Pantheon Report

Generated at 2017-08-13 07:35:29 (UTC).

Data path: India ppp0 (*remote*) →AWS India 1 Ethernet (*local*).

Repeated the test of 15 congestion control schemes 3 times.

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

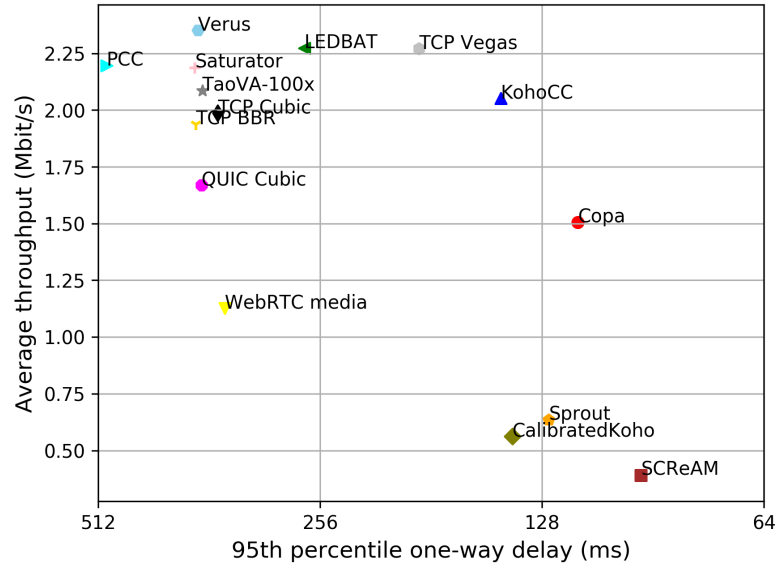Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

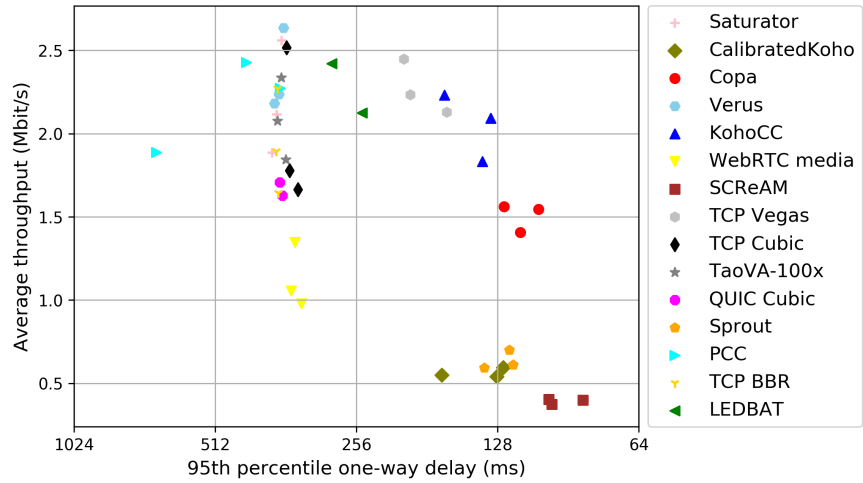NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: master @ e43be7582298d552838afcf6382342bf187fbbd6
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ dae96123232f1bcb37725348fa2378691ce26725
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-stimuli @ fc73a85ca16c34366d1888dc8a0d0d88d4ebf2a7
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 India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme
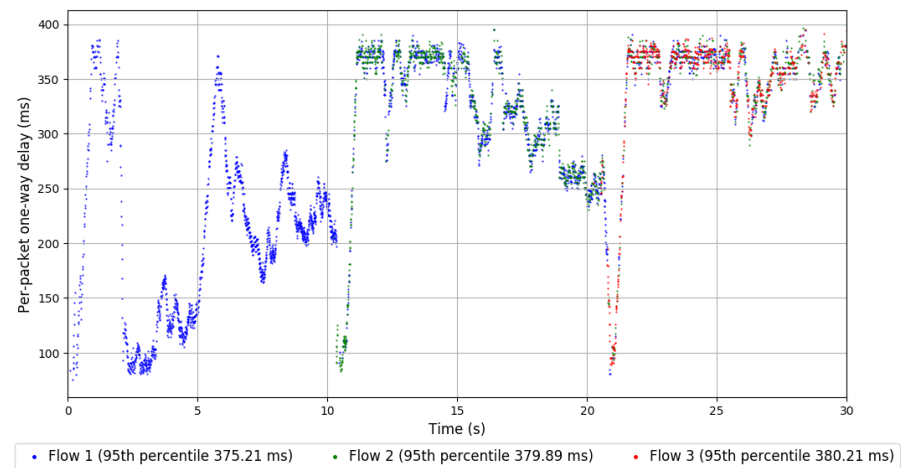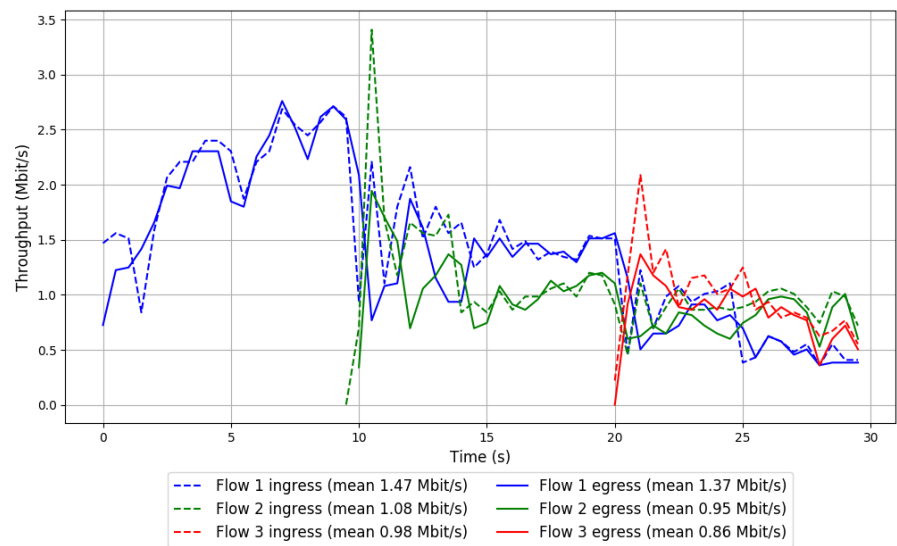3 flows with 10s interval between flows

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	3	1.26	0.66	0.77	375.20	381.92	380.11	13.89	25.17	30.22
CalibratedKoho	3	0.25	0.27	0.39	150.66	137.12	130.43	0.94	1.47	2.18
Copa	3	0.77	0.76	0.71	112.64	113.93	120.65	0.19	0.40	0.66
TCP Cubic	3	1.29	0.68	0.80	350.79	354.37	357.35	3.07	5.72	4.88
KohoCC	3	0.88	1.00	1.52	150.47	145.03	143.85	0.27	0.93	0.81
LEDBAT	2	1.36	1.14	0.56	256.55	274.07	291.86	0.60	1.13	3.78
PCC	3	1.27	0.99	0.92	382.70	493.75	756.06	53.43	60.32	84.73
QUIC Cubic	2	0.50	1.32	0.96	235.06	369.54	373.97	3.92	7.45	12.66
Saturator	3	1.89	0.38	0.23	378.81	380.21	370.55	49.91	62.43	71.18
SCReAM	3	0.19	0.20	0.21	95.35	93.09	94.05	0.28	0.33	0.45
Sprout	3	0.33	0.30	0.32	121.84	128.07	129.35	0.74	0.80	1.89
TaoVA-100x	3	1.30	0.99	6.48	367.76	371.88	372.37	12.54	18.68	53.39
TCP Vegas	3	1.17	1.05	1.07	223.29	171.19	171.13	1.17	0.50	1.56
Verus	3	2.02	0.40	0.21	373.94	377.46	376.35	21.31	62.53	55.42
WebRTC media	3	0.63	0.38	0.16	349.87	325.59	330.10	2.24	3.08	4.76

```
Run 1: Statistics of TCP BBR

Start at: 2017-08-13 05:45:42
End at: 2017-08-13 05:46:12
Local clock offset: 0.681 ms
Remote clock offset: -19.721 ms


# Below is generated by plot.py at 2017-08-13 07:34:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 377.272 ms
Loss rate: 9.71%
-- Flow 1:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 375.212 ms
Loss rate: 6.90%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 379.886 ms
Loss rate: 13.29%
-- Flow 3:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 380.209 ms
Loss rate: 14.42%
```
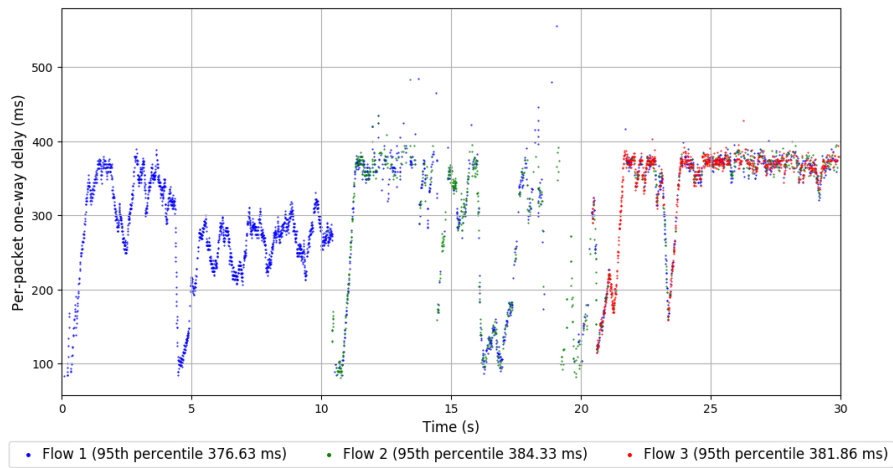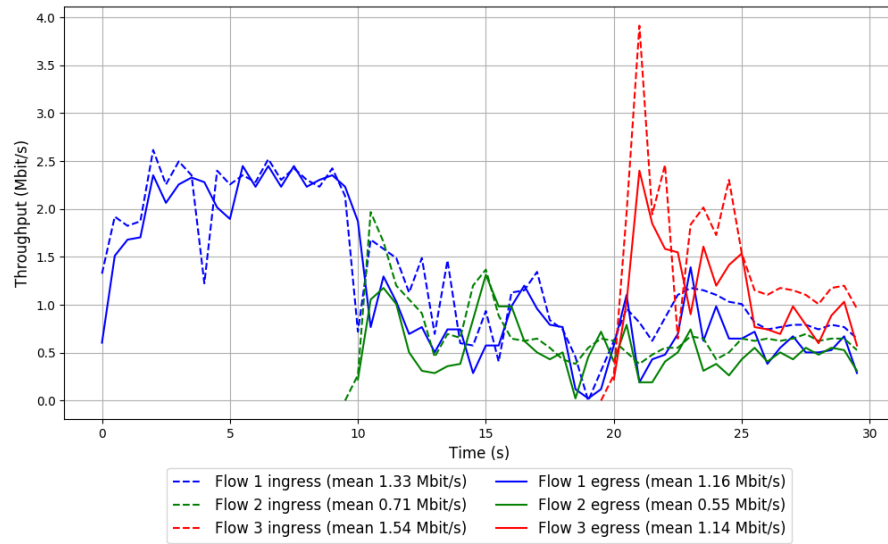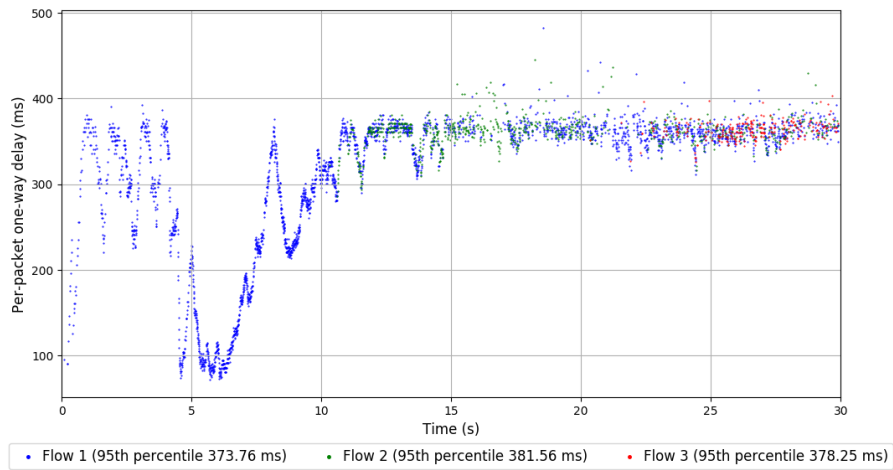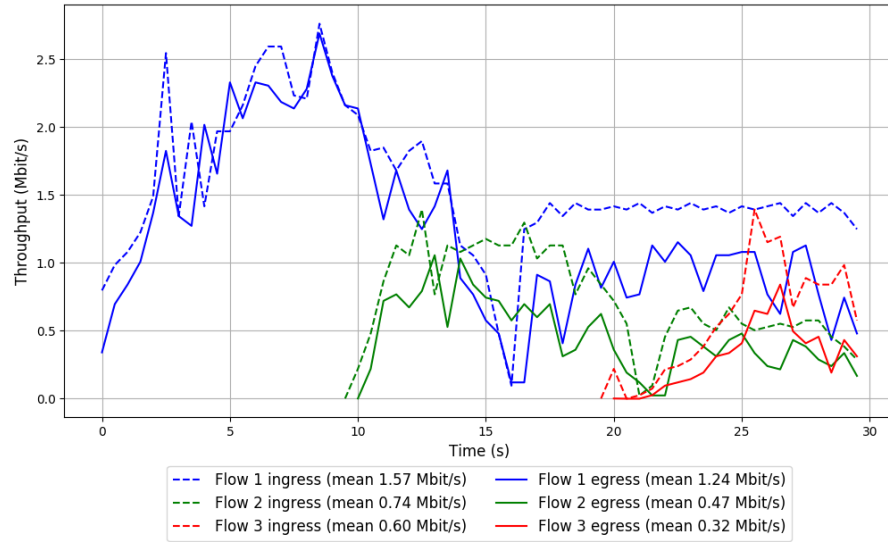
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 1.47 Mbit/s) --- Flow 1 egress (mean 1.37 Mbit/s)
Flow 2 ingress (mean 1.08 Mbit/s) --- Flow 2 egress (mean 0.95 Mbit/s)
Flow 3 ingress (mean 0.98 Mbit/s) --- Flow 3 egress (mean 0.86 Mbit/s)

Flow 1 (95th percentile 375.21 ms)   Flow 2 (95th percentile 379.89 ms)   Flow 3 (95th percentile 380.21 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2017-08-13 06:03:58
End at: 2017-08-13 06:04:28
Local clock offset: -0.76 ms
Remote clock offset: -20.936 ms


# Below is generated by plot.py at 2017-08-13 07:34:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 379.825 ms
Loss rate: 18.50%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 376.633 ms
Loss rate: 13.24%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 384.329 ms
Loss rate: 24.03%
-- Flow 3:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 381.863 ms
Loss rate: 27.01%
```
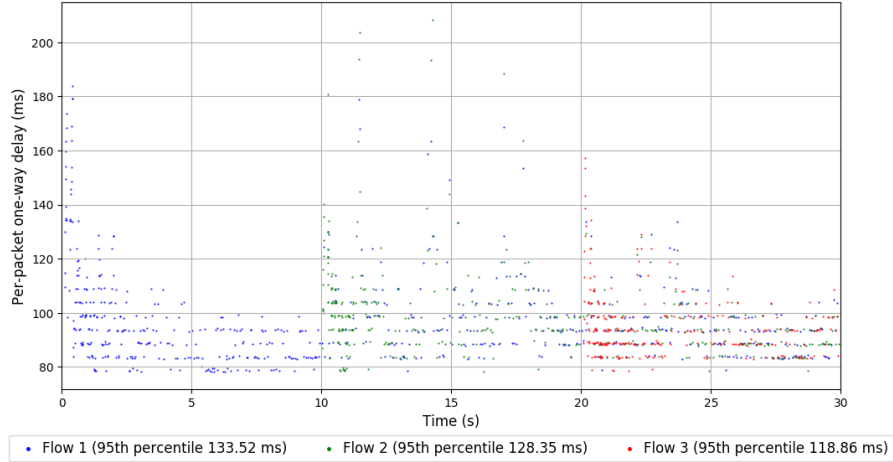
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2017-08-13 06:21:11
End at: 2017-08-13 06:21:41
Local clock offset: -1.293 ms
Remote clock offset: -18.631 ms


# Below is generated by plot.py at 2017-08-13 07:34:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 375.844 ms
Loss rate: 27.61%
-- Flow 1:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 373.756 ms
Loss rate: 21.53%
-- Flow 2:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 381.556 ms
Loss rate: 38.18%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 378.252 ms
Loss rate: 49.23%
```
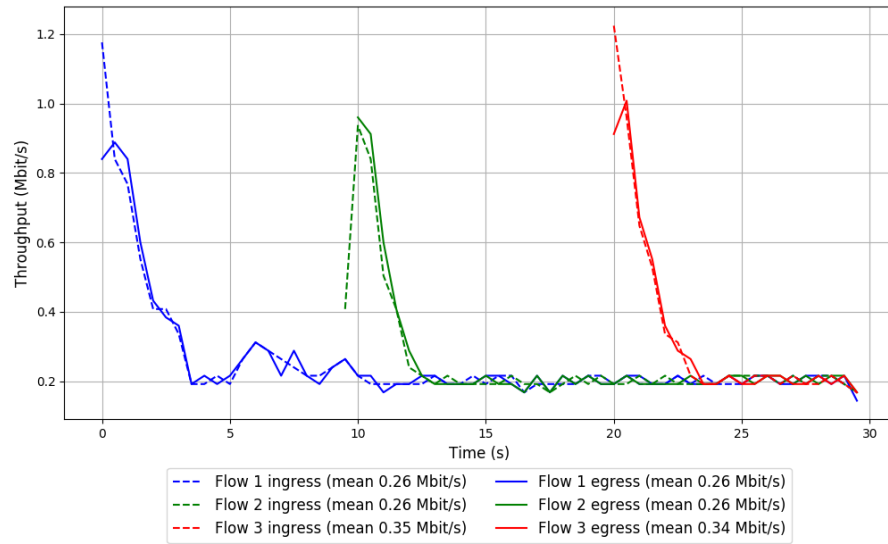
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 1.57 Mbit/s)   Flow 1 egress (mean 1.24 Mbit/s)
Flow 2 ingress (mean 0.74 Mbit/s)   Flow 2 egress (mean 0.47 Mbit/s)
Flow 3 ingress (mean 0.60 Mbit/s)   Flow 3 egress (mean 0.32 Mbit/s)

