Pantheon Report

Generated at 2018-10-02 12:17:47 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.
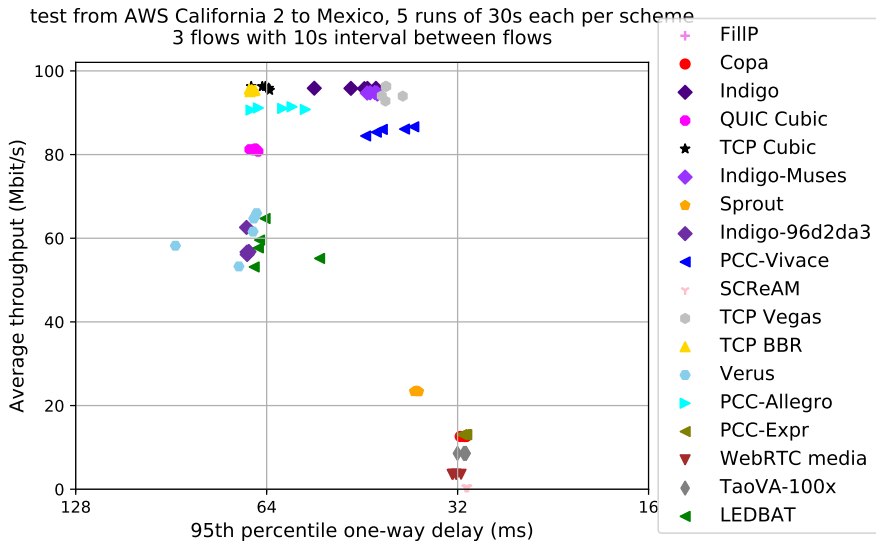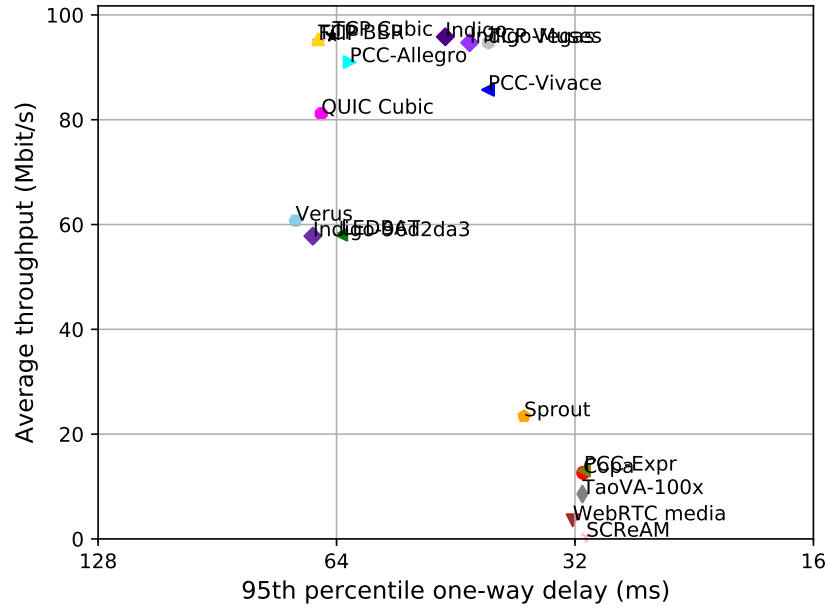
```
System info:
Linux 4.15.0-1021-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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

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

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

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

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	62.14	35.15	30.17	66.44	68.43	68.56	6.48	11.11	11.99
Copa	5	9.13	5.95	0.47	31.37	31.08	31.14	71.82	79.97	89.22
TCP Cubic	5	75.05	19.54	24.01	64.76	65.63	62.11	0.90	0.51	0.56
FillP	5	58.27	38.88	33.92	66.11	68.50	68.63	13.47	24.57	30.93
Indigo	5	67.22	25.81	35.16	43.74	49.30	55.70	0.08	0.15	0.27
Indigo-96d2da3	5	37.67	26.81	12.32	68.57	68.56	64.60	58.65	58.99	61.34
LEDBAT	5	39.47	19.36	17.27	62.60	64.53	55.81	0.12	0.26	0.44
Indigo-Muses	5	55.01	37.00	45.79	43.74	44.22	40.83	0.30	0.00	0.00
PCC-Allegro	5	79.32	12.61	10.02	61.36	63.60	61.09	2.30	2.50	3.05
PCC-Expr	5	8.47	4.93	3.95	31.16	31.19	31.23	42.10	39.81	33.22
QUIC Cubic	5	59.27	24.70	16.66	66.64	67.23	66.95	2.88	0.92	1.09
SCReAM	5	0.21	0.21	0.22	30.97	30.97	30.97	0.00	0.00	0.00
Sprout	5	11.81	11.72	11.54	36.89	37.09	37.76	0.01	0.01	0.02
TaoVA-100x	5	0.00	9.32	7.11	30.82	31.79	31.09	95.92	85.14	49.43
TCP Vegas	5	75.86	19.08	18.38	41.47	39.38	38.20	0.43	0.01	0.02
Verus	5	36.81	30.76	14.45	71.98	70.33	61.24	41.91	52.36	31.82
PCC-Vivace	5	64.16	26.54	11.81	42.05	39.31	37.16	0.04	0.02	0.00
WebRTC media	5	1.92	1.23	0.42	31.71	32.63	33.43	0.00	0.00	0.01

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-02 10:08:07
End at: 2018-10-02 10:08:37
Local clock offset: -3.562 ms
Remote clock offset: -5.49 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.68 Mbit/s
95th percentile per-packet one-way delay: 68.164 ms
Loss rate: 8.96%
-- Flow 1:
Average throughput: 64.56 Mbit/s
95th percentile per-packet one-way delay: 67.317 ms
Loss rate: 6.90%
-- Flow 2:
Average throughput: 30.36 Mbit/s
95th percentile per-packet one-way delay: 68.963 ms
Loss rate: 11.73%
-- Flow 3:
Average throughput: 32.90 Mbit/s
95th percentile per-packet one-way delay: 69.317 ms
Loss rate: 15.14%
```
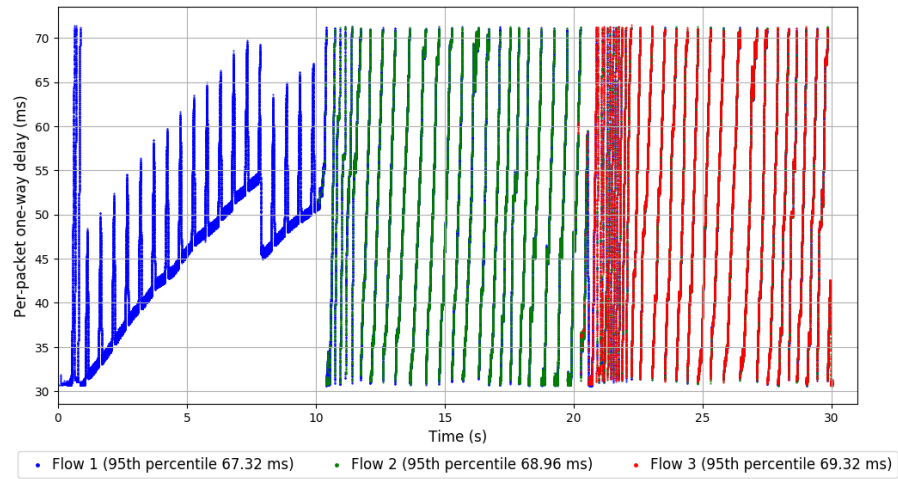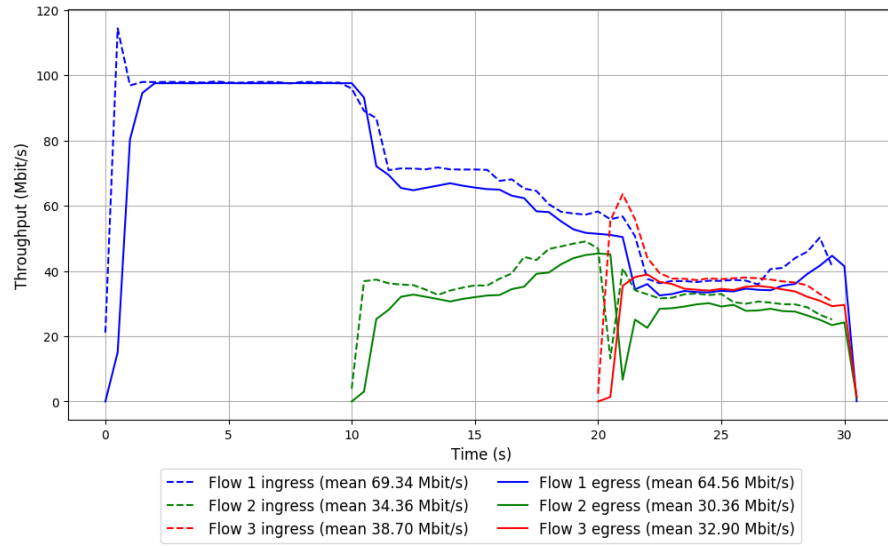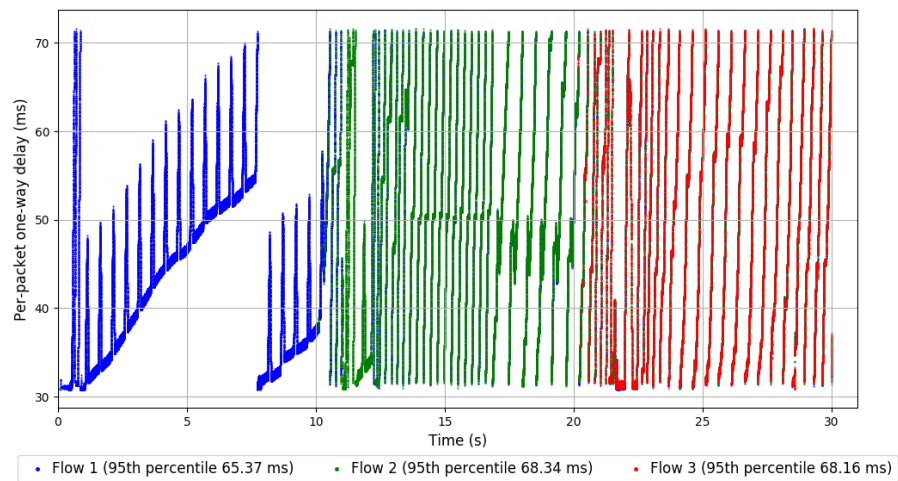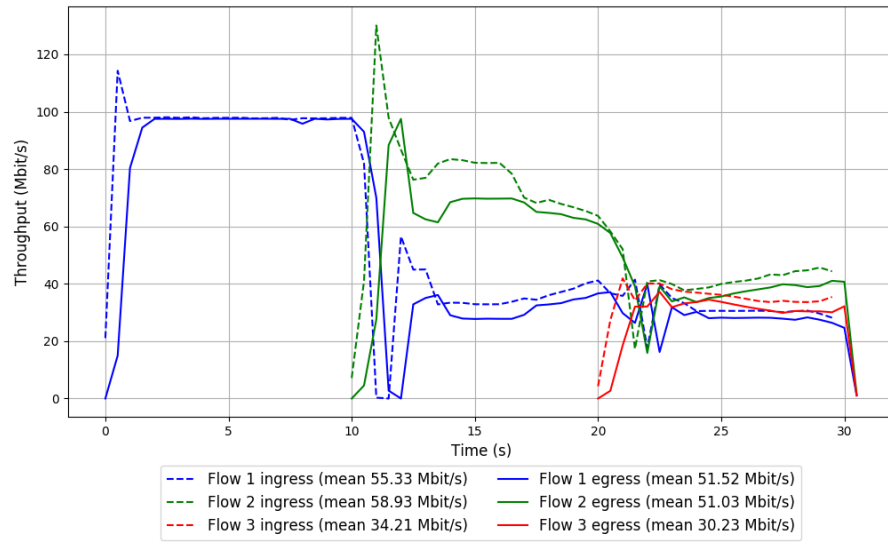
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-02 10:32:34
End at: 2018-10-02 10:33:04
Local clock offset: -0.32 ms
Remote clock offset: -5.51 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.52 Mbit/s
95th percentile per-packet one-way delay: 67.536 ms
Loss rate: 9.83%
-- Flow 1:
Average throughput: 51.52 Mbit/s
95th percentile per-packet one-way delay: 65.374 ms
Loss rate: 6.88%
-- Flow 2:
Average throughput: 51.03 Mbit/s
95th percentile per-packet one-way delay: 68.339 ms
Loss rate: 13.41%
-- Flow 3:
Average throughput: 30.23 Mbit/s
95th percentile per-packet one-way delay: 68.162 ms
Loss rate: 11.87%
```
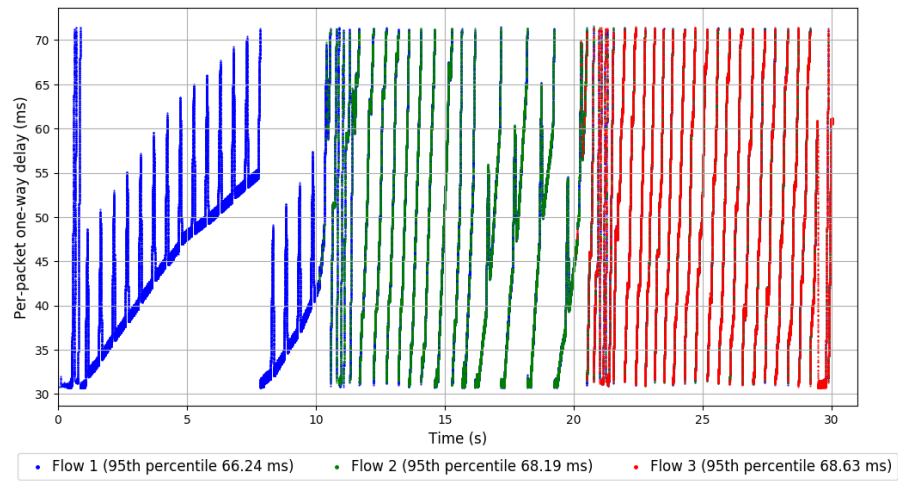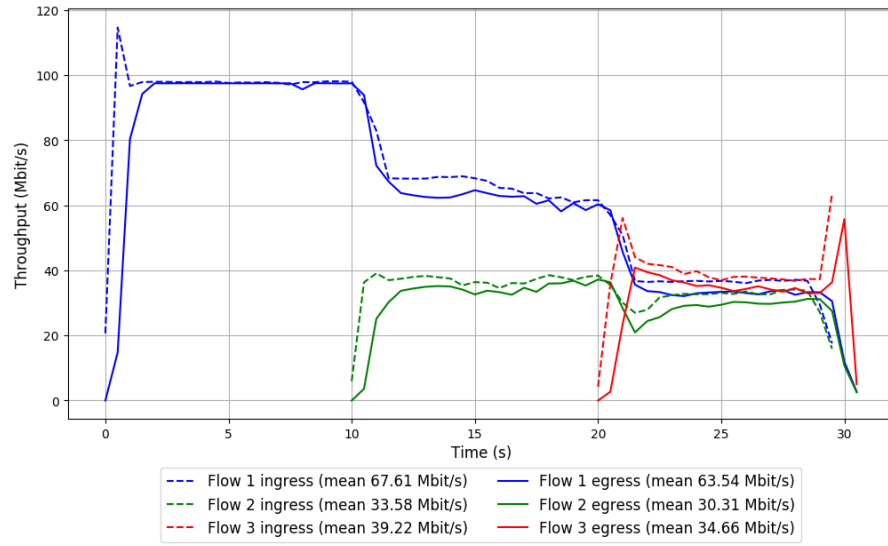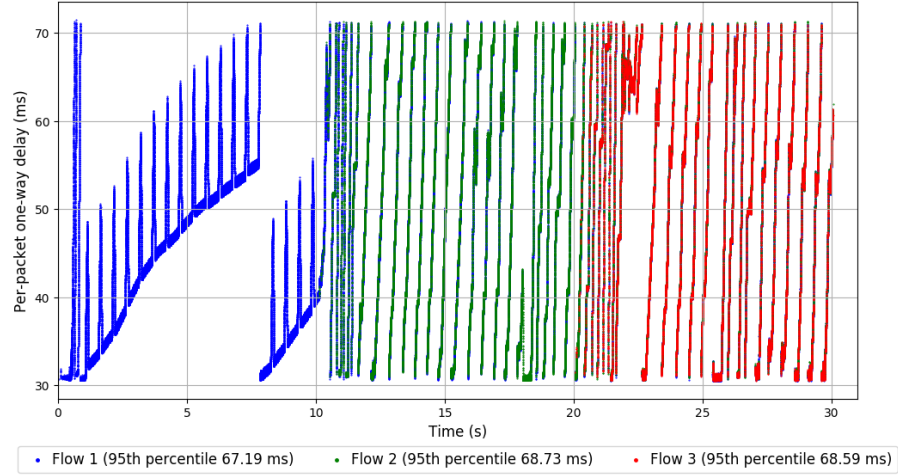
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 55.33 Mbit/s) — — — Flow 1 egress (mean 51.52 Mbit/s)
Flow 2 ingress (mean 58.93 Mbit/s) — — — Flow 2 egress (mean 51.03 Mbit/s)
Flow 3 ingress (mean 34.21 Mbit/s) — — — Flow 3 egress (mean 30.23 Mbit/s)

Flow 1 (95th percentile 65.37 ms)   Flow 2 (95th percentile 68.34 ms)   Flow 3 (95th percentile 68.16 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-02 10:57:05
End at: 2018-10-02 10:57:35
Local clock offset: 2.845 ms
Remote clock offset: -5.443 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.26 Mbit/s
95th percentile per-packet one-way delay: 67.143 ms
Loss rate: 7.44%
-- Flow 1:
Average throughput: 63.54 Mbit/s
95th percentile per-packet one-way delay: 66.244 ms
Loss rate: 5.93%
-- Flow 2:
Average throughput: 30.31 Mbit/s
95th percentile per-packet one-way delay: 68.185 ms
Loss rate: 9.64%
-- Flow 3:
Average throughput: 34.66 Mbit/s
95th percentile per-packet one-way delay: 68.633 ms
Loss rate: 11.51%
```

Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-02 11:21:29
End at: 2018-10-02 11:21:59
Local clock offset: 2.347 ms
Remote clock offset: -4.791 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.05 Mbit/s
95th percentile per-packet one-way delay: 67.989 ms
Loss rate: 7.90%
-- Flow 1:
Average throughput: 64.85 Mbit/s
95th percentile per-packet one-way delay: 67.192 ms
Loss rate: 6.47%
-- Flow 2:
Average throughput: 32.64 Mbit/s
95th percentile per-packet one-way delay: 68.731 ms
Loss rate: 10.81%
-- Flow 3:
Average throughput: 25.36 Mbit/s
95th percentile per-packet one-way delay: 68.590 ms
Loss rate: 10.89%
```
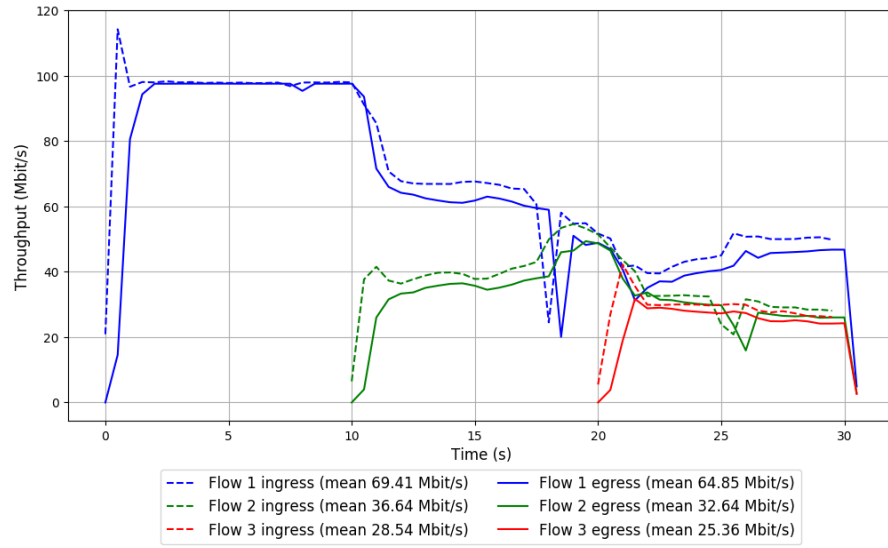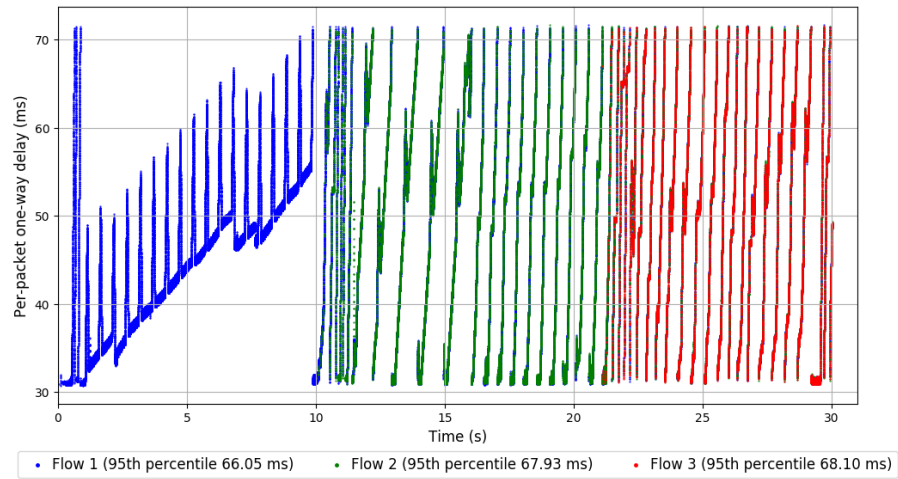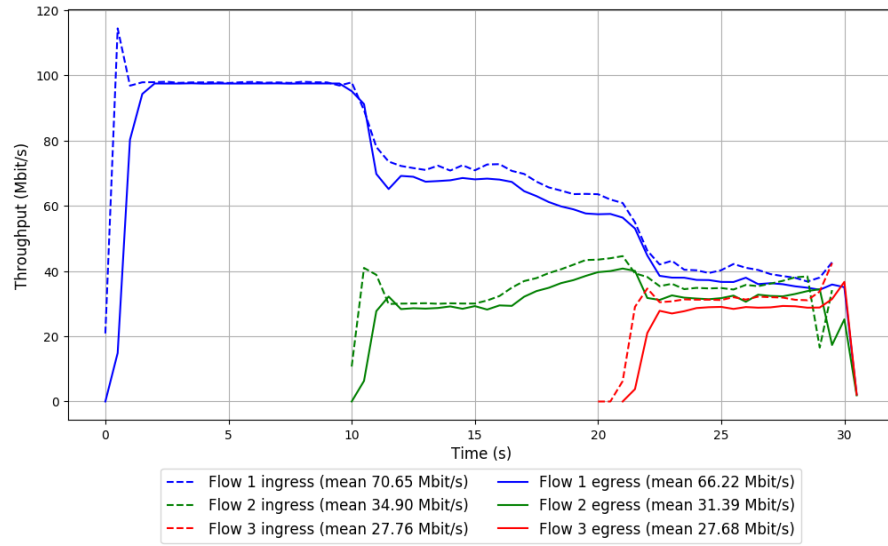
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-02 11:46:01
End at: 2018-10-02 11:46:31
Local clock offset: -0.087 ms
Remote clock offset: -3.636 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.40 Mbit/s
95th percentile per-packet one-way delay: 66.775 ms
Loss rate: 7.44%
-- Flow 1:
Average throughput: 66.22 Mbit/s
95th percentile per-packet one-way delay: 66.049 ms
Loss rate: 6.20%
-- Flow 2:
Average throughput: 31.39 Mbit/s
95th percentile per-packet one-way delay: 67.929 ms
Loss rate: 9.97%
-- Flow 3:
Average throughput: 27.68 Mbit/s
95th percentile per-packet one-way delay: 68.098 ms
Loss rate: 10.56%
```
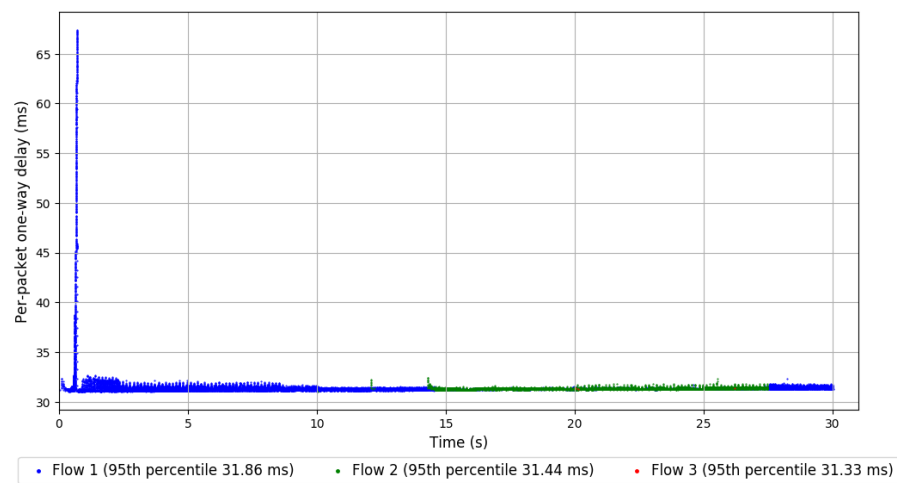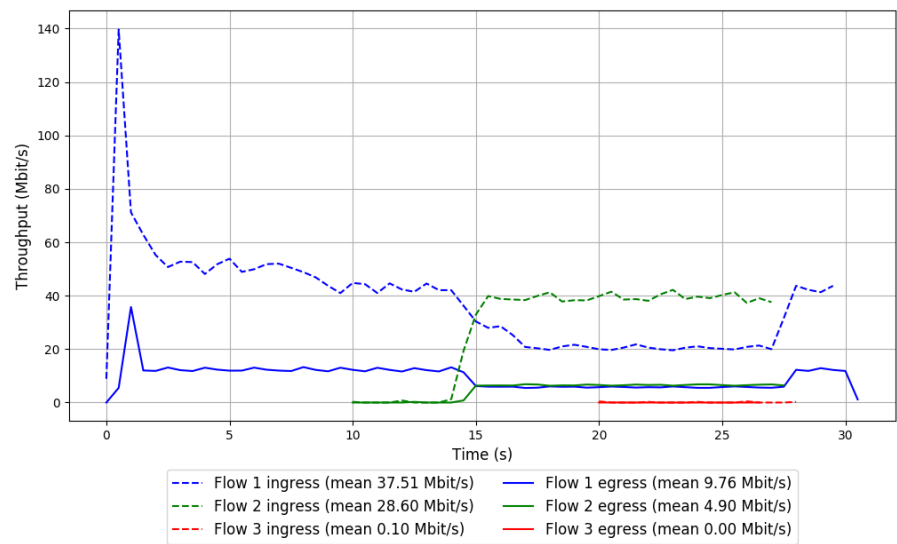
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 70.65 Mbit/s) — Flow 1 egress (mean 66.22 Mbit/s)
Flow 2 ingress (mean 34.90 Mbit/s) — Flow 2 egress (mean 31.39 Mbit/s)
Flow 3 ingress (mean 27.76 Mbit/s) — Flow 3 egress (mean 27.68 Mbit/s)

Flow 1 (95th percentile 66.05 ms) • Flow 2 (95th percentile 67.93 ms) • Flow 3 (95th percentile 68.10 ms)
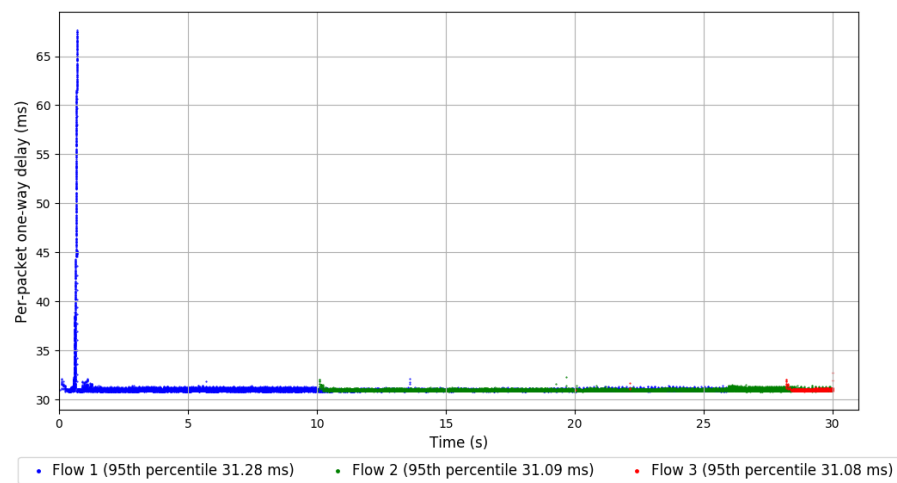
14

```
Run 1: Statistics of Copa

Start at: 2018-10-02 10:16:20
End at: 2018-10-02 10:16:50
Local clock offset: -4.143 ms
Remote clock offset: -5.524 ms

# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.701 ms
Loss rate: 76.72%
-- Flow 1:
Average throughput: 9.76 Mbit/s
95th percentile per-packet one-way delay: 31.855 ms
Loss rate: 73.98%
-- Flow 2:
Average throughput: 4.90 Mbit/s
95th percentile per-packet one-way delay: 31.443 ms
Loss rate: 82.87%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 31.328 ms
Loss rate: 96.80%
```

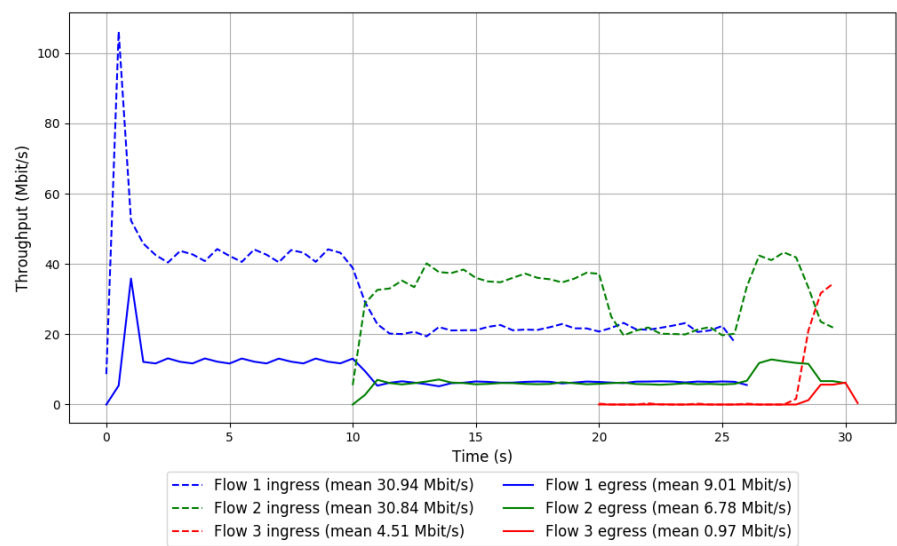Run 1: Report of Copa — Data Link

16

```
Run 2: Statistics of Copa

Start at: 2018-10-02 10:40:49
End at: 2018-10-02 10:41:19
Local clock offset: 0.172 ms
Remote clock offset: -5.472 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.193 ms
Loss rate: 74.13%
-- Flow 1:
Average throughput: 9.01 Mbit/s
95th percentile per-packet one-way delay: 31.280 ms
Loss rate: 70.89%
-- Flow 2:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 31.094 ms
Loss rate: 78.03%
-- Flow 3:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 31.078 ms
Loss rate: 78.54%
```

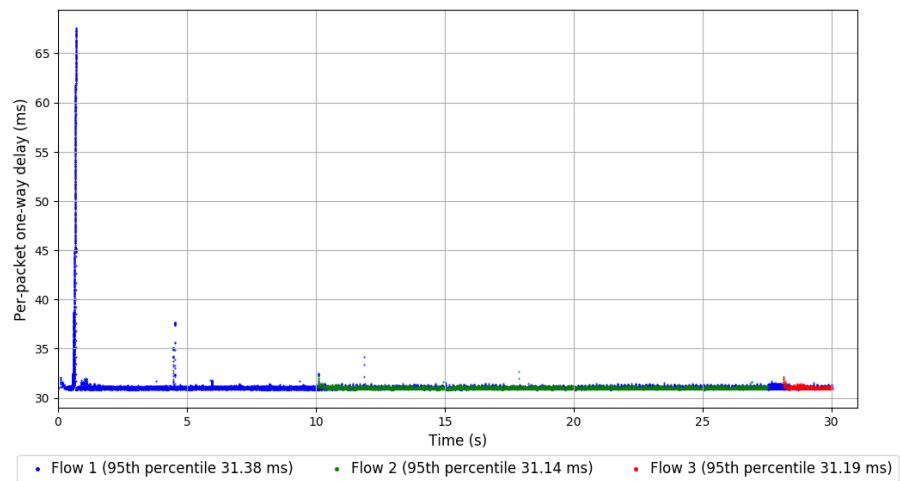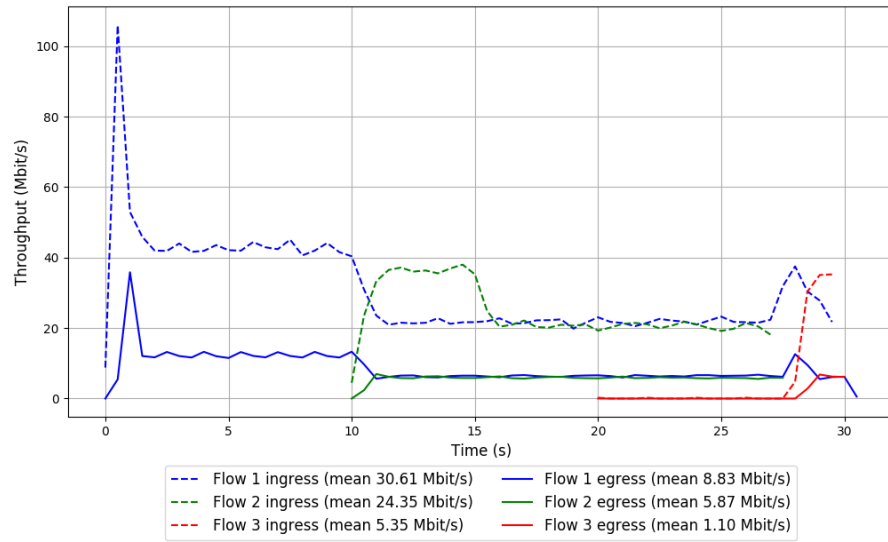Run 2: Report of Copa — Data Link

18

```
Run 3: Statistics of Copa

Start at: 2018-10-02 11:05:18
End at: 2018-10-02 11:05:48
Local clock offset: 3.705 ms
Remote clock offset: -5.068 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.263 ms
Loss rate: 72.92%
-- Flow 1:
Average throughput: 8.83 Mbit/s
95th percentile per-packet one-way delay: 31.381 ms
Loss rate: 71.16%
-- Flow 2:
Average throughput: 5.87 Mbit/s
95th percentile per-packet one-way delay: 31.136 ms
Loss rate: 75.90%
-- Flow 3:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 31.189 ms
Loss rate: 79.36%
```
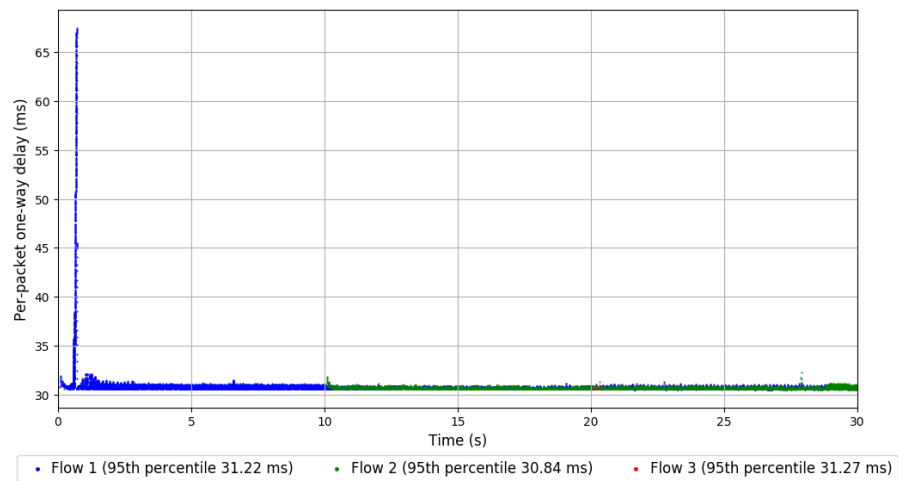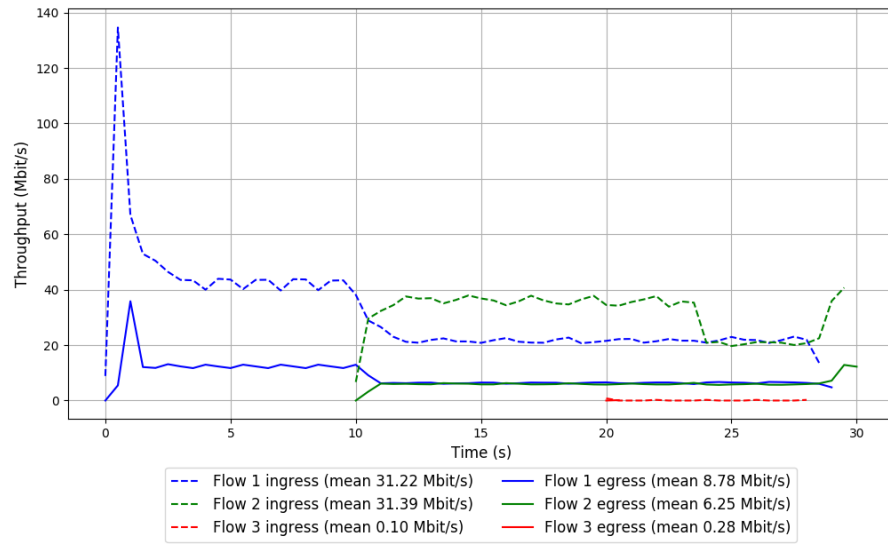
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-10-02 11:29:41
End at: 2018-10-02 11:30:11
Local clock offset: 0.89 ms
Remote clock offset: -4.551 ms


# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.025 ms
Loss rate: 75.26%
-- Flow 1:
Average throughput: 8.78 Mbit/s
95th percentile per-packet one-way delay: 31.224 ms
Loss rate: 71.89%
-- Flow 2:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 30.835 ms
Loss rate: 80.08%
-- Flow 3:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 31.275 ms
Loss rate: 91.56%
```
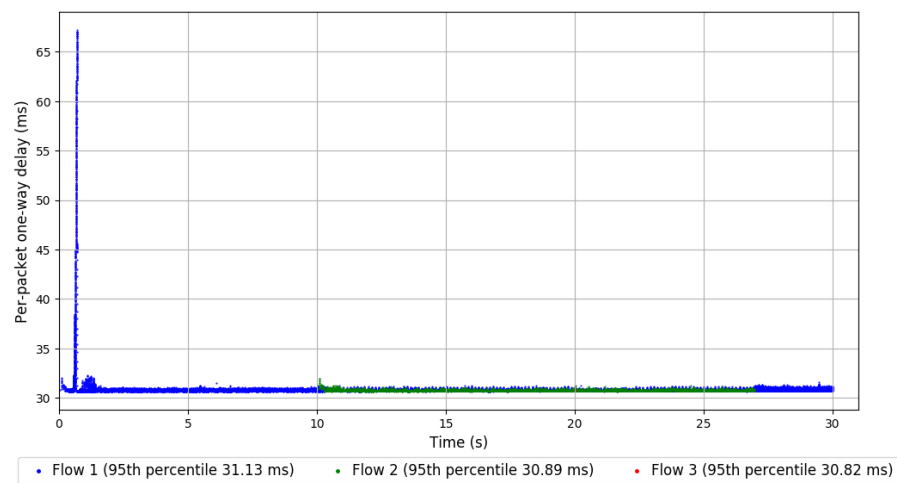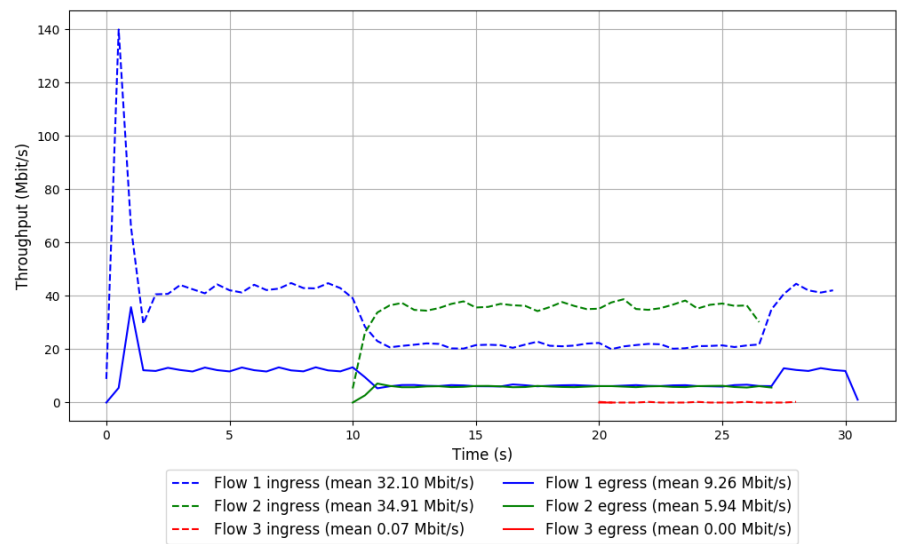
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 31.22 Mbit/s) — Flow 1 egress (mean 8.78 Mbit/s)
Flow 2 ingress (mean 31.39 Mbit/s) — Flow 2 egress (mean 6.25 Mbit/s)
Flow 3 ingress (mean 0.10 Mbit/s) — Flow 3 egress (mean 0.28 Mbit/s)

Flow 1 (95th percentile 31.22 ms) • Flow 2 (95th percentile 30.84 ms) • Flow 3 (95th percentile 31.27 ms)

