Pantheon Report

Generated at 2019-06-28 02:57:33 (UTC).

Data path: AWS Brazil 2 on `ens5` (*local*) →Colombia on `p4p1` (*remote*).

Repeated the test of 22 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 `gps.ntp.br` and have been applied to correct the timestamps in logs.
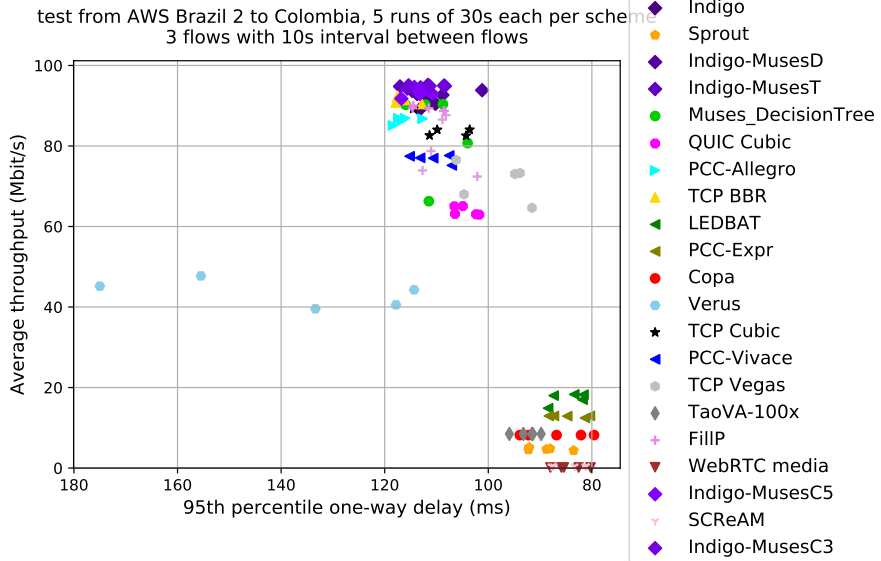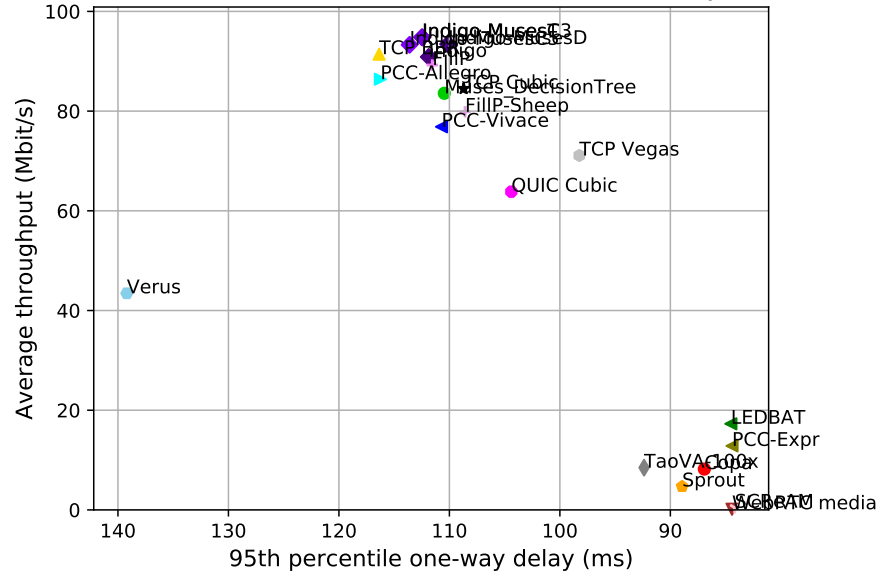
```
System info:
Linux 4.15.0-1039-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ c3953d08f32ec7ebbdede2d2f0cbdeed262571ef
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/muses_dtree @ 11c9498ecb1596b02ccd896791a02d03172af7ed
 M helpers/__init__.pyc
 M helpers/context.pyc
 M helpers/utils.pyc
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
```

```
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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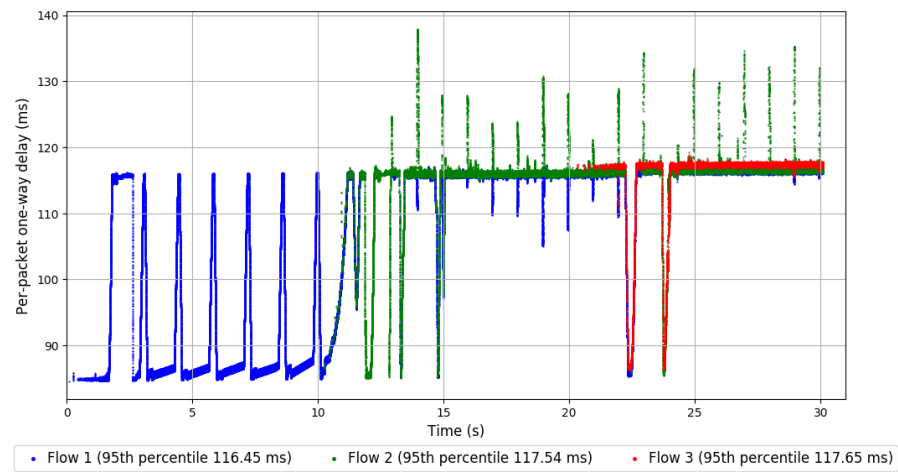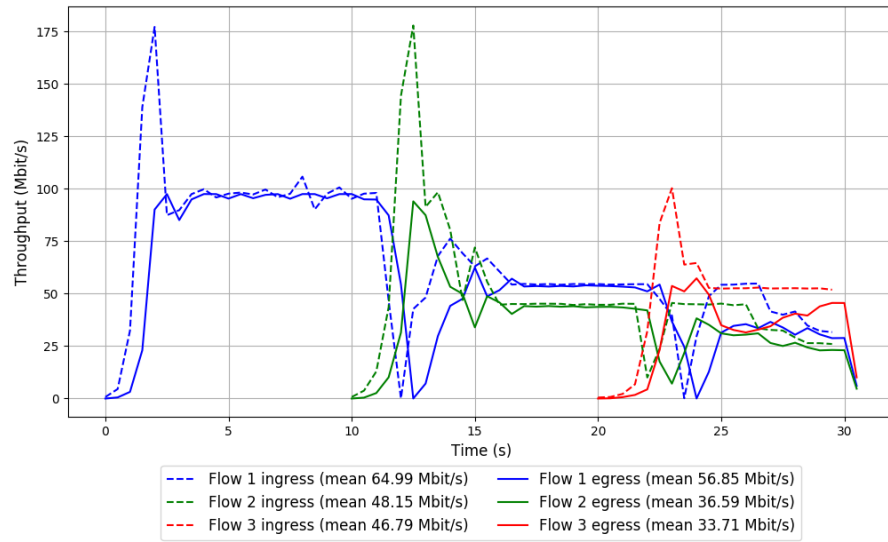3 flows with 10s interval between flows (mean of all runs by scheme)

test from AWS Brazil 2 to Colombia, 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	54.26	39.60	32.44	114.72	115.91	116.15	12.66	21.21	26.81
Copa	5	0.00	9.98	4.66	83.09	87.31	86.73	98.36	70.63	66.70
TCP Cubic	5	50.73	40.08	21.26	110.07	106.73	101.23	1.15	0.49	0.27
FillP	5	38.51	60.03	32.53	109.27	111.02	111.78	13.85	18.59	24.70
FillP-Sheep	5	22.84	70.88	29.72	106.81	108.34	108.47	6.22	7.41	15.99
Indigo	5	63.51	25.40	33.03	111.61	111.23	111.78	9.92	31.35	70.30
Indigo-MusesC3	5	51.56	49.45	38.68	110.90	111.96	113.14	0.95	1.91	4.20
Indigo-MusesC5	5	64.65	38.07	13.89	112.91	113.55	113.02	2.44	5.66	7.20
Indigo-MusesD	5	70.76	24.56	23.35	109.35	109.77	110.69	1.43	1.90	4.54
Indigo-MusesT	5	57.07	47.78	23.15	111.92	110.59	112.02	4.90	4.41	7.92
LEDBAT	5	11.16	7.32	3.82	85.51	83.96	83.41	0.01	0.00	0.00
Muses_DecisionTree	5	68.44	22.12	1.52	110.21	110.13	110.93	0.93	0.73	0.82
PCC-Allegro	5	79.17	7.31	7.21	116.22	116.45	115.66	2.61	3.91	5.86
PCC-Expr	5	9.22	3.58	3.75	84.19	85.69	85.72	46.29	41.26	34.93
QUIC Cubic	5	44.36	21.45	16.03	104.69	101.55	99.80	0.75	0.29	0.67
SCReAM	5	0.22	0.22	0.22	83.17	83.97	84.51	0.00	0.00	0.00
Sprout	5	2.58	2.34	1.76	88.29	88.82	88.17	0.00	0.00	0.00
TaoVA-100x	5	0.00	10.51	4.44	83.53	93.51	84.66	95.92	23.81	20.64
TCP Vegas	5	39.60	26.15	42.34	100.75	96.74	93.99	1.63	0.71	1.46
Verus	5	26.03	21.22	11.01	131.13	132.04	120.19	45.86	44.89	37.61
PCC-Vivace	5	65.81	13.04	7.18	110.46	111.29	111.47	0.30	0.72	0.60
WebRTC media	5	0.05	0.05	0.04	83.39	84.29	87.67	0.00	0.01	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-06-28 00:49:14
End at: 2019-06-28 00:49:44
Local clock offset: -4.929 ms
Remote clock offset: -572.806 ms


# Below is generated by plot.py at 2019-06-28 02:47:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.43 Mbit/s
95th percentile per-packet one-way delay: 117.477 ms
Loss rate: 17.85%
-- Flow 1:
Average throughput: 56.85 Mbit/s
95th percentile per-packet one-way delay: 116.452 ms
Loss rate: 12.44%
-- Flow 2:
Average throughput: 36.59 Mbit/s
95th percentile per-packet one-way delay: 117.540 ms
Loss rate: 23.90%
-- Flow 3:
Average throughput: 33.71 Mbit/s
95th percentile per-packet one-way delay: 117.650 ms
Loss rate: 27.96%
```

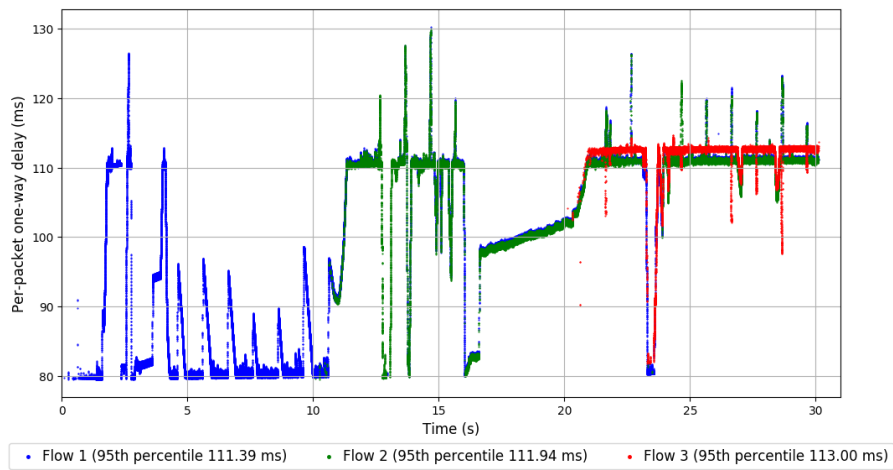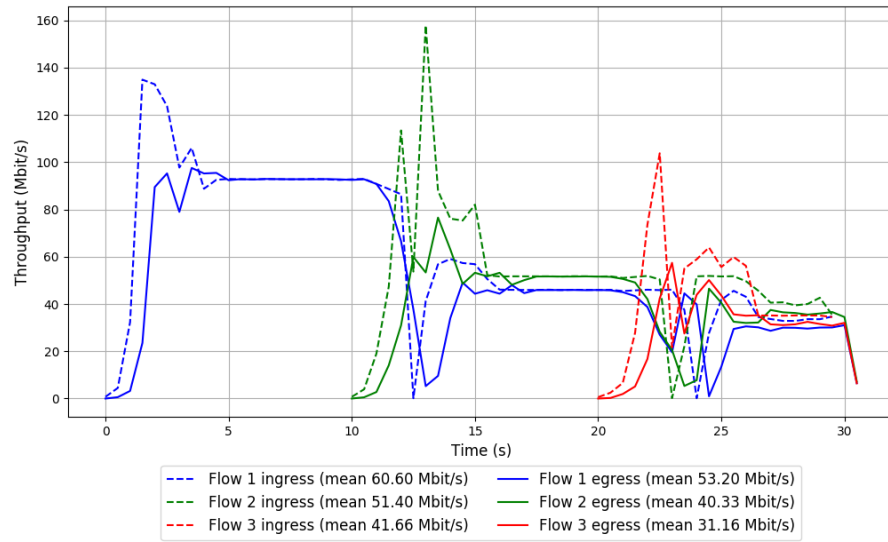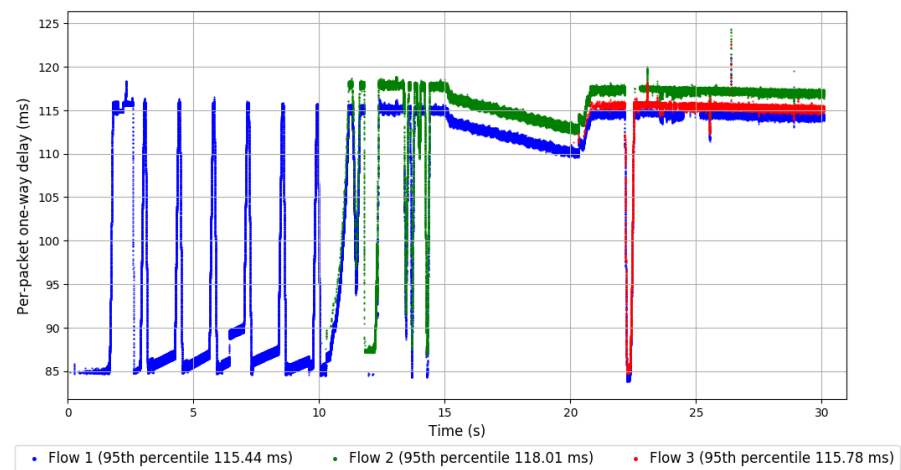Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 64.99 Mbit/s)   Flow 1 egress (mean 56.85 Mbit/s)
Flow 2 ingress (mean 48.15 Mbit/s)   Flow 2 egress (mean 36.59 Mbit/s)
Flow 3 ingress (mean 46.79 Mbit/s)   Flow 3 egress (mean 33.71 Mbit/s)

Flow 1 (95th percentile 116.45 ms)   Flow 2 (95th percentile 117.54 ms)   Flow 3 (95th percentile 117.65 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2019-06-28 01:17:12
End at: 2019-06-28 01:17:42
Local clock offset: -5.435 ms
Remote clock offset: -635.228 ms


# Below is generated by plot.py at 2019-06-28 02:47:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.44 Mbit/s
95th percentile per-packet one-way delay: 112.824 ms
Loss rate: 16.71%
-- Flow 1:
Average throughput: 53.20 Mbit/s
95th percentile per-packet one-way delay: 111.389 ms
Loss rate: 12.12%
-- Flow 2:
Average throughput: 40.33 Mbit/s
95th percentile per-packet one-way delay: 111.938 ms
Loss rate: 21.41%
-- Flow 3:
Average throughput: 31.16 Mbit/s
95th percentile per-packet one-way delay: 112.995 ms
Loss rate: 25.16%
```

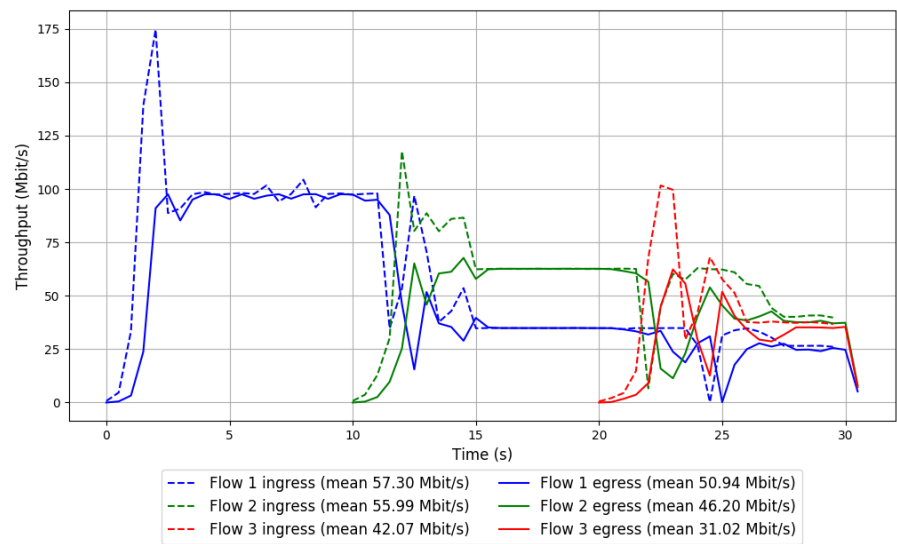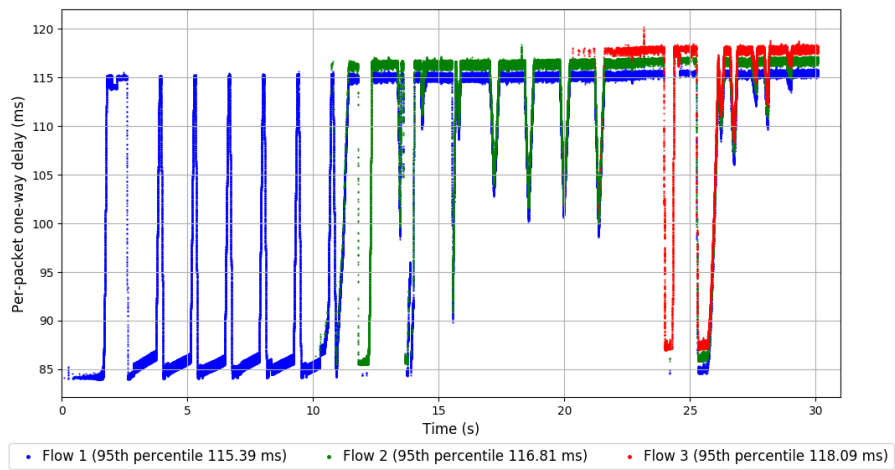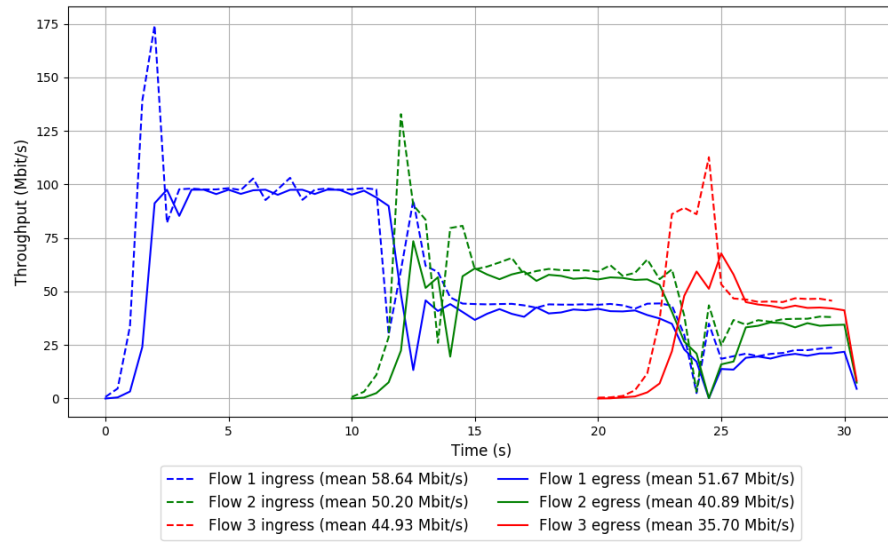Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 60.60 Mbit/s) --- Flow 1 egress (mean 53.20 Mbit/s)
Flow 2 ingress (mean 51.40 Mbit/s) --- Flow 2 egress (mean 40.33 Mbit/s)
Flow 3 ingress (mean 41.66 Mbit/s) --- Flow 3 egress (mean 31.16 Mbit/s)

Flow 1 (95th percentile 111.39 ms) Flow 2 (95th percentile 111.94 ms) Flow 3 (95th percentile 113.00 ms)

8

```
Run 3: Statistics of TCP BBR

Start at: 2019-06-28 01:45:19
End at: 2019-06-28 01:45:49
Local clock offset: -5.577 ms
Remote clock offset: -19.152 ms


# Below is generated by plot.py at 2019-06-28 02:47:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.04 Mbit/s
95th percentile per-packet one-way delay: 117.568 ms
Loss rate: 15.16%
-- Flow 1:
Average throughput: 50.94 Mbit/s
95th percentile per-packet one-way delay: 115.439 ms
Loss rate: 11.01%
-- Flow 2:
Average throughput: 46.20 Mbit/s
95th percentile per-packet one-way delay: 118.006 ms
Loss rate: 17.38%
-- Flow 3:
Average throughput: 31.02 Mbit/s
95th percentile per-packet one-way delay: 115.775 ms
Loss rate: 26.24%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 57.30 Mbit/s) --- Flow 1 egress (mean 50.94 Mbit/s)
Flow 2 ingress (mean 55.99 Mbit/s) --- Flow 2 egress (mean 46.20 Mbit/s)
Flow 3 ingress (mean 42.07 Mbit/s) --- Flow 3 egress (mean 31.02 Mbit/s)

Flow 1 (95th percentile 115.44 ms)　　Flow 2 (95th percentile 118.01 ms)　　Flow 3 (95th percentile 115.78 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-06-28 02:13:21
End at: 2019-06-28 02:13:51
Local clock offset: -5.801 ms
Remote clock offset: -40.349 ms


# Below is generated by plot.py at 2019-06-28 02:47:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.78 Mbit/s
95th percentile per-packet one-way delay: 117.864 ms
Loss rate: 15.09%
-- Flow 1:
Average throughput: 51.67 Mbit/s
95th percentile per-packet one-way delay: 115.390 ms
Loss rate: 11.80%
-- Flow 2:
Average throughput: 40.89 Mbit/s
95th percentile per-packet one-way delay: 116.809 ms
Loss rate: 18.42%
-- Flow 3:
Average throughput: 35.70 Mbit/s
95th percentile per-packet one-way delay: 118.091 ms
Loss rate: 20.52%
```
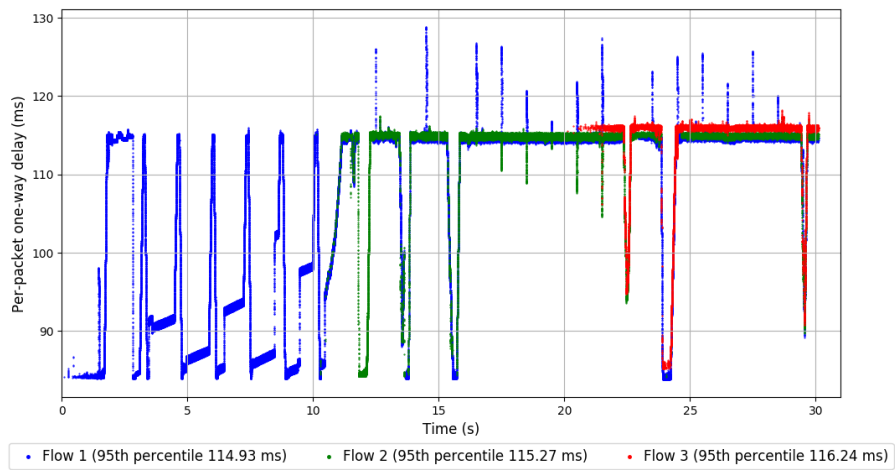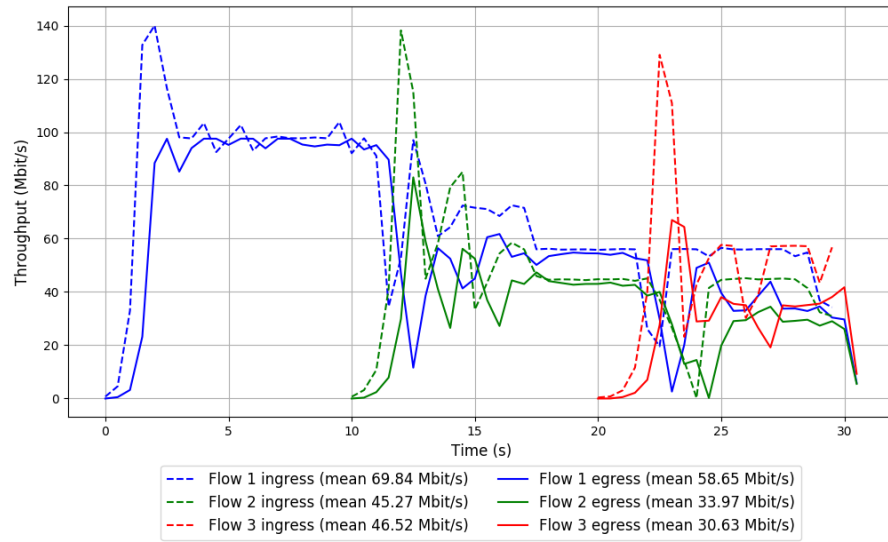
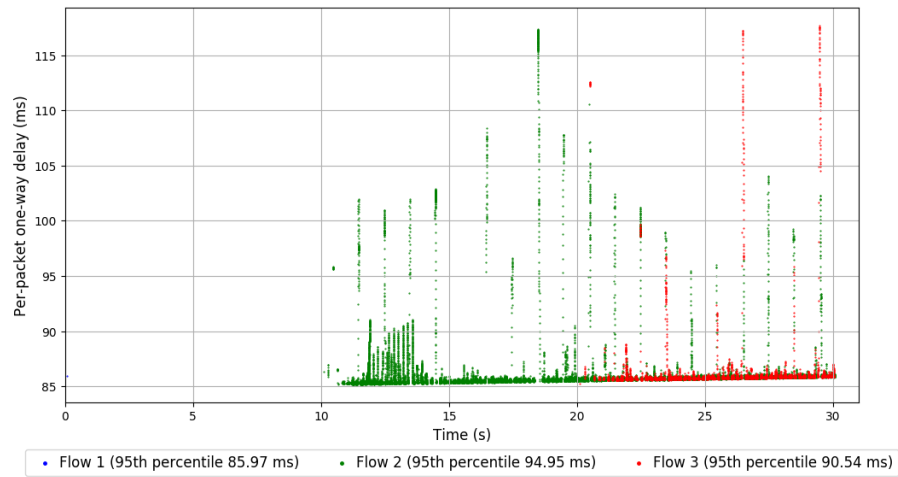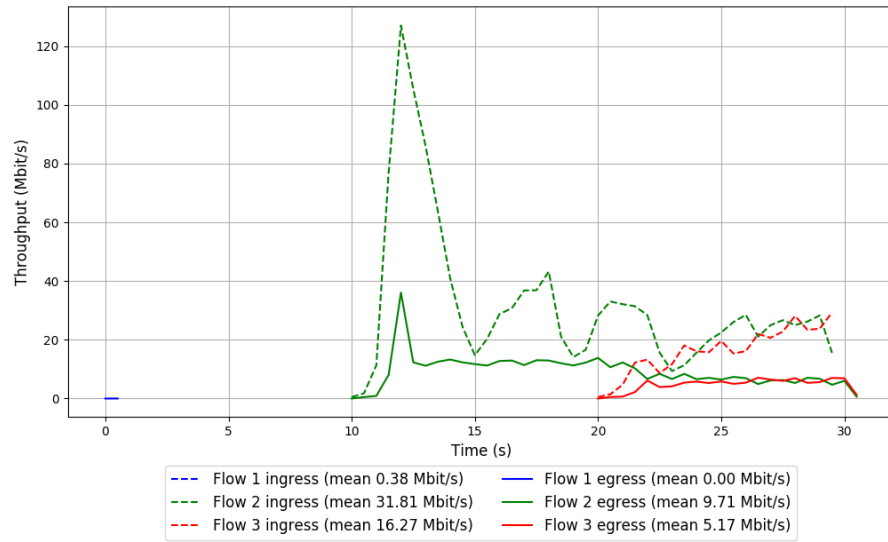Run 4: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 58.64 Mbit/s) —— Flow 1 egress (mean 51.67 Mbit/s)
- - - Flow 2 ingress (mean 50.20 Mbit/s) —— Flow 2 egress (mean 40.89 Mbit/s)
- - - Flow 3 ingress (mean 44.93 Mbit/s) —— Flow 3 egress (mean 35.70 Mbit/s)

• Flow 1 (95th percentile 115.39 ms) • Flow 2 (95th percentile 116.81 ms) • Flow 3 (95th percentile 118.09 ms)

12

```
Run 5: Statistics of TCP BBR

Start at: 2019-06-28 02:41:20
End at: 2019-06-28 02:41:50
Local clock offset: -6.401 ms
Remote clock offset: -8.86 ms


# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.42 Mbit/s
95th percentile per-packet one-way delay: 116.071 ms
Loss rate: 20.74%
-- Flow 1:
Average throughput: 58.65 Mbit/s
95th percentile per-packet one-way delay: 114.934 ms
Loss rate: 15.94%
-- Flow 2:
Average throughput: 33.97 Mbit/s
95th percentile per-packet one-way delay: 115.268 ms
Loss rate: 24.96%
-- Flow 3:
Average throughput: 30.63 Mbit/s
95th percentile per-packet one-way delay: 116.242 ms
Loss rate: 34.17%
```

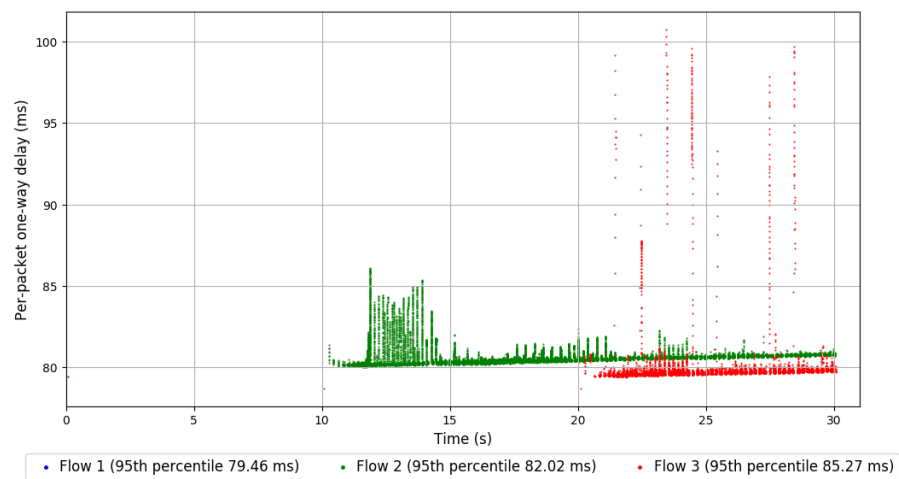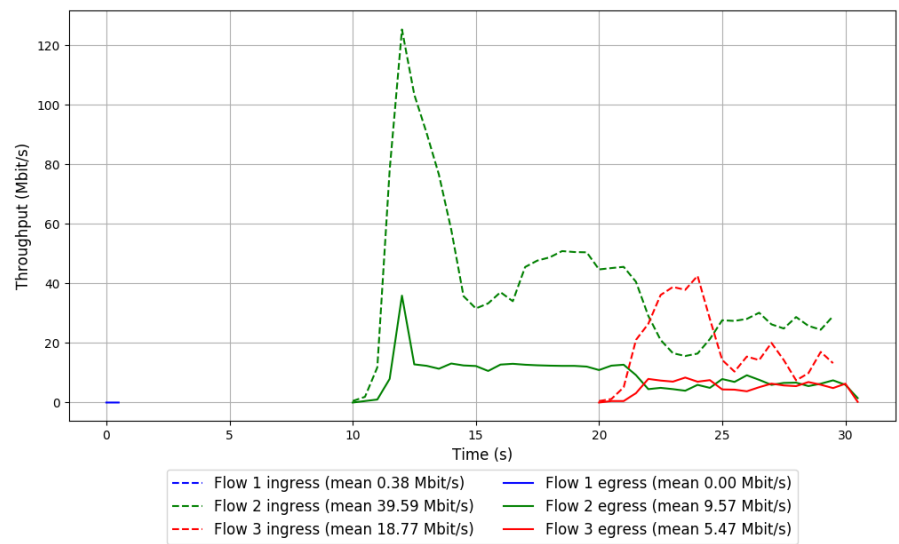Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-06-28 00:32:44
End at: 2019-06-28 00:33:14
Local clock offset: -5.408 ms
Remote clock offset: -537.49 ms

# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 93.909 ms
Loss rate: 69.21%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 85.972 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 9.71 Mbit/s
95th percentile per-packet one-way delay: 94.953 ms
Loss rate: 69.46%
-- Flow 3:
Average throughput: 5.17 Mbit/s
95th percentile per-packet one-way delay: 90.540 ms
Loss rate: 68.21%
```
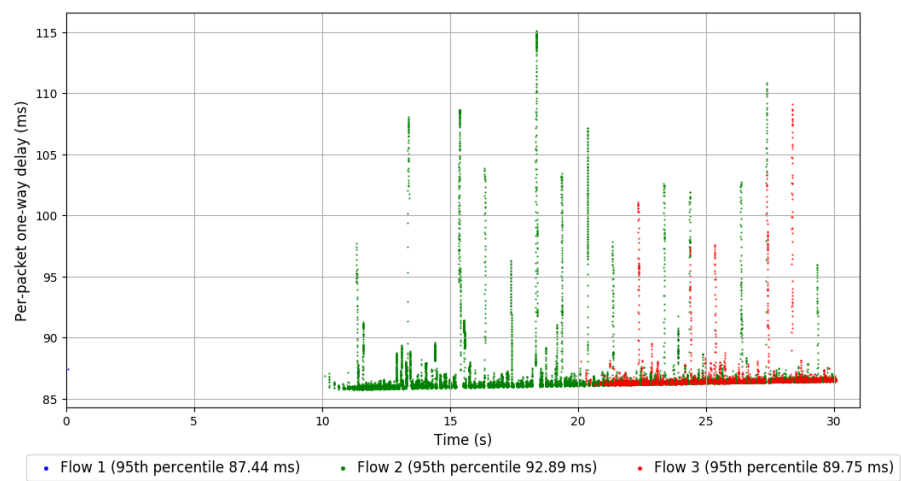
Run 1: Report of Copa — Data Link

- Flow 1 ingress (mean 0.38 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 31.81 Mbit/s)
- Flow 2 egress (mean 9.71 Mbit/s)
- Flow 3 ingress (mean 16.27 Mbit/s)
- Flow 3 egress (mean 5.17 Mbit/s)

- Flow 1 (95th percentile 85.97 ms)
- Flow 2 (95th percentile 94.95 ms)
- Flow 3 (95th percentile 90.54 ms)

16

```
Run 2: Statistics of Copa

Start at: 2019-06-28 01:00:42
End at: 2019-06-28 01:01:12
Local clock offset: -5.198 ms
Remote clock offset: -601.77 ms


# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 82.093 ms
Loss rate: 74.88%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 79.458 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 9.57 Mbit/s
95th percentile per-packet one-way delay: 82.015 ms
Loss rate: 75.83%
-- Flow 3:
Average throughput: 5.47 Mbit/s
95th percentile per-packet one-way delay: 85.269 ms
Loss rate: 70.86%
```
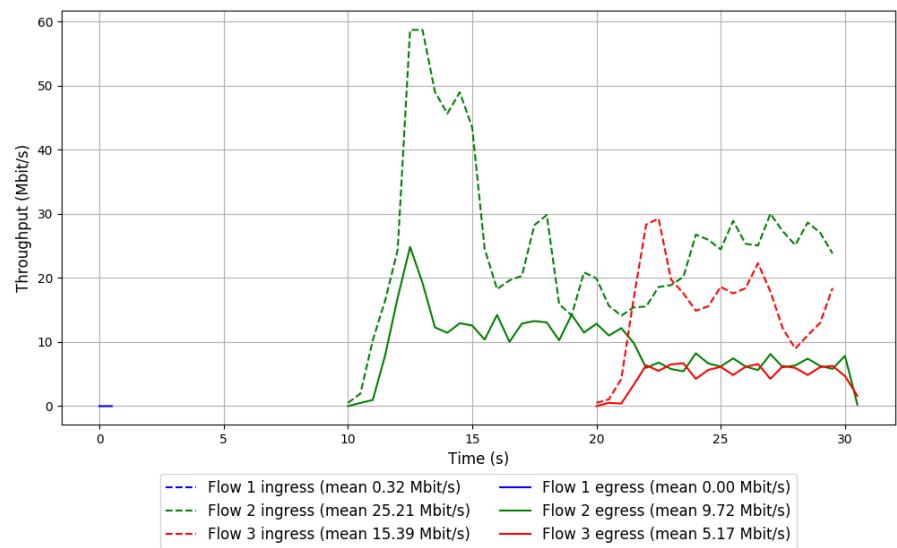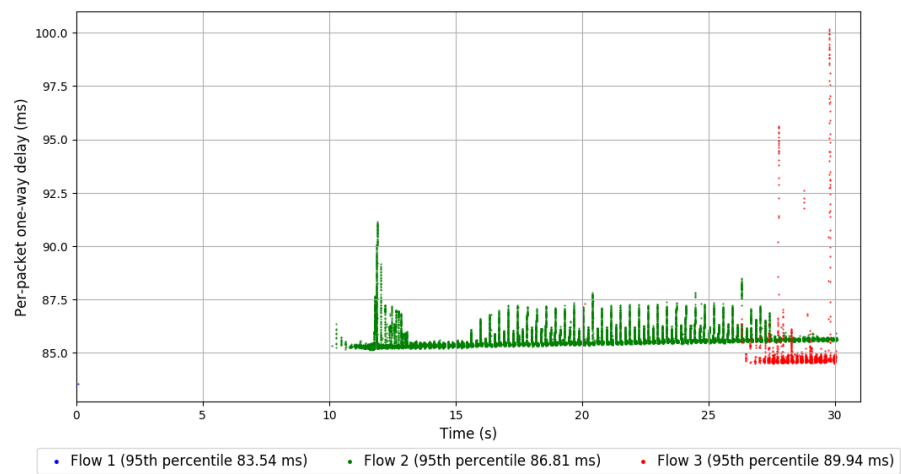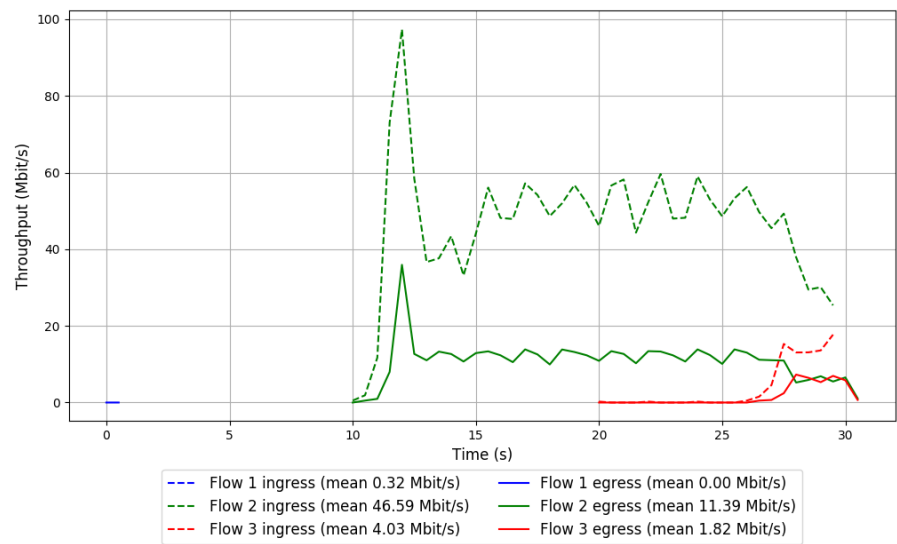
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.38 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 39.59 Mbit/s) --- Flow 2 egress (mean 9.57 Mbit/s)
Flow 3 ingress (mean 18.77 Mbit/s) --- Flow 3 egress (mean 5.47 Mbit/s)

Flow 1 (95th percentile 79.46 ms)   Flow 2 (95th percentile 82.02 ms)   Flow 3 (95th percentile 85.27 ms)

18

```
Run 3: Statistics of Copa

Start at: 2019-06-28 01:28:39
End at: 2019-06-28 01:29:09
Local clock offset: -6.364 ms
Remote clock offset: 2.631 ms


# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 92.241 ms
Loss rate: 62.61%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 87.439 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.72 Mbit/s
95th percentile per-packet one-way delay: 92.893 ms
Loss rate: 61.46%
-- Flow 3:
Average throughput: 5.17 Mbit/s
95th percentile per-packet one-way delay: 89.747 ms
Loss rate: 66.40%
```
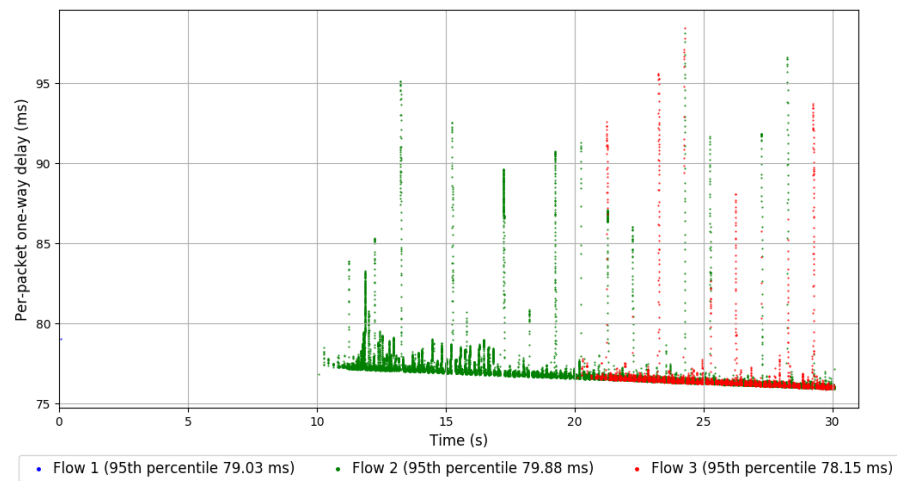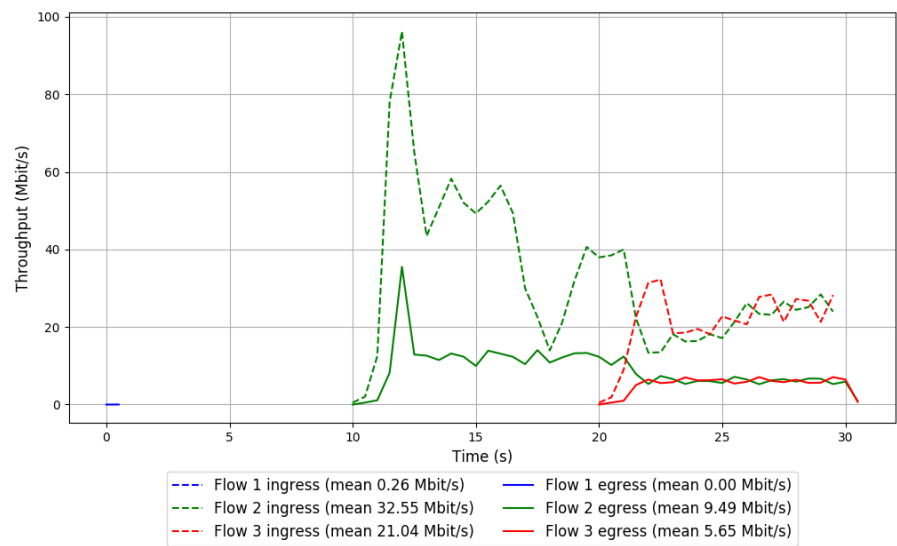
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 0.32 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 25.21 Mbit/s) --- Flow 2 egress (mean 9.72 Mbit/s)
Flow 3 ingress (mean 15.39 Mbit/s) --- Flow 3 egress (mean 5.17 Mbit/s)

Flow 1 (95th percentile 87.44 ms)   Flow 2 (95th percentile 92.89 ms)   Flow 3 (95th percentile 89.75 ms)

```
Run 4: Statistics of Copa

Start at: 2019-06-28 01:56:49
End at: 2019-06-28 01:57:19
Local clock offset: -5.945 ms
Remote clock offset: -17.712 ms


# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 86.815 ms
Loss rate: 74.71%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 83.538 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 11.39 Mbit/s
95th percentile per-packet one-way delay: 86.808 ms
Loss rate: 75.56%
-- Flow 3:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 89.938 ms
Loss rate: 54.91%
```
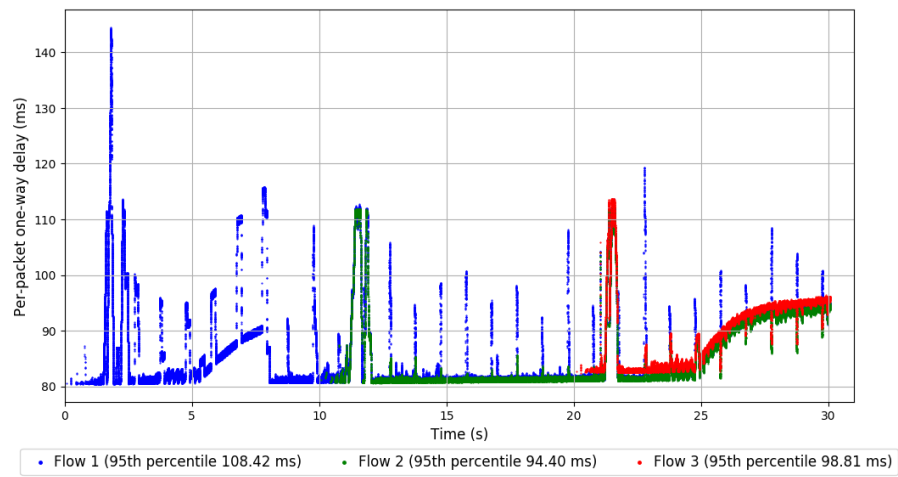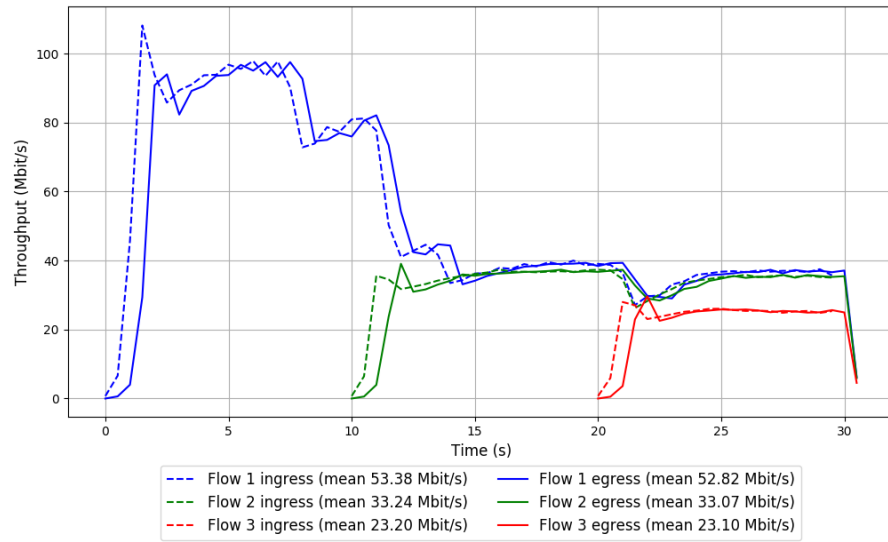
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 0.32 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 46.59 Mbit/s)   Flow 2 egress (mean 11.39 Mbit/s)
Flow 3 ingress (mean 4.03 Mbit/s)   Flow 3 egress (mean 1.82 Mbit/s)

Flow 1 (95th percentile 83.54 ms)   Flow 2 (95th percentile 86.81 ms)   Flow 3 (95th percentile 89.94 ms)

```
Run 5: Statistics of Copa

Start at: 2019-06-28 02:24:48
End at: 2019-06-28 02:25:18
Local clock offset: -5.723 ms
Remote clock offset: -42.117 ms


# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 79.578 ms
Loss rate: 71.41%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 79.034 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 79.877 ms
Loss rate: 70.86%
-- Flow 3:
Average throughput: 5.65 Mbit/s
95th percentile per-packet one-way delay: 78.154 ms
Loss rate: 73.14%
```
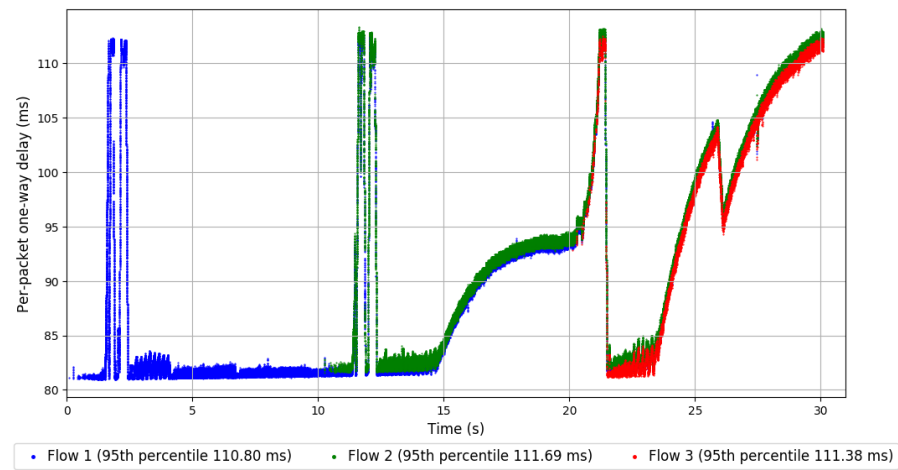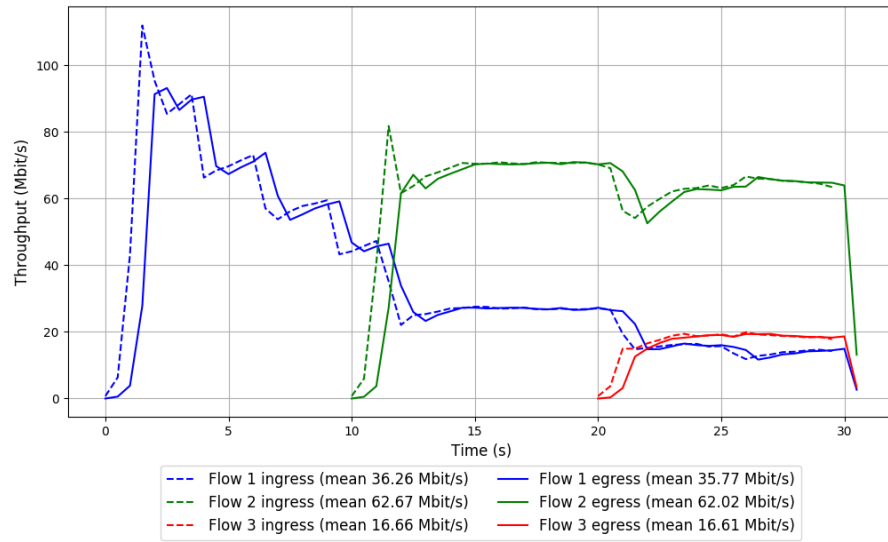
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 0.26 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 32.55 Mbit/s)   Flow 2 egress (mean 9.49 Mbit/s)
Flow 3 ingress (mean 21.04 Mbit/s)   Flow 3 egress (mean 5.65 Mbit/s)

