Pantheon Report

Generated at 2018-09-11 04:33:46 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.
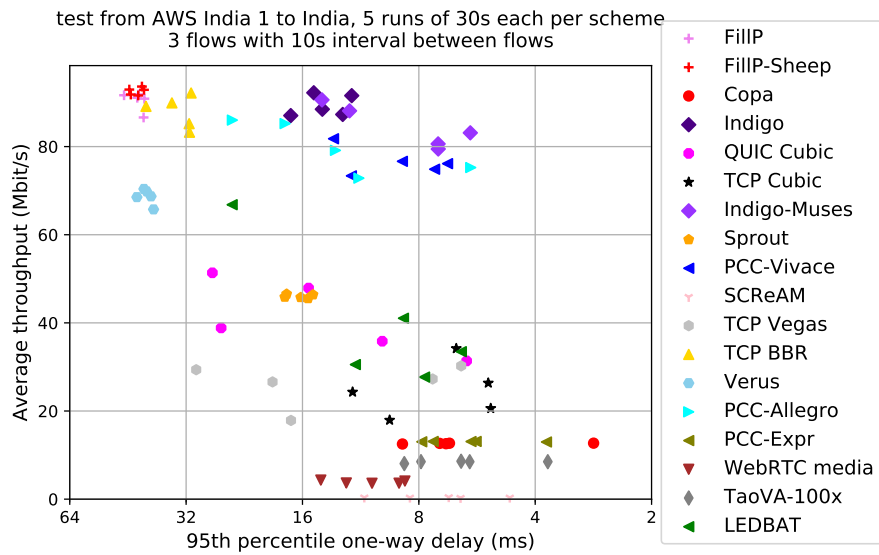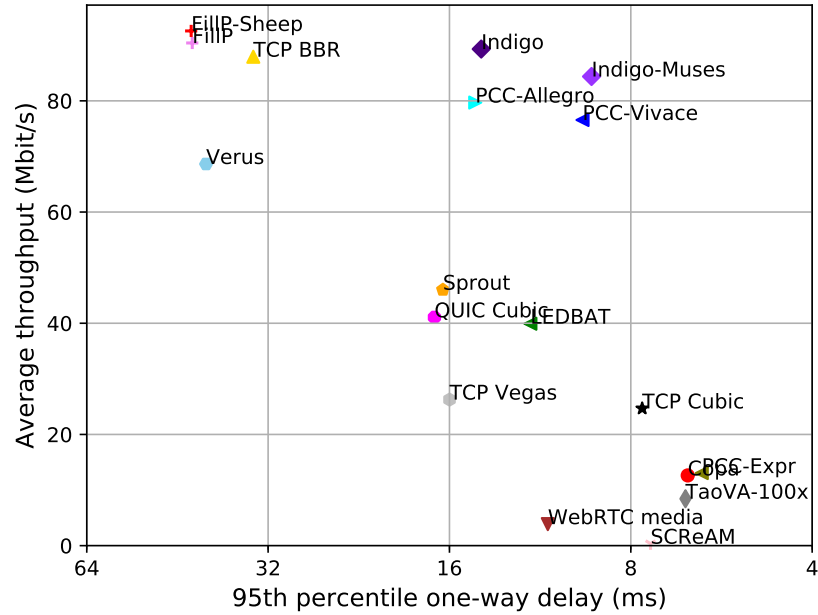
```
System info:
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 184101 245469 368202

Git summary:
branch: muses @ f30bceca2aec2ef14a3cf71e25642f4a30905a03
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```

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

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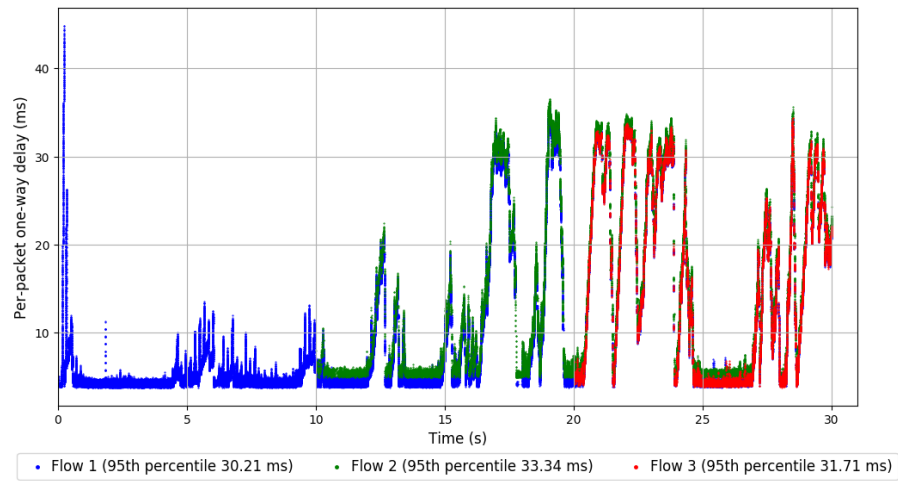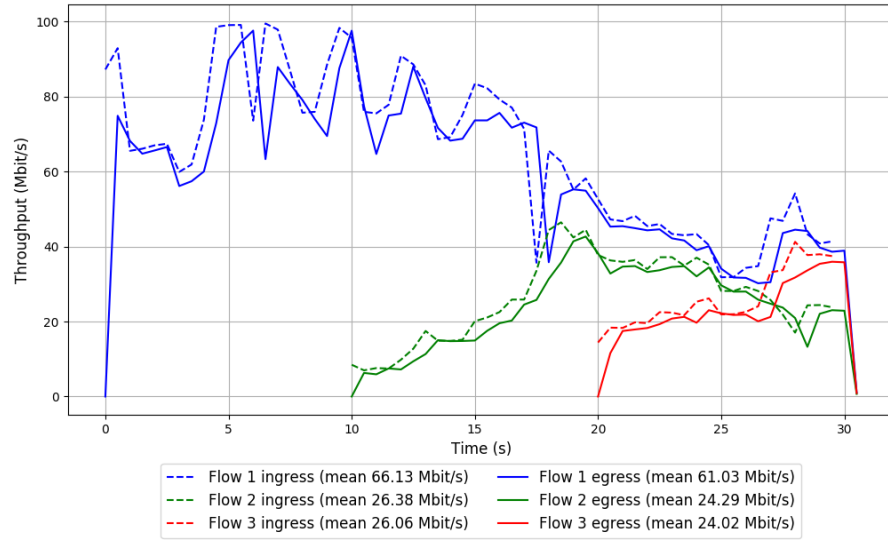3 flows with 10s interval between flows (mean of all runs by scheme)

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

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	55.96	34.63	26.77	32.10	35.06	36.04	8.61	9.19	8.73