Flow 1 (95th percentile 373.76 ms)   Flow 2 (95th percentile 381.56 ms)   Flow 3 (95th percentile 378.25 ms)
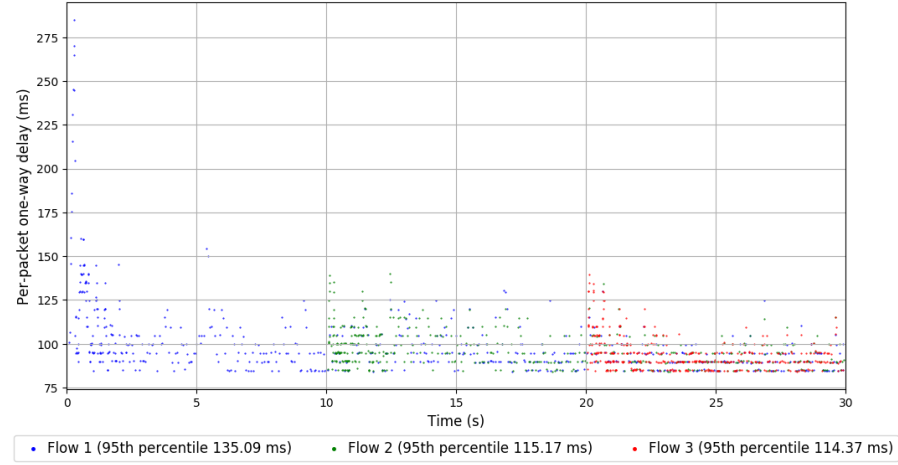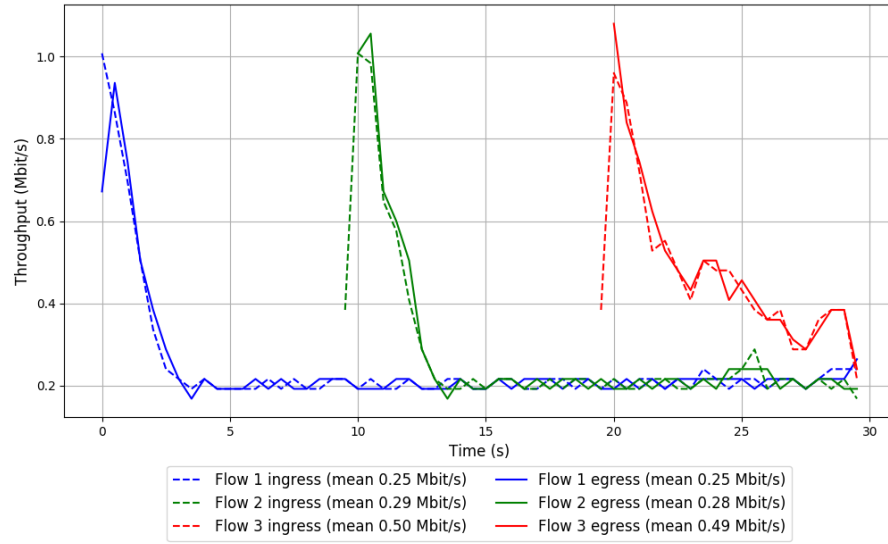
9

```
Run 1: Statistics of CalibratedKoho

Start at: 2017-08-13 05:47:09
End at: 2017-08-13 05:47:39
Local clock offset: -1.712 ms
Remote clock offset: -21.223 ms

# Below is generated by plot.py at 2017-08-13 07:34:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 128.515 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 133.524 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 128.354 ms
Loss rate: 1.86%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 118.855 ms
Loss rate: 2.46%
```

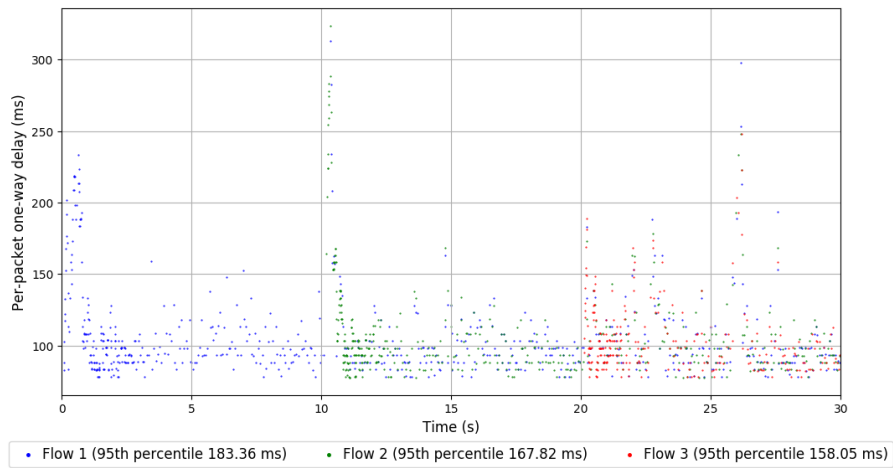Run 1: Report of CalibratedKoho — Data Link

```
Run 2: Statistics of CalibratedKoho

Start at: 2017-08-13 06:05:04
End at: 2017-08-13 06:05:34
Local clock offset: 1.498 ms
Remote clock offset: -19.56 ms


# Below is generated by plot.py at 2017-08-13 07:34:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 124.684 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 135.086 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 115.173 ms
Loss rate: 1.48%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 114.372 ms
Loss rate: 1.95%
```

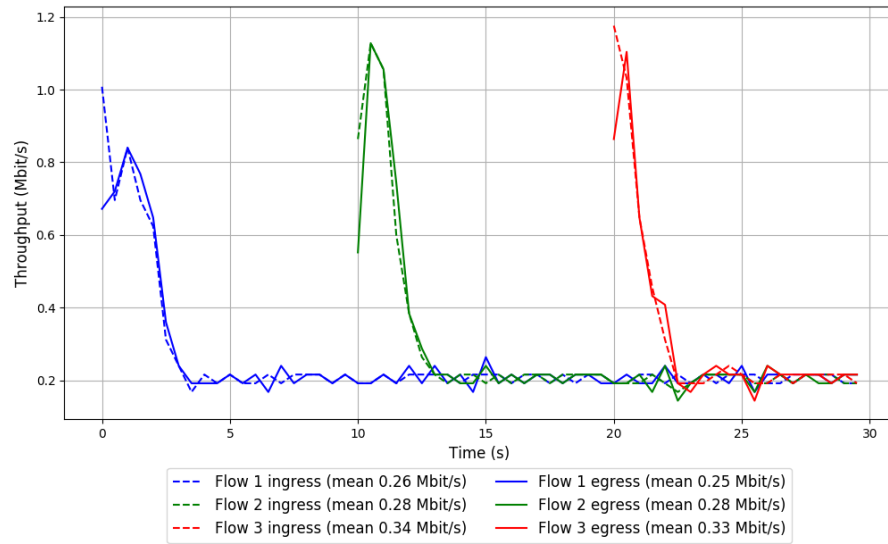Run 2: Report of CalibratedKoho — Data Link

```
Run 3: Statistics of CalibratedKoho

Start at: 2017-08-13 06:22:17
End at: 2017-08-13 06:22:47
Local clock offset: 1.765 ms
Remote clock offset: -18.396 ms


# Below is generated by plot.py at 2017-08-13 07:34:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 168.475 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 183.361 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 167.824 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 158.053 ms
Loss rate: 2.14%
```

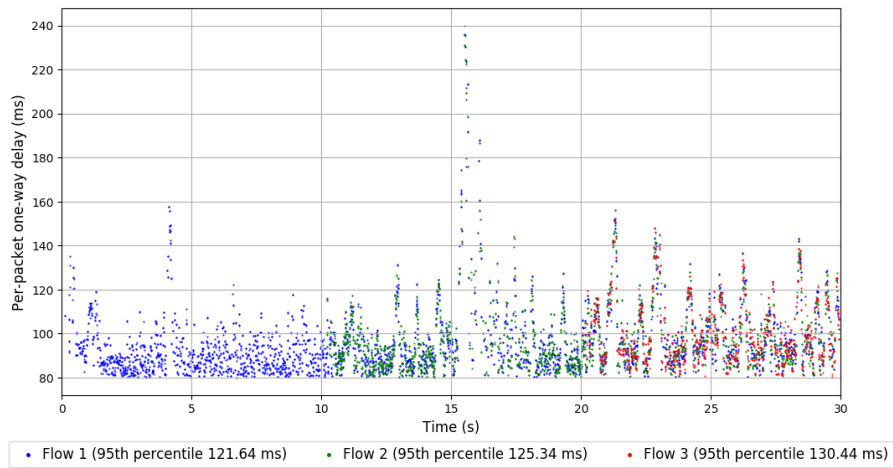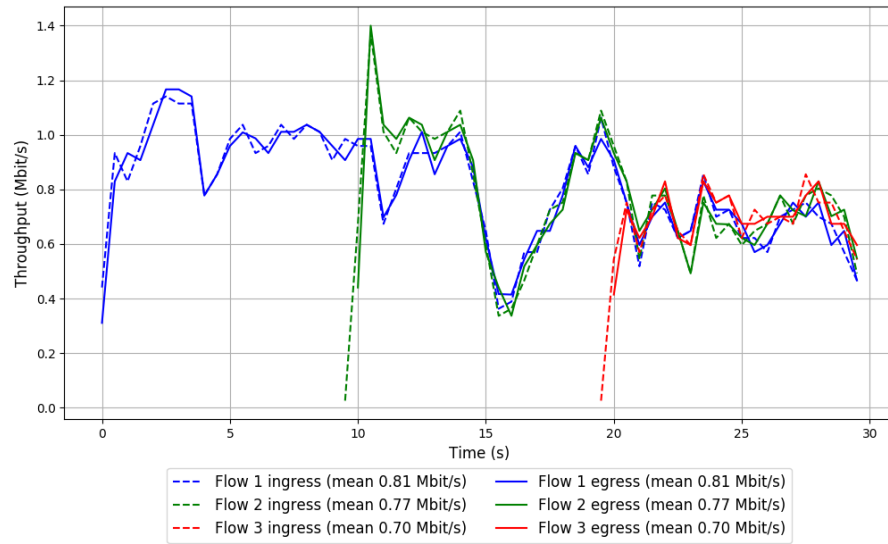Run 3: Report of CalibratedKoho — Data Link

```
Run 1: Statistics of Copa

Start at: 2017-08-13 06:02:52
End at: 2017-08-13 06:03:22
Local clock offset: 0.973 ms
Remote clock offset: -19.896 ms

# Below is generated by plot.py at 2017-08-13 07:34:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 124.173 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 121.639 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 125.337 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 130.440 ms
Loss rate: 0.74%
```
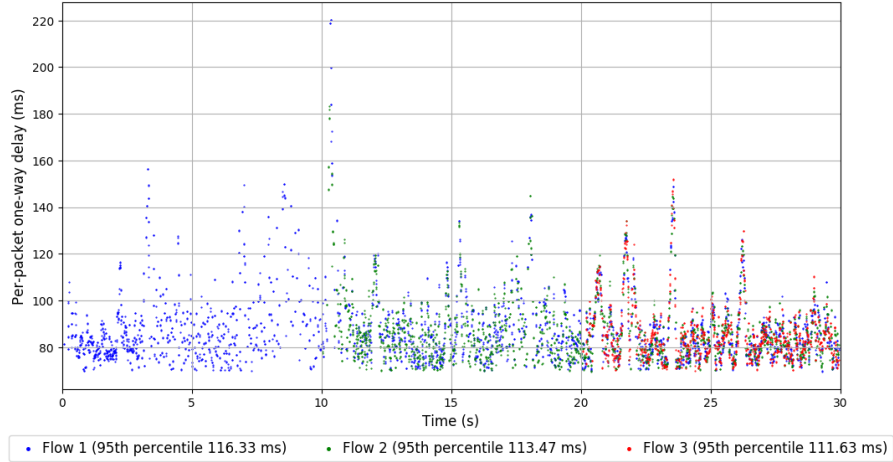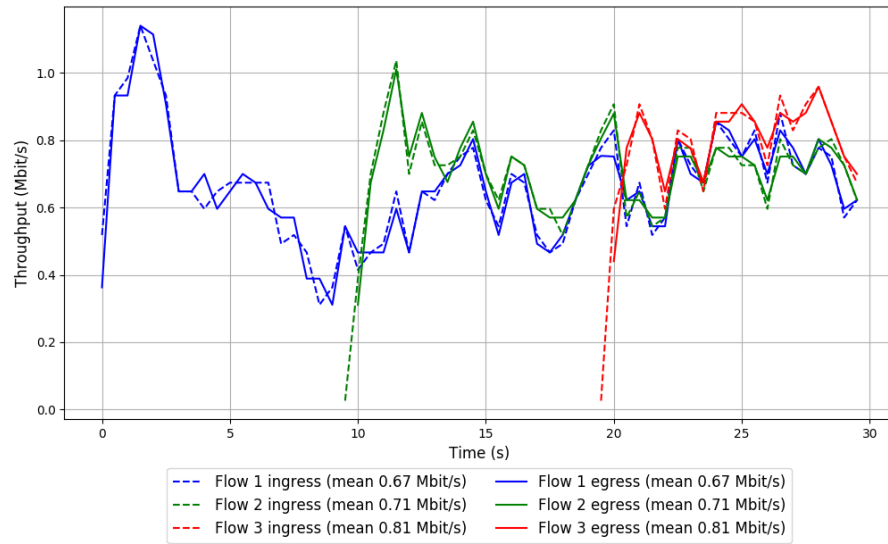
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 0.81 Mbit/s)   Flow 1 egress (mean 0.81 Mbit/s)
Flow 2 ingress (mean 0.77 Mbit/s)   Flow 2 egress (mean 0.77 Mbit/s)
Flow 3 ingress (mean 0.70 Mbit/s)   Flow 3 egress (mean 0.70 Mbit/s)

Flow 1 (95th percentile 121.64 ms)   Flow 2 (95th percentile 125.34 ms)   Flow 3 (95th percentile 130.44 ms)
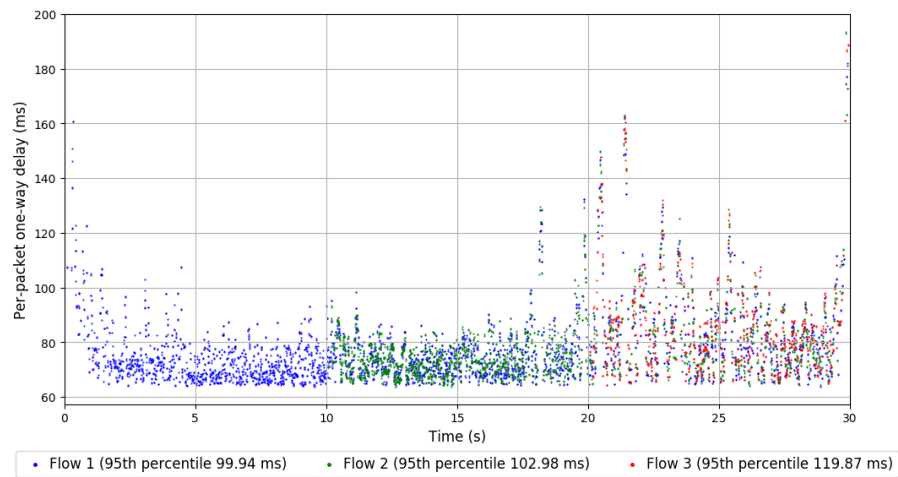
```
Run 2: Statistics of Copa

Start at: 2017-08-13 06:20:05
End at: 2017-08-13 06:20:35
Local clock offset: -1.832 ms
Remote clock offset: -17.874 ms


# Below is generated by plot.py at 2017-08-13 07:34:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 114.523 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 116.331 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 113.471 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 111.632 ms
Loss rate: 0.81%
```
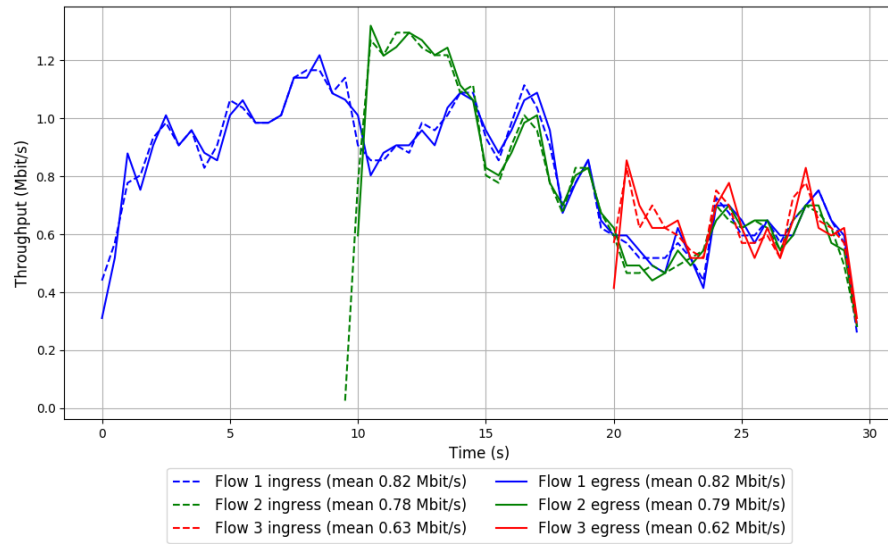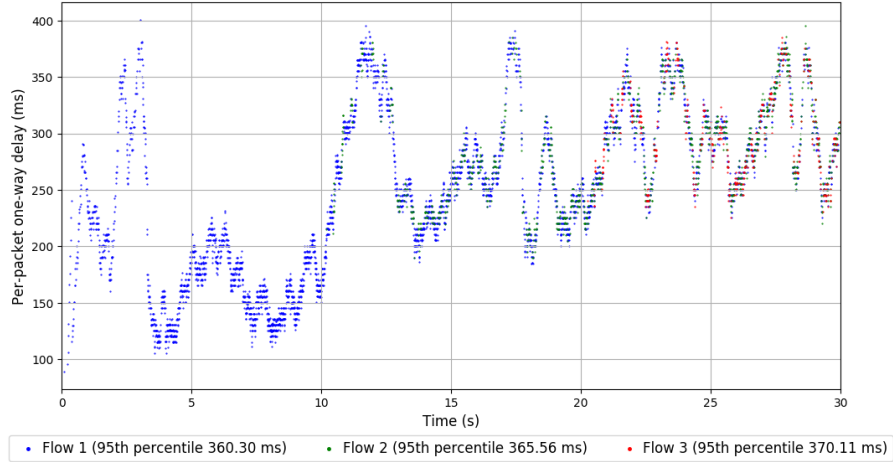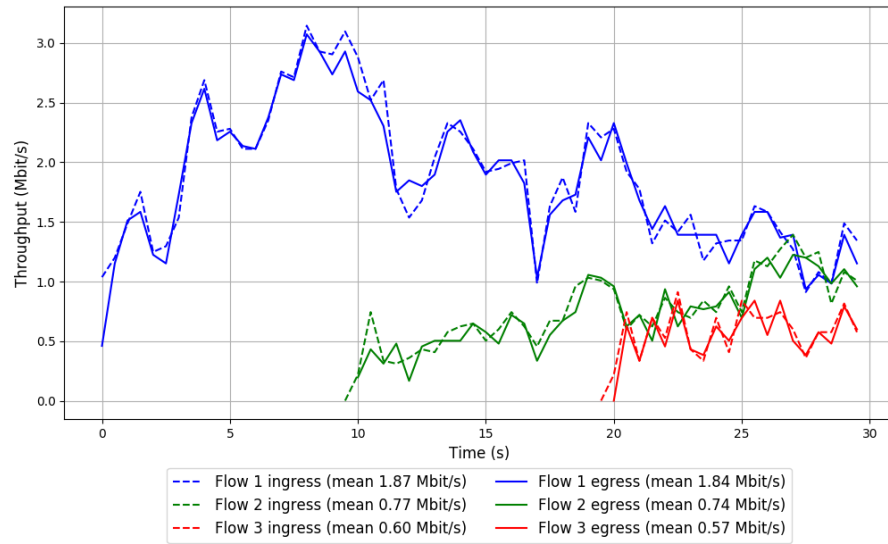
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.67 Mbit/s) — — — Flow 1 egress (mean 0.67 Mbit/s) ———
Flow 2 ingress (mean 0.71 Mbit/s) — — — Flow 2 egress (mean 0.71 Mbit/s) ———
Flow 3 ingress (mean 0.81 Mbit/s) — — — Flow 3 egress (mean 0.81 Mbit/s) ———

