Pantheon Report

Generated at 2018-10-02 18:41:34 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

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

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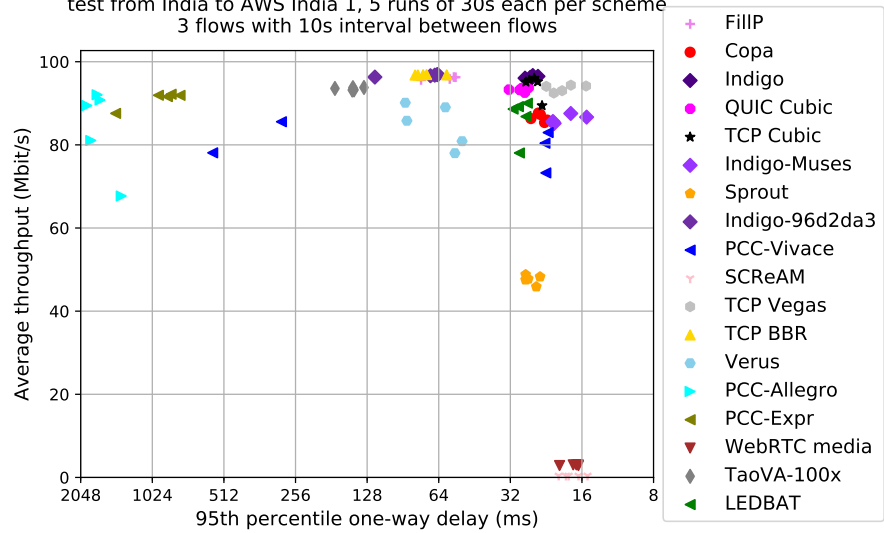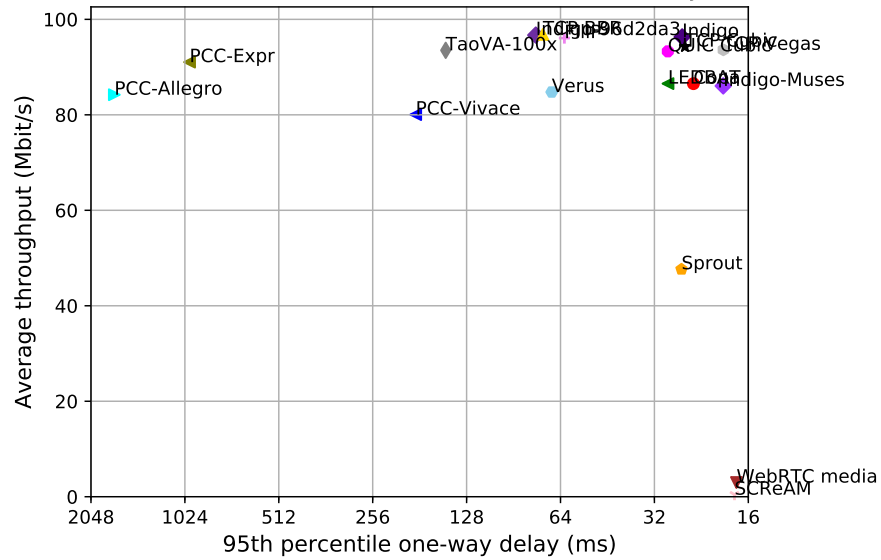
```
System info:
Linux 4.15.0-1021-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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

```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```
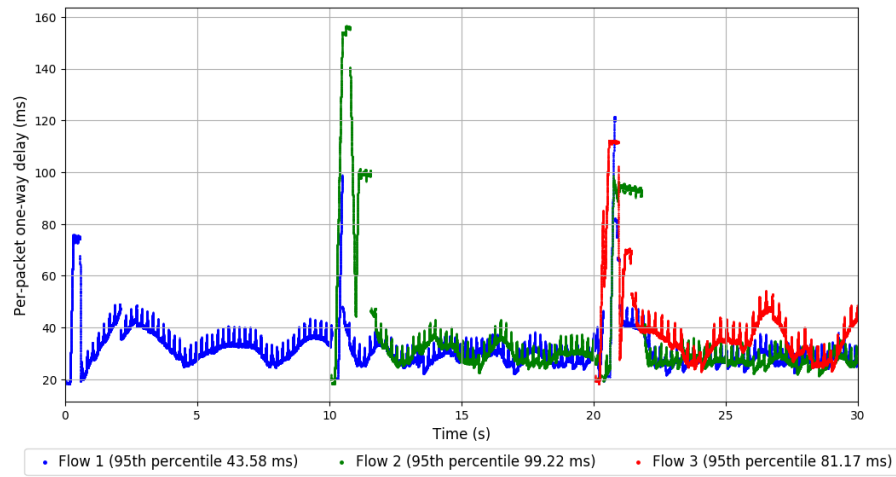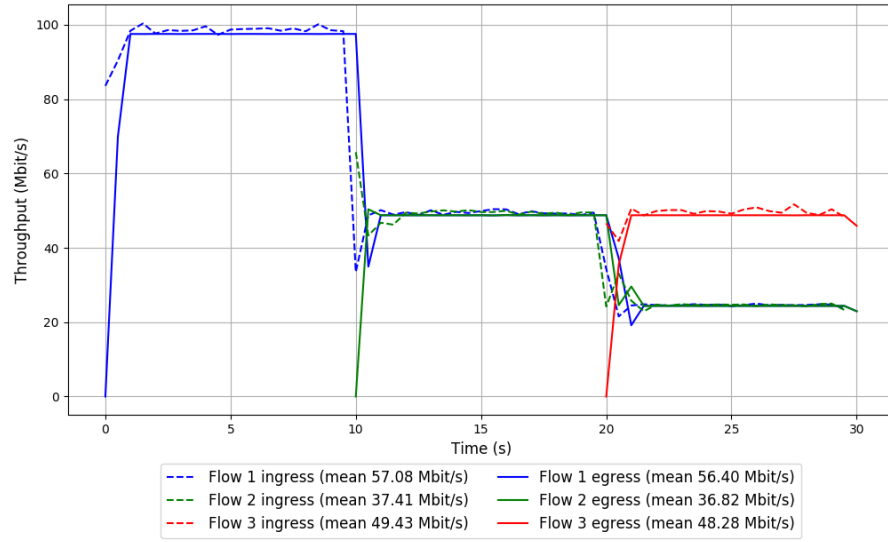
test from India to AWS India 1, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

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

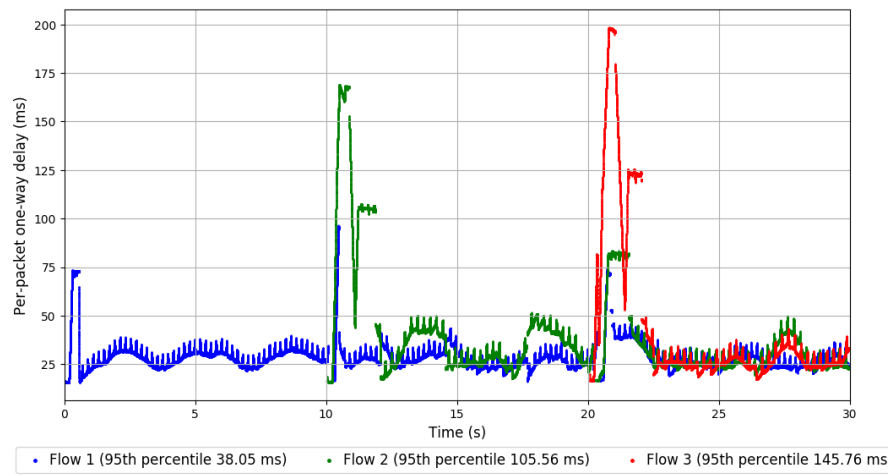| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	58.89	40.56	33.05	43.90	102.17	122.71	1.56	1.98	3.10
Copa	5	51.72	38.35	27.95	23.66	24.50	24.68	0.07	0.13	0.27
TCP Cubic	5	56.77	41.27	30.28	25.37	25.75	26.20	0.07	0.16	0.40
FillP	5	58.34	43.76	26.03	54.46	65.97	116.31	1.50	1.50	1.11
Indigo	5	58.94	40.22	32.42	24.27	24.62	25.69	0.07	0.13	0.39
Indigo-96d2da3	5	59.24	40.37	32.05	65.58	105.02	135.47	4.50	5.28	6.03
LEDBAT	5	51.92	39.39	25.83	28.27	29.29	31.18	0.09	0.16	0.39
Indigo-Muses	5	51.49	36.74	30.63	19.09	19.52	19.63	0.05	0.11	0.30
PCC-Allegro	5	56.44	31.14	21.49	1732.76	609.12	22.18	10.15	3.18	0.40
PCC-Expr	5	57.37	38.31	24.88	1007.43	218.90	68.54	24.64	2.56	0.62
QUIC Cubic	5	56.64	42.04	26.43	29.38	27.52	44.09	0.10	0.21	0.52
SCReAM	5	0.21	0.22	0.22	17.72	17.72	17.72	0.13	0.19	0.35
Sprout	5	24.22	23.87	22.93	25.75	26.41	27.57	0.10	0.18	0.36
TaoVA-100x	5	57.16	40.19	28.71	116.64	136.96	168.01	0.60	1.13	4.40
TCP Vegas	5	54.34	43.15	31.79	18.95	19.09	20.03	0.06	0.13	0.35
Verus	5	48.34	39.53	30.55	70.06	86.29	104.01	0.15	0.29	0.55
PCC-Vivace	5	54.06	29.12	20.17	214.28	50.45	29.71	0.34	0.39	0.71
WebRTC media	5	1.62	0.94	0.41	17.43	17.43	17.45	0.07	0.07	0.02

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-02 16:49:20
End at: 2018-10-02 16:49:50
Local clock offset: 0.878 ms
Remote clock offset: -3.109 ms


# Below is generated by plot.py at 2018-10-02 18:29:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.92 Mbit/s
95th percentile per-packet one-way delay: 71.985 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 56.40 Mbit/s
95th percentile per-packet one-way delay: 43.579 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 36.82 Mbit/s
95th percentile per-packet one-way delay: 99.223 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 48.28 Mbit/s
95th percentile per-packet one-way delay: 81.165 ms
Loss rate: 2.62%
```
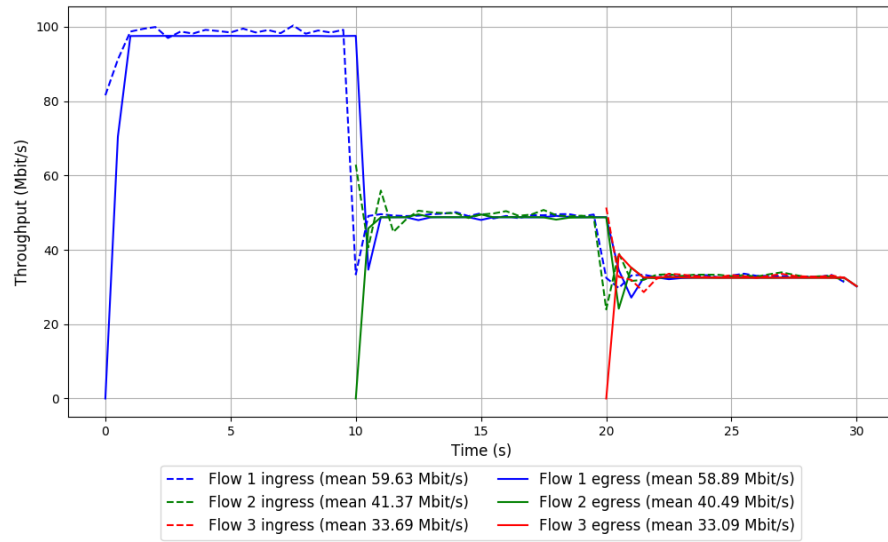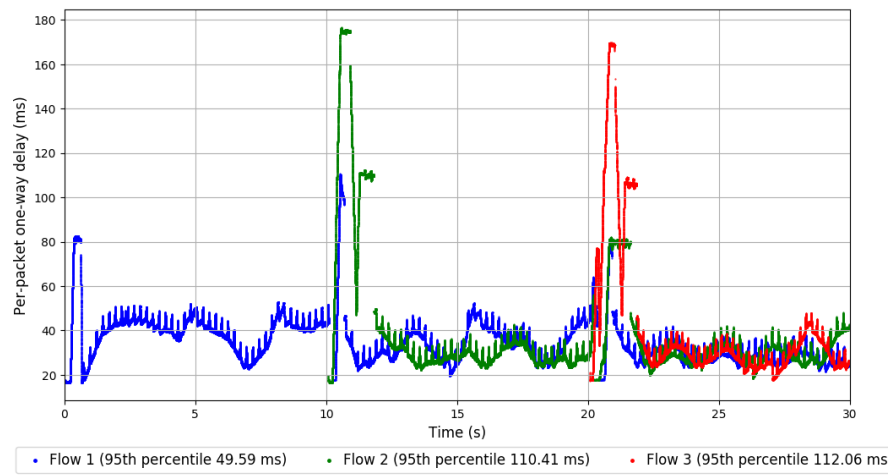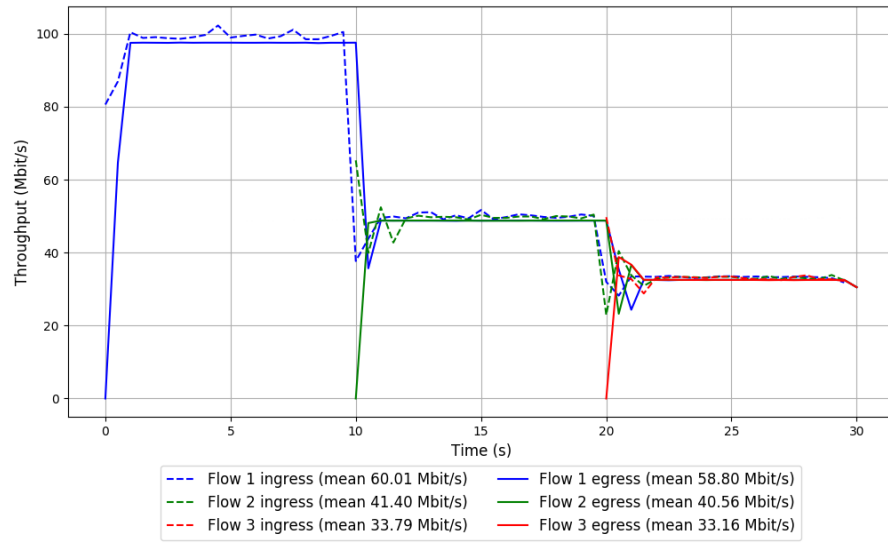
Run 1: Report of TCP BBR — Data Link

- - - - Flow 1 ingress (mean 57.08 Mbit/s)   —— Flow 1 egress (mean 56.40 Mbit/s)
- - - - Flow 2 ingress (mean 37.41 Mbit/s)   —— Flow 2 egress (mean 36.82 Mbit/s)
- - - - Flow 3 ingress (mean 49.43 Mbit/s)   —— Flow 3 egress (mean 48.28 Mbit/s)

• Flow 1 (95th percentile 43.58 ms)   • Flow 2 (95th percentile 99.22 ms)   • Flow 3 (95th percentile 81.17 ms)

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```
Run 2: Statistics of TCP BBR

Start at: 2018-10-02 17:12:07
End at: 2018-10-02 17:12:37
Local clock offset: -1.203 ms
Remote clock offset: -2.607 ms


# Below is generated by plot.py at 2018-10-02 18:29:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.82 Mbit/s
95th percentile per-packet one-way delay: 78.366 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 58.89 Mbit/s
95th percentile per-packet one-way delay: 38.049 ms
Loss rate: 1.35%
-- Flow 2:
Average throughput: 40.49 Mbit/s
95th percentile per-packet one-way delay: 105.565 ms
Loss rate: 2.27%
-- Flow 3:
Average throughput: 33.09 Mbit/s
95th percentile per-packet one-way delay: 145.762 ms
Loss rate: 2.08%
```

Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-02 17:34:34
End at: 2018-10-02 17:35:04
Local clock offset: -1.439 ms
Remote clock offset: -3.813 ms


# Below is generated by plot.py at 2018-10-02 18:29:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.80 Mbit/s
95th percentile per-packet one-way delay: 80.460 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 58.80 Mbit/s
95th percentile per-packet one-way delay: 49.588 ms
Loss rate: 2.12%
-- Flow 2:
Average throughput: 40.56 Mbit/s
95th percentile per-packet one-way delay: 110.405 ms
Loss rate: 2.18%
-- Flow 3:
Average throughput: 33.16 Mbit/s
95th percentile per-packet one-way delay: 112.058 ms
Loss rate: 2.19%
```
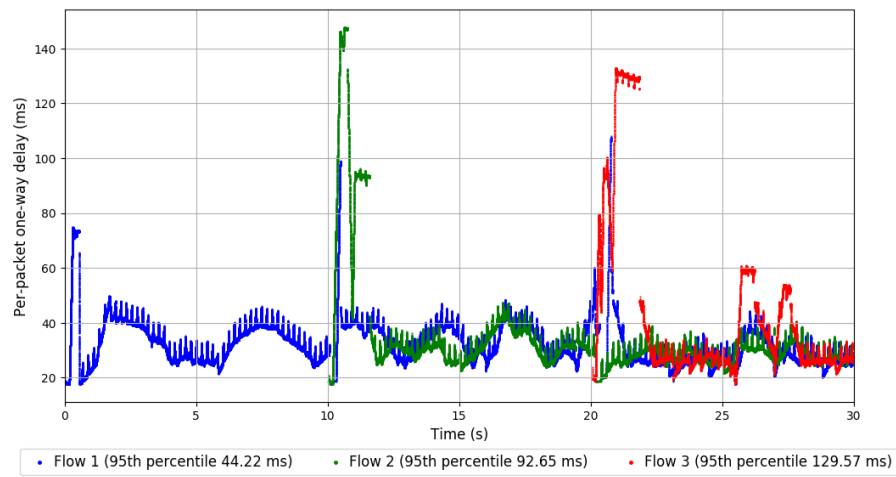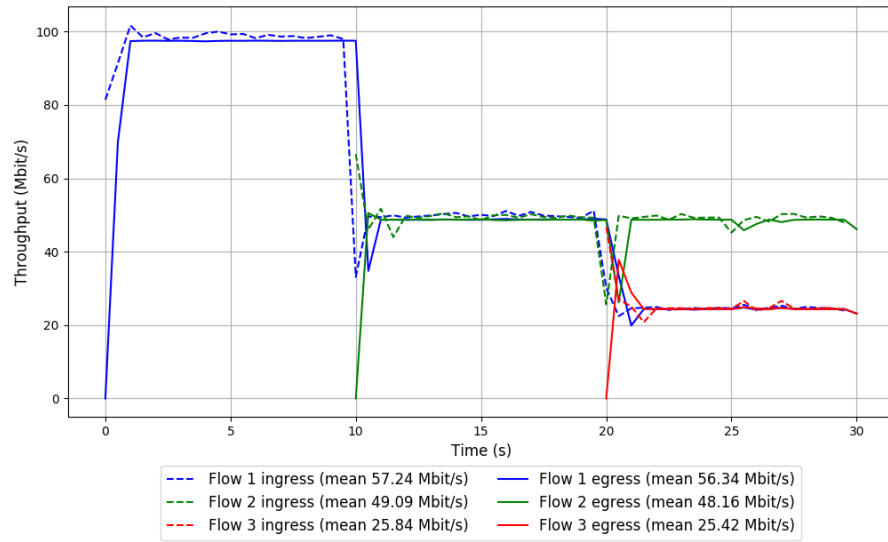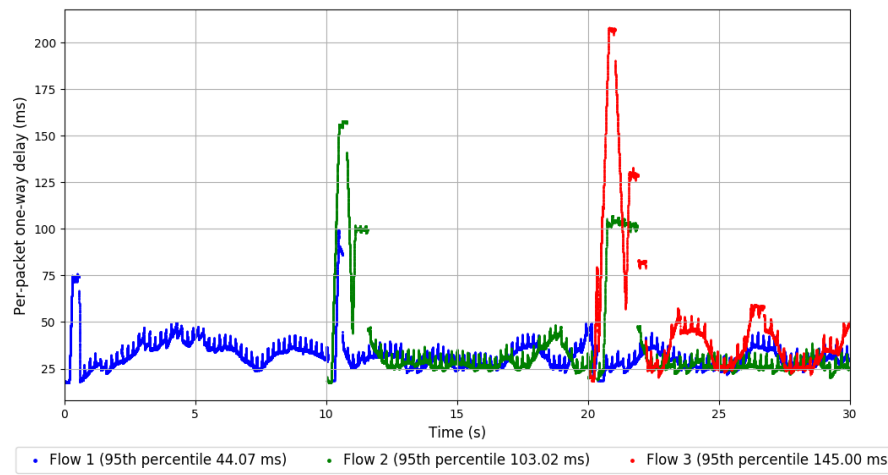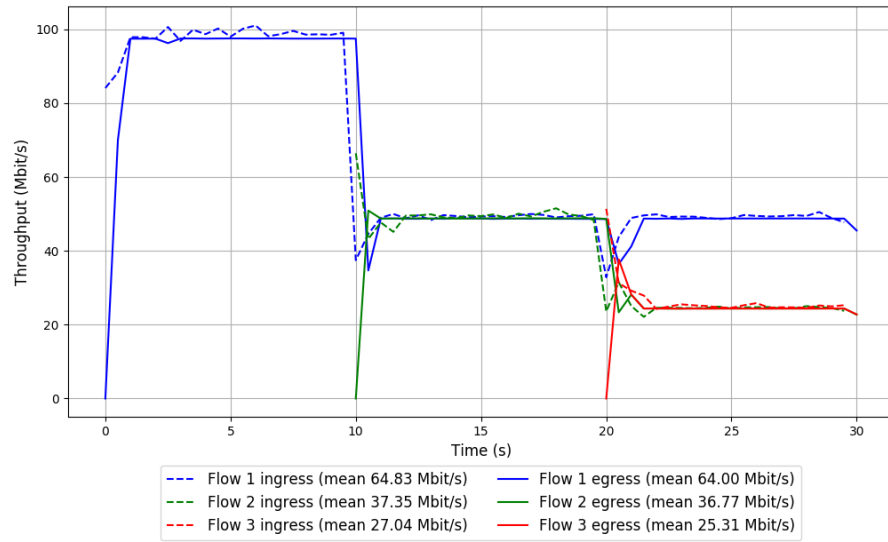
Run 3: Report of TCP BBR — Data Link

- - - - Flow 1 ingress (mean 60.01 Mbit/s)   ——— Flow 1 egress (mean 58.80 Mbit/s)
- - - - Flow 2 ingress (mean 41.40 Mbit/s)   ——— Flow 2 egress (mean 40.56 Mbit/s)
- - - - Flow 3 ingress (mean 33.79 Mbit/s)   ——— Flow 3 egress (mean 33.16 Mbit/s)

• Flow 1 (95th percentile 49.59 ms)   • Flow 2 (95th percentile 110.41 ms)   • Flow 3 (95th percentile 112.06 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-02 17:56:55
End at: 2018-10-02 17:57:25
Local clock offset: 0.806 ms
Remote clock offset: -3.5 ms


# Below is generated by plot.py at 2018-10-02 18:29:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.84 Mbit/s
95th percentile per-packet one-way delay: 59.279 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 56.34 Mbit/s
95th percentile per-packet one-way delay: 44.221 ms
Loss rate: 1.67%
-- Flow 2:
Average throughput: 48.16 Mbit/s
95th percentile per-packet one-way delay: 92.654 ms
Loss rate: 2.04%
-- Flow 3:
Average throughput: 25.42 Mbit/s
95th percentile per-packet one-way delay: 129.574 ms
Loss rate: 1.94%
```

Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-02 18:19:31
End at: 2018-10-02 18:20:01
Local clock offset: 0.984 ms
Remote clock offset: -3.231 ms


# Below is generated by plot.py at 2018-10-02 18:29:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.88 Mbit/s
95th percentile per-packet one-way delay: 74.442 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 64.00 Mbit/s
95th percentile per-packet one-way delay: 44.072 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 36.77 Mbit/s
95th percentile per-packet one-way delay: 103.019 ms
Loss rate: 1.70%
-- Flow 3:
Average throughput: 25.31 Mbit/s
95th percentile per-packet one-way delay: 144.998 ms
Loss rate: 6.69%
```
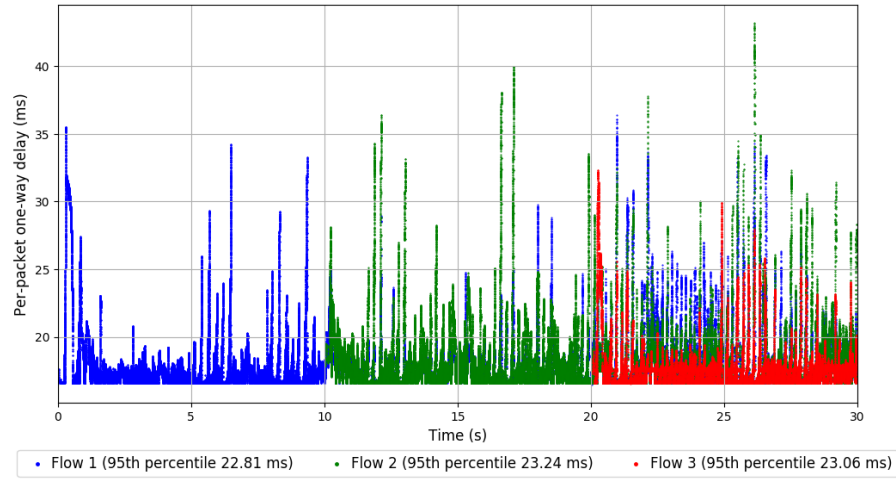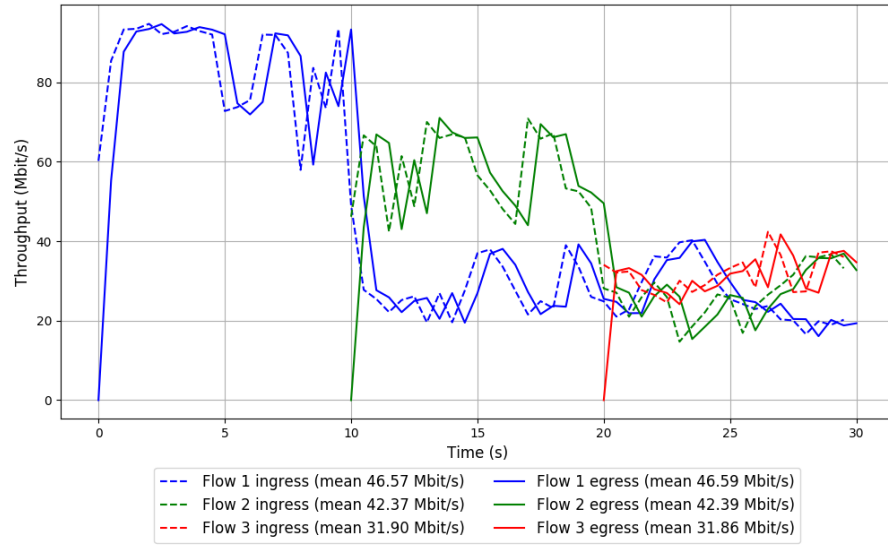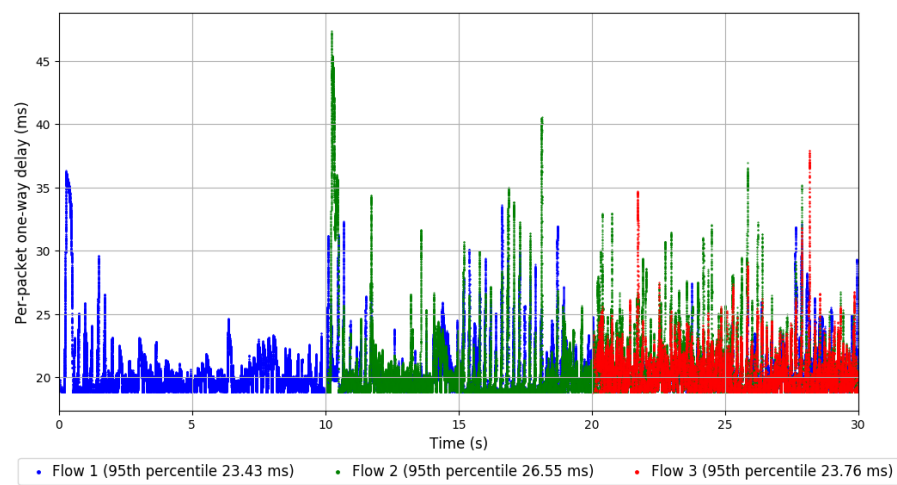
Run 5: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 64.83 Mbit/s) —— Flow 1 egress (mean 64.00 Mbit/s)
- - - Flow 2 ingress (mean 37.35 Mbit/s) —— Flow 2 egress (mean 36.77 Mbit/s)
- - - Flow 3 ingress (mean 27.04 Mbit/s) —— Flow 3 egress (mean 25.31 Mbit/s)

• Flow 1 (95th percentile 44.07 ms)   • Flow 2 (95th percentile 103.02 ms)   • Flow 3 (95th percentile 145.00 ms)
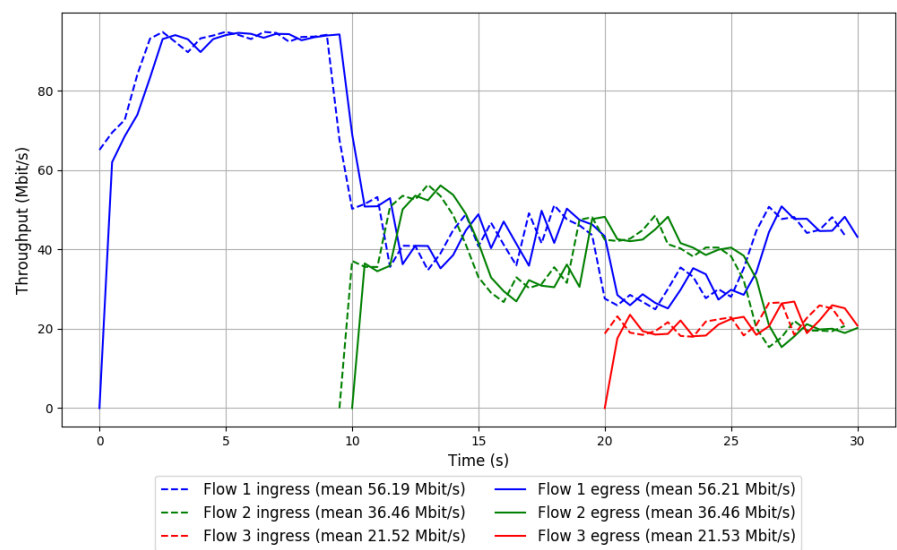
14

```
Run 1: Statistics of Copa

Start at: 2018-10-02 16:44:14
End at: 2018-10-02 16:44:44
Local clock offset: -1.475 ms
Remote clock offset: -3.56 ms


# Below is generated by plot.py at 2018-10-02 18:30:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.38 Mbit/s
95th percentile per-packet one-way delay: 22.983 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 46.59 Mbit/s
95th percentile per-packet one-way delay: 22.814 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 42.39 Mbit/s
95th percentile per-packet one-way delay: 23.244 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 31.86 Mbit/s
95th percentile per-packet one-way delay: 23.060 ms
Loss rate: 0.38%
```
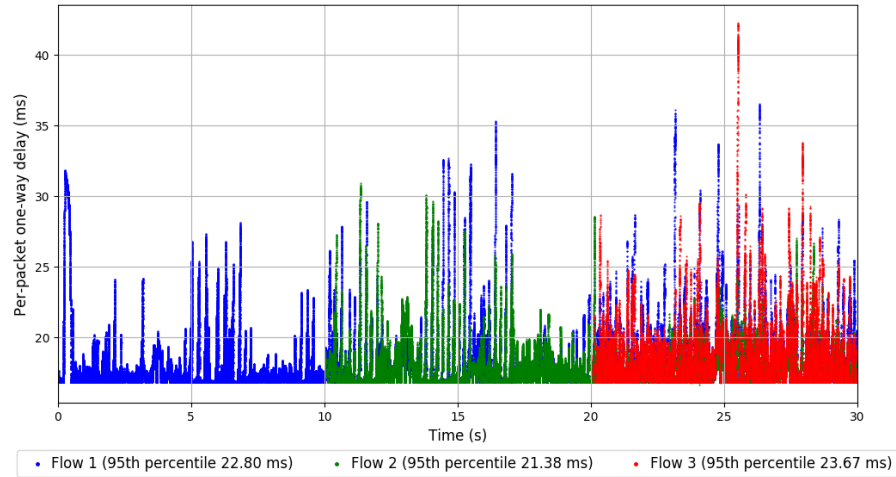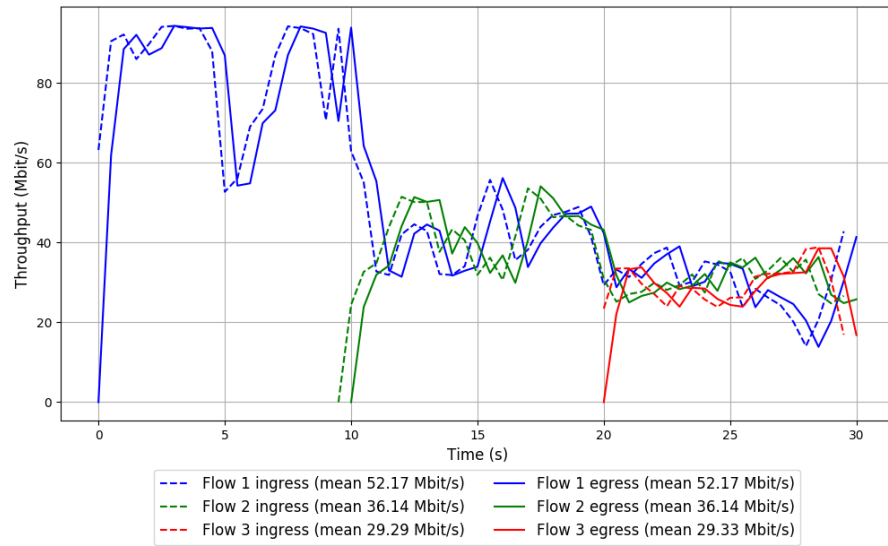
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-10-02 17:07:01
End at: 2018-10-02 17:07:31
Local clock offset: -0.32 ms
Remote clock offset: -4.975 ms


# Below is generated by plot.py at 2018-10-02 18:30:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.65 Mbit/s
95th percentile per-packet one-way delay: 24.388 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 56.21 Mbit/s
95th percentile per-packet one-way delay: 23.431 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 36.46 Mbit/s
95th percentile per-packet one-way delay: 26.548 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 21.53 Mbit/s
95th percentile per-packet one-way delay: 23.760 ms
Loss rate: 0.23%
```
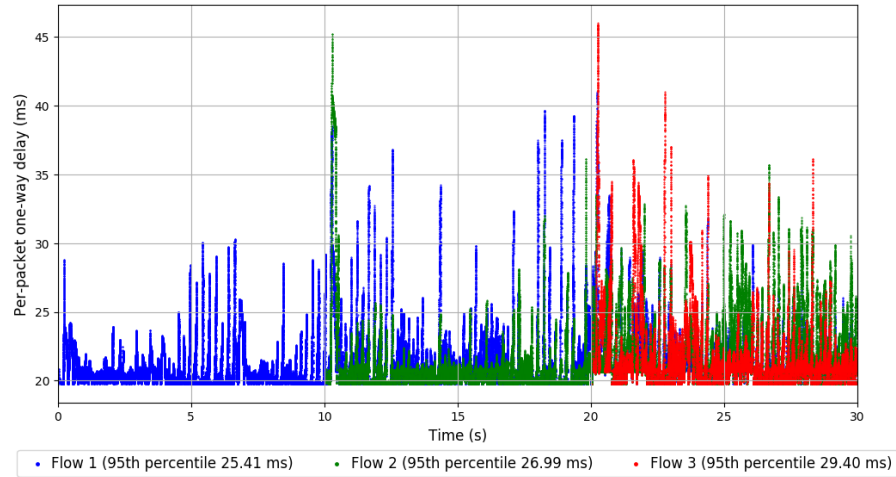
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-02 17:29:38
End at: 2018-10-02 17:30:08
Local clock offset: -0.832 ms
Remote clock offset: -3.438 ms


# Below is generated by plot.py at 2018-10-02 18:30:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.97 Mbit/s
95th percentile per-packet one-way delay: 22.428 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 52.17 Mbit/s
95th percentile per-packet one-way delay: 22.803 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.14 Mbit/s
95th percentile per-packet one-way delay: 21.380 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 29.33 Mbit/s
95th percentile per-packet one-way delay: 23.666 ms
Loss rate: 0.15%
```
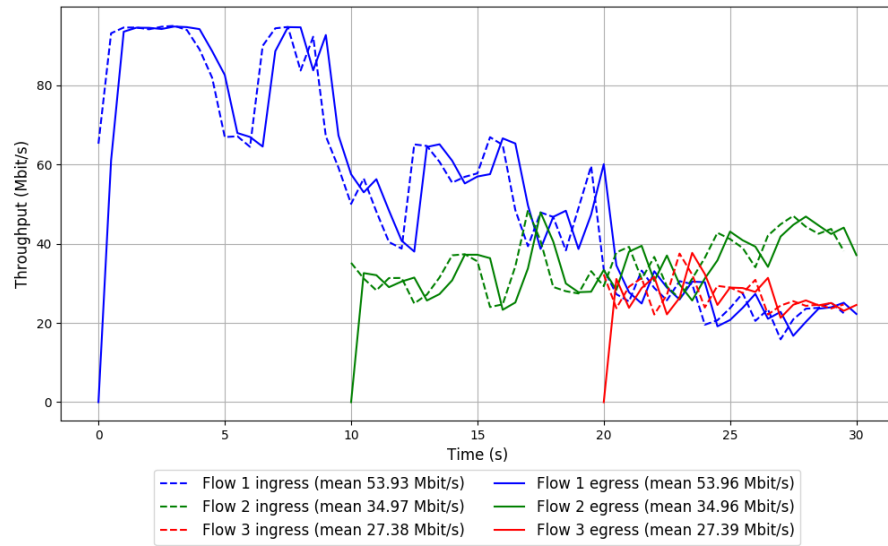
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-10-02 17:51:47
End at: 2018-10-02 17:52:17
Local clock offset: 2.207 ms
Remote clock offset: -3.922 ms


# Below is generated by plot.py at 2018-10-02 18:31:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.33 Mbit/s
95th percentile per-packet one-way delay: 26.232 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 53.96 Mbit/s
95th percentile per-packet one-way delay: 25.406 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 34.96 Mbit/s
95th percentile per-packet one-way delay: 26.992 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 27.39 Mbit/s
95th percentile per-packet one-way delay: 29.398 ms
Loss rate: 0.22%
```
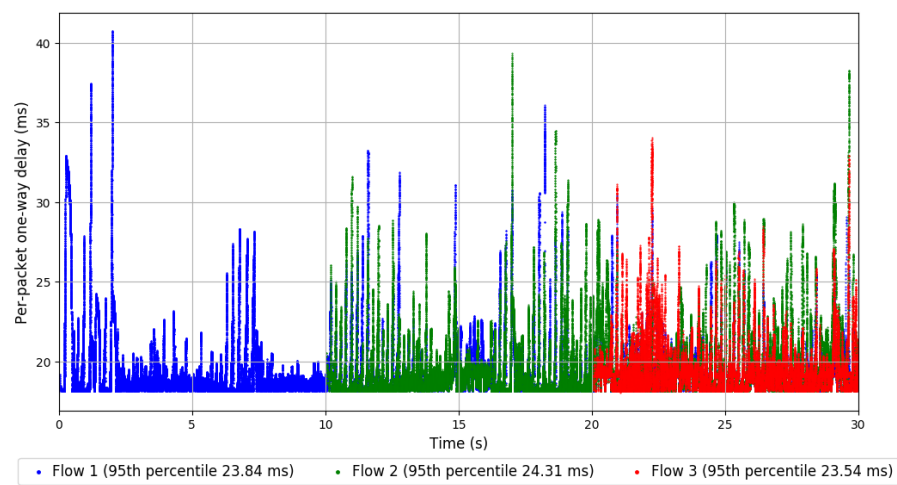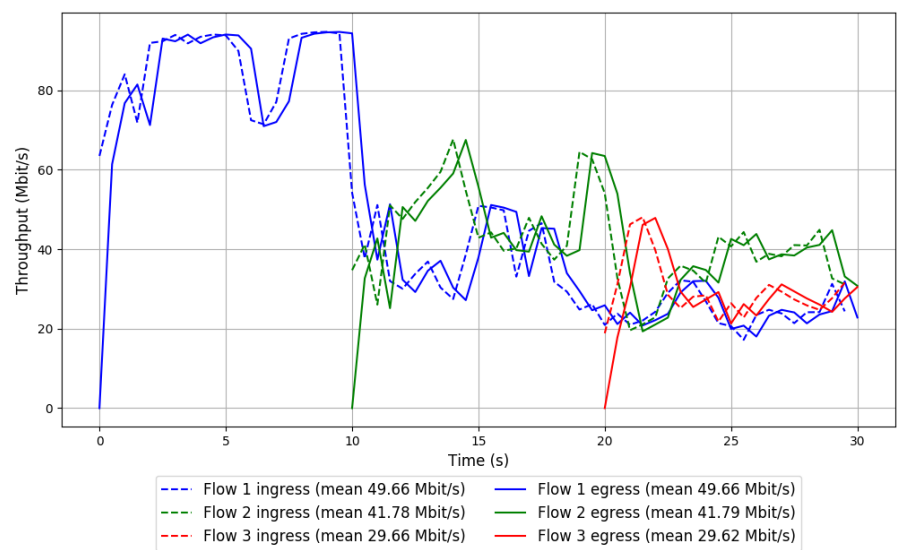
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-10-02 18:14:31
End at: 2018-10-02 18:15:01
Local clock offset: 1.567 ms
Remote clock offset: -3.559 ms

