Pantheon Report

Generated at 2019-02-20 12:22:35 (UTC).

Data path: India on em1 (*remote*) →AWS India 1 on ens5 (*local*).

Repeated the test of 21 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 nets.org.sg and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1031-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 @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
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 India to AWS India 1, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from India to AWS India 1, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

3

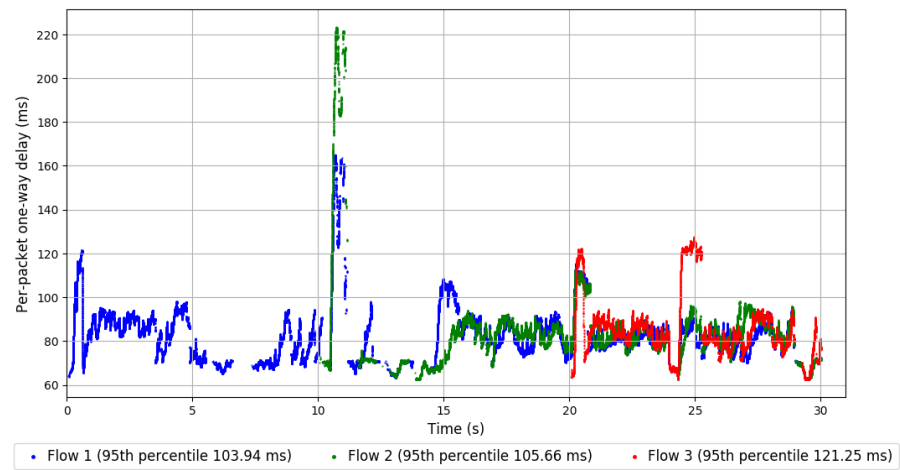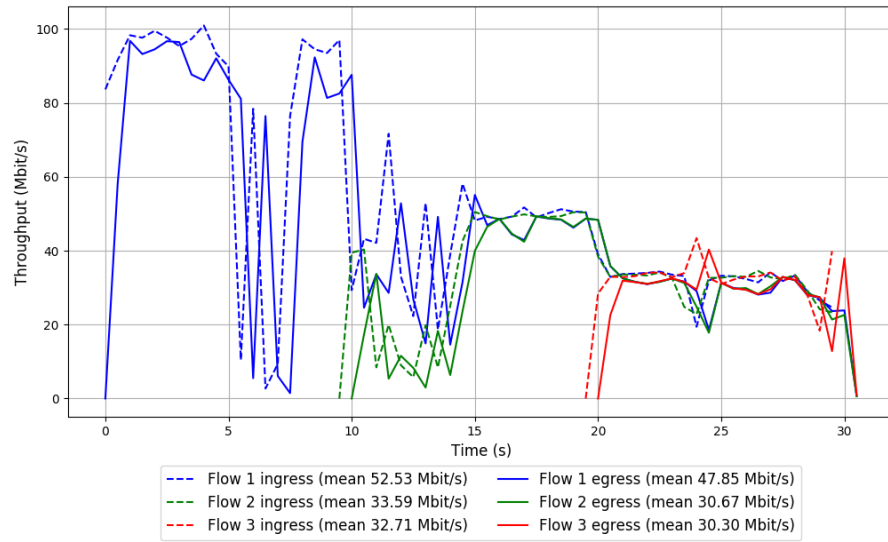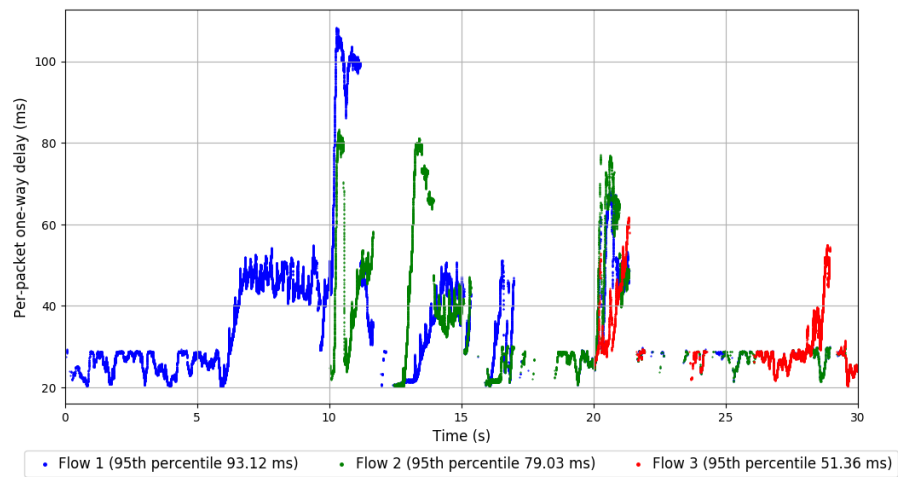| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	44.58	28.50	27.23	85.10	98.97	92.39	7.08	8.61	9.61
Copa	5	24.54	19.31	17.62	50.96	57.83	51.10	3.35	4.34	10.21
TCP Cubic	5	23.53	21.22	19.79	52.39	53.68	57.55	2.58	2.56	3.16
FillP	5	44.25	36.74	31.39	93.63	111.28	100.46	6.04	8.27	8.29
FillP-Sheep	5	26.12	46.64	35.04	79.15	81.39	90.33	24.08	11.34	17.41
Indigo	5	30.49	27.28	27.01	66.92	67.04	67.77	4.40	3.34	3.58
Indigo-MusesC3	5	27.67	22.38	14.98	78.09	78.23	79.19	3.97	5.05	4.07
Indigo-MusesC5	5	37.78	33.84	28.17	62.99	59.81	69.27	5.63	8.86	12.31
Indigo-MusesD	5	22.69	11.25	16.03	74.05	72.82	79.22	7.41	8.51	8.28
Indigo-MusesT	5	44.35	29.80	15.58	96.80	148.70	105.80	4.68	6.12	7.77
LEDBAT	5	19.35	17.16	9.96	65.14	63.46	66.29	2.27	3.59	3.10
PCC-Allegro	5	15.83	14.51	27.19	414.74	69.30	120.50	9.08	7.60	8.94
PCC-Expr	5	44.42	22.60	17.32	558.80	495.65	46.97	22.05	10.30	6.64
QUIC Cubic	5	35.72	23.68	19.98	62.54	62.99	68.53	4.27	4.85	4.55
SCReAM	5	0.12	0.12	0.13	70.89	70.90	70.85	7.17	6.37	4.74
Sprout	5	18.70	18.02	18.20	56.71	57.60	58.31	6.20	6.35	6.31
TaoVA-100x	5	27.51	19.58	29.97	97.29	107.15	85.31	5.74	5.30	3.95
TCP Vegas	5	21.09	21.95	15.83	78.56	87.11	77.03	2.94	2.45	2.36
Verus	5	44.49	32.17	30.31	87.47	101.96	122.70	7.52	7.08	4.24
PCC-Vivace	5	18.45	14.32	6.84	197.82	67.07	56.42	10.16	8.14	8.61
WebRTC media	5	1.51	0.89	0.50	65.39	65.35	65.43	9.49	9.32	7.95

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-20 09:55:18
End at: 2019-02-20 09:55:48
Local clock offset: 1.074 ms
Remote clock offset: -46.719 ms


# Below is generated by plot.py at 2019-02-20 12:13:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.35 Mbit/s
95th percentile per-packet one-way delay: 106.400 ms
Loss rate: 8.76%
-- Flow 1:
Average throughput: 47.85 Mbit/s
95th percentile per-packet one-way delay: 103.938 ms
Loss rate: 8.98%
-- Flow 2:
Average throughput: 30.67 Mbit/s
95th percentile per-packet one-way delay: 105.661 ms
Loss rate: 8.84%
-- Flow 3:
Average throughput: 30.30 Mbit/s
95th percentile per-packet one-way delay: 121.251 ms
Loss rate: 7.59%
```
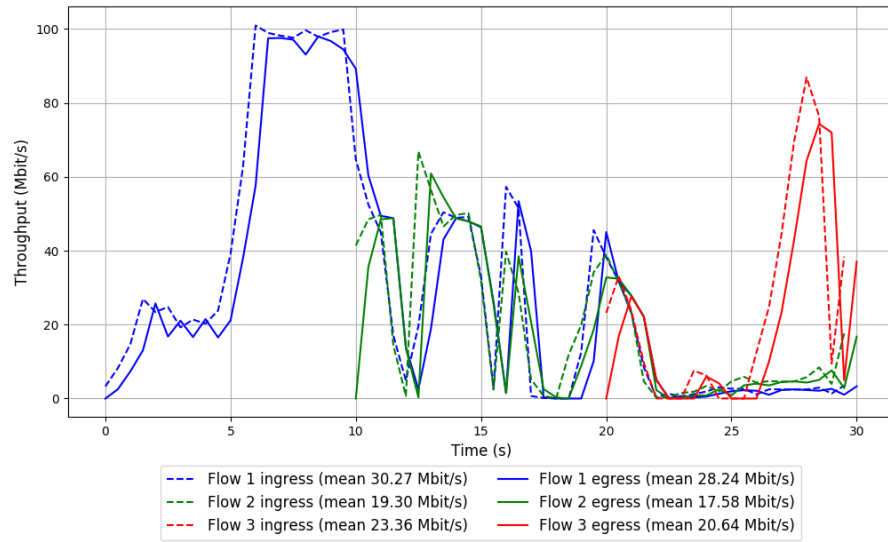
Run 1: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 52.53 Mbit/s) ——— Flow 1 egress (mean 47.85 Mbit/s)
- - - Flow 2 ingress (mean 33.59 Mbit/s) ——— Flow 2 egress (mean 30.67 Mbit/s)
- - - Flow 3 ingress (mean 32.71 Mbit/s) ——— Flow 3 egress (mean 30.30 Mbit/s)

• Flow 1 (95th percentile 103.94 ms)   • Flow 2 (95th percentile 105.66 ms)   • Flow 3 (95th percentile 121.25 ms)
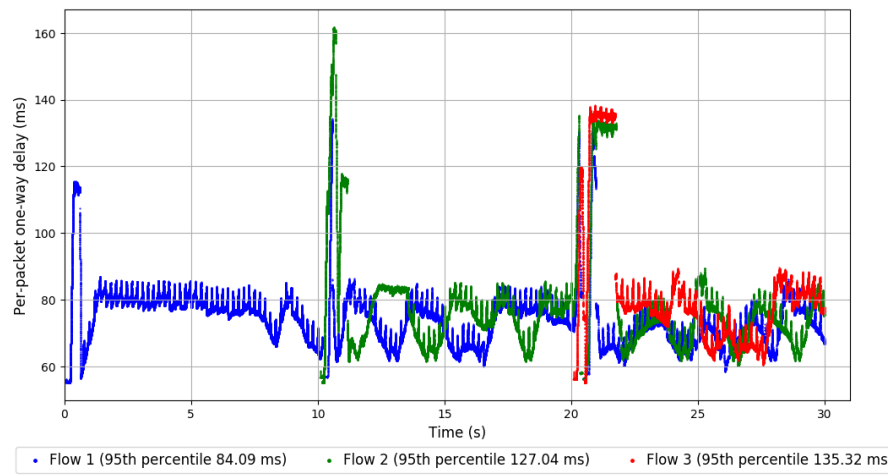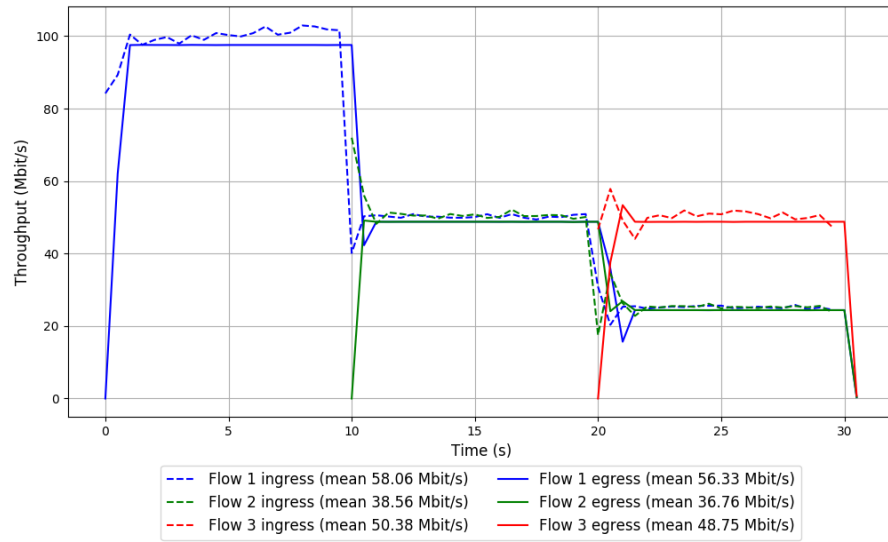
```
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 10:23:07
End at: 2019-02-20 10:23:37
Local clock offset: -0.041 ms
Remote clock offset: -6.902 ms


# Below is generated by plot.py at 2019-02-20 12:13:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.81 Mbit/s
95th percentile per-packet one-way delay: 77.827 ms
Loss rate: 8.15%
-- Flow 1:
Average throughput: 28.24 Mbit/s
95th percentile per-packet one-way delay: 93.119 ms
Loss rate: 6.81%
-- Flow 2:
Average throughput: 17.58 Mbit/s
95th percentile per-packet one-way delay: 79.031 ms
Loss rate: 9.03%
-- Flow 3:
Average throughput: 20.64 Mbit/s
95th percentile per-packet one-way delay: 51.357 ms
Loss rate: 11.90%
```
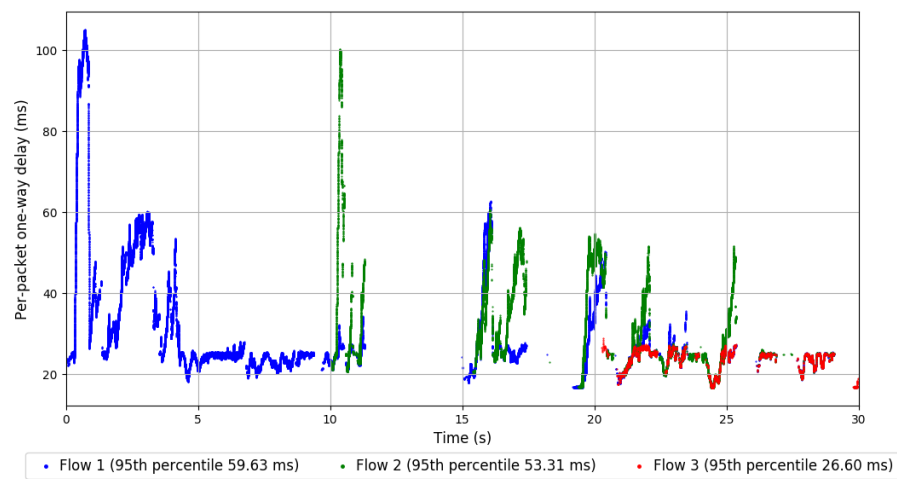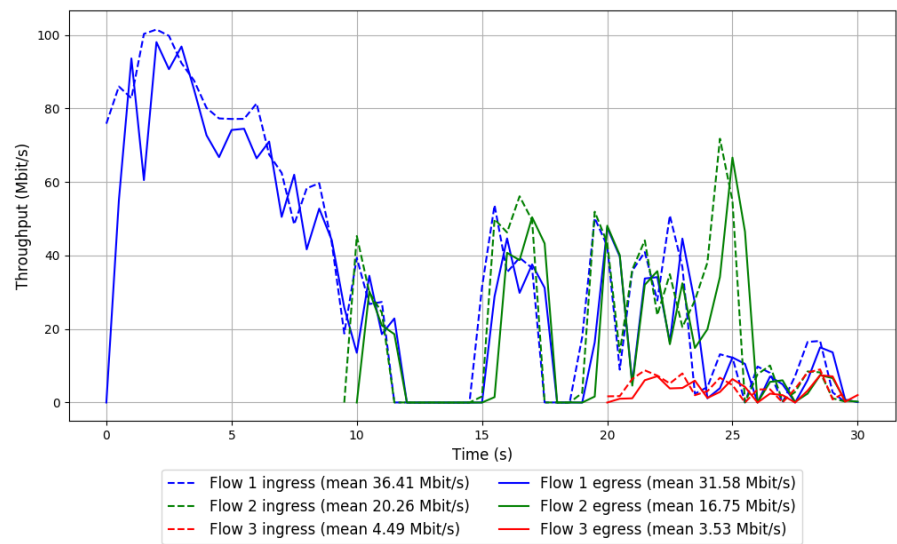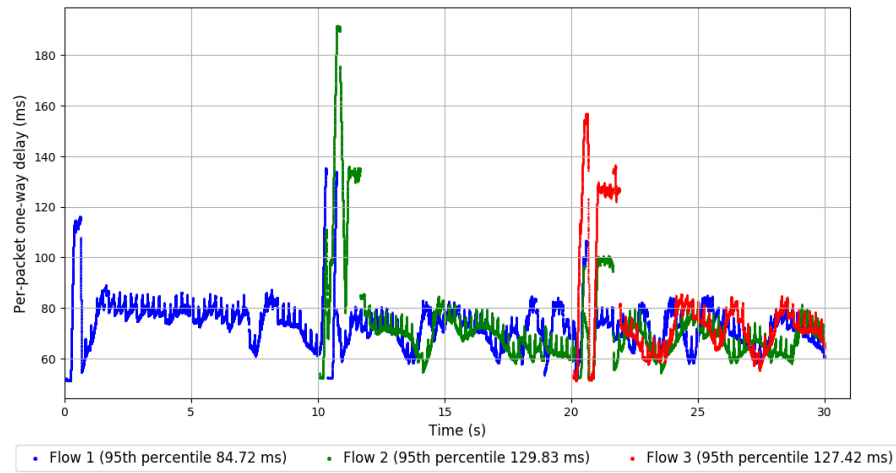
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 10:50:37
End at: 2019-02-20 10:51:07
Local clock offset: -0.651 ms
Remote clock offset: -45.279 ms


# Below is generated by plot.py at 2019-02-20 12:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.98 Mbit/s
95th percentile per-packet one-way delay: 112.023 ms
Loss rate: 3.58%
-- Flow 1:
Average throughput: 56.33 Mbit/s
95th percentile per-packet one-way delay: 84.089 ms
Loss rate: 3.06%
-- Flow 2:
Average throughput: 36.76 Mbit/s
95th percentile per-packet one-way delay: 127.038 ms
Loss rate: 4.80%
-- Flow 3:
Average throughput: 48.75 Mbit/s
95th percentile per-packet one-way delay: 135.323 ms
Loss rate: 3.50%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 58.06 Mbit/s) --- Flow 1 egress (mean 56.33 Mbit/s)
Flow 2 ingress (mean 38.56 Mbit/s) --- Flow 2 egress (mean 36.76 Mbit/s)
Flow 3 ingress (mean 50.38 Mbit/s) --- Flow 3 egress (mean 48.75 Mbit/s)

Flow 1 (95th percentile 84.09 ms)   Flow 2 (95th percentile 127.04 ms)   Flow 3 (95th percentile 135.32 ms)
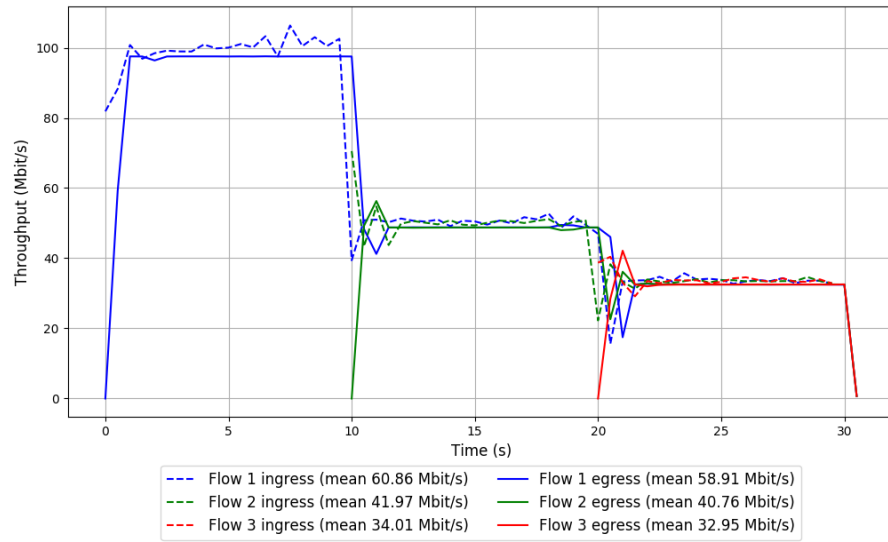
```
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 11:18:58
End at: 2019-02-20 11:19:28
Local clock offset: 0.11 ms
Remote clock offset: -6.168 ms


# Below is generated by plot.py at 2019-02-20 12:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.73 Mbit/s
95th percentile per-packet one-way delay: 58.551 ms
Loss rate: 14.59%
-- Flow 1:
Average throughput: 31.58 Mbit/s
95th percentile per-packet one-way delay: 59.630 ms
Loss rate: 13.27%
-- Flow 2:
Average throughput: 16.75 Mbit/s
95th percentile per-packet one-way delay: 53.306 ms
Loss rate: 17.36%
-- Flow 3:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 26.604 ms
Loss rate: 21.68%
```
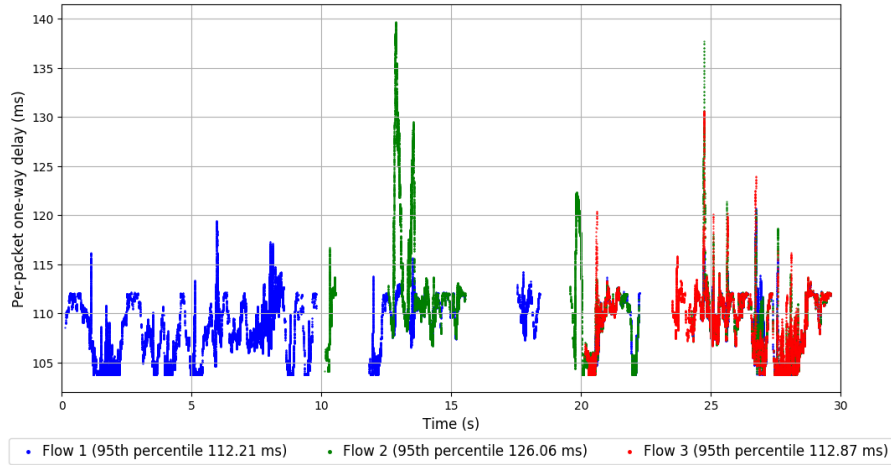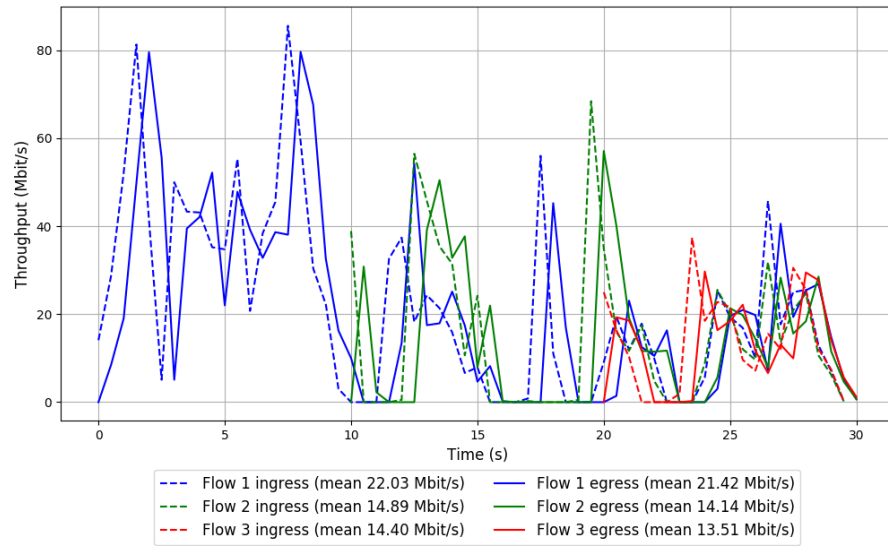
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 36.41 Mbit/s) ---- Flow 1 egress (mean 31.58 Mbit/s) ——
Flow 2 ingress (mean 20.26 Mbit/s) ---- Flow 2 egress (mean 16.75 Mbit/s) ——
Flow 3 ingress (mean 4.49 Mbit/s) ---- Flow 3 egress (mean 3.53 Mbit/s) ——

Flow 1 (95th percentile 59.63 ms) • Flow 2 (95th percentile 53.31 ms) • Flow 3 (95th percentile 26.60 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 11:47:36
End at: 2019-02-20 11:48:06
Local clock offset: -2.652 ms
Remote clock offset: -37.846 ms


# Below is generated by plot.py at 2019-02-20 12:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.00 Mbit/s
95th percentile per-packet one-way delay: 99.046 ms
Loss rate: 3.22%
-- Flow 1:
Average throughput: 58.91 Mbit/s
95th percentile per-packet one-way delay: 84.722 ms
Loss rate: 3.29%
-- Flow 2:
Average throughput: 40.76 Mbit/s
95th percentile per-packet one-way delay: 129.828 ms
Loss rate: 3.02%
-- Flow 3:
Average throughput: 32.95 Mbit/s
95th percentile per-packet one-way delay: 127.415 ms
Loss rate: 3.37%
```
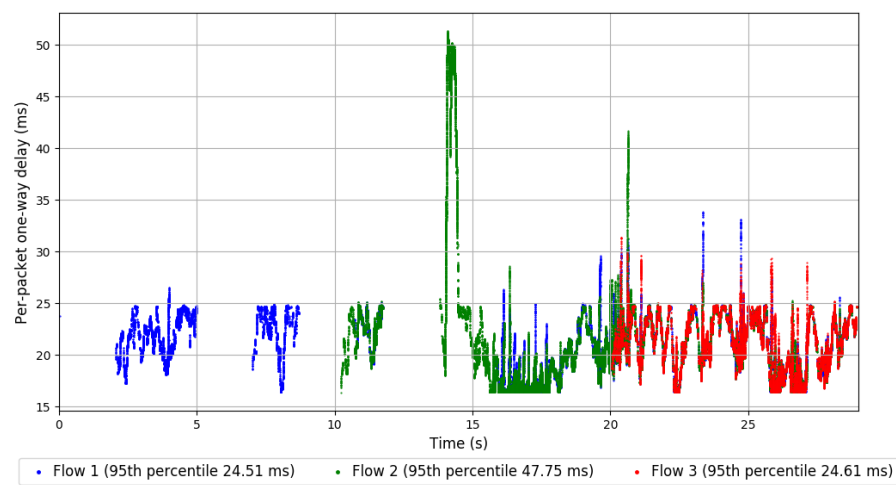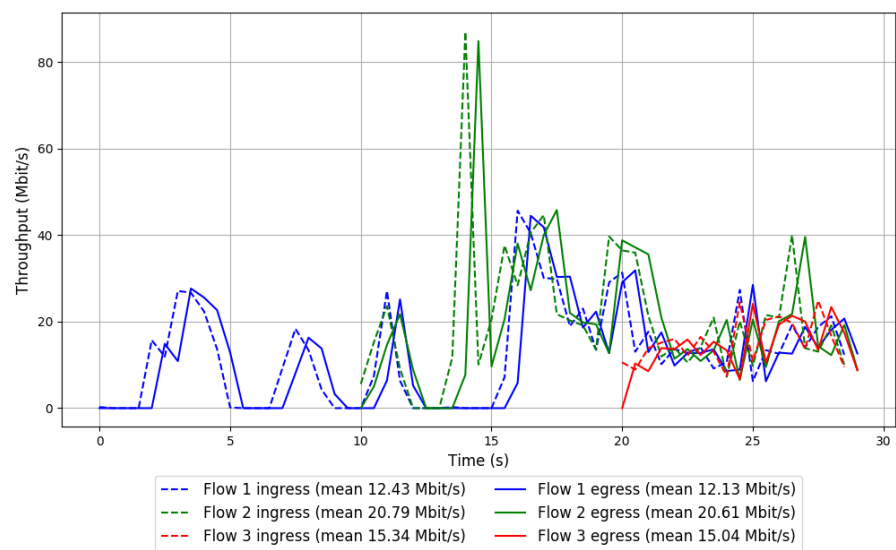
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 60.86 Mbit/s) --- Flow 1 egress (mean 58.91 Mbit/s)
Flow 2 ingress (mean 41.97 Mbit/s) --- Flow 2 egress (mean 40.76 Mbit/s)
Flow 3 ingress (mean 34.01 Mbit/s) --- Flow 3 egress (mean 32.95 Mbit/s)

• Flow 1 (95th percentile 84.72 ms)   • Flow 2 (95th percentile 129.83 ms)   • Flow 3 (95th percentile 127.42 ms)
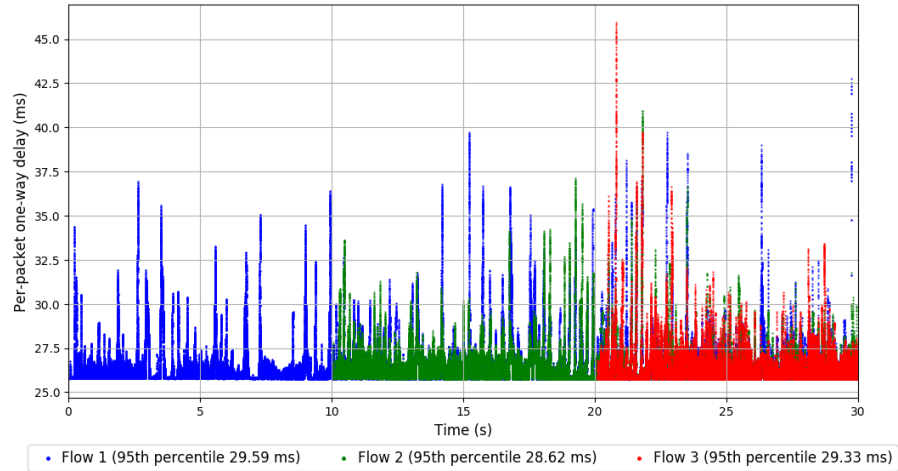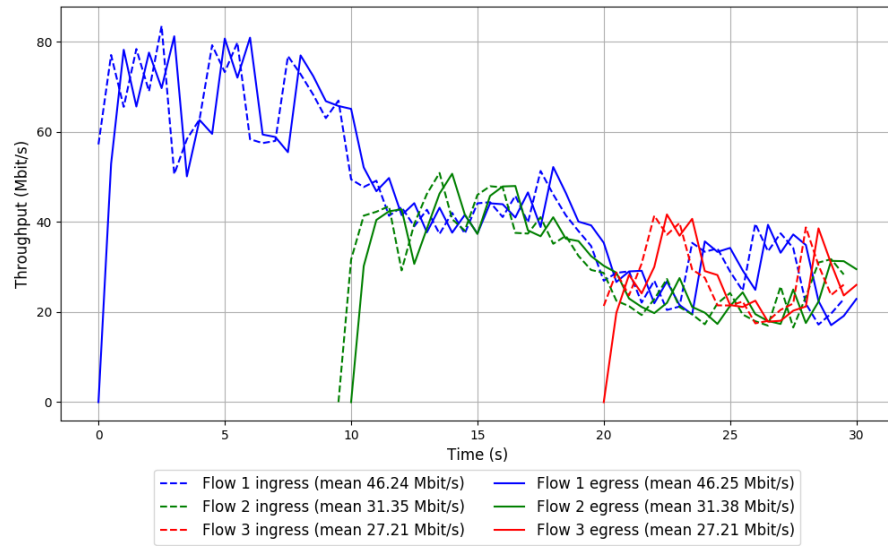
14

```
Run 1: Statistics of Copa

Start at: 2019-02-20 09:57:53
End at: 2019-02-20 09:58:23
Local clock offset: -2.03 ms
Remote clock offset: -91.111 ms


# Below is generated by plot.py at 2019-02-20 12:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.11 Mbit/s
95th percentile per-packet one-way delay: 117.283 ms
Loss rate: 3.96%
-- Flow 1:
Average throughput: 21.42 Mbit/s
95th percentile per-packet one-way delay: 112.214 ms
Loss rate: 2.88%
-- Flow 2:
Average throughput: 14.14 Mbit/s
95th percentile per-packet one-way delay: 126.065 ms
Loss rate: 5.20%
-- Flow 3:
Average throughput: 13.51 Mbit/s
95th percentile per-packet one-way delay: 112.870 ms
Loss rate: 6.47%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 22.03 Mbit/s) --- Flow 1 egress (mean 21.42 Mbit/s)
Flow 2 ingress (mean 14.89 Mbit/s) --- Flow 2 egress (mean 14.14 Mbit/s)
Flow 3 ingress (mean 14.40 Mbit/s) --- Flow 3 egress (mean 13.51 Mbit/s)

Flow 1 (95th percentile 112.21 ms)   Flow 2 (95th percentile 126.06 ms)   Flow 3 (95th percentile 112.87 ms)
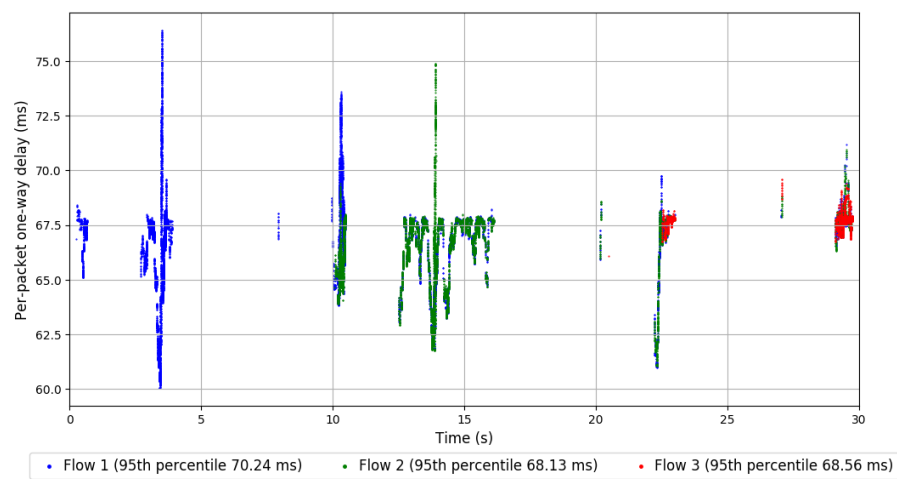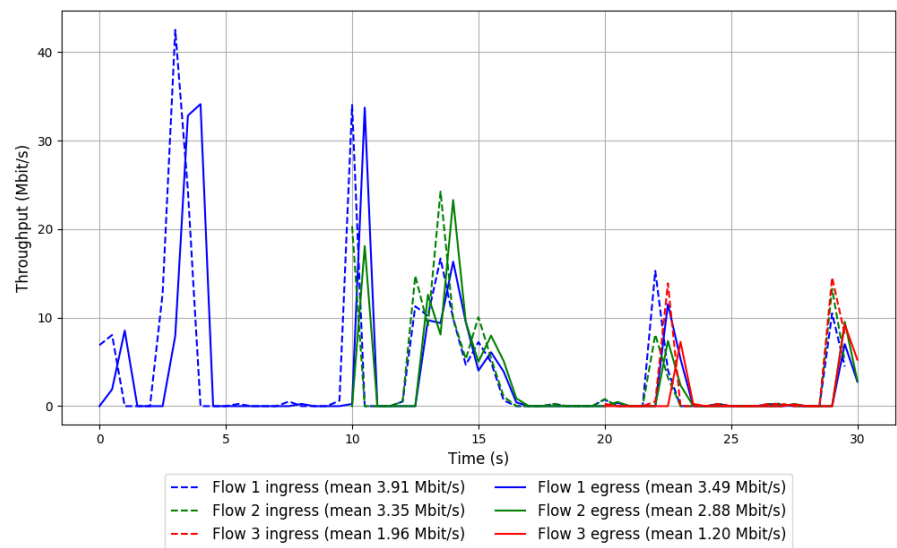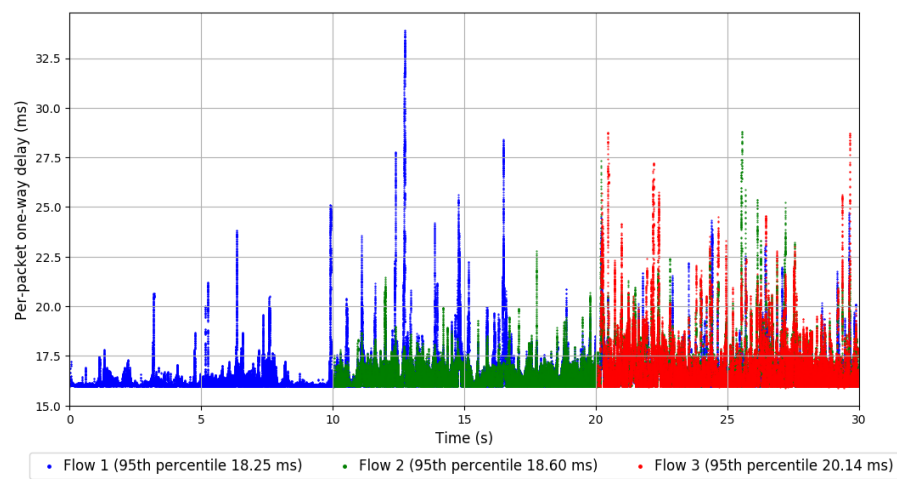
16

```
Run 2: Statistics of Copa

Start at: 2019-02-20 10:25:31
End at: 2019-02-20 10:26:01
Local clock offset: -1.25 ms
Remote clock offset: -4.105 ms


# Below is generated by plot.py at 2019-02-20 12:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.10 Mbit/s
95th percentile per-packet one-way delay: 27.898 ms
Loss rate: 2.32%
-- Flow 1:
Average throughput: 12.13 Mbit/s
95th percentile per-packet one-way delay: 24.511 ms
Loss rate: 2.54%
-- Flow 2:
Average throughput: 20.61 Mbit/s
95th percentile per-packet one-way delay: 47.749 ms
Loss rate: 2.08%
-- Flow 3:
Average throughput: 15.04 Mbit/s
95th percentile per-packet one-way delay: 24.614 ms
Loss rate: 2.42%
```

Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 12.43 Mbit/s)   Flow 1 egress (mean 12.13 Mbit/s)
Flow 2 ingress (mean 20.79 Mbit/s)   Flow 2 egress (mean 20.61 Mbit/s)
Flow 3 ingress (mean 15.34 Mbit/s)   Flow 3 egress (mean 15.04 Mbit/s)

Flow 1 (95th percentile 24.51 ms)   Flow 2 (95th percentile 47.75 ms)   Flow 3 (95th percentile 24.61 ms)
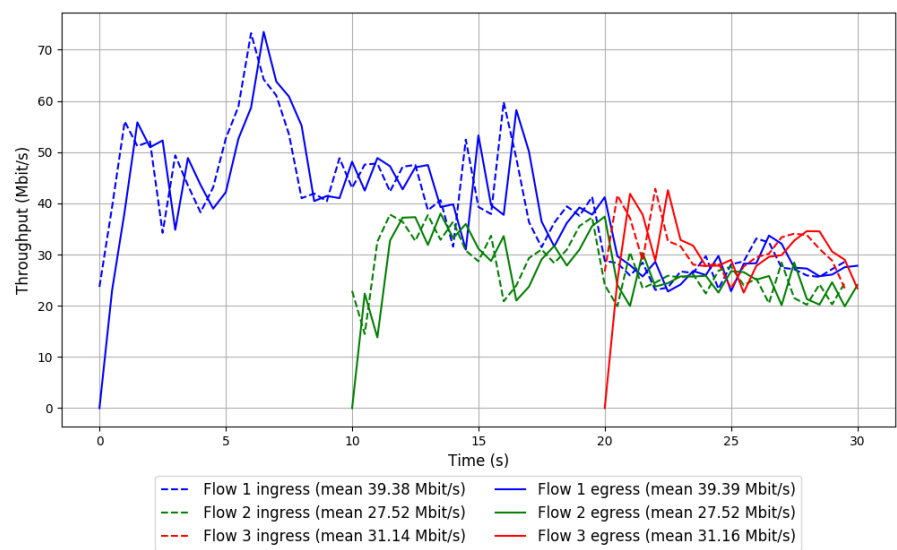
```
Run 3: Statistics of Copa

Start at: 2019-02-20 10:52:58
End at: 2019-02-20 10:53:28
Local clock offset: 1.399 ms
Remote clock offset: -13.999 ms


# Below is generated by plot.py at 2019-02-20 12:14:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.18 Mbit/s
95th percentile per-packet one-way delay: 29.311 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 46.25 Mbit/s
95th percentile per-packet one-way delay: 29.591 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 31.38 Mbit/s
95th percentile per-packet one-way delay: 28.623 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 27.21 Mbit/s
95th percentile per-packet one-way delay: 29.327 ms
Loss rate: 0.29%
```
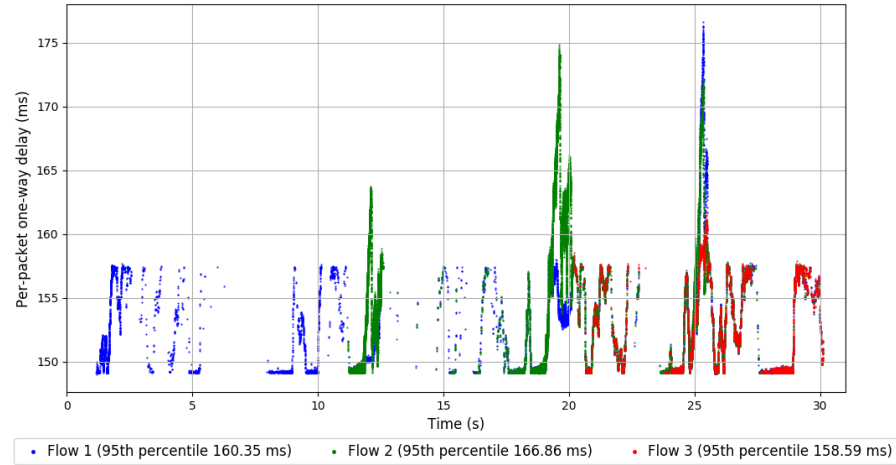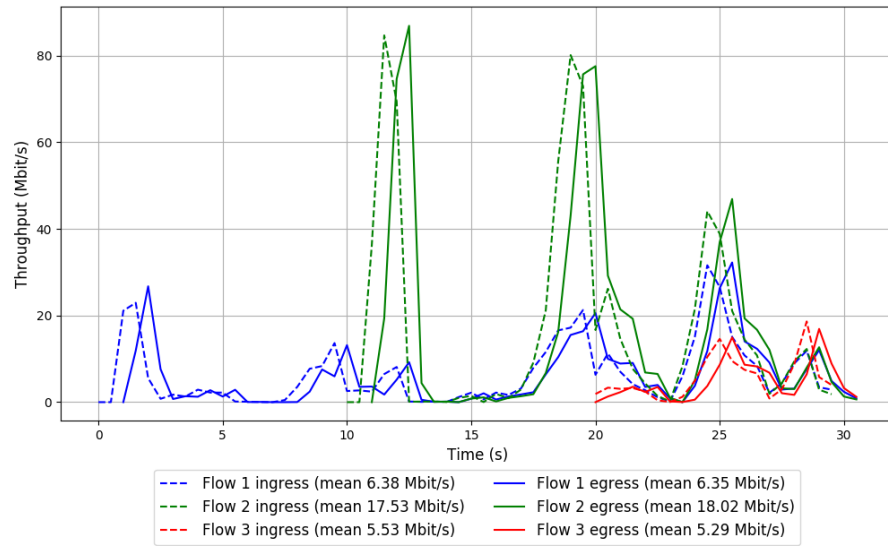
Run 3: Report of Copa — Data Link

- - - Flow 1 ingress (mean 46.24 Mbit/s)   —— Flow 1 egress (mean 46.25 Mbit/s)
- - - Flow 2 ingress (mean 31.35 Mbit/s)   —— Flow 2 egress (mean 31.38 Mbit/s)
- - - Flow 3 ingress (mean 27.21 Mbit/s)   —— Flow 3 egress (mean 27.21 Mbit/s)

• Flow 1 (95th percentile 29.59 ms)   • Flow 2 (95th percentile 28.62 ms)   • Flow 3 (95th percentile 29.33 ms)

```
Run 4: Statistics of Copa

Start at: 2019-02-20 11:22:03
End at: 2019-02-20 11:22:33
Local clock offset: -0.11 ms
Remote clock offset: -48.781 ms