Flow 1 (95th percentile 116.33 ms) · Flow 2 (95th percentile 113.47 ms) · Flow 3 (95th percentile 111.63 ms)

```
Run 3: Statistics of Copa

Start at: 2017-08-13 06:39:02
End at: 2017-08-13 06:39:32
Local clock offset: -1.11 ms
Remote clock offset: -18.857 ms

# Below is generated by plot.py at 2017-08-13 07:35:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 104.805 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 99.937 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 102.980 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 119.867 ms
Loss rate: 0.42%
```
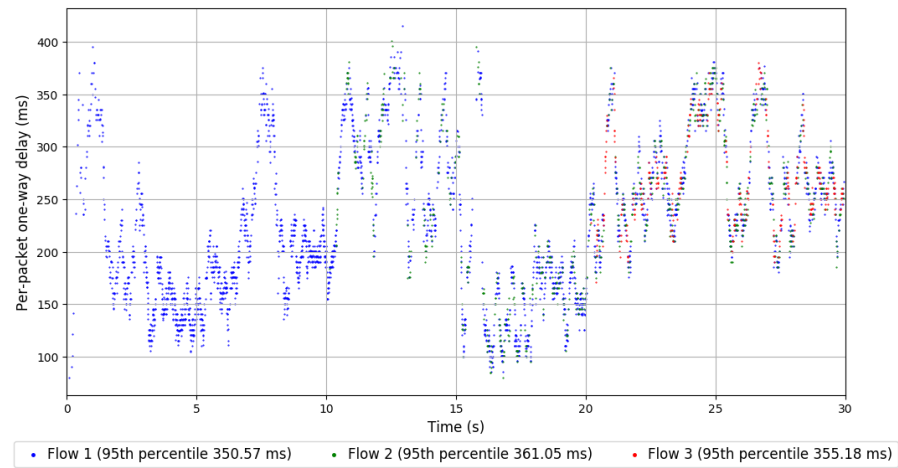
Run 3: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2017-08-13 05:58:52
End at: 2017-08-13 05:59:22
Local clock offset: -1.357 ms
Remote clock offset: -20.898 ms


# Below is generated by plot.py at 2017-08-13 07:35:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.52 Mbit/s
95th percentile per-packet one-way delay: 360.871 ms
Loss rate: 2.84%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 360.301 ms
Loss rate: 2.07%
-- Flow 2:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 365.556 ms
Loss rate: 4.69%
-- Flow 3:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 370.109 ms
Loss rate: 5.29%
```

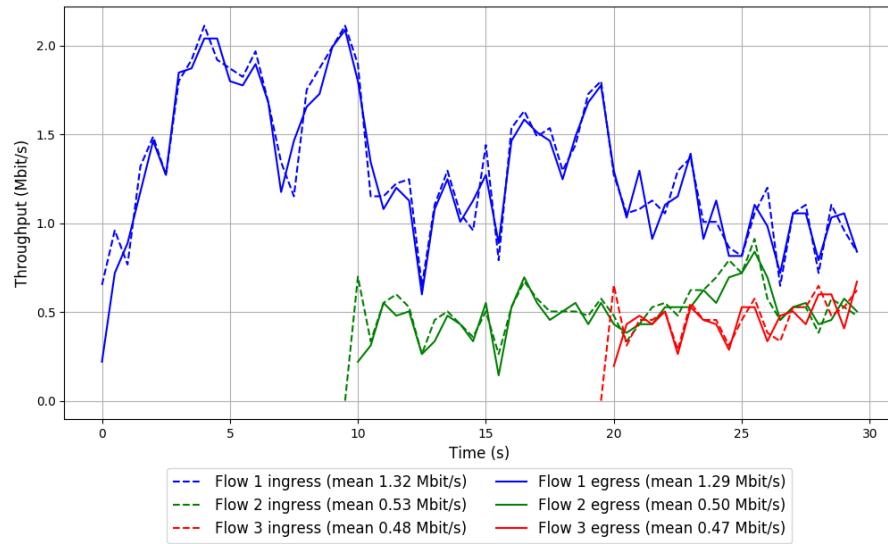Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2017-08-13 06:16:46
End at: 2017-08-13 06:17:16
Local clock offset: 1.144 ms
Remote clock offset: -20.201 ms


# Below is generated by plot.py at 2017-08-13 07:35:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 355.408 ms
Loss rate: 3.00%
-- Flow 1:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 350.566 ms
Loss rate: 1.98%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 361.051 ms
Loss rate: 6.15%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 355.183 ms
Loss rate: 4.53%
```
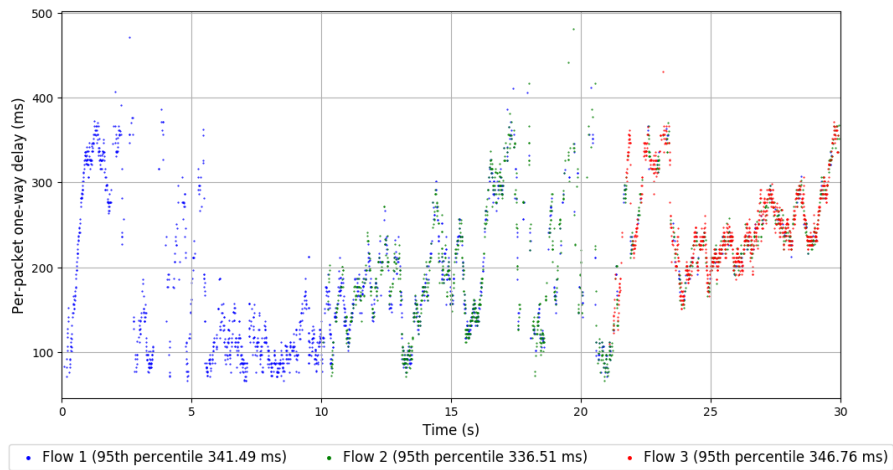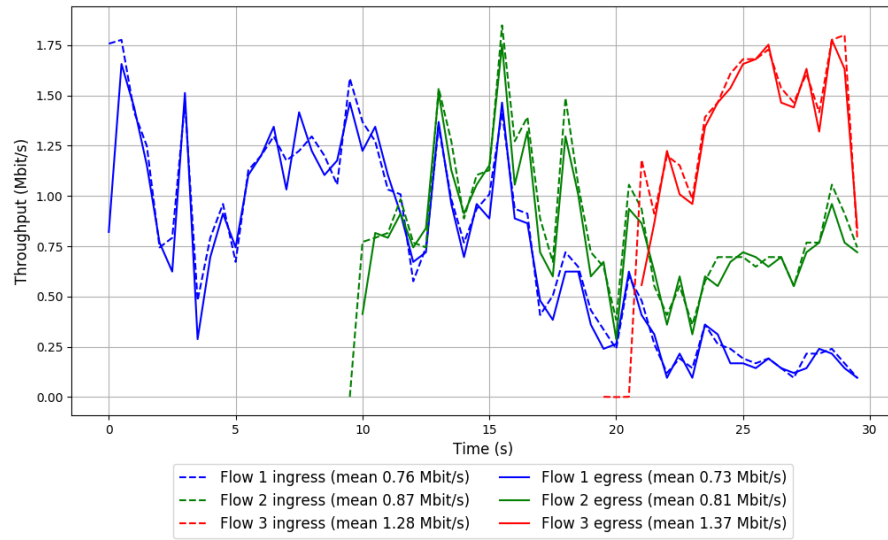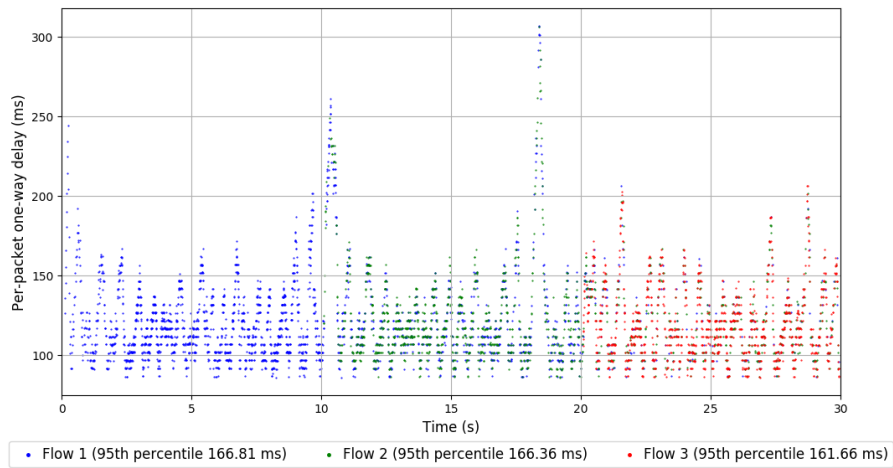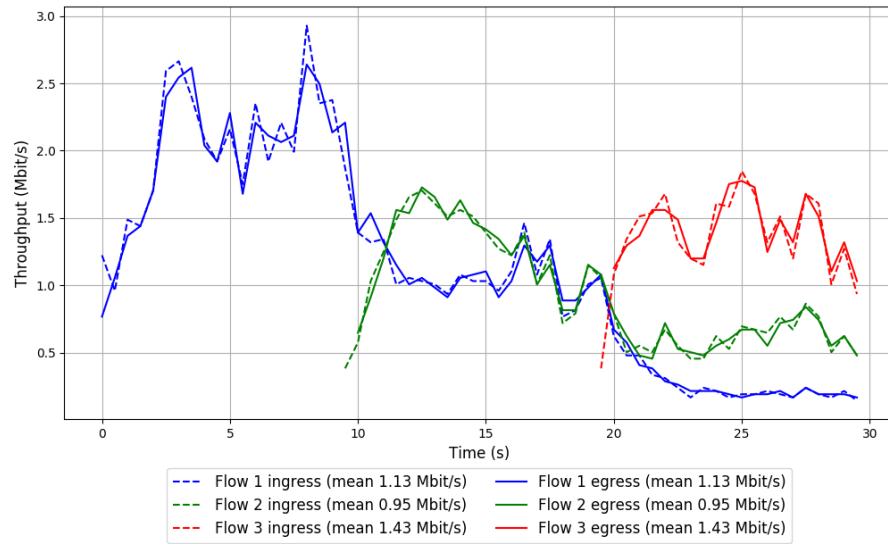
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 1.32 Mbit/s) ---- Flow 1 egress (mean 1.29 Mbit/s) ——
Flow 2 ingress (mean 0.53 Mbit/s) ---- Flow 2 egress (mean 0.50 Mbit/s) ——
Flow 3 ingress (mean 0.48 Mbit/s) ---- Flow 3 egress (mean 0.47 Mbit/s) ——

Flow 1 (95th percentile 350.57 ms)   Flow 2 (95th percentile 361.05 ms)   Flow 3 (95th percentile 355.18 ms)

25

```
Run 3: Statistics of TCP Cubic

Start at: 2017-08-13 06:35:23
End at: 2017-08-13 06:35:53
Local clock offset: 1.292 ms
Remote clock offset: -18.768 ms


# Below is generated by plot.py at 2017-08-13 07:35:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 341.577 ms
Loss rate: 5.46%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 341.494 ms
Loss rate: 5.15%
-- Flow 2:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 336.509 ms
Loss rate: 6.32%
-- Flow 3:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 346.765 ms
Loss rate: 4.83%
```
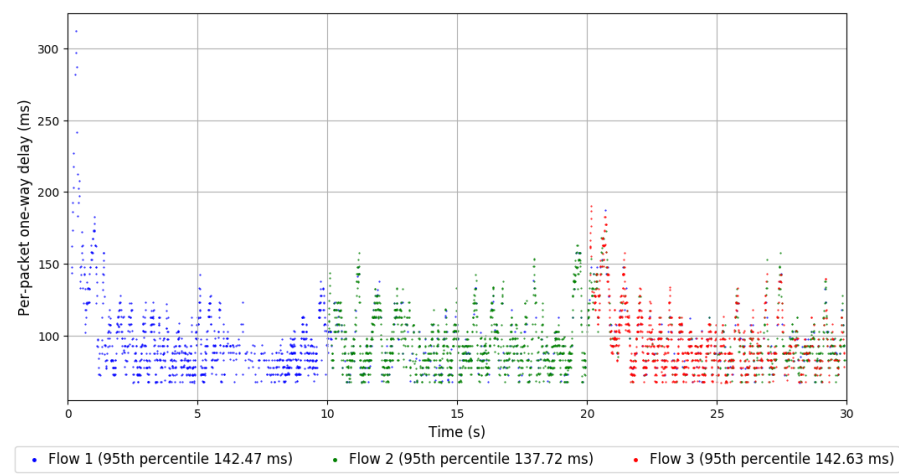
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.76 Mbit/s)   Flow 1 egress (mean 0.73 Mbit/s)
Flow 2 ingress (mean 0.87 Mbit/s)   Flow 2 egress (mean 0.81 Mbit/s)
Flow 3 ingress (mean 1.28 Mbit/s)   Flow 3 egress (mean 1.37 Mbit/s)

Flow 1 (95th percentile 341.49 ms)   Flow 2 (95th percentile 336.51 ms)   Flow 3 (95th percentile 346.76 ms)
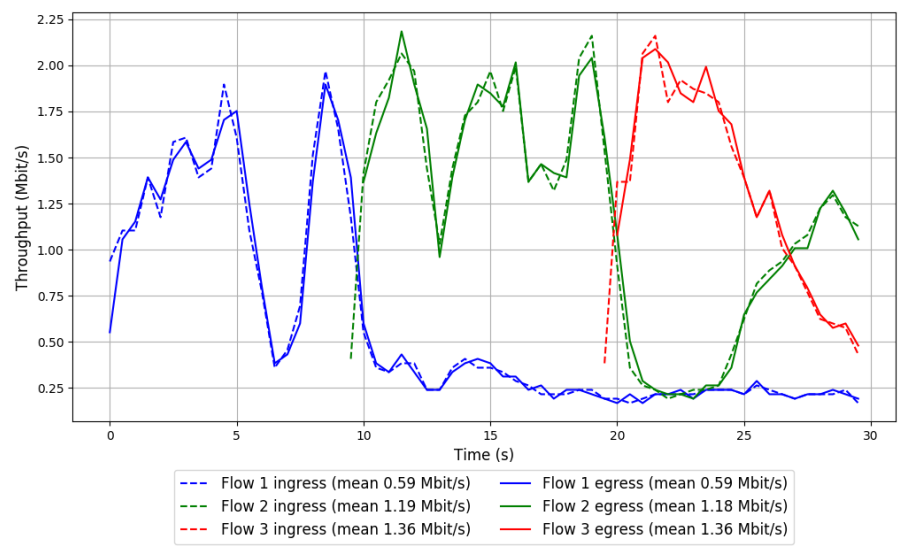
27

```
Run 1: Statistics of KohoCC

Start at: 2017-08-13 05:51:09
End at: 2017-08-13 05:51:39
Local clock offset: -1.115 ms
Remote clock offset: -24.475 ms

# Below is generated by plot.py at 2017-08-13 07:35:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 166.340 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 166.814 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 166.358 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 161.657 ms
Loss rate: 0.84%
```
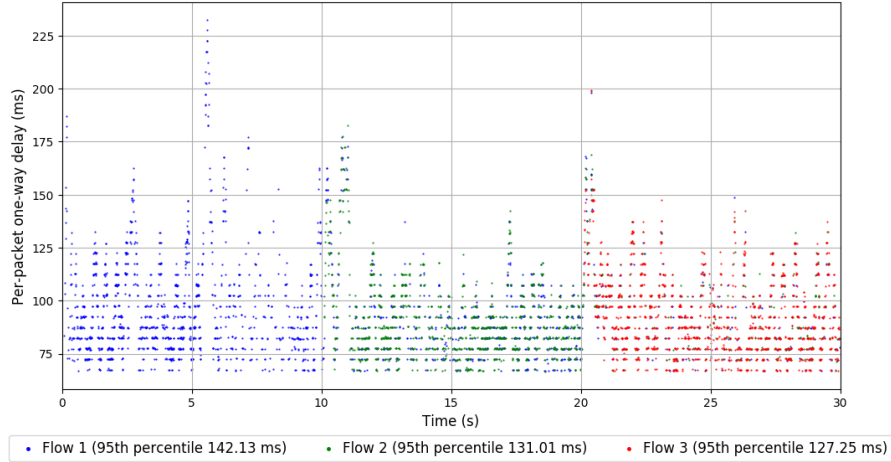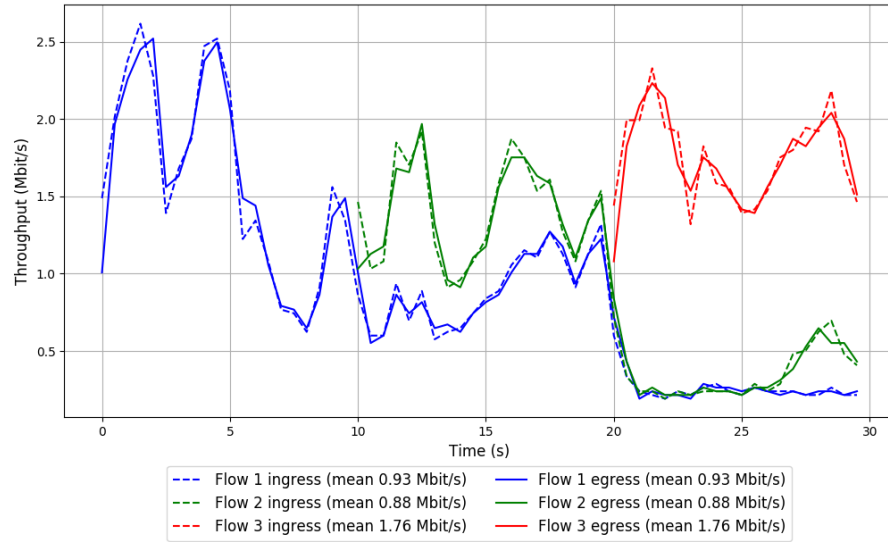
Run 1: Report of KohoCC — Data Link

```
Run 2: Statistics of KohoCC

Start at: 2017-08-13 06:08:22
End at: 2017-08-13 06:08:52
Local clock offset: -1.124 ms
Remote clock offset: -20.848 ms

# Below is generated by plot.py at 2017-08-13 07:35:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 138.067 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 142.471 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 137.723 ms
Loss rate: 1.41%
-- Flow 3:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 142.634 ms
Loss rate: 0.71%
```
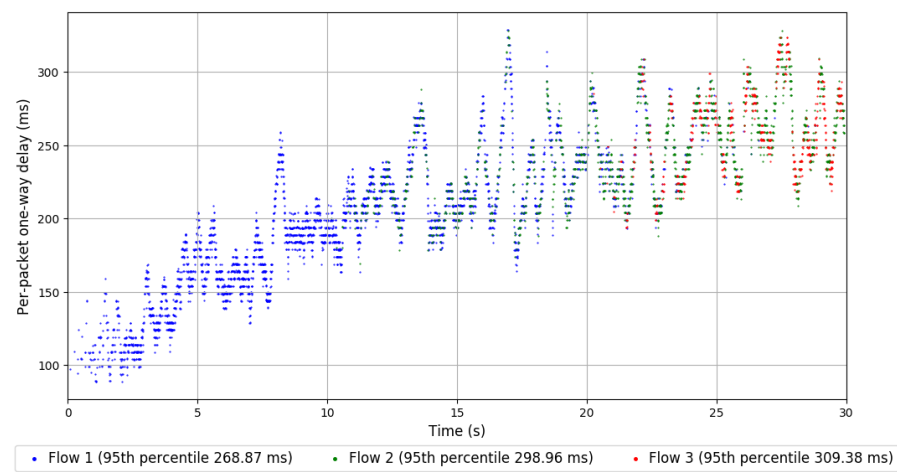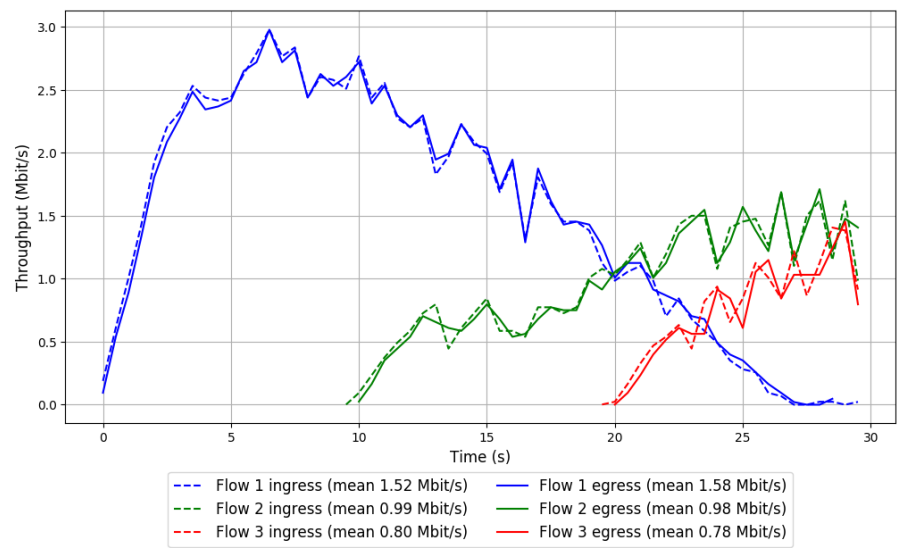
Run 2: Report of KohoCC — Data Link

```
Run 3: Statistics of KohoCC

Start at: 2017-08-13 06:26:38
End at: 2017-08-13 06:27:08
Local clock offset: -0.521 ms
Remote clock offset: -18.871 ms


# Below is generated by plot.py at 2017-08-13 07:35:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 132.510 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 142.130 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 131.010 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 127.245 ms
Loss rate: 0.89%
```

