# Pantheon Report

Generated at 2017-08-31 18:26:19 (UTC).

Data path: GCE Sydney Ethernet (*remote*) →GCE Iowa Ethernet (*local*).

Repeated the test of 15 congestion control schemes 10 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
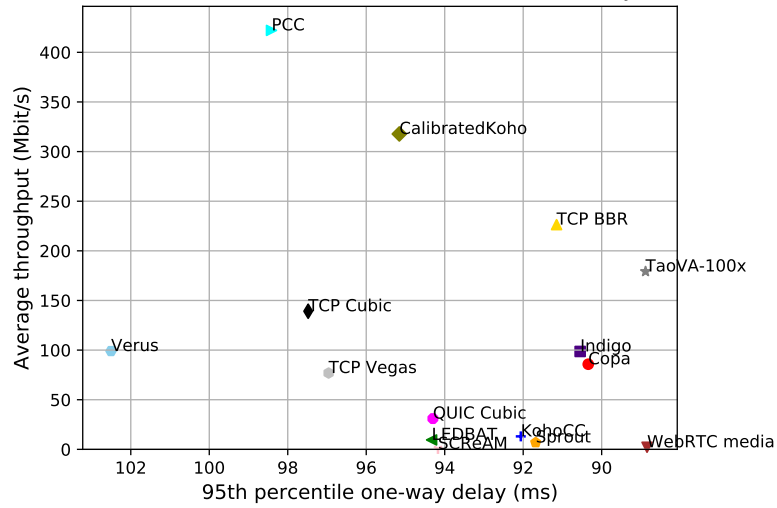
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

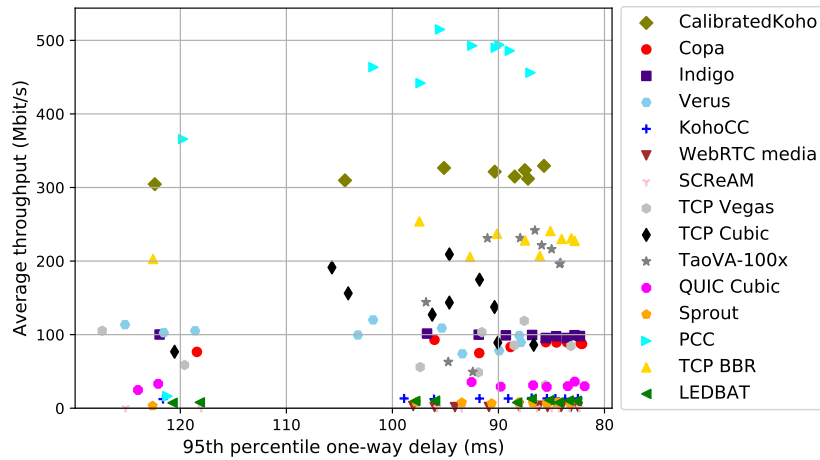Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

```
Git summary:
branch: master @ 5ea146acdebe79f5b9acfb2d9044554a7d2582ea
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
third_party/indigo @ 7ddb4adf480966042c0438984cb22a298bfa635f
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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



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

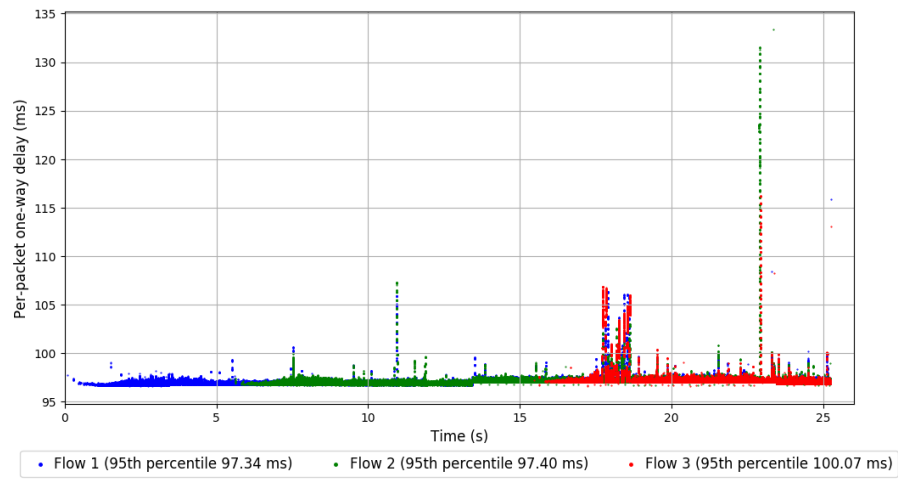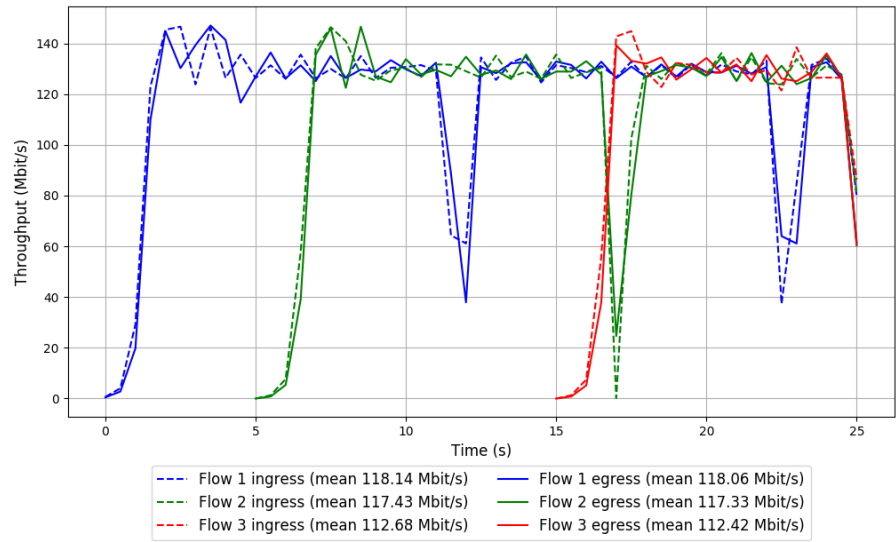| scheme | # runs | mean avg tput (Mbit/s) | | | mean 95th-%ile delay (ms) | | | mean loss rate (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 |
| TCP BBR | 10 | 115.09 | 111.97 | 106.62 | 91.18 | 91.07 | 92.05 | 0.64 | 0.97 | 2.11 |
| CalibratedKoho | 8 | 214.13 | 131.35 | 50.57 | 95.50 | 95.06 | 89.59 | 0.44 | 1.33 | 4.63 |
| Copa | 9 | 50.26 | 43.11 | 29.75 | 93.32 | 90.25 | 90.32 | 0.36 | 0.59 | 2.82 |
| TCP Cubic | 10 | 70.12 | 67.76 | 73.54 | 96.48 | 96.98 | 99.28 | 0.70 | 1.06 | 1.66 |
| Indigo | 10 | 49.82 | 57.93 | 32.74 | 90.53 | 90.55 | 90.60 | 0.56 | 0.65 | 2.44 |
| KohoCC | 10 | 6.62 | 6.51 | 6.31 | 92.08 | 92.02 | 91.91 | 0.56 | 0.94 | 1.91 |
| LEDBAT | 10 | 5.46 | 4.89 | 2.45 | 94.37 | 94.27 | 91.41 | 0.87 | 1.87 | 3.25 |
| PCC | 10 | 277.86 | 149.13 | 141.60 | 105.60 | 96.28 | 95.60 | 0.44 | 0.62 | 2.33 |
| QUIC Cubic | 9 | 0.06 | 30.52 | 32.01 | 88.38 | 91.13 | 91.18 | 0.00 | 0.83 | 2.01 |
| SCReAM | 10 | 0.21 | 0.22 | 0.22 | 91.46 | 91.40 | 91.34 | 0.54 | 0.80 | 1.57 |
| Sprout | 10 | 3.74 | 3.47 | 2.67 | 91.67 | 91.62 | 88.92 | 0.89 | 0.86 | 3.43 |
| TaoVA-100x | 10 | 110.93 | 72.83 | 84.03 | 94.03 | 94.36 | 91.75 | 0.30 | 0.58 | 2.40 |
| TCP Vegas | 9 | 41.40 | 31.05 | 45.28 | 96.44 | 96.26 | 95.06 | 0.52 | 1.07 | 1.85 |
| Verus | 10 | 59.75 | 41.44 | 35.21 | 107.80 | 96.24 | 97.36 | 0.61 | 0.99 | 1.59 |
| WebRTC media | 10 | 0.56 | 1.38 | 0.30 | 94.42 | 88.54 | 93.94 | 0.29 | 1.29 | 5.44 |

3

```
Run 1: Statistics of TCP BBR

Start at: 2017-08-31 12:26:06
End at: 2017-08-31 12:26:36

# Below is generated by plot.py at 2017-08-31 18:00:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 253.94 Mbit/s
95th percentile per-packet one-way delay: 97.455 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 118.06 Mbit/s
95th percentile per-packet one-way delay: 97.343 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 117.33 Mbit/s
95th percentile per-packet one-way delay: 97.398 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 112.42 Mbit/s
95th percentile per-packet one-way delay: 100.073 ms
Loss rate: 2.01%
```
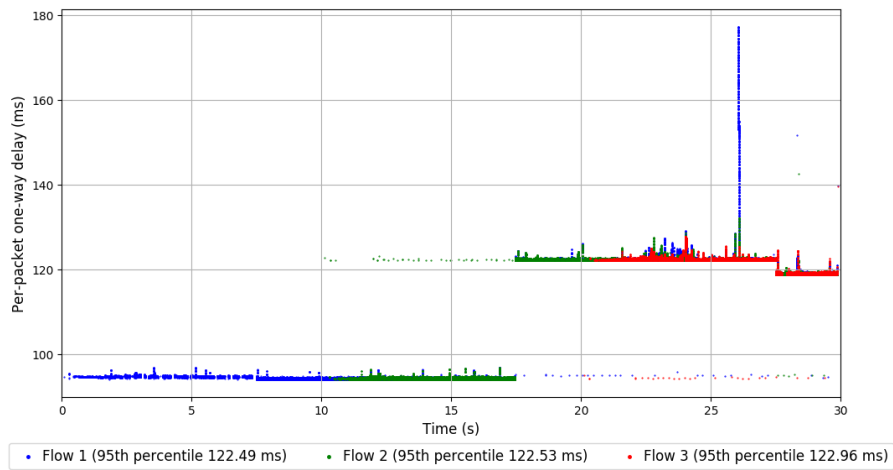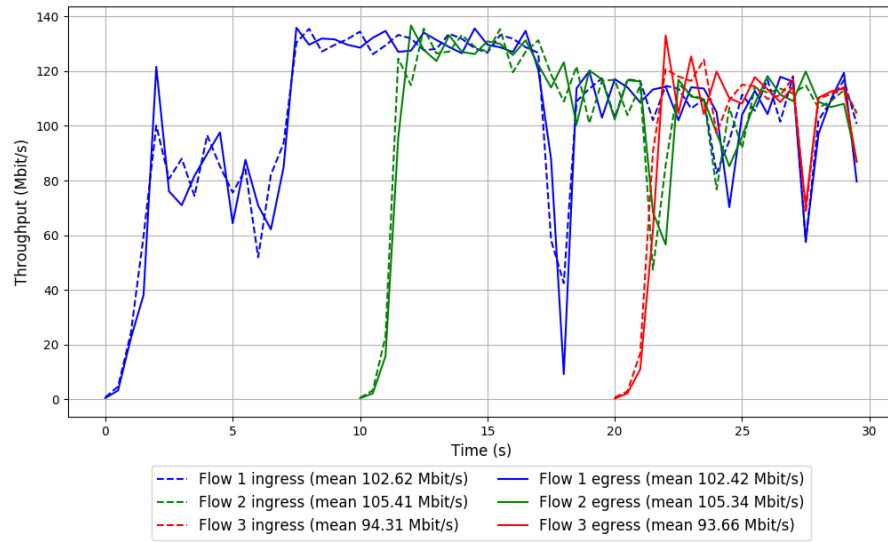
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2017-08-31 12:39:47
End at: 2017-08-31 12:40:17


# Below is generated by plot.py at 2017-08-31 18:00:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 202.89 Mbit/s
95th percentile per-packet one-way delay: 122.568 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 102.42 Mbit/s
95th percentile per-packet one-way delay: 122.488 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 105.34 Mbit/s
95th percentile per-packet one-way delay: 122.533 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 93.66 Mbit/s
95th percentile per-packet one-way delay: 122.964 ms
Loss rate: 2.41%
```
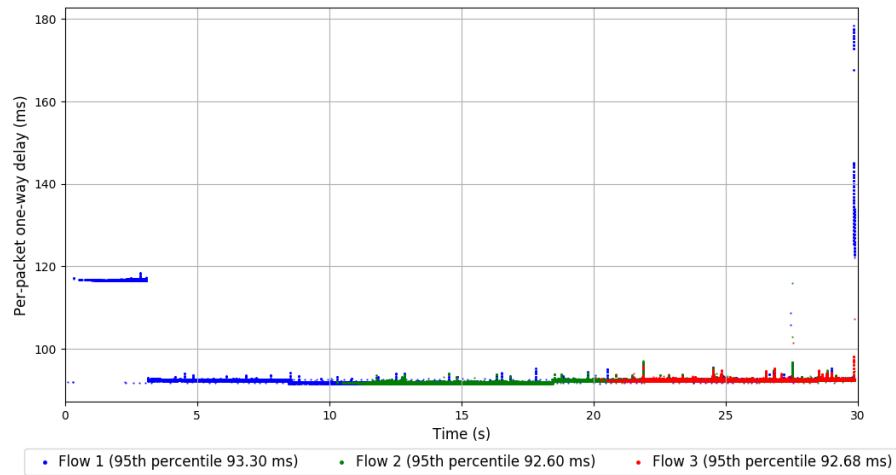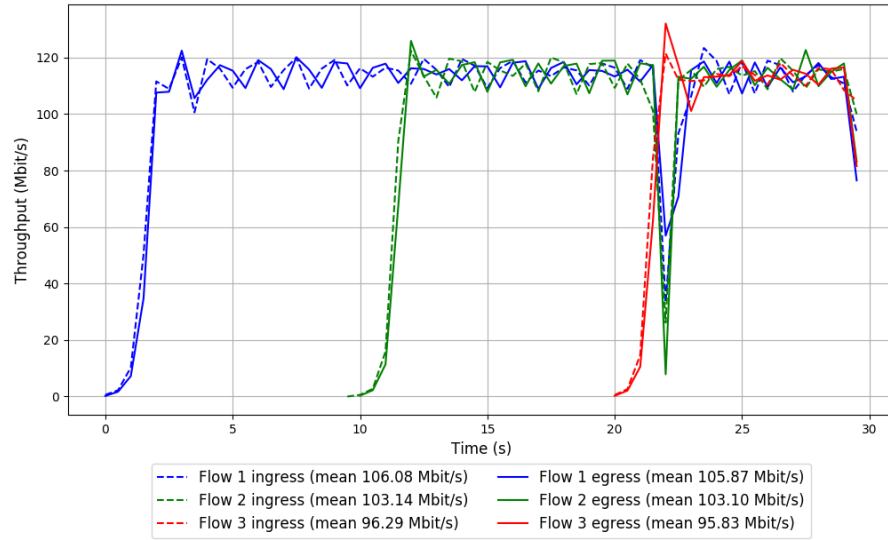
Run 2: Report of TCP BBR — Data Link



Flow 1 ingress (mean 102.62 Mbit/s) ----- Flow 1 egress (mean 102.42 Mbit/s)
Flow 2 ingress (mean 105.41 Mbit/s) ----- Flow 2 egress (mean 105.34 Mbit/s)
Flow 3 ingress (mean 94.31 Mbit/s) ----- Flow 3 egress (mean 93.66 Mbit/s)



Flow 1 (95th percentile 122.49 ms)    Flow 2 (95th percentile 122.53 ms)    Flow 3 (95th percentile 122.96 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2017-08-31 12:53:16
End at: 2017-08-31 12:53:46

# Below is generated by plot.py at 2017-08-31 18:00:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 205.71 Mbit/s
95th percentile per-packet one-way delay: 92.678 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 105.87 Mbit/s
95th percentile per-packet one-way delay: 93.302 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 103.10 Mbit/s
95th percentile per-packet one-way delay: 92.601 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 92.682 ms
Loss rate: 2.04%
```
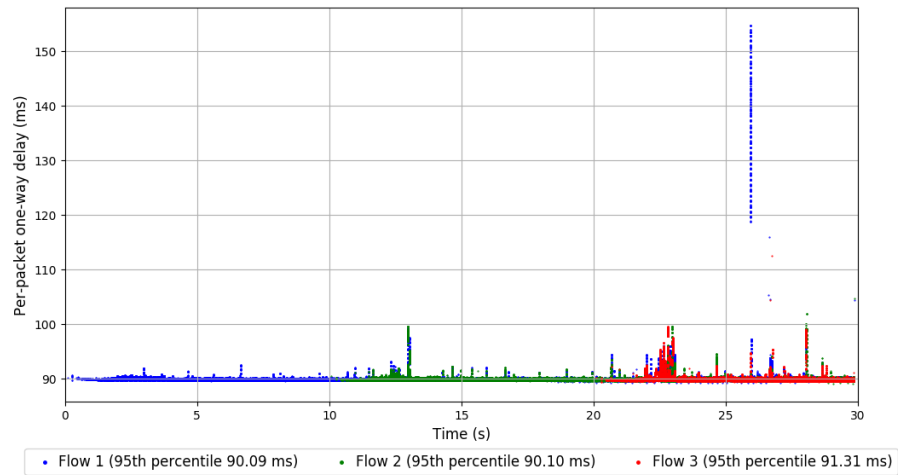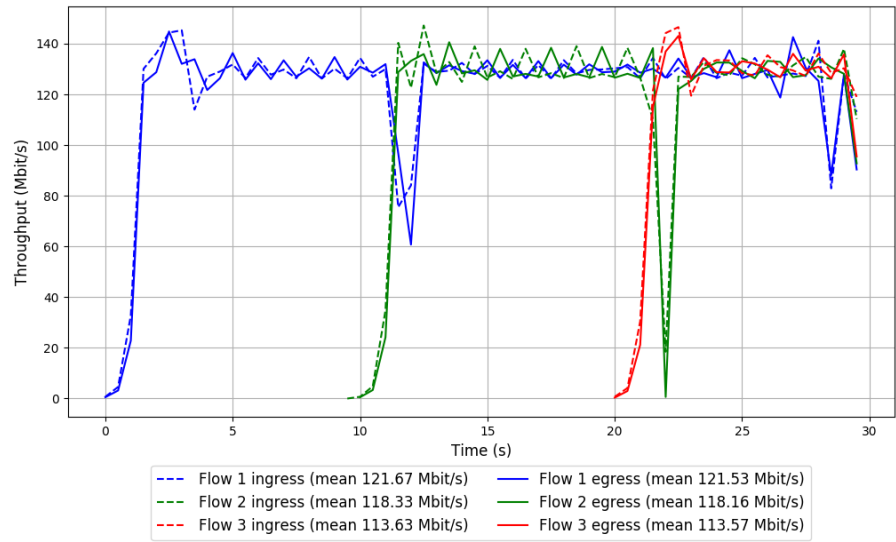
Run 3: Report of TCP BBR — Data Link

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Run 4: Statistics of TCP BBR

Start at: 2017-08-31 13:05:46
End at: 2017-08-31 13:06:16


# Below is generated by plot.py at 2017-08-31 18:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 237.19 Mbit/s
95th percentile per-packet one-way delay: 90.137 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 121.53 Mbit/s
95th percentile per-packet one-way delay: 90.086 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 118.16 Mbit/s
95th percentile per-packet one-way delay: 90.098 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 113.57 Mbit/s
95th percentile per-packet one-way delay: 91.305 ms
Loss rate: 2.00%
```
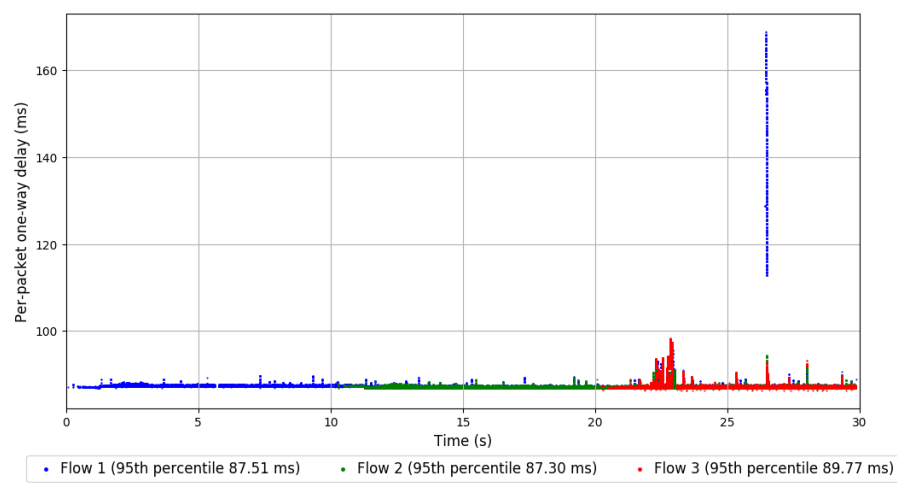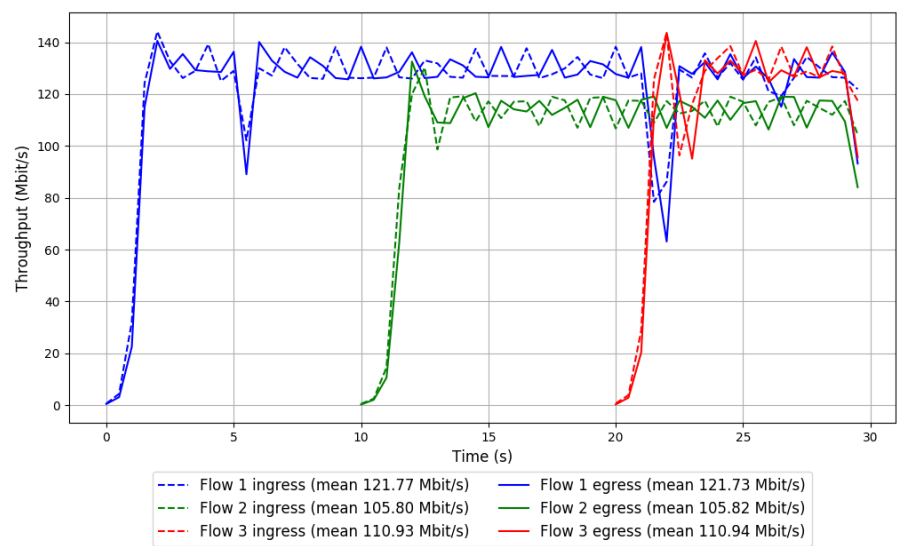
Run 4: Report of TCP BBR — Data Link

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Run 5: Statistics of TCP BBR

Start at: 2017-08-31 13:20:43
End at: 2017-08-31 13:21:13


# Below is generated by plot.py at 2017-08-31 18:01:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 228.05 Mbit/s
95th percentile per-packet one-way delay: 87.491 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 121.73 Mbit/s
95th percentile per-packet one-way delay: 87.508 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 105.82 Mbit/s
95th percentile per-packet one-way delay: 87.298 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 110.94 Mbit/s
95th percentile per-packet one-way delay: 89.767 ms
Loss rate: 2.13%
```
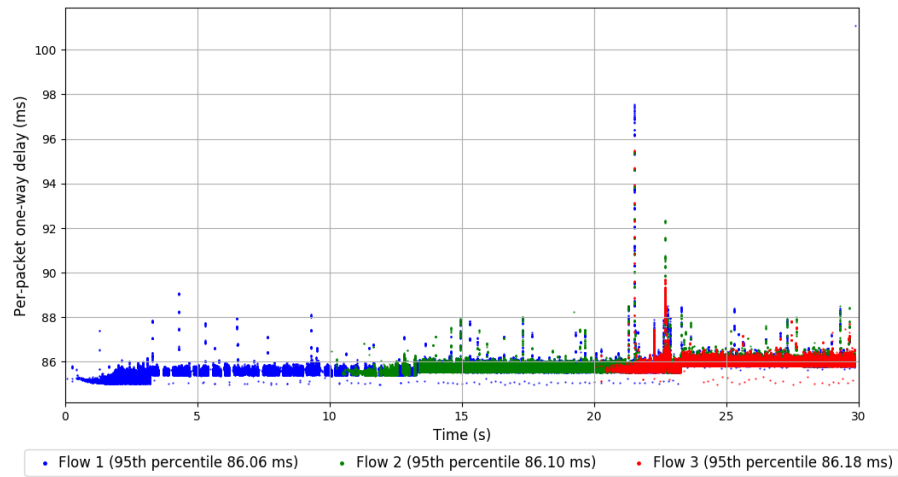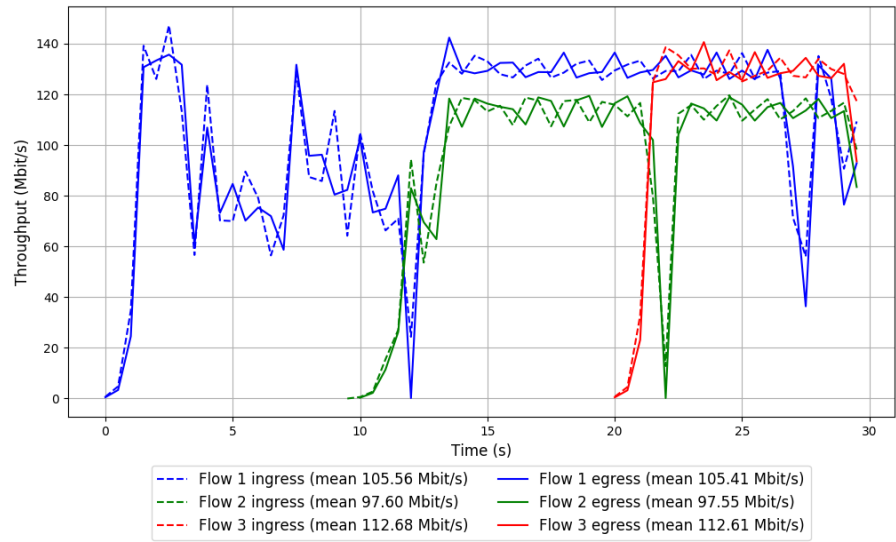
Run 5: Report of TCP BBR — Data Link



Flow 1 ingress (mean 121.77 Mbit/s) --- Flow 1 egress (mean 121.73 Mbit/s)
Flow 2 ingress (mean 105.80 Mbit/s) --- Flow 2 egress (mean 105.82 Mbit/s)
Flow 3 ingress (mean 110.93 Mbit/s) --- Flow 3 egress (mean 110.94 Mbit/s)



Flow 1 (95th percentile 87.51 ms) · Flow 2 (95th percentile 87.30 ms) · Flow 3 (95th percentile 89.77 ms)

```
Run 6: Statistics of TCP BBR

Start at: 2017-08-31 13:35:31
End at: 2017-08-31 13:36:01


# Below is generated by plot.py at 2017-08-31 18:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 207.02 Mbit/s
95th percentile per-packet one-way delay: 86.098 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 105.41 Mbit/s
95th percentile per-packet one-way delay: 86.055 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 97.55 Mbit/s
95th percentile per-packet one-way delay: 86.096 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 112.61 Mbit/s
95th percentile per-packet one-way delay: 86.177 ms
Loss rate: 2.09%
```
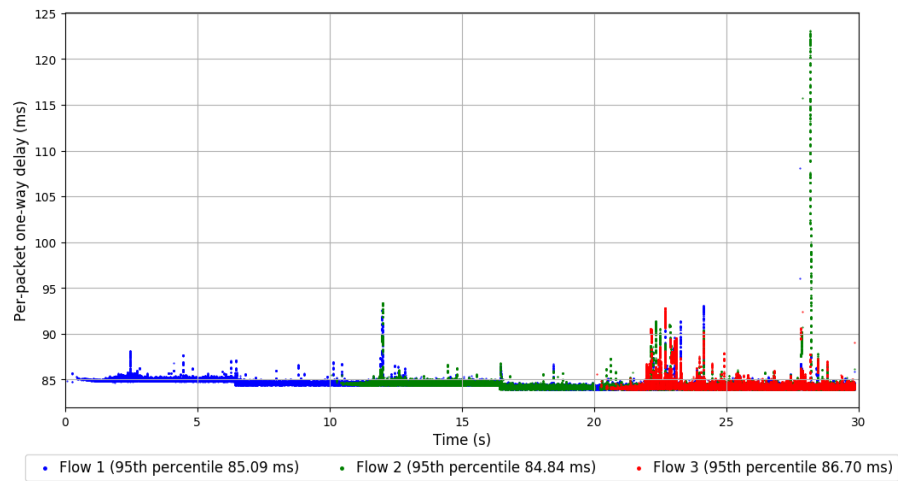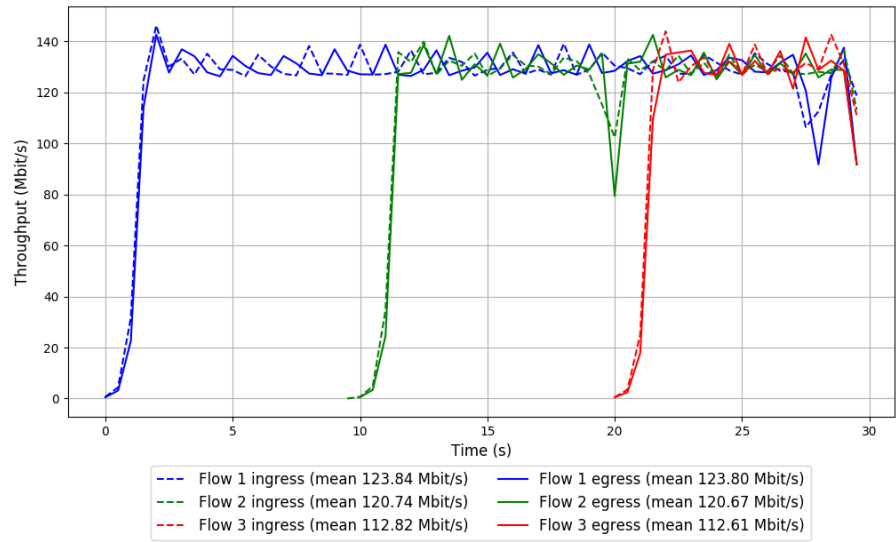
Run 6: Report of TCP BBR — Data Link

```
Run 7: Statistics of TCP BBR

Start at: 2017-08-31 13:48:38
End at: 2017-08-31 13:49:08


# Below is generated by plot.py at 2017-08-31 18:01:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 240.84 Mbit/s
95th percentile per-packet one-way delay: 85.096 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 123.80 Mbit/s
95th percentile per-packet one-way delay: 85.095 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 120.67 Mbit/s
95th percentile per-packet one-way delay: 84.839 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 112.61 Mbit/s
95th percentile per-packet one-way delay: 86.700 ms
Loss rate: 2.06%
```
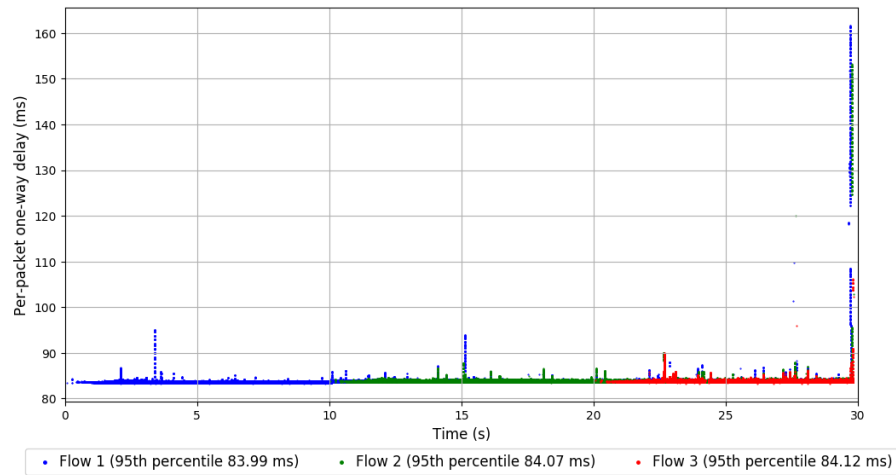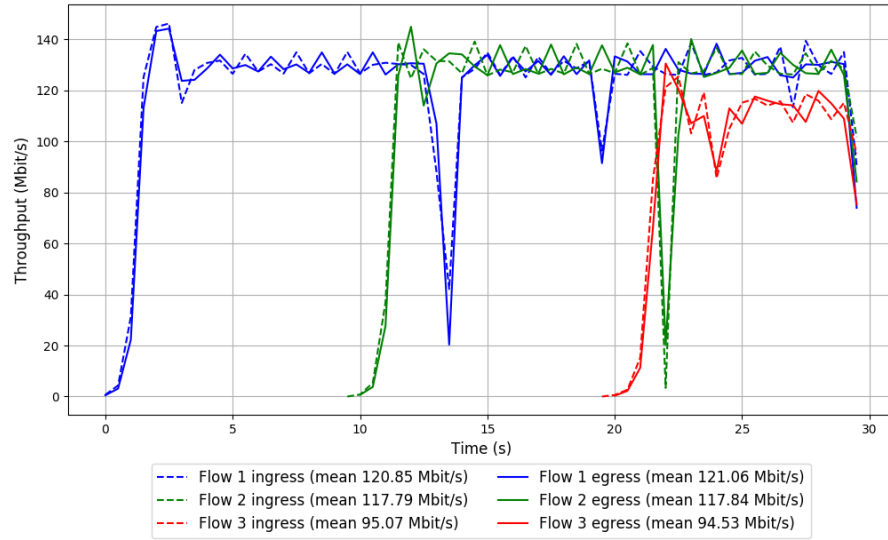
Run 7: Report of TCP BBR — Data Link

```
Run 8: Statistics of TCP BBR

Start at: 2017-08-31 14:04:34
End at: 2017-08-31 14:05:04


# Below is generated by plot.py at 2017-08-31 18:02:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 230.16 Mbit/s
95th percentile per-packet one-way delay: 84.037 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 121.06 Mbit/s
95th percentile per-packet one-way delay: 83.988 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 117.84 Mbit/s
95th percentile per-packet one-way delay: 84.066 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 94.53 Mbit/s
95th percentile per-packet one-way delay: 84.117 ms
Loss rate: 2.15%
```
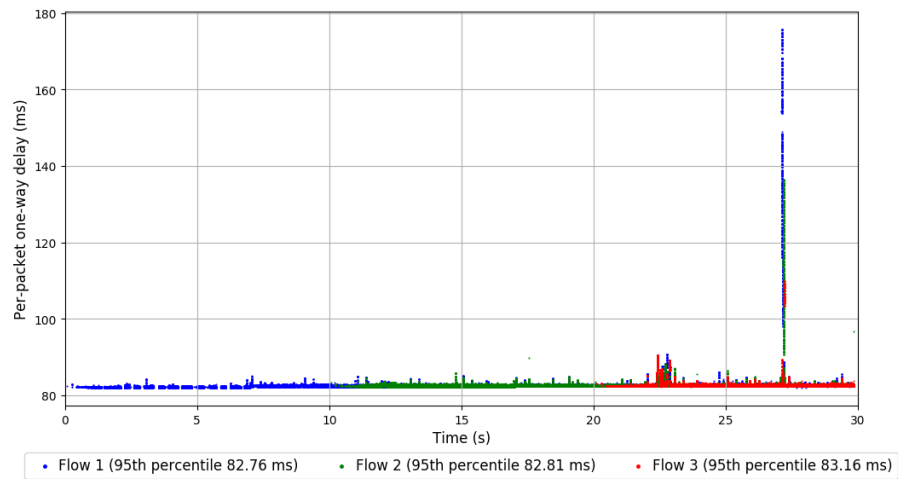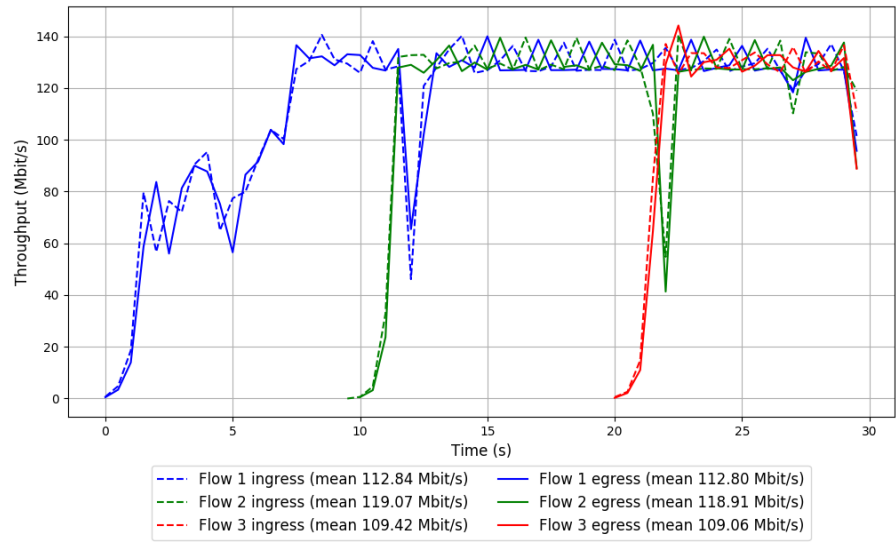
Run 8: Report of TCP BBR — Data Link



Flow 1 ingress (mean 120.85 Mbit/s)      Flow 1 egress (mean 121.06 Mbit/s)
Flow 2 ingress (mean 117.79 Mbit/s)      Flow 2 egress (mean 117.84 Mbit/s)
Flow 3 ingress (mean 95.07 Mbit/s)       Flow 3 egress (mean 94.53 Mbit/s)



Flow 1 (95th percentile 83.99 ms)      Flow 2 (95th percentile 84.07 ms)      Flow 3 (95th percentile 84.12 ms)

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```
Run 9: Statistics of TCP BBR

Start at: 2017-08-31 14:18:37
End at: 2017-08-31 14:19:07

# Below is generated by plot.py at 2017-08-31 18:02:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 227.45 Mbit/s
95th percentile per-packet one-way delay: 82.809 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 112.80 Mbit/s
95th percentile per-packet one-way delay: 82.759 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 118.91 Mbit/s
95th percentile per-packet one-way delay: 82.811 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 109.06 Mbit/s
95th percentile per-packet one-way delay: 83.155 ms
Loss rate: 2.09%
```
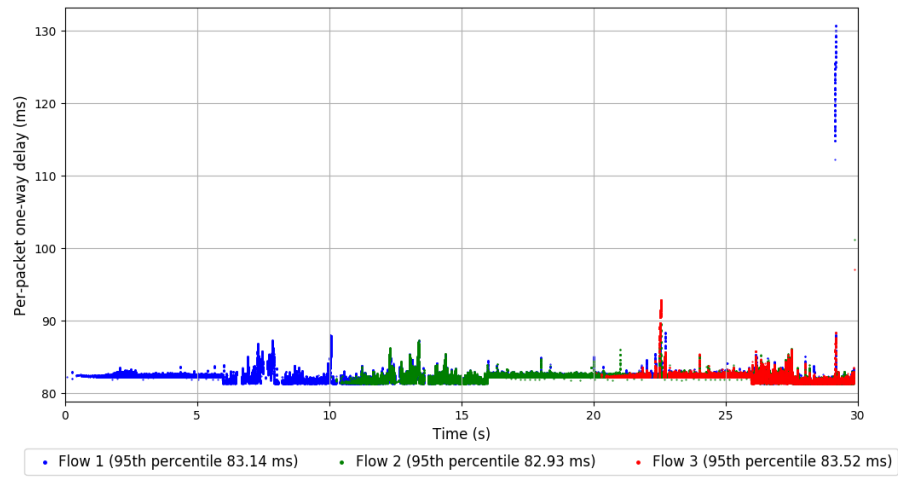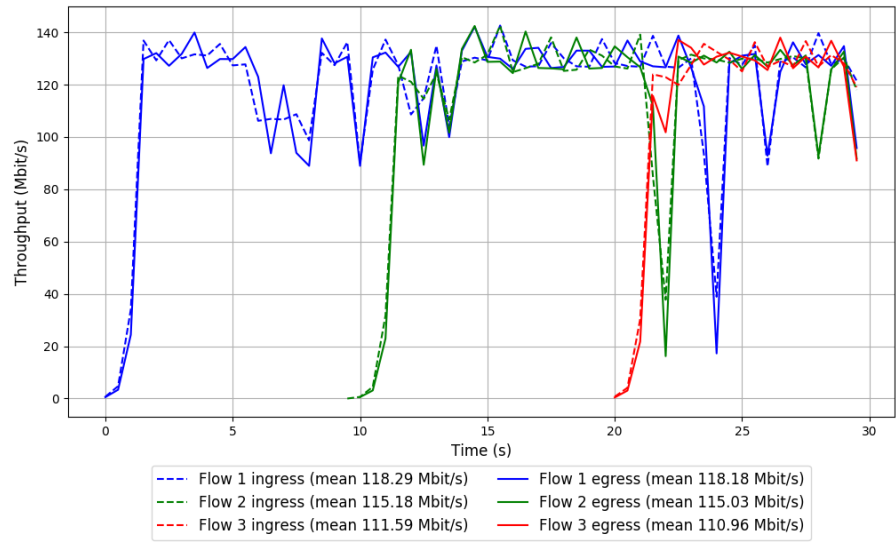
Run 9: Report of TCP BBR — Data Link



Flow 1 ingress (mean 112.84 Mbit/s) --- Flow 1 egress (mean 112.80 Mbit/s)
Flow 2 ingress (mean 119.07 Mbit/s) --- Flow 2 egress (mean 118.91 Mbit/s)
Flow 3 ingress (mean 109.42 Mbit/s) --- Flow 3 egress (mean 109.06 Mbit/s)



Flow 1 (95th percentile 82.76 ms)    Flow 2 (95th percentile 82.81 ms)    Flow 3 (95th percentile 83.16 ms)

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```
Run 10: Statistics of TCP BBR

Start at: 2017-08-31 14:34:18
End at: 2017-08-31 14:34:48

# Below is generated by plot.py at 2017-08-31 18:02:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 230.89 Mbit/s
95th percentile per-packet one-way delay: 83.121 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 118.18 Mbit/s
95th percentile per-packet one-way delay: 83.145 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 115.03 Mbit/s
95th percentile per-packet one-way delay: 82.931 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 110.96 Mbit/s
95th percentile per-packet one-way delay: 83.516 ms
Loss rate: 2.13%
```
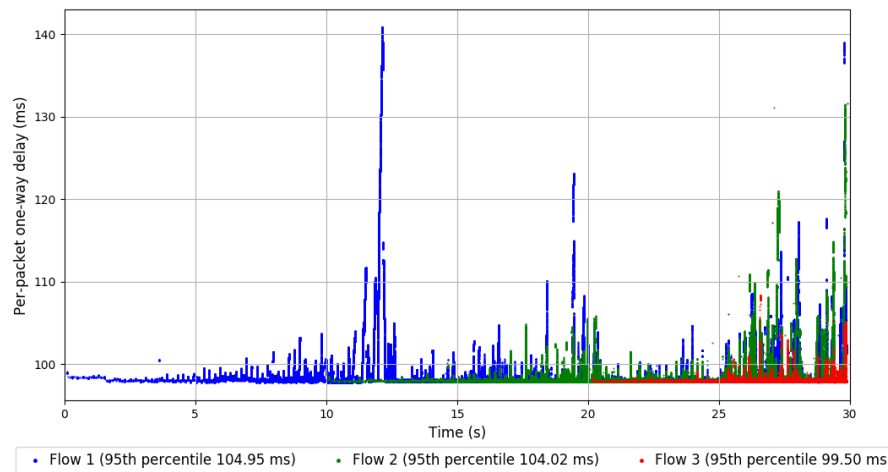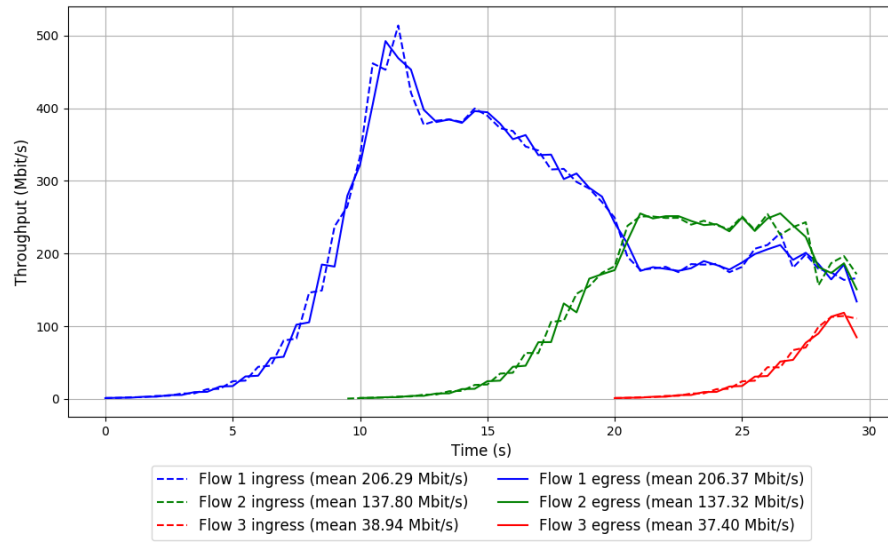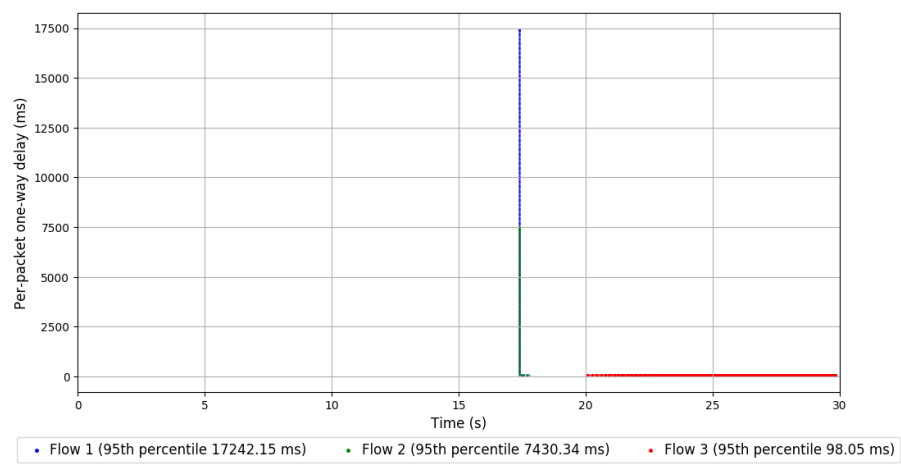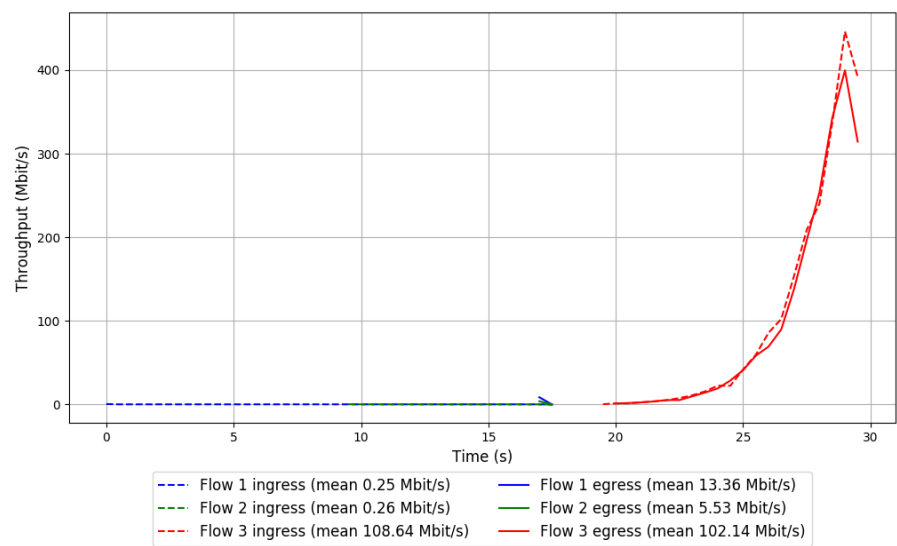
Run 10: Report of TCP BBR — Data Link

```
Run 1: Statistics of CalibratedKoho

Start at: 2017-08-31 12:19:33
End at: 2017-08-31 12:20:03

# Below is generated by plot.py at 2017-08-31 18:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 309.69 Mbit/s
95th percentile per-packet one-way delay: 104.473 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 206.37 Mbit/s
95th percentile per-packet one-way delay: 104.949 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 137.32 Mbit/s
95th percentile per-packet one-way delay: 104.018 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 37.40 Mbit/s
95th percentile per-packet one-way delay: 99.504 ms
Loss rate: 5.67%
```
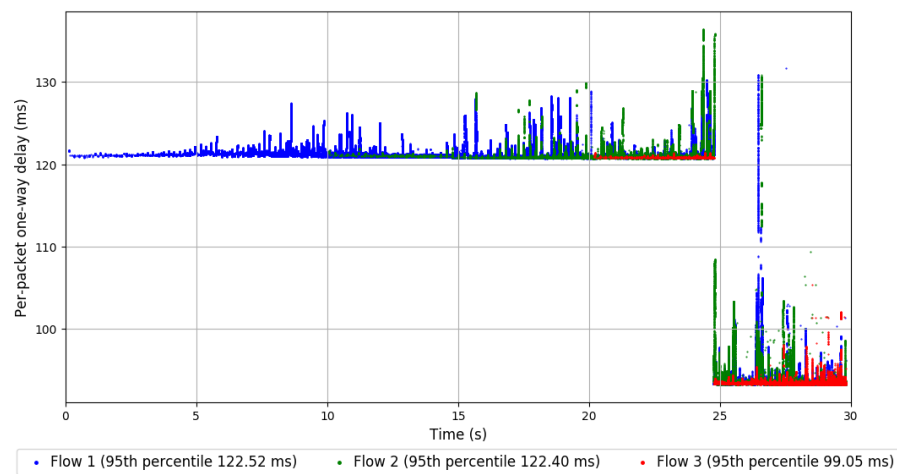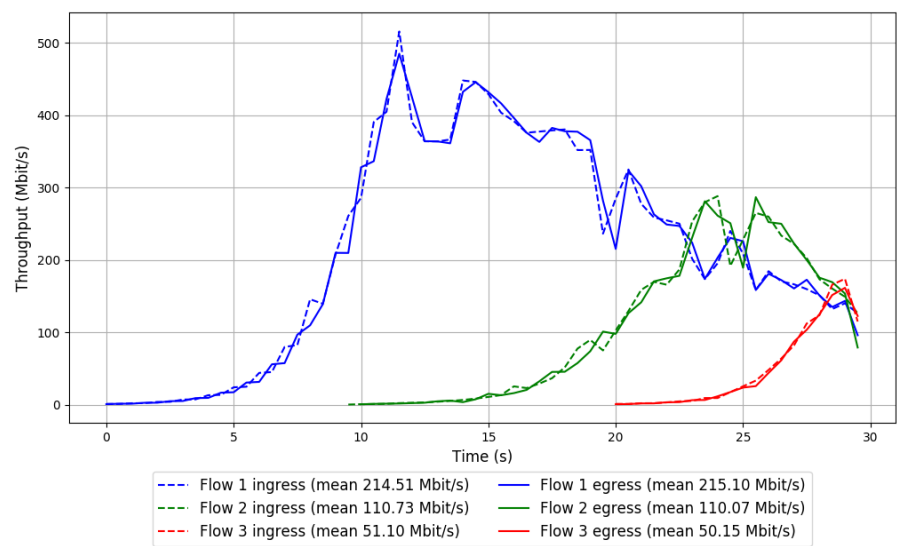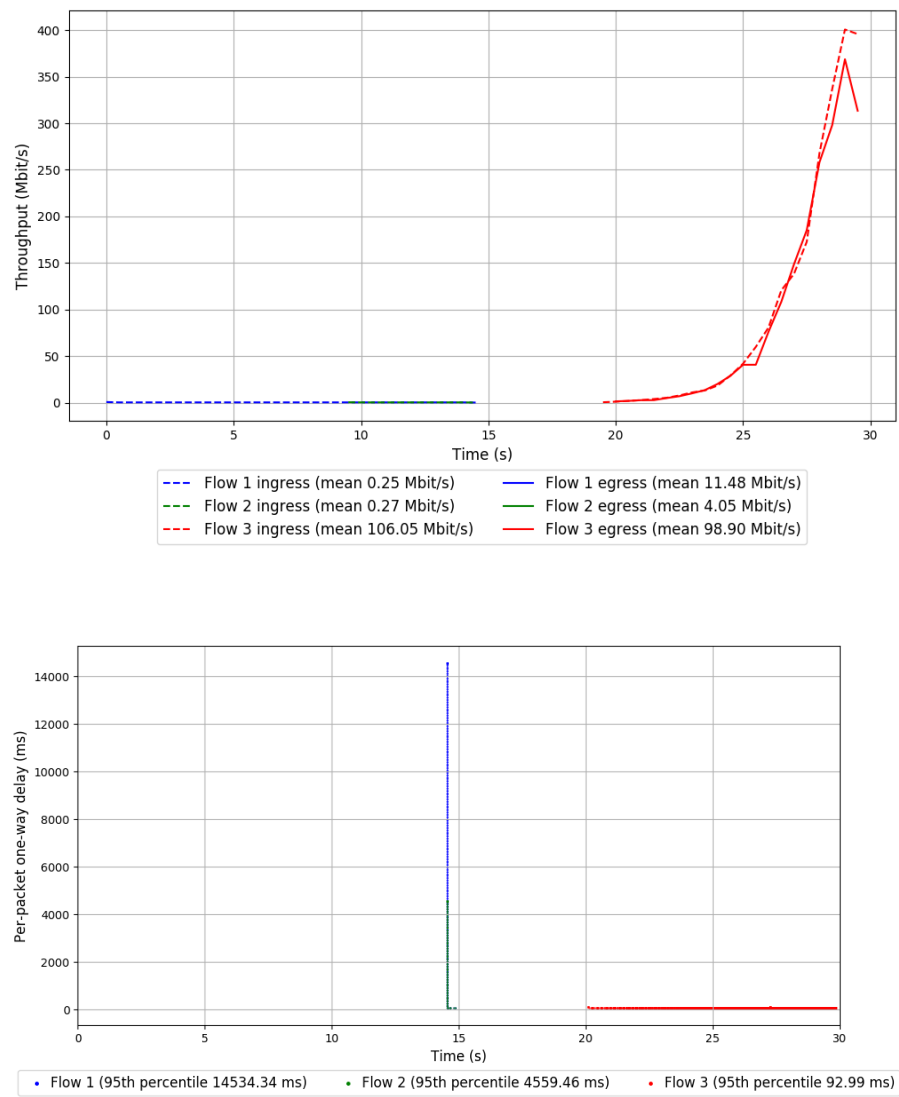
Run 1: Report of CalibratedKoho — Data Link



- - - Flow 1 ingress (mean 206.29 Mbit/s) ——— Flow 1 egress (mean 206.37 Mbit/s)
- - - Flow 2 ingress (mean 137.80 Mbit/s) ——— Flow 2 egress (mean 137.32 Mbit/s)
- - - Flow 3 ingress (mean 38.94 Mbit/s) ——— Flow 3 egress (mean 37.40 Mbit/s)



• Flow 1 (95th percentile 104.95 ms)  • Flow 2 (95th percentile 104.02 ms)  • Flow 3 (95th percentile 99.50 ms)

Run 2: Statistics of CalibratedKoho

Start at: 2017-08-31 12:35:06
End at: 2017-08-31 12:35:36

Run 2: Report of CalibratedKoho — Data Link



Flow 1 ingress (mean 0.25 Mbit/s) — Flow 1 egress (mean 13.36 Mbit/s)
Flow 2 ingress (mean 0.26 Mbit/s) — Flow 2 egress (mean 5.53 Mbit/s)
Flow 3 ingress (mean 108.64 Mbit/s) — Flow 3 egress (mean 102.14 Mbit/s)



Flow 1 (95th percentile 17242.15 ms)   Flow 2 (95th percentile 7430.34 ms)   Flow 3 (95th percentile 98.05 ms)

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Run 3: Statistics of CalibratedKoho

Start at: 2017-08-31 12:47:59
End at: 2017-08-31 12:48:29

# Below is generated by plot.py at 2017-08-31 18:03:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 304.51 Mbit/s
95th percentile per-packet one-way delay: 122.409 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 215.10 Mbit/s
95th percentile per-packet one-way delay: 122.519 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 110.07 Mbit/s
95th percentile per-packet one-way delay: 122.402 ms
Loss rate: 1.62%
-- Flow 3:
Average throughput: 50.15 Mbit/s
95th percentile per-packet one-way delay: 99.049 ms
Loss rate: 3.85%
```
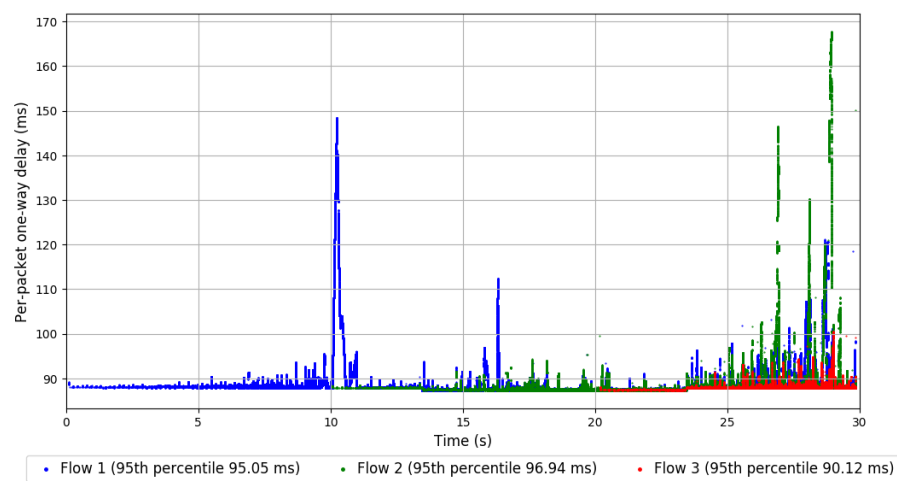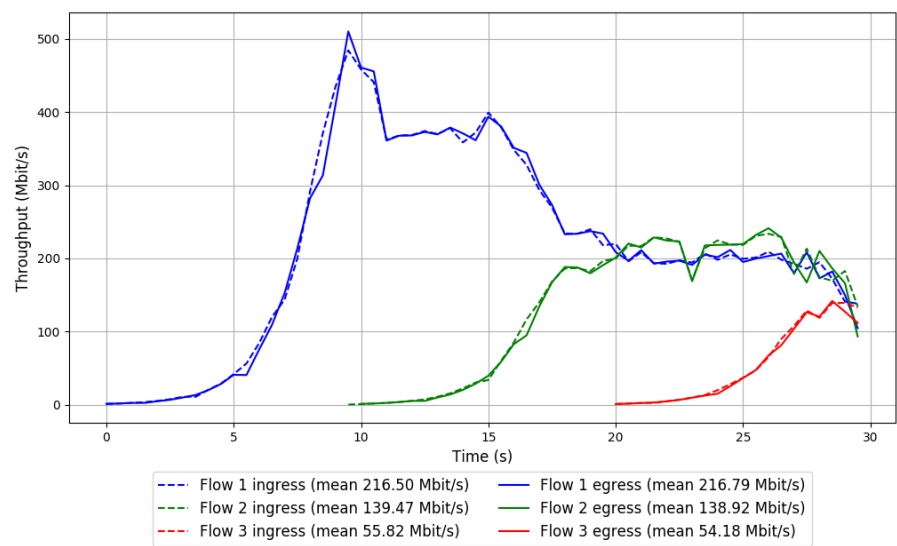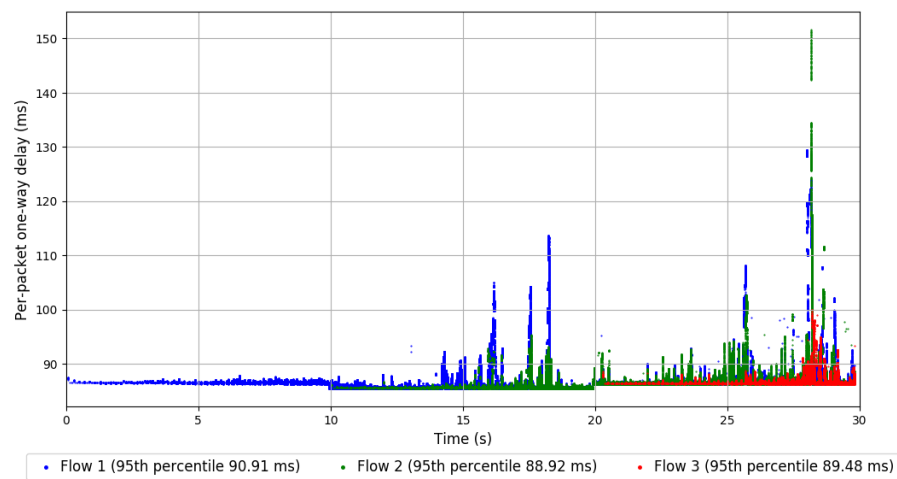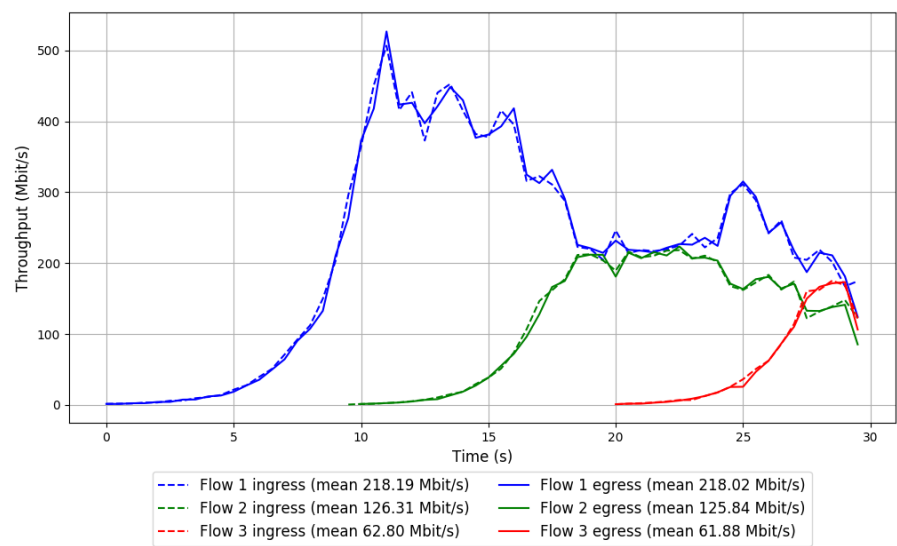
Run 3: Report of CalibratedKoho — Data Link

Run 4: Statistics of CalibratedKoho

Start at: 2017-08-31 13:01:14
End at: 2017-08-31 13:01:44

Run 4: Report of CalibratedKoho — Data Link



Flow 1 ingress (mean 0.25 Mbit/s)    Flow 1 egress (mean 11.48 Mbit/s)
Flow 2 ingress (mean 0.27 Mbit/s)    Flow 2 egress (mean 4.05 Mbit/s)
Flow 3 ingress (mean 106.05 Mbit/s)  Flow 3 egress (mean 98.90 Mbit/s)



Flow 1 (95th percentile 14534.34 ms)    Flow 2 (95th percentile 4559.46 ms)    Flow 3 (95th percentile 92.99 ms)

```
Run 5: Statistics of CalibratedKoho

Start at: 2017-08-31 13:15:11
End at: 2017-08-31 13:15:41

# Below is generated by plot.py at 2017-08-31 18:04:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 326.60 Mbit/s
95th percentile per-packet one-way delay: 95.131 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 216.79 Mbit/s
95th percentile per-packet one-way delay: 95.050 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 138.92 Mbit/s
95th percentile per-packet one-way delay: 96.938 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 54.18 Mbit/s
95th percentile per-packet one-way delay: 90.123 ms
Loss rate: 4.57%
```
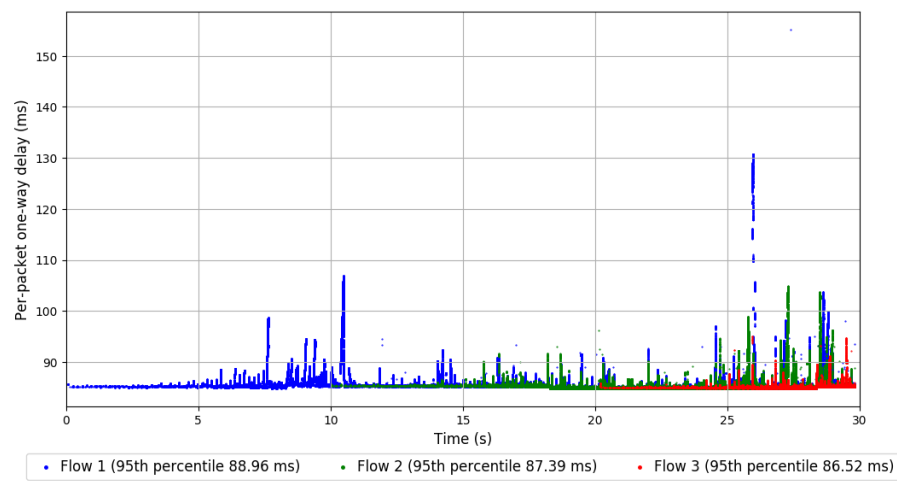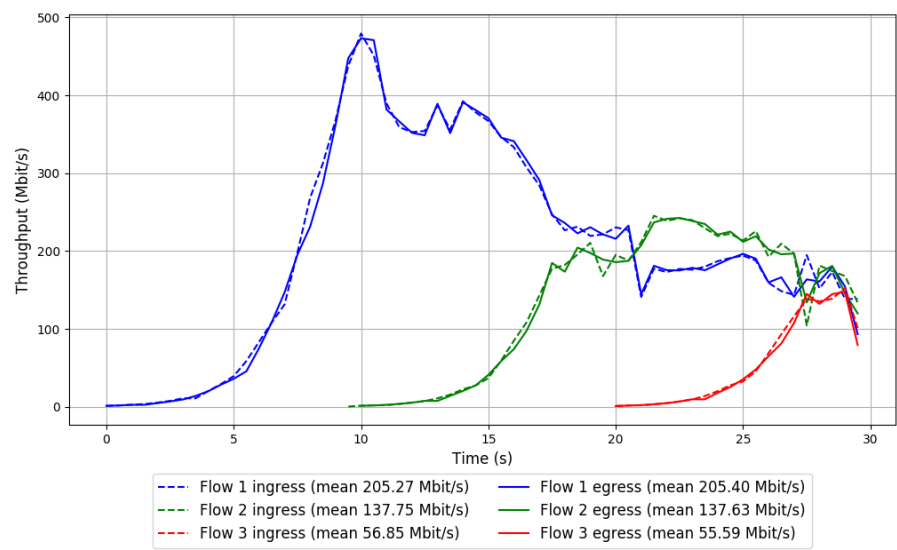
Run 5: Report of CalibratedKoho — Data Link



Flow 1 ingress (mean 216.50 Mbit/s) ---- Flow 1 egress (mean 216.79 Mbit/s)
Flow 2 ingress (mean 139.47 Mbit/s) ---- Flow 2 egress (mean 138.92 Mbit/s)
Flow 3 ingress (mean 55.82 Mbit/s) ---- Flow 3 egress (mean 54.18 Mbit/s)