```
Run 5: Statistics of Copa

Start at: 2018-10-02 11:54:14
End at: 2018-10-02 11:54:44
Local clock offset: 2.116 ms
Remote clock offset: -3.005 ms

# Below is generated by plot.py at 2018-10-02 12:09:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.051 ms
Loss rate: 75.67%
-- Flow 1:
Average throughput: 9.26 Mbit/s
95th percentile per-packet one-way delay: 31.132 ms
Loss rate: 71.16%
-- Flow 2:
Average throughput: 5.94 Mbit/s
95th percentile per-packet one-way delay: 30.889 ms
Loss rate: 82.99%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.823 ms
Loss rate: 99.83%
```
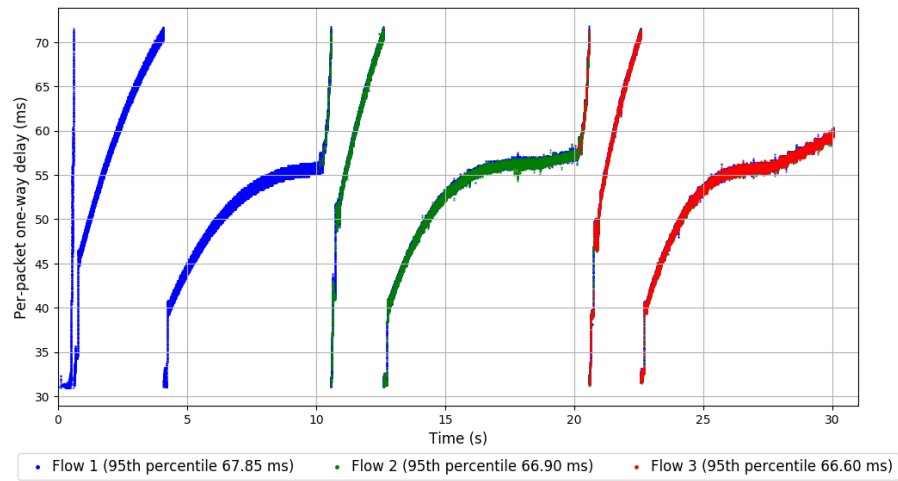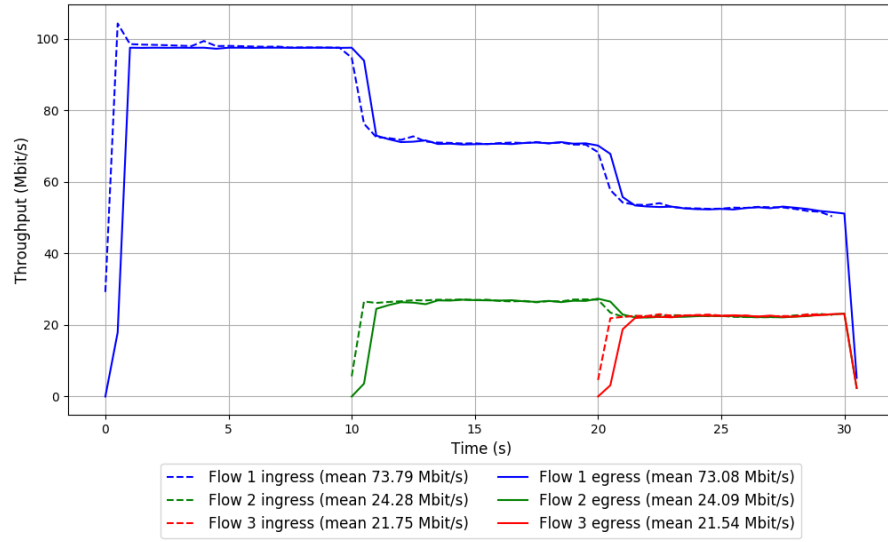
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 32.10 Mbit/s)   Flow 1 egress (mean 9.26 Mbit/s)
Flow 2 ingress (mean 34.91 Mbit/s)   Flow 2 egress (mean 5.94 Mbit/s)
Flow 3 ingress (mean 0.07 Mbit/s)   Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 31.13 ms)   Flow 2 (95th percentile 30.89 ms)   Flow 3 (95th percentile 30.82 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-02 10:19:02
End at: 2018-10-02 10:19:32
Local clock offset: -2.959 ms
Remote clock offset: -5.607 ms


# Below is generated by plot.py at 2018-10-02 12:09:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.29 Mbit/s
95th percentile per-packet one-way delay: 67.689 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 73.08 Mbit/s
95th percentile per-packet one-way delay: 67.846 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 24.09 Mbit/s
95th percentile per-packet one-way delay: 66.897 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 21.54 Mbit/s
95th percentile per-packet one-way delay: 66.596 ms
Loss rate: 0.96%
```
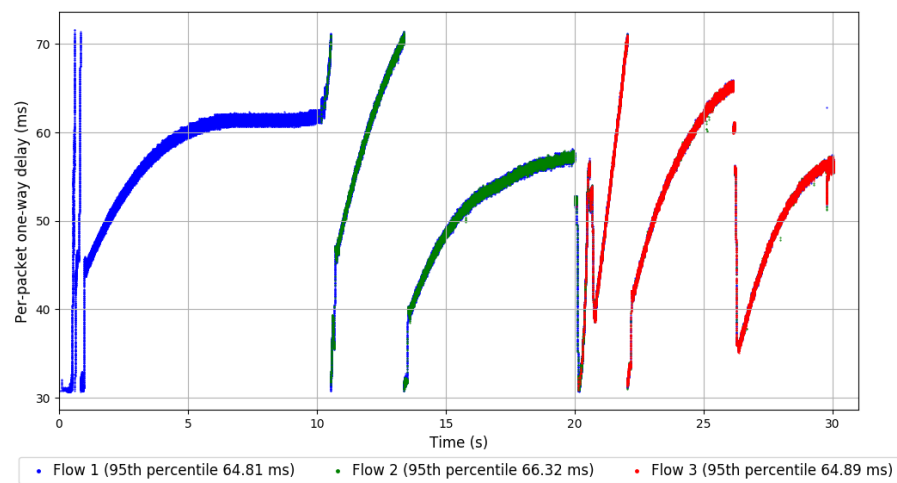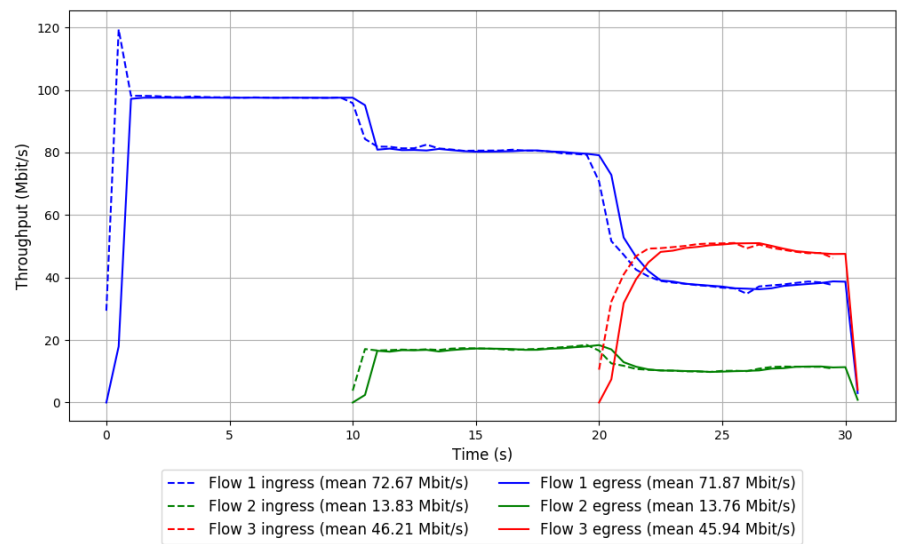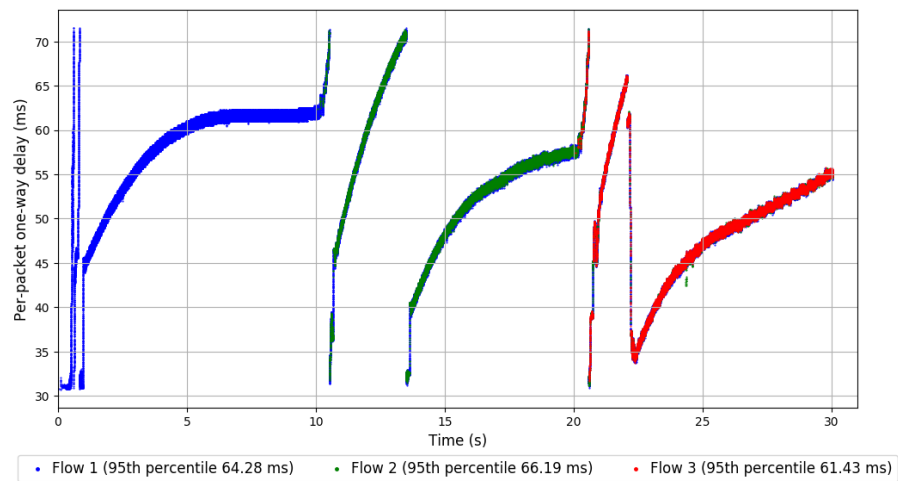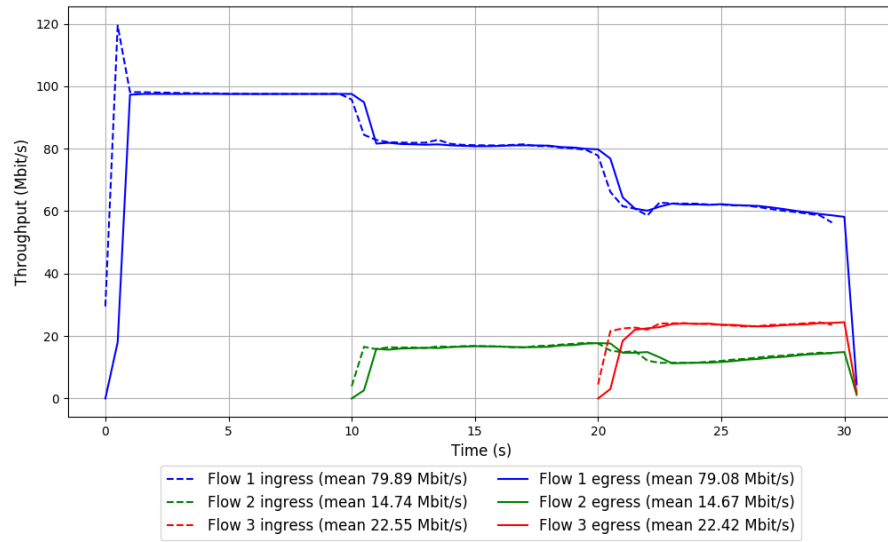
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 73.79 Mbit/s) --- Flow 1 egress (mean 73.08 Mbit/s)
Flow 2 ingress (mean 24.28 Mbit/s) --- Flow 2 egress (mean 24.09 Mbit/s)
Flow 3 ingress (mean 21.75 Mbit/s) --- Flow 3 egress (mean 21.54 Mbit/s)

Flow 1 (95th percentile 67.85 ms)   Flow 2 (95th percentile 66.90 ms)   Flow 3 (95th percentile 66.60 ms)

26

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-02 10:43:32
End at: 2018-10-02 10:44:02
Local clock offset: 0.225 ms
Remote clock offset: -5.654 ms


# Below is generated by plot.py at 2018-10-02 12:10:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.29 Mbit/s
95th percentile per-packet one-way delay: 65.012 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 71.87 Mbit/s
95th percentile per-packet one-way delay: 64.809 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 13.76 Mbit/s
95th percentile per-packet one-way delay: 66.324 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 45.94 Mbit/s
95th percentile per-packet one-way delay: 64.885 ms
Loss rate: 0.53%
```
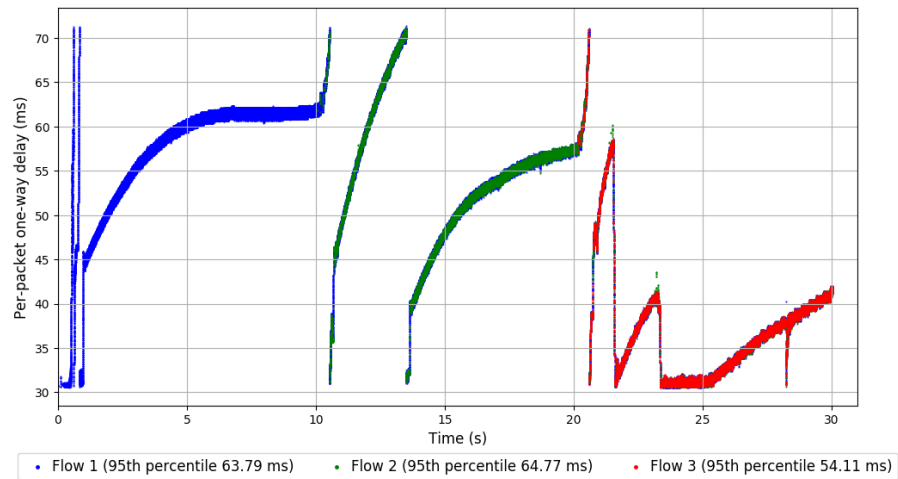
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-02 11:08:00
End at: 2018-10-02 11:08:30
Local clock offset: 3.927 ms
Remote clock offset: -5.048 ms


# Below is generated by plot.py at 2018-10-02 12:10:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 64.279 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 79.08 Mbit/s
95th percentile per-packet one-way delay: 64.279 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 14.67 Mbit/s
95th percentile per-packet one-way delay: 66.193 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 22.42 Mbit/s
95th percentile per-packet one-way delay: 61.427 ms
Loss rate: 0.59%
```

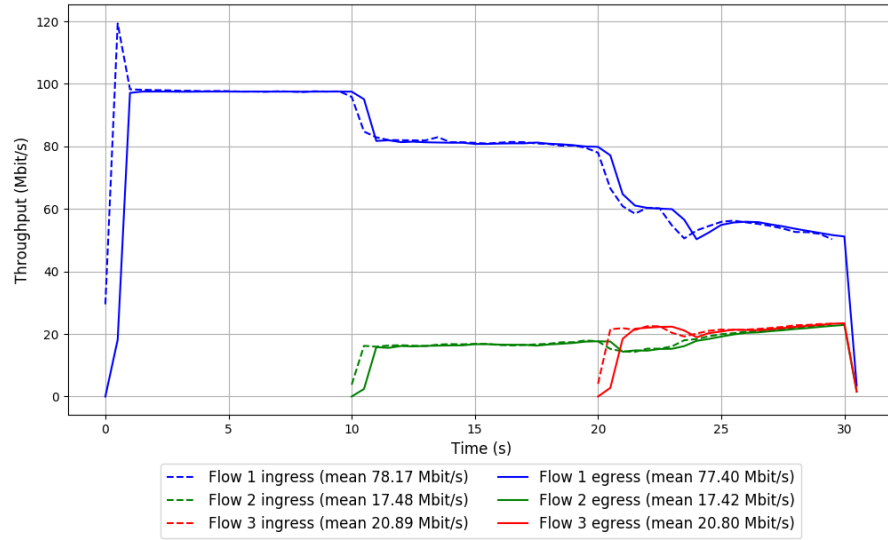Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-02 11:32:29
End at: 2018-10-02 11:32:59
Local clock offset: 0.627 ms
Remote clock offset: -4.405 ms


# Below is generated by plot.py at 2018-10-02 12:10:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.89 Mbit/s
95th percentile per-packet one-way delay: 63.531 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 77.40 Mbit/s
95th percentile per-packet one-way delay: 63.787 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 17.42 Mbit/s
95th percentile per-packet one-way delay: 64.771 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 20.80 Mbit/s
95th percentile per-packet one-way delay: 54.113 ms
Loss rate: 0.58%
```
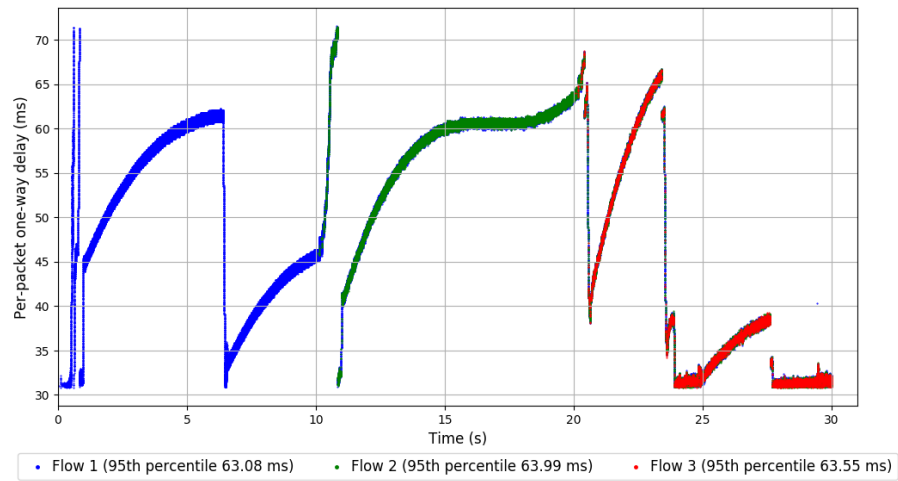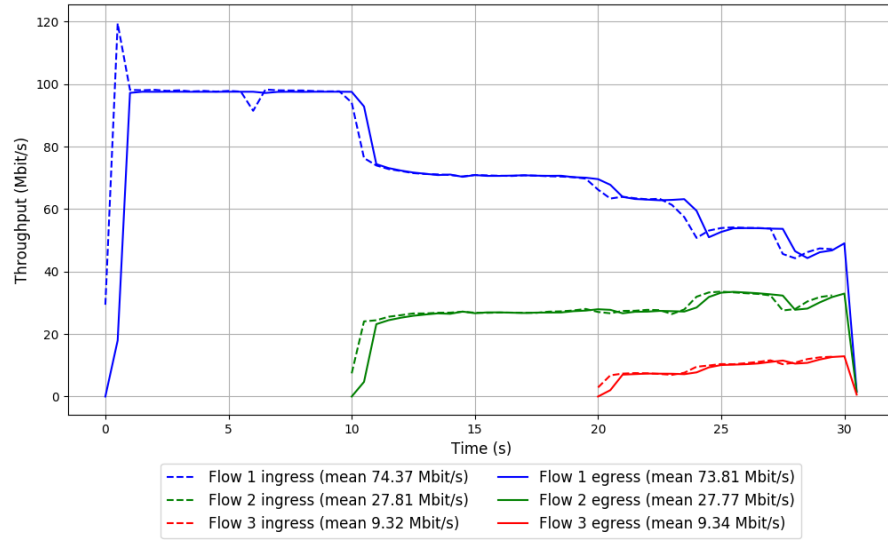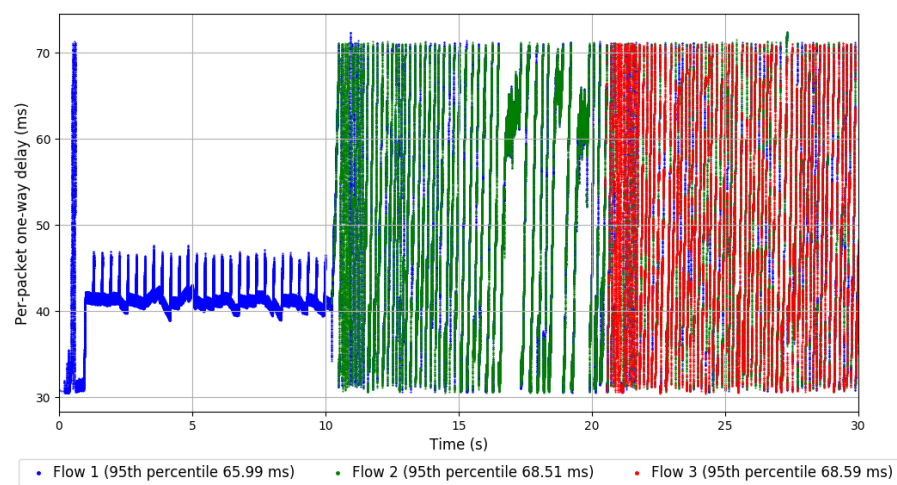
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 78.17 Mbit/s) Flow 1 egress (mean 77.40 Mbit/s)
Flow 2 ingress (mean 17.48 Mbit/s) Flow 2 egress (mean 17.42 Mbit/s)
Flow 3 ingress (mean 20.89 Mbit/s) Flow 3 egress (mean 20.80 Mbit/s)

Flow 1 (95th percentile 63.79 ms)   Flow 2 (95th percentile 64.77 ms)   Flow 3 (95th percentile 54.11 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-02 11:56:57
End at: 2018-10-02 11:57:27
Local clock offset: 2.518 ms
Remote clock offset: -2.594 ms


# Below is generated by plot.py at 2018-10-02 12:10:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.38 Mbit/s
95th percentile per-packet one-way delay: 63.312 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 73.81 Mbit/s
95th percentile per-packet one-way delay: 63.079 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 27.77 Mbit/s
95th percentile per-packet one-way delay: 63.986 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 9.34 Mbit/s
95th percentile per-packet one-way delay: 63.551 ms
Loss rate: 0.16%
```
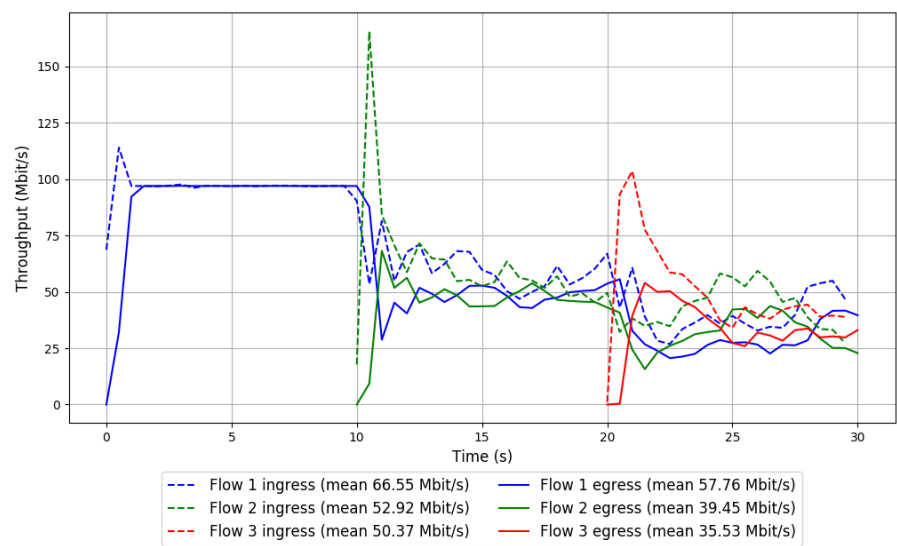
Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 74.37 Mbit/s) ——— Flow 1 egress (mean 73.81 Mbit/s)
- - - Flow 2 ingress (mean 27.81 Mbit/s) ——— Flow 2 egress (mean 27.77 Mbit/s)
- - - Flow 3 ingress (mean 9.32 Mbit/s) ——— Flow 3 egress (mean 9.34 Mbit/s)

• Flow 1 (95th percentile 63.08 ms)   • Flow 2 (95th percentile 63.99 ms)   • Flow 3 (95th percentile 63.55 ms)
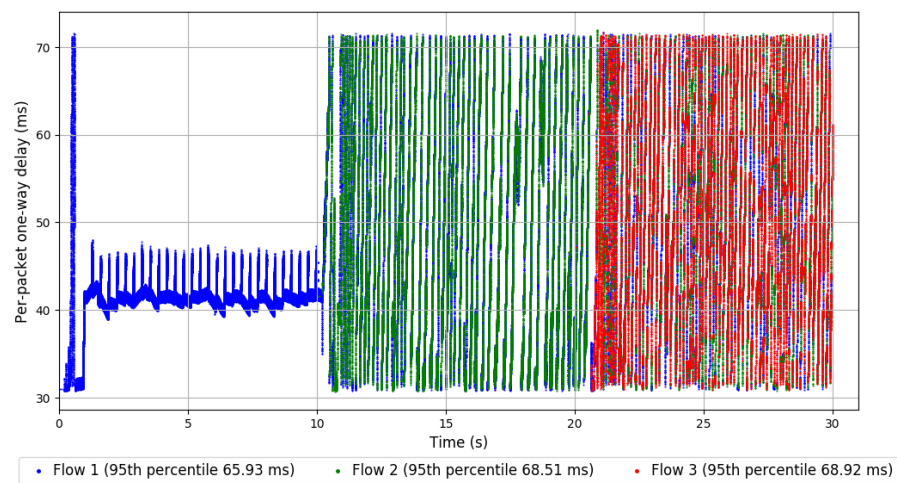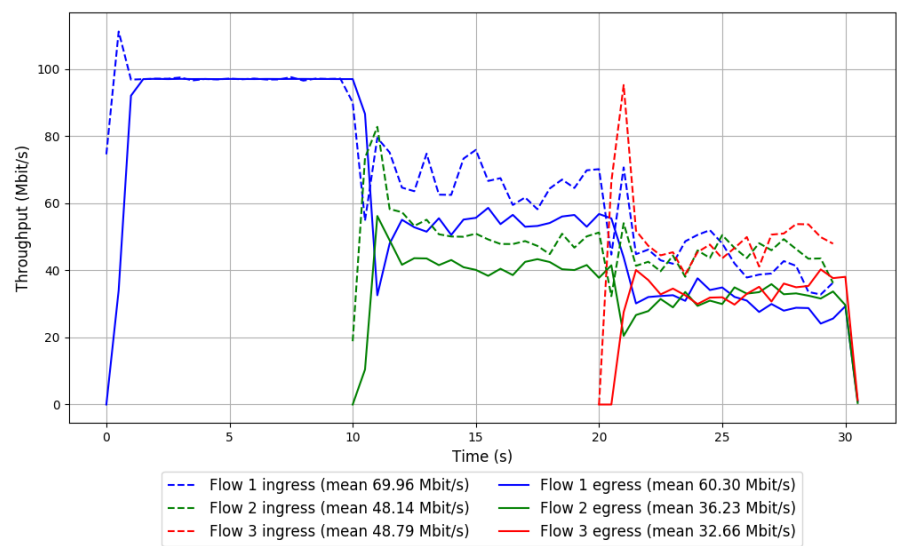
```
Run 1: Statistics of FillP

Start at: 2018-10-02 10:14:57
End at: 2018-10-02 10:15:27
Local clock offset: -4.273 ms
Remote clock offset: -5.587 ms

# Below is generated by plot.py at 2018-10-02 12:11:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.52 Mbit/s
95th percentile per-packet one-way delay: 67.404 ms
Loss rate: 19.33%
-- Flow 1:
Average throughput: 57.76 Mbit/s
95th percentile per-packet one-way delay: 65.989 ms
Loss rate: 13.16%
-- Flow 2:
Average throughput: 39.45 Mbit/s
95th percentile per-packet one-way delay: 68.508 ms
Loss rate: 25.42%
-- Flow 3:
Average throughput: 35.53 Mbit/s
95th percentile per-packet one-way delay: 68.594 ms
Loss rate: 31.05%
```
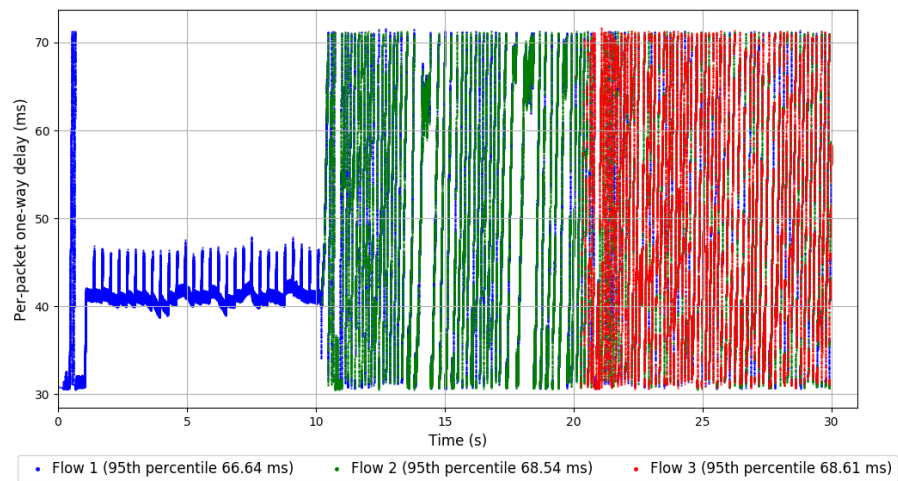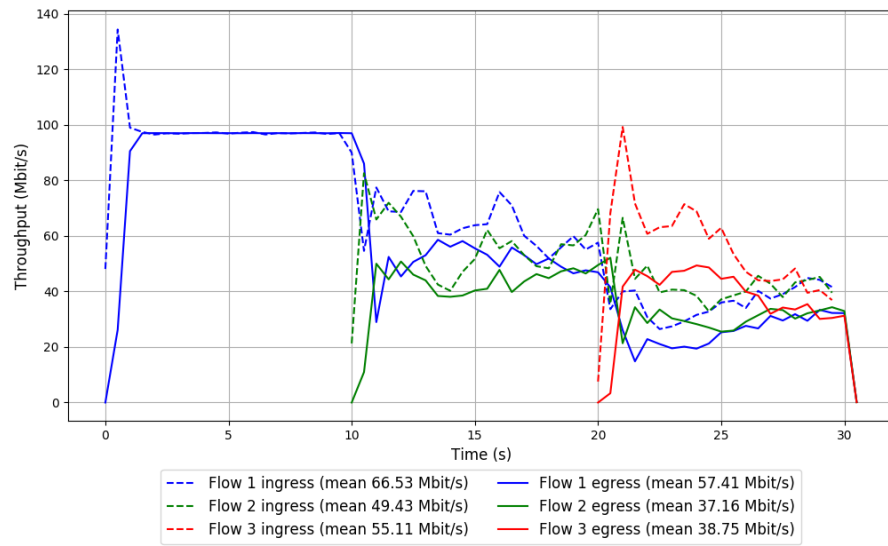
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 66.55 Mbit/s)   Flow 1 egress (mean 57.76 Mbit/s)
Flow 2 ingress (mean 52.92 Mbit/s)   Flow 2 egress (mean 39.45 Mbit/s)
Flow 3 ingress (mean 50.37 Mbit/s)   Flow 3 egress (mean 35.53 Mbit/s)

Flow 1 (95th percentile 65.99 ms)   Flow 2 (95th percentile 68.51 ms)   Flow 3 (95th percentile 68.59 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-02 10:39:26
End at: 2018-10-02 10:39:56
Local clock offset: 0.08 ms
Remote clock offset: -5.411 ms


# Below is generated by plot.py at 2018-10-02 12:11:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.27 Mbit/s
95th percentile per-packet one-way delay: 67.423 ms
Loss rate: 19.33%
-- Flow 1:
Average throughput: 60.30 Mbit/s
95th percentile per-packet one-way delay: 65.927 ms
Loss rate: 13.73%
-- Flow 2:
Average throughput: 36.23 Mbit/s
95th percentile per-packet one-way delay: 68.511 ms
Loss rate: 24.66%
-- Flow 3:
Average throughput: 32.66 Mbit/s
95th percentile per-packet one-way delay: 68.925 ms
Loss rate: 32.96%
```
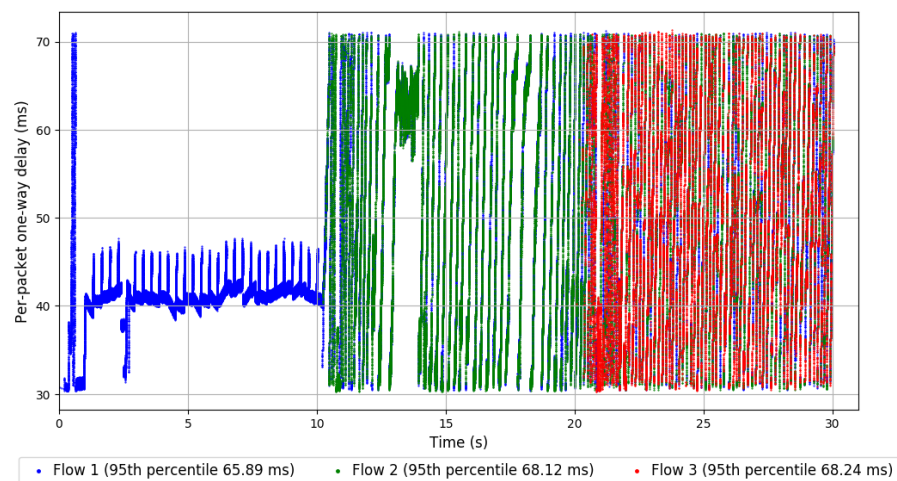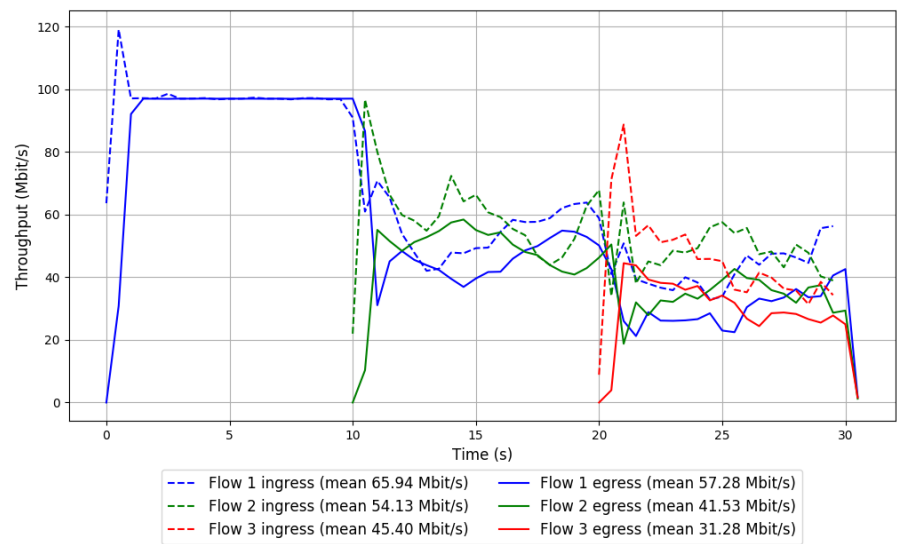
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-10-02 11:03:55
End at: 2018-10-02 11:04:25
Local clock offset: 3.602 ms
Remote clock offset: -5.252 ms


# Below is generated by plot.py at 2018-10-02 12:11:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.96 Mbit/s
95th percentile per-packet one-way delay: 67.702 ms
Loss rate: 19.25%
-- Flow 1:
Average throughput: 57.41 Mbit/s
95th percentile per-packet one-way delay: 66.644 ms
Loss rate: 13.63%
-- Flow 2:
Average throughput: 37.16 Mbit/s
95th percentile per-packet one-way delay: 68.539 ms
Loss rate: 24.78%
-- Flow 3:
Average throughput: 38.75 Mbit/s
95th percentile per-packet one-way delay: 68.615 ms
Loss rate: 29.75%
```

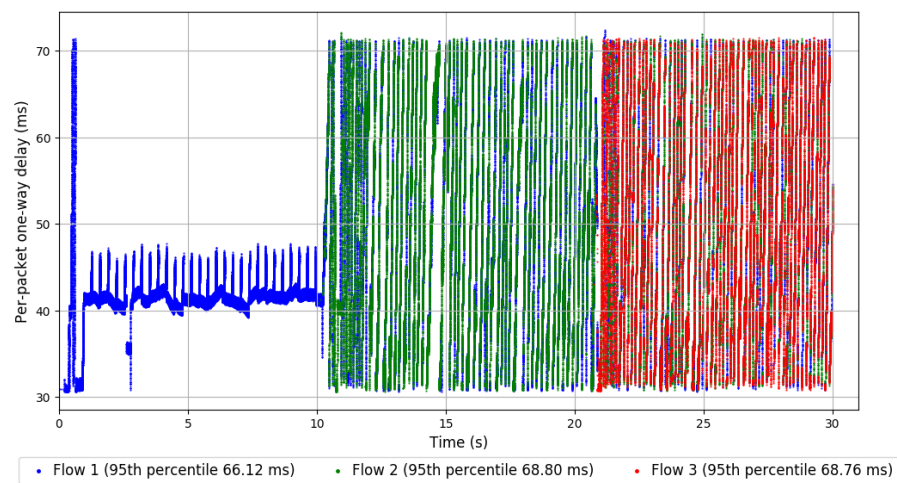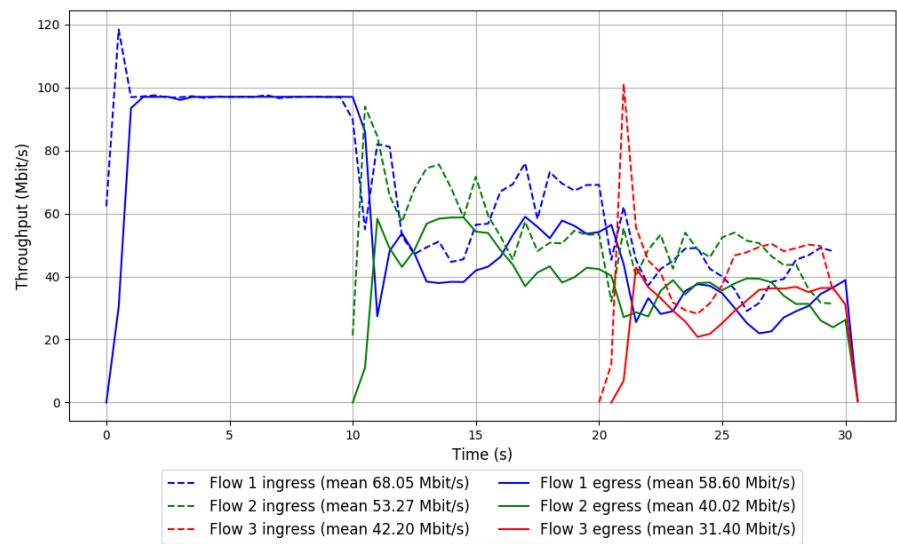Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-02 11:28:19
End at: 2018-10-02 11:28:49
Local clock offset: 1.053 ms
Remote clock offset: -4.689 ms

# Below is generated by plot.py at 2018-10-02 12:11:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.30 Mbit/s
95th percentile per-packet one-way delay: 67.096 ms
Loss rate: 18.45%
-- Flow 1:
Average throughput: 57.28 Mbit/s
95th percentile per-packet one-way delay: 65.888 ms
Loss rate: 13.03%
-- Flow 2:
Average throughput: 41.53 Mbit/s
95th percentile per-packet one-way delay: 68.120 ms
Loss rate: 23.17%
-- Flow 3:
Average throughput: 31.28 Mbit/s
95th percentile per-packet one-way delay: 68.238 ms
Loss rate: 30.91%
```
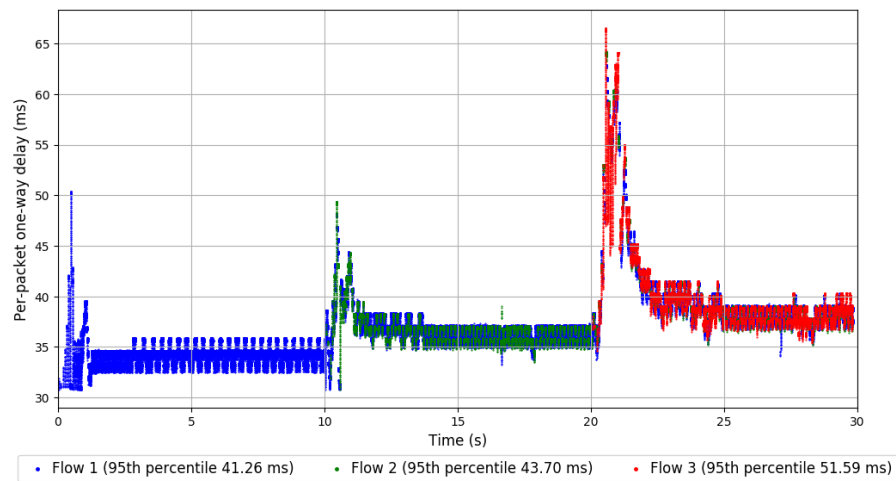
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-10-02 11:52:51
End at: 2018-10-02 11:53:21
Local clock offset: 1.873 ms
Remote clock offset: -2.998 ms


# Below is generated by plot.py at 2018-10-02 12:11:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 67.717 ms
Loss rate: 19.06%
-- Flow 1:
Average throughput: 58.60 Mbit/s
95th percentile per-packet one-way delay: 66.123 ms
Loss rate: 13.81%
-- Flow 2:
Average throughput: 40.02 Mbit/s
95th percentile per-packet one-way delay: 68.803 ms
Loss rate: 24.82%
-- Flow 3:
Average throughput: 31.40 Mbit/s
95th percentile per-packet one-way delay: 68.762 ms
Loss rate: 29.99%
```
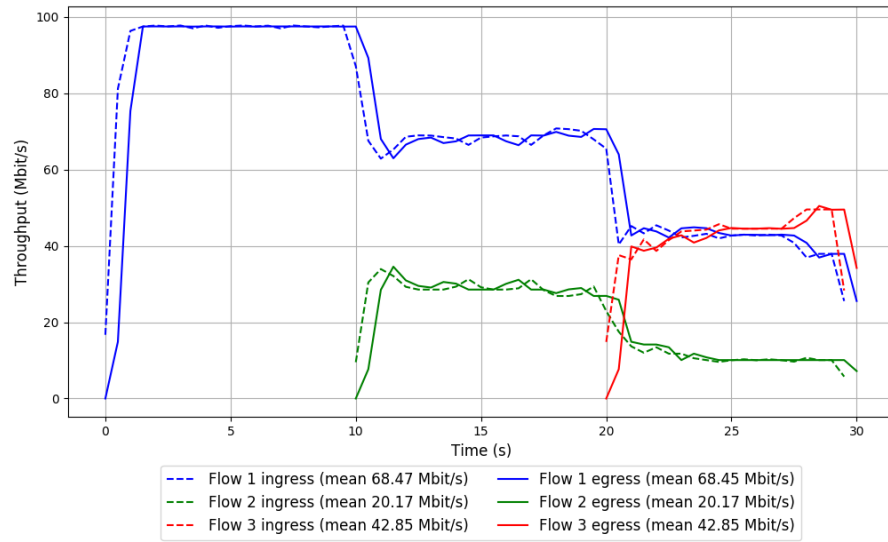
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 68.05 Mbit/s) --- Flow 1 egress (mean 58.60 Mbit/s) ——
Flow 2 ingress (mean 53.27 Mbit/s) --- Flow 2 egress (mean 40.02 Mbit/s) ——
Flow 3 ingress (mean 42.20 Mbit/s) --- Flow 3 egress (mean 31.40 Mbit/s) ——

