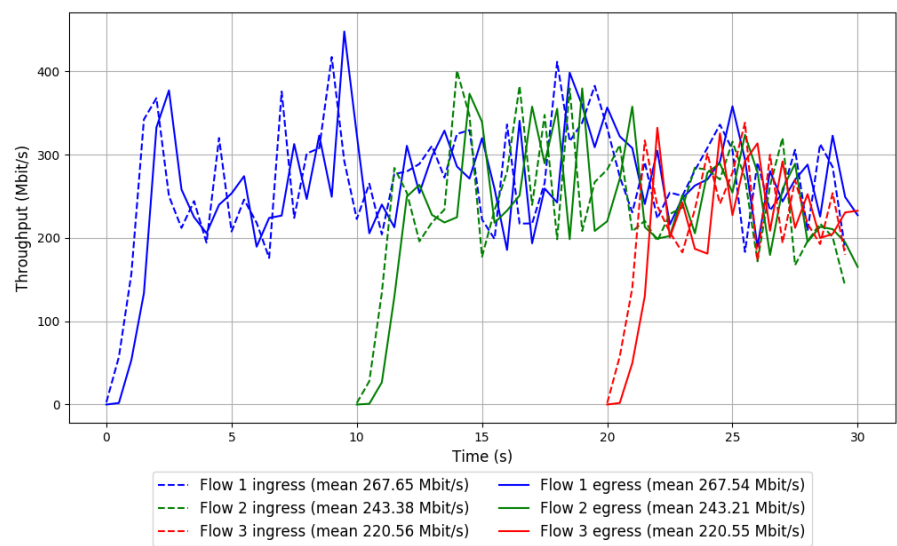Run 1: Report of Indigo-96d2da3 — Data Link

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-03 07:18:38
End at: 2018-10-03 07:19:08
Local clock offset: -0.188 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2018-10-03 10:41:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 500.82 Mbit/s
95th percentile per-packet one-way delay: 69.052 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 267.54 Mbit/s
95th percentile per-packet one-way delay: 68.934 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 243.21 Mbit/s
95th percentile per-packet one-way delay: 70.450 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 220.55 Mbit/s
95th percentile per-packet one-way delay: 64.823 ms
Loss rate: 0.00%
```
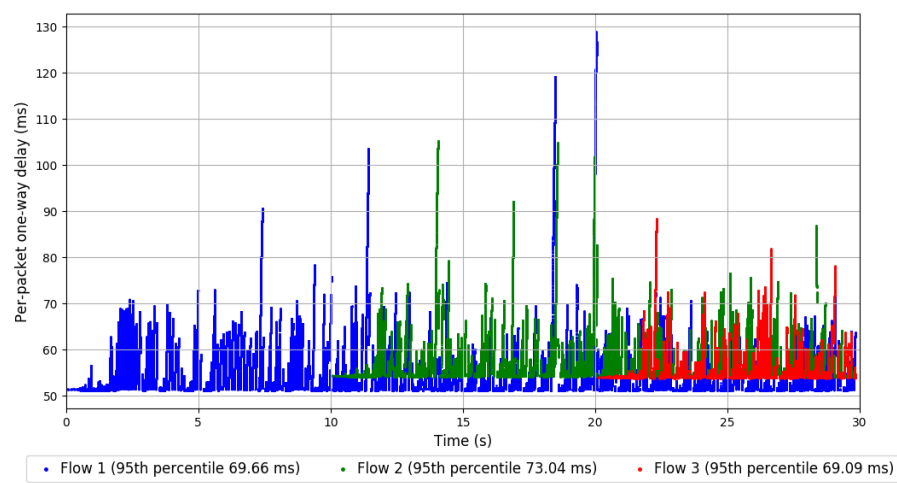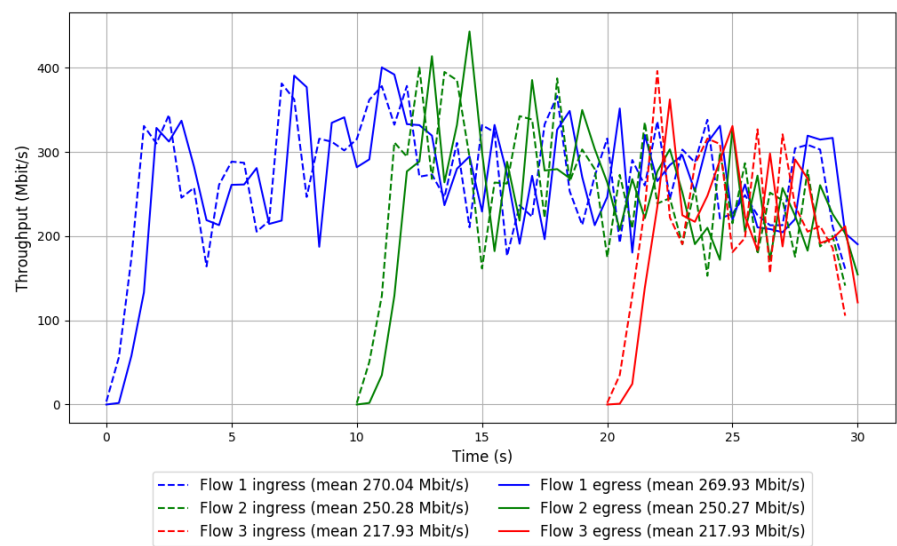
Run 2: Report of Indigo-96d2da3 — Data Link

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-03 07:49:12
End at: 2018-10-03 07:49:42
Local clock offset: -0.306 ms
Remote clock offset: 0.569 ms


# Below is generated by plot.py at 2018-10-03 10:43:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 506.86 Mbit/s
95th percentile per-packet one-way delay: 70.970 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 269.93 Mbit/s
95th percentile per-packet one-way delay: 69.658 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 250.27 Mbit/s
95th percentile per-packet one-way delay: 73.040 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 217.93 Mbit/s
95th percentile per-packet one-way delay: 69.091 ms
Loss rate: 0.00%
```

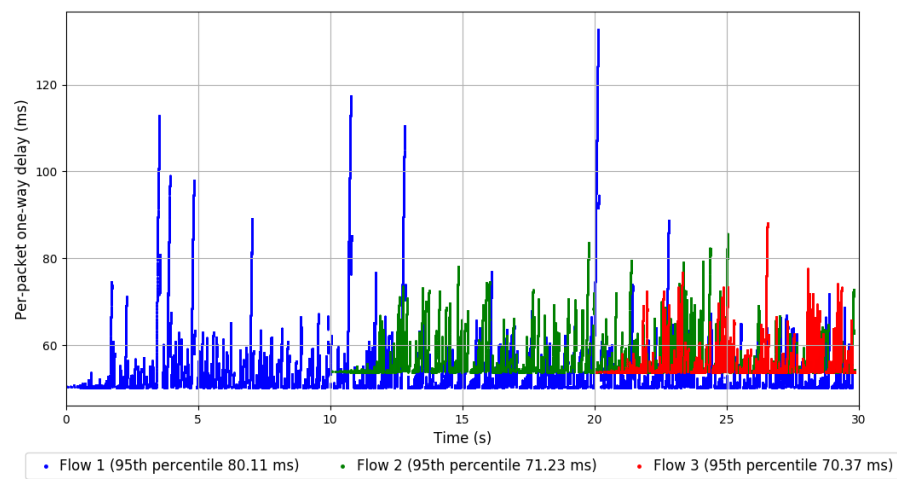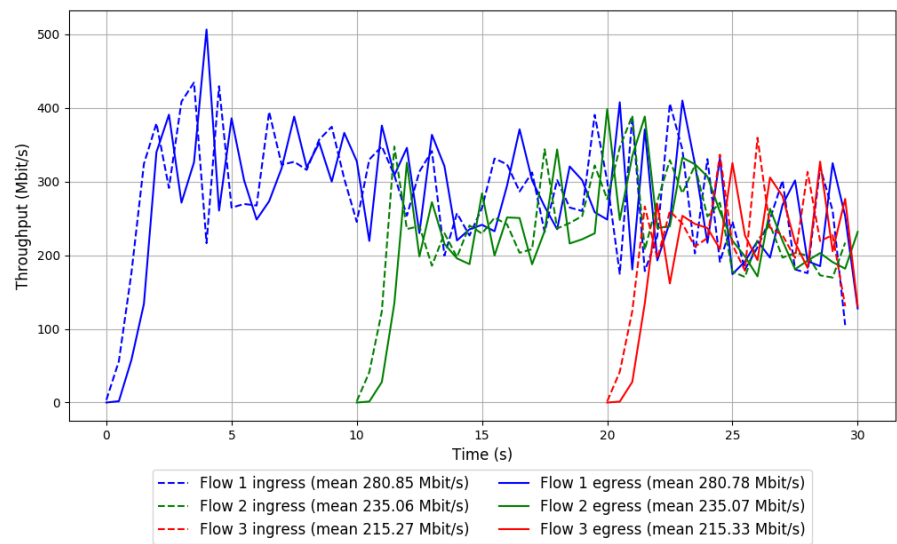Run 3: Report of Indigo-96d2da3 — Data Link

```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-03 08:20:09
End at: 2018-10-03 08:20:39
Local clock offset: -0.444 ms
Remote clock offset: -0.028 ms


# Below is generated by plot.py at 2018-10-03 10:46:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 506.60 Mbit/s
95th percentile per-packet one-way delay: 72.820 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 280.78 Mbit/s
95th percentile per-packet one-way delay: 80.109 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 235.07 Mbit/s
95th percentile per-packet one-way delay: 71.232 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 215.33 Mbit/s
95th percentile per-packet one-way delay: 70.373 ms
Loss rate: 0.00%
```

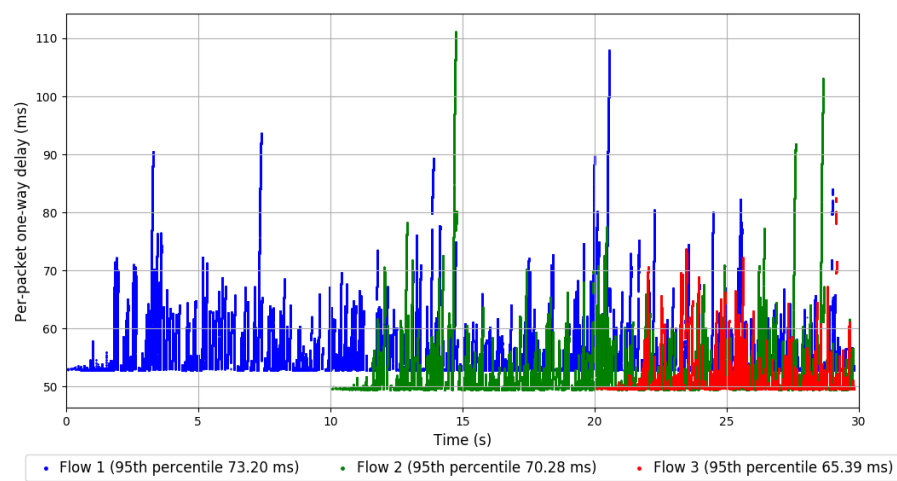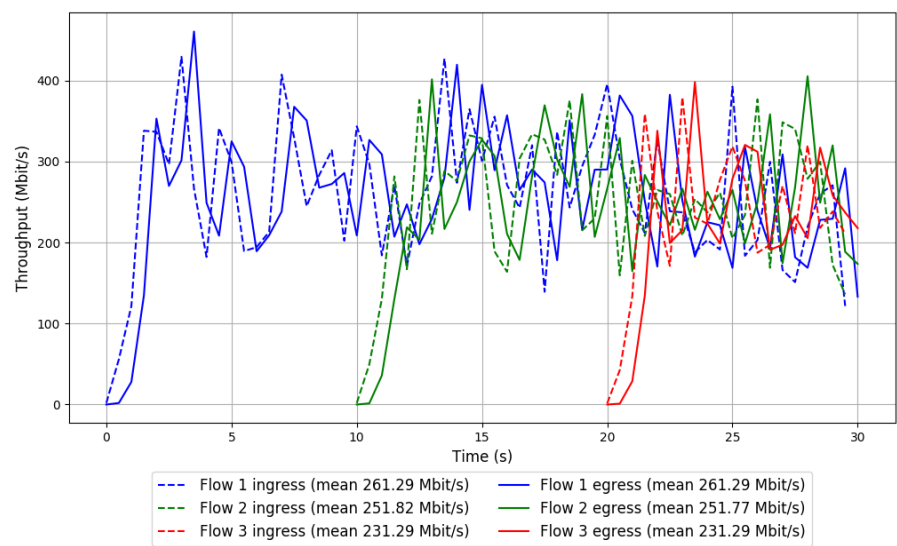Run 4: Report of Indigo-96d2da3 — Data Link

```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-03 08:51:02
End at: 2018-10-03 08:51:32
Local clock offset: -0.039 ms
Remote clock offset: -0.325 ms


# Below is generated by plot.py at 2018-10-03 10:47:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 503.57 Mbit/s
95th percentile per-packet one-way delay: 71.075 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 261.29 Mbit/s
95th percentile per-packet one-way delay: 73.199 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 251.77 Mbit/s
95th percentile per-packet one-way delay: 70.279 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 231.29 Mbit/s
95th percentile per-packet one-way delay: 65.392 ms
Loss rate: 0.00%
```

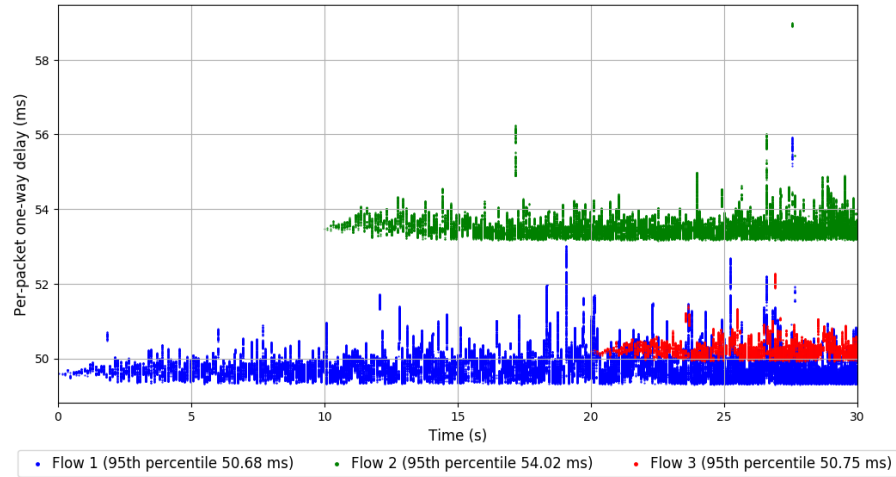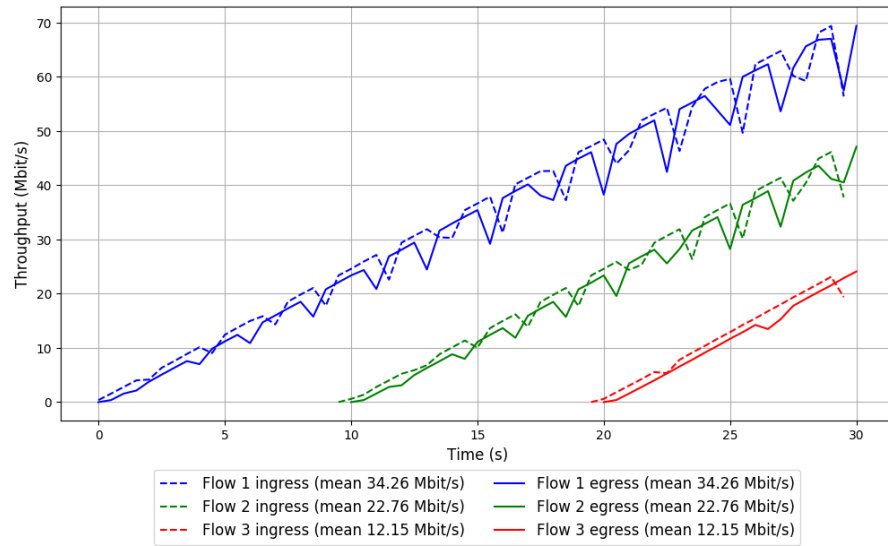Run 5: Report of Indigo-96d2da3 — Data Link



Flow 1 ingress (mean 261.29 Mbit/s)    Flow 1 egress (mean 261.29 Mbit/s)
Flow 2 ingress (mean 251.82 Mbit/s)    Flow 2 egress (mean 251.77 Mbit/s)
Flow 3 ingress (mean 231.29 Mbit/s)    Flow 3 egress (mean 231.29 Mbit/s)



Flow 1 (95th percentile 73.20 ms)    Flow 2 (95th percentile 70.28 ms)    Flow 3 (95th percentile 65.39 ms)

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```
Run 1: Statistics of LEDBAT

Start at: 2018-10-03 06:54:26
End at: 2018-10-03 06:54:56
Local clock offset: -0.278 ms
Remote clock offset: -0.597 ms


# Below is generated by plot.py at 2018-10-03 10:47:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.45 Mbit/s
95th percentile per-packet one-way delay: 53.690 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 34.26 Mbit/s
95th percentile per-packet one-way delay: 50.684 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 22.76 Mbit/s
95th percentile per-packet one-way delay: 54.016 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.15 Mbit/s
95th percentile per-packet one-way delay: 50.746 ms
Loss rate: 0.00%
```
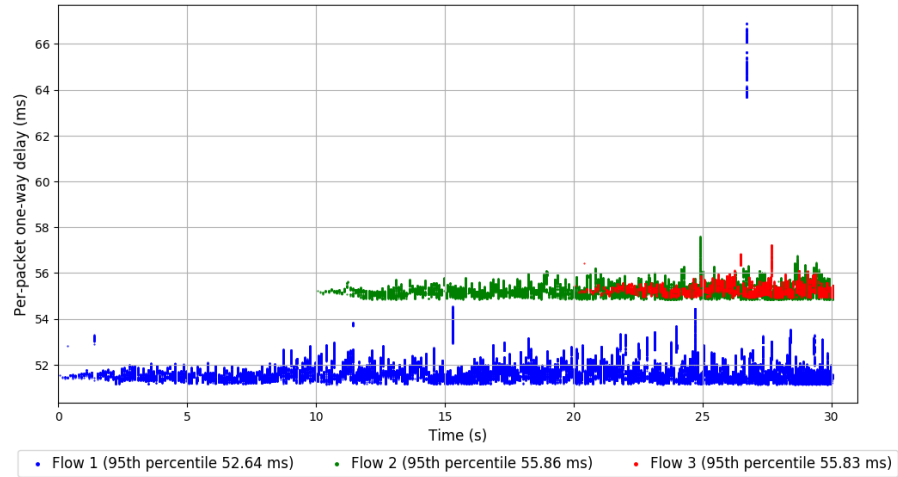
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-03 07:25:10
End at: 2018-10-03 07:25:40
Local clock offset: -0.319 ms
Remote clock offset: 1.091 ms


# Below is generated by plot.py at 2018-10-03 10:47:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.12 Mbit/s
95th percentile per-packet one-way delay: 55.605 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 34.27 Mbit/s
95th percentile per-packet one-way delay: 52.644 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 23.02 Mbit/s
95th percentile per-packet one-way delay: 55.862 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 10.67 Mbit/s
95th percentile per-packet one-way delay: 55.829 ms
Loss rate: 0.00%
```
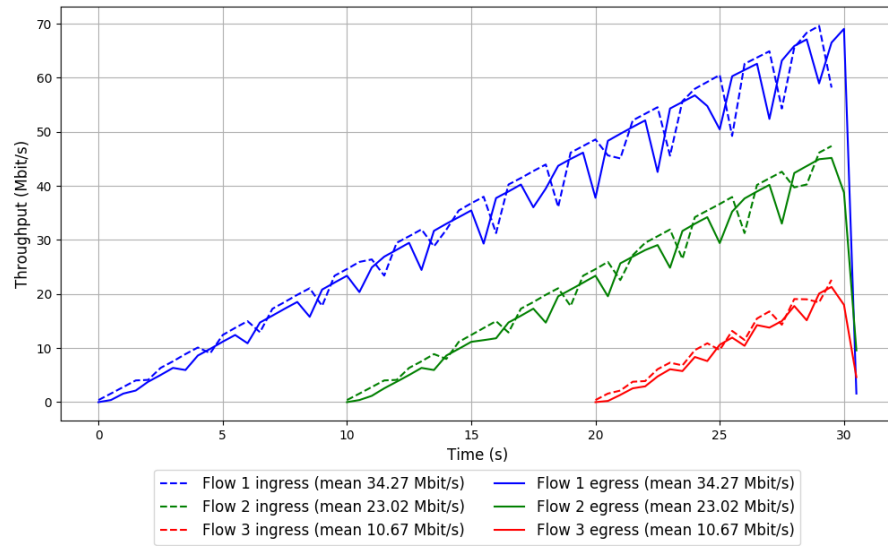
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-03 07:55:46
End at: 2018-10-03 07:56:16
Local clock offset: -0.278 ms
Remote clock offset: 1.147 ms


# Below is generated by plot.py at 2018-10-03 10:47:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.53 Mbit/s
95th percentile per-packet one-way delay: 54.440 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 36.42 Mbit/s
95th percentile per-packet one-way delay: 53.145 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 23.08 Mbit/s
95th percentile per-packet one-way delay: 52.613 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 54.909 ms
Loss rate: 0.00%
```
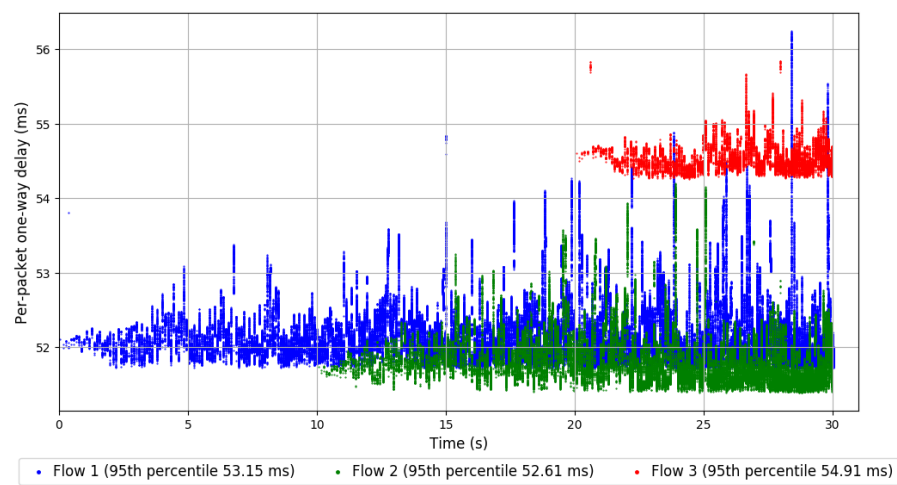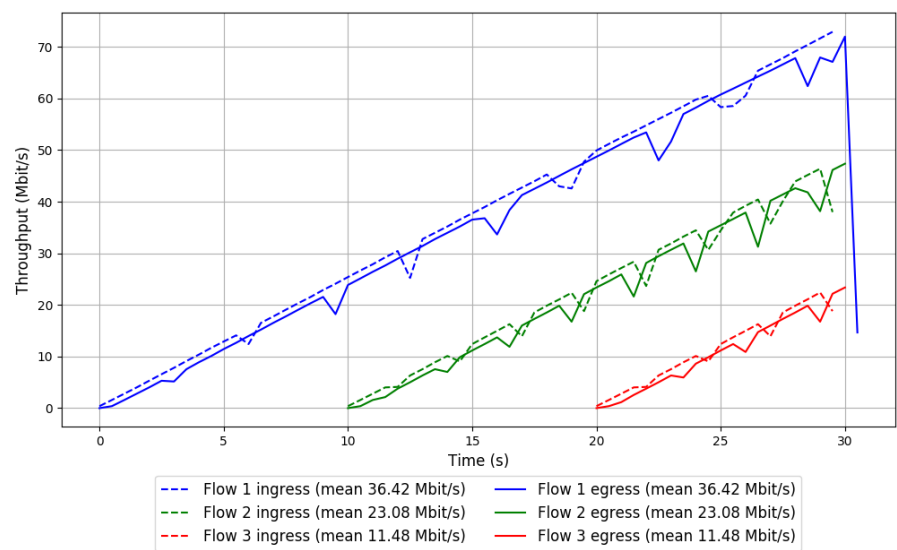
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-03 08:26:48
End at: 2018-10-03 08:27:18
Local clock offset: -0.194 ms
Remote clock offset: -0.389 ms


# Below is generated by plot.py at 2018-10-03 10:47:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.00 Mbit/s
95th percentile per-packet one-way delay: 54.458 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 32.07 Mbit/s
95th percentile per-packet one-way delay: 54.649 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 21.46 Mbit/s
95th percentile per-packet one-way delay: 54.290 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.14 Mbit/s
95th percentile per-packet one-way delay: 50.719 ms
Loss rate: 0.00%
```
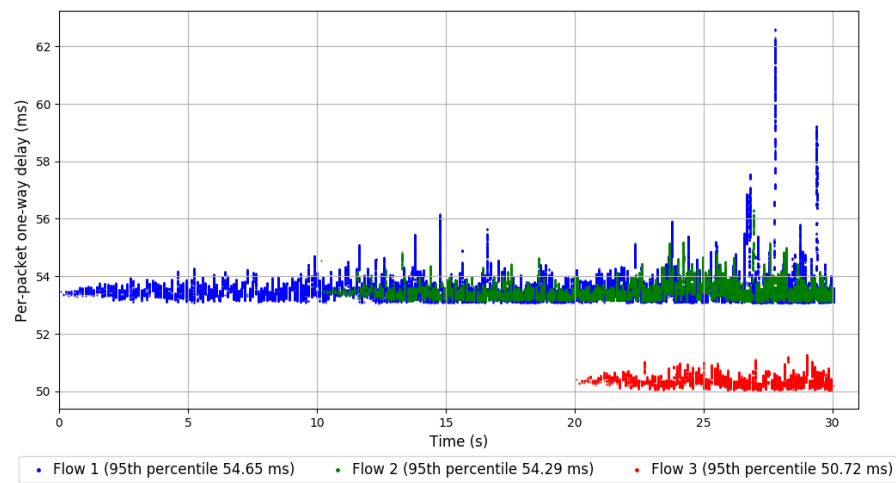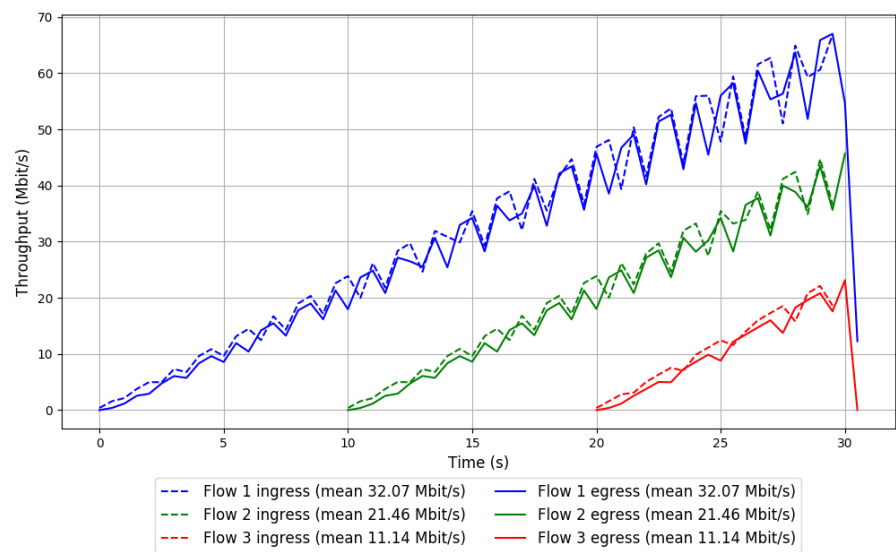
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-03 08:57:34
End at: 2018-10-03 08:58:04
Local clock offset: -0.478 ms
Remote clock offset: -0.543 ms