# Below is generated by plot.py at 2019-02-20 12:14:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 69.620 ms
Loss rate: 15.11%
-- Flow 1:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 70.239 ms
Loss rate: 11.23%
-- Flow 2:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 68.133 ms
Loss rate: 14.26%
-- Flow 3:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 68.560 ms
Loss rate: 41.69%
```
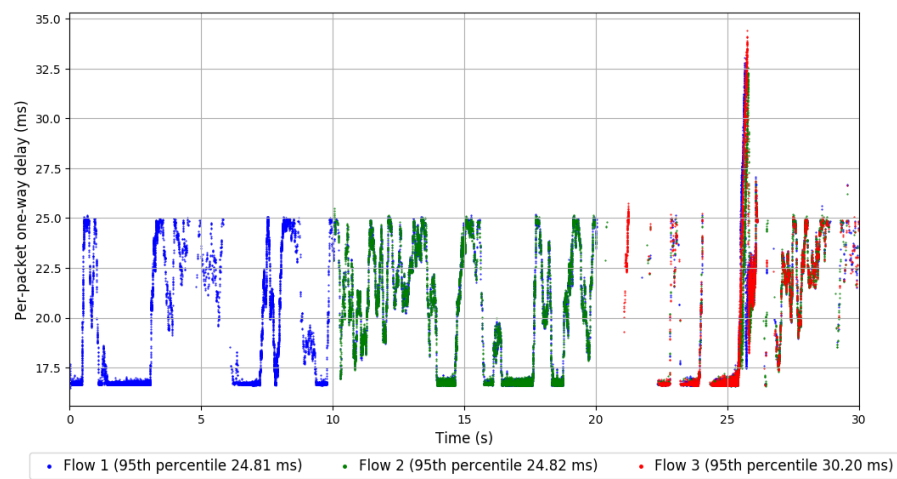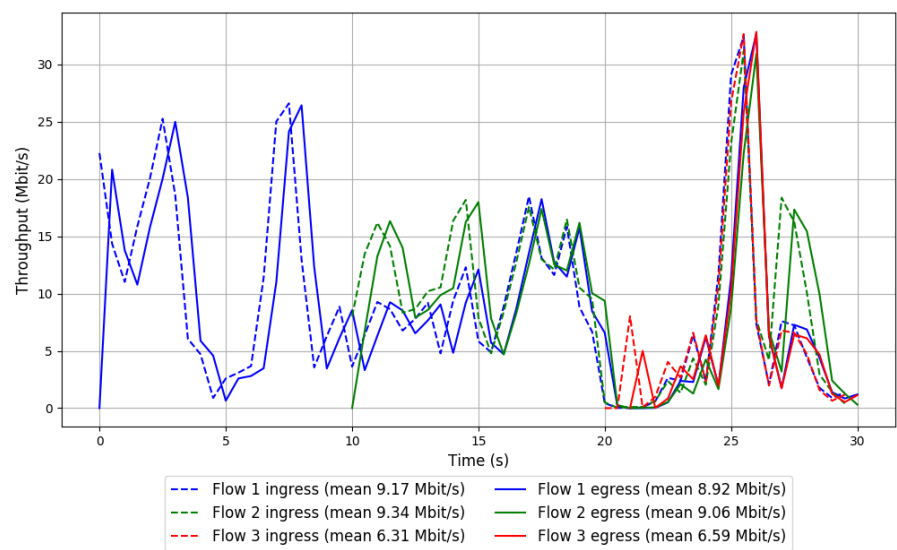
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-02-20 11:49:56
End at: 2019-02-20 11:50:26
Local clock offset: -1.968 ms
Remote clock offset: -1.5 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.06 Mbit/s
95th percentile per-packet one-way delay: 18.753 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 39.39 Mbit/s
95th percentile per-packet one-way delay: 18.251 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 27.52 Mbit/s
95th percentile per-packet one-way delay: 18.602 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 31.16 Mbit/s
95th percentile per-packet one-way delay: 20.139 ms
Loss rate: 0.16%
```
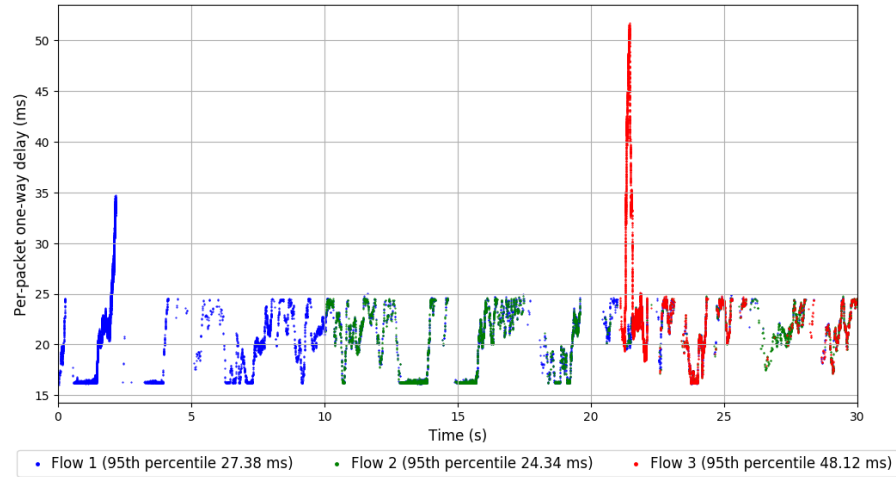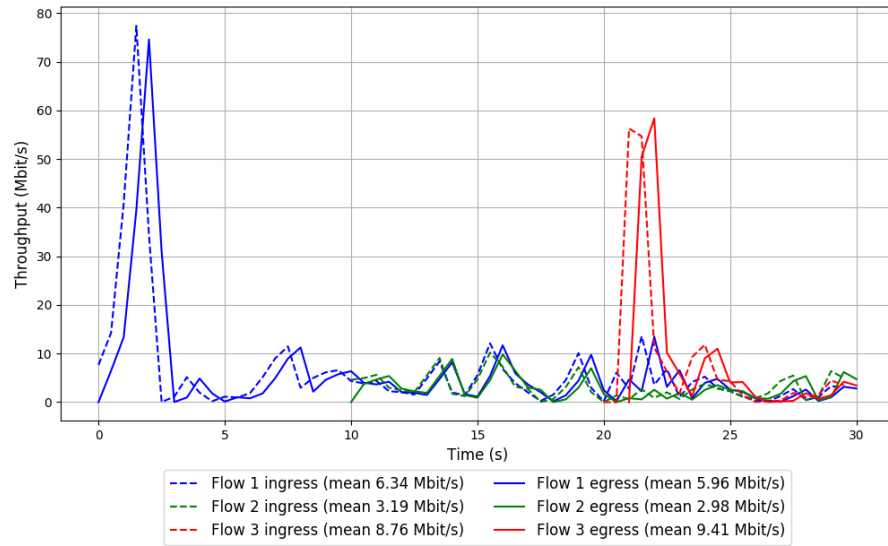
Run 5: Report of Copa — Data Link

- - - Flow 1 ingress (mean 39.38 Mbit/s) —— Flow 1 egress (mean 39.39 Mbit/s)
- - - Flow 2 ingress (mean 27.52 Mbit/s) —— Flow 2 egress (mean 27.52 Mbit/s)
- - - Flow 3 ingress (mean 31.14 Mbit/s) —— Flow 3 egress (mean 31.16 Mbit/s)

- Flow 1 (95th percentile 18.25 ms)   • Flow 2 (95th percentile 18.60 ms)   • Flow 3 (95th percentile 20.14 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 10:12:31
End at: 2019-02-20 10:13:01
Local clock offset: 0.473 ms
Remote clock offset: -134.741 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.94 Mbit/s
95th percentile per-packet one-way delay: 165.068 ms
Loss rate: 3.22%
-- Flow 1:
Average throughput: 6.35 Mbit/s
95th percentile per-packet one-way delay: 160.352 ms
Loss rate: 3.97%
-- Flow 2:
Average throughput: 18.02 Mbit/s
95th percentile per-packet one-way delay: 166.858 ms
Loss rate: 2.60%
-- Flow 3:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 158.593 ms
Loss rate: 4.49%
```

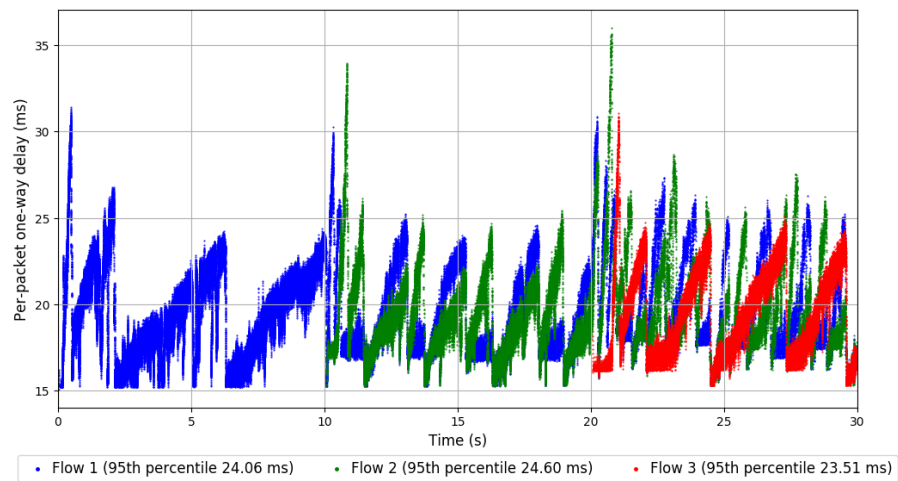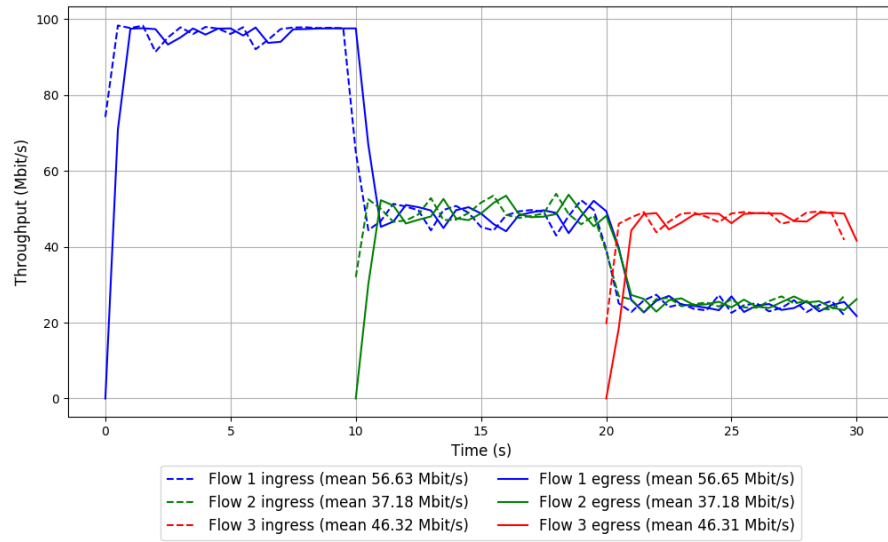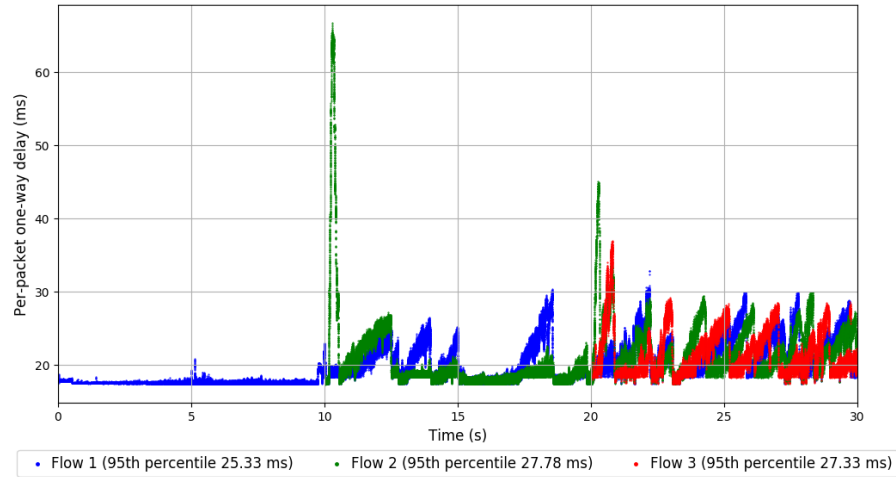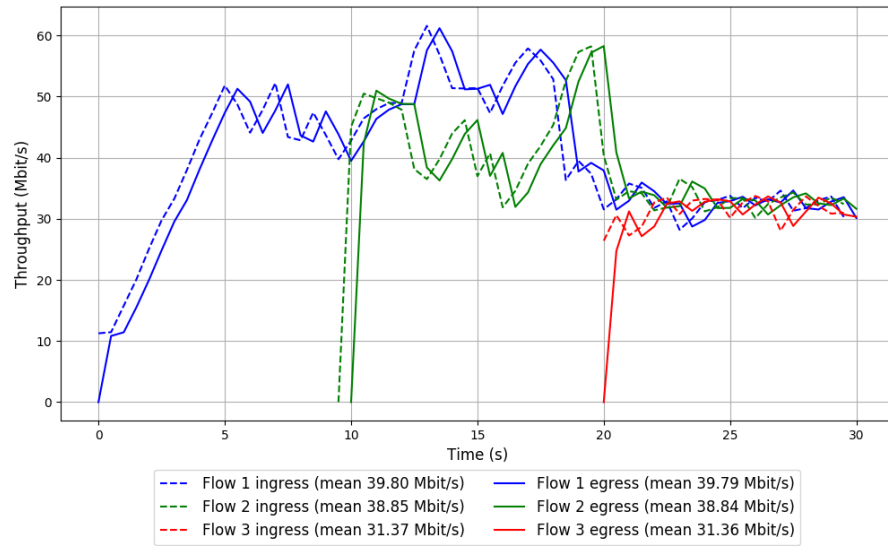Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 10:40:01
End at: 2019-02-20 10:40:31
Local clock offset: 0.611 ms
Remote clock offset: -4.419 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.91 Mbit/s
95th percentile per-packet one-way delay: 24.879 ms
Loss rate: 3.39%
-- Flow 1:
Average throughput: 8.92 Mbit/s
95th percentile per-packet one-way delay: 24.812 ms
Loss rate: 2.73%
-- Flow 2:
Average throughput: 9.06 Mbit/s
95th percentile per-packet one-way delay: 24.823 ms
Loss rate: 3.26%
-- Flow 3:
Average throughput: 6.59 Mbit/s
95th percentile per-packet one-way delay: 30.203 ms
Loss rate: 6.66%
```

Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 11:06:46
End at: 2019-02-20 11:07:16
Local clock offset: -0.145 ms
Remote clock offset: -6.592 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.74 Mbit/s
95th percentile per-packet one-way delay: 34.613 ms
Loss rate: 5.65%
-- Flow 1:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 27.383 ms
Loss rate: 6.07%
-- Flow 2:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 24.345 ms
Loss rate: 6.61%
-- Flow 3:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 48.119 ms
Loss rate: 4.03%
```
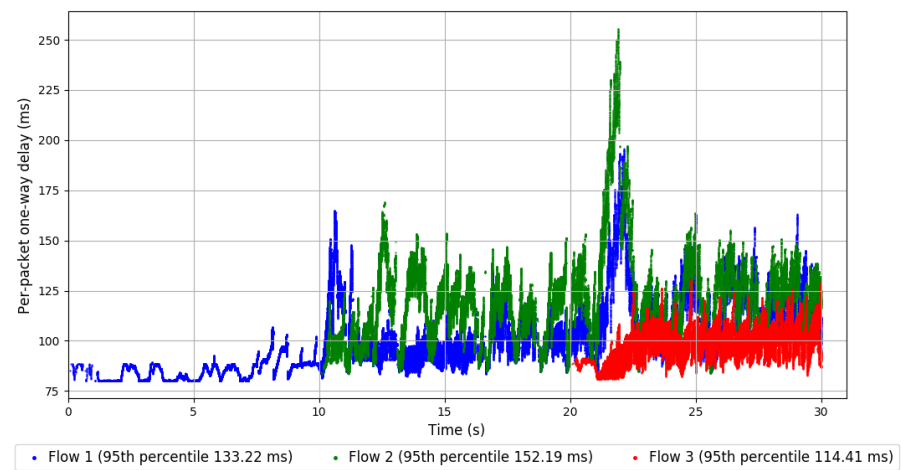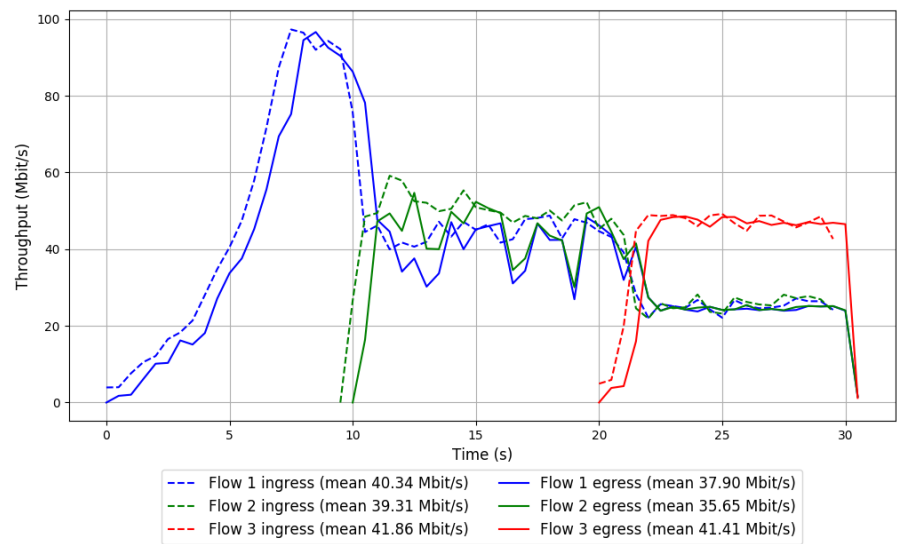
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 11:37:39
End at: 2019-02-20 11:38:09
Local clock offset: -1.246 ms
Remote clock offset: -2.171 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.77 Mbit/s
95th percentile per-packet one-way delay: 24.035 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 56.65 Mbit/s
95th percentile per-packet one-way delay: 24.061 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 24.600 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 46.31 Mbit/s
95th percentile per-packet one-way delay: 23.511 ms
Loss rate: 0.28%
```
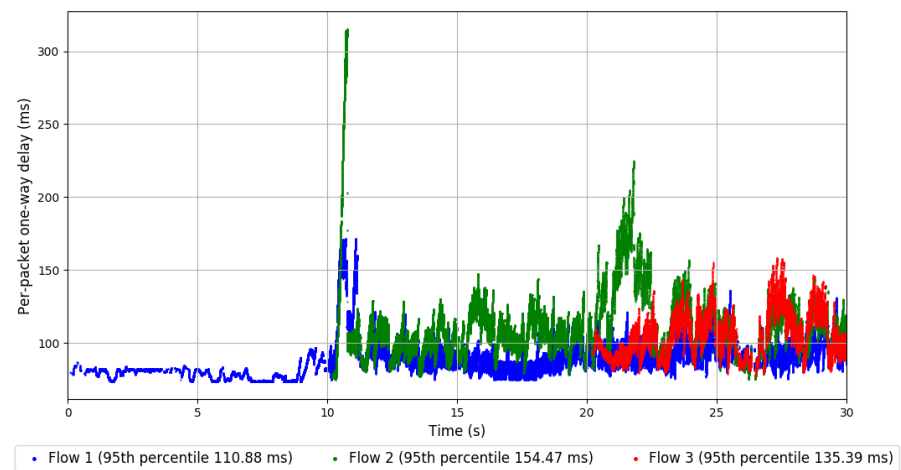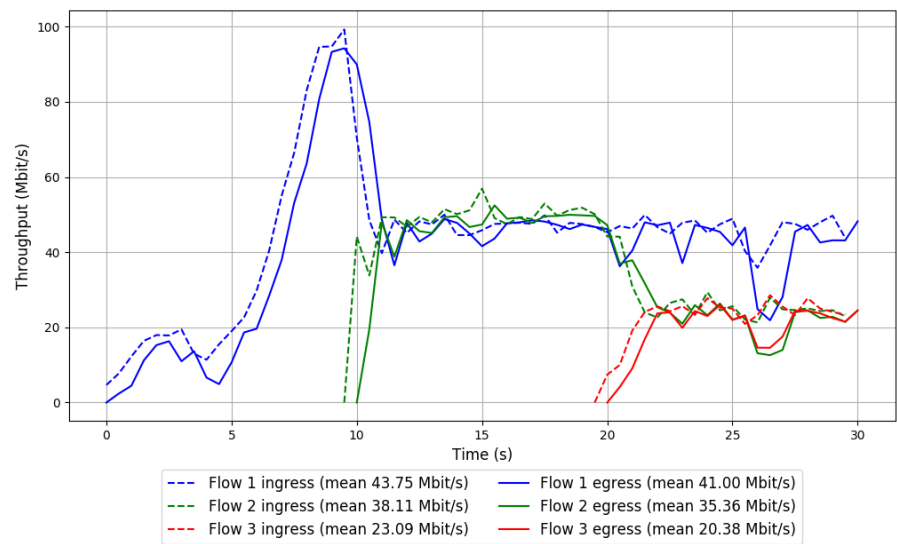
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 12:03:14
End at: 2019-02-20 12:03:44
Local clock offset: -3.115 ms
Remote clock offset: -5.145 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.07 Mbit/s
95th percentile per-packet one-way delay: 26.589 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 39.79 Mbit/s
95th percentile per-packet one-way delay: 25.330 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 38.84 Mbit/s
95th percentile per-packet one-way delay: 27.779 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 31.36 Mbit/s
95th percentile per-packet one-way delay: 27.332 ms
Loss rate: 0.32%
```

Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 39.80 Mbit/s)   —— Flow 1 egress (mean 39.79 Mbit/s)
- - - Flow 2 ingress (mean 38.85 Mbit/s)   —— Flow 2 egress (mean 38.84 Mbit/s)
- - - Flow 3 ingress (mean 31.37 Mbit/s)   —— Flow 3 egress (mean 31.36 Mbit/s)

• Flow 1 (95th percentile 25.33 ms)   • Flow 2 (95th percentile 27.78 ms)   • Flow 3 (95th percentile 27.33 ms)

34

```
Run 1: Statistics of FillP

Start at: 2019-02-20 10:02:13
End at: 2019-02-20 10:02:43
Local clock offset: 2.181 ms
Remote clock offset: -63.694 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.38 Mbit/s
95th percentile per-packet one-way delay: 139.982 ms
Loss rate: 6.36%
-- Flow 1:
Average throughput: 37.90 Mbit/s
95th percentile per-packet one-way delay: 133.220 ms
Loss rate: 6.12%
-- Flow 2:
Average throughput: 35.65 Mbit/s
95th percentile per-packet one-way delay: 152.194 ms
Loss rate: 9.36%
-- Flow 3:
Average throughput: 41.41 Mbit/s
95th percentile per-packet one-way delay: 114.411 ms
Loss rate: 1.37%
```
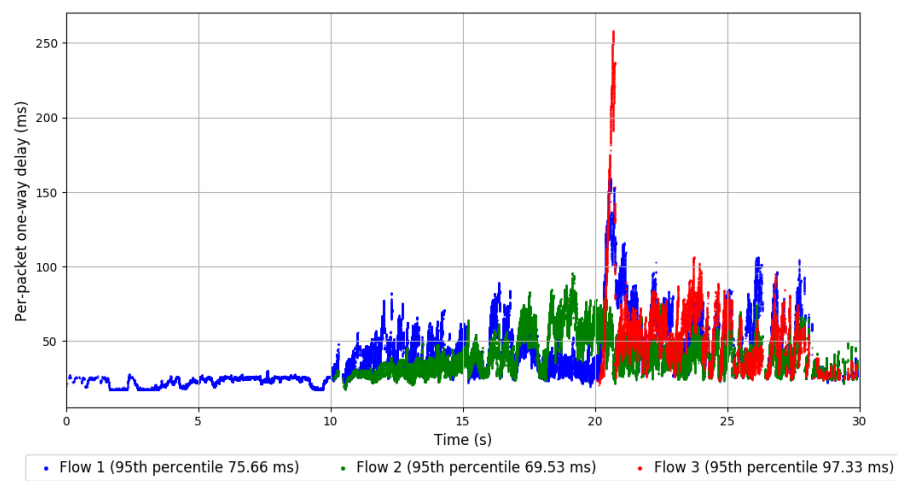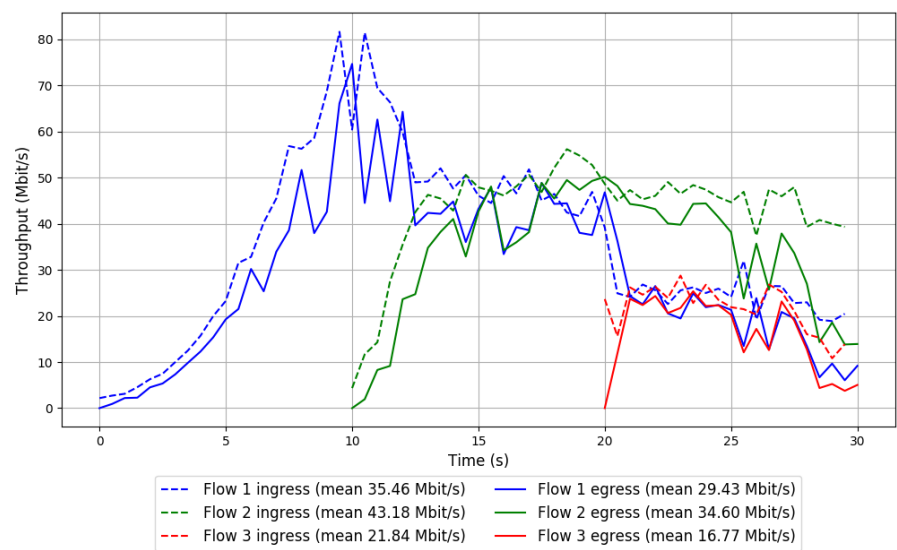
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 40.34 Mbit/s) --- Flow 1 egress (mean 37.90 Mbit/s)
Flow 2 ingress (mean 39.31 Mbit/s) --- Flow 2 egress (mean 35.65 Mbit/s)
Flow 3 ingress (mean 41.86 Mbit/s) --- Flow 3 egress (mean 41.41 Mbit/s)

Flow 1 (95th percentile 133.22 ms)   Flow 2 (95th percentile 152.19 ms)   Flow 3 (95th percentile 114.41 ms)

36

```
Run 2: Statistics of FillP

Start at: 2019-02-20 10:29:29
End at: 2019-02-20 10:29:59
Local clock offset: -3.279 ms
Remote clock offset: -63.228 ms


# Below is generated by plot.py at 2019-02-20 12:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.30 Mbit/s
95th percentile per-packet one-way delay: 134.201 ms
Loss rate: 7.27%
-- Flow 1:
Average throughput: 41.00 Mbit/s
95th percentile per-packet one-way delay: 110.880 ms
Loss rate: 6.40%
-- Flow 2:
Average throughput: 35.36 Mbit/s
95th percentile per-packet one-way delay: 154.475 ms
Loss rate: 7.33%
-- Flow 3:
Average throughput: 20.38 Mbit/s
95th percentile per-packet one-way delay: 135.394 ms
Loss rate: 12.06%
```
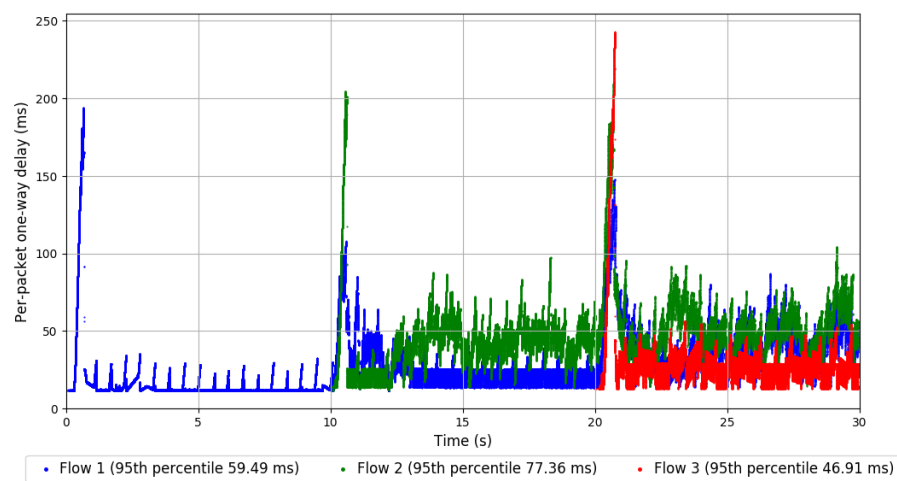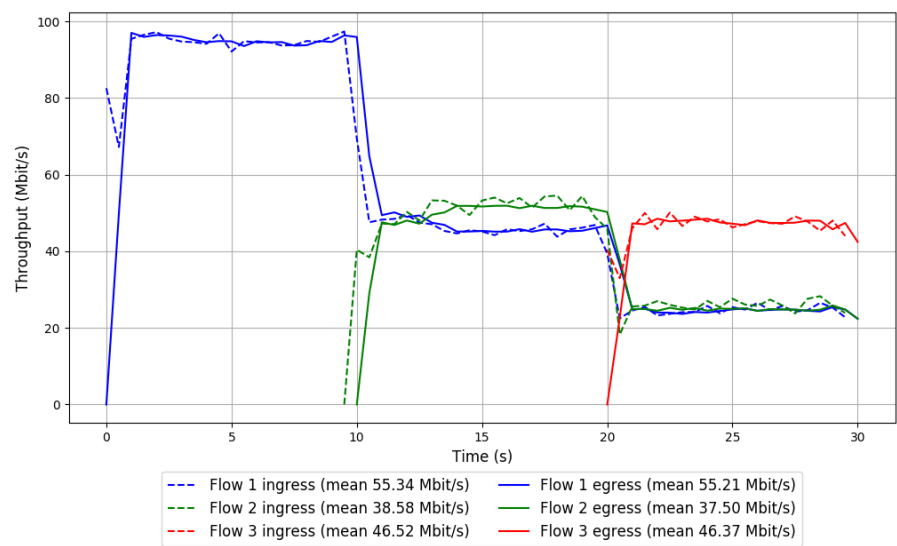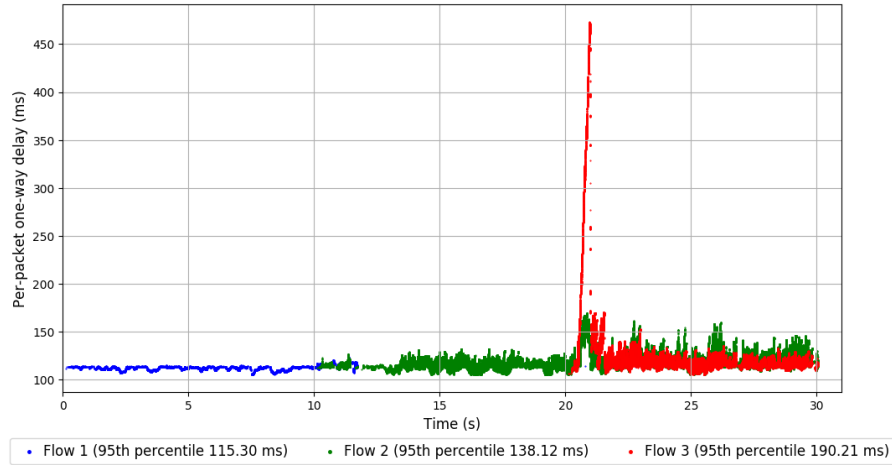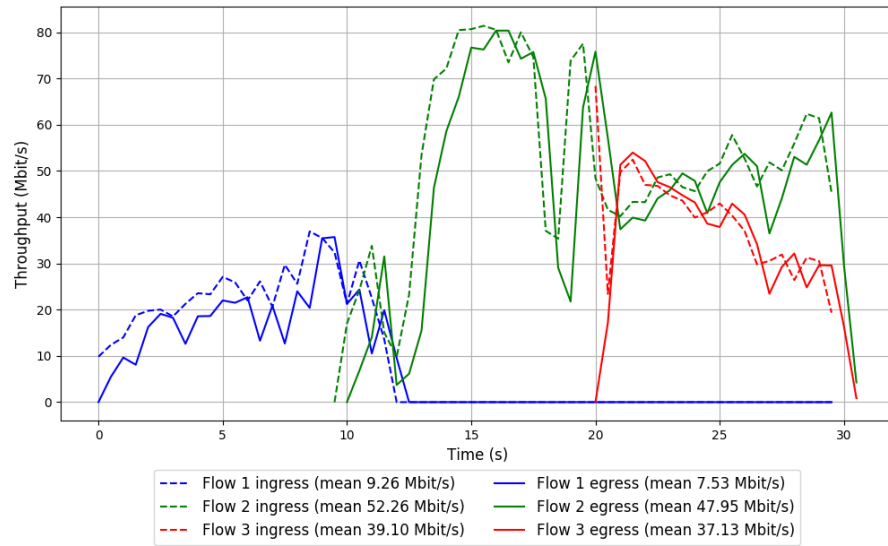
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-02-20 10:56:38
End at: 2019-02-20 10:57:08
Local clock offset: 2.345 ms
Remote clock offset: -37.791 ms


# Below is generated by plot.py at 2019-02-20 12:15:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.38 Mbit/s
95th percentile per-packet one-way delay: 99.115 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 57.73 Mbit/s
95th percentile per-packet one-way delay: 88.884 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 40.58 Mbit/s
95th percentile per-packet one-way delay: 102.847 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 32.00 Mbit/s
95th percentile per-packet one-way delay: 108.243 ms
Loss rate: 3.27%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-02-20 11:26:55
End at: 2019-02-20 11:27:25
Local clock offset: 2.323 ms
Remote clock offset: -3.68 ms


# Below is generated by plot.py at 2019-02-20 12:15:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.95 Mbit/s
95th percentile per-packet one-way delay: 74.488 ms
Loss rate: 19.06%
-- Flow 1:
Average throughput: 29.43 Mbit/s
95th percentile per-packet one-way delay: 75.660 ms
Loss rate: 17.17%
-- Flow 2:
Average throughput: 34.60 Mbit/s
95th percentile per-packet one-way delay: 69.534 ms
Loss rate: 20.11%
-- Flow 3:
Average throughput: 16.77 Mbit/s
95th percentile per-packet one-way delay: 97.329 ms
Loss rate: 24.14%
```
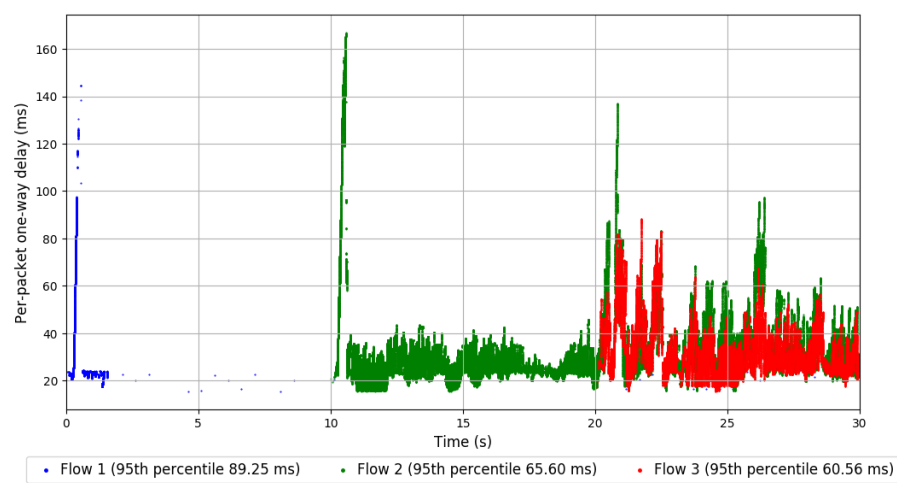
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-02-20 11:53:34
End at: 2019-02-20 11:54:04
Local clock offset: -10.717 ms
Remote clock offset: -6.345 ms


# Below is generated by plot.py at 2019-02-20 12:16:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.57 Mbit/s
95th percentile per-packet one-way delay: 68.014 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 55.21 Mbit/s
95th percentile per-packet one-way delay: 59.490 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 37.50 Mbit/s
95th percentile per-packet one-way delay: 77.365 ms
Loss rate: 2.88%
-- Flow 3:
Average throughput: 46.37 Mbit/s
95th percentile per-packet one-way delay: 46.908 ms
Loss rate: 0.60%
```
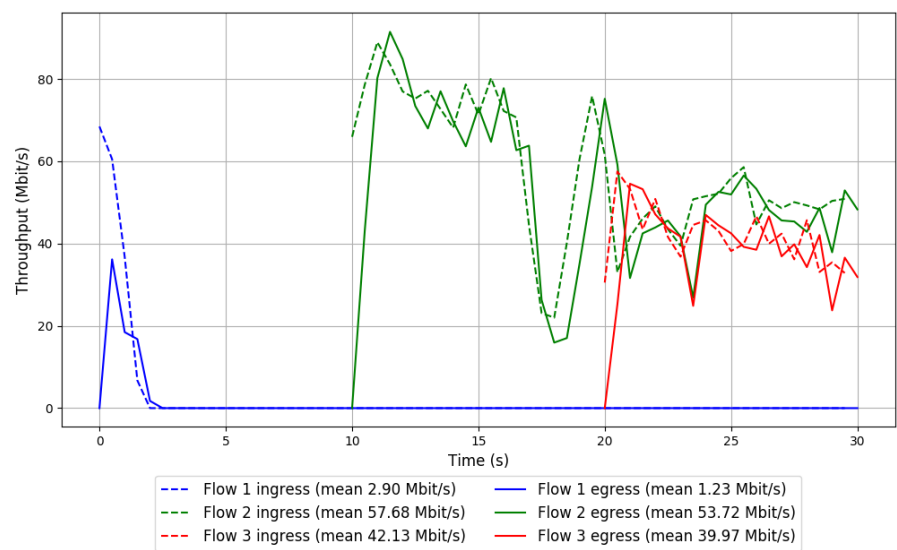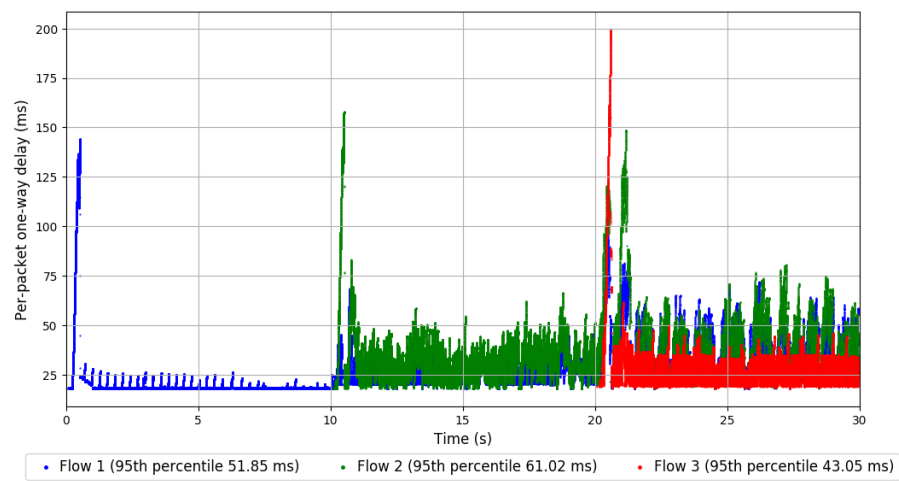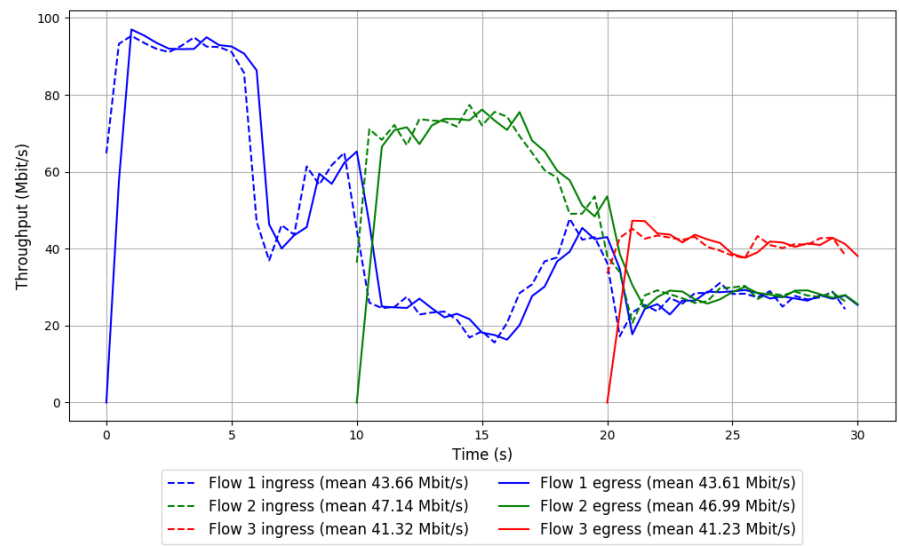
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 55.34 Mbit/s) — Flow 1 egress (mean 55.21 Mbit/s)
Flow 2 ingress (mean 38.58 Mbit/s) — Flow 2 egress (mean 37.50 Mbit/s)
Flow 3 ingress (mean 46.52 Mbit/s) — Flow 3 egress (mean 46.37 Mbit/s)

Flow 1 (95th percentile 59.49 ms)   Flow 2 (95th percentile 77.36 ms)   Flow 3 (95th percentile 46.91 ms)

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 09:59:36
End at: 2019-02-20 10:00:06
Local clock offset: -2.093 ms
Remote clock offset: -93.146 ms


# Below is generated by plot.py at 2019-02-20 12:16:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.60 Mbit/s
95th percentile per-packet one-way delay: 141.087 ms
Loss rate: 9.53%
-- Flow 1:
Average throughput: 7.53 Mbit/s
95th percentile per-packet one-way delay: 115.301 ms
Loss rate: 20.08%
-- Flow 2:
Average throughput: 47.95 Mbit/s
95th percentile per-packet one-way delay: 138.121 ms
Loss rate: 8.35%
-- Flow 3:
Average throughput: 37.13 Mbit/s
95th percentile per-packet one-way delay: 190.206 ms
Loss rate: 5.20%
```
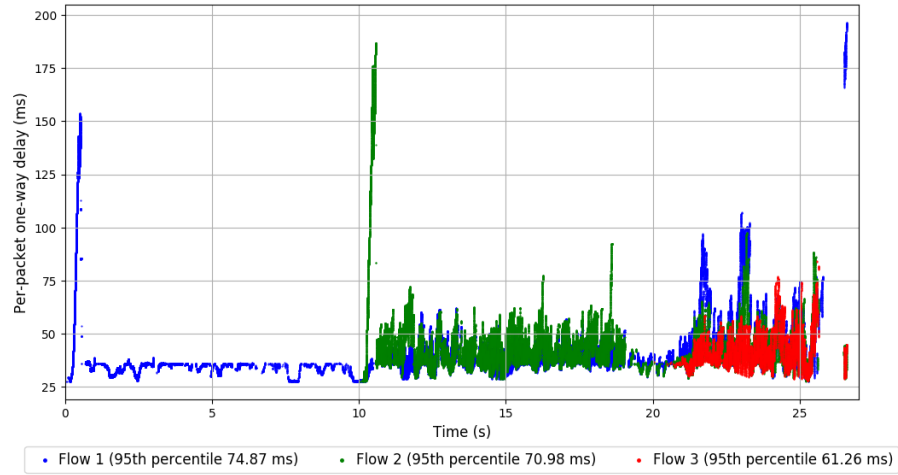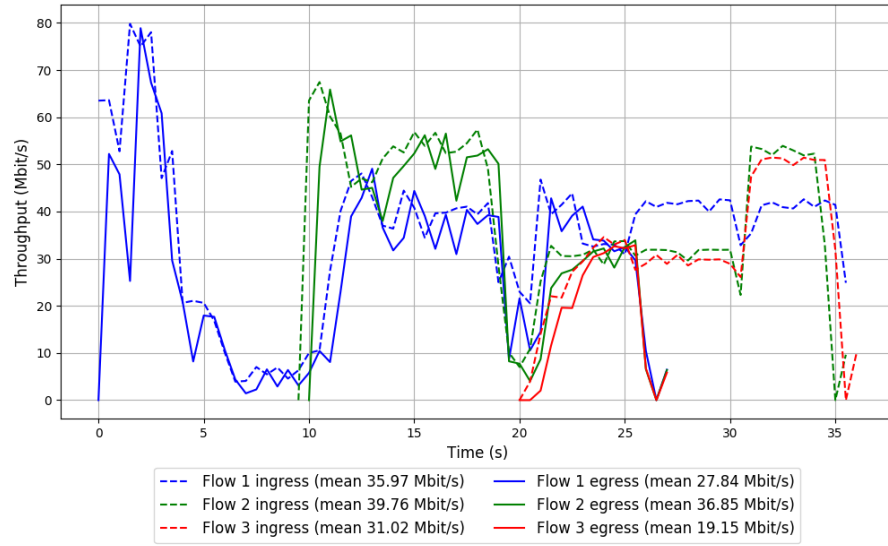
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 10:26:52
End at: 2019-02-20 10:27:22
Local clock offset: -1.748 ms
Remote clock offset: -3.89 ms

# Below is generated by plot.py at 2019-02-20 12:16:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 64.493 ms
Loss rate: 9.17%
-- Flow 1:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 89.253 ms
Loss rate: 57.54%
-- Flow 2:
Average throughput: 53.72 Mbit/s
95th percentile per-packet one-way delay: 65.604 ms
Loss rate: 6.98%
-- Flow 3:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 60.563 ms
Loss rate: 5.24%
```

Run 2: Report of FillP-Sheep — Data Link

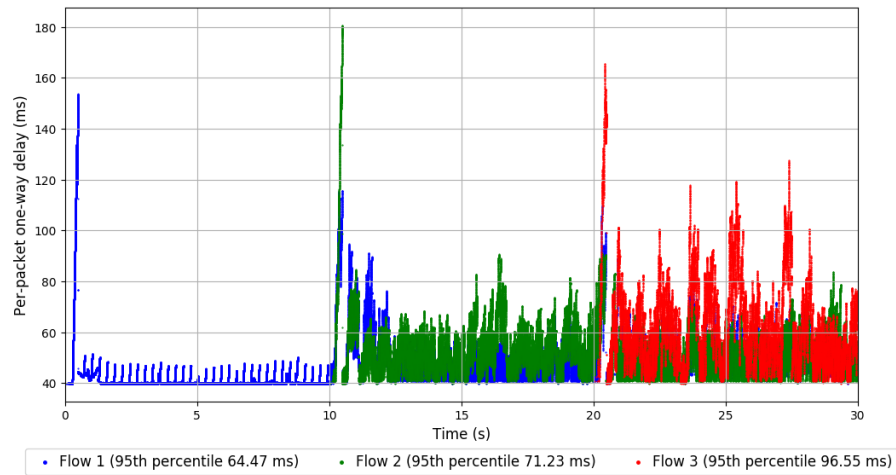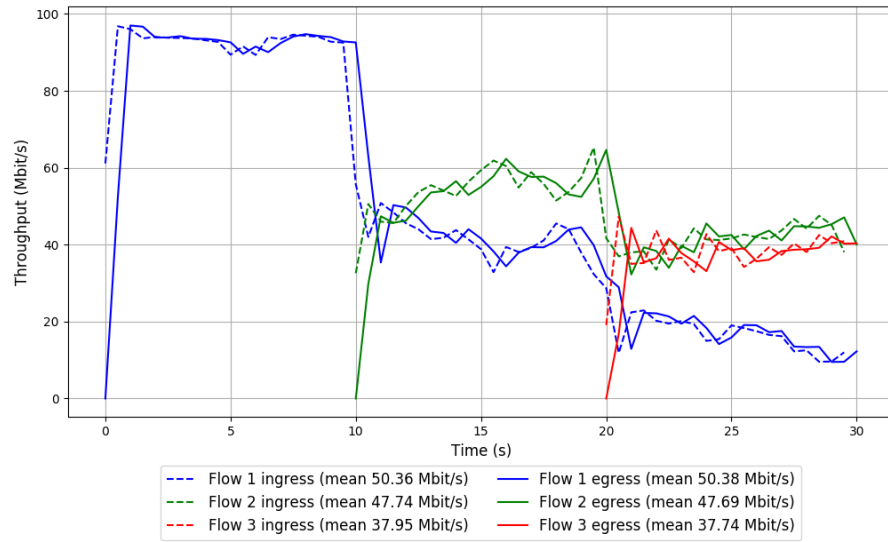```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 10:54:12
End at: 2019-02-20 10:54:42
Local clock offset: 0.199 ms
Remote clock offset: -7.891 ms

Below is generated by plot.py at 2019-02-20 12:16:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.53 Mbit/s
95th percentile per-packet one-way delay: 55.410 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 43.61 Mbit/s
95th percentile per-packet one-way delay: 51.852 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 46.99 Mbit/s
95th percentile per-packet one-way delay: 61.024 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 41.23 Mbit/s
95th percentile per-packet one-way delay: 43.051 ms
Loss rate: 0.44%
```

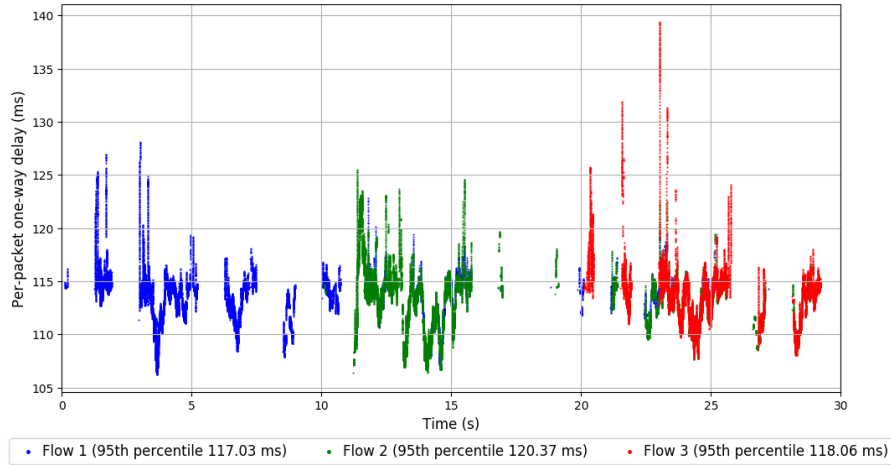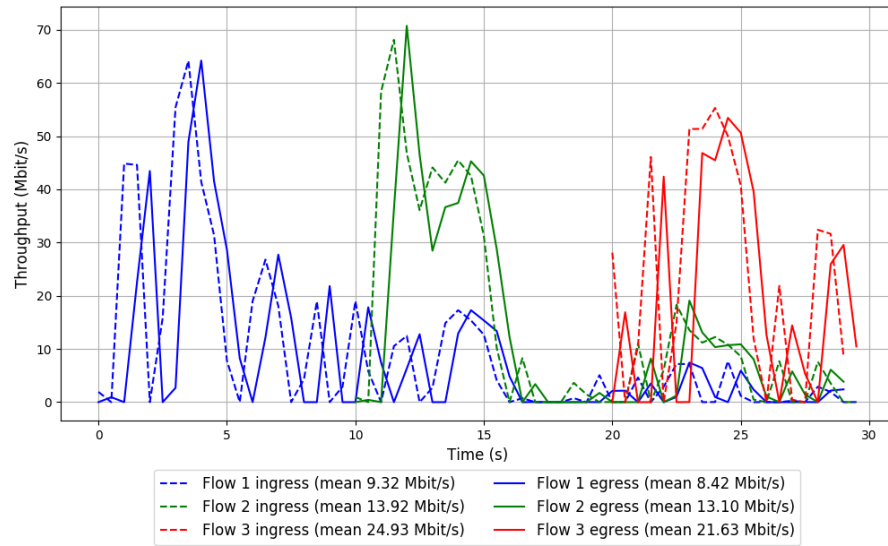Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 11:23:22
End at: 2019-02-20 11:23:52
Local clock offset: -1.272 ms
Remote clock offset: -17.92 ms