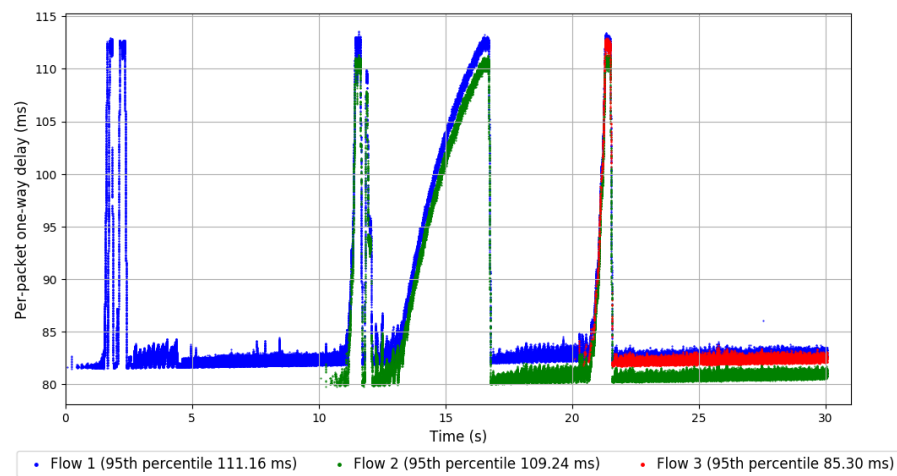Flow 1 (95th percentile 79.03 ms)   Flow 2 (95th percentile 79.88 ms)   Flow 3 (95th percentile 78.15 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2019-06-28 00:33:58
End at: 2019-06-28 00:34:28
Local clock offset: -5.98 ms
Remote clock offset: -545.468 ms


# Below is generated by plot.py at 2019-06-28 02:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.56 Mbit/s
95th percentile per-packet one-way delay: 104.282 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 52.82 Mbit/s
95th percentile per-packet one-way delay: 108.425 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 33.07 Mbit/s
95th percentile per-packet one-way delay: 94.402 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 23.10 Mbit/s
95th percentile per-packet one-way delay: 98.811 ms
Loss rate: 0.30%
```
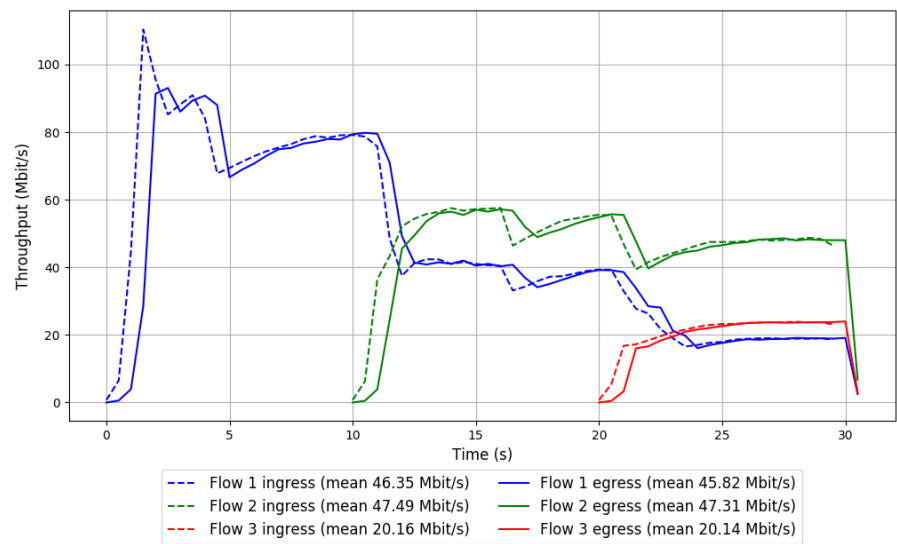
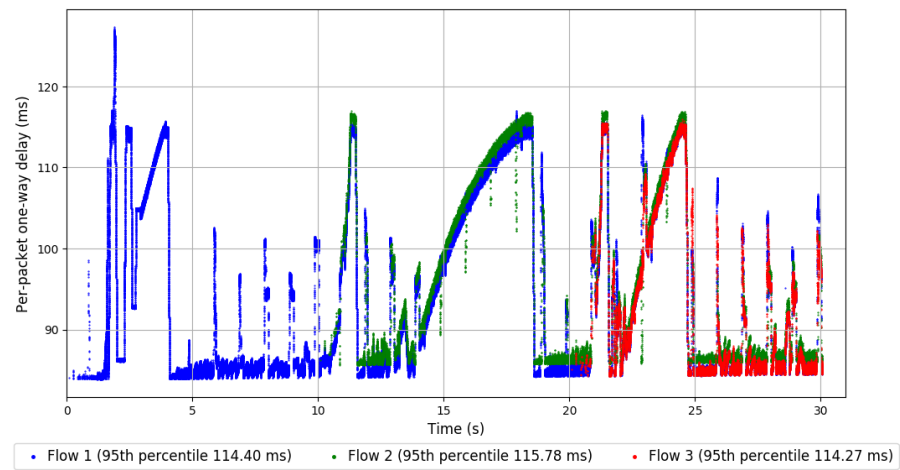Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-06-28 01:01:56
End at: 2019-06-28 01:02:26
Local clock offset: -5.168 ms
Remote clock offset: -603.504 ms


# Below is generated by plot.py at 2019-06-28 02:47:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.63 Mbit/s
95th percentile per-packet one-way delay: 111.341 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 35.77 Mbit/s
95th percentile per-packet one-way delay: 110.795 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 62.02 Mbit/s
95th percentile per-packet one-way delay: 111.691 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 16.61 Mbit/s
95th percentile per-packet one-way delay: 111.381 ms
Loss rate: 0.12%
```
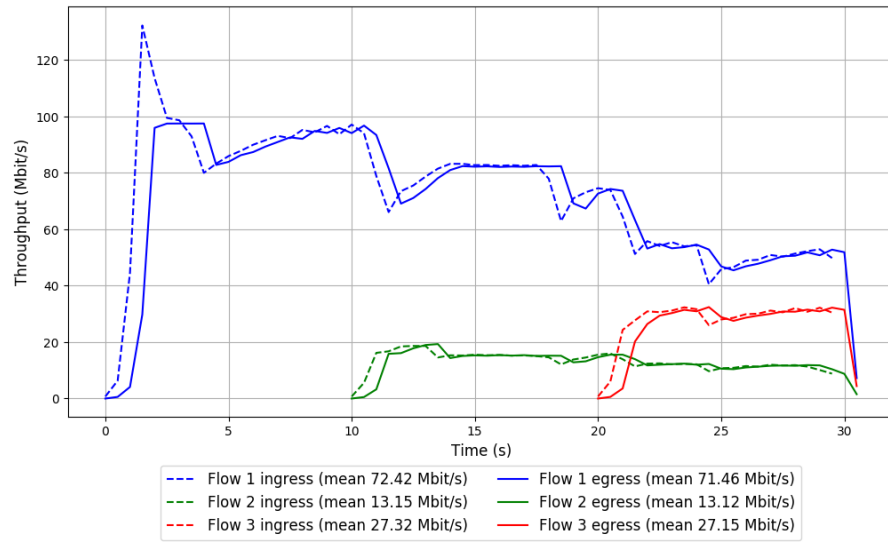
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-06-28 01:29:53
End at: 2019-06-28 01:30:23
Local clock offset: -6.103 ms
Remote clock offset: -4.997 ms


# Below is generated by plot.py at 2019-06-28 02:47:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.03 Mbit/s
95th percentile per-packet one-way delay: 109.854 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 45.82 Mbit/s
95th percentile per-packet one-way delay: 111.162 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 47.31 Mbit/s
95th percentile per-packet one-way delay: 109.243 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 20.14 Mbit/s
95th percentile per-packet one-way delay: 85.298 ms
Loss rate: 0.13%
```
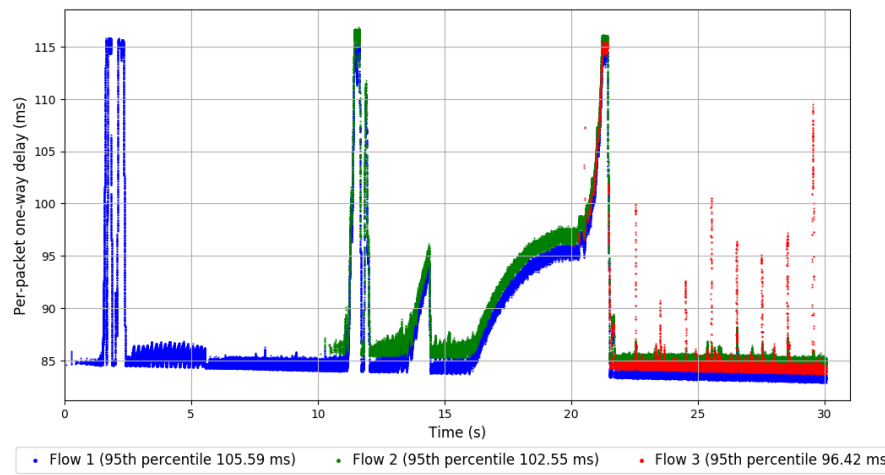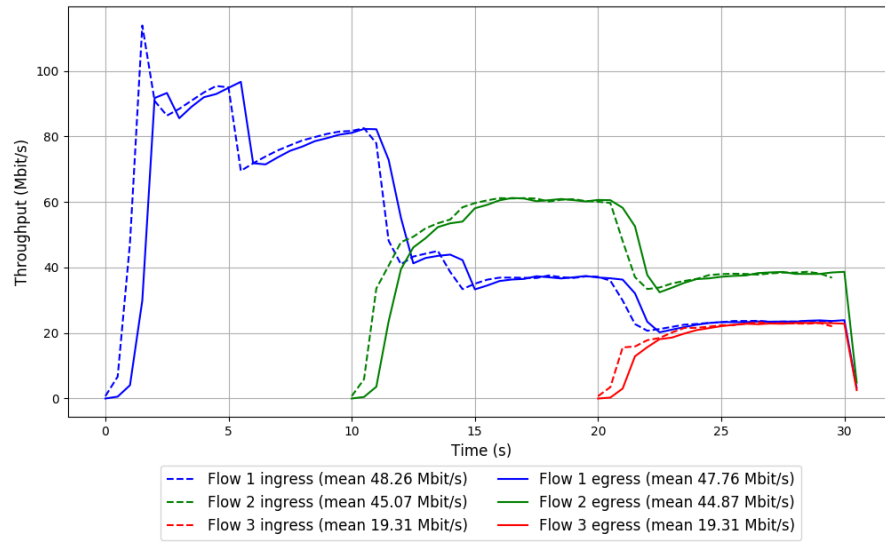
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-06-28 01:58:03
End at: 2019-06-28 01:58:33
Local clock offset: -5.345 ms
Remote clock offset: -18.152 ms


# Below is generated by plot.py at 2019-06-28 02:48:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.24 Mbit/s
95th percentile per-packet one-way delay: 114.466 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 71.46 Mbit/s
95th percentile per-packet one-way delay: 114.397 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 13.12 Mbit/s
95th percentile per-packet one-way delay: 115.782 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 27.15 Mbit/s
95th percentile per-packet one-way delay: 114.269 ms
Loss rate: 0.63%
```
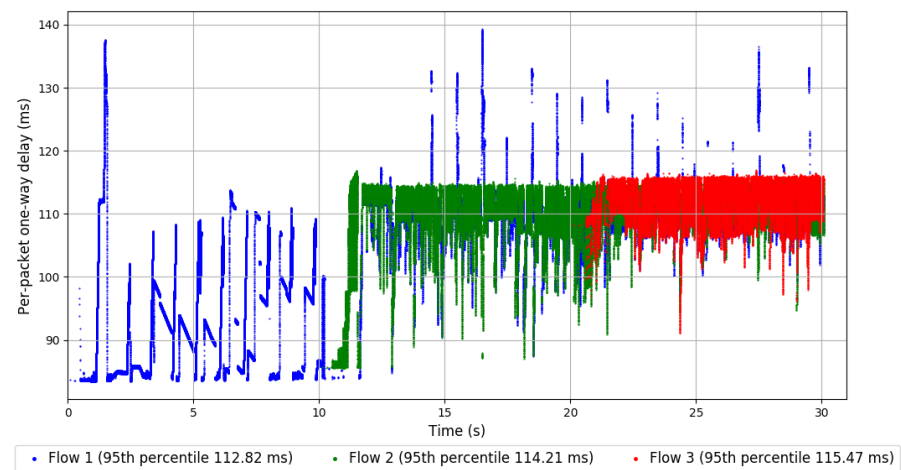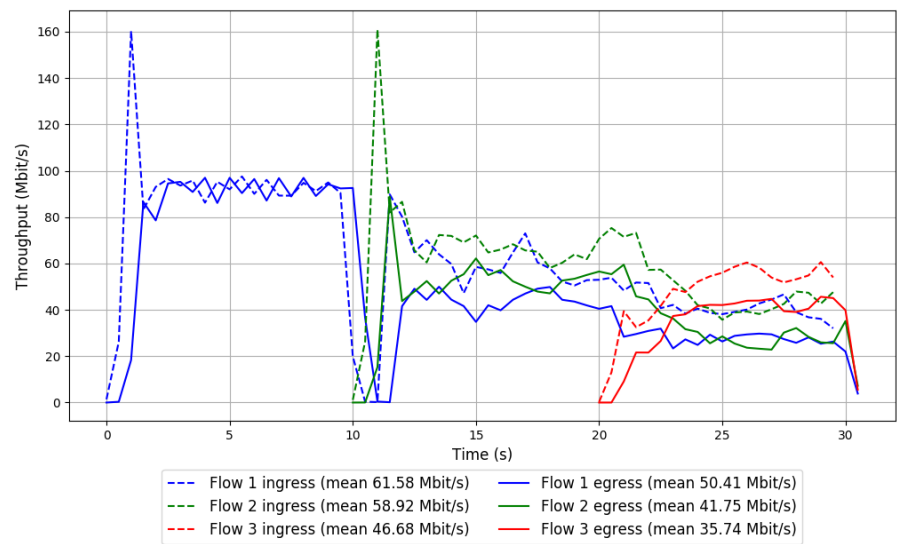
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 72.42 Mbit/s) Flow 1 egress (mean 71.46 Mbit/s)
Flow 2 ingress (mean 13.15 Mbit/s) Flow 2 egress (mean 13.12 Mbit/s)
Flow 3 ingress (mean 27.32 Mbit/s) Flow 3 egress (mean 27.15 Mbit/s)

Flow 1 (95th percentile 114.40 ms)   Flow 2 (95th percentile 115.78 ms)   Flow 3 (95th percentile 114.27 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2019-06-28 02:26:02
End at: 2019-06-28 02:26:32
Local clock offset: -6.596 ms
Remote clock offset: -31.708 ms


# Below is generated by plot.py at 2019-06-28 02:48:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.05 Mbit/s
95th percentile per-packet one-way delay: 103.594 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 47.76 Mbit/s
95th percentile per-packet one-way delay: 105.594 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 44.87 Mbit/s
95th percentile per-packet one-way delay: 102.553 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 19.31 Mbit/s
95th percentile per-packet one-way delay: 96.415 ms
Loss rate: 0.16%
```

Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 48.26 Mbit/s) —— Flow 1 egress (mean 47.76 Mbit/s)
- - - Flow 2 ingress (mean 45.07 Mbit/s) —— Flow 2 egress (mean 44.87 Mbit/s)
- - - Flow 3 ingress (mean 19.31 Mbit/s) —— Flow 3 egress (mean 19.31 Mbit/s)

• Flow 1 (95th percentile 105.59 ms) • Flow 2 (95th percentile 102.55 ms) • Flow 3 (95th percentile 96.42 ms)
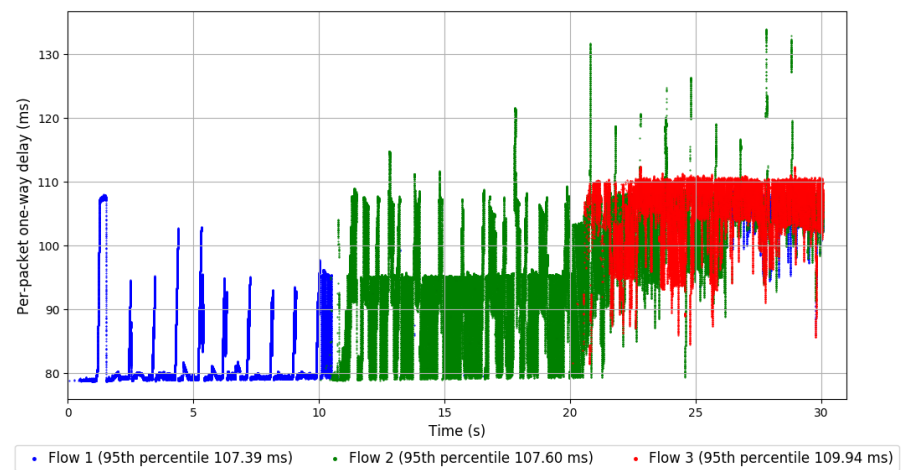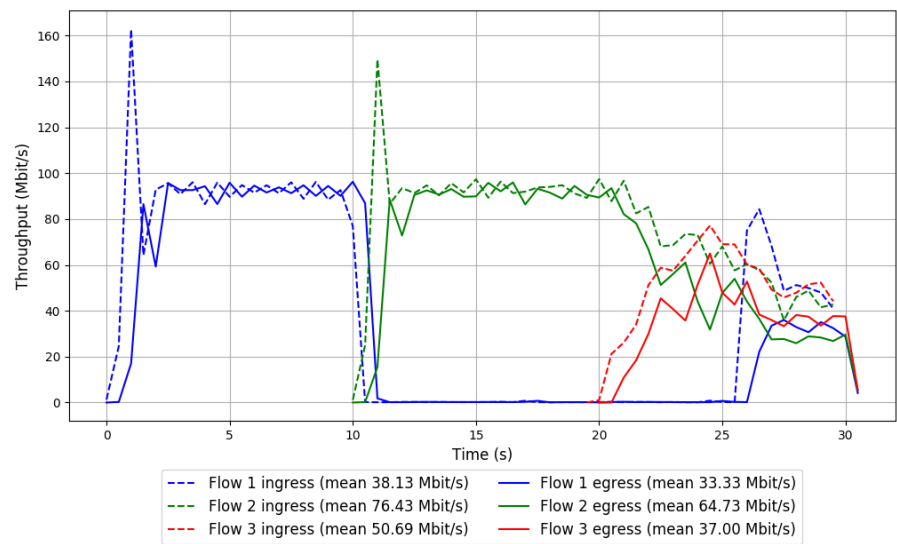
```
Run 1: Statistics of FillP

Start at: 2019-06-28 00:26:18
End at: 2019-06-28 00:26:48
Local clock offset: -6.086 ms
Remote clock offset: -525.147 ms


# Below is generated by plot.py at 2019-06-28 02:48:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.04 Mbit/s
95th percentile per-packet one-way delay: 114.495 ms
Loss rate: 22.48%
-- Flow 1:
Average throughput: 50.41 Mbit/s
95th percentile per-packet one-way delay: 112.817 ms
Loss rate: 18.07%
-- Flow 2:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 114.211 ms
Loss rate: 29.05%
-- Flow 3:
Average throughput: 35.74 Mbit/s
95th percentile per-packet one-way delay: 115.469 ms
Loss rate: 23.38%
```
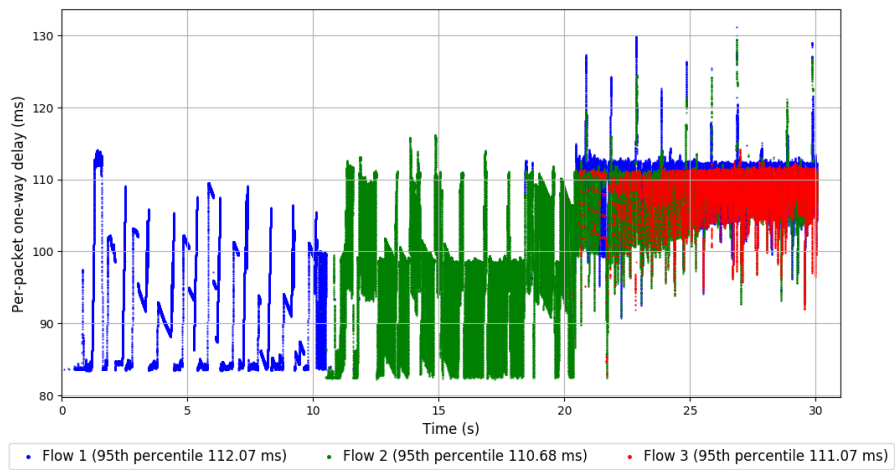
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 61.58 Mbit/s) — Flow 1 egress (mean 50.41 Mbit/s)
Flow 2 ingress (mean 58.92 Mbit/s) — Flow 2 egress (mean 41.75 Mbit/s)
Flow 3 ingress (mean 46.68 Mbit/s) — Flow 3 egress (mean 35.74 Mbit/s)

• Flow 1 (95th percentile 112.82 ms)   • Flow 2 (95th percentile 114.21 ms)   • Flow 3 (95th percentile 115.47 ms)

```
Run 2: Statistics of FillP

Start at: 2019-06-28 00:54:16
End at: 2019-06-28 00:54:46
Local clock offset: -5.103 ms
Remote clock offset: -587.491 ms


# Below is generated by plot.py at 2019-06-28 02:48:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.68 Mbit/s
95th percentile per-packet one-way delay: 108.624 ms
Loss rate: 15.65%
-- Flow 1:
Average throughput: 29.25 Mbit/s
95th percentile per-packet one-way delay: 99.523 ms
Loss rate: 5.13%
-- Flow 2:
Average throughput: 64.61 Mbit/s
95th percentile per-packet one-way delay: 107.866 ms
Loss rate: 18.24%
-- Flow 3:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 109.629 ms
Loss rate: 24.23%
```
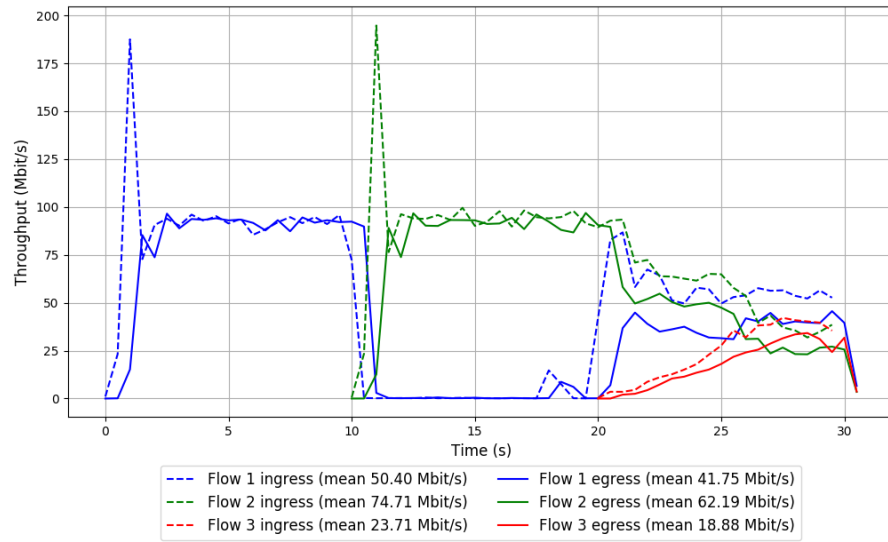
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-06-28 01:22:14
End at: 2019-06-28 01:22:44
Local clock offset: -4.984 ms
Remote clock offset: -645.488 ms


# Below is generated by plot.py at 2019-06-28 02:48:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.77 Mbit/s
95th percentile per-packet one-way delay: 108.491 ms
Loss rate: 16.09%
-- Flow 1:
Average throughput: 33.33 Mbit/s
95th percentile per-packet one-way delay: 107.389 ms
Loss rate: 12.53%
-- Flow 2:
Average throughput: 64.73 Mbit/s
95th percentile per-packet one-way delay: 107.600 ms
Loss rate: 15.22%
-- Flow 3:
Average throughput: 37.00 Mbit/s
95th percentile per-packet one-way delay: 109.936 ms
Loss rate: 26.81%
```
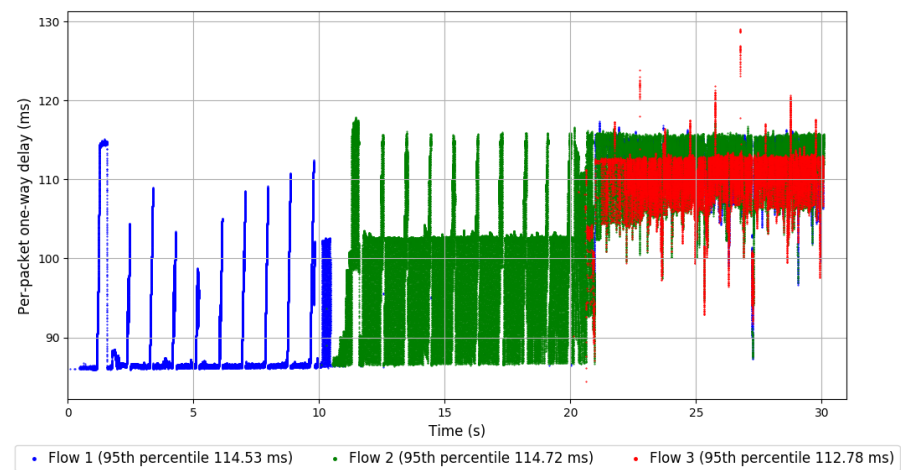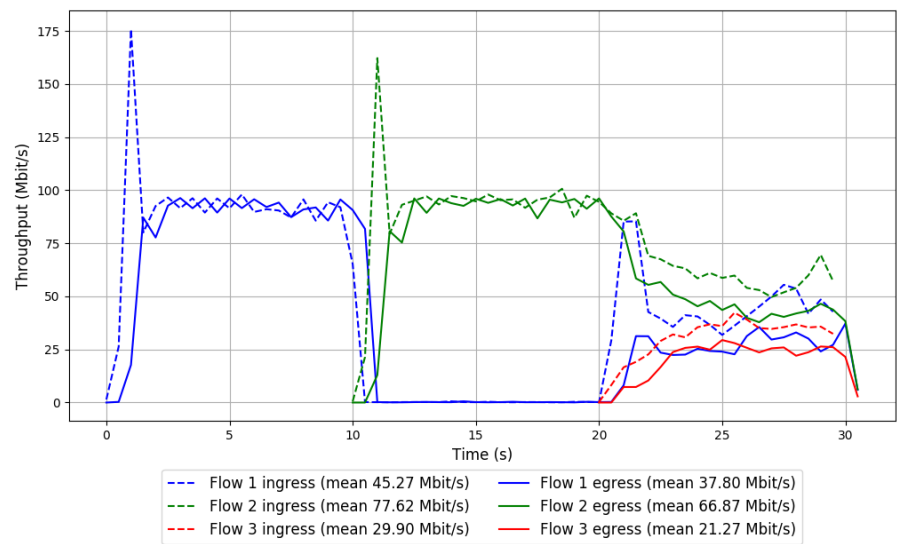
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 38.13 Mbit/s) --- Flow 1 egress (mean 33.33 Mbit/s)
Flow 2 ingress (mean 76.43 Mbit/s) --- Flow 2 egress (mean 64.73 Mbit/s)
Flow 3 ingress (mean 50.69 Mbit/s) --- Flow 3 egress (mean 37.00 Mbit/s)

Flow 1 (95th percentile 107.39 ms) Flow 2 (95th percentile 107.60 ms) Flow 3 (95th percentile 109.94 ms)

40

```
Run 4: Statistics of FillP

Start at: 2019-06-28 01:50:23
End at: 2019-06-28 01:50:53
Local clock offset: -5.274 ms
Remote clock offset: -13.534 ms

# Below is generated by plot.py at 2019-06-28 02:48:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.39 Mbit/s
95th percentile per-packet one-way delay: 111.512 ms
Loss rate: 17.16%
-- Flow 1:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 112.068 ms
Loss rate: 17.08%
-- Flow 2:
Average throughput: 62.19 Mbit/s
95th percentile per-packet one-way delay: 110.684 ms
Loss rate: 16.73%
-- Flow 3:
Average throughput: 18.88 Mbit/s
95th percentile per-packet one-way delay: 111.074 ms
Loss rate: 20.37%
```
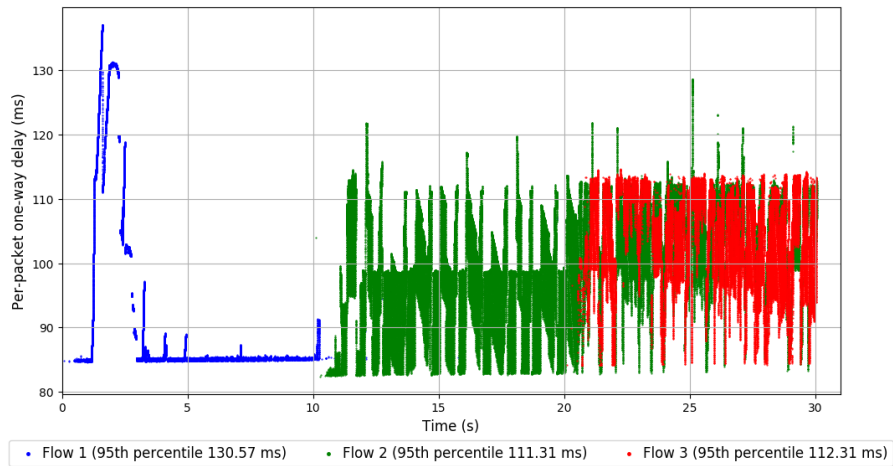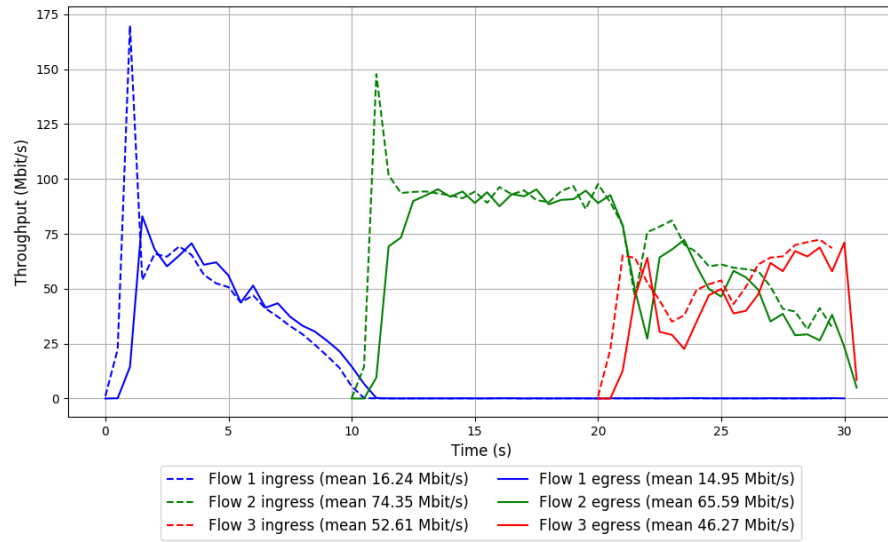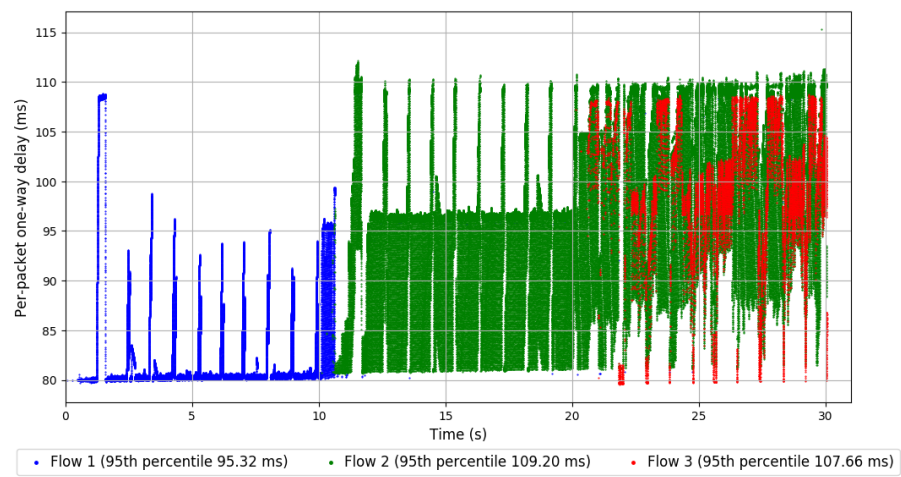
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 50.40 Mbit/s) ——— Flow 1 egress (mean 41.75 Mbit/s)
Flow 2 ingress (mean 74.71 Mbit/s) ——— Flow 2 egress (mean 62.19 Mbit/s)
Flow 3 ingress (mean 23.71 Mbit/s) ——— Flow 3 egress (mean 18.88 Mbit/s)

• Flow 1 (95th percentile 112.07 ms)   • Flow 2 (95th percentile 110.68 ms)   • Flow 3 (95th percentile 111.07 ms)

```
Run 5: Statistics of FillP

Start at: 2019-06-28 02:18:23
End at: 2019-06-28 02:18:53
Local clock offset: -5.727 ms
Remote clock offset: -47.692 ms


# Below is generated by plot.py at 2019-06-28 02:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.39 Mbit/s
95th percentile per-packet one-way delay: 114.629 ms
Loss rate: 16.27%
-- Flow 1:
Average throughput: 37.80 Mbit/s
95th percentile per-packet one-way delay: 114.529 ms
Loss rate: 16.44%
-- Flow 2:
Average throughput: 66.87 Mbit/s
95th percentile per-packet one-way delay: 114.720 ms
Loss rate: 13.73%
-- Flow 3:
Average throughput: 21.27 Mbit/s
95th percentile per-packet one-way delay: 112.785 ms
Loss rate: 28.73%
```
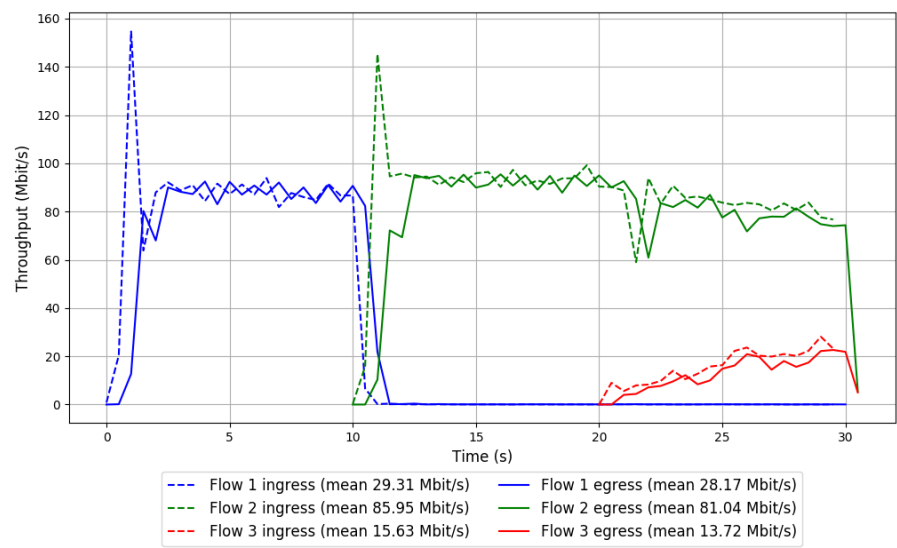
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 45.27 Mbit/s) — — —   Flow 1 egress (mean 37.80 Mbit/s) ———
Flow 2 ingress (mean 77.62 Mbit/s) — — —   Flow 2 egress (mean 66.87 Mbit/s) ———
Flow 3 ingress (mean 29.90 Mbit/s) — — —   Flow 3 egress (mean 21.27 Mbit/s) ———

• Flow 1 (95th percentile 114.53 ms)   • Flow 2 (95th percentile 114.72 ms)   • Flow 3 (95th percentile 112.78 ms)

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-06-28 00:31:28
End at: 2019-06-28 00:31:58
Local clock offset: -6.015 ms
Remote clock offset: -537.197 ms


# Below is generated by plot.py at 2019-06-28 02:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.92 Mbit/s
95th percentile per-packet one-way delay: 112.685 ms
Loss rate: 11.01%
-- Flow 1:
Average throughput: 14.95 Mbit/s
95th percentile per-packet one-way delay: 130.569 ms
Loss rate: 7.86%
-- Flow 2:
Average throughput: 65.59 Mbit/s
95th percentile per-packet one-way delay: 111.315 ms
Loss rate: 11.77%
-- Flow 3:
Average throughput: 46.27 Mbit/s
95th percentile per-packet one-way delay: 112.305 ms
Loss rate: 11.81%
```
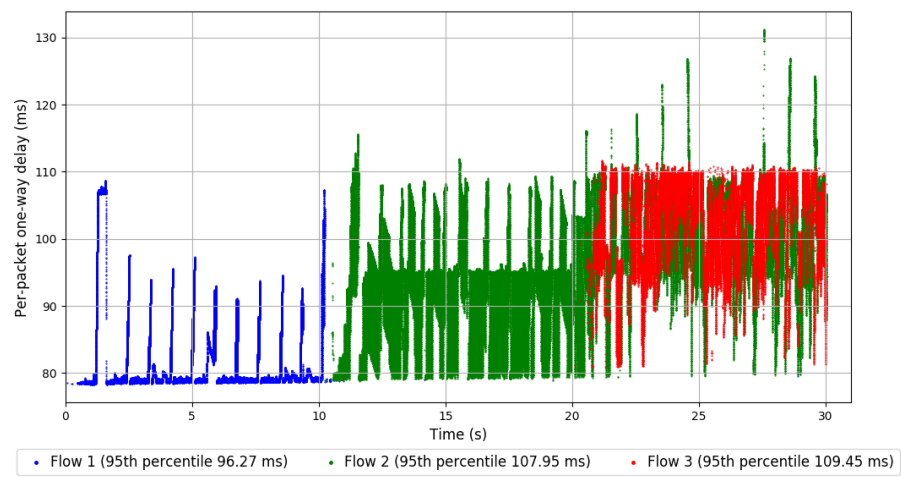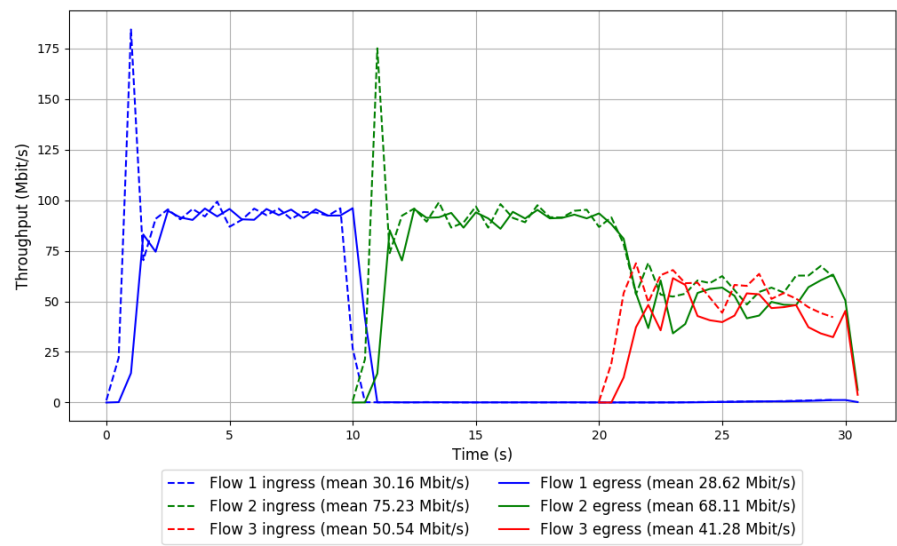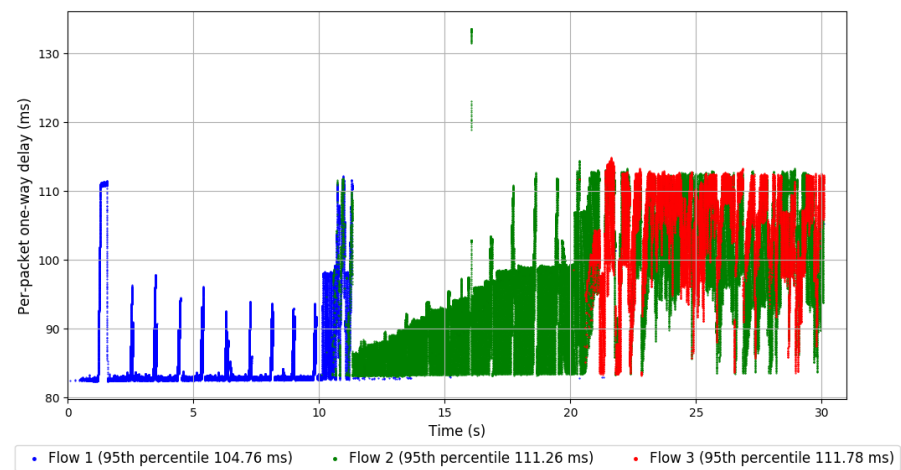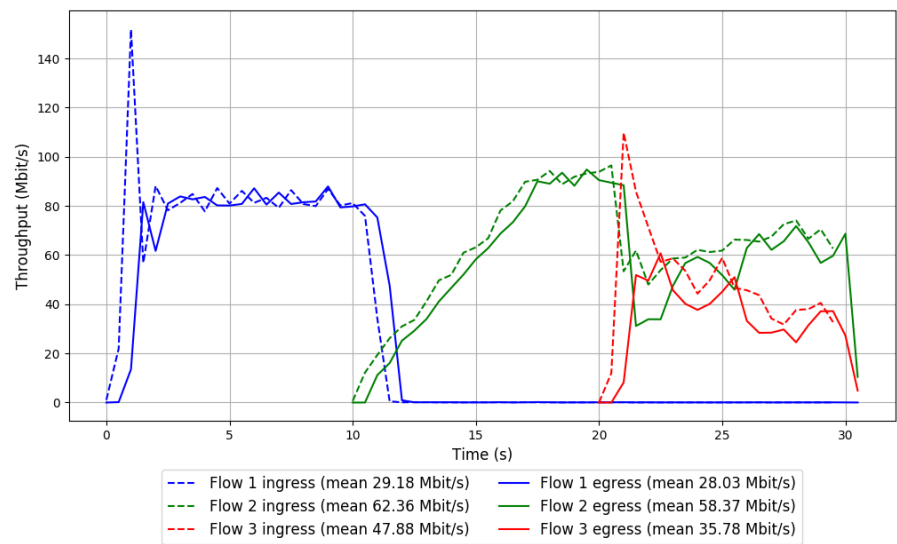
Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 16.24 Mbit/s) --- Flow 1 egress (mean 14.95 Mbit/s)
Flow 2 ingress (mean 74.35 Mbit/s) --- Flow 2 egress (mean 65.59 Mbit/s)
Flow 3 ingress (mean 52.61 Mbit/s) --- Flow 3 egress (mean 46.27 Mbit/s)

Flow 1 (95th percentile 130.57 ms) • Flow 2 (95th percentile 111.31 ms) • Flow 3 (95th percentile 112.31 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-06-28 00:59:25
End at: 2019-06-28 00:59:55
Local clock offset: -5.711 ms
Remote clock offset: -599.34 ms


# Below is generated by plot.py at 2019-06-28 02:49:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.55 Mbit/s
95th percentile per-packet one-way delay: 108.874 ms
Loss rate: 5.46%
-- Flow 1:
Average throughput: 28.17 Mbit/s
95th percentile per-packet one-way delay: 95.324 ms
Loss rate: 3.81%
-- Flow 2:
Average throughput: 81.04 Mbit/s
95th percentile per-packet one-way delay: 109.202 ms
Loss rate: 5.67%
-- Flow 3:
Average throughput: 13.72 Mbit/s
95th percentile per-packet one-way delay: 107.661 ms
Loss rate: 12.38%
```
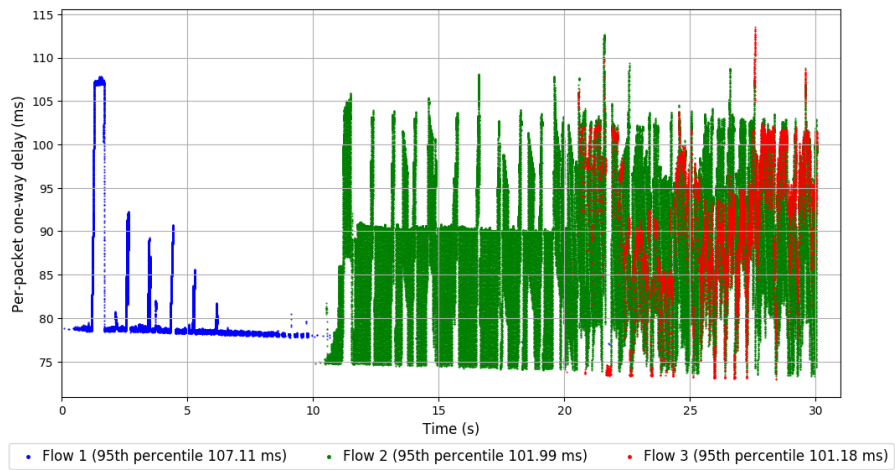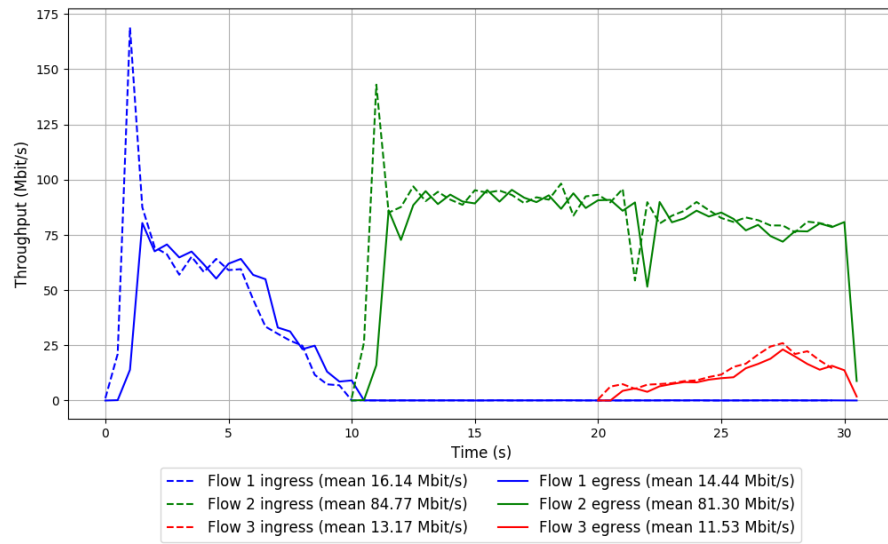
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-06-28 01:27:22
End at: 2019-06-28 01:27:52
Local clock offset: -5.239 ms
Remote clock offset: 0.215 ms