# Below is generated by plot.py at 2018-10-03 10:47:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.14 Mbit/s
95th percentile per-packet one-way delay: 54.634 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 32.20 Mbit/s
95th percentile per-packet one-way delay: 54.839 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 22.82 Mbit/s
95th percentile per-packet one-way delay: 51.247 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.41 Mbit/s
95th percentile per-packet one-way delay: 51.126 ms
Loss rate: 0.00%
```
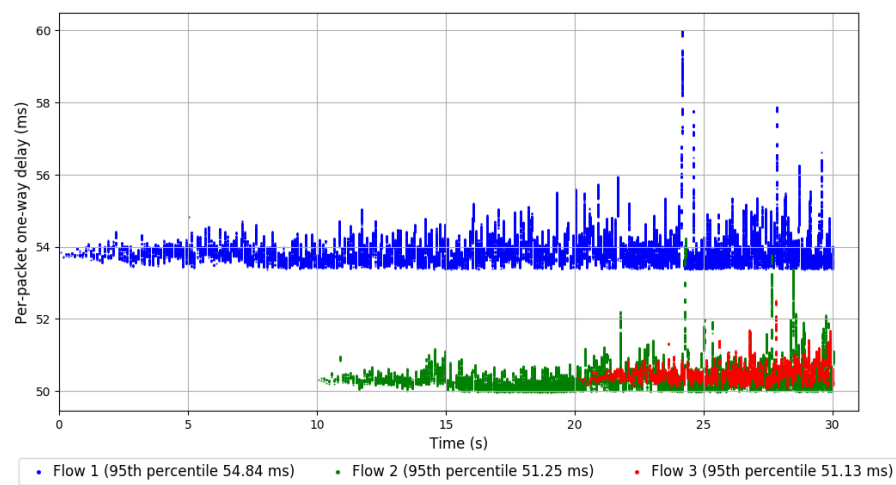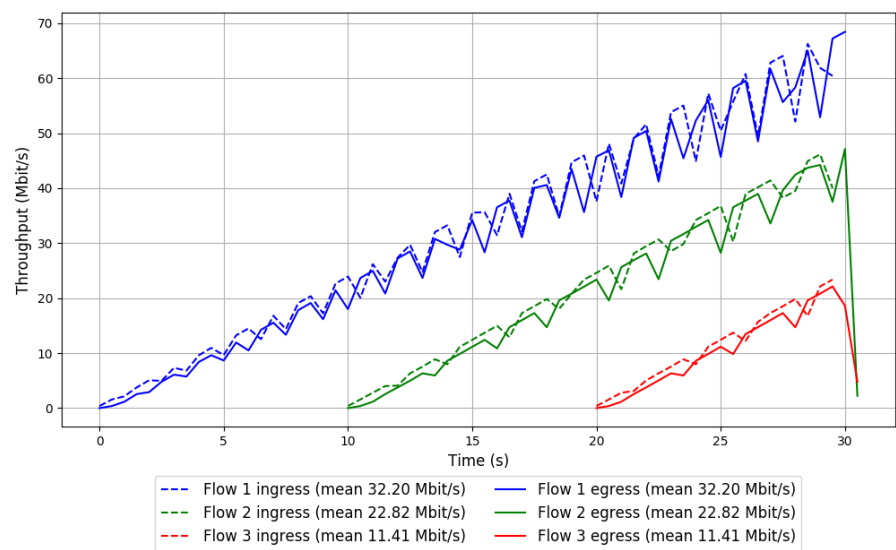
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-03 06:58:44
End at: 2018-10-03 06:59:14
Local clock offset: -0.181 ms
Remote clock offset: 0.238 ms

# Below is generated by plot.py at 2018-10-03 11:04:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1077.94 Mbit/s
95th percentile per-packet one-way delay: 74.710 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 579.79 Mbit/s
95th percentile per-packet one-way delay: 74.255 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 536.77 Mbit/s
95th percentile per-packet one-way delay: 78.750 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 435.30 Mbit/s
95th percentile per-packet one-way delay: 63.158 ms
Loss rate: 0.00%
```
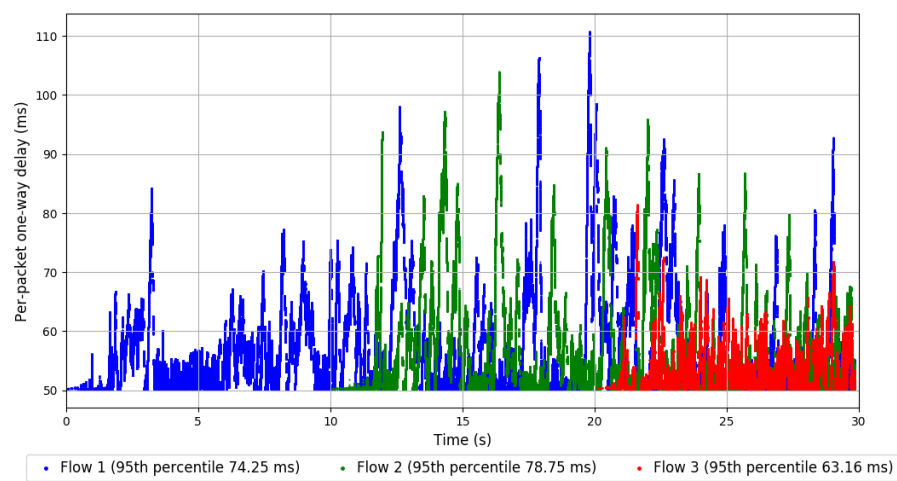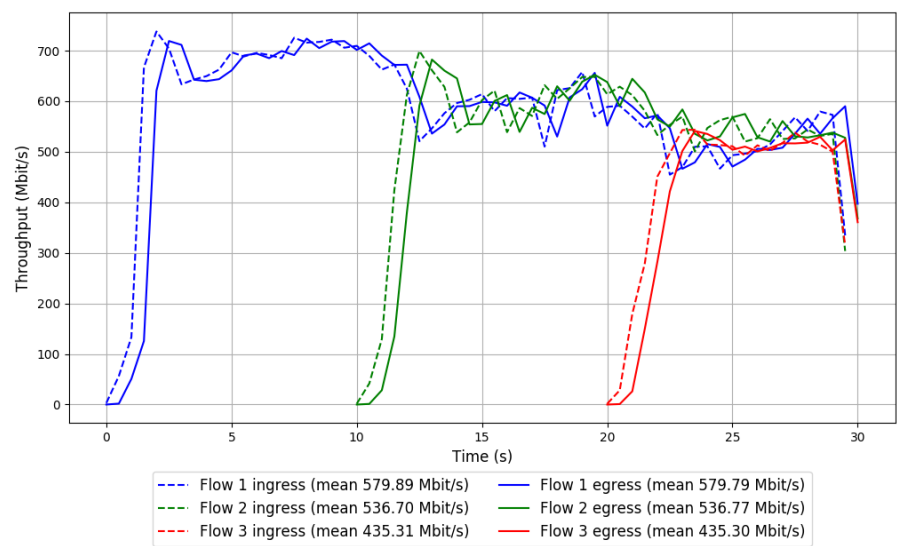
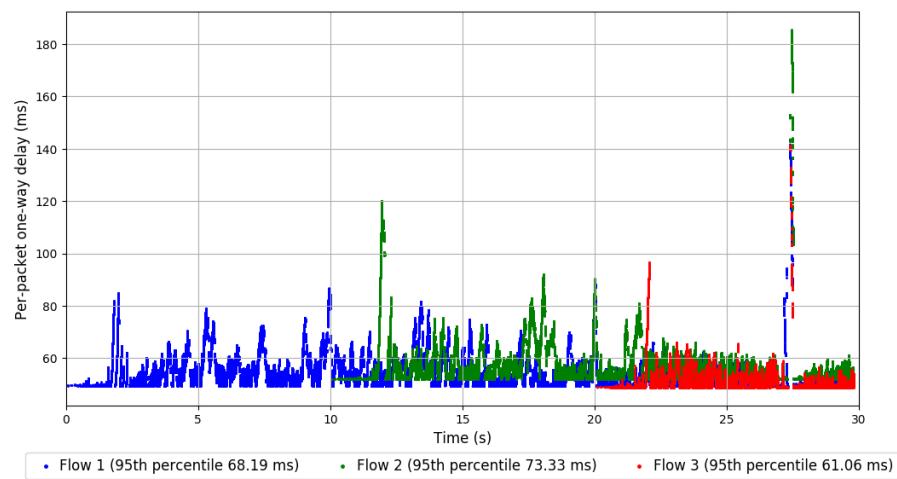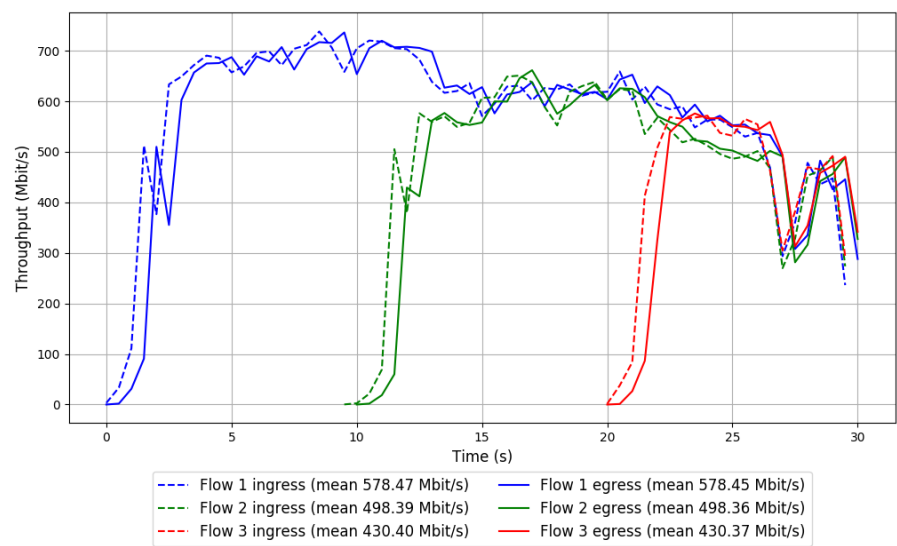Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-03 07:29:29
End at: 2018-10-03 07:29:59
Local clock offset: 0.077 ms
Remote clock offset: -0.829 ms


# Below is generated by plot.py at 2018-10-03 11:04:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1050.45 Mbit/s
95th percentile per-packet one-way delay: 69.635 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 578.45 Mbit/s
95th percentile per-packet one-way delay: 68.194 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 498.36 Mbit/s
95th percentile per-packet one-way delay: 73.330 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 430.37 Mbit/s
95th percentile per-packet one-way delay: 61.056 ms
Loss rate: 0.00%
```

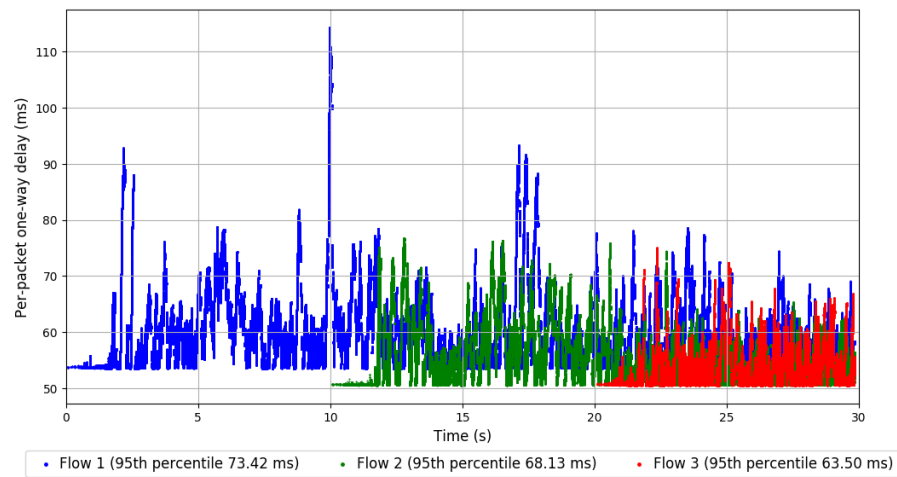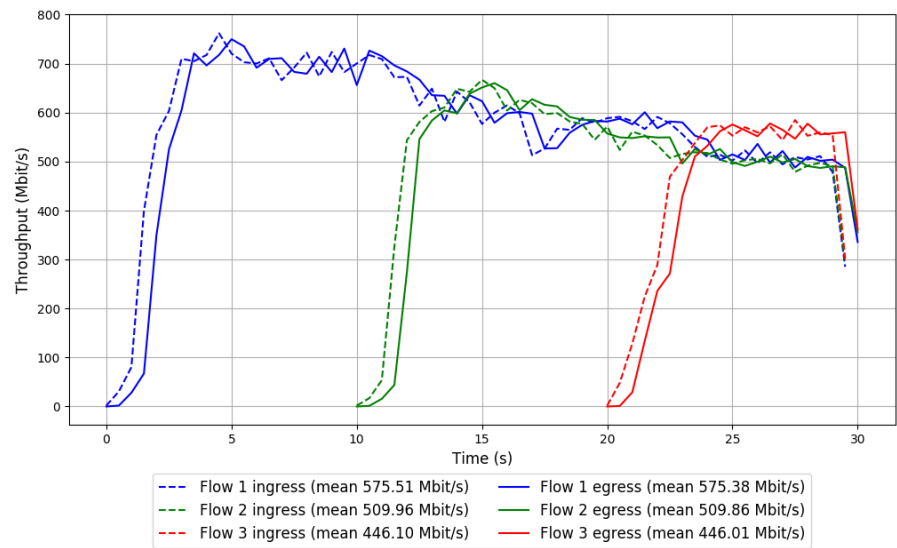Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-03 08:00:10
End at: 2018-10-03 08:00:40
Local clock offset: -0.344 ms
Remote clock offset: -0.091 ms

# Below is generated by plot.py at 2018-10-03 11:05:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1059.66 Mbit/s
95th percentile per-packet one-way delay: 70.828 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 575.38 Mbit/s
95th percentile per-packet one-way delay: 73.416 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 509.86 Mbit/s
95th percentile per-packet one-way delay: 68.128 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 446.01 Mbit/s
95th percentile per-packet one-way delay: 63.504 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-03 08:31:10
End at: 2018-10-03 08:31:40
Local clock offset: -0.203 ms
Remote clock offset: 0.541 ms


# Below is generated by plot.py at 2018-10-03 11:05:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1074.63 Mbit/s
95th percentile per-packet one-way delay: 71.271 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 585.00 Mbit/s
95th percentile per-packet one-way delay: 68.376 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 526.48 Mbit/s
95th percentile per-packet one-way delay: 81.201 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 432.71 Mbit/s
95th percentile per-packet one-way delay: 63.721 ms
Loss rate: 0.00%
```
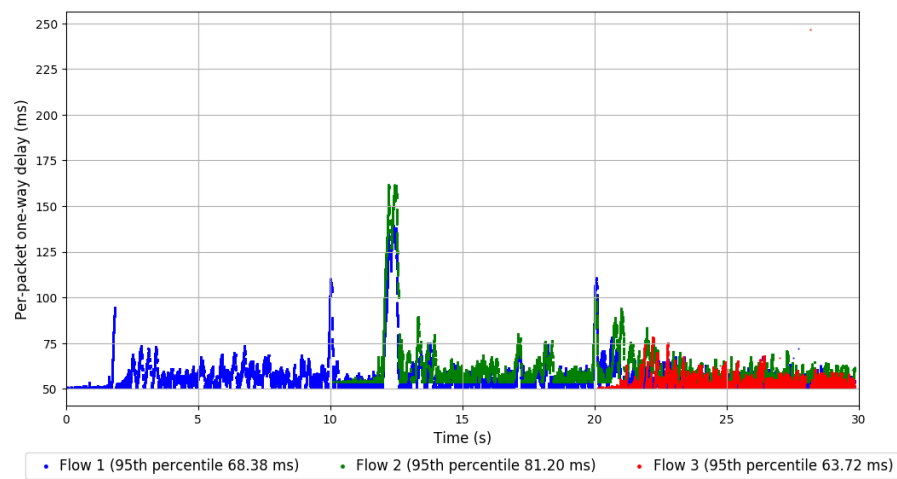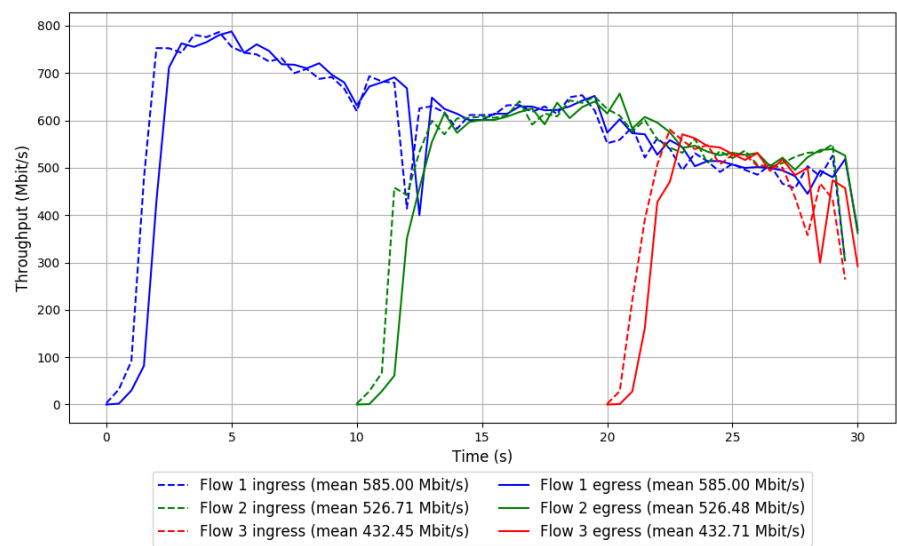
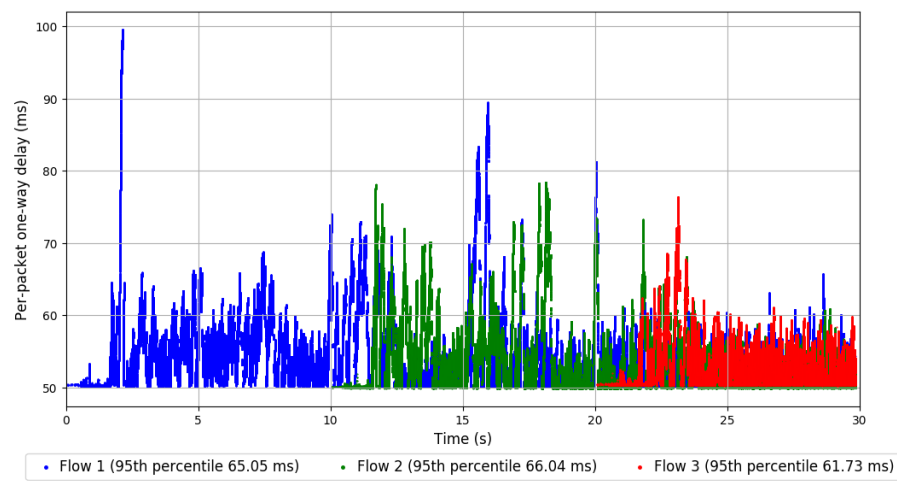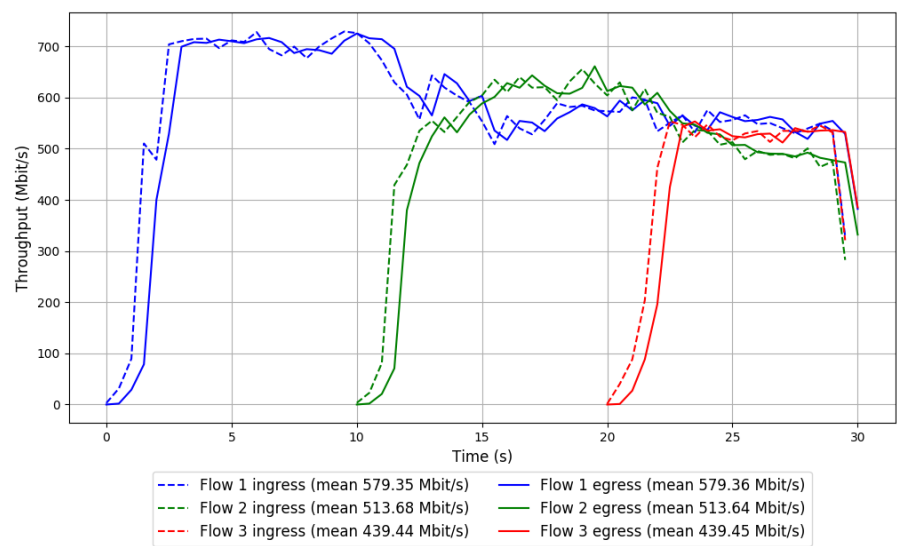Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-03 09:01:53
End at: 2018-10-03 09:02:23
Local clock offset: -0.119 ms
Remote clock offset: -0.257 ms


# Below is generated by plot.py at 2018-10-03 11:06:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1064.69 Mbit/s
95th percentile per-packet one-way delay: 65.018 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 579.36 Mbit/s
95th percentile per-packet one-way delay: 65.054 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 513.64 Mbit/s
95th percentile per-packet one-way delay: 66.042 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 439.45 Mbit/s
95th percentile per-packet one-way delay: 61.729 ms
Loss rate: 0.00%
```

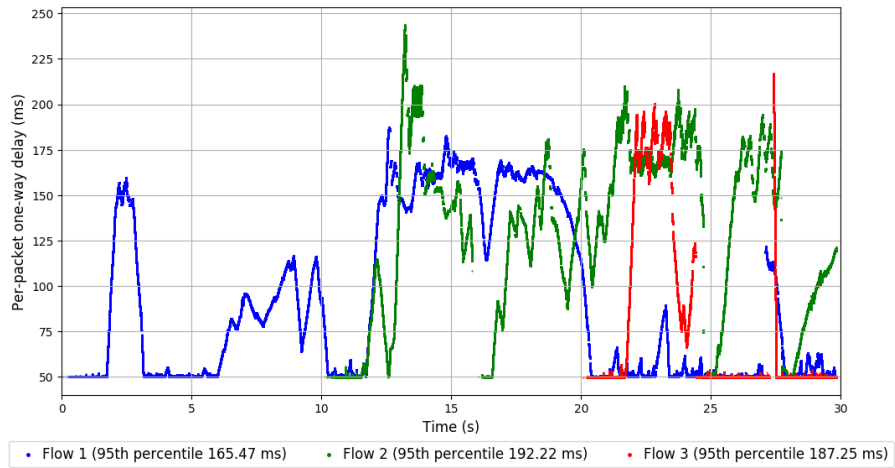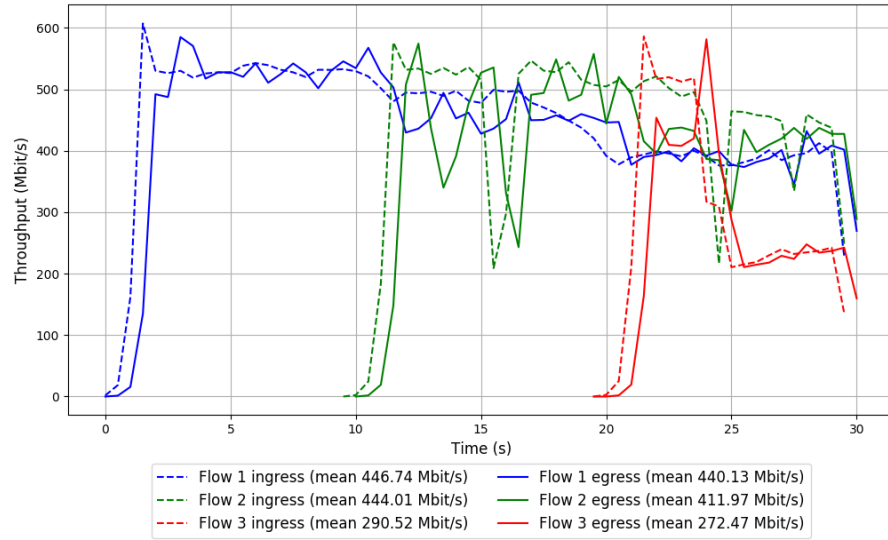Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-03 06:49:23
End at: 2018-10-03 06:49:53
Local clock offset: -0.343 ms
Remote clock offset: -0.353 ms

# Below is generated by plot.py at 2018-10-03 11:19:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 804.36 Mbit/s
95th percentile per-packet one-way delay: 180.596 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 440.13 Mbit/s
95th percentile per-packet one-way delay: 165.474 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 411.97 Mbit/s
95th percentile per-packet one-way delay: 192.221 ms
Loss rate: 7.20%
-- Flow 3:
Average throughput: 272.47 Mbit/s
95th percentile per-packet one-way delay: 187.249 ms
Loss rate: 6.21%
```

Run 1: Report of PCC-Allegro — Data Link



Flow 1 ingress (mean 446.74 Mbit/s)    Flow 1 egress (mean 440.13 Mbit/s)
Flow 2 ingress (mean 444.01 Mbit/s)    Flow 2 egress (mean 411.97 Mbit/s)
Flow 3 ingress (mean 290.52 Mbit/s)    Flow 3 egress (mean 272.47 Mbit/s)



Flow 1 (95th percentile 165.47 ms)    Flow 2 (95th percentile 192.22 ms)    Flow 3 (95th percentile 187.25 ms)
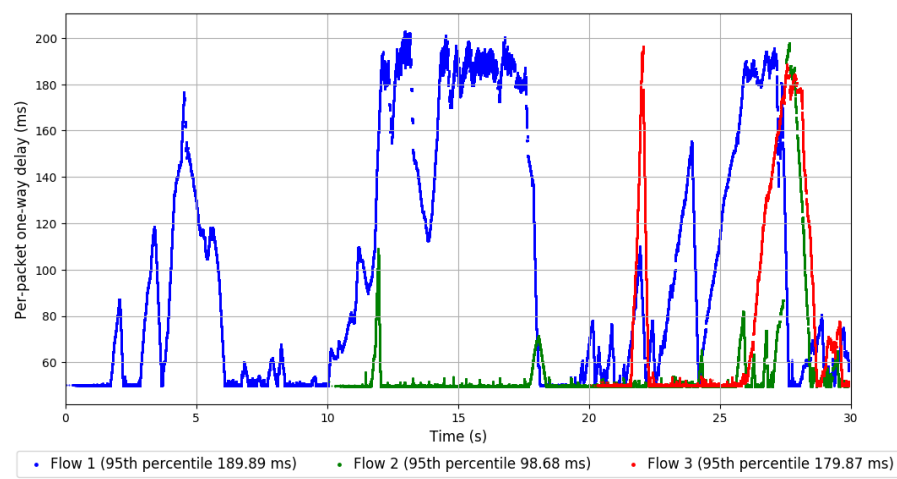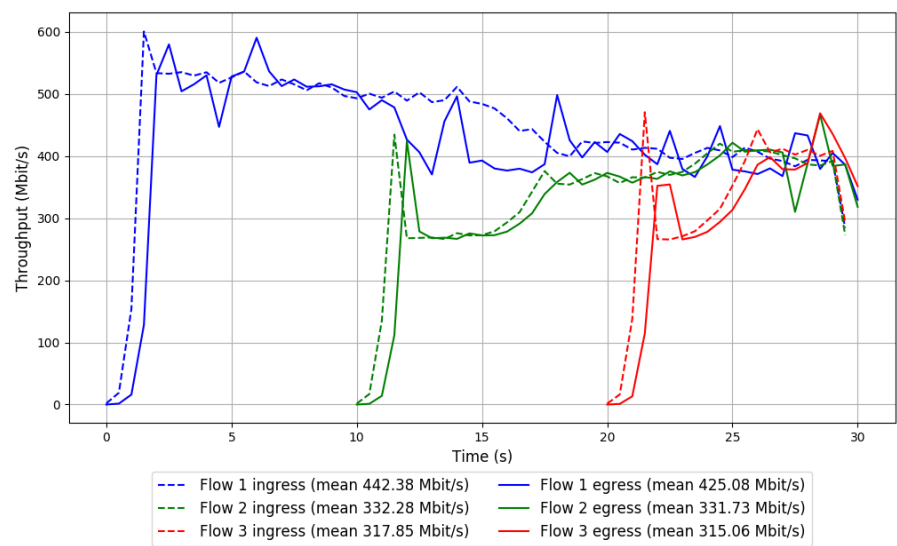
```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-03 07:20:14
End at: 2018-10-03 07:20:44
Local clock offset: -0.087 ms
Remote clock offset: -0.131 ms


# Below is generated by plot.py at 2018-10-03 11:19:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 749.00 Mbit/s
95th percentile per-packet one-way delay: 187.317 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 425.08 Mbit/s
95th percentile per-packet one-way delay: 189.892 ms
Loss rate: 3.90%
-- Flow 2:
Average throughput: 331.73 Mbit/s
95th percentile per-packet one-way delay: 98.679 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 315.06 Mbit/s
95th percentile per-packet one-way delay: 179.870 ms
Loss rate: 0.87%
```