# Below is generated by plot.py at 2019-02-20 12:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.55 Mbit/s
95th percentile per-packet one-way delay: 70.452 ms
Loss rate: 47.79%
-- Flow 1:
Average throughput: 27.84 Mbit/s
95th percentile per-packet one-way delay: 74.869 ms
Loss rate: 42.55%
-- Flow 2:
Average throughput: 36.85 Mbit/s
95th percentile per-packet one-way delay: 70.981 ms
Loss rate: 40.74%
-- Flow 3:
Average throughput: 19.15 Mbit/s
95th percentile per-packet one-way delay: 61.262 ms
Loss rate: 75.35%
```

Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-20 11:51:10
End at: 2019-02-20 11:51:40
Local clock offset: -3.557 ms
Remote clock offset: -27.167 ms


# Below is generated by plot.py at 2019-02-20 12:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.65 Mbit/s
95th percentile per-packet one-way delay: 74.888 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 50.38 Mbit/s
95th percentile per-packet one-way delay: 64.466 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 47.69 Mbit/s
95th percentile per-packet one-way delay: 71.233 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 37.74 Mbit/s
95th percentile per-packet one-way delay: 96.553 ms
Loss rate: 0.83%
```
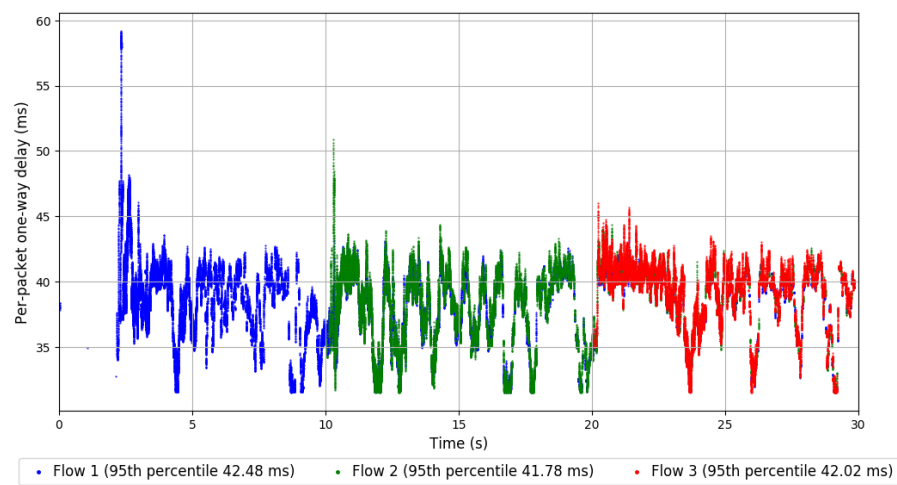
Run 5: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 50.36 Mbit/s)   —— Flow 1 egress (mean 50.38 Mbit/s)
- - - Flow 2 ingress (mean 47.74 Mbit/s)   —— Flow 2 egress (mean 47.69 Mbit/s)
- - - Flow 3 ingress (mean 37.95 Mbit/s)   —— Flow 3 egress (mean 37.74 Mbit/s)

• Flow 1 (95th percentile 64.47 ms)   • Flow 2 (95th percentile 71.23 ms)   • Flow 3 (95th percentile 96.55 ms)
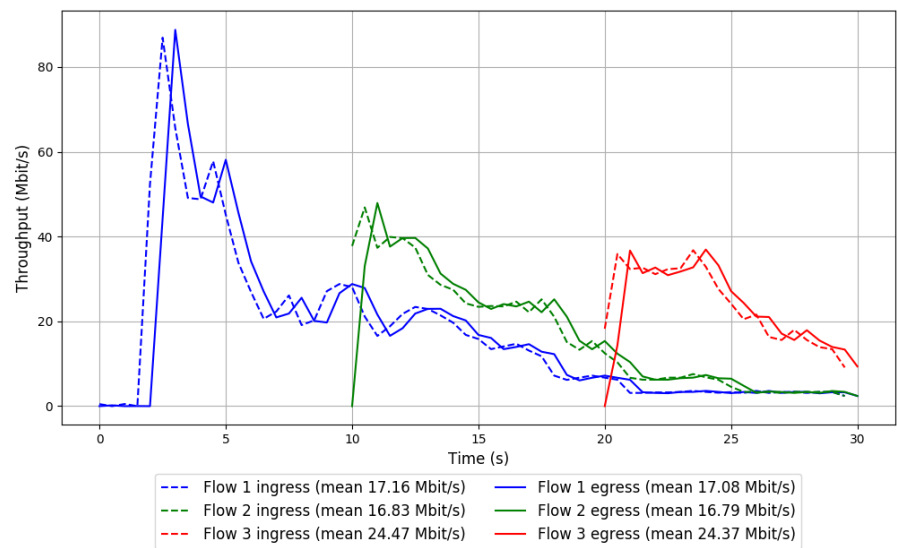
```
Run 1: Statistics of Indigo

Start at: 2019-02-20 10:10:06
End at: 2019-02-20 10:10:36
Local clock offset: -1.428 ms
Remote clock offset: -93.686 ms


# Below is generated by plot.py at 2019-02-20 12:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: 118.679 ms
Loss rate: 12.33%
-- Flow 1:
Average throughput: 8.42 Mbit/s
95th percentile per-packet one-way delay: 117.027 ms
Loss rate: 12.88%
-- Flow 2:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 120.372 ms
Loss rate: 10.79%
-- Flow 3:
Average throughput: 21.63 Mbit/s
95th percentile per-packet one-way delay: 118.063 ms
Loss rate: 13.54%
```
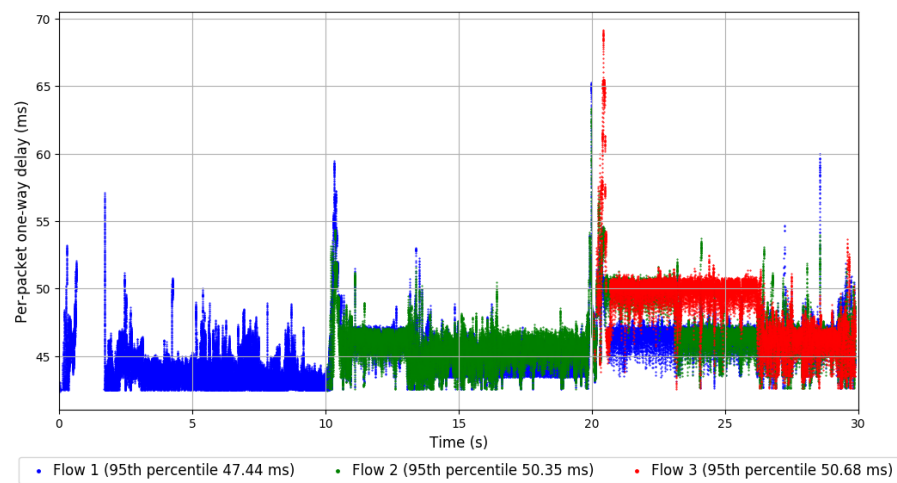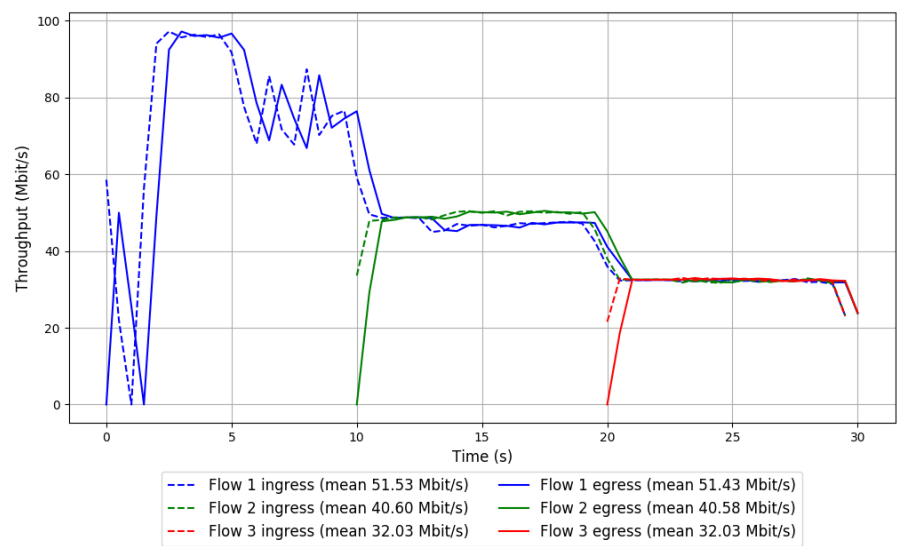
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-20 10:37:21
End at: 2019-02-20 10:37:51
Local clock offset: -2.435 ms
Remote clock offset: -5.216 ms


# Below is generated by plot.py at 2019-02-20 12:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.49 Mbit/s
95th percentile per-packet one-way delay: 24.164 ms
Loss rate: 5.83%
-- Flow 1:
Average throughput: 17.40 Mbit/s
95th percentile per-packet one-way delay: 24.493 ms
Loss rate: 8.22%
-- Flow 2:
Average throughput: 22.84 Mbit/s
95th percentile per-packet one-way delay: 23.806 ms
Loss rate: 5.17%
-- Flow 3:
Average throughput: 32.74 Mbit/s
95th percentile per-packet one-way delay: 24.288 ms
Loss rate: 2.89%
```
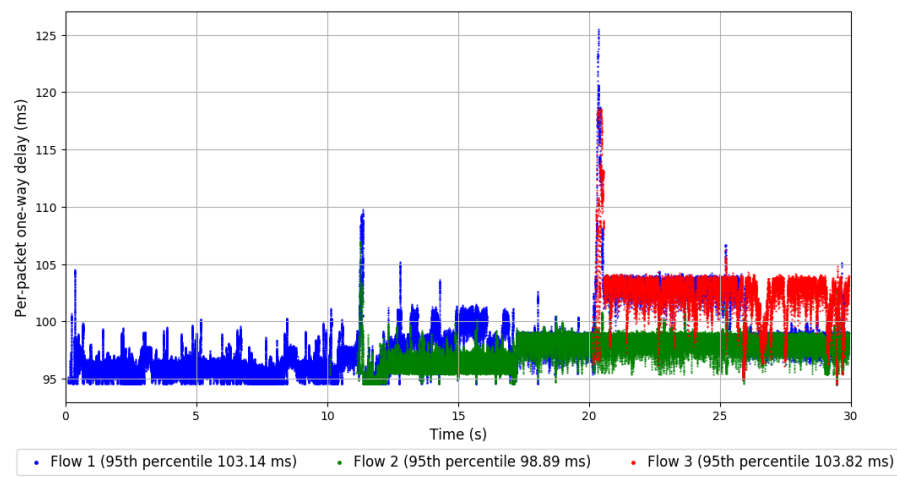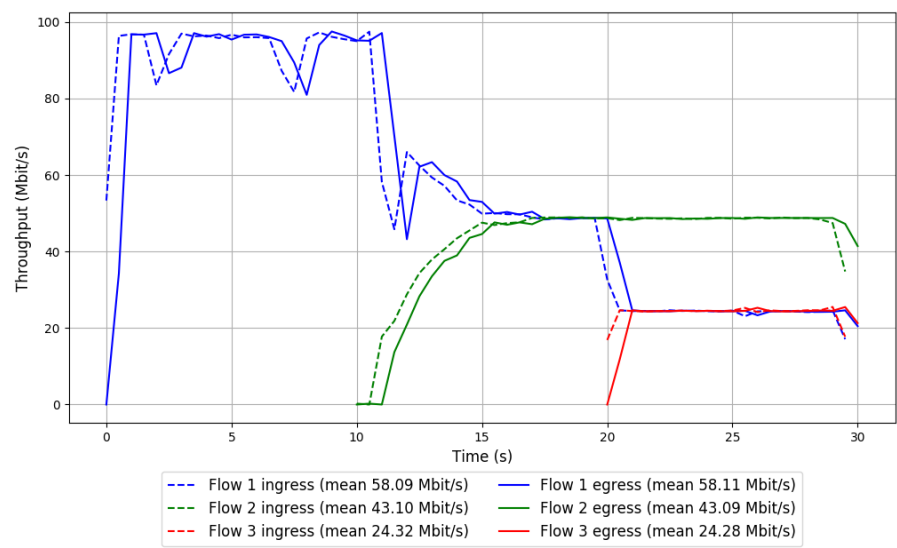
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-02-20 11:04:25
End at: 2019-02-20 11:04:55
Local clock offset: 1.928 ms
Remote clock offset: -17.824 ms


# Below is generated by plot.py at 2019-02-20 12:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.22 Mbit/s
95th percentile per-packet one-way delay: 42.029 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 17.08 Mbit/s
95th percentile per-packet one-way delay: 42.484 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 16.79 Mbit/s
95th percentile per-packet one-way delay: 41.779 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 24.37 Mbit/s
95th percentile per-packet one-way delay: 42.021 ms
Loss rate: 0.76%
```
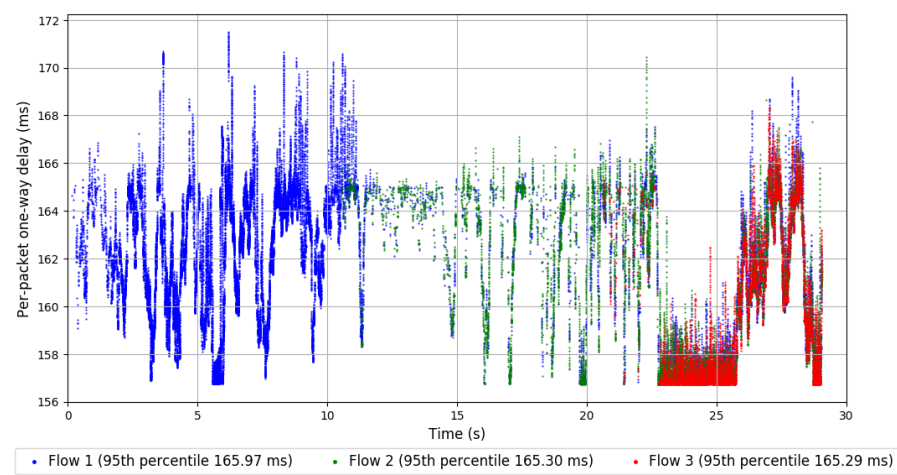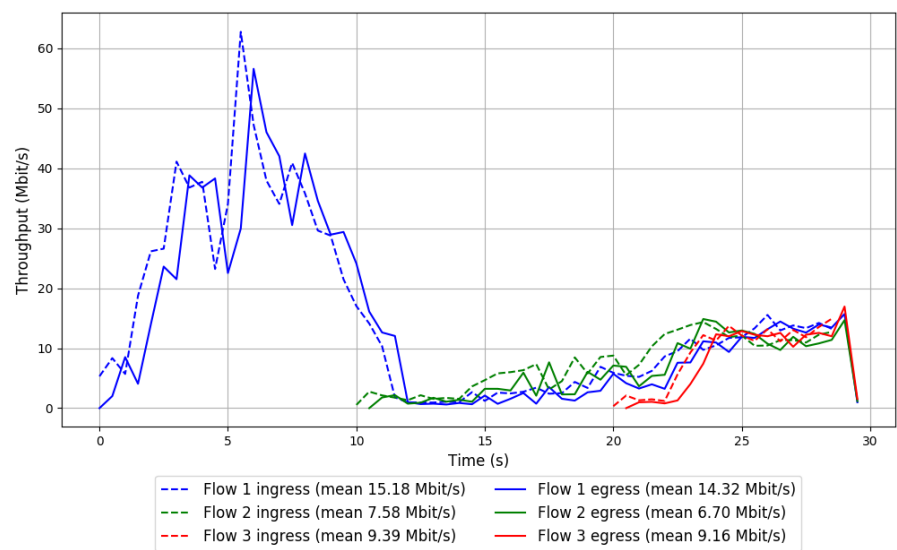
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-02-20 11:35:15
End at: 2019-02-20 11:35:45
Local clock offset: -0.991 ms
Remote clock offset: -29.769 ms


# Below is generated by plot.py at 2019-02-20 12:16:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.91 Mbit/s
95th percentile per-packet one-way delay: 50.277 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 51.43 Mbit/s
95th percentile per-packet one-way delay: 47.444 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 40.58 Mbit/s
95th percentile per-packet one-way delay: 50.346 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 32.03 Mbit/s
95th percentile per-packet one-way delay: 50.676 ms
Loss rate: 0.30%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-02-20 12:00:52
End at: 2019-02-20 12:01:22
Local clock offset: -1.878 ms
Remote clock offset: -80.673 ms


# Below is generated by plot.py at 2019-02-20 12:16:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.70 Mbit/s
95th percentile per-packet one-way delay: 103.274 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 58.11 Mbit/s
95th percentile per-packet one-way delay: 103.135 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 43.09 Mbit/s
95th percentile per-packet one-way delay: 98.889 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 24.28 Mbit/s
95th percentile per-packet one-way delay: 103.817 ms
Loss rate: 0.43%
```
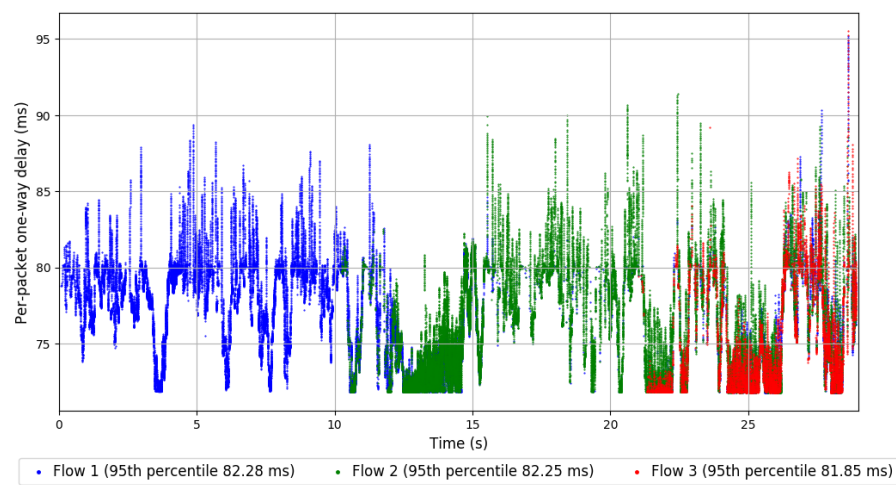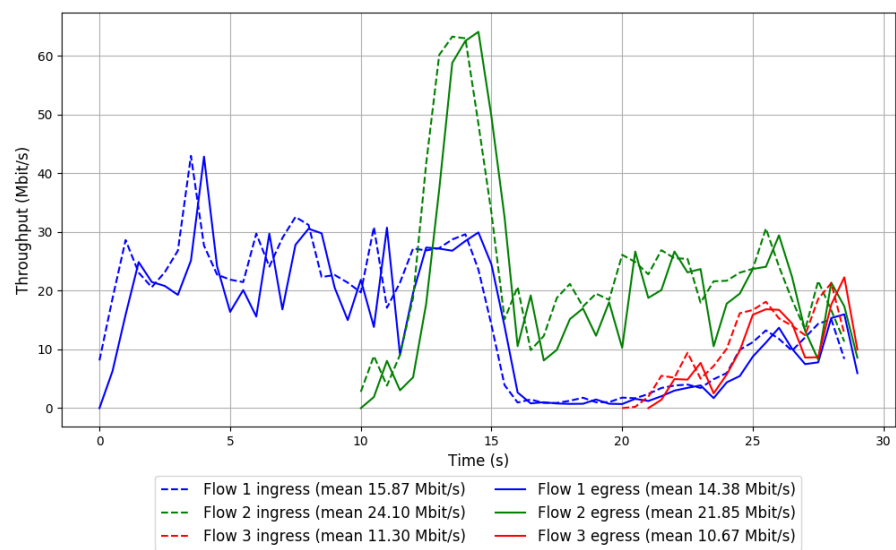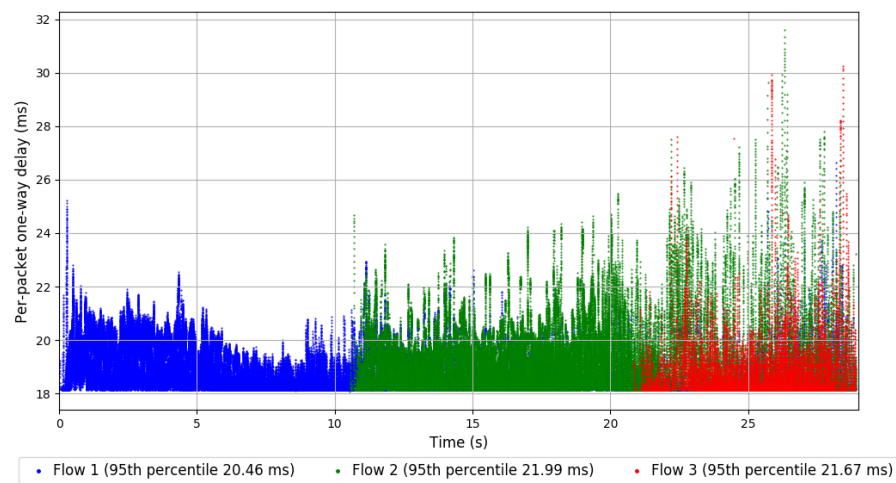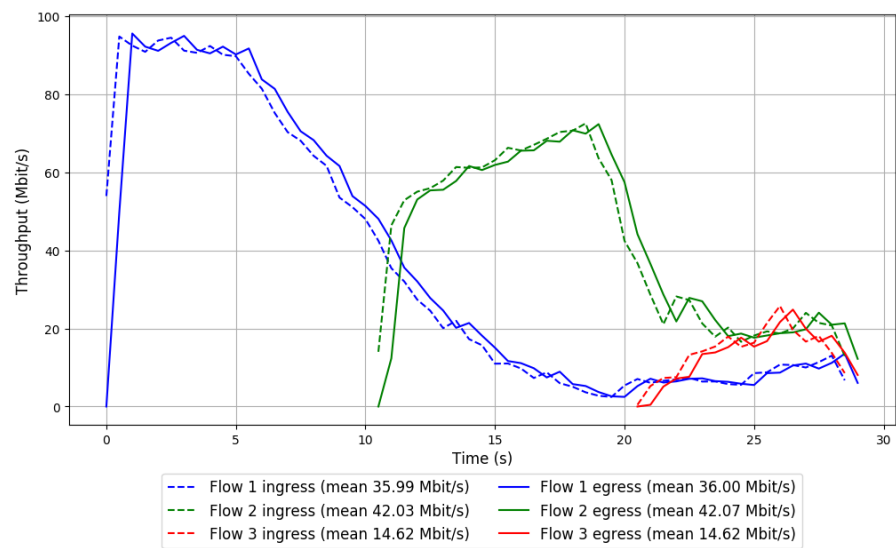
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:05:56
End at: 2019-02-20 10:06:26
Local clock offset: 0.991 ms
Remote clock offset: -141.596 ms

# Below is generated by plot.py at 2019-02-20 12:16:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.30 Mbit/s
95th percentile per-packet one-way delay: 165.701 ms
Loss rate: 6.64%
-- Flow 1:
Average throughput: 14.32 Mbit/s
95th percentile per-packet one-way delay: 165.968 ms
Loss rate: 5.70%
-- Flow 2:
Average throughput: 6.70 Mbit/s
95th percentile per-packet one-way delay: 165.300 ms
Loss rate: 11.73%
-- Flow 3:
Average throughput: 9.16 Mbit/s
95th percentile per-packet one-way delay: 165.290 ms
Loss rate: 2.77%
```

Run 1: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 15.18 Mbit/s) --- Flow 1 egress (mean 14.32 Mbit/s)
Flow 2 ingress (mean 7.58 Mbit/s) --- Flow 2 egress (mean 6.70 Mbit/s)
Flow 3 ingress (mean 9.39 Mbit/s) --- Flow 3 egress (mean 9.16 Mbit/s)

Flow 1 (95th percentile 165.97 ms)   Flow 2 (95th percentile 165.30 ms)   Flow 3 (95th percentile 165.29 ms)
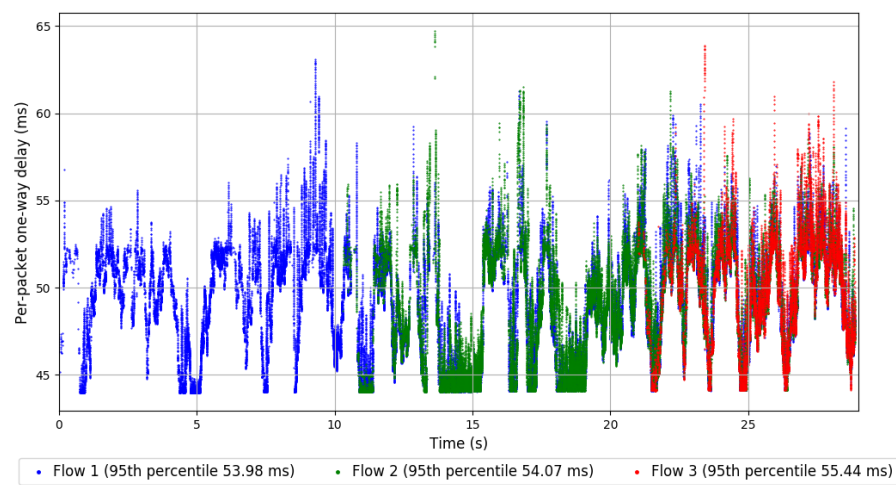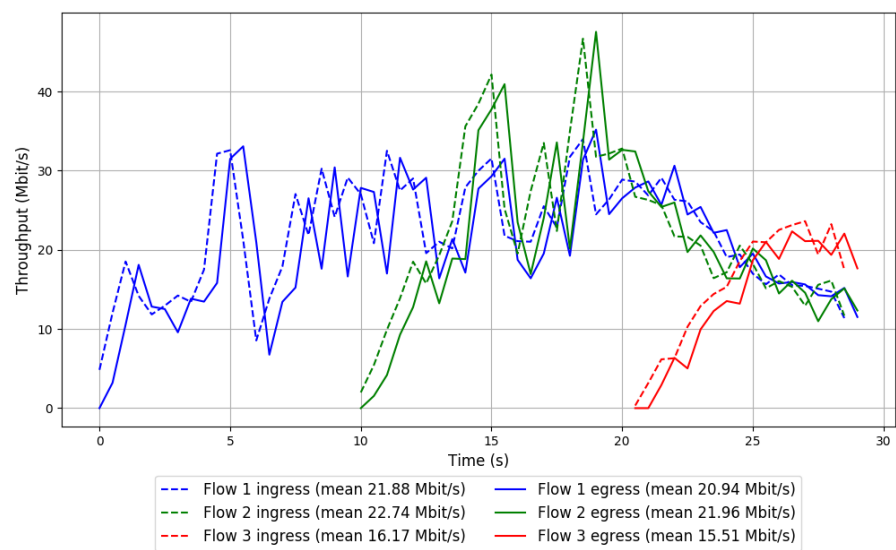
66

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:33:22
End at: 2019-02-20 10:33:52
Local clock offset: -0.02 ms
Remote clock offset: -59.304 ms


# Below is generated by plot.py at 2019-02-20 12:16:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.45 Mbit/s
95th percentile per-packet one-way delay: 82.230 ms
Loss rate: 9.67%
-- Flow 1:
Average throughput: 14.38 Mbit/s
95th percentile per-packet one-way delay: 82.277 ms
Loss rate: 9.48%
-- Flow 2:
Average throughput: 21.85 Mbit/s
95th percentile per-packet one-way delay: 82.251 ms
Loss rate: 9.48%
-- Flow 3:
Average throughput: 10.67 Mbit/s
95th percentile per-packet one-way delay: 81.848 ms
Loss rate: 11.51%
```

Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:00:18
End at: 2019-02-20 11:00:48
Local clock offset: 0.532 ms
Remote clock offset: -7.672 ms


# Below is generated by plot.py at 2019-02-20 12:16:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.83 Mbit/s
95th percentile per-packet one-way delay: 21.102 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 36.00 Mbit/s
95th percentile per-packet one-way delay: 20.461 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 42.07 Mbit/s
95th percentile per-packet one-way delay: 21.993 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 14.62 Mbit/s
95th percentile per-packet one-way delay: 21.674 ms
Loss rate: 0.44%
```
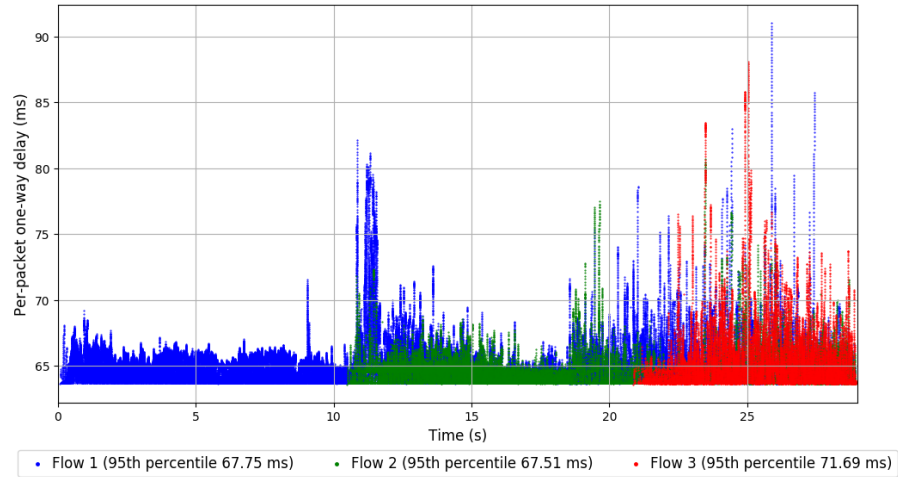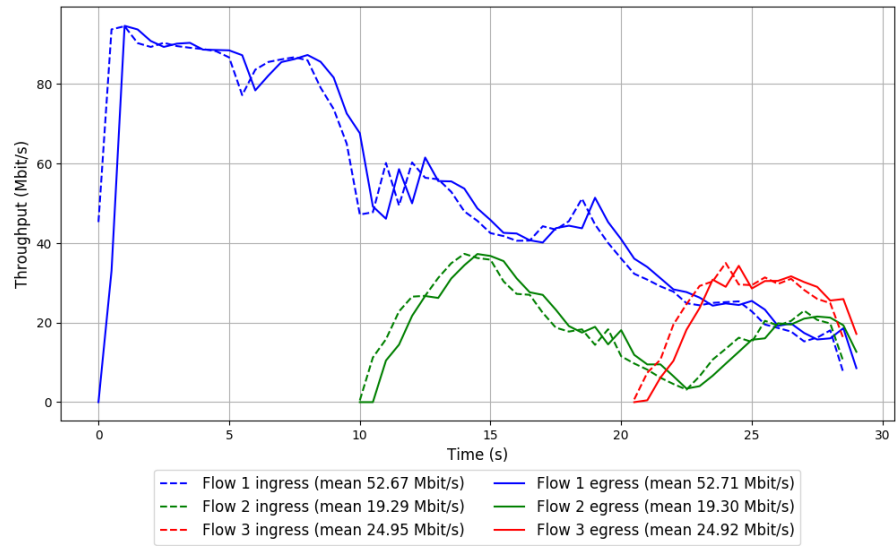
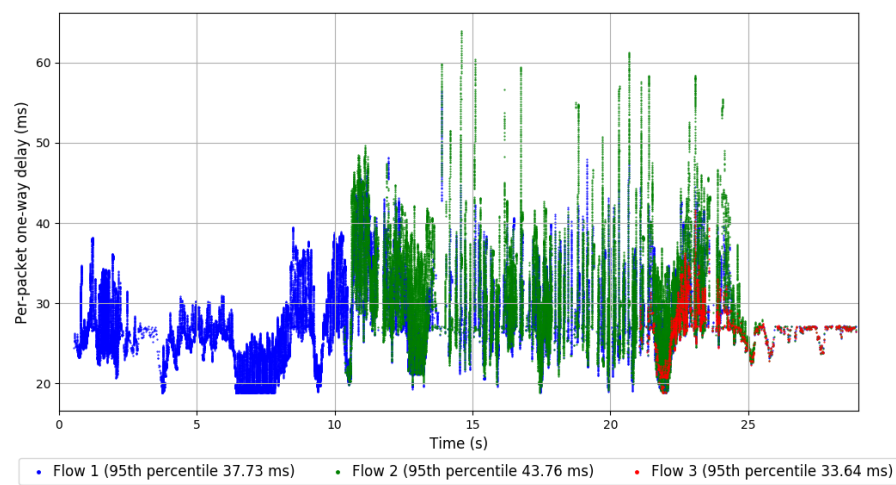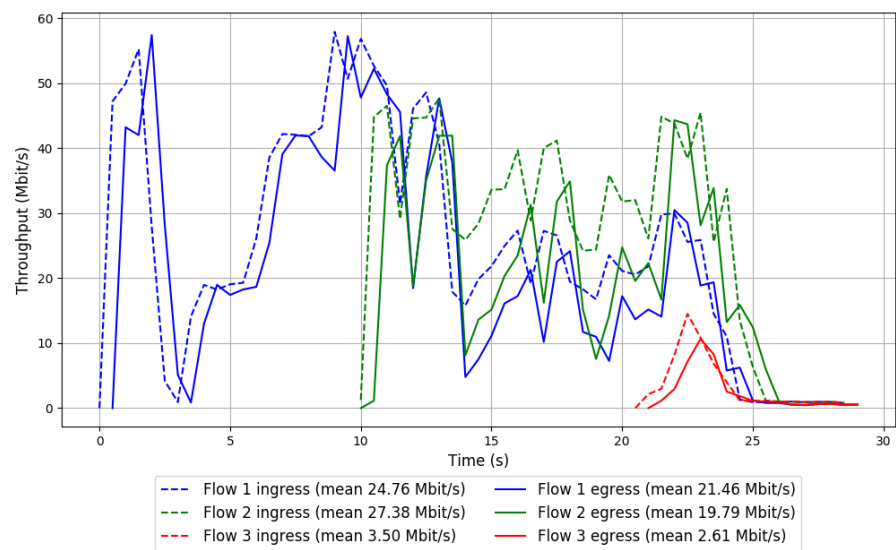Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:30:54
End at: 2019-02-20 11:31:24
Local clock offset: -0.261 ms
Remote clock offset: -31.803 ms


# Below is generated by plot.py at 2019-02-20 12:16:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.34 Mbit/s
95th percentile per-packet one-way delay: 54.214 ms
Loss rate: 4.41%
-- Flow 1:
Average throughput: 20.94 Mbit/s
95th percentile per-packet one-way delay: 53.984 ms
Loss rate: 4.61%
-- Flow 2:
Average throughput: 21.96 Mbit/s
95th percentile per-packet one-way delay: 54.074 ms
Loss rate: 3.86%
-- Flow 3:
Average throughput: 15.51 Mbit/s
95th percentile per-packet one-way delay: 55.439 ms
Loss rate: 5.20%
```

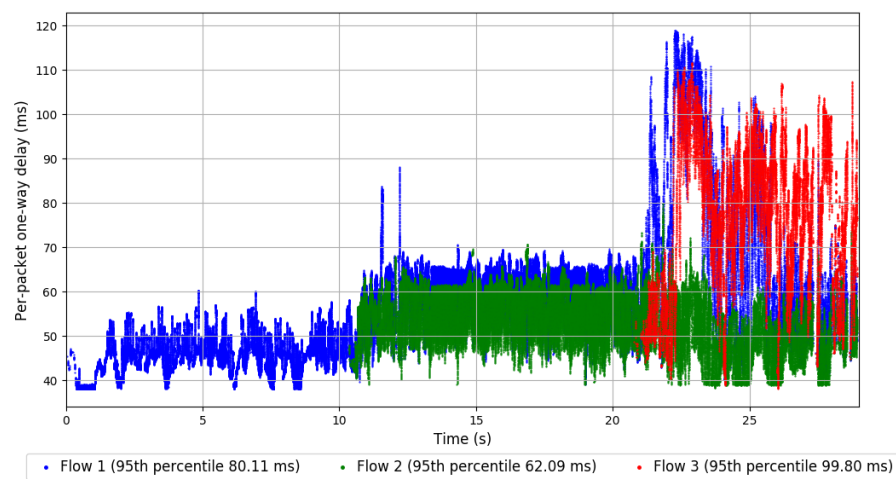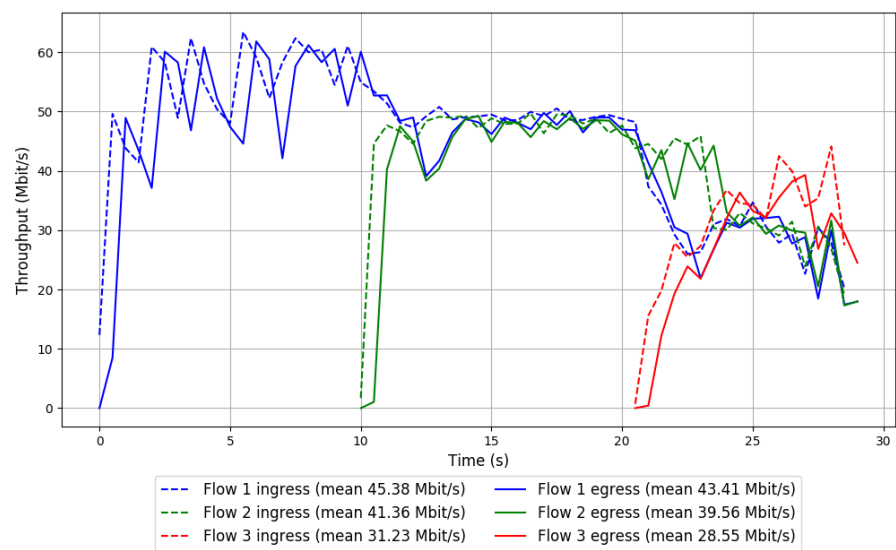Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:57:09
End at: 2019-02-20 11:57:39
Local clock offset: -2.623 ms
Remote clock offset: -50.177 ms


# Below is generated by plot.py at 2019-02-20 12:17:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.01 Mbit/s
95th percentile per-packet one-way delay: 68.235 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 52.71 Mbit/s
95th percentile per-packet one-way delay: 67.746 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 19.30 Mbit/s
95th percentile per-packet one-way delay: 67.514 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 24.92 Mbit/s
95th percentile per-packet one-way delay: 71.687 ms
Loss rate: 0.45%
```
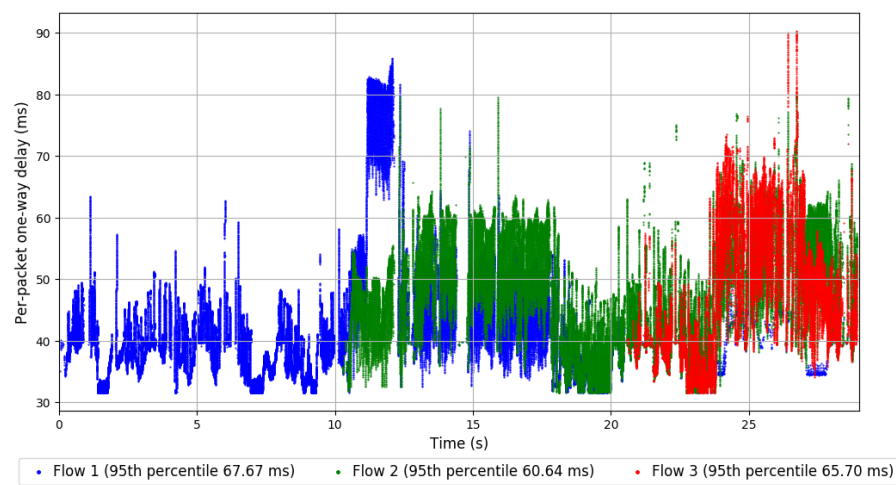
Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:08:39
End at: 2019-02-20 10:09:09
Local clock offset: 1.468 ms
Remote clock offset: -3.346 ms


# Below is generated by plot.py at 2019-02-20 12:17:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.13 Mbit/s
95th percentile per-packet one-way delay: 40.395 ms
Loss rate: 20.54%
-- Flow 1:
Average throughput: 21.46 Mbit/s
95th percentile per-packet one-way delay: 37.728 ms
Loss rate: 14.91%
-- Flow 2:
Average throughput: 19.79 Mbit/s
95th percentile per-packet one-way delay: 43.763 ms
Loss rate: 27.89%
-- Flow 3:
Average throughput: 2.61 Mbit/s
95th percentile per-packet one-way delay: 33.644 ms
Loss rate: 30.05%
```

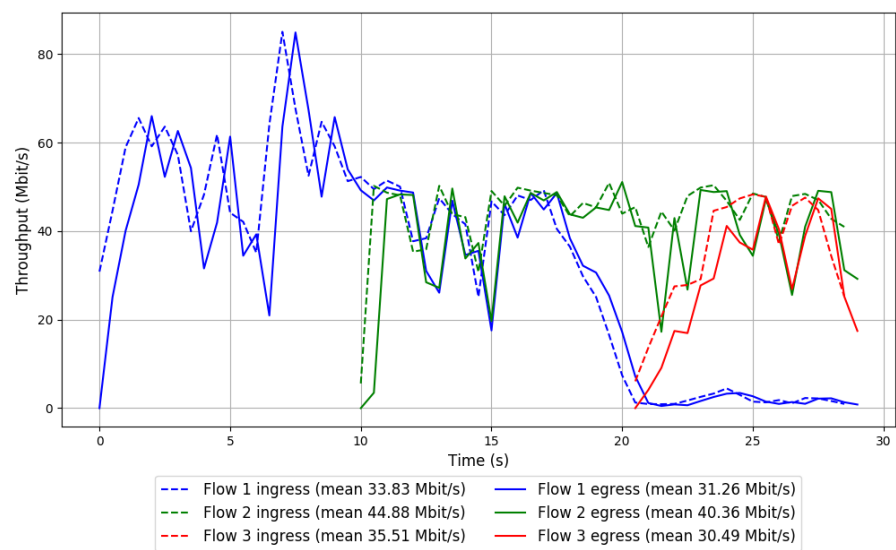Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:36:01
End at: 2019-02-20 10:36:31
Local clock offset: -1.239 ms
Remote clock offset: -27.101 ms


# Below is generated by plot.py at 2019-02-20 12:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.95 Mbit/s
95th percentile per-packet one-way delay: 87.869 ms
Loss rate: 4.93%
-- Flow 1:
Average throughput: 43.41 Mbit/s
95th percentile per-packet one-way delay: 80.106 ms
Loss rate: 4.43%
-- Flow 2:
Average throughput: 39.56 Mbit/s
95th percentile per-packet one-way delay: 62.087 ms
Loss rate: 4.44%
-- Flow 3:
Average throughput: 28.55 Mbit/s
95th percentile per-packet one-way delay: 99.797 ms
Loss rate: 9.00%
```
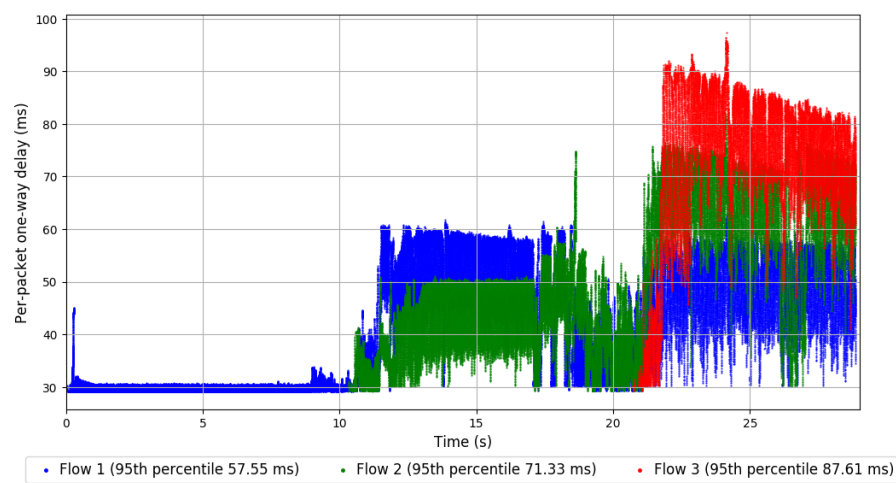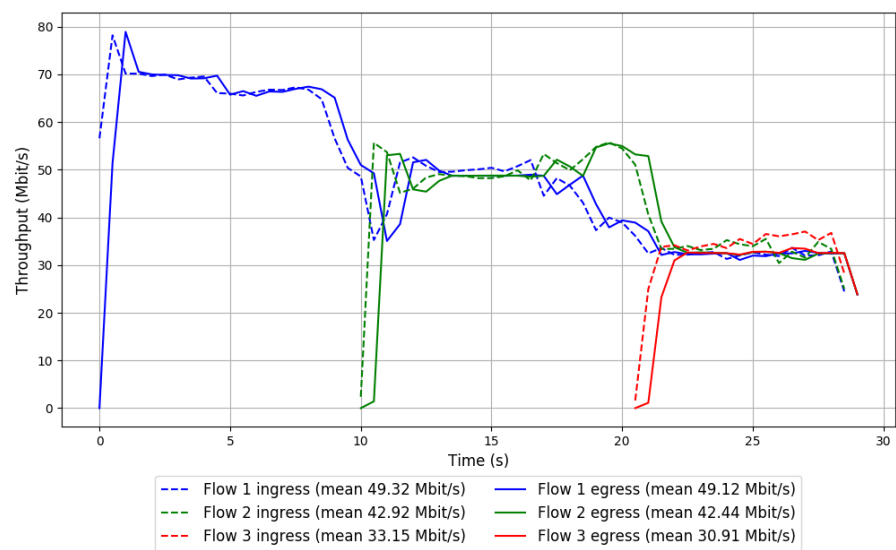
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:02:52
End at: 2019-02-20 11:03:22
Local clock offset: 1.824 ms
Remote clock offset: -19.909 ms