Flow 1 (95th percentile 66.12 ms)   Flow 2 (95th percentile 68.80 ms)   Flow 3 (95th percentile 68.76 ms)

44

```
Run 1: Statistics of Indigo

Start at: 2018-10-02 10:24:24
End at: 2018-10-02 10:24:54
Local clock offset: -1.446 ms
Remote clock offset: -5.602 ms


# Below is generated by plot.py at 2018-10-02 12:11:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.84 Mbit/s
95th percentile per-packet one-way delay: 43.042 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 68.45 Mbit/s
95th percentile per-packet one-way delay: 41.256 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 20.17 Mbit/s
95th percentile per-packet one-way delay: 43.695 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 42.85 Mbit/s
95th percentile per-packet one-way delay: 51.594 ms
Loss rate: 0.00%
```
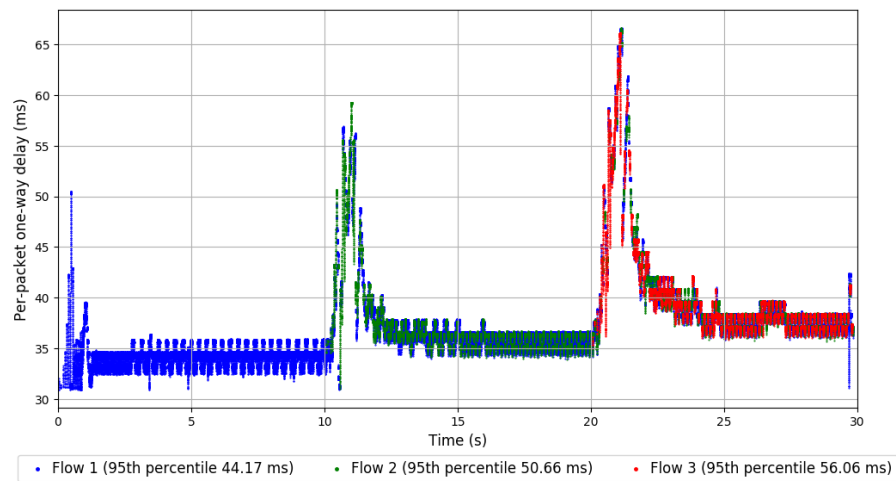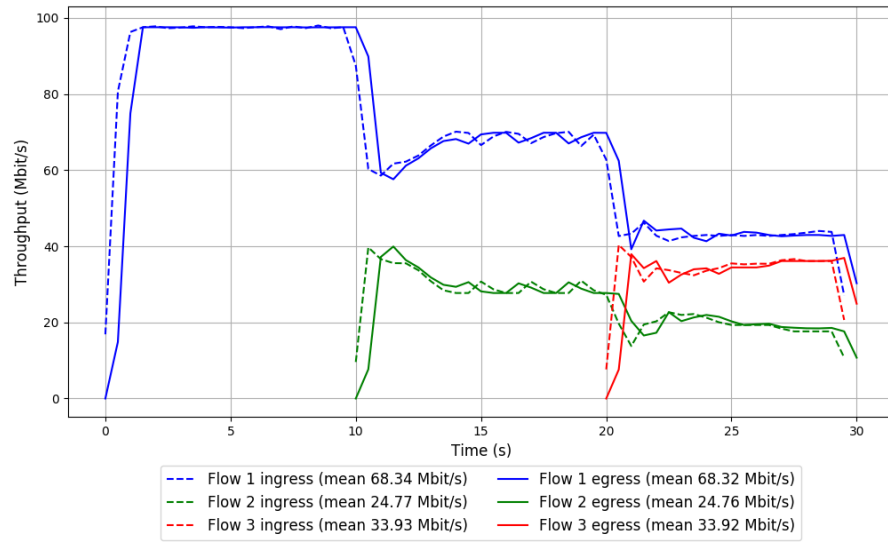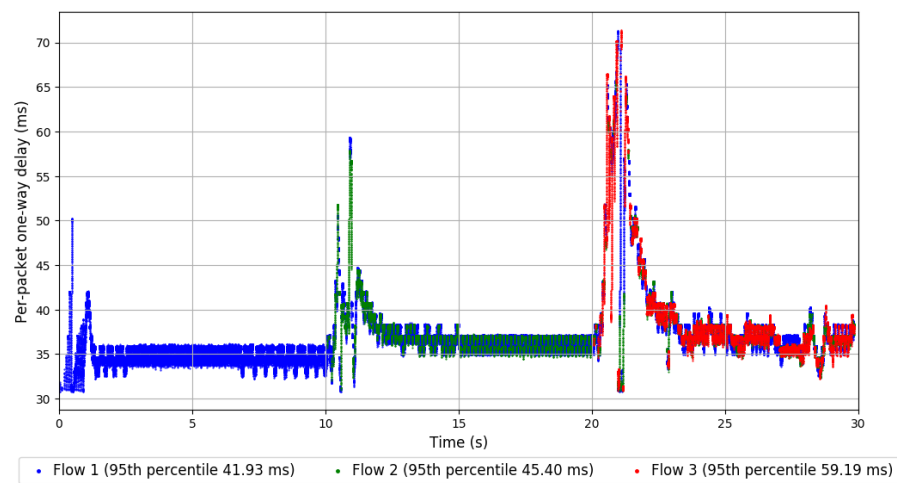
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-02 10:48:55
End at: 2018-10-02 10:49:25
Local clock offset: 1.273 ms
Remote clock offset: -5.52 ms

# Below is generated by plot.py at 2018-10-02 12:11:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 47.134 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 68.32 Mbit/s
95th percentile per-packet one-way delay: 44.173 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.76 Mbit/s
95th percentile per-packet one-way delay: 50.663 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 33.92 Mbit/s
95th percentile per-packet one-way delay: 56.060 ms
Loss rate: 0.00%
```
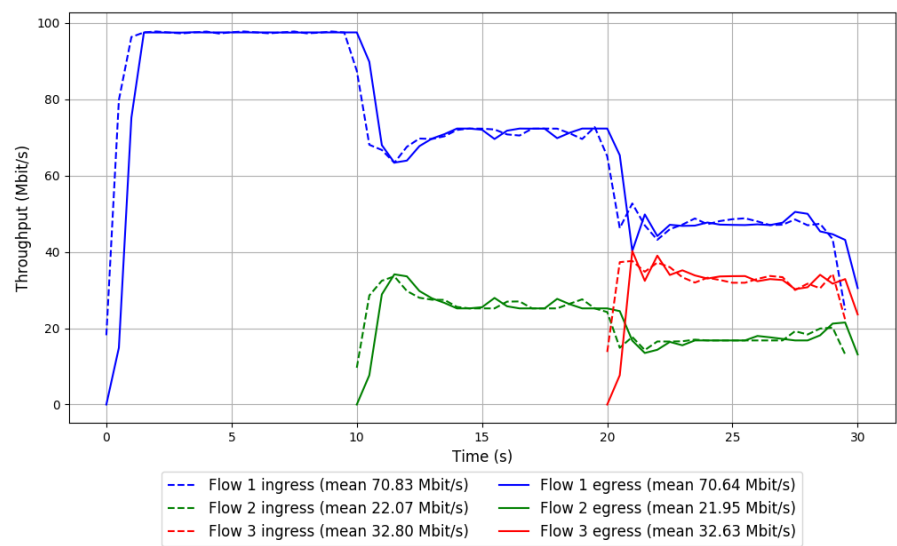
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 68.34 Mbit/s)   Flow 1 egress (mean 68.32 Mbit/s)
Flow 2 ingress (mean 24.77 Mbit/s)   Flow 2 egress (mean 24.76 Mbit/s)
Flow 3 ingress (mean 33.93 Mbit/s)   Flow 3 egress (mean 33.92 Mbit/s)

Flow 1 (95th percentile 44.17 ms)   Flow 2 (95th percentile 50.66 ms)   Flow 3 (95th percentile 56.06 ms)
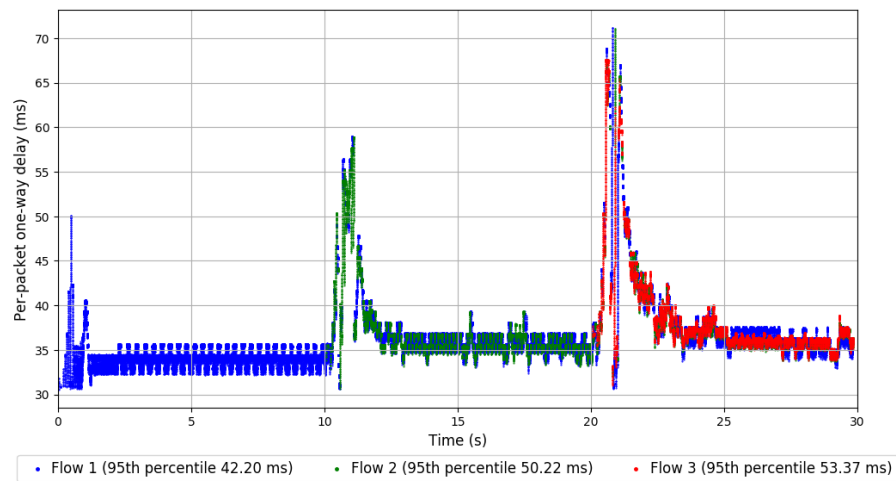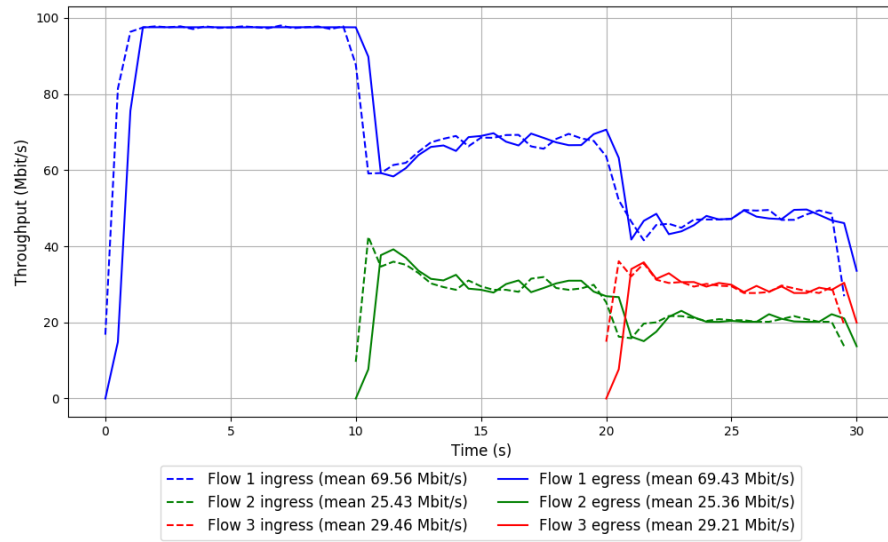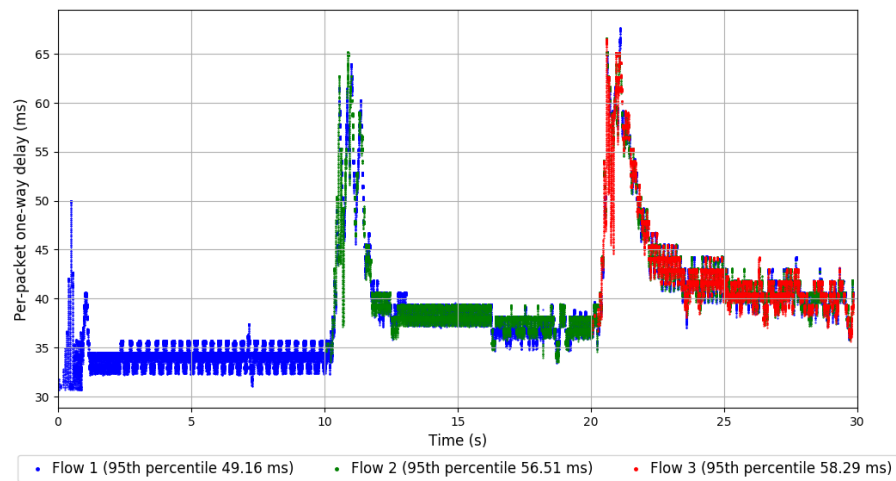
```
Run 3: Statistics of Indigo

Start at: 2018-10-02 11:13:21
End at: 2018-10-02 11:13:51
Local clock offset: 4.269 ms
Remote clock offset: -4.939 ms


# Below is generated by plot.py at 2018-10-02 12:11:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.82 Mbit/s
95th percentile per-packet one-way delay: 44.396 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 70.64 Mbit/s
95th percentile per-packet one-way delay: 41.933 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 21.95 Mbit/s
95th percentile per-packet one-way delay: 45.402 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 32.63 Mbit/s
95th percentile per-packet one-way delay: 59.188 ms
Loss rate: 0.49%
```
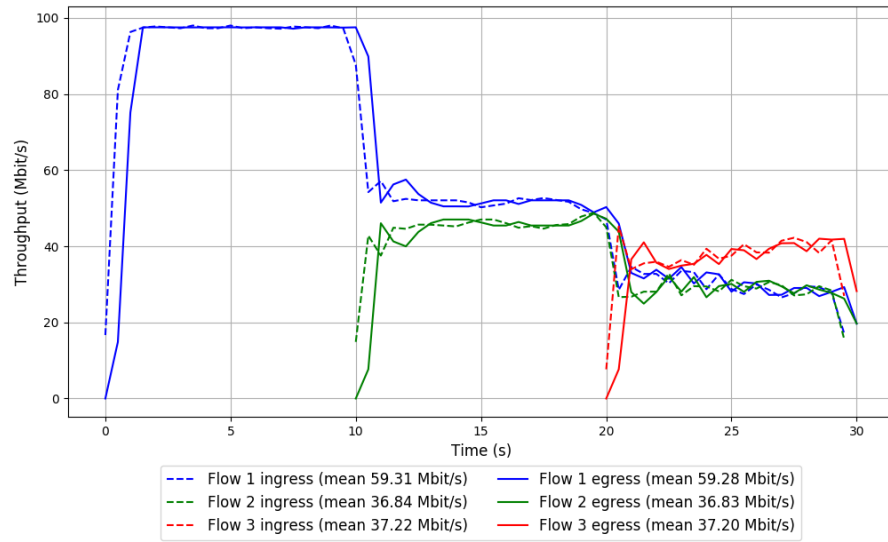
Run 3: Report of Indigo — Data Link

Flow 1 ingress (mean 70.83 Mbit/s) --- Flow 1 egress (mean 70.64 Mbit/s)
Flow 2 ingress (mean 22.07 Mbit/s) --- Flow 2 egress (mean 21.95 Mbit/s)
Flow 3 ingress (mean 32.80 Mbit/s) --- Flow 3 egress (mean 32.63 Mbit/s)

Flow 1 (95th percentile 41.93 ms)   Flow 2 (95th percentile 45.40 ms)   Flow 3 (95th percentile 59.19 ms)

```
Run 4: Statistics of Indigo

Start at: 2018-10-02 11:37:52
End at: 2018-10-02 11:38:22
Local clock offset: 0.251 ms
Remote clock offset: -3.978 ms


# Below is generated by plot.py at 2018-10-02 12:12:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 44.883 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 69.43 Mbit/s
95th percentile per-packet one-way delay: 42.201 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 25.36 Mbit/s
95th percentile per-packet one-way delay: 50.223 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 29.21 Mbit/s
95th percentile per-packet one-way delay: 53.369 ms
Loss rate: 0.84%
```
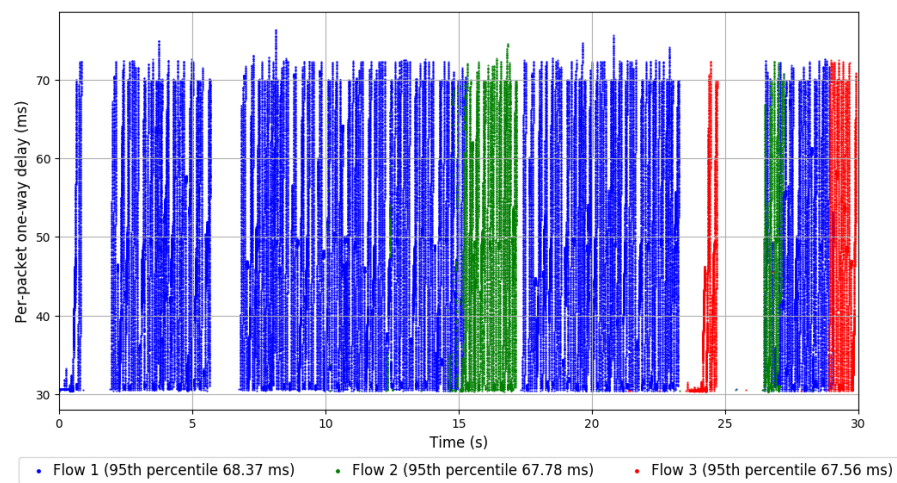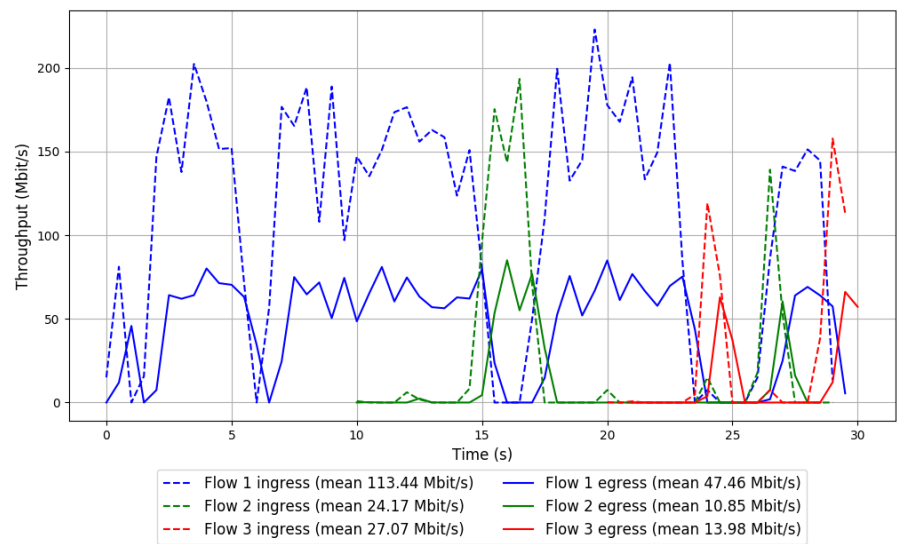
Run 4: Report of Indigo — Data Link

- - - - Flow 1 ingress (mean 69.56 Mbit/s) ——— Flow 1 egress (mean 69.43 Mbit/s)
- - - - Flow 2 ingress (mean 25.43 Mbit/s) ——— Flow 2 egress (mean 25.36 Mbit/s)
- - - - Flow 3 ingress (mean 29.46 Mbit/s) ——— Flow 3 egress (mean 29.21 Mbit/s)

• Flow 1 (95th percentile 42.20 ms)   • Flow 2 (95th percentile 50.22 ms)   • Flow 3 (95th percentile 53.37 ms)

```
Run 5: Statistics of Indigo

Start at: 2018-10-02 12:02:21
End at: 2018-10-02 12:02:51
Local clock offset: 3.093 ms
Remote clock offset: -2.303 ms


# Below is generated by plot.py at 2018-10-02 12:12:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.86 Mbit/s
95th percentile per-packet one-way delay: 53.838 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 59.28 Mbit/s
95th percentile per-packet one-way delay: 49.158 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 36.83 Mbit/s
95th percentile per-packet one-way delay: 56.507 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 37.20 Mbit/s
95th percentile per-packet one-way delay: 58.288 ms
Loss rate: 0.01%
```
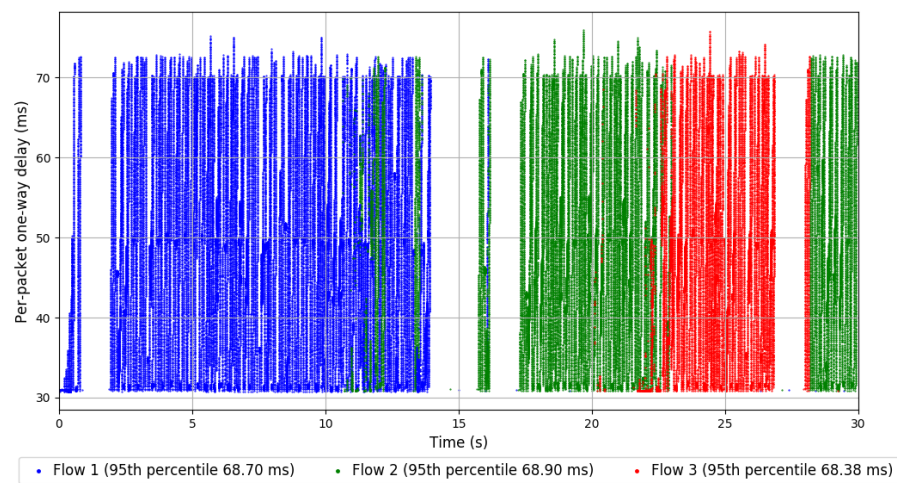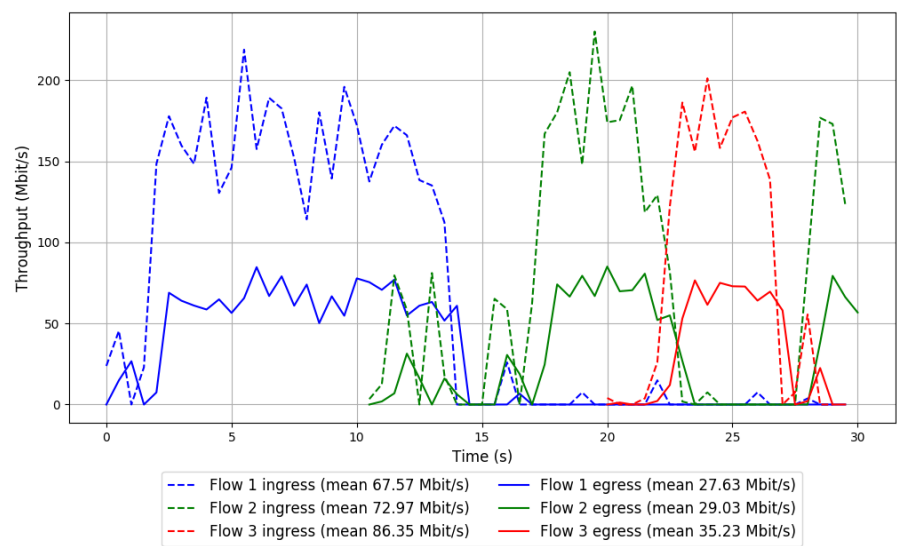
Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-02 10:05:25
End at: 2018-10-02 10:05:55
Local clock offset: -3.225 ms
Remote clock offset: -5.668 ms


# Below is generated by plot.py at 2018-10-02 12:12:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.70 Mbit/s
95th percentile per-packet one-way delay: 68.276 ms
Loss rate: 57.86%
-- Flow 1:
Average throughput: 47.46 Mbit/s
95th percentile per-packet one-way delay: 68.371 ms
Loss rate: 58.24%
-- Flow 2:
Average throughput: 10.85 Mbit/s
95th percentile per-packet one-way delay: 67.777 ms
Loss rate: 57.51%
-- Flow 3:
Average throughput: 13.98 Mbit/s
95th percentile per-packet one-way delay: 67.556 ms
Loss rate: 53.71%
```
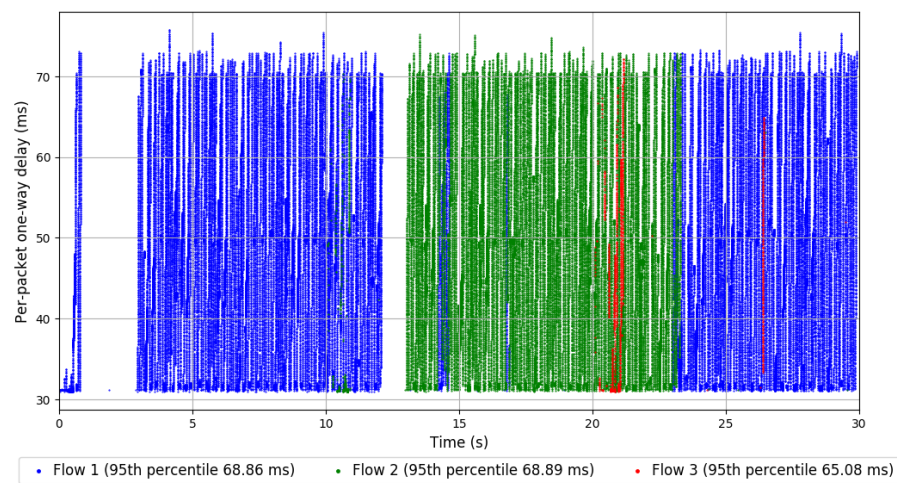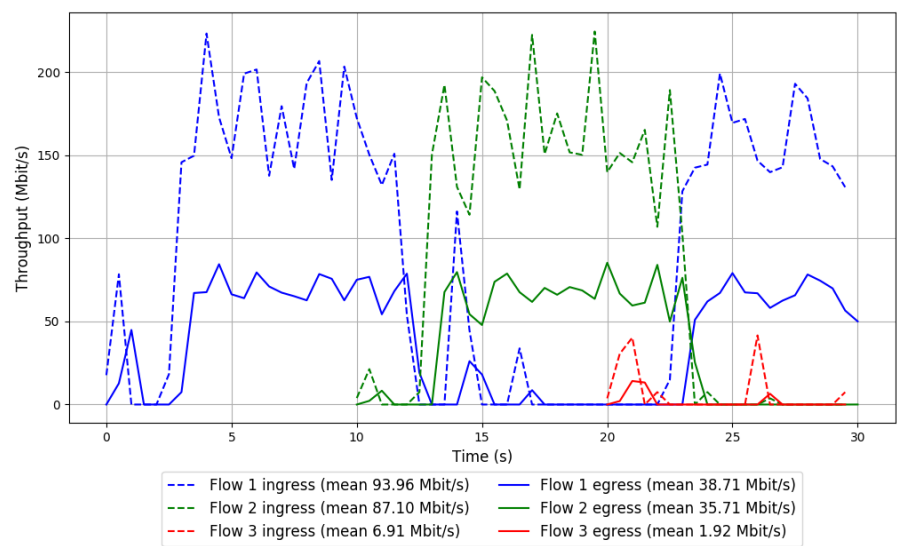
Run 1: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-02 10:29:52
End at: 2018-10-02 10:30:22
Local clock offset: -0.57 ms
Remote clock offset: -5.592 ms

# Below is generated by plot.py at 2018-10-02 12:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.69 Mbit/s
95th percentile per-packet one-way delay: 68.726 ms
Loss rate: 59.50%
-- Flow 1:
Average throughput: 27.63 Mbit/s
95th percentile per-packet one-way delay: 68.696 ms
Loss rate: 59.11%
-- Flow 2:
Average throughput: 29.03 Mbit/s
95th percentile per-packet one-way delay: 68.901 ms
Loss rate: 60.21%
-- Flow 3:
Average throughput: 35.23 Mbit/s
95th percentile per-packet one-way delay: 68.378 ms
Loss rate: 59.25%
```

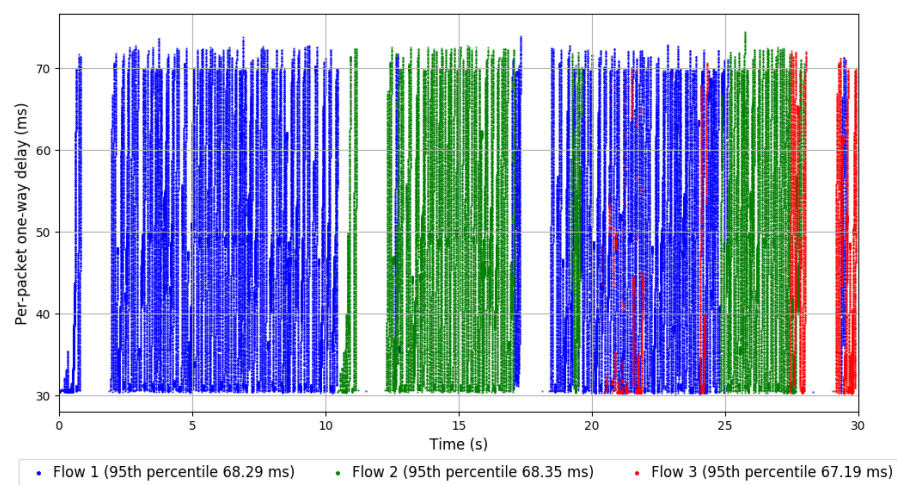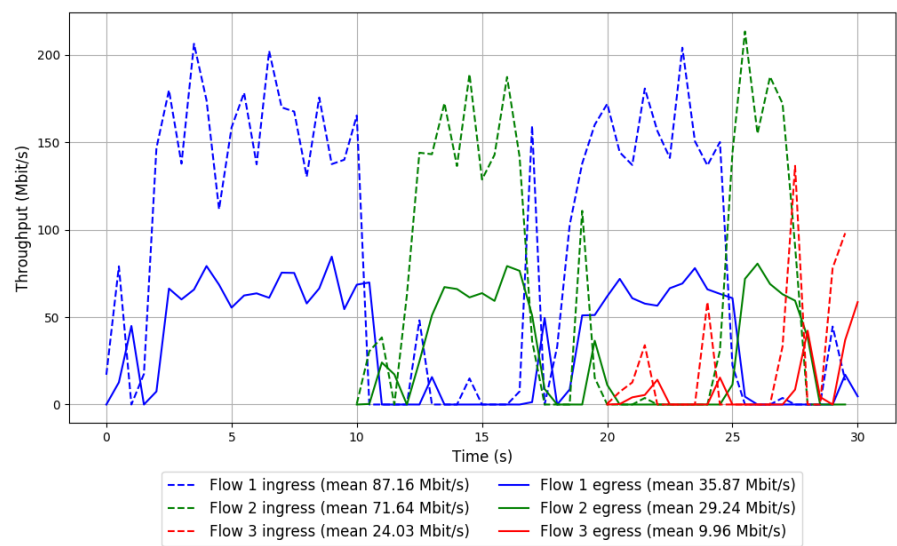Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 67.57 Mbit/s) --- Flow 1 egress (mean 27.63 Mbit/s)
Flow 2 ingress (mean 72.97 Mbit/s) --- Flow 2 egress (mean 29.03 Mbit/s)
Flow 3 ingress (mean 86.35 Mbit/s) --- Flow 3 egress (mean 35.23 Mbit/s)

Flow 1 (95th percentile 68.70 ms)   Flow 2 (95th percentile 68.90 ms)   Flow 3 (95th percentile 68.38 ms)

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

Start at: 2018-10-02 10:54:23
End at: 2018-10-02 10:54:53
Local clock offset: 2.457 ms
Remote clock offset: -5.255 ms


# Below is generated by plot.py at 2018-10-02 12:12:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.59 Mbit/s
95th percentile per-packet one-way delay: 68.856 ms
Loss rate: 59.06%
-- Flow 1:
Average throughput: 38.71 Mbit/s
95th percentile per-packet one-way delay: 68.857 ms
Loss rate: 58.76%
-- Flow 2:
Average throughput: 35.71 Mbit/s
95th percentile per-packet one-way delay: 68.888 ms
Loss rate: 59.04%
-- Flow 3:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 65.079 ms
Loss rate: 72.52%
```

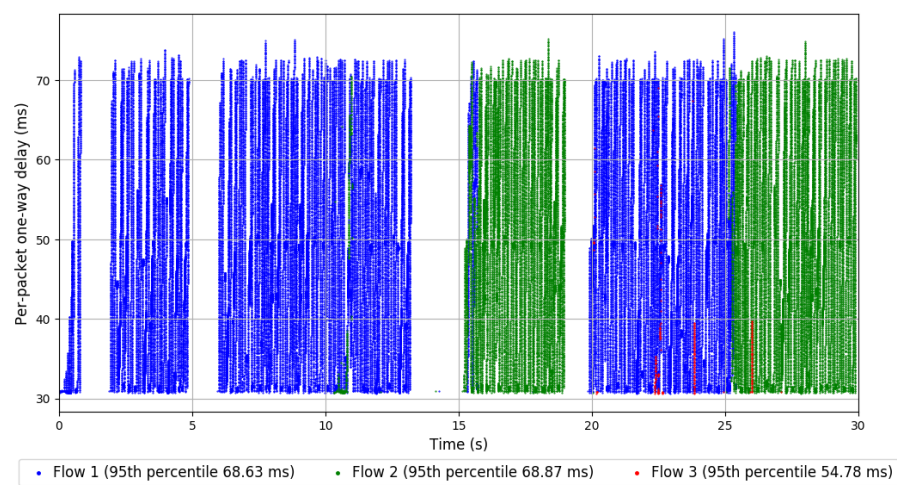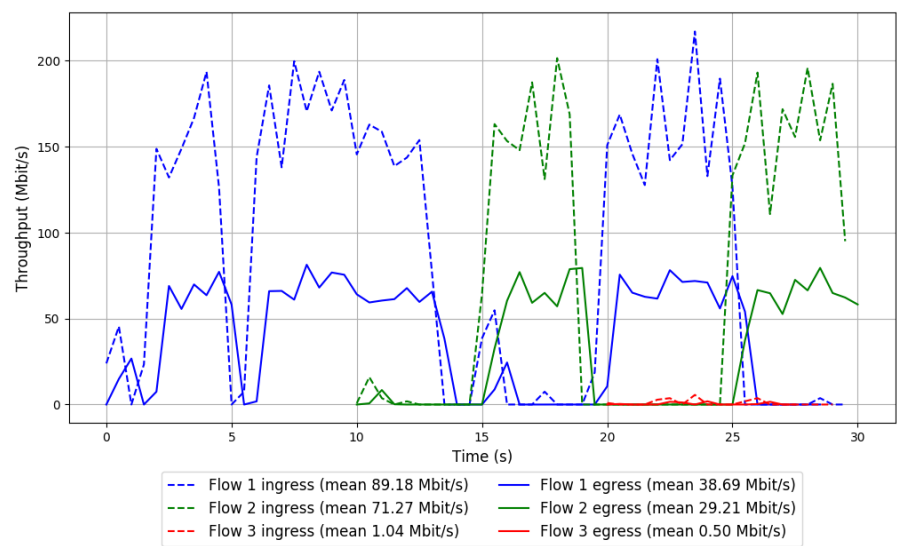Run 3: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 93.96 Mbit/s)   Flow 1 egress (mean 38.71 Mbit/s)
Flow 2 ingress (mean 87.10 Mbit/s)   Flow 2 egress (mean 35.71 Mbit/s)
Flow 3 ingress (mean 6.91 Mbit/s)   Flow 3 egress (mean 1.92 Mbit/s)

Flow 1 (95th percentile 68.86 ms)   Flow 2 (95th percentile 68.89 ms)   Flow 3 (95th percentile 65.08 ms)

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

Start at: 2018-10-02 11:18:48
End at: 2018-10-02 11:19:18
Local clock offset: 3.209 ms
Remote clock offset: -5.025 ms


# Below is generated by plot.py at 2018-10-02 12:12:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.84 Mbit/s
95th percentile per-packet one-way delay: 68.272 ms
Loss rate: 59.01%
-- Flow 1:
Average throughput: 35.87 Mbit/s
95th percentile per-packet one-way delay: 68.289 ms
Loss rate: 58.94%
-- Flow 2:
Average throughput: 29.24 Mbit/s
95th percentile per-packet one-way delay: 68.351 ms
Loss rate: 59.21%
-- Flow 3:
Average throughput: 9.96 Mbit/s
95th percentile per-packet one-way delay: 67.190 ms
Loss rate: 58.57%
```

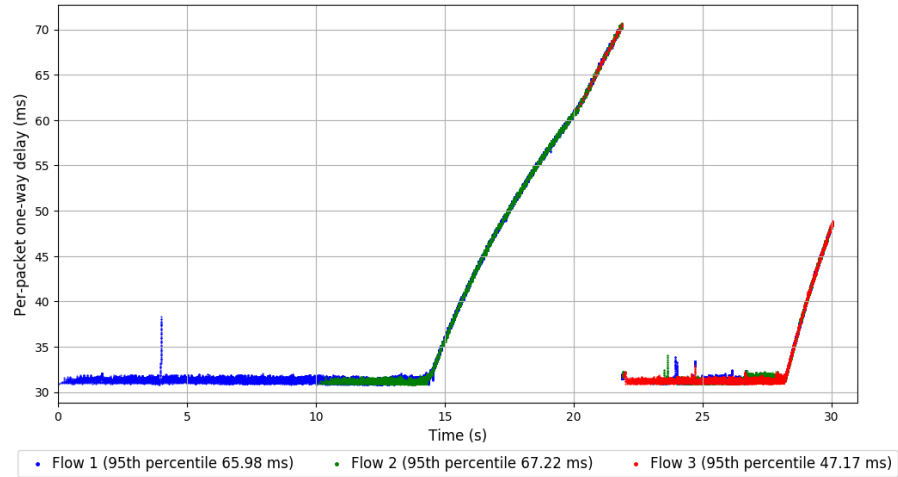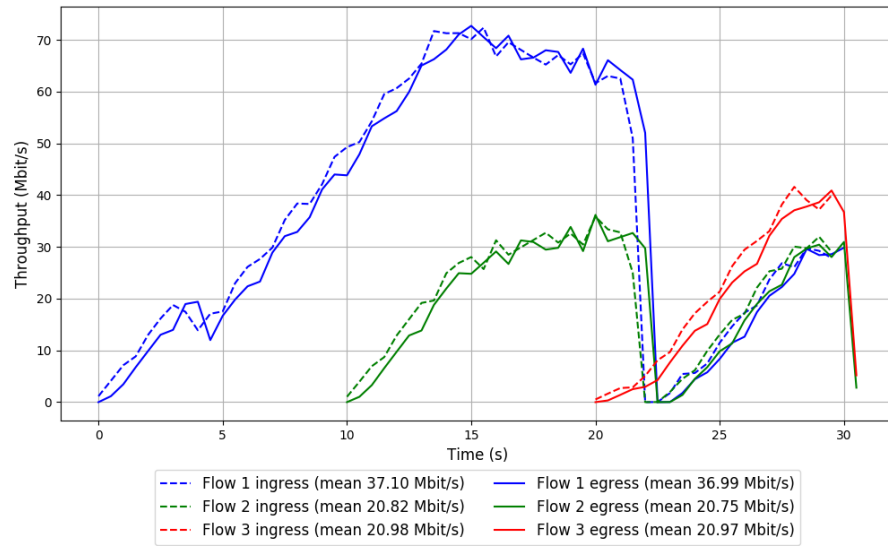Run 4: Report of Indigo-96d2da3 — Data Link
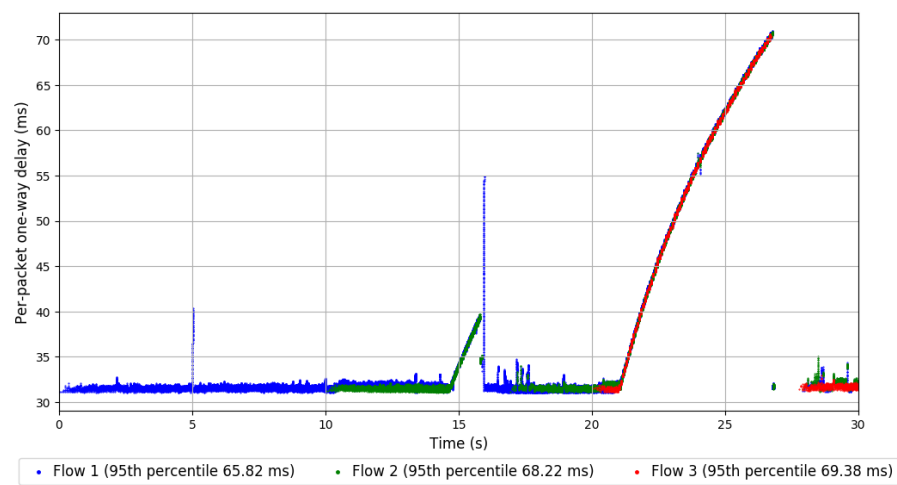
```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-02 11:43:19
End at: 2018-10-02 11:43:49
Local clock offset: 0.008 ms
Remote clock offset: -3.639 ms