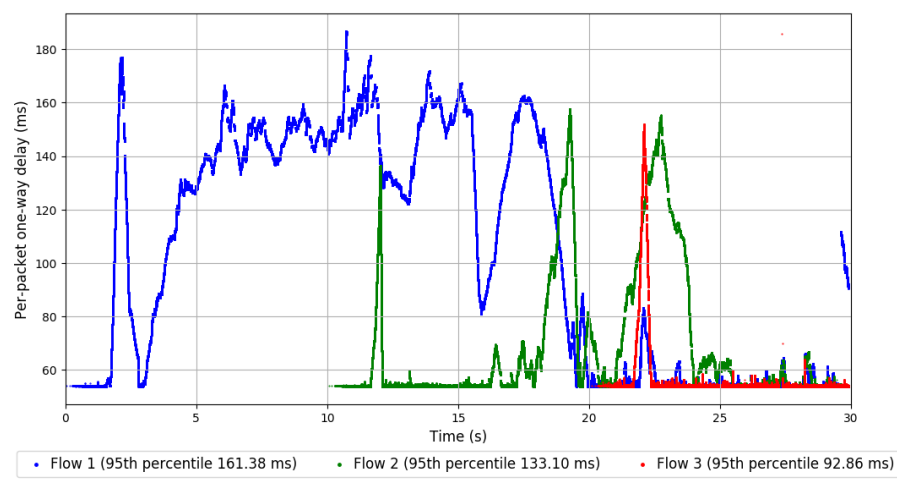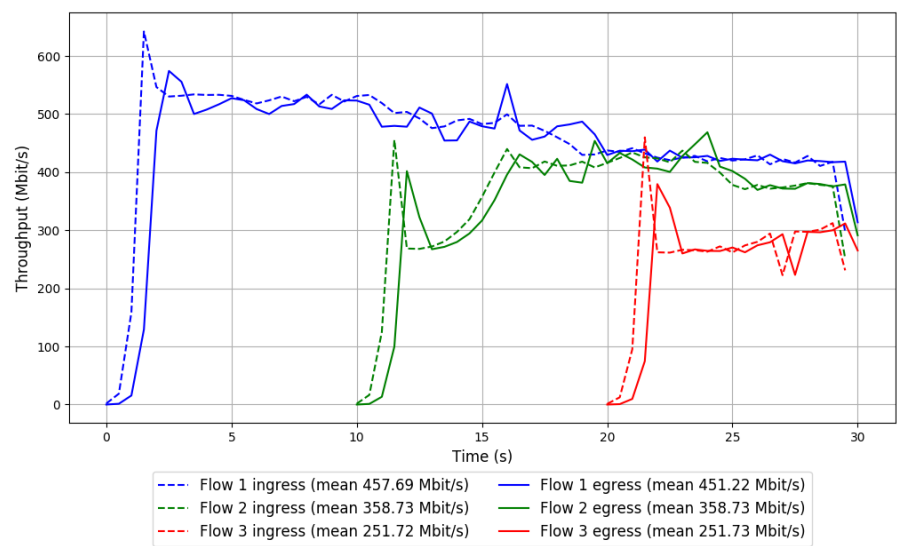Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-03 07:50:49
End at: 2018-10-03 07:51:19
Local clock offset: -0.482 ms
Remote clock offset: -0.136 ms


# Below is generated by plot.py at 2018-10-03 11:21:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 772.09 Mbit/s
95th percentile per-packet one-way delay: 158.964 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 451.22 Mbit/s
95th percentile per-packet one-way delay: 161.376 ms
Loss rate: 1.40%
-- Flow 2:
Average throughput: 358.73 Mbit/s
95th percentile per-packet one-way delay: 133.104 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 251.73 Mbit/s
95th percentile per-packet one-way delay: 92.856 ms
Loss rate: 0.00%
```

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



Flow 1 ingress (mean 457.69 Mbit/s) --- Flow 1 egress (mean 451.22 Mbit/s)
Flow 2 ingress (mean 358.73 Mbit/s) --- Flow 2 egress (mean 358.73 Mbit/s)
Flow 3 ingress (mean 251.72 Mbit/s) --- Flow 3 egress (mean 251.73 Mbit/s)



Flow 1 (95th percentile 161.38 ms)  •  Flow 2 (95th percentile 133.10 ms)  •  Flow 3 (95th percentile 92.86 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-03 08:21:46
End at: 2018-10-03 08:22:16
Local clock offset: -0.35 ms
Remote clock offset: 0.642 ms


# Below is generated by plot.py at 2018-10-03 11:41:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 790.30 Mbit/s
95th percentile per-packet one-way delay: 166.804 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 460.98 Mbit/s
95th percentile per-packet one-way delay: 167.907 ms
Loss rate: 2.45%
-- Flow 2:
Average throughput: 344.66 Mbit/s
95th percentile per-packet one-way delay: 80.032 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 305.06 Mbit/s
95th percentile per-packet one-way delay: 130.831 ms
Loss rate: 0.95%
```
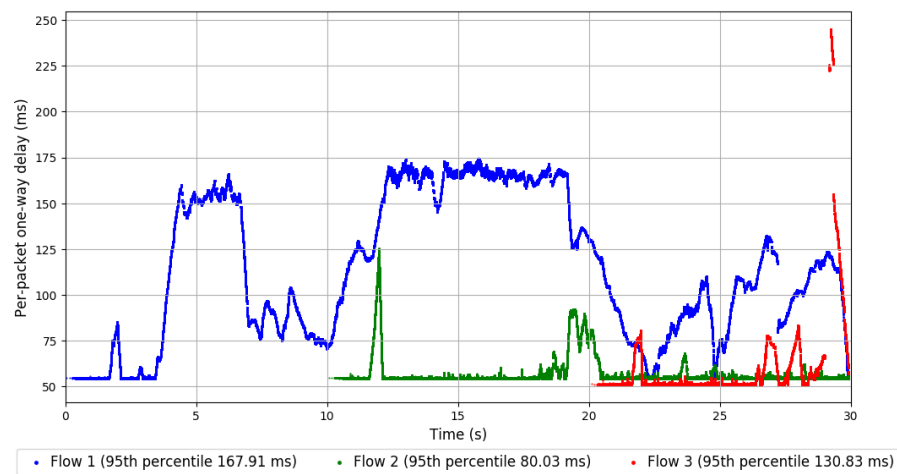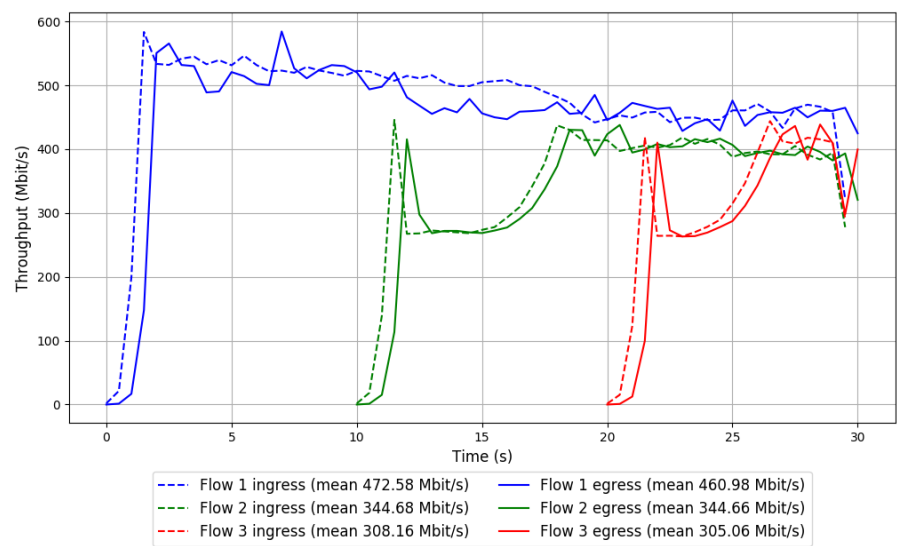
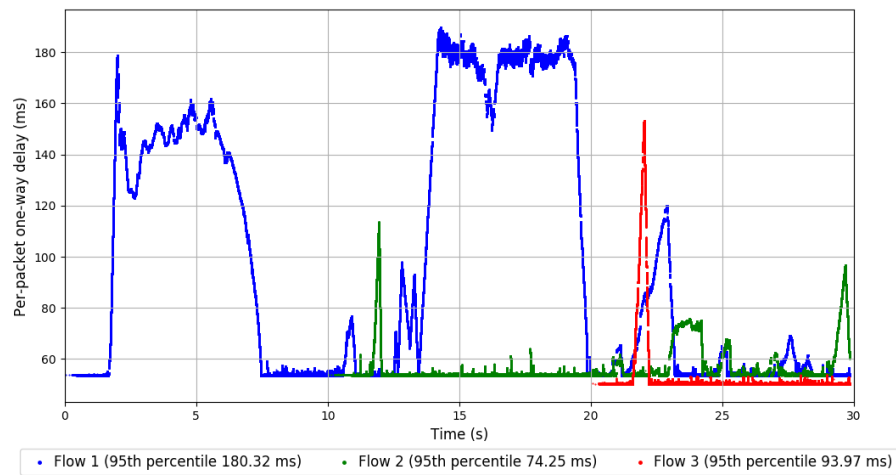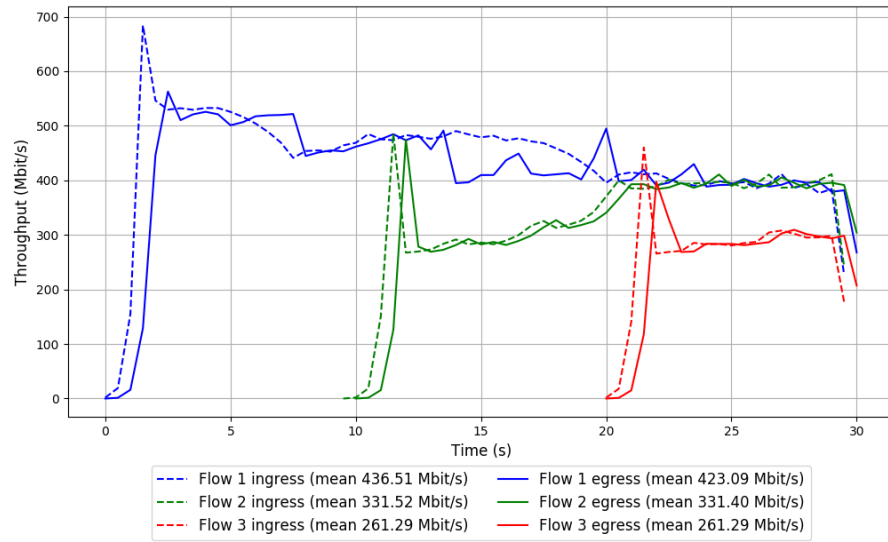Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-03 08:52:38
End at: 2018-10-03 08:53:08
Local clock offset: -0.096 ms
Remote clock offset: -0.202 ms


# Below is generated by plot.py at 2018-10-03 11:41:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 729.28 Mbit/s
95th percentile per-packet one-way delay: 178.262 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 423.09 Mbit/s
95th percentile per-packet one-way delay: 180.323 ms
Loss rate: 3.07%
-- Flow 2:
Average throughput: 331.40 Mbit/s
95th percentile per-packet one-way delay: 74.249 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 261.29 Mbit/s
95th percentile per-packet one-way delay: 93.973 ms
Loss rate: 0.00%
```

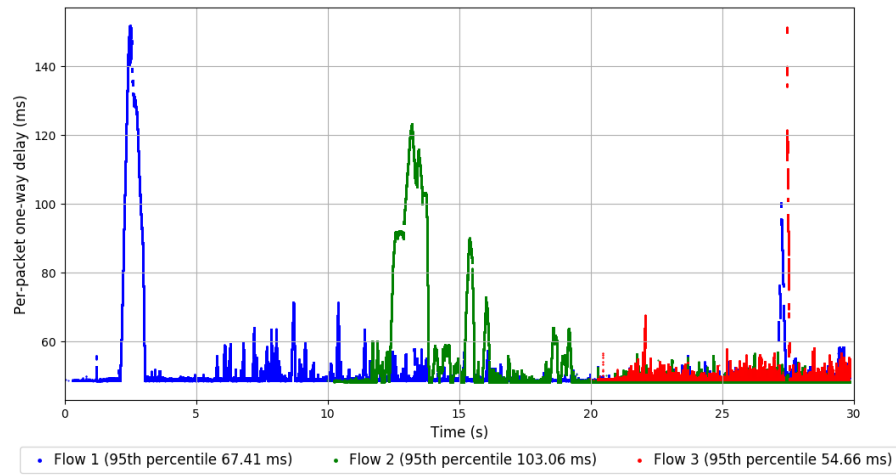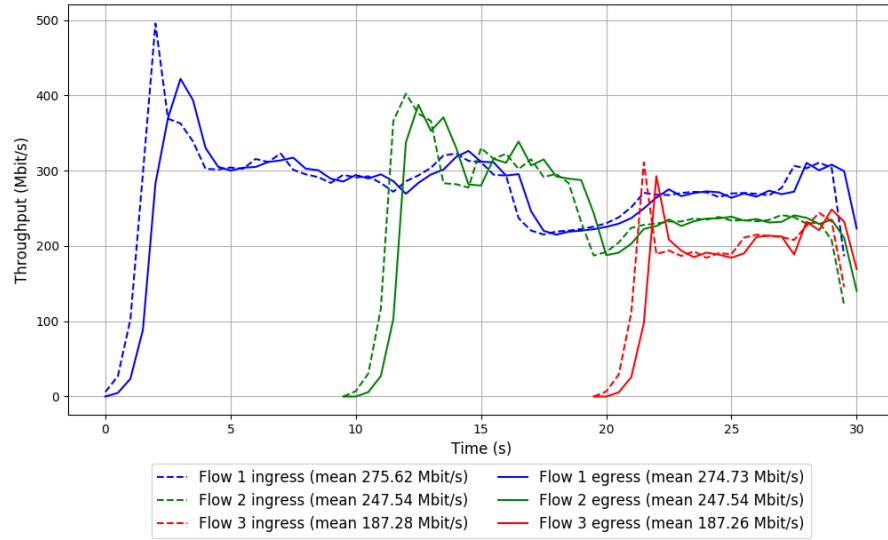Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-03 06:44:17
End at: 2018-10-03 06:44:47
Local clock offset: -0.025 ms
Remote clock offset: -1.429 ms


# Below is generated by plot.py at 2018-10-03 11:41:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.70 Mbit/s
95th percentile per-packet one-way delay: 90.914 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 274.73 Mbit/s
95th percentile per-packet one-way delay: 67.408 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 247.54 Mbit/s
95th percentile per-packet one-way delay: 103.059 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 187.26 Mbit/s
95th percentile per-packet one-way delay: 54.655 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-03 07:15:00
End at: 2018-10-03 07:15:30
Local clock offset: -0.351 ms
Remote clock offset: 0.282 ms


# Below is generated by plot.py at 2018-10-03 11:41:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 516.01 Mbit/s
95th percentile per-packet one-way delay: 143.709 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 288.63 Mbit/s
95th percentile per-packet one-way delay: 148.370 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 234.39 Mbit/s
95th percentile per-packet one-way delay: 128.355 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 217.02 Mbit/s
95th percentile per-packet one-way delay: 65.038 ms
Loss rate: 0.00%
```
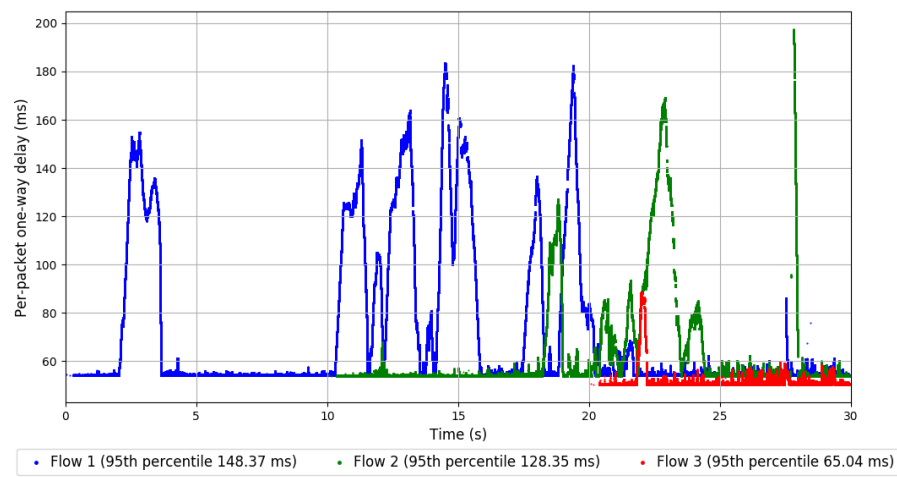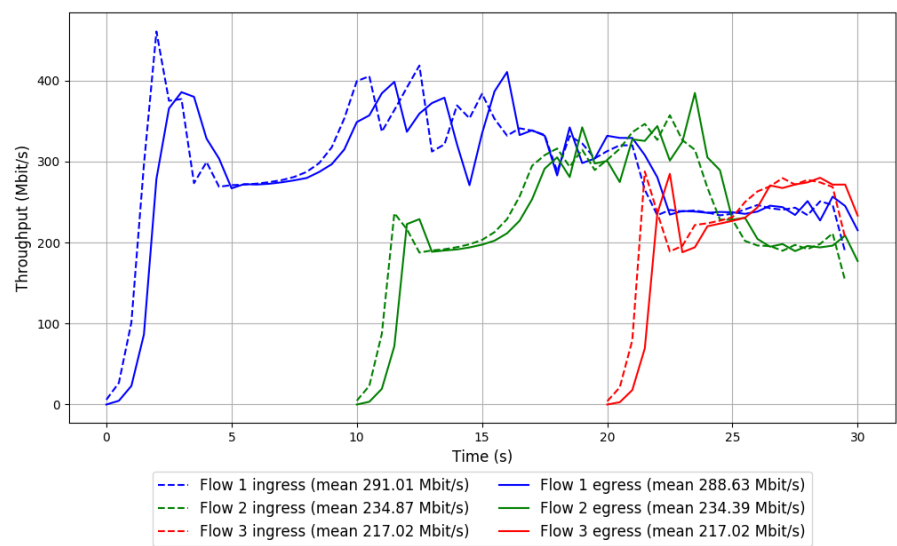
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-03 07:45:30
End at: 2018-10-03 07:46:00
Local clock offset: -0.013 ms
Remote clock offset: 1.09 ms


# Below is generated by plot.py at 2018-10-03 11:41:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 545.94 Mbit/s
95th percentile per-packet one-way delay: 138.132 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 303.36 Mbit/s
95th percentile per-packet one-way delay: 109.311 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 271.71 Mbit/s
95th percentile per-packet one-way delay: 159.265 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 187.84 Mbit/s
95th percentile per-packet one-way delay: 58.641 ms
Loss rate: 0.00%
```
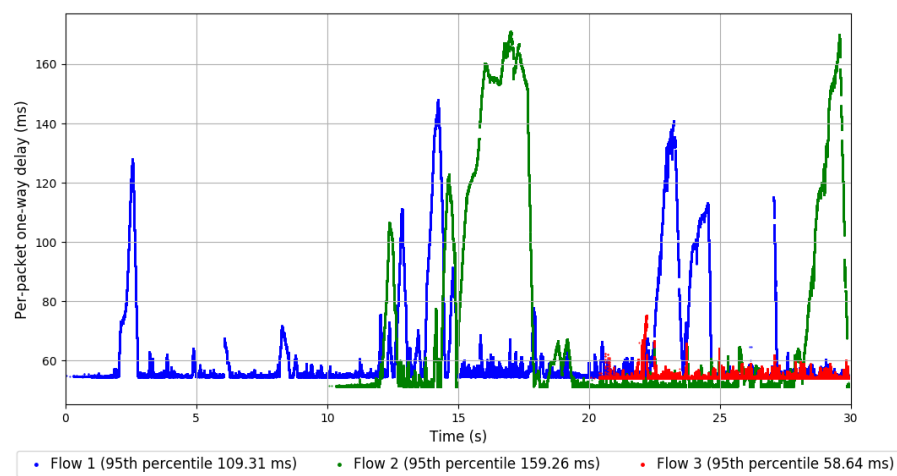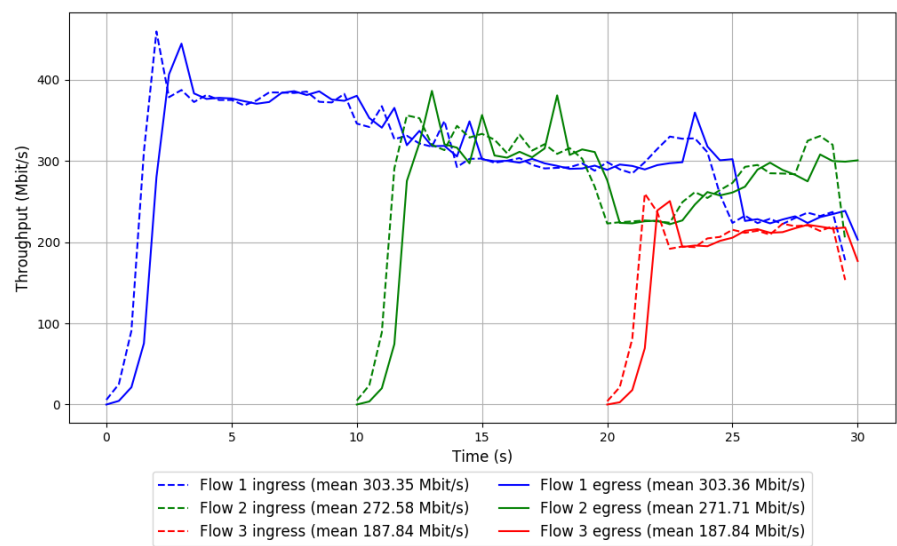
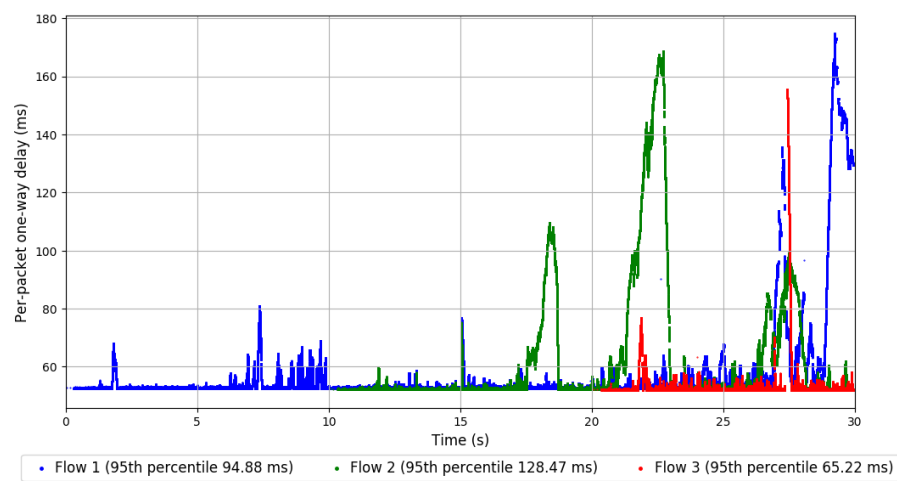Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-03 08:16:34
End at: 2018-10-03 08:17:04
Local clock offset: -0.442 ms
Remote clock offset: -1.158 ms


# Below is generated by plot.py at 2018-10-03 11:42:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 506.10 Mbit/s
95th percentile per-packet one-way delay: 106.474 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 274.40 Mbit/s
95th percentile per-packet one-way delay: 94.875 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 258.35 Mbit/s
95th percentile per-packet one-way delay: 128.472 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 181.90 Mbit/s
95th percentile per-packet one-way delay: 65.216 ms
Loss rate: 0.00%
```

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



Flow 1 ingress (mean 275.59 Mbit/s)     Flow 1 egress (mean 274.40 Mbit/s)
Flow 2 ingress (mean 258.45 Mbit/s)     Flow 2 egress (mean 258.35 Mbit/s)
Flow 3 ingress (mean 181.89 Mbit/s)     Flow 3 egress (mean 181.90 Mbit/s)



Flow 1 (95th percentile 94.88 ms)     Flow 2 (95th percentile 128.47 ms)     Flow 3 (95th percentile 65.22 ms)
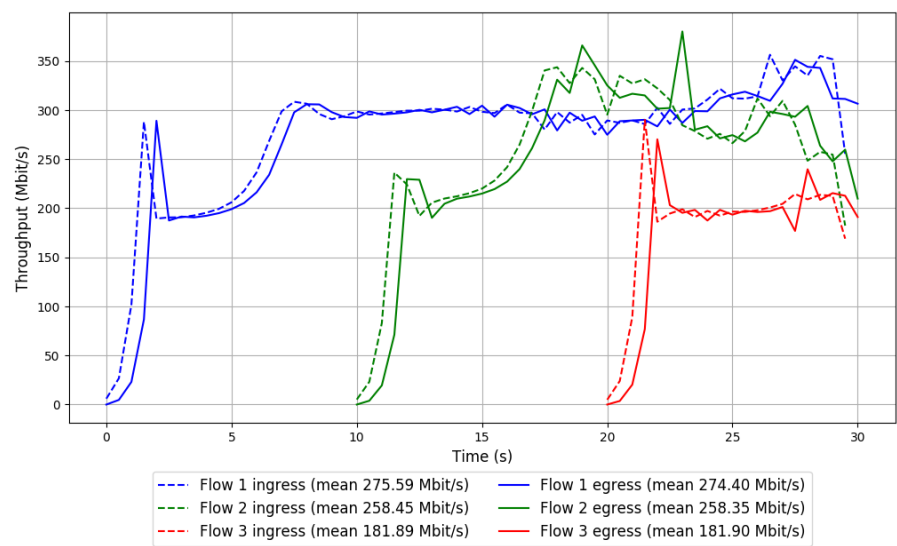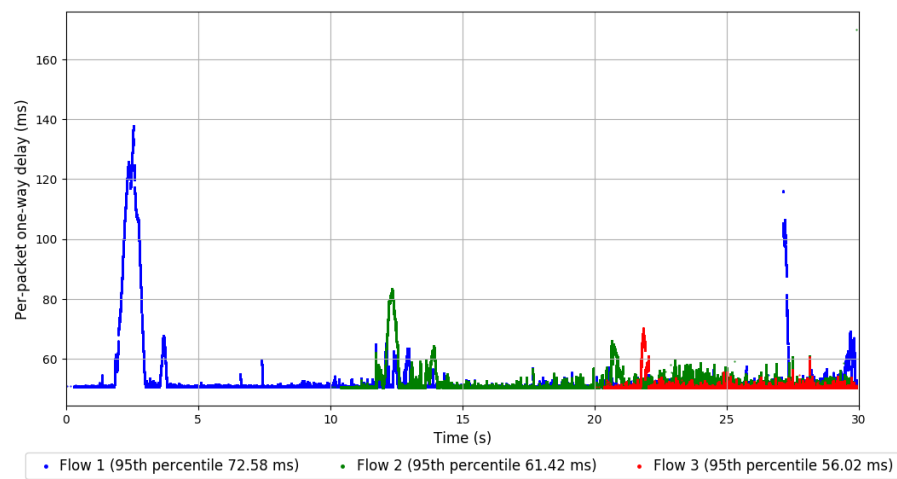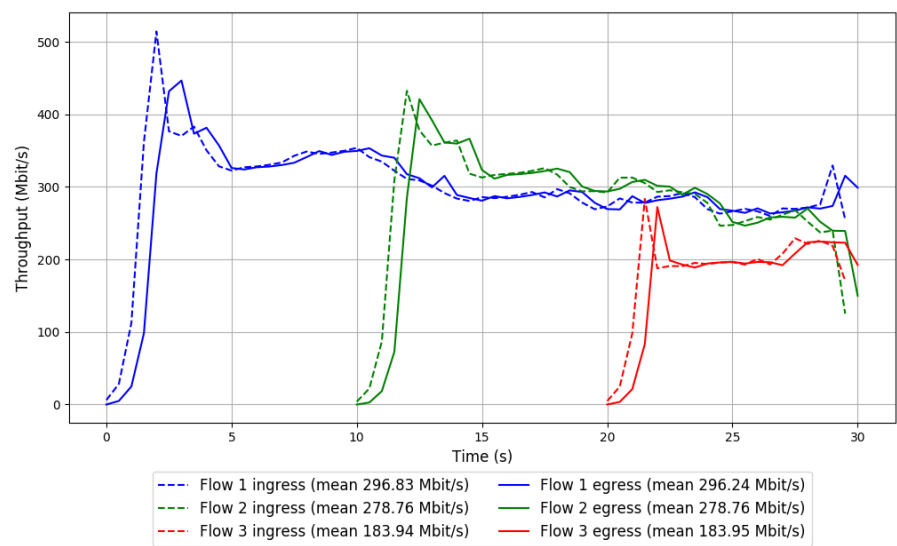
```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-03 08:47:27
End at: 2018-10-03 08:47:57
Local clock offset: -0.436 ms
Remote clock offset: -0.168 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.18 Mbit/s
95th percentile per-packet one-way delay: 63.655 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 296.24 Mbit/s
95th percentile per-packet one-way delay: 72.575 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 278.76 Mbit/s
95th percentile per-packet one-way delay: 61.423 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 183.95 Mbit/s
95th percentile per-packet one-way delay: 56.018 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Expr — Data Link



Flow 1 ingress (mean 296.83 Mbit/s) --- Flow 1 egress (mean 296.24 Mbit/s)
Flow 2 ingress (mean 278.76 Mbit/s) --- Flow 2 egress (mean 278.76 Mbit/s)
Flow 3 ingress (mean 183.94 Mbit/s) --- Flow 3 egress (mean 183.95 Mbit/s)



Flow 1 (95th percentile 72.58 ms)   Flow 2 (95th percentile 61.42 ms)   Flow 3 (95th percentile 56.02 ms)
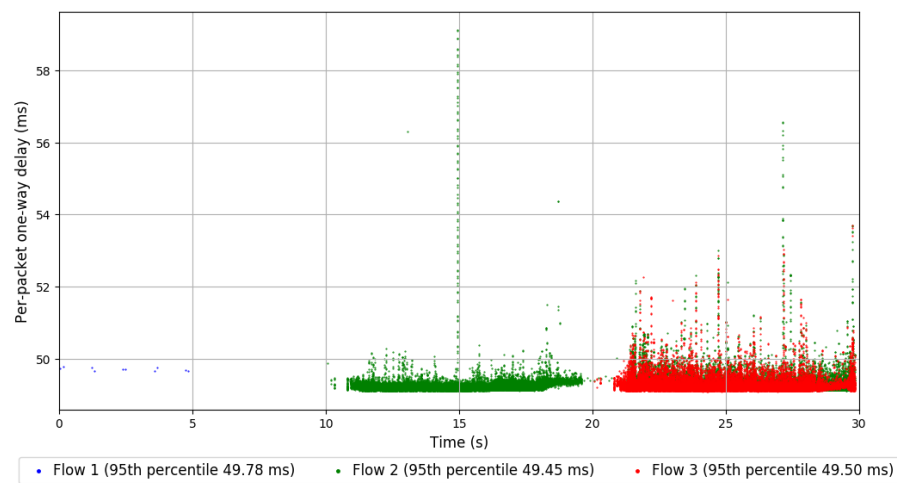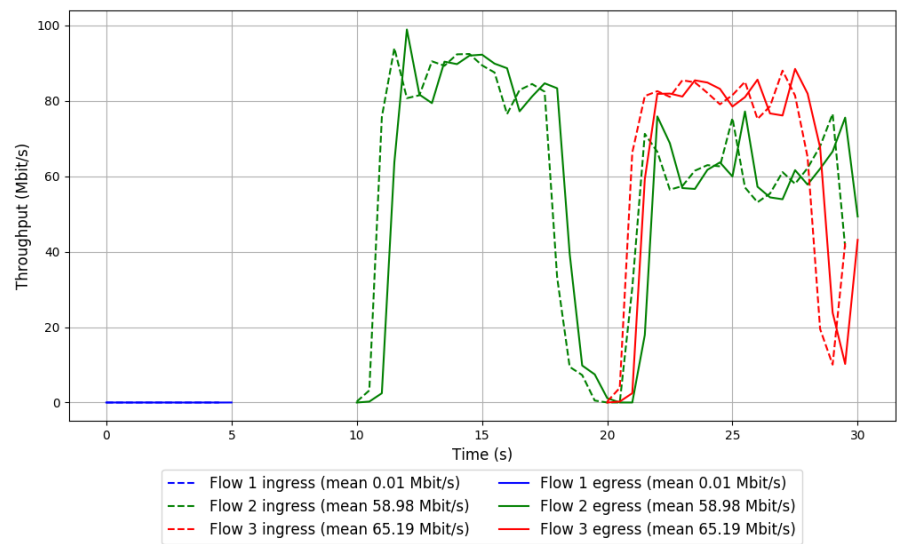
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-03 06:55:42
End at: 2018-10-03 06:56:12
Local clock offset: -0.192 ms
Remote clock offset: -0.716 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.52 Mbit/s
95th percentile per-packet one-way delay: 49.465 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 49.778 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 58.98 Mbit/s
95th percentile per-packet one-way delay: 49.447 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 65.19 Mbit/s
95th percentile per-packet one-way delay: 49.500 ms
Loss rate: 0.00%
```