# Below is generated by plot.py at 2019-02-20 12:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.14 Mbit/s
95th percentile per-packet one-way delay: 62.498 ms
Loss rate: 9.60%
-- Flow 1:
Average throughput: 31.26 Mbit/s
95th percentile per-packet one-way delay: 67.668 ms
Loss rate: 7.68%
-- Flow 2:
Average throughput: 40.36 Mbit/s
95th percentile per-packet one-way delay: 60.639 ms
Loss rate: 10.18%
-- Flow 3:
Average throughput: 30.49 Mbit/s
95th percentile per-packet one-way delay: 65.696 ms
Loss rate: 14.31%
```

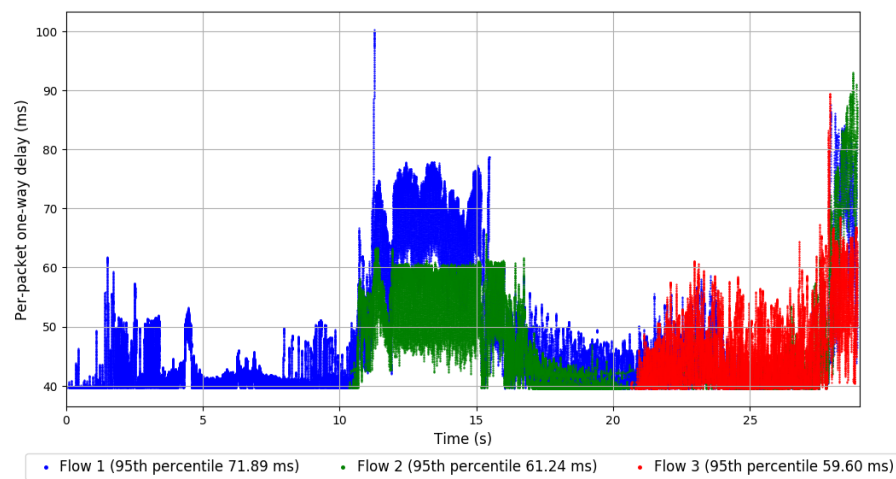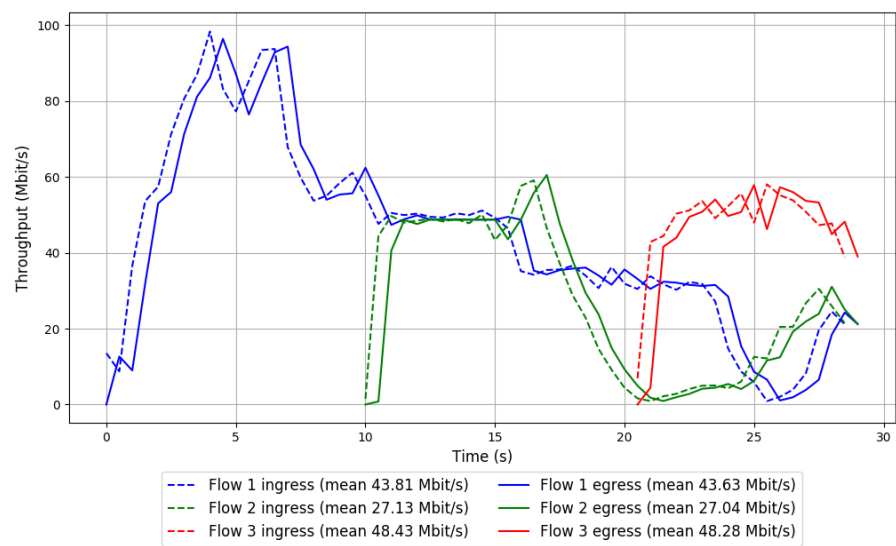Run 3: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 33.83 Mbit/s) ——— Flow 1 egress (mean 31.26 Mbit/s)
- - - Flow 2 ingress (mean 44.88 Mbit/s) ——— Flow 2 egress (mean 40.36 Mbit/s)
- - - Flow 3 ingress (mean 35.51 Mbit/s) ——— Flow 3 egress (mean 30.49 Mbit/s)

• Flow 1 (95th percentile 67.67 ms)　　• Flow 2 (95th percentile 60.64 ms)　　• Flow 3 (95th percentile 65.70 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:33:59
End at: 2019-02-20 11:34:29
Local clock offset: 11.208 ms
Remote clock offset: -4.628 ms


# Below is generated by plot.py at 2019-02-20 12:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.18 Mbit/s
95th percentile per-packet one-way delay: 76.245 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 49.12 Mbit/s
95th percentile per-packet one-way delay: 57.551 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 42.44 Mbit/s
95th percentile per-packet one-way delay: 71.326 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 30.91 Mbit/s
95th percentile per-packet one-way delay: 87.606 ms
Loss rate: 7.57%
```

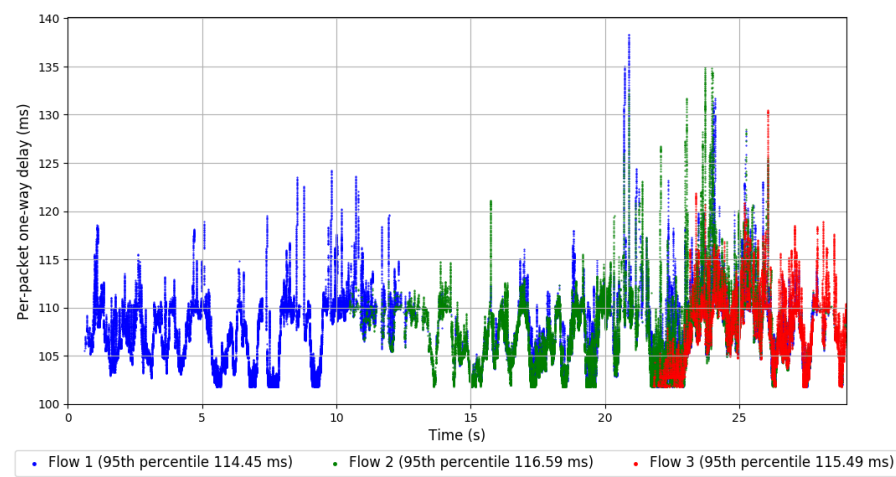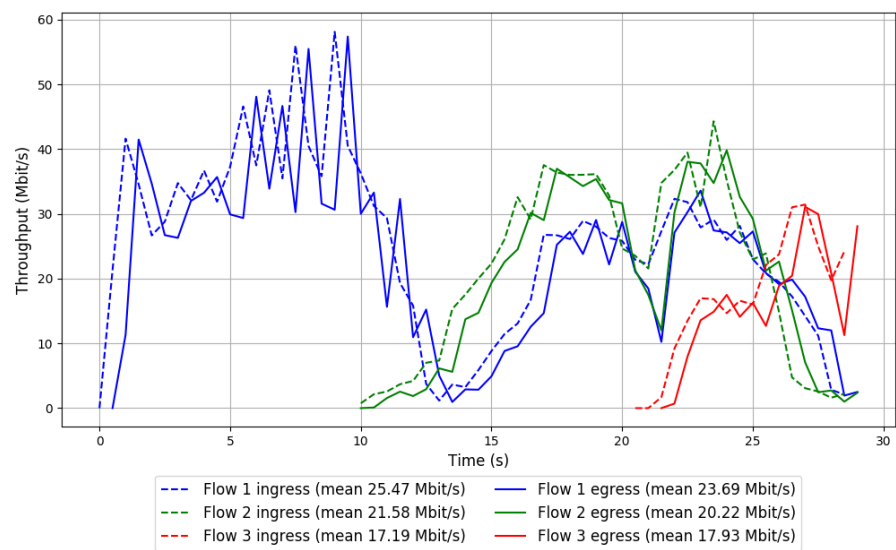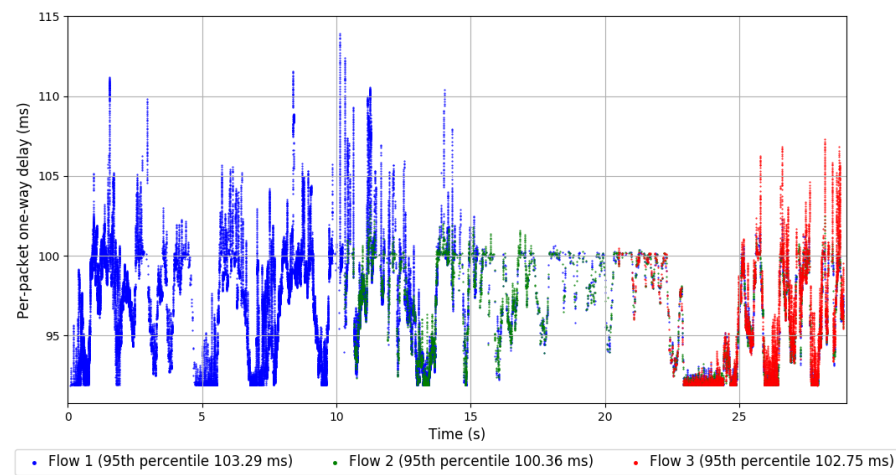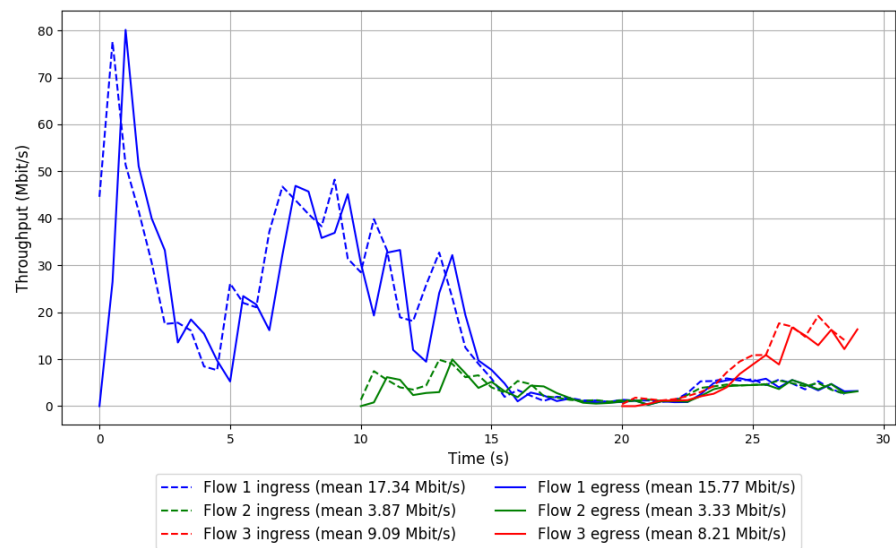Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:59:38
End at: 2019-02-20 12:00:08
Local clock offset: -2.695 ms
Remote clock offset: -26.32 ms


# Below is generated by plot.py at 2019-02-20 12:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.89 Mbit/s
95th percentile per-packet one-way delay: 69.983 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 43.63 Mbit/s
95th percentile per-packet one-way delay: 71.891 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 27.04 Mbit/s
95th percentile per-packet one-way delay: 61.236 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 48.28 Mbit/s
95th percentile per-packet one-way delay: 59.600 ms
Loss rate: 0.61%
```

Run 5: Report of Indigo-MusesC5 — Data Link

- Flow 1 ingress (mean 43.81 Mbit/s)
- Flow 1 egress (mean 43.63 Mbit/s)
- Flow 2 ingress (mean 27.13 Mbit/s)
- Flow 2 egress (mean 27.04 Mbit/s)
- Flow 3 ingress (mean 48.43 Mbit/s)
- Flow 3 egress (mean 48.28 Mbit/s)

- Flow 1 (95th percentile 71.89 ms)
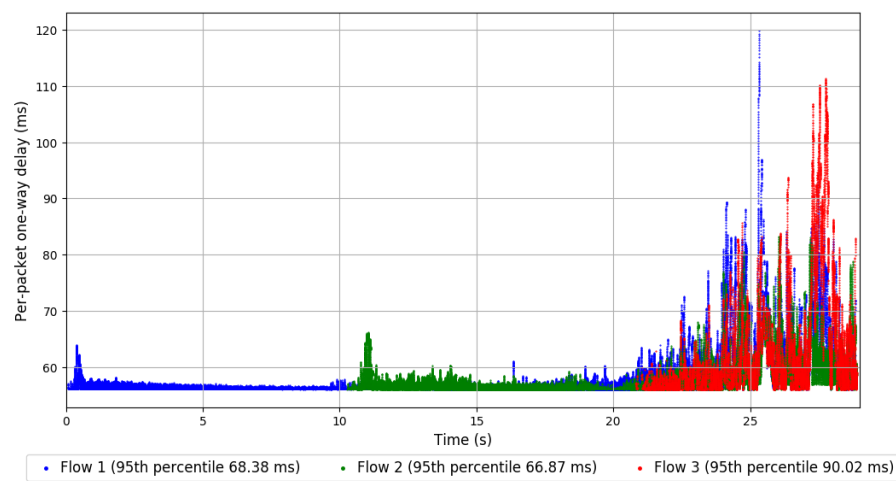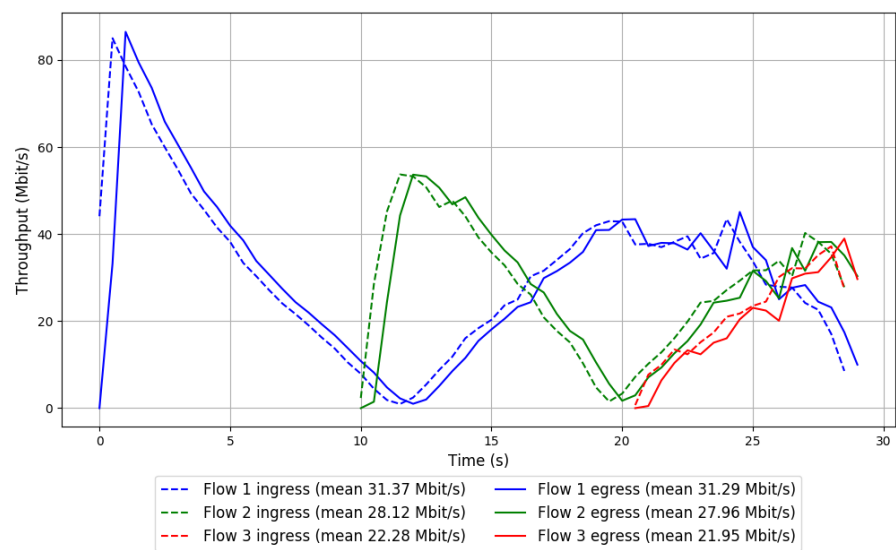- Flow 2 (95th percentile 61.24 ms)
- Flow 3 (95th percentile 59.60 ms)

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 09:53:56
End at: 2019-02-20 09:54:26
Local clock offset: 0.943 ms
Remote clock offset: -86.088 ms


# Below is generated by plot.py at 2019-02-20 12:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.43 Mbit/s
95th percentile per-packet one-way delay: 115.268 ms
Loss rate: 7.96%
-- Flow 1:
Average throughput: 23.69 Mbit/s
95th percentile per-packet one-way delay: 114.453 ms
Loss rate: 8.67%
-- Flow 2:
Average throughput: 20.22 Mbit/s
95th percentile per-packet one-way delay: 116.587 ms
Loss rate: 6.41%
-- Flow 3:
Average throughput: 17.93 Mbit/s
95th percentile per-packet one-way delay: 115.489 ms
Loss rate: 8.66%
```

Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:21:50
End at: 2019-02-20 10:22:20
Local clock offset: 1.227 ms
Remote clock offset: -77.06 ms


# Below is generated by plot.py at 2019-02-20 12:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.31 Mbit/s
95th percentile per-packet one-way delay: 102.830 ms
Loss rate: 9.77%
-- Flow 1:
Average throughput: 15.77 Mbit/s
95th percentile per-packet one-way delay: 103.292 ms
Loss rate: 9.14%
-- Flow 2:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 100.363 ms
Loss rate: 13.93%
-- Flow 3:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 102.751 ms
Loss rate: 9.96%
```

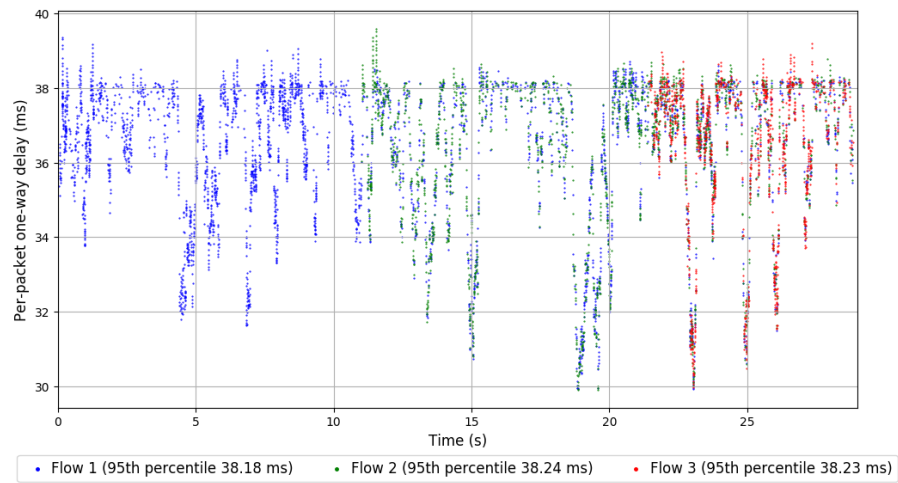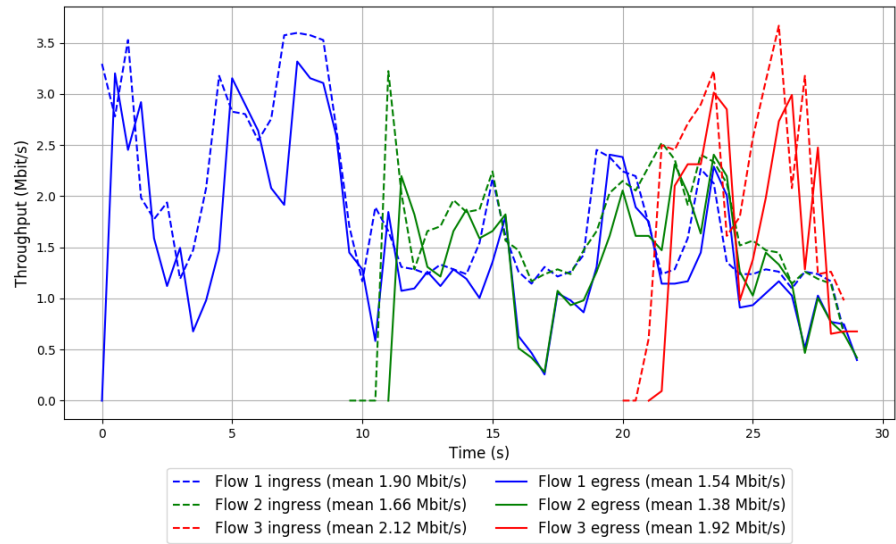Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:49:26
End at: 2019-02-20 10:49:56
Local clock offset: 0.105 ms
Remote clock offset: -45.379 ms


# Below is generated by plot.py at 2019-02-20 12:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.49 Mbit/s
95th percentile per-packet one-way delay: 70.694 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 31.29 Mbit/s
95th percentile per-packet one-way delay: 68.379 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 27.96 Mbit/s
95th percentile per-packet one-way delay: 66.866 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 21.95 Mbit/s
95th percentile per-packet one-way delay: 90.018 ms
Loss rate: 1.73%
```

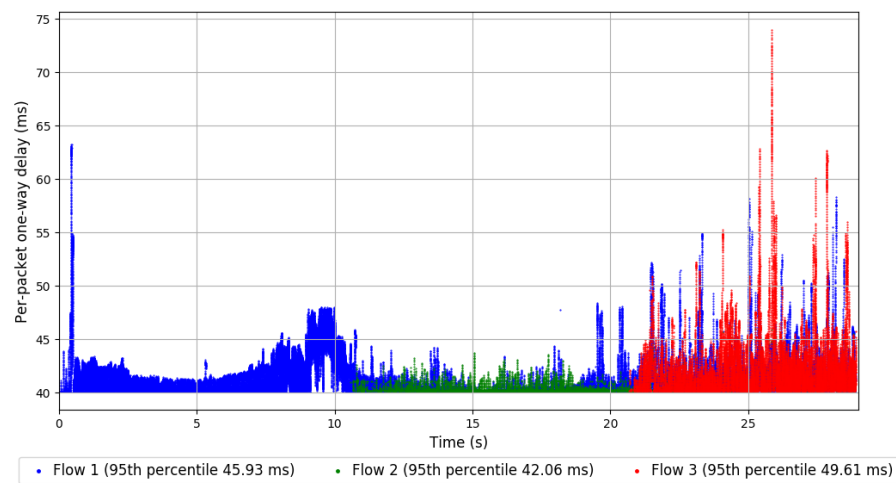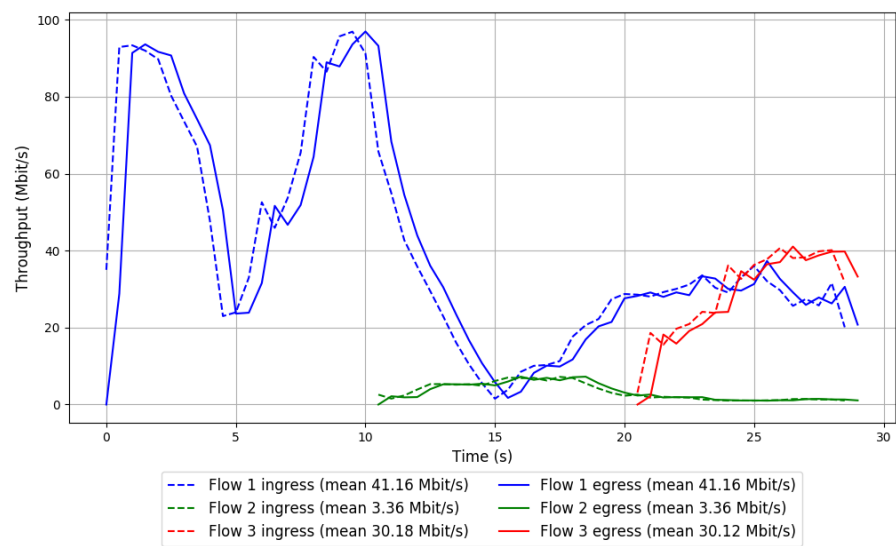Run 3: Report of Indigo-MusesD — Data Link

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```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:17:42
End at: 2019-02-20 11:18:12
Local clock offset: -0.533 ms
Remote clock offset: -20.302 ms


# Below is generated by plot.py at 2019-02-20 12:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 38.205 ms
Loss rate: 19.92%
-- Flow 1:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 38.178 ms
Loss rate: 18.82%
-- Flow 2:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 38.237 ms
Loss rate: 21.49%
-- Flow 3:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 38.230 ms
Loss rate: 20.56%
```

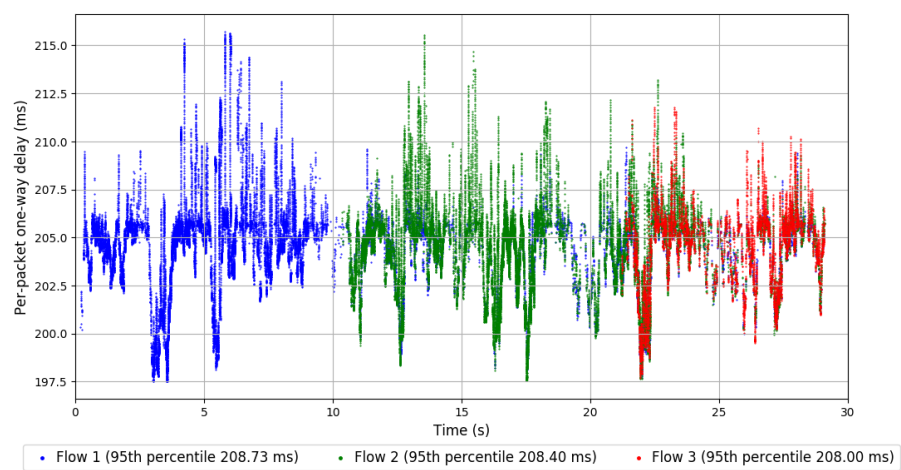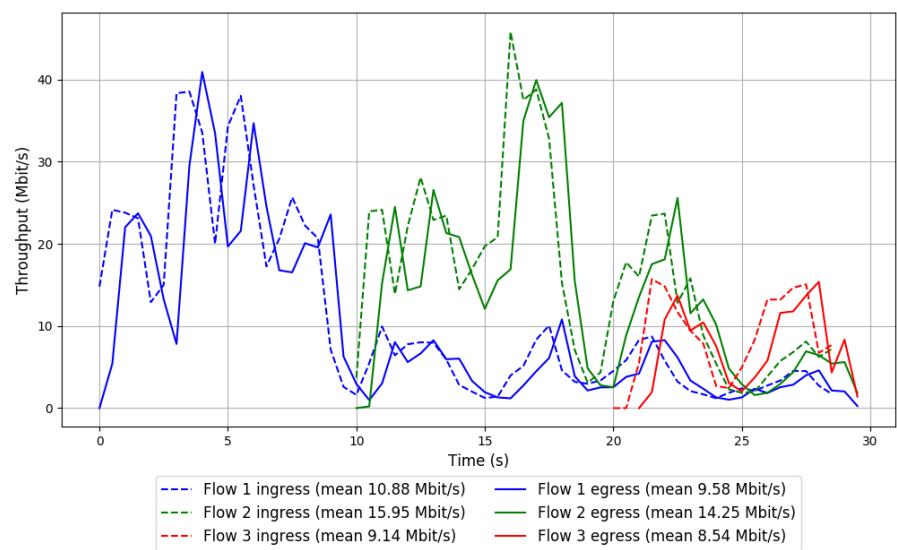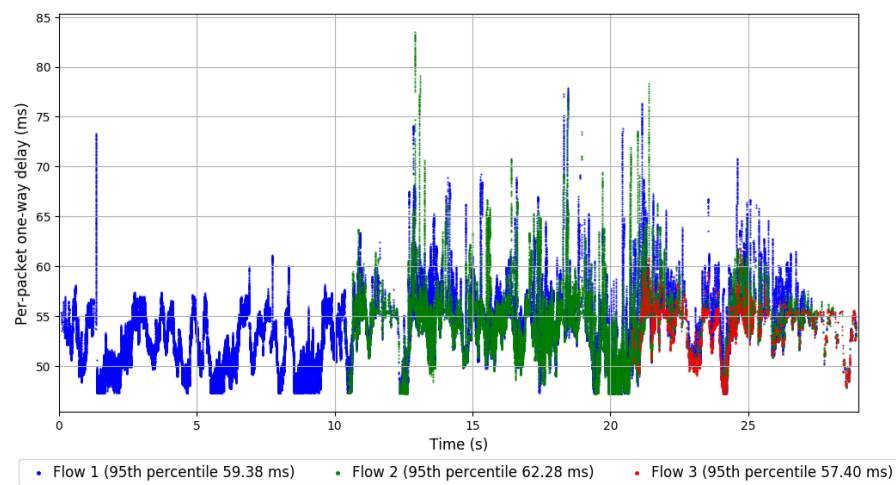Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:46:26
End at: 2019-02-20 11:46:56
Local clock offset: 1.585 ms
Remote clock offset: -22.515 ms

# Below is generated by plot.py at 2019-02-20 12:17:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.86 Mbit/s
95th percentile per-packet one-way delay: 46.242 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 41.16 Mbit/s
95th percentile per-packet one-way delay: 45.933 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 42.063 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 30.12 Mbit/s
95th percentile per-packet one-way delay: 49.607 ms
Loss rate: 0.49%
```

Run 5: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 41.16 Mbit/s) --- Flow 1 egress (mean 41.16 Mbit/s)
Flow 2 ingress (mean 3.36 Mbit/s) --- Flow 2 egress (mean 3.36 Mbit/s)
Flow 3 ingress (mean 30.18 Mbit/s) --- Flow 3 egress (mean 30.12 Mbit/s)

Flow 1 (95th percentile 45.93 ms)   Flow 2 (95th percentile 42.06 ms)   Flow 3 (95th percentile 49.61 ms)

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:07:12
End at: 2019-02-20 10:07:42
Local clock offset: 0.544 ms
Remote clock offset: -182.869 ms


# Below is generated by plot.py at 2019-02-20 12:17:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.17 Mbit/s
95th percentile per-packet one-way delay: 208.479 ms
Loss rate: 11.55%
-- Flow 1:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 208.728 ms
Loss rate: 12.08%
-- Flow 2:
Average throughput: 14.25 Mbit/s
95th percentile per-packet one-way delay: 208.400 ms
Loss rate: 10.80%
-- Flow 3:
Average throughput: 8.54 Mbit/s
95th percentile per-packet one-way delay: 207.999 ms
Loss rate: 12.29%
```
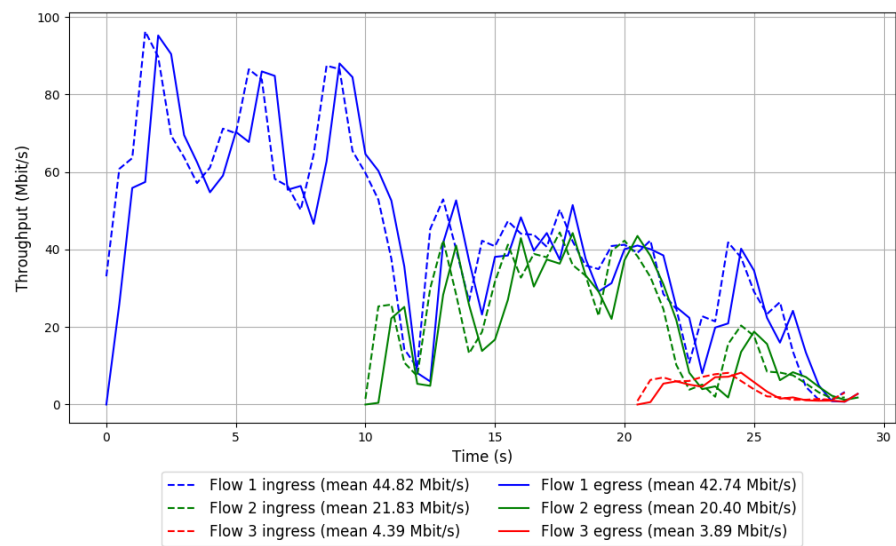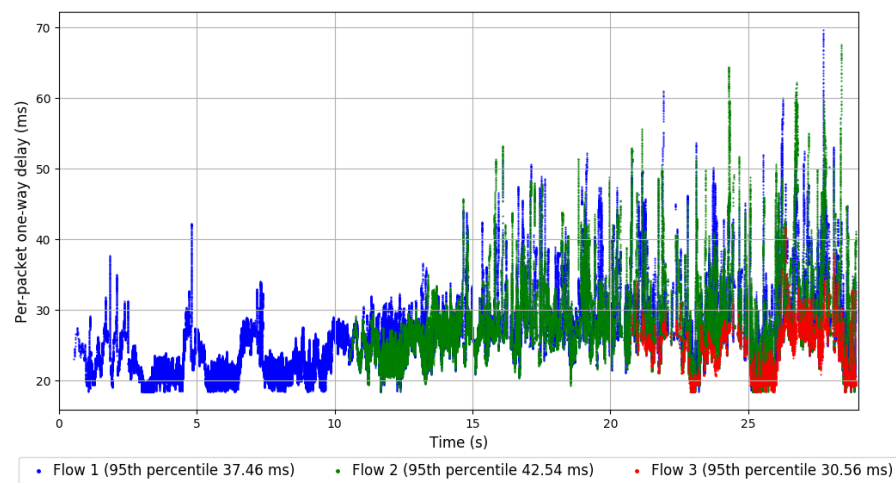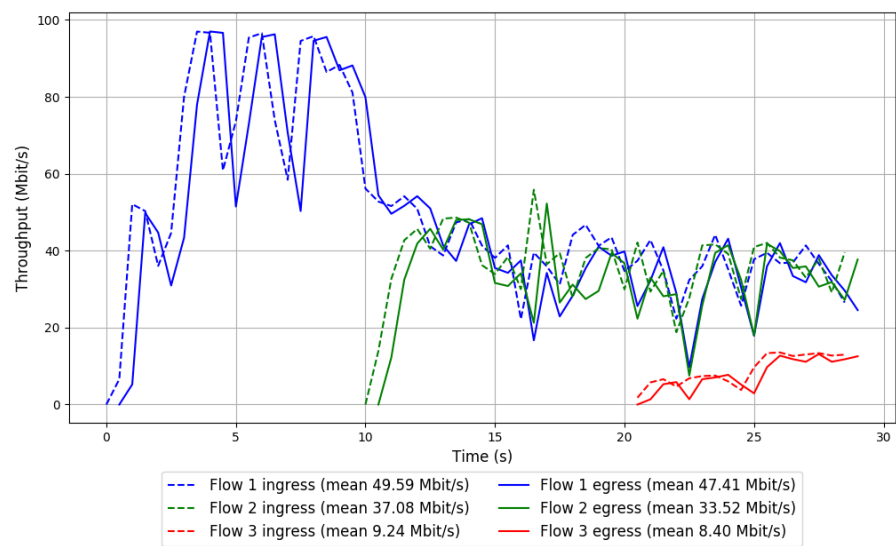
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:34:40
End at: 2019-02-20 10:35:10
Local clock offset: 2.722 ms
Remote clock offset: -32.201 ms


# Below is generated by plot.py at 2019-02-20 12:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.94 Mbit/s
95th percentile per-packet one-way delay: 60.010 ms
Loss rate: 5.37%
-- Flow 1:
Average throughput: 42.74 Mbit/s
95th percentile per-packet one-way delay: 59.381 ms
Loss rate: 4.77%
-- Flow 2:
Average throughput: 20.40 Mbit/s
95th percentile per-packet one-way delay: 62.280 ms
Loss rate: 6.73%
-- Flow 3:
Average throughput: 3.89 Mbit/s
95th percentile per-packet one-way delay: 57.402 ms
Loss rate: 11.71%
```
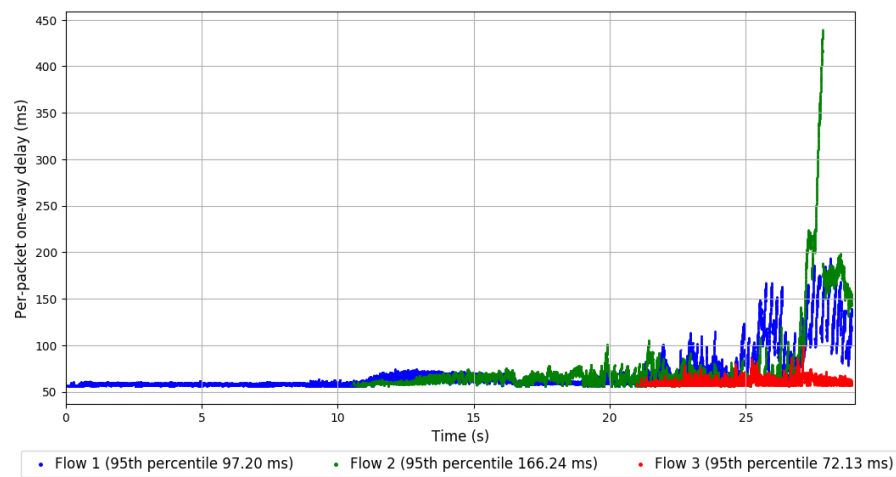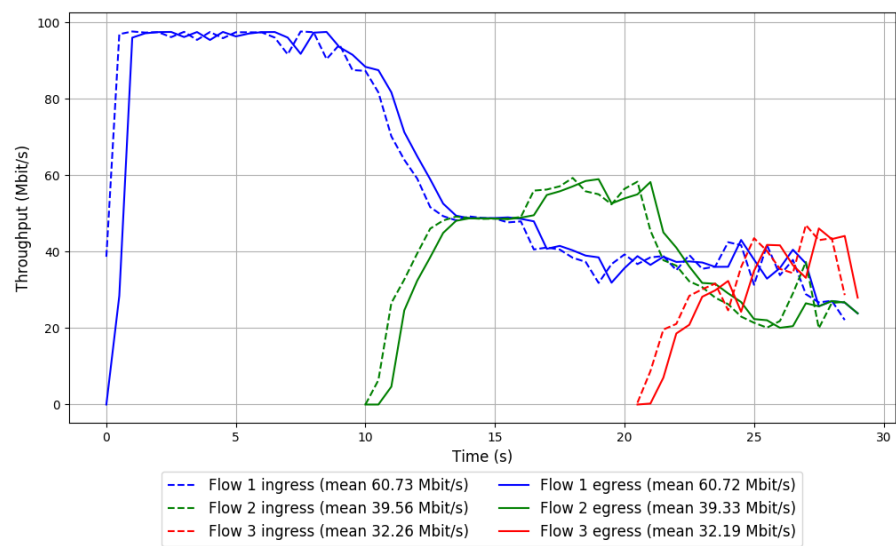
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:01:30
End at: 2019-02-20 11:02:00
Local clock offset: 1.187 ms
Remote clock offset: -7.334 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.56 Mbit/s
95th percentile per-packet one-way delay: 39.051 ms
Loss rate: 7.42%
-- Flow 1:
Average throughput: 47.41 Mbit/s
95th percentile per-packet one-way delay: 37.457 ms
Loss rate: 6.18%
-- Flow 2:
Average throughput: 33.52 Mbit/s
95th percentile per-packet one-way delay: 42.541 ms
Loss rate: 9.78%
-- Flow 3:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 30.556 ms
Loss rate: 9.51%
```
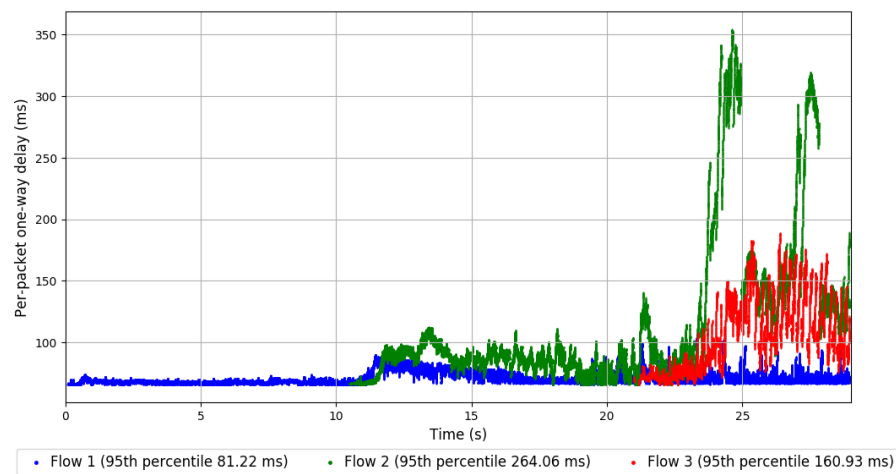
Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:32:28
End at: 2019-02-20 11:32:58
Local clock offset: 16.649 ms
Remote clock offset: -26.531 ms


# Below is generated by plot.py at 2019-02-20 12:18:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.68 Mbit/s
95th percentile per-packet one-way delay: 98.900 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 60.72 Mbit/s
95th percentile per-packet one-way delay: 97.205 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 39.33 Mbit/s
95th percentile per-packet one-way delay: 166.243 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 72.133 ms
Loss rate: 1.09%
```

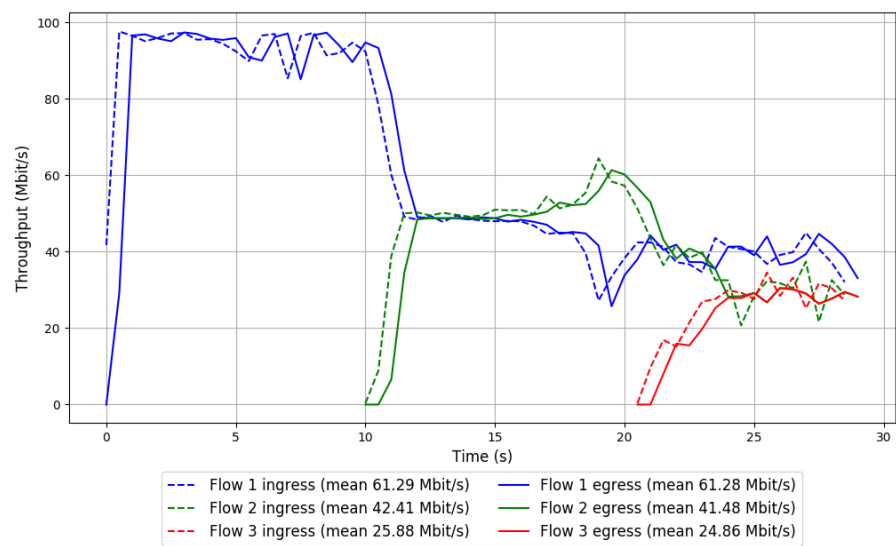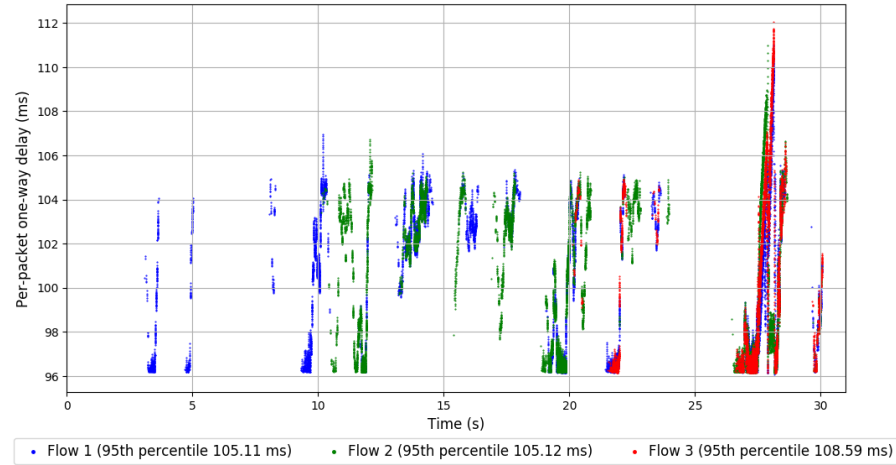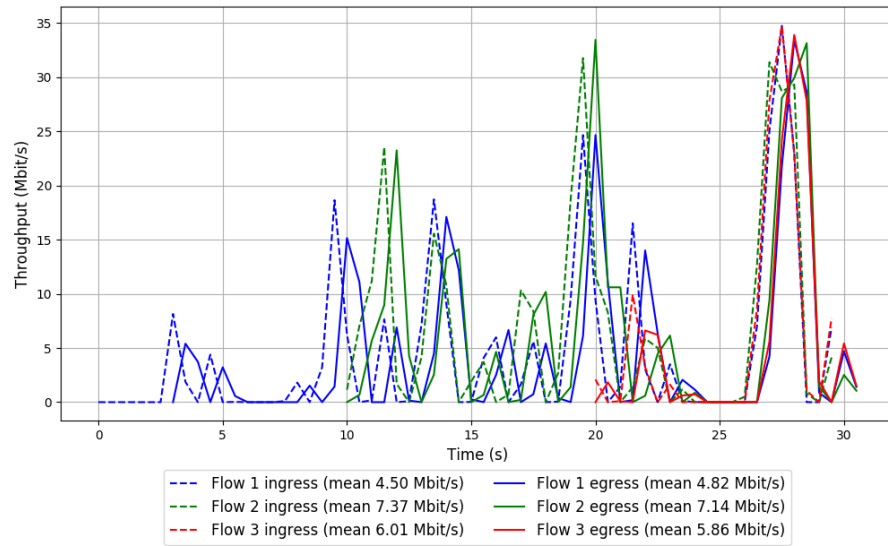# Run 4: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 60.73 Mbit/s) —— Flow 1 egress (mean 60.72 Mbit/s)
Flow 2 ingress (mean 39.56 Mbit/s) —— Flow 2 egress (mean 39.33 Mbit/s)
Flow 3 ingress (mean 32.26 Mbit/s) —— Flow 3 egress (mean 32.19 Mbit/s)

Flow 1 (95th percentile 97.20 ms)   Flow 2 (95th percentile 166.24 ms)   Flow 3 (95th percentile 72.13 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:58:25
End at: 2019-02-20 11:58:55
Local clock offset: -2.014 ms
Remote clock offset: -51.895 ms

# Below is generated by plot.py at 2019-02-20 12:18:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.73 Mbit/s
95th percentile per-packet one-way delay: 141.041 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 61.28 Mbit/s
95th percentile per-packet one-way delay: 81.221 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 41.48 Mbit/s
95th percentile per-packet one-way delay: 264.055 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 24.86 Mbit/s
95th percentile per-packet one-way delay: 160.931 ms
Loss rate: 4.27%
```
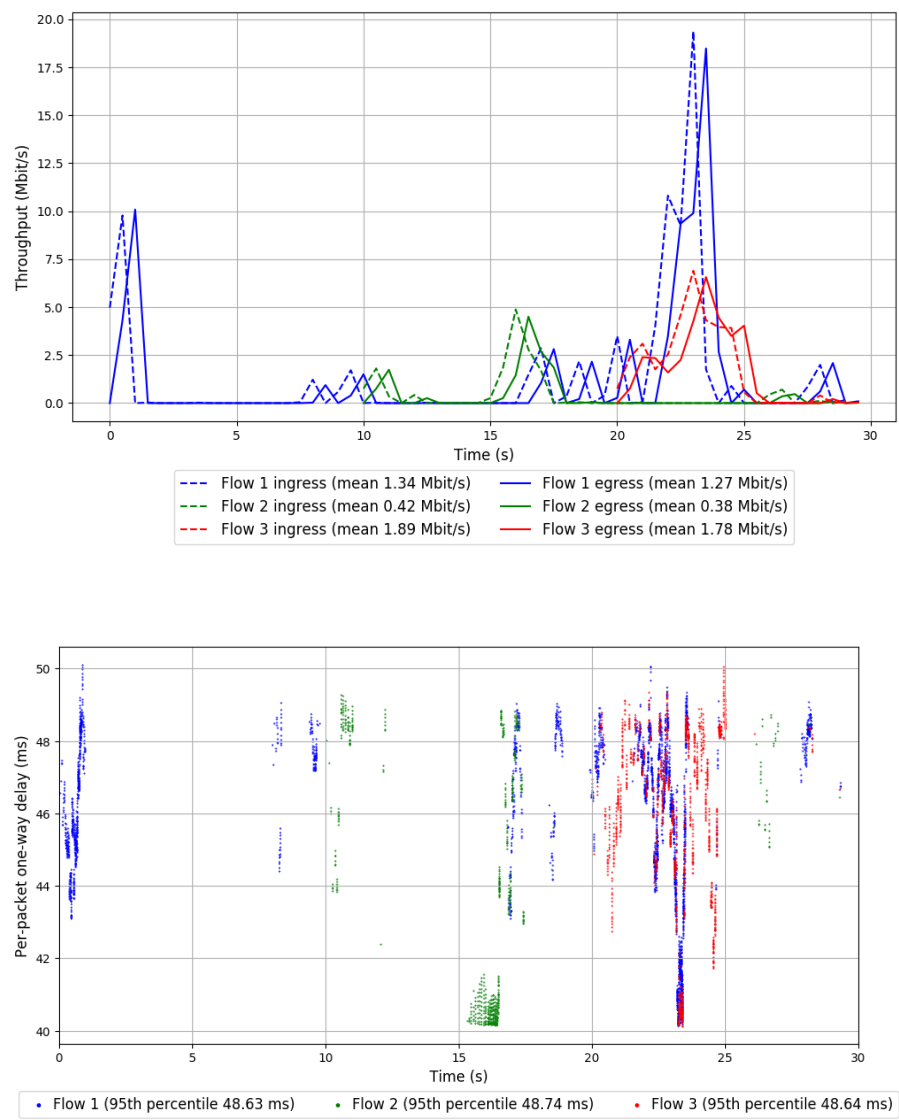
Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-02-20 10:03:29
End at: 2019-02-20 10:03:59
Local clock offset: 0.314 ms
Remote clock offset: -81.526 ms


# Below is generated by plot.py at 2019-02-20 12:18:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.26 Mbit/s
95th percentile per-packet one-way delay: 105.802 ms
Loss rate: 3.30%
-- Flow 1:
Average throughput: 4.82 Mbit/s
95th percentile per-packet one-way delay: 105.109 ms
Loss rate: 3.67%
-- Flow 2:
Average throughput: 7.14 Mbit/s
95th percentile per-packet one-way delay: 105.118 ms
Loss rate: 3.14%
-- Flow 3:
Average throughput: 5.86 Mbit/s
95th percentile per-packet one-way delay: 108.594 ms
Loss rate: 2.82%
```
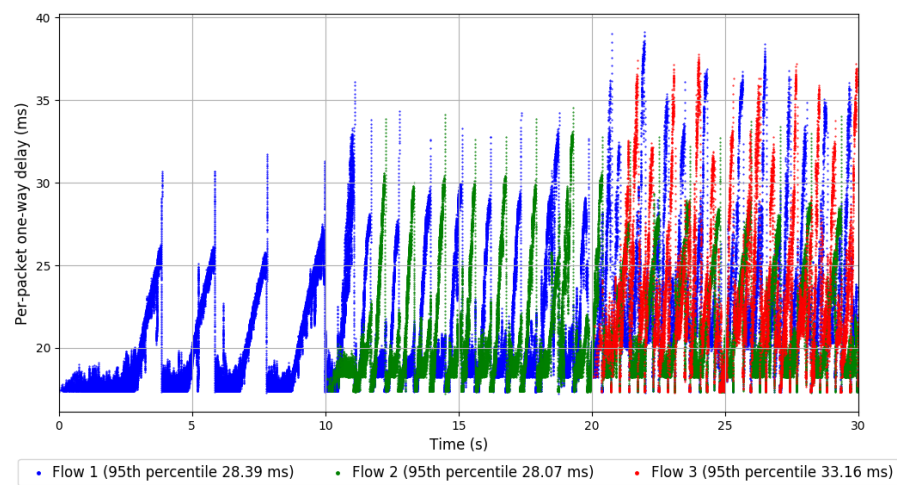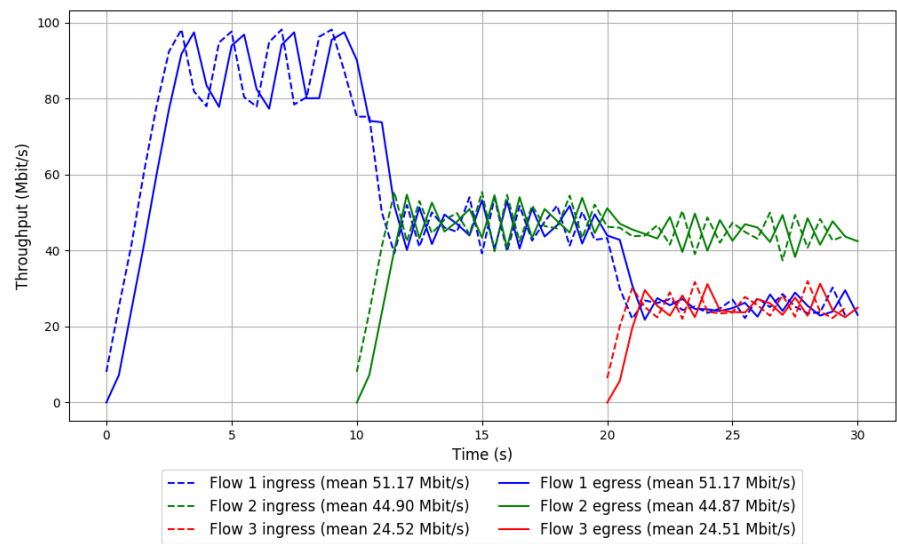
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-20 10:30:46
End at: 2019-02-20 10:31:16
Local clock offset: -0.017 ms
Remote clock offset: -27.065 ms