# Below is generated by plot.py at 2018-10-02 18:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.32 Mbit/s
95th percentile per-packet one-way delay: 23.935 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 49.66 Mbit/s
95th percentile per-packet one-way delay: 23.844 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 41.79 Mbit/s
95th percentile per-packet one-way delay: 24.314 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 29.62 Mbit/s
95th percentile per-packet one-way delay: 23.536 ms
Loss rate: 0.38%
```
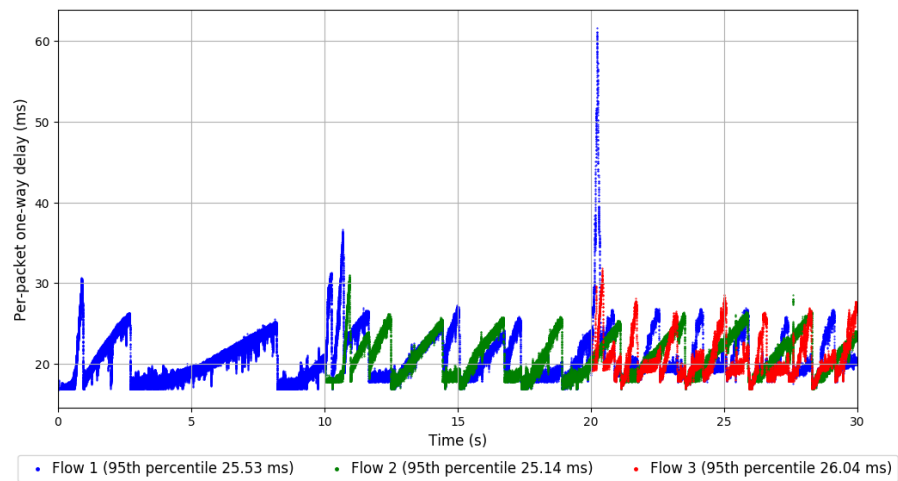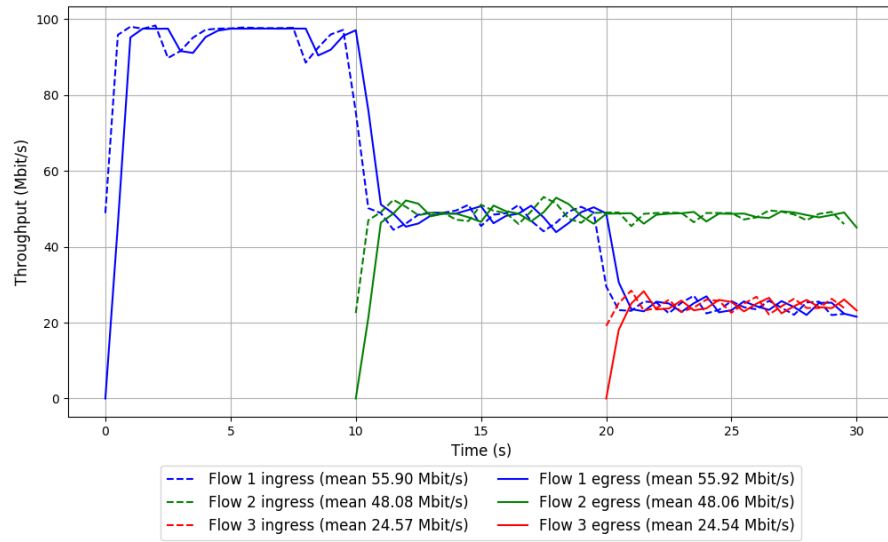
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-02 16:36:54
End at: 2018-10-02 16:37:24
Local clock offset: 0.754 ms
Remote clock offset: -1.568 ms


# Below is generated by plot.py at 2018-10-02 18:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.06 Mbit/s
95th percentile per-packet one-way delay: 25.401 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 55.92 Mbit/s
95th percentile per-packet one-way delay: 25.529 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 48.06 Mbit/s
95th percentile per-packet one-way delay: 25.137 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 24.54 Mbit/s
95th percentile per-packet one-way delay: 26.038 ms
Loss rate: 0.41%
```
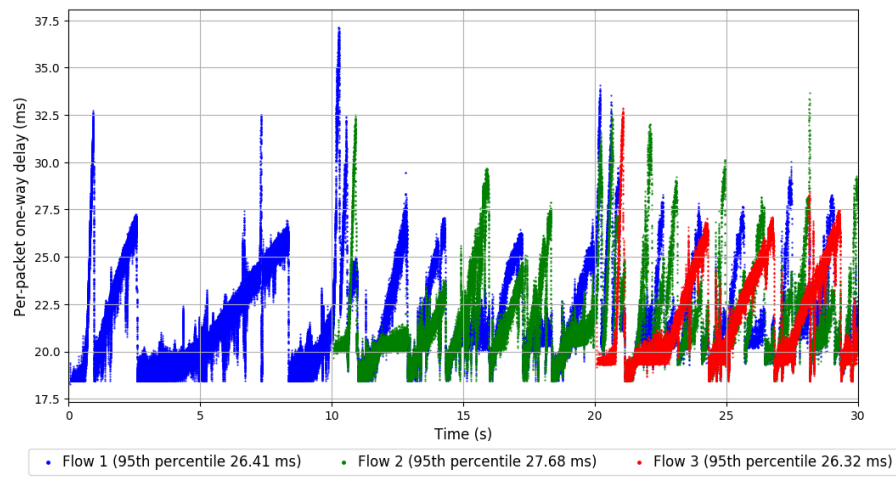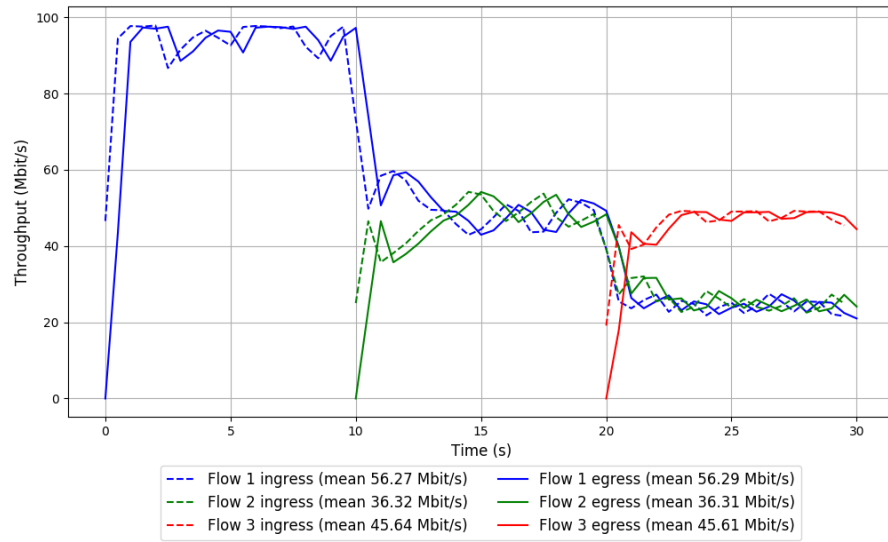
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 55.90 Mbit/s)   Flow 1 egress (mean 55.92 Mbit/s)
Flow 2 ingress (mean 48.08 Mbit/s)   Flow 2 egress (mean 48.06 Mbit/s)
Flow 3 ingress (mean 24.57 Mbit/s)   Flow 3 egress (mean 24.54 Mbit/s)

Flow 1 (95th percentile 25.53 ms)   Flow 2 (95th percentile 25.14 ms)   Flow 3 (95th percentile 26.04 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-02 16:59:43
End at: 2018-10-02 17:00:13
Local clock offset: 0.947 ms
Remote clock offset: -3.162 ms


# Below is generated by plot.py at 2018-10-02 18:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 26.606 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 56.29 Mbit/s
95th percentile per-packet one-way delay: 26.411 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 36.31 Mbit/s
95th percentile per-packet one-way delay: 27.676 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 45.61 Mbit/s
95th percentile per-packet one-way delay: 26.316 ms
Loss rate: 0.33%
```

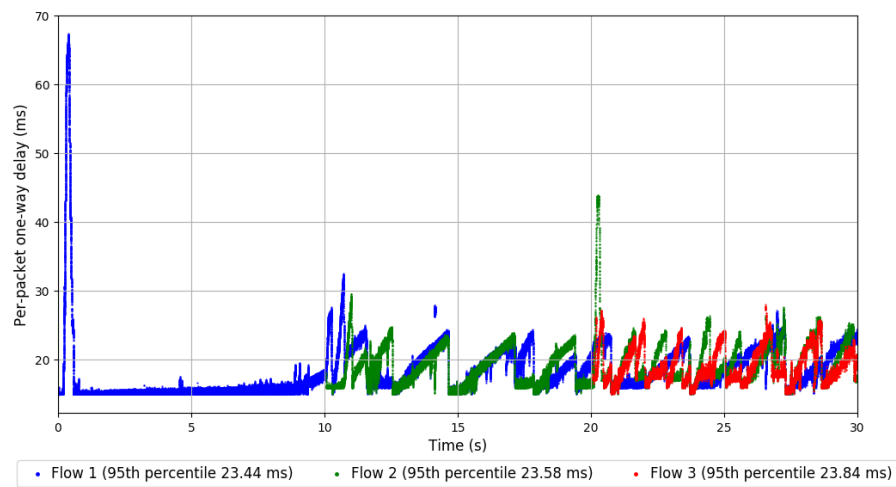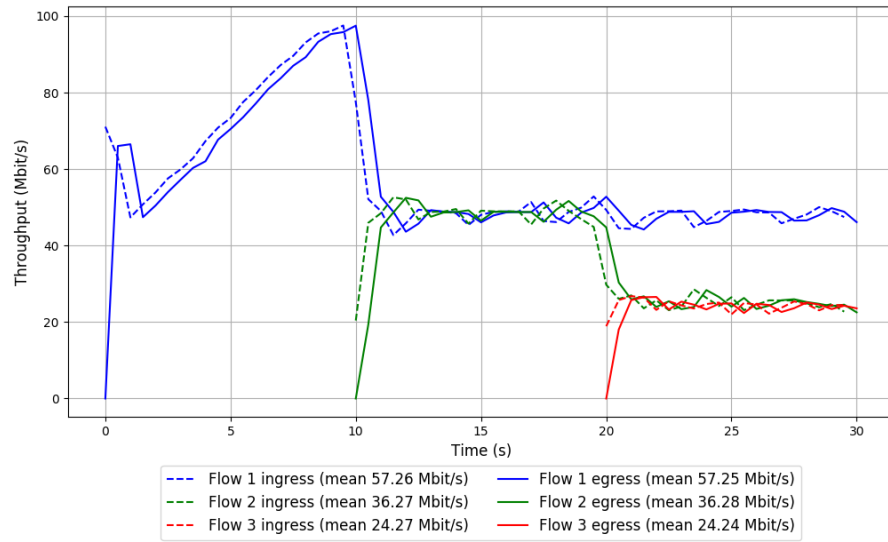Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-02 17:22:26
End at: 2018-10-02 17:22:56
Local clock offset: -0.992 ms
Remote clock offset: -1.807 ms


# Below is generated by plot.py at 2018-10-02 18:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.44 Mbit/s
95th percentile per-packet one-way delay: 23.543 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 57.25 Mbit/s
95th percentile per-packet one-way delay: 23.442 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 36.28 Mbit/s
95th percentile per-packet one-way delay: 23.582 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 24.24 Mbit/s
95th percentile per-packet one-way delay: 23.844 ms
Loss rate: 0.41%
```
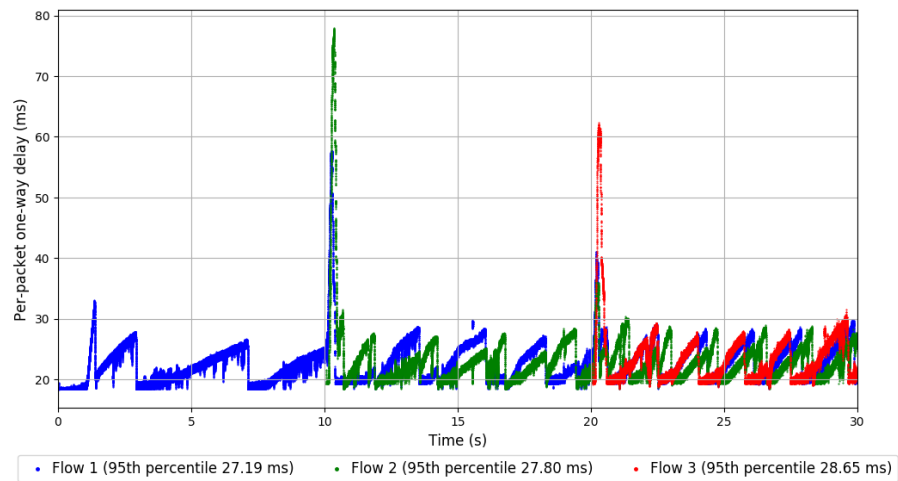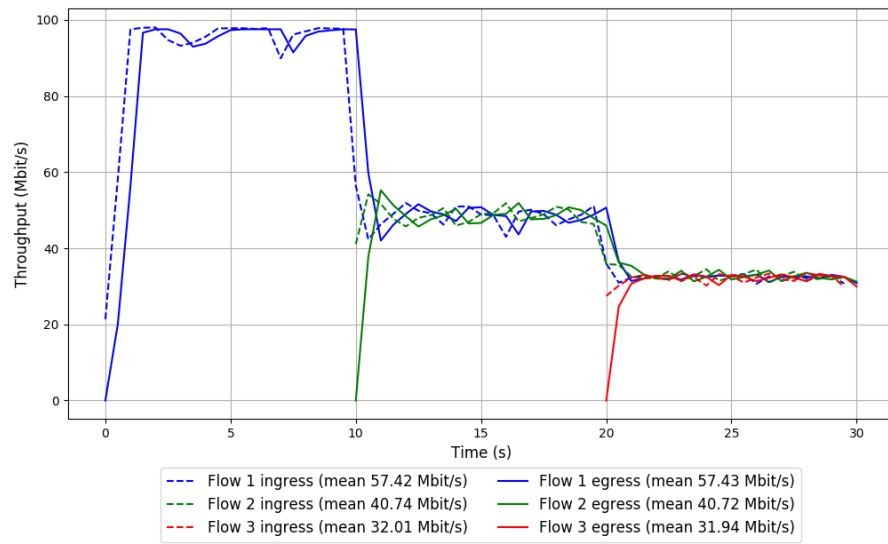
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 57.26 Mbit/s) --- Flow 1 egress (mean 57.25 Mbit/s)
Flow 2 ingress (mean 36.27 Mbit/s) --- Flow 2 egress (mean 36.28 Mbit/s)
Flow 3 ingress (mean 24.27 Mbit/s) --- Flow 3 egress (mean 24.24 Mbit/s)

Flow 1 (95th percentile 23.44 ms) · Flow 2 (95th percentile 23.58 ms) · Flow 3 (95th percentile 23.84 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-02 17:44:32
End at: 2018-10-02 17:45:02
Local clock offset: -5.332 ms
Remote clock offset: -9.478 ms


# Below is generated by plot.py at 2018-10-02 18:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.14 Mbit/s
95th percentile per-packet one-way delay: 27.534 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 57.43 Mbit/s
95th percentile per-packet one-way delay: 27.187 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.72 Mbit/s
95th percentile per-packet one-way delay: 27.802 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 31.94 Mbit/s
95th percentile per-packet one-way delay: 28.647 ms
Loss rate: 0.46%
```
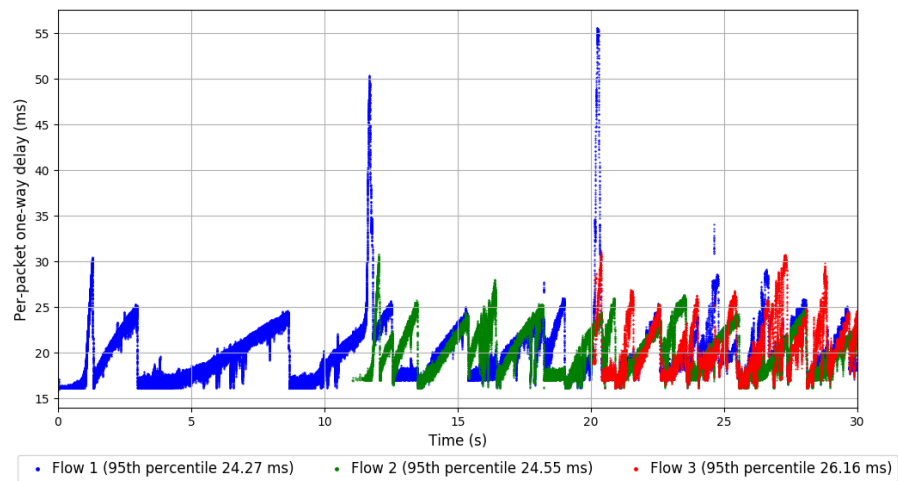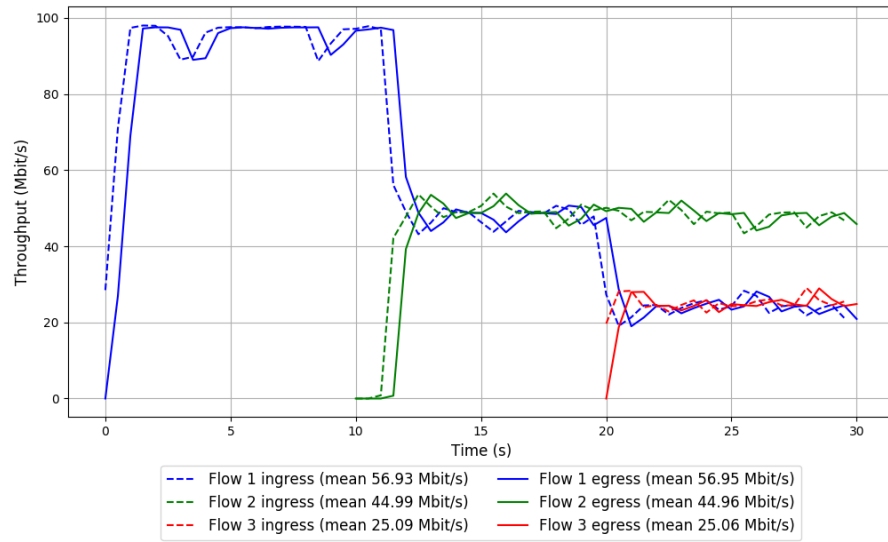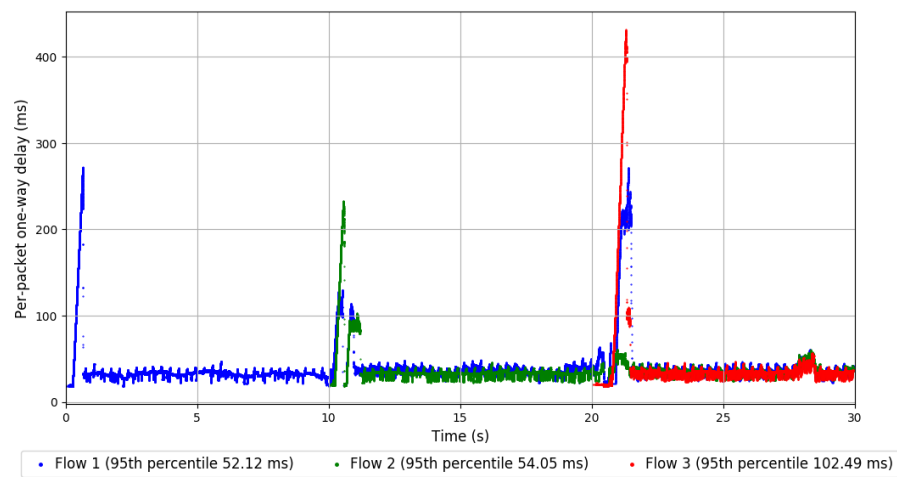
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 57.42 Mbit/s) --- Flow 1 egress (mean 57.43 Mbit/s)
Flow 2 ingress (mean 40.74 Mbit/s) --- Flow 2 egress (mean 40.72 Mbit/s)
Flow 3 ingress (mean 32.01 Mbit/s) --- Flow 3 egress (mean 31.94 Mbit/s)

Flow 1 (95th percentile 27.19 ms)   Flow 2 (95th percentile 27.80 ms)   Flow 3 (95th percentile 28.65 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-02 18:07:20
End at: 2018-10-02 18:07:50
Local clock offset: -0.618 ms
Remote clock offset: -3.574 ms


# Below is generated by plot.py at 2018-10-02 18:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.20 Mbit/s
95th percentile per-packet one-way delay: 24.569 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 24.267 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 44.96 Mbit/s
95th percentile per-packet one-way delay: 24.554 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 25.06 Mbit/s
95th percentile per-packet one-way delay: 26.161 ms
Loss rate: 0.39%
```
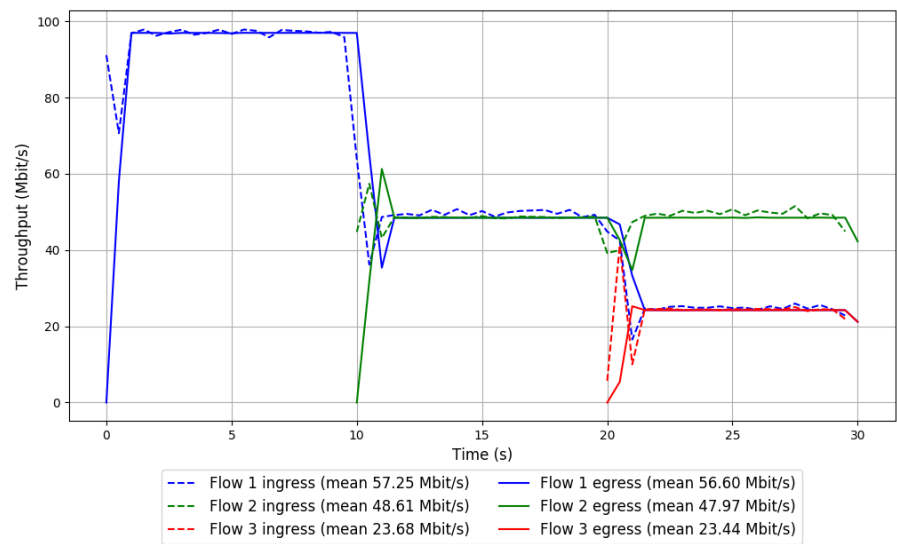
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-10-02 16:40:29
End at: 2018-10-02 16:40:59
Local clock offset: 1.947 ms
Remote clock offset: -1.973 ms


# Below is generated by plot.py at 2018-10-02 18:32:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 54.350 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 56.60 Mbit/s
95th percentile per-packet one-way delay: 52.123 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 47.97 Mbit/s
95th percentile per-packet one-way delay: 54.050 ms
Loss rate: 1.46%
-- Flow 3:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 102.492 ms
Loss rate: 1.32%
```
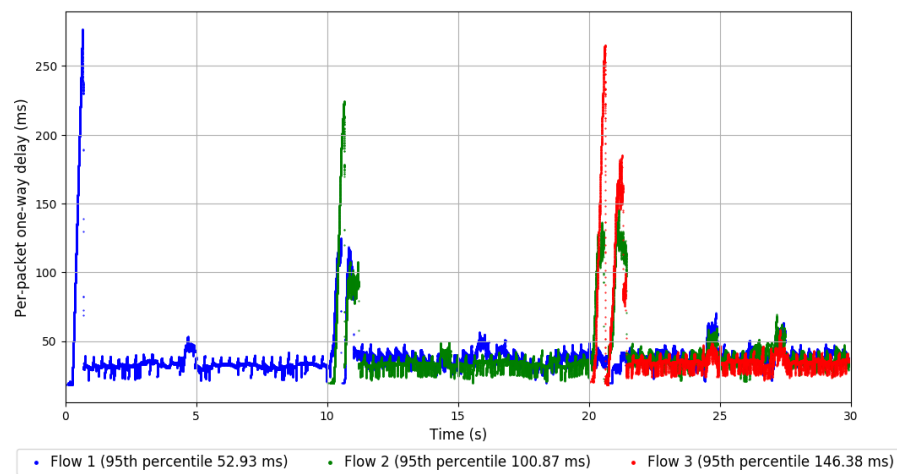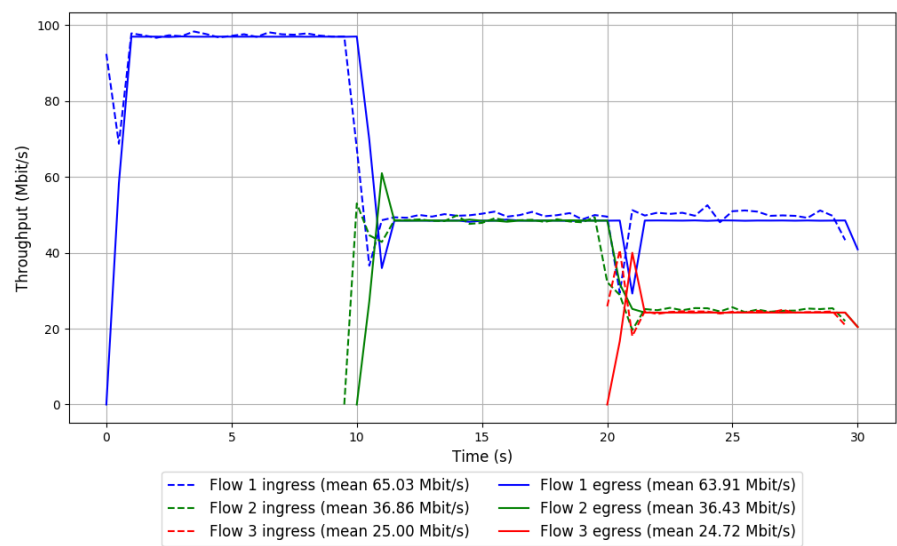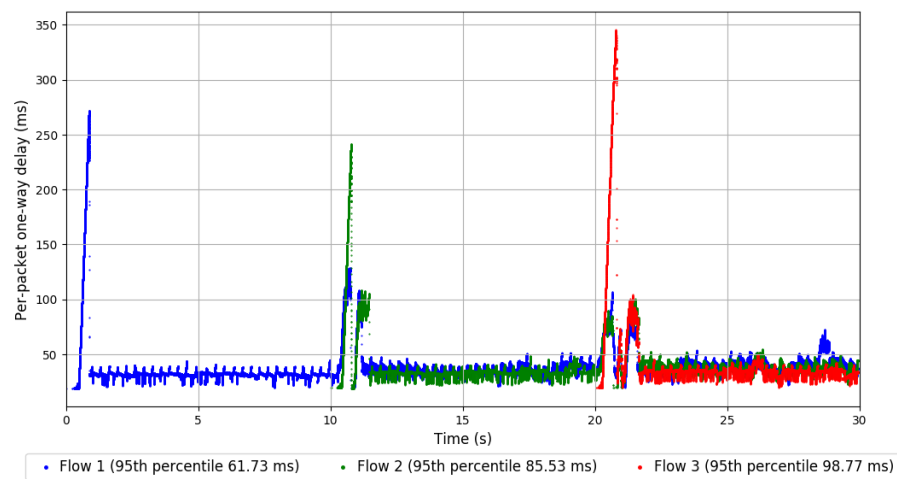
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 57.25 Mbit/s) — Flow 1 egress (mean 56.60 Mbit/s)
Flow 2 ingress (mean 48.61 Mbit/s) — Flow 2 egress (mean 47.97 Mbit/s)
Flow 3 ingress (mean 23.68 Mbit/s) — Flow 3 egress (mean 23.44 Mbit/s)

Flow 1 (95th percentile 52.12 ms)   Flow 2 (95th percentile 54.05 ms)   Flow 3 (95th percentile 102.49 ms)

36

```
Run 2: Statistics of FillP

Start at: 2018-10-02 17:03:12
End at: 2018-10-02 17:03:42
Local clock offset: 0.516 ms
Remote clock offset: -3.822 ms


# Below is generated by plot.py at 2018-10-02 18:32:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.34 Mbit/s
95th percentile per-packet one-way delay: 67.838 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 63.91 Mbit/s
95th percentile per-packet one-way delay: 52.926 ms
Loss rate: 1.81%
-- Flow 2:
Average throughput: 36.43 Mbit/s
95th percentile per-packet one-way delay: 100.866 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 24.72 Mbit/s
95th percentile per-packet one-way delay: 146.383 ms
Loss rate: 1.41%
```

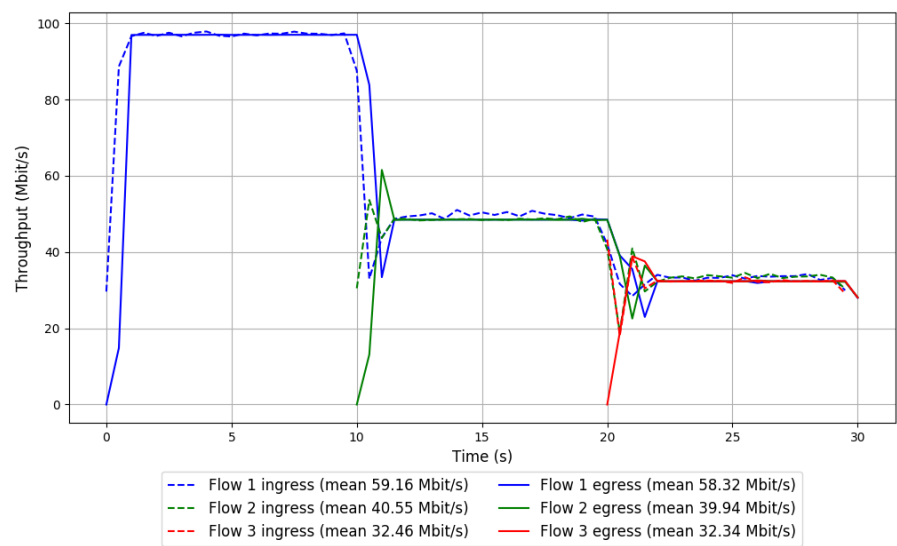Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-10-02 17:25:55
End at: 2018-10-02 17:26:25
Local clock offset: 1.459 ms
Remote clock offset: -3.317 ms


# Below is generated by plot.py at 2018-10-02 18:32:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.62 Mbit/s
95th percentile per-packet one-way delay: 75.949 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 58.32 Mbit/s
95th percentile per-packet one-way delay: 61.726 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 39.94 Mbit/s
95th percentile per-packet one-way delay: 85.535 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 98.770 ms
Loss rate: 0.75%
```
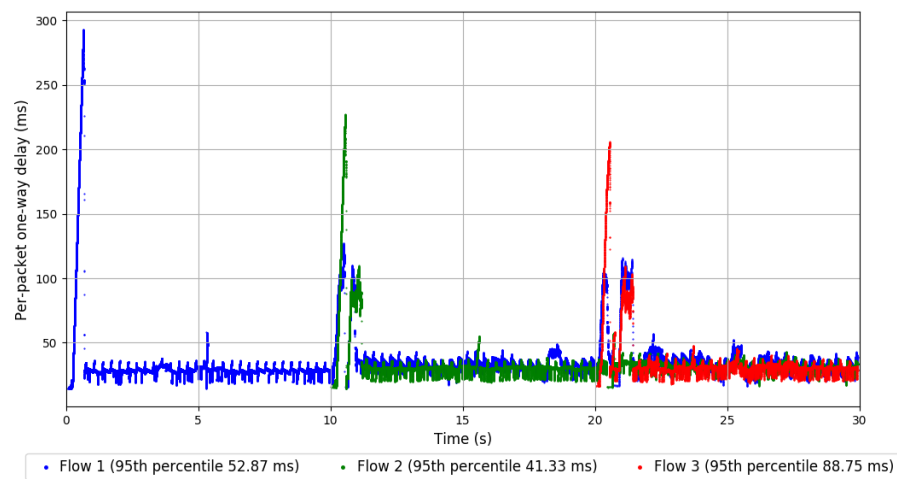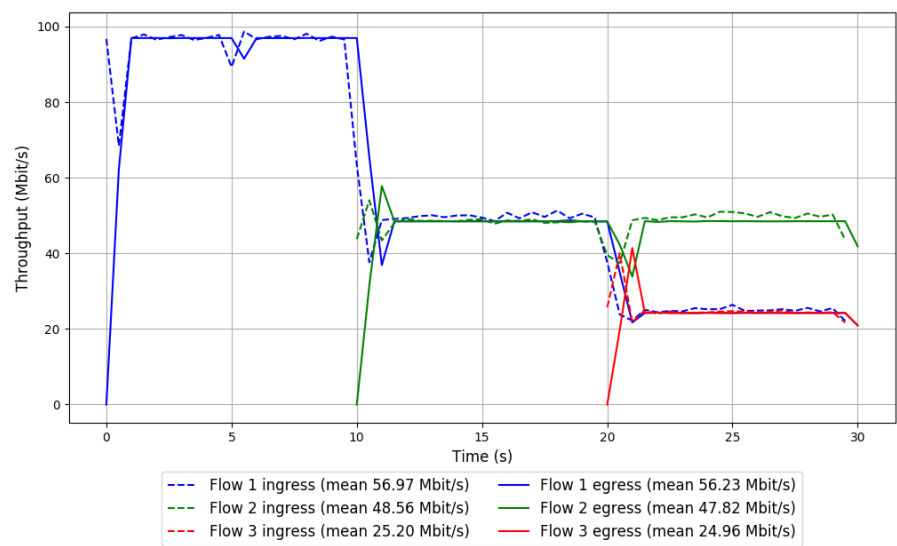
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-02 17:48:07
End at: 2018-10-02 17:48:37
Local clock offset: -3.29 ms
Remote clock offset: -4.001 ms


# Below is generated by plot.py at 2018-10-02 18:32:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.31 Mbit/s
95th percentile per-packet one-way delay: 55.290 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 56.23 Mbit/s
95th percentile per-packet one-way delay: 52.869 ms
Loss rate: 1.39%
-- Flow 2:
Average throughput: 47.82 Mbit/s
95th percentile per-packet one-way delay: 41.334 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 24.96 Mbit/s
95th percentile per-packet one-way delay: 88.752 ms
Loss rate: 1.29%
```
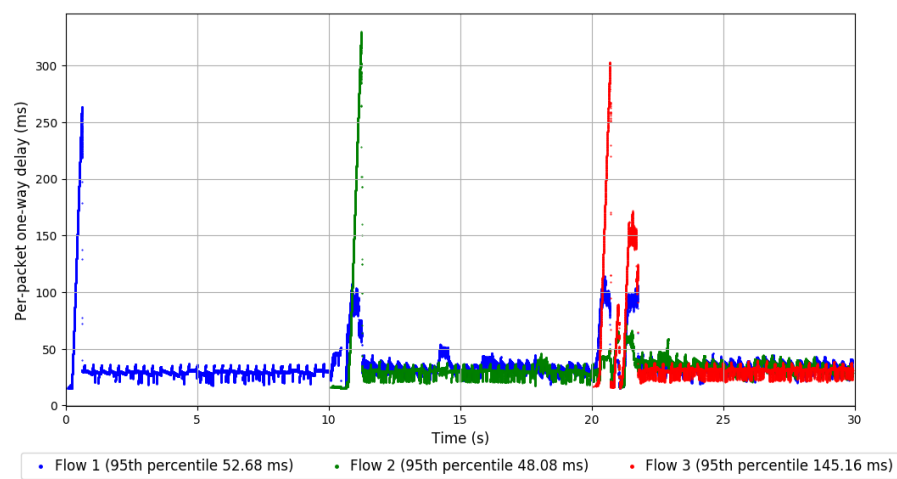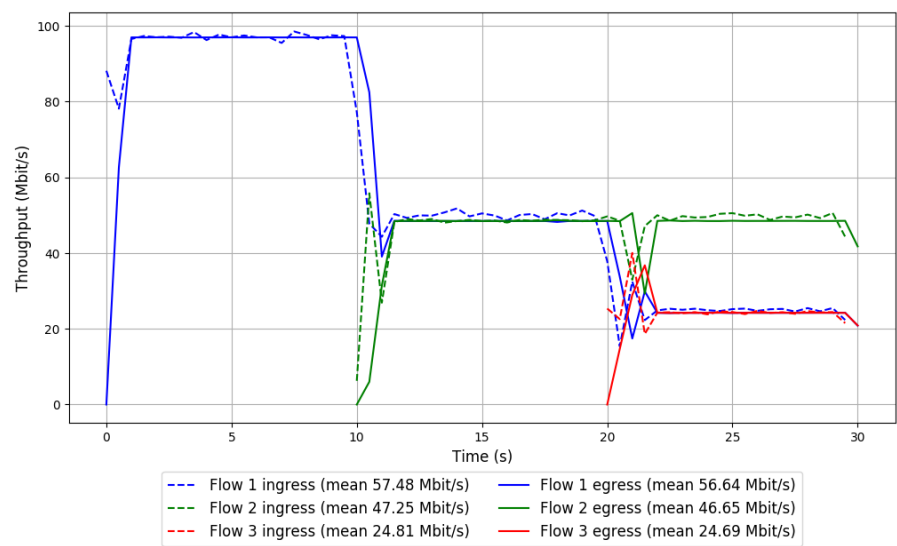
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-10-02 18:10:53
End at: 2018-10-02 18:11:23
Local clock offset: -0.676 ms
Remote clock offset: -3.169 ms

# Below is generated by plot.py at 2018-10-02 18:33:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 57.520 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 56.64 Mbit/s
95th percentile per-packet one-way delay: 52.678 ms
Loss rate: 1.56%
-- Flow 2:
Average throughput: 46.65 Mbit/s
95th percentile per-packet one-way delay: 48.077 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 24.69 Mbit/s
95th percentile per-packet one-way delay: 145.156 ms
Loss rate: 0.79%
```
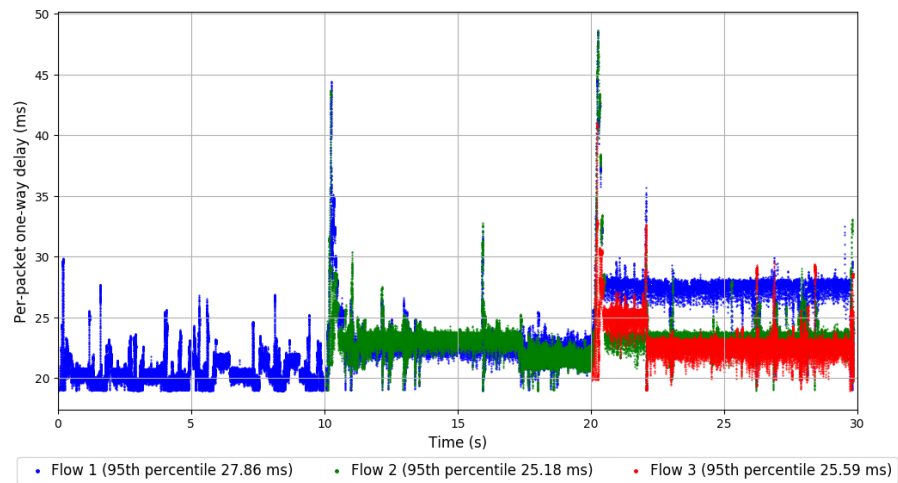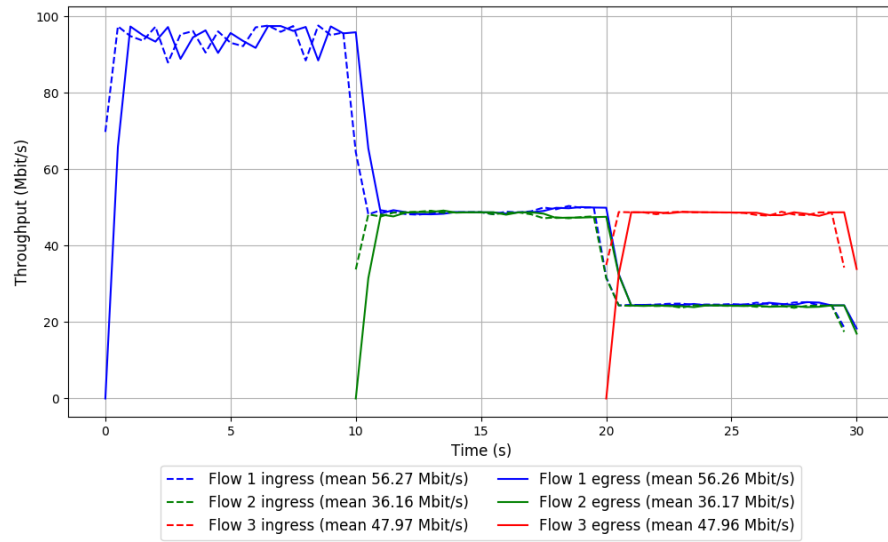
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 57.48 Mbit/s) — — — Flow 1 egress (mean 56.64 Mbit/s)
Flow 2 ingress (mean 47.25 Mbit/s) — — — Flow 2 egress (mean 46.65 Mbit/s)
Flow 3 ingress (mean 24.81 Mbit/s) — — — Flow 3 egress (mean 24.69 Mbit/s)

Flow 1 (95th percentile 52.68 ms)   Flow 2 (95th percentile 48.08 ms)   Flow 3 (95th percentile 145.16 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-10-02 16:55:49
End at: 2018-10-02 16:56:19
Local clock offset: 0.428 ms
Remote clock offset: -4.165 ms