Run 1: Report of QUIC Cubic — Data Link

--- Flow 1 ingress (mean 0.01 Mbit/s)    —— Flow 1 egress (mean 0.01 Mbit/s)
--- Flow 2 ingress (mean 58.98 Mbit/s)   —— Flow 2 egress (mean 58.98 Mbit/s)
--- Flow 3 ingress (mean 65.19 Mbit/s)   —— Flow 3 egress (mean 65.19 Mbit/s)

• Flow 1 (95th percentile 49.78 ms)    • Flow 2 (95th percentile 49.45 ms)    • Flow 3 (95th percentile 49.50 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-03 07:26:27
End at: 2018-10-03 07:26:57
Local clock offset: -0.18 ms
Remote clock offset: 0.785 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 106.48 Mbit/s
95th percentile per-packet one-way delay: 54.556 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 54.614 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 71.13 Mbit/s
95th percentile per-packet one-way delay: 51.002 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 58.17 Mbit/s
95th percentile per-packet one-way delay: 51.350 ms
Loss rate: 0.00%
```
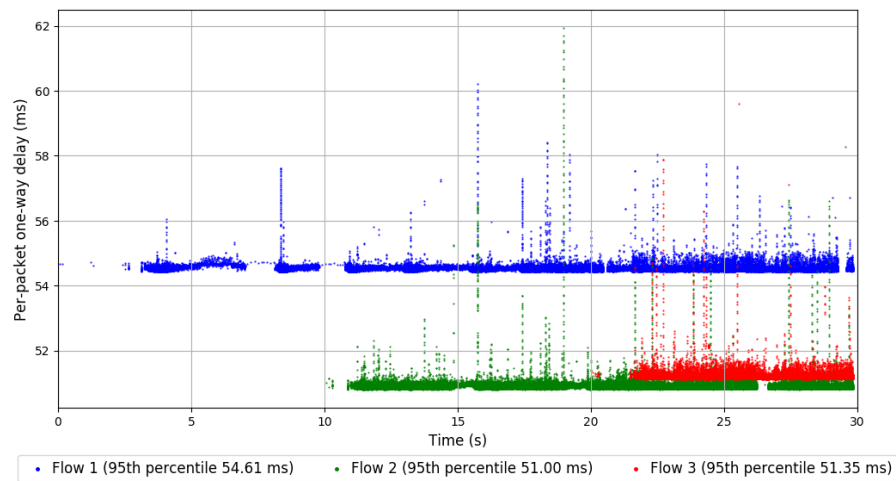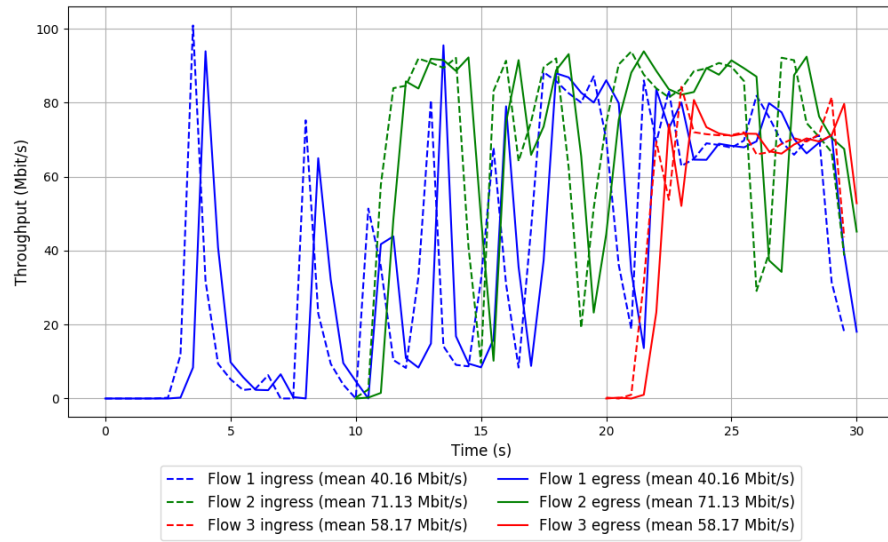
Run 2: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 40.16 Mbit/s)          Flow 1 egress (mean 40.16 Mbit/s)
Flow 2 ingress (mean 71.13 Mbit/s)          Flow 2 egress (mean 71.13 Mbit/s)
Flow 3 ingress (mean 58.17 Mbit/s)          Flow 3 egress (mean 58.17 Mbit/s)



Flow 1 (95th percentile 54.61 ms)     Flow 2 (95th percentile 51.00 ms)     Flow 3 (95th percentile 51.35 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-03 07:57:03
End at: 2018-10-03 07:57:33
Local clock offset: -0.216 ms
Remote clock offset: 1.304 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 122.20 Mbit/s
95th percentile per-packet one-way delay: 54.336 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.16 Mbit/s
95th percentile per-packet one-way delay: 51.738 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 64.11 Mbit/s
95th percentile per-packet one-way delay: 51.433 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 54.455 ms
Loss rate: 0.00%
```
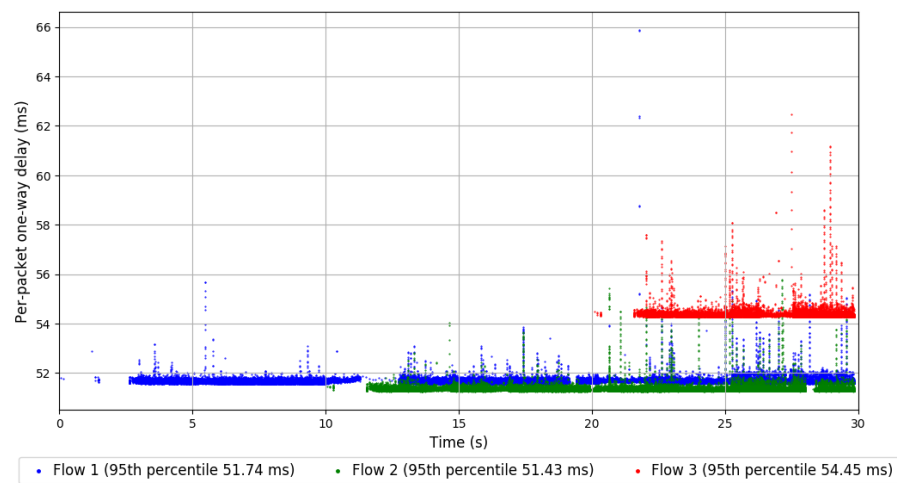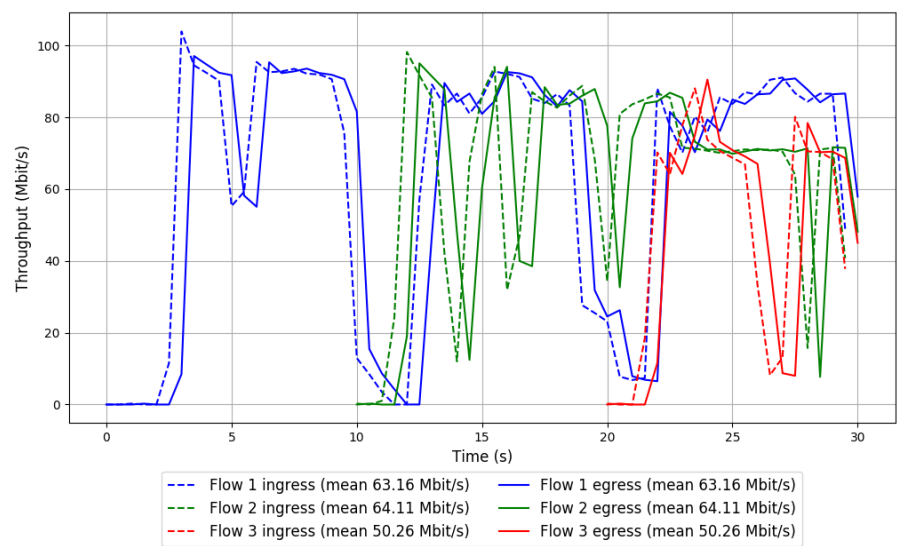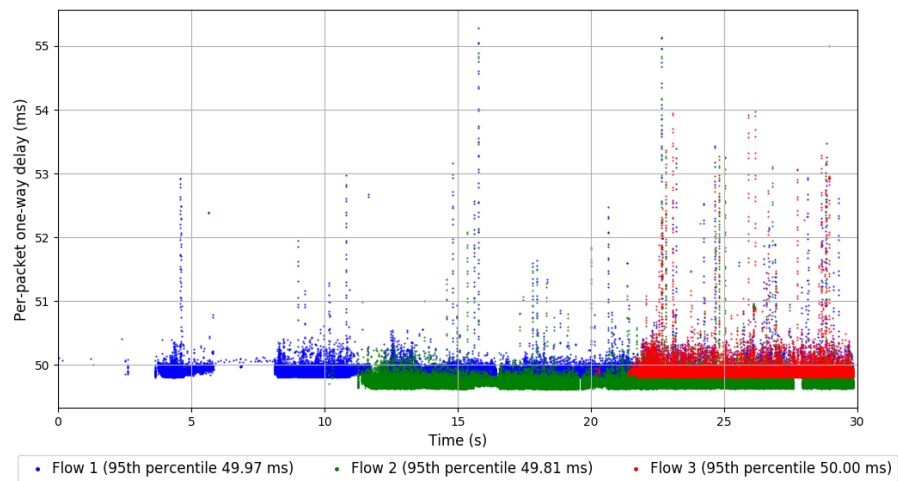
Run 3: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 63.16 Mbit/s) — Flow 1 egress (mean 63.16 Mbit/s)
Flow 2 ingress (mean 64.11 Mbit/s) — Flow 2 egress (mean 64.11 Mbit/s)
Flow 3 ingress (mean 50.26 Mbit/s) — Flow 3 egress (mean 50.26 Mbit/s)



Flow 1 (95th percentile 51.74 ms) • Flow 2 (95th percentile 51.43 ms) • Flow 3 (95th percentile 54.45 ms)
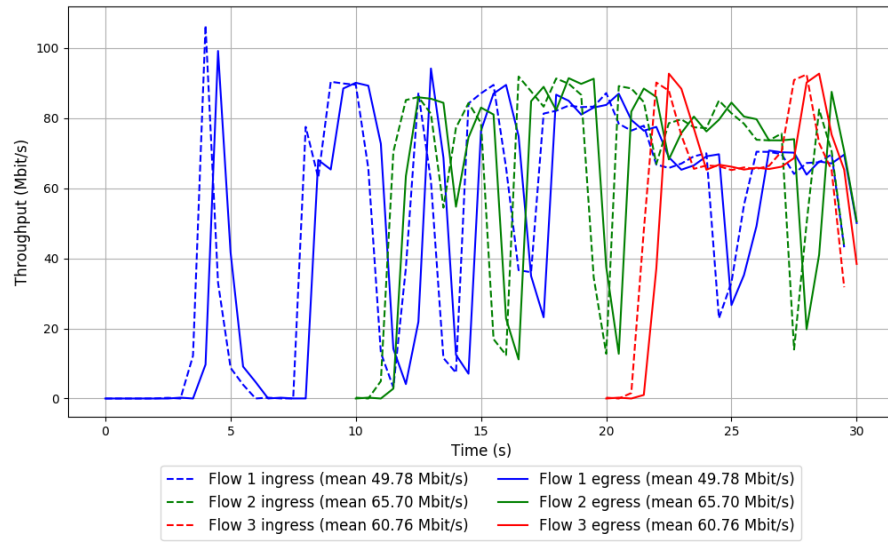
```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-03 08:28:03
End at: 2018-10-03 08:28:33
Local clock offset: -0.049 ms
Remote clock offset: -0.407 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 113.32 Mbit/s
95th percentile per-packet one-way delay: 49.951 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 49.78 Mbit/s
95th percentile per-packet one-way delay: 49.972 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 65.70 Mbit/s
95th percentile per-packet one-way delay: 49.806 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 60.76 Mbit/s
95th percentile per-packet one-way delay: 49.998 ms
Loss rate: 0.00%
```

Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-03 08:58:50
End at: 2018-10-03 08:59:20
Local clock offset: -0.067 ms
Remote clock offset: 0.008 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 101.80 Mbit/s
95th percentile per-packet one-way delay: 53.692 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.85 Mbit/s
95th percentile per-packet one-way delay: 53.721 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 31.64 Mbit/s
95th percentile per-packet one-way delay: 50.587 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 60.91 Mbit/s
95th percentile per-packet one-way delay: 50.777 ms
Loss rate: 0.00%
```
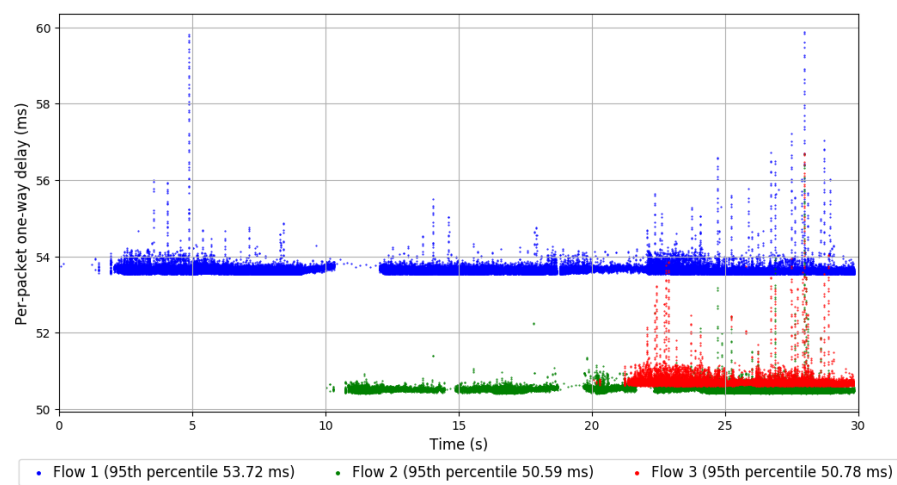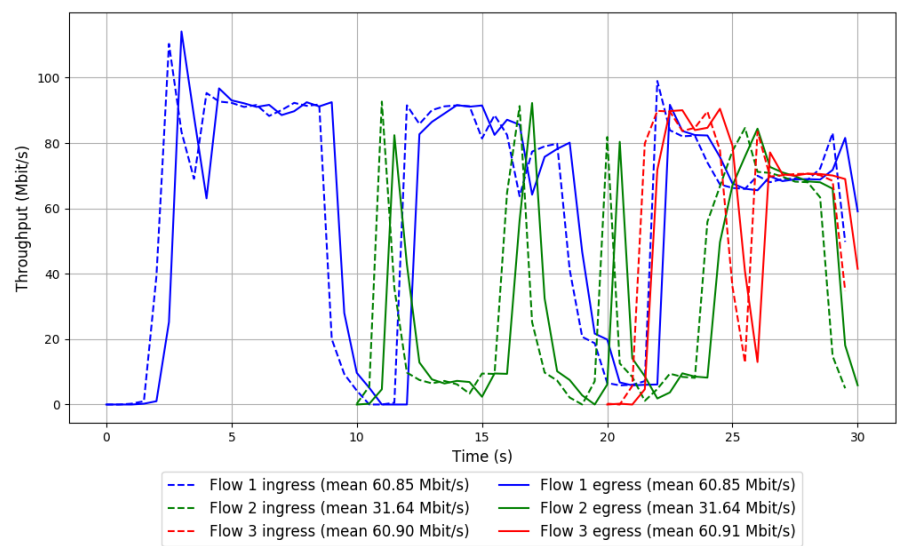
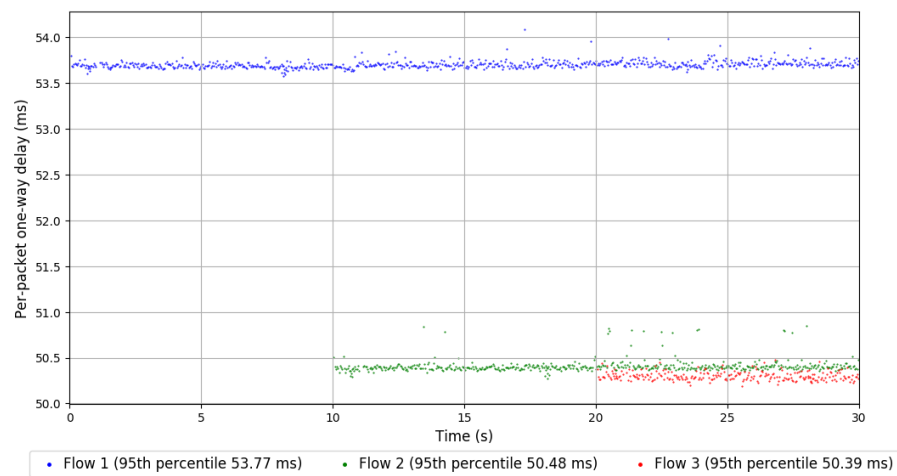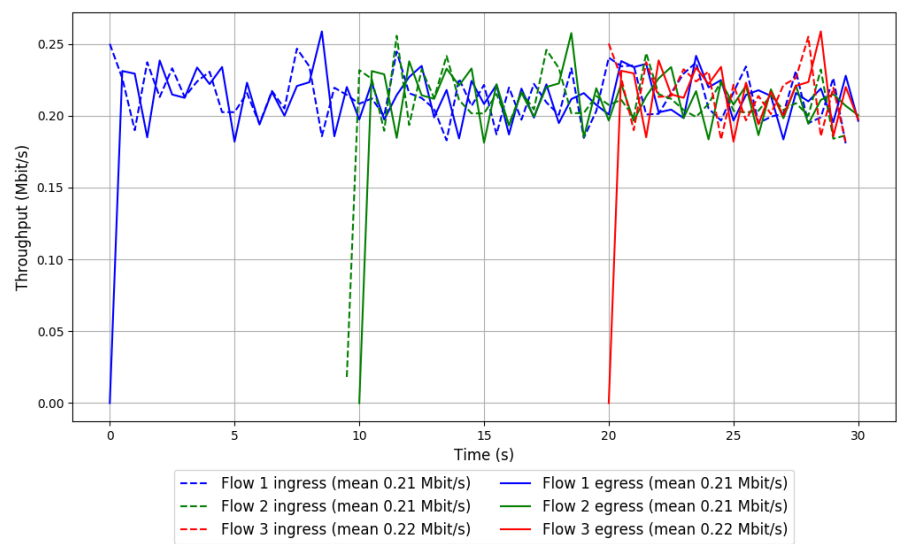Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-10-03 06:33:26
End at: 2018-10-03 06:33:56
Local clock offset: -0.088 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 53.750 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 53.768 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 50.484 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.388 ms
Loss rate: 0.00%
```
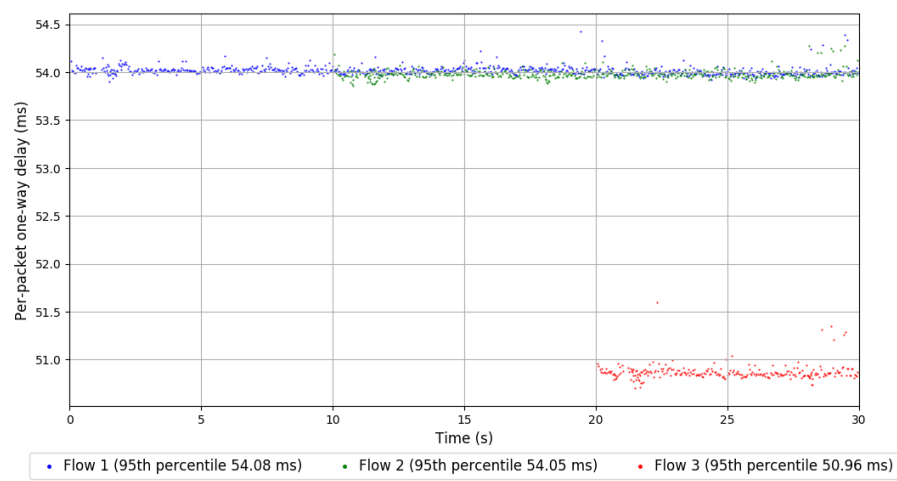
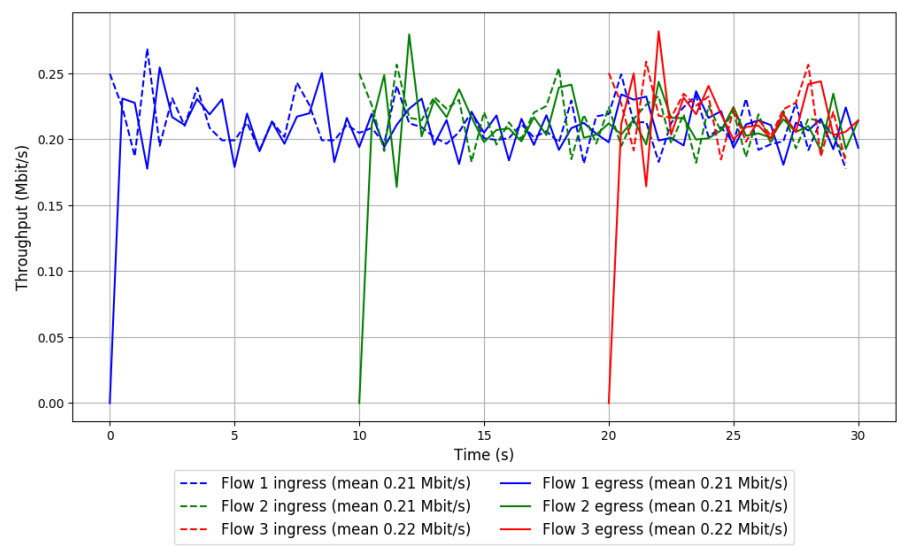# Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-10-03 07:04:00
End at: 2018-10-03 07:04:30
Local clock offset: -0.313 ms
Remote clock offset: 0.104 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 54.063 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.081 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.048 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.959 ms
Loss rate: 0.00%
```

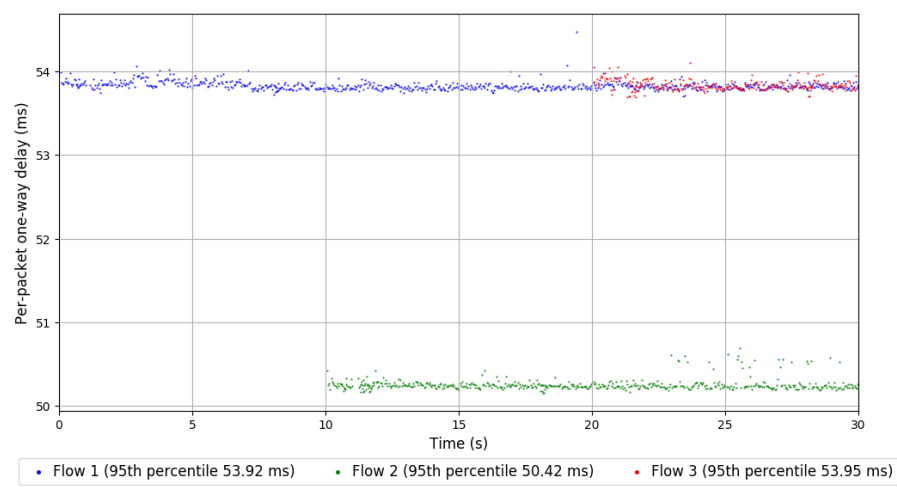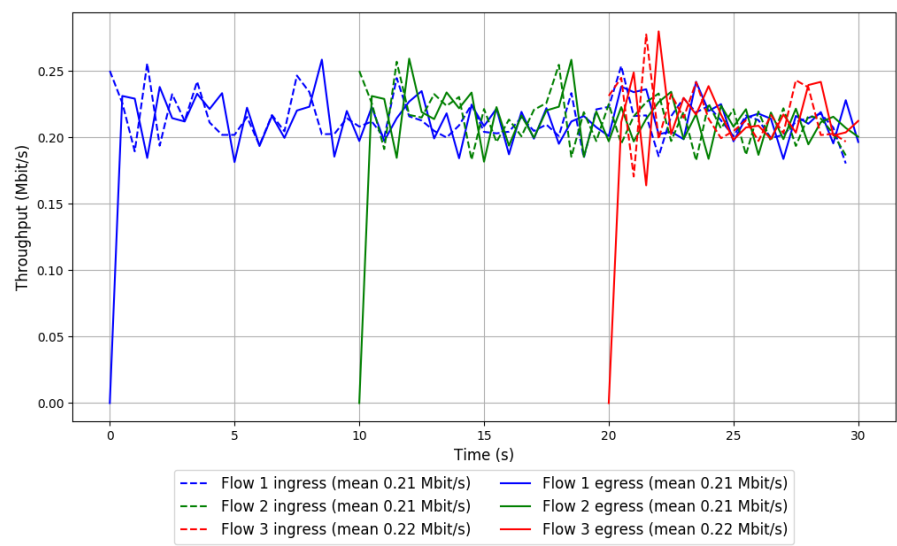# Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-03 07:34:40
End at: 2018-10-03 07:35:10
Local clock offset: -0.218 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 53.911 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 53.918 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 50.422 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 53.947 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-10-03 08:05:27
End at: 2018-10-03 08:05:57
Local clock offset: -0.144 ms
Remote clock offset: 0.565 ms

# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 51.350 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.395 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.030 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.884 ms
Loss rate: 0.00%
```
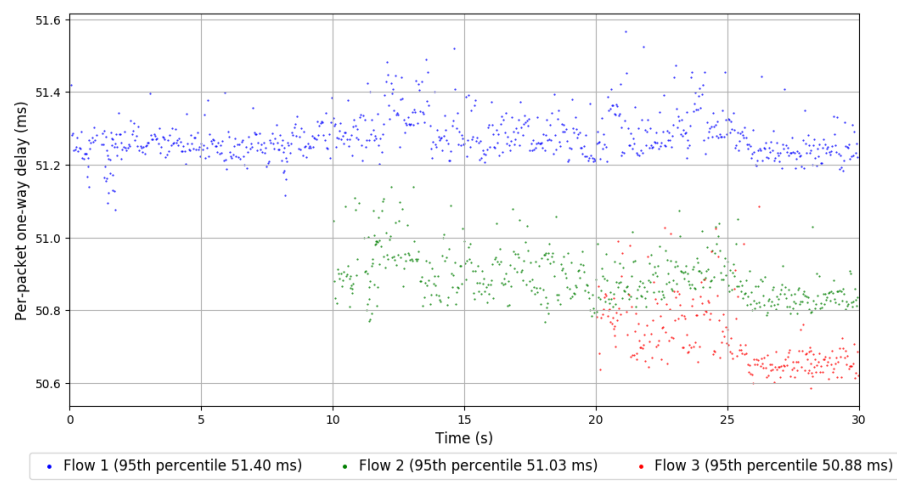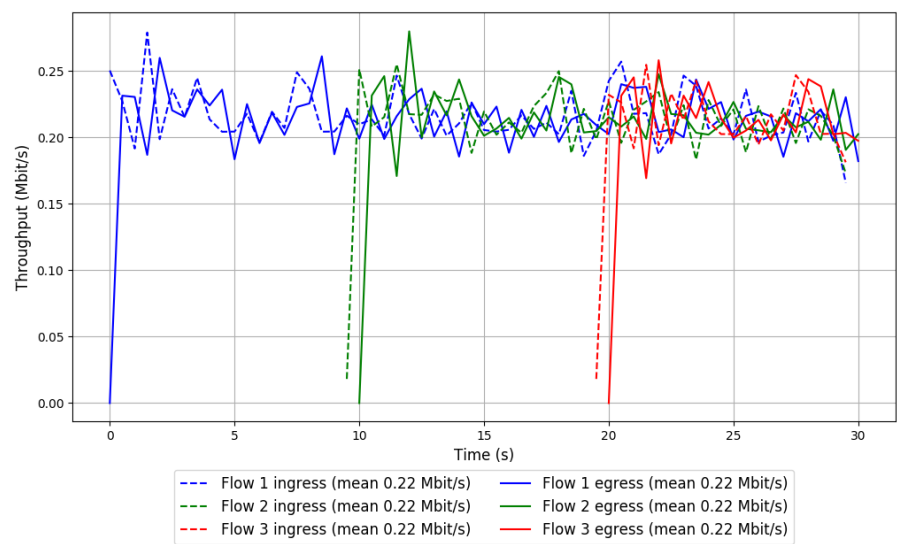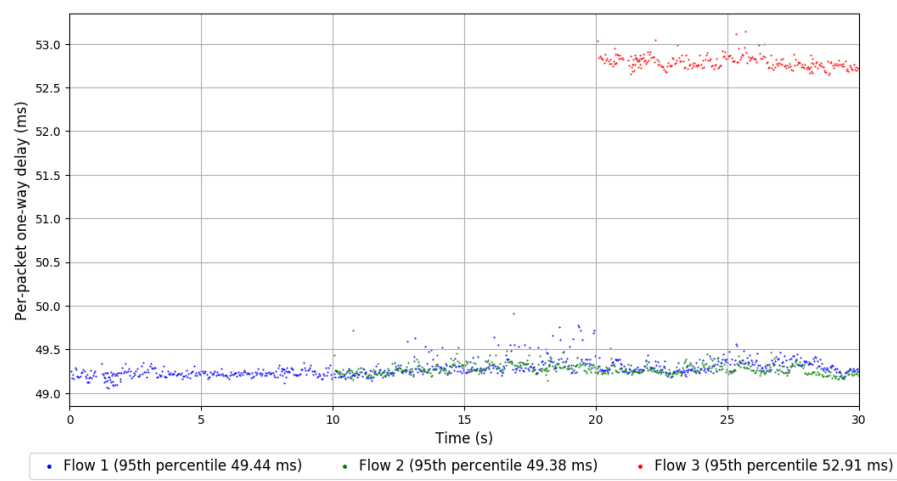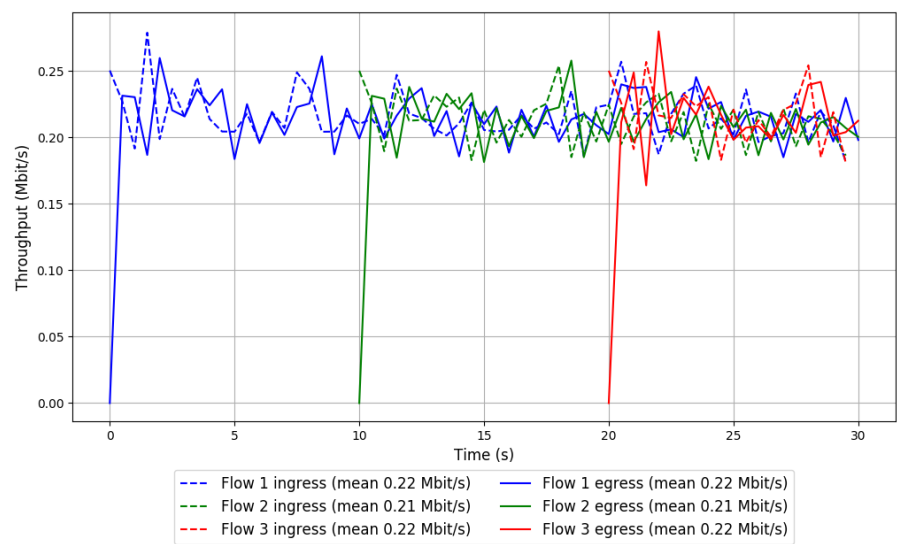
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-03 08:36:29
End at: 2018-10-03 08:37:00
Local clock offset: -0.438 ms
Remote clock offset: -1.216 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 52.828 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.439 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 49.383 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.907 ms
Loss rate: 0.00%
```
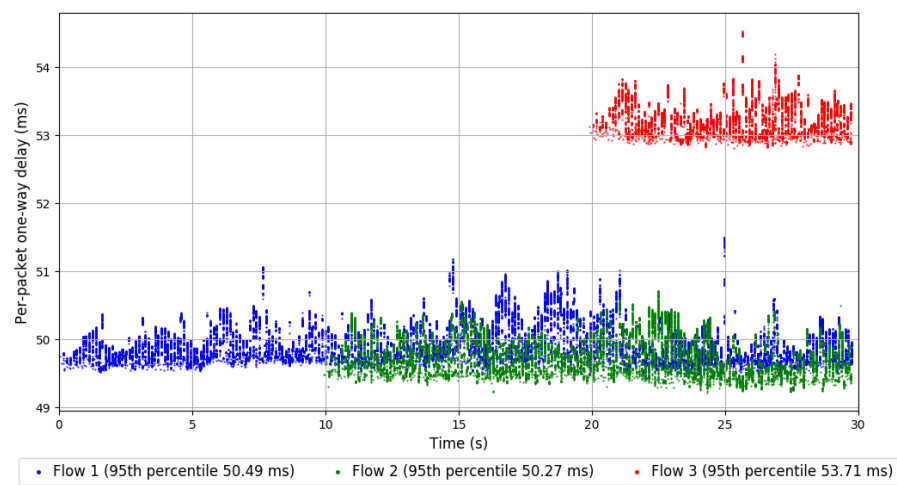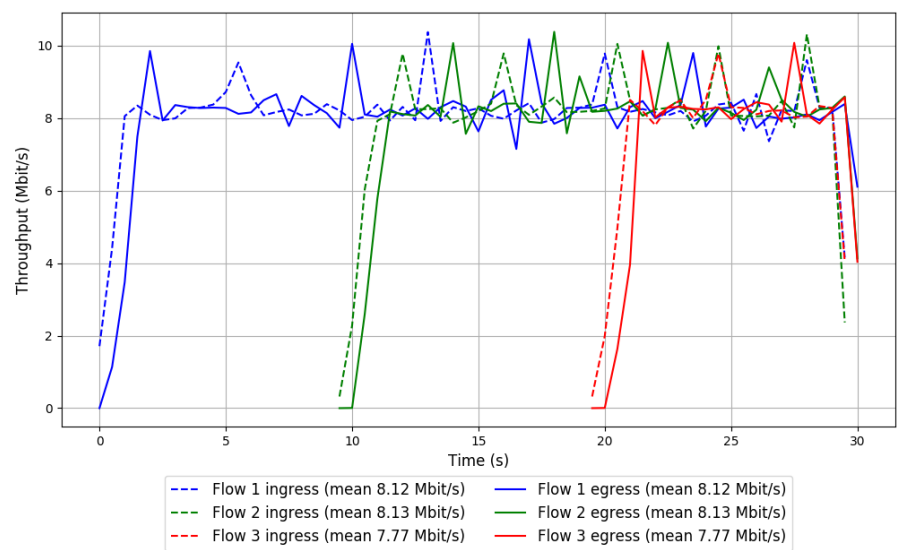
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-10-03 06:32:14
End at: 2018-10-03 06:32:44
Local clock offset: -0.461 ms
Remote clock offset: -1.069 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.13 Mbit/s
95th percentile per-packet one-way delay: 53.359 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.12 Mbit/s
95th percentile per-packet one-way delay: 50.488 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.13 Mbit/s
95th percentile per-packet one-way delay: 50.268 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 53.713 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 8.12 Mbit/s)    —— Flow 1 egress (mean 8.12 Mbit/s)
- - - Flow 2 ingress (mean 8.13 Mbit/s)    —— Flow 2 egress (mean 8.13 Mbit/s)
- - - Flow 3 ingress (mean 7.77 Mbit/s)    —— Flow 3 egress (mean 7.77 Mbit/s)

• Flow 1 (95th percentile 50.49 ms)    • Flow 2 (95th percentile 50.27 ms)    • Flow 3 (95th percentile 53.71 ms)