# Below is generated by plot.py at 2019-02-20 12:18:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 48.653 ms
Loss rate: 6.23%
-- Flow 1:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 48.633 ms
Loss rate: 4.94%
-- Flow 2:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 48.738 ms
Loss rate: 11.37%
-- Flow 3:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 48.640 ms
Loss rate: 6.71%
```
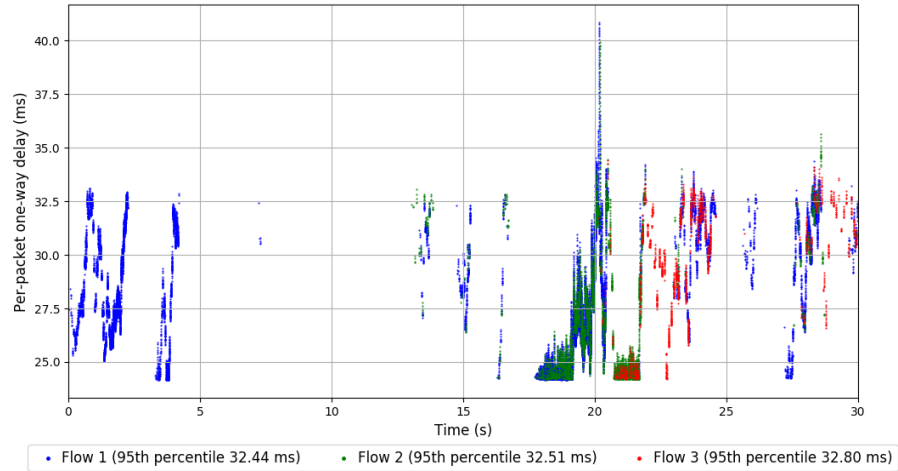
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 10:57:51
End at: 2019-02-20 10:58:21
Local clock offset: 0.47 ms
Remote clock offset: -6.849 ms


# Below is generated by plot.py at 2019-02-20 12:18:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.18 Mbit/s
95th percentile per-packet one-way delay: 28.811 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 51.17 Mbit/s
95th percentile per-packet one-way delay: 28.390 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 44.87 Mbit/s
95th percentile per-packet one-way delay: 28.074 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 24.51 Mbit/s
95th percentile per-packet one-way delay: 33.155 ms
Loss rate: 0.29%
```
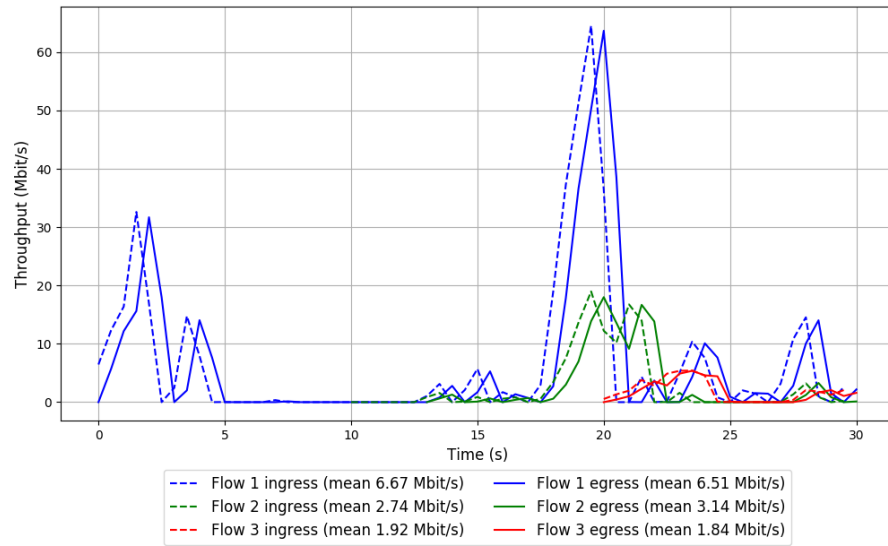
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 11:28:16
End at: 2019-02-20 11:28:46
Local clock offset: -0.477 ms
Remote clock offset: -12.888 ms

# Below is generated by plot.py at 2019-02-20 12:18:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.89 Mbit/s
95th percentile per-packet one-way delay: 32.508 ms
Loss rate: 2.85%
-- Flow 1:
Average throughput: 6.51 Mbit/s
95th percentile per-packet one-way delay: 32.444 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 3.14 Mbit/s
95th percentile per-packet one-way delay: 32.514 ms
Loss rate: 3.00%
-- Flow 3:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 32.802 ms
Loss rate: 5.31%
```
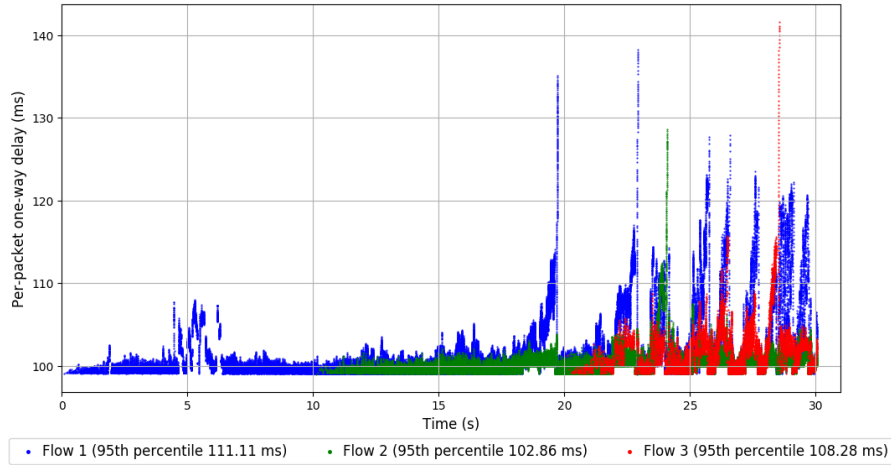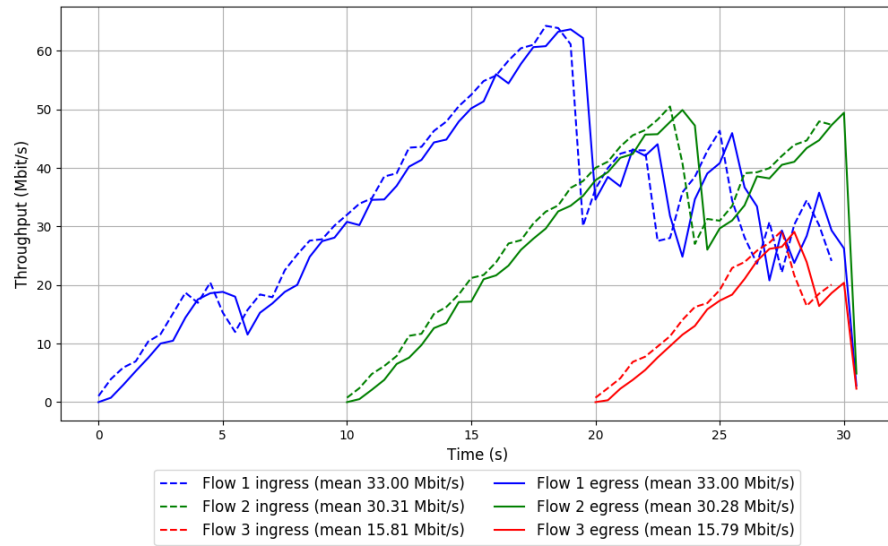
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-20 11:54:48
End at: 2019-02-20 11:55:18
Local clock offset: -1.187 ms
Remote clock offset: -84.048 ms


# Below is generated by plot.py at 2019-02-20 12:18:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.40 Mbit/s
95th percentile per-packet one-way delay: 108.883 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 33.00 Mbit/s
95th percentile per-packet one-way delay: 111.115 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 30.28 Mbit/s
95th percentile per-packet one-way delay: 102.865 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 15.79 Mbit/s
95th percentile per-packet one-way delay: 108.280 ms
Loss rate: 0.35%
```
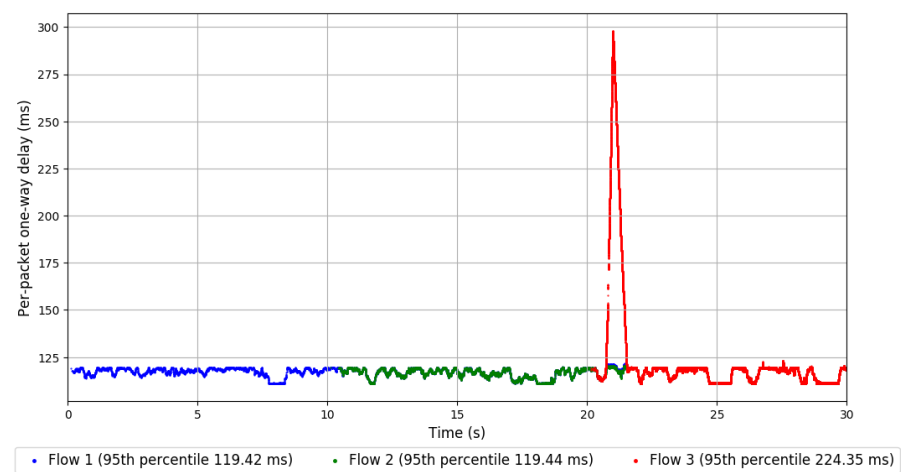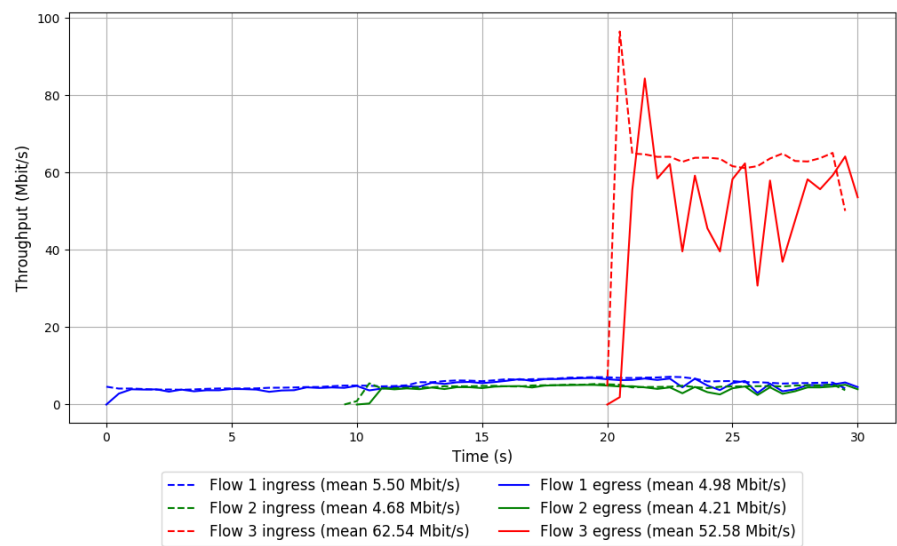
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 33.00 Mbit/s)   Flow 1 egress (mean 33.00 Mbit/s)
Flow 2 ingress (mean 30.31 Mbit/s)   Flow 2 egress (mean 30.28 Mbit/s)
Flow 3 ingress (mean 15.81 Mbit/s)   Flow 3 egress (mean 15.79 Mbit/s)

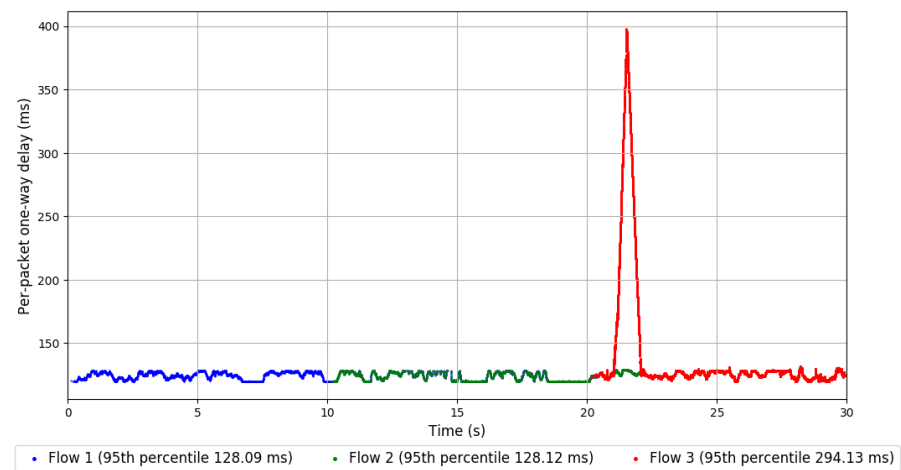Flow 1 (95th percentile 111.11 ms)   Flow 2 (95th percentile 102.86 ms)   Flow 3 (95th percentile 108.28 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-20 10:04:42
End at: 2019-02-20 10:05:12
Local clock offset: -1.41 ms
Remote clock offset: -98.378 ms


# Below is generated by plot.py at 2019-02-20 12:18:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.08 Mbit/s
95th percentile per-packet one-way delay: 187.591 ms
Loss rate: 14.30%
-- Flow 1:
Average throughput: 4.98 Mbit/s
95th percentile per-packet one-way delay: 119.423 ms
Loss rate: 9.55%
-- Flow 2:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 119.437 ms
Loss rate: 10.05%
-- Flow 3:
Average throughput: 52.58 Mbit/s
95th percentile per-packet one-way delay: 224.355 ms
Loss rate: 16.21%
```

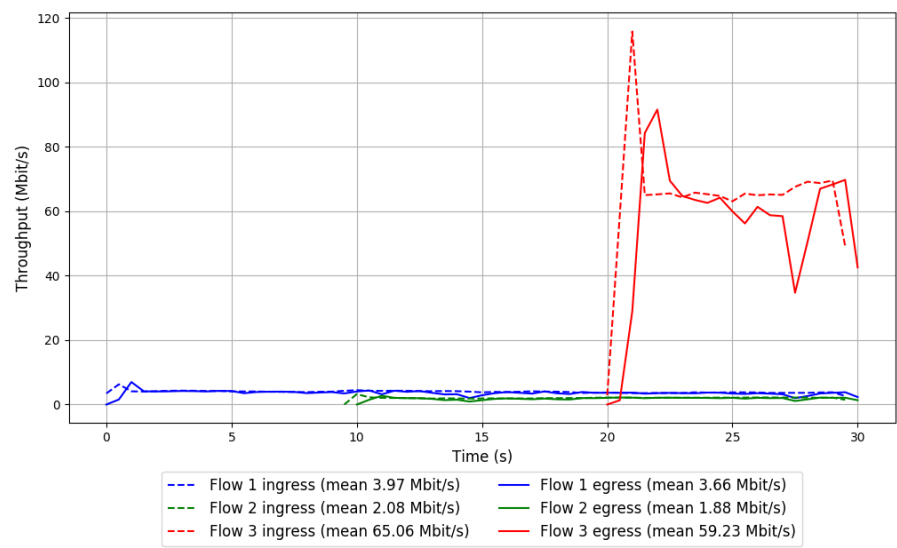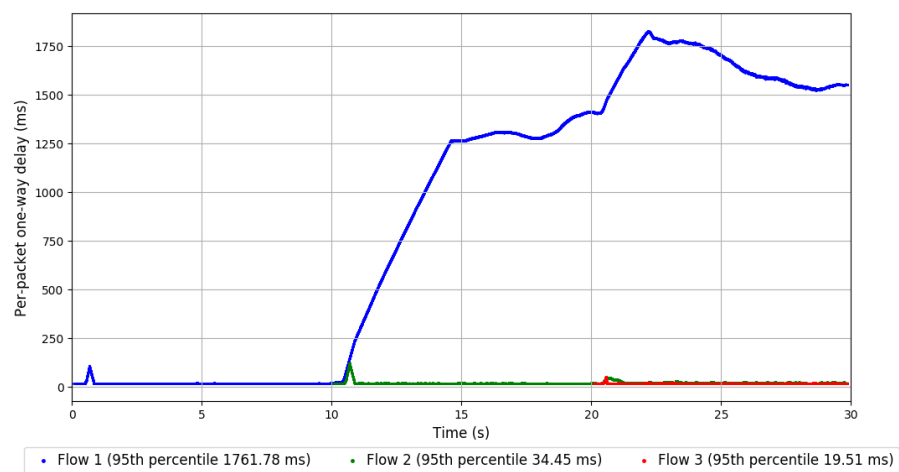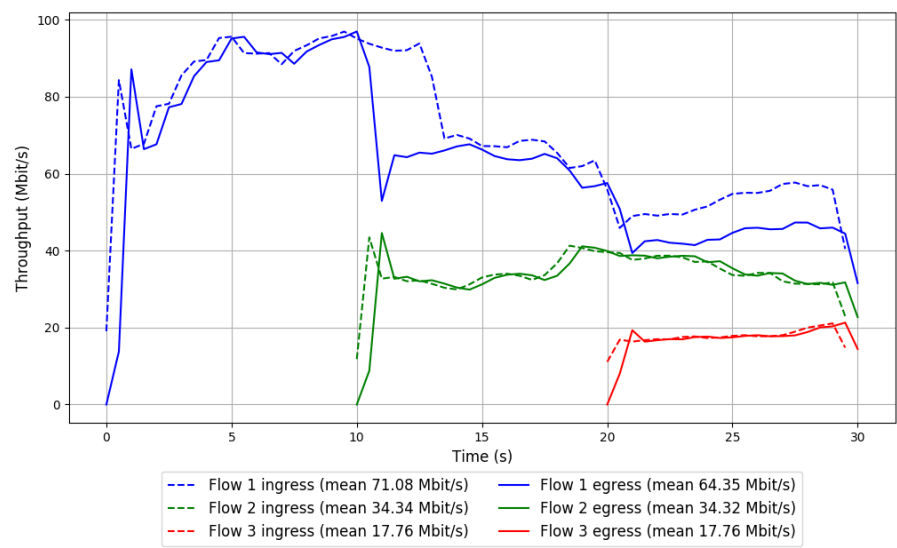Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 5.50 Mbit/s)   Flow 1 egress (mean 4.98 Mbit/s)
Flow 2 ingress (mean 4.68 Mbit/s)   Flow 2 egress (mean 4.21 Mbit/s)
Flow 3 ingress (mean 62.54 Mbit/s)   Flow 3 egress (mean 52.58 Mbit/s)

Flow 1 (95th percentile 119.42 ms)   Flow 2 (95th percentile 119.44 ms)   Flow 3 (95th percentile 224.35 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 10:31:59
End at: 2019-02-20 10:32:29
Local clock offset: -1.279 ms
Remote clock offset: -108.359 ms


# Below is generated by plot.py at 2019-02-20 12:18:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.34 Mbit/s
95th percentile per-packet one-way delay: 266.236 ms
Loss rate: 9.39%
-- Flow 1:
Average throughput: 3.66 Mbit/s
95th percentile per-packet one-way delay: 128.093 ms
Loss rate: 8.04%
-- Flow 2:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 128.119 ms
Loss rate: 10.11%
-- Flow 3:
Average throughput: 59.23 Mbit/s
95th percentile per-packet one-way delay: 294.130 ms
Loss rate: 9.60%
```

Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 10:59:07
End at: 2019-02-20 10:59:37
Local clock offset: 2.669 ms
Remote clock offset: -5.451 ms


# Below is generated by plot.py at 2019-02-20 12:19:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.98 Mbit/s
95th percentile per-packet one-way delay: 1711.303 ms
Loss rate: 6.86%
-- Flow 1:
Average throughput: 64.35 Mbit/s
95th percentile per-packet one-way delay: 1761.775 ms
Loss rate: 9.54%
-- Flow 2:
Average throughput: 34.32 Mbit/s
95th percentile per-packet one-way delay: 34.449 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 17.76 Mbit/s
95th percentile per-packet one-way delay: 19.507 ms
Loss rate: 0.32%
```
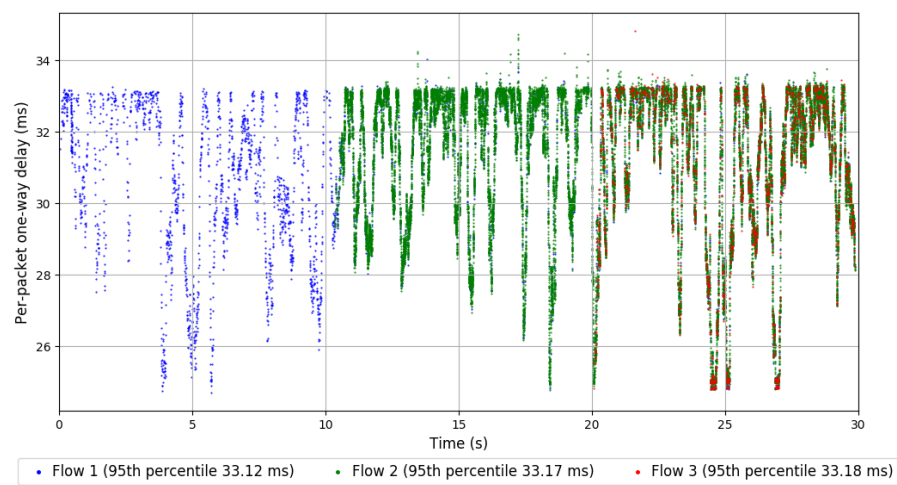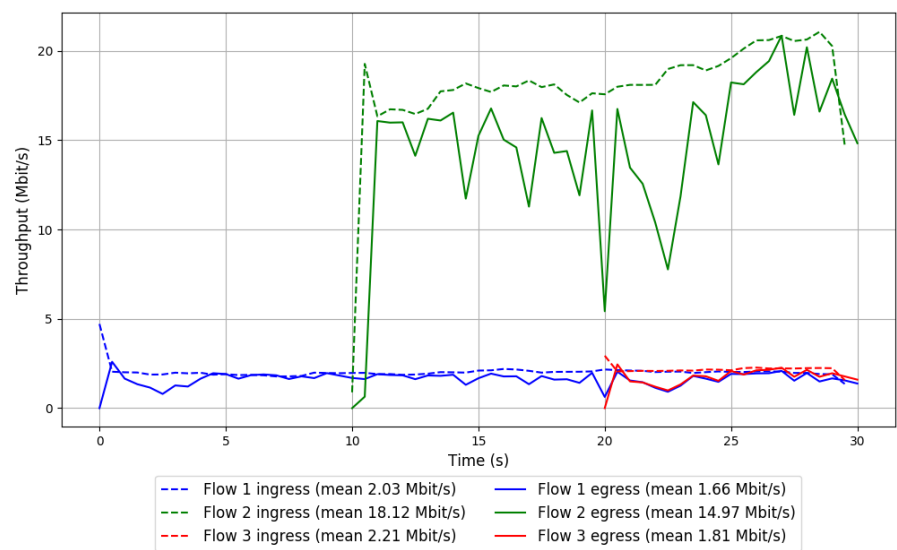
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 11:29:30
End at: 2019-02-20 11:30:00
Local clock offset: -0.949 ms
Remote clock offset: -13.881 ms


# Below is generated by plot.py at 2019-02-20 12:19:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.21 Mbit/s
95th percentile per-packet one-way delay: 33.161 ms
Loss rate: 17.63%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 33.115 ms
Loss rate: 18.19%
-- Flow 2:
Average throughput: 14.97 Mbit/s
95th percentile per-packet one-way delay: 33.166 ms
Loss rate: 17.50%
-- Flow 3:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 33.180 ms
Loss rate: 18.27%
```
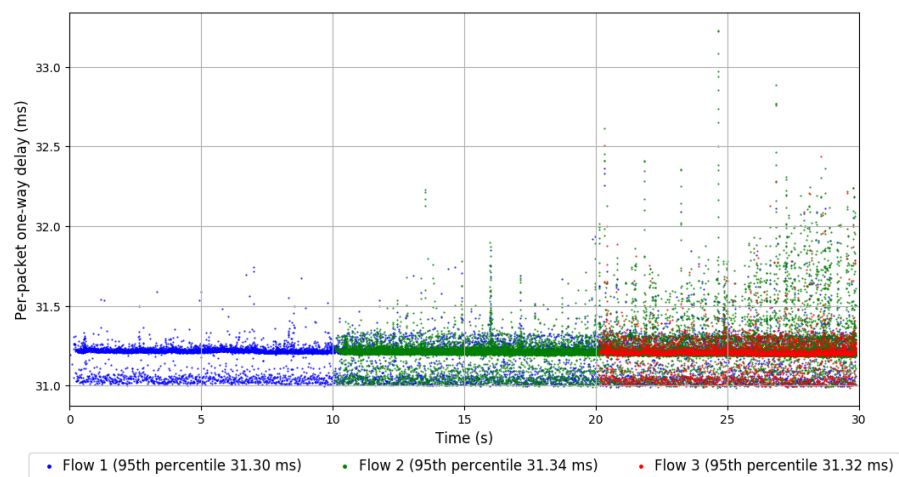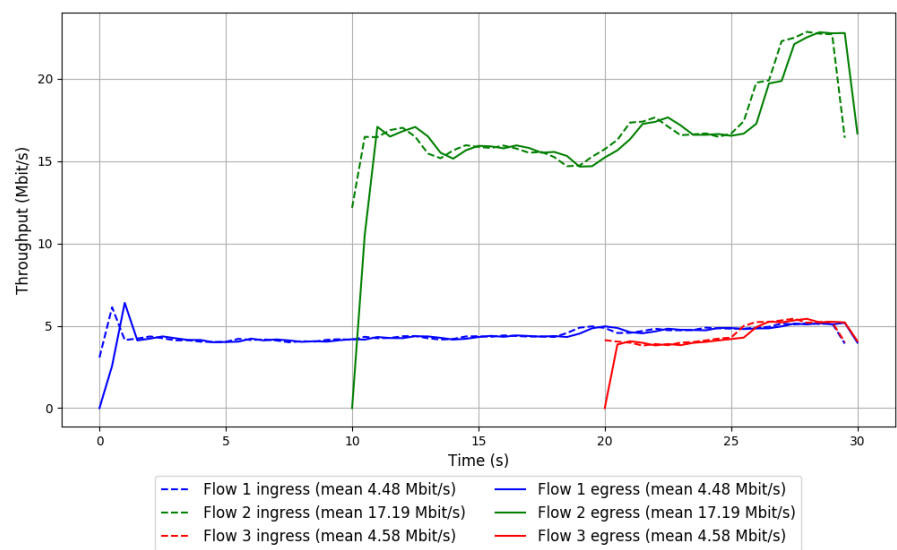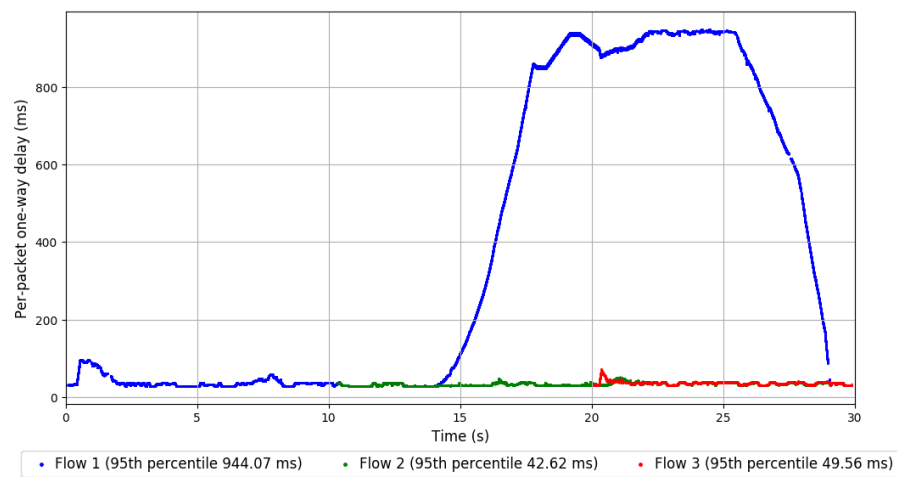
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-20 11:56:01
End at: 2019-02-20 11:56:31
Local clock offset: -3.7 ms
Remote clock offset: -18.707 ms


# Below is generated by plot.py at 2019-02-20 12:19:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.41 Mbit/s
95th percentile per-packet one-way delay: 31.321 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 31.304 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 17.19 Mbit/s
95th percentile per-packet one-way delay: 31.344 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 4.58 Mbit/s
95th percentile per-packet one-way delay: 31.323 ms
Loss rate: 0.30%
```
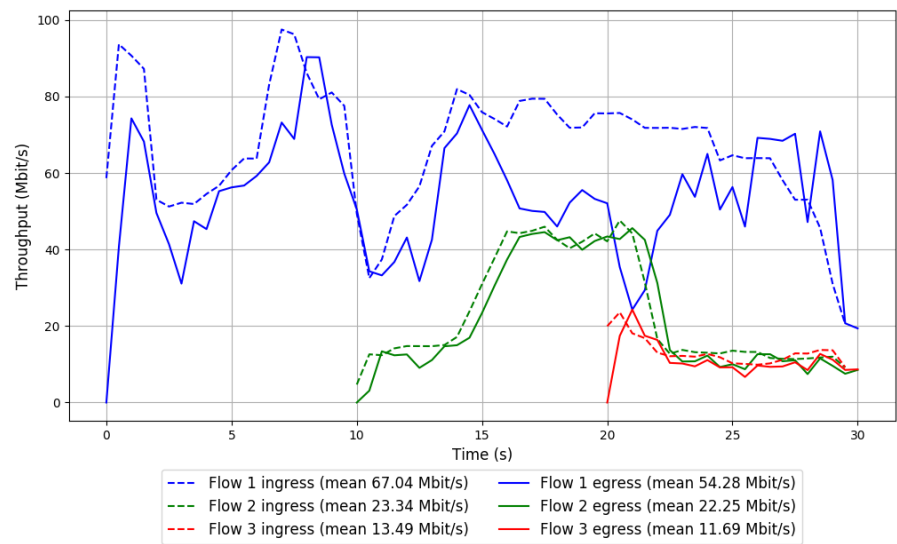
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 4.48 Mbit/s) — — — Flow 1 egress (mean 4.48 Mbit/s)
Flow 2 ingress (mean 17.19 Mbit/s) — — — Flow 2 egress (mean 17.19 Mbit/s)
Flow 3 ingress (mean 4.58 Mbit/s) — — — Flow 3 egress (mean 4.58 Mbit/s)

Flow 1 (95th percentile 31.30 ms) Flow 2 (95th percentile 31.34 ms) Flow 3 (95th percentile 31.32 ms)
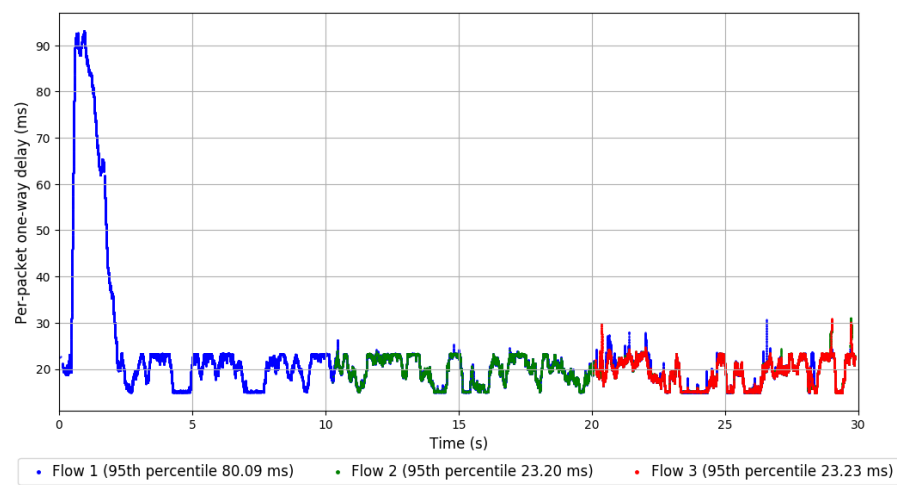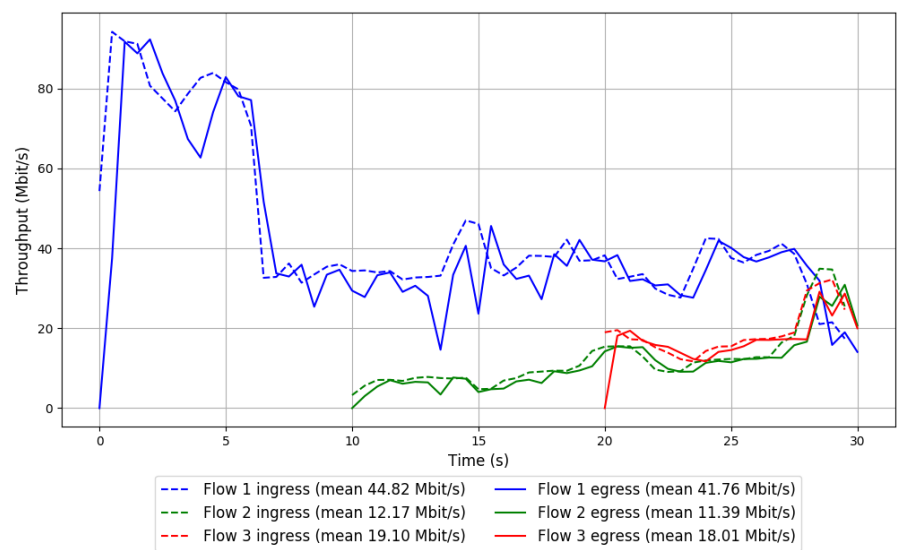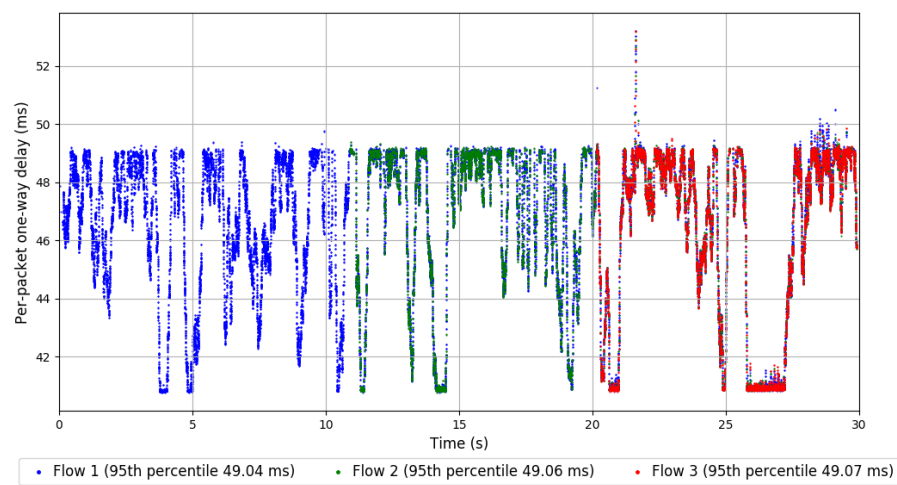
```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 10:20:22
End at: 2019-02-20 10:20:52
Local clock offset: -0.288 ms
Remote clock offset: -15.151 ms


# Below is generated by plot.py at 2019-02-20 12:20:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.73 Mbit/s
95th percentile per-packet one-way delay: 942.837 ms
Loss rate: 16.49%
-- Flow 1:
Average throughput: 54.28 Mbit/s
95th percentile per-packet one-way delay: 944.068 ms
Loss rate: 19.10%
-- Flow 2:
Average throughput: 22.25 Mbit/s
95th percentile per-packet one-way delay: 42.625 ms
Loss rate: 6.05%
-- Flow 3:
Average throughput: 11.69 Mbit/s
95th percentile per-packet one-way delay: 49.564 ms
Loss rate: 13.53%
```

Run 1: Report of PCC-Expr — Data Link

- Flow 1 ingress (mean 67.04 Mbit/s)
- Flow 1 egress (mean 54.28 Mbit/s)
- Flow 2 ingress (mean 23.34 Mbit/s)
- Flow 2 egress (mean 22.25 Mbit/s)
- Flow 3 ingress (mean 13.49 Mbit/s)
- Flow 3 egress (mean 11.69 Mbit/s)

- Flow 1 (95th percentile 944.07 ms)
- Flow 2 (95th percentile 42.62 ms)
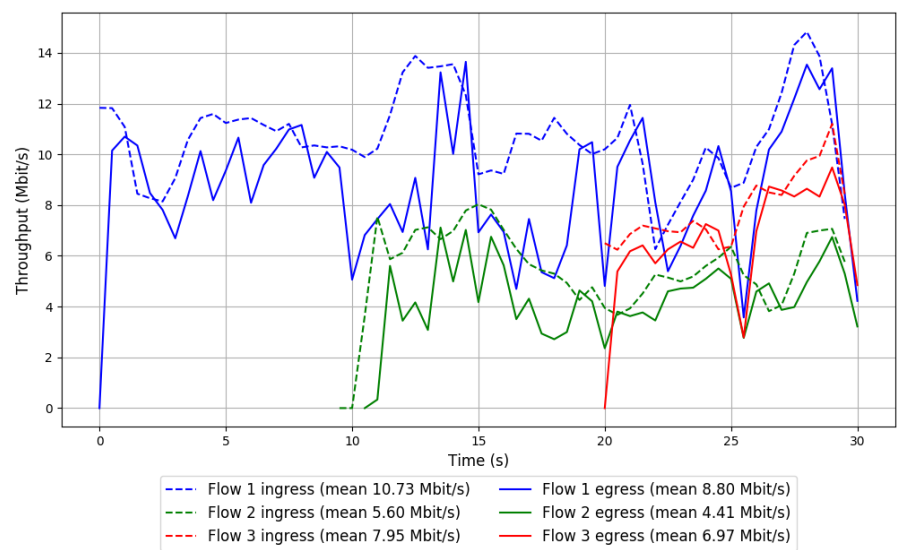- Flow 3 (95th percentile 49.56 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 10:47:54
End at: 2019-02-20 10:48:24
Local clock offset: -1.786 ms
Remote clock offset: -6.013 ms


# Below is generated by plot.py at 2019-02-20 12:20:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.17 Mbit/s
95th percentile per-packet one-way delay: 67.204 ms
Loss rate: 6.95%
-- Flow 1:
Average throughput: 41.76 Mbit/s
95th percentile per-packet one-way delay: 80.093 ms
Loss rate: 6.94%
-- Flow 2:
Average throughput: 11.39 Mbit/s
95th percentile per-packet one-way delay: 23.204 ms
Loss rate: 7.73%
-- Flow 3:
Average throughput: 18.01 Mbit/s
95th percentile per-packet one-way delay: 23.227 ms
Loss rate: 6.05%
```
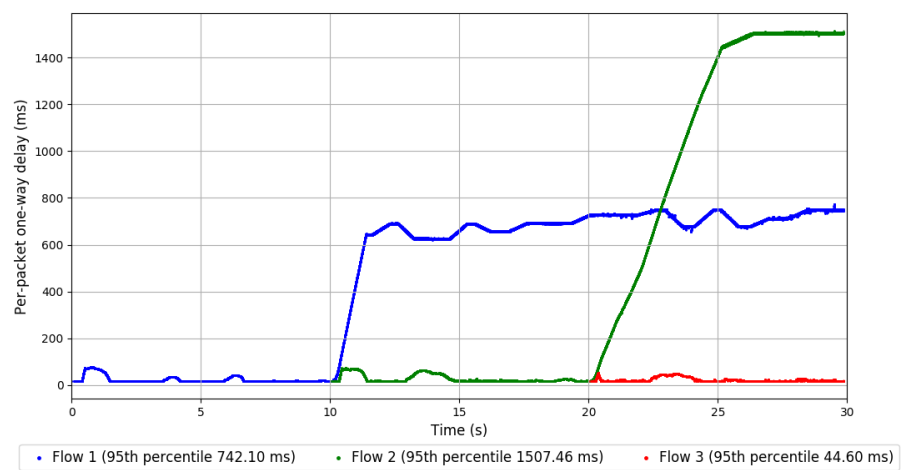
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 11:16:14
End at: 2019-02-20 11:16:44
Local clock offset: -1.175 ms
Remote clock offset: -32.135 ms


# Below is generated by plot.py at 2019-02-20 12:20:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.95 Mbit/s
95th percentile per-packet one-way delay: 49.052 ms
Loss rate: 18.41%
-- Flow 1:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 49.043 ms
Loss rate: 18.06%
-- Flow 2:
Average throughput: 4.41 Mbit/s
95th percentile per-packet one-way delay: 49.064 ms
Loss rate: 23.46%
-- Flow 3:
Average throughput: 6.97 Mbit/s
95th percentile per-packet one-way delay: 49.066 ms
Loss rate: 12.65%
```
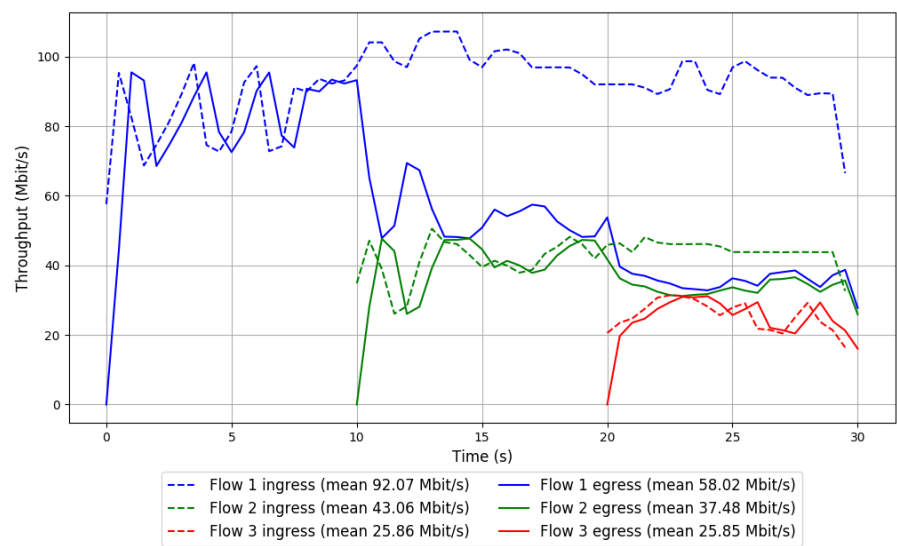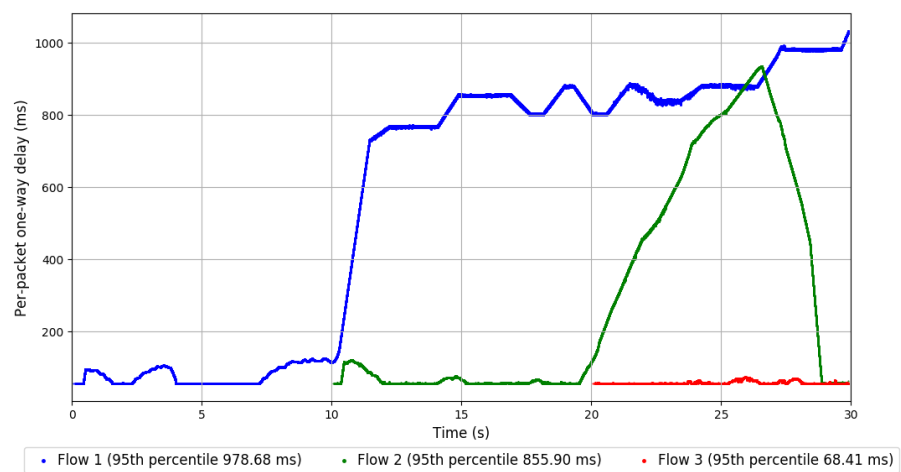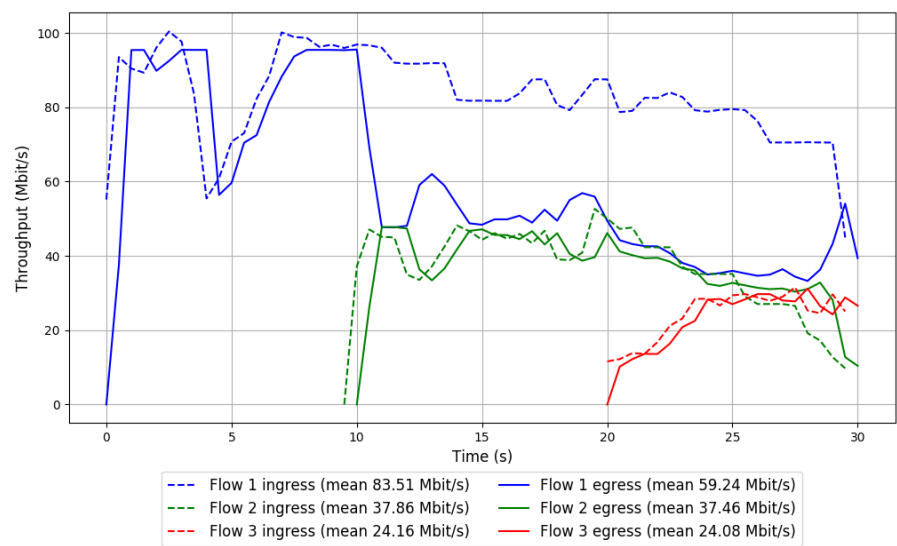
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 11:45:02
End at: 2019-02-20 11:45:32
Local clock offset: -2.062 ms
Remote clock offset: -2.62 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.45 Mbit/s
95th percentile per-packet one-way delay: 1487.882 ms
Loss rate: 29.31%
-- Flow 1:
Average throughput: 58.02 Mbit/s
95th percentile per-packet one-way delay: 742.096 ms
Loss rate: 37.05%
-- Flow 2:
Average throughput: 37.48 Mbit/s
95th percentile per-packet one-way delay: 1507.457 ms
Loss rate: 13.10%
-- Flow 3:
Average throughput: 25.85 Mbit/s
95th percentile per-packet one-way delay: 44.599 ms
Loss rate: 0.32%
```
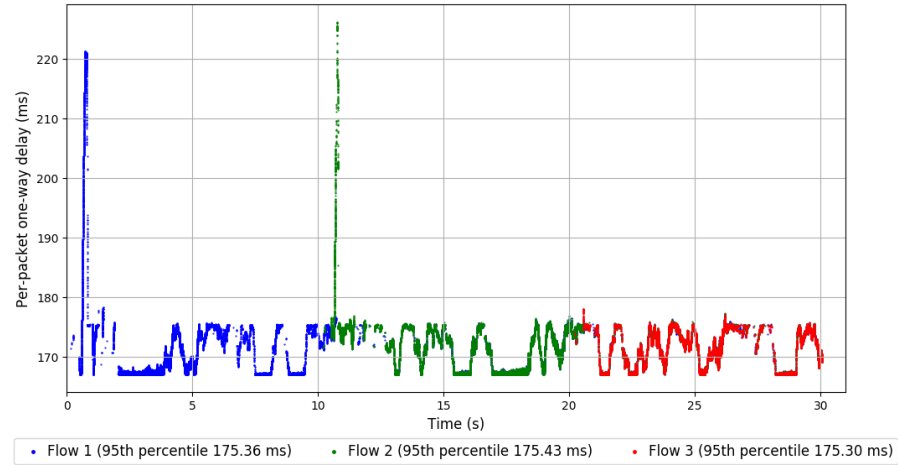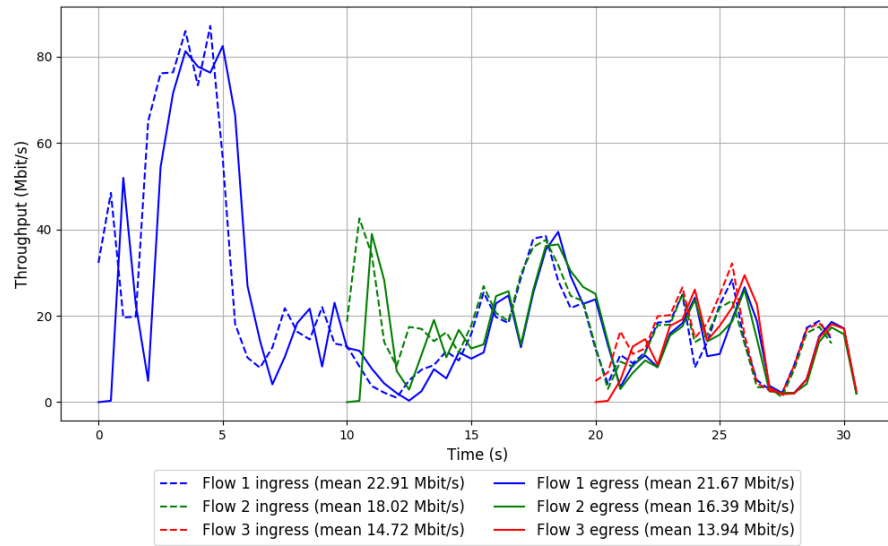
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 92.07 Mbit/s)   Flow 1 egress (mean 58.02 Mbit/s)
Flow 2 ingress (mean 43.06 Mbit/s)   Flow 2 egress (mean 37.48 Mbit/s)
Flow 3 ingress (mean 25.86 Mbit/s)   Flow 3 egress (mean 25.85 Mbit/s)