Flow 1 (95th percentile 95.05 ms)    Flow 2 (95th percentile 96.94 ms)    Flow 3 (95th percentile 90.12 ms)

```
Run 6: Statistics of CalibratedKoho

Start at: 2017-08-31 13:30:24
End at: 2017-08-31 13:30:54


# Below is generated by plot.py at 2017-08-31 18:04:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 321.48 Mbit/s
95th percentile per-packet one-way delay: 90.352 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 218.02 Mbit/s
95th percentile per-packet one-way delay: 90.914 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 125.84 Mbit/s
95th percentile per-packet one-way delay: 88.922 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 61.88 Mbit/s
95th percentile per-packet one-way delay: 89.485 ms
Loss rate: 3.23%
```
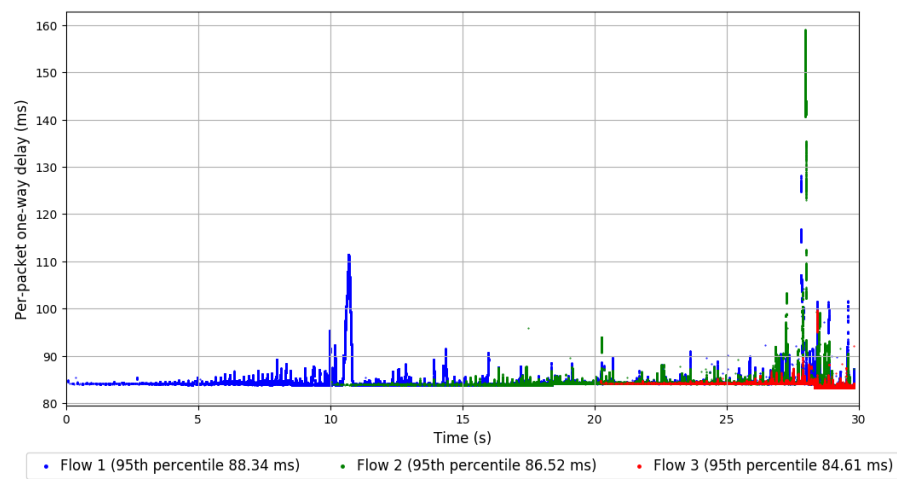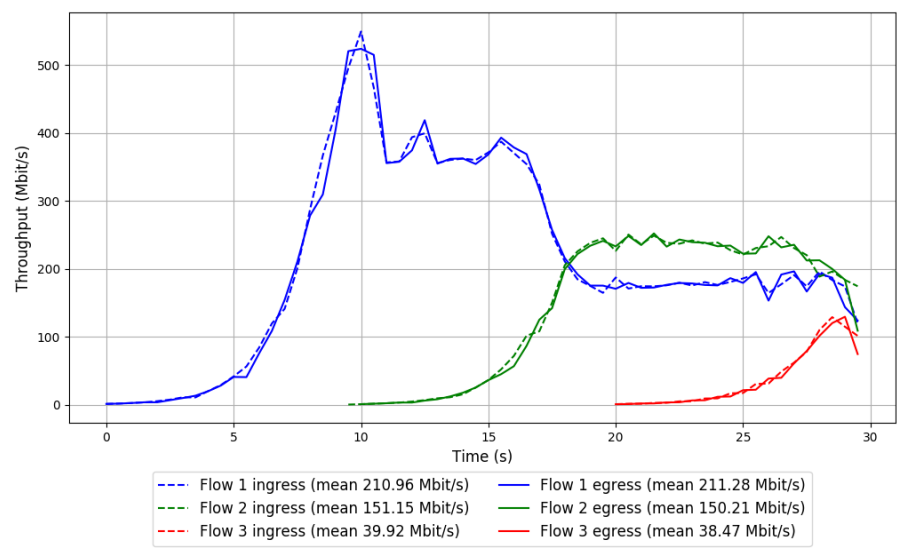
# Run 6: Report of CalibratedKoho — Data Link

```
Run 7: Statistics of CalibratedKoho

Start at: 2017-08-31 13:43:36
End at: 2017-08-31 13:44:06


# Below is generated by plot.py at 2017-08-31 18:05:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 314.91 Mbit/s
95th percentile per-packet one-way delay: 88.466 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 205.40 Mbit/s
95th percentile per-packet one-way delay: 88.961 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 137.63 Mbit/s
95th percentile per-packet one-way delay: 87.393 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 55.59 Mbit/s
95th percentile per-packet one-way delay: 86.523 ms
Loss rate: 4.10%
```
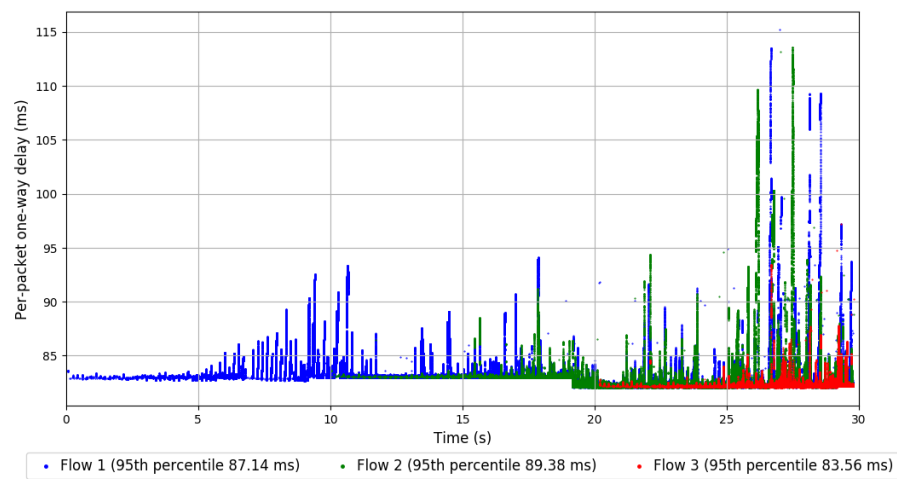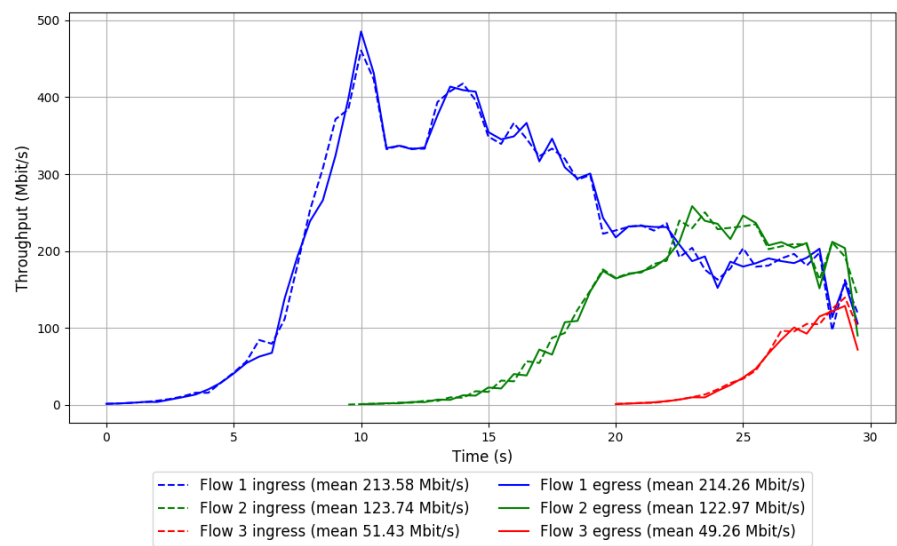
Run 7: Report of CalibratedKoho — Data Link

```
Run 8: Statistics of CalibratedKoho

Start at: 2017-08-31 13:58:26
End at: 2017-08-31 13:58:56


# Below is generated by plot.py at 2017-08-31 18:05:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 323.57 Mbit/s
95th percentile per-packet one-way delay: 87.507 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 211.28 Mbit/s
95th percentile per-packet one-way delay: 88.344 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 150.21 Mbit/s
95th percentile per-packet one-way delay: 86.515 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 38.47 Mbit/s
95th percentile per-packet one-way delay: 84.615 ms
Loss rate: 5.27%
```
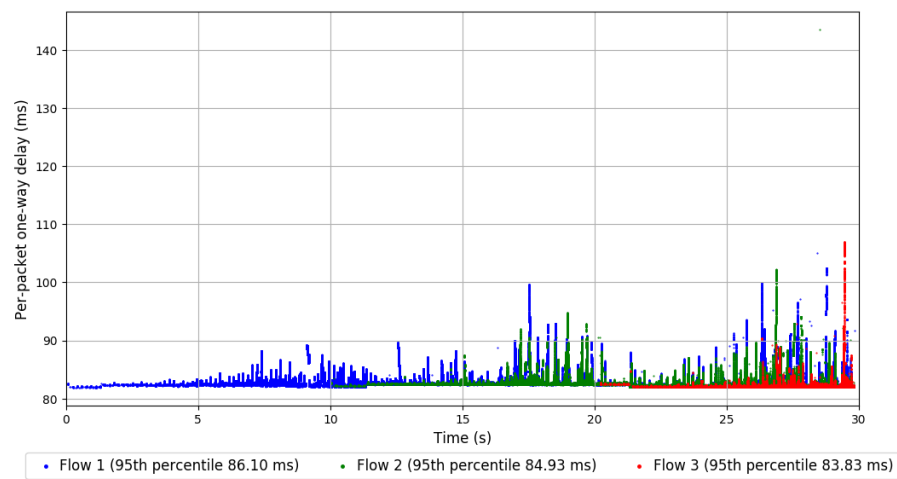
Run 8: Report of CalibratedKoho — Data Link

```
Run 9: Statistics of CalibratedKoho

Start at: 2017-08-31 14:13:25
End at: 2017-08-31 14:13:55

# Below is generated by plot.py at 2017-08-31 18:06:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 311.94 Mbit/s
95th percentile per-packet one-way delay: 87.212 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 214.26 Mbit/s
95th percentile per-packet one-way delay: 87.143 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 122.97 Mbit/s
95th percentile per-packet one-way delay: 89.382 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 49.26 Mbit/s
95th percentile per-packet one-way delay: 83.557 ms
Loss rate: 5.89%
```
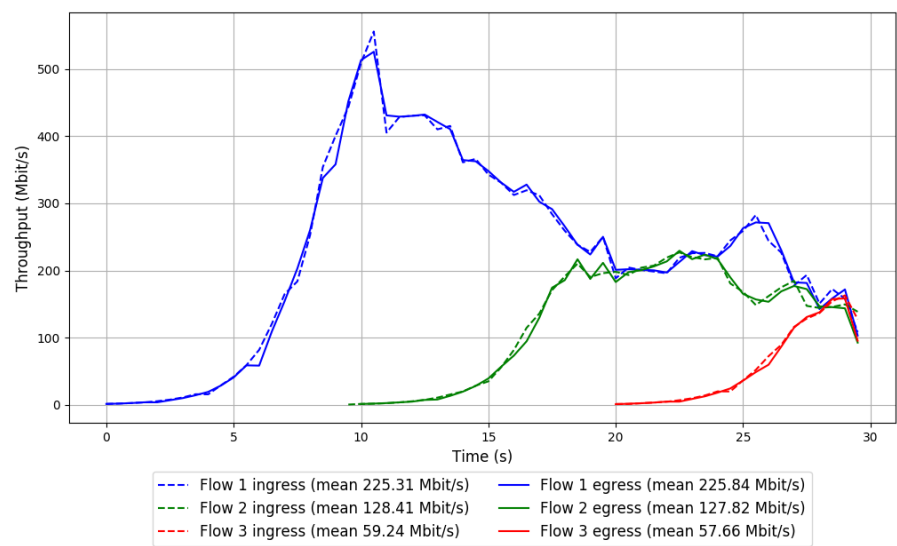
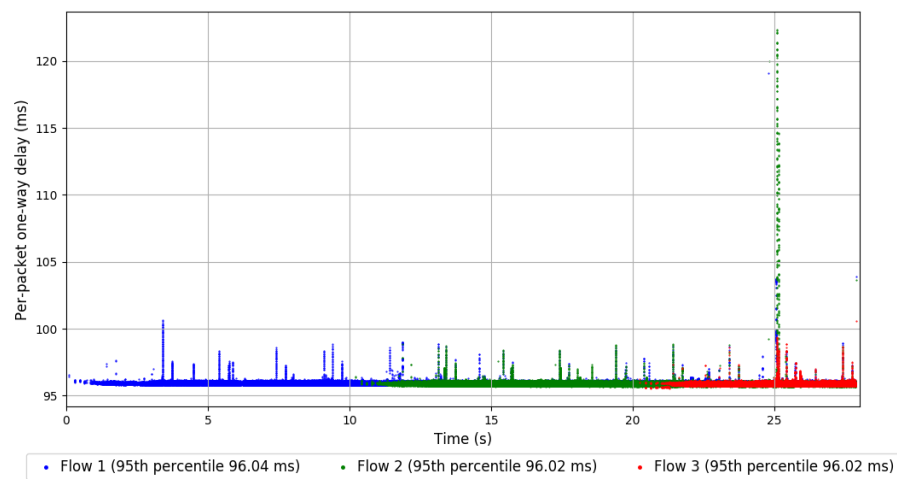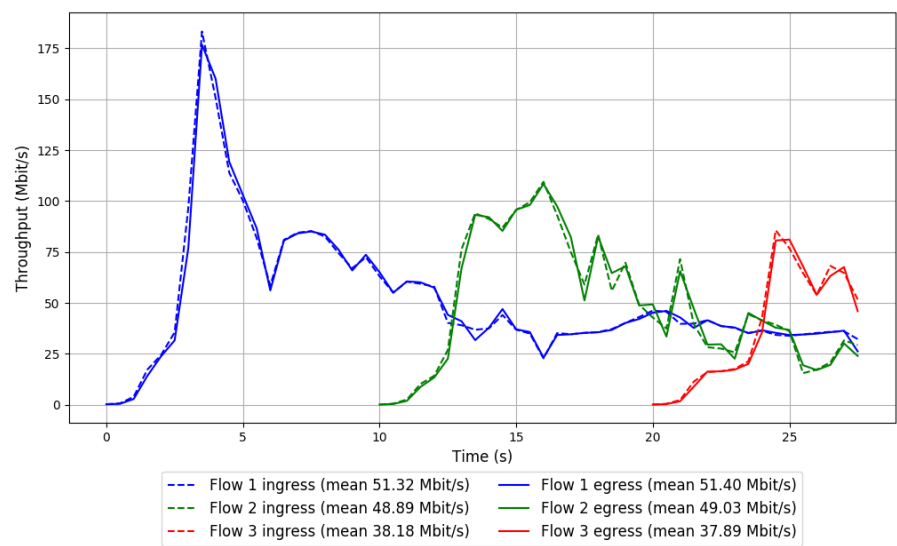Run 9: Report of CalibratedKoho — Data Link

```
Run 10: Statistics of CalibratedKoho

Start at: 2017-08-31 14:29:13
End at: 2017-08-31 14:29:43


# Below is generated by plot.py at 2017-08-31 18:06:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 329.44 Mbit/s
95th percentile per-packet one-way delay: 85.704 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 225.84 Mbit/s
95th percentile per-packet one-way delay: 86.101 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 127.82 Mbit/s
95th percentile per-packet one-way delay: 84.927 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 57.66 Mbit/s
95th percentile per-packet one-way delay: 83.825 ms
Loss rate: 4.47%
```
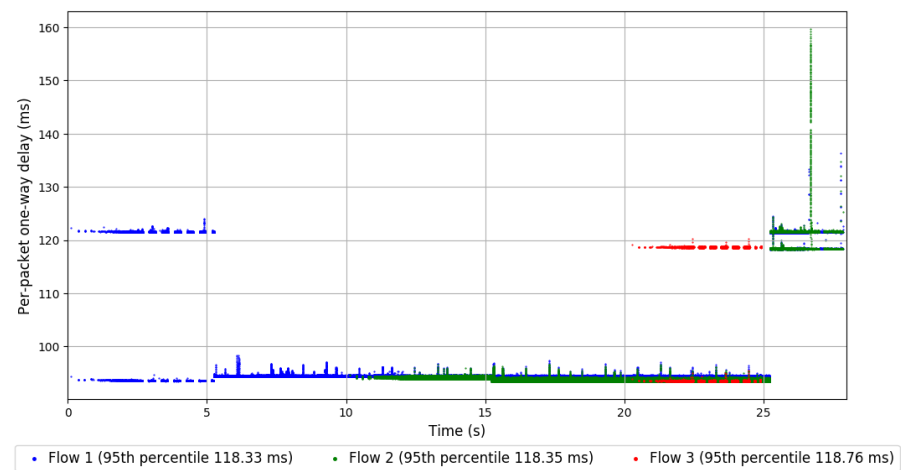
Run 10: Report of CalibratedKoho — Data Link



Flow 1 ingress (mean 225.31 Mbit/s) — Flow 1 egress (mean 225.84 Mbit/s)
Flow 2 ingress (mean 128.41 Mbit/s) — Flow 2 egress (mean 127.82 Mbit/s)
Flow 3 ingress (mean 59.24 Mbit/s) — Flow 3 egress (mean 57.66 Mbit/s)



Flow 1 (95th percentile 86.10 ms) — Flow 2 (95th percentile 84.93 ms) — Flow 3 (95th percentile 83.83 ms)

43

```
Run 1: Statistics of Copa

Start at: 2017-08-31 12:31:11
End at: 2017-08-31 12:31:41


# Below is generated by plot.py at 2017-08-31 18:06:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 96.032 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 51.40 Mbit/s
95th percentile per-packet one-way delay: 96.039 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 49.03 Mbit/s
95th percentile per-packet one-way delay: 96.023 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 37.89 Mbit/s
95th percentile per-packet one-way delay: 96.017 ms
Loss rate: 2.91%
```
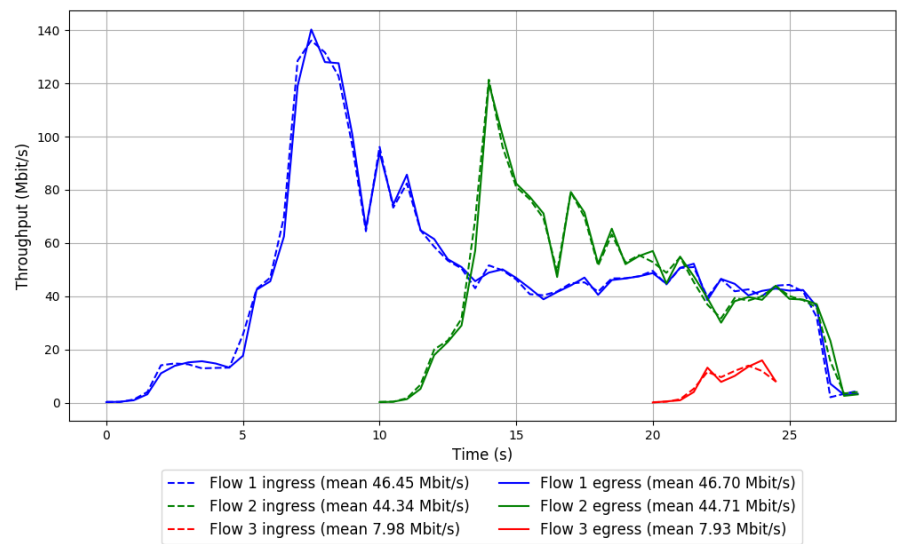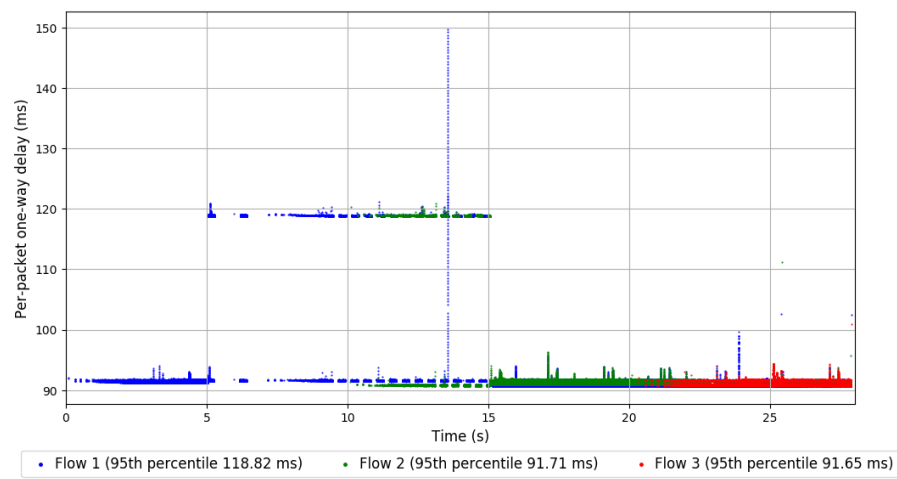
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2017-08-31 12:44:27
End at: 2017-08-31 12:44:57

# Below is generated by plot.py at 2017-08-31 18:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.56 Mbit/s
95th percentile per-packet one-way delay: 118.437 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 46.70 Mbit/s
95th percentile per-packet one-way delay: 118.331 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 44.71 Mbit/s
95th percentile per-packet one-way delay: 118.350 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 118.758 ms
Loss rate: 0.00%
```
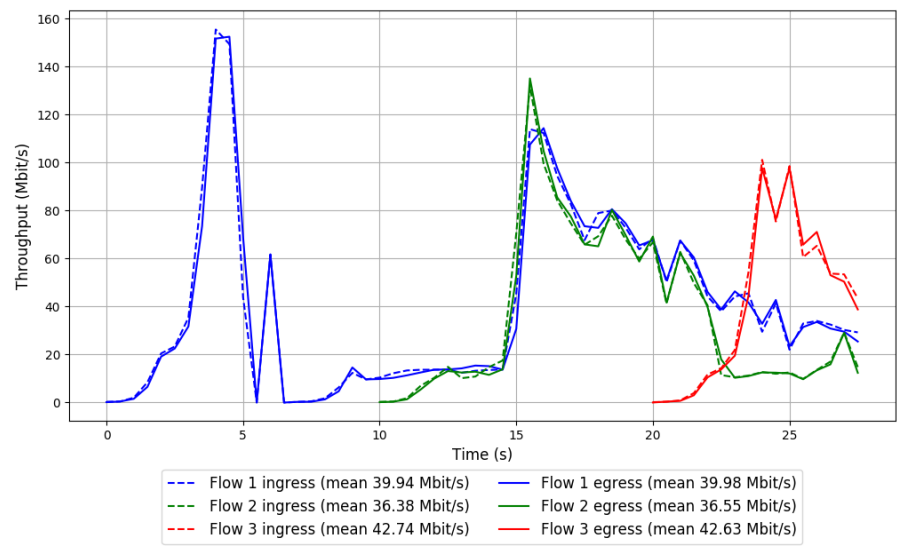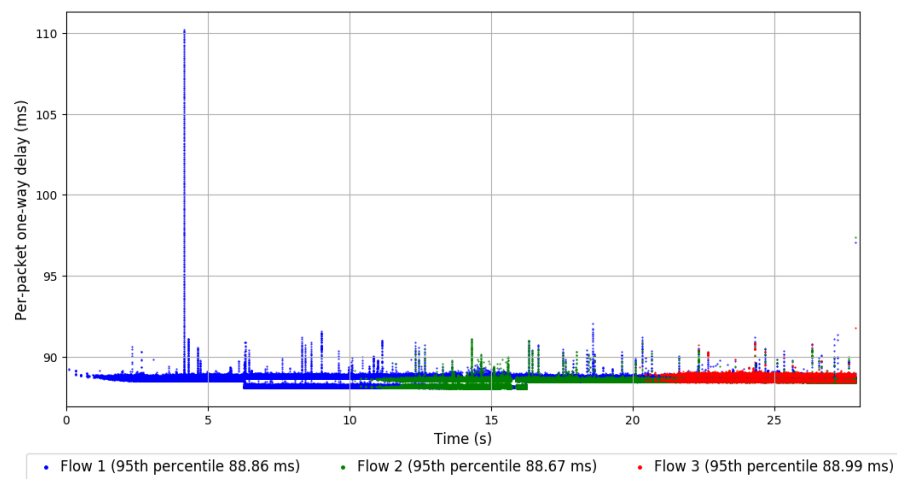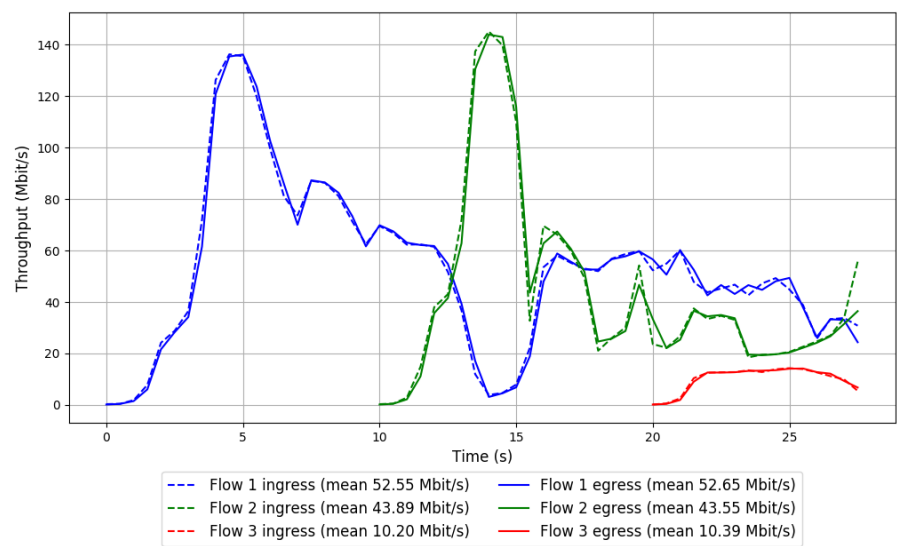
# Run 2: Report of Copa — Data Link



Flow 1 ingress (mean 46.45 Mbit/s) --- Flow 1 egress (mean 46.70 Mbit/s)
Flow 2 ingress (mean 44.34 Mbit/s) --- Flow 2 egress (mean 44.71 Mbit/s)
Flow 3 ingress (mean 7.98 Mbit/s) --- Flow 3 egress (mean 7.93 Mbit/s)



Flow 1 (95th percentile 118.33 ms) Flow 2 (95th percentile 118.35 ms) Flow 3 (95th percentile 118.76 ms)

```
Run 3: Statistics of Copa

Start at: 2017-08-31 12:57:37
End at: 2017-08-31 12:58:07

# Below is generated by plot.py at 2017-08-31 18:07:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.95 Mbit/s
95th percentile per-packet one-way delay: 91.811 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 39.98 Mbit/s
95th percentile per-packet one-way delay: 118.824 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 36.55 Mbit/s
95th percentile per-packet one-way delay: 91.711 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 42.63 Mbit/s
95th percentile per-packet one-way delay: 91.646 ms
Loss rate: 2.41%
```
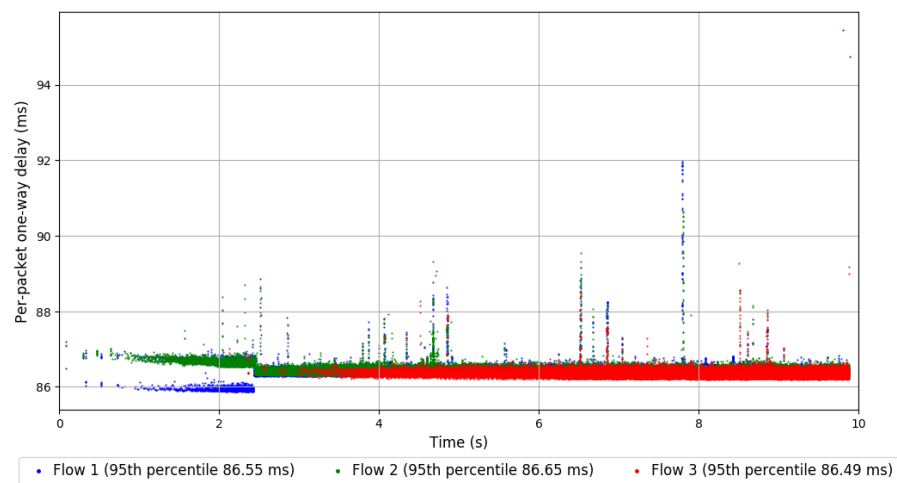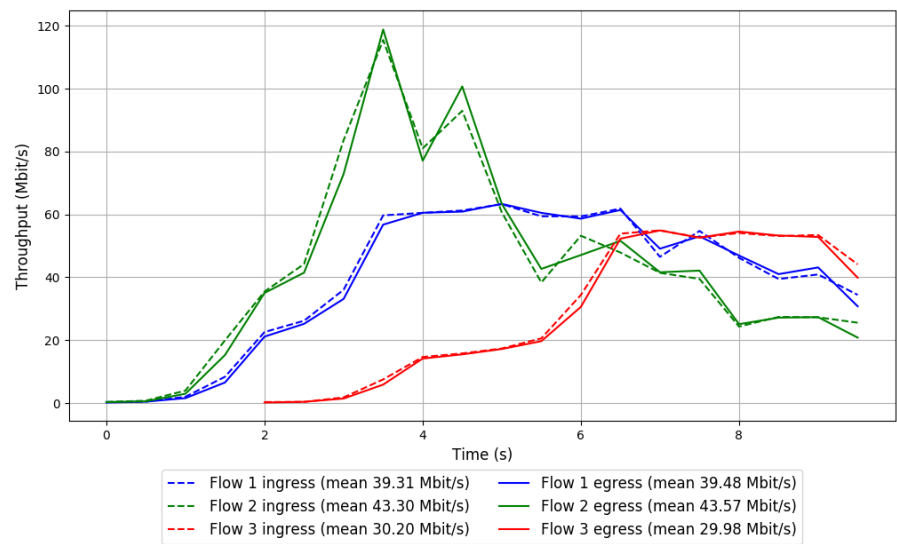
# Run 3: Report of Copa — Data Link





49

```
Run 4: Statistics of Copa

Start at: 2017-08-31 13:11:06
End at: 2017-08-31 13:11:36


# Below is generated by plot.py at 2017-08-31 18:07:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.21 Mbit/s
95th percentile per-packet one-way delay: 88.854 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 52.65 Mbit/s
95th percentile per-packet one-way delay: 88.859 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 43.55 Mbit/s
95th percentile per-packet one-way delay: 88.665 ms
Loss rate: 1.69%
-- Flow 3:
Average throughput: 10.39 Mbit/s
95th percentile per-packet one-way delay: 88.986 ms
Loss rate: 0.36%
```
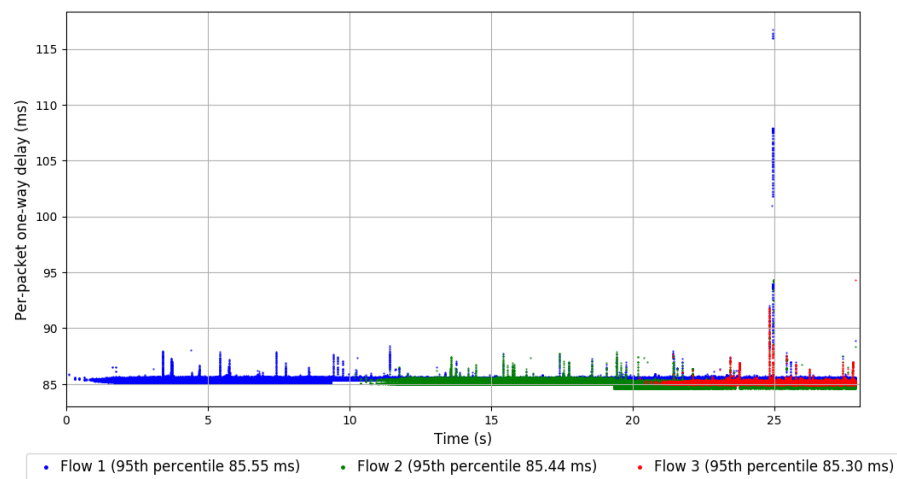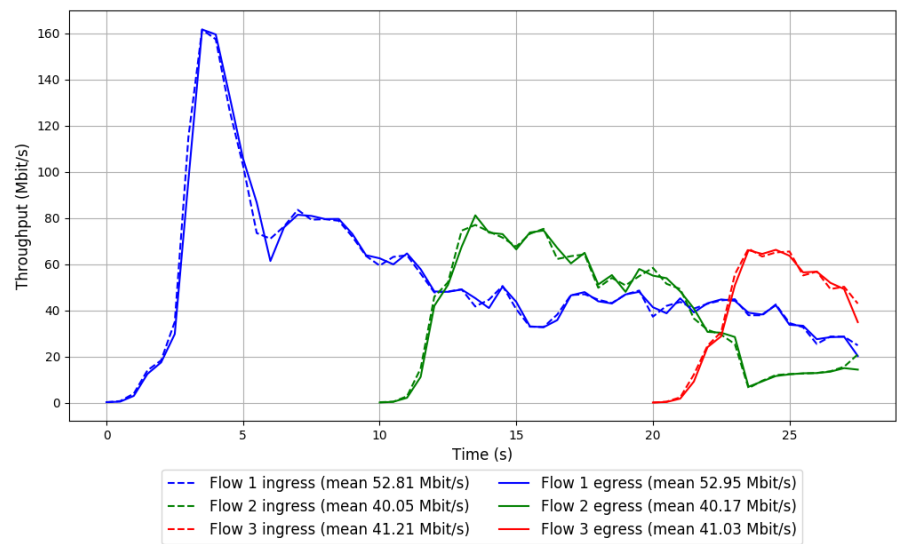
Run 4: Report of Copa — Data Link

Run 5: Statistics of Copa

Start at: 2017-08-31 13:26:12
End at: 2017-08-31 13:26:42

Run 5: Report of Copa — Data Link



Flow 1 ingress (mean 39.31 Mbit/s)     Flow 1 egress (mean 39.48 Mbit/s)
Flow 2 ingress (mean 43.30 Mbit/s)     Flow 2 egress (mean 43.57 Mbit/s)
Flow 3 ingress (mean 30.20 Mbit/s)     Flow 3 egress (mean 29.98 Mbit/s)



Flow 1 (95th percentile 86.55 ms)     Flow 2 (95th percentile 86.65 ms)     Flow 3 (95th percentile 86.49 ms)

```
Run 6: Statistics of Copa

Start at: 2017-08-31 13:40:03
End at: 2017-08-31 13:40:33


# Below is generated by plot.py at 2017-08-31 18:07:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.76 Mbit/s
95th percentile per-packet one-way delay: 85.531 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 52.95 Mbit/s
95th percentile per-packet one-way delay: 85.550 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 40.17 Mbit/s
95th percentile per-packet one-way delay: 85.438 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 41.03 Mbit/s
95th percentile per-packet one-way delay: 85.297 ms
Loss rate: 2.55%
```
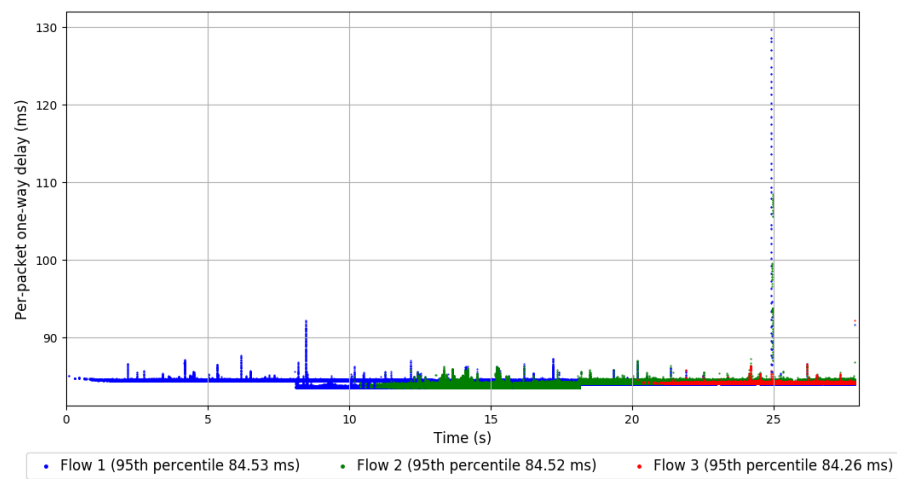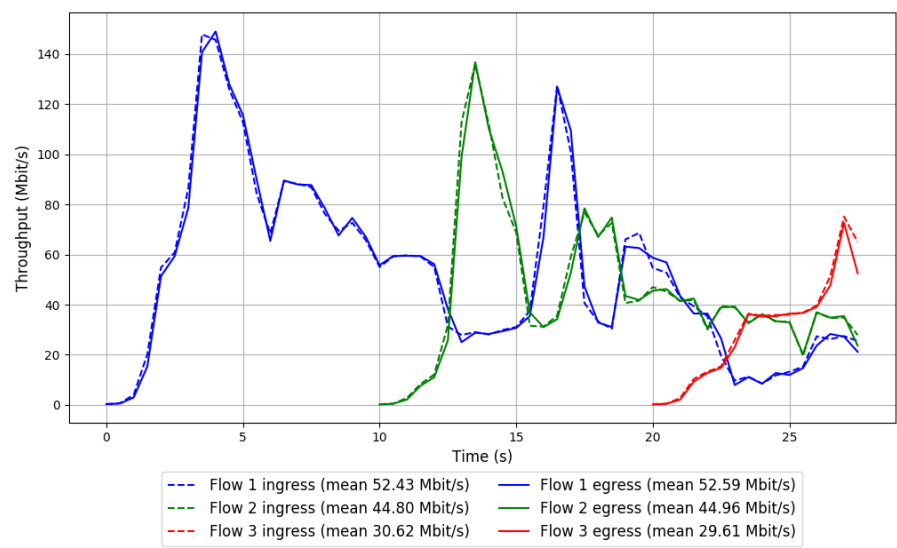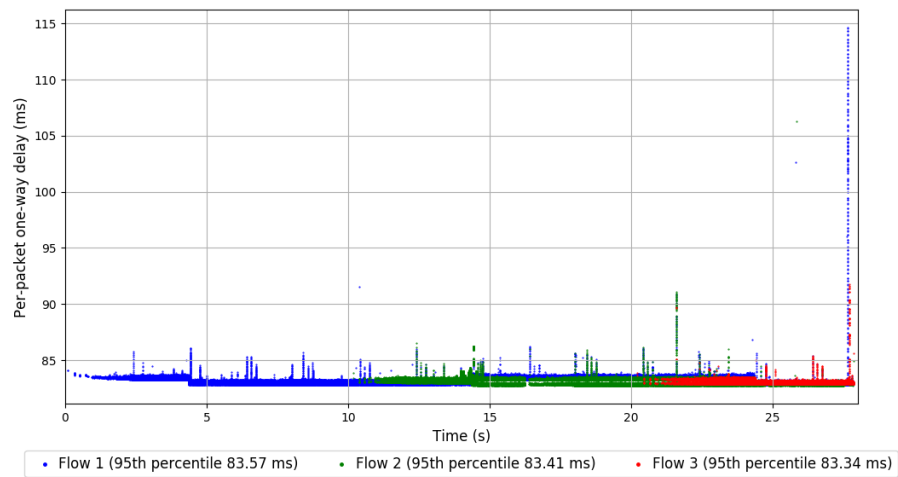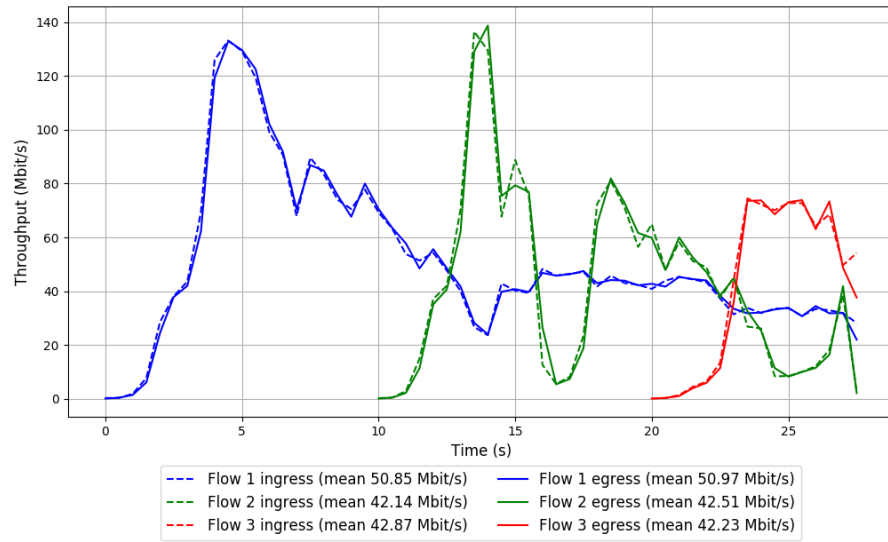
Run 6: Report of Copa — Data Link



Flow 1 ingress (mean 52.81 Mbit/s) --- Flow 1 egress (mean 52.95 Mbit/s)
Flow 2 ingress (mean 40.05 Mbit/s) --- Flow 2 egress (mean 40.17 Mbit/s)
Flow 3 ingress (mean 41.21 Mbit/s) --- Flow 3 egress (mean 41.03 Mbit/s)



Flow 1 (95th percentile 85.55 ms)   Flow 2 (95th percentile 85.44 ms)   Flow 3 (95th percentile 85.30 ms)

55

```
Run 7: Statistics of Copa

Start at: 2017-08-31 13:54:14
End at: 2017-08-31 13:54:44


# Below is generated by plot.py at 2017-08-31 18:07:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.36 Mbit/s
95th percentile per-packet one-way delay: 84.525 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 52.59 Mbit/s
95th percentile per-packet one-way delay: 84.532 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 44.96 Mbit/s
95th percentile per-packet one-way delay: 84.522 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 29.61 Mbit/s
95th percentile per-packet one-way delay: 84.257 ms
Loss rate: 5.35%
```
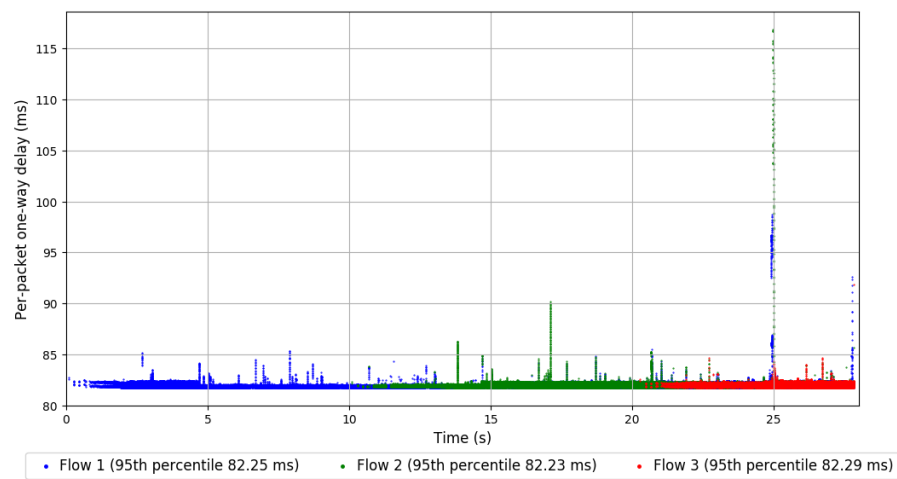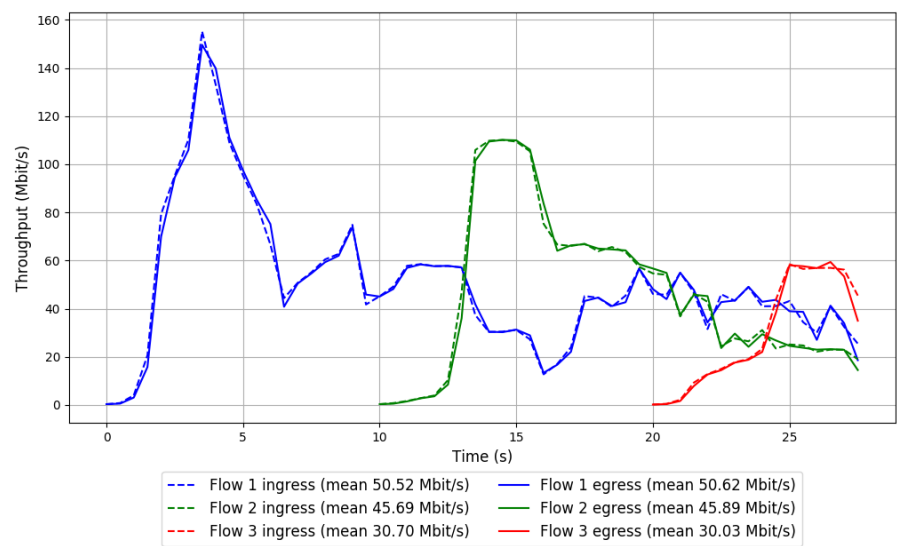
Run 7: Report of Copa — Data Link





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```
Run 8: Statistics of Copa

Start at: 2017-08-31 14:09:08
End at: 2017-08-31 14:09:38


# Below is generated by plot.py at 2017-08-31 18:08:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.62 Mbit/s
95th percentile per-packet one-way delay: 83.528 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 50.97 Mbit/s
95th percentile per-packet one-way delay: 83.567 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 42.51 Mbit/s
95th percentile per-packet one-way delay: 83.409 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 42.23 Mbit/s
95th percentile per-packet one-way delay: 83.343 ms
Loss rate: 3.72%
```
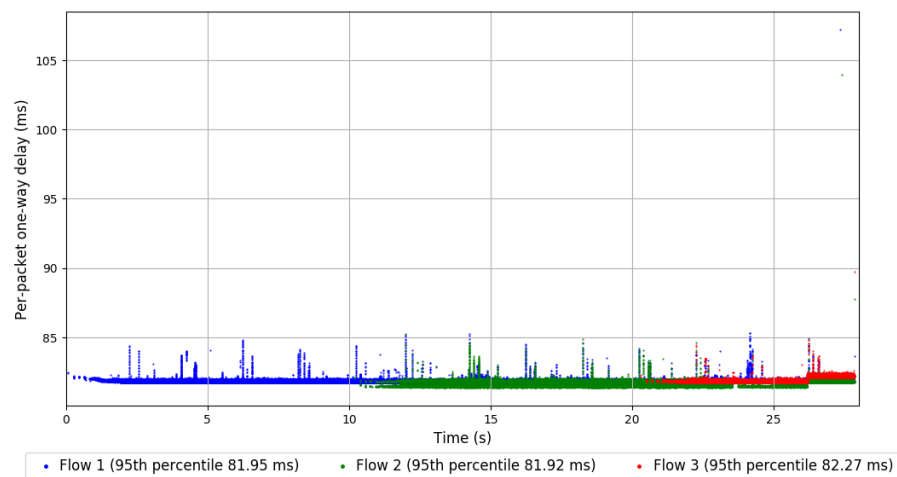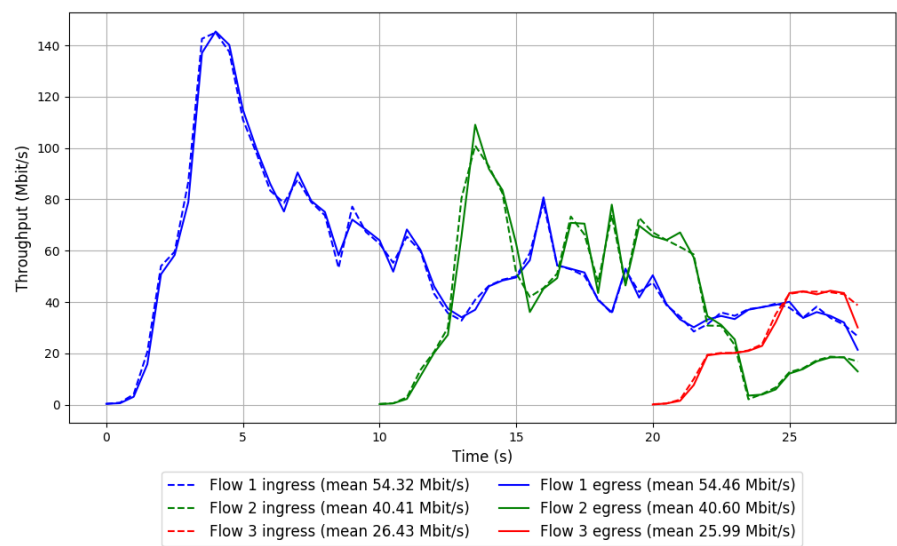
Run 8: Report of Copa — Data Link



Flow 1 ingress (mean 50.85 Mbit/s) — Flow 1 egress (mean 50.97 Mbit/s)
Flow 2 ingress (mean 42.14 Mbit/s) — Flow 2 egress (mean 42.51 Mbit/s)
Flow 3 ingress (mean 42.87 Mbit/s) — Flow 3 egress (mean 42.23 Mbit/s)



Flow 1 (95th percentile 83.57 ms) • Flow 2 (95th percentile 83.41 ms) • Flow 3 (95th percentile 83.34 ms)

```
Run 9: Statistics of Copa

Start at: 2017-08-31 14:24:18
End at: 2017-08-31 14:24:48

# Below is generated by plot.py at 2017-08-31 18:08:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.10 Mbit/s
95th percentile per-packet one-way delay: 82.245 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 50.62 Mbit/s
95th percentile per-packet one-way delay: 82.245 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 45.89 Mbit/s
95th percentile per-packet one-way delay: 82.229 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 30.03 Mbit/s
95th percentile per-packet one-way delay: 82.286 ms
Loss rate: 4.26%
```
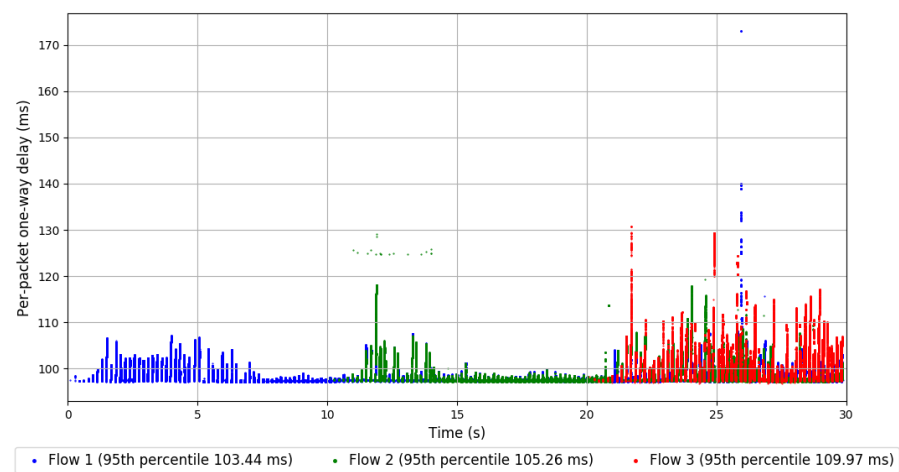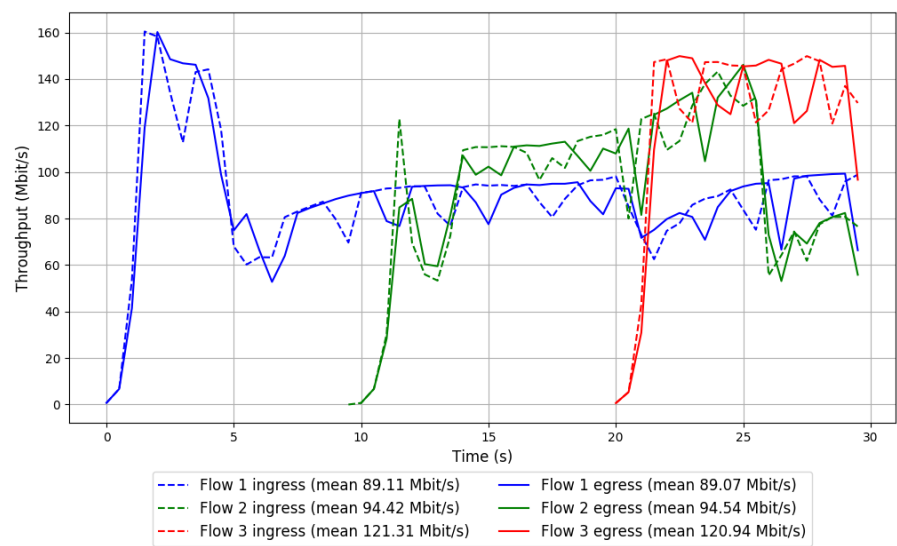
Run 9: Report of Copa — Data Link



Flow 1 ingress (mean 50.52 Mbit/s) --- Flow 1 egress (mean 50.62 Mbit/s)
Flow 2 ingress (mean 45.69 Mbit/s) --- Flow 2 egress (mean 45.89 Mbit/s)
Flow 3 ingress (mean 30.70 Mbit/s) --- Flow 3 egress (mean 30.03 Mbit/s)



Flow 1 (95th percentile 82.25 ms)    Flow 2 (95th percentile 82.23 ms)    Flow 3 (95th percentile 82.29 ms)

```
Run 10: Statistics of Copa

Start at: 2017-08-31 14:38:46
End at: 2017-08-31 14:39:16


# Below is generated by plot.py at 2017-08-31 18:08:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.37 Mbit/s
95th percentile per-packet one-way delay: 82.117 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 54.46 Mbit/s
95th percentile per-packet one-way delay: 81.950 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 40.60 Mbit/s
95th percentile per-packet one-way delay: 81.918 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 25.99 Mbit/s
95th percentile per-packet one-way delay: 82.271 ms
Loss rate: 3.79%
```
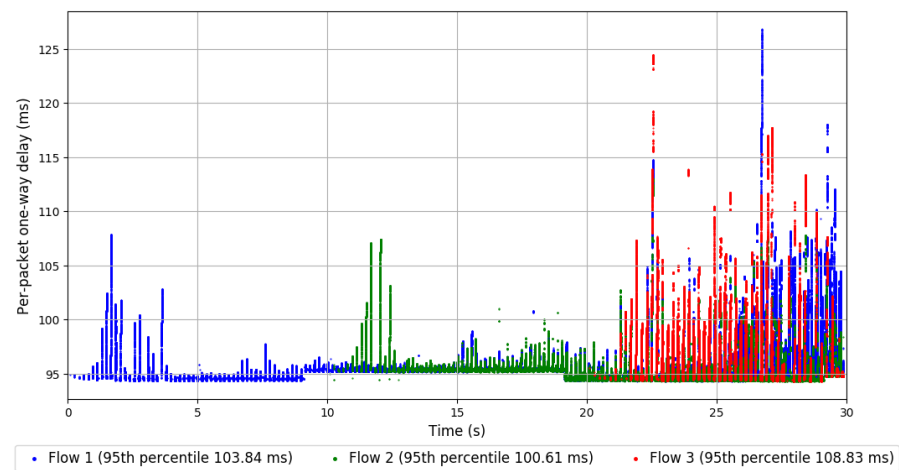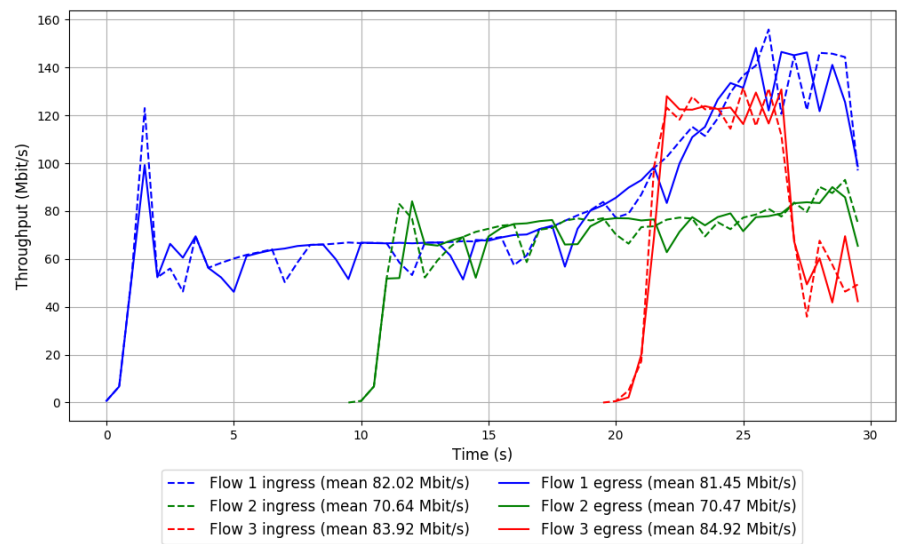
## Run 10: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2017-08-31 12:23:44
End at: 2017-08-31 12:24:14


# Below is generated by plot.py at 2017-08-31 18:08:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 191.36 Mbit/s
95th percentile per-packet one-way delay: 105.703 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 89.07 Mbit/s
95th percentile per-packet one-way delay: 103.442 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 94.54 Mbit/s
95th percentile per-packet one-way delay: 105.259 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 120.94 Mbit/s
95th percentile per-packet one-way delay: 109.974 ms
Loss rate: 2.02%
```
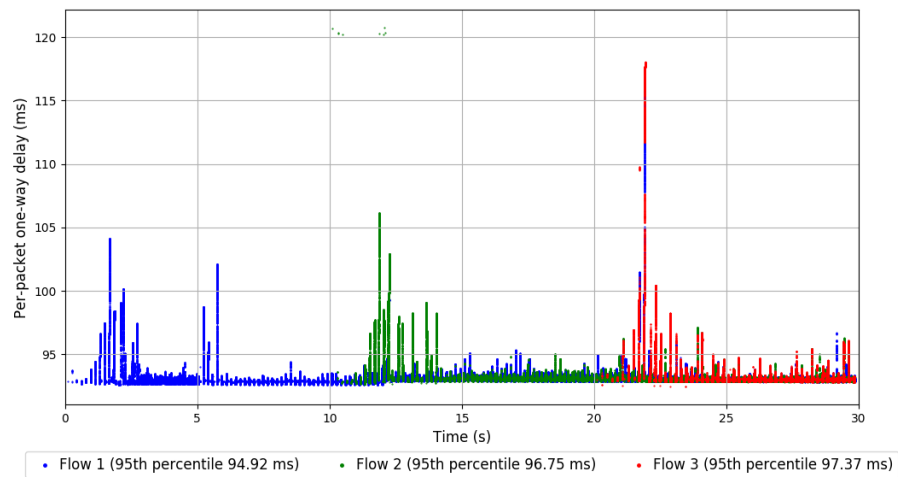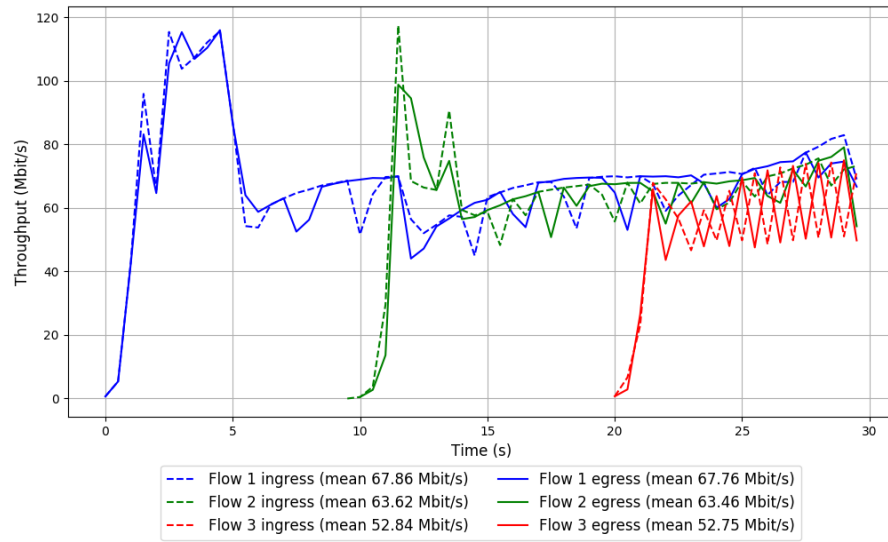
Run 1: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 89.11 Mbit/s)        Flow 1 egress (mean 89.07 Mbit/s)
Flow 2 ingress (mean 94.42 Mbit/s)        Flow 2 egress (mean 94.54 Mbit/s)
Flow 3 ingress (mean 121.31 Mbit/s)       Flow 3 egress (mean 120.94 Mbit/s)



Flow 1 (95th percentile 103.44 ms)    Flow 2 (95th percentile 105.26 ms)    Flow 3 (95th percentile 109.97 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2017-08-31 12:38:05
End at: 2017-08-31 12:38:35


# Below is generated by plot.py at 2017-08-31 18:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 156.13 Mbit/s
95th percentile per-packet one-way delay: 104.167 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 81.45 Mbit/s
95th percentile per-packet one-way delay: 103.838 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 70.47 Mbit/s
95th percentile per-packet one-way delay: 100.609 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 84.92 Mbit/s
95th percentile per-packet one-way delay: 108.834 ms
Loss rate: 0.42%
```
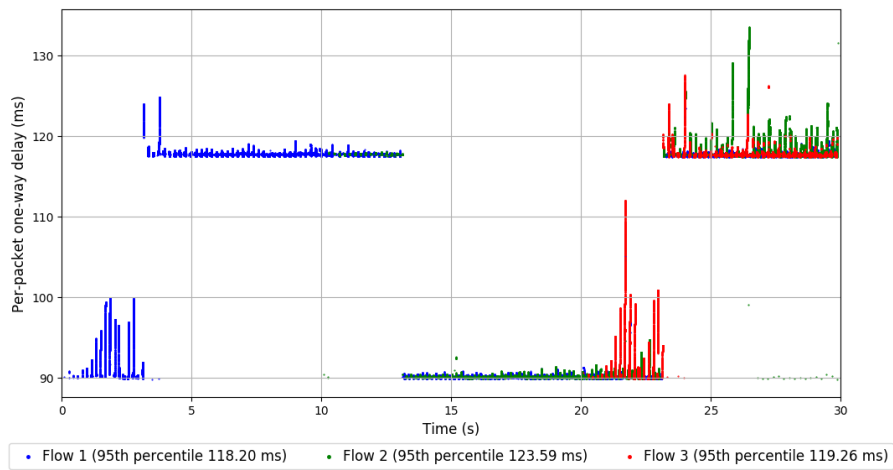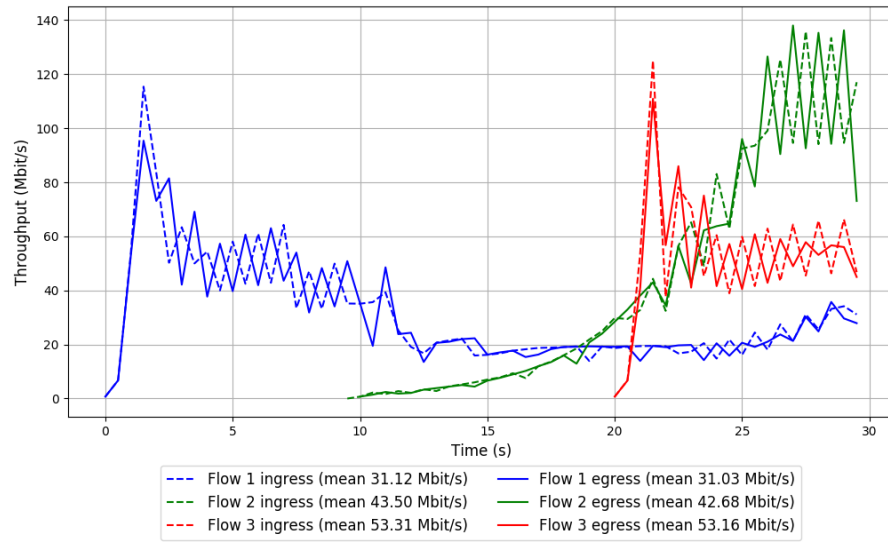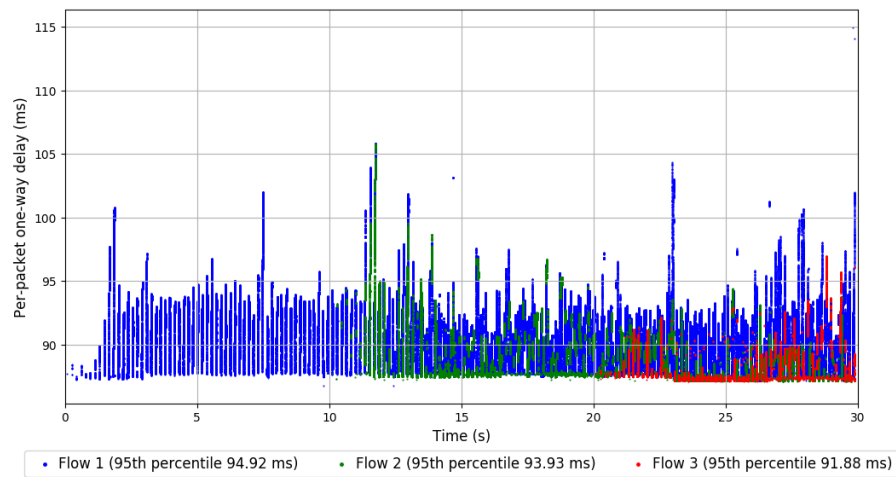
## Run 2: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 82.02 Mbit/s)    Flow 1 egress (mean 81.45 Mbit/s)
Flow 2 ingress (mean 70.64 Mbit/s)    Flow 2 egress (mean 70.47 Mbit/s)
Flow 3 ingress (mean 83.92 Mbit/s)    Flow 3 egress (mean 84.92 Mbit/s)



Flow 1 (95th percentile 103.84 ms)    Flow 2 (95th percentile 100.61 ms)    Flow 3 (95th percentile 108.83 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2017-08-31 12:51:32
End at: 2017-08-31 12:52:02