```
Run 2: Statistics of Sprout

Start at: 2018-10-03 07:02:48
End at: 2018-10-03 07:03:18
Local clock offset: -0.211 ms
Remote clock offset: 0.47 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.12 Mbit/s
95th percentile per-packet one-way delay: 51.510 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 51.583 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.11 Mbit/s
95th percentile per-packet one-way delay: 51.207 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.80 Mbit/s
95th percentile per-packet one-way delay: 51.335 ms
Loss rate: 0.00%
```
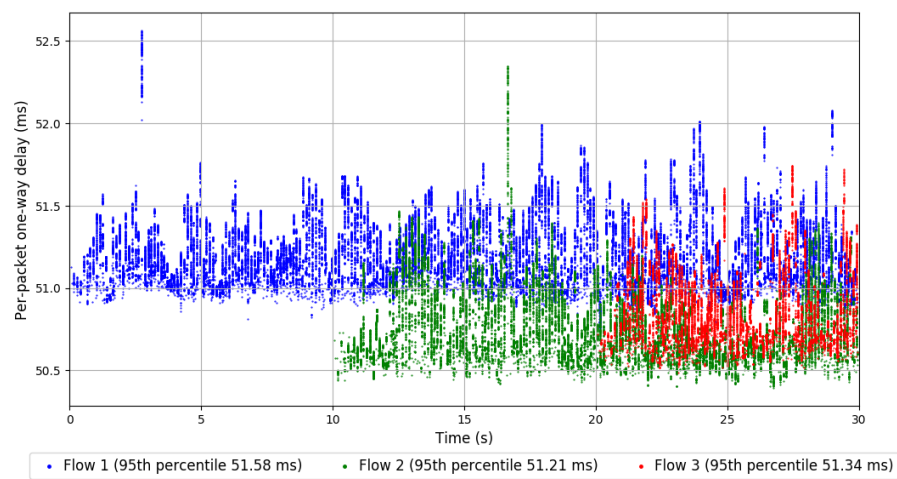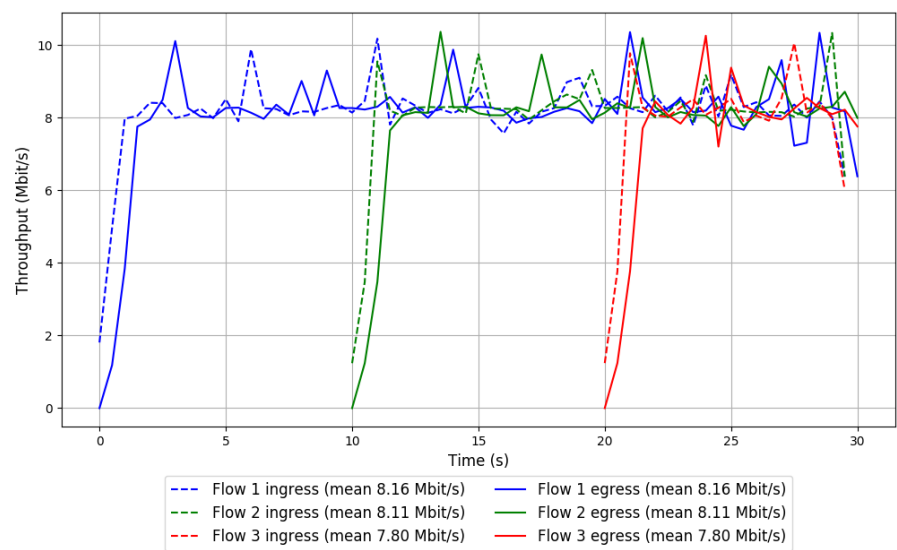
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-03 07:33:28
End at: 2018-10-03 07:33:58
Local clock offset: -0.05 ms
Remote clock offset: 1.384 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.96 Mbit/s
95th percentile per-packet one-way delay: 55.587 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.11 Mbit/s
95th percentile per-packet one-way delay: 55.614 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.96 Mbit/s
95th percentile per-packet one-way delay: 55.621 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 52.149 ms
Loss rate: 0.00%
```
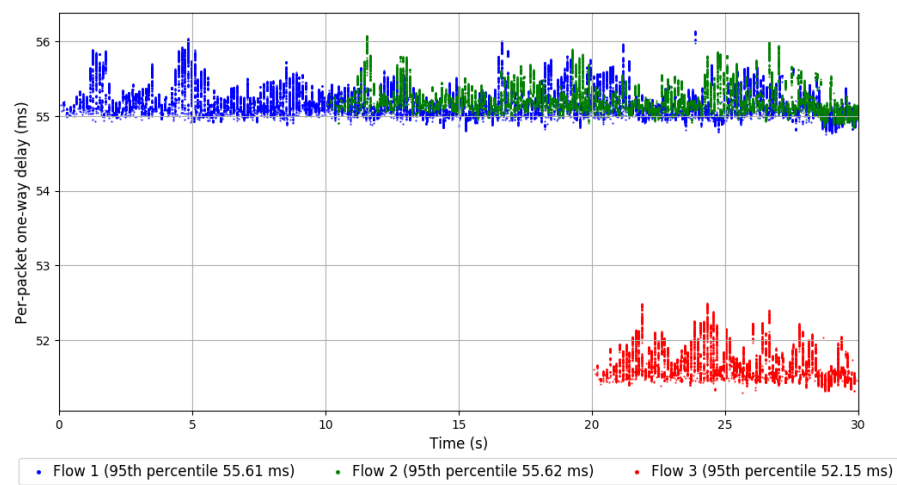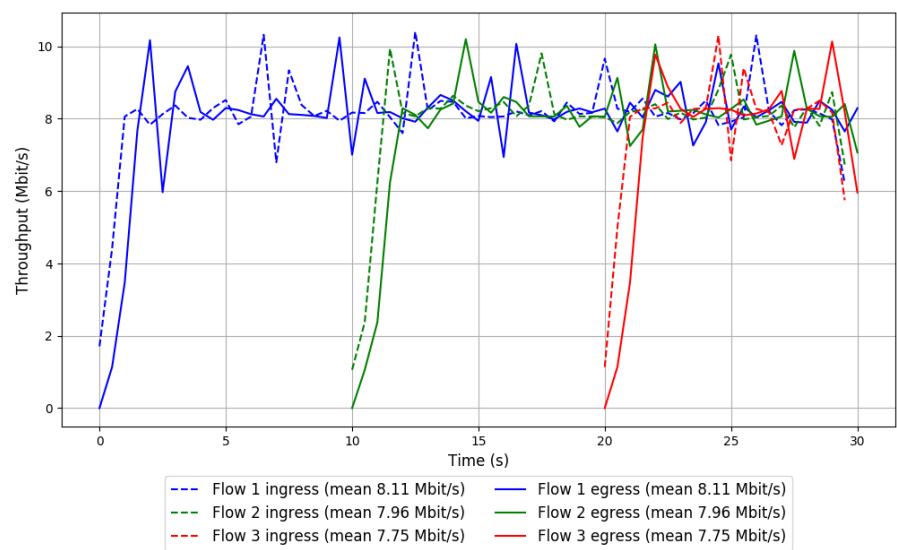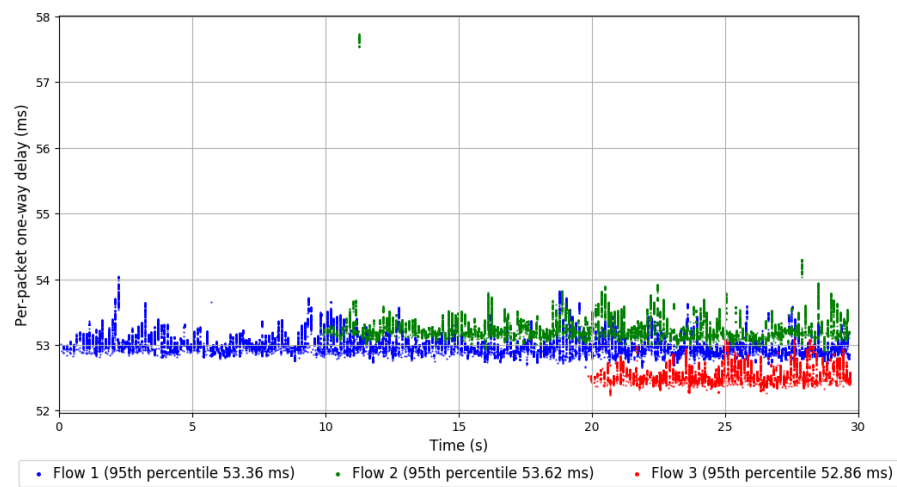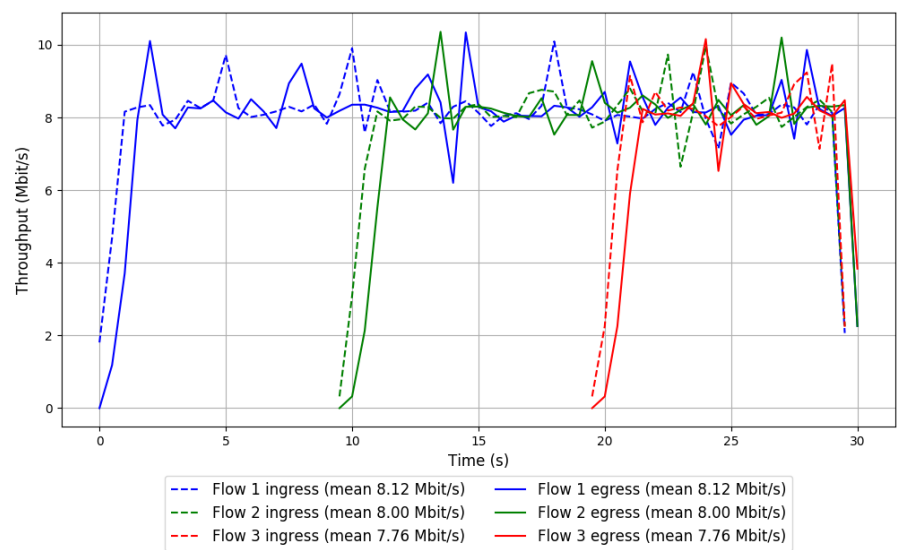
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-03 08:04:15
End at: 2018-10-03 08:04:45
Local clock offset: -0.175 ms
Remote clock offset: -0.776 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.05 Mbit/s
95th percentile per-packet one-way delay: 53.482 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.12 Mbit/s
95th percentile per-packet one-way delay: 53.361 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.00 Mbit/s
95th percentile per-packet one-way delay: 53.615 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 52.858 ms
Loss rate: 0.00%
```
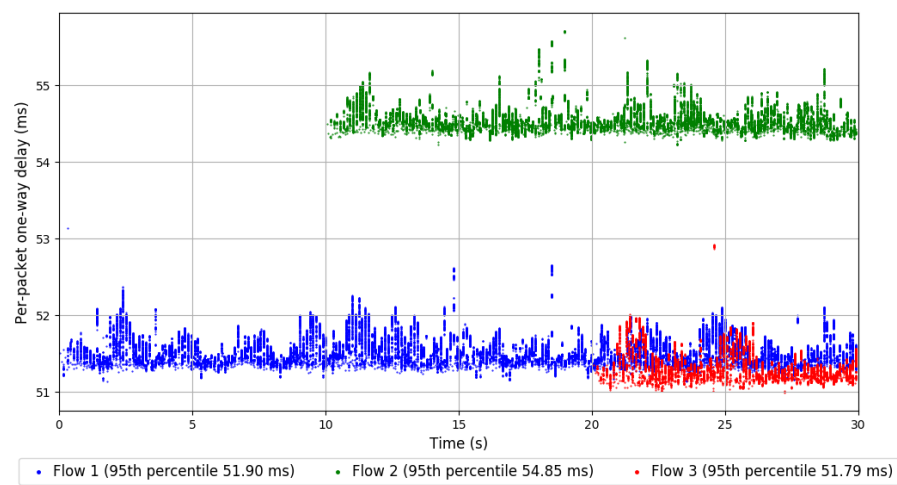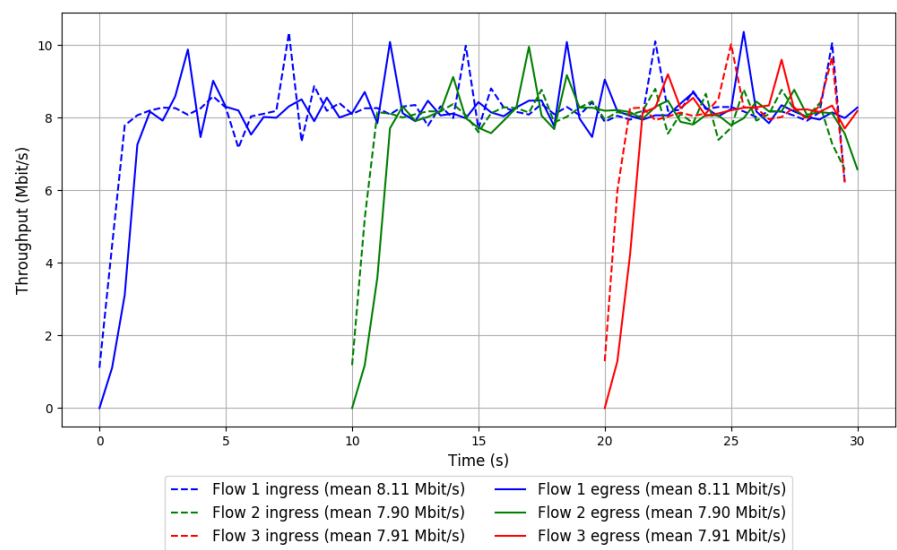
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-10-03 08:35:17
End at: 2018-10-03 08:35:47
Local clock offset: -0.092 ms
Remote clock offset: 0.727 ms


# Below is generated by plot.py at 2018-10-03 11:45:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.97 Mbit/s
95th percentile per-packet one-way delay: 54.679 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.11 Mbit/s
95th percentile per-packet one-way delay: 51.896 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 54.854 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: 51.788 ms
Loss rate: 0.00%
```

# Run 5: Report of Sprout — Data Link



- - - Flow 1 ingress (mean 8.11 Mbit/s)     —— Flow 1 egress (mean 8.11 Mbit/s)
- - - Flow 2 ingress (mean 7.90 Mbit/s)     —— Flow 2 egress (mean 7.90 Mbit/s)
- - - Flow 3 ingress (mean 7.91 Mbit/s)     —— Flow 3 egress (mean 7.91 Mbit/s)



- Flow 1 (95th percentile 51.90 ms)    • Flow 2 (95th percentile 54.85 ms)    • Flow 3 (95th percentile 51.79 ms)
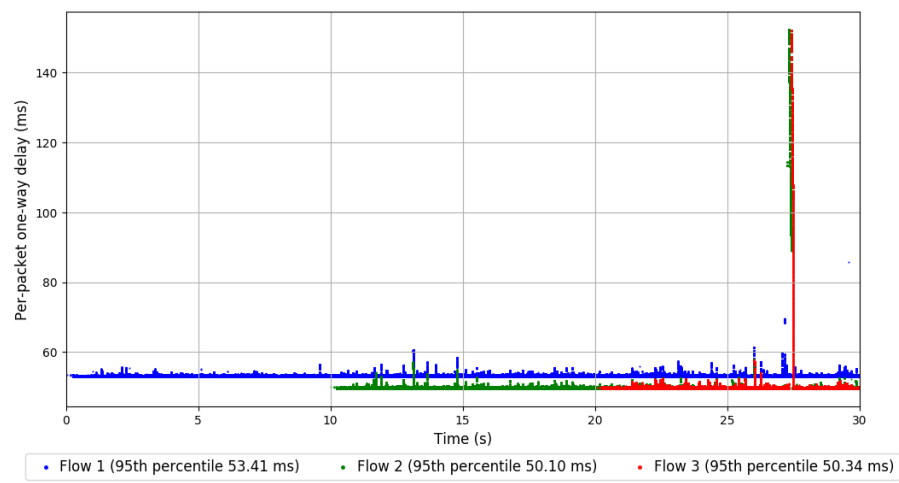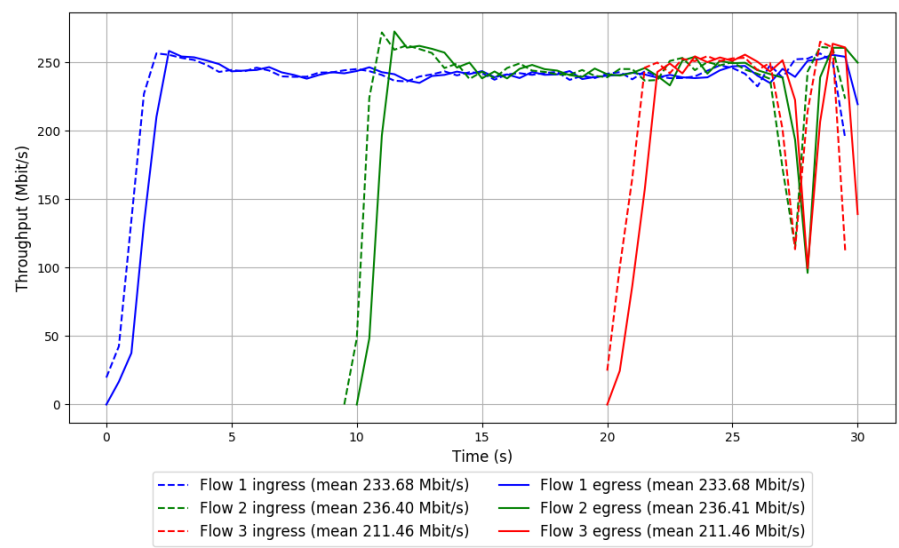
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-03 06:36:39
End at: 2018-10-03 06:37:09
Local clock offset: -0.025 ms
Remote clock offset: -0.289 ms