Flow 1 (95th percentile 742.10 ms)   Flow 2 (95th percentile 1507.46 ms)   Flow 3 (95th percentile 44.60 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-20 12:10:38
End at: 2019-02-20 12:11:08
Local clock offset: 12.154 ms
Remote clock offset: -28.241 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.09 Mbit/s
95th percentile per-packet one-way delay: 906.913 ms
Loss rate: 21.14%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 978.681 ms
Loss rate: 29.12%
-- Flow 2:
Average throughput: 37.46 Mbit/s
95th percentile per-packet one-way delay: 855.900 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 24.08 Mbit/s
95th percentile per-packet one-way delay: 68.409 ms
Loss rate: 0.65%
```

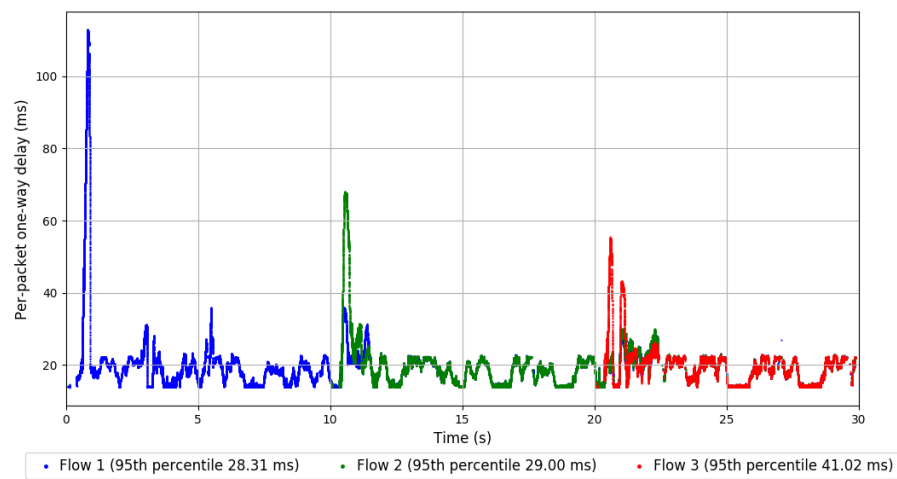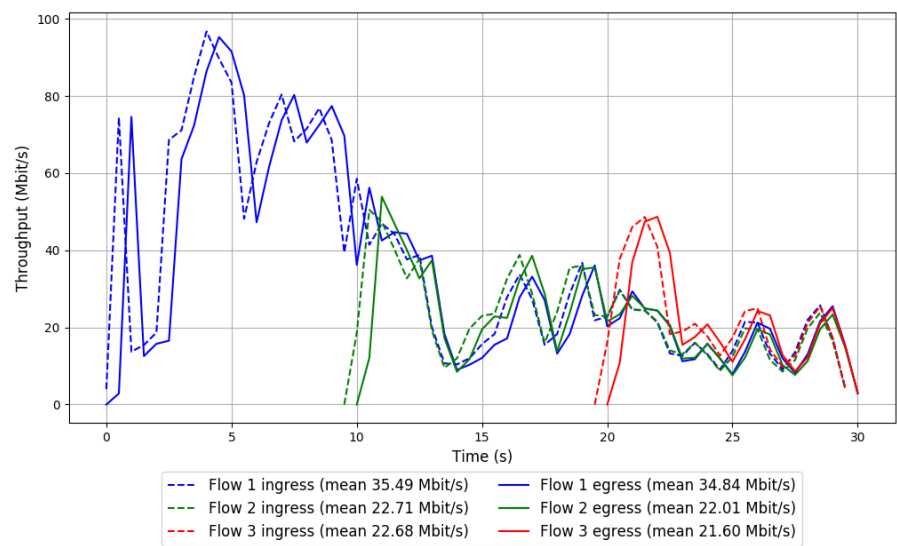## Run 5: Report of PCC-Expr — Data Link

Legend (top plot):
- Flow 1 ingress (mean 83.51 Mbit/s)
- Flow 1 egress (mean 59.24 Mbit/s)
- Flow 2 ingress (mean 37.86 Mbit/s)
- Flow 2 egress (mean 37.46 Mbit/s)
- Flow 3 ingress (mean 24.16 Mbit/s)
- Flow 3 egress (mean 24.08 Mbit/s)

Legend (bottom plot):
- Flow 1 (95th percentile 978.68 ms)
- Flow 2 (95th percentile 855.90 ms)
- Flow 3 (95th percentile 68.41 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 10:16:17
End at: 2019-02-20 10:16:47
Local clock offset: -0.604 ms
Remote clock offset: -153.965 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 175.371 ms
Loss rate: 6.62%
-- Flow 1:
Average throughput: 21.67 Mbit/s
95th percentile per-packet one-way delay: 175.362 ms
Loss rate: 5.52%
-- Flow 2:
Average throughput: 16.39 Mbit/s
95th percentile per-packet one-way delay: 175.432 ms
Loss rate: 9.12%
-- Flow 3:
Average throughput: 13.94 Mbit/s
95th percentile per-packet one-way delay: 175.298 ms
Loss rate: 5.68%
```

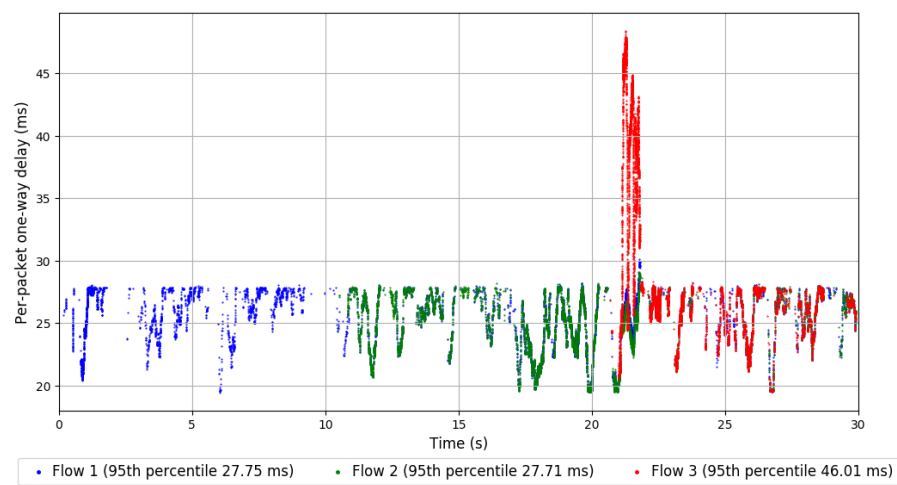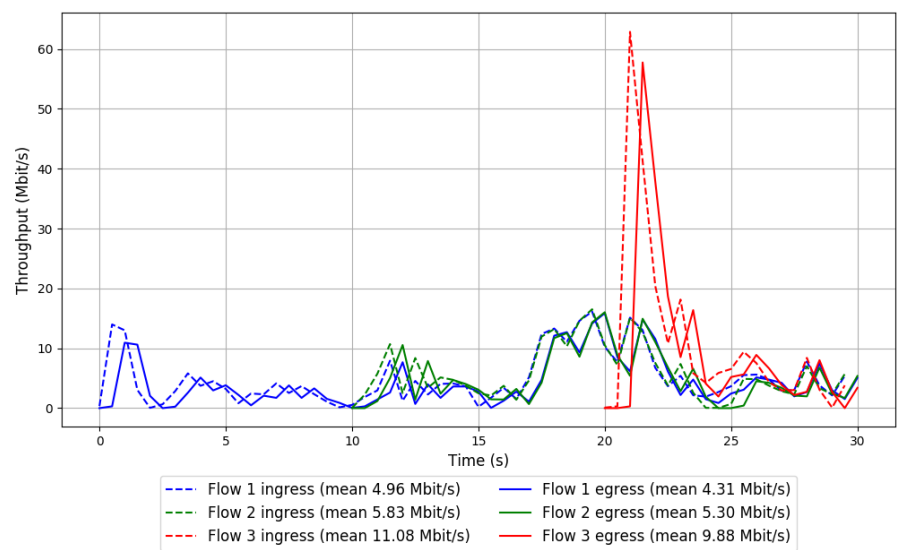Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 10:43:37
End at: 2019-02-20 10:44:07
Local clock offset: -1.957 ms
Remote clock offset: -4.627 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.62 Mbit/s
95th percentile per-packet one-way delay: 29.299 ms
Loss rate: 2.67%
-- Flow 1:
Average throughput: 34.84 Mbit/s
95th percentile per-packet one-way delay: 28.311 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 22.01 Mbit/s
95th percentile per-packet one-way delay: 28.995 ms
Loss rate: 3.21%
-- Flow 3:
Average throughput: 21.60 Mbit/s
95th percentile per-packet one-way delay: 41.022 ms
Loss rate: 5.04%
```
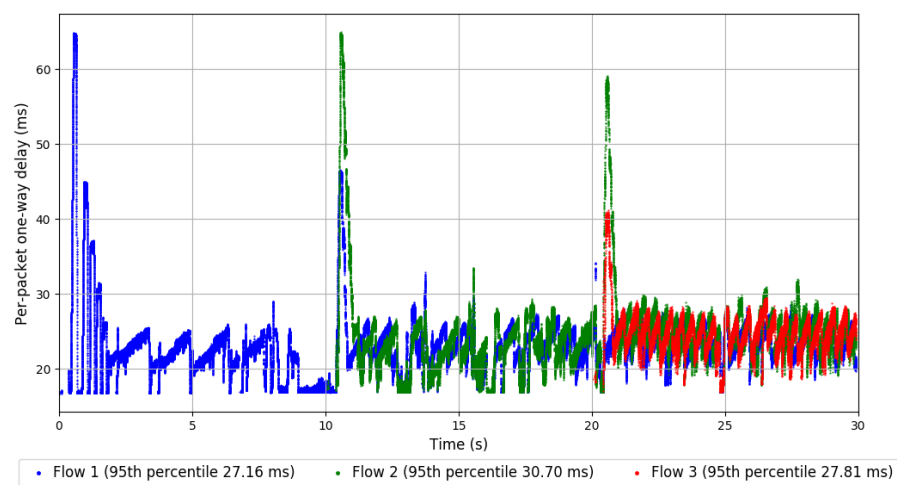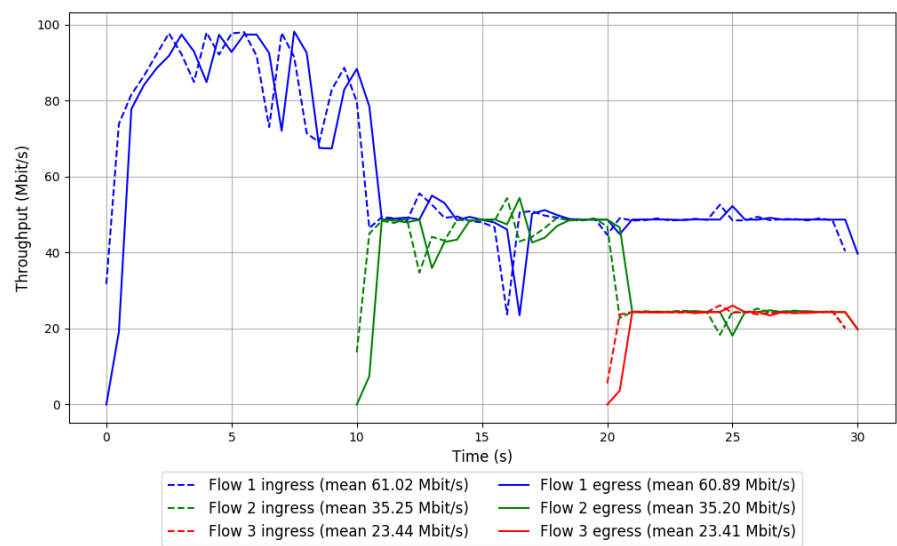
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 11:10:35
End at: 2019-02-20 11:11:05
Local clock offset: 1.752 ms
Remote clock offset: -8.279 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.05 Mbit/s
95th percentile per-packet one-way delay: 41.134 ms
Loss rate: 12.13%
-- Flow 1:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 27.755 ms
Loss rate: 13.51%
-- Flow 2:
Average throughput: 5.30 Mbit/s
95th percentile per-packet one-way delay: 27.712 ms
Loss rate: 11.38%
-- Flow 3:
Average throughput: 9.88 Mbit/s
95th percentile per-packet one-way delay: 46.010 ms
Loss rate: 11.06%
```
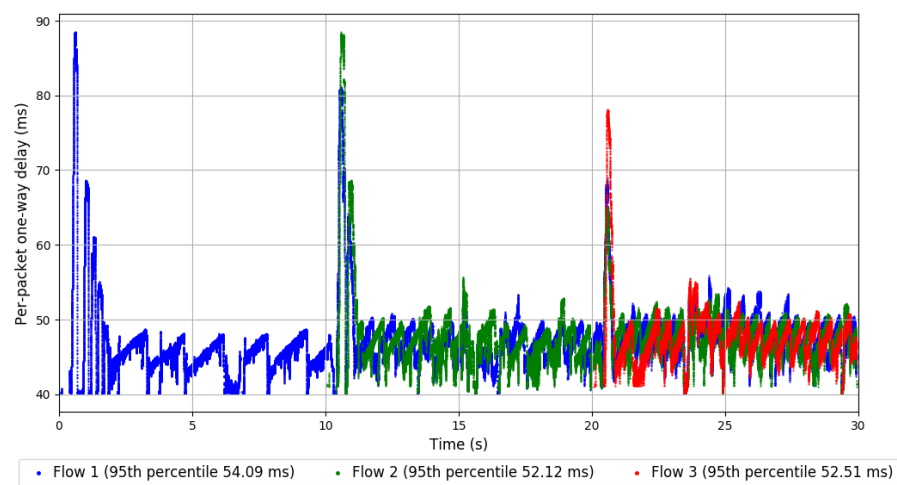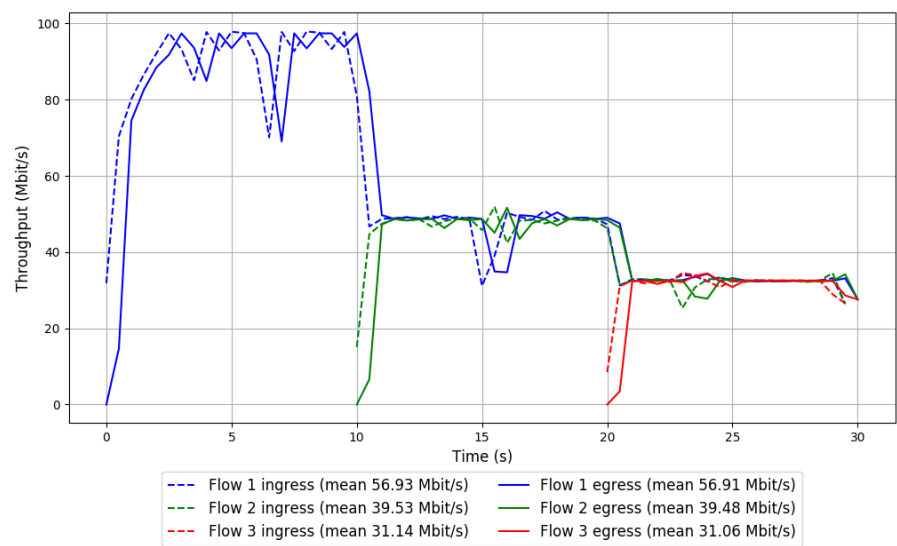
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 4.96 Mbit/s)   Flow 1 egress (mean 4.31 Mbit/s)
Flow 2 ingress (mean 5.83 Mbit/s)   Flow 2 egress (mean 5.30 Mbit/s)
Flow 3 ingress (mean 11.08 Mbit/s)   Flow 3 egress (mean 9.88 Mbit/s)

Flow 1 (95th percentile 27.75 ms)   Flow 2 (95th percentile 27.71 ms)   Flow 3 (95th percentile 46.01 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 11:41:16
End at: 2019-02-20 11:41:46
Local clock offset: -2.787 ms
Remote clock offset: -4.533 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.01 Mbit/s
95th percentile per-packet one-way delay: 28.360 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 60.89 Mbit/s
95th percentile per-packet one-way delay: 27.160 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 35.20 Mbit/s
95th percentile per-packet one-way delay: 30.698 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 23.41 Mbit/s
95th percentile per-packet one-way delay: 27.808 ms
Loss rate: 0.44%
```
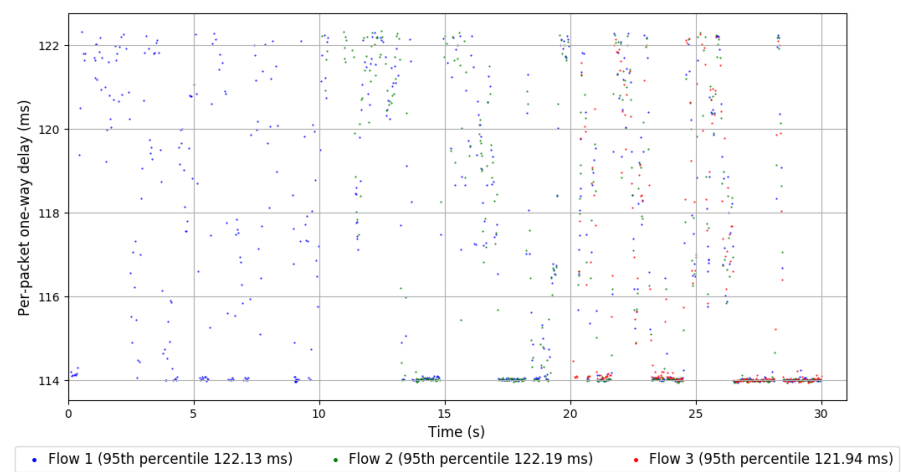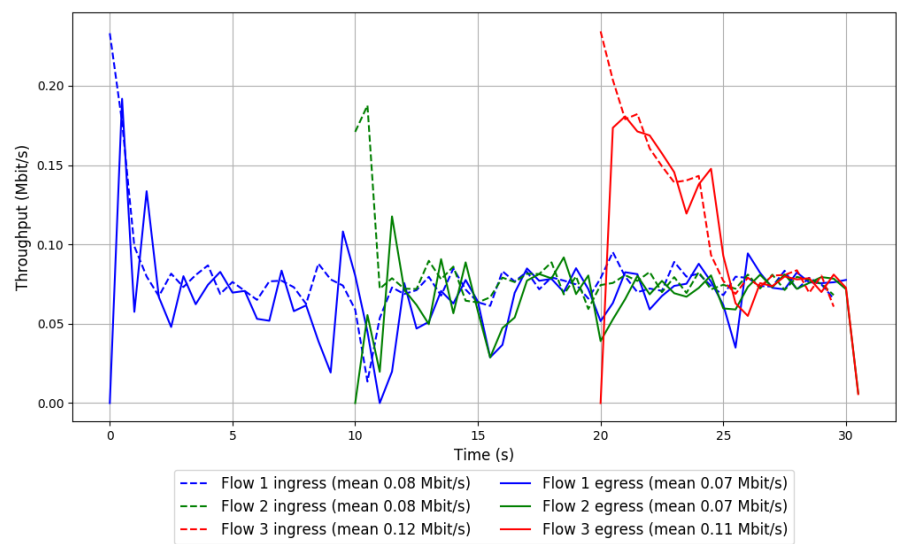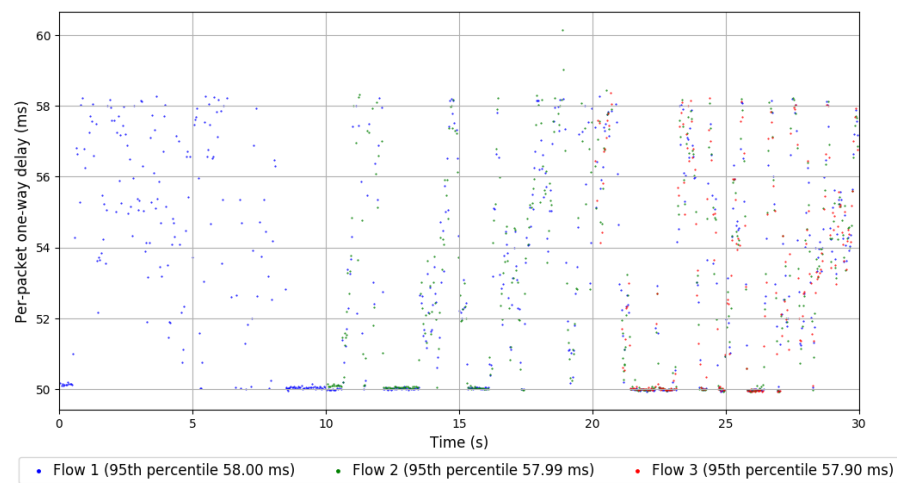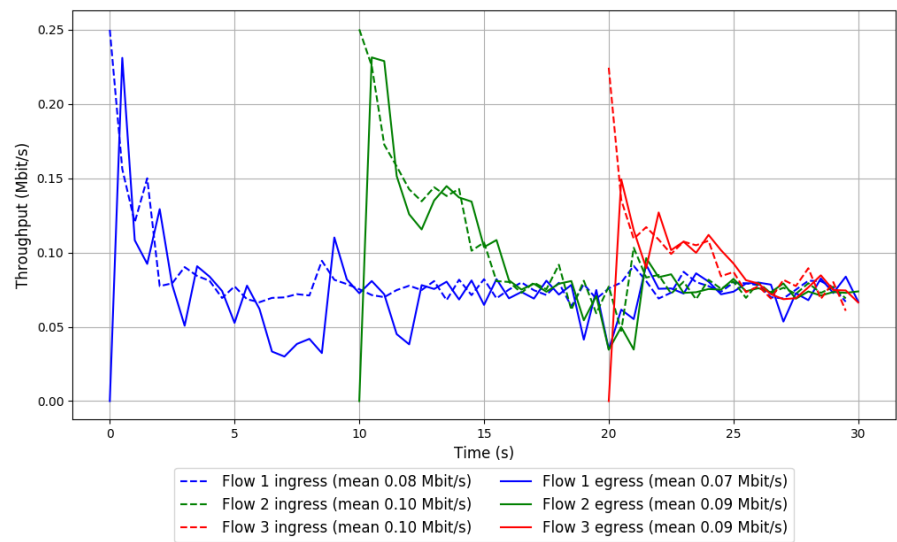
Run 4: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 61.02 Mbit/s) —— Flow 1 egress (mean 60.89 Mbit/s)
- - - Flow 2 ingress (mean 35.25 Mbit/s) —— Flow 2 egress (mean 35.20 Mbit/s)
- - - Flow 3 ingress (mean 23.44 Mbit/s) —— Flow 3 egress (mean 23.41 Mbit/s)

• Flow 1 (95th percentile 27.16 ms)   • Flow 2 (95th percentile 30.70 ms)   • Flow 3 (95th percentile 27.81 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 12:06:52
End at: 2019-02-20 12:07:22
Local clock offset: -0.634 ms
Remote clock offset: -25.934 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.41 Mbit/s
95th percentile per-packet one-way delay: 53.399 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 56.91 Mbit/s
95th percentile per-packet one-way delay: 54.091 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 39.48 Mbit/s
95th percentile per-packet one-way delay: 52.120 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 31.06 Mbit/s
95th percentile per-packet one-way delay: 52.506 ms
Loss rate: 0.54%
```

Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 56.93 Mbit/s) --- Flow 1 egress (mean 56.91 Mbit/s)
Flow 2 ingress (mean 39.53 Mbit/s) --- Flow 2 egress (mean 39.48 Mbit/s)
Flow 3 ingress (mean 31.14 Mbit/s) --- Flow 3 egress (mean 31.06 Mbit/s)

Flow 1 (95th percentile 54.09 ms) • Flow 2 (95th percentile 52.12 ms) • Flow 3 (95th percentile 52.51 ms)
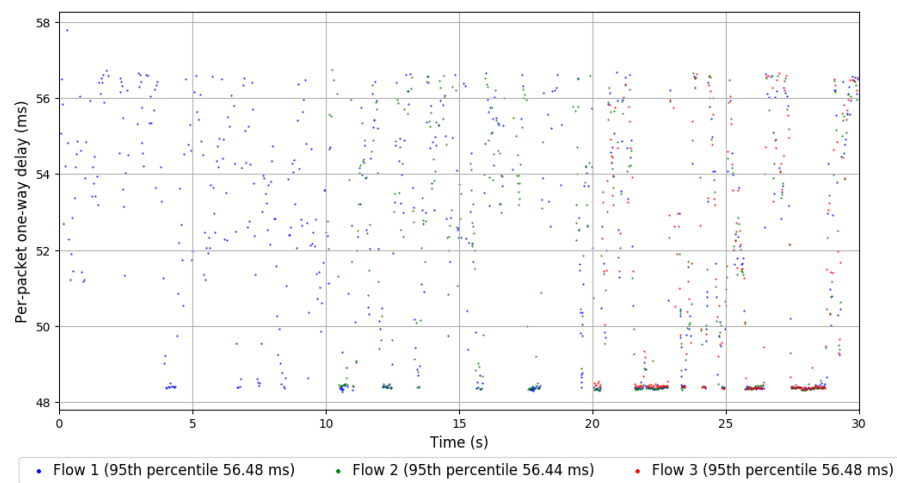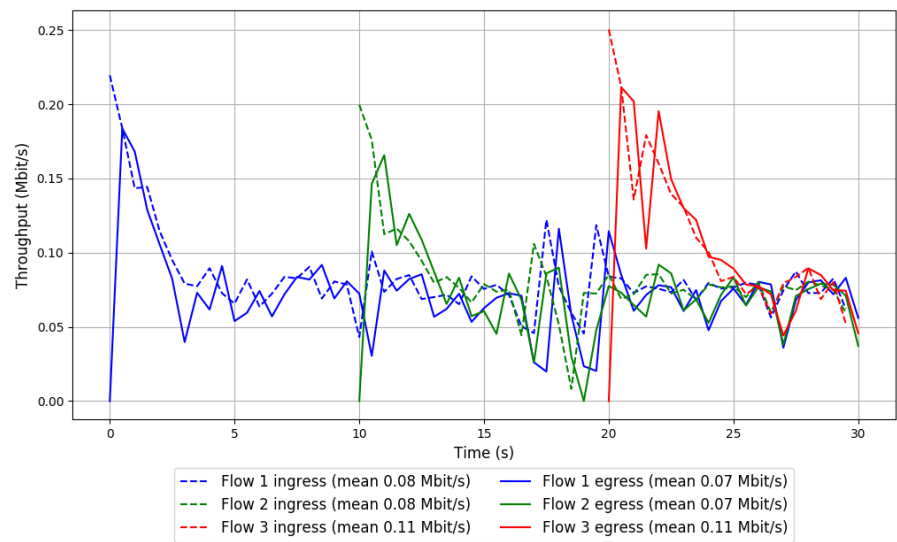
```
Run 1: Statistics of SCReAM

Start at: 2019-02-20 10:11:22
End at: 2019-02-20 10:11:52
Local clock offset: -0.34 ms
Remote clock offset: -100.482 ms

# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 122.126 ms
Loss rate: 11.60%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 122.126 ms
Loss rate: 12.20%
-- Flow 2:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 122.191 ms
Loss rate: 14.59%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 121.939 ms
Loss rate: 6.33%
```
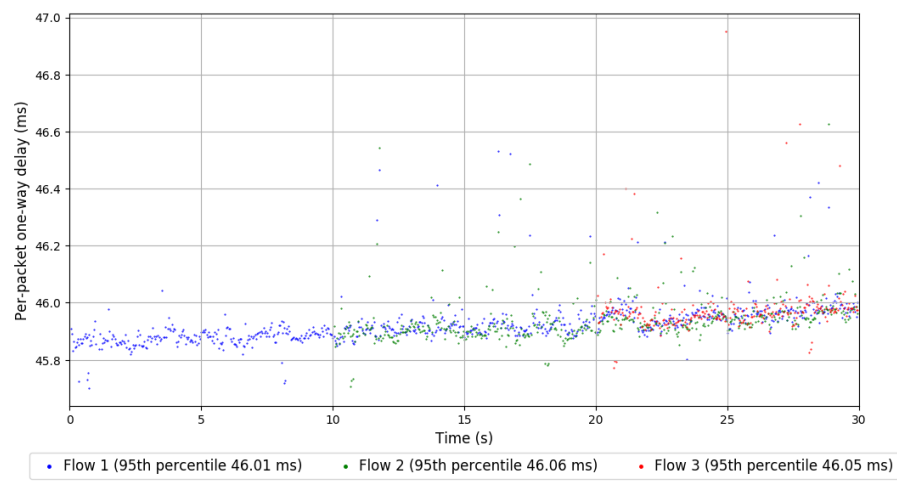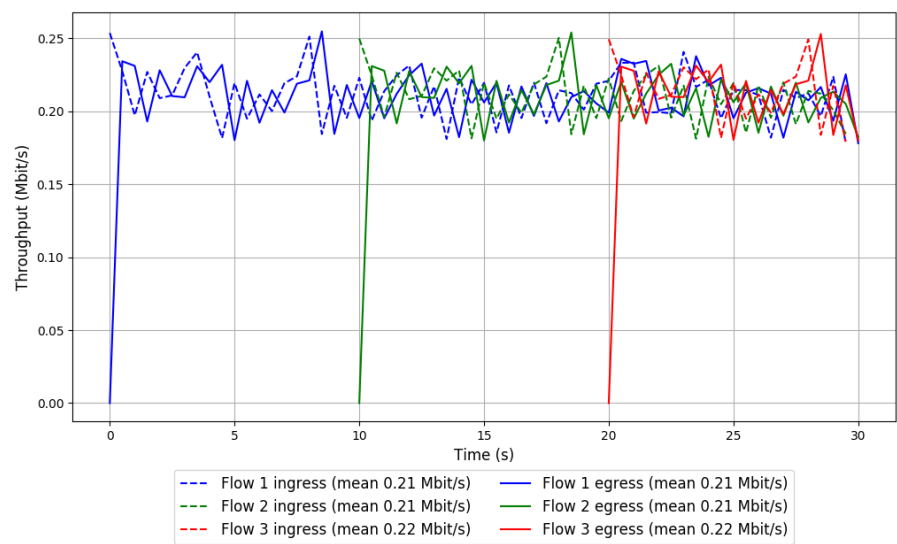
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-02-20 10:38:50
End at: 2019-02-20 10:39:20
Local clock offset: -4.83 ms
Remote clock offset: -43.154 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 57.991 ms
Loss rate: 7.94%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 57.996 ms
Loss rate: 10.66%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 57.992 ms
Loss rate: 5.42%
-- Flow 3:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 57.895 ms
Loss rate: 6.12%
```
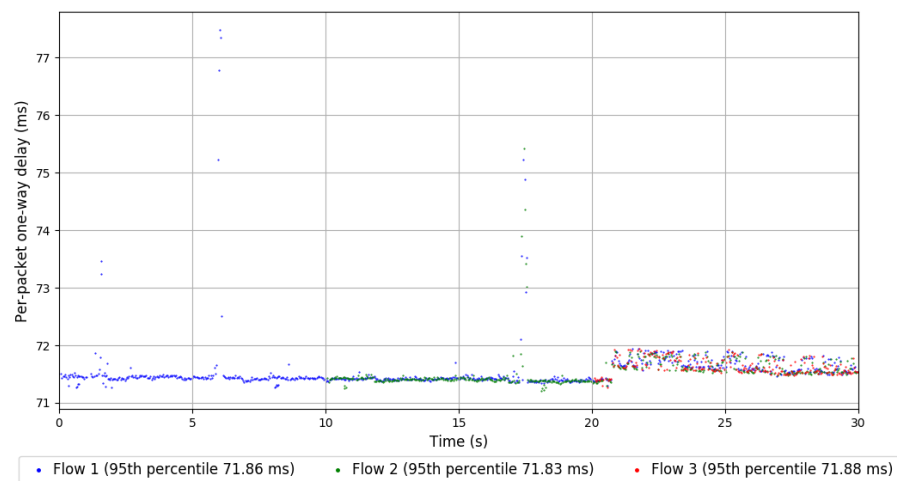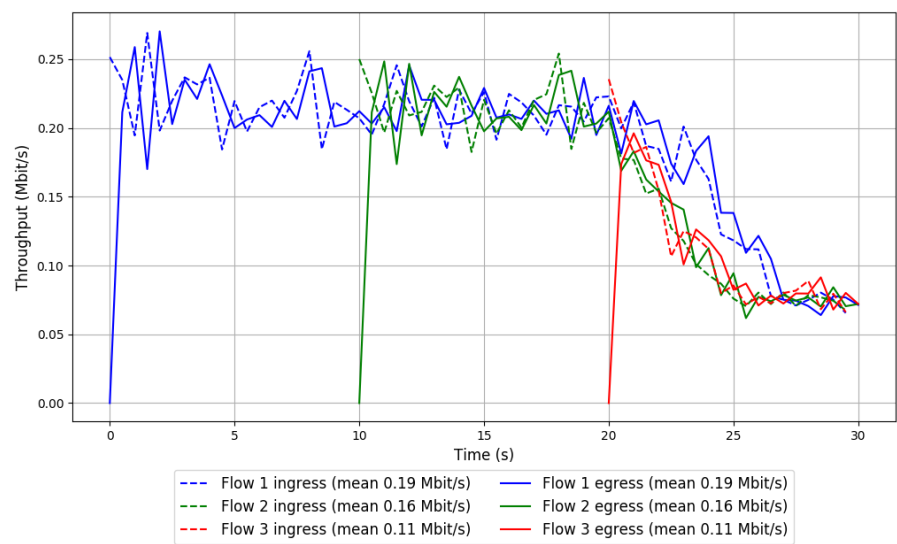
Run 2: Report of SCReAM — Data Link

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```
Run 3: Statistics of SCReAM

Start at: 2019-02-20 11:05:37
End at: 2019-02-20 11:06:07
Local clock offset: 1.917 ms
Remote clock offset: -36.745 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 56.456 ms
Loss rate: 10.39%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 56.485 ms
Loss rate: 12.07%
-- Flow 2:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 56.438 ms
Loss rate: 10.43%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 56.478 ms
Loss rate: 6.60%
```
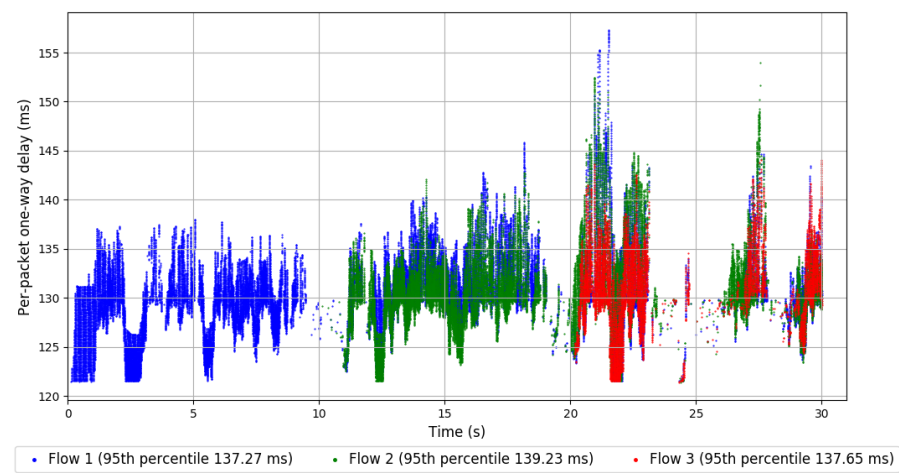
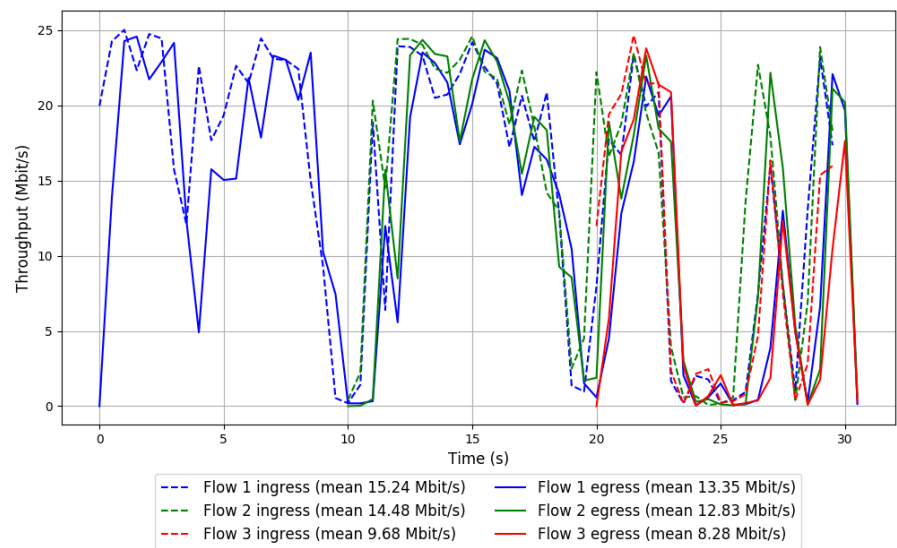# Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-02-20 11:36:33
End at: 2019-02-20 11:37:03
Local clock offset: 0.33 ms
Remote clock offset: -31.464 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 46.028 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 46.007 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 46.057 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.054 ms
Loss rate: 0.35%
```

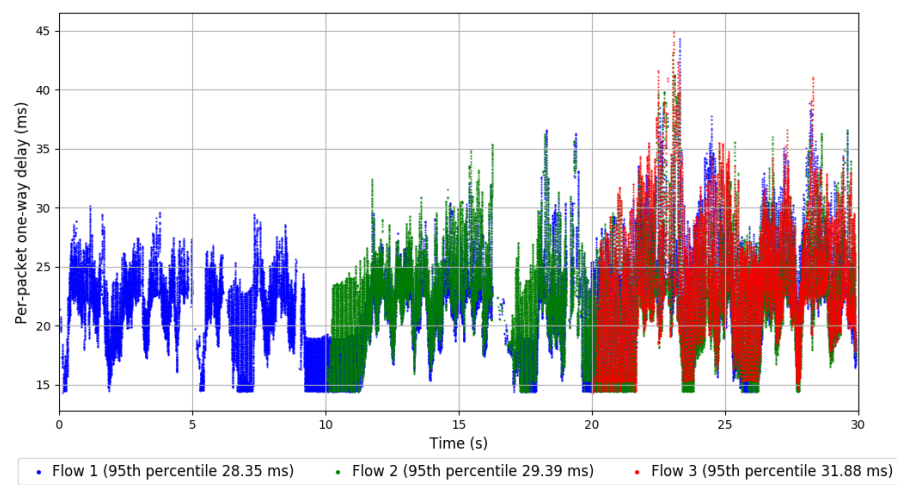# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-02-20 12:02:06
End at: 2019-02-20 12:02:36
Local clock offset: 21.025 ms
Remote clock offset: -34.795 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 71.855 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 71.858 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 71.833 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 71.880 ms
Loss rate: 4.31%
```
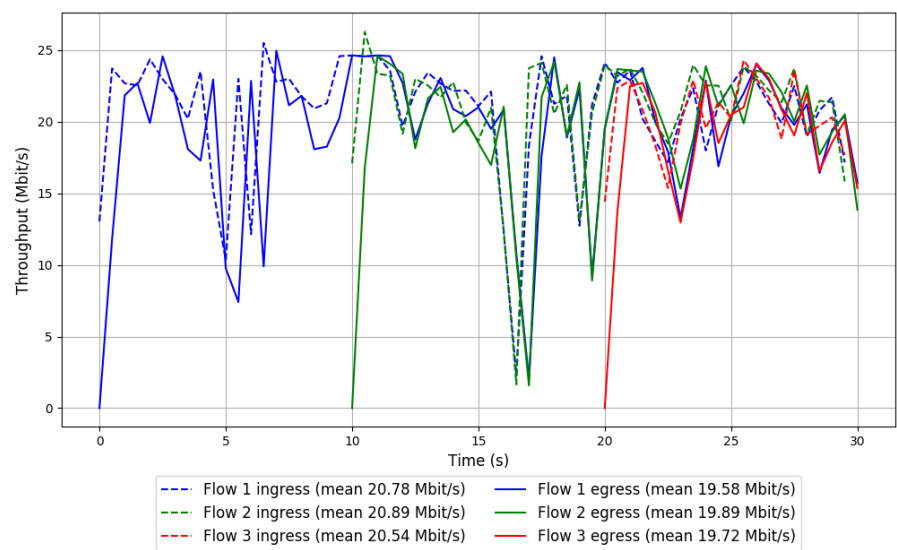
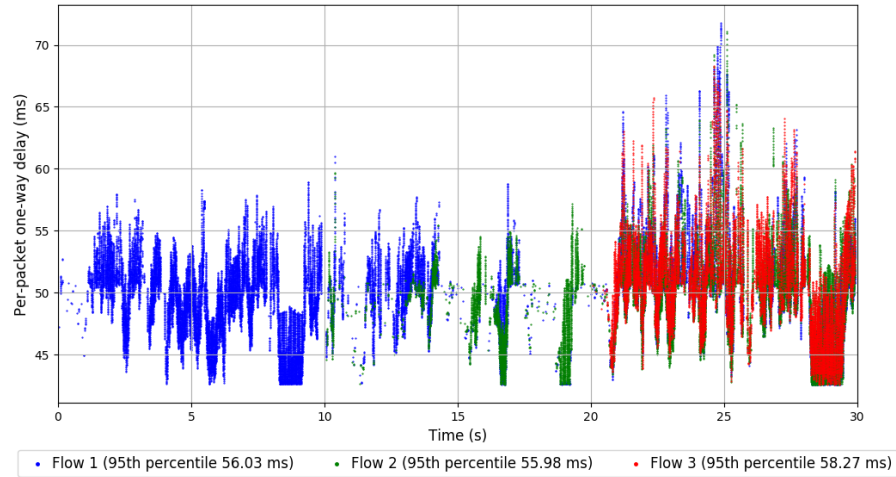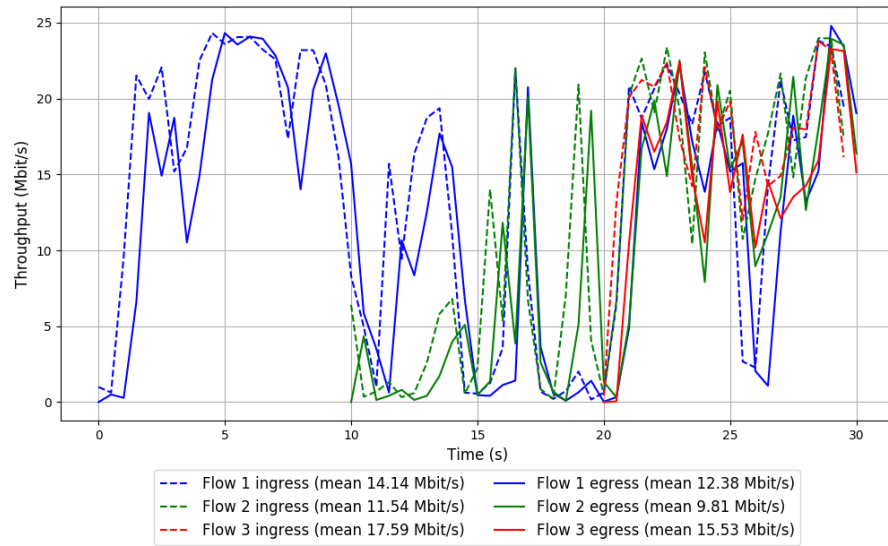Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2019-02-20 10:14:59
End at: 2019-02-20 10:15:29
Local clock offset: 1.884 ms
Remote clock offset: -105.789 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.62 Mbit/s
95th percentile per-packet one-way delay: 137.982 ms
Loss rate: 12.33%
-- Flow 1:
Average throughput: 13.35 Mbit/s
95th percentile per-packet one-way delay: 137.269 ms
Loss rate: 12.40%
-- Flow 2:
Average throughput: 12.83 Mbit/s
95th percentile per-packet one-way delay: 139.231 ms
Loss rate: 11.47%
-- Flow 3:
Average throughput: 8.28 Mbit/s
95th percentile per-packet one-way delay: 137.647 ms
Loss rate: 14.61%
```

Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-20 10:42:27
End at: 2019-02-20 10:42:57
Local clock offset: -0.369 ms
Remote clock offset: -3.417 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.32 Mbit/s
95th percentile per-packet one-way delay: 29.551 ms
Loss rate: 5.26%
-- Flow 1:
Average throughput: 19.58 Mbit/s
95th percentile per-packet one-way delay: 28.350 ms
Loss rate: 5.87%
-- Flow 2:
Average throughput: 19.89 Mbit/s
95th percentile per-packet one-way delay: 29.394 ms
Loss rate: 4.84%
-- Flow 3:
Average throughput: 19.72 Mbit/s
95th percentile per-packet one-way delay: 31.879 ms
Loss rate: 4.27%
```
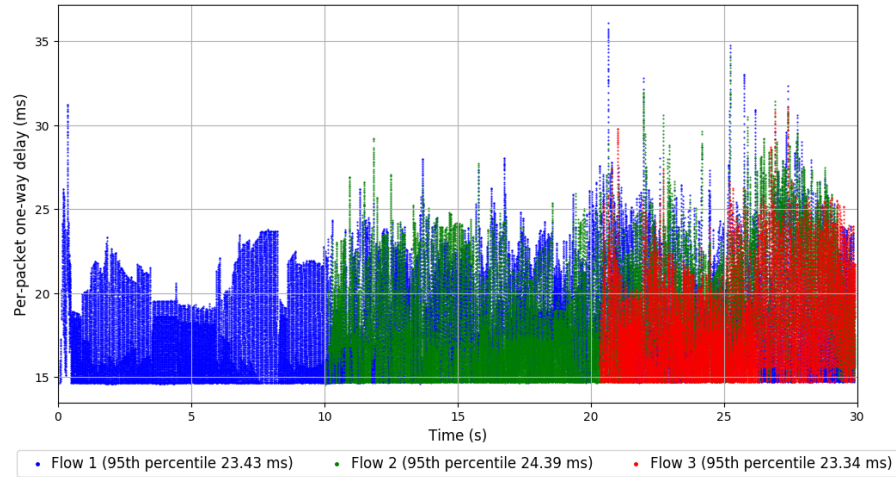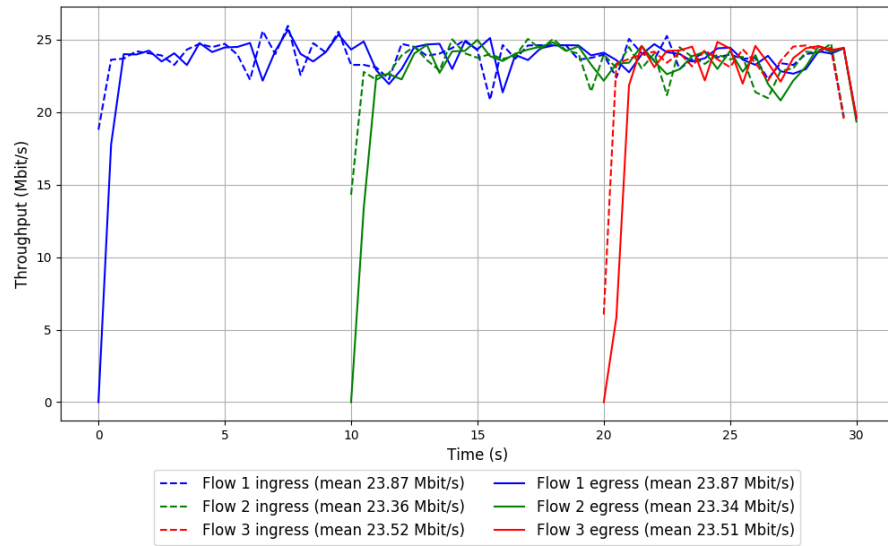
Run 2: Report of Sprout — Data Link