# Below is generated by plot.py at 2018-10-02 12:12:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 68.694 ms
Loss rate: 58.47%
-- Flow 1:
Average throughput: 38.69 Mbit/s
95th percentile per-packet one-way delay: 68.633 ms
Loss rate: 58.19%
-- Flow 2:
Average throughput: 29.21 Mbit/s
95th percentile per-packet one-way delay: 68.870 ms
Loss rate: 58.97%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 54.780 ms
Loss rate: 62.65%
```

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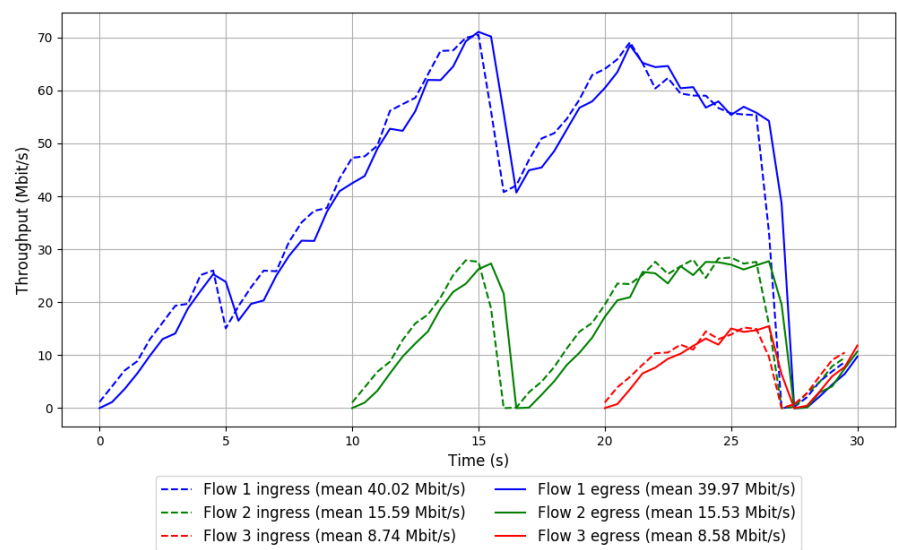

- Flow 1 ingress (mean 89.18 Mbit/s) --- Flow 1 egress (mean 38.69 Mbit/s)
- Flow 2 ingress (mean 71.27 Mbit/s) --- Flow 2 egress (mean 29.21 Mbit/s)
- Flow 3 ingress (mean 1.04 Mbit/s) --- Flow 3 egress (mean 0.50 Mbit/s)

- Flow 1 (95th percentile 68.63 ms)   • Flow 2 (95th percentile 68.87 ms)   • Flow 3 (95th percentile 54.78 ms)
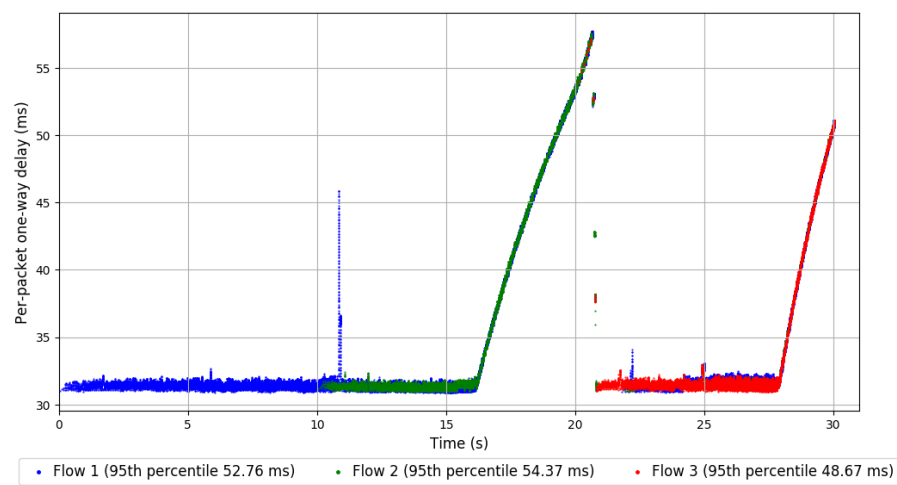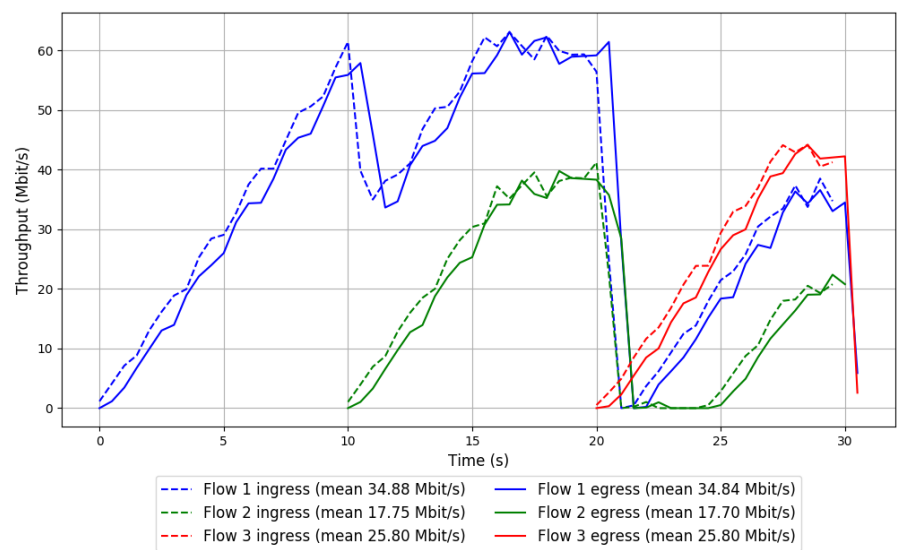
```
Run 1: Statistics of LEDBAT

Start at: 2018-10-02 10:23:03
End at: 2018-10-02 10:23:33
Local clock offset: -1.706 ms
Remote clock offset: -5.6 ms


# Below is generated by plot.py at 2018-10-02 12:12:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.70 Mbit/s
95th percentile per-packet one-way delay: 65.963 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 36.99 Mbit/s
95th percentile per-packet one-way delay: 65.976 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 20.75 Mbit/s
95th percentile per-packet one-way delay: 67.221 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 20.97 Mbit/s
95th percentile per-packet one-way delay: 47.175 ms
Loss rate: 0.14%
```
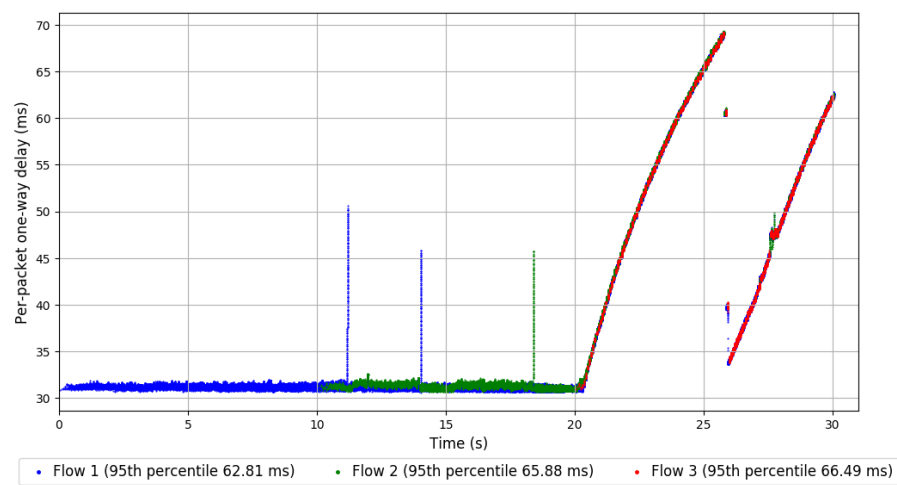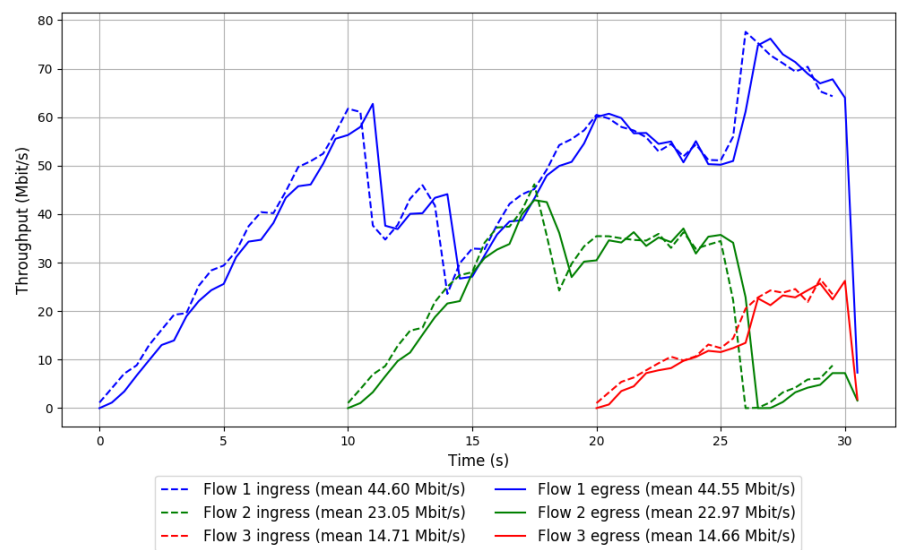
Run 1: Report of LEDBAT — Data Link

- - - Flow 1 ingress (mean 37.10 Mbit/s)   —— Flow 1 egress (mean 36.99 Mbit/s)
- - - Flow 2 ingress (mean 20.82 Mbit/s)   —— Flow 2 egress (mean 20.75 Mbit/s)
- - - Flow 3 ingress (mean 20.98 Mbit/s)   —— Flow 3 egress (mean 20.97 Mbit/s)

- Flow 1 (95th percentile 65.98 ms)   • Flow 2 (95th percentile 67.22 ms)   • Flow 3 (95th percentile 47.17 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-02 10:47:33
End at: 2018-10-02 10:48:03
Local clock offset: 0.803 ms
Remote clock offset: -5.483 ms


# Below is generated by plot.py at 2018-10-02 12:12:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.14 Mbit/s
95th percentile per-packet one-way delay: 66.970 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 65.824 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 15.53 Mbit/s
95th percentile per-packet one-way delay: 68.220 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 69.379 ms
Loss rate: 1.88%
```
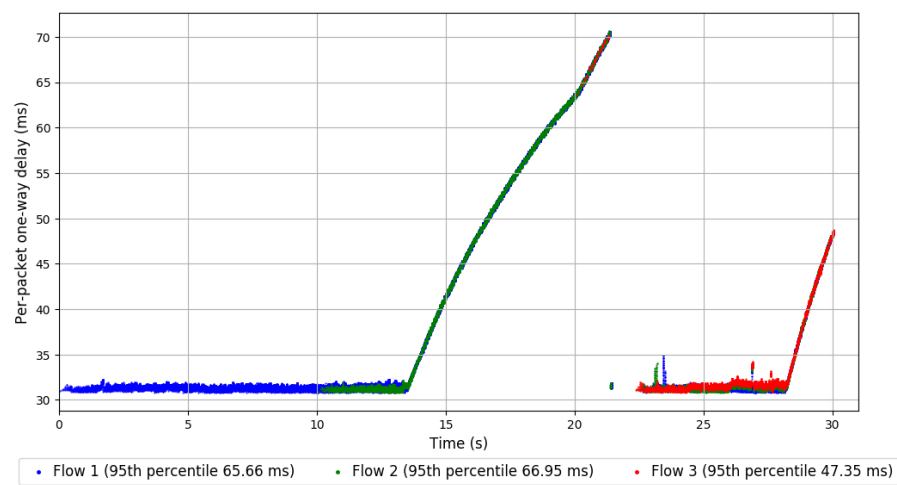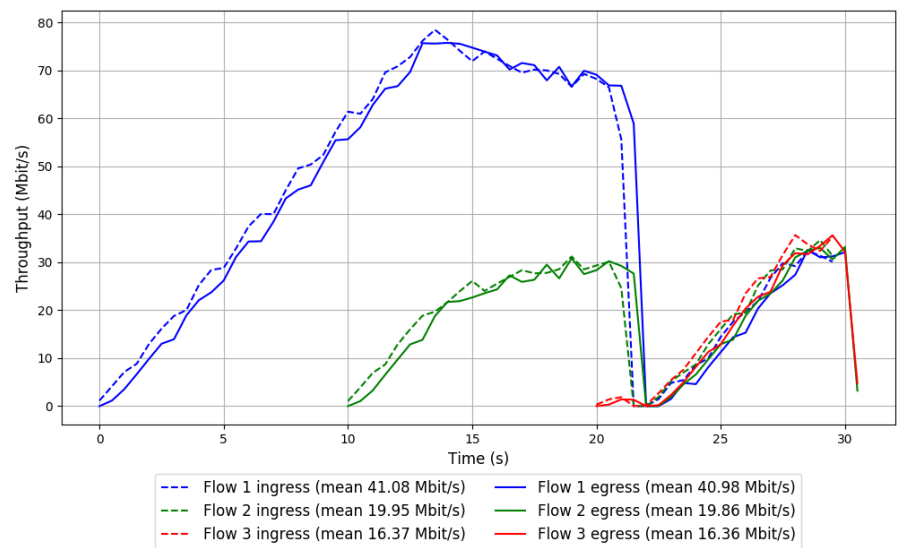
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-02 11:12:00
End at: 2018-10-02 11:12:30
Local clock offset: 4.184 ms
Remote clock offset: -4.918 ms


# Below is generated by plot.py at 2018-10-02 12:12:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.17 Mbit/s
95th percentile per-packet one-way delay: 52.819 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 34.84 Mbit/s
95th percentile per-packet one-way delay: 52.760 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 17.70 Mbit/s
95th percentile per-packet one-way delay: 54.373 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 25.80 Mbit/s
95th percentile per-packet one-way delay: 48.672 ms
Loss rate: 0.00%
```
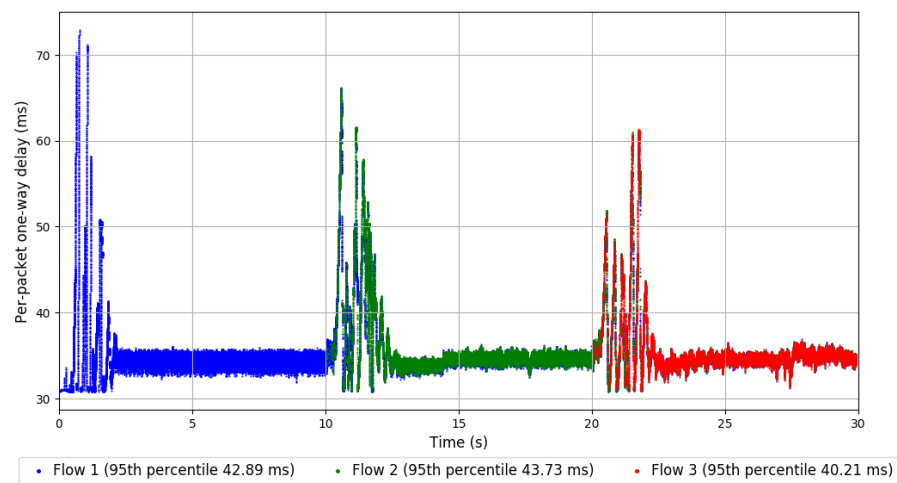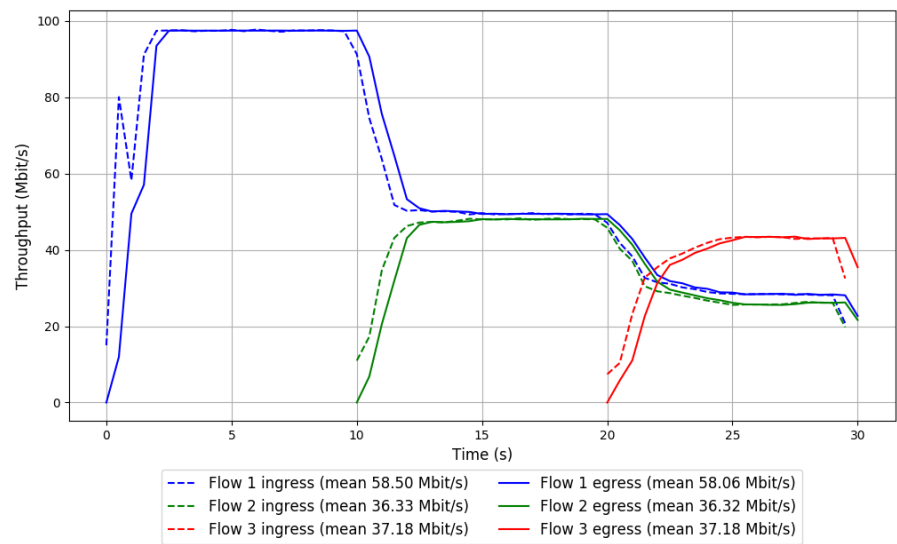
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 34.88 Mbit/s) ---- Flow 1 egress (mean 34.84 Mbit/s)
Flow 2 ingress (mean 17.75 Mbit/s) ---- Flow 2 egress (mean 17.70 Mbit/s)
Flow 3 ingress (mean 25.80 Mbit/s) ---- Flow 3 egress (mean 25.80 Mbit/s)

Flow 1 (95th percentile 52.76 ms)   Flow 2 (95th percentile 54.37 ms)   Flow 3 (95th percentile 48.67 ms)

70

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-02 11:36:30
End at: 2018-10-02 11:37:00
Local clock offset: 0.327 ms
Remote clock offset: -4.045 ms


# Below is generated by plot.py at 2018-10-02 12:13:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.71 Mbit/s
95th percentile per-packet one-way delay: 64.374 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 44.55 Mbit/s
95th percentile per-packet one-way delay: 62.808 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 22.97 Mbit/s
95th percentile per-packet one-way delay: 65.878 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 14.66 Mbit/s
95th percentile per-packet one-way delay: 66.489 ms
Loss rate: 0.00%
```
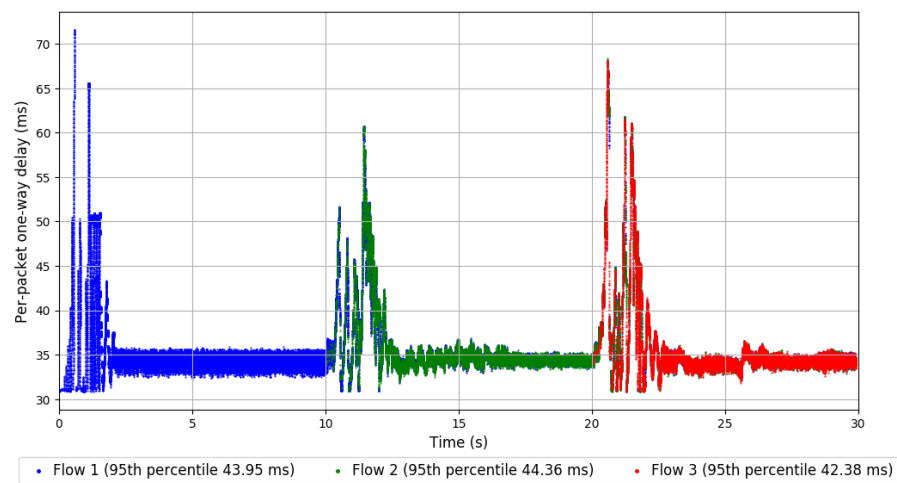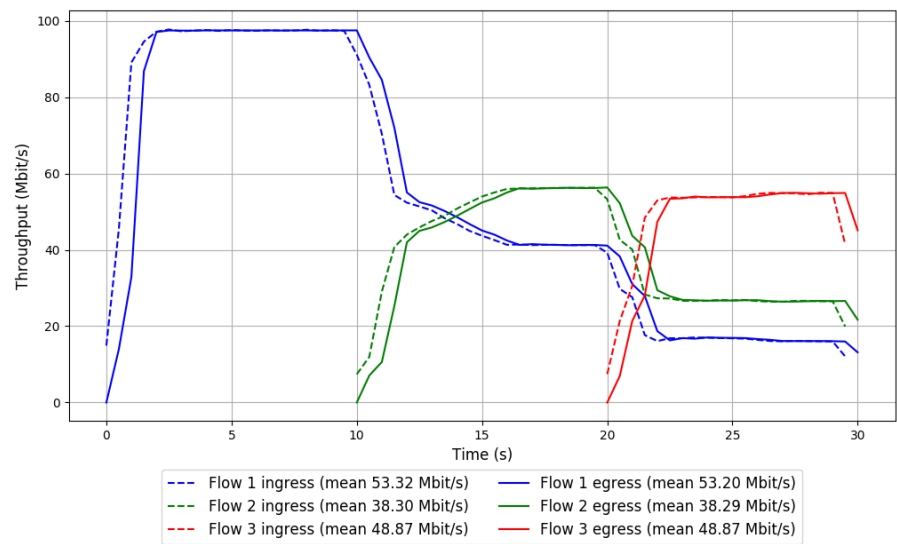
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-02 12:00:59
End at: 2018-10-02 12:01:29
Local clock offset: 2.978 ms
Remote clock offset: -2.341 ms


# Below is generated by plot.py at 2018-10-02 12:13:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.57 Mbit/s
95th percentile per-packet one-way delay: 65.670 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 40.98 Mbit/s
95th percentile per-packet one-way delay: 65.655 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 19.86 Mbit/s
95th percentile per-packet one-way delay: 66.946 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 16.36 Mbit/s
95th percentile per-packet one-way delay: 47.352 ms
Loss rate: 0.17%
```

Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 41.08 Mbit/s) --- Flow 1 egress (mean 40.98 Mbit/s)
Flow 2 ingress (mean 19.95 Mbit/s) --- Flow 2 egress (mean 19.86 Mbit/s)
Flow 3 ingress (mean 16.37 Mbit/s) --- Flow 3 egress (mean 16.36 Mbit/s)

Flow 1 (95th percentile 65.66 ms)   Flow 2 (95th percentile 66.95 ms)   Flow 3 (95th percentile 47.35 ms)
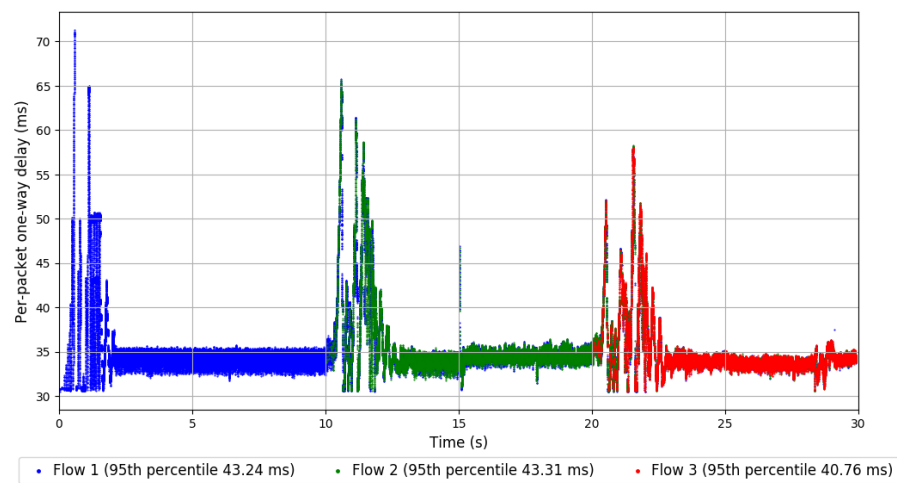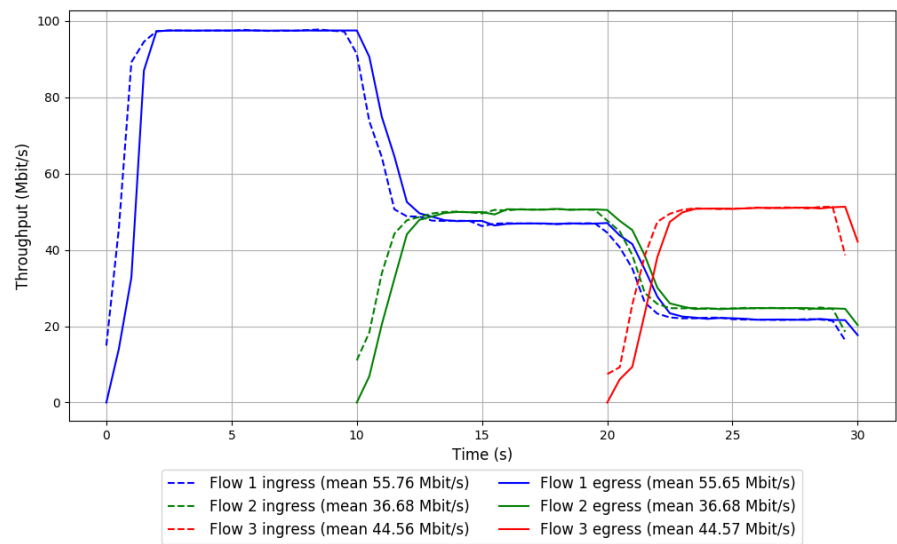
74

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-02 10:28:29
End at: 2018-10-02 10:28:59
Local clock offset: -0.743 ms
Remote clock offset: -5.527 ms

# Below is generated by plot.py at 2018-10-02 12:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.46 Mbit/s
95th percentile per-packet one-way delay: 42.820 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 58.06 Mbit/s
95th percentile per-packet one-way delay: 42.894 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 36.32 Mbit/s
95th percentile per-packet one-way delay: 43.733 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 40.209 ms
Loss rate: 0.00%
```

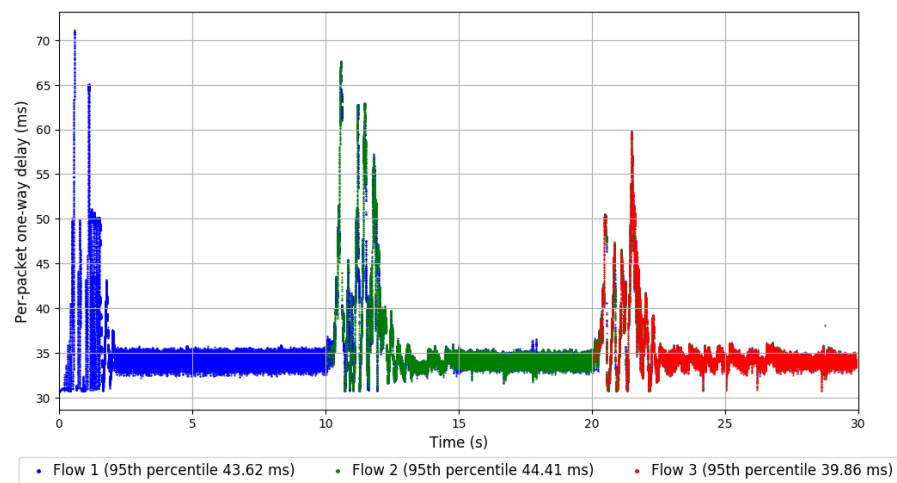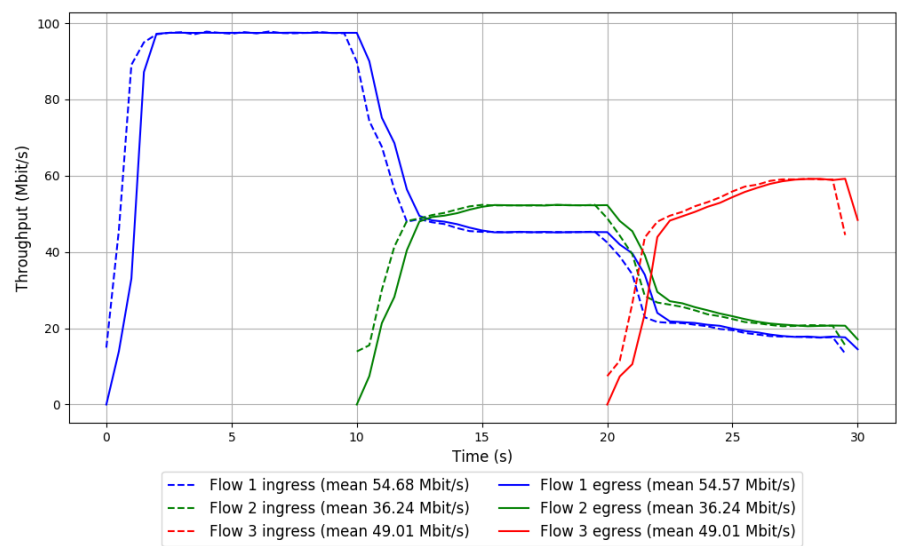Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-02 10:53:00
End at: 2018-10-02 10:53:30
Local clock offset: 2.211 ms
Remote clock offset: -5.432 ms

# Below is generated by plot.py at 2018-10-02 12:13:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.77 Mbit/s
95th percentile per-packet one-way delay: 43.964 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 53.20 Mbit/s
95th percentile per-packet one-way delay: 43.954 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 38.29 Mbit/s
95th percentile per-packet one-way delay: 44.364 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 48.87 Mbit/s
95th percentile per-packet one-way delay: 42.382 ms
Loss rate: 0.00%
```

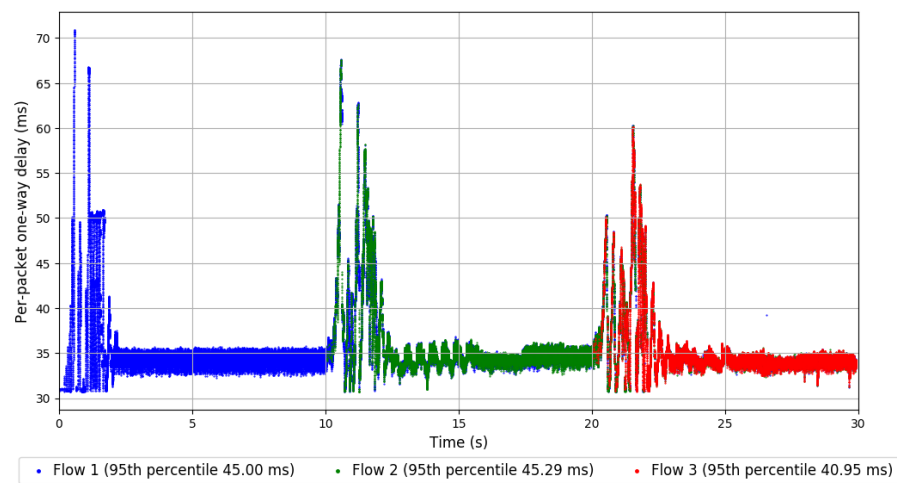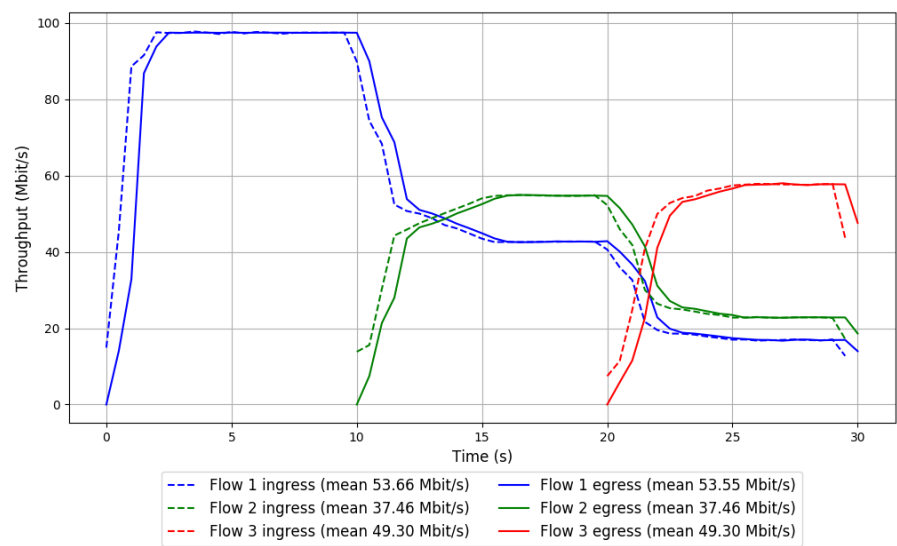Run 2: Report of Indigo-Muses — Data Link

- - - Flow 1 ingress (mean 53.32 Mbit/s) —— Flow 1 egress (mean 53.20 Mbit/s)
- - - Flow 2 ingress (mean 38.30 Mbit/s) —— Flow 2 egress (mean 38.29 Mbit/s)
- - - Flow 3 ingress (mean 48.87 Mbit/s) —— Flow 3 egress (mean 48.87 Mbit/s)

• Flow 1 (95th percentile 43.95 ms) • Flow 2 (95th percentile 44.36 ms) • Flow 3 (95th percentile 42.38 ms)

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-02 11:17:25
End at: 2018-10-02 11:17:55
Local clock offset: 3.698 ms
Remote clock offset: -4.837 ms


# Below is generated by plot.py at 2018-10-02 12:13:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.73 Mbit/s
95th percentile per-packet one-way delay: 42.896 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 55.65 Mbit/s
95th percentile per-packet one-way delay: 43.240 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.68 Mbit/s
95th percentile per-packet one-way delay: 43.307 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 44.57 Mbit/s
95th percentile per-packet one-way delay: 40.763 ms
Loss rate: 0.00%
```
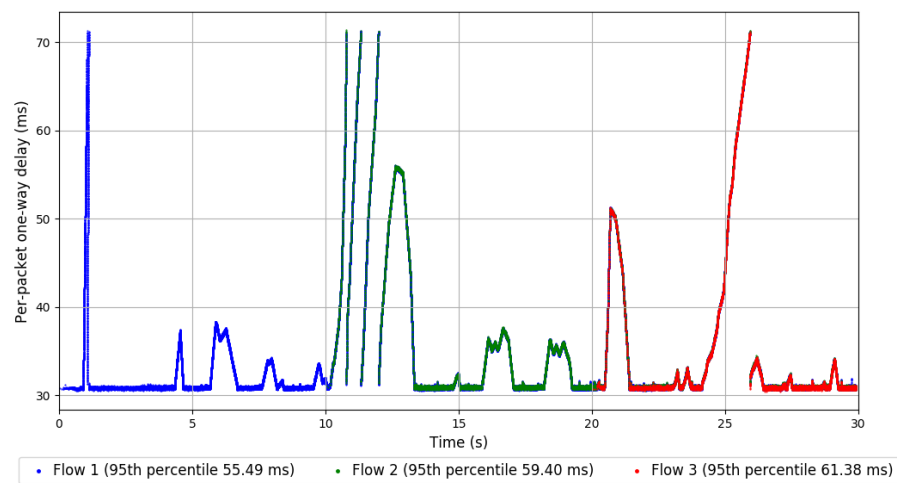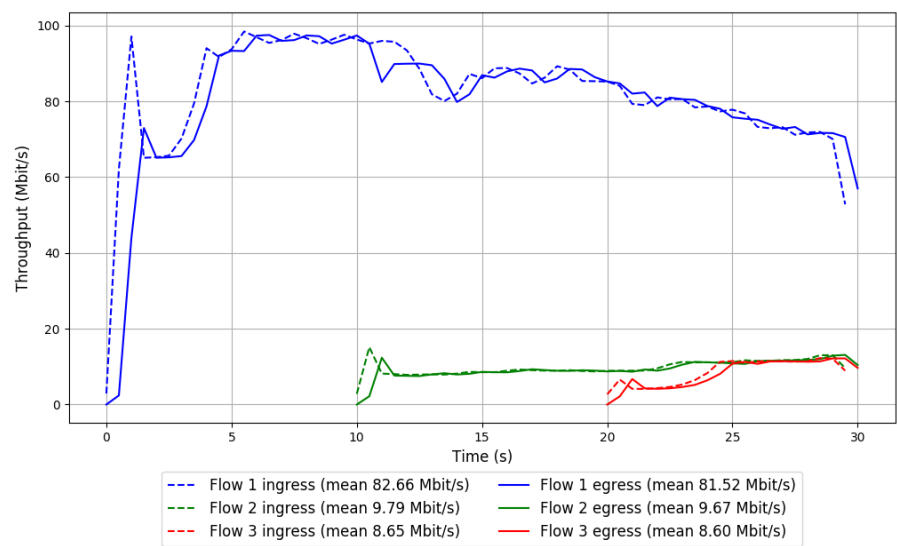
Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 55.76 Mbit/s) --- Flow 1 egress (mean 55.65 Mbit/s)
Flow 2 ingress (mean 36.68 Mbit/s) --- Flow 2 egress (mean 36.68 Mbit/s)
Flow 3 ingress (mean 44.56 Mbit/s) --- Flow 3 egress (mean 44.57 Mbit/s)

Flow 1 (95th percentile 43.24 ms) Flow 2 (95th percentile 43.31 ms) Flow 3 (95th percentile 40.76 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-02 11:41:57
End at: 2018-10-02 11:42:27
Local clock offset: 0.05 ms
Remote clock offset: -3.725 ms


# Below is generated by plot.py at 2018-10-02 12:13:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.82 Mbit/s
95th percentile per-packet one-way delay: 43.206 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 54.57 Mbit/s
95th percentile per-packet one-way delay: 43.625 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.24 Mbit/s
95th percentile per-packet one-way delay: 44.410 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.01 Mbit/s
95th percentile per-packet one-way delay: 39.856 ms
Loss rate: 0.00%
```

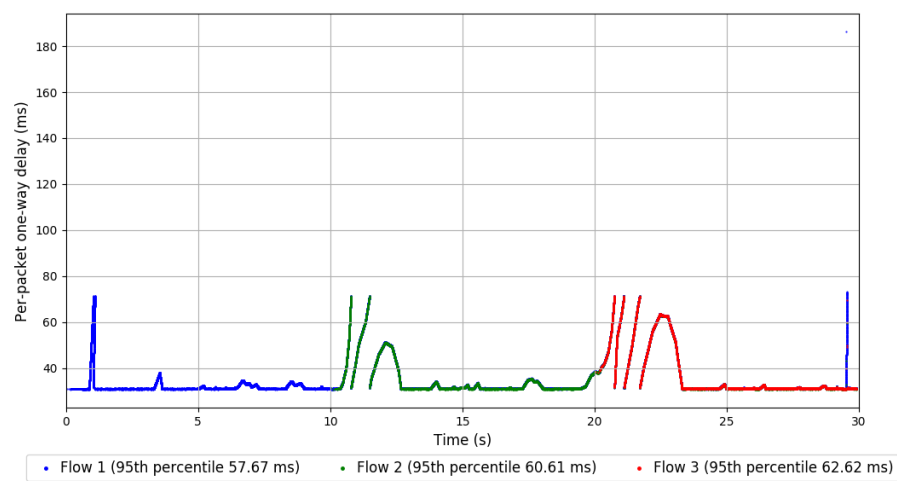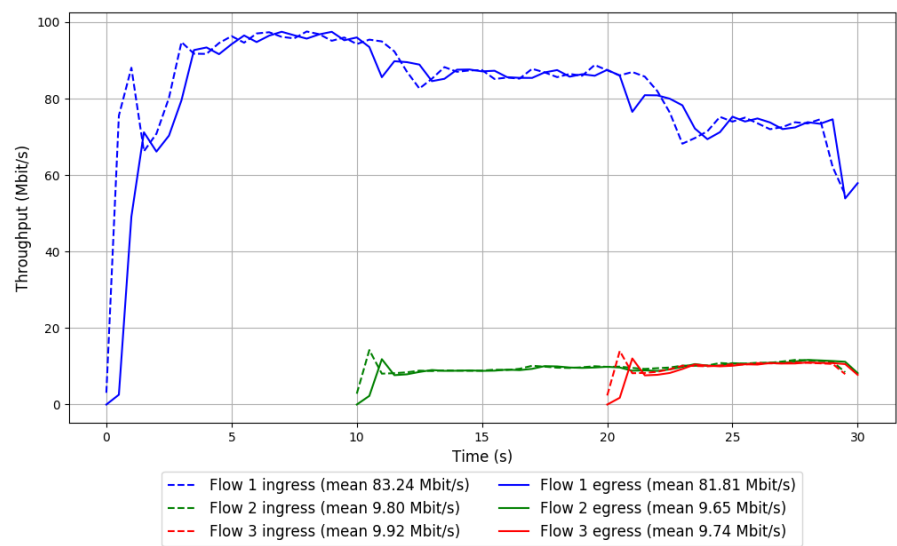Run 4: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 54.68 Mbit/s) --- Flow 1 egress (mean 54.57 Mbit/s)
Flow 2 ingress (mean 36.24 Mbit/s) --- Flow 2 egress (mean 36.24 Mbit/s)
Flow 3 ingress (mean 49.01 Mbit/s) --- Flow 3 egress (mean 49.01 Mbit/s)

Flow 1 (95th percentile 43.62 ms)   Flow 2 (95th percentile 44.41 ms)   Flow 3 (95th percentile 39.86 ms)

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-02 12:06:26
End at: 2018-10-02 12:06:56
Local clock offset: 3.398 ms
Remote clock offset: -1.983 ms


# Below is generated by plot.py at 2018-10-02 12:14:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.71 Mbit/s
95th percentile per-packet one-way delay: 44.425 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 53.55 Mbit/s
95th percentile per-packet one-way delay: 45.002 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 37.46 Mbit/s
95th percentile per-packet one-way delay: 45.293 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.30 Mbit/s
95th percentile per-packet one-way delay: 40.953 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 53.66 Mbit/s) --- Flow 1 egress (mean 53.55 Mbit/s)
Flow 2 ingress (mean 37.46 Mbit/s) --- Flow 2 egress (mean 37.46 Mbit/s)
Flow 3 ingress (mean 49.30 Mbit/s) --- Flow 3 egress (mean 49.30 Mbit/s)

Flow 1 (95th percentile 45.00 ms)   Flow 2 (95th percentile 45.29 ms)   Flow 3 (95th percentile 40.95 ms)
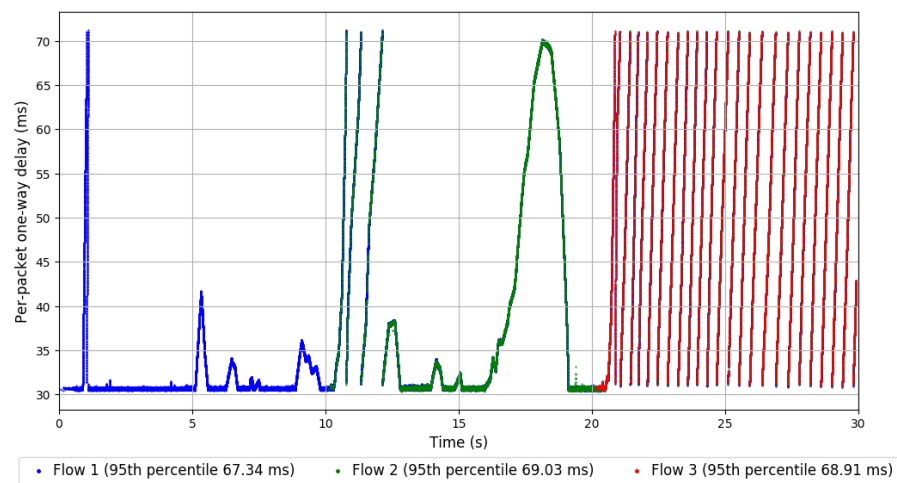
```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-02 10:10:52
End at: 2018-10-02 10:11:22
Local clock offset: -3.891 ms
Remote clock offset: -5.589 ms


