Pantheon Report

Generated at 2018-11-30 09:14:40 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

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

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

```
System info:
Linux 4.15.0-1027-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 @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```

```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

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

3
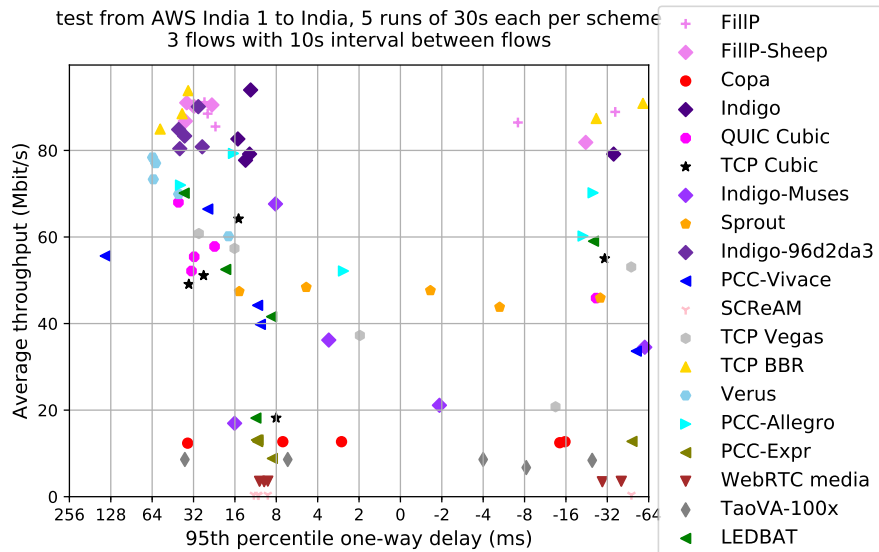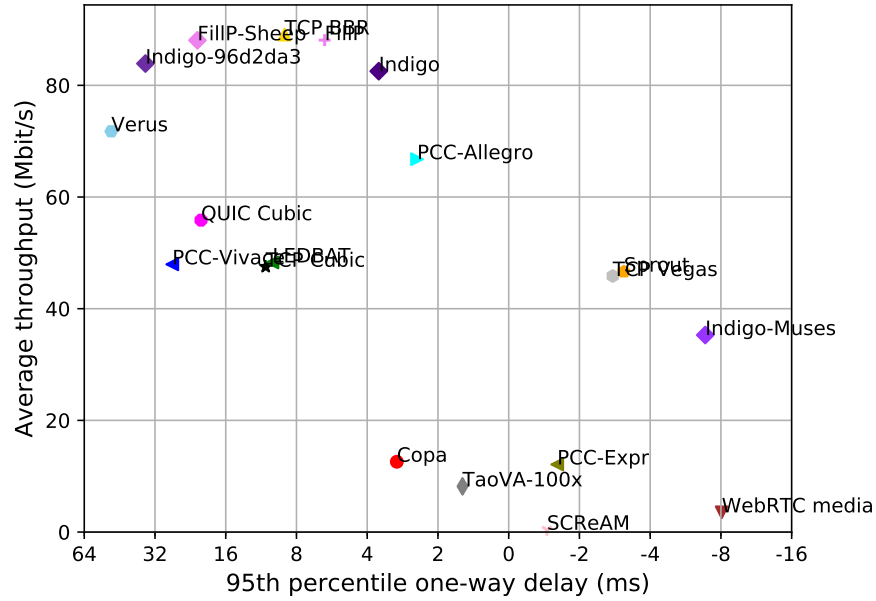
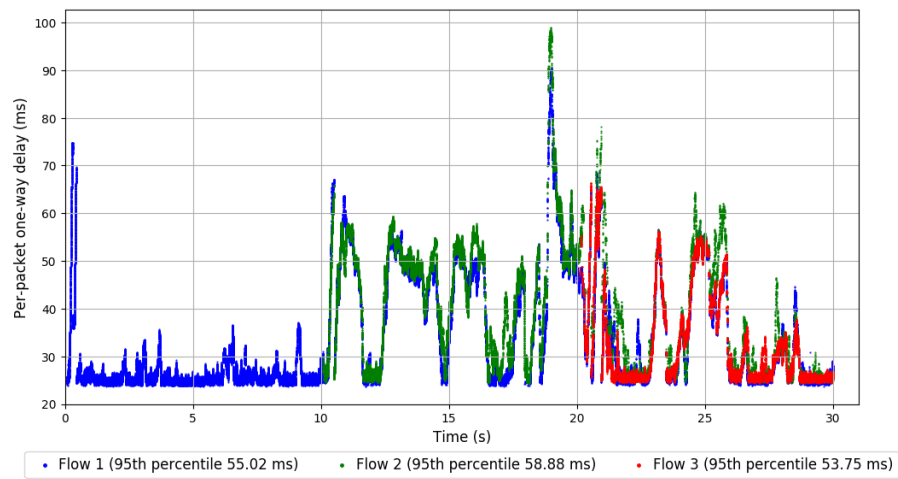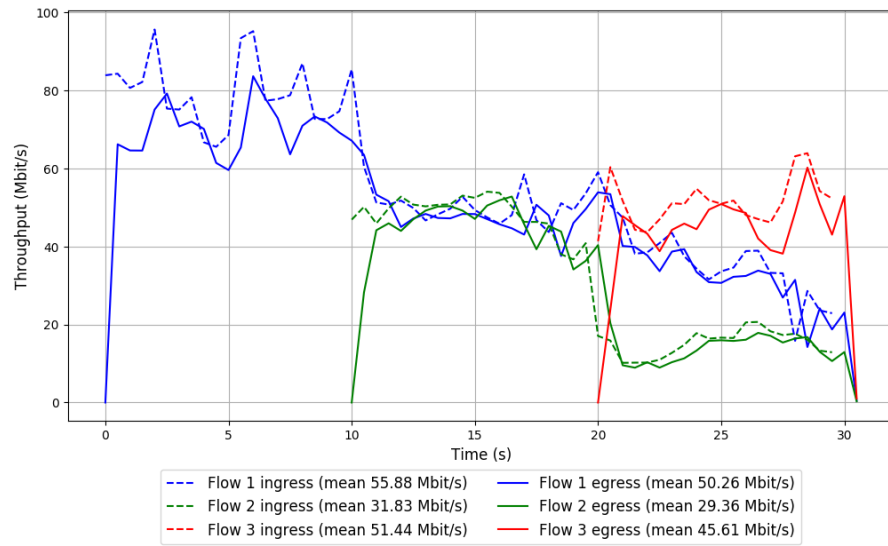| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	52.44	34.89	40.41	7.92	10.28	9.80	8.30	7.74	8.55
Copa	5	8.59	5.13	2.01	2.59	4.04	2.33	49.39	58.95	79.31
TCP Cubic	5	27.93	20.39	18.21	12.23	0.19	2.16	0.41	0.43	0.27
FillP	5	52.01	40.11	28.58	4.84	10.11	2.00	24.72	36.24	42.21
FillP-Sheep	5	53.85	38.61	25.59	19.23	22.48	23.66	7.84	11.44	16.89
Indigo	5	46.26	39.14	32.36	3.40	3.25	5.81	7.43	10.08	11.34
Indigo-96d2da3	5	53.77	34.05	23.69	37.10	31.64	30.76	28.42	35.71	40.95
LEDBAT	5	28.58	22.04	15.13	9.48	10.92	4.57	0.45	0.60	1.13
Indigo-Muses	5	17.10	14.64	25.57	-6.69	-6.33	-7.30	1.77	1.61	1.33
PCC-Allegro	5	36.05	39.23	14.11	0.55	0.59	6.07	5.62	7.25	6.62
PCC-Expr	5	6.63	6.10	4.37	-1.69	-1.58	-2.36	35.59	32.73	32.76
QUIC Cubic	5	31.94	26.35	19.38	26.87	12.92	7.85	1.06	0.70	0.87
SCReAM	5	0.20	0.21	0.22	-0.46	-1.32	-0.98	0.00	0.00	0.00
Sprout	5	23.60	23.25	22.87	-3.01	-3.00	-3.96	1.94	2.40	3.57
TaoVA-100x	5	0.00	7.46	9.82	-11.80	0.55	5.59	95.92	66.83	84.80
TCP Vegas	5	25.96	20.50	18.77	-3.66	-4.54	-2.92	0.36	0.23	0.26
Verus	5	46.03	34.41	9.72	40.15	58.10	39.96	18.08	56.05	45.38
PCC-Vivace	5	32.25	19.29	8.69	28.10	-2.34	-3.05	3.39	3.42	3.47
WebRTC media	5	1.92	1.23	0.39	-7.01	-7.49	-10.78	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-11-30 07:27:14
End at: 2018-11-30 07:27:44
Local clock offset: -0.193 ms
Remote clock offset: -3.749 ms


# Below is generated by plot.py at 2018-11-30 09:07:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.49 Mbit/s
95th percentile per-packet one-way delay: 38.741 ms
Loss rate: 8.51%
-- Flow 1:
Average throughput: 47.70 Mbit/s
95th percentile per-packet one-way delay: 41.076 ms
Loss rate: 8.06%
-- Flow 2:
Average throughput: 40.52 Mbit/s
95th percentile per-packet one-way delay: 38.571 ms
Loss rate: 8.33%
-- Flow 3:
Average throughput: 41.57 Mbit/s
95th percentile per-packet one-way delay: 33.812 ms
Loss rate: 10.39%
```

Run 1: Report of TCP BBR — Data Link
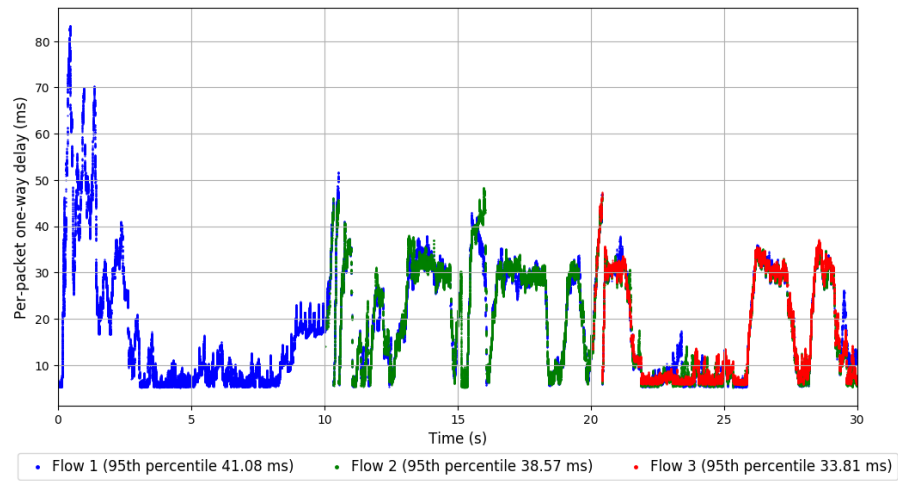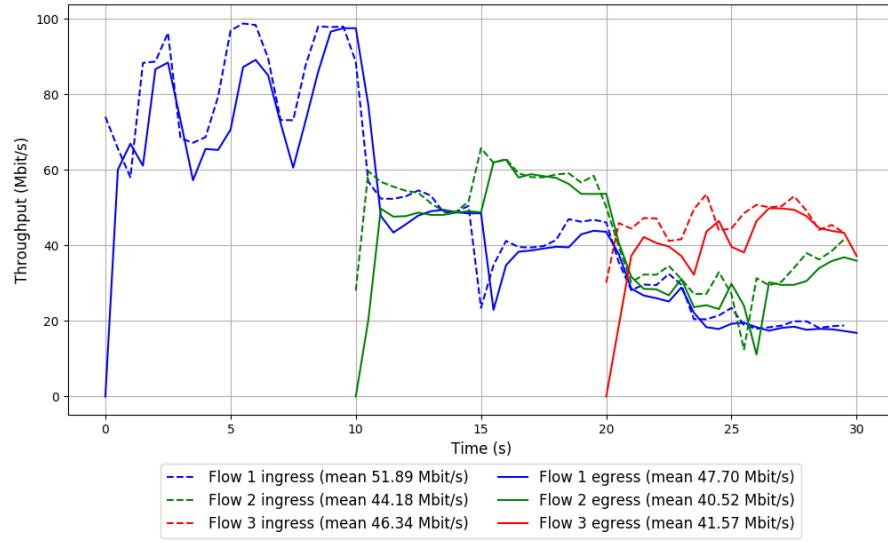
```
Run 2: Statistics of TCP BBR

Start at: 2018-11-30 07:49:29
End at: 2018-11-30 07:49:59
Local clock offset: 2.857 ms
Remote clock offset: 18.964 ms


# Below is generated by plot.py at 2018-11-30 09:07:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.94 Mbit/s
95th percentile per-packet one-way delay: 55.946 ms
Loss rate: 9.81%
-- Flow 1:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 55.017 ms
Loss rate: 10.06%
-- Flow 2:
Average throughput: 29.36 Mbit/s
95th percentile per-packet one-way delay: 58.880 ms
Loss rate: 7.79%
-- Flow 3:
Average throughput: 45.61 Mbit/s
95th percentile per-packet one-way delay: 53.747 ms
Loss rate: 11.49%
```

Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 55.88 Mbit/s) — — — Flow 1 egress (mean 50.26 Mbit/s)
Flow 2 ingress (mean 31.83 Mbit/s) — — — Flow 2 egress (mean 29.36 Mbit/s)
Flow 3 ingress (mean 51.44 Mbit/s) — — — Flow 3 egress (mean 45.61 Mbit/s)

Flow 1 (95th percentile 55.02 ms)   Flow 2 (95th percentile 58.88 ms)   Flow 3 (95th percentile 53.75 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2018-11-30 08:11:46
End at: 2018-11-30 08:12:16
Local clock offset: 0.776 ms
Remote clock offset: -0.628 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.82 Mbit/s
95th percentile per-packet one-way delay: 34.999 ms
Loss rate: 6.79%
-- Flow 1:
Average throughput: 55.07 Mbit/s
95th percentile per-packet one-way delay: 31.674 ms
Loss rate: 6.92%
-- Flow 2:
Average throughput: 35.85 Mbit/s
95th percentile per-packet one-way delay: 35.205 ms
Loss rate: 7.16%
-- Flow 3:
Average throughput: 44.67 Mbit/s
95th percentile per-packet one-way delay: 43.556 ms
Loss rate: 5.70%
```
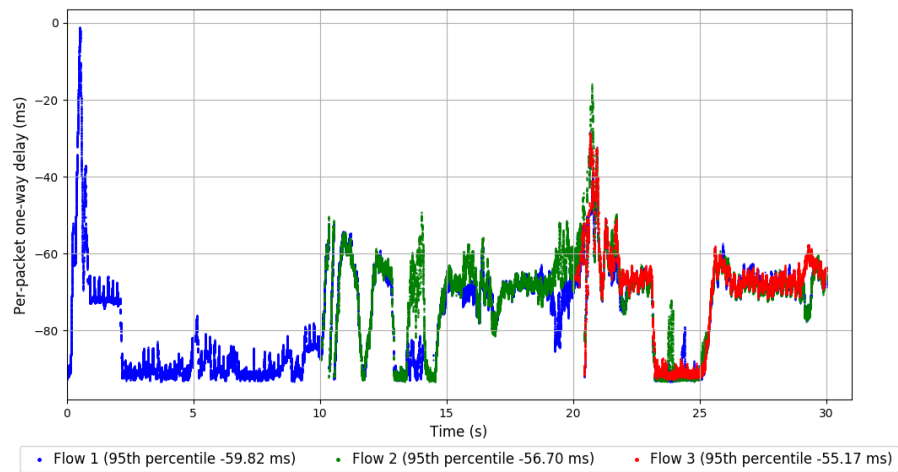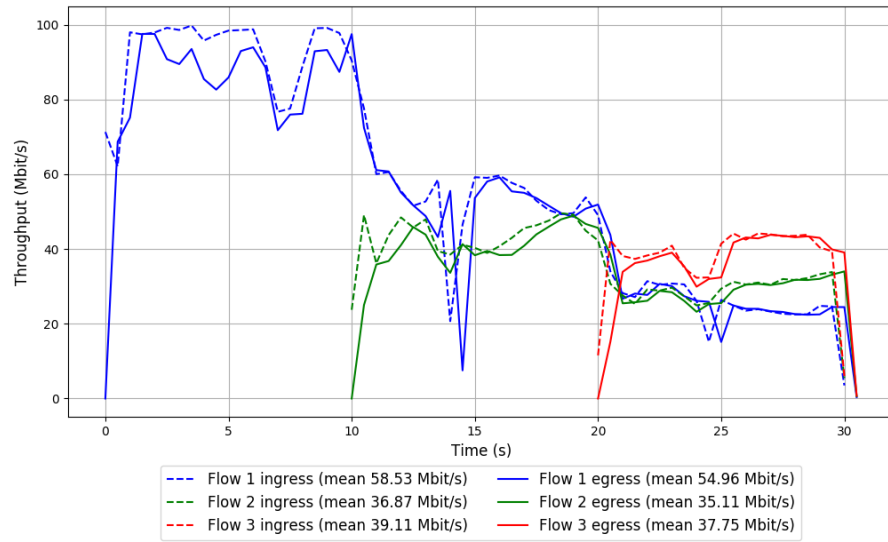
Run 3: Report of TCP BBR — Data Link
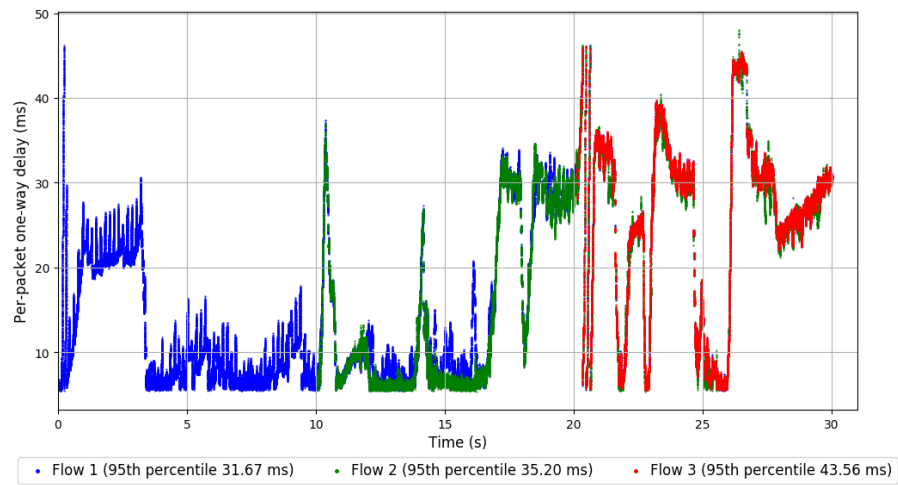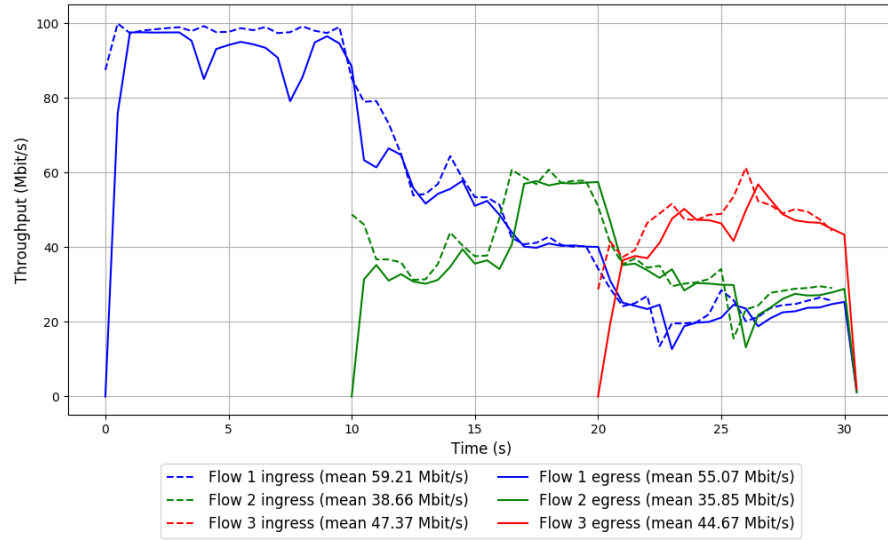
```
Run 4: Statistics of TCP BBR

Start at: 2018-11-30 08:33:52
End at: 2018-11-30 08:34:22
Local clock offset: 0.203 ms
Remote clock offset: -61.885 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.39 Mbit/s
95th percentile per-packet one-way delay: -26.590 ms
Loss rate: 10.67%
-- Flow 1:
Average throughput: 54.19 Mbit/s
95th percentile per-packet one-way delay: -28.361 ms
Loss rate: 10.43%
-- Flow 2:
Average throughput: 33.62 Mbit/s
95th percentile per-packet one-way delay: -24.554 ms
Loss rate: 10.75%
-- Flow 3:
Average throughput: 32.43 Mbit/s
95th percentile per-packet one-way delay: -26.935 ms
Loss rate: 11.72%
```

Run 4: Report of TCP BBR — Data Link
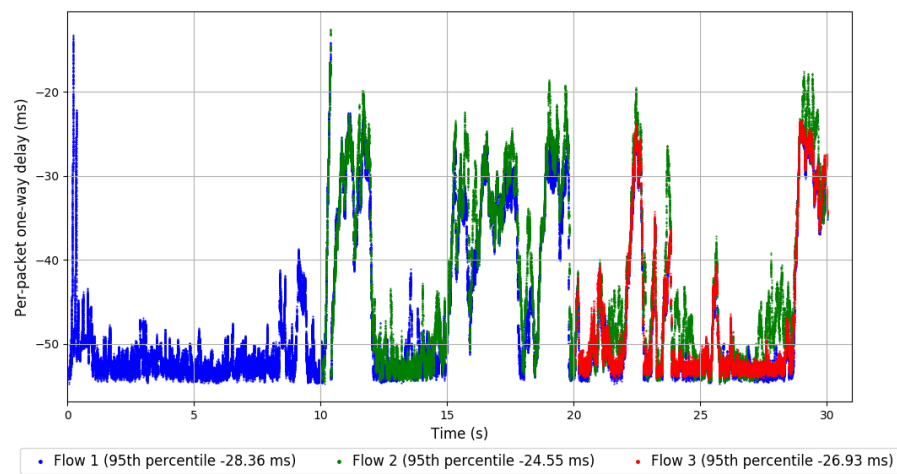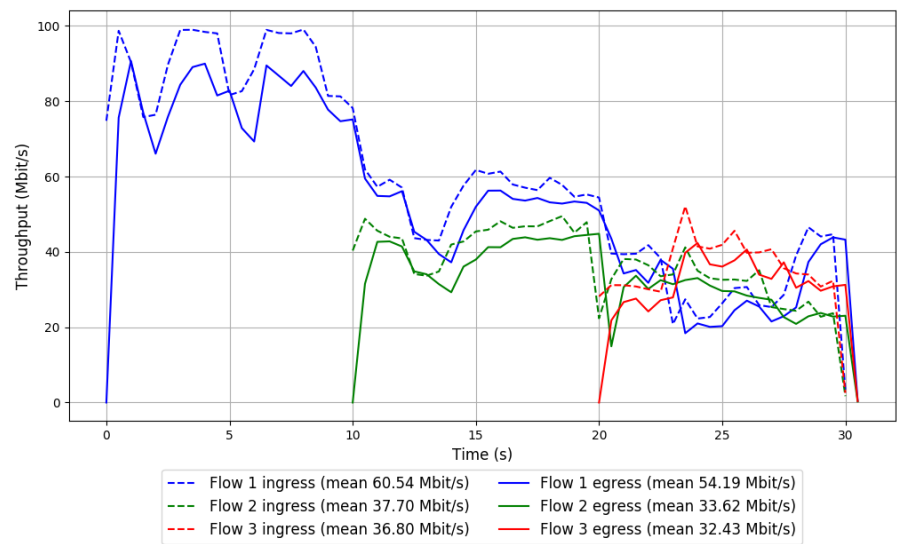
```
Run 5: Statistics of TCP BBR

Start at: 2018-11-30 08:56:05
End at: 2018-11-30 08:56:35
Local clock offset: -1.088 ms
Remote clock offset: -100.488 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.88 Mbit/s
95th percentile per-packet one-way delay: -58.141 ms
Loss rate: 5.33%
-- Flow 1:
Average throughput: 54.96 Mbit/s
95th percentile per-packet one-way delay: -59.822 ms
Loss rate: 6.02%
-- Flow 2:
Average throughput: 35.11 Mbit/s
95th percentile per-packet one-way delay: -56.696 ms
Loss rate: 4.67%
-- Flow 3:
Average throughput: 37.75 Mbit/s
95th percentile per-packet one-way delay: -55.175 ms
Loss rate: 3.44%
```

Run 5: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 58.53 Mbit/s) —— Flow 1 egress (mean 54.96 Mbit/s)
- - - Flow 2 ingress (mean 36.87 Mbit/s) —— Flow 2 egress (mean 35.11 Mbit/s)
- - - Flow 3 ingress (mean 39.11 Mbit/s) —— Flow 3 egress (mean 37.75 Mbit/s)

- Flow 1 (95th percentile -59.82 ms)   - Flow 2 (95th percentile -56.70 ms)   - Flow 3 (95th percentile -55.17 ms)
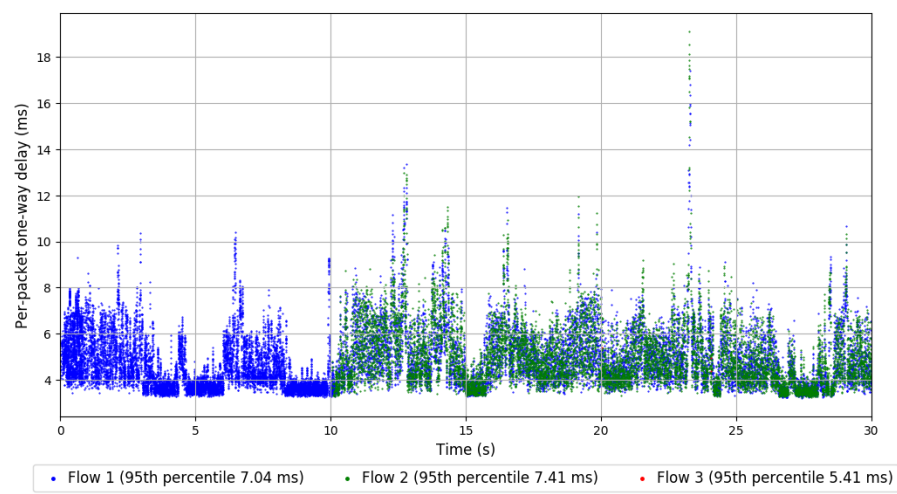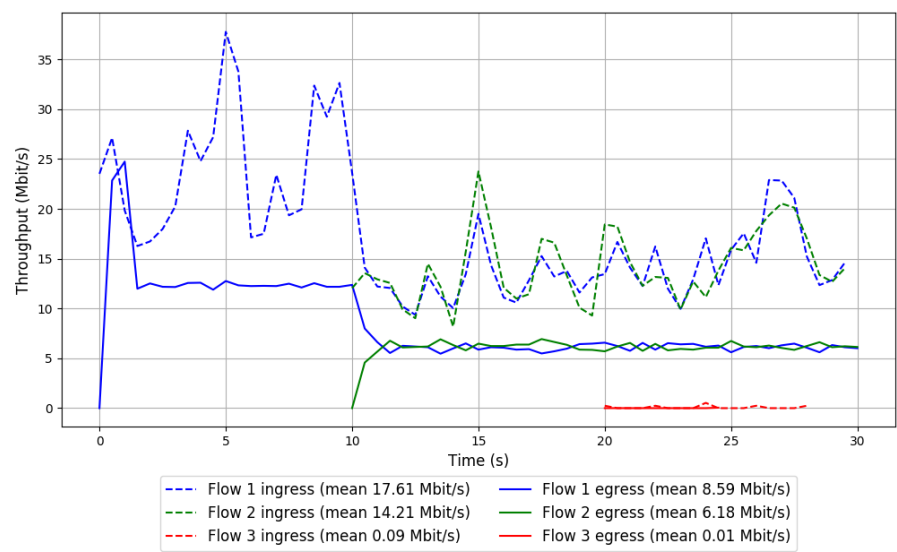
14

```
Run 1: Statistics of Copa

Start at: 2018-11-30 07:33:06
End at: 2018-11-30 07:33:36
Local clock offset: -0.374 ms
Remote clock offset: -3.248 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.37 Mbit/s
95th percentile per-packet one-way delay: 35.300 ms
Loss rate: 43.47%
-- Flow 1:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 33.292 ms
Loss rate: 36.26%
-- Flow 2:
Average throughput: 4.65 Mbit/s
95th percentile per-packet one-way delay: 41.213 ms
Loss rate: 48.67%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 30.327 ms
Loss rate: 60.29%
```
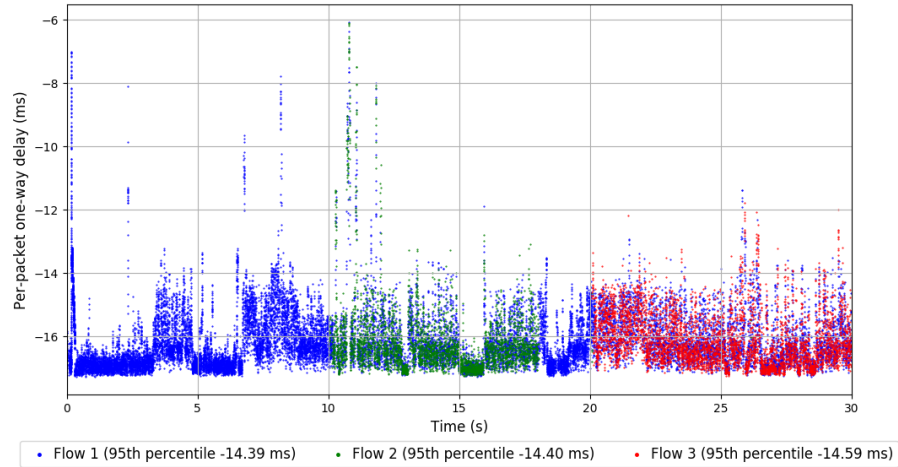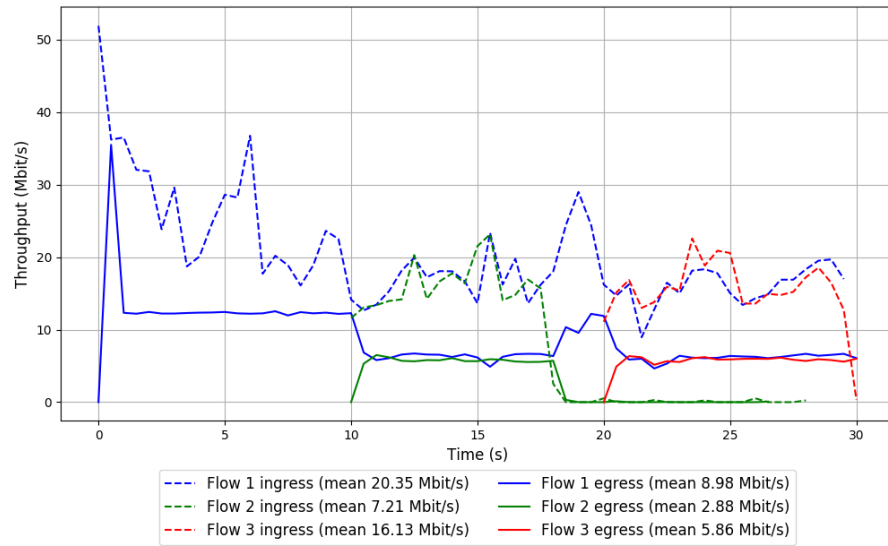
Run 1: Report of Copa — Data Link
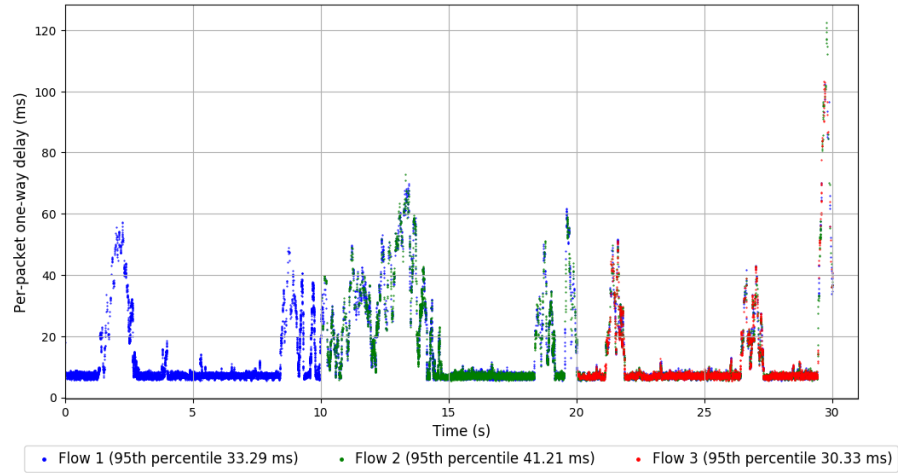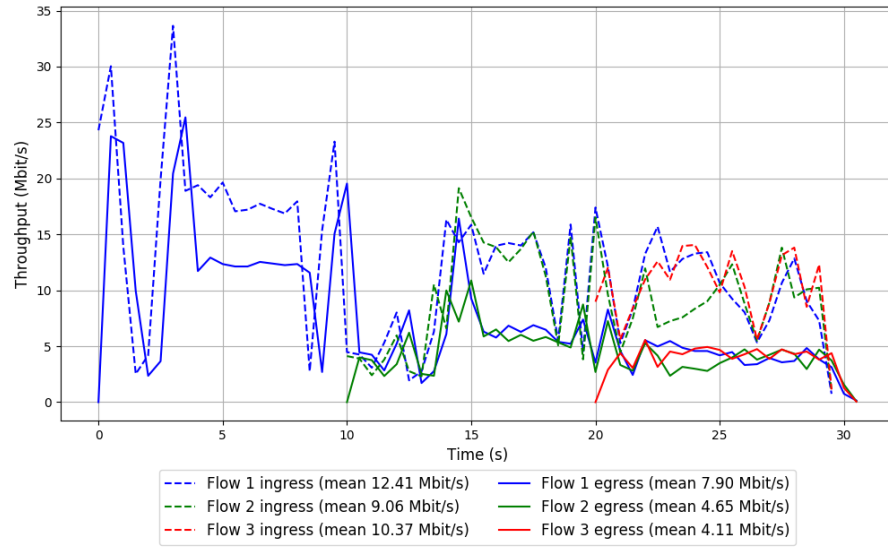
```
Run 2: Statistics of Copa

Start at: 2018-11-30 07:55:21
End at: 2018-11-30 07:55:51
Local clock offset: 1.83 ms
Remote clock offset: -2.363 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.71 Mbit/s
95th percentile per-packet one-way delay: 7.171 ms
Loss rate: 53.10%
-- Flow 1:
Average throughput: 8.59 Mbit/s
95th percentile per-packet one-way delay: 7.035 ms
Loss rate: 51.20%
-- Flow 2:
Average throughput: 6.18 Mbit/s
95th percentile per-packet one-way delay: 7.405 ms
Loss rate: 56.52%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 5.406 ms
Loss rate: 96.64%
```

Run 2: Report of Copa — Data Link

Figure legend:
- - - Flow 1 ingress (mean 17.61 Mbit/s)   —— Flow 1 egress (mean 8.59 Mbit/s)
- - - Flow 2 ingress (mean 14.21 Mbit/s)   —— Flow 2 egress (mean 6.18 Mbit/s)
- - - Flow 3 ingress (mean 0.09 Mbit/s)   —— Flow 3 egress (mean 0.01 Mbit/s)

· Flow 1 (95th percentile 7.04 ms)   · Flow 2 (95th percentile 7.41 ms)   · Flow 3 (95th percentile 5.41 ms)
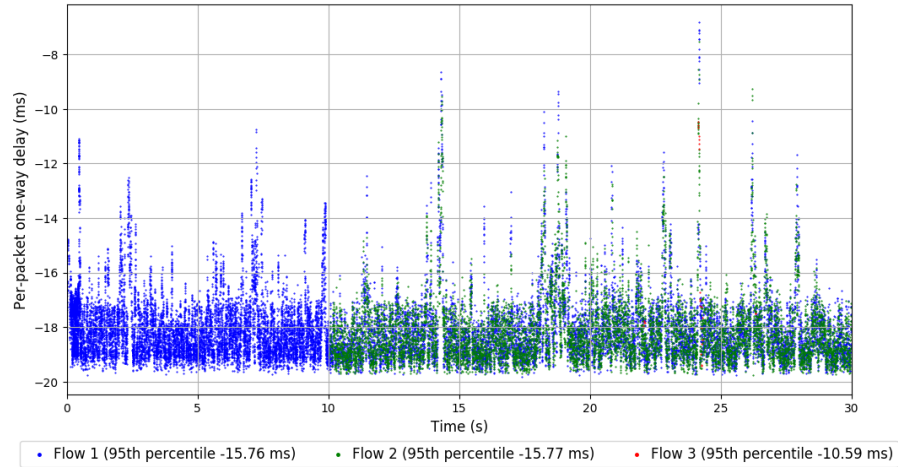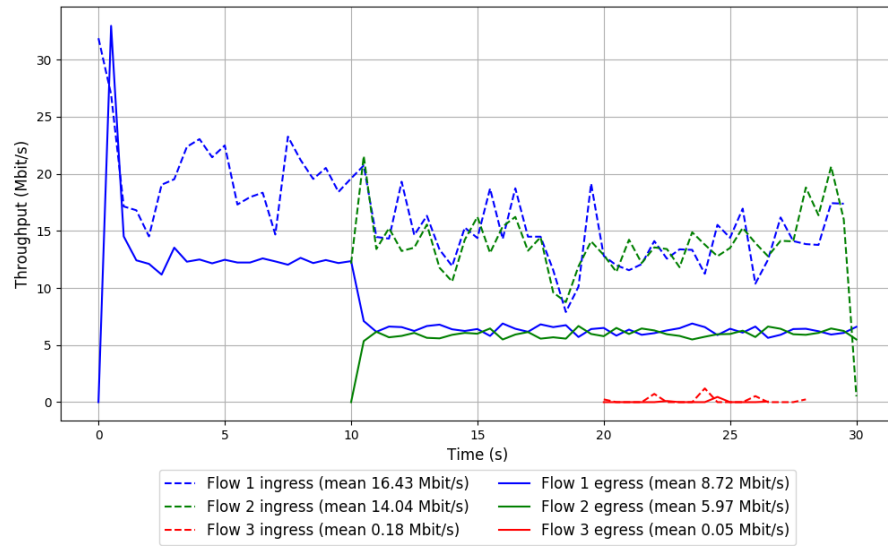
```
Run 3: Statistics of Copa

Start at: 2018-11-30 08:17:36
End at: 2018-11-30 08:18:06
Local clock offset: 1.833 ms
Remote clock offset: -22.406 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: -14.436 ms
Loss rate: 58.52%
-- Flow 1:
Average throughput: 8.98 Mbit/s
95th percentile per-packet one-way delay: -14.391 ms
Loss rate: 55.86%
-- Flow 2:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: -14.403 ms
Loss rate: 64.51%
-- Flow 3:
Average throughput: 5.86 Mbit/s
95th percentile per-packet one-way delay: -14.587 ms
Loss rate: 63.70%
```

Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 20.35 Mbit/s) --- Flow 1 egress (mean 8.98 Mbit/s) ———
Flow 2 ingress (mean 7.21 Mbit/s) --- Flow 2 egress (mean 2.88 Mbit/s) ———
Flow 3 ingress (mean 16.13 Mbit/s) --- Flow 3 egress (mean 5.86 Mbit/s) ———

Flow 1 (95th percentile -14.39 ms) • Flow 2 (95th percentile -14.40 ms) • Flow 3 (95th percentile -14.59 ms)

```
Run 4: Statistics of Copa

Start at: 2018-11-30 08:39:42
End at: 2018-11-30 08:40:12
Local clock offset: -3.756 ms
Remote clock offset: -11.714 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.71 Mbit/s
95th percentile per-packet one-way delay: 2.682 ms
Loss rate: 60.84%
-- Flow 1:
Average throughput: 8.74 Mbit/s
95th percentile per-packet one-way delay: 2.788 ms
Loss rate: 56.71%
-- Flow 2:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 1.779 ms
Loss rate: 67.59%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.103 ms
Loss rate: 96.47%
```
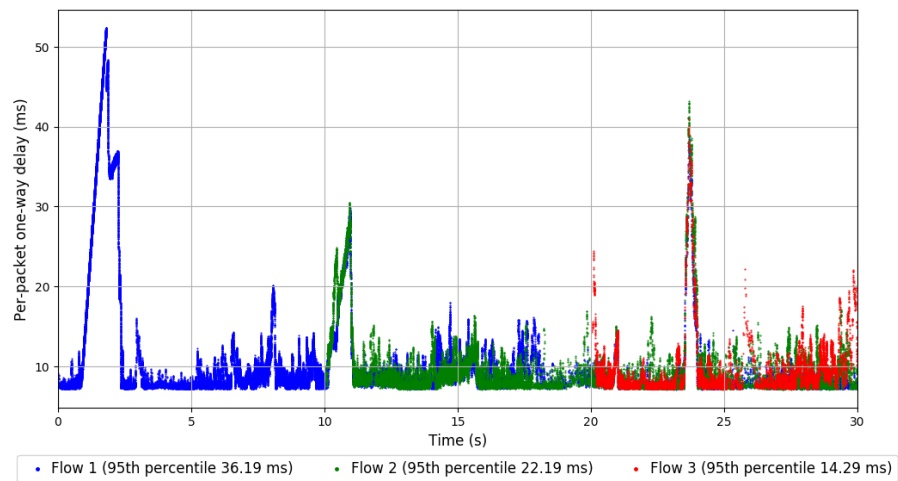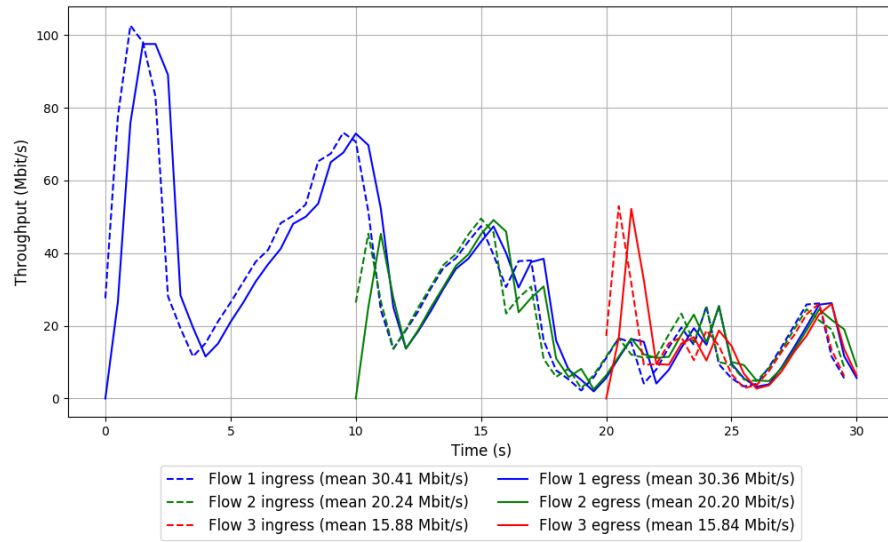
Run 4: Report of Copa — Data Link
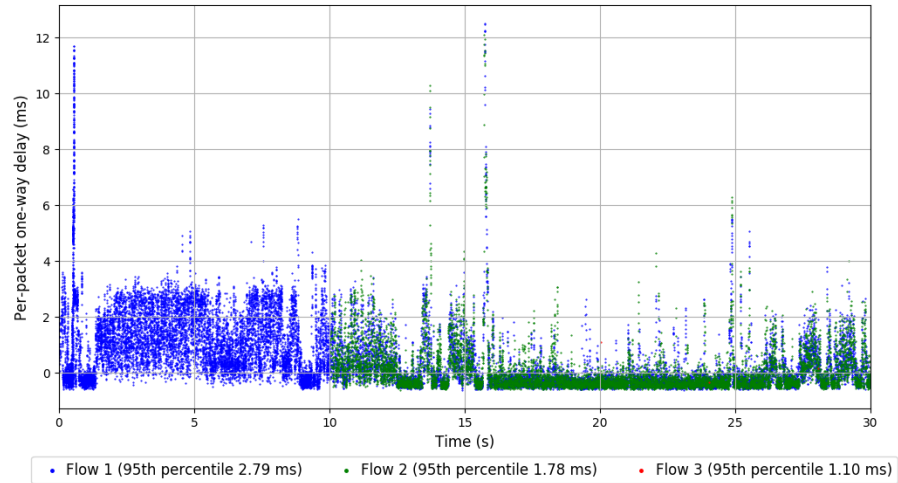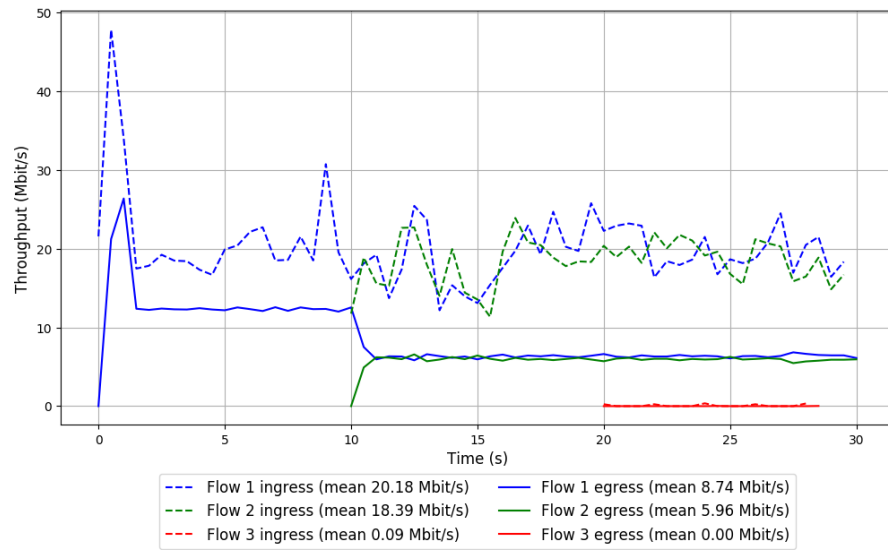
```
Run 5: Statistics of Copa

Start at: 2018-11-30 09:01:53
End at: 2018-11-30 09:02:23
Local clock offset: 1.607 ms
Remote clock offset: -23.675 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.70 Mbit/s
95th percentile per-packet one-way delay: -15.756 ms
Loss rate: 50.81%
-- Flow 1:
Average throughput: 8.72 Mbit/s
95th percentile per-packet one-way delay: -15.756 ms
Loss rate: 46.94%
-- Flow 2:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: -15.772 ms
Loss rate: 57.47%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: -10.588 ms
Loss rate: 79.45%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-30 07:18:59
End at: 2018-11-30 07:19:29
Local clock offset: -1.309 ms
Remote clock offset: -4.053 ms


# Below is generated by plot.py at 2018-11-30 09:07:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.08 Mbit/s
95th percentile per-packet one-way delay: 34.641 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 30.36 Mbit/s
95th percentile per-packet one-way delay: 36.186 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 20.20 Mbit/s
95th percentile per-packet one-way delay: 22.189 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 15.84 Mbit/s
95th percentile per-packet one-way delay: 14.287 ms
Loss rate: 0.25%
```

Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 30.41 Mbit/s) — Flow 1 egress (mean 30.36 Mbit/s)
Flow 2 ingress (mean 20.24 Mbit/s) — Flow 2 egress (mean 20.20 Mbit/s)
Flow 3 ingress (mean 15.88 Mbit/s) — Flow 3 egress (mean 15.84 Mbit/s)

Flow 1 (95th percentile 36.19 ms)   Flow 2 (95th percentile 22.19 ms)   Flow 3 (95th percentile 14.29 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2018-11-30 07:41:16
End at: 2018-11-30 07:41:46
Local clock offset: 0.844 ms
Remote clock offset: -10.686 ms


# Below is generated by plot.py at 2018-11-30 09:07:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.19 Mbit/s
95th percentile per-packet one-way delay: 15.056 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 39.82 Mbit/s
95th percentile per-packet one-way delay: 19.359 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 26.91 Mbit/s
95th percentile per-packet one-way delay: 7.353 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 19.42 Mbit/s
95th percentile per-packet one-way delay: 2.589 ms
Loss rate: 0.11%
```
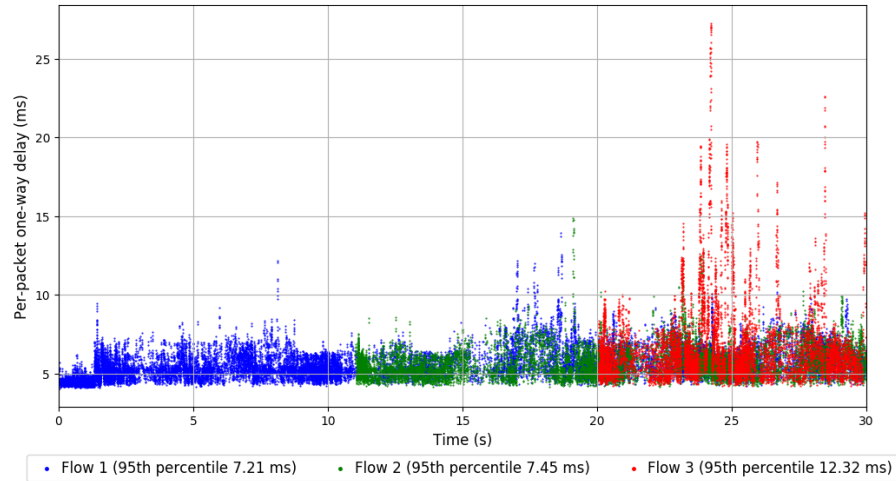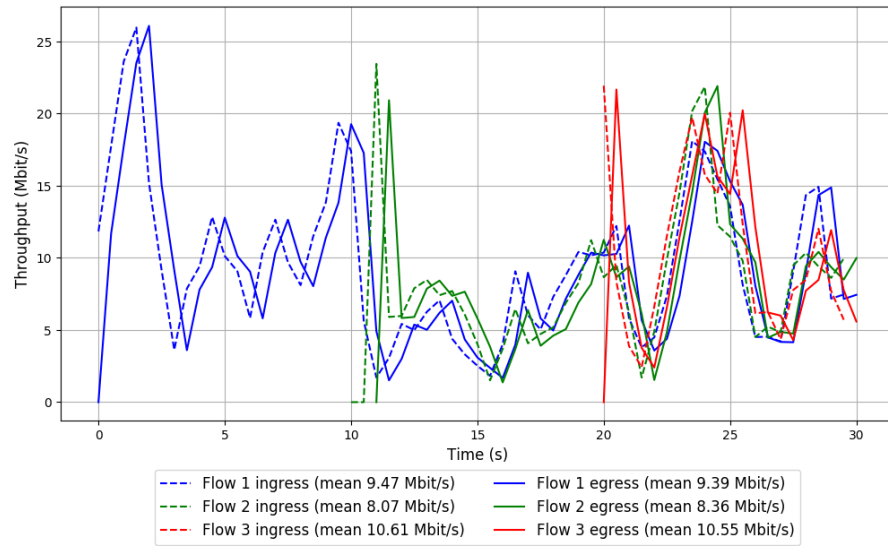
Run 2: Report of TCP Cubic — Data Link
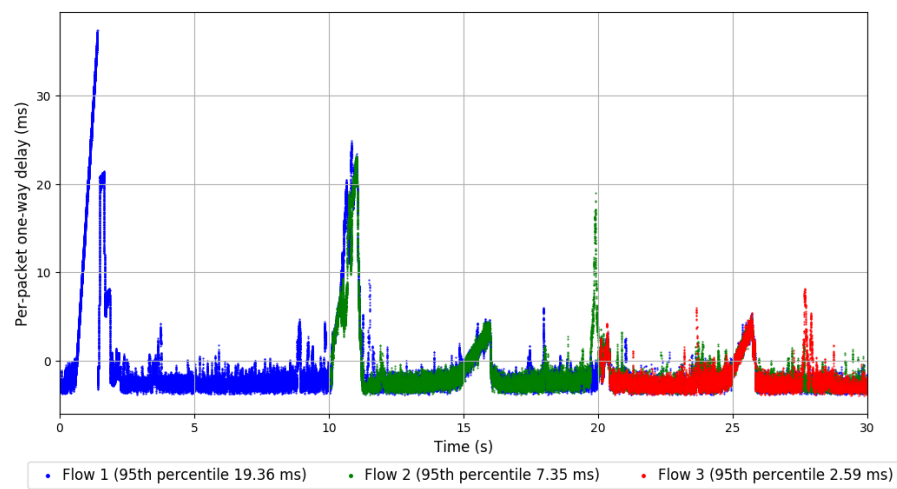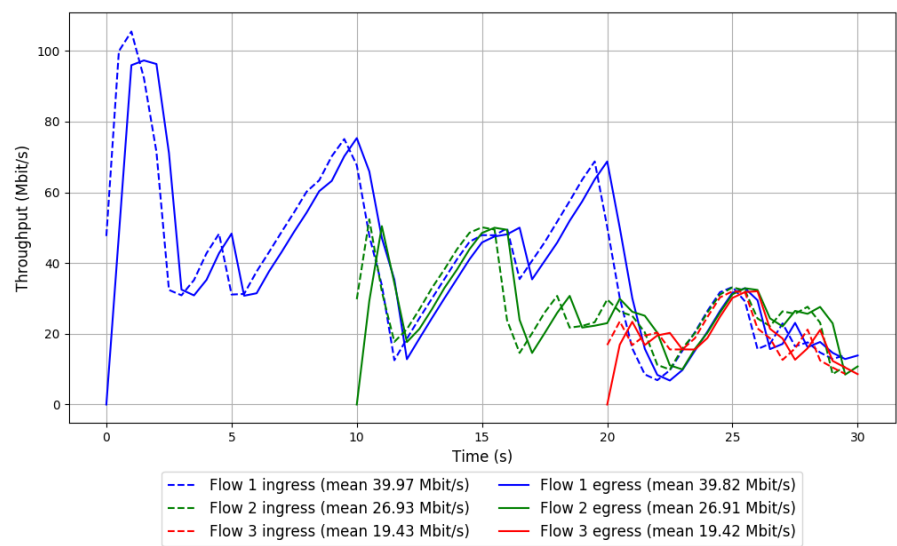
```
Run 3: Statistics of TCP Cubic

Start at: 2018-11-30 08:03:32
End at: 2018-11-30 08:04:02
Local clock offset: 0.071 ms
Remote clock offset: -4.986 ms


# Below is generated by plot.py at 2018-11-30 09:07:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.10 Mbit/s
95th percentile per-packet one-way delay: 27.026 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 28.06 Mbit/s
95th percentile per-packet one-way delay: 26.975 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 22.02 Mbit/s
95th percentile per-packet one-way delay: 11.140 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 25.16 Mbit/s
95th percentile per-packet one-way delay: 33.583 ms
Loss rate: 0.32%
```
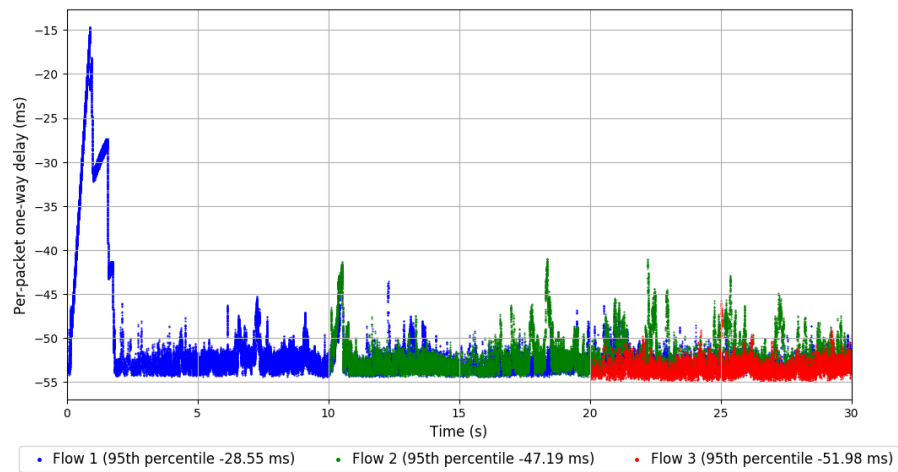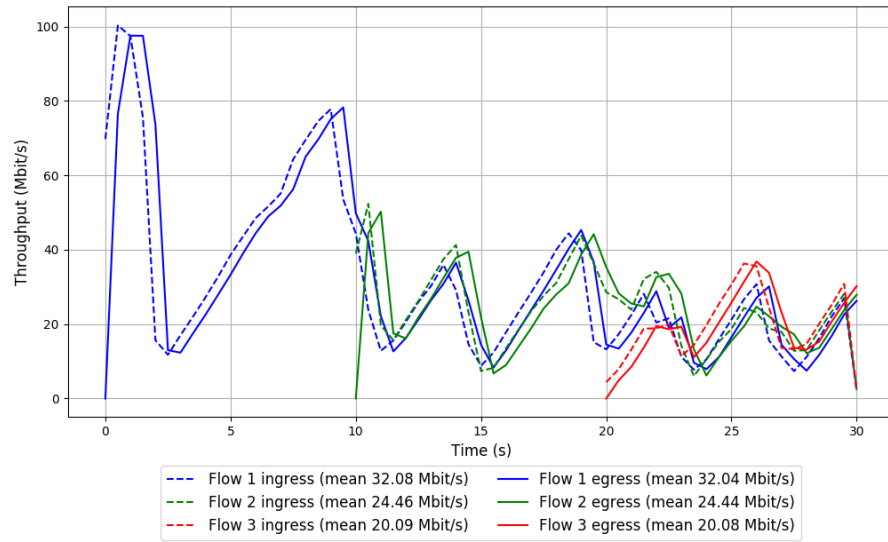
Run 3: Report of TCP Cubic — Data Link
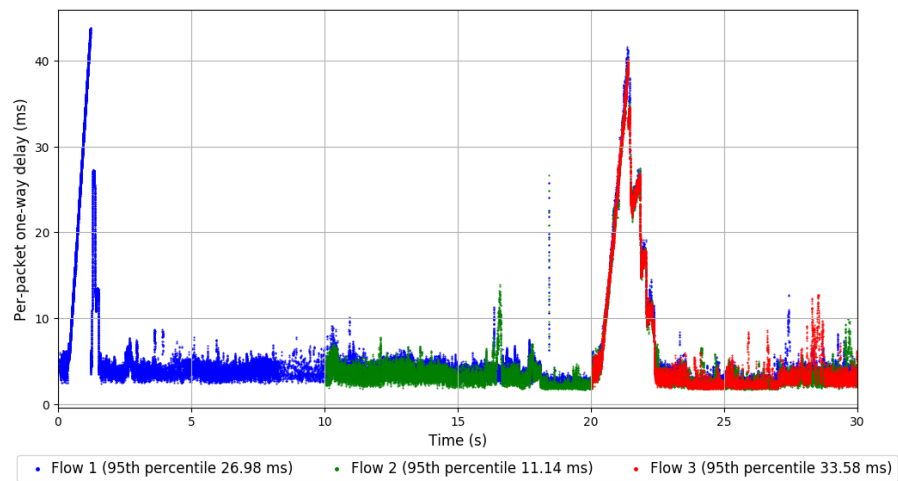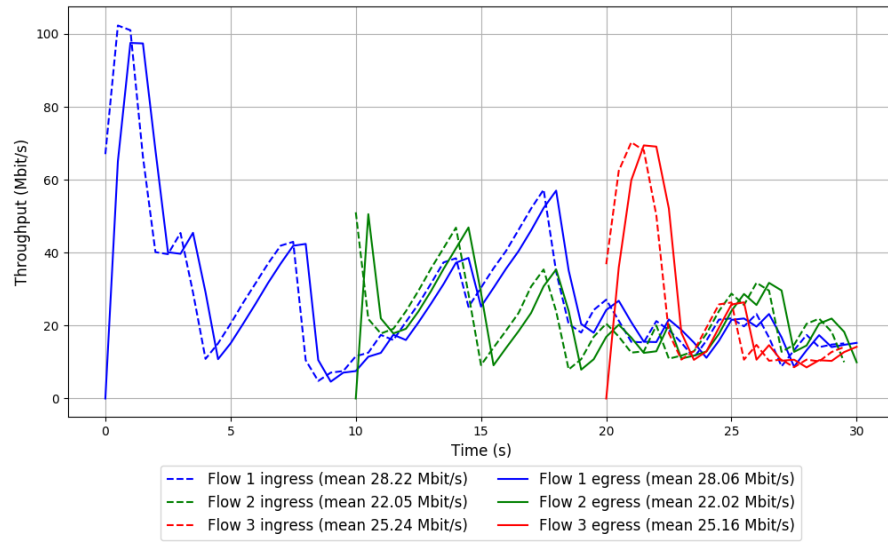
```
Run 4: Statistics of TCP Cubic

Start at: 2018-11-30 08:25:46
End at: 2018-11-30 08:26:16
Local clock offset: 3.126 ms
Remote clock offset: -0.506 ms

# Below is generated by plot.py at 2018-11-30 09:07:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.19 Mbit/s
95th percentile per-packet one-way delay: 8.021 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 7.205 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 8.36 Mbit/s
95th percentile per-packet one-way delay: 7.450 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 10.55 Mbit/s
95th percentile per-packet one-way delay: 12.322 ms
Loss rate: 0.61%
```
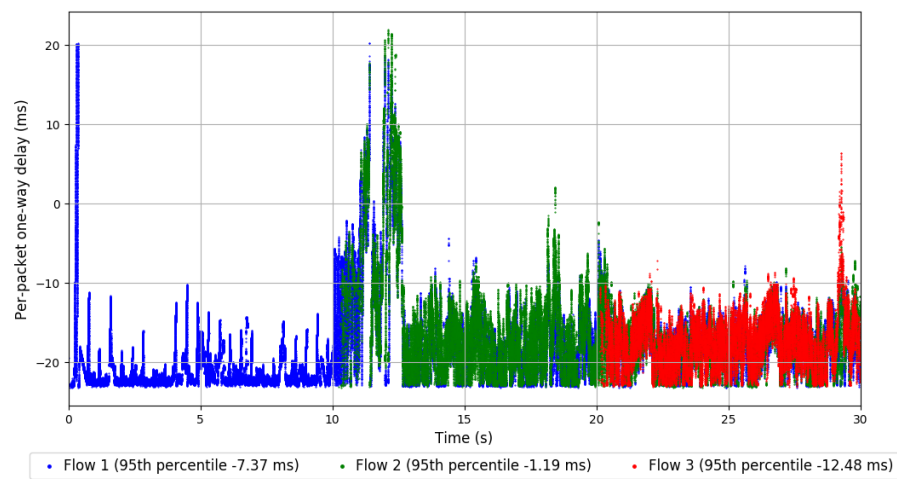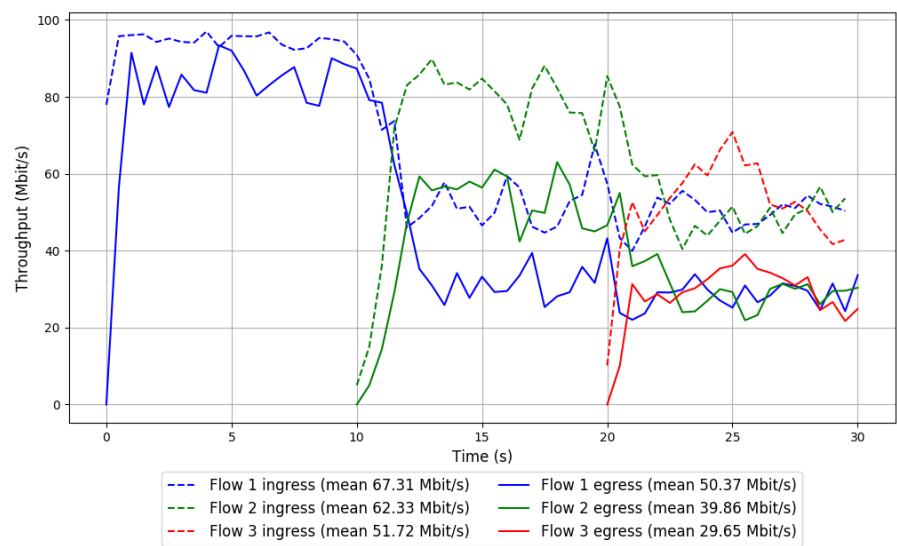
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 9.47 Mbit/s) — Flow 1 egress (mean 9.39 Mbit/s)
Flow 2 ingress (mean 8.07 Mbit/s) — Flow 2 egress (mean 8.36 Mbit/s)
Flow 3 ingress (mean 10.61 Mbit/s) — Flow 3 egress (mean 10.55 Mbit/s)

Flow 1 (95th percentile 7.21 ms)   •   Flow 2 (95th percentile 7.45 ms)   •   Flow 3 (95th percentile 12.32 ms)
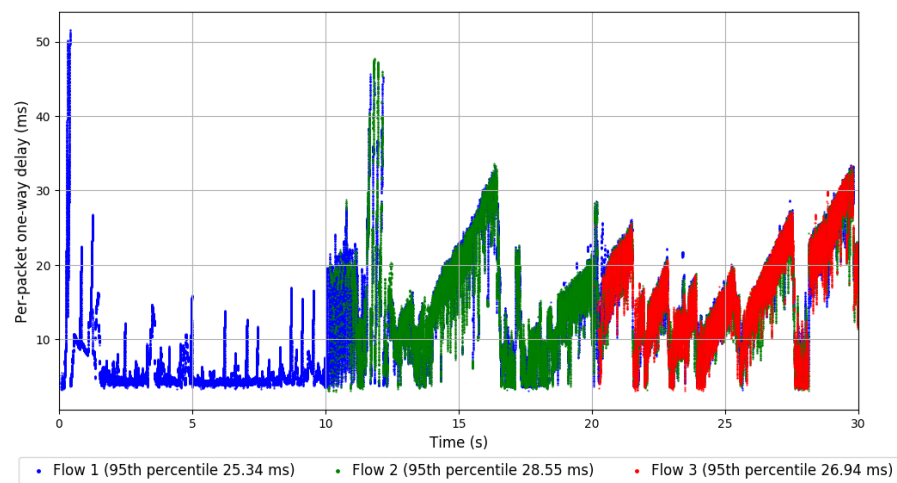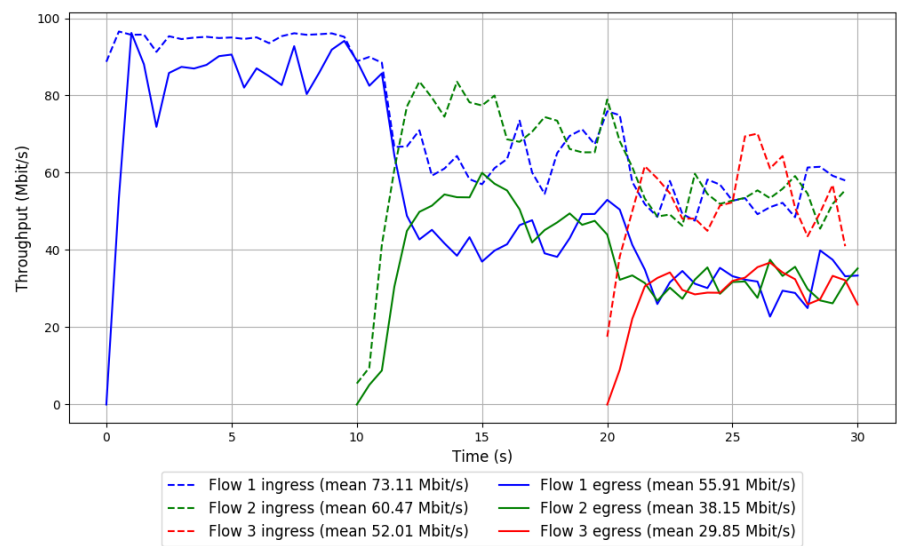
```
Run 5: Statistics of TCP Cubic

Start at: 2018-11-30 08:47:53
End at: 2018-11-30 08:48:23
Local clock offset: 2.221 ms
Remote clock offset: -59.778 ms


# Below is generated by plot.py at 2018-11-30 09:07:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: -30.638 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 32.04 Mbit/s
95th percentile per-packet one-way delay: -28.553 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 24.44 Mbit/s
95th percentile per-packet one-way delay: -47.192 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 20.08 Mbit/s
95th percentile per-packet one-way delay: -51.981 ms
Loss rate: 0.07%
```

Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 32.08 Mbit/s)   —— Flow 1 egress (mean 32.04 Mbit/s)
- - - Flow 2 ingress (mean 24.46 Mbit/s)   —— Flow 2 egress (mean 24.44 Mbit/s)
- - - Flow 3 ingress (mean 20.09 Mbit/s)   —— Flow 3 egress (mean 20.08 Mbit/s)

- Flow 1 (95th percentile -28.55 ms)   • Flow 2 (95th percentile -47.19 ms)   • Flow 3 (95th percentile -51.98 ms)

34

```
Run 1: Statistics of FillP

Start at: 2018-11-30 07:15:27
End at: 2018-11-30 07:15:57
Local clock offset: 0.443 ms
Remote clock offset: -32.774 ms


# Below is generated by plot.py at 2018-11-30 09:08:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.45 Mbit/s
95th percentile per-packet one-way delay: -7.160 ms
Loss rate: 31.35%
-- Flow 1:
Average throughput: 50.37 Mbit/s
95th percentile per-packet one-way delay: -7.372 ms
Loss rate: 25.18%
-- Flow 2:
Average throughput: 39.86 Mbit/s
95th percentile per-packet one-way delay: -1.194 ms
Loss rate: 36.69%
-- Flow 3:
Average throughput: 29.65 Mbit/s
95th percentile per-packet one-way delay: -12.482 ms
Loss rate: 42.63%
```
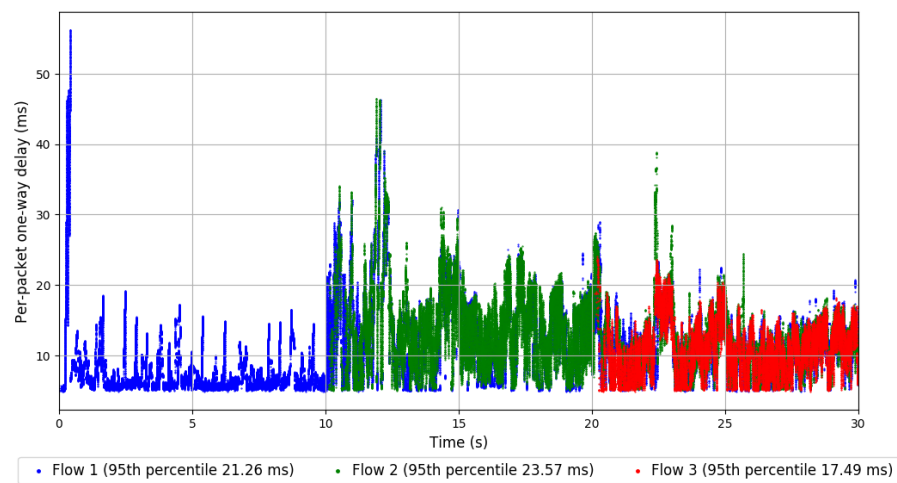
Run 1: Report of FillP — Data Link

Legend:
- Flow 1 ingress (mean 67.31 Mbit/s)
- Flow 1 egress (mean 50.37 Mbit/s)
- Flow 2 ingress (mean 62.33 Mbit/s)
- Flow 2 egress (mean 39.86 Mbit/s)
- Flow 3 ingress (mean 51.72 Mbit/s)
- Flow 3 egress (mean 29.65 Mbit/s)

Legend:
- Flow 1 (95th percentile -7.37 ms)
- Flow 2 (95th percentile -1.19 ms)
- Flow 3 (95th percentile -12.48 ms)

```
Run 2: Statistics of FillP

Start at: 2018-11-30 07:37:43
End at: 2018-11-30 07:38:13
Local clock offset: 0.86 ms
Remote clock offset: -3.899 ms


# Below is generated by plot.py at 2018-11-30 09:08:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.15 Mbit/s
95th percentile per-packet one-way delay: 26.649 ms
Loss rate: 30.15%
-- Flow 1:
Average throughput: 55.91 Mbit/s
95th percentile per-packet one-way delay: 25.336 ms
Loss rate: 23.51%
-- Flow 2:
Average throughput: 38.15 Mbit/s
95th percentile per-packet one-way delay: 28.554 ms
Loss rate: 36.88%
-- Flow 3:
Average throughput: 29.85 Mbit/s
95th percentile per-packet one-way delay: 26.944 ms
Loss rate: 42.57%
```
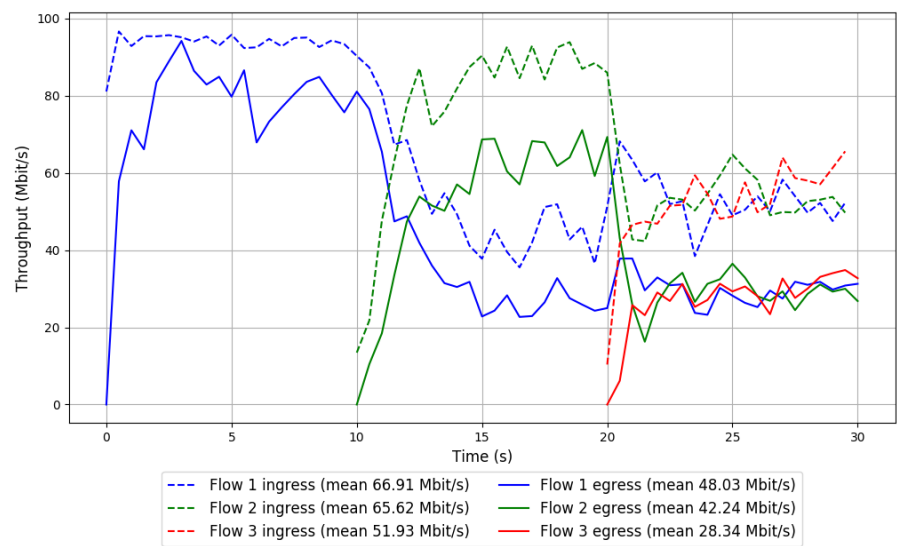
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-11-30 07:59:55
End at: 2018-11-30 08:00:25
Local clock offset: -0.726 ms
Remote clock offset: -6.24 ms

# Below is generated by plot.py at 2018-11-30 09:08:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.49 Mbit/s
95th percentile per-packet one-way delay: 25.254 ms
Loss rate: 30.37%
-- Flow 1:
Average throughput: 52.97 Mbit/s
95th percentile per-packet one-way delay: 23.020 ms
Loss rate: 24.28%
-- Flow 2:
Average throughput: 38.84 Mbit/s
95th percentile per-packet one-way delay: 34.712 ms
Loss rate: 36.77%
-- Flow 3:
Average throughput: 29.30 Mbit/s
95th percentile per-packet one-way delay: 14.726 ms
Loss rate: 40.43%
```

Run 3: Report of FillP — Data Link
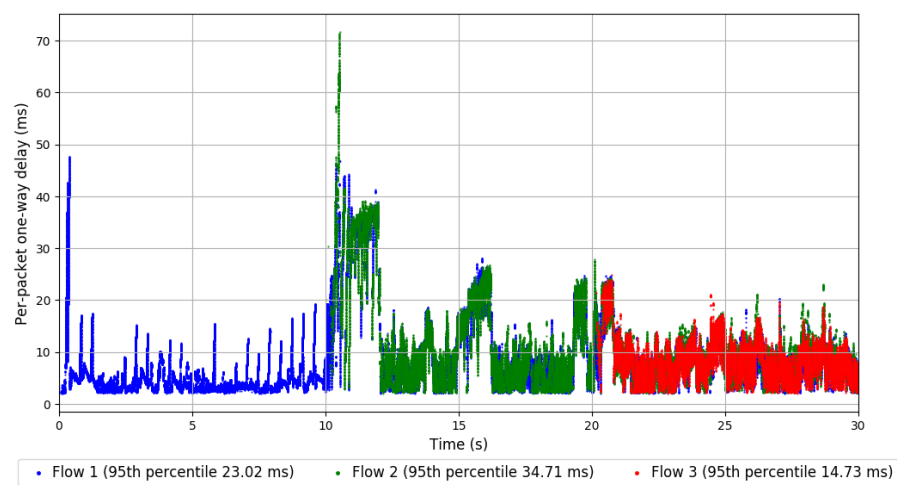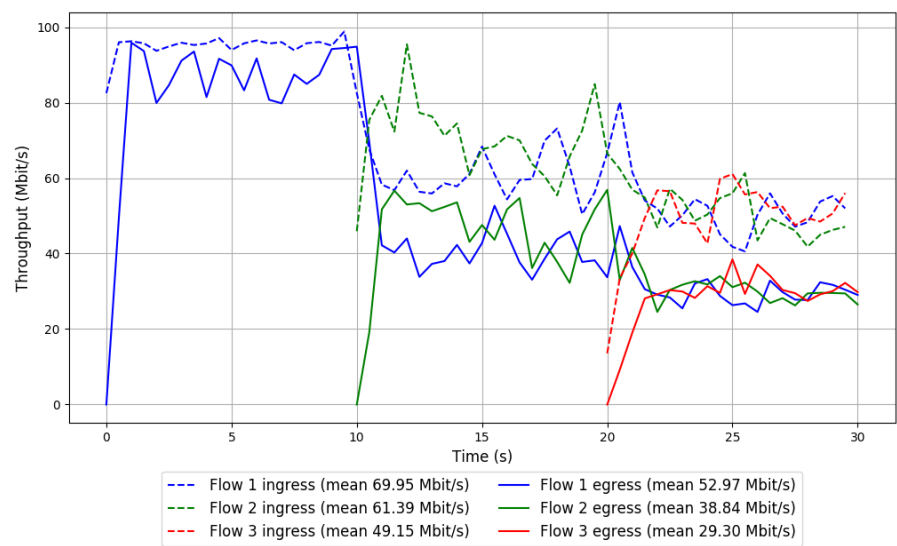
```
Run 4: Statistics of FillP

Start at: 2018-11-30 08:22:10
End at: 2018-11-30 08:22:40
Local clock offset: 1.399 ms
Remote clock offset: -0.543 ms

# Below is generated by plot.py at 2018-11-30 09:08:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.52 Mbit/s
95th percentile per-packet one-way delay: 22.156 ms
Loss rate: 33.06%
-- Flow 1:
Average throughput: 48.03 Mbit/s
95th percentile per-packet one-way delay: 21.263 ms
Loss rate: 28.21%
-- Flow 2:
Average throughput: 42.24 Mbit/s
95th percentile per-packet one-way delay: 23.569 ms
Loss rate: 35.61%
-- Flow 3:
Average throughput: 28.34 Mbit/s
95th percentile per-packet one-way delay: 17.487 ms
Loss rate: 45.46%
```
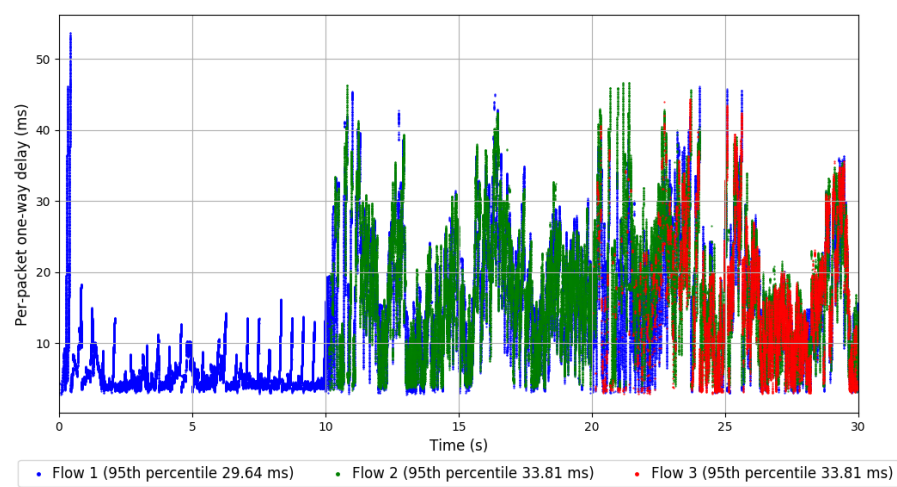
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 66.91 Mbit/s) — — — Flow 1 egress (mean 48.03 Mbit/s)
Flow 2 ingress (mean 65.62 Mbit/s) — — — Flow 2 egress (mean 42.24 Mbit/s)
Flow 3 ingress (mean 51.93 Mbit/s) — — — Flow 3 egress (mean 28.34 Mbit/s)

Flow 1 (95th percentile 21.26 ms)   Flow 2 (95th percentile 23.57 ms)   Flow 3 (95th percentile 17.49 ms)

```
Run 5: Statistics of FillP

Start at: 2018-11-30 08:44:17
End at: 2018-11-30 08:44:47
Local clock offset: 0.414 ms
Remote clock offset: -77.456 ms


# Below is generated by plot.py at 2018-11-30 09:08:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.90 Mbit/s
95th percentile per-packet one-way delay: -36.547 ms
Loss rate: 28.79%
-- Flow 1:
Average throughput: 52.78 Mbit/s
95th percentile per-packet one-way delay: -38.031 ms
Loss rate: 22.41%
-- Flow 2:
Average throughput: 41.45 Mbit/s
95th percentile per-packet one-way delay: -35.114 ms
Loss rate: 35.26%
-- Flow 3:
Average throughput: 25.77 Mbit/s
95th percentile per-packet one-way delay: -36.686 ms
Loss rate: 39.97%
```
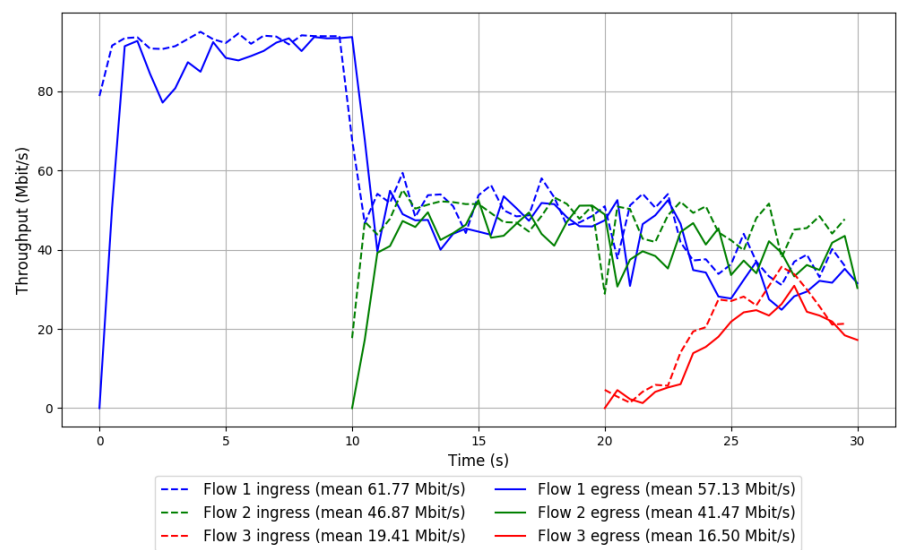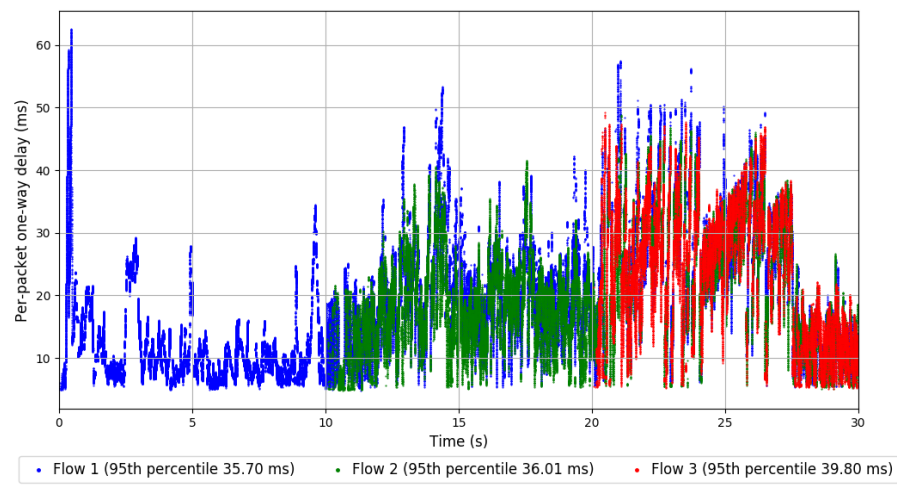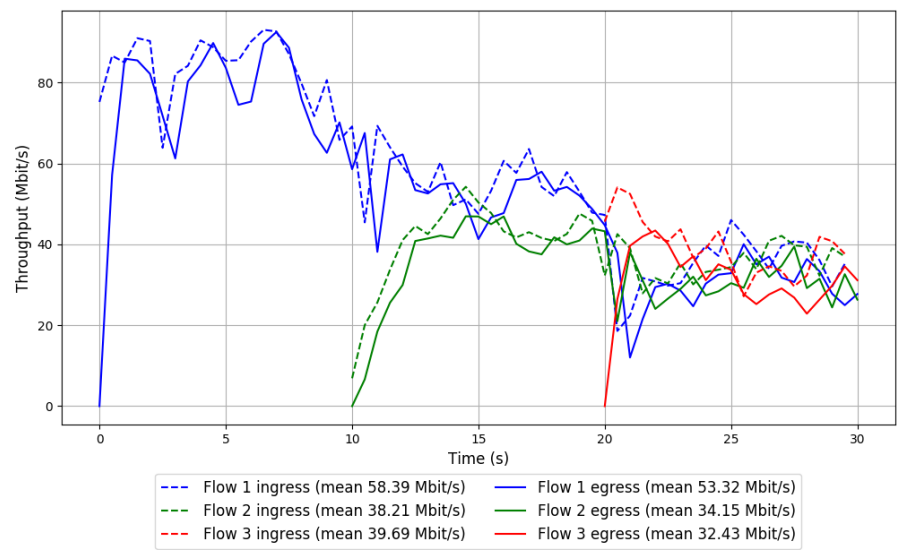
Run 5: Report of FillP — Data Link
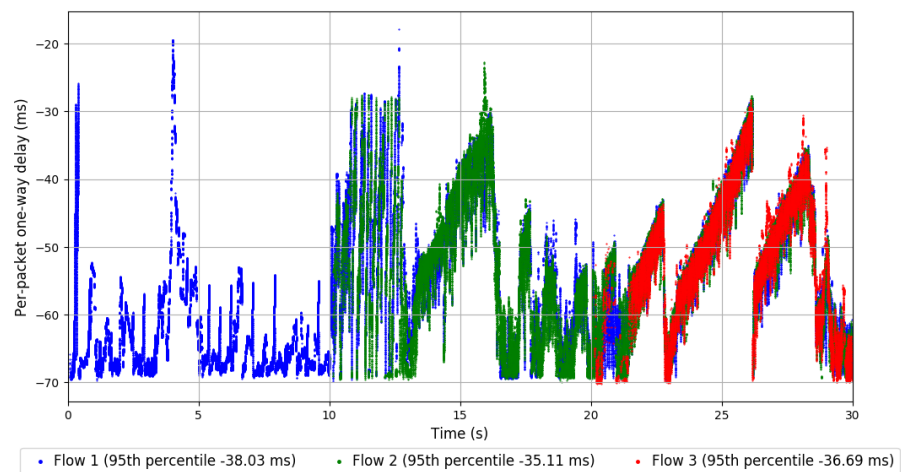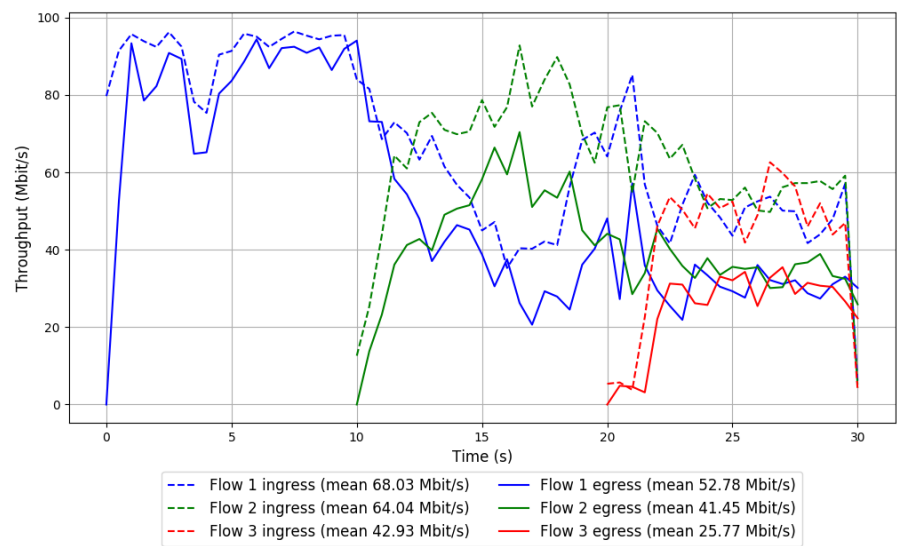
```
Run 1: Statistics of FillP-Sheep

Start at: 2018-11-30 07:24:50
End at: 2018-11-30 07:25:20
Local clock offset: 0.837 ms
Remote clock offset: -6.904 ms


# Below is generated by plot.py at 2018-11-30 09:08:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.51 Mbit/s
95th percentile per-packet one-way delay: 23.520 ms
Loss rate: 11.68%
-- Flow 1:
Average throughput: 54.37 Mbit/s
95th percentile per-packet one-way delay: 21.677 ms
Loss rate: 8.09%
-- Flow 2:
Average throughput: 37.24 Mbit/s
95th percentile per-packet one-way delay: 25.829 ms
Loss rate: 14.71%
-- Flow 3:
Average throughput: 34.22 Mbit/s
95th percentile per-packet one-way delay: 24.354 ms
Loss rate: 20.37%
```