# Below is generated by plot.py at 2017-08-31 18:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 127.13 Mbit/s
95th percentile per-packet one-way delay: 96.242 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 67.76 Mbit/s
95th percentile per-packet one-way delay: 94.916 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 63.46 Mbit/s
95th percentile per-packet one-way delay: 96.752 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 52.75 Mbit/s
95th percentile per-packet one-way delay: 97.374 ms
Loss rate: 2.10%
```
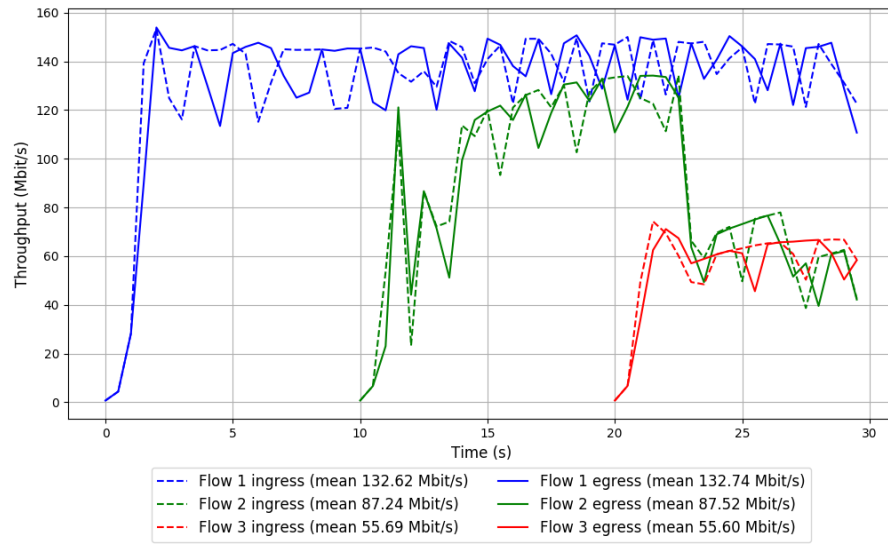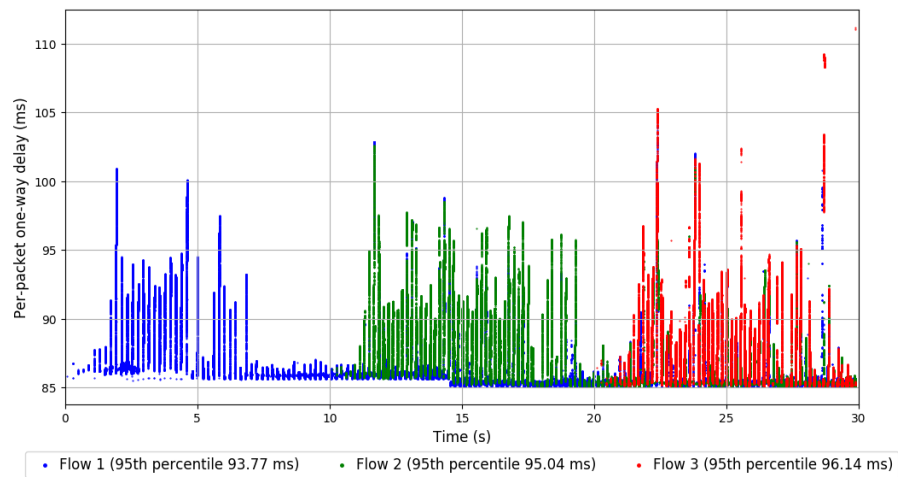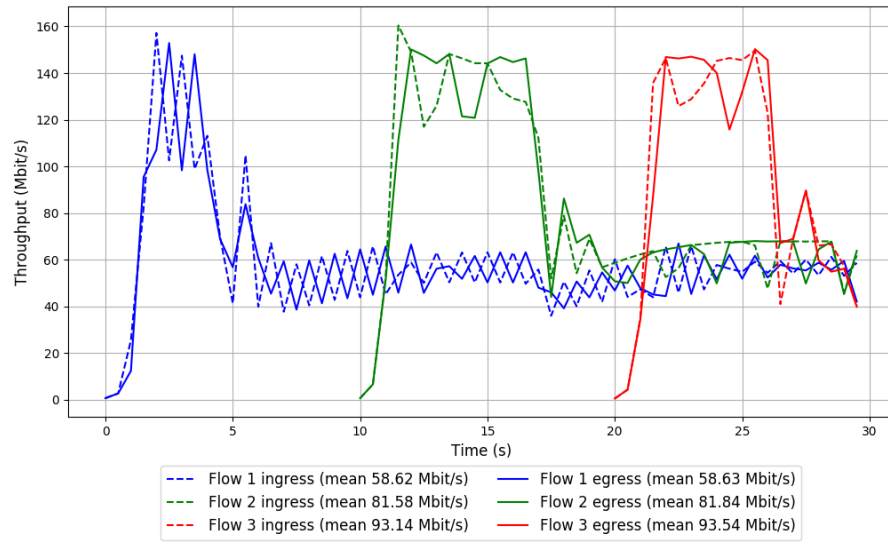
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2017-08-31 13:04:11
End at: 2017-08-31 13:04:41


# Below is generated by plot.py at 2017-08-31 18:09:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.79 Mbit/s
95th percentile per-packet one-way delay: 120.545 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 31.03 Mbit/s
95th percentile per-packet one-way delay: 118.202 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 42.68 Mbit/s
95th percentile per-packet one-way delay: 123.588 ms
Loss rate: 2.66%
-- Flow 3:
Average throughput: 53.16 Mbit/s
95th percentile per-packet one-way delay: 119.259 ms
Loss rate: 2.15%
```
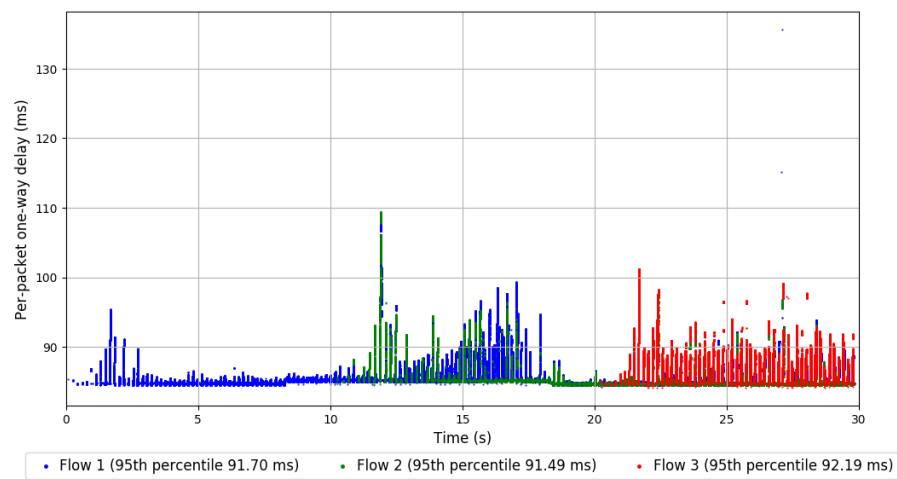
Run 4: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 31.12 Mbit/s) --- Flow 1 egress (mean 31.03 Mbit/s)
Flow 2 ingress (mean 43.50 Mbit/s) --- Flow 2 egress (mean 42.68 Mbit/s)
Flow 3 ingress (mean 53.31 Mbit/s) --- Flow 3 egress (mean 53.16 Mbit/s)



Flow 1 (95th percentile 118.20 ms)   Flow 2 (95th percentile 123.59 ms)   Flow 3 (95th percentile 119.26 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2017-08-31 13:19:01
End at: 2017-08-31 13:19:31


# Below is generated by plot.py at 2017-08-31 18:09:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 209.07 Mbit/s
95th percentile per-packet one-way delay: 94.625 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 132.74 Mbit/s
95th percentile per-packet one-way delay: 94.923 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 87.52 Mbit/s
95th percentile per-packet one-way delay: 93.930 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 55.60 Mbit/s
95th percentile per-packet one-way delay: 91.878 ms
Loss rate: 2.00%
```
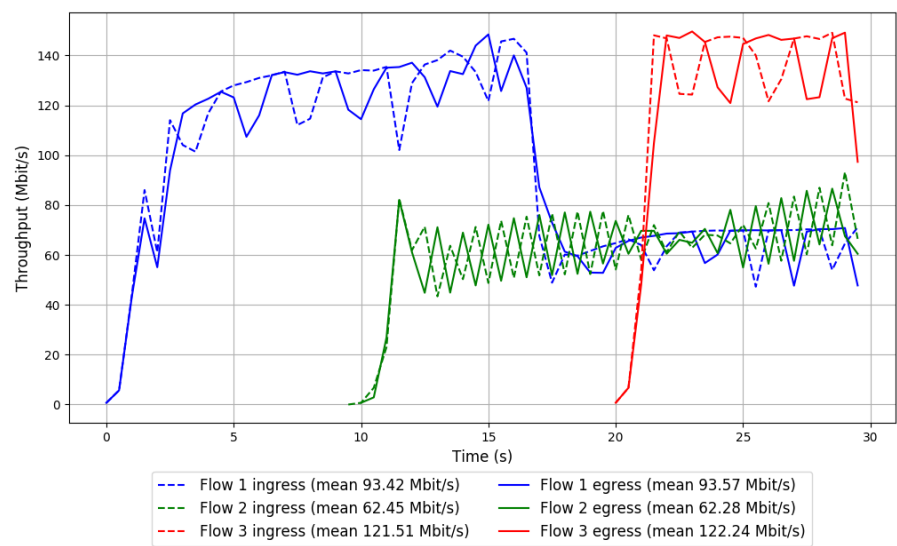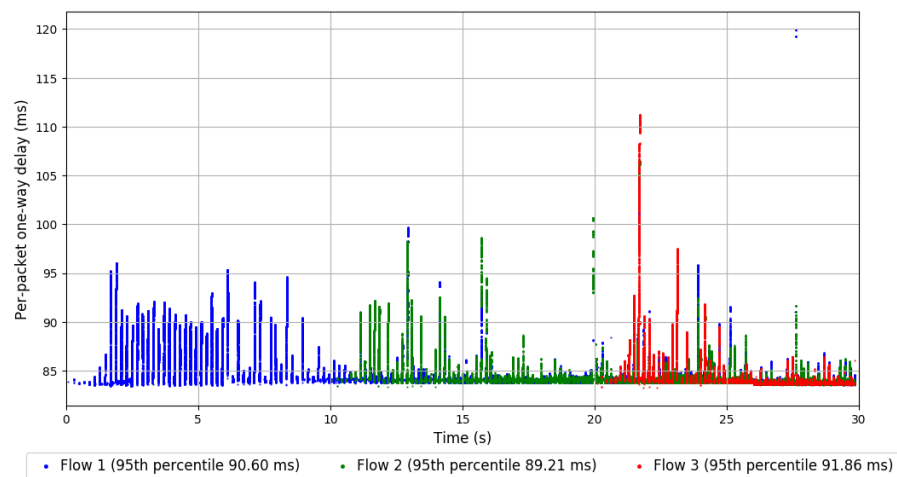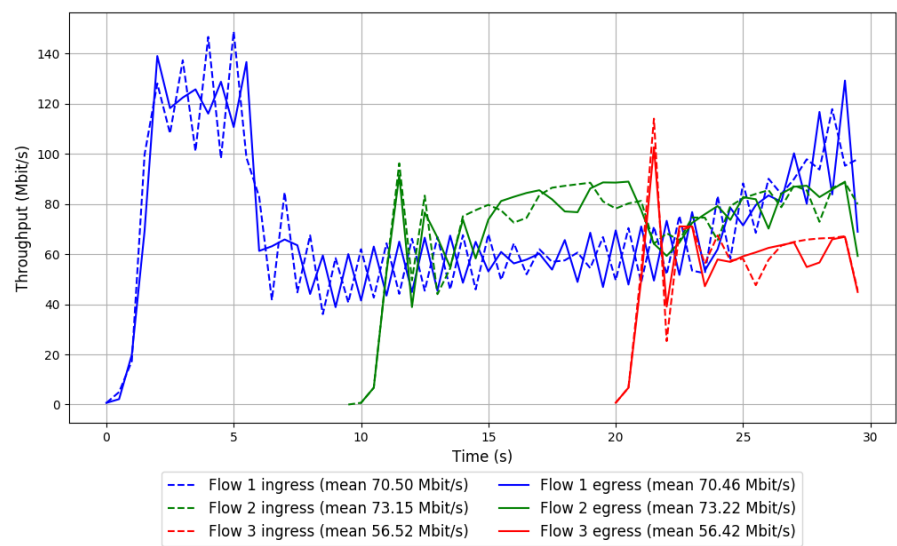
Run 5: Report of TCP Cubic — Data Link

```
Run 6: Statistics of TCP Cubic

Start at: 2017-08-31 13:33:50
End at: 2017-08-31 13:34:20


# Below is generated by plot.py at 2017-08-31 18:09:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 143.56 Mbit/s
95th percentile per-packet one-way delay: 94.627 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 58.63 Mbit/s
95th percentile per-packet one-way delay: 93.774 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 81.84 Mbit/s
95th percentile per-packet one-way delay: 95.042 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 93.54 Mbit/s
95th percentile per-packet one-way delay: 96.137 ms
Loss rate: 1.07%
```
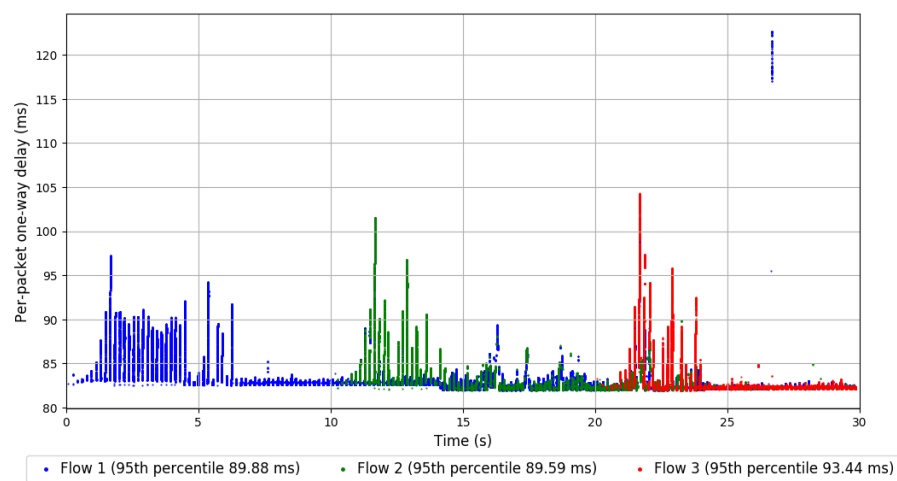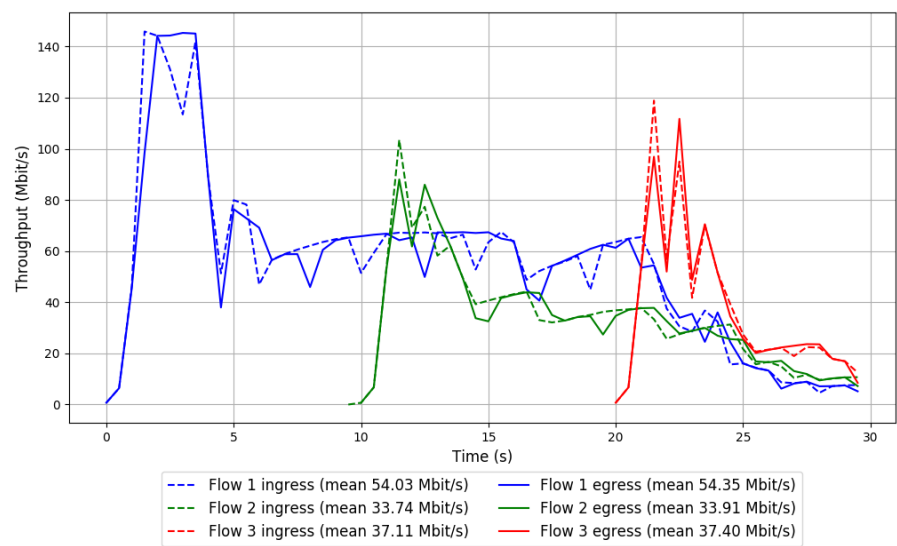
# Run 6: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 58.62 Mbit/s)     Flow 1 egress (mean 58.63 Mbit/s)
Flow 2 ingress (mean 81.58 Mbit/s)     Flow 2 egress (mean 81.84 Mbit/s)
Flow 3 ingress (mean 93.14 Mbit/s)     Flow 3 egress (mean 93.54 Mbit/s)



Flow 1 (95th percentile 93.77 ms)     Flow 2 (95th percentile 95.04 ms)     Flow 3 (95th percentile 96.14 ms)

```
Run 7: Statistics of TCP Cubic

Start at: 2017-08-31 13:46:56
End at: 2017-08-31 13:47:26


# Below is generated by plot.py at 2017-08-31 18:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 174.70 Mbit/s
95th percentile per-packet one-way delay: 91.784 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 93.57 Mbit/s
95th percentile per-packet one-way delay: 91.704 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 62.28 Mbit/s
95th percentile per-packet one-way delay: 91.494 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 122.24 Mbit/s
95th percentile per-packet one-way delay: 92.191 ms
Loss rate: 1.99%
```
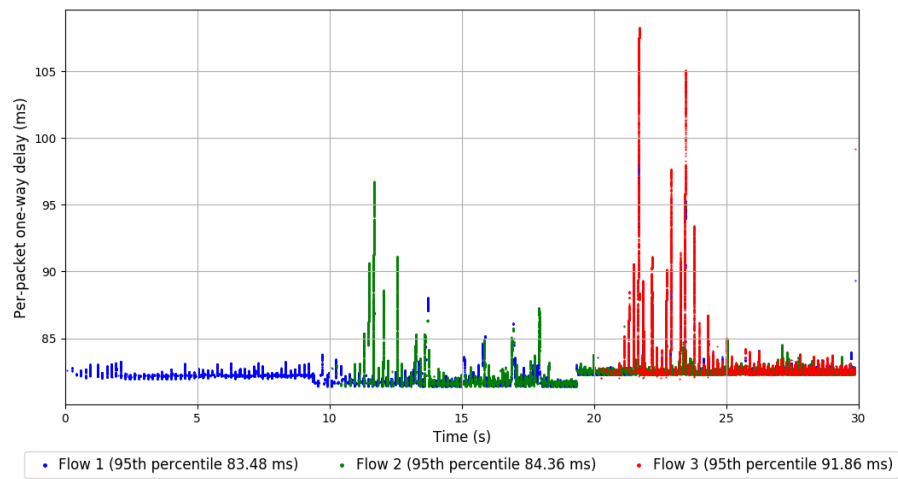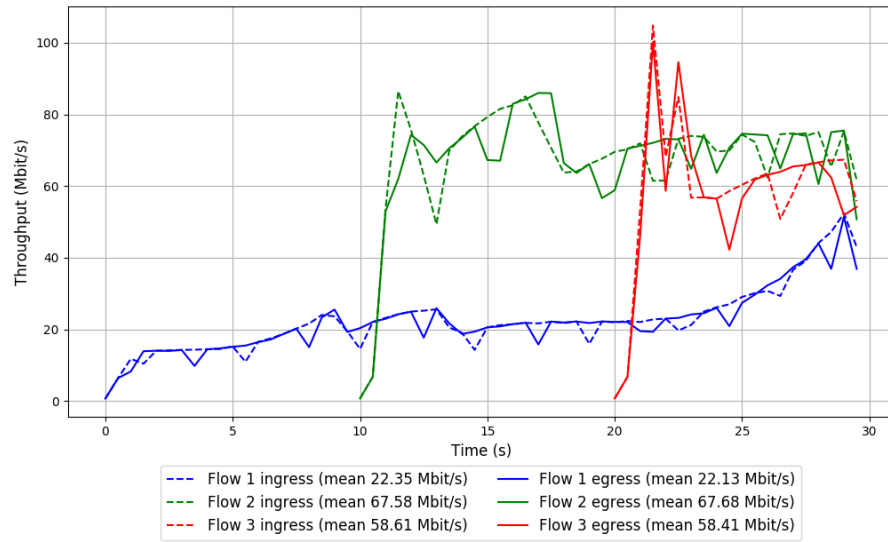
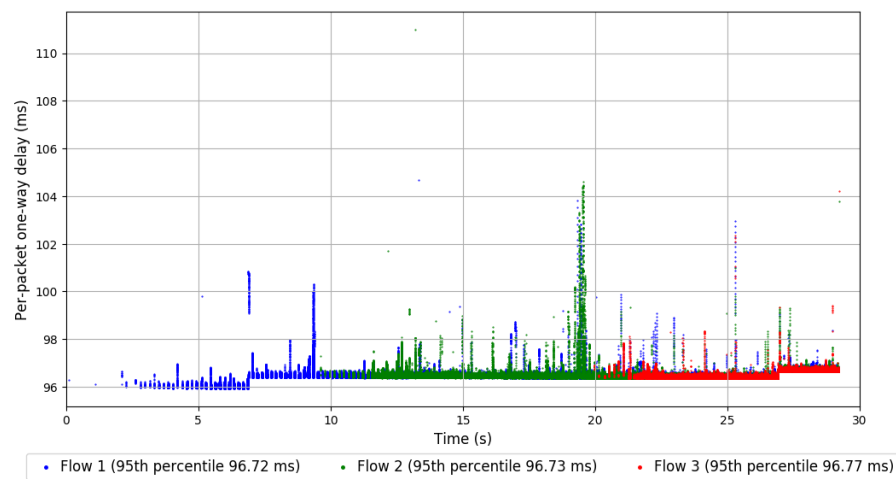Run 7: Report of TCP Cubic — Data Link

```
Run 8: Statistics of TCP Cubic

Start at: 2017-08-31 14:02:38
End at: 2017-08-31 14:03:08

# Below is generated by plot.py at 2017-08-31 18:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 137.52 Mbit/s
95th percentile per-packet one-way delay: 90.367 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 70.46 Mbit/s
95th percentile per-packet one-way delay: 90.596 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 73.22 Mbit/s
95th percentile per-packet one-way delay: 89.206 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 56.42 Mbit/s
95th percentile per-packet one-way delay: 91.861 ms
Loss rate: 2.00%
```
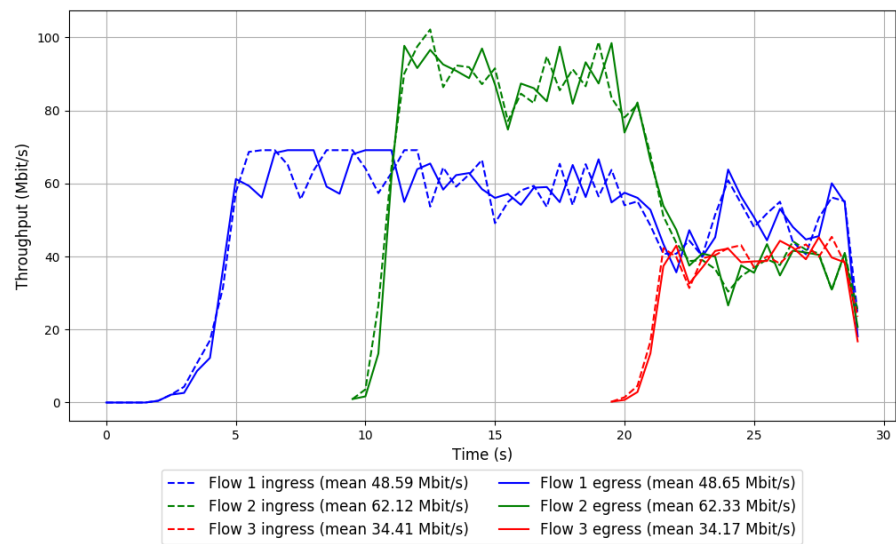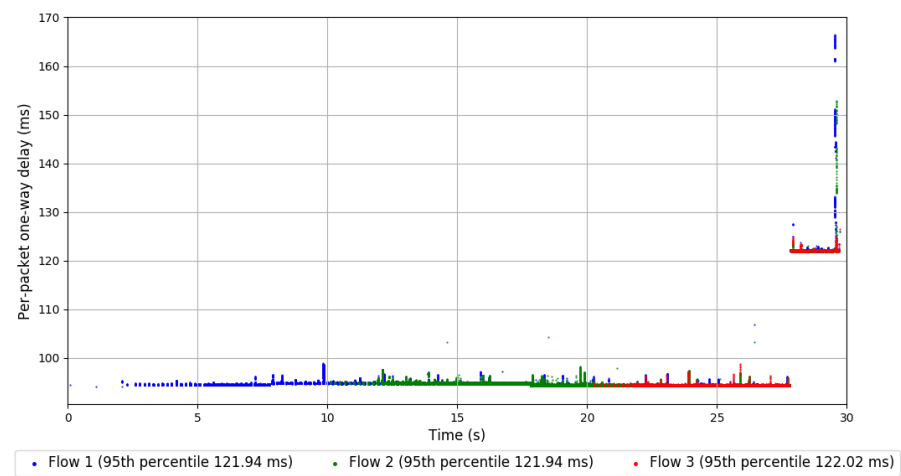
Run 8: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 70.50 Mbit/s) --- Flow 1 egress (mean 70.46 Mbit/s)
Flow 2 ingress (mean 73.15 Mbit/s) --- Flow 2 egress (mean 73.22 Mbit/s)
Flow 3 ingress (mean 56.52 Mbit/s) --- Flow 3 egress (mean 56.42 Mbit/s)



Flow 1 (95th percentile 90.60 ms)   Flow 2 (95th percentile 89.21 ms)   Flow 3 (95th percentile 91.86 ms)

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```
Run 9: Statistics of TCP Cubic

Start at: 2017-08-31 14:17:00
End at: 2017-08-31 14:17:30


# Below is generated by plot.py at 2017-08-31 18:10:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.05 Mbit/s
95th percentile per-packet one-way delay: 90.063 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 54.35 Mbit/s
95th percentile per-packet one-way delay: 89.882 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 33.91 Mbit/s
95th percentile per-packet one-way delay: 89.589 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 37.40 Mbit/s
95th percentile per-packet one-way delay: 93.437 ms
Loss rate: 0.97%
```
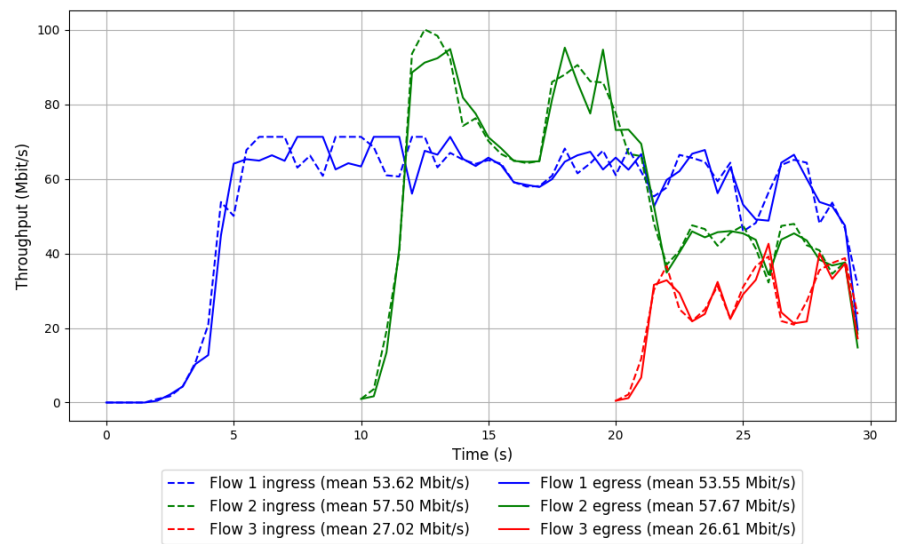
Run 9: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 54.03 Mbit/s) — Flow 1 egress (mean 54.35 Mbit/s)
Flow 2 ingress (mean 33.74 Mbit/s) — Flow 2 egress (mean 33.91 Mbit/s)
Flow 3 ingress (mean 37.11 Mbit/s) — Flow 3 egress (mean 37.40 Mbit/s)



Flow 1 (95th percentile 89.88 ms)   Flow 2 (95th percentile 89.59 ms)   Flow 3 (95th percentile 93.44 ms)

```
Run 10: Statistics of TCP Cubic

Start at: 2017-08-31 14:32:45
End at: 2017-08-31 14:33:15


# Below is generated by plot.py at 2017-08-31 18:10:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.15 Mbit/s
95th percentile per-packet one-way delay: 86.673 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 22.13 Mbit/s
95th percentile per-packet one-way delay: 83.485 ms
Loss rate: 1.54%
-- Flow 2:
Average throughput: 67.68 Mbit/s
95th percentile per-packet one-way delay: 84.359 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 58.41 Mbit/s
95th percentile per-packet one-way delay: 91.857 ms
Loss rate: 1.91%
```
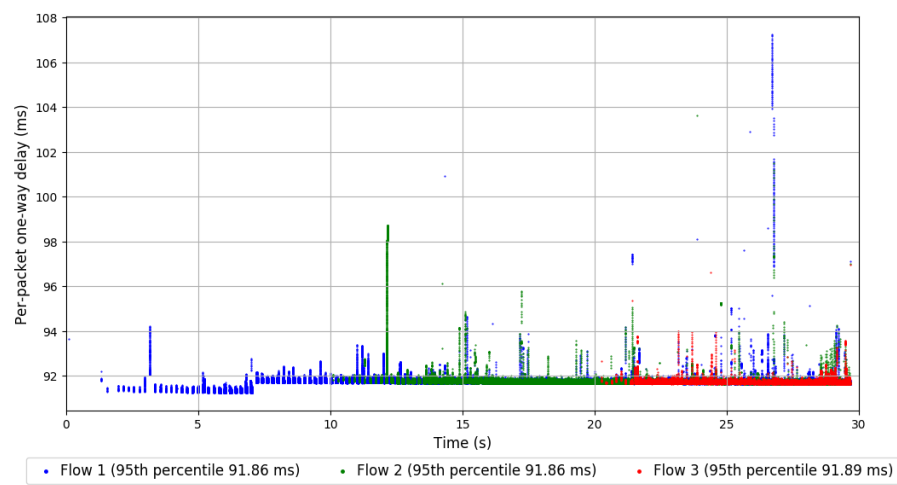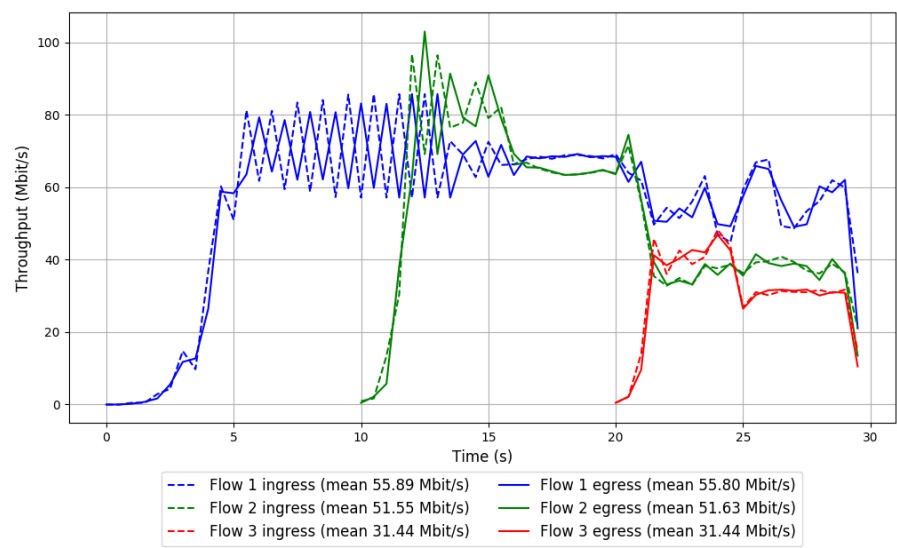
Run 10: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 22.35 Mbit/s) --- Flow 1 egress (mean 22.13 Mbit/s)
Flow 2 ingress (mean 67.58 Mbit/s) --- Flow 2 egress (mean 67.68 Mbit/s)
Flow 3 ingress (mean 58.61 Mbit/s) --- Flow 3 egress (mean 58.41 Mbit/s)



Flow 1 (95th percentile 83.48 ms)   Flow 2 (95th percentile 84.36 ms)   Flow 3 (95th percentile 91.86 ms)

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```
Run 1: Statistics of Indigo

Start at: 2017-08-31 12:28:07
End at: 2017-08-31 12:28:37

# Below is generated by plot.py at 2017-08-31 18:10:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 101.46 Mbit/s
95th percentile per-packet one-way delay: 96.734 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 48.65 Mbit/s
95th percentile per-packet one-way delay: 96.723 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 62.33 Mbit/s
95th percentile per-packet one-way delay: 96.729 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 34.17 Mbit/s
95th percentile per-packet one-way delay: 96.765 ms
Loss rate: 2.47%
```
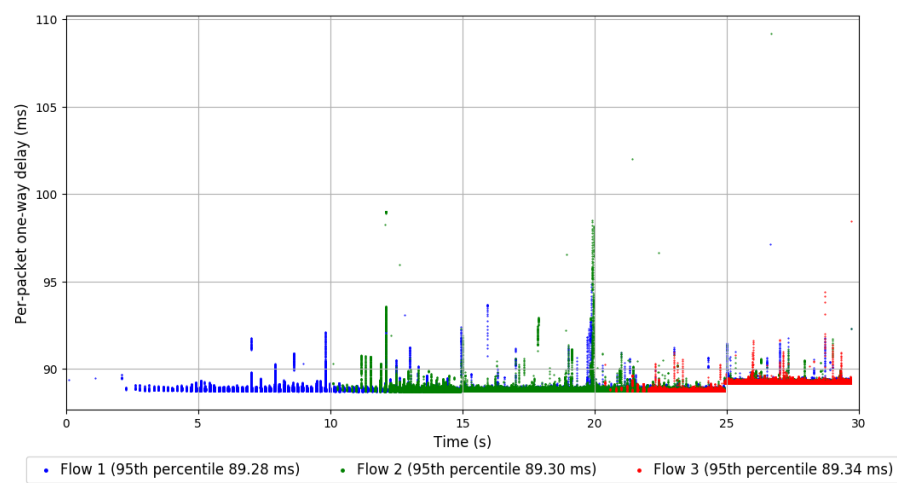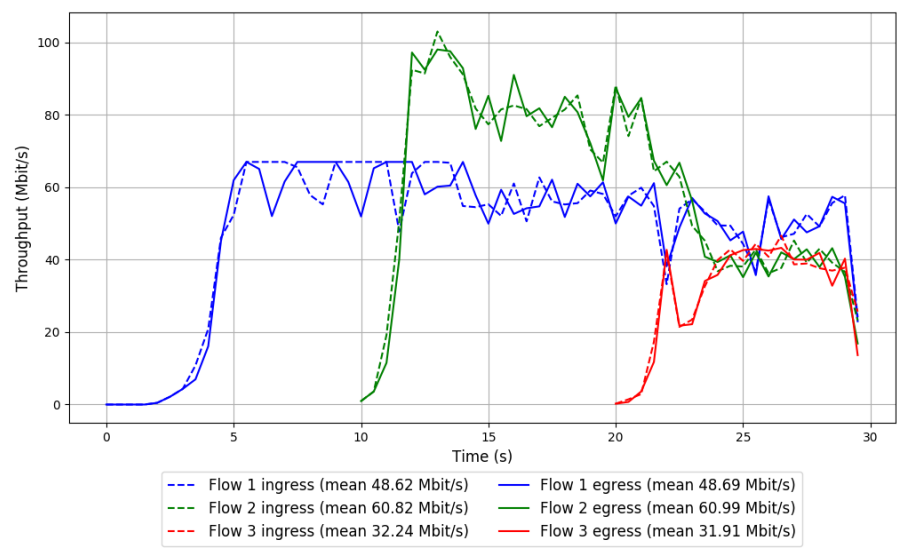
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2017-08-31 12:41:36
End at: 2017-08-31 12:42:06


# Below is generated by plot.py at 2017-08-31 18:10:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.18 Mbit/s
95th percentile per-packet one-way delay: 121.957 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 53.55 Mbit/s
95th percentile per-packet one-way delay: 121.940 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 57.67 Mbit/s
95th percentile per-packet one-way delay: 121.945 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 26.61 Mbit/s
95th percentile per-packet one-way delay: 122.023 ms
Loss rate: 3.27%
```
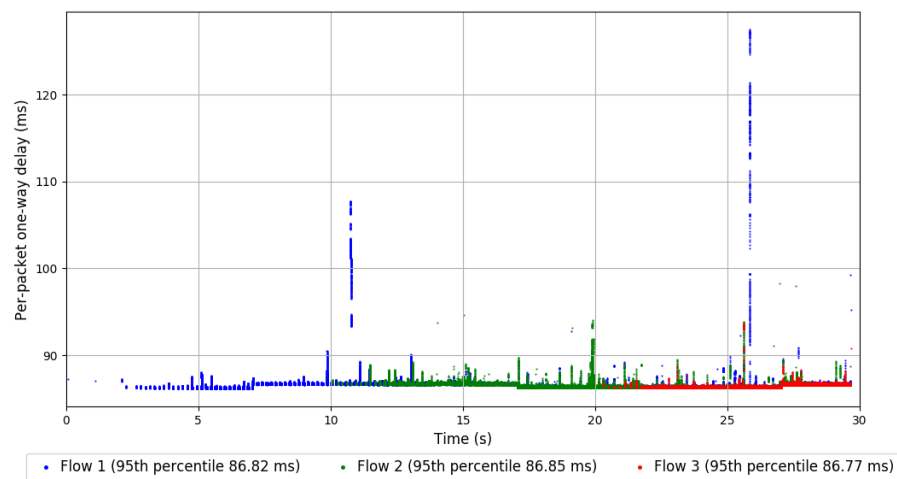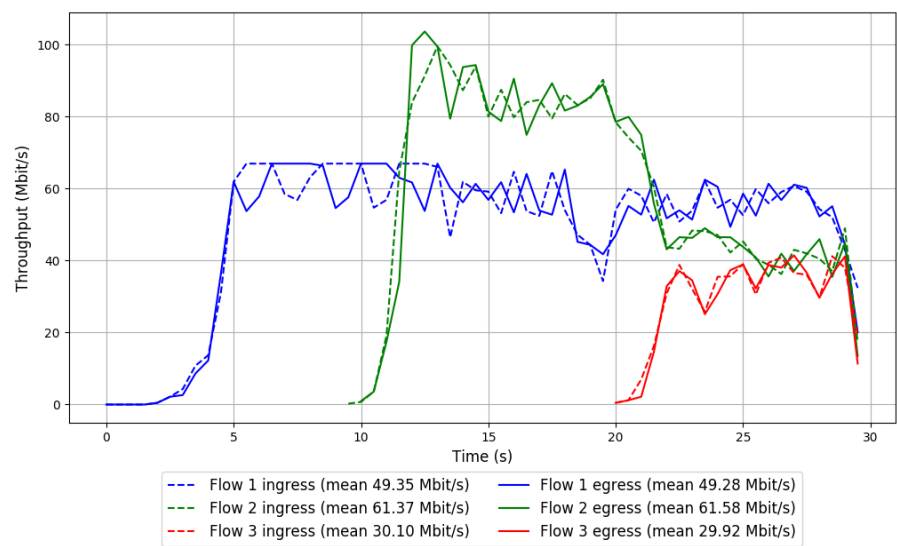
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2017-08-31 12:55:07
End at: 2017-08-31 12:55:37


# Below is generated by plot.py at 2017-08-31 18:10:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.97 Mbit/s
95th percentile per-packet one-way delay: 91.861 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 55.80 Mbit/s
95th percentile per-packet one-way delay: 91.858 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 51.63 Mbit/s
95th percentile per-packet one-way delay: 91.859 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 31.44 Mbit/s
95th percentile per-packet one-way delay: 91.886 ms
Loss rate: 1.82%
```
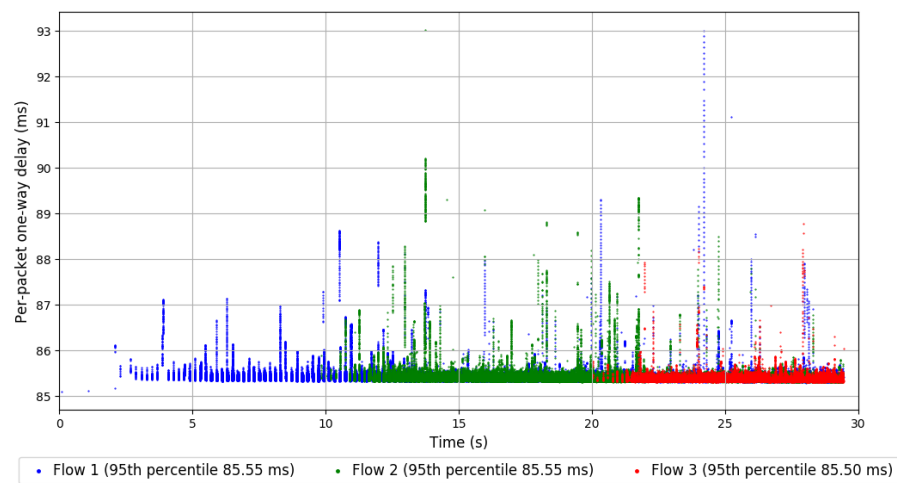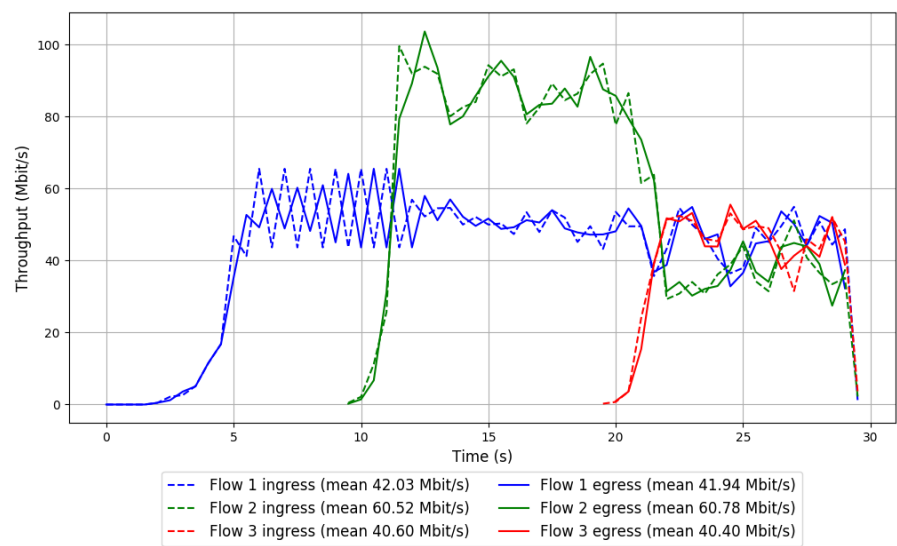
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2017-08-31 13:07:39
End at: 2017-08-31 13:08:09

# Below is generated by plot.py at 2017-08-31 18:11:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.05 Mbit/s
95th percentile per-packet one-way delay: 89.301 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 48.69 Mbit/s
95th percentile per-packet one-way delay: 89.285 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 60.99 Mbit/s
95th percentile per-packet one-way delay: 89.302 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 31.91 Mbit/s
95th percentile per-packet one-way delay: 89.339 ms
Loss rate: 2.80%
```
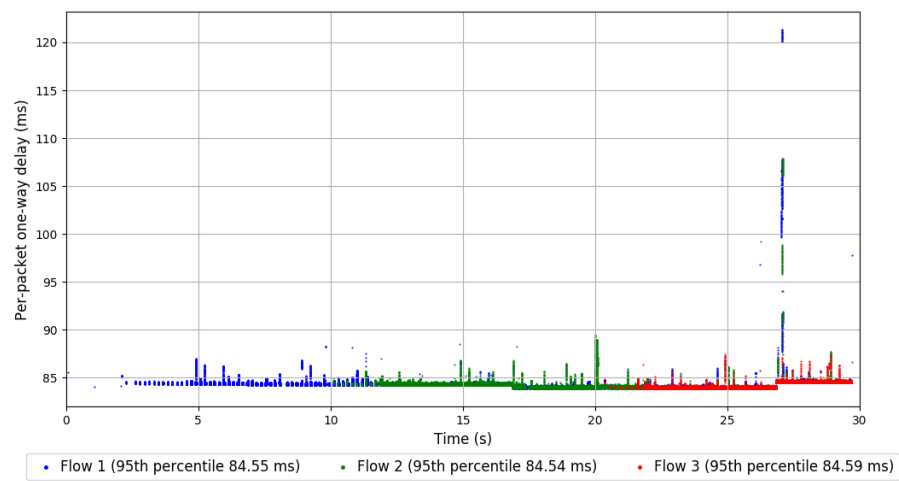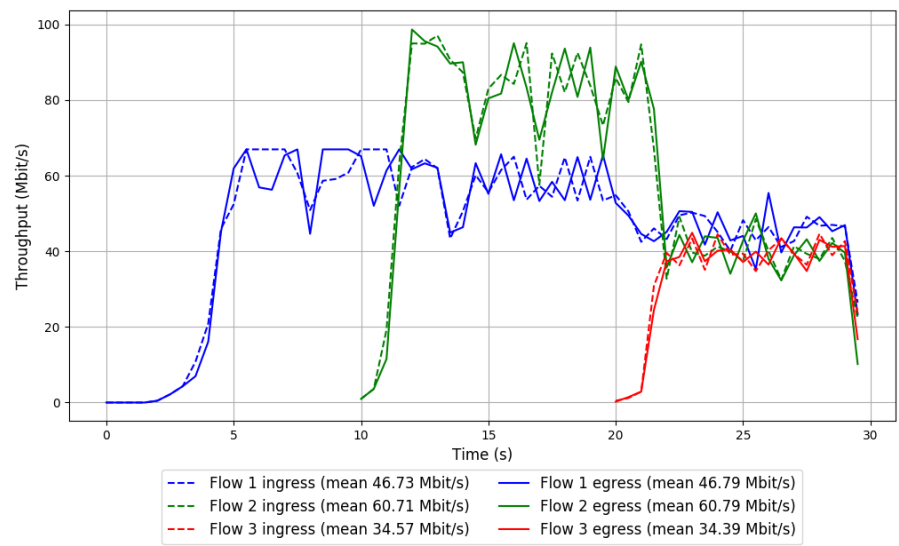
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2017-08-31 13:22:47
End at: 2017-08-31 13:23:17


# Below is generated by plot.py at 2017-08-31 18:11:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.53 Mbit/s
95th percentile per-packet one-way delay: 86.824 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 49.28 Mbit/s
95th percentile per-packet one-way delay: 86.819 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 61.58 Mbit/s
95th percentile per-packet one-way delay: 86.846 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 29.92 Mbit/s
95th percentile per-packet one-way delay: 86.770 ms
Loss rate: 2.35%
```
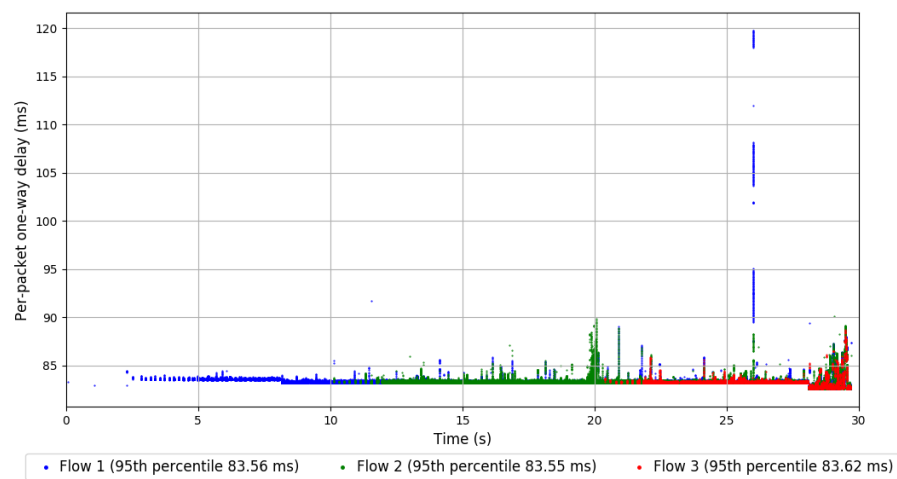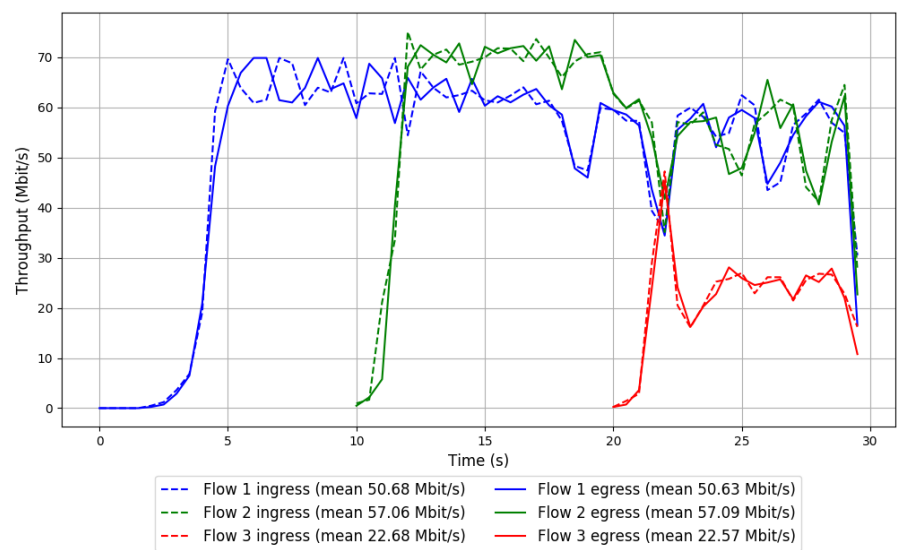
Run 5: Report of Indigo — Data Link

```
Run 6: Statistics of Indigo

Start at: 2017-08-31 13:37:14
End at: 2017-08-31 13:37:44

# Below is generated by plot.py at 2017-08-31 18:11:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.46 Mbit/s
95th percentile per-packet one-way delay: 85.542 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 41.94 Mbit/s
95th percentile per-packet one-way delay: 85.548 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 60.78 Mbit/s
95th percentile per-packet one-way delay: 85.553 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 40.40 Mbit/s
95th percentile per-packet one-way delay: 85.499 ms
Loss rate: 2.39%
```
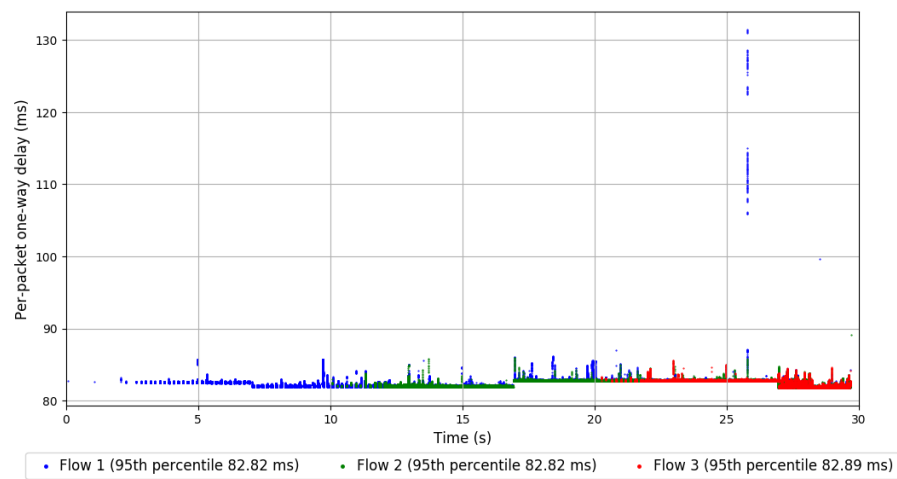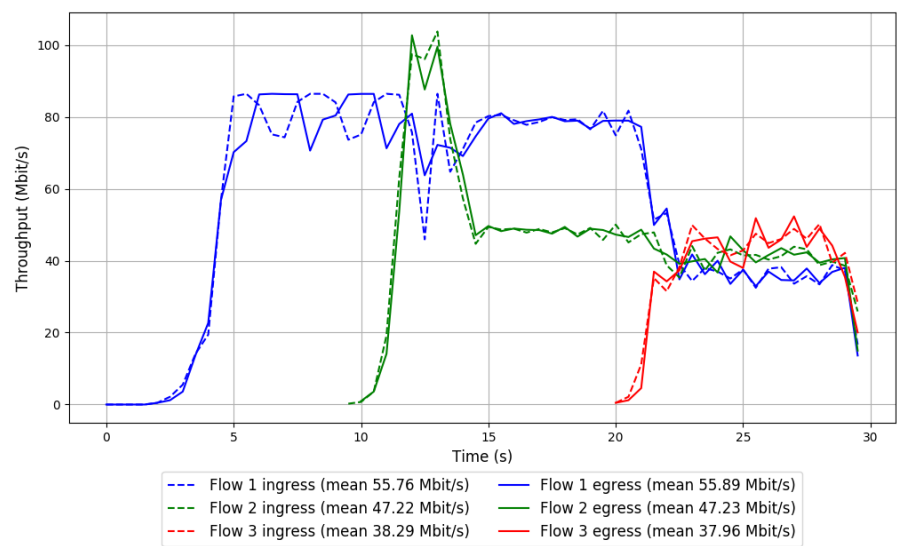
Run 6: Report of Indigo — Data Link

```
Run 7: Statistics of Indigo

Start at: 2017-08-31 13:50:37
End at: 2017-08-31 13:51:07


# Below is generated by plot.py at 2017-08-31 18:11:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.84 Mbit/s
95th percentile per-packet one-way delay: 84.555 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 46.79 Mbit/s
95th percentile per-packet one-way delay: 84.551 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 60.79 Mbit/s
95th percentile per-packet one-way delay: 84.543 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 34.39 Mbit/s
95th percentile per-packet one-way delay: 84.588 ms
Loss rate: 2.33%
```
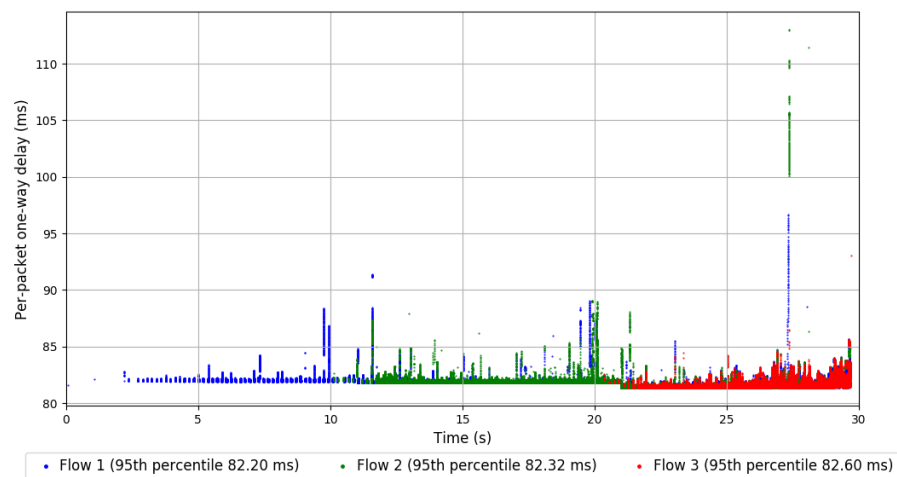
# Run 7: Report of Indigo — Data Link





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```
Run 8: Statistics of Indigo

Start at: 2017-08-31 14:06:26
End at: 2017-08-31 14:06:56


# Below is generated by plot.py at 2017-08-31 18:11:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.47 Mbit/s
95th percentile per-packet one-way delay: 83.565 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 50.63 Mbit/s
95th percentile per-packet one-way delay: 83.565 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 57.09 Mbit/s
95th percentile per-packet one-way delay: 83.549 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 22.57 Mbit/s
95th percentile per-packet one-way delay: 83.625 ms
Loss rate: 2.34%
```
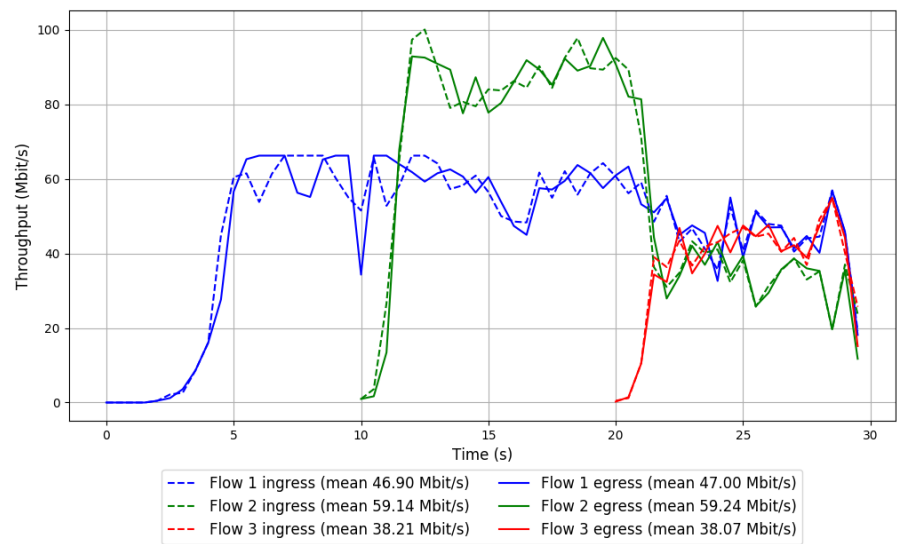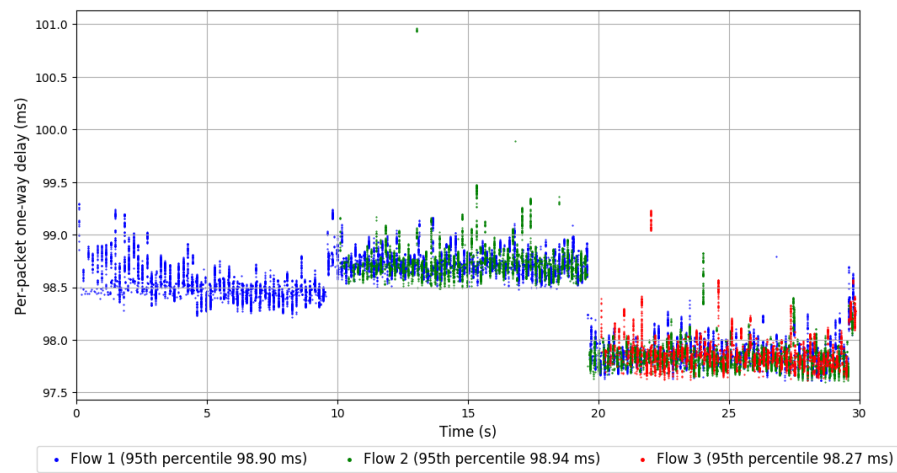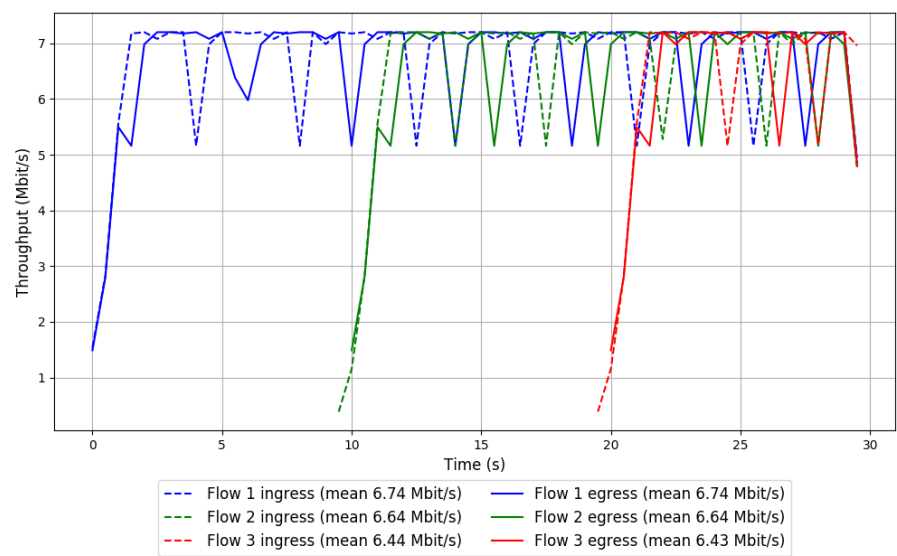
Run 8: Report of Indigo — Data Link

```
Run 9: Statistics of Indigo

Start at: 2017-08-31 14:20:47
End at: 2017-08-31 14:21:17

# Below is generated by plot.py at 2017-08-31 18:11:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.26 Mbit/s
95th percentile per-packet one-way delay: 82.829 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 55.89 Mbit/s
95th percentile per-packet one-way delay: 82.819 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 47.23 Mbit/s
95th percentile per-packet one-way delay: 82.822 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 37.96 Mbit/s
95th percentile per-packet one-way delay: 82.887 ms
Loss rate: 2.61%
```
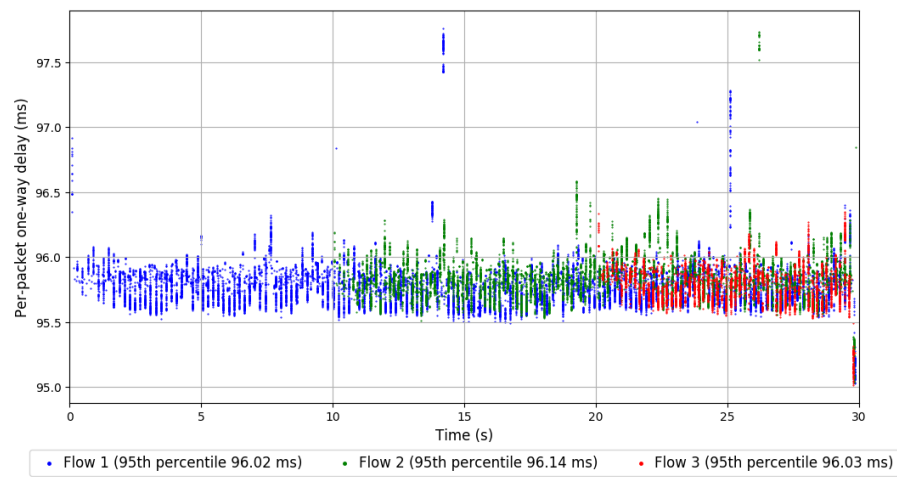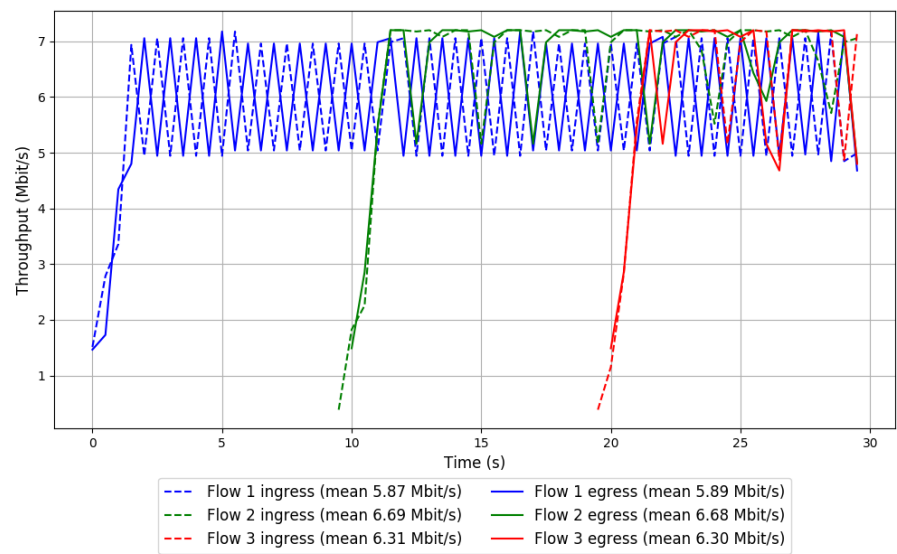
Run 9: Report of Indigo — Data Link

```
Run 10: Statistics of Indigo

Start at: 2017-08-31 14:36:03
End at: 2017-08-31 14:36:33


# Below is generated by plot.py at 2017-08-31 18:11:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.10 Mbit/s
95th percentile per-packet one-way delay: 82.316 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 47.00 Mbit/s
95th percentile per-packet one-way delay: 82.196 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 82.323 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 38.07 Mbit/s
95th percentile per-packet one-way delay: 82.601 ms
Loss rate: 2.07%
```

# Run 10: Report of Indigo — Data Link



- - - - Flow 1 ingress (mean 46.90 Mbit/s) —— Flow 1 egress (mean 47.00 Mbit/s)
- - - - Flow 2 ingress (mean 59.14 Mbit/s) —— Flow 2 egress (mean 59.24 Mbit/s)
- - - - Flow 3 ingress (mean 38.21 Mbit/s) —— Flow 3 egress (mean 38.07 Mbit/s)



• Flow 1 (95th percentile 82.20 ms)    • Flow 2 (95th percentile 82.32 ms)    • Flow 3 (95th percentile 82.60 ms)

```
Run 1: Statistics of KohoCC

Start at: 2017-08-31 12:17:45
End at: 2017-08-31 12:18:15

# Below is generated by plot.py at 2017-08-31 18:11:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.25 Mbit/s
95th percentile per-packet one-way delay: 98.898 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 98.904 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 98.939 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 6.43 Mbit/s
95th percentile per-packet one-way delay: 98.272 ms
Loss rate: 1.88%
```
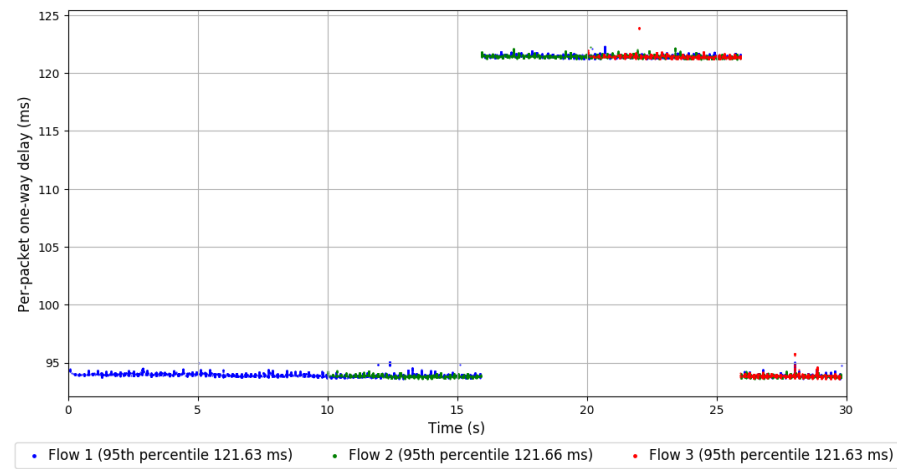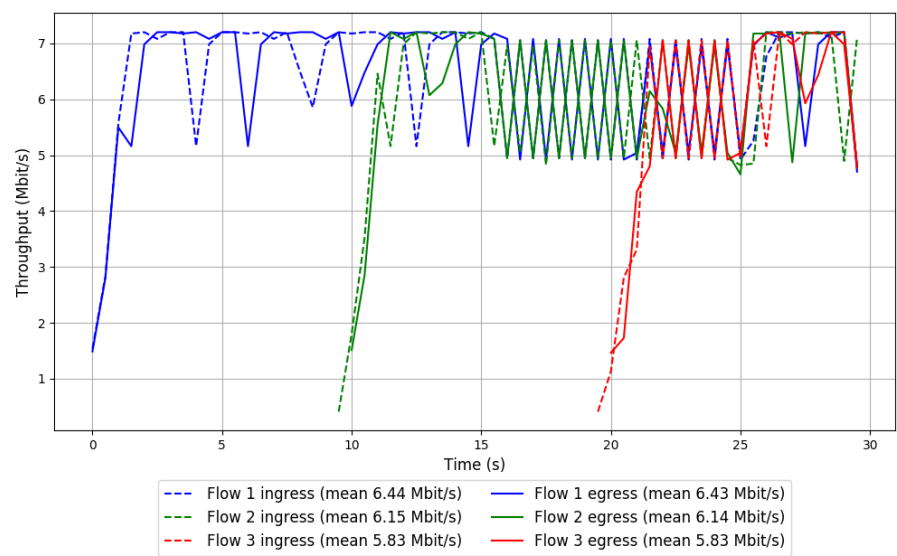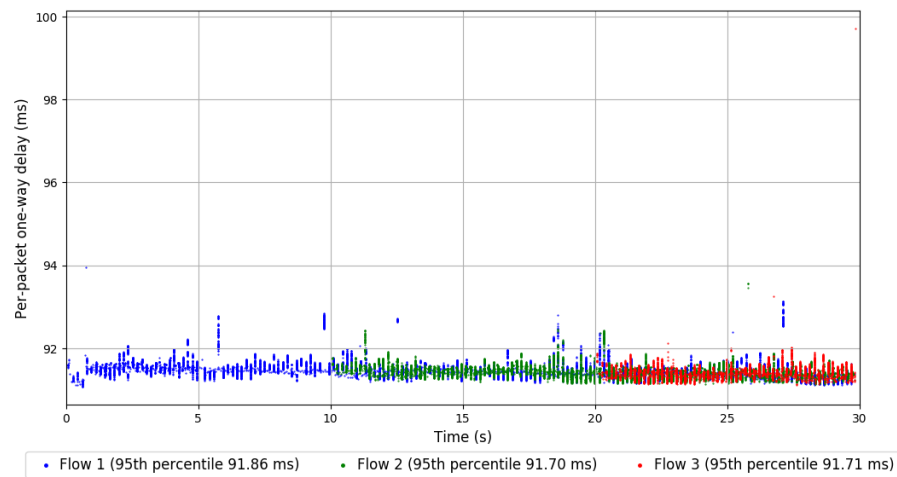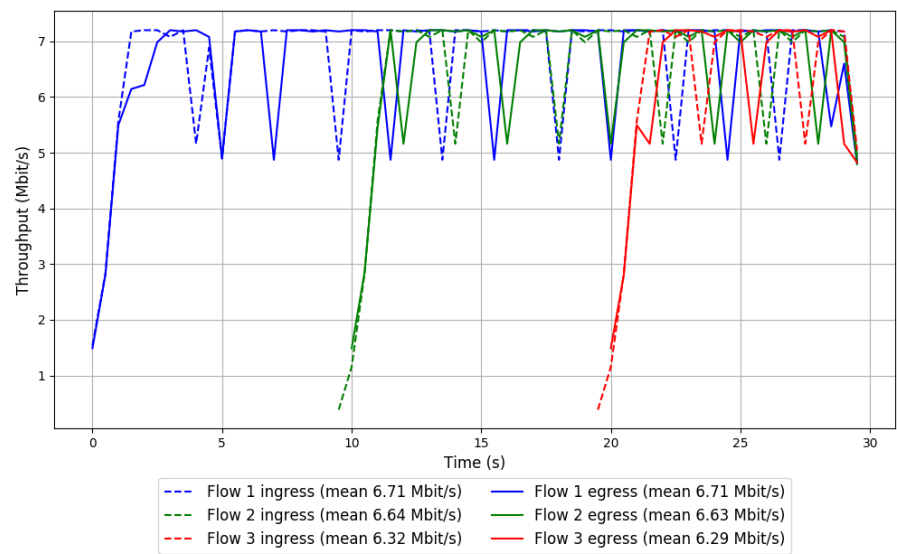
Run 1: Report of KohoCC — Data Link

```
Run 2: Statistics of KohoCC

Start at: 2017-08-31 12:33:14
End at: 2017-08-31 12:33:44

# Below is generated by plot.py at 2017-08-31 18:11:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.39 Mbit/s
95th percentile per-packet one-way delay: 96.075 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 5.89 Mbit/s
95th percentile per-packet one-way delay: 96.017 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 96.143 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 6.30 Mbit/s
95th percentile per-packet one-way delay: 96.026 ms
Loss rate: 1.92%
```
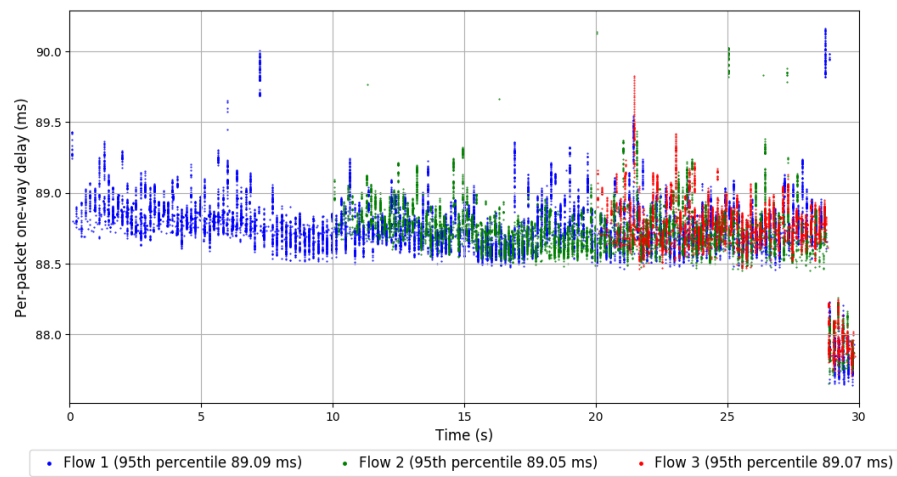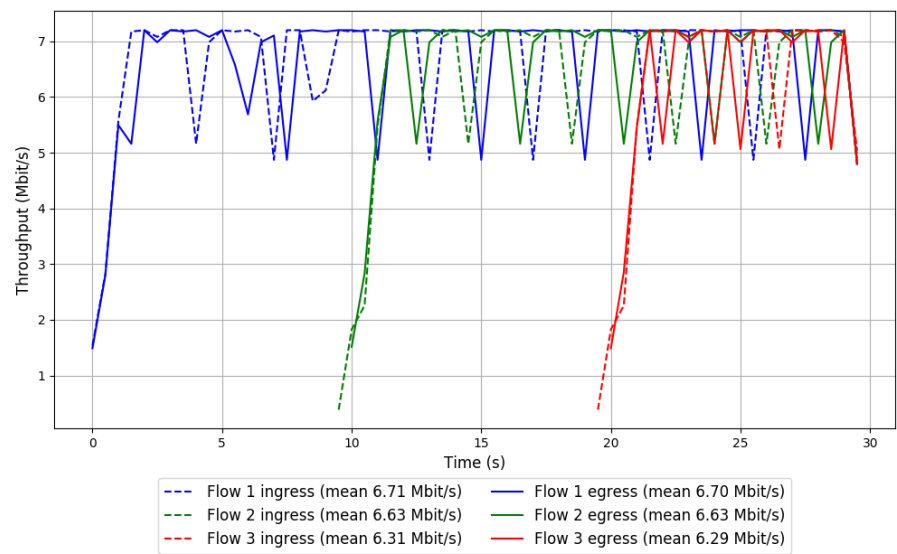
Run 2: Report of KohoCC — Data Link

```
Run 3: Statistics of KohoCC

Start at: 2017-08-31 12:46:28
End at: 2017-08-31 12:46:58

# Below is generated by plot.py at 2017-08-31 18:11:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.41 Mbit/s
95th percentile per-packet one-way delay: 121.636 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 6.43 Mbit/s
95th percentile per-packet one-way delay: 121.626 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 6.14 Mbit/s
95th percentile per-packet one-way delay: 121.663 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 5.83 Mbit/s
95th percentile per-packet one-way delay: 121.631 ms
Loss rate: 2.08%
```