# Below is generated by plot.py at 2018-10-02 18:33:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.05 Mbit/s
95th percentile per-packet one-way delay: 27.753 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 56.26 Mbit/s
95th percentile per-packet one-way delay: 27.865 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 36.17 Mbit/s
95th percentile per-packet one-way delay: 25.182 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 47.96 Mbit/s
95th percentile per-packet one-way delay: 25.585 ms
Loss rate: 0.28%
```
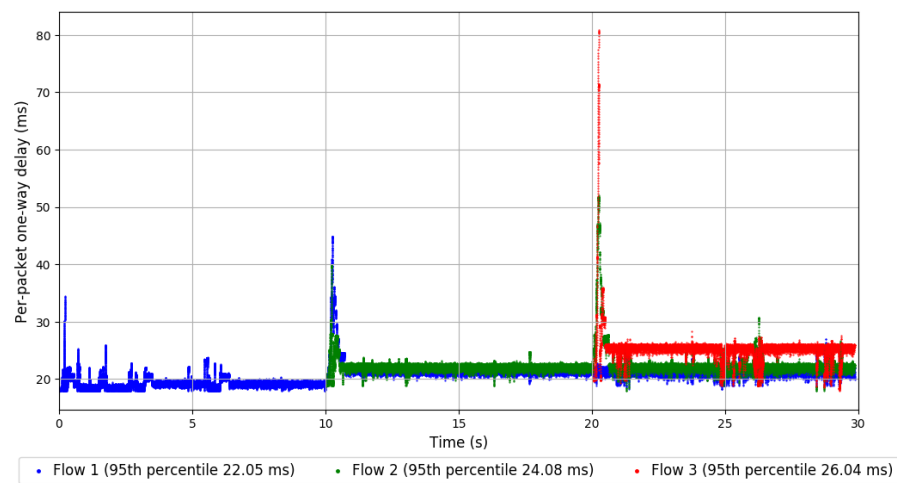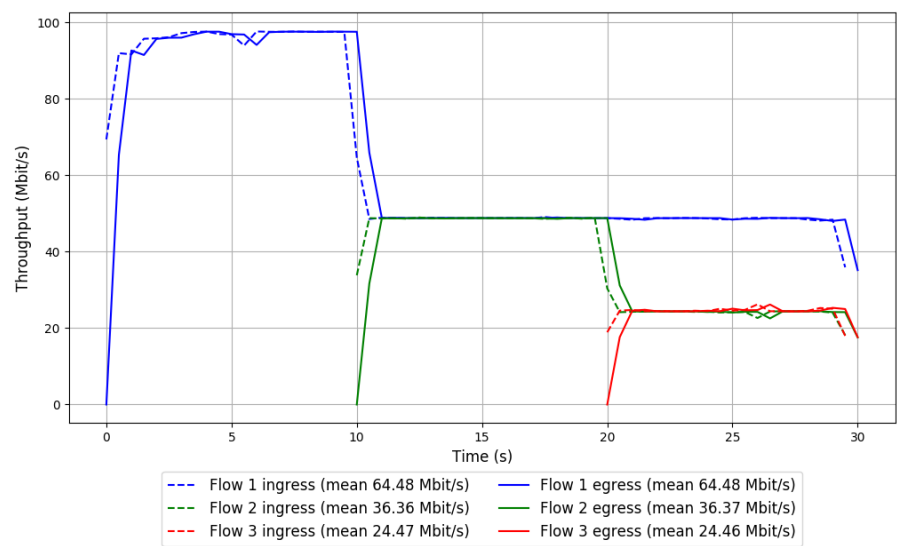
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-02 17:18:39
End at: 2018-10-02 17:19:09
Local clock offset: 0.685 ms
Remote clock offset: -3.014 ms


# Below is generated by plot.py at 2018-10-02 18:33:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.68 Mbit/s
95th percentile per-packet one-way delay: 25.744 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 64.48 Mbit/s
95th percentile per-packet one-way delay: 22.053 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 36.37 Mbit/s
95th percentile per-packet one-way delay: 24.082 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 24.46 Mbit/s
95th percentile per-packet one-way delay: 26.044 ms
Loss rate: 0.34%
```

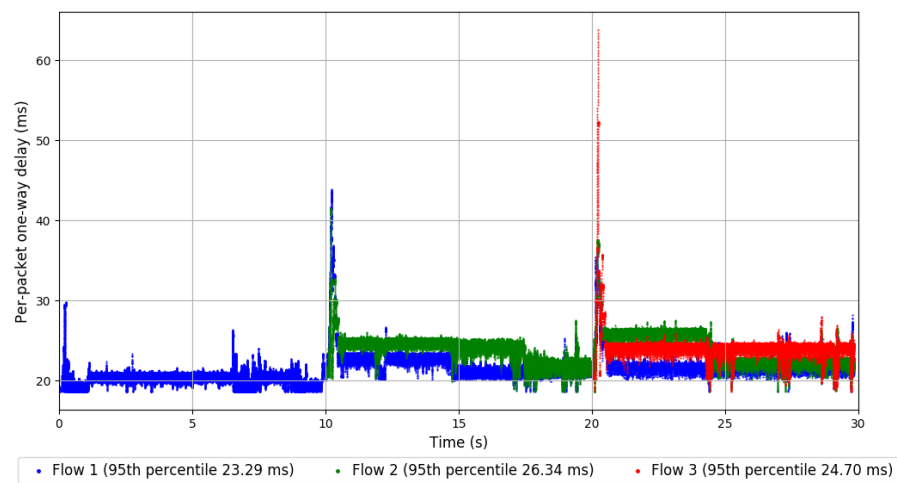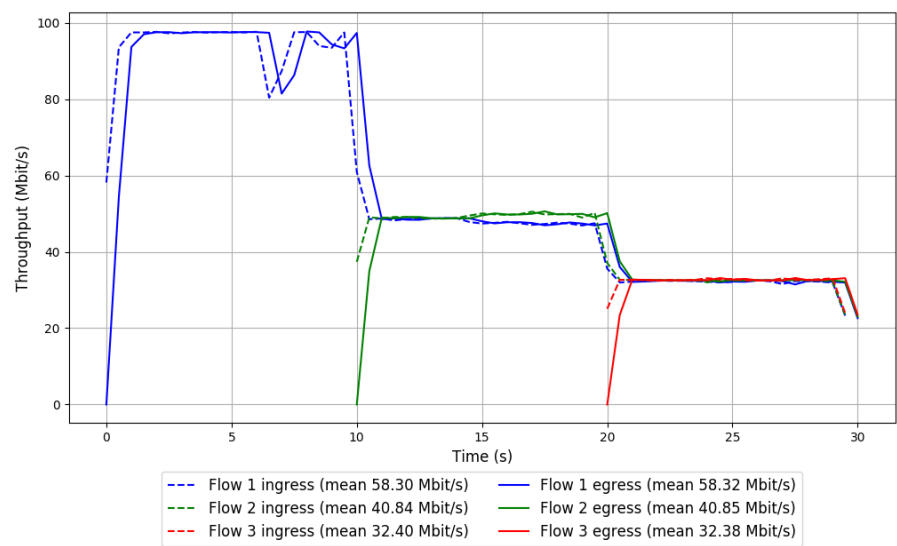Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-02 17:40:51
End at: 2018-10-02 17:41:21
Local clock offset: 1.117 ms
Remote clock offset: -3.228 ms


# Below is generated by plot.py at 2018-10-02 18:33:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.13 Mbit/s
95th percentile per-packet one-way delay: 25.982 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 58.32 Mbit/s
95th percentile per-packet one-way delay: 23.285 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.85 Mbit/s
95th percentile per-packet one-way delay: 26.342 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.38 Mbit/s
95th percentile per-packet one-way delay: 24.699 ms
Loss rate: 0.32%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-02 18:03:27
End at: 2018-10-02 18:03:57
Local clock offset: 2.743 ms
Remote clock offset: -3.231 ms


# Below is generated by plot.py at 2018-10-02 18:33:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.24 Mbit/s
95th percentile per-packet one-way delay: 26.388 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 58.67 Mbit/s
95th percentile per-packet one-way delay: 23.913 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.62 Mbit/s
95th percentile per-packet one-way delay: 26.940 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 26.811 ms
Loss rate: 0.39%
```
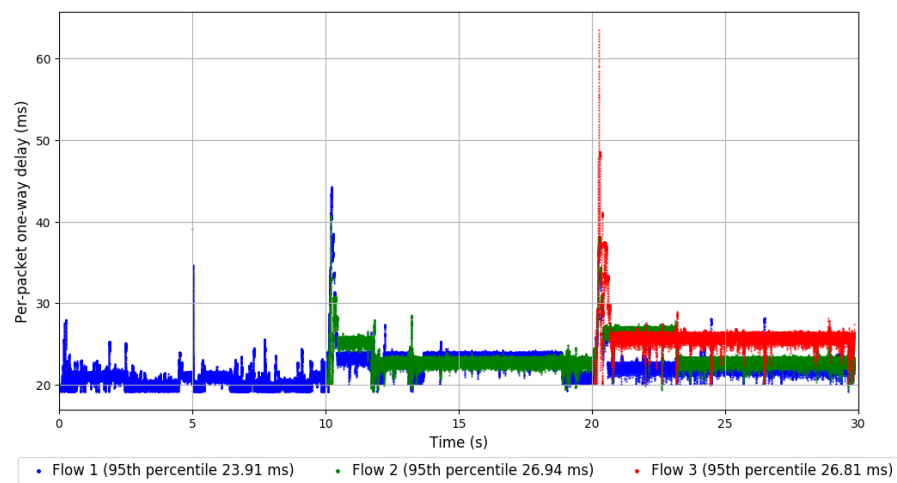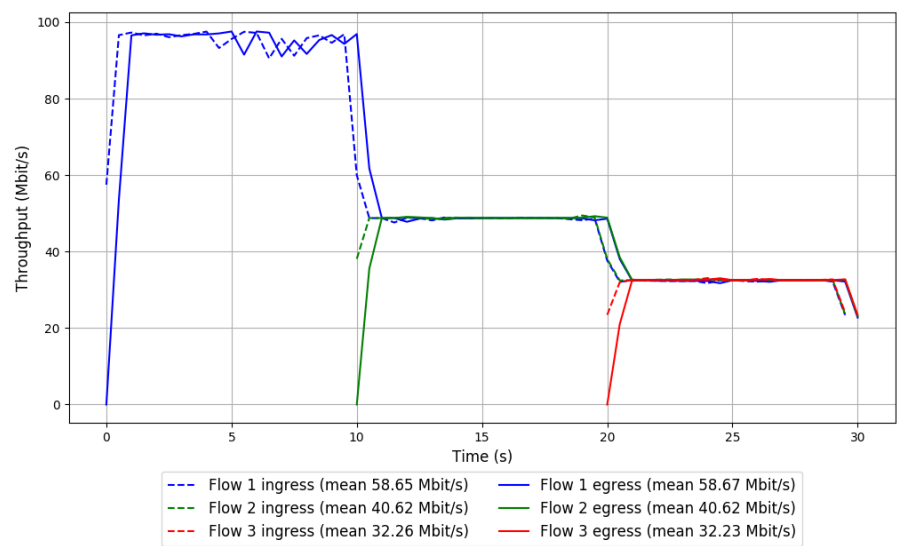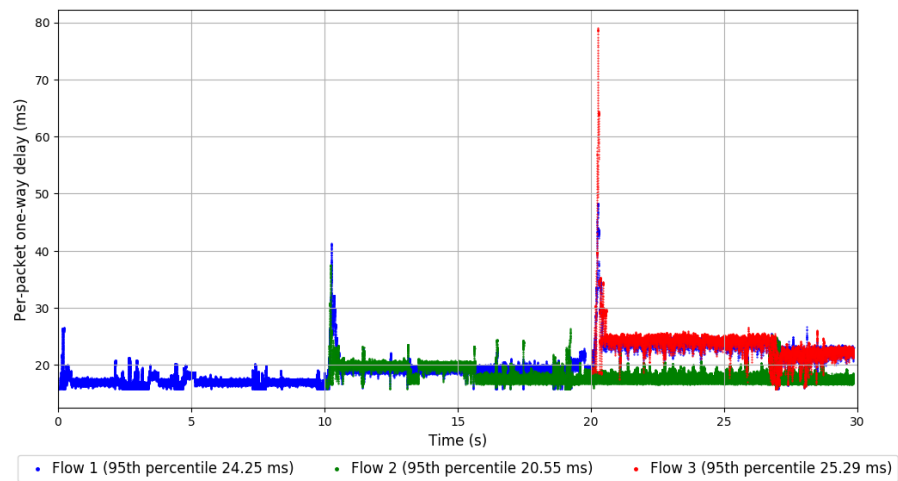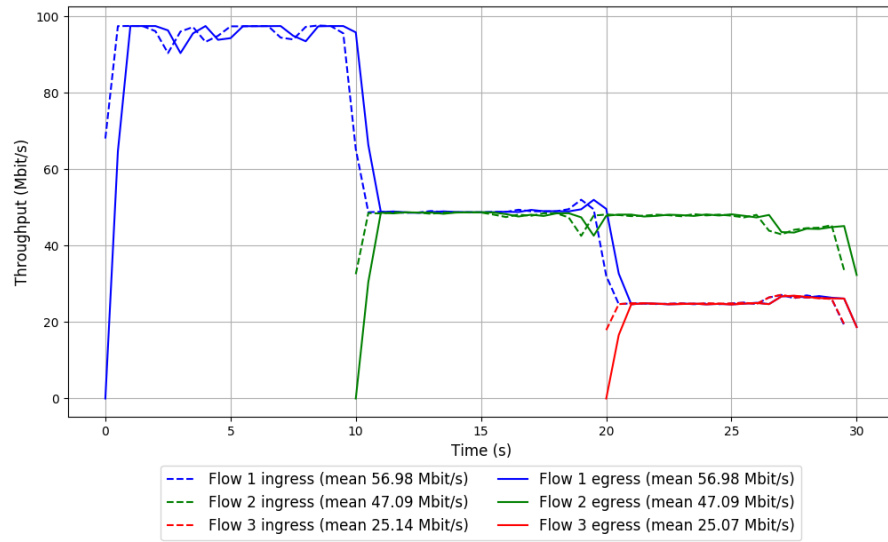
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-10-02 18:26:05
End at: 2018-10-02 18:26:35
Local clock offset: -1.076 ms
Remote clock offset: -3.165 ms

# Below is generated by plot.py at 2018-10-02 18:33:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.49 Mbit/s
95th percentile per-packet one-way delay: 24.487 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 24.248 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 47.09 Mbit/s
95th percentile per-packet one-way delay: 20.551 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 25.07 Mbit/s
95th percentile per-packet one-way delay: 25.292 ms
Loss rate: 0.62%
```
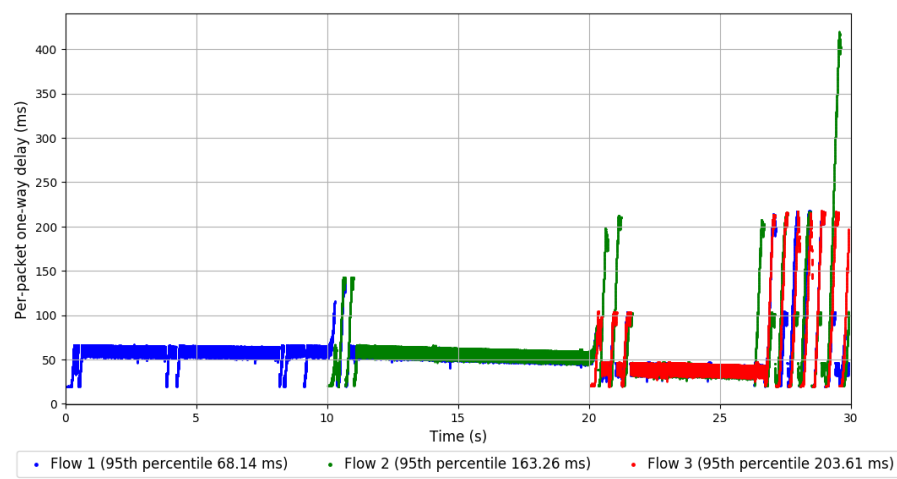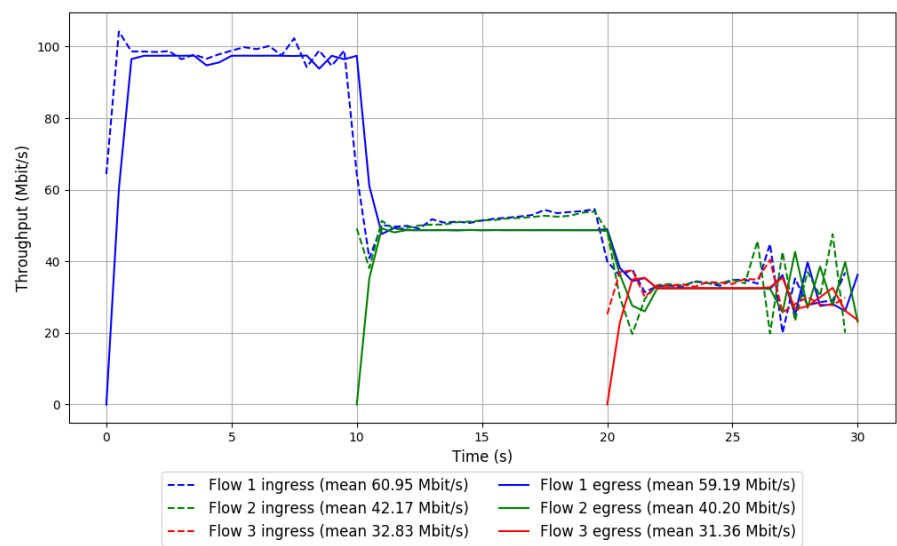
Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-02 16:53:15
End at: 2018-10-02 16:53:45
Local clock offset: 1.726 ms
Remote clock offset: -3.504 ms


# Below is generated by plot.py at 2018-10-02 18:33:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.31 Mbit/s
95th percentile per-packet one-way delay: 118.733 ms
Loss rate: 3.56%
-- Flow 1:
Average throughput: 59.19 Mbit/s
95th percentile per-packet one-way delay: 68.141 ms
Loss rate: 2.97%
-- Flow 2:
Average throughput: 40.20 Mbit/s
95th percentile per-packet one-way delay: 163.259 ms
Loss rate: 4.77%
-- Flow 3:
Average throughput: 31.36 Mbit/s
95th percentile per-packet one-way delay: 203.614 ms
Loss rate: 3.76%
```

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

- - - Flow 1 ingress (mean 60.95 Mbit/s) —— Flow 1 egress (mean 59.19 Mbit/s)
- - - Flow 2 ingress (mean 42.17 Mbit/s) —— Flow 2 egress (mean 40.20 Mbit/s)
- - - Flow 3 ingress (mean 32.83 Mbit/s) —— Flow 3 egress (mean 31.36 Mbit/s)

- Flow 1 (95th percentile 68.14 ms)   - Flow 2 (95th percentile 163.26 ms)   - Flow 3 (95th percentile 203.61 ms)
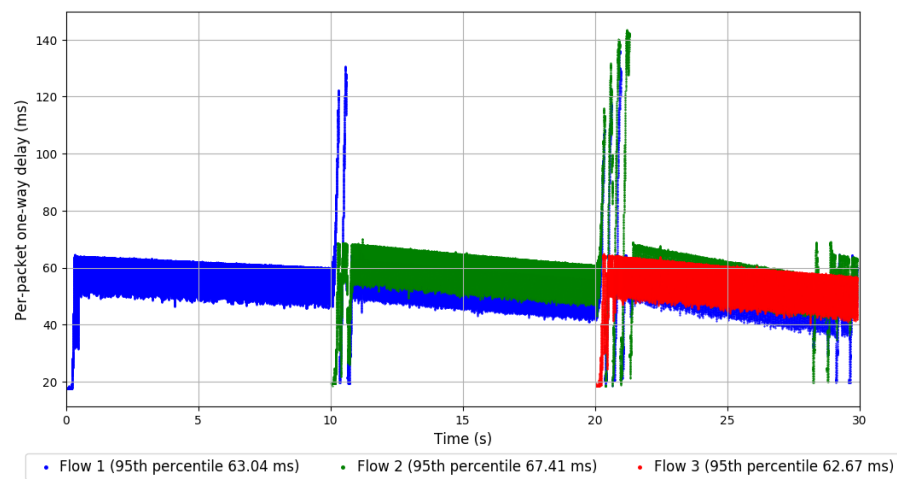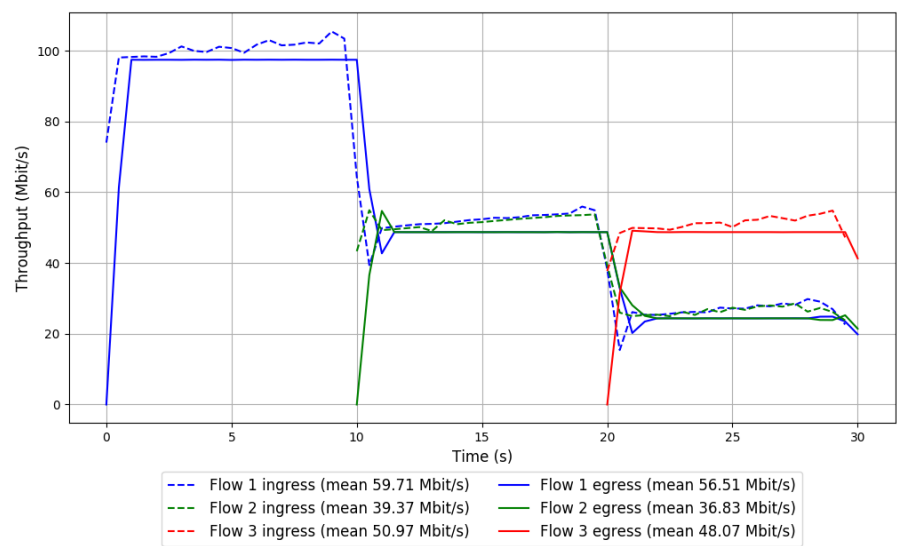
```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-02 17:16:08
End at: 2018-10-02 17:16:38
Local clock offset: 1.016 ms
Remote clock offset: -2.457 ms


# Below is generated by plot.py at 2018-10-02 18:33:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.91 Mbit/s
95th percentile per-packet one-way delay: 65.000 ms
Loss rate: 5.82%
-- Flow 1:
Average throughput: 56.51 Mbit/s
95th percentile per-packet one-way delay: 63.043 ms
Loss rate: 5.46%
-- Flow 2:
Average throughput: 36.83 Mbit/s
95th percentile per-packet one-way delay: 67.406 ms
Loss rate: 6.55%
-- Flow 3:
Average throughput: 48.07 Mbit/s
95th percentile per-packet one-way delay: 62.671 ms
Loss rate: 5.98%
```

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

Flow 1 ingress (mean 59.71 Mbit/s) --- Flow 1 egress (mean 56.51 Mbit/s)
Flow 2 ingress (mean 39.37 Mbit/s) --- Flow 2 egress (mean 36.83 Mbit/s)
Flow 3 ingress (mean 50.97 Mbit/s) --- Flow 3 egress (mean 48.07 Mbit/s)

Flow 1 (95th percentile 63.04 ms)   Flow 2 (95th percentile 67.41 ms)   Flow 3 (95th percentile 62.67 ms)
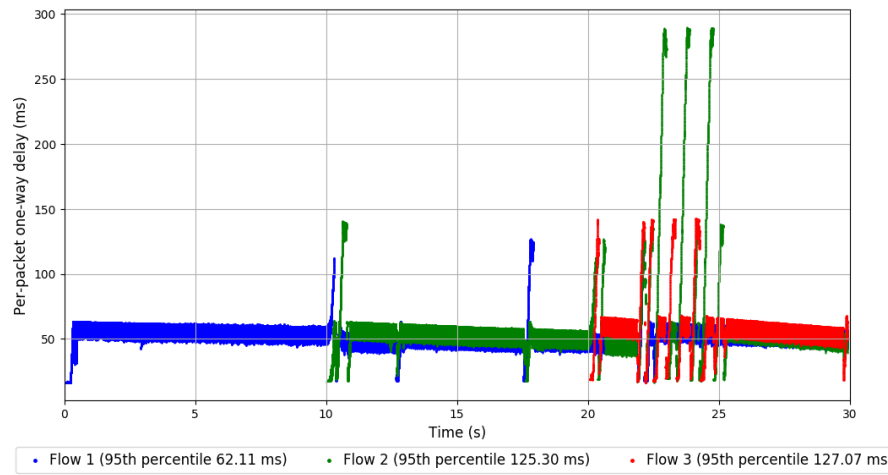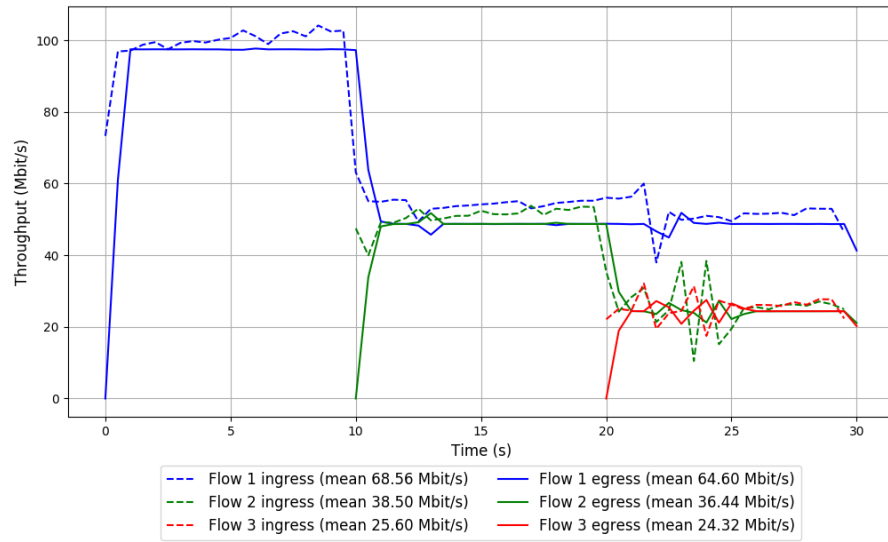
```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-02 17:38:23
End at: 2018-10-02 17:38:53
Local clock offset: -1.101 ms
Remote clock offset: -3.443 ms


# Below is generated by plot.py at 2018-10-02 18:34:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.89 Mbit/s
95th percentile per-packet one-way delay: 64.481 ms
Loss rate: 5.71%
-- Flow 1:
Average throughput: 64.60 Mbit/s
95th percentile per-packet one-way delay: 62.112 ms
Loss rate: 5.86%
-- Flow 2:
Average throughput: 36.44 Mbit/s
95th percentile per-packet one-way delay: 125.295 ms
Loss rate: 5.48%
-- Flow 3:
Average throughput: 24.32 Mbit/s
95th percentile per-packet one-way delay: 127.070 ms
Loss rate: 5.22%
```

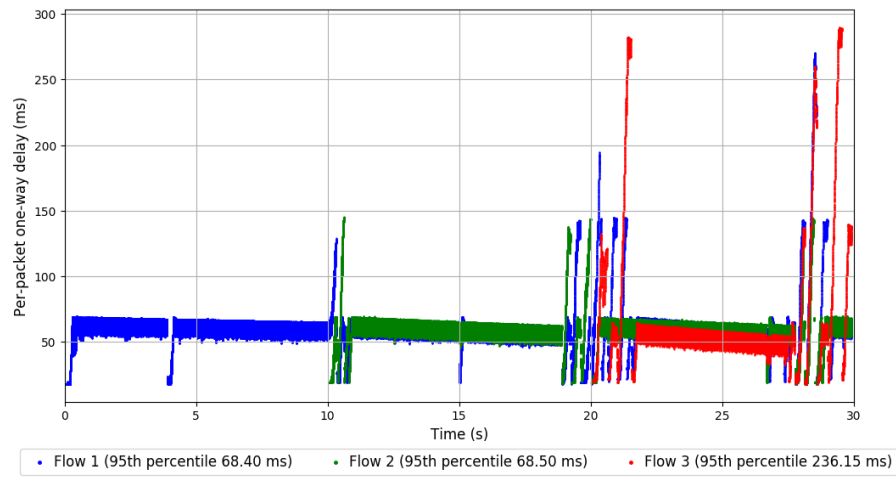Run 3: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 68.56 Mbit/s)   Flow 1 egress (mean 64.60 Mbit/s)
Flow 2 ingress (mean 38.50 Mbit/s)   Flow 2 egress (mean 36.44 Mbit/s)
Flow 3 ingress (mean 25.60 Mbit/s)   Flow 3 egress (mean 24.32 Mbit/s)

Flow 1 (95th percentile 62.11 ms)   Flow 2 (95th percentile 125.30 ms)   Flow 3 (95th percentile 127.07 ms)
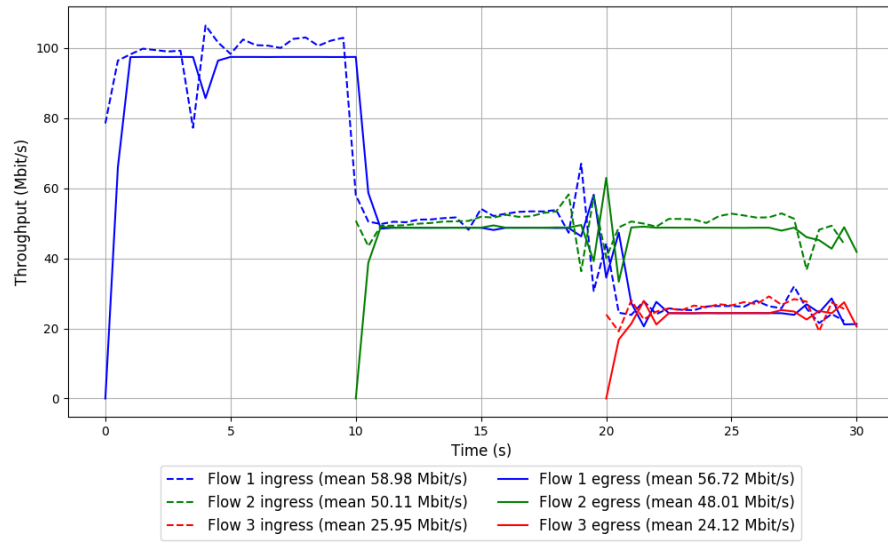
60

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

Start at: 2018-10-02 18:00:47
End at: 2018-10-02 18:01:17
Local clock offset: 0.59 ms
Remote clock offset: -4.123 ms


# Below is generated by plot.py at 2018-10-02 18:34:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.62 Mbit/s
95th percentile per-packet one-way delay: 69.342 ms
Loss rate: 4.32%
-- Flow 1:
Average throughput: 56.72 Mbit/s
95th percentile per-packet one-way delay: 68.401 ms
Loss rate: 3.90%
-- Flow 2:
Average throughput: 48.01 Mbit/s
95th percentile per-packet one-way delay: 68.504 ms
Loss rate: 4.31%
-- Flow 3:
Average throughput: 24.12 Mbit/s
95th percentile per-packet one-way delay: 236.146 ms
Loss rate: 7.32%
```

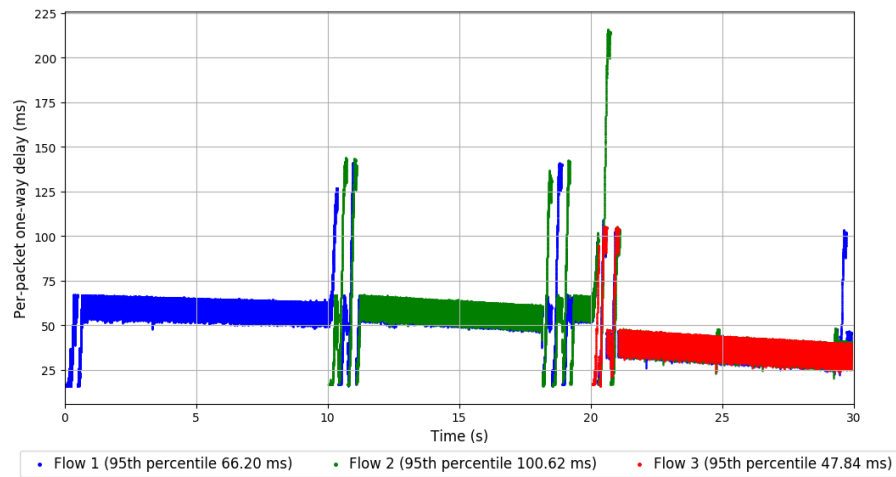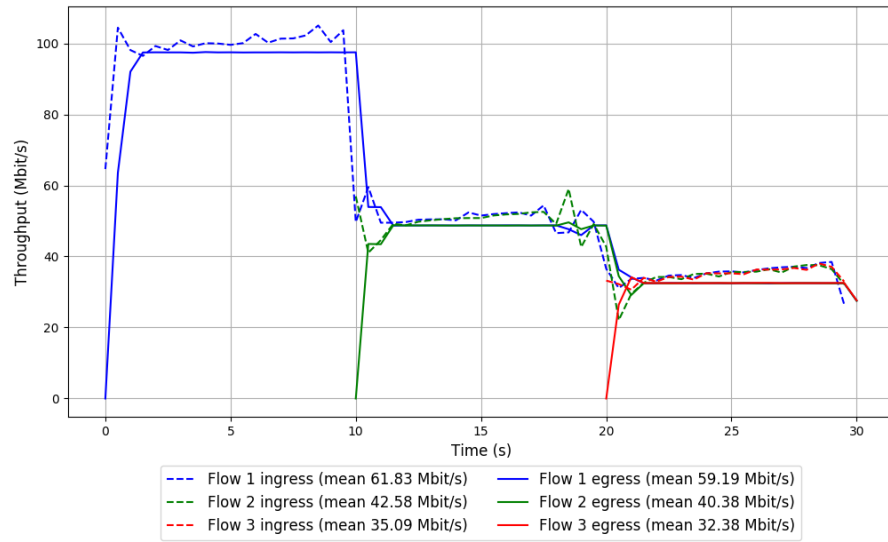Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-02 18:23:31
End at: 2018-10-02 18:24:01
Local clock offset: -1.03 ms
Remote clock offset: -3.486 ms


# Below is generated by plot.py at 2018-10-02 18:34:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.77 Mbit/s
95th percentile per-packet one-way delay: 66.510 ms
Loss rate: 4.99%
-- Flow 1:
Average throughput: 59.19 Mbit/s
95th percentile per-packet one-way delay: 66.198 ms
Loss rate: 4.31%
-- Flow 2:
Average throughput: 40.38 Mbit/s
95th percentile per-packet one-way delay: 100.618 ms
Loss rate: 5.29%
-- Flow 3:
Average throughput: 32.38 Mbit/s
95th percentile per-packet one-way delay: 47.842 ms
Loss rate: 7.88%
```

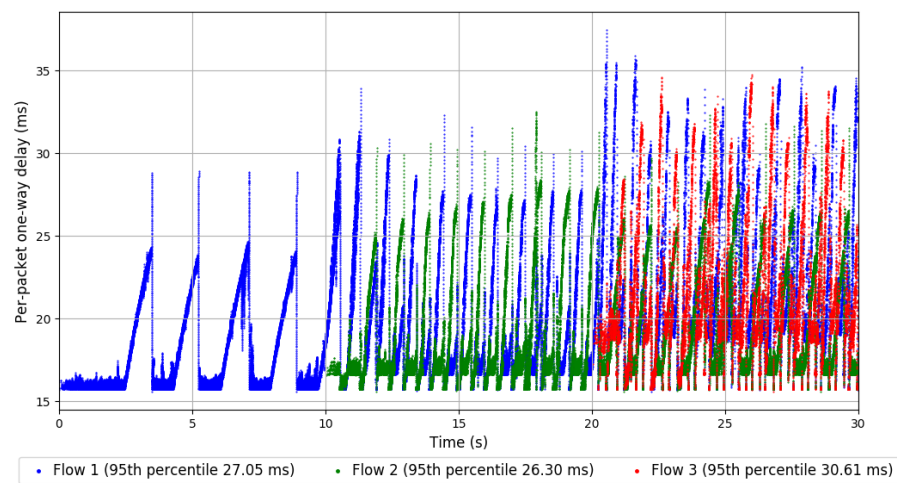Run 5: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 61.83 Mbit/s) --- Flow 1 egress (mean 59.19 Mbit/s)
Flow 2 ingress (mean 42.58 Mbit/s) --- Flow 2 egress (mean 40.38 Mbit/s)
Flow 3 ingress (mean 35.09 Mbit/s) --- Flow 3 egress (mean 32.38 Mbit/s)

Flow 1 (95th percentile 66.20 ms)   Flow 2 (95th percentile 100.62 ms)   Flow 3 (95th percentile 47.84 ms)
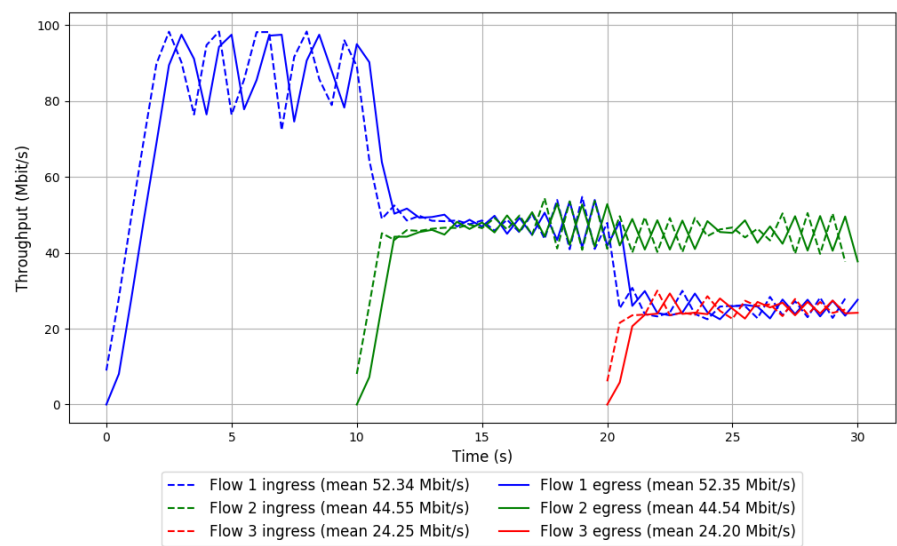
64

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-02 16:35:37
End at: 2018-10-02 16:36:07
Local clock offset: -0.521 ms
Remote clock offset: -1.61 ms

# Below is generated by plot.py at 2018-10-02 18:34:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.03 Mbit/s
95th percentile per-packet one-way delay: 27.154 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 52.35 Mbit/s
95th percentile per-packet one-way delay: 27.050 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 44.54 Mbit/s
95th percentile per-packet one-way delay: 26.305 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 24.20 Mbit/s
95th percentile per-packet one-way delay: 30.615 ms
Loss rate: 0.45%
```
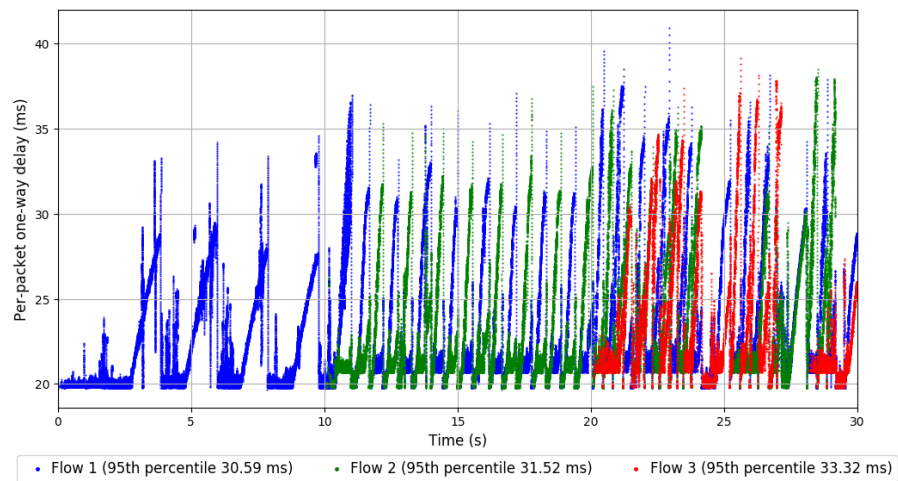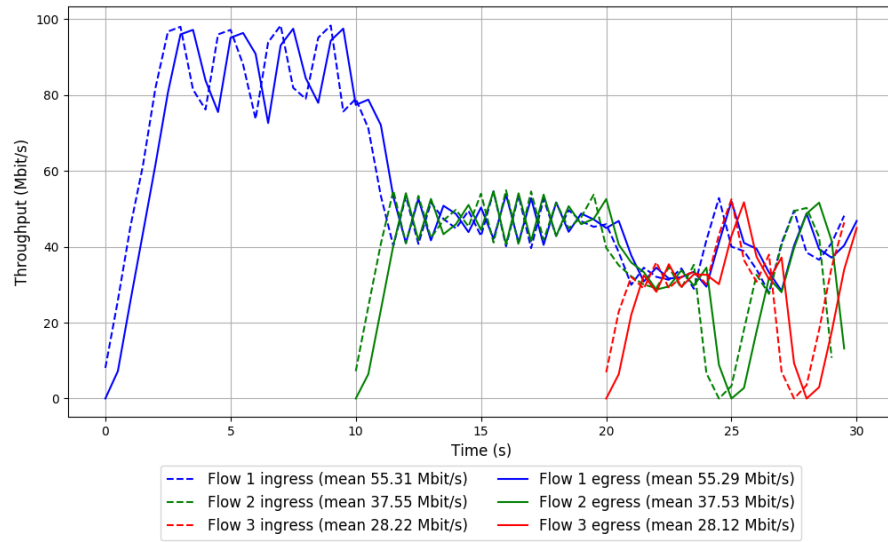
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-02 16:58:22
End at: 2018-10-02 16:58:52
Local clock offset: 1.406 ms
Remote clock offset: -4.042 ms