Run 1: Report of FillP-Sheep — Data Link
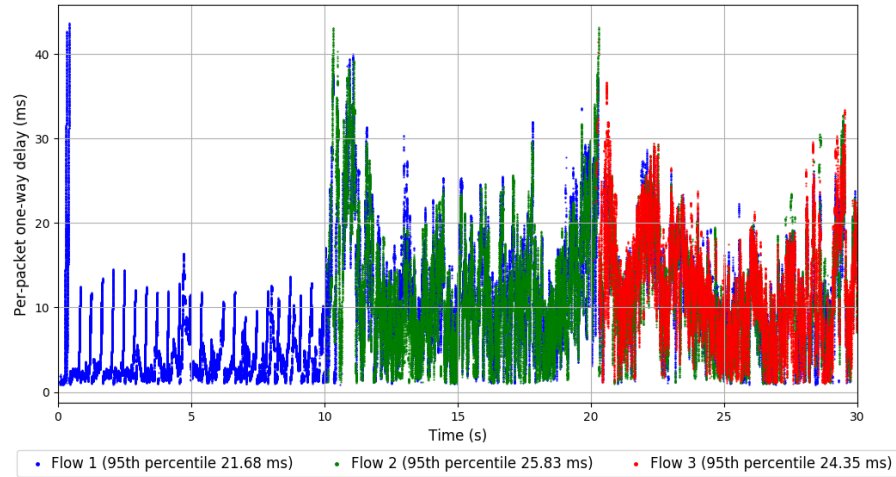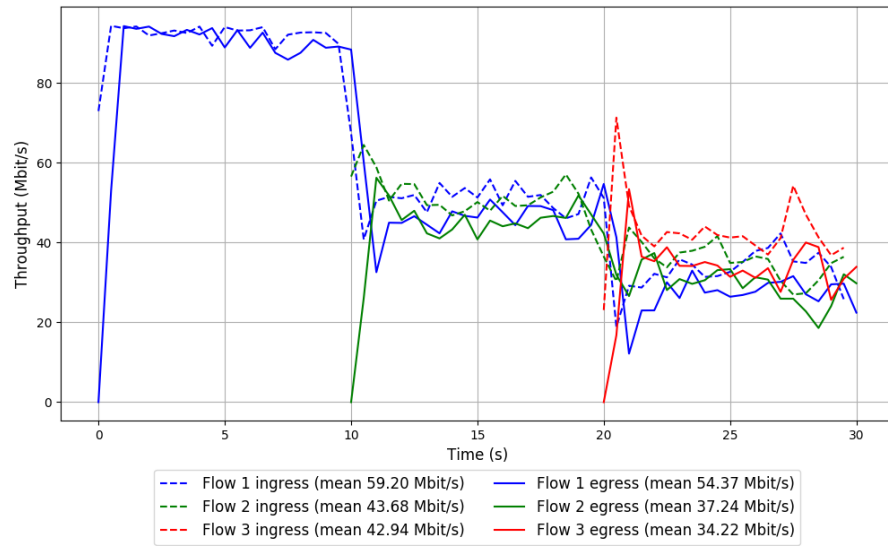
```
Run 2: Statistics of FillP-Sheep

Start at: 2018-11-30 07:47:06
End at: 2018-11-30 07:47:36
Local clock offset: 2.28 ms
Remote clock offset: -2.513 ms


# Below is generated by plot.py at 2018-11-30 09:08:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.20 Mbit/s
95th percentile per-packet one-way delay: 31.802 ms
Loss rate: 9.24%
-- Flow 1:
Average throughput: 57.13 Mbit/s
95th percentile per-packet one-way delay: 29.637 ms
Loss rate: 7.49%
-- Flow 2:
Average throughput: 41.47 Mbit/s
95th percentile per-packet one-way delay: 33.812 ms
Loss rate: 11.48%
-- Flow 3:
Average throughput: 16.50 Mbit/s
95th percentile per-packet one-way delay: 33.809 ms
Loss rate: 15.08%
```

Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 61.77 Mbit/s)   Flow 1 egress (mean 57.13 Mbit/s)
Flow 2 ingress (mean 46.87 Mbit/s)   Flow 2 egress (mean 41.47 Mbit/s)
Flow 3 ingress (mean 19.41 Mbit/s)   Flow 3 egress (mean 16.50 Mbit/s)

Flow 1 (95th percentile 29.64 ms)   Flow 2 (95th percentile 33.81 ms)   Flow 3 (95th percentile 33.81 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-11-30 08:09:25
End at: 2018-11-30 08:09:55
Local clock offset: 0.319 ms
Remote clock offset: -1.522 ms


# Below is generated by plot.py at 2018-11-30 09:09:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.76 Mbit/s
95th percentile per-packet one-way delay: 36.694 ms
Loss rate: 10.49%
-- Flow 1:
Average throughput: 53.32 Mbit/s
95th percentile per-packet one-way delay: 35.698 ms
Loss rate: 8.67%
-- Flow 2:
Average throughput: 34.15 Mbit/s
95th percentile per-packet one-way delay: 36.009 ms
Loss rate: 10.60%
-- Flow 3:
Average throughput: 32.43 Mbit/s
95th percentile per-packet one-way delay: 39.799 ms
Loss rate: 18.37%
```

Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 58.39 Mbit/s)   Flow 1 egress (mean 53.32 Mbit/s)
Flow 2 ingress (mean 38.21 Mbit/s)   Flow 2 egress (mean 34.15 Mbit/s)
Flow 3 ingress (mean 39.69 Mbit/s)   Flow 3 egress (mean 32.43 Mbit/s)

Flow 1 (95th percentile 35.70 ms)   Flow 2 (95th percentile 36.01 ms)   Flow 3 (95th percentile 39.80 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-11-30 08:31:32
End at: 2018-11-30 08:32:02
Local clock offset: -0.774 ms
Remote clock offset: -56.879 ms

# Below is generated by plot.py at 2018-11-30 09:09:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.86 Mbit/s
95th percentile per-packet one-way delay: -22.291 ms
Loss rate: 11.32%
-- Flow 1:
Average throughput: 45.03 Mbit/s
95th percentile per-packet one-way delay: -25.020 ms
Loss rate: 9.48%
-- Flow 2:
Average throughput: 42.02 Mbit/s
95th percentile per-packet one-way delay: -20.662 ms
Loss rate: 11.96%
-- Flow 3:
Average throughput: 26.04 Mbit/s
95th percentile per-packet one-way delay: -19.074 ms
Loss rate: 18.04%
```

Run 4: Report of FillP-Sheep — Data Link
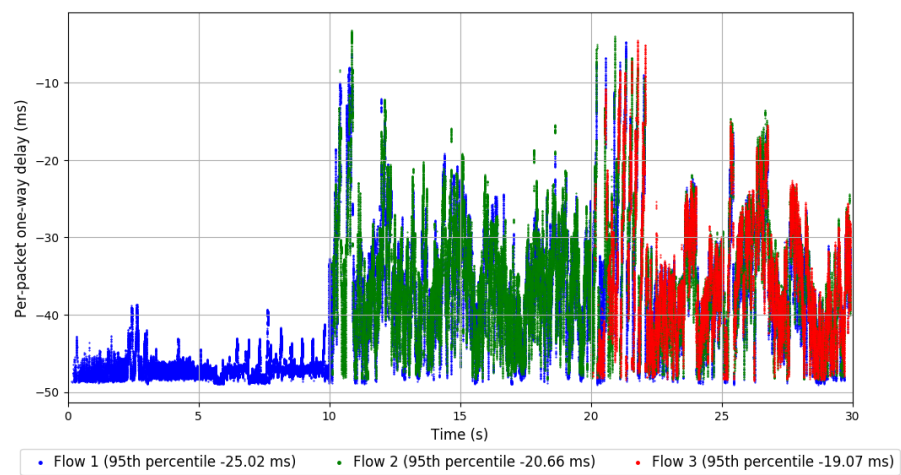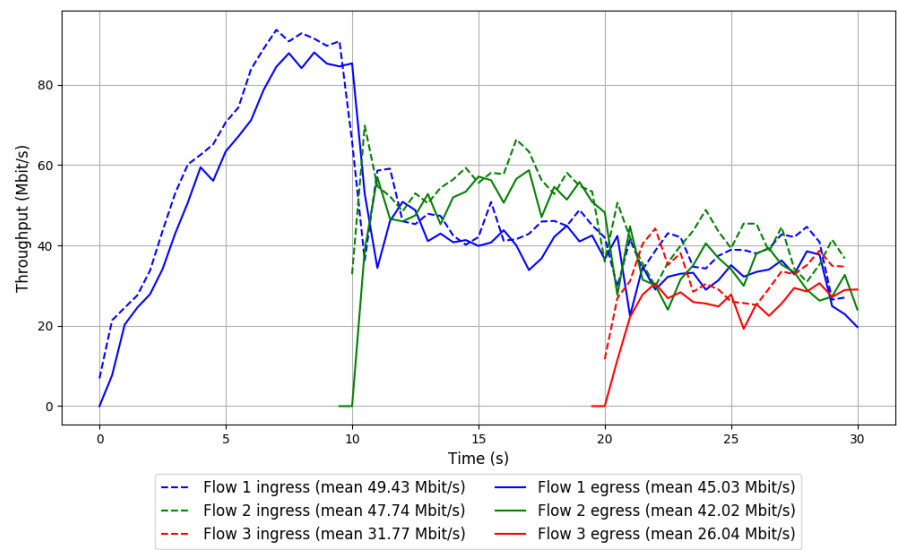
```
Run 5: Statistics of FillP-Sheep

Start at: 2018-11-30 08:53:43
End at: 2018-11-30 08:54:13
Local clock offset: 0.925 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2018-11-30 09:09:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.01 Mbit/s
95th percentile per-packet one-way delay: 35.868 ms
Loss rate: 6.85%
-- Flow 1:
Average throughput: 59.41 Mbit/s
95th percentile per-packet one-way delay: 34.153 ms
Loss rate: 5.49%
-- Flow 2:
Average throughput: 38.15 Mbit/s
95th percentile per-packet one-way delay: 37.406 ms
Loss rate: 8.47%
-- Flow 3:
Average throughput: 18.74 Mbit/s
95th percentile per-packet one-way delay: 39.407 ms
Loss rate: 12.59%
```

# Run 5: Report of FillP-Sheep — Data Link
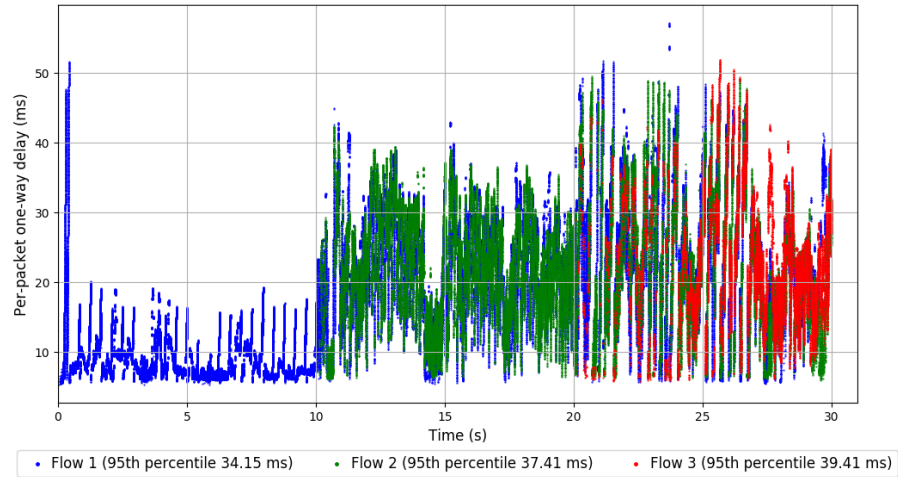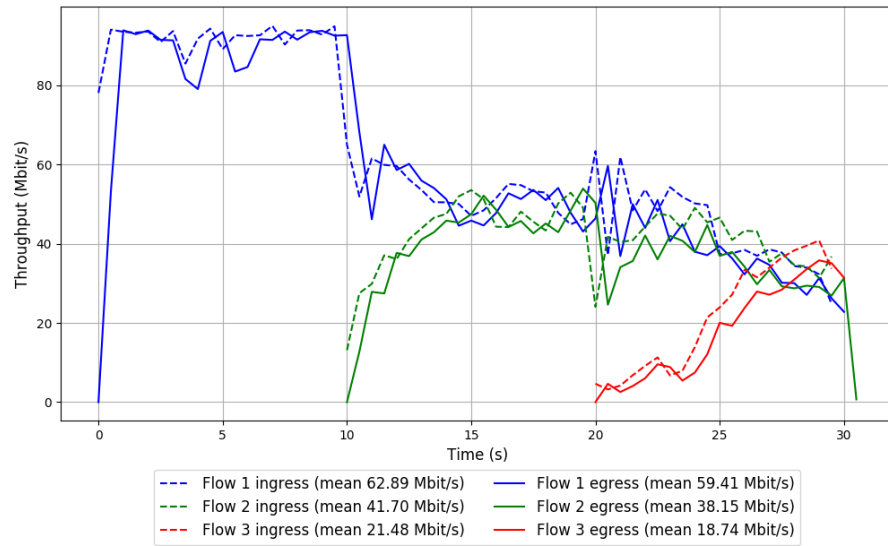
```
Run 1: Statistics of Indigo

Start at: 2018-11-30 07:16:39
End at: 2018-11-30 07:17:09
Local clock offset: 3.233 ms
Remote clock offset: -3.941 ms


# Below is generated by plot.py at 2018-11-30 09:09:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.16 Mbit/s
95th percentile per-packet one-way delay: 12.515 ms
Loss rate: 6.00%
-- Flow 1:
Average throughput: 29.72 Mbit/s
95th percentile per-packet one-way delay: 14.710 ms
Loss rate: 3.55%
-- Flow 2:
Average throughput: 54.09 Mbit/s
95th percentile per-packet one-way delay: 9.516 ms
Loss rate: 6.90%
-- Flow 3:
Average throughput: 41.25 Mbit/s
95th percentile per-packet one-way delay: 11.515 ms
Loss rate: 8.76%
```

Run 1: Report of Indigo — Data Link
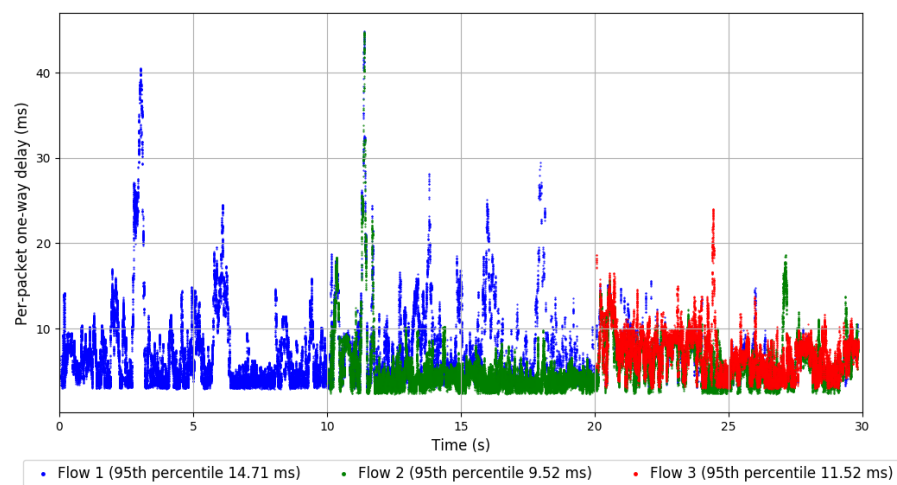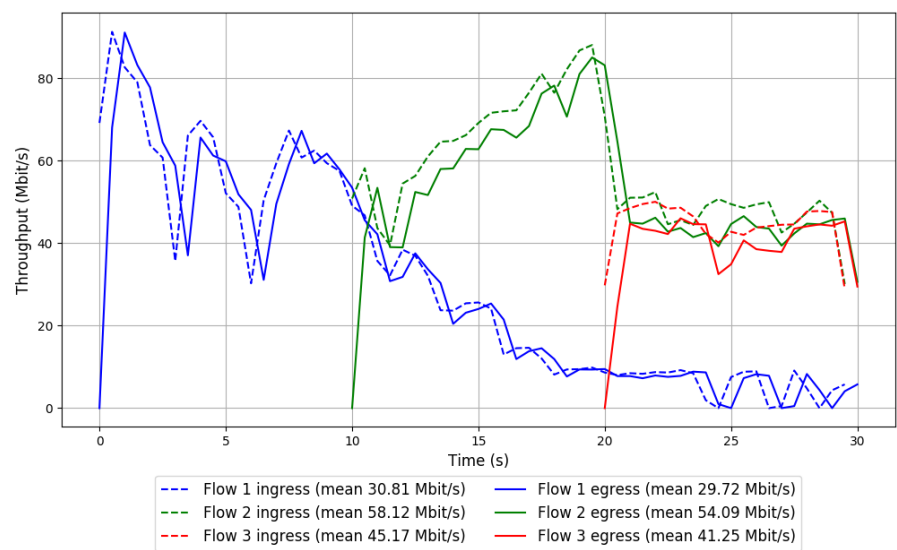
```
Run 2: Statistics of Indigo

Start at: 2018-11-30 07:38:54
End at: 2018-11-30 07:39:24
Local clock offset: 0.44 ms
Remote clock offset: -2.953 ms


# Below is generated by plot.py at 2018-11-30 09:09:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.97 Mbit/s
95th percentile per-packet one-way delay: 12.299 ms
Loss rate: 2.97%
-- Flow 1:
Average throughput: 59.07 Mbit/s
95th percentile per-packet one-way delay: 11.182 ms
Loss rate: 2.89%
-- Flow 2:
Average throughput: 40.92 Mbit/s
95th percentile per-packet one-way delay: 12.252 ms
Loss rate: 3.21%
-- Flow 3:
Average throughput: 23.67 Mbit/s
95th percentile per-packet one-way delay: 17.617 ms
Loss rate: 2.72%
```

Run 2: Report of Indigo — Data Link
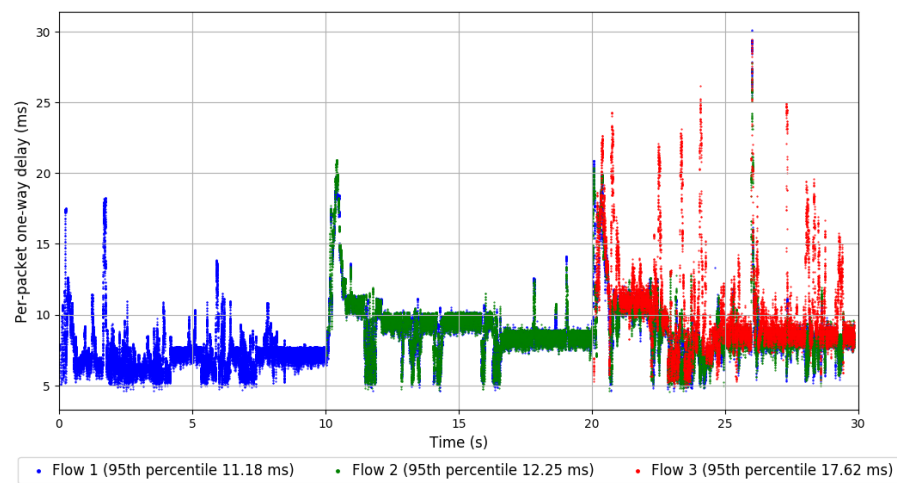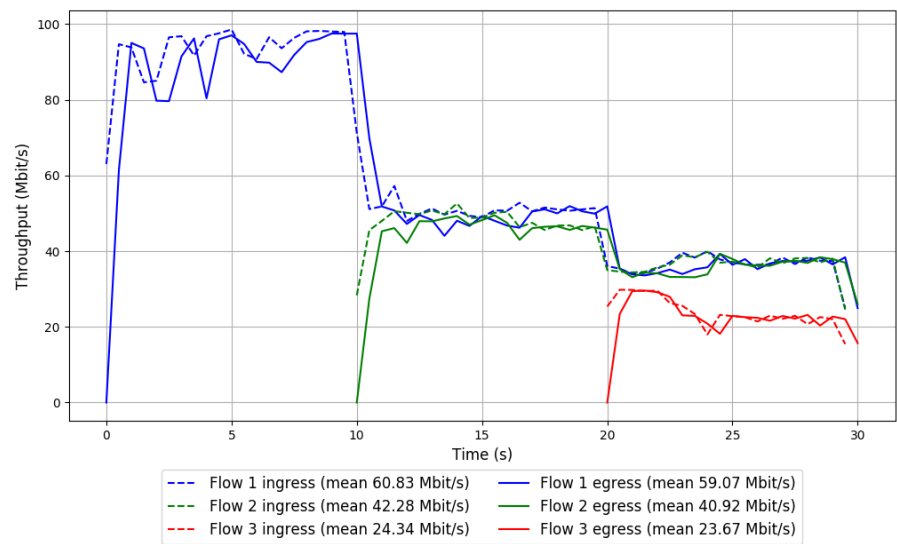
```
Run 3: Statistics of Indigo

Start at: 2018-11-30 08:01:07
End at: 2018-11-30 08:01:37
Local clock offset: -0.827 ms
Remote clock offset: -1.502 ms


# Below is generated by plot.py at 2018-11-30 09:09:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.65 Mbit/s
95th percentile per-packet one-way delay: 15.230 ms
Loss rate: 9.04%
-- Flow 1:
Average throughput: 46.61 Mbit/s
95th percentile per-packet one-way delay: 14.430 ms
Loss rate: 8.15%
-- Flow 2:
Average throughput: 35.43 Mbit/s
95th percentile per-packet one-way delay: 16.726 ms
Loss rate: 9.74%
-- Flow 3:
Average throughput: 38.10 Mbit/s
95th percentile per-packet one-way delay: 16.390 ms
Loss rate: 10.92%
```

Run 3: Report of Indigo — Data Link
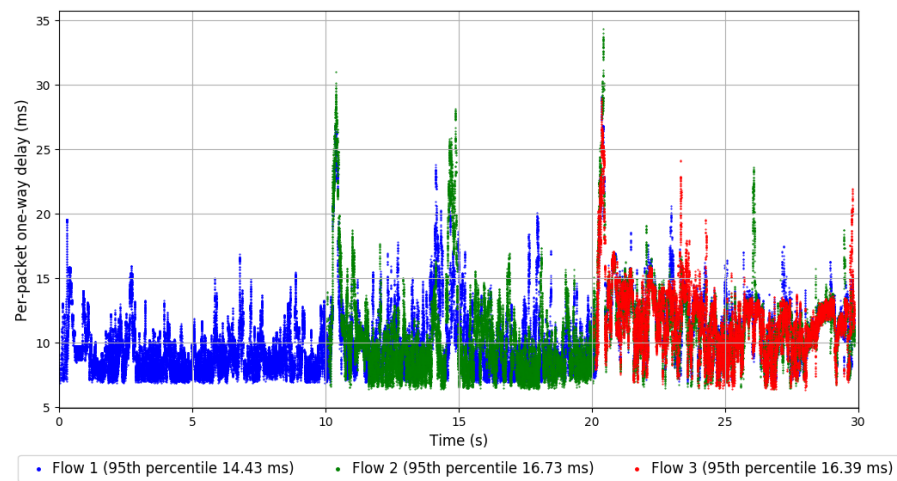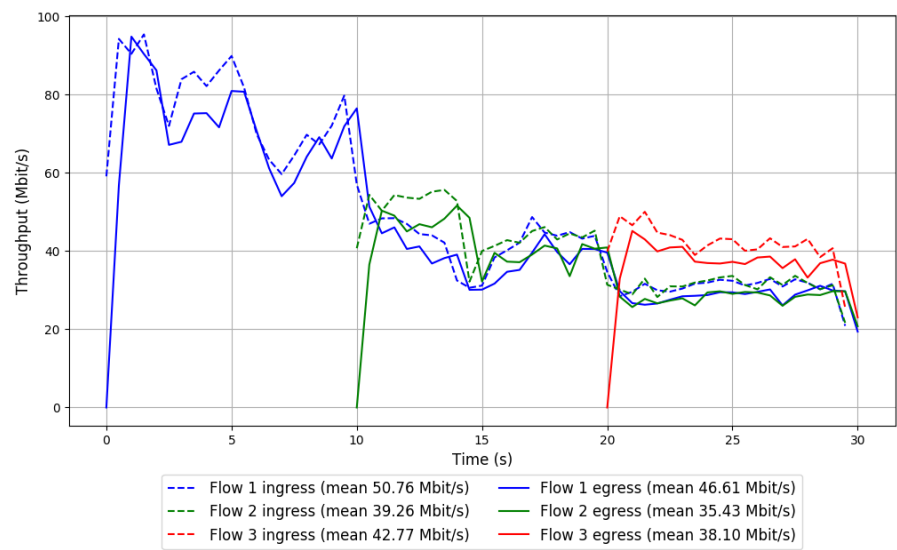
```
Run 4: Statistics of Indigo

Start at: 2018-11-30 08:23:23
End at: 2018-11-30 08:23:53
Local clock offset: -0.501 ms
Remote clock offset: -2.188 ms

# Below is generated by plot.py at 2018-11-30 09:09:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.73 Mbit/s
95th percentile per-packet one-way delay: 13.391 ms
Loss rate: 15.10%
-- Flow 1:
Average throughput: 51.15 Mbit/s
95th percentile per-packet one-way delay: 12.669 ms
Loss rate: 12.75%
-- Flow 2:
Average throughput: 29.44 Mbit/s
95th percentile per-packet one-way delay: 13.437 ms
Loss rate: 17.89%
-- Flow 3:
Average throughput: 26.46 Mbit/s
95th percentile per-packet one-way delay: 16.822 ms
Loss rate: 22.90%
```
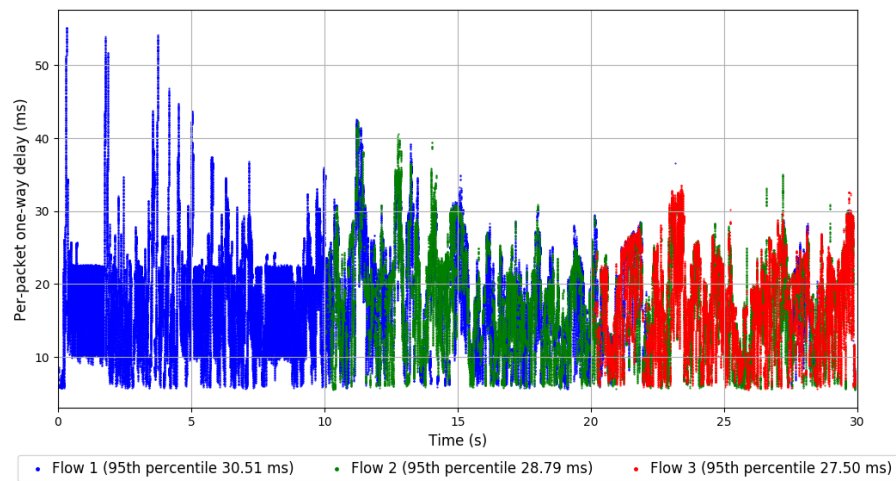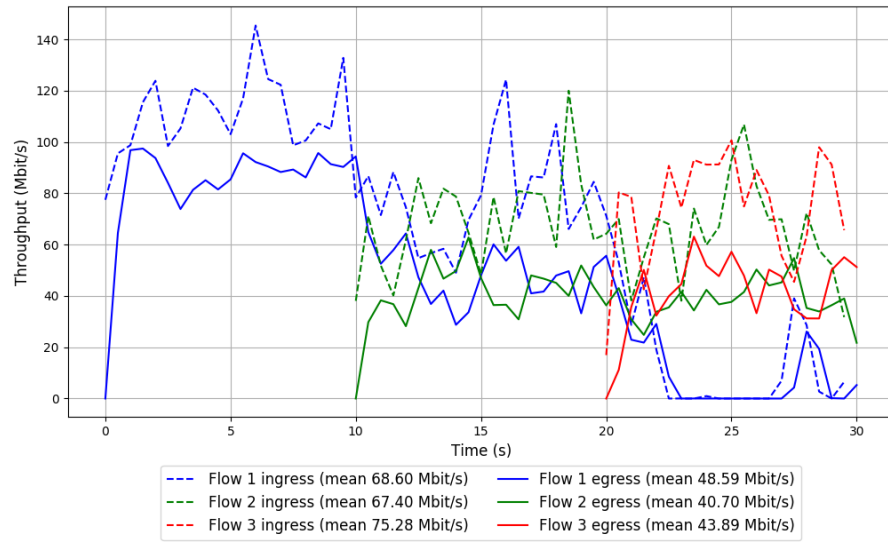
Run 4: Report of Indigo — Data Link
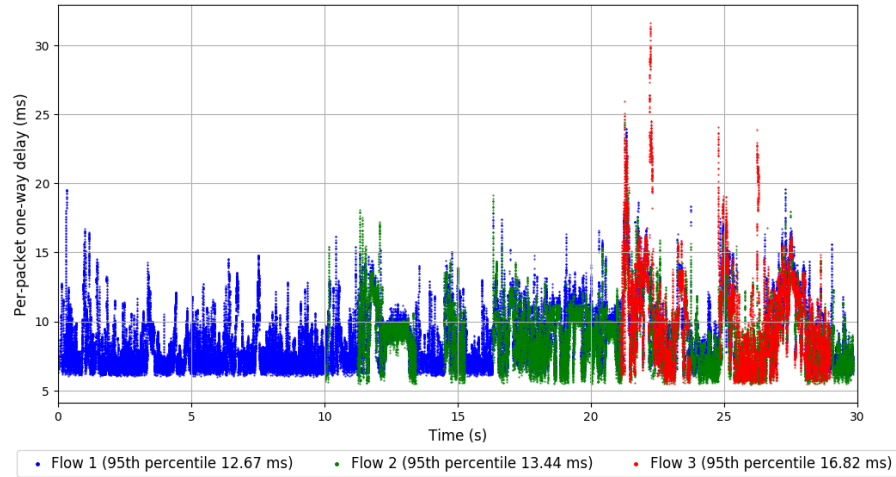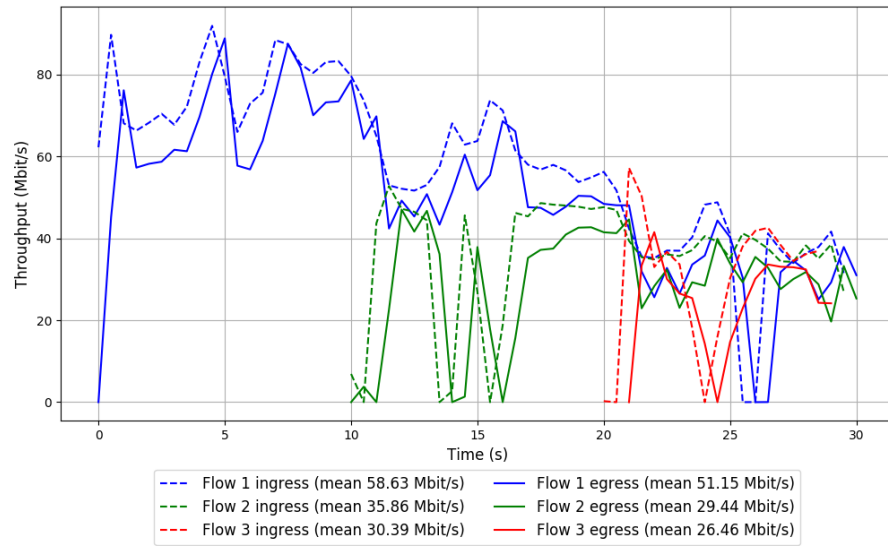
```
Run 5: Statistics of Indigo

Start at: 2018-11-30 08:45:29
End at: 2018-11-30 08:45:59
Local clock offset: 1.855 ms
Remote clock offset: -49.853 ms


# Below is generated by plot.py at 2018-11-30 09:09:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.15 Mbit/s
95th percentile per-packet one-way delay: -35.573 ms
Loss rate: 10.89%
-- Flow 1:
Average throughput: 44.76 Mbit/s
95th percentile per-packet one-way delay: -35.995 ms
Loss rate: 9.79%
-- Flow 2:
Average throughput: 35.82 Mbit/s
95th percentile per-packet one-way delay: -35.673 ms
Loss rate: 12.67%
-- Flow 3:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: -33.297 ms
Loss rate: 11.38%
```

Run 5: Report of Indigo — Data Link
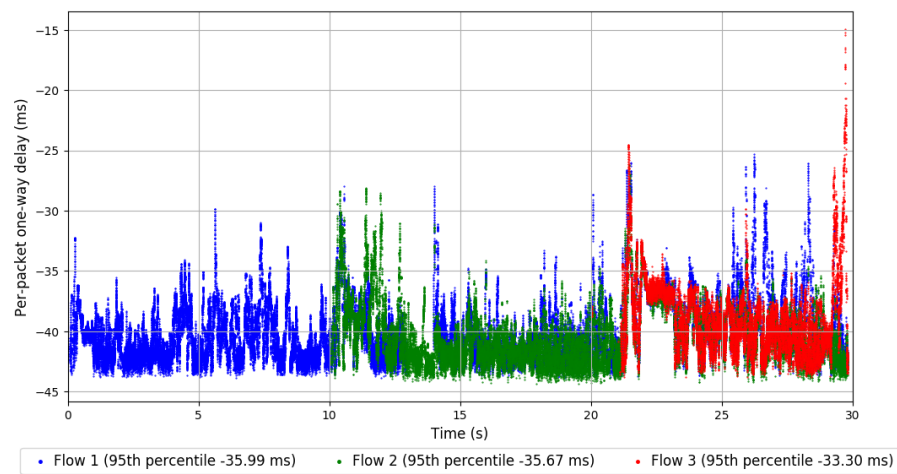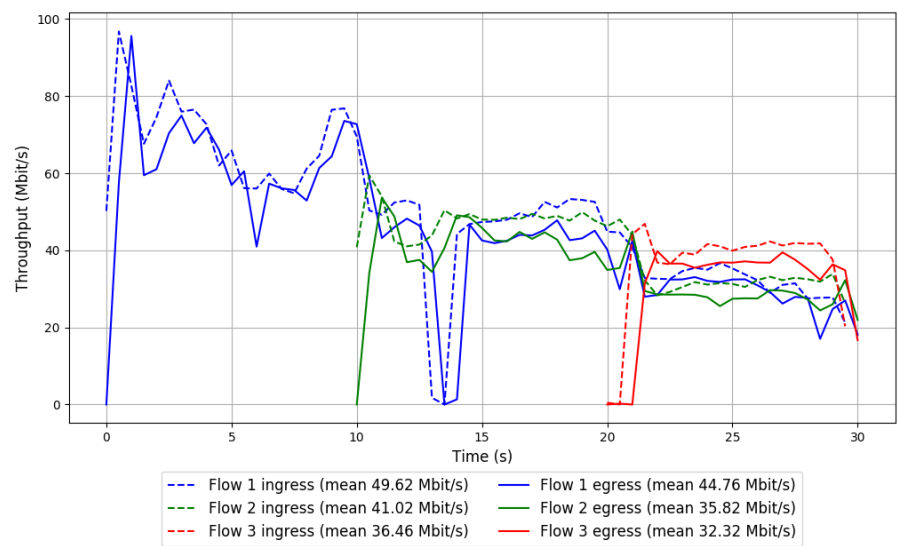
```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-30 07:28:26
End at: 2018-11-30 07:28:56
Local clock offset: -0.316 ms
Remote clock offset: -3.361 ms


# Below is generated by plot.py at 2018-11-30 09:10:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.11 Mbit/s
95th percentile per-packet one-way delay: 29.557 ms
Loss rate: 34.83%
-- Flow 1:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 30.510 ms
Loss rate: 29.17%
-- Flow 2:
Average throughput: 40.70 Mbit/s
95th percentile per-packet one-way delay: 28.789 ms
Loss rate: 39.64%
-- Flow 3:
Average throughput: 43.89 Mbit/s
95th percentile per-packet one-way delay: 27.499 ms
Loss rate: 41.77%
```

Run 1: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 68.60 Mbit/s) — Flow 1 egress (mean 48.59 Mbit/s)
Flow 2 ingress (mean 67.40 Mbit/s) — Flow 2 egress (mean 40.70 Mbit/s)
Flow 3 ingress (mean 75.28 Mbit/s) — Flow 3 egress (mean 43.89 Mbit/s)

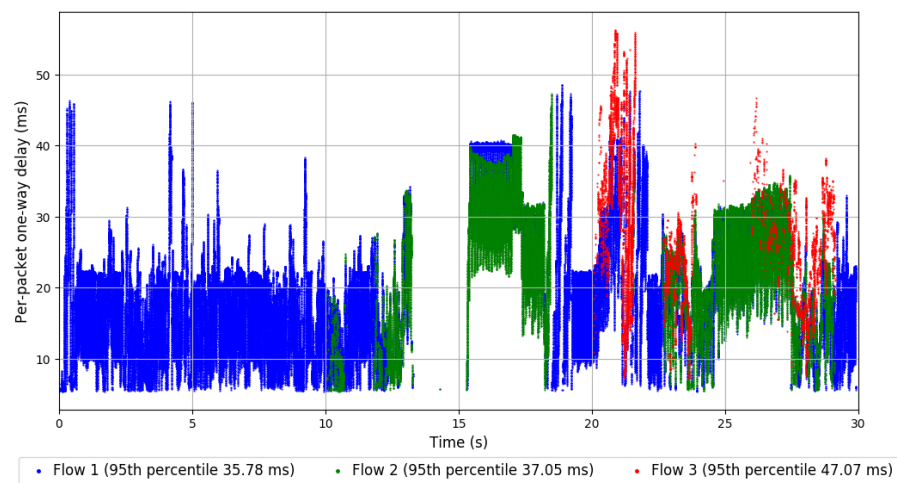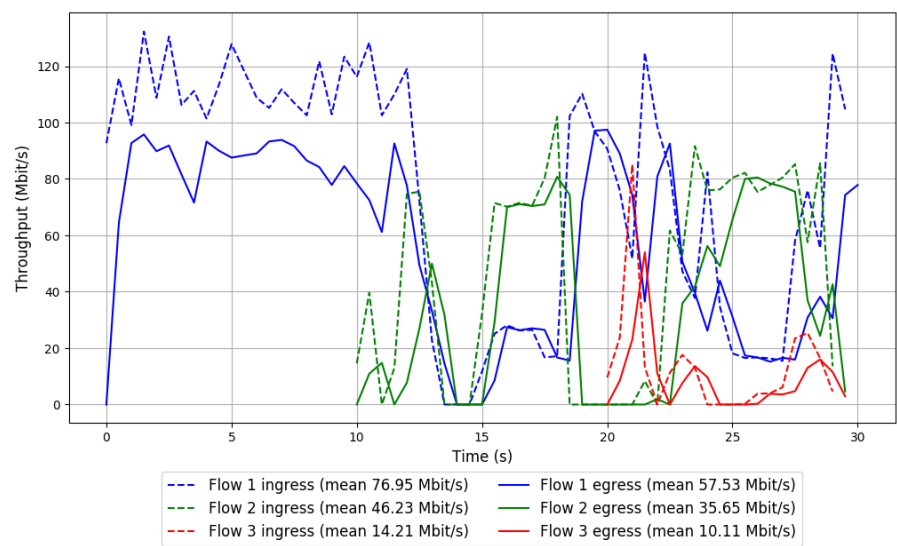Flow 1 (95th percentile 30.51 ms)   Flow 2 (95th percentile 28.79 ms)   Flow 3 (95th percentile 27.50 ms)

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

Start at: 2018-11-30 07:50:43
End at: 2018-11-30 07:51:13
Local clock offset: 0.281 ms
Remote clock offset: -2.438 ms


# Below is generated by plot.py at 2018-11-30 09:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.84 Mbit/s
95th percentile per-packet one-way delay: 41.066 ms
Loss rate: 34.69%
-- Flow 1:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 46.944 ms
Loss rate: 29.08%
-- Flow 2:
Average throughput: 30.90 Mbit/s
95th percentile per-packet one-way delay: 34.589 ms
Loss rate: 41.16%
-- Flow 3:
Average throughput: 22.36 Mbit/s
95th percentile per-packet one-way delay: 26.896 ms
Loss rate: 49.95%
```
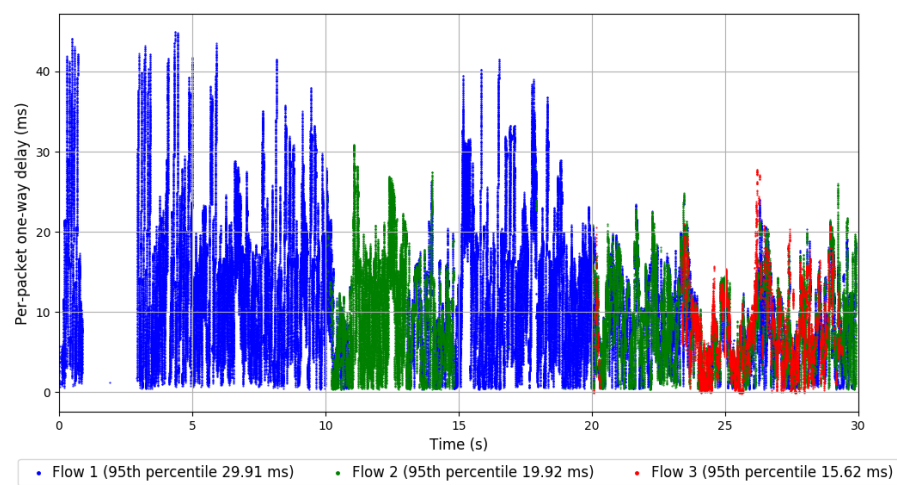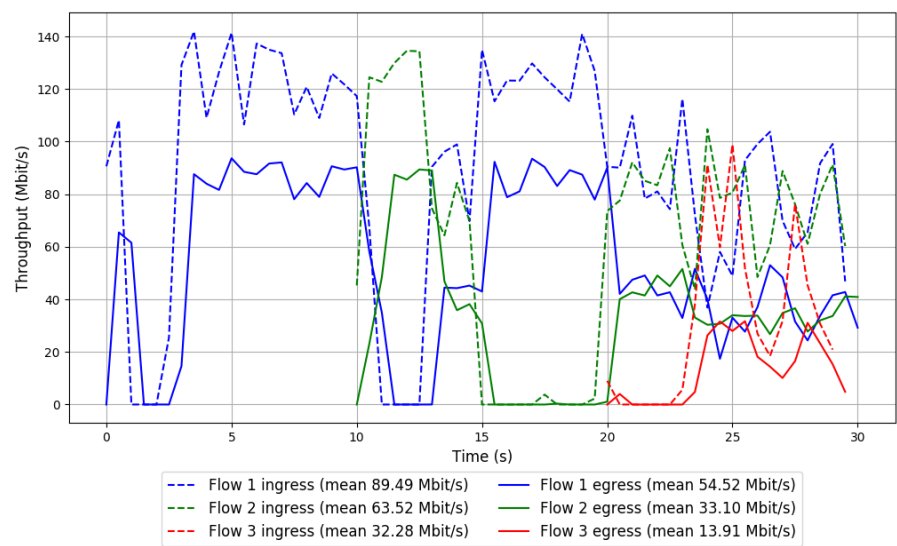
Run 2: Report of Indigo-96d2da3 — Data Link
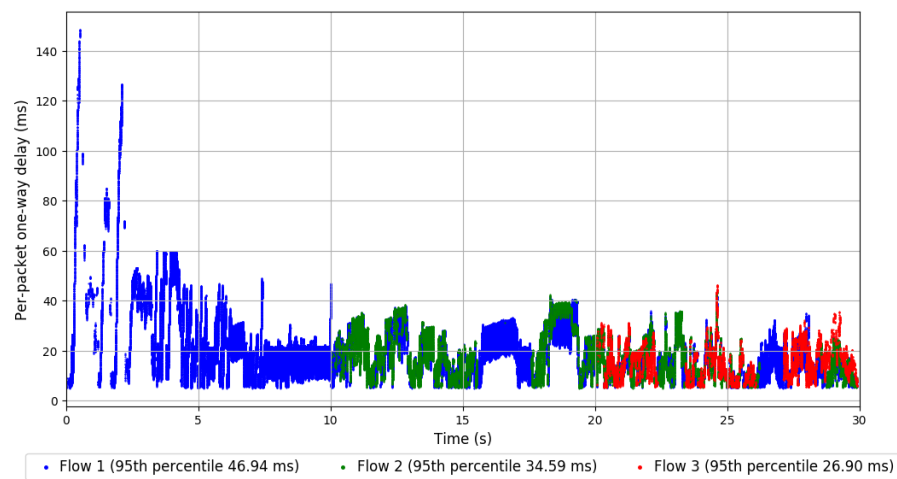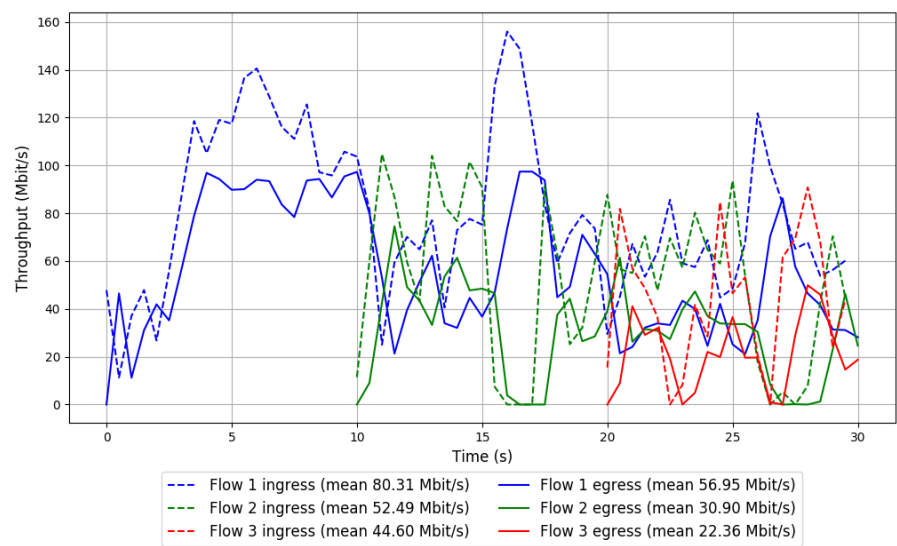
```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-30 08:13:00
End at: 2018-11-30 08:13:30
Local clock offset: 1.155 ms
Remote clock offset: -0.226 ms