Run 3: Report of KohoCC — Data Link
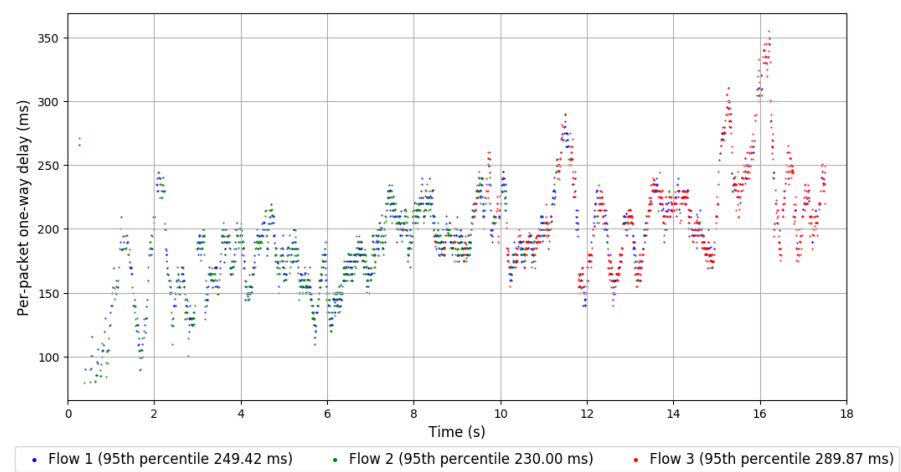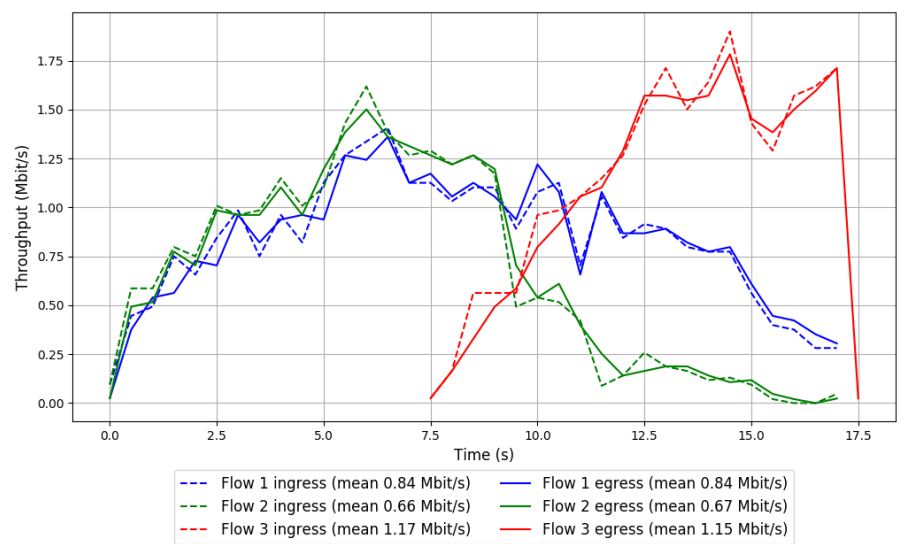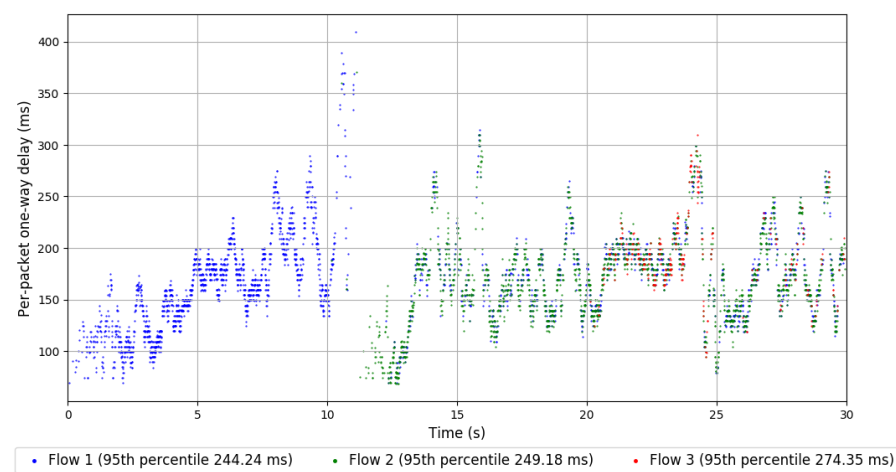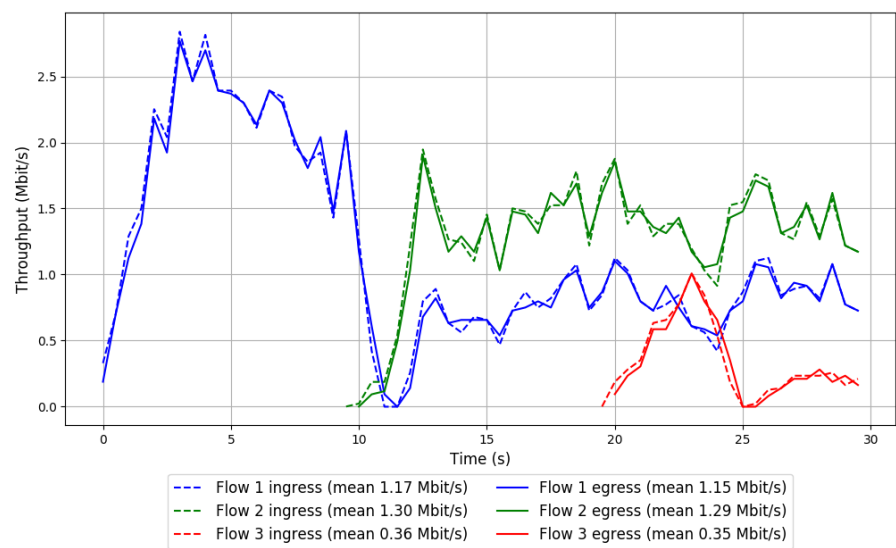
```
Run 1: Statistics of LEDBAT

Start at: 2017-08-13 05:50:02
End at: 2017-08-13 05:50:32
Local clock offset: 0.276 ms
Remote clock offset: -20.023 ms

# Below is generated by plot.py at 2017-08-13 07:35:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 288.982 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 268.867 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 298.965 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 309.375 ms
Loss rate: 4.91%
```

Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 1.52 Mbit/s) --- Flow 1 egress (mean 1.58 Mbit/s)
Flow 2 ingress (mean 0.99 Mbit/s) --- Flow 2 egress (mean 0.98 Mbit/s)
Flow 3 ingress (mean 0.80 Mbit/s) --- Flow 3 egress (mean 0.78 Mbit/s)

Flow 1 (95th percentile 268.87 ms)   Flow 2 (95th percentile 298.96 ms)   Flow 3 (95th percentile 309.38 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2017-08-13 06:07:16
End at: 2017-08-13 06:07:46
Local clock offset: -1.33 ms
Remote clock offset: -19.79 ms
```
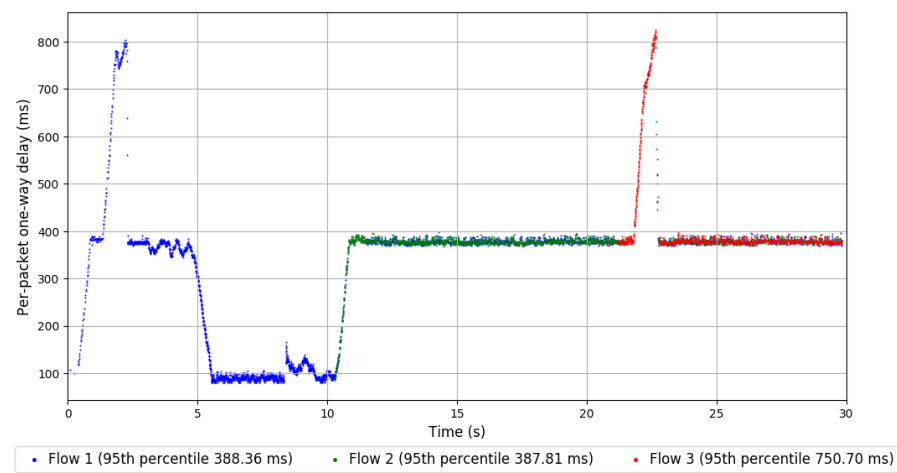
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2017-08-13 06:25:10
End at: 2017-08-13 06:25:40
Local clock offset: 0.945 ms
Remote clock offset: -18.804 ms

# Below is generated by plot.py at 2017-08-13 07:35:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 249.272 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 244.237 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 249.175 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 274.350 ms
Loss rate: 2.64%
```
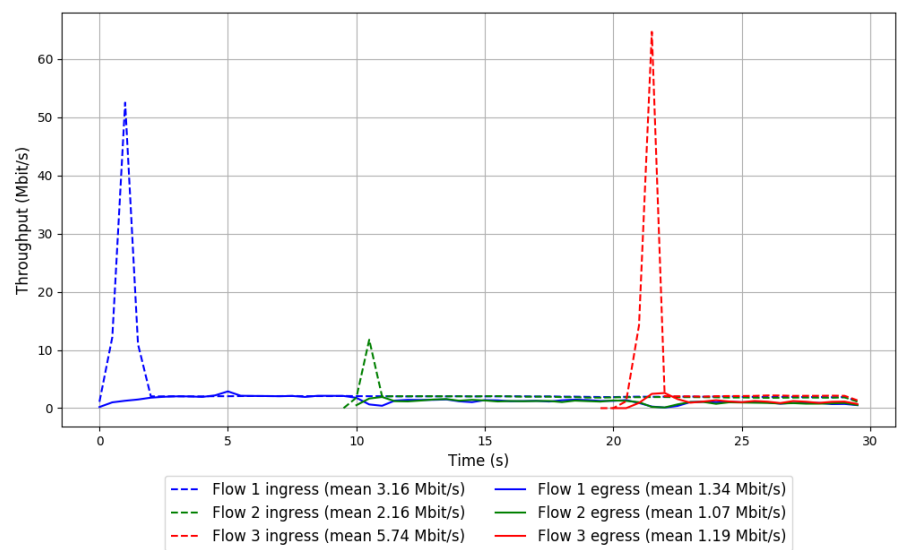
Run 3: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC

Start at: 2017-08-13 05:53:21
End at: 2017-08-13 05:53:51
Local clock offset: 1.219 ms
Remote clock offset: -22.075 ms

# Below is generated by plot.py at 2017-08-13 07:35:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 439.954 ms
Loss rate: 62.66%
-- Flow 1:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 388.360 ms
Loss rate: 57.71%
-- Flow 2:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 387.811 ms
Loss rate: 50.66%
-- Flow 3:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 750.698 ms
Loss rate: 80.02%
```
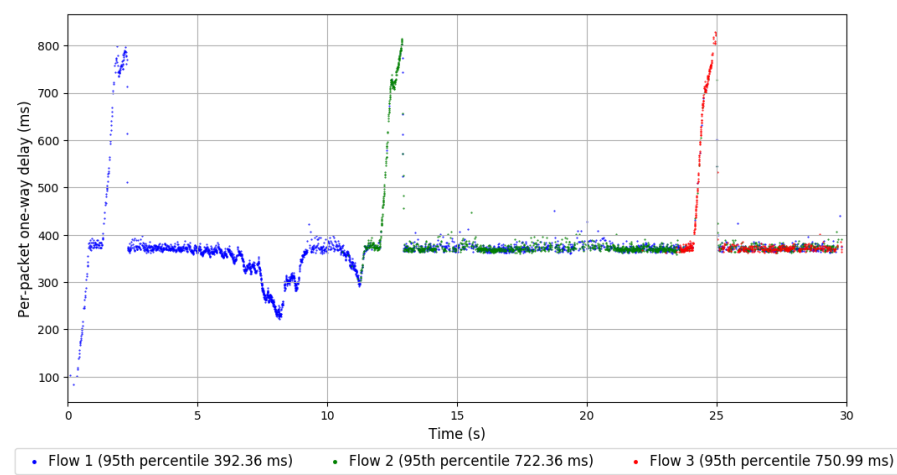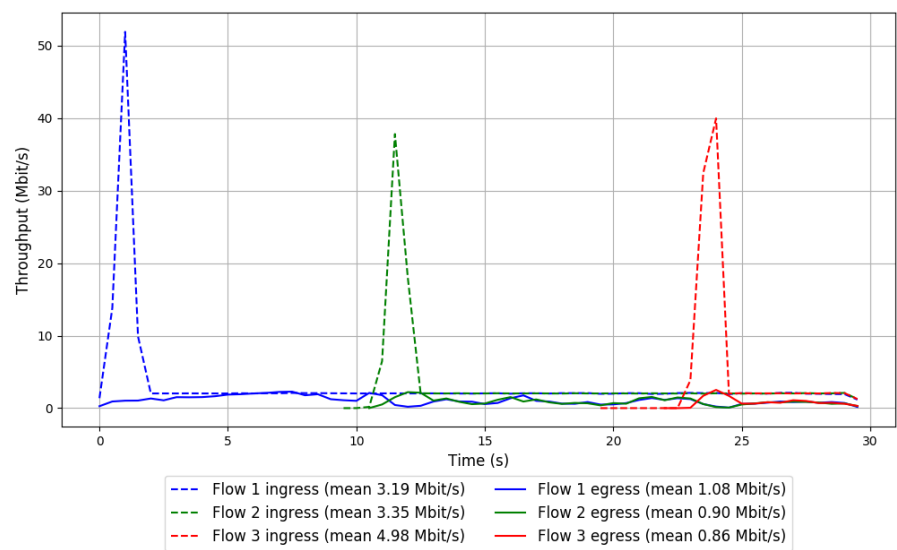
Run 1: Report of PCC — Data Link

```
Run 2: Statistics of PCC

Start at: 2017-08-13 06:10:34
End at: 2017-08-13 06:11:04
Local clock offset: 0.534 ms
Remote clock offset: -21.705 ms

# Below is generated by plot.py at 2017-08-13 07:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 684.069 ms
Loss rate: 73.37%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 392.356 ms
Loss rate: 66.11%
-- Flow 2:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 722.360 ms
Loss rate: 74.06%
-- Flow 3:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 750.992 ms
Loss rate: 86.51%
```
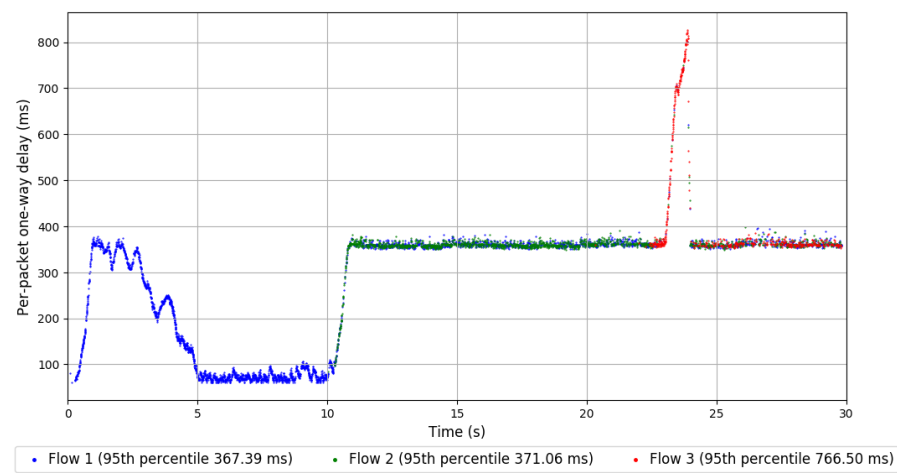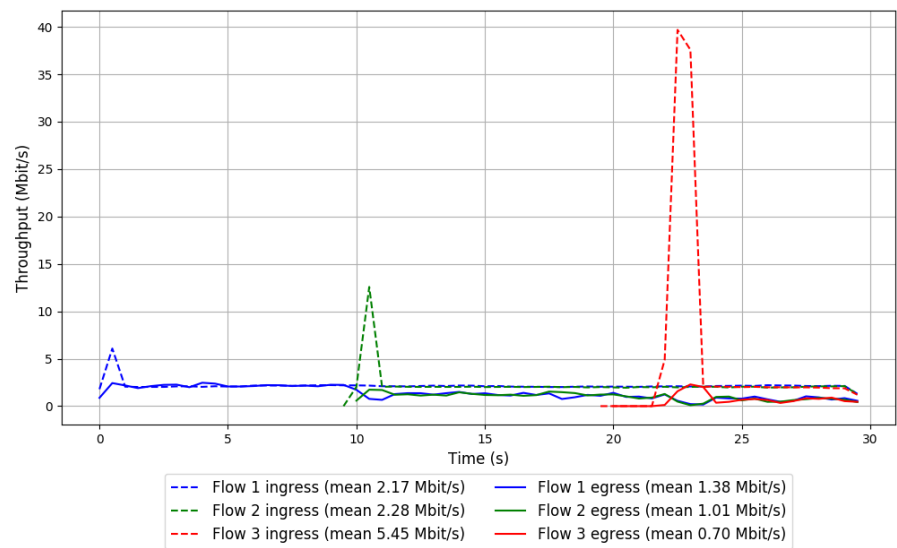
Run 2: Report of PCC — Data Link

Flow 1 ingress (mean 3.19 Mbit/s)   Flow 1 egress (mean 1.08 Mbit/s)
Flow 2 ingress (mean 3.35 Mbit/s)   Flow 2 egress (mean 0.90 Mbit/s)
Flow 3 ingress (mean 4.98 Mbit/s)   Flow 3 egress (mean 0.86 Mbit/s)

Flow 1 (95th percentile 392.36 ms)   Flow 2 (95th percentile 722.36 ms)   Flow 3 (95th percentile 750.99 ms)

```
Run 3: Statistics of PCC

Start at: 2017-08-13 06:29:31
End at: 2017-08-13 06:30:01
Local clock offset: -0.346 ms
Remote clock offset: -18.083 ms