# Below is generated by plot.py at 2018-10-02 12:14:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.78 Mbit/s
95th percentile per-packet one-way delay: 55.619 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 81.52 Mbit/s
95th percentile per-packet one-way delay: 55.488 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 9.67 Mbit/s
95th percentile per-packet one-way delay: 59.399 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: 61.381 ms
Loss rate: 0.52%
```
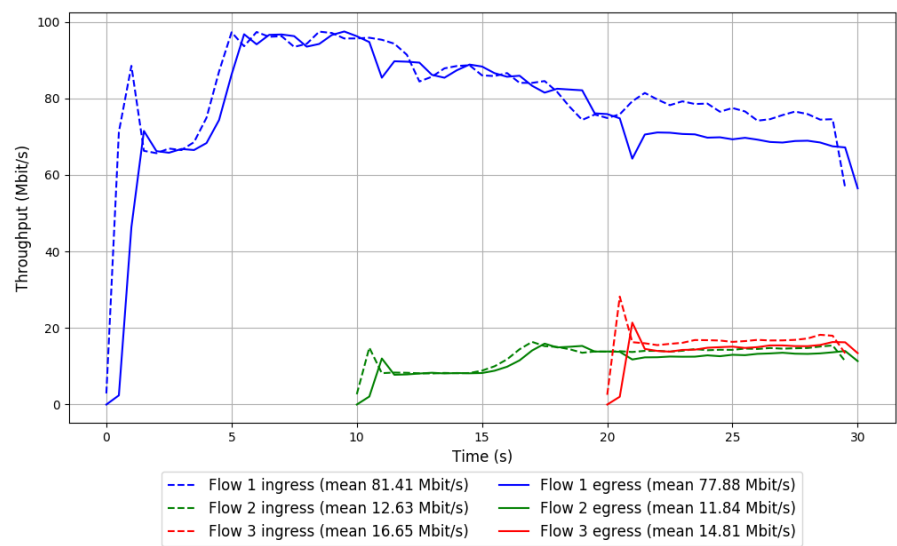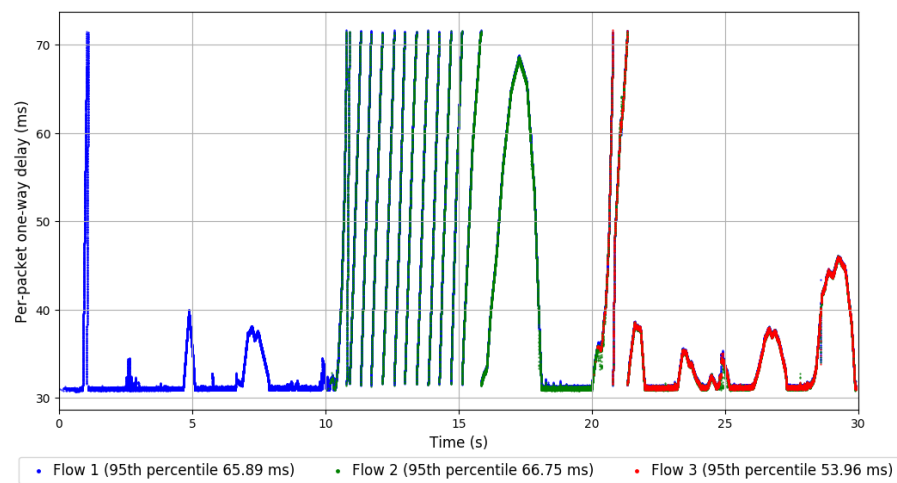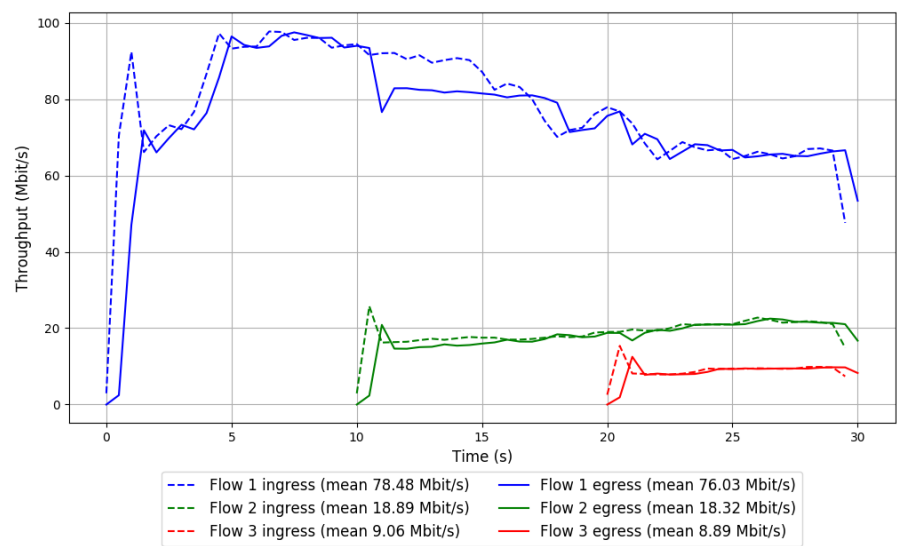
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 82.66 Mbit/s) -- Flow 1 egress (mean 81.52 Mbit/s)
Flow 2 ingress (mean 9.79 Mbit/s) -- Flow 2 egress (mean 9.67 Mbit/s)
Flow 3 ingress (mean 8.65 Mbit/s) -- Flow 3 egress (mean 8.60 Mbit/s)

Flow 1 (95th percentile 55.49 ms)   Flow 2 (95th percentile 59.40 ms)   Flow 3 (95th percentile 61.38 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-02 10:35:20
End at: 2018-10-02 10:35:50
Local clock offset: -0.131 ms
Remote clock offset: -5.591 ms


# Below is generated by plot.py at 2018-10-02 12:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.43 Mbit/s
95th percentile per-packet one-way delay: 58.364 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 81.81 Mbit/s
95th percentile per-packet one-way delay: 57.668 ms
Loss rate: 1.72%
-- Flow 2:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 60.610 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 9.74 Mbit/s
95th percentile per-packet one-way delay: 62.621 ms
Loss rate: 1.89%
```
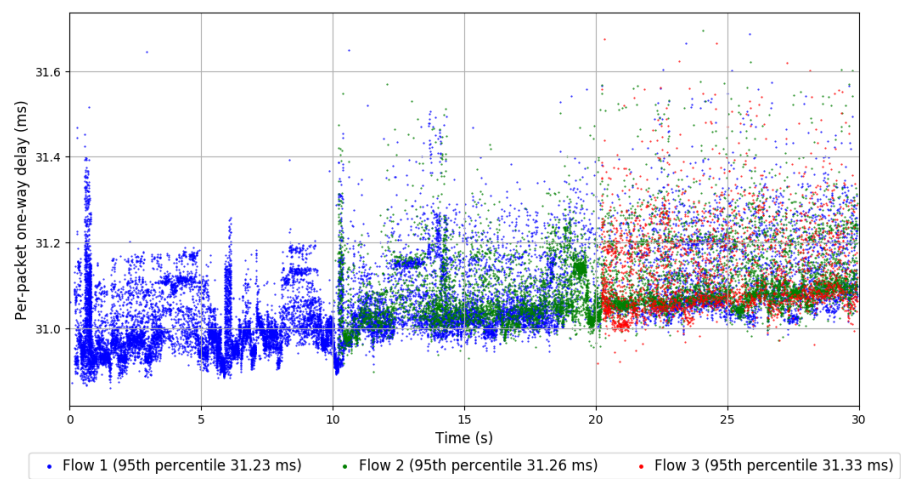
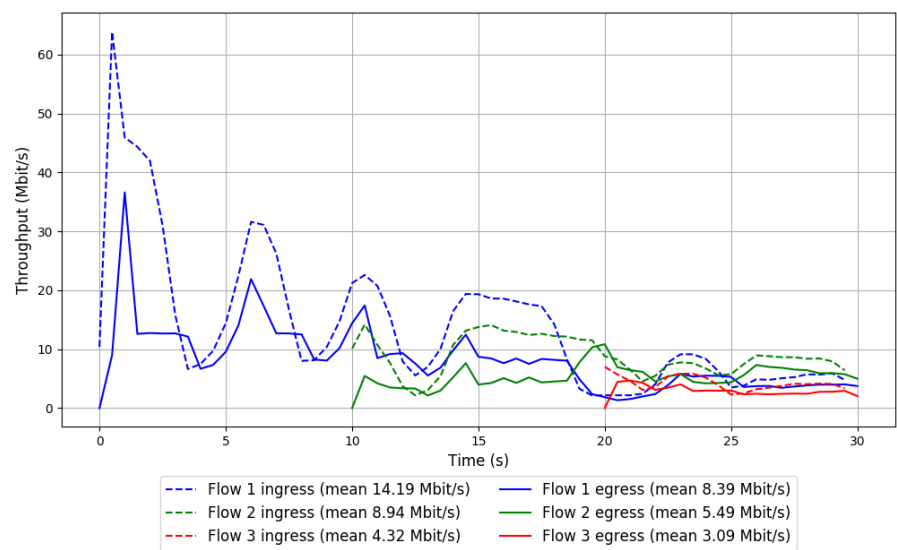# Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-02 10:59:51
End at: 2018-10-02 11:00:21
Local clock offset: 3.202 ms
Remote clock offset: -5.022 ms


# Below is generated by plot.py at 2018-10-02 12:14:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.03 Mbit/s
95th percentile per-packet one-way delay: 60.384 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 79.35 Mbit/s
95th percentile per-packet one-way delay: 60.424 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 13.59 Mbit/s
95th percentile per-packet one-way delay: 62.229 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 8.04 Mbit/s
95th percentile per-packet one-way delay: 58.578 ms
Loss rate: 0.00%
```
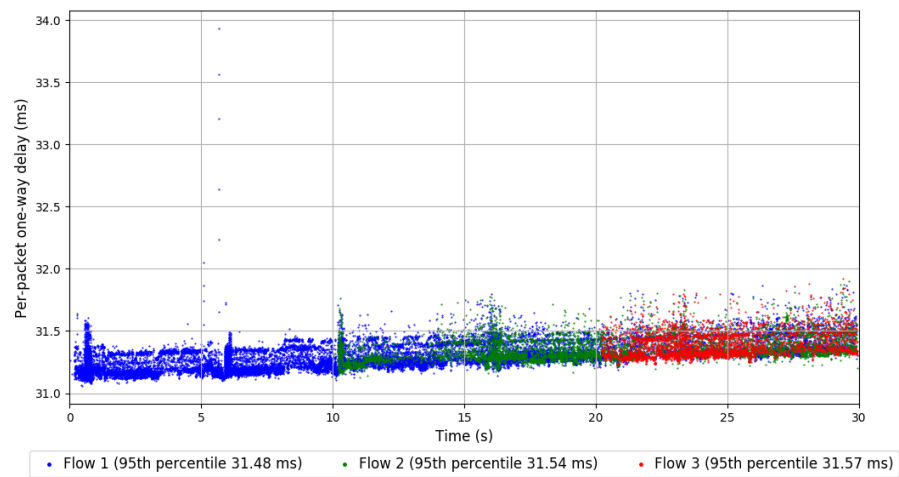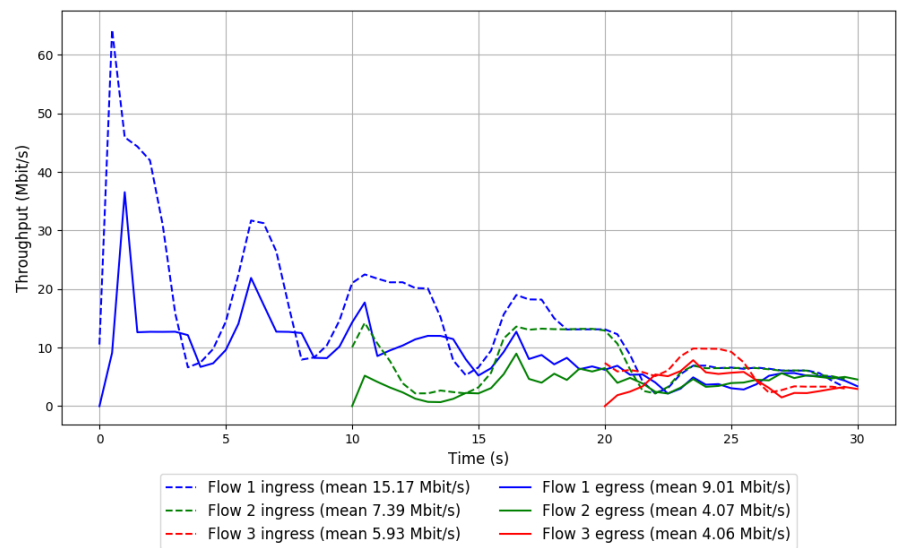
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 80.15 Mbit/s) — Flow 1 egress (mean 79.35 Mbit/s)
Flow 2 ingress (mean 13.66 Mbit/s) — Flow 2 egress (mean 13.59 Mbit/s)
Flow 3 ingress (mean 8.02 Mbit/s) — Flow 3 egress (mean 8.04 Mbit/s)

Flow 1 (95th percentile 60.42 ms)   Flow 2 (95th percentile 62.23 ms)   Flow 3 (95th percentile 58.58 ms)
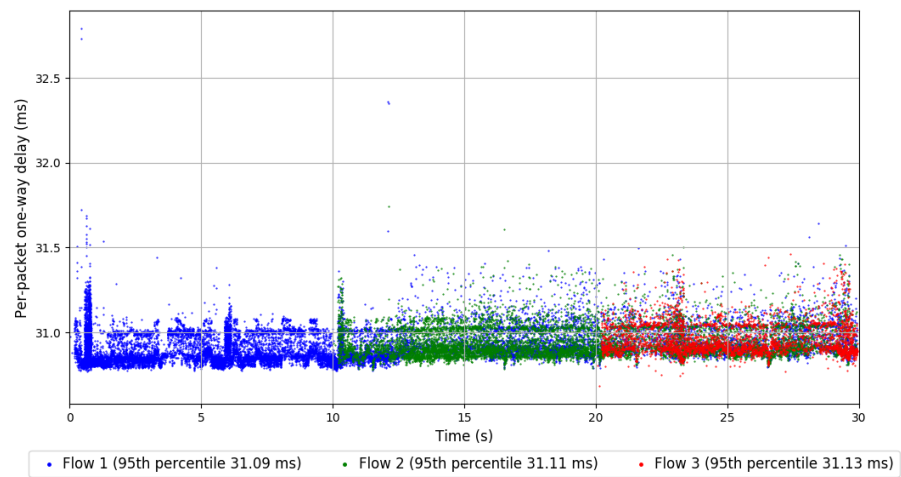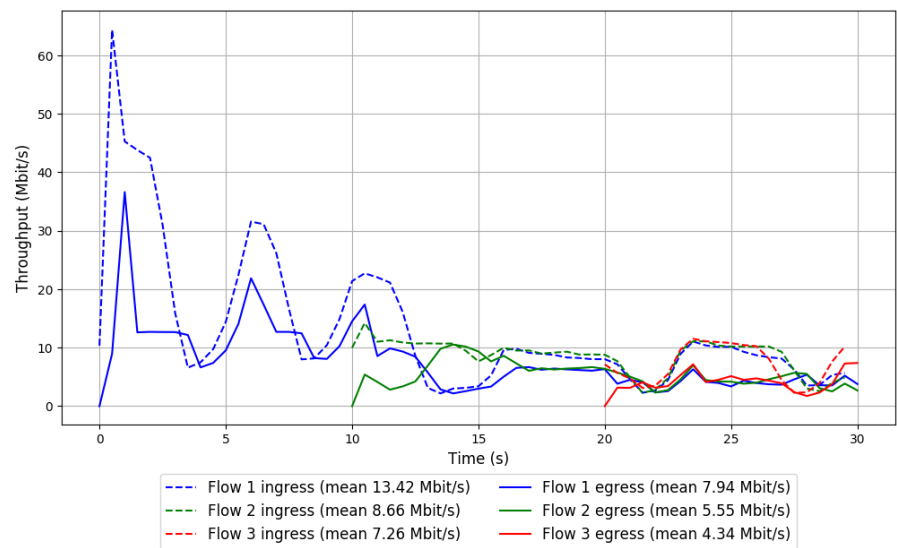
```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-02 11:24:14
End at: 2018-10-02 11:24:44
Local clock offset: 1.693 ms
Remote clock offset: -4.911 ms


# Below is generated by plot.py at 2018-10-02 12:14:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.63 Mbit/s
95th percentile per-packet one-way delay: 67.741 ms
Loss rate: 4.85%
-- Flow 1:
Average throughput: 77.88 Mbit/s
95th percentile per-packet one-way delay: 67.340 ms
Loss rate: 4.30%
-- Flow 2:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 69.034 ms
Loss rate: 6.21%
-- Flow 3:
Average throughput: 14.81 Mbit/s
95th percentile per-packet one-way delay: 68.914 ms
Loss rate: 10.95%
```

Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 81.41 Mbit/s) --- Flow 1 egress (mean 77.88 Mbit/s)
Flow 2 ingress (mean 12.63 Mbit/s) --- Flow 2 egress (mean 11.84 Mbit/s)
Flow 3 ingress (mean 16.65 Mbit/s) --- Flow 3 egress (mean 14.81 Mbit/s)

Flow 1 (95th percentile 67.34 ms)   Flow 2 (95th percentile 69.03 ms)   Flow 3 (95th percentile 68.91 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-02 11:48:46
End at: 2018-10-02 11:49:16
Local clock offset: 0.885 ms
Remote clock offset: -3.246 ms


# Below is generated by plot.py at 2018-10-02 12:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.15 Mbit/s
95th percentile per-packet one-way delay: 65.947 ms
Loss rate: 3.07%
-- Flow 1:
Average throughput: 76.03 Mbit/s
95th percentile per-packet one-way delay: 65.890 ms
Loss rate: 3.13%
-- Flow 2:
Average throughput: 18.32 Mbit/s
95th percentile per-packet one-way delay: 66.750 ms
Loss rate: 2.97%
-- Flow 3:
Average throughput: 8.89 Mbit/s
95th percentile per-packet one-way delay: 53.962 ms
Loss rate: 1.88%
```

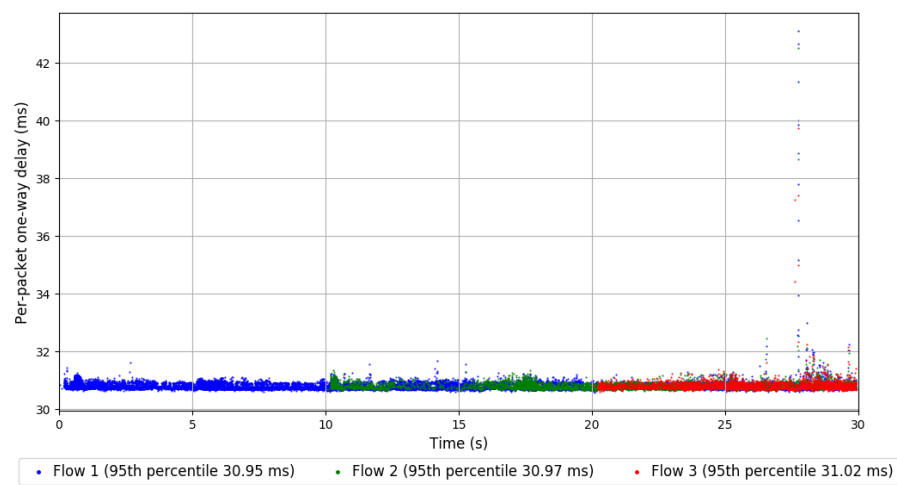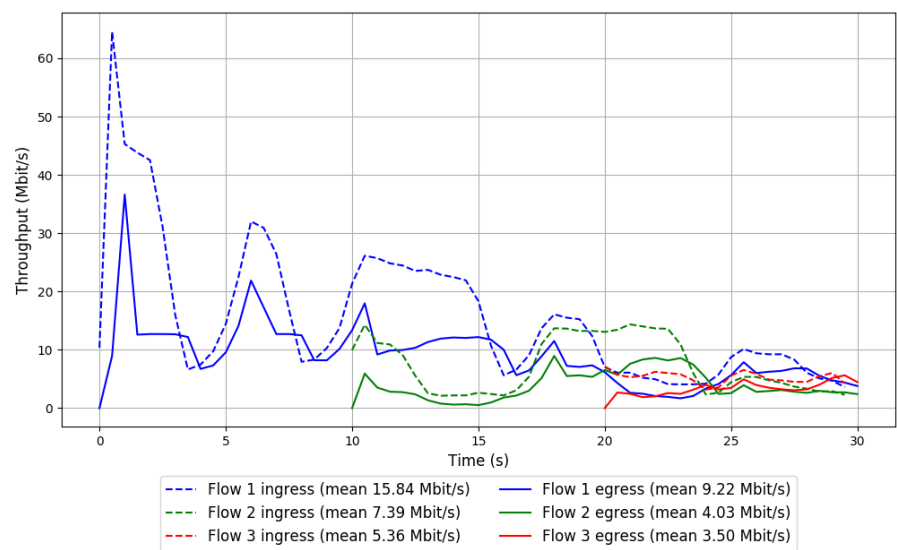Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-02 10:21:43
End at: 2018-10-02 10:22:13
Local clock offset: -2.087 ms
Remote clock offset: -5.596 ms


# Below is generated by plot.py at 2018-10-02 12:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.253 ms
Loss rate: 39.44%
-- Flow 1:
Average throughput: 8.39 Mbit/s
95th percentile per-packet one-way delay: 31.231 ms
Loss rate: 40.86%
-- Flow 2:
Average throughput: 5.49 Mbit/s
95th percentile per-packet one-way delay: 31.262 ms
Loss rate: 38.65%
-- Flow 3:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 31.333 ms
Loss rate: 28.54%
```
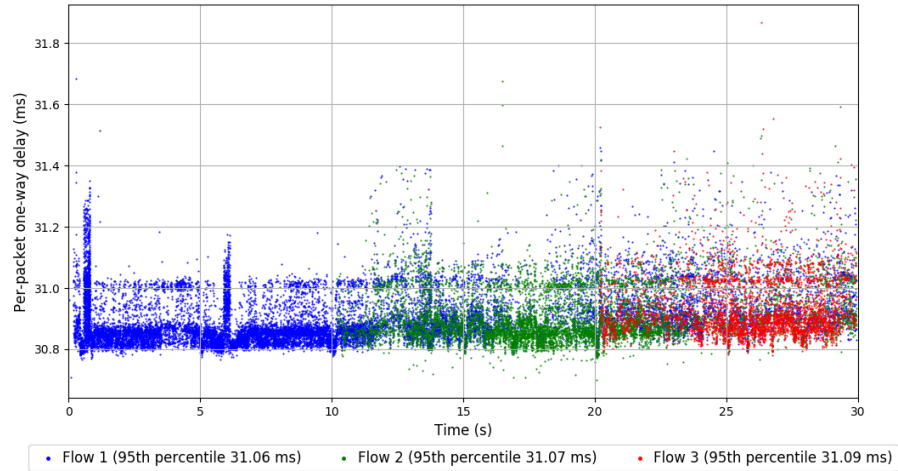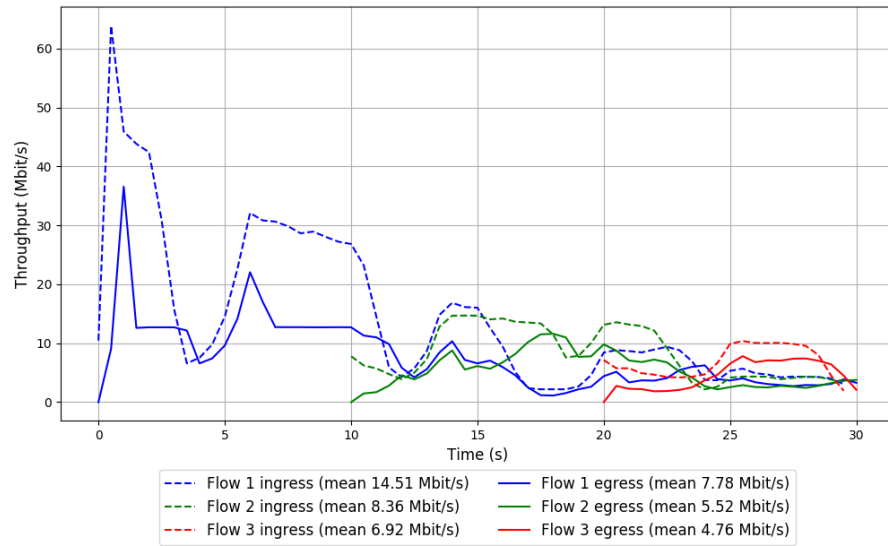
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 14.19 Mbit/s) ---- Flow 1 egress (mean 8.39 Mbit/s)
Flow 2 ingress (mean 8.94 Mbit/s) ---- Flow 2 egress (mean 5.49 Mbit/s)
Flow 3 ingress (mean 4.32 Mbit/s) ---- Flow 3 egress (mean 3.09 Mbit/s)

Flow 1 (95th percentile 31.23 ms) • Flow 2 (95th percentile 31.26 ms) • Flow 3 (95th percentile 31.33 ms)

96

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-02 10:46:13
End at: 2018-10-02 10:46:43
Local clock offset: 0.323 ms
Remote clock offset: -5.447 ms


# Below is generated by plot.py at 2018-10-02 12:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.508 ms
Loss rate: 40.74%
-- Flow 1:
Average throughput: 9.01 Mbit/s
95th percentile per-packet one-way delay: 31.480 ms
Loss rate: 40.59%
-- Flow 2:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 31.535 ms
Loss rate: 44.90%
-- Flow 3:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 31.574 ms
Loss rate: 31.48%
```
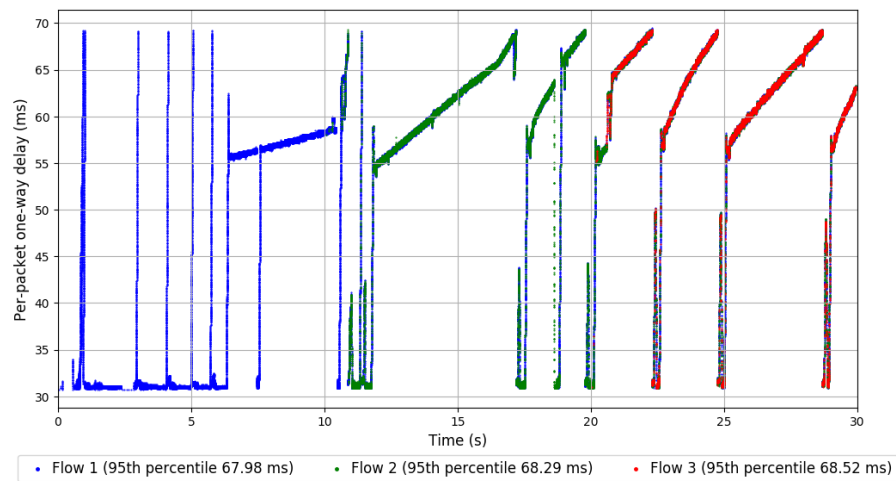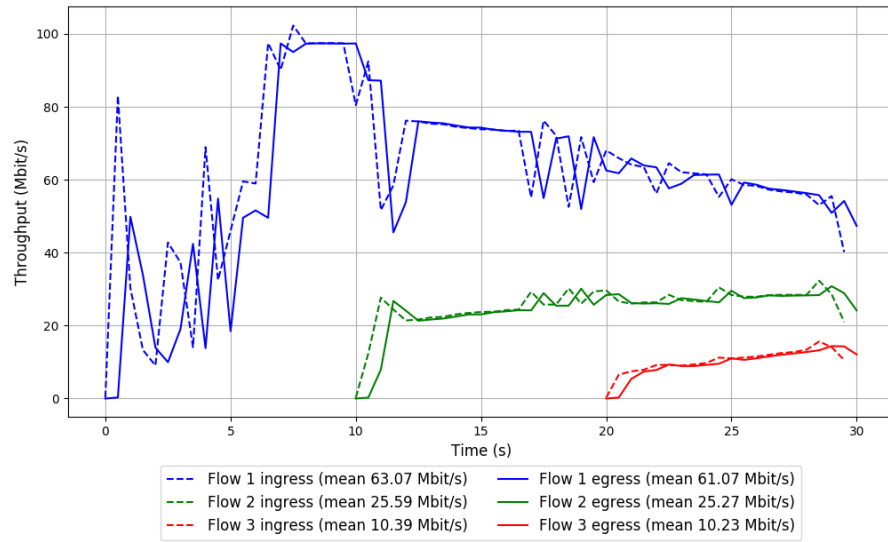
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-02 11:10:41
End at: 2018-10-02 11:11:11
Local clock offset: 4.103 ms
Remote clock offset: -5.029 ms

# Below is generated by plot.py at 2018-10-02 12:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.102 ms
Loss rate: 39.48%
-- Flow 1:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 31.090 ms
Loss rate: 40.87%
-- Flow 2:
Average throughput: 5.55 Mbit/s
95th percentile per-packet one-way delay: 31.109 ms
Loss rate: 35.91%
-- Flow 3:
Average throughput: 4.34 Mbit/s
95th percentile per-packet one-way delay: 31.127 ms
Loss rate: 40.28%
```

Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-02 11:35:11
End at: 2018-10-02 11:35:41
Local clock offset: 0.409 ms
Remote clock offset: -4.167 ms


# Below is generated by plot.py at 2018-10-02 12:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.05 Mbit/s
95th percentile per-packet one-way delay: 30.956 ms
Loss rate: 42.06%
-- Flow 1:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 30.946 ms
Loss rate: 41.82%
-- Flow 2:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 30.967 ms
Loss rate: 45.54%
-- Flow 3:
Average throughput: 3.50 Mbit/s
95th percentile per-packet one-way delay: 31.022 ms
Loss rate: 34.61%
```
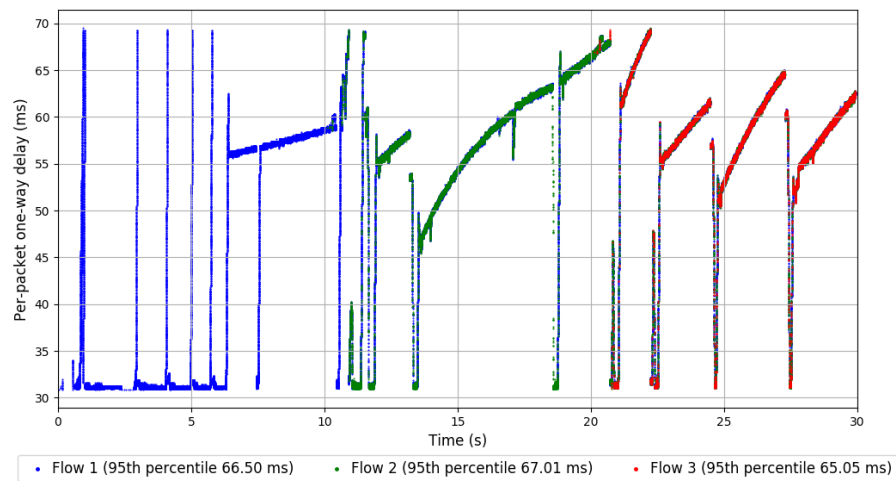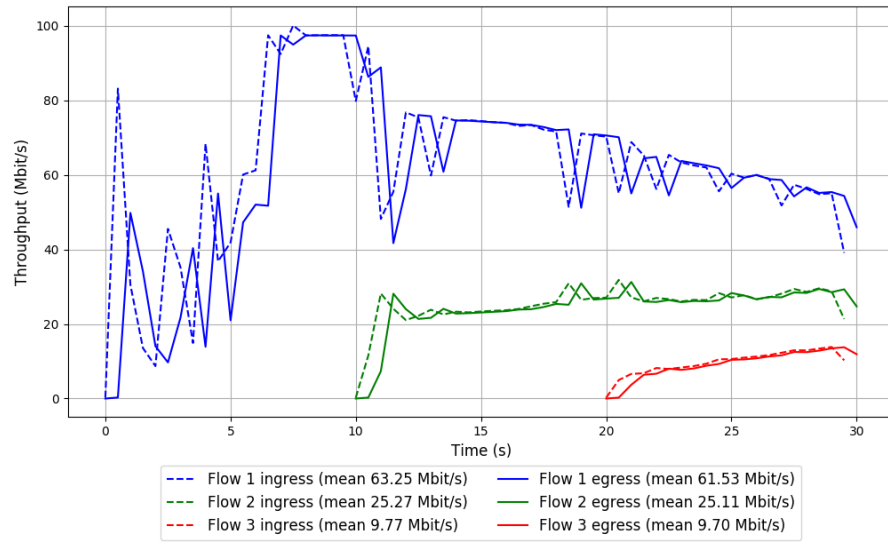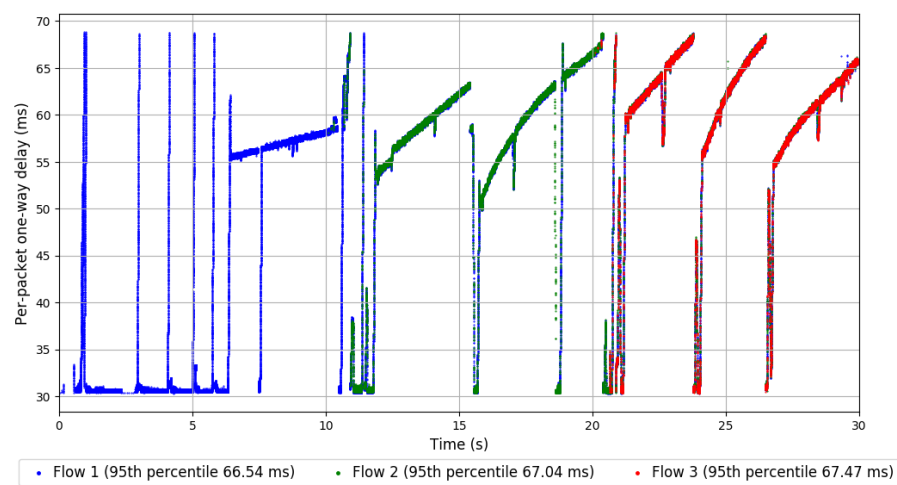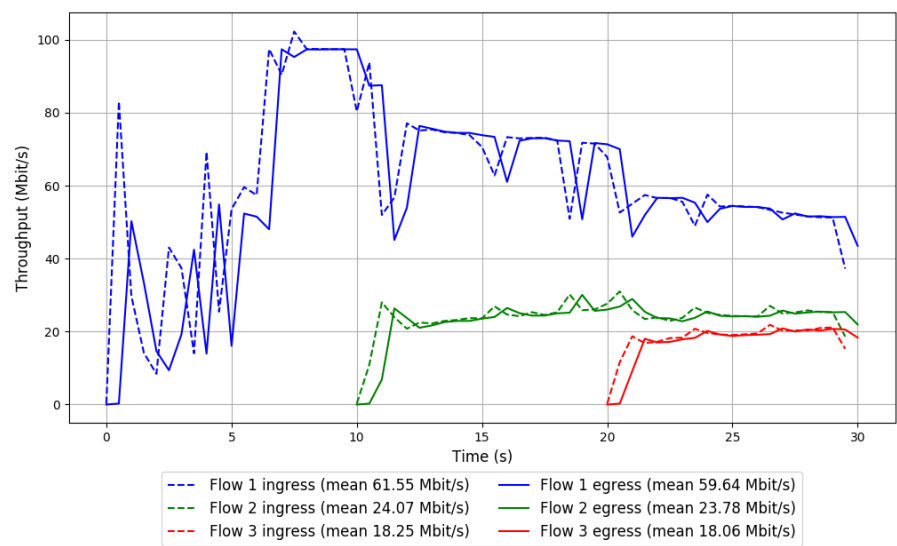
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-02 11:59:39
End at: 2018-10-02 12:00:09
Local clock offset: 2.829 ms
Remote clock offset: -2.429 ms


# Below is generated by plot.py at 2018-10-02 12:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.02 Mbit/s
95th percentile per-packet one-way delay: 31.073 ms
Loss rate: 41.75%
-- Flow 1:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 31.061 ms
Loss rate: 46.38%
-- Flow 2:
Average throughput: 5.52 Mbit/s
95th percentile per-packet one-way delay: 31.073 ms
Loss rate: 34.03%
-- Flow 3:
Average throughput: 4.76 Mbit/s
95th percentile per-packet one-way delay: 31.093 ms
Loss rate: 31.21%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 14.51 Mbit/s)
Flow 1 egress (mean 7.78 Mbit/s)
Flow 2 ingress (mean 8.36 Mbit/s)
Flow 2 egress (mean 5.52 Mbit/s)
Flow 3 ingress (mean 6.92 Mbit/s)
Flow 3 egress (mean 4.76 Mbit/s)

Flow 1 (95th percentile 31.06 ms)
Flow 2 (95th percentile 31.07 ms)
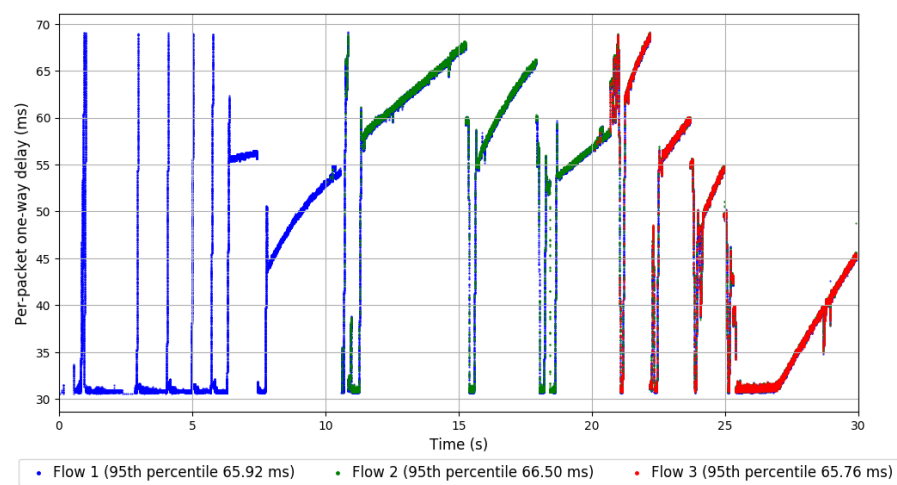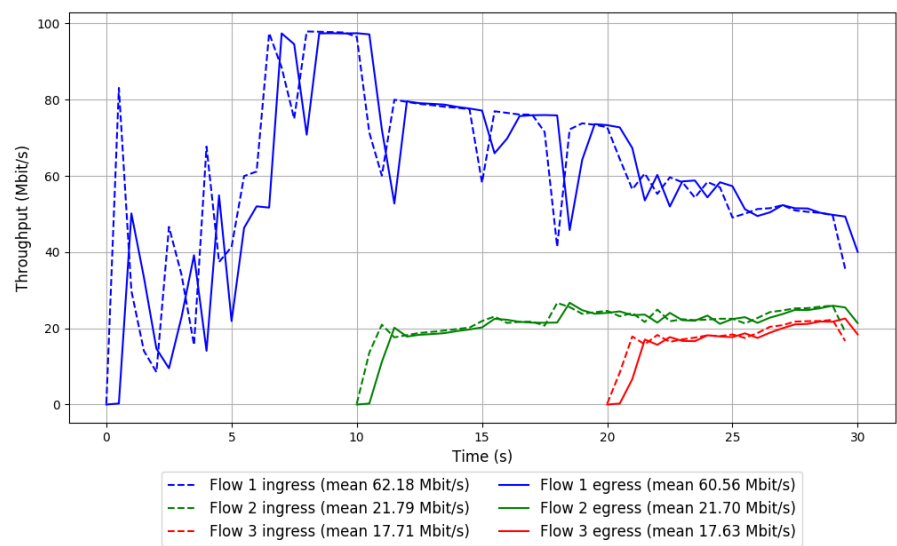Flow 3 (95th percentile 31.09 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-02 10:27:07
End at: 2018-10-02 10:27:37
Local clock offset: -0.967 ms
Remote clock offset: -5.576 ms