# Below is generated by plot.py at 2018-11-30 09:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.33 Mbit/s
95th percentile per-packet one-way delay: 37.150 ms
Loss rate: 24.76%
-- Flow 1:
Average throughput: 57.53 Mbit/s
95th percentile per-packet one-way delay: 35.776 ms
Loss rate: 25.23%
-- Flow 2:
Average throughput: 35.65 Mbit/s
95th percentile per-packet one-way delay: 37.051 ms
Loss rate: 22.93%
-- Flow 3:
Average throughput: 10.11 Mbit/s
95th percentile per-packet one-way delay: 47.070 ms
Loss rate: 28.91%
```

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

Flow 1 ingress (mean 76.95 Mbit/s) --- Flow 1 egress (mean 57.53 Mbit/s)
Flow 2 ingress (mean 46.23 Mbit/s) --- Flow 2 egress (mean 35.65 Mbit/s)
Flow 3 ingress (mean 14.21 Mbit/s) --- Flow 3 egress (mean 10.11 Mbit/s)

Flow 1 (95th percentile 35.78 ms) • Flow 2 (95th percentile 37.05 ms) • Flow 3 (95th percentile 47.07 ms)

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

Start at: 2018-11-30 08:35:05
End at: 2018-11-30 08:35:35
Local clock offset: 3.508 ms
Remote clock offset: -3.966 ms


# Below is generated by plot.py at 2018-11-30 09:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.84 Mbit/s
95th percentile per-packet one-way delay: 27.658 ms
Loss rate: 42.98%
-- Flow 1:
Average throughput: 54.52 Mbit/s
95th percentile per-packet one-way delay: 29.913 ms
Loss rate: 39.05%
-- Flow 2:
Average throughput: 33.10 Mbit/s
95th percentile per-packet one-way delay: 19.918 ms
Loss rate: 47.93%
-- Flow 3:
Average throughput: 13.91 Mbit/s
95th percentile per-packet one-way delay: 15.625 ms
Loss rate: 56.98%
```
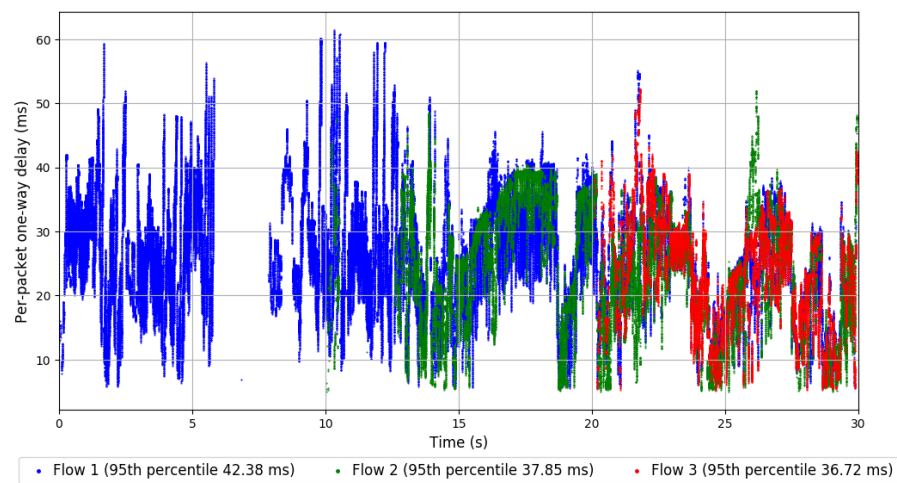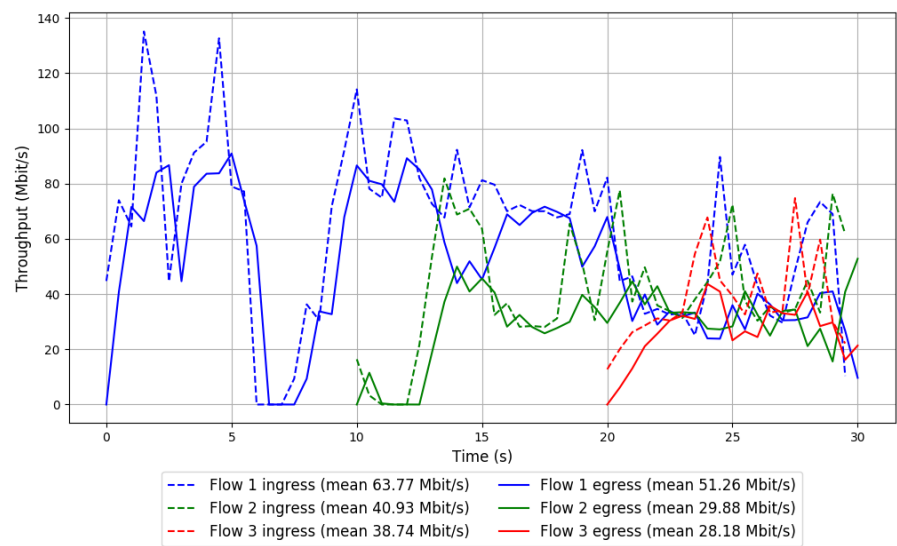
Run 4: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 89.49 Mbit/s) Flow 1 egress (mean 54.52 Mbit/s)
Flow 2 ingress (mean 63.52 Mbit/s) Flow 2 egress (mean 33.10 Mbit/s)
Flow 3 ingress (mean 32.28 Mbit/s) Flow 3 egress (mean 13.91 Mbit/s)

Flow 1 (95th percentile 29.91 ms)   Flow 2 (95th percentile 19.92 ms)   Flow 3 (95th percentile 15.62 ms)

```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-30 08:57:18
End at: 2018-11-30 08:57:48
Local clock offset: 0.698 ms
Remote clock offset: -0.333 ms

# Below is generated by plot.py at 2018-11-30 09:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.40 Mbit/s
95th percentile per-packet one-way delay: 40.302 ms
Loss rate: 22.40%
-- Flow 1:
Average throughput: 51.26 Mbit/s
95th percentile per-packet one-way delay: 42.375 ms
Loss rate: 19.55%
-- Flow 2:
Average throughput: 29.88 Mbit/s
95th percentile per-packet one-way delay: 37.854 ms
Loss rate: 26.87%
-- Flow 3:
Average throughput: 28.18 Mbit/s
95th percentile per-packet one-way delay: 36.723 ms
Loss rate: 27.14%
```

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

Flow 1 ingress (mean 63.77 Mbit/s) — — — Flow 1 egress (mean 51.26 Mbit/s)
Flow 2 ingress (mean 40.93 Mbit/s) — — — Flow 2 egress (mean 29.88 Mbit/s)
Flow 3 ingress (mean 38.74 Mbit/s) — — — Flow 3 egress (mean 28.18 Mbit/s)

Flow 1 (95th percentile 42.38 ms)   Flow 2 (95th percentile 37.85 ms)   Flow 3 (95th percentile 36.72 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-11-30 07:21:20
End at: 2018-11-30 07:21:50
Local clock offset: 2.284 ms
Remote clock offset: -3.466 ms

# Below is generated by plot.py at 2018-11-30 09:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.50 Mbit/s
95th percentile per-packet one-way delay: 18.659 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 29.45 Mbit/s
95th percentile per-packet one-way delay: 19.049 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 23.15 Mbit/s
95th percentile per-packet one-way delay: 16.539 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 22.97 Mbit/s
95th percentile per-packet one-way delay: 23.615 ms
Loss rate: 0.19%
```
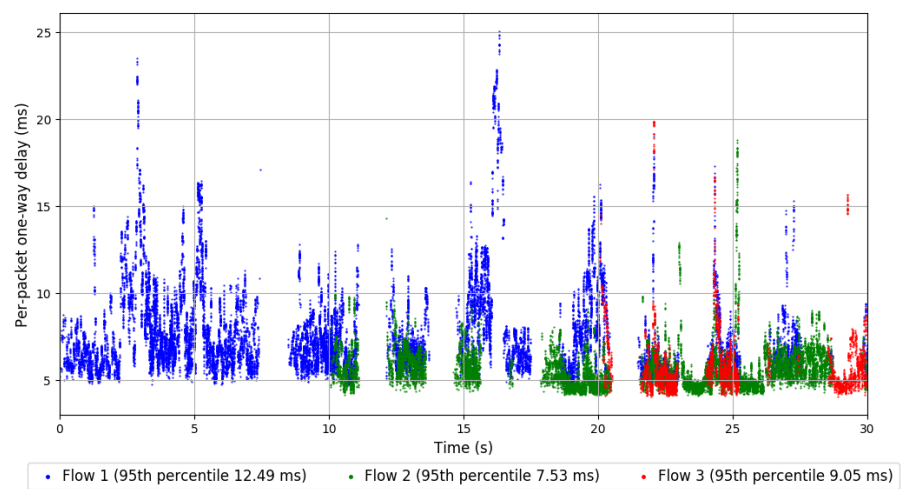
Run 1: Report of LEDBAT — Data Link
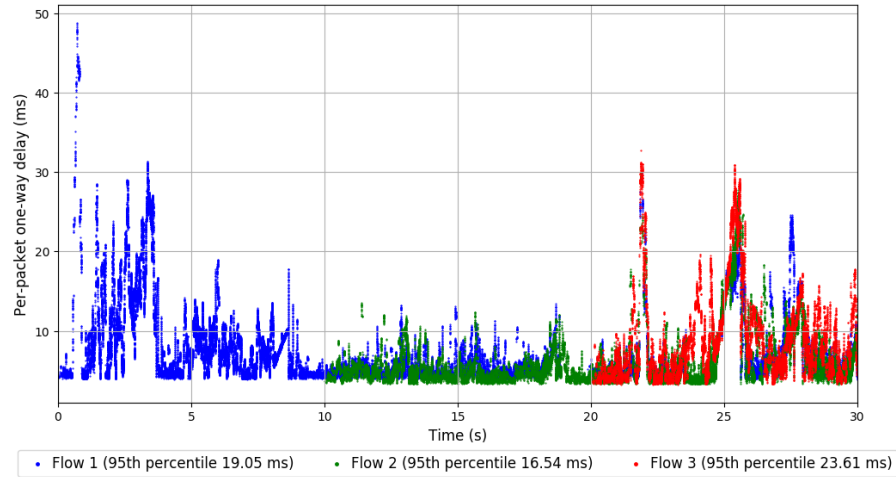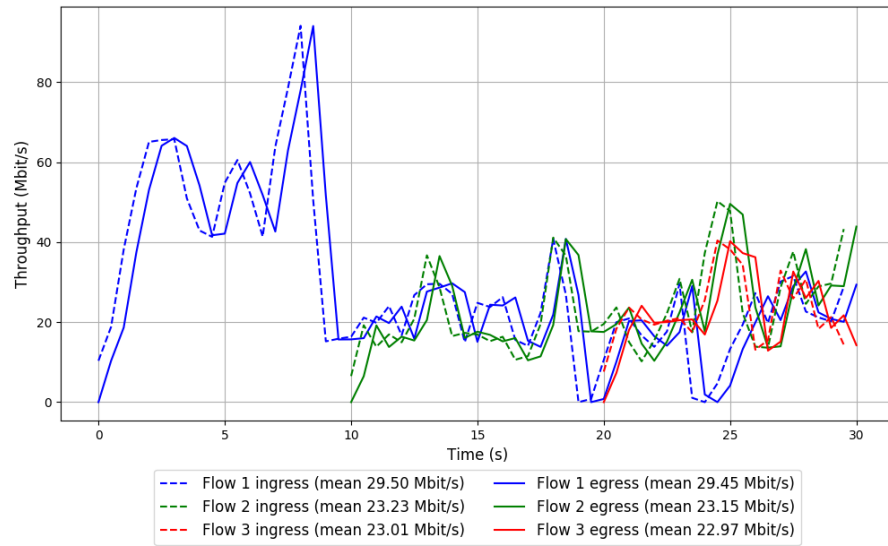
```
Run 2: Statistics of LEDBAT

Start at: 2018-11-30 07:43:36
End at: 2018-11-30 07:44:06
Local clock offset: 1.639 ms
Remote clock offset: -2.793 ms


# Below is generated by plot.py at 2018-11-30 09:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.59 Mbit/s
95th percentile per-packet one-way delay: 8.658 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 24.52 Mbit/s
95th percentile per-packet one-way delay: 6.630 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 19.05 Mbit/s
95th percentile per-packet one-way delay: 12.398 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 13.18 Mbit/s
95th percentile per-packet one-way delay: 7.233 ms
Loss rate: 0.59%
```
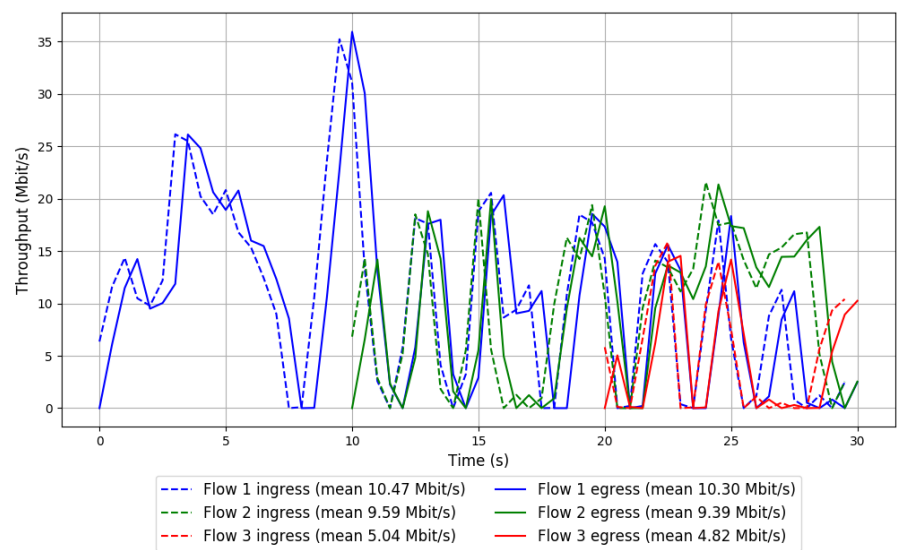
Run 2: Report of LEDBAT — Data Link
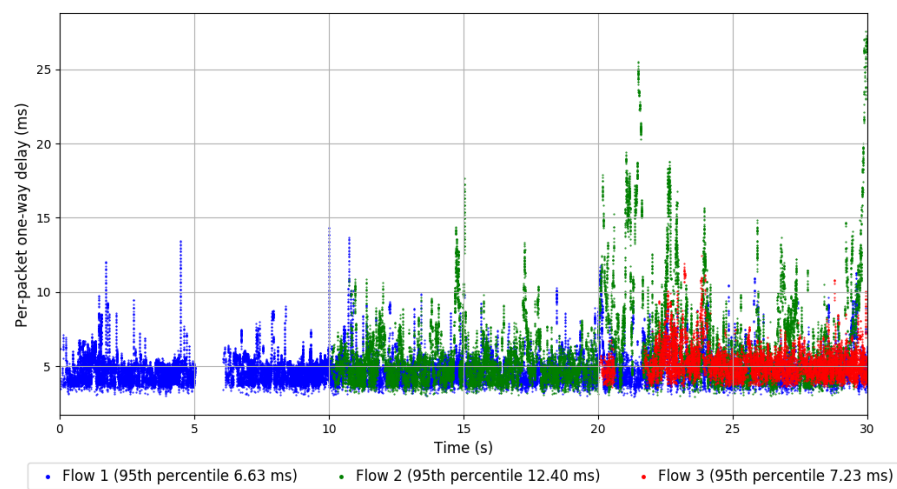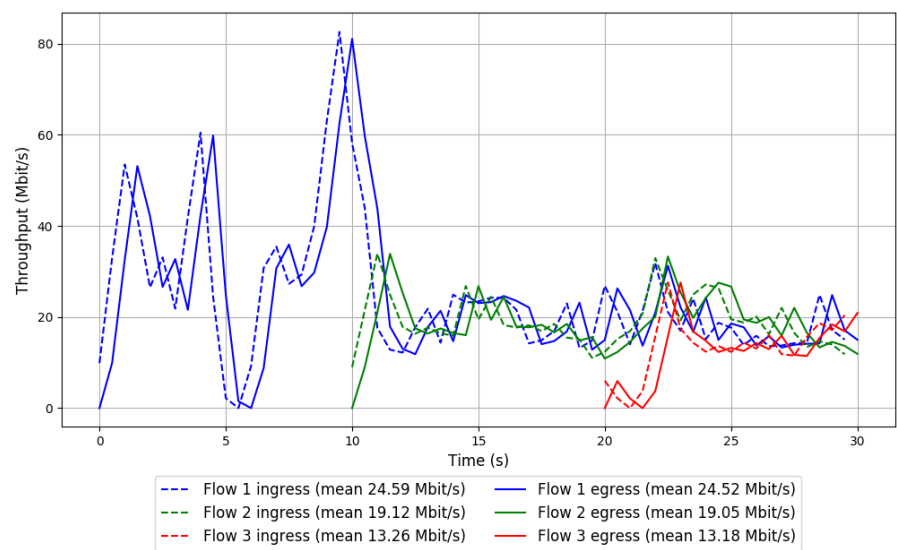
```
Run 3: Statistics of LEDBAT

Start at: 2018-11-30 08:05:54
End at: 2018-11-30 08:06:24
Local clock offset: 3.56 ms
Remote clock offset: 0.489 ms


# Below is generated by plot.py at 2018-11-30 09:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.13 Mbit/s
95th percentile per-packet one-way delay: 37.442 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 41.97 Mbit/s
95th percentile per-packet one-way delay: 35.743 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 32.16 Mbit/s
95th percentile per-packet one-way delay: 40.350 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 20.32 Mbit/s
95th percentile per-packet one-way delay: 12.880 ms
Loss rate: 0.21%
```

Run 3: Report of LEDBAT — Data Link
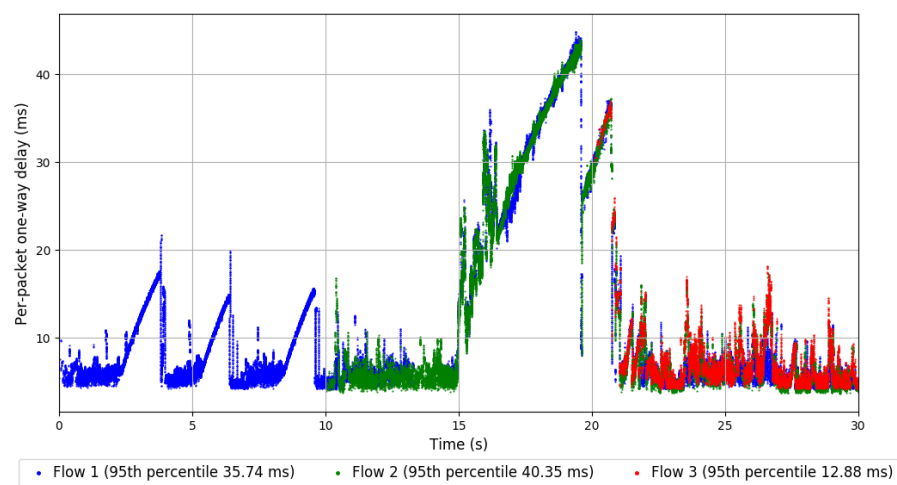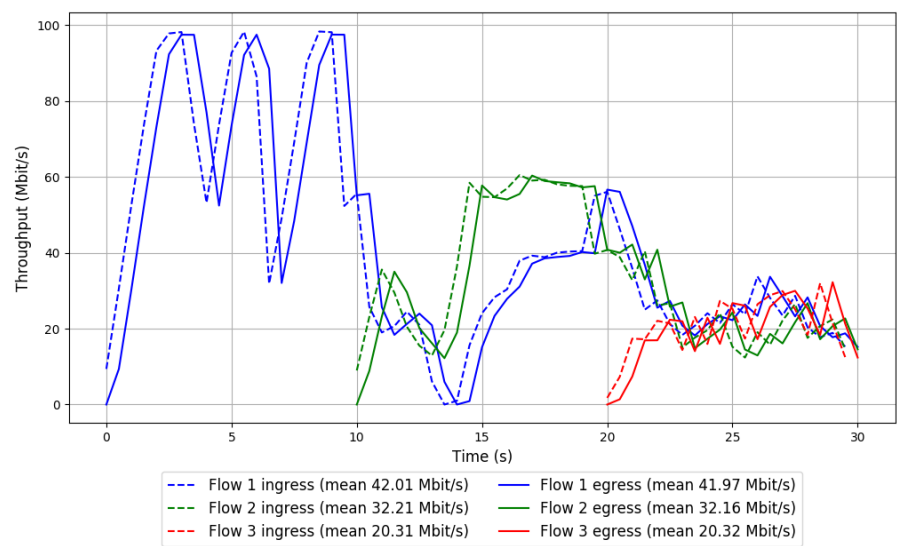
```
Run 4: Statistics of LEDBAT

Start at: 2018-11-30 08:28:02
End at: 2018-11-30 08:28:32
Local clock offset: 1.955 ms
Remote clock offset: -1.133 ms


# Below is generated by plot.py at 2018-11-30 09:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.17 Mbit/s
95th percentile per-packet one-way delay: 11.260 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 10.30 Mbit/s
95th percentile per-packet one-way delay: 12.488 ms
Loss rate: 1.62%
-- Flow 2:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 7.529 ms
Loss rate: 2.06%
-- Flow 3:
Average throughput: 4.82 Mbit/s
95th percentile per-packet one-way delay: 9.052 ms
Loss rate: 4.31%
```
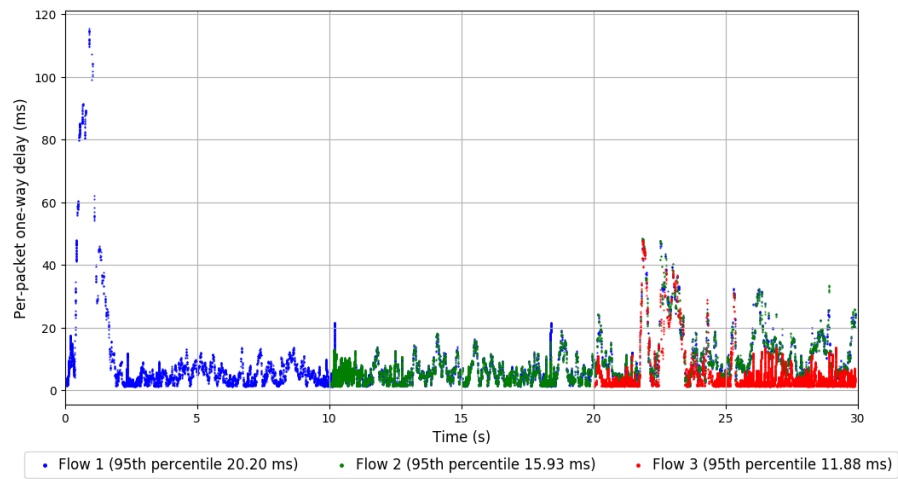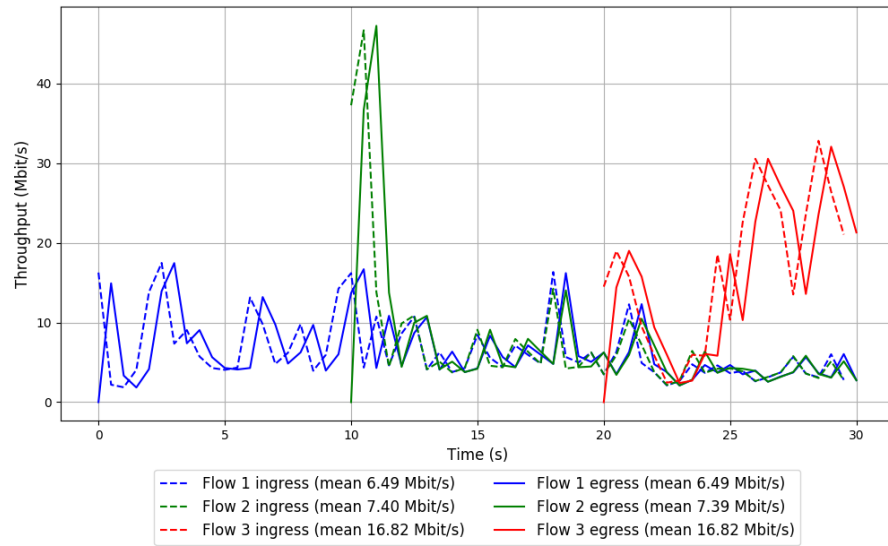
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 10.47 Mbit/s) — Flow 1 egress (mean 10.30 Mbit/s)
Flow 2 ingress (mean 9.59 Mbit/s) — Flow 2 egress (mean 9.39 Mbit/s)
Flow 3 ingress (mean 5.04 Mbit/s) — Flow 3 egress (mean 4.82 Mbit/s)

Flow 1 (95th percentile 12.49 ms) Flow 2 (95th percentile 7.53 ms) Flow 3 (95th percentile 9.05 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-11-30 08:50:13
End at: 2018-11-30 08:50:43
Local clock offset: 1.541 ms
Remote clock offset: -44.368 ms


# Below is generated by plot.py at 2018-11-30 09:11:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.03 Mbit/s
95th percentile per-packet one-way delay: -25.389 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 36.65 Mbit/s
95th percentile per-packet one-way delay: -26.507 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 26.43 Mbit/s
95th percentile per-packet one-way delay: -22.225 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 14.36 Mbit/s
95th percentile per-packet one-way delay: -29.924 ms
Loss rate: 0.33%
```

Run 5: Report of LEDBAT — Data Link
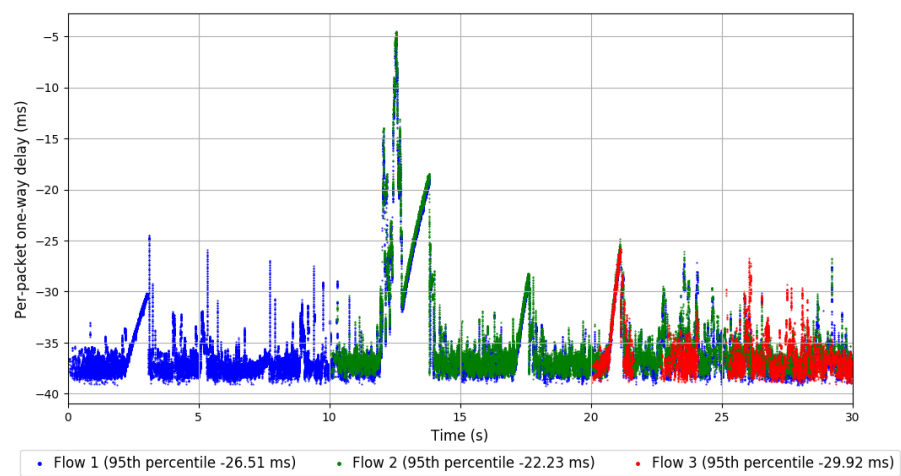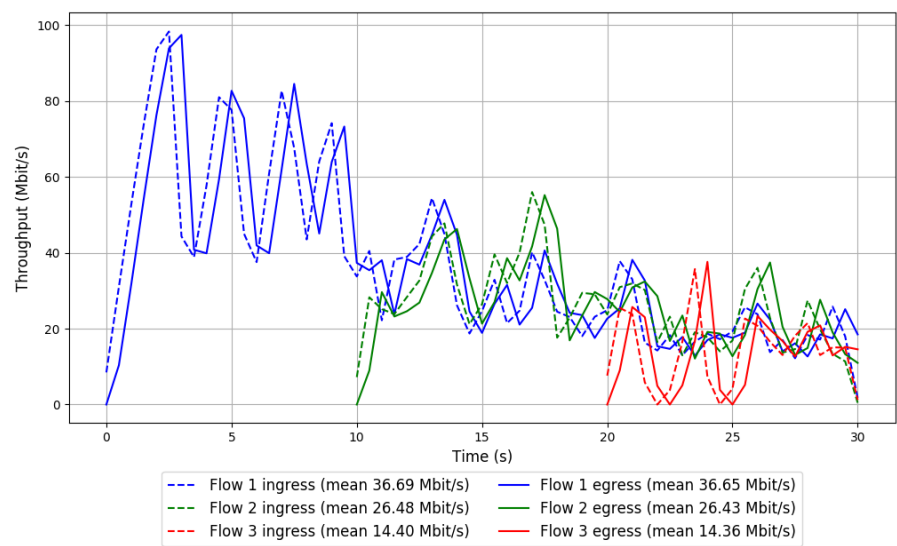
```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-30 07:17:52
End at: 2018-11-30 07:18:22
Local clock offset: 4.089 ms
Remote clock offset: -4.07 ms

# Below is generated by plot.py at 2018-11-30 09:11:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.96 Mbit/s
95th percentile per-packet one-way delay: 16.080 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 20.203 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 7.39 Mbit/s
95th percentile per-packet one-way delay: 15.928 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.82 Mbit/s
95th percentile per-packet one-way delay: 11.884 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 6.49 Mbit/s)   Flow 1 egress (mean 6.49 Mbit/s)
Flow 2 ingress (mean 7.40 Mbit/s)   Flow 2 egress (mean 7.39 Mbit/s)
Flow 3 ingress (mean 16.82 Mbit/s)   Flow 3 egress (mean 16.82 Mbit/s)

Flow 1 (95th percentile 20.20 ms)   Flow 2 (95th percentile 15.93 ms)   Flow 3 (95th percentile 11.88 ms)

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-30 07:40:07
End at: 2018-11-30 07:40:37
Local clock offset: 1.36 ms
Remote clock offset: -15.788 ms

# Below is generated by plot.py at 2018-11-30 09:11:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.12 Mbit/s
95th percentile per-packet one-way delay: -1.885 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.89 Mbit/s
95th percentile per-packet one-way delay: -4.633 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.82 Mbit/s
95th percentile per-packet one-way delay: -1.738 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.20 Mbit/s
95th percentile per-packet one-way delay: 0.599 ms
Loss rate: 0.00%
```
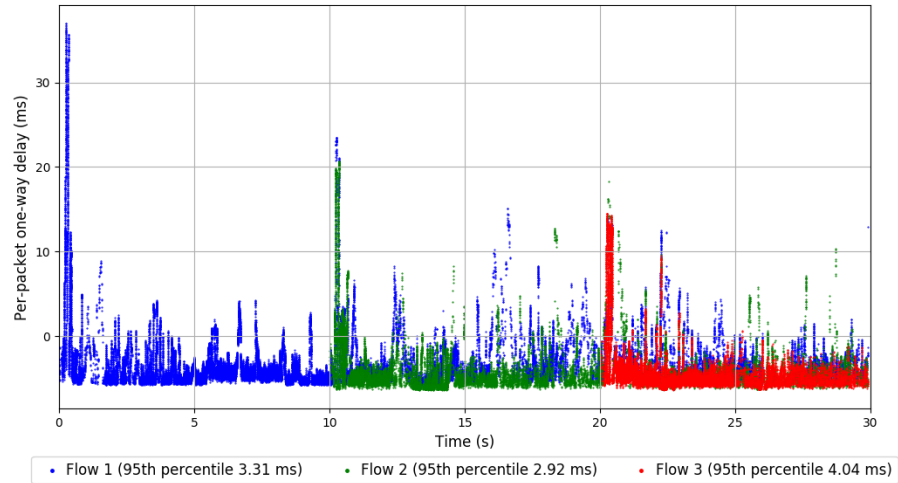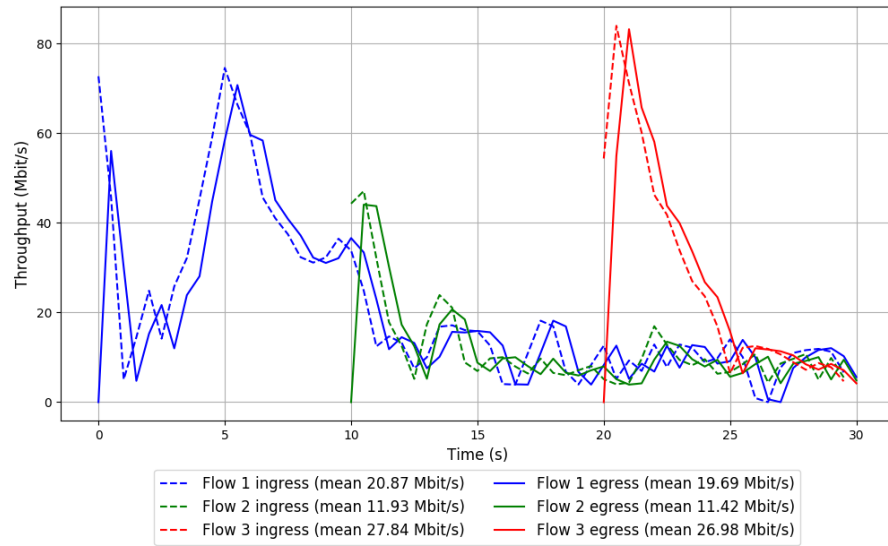
Run 2: Report of Indigo-Muses — Data Link
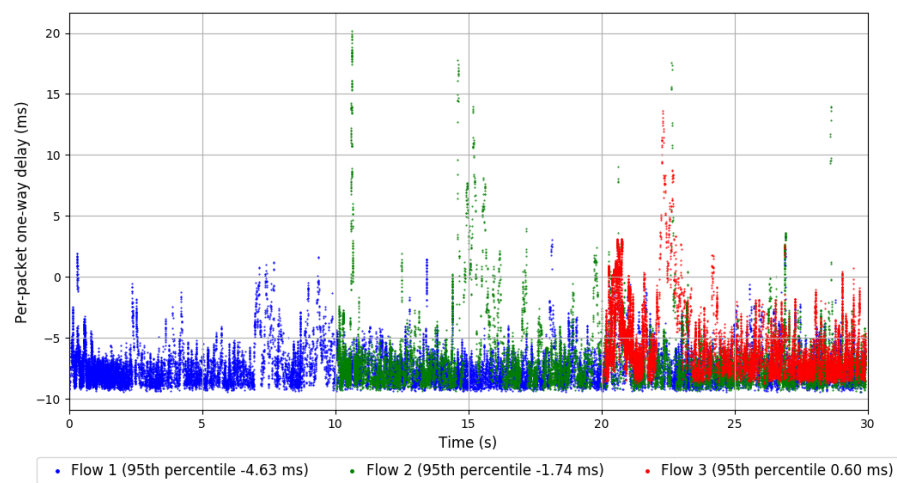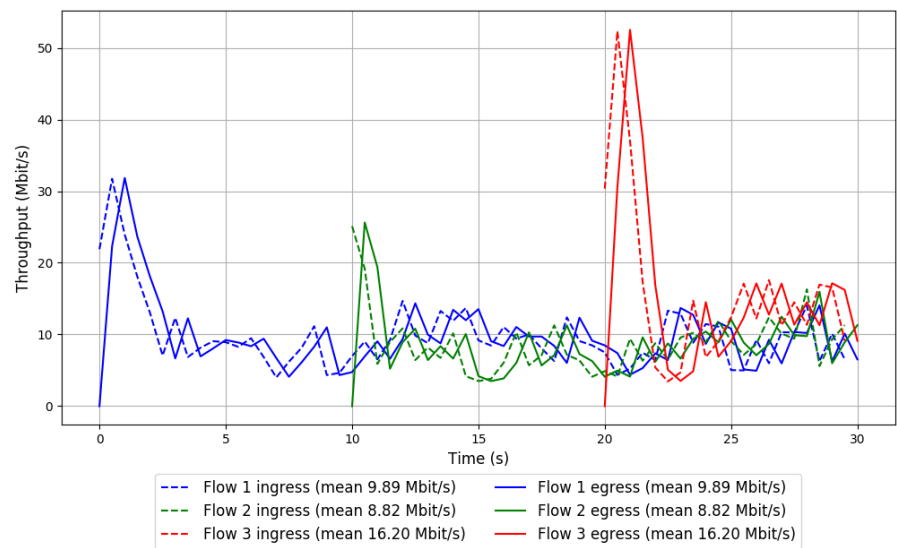
```
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-30 08:02:19
End at: 2018-11-30 08:02:49
Local clock offset: 1.086 ms
Remote clock offset: -1.975 ms


# Below is generated by plot.py at 2018-11-30 09:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.63 Mbit/s
95th percentile per-packet one-way delay: 8.108 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 8.099 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 30.55 Mbit/s
95th percentile per-packet one-way delay: 8.034 ms
Loss rate: 1.90%
-- Flow 3:
Average throughput: 45.77 Mbit/s
95th percentile per-packet one-way delay: 8.217 ms
Loss rate: 3.04%
```

Run 3: Report of Indigo-Muses — Data Link
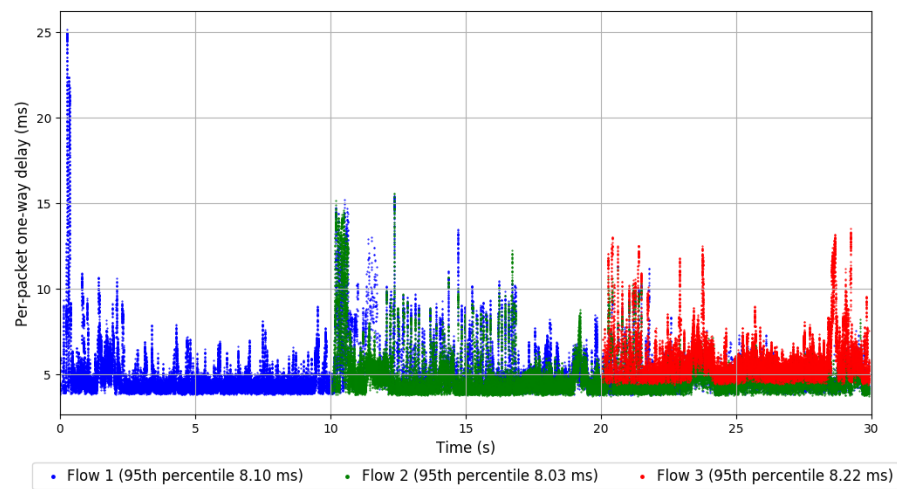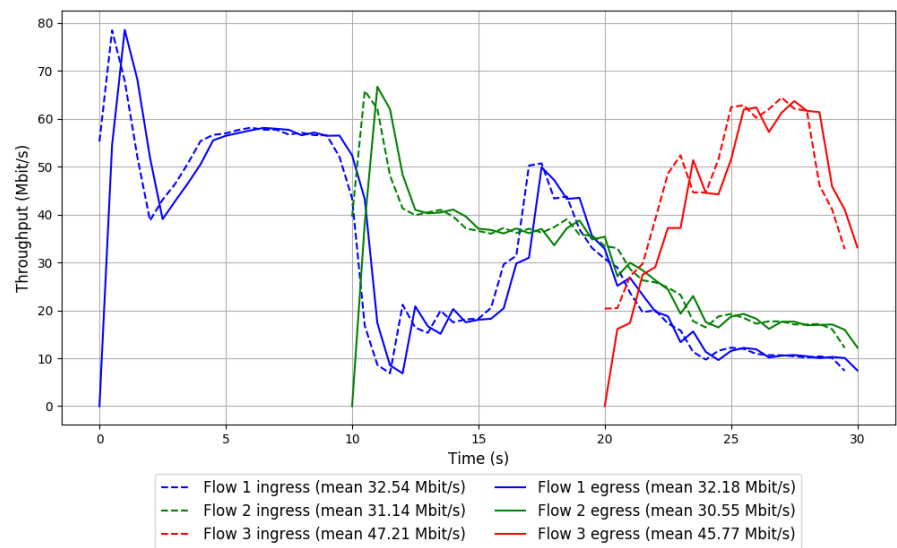
```
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-30 08:24:37
End at: 2018-11-30 08:25:07
Local clock offset: 0.998 ms
Remote clock offset: -12.531 ms


# Below is generated by plot.py at 2018-11-30 09:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.19 Mbit/s
95th percentile per-packet one-way delay: 3.321 ms
Loss rate: 4.72%
-- Flow 1:
Average throughput: 19.69 Mbit/s
95th percentile per-packet one-way delay: 3.315 ms
Loss rate: 5.58%
-- Flow 2:
Average throughput: 11.42 Mbit/s
95th percentile per-packet one-way delay: 2.917 ms
Loss rate: 4.31%
-- Flow 3:
Average throughput: 26.98 Mbit/s
95th percentile per-packet one-way delay: 4.044 ms
Loss rate: 3.11%
```

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-30 08:46:44
End at: 2018-11-30 08:47:14
Local clock offset: 3.952 ms
Remote clock offset: -70.205 ms

# Below is generated by plot.py at 2018-11-30 09:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.53 Mbit/s
95th percentile per-packet one-way delay: -59.926 ms
Loss rate: 1.71%
-- Flow 1:
Average throughput: 17.24 Mbit/s
95th percentile per-packet one-way delay: -60.457 ms
Loss rate: 2.15%
-- Flow 2:
Average throughput: 15.03 Mbit/s
95th percentile per-packet one-way delay: -56.789 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 22.08 Mbit/s
95th percentile per-packet one-way delay: -61.230 ms
Loss rate: 0.52%
```

Run 5: Report of Indigo-Muses — Data Link
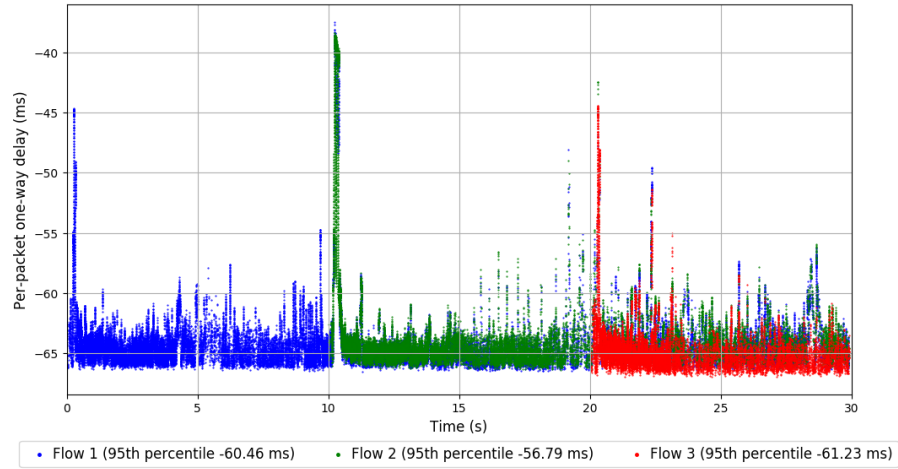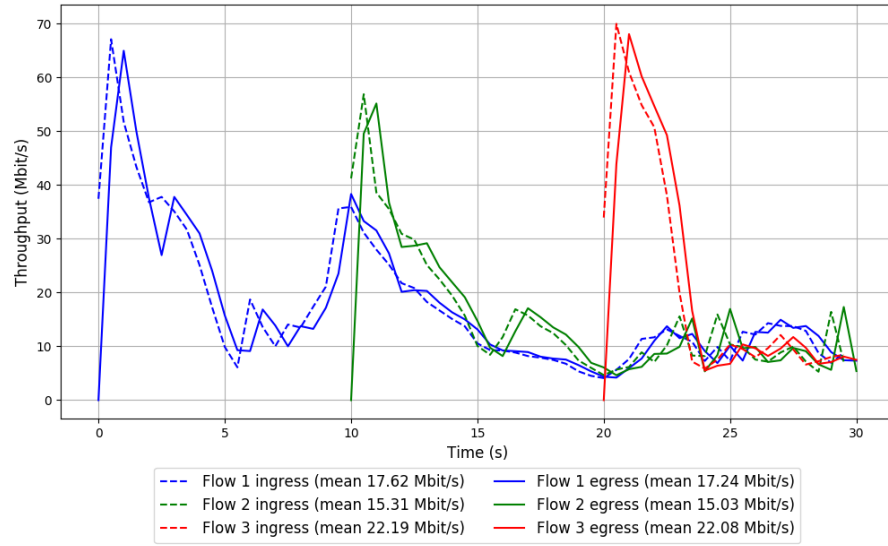
```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-30 07:35:24
End at: 2018-11-30 07:35:55
Local clock offset: 0.535 ms
Remote clock offset: -3.397 ms