# Below is generated by plot.py at 2017-08-13 07:35:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 372.454 ms
Loss rate: 58.72%
-- Flow 1:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 367.388 ms
Loss rate: 36.48%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 371.064 ms
Loss rate: 56.23%
-- Flow 3:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 766.496 ms
Loss rate: 87.66%
```
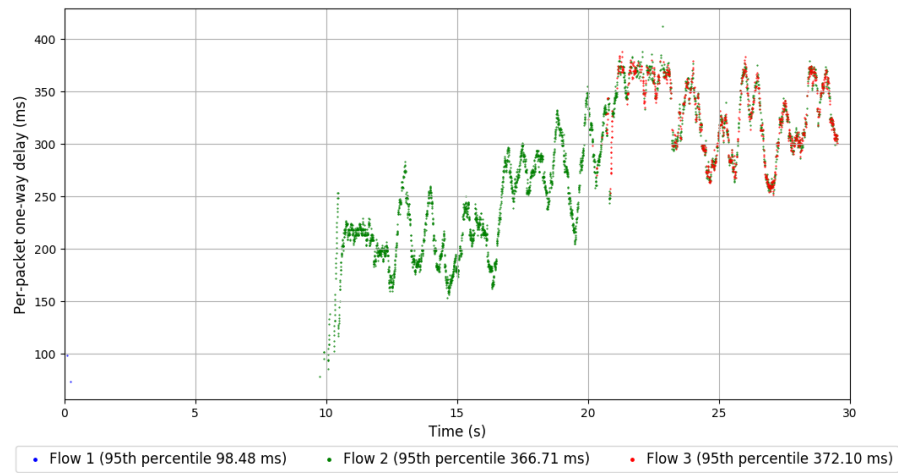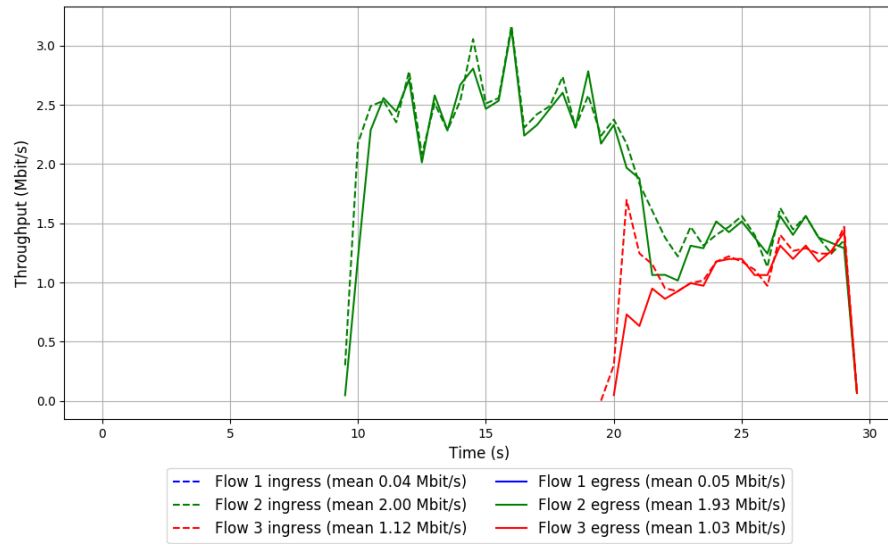
Run 3: Report of PCC — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2017-08-13 06:01:46
End at: 2017-08-13 06:02:16
Local clock offset: -1.597 ms
Remote clock offset: -20.16 ms


# Below is generated by plot.py at 2017-08-13 07:35:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 368.535 ms
Loss rate: 5.47%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 98.482 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 366.709 ms
Loss rate: 4.01%
-- Flow 3:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 372.101 ms
Loss rate: 10.73%
```

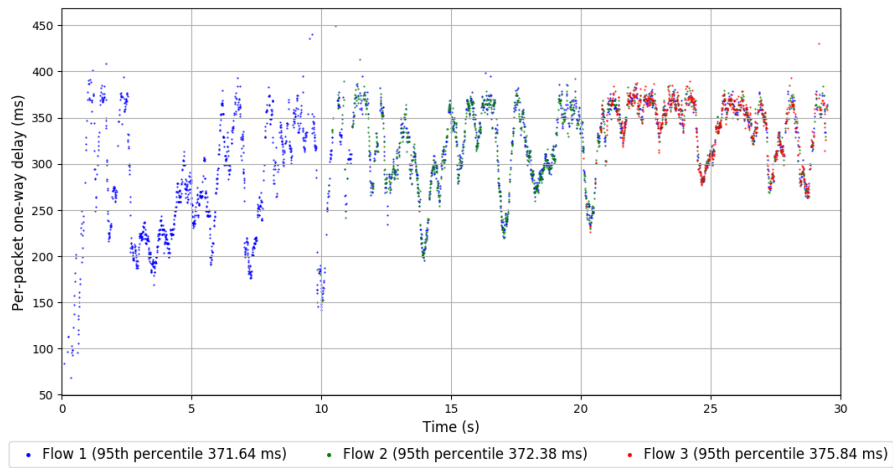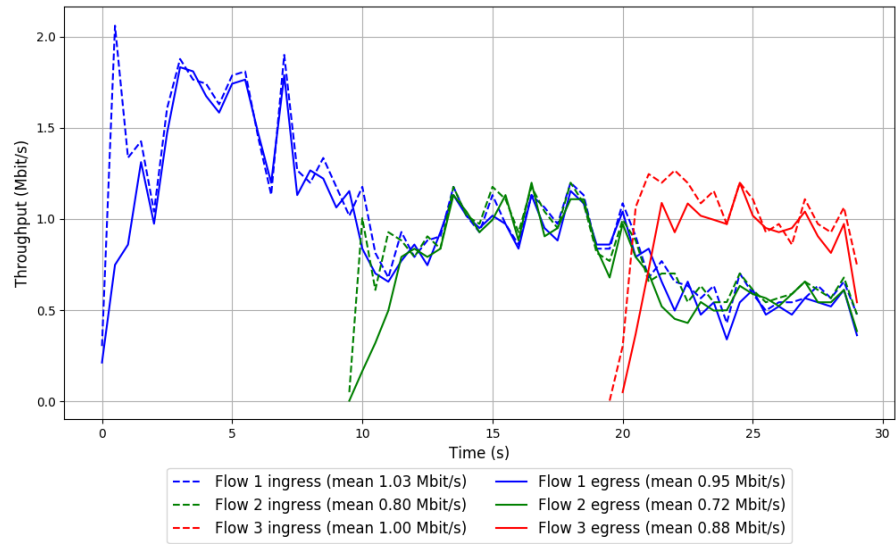Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2017-08-13 06:18:59
End at: 2017-08-13 06:19:29
Local clock offset: 0.769 ms
Remote clock offset: -19.791 ms


# Below is generated by plot.py at 2017-08-13 07:35:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 373.346 ms
Loss rate: 9.87%
-- Flow 1:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 371.641 ms
Loss rate: 7.83%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 372.379 ms
Loss rate: 10.88%
-- Flow 3:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 375.843 ms
Loss rate: 14.60%
```

Run 2: Report of QUIC Cubic — Data Link

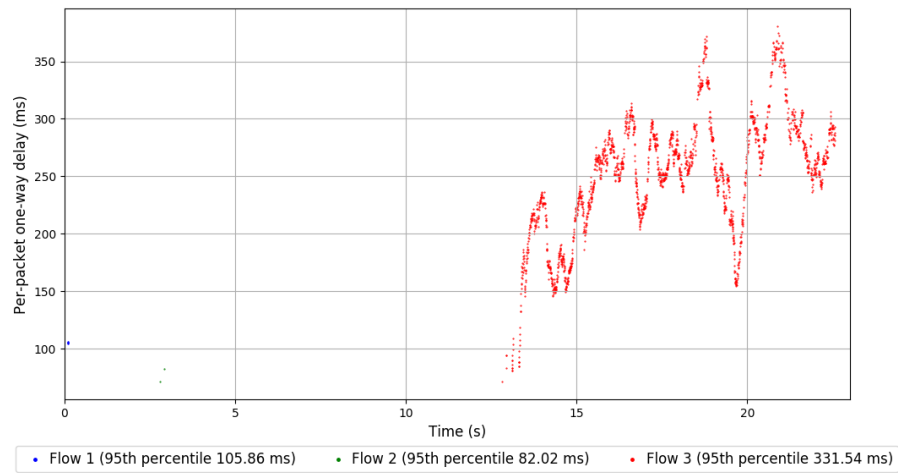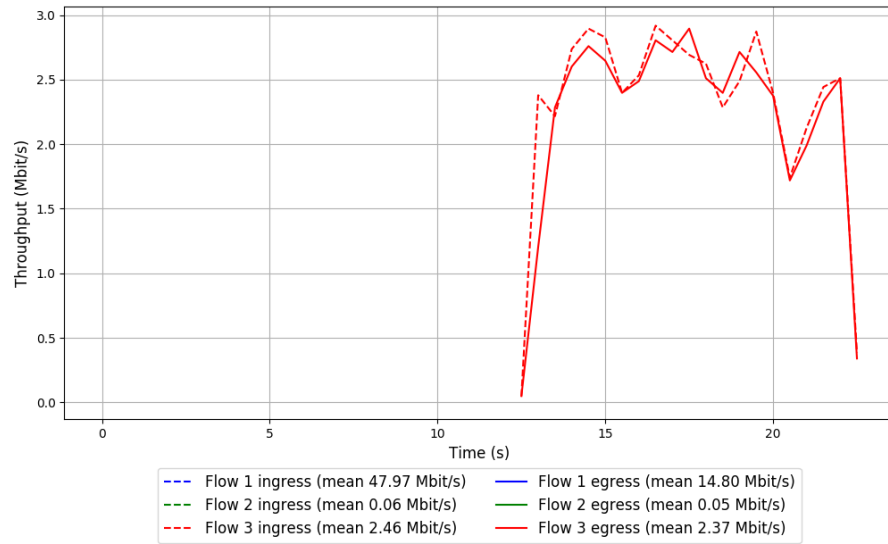Flow 1 ingress (mean 1.03 Mbit/s) --- Flow 1 egress (mean 0.95 Mbit/s)
Flow 2 ingress (mean 0.80 Mbit/s) --- Flow 2 egress (mean 0.72 Mbit/s)
Flow 3 ingress (mean 1.00 Mbit/s) --- Flow 3 egress (mean 0.88 Mbit/s)

Flow 1 (95th percentile 371.64 ms)   Flow 2 (95th percentile 372.38 ms)   Flow 3 (95th percentile 375.84 ms)

49

Run 3: Statistics of QUIC Cubic

Start at: 2017-08-13 06:37:56
End at: 2017-08-13 06:38:26
Local clock offset: 1.466 ms
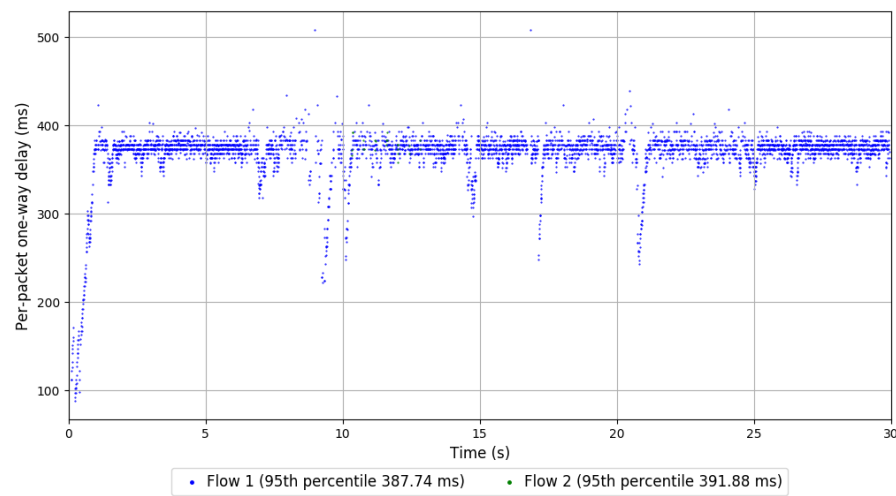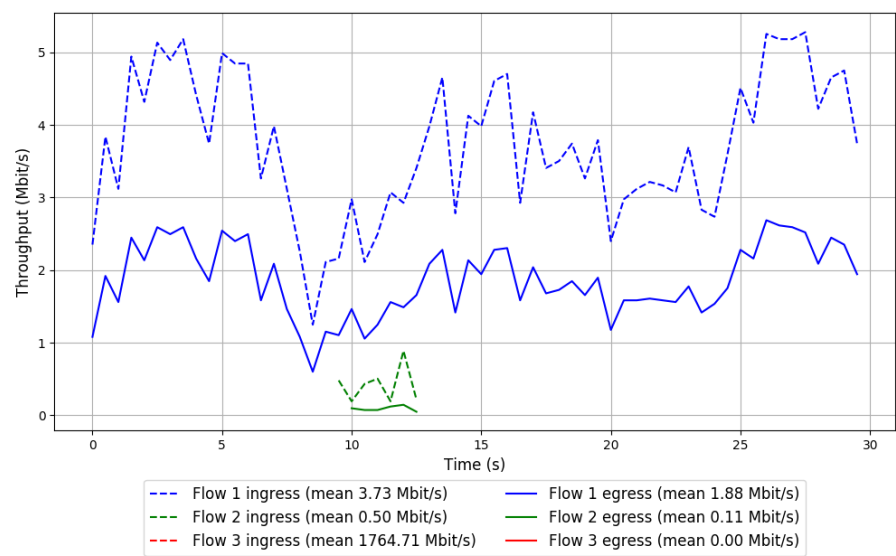Remote clock offset: -19.349 ms

Run 3: Report of QUIC Cubic — Data Link

- --- Flow 1 ingress (mean 47.97 Mbit/s)
- ---- Flow 1 egress (mean 14.80 Mbit/s)
- --- Flow 2 ingress (mean 0.06 Mbit/s)
- ---- Flow 2 egress (mean 0.05 Mbit/s)
- --- Flow 3 ingress (mean 2.46 Mbit/s)
- ---- Flow 3 egress (mean 2.37 Mbit/s)

- Flow 1 (95th percentile 105.86 ms)
- Flow 2 (95th percentile 82.02 ms)
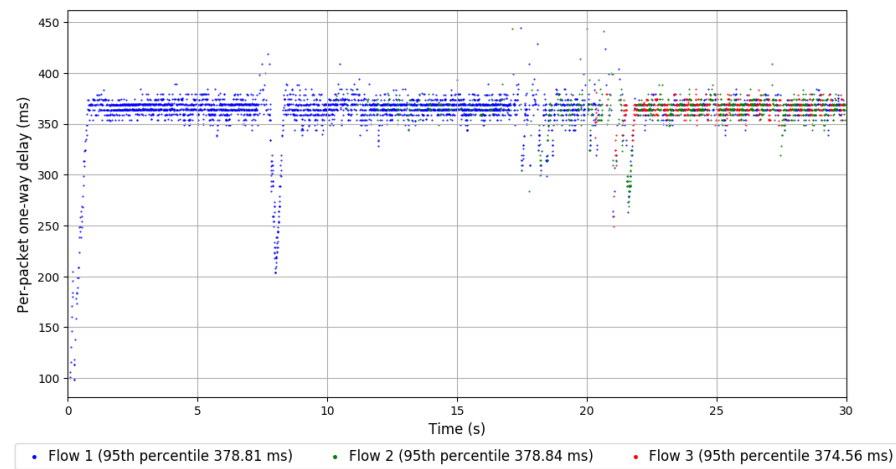- Flow 3 (95th percentile 331.54 ms)

51

```
Run 1: Statistics of Saturator

Start at: 2017-08-13 06:00:19
End at: 2017-08-13 06:00:49
Local clock offset: 1.475 ms
Remote clock offset: -20.859 ms


# Below is generated by plot.py at 2017-08-13 07:35:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 387.748 ms
Loss rate: 50.32%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 387.744 ms
Loss rate: 49.81%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 391.876 ms
Loss rate: 80.99%
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
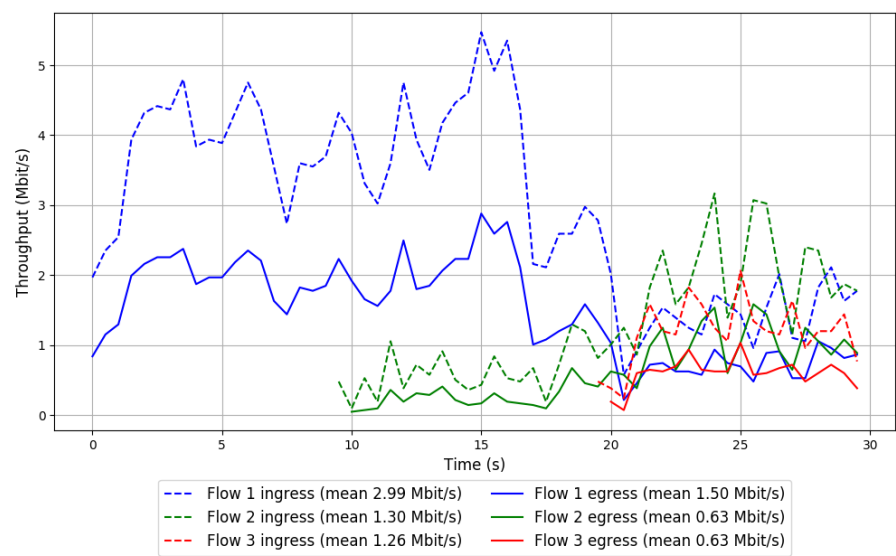
Run 1: Report of Saturator — Data Link

```
Run 2: Statistics of Saturator

Start at: 2017-08-13 06:17:52
End at: 2017-08-13 06:18:22
Local clock offset: 1.203 ms
Remote clock offset: -18.656 ms


# Below is generated by plot.py at 2017-08-13 07:35:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 378.769 ms
Loss rate: 50.61%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 378.814 ms
Loss rate: 49.99%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 378.840 ms
Loss rate: 52.34%
-- Flow 3:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 374.560 ms
Loss rate: 51.45%
```

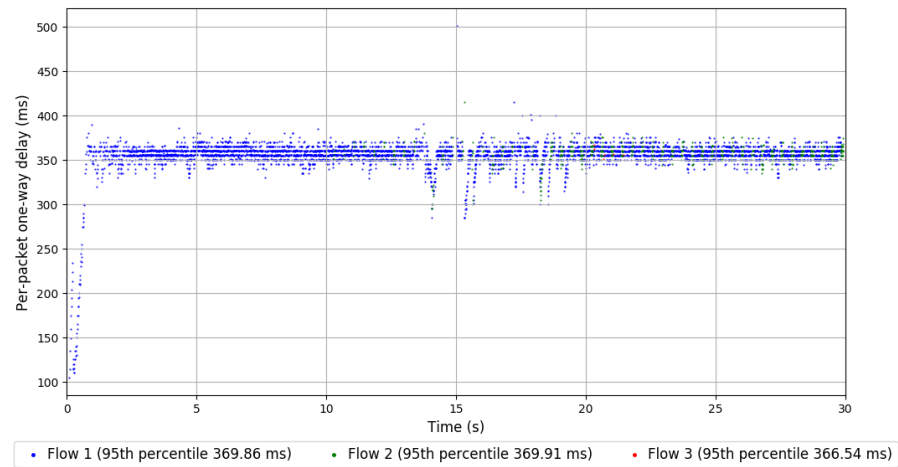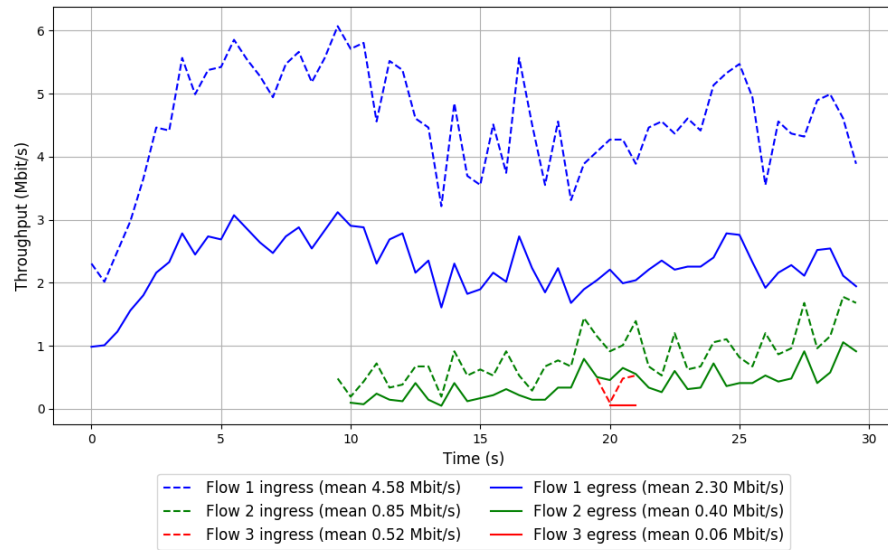Run 2: Report of Saturator — Data Link

```
Run 3: Statistics of Saturator

Start at: 2017-08-13 06:36:29
End at: 2017-08-13 06:36:59
Local clock offset: 0.892 ms
Remote clock offset: -18.035 ms


# Below is generated by plot.py at 2017-08-13 07:35:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 369.867 ms
Loss rate: 50.59%
-- Flow 1:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 369.858 ms
Loss rate: 49.94%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 369.909 ms
Loss rate: 53.95%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 366.535 ms
Loss rate: 90.91%
```