# Below is generated by plot.py at 2019-06-28 02:49:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.68 Mbit/s
95th percentile per-packet one-way delay: 108.172 ms
Loss rate: 9.54%
-- Flow 1:
Average throughput: 28.62 Mbit/s
95th percentile per-packet one-way delay: 96.268 ms
Loss rate: 5.04%
-- Flow 2:
Average throughput: 68.11 Mbit/s
95th percentile per-packet one-way delay: 107.954 ms
Loss rate: 9.35%
-- Flow 3:
Average throughput: 41.28 Mbit/s
95th percentile per-packet one-way delay: 109.452 ms
Loss rate: 18.23%
```

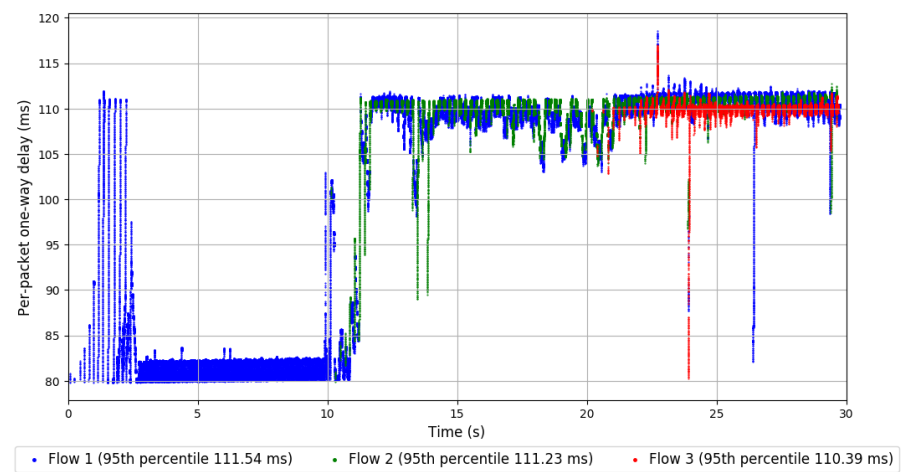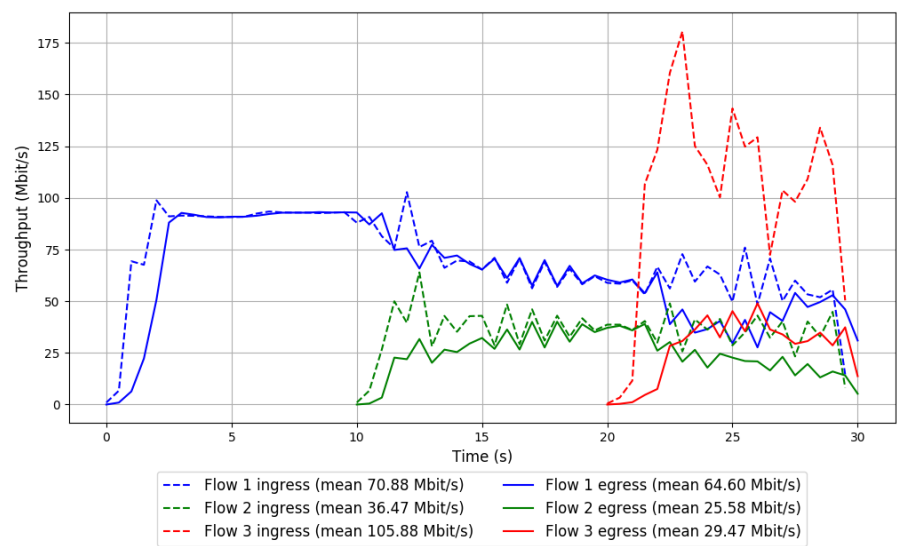Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-06-28 01:55:32
End at: 2019-06-28 01:56:02
Local clock offset: -5.2 ms
Remote clock offset: -17.525 ms


# Below is generated by plot.py at 2019-06-28 02:49:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.76 Mbit/s
95th percentile per-packet one-way delay: 111.051 ms
Loss rate: 8.95%
-- Flow 1:
Average throughput: 28.03 Mbit/s
95th percentile per-packet one-way delay: 104.758 ms
Loss rate: 3.88%
-- Flow 2:
Average throughput: 58.37 Mbit/s
95th percentile per-packet one-way delay: 111.261 ms
Loss rate: 6.29%
-- Flow 3:
Average throughput: 35.78 Mbit/s
95th percentile per-packet one-way delay: 111.780 ms
Loss rate: 25.20%
```
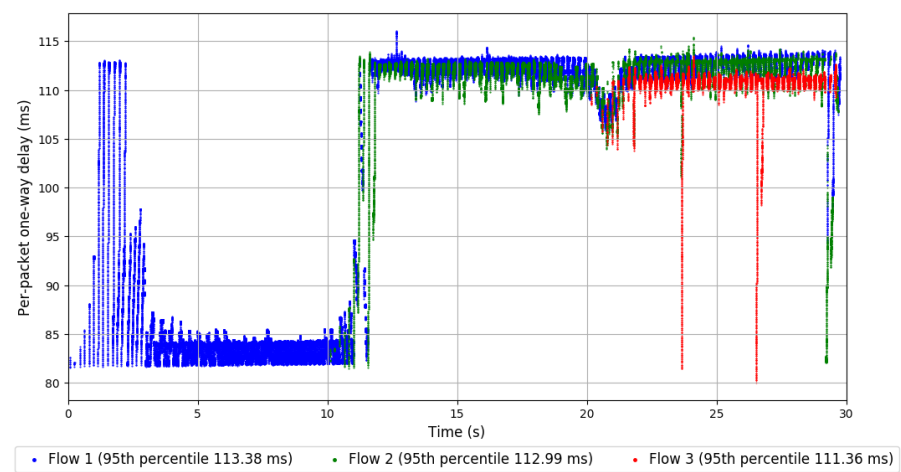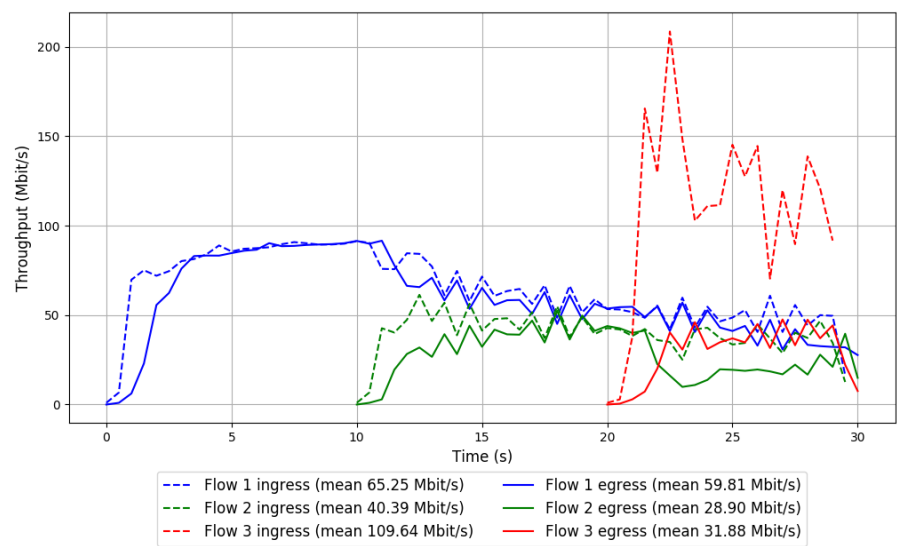
Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 29.18 Mbit/s) — — — Flow 1 egress (mean 28.03 Mbit/s)
Flow 2 ingress (mean 62.36 Mbit/s) — — — Flow 2 egress (mean 58.37 Mbit/s)
Flow 3 ingress (mean 47.88 Mbit/s) — — — Flow 3 egress (mean 35.78 Mbit/s)

Flow 1 (95th percentile 104.76 ms)   Flow 2 (95th percentile 111.26 ms)   Flow 3 (95th percentile 111.78 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-06-28 02:23:32
End at: 2019-06-28 02:24:02
Local clock offset: -5.571 ms
Remote clock offset: -49.642 ms


# Below is generated by plot.py at 2019-06-28 02:49:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.42 Mbit/s
95th percentile per-packet one-way delay: 102.138 ms
Loss rate: 5.82%
-- Flow 1:
Average throughput: 14.44 Mbit/s
95th percentile per-packet one-way delay: 107.112 ms
Loss rate: 10.49%
-- Flow 2:
Average throughput: 81.30 Mbit/s
95th percentile per-packet one-way delay: 101.992 ms
Loss rate: 3.97%
-- Flow 3:
Average throughput: 11.53 Mbit/s
95th percentile per-packet one-way delay: 101.176 ms
Loss rate: 12.32%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 16.14 Mbit/s) --- Flow 1 egress (mean 14.44 Mbit/s) ---
Flow 2 ingress (mean 84.77 Mbit/s) --- Flow 2 egress (mean 81.30 Mbit/s) ---
Flow 3 ingress (mean 13.17 Mbit/s) --- Flow 3 egress (mean 11.53 Mbit/s) ---

Flow 1 (95th percentile 107.11 ms) Flow 2 (95th percentile 101.99 ms) Flow 3 (95th percentile 101.18 ms)
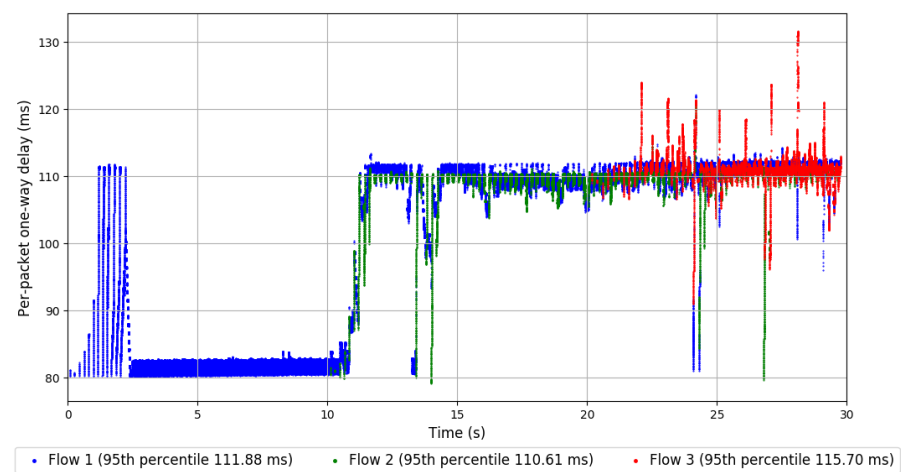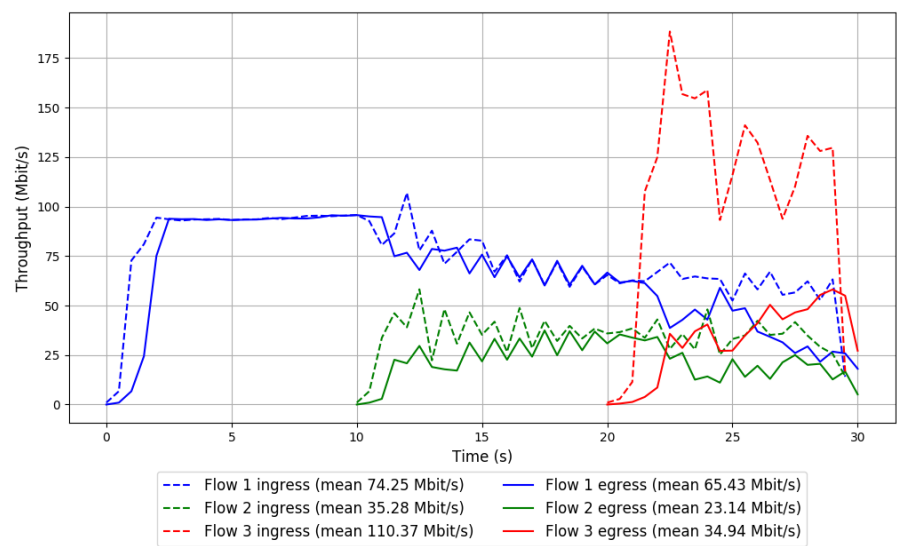
54

```
Run 1: Statistics of Indigo

Start at: 2019-06-28 00:36:33
End at: 2019-06-28 00:37:03
Local clock offset: -5.047 ms
Remote clock offset: -551.681 ms


# Below is generated by plot.py at 2019-06-28 02:50:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.85 Mbit/s
95th percentile per-packet one-way delay: 111.469 ms
Loss rate: 29.37%
-- Flow 1:
Average throughput: 64.60 Mbit/s
95th percentile per-packet one-way delay: 111.542 ms
Loss rate: 8.78%
-- Flow 2:
Average throughput: 25.58 Mbit/s
95th percentile per-packet one-way delay: 111.230 ms
Loss rate: 29.81%
-- Flow 3:
Average throughput: 29.47 Mbit/s
95th percentile per-packet one-way delay: 110.394 ms
Loss rate: 72.16%
```
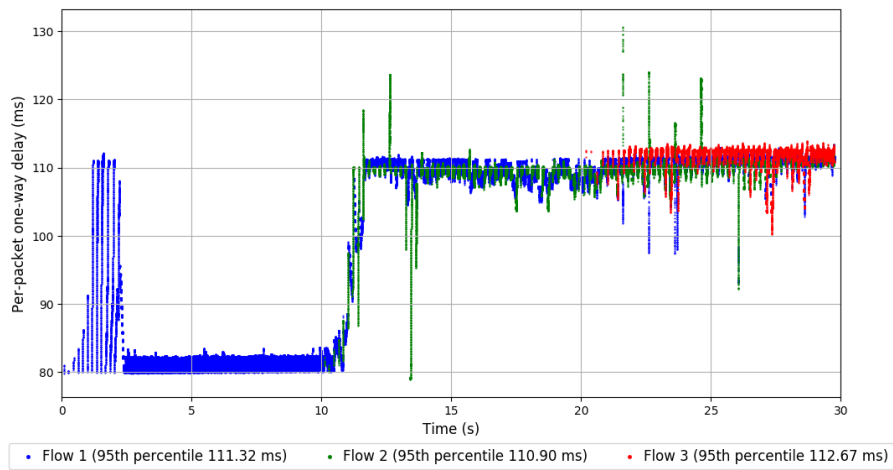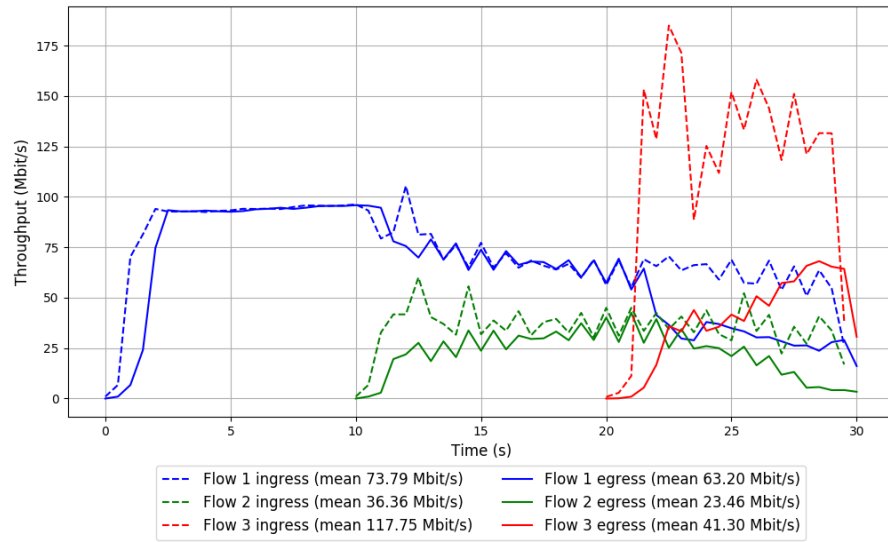
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-06-28 01:04:32
End at: 2019-06-28 01:05:02
Local clock offset: -4.89 ms
Remote clock offset: -608.508 ms


# Below is generated by plot.py at 2019-06-28 02:50:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.01 Mbit/s
95th percentile per-packet one-way delay: 113.290 ms
Loss rate: 29.72%
-- Flow 1:
Average throughput: 59.81 Mbit/s
95th percentile per-packet one-way delay: 113.383 ms
Loss rate: 8.26%
-- Flow 2:
Average throughput: 28.90 Mbit/s
95th percentile per-packet one-way delay: 112.993 ms
Loss rate: 28.35%
-- Flow 3:
Average throughput: 31.88 Mbit/s
95th percentile per-packet one-way delay: 111.361 ms
Loss rate: 70.92%
```
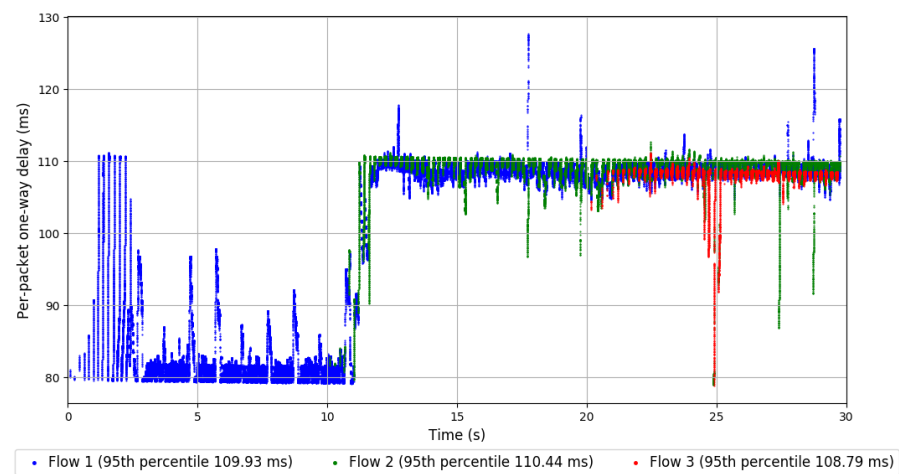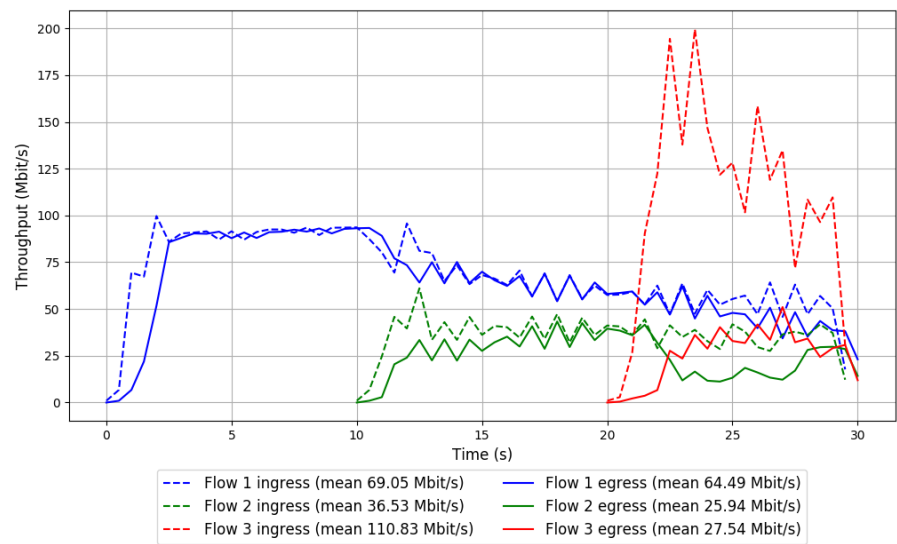
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 65.25 Mbit/s)   Flow 1 egress (mean 59.81 Mbit/s)
Flow 2 ingress (mean 40.39 Mbit/s)   Flow 2 egress (mean 28.90 Mbit/s)
Flow 3 ingress (mean 109.64 Mbit/s)   Flow 3 egress (mean 31.88 Mbit/s)

Flow 1 (95th percentile 113.38 ms)   Flow 2 (95th percentile 112.99 ms)   Flow 3 (95th percentile 111.36 ms)

```
Run 3: Statistics of Indigo

Start at: 2019-06-28 01:32:28
End at: 2019-06-28 01:32:58
Local clock offset: -5.372 ms
Remote clock offset: -10.474 ms


# Below is generated by plot.py at 2019-06-28 02:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.97 Mbit/s
95th percentile per-packet one-way delay: 111.923 ms
Loss rate: 30.87%
-- Flow 1:
Average throughput: 65.43 Mbit/s
95th percentile per-packet one-way delay: 111.876 ms
Loss rate: 11.79%
-- Flow 2:
Average throughput: 23.14 Mbit/s
95th percentile per-packet one-way delay: 110.608 ms
Loss rate: 34.31%
-- Flow 3:
Average throughput: 34.94 Mbit/s
95th percentile per-packet one-way delay: 115.705 ms
Loss rate: 68.34%
```
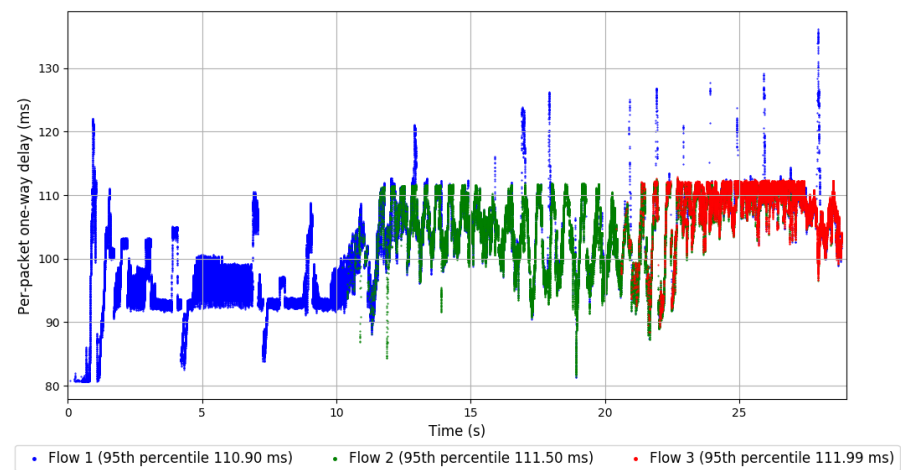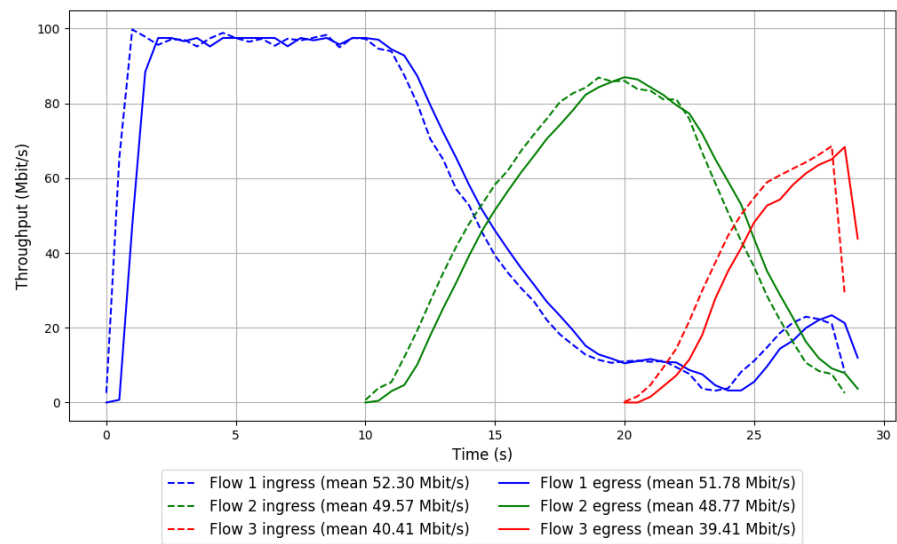
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-06-28 02:00:39
End at: 2019-06-28 02:01:09
Local clock offset: -5.328 ms
Remote clock offset: -26.501 ms


# Below is generated by plot.py at 2019-06-28 02:50:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.05 Mbit/s
95th percentile per-packet one-way delay: 112.457 ms
Loss rate: 32.20%
-- Flow 1:
Average throughput: 63.20 Mbit/s
95th percentile per-packet one-way delay: 111.321 ms
Loss rate: 14.25%
-- Flow 2:
Average throughput: 23.46 Mbit/s
95th percentile per-packet one-way delay: 110.900 ms
Loss rate: 35.39%
-- Flow 3:
Average throughput: 41.30 Mbit/s
95th percentile per-packet one-way delay: 112.671 ms
Loss rate: 64.94%
```
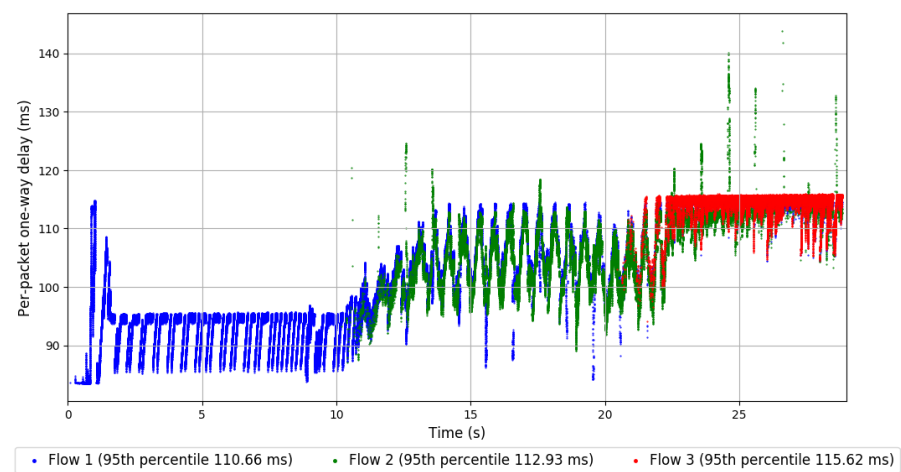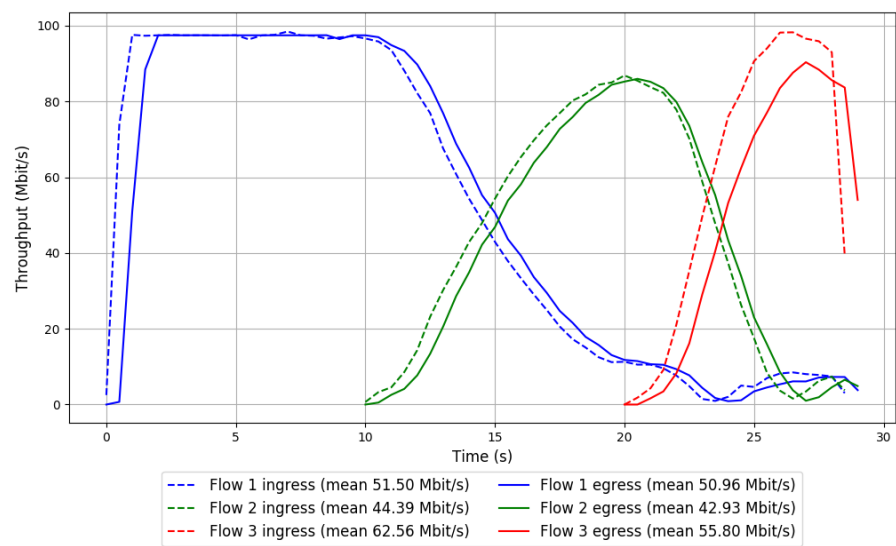
Run 4: Report of Indigo — Data Link

- - - - Flow 1 ingress (mean 73.79 Mbit/s)   —— Flow 1 egress (mean 63.20 Mbit/s)
- - - - Flow 2 ingress (mean 36.36 Mbit/s)   —— Flow 2 egress (mean 23.46 Mbit/s)
- - - - Flow 3 ingress (mean 117.75 Mbit/s)   —— Flow 3 egress (mean 41.30 Mbit/s)

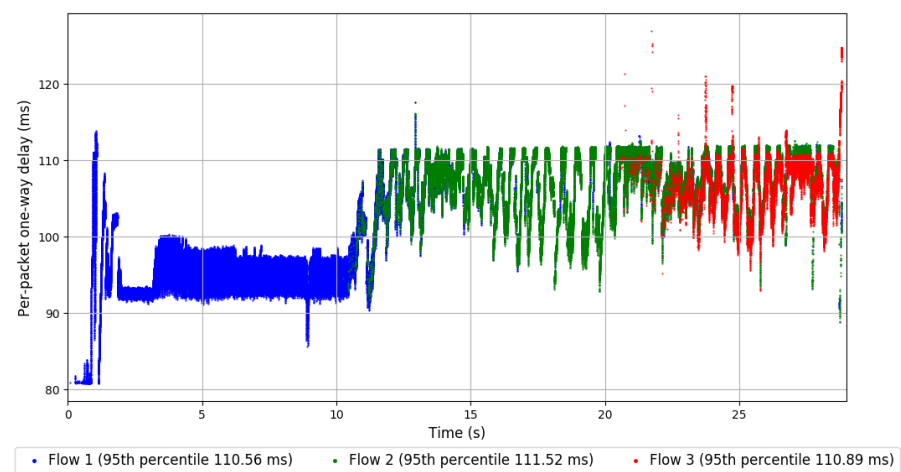- Flow 1 (95th percentile 111.32 ms)   - Flow 2 (95th percentile 110.90 ms)   - Flow 3 (95th percentile 112.67 ms)

```
Run 5: Statistics of Indigo

Start at: 2019-06-28 02:28:38
End at: 2019-06-28 02:29:08
Local clock offset: -6.198 ms
Remote clock offset: -29.261 ms


# Below is generated by plot.py at 2019-06-28 02:50:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.48 Mbit/s
95th percentile per-packet one-way delay: 110.201 ms
Loss rate: 29.63%
-- Flow 1:
Average throughput: 64.49 Mbit/s
95th percentile per-packet one-way delay: 109.934 ms
Loss rate: 6.51%
-- Flow 2:
Average throughput: 25.94 Mbit/s
95th percentile per-packet one-way delay: 110.435 ms
Loss rate: 28.90%
-- Flow 3:
Average throughput: 27.54 Mbit/s
95th percentile per-packet one-way delay: 108.787 ms
Loss rate: 75.13%
```

Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 69.05 Mbit/s) --- Flow 1 egress (mean 64.49 Mbit/s)
Flow 2 ingress (mean 36.53 Mbit/s) --- Flow 2 egress (mean 25.94 Mbit/s)
Flow 3 ingress (mean 110.83 Mbit/s) --- Flow 3 egress (mean 27.54 Mbit/s)

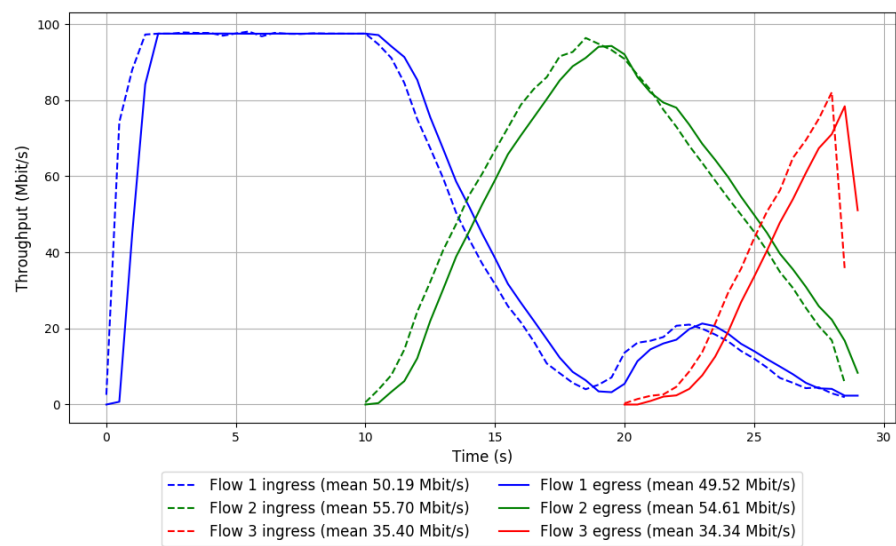Flow 1 (95th percentile 109.93 ms) • Flow 2 (95th percentile 110.44 ms) • Flow 3 (95th percentile 108.79 ms)

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-06-28 00:28:52
End at: 2019-06-28 00:29:23
Local clock offset: -6.054 ms
Remote clock offset: -534.537 ms


# Below is generated by plot.py at 2019-06-28 02:50:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.88 Mbit/s
95th percentile per-packet one-way delay: 111.526 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 51.78 Mbit/s
95th percentile per-packet one-way delay: 110.902 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 48.77 Mbit/s
95th percentile per-packet one-way delay: 111.504 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 111.990 ms
Loss rate: 2.50%
```
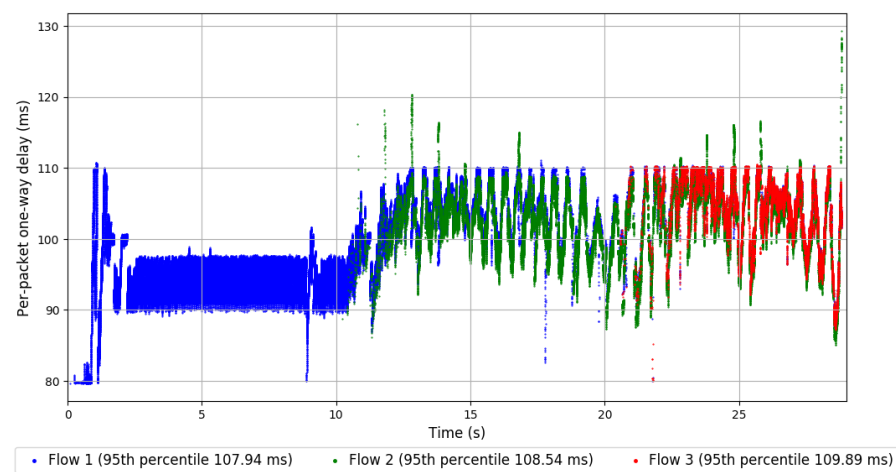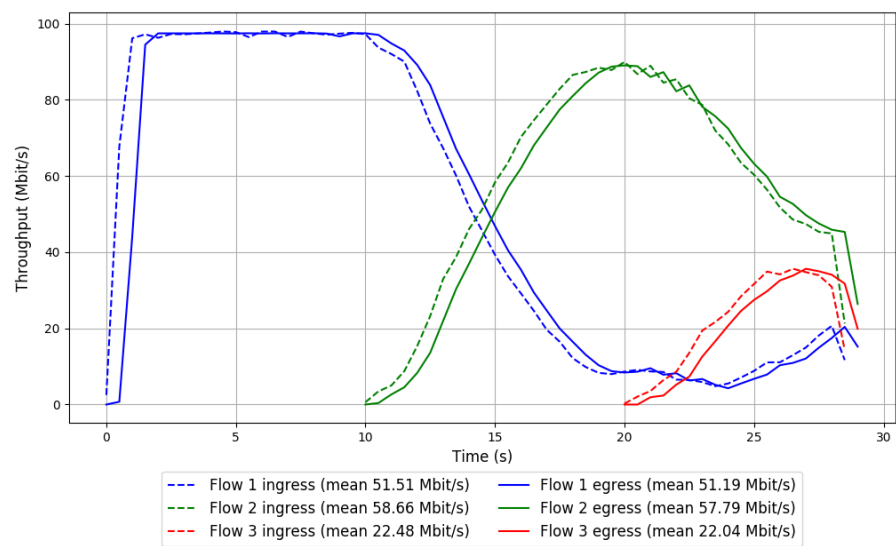
Run 1: Report of Indigo-MusesC3 — Data Link

Legend:
- Flow 1 ingress (mean 52.30 Mbit/s)
- Flow 1 egress (mean 51.78 Mbit/s)
- Flow 2 ingress (mean 49.57 Mbit/s)
- Flow 2 egress (mean 48.77 Mbit/s)
- Flow 3 ingress (mean 40.41 Mbit/s)
- Flow 3 egress (mean 39.41 Mbit/s)

Legend:
- Flow 1 (95th percentile 110.90 ms)
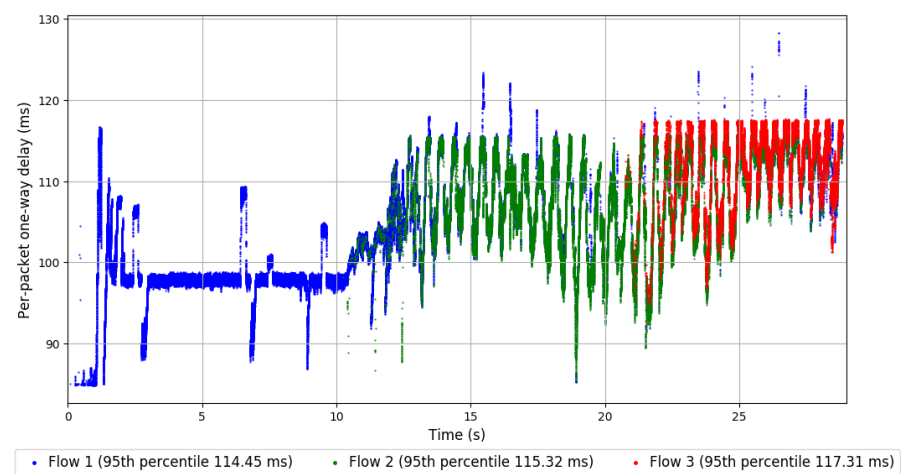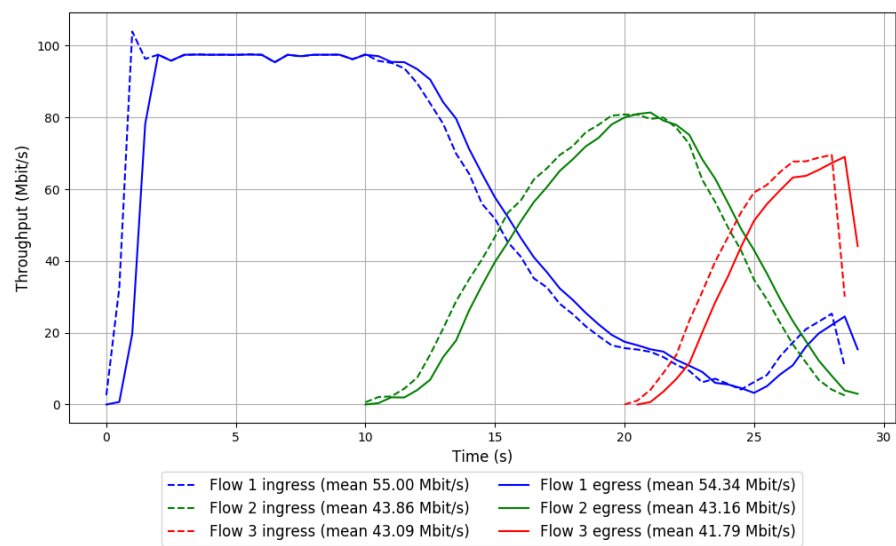- Flow 2 (95th percentile 111.50 ms)
- Flow 3 (95th percentile 111.99 ms)

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-06-28 00:56:50
End at: 2019-06-28 00:57:20
Local clock offset: -5.189 ms
Remote clock offset: -589.934 ms


# Below is generated by plot.py at 2019-06-28 02:51:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.07 Mbit/s
95th percentile per-packet one-way delay: 115.387 ms
Loss rate: 3.42%
-- Flow 1:
Average throughput: 50.96 Mbit/s
95th percentile per-packet one-way delay: 110.655 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 42.93 Mbit/s
95th percentile per-packet one-way delay: 112.931 ms
Loss rate: 3.19%
-- Flow 3:
Average throughput: 55.80 Mbit/s
95th percentile per-packet one-way delay: 115.619 ms
Loss rate: 10.73%
```

Run 2: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 51.50 Mbit/s) —— Flow 1 egress (mean 50.96 Mbit/s)
- - - Flow 2 ingress (mean 44.39 Mbit/s) —— Flow 2 egress (mean 42.93 Mbit/s)
- - - Flow 3 ingress (mean 62.56 Mbit/s) —— Flow 3 egress (mean 55.80 Mbit/s)

· Flow 1 (95th percentile 110.66 ms) · Flow 2 (95th percentile 112.93 ms) · Flow 3 (95th percentile 115.62 ms)
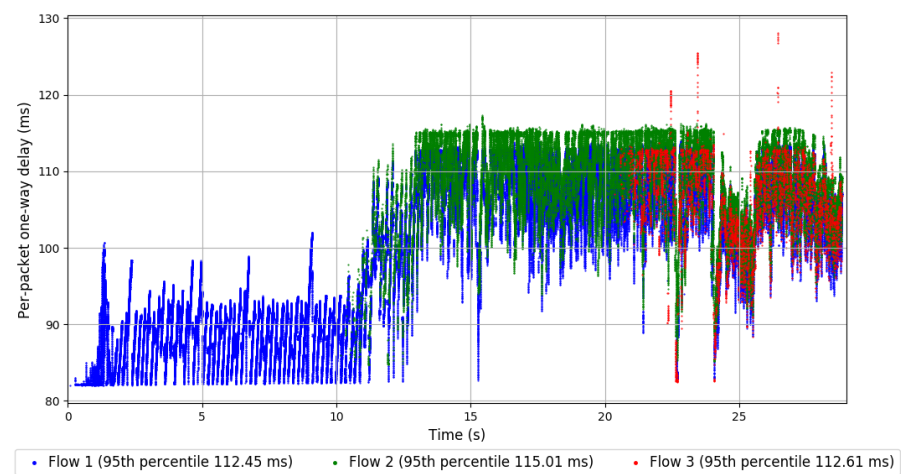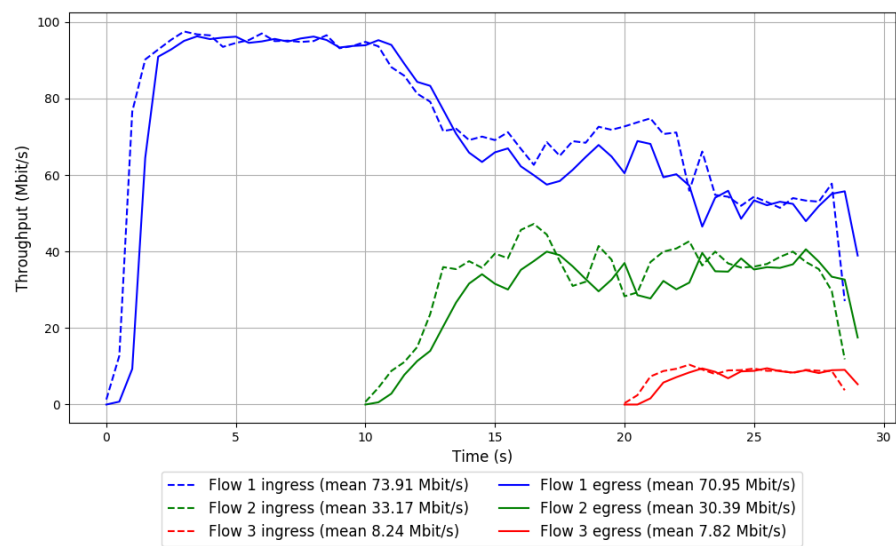
```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-06-28 01:24:48
End at: 2019-06-28 01:25:18
Local clock offset: -5.359 ms
Remote clock offset: -650.682 ms


# Below is generated by plot.py at 2019-06-28 02:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.90 Mbit/s
95th percentile per-packet one-way delay: 111.319 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 49.52 Mbit/s
95th percentile per-packet one-way delay: 110.563 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 54.61 Mbit/s
95th percentile per-packet one-way delay: 111.518 ms
Loss rate: 1.90%
-- Flow 3:
Average throughput: 34.34 Mbit/s
95th percentile per-packet one-way delay: 110.890 ms
Loss rate: 2.92%
```

Run 3: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 50.19 Mbit/s) ——— Flow 1 egress (mean 49.52 Mbit/s)
- - - - Flow 2 ingress (mean 55.70 Mbit/s) ——— Flow 2 egress (mean 54.61 Mbit/s)
- - - - Flow 3 ingress (mean 35.40 Mbit/s) ——— Flow 3 egress (mean 34.34 Mbit/s)

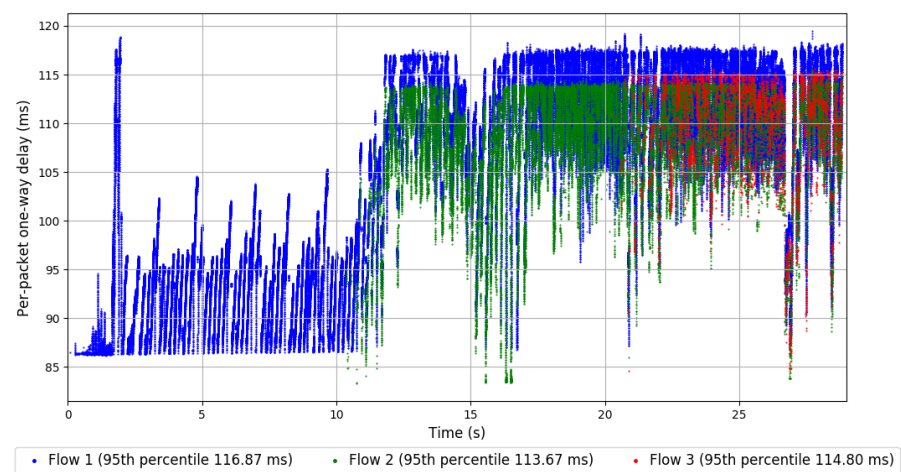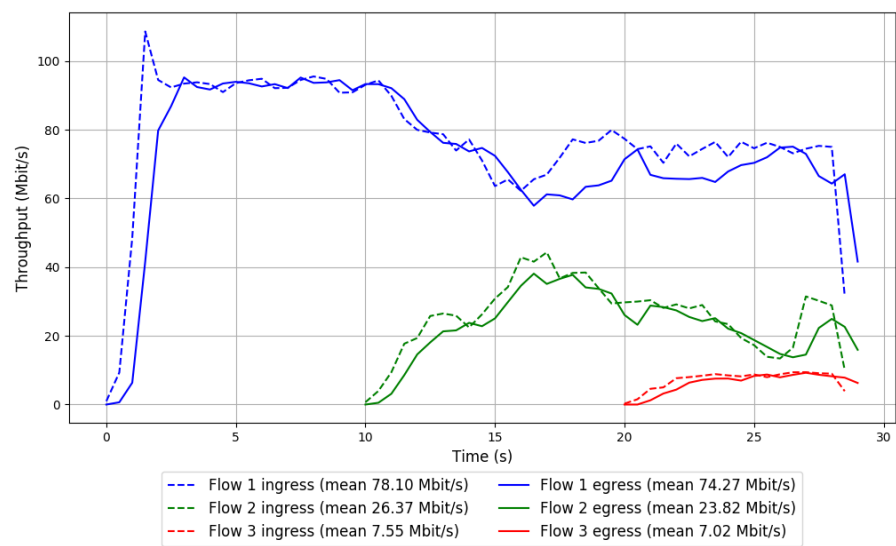• Flow 1 (95th percentile 110.56 ms)　　• Flow 2 (95th percentile 111.52 ms)　　• Flow 3 (95th percentile 110.89 ms)

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-06-28 01:52:58
End at: 2019-06-28 01:53:28
Local clock offset: -5.442 ms
Remote clock offset: -19.432 ms

# Below is generated by plot.py at 2019-06-28 02:51:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.02 Mbit/s
95th percentile per-packet one-way delay: 108.555 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 51.19 Mbit/s
95th percentile per-packet one-way delay: 107.936 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 57.79 Mbit/s
95th percentile per-packet one-way delay: 108.538 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 22.04 Mbit/s
95th percentile per-packet one-way delay: 109.891 ms
Loss rate: 1.94%
```

Run 4: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 51.51 Mbit/s) ---- Flow 1 egress (mean 51.19 Mbit/s) ——
Flow 2 ingress (mean 58.66 Mbit/s) ---- Flow 2 egress (mean 57.79 Mbit/s) ——
Flow 3 ingress (mean 22.48 Mbit/s) ---- Flow 3 egress (mean 22.04 Mbit/s) ——

Flow 1 (95th percentile 107.94 ms) • Flow 2 (95th percentile 108.54 ms) • Flow 3 (95th percentile 109.89 ms)
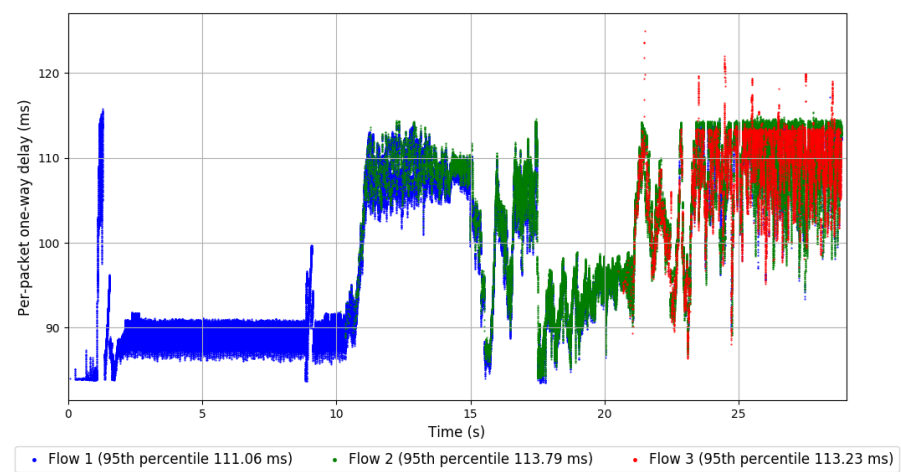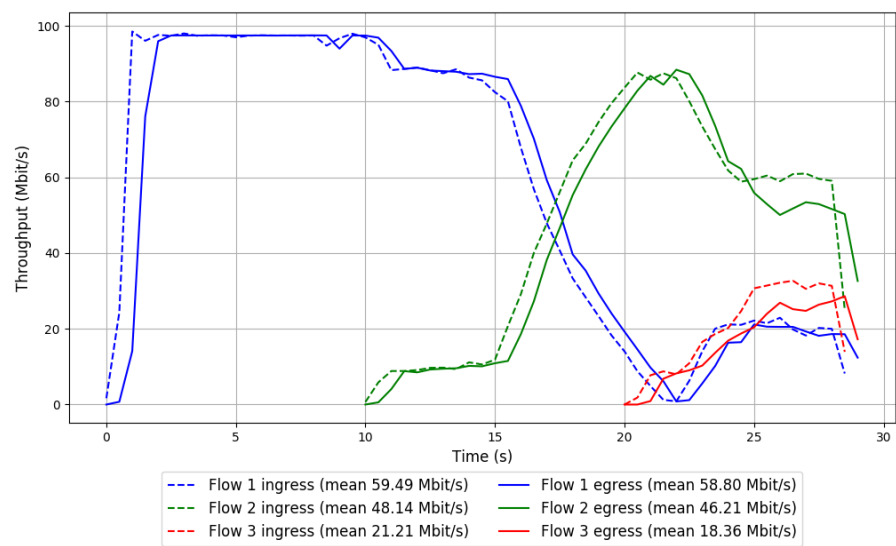
```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-06-28 02:20:57
End at: 2019-06-28 02:21:27
Local clock offset: -6.318 ms
Remote clock offset: -50.166 ms