# Below is generated by plot.py at 2018-10-02 18:34:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.60 Mbit/s
95th percentile per-packet one-way delay: 31.161 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 55.29 Mbit/s
95th percentile per-packet one-way delay: 30.591 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 37.53 Mbit/s
95th percentile per-packet one-way delay: 31.515 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 28.12 Mbit/s
95th percentile per-packet one-way delay: 33.316 ms
Loss rate: 0.60%
```
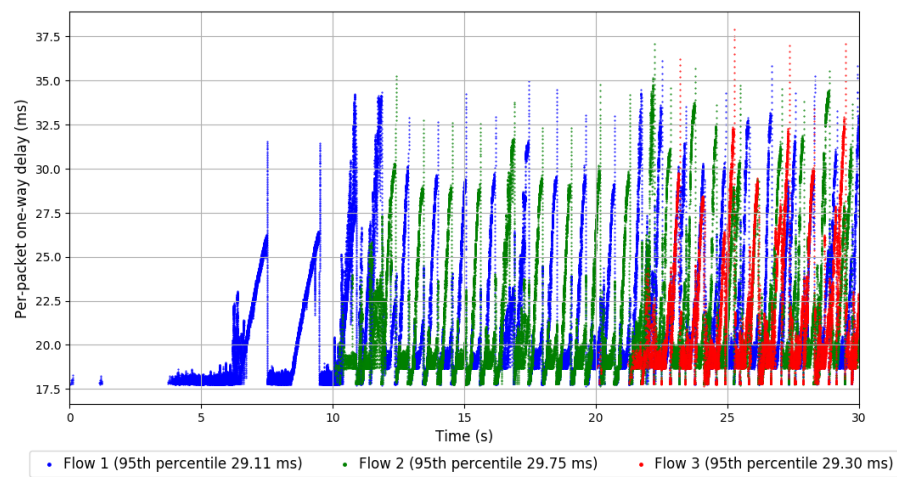
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 55.31 Mbit/s) — Flow 1 egress (mean 55.29 Mbit/s)
Flow 2 ingress (mean 37.55 Mbit/s) — Flow 2 egress (mean 37.53 Mbit/s)
Flow 3 ingress (mean 28.22 Mbit/s) — Flow 3 egress (mean 28.12 Mbit/s)

Flow 1 (95th percentile 30.59 ms)   •   Flow 2 (95th percentile 31.52 ms)   •   Flow 3 (95th percentile 33.32 ms)
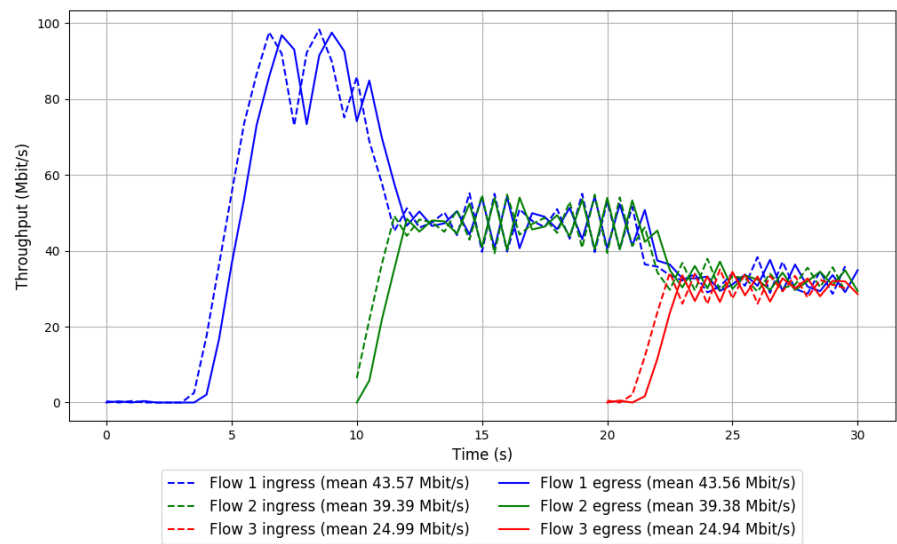
```
Run 3: Statistics of LEDBAT

Start at: 2018-10-02 17:21:12
End at: 2018-10-02 17:21:42
Local clock offset: 0.69 ms
Remote clock offset: -2.889 ms


# Below is generated by plot.py at 2018-10-02 18:34:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.05 Mbit/s
95th percentile per-packet one-way delay: 29.331 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 43.56 Mbit/s
95th percentile per-packet one-way delay: 29.106 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 39.38 Mbit/s
95th percentile per-packet one-way delay: 29.752 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 24.94 Mbit/s
95th percentile per-packet one-way delay: 29.305 ms
Loss rate: 0.49%
```
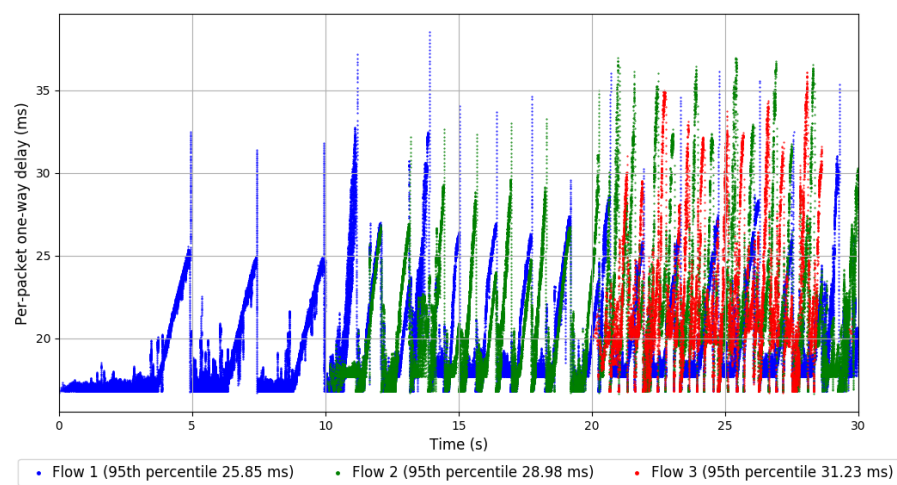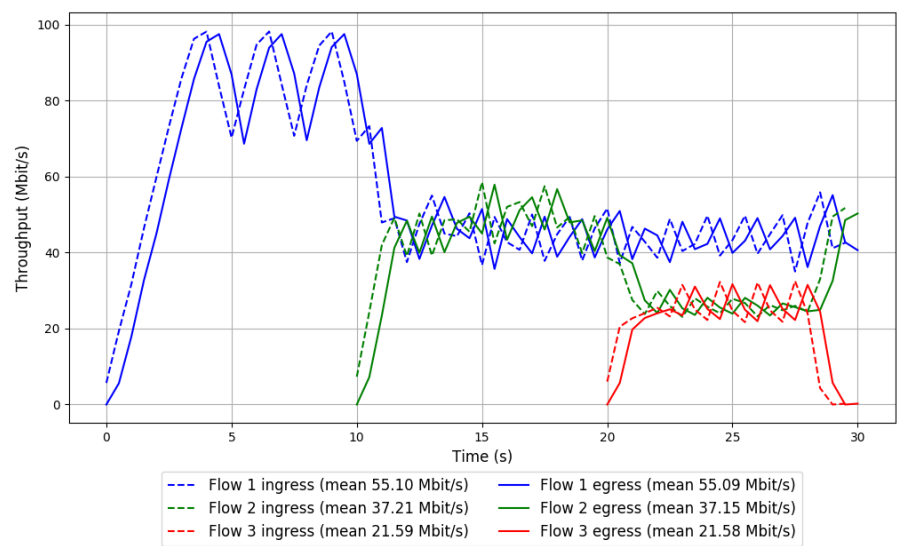
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-02 17:43:18
End at: 2018-10-02 17:43:48
Local clock offset: -1.298 ms
Remote clock offset: -3.824 ms


# Below is generated by plot.py at 2018-10-02 18:34:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.82 Mbit/s
95th percentile per-packet one-way delay: 27.530 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 55.09 Mbit/s
95th percentile per-packet one-way delay: 25.848 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 37.15 Mbit/s
95th percentile per-packet one-way delay: 28.980 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 21.58 Mbit/s
95th percentile per-packet one-way delay: 31.231 ms
Loss rate: 0.06%
```
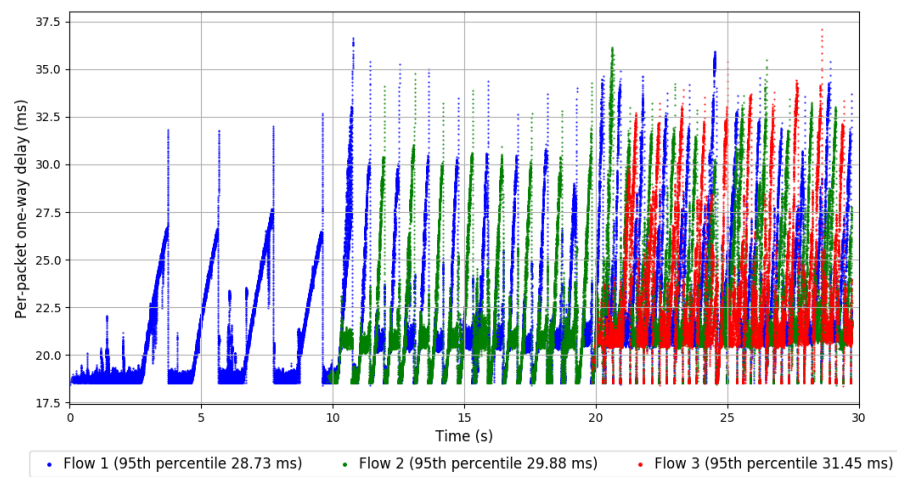
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 55.10 Mbit/s)   Flow 1 egress (mean 55.09 Mbit/s)
Flow 2 ingress (mean 37.21 Mbit/s)   Flow 2 egress (mean 37.15 Mbit/s)
Flow 3 ingress (mean 21.59 Mbit/s)   Flow 3 egress (mean 21.58 Mbit/s)

Flow 1 (95th percentile 25.85 ms)   Flow 2 (95th percentile 28.98 ms)   Flow 3 (95th percentile 31.23 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-02 18:06:07
End at: 2018-10-02 18:06:37
Local clock offset: 0.985 ms
Remote clock offset: -4.37 ms


# Below is generated by plot.py at 2018-10-02 18:34:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.20 Mbit/s
95th percentile per-packet one-way delay: 29.598 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 53.33 Mbit/s
95th percentile per-packet one-way delay: 28.734 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 38.34 Mbit/s
95th percentile per-packet one-way delay: 29.877 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 30.32 Mbit/s
95th percentile per-packet one-way delay: 31.451 ms
Loss rate: 0.35%
```
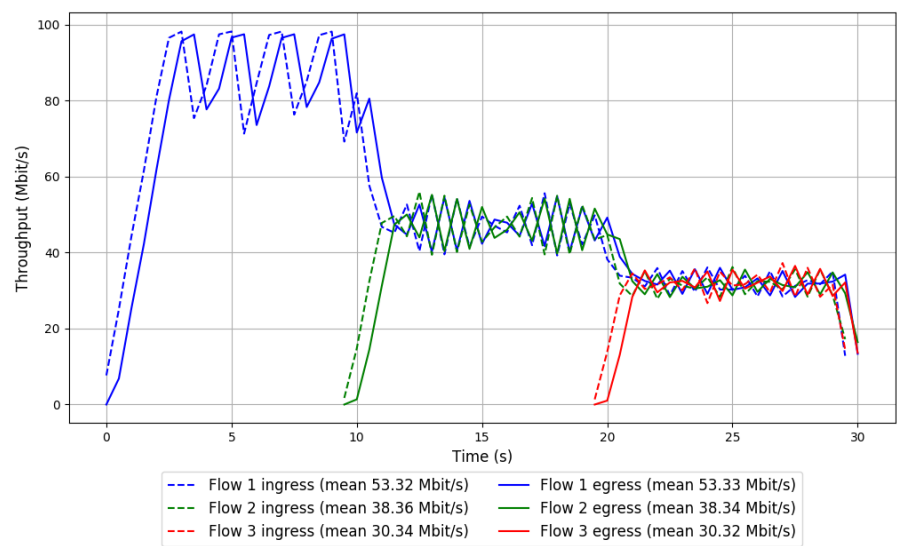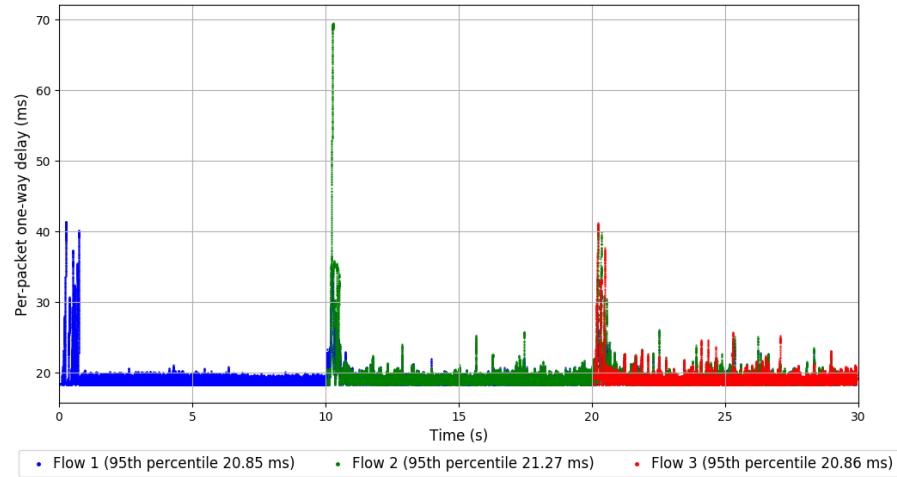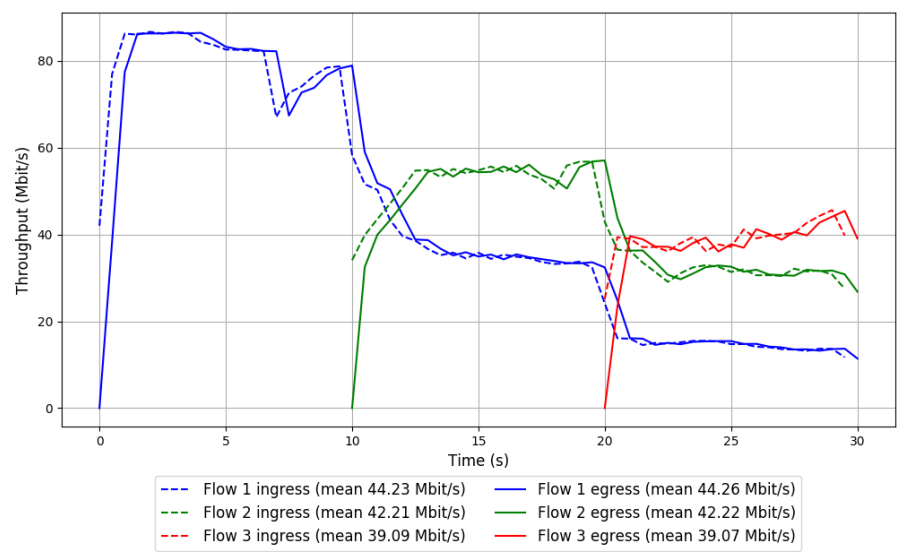
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-02 16:48:05
End at: 2018-10-02 16:48:35
Local clock offset: 1.213 ms
Remote clock offset: -2.683 ms

# Below is generated by plot.py at 2018-10-02 18:35:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.27 Mbit/s
95th percentile per-packet one-way delay: 21.009 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 44.26 Mbit/s
95th percentile per-packet one-way delay: 20.846 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 42.22 Mbit/s
95th percentile per-packet one-way delay: 21.275 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 20.857 ms
Loss rate: 0.33%
```

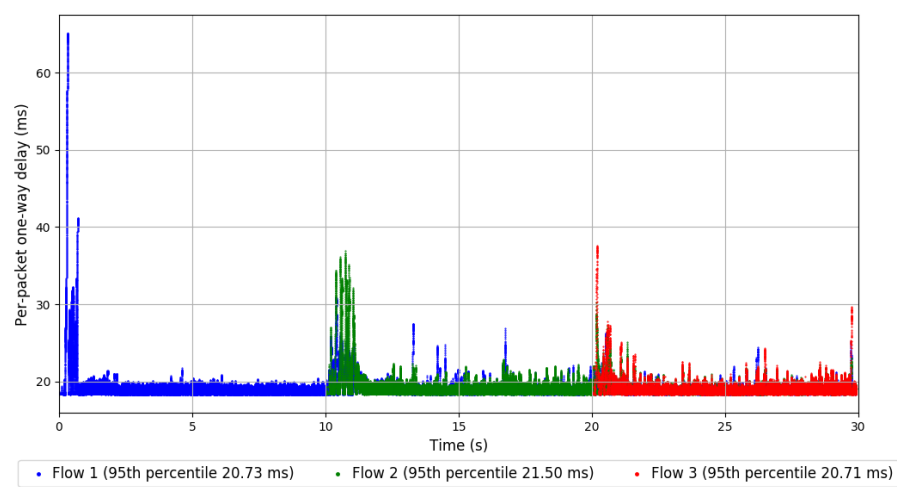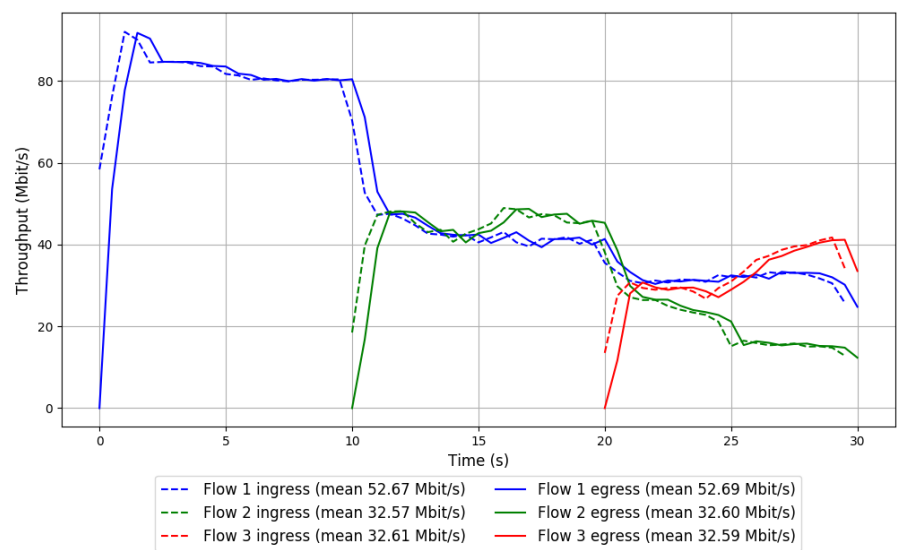Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-02 17:10:55
End at: 2018-10-02 17:11:25
Local clock offset: 1.238 ms
Remote clock offset: -2.898 ms


# Below is generated by plot.py at 2018-10-02 18:35:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.15 Mbit/s
95th percentile per-packet one-way delay: 20.957 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 52.69 Mbit/s
95th percentile per-packet one-way delay: 20.727 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 32.60 Mbit/s
95th percentile per-packet one-way delay: 21.495 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 32.59 Mbit/s
95th percentile per-packet one-way delay: 20.713 ms
Loss rate: 0.36%
```

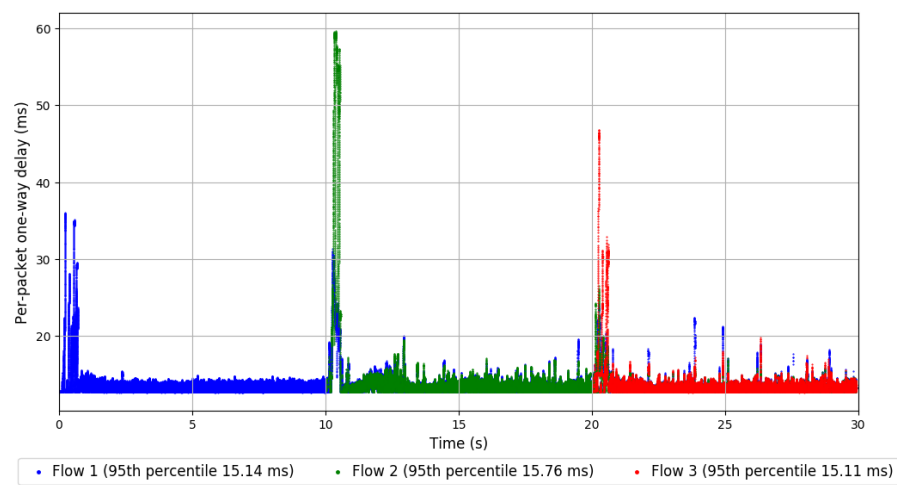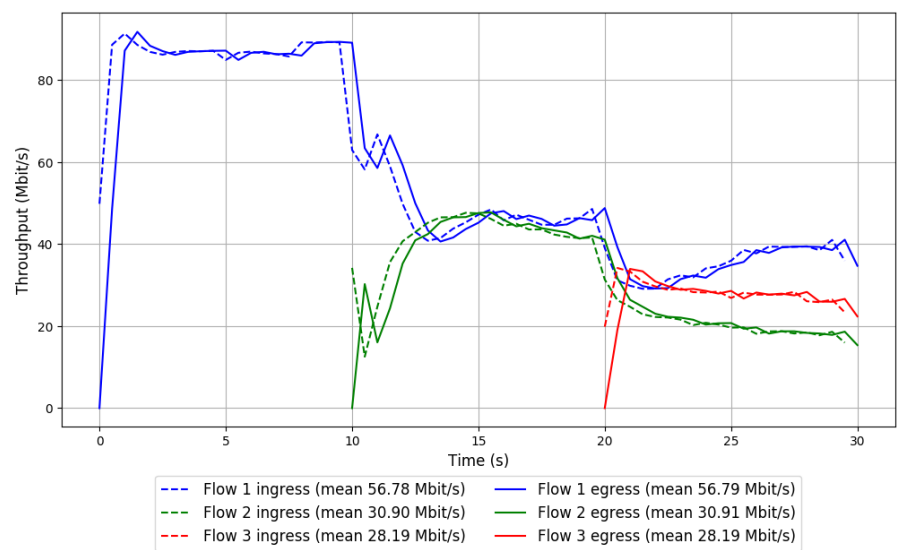Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-02 17:33:21
End at: 2018-10-02 17:33:51
Local clock offset: -4.28 ms
Remote clock offset: -2.776 ms

# Below is generated by plot.py at 2018-10-02 18:35:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.67 Mbit/s
95th percentile per-packet one-way delay: 15.293 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 56.79 Mbit/s
95th percentile per-packet one-way delay: 15.142 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 30.91 Mbit/s
95th percentile per-packet one-way delay: 15.755 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 28.19 Mbit/s
95th percentile per-packet one-way delay: 15.113 ms
Loss rate: 0.28%
```

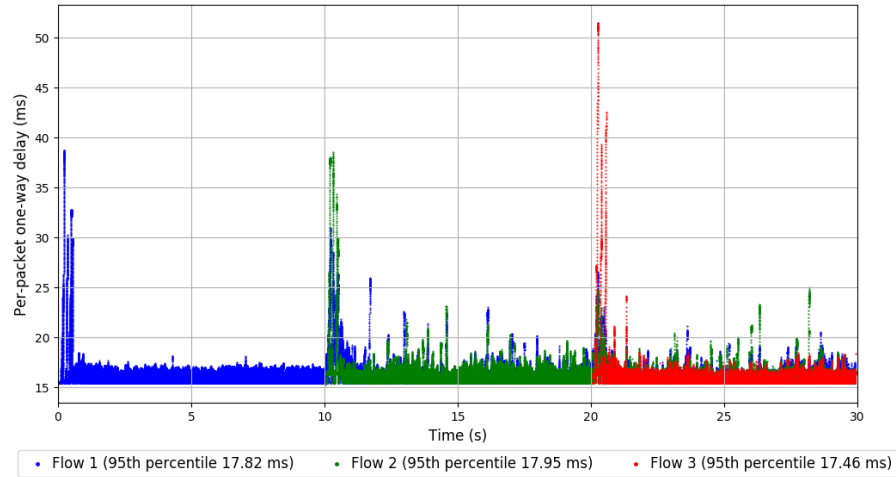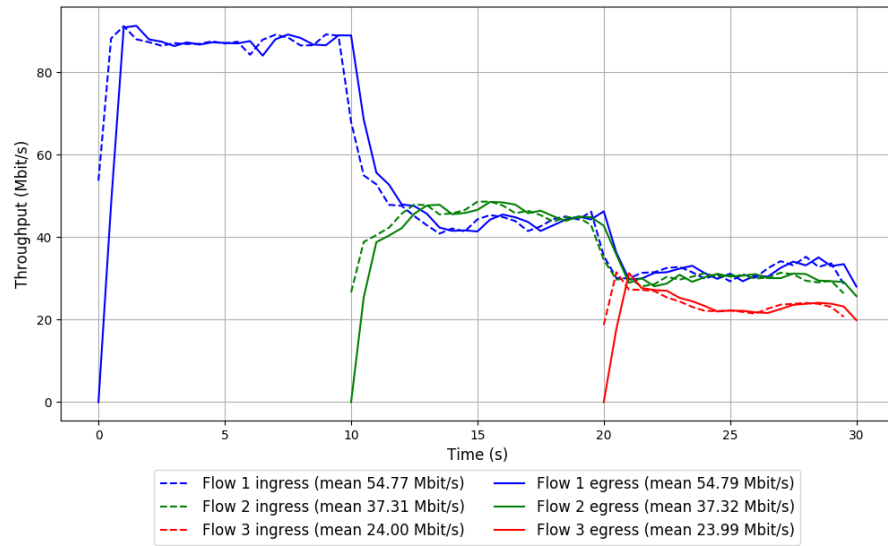# Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-02 17:55:41
End at: 2018-10-02 17:56:11
Local clock offset: -1.503 ms
Remote clock offset: -3.447 ms


# Below is generated by plot.py at 2018-10-02 18:35:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.55 Mbit/s
95th percentile per-packet one-way delay: 17.830 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 54.79 Mbit/s
95th percentile per-packet one-way delay: 17.816 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 37.32 Mbit/s
95th percentile per-packet one-way delay: 17.947 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 23.99 Mbit/s
95th percentile per-packet one-way delay: 17.457 ms
Loss rate: 0.30%
```

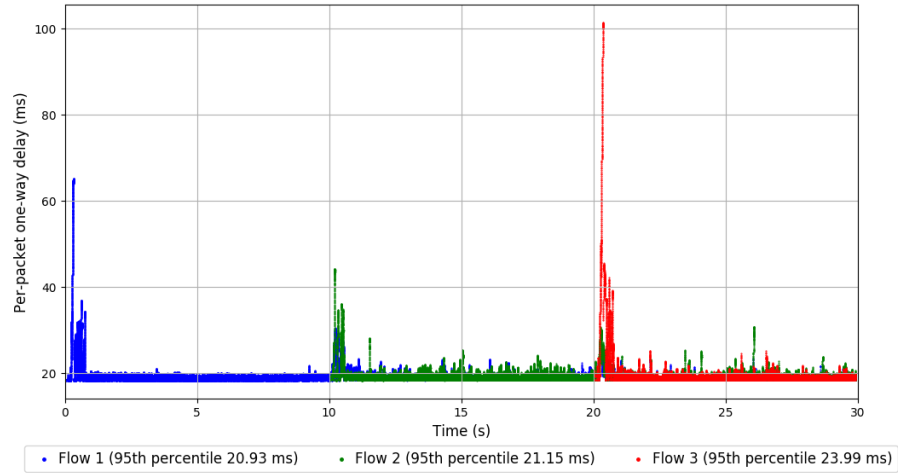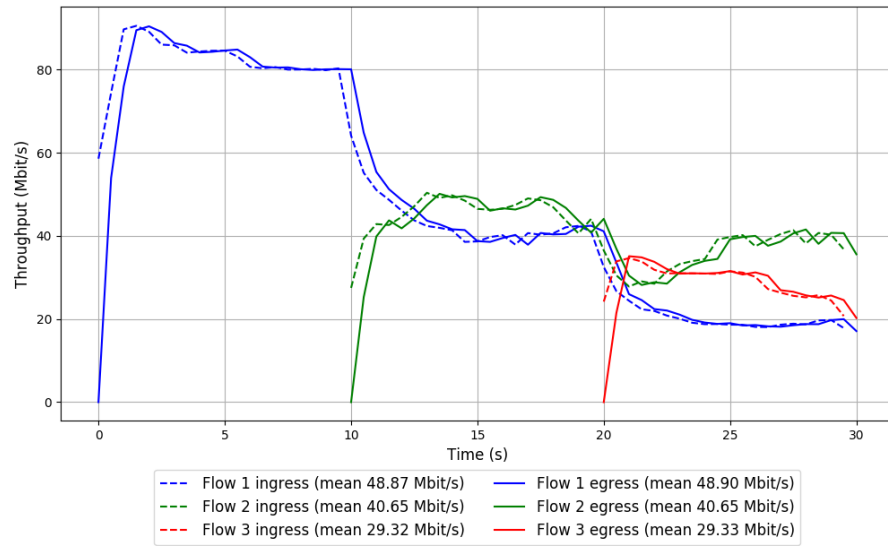# Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-02 18:18:16
End at: 2018-10-02 18:18:46
Local clock offset: 1.533 ms
Remote clock offset: -3.497 ms


# Below is generated by plot.py at 2018-10-02 18:35:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.63 Mbit/s
95th percentile per-packet one-way delay: 21.187 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 48.90 Mbit/s
95th percentile per-packet one-way delay: 20.930 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 21.146 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 29.33 Mbit/s
95th percentile per-packet one-way delay: 23.991 ms
Loss rate: 0.25%
```

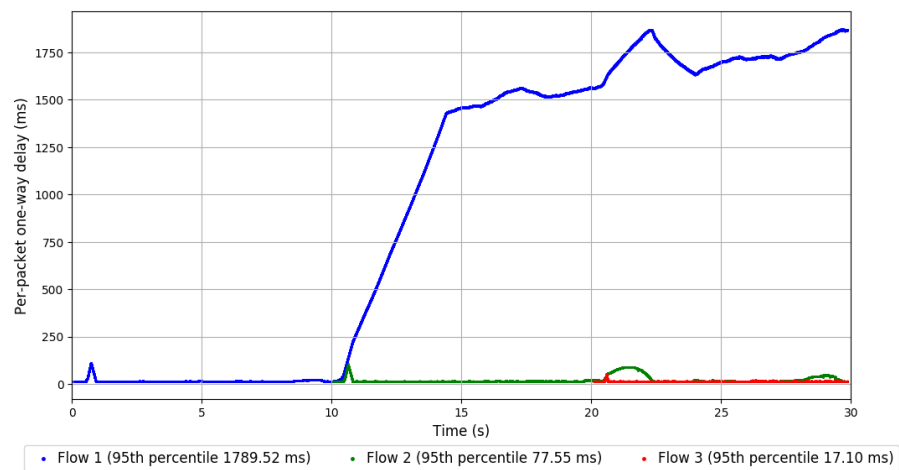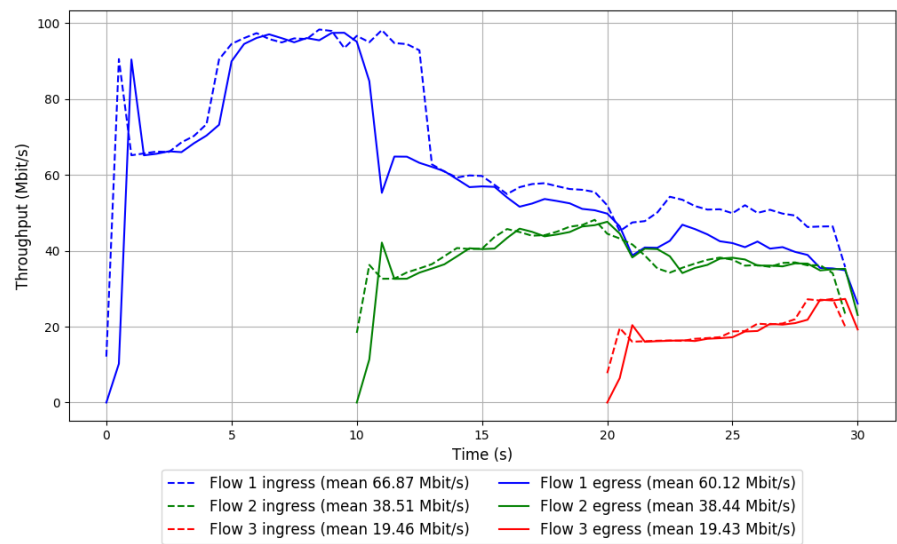Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-02 16:45:35
End at: 2018-10-02 16:46:05
Local clock offset: -1.64 ms
Remote clock offset: -1.583 ms


# Below is generated by plot.py at 2018-10-02 18:35:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.06 Mbit/s
95th percentile per-packet one-way delay: 1747.261 ms
Loss rate: 7.00%
-- Flow 1:
Average throughput: 60.12 Mbit/s
95th percentile per-packet one-way delay: 1789.524 ms
Loss rate: 10.18%
-- Flow 2:
Average throughput: 38.44 Mbit/s
95th percentile per-packet one-way delay: 77.547 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 19.43 Mbit/s
95th percentile per-packet one-way delay: 17.104 ms
Loss rate: 0.43%
```

Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 66.87 Mbit/s) — Flow 1 egress (mean 60.12 Mbit/s)
Flow 2 ingress (mean 38.51 Mbit/s) — Flow 2 egress (mean 38.44 Mbit/s)
Flow 3 ingress (mean 19.46 Mbit/s) — Flow 3 egress (mean 19.43 Mbit/s)

Flow 1 (95th percentile 1789.52 ms) • Flow 2 (95th percentile 77.55 ms) • Flow 3 (95th percentile 17.10 ms)
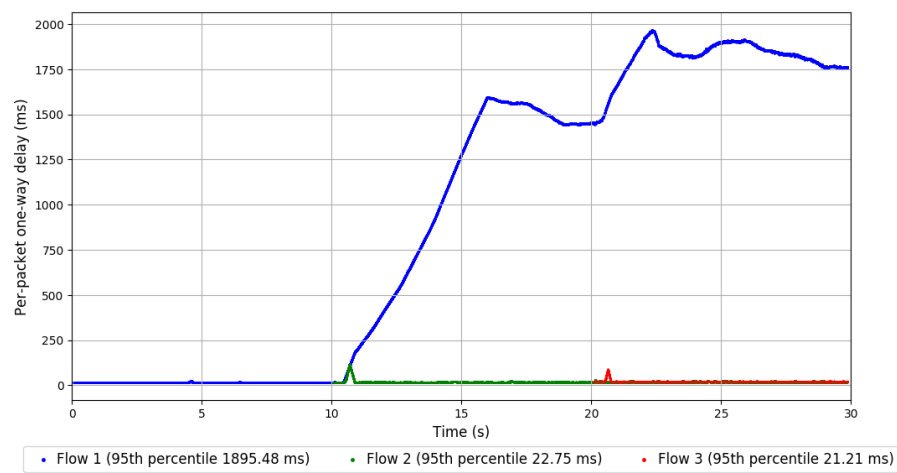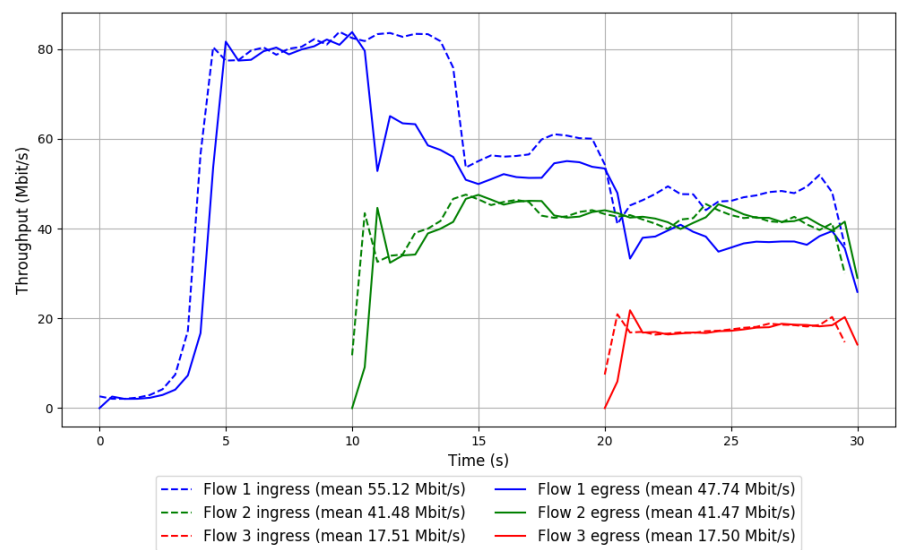
```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-02 17:08:25
End at: 2018-10-02 17:08:55
Local clock offset: -0.789 ms
Remote clock offset: -3.509 ms


# Below is generated by plot.py at 2018-10-02 18:35:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.06 Mbit/s
95th percentile per-packet one-way delay: 1857.589 ms
Loss rate: 8.48%
-- Flow 1:
Average throughput: 47.74 Mbit/s
95th percentile per-packet one-way delay: 1895.484 ms
Loss rate: 13.49%
-- Flow 2:
Average throughput: 41.47 Mbit/s
95th percentile per-packet one-way delay: 22.752 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 17.50 Mbit/s
95th percentile per-packet one-way delay: 21.210 ms
Loss rate: 0.38%
```

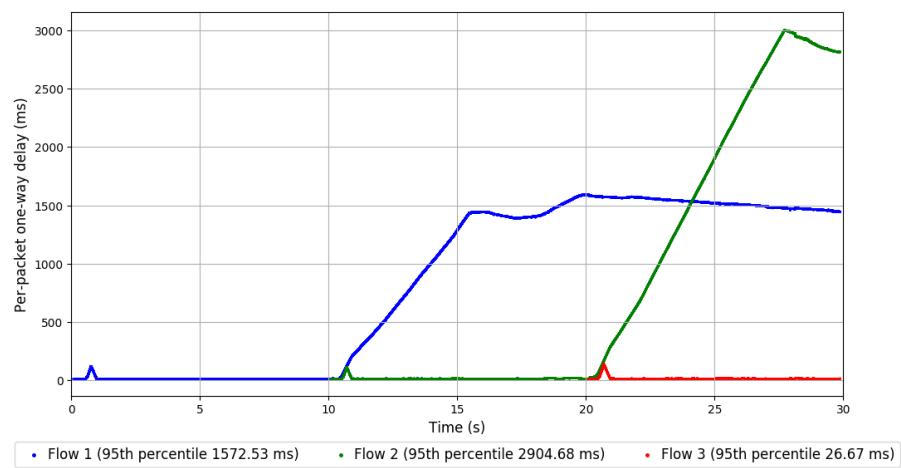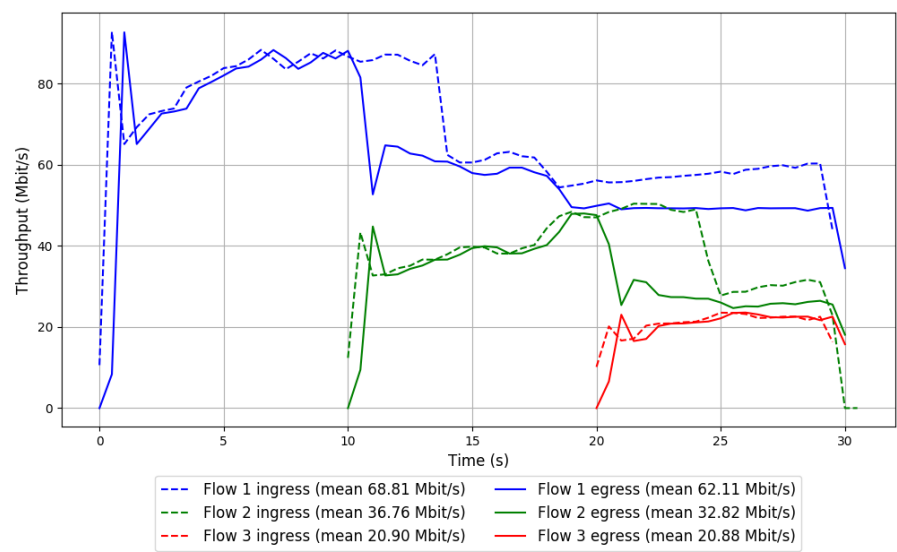Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-02 17:30:56
End at: 2018-10-02 17:31:26
Local clock offset: -0.374 ms
Remote clock offset: -3.621 ms


# Below is generated by plot.py at 2018-10-02 18:35:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.78 Mbit/s
95th percentile per-packet one-way delay: 1698.441 ms
Loss rate: 10.53%
-- Flow 1:
Average throughput: 62.11 Mbit/s
95th percentile per-packet one-way delay: 1572.531 ms
Loss rate: 9.82%
-- Flow 2:
Average throughput: 32.82 Mbit/s
95th percentile per-packet one-way delay: 2904.683 ms
Loss rate: 15.17%
-- Flow 3:
Average throughput: 20.88 Mbit/s
95th percentile per-packet one-way delay: 26.670 ms
Loss rate: 0.38%
```

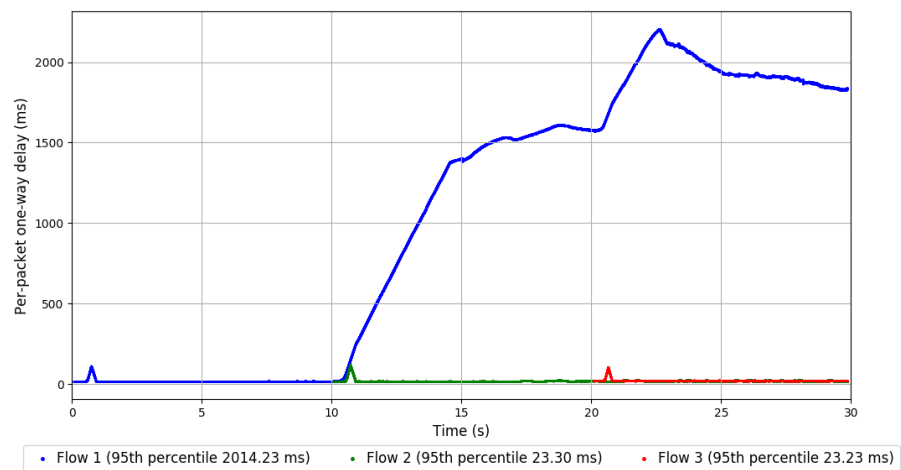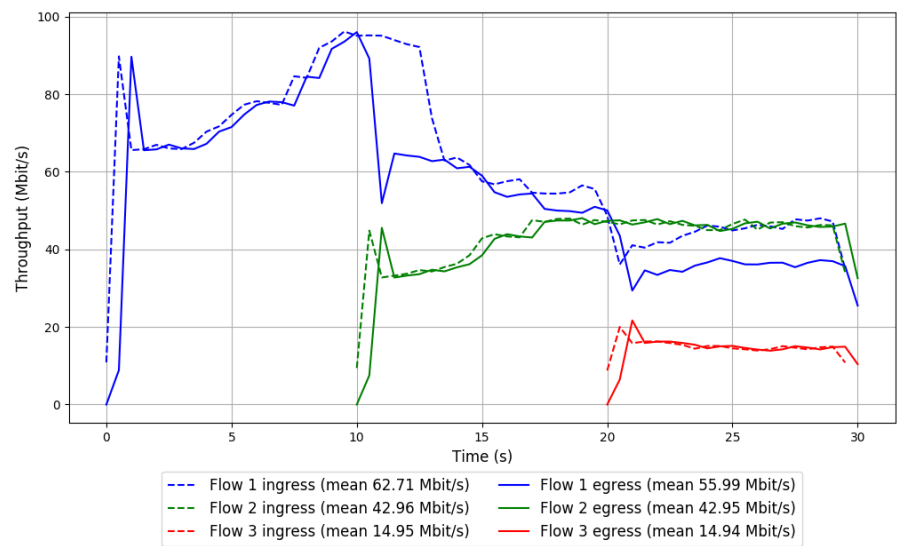Run 3: Report of PCC-Allegro — Data Link

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```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-02 17:53:06
End at: 2018-10-02 17:53:36
Local clock offset: -1.034 ms
Remote clock offset: -3.139 ms