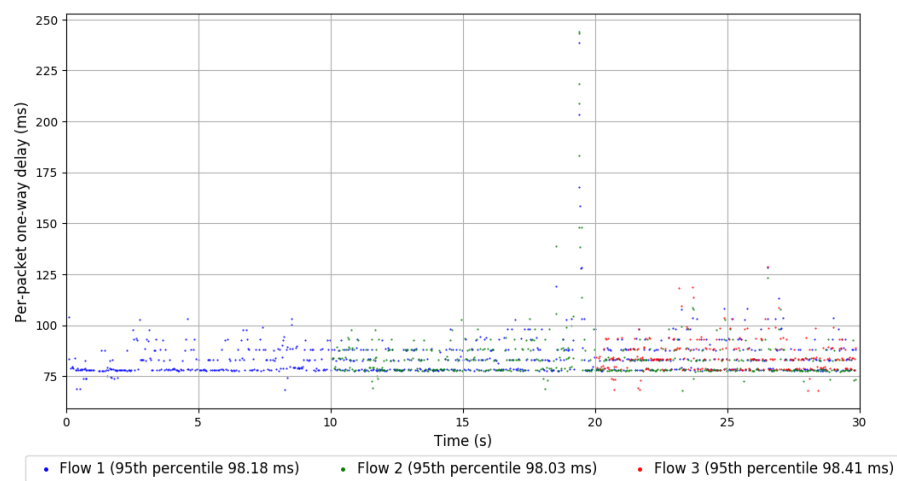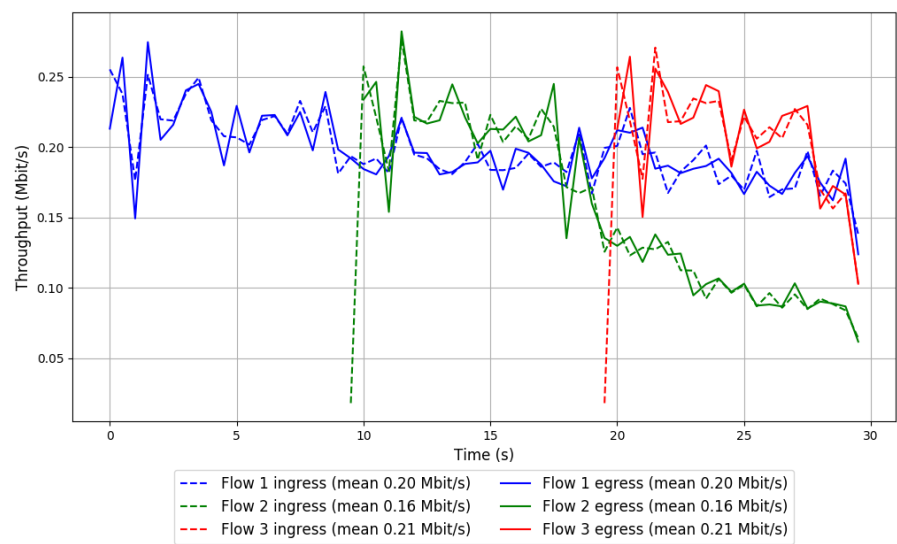Run 3: Report of Saturator — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2017-08-13 05:54:27
End at: 2017-08-13 05:54:57
Local clock offset: -2.309 ms
Remote clock offset: -19.769 ms

# Below is generated by plot.py at 2017-08-13 07:35:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 98.232 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 98.178 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 98.028 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 98.407 ms
Loss rate: 0.50%
```
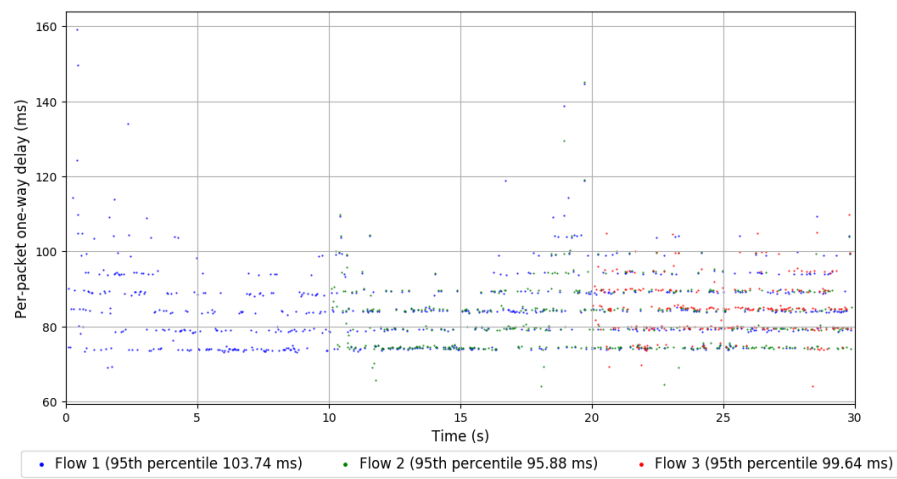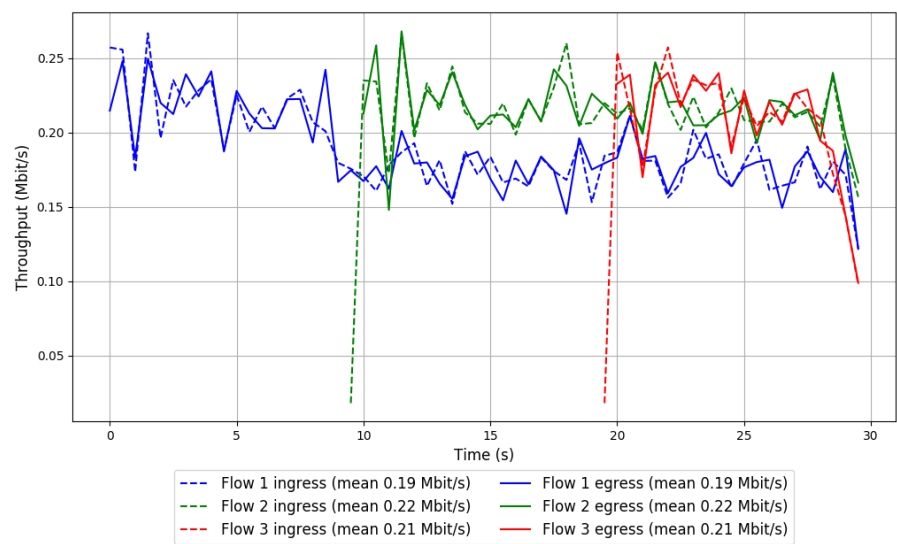
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2017-08-13 06:12:01
End at: 2017-08-13 06:12:31
Local clock offset: 0.125 ms
Remote clock offset: -19.321 ms

# Below is generated by plot.py at 2017-08-13 07:35:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 99.541 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 103.739 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 95.879 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 99.638 ms
Loss rate: 0.50%
```

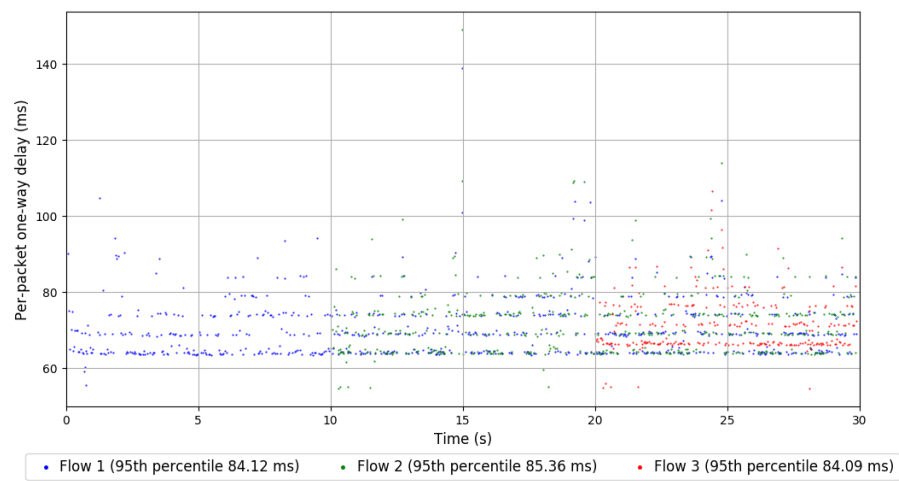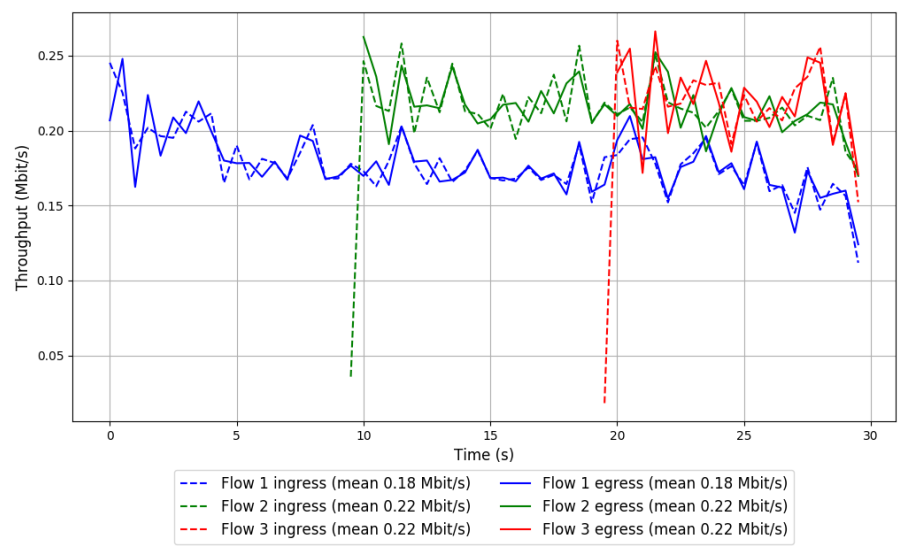Run 2: Report of SCReAM — Data Link

61

```
Run 3: Statistics of SCReAM

Start at: 2017-08-13 06:30:37
End at: 2017-08-13 06:31:07
Local clock offset: -1.44 ms
Remote clock offset: -18.819 ms


# Below is generated by plot.py at 2017-08-13 07:35:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 84.278 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 84.124 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.355 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.090 ms
Loss rate: 0.35%
```
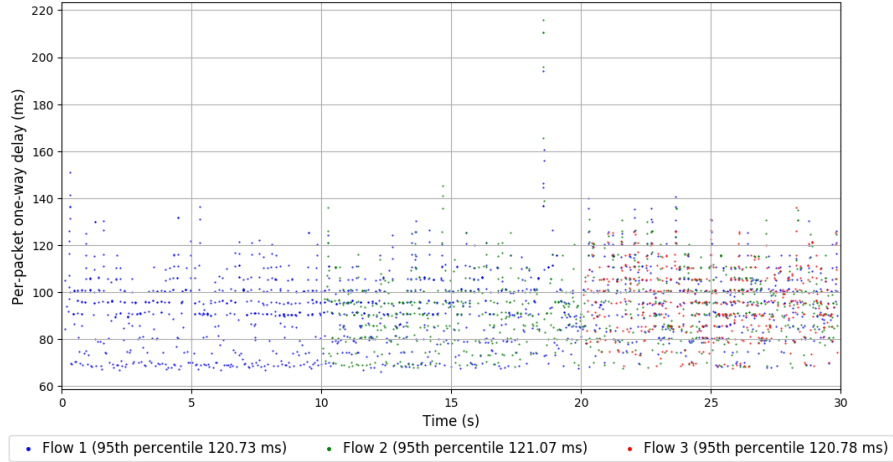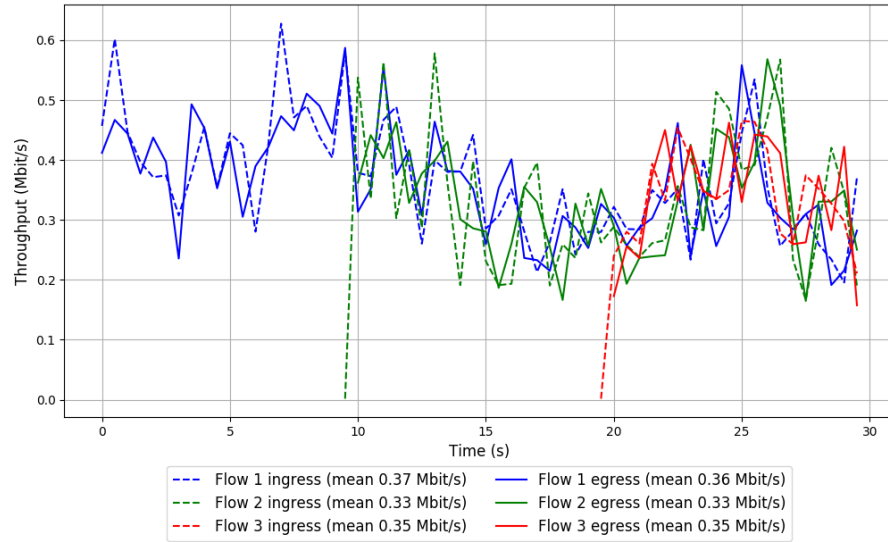
Run 3: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2017-08-13 05:48:56
End at: 2017-08-13 05:49:26
Local clock offset: -2.294 ms
Remote clock offset: -19.652 ms


# Below is generated by plot.py at 2017-08-13 07:35:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 120.828 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 120.729 ms
Loss rate: 1.23%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 121.071 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 120.775 ms
Loss rate: 0.98%
```
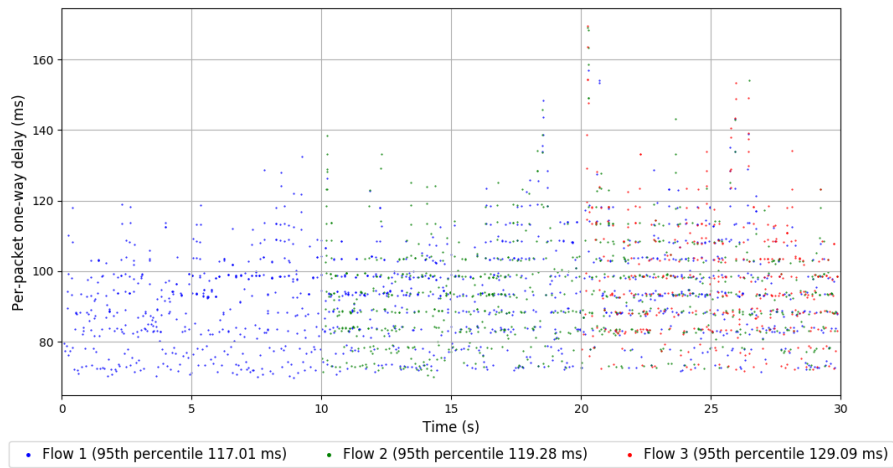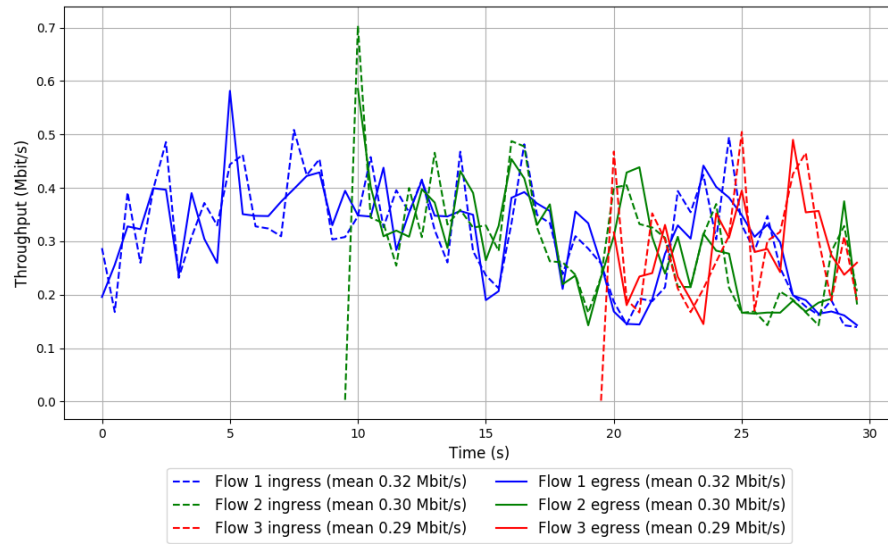
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2017-08-13 06:06:10
End at: 2017-08-13 06:06:40
Local clock offset: 0.595 ms
Remote clock offset: -19.816 ms


# Below is generated by plot.py at 2017-08-13 07:35:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 118.672 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 117.014 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 119.277 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 129.095 ms
Loss rate: 1.96%
```
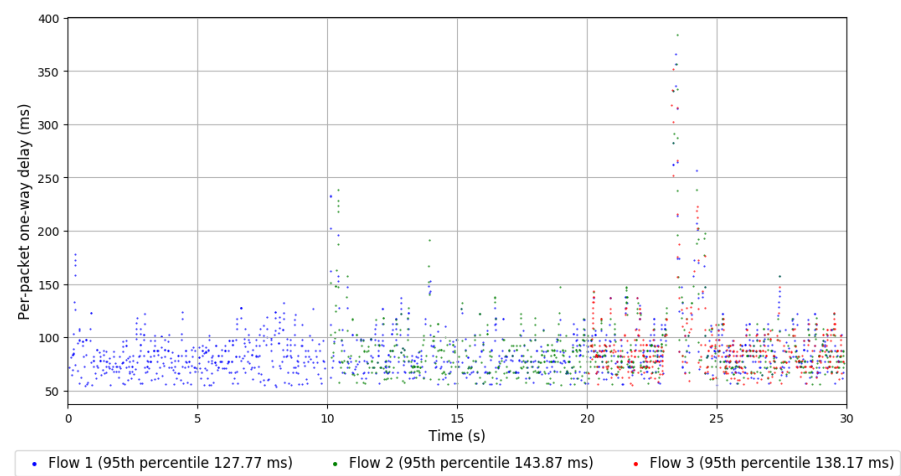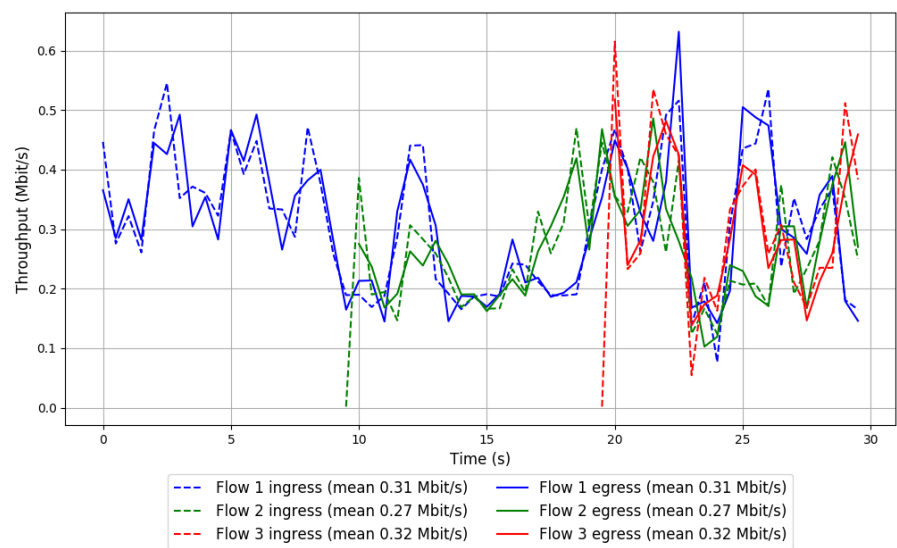
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2017-08-13 06:23:44
End at: 2017-08-13 06:24:14
Local clock offset: 0.722 ms
Remote clock offset: -17.543 ms