# Below is generated by plot.py at 2019-06-28 02:51:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.27 Mbit/s
95th percentile per-packet one-way delay: 115.633 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 54.34 Mbit/s
95th percentile per-packet one-way delay: 114.448 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 43.16 Mbit/s
95th percentile per-packet one-way delay: 115.316 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 41.79 Mbit/s
95th percentile per-packet one-way delay: 117.308 ms
Loss rate: 2.92%
```

Run 5: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 55.00 Mbit/s) Flow 1 egress (mean 54.34 Mbit/s)
Flow 2 ingress (mean 43.86 Mbit/s) Flow 2 egress (mean 43.16 Mbit/s)
Flow 3 ingress (mean 43.09 Mbit/s) Flow 3 egress (mean 41.79 Mbit/s)

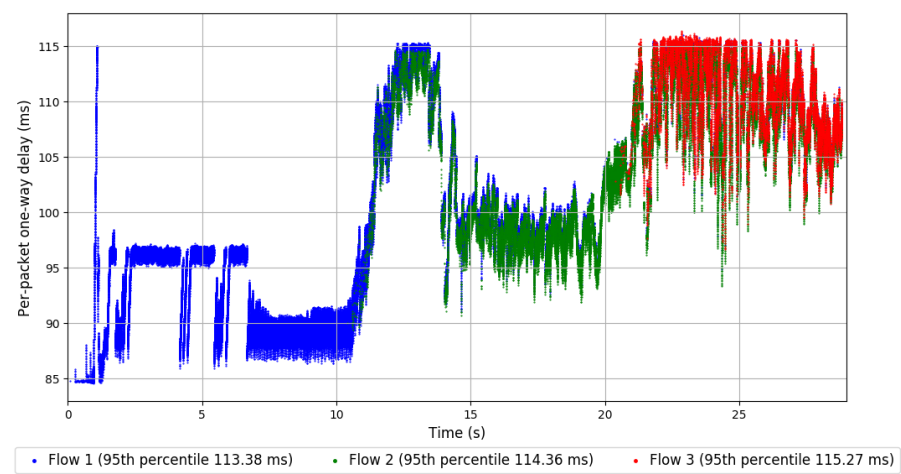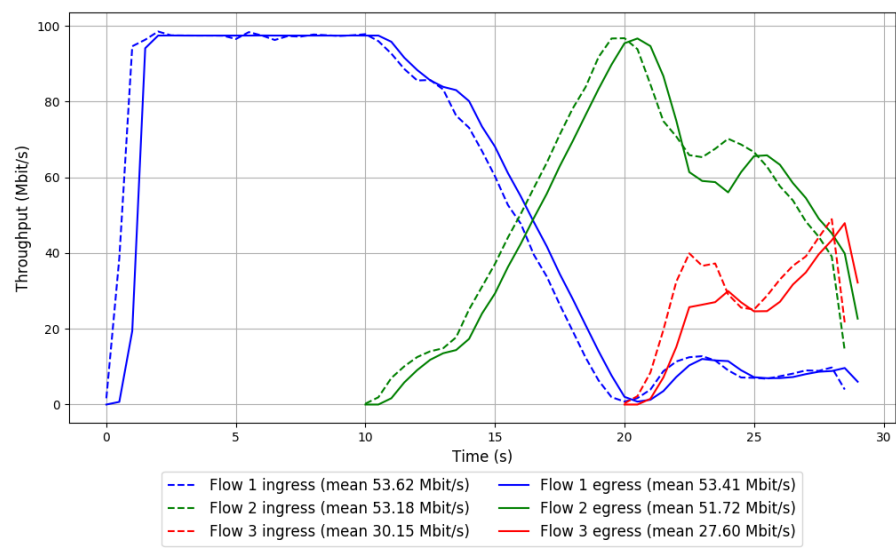Flow 1 (95th percentile 114.45 ms)   Flow 2 (95th percentile 115.32 ms)   Flow 3 (95th percentile 117.31 ms)

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-06-28 00:51:46
End at: 2019-06-28 00:52:16
Local clock offset: -5.057 ms
Remote clock offset: -579.354 ms


# Below is generated by plot.py at 2019-06-28 02:51:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.98 Mbit/s
95th percentile per-packet one-way delay: 113.195 ms
Loss rate: 4.90%
-- Flow 1:
Average throughput: 70.95 Mbit/s
95th percentile per-packet one-way delay: 112.453 ms
Loss rate: 3.92%
-- Flow 2:
Average throughput: 30.39 Mbit/s
95th percentile per-packet one-way delay: 115.014 ms
Loss rate: 8.25%
-- Flow 3:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 112.608 ms
Loss rate: 5.11%
```

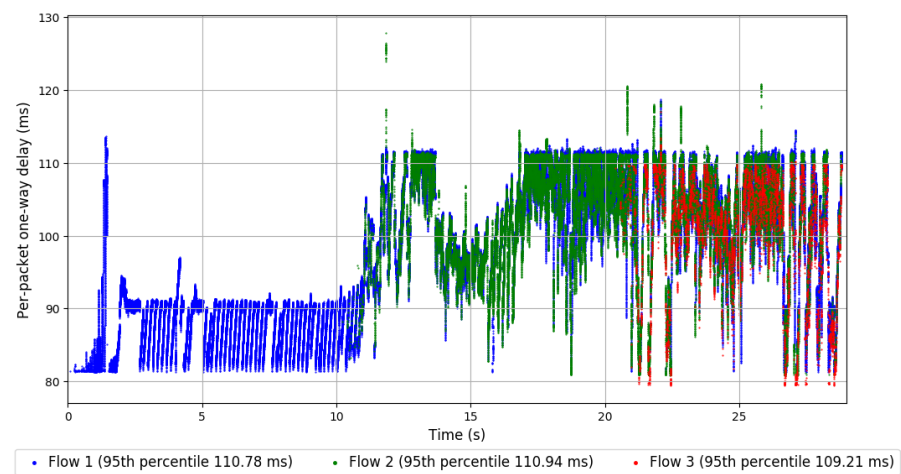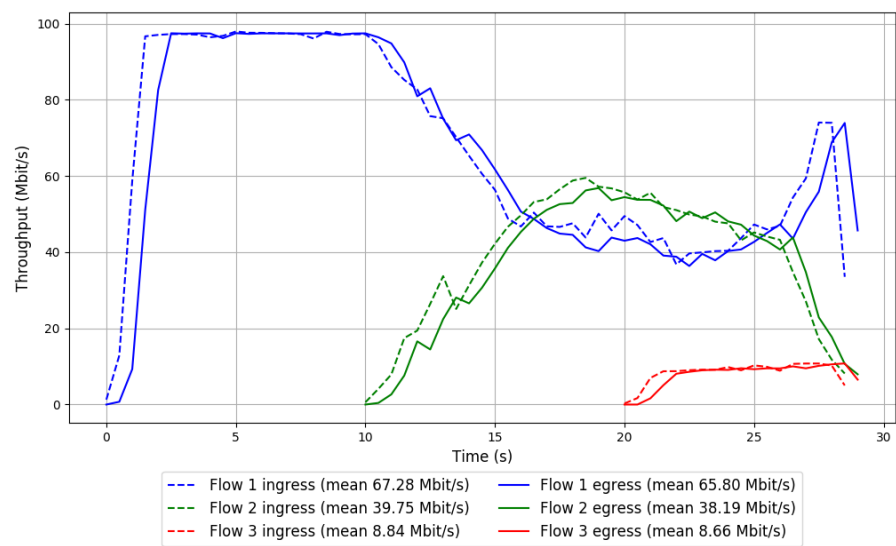Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-06-28 01:19:44
End at: 2019-06-28 01:20:14
Local clock offset: -5.589 ms
Remote clock offset: -637.081 ms


# Below is generated by plot.py at 2019-06-28 02:51:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.76 Mbit/s
95th percentile per-packet one-way delay: 116.788 ms
Loss rate: 5.70%
-- Flow 1:
Average throughput: 74.27 Mbit/s
95th percentile per-packet one-way delay: 116.872 ms
Loss rate: 4.81%
-- Flow 2:
Average throughput: 23.82 Mbit/s
95th percentile per-packet one-way delay: 113.674 ms
Loss rate: 9.58%
-- Flow 3:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 114.804 ms
Loss rate: 7.08%
```

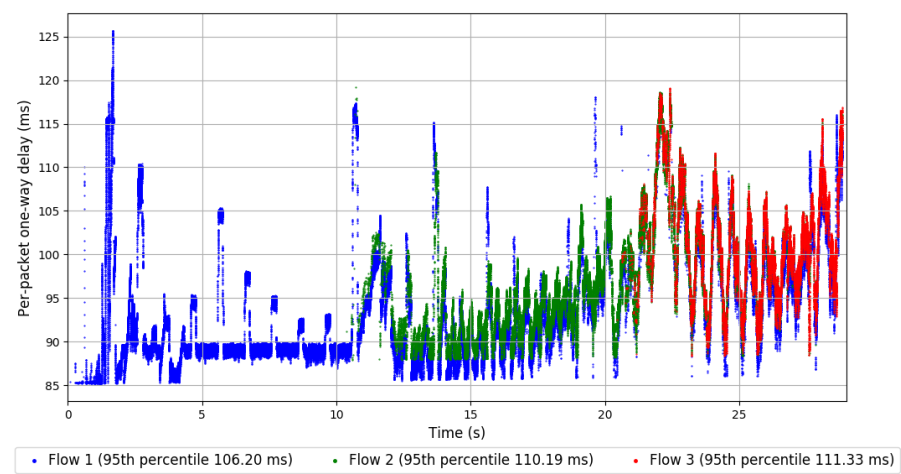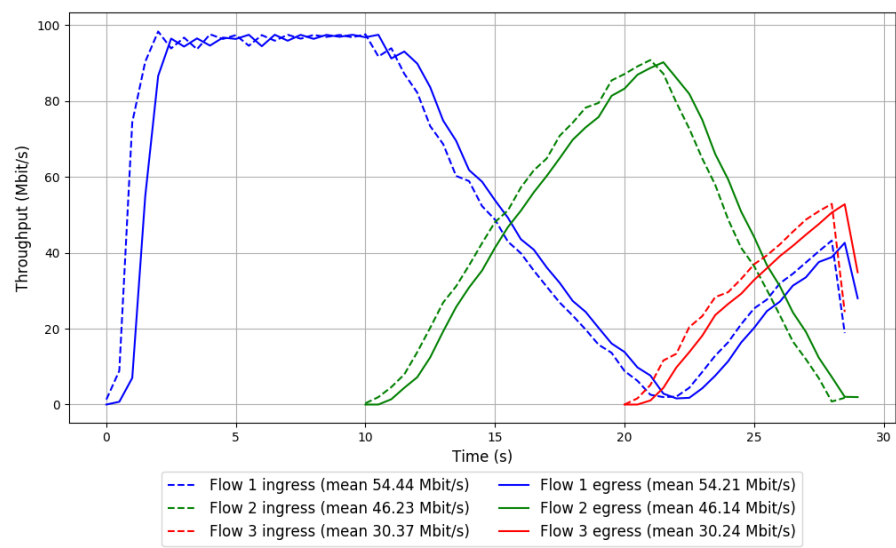Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-06-28 01:47:52
End at: 2019-06-28 01:48:22
Local clock offset: -6.129 ms
Remote clock offset: -15.471 ms


# Below is generated by plot.py at 2019-06-28 02:52:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.11 Mbit/s
95th percentile per-packet one-way delay: 112.923 ms
Loss rate: 2.75%
-- Flow 1:
Average throughput: 58.80 Mbit/s
95th percentile per-packet one-way delay: 111.061 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 46.21 Mbit/s
95th percentile per-packet one-way delay: 113.794 ms
Loss rate: 3.90%
-- Flow 3:
Average throughput: 18.36 Mbit/s
95th percentile per-packet one-way delay: 113.226 ms
Loss rate: 13.31%
```

Run 3: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 59.49 Mbit/s) --- Flow 1 egress (mean 58.80 Mbit/s)
Flow 2 ingress (mean 48.14 Mbit/s) --- Flow 2 egress (mean 46.21 Mbit/s)
Flow 3 ingress (mean 21.21 Mbit/s) --- Flow 3 egress (mean 18.36 Mbit/s)

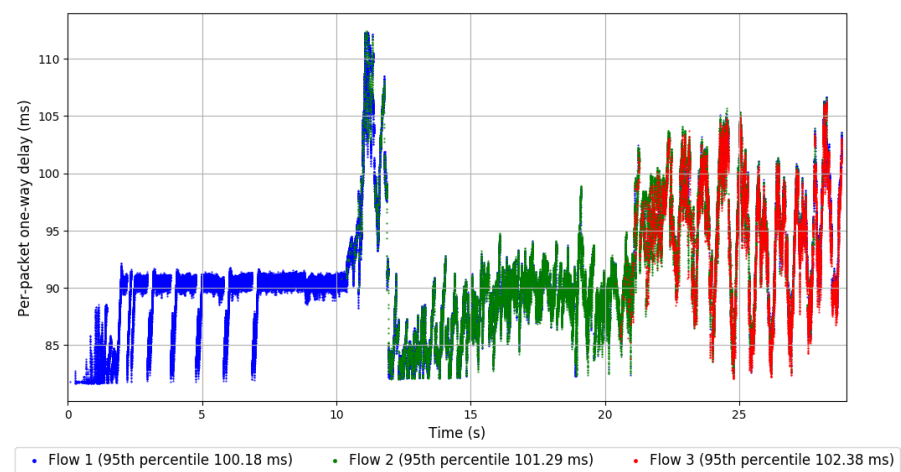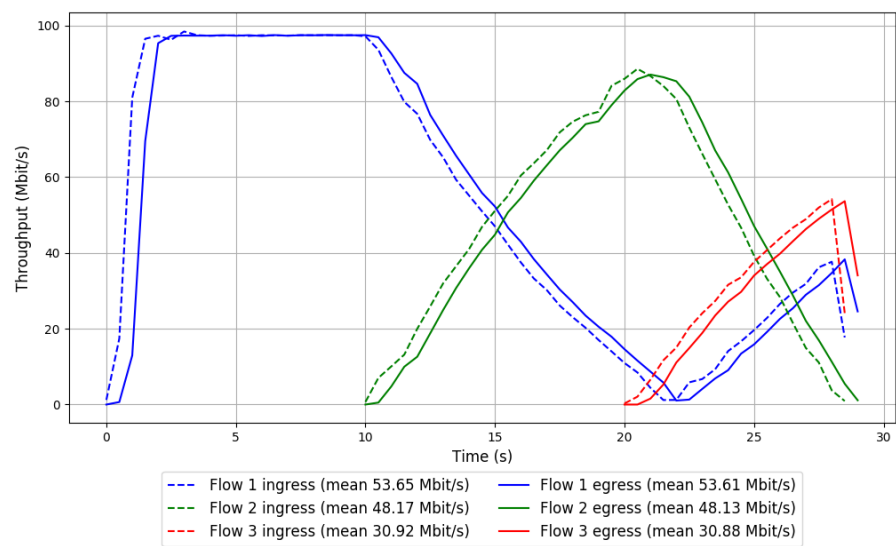Flow 1 (95th percentile 111.06 ms)   Flow 2 (95th percentile 113.79 ms)   Flow 3 (95th percentile 113.23 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-06-28 02:15:53
End at: 2019-06-28 02:16:23
Local clock offset: -4.968 ms
Remote clock offset: -43.854 ms

# Below is generated by plot.py at 2019-06-28 02:52:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.65 Mbit/s
95th percentile per-packet one-way delay: 114.266 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 53.41 Mbit/s
95th percentile per-packet one-way delay: 113.384 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 51.72 Mbit/s
95th percentile per-packet one-way delay: 114.357 ms
Loss rate: 2.65%
-- Flow 3:
Average throughput: 27.60 Mbit/s
95th percentile per-packet one-way delay: 115.271 ms
Loss rate: 8.42%
```
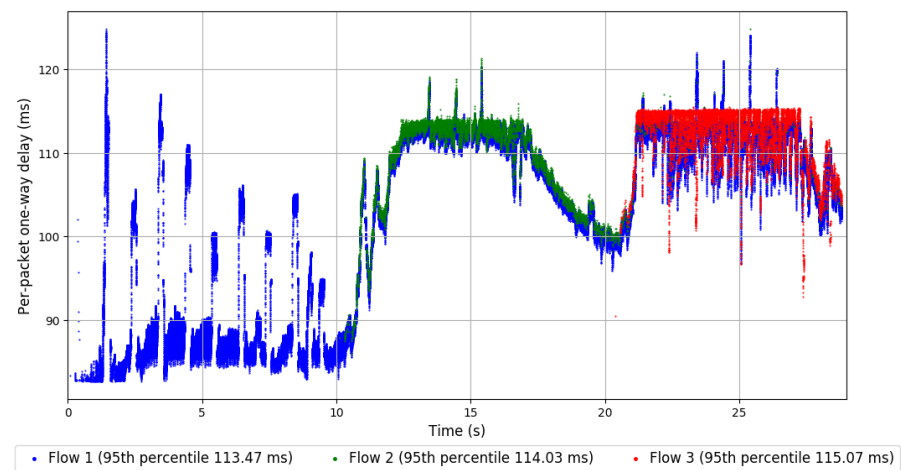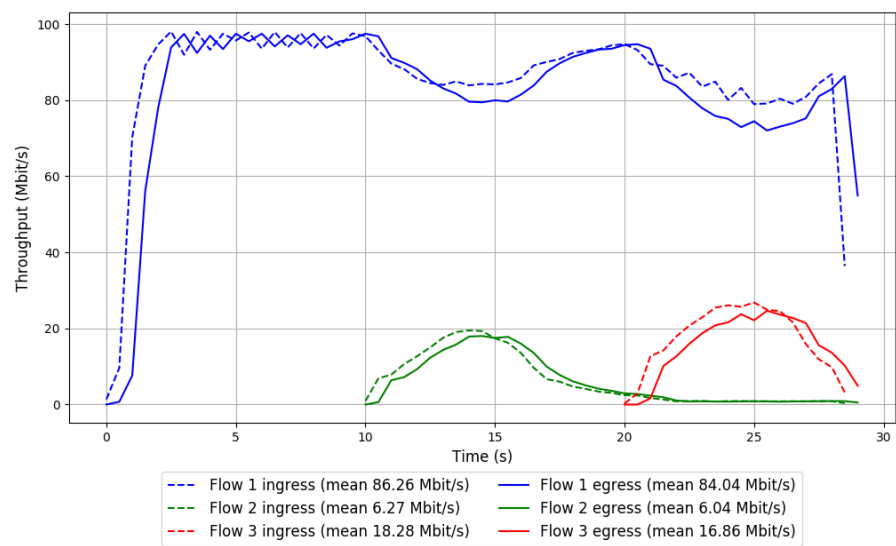
Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-06-28 02:43:53
End at: 2019-06-28 02:44:23
Local clock offset: -7.468 ms
Remote clock offset: -13.357 ms


# Below is generated by plot.py at 2019-06-28 02:52:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.01 Mbit/s
95th percentile per-packet one-way delay: 110.854 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 65.80 Mbit/s
95th percentile per-packet one-way delay: 110.778 ms
Loss rate: 2.10%
-- Flow 2:
Average throughput: 38.19 Mbit/s
95th percentile per-packet one-way delay: 110.935 ms
Loss rate: 3.92%
-- Flow 3:
Average throughput: 8.66 Mbit/s
95th percentile per-packet one-way delay: 109.208 ms
Loss rate: 2.08%
```

Run 5: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 67.28 Mbit/s)   Flow 1 egress (mean 65.80 Mbit/s)
Flow 2 ingress (mean 39.75 Mbit/s)   Flow 2 egress (mean 38.19 Mbit/s)
Flow 3 ingress (mean 8.84 Mbit/s)   Flow 3 egress (mean 8.66 Mbit/s)

Flow 1 (95th percentile 110.78 ms)   Flow 2 (95th percentile 110.94 ms)   Flow 3 (95th percentile 109.21 ms)

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-06-28 00:45:26
End at: 2019-06-28 00:45:56
Local clock offset: -5.774 ms
Remote clock offset: -563.742 ms


# Below is generated by plot.py at 2019-06-28 02:52:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.67 Mbit/s
95th percentile per-packet one-way delay: 108.846 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 54.21 Mbit/s
95th percentile per-packet one-way delay: 106.205 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 46.14 Mbit/s
95th percentile per-packet one-way delay: 110.188 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 30.24 Mbit/s
95th percentile per-packet one-way delay: 111.325 ms
Loss rate: 0.16%
```
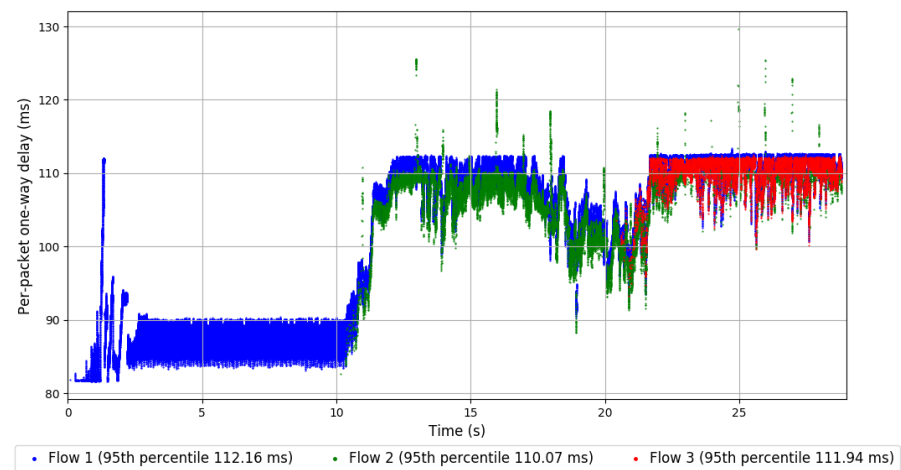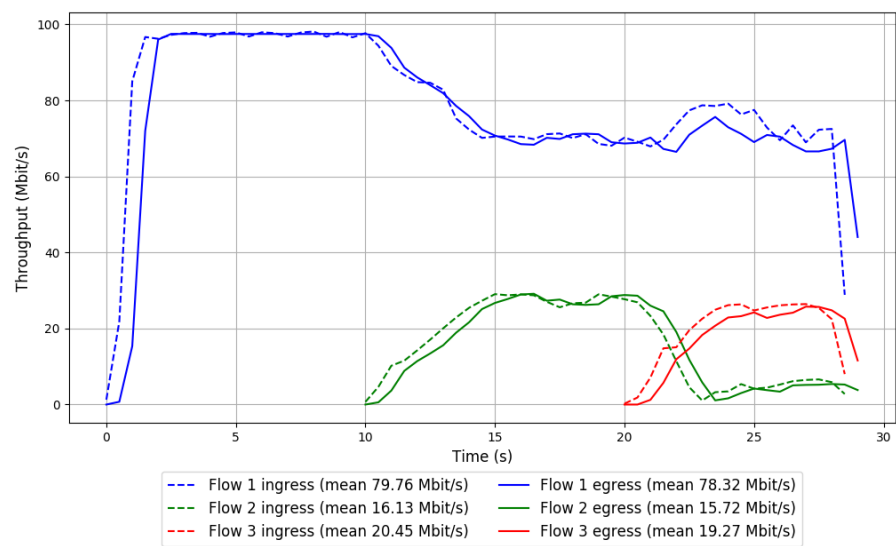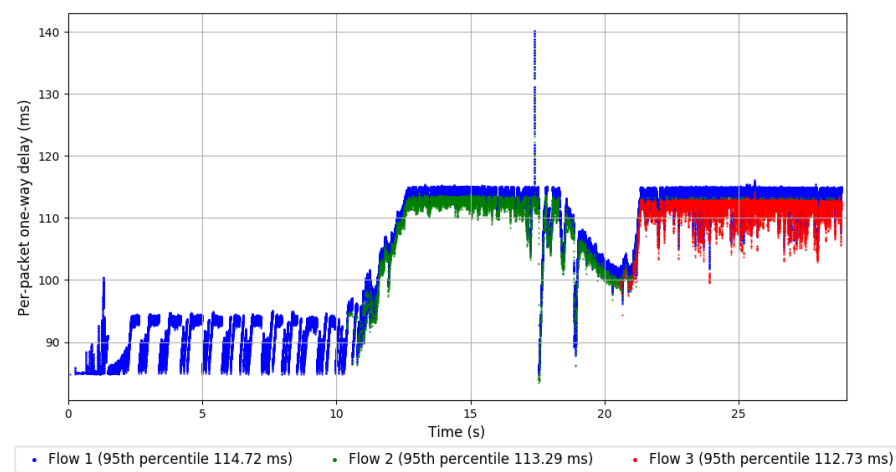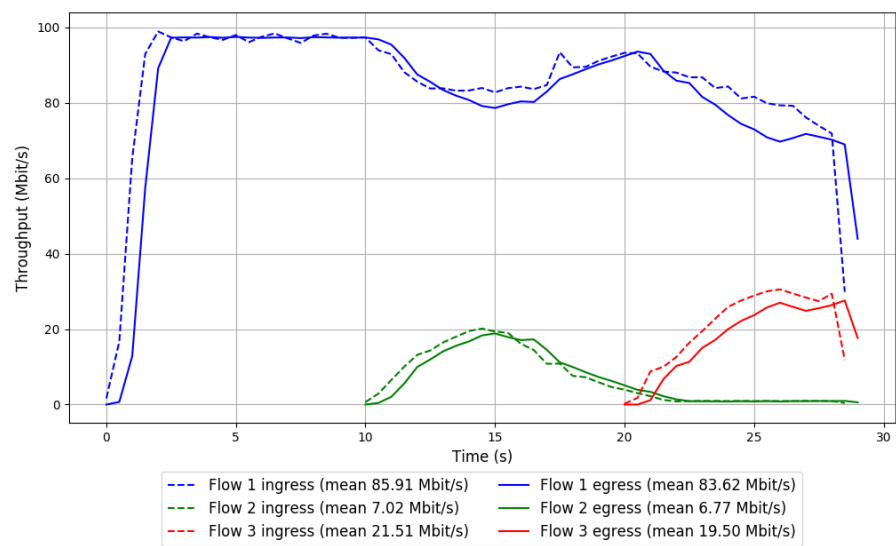
Run 1: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 54.44 Mbit/s)   Flow 1 egress (mean 54.21 Mbit/s)
Flow 2 ingress (mean 46.23 Mbit/s)   Flow 2 egress (mean 46.14 Mbit/s)
Flow 3 ingress (mean 30.37 Mbit/s)   Flow 3 egress (mean 30.24 Mbit/s)

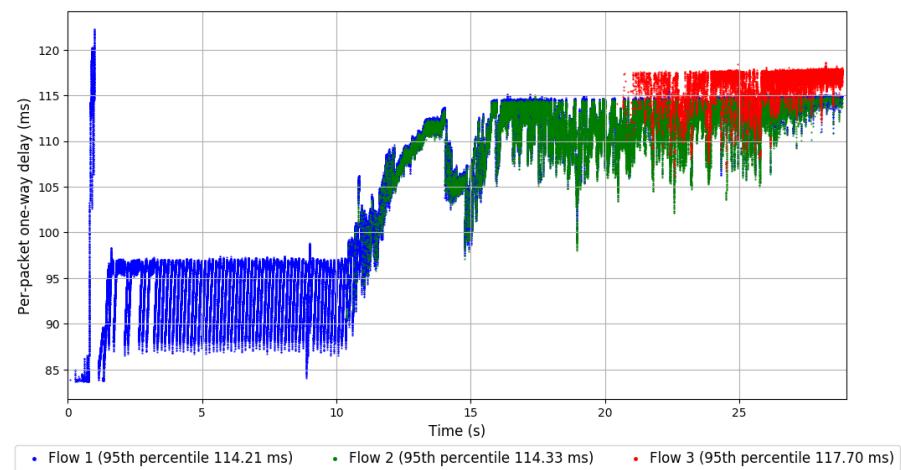Flow 1 (95th percentile 106.20 ms)   Flow 2 (95th percentile 110.19 ms)   Flow 3 (95th percentile 111.33 ms)

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-06-28 01:13:24
End at: 2019-06-28 01:13:54
Local clock offset: -5.593 ms
Remote clock offset: -627.308 ms


# Below is generated by plot.py at 2019-06-28 02:52:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.85 Mbit/s
95th percentile per-packet one-way delay: 101.187 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 53.61 Mbit/s
95th percentile per-packet one-way delay: 100.182 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 48.13 Mbit/s
95th percentile per-packet one-way delay: 101.290 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 30.88 Mbit/s
95th percentile per-packet one-way delay: 102.379 ms
Loss rate: 0.00%
```
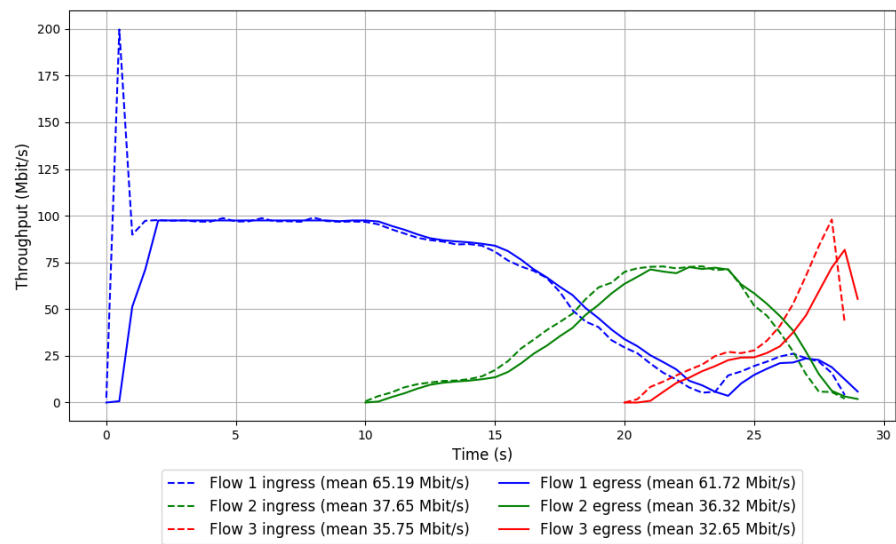
Run 2: Report of Indigo-MusesD — Data Link

- - - - Flow 1 ingress (mean 53.65 Mbit/s)   —— Flow 1 egress (mean 53.61 Mbit/s)
- - - - Flow 2 ingress (mean 48.17 Mbit/s)   —— Flow 2 egress (mean 48.13 Mbit/s)
- - - - Flow 3 ingress (mean 30.92 Mbit/s)   —— Flow 3 egress (mean 30.88 Mbit/s)

- Flow 1 (95th percentile 100.18 ms)   • Flow 2 (95th percentile 101.29 ms)   • Flow 3 (95th percentile 102.38 ms)
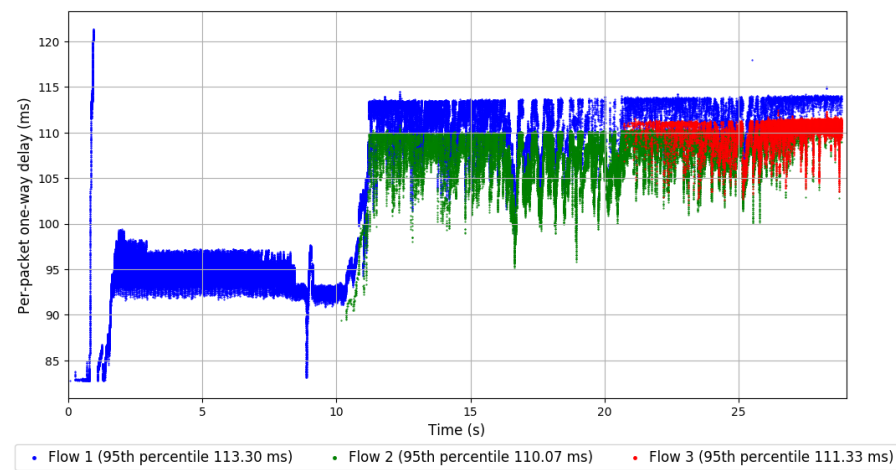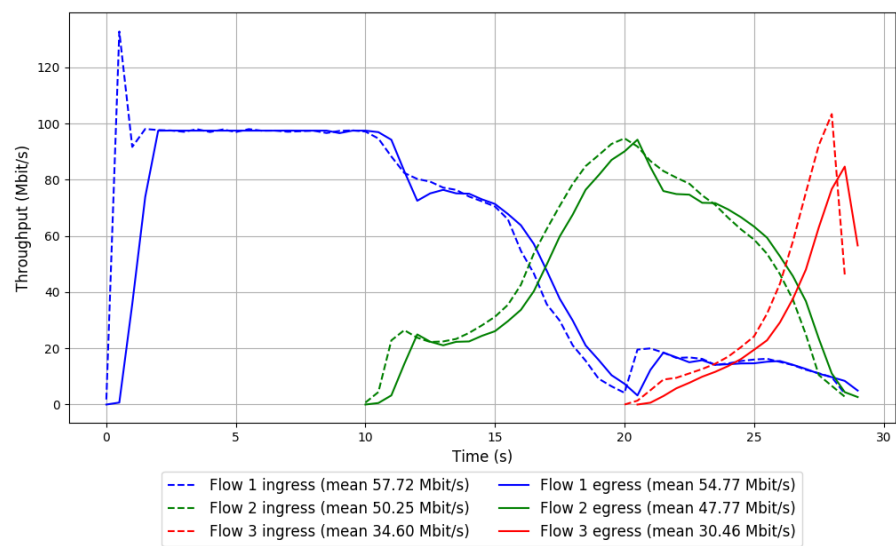
```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-06-28 01:41:21
End at: 2019-06-28 01:41:51
Local clock offset: -6.171 ms
Remote clock offset: -13.522 ms


# Below is generated by plot.py at 2019-06-28 02:52:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.92 Mbit/s
95th percentile per-packet one-way delay: 113.758 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 84.04 Mbit/s
95th percentile per-packet one-way delay: 113.473 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 114.030 ms
Loss rate: 3.54%
-- Flow 3:
Average throughput: 16.86 Mbit/s
95th percentile per-packet one-way delay: 115.067 ms
Loss rate: 7.61%
```

Run 3: Report of Indigo-MusesD — Data Link

- - - - Flow 1 ingress (mean 86.26 Mbit/s) ——— Flow 1 egress (mean 84.04 Mbit/s)
- - - - Flow 2 ingress (mean 6.27 Mbit/s) ——— Flow 2 egress (mean 6.04 Mbit/s)
- - - - Flow 3 ingress (mean 18.28 Mbit/s) ——— Flow 3 egress (mean 16.86 Mbit/s)

- Flow 1 (95th percentile 113.47 ms) - Flow 2 (95th percentile 114.03 ms) - Flow 3 (95th percentile 115.07 ms)
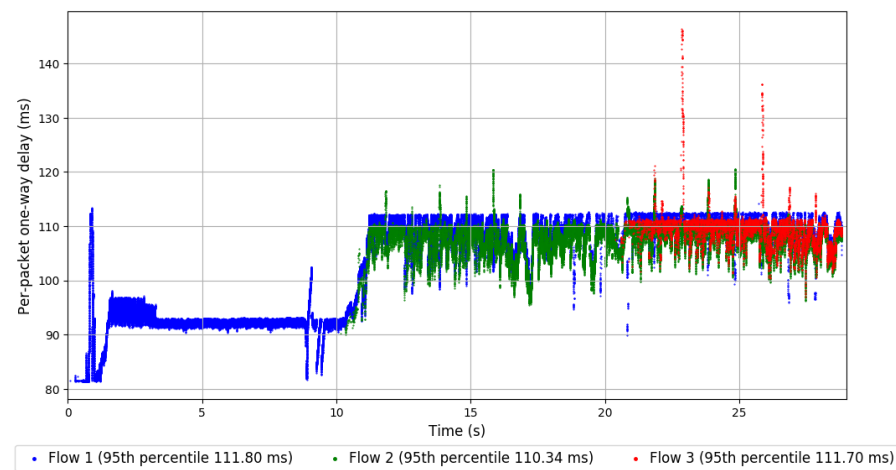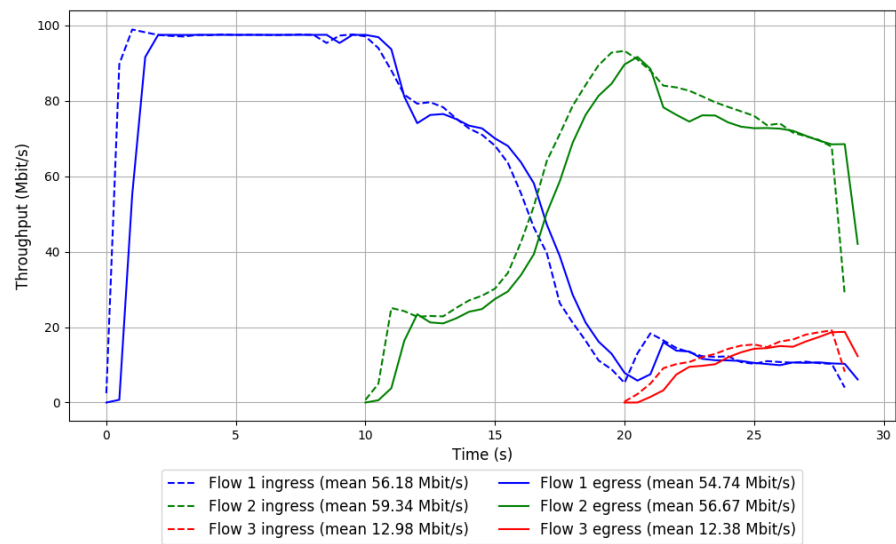
```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-06-28 02:09:32
End at: 2019-06-28 02:10:02
Local clock offset: -5.773 ms
Remote clock offset: -38.801 ms

# Below is generated by plot.py at 2019-06-28 02:52:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.15 Mbit/s
95th percentile per-packet one-way delay: 112.117 ms
Loss rate: 2.04%
-- Flow 1:
Average throughput: 78.32 Mbit/s
95th percentile per-packet one-way delay: 112.160 ms
Loss rate: 1.72%
-- Flow 2:
Average throughput: 15.72 Mbit/s
95th percentile per-packet one-way delay: 110.074 ms
Loss rate: 2.41%
-- Flow 3:
Average throughput: 19.27 Mbit/s
95th percentile per-packet one-way delay: 111.935 ms
Loss rate: 5.73%
```

Run 4: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 79.76 Mbit/s) --- Flow 1 egress (mean 78.32 Mbit/s)
Flow 2 ingress (mean 16.13 Mbit/s) --- Flow 2 egress (mean 15.72 Mbit/s)
Flow 3 ingress (mean 20.45 Mbit/s) --- Flow 3 egress (mean 19.27 Mbit/s)

Flow 1 (95th percentile 112.16 ms)   Flow 2 (95th percentile 110.07 ms)   Flow 3 (95th percentile 111.94 ms)

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-06-28 02:37:31
End at: 2019-06-28 02:38:01
Local clock offset: -6.309 ms
Remote clock offset: -11.624 ms


# Below is generated by plot.py at 2019-06-28 02:52:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.70 Mbit/s
95th percentile per-packet one-way delay: 114.703 ms
Loss rate: 3.05%
-- Flow 1:
Average throughput: 83.62 Mbit/s
95th percentile per-packet one-way delay: 114.721 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 6.77 Mbit/s
95th percentile per-packet one-way delay: 113.287 ms
Loss rate: 3.46%
-- Flow 3:
Average throughput: 19.50 Mbit/s
95th percentile per-packet one-way delay: 112.731 ms
Loss rate: 9.21%
```

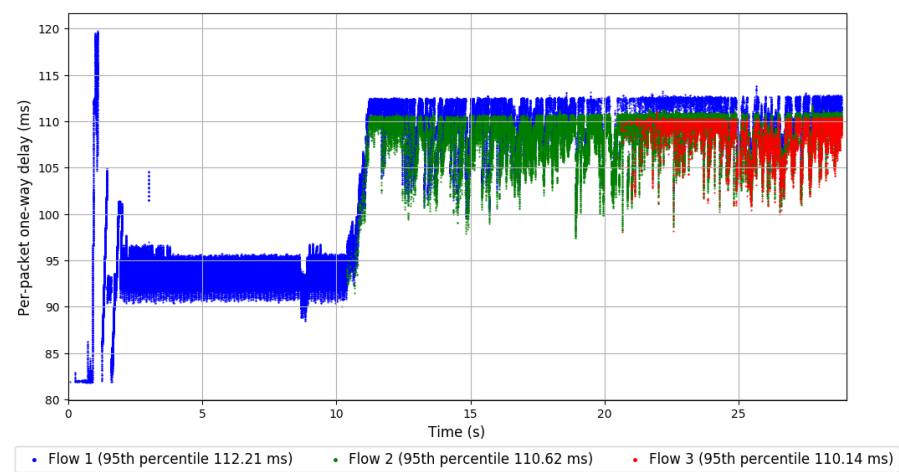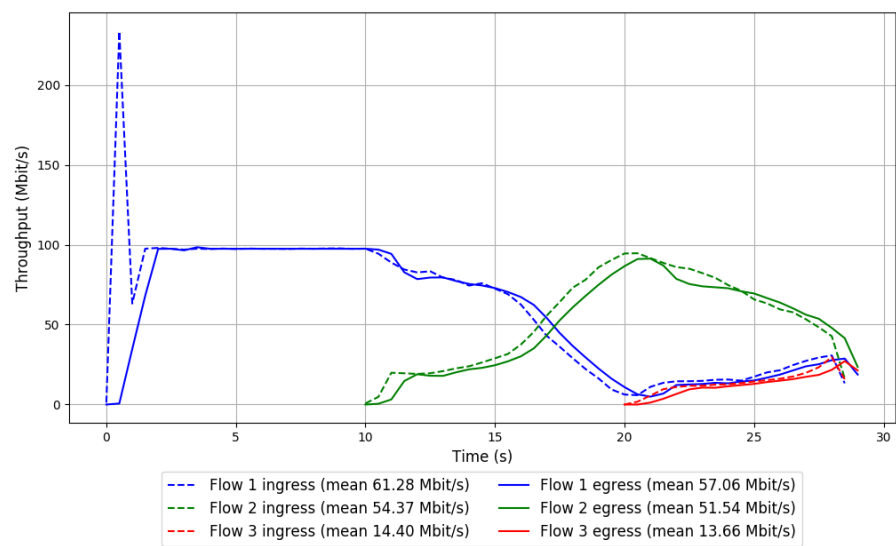Run 5: Report of Indigo-MusesD — Data Link

- - - Flow 1 ingress (mean 85.91 Mbit/s) —— Flow 1 egress (mean 83.62 Mbit/s)
- - - Flow 2 ingress (mean 7.02 Mbit/s) —— Flow 2 egress (mean 6.77 Mbit/s)
- - - Flow 3 ingress (mean 21.51 Mbit/s) —— Flow 3 egress (mean 19.50 Mbit/s)

• Flow 1 (95th percentile 114.72 ms)   • Flow 2 (95th percentile 113.29 ms)   • Flow 3 (95th percentile 112.73 ms)
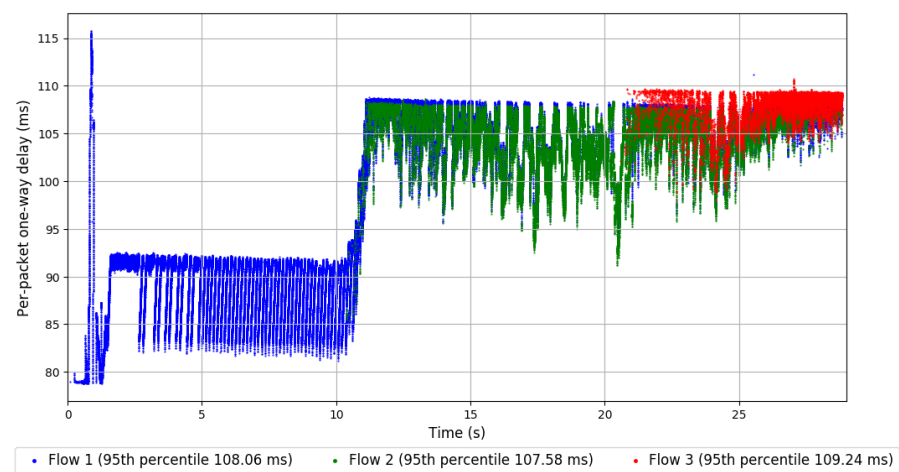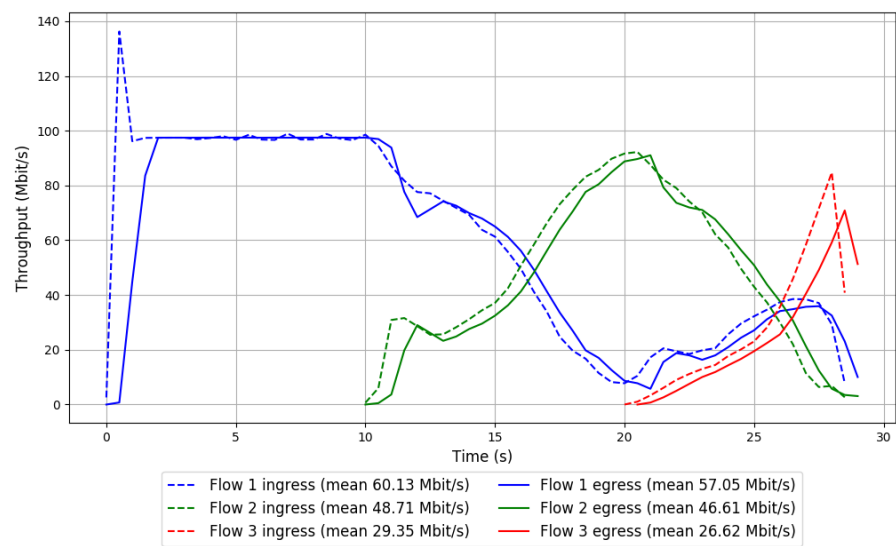
```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-06-28 00:35:15
End at: 2019-06-28 00:35:45
Local clock offset: -5.863 ms
Remote clock offset: -544.339 ms


# Below is generated by plot.py at 2019-06-28 02:53:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.79 Mbit/s
95th percentile per-packet one-way delay: 117.050 ms
Loss rate: 5.14%
-- Flow 1:
Average throughput: 61.72 Mbit/s
95th percentile per-packet one-way delay: 114.207 ms
Loss rate: 5.21%
-- Flow 2:
Average throughput: 36.32 Mbit/s
95th percentile per-packet one-way delay: 114.335 ms
Loss rate: 3.44%
-- Flow 3:
Average throughput: 32.65 Mbit/s
95th percentile per-packet one-way delay: 117.705 ms
Loss rate: 8.62%
```
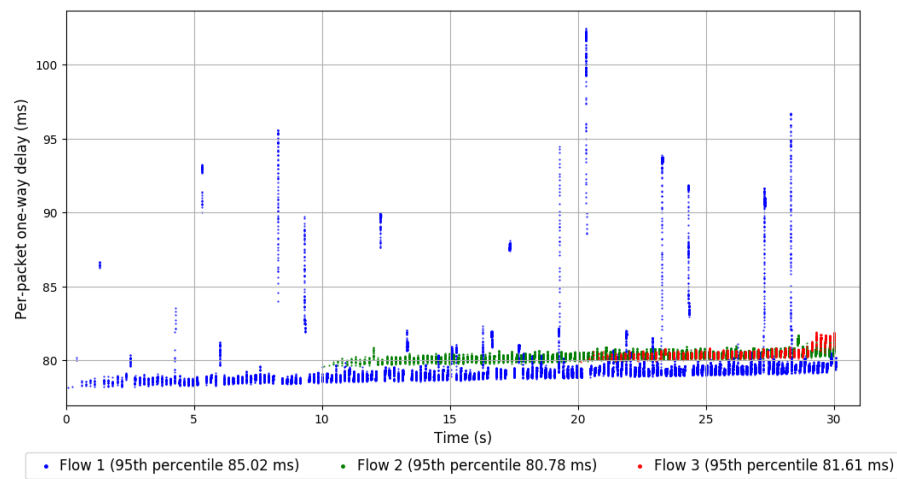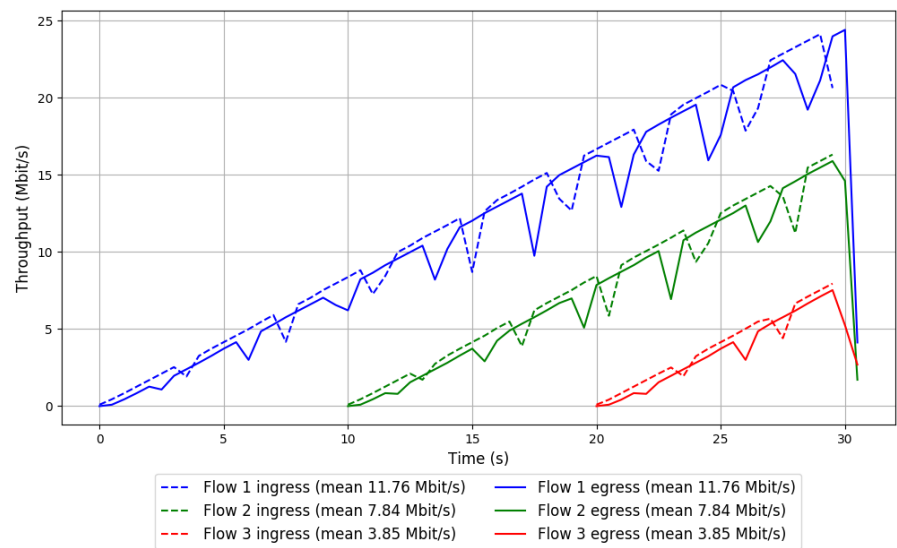
Run 1: Report of Indigo-MusesT — Data Link

- Flow 1 ingress (mean 65.19 Mbit/s)
- Flow 2 ingress (mean 37.65 Mbit/s)
- Flow 3 ingress (mean 35.75 Mbit/s)
- Flow 1 egress (mean 61.72 Mbit/s)
- Flow 2 egress (mean 36.32 Mbit/s)
- Flow 3 egress (mean 32.65 Mbit/s)

- Flow 1 (95th percentile 114.21 ms)
- Flow 2 (95th percentile 114.33 ms)
- Flow 3 (95th percentile 117.70 ms)

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-06-28 01:03:13
End at: 2019-06-28 01:03:43
Local clock offset: -5.188 ms
Remote clock offset: -605.829 ms


# Below is generated by plot.py at 2019-06-28 02:53:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.56 Mbit/s
95th percentile per-packet one-way delay: 113.071 ms
Loss rate: 5.64%
-- Flow 1:
Average throughput: 54.77 Mbit/s
95th percentile per-packet one-way delay: 113.300 ms
Loss rate: 5.00%
-- Flow 2:
Average throughput: 47.77 Mbit/s
95th percentile per-packet one-way delay: 110.070 ms
Loss rate: 4.84%
-- Flow 3:
Average throughput: 30.46 Mbit/s
95th percentile per-packet one-way delay: 111.332 ms
Loss rate: 11.94%
```
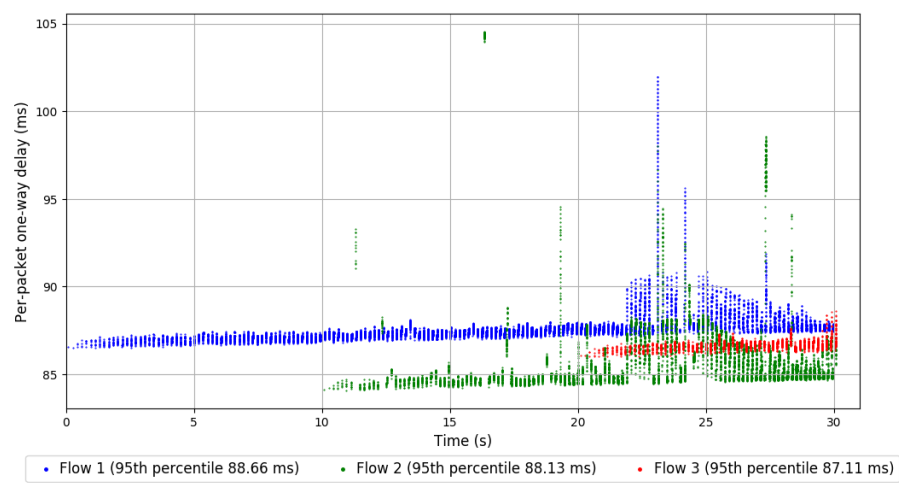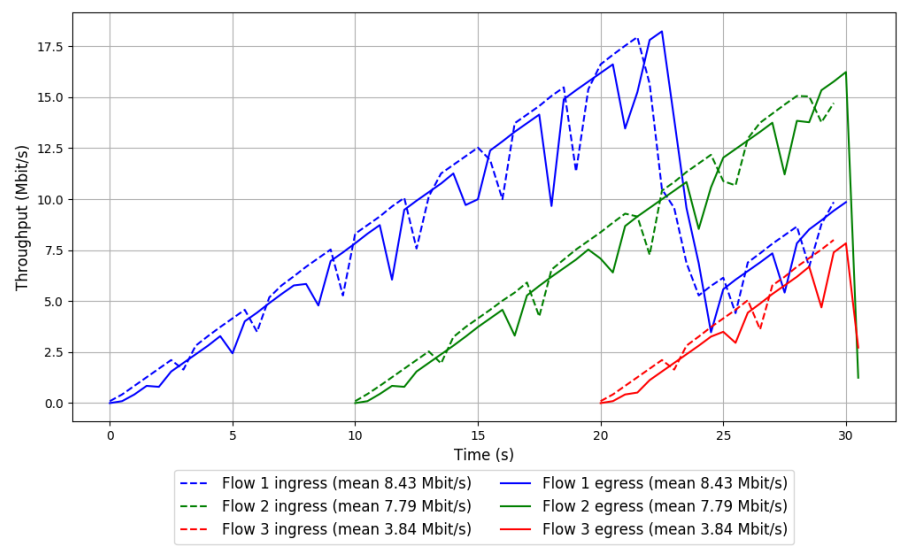
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-06-28 01:31:11
End at: 2019-06-28 01:31:41
Local clock offset: -5.336 ms
Remote clock offset: -7.389 ms