# Below is generated by plot.py at 2018-10-02 12:15:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.23 Mbit/s
95th percentile per-packet one-way delay: 68.068 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 61.07 Mbit/s
95th percentile per-packet one-way delay: 67.980 ms
Loss rate: 3.07%
-- Flow 2:
Average throughput: 25.27 Mbit/s
95th percentile per-packet one-way delay: 68.290 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 10.23 Mbit/s
95th percentile per-packet one-way delay: 68.515 ms
Loss rate: 1.22%
```
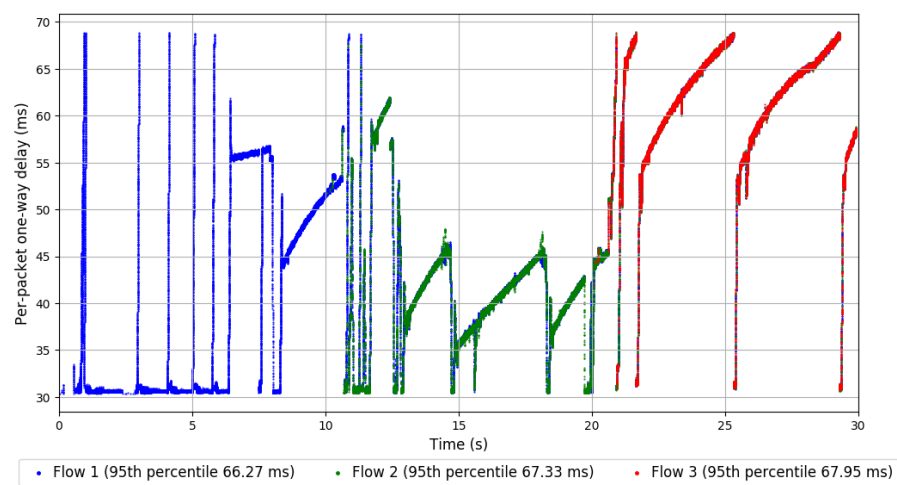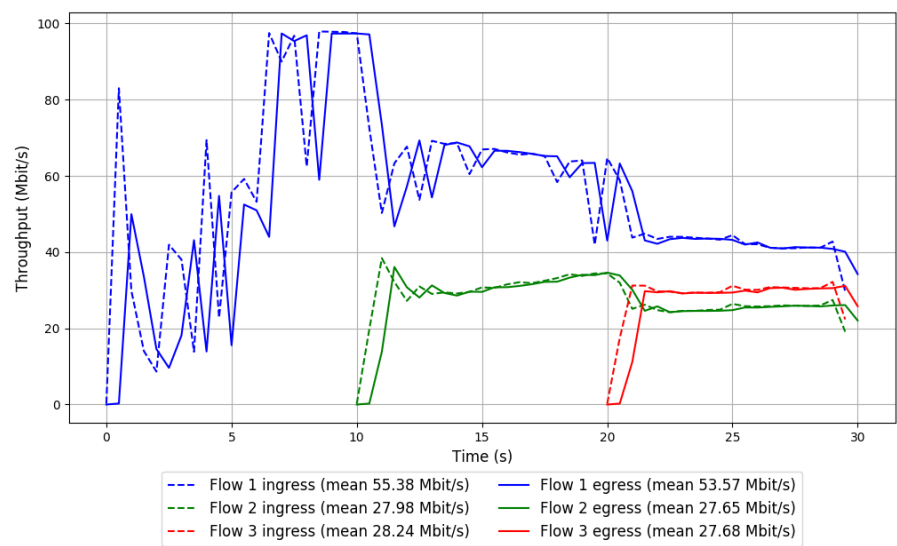
Run 1: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 63.07 Mbit/s) — Flow 1 egress (mean 61.07 Mbit/s)
- - - Flow 2 ingress (mean 25.59 Mbit/s) — Flow 2 egress (mean 25.27 Mbit/s)
- - - Flow 3 ingress (mean 10.39 Mbit/s) — Flow 3 egress (mean 10.23 Mbit/s)

• Flow 1 (95th percentile 67.98 ms)   • Flow 2 (95th percentile 68.29 ms)   • Flow 3 (95th percentile 68.52 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-02 10:51:37
End at: 2018-10-02 10:52:07
Local clock offset: 1.877 ms
Remote clock offset: -5.44 ms

# Below is generated by plot.py at 2018-10-02 12:15:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.37 Mbit/s
95th percentile per-packet one-way delay: 66.622 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 61.53 Mbit/s
95th percentile per-packet one-way delay: 66.504 ms
Loss rate: 2.62%
-- Flow 2:
Average throughput: 25.11 Mbit/s
95th percentile per-packet one-way delay: 67.013 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 9.70 Mbit/s
95th percentile per-packet one-way delay: 65.045 ms
Loss rate: 0.76%
```
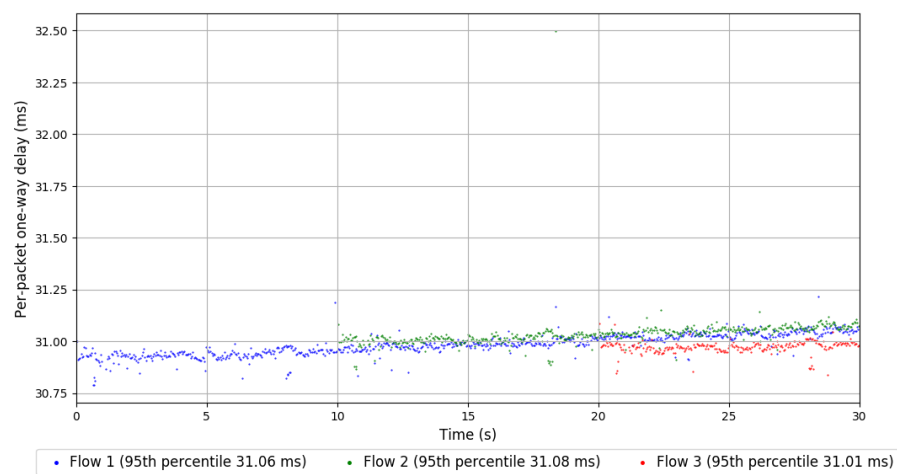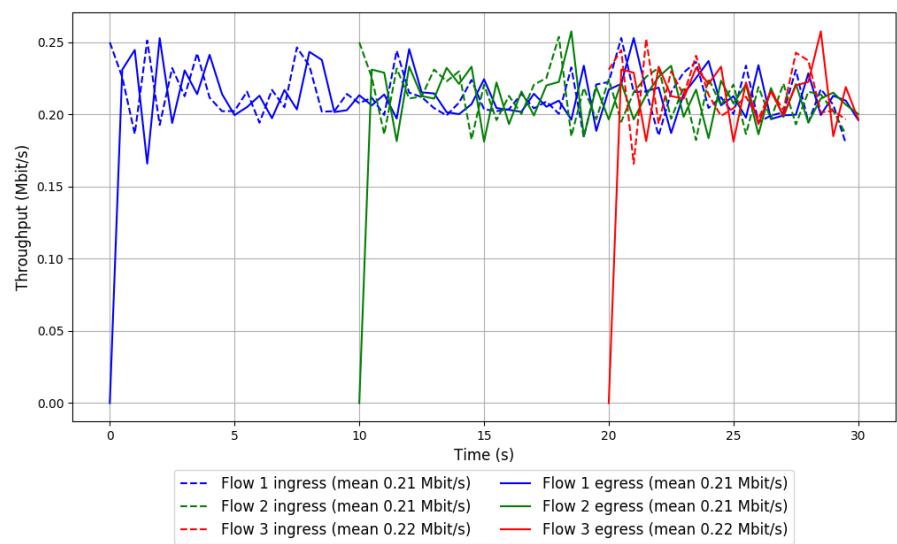
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-02 11:16:03
End at: 2018-10-02 11:16:33
Local clock offset: 4.409 ms
Remote clock offset: -4.916 ms


# Below is generated by plot.py at 2018-10-02 12:15:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.36 Mbit/s
95th percentile per-packet one-way delay: 66.770 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 59.64 Mbit/s
95th percentile per-packet one-way delay: 66.541 ms
Loss rate: 2.98%
-- Flow 2:
Average throughput: 23.78 Mbit/s
95th percentile per-packet one-way delay: 67.042 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 18.06 Mbit/s
95th percentile per-packet one-way delay: 67.467 ms
Loss rate: 1.05%
```
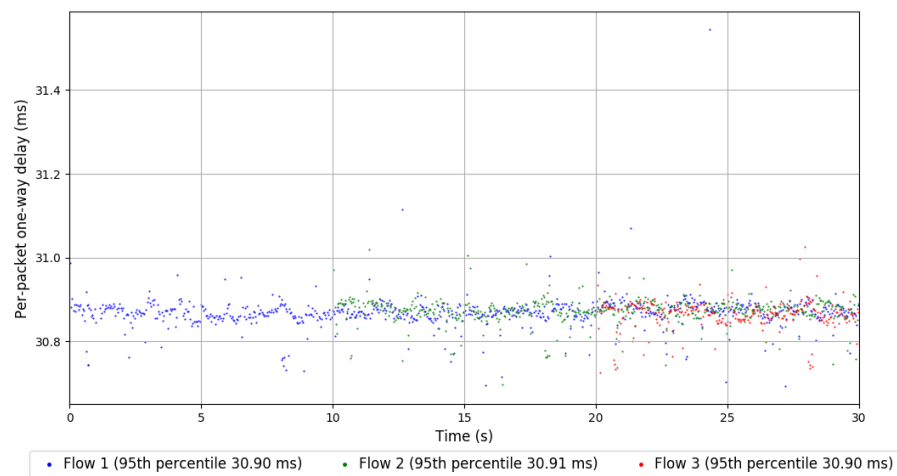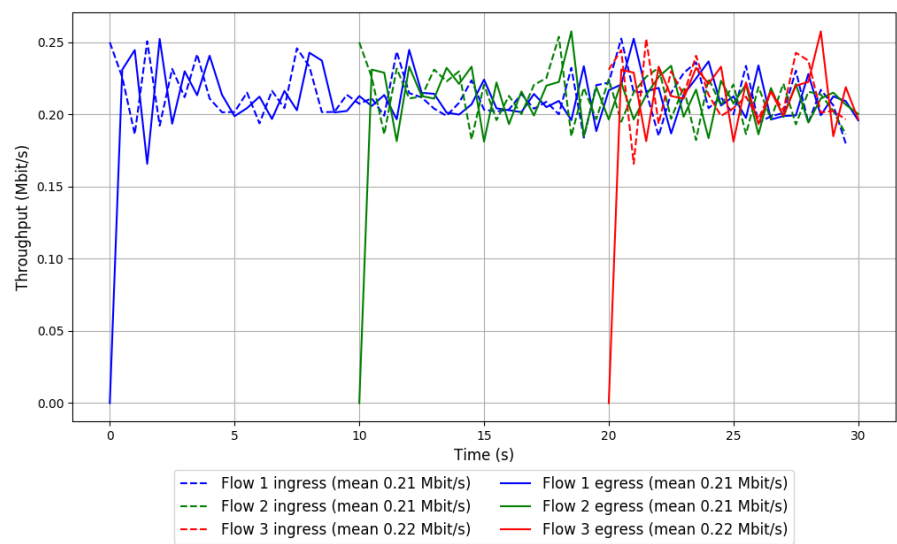
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-02 11:40:34
End at: 2018-10-02 11:41:04
Local clock offset: 0.127 ms
Remote clock offset: -3.752 ms


# Below is generated by plot.py at 2018-10-02 12:15:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.75 Mbit/s
95th percentile per-packet one-way delay: 66.004 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 60.56 Mbit/s
95th percentile per-packet one-way delay: 65.924 ms
Loss rate: 2.56%
-- Flow 2:
Average throughput: 21.70 Mbit/s
95th percentile per-packet one-way delay: 66.498 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 17.63 Mbit/s
95th percentile per-packet one-way delay: 65.758 ms
Loss rate: 0.56%
```

Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-02 12:05:03
End at: 2018-10-02 12:05:33
Local clock offset: 3.318 ms
Remote clock offset: -2.322 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.06 Mbit/s
95th percentile per-packet one-way delay: 67.099 ms
Loss rate: 2.58%
-- Flow 1:
Average throughput: 53.57 Mbit/s
95th percentile per-packet one-way delay: 66.274 ms
Loss rate: 3.17%
-- Flow 2:
Average throughput: 27.65 Mbit/s
95th percentile per-packet one-way delay: 67.329 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 27.68 Mbit/s
95th percentile per-packet one-way delay: 67.947 ms
Loss rate: 1.84%
```
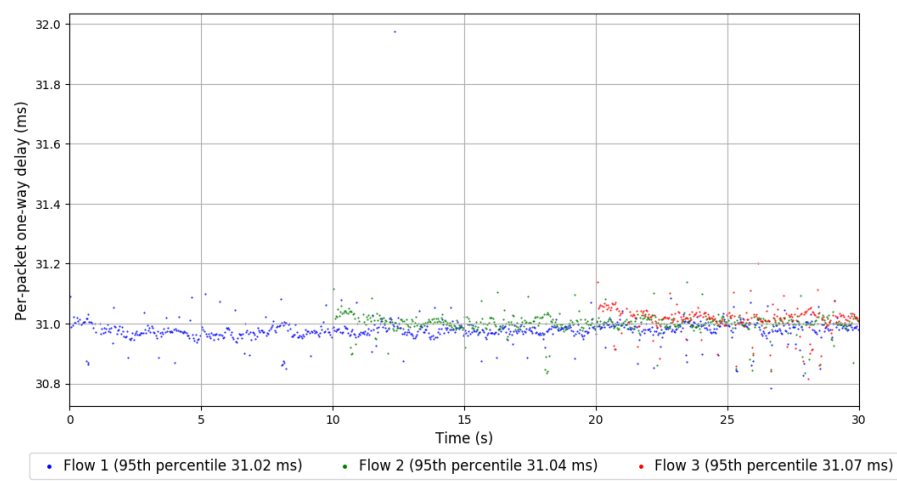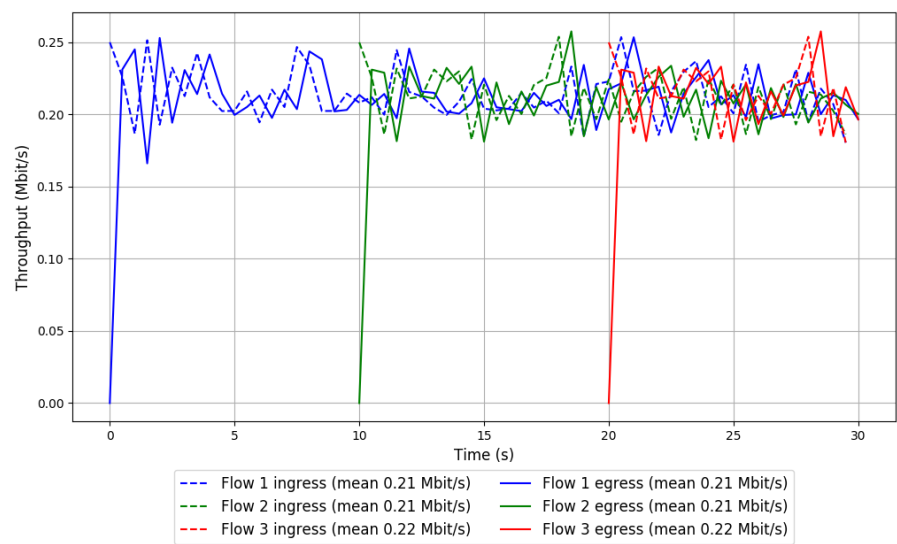
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 55.38 Mbit/s) ---- Flow 1 egress (mean 53.57 Mbit/s) ——
Flow 2 ingress (mean 27.98 Mbit/s) ---- Flow 2 egress (mean 27.65 Mbit/s) ——
Flow 3 ingress (mean 28.24 Mbit/s) ---- Flow 3 egress (mean 27.68 Mbit/s) ——

Flow 1 (95th percentile 66.27 ms)   Flow 2 (95th percentile 67.33 ms)   Flow 3 (95th percentile 67.95 ms)
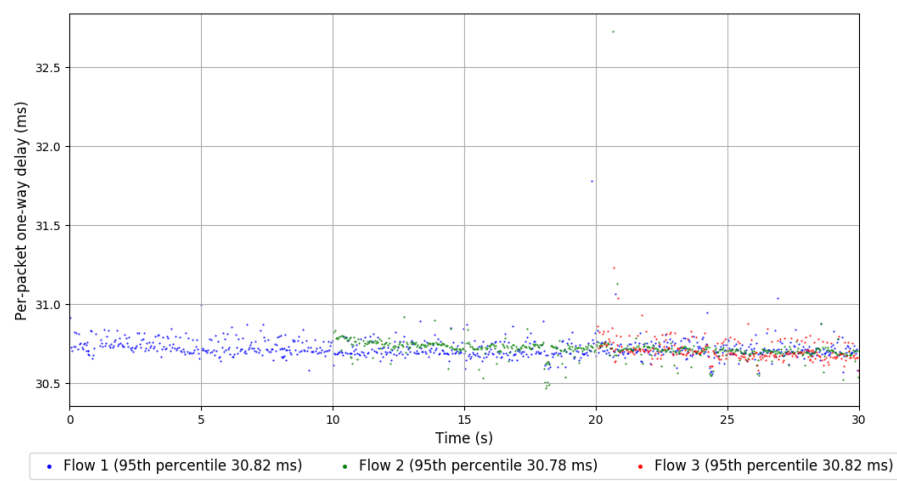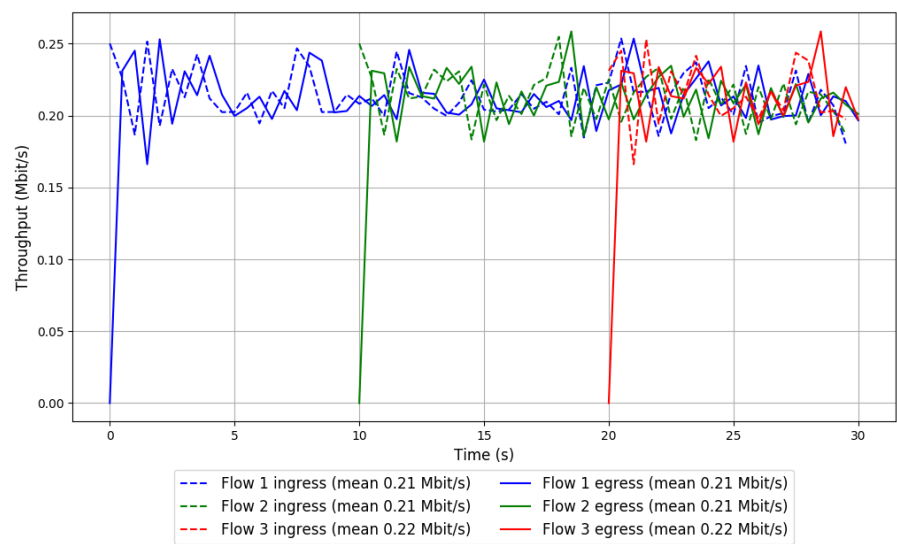
114

```
Run 1: Statistics of SCReAM

Start at: 2018-10-02 10:20:25
End at: 2018-10-02 10:20:55
Local clock offset: -2.498 ms
Remote clock offset: -5.767 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 31.070 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.057 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.082 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 31.007 ms
Loss rate: 0.00%
```
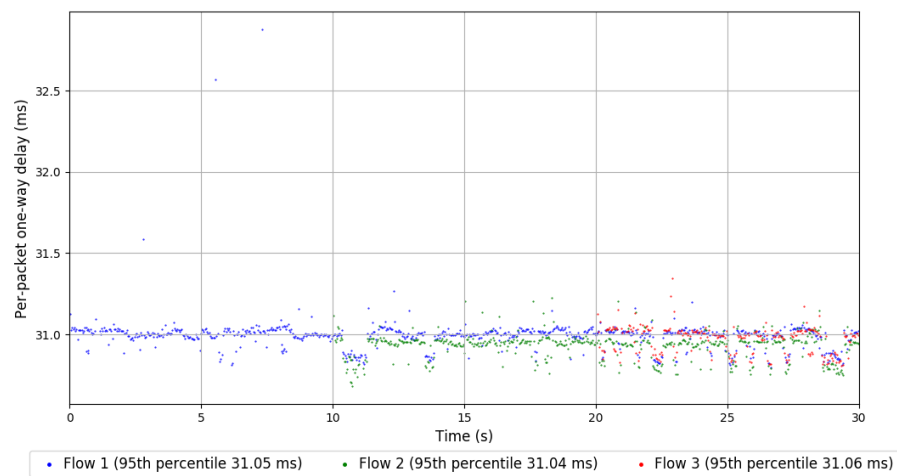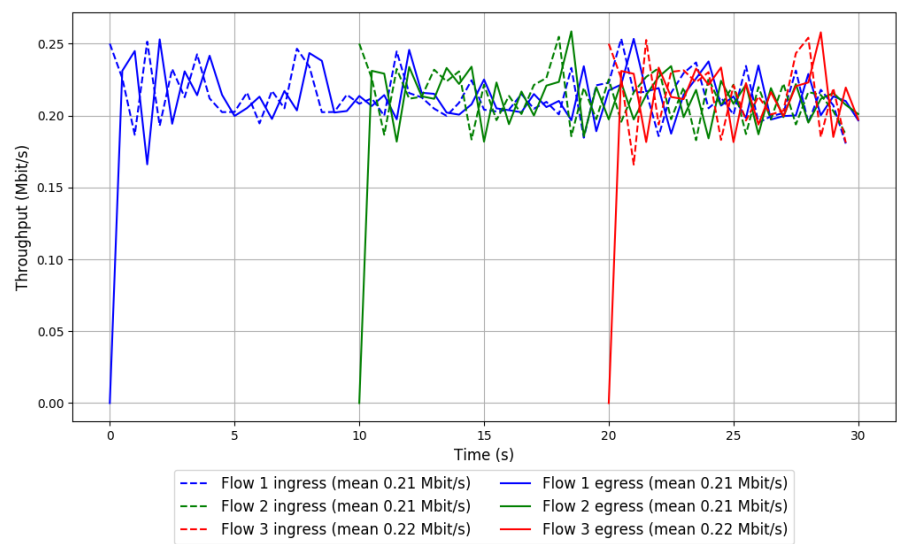
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-10-02 10:44:55
End at: 2018-10-02 10:45:25
Local clock offset: 0.258 ms
Remote clock offset: -5.621 ms

# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 30.902 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.900 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.905 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.903 ms
Loss rate: 0.00%
```
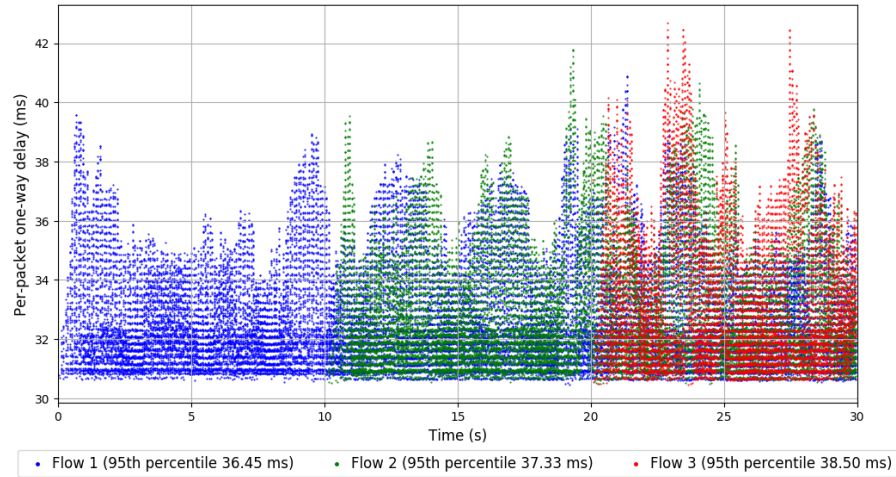
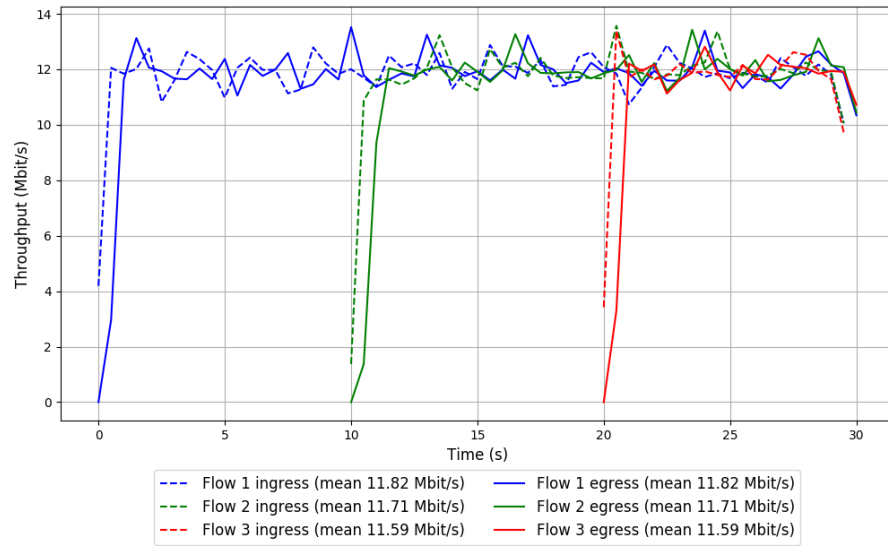# Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-02 11:09:23
End at: 2018-10-02 11:09:53
Local clock offset: 3.995 ms
Remote clock offset: -5.03 ms

# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 31.044 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.017 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.037 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 31.065 ms
Loss rate: 0.00%
```

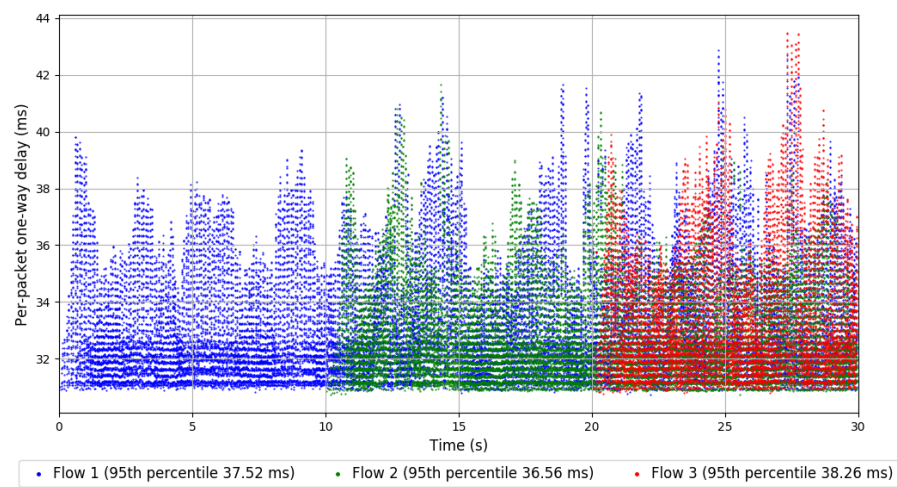# Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-10-02 11:33:52
End at: 2018-10-02 11:34:22
Local clock offset: 0.517 ms
Remote clock offset: -4.262 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 30.807 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.816 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.782 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.819 ms
Loss rate: 0.00%
```
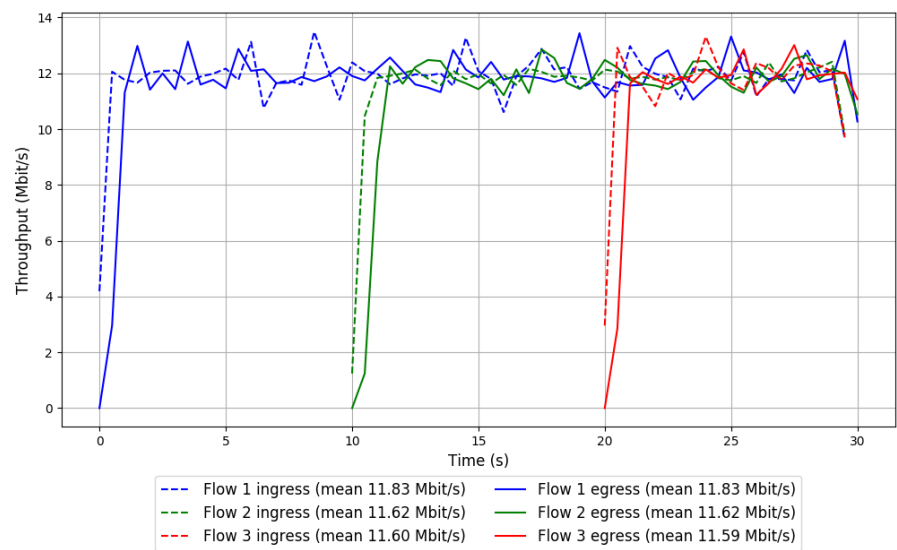
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-02 11:58:21
End at: 2018-10-02 11:58:51
Local clock offset: 2.686 ms
Remote clock offset: -2.507 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 31.048 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.048 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.042 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 31.058 ms
Loss rate: 0.00%
```
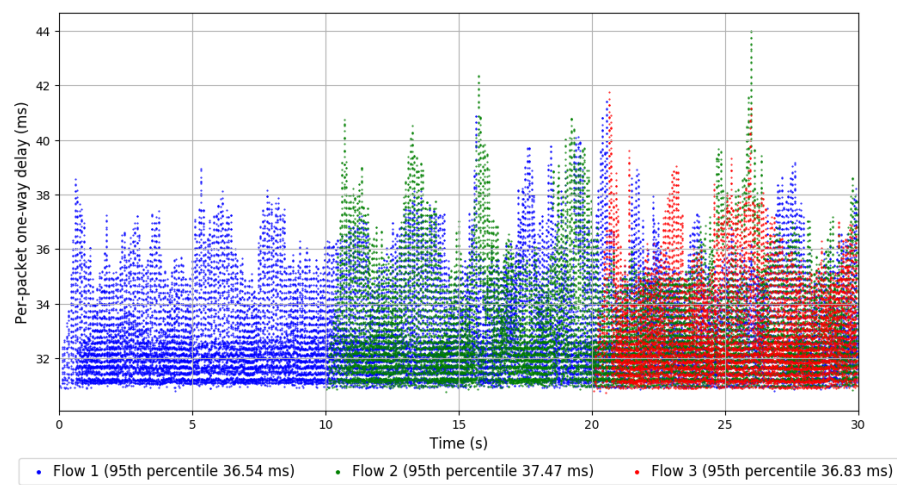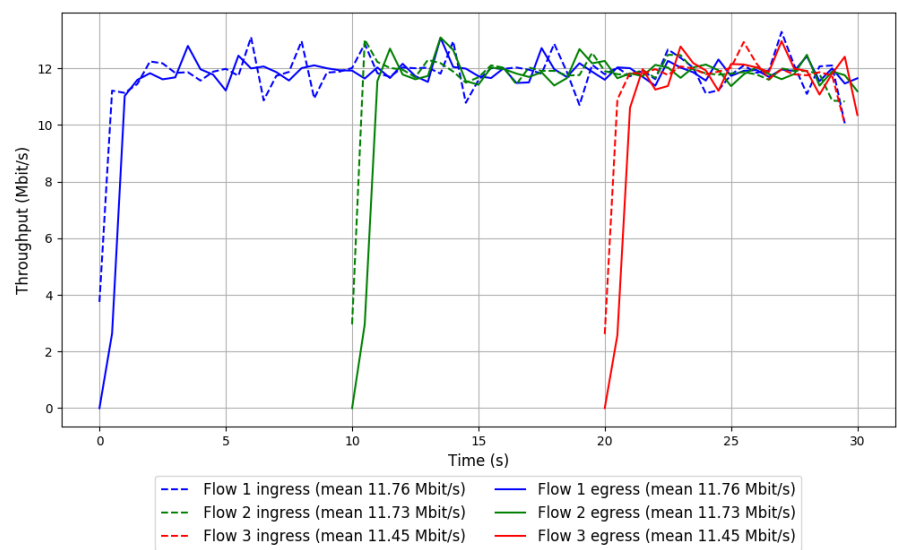
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-10-02 10:13:38
End at: 2018-10-02 10:14:08
Local clock offset: -4.164 ms
Remote clock offset: -5.579 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 37.087 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 36.455 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.71 Mbit/s
95th percentile per-packet one-way delay: 37.330 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 11.59 Mbit/s
95th percentile per-packet one-way delay: 38.498 ms
Loss rate: 0.00%
```
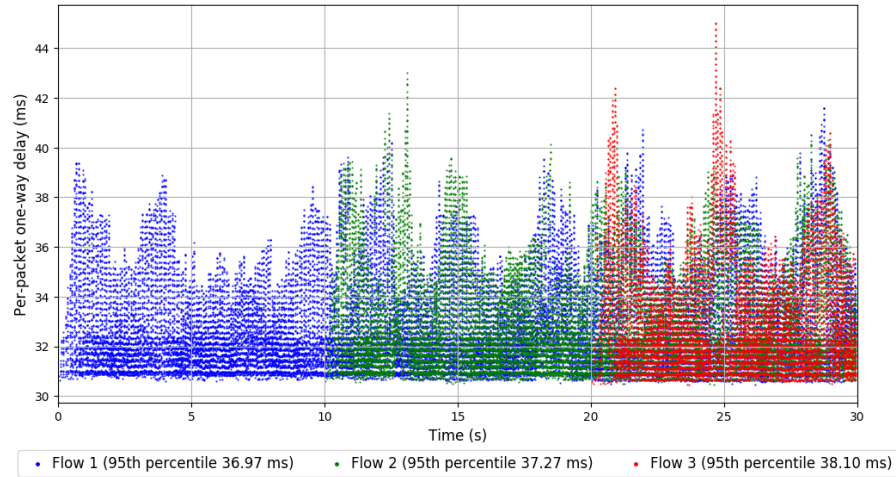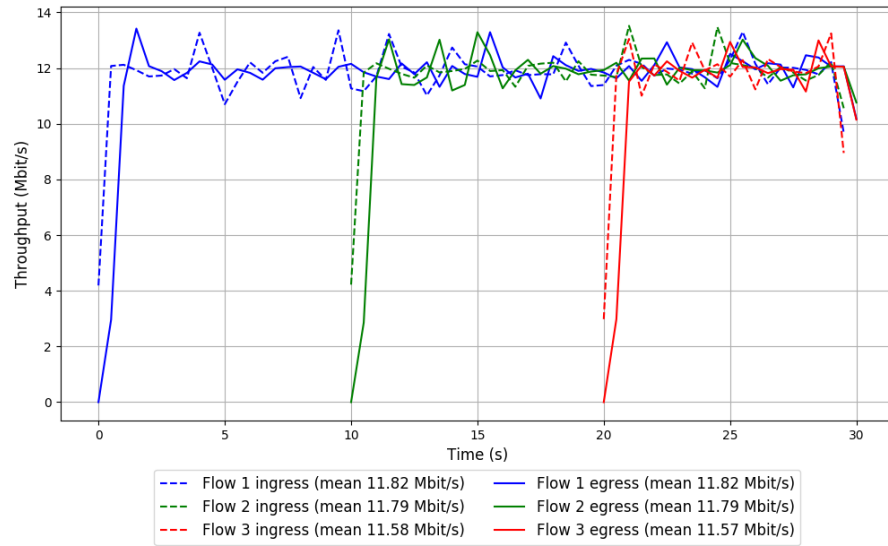
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-10-02 10:38:06
End at: 2018-10-02 10:38:36
Local clock offset: 0.03 ms
Remote clock offset: -5.431 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.39 Mbit/s
95th percentile per-packet one-way delay: 37.447 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 37.517 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 11.62 Mbit/s
95th percentile per-packet one-way delay: 36.560 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.59 Mbit/s
95th percentile per-packet one-way delay: 38.258 ms
Loss rate: 0.09%
```
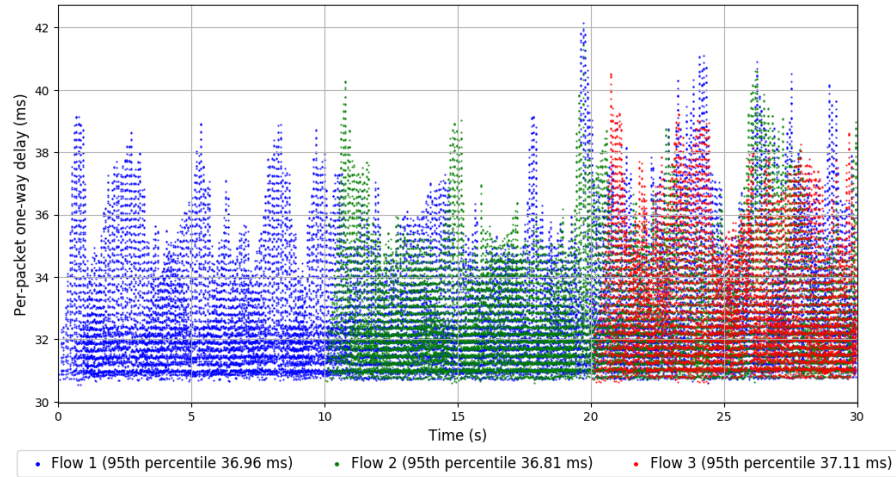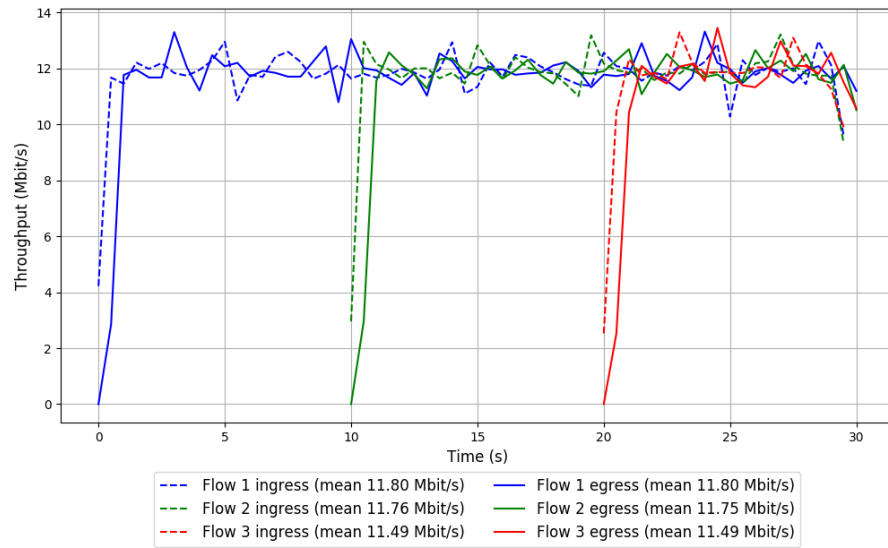
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-02 11:02:36
End at: 2018-10-02 11:03:06
Local clock offset: 3.49 ms
Remote clock offset: -5.097 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.34 Mbit/s
95th percentile per-packet one-way delay: 36.848 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 36.539 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 11.73 Mbit/s
95th percentile per-packet one-way delay: 37.468 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.45 Mbit/s
95th percentile per-packet one-way delay: 36.828 ms
Loss rate: 0.00%
```
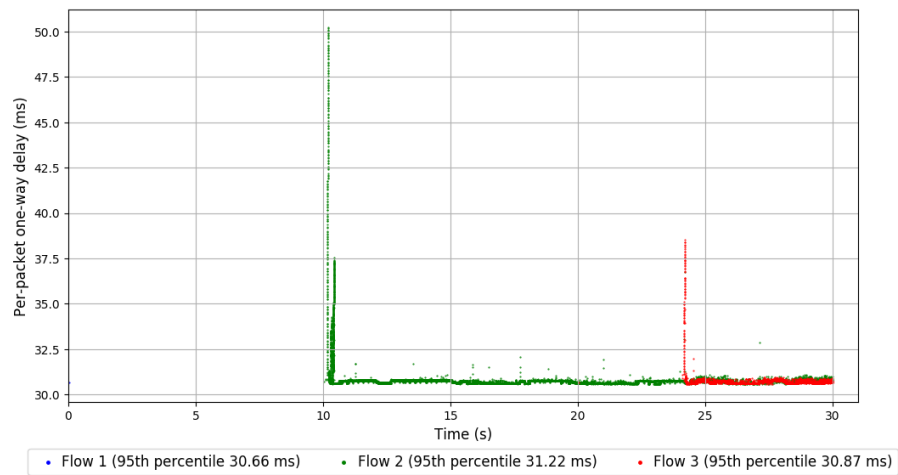
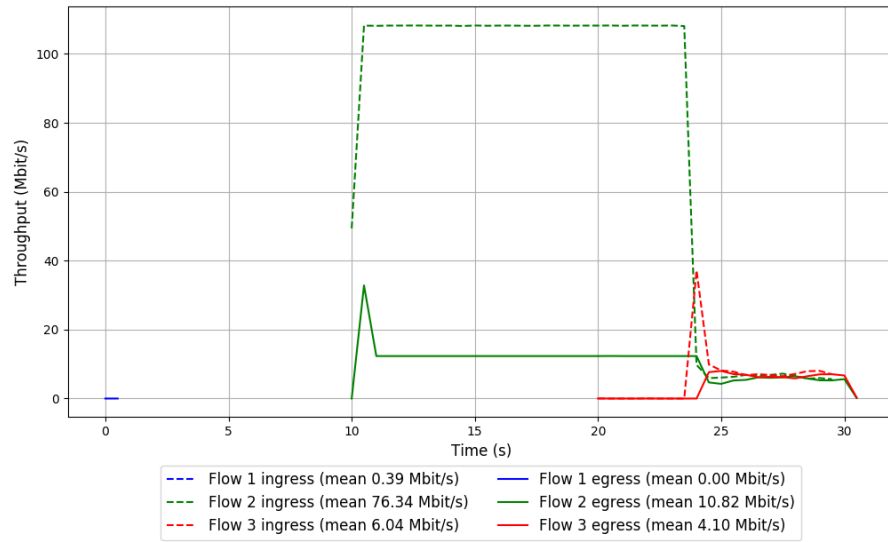## Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-02 11:27:00
End at: 2018-10-02 11:27:30
Local clock offset: 1.239 ms
Remote clock offset: -4.609 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: 37.224 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 36.965 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 37.266 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 38.096 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-10-02 11:51:31
End at: 2018-10-02 11:52:01
Local clock offset: 1.563 ms
Remote clock offset: -3.269 ms