# Below is generated by plot.py at 2017-08-13 07:35:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 136.828 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 127.765 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 143.870 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 138.166 ms
Loss rate: 2.74%
```
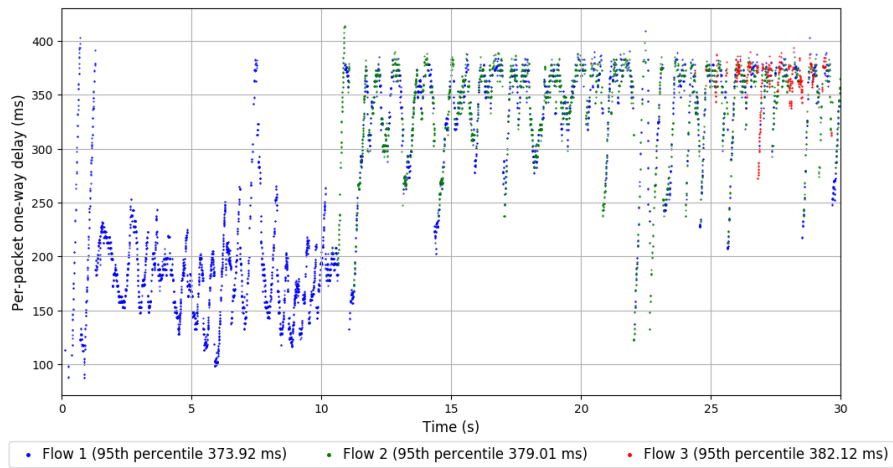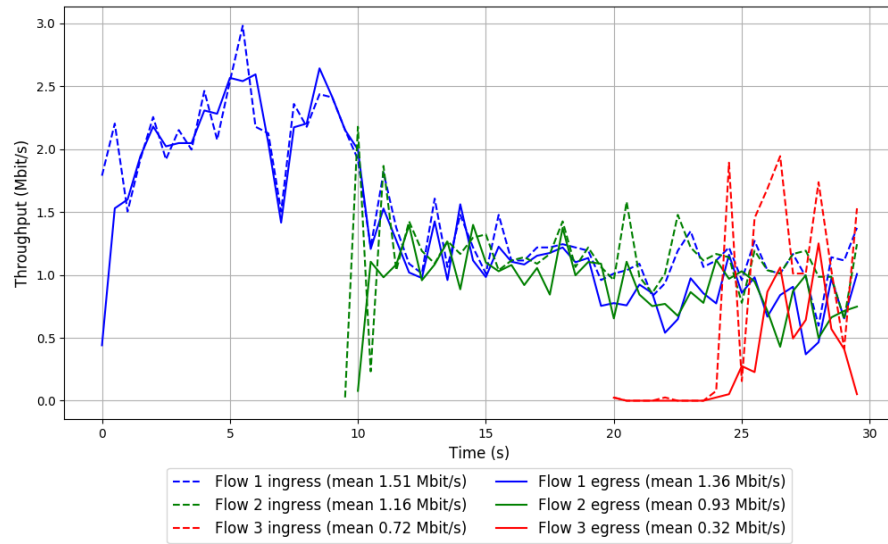
Run 3: Report of Sprout — Data Link

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

Start at: 2017-08-13 05:56:40
End at: 2017-08-13 05:57:10
Local clock offset: 1.37 ms
Remote clock offset: -20.147 ms

# Below is generated by plot.py at 2017-08-13 07:35:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 377.600 ms
Loss rate: 17.52%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 373.918 ms
Loss rate: 10.06%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 379.014 ms
Loss rate: 19.96%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 382.121 ms
Loss rate: 57.50%
```

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

Flow 1 ingress (mean 1.51 Mbit/s)   Flow 1 egress (mean 1.36 Mbit/s)
Flow 2 ingress (mean 1.16 Mbit/s)   Flow 2 egress (mean 0.93 Mbit/s)
Flow 3 ingress (mean 0.72 Mbit/s)   Flow 3 egress (mean 0.32 Mbit/s)

Flow 1 (95th percentile 373.92 ms)   Flow 2 (95th percentile 379.01 ms)   Flow 3 (95th percentile 382.12 ms)
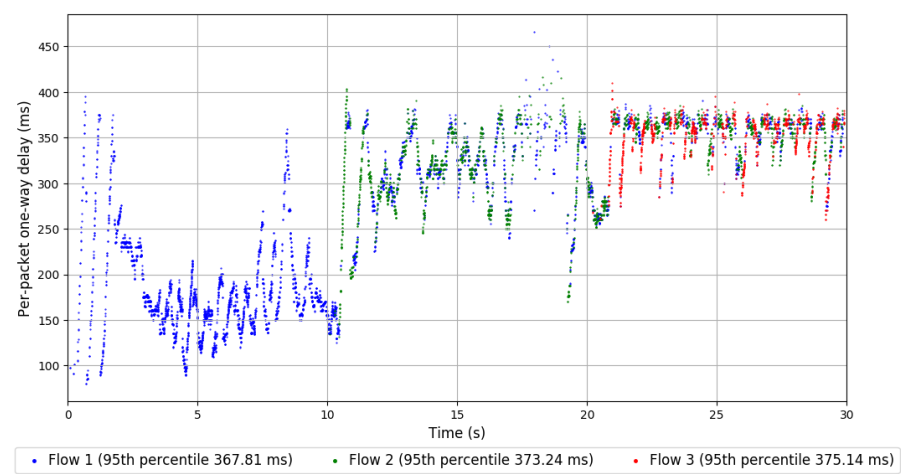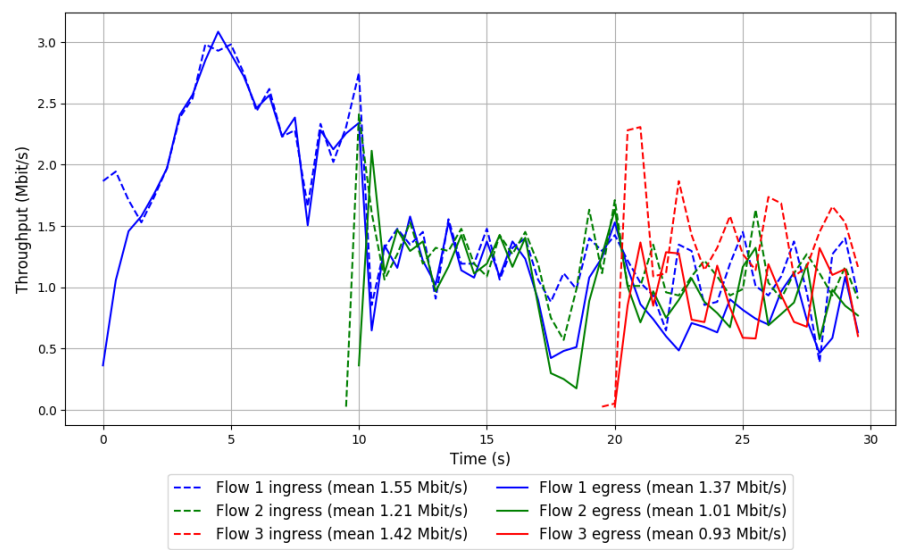
71

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

Start at: 2017-08-13 06:14:13
End at: 2017-08-13 06:14:43
Local clock offset: -0.04 ms
Remote clock offset: -20.502 ms

# Below is generated by plot.py at 2017-08-13 07:35:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 370.841 ms
Loss rate: 17.68%
-- Flow 1:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 367.812 ms
Loss rate: 12.35%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 373.241 ms
Loss rate: 17.27%
-- Flow 3:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 375.143 ms
Loss rate: 36.01%
```

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

Flow 1 ingress (mean 1.55 Mbit/s) — Flow 1 egress (mean 1.37 Mbit/s)
Flow 2 ingress (mean 1.21 Mbit/s) — Flow 2 egress (mean 1.01 Mbit/s)
Flow 3 ingress (mean 1.42 Mbit/s) — Flow 3 egress (mean 0.93 Mbit/s)

Flow 1 (95th percentile 367.81 ms) — Flow 2 (95th percentile 373.24 ms) — Flow 3 (95th percentile 375.14 ms)
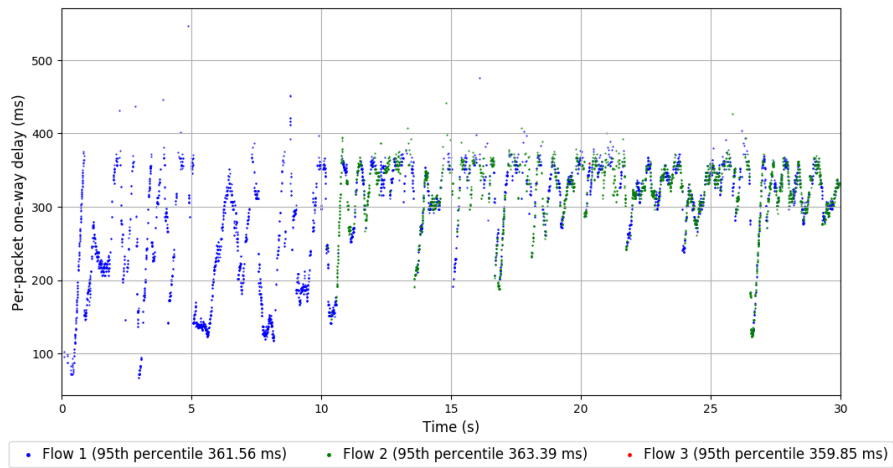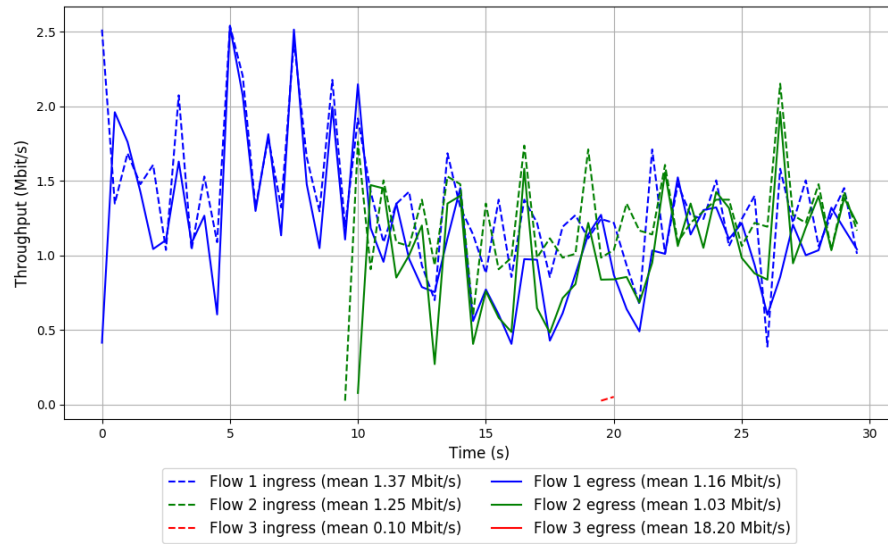
```
Run 3: Statistics of TaoVA-100x

Start at: 2017-08-13 06:33:10
End at: 2017-08-13 06:33:40
Local clock offset: 0.442 ms
Remote clock offset: -18.96 ms

# Below is generated by plot.py at 2017-08-13 07:35:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 362.119 ms
Loss rate: 16.61%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 361.558 ms
Loss rate: 15.22%
-- Flow 2:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 363.387 ms
Loss rate: 18.81%
-- Flow 3:
Average throughput: 18.20 Mbit/s
95th percentile per-packet one-way delay: 359.852 ms
Loss rate: 66.67%
```

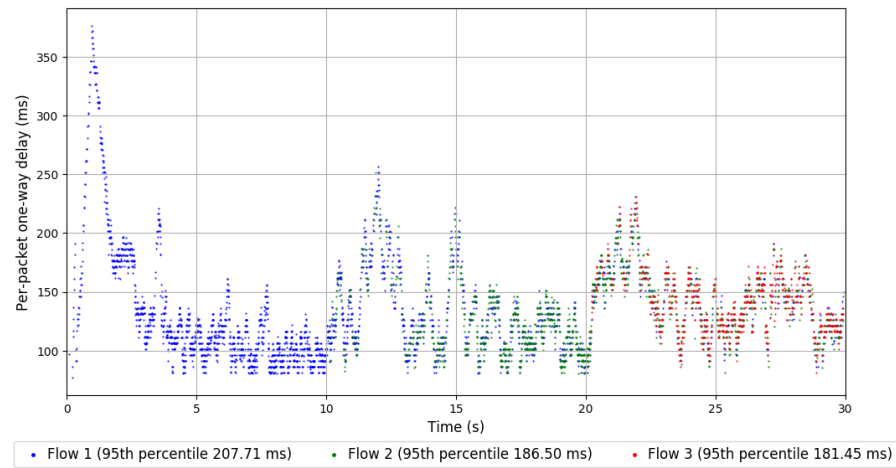## Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 1.37 Mbit/s) --- Flow 1 egress (mean 1.16 Mbit/s)
Flow 2 ingress (mean 1.25 Mbit/s) --- Flow 2 egress (mean 1.03 Mbit/s)
Flow 3 ingress (mean 0.10 Mbit/s) --- Flow 3 egress (mean 18.20 Mbit/s)

Flow 1 (95th percentile 361.56 ms)   Flow 2 (95th percentile 363.39 ms)   Flow 3 (95th percentile 359.85 ms)
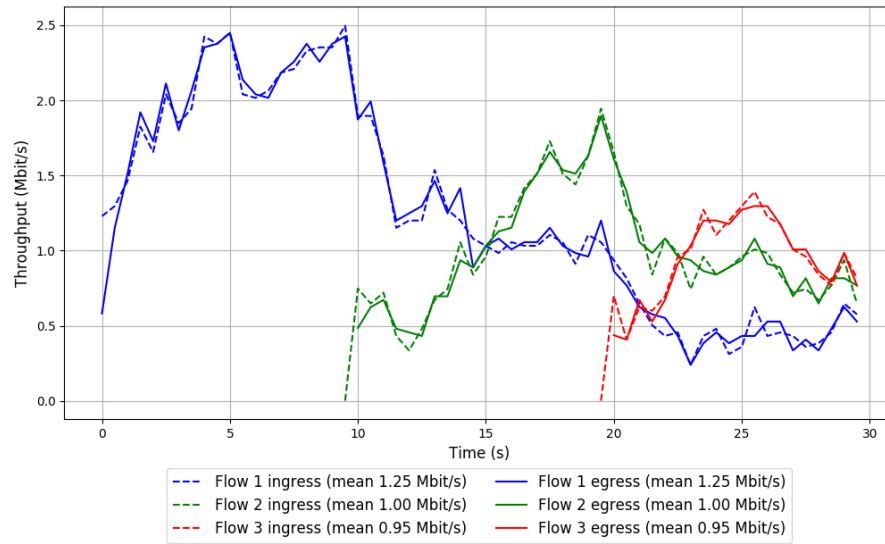
```
Run 1: Statistics of TCP Vegas

Start at: 2017-08-13 05:57:46
End at: 2017-08-13 05:58:16
Local clock offset: -1.003 ms
Remote clock offset: -21.099 ms


# Below is generated by plot.py at 2017-08-13 07:35:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 196.696 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 207.707 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 186.505 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 181.447 ms
Loss rate: 1.76%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2017-08-13 06:15:39
End at: 2017-08-13 06:16:09
Local clock offset: -0.674 ms
Remote clock offset: -19.4 ms