# Below is generated by plot.py at 2018-10-02 18:36:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.46 Mbit/s
95th percentile per-packet one-way delay: 1929.169 ms
Loss rate: 7.11%
-- Flow 1:
Average throughput: 55.99 Mbit/s
95th percentile per-packet one-way delay: 2014.228 ms
Loss rate: 10.80%
-- Flow 2:
Average throughput: 42.95 Mbit/s
95th percentile per-packet one-way delay: 23.297 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 14.94 Mbit/s
95th percentile per-packet one-way delay: 23.225 ms
Loss rate: 0.35%
```

Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 62.71 Mbit/s) --- Flow 1 egress (mean 55.99 Mbit/s)
Flow 2 ingress (mean 42.96 Mbit/s) --- Flow 2 egress (mean 42.95 Mbit/s)
Flow 3 ingress (mean 14.95 Mbit/s) --- Flow 3 egress (mean 14.94 Mbit/s)

Flow 1 (95th percentile 2014.23 ms) • Flow 2 (95th percentile 23.30 ms) • Flow 3 (95th percentile 23.23 ms)
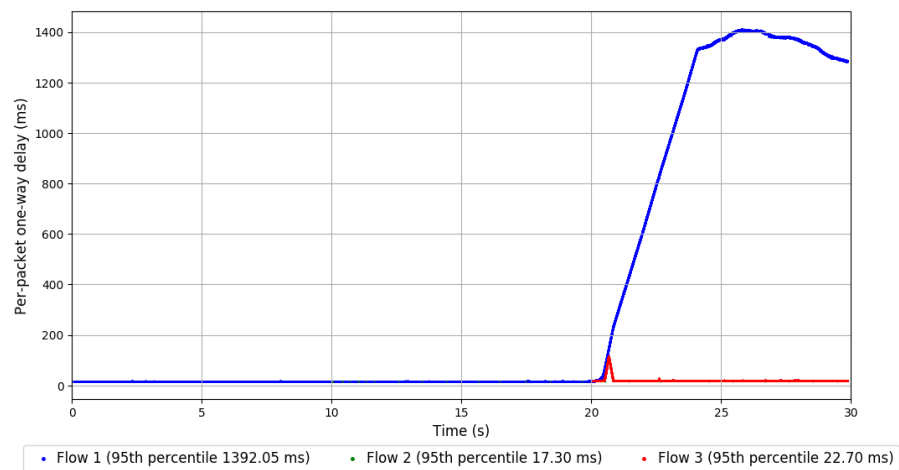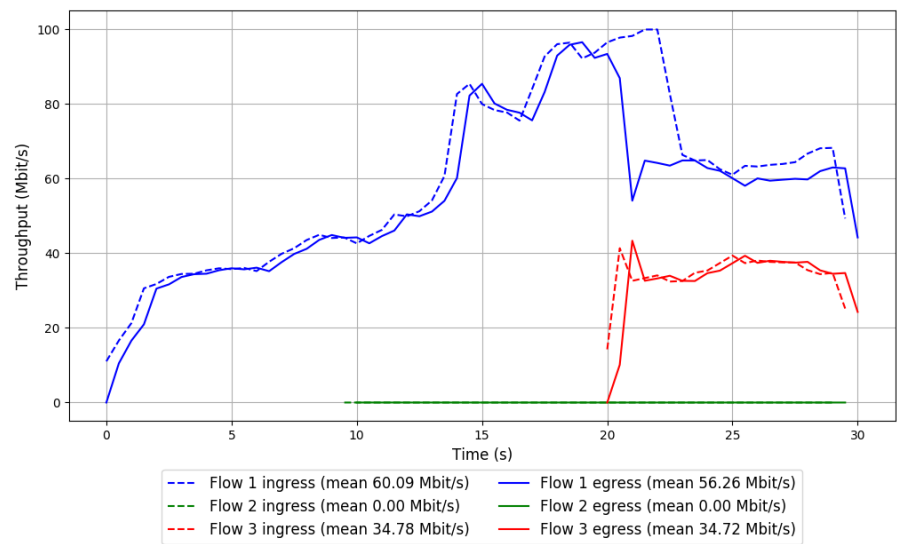
```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-02 18:15:49
End at: 2018-10-02 18:16:19
Local clock offset: 0.322 ms
Remote clock offset: -3.007 ms


# Below is generated by plot.py at 2018-10-02 18:36:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.69 Mbit/s
95th percentile per-packet one-way delay: 1383.270 ms
Loss rate: 5.50%
-- Flow 1:
Average throughput: 56.26 Mbit/s
95th percentile per-packet one-way delay: 1392.050 ms
Loss rate: 6.46%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 17.300 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.72 Mbit/s
95th percentile per-packet one-way delay: 22.696 ms
Loss rate: 0.45%
```

Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 60.09 Mbit/s) --- Flow 1 egress (mean 56.26 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) --- Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 34.78 Mbit/s) --- Flow 3 egress (mean 34.72 Mbit/s)

• Flow 1 (95th percentile 1392.05 ms)   • Flow 2 (95th percentile 17.30 ms)   • Flow 3 (95th percentile 22.70 ms)
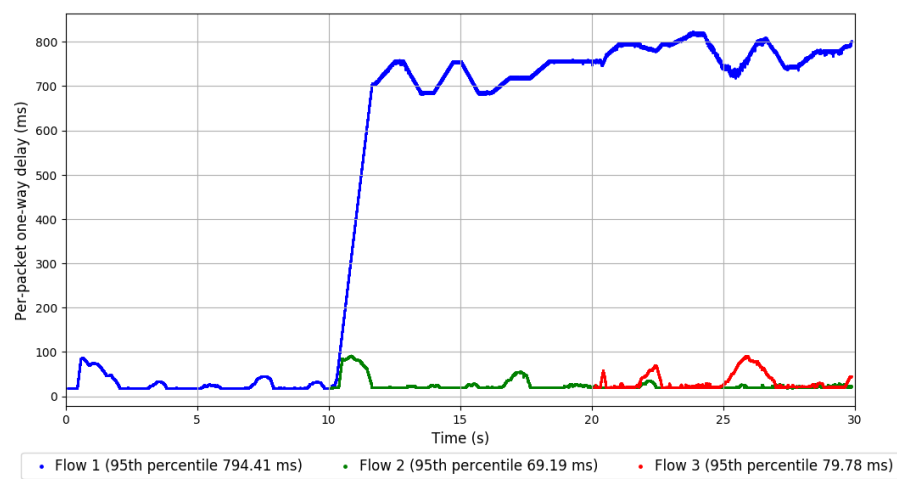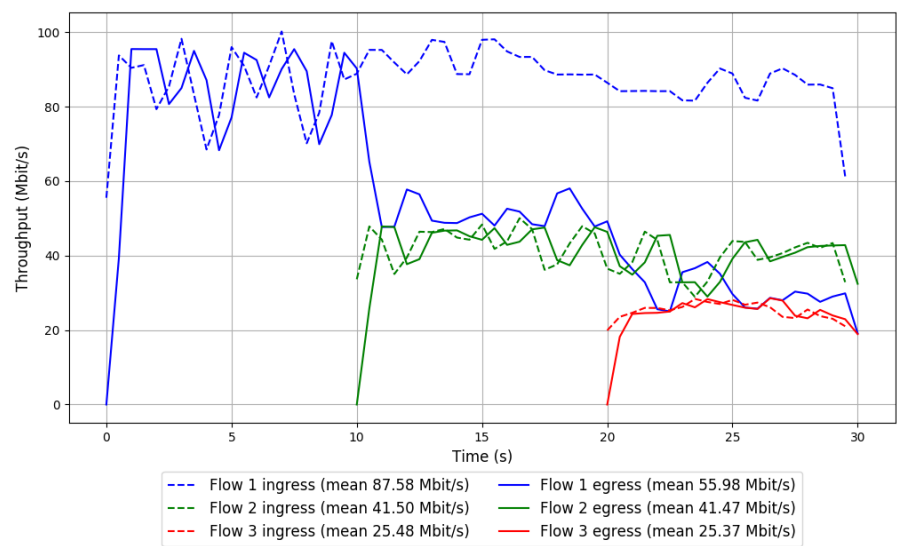
```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-02 16:51:50
End at: 2018-10-02 16:52:20
Local clock offset: 1.437 ms
Remote clock offset: -2.711 ms


# Below is generated by plot.py at 2018-10-02 18:37:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.91 Mbit/s
95th percentile per-packet one-way delay: 783.156 ms
Loss rate: 25.72%
-- Flow 1:
Average throughput: 55.98 Mbit/s
95th percentile per-packet one-way delay: 794.410 ms
Loss rate: 36.15%
-- Flow 2:
Average throughput: 41.47 Mbit/s
95th percentile per-packet one-way delay: 69.195 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 25.37 Mbit/s
95th percentile per-packet one-way delay: 79.783 ms
Loss rate: 0.79%
```

Run 1: Report of PCC-Expr — Data Link

- - - Flow 1 ingress (mean 87.58 Mbit/s) —— Flow 1 egress (mean 55.98 Mbit/s)
- - - Flow 2 ingress (mean 41.50 Mbit/s) —— Flow 2 egress (mean 41.47 Mbit/s)
- - - Flow 3 ingress (mean 25.48 Mbit/s) —— Flow 3 egress (mean 25.37 Mbit/s)

- Flow 1 (95th percentile 794.41 ms)   • Flow 2 (95th percentile 69.19 ms)   • Flow 3 (95th percentile 79.78 ms)
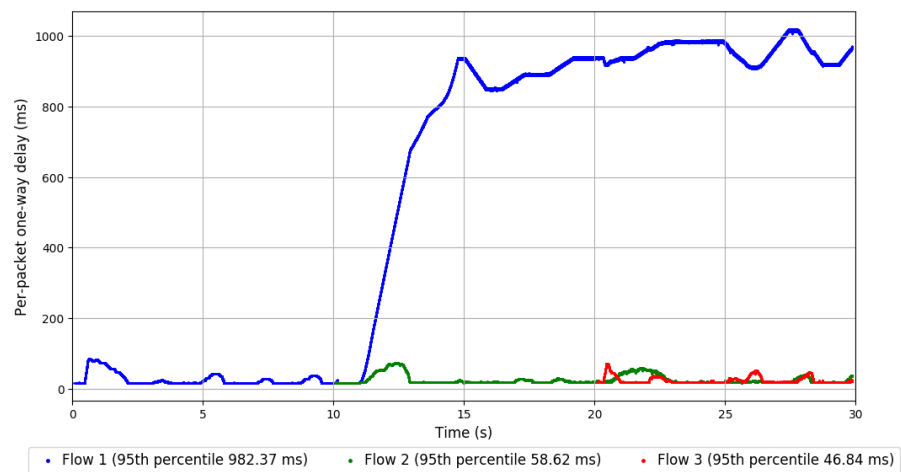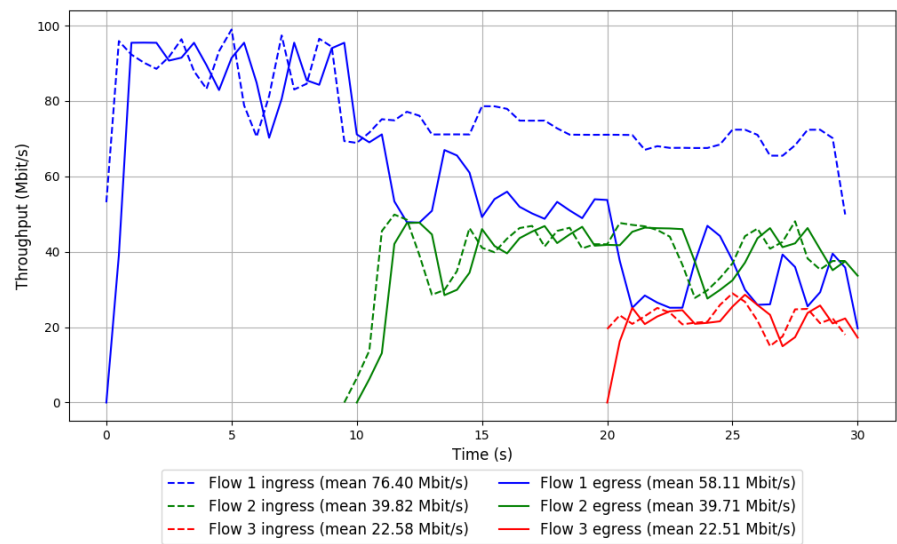
```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-02 17:14:42
End at: 2018-10-02 17:15:12
Local clock offset: 0.379 ms
Remote clock offset: -2.758 ms


# Below is generated by plot.py at 2018-10-02 18:37:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.93 Mbit/s
95th percentile per-packet one-way delay: 965.471 ms
Loss rate: 16.81%
-- Flow 1:
Average throughput: 58.11 Mbit/s
95th percentile per-packet one-way delay: 982.365 ms
Loss rate: 24.05%
-- Flow 2:
Average throughput: 39.71 Mbit/s
95th percentile per-packet one-way delay: 58.617 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 22.51 Mbit/s
95th percentile per-packet one-way delay: 46.845 ms
Loss rate: 0.61%
```

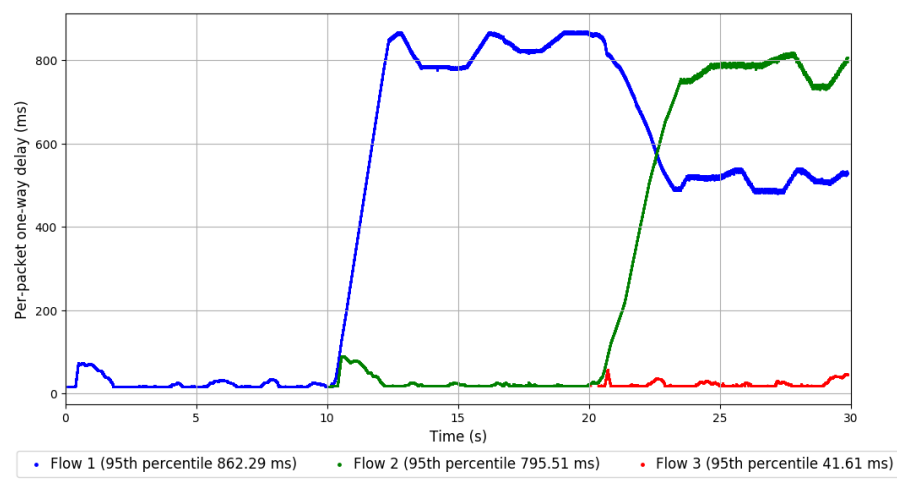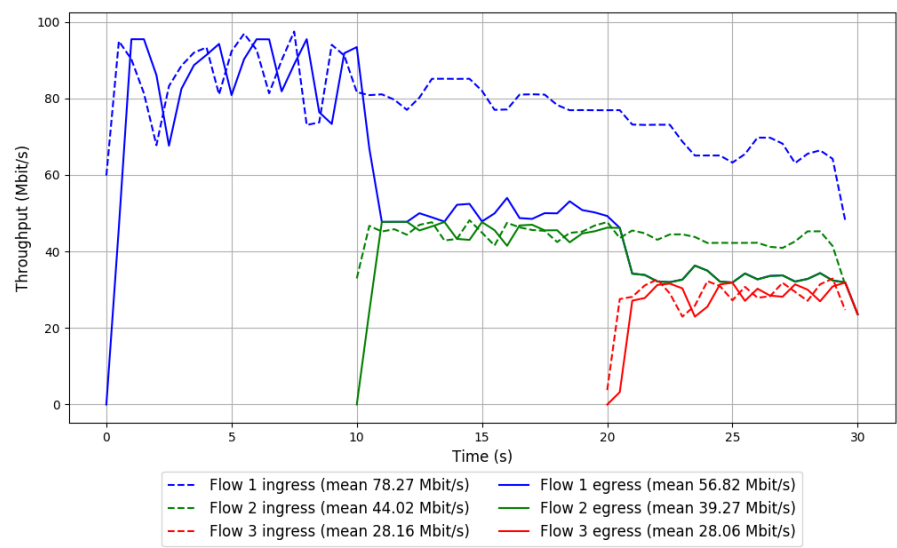Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-02 17:37:05
End at: 2018-10-02 17:37:35
Local clock offset: -0.916 ms
Remote clock offset: -4.142 ms


# Below is generated by plot.py at 2018-10-02 18:37:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.18 Mbit/s
95th percentile per-packet one-way delay: 853.563 ms
Loss rate: 21.20%
-- Flow 1:
Average throughput: 56.82 Mbit/s
95th percentile per-packet one-way delay: 862.292 ms
Loss rate: 27.47%
-- Flow 2:
Average throughput: 39.27 Mbit/s
95th percentile per-packet one-way delay: 795.508 ms
Loss rate: 10.95%
-- Flow 3:
Average throughput: 28.06 Mbit/s
95th percentile per-packet one-way delay: 41.613 ms
Loss rate: 0.73%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 78.27 Mbit/s) --- Flow 1 egress (mean 56.82 Mbit/s)
Flow 2 ingress (mean 44.02 Mbit/s) --- Flow 2 egress (mean 39.27 Mbit/s)
Flow 3 ingress (mean 28.16 Mbit/s) --- Flow 3 egress (mean 28.06 Mbit/s)

Flow 1 (95th percentile 862.29 ms)   Flow 2 (95th percentile 795.51 ms)   Flow 3 (95th percentile 41.61 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-02 17:59:22
End at: 2018-10-02 17:59:52
Local clock offset: -0.463 ms
Remote clock offset: -3.579 ms


# Below is generated by plot.py at 2018-10-02 18:37:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.57 Mbit/s
95th percentile per-packet one-way delay: 1461.158 ms
Loss rate: 5.27%
-- Flow 1:
Average throughput: 55.85 Mbit/s
95th percentile per-packet one-way delay: 1510.387 ms
Loss rate: 7.82%
-- Flow 2:
Average throughput: 36.19 Mbit/s
95th percentile per-packet one-way delay: 67.121 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 23.25 Mbit/s
95th percentile per-packet one-way delay: 82.139 ms
Loss rate: 0.52%
```
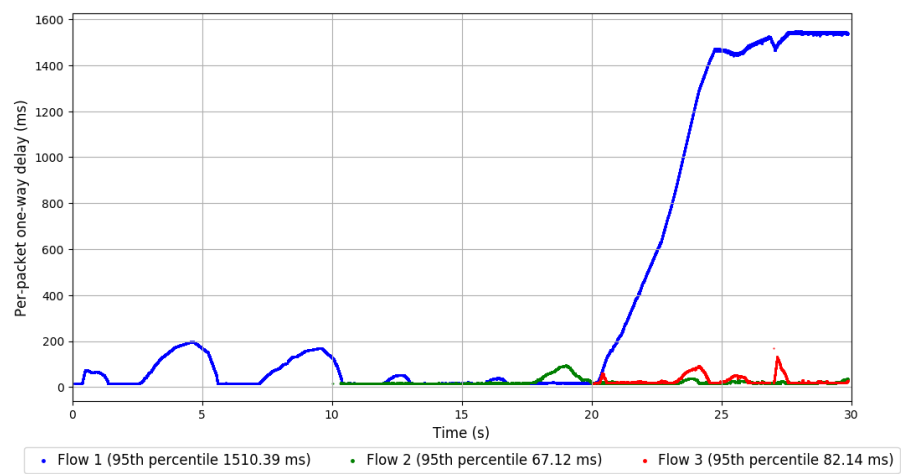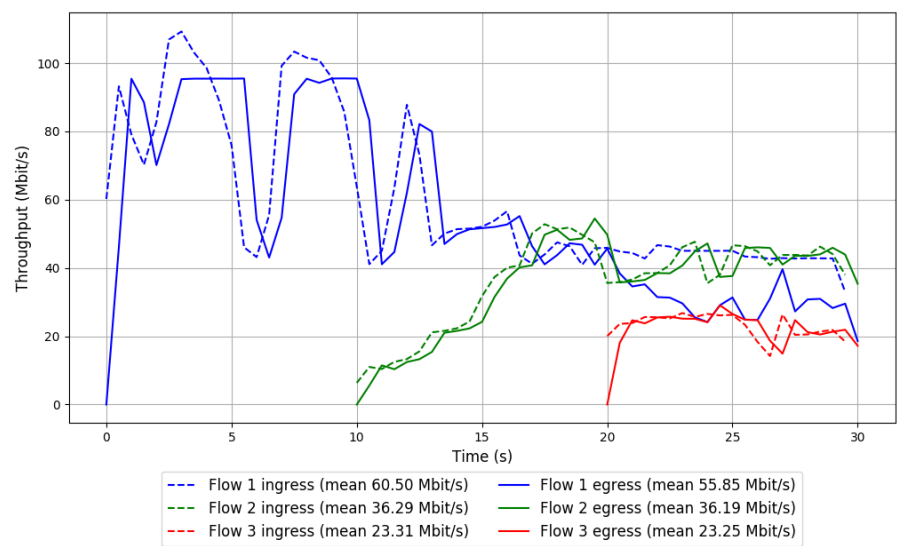
Run 4: Report of PCC-Expr — Data Link

- - - - Flow 1 ingress (mean 60.50 Mbit/s)   —— Flow 1 egress (mean 55.85 Mbit/s)
- - - - Flow 2 ingress (mean 36.29 Mbit/s)   —— Flow 2 egress (mean 36.19 Mbit/s)
- - - - Flow 3 ingress (mean 23.31 Mbit/s)   —— Flow 3 egress (mean 23.25 Mbit/s)

- Flow 1 (95th percentile 1510.39 ms)   • Flow 2 (95th percentile 67.12 ms)   • Flow 3 (95th percentile 82.14 ms)
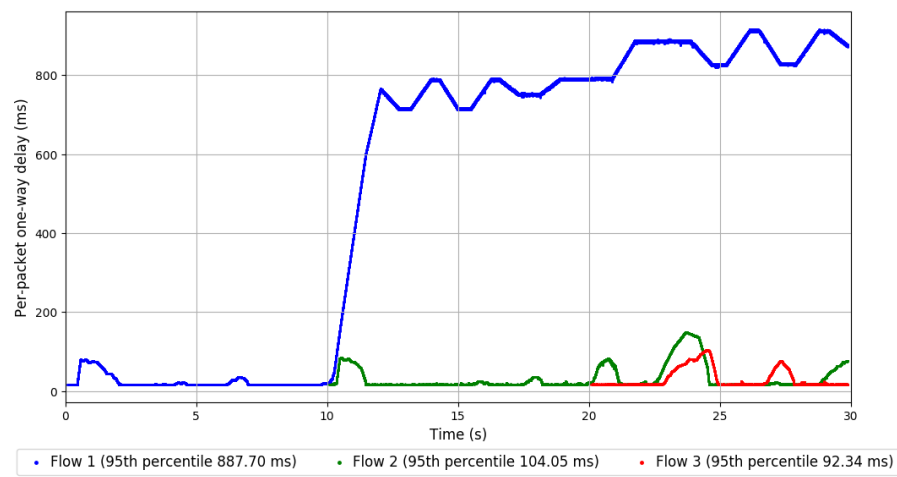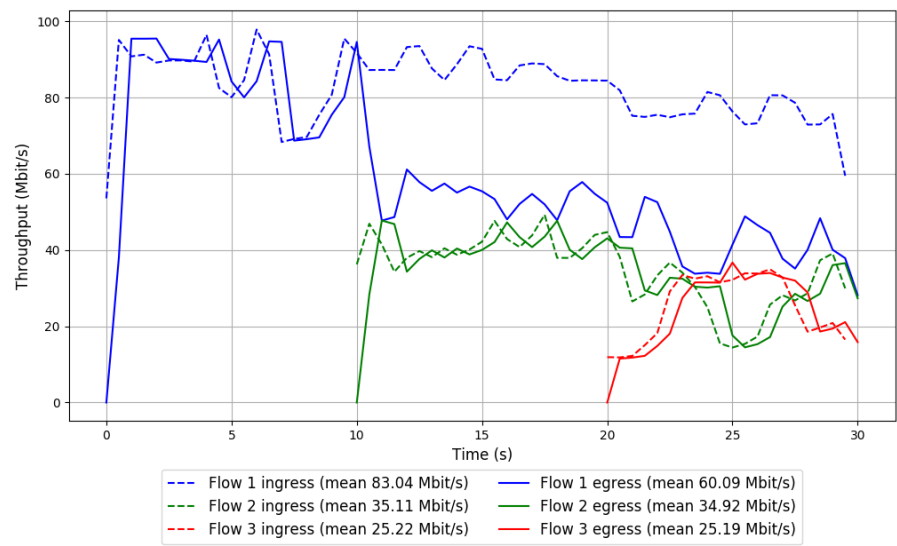
```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-02 18:22:04
End at: 2018-10-02 18:22:34
Local clock offset: -0.352 ms
Remote clock offset: -3.096 ms


# Below is generated by plot.py at 2018-10-02 18:37:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.61 Mbit/s
95th percentile per-packet one-way delay: 884.802 ms
Loss rate: 20.24%
-- Flow 1:
Average throughput: 60.09 Mbit/s
95th percentile per-packet one-way delay: 887.701 ms
Loss rate: 27.72%
-- Flow 2:
Average throughput: 34.92 Mbit/s
95th percentile per-packet one-way delay: 104.053 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 25.19 Mbit/s
95th percentile per-packet one-way delay: 92.341 ms
Loss rate: 0.43%
```

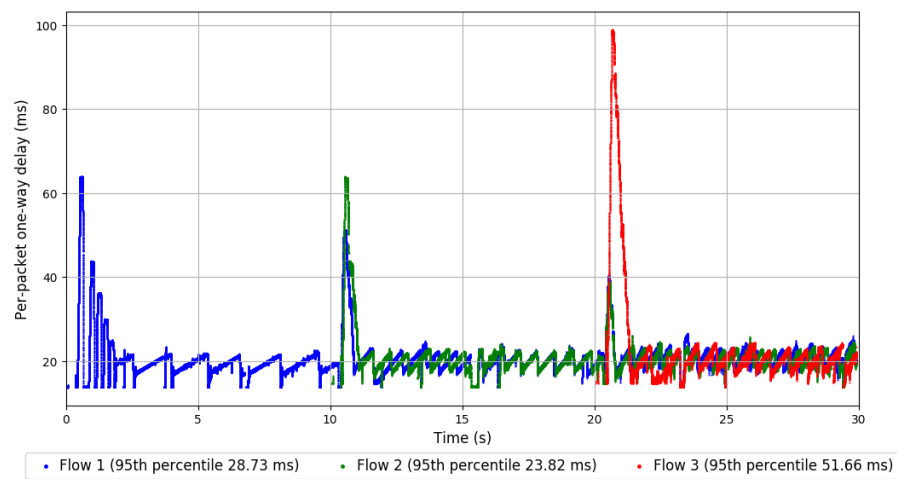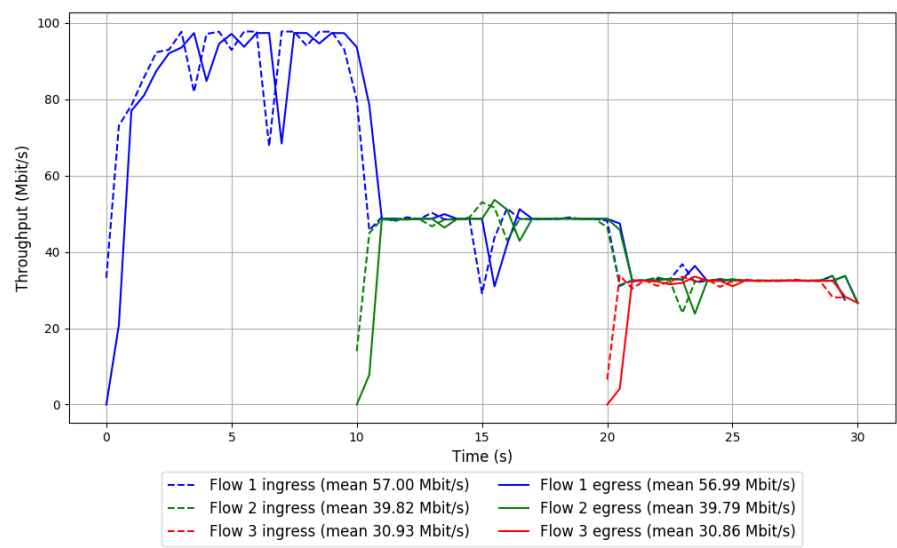Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-02 16:34:16
End at: 2018-10-02 16:34:46
Local clock offset: -1.848 ms
Remote clock offset: -0.997 ms


# Below is generated by plot.py at 2018-10-02 18:37:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.64 Mbit/s
95th percentile per-packet one-way delay: 28.625 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 56.99 Mbit/s
95th percentile per-packet one-way delay: 28.726 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 39.79 Mbit/s
95th percentile per-packet one-way delay: 23.815 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 30.86 Mbit/s
95th percentile per-packet one-way delay: 51.662 ms
Loss rate: 0.54%
```

Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 57.00 Mbit/s)   Flow 1 egress (mean 56.99 Mbit/s)
Flow 2 ingress (mean 39.82 Mbit/s)   Flow 2 egress (mean 39.79 Mbit/s)
Flow 3 ingress (mean 30.93 Mbit/s)   Flow 3 egress (mean 30.86 Mbit/s)

Flow 1 (95th percentile 28.73 ms)   Flow 2 (95th percentile 23.82 ms)   Flow 3 (95th percentile 51.66 ms)
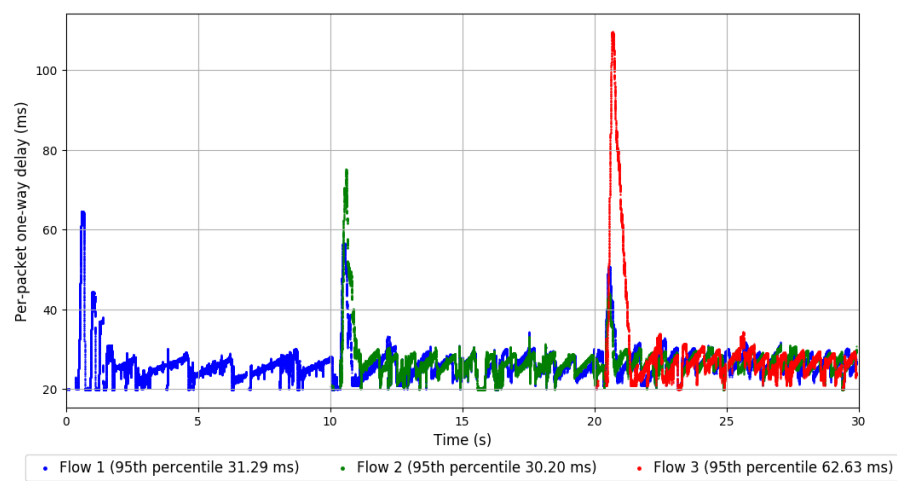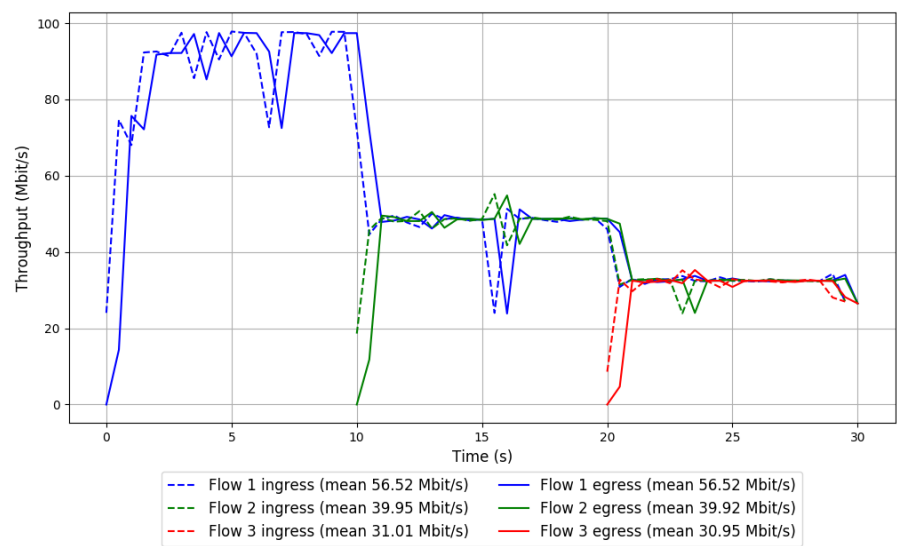
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-02 16:57:06
End at: 2018-10-02 16:57:36
Local clock offset: 1.102 ms
Remote clock offset: -4.481 ms


# Below is generated by plot.py at 2018-10-02 18:37:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.30 Mbit/s
95th percentile per-packet one-way delay: 32.435 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 56.52 Mbit/s
95th percentile per-packet one-way delay: 31.290 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 39.92 Mbit/s
95th percentile per-packet one-way delay: 30.195 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 30.95 Mbit/s
95th percentile per-packet one-way delay: 62.629 ms
Loss rate: 0.49%
```
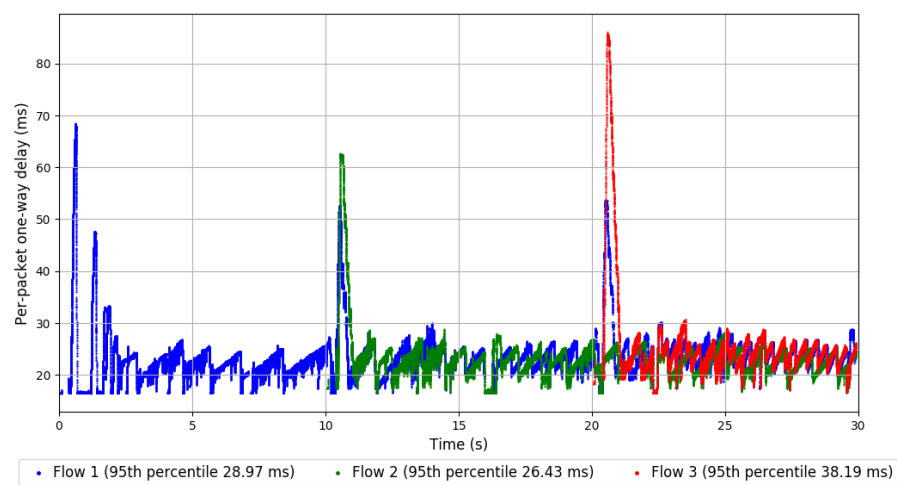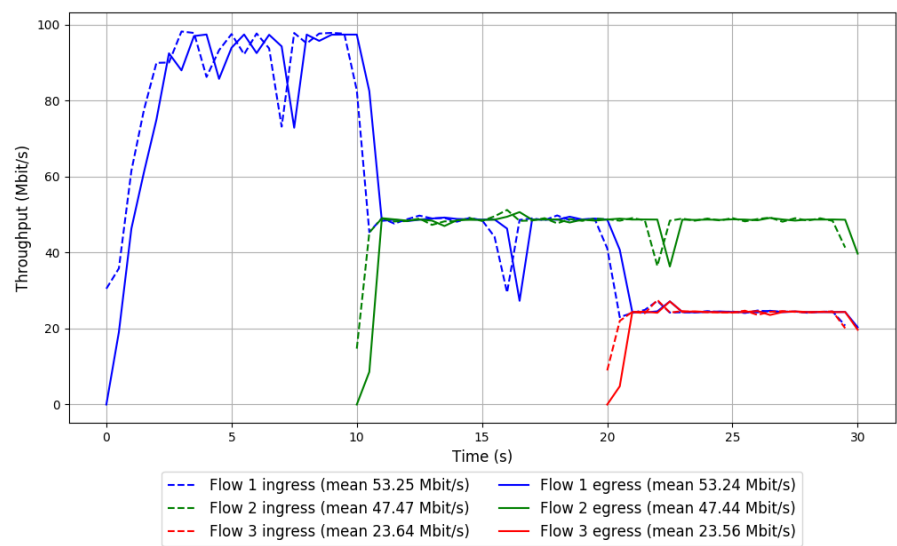
Run 2: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 56.52 Mbit/s) —— Flow 1 egress (mean 56.52 Mbit/s)
- - - Flow 2 ingress (mean 39.95 Mbit/s) —— Flow 2 egress (mean 39.92 Mbit/s)
- - - Flow 3 ingress (mean 31.01 Mbit/s) —— Flow 3 egress (mean 30.95 Mbit/s)

- Flow 1 (95th percentile 31.29 ms)   - Flow 2 (95th percentile 30.20 ms)   - Flow 3 (95th percentile 62.63 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-02 17:19:55
End at: 2018-10-02 17:20:25
Local clock offset: -0.976 ms
Remote clock offset: -3.269 ms


# Below is generated by plot.py at 2018-10-02 18:37:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.56 Mbit/s
95th percentile per-packet one-way delay: 27.828 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 53.24 Mbit/s
95th percentile per-packet one-way delay: 28.968 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 47.44 Mbit/s
95th percentile per-packet one-way delay: 26.425 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 23.56 Mbit/s
95th percentile per-packet one-way delay: 38.189 ms
Loss rate: 0.59%
```

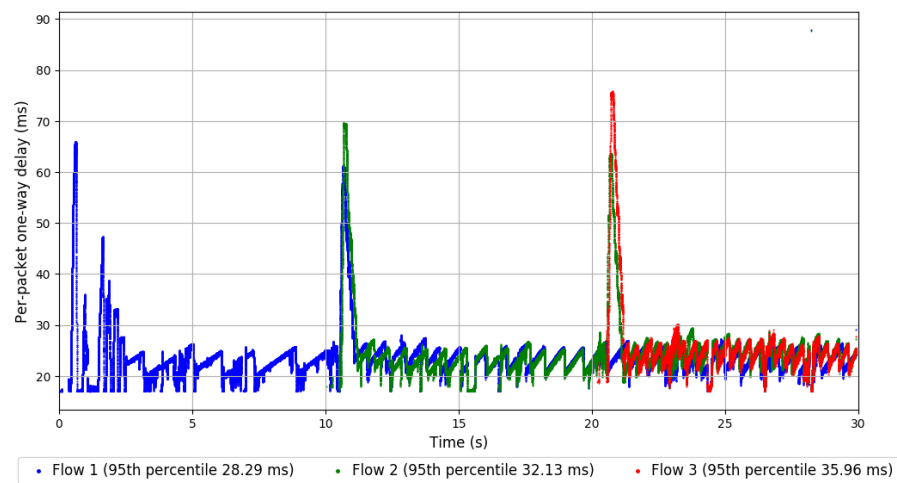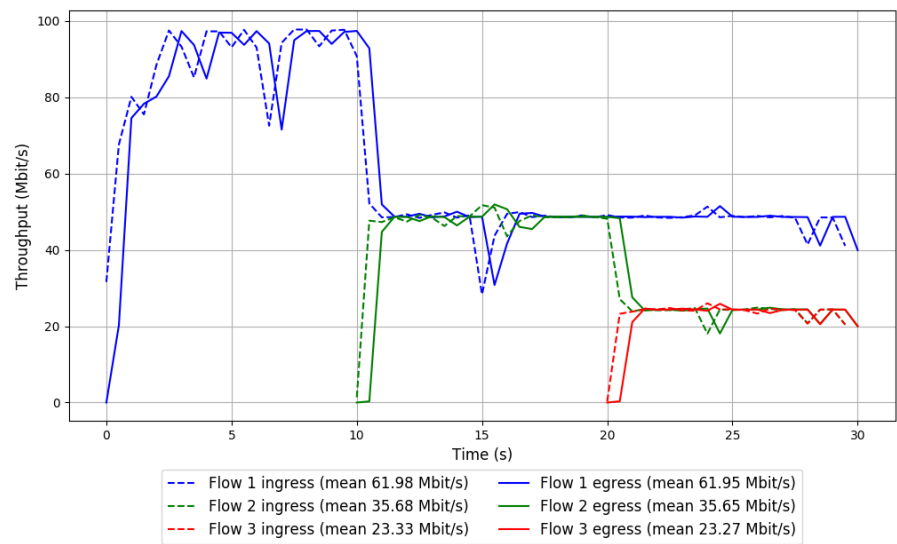Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-02 17:42:05
End at: 2018-10-02 17:42:35
Local clock offset: -1.429 ms
Remote clock offset: -4.249 ms


# Below is generated by plot.py at 2018-10-02 18:38:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.22 Mbit/s
95th percentile per-packet one-way delay: 29.230 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 61.95 Mbit/s
95th percentile per-packet one-way delay: 28.290 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 35.65 Mbit/s
95th percentile per-packet one-way delay: 32.132 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 35.962 ms
Loss rate: 0.51%
```
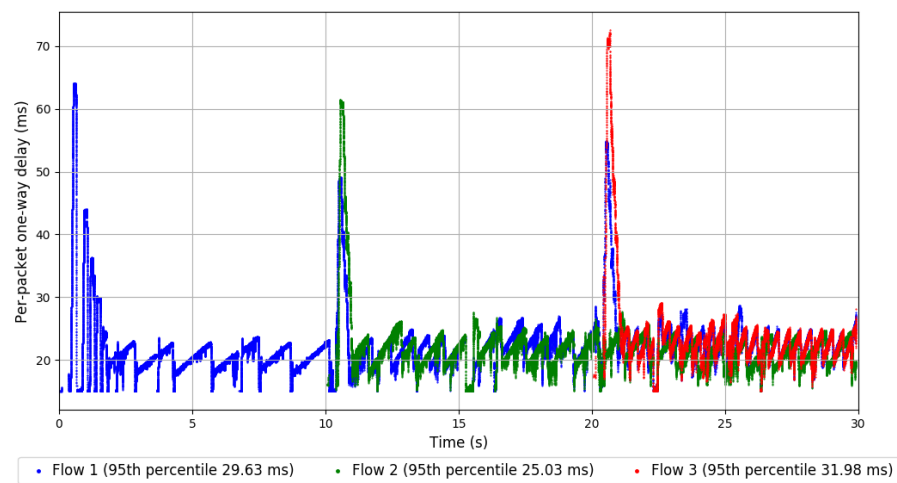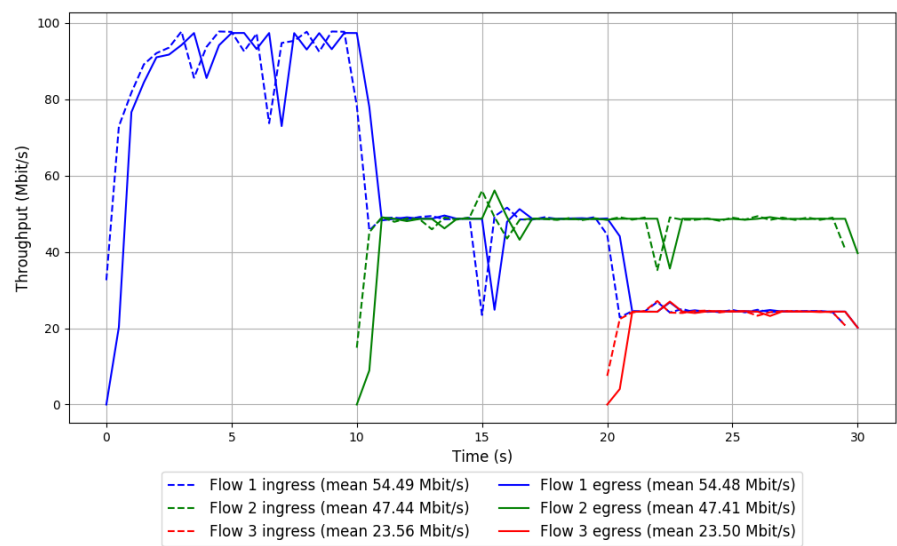
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 61.98 Mbit/s) --- Flow 1 egress (mean 61.95 Mbit/s)
Flow 2 ingress (mean 35.68 Mbit/s) --- Flow 2 egress (mean 35.65 Mbit/s)
Flow 3 ingress (mean 23.33 Mbit/s) --- Flow 3 egress (mean 23.27 Mbit/s)