Copa	5	9.12	5.27	0.00	7.33	5.92	7.77	68.88	72.61	98.05
TCP Cubic	5	13.19	12.66	9.16	7.46	10.86	7.07	0.36	0.52	0.92
FillP	5	56.36	37.34	27.98	42.01	43.61	43.06	23.41	32.45	37.70
FillP-Sheep	5	55.36	38.19	35.64	41.26	44.10	43.69	18.78	26.08	30.23
Indigo	5	54.74	34.58	36.31	12.27	14.39	14.88	8.09	8.71	8.76
LEDBAT	5	21.80	18.82	17.04	11.30	11.57	10.43	0.45	0.58	0.63
Indigo-Muses	5	46.15	41.46	32.27	8.97	8.56	8.64	5.19	5.43	6.50
PCC-Allegro	5	69.75	13.04	3.86	13.77	15.05	9.03	7.40	7.65	7.42
PCC-Expr	5	8.01	5.76	3.67	6.33	6.01	6.03	45.39	25.13	26.47
QUIC Cubic	5	22.95	18.76	17.08	13.14	13.19	20.47	2.02	1.80	1.37
SCReAM	5	0.16	0.17	0.22	7.45	6.98	5.88	0.25	0.13	0.00
Sprout	5	23.34	22.76	22.83	16.28	15.57	16.82	2.46	2.90	3.50
TaoVA-100x	5	0.00	9.41	8.98	6.94	6.42	8.35	95.92	84.87	86.13
TCP Vegas	5	13.77	13.31	10.91	14.20	14.19	12.38	1.01	1.32	1.78