# Below is generated by plot.py at 2017-08-13 07:35:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.45 Mbit/s
95th percentile per-packet one-way delay: 203.123 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 232.983 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 183.138 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 173.761 ms
Loss rate: 1.53%
```
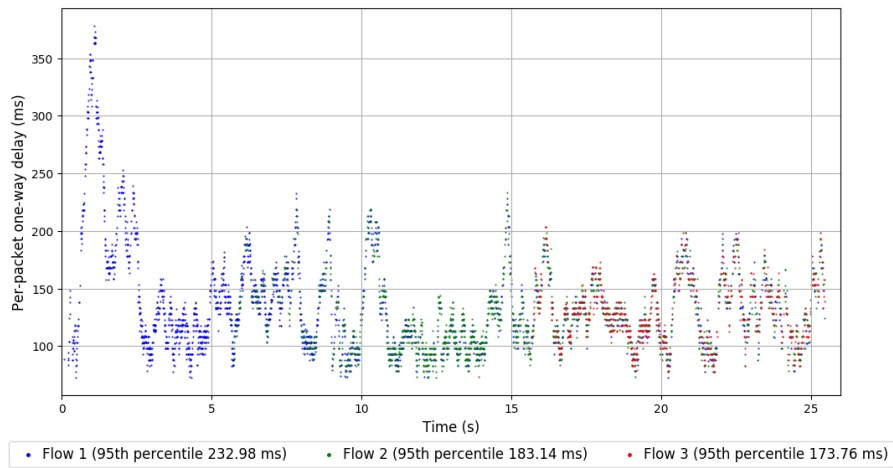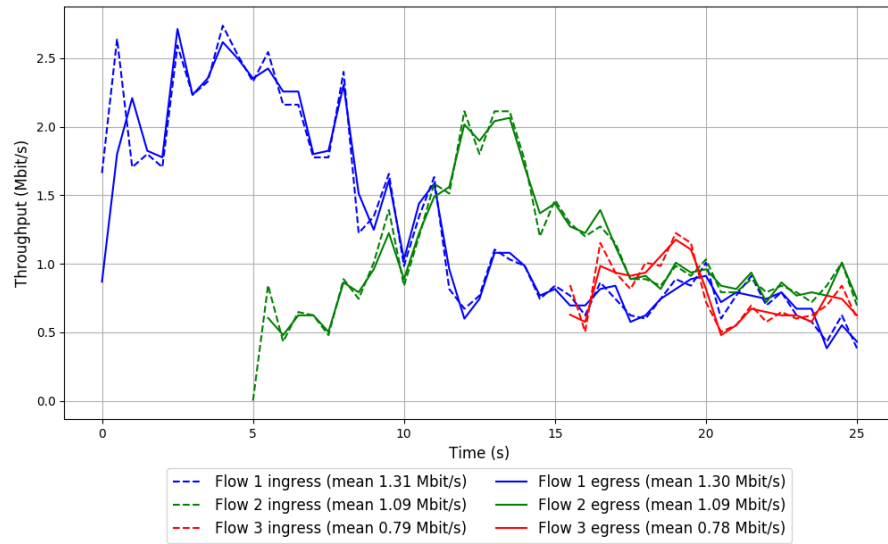
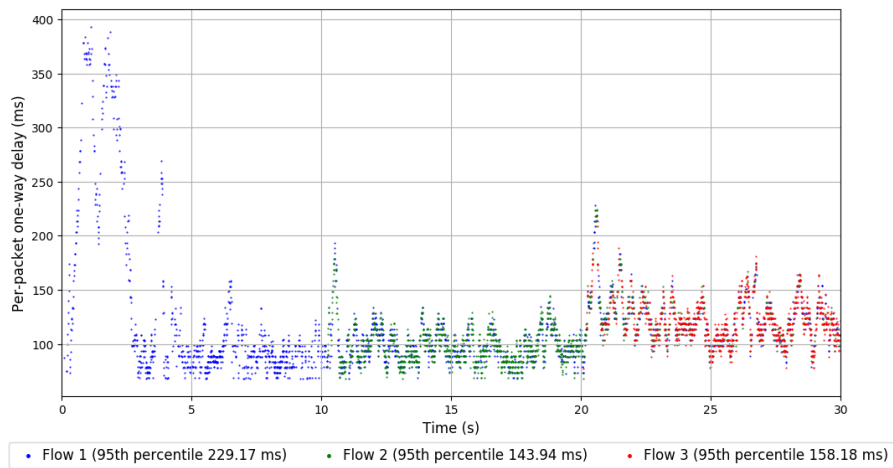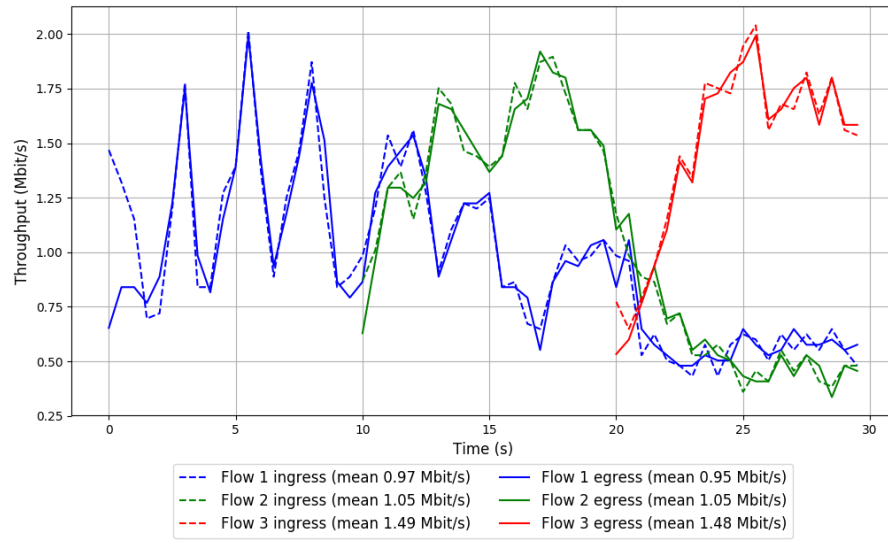Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2017-08-13 06:34:16
End at: 2017-08-13 06:34:46
Local clock offset: 1.654 ms
Remote clock offset: -20.109 ms


# Below is generated by plot.py at 2017-08-13 07:35:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 164.476 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 229.169 ms
Loss rate: 2.28%
-- Flow 2:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 143.940 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 1.48 Mbit/s
95th percentile per-packet one-way delay: 158.175 ms
Loss rate: 1.38%
```
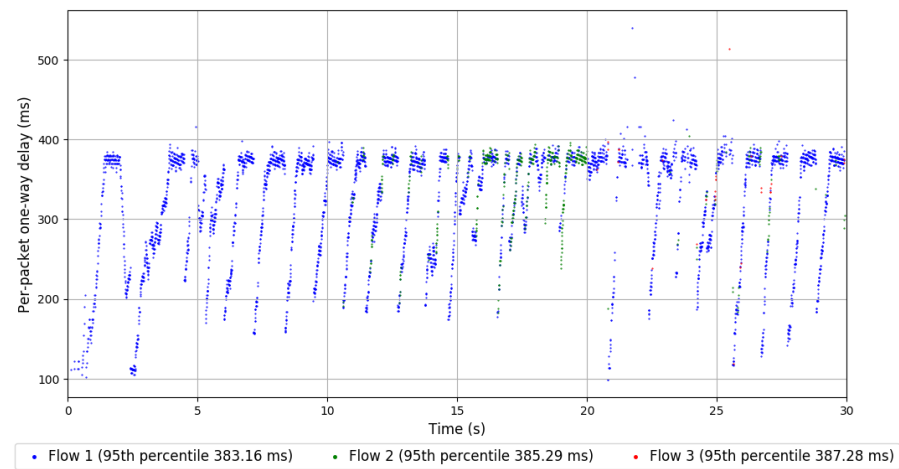
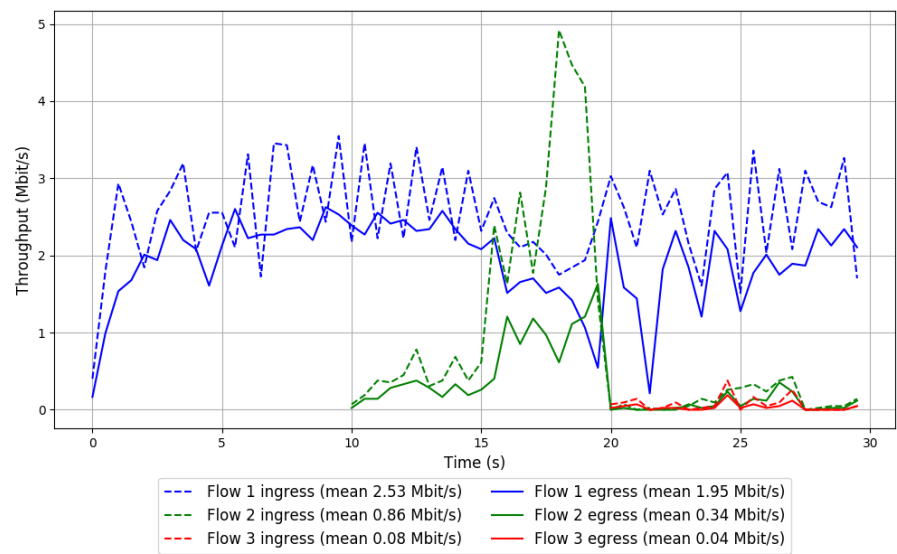Run 3: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2017-08-13 05:55:33
End at: 2017-08-13 05:56:03
Local clock offset: 2.4 ms
Remote clock offset: -20.12 ms

# Below is generated by plot.py at 2017-08-13 07:35:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 383.547 ms
Loss rate: 30.30%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 383.164 ms
Loss rate: 23.30%
-- Flow 2:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 385.292 ms
Loss rate: 60.86%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 387.281 ms
Loss rate: 50.79%
```
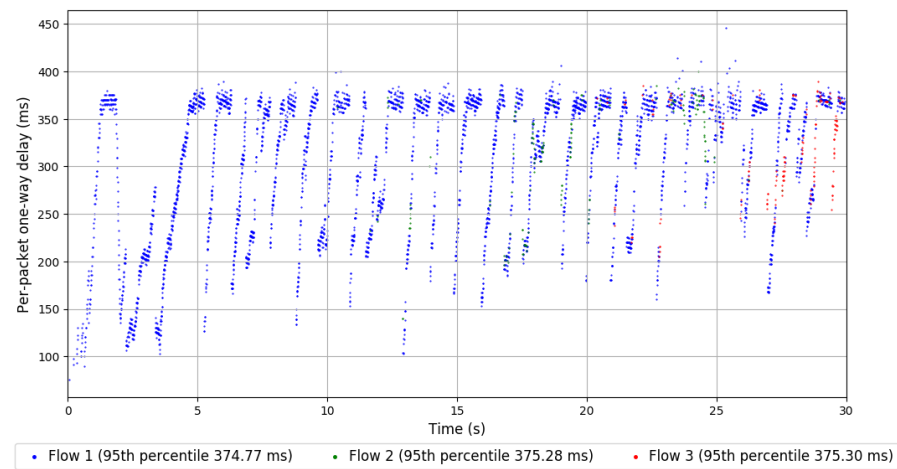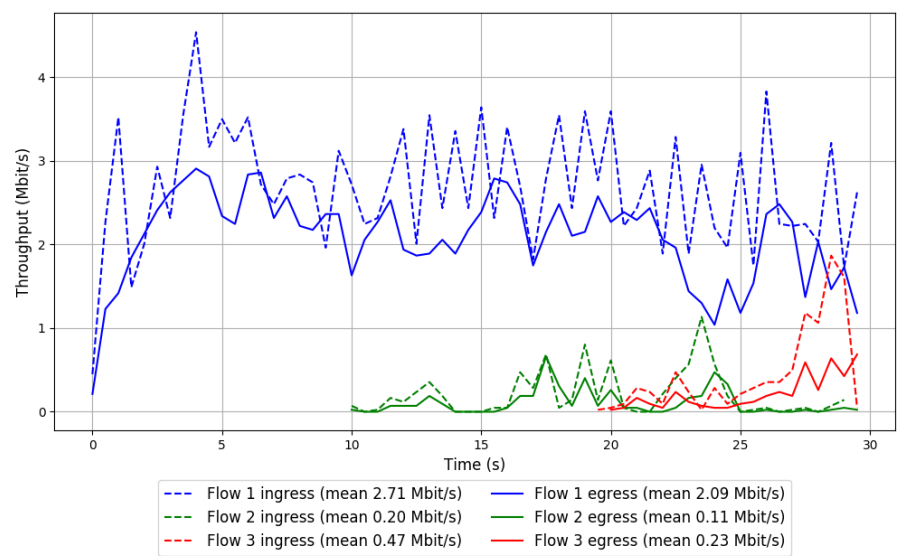
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2017-08-13 06:13:06
End at: 2017-08-13 06:13:36
Local clock offset: 0.426 ms
Remote clock offset: -19.725 ms


# Below is generated by plot.py at 2017-08-13 07:35:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 374.949 ms
Loss rate: 25.44%
-- Flow 1:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 374.774 ms
Loss rate: 22.72%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 375.276 ms
Loss rate: 47.46%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 375.300 ms
Loss rate: 53.79%
```
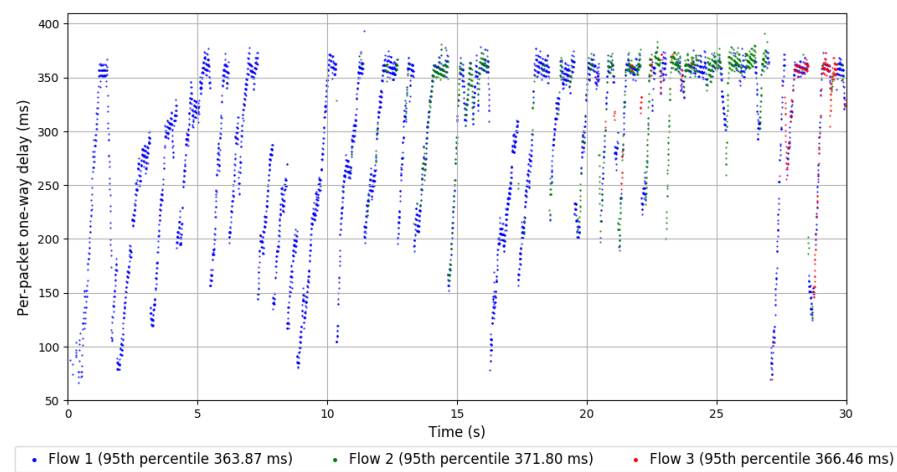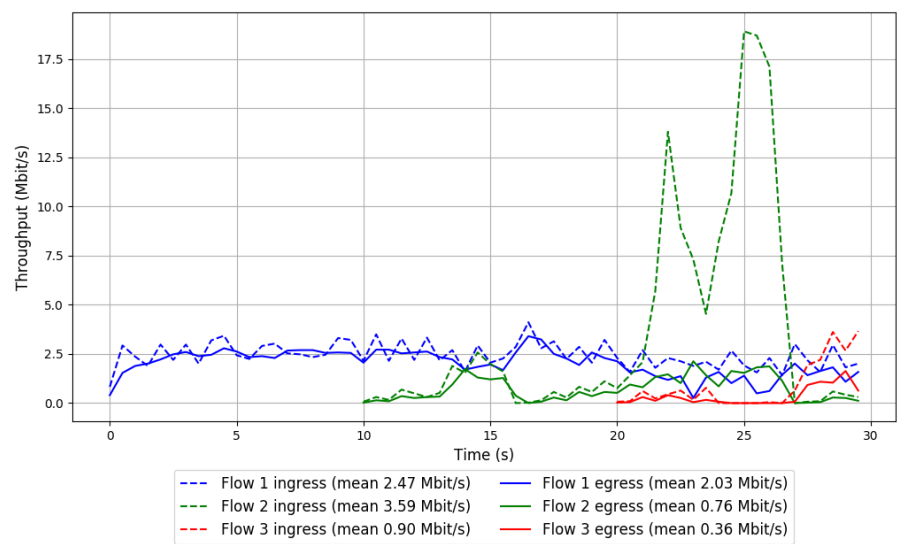
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2017-08-13 06:31:43
End at: 2017-08-13 06:32:13
Local clock offset: 0.811 ms
Remote clock offset: -18.098 ms


# Below is generated by plot.py at 2017-08-13 07:35:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.64 Mbit/s
95th percentile per-packet one-way delay: 366.727 ms
Loss rate: 48.85%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 363.870 ms
Loss rate: 17.90%
-- Flow 2:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 371.799 ms
Loss rate: 79.27%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 366.463 ms
Loss rate: 61.67%
```

Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 2.47 Mbit/s) --- Flow 1 egress (mean 2.03 Mbit/s) ---
Flow 2 ingress (mean 3.59 Mbit/s) --- Flow 2 egress (mean 0.76 Mbit/s) ---
Flow 3 ingress (mean 0.90 Mbit/s) --- Flow 3 egress (mean 0.36 Mbit/s) ---

Flow 1 (95th percentile 363.87 ms) • Flow 2 (95th percentile 371.80 ms) • Flow 3 (95th percentile 366.46 ms)
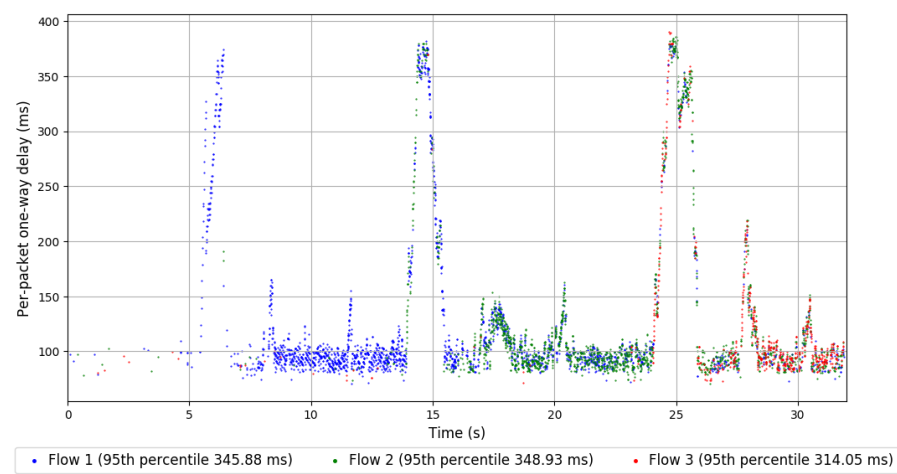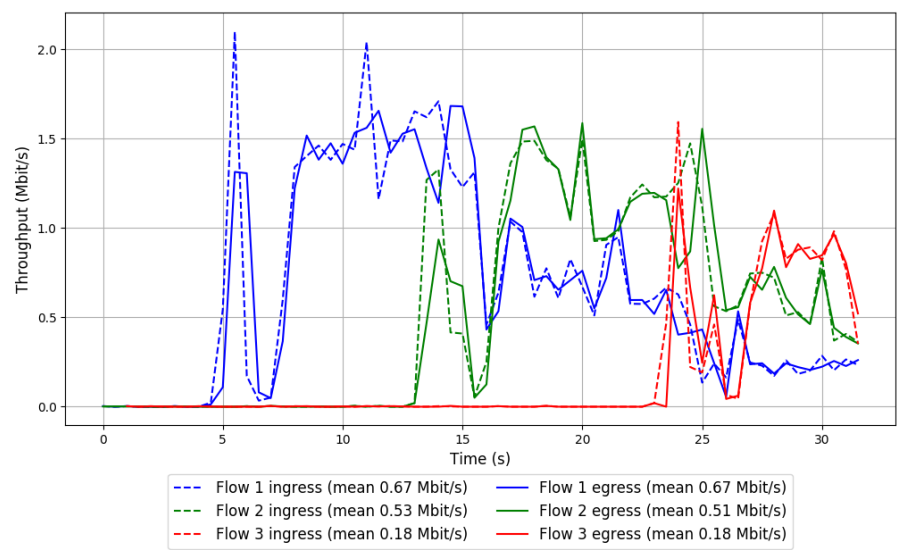
```
Run 1: Statistics of WebRTC media

Start at: 2017-08-13 05:52:15
End at: 2017-08-13 05:52:45
Local clock offset: 2.218 ms
Remote clock offset: -19.42 ms

# Below is generated by plot.py at 2017-08-13 07:35:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 346.283 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 345.876 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 348.929 ms
Loss rate: 3.17%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 314.046 ms
Loss rate: 1.55%
```

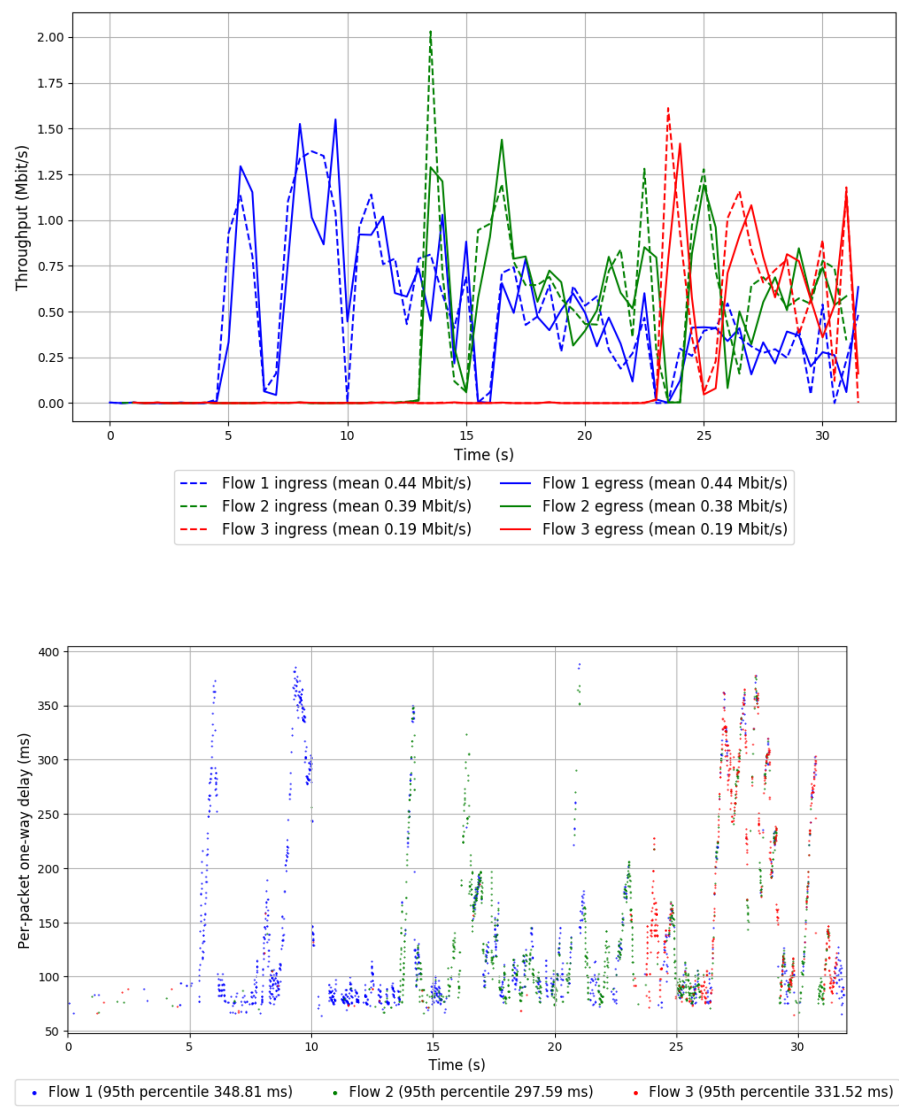Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2017-08-13 06:09:28
End at: 2017-08-13 06:09:58
Local clock offset: 1.64 ms
Remote clock offset: -20.31 ms


# Below is generated by plot.py at 2017-08-13 07:35:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 335.818 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 348.806 ms
Loss rate: 1.49%
-- Flow 2:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 297.588 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 331.516 ms
Loss rate: 1.36%
```

Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2017-08-13 06:28:05
End at: 2017-08-13 06:28:35
Local clock offset: -0.2 ms
Remote clock offset: -19.867 ms


# Below is generated by plot.py at 2017-08-13 07:35:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 353.357 ms
Loss rate: 4.92%
-- Flow 1:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 354.932 ms
Loss rate: 4.19%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 330.265 ms
Loss rate: 5.11%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 344.741 ms
Loss rate: 11.38%
```

Run 3: Report of WebRTC media — Data Link