Flow 1 (95th percentile 28.29 ms) • Flow 2 (95th percentile 32.13 ms) • Flow 3 (95th percentile 35.96 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-02 18:04:49
End at: 2018-10-02 18:05:19
Local clock offset: -1.316 ms
Remote clock offset: -3.228 ms

# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.76 Mbit/s
95th percentile per-packet one-way delay: 26.807 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 54.48 Mbit/s
95th percentile per-packet one-way delay: 29.630 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 47.41 Mbit/s
95th percentile per-packet one-way delay: 25.031 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 23.50 Mbit/s
95th percentile per-packet one-way delay: 31.985 ms
Loss rate: 0.49%
```
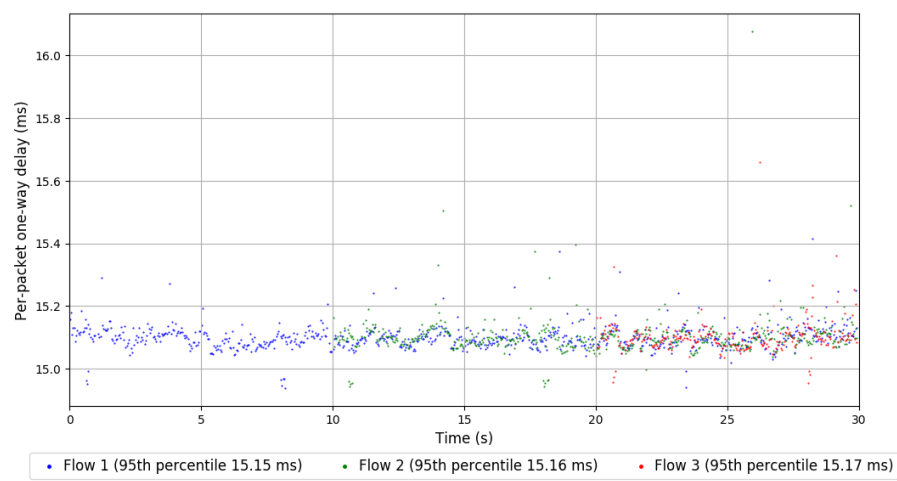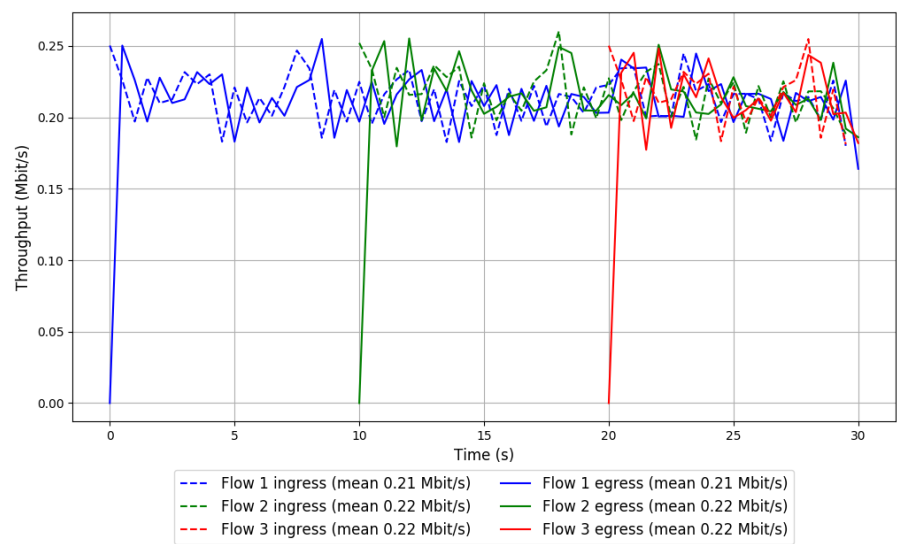
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 54.49 Mbit/s) --- Flow 1 egress (mean 54.48 Mbit/s)
Flow 2 ingress (mean 47.44 Mbit/s) --- Flow 2 egress (mean 47.41 Mbit/s)
Flow 3 ingress (mean 23.56 Mbit/s) --- Flow 3 egress (mean 23.50 Mbit/s)

Flow 1 (95th percentile 29.63 ms)   Flow 2 (95th percentile 25.03 ms)   Flow 3 (95th percentile 31.98 ms)

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```
Run 1: Statistics of SCReAM

Start at: 2018-10-02 16:38:10
End at: 2018-10-02 16:38:40
Local clock offset: -1.343 ms
Remote clock offset: -1.827 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 15.158 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 15.150 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 15.159 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 15.171 ms
Loss rate: 0.36%
```
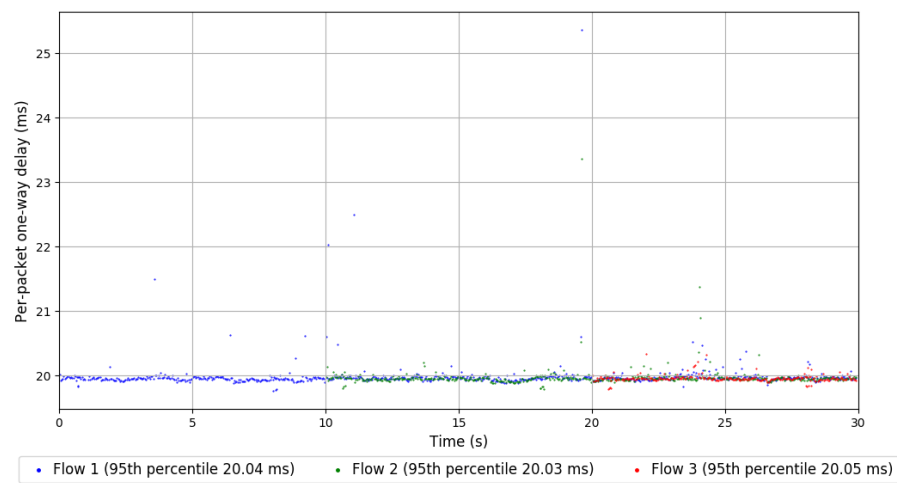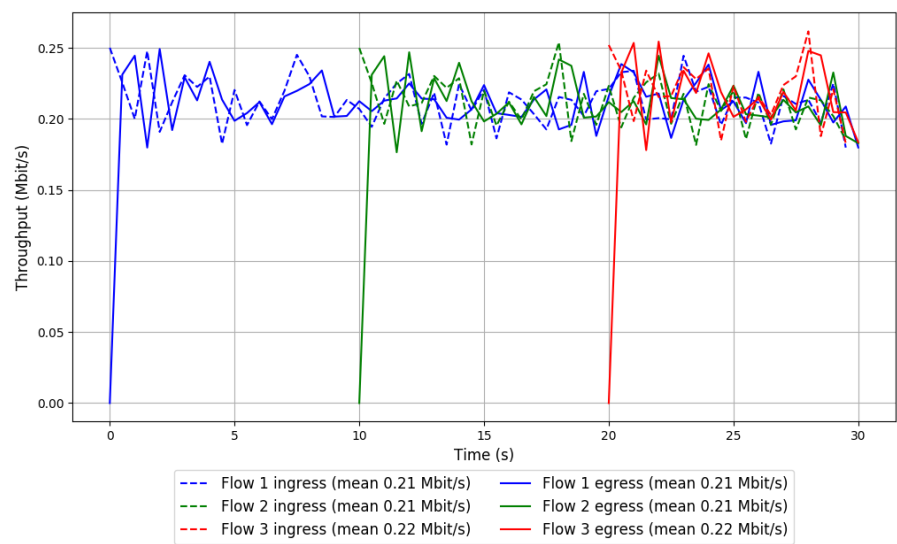
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-10-02 17:00:59
End at: 2018-10-02 17:01:29
Local clock offset: 2.23 ms
Remote clock offset: -3.387 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 20.039 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 20.039 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 20.026 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 20.045 ms
Loss rate: 0.35%
```
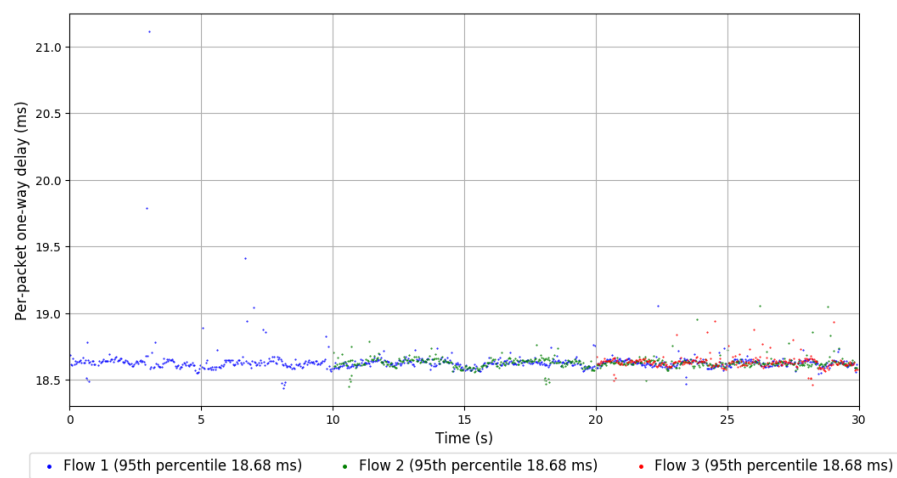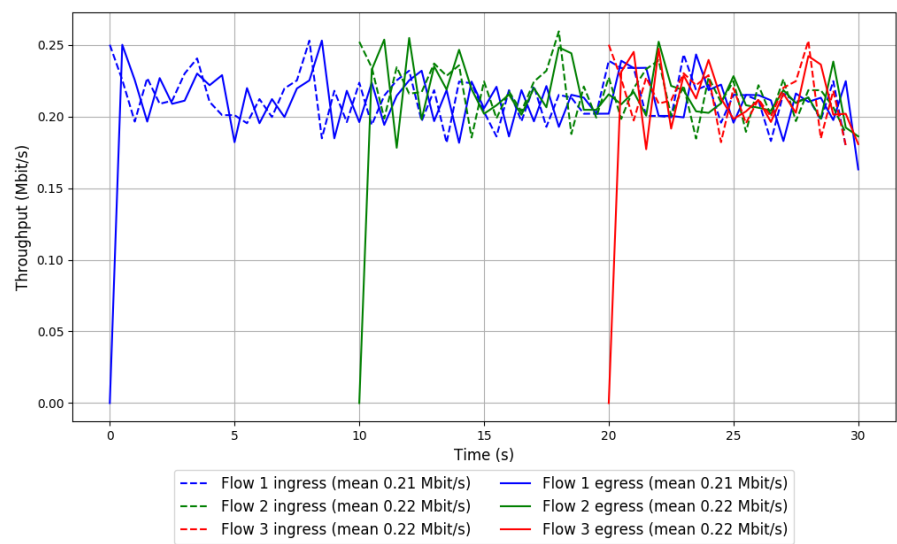
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-02 17:23:42
End at: 2018-10-02 17:24:12
Local clock offset: 1.345 ms
Remote clock offset: -3.053 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 18.680 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 18.677 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 18.685 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 18.679 ms
Loss rate: 0.35%
```

Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-10-02 17:45:48
End at: 2018-10-02 17:46:18
Local clock offset: 0.213 ms
Remote clock offset: -3.71 ms

# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 18.190 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 18.199 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 18.172 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 18.161 ms
Loss rate: 0.35%
```
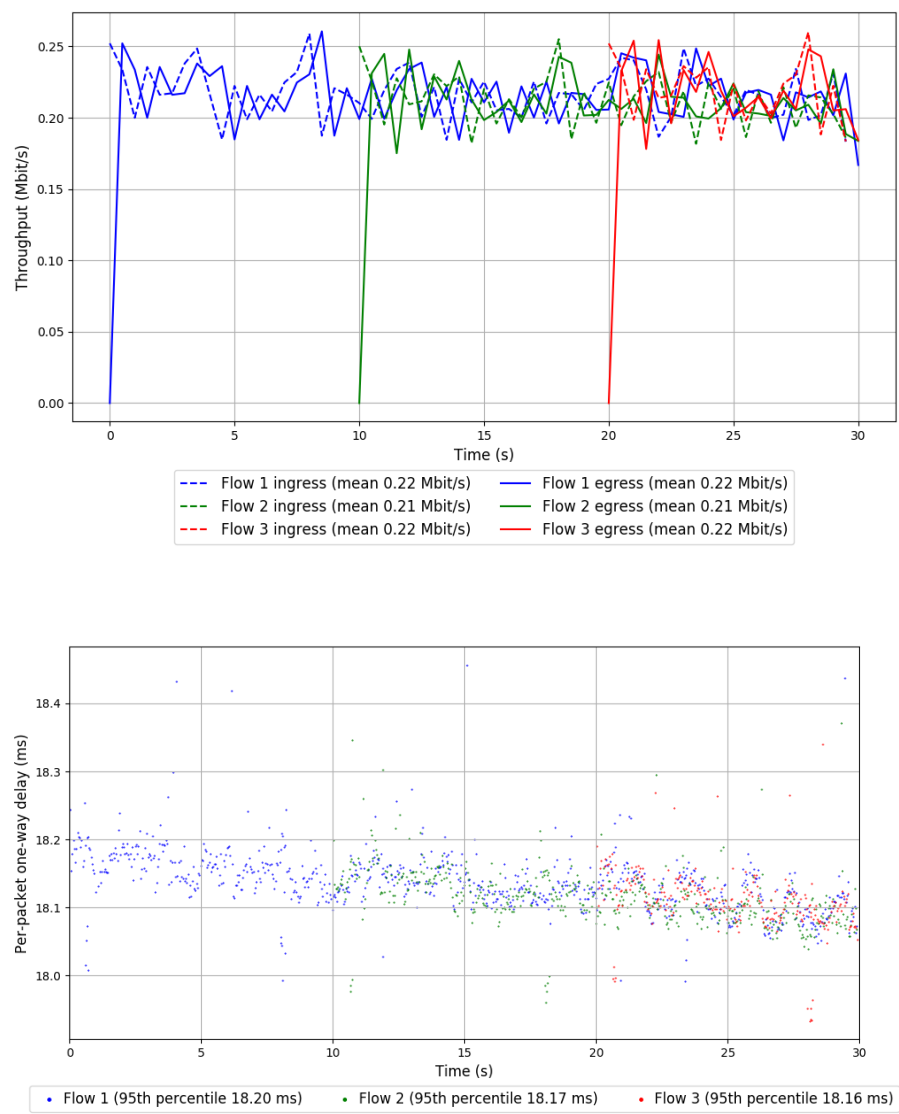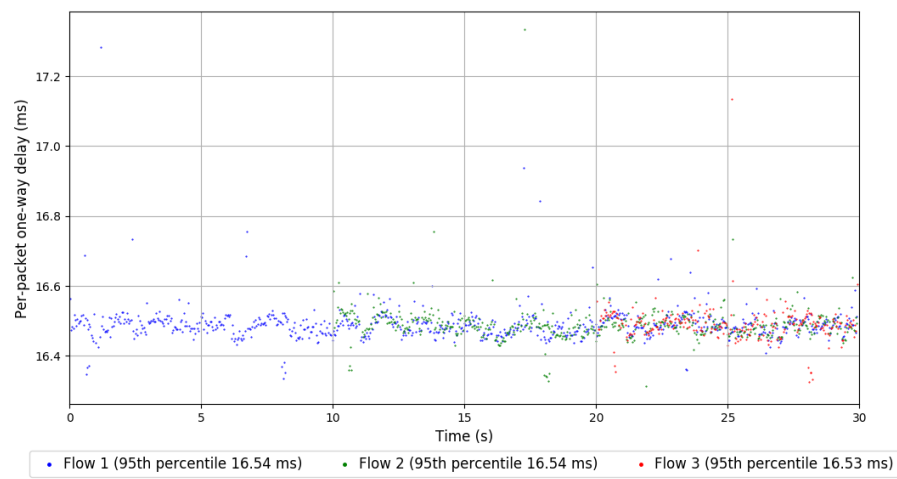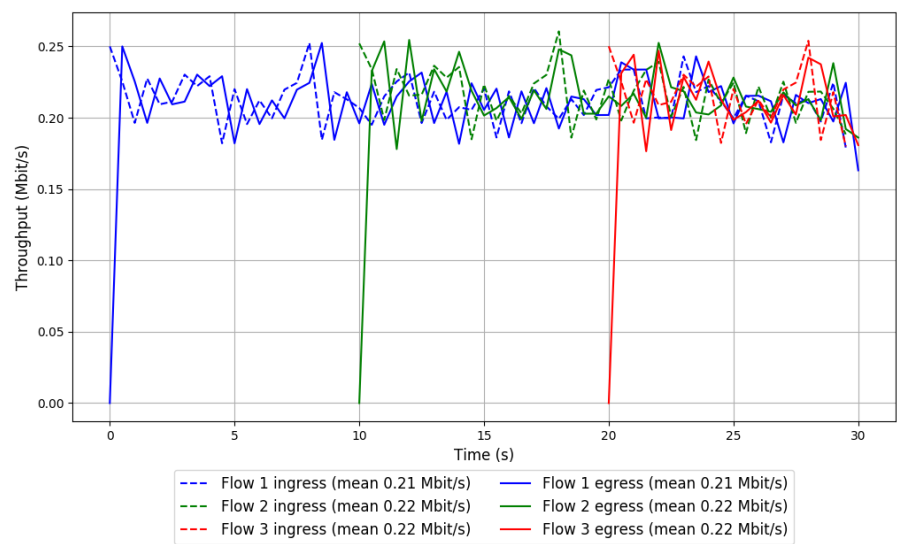
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-02 18:08:34
End at: 2018-10-02 18:09:04
Local clock offset: -0.261 ms
Remote clock offset: -3.615 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 16.537 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 16.538 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 16.537 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 16.533 ms
Loss rate: 0.36%
```

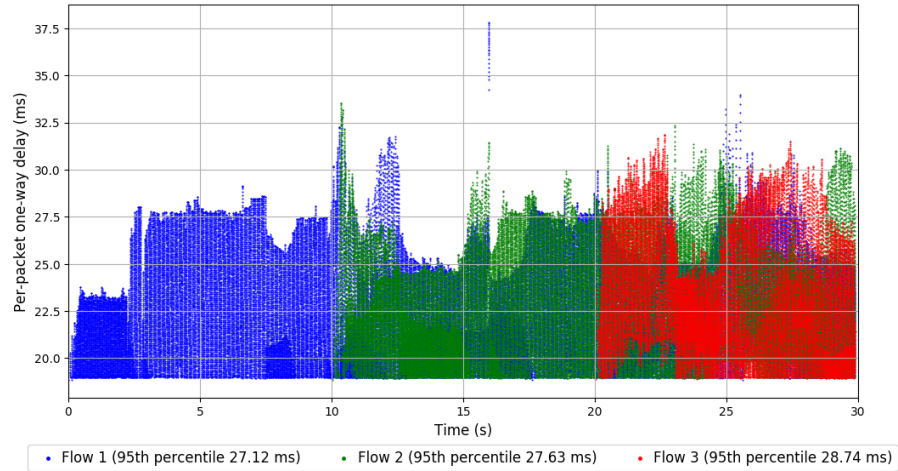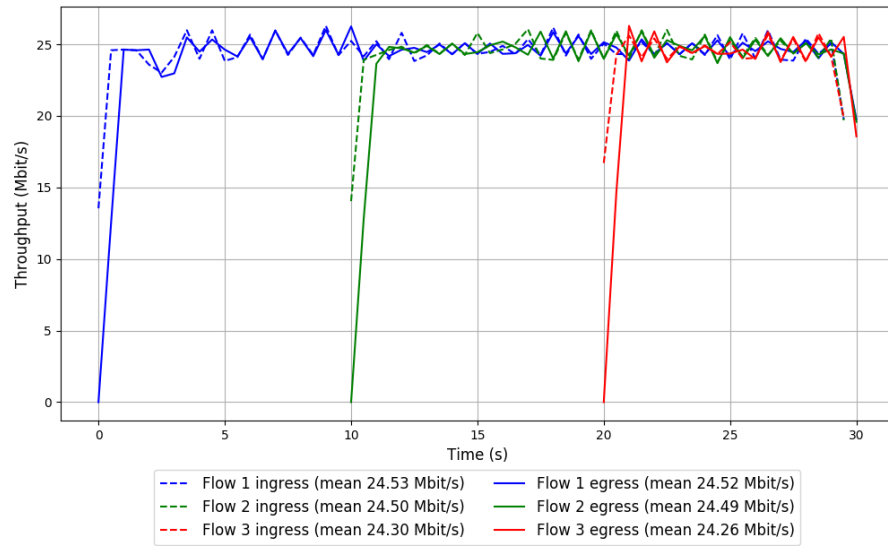Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2018-10-02 16:43:05
End at: 2018-10-02 16:43:35
Local clock offset: 1.216 ms
Remote clock offset: -3.181 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.80 Mbit/s
95th percentile per-packet one-way delay: 27.596 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 24.52 Mbit/s
95th percentile per-packet one-way delay: 27.123 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 24.49 Mbit/s
95th percentile per-packet one-way delay: 27.634 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 24.26 Mbit/s
95th percentile per-packet one-way delay: 28.742 ms
Loss rate: 0.35%
```
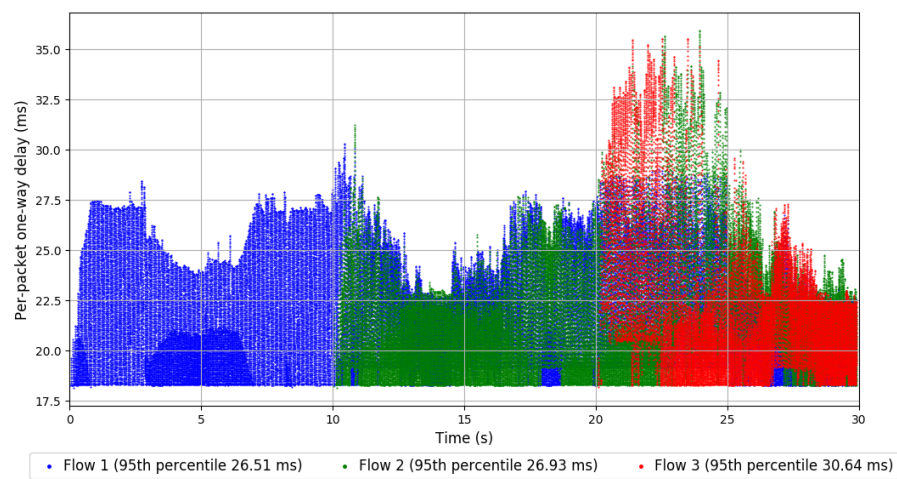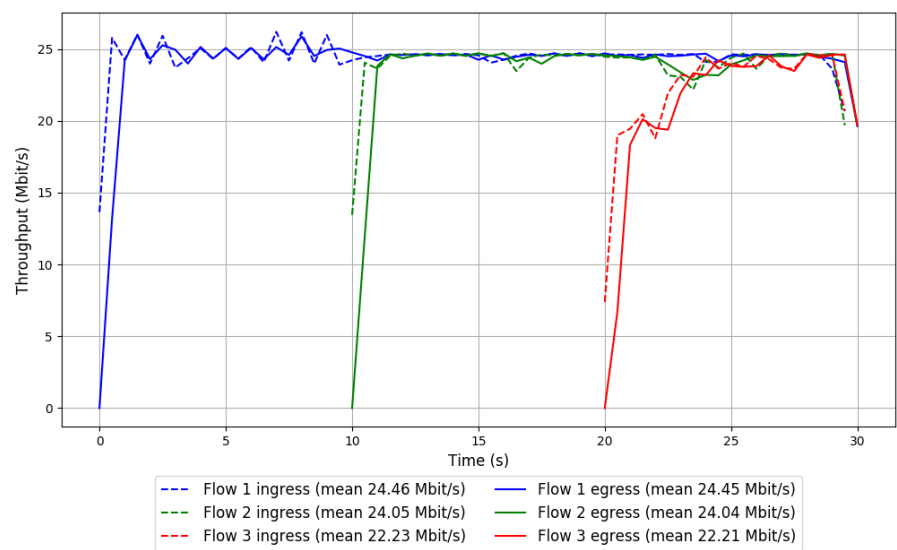
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-10-02 17:05:50
End at: 2018-10-02 17:06:20
Local clock offset: 0.446 ms
Remote clock offset: -3.565 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.76 Mbit/s
95th percentile per-packet one-way delay: 26.916 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 24.45 Mbit/s
95th percentile per-packet one-way delay: 26.511 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 24.04 Mbit/s
95th percentile per-packet one-way delay: 26.932 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 22.21 Mbit/s
95th percentile per-packet one-way delay: 30.635 ms
Loss rate: 0.45%
```
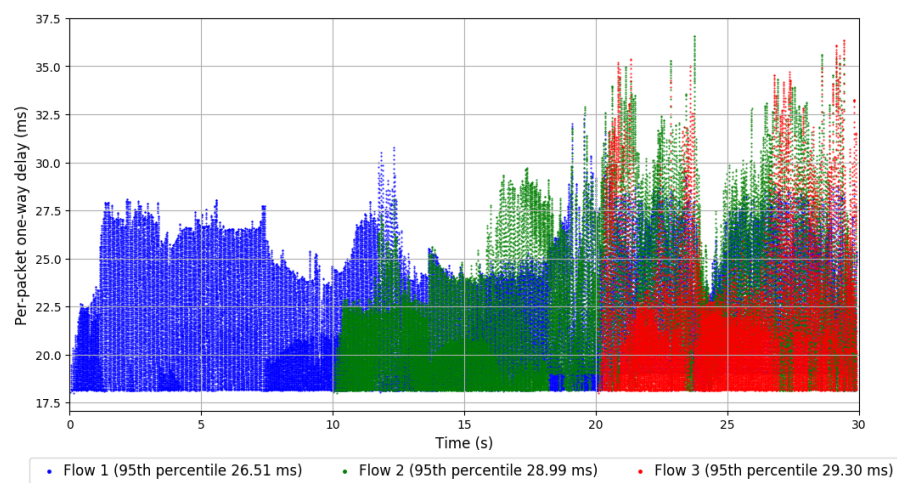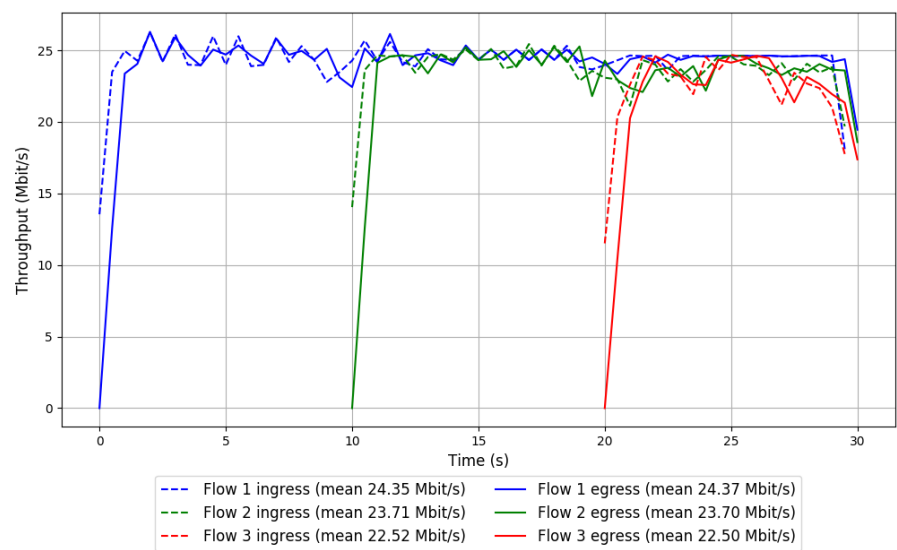
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-02 17:28:29
End at: 2018-10-02 17:28:59
Local clock offset: 0.642 ms
Remote clock offset: -3.268 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.54 Mbit/s
95th percentile per-packet one-way delay: 27.610 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 24.37 Mbit/s
95th percentile per-packet one-way delay: 26.512 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 23.70 Mbit/s
95th percentile per-packet one-way delay: 28.986 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 22.50 Mbit/s
95th percentile per-packet one-way delay: 29.304 ms
Loss rate: 0.33%
```
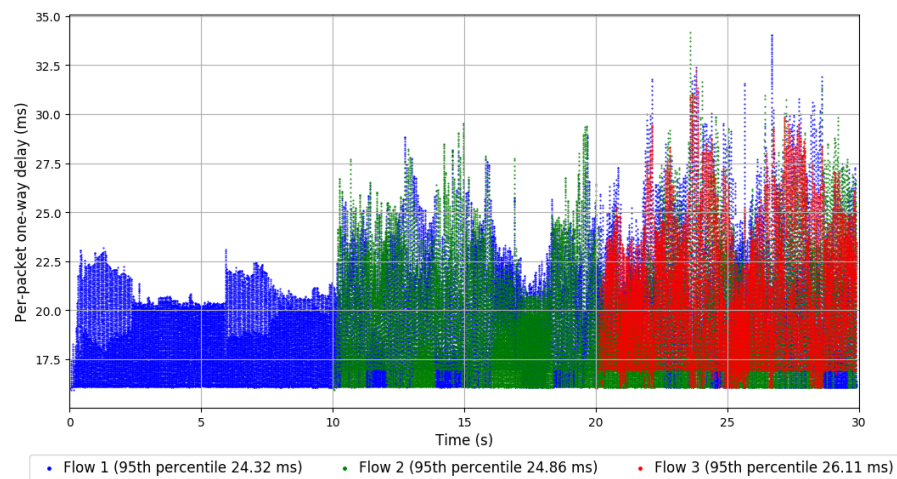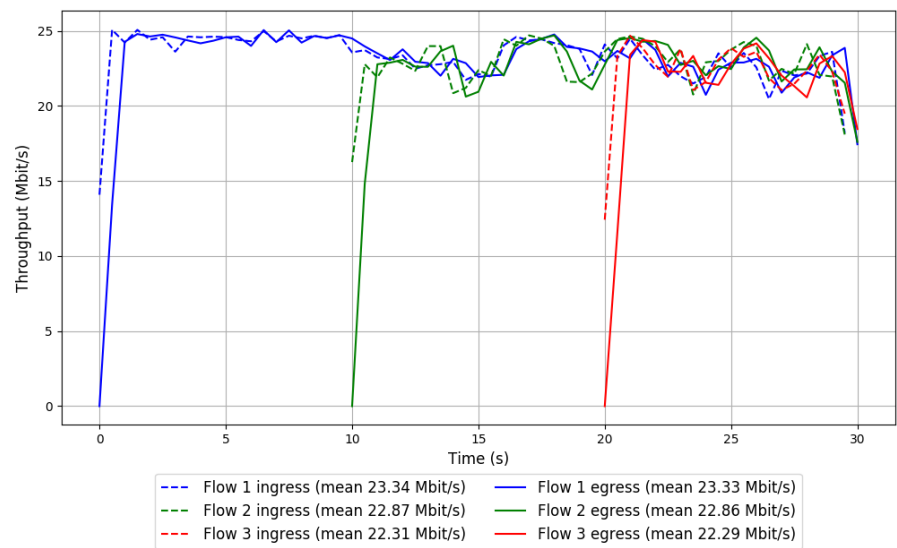
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-02 17:50:37
End at: 2018-10-02 17:51:07
Local clock offset: -0.869 ms
Remote clock offset: -3.196 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.88 Mbit/s
95th percentile per-packet one-way delay: 24.891 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 23.33 Mbit/s
95th percentile per-packet one-way delay: 24.319 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 22.86 Mbit/s
95th percentile per-packet one-way delay: 24.860 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 22.29 Mbit/s
95th percentile per-packet one-way delay: 26.112 ms
Loss rate: 0.45%
```

Run 4: Report of Sprout — Data Link

- - - - Flow 1 ingress (mean 23.34 Mbit/s)   —— Flow 1 egress (mean 23.33 Mbit/s)
- - - - Flow 2 ingress (mean 22.87 Mbit/s)   —— Flow 2 egress (mean 22.86 Mbit/s)
- - - - Flow 3 ingress (mean 22.31 Mbit/s)   —— Flow 3 egress (mean 22.29 Mbit/s)

• Flow 1 (95th percentile 24.32 ms)   • Flow 2 (95th percentile 24.86 ms)   • Flow 3 (95th percentile 26.11 ms)
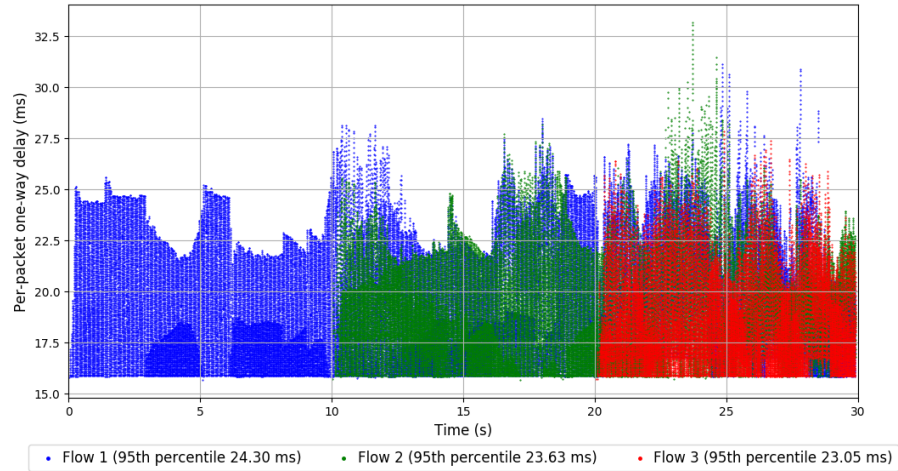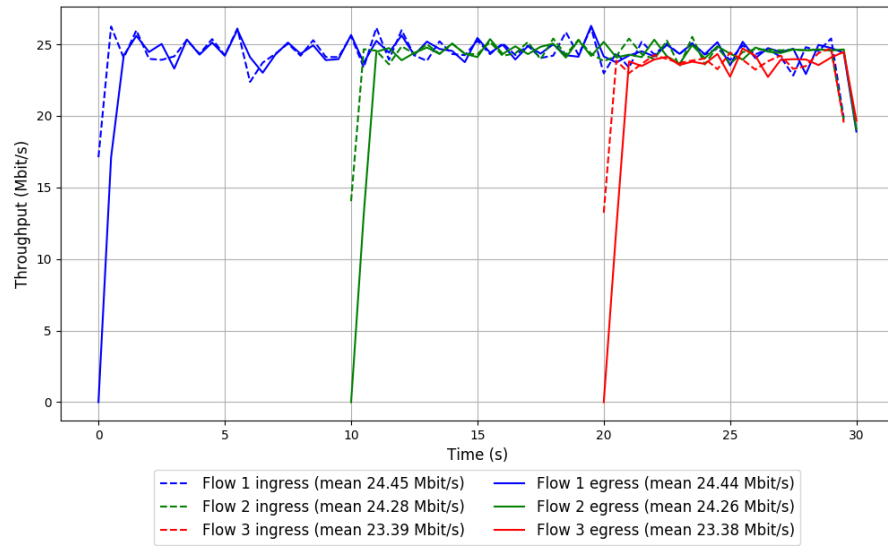
```
Run 5: Statistics of Sprout

Start at: 2018-10-02 18:13:23
End at: 2018-10-02 18:13:53
Local clock offset: -1.205 ms
Remote clock offset: -3.977 ms


# Below is generated by plot.py at 2018-10-02 18:38:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.28 Mbit/s
95th percentile per-packet one-way delay: 23.999 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 24.44 Mbit/s
95th percentile per-packet one-way delay: 24.305 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 24.26 Mbit/s
95th percentile per-packet one-way delay: 23.630 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 23.054 ms
Loss rate: 0.21%
```
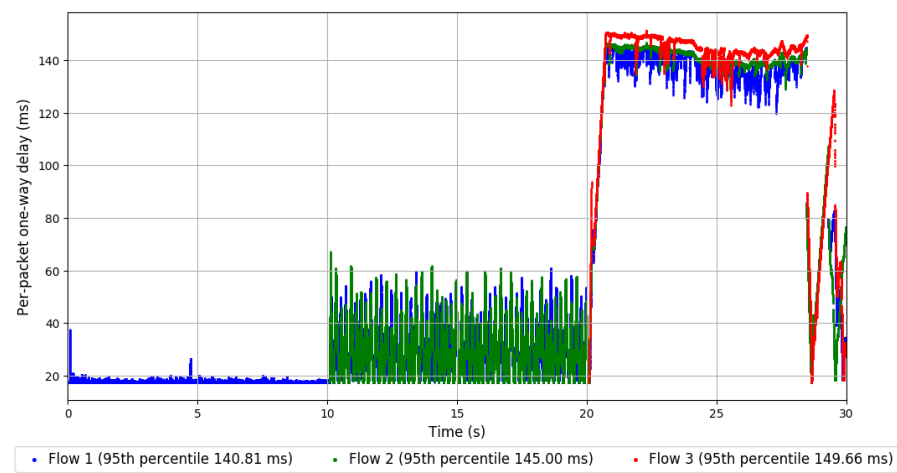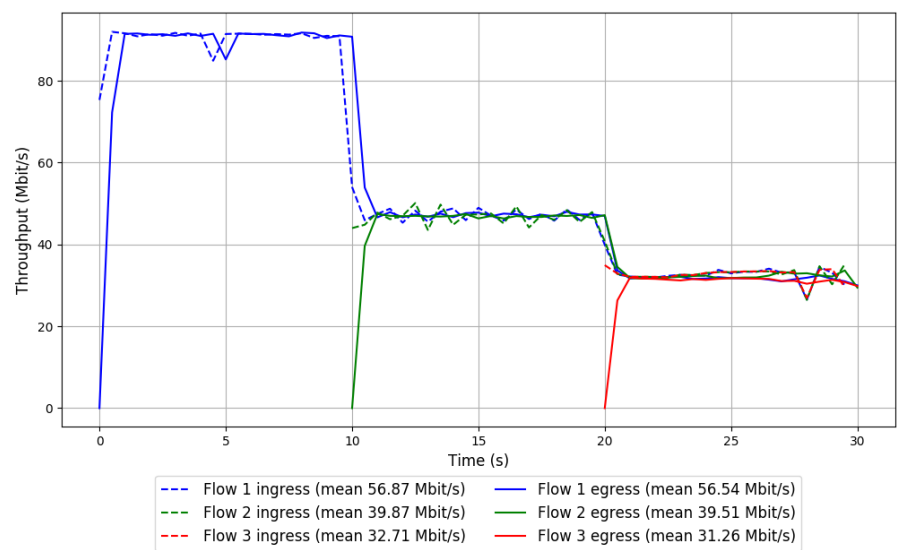
Run 5: Report of Sprout — Data Link

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

Start at: 2018-10-02 16:41:42
End at: 2018-10-02 16:42:12
Local clock offset: 0.398 ms
Remote clock offset: -2.516 ms


# Below is generated by plot.py at 2018-10-02 18:40:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.22 Mbit/s
95th percentile per-packet one-way delay: 145.351 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 140.806 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 39.51 Mbit/s
95th percentile per-packet one-way delay: 145.002 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 31.26 Mbit/s
95th percentile per-packet one-way delay: 149.655 ms
Loss rate: 4.74%
```

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

- Flow 1 ingress (mean 56.87 Mbit/s)
- Flow 1 egress (mean 56.54 Mbit/s)
- Flow 2 ingress (mean 39.87 Mbit/s)
- Flow 2 egress (mean 39.51 Mbit/s)
- Flow 3 ingress (mean 32.71 Mbit/s)
- Flow 3 egress (mean 31.26 Mbit/s)

- Flow 1 (95th percentile 140.81 ms)
- Flow 2 (95th percentile 145.00 ms)
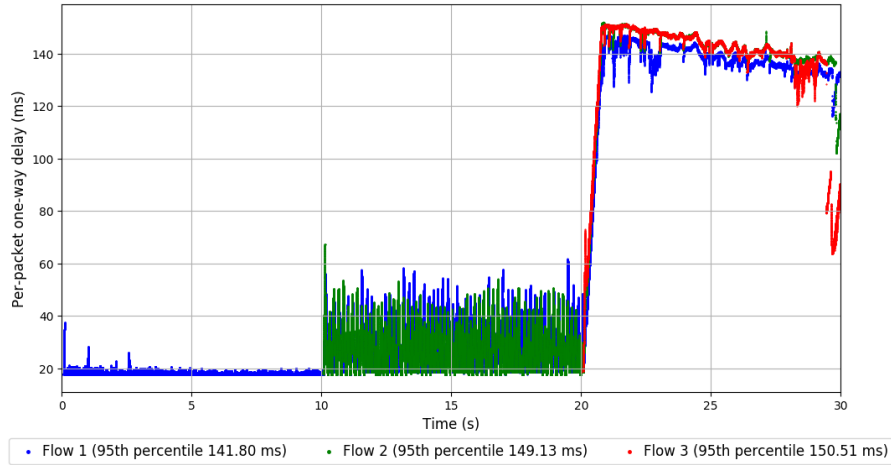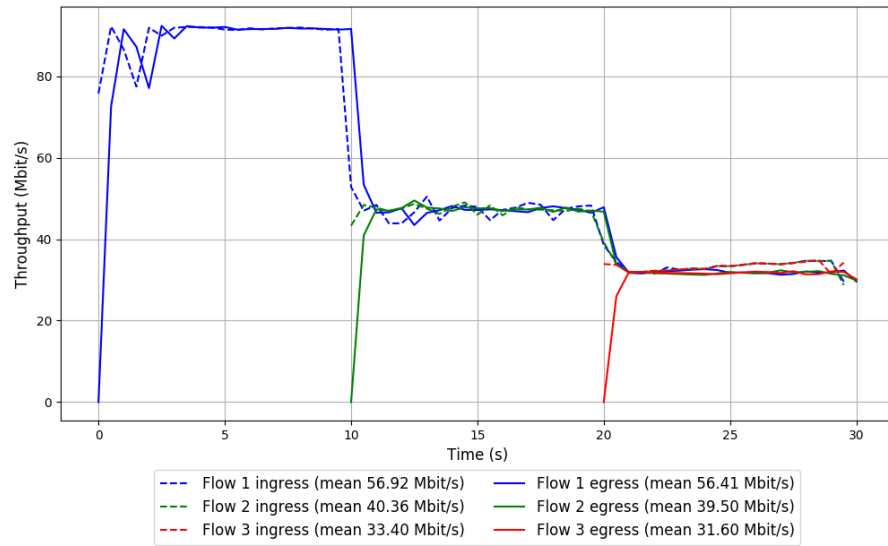- Flow 3 (95th percentile 149.66 ms)

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

Start at: 2018-10-02 17:04:26
End at: 2018-10-02 17:04:56
Local clock offset: -0.985 ms
Remote clock offset: -4.512 ms


# Below is generated by plot.py at 2018-10-02 18:40:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.19 Mbit/s
95th percentile per-packet one-way delay: 147.768 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 56.41 Mbit/s
95th percentile per-packet one-way delay: 141.803 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 39.50 Mbit/s
95th percentile per-packet one-way delay: 149.131 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 31.60 Mbit/s
95th percentile per-packet one-way delay: 150.506 ms
Loss rate: 5.68%
```