Verus	5	40.78	32.91	19.50	36.79	43.01	40.61	22.79	44.30	38.80
PCC-Vivace	5	53.87	28.55	11.25	8.09	9.99	10.63	4.72	4.65	4.40
WebRTC media	5	2.11	1.35	0.42	10.60	11.31	9.90	0.24	0.32	0.74

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-11 02:43:05
End at: 2018-09-11 02:43:35
Local clock offset: 1.988 ms
Remote clock offset: -5.434 ms


# Below is generated by plot.py at 2018-09-11 04:26:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.21 Mbit/s
95th percentile per-packet one-way delay: 31.429 ms
Loss rate: 7.70%
-- Flow 1:
Average throughput: 61.03 Mbit/s
95th percentile per-packet one-way delay: 30.207 ms
Loss rate: 7.66%
-- Flow 2:
Average throughput: 24.29 Mbit/s
95th percentile per-packet one-way delay: 33.345 ms
Loss rate: 7.86%
-- Flow 3:
Average throughput: 24.02 Mbit/s
95th percentile per-packet one-way delay: 31.714 ms
Loss rate: 7.70%
```
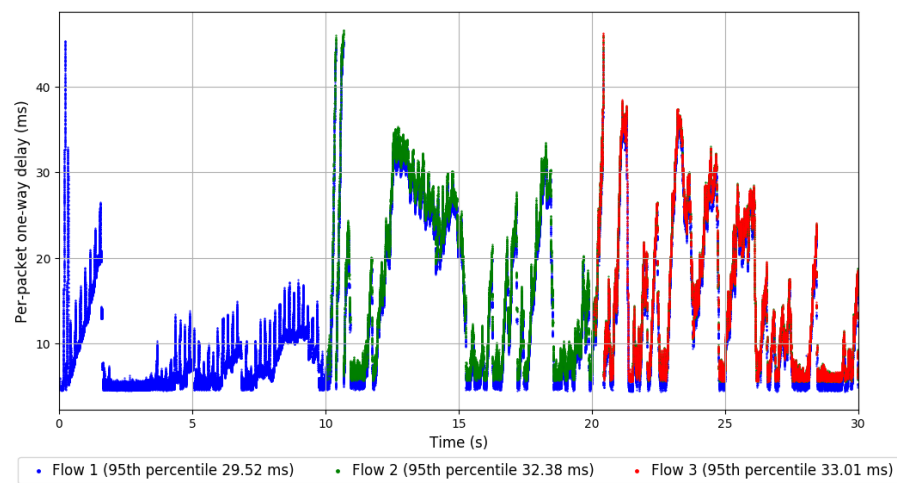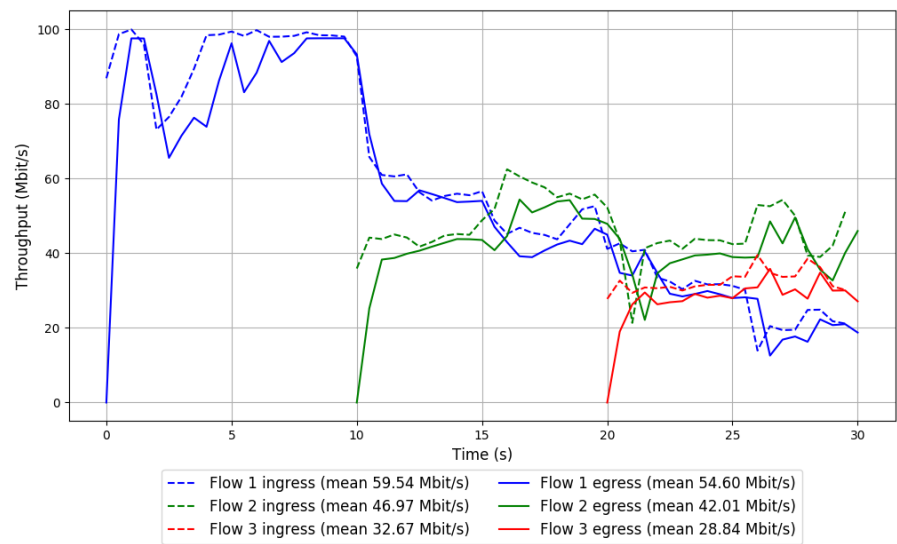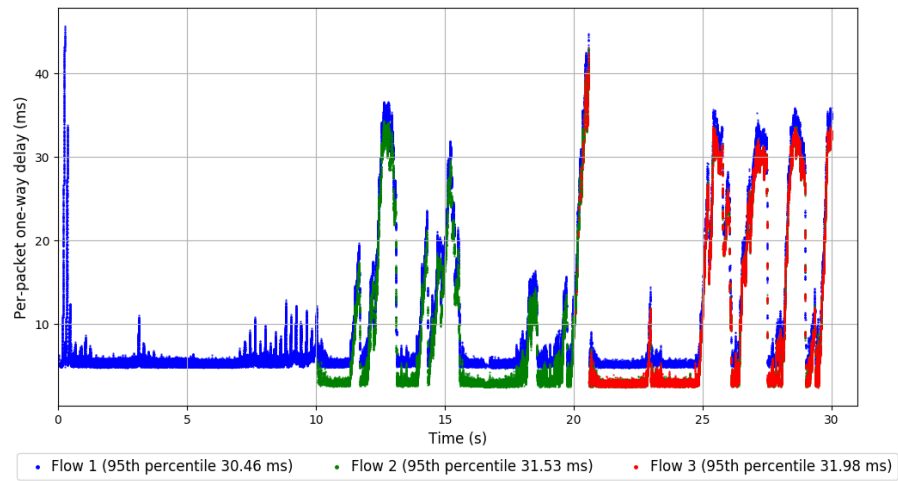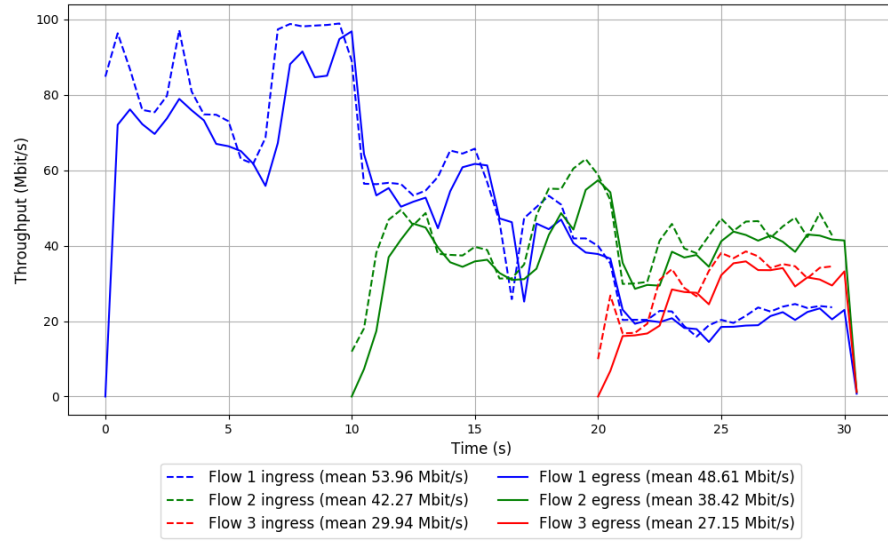
Run 1: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 66.13 Mbit/s)   —— Flow 1 egress (mean 61.03 Mbit/s)
- - - Flow 2 ingress (mean 26.38 Mbit/s)   —— Flow 2 egress (mean 24.29 Mbit/s)
- - - Flow 3 ingress (mean 26.06 Mbit/s)   —— Flow 3 egress (mean 24.02 Mbit/s)

· Flow 1 (95th percentile 30.21 ms)   · Flow 2 (95th percentile 33.34 ms)   · Flow 3 (95th percentile 31.71 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-09-11 03:04:08
End at: 2018-09-11 03:04:38
Local clock offset: 1.825 ms
Remote clock offset: -5.297 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.16 Mbit/s