# Below is generated by plot.py at 2019-06-28 02:53:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.18 Mbit/s
95th percentile per-packet one-way delay: 111.654 ms
Loss rate: 3.34%
-- Flow 1:
Average throughput: 54.74 Mbit/s
95th percentile per-packet one-way delay: 111.801 ms
Loss rate: 2.50%
-- Flow 2:
Average throughput: 56.67 Mbit/s
95th percentile per-packet one-way delay: 110.339 ms
Loss rate: 4.44%
-- Flow 3:
Average throughput: 12.38 Mbit/s
95th percentile per-packet one-way delay: 111.701 ms
Loss rate: 4.65%
```
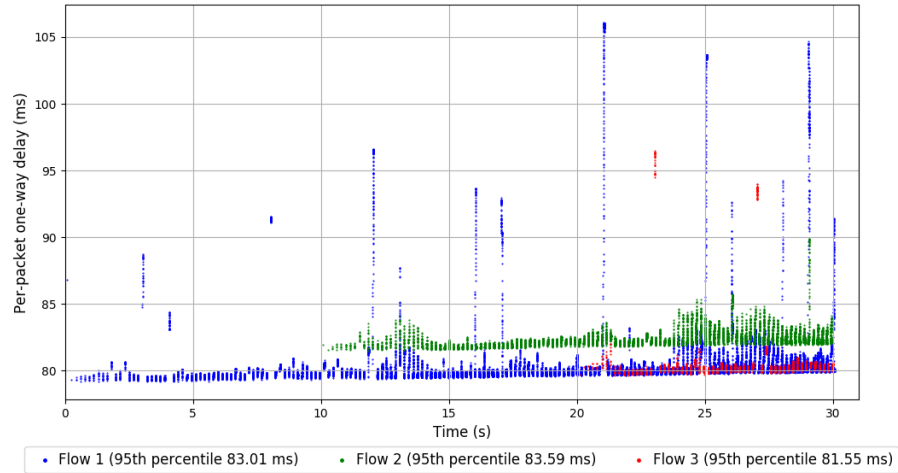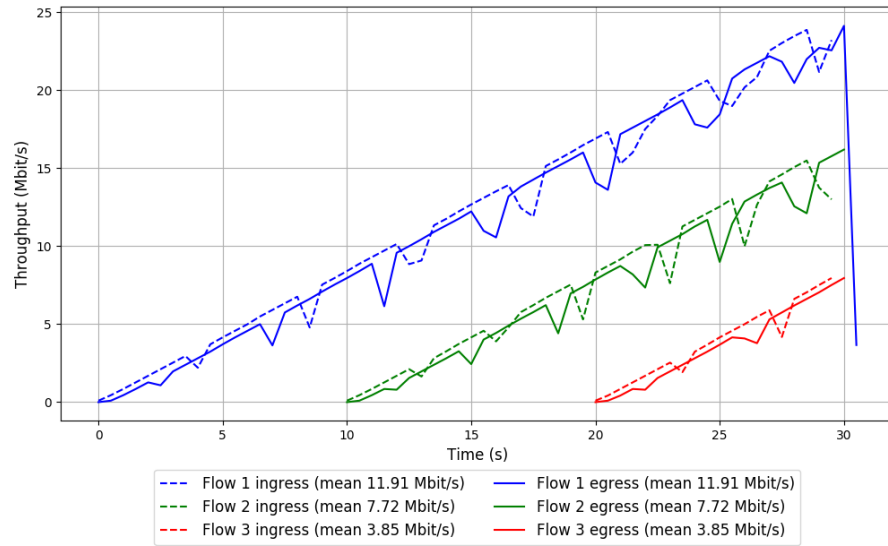
Run 3: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 56.18 Mbit/s) —— Flow 1 egress (mean 54.74 Mbit/s)
- - - Flow 2 ingress (mean 59.34 Mbit/s) —— Flow 2 egress (mean 56.67 Mbit/s)
- - - Flow 3 ingress (mean 12.98 Mbit/s) —— Flow 3 egress (mean 12.38 Mbit/s)

• Flow 1 (95th percentile 111.80 ms)   • Flow 2 (95th percentile 110.34 ms)   • Flow 3 (95th percentile 111.70 ms)

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-06-28 01:59:21
End at: 2019-06-28 01:59:51
Local clock offset: -5.975 ms
Remote clock offset: -25.833 ms

# Below is generated by plot.py at 2019-06-28 02:53:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.45 Mbit/s
95th percentile per-packet one-way delay: 112.045 ms
Loss rate: 6.13%
-- Flow 1:
Average throughput: 57.06 Mbit/s
95th percentile per-packet one-way delay: 112.212 ms
Loss rate: 6.79%
-- Flow 2:
Average throughput: 51.54 Mbit/s
95th percentile per-packet one-way delay: 110.625 ms
Loss rate: 5.10%
-- Flow 3:
Average throughput: 13.66 Mbit/s
95th percentile per-packet one-way delay: 110.138 ms
Loss rate: 5.14%
```

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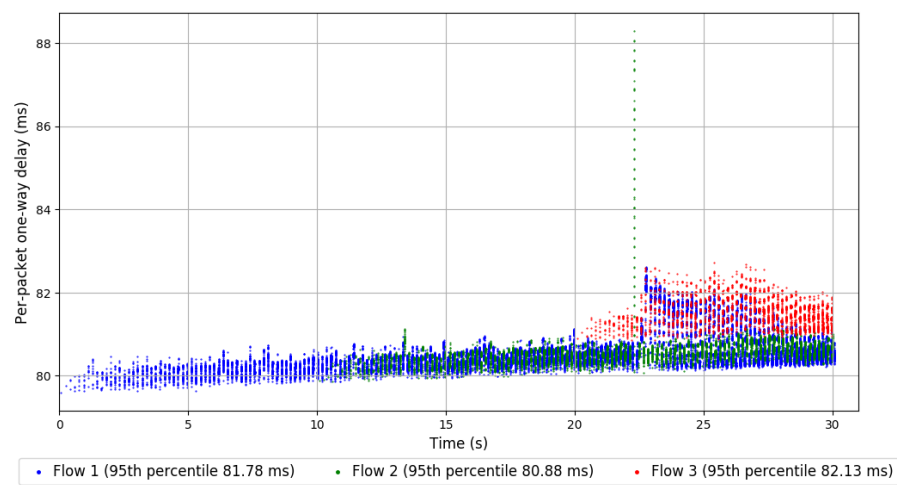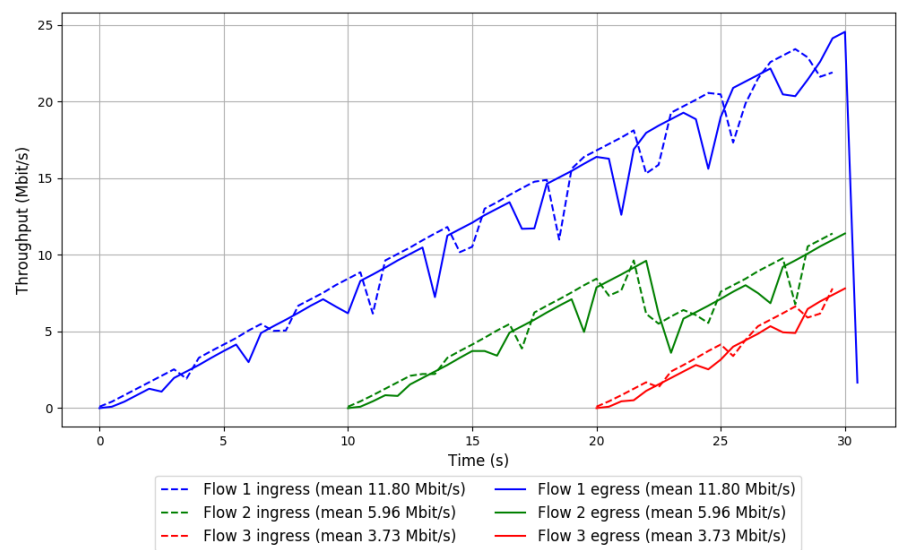
```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-06-28 02:27:20
End at: 2019-06-28 02:27:50
Local clock offset: -6.688 ms
Remote clock offset: -32.974 ms


# Below is generated by plot.py at 2019-06-28 02:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.90 Mbit/s
95th percentile per-packet one-way delay: 108.385 ms
Loss rate: 5.13%
-- Flow 1:
Average throughput: 57.05 Mbit/s
95th percentile per-packet one-way delay: 108.059 ms
Loss rate: 5.02%
-- Flow 2:
Average throughput: 46.61 Mbit/s
95th percentile per-packet one-way delay: 107.578 ms
Loss rate: 4.22%
-- Flow 3:
Average throughput: 26.62 Mbit/s
95th percentile per-packet one-way delay: 109.244 ms
Loss rate: 9.27%
```

Run 5: Report of Indigo-MusesT — Data Link

- - - - Flow 1 ingress (mean 60.13 Mbit/s) ——— Flow 1 egress (mean 57.05 Mbit/s)
- - - - Flow 2 ingress (mean 48.71 Mbit/s) ——— Flow 2 egress (mean 46.61 Mbit/s)
- - - - Flow 3 ingress (mean 29.35 Mbit/s) ——— Flow 3 egress (mean 26.62 Mbit/s)

• Flow 1 (95th percentile 108.06 ms)   • Flow 2 (95th percentile 107.58 ms)   • Flow 3 (95th percentile 109.24 ms)
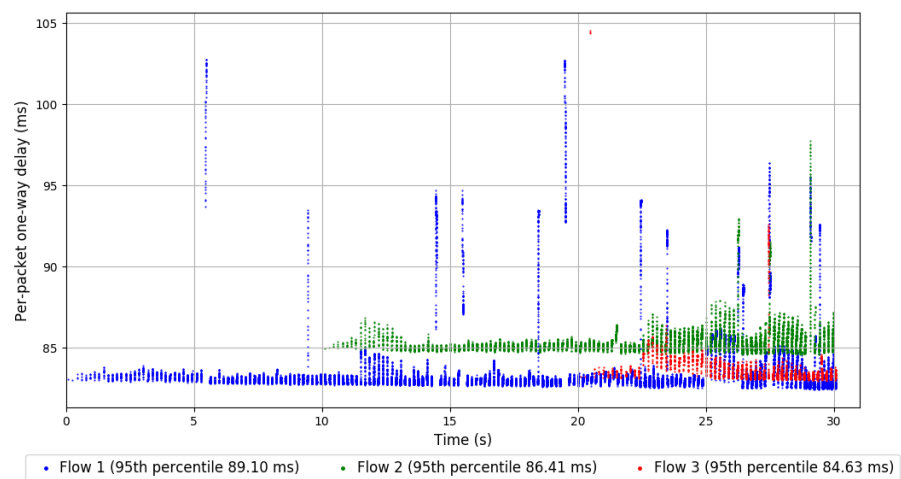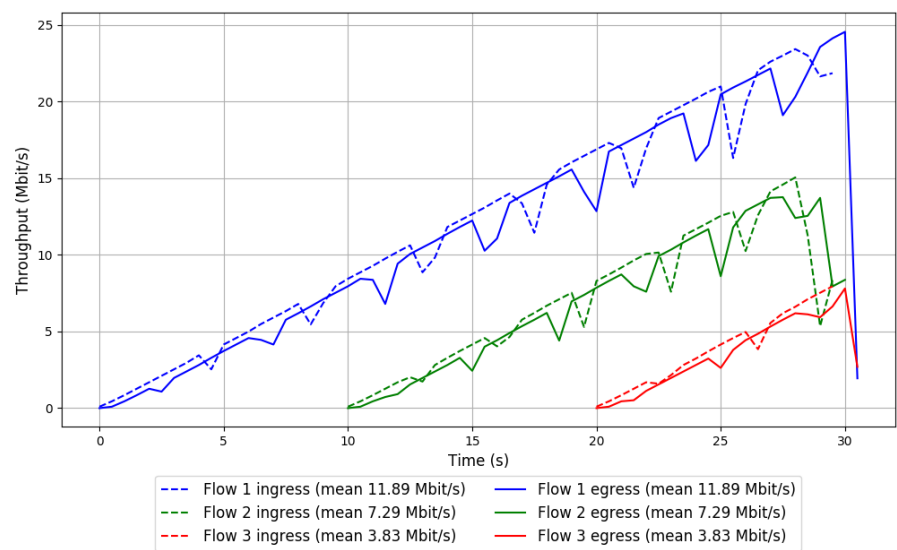
```
Run 1: Statistics of LEDBAT

Start at: 2019-06-28 00:44:11
End at: 2019-06-28 00:44:41
Local clock offset: -5.037 ms
Remote clock offset: -567.821 ms


# Below is generated by plot.py at 2019-06-28 02:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.24 Mbit/s
95th percentile per-packet one-way delay: 81.616 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 85.018 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 80.780 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 81.608 ms
Loss rate: 0.00%
```
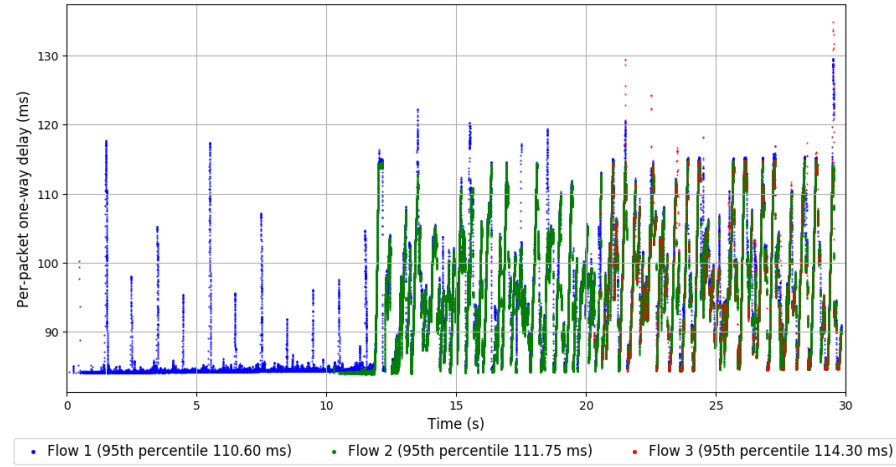
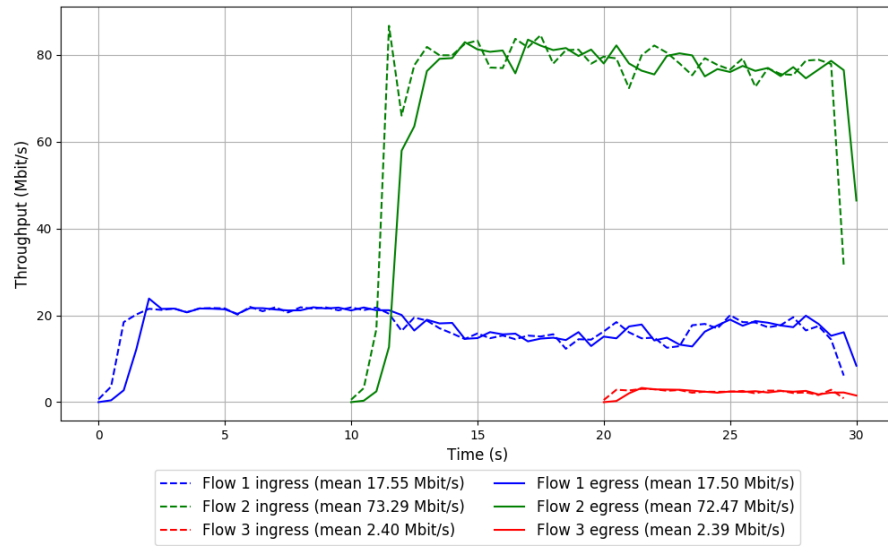## Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-06-28 01:12:10
End at: 2019-06-28 01:12:40
Local clock offset: -5.524 ms
Remote clock offset: -620.493 ms


# Below is generated by plot.py at 2019-06-28 02:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.87 Mbit/s
95th percentile per-packet one-way delay: 88.450 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 8.43 Mbit/s
95th percentile per-packet one-way delay: 88.655 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 88.126 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.84 Mbit/s
95th percentile per-packet one-way delay: 87.113 ms
Loss rate: 0.00%
```
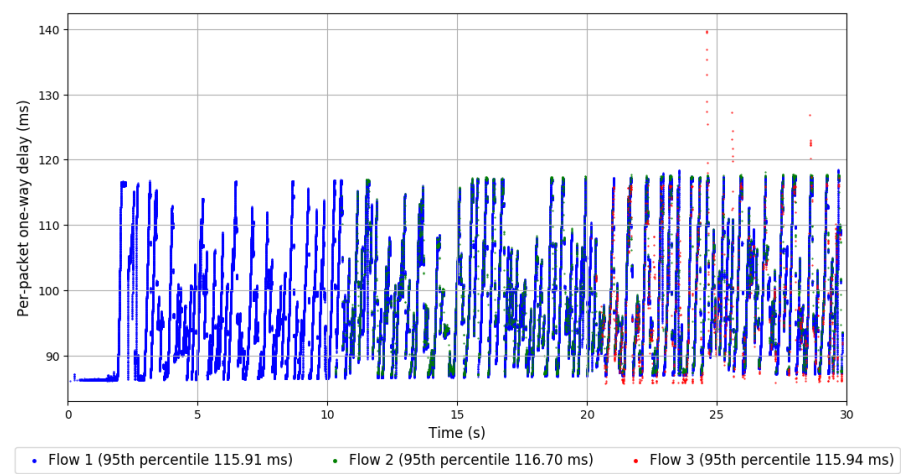
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-06-28 01:40:07
End at: 2019-06-28 01:40:37
Local clock offset: -5.603 ms
Remote clock offset: -14.625 ms


# Below is generated by plot.py at 2019-06-28 02:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.30 Mbit/s
95th percentile per-packet one-way delay: 83.393 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.91 Mbit/s
95th percentile per-packet one-way delay: 83.008 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 83.593 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 81.546 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-06-28 02:08:18
End at: 2019-06-28 02:08:48
Local clock offset: -5.062 ms
Remote clock offset: -38.303 ms

# Below is generated by plot.py at 2019-06-28 02:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.99 Mbit/s
95th percentile per-packet one-way delay: 81.786 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 81.776 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 80.875 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 3.73 Mbit/s
95th percentile per-packet one-way delay: 82.132 ms
Loss rate: 0.00%
```
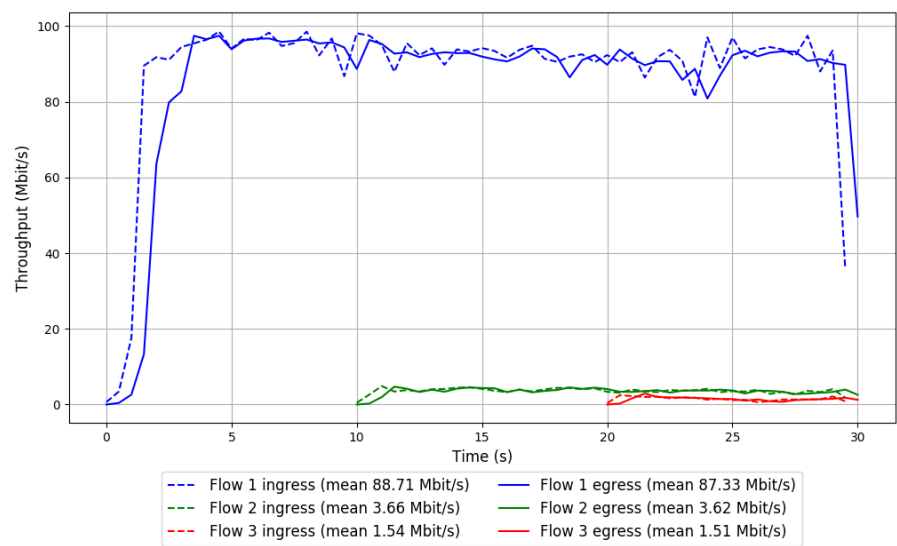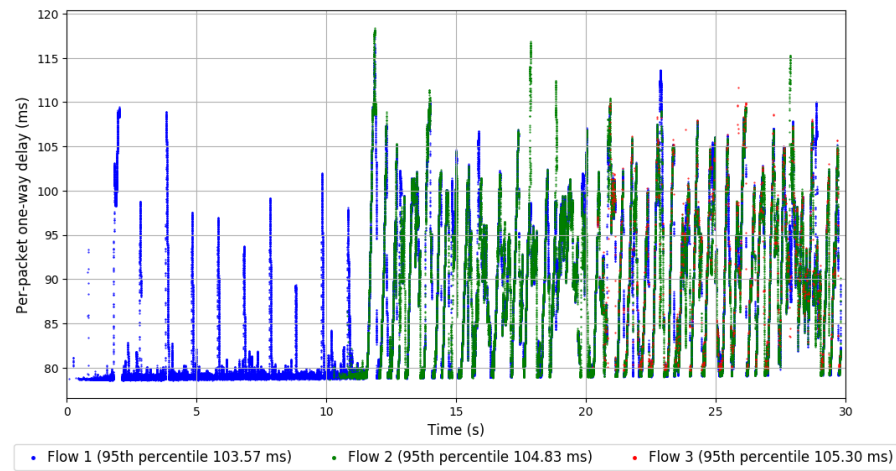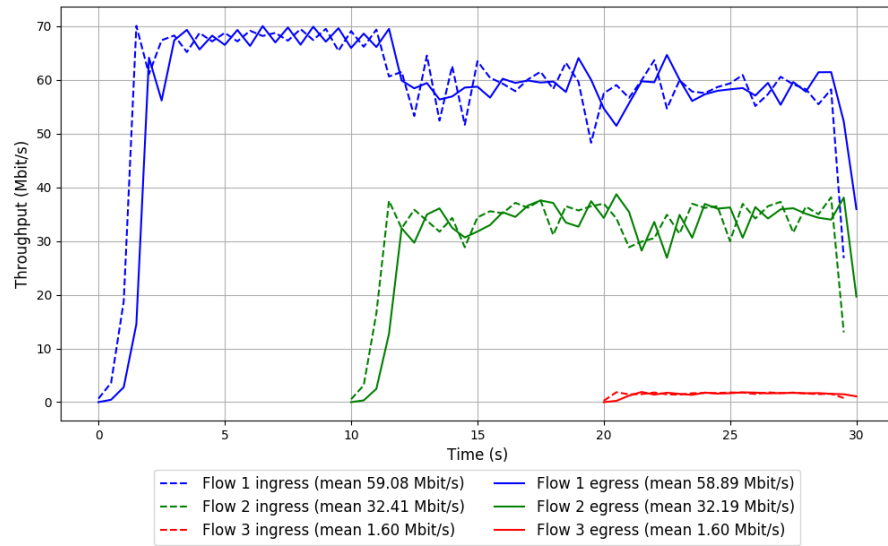
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 11.80 Mbit/s) --- Flow 1 egress (mean 11.80 Mbit/s)
Flow 2 ingress (mean 5.96 Mbit/s) --- Flow 2 egress (mean 5.96 Mbit/s)
Flow 3 ingress (mean 3.73 Mbit/s) --- Flow 3 egress (mean 3.73 Mbit/s)

Flow 1 (95th percentile 81.78 ms) • Flow 2 (95th percentile 80.88 ms) • Flow 3 (95th percentile 82.13 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2019-06-28 02:36:16
End at: 2019-06-28 02:36:46
Local clock offset: -6.589 ms
Remote clock offset: -12.799 ms


# Below is generated by plot.py at 2019-06-28 02:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.99 Mbit/s
95th percentile per-packet one-way delay: 87.384 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.89 Mbit/s
95th percentile per-packet one-way delay: 89.096 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 86.413 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 3.83 Mbit/s
95th percentile per-packet one-way delay: 84.633 ms
Loss rate: 0.00%
```
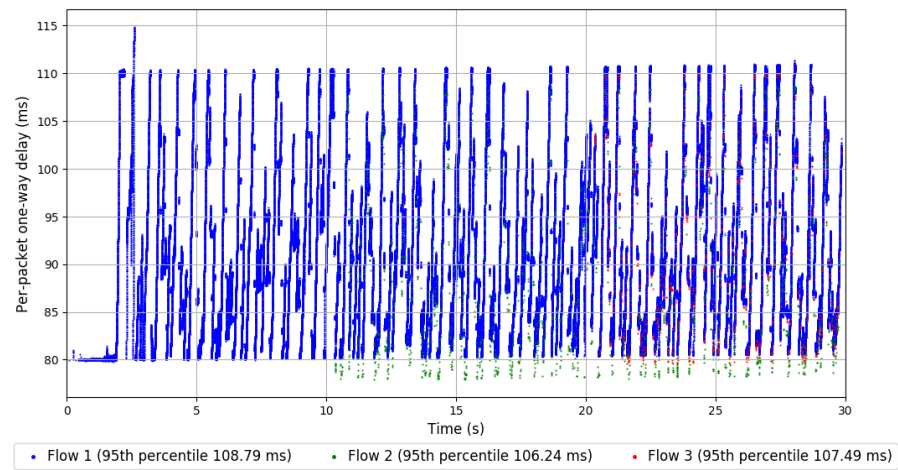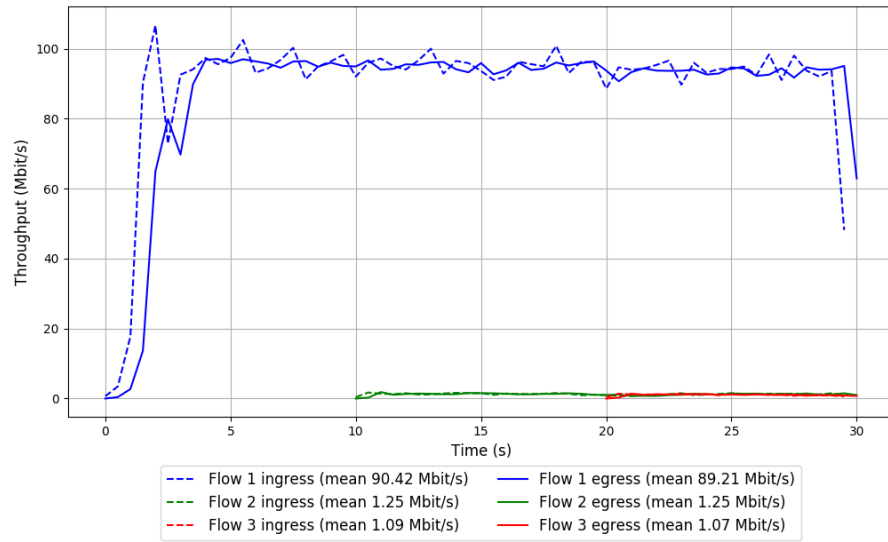
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 00:42:55
End at: 2019-06-28 00:43:25
Local clock offset: -5.673 ms
Remote clock offset: -559.681 ms


# Below is generated by plot.py at 2019-06-28 02:53:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.28 Mbit/s
95th percentile per-packet one-way delay: 111.475 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 17.50 Mbit/s
95th percentile per-packet one-way delay: 110.601 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 72.47 Mbit/s
95th percentile per-packet one-way delay: 111.748 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 2.39 Mbit/s
95th percentile per-packet one-way delay: 114.304 ms
Loss rate: 0.35%
```

Run 1: Report of Muses_DecisionTree — Data Link
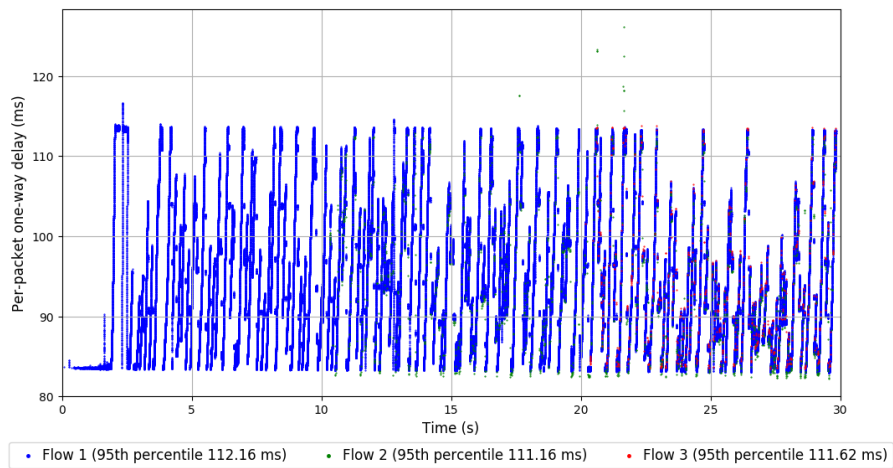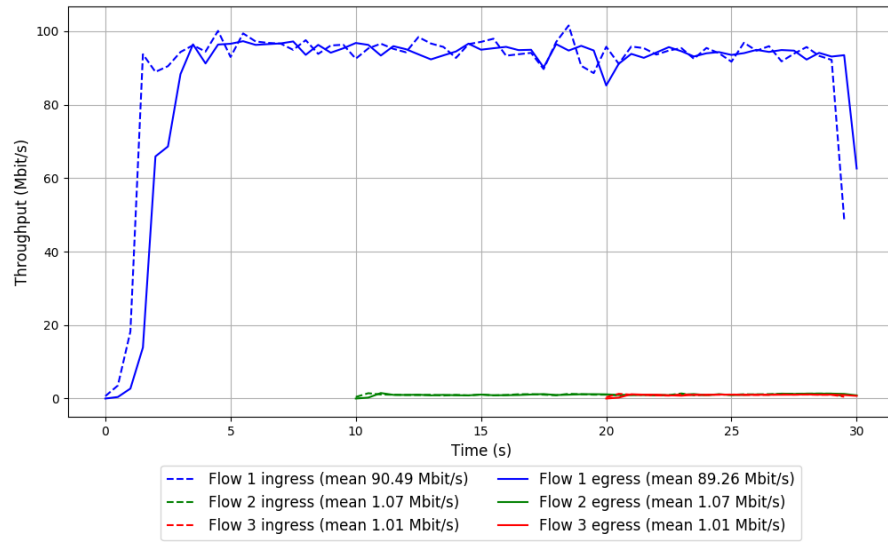
```
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 01:10:53
End at: 2019-06-28 01:11:23
Local clock offset: -4.845 ms
Remote clock offset: -616.695 ms


# Below is generated by plot.py at 2019-06-28 02:54:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.21 Mbit/s
95th percentile per-packet one-way delay: 115.941 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 87.33 Mbit/s
95th percentile per-packet one-way delay: 115.907 ms
Loss rate: 1.53%
-- Flow 2:
Average throughput: 3.62 Mbit/s
95th percentile per-packet one-way delay: 116.696 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 115.941 ms
Loss rate: 1.65%
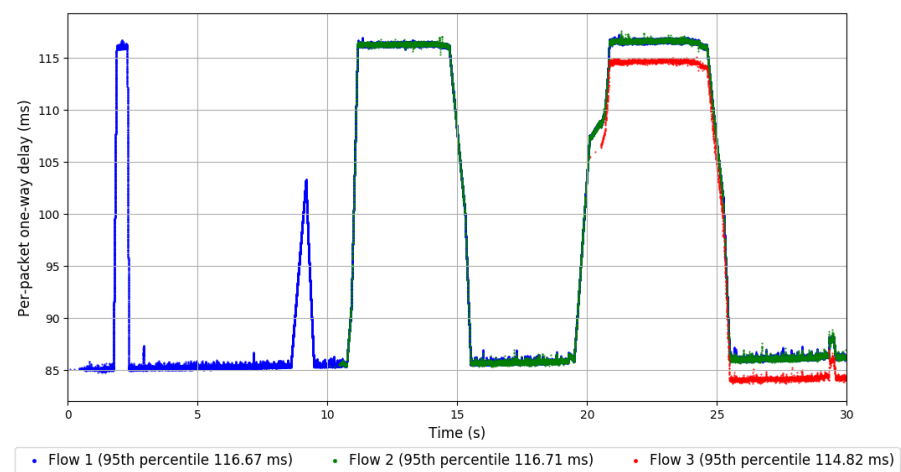```

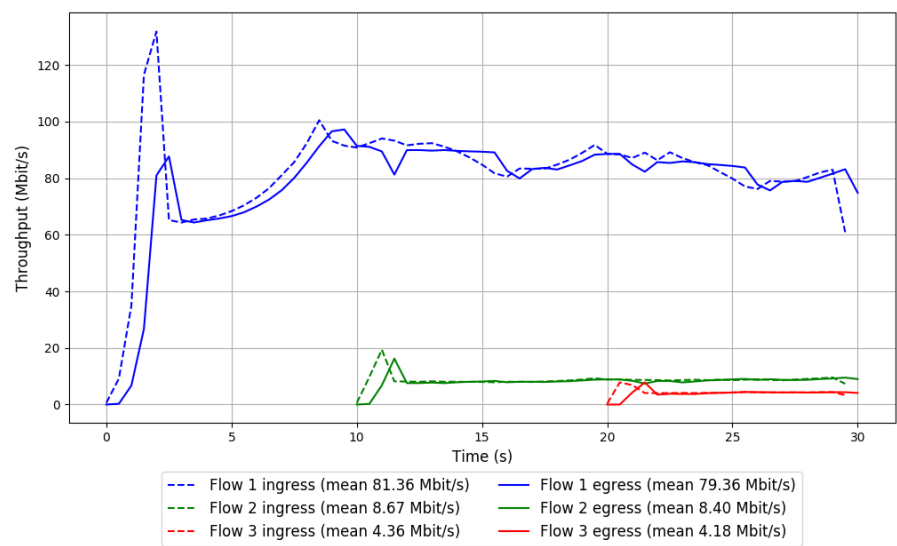Run 2: Report of Muses_DecisionTree — Data Link

```
Run 3: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 01:38:50
End at: 2019-06-28 01:39:20
Local clock offset: -5.382 ms
Remote clock offset: -12.806 ms


# Below is generated by plot.py at 2019-06-28 02:54:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.71 Mbit/s
95th percentile per-packet one-way delay: 103.989 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 58.89 Mbit/s
95th percentile per-packet one-way delay: 103.566 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 104.827 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 105.301 ms
Loss rate: 0.31%
```

Run 3: Report of Muses_DecisionTree — Data Link

Run 4: Statistics of Muses_DecisionTree

Start at: 2019-06-28 02:07:01
End at: 2019-06-28 02:07:31
Local clock offset: -5.026 ms
Remote clock offset: -36.452 ms

Below is generated by plot.py at 2019-06-28 02:54:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 90.38 Mbit/s
95th percentile per-packet one-way delay: 108.762 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 89.21 Mbit/s
95th percentile per-packet one-way delay: 108.791 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 106.243 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 107.492 ms
Loss rate: 1.44%

Run 4: Report of Muses_DecisionTree — Data Link

```
Run 5: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 02:34:59
End at: 2019-06-28 02:35:29
Local clock offset: -6.27 ms
Remote clock offset: -14.463 ms


# Below is generated by plot.py at 2019-06-28 02:54:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.29 Mbit/s
95th percentile per-packet one-way delay: 112.143 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 89.26 Mbit/s
95th percentile per-packet one-way delay: 112.163 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 111.156 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 111.618 ms
Loss rate: 0.36%
```

Run 5: Report of Muses_DecisionTree — Data Link

- - - - Flow 1 ingress (mean 90.49 Mbit/s) ——— Flow 1 egress (mean 89.26 Mbit/s)
- - - - Flow 2 ingress (mean 1.07 Mbit/s) ——— Flow 2 egress (mean 1.07 Mbit/s)
- - - - Flow 3 ingress (mean 1.01 Mbit/s) ——— Flow 3 egress (mean 1.01 Mbit/s)

• Flow 1 (95th percentile 112.16 ms) • Flow 2 (95th percentile 111.16 ms) • Flow 3 (95th percentile 111.62 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-06-28 00:27:36
End at: 2019-06-28 00:28:06
Local clock offset: -5.203 ms
Remote clock offset: -527.799 ms


# Below is generated by plot.py at 2019-06-28 02:54:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.32 Mbit/s
95th percentile per-packet one-way delay: 116.676 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 79.36 Mbit/s
95th percentile per-packet one-way delay: 116.675 ms
Loss rate: 2.45%
-- Flow 2:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 116.712 ms
Loss rate: 3.11%
-- Flow 3:
Average throughput: 4.18 Mbit/s
95th percentile per-packet one-way delay: 114.816 ms
Loss rate: 4.24%
```

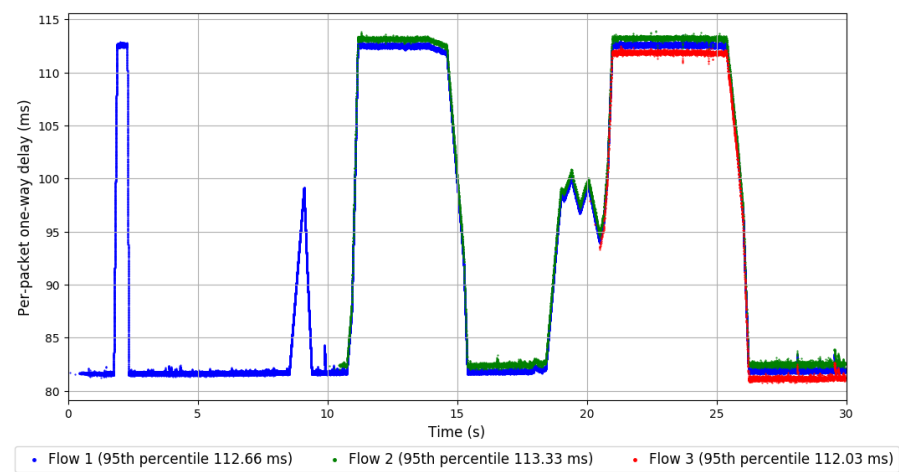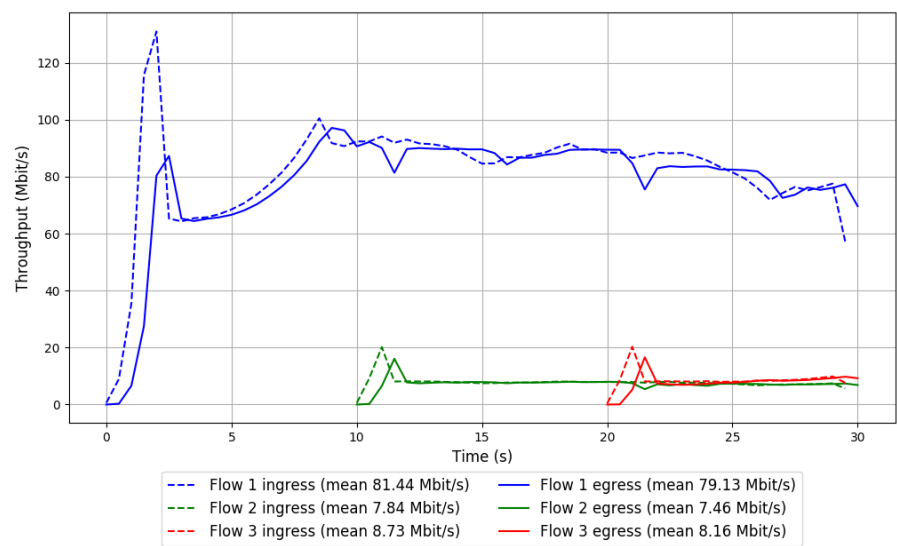## Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 81.36 Mbit/s) — Flow 1 egress (mean 79.36 Mbit/s)
Flow 2 ingress (mean 8.67 Mbit/s) — Flow 2 egress (mean 8.40 Mbit/s)
Flow 3 ingress (mean 4.36 Mbit/s) — Flow 3 egress (mean 4.18 Mbit/s)

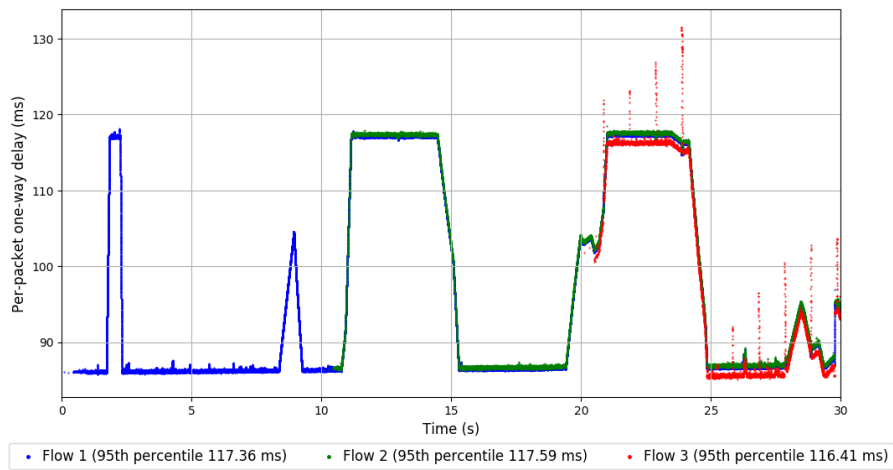Flow 1 (95th percentile 116.67 ms) — Flow 2 (95th percentile 116.71 ms) — Flow 3 (95th percentile 114.82 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-06-28 00:55:34
End at: 2019-06-28 00:56:04
Local clock offset: -4.987 ms
Remote clock offset: -586.277 ms


# Below is generated by plot.py at 2019-06-28 02:54:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.90 Mbit/s
95th percentile per-packet one-way delay: 116.073 ms
Loss rate: 2.82%
-- Flow 1:
Average throughput: 78.98 Mbit/s
95th percentile per-packet one-way delay: 116.011 ms
Loss rate: 2.64%
-- Flow 2:
Average throughput: 7.62 Mbit/s
95th percentile per-packet one-way delay: 116.512 ms
Loss rate: 4.10%
-- Flow 3:
Average throughput: 8.63 Mbit/s
95th percentile per-packet one-way delay: 116.567 ms
Loss rate: 5.56%
```

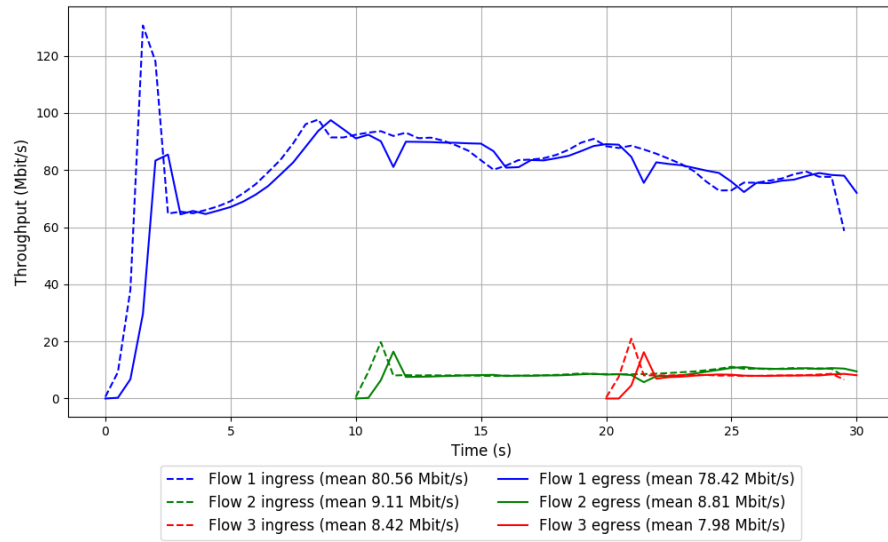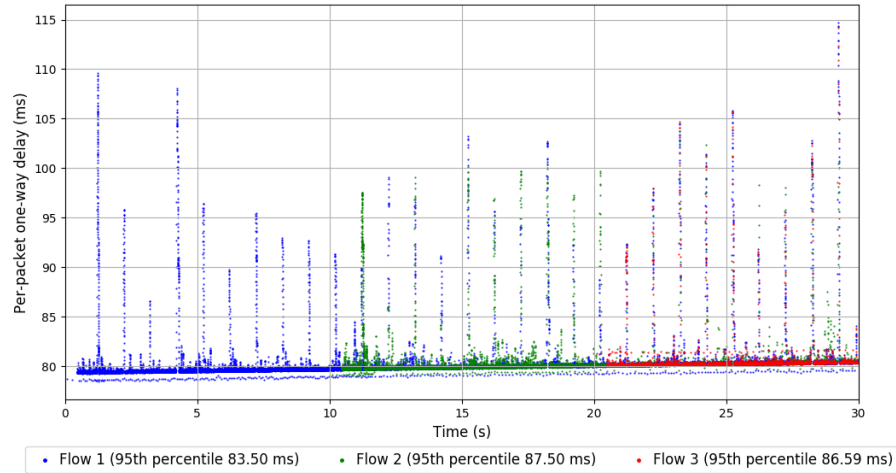Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-06-28 01:23:32
End at: 2019-06-28 01:24:02
Local clock offset: -6.096 ms
Remote clock offset: -642.939 ms


# Below is generated by plot.py at 2019-06-28 02:54:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.11 Mbit/s
95th percentile per-packet one-way delay: 118.409 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 79.94 Mbit/s
95th percentile per-packet one-way delay: 118.405 ms
Loss rate: 2.45%
-- Flow 2:
Average throughput: 4.25 Mbit/s
95th percentile per-packet one-way delay: 118.116 ms
Loss rate: 4.08%
-- Flow 3:
Average throughput: 7.11 Mbit/s
95th percentile per-packet one-way delay: 118.491 ms
Loss rate: 7.55%
```

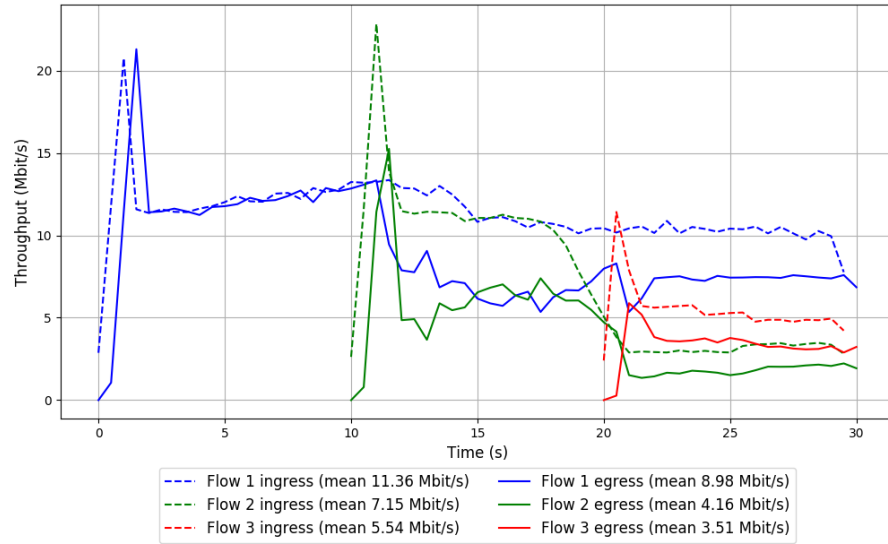## Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 81.94 Mbit/s) —— Flow 1 egress (mean 79.94 Mbit/s)
Flow 2 ingress (mean 4.43 Mbit/s) —— Flow 2 egress (mean 4.25 Mbit/s)
Flow 3 ingress (mean 7.69 Mbit/s) —— Flow 3 egress (mean 7.11 Mbit/s)

• Flow 1 (95th percentile 118.41 ms)   • Flow 2 (95th percentile 118.12 ms)   • Flow 3 (95th percentile 118.49 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-06-28 01:51:41
End at: 2019-06-28 01:52:11
Local clock offset: -5.499 ms
Remote clock offset: -17.663 ms