# Below is generated by plot.py at 2018-11-30 09:12:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.31 Mbit/s
95th percentile per-packet one-way delay: 16.400 ms
Loss rate: 4.15%
-- Flow 1:
Average throughput: 70.80 Mbit/s
95th percentile per-packet one-way delay: 16.607 ms
Loss rate: 4.13%
-- Flow 2:
Average throughput: 8.44 Mbit/s
95th percentile per-packet one-way delay: 9.123 ms
Loss rate: 4.58%
-- Flow 3:
Average throughput: 8.99 Mbit/s
95th percentile per-packet one-way delay: 11.510 ms
Loss rate: 3.83%
```

Run 1: Report of PCC-Allegro — Data Link
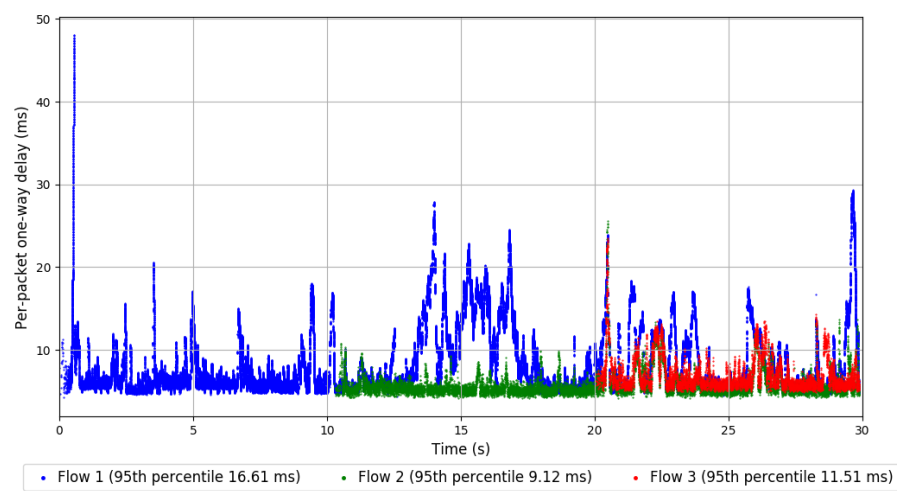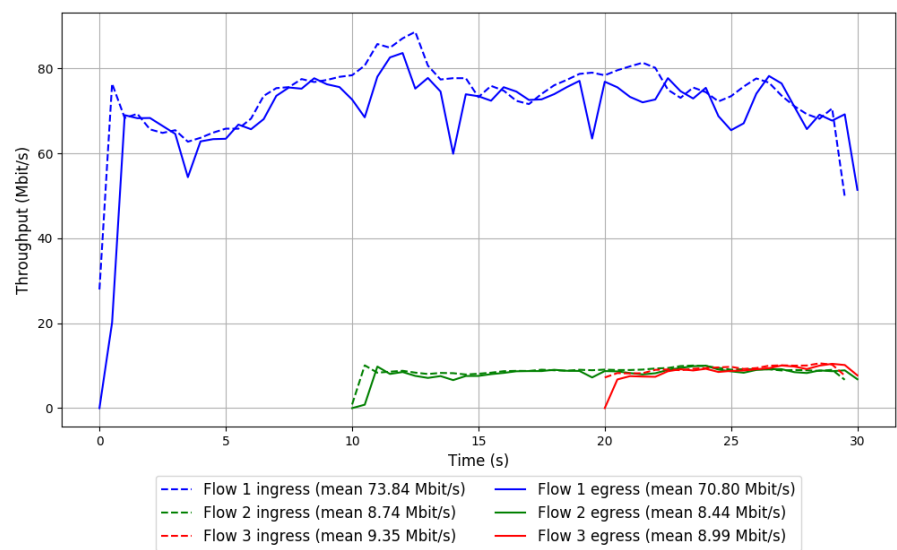
```
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-30 07:57:38
End at: 2018-11-30 07:58:08
Local clock offset: -0.7 ms
Remote clock offset: -0.987 ms


# Below is generated by plot.py at 2018-11-30 09:12:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.99 Mbit/s
95th percentile per-packet one-way delay: 39.801 ms
Loss rate: 8.79%
-- Flow 1:
Average throughput: 37.37 Mbit/s
95th percentile per-packet one-way delay: 34.850 ms
Loss rate: 6.62%
-- Flow 2:
Average throughput: 45.01 Mbit/s
95th percentile per-packet one-way delay: 40.859 ms
Loss rate: 11.15%
-- Flow 3:
Average throughput: 14.27 Mbit/s
95th percentile per-packet one-way delay: 46.750 ms
Loss rate: 10.17%
```

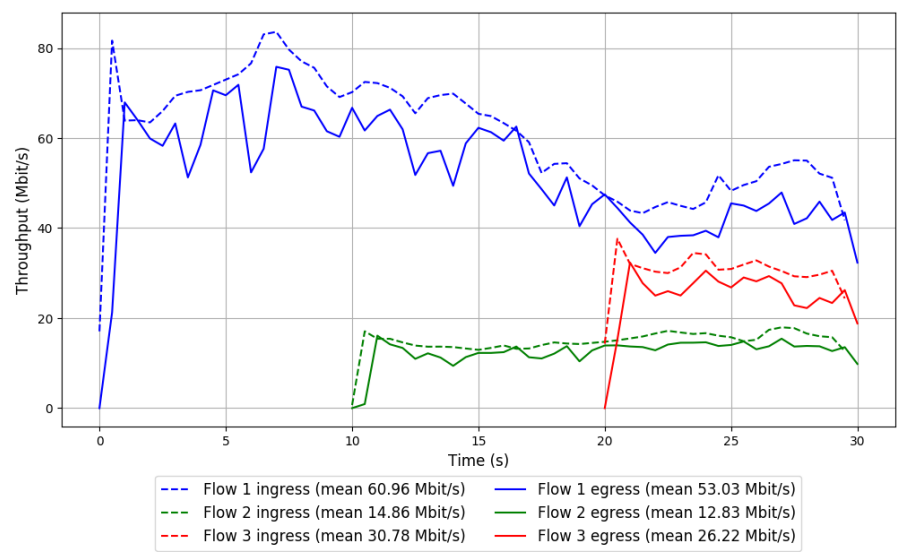Run 2: Report of PCC-Allegro — Data Link
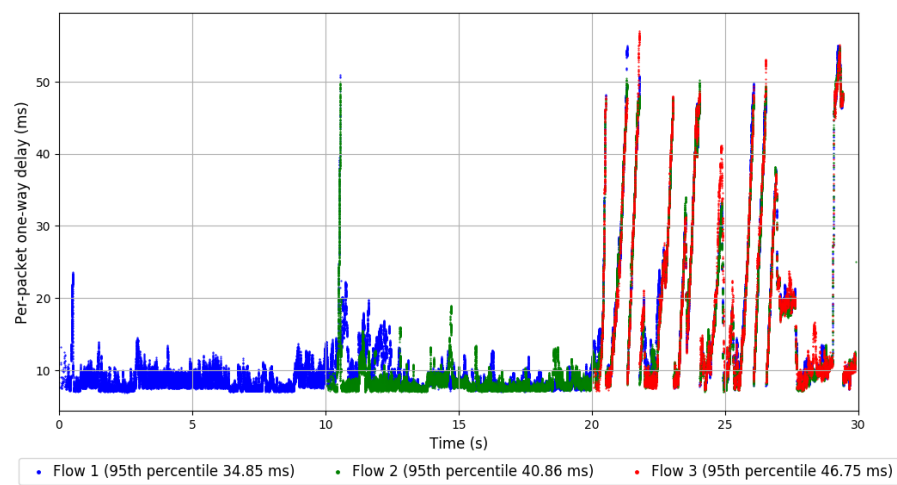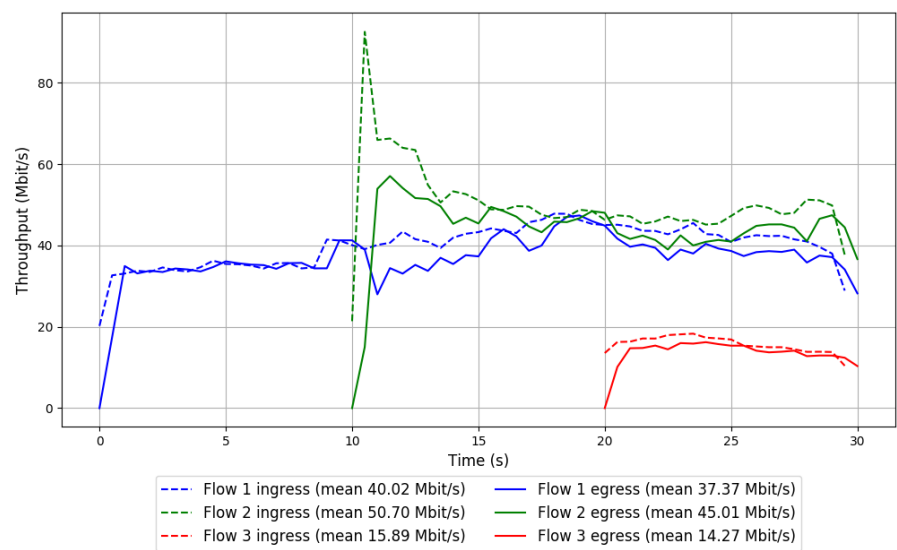
```
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-30 08:19:53
End at: 2018-11-30 08:20:23
Local clock offset: 0.21 ms
Remote clock offset: -38.173 ms


# Below is generated by plot.py at 2018-11-30 09:12:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.21 Mbit/s
95th percentile per-packet one-way delay: -25.210 ms
Loss rate: 13.32%
-- Flow 1:
Average throughput: 53.03 Mbit/s
95th percentile per-packet one-way delay: -24.981 ms
Loss rate: 13.01%
-- Flow 2:
Average throughput: 12.83 Mbit/s
95th percentile per-packet one-way delay: -28.216 ms
Loss rate: 13.67%
-- Flow 3:
Average throughput: 26.22 Mbit/s
95th percentile per-packet one-way delay: -25.618 ms
Loss rate: 14.80%
```

Run 3: Report of PCC-Allegro — Data Link
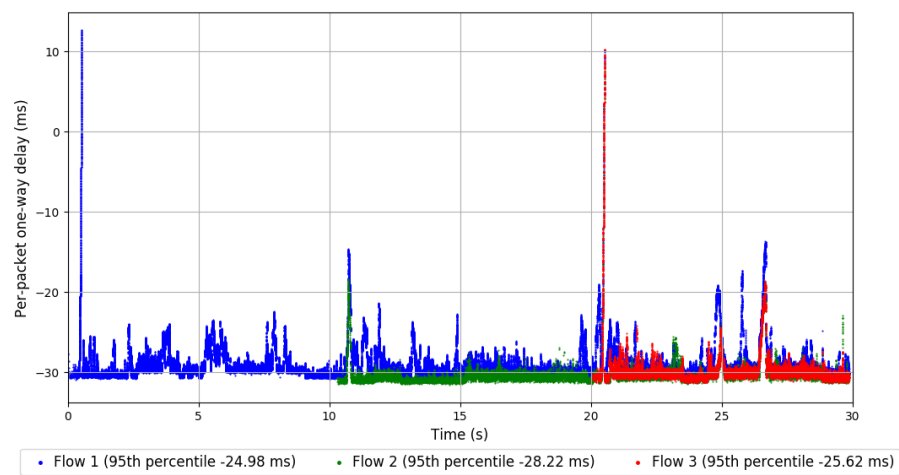
```
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-30 08:41:59
End at: 2018-11-30 08:42:29
Local clock offset: -27.441 ms
Remote clock offset: -36.61 ms


# Below is generated by plot.py at 2018-11-30 09:12:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.14 Mbit/s
95th percentile per-packet one-way delay: 2.597 ms
Loss rate: 4.35%
-- Flow 1:
Average throughput: 6.05 Mbit/s
95th percentile per-packet one-way delay: 1.331 ms
Loss rate: 3.05%
-- Flow 2:
Average throughput: 68.21 Mbit/s
95th percentile per-packet one-way delay: 2.284 ms
Loss rate: 4.55%
-- Flow 3:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 17.242 ms
Loss rate: 2.79%
```

## Run 4: Report of PCC-Allegro — Data Link
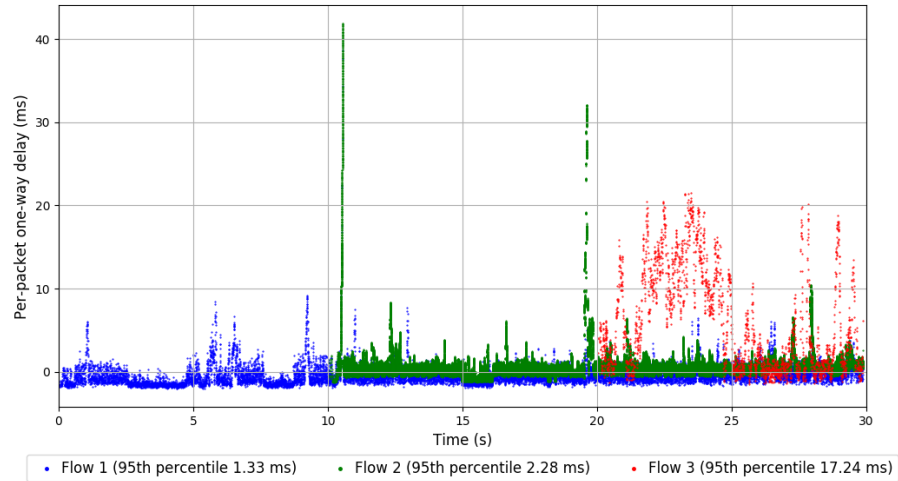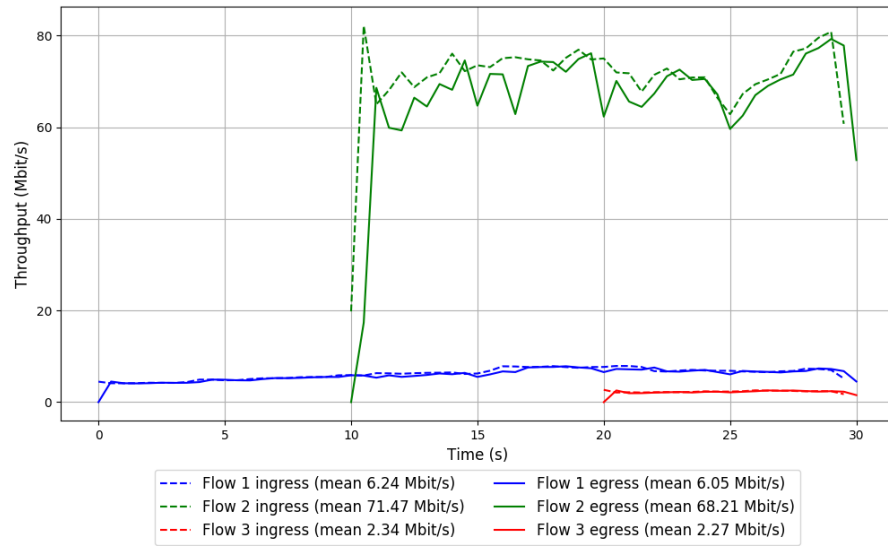
```
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-30 09:04:09
End at: 2018-11-30 09:04:39
Local clock offset: 0.636 ms
Remote clock offset: -49.025 ms


# Below is generated by plot.py at 2018-11-30 09:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.22 Mbit/s
95th percentile per-packet one-way delay: -21.320 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 13.02 Mbit/s
95th percentile per-packet one-way delay: -25.072 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 61.65 Mbit/s
95th percentile per-packet one-way delay: -21.106 ms
Loss rate: 2.32%
-- Flow 3:
Average throughput: 18.79 Mbit/s
95th percentile per-packet one-way delay: -19.540 ms
Loss rate: 1.50%
```

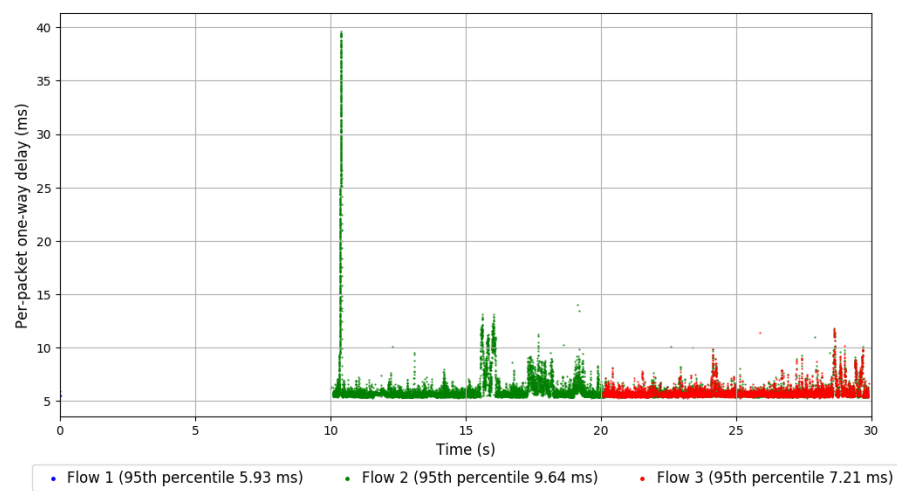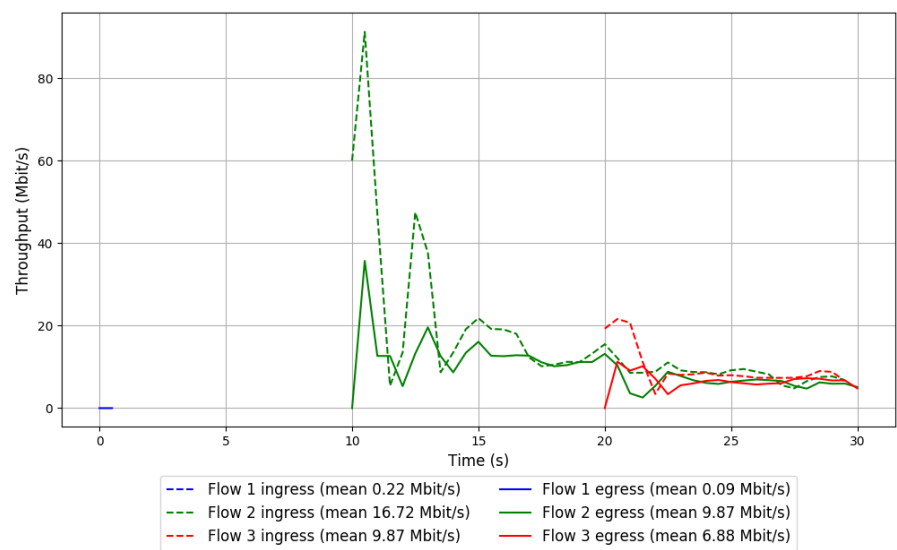Run 5: Report of PCC-Allegro — Data Link
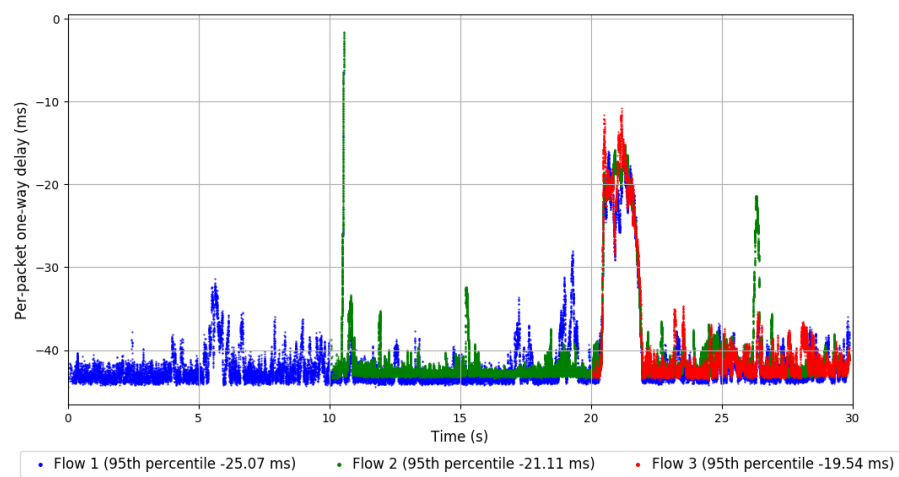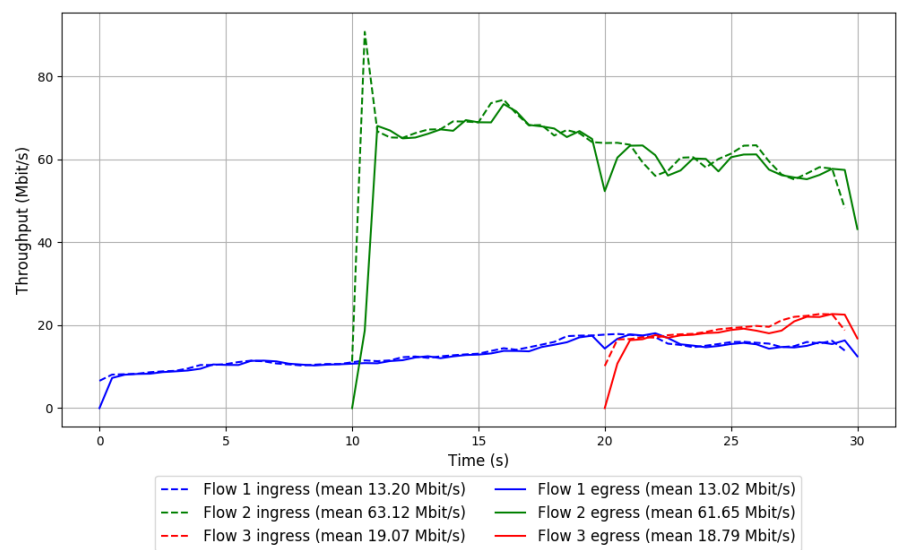
```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-30 07:14:19
End at: 2018-11-30 07:14:49
Local clock offset: 0.641 ms
Remote clock offset: -3.853 ms

# Below is generated by plot.py at 2018-11-30 09:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.83 Mbit/s
95th percentile per-packet one-way delay: 8.547 ms
Loss rate: 38.55%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 5.929 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 9.87 Mbit/s
95th percentile per-packet one-way delay: 9.641 ms
Loss rate: 40.98%
-- Flow 3:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 7.207 ms
Loss rate: 30.26%
```

Run 1: Report of PCC-Expr — Data Link

Legend:
- Flow 1 ingress (mean 0.22 Mbit/s)
- Flow 1 egress (mean 0.09 Mbit/s)
- Flow 2 ingress (mean 16.72 Mbit/s)
- Flow 2 egress (mean 9.87 Mbit/s)
- Flow 3 ingress (mean 9.87 Mbit/s)
- Flow 3 egress (mean 6.88 Mbit/s)

Legend:
- Flow 1 (95th percentile 5.93 ms)
- Flow 2 (95th percentile 9.64 ms)
- Flow 3 (95th percentile 7.21 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-30 07:36:36
End at: 2018-11-30 07:37:06
Local clock offset: 0.488 ms
Remote clock offset: -1.821 ms


# Below is generated by plot.py at 2018-11-30 09:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 10.872 ms
Loss rate: 26.58%
-- Flow 1:
Average throughput: 8.72 Mbit/s
95th percentile per-packet one-way delay: 11.082 ms
Loss rate: 22.59%
-- Flow 2:
Average throughput: 5.34 Mbit/s
95th percentile per-packet one-way delay: 10.785 ms
Loss rate: 32.18%
-- Flow 3:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 8.757 ms
Loss rate: 38.24%
```
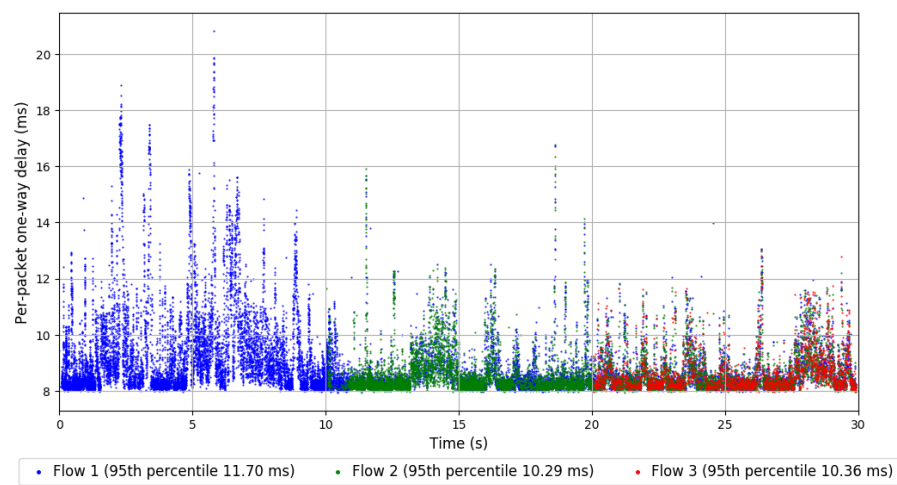
Run 2: Report of PCC-Expr — Data Link
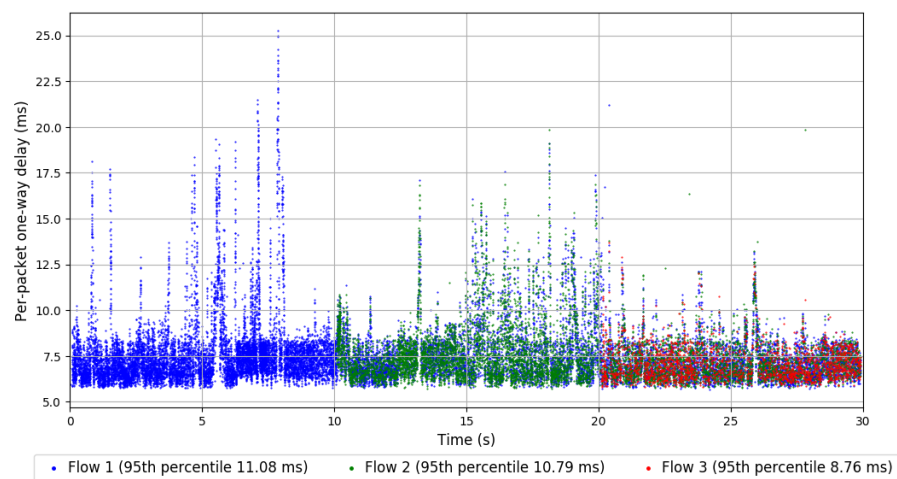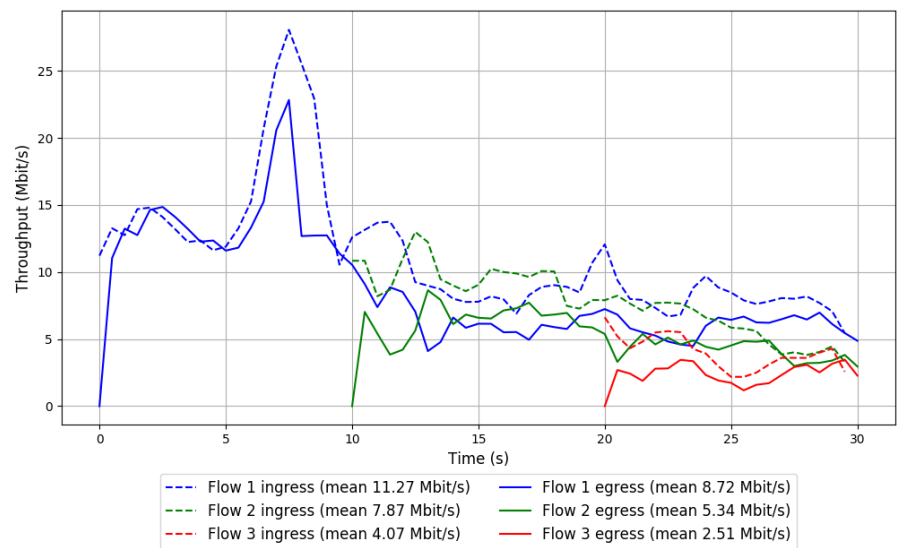
```
Run 3: Statistics of PCC-Expr

Start at: 2018-11-30 07:58:48
End at: 2018-11-30 07:59:18
Local clock offset: -1.314 ms
Remote clock offset: -0.55 ms

# Below is generated by plot.py at 2018-11-30 09:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 11.155 ms
Loss rate: 23.52%
-- Flow 1:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 11.696 ms
Loss rate: 20.58%
-- Flow 2:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 10.292 ms
Loss rate: 27.09%
-- Flow 3:
Average throughput: 2.90 Mbit/s
95th percentile per-packet one-way delay: 10.356 ms
Loss rate: 32.00%
```
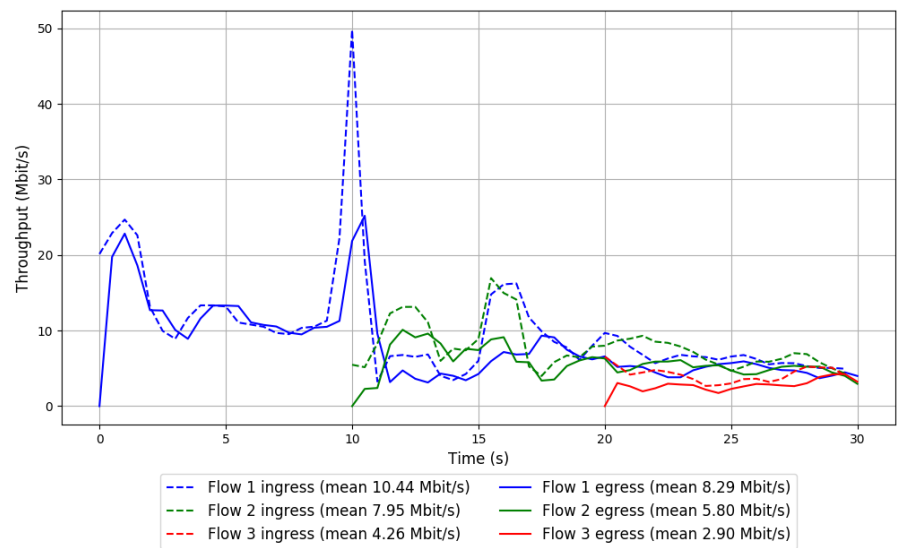
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 10.44 Mbit/s) --- Flow 1 egress (mean 8.29 Mbit/s)
Flow 2 ingress (mean 7.95 Mbit/s) --- Flow 2 egress (mean 5.80 Mbit/s)
Flow 3 ingress (mean 4.26 Mbit/s) --- Flow 3 egress (mean 2.90 Mbit/s)

Flow 1 (95th percentile 11.70 ms) • Flow 2 (95th percentile 10.29 ms) • Flow 3 (95th percentile 10.36 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-11-30 08:21:02
End at: 2018-11-30 08:21:32
Local clock offset: -1.172 ms
Remote clock offset: -1.419 ms


# Below is generated by plot.py at 2018-11-30 09:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 10.928 ms
Loss rate: 28.75%
-- Flow 1:
Average throughput: 8.59 Mbit/s
95th percentile per-packet one-way delay: 11.230 ms
Loss rate: 29.10%
-- Flow 2:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 9.705 ms
Loss rate: 35.17%
-- Flow 3:
Average throughput: 6.27 Mbit/s
95th percentile per-packet one-way delay: 10.229 ms
Loss rate: 19.02%
```

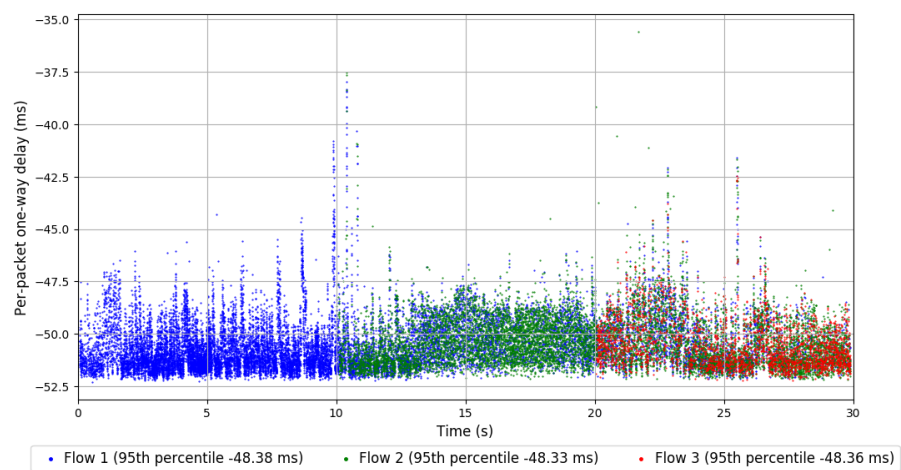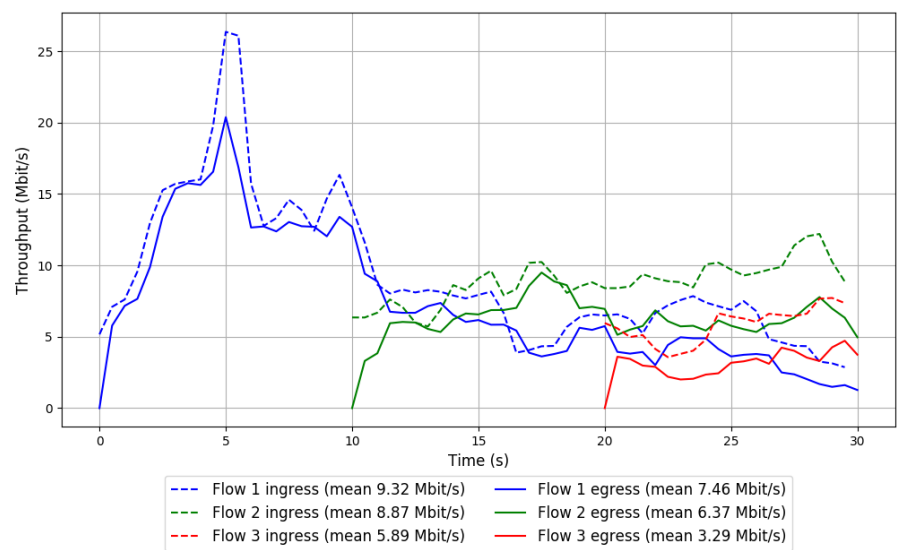# Run 4: Report of PCC-Expr — Data Link
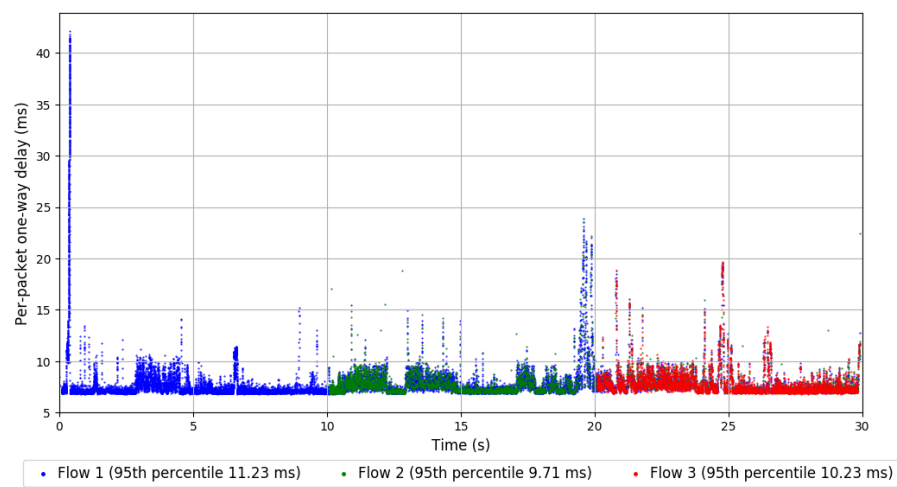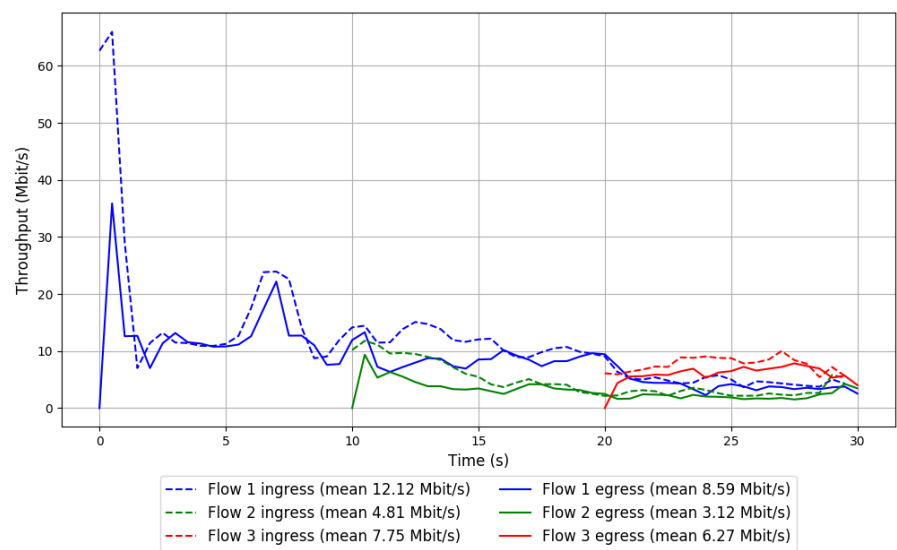
```
Run 5: Statistics of PCC-Expr

Start at: 2018-11-30 08:43:09
End at: 2018-11-30 08:43:39
Local clock offset: -21.175 ms
Remote clock offset: -80.943 ms

# Below is generated by plot.py at 2018-11-30 09:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.78 Mbit/s
95th percentile per-packet one-way delay: -48.360 ms
Loss rate: 25.57%
-- Flow 1:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: -48.385 ms
Loss rate: 19.99%
-- Flow 2:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: -48.327 ms
Loss rate: 28.22%
-- Flow 3:
Average throughput: 3.29 Mbit/s
95th percentile per-packet one-way delay: -48.357 ms
Loss rate: 44.26%
```

Run 5: Report of PCC-Expr — Data Link

- Flow 1 ingress (mean 9.32 Mbit/s)
- Flow 1 egress (mean 7.46 Mbit/s)
- Flow 2 ingress (mean 8.87 Mbit/s)
- Flow 2 egress (mean 6.37 Mbit/s)
- Flow 3 ingress (mean 5.89 Mbit/s)
- Flow 3 egress (mean 3.29 Mbit/s)

- Flow 1 (95th percentile -48.38 ms)
- Flow 2 (95th percentile -48.33 ms)
- Flow 3 (95th percentile -48.36 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-30 07:26:02
End at: 2018-11-30 07:26:32
Local clock offset: 1.506 ms
Remote clock offset: -3.104 ms


# Below is generated by plot.py at 2018-11-30 09:12:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.01 Mbit/s
95th percentile per-packet one-way delay: 41.213 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 35.26 Mbit/s
95th percentile per-packet one-way delay: 39.534 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 37.65 Mbit/s
95th percentile per-packet one-way delay: 42.732 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 23.49 Mbit/s
95th percentile per-packet one-way delay: 35.108 ms
Loss rate: 0.77%
```

Run 1: Report of QUIC Cubic — Data Link
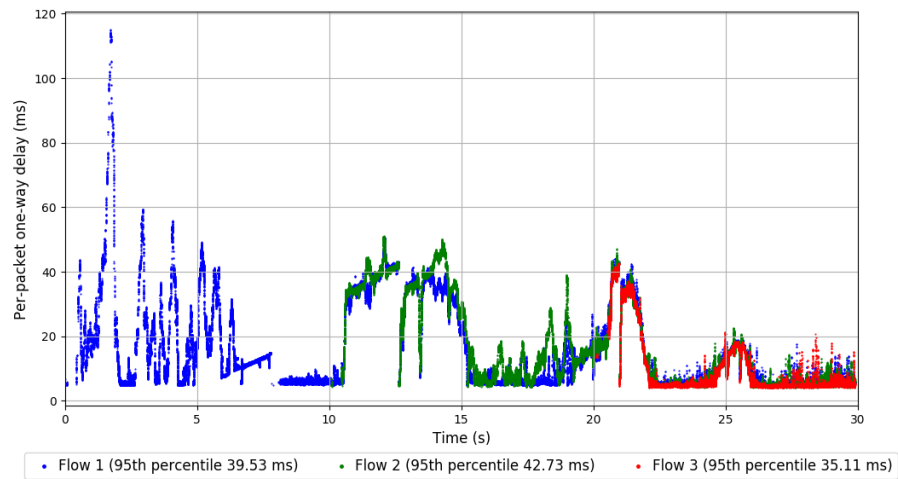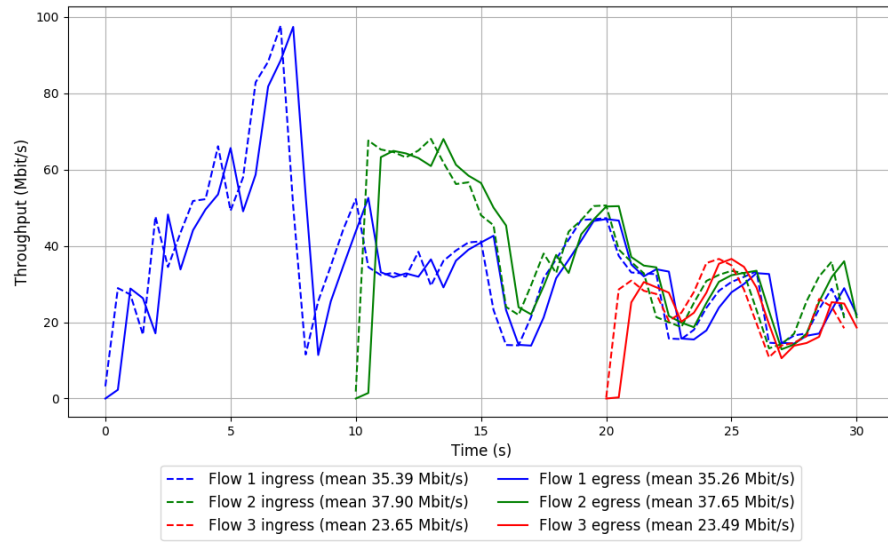
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-30 07:48:18
End at: 2018-11-30 07:48:48
Local clock offset: -1.558 ms
Remote clock offset: -2.835 ms

# Below is generated by plot.py at 2018-11-30 09:12:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.81 Mbit/s
95th percentile per-packet one-way delay: 22.500 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 35.28 Mbit/s
95th percentile per-packet one-way delay: 38.812 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 24.60 Mbit/s
95th percentile per-packet one-way delay: 18.457 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 18.68 Mbit/s
95th percentile per-packet one-way delay: 10.662 ms
Loss rate: 0.85%
```

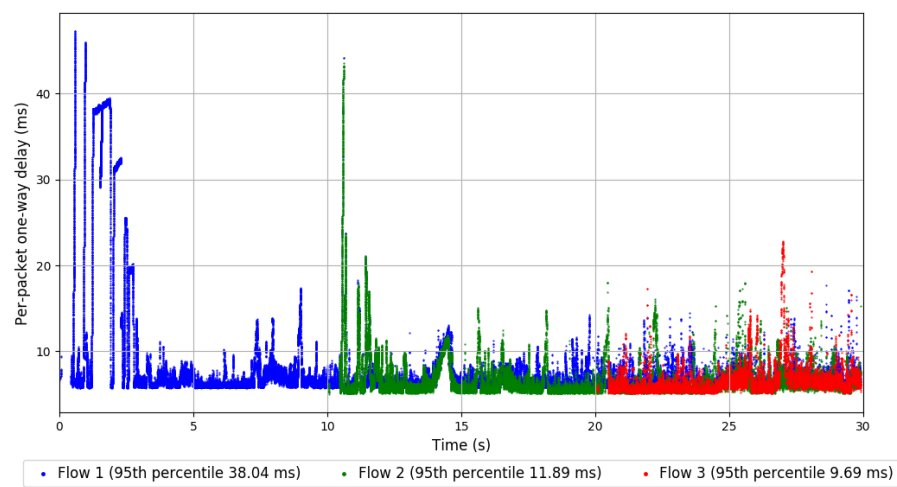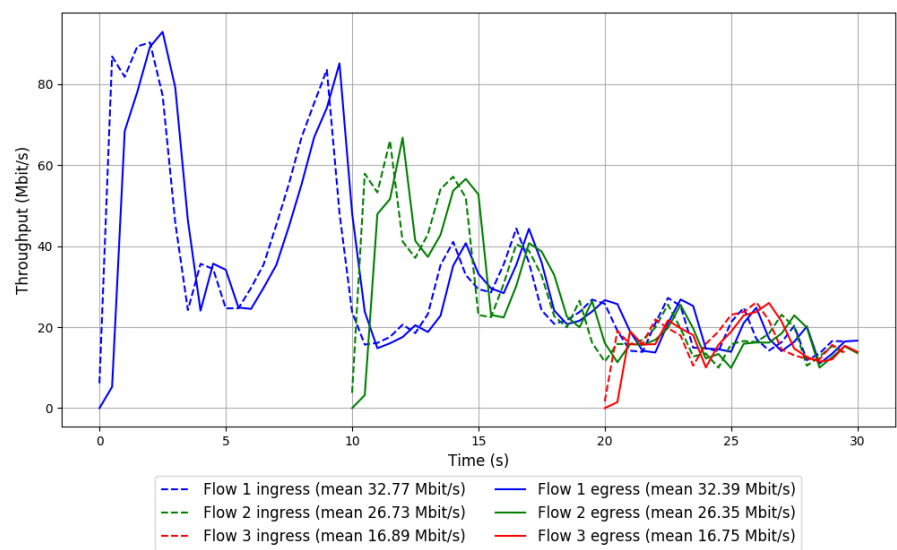Run 2: Report of QUIC Cubic — Data Link
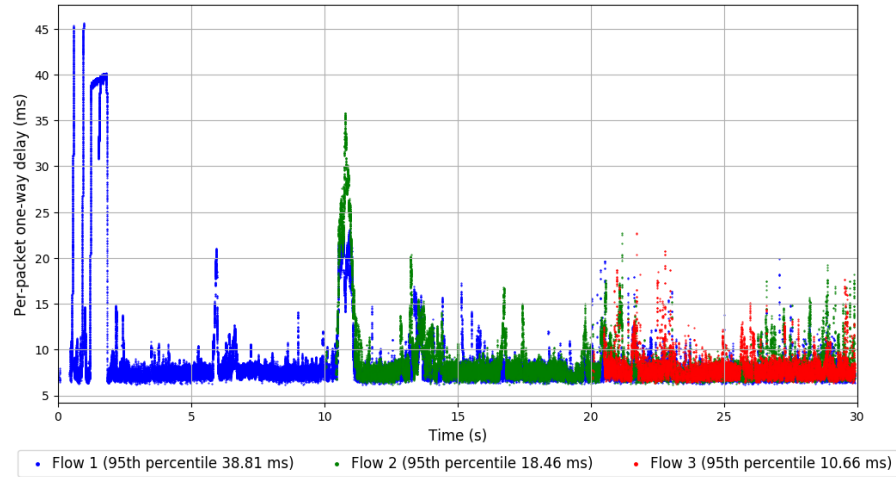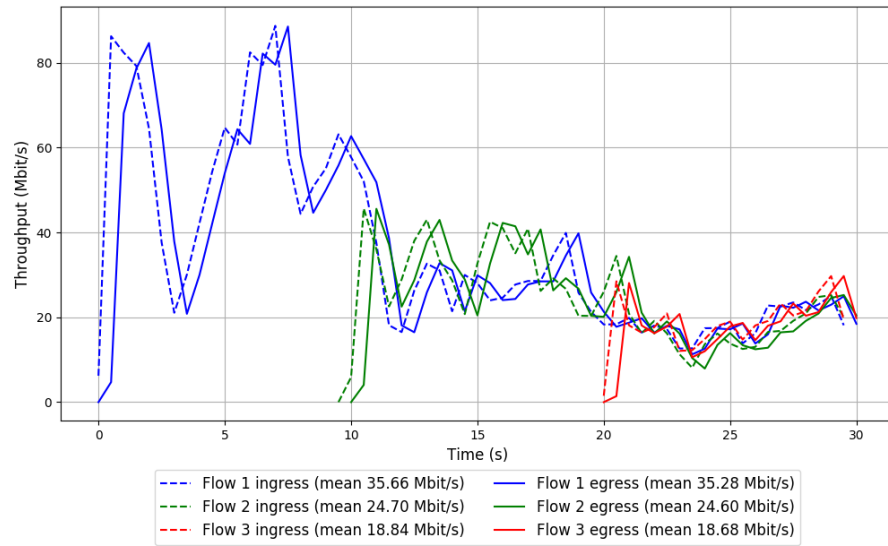
```
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-30 08:10:35
End at: 2018-11-30 08:11:05
Local clock offset: 0.732 ms
Remote clock offset: -0.893 ms