# Below is generated by plot.py at 2018-10-03 11:53:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 461.54 Mbit/s
95th percentile per-packet one-way delay: 53.329 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 233.68 Mbit/s
95th percentile per-packet one-way delay: 53.410 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 236.41 Mbit/s
95th percentile per-packet one-way delay: 50.103 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 211.46 Mbit/s
95th percentile per-packet one-way delay: 50.341 ms
Loss rate: 0.00%
```

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



Flow 1 ingress (mean 233.68 Mbit/s) --- Flow 1 egress (mean 233.68 Mbit/s)
Flow 2 ingress (mean 236.40 Mbit/s) --- Flow 2 egress (mean 236.41 Mbit/s)
Flow 3 ingress (mean 211.46 Mbit/s) --- Flow 3 egress (mean 211.46 Mbit/s)



Flow 1 (95th percentile 53.41 ms)   Flow 2 (95th percentile 50.10 ms)   Flow 3 (95th percentile 50.34 ms)
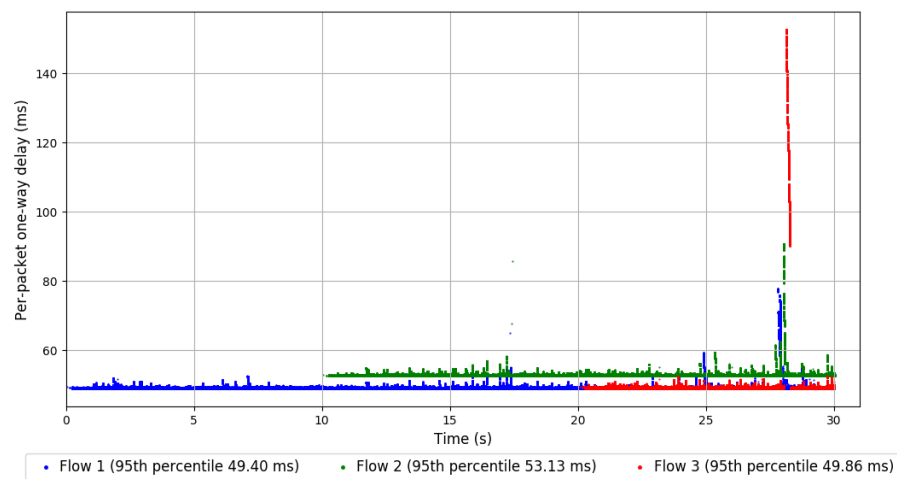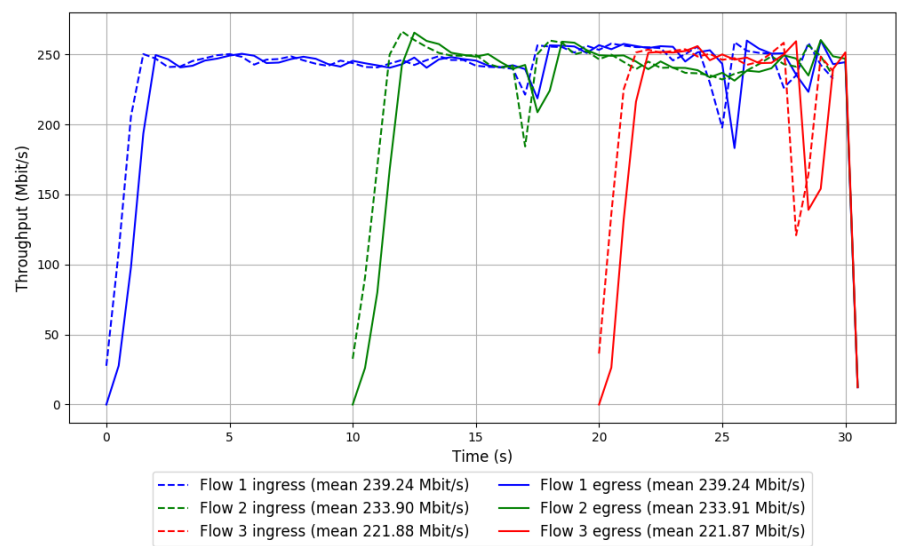
```
Run 2: Statistics of TaoVA-100x

Start at: 2018-10-03 07:07:10
End at: 2018-10-03 07:07:40
Local clock offset: -0.182 ms
Remote clock offset: -0.892 ms

# Below is generated by plot.py at 2018-10-03 11:54:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.72 Mbit/s
95th percentile per-packet one-way delay: 52.885 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 239.24 Mbit/s
95th percentile per-packet one-way delay: 49.399 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 233.91 Mbit/s
95th percentile per-packet one-way delay: 53.132 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 221.87 Mbit/s
95th percentile per-packet one-way delay: 49.856 ms
Loss rate: 0.00%
```

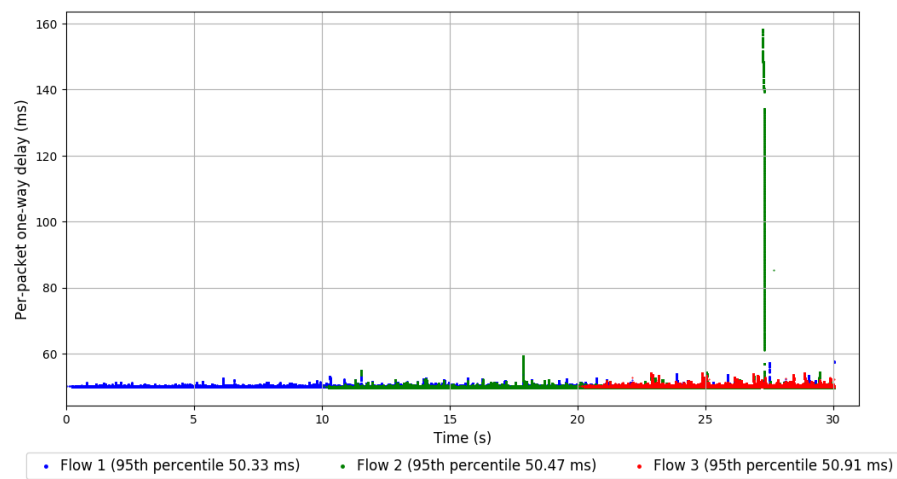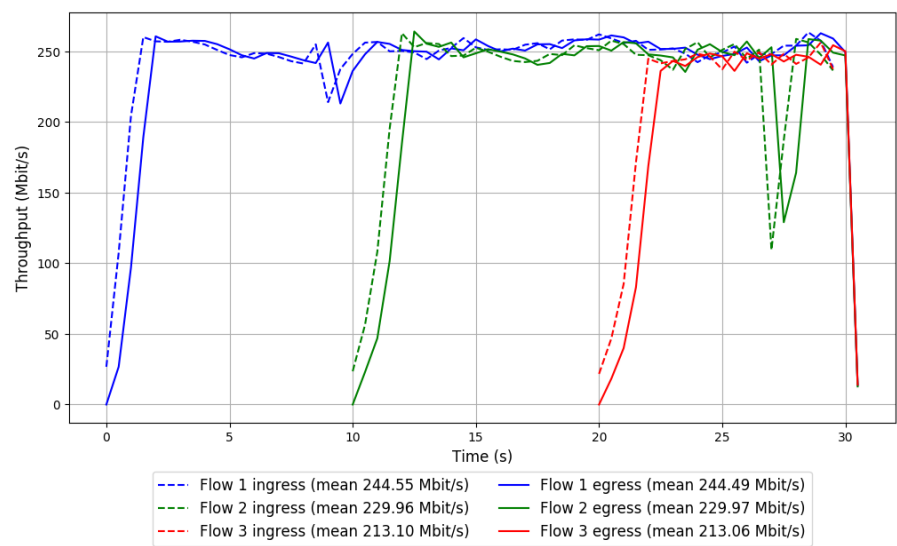# Run 2: Report of TaoVA-100x — Data Link





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```
Run 3: Statistics of TaoVA-100x

Start at: 2018-10-03 07:37:51
End at: 2018-10-03 07:38:21
Local clock offset: -0.061 ms
Remote clock offset: -0.091 ms


# Below is generated by plot.py at 2018-10-03 11:55:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.34 Mbit/s
95th percentile per-packet one-way delay: 50.464 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 244.49 Mbit/s
95th percentile per-packet one-way delay: 50.332 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 229.97 Mbit/s
95th percentile per-packet one-way delay: 50.471 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 213.06 Mbit/s
95th percentile per-packet one-way delay: 50.911 ms
Loss rate: 0.00%
```

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



Flow 1 ingress (mean 244.55 Mbit/s) --- Flow 1 egress (mean 244.49 Mbit/s)
Flow 2 ingress (mean 229.96 Mbit/s) --- Flow 2 egress (mean 229.97 Mbit/s)
Flow 3 ingress (mean 213.10 Mbit/s) --- Flow 3 egress (mean 213.06 Mbit/s)



Flow 1 (95th percentile 50.33 ms)   Flow 2 (95th percentile 50.47 ms)   Flow 3 (95th percentile 50.91 ms)
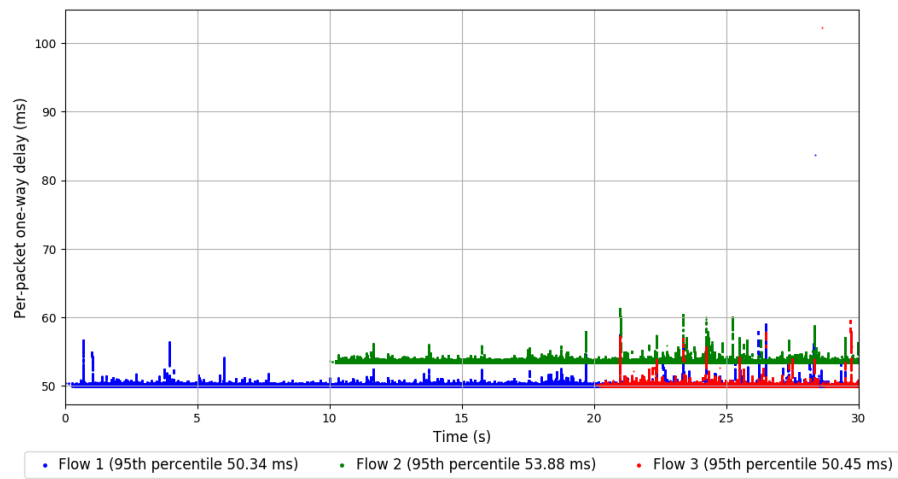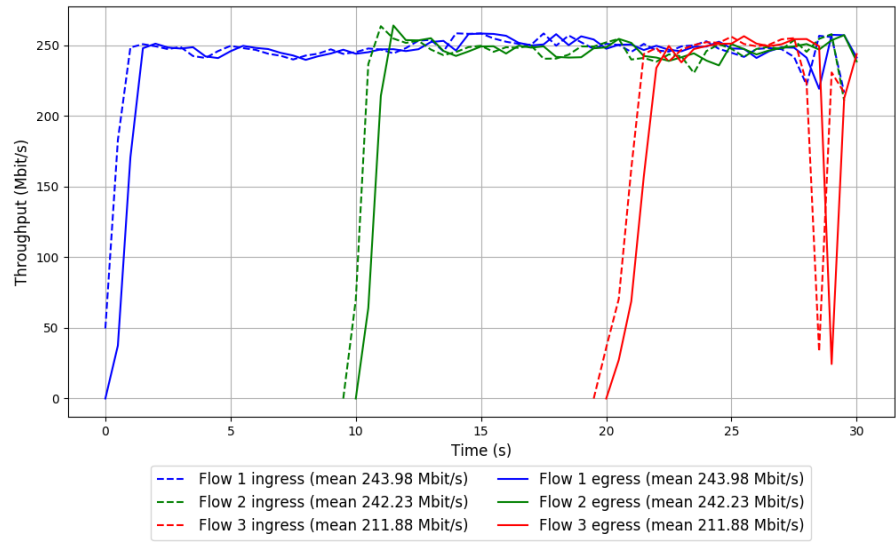
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-10-03 08:08:43
End at: 2018-10-03 08:09:13
Local clock offset: -0.211 ms
Remote clock offset: -0.246 ms

# Below is generated by plot.py at 2018-10-03 11:55:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 476.07 Mbit/s
95th percentile per-packet one-way delay: 53.667 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 243.98 Mbit/s
95th percentile per-packet one-way delay: 50.343 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 242.23 Mbit/s
95th percentile per-packet one-way delay: 53.879 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 211.88 Mbit/s
95th percentile per-packet one-way delay: 50.451 ms
Loss rate: 0.00%
```

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

- - - Flow 1 ingress (mean 243.98 Mbit/s) —— Flow 1 egress (mean 243.98 Mbit/s)
- - - Flow 2 ingress (mean 242.23 Mbit/s) —— Flow 2 egress (mean 242.23 Mbit/s)
- - - Flow 3 ingress (mean 211.88 Mbit/s) —— Flow 3 egress (mean 211.88 Mbit/s)

- Flow 1 (95th percentile 50.34 ms)   - Flow 2 (95th percentile 53.88 ms)   - Flow 3 (95th percentile 50.45 ms)
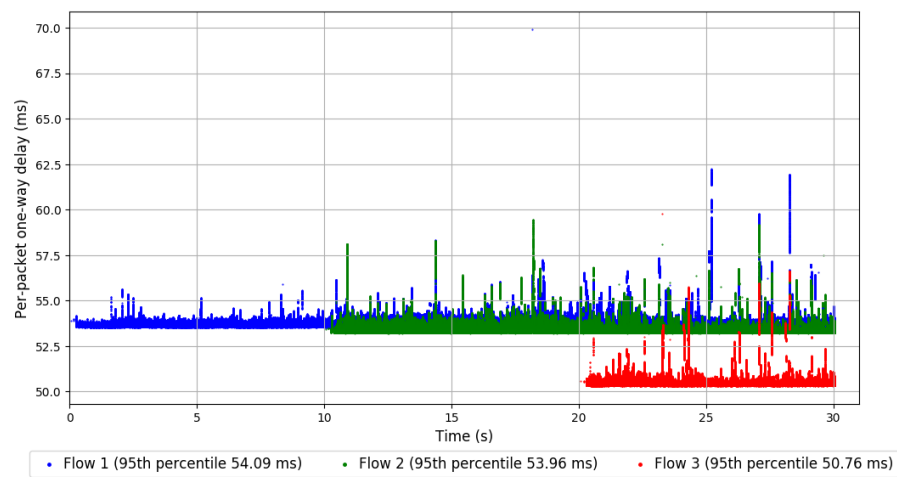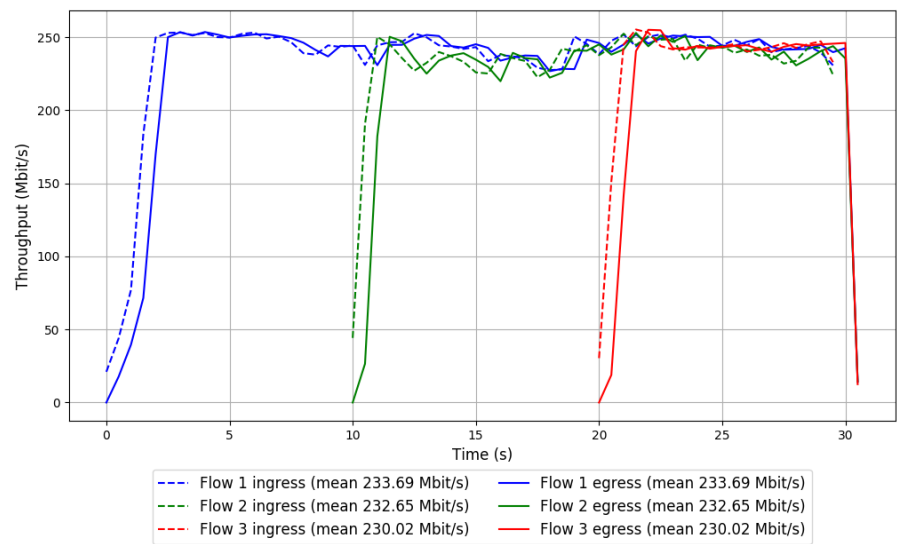
```
Run 5: Statistics of TaoVA-100x

Start at: 2018-10-03 08:39:44
End at: 2018-10-03 08:40:14
Local clock offset: -0.214 ms
Remote clock offset: -0.178 ms


# Below is generated by plot.py at 2018-10-03 12:01:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 464.99 Mbit/s
95th percentile per-packet one-way delay: 54.004 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 233.69 Mbit/s
95th percentile per-packet one-way delay: 54.089 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 232.65 Mbit/s
95th percentile per-packet one-way delay: 53.962 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 230.02 Mbit/s
95th percentile per-packet one-way delay: 50.758 ms
Loss rate: 0.00%
```

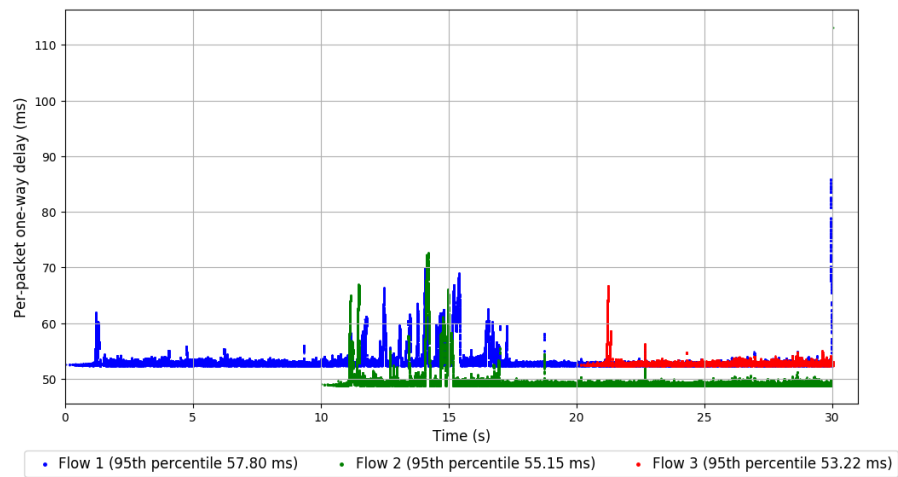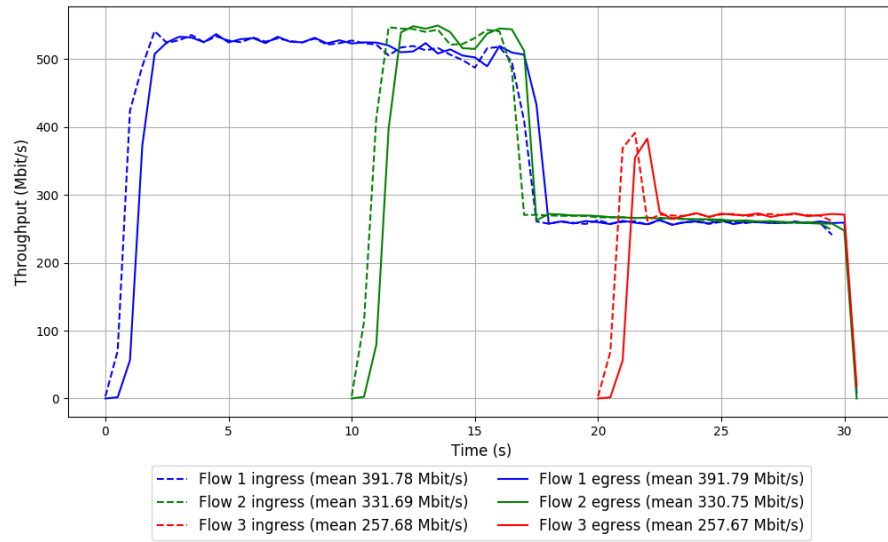# Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-03 06:56:58
End at: 2018-10-03 06:57:28
Local clock offset: -0.228 ms
Remote clock offset: -1.344 ms


# Below is generated by plot.py at 2018-10-03 12:01:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 697.60 Mbit/s
95th percentile per-packet one-way delay: 56.521 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 391.79 Mbit/s
95th percentile per-packet one-way delay: 57.798 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 330.75 Mbit/s
95th percentile per-packet one-way delay: 55.147 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 257.67 Mbit/s
95th percentile per-packet one-way delay: 53.224 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-03 07:27:44
End at: 2018-10-03 07:28:14
Local clock offset: -0.065 ms
Remote clock offset: 0.015 ms


# Below is generated by plot.py at 2018-10-03 12:01:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 665.03 Mbit/s
95th percentile per-packet one-way delay: 57.043 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 374.83 Mbit/s
95th percentile per-packet one-way delay: 57.284 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 324.12 Mbit/s
95th percentile per-packet one-way delay: 57.822 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 223.47 Mbit/s
95th percentile per-packet one-way delay: 51.094 ms
Loss rate: 0.00%
```
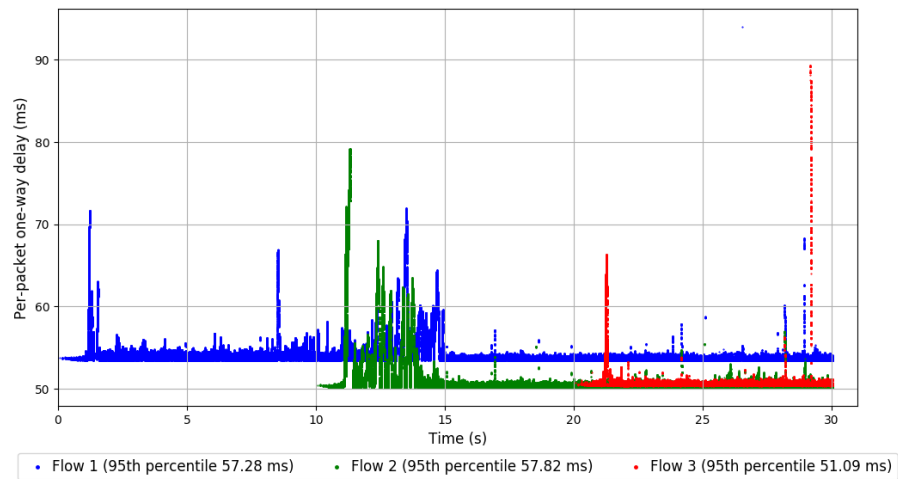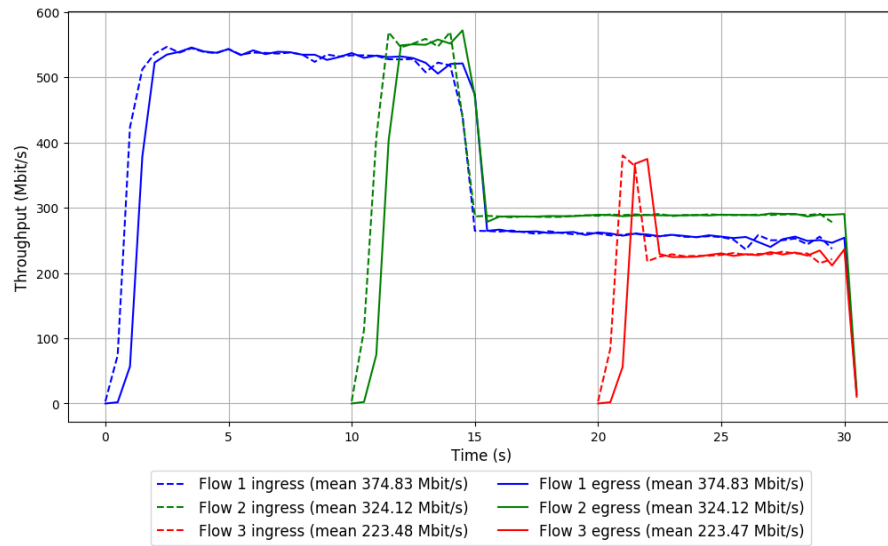
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-03 07:58:21
End at: 2018-10-03 07:58:51
Local clock offset: -0.169 ms
Remote clock offset: 0.648 ms


# Below is generated by plot.py at 2018-10-03 12:05:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 764.92 Mbit/s
95th percentile per-packet one-way delay: 61.352 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 439.88 Mbit/s
95th percentile per-packet one-way delay: 60.826 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 355.31 Mbit/s
95th percentile per-packet one-way delay: 63.021 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 265.49 Mbit/s
95th percentile per-packet one-way delay: 51.554 ms
Loss rate: 0.00%
```
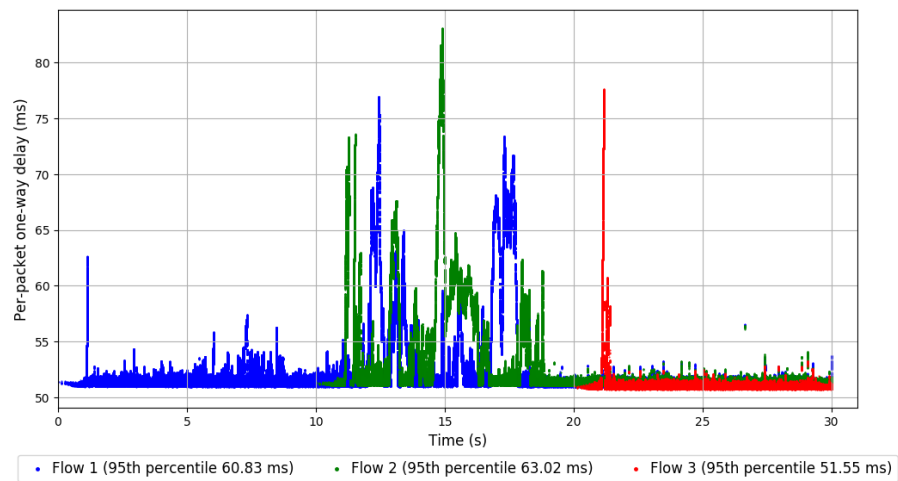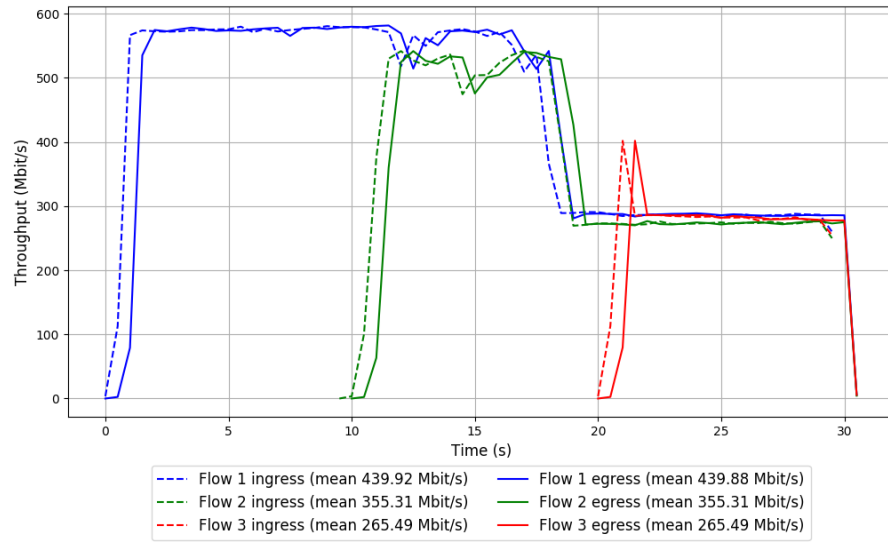
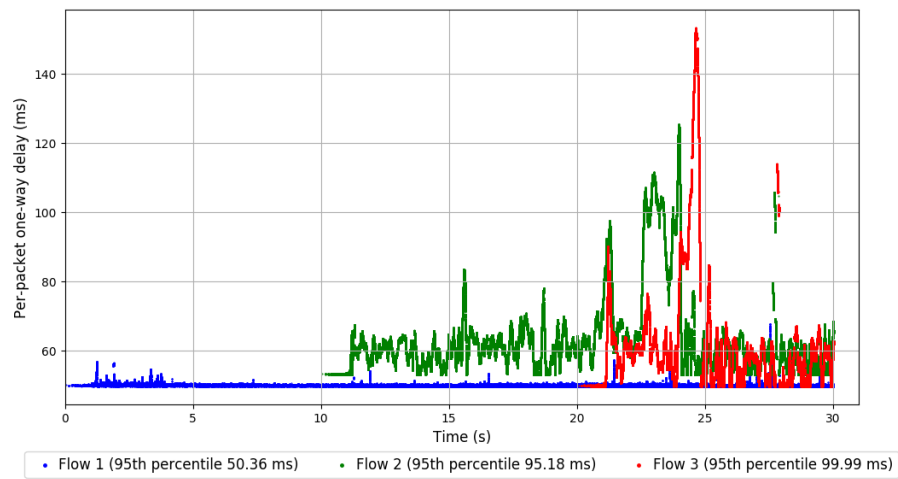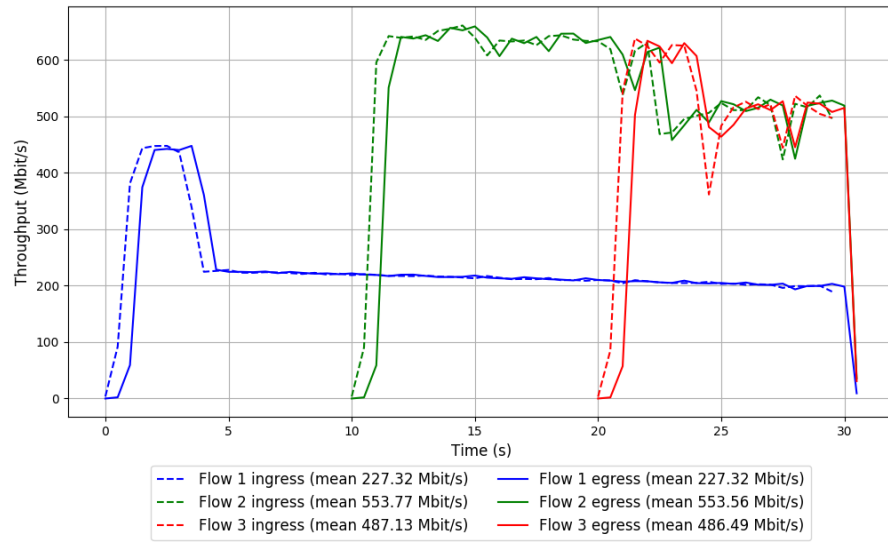Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-03 08:29:21
End at: 2018-10-03 08:29:51
Local clock offset: -0.156 ms
Remote clock offset: -0.429 ms


# Below is generated by plot.py at 2018-10-03 12:13:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.79 Mbit/s
95th percentile per-packet one-way delay: 86.556 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 227.32 Mbit/s
95th percentile per-packet one-way delay: 50.358 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 553.56 Mbit/s
95th percentile per-packet one-way delay: 95.180 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 486.49 Mbit/s
95th percentile per-packet one-way delay: 99.994 ms
Loss rate: 0.09%
```