# Below is generated by plot.py at 2019-06-28 02:55:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.77 Mbit/s
95th percentile per-packet one-way delay: 112.689 ms
Loss rate: 3.09%
-- Flow 1:
Average throughput: 79.13 Mbit/s
95th percentile per-packet one-way delay: 112.656 ms
Loss rate: 2.85%
-- Flow 2:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 113.335 ms
Loss rate: 4.87%
-- Flow 3:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 112.025 ms
Loss rate: 6.69%
```

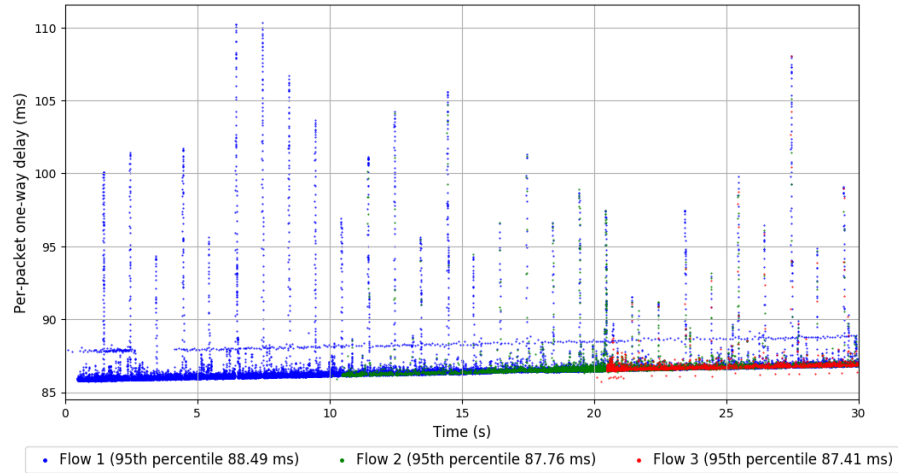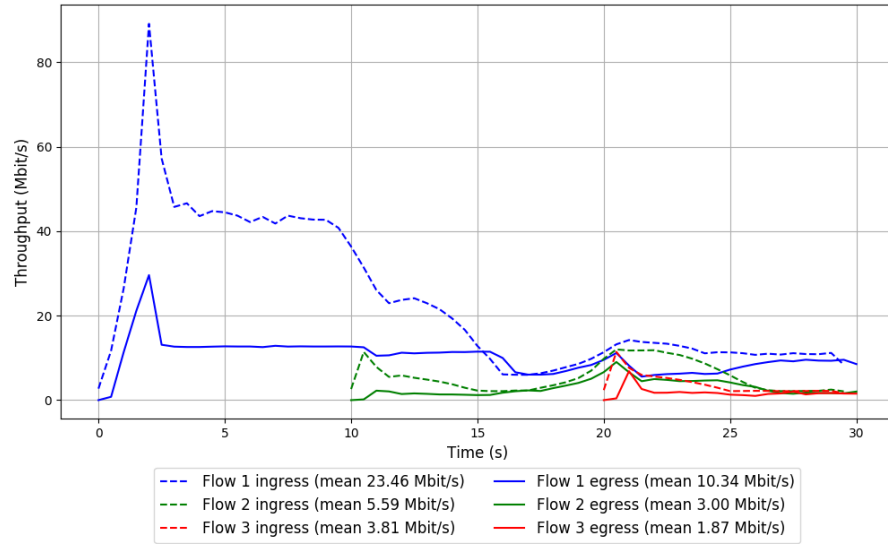Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 81.44 Mbit/s)   Flow 1 egress (mean 79.13 Mbit/s)
Flow 2 ingress (mean 7.84 Mbit/s)   Flow 2 egress (mean 7.46 Mbit/s)
Flow 3 ingress (mean 8.73 Mbit/s)   Flow 3 egress (mean 8.16 Mbit/s)

Flow 1 (95th percentile 112.66 ms)   Flow 2 (95th percentile 113.33 ms)   Flow 3 (95th percentile 112.03 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-06-28 02:19:41
End at: 2019-06-28 02:20:11
Local clock offset: -5.121 ms
Remote clock offset: -48.725 ms


# Below is generated by plot.py at 2019-06-28 02:55:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.89 Mbit/s
95th percentile per-packet one-way delay: 117.381 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 78.42 Mbit/s
95th percentile per-packet one-way delay: 117.358 ms
Loss rate: 2.64%
-- Flow 2:
Average throughput: 8.81 Mbit/s
95th percentile per-packet one-way delay: 117.594 ms
Loss rate: 3.37%
-- Flow 3:
Average throughput: 7.98 Mbit/s
95th percentile per-packet one-way delay: 116.407 ms
Loss rate: 5.25%
```
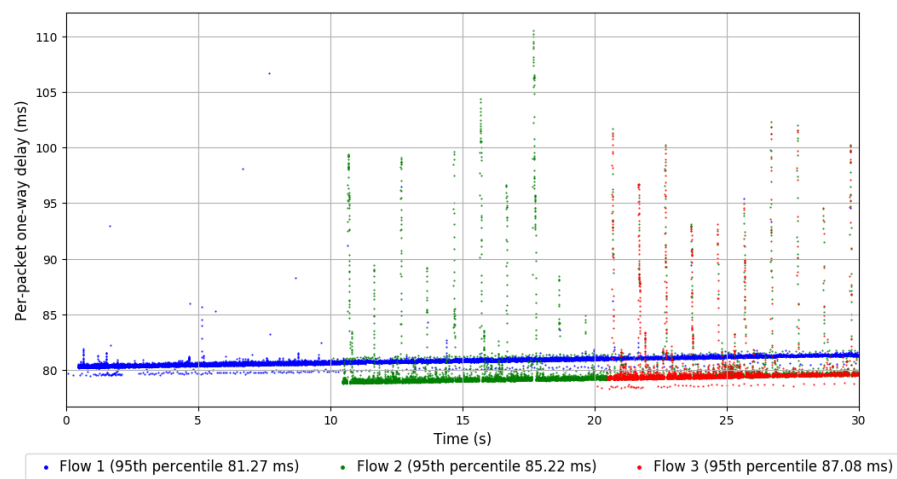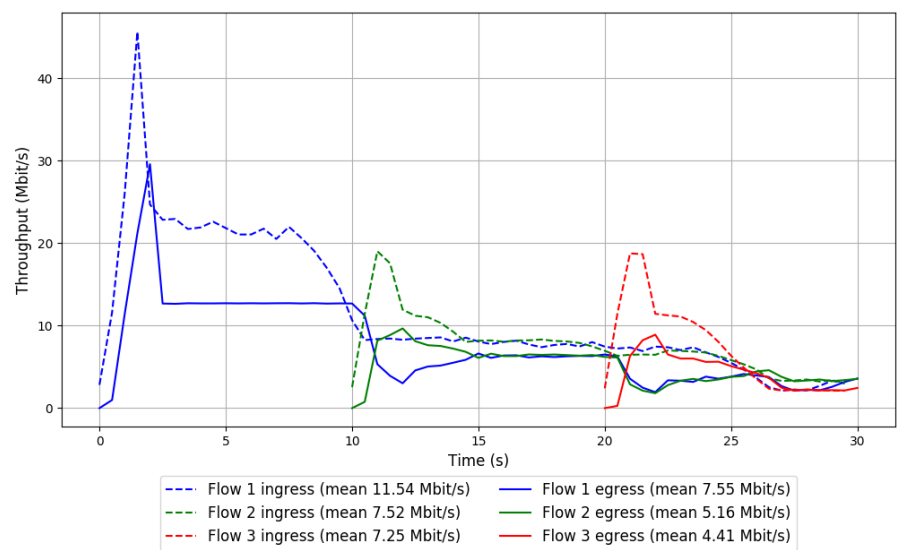
Run 5: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 80.56 Mbit/s) ——— Flow 1 egress (mean 78.42 Mbit/s)
- - - - Flow 2 ingress (mean 9.11 Mbit/s) ——— Flow 2 egress (mean 8.81 Mbit/s)
- - - - Flow 3 ingress (mean 8.42 Mbit/s) ——— Flow 3 egress (mean 7.98 Mbit/s)

- Flow 1 (95th percentile 117.36 ms) • Flow 2 (95th percentile 117.59 ms) • Flow 3 (95th percentile 116.41 ms)
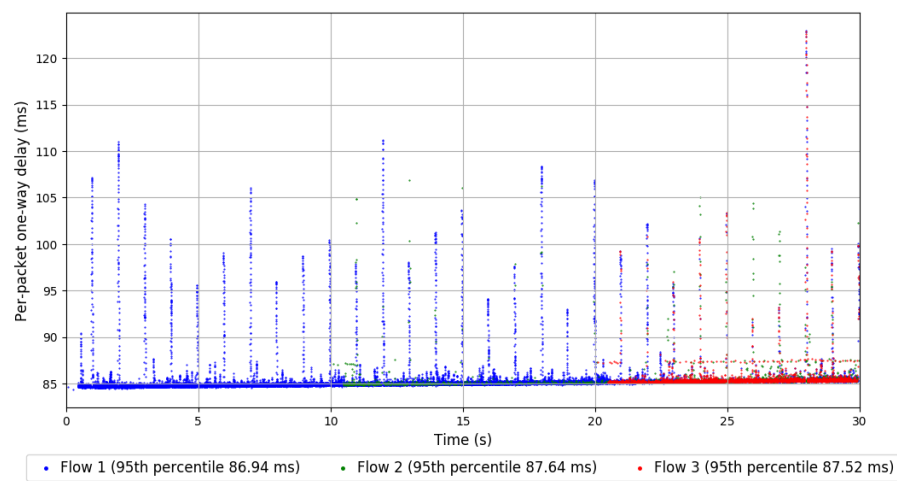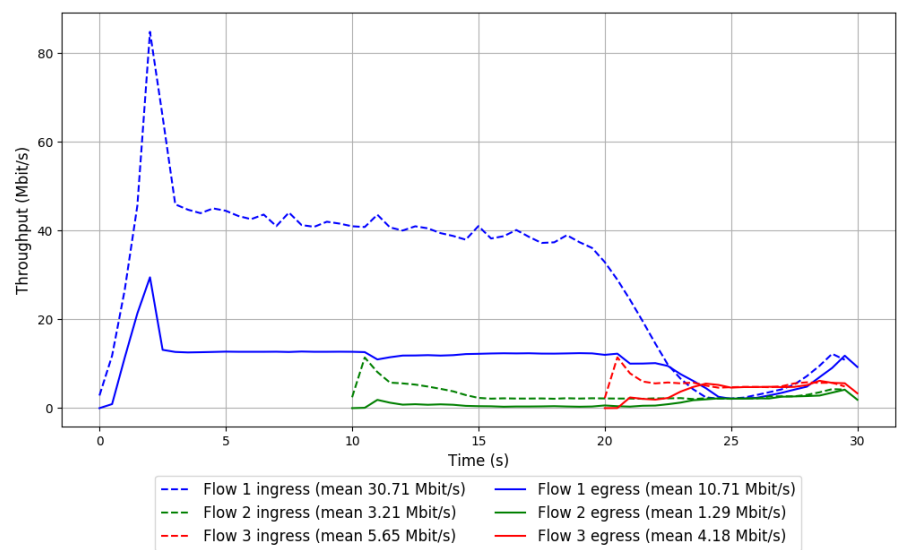
```
Run 1: Statistics of PCC-Expr

Start at: 2019-06-28 00:37:53
End at: 2019-06-28 00:38:23
Local clock offset: -6.016 ms
Remote clock offset: -554.472 ms


# Below is generated by plot.py at 2019-06-28 02:55:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 84.749 ms
Loss rate: 28.09%
-- Flow 1:
Average throughput: 8.98 Mbit/s
95th percentile per-packet one-way delay: 83.504 ms
Loss rate: 20.97%
-- Flow 2:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 87.502 ms
Loss rate: 41.82%
-- Flow 3:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 86.589 ms
Loss rate: 36.65%
```
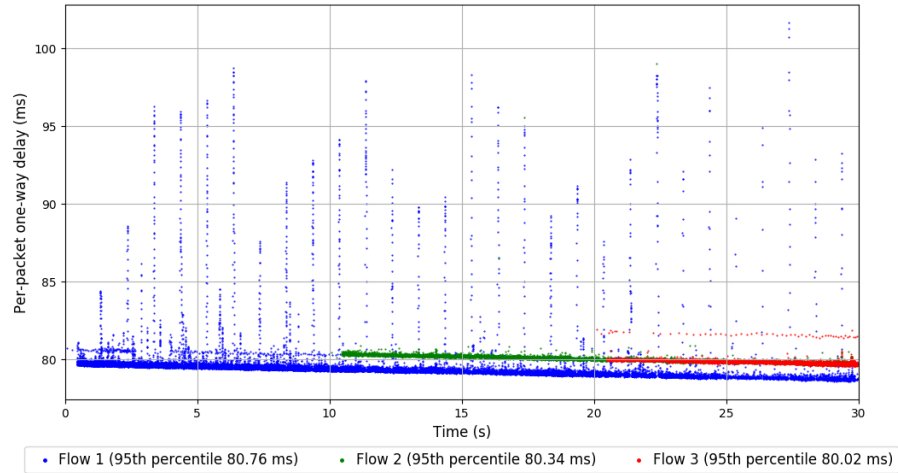
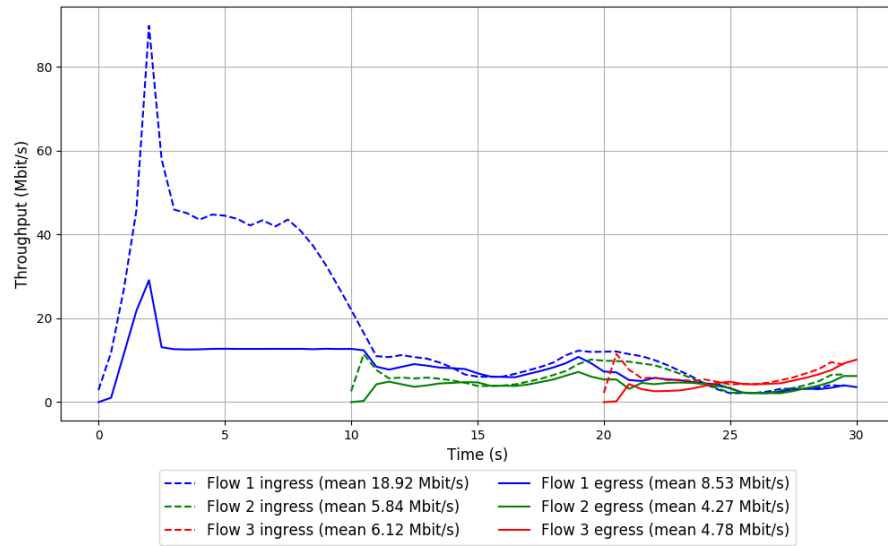Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-06-28 01:05:51
End at: 2019-06-28 01:06:21
Local clock offset: -5.725 ms
Remote clock offset: -605.985 ms


# Below is generated by plot.py at 2019-06-28 02:55:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 88.332 ms
Loss rate: 54.45%
-- Flow 1:
Average throughput: 10.34 Mbit/s
95th percentile per-packet one-way delay: 88.489 ms
Loss rate: 55.94%
-- Flow 2:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 87.758 ms
Loss rate: 46.30%
-- Flow 3:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 87.411 ms
Loss rate: 50.76%
```
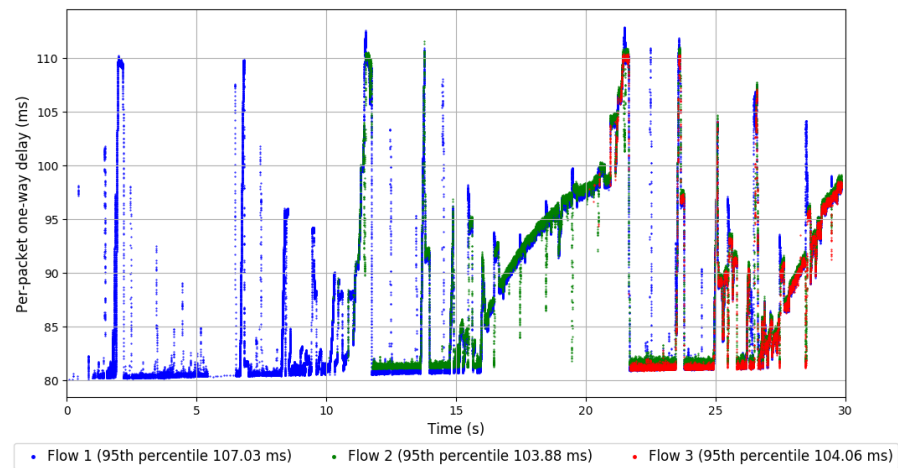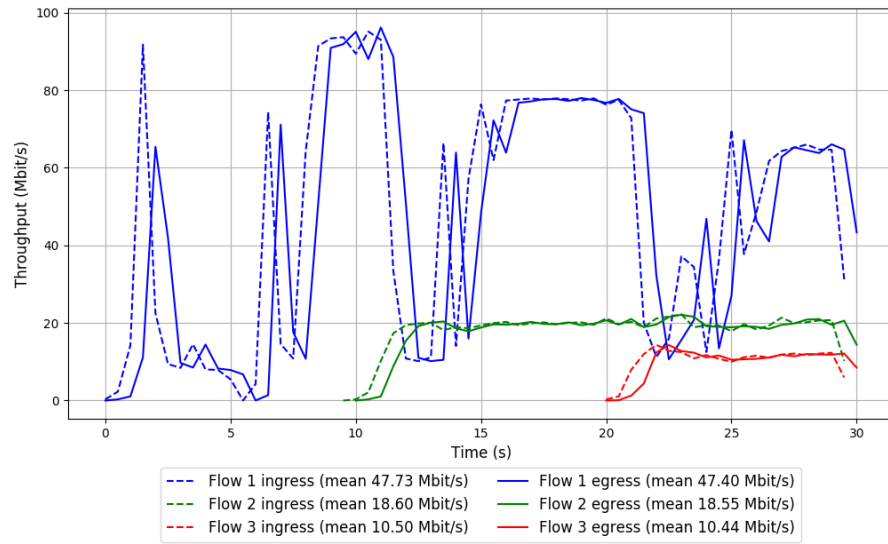
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 23.46 Mbit/s) — Flow 1 egress (mean 10.34 Mbit/s)
Flow 2 ingress (mean 5.59 Mbit/s) — Flow 2 egress (mean 3.00 Mbit/s)
Flow 3 ingress (mean 3.81 Mbit/s) — Flow 3 egress (mean 1.87 Mbit/s)

Flow 1 (95th percentile 88.49 ms)   Flow 2 (95th percentile 87.76 ms)   Flow 3 (95th percentile 87.41 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2019-06-28 01:33:48
End at: 2019-06-28 01:34:18
Local clock offset: -5.416 ms
Remote clock offset: -13.967 ms


# Below is generated by plot.py at 2019-06-28 02:55:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.44 Mbit/s
95th percentile per-packet one-way delay: 81.324 ms
Loss rate: 34.31%
-- Flow 1:
Average throughput: 7.55 Mbit/s
95th percentile per-packet one-way delay: 81.268 ms
Loss rate: 34.55%
-- Flow 2:
Average throughput: 5.16 Mbit/s
95th percentile per-packet one-way delay: 85.219 ms
Loss rate: 31.37%
-- Flow 3:
Average throughput: 4.41 Mbit/s
95th percentile per-packet one-way delay: 87.081 ms
Loss rate: 39.25%
```
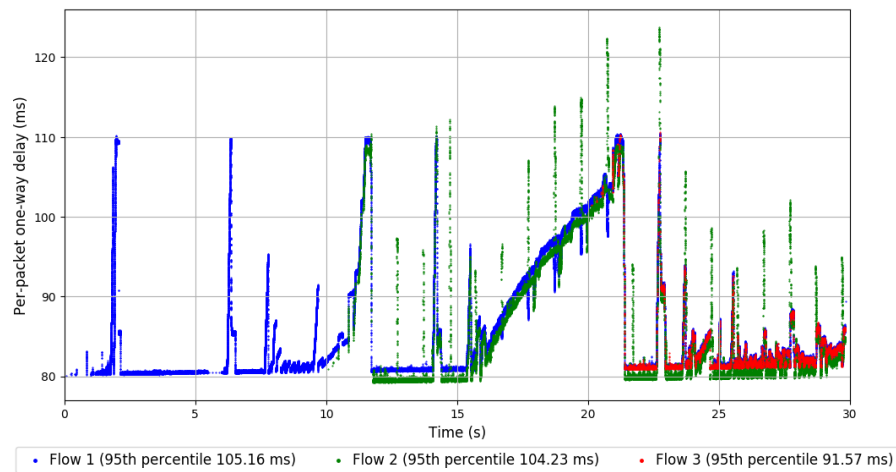
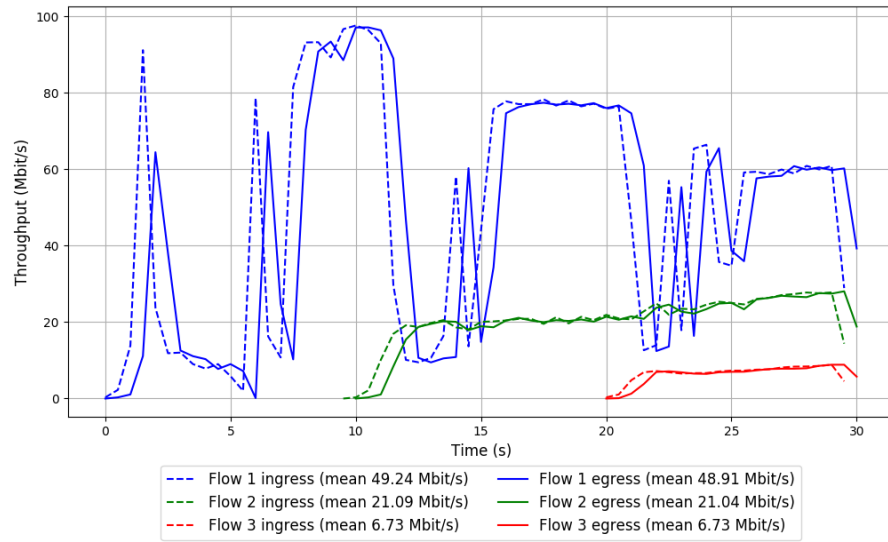Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-06-28 02:01:59
End at: 2019-06-28 02:02:29
Local clock offset: -5.142 ms
Remote clock offset: -22.971 ms


# Below is generated by plot.py at 2019-06-28 02:55:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 87.322 ms
Loss rate: 62.69%
-- Flow 1:
Average throughput: 10.71 Mbit/s
95th percentile per-packet one-way delay: 86.938 ms
Loss rate: 65.11%
-- Flow 2:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 87.640 ms
Loss rate: 59.95%
-- Flow 3:
Average throughput: 4.18 Mbit/s
95th percentile per-packet one-way delay: 87.521 ms
Loss rate: 26.10%
```

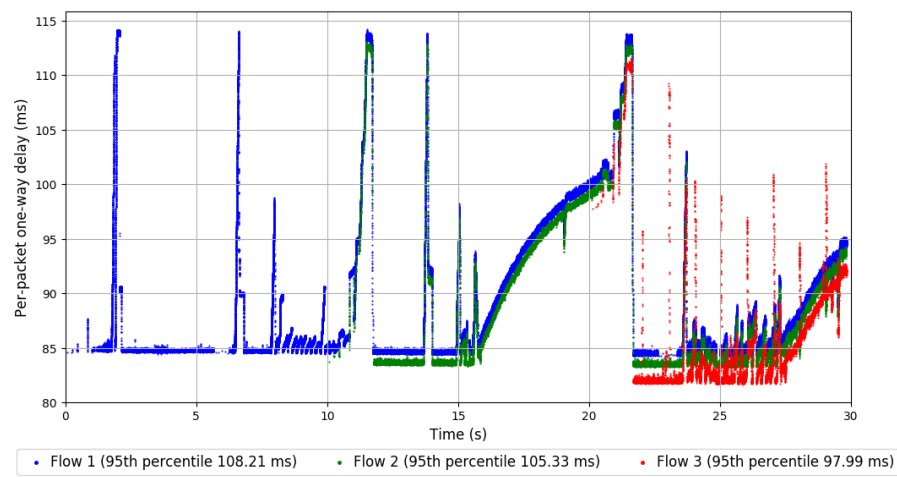Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-06-28 02:29:57
End at: 2019-06-28 02:30:27
Local clock offset: -6.827 ms
Remote clock offset: -25.734 ms


# Below is generated by plot.py at 2019-06-28 02:55:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 80.376 ms
Loss rate: 47.83%
-- Flow 1:
Average throughput: 8.53 Mbit/s
95th percentile per-packet one-way delay: 80.763 ms
Loss rate: 54.90%
-- Flow 2:
Average throughput: 4.27 Mbit/s
95th percentile per-packet one-way delay: 80.338 ms
Loss rate: 26.86%
-- Flow 3:
Average throughput: 4.78 Mbit/s
95th percentile per-packet one-way delay: 80.015 ms
Loss rate: 21.88%
```
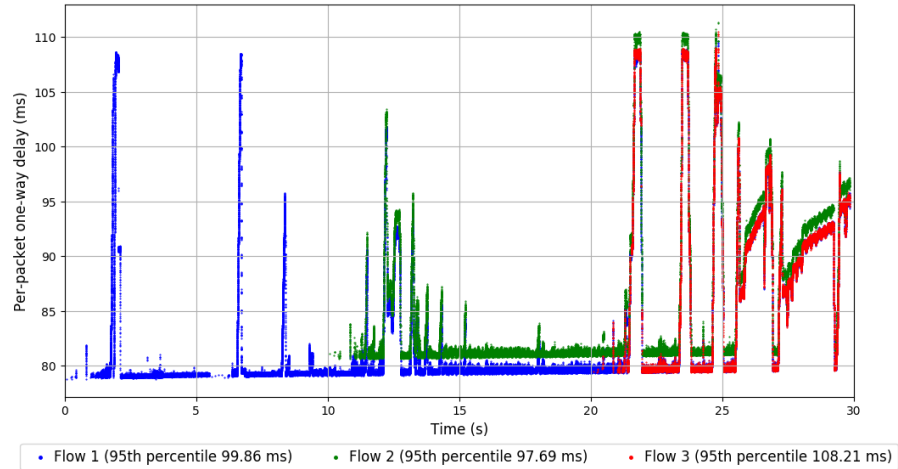
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-06-28 00:40:20
End at: 2019-06-28 00:40:50
Local clock offset: -4.997 ms
Remote clock offset: -558.162 ms


# Below is generated by plot.py at 2019-06-28 02:55:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.12 Mbit/s
95th percentile per-packet one-way delay: 106.420 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 47.40 Mbit/s
95th percentile per-packet one-way delay: 107.034 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 18.55 Mbit/s
95th percentile per-packet one-way delay: 103.877 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 10.44 Mbit/s
95th percentile per-packet one-way delay: 104.057 ms
Loss rate: 0.63%
```

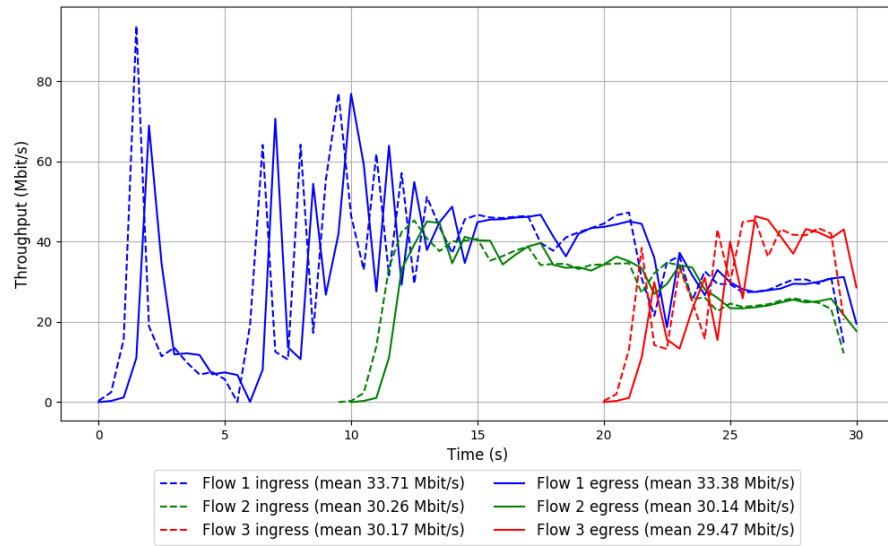Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-06-28 01:08:18
End at: 2019-06-28 01:08:48
Local clock offset: -4.818 ms
Remote clock offset: -616.776 ms


# Below is generated by plot.py at 2019-06-28 02:55:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.07 Mbit/s
95th percentile per-packet one-way delay: 104.918 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 48.91 Mbit/s
95th percentile per-packet one-way delay: 105.157 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 21.04 Mbit/s
95th percentile per-packet one-way delay: 104.231 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 91.568 ms
Loss rate: 0.07%
```

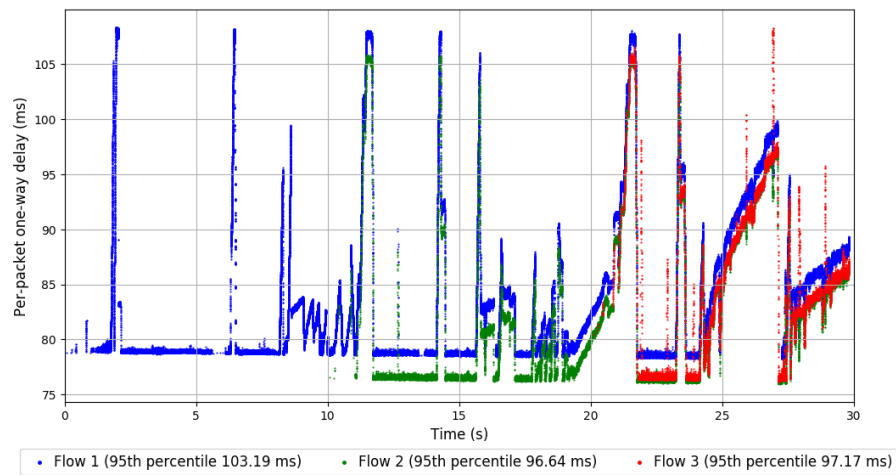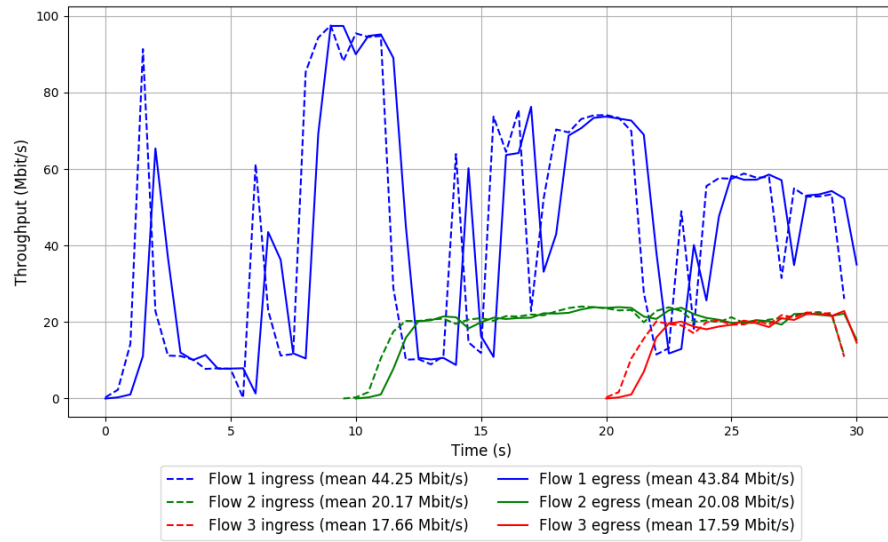Run 2: Report of QUIC Cubic — Data Link

- - - - Flow 1 ingress (mean 49.24 Mbit/s) —— Flow 1 egress (mean 48.91 Mbit/s)
- - - - Flow 2 ingress (mean 21.09 Mbit/s) —— Flow 2 egress (mean 21.04 Mbit/s)
- - - - Flow 3 ingress (mean 6.73 Mbit/s) —— Flow 3 egress (mean 6.73 Mbit/s)

• Flow 1 (95th percentile 105.16 ms) • Flow 2 (95th percentile 104.23 ms) • Flow 3 (95th percentile 91.57 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-06-28 01:36:14
End at: 2019-06-28 01:36:44
Local clock offset: -6.175 ms
Remote clock offset: -10.048 ms


# Below is generated by plot.py at 2019-06-28 02:55:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.01 Mbit/s
95th percentile per-packet one-way delay: 106.541 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 48.25 Mbit/s
95th percentile per-packet one-way delay: 108.206 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 17.42 Mbit/s
95th percentile per-packet one-way delay: 105.332 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 15.93 Mbit/s
95th percentile per-packet one-way delay: 97.989 ms
Loss rate: 0.20%
```

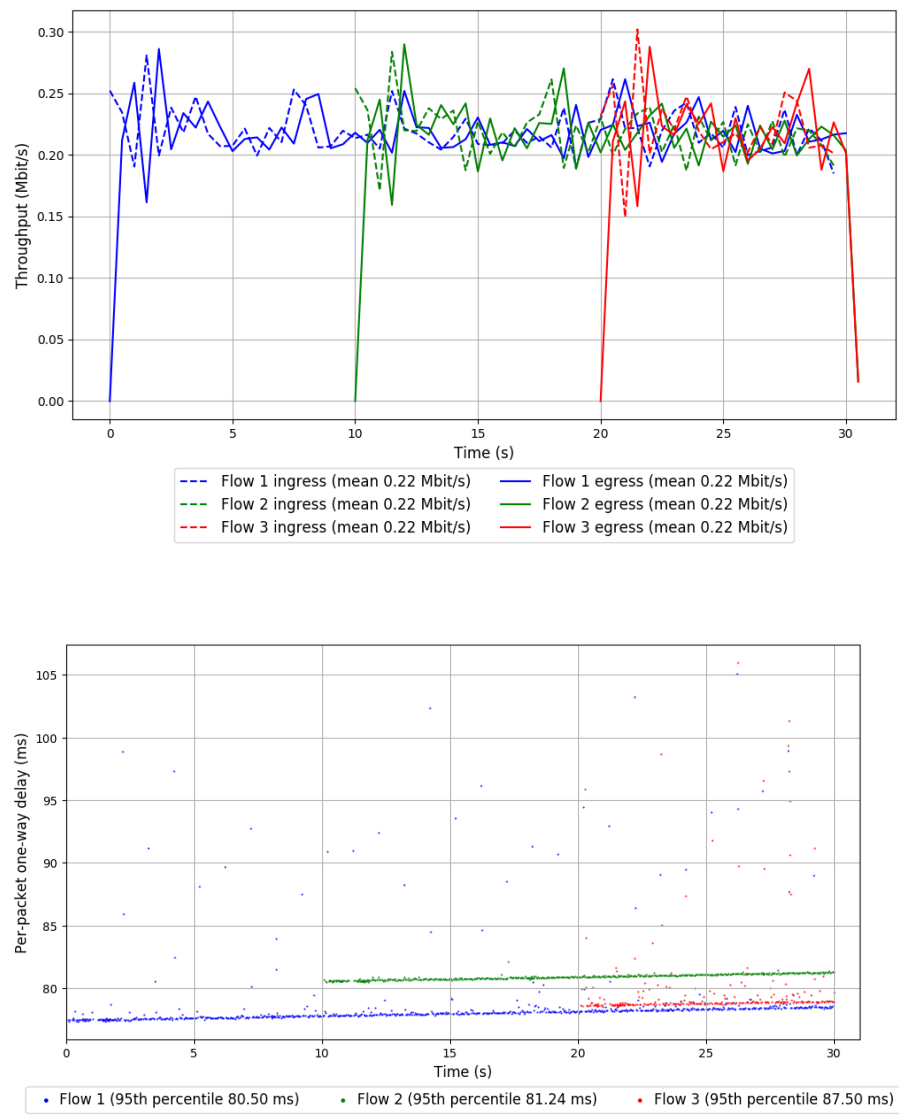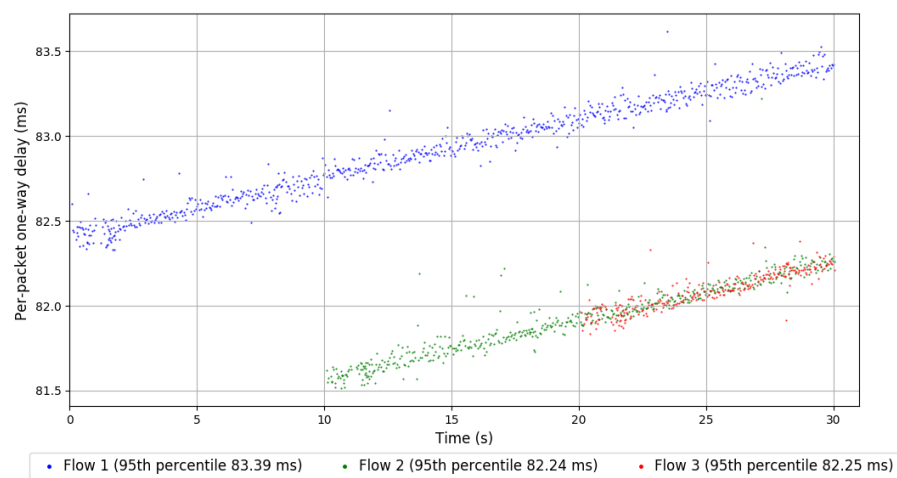Run 3: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 48.56 Mbit/s) —— Flow 1 egress (mean 48.25 Mbit/s)
- - - Flow 2 ingress (mean 17.49 Mbit/s) —— Flow 2 egress (mean 17.42 Mbit/s)
- - - Flow 3 ingress (mean 15.95 Mbit/s) —— Flow 3 egress (mean 15.93 Mbit/s)

• Flow 1 (95th percentile 108.21 ms)   • Flow 2 (95th percentile 105.33 ms)   • Flow 3 (95th percentile 97.99 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-06-28 02:04:26
End at: 2019-06-28 02:04:56
Local clock offset: -5.057 ms
Remote clock offset: -31.418 ms


# Below is generated by plot.py at 2019-06-28 02:55:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.04 Mbit/s
95th percentile per-packet one-way delay: 102.364 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 33.38 Mbit/s
95th percentile per-packet one-way delay: 99.863 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 30.14 Mbit/s
95th percentile per-packet one-way delay: 97.687 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 29.47 Mbit/s
95th percentile per-packet one-way delay: 108.214 ms
Loss rate: 2.17%
```

Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 33.71 Mbit/s)   Flow 1 egress (mean 33.38 Mbit/s)
Flow 2 ingress (mean 30.26 Mbit/s)   Flow 2 egress (mean 30.14 Mbit/s)
Flow 3 ingress (mean 30.17 Mbit/s)   Flow 3 egress (mean 29.47 Mbit/s)