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```
Run 3: Statistics of Sprout

Start at: 2019-02-20 11:09:12
End at: 2019-02-20 11:09:42
Local clock offset: 0.918 ms
Remote clock offset: -32.051 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.02 Mbit/s
95th percentile per-packet one-way delay: 56.587 ms
Loss rate: 13.15%
-- Flow 1:
Average throughput: 12.38 Mbit/s
95th percentile per-packet one-way delay: 56.032 ms
Loss rate: 12.53%
-- Flow 2:
Average throughput: 9.81 Mbit/s
95th percentile per-packet one-way delay: 55.984 ms
Loss rate: 15.09%
-- Flow 3:
Average throughput: 15.53 Mbit/s
95th percentile per-packet one-way delay: 58.272 ms
Loss rate: 12.09%
```

Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-20 11:40:07
End at: 2019-02-20 11:40:37
Local clock offset: -2.454 ms
Remote clock offset: -2.199 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.96 Mbit/s
95th percentile per-packet one-way delay: 23.746 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 23.87 Mbit/s
95th percentile per-packet one-way delay: 23.433 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 23.34 Mbit/s
95th percentile per-packet one-way delay: 24.386 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 23.51 Mbit/s
95th percentile per-packet one-way delay: 23.337 ms
Loss rate: 0.20%
```
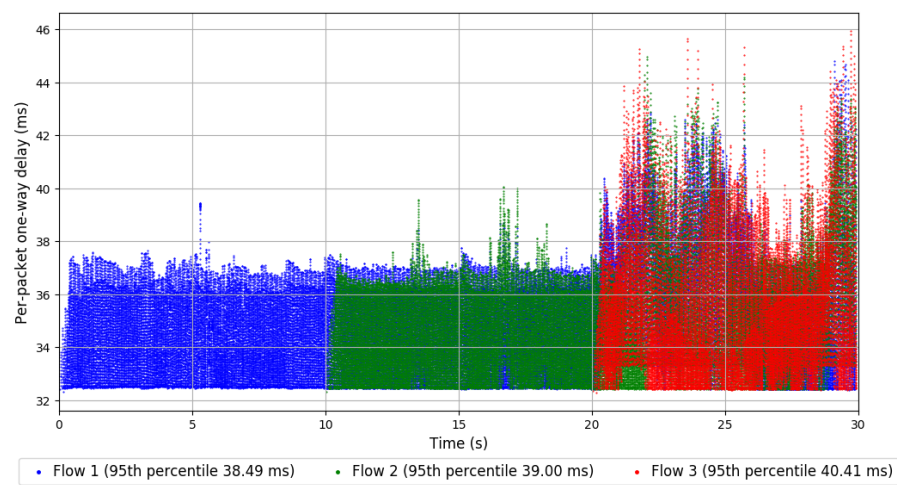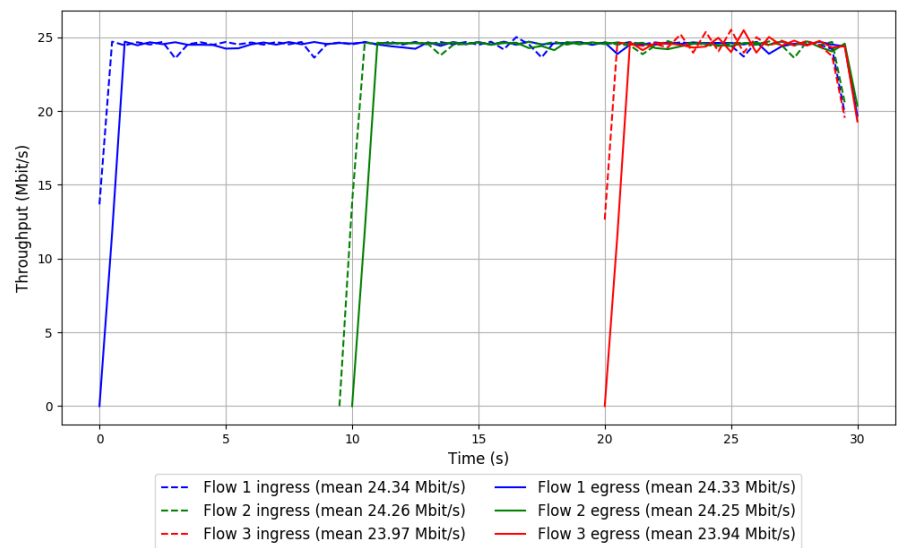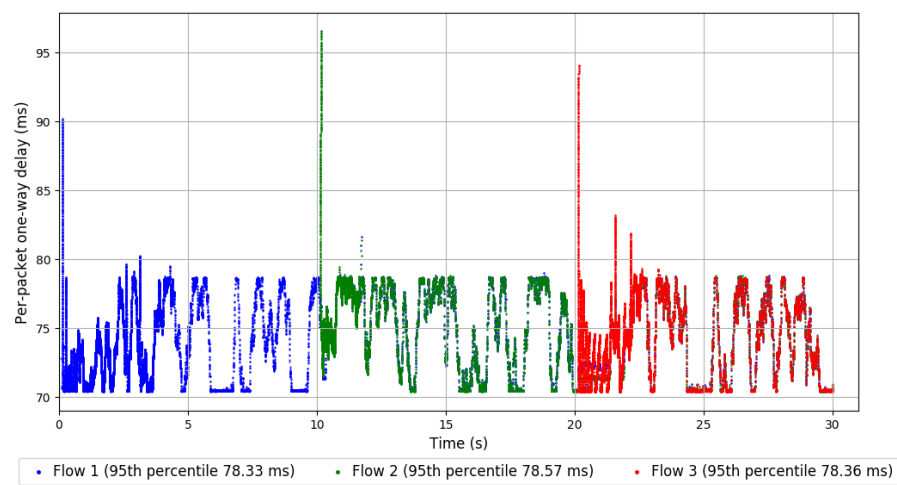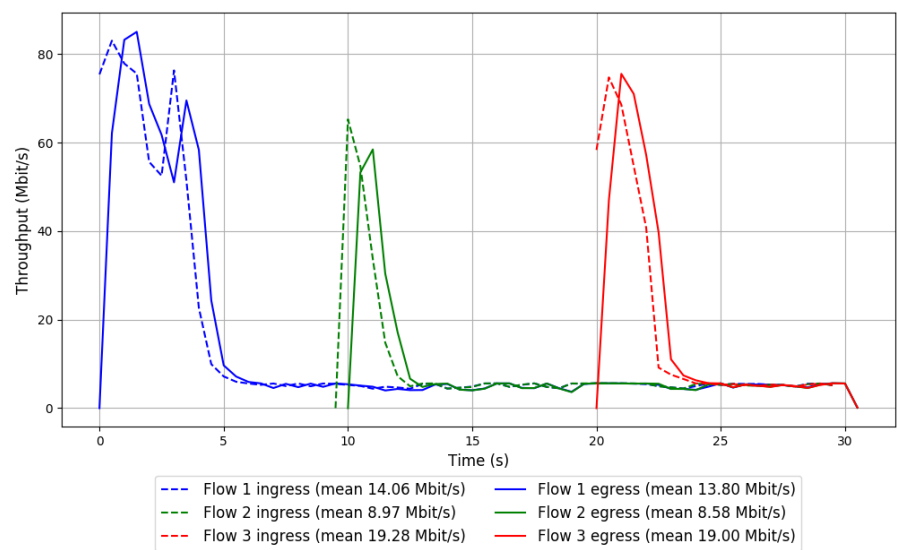
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-02-20 12:05:42
End at: 2019-02-20 12:06:12
Local clock offset: -2.018 ms
Remote clock offset: -19.4 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.36 Mbit/s
95th percentile per-packet one-way delay: 39.125 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 24.33 Mbit/s
95th percentile per-packet one-way delay: 38.489 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 24.25 Mbit/s
95th percentile per-packet one-way delay: 38.999 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 23.94 Mbit/s
95th percentile per-packet one-way delay: 40.410 ms
Loss rate: 0.36%
```
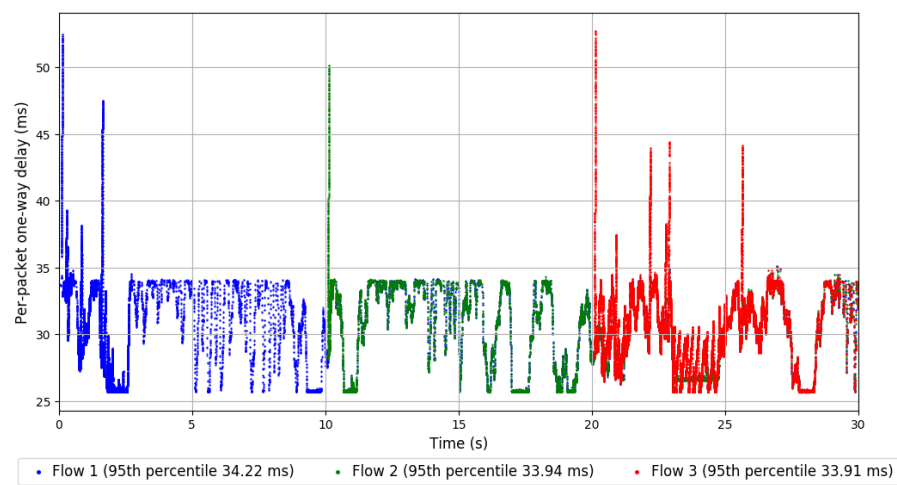
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 24.34 Mbit/s)   Flow 1 egress (mean 24.33 Mbit/s)
Flow 2 ingress (mean 24.26 Mbit/s)   Flow 2 egress (mean 24.25 Mbit/s)
Flow 3 ingress (mean 23.97 Mbit/s)   Flow 3 egress (mean 23.94 Mbit/s)

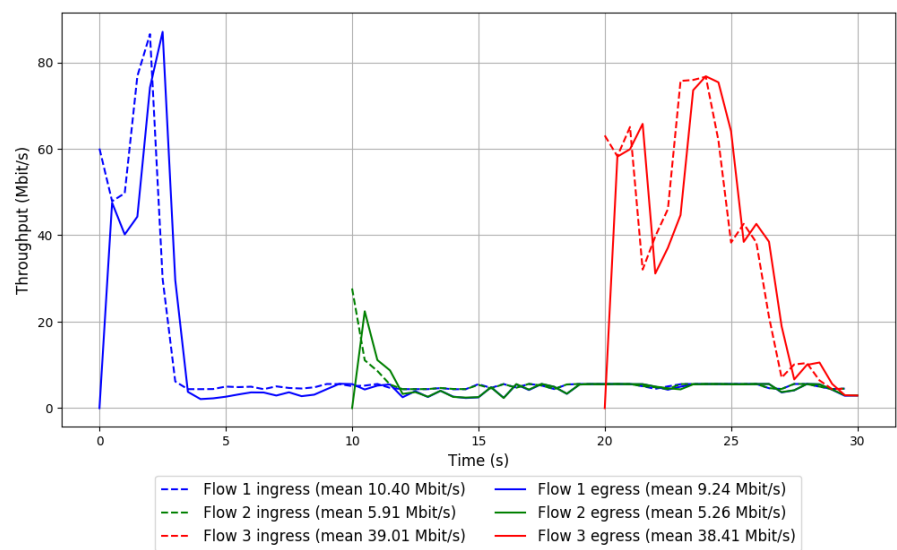Flow 1 (95th percentile 38.49 ms)   Flow 2 (95th percentile 39.00 ms)   Flow 3 (95th percentile 40.41 ms)

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

Start at: 2019-02-20 10:17:37
End at: 2019-02-20 10:18:07
Local clock offset: 1.316 ms
Remote clock offset: -55.361 ms

# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.82 Mbit/s
95th percentile per-packet one-way delay: 78.452 ms
Loss rate: 2.46%
-- Flow 1:
Average throughput: 13.80 Mbit/s
95th percentile per-packet one-way delay: 78.327 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 78.573 ms
Loss rate: 4.57%
-- Flow 3:
Average throughput: 19.00 Mbit/s
95th percentile per-packet one-way delay: 78.361 ms
Loss rate: 1.66%
```
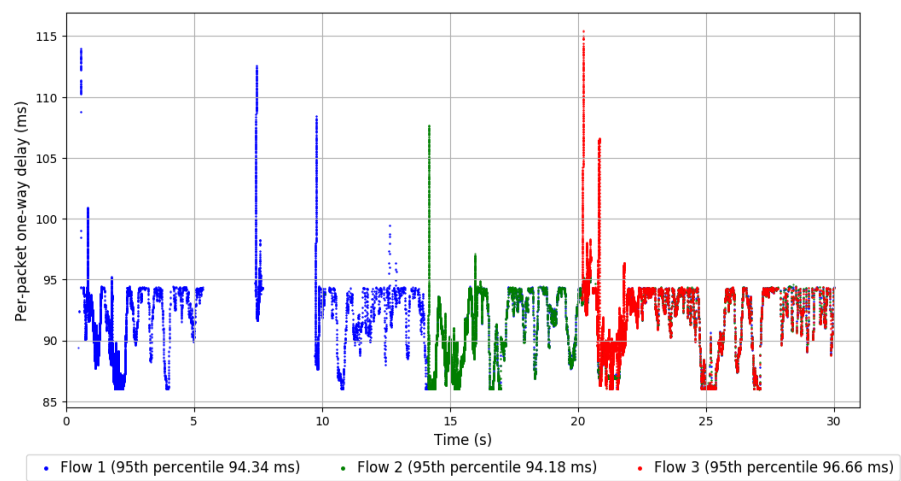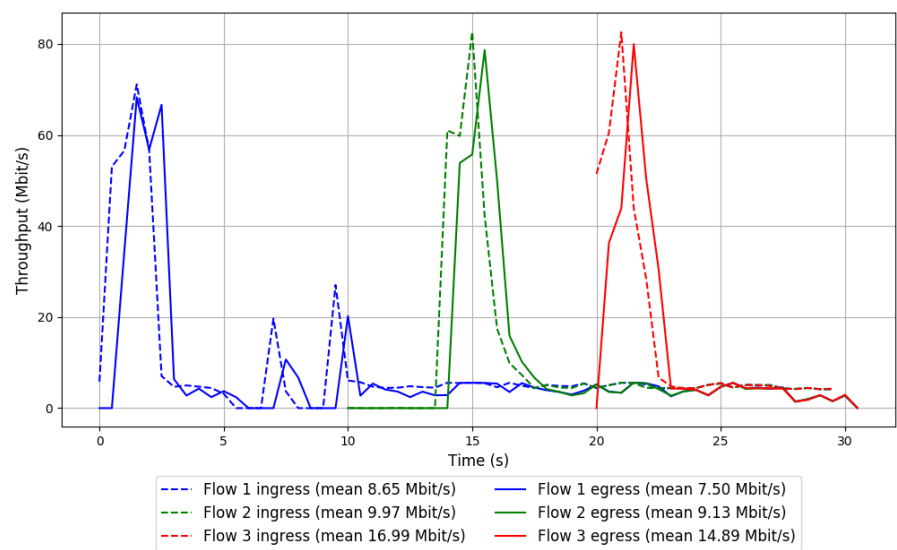
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 10:44:55
End at: 2019-02-20 10:45:25
Local clock offset: -1.202 ms
Remote clock offset: -15.828 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.49 Mbit/s
95th percentile per-packet one-way delay: 33.990 ms
Loss rate: 6.72%
-- Flow 1:
Average throughput: 9.24 Mbit/s
95th percentile per-packet one-way delay: 34.223 ms
Loss rate: 11.21%
-- Flow 2:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 33.941 ms
Loss rate: 11.06%
-- Flow 3:
Average throughput: 38.41 Mbit/s
95th percentile per-packet one-way delay: 33.907 ms
Loss rate: 1.79%
```
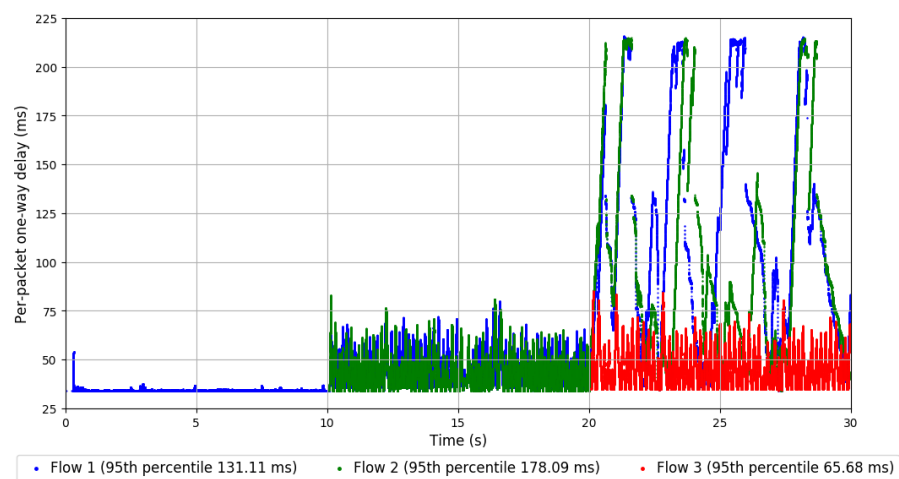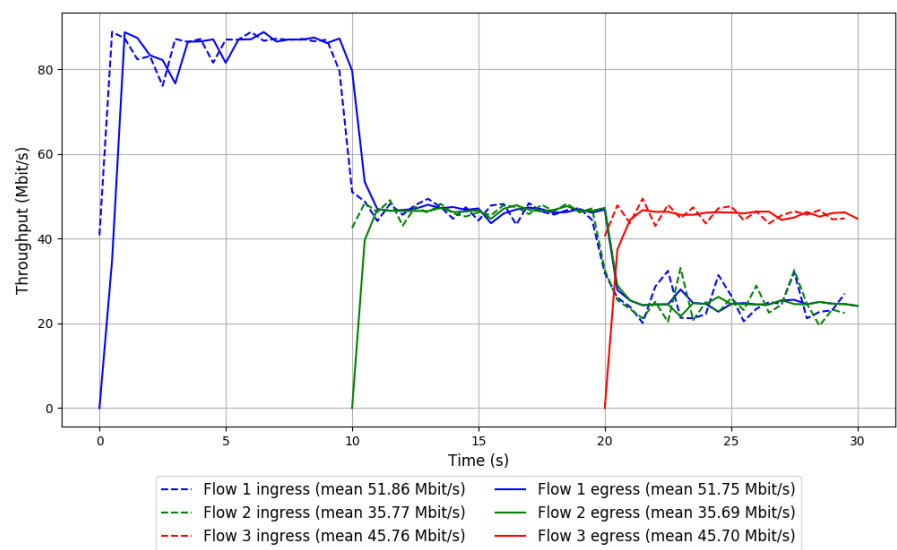
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 11:12:19
End at: 2019-02-20 11:12:49
Local clock offset: 2.187 ms
Remote clock offset: -74.454 ms


# Below is generated by plot.py at 2019-02-20 12:20:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.65 Mbit/s
95th percentile per-packet one-way delay: 94.942 ms
Loss rate: 12.30%
-- Flow 1:
Average throughput: 7.50 Mbit/s
95th percentile per-packet one-way delay: 94.336 ms
Loss rate: 14.63%
-- Flow 2:
Average throughput: 9.13 Mbit/s
95th percentile per-packet one-way delay: 94.181 ms
Loss rate: 8.70%
-- Flow 3:
Average throughput: 14.89 Mbit/s
95th percentile per-packet one-way delay: 96.655 ms
Loss rate: 12.98%
```
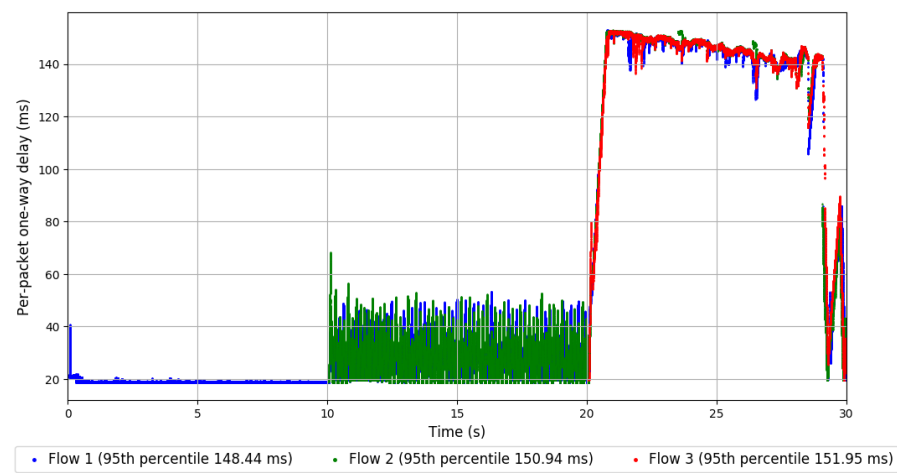
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 11:42:32
End at: 2019-02-20 11:43:02
Local clock offset: -0.428 ms
Remote clock offset: -19.241 ms


# Below is generated by plot.py at 2019-02-20 12:22:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.69 Mbit/s
95th percentile per-packet one-way delay: 131.291 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 51.75 Mbit/s
95th percentile per-packet one-way delay: 131.111 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 35.69 Mbit/s
95th percentile per-packet one-way delay: 178.090 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 45.70 Mbit/s
95th percentile per-packet one-way delay: 65.678 ms
Loss rate: 0.40%
```

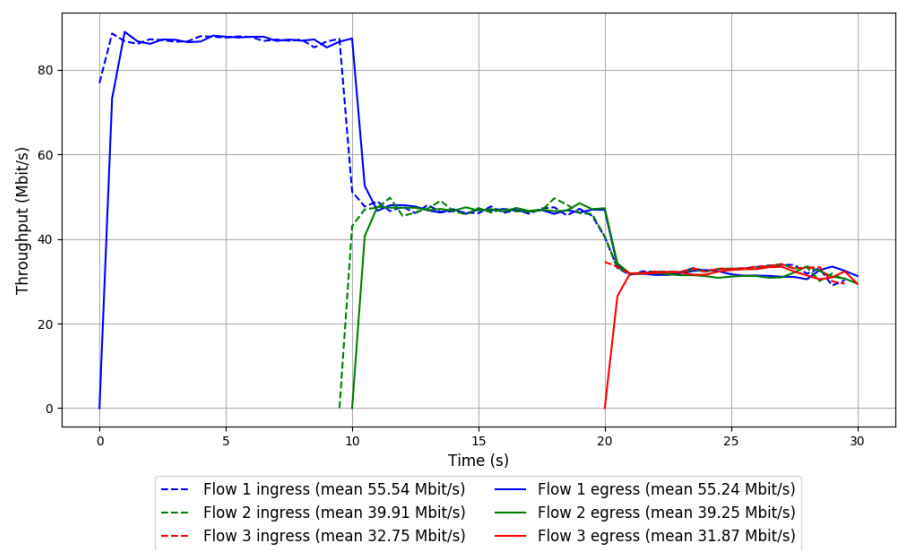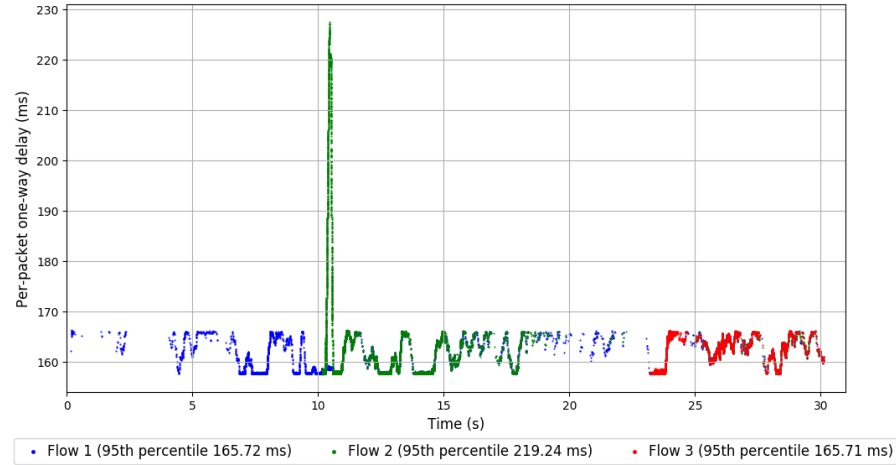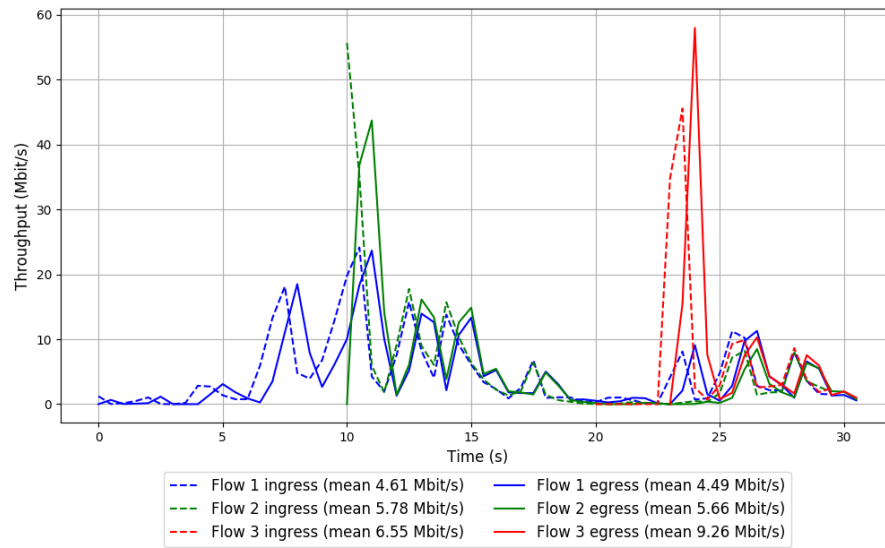Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 51.86 Mbit/s) — Flow 1 egress (mean 51.75 Mbit/s)
Flow 2 ingress (mean 35.77 Mbit/s) — Flow 2 egress (mean 35.69 Mbit/s)
Flow 3 ingress (mean 45.76 Mbit/s) — Flow 3 egress (mean 45.70 Mbit/s)

Flow 1 (95th percentile 131.11 ms)   Flow 2 (95th percentile 178.09 ms)   Flow 3 (95th percentile 65.68 ms)

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

Start at: 2019-02-20 12:08:05
End at: 2019-02-20 12:08:35
Local clock offset: 0.488 ms
Remote clock offset: -3.569 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.96 Mbit/s
95th percentile per-packet one-way delay: 150.190 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 55.24 Mbit/s
95th percentile per-packet one-way delay: 148.438 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 39.25 Mbit/s
95th percentile per-packet one-way delay: 150.945 ms
Loss rate: 1.78%
-- Flow 3:
Average throughput: 31.87 Mbit/s
95th percentile per-packet one-way delay: 151.948 ms
Loss rate: 2.93%
```

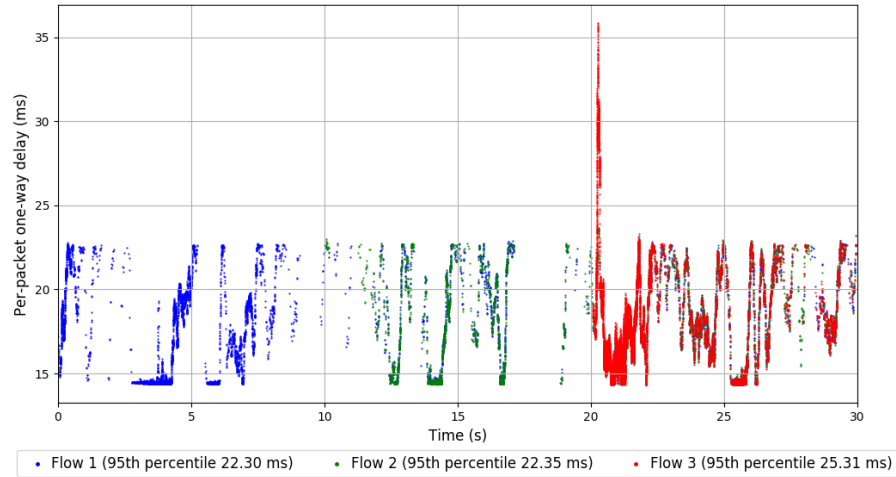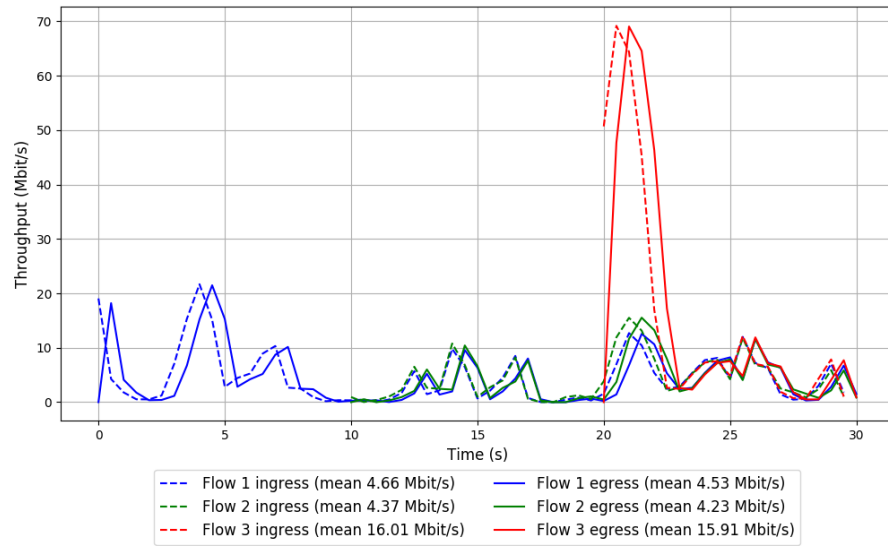Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.54 Mbit/s)   Flow 1 egress (mean 55.24 Mbit/s)
Flow 2 ingress (mean 39.91 Mbit/s)   Flow 2 egress (mean 39.25 Mbit/s)
Flow 3 ingress (mean 32.75 Mbit/s)   Flow 3 egress (mean 31.87 Mbit/s)

• Flow 1 (95th percentile 148.44 ms)   • Flow 2 (95th percentile 150.94 ms)   • Flow 3 (95th percentile 151.95 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-20 10:13:48
End at: 2019-02-20 10:14:18
Local clock offset: 1.732 ms
Remote clock offset: -142.089 ms

# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.39 Mbit/s
95th percentile per-packet one-way delay: 177.846 ms
Loss rate: 2.47%
-- Flow 1:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 165.722 ms
Loss rate: 2.79%
-- Flow 2:
Average throughput: 5.66 Mbit/s
95th percentile per-packet one-way delay: 219.242 ms
Loss rate: 2.36%
-- Flow 3:
Average throughput: 9.26 Mbit/s
95th percentile per-packet one-way delay: 165.713 ms
Loss rate: 1.99%
```
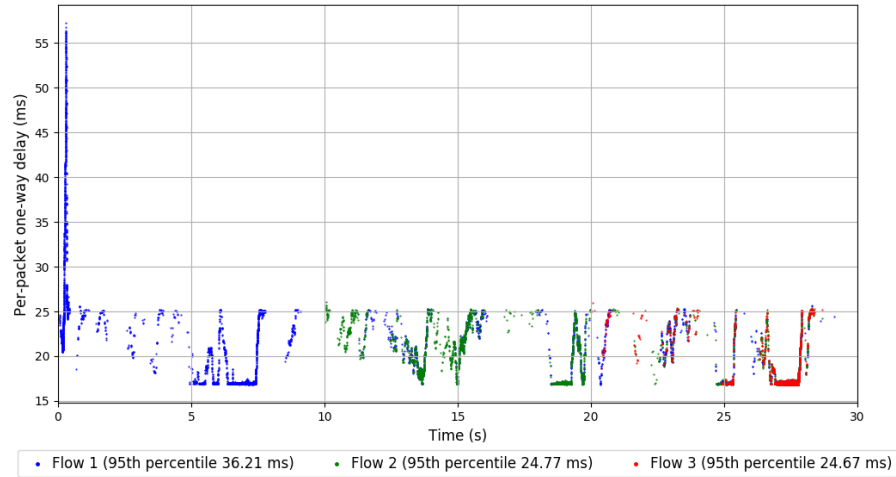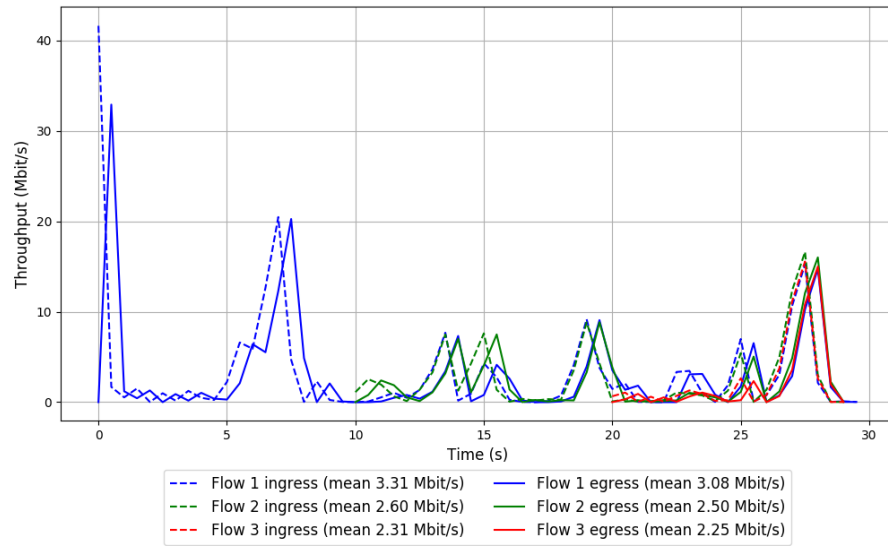
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 10:41:13
End at: 2019-02-20 10:41:43
Local clock offset: -1.731 ms
Remote clock offset: -4.573 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 22.475 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 4.53 Mbit/s
95th percentile per-packet one-way delay: 22.302 ms
Loss rate: 2.94%
-- Flow 2:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 22.348 ms
Loss rate: 3.39%
-- Flow 3:
Average throughput: 15.91 Mbit/s
95th percentile per-packet one-way delay: 25.314 ms
Loss rate: 0.96%
```
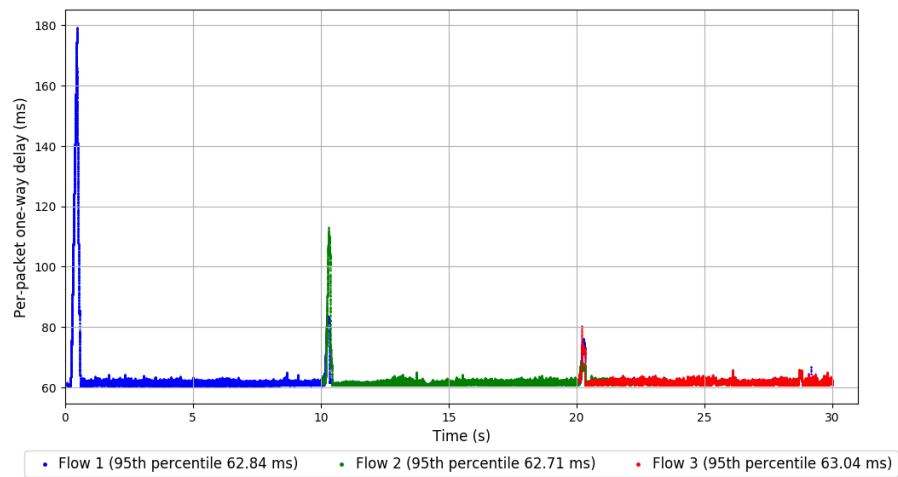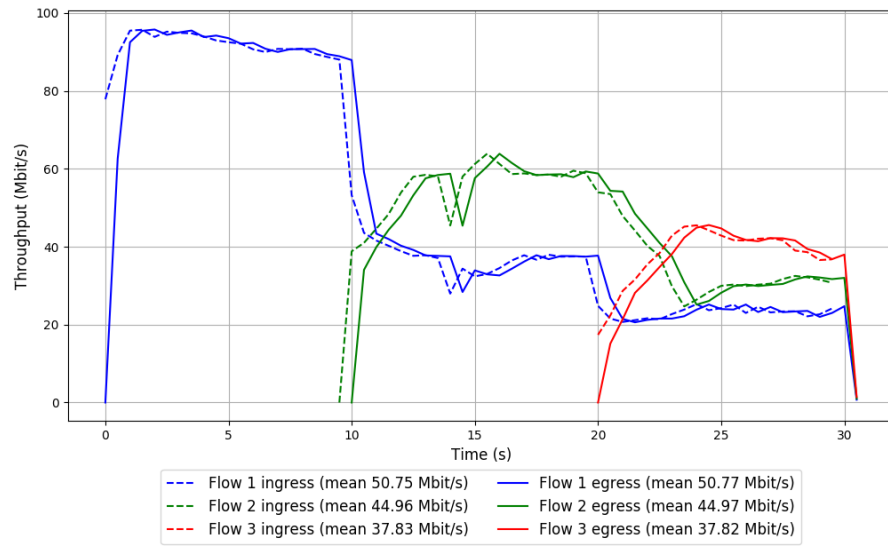
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 11:08:00
End at: 2019-02-20 11:08:30
Local clock offset: 0.049 ms
Remote clock offset: -7.105 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.35 Mbit/s
95th percentile per-packet one-way delay: 26.418 ms
Loss rate: 7.98%
-- Flow 1:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 36.207 ms
Loss rate: 8.83%
-- Flow 2:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 24.765 ms
Loss rate: 6.29%
-- Flow 3:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 24.673 ms
Loss rate: 7.96%
```
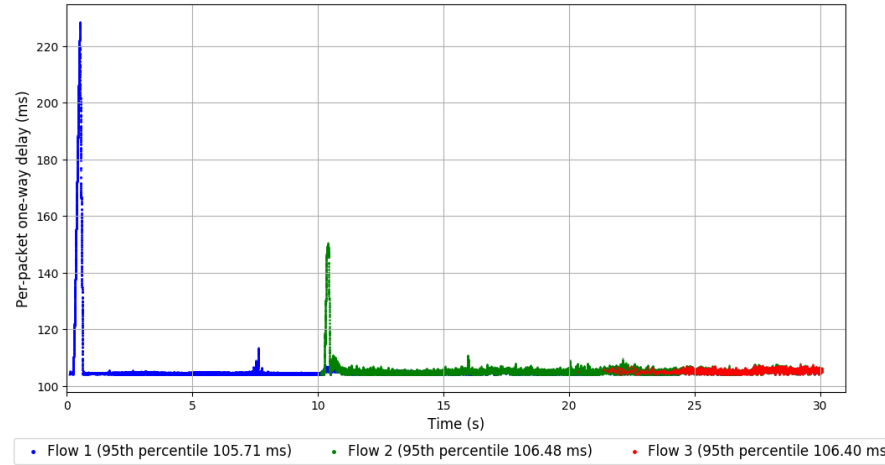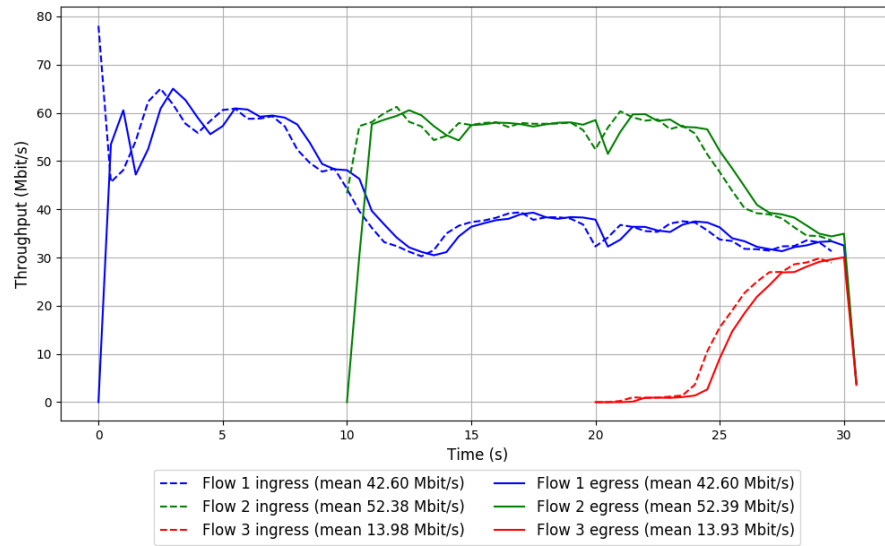
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-20 11:38:54
End at: 2019-02-20 11:39:24
Local clock offset: -1.059 ms
Remote clock offset: -47.167 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.29 Mbit/s
95th percentile per-packet one-way delay: 62.865 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 50.77 Mbit/s
95th percentile per-packet one-way delay: 62.844 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 44.97 Mbit/s
95th percentile per-packet one-way delay: 62.708 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 37.82 Mbit/s
95th percentile per-packet one-way delay: 63.036 ms
Loss rate: 0.27%
```
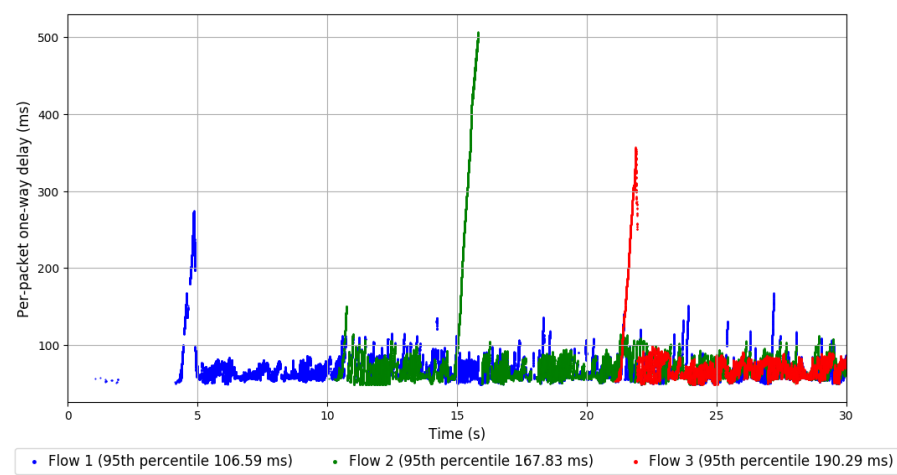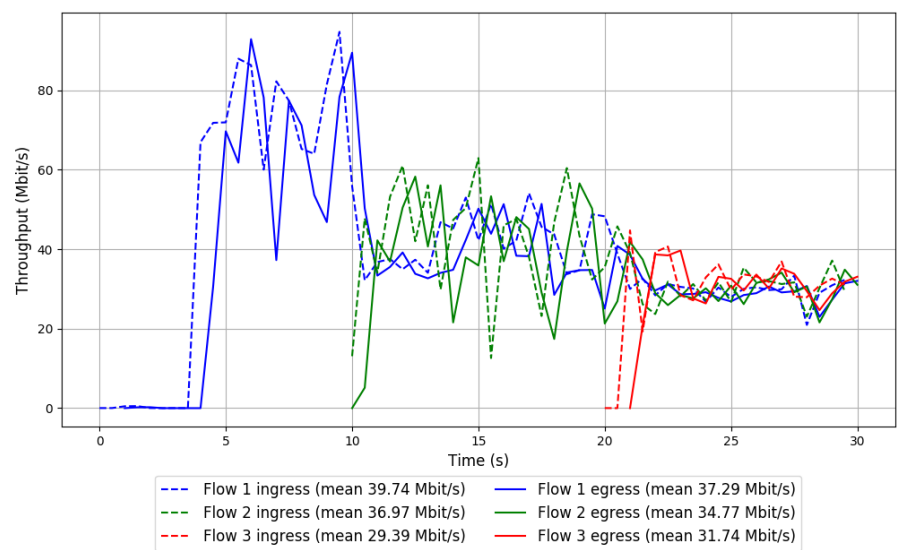
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 50.75 Mbit/s)   Flow 1 egress (mean 50.77 Mbit/s)
Flow 2 ingress (mean 44.96 Mbit/s)   Flow 2 egress (mean 44.97 Mbit/s)
Flow 3 ingress (mean 37.83 Mbit/s)   Flow 3 egress (mean 37.82 Mbit/s)