# Run 3: Report of KohoCC — Data Link



Flow 1 ingress (mean 6.44 Mbit/s)     Flow 1 egress (mean 6.43 Mbit/s)
Flow 2 ingress (mean 6.15 Mbit/s)     Flow 2 egress (mean 6.14 Mbit/s)
Flow 3 ingress (mean 5.83 Mbit/s)     Flow 3 egress (mean 5.83 Mbit/s)



Flow 1 (95th percentile 121.63 ms)     Flow 2 (95th percentile 121.66 ms)     Flow 3 (95th percentile 121.63 ms)

```
Run 4: Statistics of KohoCC

Start at: 2017-08-31 12:59:23
End at: 2017-08-31 12:59:53


# Below is generated by plot.py at 2017-08-31 18:12:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.16 Mbit/s
95th percentile per-packet one-way delay: 91.785 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 6.71 Mbit/s
95th percentile per-packet one-way delay: 91.857 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 91.699 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 6.29 Mbit/s
95th percentile per-packet one-way delay: 91.709 ms
Loss rate: 1.91%
```
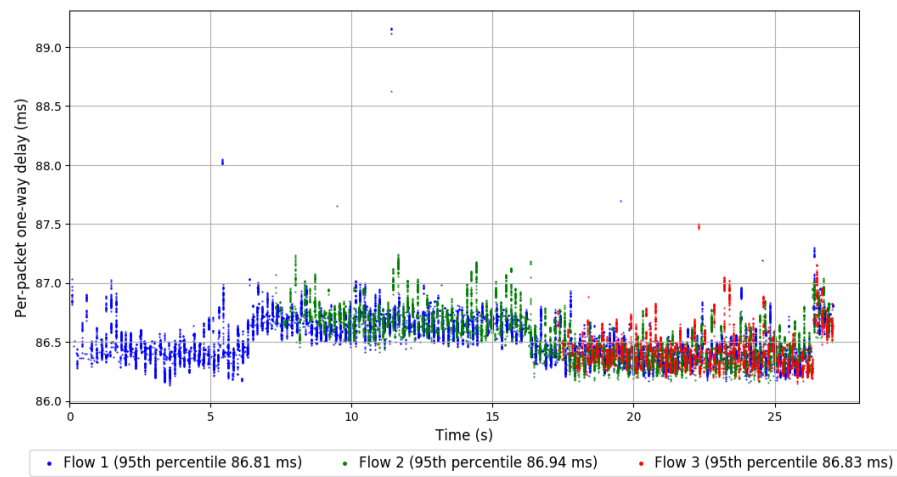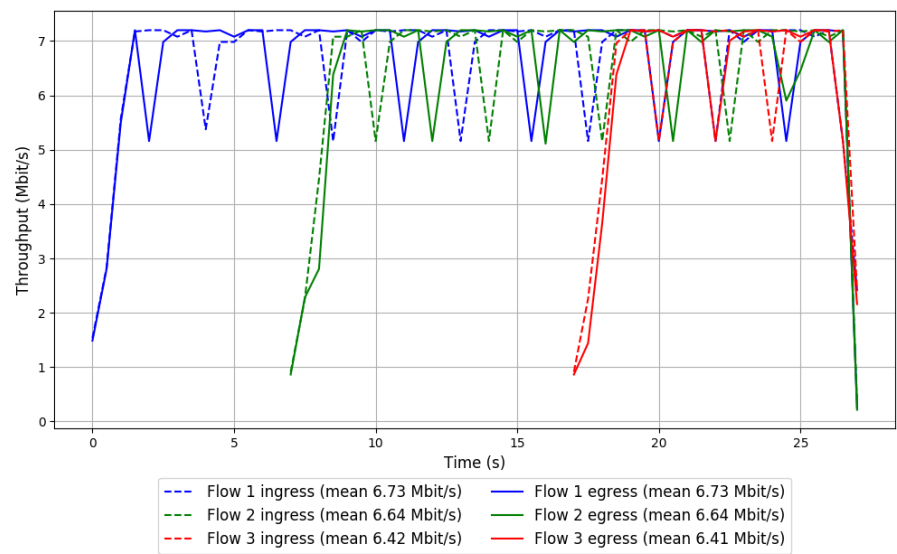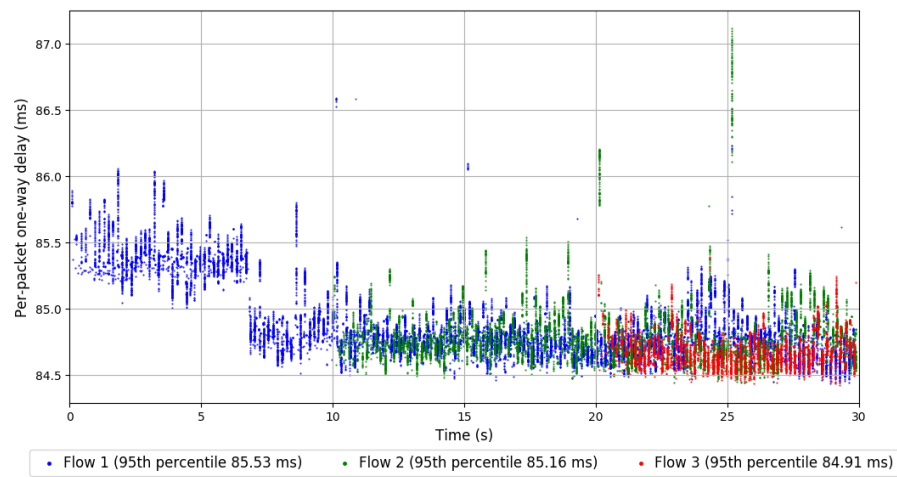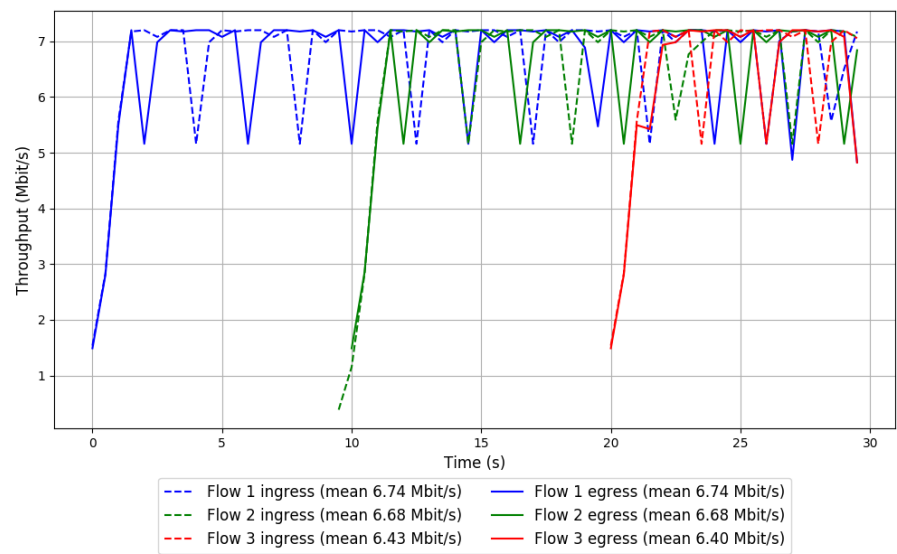
Run 4: Report of KohoCC — Data Link

```
Run 5: Statistics of KohoCC

Start at: 2017-08-31 13:13:15
End at: 2017-08-31 13:13:45


# Below is generated by plot.py at 2017-08-31 18:12:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.17 Mbit/s
95th percentile per-packet one-way delay: 89.080 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 6.70 Mbit/s
95th percentile per-packet one-way delay: 89.092 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 89.054 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 6.29 Mbit/s
95th percentile per-packet one-way delay: 89.070 ms
Loss rate: 1.91%
```

# Run 5: Report of KohoCC — Data Link

```
Run 6: Statistics of KohoCC

Start at: 2017-08-31 13:27:55
End at: 2017-08-31 13:28:25


# Below is generated by plot.py at 2017-08-31 18:12:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.90 Mbit/s
95th percentile per-packet one-way delay: 86.866 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 86.812 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 86.944 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 86.827 ms
Loss rate: 1.88%
```
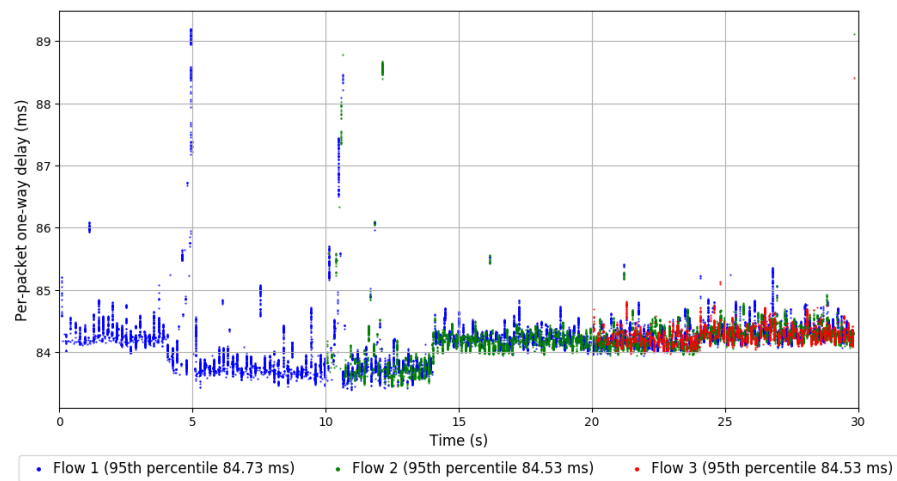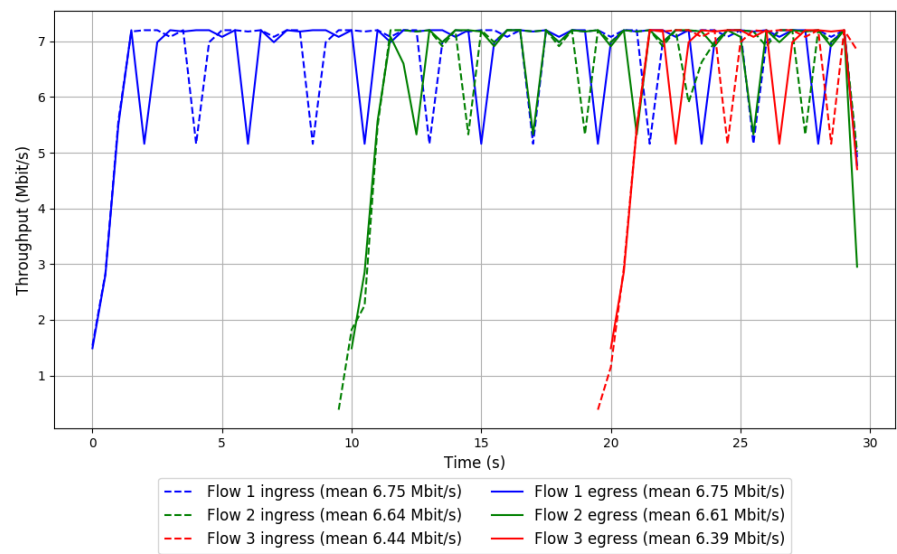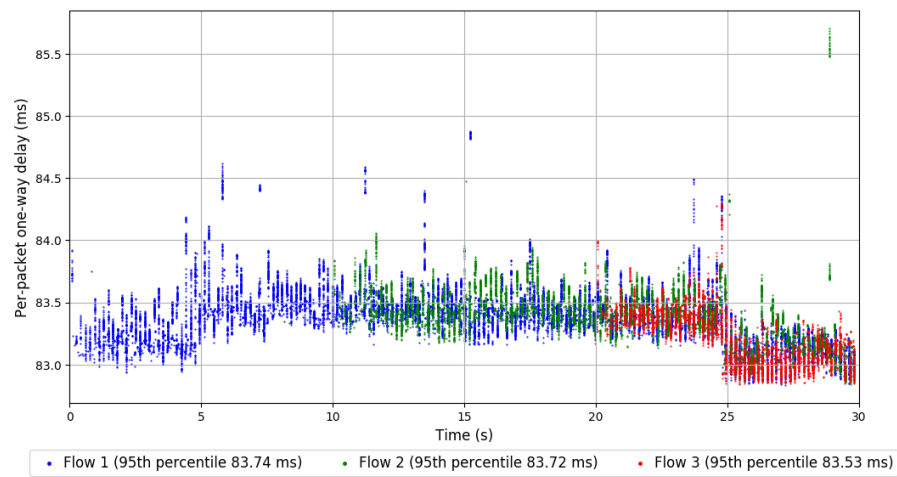
# Run 6: Report of KohoCC — Data Link



Flow 1 ingress (mean 6.73 Mbit/s)    Flow 1 egress (mean 6.73 Mbit/s)
Flow 2 ingress (mean 6.64 Mbit/s)    Flow 2 egress (mean 6.64 Mbit/s)
Flow 3 ingress (mean 6.42 Mbit/s)    Flow 3 egress (mean 6.41 Mbit/s)



Flow 1 (95th percentile 86.81 ms)    Flow 2 (95th percentile 86.94 ms)    Flow 3 (95th percentile 86.83 ms)

```
Run 7: Statistics of KohoCC

Start at: 2017-08-31 13:41:47
End at: 2017-08-31 13:42:17


# Below is generated by plot.py at 2017-08-31 18:12:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.27 Mbit/s
95th percentile per-packet one-way delay: 85.427 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 85.529 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 85.162 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 84.905 ms
Loss rate: 1.87%
```
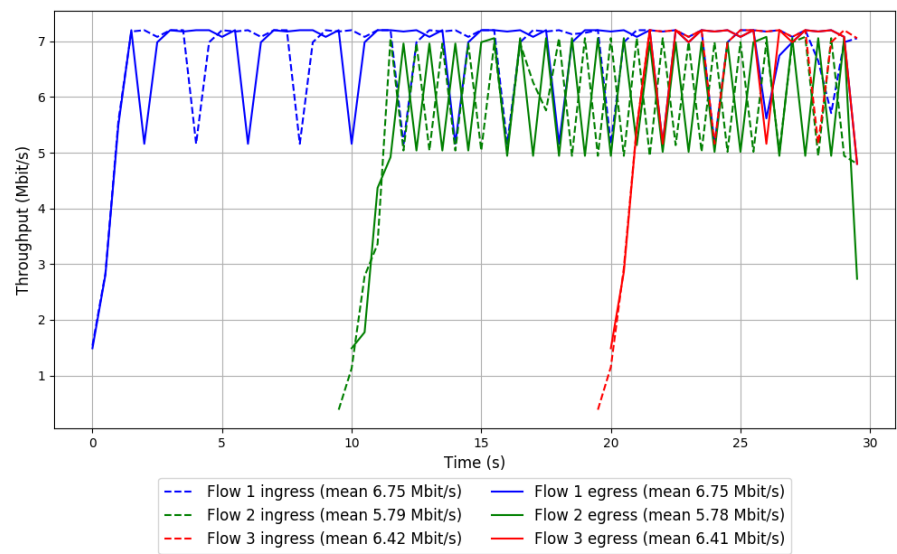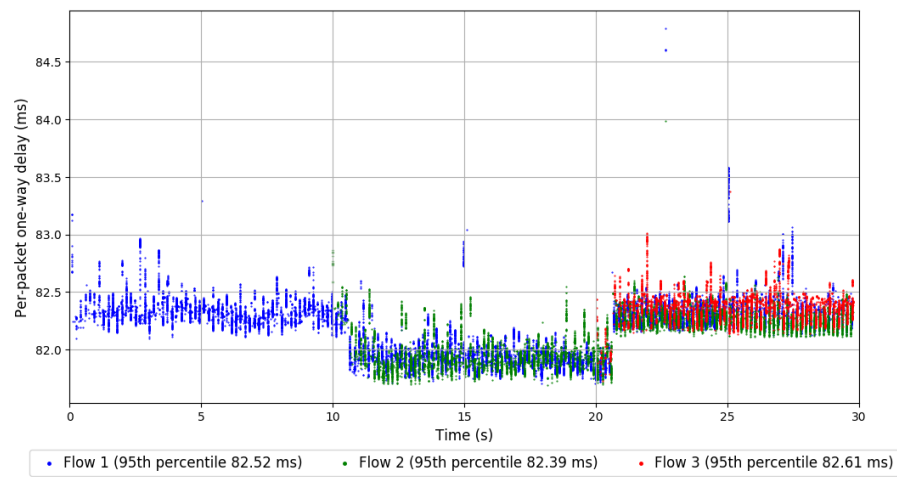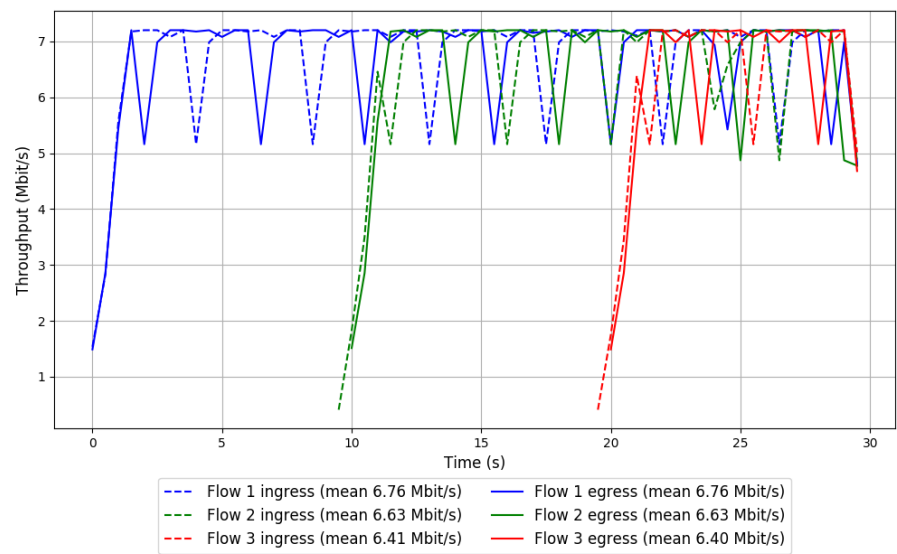
Run 7: Report of KohoCC — Data Link



Flow 1 ingress (mean 6.74 Mbit/s) --- Flow 1 egress (mean 6.74 Mbit/s)
Flow 2 ingress (mean 6.68 Mbit/s) --- Flow 2 egress (mean 6.68 Mbit/s)
Flow 3 ingress (mean 6.43 Mbit/s) --- Flow 3 egress (mean 6.40 Mbit/s)



Flow 1 (95th percentile 85.53 ms)  •  Flow 2 (95th percentile 85.16 ms)  •  Flow 3 (95th percentile 84.91 ms)

```
Run 8: Statistics of KohoCC

Start at: 2017-08-31 13:56:20
End at: 2017-08-31 13:56:50

# Below is generated by plot.py at 2017-08-31 18:12:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.24 Mbit/s
95th percentile per-packet one-way delay: 84.626 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 6.75 Mbit/s
95th percentile per-packet one-way delay: 84.732 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 6.61 Mbit/s
95th percentile per-packet one-way delay: 84.528 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 6.39 Mbit/s
95th percentile per-packet one-way delay: 84.530 ms
Loss rate: 1.87%
```
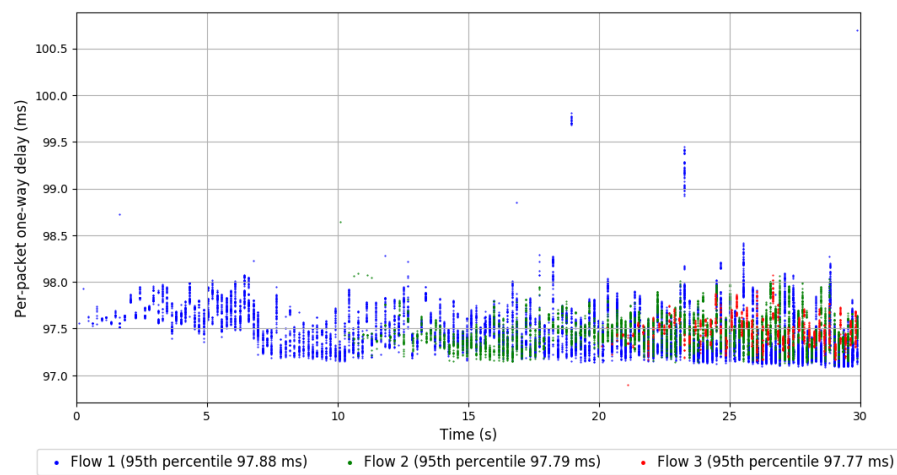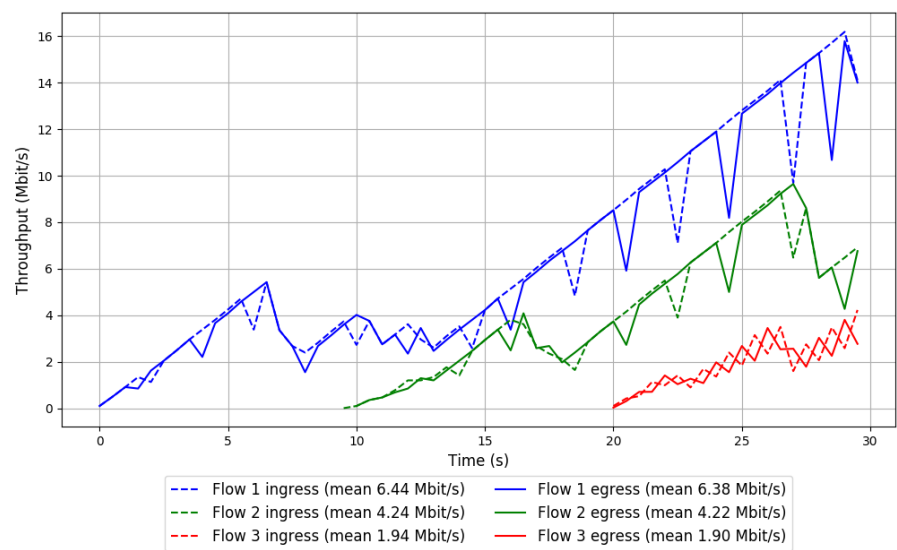
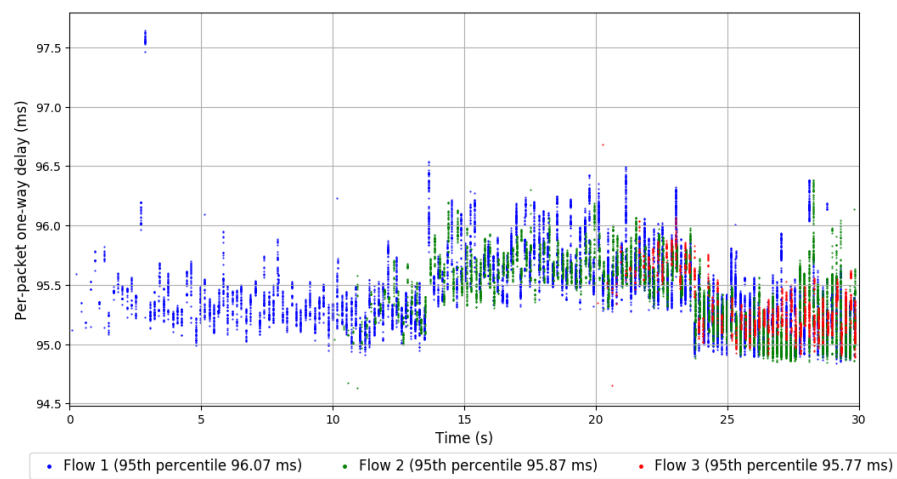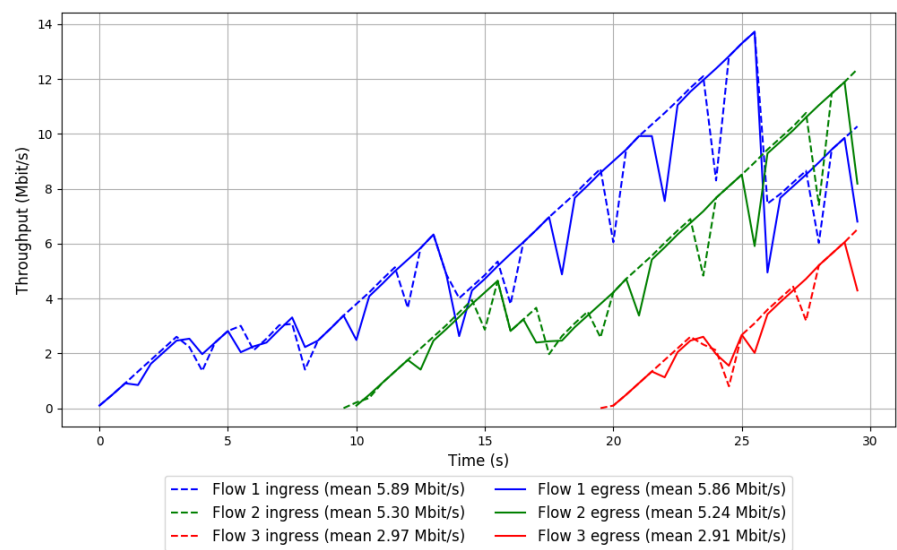# Run 8: Report of KohoCC — Data Link

```
Run 9: Statistics of KohoCC

Start at: 2017-08-31 14:10:59
End at: 2017-08-31 14:11:29


# Below is generated by plot.py at 2017-08-31 18:12:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.69 Mbit/s
95th percentile per-packet one-way delay: 83.713 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 6.75 Mbit/s
95th percentile per-packet one-way delay: 83.744 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 83.715 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 83.530 ms
Loss rate: 1.88%
```

# Run 9: Report of KohoCC — Data Link



- Flow 1 ingress (mean 6.75 Mbit/s) — Flow 1 egress (mean 6.75 Mbit/s)
- Flow 2 ingress (mean 5.79 Mbit/s) — Flow 2 egress (mean 5.78 Mbit/s)
- Flow 3 ingress (mean 6.42 Mbit/s) — Flow 3 egress (mean 6.41 Mbit/s)



- Flow 1 (95th percentile 83.74 ms)
- Flow 2 (95th percentile 83.72 ms)
- Flow 3 (95th percentile 83.53 ms)

```
Run 10: Statistics of KohoCC

Start at: 2017-08-31 14:26:44
End at: 2017-08-31 14:27:14

# Below is generated by plot.py at 2017-08-31 18:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.26 Mbit/s
95th percentile per-packet one-way delay: 82.508 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 82.517 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 82.387 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 82.611 ms
Loss rate: 1.90%
```
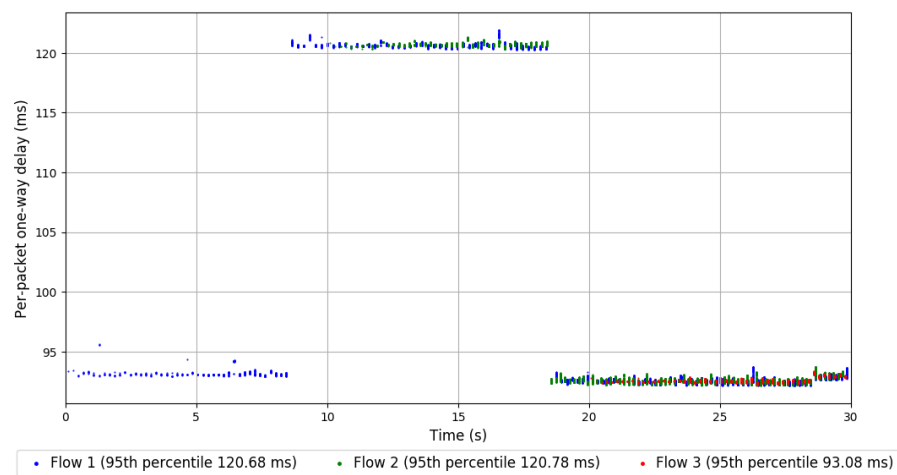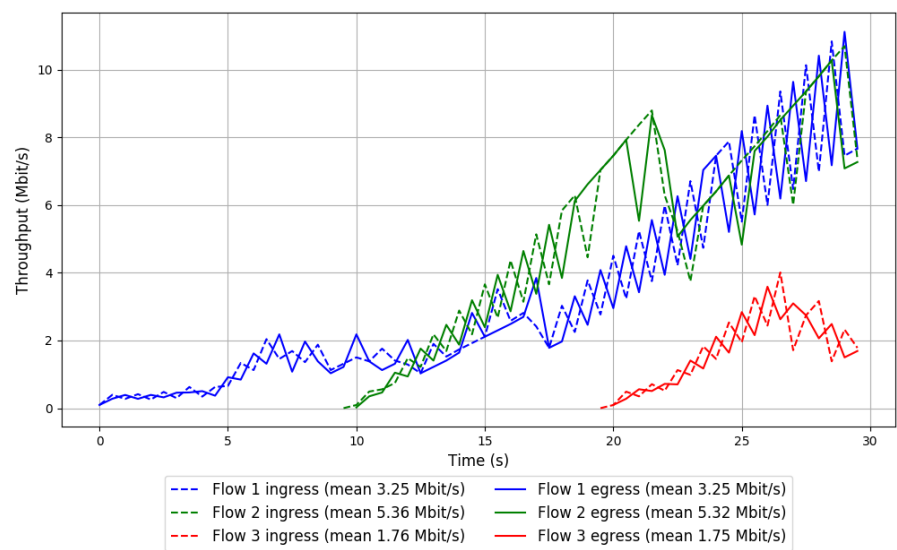
## Run 10: Report of KohoCC — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2017-08-31 12:22:57
End at: 2017-08-31 12:23:27

# Below is generated by plot.py at 2017-08-31 18:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.80 Mbit/s
95th percentile per-packet one-way delay: 97.845 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 6.38 Mbit/s
95th percentile per-packet one-way delay: 97.875 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 4.22 Mbit/s
95th percentile per-packet one-way delay: 97.794 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 97.766 ms
Loss rate: 3.79%
```
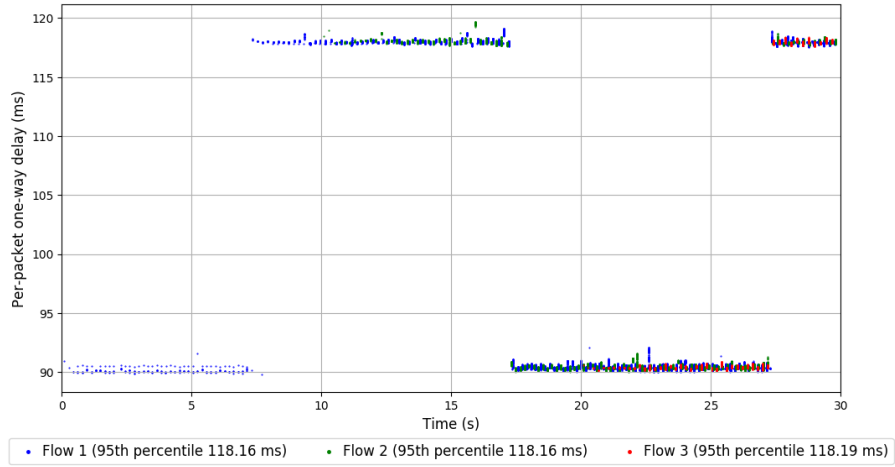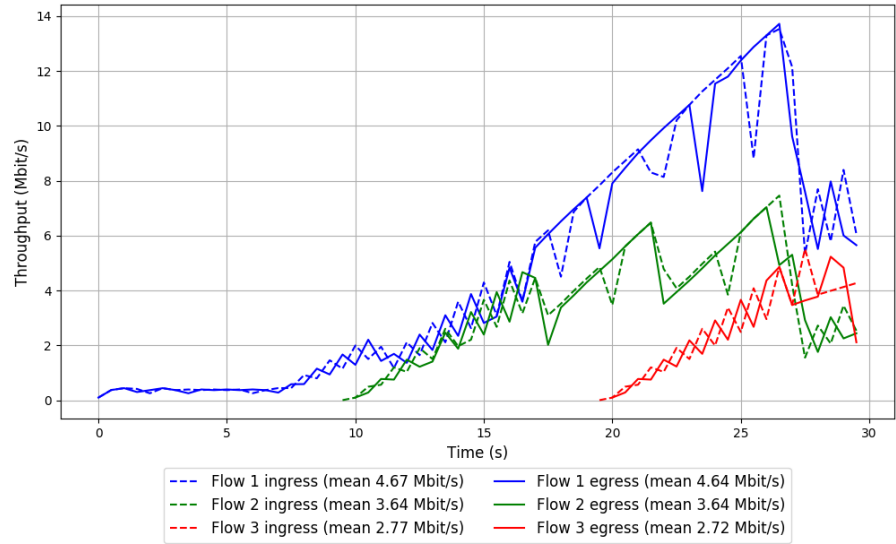
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2017-08-31 12:37:21
End at: 2017-08-31 12:37:51

# Below is generated by plot.py at 2017-08-31 18:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.30 Mbit/s
95th percentile per-packet one-way delay: 95.976 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 5.86 Mbit/s
95th percentile per-packet one-way delay: 96.067 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 95.871 ms
Loss rate: 1.99%
-- Flow 3:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 95.767 ms
Loss rate: 3.82%
```

Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2017-08-31 12:50:46
End at: 2017-08-31 12:51:16

# Below is generated by plot.py at 2017-08-31 18:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.32 Mbit/s
95th percentile per-packet one-way delay: 120.736 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 120.683 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.32 Mbit/s
95th percentile per-packet one-way delay: 120.781 ms
Loss rate: 1.75%
-- Flow 3:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 93.081 ms
Loss rate: 2.62%
```
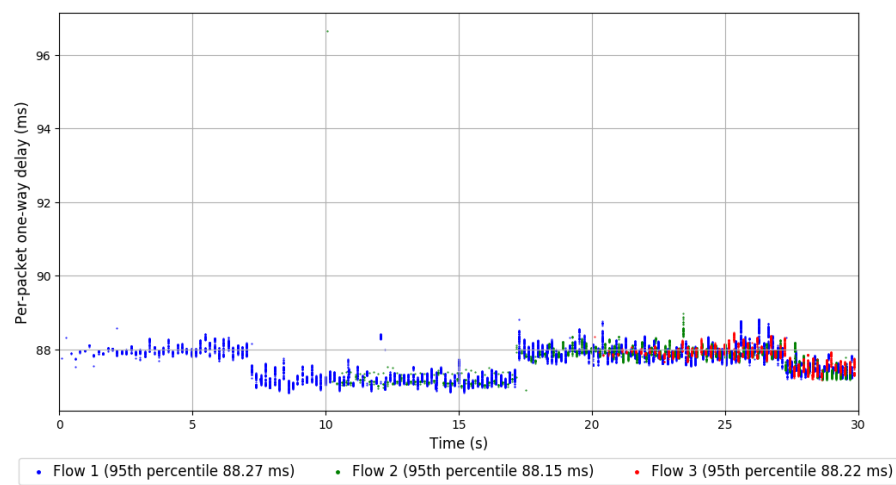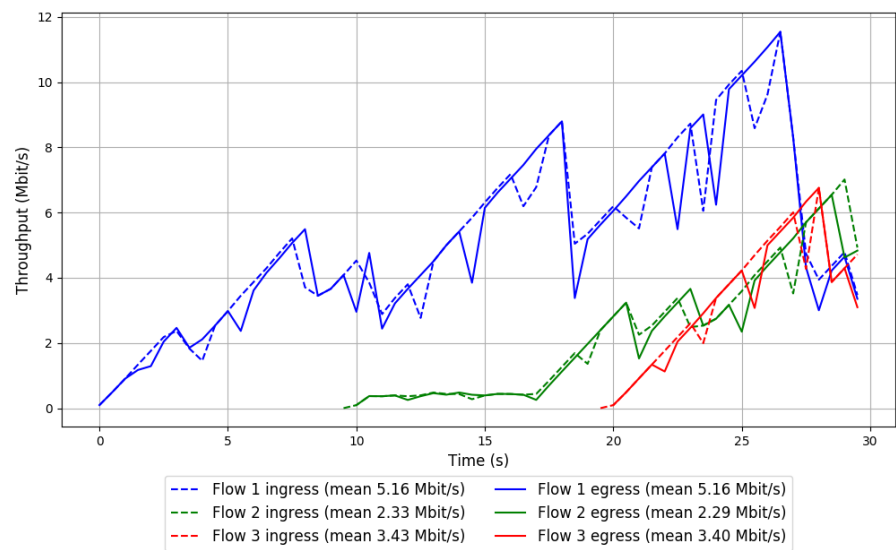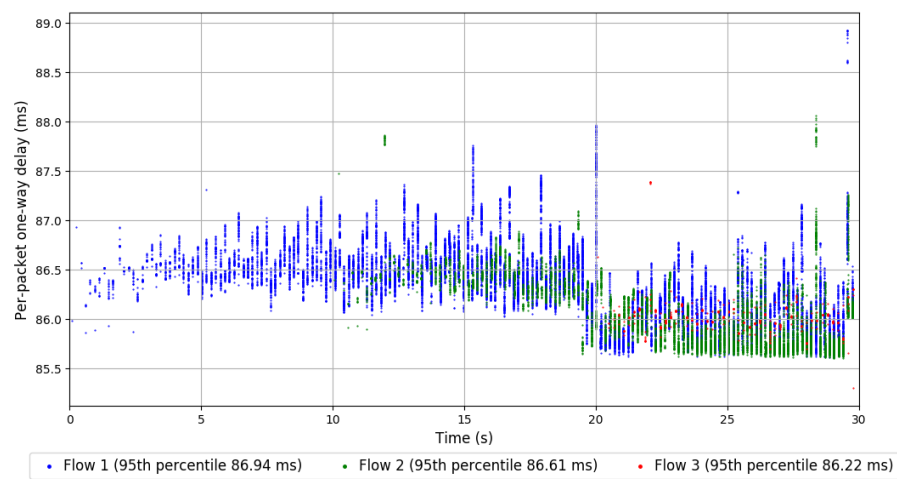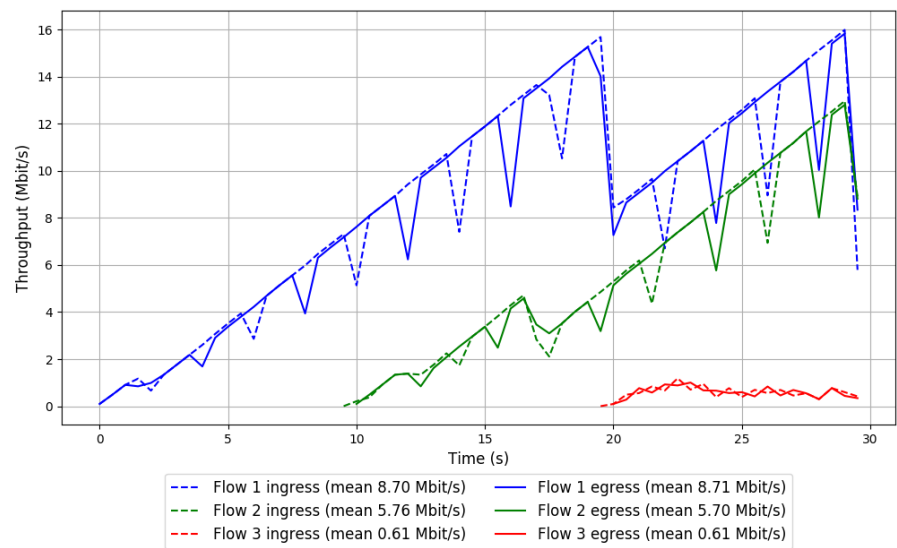
Run 3: Report of LEDBAT — Data Link



Flow 1 ingress (mean 3.25 Mbit/s)     Flow 1 egress (mean 3.25 Mbit/s)
Flow 2 ingress (mean 5.36 Mbit/s)     Flow 2 egress (mean 5.32 Mbit/s)
Flow 3 ingress (mean 1.76 Mbit/s)     Flow 3 egress (mean 1.75 Mbit/s)



Flow 1 (95th percentile 120.68 ms)     Flow 2 (95th percentile 120.78 ms)     Flow 3 (95th percentile 93.08 ms)
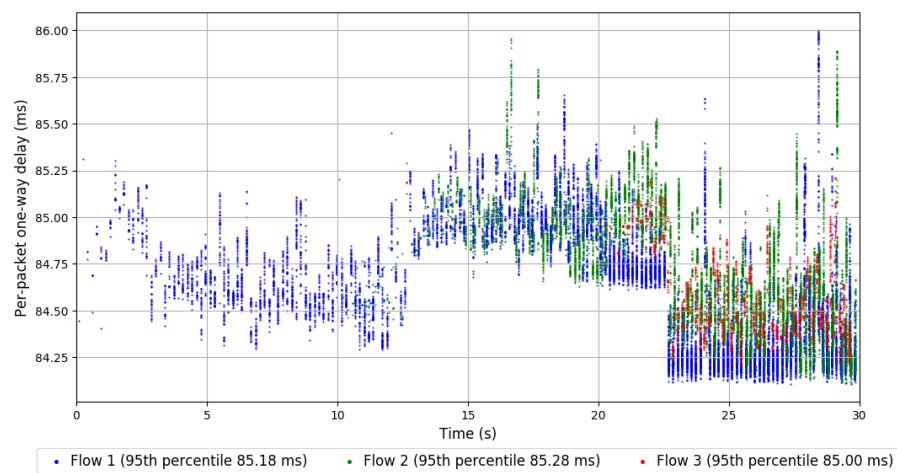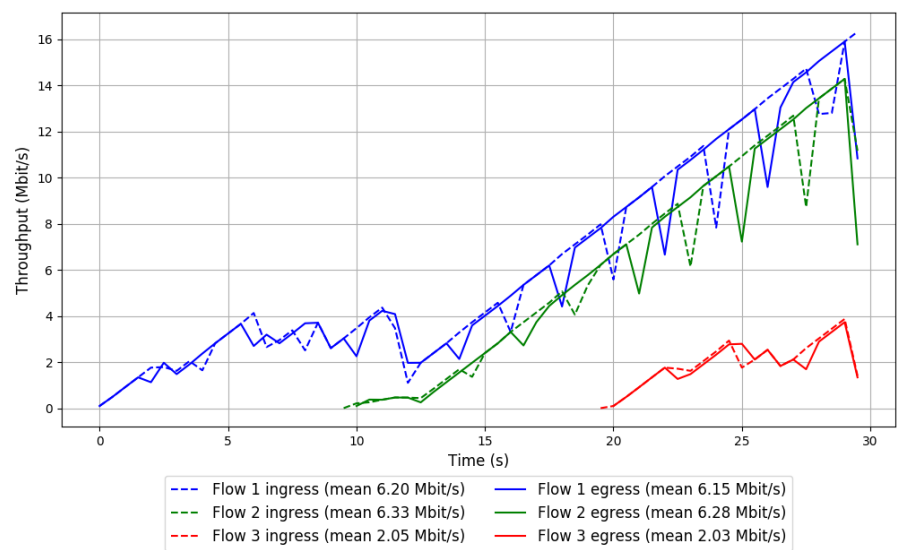
```
Run 4: Statistics of LEDBAT

Start at: 2017-08-31 13:03:27
End at: 2017-08-31 13:03:57

# Below is generated by plot.py at 2017-08-31 18:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 118.163 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 4.64 Mbit/s
95th percentile per-packet one-way delay: 118.155 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 3.64 Mbit/s
95th percentile per-packet one-way delay: 118.164 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 118.185 ms
Loss rate: 3.97%
```

# Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2017-08-31 13:18:17
End at: 2017-08-31 13:18:47


# Below is generated by plot.py at 2017-08-31 18:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 88.235 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 5.16 Mbit/s
95th percentile per-packet one-way delay: 88.269 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 88.147 ms
Loss rate: 2.69%
-- Flow 3:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 88.220 ms
Loss rate: 2.38%
```
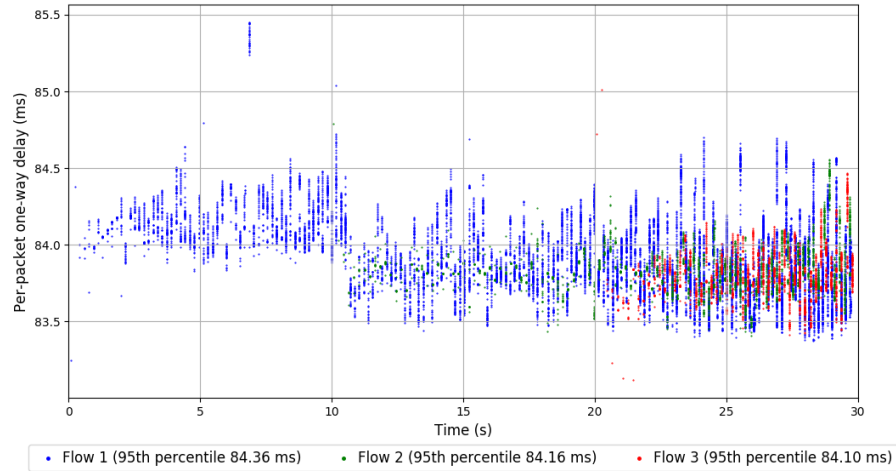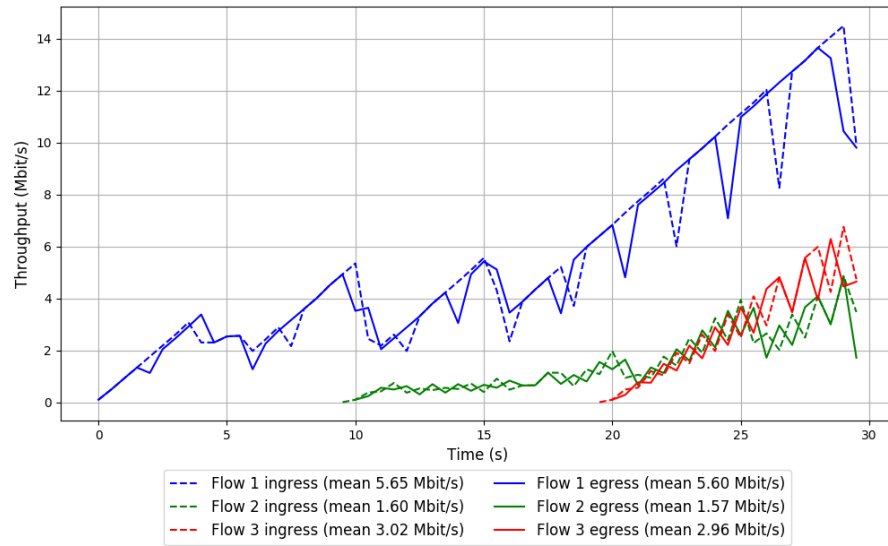
Run 5: Report of LEDBAT — Data Link



Flow 1 ingress (mean 5.16 Mbit/s)    Flow 1 egress (mean 5.16 Mbit/s)
Flow 2 ingress (mean 2.33 Mbit/s)    Flow 2 egress (mean 2.29 Mbit/s)
Flow 3 ingress (mean 3.43 Mbit/s)    Flow 3 egress (mean 3.40 Mbit/s)



Flow 1 (95th percentile 88.27 ms)    Flow 2 (95th percentile 88.15 ms)    Flow 3 (95th percentile 88.22 ms)

```
Run 6: Statistics of LEDBAT

Start at: 2017-08-31 13:33:05
End at: 2017-08-31 13:33:35

# Below is generated by plot.py at 2017-08-31 18:12:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.67 Mbit/s
95th percentile per-packet one-way delay: 86.870 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 8.71 Mbit/s
95th percentile per-packet one-way delay: 86.942 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 5.70 Mbit/s
95th percentile per-packet one-way delay: 86.608 ms
Loss rate: 1.96%
-- Flow 3:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 86.221 ms
Loss rate: 1.95%
```
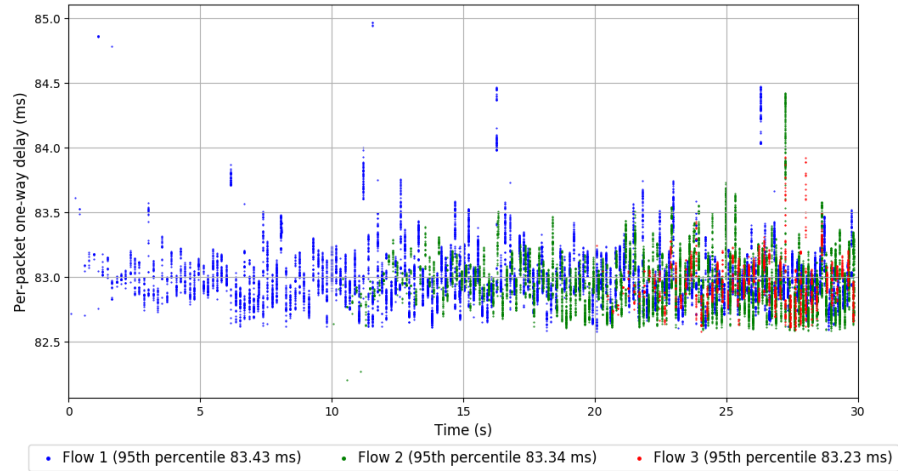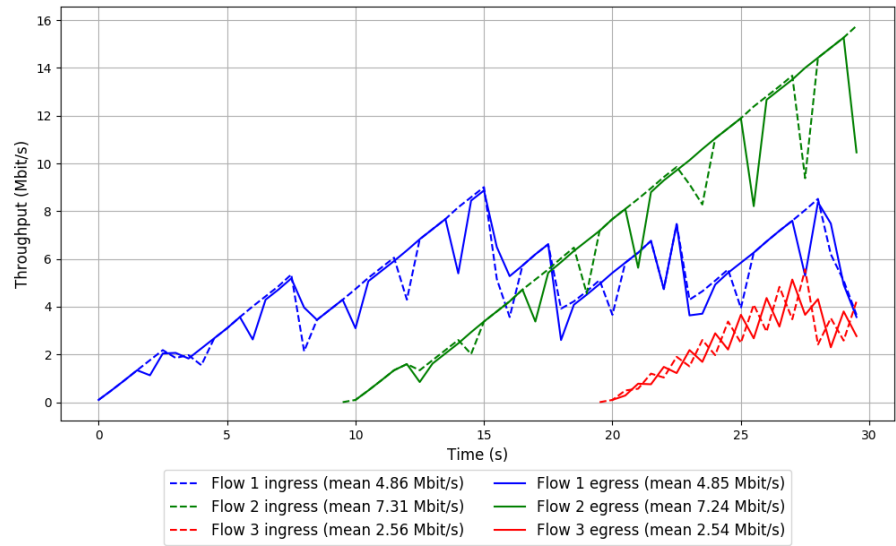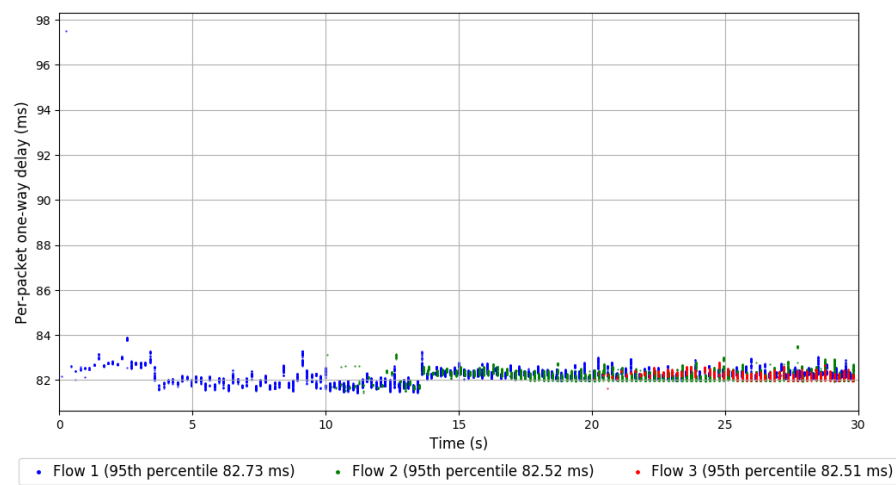
# Run 6: Report of LEDBAT — Data Link

```
Run 7: Statistics of LEDBAT

Start at: 2017-08-31 13:46:12
End at: 2017-08-31 13:46:42

# Below is generated by plot.py at 2017-08-31 18:12:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.97 Mbit/s
95th percentile per-packet one-way delay: 85.207 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 6.15 Mbit/s
95th percentile per-packet one-way delay: 85.183 ms
Loss rate: 1.49%
-- Flow 2:
Average throughput: 6.28 Mbit/s
95th percentile per-packet one-way delay: 85.279 ms
Loss rate: 1.61%
-- Flow 3:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 85.003 ms
Loss rate: 3.51%
```
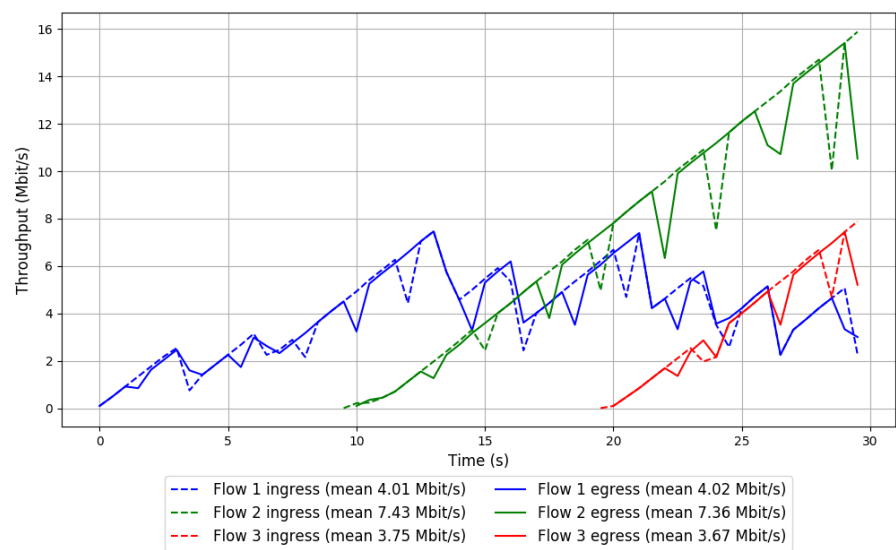
Run 7: Report of LEDBAT — Data Link

```
Run 8: Statistics of LEDBAT

Start at: 2017-08-31 14:01:54
End at: 2017-08-31 14:02:24


# Below is generated by plot.py at 2017-08-31 18:12:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 84.325 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 5.60 Mbit/s
95th percentile per-packet one-way delay: 84.355 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 84.163 ms
Loss rate: 2.78%
-- Flow 3:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 84.098 ms
Loss rate: 4.00%
```
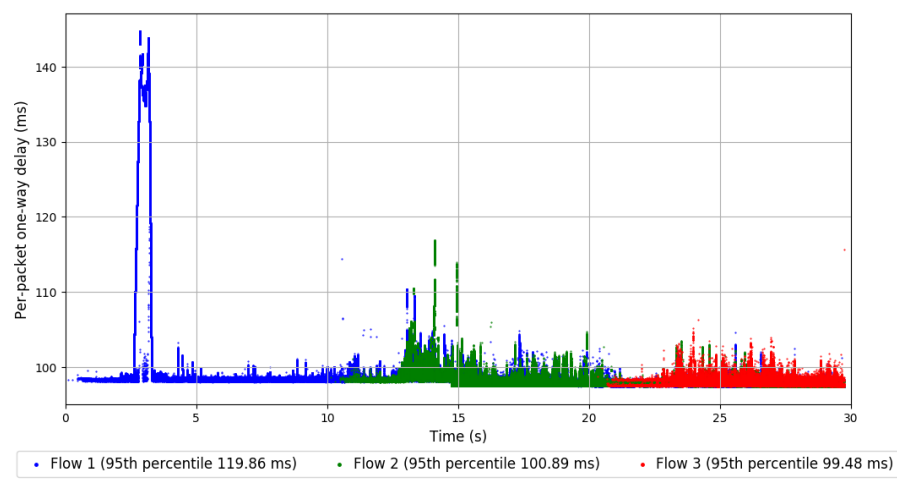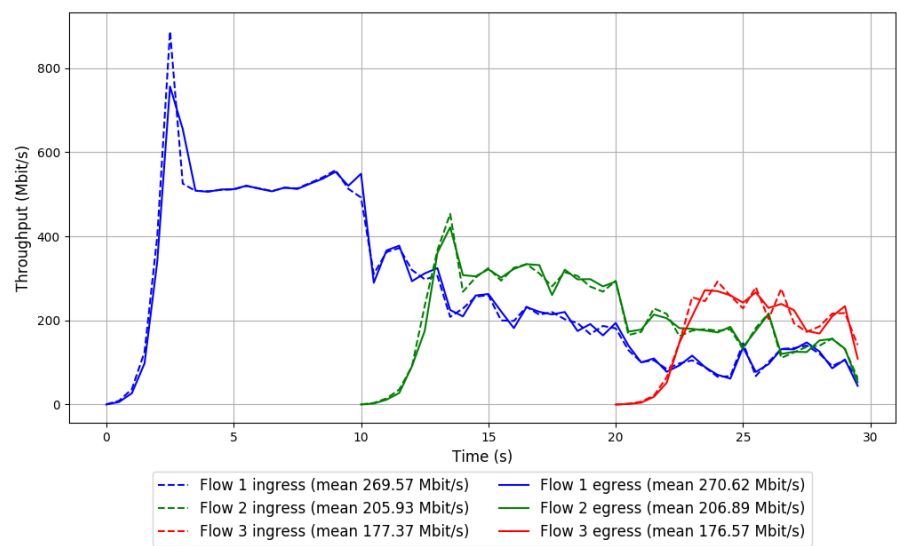
Run 8: Report of LEDBAT — Data Link

```
Run 9: Statistics of LEDBAT

Start at: 2017-08-31 14:16:13
End at: 2017-08-31 14:16:43

# Below is generated by plot.py at 2017-08-31 18:12:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.49 Mbit/s
95th percentile per-packet one-way delay: 83.382 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 4.85 Mbit/s
95th percentile per-packet one-way delay: 83.433 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 7.24 Mbit/s
95th percentile per-packet one-way delay: 83.344 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 2.54 Mbit/s
95th percentile per-packet one-way delay: 83.228 ms
Loss rate: 2.86%
```
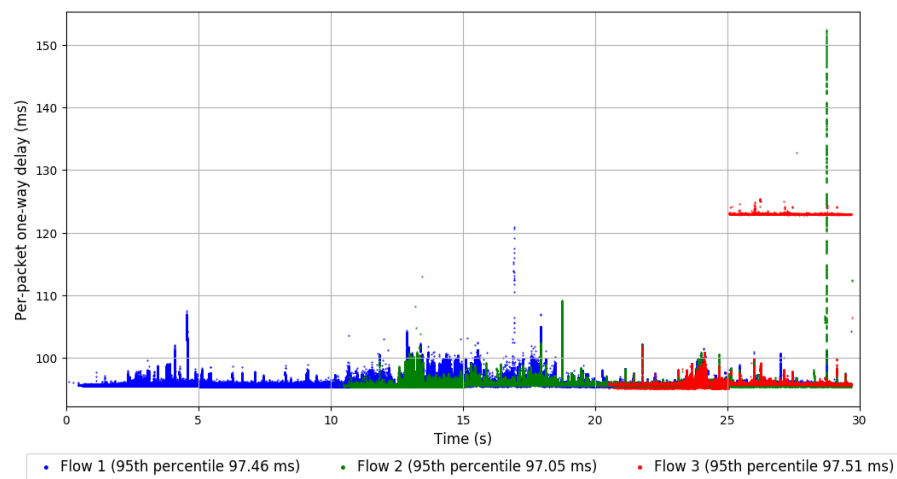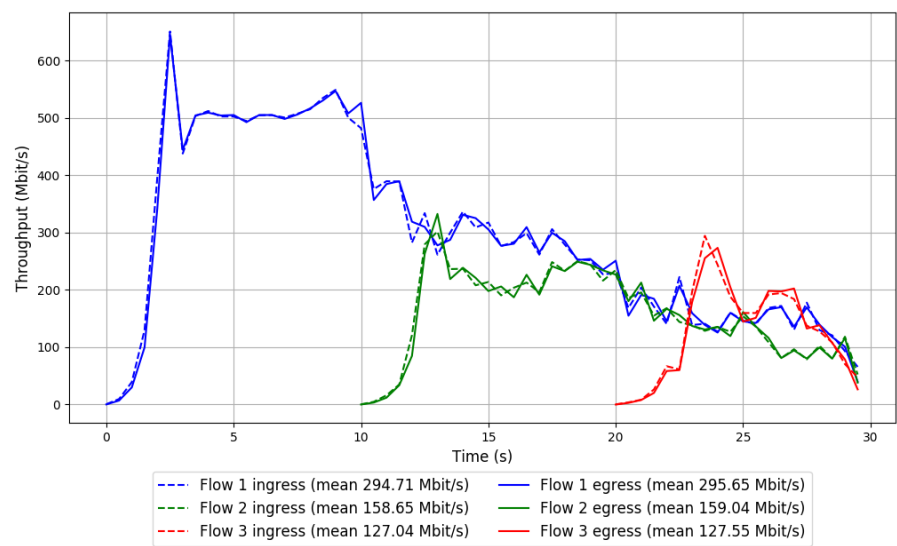
Run 9: Report of LEDBAT — Data Link



Flow 1 ingress (mean 4.86 Mbit/s)    Flow 1 egress (mean 4.85 Mbit/s)
Flow 2 ingress (mean 7.31 Mbit/s)    Flow 2 egress (mean 7.24 Mbit/s)
Flow 3 ingress (mean 2.56 Mbit/s)    Flow 3 egress (mean 2.54 Mbit/s)



Flow 1 (95th percentile 83.43 ms)    Flow 2 (95th percentile 83.34 ms)    Flow 3 (95th percentile 83.23 ms)

```
Run 10: Statistics of LEDBAT

Start at: 2017-08-31 14:32:01
End at: 2017-08-31 14:32:31

# Below is generated by plot.py at 2017-08-31 18:12:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.09 Mbit/s
95th percentile per-packet one-way delay: 82.605 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 82.731 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 7.36 Mbit/s
95th percentile per-packet one-way delay: 82.515 ms
Loss rate: 1.81%
-- Flow 3:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 82.512 ms
Loss rate: 3.60%
```
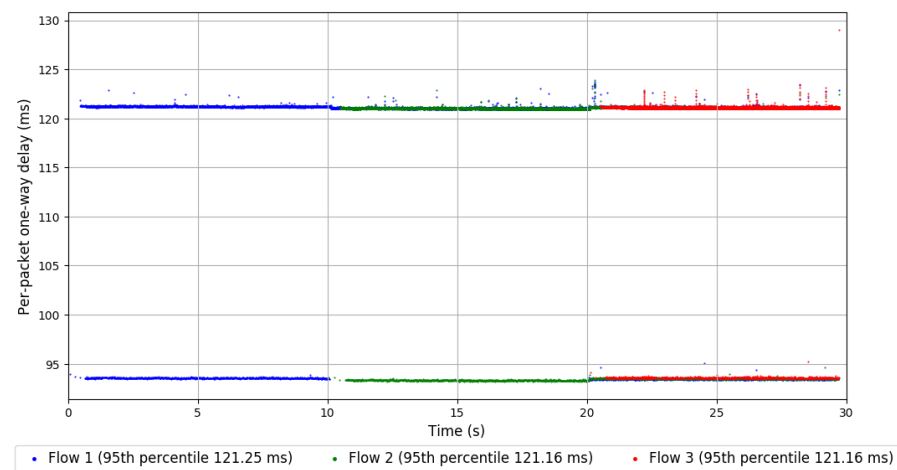
Run 10: Report of LEDBAT — Data Link



Flow 1 ingress (mean 4.01 Mbit/s) --- Flow 1 egress (mean 4.02 Mbit/s)
Flow 2 ingress (mean 7.43 Mbit/s) --- Flow 2 egress (mean 7.36 Mbit/s)
Flow 3 ingress (mean 3.75 Mbit/s) --- Flow 3 egress (mean 3.67 Mbit/s)



Flow 1 (95th percentile 82.73 ms)  •  Flow 2 (95th percentile 82.52 ms)  •  Flow 3 (95th percentile 82.51 ms)