# Below is generated by plot.py at 2018-11-30 09:12:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 31.643 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 32.39 Mbit/s
95th percentile per-packet one-way delay: 38.040 ms
Loss rate: 1.17%
-- Flow 2:
Average throughput: 26.35 Mbit/s
95th percentile per-packet one-way delay: 11.891 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 16.75 Mbit/s
95th percentile per-packet one-way delay: 9.692 ms
Loss rate: 0.82%
```

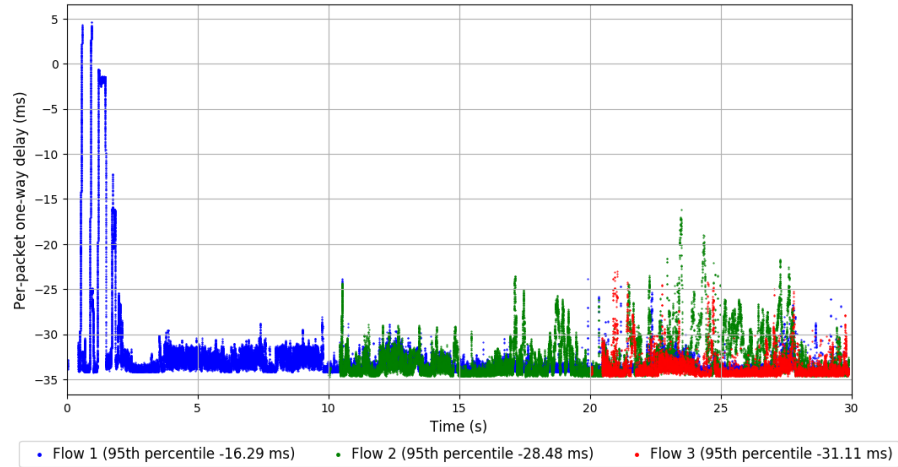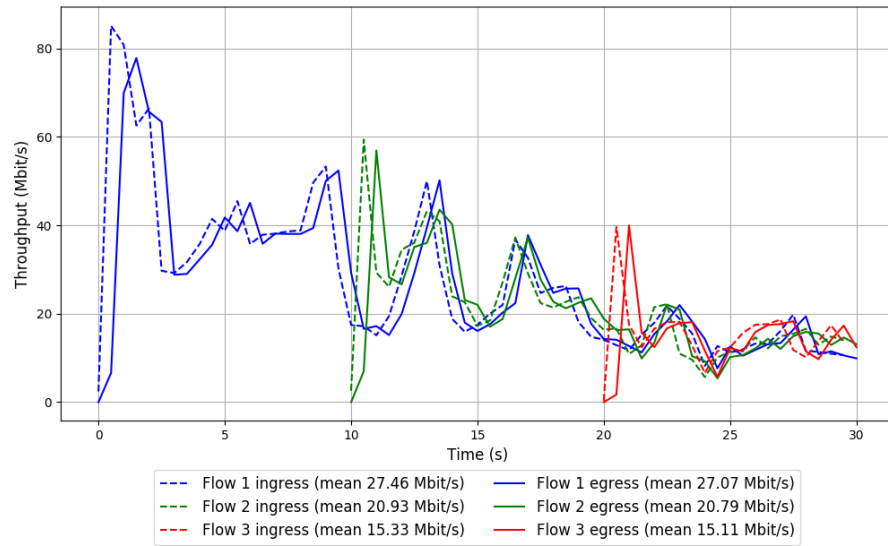Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-30 08:32:42
End at: 2018-11-30 08:33:12
Local clock offset: 0.844 ms
Remote clock offset: -41.089 ms


# Below is generated by plot.py at 2018-11-30 09:12:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.88 Mbit/s
95th percentile per-packet one-way delay: -26.525 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 27.07 Mbit/s
95th percentile per-packet one-way delay: -16.291 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 20.79 Mbit/s
95th percentile per-packet one-way delay: -28.477 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 15.11 Mbit/s
95th percentile per-packet one-way delay: -31.111 ms
Loss rate: 1.42%
```
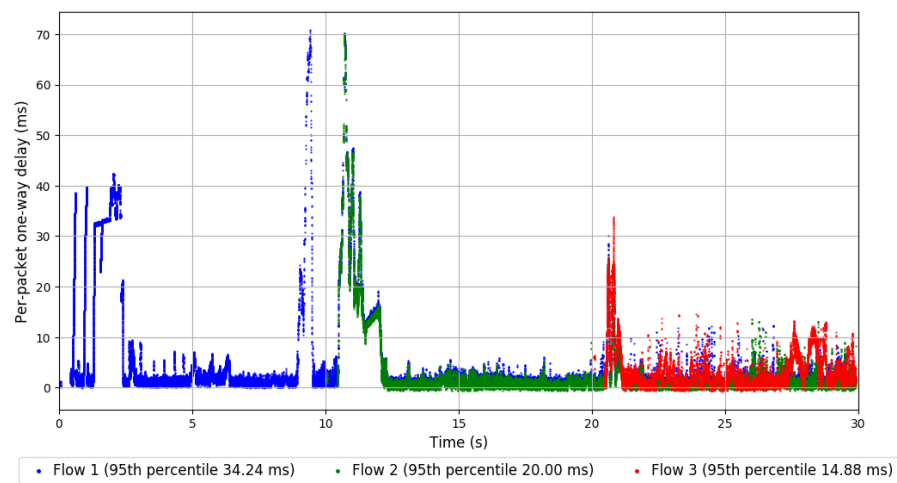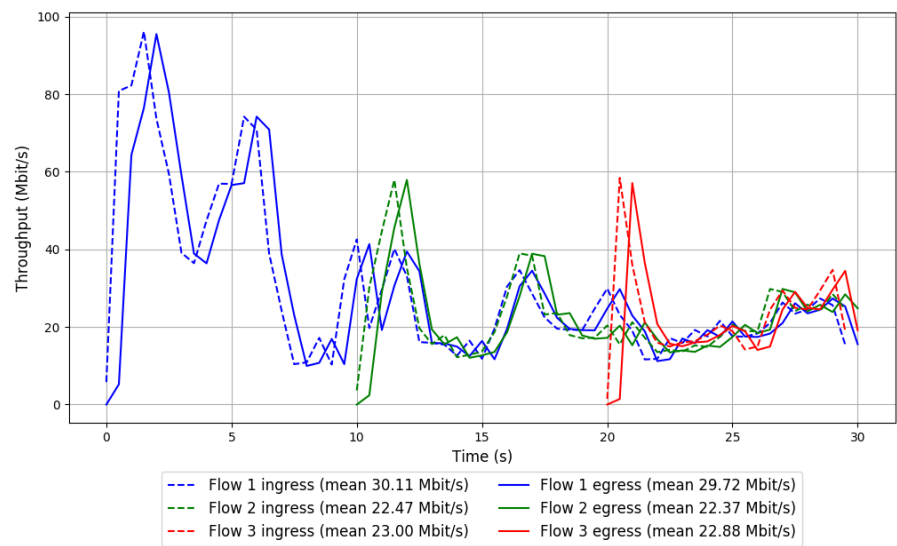
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 27.46 Mbit/s)   Flow 1 egress (mean 27.07 Mbit/s)
Flow 2 ingress (mean 20.93 Mbit/s)   Flow 2 egress (mean 20.79 Mbit/s)
Flow 3 ingress (mean 15.33 Mbit/s)   Flow 3 egress (mean 15.11 Mbit/s)

Flow 1 (95th percentile -16.29 ms)   Flow 2 (95th percentile -28.48 ms)   Flow 3 (95th percentile -31.11 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-30 08:54:55
End at: 2018-11-30 08:55:25
Local clock offset: 1.447 ms
Remote clock offset: -5.387 ms


# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.14 Mbit/s
95th percentile per-packet one-way delay: 33.095 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 29.72 Mbit/s
95th percentile per-packet one-way delay: 34.236 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 22.37 Mbit/s
95th percentile per-packet one-way delay: 19.998 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 22.88 Mbit/s
95th percentile per-packet one-way delay: 14.882 ms
Loss rate: 0.48%
```

Run 5: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 30.11 Mbit/s) — Flow 1 egress (mean 29.72 Mbit/s)
- - - Flow 2 ingress (mean 22.47 Mbit/s) — Flow 2 egress (mean 22.37 Mbit/s)
- - - Flow 3 ingress (mean 23.00 Mbit/s) — Flow 3 egress (mean 22.88 Mbit/s)

- Flow 1 (95th percentile 34.24 ms)   • Flow 2 (95th percentile 20.00 ms)   • Flow 3 (95th percentile 14.88 ms)
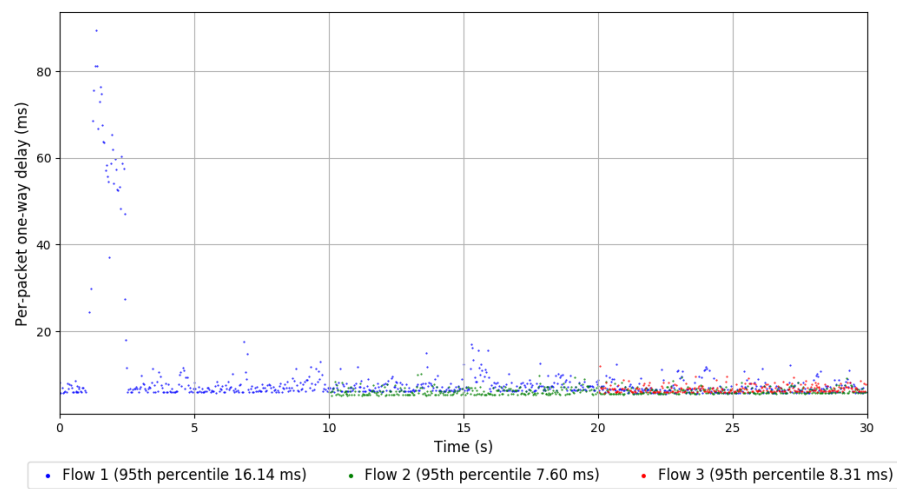
```
Run 1: Statistics of SCReAM

Start at: 2018-11-30 07:29:38
End at: 2018-11-30 07:30:08
Local clock offset: 1.676 ms
Remote clock offset: -3.271 ms

# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 10.879 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 9.190 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 11.328 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 16.653 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link
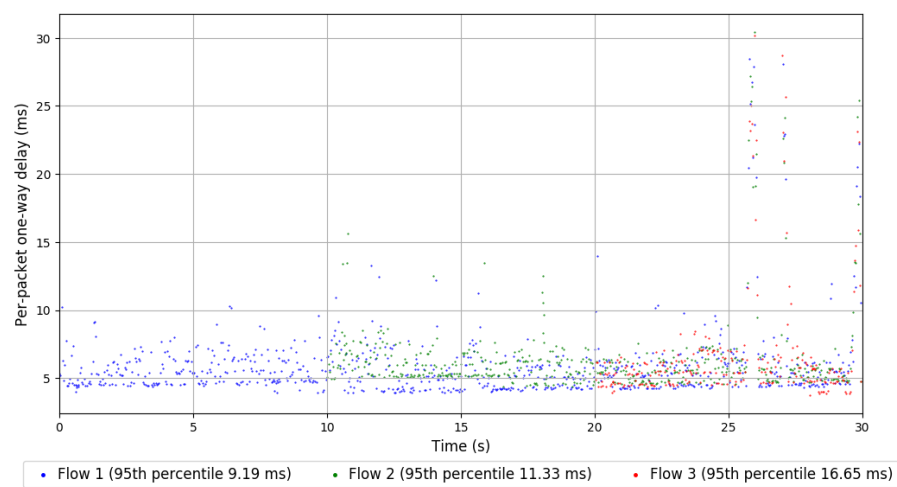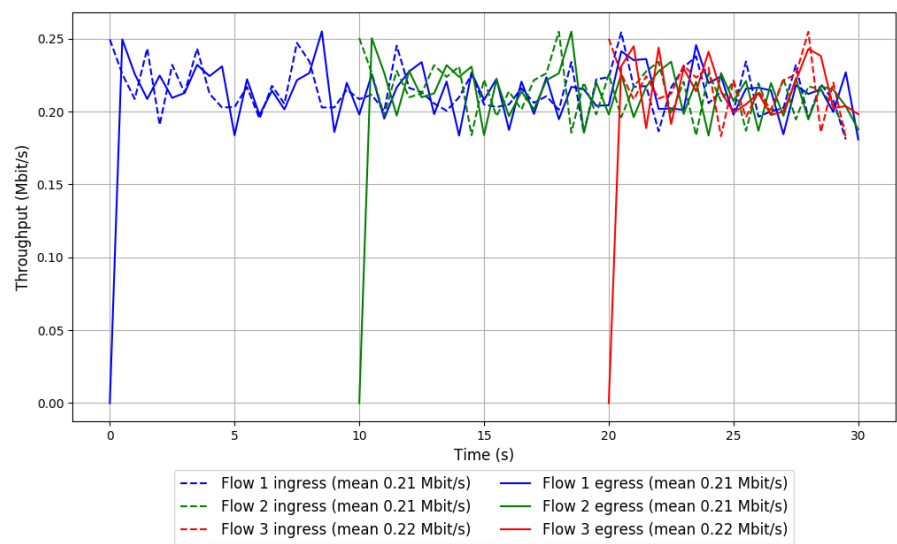
```
Run 2: Statistics of SCReAM

Start at: 2018-11-30 07:51:56
End at: 2018-11-30 07:52:26
Local clock offset: 1.607 ms
Remote clock offset: -0.947 ms

# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 10.778 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 16.144 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 7.603 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 8.306 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link
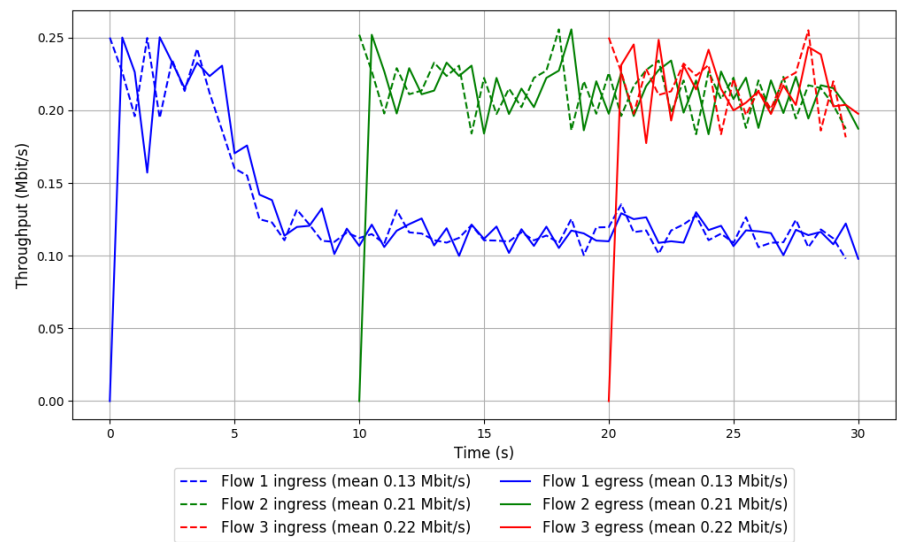
```
Run 3: Statistics of SCReAM

Start at: 2018-11-30 08:14:12
End at: 2018-11-30 08:14:42
Local clock offset: 1.586 ms
Remote clock offset: -57.336 ms


# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: -47.936 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: -47.753 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: -47.727 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -49.507 ms
Loss rate: 0.00%
```

# Run 3: Report of SCReAM — Data Link
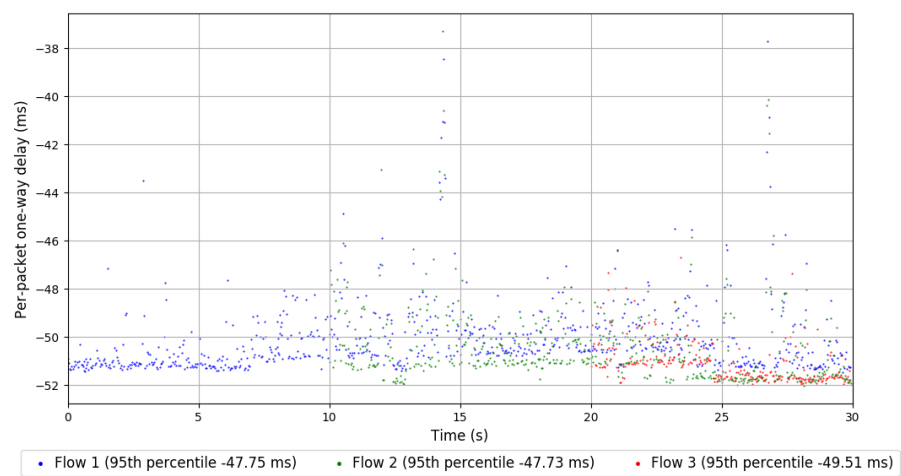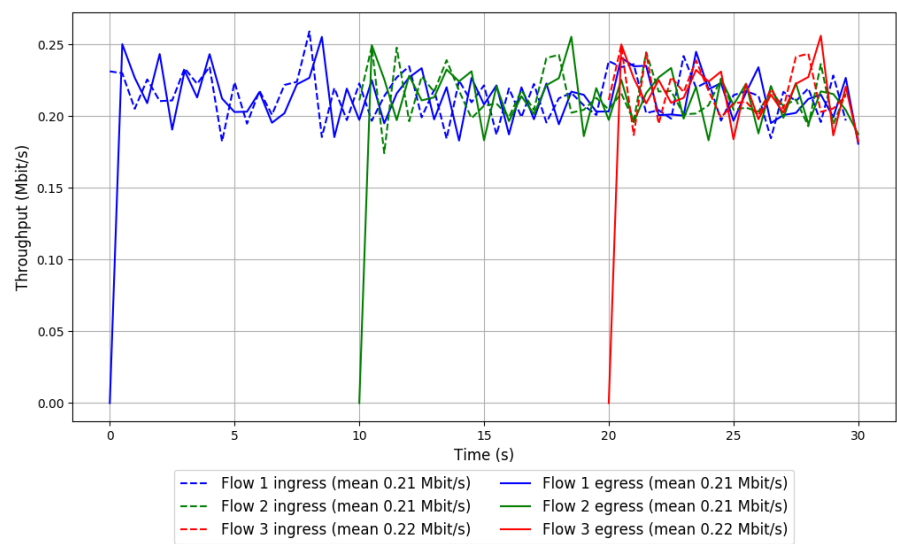
```
Run 4: Statistics of SCReAM

Start at: 2018-11-30 08:36:17
End at: 2018-11-30 08:36:47
Local clock offset: -0.293 ms
Remote clock offset: -0.251 ms


# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 11.648 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 11.623 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 11.944 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 11.037 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link
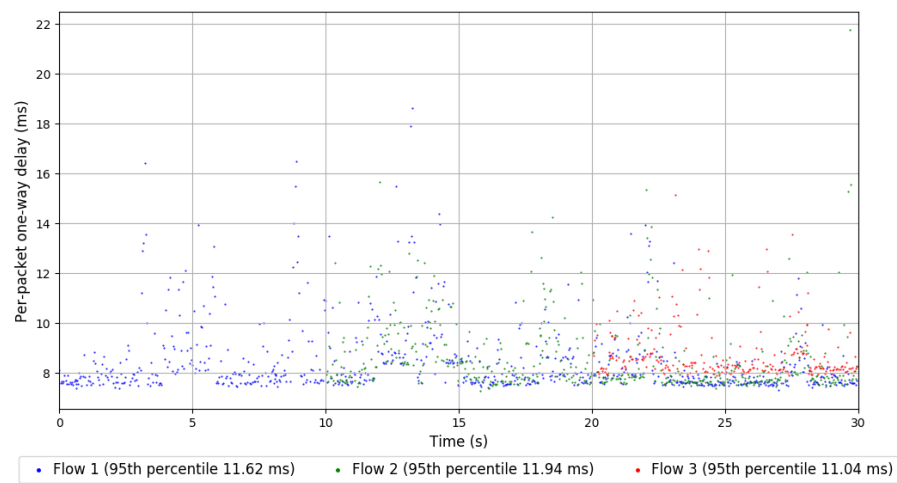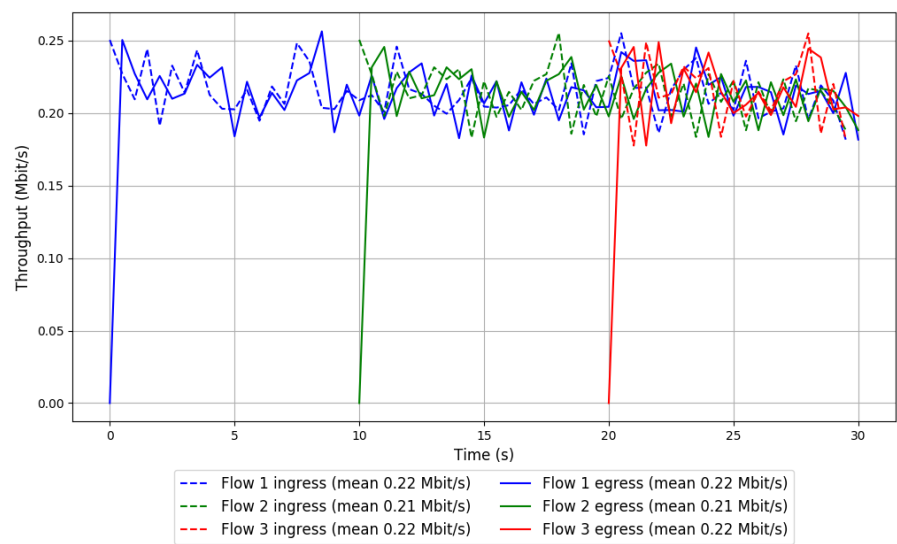
```
Run 5: Statistics of SCReAM

Start at: 2018-11-30 08:58:28
End at: 2018-11-30 08:58:58
Local clock offset: 0.959 ms
Remote clock offset: -1.046 ms


# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 9.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 8.511 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 10.262 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 8.618 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link
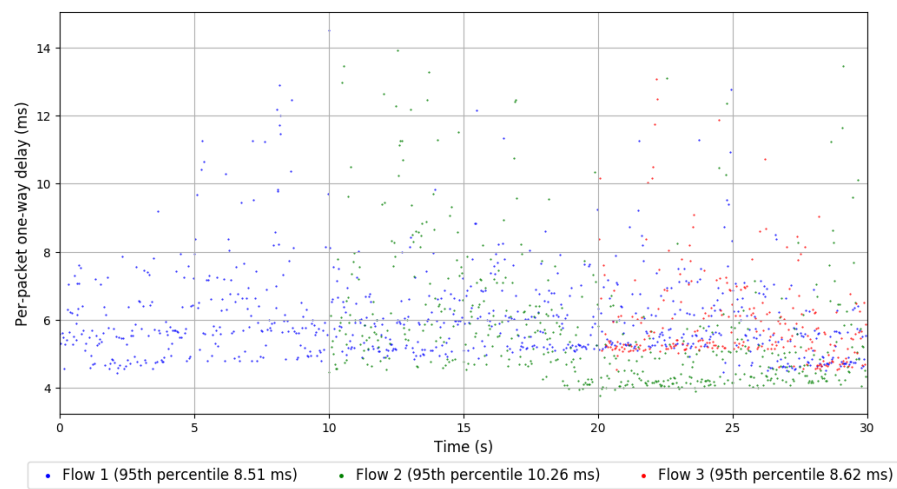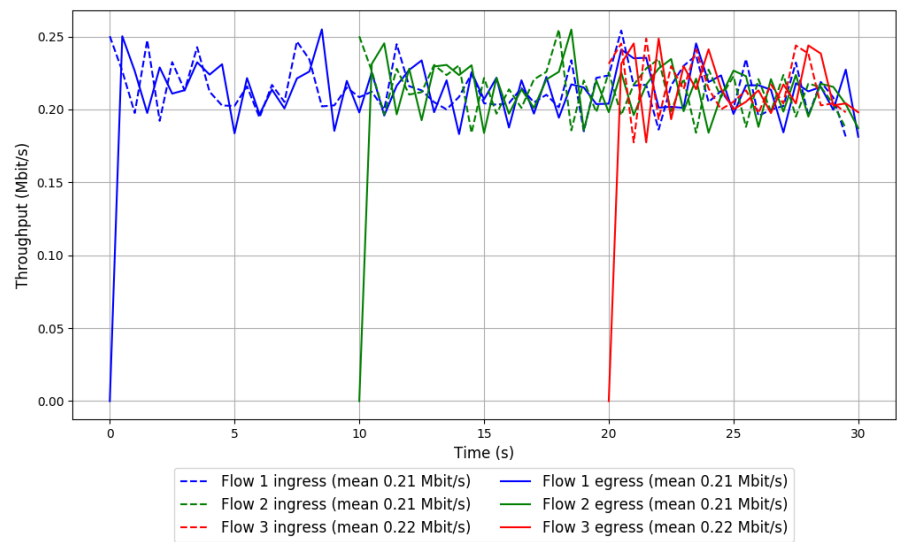
```
Run 1: Statistics of Sprout

Start at: 2018-11-30 07:34:14
End at: 2018-11-30 07:34:44
Local clock offset: 1.895 ms
Remote clock offset: -13.138 ms


# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.38 Mbit/s
95th percentile per-packet one-way delay: 4.843 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 24.46 Mbit/s
95th percentile per-packet one-way delay: 4.754 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 24.12 Mbit/s
95th percentile per-packet one-way delay: 5.168 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 23.78 Mbit/s
95th percentile per-packet one-way delay: 3.965 ms
Loss rate: 0.74%
```

Run 1: Report of Sprout — Data Link
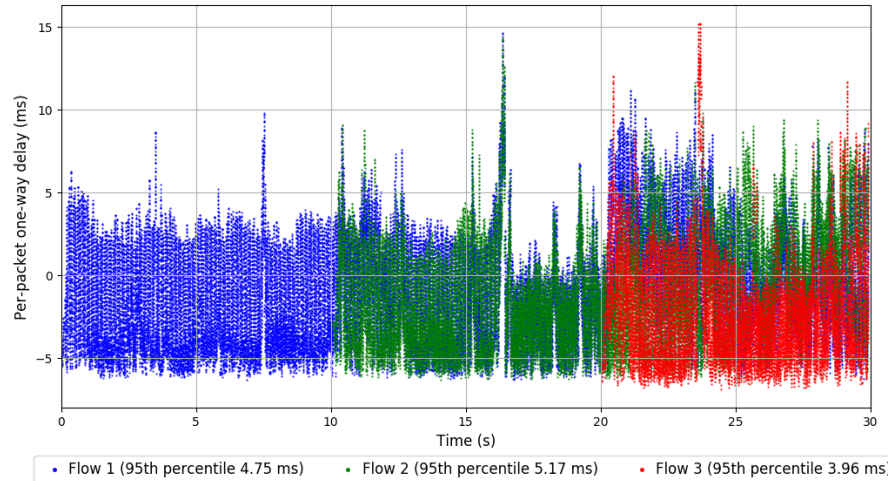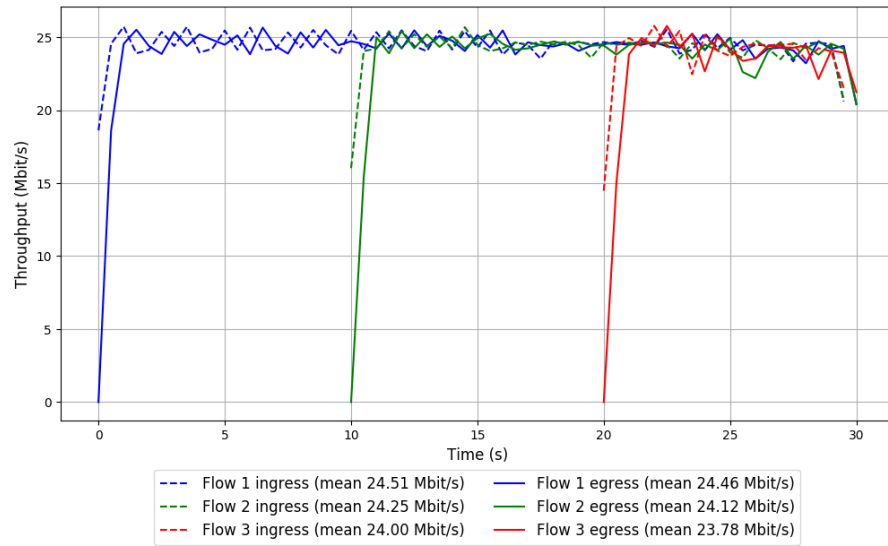
```
Run 2: Statistics of Sprout

Start at: 2018-11-30 07:56:29
End at: 2018-11-30 07:56:59
Local clock offset: 1.159 ms
Remote clock offset: -2.185 ms


# Below is generated by plot.py at 2018-11-30 09:12:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.42 Mbit/s
95th percentile per-packet one-way delay: 14.891 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 24.05 Mbit/s
95th percentile per-packet one-way delay: 14.678 ms
Loss rate: 1.36%
-- Flow 2:
Average throughput: 23.74 Mbit/s
95th percentile per-packet one-way delay: 14.050 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 22.92 Mbit/s
95th percentile per-packet one-way delay: 16.362 ms
Loss rate: 2.96%
```

Run 2: Report of Sprout — Data Link
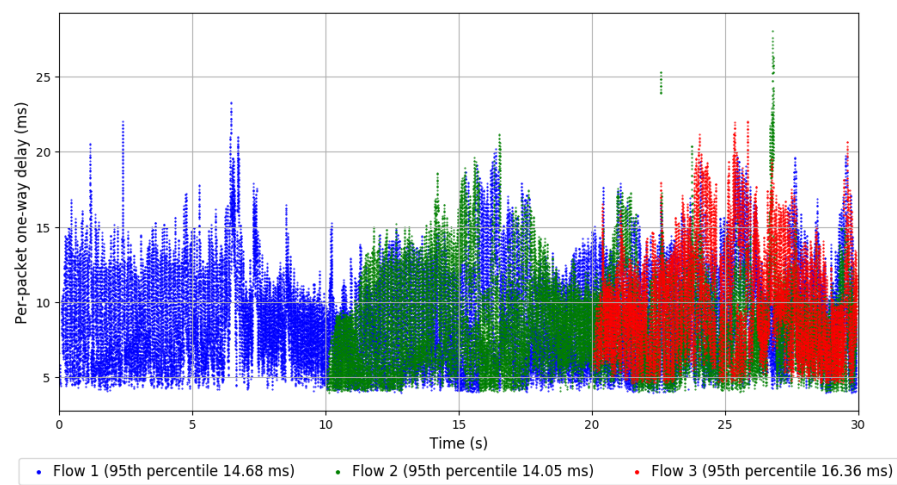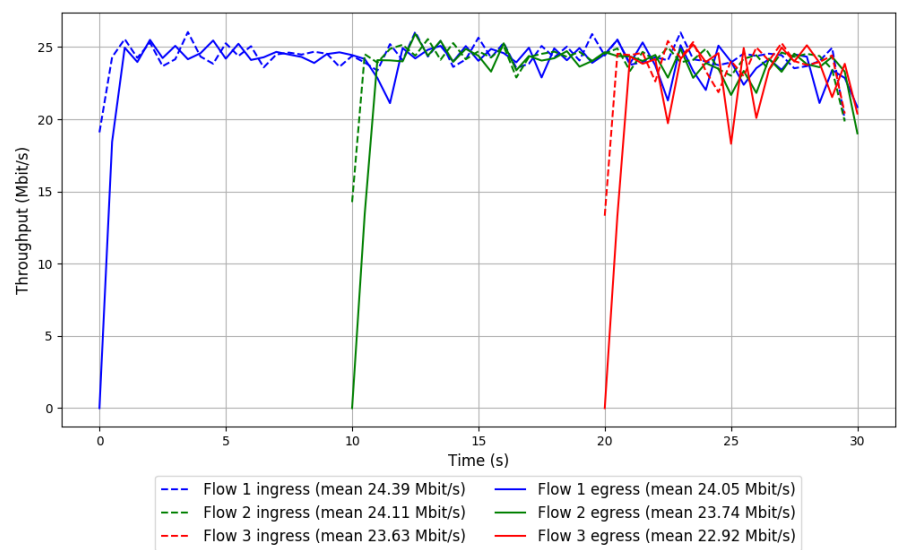
```
Run 3: Statistics of Sprout

Start at: 2018-11-30 08:18:44
End at: 2018-11-30 08:19:14
Local clock offset: 2.239 ms
Remote clock offset: -21.601 ms


# Below is generated by plot.py at 2018-11-30 09:12:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.80 Mbit/s
95th percentile per-packet one-way delay: -5.269 ms
Loss rate: 6.05%
-- Flow 1:
Average throughput: 22.16 Mbit/s
95th percentile per-packet one-way delay: -4.536 ms
Loss rate: 5.34%
-- Flow 2:
Average throughput: 21.90 Mbit/s
95th percentile per-packet one-way delay: -5.761 ms
Loss rate: 6.39%
-- Flow 3:
Average throughput: 21.35 Mbit/s
95th percentile per-packet one-way delay: -6.624 ms
Loss rate: 7.57%
```
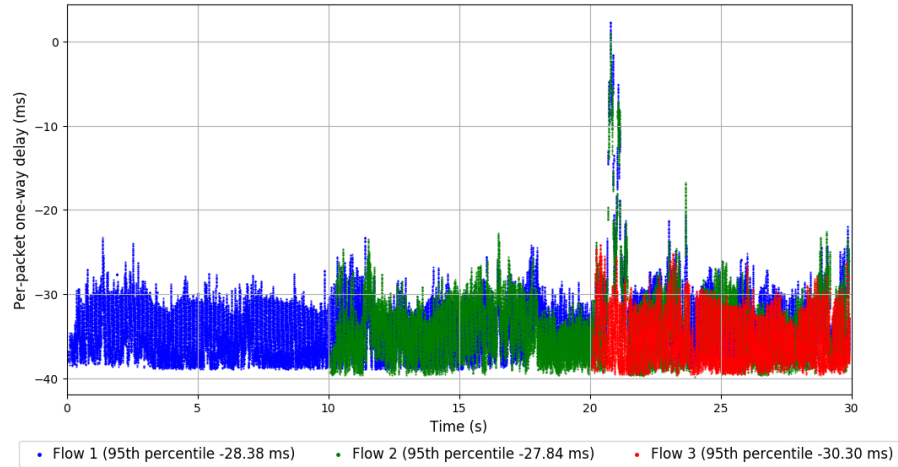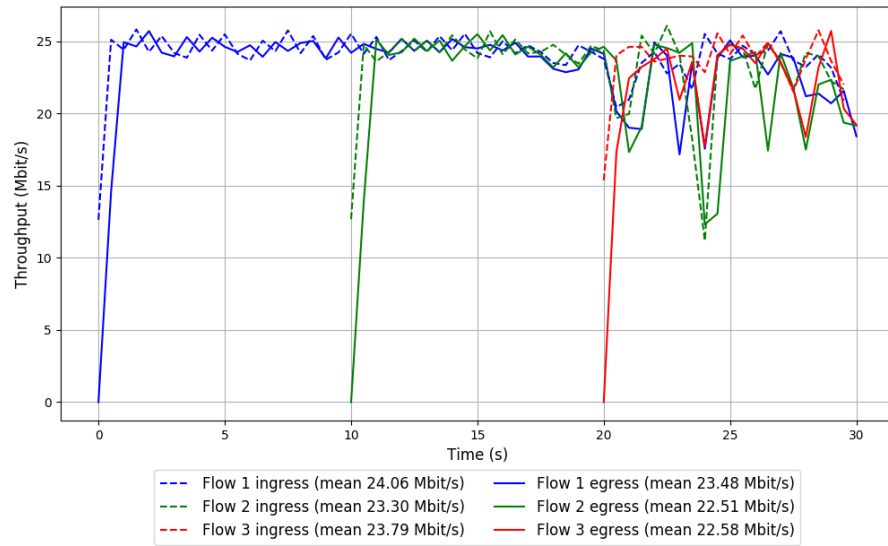
Run 3: Report of Sprout — Data Link
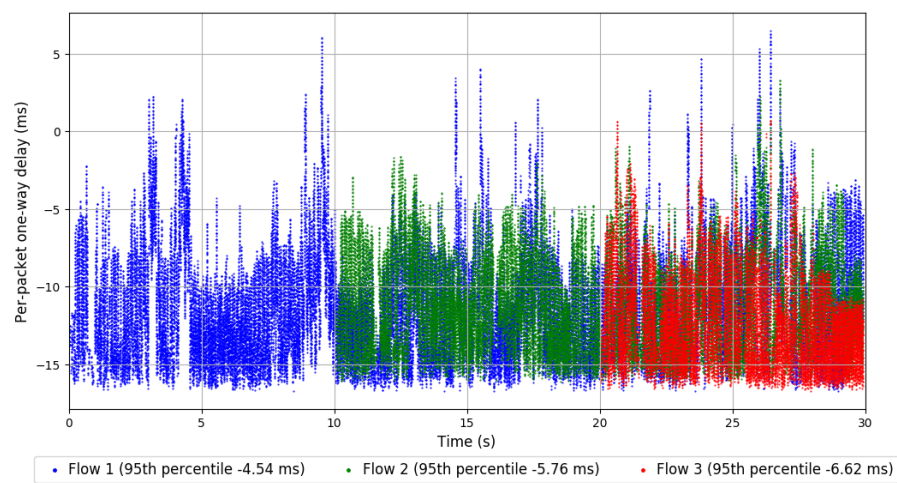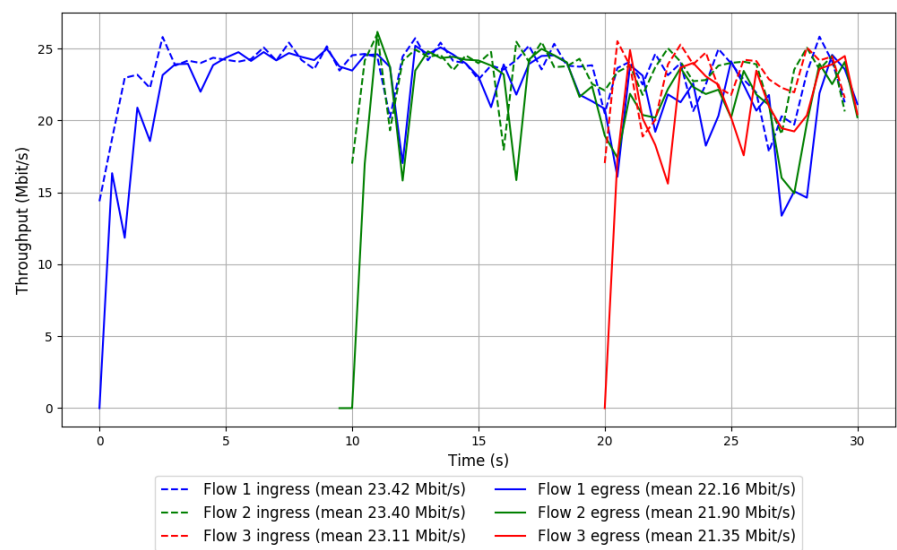
```
Run 4: Statistics of Sprout

Start at: 2018-11-30 08:40:51
End at: 2018-11-30 08:41:21
Local clock offset: -15.076 ms
Remote clock offset: -62.056 ms


# Below is generated by plot.py at 2018-11-30 09:13:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.92 Mbit/s
95th percentile per-packet one-way delay: -28.468 ms
Loss rate: 3.14%
-- Flow 1:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: -28.379 ms
Loss rate: 2.38%
-- Flow 2:
Average throughput: 22.51 Mbit/s
95th percentile per-packet one-way delay: -27.840 ms
Loss rate: 3.35%
-- Flow 3:
Average throughput: 22.58 Mbit/s
95th percentile per-packet one-way delay: -30.303 ms
Loss rate: 5.05%
```

Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 24.06 Mbit/s)   Flow 1 egress (mean 23.48 Mbit/s)
Flow 2 ingress (mean 23.30 Mbit/s)   Flow 2 egress (mean 22.51 Mbit/s)
Flow 3 ingress (mean 23.79 Mbit/s)   Flow 3 egress (mean 22.58 Mbit/s)

Flow 1 (95th percentile -28.38 ms)   Flow 2 (95th percentile -27.84 ms)   Flow 3 (95th percentile -30.30 ms)
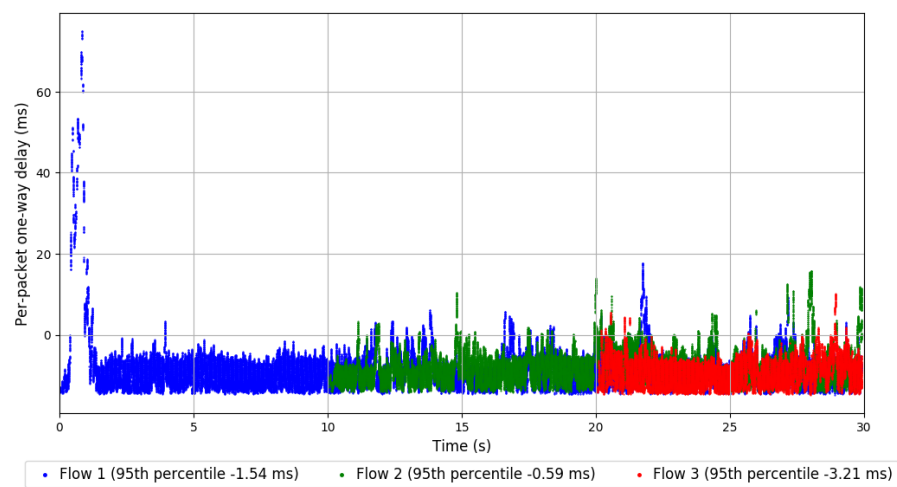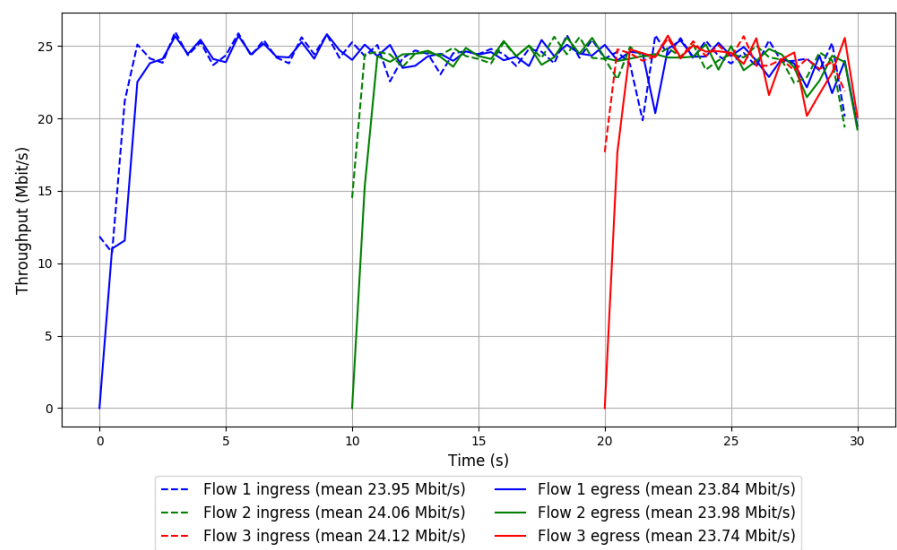
```
Run 5: Statistics of Sprout