Flow 1 (95th percentile 99.86 ms)   Flow 2 (95th percentile 97.69 ms)   Flow 3 (95th percentile 108.21 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-06-28 02:32:23
End at: 2019-06-28 02:32:54
Local clock offset: -6.157 ms
Remote clock offset: -22.728 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.94 Mbit/s
95th percentile per-packet one-way delay: 101.727 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 43.84 Mbit/s
95th percentile per-packet one-way delay: 103.194 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 20.08 Mbit/s
95th percentile per-packet one-way delay: 96.639 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 17.59 Mbit/s
95th percentile per-packet one-way delay: 97.173 ms
Loss rate: 0.28%
```

Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-06-28 00:25:05
End at: 2019-06-28 00:25:35
Local clock offset: -5.274 ms
Remote clock offset: -528.016 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 81.254 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.497 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.244 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.500 ms
Loss rate: 0.00%
```
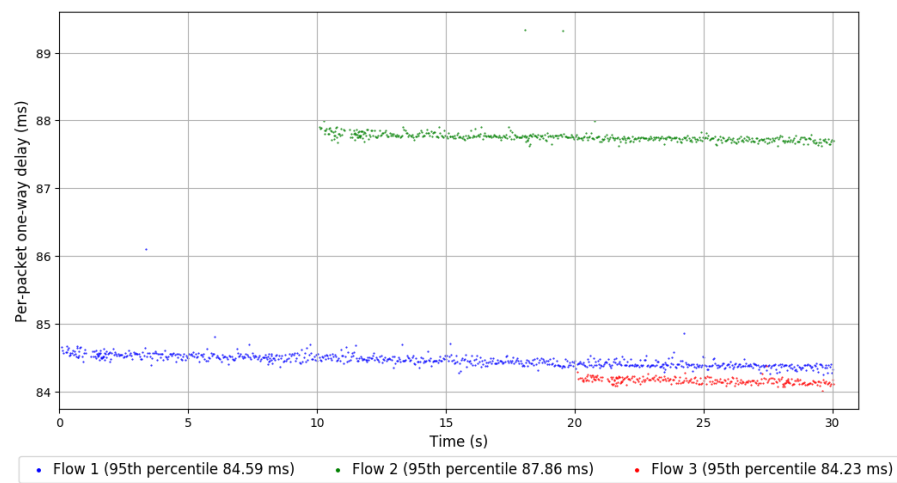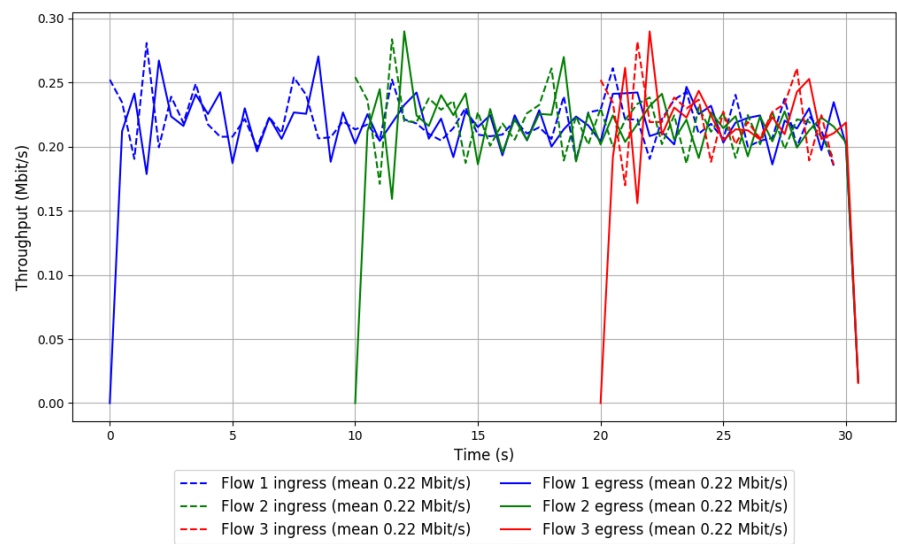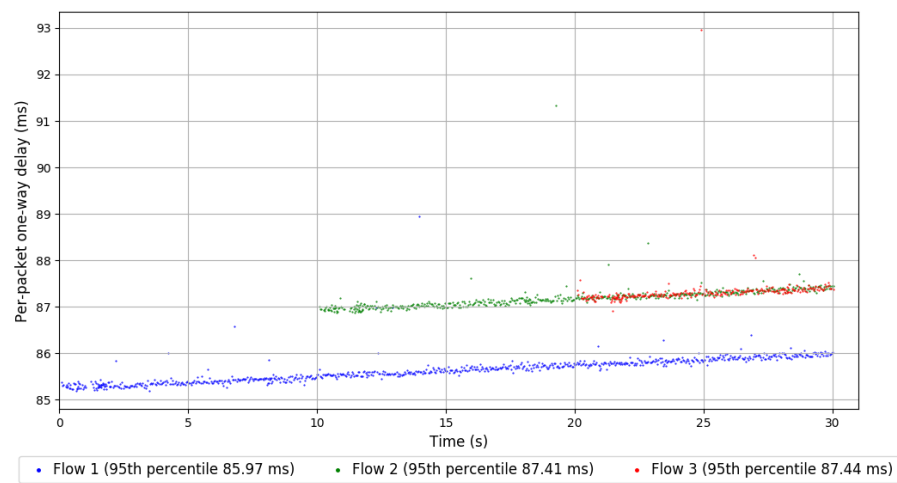
Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s)   Flow 1 egress (mean 0.22 Mbit/s)
Flow 2 ingress (mean 0.22 Mbit/s)   Flow 2 egress (mean 0.22 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 80.50 ms)   Flow 2 (95th percentile 81.24 ms)   Flow 3 (95th percentile 87.50 ms)

```
Run 2: Statistics of SCReAM

Start at: 2019-06-28 00:53:04
End at: 2019-06-28 00:53:34
Local clock offset: -5.886 ms
Remote clock offset: -585.158 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 83.338 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.389 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.240 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.247 ms
Loss rate: 0.00%
```
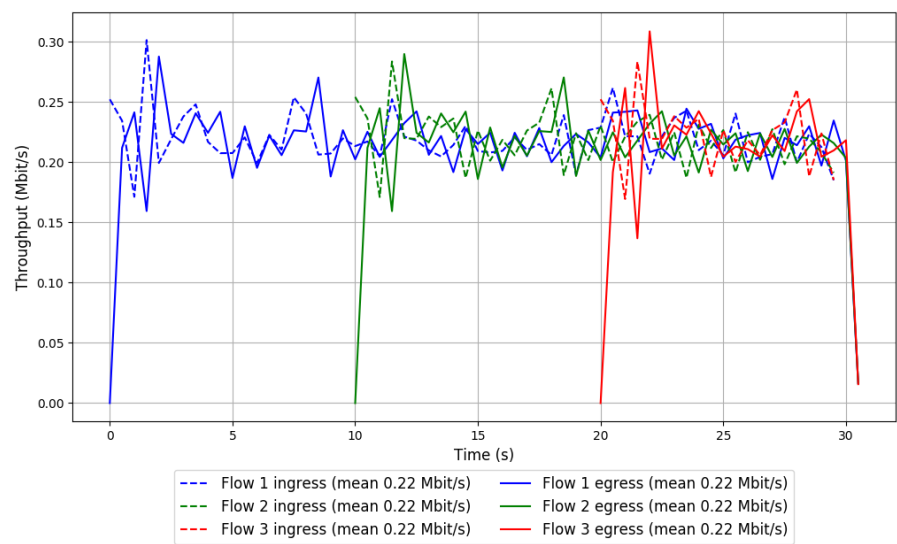
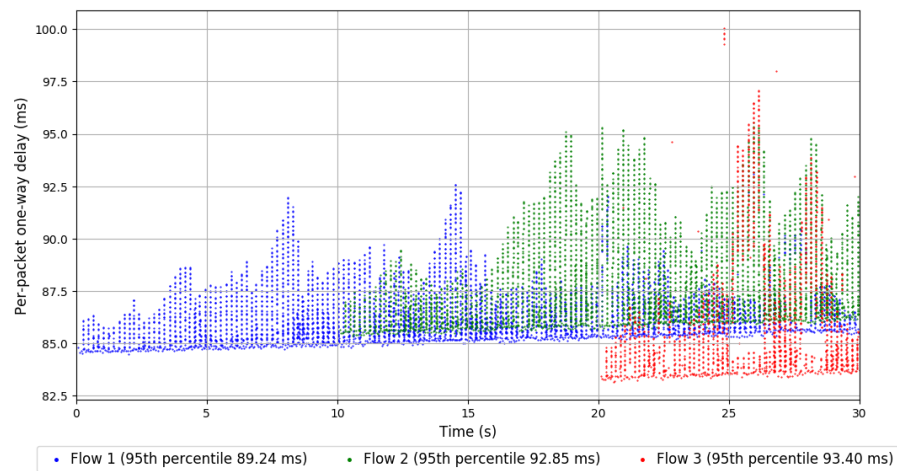# Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-06-28 01:21:01
End at: 2019-06-28 01:21:31
Local clock offset: -5.906 ms
Remote clock offset: -644.366 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 81.104 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.404 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.092 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.151 ms
Loss rate: 0.00%
```
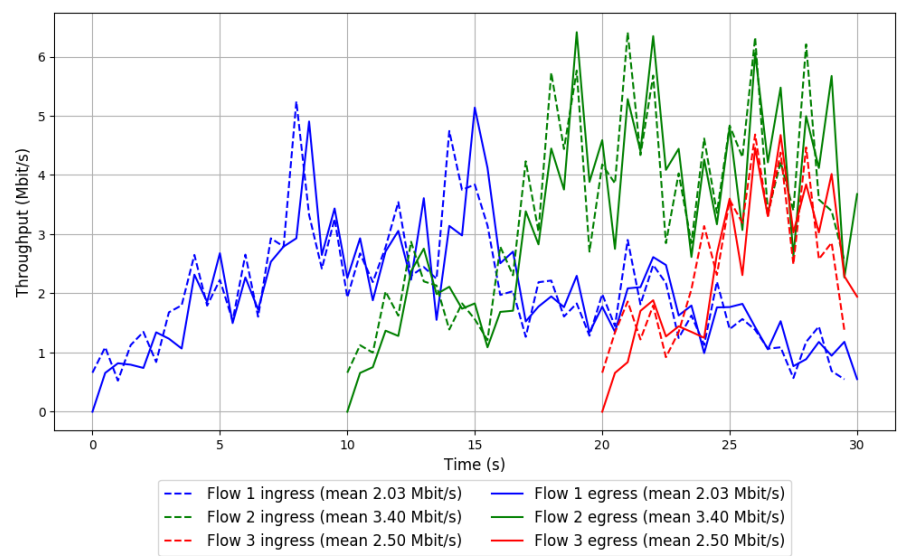
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-06-28 01:49:10
End at: 2019-06-28 01:49:40
Local clock offset: -6.103 ms
Remote clock offset: -12.71 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.807 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.587 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.859 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.228 ms
Loss rate: 0.00%
```
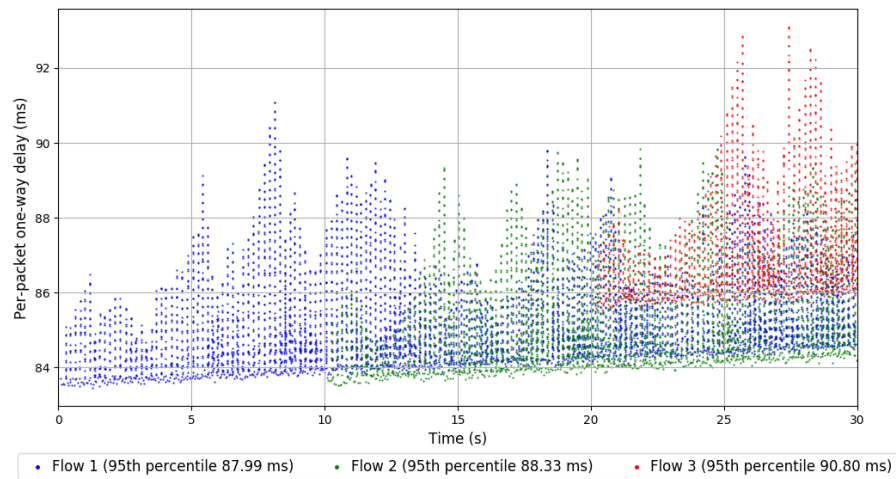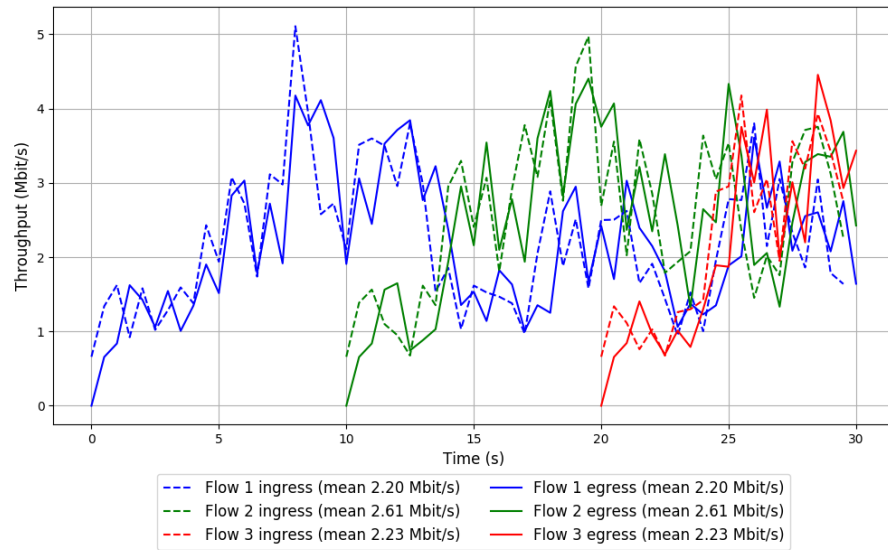
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-06-28 02:17:10
End at: 2019-06-28 02:17:40
Local clock offset: -5.698 ms
Remote clock offset: -44.984 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.384 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.966 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.413 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.441 ms
Loss rate: 0.00%
```
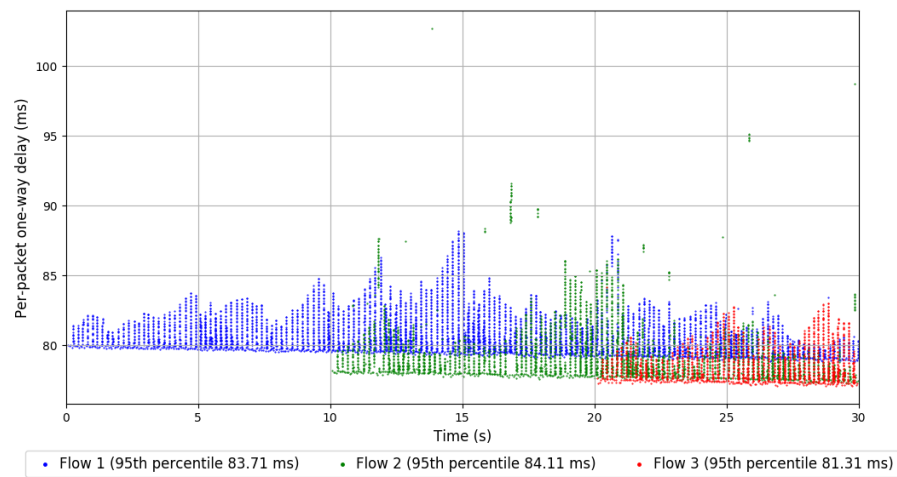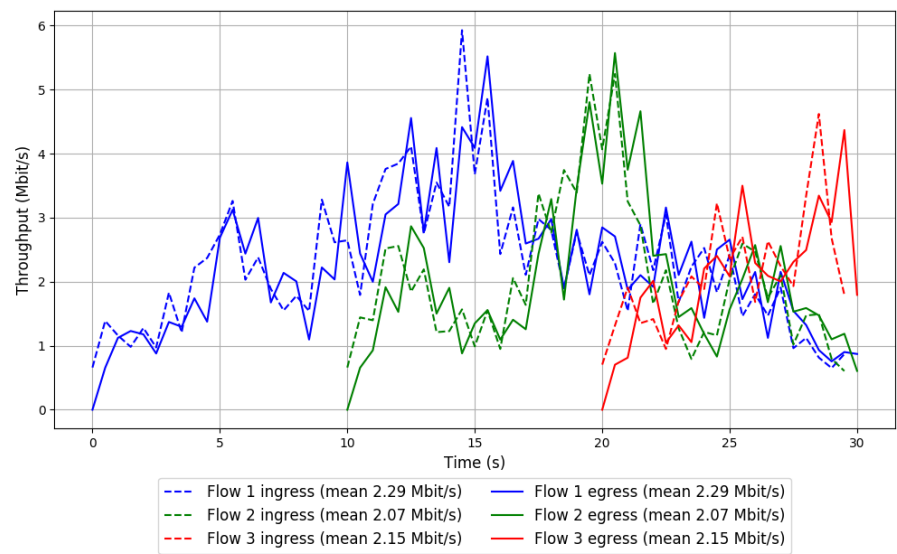
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-06-28 00:50:33
End at: 2019-06-28 00:51:03
Local clock offset: -5.581 ms
Remote clock offset: -576.624 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.12 Mbit/s
95th percentile per-packet one-way delay: 92.101 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 89.243 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 92.848 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 93.397 ms
Loss rate: 0.00%
```
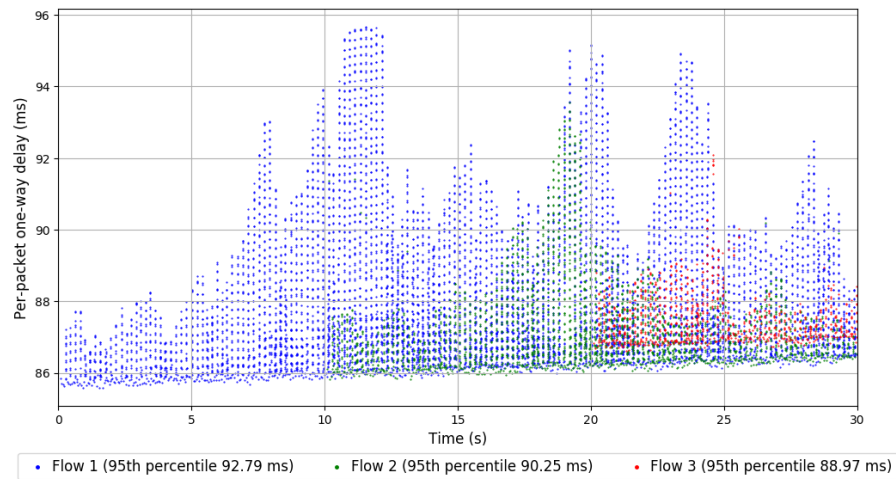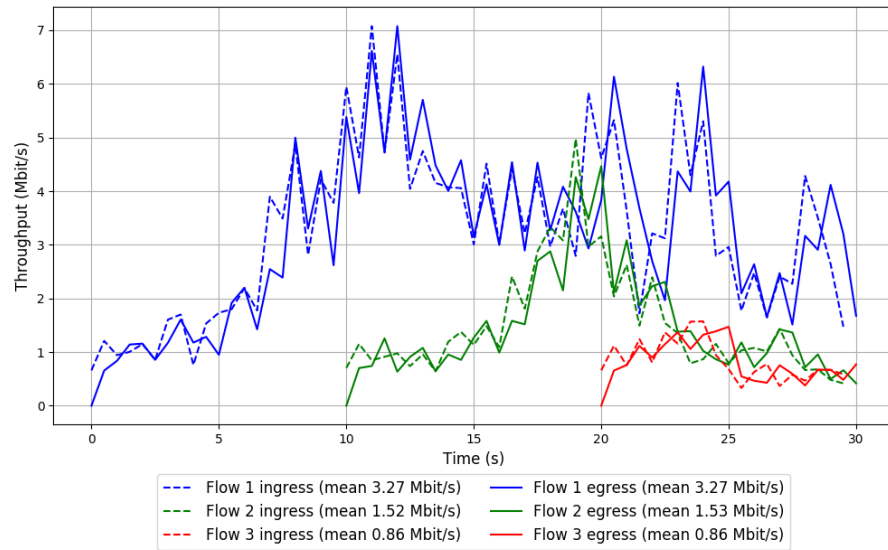
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-06-28 01:18:30
End at: 2019-06-28 01:19:01
Local clock offset: -5.661 ms
Remote clock offset: -633.996 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 88.765 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.20 Mbit/s
95th percentile per-packet one-way delay: 87.989 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 2.61 Mbit/s
95th percentile per-packet one-way delay: 88.325 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 90.802 ms
Loss rate: 0.00%
```
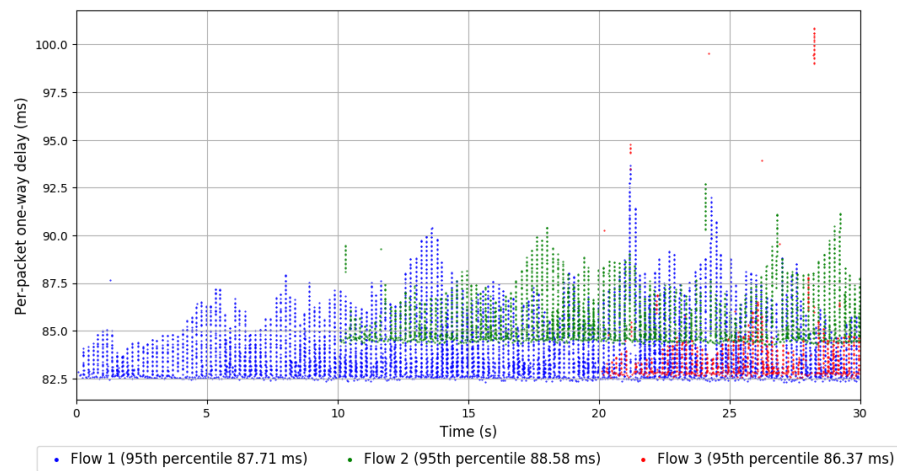
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-06-28 01:46:39
End at: 2019-06-28 01:47:09
Local clock offset: -6.35 ms
Remote clock offset: -22.235 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.38 Mbit/s
95th percentile per-packet one-way delay: 83.515 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 83.708 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 84.107 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 81.315 ms
Loss rate: 0.00%
```
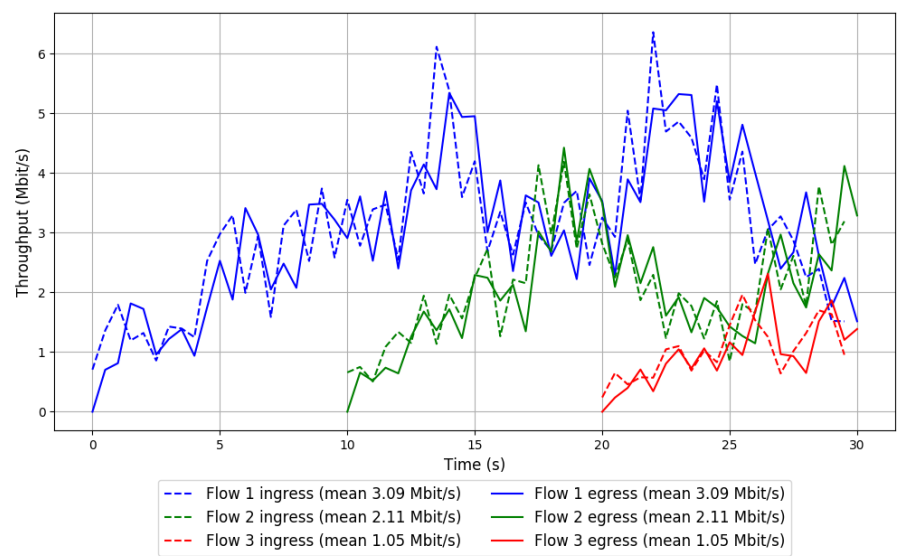
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-06-28 02:14:40
End at: 2019-06-28 02:15:10
Local clock offset: -5.987 ms
Remote clock offset: -42.417 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.56 Mbit/s
95th percentile per-packet one-way delay: 92.233 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 92.791 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 90.245 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 88.974 ms
Loss rate: 0.00%
```
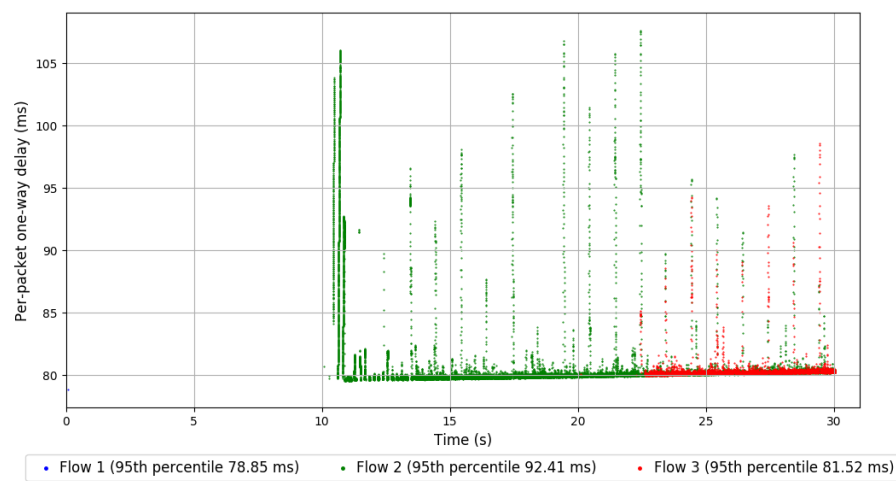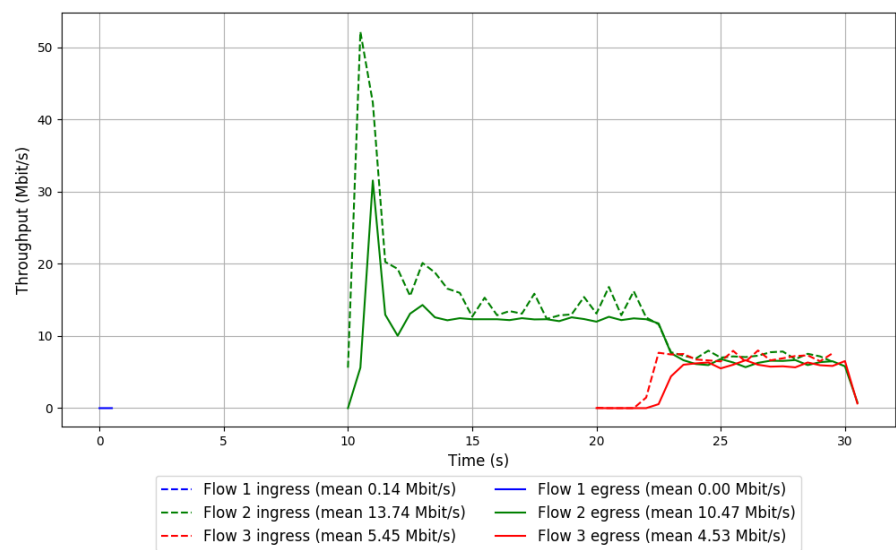
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-06-28 02:42:39
End at: 2019-06-28 02:43:09
Local clock offset: -7.496 ms
Remote clock offset: -10.399 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 88.056 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 87.709 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 88.583 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 86.370 ms
Loss rate: 0.00%
```
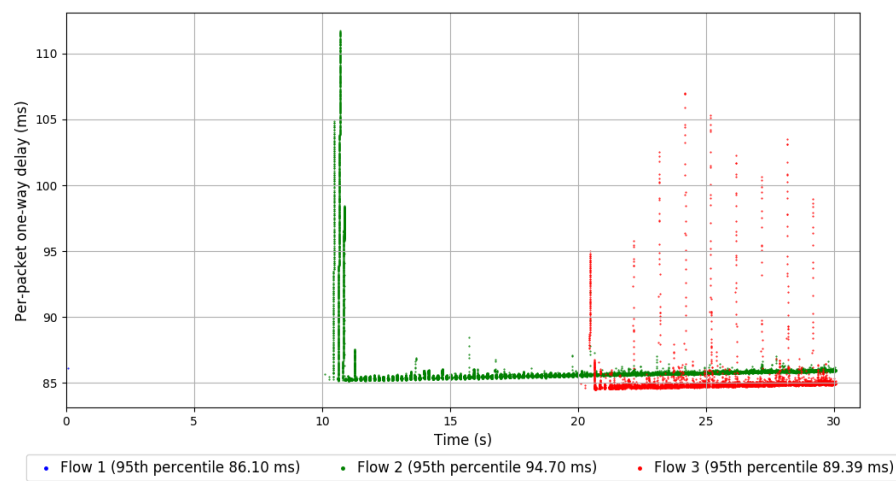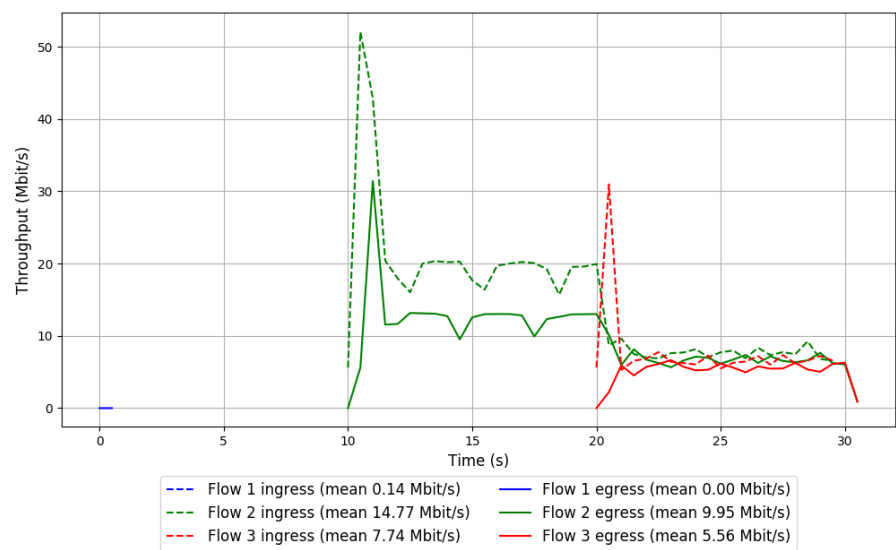
Run 5: Report of Sprout — Data Link

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

Start at: 2019-06-28 00:48:00
End at: 2019-06-28 00:48:30
Local clock offset: -5.709 ms
Remote clock offset: -575.576 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 91.415 ms
Loss rate: 22.67%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 78.847 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.47 Mbit/s
95th percentile per-packet one-way delay: 92.407 ms
Loss rate: 23.81%
-- Flow 3:
Average throughput: 4.53 Mbit/s
95th percentile per-packet one-way delay: 81.523 ms
Loss rate: 16.88%
```

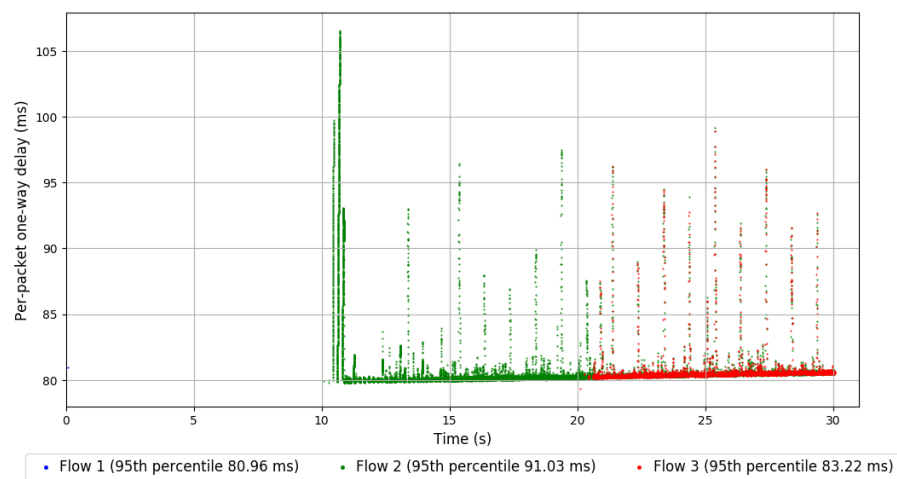Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 01:15:58
End at: 2019-06-28 01:16:28
Local clock offset: -4.899 ms
Remote clock offset: -628.368 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 93.221 ms
Loss rate: 31.72%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 86.099 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.95 Mbit/s
95th percentile per-packet one-way delay: 94.700 ms
Loss rate: 32.62%
-- Flow 3:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 89.385 ms
Loss rate: 28.23%
```

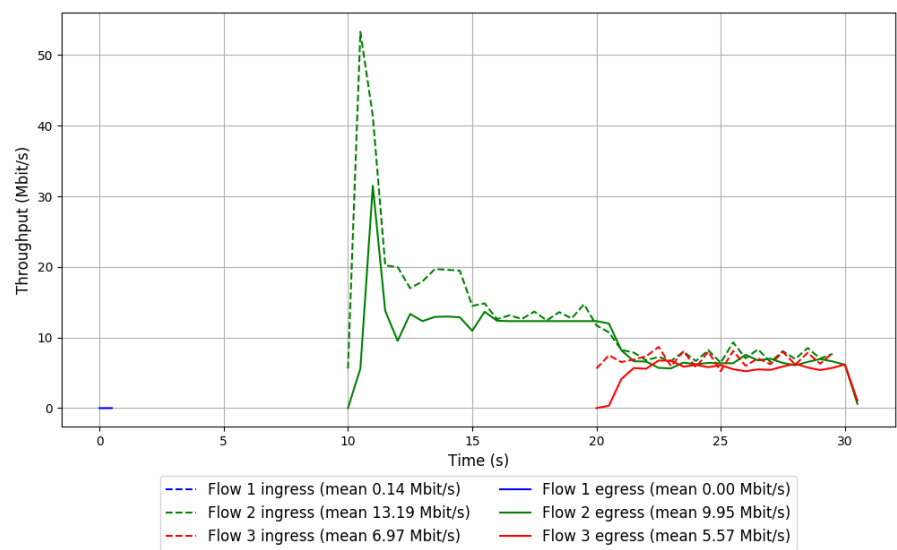Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 01:44:05
End at: 2019-06-28 01:44:35
Local clock offset: -6.458 ms
Remote clock offset: -22.77 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 89.788 ms
Loss rate: 23.64%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 80.957 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.95 Mbit/s
95th percentile per-packet one-way delay: 91.035 ms
Loss rate: 24.56%
-- Flow 3:
Average throughput: 5.57 Mbit/s
95th percentile per-packet one-way delay: 83.223 ms
Loss rate: 20.11%
```
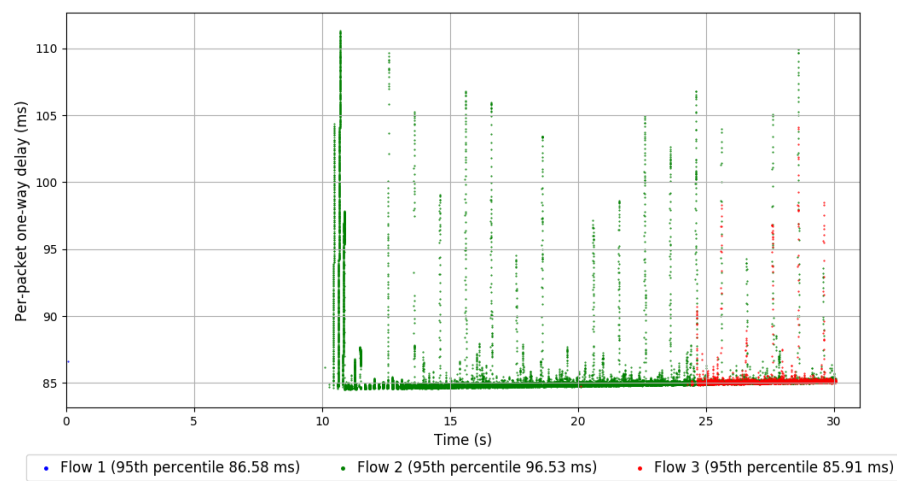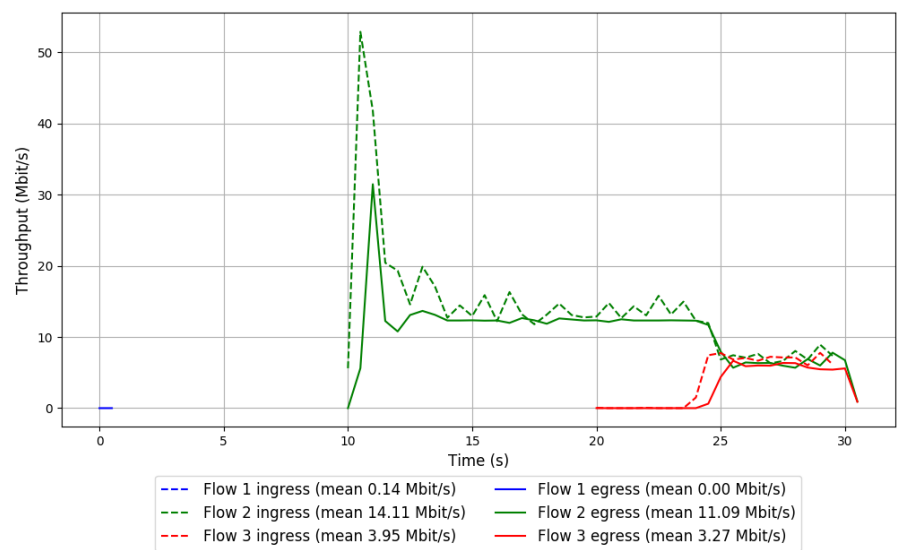
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.14 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 13.19 Mbit/s) --- Flow 2 egress (mean 9.95 Mbit/s)
Flow 3 ingress (mean 6.97 Mbit/s) --- Flow 3 egress (mean 5.57 Mbit/s)

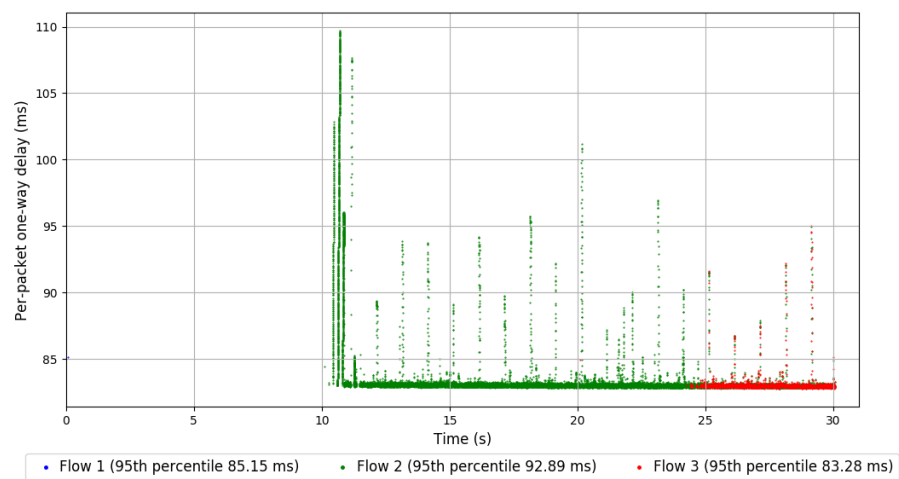Flow 1 (95th percentile 80.96 ms)   Flow 2 (95th percentile 91.03 ms)   Flow 3 (95th percentile 83.22 ms)

180

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

Start at: 2019-06-28 02:12:07
End at: 2019-06-28 02:12:37
Local clock offset: -5.748 ms
Remote clock offset: -38.445 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 95.928 ms
Loss rate: 20.87%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 86.585 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 11.09 Mbit/s
95th percentile per-packet one-way delay: 96.529 ms
Loss rate: 21.39%
-- Flow 3:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 85.909 ms
Loss rate: 17.11%
```

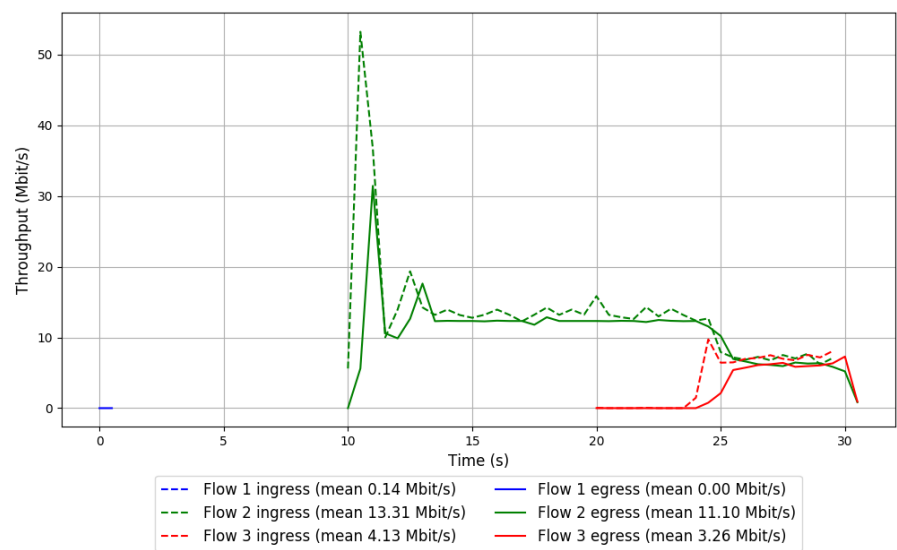Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 02:40:06
End at: 2019-06-28 02:40:37
Local clock offset: -6.367 ms
Remote clock offset: -10.304 ms


# Below is generated by plot.py at 2019-06-28 02:55:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 91.551 ms
Loss rate: 17.23%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 85.151 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 11.10 Mbit/s
95th percentile per-packet one-way delay: 92.885 ms
Loss rate: 16.66%
-- Flow 3:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 83.281 ms
Loss rate: 20.89%
```

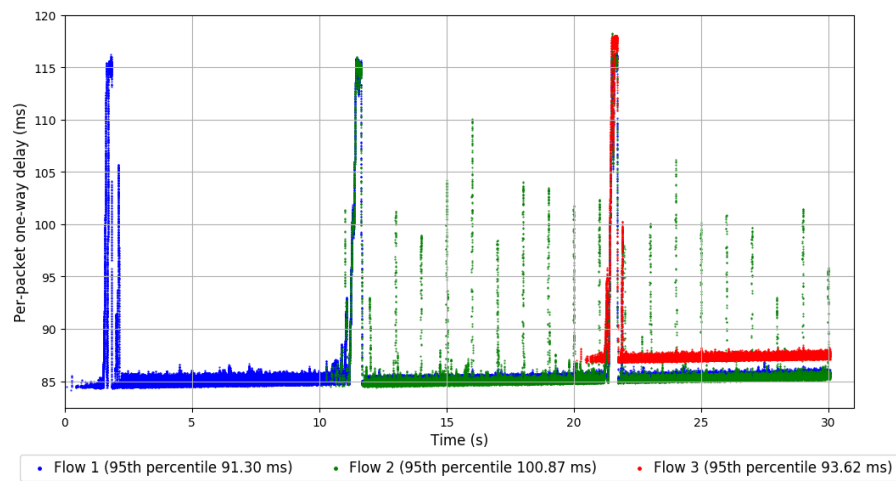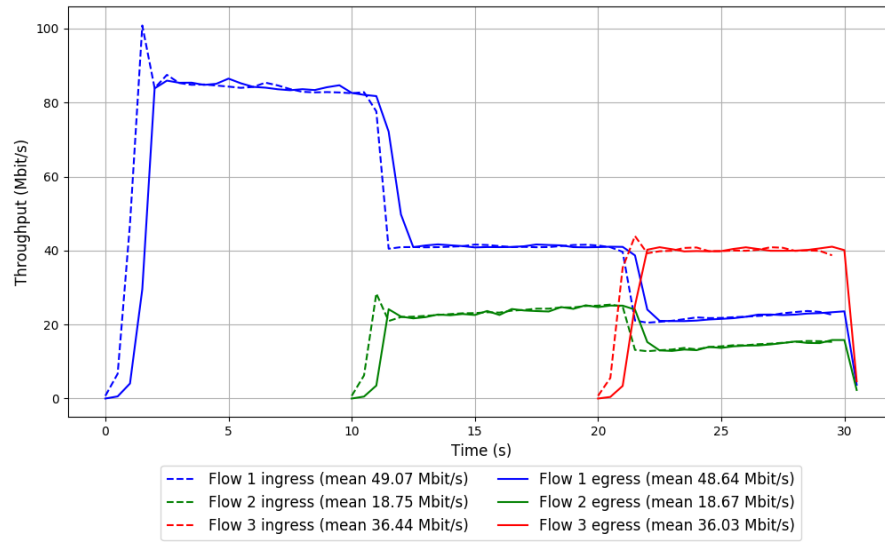Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2019-06-28 00:30:11
End at: 2019-06-28 00:30:41
Local clock offset: -6.187 ms
Remote clock offset: -533.06 ms


# Below is generated by plot.py at 2019-06-28 02:56:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.05 Mbit/s
95th percentile per-packet one-way delay: 94.869 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 48.64 Mbit/s
95th percentile per-packet one-way delay: 91.295 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 18.67 Mbit/s
95th percentile per-packet one-way delay: 100.871 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 36.03 Mbit/s
95th percentile per-packet one-way delay: 93.616 ms
Loss rate: 1.15%
```

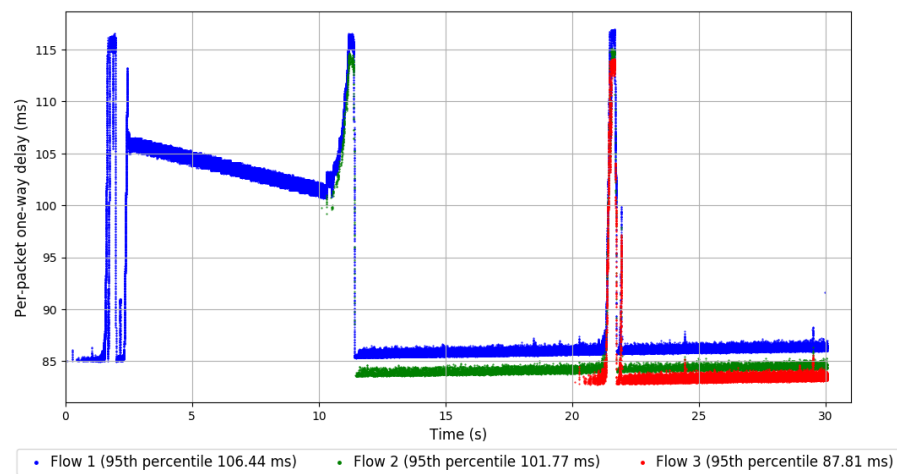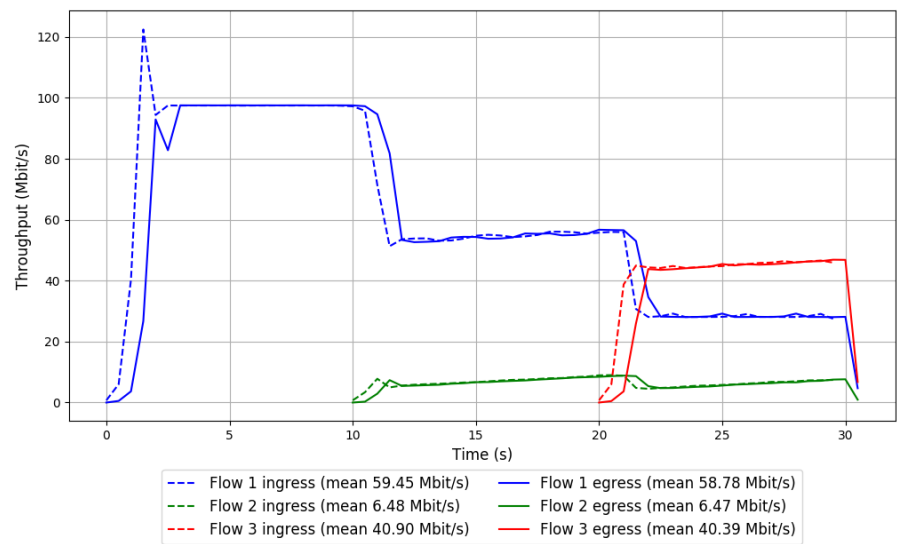Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-06-28 00:58:08
End at: 2019-06-28 00:58:38
Local clock offset: -4.985 ms
Remote clock offset: -592.739 ms


# Below is generated by plot.py at 2019-06-28 02:56:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.51 Mbit/s
95th percentile per-packet one-way delay: 106.213 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 106.444 ms
Loss rate: 1.14%
-- Flow 2:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 101.774 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 40.39 Mbit/s
95th percentile per-packet one-way delay: 87.807 ms
Loss rate: 1.24%
```

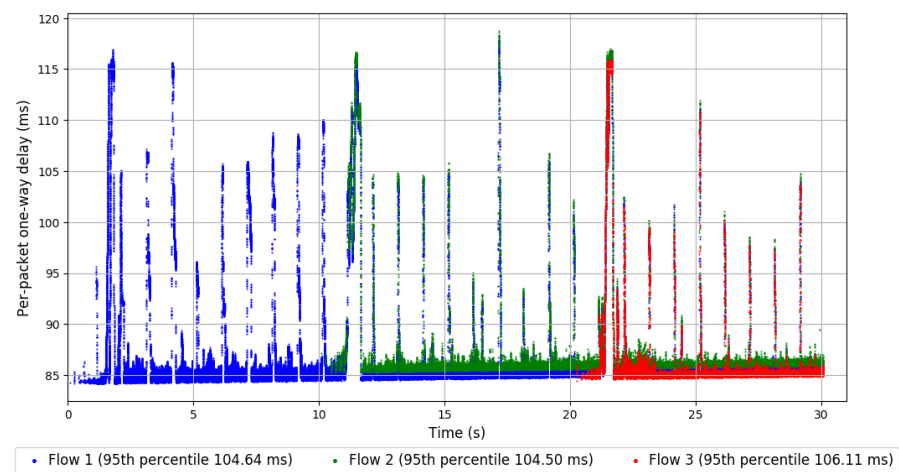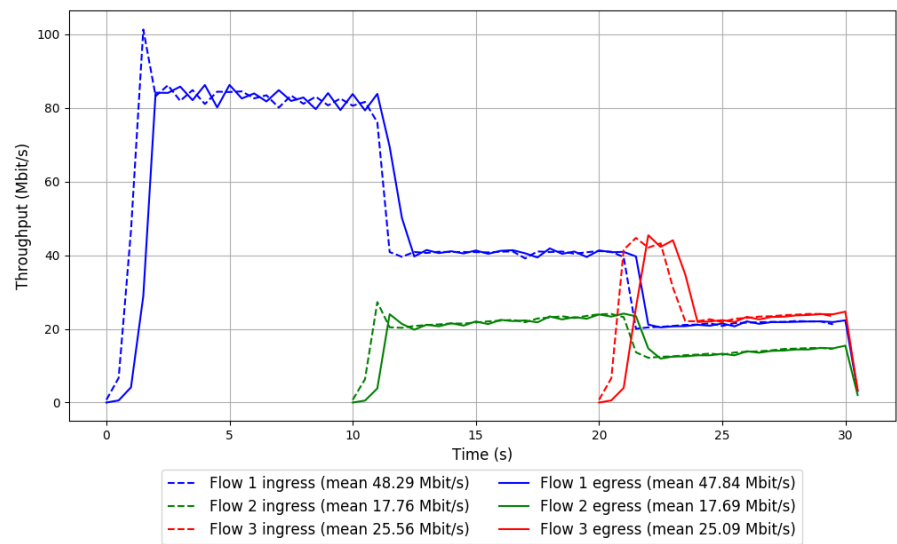Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-06-28 01:26:06
End at: 2019-06-28 01:26:36
Local clock offset: -5.412 ms
Remote clock offset: -648.435 ms


# Below is generated by plot.py at 2019-06-28 02:56:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.98 Mbit/s
95th percentile per-packet one-way delay: 104.691 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 47.84 Mbit/s
95th percentile per-packet one-way delay: 104.636 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 17.69 Mbit/s
95th percentile per-packet one-way delay: 104.503 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 25.09 Mbit/s
95th percentile per-packet one-way delay: 106.107 ms
Loss rate: 1.84%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 48.29 Mbit/s) Flow 1 egress (mean 47.84 Mbit/s)
Flow 2 ingress (mean 17.76 Mbit/s) Flow 2 egress (mean 17.69 Mbit/s)
Flow 3 ingress (mean 25.56 Mbit/s) Flow 3 egress (mean 25.09 Mbit/s)

Flow 1 (95th percentile 104.64 ms) Flow 2 (95th percentile 104.50 ms) Flow 3 (95th percentile 106.11 ms)
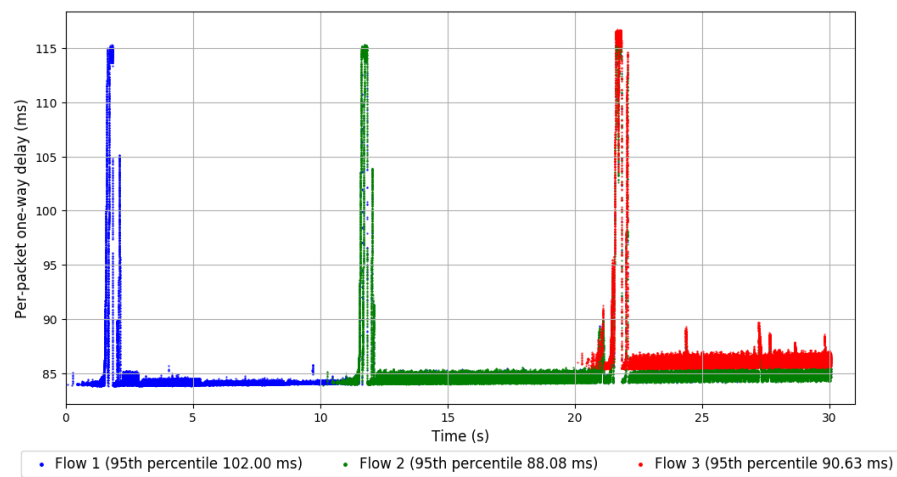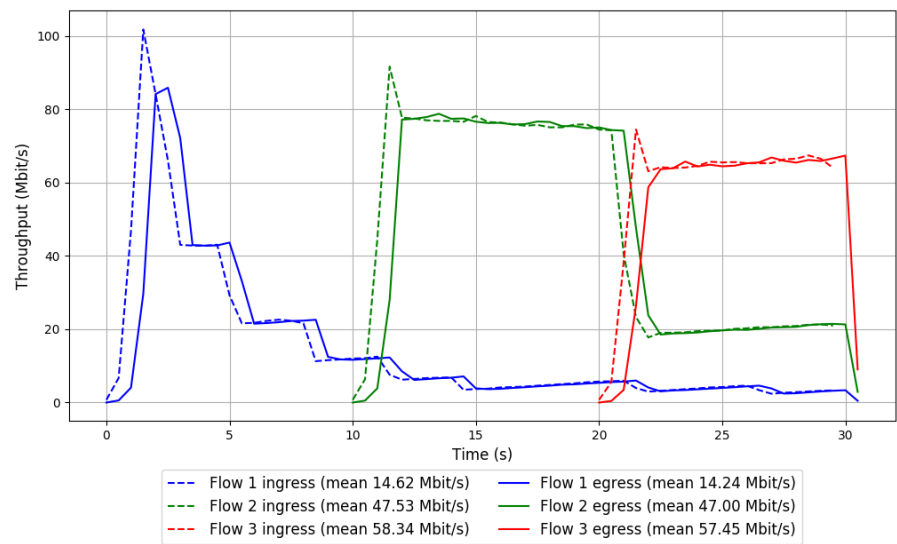
```
Run 4: Statistics of TCP Vegas

Start at: 2019-06-28 01:54:16
End at: 2019-06-28 01:54:46
Local clock offset: -6.001 ms
Remote clock offset: -15.027 ms


# Below is generated by plot.py at 2019-06-28 02:56:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.64 Mbit/s
95th percentile per-packet one-way delay: 91.557 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 14.24 Mbit/s
95th percentile per-packet one-way delay: 101.997 ms
Loss rate: 2.59%
-- Flow 2:
Average throughput: 47.00 Mbit/s
95th percentile per-packet one-way delay: 88.083 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 57.45 Mbit/s
95th percentile per-packet one-way delay: 90.632 ms
Loss rate: 1.53%
```

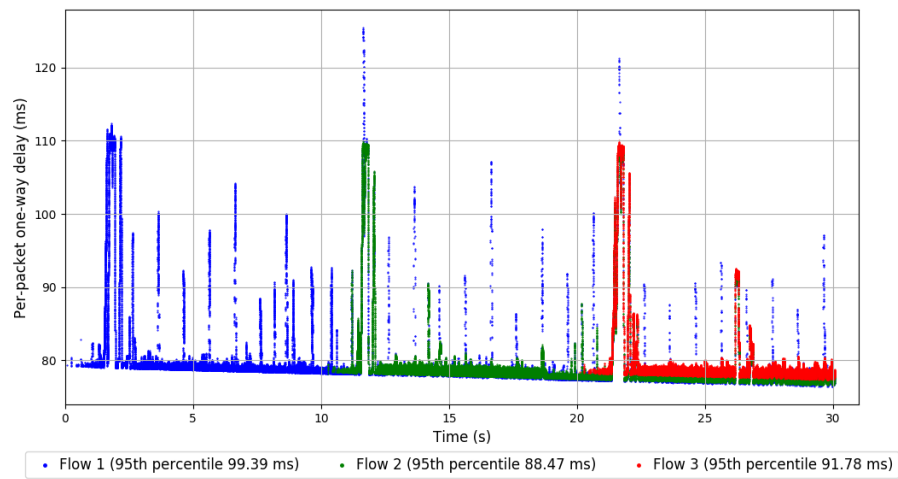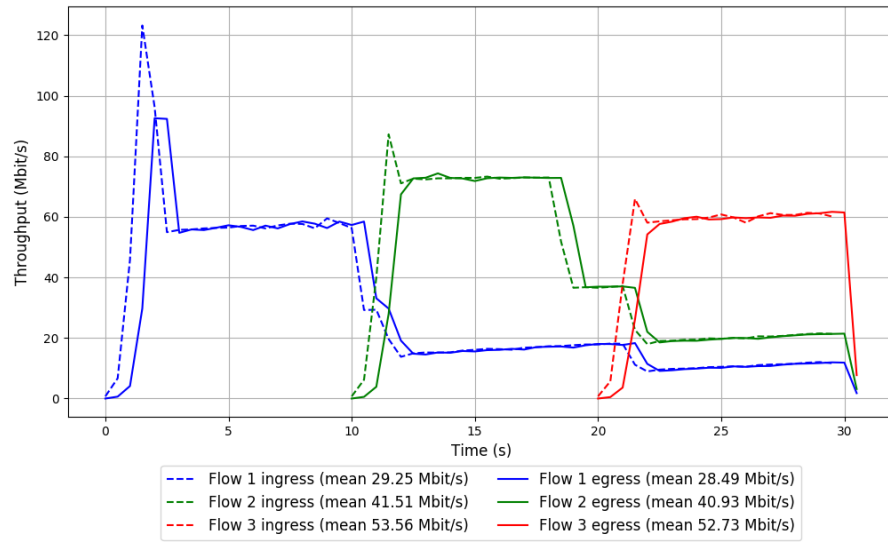## Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-06-28 02:22:15
End at: 2019-06-28 02:22:45
Local clock offset: -6.281 ms
Remote clock offset: -54.449 ms


# Below is generated by plot.py at 2019-06-28 02:56:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.28 Mbit/s
95th percentile per-packet one-way delay: 93.871 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 28.49 Mbit/s
95th percentile per-packet one-way delay: 99.389 ms
Loss rate: 2.62%
-- Flow 2:
Average throughput: 40.93 Mbit/s
95th percentile per-packet one-way delay: 88.467 ms
Loss rate: 1.41%
-- Flow 3:
Average throughput: 52.73 Mbit/s
95th percentile per-packet one-way delay: 91.782 ms
Loss rate: 1.56%
```

Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 29.25 Mbit/s) — Flow 1 egress (mean 28.49 Mbit/s)
Flow 2 ingress (mean 41.51 Mbit/s) — Flow 2 egress (mean 40.93 Mbit/s)
Flow 3 ingress (mean 53.56 Mbit/s) — Flow 3 egress (mean 52.73 Mbit/s)