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

Flow 1 ingress (mean 56.92 Mbit/s) --- Flow 1 egress (mean 56.41 Mbit/s)
Flow 2 ingress (mean 40.36 Mbit/s) --- Flow 2 egress (mean 39.50 Mbit/s)
Flow 3 ingress (mean 33.40 Mbit/s) --- Flow 3 egress (mean 31.60 Mbit/s)

Flow 1 (95th percentile 141.80 ms)   Flow 2 (95th percentile 149.13 ms)   Flow 3 (95th percentile 150.51 ms)
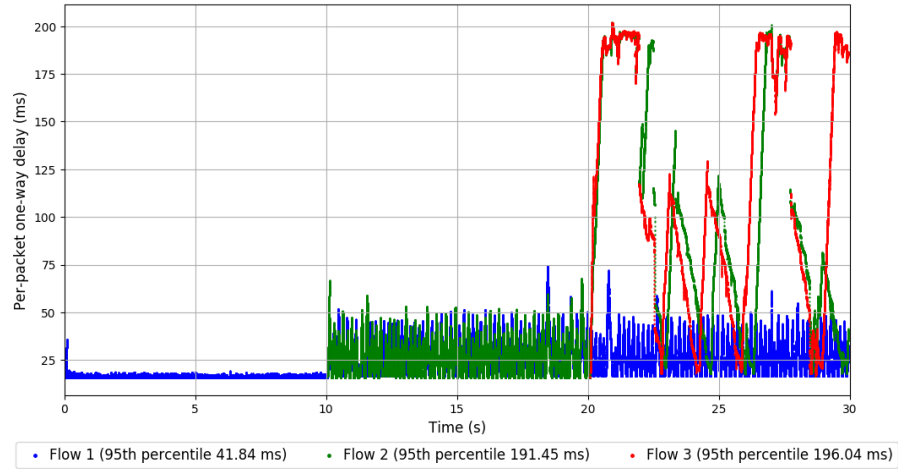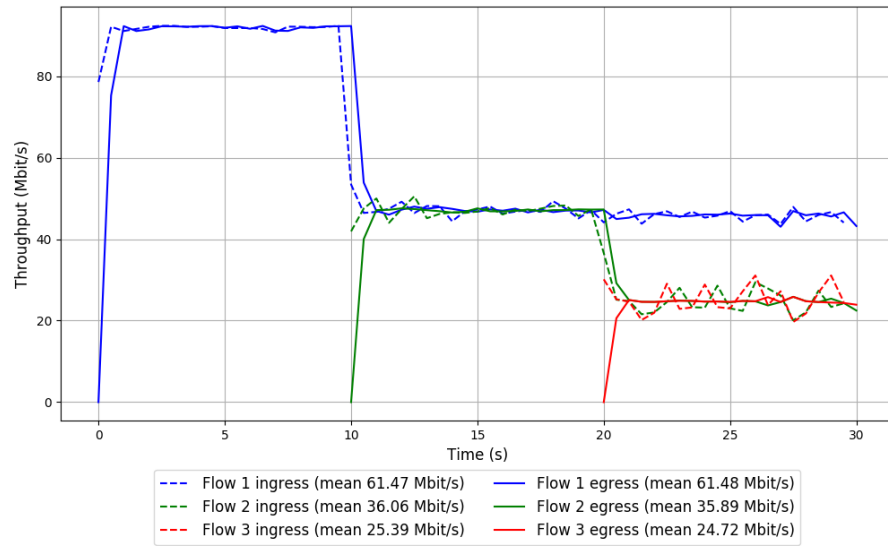
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-10-02 17:27:08
End at: 2018-10-02 17:27:38
Local clock offset: -0.992 ms
Remote clock offset: -2.667 ms


# Below is generated by plot.py at 2018-10-02 18:40:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.57 Mbit/s
95th percentile per-packet one-way delay: 174.813 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 61.48 Mbit/s
95th percentile per-packet one-way delay: 41.839 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 191.452 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 24.72 Mbit/s
95th percentile per-packet one-way delay: 196.042 ms
Loss rate: 2.89%
```

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

Flow 1 ingress (mean 61.47 Mbit/s)   Flow 1 egress (mean 61.48 Mbit/s)
Flow 2 ingress (mean 36.06 Mbit/s)   Flow 2 egress (mean 35.89 Mbit/s)
Flow 3 ingress (mean 25.39 Mbit/s)   Flow 3 egress (mean 24.72 Mbit/s)

Flow 1 (95th percentile 41.84 ms)   Flow 2 (95th percentile 191.45 ms)   Flow 3 (95th percentile 196.04 ms)
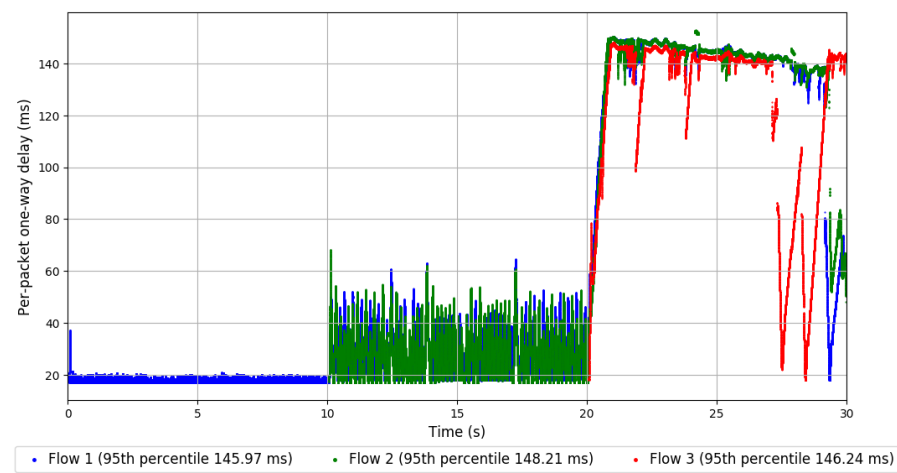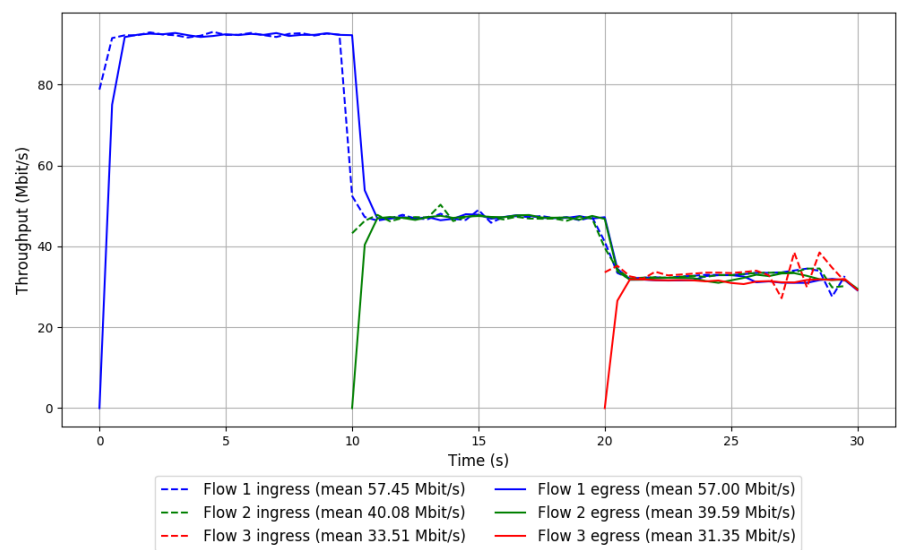
140

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

Start at: 2018-10-02 17:49:19
End at: 2018-10-02 17:49:49
Local clock offset: -0.288 ms
Remote clock offset: -3.677 ms


# Below is generated by plot.py at 2018-10-02 18:40:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.76 Mbit/s
95th percentile per-packet one-way delay: 146.869 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 57.00 Mbit/s
95th percentile per-packet one-way delay: 145.970 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 148.210 ms
Loss rate: 1.38%
-- Flow 3:
Average throughput: 31.35 Mbit/s
95th percentile per-packet one-way delay: 146.240 ms
Loss rate: 6.68%
```

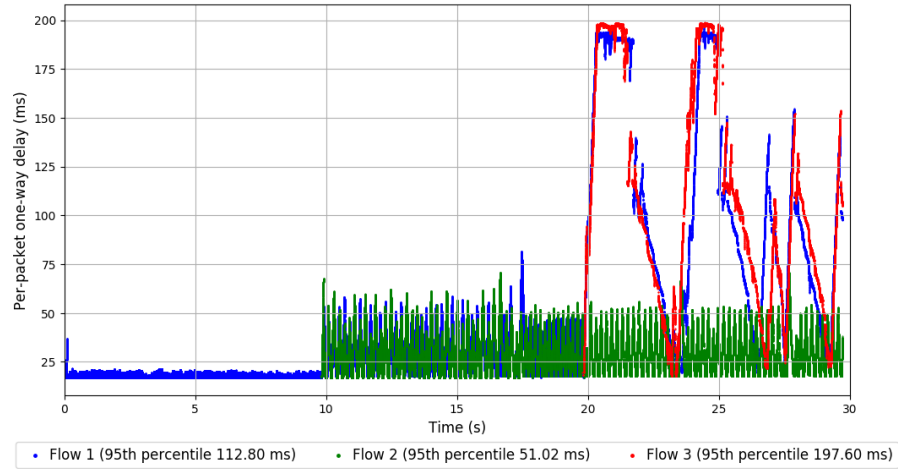# Run 4: Report of TaoVA-100x — Data Link

- - - - Flow 1 ingress (mean 57.45 Mbit/s) ——— Flow 1 egress (mean 57.00 Mbit/s)
- - - - Flow 2 ingress (mean 40.08 Mbit/s) ——— Flow 2 egress (mean 39.59 Mbit/s)
- - - - Flow 3 ingress (mean 33.51 Mbit/s) ——— Flow 3 egress (mean 31.35 Mbit/s)

• Flow 1 (95th percentile 145.97 ms)   • Flow 2 (95th percentile 148.21 ms)   • Flow 3 (95th percentile 146.24 ms)
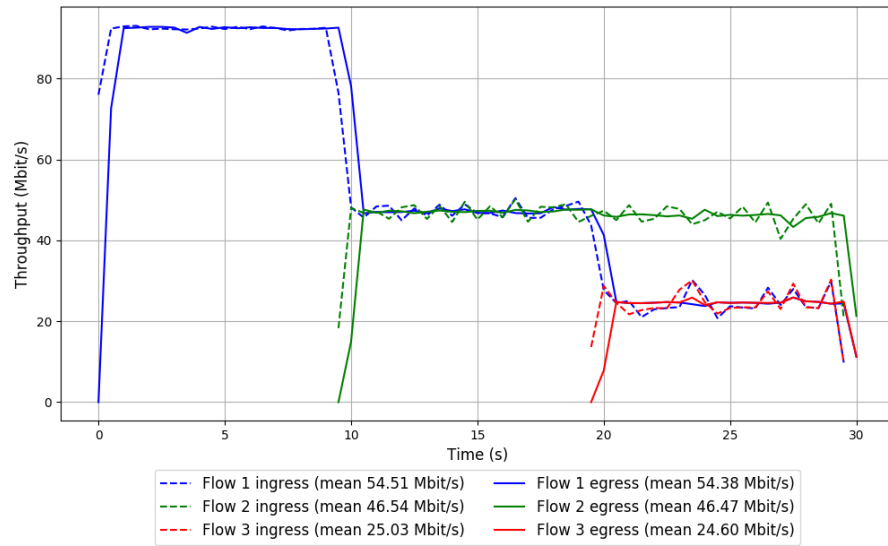
142

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

Start at: 2018-10-02 18:12:06
End at: 2018-10-02 18:12:36
Local clock offset: -0.058 ms
Remote clock offset: -4.003 ms


# Below is generated by plot.py at 2018-10-02 18:40:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.80 Mbit/s
95th percentile per-packet one-way delay: 131.980 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 54.38 Mbit/s
95th percentile per-packet one-way delay: 112.797 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 46.47 Mbit/s
95th percentile per-packet one-way delay: 51.018 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 24.60 Mbit/s
95th percentile per-packet one-way delay: 197.596 ms
Loss rate: 1.99%
```

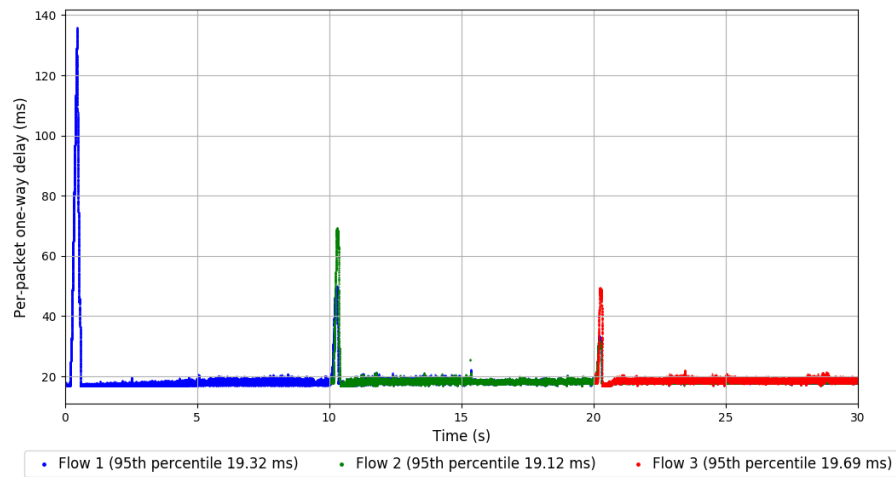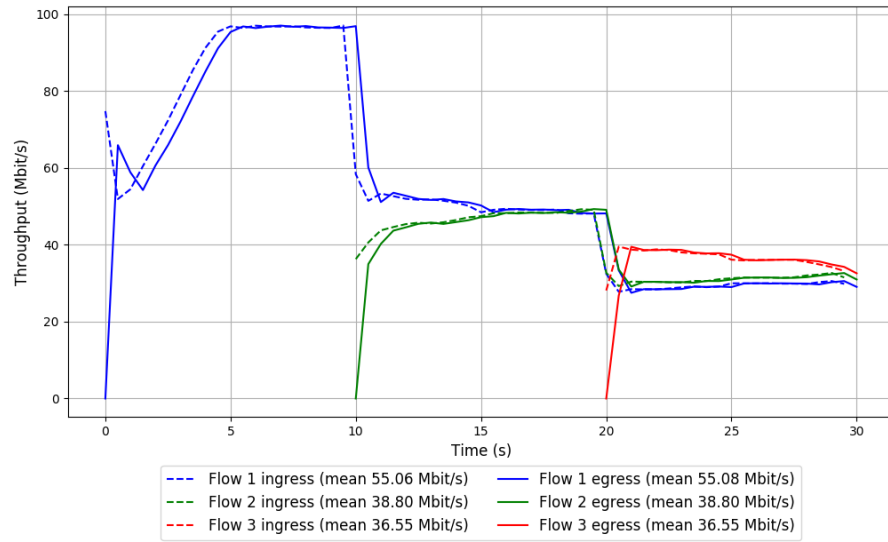Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 54.51 Mbit/s) --- Flow 1 egress (mean 54.38 Mbit/s)
Flow 2 ingress (mean 46.54 Mbit/s) --- Flow 2 egress (mean 46.47 Mbit/s)
Flow 3 ingress (mean 25.03 Mbit/s) --- Flow 3 egress (mean 24.60 Mbit/s)

Flow 1 (95th percentile 112.80 ms) · Flow 2 (95th percentile 51.02 ms) · Flow 3 (95th percentile 197.60 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-02 16:54:30
End at: 2018-10-02 16:55:00
Local clock offset: 0.911 ms
Remote clock offset: -1.523 ms


# Below is generated by plot.py at 2018-10-02 18:40:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.03 Mbit/s
95th percentile per-packet one-way delay: 19.388 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 55.08 Mbit/s
95th percentile per-packet one-way delay: 19.325 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 38.80 Mbit/s
95th percentile per-packet one-way delay: 19.116 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 36.55 Mbit/s
95th percentile per-packet one-way delay: 19.692 ms
Loss rate: 0.26%
```
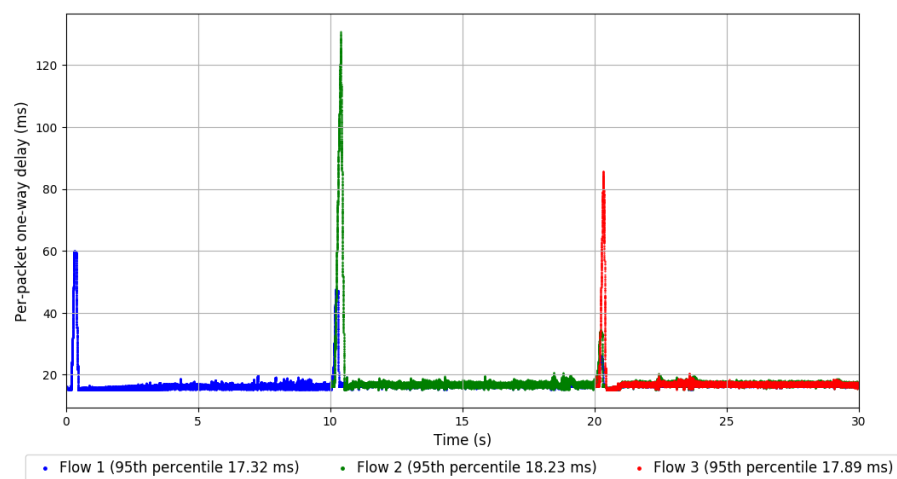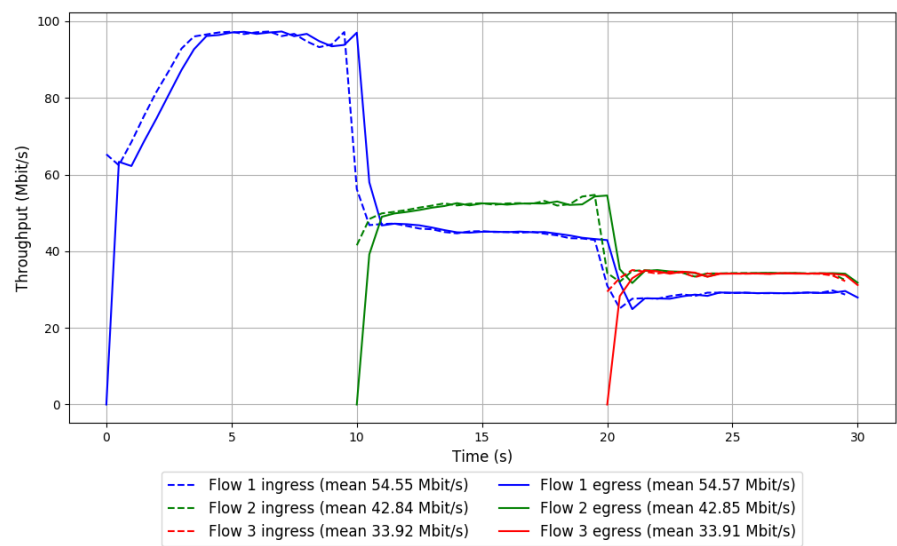
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 55.06 Mbit/s) --- Flow 1 egress (mean 55.08 Mbit/s)
Flow 2 ingress (mean 38.80 Mbit/s) --- Flow 2 egress (mean 38.80 Mbit/s)
Flow 3 ingress (mean 36.55 Mbit/s) --- Flow 3 egress (mean 36.55 Mbit/s)

Flow 1 (95th percentile 19.32 ms) • Flow 2 (95th percentile 19.12 ms) • Flow 3 (95th percentile 19.69 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-02 17:17:27
End at: 2018-10-02 17:17:57
Local clock offset: -1.794 ms
Remote clock offset: -2.816 ms


# Below is generated by plot.py at 2018-10-02 18:40:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.36 Mbit/s
95th percentile per-packet one-way delay: 17.813 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 54.57 Mbit/s
95th percentile per-packet one-way delay: 17.325 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 42.85 Mbit/s
95th percentile per-packet one-way delay: 18.229 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 33.91 Mbit/s
95th percentile per-packet one-way delay: 17.887 ms
Loss rate: 0.32%
```
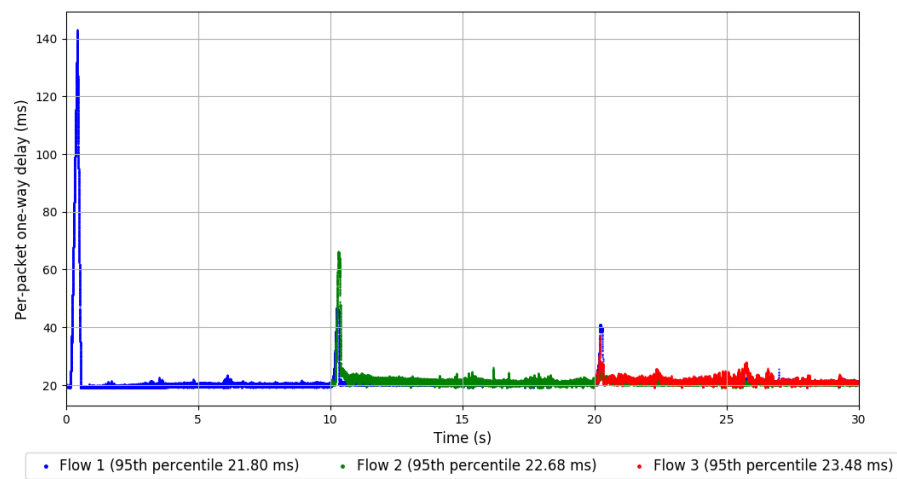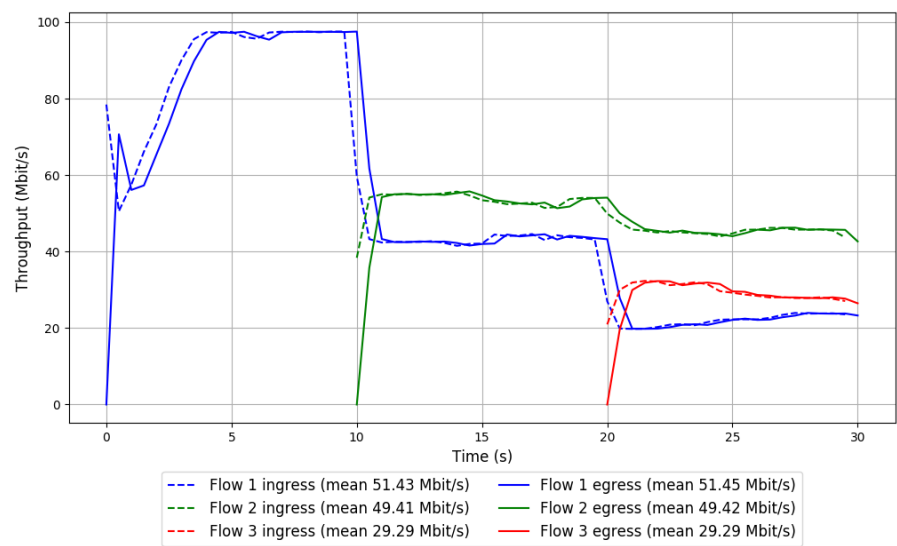
Run 2: Report of TCP Vegas — Data Link

- - - - Flow 1 ingress (mean 54.55 Mbit/s) ——— Flow 1 egress (mean 54.57 Mbit/s)
- - - - Flow 2 ingress (mean 42.84 Mbit/s) ——— Flow 2 egress (mean 42.85 Mbit/s)
- - - - Flow 3 ingress (mean 33.92 Mbit/s) ——— Flow 3 egress (mean 33.91 Mbit/s)

- Flow 1 (95th percentile 17.32 ms)   • Flow 2 (95th percentile 18.23 ms)   • Flow 3 (95th percentile 17.89 ms)
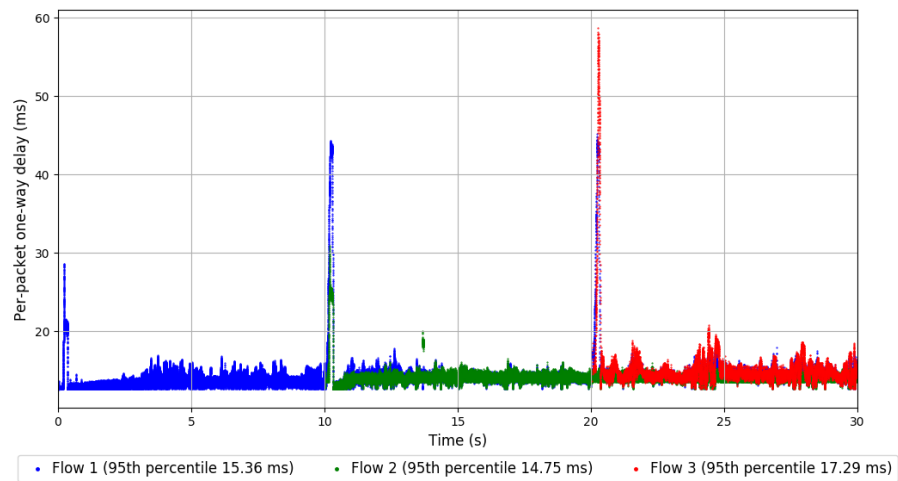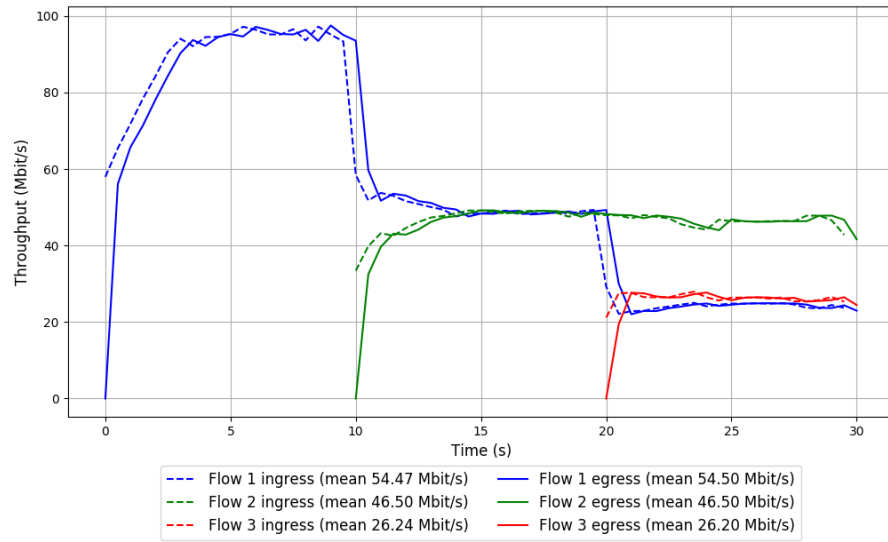
```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-02 17:39:38
End at: 2018-10-02 17:40:08
Local clock offset: 0.94 ms
Remote clock offset: -3.938 ms


# Below is generated by plot.py at 2018-10-02 18:40:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.07 Mbit/s
95th percentile per-packet one-way delay: 22.592 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 51.45 Mbit/s
95th percentile per-packet one-way delay: 21.797 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 49.42 Mbit/s
95th percentile per-packet one-way delay: 22.678 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 29.29 Mbit/s
95th percentile per-packet one-way delay: 23.483 ms
Loss rate: 0.30%
```
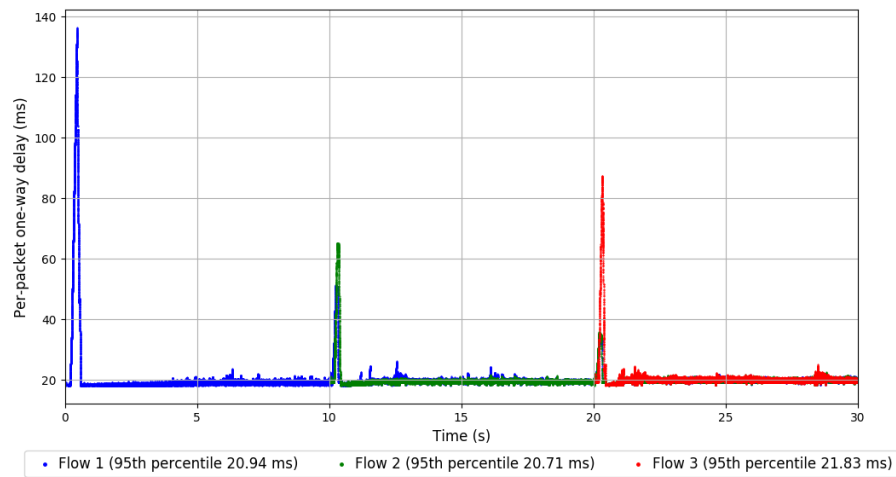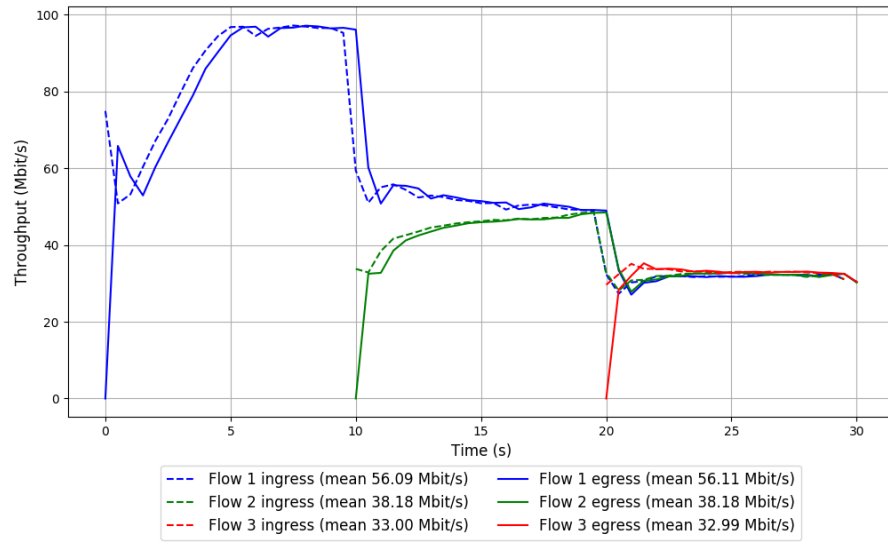
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 51.43 Mbit/s)   Flow 1 egress (mean 51.45 Mbit/s)
Flow 2 ingress (mean 49.41 Mbit/s)   Flow 2 egress (mean 49.42 Mbit/s)
Flow 3 ingress (mean 29.29 Mbit/s)   Flow 3 egress (mean 29.29 Mbit/s)

Flow 1 (95th percentile 21.80 ms)   Flow 2 (95th percentile 22.68 ms)   Flow 3 (95th percentile 23.48 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-02 18:02:10
End at: 2018-10-02 18:02:40
Local clock offset: -3.114 ms
Remote clock offset: -2.469 ms


# Below is generated by plot.py at 2018-10-02 18:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.16 Mbit/s
95th percentile per-packet one-way delay: 15.379 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 54.50 Mbit/s
95th percentile per-packet one-way delay: 15.360 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 46.50 Mbit/s
95th percentile per-packet one-way delay: 14.746 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 26.20 Mbit/s
95th percentile per-packet one-way delay: 17.286 ms
Loss rate: 0.50%
```
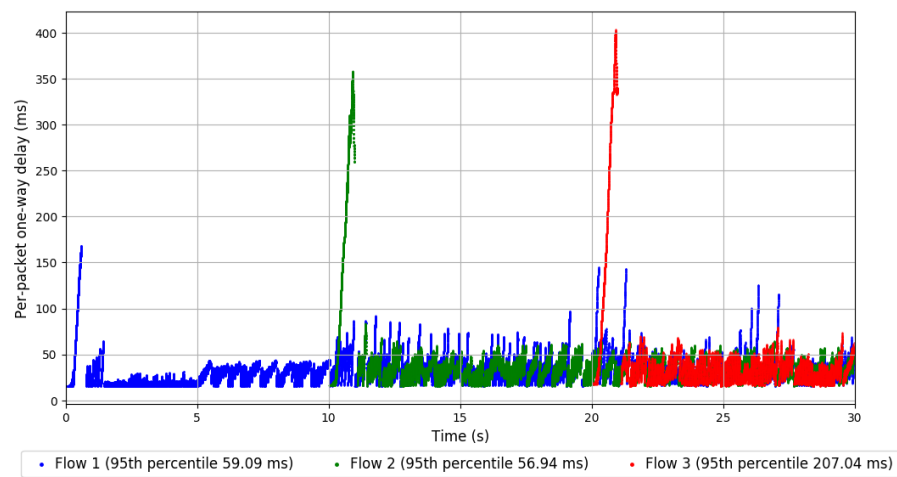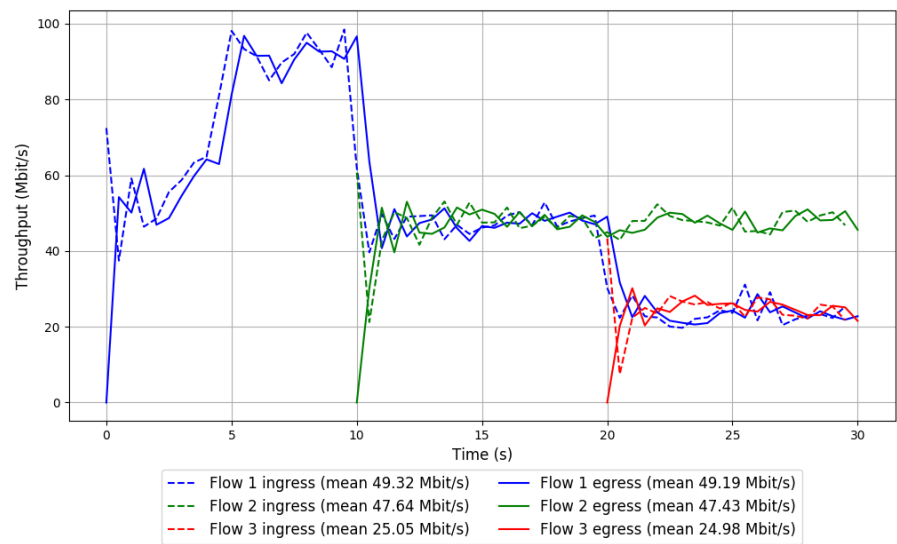
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-02 18:24:51
End at: 2018-10-02 18:25:21
Local clock offset: 1.398 ms
Remote clock offset: -3.217 ms


# Below is generated by plot.py at 2018-10-02 18:40:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.47 Mbit/s
95th percentile per-packet one-way delay: 21.016 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 56.11 Mbit/s
95th percentile per-packet one-way delay: 20.942 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 38.18 Mbit/s
95th percentile per-packet one-way delay: 20.706 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 32.99 Mbit/s
95th percentile per-packet one-way delay: 21.826 ms
Loss rate: 0.35%
```
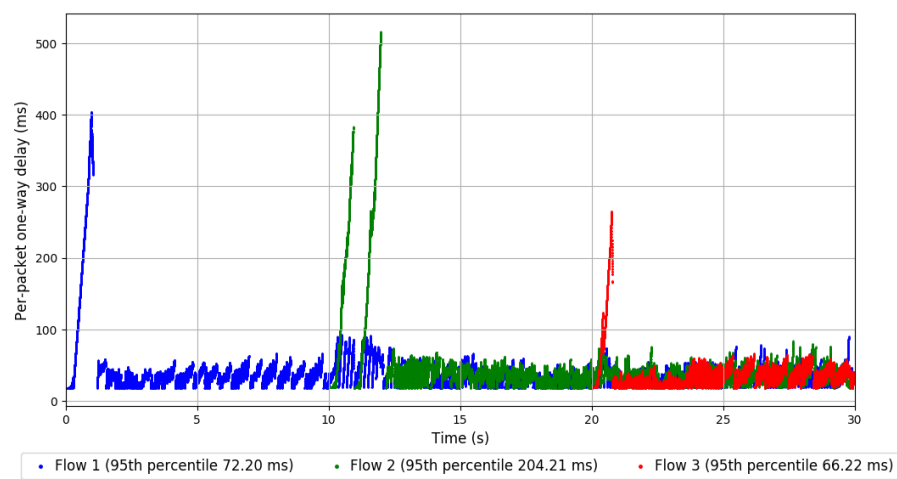
Run 5: Report of TCP Vegas — Data Link

- - - - Flow 1 ingress (mean 56.09 Mbit/s) ——— Flow 1 egress (mean 56.11 Mbit/s)
- - - - Flow 2 ingress (mean 38.18 Mbit/s) ——— Flow 2 egress (mean 38.18 Mbit/s)
- - - - Flow 3 ingress (mean 33.00 Mbit/s) ——— Flow 3 egress (mean 32.99 Mbit/s)

- Flow 1 (95th percentile 20.94 ms)   • Flow 2 (95th percentile 20.71 ms)   • Flow 3 (95th percentile 21.83 ms)
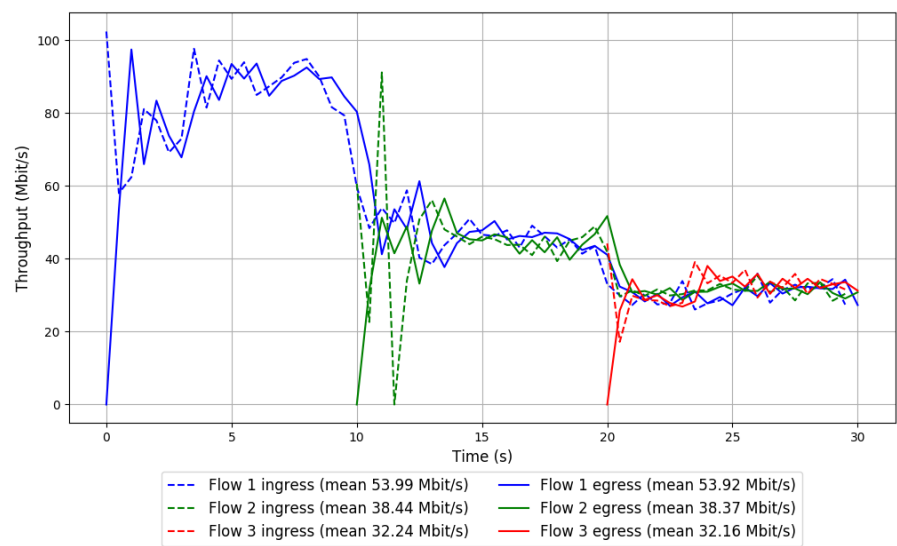
154

```
Run 1: Statistics of Verus

Start at: 2018-10-02 16:46:48
End at: 2018-10-02 16:47:18
Local clock offset: -0.978 ms
Remote clock offset: -2.008 ms