Flow 1 (95th percentile 62.84 ms)   Flow 2 (95th percentile 62.71 ms)   Flow 3 (95th percentile 63.04 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 12:04:28
End at: 2019-02-20 12:04:58
Local clock offset: 18.549 ms
Remote clock offset: -70.465 ms

# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.00 Mbit/s
95th percentile per-packet one-way delay: 106.268 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 42.60 Mbit/s
95th percentile per-packet one-way delay: 105.710 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 52.39 Mbit/s
95th percentile per-packet one-way delay: 106.482 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 13.93 Mbit/s
95th percentile per-packet one-way delay: 106.404 ms
Loss rate: 0.60%
```

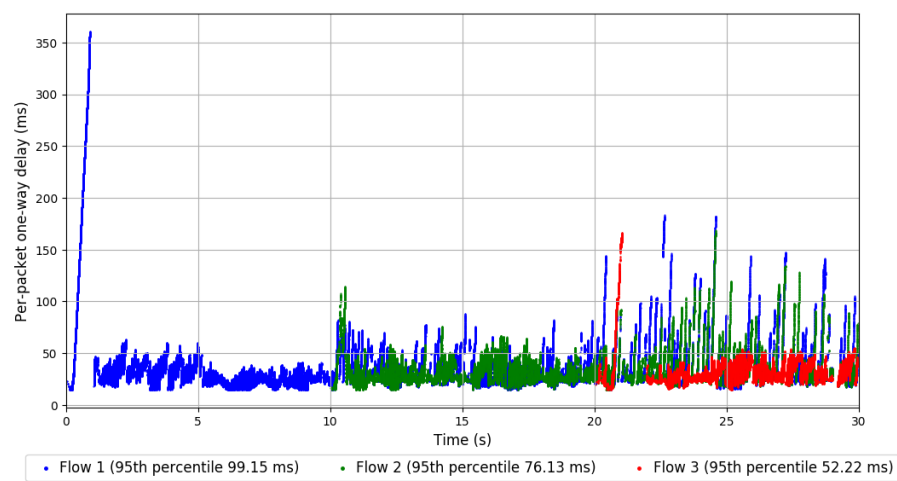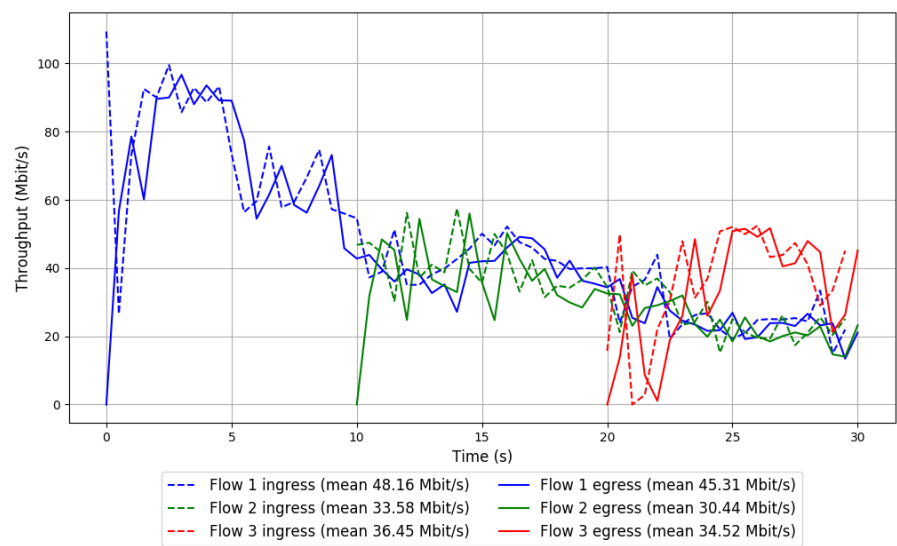Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-02-20 10:18:52
End at: 2019-02-20 10:19:22
Local clock offset: -1.701 ms
Remote clock offset: -36.922 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.03 Mbit/s
95th percentile per-packet one-way delay: 120.923 ms
Loss rate: 7.45%
-- Flow 1:
Average throughput: 37.29 Mbit/s
95th percentile per-packet one-way delay: 106.594 ms
Loss rate: 9.40%
-- Flow 2:
Average throughput: 34.77 Mbit/s
95th percentile per-packet one-way delay: 167.832 ms
Loss rate: 6.10%
-- Flow 3:
Average throughput: 31.74 Mbit/s
95th percentile per-packet one-way delay: 190.290 ms
Loss rate: 2.90%
```

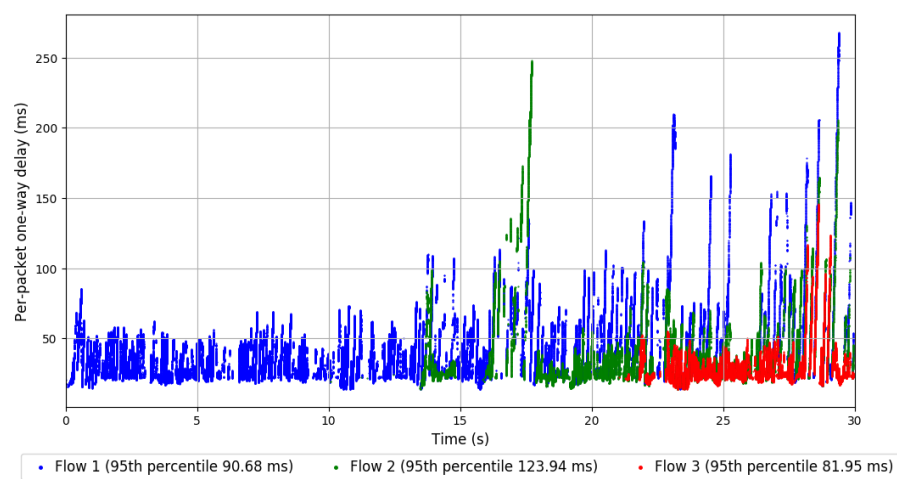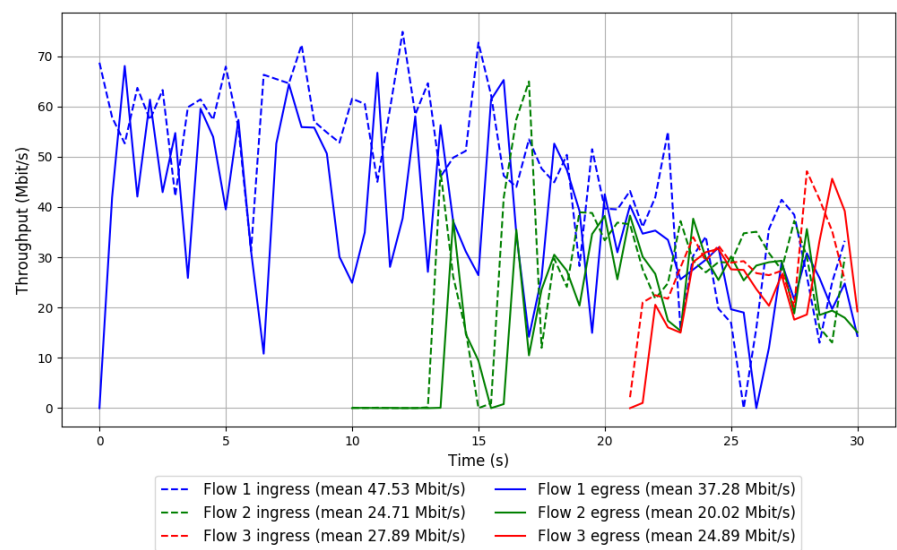Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-02-20 10:46:10
End at: 2019-02-20 10:46:40
Local clock offset: -0.831 ms
Remote clock offset: -4.721 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.01 Mbit/s
95th percentile per-packet one-way delay: 85.817 ms
Loss rate: 6.79%
-- Flow 1:
Average throughput: 45.31 Mbit/s
95th percentile per-packet one-way delay: 99.151 ms
Loss rate: 6.01%
-- Flow 2:
Average throughput: 30.44 Mbit/s
95th percentile per-packet one-way delay: 76.134 ms
Loss rate: 9.13%
-- Flow 3:
Average throughput: 34.52 Mbit/s
95th percentile per-packet one-way delay: 52.218 ms
Loss rate: 5.61%
```
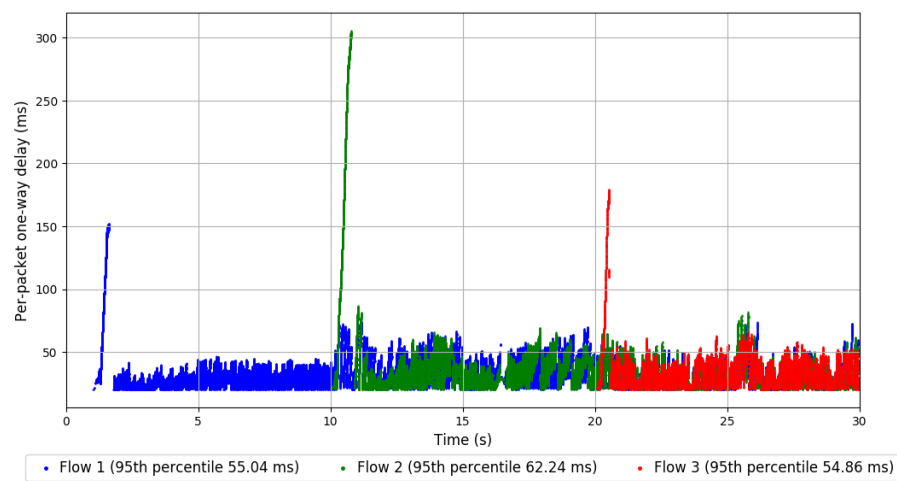
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-02-20 11:14:14
End at: 2019-02-20 11:14:44
Local clock offset: -0.796 ms
Remote clock offset: -5.328 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.01 Mbit/s
95th percentile per-packet one-way delay: 95.021 ms
Loss rate: 19.81%
-- Flow 1:
Average throughput: 37.28 Mbit/s
95th percentile per-packet one-way delay: 90.678 ms
Loss rate: 21.59%
-- Flow 2:
Average throughput: 20.02 Mbit/s
95th percentile per-packet one-way delay: 123.941 ms
Loss rate: 19.03%
-- Flow 3:
Average throughput: 24.89 Mbit/s
95th percentile per-packet one-way delay: 81.954 ms
Loss rate: 11.17%
```

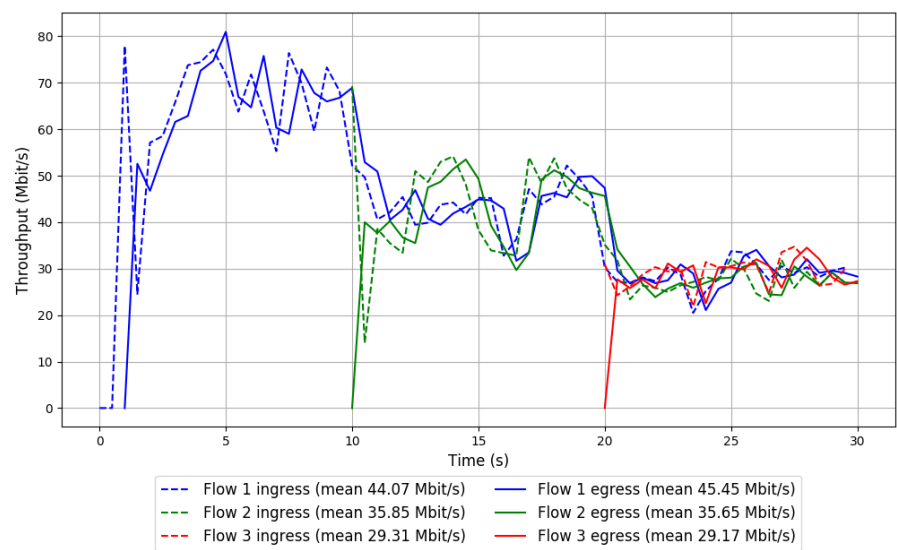Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-02-20 11:43:50
End at: 2019-02-20 11:44:20
Local clock offset: -0.68 ms
Remote clock offset: -5.458 ms


# Below is generated by plot.py at 2019-02-20 12:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.03 Mbit/s
95th percentile per-packet one-way delay: 57.129 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 45.45 Mbit/s
95th percentile per-packet one-way delay: 55.040 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 35.65 Mbit/s
95th percentile per-packet one-way delay: 62.244 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 29.17 Mbit/s
95th percentile per-packet one-way delay: 54.862 ms
Loss rate: 0.69%
```

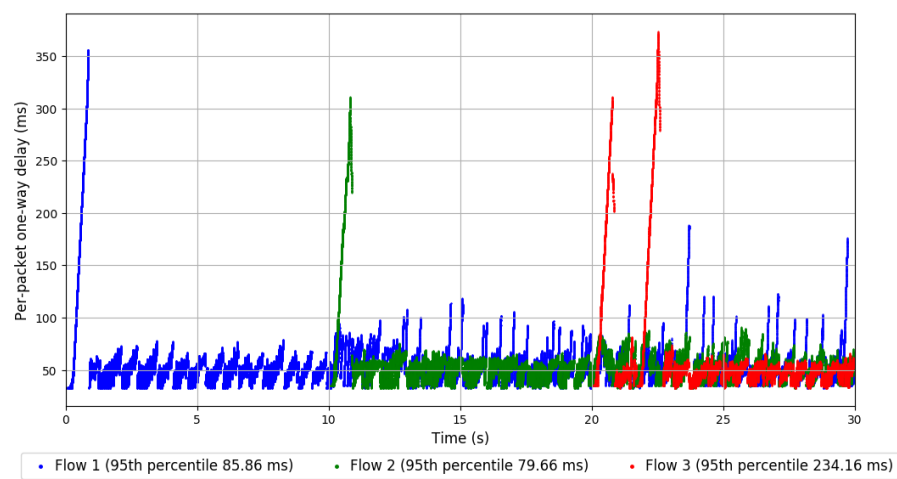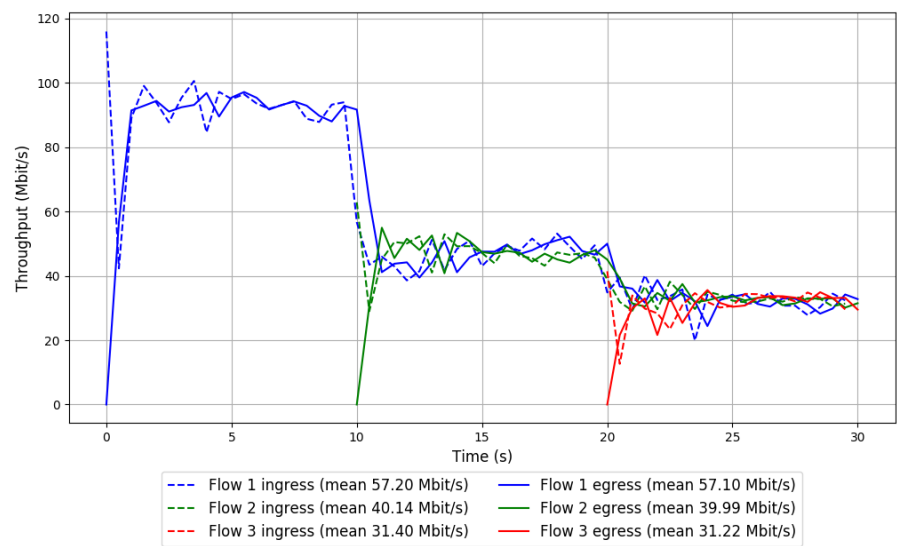Run 4: Report of Verus — Data Link

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```
Run 5: Statistics of Verus

Start at: 2019-02-20 12:09:23
End at: 2019-02-20 12:09:53
Local clock offset: 0.336 ms
Remote clock offset: -17.866 ms


# Below is generated by plot.py at 2019-02-20 12:22:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.09 Mbit/s
95th percentile per-packet one-way delay: 90.200 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 57.10 Mbit/s
95th percentile per-packet one-way delay: 85.862 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 39.99 Mbit/s
95th percentile per-packet one-way delay: 79.664 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 31.22 Mbit/s
95th percentile per-packet one-way delay: 234.155 ms
Loss rate: 0.83%
```
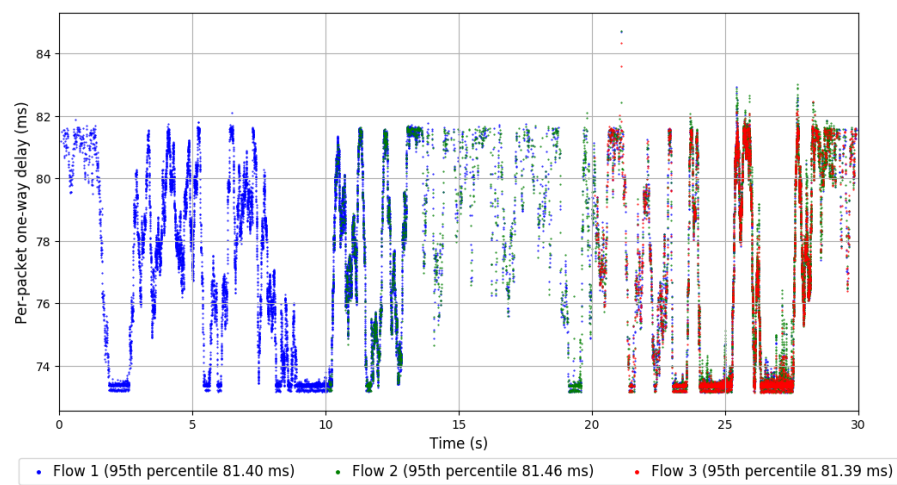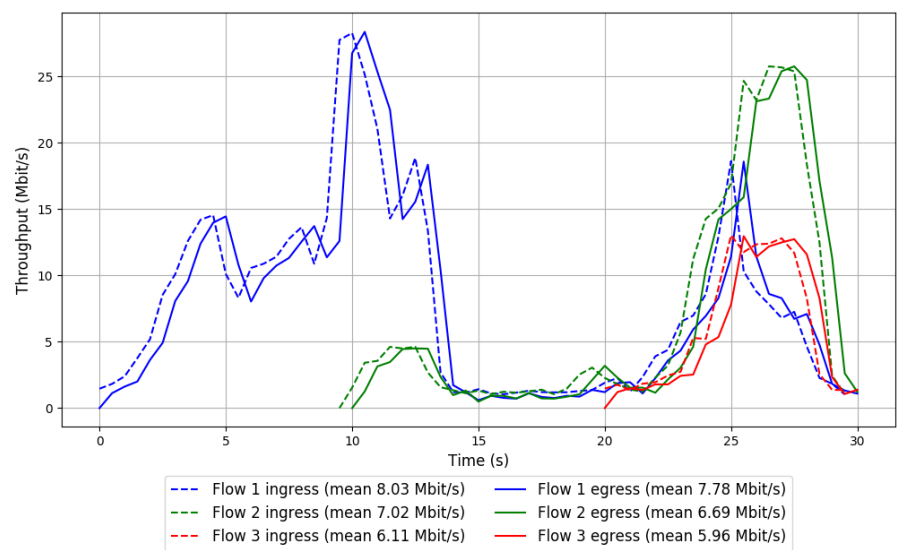
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 10:00:54
End at: 2019-02-20 10:01:24
Local clock offset: -1.35 ms
Remote clock offset: -60.183 ms


# Below is generated by plot.py at 2019-02-20 12:22:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.19 Mbit/s
95th percentile per-packet one-way delay: 81.418 ms
Loss rate: 3.72%
-- Flow 1:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 81.400 ms
Loss rate: 3.21%
-- Flow 2:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 81.464 ms
Loss rate: 4.88%
-- Flow 3:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 81.395 ms
Loss rate: 3.09%
```

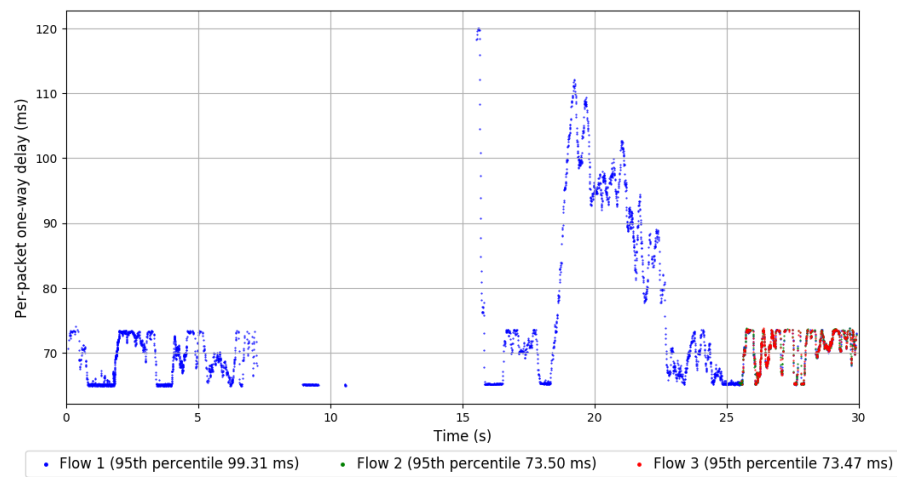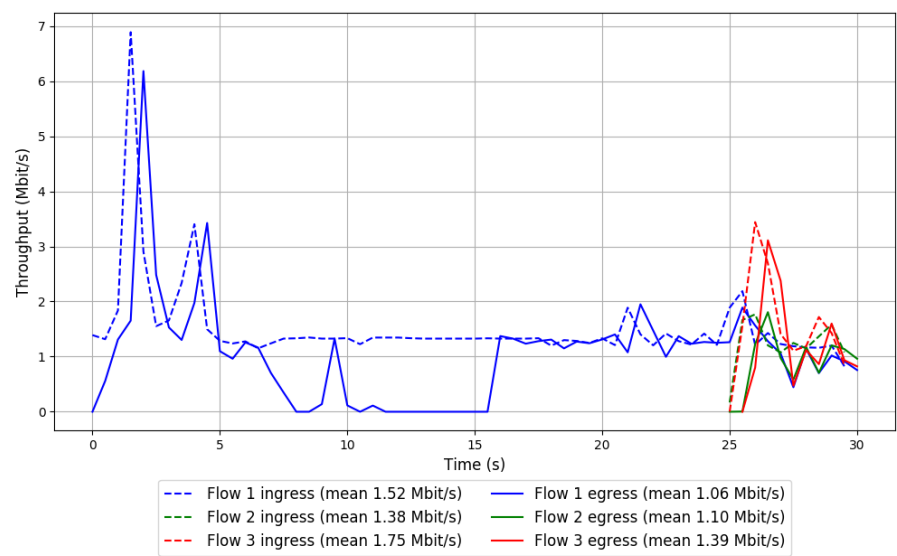Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 10:28:19
End at: 2019-02-20 10:28:49
Local clock offset: -1.227 ms
Remote clock offset: -52.796 ms


# Below is generated by plot.py at 2019-02-20 12:22:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 97.166 ms
Loss rate: 28.30%
-- Flow 1:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 99.309 ms
Loss rate: 30.52%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 73.505 ms
Loss rate: 20.53%
-- Flow 3:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 73.475 ms
Loss rate: 21.39%
```

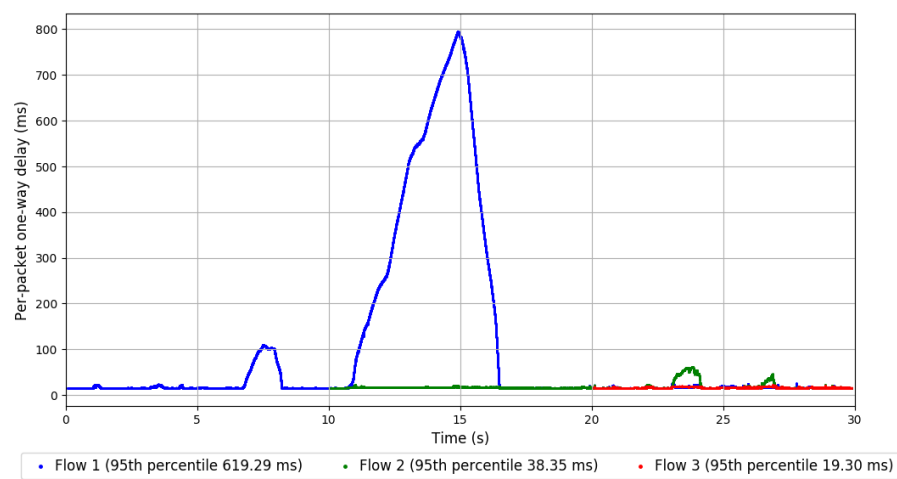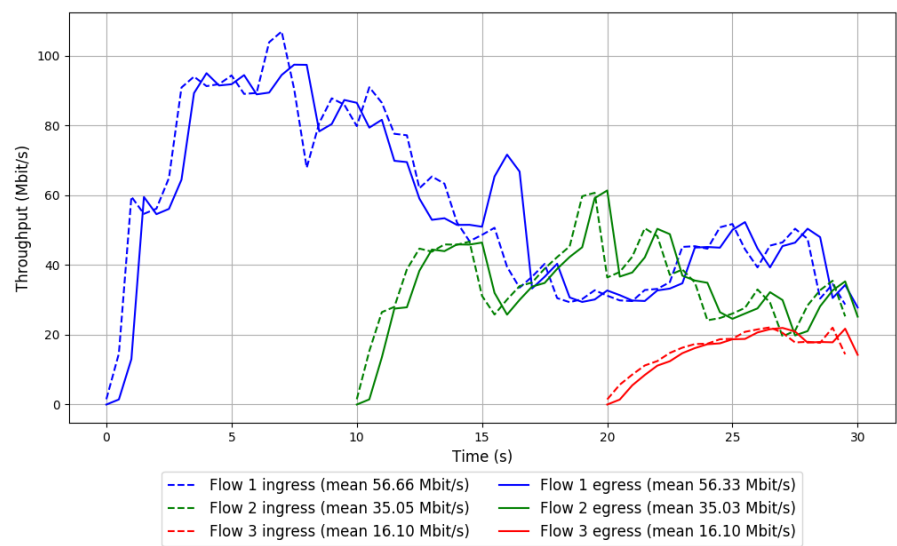Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 10:55:23
End at: 2019-02-20 10:55:53
Local clock offset: -0.134 ms
Remote clock offset: -5.809 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.93 Mbit/s
95th percentile per-packet one-way delay: 532.880 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 56.33 Mbit/s
95th percentile per-packet one-way delay: 619.293 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 35.03 Mbit/s
95th percentile per-packet one-way delay: 38.352 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 16.10 Mbit/s
95th percentile per-packet one-way delay: 19.297 ms
Loss rate: 0.29%
```

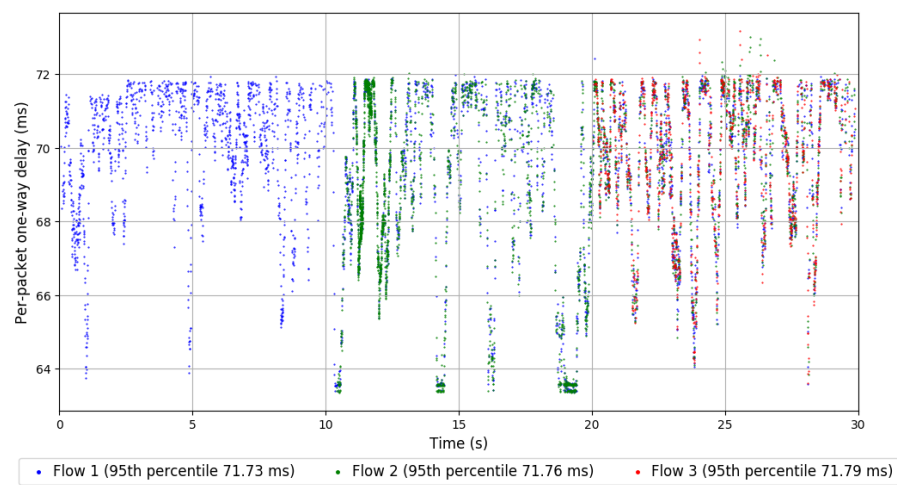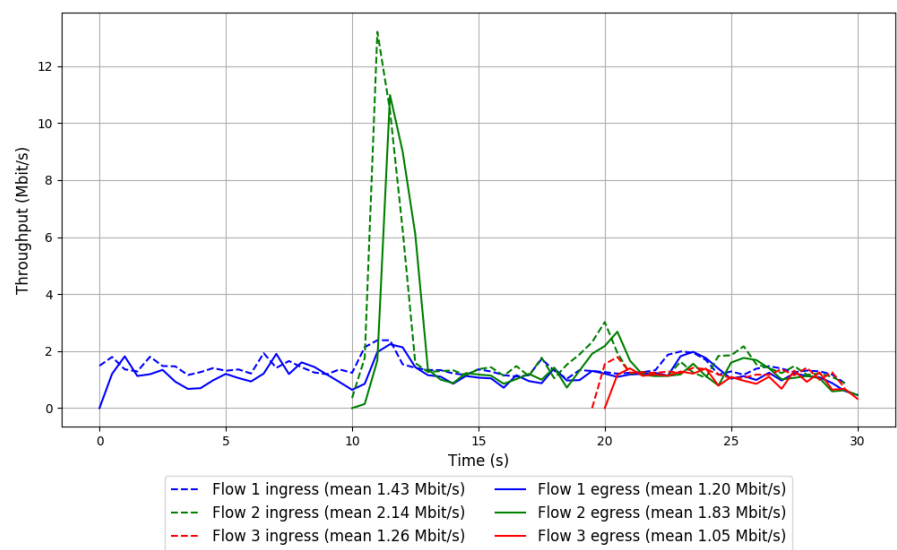Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 11:25:41
End at: 2019-02-20 11:26:11
Local clock offset: 2.982 ms
Remote clock offset: -49.176 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 71.752 ms
Loss rate: 15.71%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 71.735 ms
Loss rate: 16.23%
-- Flow 2:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 71.762 ms
Loss rate: 14.60%
-- Flow 3:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 71.793 ms
Loss rate: 17.62%
```

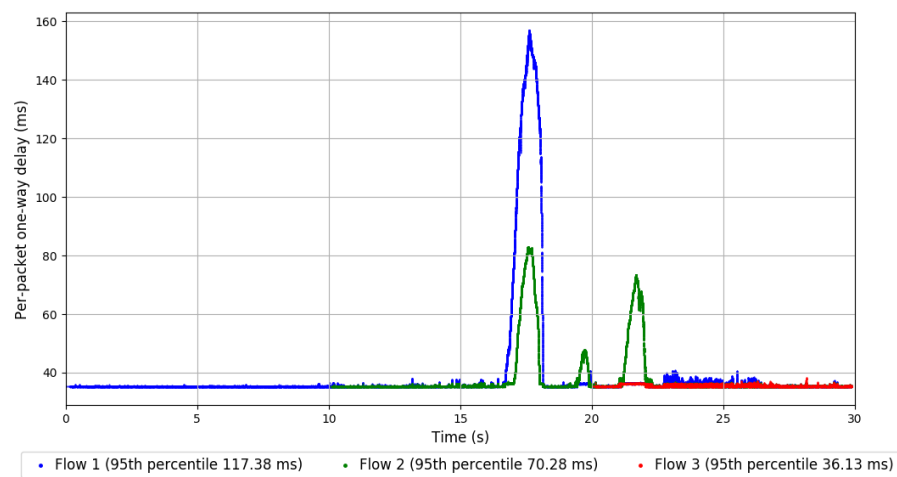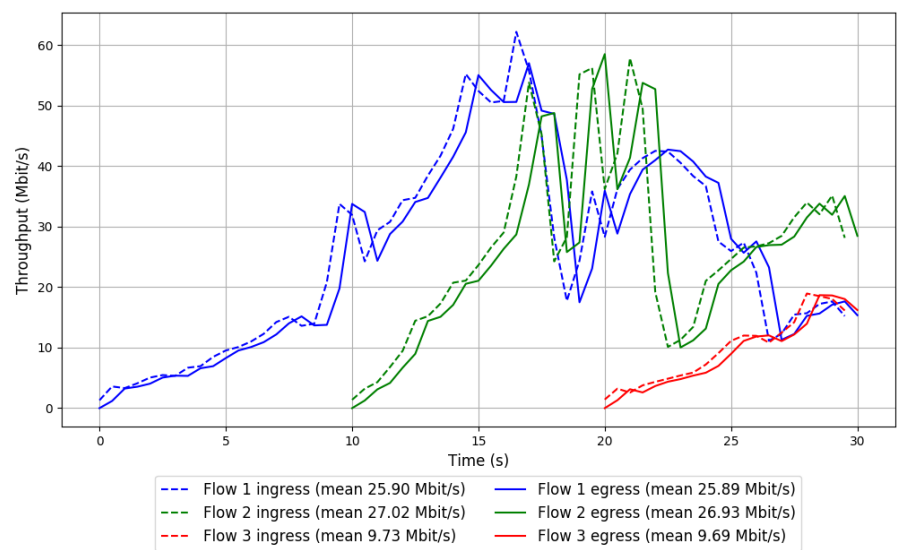Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 11:52:21
End at: 2019-02-20 11:52:51
Local clock offset: -0.648 ms
Remote clock offset: -19.511 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.95 Mbit/s
95th percentile per-packet one-way delay: 73.557 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 25.89 Mbit/s
95th percentile per-packet one-way delay: 117.379 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 26.93 Mbit/s
95th percentile per-packet one-way delay: 70.280 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 9.69 Mbit/s
95th percentile per-packet one-way delay: 36.130 ms
Loss rate: 0.66%
```

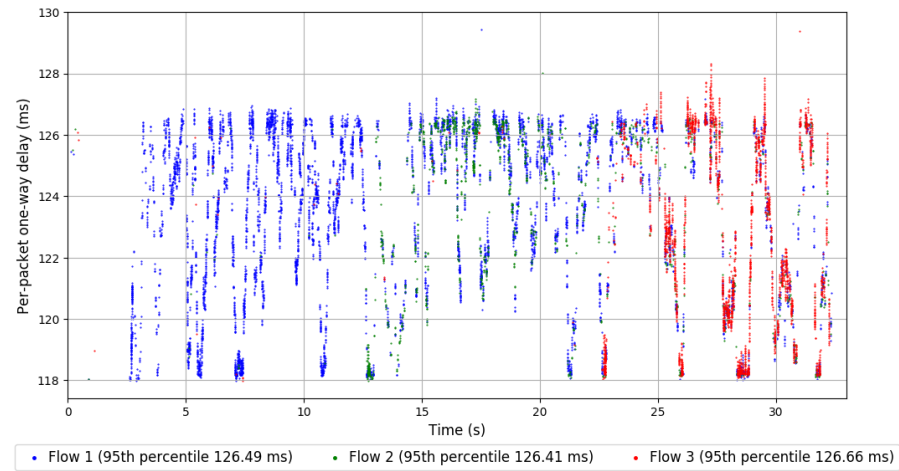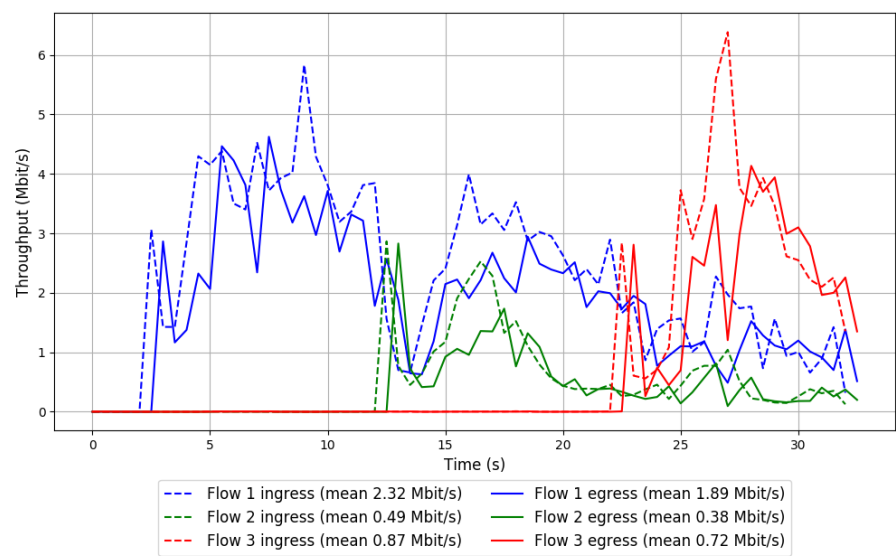Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-02-20 09:56:45
End at: 2019-02-20 09:57:15
Local clock offset: 1.426 ms
Remote clock offset: -101.994 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 126.499 ms
Loss rate: 18.84%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 126.487 ms
Loss rate: 18.48%
-- Flow 2:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 126.412 ms
Loss rate: 22.81%
-- Flow 3:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 126.663 ms
Loss rate: 17.60%
```

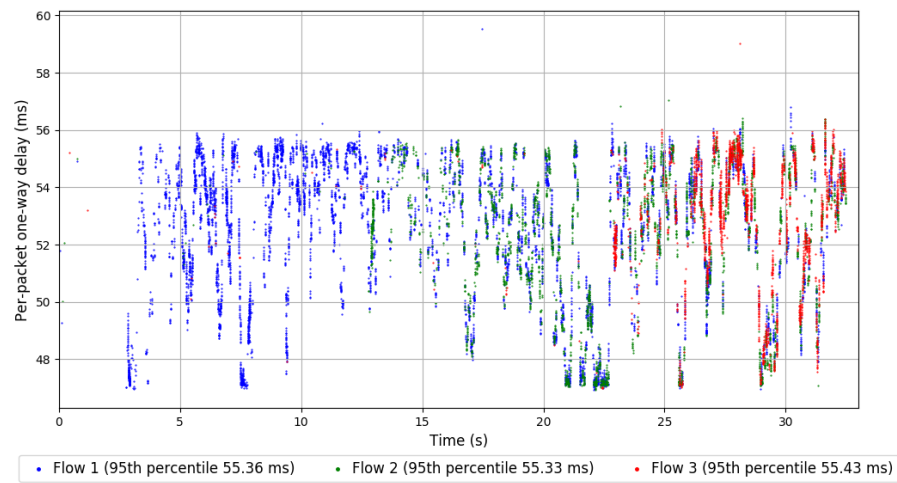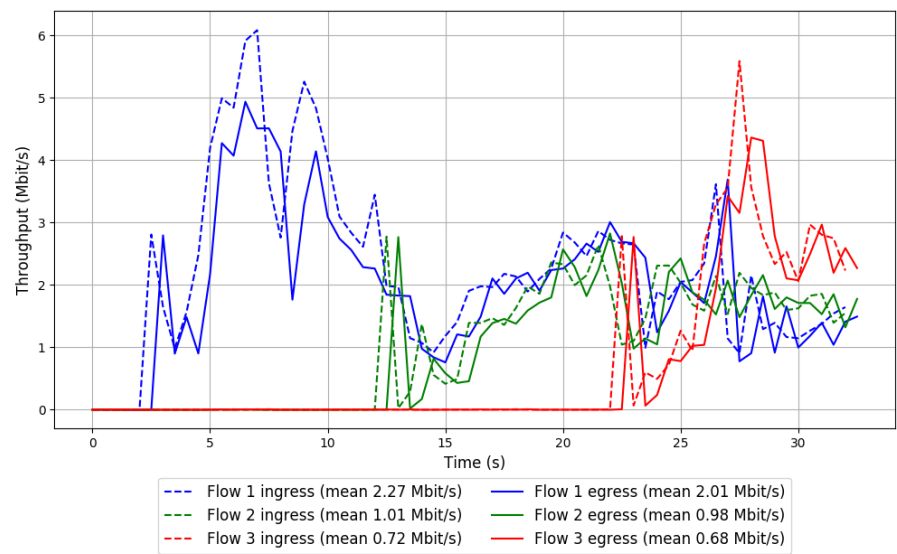Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 10:24:21
End at: 2019-02-20 10:24:51
Local clock offset: -0.503 ms
Remote clock offset: -34.002 ms

# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.65 Mbit/s
95th percentile per-packet one-way delay: 55.364 ms
Loss rate: 8.44%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 55.363 ms
Loss rate: 11.67%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 55.333 ms
Loss rate: 3.13%
-- Flow 3:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 55.432 ms
Loss rate: 5.65%
```

Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.27 Mbit/s) --- Flow 1 egress (mean 2.01 Mbit/s)
Flow 2 ingress (mean 1.01 Mbit/s) --- Flow 2 egress (mean 0.98 Mbit/s)
Flow 3 ingress (mean 0.72 Mbit/s) --- Flow 3 egress (mean 0.68 Mbit/s)

Flow 1 (95th percentile 55.36 ms)   Flow 2 (95th percentile 55.33 ms)   Flow 3 (95th percentile 55.43 ms)
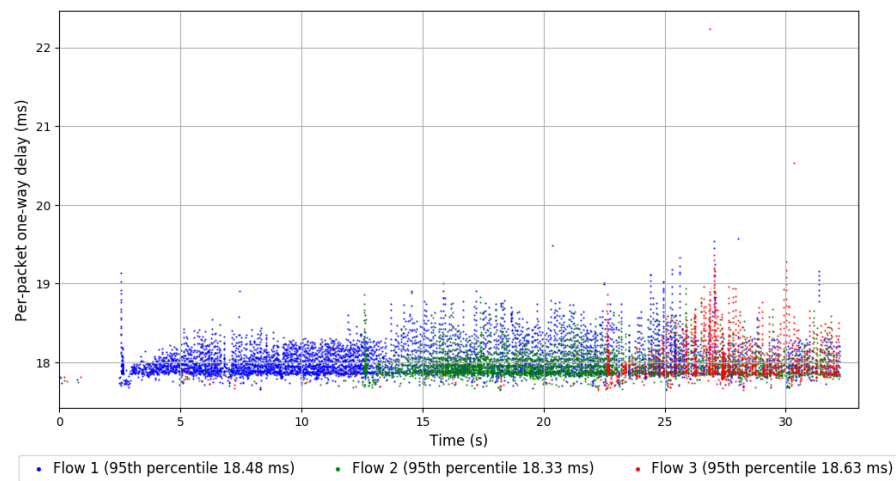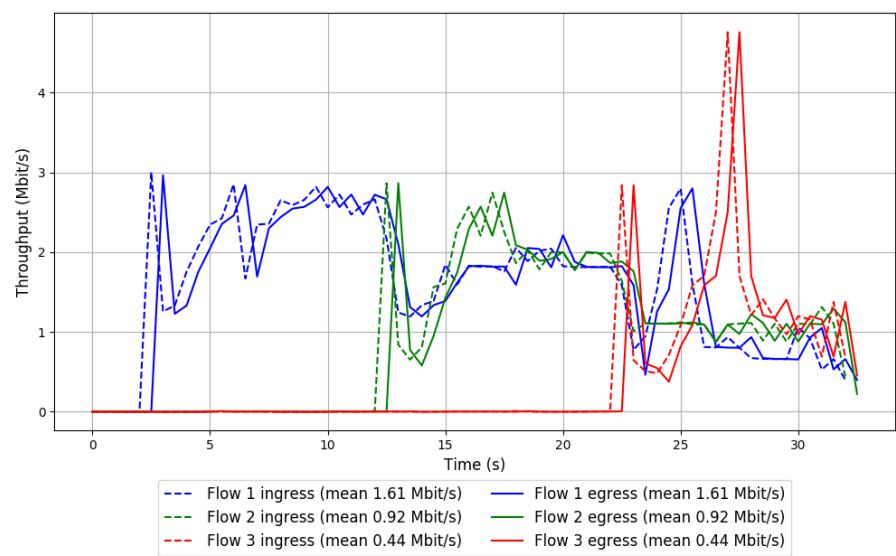
```
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 10:51:51
End at: 2019-02-20 10:52:21
Local clock offset: -0.535 ms
Remote clock offset: -7.913 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 18.471 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 18.478 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 18.328 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 18.627 ms
Loss rate: 0.80%
```

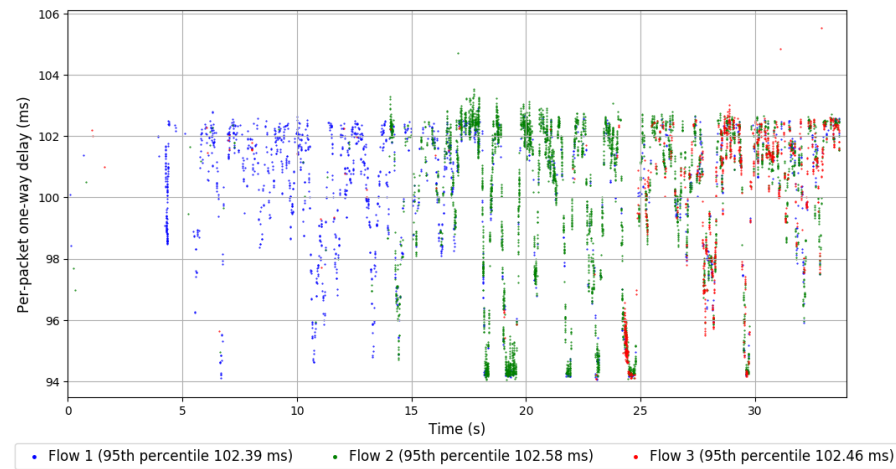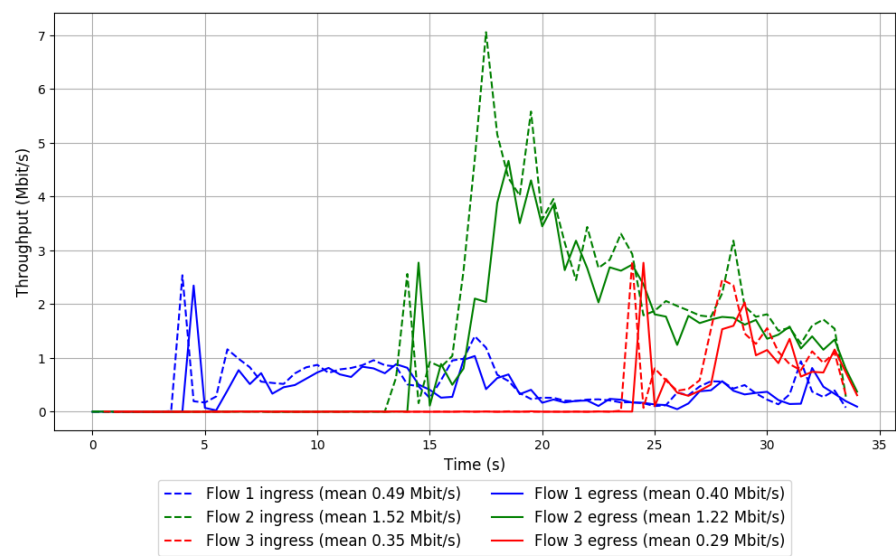Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 11:20:52
End at: 2019-02-20 11:21:22
Local clock offset: -0.946 ms
Remote clock offset: -84.488 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 102.513 ms
Loss rate: 18.77%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 102.391 ms
Loss rate: 17.31%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 102.580 ms
Loss rate: 19.93%
-- Flow 3:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 102.459 ms
Loss rate: 15.70%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-20 11:48:49
End at: 2019-02-20 11:49:19
Local clock offset: -2.278 ms
Remote clock offset: -9.316 ms


# Below is generated by plot.py at 2019-02-20 12:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 24.151 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 24.218 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 24.109 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 23.963 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link