Start at: 2018-11-30 09:03:01
End at: 2018-11-30 09:03:31
Local clock offset: 3.094 ms
Remote clock offset: -17.116 ms


# Below is generated by plot.py at 2018-11-30 09:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.64 Mbit/s
95th percentile per-packet one-way delay: -1.450 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 23.84 Mbit/s
95th percentile per-packet one-way delay: -1.543 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 23.98 Mbit/s
95th percentile per-packet one-way delay: -0.594 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 23.74 Mbit/s
95th percentile per-packet one-way delay: -3.209 ms
Loss rate: 1.53%
```
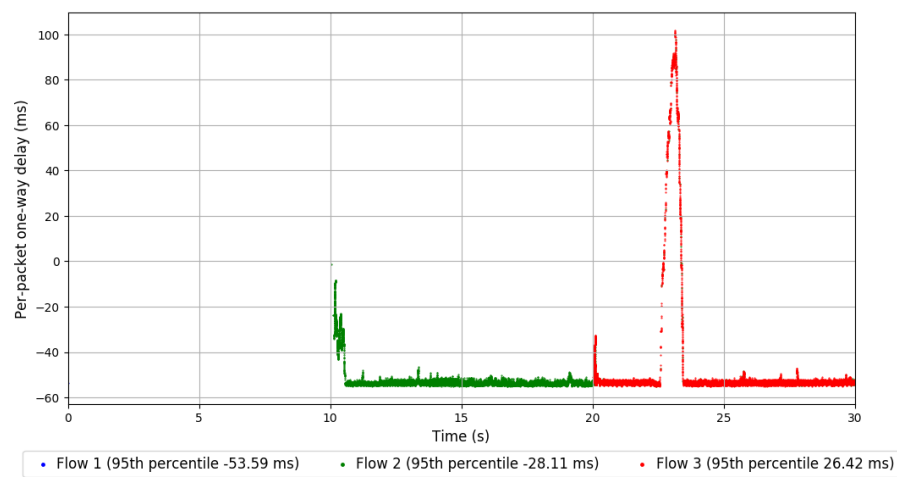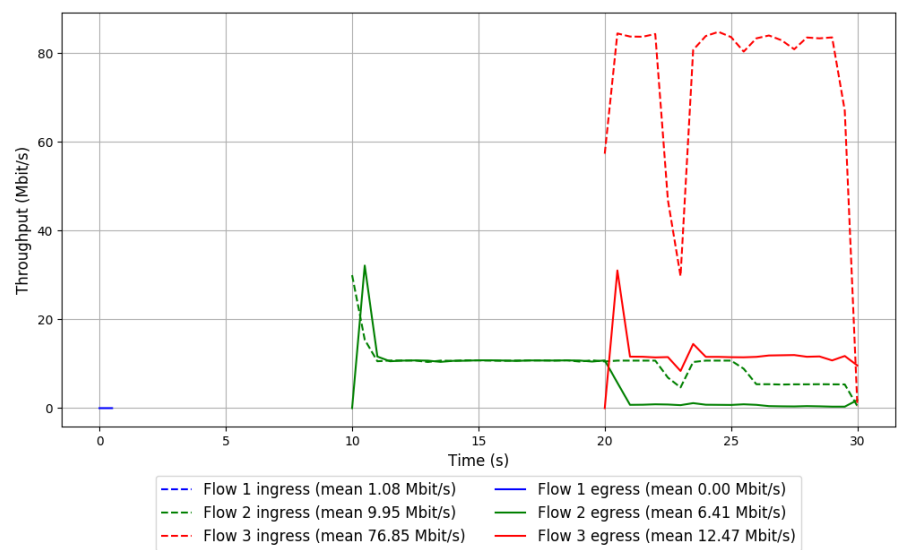
Run 5: Report of Sprout — Data Link

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

Start at: 2018-11-30 07:31:59
End at: 2018-11-30 07:32:29
Local clock offset: -0.004 ms
Remote clock offset: -63.489 ms

# Below is generated by plot.py at 2018-11-30 09:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: -24.844 ms
Loss rate: 73.88%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: -53.592 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: -28.112 ms
Loss rate: 35.76%
-- Flow 3:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 26.420 ms
Loss rate: 83.77%
```

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

Flow 1 ingress (mean 1.08 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 9.95 Mbit/s) --- Flow 2 egress (mean 6.41 Mbit/s)
Flow 3 ingress (mean 76.85 Mbit/s) --- Flow 3 egress (mean 12.47 Mbit/s)

Flow 1 (95th percentile -53.59 ms) Flow 2 (95th percentile -28.11 ms) Flow 3 (95th percentile 26.42 ms)
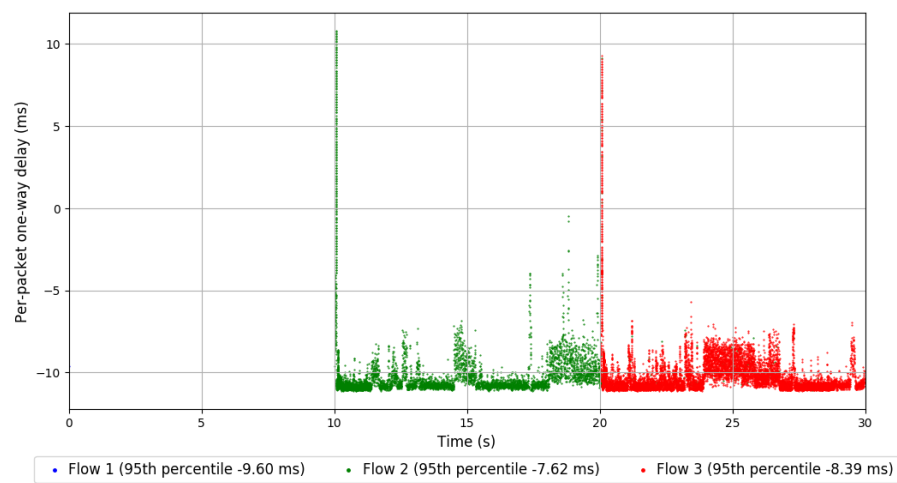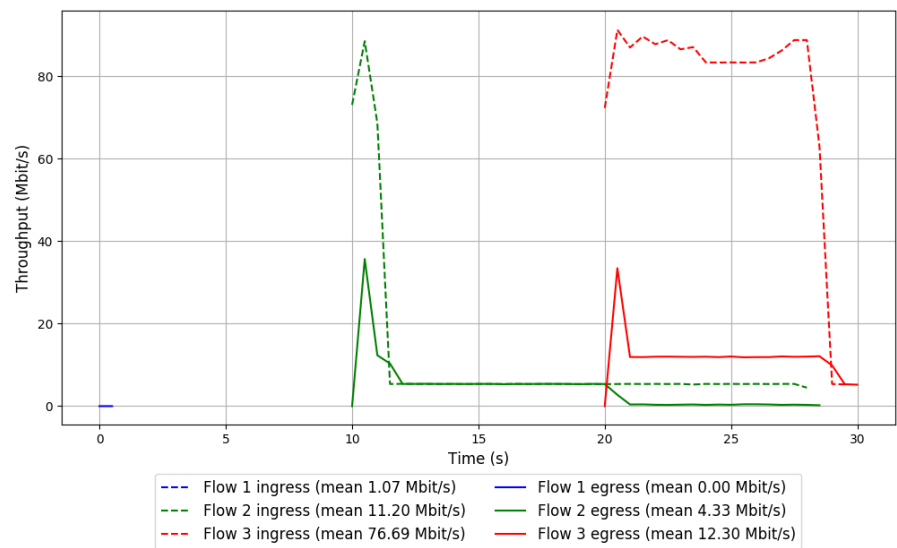
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```
Run 2: Statistics of TaoVA-100x

Start at: 2018-11-30 07:54:12
End at: 2018-11-30 07:54:42
Local clock offset: 0.174 ms
Remote clock offset: -18.437 ms

# Below is generated by plot.py at 2018-11-30 09:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: -8.232 ms
Loss rate: 79.21%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: -9.599 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: -7.617 ms
Loss rate: 61.58%
-- Flow 3:
Average throughput: 12.30 Mbit/s
95th percentile per-packet one-way delay: -8.389 ms
Loss rate: 83.96%
```

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

Flow 1 ingress (mean 1.07 Mbit/s) Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 11.20 Mbit/s) Flow 2 egress (mean 4.33 Mbit/s)
Flow 3 ingress (mean 76.69 Mbit/s) Flow 3 egress (mean 12.30 Mbit/s)

Flow 1 (95th percentile -9.60 ms) Flow 2 (95th percentile -7.62 ms) Flow 3 (95th percentile -8.39 ms)
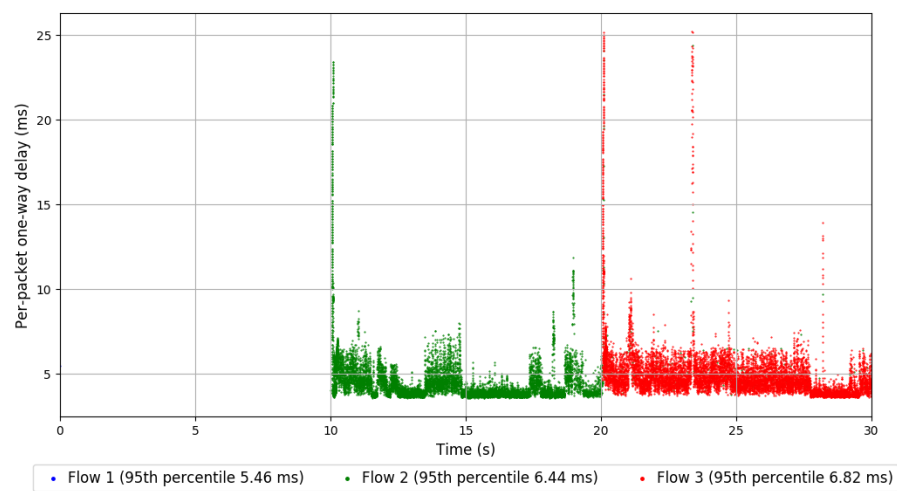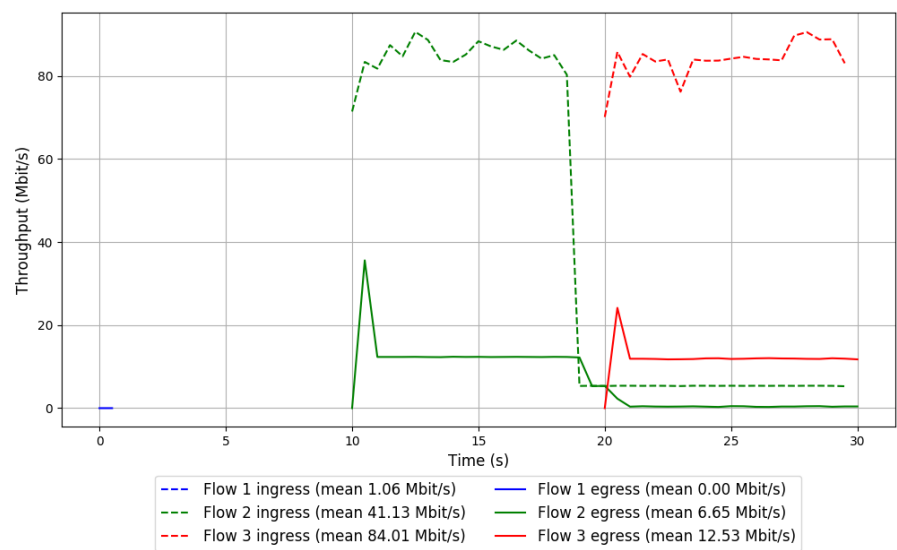
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-11-30 08:16:29
End at: 2018-11-30 08:16:59
Local clock offset: 2.414 ms
Remote clock offset: -0.925 ms

# Below is generated by plot.py at 2018-11-30 09:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.59 Mbit/s
95th percentile per-packet one-way delay: 6.604 ms
Loss rate: 84.48%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5.458 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 6.440 ms
Loss rate: 83.86%
-- Flow 3:
Average throughput: 12.53 Mbit/s
95th percentile per-packet one-way delay: 6.816 ms
Loss rate: 85.08%
```
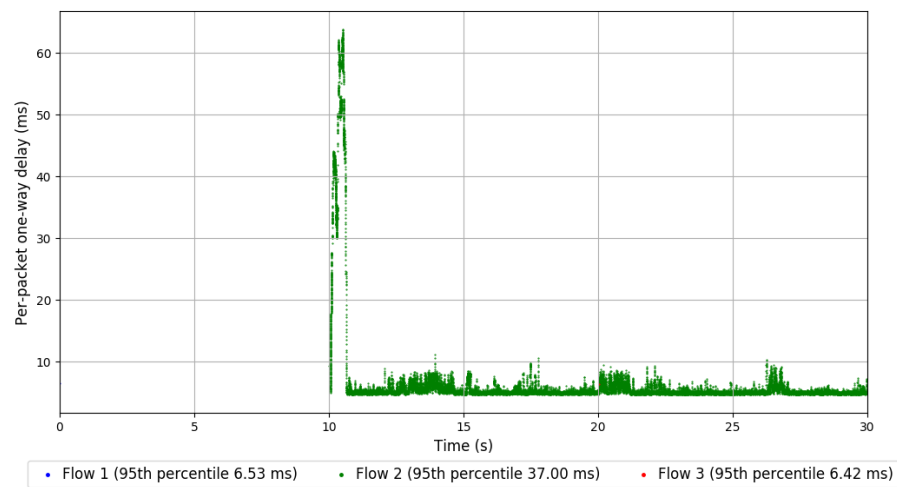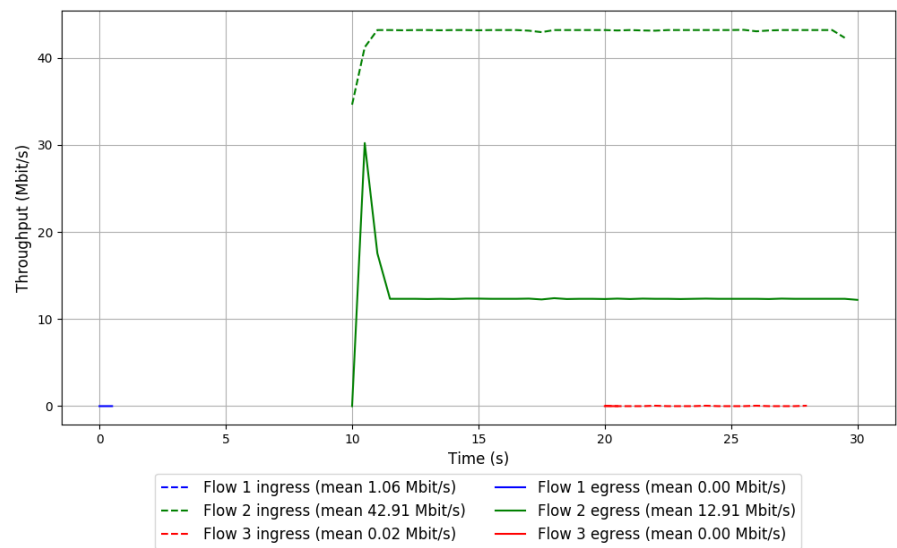
Run 3: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 1.06 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 41.13 Mbit/s) —— Flow 2 egress (mean 6.65 Mbit/s)
- - - Flow 3 ingress (mean 84.01 Mbit/s) —— Flow 3 egress (mean 12.53 Mbit/s)

• Flow 1 (95th percentile 5.46 ms)   • Flow 2 (95th percentile 6.44 ms)   • Flow 3 (95th percentile 6.82 ms)

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

Start at: 2018-11-30 08:38:35
End at: 2018-11-30 08:39:05
Local clock offset: 1.977 ms
Remote clock offset: -0.652 ms

# Below is generated by plot.py at 2018-11-30 09:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: 37.003 ms
Loss rate: 69.92%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6.525 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 12.91 Mbit/s
95th percentile per-packet one-way delay: 37.003 ms
Loss rate: 69.92%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6.423 ms
Loss rate: 99.16%
```

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

- - - Flow 1 ingress (mean 1.06 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 42.91 Mbit/s) —— Flow 2 egress (mean 12.91 Mbit/s)
- - - Flow 3 ingress (mean 0.02 Mbit/s) —— Flow 3 egress (mean 0.00 Mbit/s)

- Flow 1 (95th percentile 6.53 ms) • Flow 2 (95th percentile 37.00 ms) • Flow 3 (95th percentile 6.42 ms)

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

Start at: 2018-11-30 09:00:45
End at: 2018-11-30 09:01:15
Local clock offset: 0.145 ms
Remote clock offset: -15.288 ms


# Below is generated by plot.py at 2018-11-30 09:13:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: -4.001 ms
Loss rate: 79.32%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: -7.775 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: -4.945 ms
Loss rate: 83.03%
-- Flow 3:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: -3.332 ms
Loss rate: 72.05%
```

Run 5: Report of TaoVA-100x — Data Link
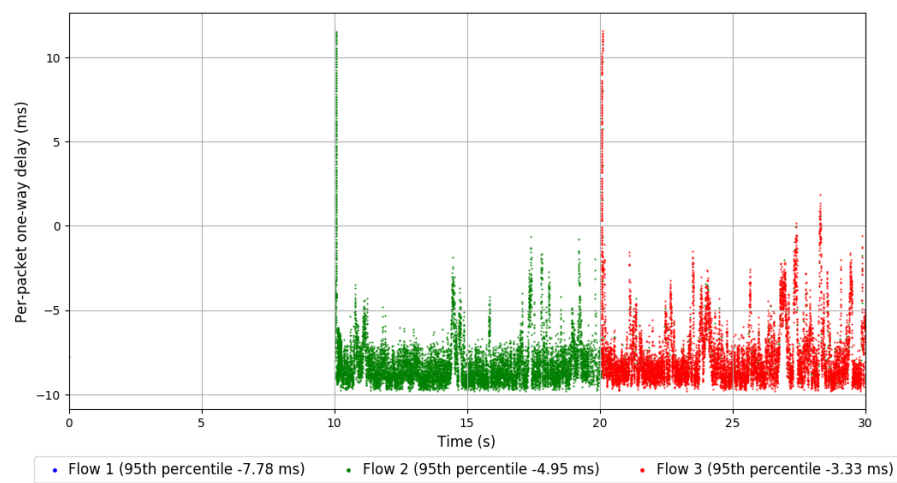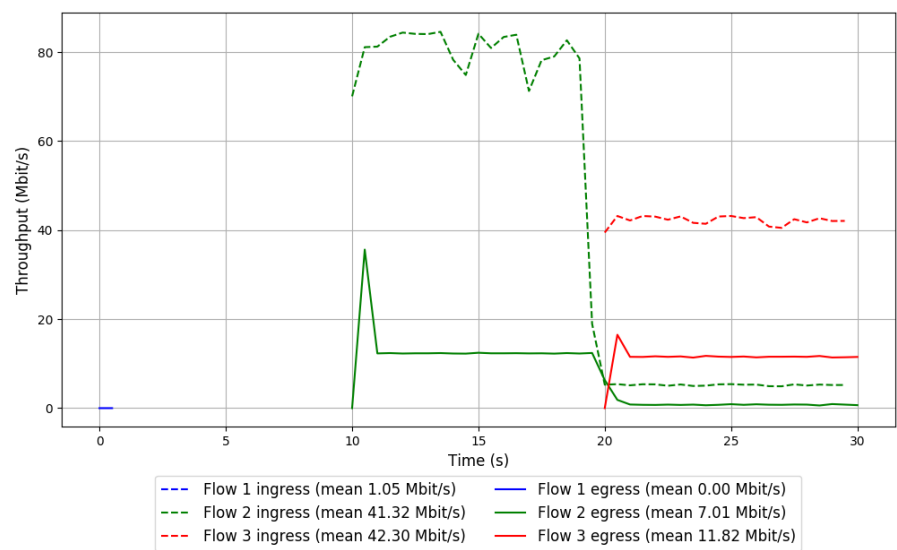
```
Run 1: Statistics of TCP Vegas

Start at: 2018-11-30 07:20:11
End at: 2018-11-30 07:20:41
Local clock offset: -0.931 ms
Remote clock offset: -13.444 ms


# Below is generated by plot.py at 2018-11-30 09:13:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.25 Mbit/s
95th percentile per-packet one-way delay: 1.960 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 22.97 Mbit/s
95th percentile per-packet one-way delay: 5.717 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 14.97 Mbit/s
95th percentile per-packet one-way delay: -0.073 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 12.94 Mbit/s
95th percentile per-packet one-way delay: 2.349 ms
Loss rate: 0.25%
```

Run 1: Report of TCP Vegas — Data Link
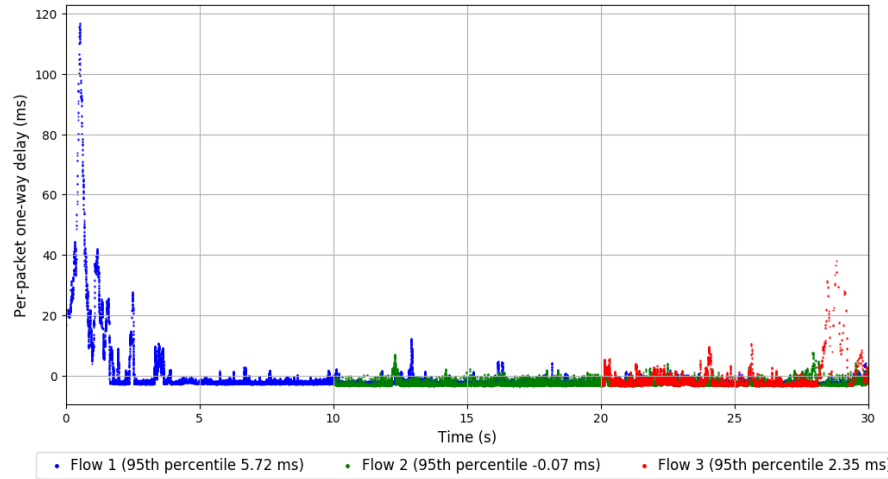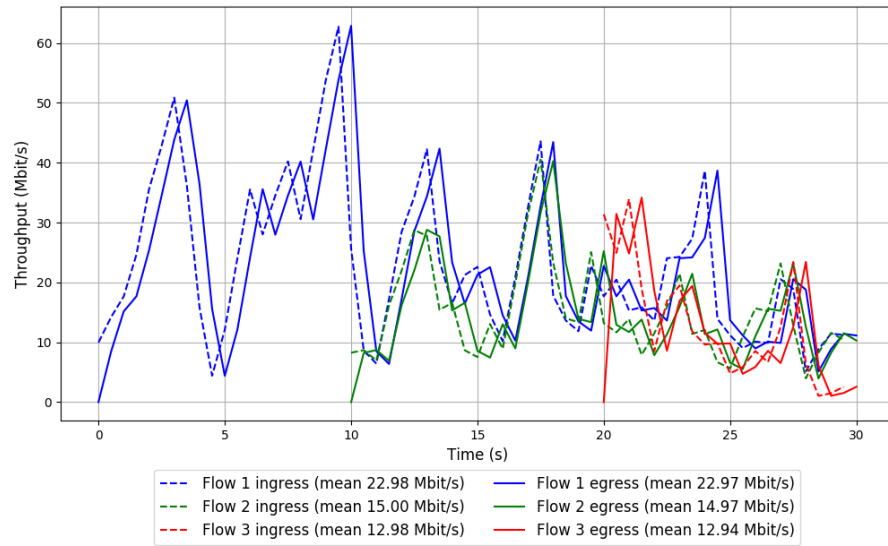
```
Run 2: Statistics of TCP Vegas

Start at: 2018-11-30 07:42:26
End at: 2018-11-30 07:42:56
Local clock offset: 1.386 ms
Remote clock offset: -1.839 ms


# Below is generated by plot.py at 2018-11-30 09:13:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.36 Mbit/s
95th percentile per-packet one-way delay: 16.113 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 29.80 Mbit/s
95th percentile per-packet one-way delay: 17.124 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 25.74 Mbit/s
95th percentile per-packet one-way delay: 8.036 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 31.33 Mbit/s
95th percentile per-packet one-way delay: 12.735 ms
Loss rate: 0.04%
```

Run 2: Report of TCP Vegas — Data Link
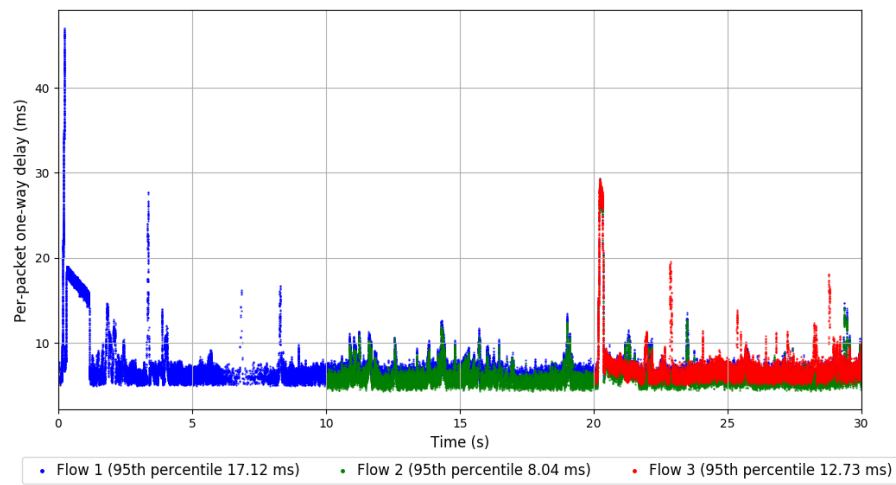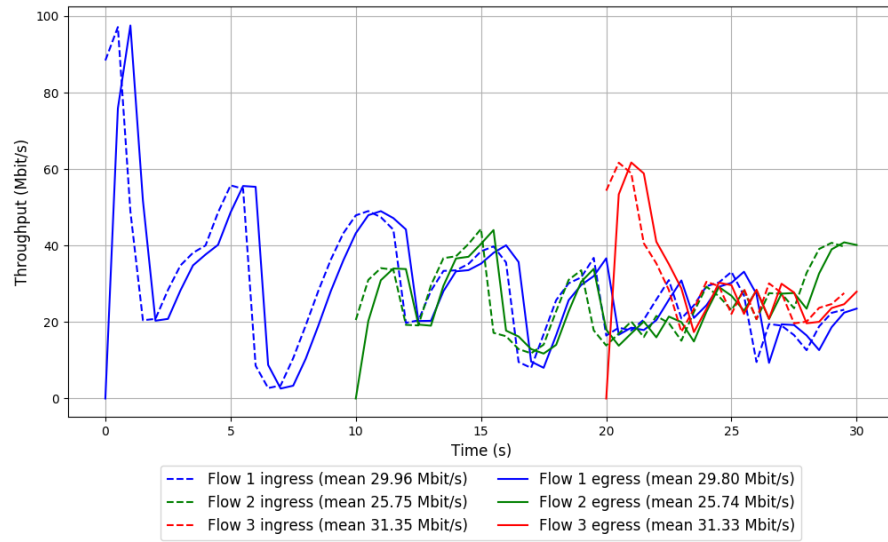
```
Run 3: Statistics of TCP Vegas

Start at: 2018-11-30 08:04:42
End at: 2018-11-30 08:05:12
Local clock offset: -1.302 ms
Remote clock offset: -0.976 ms

# Below is generated by plot.py at 2018-11-30 09:13:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.79 Mbit/s
95th percentile per-packet one-way delay: 29.274 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 35.91 Mbit/s
95th percentile per-packet one-way delay: 20.511 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 28.28 Mbit/s
95th percentile per-packet one-way delay: 31.264 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 18.19 Mbit/s
95th percentile per-packet one-way delay: 29.834 ms
Loss rate: 0.17%
```

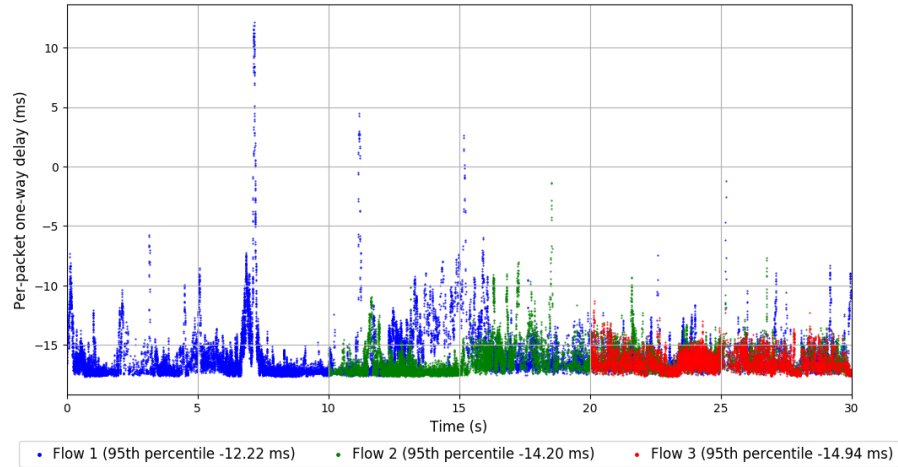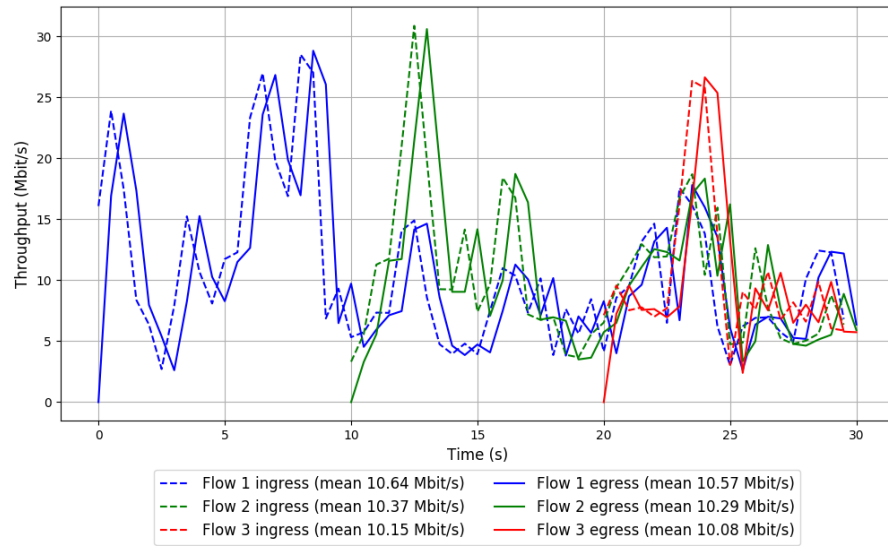Run 3: Report of TCP Vegas — Data Link
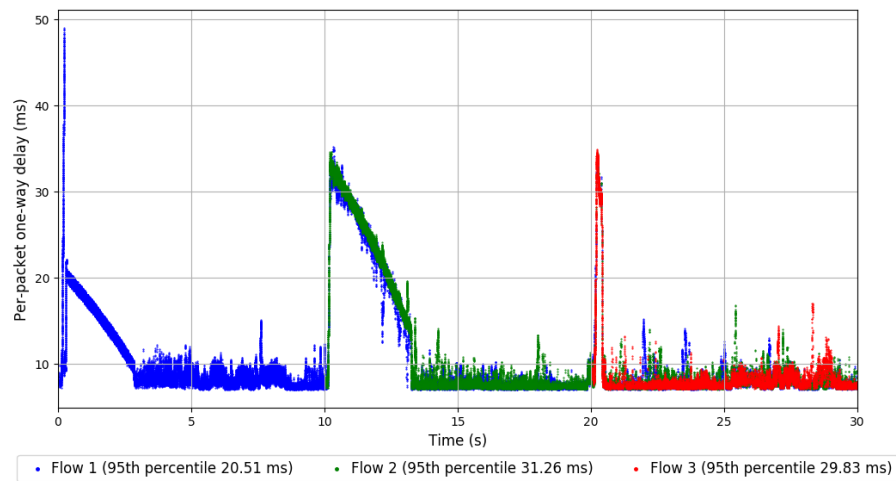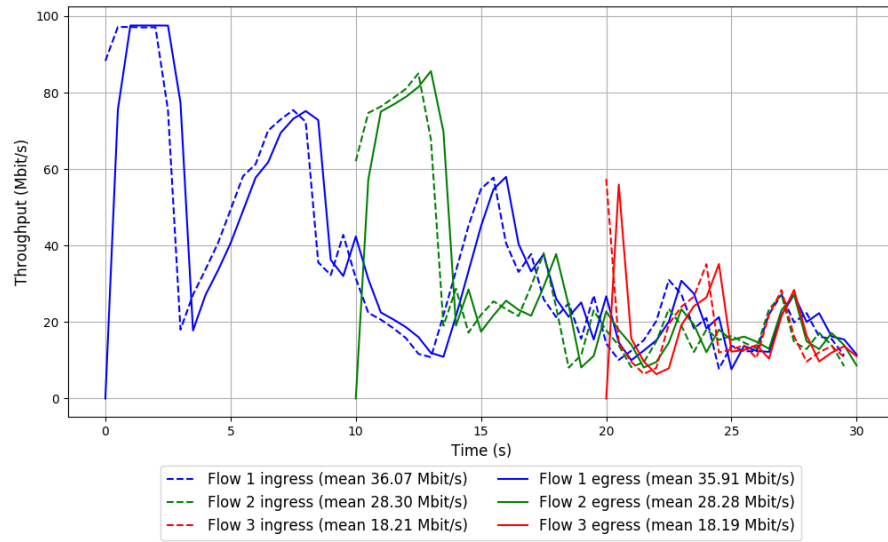
```
Run 4: Statistics of TCP Vegas

Start at: 2018-11-30 08:26:54
End at: 2018-11-30 08:27:24
Local clock offset: 1.761 ms
Remote clock offset: -23.056 ms


# Below is generated by plot.py at 2018-11-30 09:13:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.77 Mbit/s
95th percentile per-packet one-way delay: -13.439 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 10.57 Mbit/s
95th percentile per-packet one-way delay: -12.217 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 10.29 Mbit/s
95th percentile per-packet one-way delay: -14.200 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 10.08 Mbit/s
95th percentile per-packet one-way delay: -14.935 ms
Loss rate: 0.74%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 10.64 Mbit/s)　　　Flow 1 egress (mean 10.57 Mbit/s)
Flow 2 ingress (mean 10.37 Mbit/s)　　　Flow 2 egress (mean 10.29 Mbit/s)
Flow 3 ingress (mean 10.15 Mbit/s)　　　Flow 3 egress (mean 10.08 Mbit/s)

Flow 1 (95th percentile -12.22 ms)　　　Flow 2 (95th percentile -14.20 ms)　　　Flow 3 (95th percentile -14.94 ms)
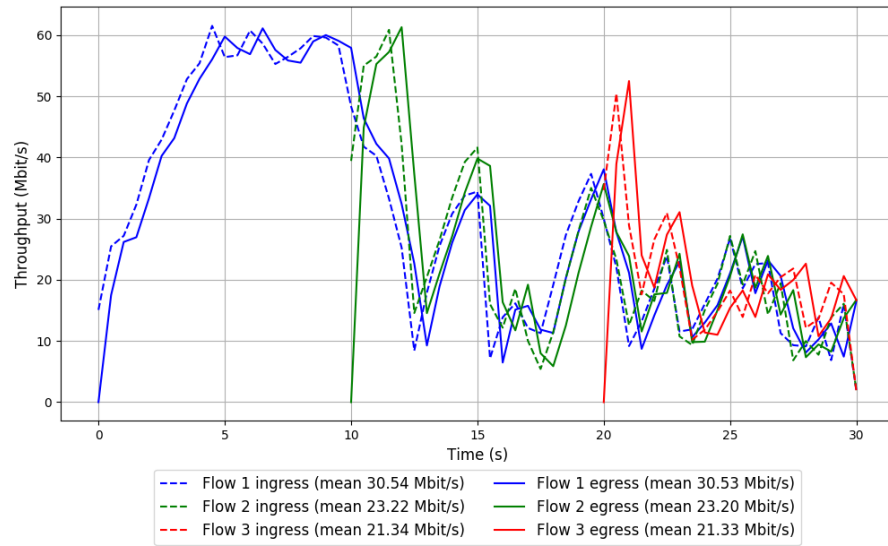
```
Run 5: Statistics of TCP Vegas

Start at: 2018-11-30 08:49:03
End at: 2018-11-30 08:49:33
Local clock offset: 1.743 ms
Remote clock offset: -62.814 ms


# Below is generated by plot.py at 2018-11-30 09:13:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.07 Mbit/s
95th percentile per-packet one-way delay: -47.764 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 30.53 Mbit/s
95th percentile per-packet one-way delay: -49.416 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 23.20 Mbit/s
95th percentile per-packet one-way delay: -47.747 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 21.33 Mbit/s
95th percentile per-packet one-way delay: -44.564 ms
Loss rate: 0.10%
```

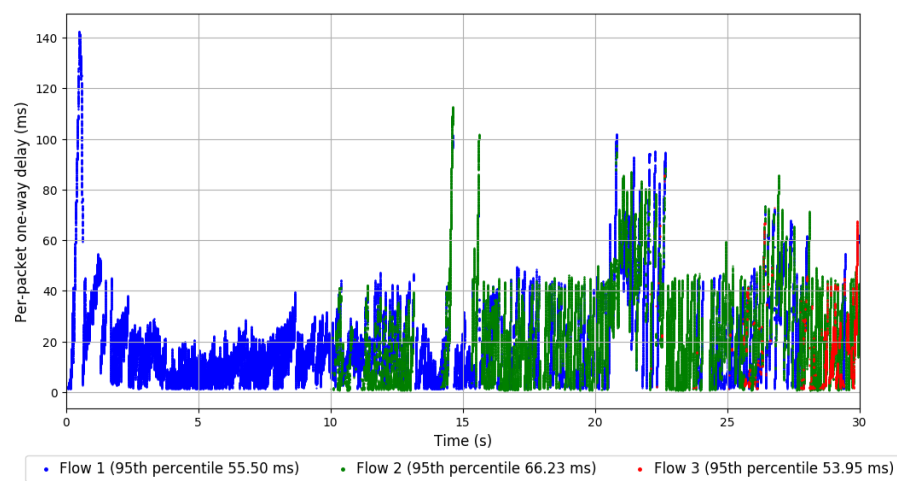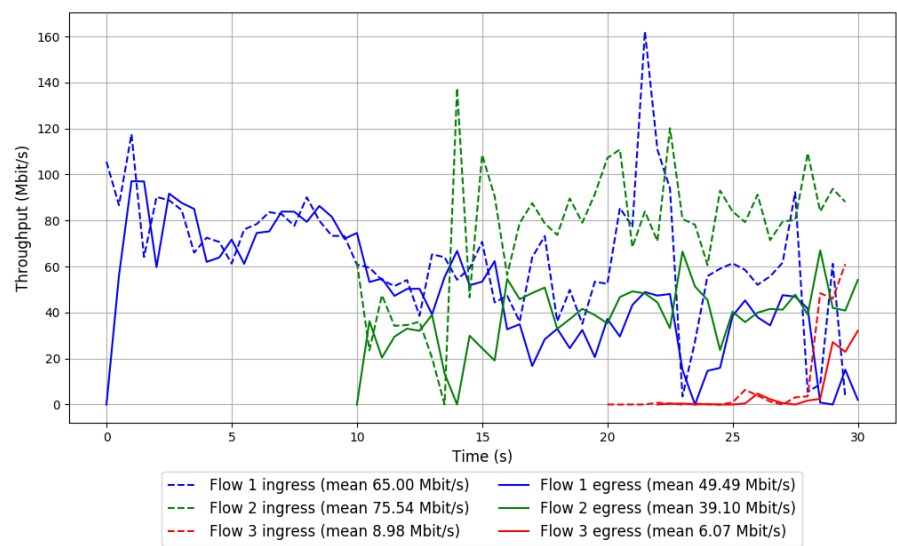# Run 5: Report of TCP Vegas — Data Link
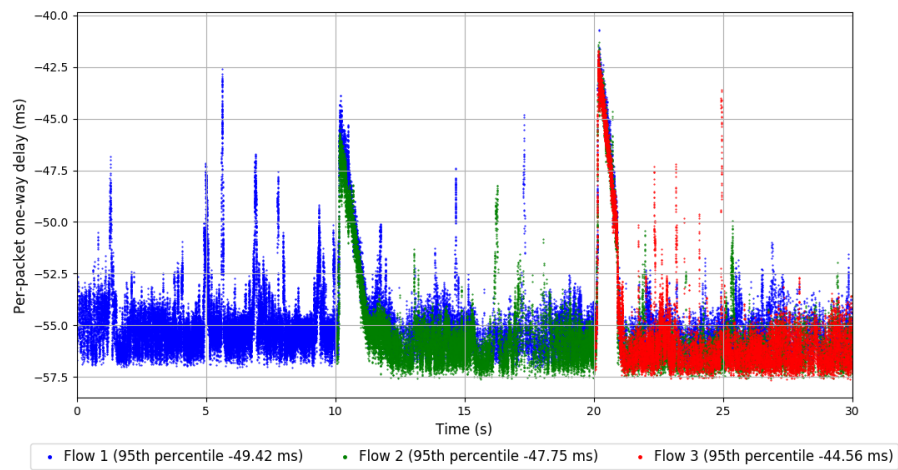
```
Run 1: Statistics of Verus

Start at: 2018-11-30 07:22:31
End at: 2018-11-30 07:23:01
Local clock offset: 3.872 ms
Remote clock offset: -4.326 ms


# Below is generated by plot.py at 2018-11-30 09:14:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.05 Mbit/s
95th percentile per-packet one-way delay: 60.402 ms
Loss rate: 34.67%
-- Flow 1:
Average throughput: 49.49 Mbit/s
95th percentile per-packet one-way delay: 55.501 ms
Loss rate: 23.70%
-- Flow 2:
Average throughput: 39.10 Mbit/s
95th percentile per-packet one-way delay: 66.226 ms
Loss rate: 48.15%
-- Flow 3:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 53.951 ms
Loss rate: 45.94%
```

Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 65.00 Mbit/s) --- Flow 1 egress (mean 49.49 Mbit/s)
Flow 2 ingress (mean 75.54 Mbit/s) --- Flow 2 egress (mean 39.10 Mbit/s)
Flow 3 ingress (mean 8.98 Mbit/s) --- Flow 3 egress (mean 6.07 Mbit/s)

Flow 1 (95th percentile 55.50 ms) · Flow 2 (95th percentile 66.23 ms) · Flow 3 (95th percentile 53.95 ms)

```
Run 2: Statistics of Verus

Start at: 2018-11-30 07:44:47
End at: 2018-11-30 07:45:17
Local clock offset: 0.896 ms
Remote clock offset: -2.161 ms


# Below is generated by plot.py at 2018-11-30 09:14:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.91 Mbit/s
95th percentile per-packet one-way delay: 41.107 ms
Loss rate: 35.53%
-- Flow 1:
Average throughput: 47.39 Mbit/s
95th percentile per-packet one-way delay: 38.158 ms
Loss rate: 18.33%
-- Flow 2:
Average throughput: 22.25 Mbit/s
95th percentile per-packet one-way delay: 39.136 ms
Loss rate: 38.74%
-- Flow 3:
Average throughput: 24.04 Mbit/s
95th percentile per-packet one-way delay: 47.352 ms
Loss rate: 70.29%
```

Run 2: Report of Verus — Data Link
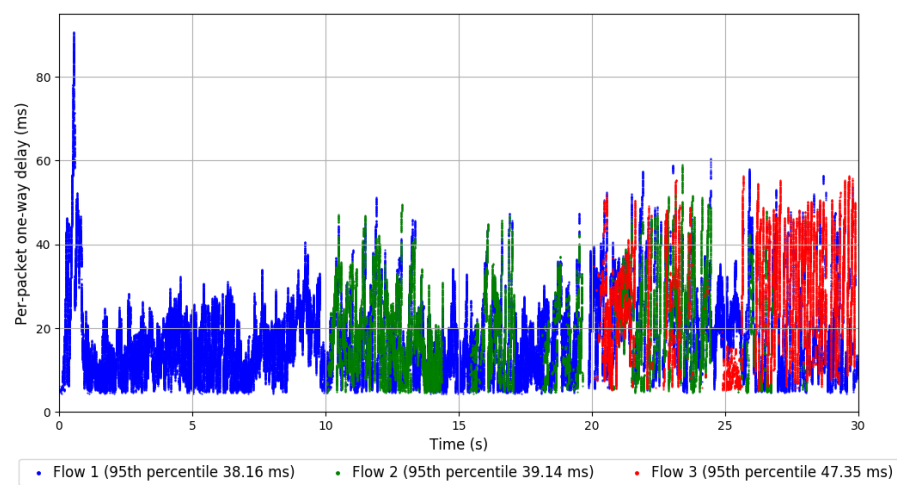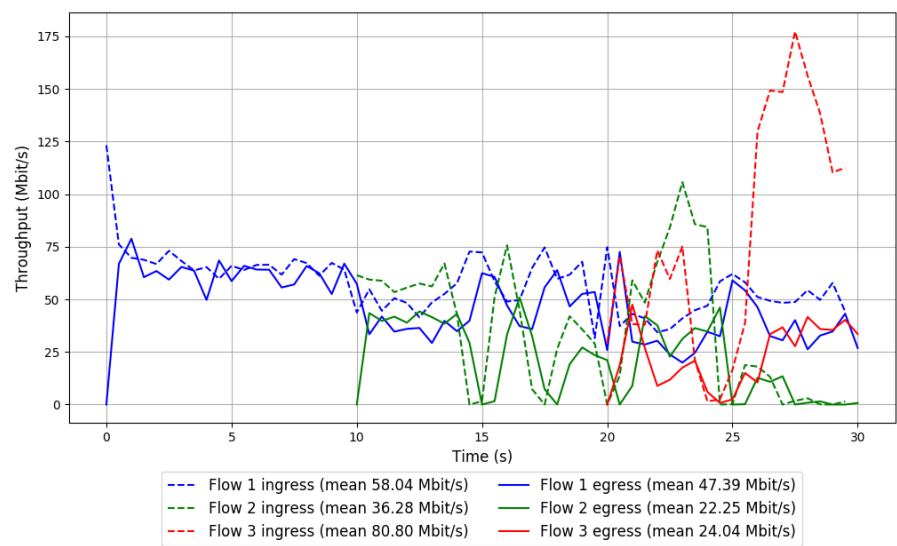
```
Run 3: Statistics of Verus