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

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-03 09:00:07
End at: 2018-10-03 09:00:37
Local clock offset: -0.028 ms
Remote clock offset: -0.22 ms


# Below is generated by plot.py at 2018-10-03 12:13:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 708.81 Mbit/s
95th percentile per-packet one-way delay: 87.302 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 366.47 Mbit/s
95th percentile per-packet one-way delay: 59.993 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 286.48 Mbit/s
95th percentile per-packet one-way delay: 90.479 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 456.47 Mbit/s
95th percentile per-packet one-way delay: 50.740 ms
Loss rate: 0.00%
```
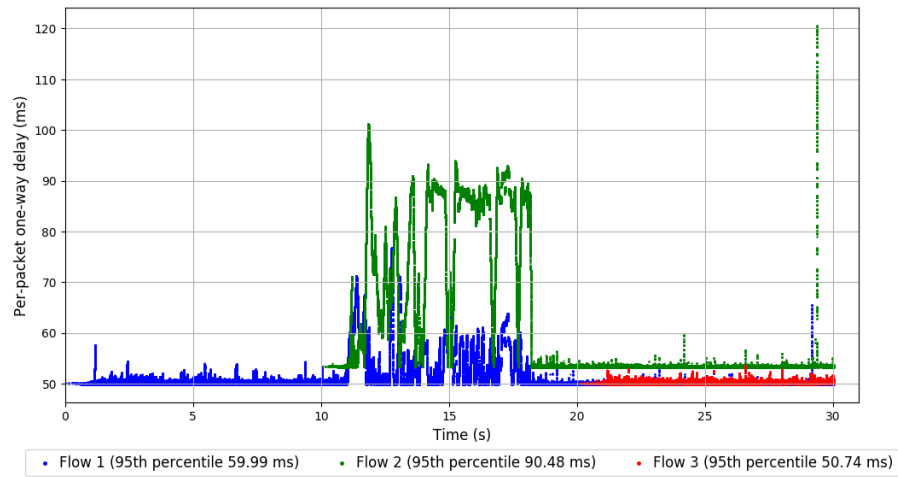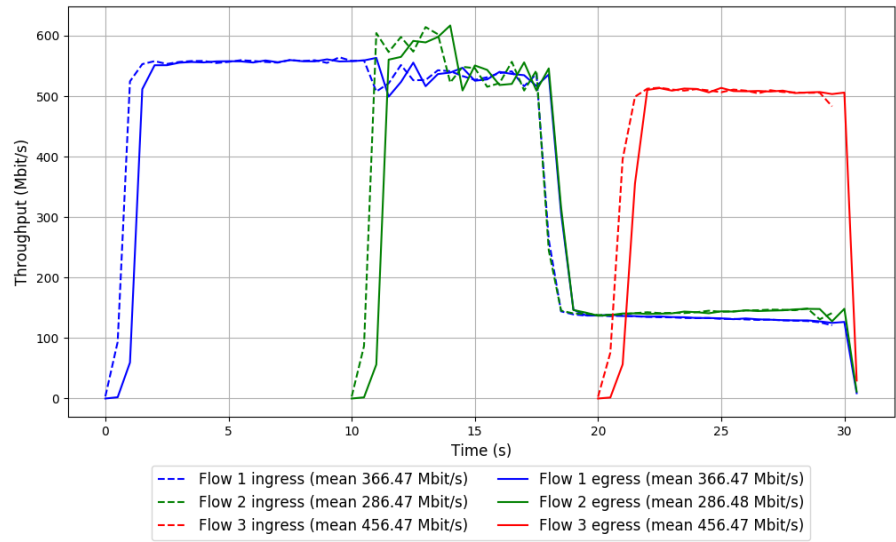
Run 5: Report of TCP Vegas — Data Link



Flow 1 ingress (mean 366.47 Mbit/s) --- Flow 1 egress (mean 366.47 Mbit/s)
Flow 2 ingress (mean 286.47 Mbit/s) --- Flow 2 egress (mean 286.48 Mbit/s)
Flow 3 ingress (mean 456.47 Mbit/s) --- Flow 3 egress (mean 456.47 Mbit/s)



Flow 1 (95th percentile 59.99 ms)　　Flow 2 (95th percentile 90.48 ms)　　Flow 3 (95th percentile 50.74 ms)

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```
Run 1: Statistics of Verus

Start at: 2018-10-03 06:46:13
End at: 2018-10-03 06:46:43
Local clock offset: -0.283 ms
Remote clock offset: 1.351 ms


# Below is generated by plot.py at 2018-10-03 12:13:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 275.68 Mbit/s
95th percentile per-packet one-way delay: 215.495 ms
Loss rate: 2.71%
-- Flow 1:
Average throughput: 122.25 Mbit/s
95th percentile per-packet one-way delay: 60.535 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 191.08 Mbit/s
95th percentile per-packet one-way delay: 228.640 ms
Loss rate: 5.71%
-- Flow 3:
Average throughput: 81.45 Mbit/s
95th percentile per-packet one-way delay: 165.236 ms
Loss rate: 0.00%
```
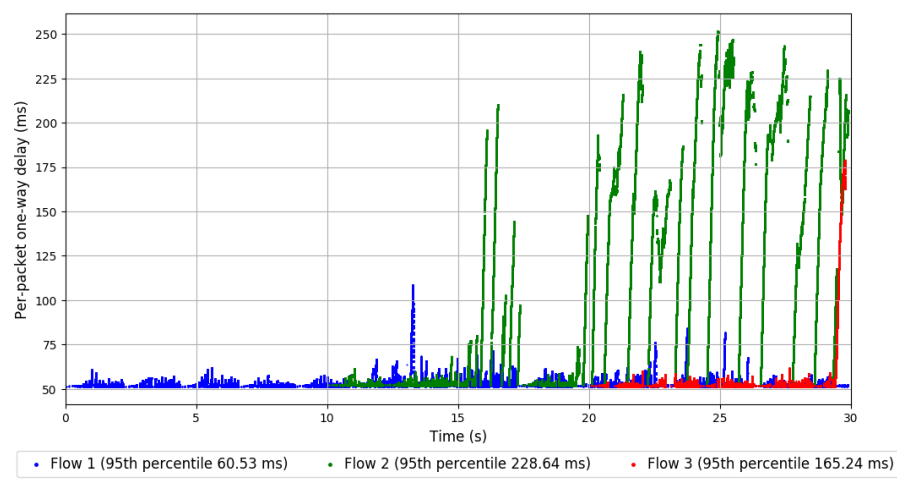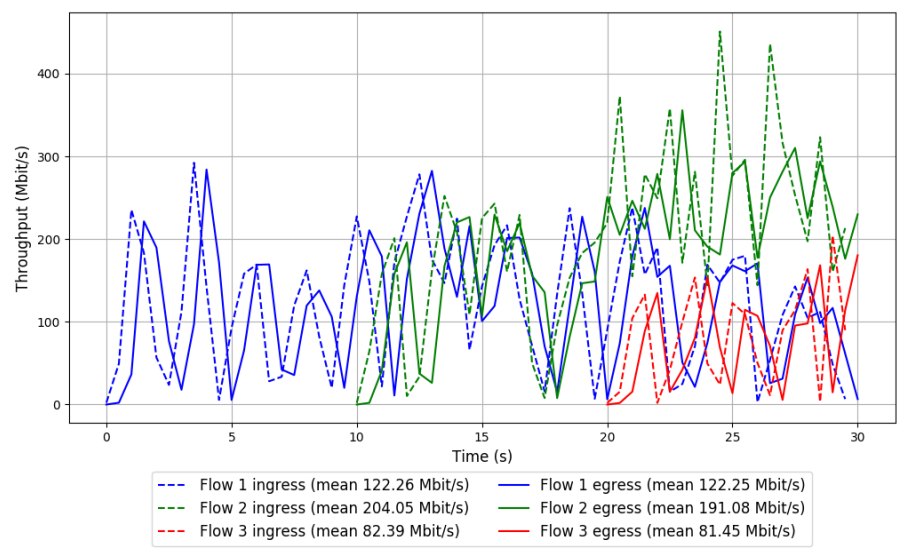
Run 1: Report of Verus — Data Link



Flow 1 ingress (mean 122.26 Mbit/s) --- Flow 1 egress (mean 122.25 Mbit/s)
Flow 2 ingress (mean 204.05 Mbit/s) --- Flow 2 egress (mean 191.08 Mbit/s)
Flow 3 ingress (mean 82.39 Mbit/s) --- Flow 3 egress (mean 81.45 Mbit/s)



Flow 1 (95th percentile 60.53 ms)   Flow 2 (95th percentile 228.64 ms)   Flow 3 (95th percentile 165.24 ms)

```
Run 2: Statistics of Verus

Start at: 2018-10-03 07:16:58
End at: 2018-10-03 07:17:28
Local clock offset: -0.292 ms
Remote clock offset: 0.741 ms


# Below is generated by plot.py at 2018-10-03 12:13:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 305.48 Mbit/s
95th percentile per-packet one-way delay: 184.551 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 155.29 Mbit/s
95th percentile per-packet one-way delay: 218.975 ms
Loss rate: 3.23%
-- Flow 2:
Average throughput: 171.29 Mbit/s
95th percentile per-packet one-way delay: 140.999 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 110.41 Mbit/s
95th percentile per-packet one-way delay: 81.350 ms
Loss rate: 0.66%
```
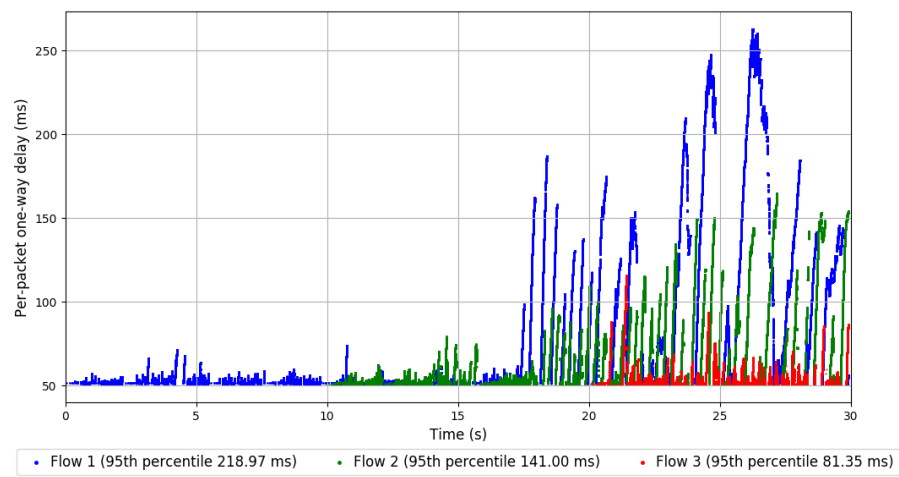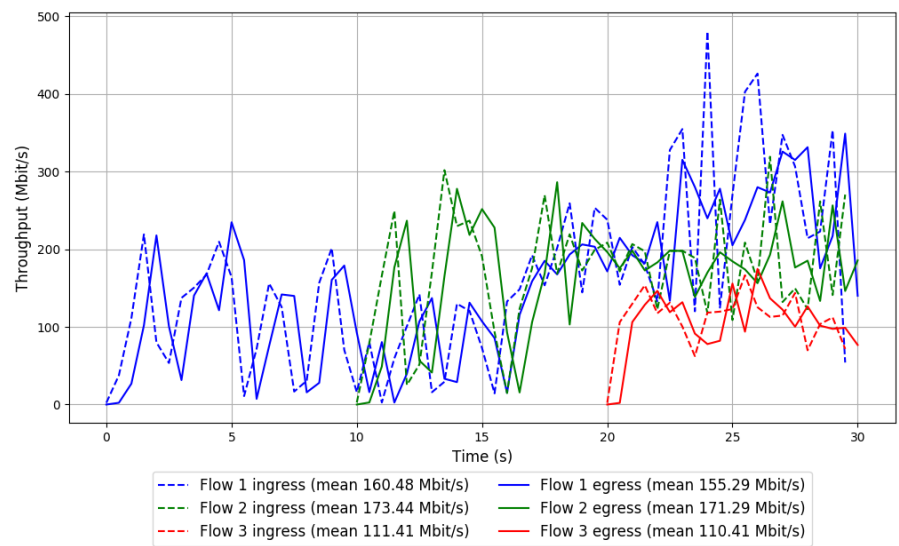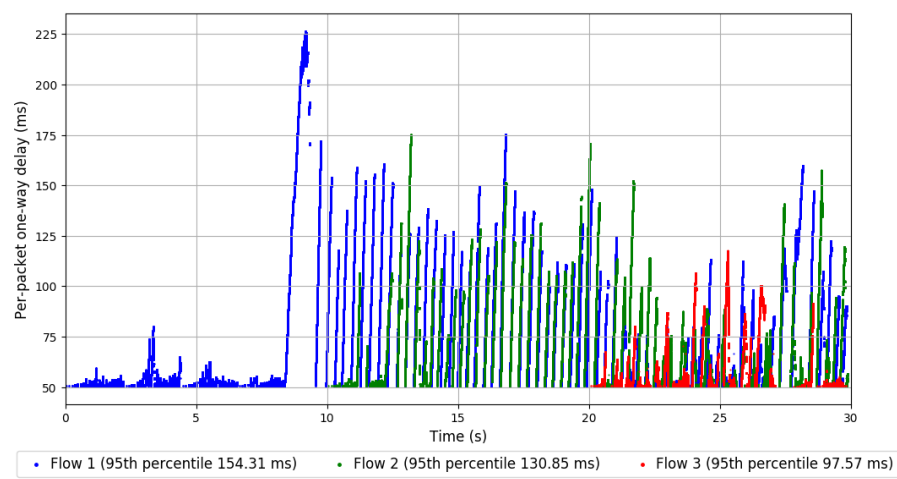
Run 2: Report of Verus — Data Link



Flow 1 ingress (mean 160.48 Mbit/s) — — — Flow 1 egress (mean 155.29 Mbit/s)
Flow 2 ingress (mean 173.44 Mbit/s) — — — Flow 2 egress (mean 171.29 Mbit/s)
Flow 3 ingress (mean 111.41 Mbit/s) — — — Flow 3 egress (mean 110.41 Mbit/s)



• Flow 1 (95th percentile 218.97 ms)    • Flow 2 (95th percentile 141.00 ms)    • Flow 3 (95th percentile 81.35 ms)
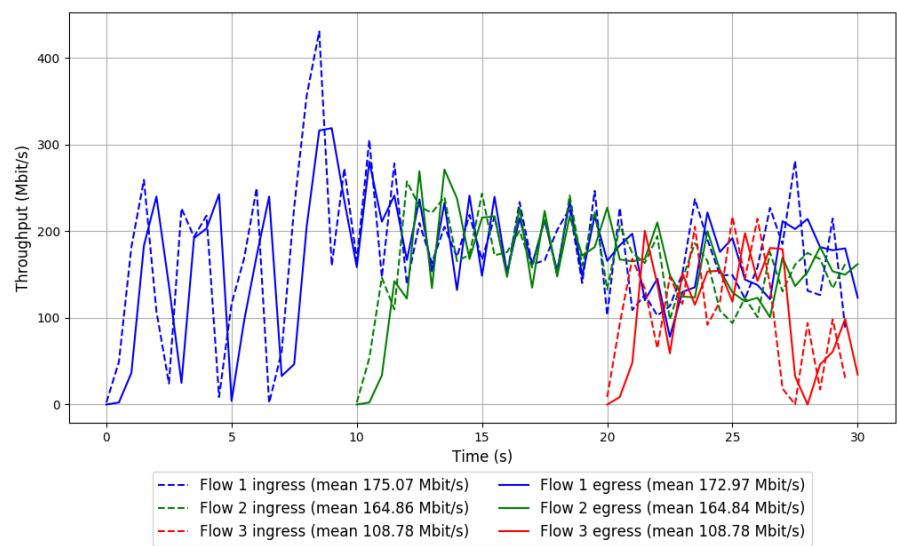
```
Run 3: Statistics of Verus

Start at: 2018-10-03 07:47:30
End at: 2018-10-03 07:48:00
Local clock offset: -0.286 ms
Remote clock offset: -0.146 ms


# Below is generated by plot.py at 2018-10-03 12:14:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 317.88 Mbit/s
95th percentile per-packet one-way delay: 142.991 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 172.97 Mbit/s
95th percentile per-packet one-way delay: 154.314 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 164.84 Mbit/s
95th percentile per-packet one-way delay: 130.847 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 108.78 Mbit/s
95th percentile per-packet one-way delay: 97.568 ms
Loss rate: 0.00%
```

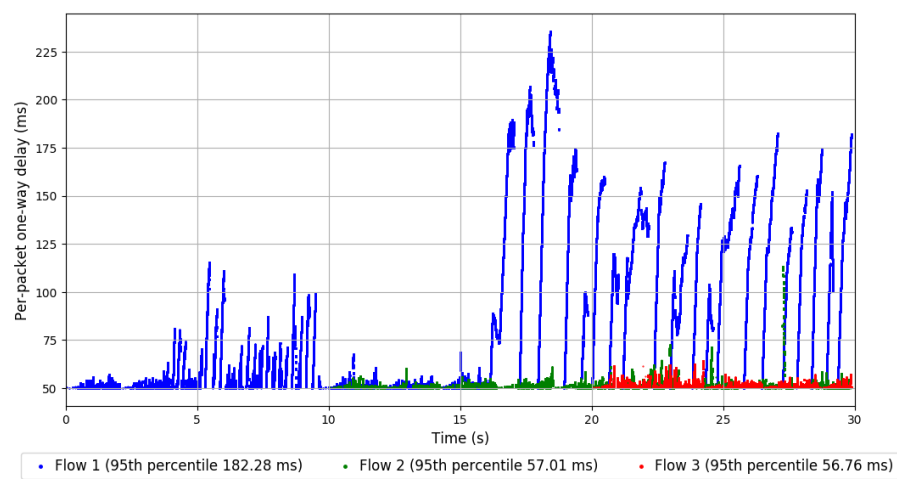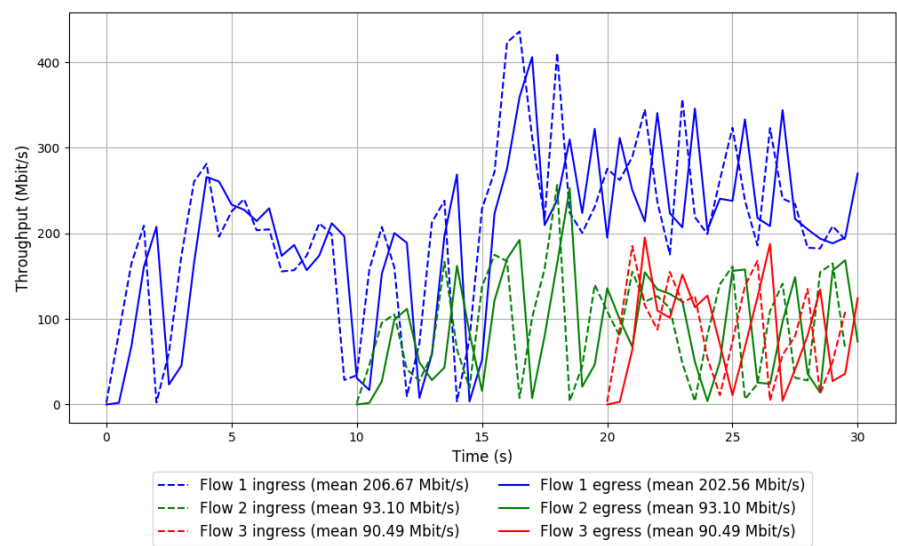Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-03 08:18:30
End at: 2018-10-03 08:19:00
Local clock offset: -0.211 ms
Remote clock offset: 0.071 ms


# Below is generated by plot.py at 2018-10-03 12:14:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 294.02 Mbit/s
95th percentile per-packet one-way delay: 173.736 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 202.56 Mbit/s
95th percentile per-packet one-way delay: 182.282 ms
Loss rate: 1.64%
-- Flow 2:
Average throughput: 93.10 Mbit/s
95th percentile per-packet one-way delay: 57.014 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 90.49 Mbit/s
95th percentile per-packet one-way delay: 56.764 ms
Loss rate: 0.00%
```

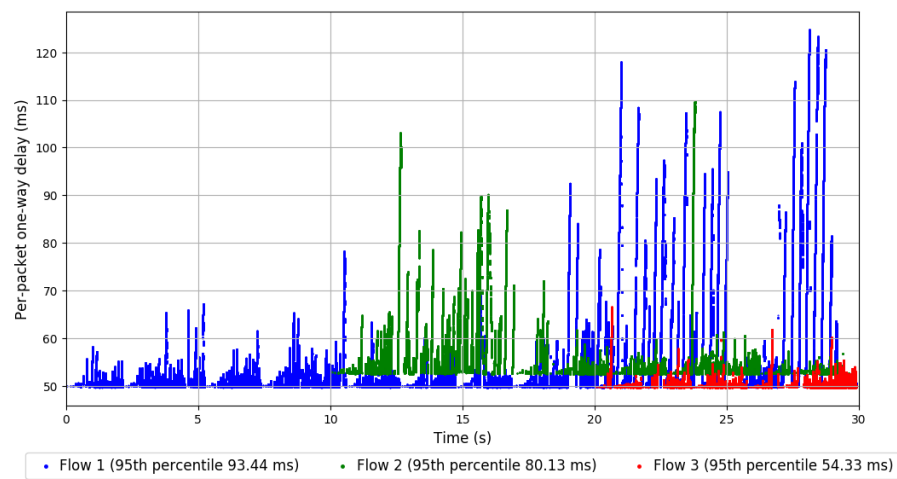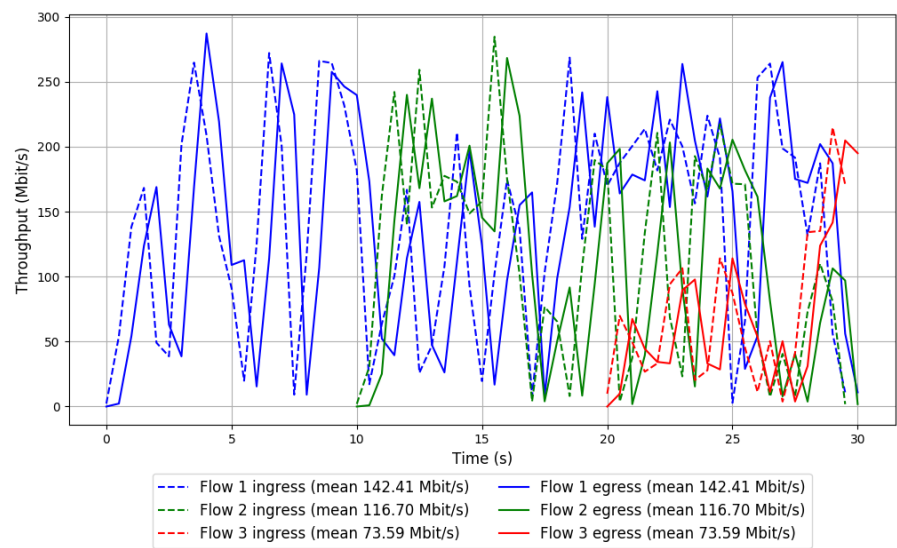Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-03 08:49:27
End at: 2018-10-03 08:49:57
Local clock offset: -0.315 ms
Remote clock offset: -0.945 ms


# Below is generated by plot.py at 2018-10-03 12:14:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 243.95 Mbit/s
95th percentile per-packet one-way delay: 87.090 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 142.41 Mbit/s
95th percentile per-packet one-way delay: 93.441 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 116.70 Mbit/s
95th percentile per-packet one-way delay: 80.129 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 73.59 Mbit/s
95th percentile per-packet one-way delay: 54.326 ms
Loss rate: 0.00%
```

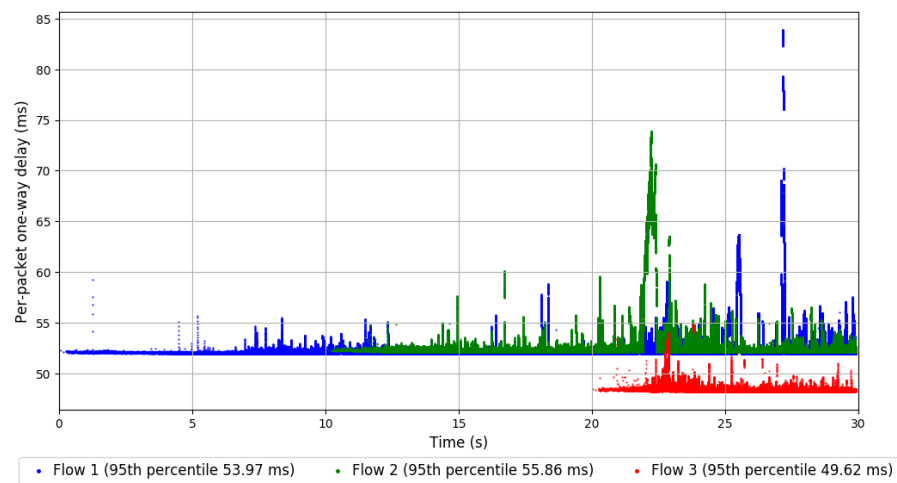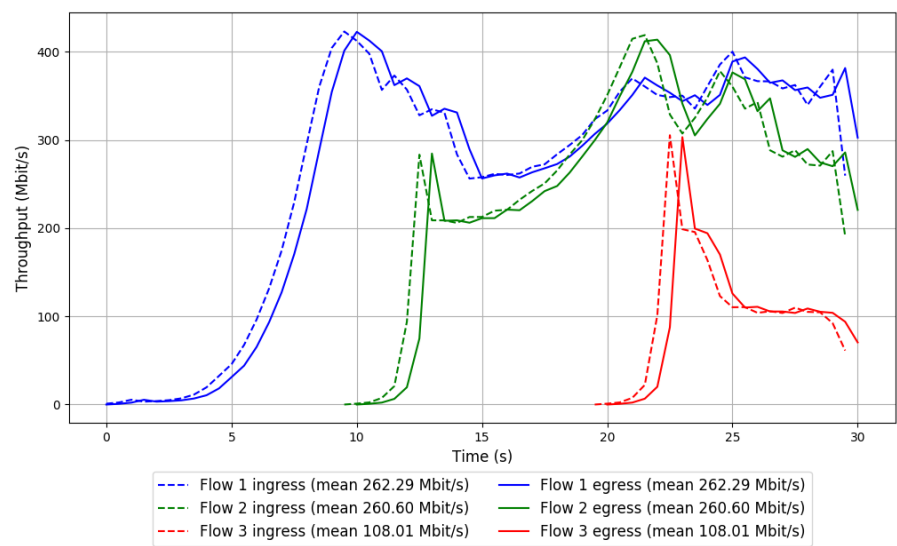Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-03 06:42:34
End at: 2018-10-03 06:43:04
Local clock offset: -0.101 ms
Remote clock offset: -1.519 ms