Run 1: Statistics of PCC

Start at: 2017-08-31 12:18:29
End at: 2017-08-31 12:18:59


# Below is generated by plot.py at 2017-08-31 18:13:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 463.56 Mbit/s
95th percentile per-packet one-way delay: 101.787 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 270.62 Mbit/s
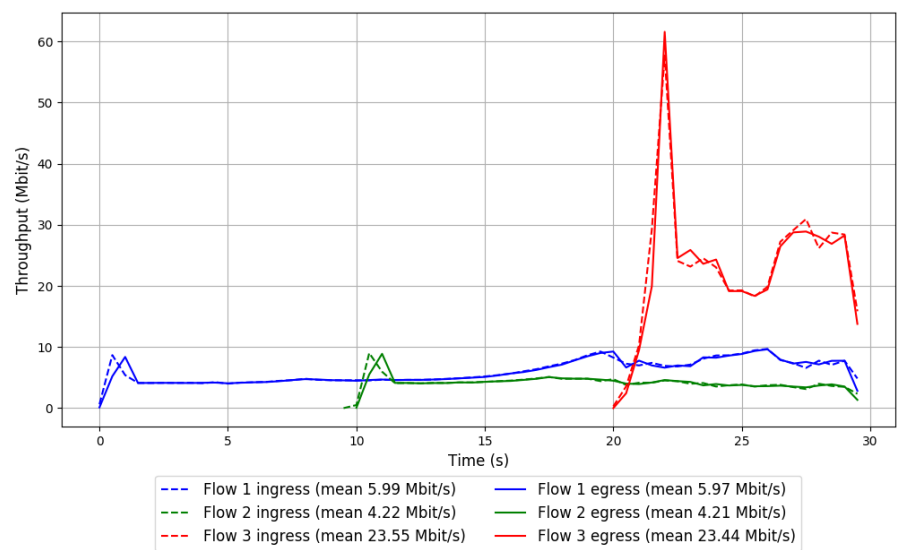95th percentile per-packet one-way delay: 119.862 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 206.89 Mbit/s
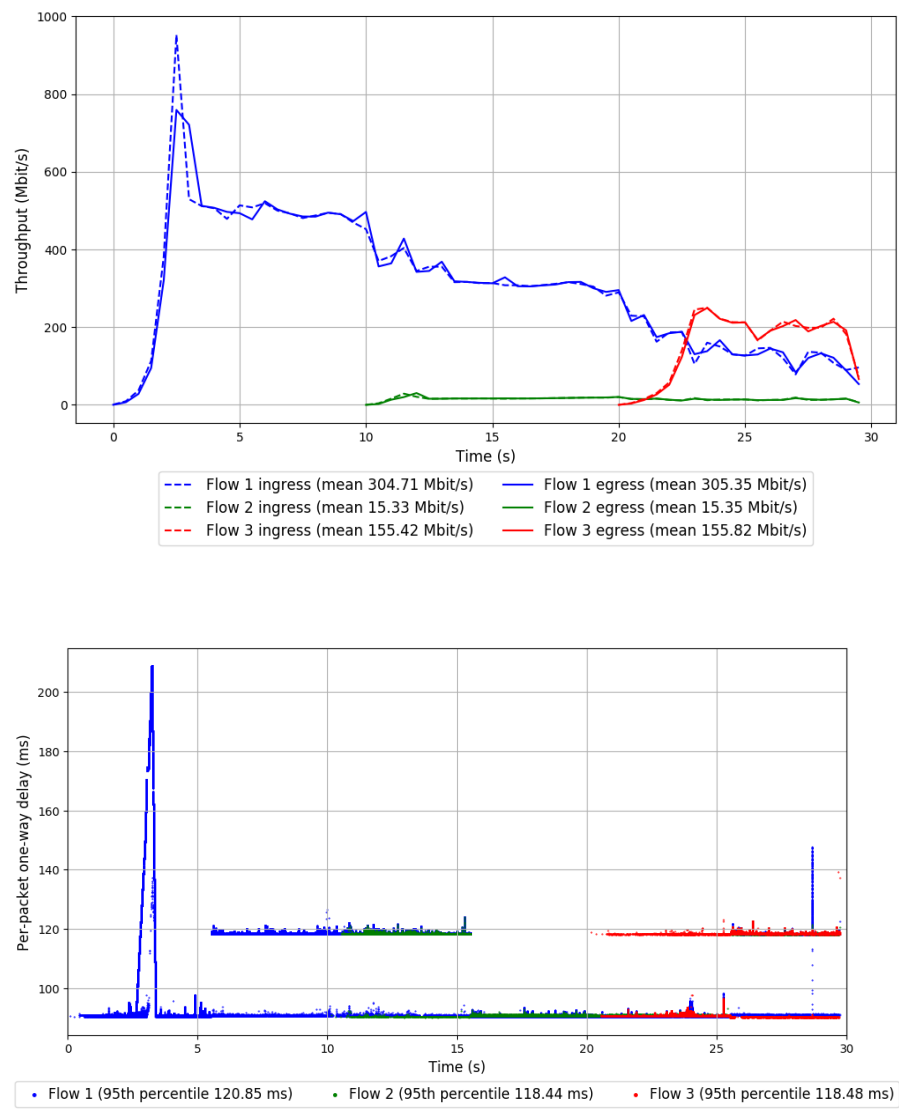95th percentile per-packet one-way delay: 100.894 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 176.57 Mbit/s
95th percentile per-packet one-way delay: 99.483 ms
Loss rate: 2.17%

Run 1: Report of PCC — Data Link





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```
Run 2: Statistics of PCC

Start at: 2017-08-31 12:33:59
End at: 2017-08-31 12:34:29

# Below is generated by plot.py at 2017-08-31 18:13:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 441.93 Mbit/s
95th percentile per-packet one-way delay: 97.346 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 295.65 Mbit/s
95th percentile per-packet one-way delay: 97.458 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 159.04 Mbit/s
95th percentile per-packet one-way delay: 97.048 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 127.55 Mbit/s
95th percentile per-packet one-way delay: 97.507 ms
Loss rate: 1.31%
```
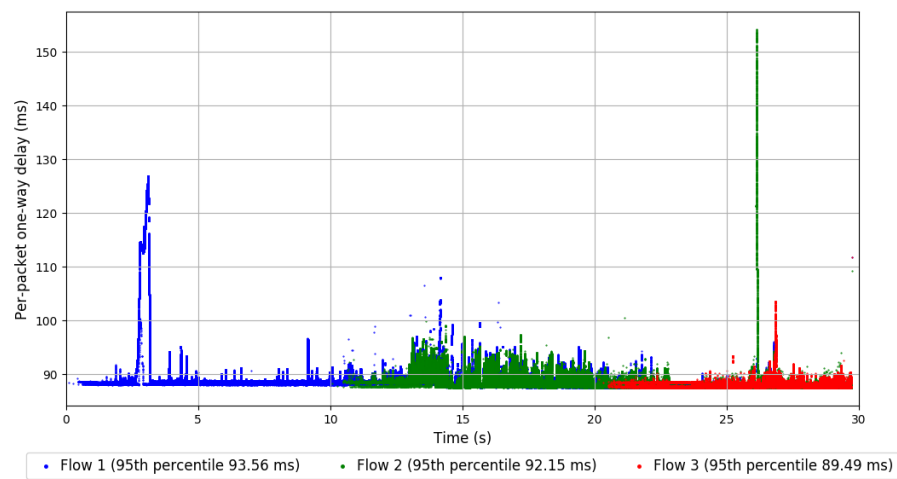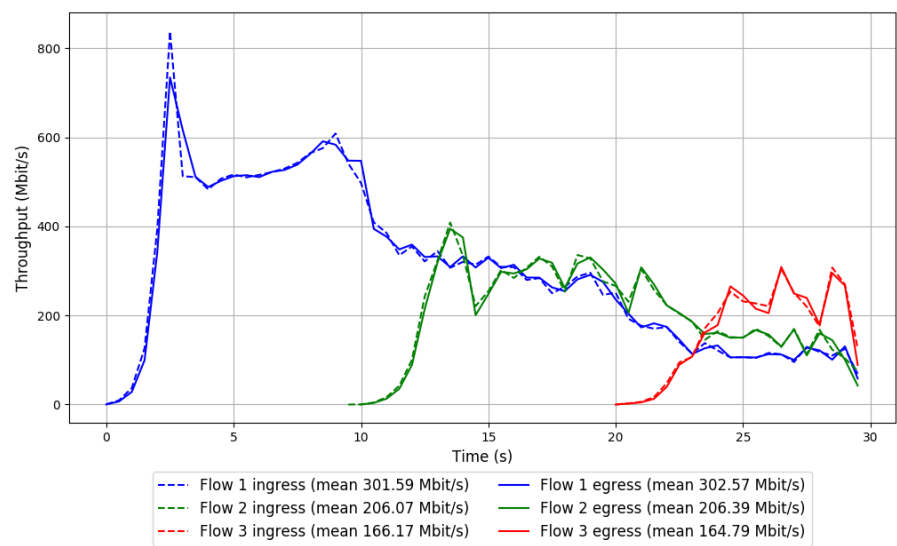
Run 2: Report of PCC — Data Link

```
Run 3: Statistics of PCC

Start at: 2017-08-31 12:47:14
End at: 2017-08-31 12:47:44


# Below is generated by plot.py at 2017-08-31 18:13:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.34 Mbit/s
95th percentile per-packet one-way delay: 121.221 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 121.252 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 121.163 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 121.164 ms
Loss rate: 2.18%
```
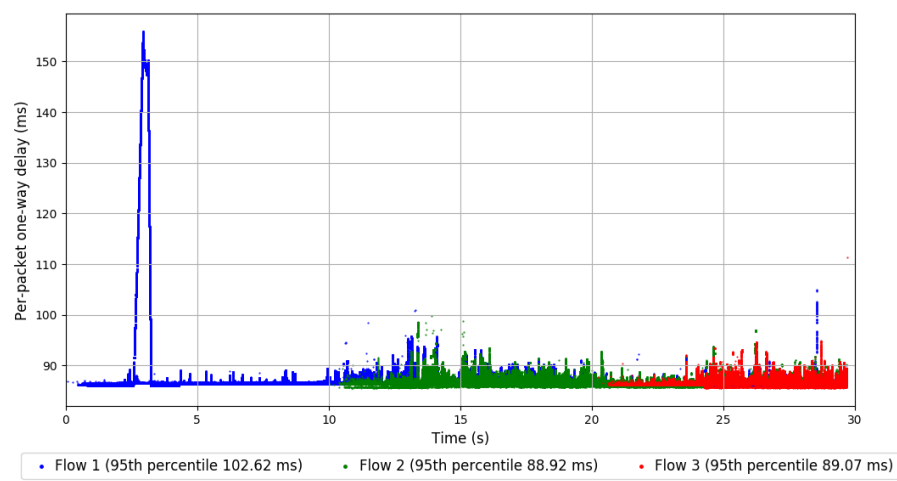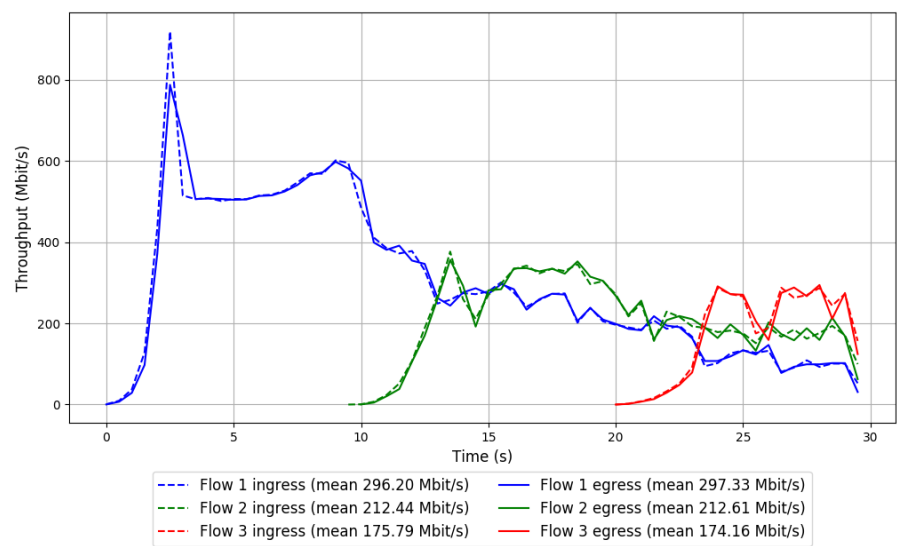
Run 3: Report of PCC — Data Link

```
Run 4: Statistics of PCC

Start at: 2017-08-31 13:00:09
End at: 2017-08-31 13:00:39


# Below is generated by plot.py at 2017-08-31 18:14:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 365.70 Mbit/s
95th percentile per-packet one-way delay: 119.739 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 305.35 Mbit/s
95th percentile per-packet one-way delay: 120.848 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 15.35 Mbit/s
95th percentile per-packet one-way delay: 118.437 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 155.82 Mbit/s
95th percentile per-packet one-way delay: 118.483 ms
Loss rate: 1.66%
```

# Run 4: Report of PCC — Data Link

```
Run 5: Statistics of PCC

Start at: 2017-08-31 13:14:00
End at: 2017-08-31 13:14:30


# Below is generated by plot.py at 2017-08-31 18:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 492.73 Mbit/s
95th percentile per-packet one-way delay: 92.467 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 302.57 Mbit/s
95th percentile per-packet one-way delay: 93.559 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 206.39 Mbit/s
95th percentile per-packet one-way delay: 92.146 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 164.79 Mbit/s
95th percentile per-packet one-way delay: 89.494 ms
Loss rate: 2.52%
```
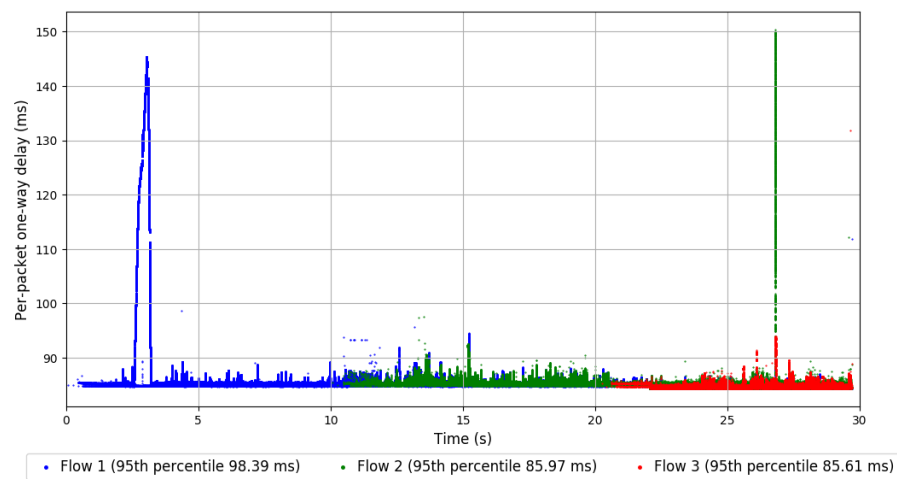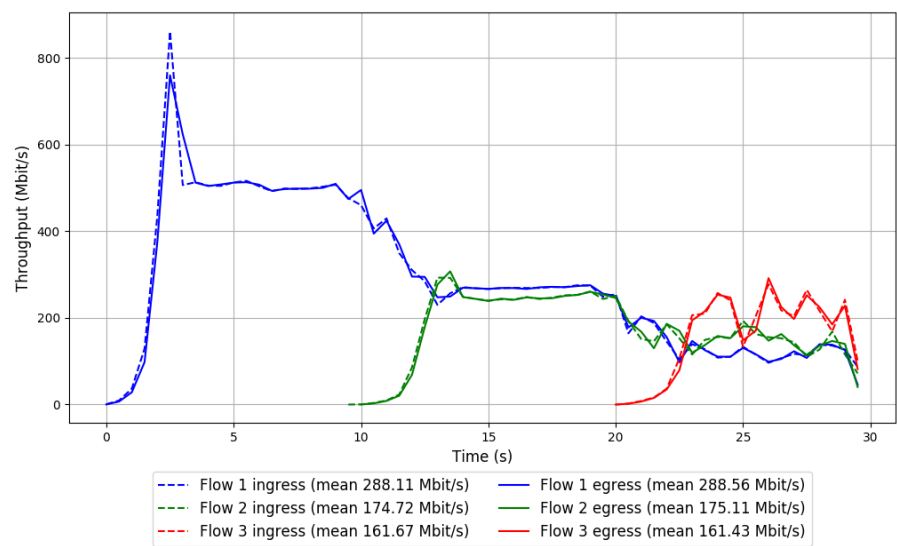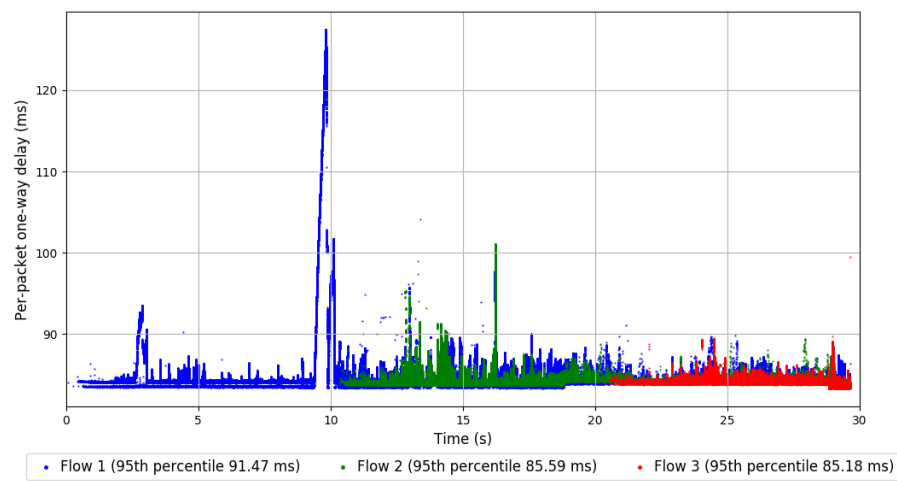
Run 5: Report of PCC — Data Link





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```
Run 6: Statistics of PCC

Start at: 2017-08-31 13:28:40
End at: 2017-08-31 13:29:10


# Below is generated by plot.py at 2017-08-31 18:16:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 493.96 Mbit/s
95th percentile per-packet one-way delay: 89.909 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 297.33 Mbit/s
95th percentile per-packet one-way delay: 102.622 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 212.61 Mbit/s
95th percentile per-packet one-way delay: 88.918 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 174.16 Mbit/s
95th percentile per-packet one-way delay: 89.071 ms
Loss rate: 2.67%
```
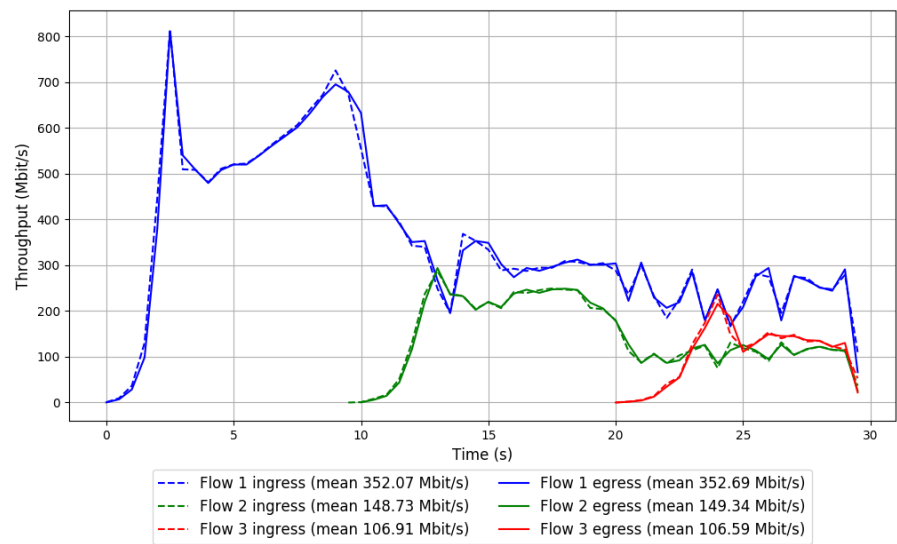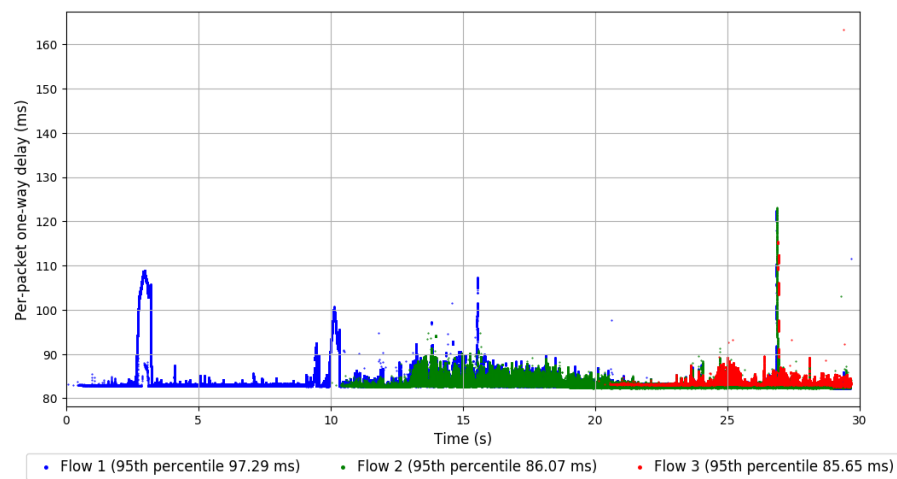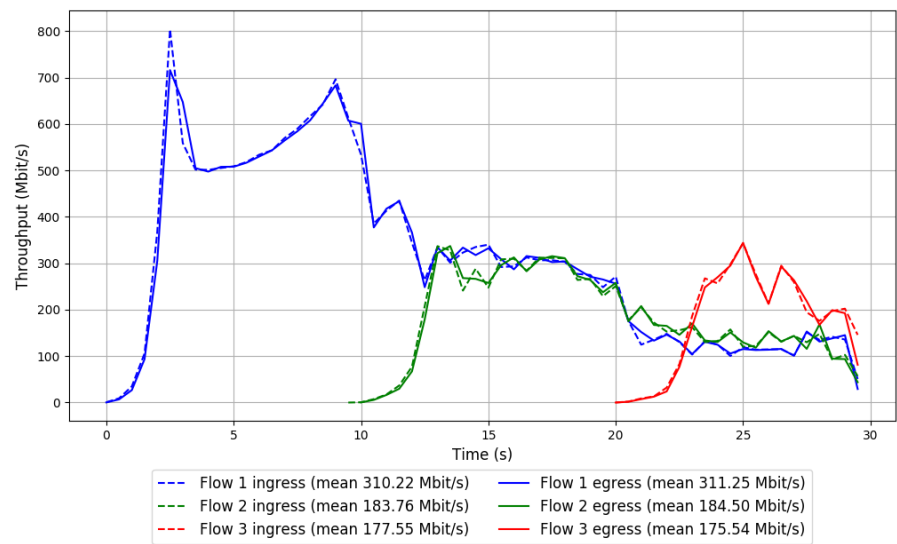
Run 6: Report of PCC — Data Link

```
Run 7: Statistics of PCC

Start at: 2017-08-31 13:42:32
End at: 2017-08-31 13:43:02

# Below is generated by plot.py at 2017-08-31 18:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 456.02 Mbit/s
95th percentile per-packet one-way delay: 86.981 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 288.56 Mbit/s
95th percentile per-packet one-way delay: 98.389 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 175.11 Mbit/s
95th percentile per-packet one-way delay: 85.969 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 161.43 Mbit/s
95th percentile per-packet one-way delay: 85.610 ms
Loss rate: 1.94%
```
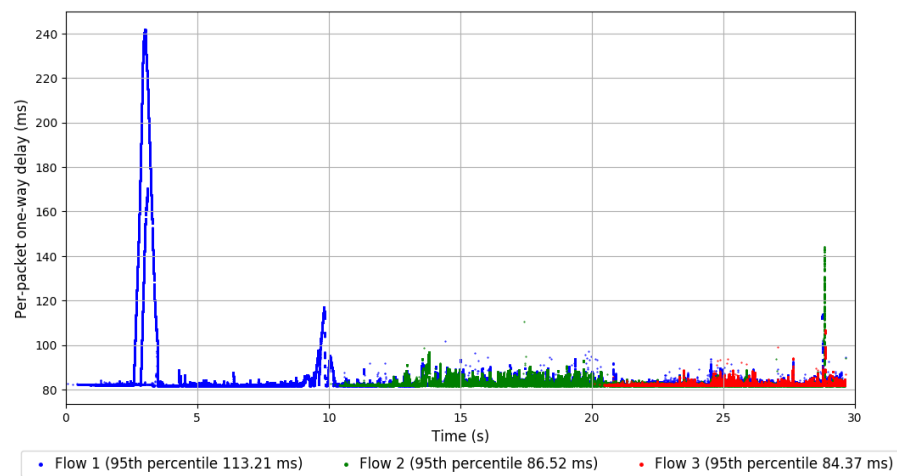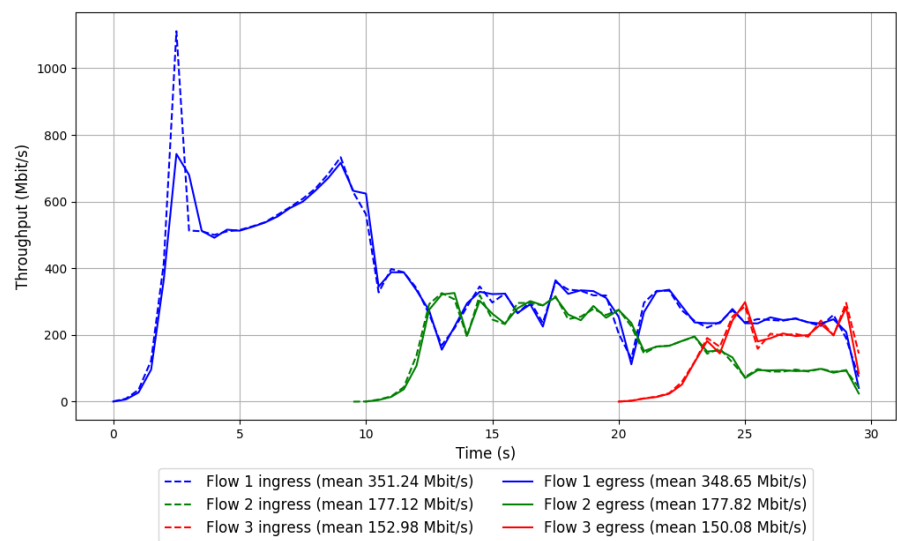
# Run 7: Report of PCC — Data Link



Flow 1 ingress (mean 288.11 Mbit/s)  Flow 1 egress (mean 288.56 Mbit/s)
Flow 2 ingress (mean 174.72 Mbit/s)  Flow 2 egress (mean 175.11 Mbit/s)
Flow 3 ingress (mean 161.67 Mbit/s)  Flow 3 egress (mean 161.43 Mbit/s)



Flow 1 (95th percentile 98.39 ms)  Flow 2 (95th percentile 85.97 ms)  Flow 3 (95th percentile 85.61 ms)

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```
Run 8: Statistics of PCC

Start at: 2017-08-31 13:57:05
End at: 2017-08-31 13:57:35


# Below is generated by plot.py at 2017-08-31 18:17:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 485.83 Mbit/s
95th percentile per-packet one-way delay: 88.927 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 352.69 Mbit/s
95th percentile per-packet one-way delay: 91.475 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 149.34 Mbit/s
95th percentile per-packet one-way delay: 85.590 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 106.59 Mbit/s
95th percentile per-packet one-way delay: 85.182 ms
Loss rate: 1.97%
```
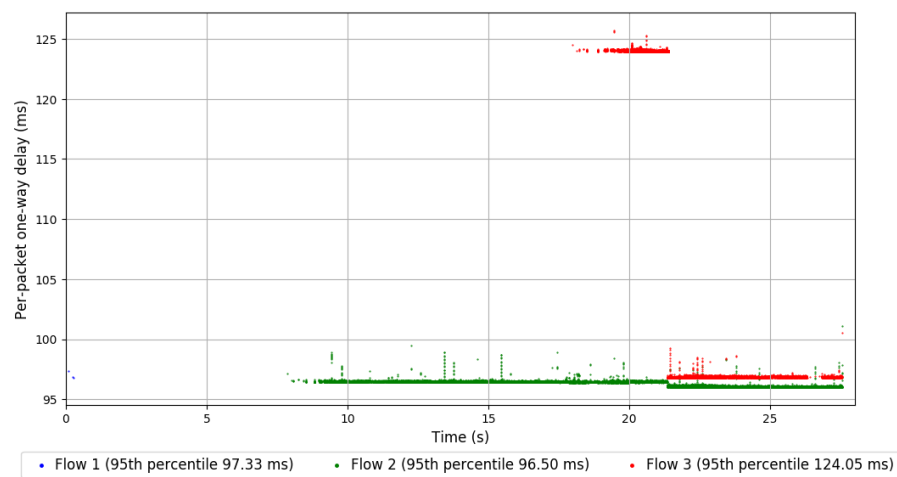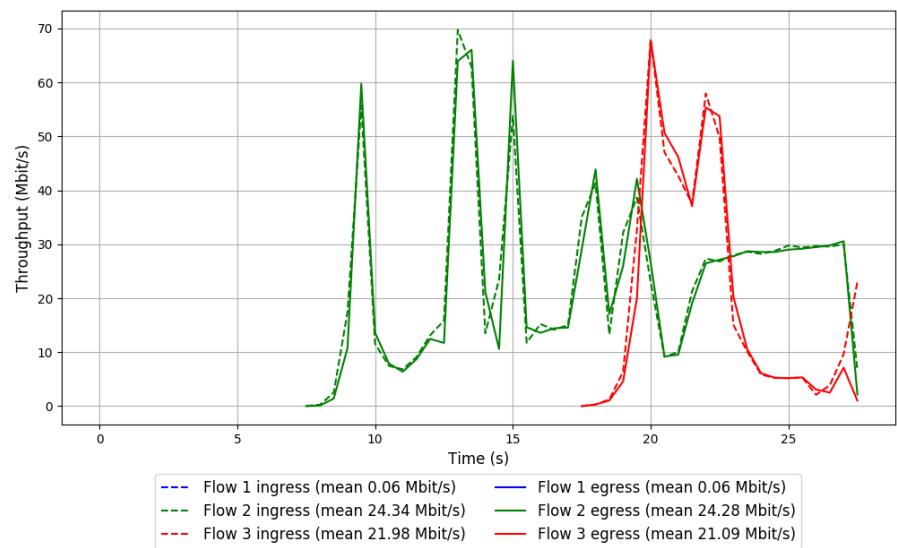
Run 8: Report of PCC — Data Link





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```
Run 9: Statistics of PCC

Start at: 2017-08-31 14:11:45
End at: 2017-08-31 14:12:15


# Below is generated by plot.py at 2017-08-31 18:17:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.05 Mbit/s
95th percentile per-packet one-way delay: 90.253 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 311.25 Mbit/s
95th percentile per-packet one-way delay: 97.293 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 184.50 Mbit/s
95th percentile per-packet one-way delay: 86.073 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 175.54 Mbit/s
95th percentile per-packet one-way delay: 85.648 ms
Loss rate: 3.13%
```

Run 9: Report of PCC — Data Link





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```
Run 10: Statistics of PCC

Start at: 2017-08-31 14:27:31
End at: 2017-08-31 14:28:01


# Below is generated by plot.py at 2017-08-31 18:18:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 514.83 Mbit/s
95th percentile per-packet one-way delay: 95.511 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 348.65 Mbit/s
95th percentile per-packet one-way delay: 113.212 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 177.82 Mbit/s
95th percentile per-packet one-way delay: 86.515 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 150.08 Mbit/s
95th percentile per-packet one-way delay: 84.369 ms
Loss rate: 3.76%
```
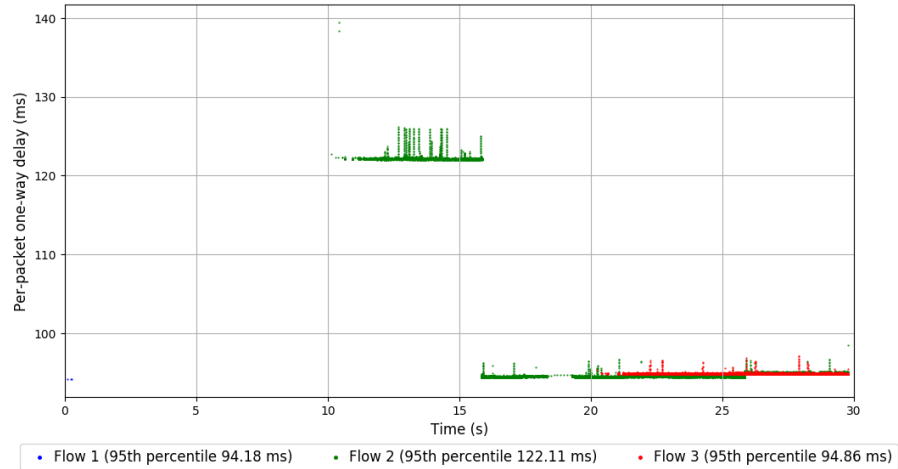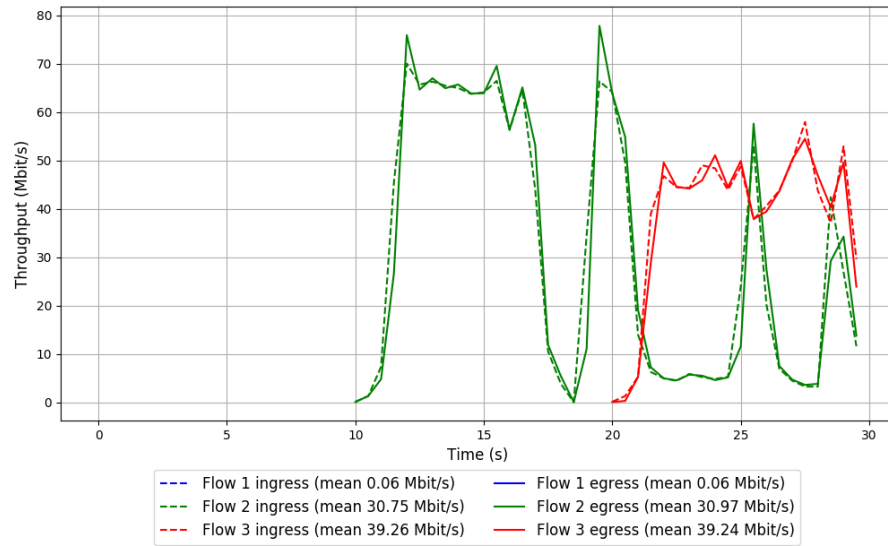
Run 10: Report of PCC — Data Link



Flow 1 ingress (mean 351.24 Mbit/s)    Flow 1 egress (mean 348.65 Mbit/s)
Flow 2 ingress (mean 177.12 Mbit/s)    Flow 2 egress (mean 177.82 Mbit/s)
Flow 3 ingress (mean 152.98 Mbit/s)    Flow 3 egress (mean 150.08 Mbit/s)



Flow 1 (95th percentile 113.21 ms)    Flow 2 (95th percentile 86.52 ms)    Flow 3 (95th percentile 84.37 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2017-08-31 12:27:20
End at: 2017-08-31 12:27:51


# Below is generated by plot.py at 2017-08-31 18:18:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.75 Mbit/s
95th percentile per-packet one-way delay: 123.996 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 97.331 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.28 Mbit/s
95th percentile per-packet one-way delay: 96.495 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 21.09 Mbit/s
95th percentile per-packet one-way delay: 124.046 ms
Loss rate: 6.03%
```
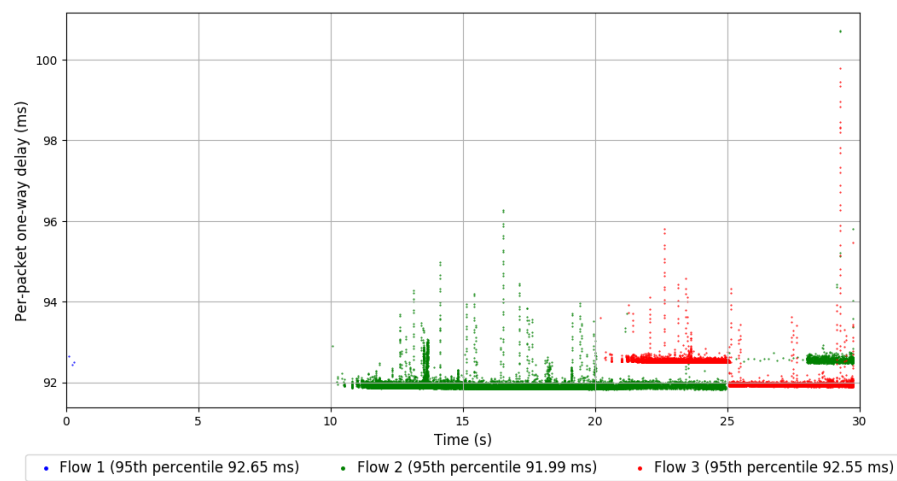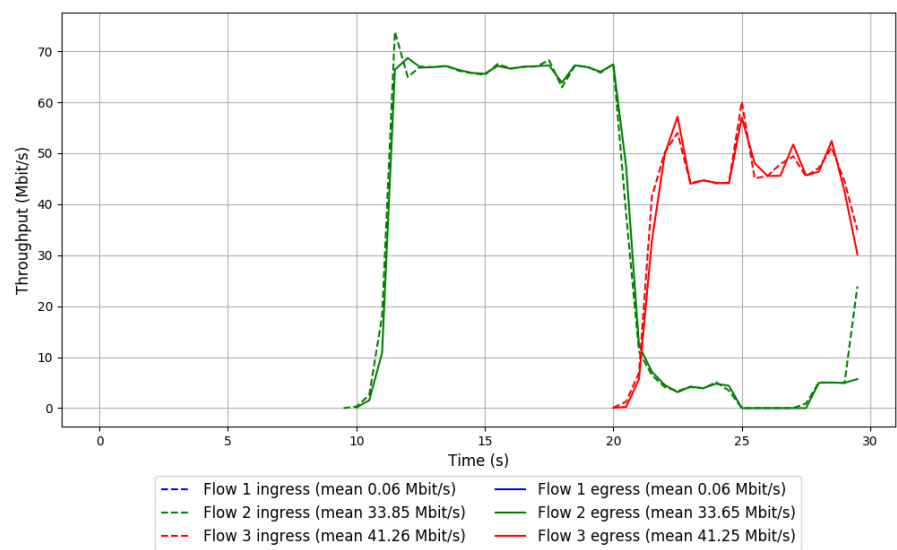
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2017-08-31 12:40:48
End at: 2017-08-31 12:41:18


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.13 Mbit/s
95th percentile per-packet one-way delay: 122.090 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 94.184 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 30.97 Mbit/s
95th percentile per-packet one-way delay: 122.107 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 39.24 Mbit/s
95th percentile per-packet one-way delay: 94.858 ms
Loss rate: 1.86%
```
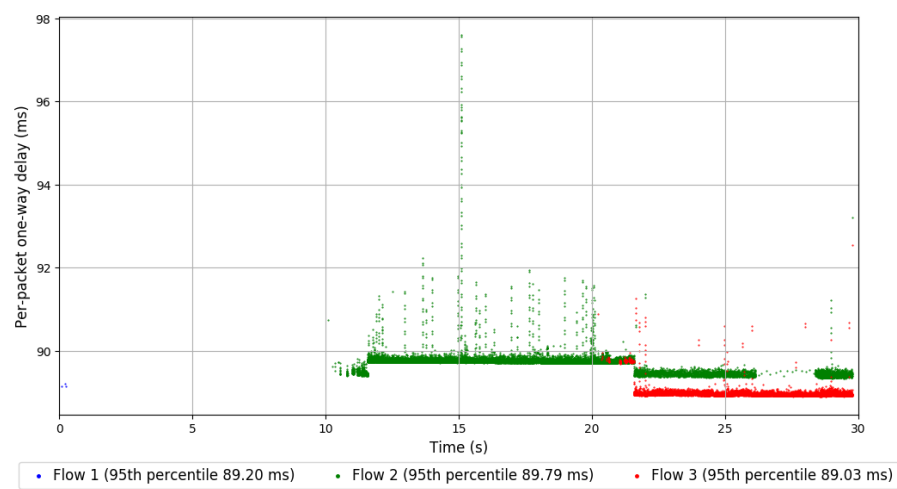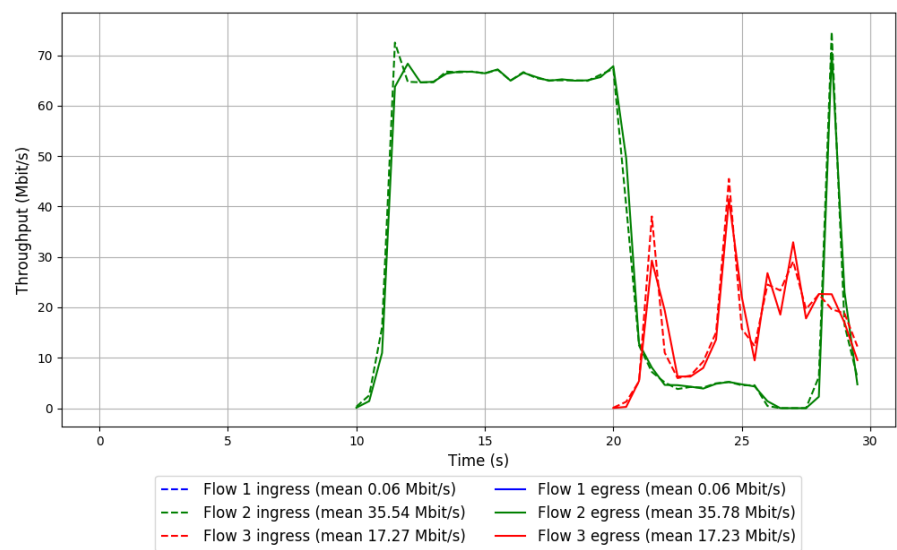
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2017-08-31 12:54:19
End at: 2017-08-31 12:54:49


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.59 Mbit/s
95th percentile per-packet one-way delay: 92.532 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 92.654 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 33.65 Mbit/s
95th percentile per-packet one-way delay: 91.987 ms
Loss rate: 1.42%
-- Flow 3:
Average throughput: 41.25 Mbit/s
95th percentile per-packet one-way delay: 92.547 ms
Loss rate: 1.79%
```
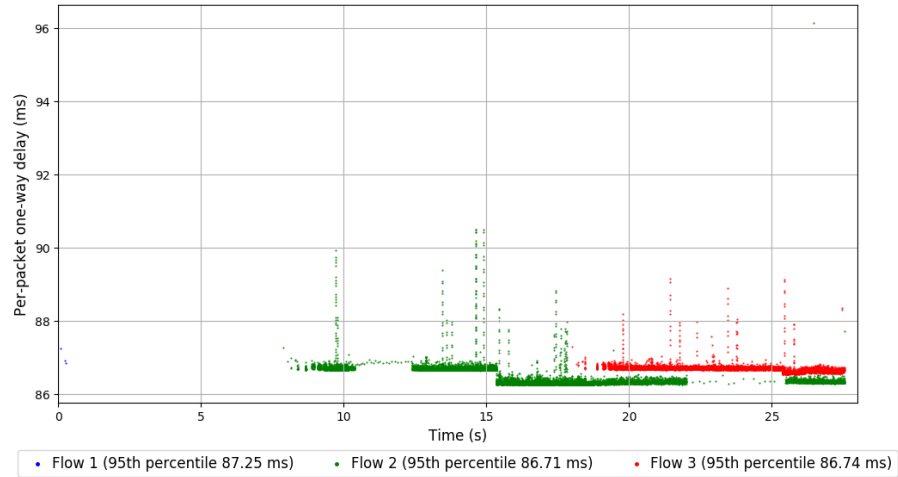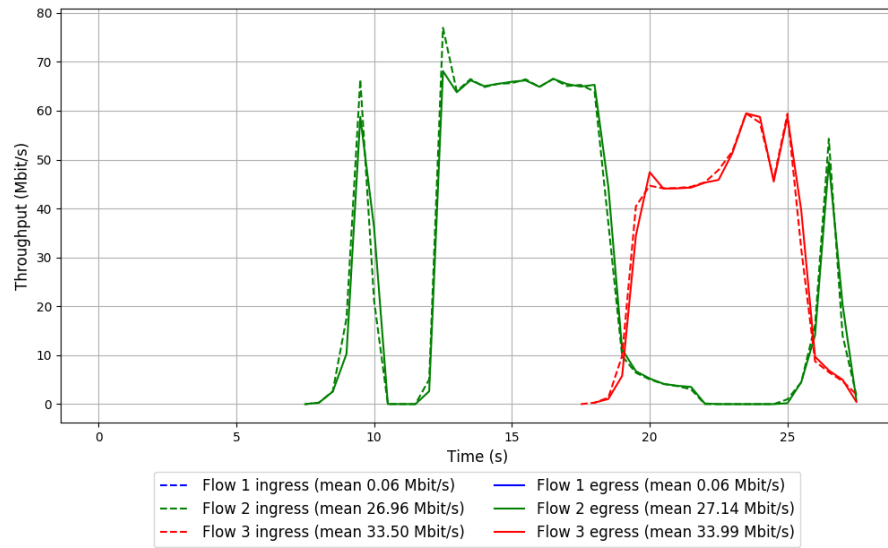
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2017-08-31 13:06:53
End at: 2017-08-31 13:07:23


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.25 Mbit/s
95th percentile per-packet one-way delay: 89.788 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 89.197 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 35.78 Mbit/s
95th percentile per-packet one-way delay: 89.793 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 17.23 Mbit/s
95th percentile per-packet one-way delay: 89.034 ms
Loss rate: 1.94%
```
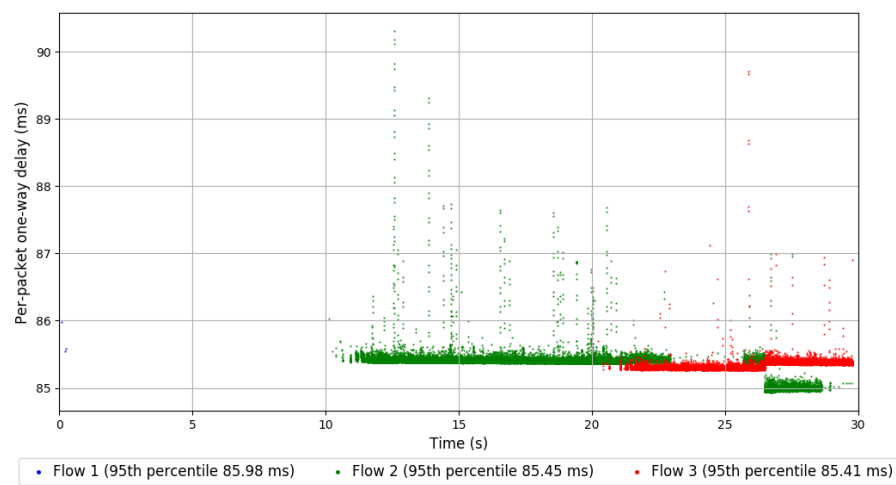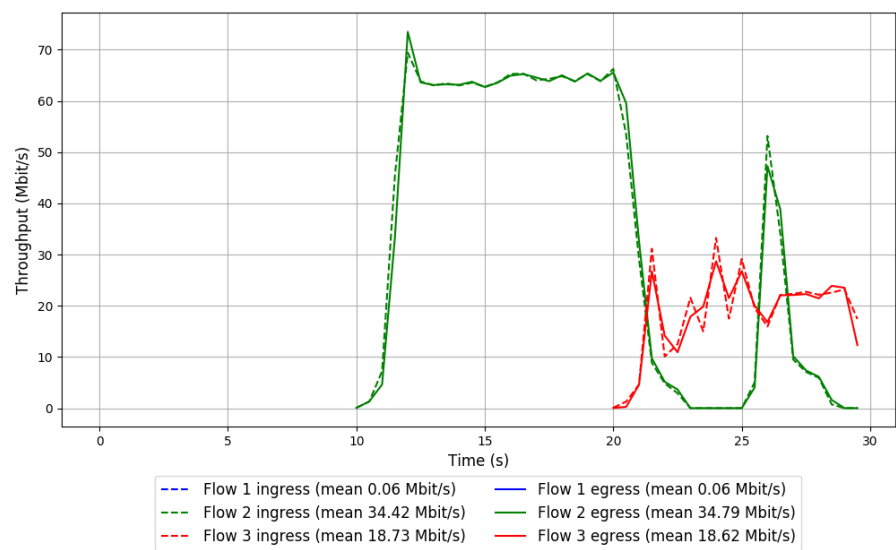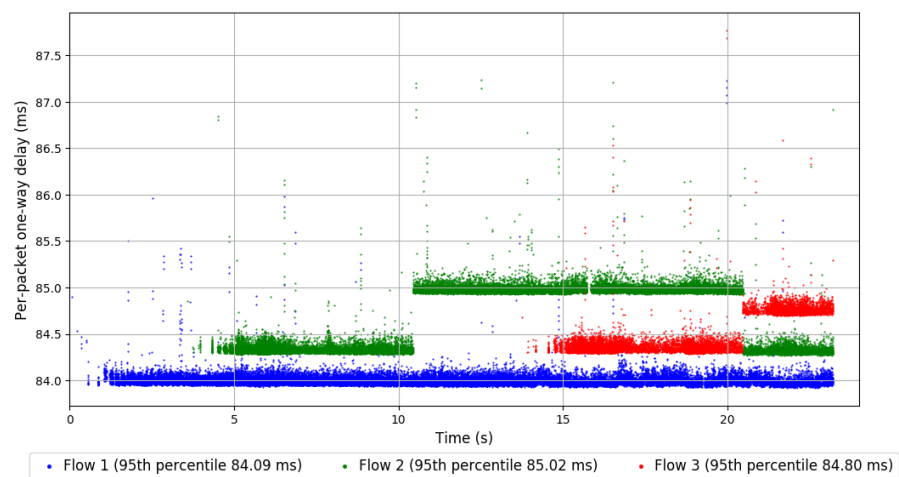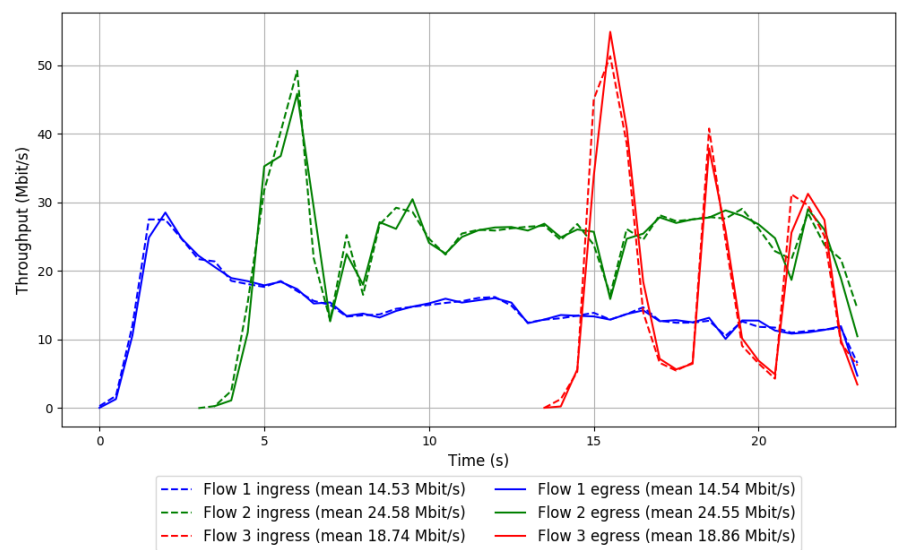
Run 4: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 0.06 Mbit/s) --- Flow 1 egress (mean 0.06 Mbit/s)
Flow 2 ingress (mean 35.54 Mbit/s) --- Flow 2 egress (mean 35.78 Mbit/s)
Flow 3 ingress (mean 17.27 Mbit/s) --- Flow 3 egress (mean 17.23 Mbit/s)



Flow 1 (95th percentile 89.20 ms)    Flow 2 (95th percentile 89.79 ms)    Flow 3 (95th percentile 89.03 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2017-08-31 13:21:56
End at: 2017-08-31 13:22:27


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.23 Mbit/s
95th percentile per-packet one-way delay: 86.730 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 87.255 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 27.14 Mbit/s
95th percentile per-packet one-way delay: 86.713 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 33.99 Mbit/s
95th percentile per-packet one-way delay: 86.740 ms
Loss rate: 0.36%
```
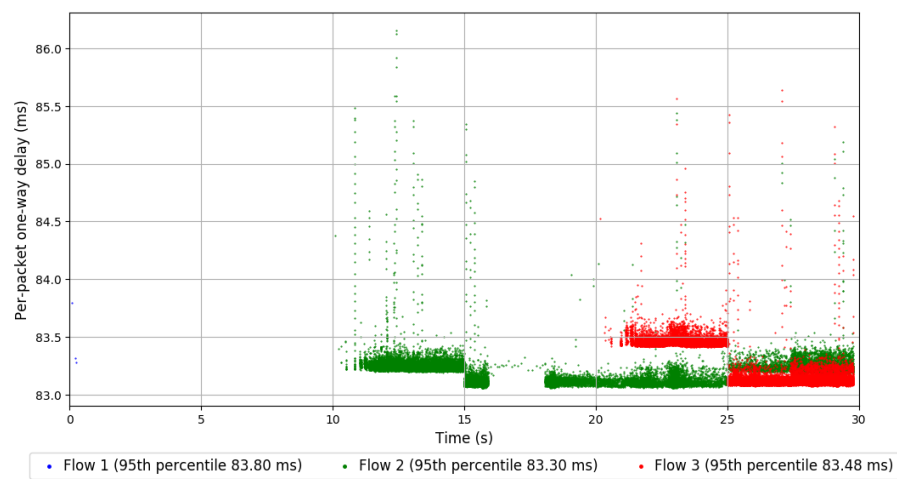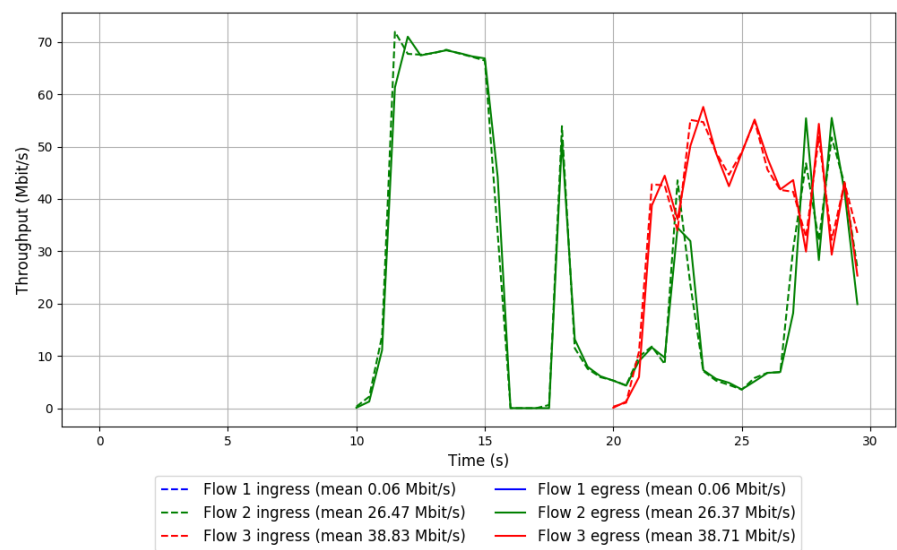
Run 5: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 0.06 Mbit/s)
Flow 2 ingress (mean 26.96 Mbit/s)
Flow 3 ingress (mean 33.50 Mbit/s)
Flow 1 egress (mean 0.06 Mbit/s)
Flow 2 egress (mean 27.14 Mbit/s)
Flow 3 egress (mean 33.99 Mbit/s)



Flow 1 (95th percentile 87.25 ms)
Flow 2 (95th percentile 86.71 ms)
Flow 3 (95th percentile 86.74 ms)

```
Run 6: Statistics of QUIC Cubic

Start at: 2017-08-31 13:36:28
End at: 2017-08-31 13:36:58


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 28.97 Mbit/s
95th percentile per-packet one-way delay: 85.443 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 85.978 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 34.79 Mbit/s
95th percentile per-packet one-way delay: 85.447 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 18.62 Mbit/s
95th percentile per-packet one-way delay: 85.410 ms
Loss rate: 2.30%
```
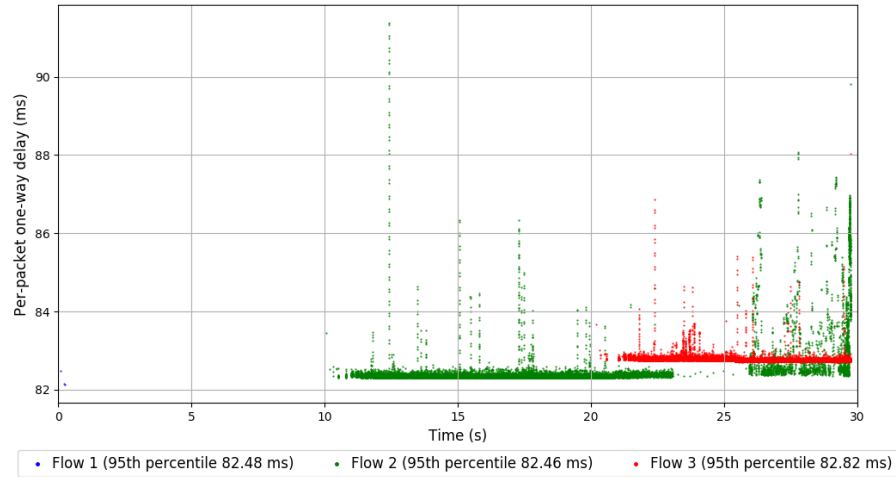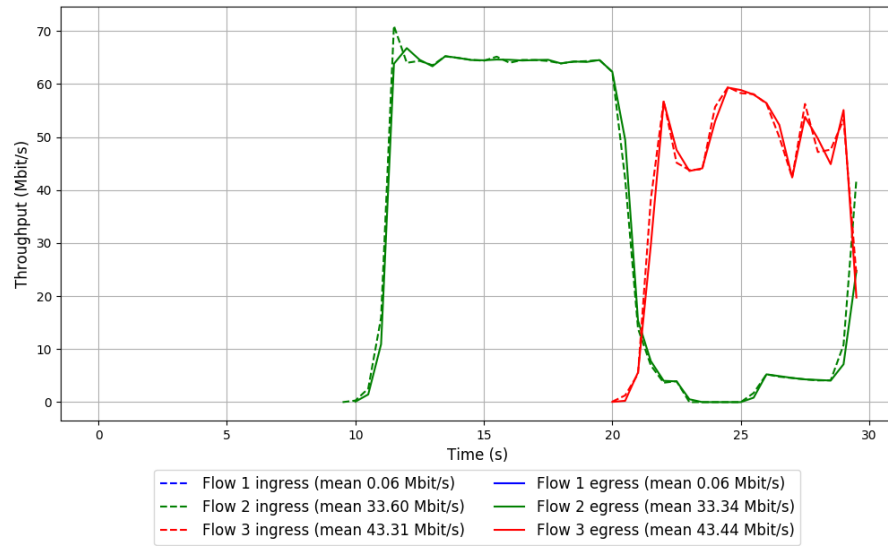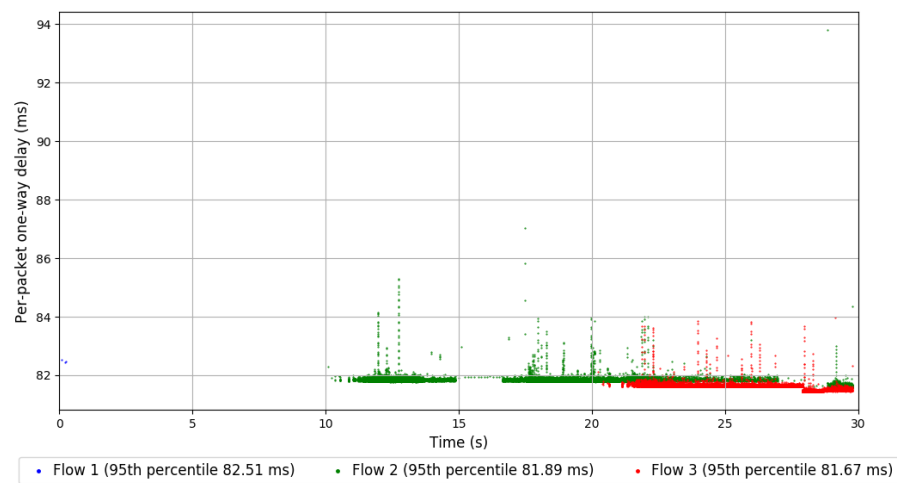
Run 6: Report of QUIC Cubic — Data Link

Run 7: Statistics of QUIC Cubic

Start at: 2017-08-31 13:49:47
End at: 2017-08-31 13:50:17

Run 7: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 14.53 Mbit/s) — — — Flow 1 egress (mean 14.54 Mbit/s)
Flow 2 ingress (mean 24.58 Mbit/s) — — — Flow 2 egress (mean 24.55 Mbit/s)
Flow 3 ingress (mean 18.74 Mbit/s) — — — Flow 3 egress (mean 18.86 Mbit/s)



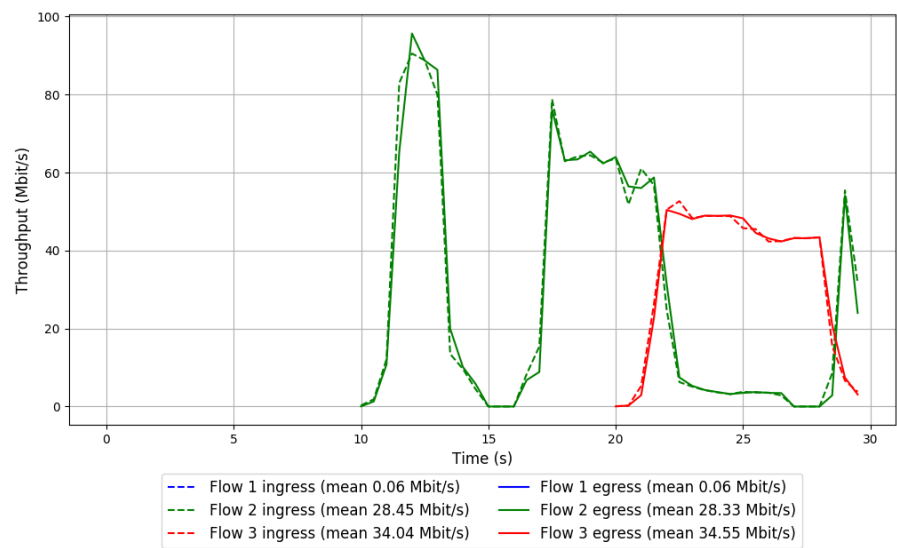Flow 1 (95th percentile 84.09 ms)    Flow 2 (95th percentile 85.02 ms)    Flow 3 (95th percentile 84.80 ms)

```
Run 8: Statistics of QUIC Cubic

Start at: 2017-08-31 14:05:39
End at: 2017-08-31 14:06:09

# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.02 Mbit/s
95th percentile per-packet one-way delay: 83.462 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 83.797 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.37 Mbit/s
95th percentile per-packet one-way delay: 83.299 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 38.71 Mbit/s
95th percentile per-packet one-way delay: 83.485 ms
Loss rate: 2.08%
```
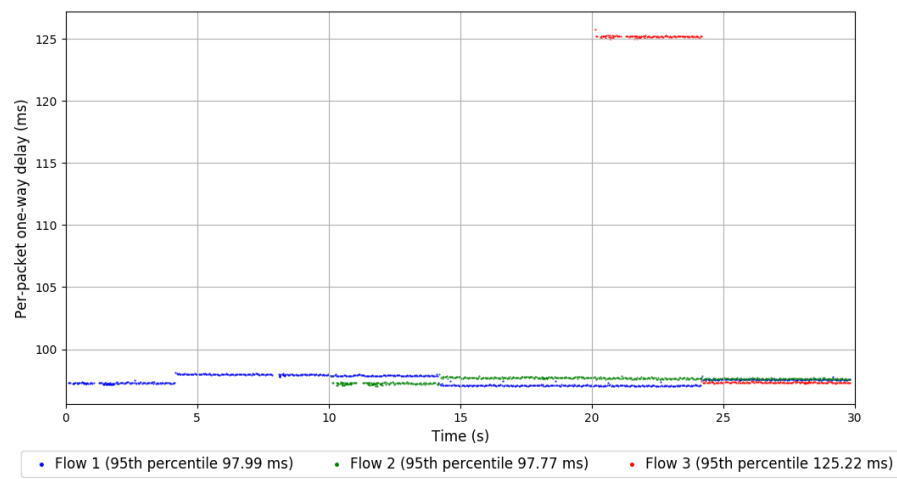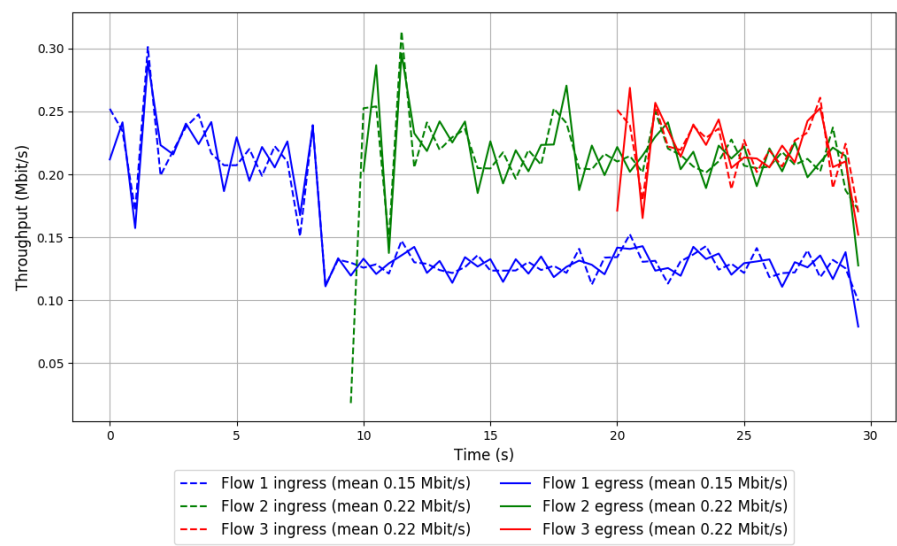
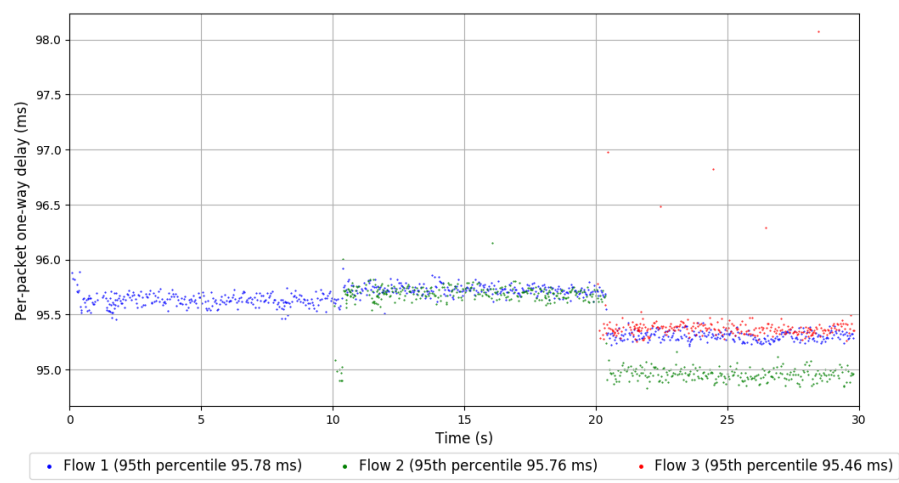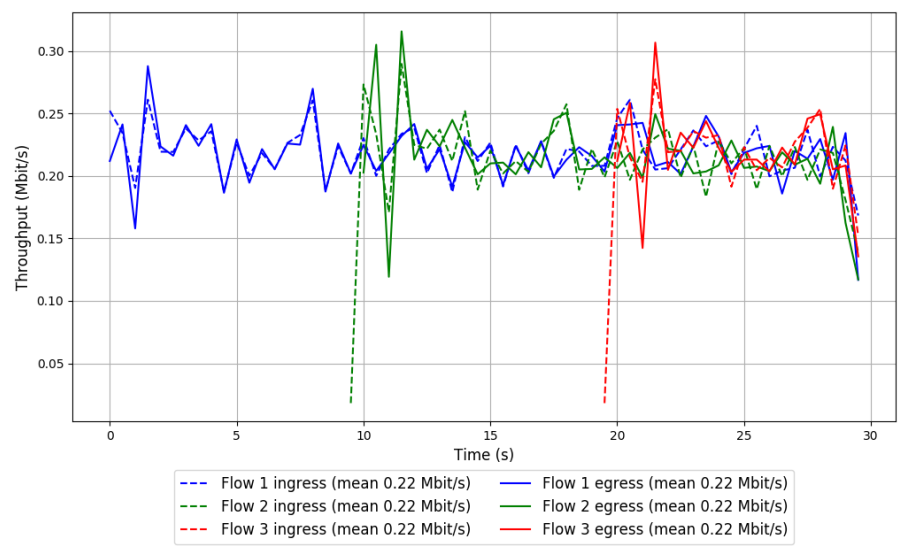Run 8: Report of QUIC Cubic — Data Link

```
Run 9: Statistics of QUIC Cubic

Start at: 2017-08-31 14:19:59
End at: 2017-08-31 14:20:29


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.14 Mbit/s
95th percentile per-packet one-way delay: 82.801 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 82.484 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 33.34 Mbit/s
95th percentile per-packet one-way delay: 82.458 ms
Loss rate: 1.62%
-- Flow 3:
Average throughput: 43.44 Mbit/s
95th percentile per-packet one-way delay: 82.816 ms
Loss rate: 1.45%
```