# Below is generated by plot.py at 2018-10-02 12:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.41 Mbit/s
95th percentile per-packet one-way delay: 36.926 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 36.958 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.75 Mbit/s
95th percentile per-packet one-way delay: 36.809 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 11.49 Mbit/s
95th percentile per-packet one-way delay: 37.112 ms
Loss rate: 0.00%
```
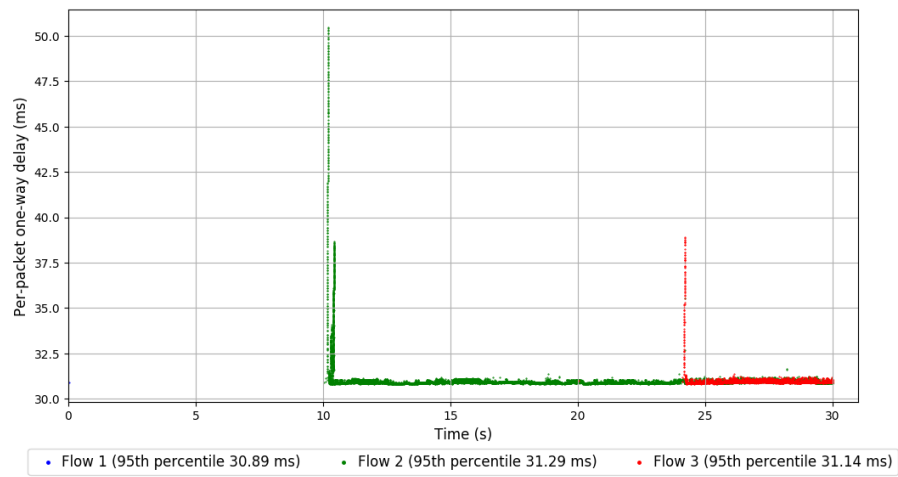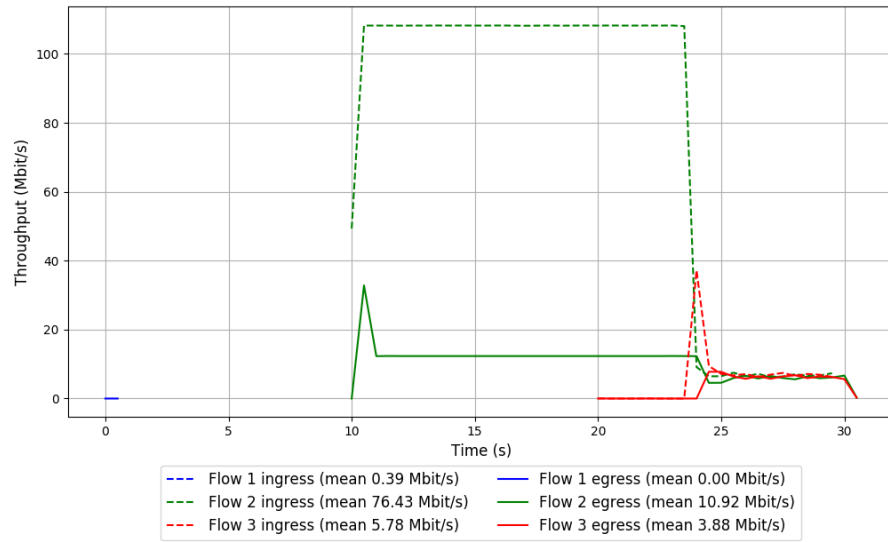
Run 5: Report of Sprout — Data Link

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

Start at: 2018-10-02 10:06:47
End at: 2018-10-02 10:07:17
Local clock offset: -3.422 ms
Remote clock offset: -5.532 ms


# Below is generated by plot.py at 2018-10-02 12:15:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.032 ms
Loss rate: 83.79%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.662 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.82 Mbit/s
95th percentile per-packet one-way delay: 31.216 ms
Loss rate: 85.83%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 30.871 ms
Loss rate: 32.09%
```
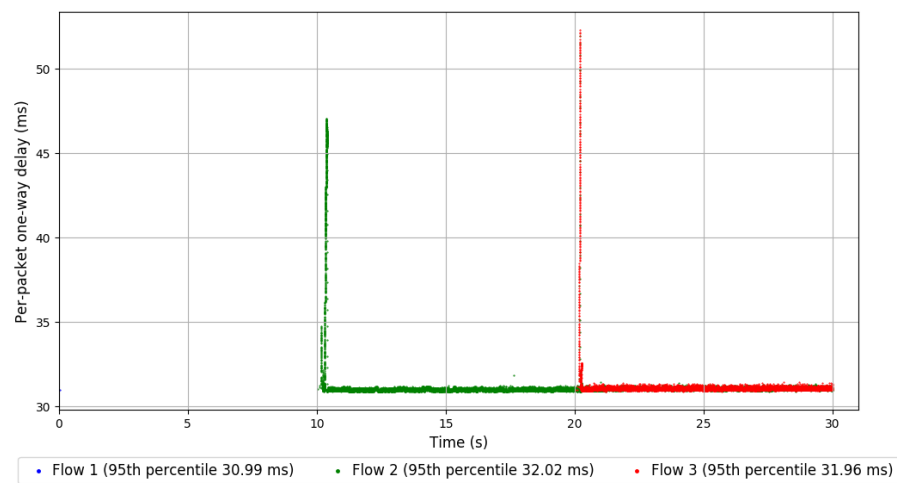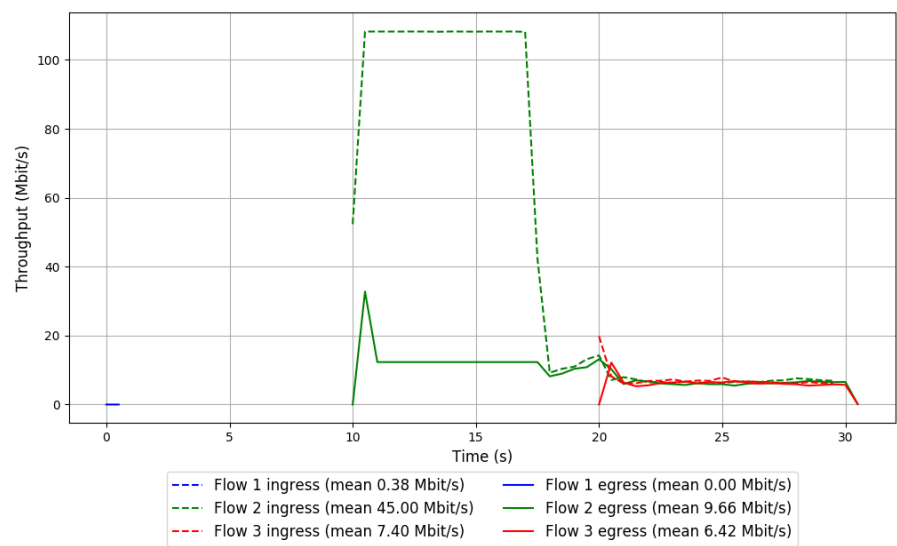
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.39 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 76.34 Mbit/s) --- Flow 2 egress (mean 10.82 Mbit/s)
Flow 3 ingress (mean 6.04 Mbit/s) --- Flow 3 egress (mean 4.10 Mbit/s)

Flow 1 (95th percentile 30.66 ms)   Flow 2 (95th percentile 31.22 ms)   Flow 3 (95th percentile 30.87 ms)

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

Start at: 2018-10-02 10:31:14
End at: 2018-10-02 10:31:44
Local clock offset: -0.434 ms
Remote clock offset: -5.535 ms


# Below is generated by plot.py at 2018-10-02 12:15:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.184 ms
Loss rate: 83.79%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.885 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.92 Mbit/s
95th percentile per-packet one-way delay: 31.286 ms
Loss rate: 85.71%
-- Flow 3:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 31.138 ms
Loss rate: 32.77%
```
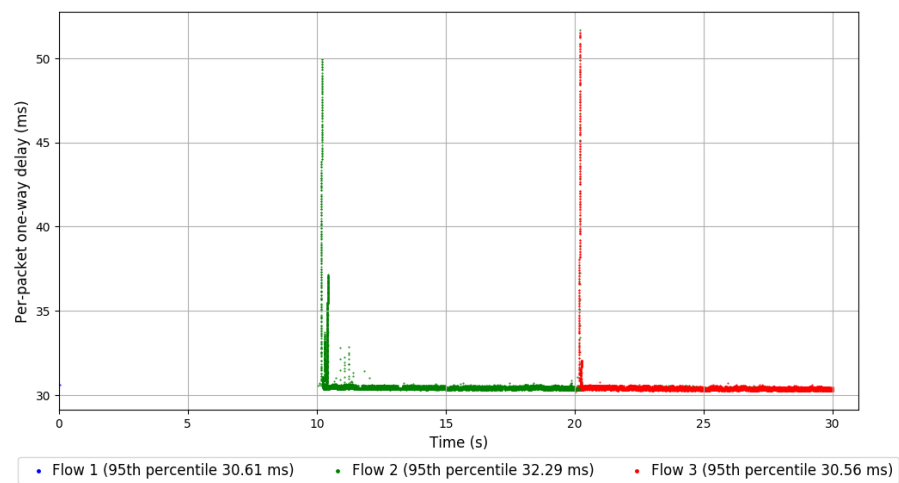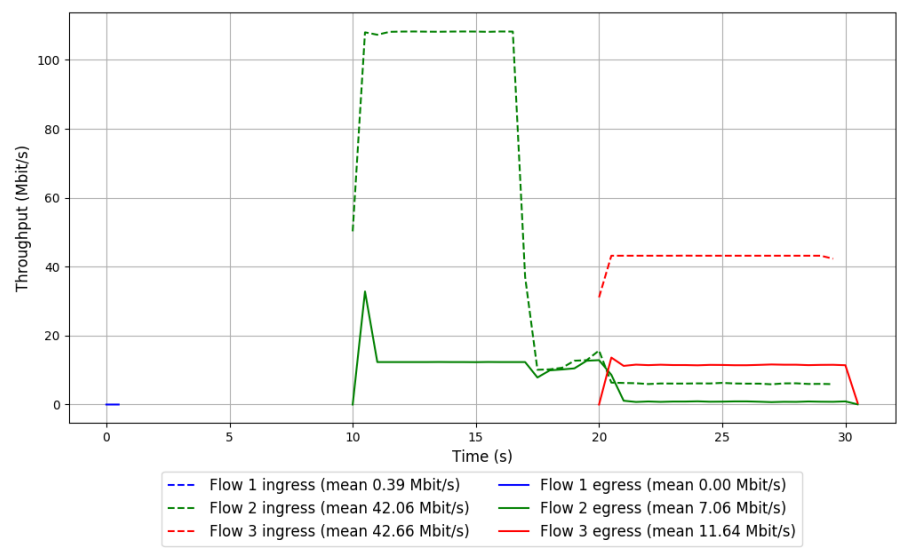
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-02 10:55:45
End at: 2018-10-02 10:56:15
Local clock offset: 2.698 ms
Remote clock offset: -5.295 ms


# Below is generated by plot.py at 2018-10-02 12:15:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.56 Mbit/s
95th percentile per-packet one-way delay: 32.015 ms
Loss rate: 73.59%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.987 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.66 Mbit/s
95th percentile per-packet one-way delay: 32.015 ms
Loss rate: 78.54%
-- Flow 3:
Average throughput: 6.42 Mbit/s
95th percentile per-packet one-way delay: 31.961 ms
Loss rate: 13.22%
```
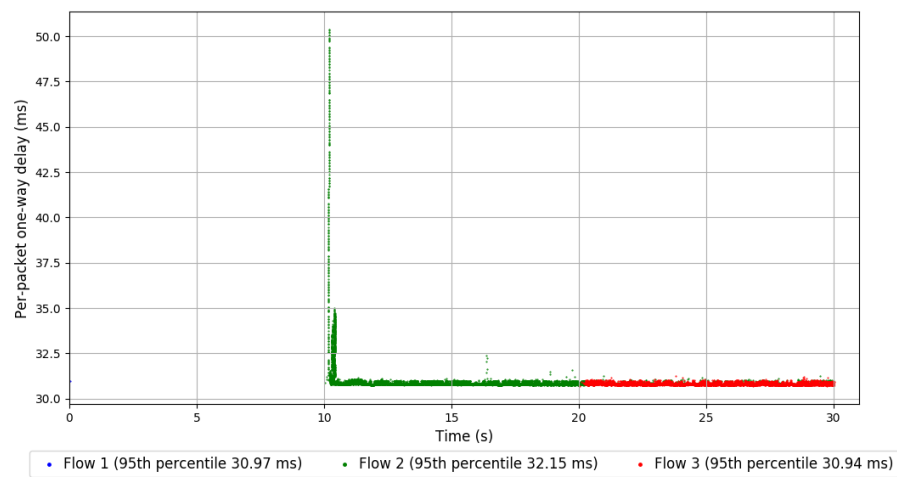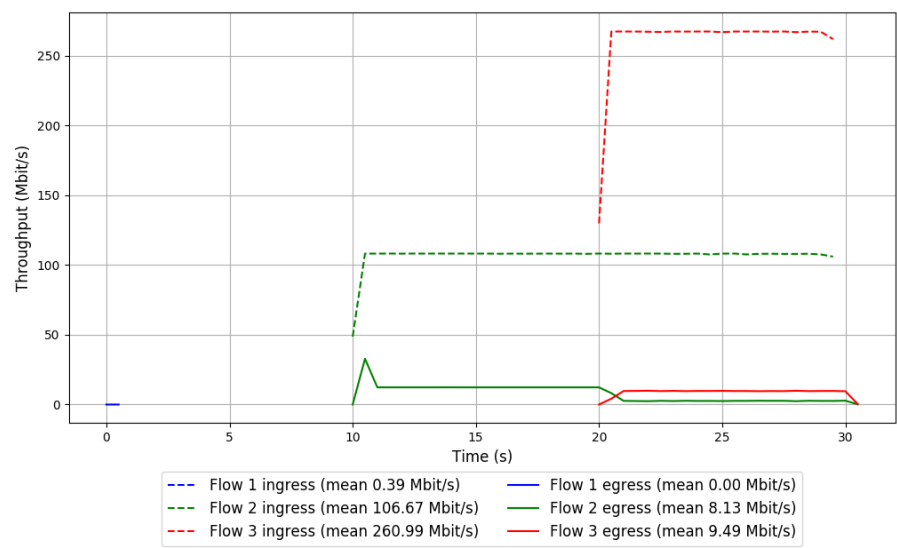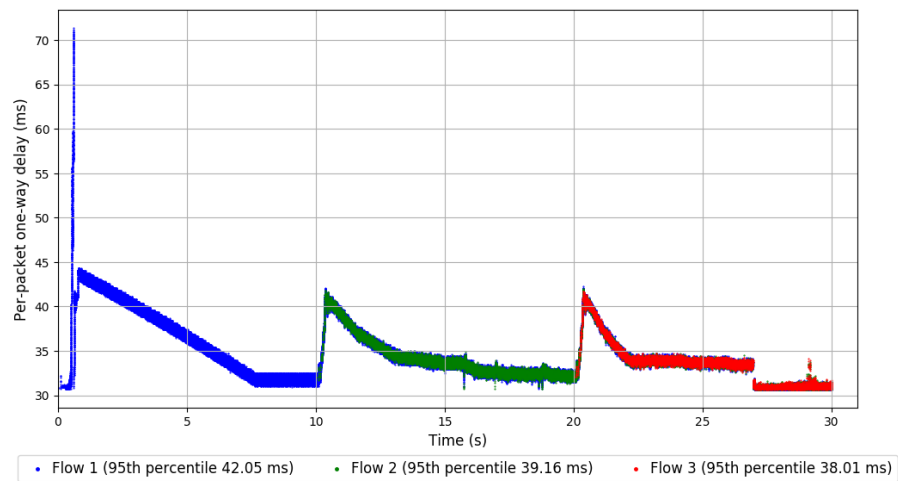
Run 3: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 0.38 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 45.00 Mbit/s) —— Flow 2 egress (mean 9.66 Mbit/s)
- - - Flow 3 ingress (mean 7.40 Mbit/s) —— Flow 3 egress (mean 6.42 Mbit/s)

• Flow 1 (95th percentile 30.99 ms)   • Flow 2 (95th percentile 32.02 ms)   • Flow 3 (95th percentile 31.96 ms)

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

Start at: 2018-10-02 11:20:10
End at: 2018-10-02 11:20:40
Local clock offset: 2.759 ms
Remote clock offset: -5.046 ms


# Below is generated by plot.py at 2018-10-02 12:15:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.295 ms
Loss rate: 79.70%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.606 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 32.288 ms
Loss rate: 83.23%
-- Flow 3:
Average throughput: 11.64 Mbit/s
95th percentile per-packet one-way delay: 30.559 ms
Loss rate: 72.72%
```
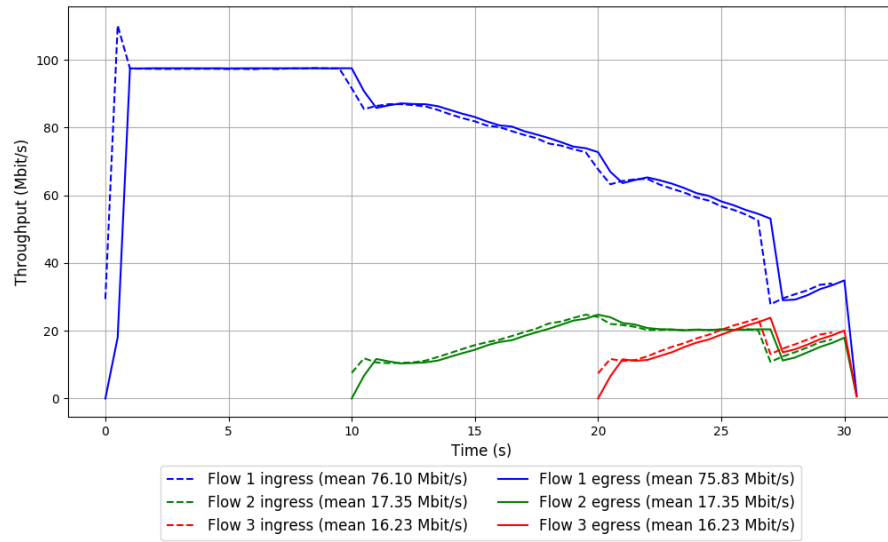
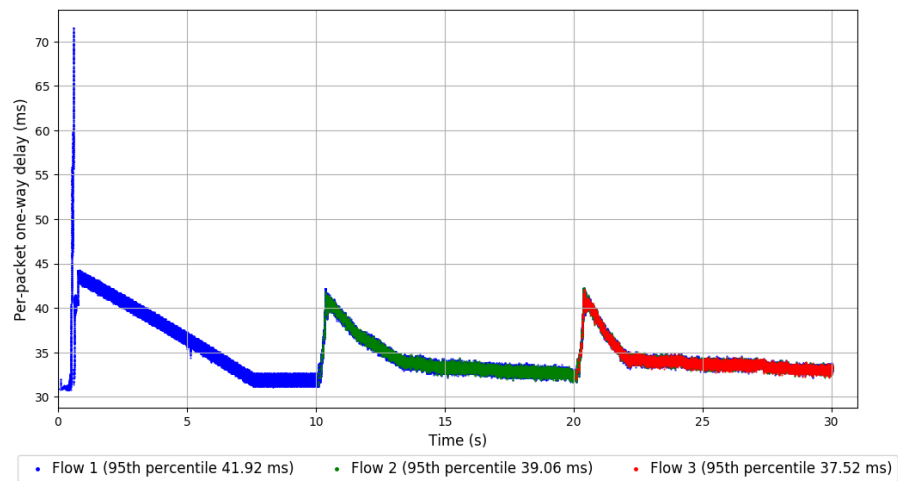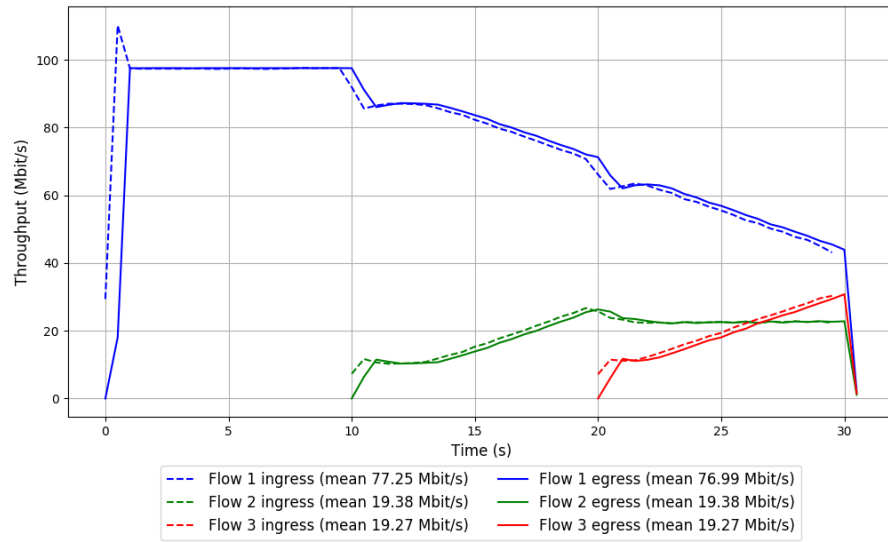Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-02 11:44:41
End at: 2018-10-02 11:45:11
Local clock offset: -0.052 ms
Remote clock offset: -3.455 ms


# Below is generated by plot.py at 2018-10-02 12:15:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.065 ms
Loss rate: 94.57%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.971 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 8.13 Mbit/s
95th percentile per-packet one-way delay: 32.151 ms
Loss rate: 92.38%
-- Flow 3:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 30.936 ms
Loss rate: 96.36%
```

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

- --- Flow 1 ingress (mean 0.39 Mbit/s)
- --- Flow 2 ingress (mean 106.67 Mbit/s)
- --- Flow 3 ingress (mean 260.99 Mbit/s)
- — Flow 1 egress (mean 0.00 Mbit/s)
- — Flow 2 egress (mean 8.13 Mbit/s)
- — Flow 3 egress (mean 9.49 Mbit/s)

- Flow 1 (95th percentile 30.97 ms)
- Flow 2 (95th percentile 32.15 ms)
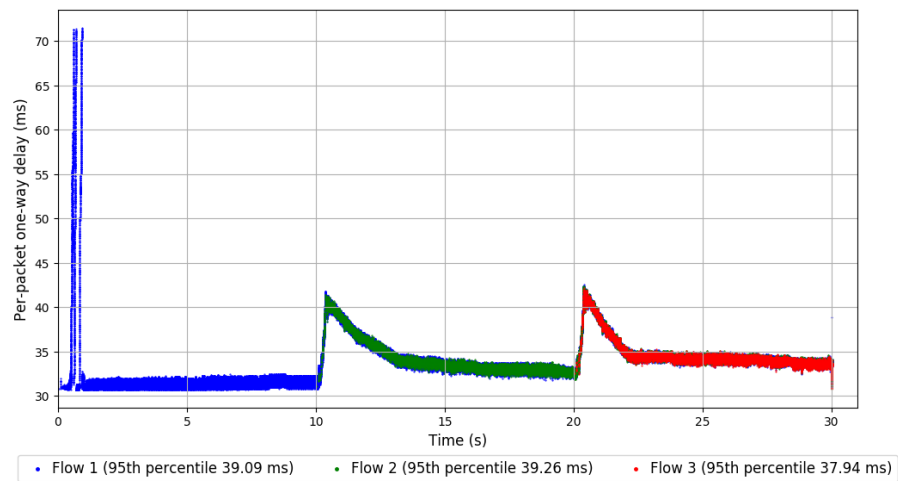- Flow 3 (95th percentile 30.94 ms)

144

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-02 10:09:30
End at: 2018-10-02 10:10:00
Local clock offset: -3.753 ms
Remote clock offset: -5.498 ms


# Below is generated by plot.py at 2018-10-02 12:16:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.80 Mbit/s
95th percentile per-packet one-way delay: 41.584 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 75.83 Mbit/s
95th percentile per-packet one-way delay: 42.046 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 17.35 Mbit/s
95th percentile per-packet one-way delay: 39.159 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 16.23 Mbit/s
95th percentile per-packet one-way delay: 38.007 ms
Loss rate: 0.04%
```
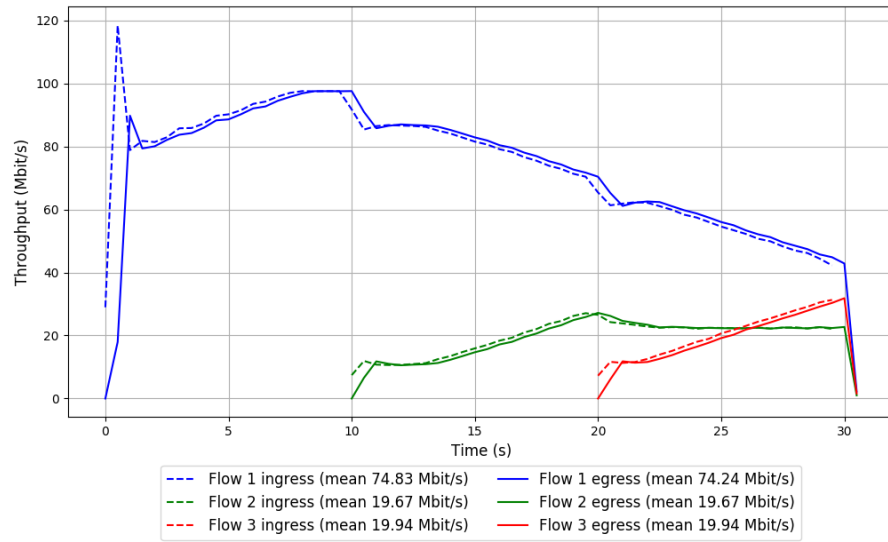
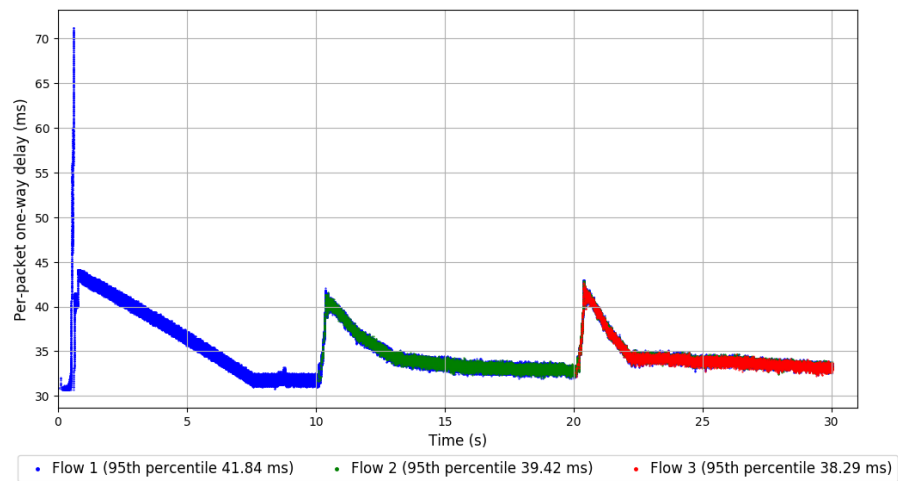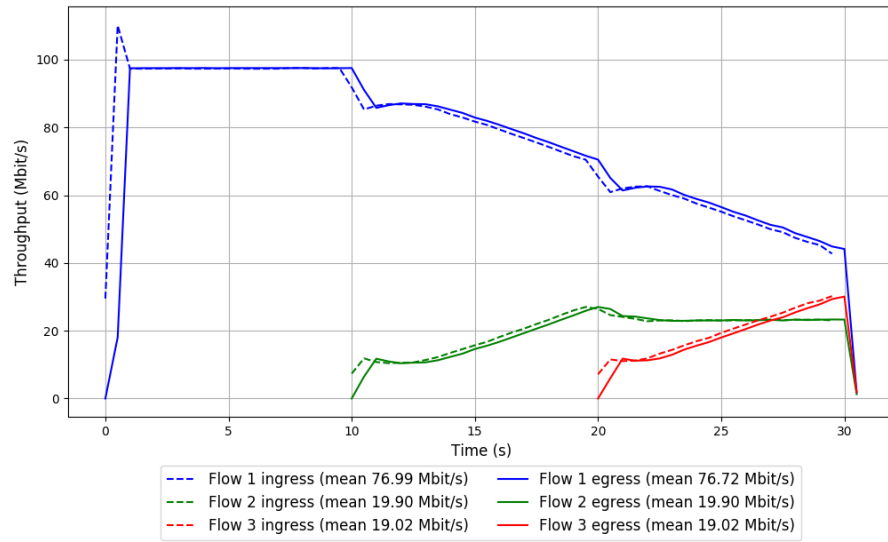Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-02 10:33:57
End at: 2018-10-02 10:34:27
Local clock offset: -0.203 ms
Remote clock offset: -5.488 ms


# Below is generated by plot.py at 2018-10-02 12:16:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 41.459 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 76.99 Mbit/s
95th percentile per-packet one-way delay: 41.923 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 19.38 Mbit/s
95th percentile per-packet one-way delay: 39.056 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.27 Mbit/s
95th percentile per-packet one-way delay: 37.523 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-02 10:58:28
End at: 2018-10-02 10:58:58
Local clock offset: 3.031 ms
Remote clock offset: -5.395 ms


# Below is generated by plot.py at 2018-10-02 12:16:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.97 Mbit/s
95th percentile per-packet one-way delay: 39.052 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 74.24 Mbit/s
95th percentile per-packet one-way delay: 39.088 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 19.67 Mbit/s
95th percentile per-packet one-way delay: 39.263 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.94 Mbit/s
95th percentile per-packet one-way delay: 37.941 ms
Loss rate: 0.00%
```
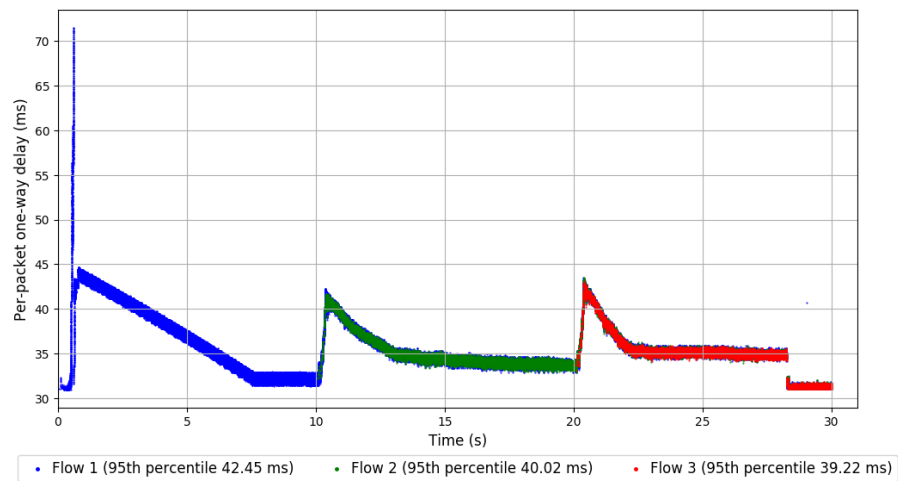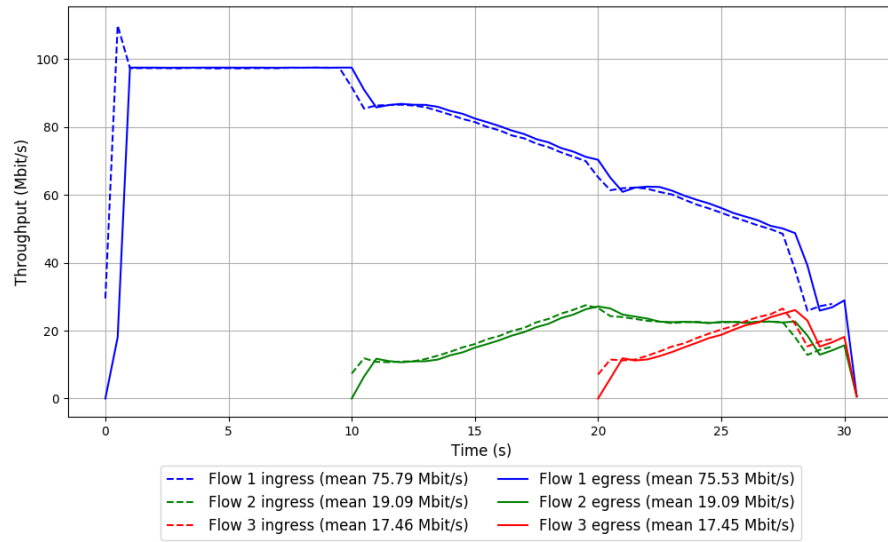
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-02 11:22:52
End at: 2018-10-02 11:23:22
Local clock offset: 2.005 ms
Remote clock offset: -4.752 ms


# Below is generated by plot.py at 2018-10-02 12:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 41.543 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 76.72 Mbit/s
95th percentile per-packet one-way delay: 41.844 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 19.90 Mbit/s
95th percentile per-packet one-way delay: 39.423 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.02 Mbit/s
95th percentile per-packet one-way delay: 38.293 ms
Loss rate: 0.00%
```
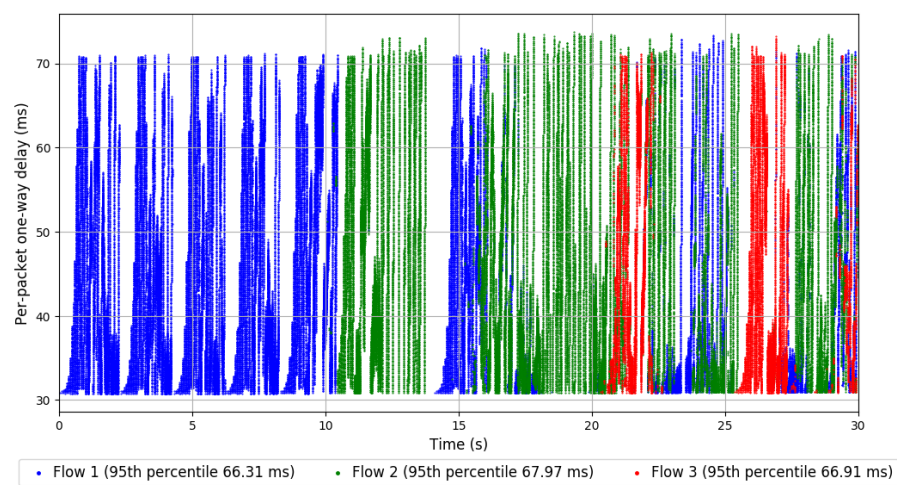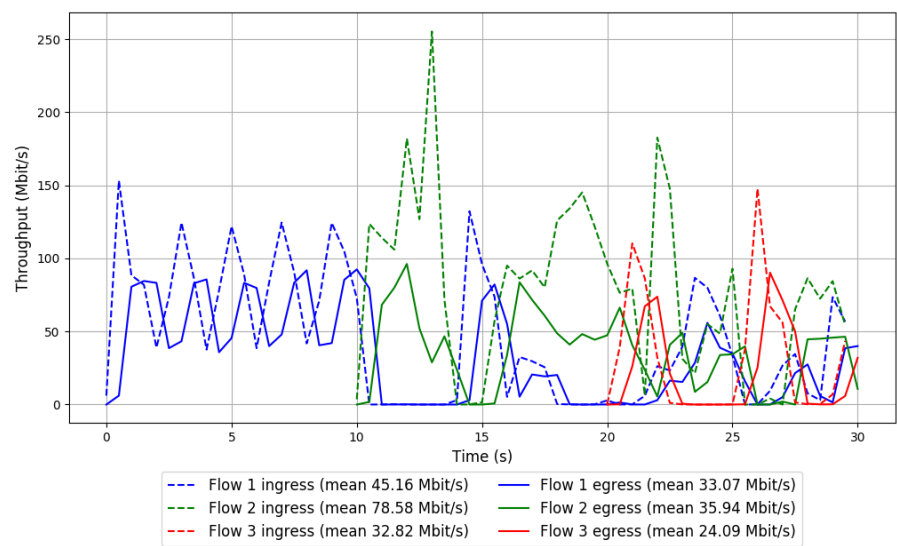
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-02 11:47:24
End at: 2018-10-02 11:47:54
Local clock offset: 0.391 ms
Remote clock offset: -3.32 ms


# Below is generated by plot.py at 2018-10-02 12:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.03 Mbit/s
95th percentile per-packet one-way delay: 42.138 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 75.53 Mbit/s
95th percentile per-packet one-way delay: 42.445 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 19.09 Mbit/s
95th percentile per-packet one-way delay: 40.018 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 17.45 Mbit/s
95th percentile per-packet one-way delay: 39.224 ms
Loss rate: 0.04%
```

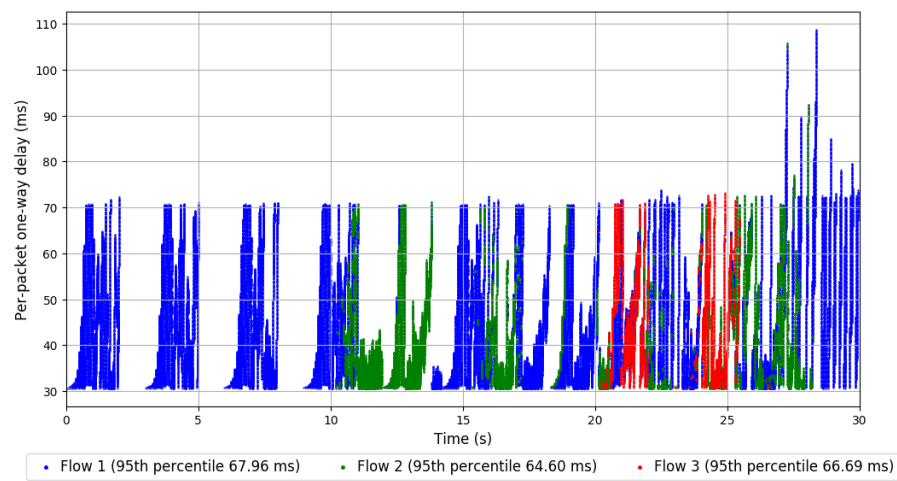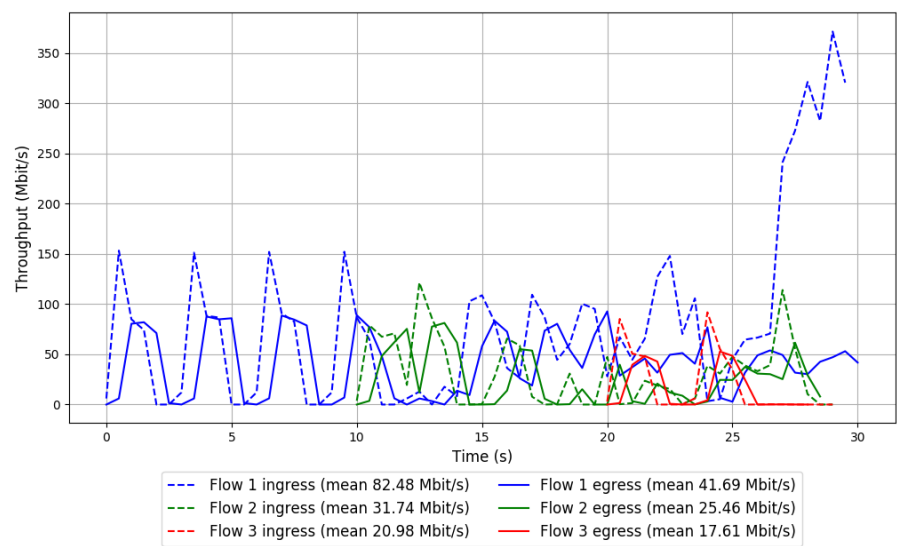## Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-10-02 10:17:39
End at: 2018-10-02 10:18:09
Local clock offset: -3.493 ms
Remote clock offset: -5.748 ms


# Below is generated by plot.py at 2018-10-02 12:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.72 Mbit/s
95th percentile per-packet one-way delay: 67.059 ms
Loss rate: 39.99%
-- Flow 1:
Average throughput: 33.07 Mbit/s
95th percentile per-packet one-way delay: 66.305 ms
Loss rate: 26.70%
-- Flow 2:
Average throughput: 35.94 Mbit/s
95th percentile per-packet one-way delay: 67.970 ms
Loss rate: 54.24%
-- Flow 3:
Average throughput: 24.09 Mbit/s
95th percentile per-packet one-way delay: 66.911 ms
Loss rate: 26.34%
```
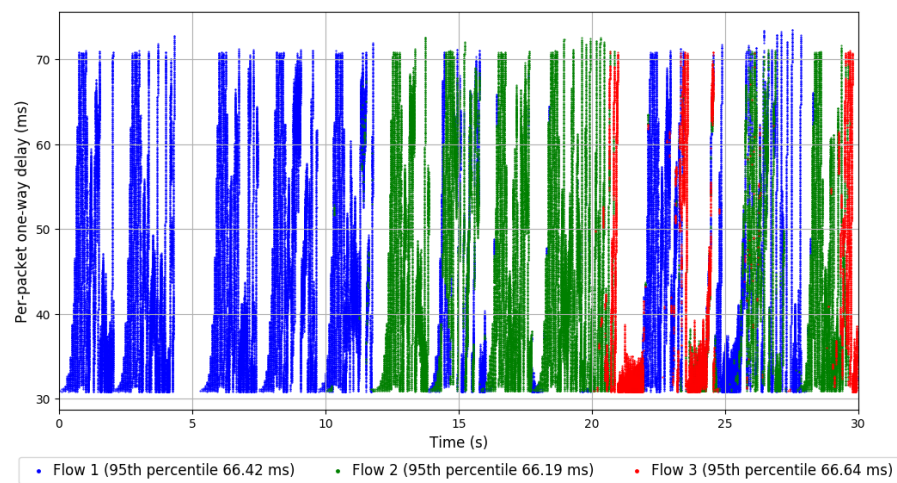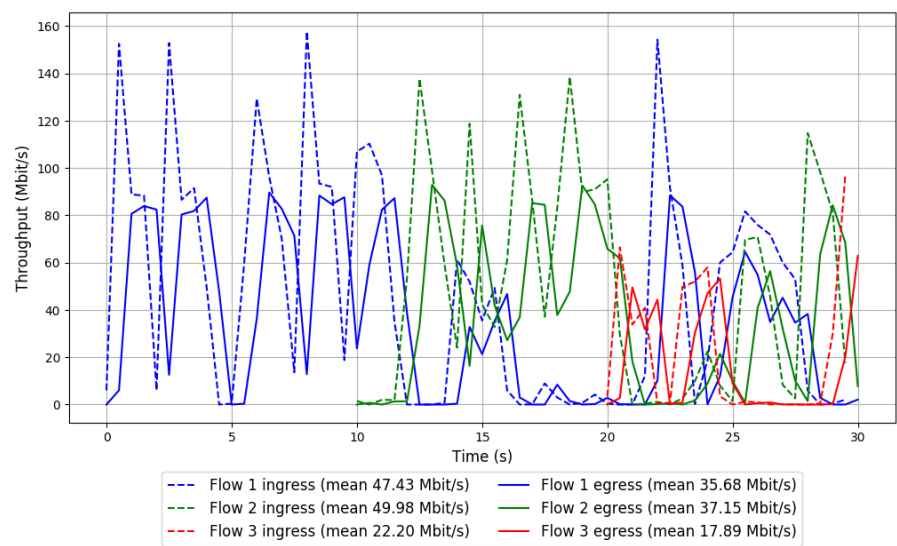
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 45.16 Mbit/s)   Flow 1 egress (mean 33.07 Mbit/s)
Flow 2 ingress (mean 78.58 Mbit/s)   Flow 2 egress (mean 35.94 Mbit/s)
Flow 3 ingress (mean 32.82 Mbit/s)   Flow 3 egress (mean 24.09 Mbit/s)

Flow 1 (95th percentile 66.31 ms)   Flow 2 (95th percentile 67.97 ms)   Flow 3 (95th percentile 66.91 ms)