Flow 1 (95th percentile 99.39 ms) • Flow 2 (95th percentile 88.47 ms) • Flow 3 (95th percentile 91.78 ms)
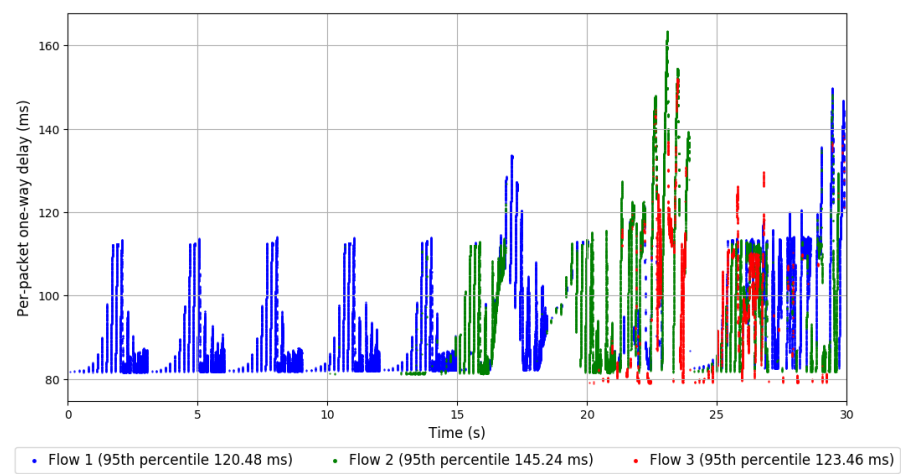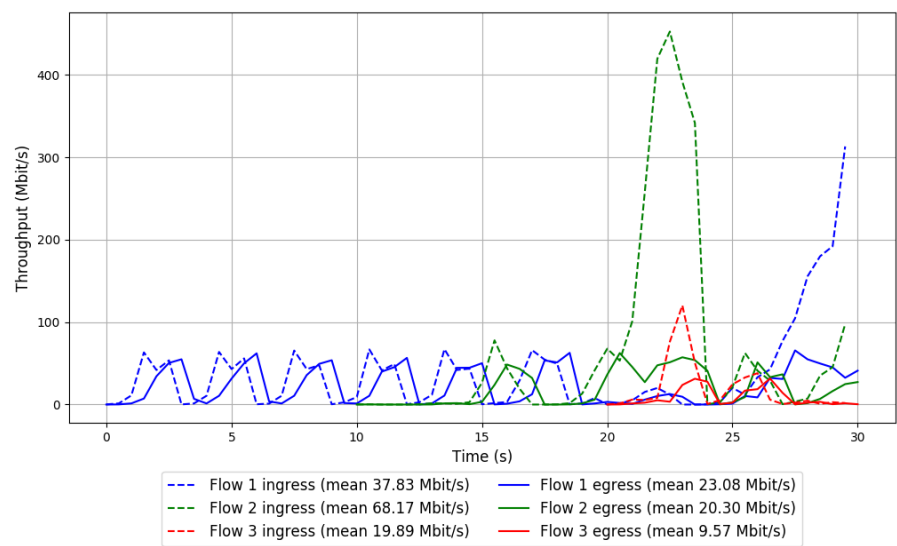
```
Run 1: Statistics of Verus

Start at: 2019-06-28 00:46:44
End at: 2019-06-28 00:47:14
Local clock offset: -4.947 ms
Remote clock offset: -572.584 ms


# Below is generated by plot.py at 2019-06-28 02:56:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.56 Mbit/s
95th percentile per-packet one-way delay: 133.375 ms
Loss rate: 55.52%
-- Flow 1:
Average throughput: 23.08 Mbit/s
95th percentile per-packet one-way delay: 120.478 ms
Loss rate: 38.91%
-- Flow 2:
Average throughput: 20.30 Mbit/s
95th percentile per-packet one-way delay: 145.236 ms
Loss rate: 70.14%
-- Flow 3:
Average throughput: 9.57 Mbit/s
95th percentile per-packet one-way delay: 123.463 ms
Loss rate: 51.69%
```
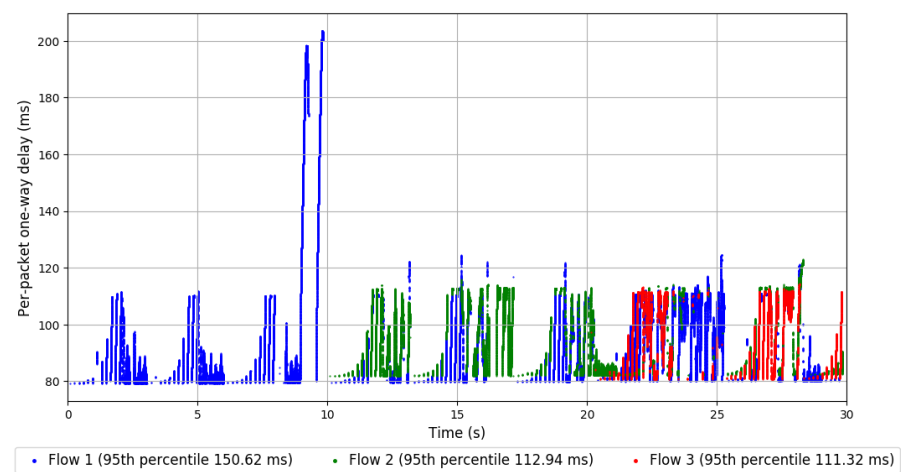
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 37.83 Mbit/s) — — — Flow 1 egress (mean 23.08 Mbit/s)
Flow 2 ingress (mean 68.17 Mbit/s) — — — Flow 2 egress (mean 20.30 Mbit/s)
Flow 3 ingress (mean 19.89 Mbit/s) — — — Flow 3 egress (mean 9.57 Mbit/s)

Flow 1 (95th percentile 120.48 ms)   Flow 2 (95th percentile 145.24 ms)   Flow 3 (95th percentile 123.46 ms)
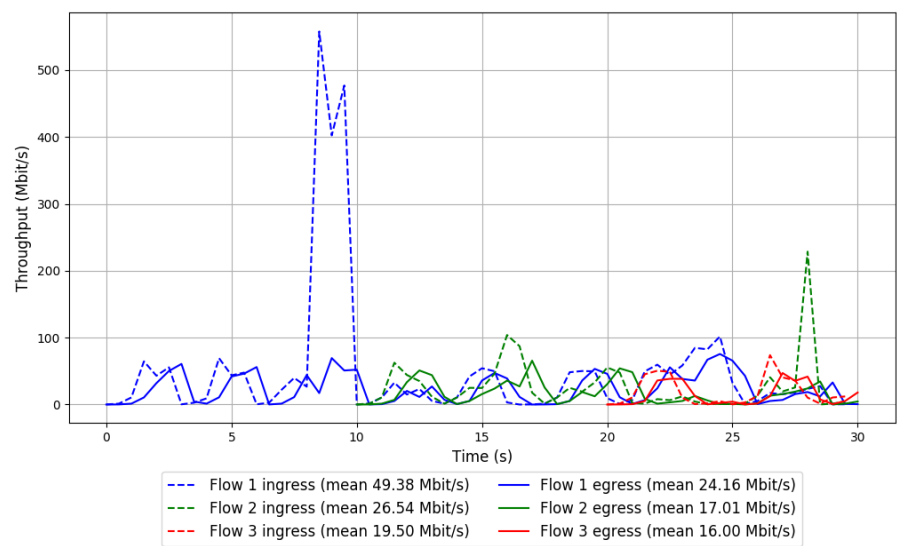
196

```
Run 2: Statistics of Verus

Start at: 2019-06-28 01:14:42
End at: 2019-06-28 01:15:12
Local clock offset: -5.495 ms
Remote clock offset: -630.103 ms


# Below is generated by plot.py at 2019-06-28 02:56:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.54 Mbit/s
95th percentile per-packet one-way delay: 117.820 ms
Loss rate: 44.53%
-- Flow 1:
Average throughput: 24.16 Mbit/s
95th percentile per-packet one-way delay: 150.617 ms
Loss rate: 51.06%
-- Flow 2:
Average throughput: 17.01 Mbit/s
95th percentile per-packet one-way delay: 112.939 ms
Loss rate: 35.87%
-- Flow 3:
Average throughput: 16.00 Mbit/s
95th percentile per-packet one-way delay: 111.323 ms
Loss rate: 17.79%
```

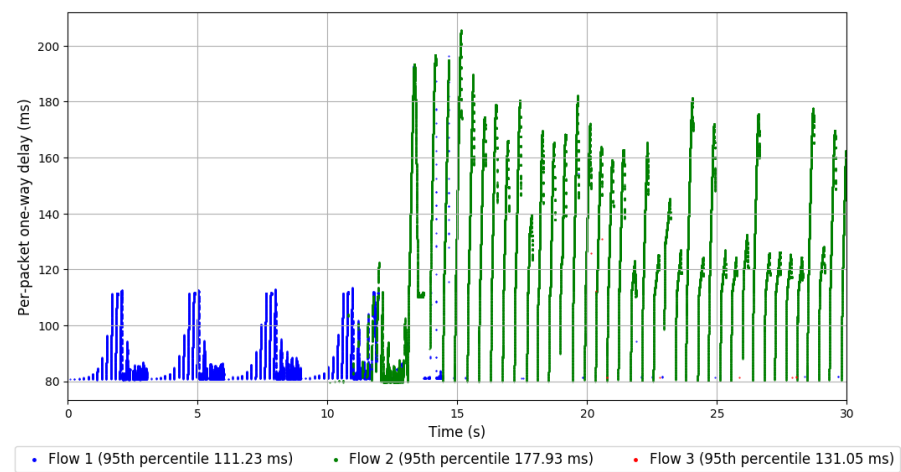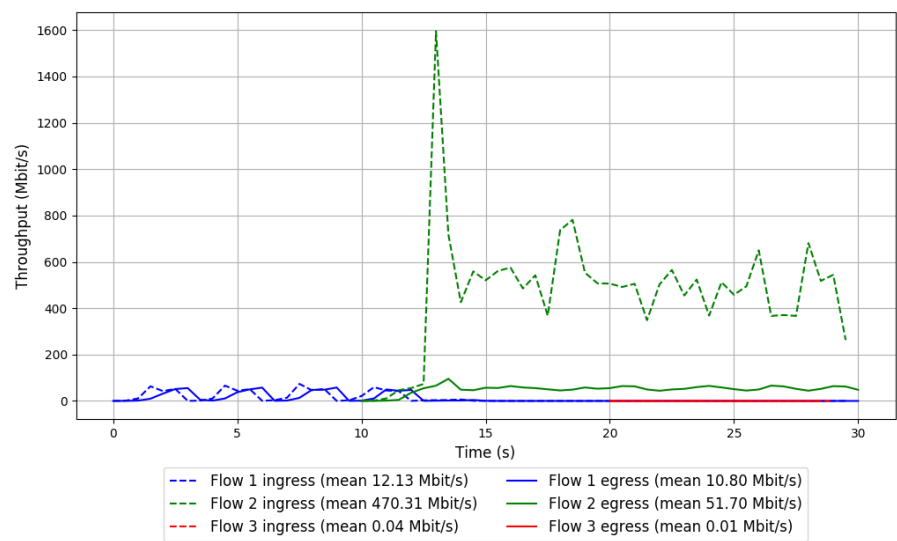## Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-06-28 01:42:39
End at: 2019-06-28 01:43:09
Local clock offset: -5.583 ms
Remote clock offset: -18.89 ms


# Below is generated by plot.py at 2019-06-28 02:57:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.17 Mbit/s
95th percentile per-packet one-way delay: 175.010 ms
Loss rate: 86.04%
-- Flow 1:
Average throughput: 10.80 Mbit/s
95th percentile per-packet one-way delay: 111.233 ms
Loss rate: 10.72%
-- Flow 2:
Average throughput: 51.70 Mbit/s
95th percentile per-packet one-way delay: 177.933 ms
Loss rate: 88.96%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 131.047 ms
Loss rate: 64.29%
```
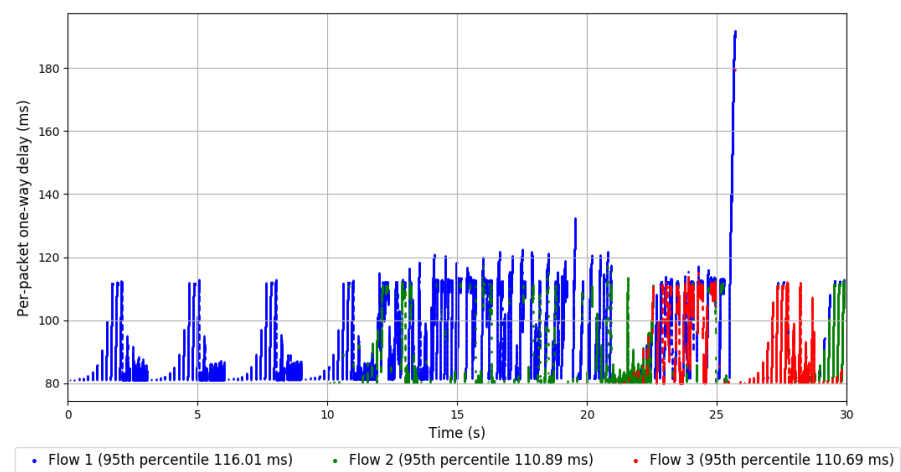
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 12.13 Mbit/s)   Flow 1 egress (mean 10.80 Mbit/s)
Flow 2 ingress (mean 470.31 Mbit/s)   Flow 2 egress (mean 51.70 Mbit/s)
Flow 3 ingress (mean 0.04 Mbit/s)   Flow 3 egress (mean 0.01 Mbit/s)

Flow 1 (95th percentile 111.23 ms)   Flow 2 (95th percentile 177.93 ms)   Flow 3 (95th percentile 131.05 ms)
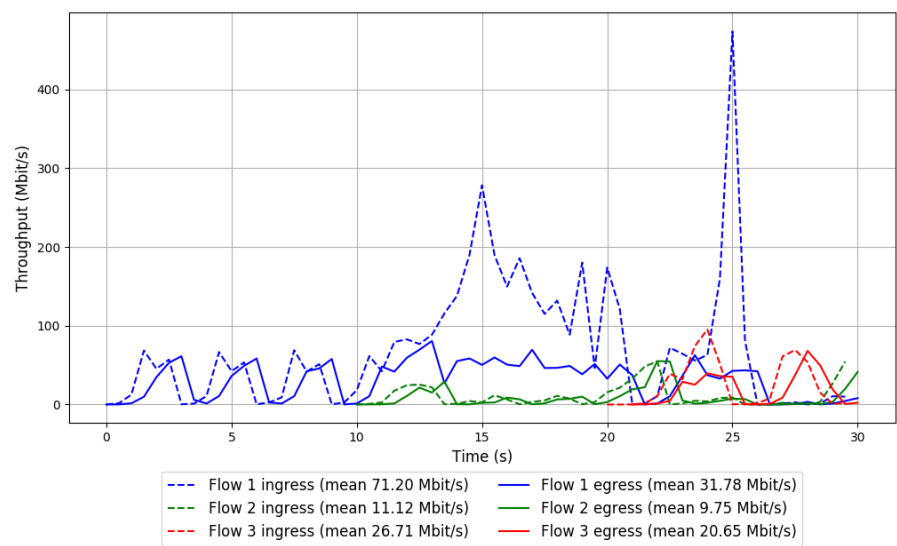
```
Run 4: Statistics of Verus

Start at: 2019-06-28 02:10:50
End at: 2019-06-28 02:11:20
Local clock offset: -5.819 ms
Remote clock offset: -40.964 ms


# Below is generated by plot.py at 2019-06-28 02:57:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.27 Mbit/s
95th percentile per-packet one-way delay: 114.311 ms
Loss rate: 49.23%
-- Flow 1:
Average throughput: 31.78 Mbit/s
95th percentile per-packet one-way delay: 116.014 ms
Loss rate: 55.33%
-- Flow 2:
Average throughput: 9.75 Mbit/s
95th percentile per-packet one-way delay: 110.891 ms
Loss rate: 12.28%
-- Flow 3:
Average throughput: 20.65 Mbit/s
95th percentile per-packet one-way delay: 110.690 ms
Loss rate: 30.64%
```

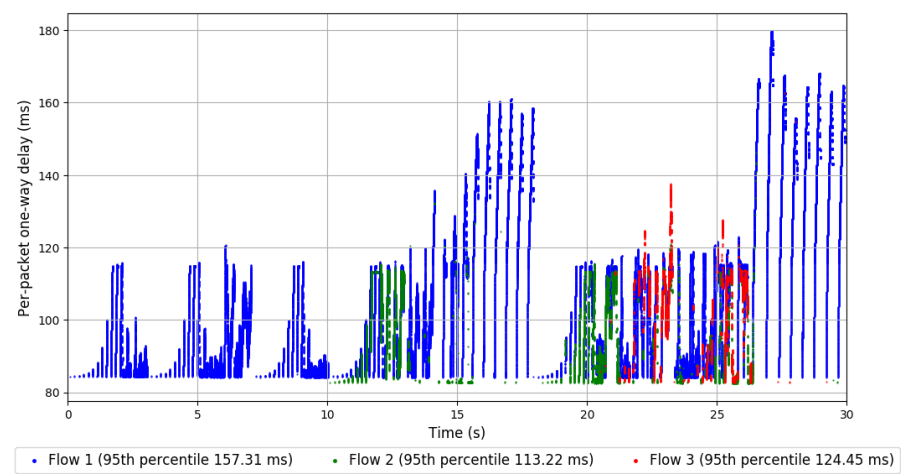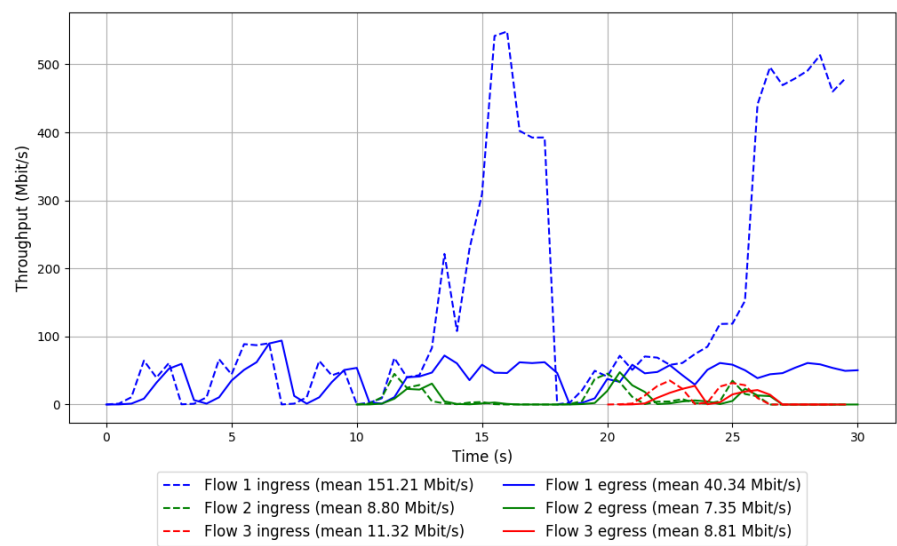## Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-06-28 02:38:48
End at: 2019-06-28 02:39:18
Local clock offset: -6.563 ms
Remote clock offset: -10.865 ms


# Below is generated by plot.py at 2019-06-28 02:57:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.72 Mbit/s
95th percentile per-packet one-way delay: 155.483 ms
Loss rate: 70.18%
-- Flow 1:
Average throughput: 40.34 Mbit/s
95th percentile per-packet one-way delay: 157.308 ms
Loss rate: 73.26%
-- Flow 2:
Average throughput: 7.35 Mbit/s
95th percentile per-packet one-way delay: 113.218 ms
Loss rate: 17.19%
-- Flow 3:
Average throughput: 8.81 Mbit/s
95th percentile per-packet one-way delay: 124.449 ms
Loss rate: 23.66%
```
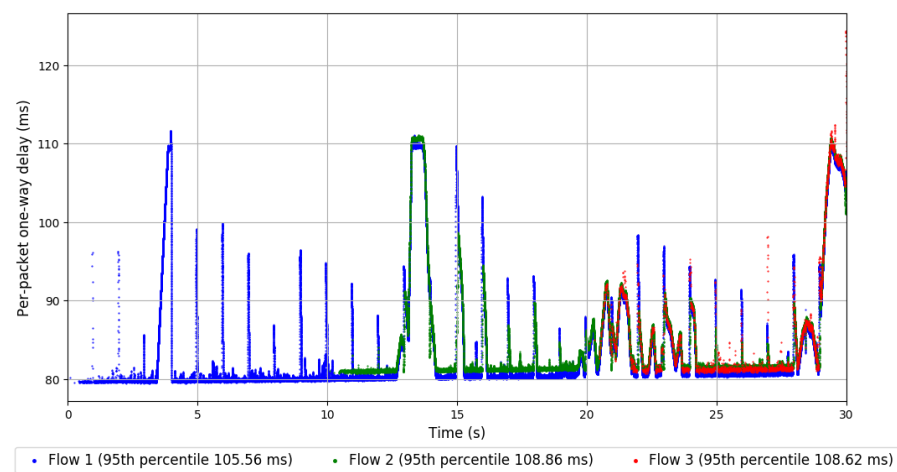
Run 5: Report of Verus — Data Link

- Flow 1 ingress (mean 151.21 Mbit/s)
- Flow 1 egress (mean 40.34 Mbit/s)
- Flow 2 ingress (mean 8.80 Mbit/s)
- Flow 2 egress (mean 7.35 Mbit/s)
- Flow 3 ingress (mean 11.32 Mbit/s)
- Flow 3 egress (mean 8.81 Mbit/s)

- Flow 1 (95th percentile 157.31 ms)
- Flow 2 (95th percentile 113.22 ms)
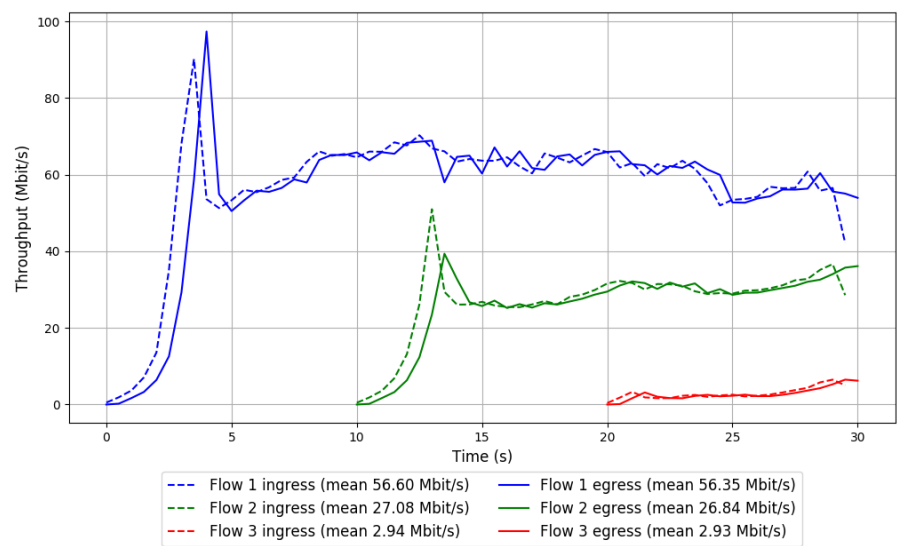- Flow 3 (95th percentile 124.45 ms)

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-06-28 00:41:37
End at: 2019-06-28 00:42:07
Local clock offset: -5.11 ms
Remote clock offset: -561.192 ms


# Below is generated by plot.py at 2019-06-28 02:57:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.18 Mbit/s
95th percentile per-packet one-way delay: 107.040 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 56.35 Mbit/s
95th percentile per-packet one-way delay: 105.556 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 26.84 Mbit/s
95th percentile per-packet one-way delay: 108.864 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 108.619 ms
Loss rate: 0.12%
```

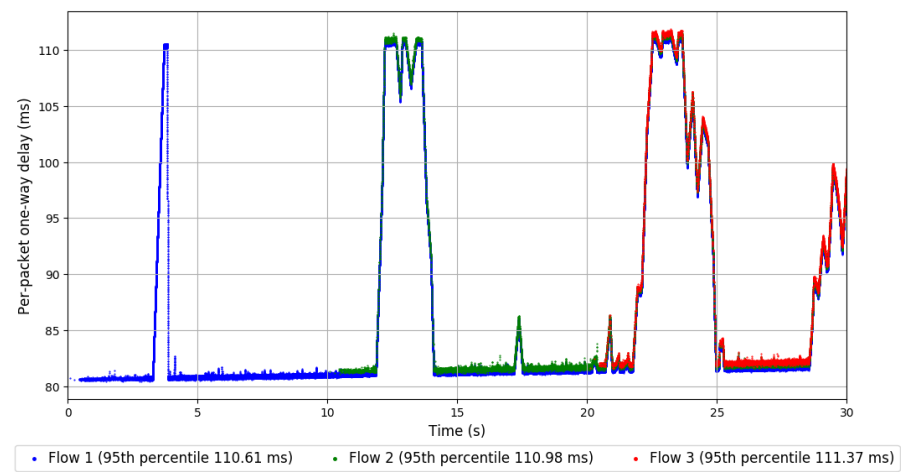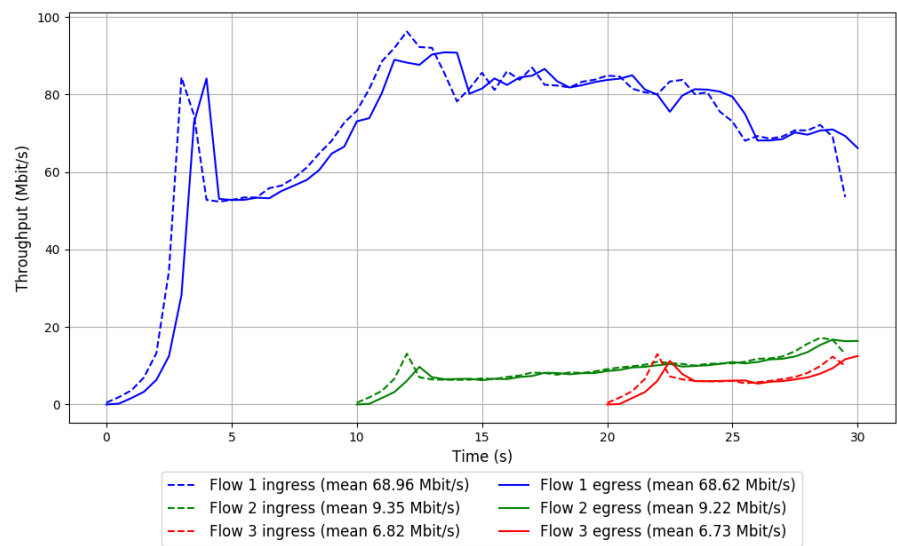## Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-06-28 01:09:34
End at: 2019-06-28 01:10:04
Local clock offset: -5.869 ms
Remote clock offset: -620.608 ms


# Below is generated by plot.py at 2019-06-28 02:57:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.98 Mbit/s
95th percentile per-packet one-way delay: 110.633 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 68.62 Mbit/s
95th percentile per-packet one-way delay: 110.609 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 110.982 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 111.372 ms
Loss rate: 1.14%
```

Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 68.96 Mbit/s) — — —   Flow 1 egress (mean 68.62 Mbit/s) ———
Flow 2 ingress (mean 9.35 Mbit/s) — — —   Flow 2 egress (mean 9.22 Mbit/s) ———
Flow 3 ingress (mean 6.82 Mbit/s) — — —   Flow 3 egress (mean 6.73 Mbit/s) ———

Flow 1 (95th percentile 110.61 ms)   Flow 2 (95th percentile 110.98 ms)   Flow 3 (95th percentile 111.37 ms)
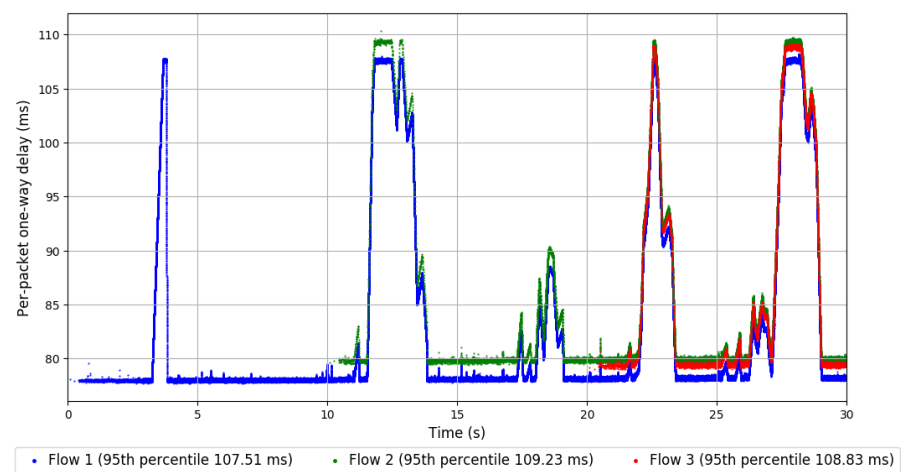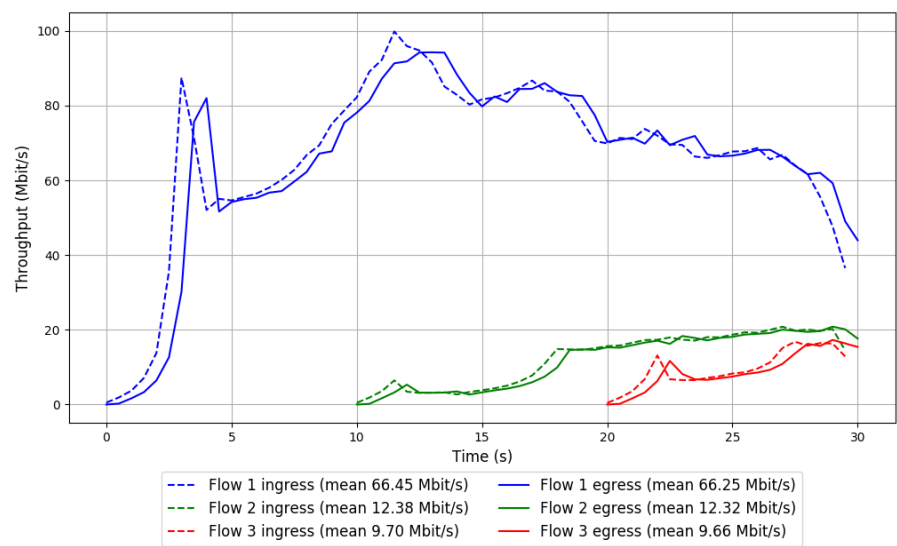
```
Run 3: Statistics of PCC-Vivace

Start at: 2019-06-28 01:37:31
End at: 2019-06-28 01:38:01
Local clock offset: -6.159 ms
Remote clock offset: -13.455 ms


# Below is generated by plot.py at 2019-06-28 02:57:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.63 Mbit/s
95th percentile per-packet one-way delay: 107.546 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 66.25 Mbit/s
95th percentile per-packet one-way delay: 107.510 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 12.32 Mbit/s
95th percentile per-packet one-way delay: 109.235 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 9.66 Mbit/s
95th percentile per-packet one-way delay: 108.833 ms
Loss rate: 0.45%
```

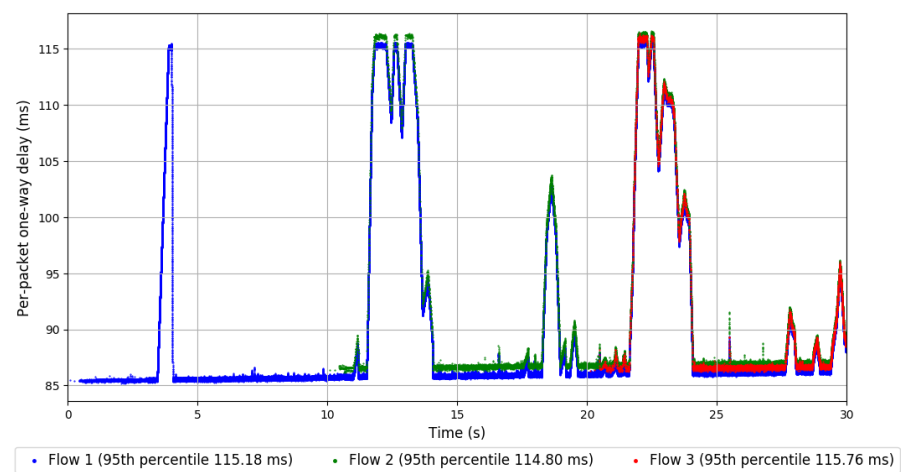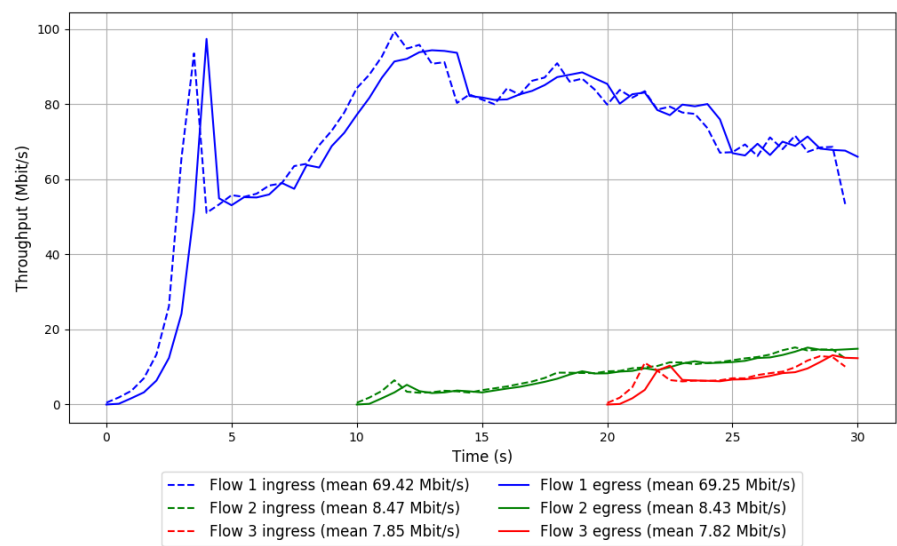# Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 66.45 Mbit/s) --- Flow 1 egress (mean 66.25 Mbit/s)
Flow 2 ingress (mean 12.38 Mbit/s) --- Flow 2 egress (mean 12.32 Mbit/s)
Flow 3 ingress (mean 9.70 Mbit/s) --- Flow 3 egress (mean 9.66 Mbit/s)

Flow 1 (95th percentile 107.51 ms) • Flow 2 (95th percentile 109.23 ms) • Flow 3 (95th percentile 108.83 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-06-28 02:05:42
End at: 2019-06-28 02:06:12
Local clock offset: -6.049 ms
Remote clock offset: -29.311 ms


# Below is generated by plot.py at 2019-06-28 02:57:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.44 Mbit/s
95th percentile per-packet one-way delay: 115.186 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 69.25 Mbit/s
95th percentile per-packet one-way delay: 115.184 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 8.43 Mbit/s
95th percentile per-packet one-way delay: 114.801 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 115.756 ms
Loss rate: 0.33%
```

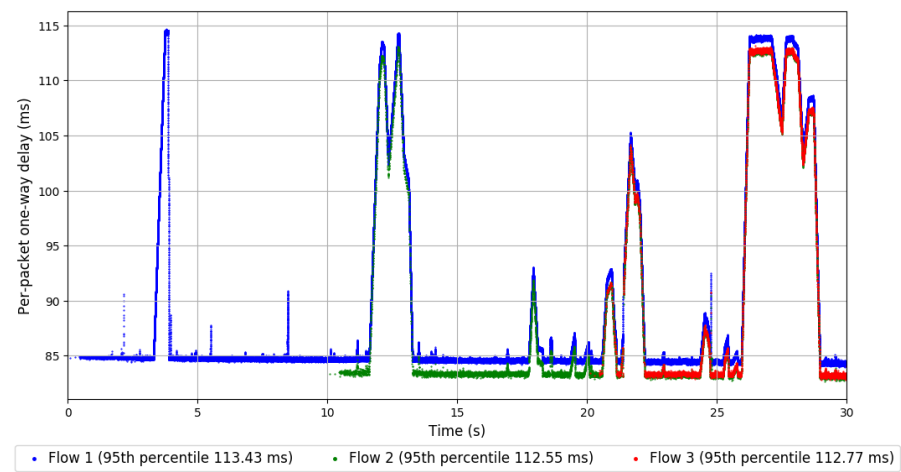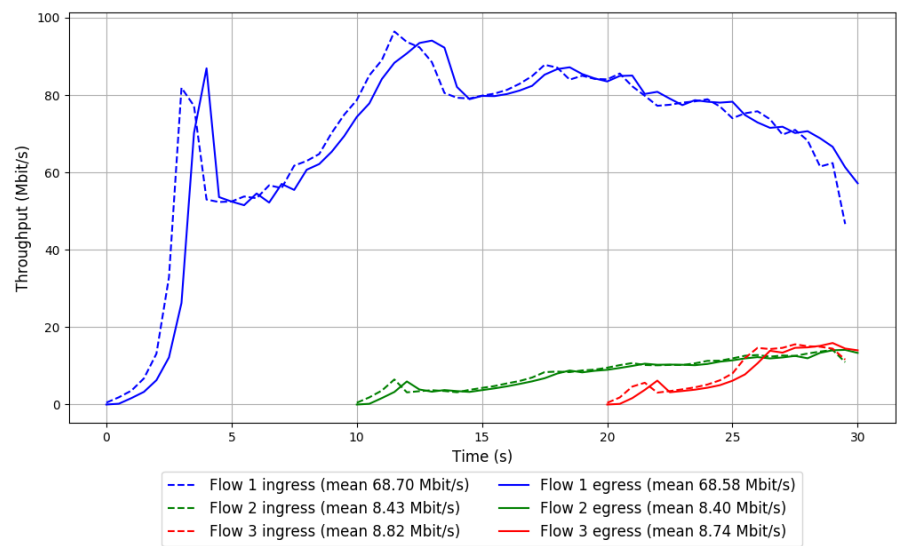# Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-06-28 02:33:40
End at: 2019-06-28 02:34:10
Local clock offset: -7.008 ms
Remote clock offset: -16.641 ms


# Below is generated by plot.py at 2019-06-28 02:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.05 Mbit/s
95th percentile per-packet one-way delay: 113.154 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 68.58 Mbit/s
95th percentile per-packet one-way delay: 113.433 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 112.554 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 8.74 Mbit/s
95th percentile per-packet one-way delay: 112.770 ms
Loss rate: 0.97%
```
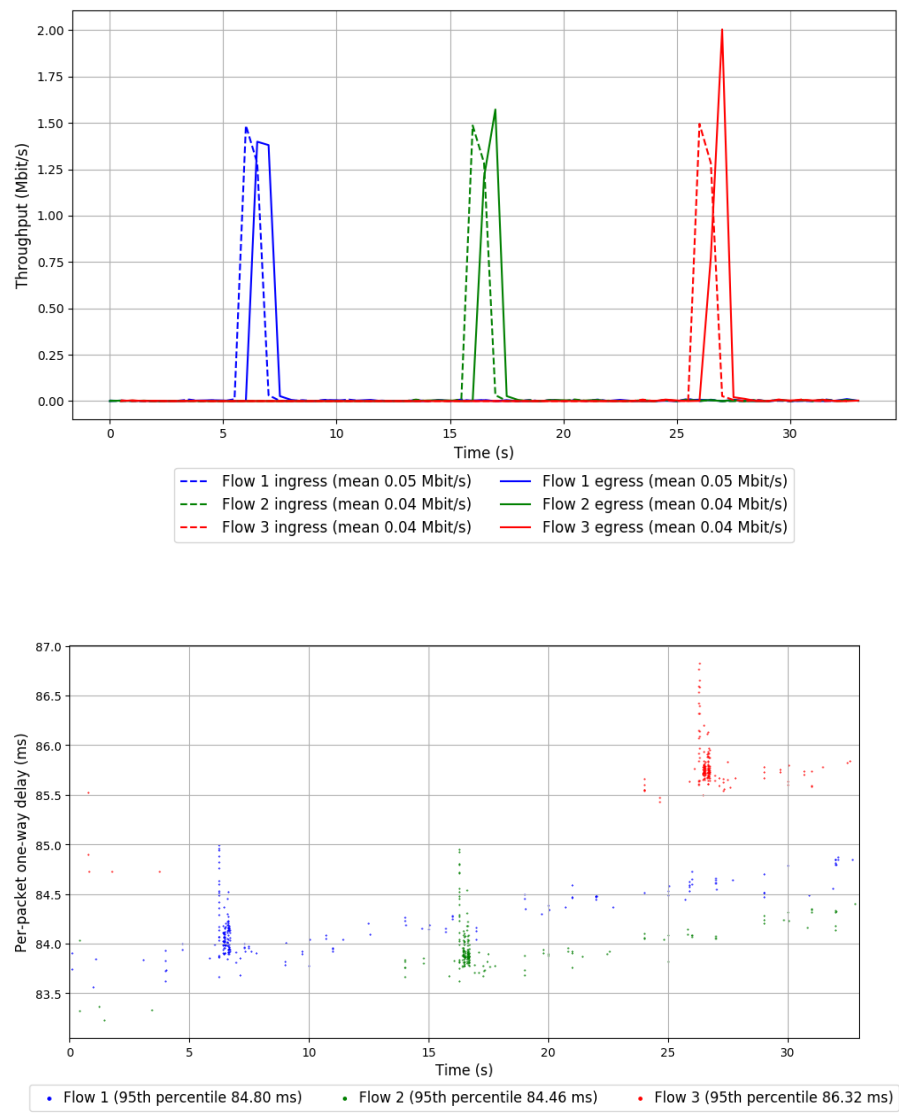
Run 5: Report of PCC-Vivace — Data Link

- Flow 1 ingress (mean 68.70 Mbit/s) — Flow 1 egress (mean 68.58 Mbit/s)
- Flow 2 ingress (mean 8.43 Mbit/s) — Flow 2 egress (mean 8.40 Mbit/s)
- Flow 3 ingress (mean 8.82 Mbit/s) — Flow 3 egress (mean 8.74 Mbit/s)

- Flow 1 (95th percentile 113.43 ms) • Flow 2 (95th percentile 112.55 ms) • Flow 3 (95th percentile 112.77 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2019-06-28 00:39:07
End at: 2019-06-28 00:39:37
Local clock offset: -4.978 ms
Remote clock offset: -551.971 ms


# Below is generated by plot.py at 2019-06-28 02:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 85.879 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 84.798 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 84.456 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 86.319 ms
Loss rate: 0.00%
```

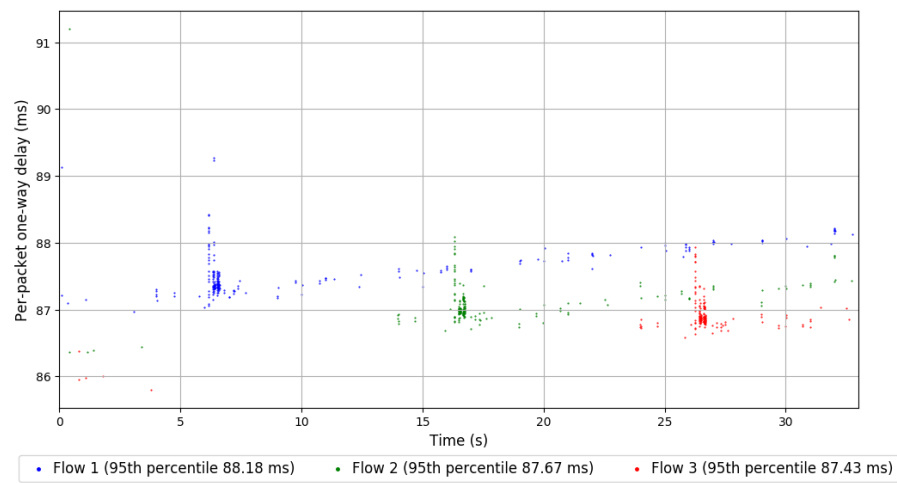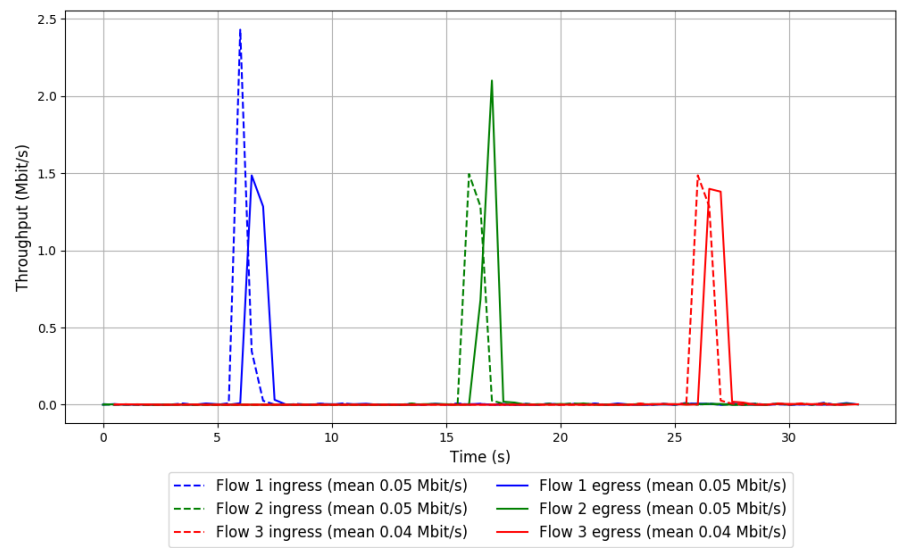Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-06-28 01:07:05
End at: 2019-06-28 01:07:35
Local clock offset: -4.928 ms
Remote clock offset: -608.602 ms


# Below is generated by plot.py at 2019-06-28 02:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 88.003 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 88.183 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 87.671 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 87.430 ms
Loss rate: 0.00%
```

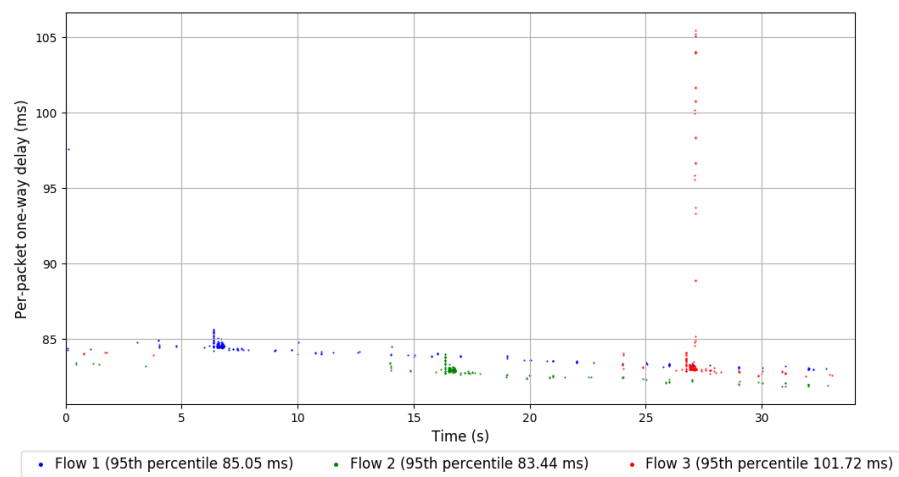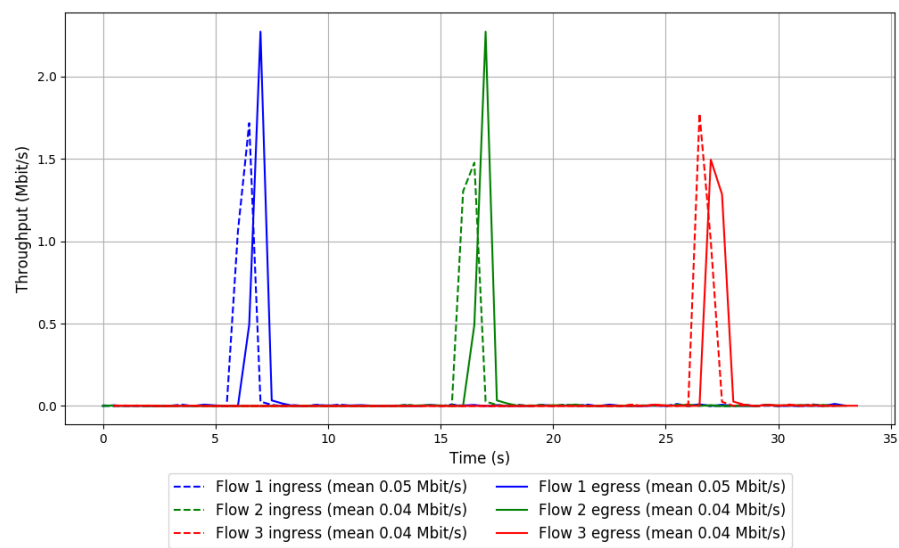Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-06-28 01:35:02
End at: 2019-06-28 01:35:32
Local clock offset: -6.165 ms
Remote clock offset: -11.633 ms


# Below is generated by plot.py at 2019-06-28 02:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 85.423 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.047 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 83.442 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 101.721 ms
Loss rate: 0.00%
```

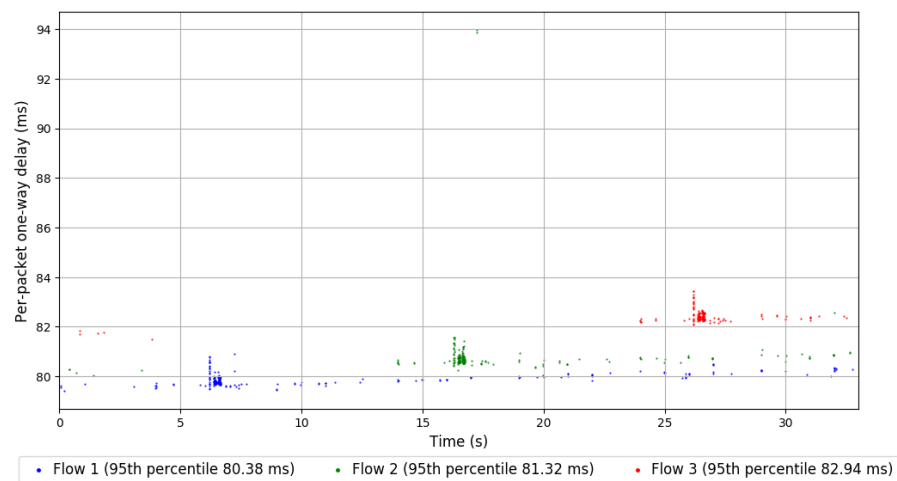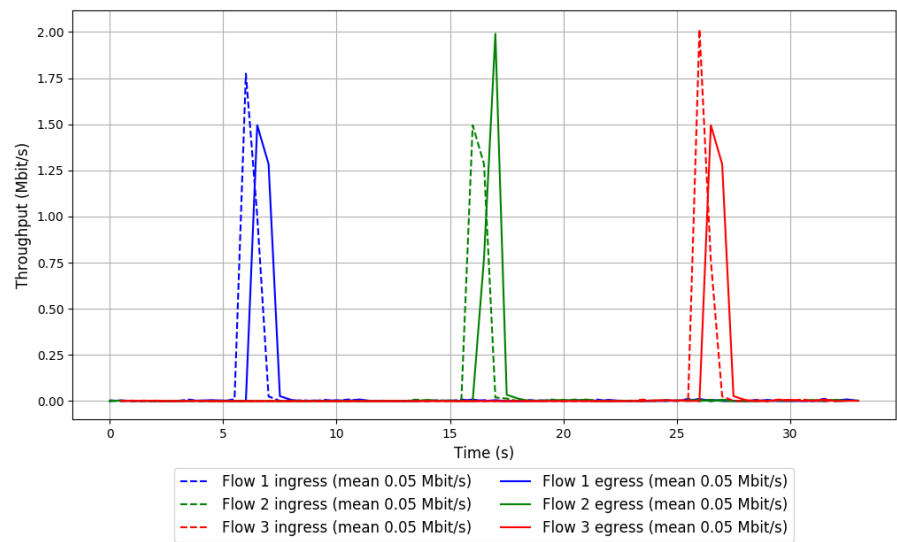## Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-06-28 02:03:13
End at: 2019-06-28 02:03:43
Local clock offset: -6.165 ms
Remote clock offset: -31.385 ms


# Below is generated by plot.py at 2019-06-28 02:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 82.552 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 80.377 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 81.317 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 82.942 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-06-28 02:31:11
End at: 2019-06-28 02:31:41
Local clock offset: -6.109 ms
Remote clock offset: -23.865 ms


# Below is generated by plot.py at 2019-06-28 02:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 80.248 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 78.530 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 84.561 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 79.954 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link