# Below is generated by plot.py at 2018-10-03 12:16:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 471.43 Mbit/s
95th percentile per-packet one-way delay: 54.412 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 262.29 Mbit/s
95th percentile per-packet one-way delay: 53.968 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 260.60 Mbit/s
95th percentile per-packet one-way delay: 55.860 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 108.01 Mbit/s
95th percentile per-packet one-way delay: 49.617 ms
Loss rate: 0.00%
```

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



- - - - Flow 1 ingress (mean 262.29 Mbit/s)   ——— Flow 1 egress (mean 262.29 Mbit/s)
- - - - Flow 2 ingress (mean 260.60 Mbit/s)   ——— Flow 2 egress (mean 260.60 Mbit/s)
- - - - Flow 3 ingress (mean 108.01 Mbit/s)   ——— Flow 3 egress (mean 108.01 Mbit/s)



- Flow 1 (95th percentile 53.97 ms)    • Flow 2 (95th percentile 55.86 ms)    • Flow 3 (95th percentile 49.62 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-03 07:13:10
End at: 2018-10-03 07:13:40
Local clock offset: -0.431 ms
Remote clock offset: 0.977 ms


# Below is generated by plot.py at 2018-10-03 12:18:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 563.76 Mbit/s
95th percentile per-packet one-way delay: 54.479 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 325.57 Mbit/s
95th percentile per-packet one-way delay: 53.207 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 276.88 Mbit/s
95th percentile per-packet one-way delay: 52.716 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 164.09 Mbit/s
95th percentile per-packet one-way delay: 55.870 ms
Loss rate: 0.00%
```
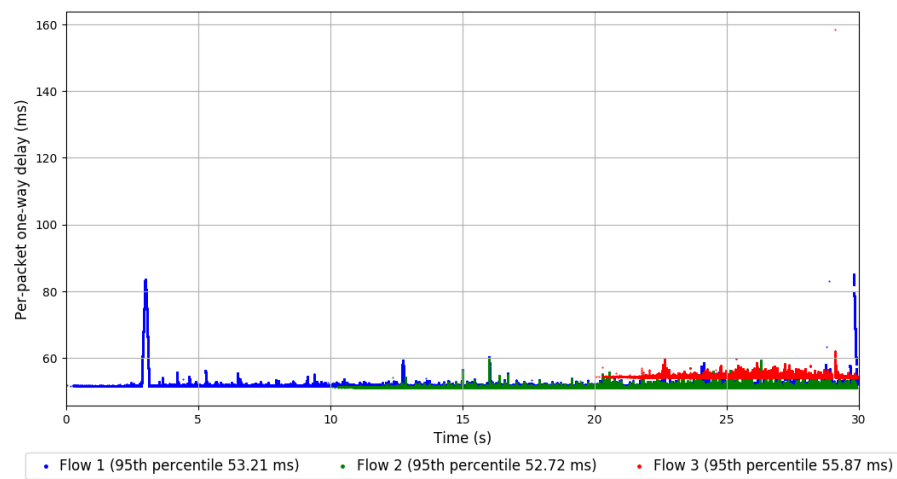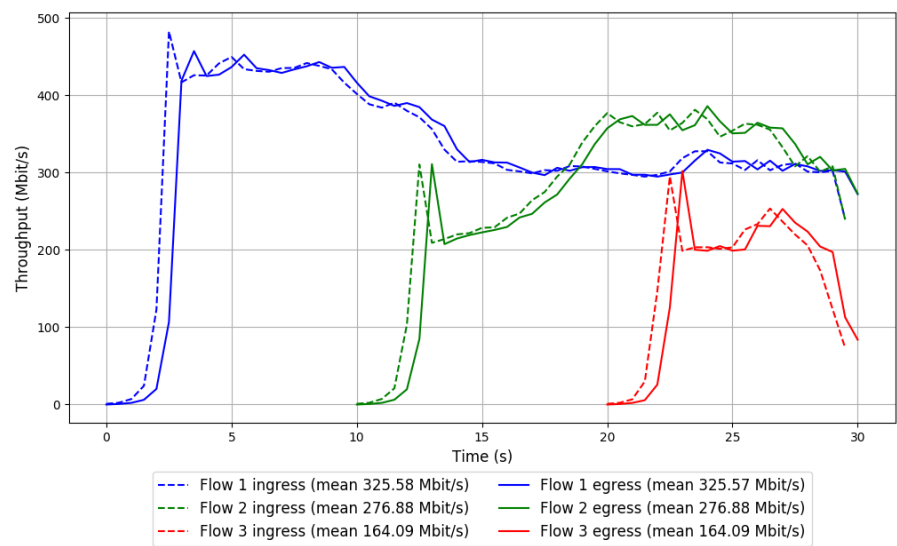
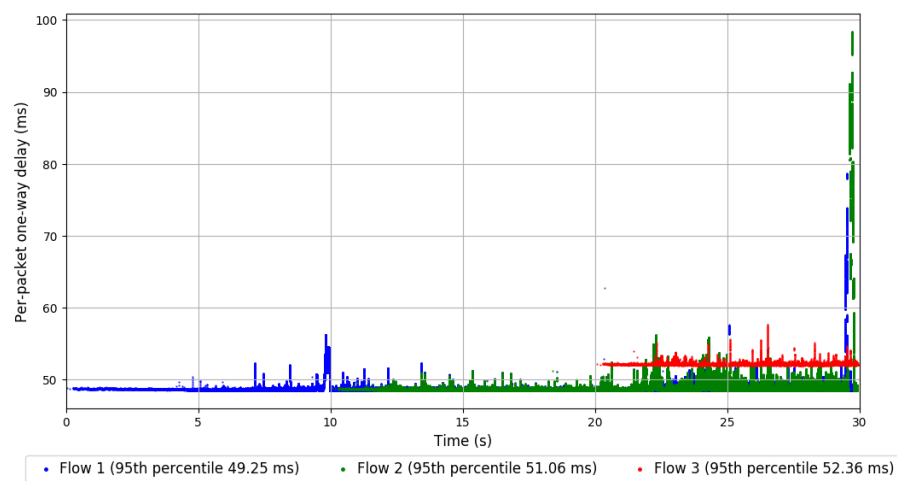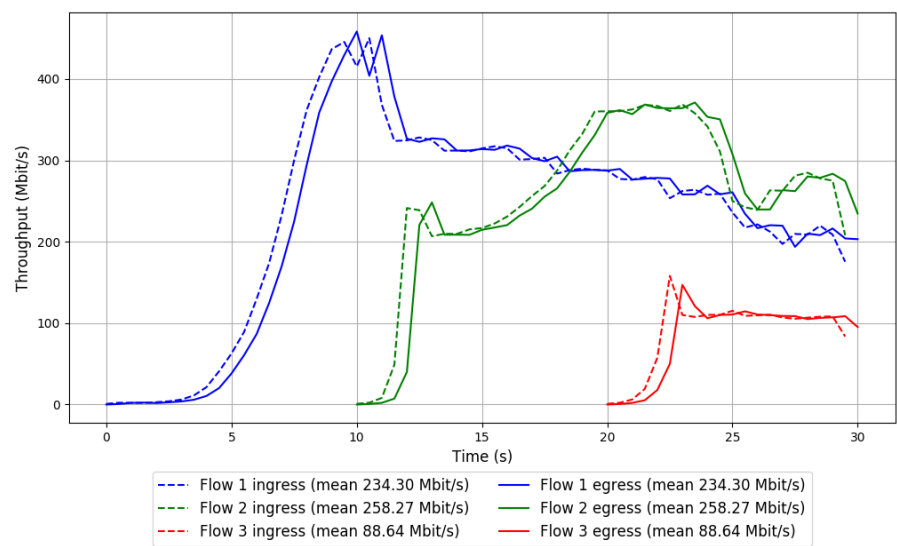## Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-03 07:43:49
End at: 2018-10-03 07:44:19
Local clock offset: -0.138 ms
Remote clock offset: -1.459 ms


# Below is generated by plot.py at 2018-10-03 12:18:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 435.03 Mbit/s
95th percentile per-packet one-way delay: 52.067 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 234.30 Mbit/s
95th percentile per-packet one-way delay: 49.247 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 258.27 Mbit/s
95th percentile per-packet one-way delay: 51.064 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 88.64 Mbit/s
95th percentile per-packet one-way delay: 52.361 ms
Loss rate: 0.00%
```

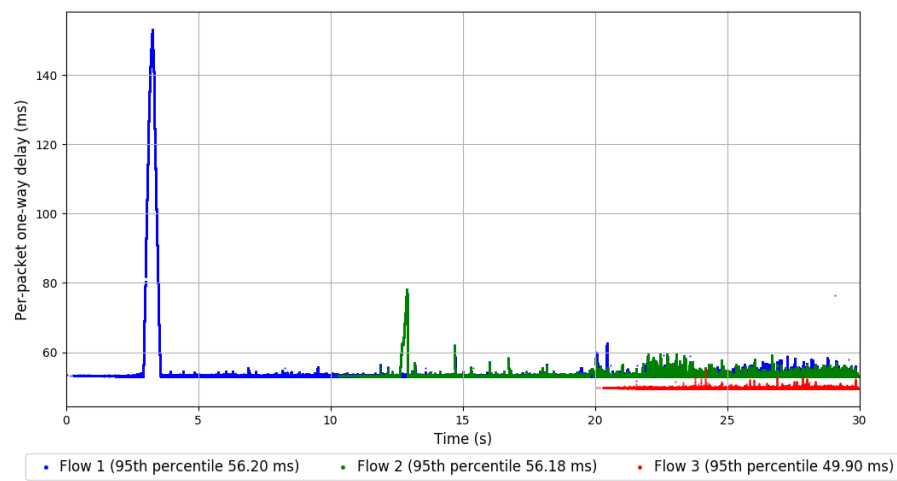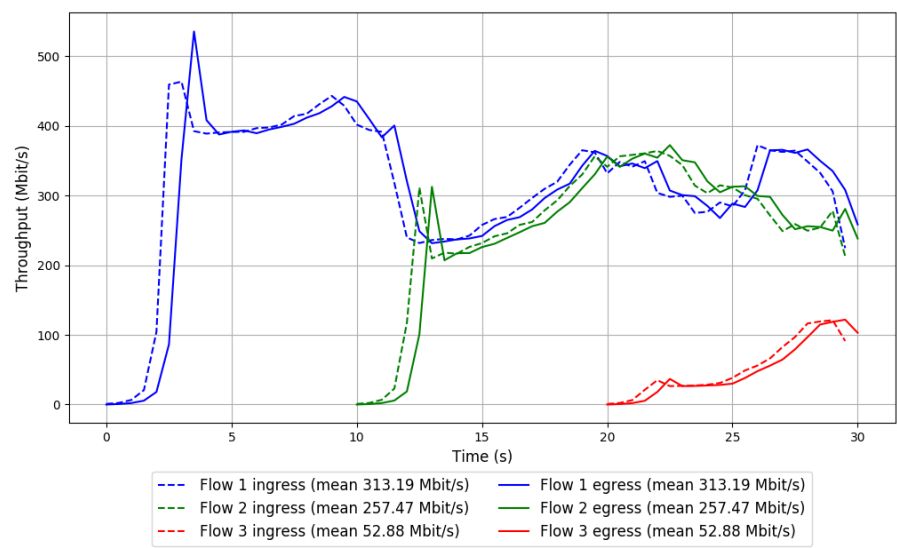## Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-03 08:14:48
End at: 2018-10-03 08:15:18
Local clock offset: -0.248 ms
Remote clock offset: -0.485 ms


# Below is generated by plot.py at 2018-10-03 12:19:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.83 Mbit/s
95th percentile per-packet one-way delay: 56.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 313.19 Mbit/s
95th percentile per-packet one-way delay: 56.199 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 257.47 Mbit/s
95th percentile per-packet one-way delay: 56.181 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 52.88 Mbit/s
95th percentile per-packet one-way delay: 49.899 ms
Loss rate: 0.00%
```

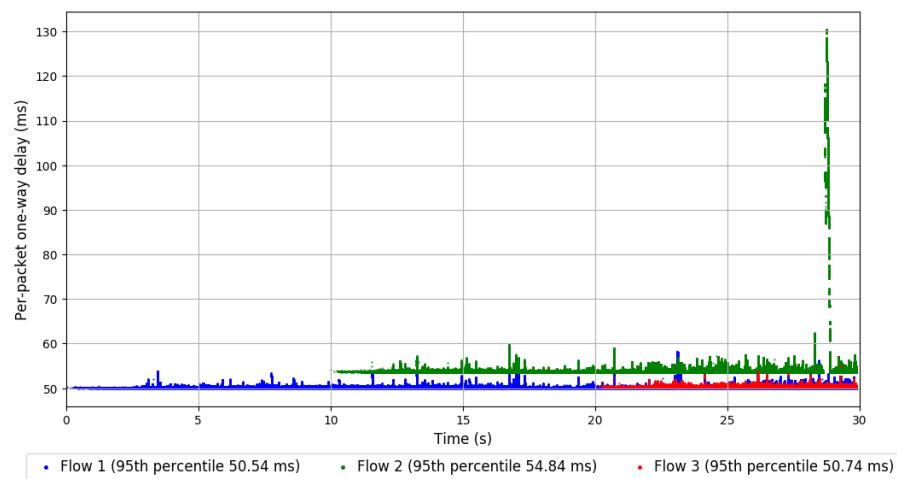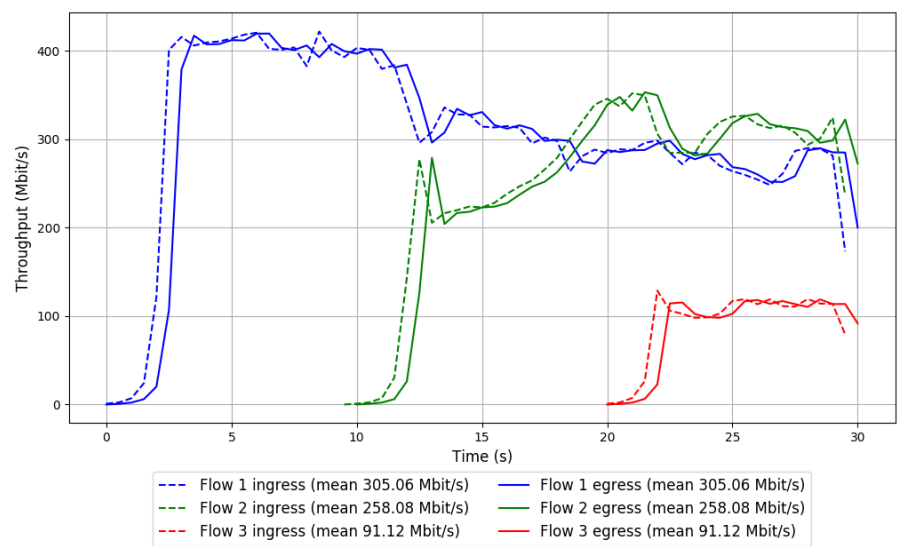Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-03 08:45:41
End at: 2018-10-03 08:46:11
Local clock offset: -0.323 ms
Remote clock offset: -0.171 ms


# Below is generated by plot.py at 2018-10-03 12:19:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 506.88 Mbit/s
95th percentile per-packet one-way delay: 53.950 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 305.06 Mbit/s
95th percentile per-packet one-way delay: 50.537 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 258.08 Mbit/s
95th percentile per-packet one-way delay: 54.835 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 91.12 Mbit/s
95th percentile per-packet one-way delay: 50.743 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link



Flow 1 ingress (mean 305.06 Mbit/s) --- Flow 1 egress (mean 305.06 Mbit/s)
Flow 2 ingress (mean 258.08 Mbit/s) --- Flow 2 egress (mean 258.08 Mbit/s)
Flow 3 ingress (mean 91.12 Mbit/s) --- Flow 3 egress (mean 91.12 Mbit/s)



Flow 1 (95th percentile 50.54 ms)   Flow 2 (95th percentile 54.84 ms)   Flow 3 (95th percentile 50.74 ms)
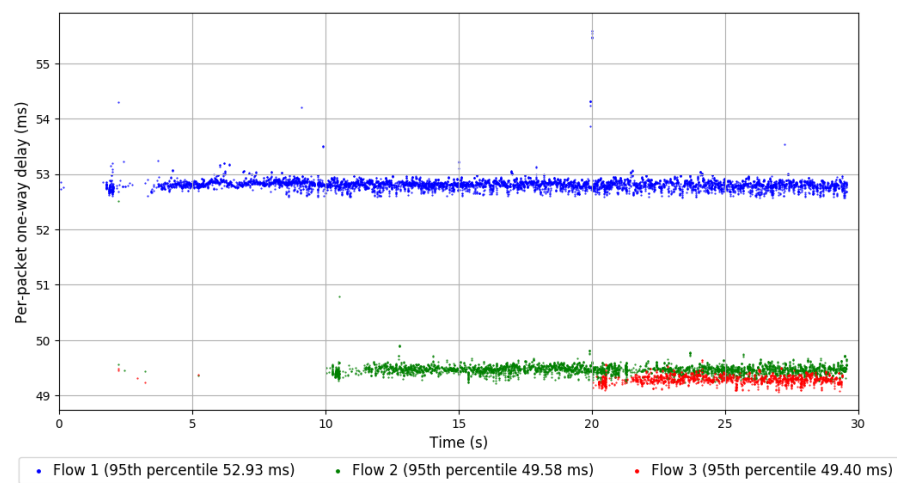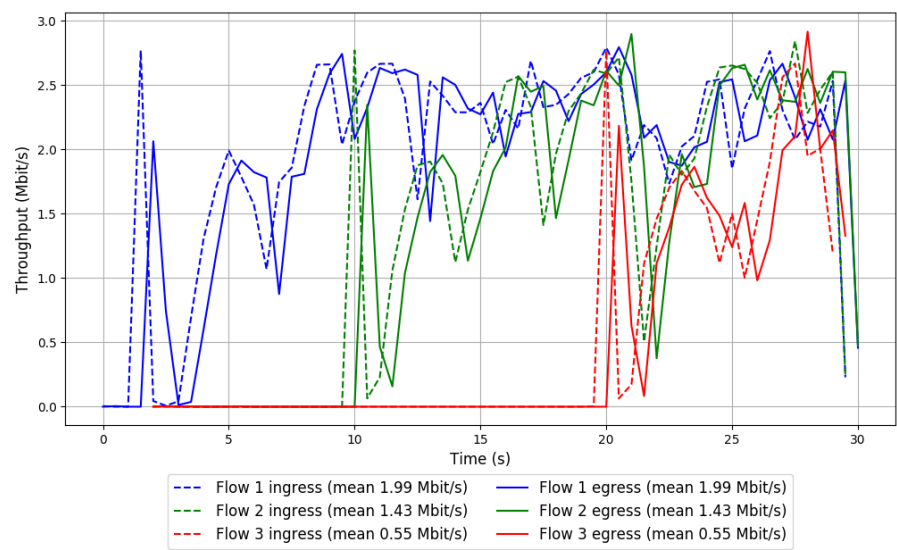
```
Run 1: Statistics of WebRTC media

Start at: 2018-10-03 06:51:27
End at: 2018-10-03 06:51:57
Local clock offset: 0.044 ms
Remote clock offset: -0.735 ms


# Below is generated by plot.py at 2018-10-03 12:19:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 52.899 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 52.928 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 49.580 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 49.401 ms
Loss rate: 0.00%
```

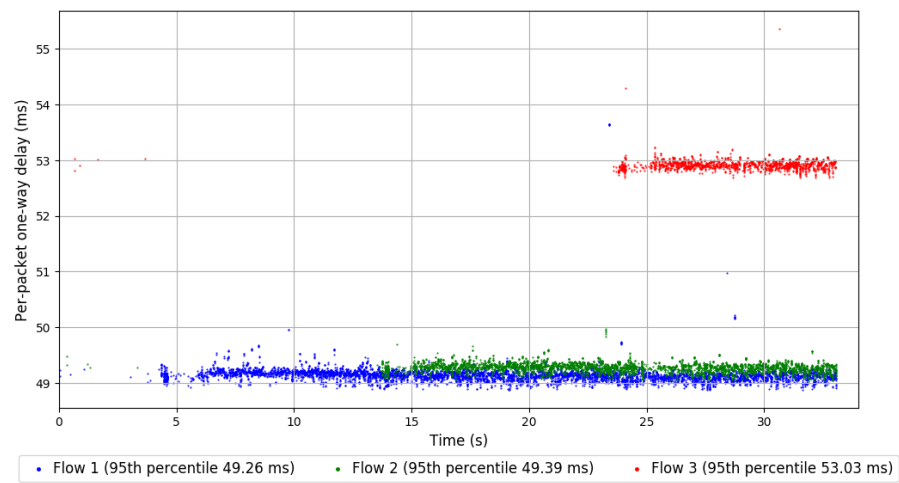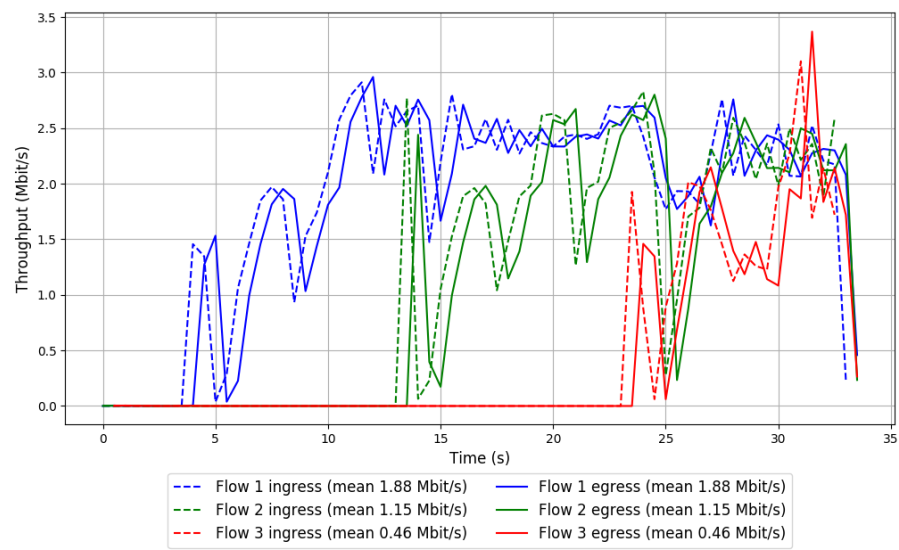Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-03 07:22:14
End at: 2018-10-03 07:22:44
Local clock offset: -0.087 ms
Remote clock offset: -0.893 ms


# Below is generated by plot.py at 2018-10-03 12:19:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 52.929 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 49.262 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 49.394 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 53.032 ms
Loss rate: 0.00%
```

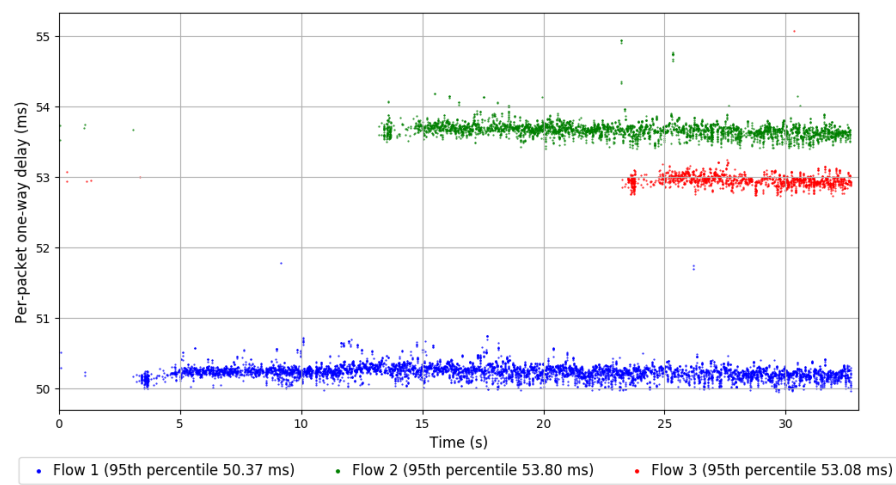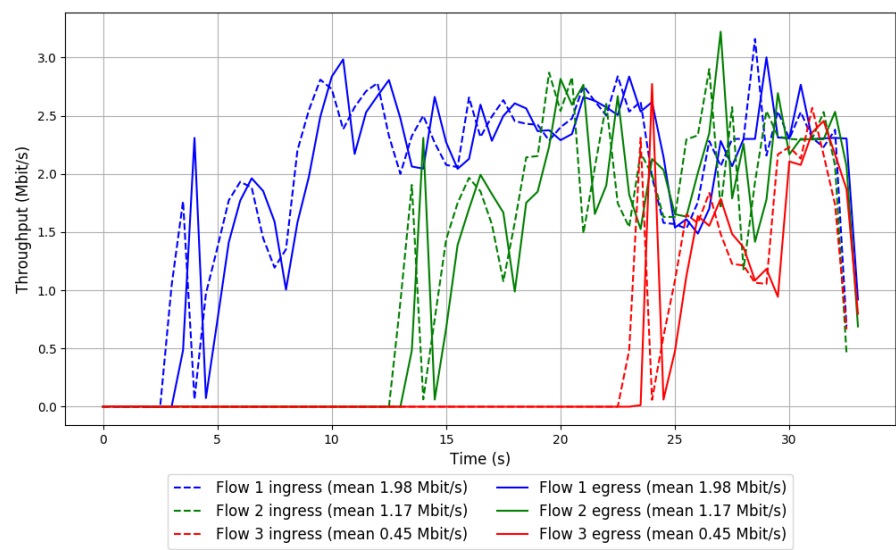Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-03 07:52:51
End at: 2018-10-03 07:53:21
Local clock offset: -0.046 ms
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2018-10-03 12:19:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 53.740 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 50.369 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 53.801 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 53.079 ms
Loss rate: 0.00%
```

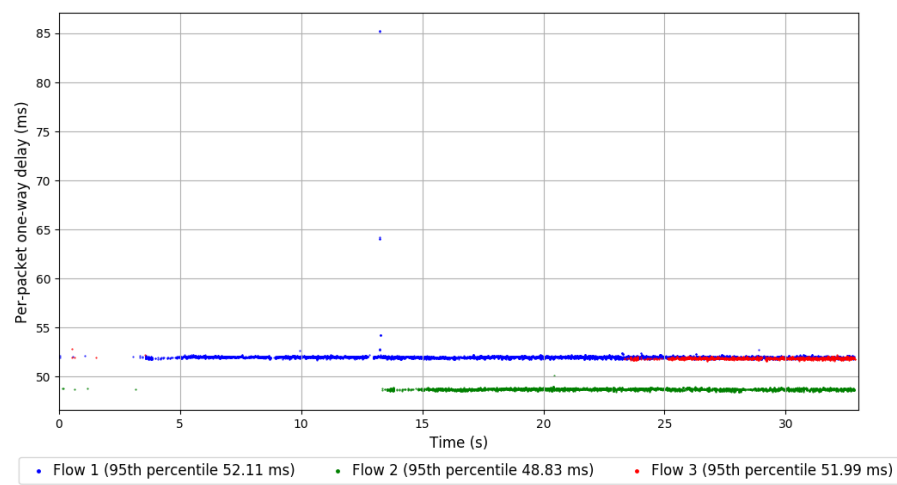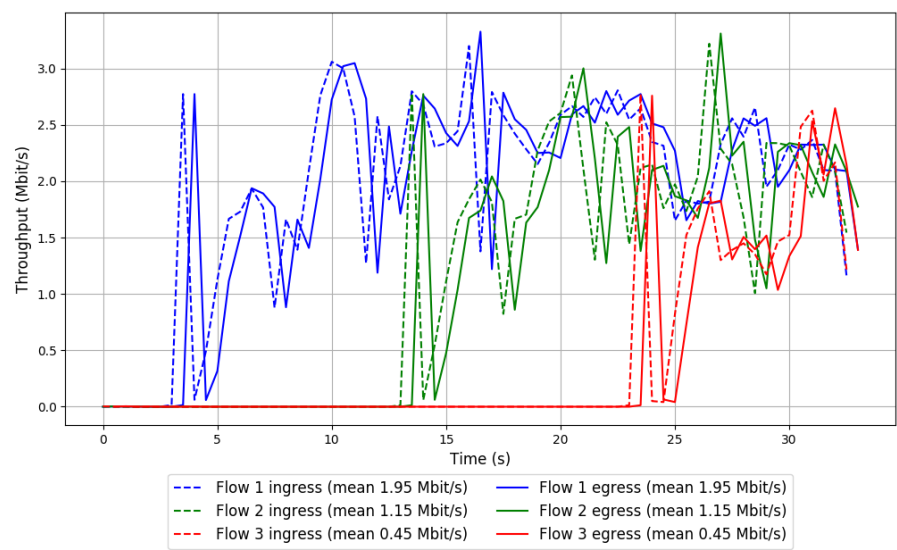Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-03 08:23:50
End at: 2018-10-03 08:24:20
Local clock offset: -0.244 ms
Remote clock offset: -1.417 ms


# Below is generated by plot.py at 2018-10-03 12:19:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 52.080 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 52.107 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 48.833 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 51.994 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-03 08:54:37
End at: 2018-10-03 08:55:07
Local clock offset: -0.299 ms
Remote clock offset: -0.691 ms


# Below is generated by plot.py at 2018-10-03 12:19:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 50.279 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 49.783 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 50.327 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 49.969 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link