Start at: 2018-11-30 08:07:05
End at: 2018-11-30 08:07:35
Local clock offset: 0.415 ms
Remote clock offset: -1.533 ms


# Below is generated by plot.py at 2018-11-30 09:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.38 Mbit/s
95th percentile per-packet one-way delay: 63.558 ms
Loss rate: 44.76%
-- Flow 1:
Average throughput: 56.62 Mbit/s
95th percentile per-packet one-way delay: 41.488 ms
Loss rate: 13.16%
-- Flow 2:
Average throughput: 27.42 Mbit/s
95th percentile per-packet one-way delay: 107.808 ms
Loss rate: 74.59%
-- Flow 3:
Average throughput: 11.28 Mbit/s
95th percentile per-packet one-way delay: 45.447 ms
Loss rate: 34.01%
```

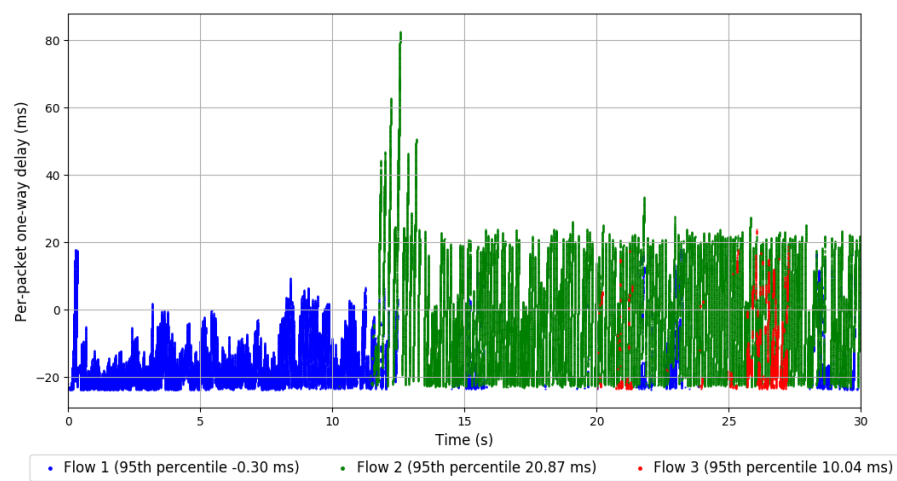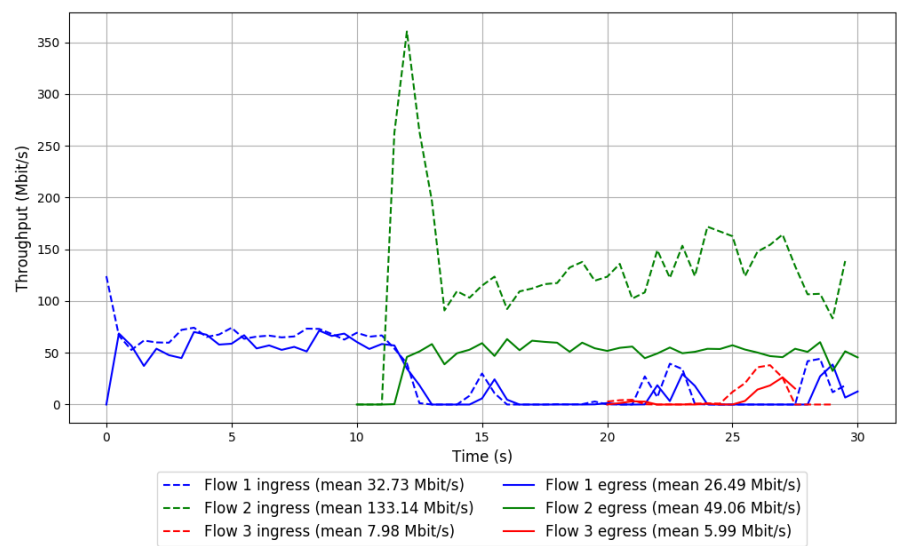Run 3: Report of Verus — Data Link
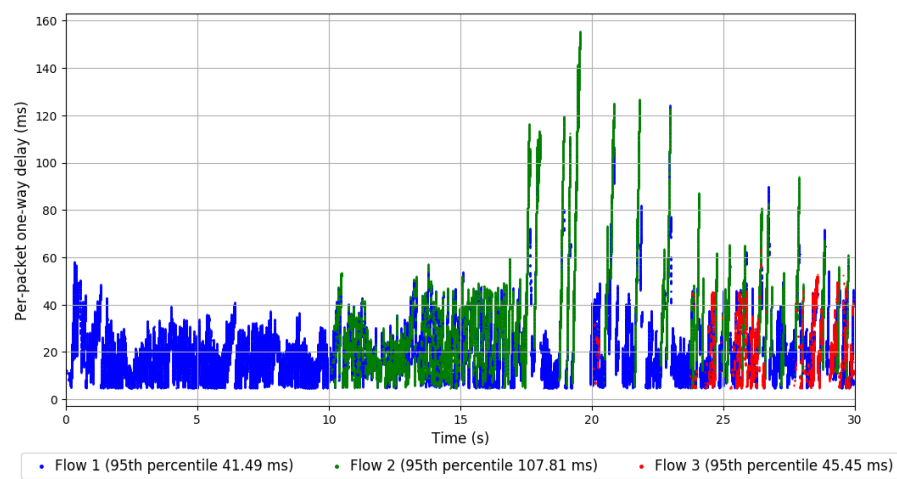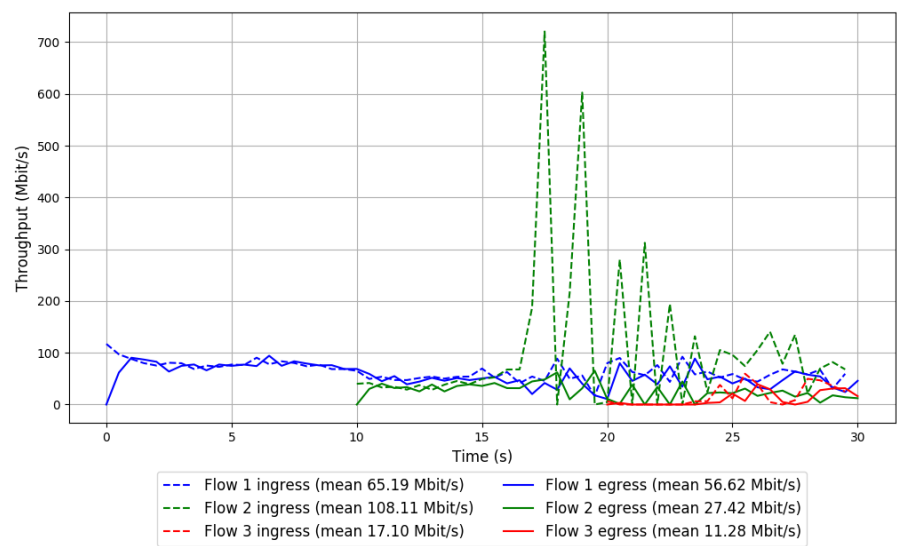
```
Run 4: Statistics of Verus

Start at: 2018-11-30 08:29:11
End at: 2018-11-30 08:29:41
Local clock offset: 2.113 ms
Remote clock offset: -28.862 ms


# Below is generated by plot.py at 2018-11-30 09:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.17 Mbit/s
95th percentile per-packet one-way delay: 17.809 ms
Loss rate: 50.96%
-- Flow 1:
Average throughput: 26.49 Mbit/s
95th percentile per-packet one-way delay: -0.300 ms
Loss rate: 19.12%
-- Flow 2:
Average throughput: 49.06 Mbit/s
95th percentile per-packet one-way delay: 20.868 ms
Loss rate: 63.12%
-- Flow 3:
Average throughput: 5.99 Mbit/s
95th percentile per-packet one-way delay: 10.035 ms
Loss rate: 41.46%
```

Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 32.73 Mbit/s)   Flow 1 egress (mean 26.49 Mbit/s)
Flow 2 ingress (mean 133.14 Mbit/s)   Flow 2 egress (mean 49.06 Mbit/s)
Flow 3 ingress (mean 7.98 Mbit/s)   Flow 3 egress (mean 5.99 Mbit/s)

Flow 1 (95th percentile -0.30 ms)   Flow 2 (95th percentile 20.87 ms)   Flow 3 (95th percentile 10.04 ms)

```
Run 5: Statistics of Verus

Start at: 2018-11-30 08:51:23
End at: 2018-11-30 08:51:53
Local clock offset: 2.745 ms
Remote clock offset: 0.497 ms


# Below is generated by plot.py at 2018-11-30 09:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.32 Mbit/s
95th percentile per-packet one-way delay: 62.765 ms
Loss rate: 34.37%
-- Flow 1:
Average throughput: 50.15 Mbit/s
95th percentile per-packet one-way delay: 65.880 ms
Loss rate: 16.11%
-- Flow 2:
Average throughput: 34.22 Mbit/s
95th percentile per-packet one-way delay: 56.468 ms
Loss rate: 55.63%
-- Flow 3:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 43.031 ms
Loss rate: 35.18%
```
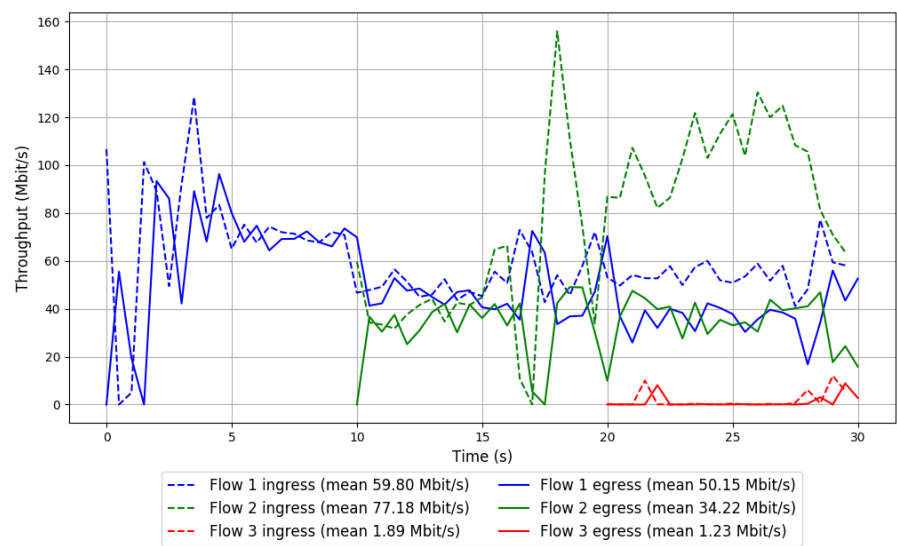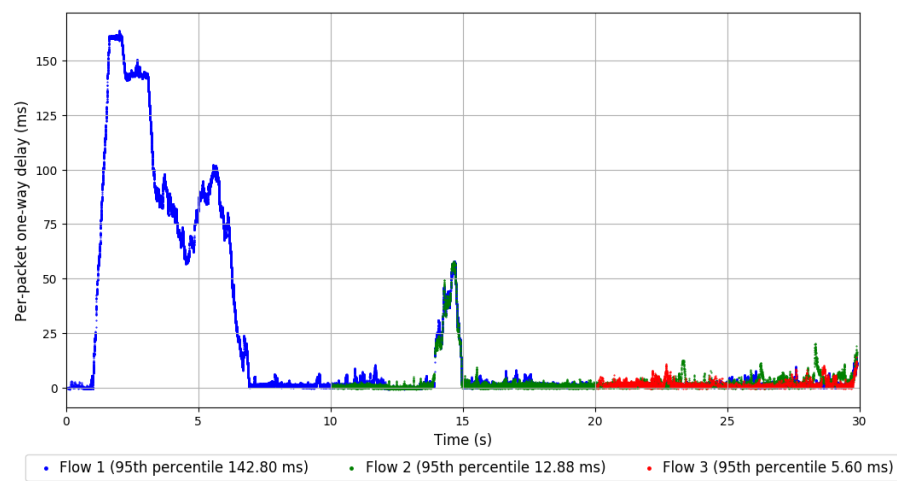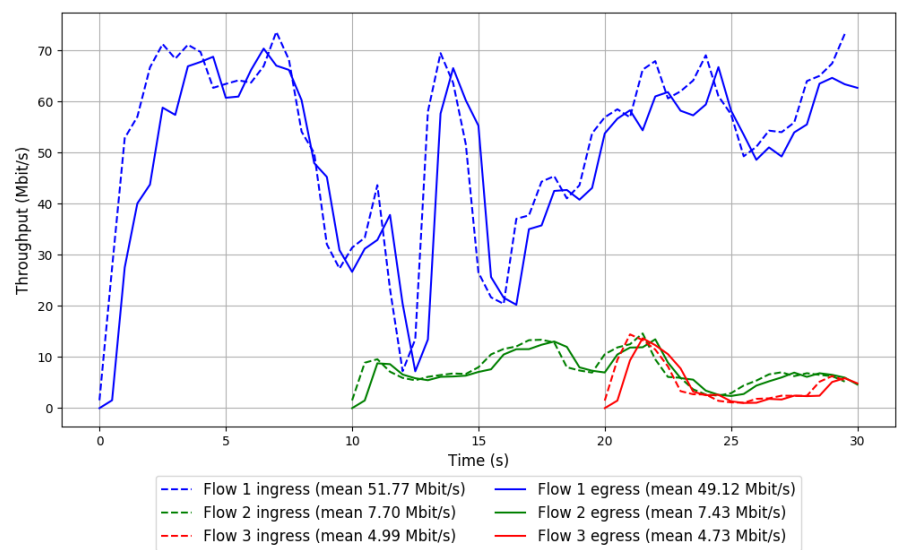
Run 5: Report of Verus — Data Link
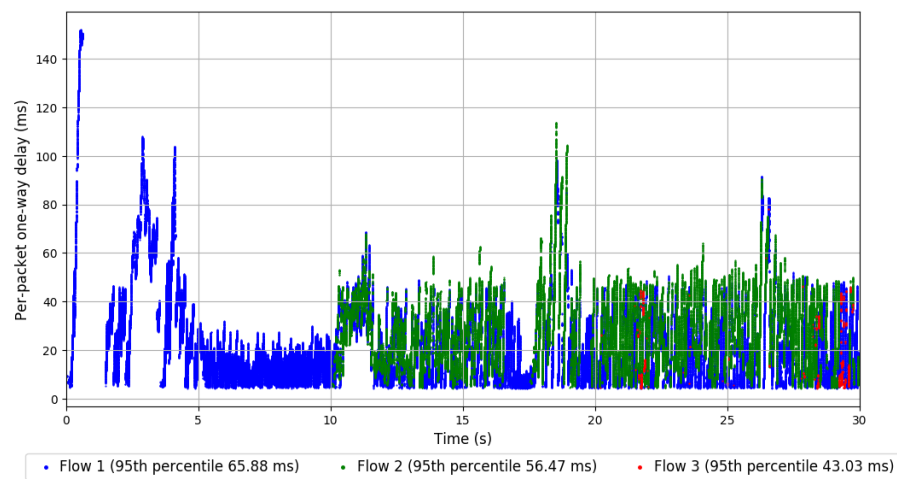
```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-30 07:30:46
End at: 2018-11-30 07:31:16
Local clock offset: 1.838 ms
Remote clock offset: -7.181 ms


# Below is generated by plot.py at 2018-11-30 09:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.63 Mbit/s
95th percentile per-packet one-way delay: 140.500 ms
Loss rate: 4.94%
-- Flow 1:
Average throughput: 49.12 Mbit/s
95th percentile per-packet one-way delay: 142.799 ms
Loss rate: 5.08%
-- Flow 2:
Average throughput: 7.43 Mbit/s
95th percentile per-packet one-way delay: 12.878 ms
Loss rate: 3.45%
-- Flow 3:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 5.600 ms
Loss rate: 5.11%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 51.77 Mbit/s) — Flow 1 egress (mean 49.12 Mbit/s)
Flow 2 ingress (mean 7.70 Mbit/s) — Flow 2 egress (mean 7.43 Mbit/s)
Flow 3 ingress (mean 4.99 Mbit/s) — Flow 3 egress (mean 4.73 Mbit/s)

Flow 1 (95th percentile 142.80 ms) • Flow 2 (95th percentile 12.88 ms) • Flow 3 (95th percentile 5.60 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-30 07:53:02
End at: 2018-11-30 07:53:32
Local clock offset: 2.752 ms
Remote clock offset: -1.754 ms


# Below is generated by plot.py at 2018-11-30 09:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.81 Mbit/s
95th percentile per-packet one-way delay: 10.447 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 19.29 Mbit/s
95th percentile per-packet one-way delay: 7.348 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 18.13 Mbit/s
95th percentile per-packet one-way delay: 10.795 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 25.64 Mbit/s
95th percentile per-packet one-way delay: 11.783 ms
Loss rate: 0.04%
```

Run 2: Report of PCC-Vivace — Data Link
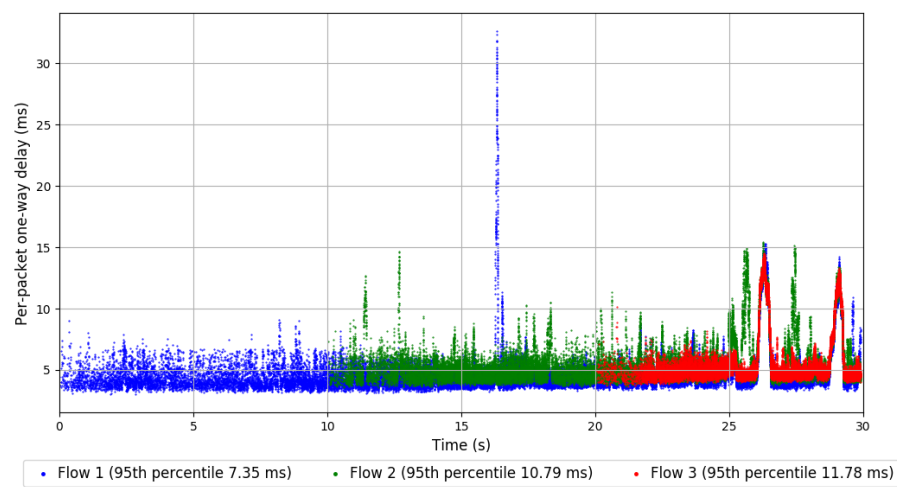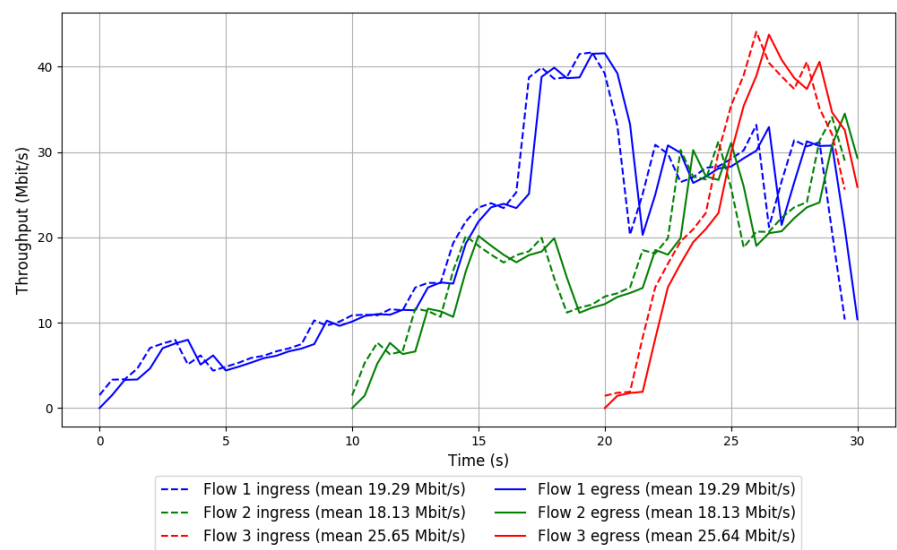
```
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-30 08:15:19
End at: 2018-11-30 08:15:49
Local clock offset: -0.925 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2018-11-30 09:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.21 Mbit/s
95th percentile per-packet one-way delay: 10.939 ms
Loss rate: 3.57%
-- Flow 1:
Average throughput: 22.45 Mbit/s
95th percentile per-packet one-way delay: 11.214 ms
Loss rate: 2.00%
-- Flow 2:
Average throughput: 31.42 Mbit/s
95th percentile per-packet one-way delay: 10.640 ms
Loss rate: 5.27%
-- Flow 3:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 12.246 ms
Loss rate: 1.71%
```
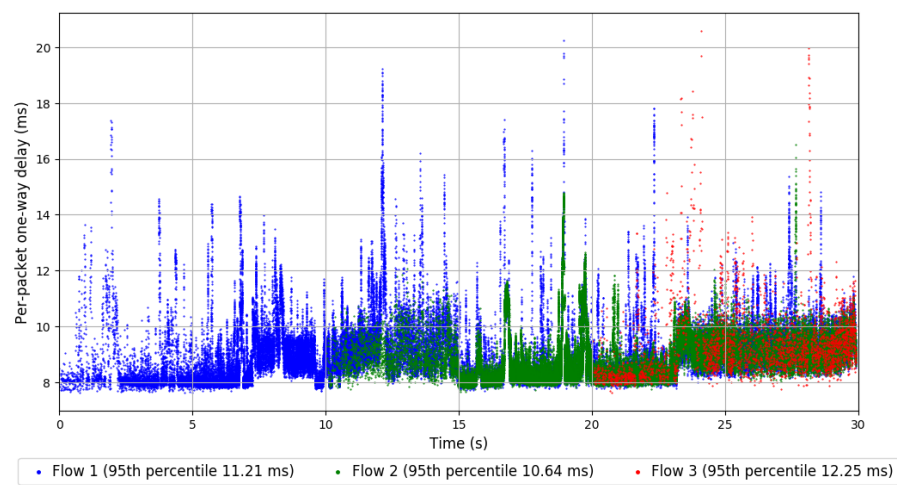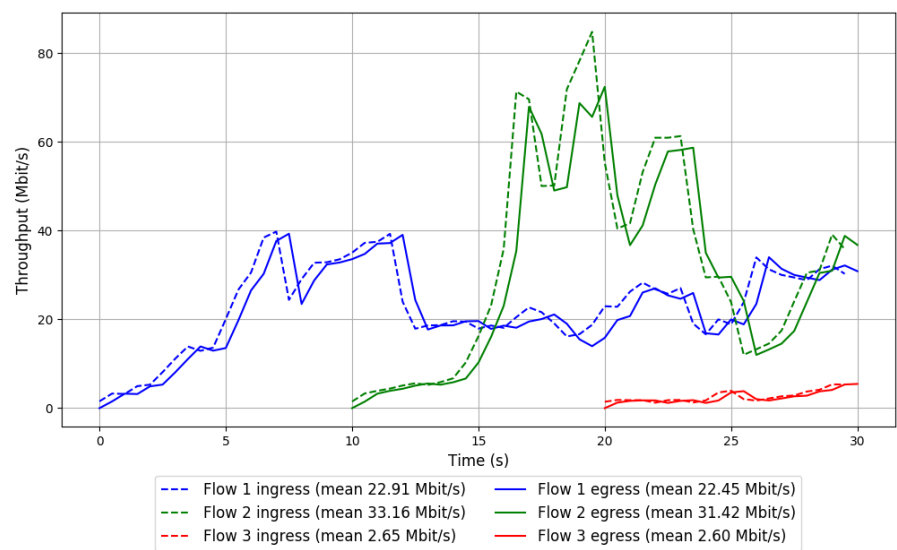
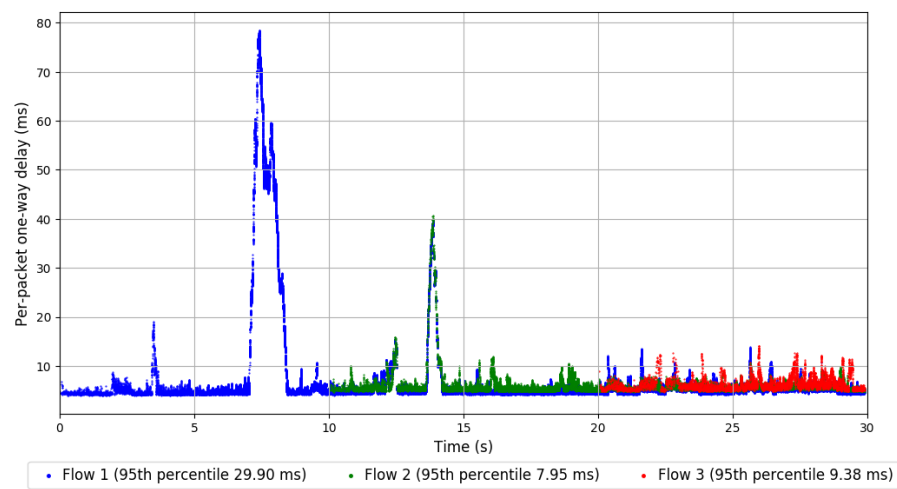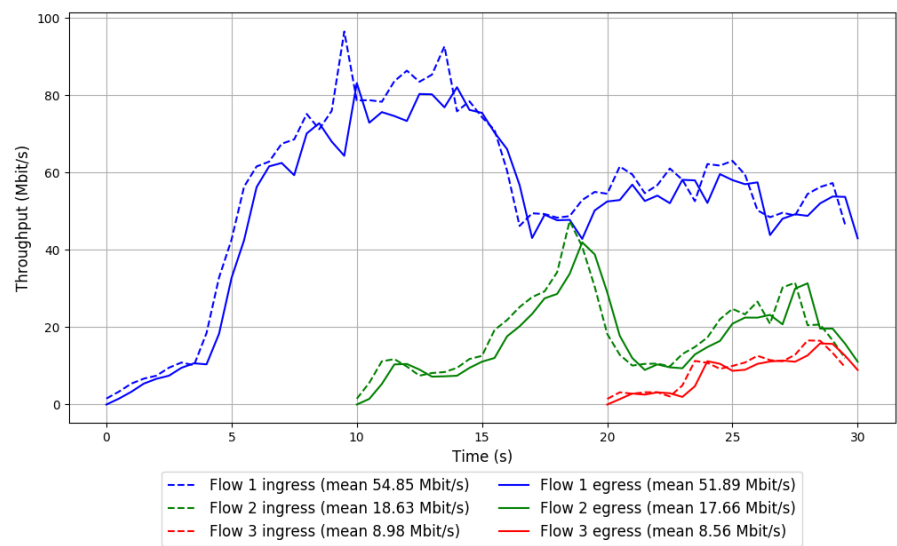Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-30 08:37:24
End at: 2018-11-30 08:37:54
Local clock offset: 2.131 ms
Remote clock offset: -0.987 ms


# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.46 Mbit/s
95th percentile per-packet one-way delay: 25.210 ms
Loss rate: 5.34%
-- Flow 1:
Average throughput: 51.89 Mbit/s
95th percentile per-packet one-way delay: 29.903 ms
Loss rate: 5.39%
-- Flow 2:
Average throughput: 17.66 Mbit/s
95th percentile per-packet one-way delay: 7.945 ms
Loss rate: 5.25%
-- Flow 3:
Average throughput: 8.56 Mbit/s
95th percentile per-packet one-way delay: 9.382 ms
Loss rate: 4.67%
```

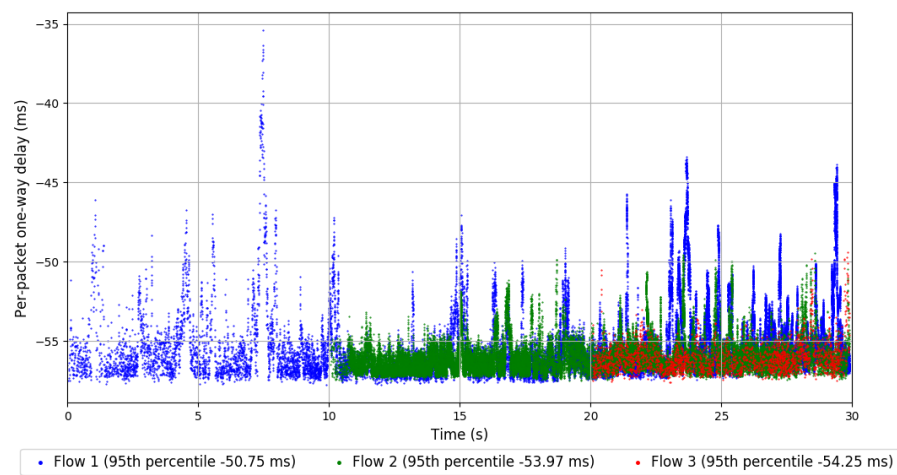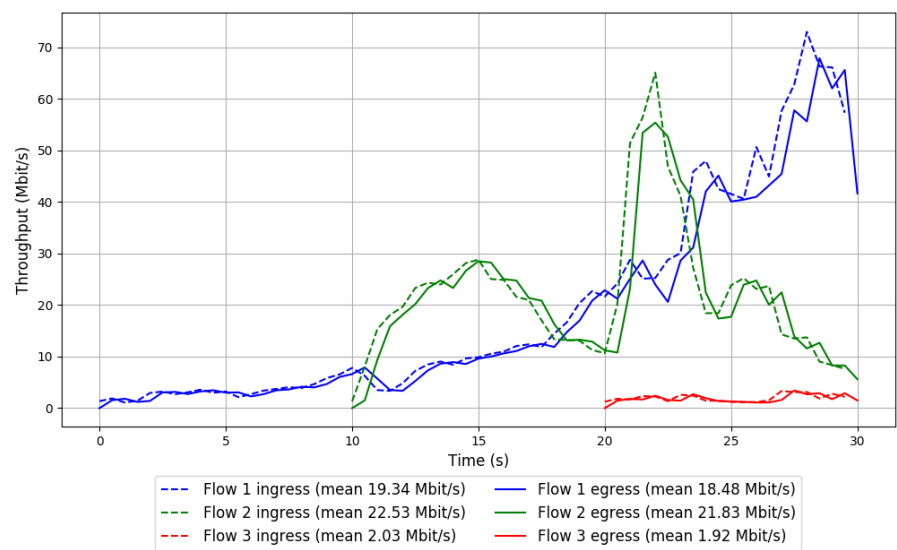Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-30 08:59:36
End at: 2018-11-30 09:00:06
Local clock offset: 0.265 ms
Remote clock offset: -62.978 ms


# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.63 Mbit/s
95th percentile per-packet one-way delay: -52.013 ms
Loss rate: 3.89%
-- Flow 1:
Average throughput: 18.48 Mbit/s
95th percentile per-packet one-way delay: -50.748 ms
Loss rate: 4.43%
-- Flow 2:
Average throughput: 21.83 Mbit/s
95th percentile per-packet one-way delay: -53.972 ms
Loss rate: 3.12%
-- Flow 3:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: -54.250 ms
Loss rate: 5.81%
```

Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 19.34 Mbit/s) --- Flow 1 egress (mean 18.48 Mbit/s)
Flow 2 ingress (mean 22.53 Mbit/s) --- Flow 2 egress (mean 21.83 Mbit/s)
Flow 3 ingress (mean 2.03 Mbit/s) --- Flow 3 egress (mean 1.92 Mbit/s)

Flow 1 (95th percentile -50.75 ms)   Flow 2 (95th percentile -53.97 ms)   Flow 3 (95th percentile -54.25 ms)
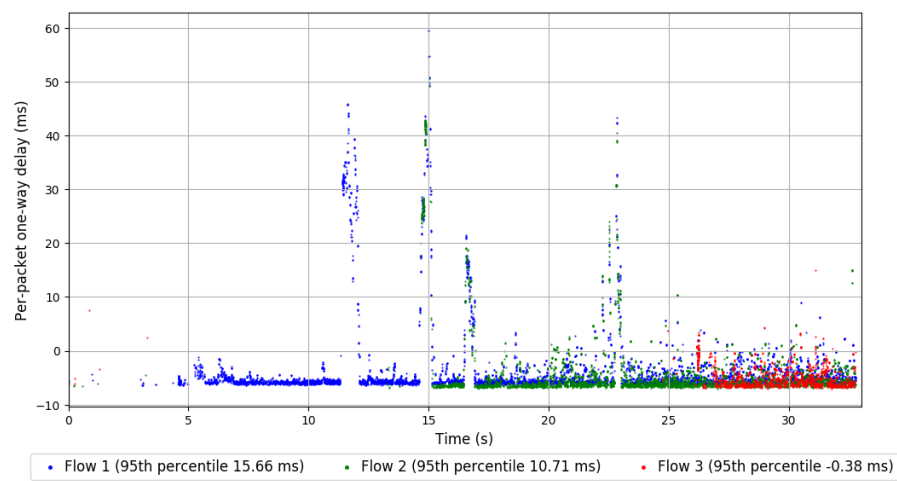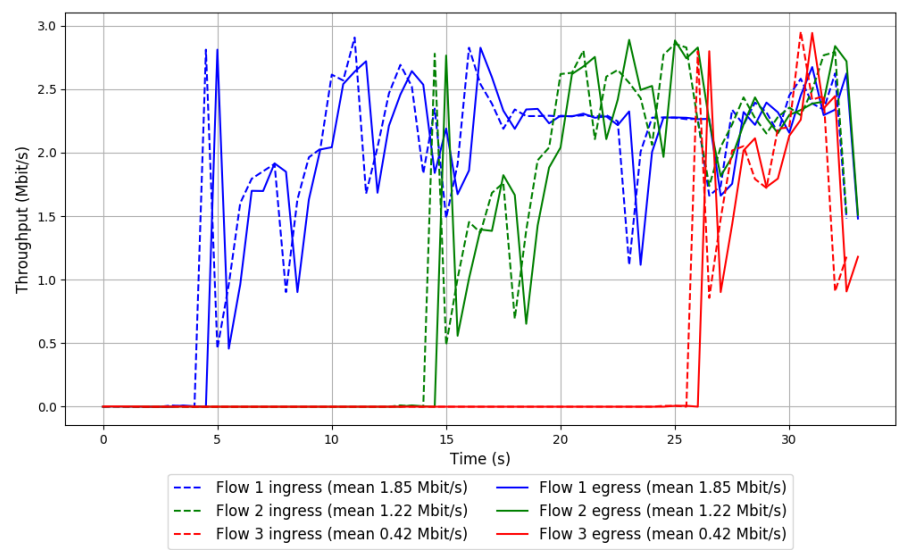
```
Run 1: Statistics of WebRTC media

Start at: 2018-11-30 07:23:43
End at: 2018-11-30 07:24:13
Local clock offset: 1.774 ms
Remote clock offset: -13.954 ms

# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 9.797 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 15.660 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 10.705 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: -0.384 ms
Loss rate: 0.00%
```

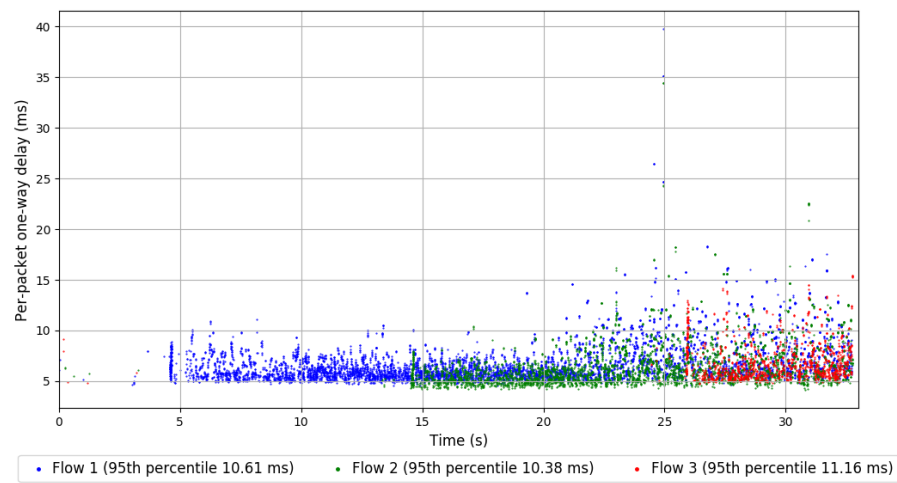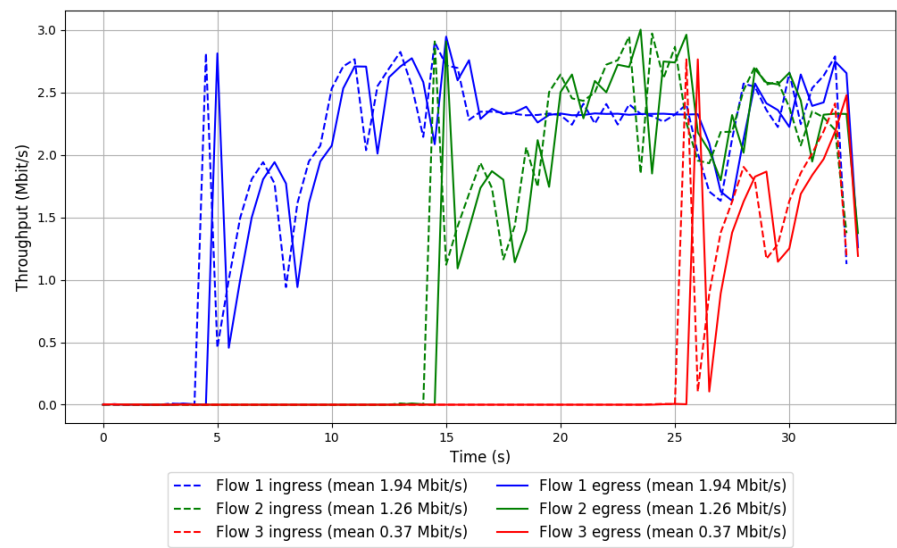Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-11-30 07:45:59
End at: 2018-11-30 07:46:29
Local clock offset: 0.817 ms
Remote clock offset: -2.516 ms

# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 10.587 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 10.605 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 10.379 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 11.159 ms
Loss rate: 0.00%
```

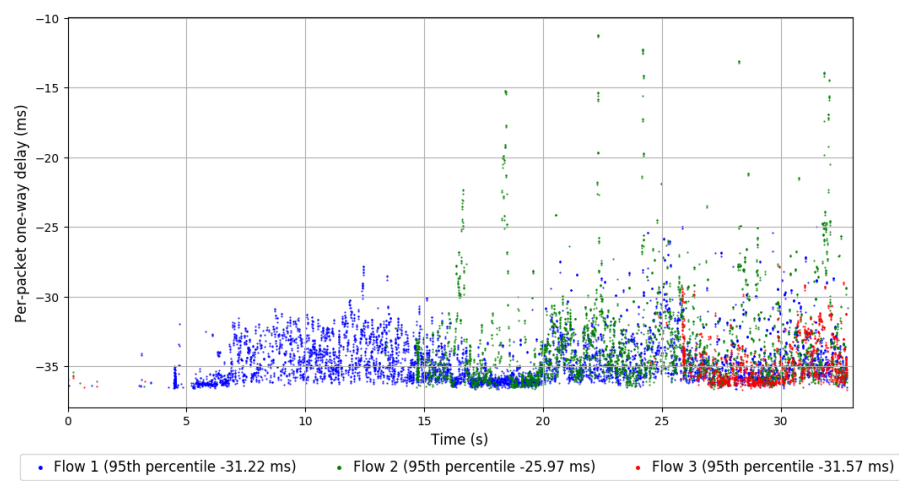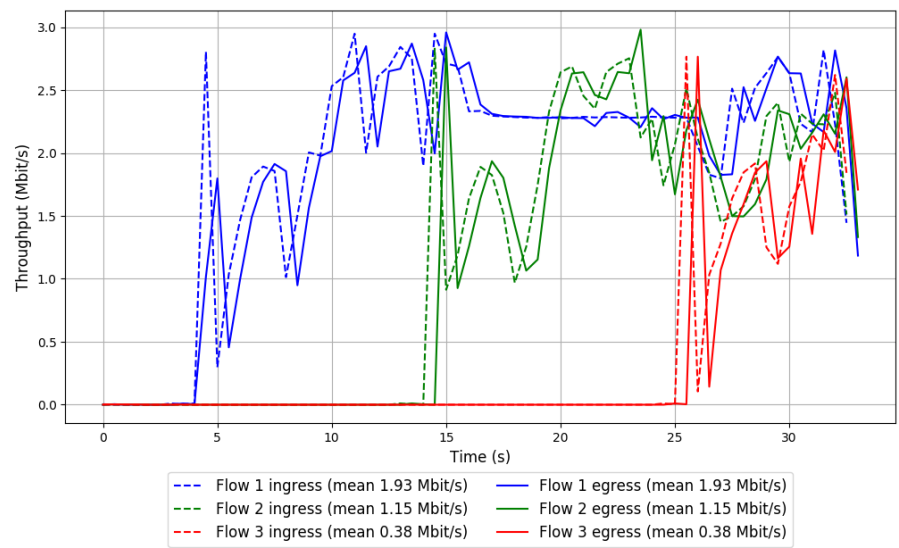Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-11-30 08:08:18
End at: 2018-11-30 08:08:48
Local clock offset: -0.835 ms
Remote clock offset: -44.132 ms


# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.45 Mbit/s
95th percentile per-packet one-way delay: -29.452 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: -31.218 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: -25.969 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: -31.571 ms
Loss rate: 0.00%
```

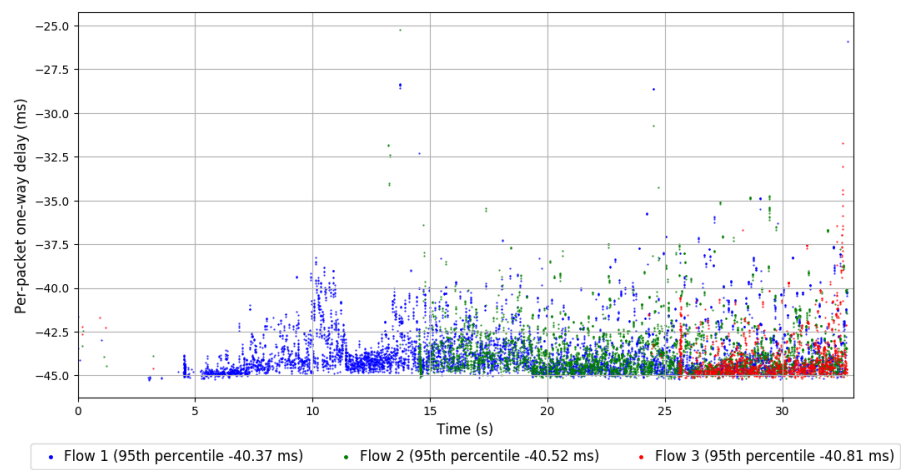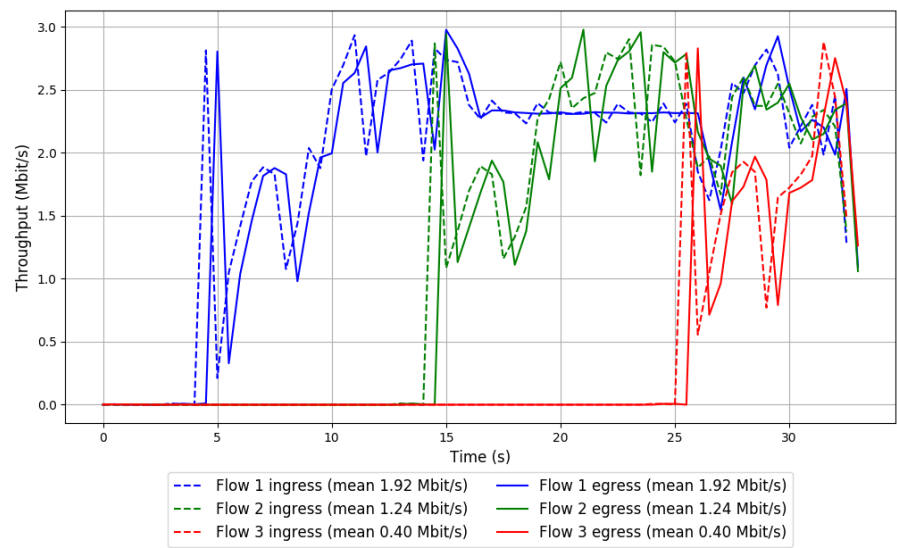Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-11-30 08:30:24
End at: 2018-11-30 08:30:54
Local clock offset: 2.443 ms
Remote clock offset: -49.928 ms


# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: -40.463 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: -40.373 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: -40.516 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: -40.814 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-11-30 08:52:36
End at: 2018-11-30 08:53:06
Local clock offset: 2.741 ms
Remote clock offset: -1.15 ms


# Below is generated by plot.py at 2018-11-30 09:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 9.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 10.270 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 7.953 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 7.709 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link