```
Run 2: Statistics of Verus

Start at: 2018-10-02 10:42:09
End at: 2018-10-02 10:42:39
Local clock offset: 0.185 ms
Remote clock offset: -5.612 ms


# Below is generated by plot.py at 2018-10-02 12:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.59 Mbit/s
95th percentile per-packet one-way delay: 67.240 ms
Loss rate: 43.54%
-- Flow 1:
Average throughput: 41.69 Mbit/s
95th percentile per-packet one-way delay: 67.960 ms
Loss rate: 49.42%
-- Flow 2:
Average throughput: 25.46 Mbit/s
95th percentile per-packet one-way delay: 64.602 ms
Loss rate: 24.00%
-- Flow 3:
Average throughput: 17.61 Mbit/s
95th percentile per-packet one-way delay: 66.692 ms
Loss rate: 29.80%
```
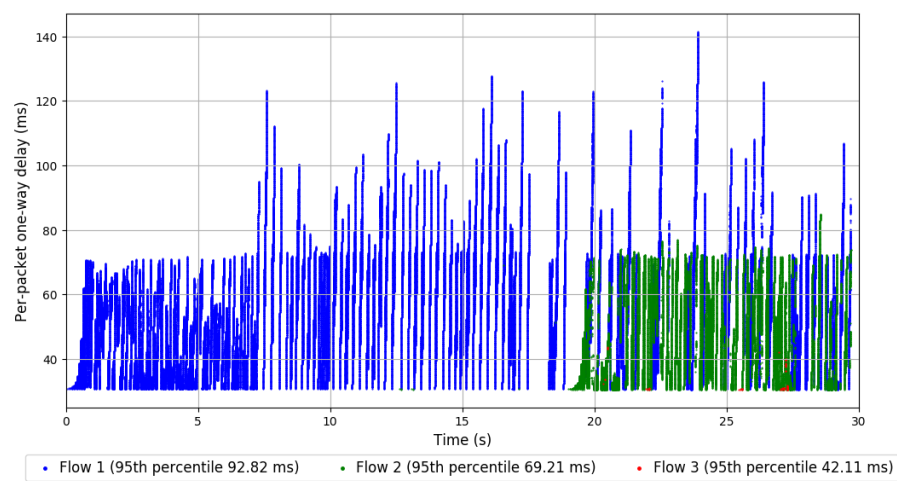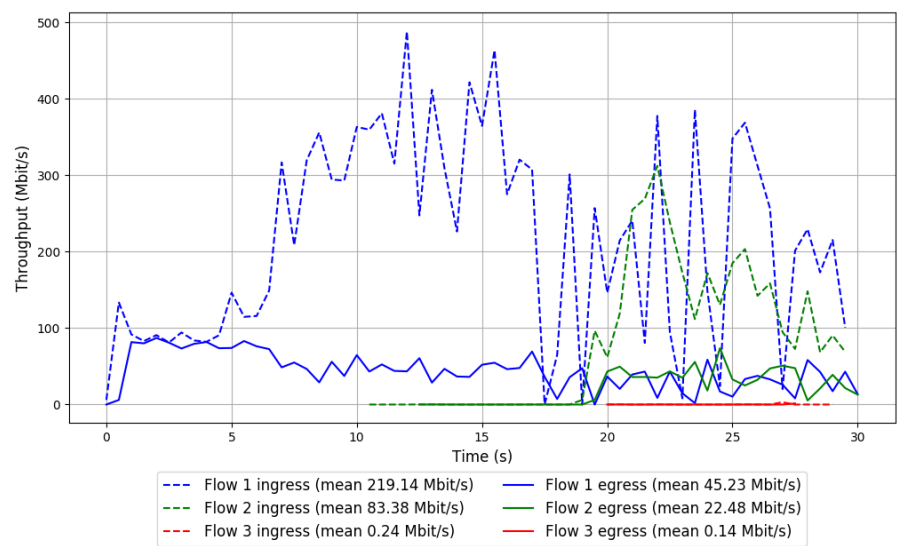
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-02 11:06:38
End at: 2018-10-02 11:07:08
Local clock offset: 3.818 ms
Remote clock offset: -5.053 ms


# Below is generated by plot.py at 2018-10-02 12:16:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.99 Mbit/s
95th percentile per-packet one-way delay: 66.368 ms
Loss rate: 24.74%
-- Flow 1:
Average throughput: 35.68 Mbit/s
95th percentile per-packet one-way delay: 66.416 ms
Loss rate: 24.76%
-- Flow 2:
Average throughput: 37.15 Mbit/s
95th percentile per-packet one-way delay: 66.191 ms
Loss rate: 25.92%
-- Flow 3:
Average throughput: 17.89 Mbit/s
95th percentile per-packet one-way delay: 66.640 ms
Loss rate: 19.36%
```

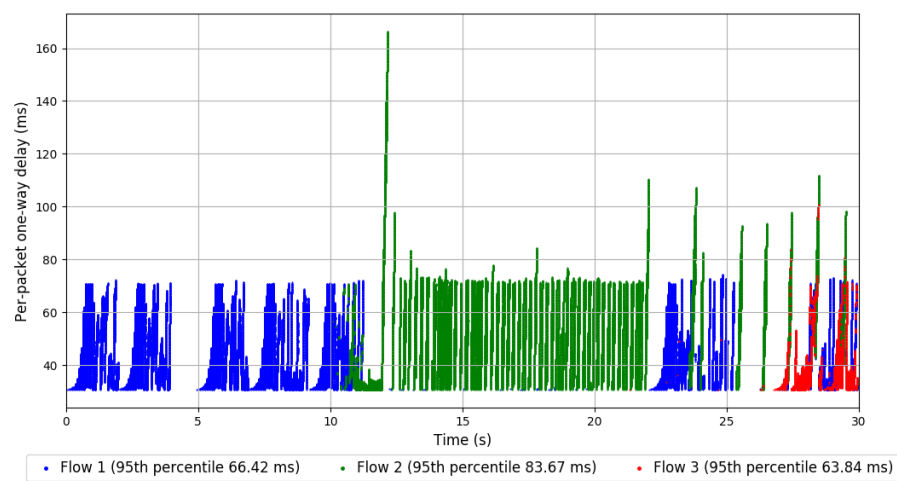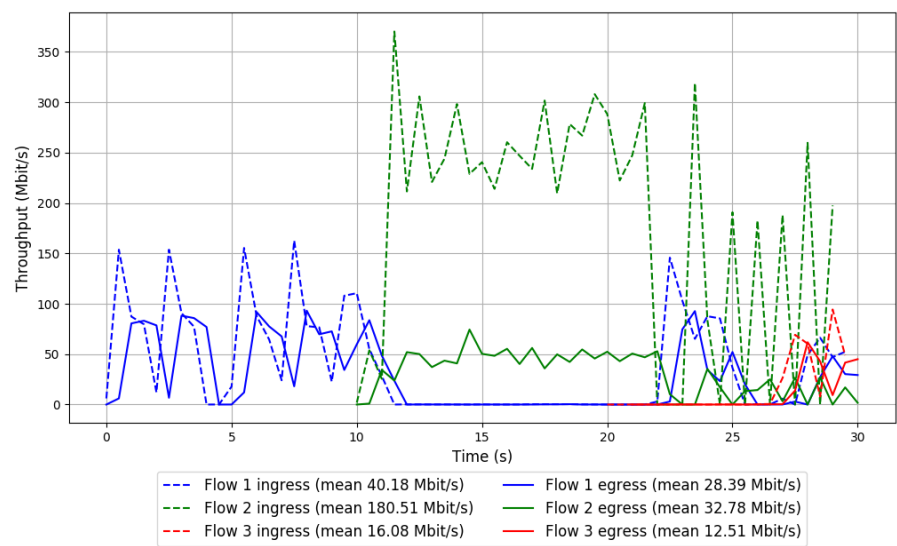## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-02 11:31:00
End at: 2018-10-02 11:31:30
Local clock offset: 0.752 ms
Remote clock offset: -4.505 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.21 Mbit/s
95th percentile per-packet one-way delay: 89.126 ms
Loss rate: 78.63%
-- Flow 1:
Average throughput: 45.23 Mbit/s
95th percentile per-packet one-way delay: 92.818 ms
Loss rate: 79.32%
-- Flow 2:
Average throughput: 22.48 Mbit/s
95th percentile per-packet one-way delay: 69.212 ms
Loss rate: 75.83%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 42.106 ms
Loss rate: 53.33%
```
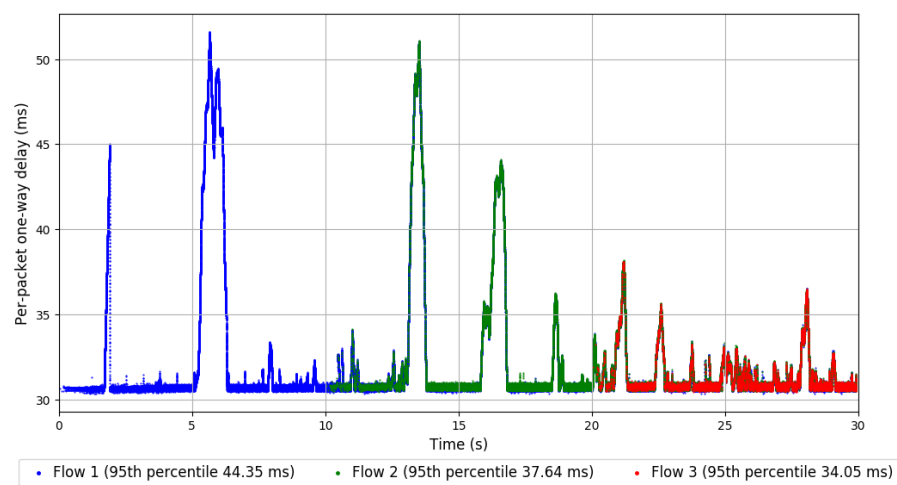
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-02 11:55:34
End at: 2018-10-02 11:56:04
Local clock offset: 2.337 ms
Remote clock offset: -2.729 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.26 Mbit/s
95th percentile per-packet one-way delay: 70.779 ms
Loss rate: 67.20%
-- Flow 1:
Average throughput: 28.39 Mbit/s
95th percentile per-packet one-way delay: 66.425 ms
Loss rate: 29.33%
-- Flow 2:
Average throughput: 32.78 Mbit/s
95th percentile per-packet one-way delay: 83.666 ms
Loss rate: 81.82%
-- Flow 3:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 63.838 ms
Loss rate: 30.29%
```

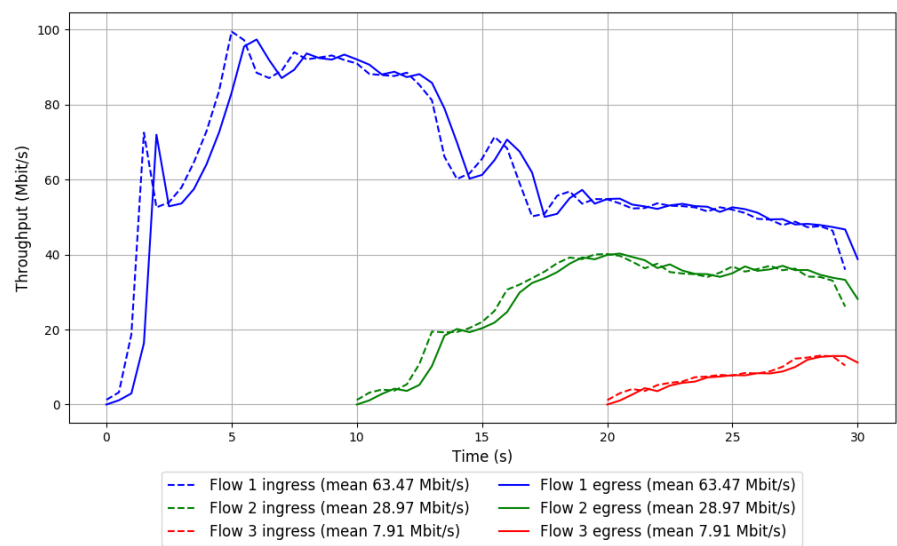Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-02 10:12:14
End at: 2018-10-02 10:12:44
Local clock offset: -4.031 ms
Remote clock offset: -5.716 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.35 Mbit/s
95th percentile per-packet one-way delay: 42.985 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.47 Mbit/s
95th percentile per-packet one-way delay: 44.352 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.97 Mbit/s
95th percentile per-packet one-way delay: 37.638 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: 34.051 ms
Loss rate: 0.00%
```

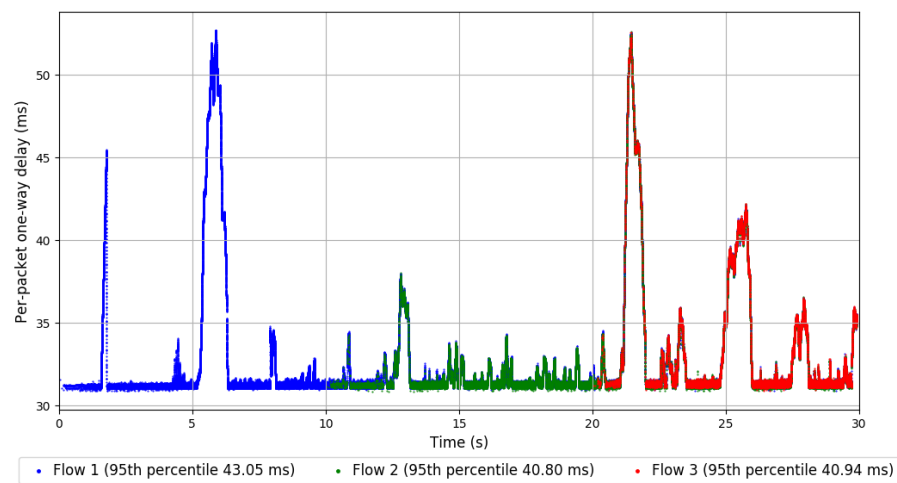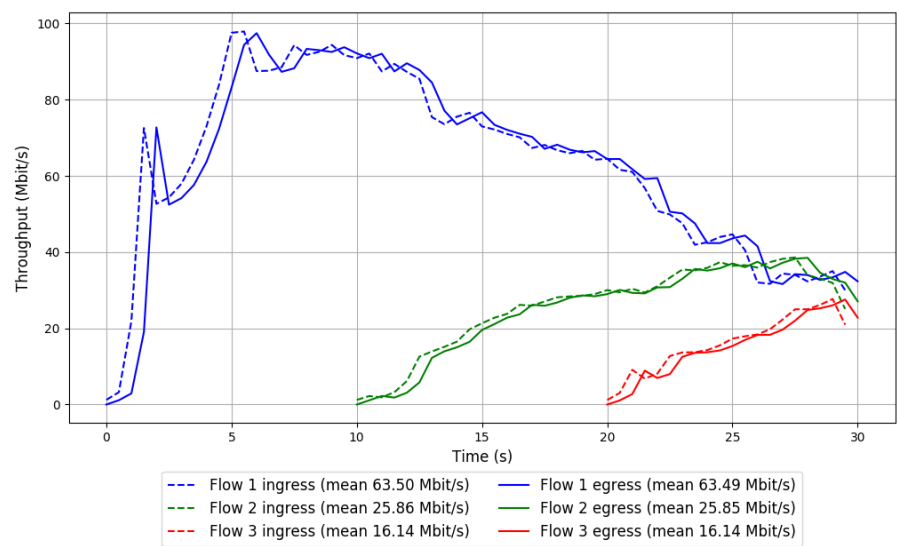# Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-02 10:36:42
End at: 2018-10-02 10:37:12
Local clock offset: -0.044 ms
Remote clock offset: -5.299 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.02 Mbit/s
95th percentile per-packet one-way delay: 42.065 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.49 Mbit/s
95th percentile per-packet one-way delay: 43.049 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 25.85 Mbit/s
95th percentile per-packet one-way delay: 40.800 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.14 Mbit/s
95th percentile per-packet one-way delay: 40.936 ms
Loss rate: 0.00%
```

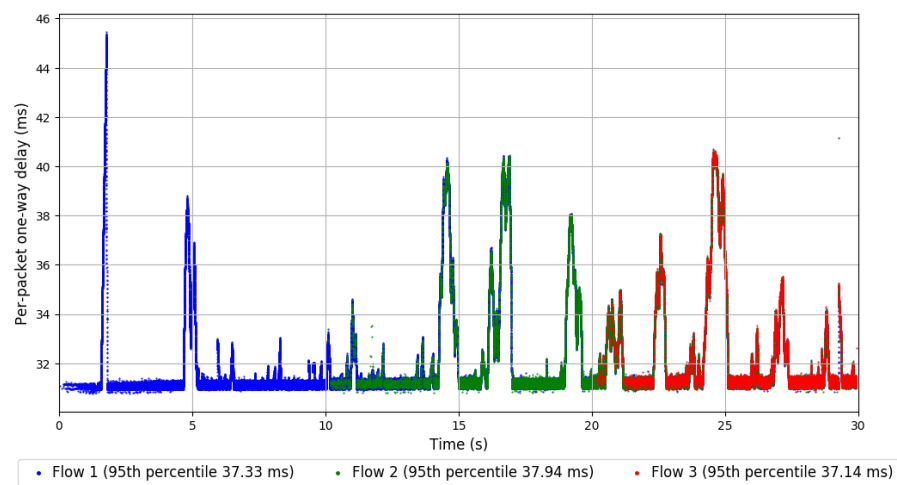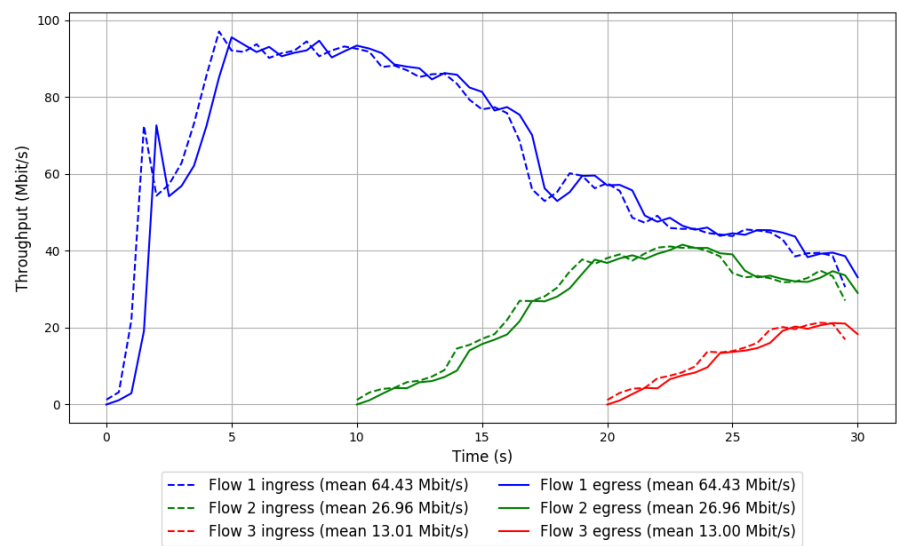# Run 2: Report of PCC-Vivace — Data Link

168

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-02 11:01:12
End at: 2018-10-02 11:01:42
Local clock offset: 3.339 ms
Remote clock offset: -5.091 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.65 Mbit/s
95th percentile per-packet one-way delay: 37.518 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 64.43 Mbit/s
95th percentile per-packet one-way delay: 37.326 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.96 Mbit/s
95th percentile per-packet one-way delay: 37.935 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.00 Mbit/s
95th percentile per-packet one-way delay: 37.142 ms
Loss rate: 0.00%
```

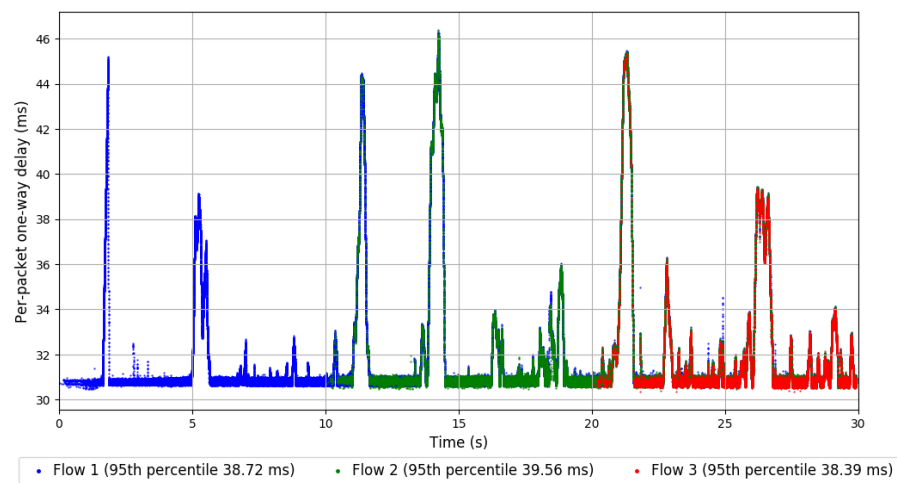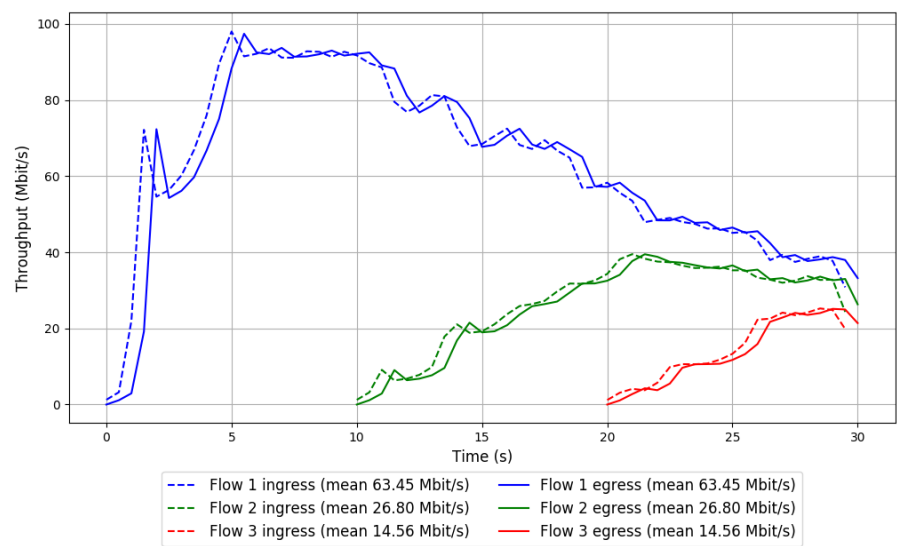Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-02 11:25:36
End at: 2018-10-02 11:26:06
Local clock offset: 1.489 ms
Remote clock offset: -4.714 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.10 Mbit/s
95th percentile per-packet one-way delay: 38.800 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.45 Mbit/s
95th percentile per-packet one-way delay: 38.724 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.80 Mbit/s
95th percentile per-packet one-way delay: 39.563 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 14.56 Mbit/s
95th percentile per-packet one-way delay: 38.386 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-02 11:50:08
End at: 2018-10-02 11:50:38
Local clock offset: 1.259 ms
Remote clock offset: -3.09 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.45 Mbit/s
95th percentile per-packet one-way delay: 44.685 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 65.94 Mbit/s
95th percentile per-packet one-way delay: 46.792 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 24.13 Mbit/s
95th percentile per-packet one-way delay: 40.595 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 35.267 ms
Loss rate: 0.02%
```
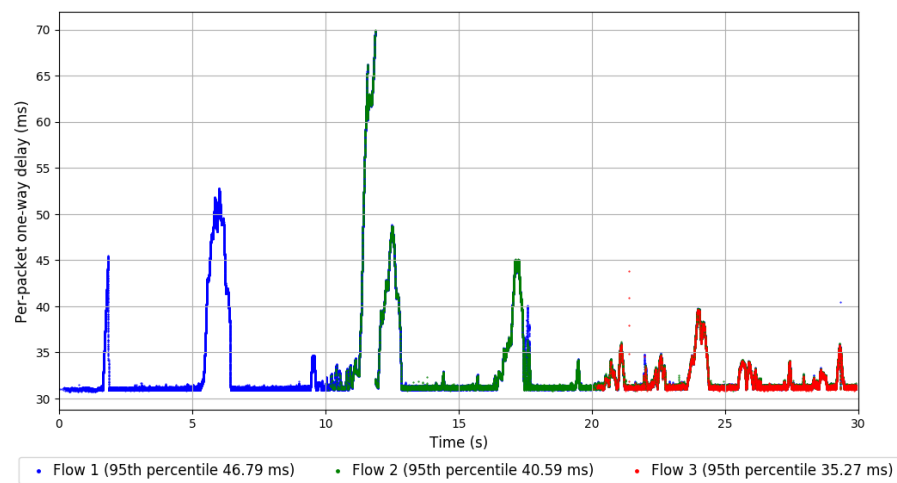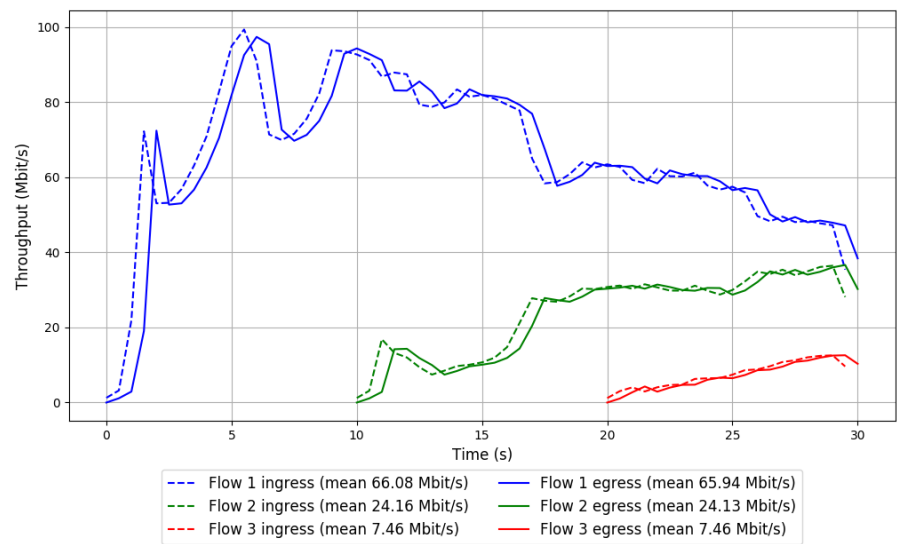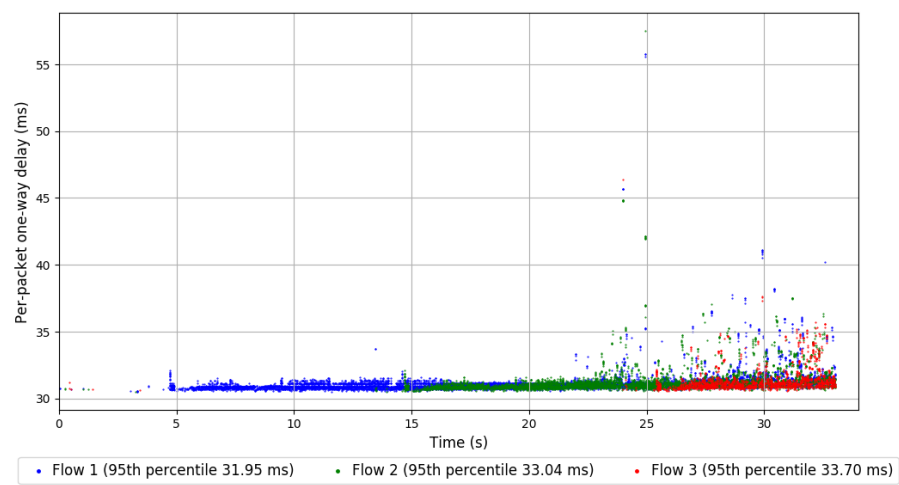
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 66.08 Mbit/s)   Flow 1 egress (mean 65.94 Mbit/s)
Flow 2 ingress (mean 24.16 Mbit/s)   Flow 2 egress (mean 24.13 Mbit/s)
Flow 3 ingress (mean 7.46 Mbit/s)   Flow 3 egress (mean 7.46 Mbit/s)

Flow 1 (95th percentile 46.79 ms)   Flow 2 (95th percentile 40.59 ms)   Flow 3 (95th percentile 35.27 ms)
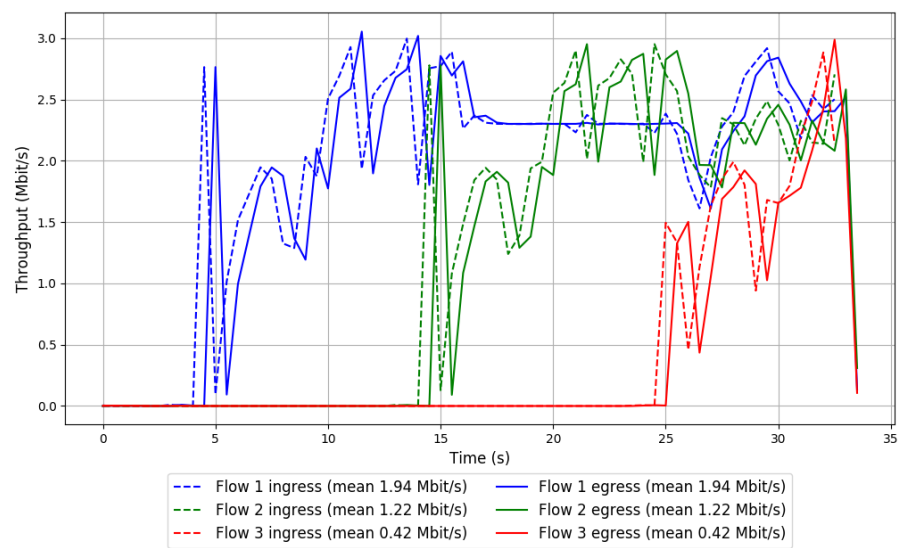
```
Run 1: Statistics of WebRTC media

Start at: 2018-10-02 10:25:48
End at: 2018-10-02 10:26:18
Local clock offset: -1.148 ms
Remote clock offset: -5.756 ms

# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 32.636 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 31.952 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 33.042 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 33.696 ms
Loss rate: 0.00%
```

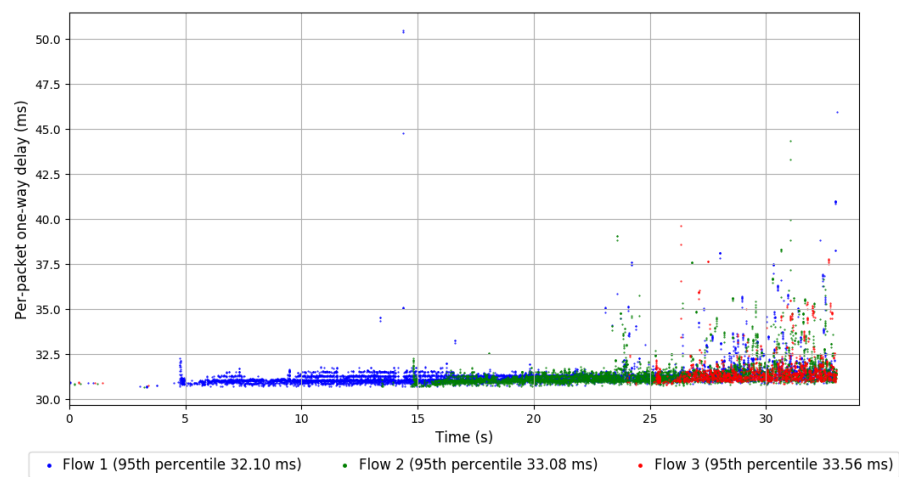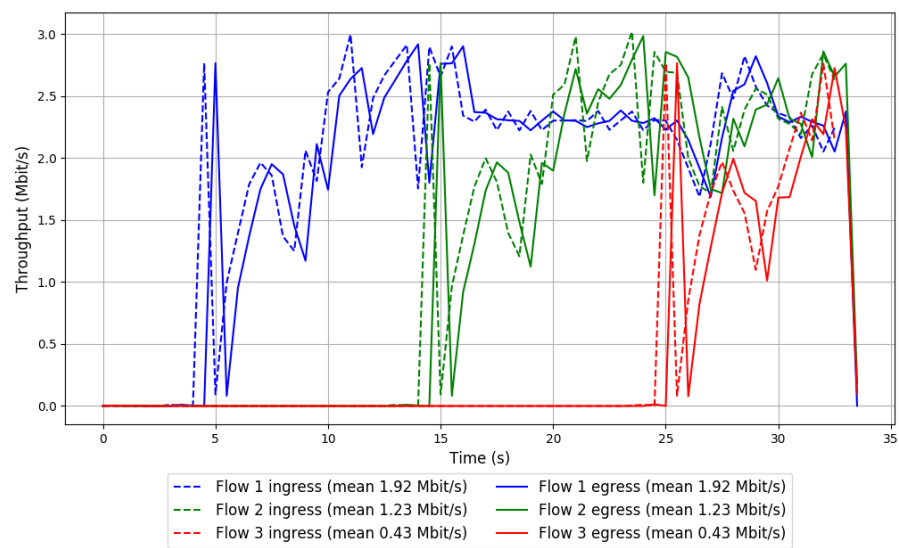Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-02 10:50:19
End at: 2018-10-02 10:50:49
Local clock offset: 1.561 ms
Remote clock offset: -5.635 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 32.543 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 32.103 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 33.083 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.561 ms
Loss rate: 0.00%
```

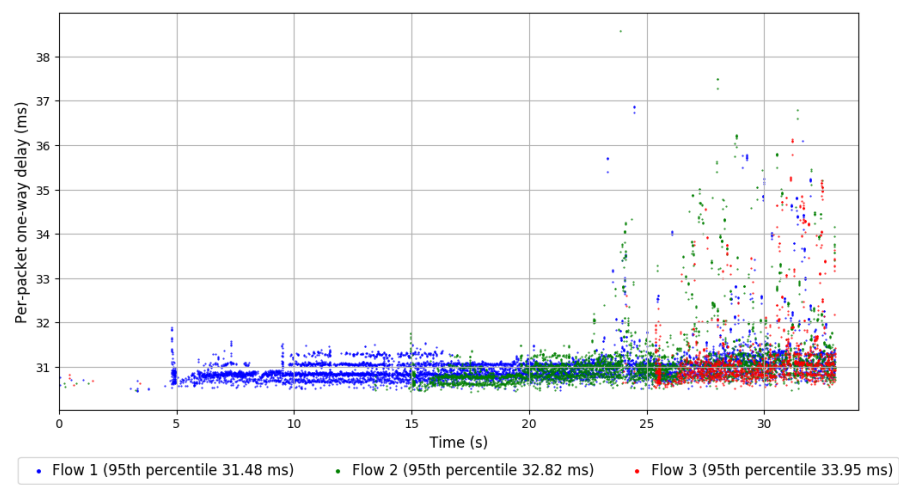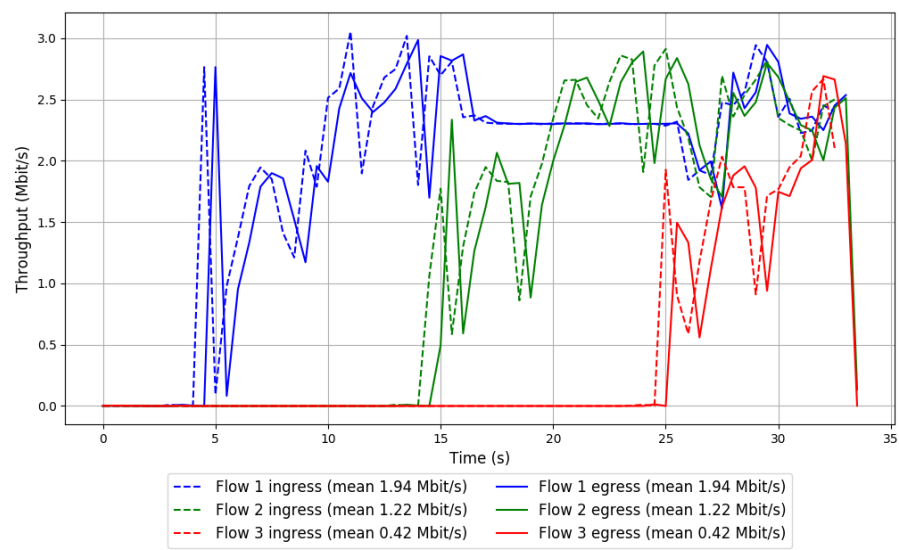Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-02 11:14:45
End at: 2018-10-02 11:15:15
Local clock offset: 4.341 ms
Remote clock offset: -5.145 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 32.185 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 31.482 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 32.822 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 33.952 ms
Loss rate: 0.00%
```
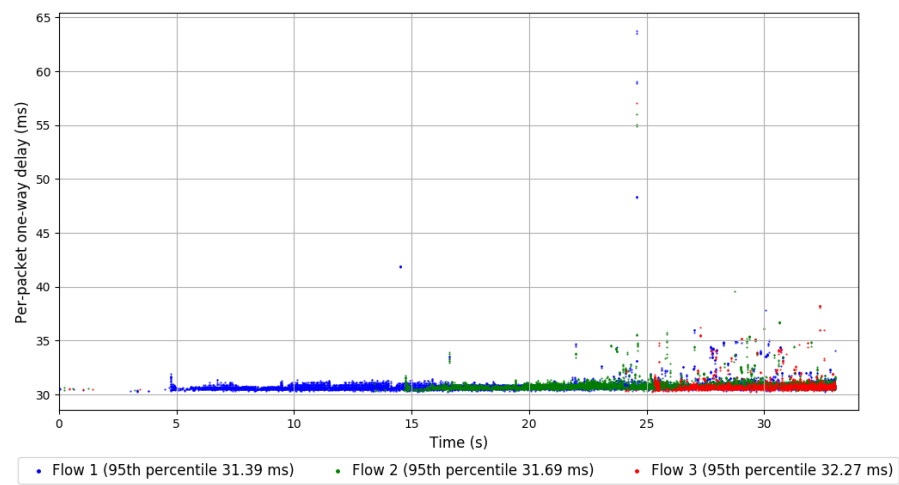
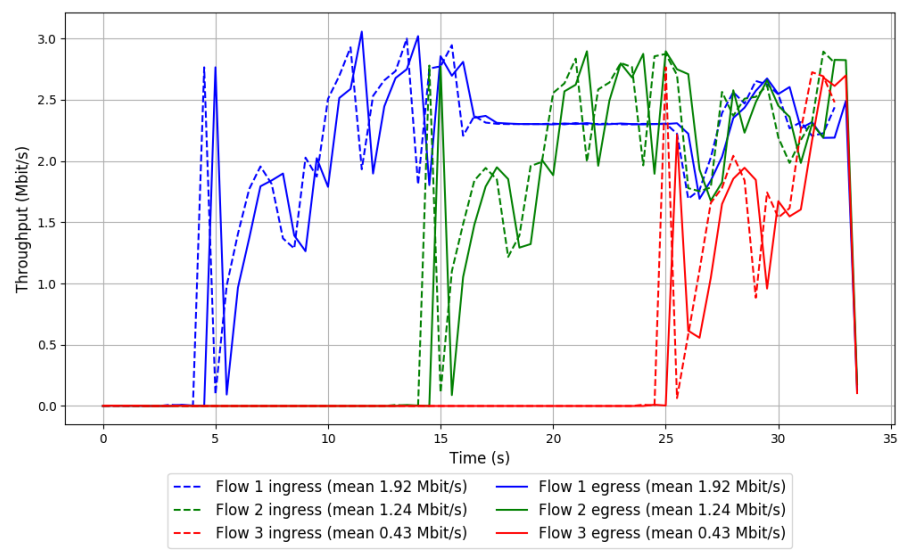Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-02 11:39:16
End at: 2018-10-02 11:39:46
Local clock offset: 0.169 ms
Remote clock offset: -4.162 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 31.600 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 31.390 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 31.692 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 32.265 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-02 12:03:45
End at: 2018-10-02 12:04:15
Local clock offset: 3.225 ms
Remote clock offset: -2.22 ms


# Below is generated by plot.py at 2018-10-02 12:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 32.111 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 31.605 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 32.519 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 33.679 ms
Loss rate: 0.07%
```

Run 5: Report of WebRTC media — Data Link