Run 9: Report of QUIC Cubic — Data Link



- - - - Flow 1 ingress (mean 0.06 Mbit/s)  ——— Flow 1 egress (mean 0.06 Mbit/s)
- - - - Flow 2 ingress (mean 33.60 Mbit/s)  ——— Flow 2 egress (mean 33.34 Mbit/s)
- - - - Flow 3 ingress (mean 43.31 Mbit/s)  ——— Flow 3 egress (mean 43.44 Mbit/s)



• Flow 1 (95th percentile 82.48 ms)    • Flow 2 (95th percentile 82.46 ms)    • Flow 3 (95th percentile 82.82 ms)

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```
Run 10: Statistics of QUIC Cubic

Start at: 2017-08-31 14:35:16
End at: 2017-08-31 14:35:46


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.89 Mbit/s
95th percentile per-packet one-way delay: 81.869 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 82.507 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.33 Mbit/s
95th percentile per-packet one-way delay: 81.892 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 34.55 Mbit/s
95th percentile per-packet one-way delay: 81.675 ms
Loss rate: 0.25%
```

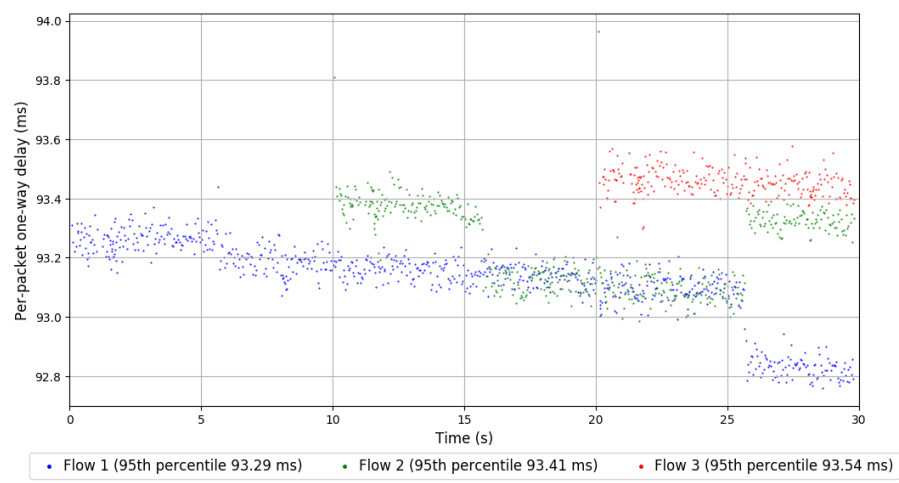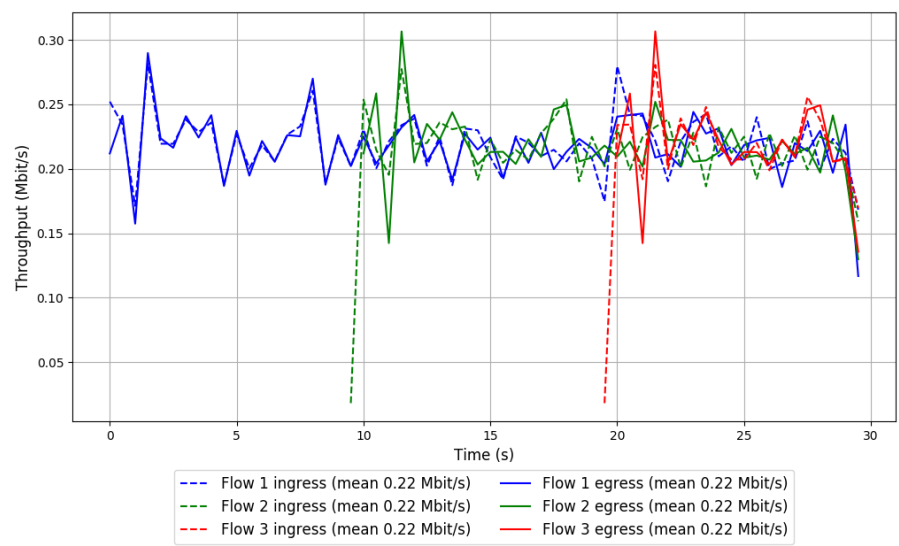Run 10: Report of QUIC Cubic — Data Link



- - - Flow 1 ingress (mean 0.06 Mbit/s) —— Flow 1 egress (mean 0.06 Mbit/s)
- - - Flow 2 ingress (mean 28.45 Mbit/s) —— Flow 2 egress (mean 28.33 Mbit/s)
- - - Flow 3 ingress (mean 34.04 Mbit/s) —— Flow 3 egress (mean 34.55 Mbit/s)



• Flow 1 (95th percentile 82.51 ms)   • Flow 2 (95th percentile 81.89 ms)   • Flow 3 (95th percentile 81.67 ms)

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```
Run 1: Statistics of SCReAM

Start at: 2017-08-31 12:21:30
End at: 2017-08-31 12:22:00

# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 125.160 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 97.993 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 97.774 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 125.223 ms
Loss rate: 1.51%
```
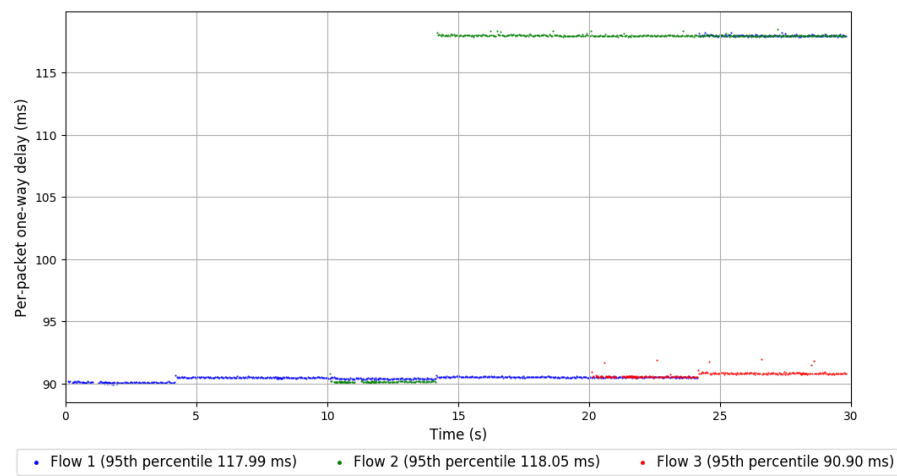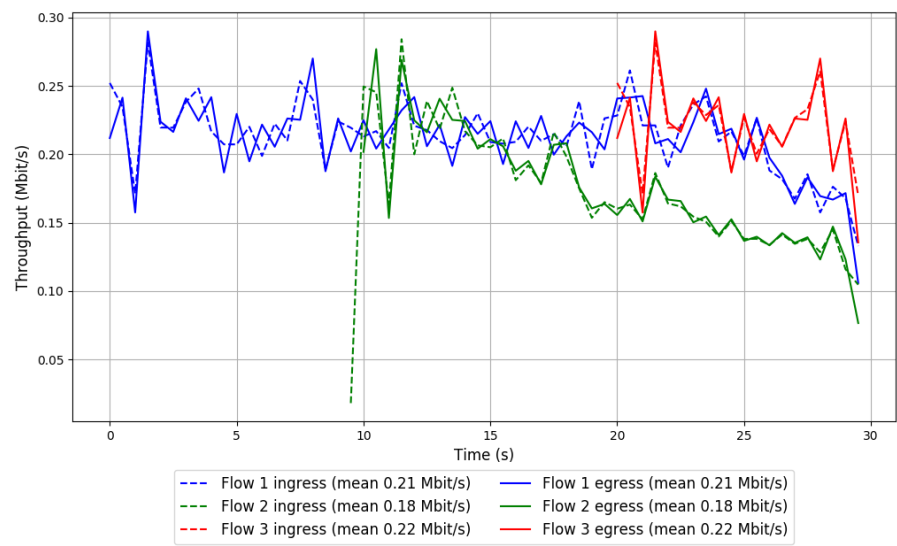
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2017-08-31 12:35:54
End at: 2017-08-31 12:36:24


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 95.767 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 95.776 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 95.761 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 95.462 ms
Loss rate: 1.50%
```
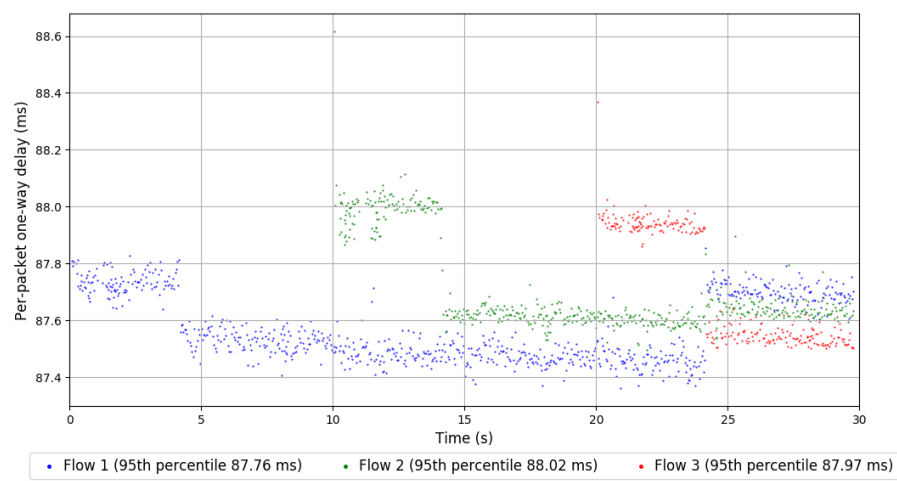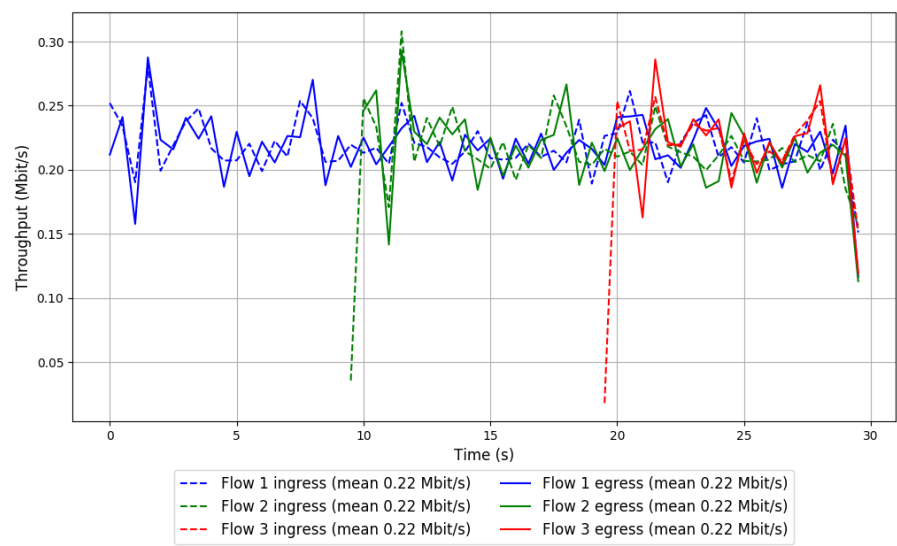
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2017-08-31 12:49:18
End at: 2017-08-31 12:49:48


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 93.477 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 93.290 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 93.411 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 93.540 ms
Loss rate: 1.50%
```
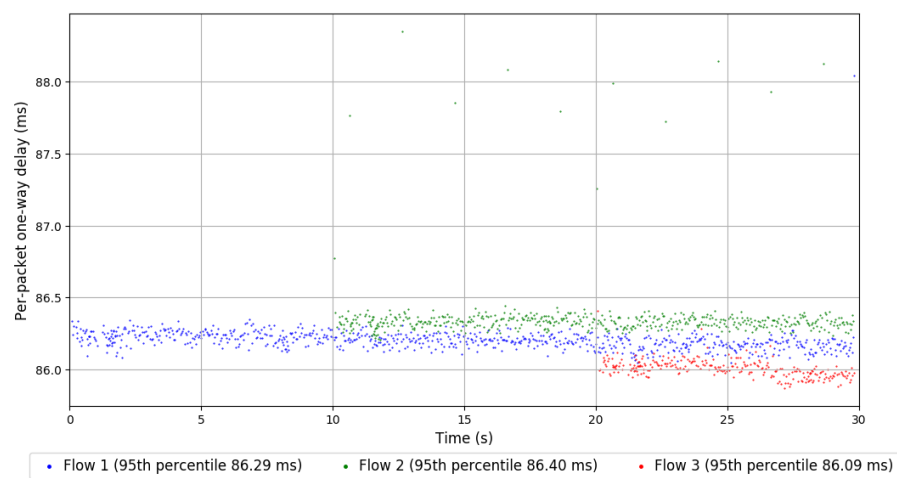
# Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2017-08-31 13:02:00
End at: 2017-08-31 13:02:30

# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 118.021 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 117.992 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 118.054 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.897 ms
Loss rate: 1.50%
```
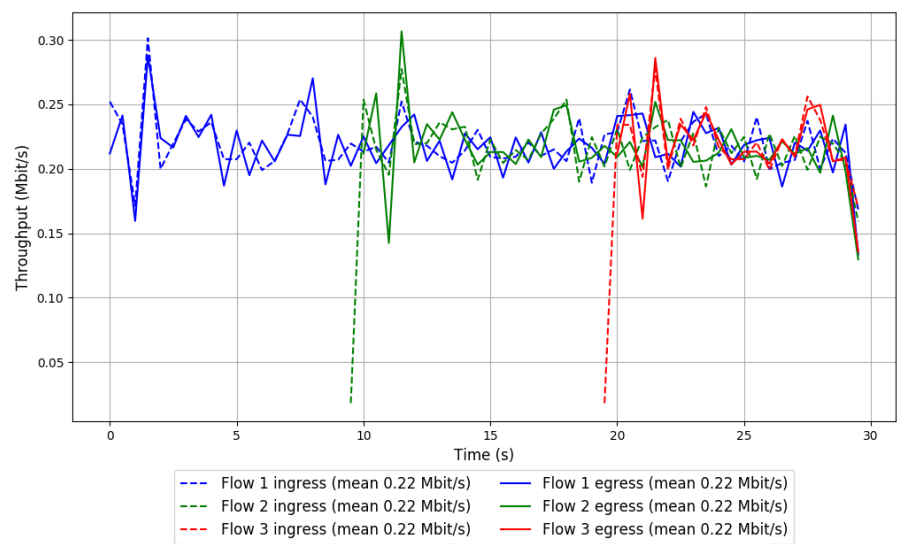
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2017-08-31 13:16:50
End at: 2017-08-31 13:17:20


# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.994 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.757 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.023 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.974 ms
Loss rate: 1.50%
```
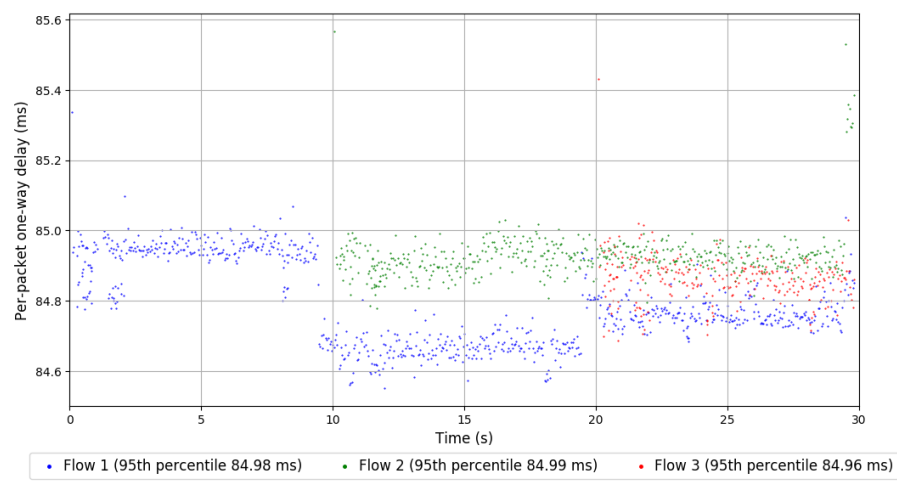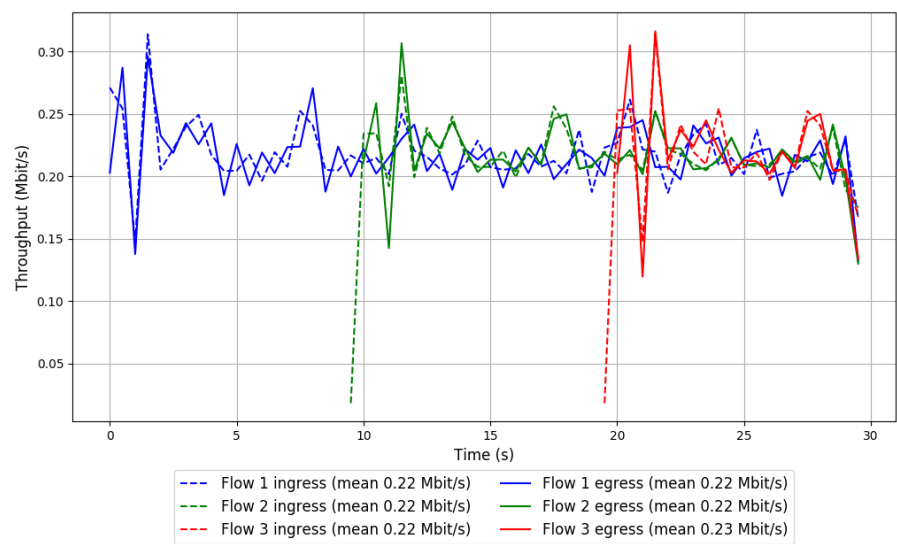
# Run 5: Report of SCReAM — Data Link





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```
Run 6: Statistics of SCReAM

Start at: 2017-08-31 13:31:38
End at: 2017-08-31 13:32:08

# Below is generated by plot.py at 2017-08-31 18:18:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.375 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.286 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.402 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.094 ms
Loss rate: 1.51%
```
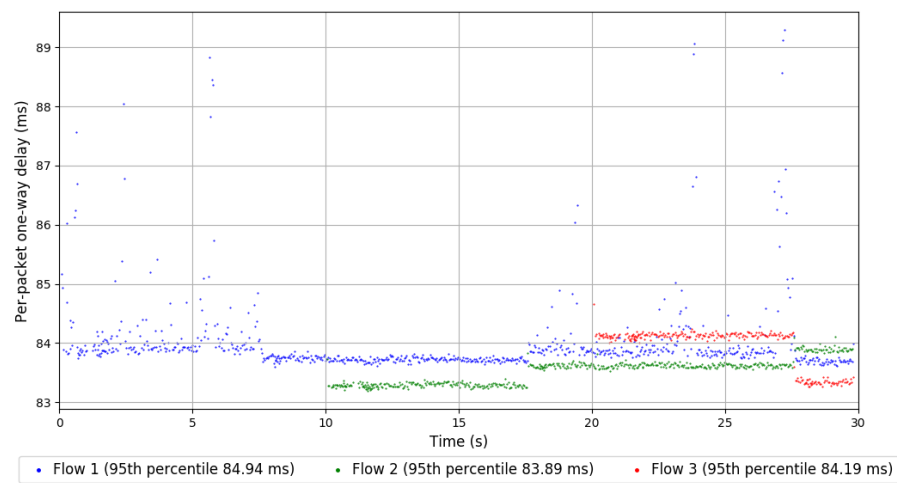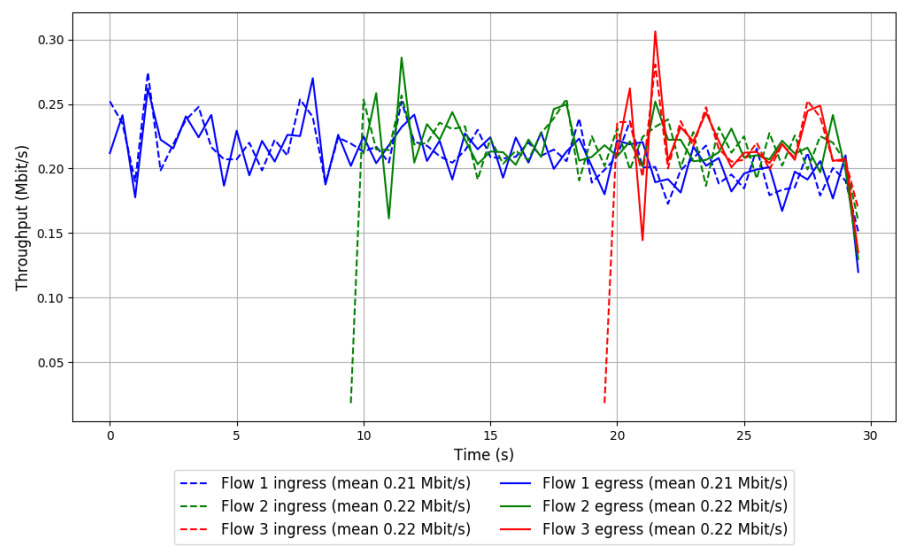
Run 6: Report of SCReAM — Data Link



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```
Run 7: Statistics of SCReAM

Start at: 2017-08-31 13:44:45
End at: 2017-08-31 13:45:15


# Below is generated by plot.py at 2017-08-31 18:19:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 84.980 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.978 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.988 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 84.957 ms
Loss rate: 1.48%
```
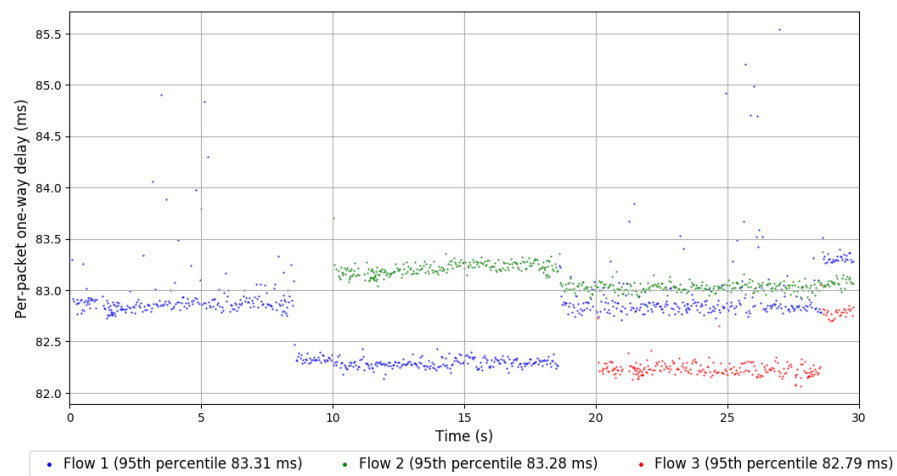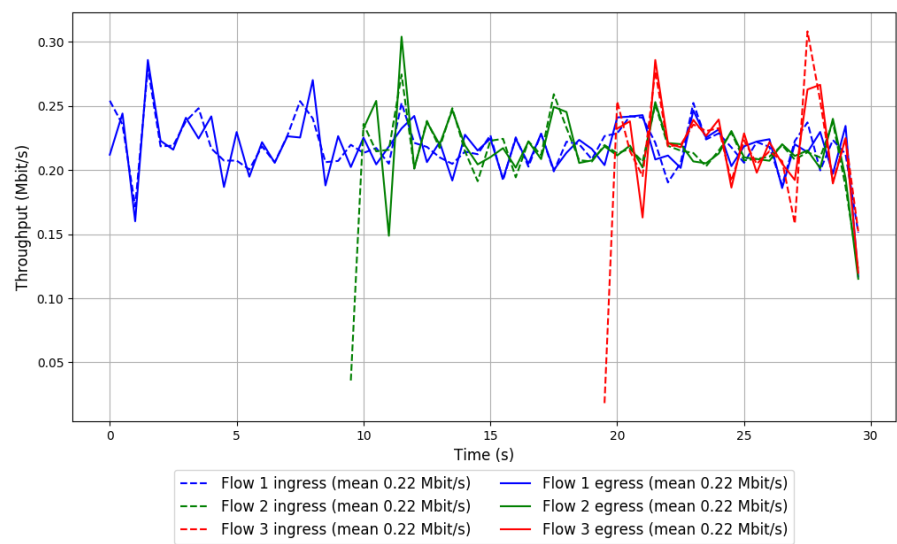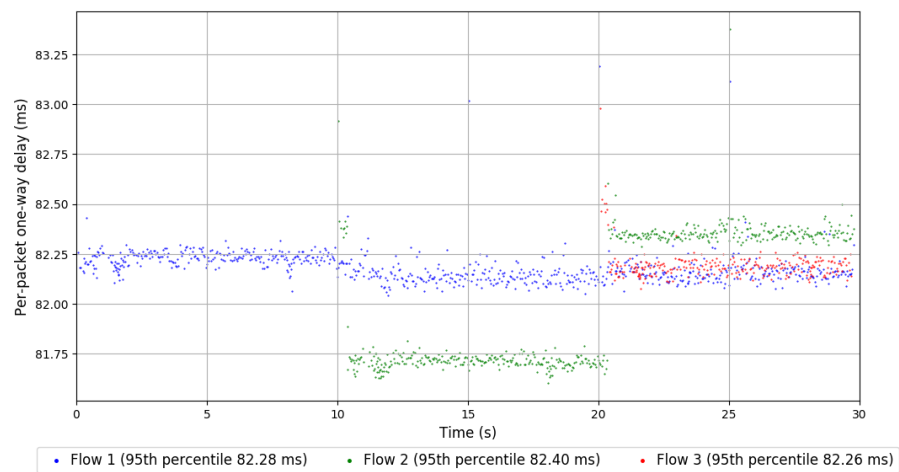
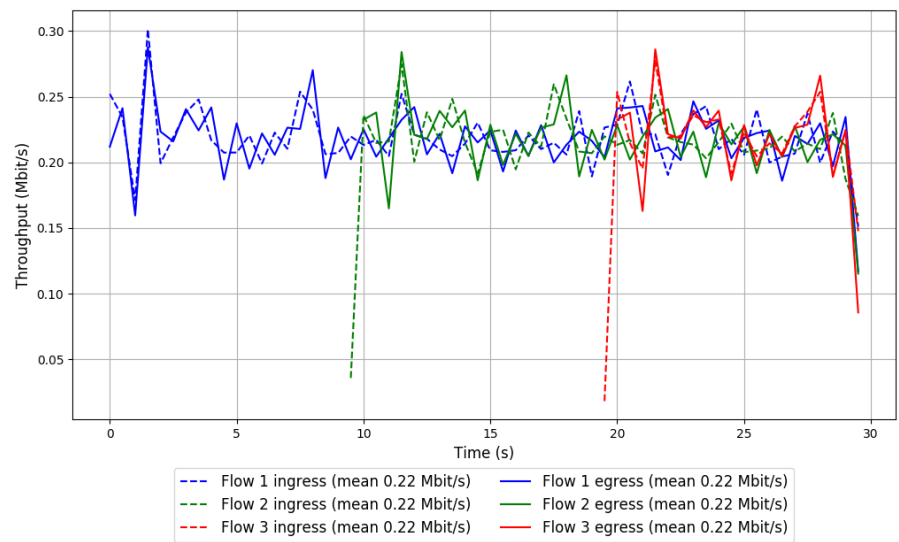# Run 7: Report of SCReAM — Data Link

```
Run 8: Statistics of SCReAM

Start at: 2017-08-31 14:00:27
End at: 2017-08-31 14:00:57


# Below is generated by plot.py at 2017-08-31 18:19:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 84.290 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 84.940 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.893 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.185 ms
Loss rate: 1.50%
```
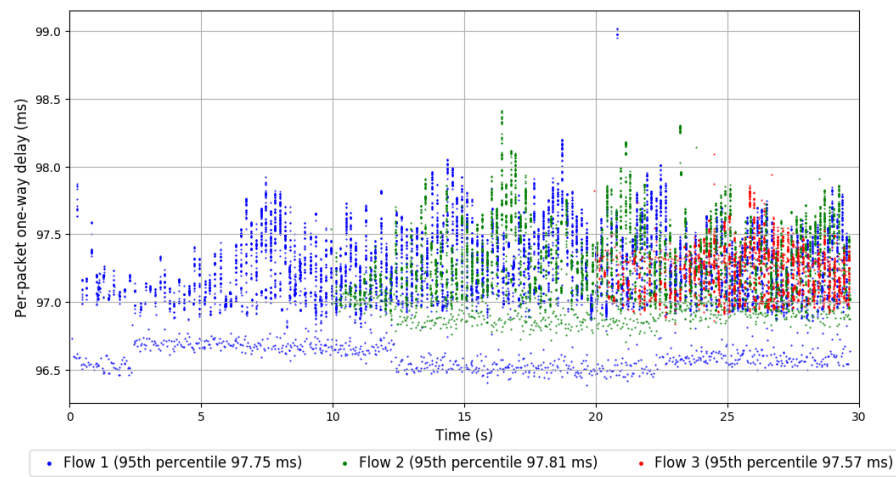
Run 8: Report of SCReAM — Data Link





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```
Run 9: Statistics of SCReAM

Start at: 2017-08-31 14:14:46
End at: 2017-08-31 14:15:16


# Below is generated by plot.py at 2017-08-31 18:19:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 83.283 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.310 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.282 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.790 ms
Loss rate: 1.50%
```
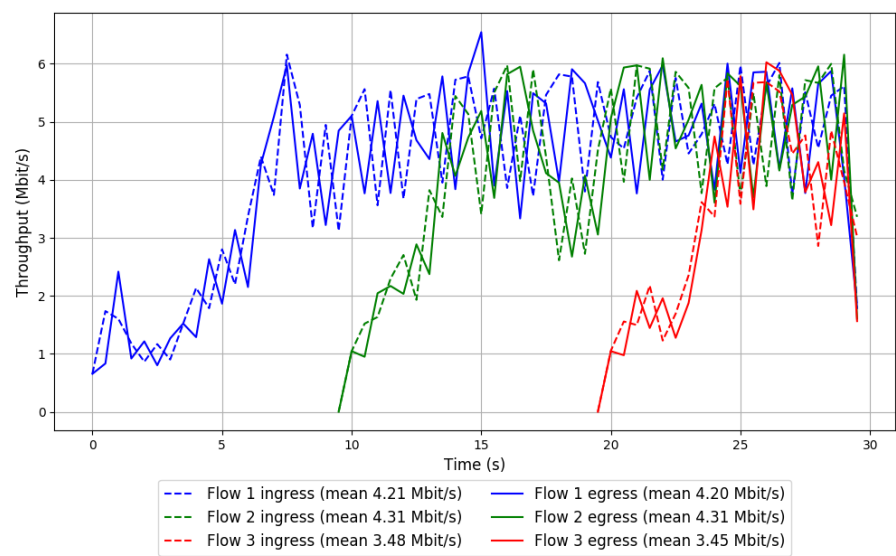
# Run 9: Report of SCReAM — Data Link

```
Run 10: Statistics of SCReAM

Start at: 2017-08-31 14:30:34
End at: 2017-08-31 14:31:04

# Below is generated by plot.py at 2017-08-31 18:19:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 82.369 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.275 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.397 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.259 ms
Loss rate: 2.17%
```
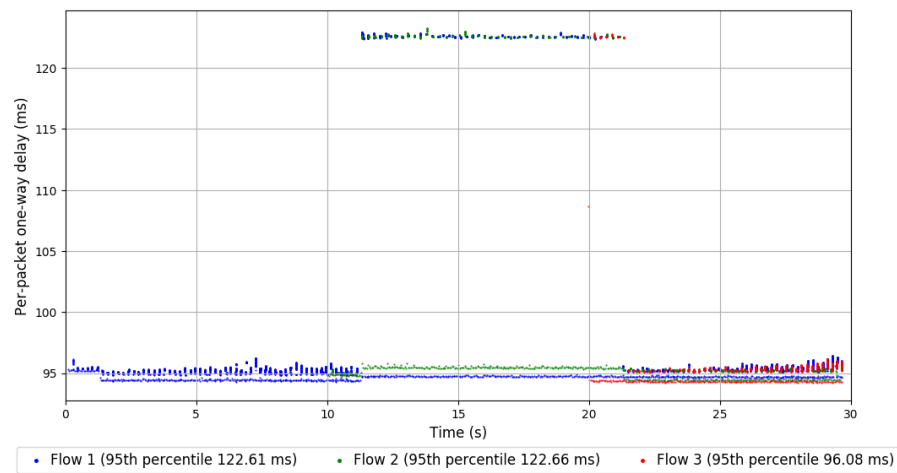
Run 10: Report of SCReAM — Data Link





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```
Run 1: Statistics of Sprout

Start at: 2017-08-31 12:25:22
End at: 2017-08-31 12:25:52


# Below is generated by plot.py at 2017-08-31 18:19:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 97.758 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 97.746 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 97.815 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 3.45 Mbit/s
95th percentile per-packet one-way delay: 97.566 ms
Loss rate: 2.76%
```
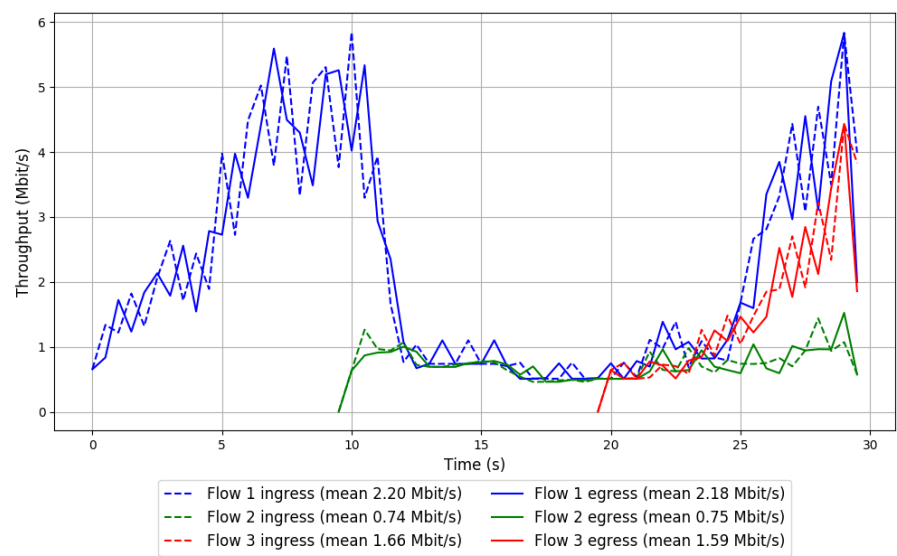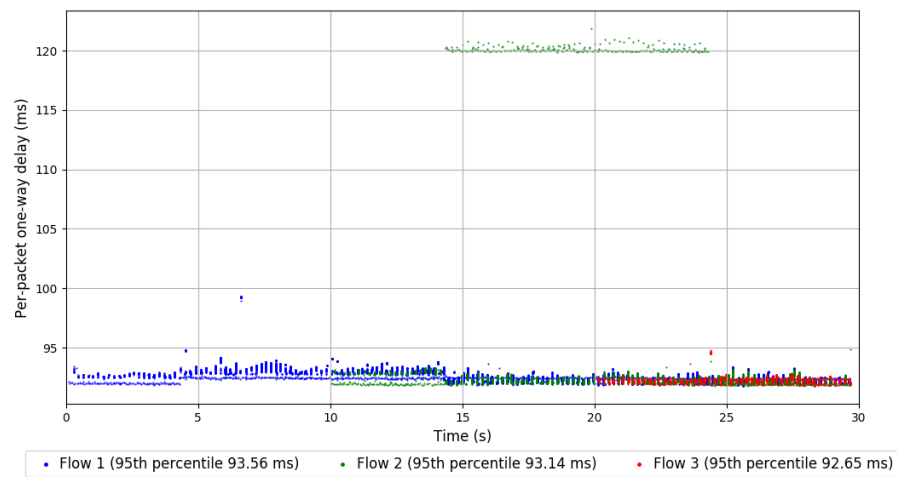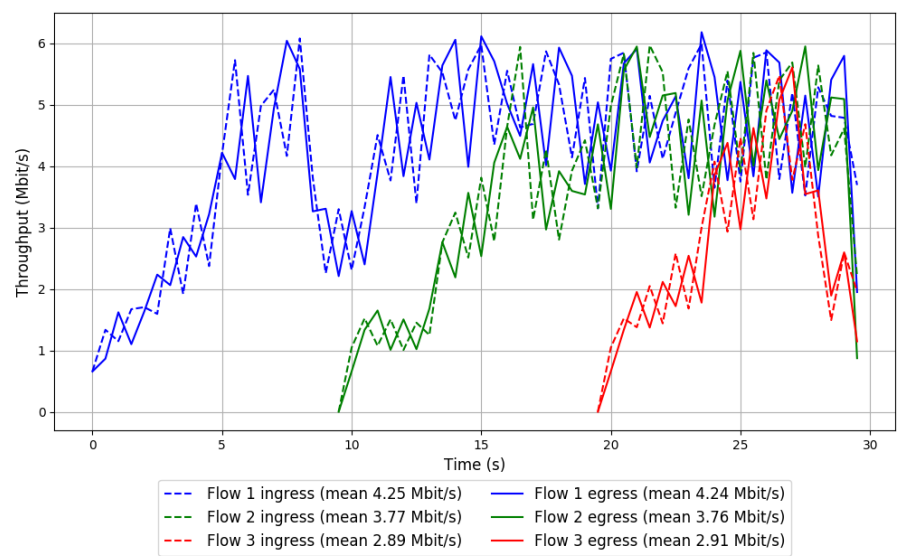
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2017-08-31 12:39:03
End at: 2017-08-31 12:39:33


# Below is generated by plot.py at 2017-08-31 18:19:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 122.617 ms
Loss rate: 2.06%
-- Flow 1:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 122.612 ms
Loss rate: 1.52%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 122.657 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 96.077 ms
Loss rate: 6.03%
```
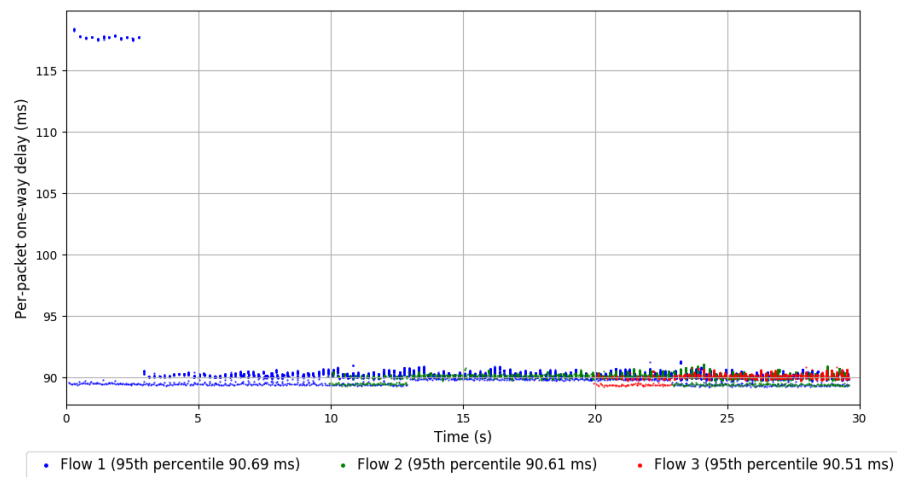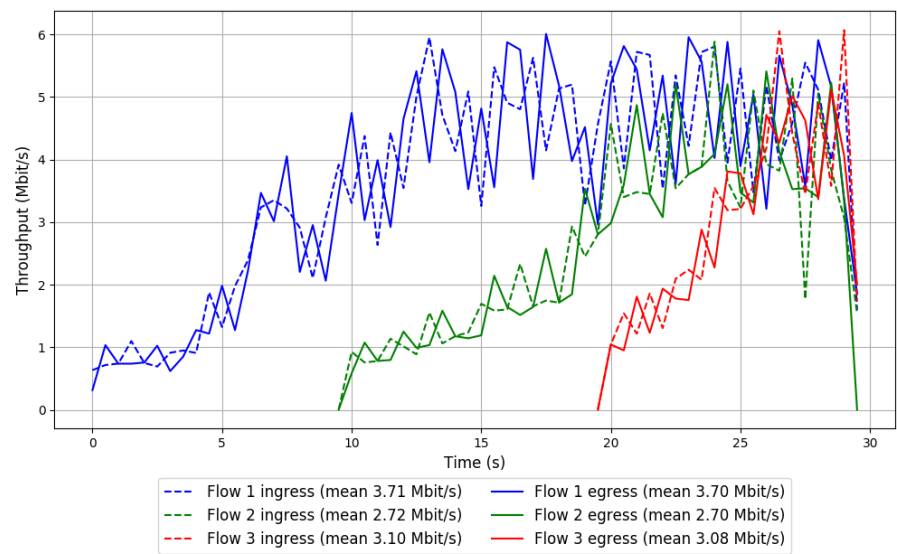
Run 2: Report of Sprout — Data Link



Flow 1 ingress (mean 2.20 Mbit/s)    Flow 1 egress (mean 2.18 Mbit/s)
Flow 2 ingress (mean 0.74 Mbit/s)    Flow 2 egress (mean 0.75 Mbit/s)
Flow 3 ingress (mean 1.66 Mbit/s)    Flow 3 egress (mean 1.59 Mbit/s)



Flow 1 (95th percentile 122.61 ms)    Flow 2 (95th percentile 122.66 ms)    Flow 3 (95th percentile 96.08 ms)

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```
Run 3: Statistics of Sprout

Start at: 2017-08-31 12:52:30
End at: 2017-08-31 12:53:00

# Below is generated by plot.py at 2017-08-31 18:19:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.69 Mbit/s
95th percentile per-packet one-way delay: 93.448 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 93.557 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 3.76 Mbit/s
95th percentile per-packet one-way delay: 93.145 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 92.649 ms
Loss rate: 1.43%
```
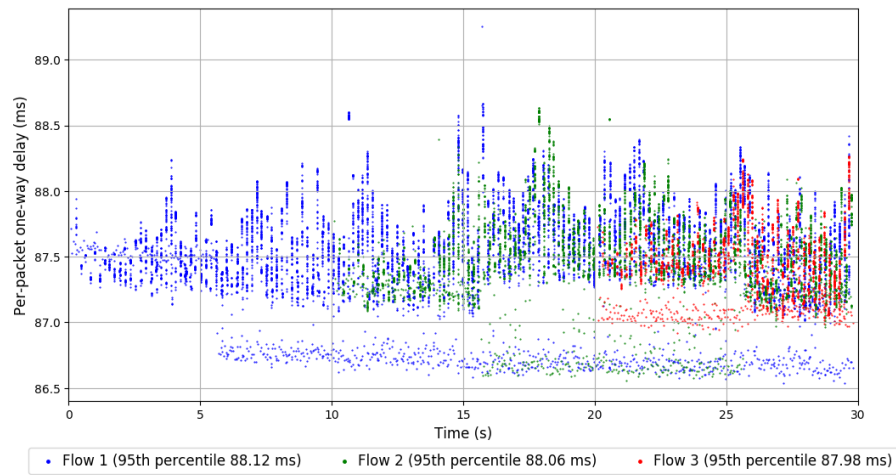
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2017-08-31 13:05:01
End at: 2017-08-31 13:05:31


# Below is generated by plot.py at 2017-08-31 18:19:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.51 Mbit/s
95th percentile per-packet one-way delay: 90.637 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 3.70 Mbit/s
95th percentile per-packet one-way delay: 90.694 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 90.605 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 90.508 ms
Loss rate: 2.84%
```
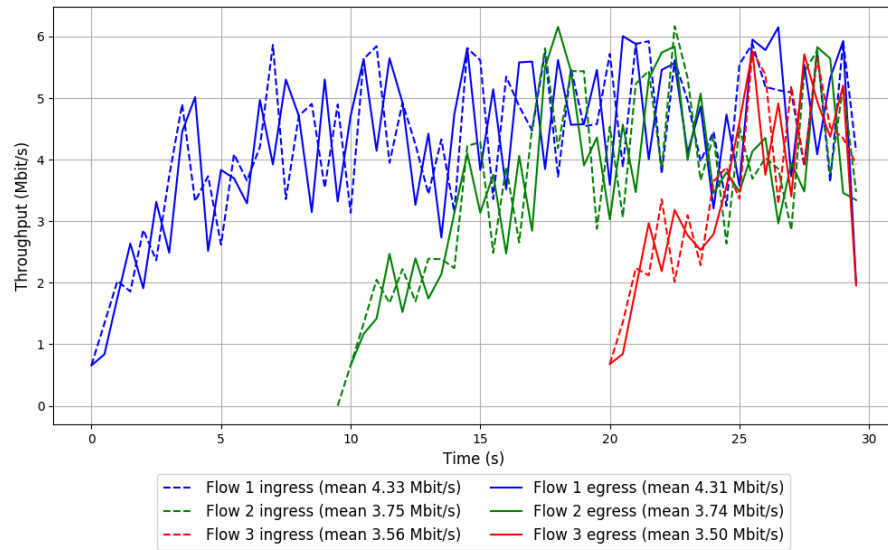
# Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2017-08-31 13:19:58
End at: 2017-08-31 13:20:28


# Below is generated by plot.py at 2017-08-31 18:19:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 88.095 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 88.118 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 3.74 Mbit/s
95th percentile per-packet one-way delay: 88.064 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 3.50 Mbit/s
95th percentile per-packet one-way delay: 87.979 ms
Loss rate: 2.82%
```
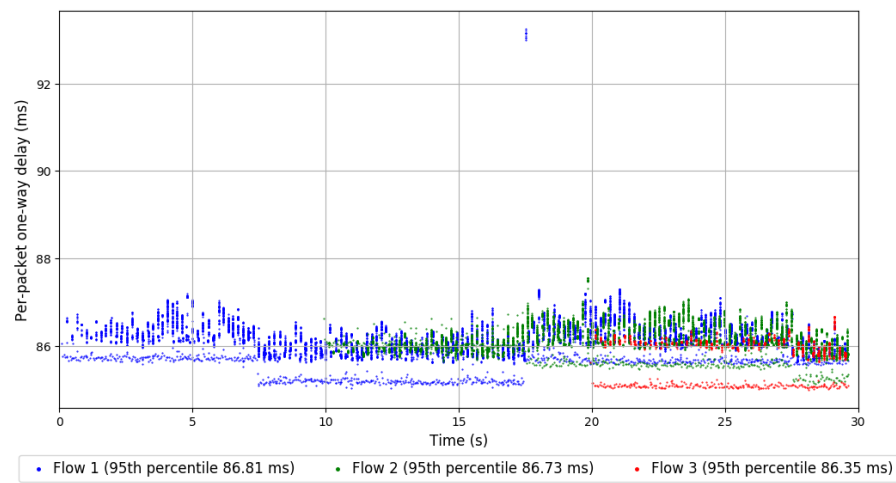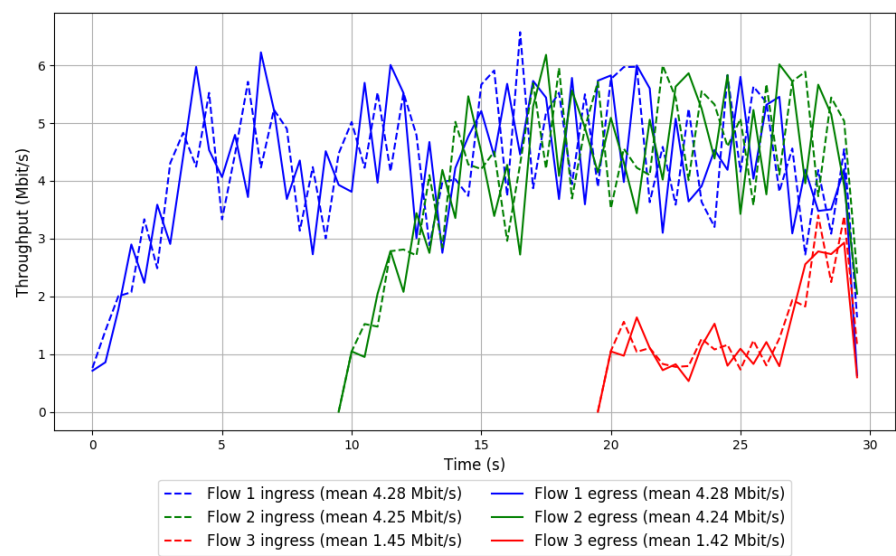
Run 5: Report of Sprout — Data Link

```
Run 6: Statistics of Sprout

Start at: 2017-08-31 13:34:46
End at: 2017-08-31 13:35:17


# Below is generated by plot.py at 2017-08-31 18:19:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 86.760 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 86.811 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 86.732 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 86.352 ms
Loss rate: 4.03%
```
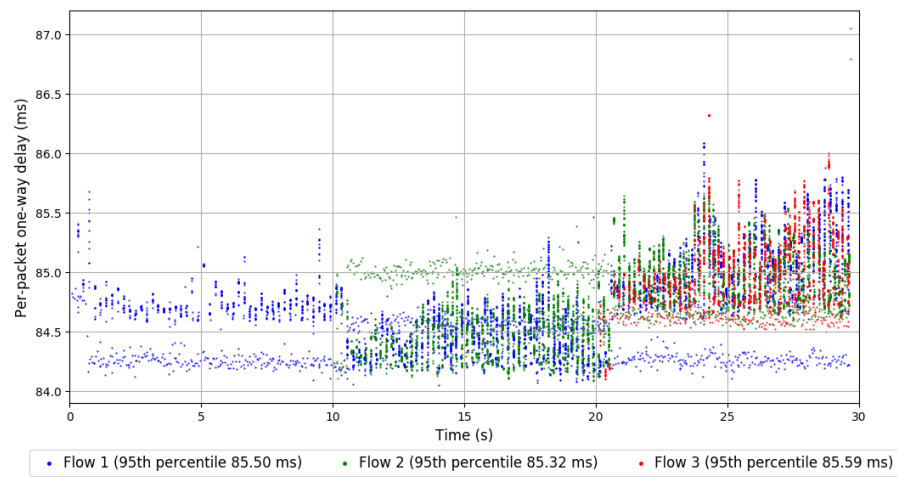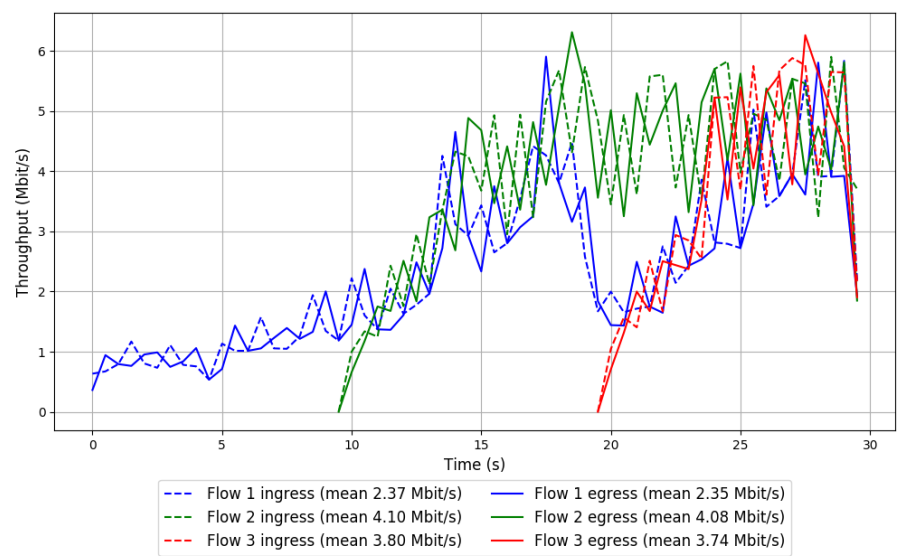
# Run 6: Report of Sprout — Data Link





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```
Run 7: Statistics of Sprout

Start at: 2017-08-31 13:47:53
End at: 2017-08-31 13:48:23


# Below is generated by plot.py at 2017-08-31 18:19:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.29 Mbit/s
95th percentile per-packet one-way delay: 85.455 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 85.498 ms
Loss rate: 1.55%
-- Flow 2:
Average throughput: 4.08 Mbit/s
95th percentile per-packet one-way delay: 85.319 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 3.74 Mbit/s
95th percentile per-packet one-way delay: 85.589 ms
Loss rate: 2.87%
```
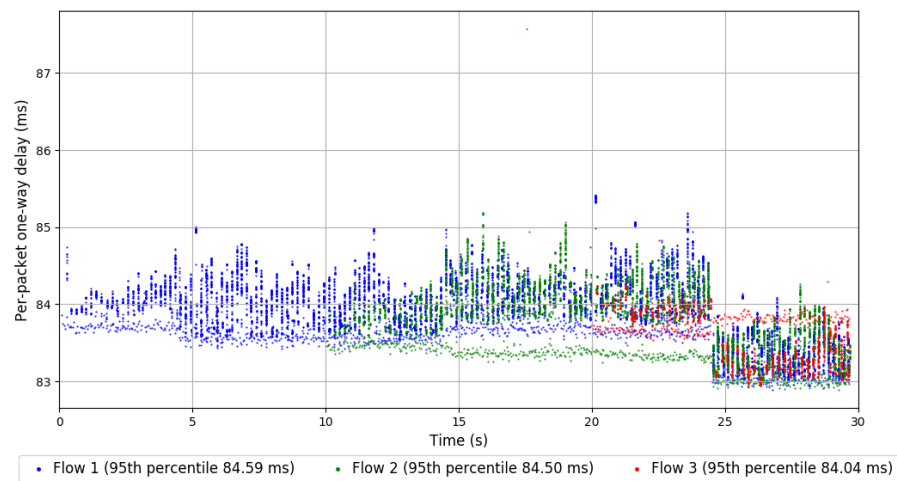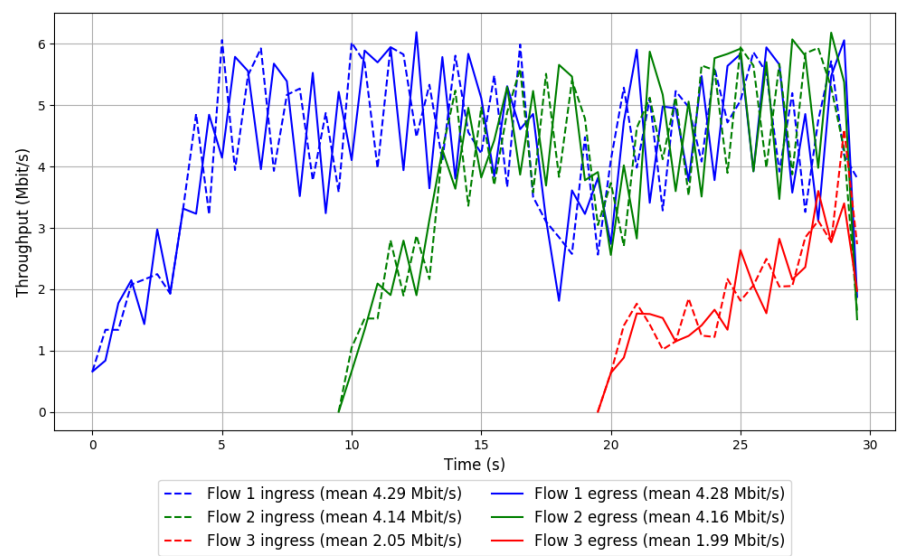
Run 7: Report of Sprout — Data Link

```
Run 8: Statistics of Sprout

Start at: 2017-08-31 14:03:50
End at: 2017-08-31 14:04:20

# Below is generated by plot.py at 2017-08-31 18:19:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.70 Mbit/s
95th percentile per-packet one-way delay: 84.545 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 84.586 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 84.505 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 84.043 ms
Loss rate: 4.87%
```
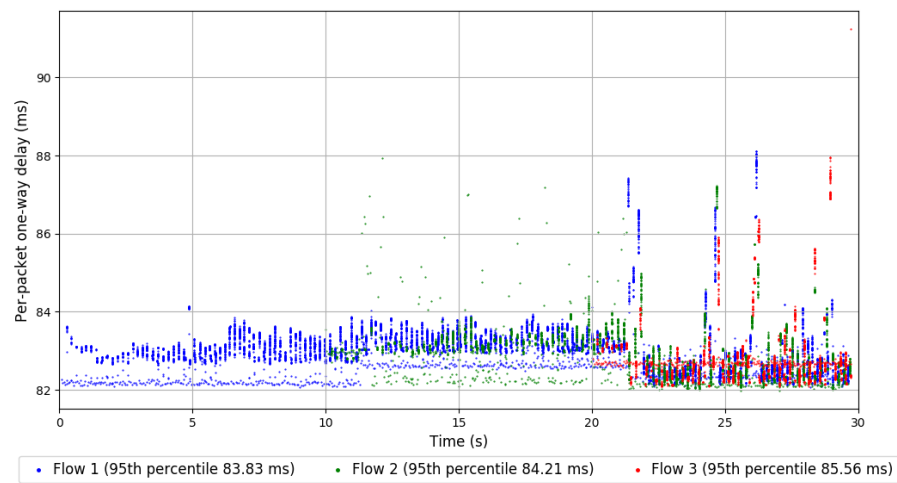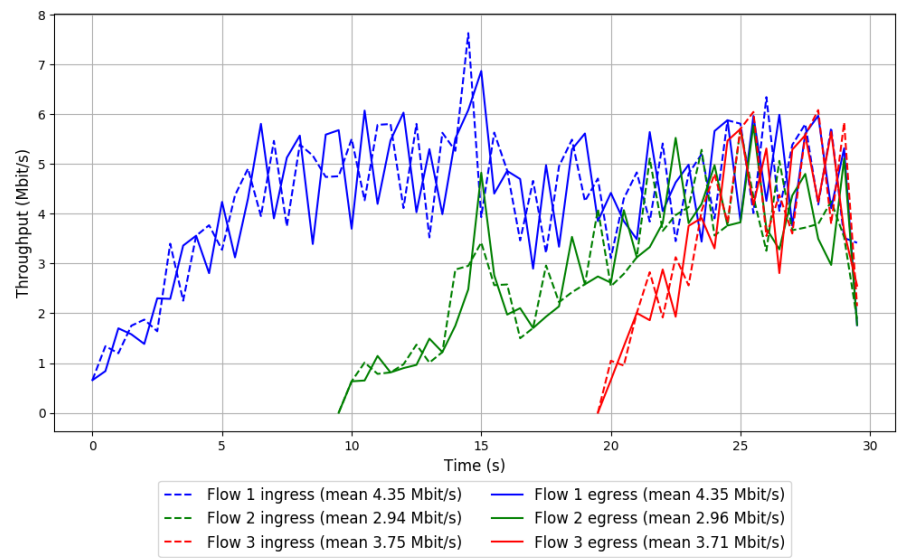
## Run 8: Report of Sprout — Data Link

```
Run 9: Statistics of Sprout

Start at: 2017-08-31 14:17:53
End at: 2017-08-31 14:18:23


# Below is generated by plot.py at 2017-08-31 18:19:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.53 Mbit/s
95th percentile per-packet one-way delay: 84.269 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 4.35 Mbit/s
95th percentile per-packet one-way delay: 83.832 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 84.210 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 3.71 Mbit/s
95th percentile per-packet one-way delay: 85.559 ms
Loss rate: 2.42%
```
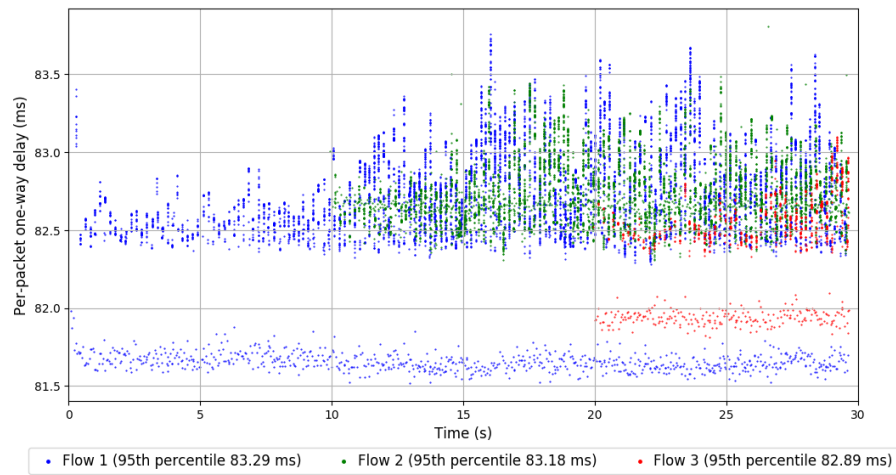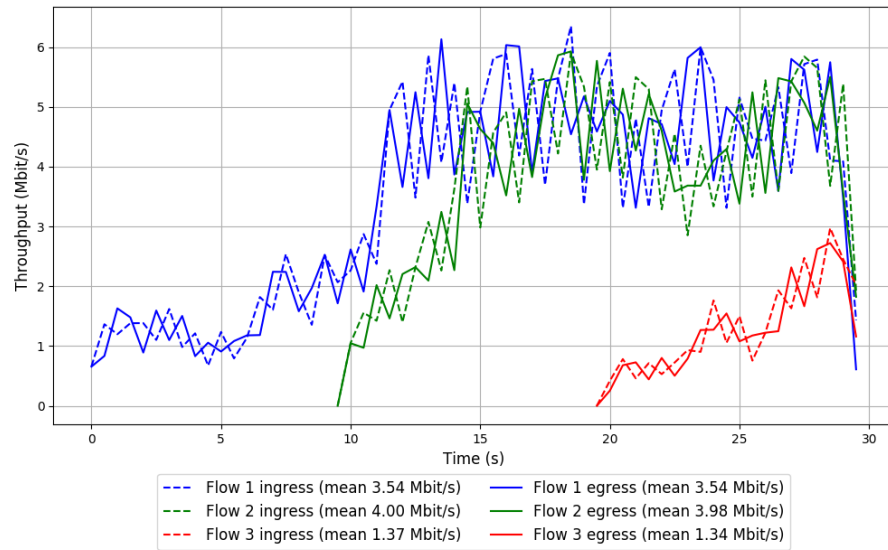
Run 9: Report of Sprout — Data Link

```
Run 10: Statistics of Sprout

Start at: 2017-08-31 14:33:34
End at: 2017-08-31 14:34:04


# Below is generated by plot.py at 2017-08-31 18:19:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 83.230 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 83.291 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 83.177 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 82.892 ms
Loss rate: 4.27%
```
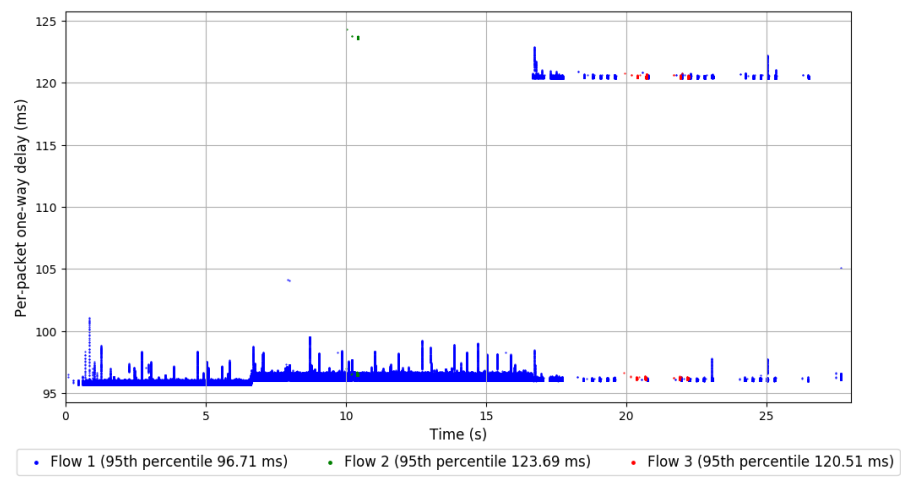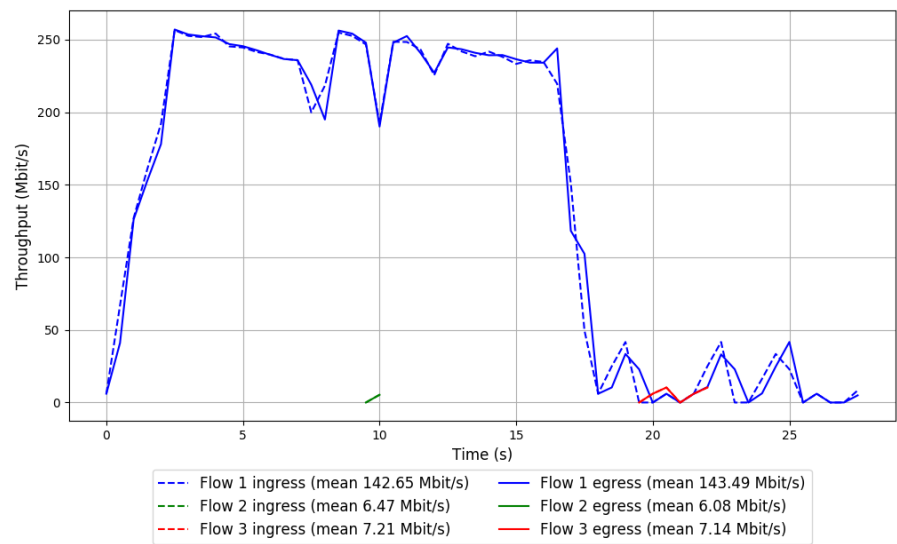
## Run 10: Report of Sprout — Data Link

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

Start at: 2017-08-31 12:29:45
End at: 2017-08-31 12:30:15


# Below is generated by plot.py at 2017-08-31 18:19:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 144.18 Mbit/s
95th percentile per-packet one-way delay: 96.831 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 143.49 Mbit/s
95th percentile per-packet one-way delay: 96.708 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 6.08 Mbit/s
95th percentile per-packet one-way delay: 123.690 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.14 Mbit/s
95th percentile per-packet one-way delay: 120.508 ms
Loss rate: 0.00%
```

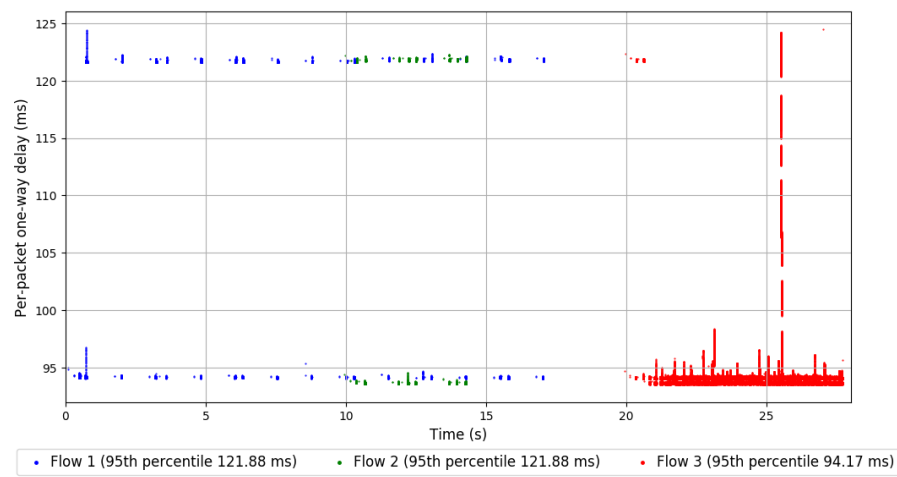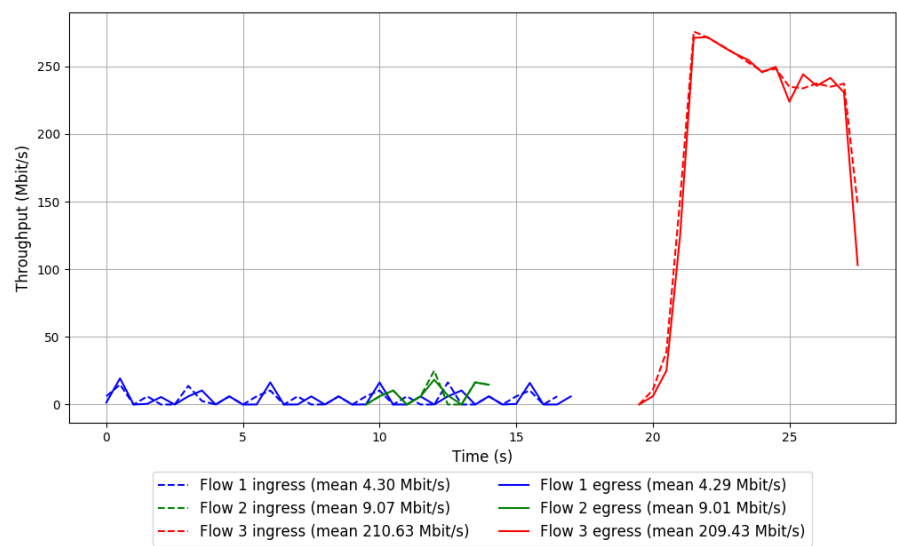# Run 1: Report of TaoVA-100x — Data Link