# Below is generated by plot.py at 2018-10-02 18:40:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.04 Mbit/s
95th percentile per-packet one-way delay: 60.020 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 49.19 Mbit/s
95th percentile per-packet one-way delay: 59.091 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 47.43 Mbit/s
95th percentile per-packet one-way delay: 56.935 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 24.98 Mbit/s
95th percentile per-packet one-way delay: 207.036 ms
Loss rate: 0.55%
```
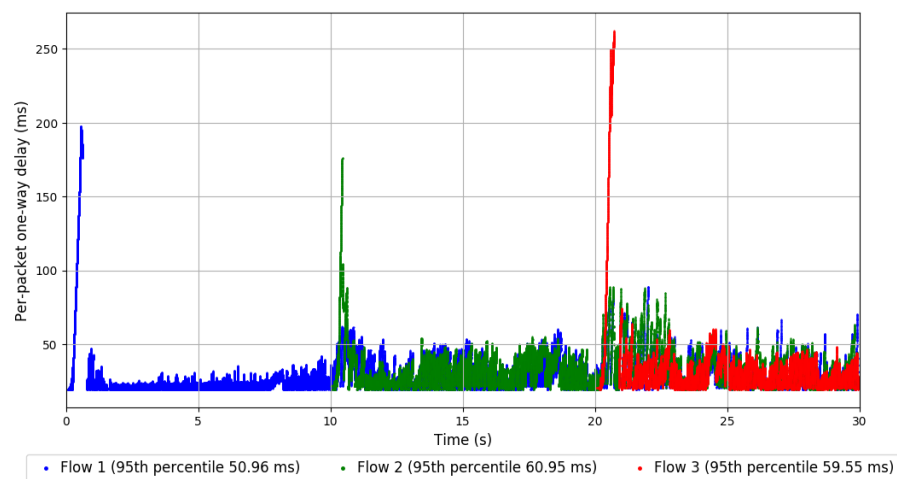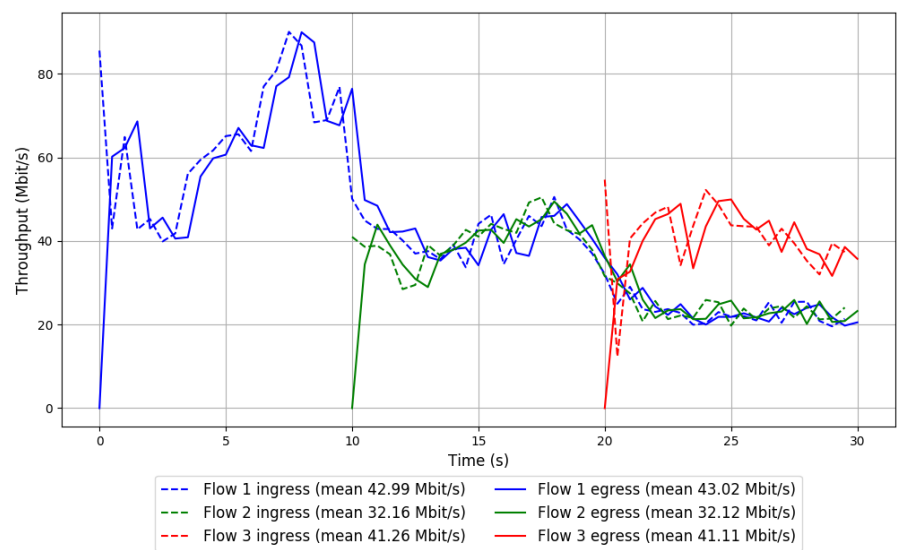
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-10-02 17:09:39
End at: 2018-10-02 17:10:09
Local clock offset: 0.718 ms
Remote clock offset: -3.162 ms


# Below is generated by plot.py at 2018-10-02 18:41:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.14 Mbit/s
95th percentile per-packet one-way delay: 88.461 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 53.92 Mbit/s
95th percentile per-packet one-way delay: 72.205 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 38.37 Mbit/s
95th percentile per-packet one-way delay: 204.208 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 32.16 Mbit/s
95th percentile per-packet one-way delay: 66.220 ms
Loss rate: 0.55%
```

Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-02 17:32:07
End at: 2018-10-02 17:32:37
Local clock offset: 1.442 ms
Remote clock offset: -3.798 ms


# Below is generated by plot.py at 2018-10-02 18:41:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.00 Mbit/s
95th percentile per-packet one-way delay: 54.740 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 43.02 Mbit/s
95th percentile per-packet one-way delay: 50.963 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 32.12 Mbit/s
95th percentile per-packet one-way delay: 60.950 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 41.11 Mbit/s
95th percentile per-packet one-way delay: 59.551 ms
Loss rate: 0.67%
```
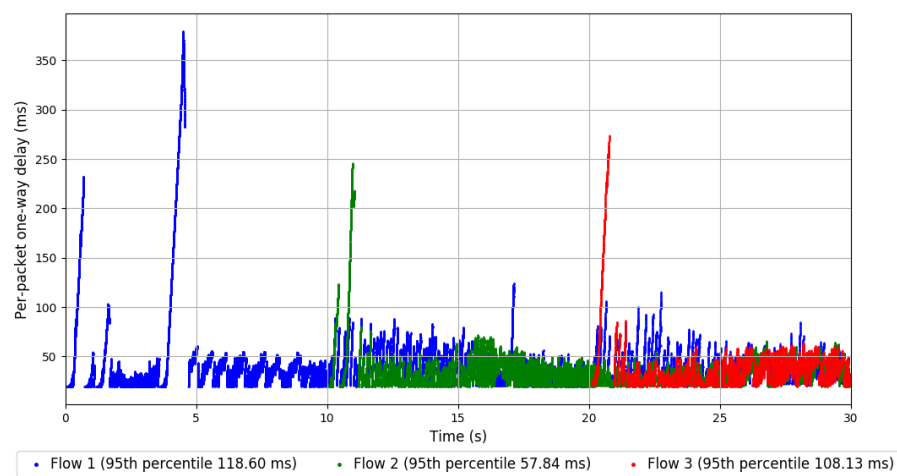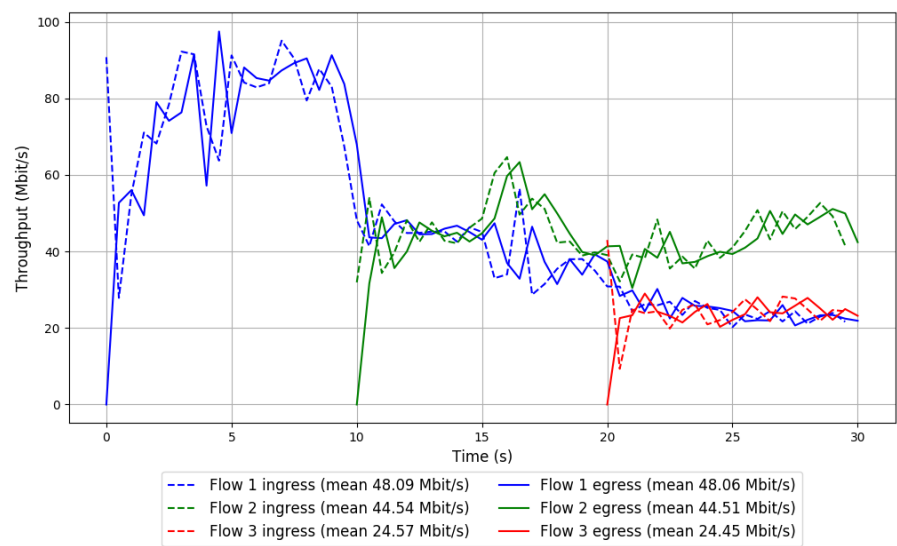
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-02 17:54:18
End at: 2018-10-02 17:54:48
Local clock offset: 2.004 ms
Remote clock offset: -3.99 ms


# Below is generated by plot.py at 2018-10-02 18:41:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.80 Mbit/s
95th percentile per-packet one-way delay: 87.127 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 48.06 Mbit/s
95th percentile per-packet one-way delay: 118.599 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 44.51 Mbit/s
95th percentile per-packet one-way delay: 57.836 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 24.45 Mbit/s
95th percentile per-packet one-way delay: 108.133 ms
Loss rate: 0.79%
```

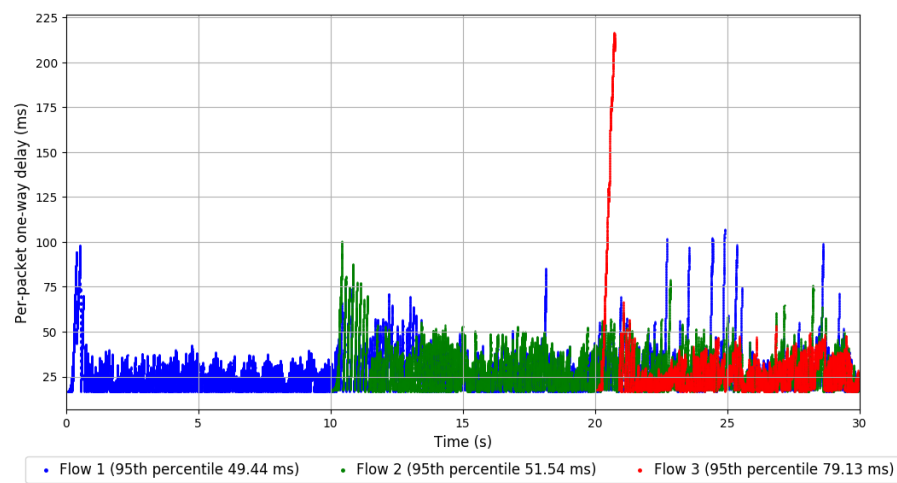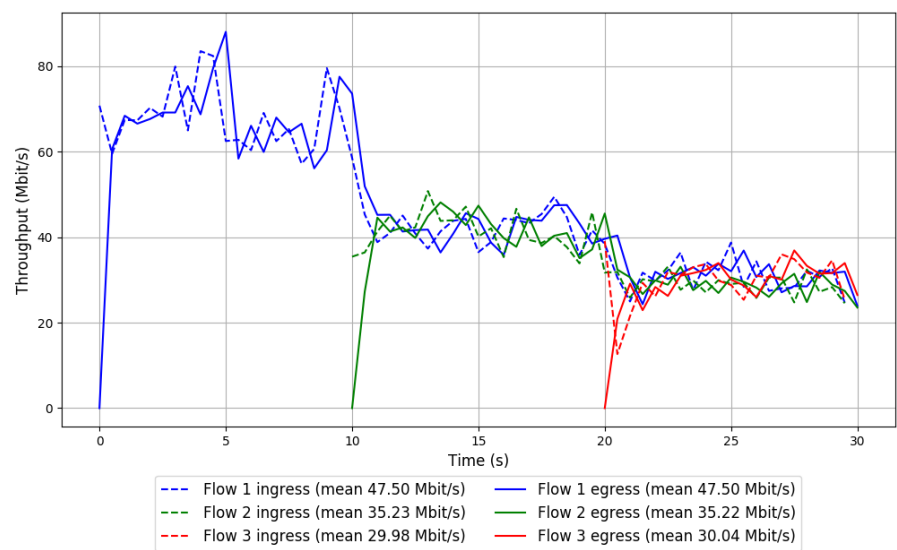## Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-02 18:17:00
End at: 2018-10-02 18:17:30
Local clock offset: -0.338 ms
Remote clock offset: -3.817 ms


# Below is generated by plot.py at 2018-10-02 18:41:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.89 Mbit/s
95th percentile per-packet one-way delay: 51.065 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 47.50 Mbit/s
95th percentile per-packet one-way delay: 49.439 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 35.22 Mbit/s
95th percentile per-packet one-way delay: 51.536 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 30.04 Mbit/s
95th percentile per-packet one-way delay: 79.126 ms
Loss rate: 0.20%
```
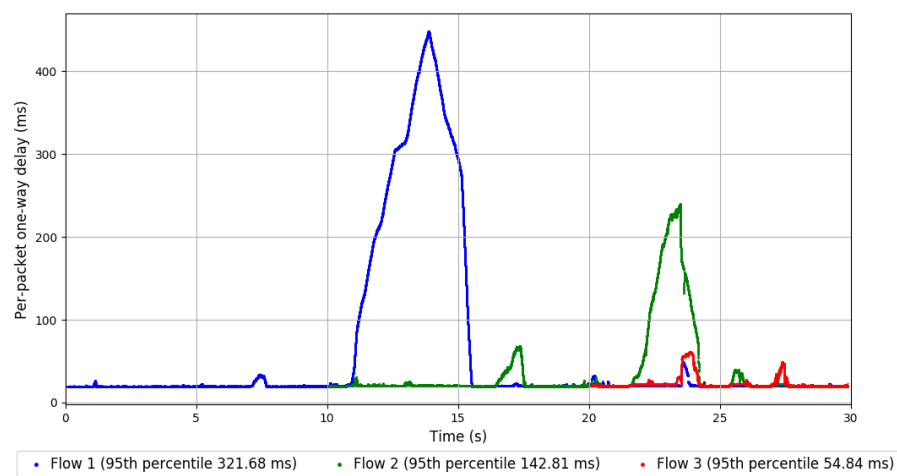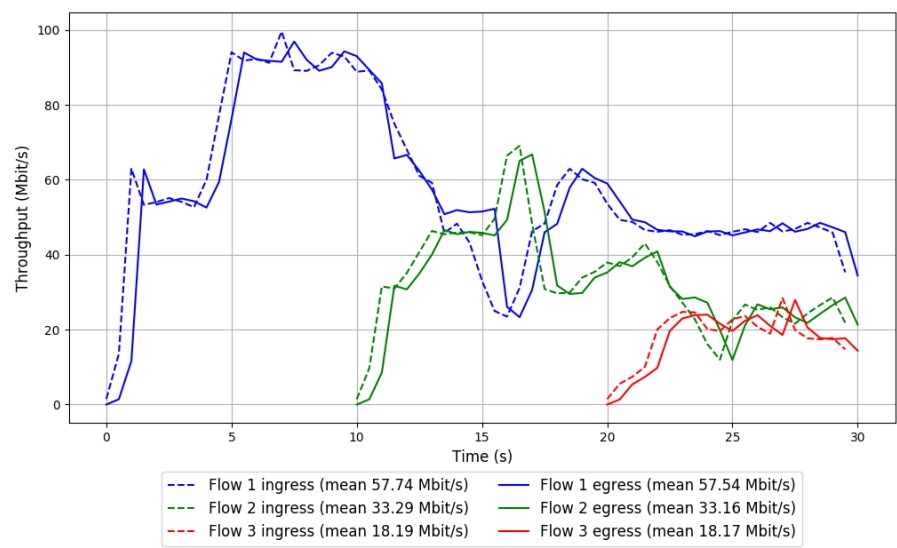
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-02 16:50:36
End at: 2018-10-02 16:51:06
Local clock offset: 1.524 ms
Remote clock offset: -3.374 ms


# Below is generated by plot.py at 2018-10-02 18:41:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.56 Mbit/s
95th percentile per-packet one-way delay: 293.469 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 57.54 Mbit/s
95th percentile per-packet one-way delay: 321.678 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 33.16 Mbit/s
95th percentile per-packet one-way delay: 142.812 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 18.17 Mbit/s
95th percentile per-packet one-way delay: 54.841 ms
Loss rate: 0.42%
```
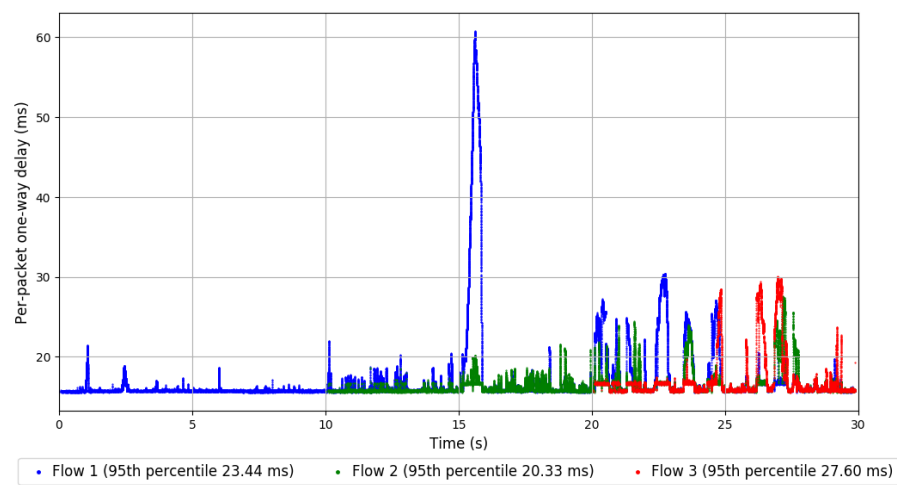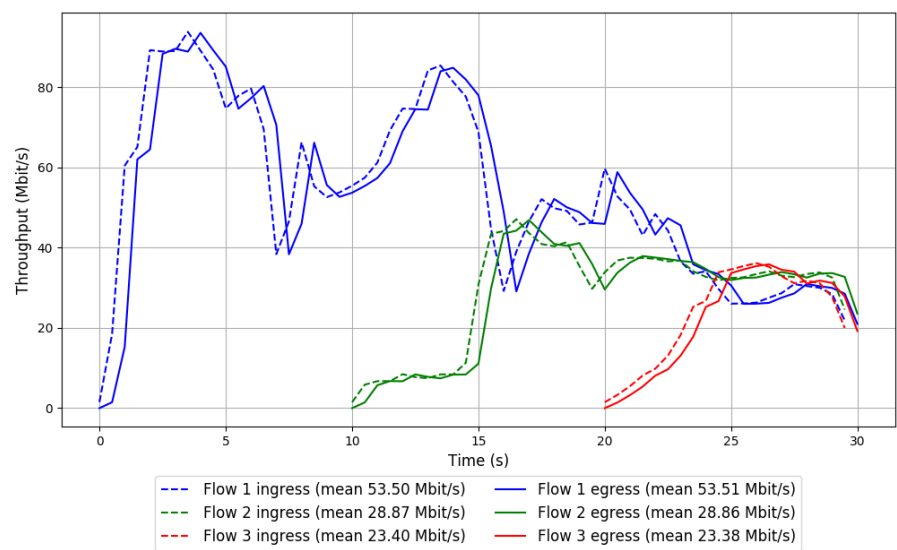
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 57.74 Mbit/s)   Flow 1 egress (mean 57.54 Mbit/s)
Flow 2 ingress (mean 33.29 Mbit/s)   Flow 2 egress (mean 33.16 Mbit/s)
Flow 3 ingress (mean 18.19 Mbit/s)   Flow 3 egress (mean 18.17 Mbit/s)

Flow 1 (95th percentile 321.68 ms)   Flow 2 (95th percentile 142.81 ms)   Flow 3 (95th percentile 54.84 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-02 17:13:23
End at: 2018-10-02 17:13:53
Local clock offset: -1.51 ms
Remote clock offset: -3.075 ms


# Below is generated by plot.py at 2018-10-02 18:41:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.39 Mbit/s
95th percentile per-packet one-way delay: 22.894 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 53.51 Mbit/s
95th percentile per-packet one-way delay: 23.443 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 20.326 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 27.598 ms
Loss rate: 0.37%
```

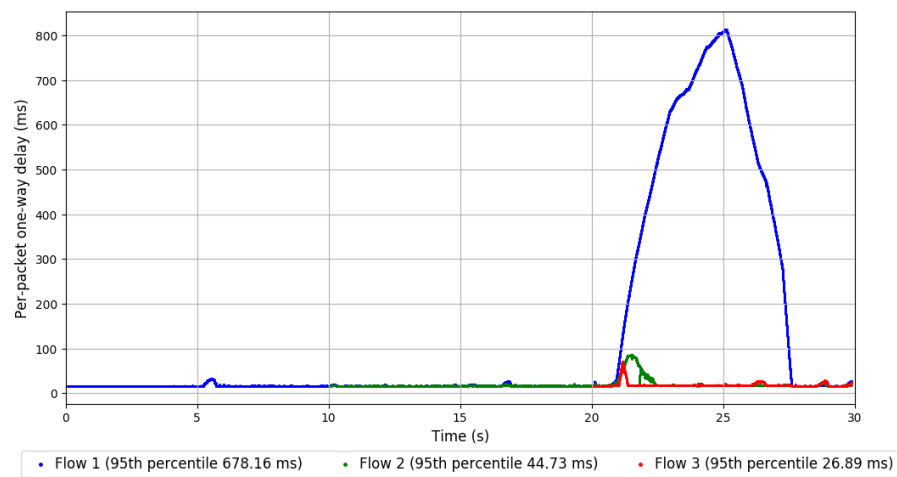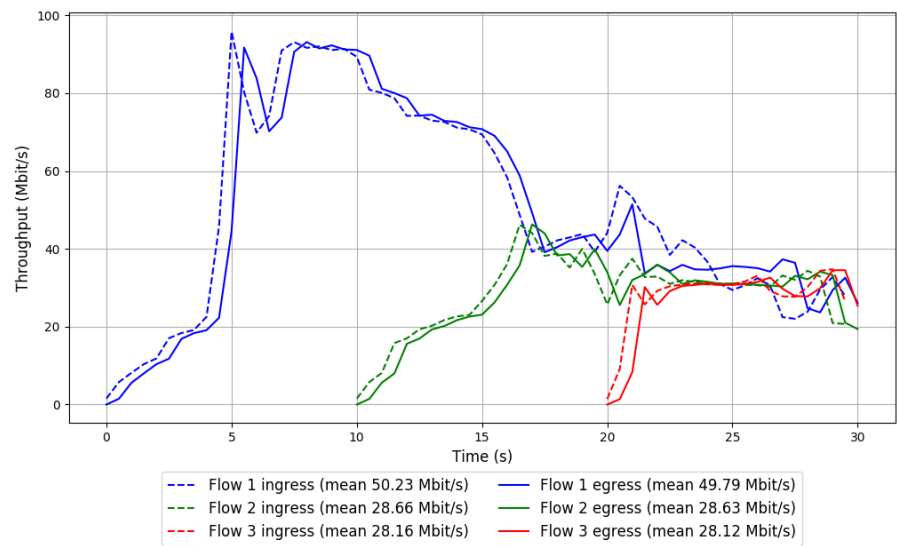Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-02 17:35:52
End at: 2018-10-02 17:36:22
Local clock offset: -1.311 ms
Remote clock offset: -3.489 ms


# Below is generated by plot.py at 2018-10-02 18:41:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.09 Mbit/s
95th percentile per-packet one-way delay: 570.914 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 49.79 Mbit/s
95th percentile per-packet one-way delay: 678.157 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 28.63 Mbit/s
95th percentile per-packet one-way delay: 44.728 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 28.12 Mbit/s
95th percentile per-packet one-way delay: 26.886 ms
Loss rate: 0.55%
```
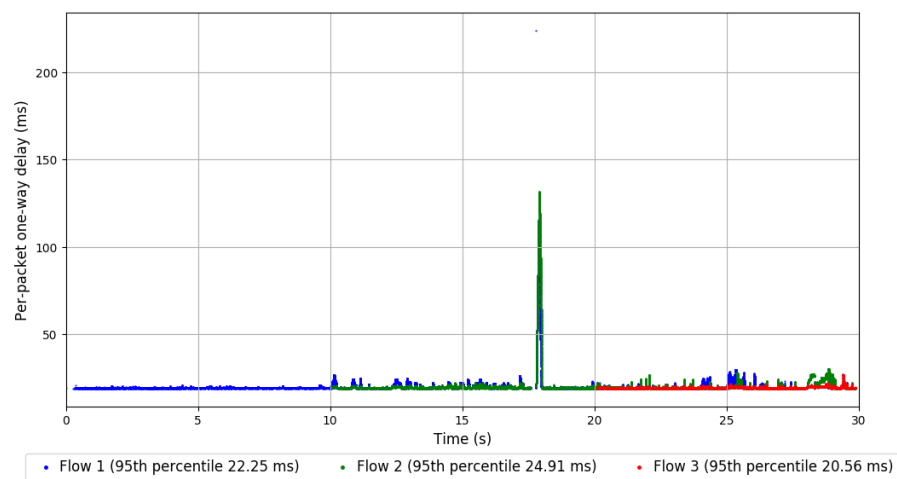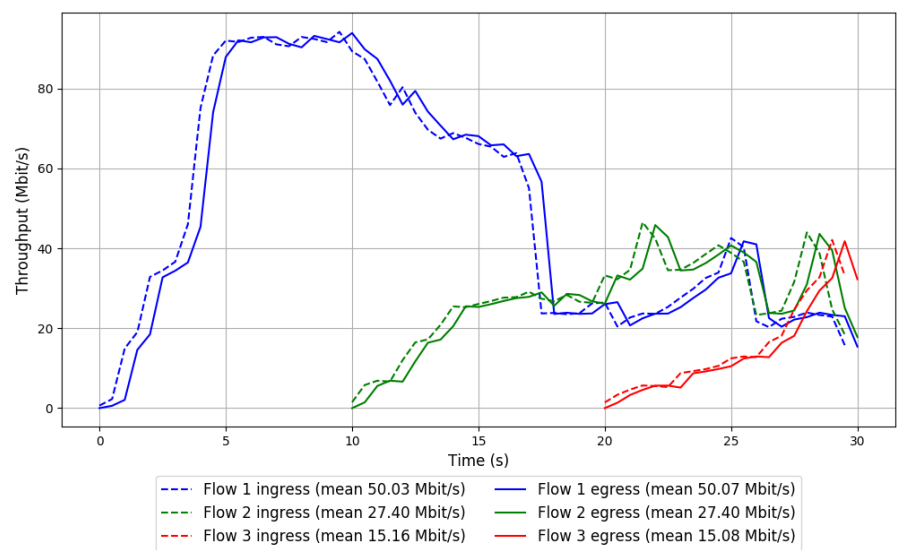
Run 3: Report of PCC-Vivace — Data Link

Legend (Throughput):
- Flow 1 ingress (mean 50.23 Mbit/s) — Flow 1 egress (mean 49.79 Mbit/s)
- Flow 2 ingress (mean 28.66 Mbit/s) — Flow 2 egress (mean 28.63 Mbit/s)
- Flow 3 ingress (mean 28.16 Mbit/s) — Flow 3 egress (mean 28.12 Mbit/s)

Legend (Per-packet one-way delay):
- Flow 1 (95th percentile 678.16 ms)
- Flow 2 (95th percentile 44.73 ms)
- Flow 3 (95th percentile 26.89 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-02 17:58:09
End at: 2018-10-02 17:58:39
Local clock offset: 1.711 ms
Remote clock offset: -4.175 ms


# Below is generated by plot.py at 2018-10-02 18:41:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.26 Mbit/s
95th percentile per-packet one-way delay: 22.702 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 50.07 Mbit/s
95th percentile per-packet one-way delay: 22.250 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 27.40 Mbit/s
95th percentile per-packet one-way delay: 24.906 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 15.08 Mbit/s
95th percentile per-packet one-way delay: 20.562 ms
Loss rate: 0.89%
```
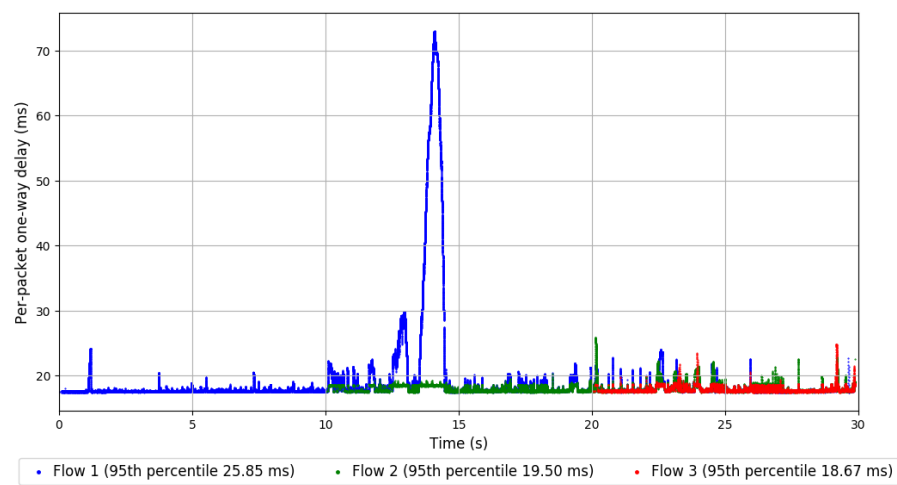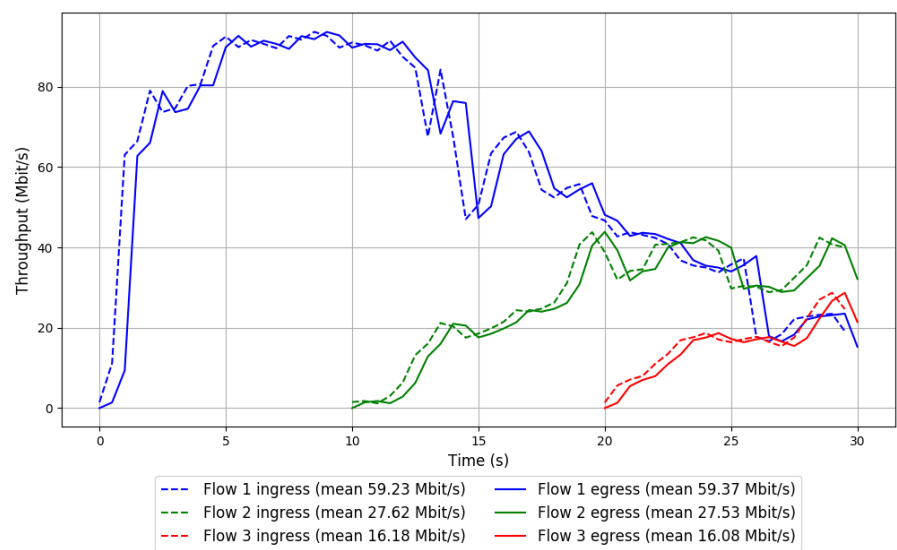
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-02 18:20:49
End at: 2018-10-02 18:21:19
Local clock offset: 1.367 ms
Remote clock offset: -2.79 ms


# Below is generated by plot.py at 2018-10-02 18:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.96 Mbit/s
95th percentile per-packet one-way delay: 22.200 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 59.37 Mbit/s
95th percentile per-packet one-way delay: 25.847 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 27.53 Mbit/s
95th percentile per-packet one-way delay: 19.502 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 16.08 Mbit/s
95th percentile per-packet one-way delay: 18.672 ms
Loss rate: 1.33%
```

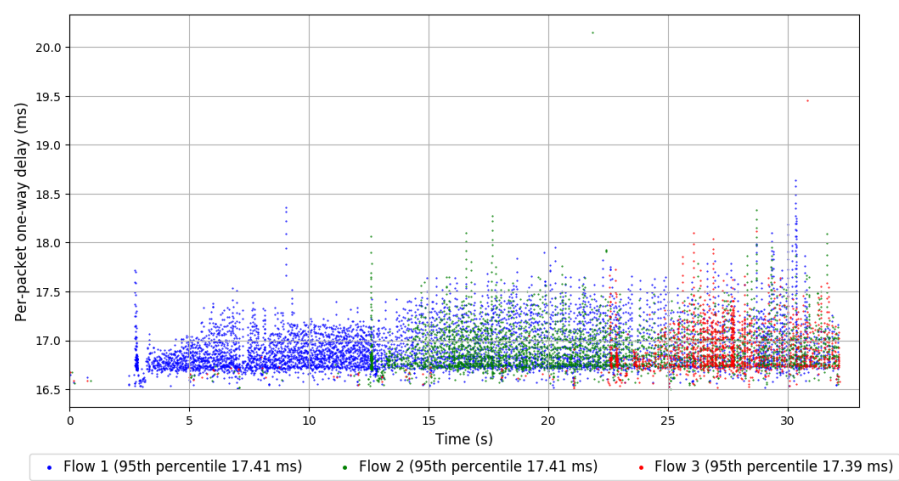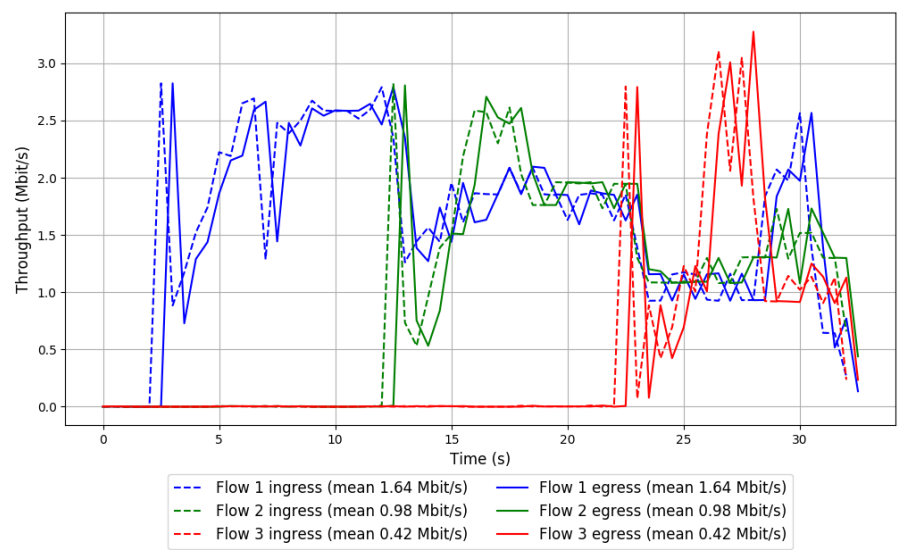Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-02 16:39:17
End at: 2018-10-02 16:39:47
Local clock offset: 0.28 ms
Remote clock offset: -1.834 ms


# Below is generated by plot.py at 2018-10-02 18:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 17.408 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 17.415 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 17.406 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 17.391 ms
Loss rate: 0.00%
```

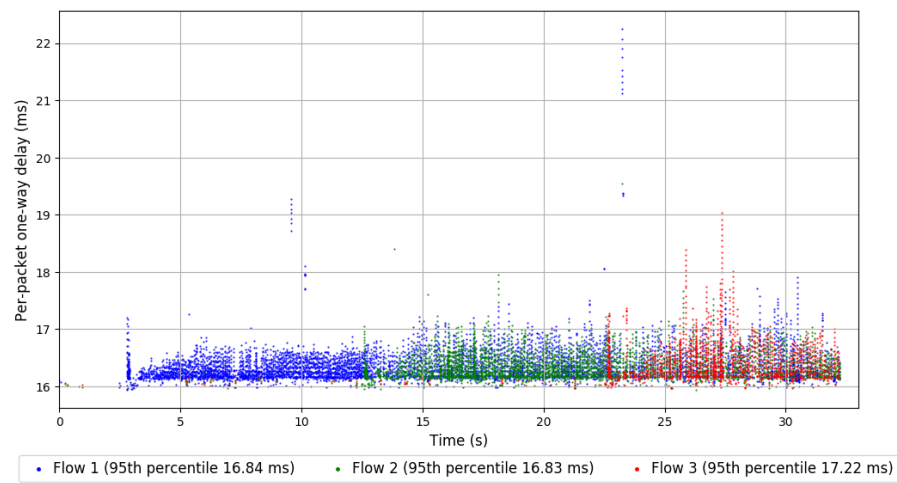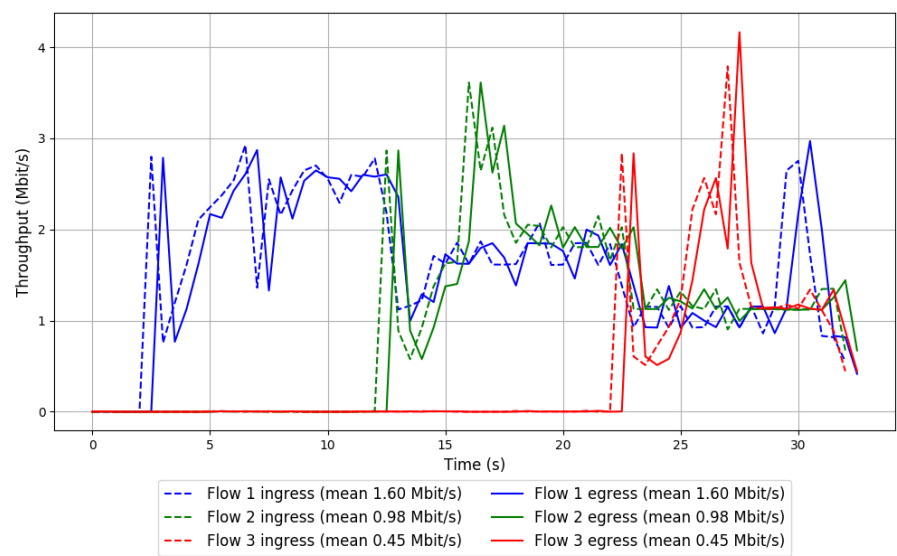Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-02 17:02:05
End at: 2018-10-02 17:02:35
Local clock offset: -0.546 ms
Remote clock offset: -2.386 ms


# Below is generated by plot.py at 2018-10-02 18:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 16.890 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 16.844 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 16.831 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 17.223 ms
Loss rate: 0.00%
```

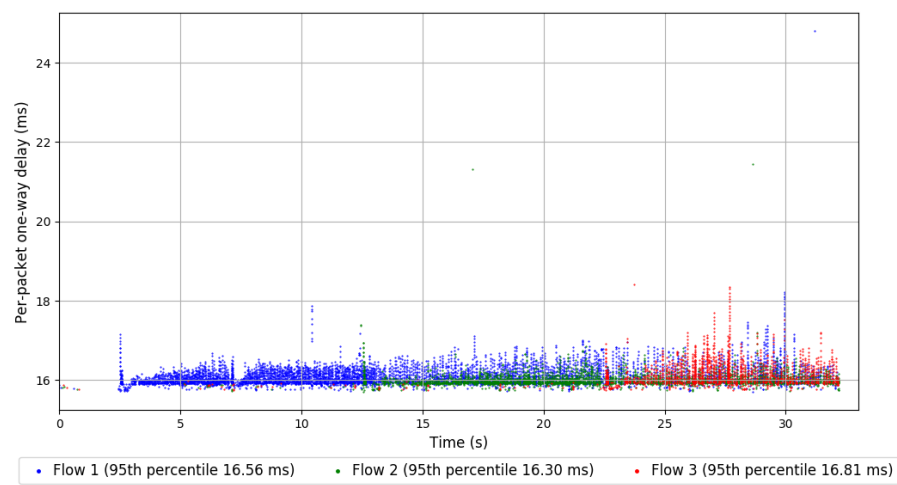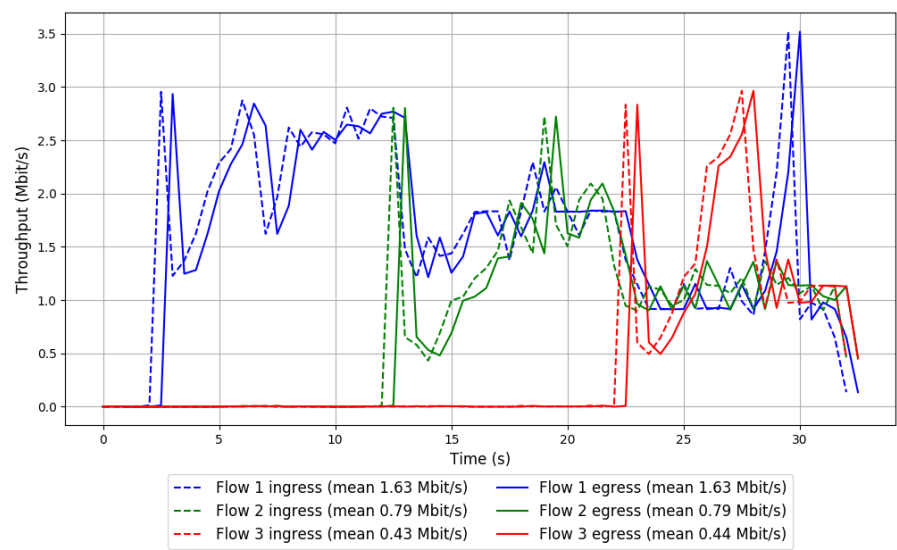Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-02 17:24:48
End at: 2018-10-02 17:25:18
Local clock offset: -0.069 ms
Remote clock offset: -1.758 ms


# Below is generated by plot.py at 2018-10-02 18:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.85 Mbit/s
95th percentile per-packet one-way delay: 16.557 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 16.559 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 16.297 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 16.812 ms
Loss rate: 0.02%
```
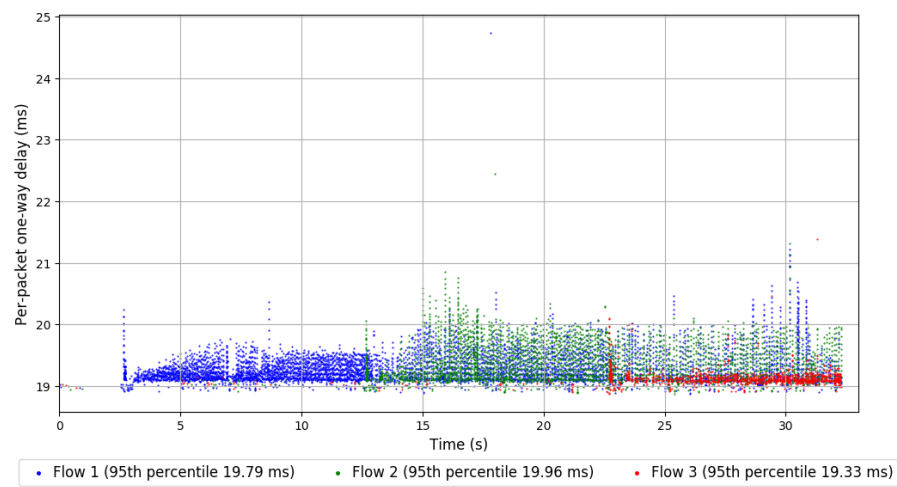
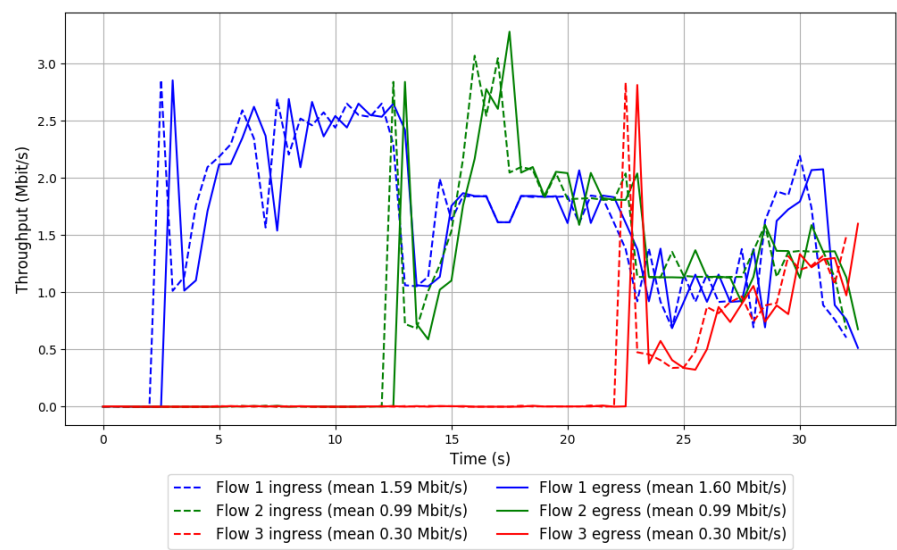Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-02 17:46:55
End at: 2018-10-02 17:47:25
Local clock offset: 0.844 ms
Remote clock offset: -4.163 ms


# Below is generated by plot.py at 2018-10-02 18:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 19.871 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 19.791 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 19.957 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 19.329 ms
Loss rate: 0.06%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-02 18:09:41
End at: 2018-10-02 18:10:11
Local clock offset: -1.226 ms
Remote clock offset: -4.013 ms


# Below is generated by plot.py at 2018-10-02 18:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.06 Mbit/s
95th percentile per-packet one-way delay: 16.595 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 16.561 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 16.659 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 16.513 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link