Flow 1 ingress (mean 142.65 Mbit/s) ---- Flow 1 egress (mean 143.49 Mbit/s)
Flow 2 ingress (mean 6.47 Mbit/s) ---- Flow 2 egress (mean 6.08 Mbit/s)
Flow 3 ingress (mean 7.21 Mbit/s) ---- Flow 3 egress (mean 7.14 Mbit/s)



Flow 1 (95th percentile 96.71 ms) • Flow 2 (95th percentile 123.69 ms) • Flow 3 (95th percentile 120.51 ms)

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```
Run 2: Statistics of TaoVA-100x

Start at: 2017-08-31 12:43:31
End at: 2017-08-31 12:44:01

# Below is generated by plot.py at 2017-08-31 18:19:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.98 Mbit/s
95th percentile per-packet one-way delay: 94.730 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 4.29 Mbit/s
95th percentile per-packet one-way delay: 121.876 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.01 Mbit/s
95th percentile per-packet one-way delay: 121.881 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 209.43 Mbit/s
95th percentile per-packet one-way delay: 94.166 ms
Loss rate: 2.83%
```

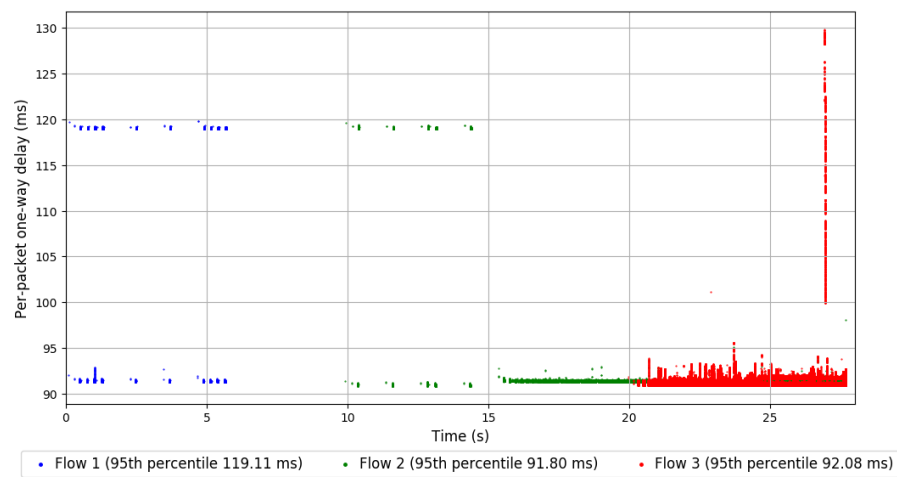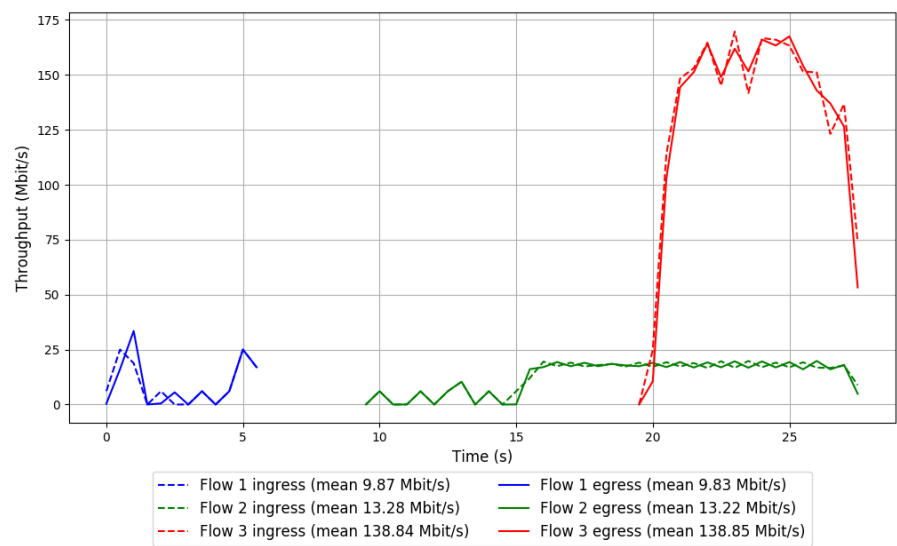Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2017-08-31 12:56:47
End at: 2017-08-31 12:57:17

# Below is generated by plot.py at 2017-08-31 18:19:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.40 Mbit/s
95th percentile per-packet one-way delay: 92.422 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 9.83 Mbit/s
95th percentile per-packet one-way delay: 119.109 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 13.22 Mbit/s
95th percentile per-packet one-way delay: 91.798 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 138.85 Mbit/s
95th percentile per-packet one-way delay: 92.082 ms
Loss rate: 2.16%
```
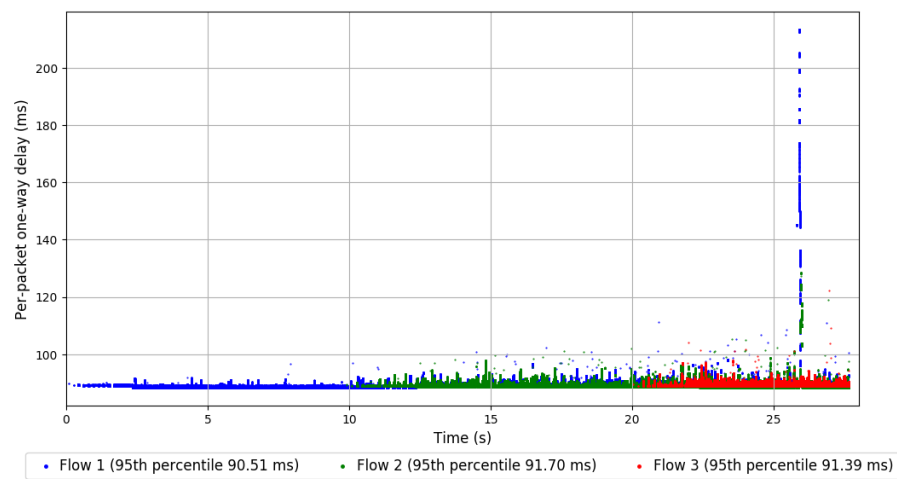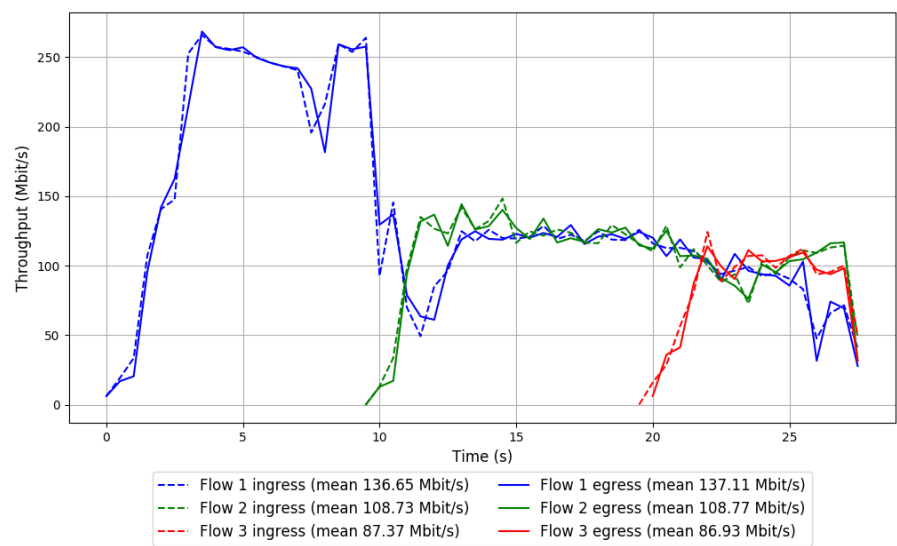
Run 3: Report of TaoVA-100x — Data Link



Flow 1 ingress (mean 9.87 Mbit/s) — — — Flow 1 egress (mean 9.83 Mbit/s)
Flow 2 ingress (mean 13.28 Mbit/s) — — — Flow 2 egress (mean 13.22 Mbit/s)
Flow 3 ingress (mean 138.84 Mbit/s) — — — Flow 3 egress (mean 138.85 Mbit/s)



Flow 1 (95th percentile 119.11 ms)   Flow 2 (95th percentile 91.80 ms)   Flow 3 (95th percentile 92.08 ms)

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```
Run 4: Statistics of TaoVA-100x

Start at: 2017-08-31 13:09:30
End at: 2017-08-31 13:10:00

# Below is generated by plot.py at 2017-08-31 18:20:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 231.08 Mbit/s
95th percentile per-packet one-way delay: 91.036 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 137.11 Mbit/s
95th percentile per-packet one-way delay: 90.510 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 108.77 Mbit/s
95th percentile per-packet one-way delay: 91.699 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 86.93 Mbit/s
95th percentile per-packet one-way delay: 91.388 ms
Loss rate: 2.75%
```
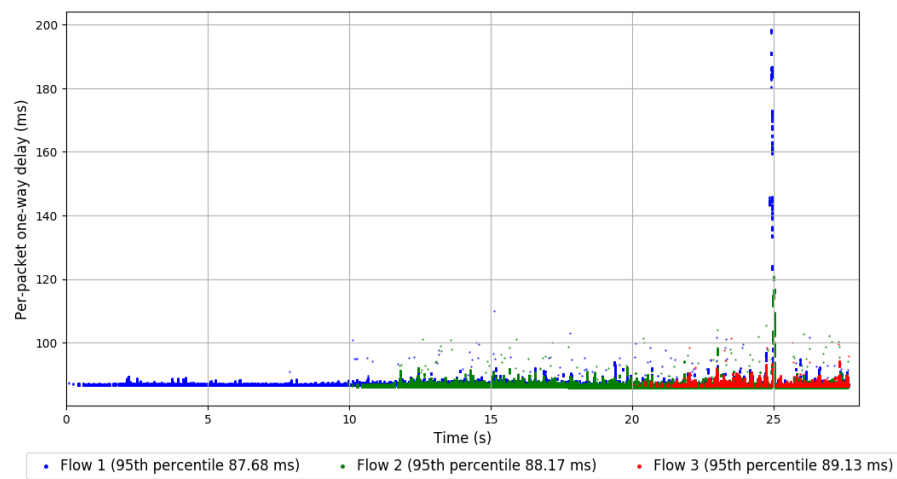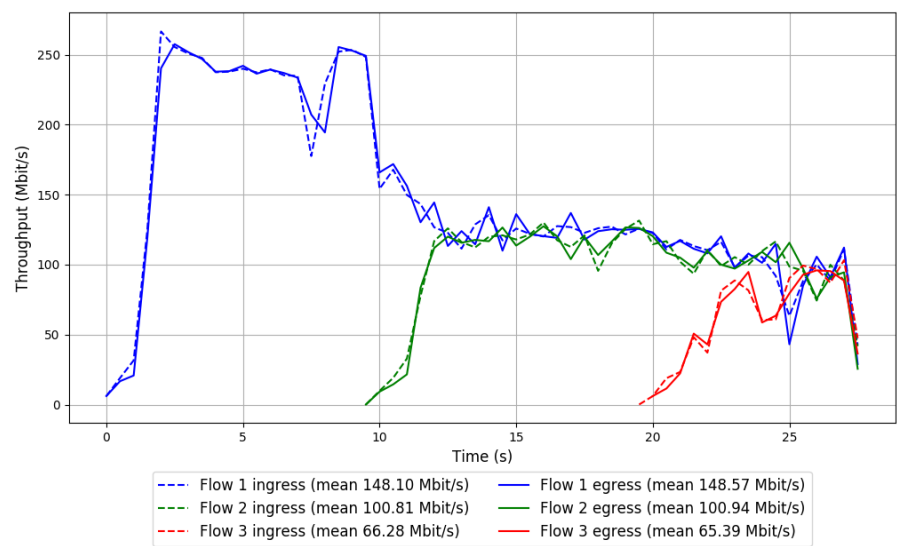
## Run 4: Report of TaoVA-100x — Data Link



Flow 1 ingress (mean 136.65 Mbit/s)    Flow 1 egress (mean 137.11 Mbit/s)
Flow 2 ingress (mean 108.73 Mbit/s)    Flow 2 egress (mean 108.77 Mbit/s)
Flow 3 ingress (mean 87.37 Mbit/s)     Flow 3 egress (mean 86.93 Mbit/s)



Flow 1 (95th percentile 90.51 ms)    Flow 2 (95th percentile 91.70 ms)    Flow 3 (95th percentile 91.39 ms)

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```
Run 5: Statistics of TaoVA-100x

Start at: 2017-08-31 13:24:44
End at: 2017-08-31 13:25:14

# Below is generated by plot.py at 2017-08-31 18:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 231.29 Mbit/s
95th percentile per-packet one-way delay: 87.947 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 148.57 Mbit/s
95th percentile per-packet one-way delay: 87.683 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 100.94 Mbit/s
95th percentile per-packet one-way delay: 88.173 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 65.39 Mbit/s
95th percentile per-packet one-way delay: 89.129 ms
Loss rate: 3.48%
```
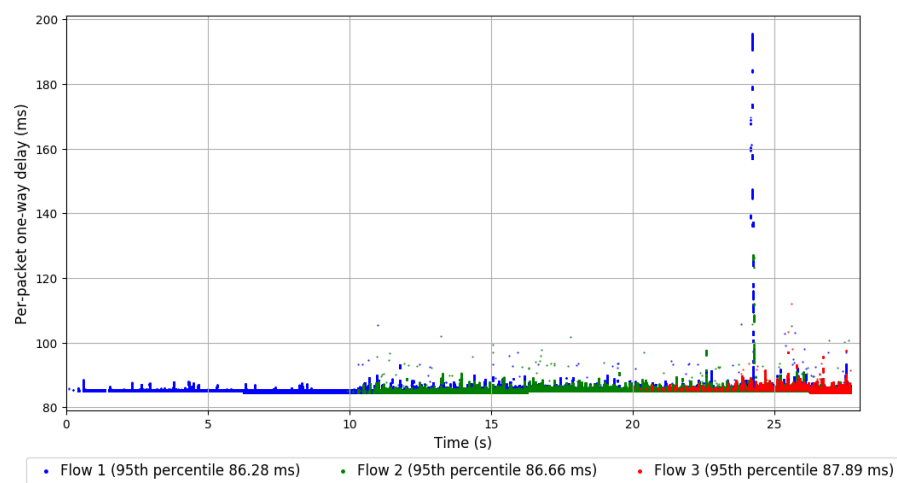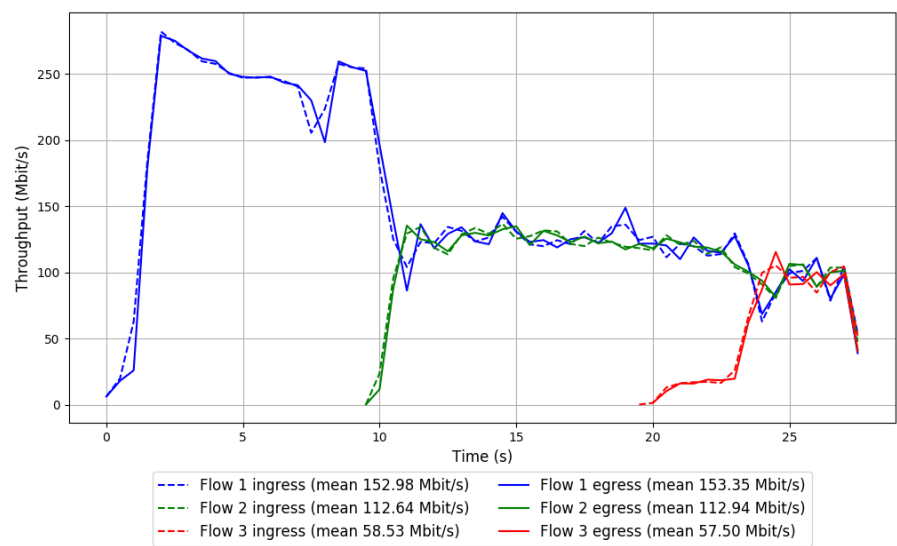
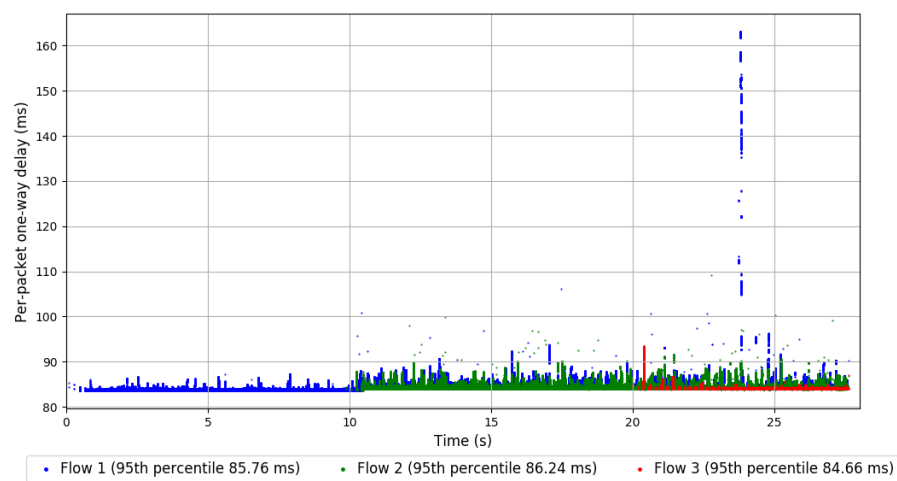Run 5: Report of TaoVA-100x — Data Link

```
Run 6: Statistics of TaoVA-100x

Start at: 2017-08-31 13:38:56
End at: 2017-08-31 13:39:26

# Below is generated by plot.py at 2017-08-31 18:22:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 241.76 Mbit/s
95th percentile per-packet one-way delay: 86.562 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 153.35 Mbit/s
95th percentile per-packet one-way delay: 86.285 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 112.94 Mbit/s
95th percentile per-packet one-way delay: 86.656 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 57.50 Mbit/s
95th percentile per-packet one-way delay: 87.893 ms
Loss rate: 3.87%
```
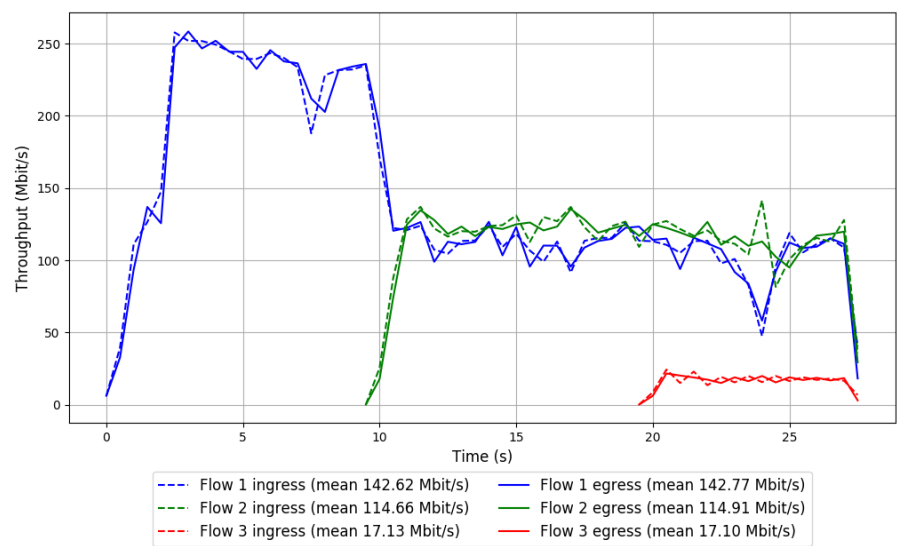
Run 6: Report of TaoVA-100x — Data Link



- - - Flow 1 ingress (mean 152.98 Mbit/s) —— Flow 1 egress (mean 153.35 Mbit/s)
- - - Flow 2 ingress (mean 112.64 Mbit/s) —— Flow 2 egress (mean 112.94 Mbit/s)
- - - Flow 3 ingress (mean 58.53 Mbit/s) —— Flow 3 egress (mean 57.50 Mbit/s)



- Flow 1 (95th percentile 86.28 ms) • Flow 2 (95th percentile 86.66 ms) • Flow 3 (95th percentile 87.89 ms)

```
Run 7: Statistics of TaoVA-100x

Start at: 2017-08-31 13:52:31
End at: 2017-08-31 13:53:01


# Below is generated by plot.py at 2017-08-31 18:22:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 221.49 Mbit/s
95th percentile per-packet one-way delay: 85.922 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 142.77 Mbit/s
95th percentile per-packet one-way delay: 85.763 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 114.91 Mbit/s
95th percentile per-packet one-way delay: 86.237 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 17.10 Mbit/s
95th percentile per-packet one-way delay: 84.655 ms
Loss rate: 2.24%
```
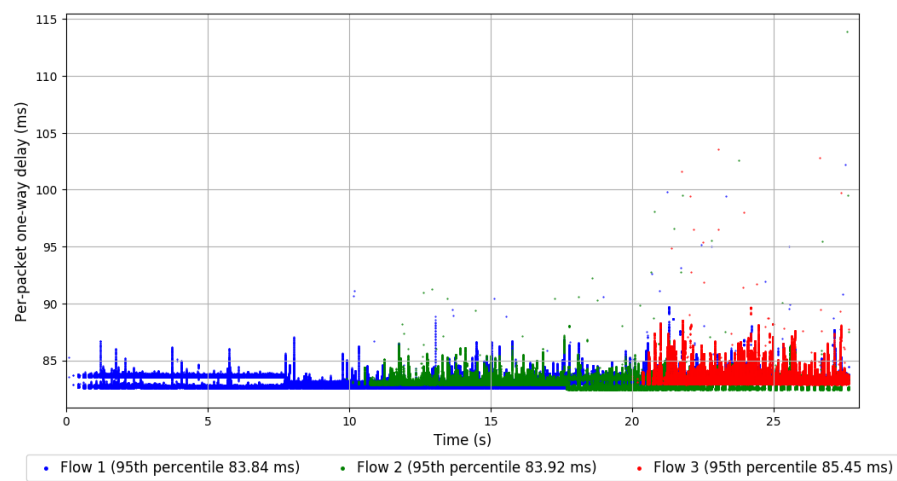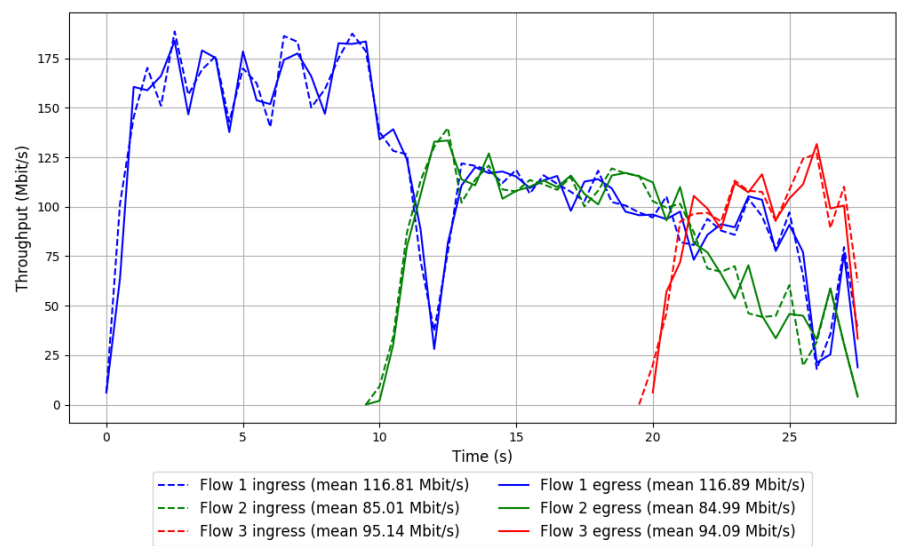
# Run 7: Report of TaoVA-100x — Data Link

```
Run 8: Statistics of TaoVA-100x

Start at: 2017-08-31 14:08:04
End at: 2017-08-31 14:08:34


# Below is generated by plot.py at 2017-08-31 18:22:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 197.56 Mbit/s
95th percentile per-packet one-way delay: 84.150 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 116.89 Mbit/s
95th percentile per-packet one-way delay: 83.843 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 84.99 Mbit/s
95th percentile per-packet one-way delay: 83.921 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 94.09 Mbit/s
95th percentile per-packet one-way delay: 85.453 ms
Loss rate: 3.33%
```
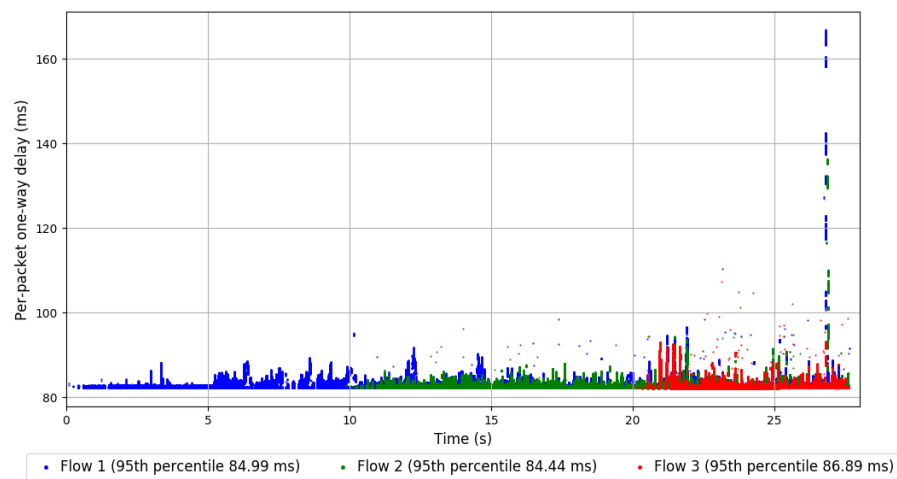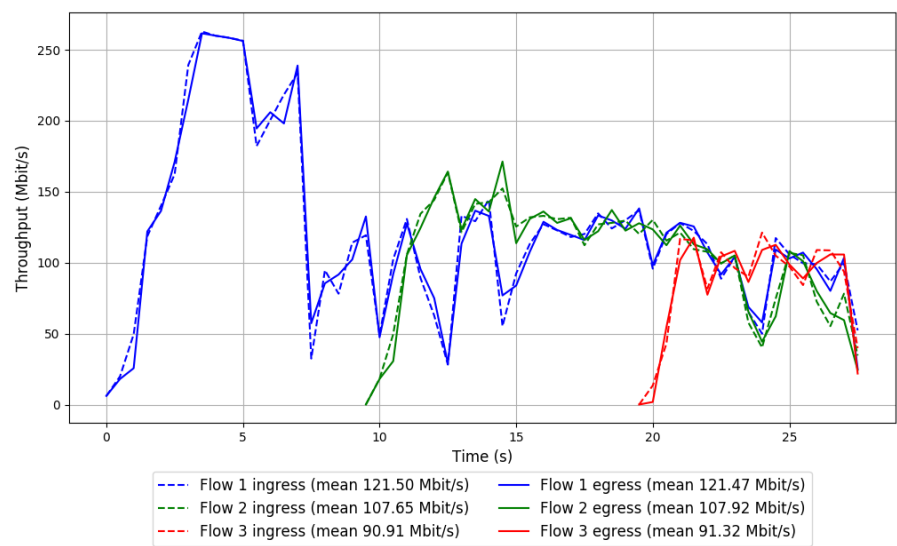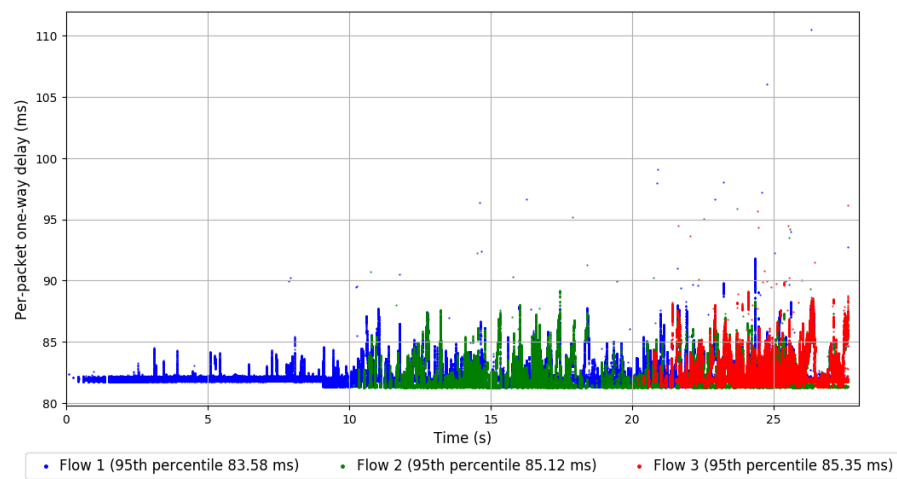
# Run 8: Report of TaoVA-100x — Data Link



Flow 1 ingress (mean 116.81 Mbit/s) --- Flow 1 egress (mean 116.89 Mbit/s)
Flow 2 ingress (mean 85.01 Mbit/s) --- Flow 2 egress (mean 84.99 Mbit/s)
Flow 3 ingress (mean 95.14 Mbit/s) --- Flow 3 egress (mean 94.09 Mbit/s)



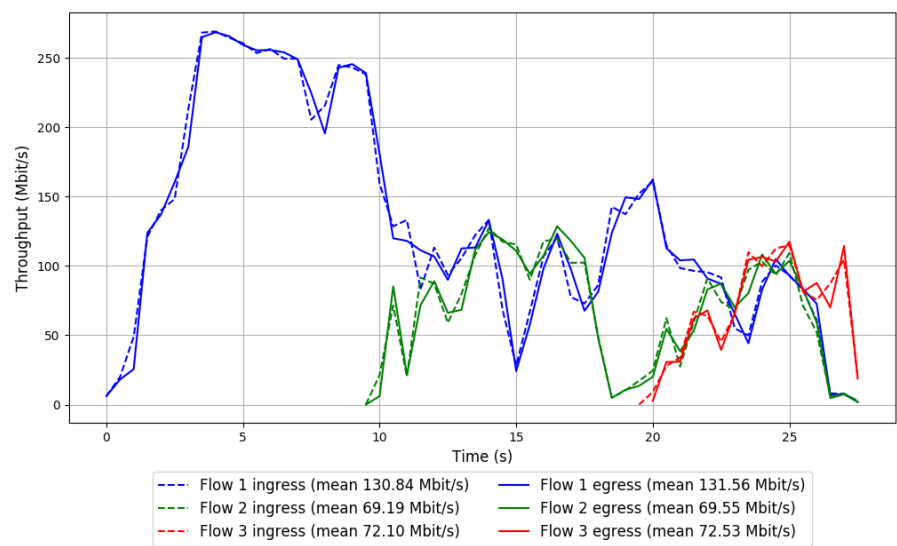Flow 1 (95th percentile 83.84 ms)   Flow 2 (95th percentile 83.92 ms)   Flow 3 (95th percentile 85.45 ms)

```
Run 9: Statistics of TaoVA-100x

Start at: 2017-08-31 14:22:27
End at: 2017-08-31 14:22:57

# Below is generated by plot.py at 2017-08-31 18:23:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 216.24 Mbit/s
95th percentile per-packet one-way delay: 84.986 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 121.47 Mbit/s
95th percentile per-packet one-way delay: 84.987 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 107.92 Mbit/s
95th percentile per-packet one-way delay: 84.445 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 91.32 Mbit/s
95th percentile per-packet one-way delay: 86.890 ms
Loss rate: 1.98%
```

# Run 9: Report of TaoVA-100x — Data Link

```
Run 10: Statistics of TaoVA-100x

Start at: 2017-08-31 14:37:43
End at: 2017-08-31 14:38:13

# Below is generated by plot.py at 2017-08-31 18:23:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 196.12 Mbit/s
95th percentile per-packet one-way delay: 84.236 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 131.56 Mbit/s
95th percentile per-packet one-way delay: 83.579 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 69.55 Mbit/s
95th percentile per-packet one-way delay: 85.123 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 72.53 Mbit/s
95th percentile per-packet one-way delay: 85.347 ms
Loss rate: 1.39%
```
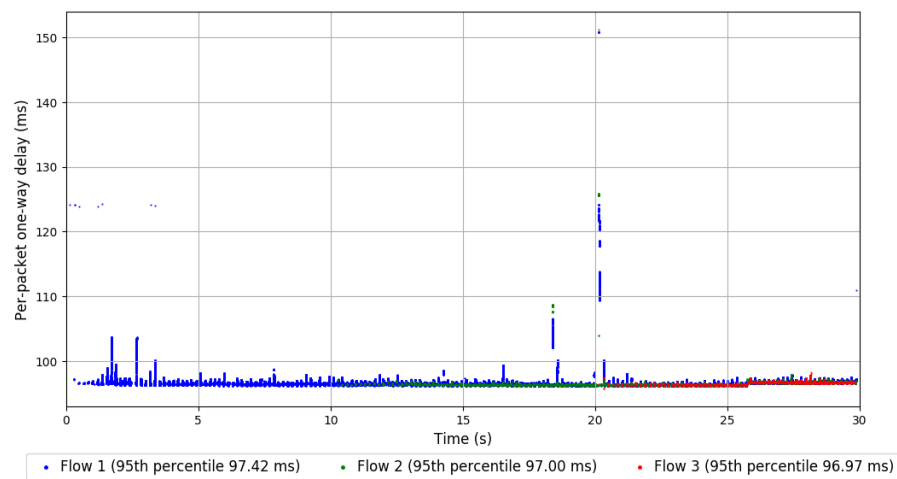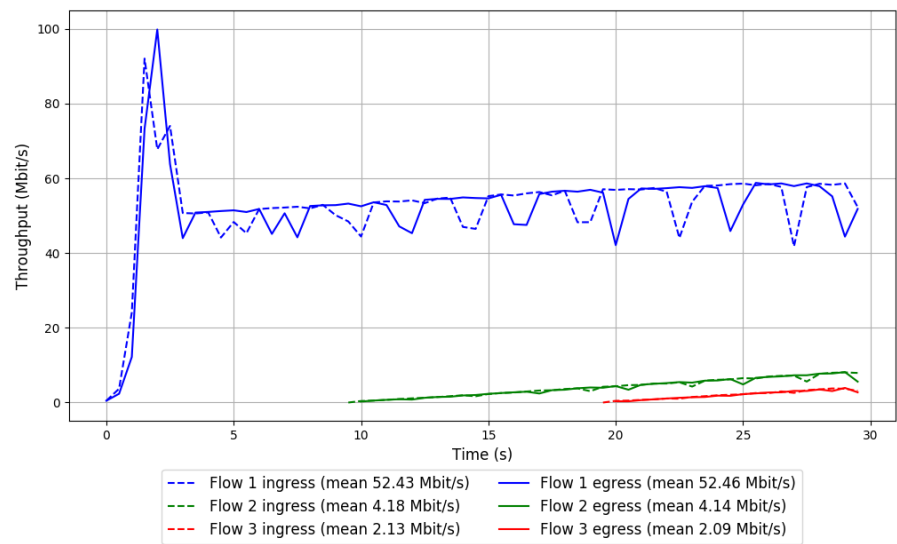
Run 10: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2017-08-31 12:28:58
End at: 2017-08-31 12:29:28

# Below is generated by plot.py at 2017-08-31 18:23:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.90 Mbit/s
95th percentile per-packet one-way delay: 97.380 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 52.46 Mbit/s
95th percentile per-packet one-way delay: 97.424 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 4.14 Mbit/s
95th percentile per-packet one-way delay: 97.003 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 96.972 ms
Loss rate: 3.64%
```
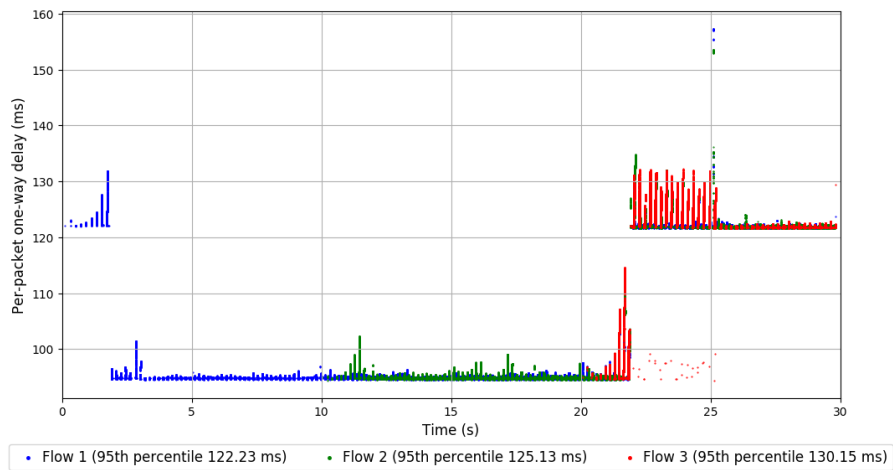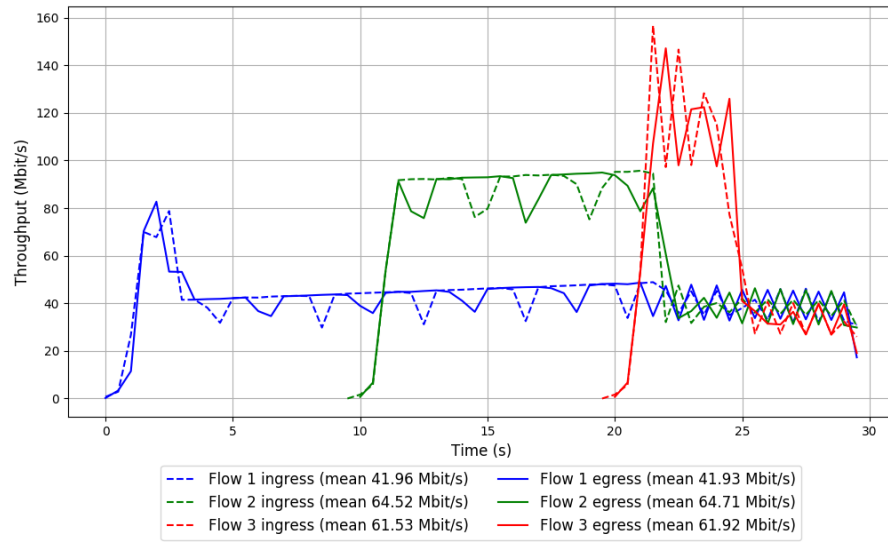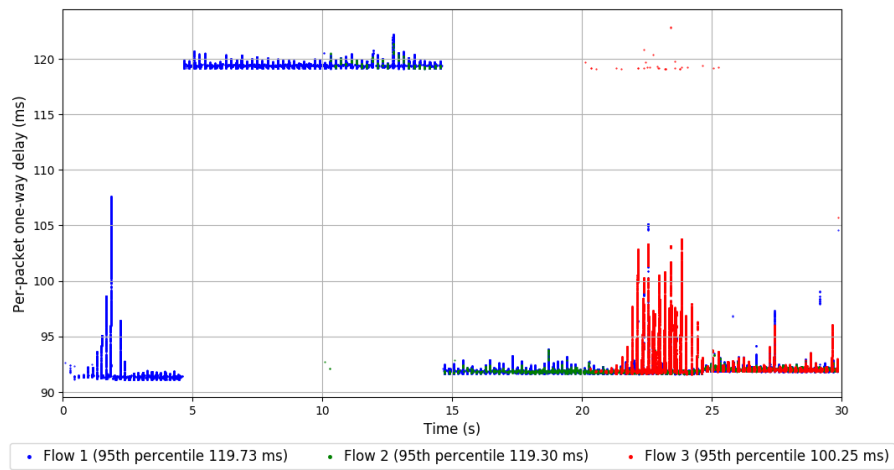
# Run 1: Report of TCP Vegas — Data Link



- - - Flow 1 ingress (mean 52.43 Mbit/s) —— Flow 1 egress (mean 52.46 Mbit/s)
- - - Flow 2 ingress (mean 4.18 Mbit/s) —— Flow 2 egress (mean 4.14 Mbit/s)
- - - Flow 3 ingress (mean 2.13 Mbit/s) —— Flow 3 egress (mean 2.09 Mbit/s)



• Flow 1 (95th percentile 97.42 ms)   • Flow 2 (95th percentile 97.00 ms)   • Flow 3 (95th percentile 96.97 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2017-08-31 12:42:32
End at: 2017-08-31 12:43:02

# Below is generated by plot.py at 2017-08-31 18:23:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 105.31 Mbit/s
95th percentile per-packet one-way delay: 127.370 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 41.93 Mbit/s
95th percentile per-packet one-way delay: 122.229 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 64.71 Mbit/s
95th percentile per-packet one-way delay: 125.127 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 61.92 Mbit/s
95th percentile per-packet one-way delay: 130.146 ms
Loss rate: 1.06%
```
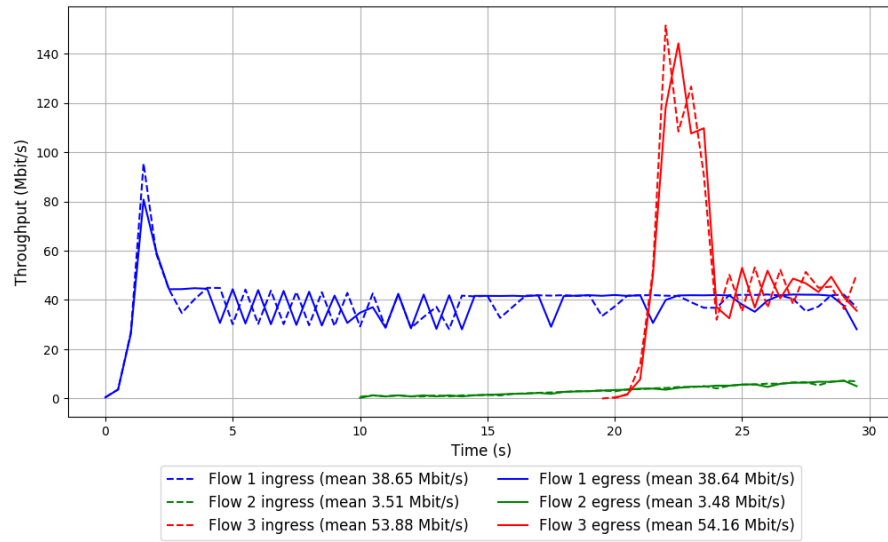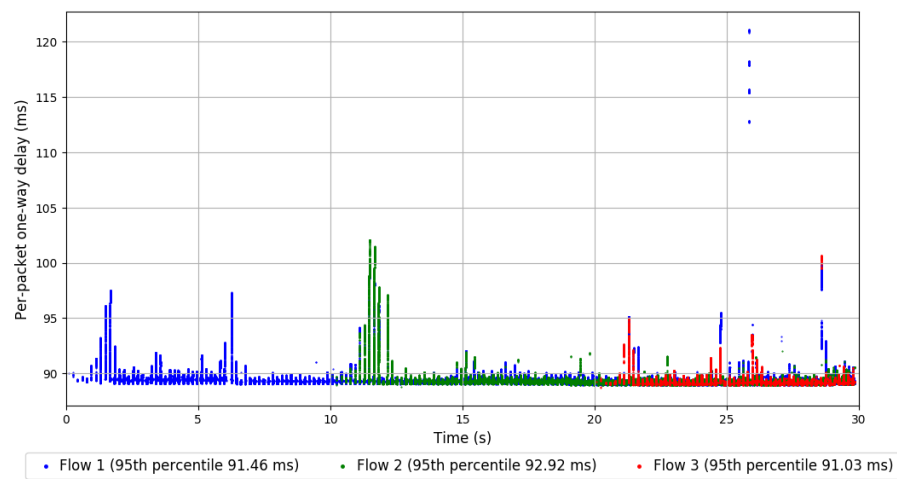
# Run 2: Report of TCP Vegas — Data Link



- Flow 1 ingress (mean 41.96 Mbit/s)
- Flow 1 egress (mean 41.93 Mbit/s)
- Flow 2 ingress (mean 64.52 Mbit/s)
- Flow 2 egress (mean 64.71 Mbit/s)
- Flow 3 ingress (mean 61.53 Mbit/s)
- Flow 3 egress (mean 61.92 Mbit/s)



- Flow 1 (95th percentile 122.23 ms)
- Flow 2 (95th percentile 125.13 ms)
- Flow 3 (95th percentile 130.15 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2017-08-31 12:56:00
End at: 2017-08-31 12:56:30


# Below is generated by plot.py at 2017-08-31 18:23:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.69 Mbit/s
95th percentile per-packet one-way delay: 119.610 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 38.64 Mbit/s
95th percentile per-packet one-way delay: 119.726 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 119.296 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 54.16 Mbit/s
95th percentile per-packet one-way delay: 100.251 ms
Loss rate: 1.38%
```
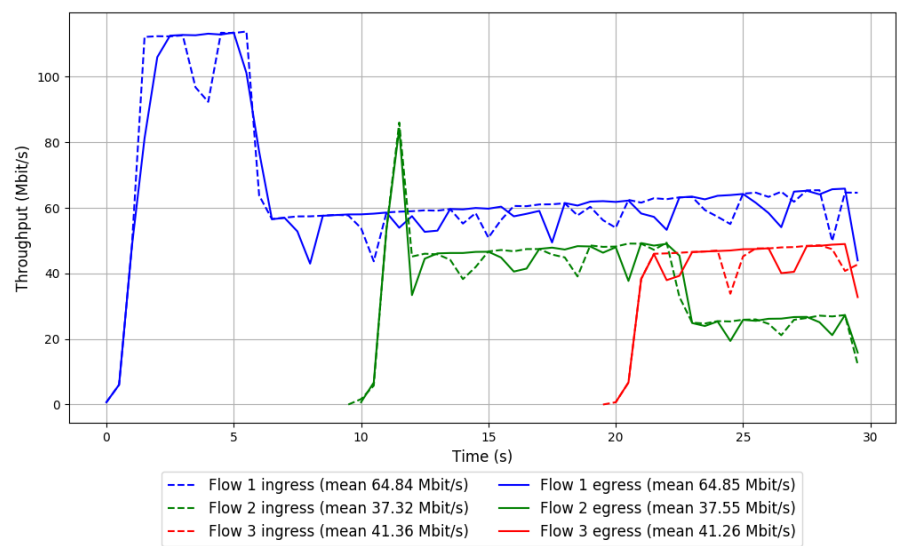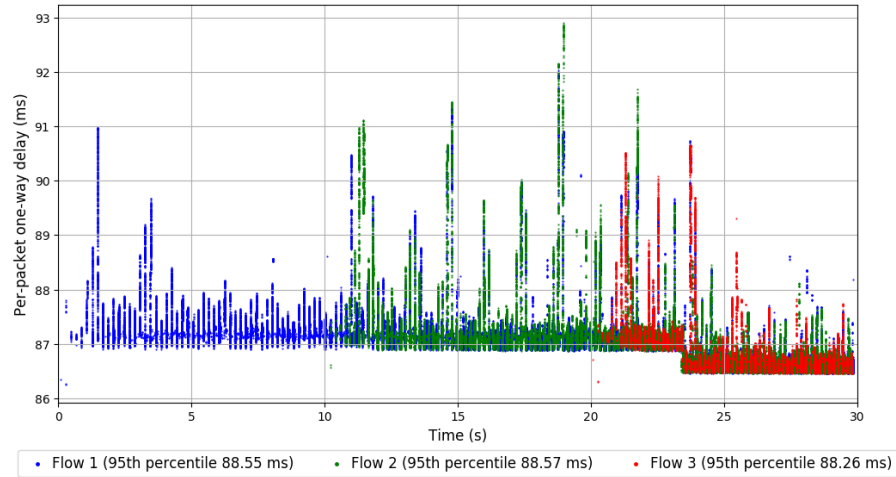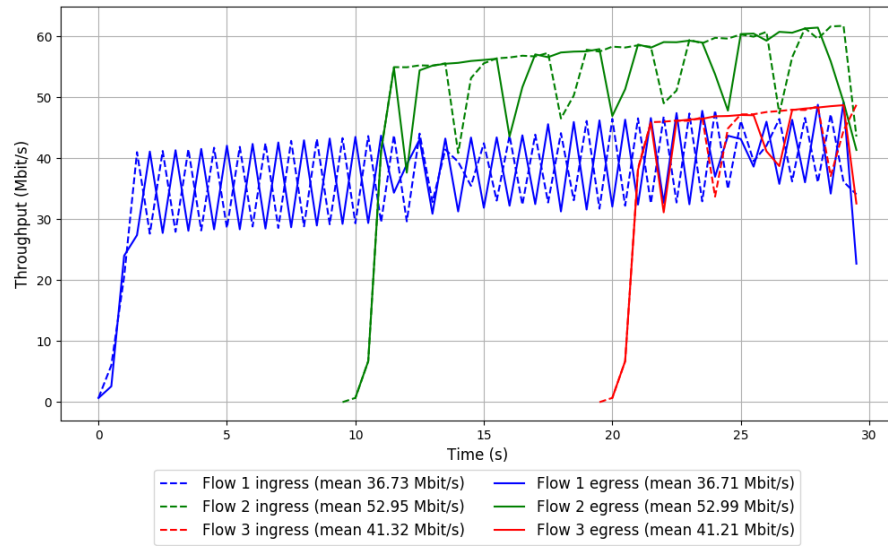
Run 3: Report of TCP Vegas — Data Link



Flow 1 ingress (mean 38.65 Mbit/s) --- Flow 1 egress (mean 38.64 Mbit/s)
Flow 2 ingress (mean 3.51 Mbit/s) --- Flow 2 egress (mean 3.48 Mbit/s)
Flow 3 ingress (mean 53.88 Mbit/s) --- Flow 3 egress (mean 54.16 Mbit/s)



Flow 1 (95th percentile 119.73 ms) • Flow 2 (95th percentile 119.30 ms) • Flow 3 (95th percentile 100.25 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2017-08-31 13:08:35
End at: 2017-08-31 13:09:05


# Below is generated by plot.py at 2017-08-31 18:24:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 103.35 Mbit/s
95th percentile per-packet one-way delay: 91.565 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 64.85 Mbit/s
95th percentile per-packet one-way delay: 91.459 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 37.55 Mbit/s
95th percentile per-packet one-way delay: 92.917 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 41.26 Mbit/s
95th percentile per-packet one-way delay: 91.025 ms
Loss rate: 1.99%
```
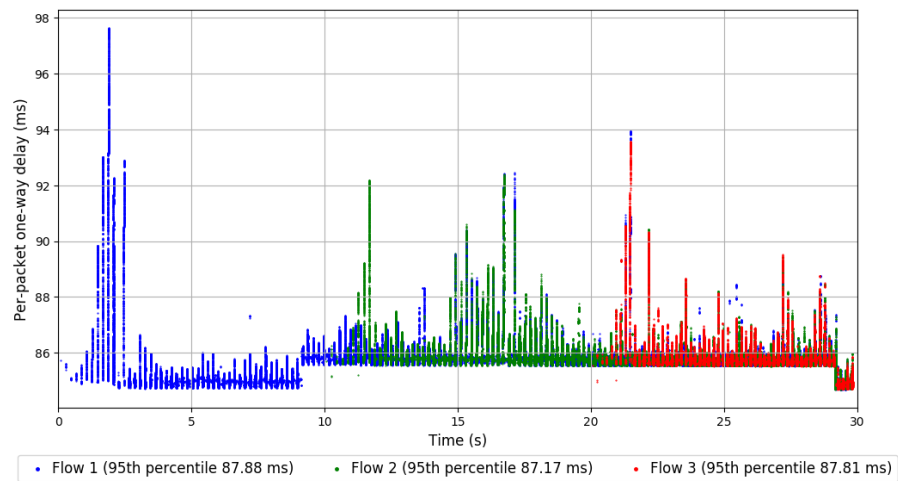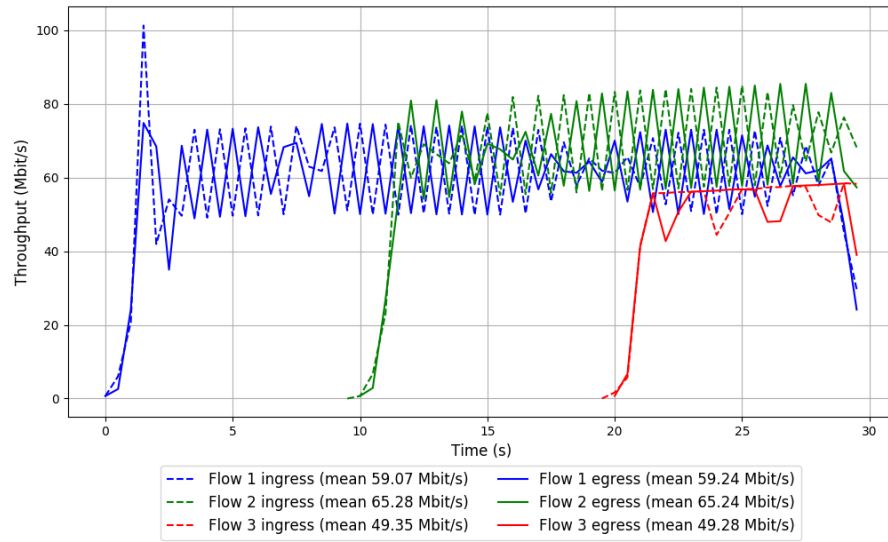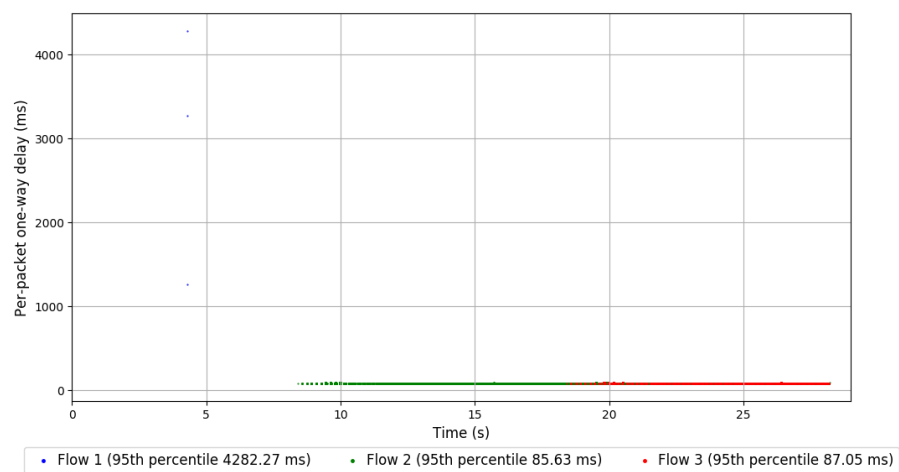
Run 4: Report of TCP Vegas — Data Link



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Run 5: Statistics of TCP Vegas

Start at: 2017-08-31 13:23:51
End at: 2017-08-31 13:24:21


# Below is generated by plot.py at 2017-08-31 18:24:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.37 Mbit/s
95th percentile per-packet one-way delay: 88.516 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 36.71 Mbit/s
95th percentile per-packet one-way delay: 88.551 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 52.99 Mbit/s
95th percentile per-packet one-way delay: 88.567 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 41.21 Mbit/s
95th percentile per-packet one-way delay: 88.258 ms
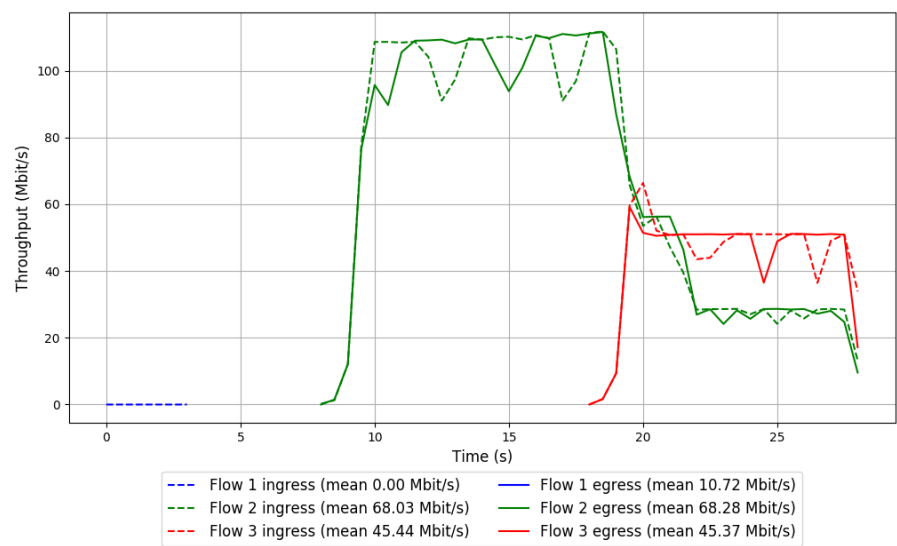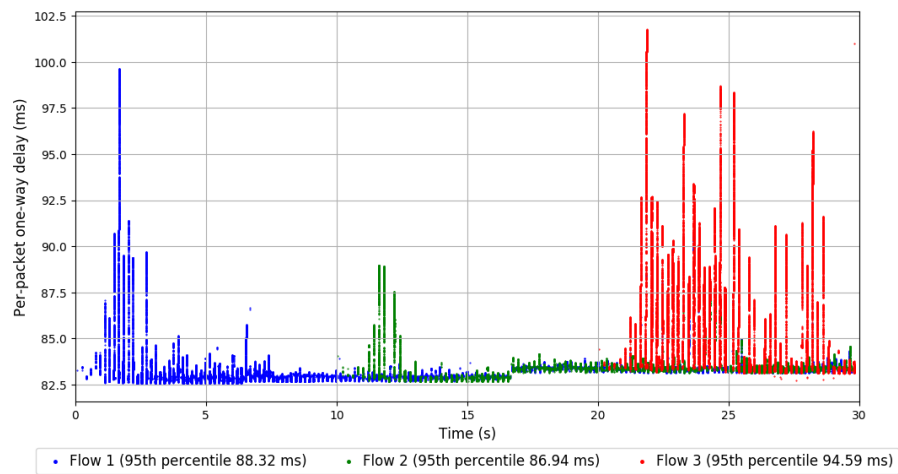Loss rate: 2.00%

Run 5: Report of TCP Vegas — Data Link





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```
Run 6: Statistics of TCP Vegas

Start at: 2017-08-31 13:38:05
End at: 2017-08-31 13:38:35


# Below is generated by plot.py at 2017-08-31 18:24:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 118.73 Mbit/s
95th percentile per-packet one-way delay: 87.566 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 87.878 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 65.24 Mbit/s
95th percentile per-packet one-way delay: 87.174 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 49.28 Mbit/s
95th percentile per-packet one-way delay: 87.812 ms
Loss rate: 1.99%
```
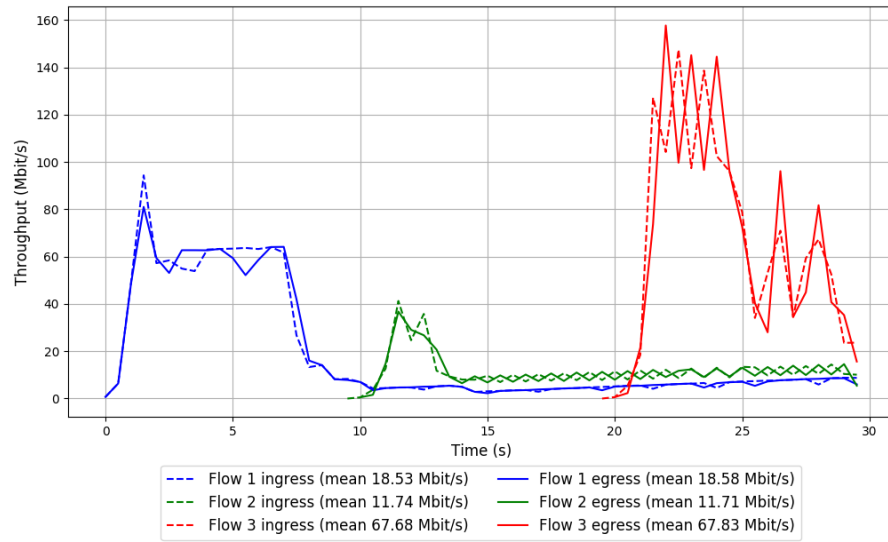
Run 6: Report of TCP Vegas — Data Link

```
Run 7: Statistics of TCP Vegas

Start at: 2017-08-31 13:51:41
End at: 2017-08-31 13:52:11
```

Run 7: Report of TCP Vegas — Data Link



Flow 1 ingress (mean 0.00 Mbit/s) --- Flow 1 egress (mean 10.72 Mbit/s)
Flow 2 ingress (mean 68.03 Mbit/s) --- Flow 2 egress (mean 68.28 Mbit/s)
Flow 3 ingress (mean 45.44 Mbit/s) --- Flow 3 egress (mean 45.37 Mbit/s)



Flow 1 (95th percentile 4282.27 ms)  Flow 2 (95th percentile 85.63 ms)  Flow 3 (95th percentile 87.05 ms)

```
Run 8: Statistics of TCP Vegas

Start at: 2017-08-31 14:07:17
End at: 2017-08-31 14:07:47


# Below is generated by plot.py at 2017-08-31 18:24:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.67 Mbit/s
95th percentile per-packet one-way delay: 91.898 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 18.58 Mbit/s
95th percentile per-packet one-way delay: 88.318 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 11.71 Mbit/s
95th percentile per-packet one-way delay: 86.945 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 67.83 Mbit/s
95th percentile per-packet one-way delay: 94.587 ms
Loss rate: 0.60%
```
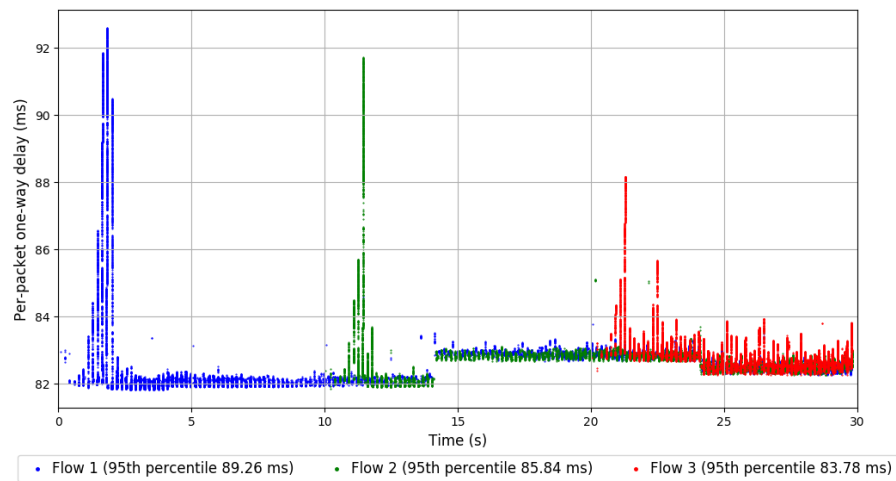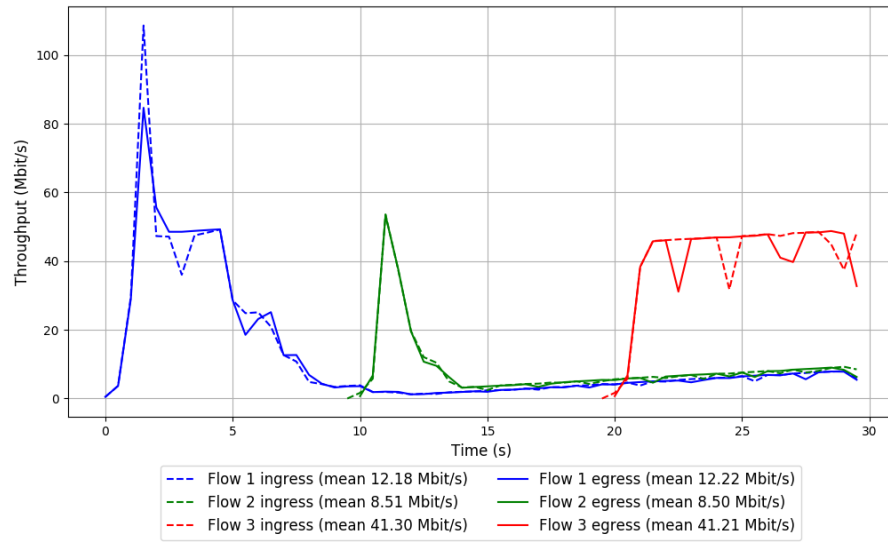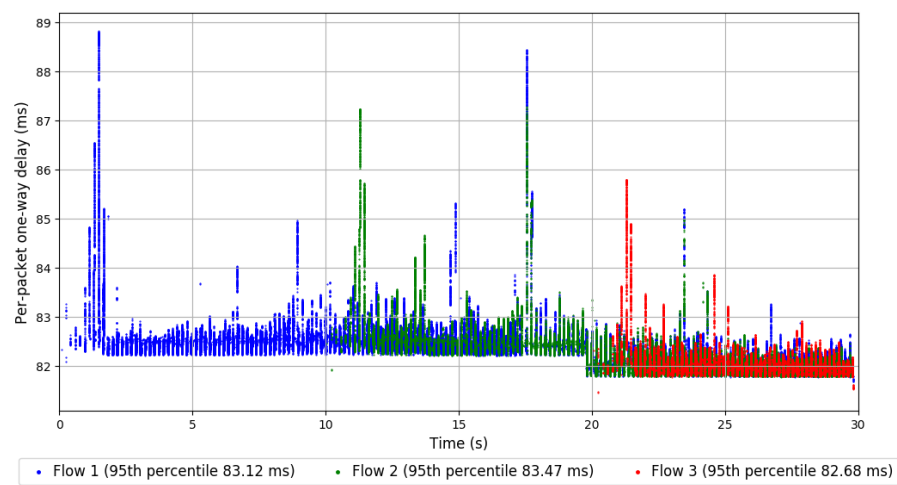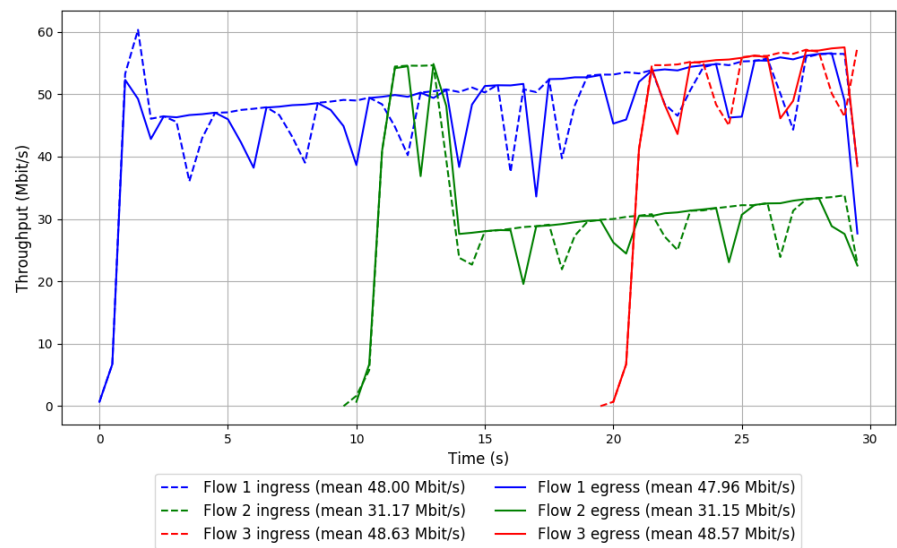
# Run 8: Report of TCP Vegas — Data Link



Flow 1 ingress (mean 18.53 Mbit/s) --- Flow 1 egress (mean 18.58 Mbit/s)
Flow 2 ingress (mean 11.74 Mbit/s) --- Flow 2 egress (mean 11.71 Mbit/s)
Flow 3 ingress (mean 67.68 Mbit/s) --- Flow 3 egress (mean 67.83 Mbit/s)



Flow 1 (95th percentile 88.32 ms) • Flow 2 (95th percentile 86.94 ms) • Flow 3 (95th percentile 94.59 ms)
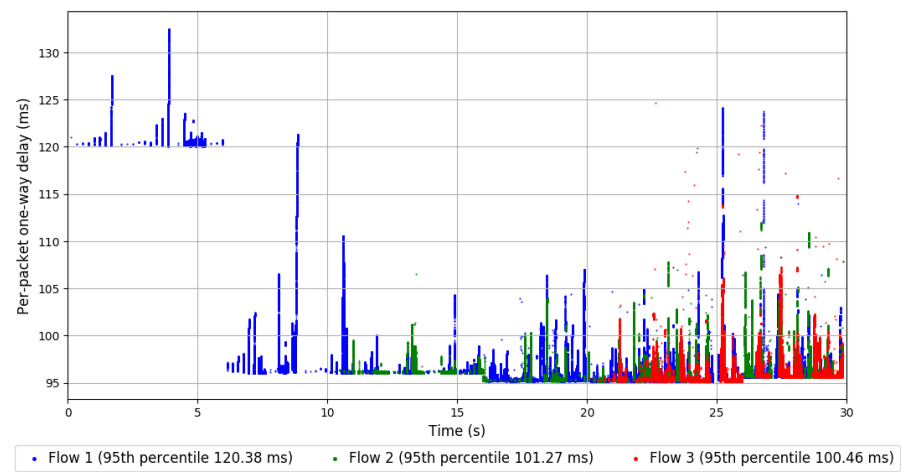
259

```
Run 9: Statistics of TCP Vegas

Start at: 2017-08-31 14:21:40
End at: 2017-08-31 14:22:10


# Below is generated by plot.py at 2017-08-31 18:24:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.40 Mbit/s
95th percentile per-packet one-way delay: 85.559 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 12.22 Mbit/s
95th percentile per-packet one-way delay: 89.262 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 85.837 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 41.21 Mbit/s
95th percentile per-packet one-way delay: 83.775 ms
Loss rate: 2.00%
```
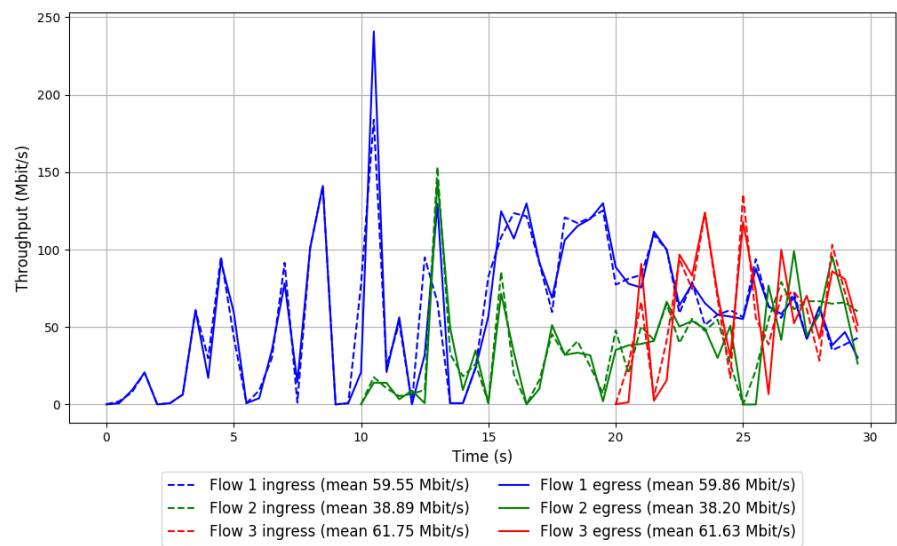
Run 9: Report of TCP Vegas — Data Link

```
Run 10: Statistics of TCP Vegas

Start at: 2017-08-31 14:36:54
End at: 2017-08-31 14:37:24


# Below is generated by plot.py at 2017-08-31 18:24:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.57 Mbit/s
95th percentile per-packet one-way delay: 83.164 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 47.96 Mbit/s
95th percentile per-packet one-way delay: 83.122 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 31.15 Mbit/s
95th percentile per-packet one-way delay: 83.471 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 48.57 Mbit/s
95th percentile per-packet one-way delay: 82.684 ms
Loss rate: 2.00%
```
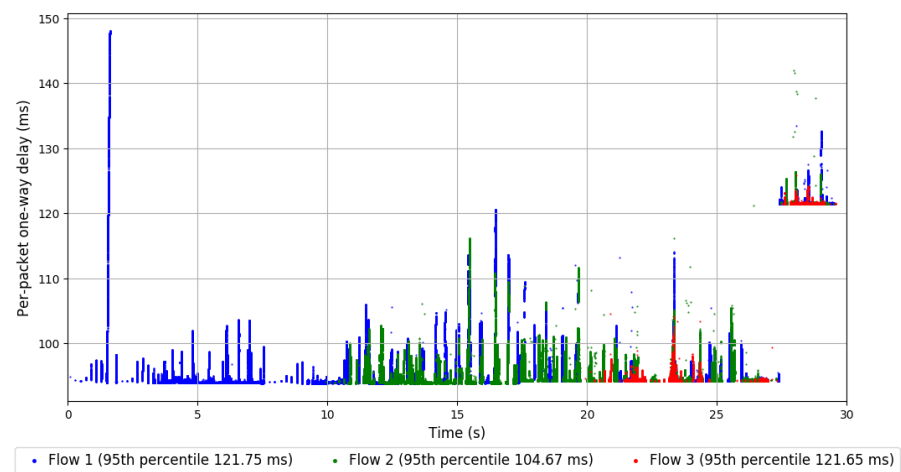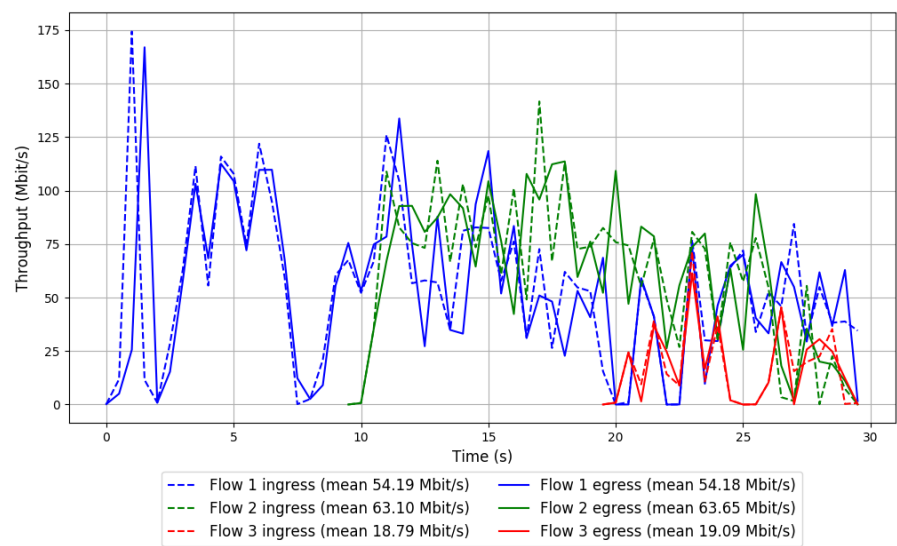
Run 10: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2017-08-31 12:32:18
End at: 2017-08-31 12:32:48


# Below is generated by plot.py at 2017-08-31 18:24:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 105.22 Mbit/s
95th percentile per-packet one-way delay: 118.604 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 59.86 Mbit/s
95th percentile per-packet one-way delay: 120.383 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 38.20 Mbit/s
95th percentile per-packet one-way delay: 101.266 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 61.63 Mbit/s
95th percentile per-packet one-way delay: 100.460 ms
Loss rate: 0.25%
```

Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2017-08-31 12:45:27
End at: 2017-08-31 12:45:57


# Below is generated by plot.py at 2017-08-31 18:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 102.62 Mbit/s
95th percentile per-packet one-way delay: 121.557 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 54.18 Mbit/s
95th percentile per-packet one-way delay: 121.755 ms
Loss rate: 1.07%
-- Flow 2:
Average throughput: 63.65 Mbit/s
95th percentile per-packet one-way delay: 104.665 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 19.09 Mbit/s
95th percentile per-packet one-way delay: 121.648 ms
Loss rate: 0.19%
```
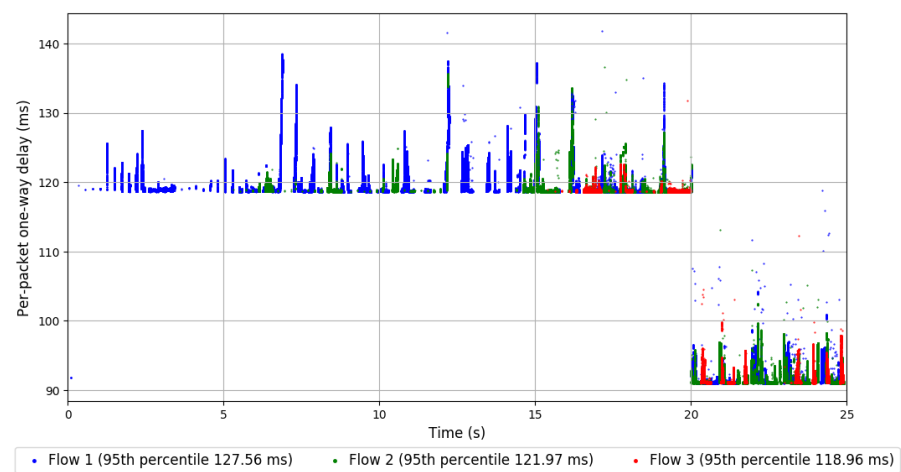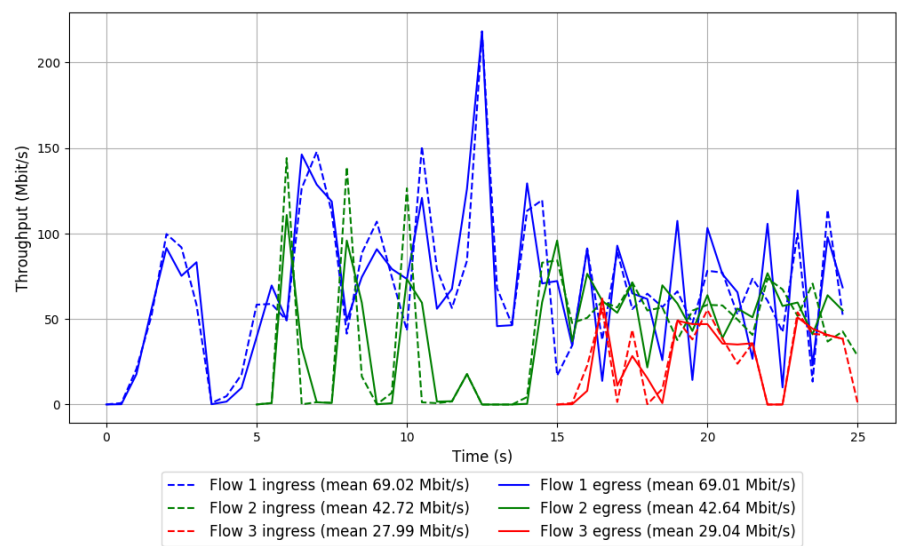
# Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2017-08-31 12:58:29
End at: 2017-08-31 12:58:59


# Below is generated by plot.py at 2017-08-31 18:25:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 113.55 Mbit/s
95th percentile per-packet one-way delay: 125.216 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 69.01 Mbit/s
95th percentile per-packet one-way delay: 127.555 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 42.64 Mbit/s
95th percentile per-packet one-way delay: 121.973 ms
Loss rate: 1.67%
-- Flow 3:
Average throughput: 29.04 Mbit/s
95th percentile per-packet one-way delay: 118.957 ms
Loss rate: 0.15%
```
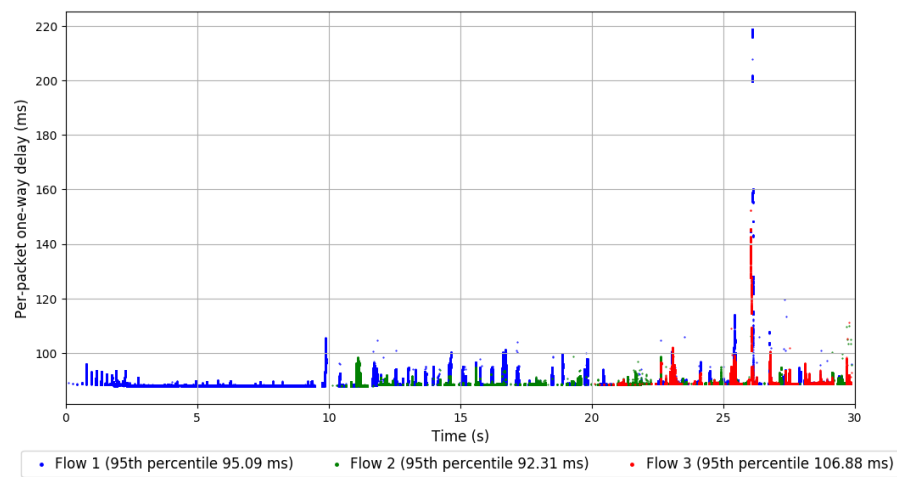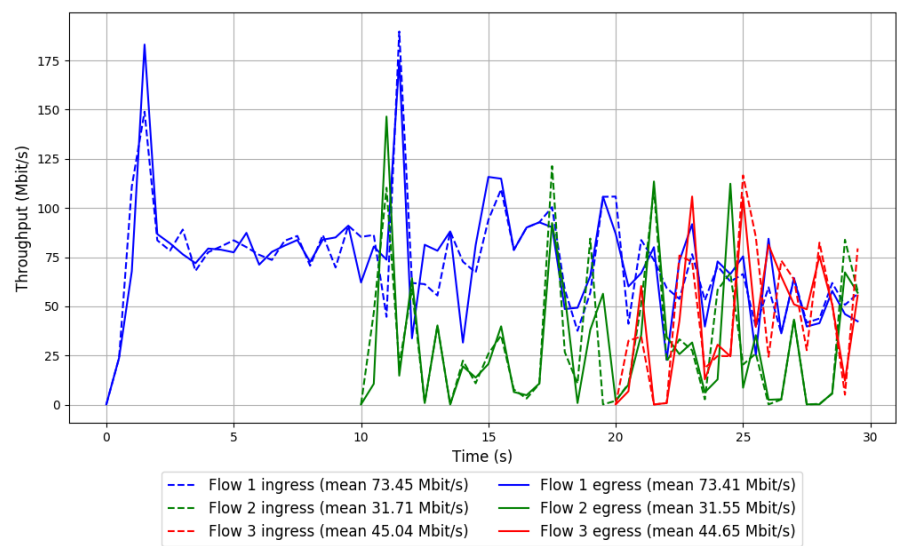
## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2017-08-31 13:12:12
End at: 2017-08-31 13:12:42


# Below is generated by plot.py at 2017-08-31 18:25:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 108.93 Mbit/s
95th percentile per-packet one-way delay: 95.342 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 73.41 Mbit/s
95th percentile per-packet one-way delay: 95.089 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 31.55 Mbit/s
95th percentile per-packet one-way delay: 92.311 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 44.65 Mbit/s
95th percentile per-packet one-way delay: 106.878 ms
Loss rate: 2.68%
```
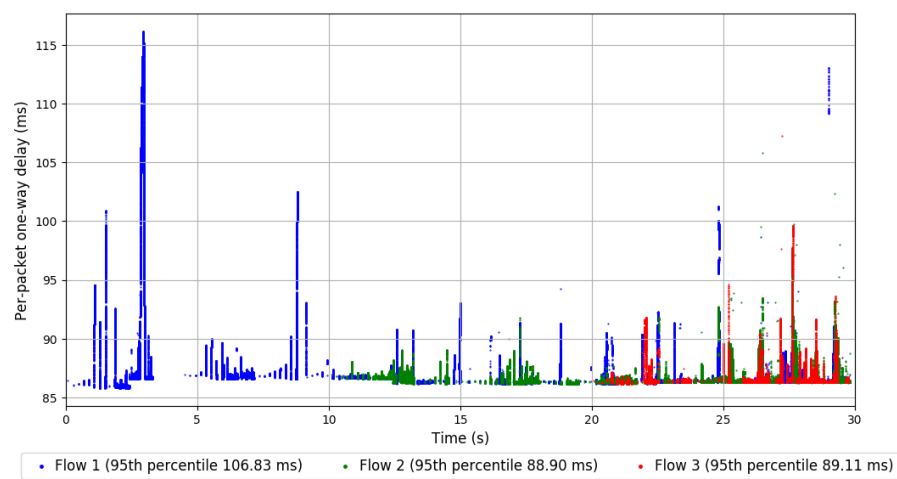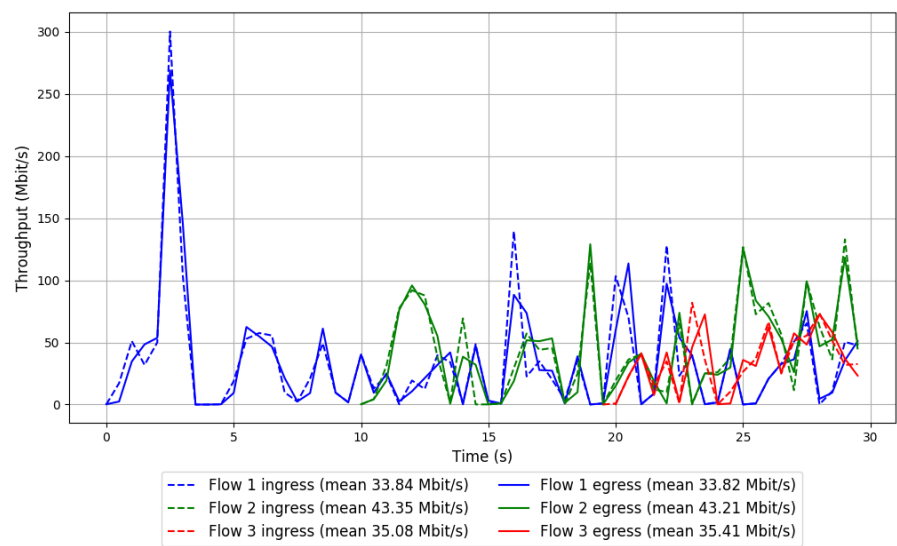
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2017-08-31 13:27:02
End at: 2017-08-31 13:27:32


# Below is generated by plot.py at 2017-08-31 18:25:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.02 Mbit/s
95th percentile per-packet one-way delay: 93.402 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 33.82 Mbit/s
95th percentile per-packet one-way delay: 106.834 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 43.21 Mbit/s
95th percentile per-packet one-way delay: 88.904 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 35.41 Mbit/s
95th percentile per-packet one-way delay: 89.108 ms
Loss rate: 1.34%
```
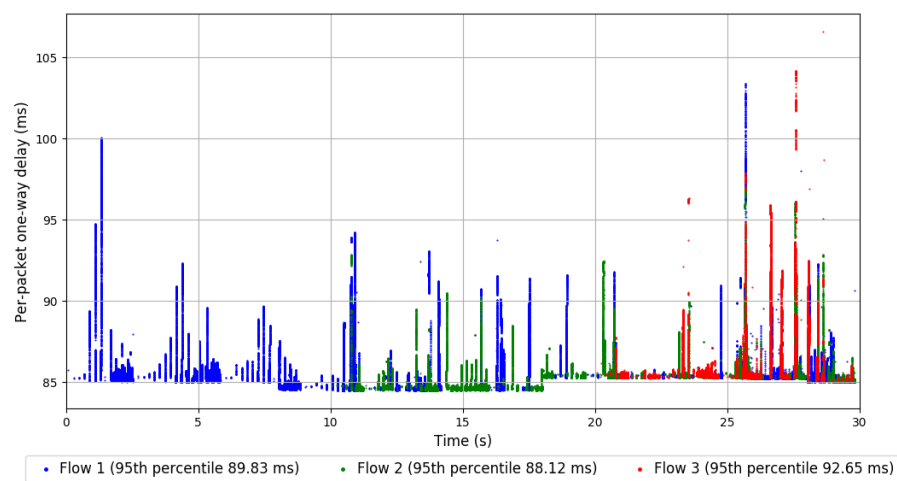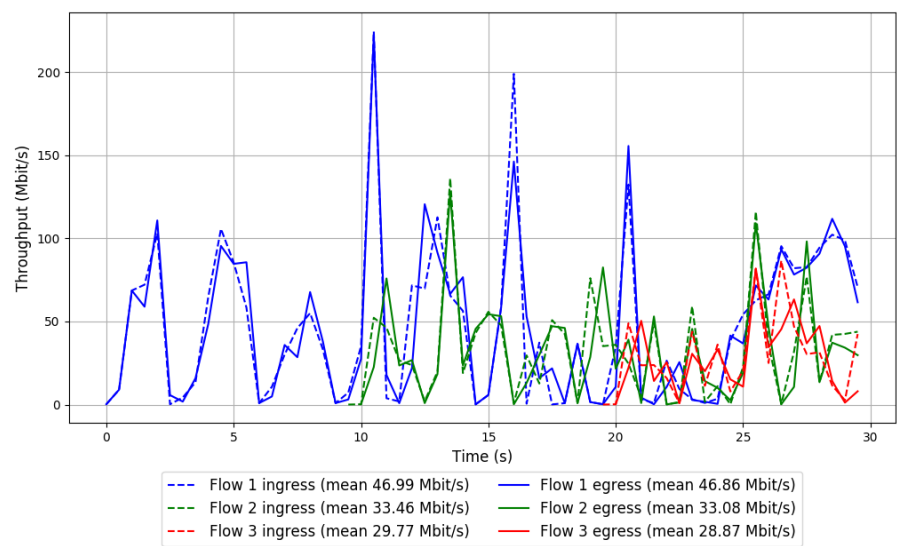
# Run 5: Report of Verus — Data Link

```
Run 6: Statistics of Verus

Start at: 2017-08-31 13:40:56
End at: 2017-08-31 13:41:26


# Below is generated by plot.py at 2017-08-31 18:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.16 Mbit/s
95th percentile per-packet one-way delay: 89.928 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 46.86 Mbit/s
95th percentile per-packet one-way delay: 89.835 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 33.08 Mbit/s
95th percentile per-packet one-way delay: 88.121 ms
Loss rate: 2.03%
-- Flow 3:
Average throughput: 28.87 Mbit/s
95th percentile per-packet one-way delay: 92.654 ms
Loss rate: 6.06%
```
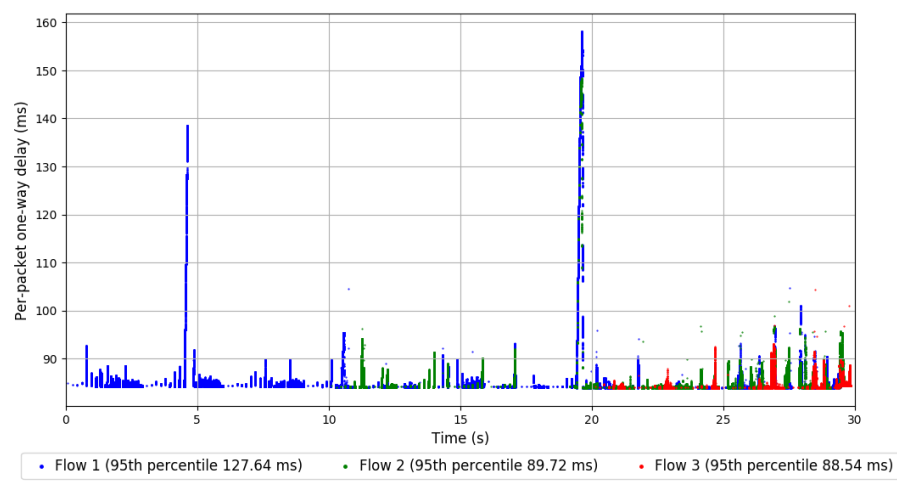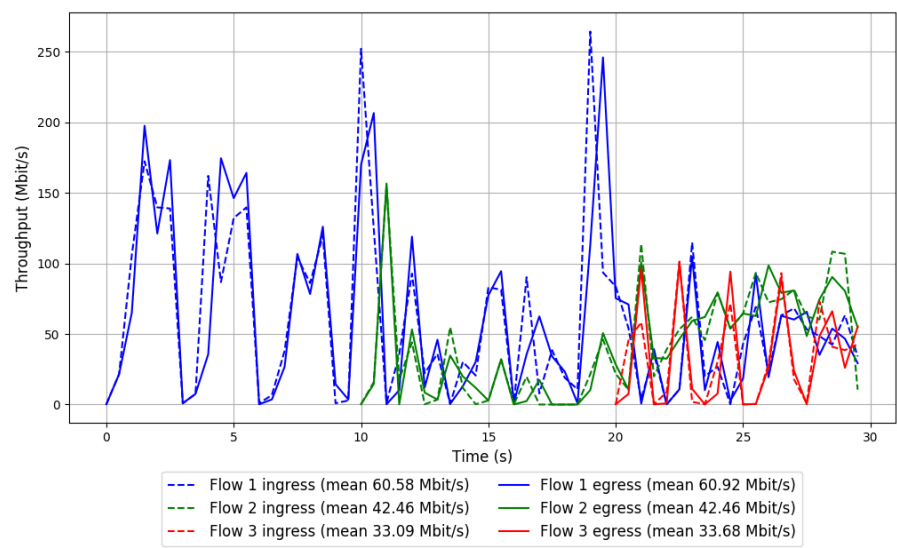
Run 6: Report of Verus — Data Link

```
Run 7: Statistics of Verus

Start at: 2017-08-31 13:55:25
End at: 2017-08-31 13:55:55


# Below is generated by plot.py at 2017-08-31 18:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.49 Mbit/s
95th percentile per-packet one-way delay: 103.256 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 60.92 Mbit/s
95th percentile per-packet one-way delay: 127.635 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 42.46 Mbit/s
95th percentile per-packet one-way delay: 89.719 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 33.68 Mbit/s
95th percentile per-packet one-way delay: 88.543 ms
Loss rate: 0.01%
```
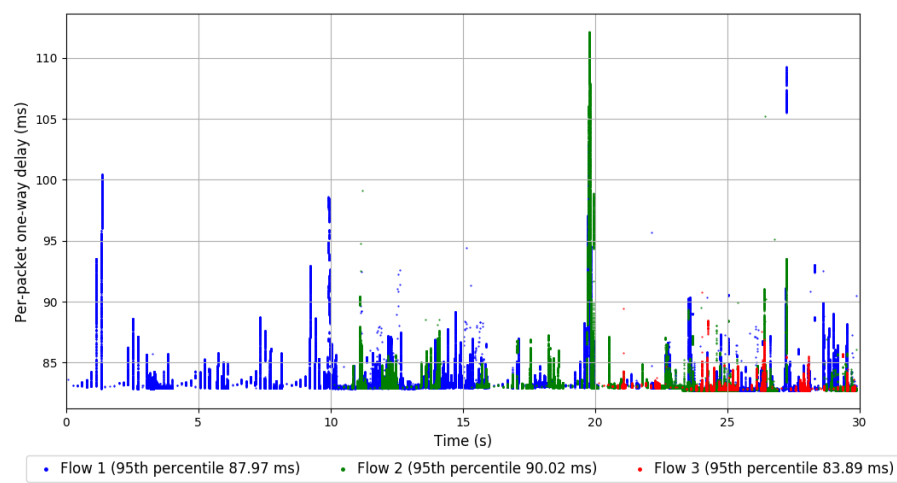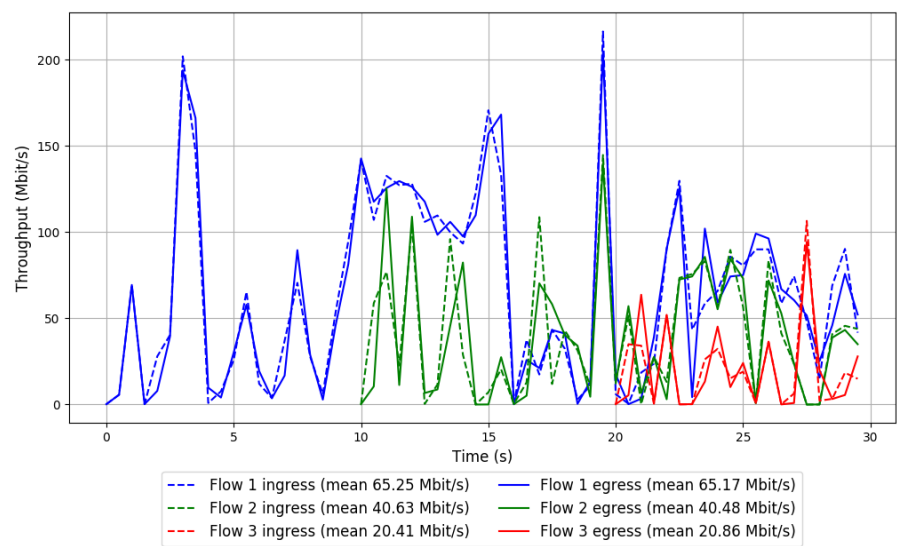
## Run 7: Report of Verus — Data Link



Flow 1 ingress (mean 60.58 Mbit/s) —— Flow 1 egress (mean 60.92 Mbit/s)
Flow 2 ingress (mean 42.46 Mbit/s) —— Flow 2 egress (mean 42.46 Mbit/s)
Flow 3 ingress (mean 33.09 Mbit/s) —— Flow 3 egress (mean 33.68 Mbit/s)



Flow 1 (95th percentile 127.64 ms)   Flow 2 (95th percentile 89.72 ms)   Flow 3 (95th percentile 88.54 ms)

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```
Run 8: Statistics of Verus

Start at: 2017-08-31 14:10:01
End at: 2017-08-31 14:10:31


# Below is generated by plot.py at 2017-08-31 18:25:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.77 Mbit/s
95th percentile per-packet one-way delay: 88.034 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 65.17 Mbit/s
95th percentile per-packet one-way delay: 87.975 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 40.48 Mbit/s
95th percentile per-packet one-way delay: 90.023 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 20.86 Mbit/s
95th percentile per-packet one-way delay: 83.886 ms
Loss rate: 0.01%
```
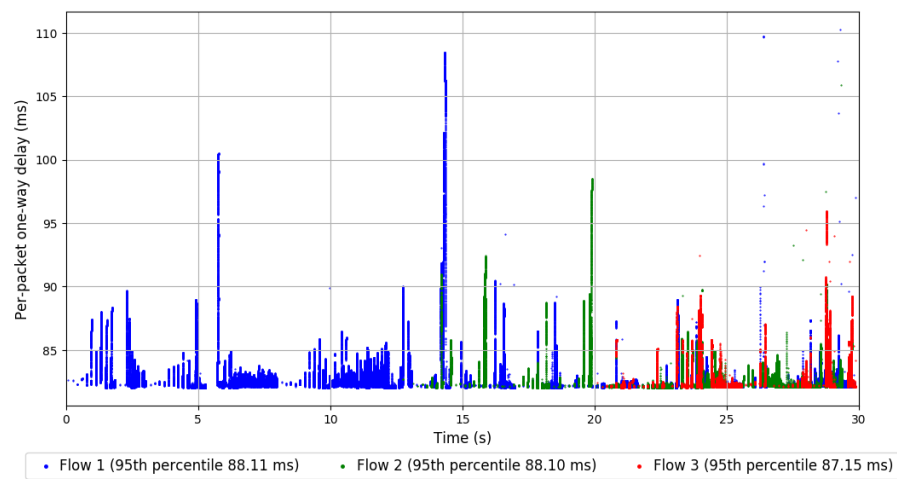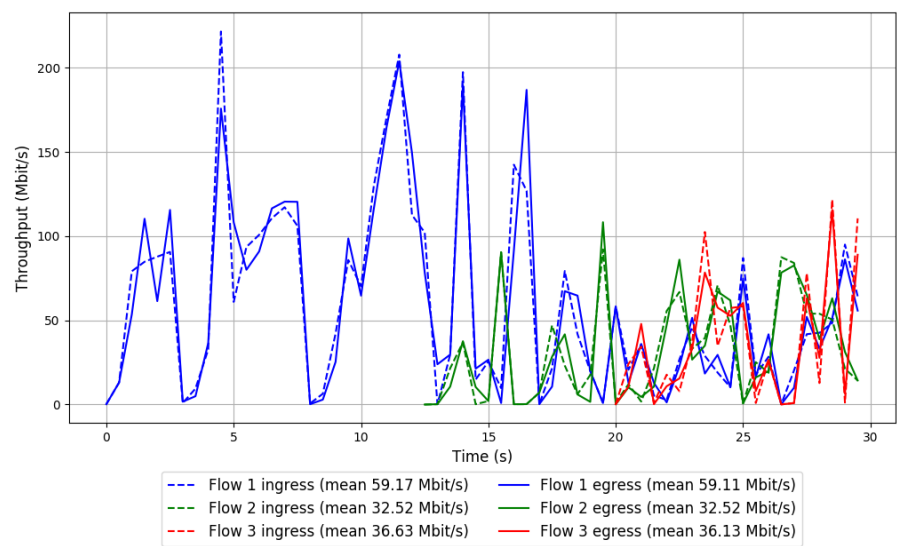
Run 8: Report of Verus — Data Link

```
Run 9: Statistics of Verus

Start at: 2017-08-31 14:25:30
End at: 2017-08-31 14:26:00

# Below is generated by plot.py at 2017-08-31 18:26:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.47 Mbit/s
95th percentile per-packet one-way delay: 87.878 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 59.11 Mbit/s
95th percentile per-packet one-way delay: 88.114 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 32.52 Mbit/s
95th percentile per-packet one-way delay: 88.097 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.13 Mbit/s
95th percentile per-packet one-way delay: 87.150 ms
Loss rate: 3.08%
```
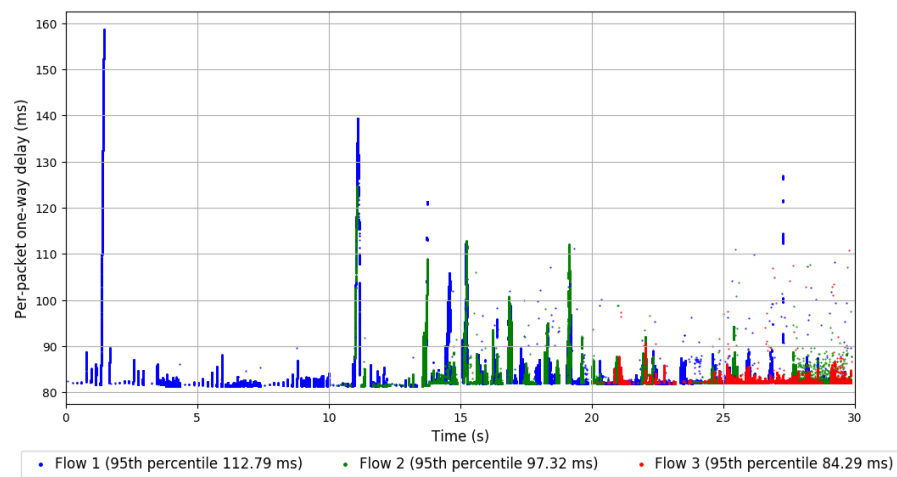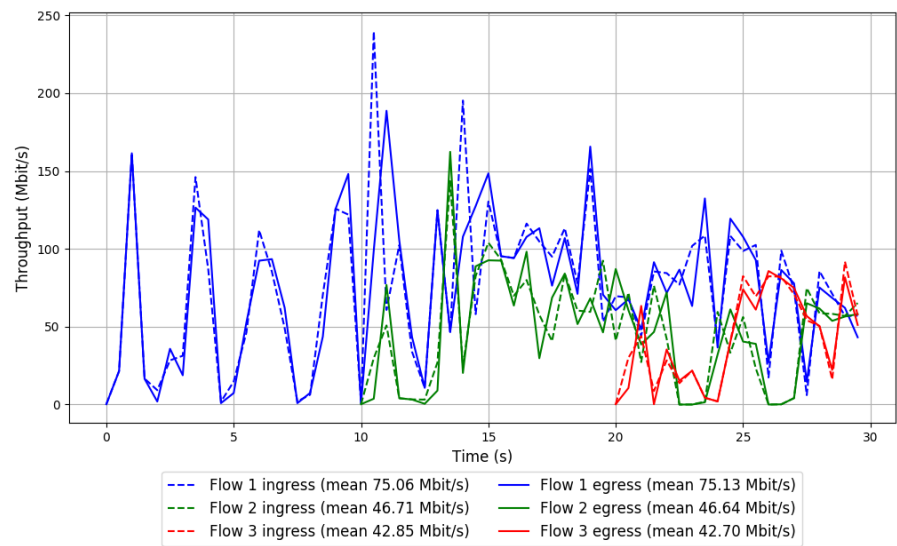
Run 9: Report of Verus — Data Link

```
Run 10: Statistics of Verus

Start at: 2017-08-31 14:39:40
End at: 2017-08-31 14:40:10


# Below is generated by plot.py at 2017-08-31 18:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.00 Mbit/s
95th percentile per-packet one-way delay: 101.822 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 75.13 Mbit/s
95th percentile per-packet one-way delay: 112.786 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 46.64 Mbit/s
95th percentile per-packet one-way delay: 97.318 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 42.70 Mbit/s
95th percentile per-packet one-way delay: 84.286 ms
Loss rate: 2.14%
```

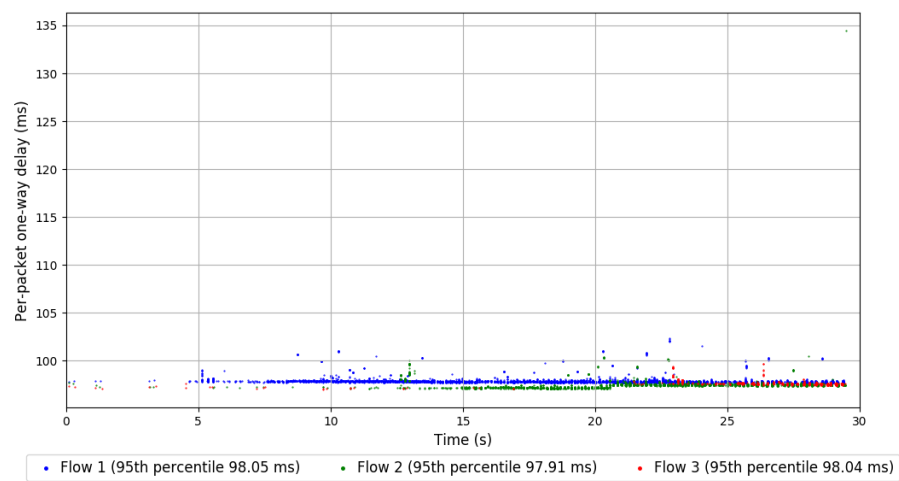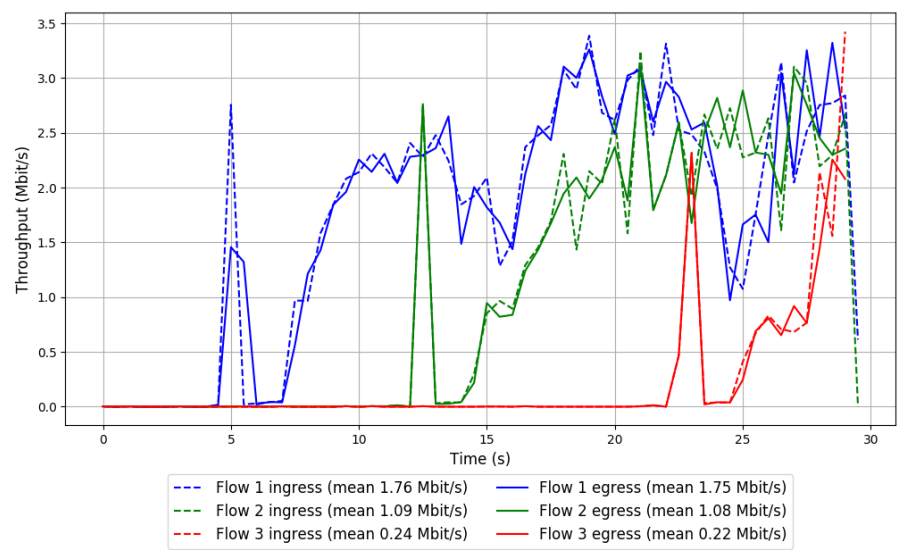# Run 10: Report of Verus — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2017-08-31 12:22:13
End at: 2017-08-31 12:22:43

# Below is generated by plot.py at 2017-08-31 18:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 98.035 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 98.050 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 97.914 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 98.038 ms
Loss rate: 9.52%
```
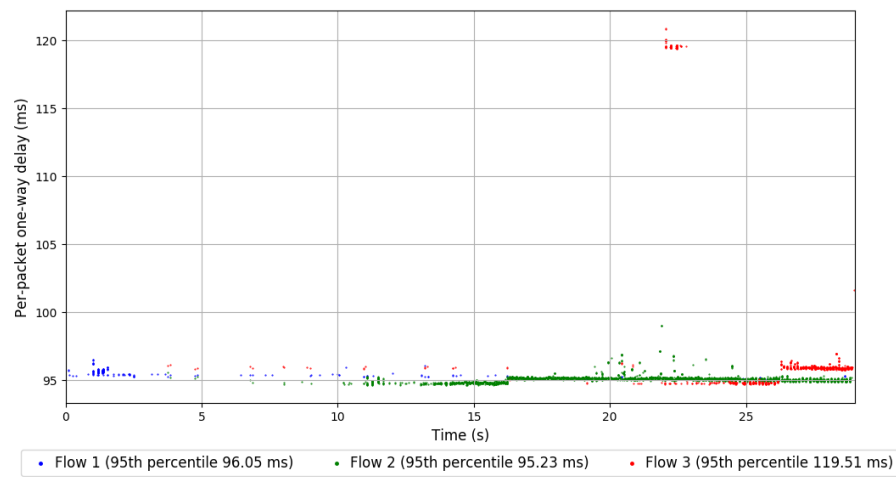
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2017-08-31 12:36:37
End at: 2017-08-31 12:37:07


# Below is generated by plot.py at 2017-08-31 18:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 96.021 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 96.051 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 95.229 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 119.513 ms
Loss rate: 6.89%
```
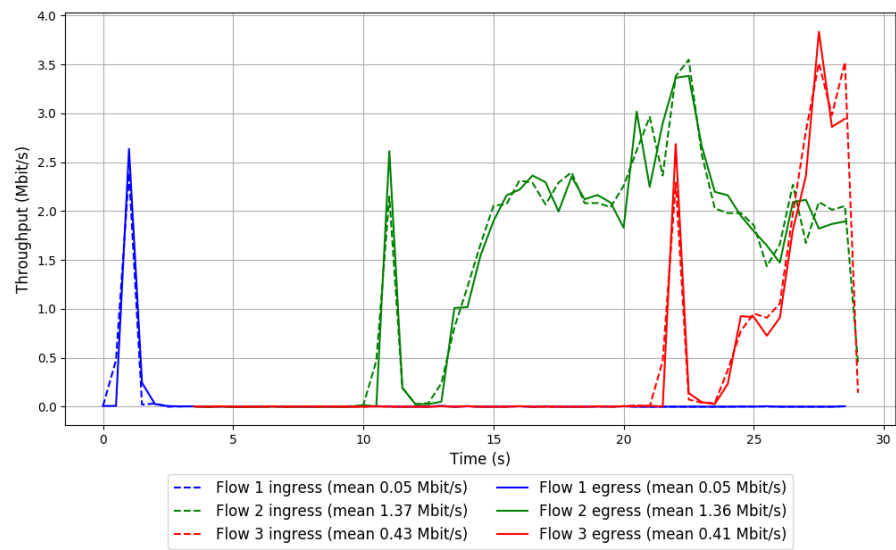
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2017-08-31 12:50:02
End at: 2017-08-31 12:50:32


# Below is generated by plot.py at 2017-08-31 18:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 94.097 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 120.923 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 93.144 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 121.021 ms
Loss rate: 3.12%
```
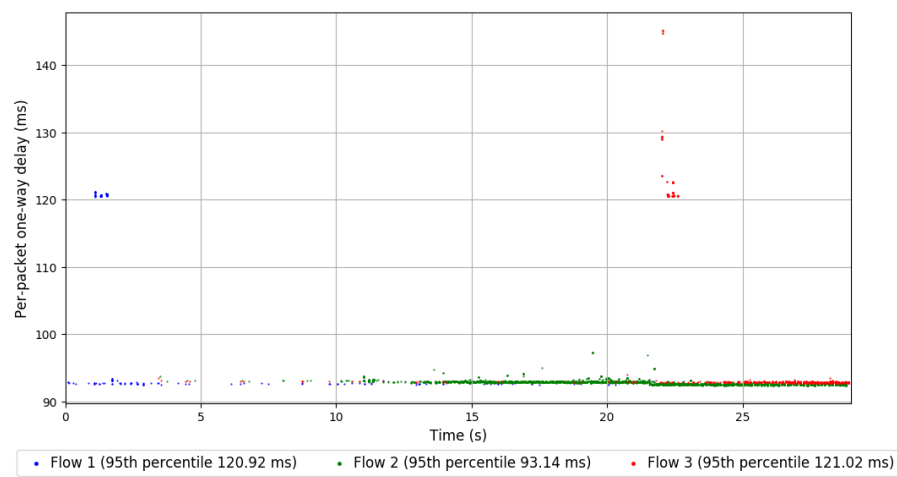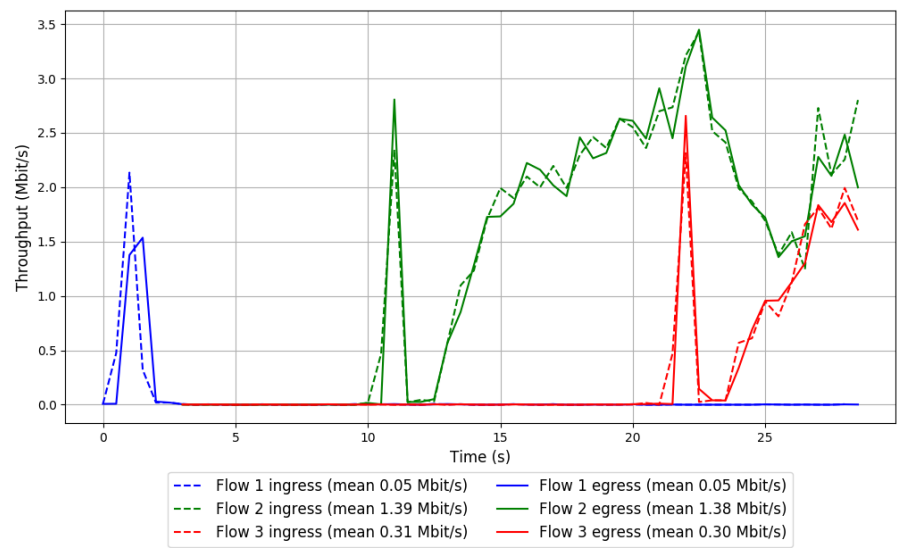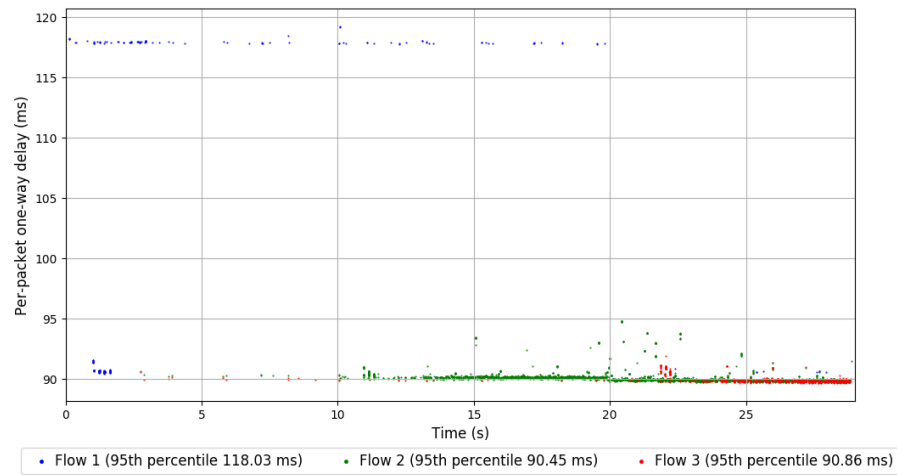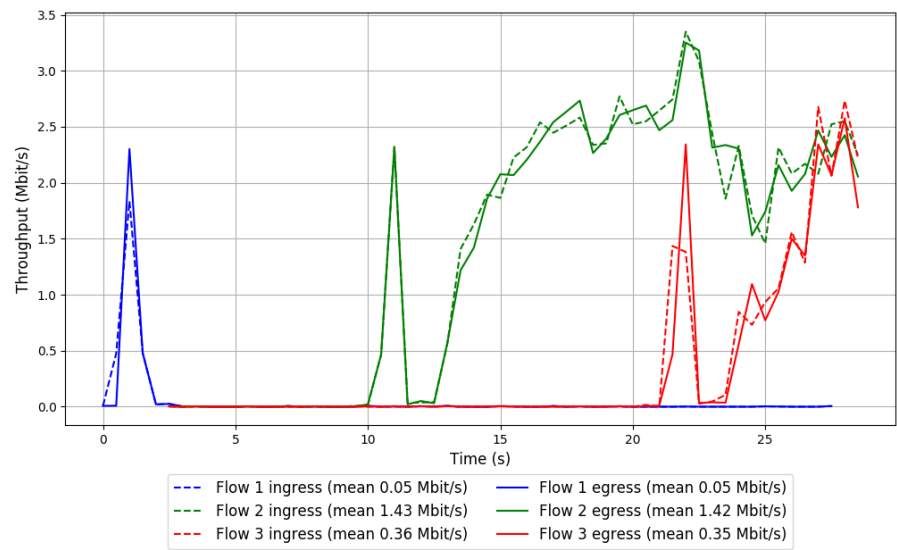
Run 3: Report of WebRTC media — Data Link



Flow 1 ingress (mean 0.05 Mbit/s) --- Flow 1 egress (mean 0.05 Mbit/s) ---
Flow 2 ingress (mean 1.39 Mbit/s) --- Flow 2 egress (mean 1.38 Mbit/s) ---
Flow 3 ingress (mean 0.31 Mbit/s) --- Flow 3 egress (mean 0.30 Mbit/s) ---



• Flow 1 (95th percentile 120.92 ms)   • Flow 2 (95th percentile 93.14 ms)   • Flow 3 (95th percentile 121.02 ms)

```
Run 4: Statistics of WebRTC media

Start at: 2017-08-31 13:02:43
End at: 2017-08-31 13:03:13


# Below is generated by plot.py at 2017-08-31 18:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 90.896 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 118.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 90.455 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 90.861 ms
Loss rate: 5.82%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2017-08-31 13:17:33
End at: 2017-08-31 13:18:03

# Below is generated by plot.py at 2017-08-31 18:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 88.074 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 88.047 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 88.073 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 88.624 ms
Loss rate: 0.02%
```
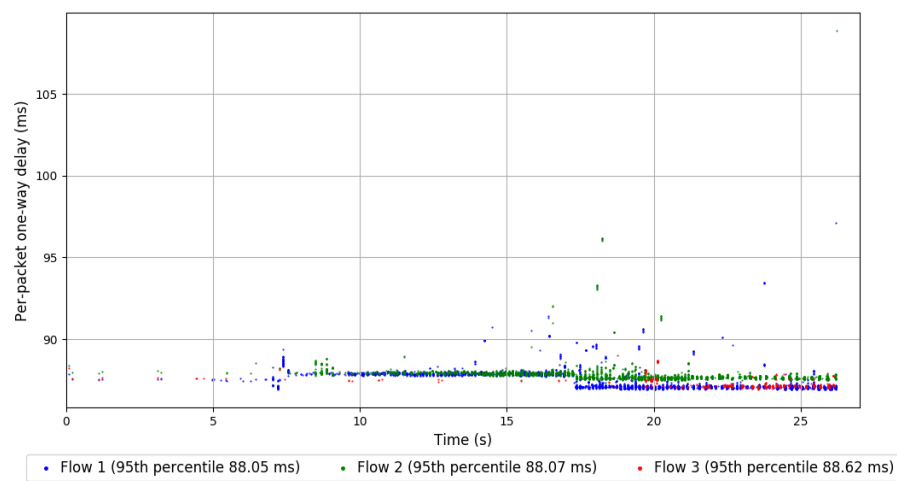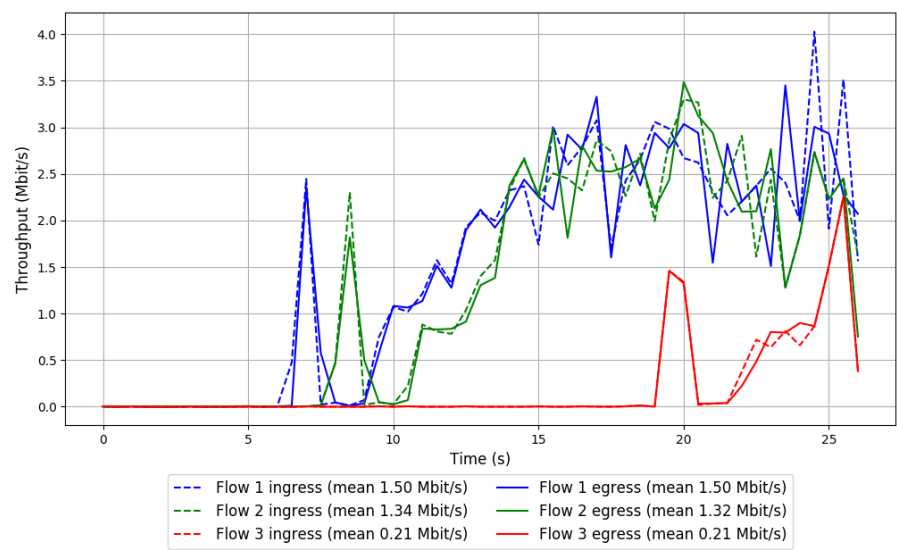
Run 5: Report of WebRTC media — Data Link

```
Run 6: Statistics of WebRTC media

Start at: 2017-08-31 13:32:21
End at: 2017-08-31 13:32:51

# Below is generated by plot.py at 2017-08-31 18:26:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 86.178 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 86.036 ms
Loss rate: 1.07%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 86.252 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 86.560 ms
Loss rate: 2.92%
```
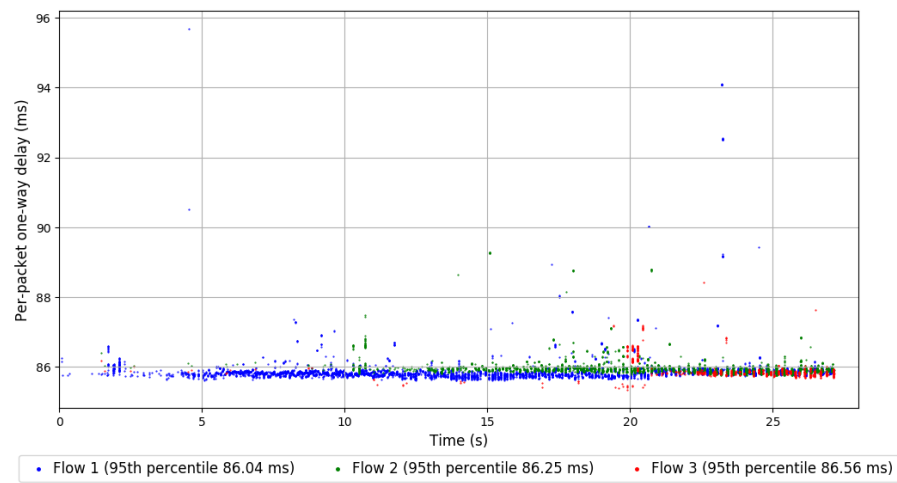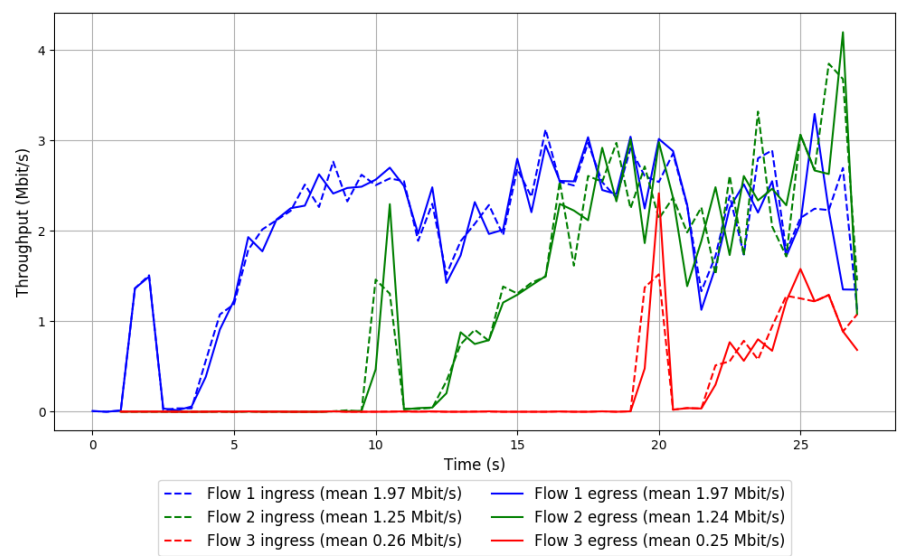
Run 6: Report of WebRTC media — Data Link

```
Run 7: Statistics of WebRTC media

Start at: 2017-08-31 13:45:28
End at: 2017-08-31 13:45:58

# Below is generated by plot.py at 2017-08-31 18:26:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 85.366 ms
Loss rate: 2.55%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.394 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 85.363 ms
Loss rate: 2.22%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 84.628 ms
Loss rate: 4.51%
```
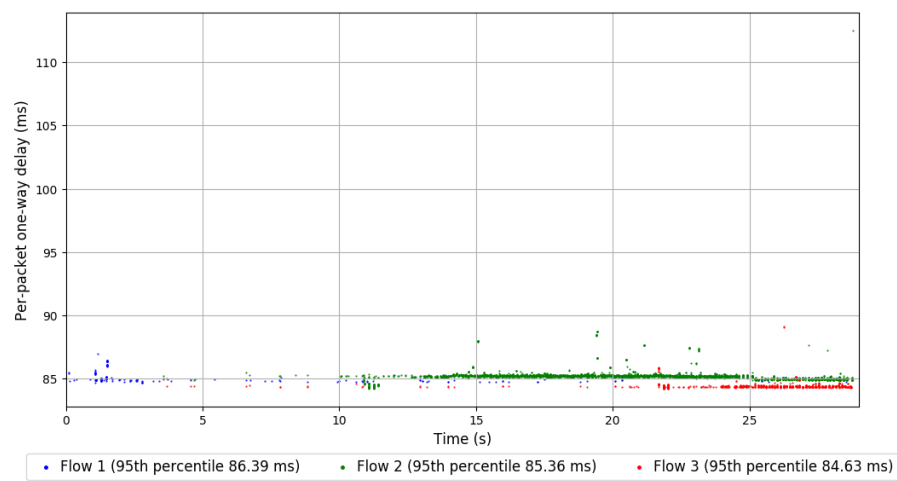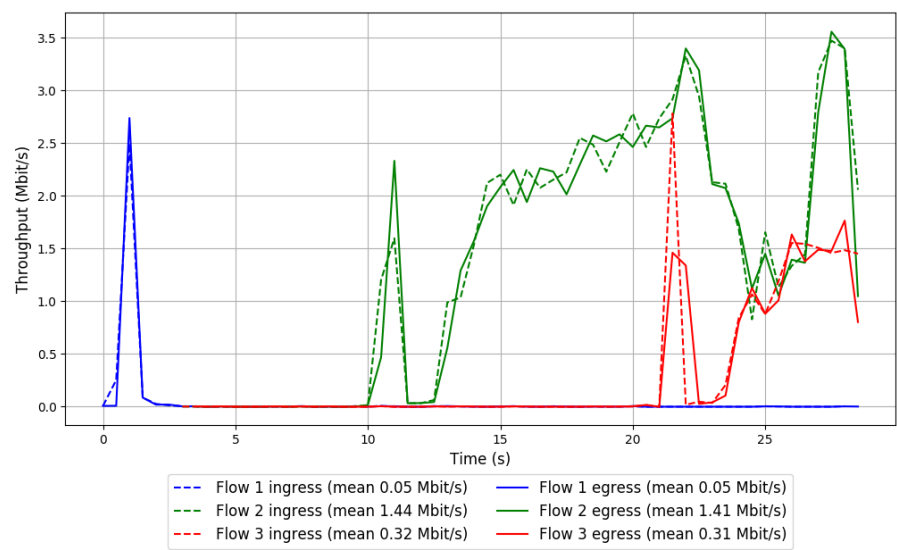
## Run 7: Report of WebRTC media — Data Link

```
Run 8: Statistics of WebRTC media

Start at: 2017-08-31 14:01:10
End at: 2017-08-31 14:01:40

# Below is generated by plot.py at 2017-08-31 18:26:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 84.078 ms
Loss rate: 2.35%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 84.502 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 83.546 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 84.172 ms
Loss rate: 6.99%
```
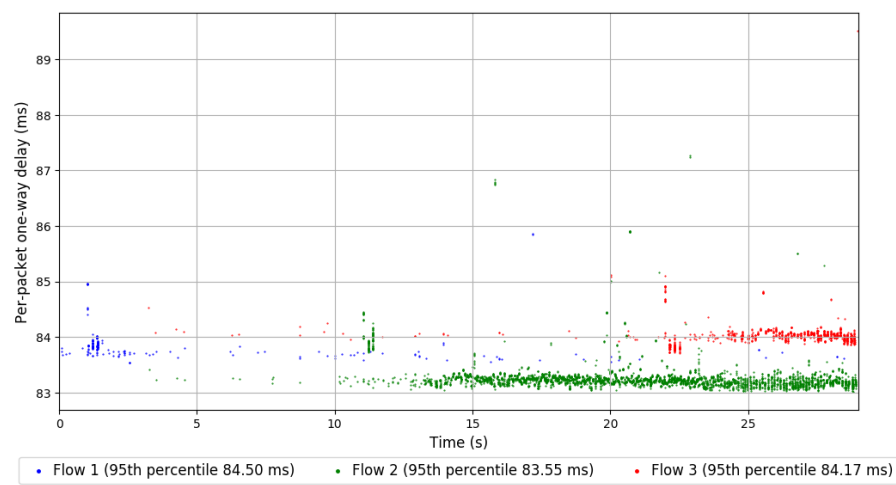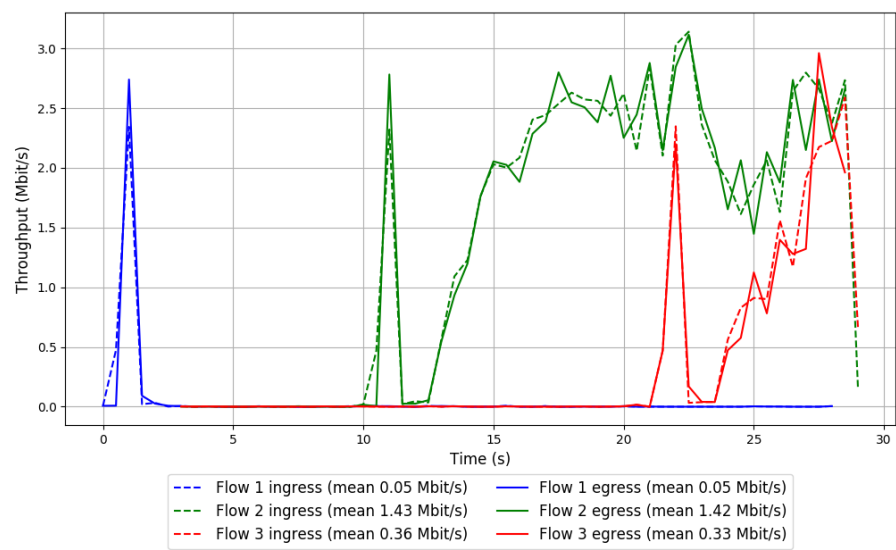
Run 8: Report of WebRTC media — Data Link

```
Run 9: Statistics of WebRTC media

Start at: 2017-08-31 14:15:29
End at: 2017-08-31 14:15:59


# Below is generated by plot.py at 2017-08-31 18:26:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 83.184 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 83.426 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 82.984 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 83.382 ms
Loss rate: 6.23%
```
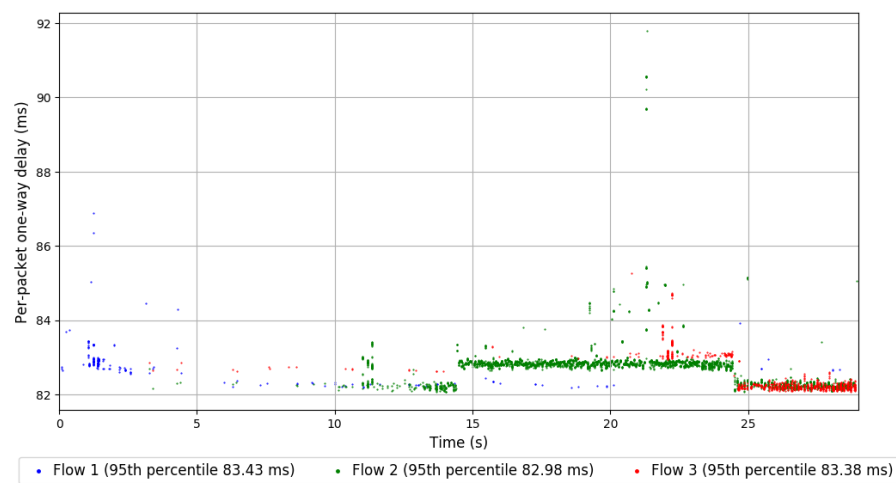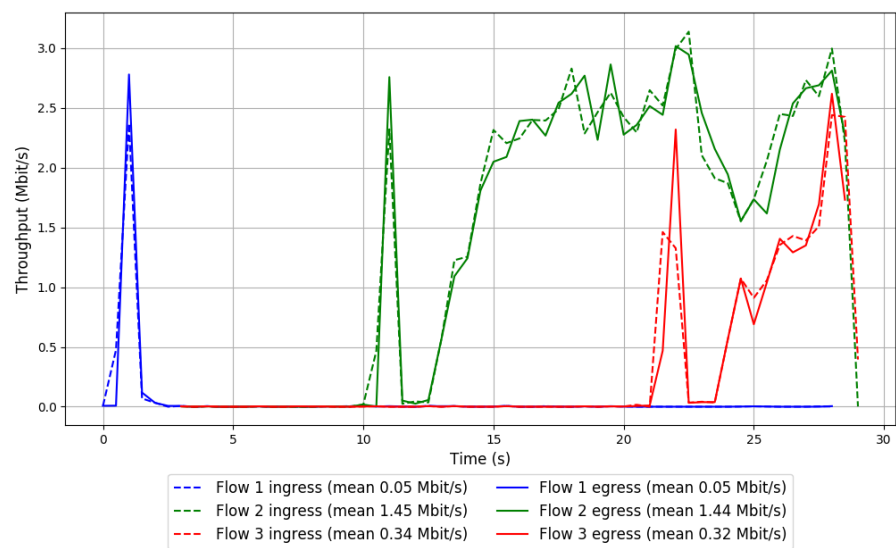
# Run 9: Report of WebRTC media — Data Link

```
Run 10: Statistics of WebRTC media

Start at: 2017-08-31 14:31:17
End at: 2017-08-31 14:31:47


# Below is generated by plot.py at 2017-08-31 18:26:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 82.509 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 82.762 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 82.410 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 82.589 ms
Loss rate: 8.38%
```

## Run 10: Report of WebRTC media — Data Link