95th percentile per-packet one-way delay: 31.063 ms
Loss rate: 9.36%
-- Flow 1:
Average throughput: 54.60 Mbit/s
95th percentile per-packet one-way delay: 29.523 ms
Loss rate: 8.29%
-- Flow 2:
Average throughput: 42.01 Mbit/s
95th percentile per-packet one-way delay: 32.378 ms
Loss rate: 10.58%
-- Flow 3:
Average throughput: 28.84 Mbit/s
95th percentile per-packet one-way delay: 33.014 ms
Loss rate: 11.76%
```
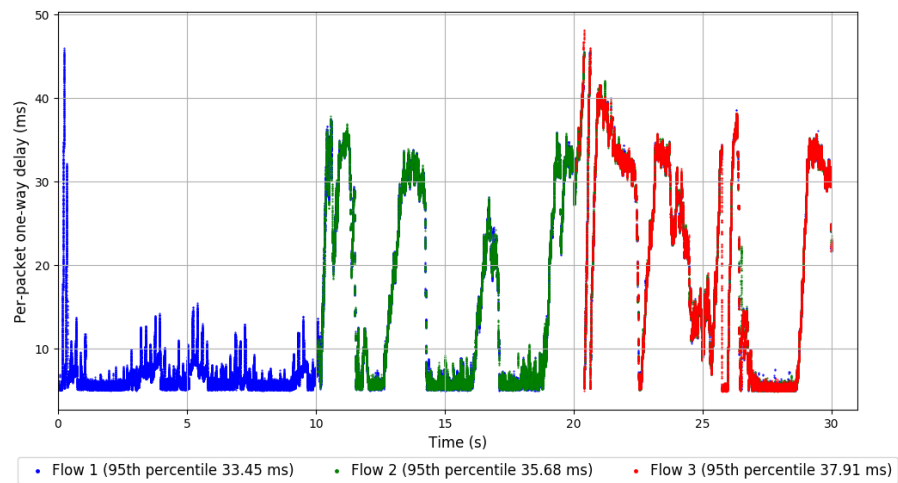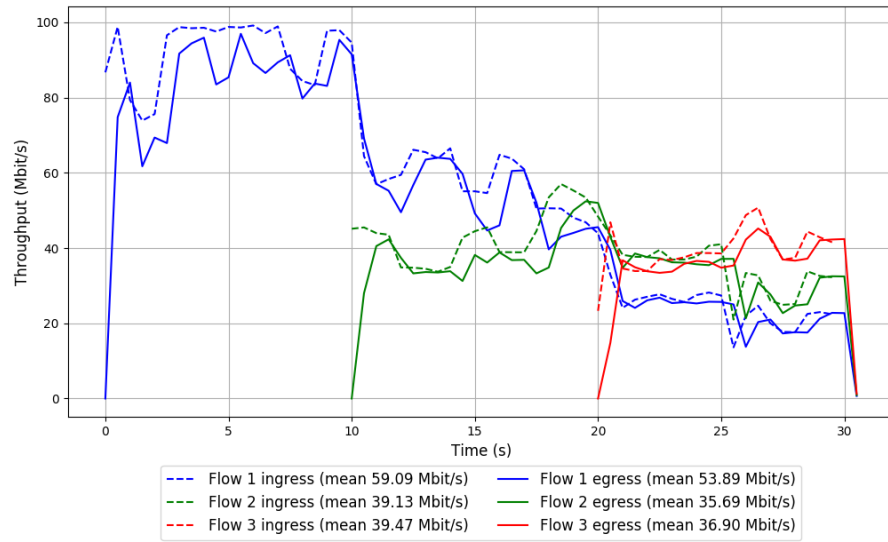
Run 2: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 59.54 Mbit/s) —— Flow 1 egress (mean 54.60 Mbit/s)
- - - Flow 2 ingress (mean 46.97 Mbit/s) —— Flow 2 egress (mean 42.01 Mbit/s)
- - - Flow 3 ingress (mean 32.67 Mbit/s) —— Flow 3 egress (mean 28.84 Mbit/s)

- Flow 1 (95th percentile 29.52 ms)   - Flow 2 (95th percentile 32.38 ms)   - Flow 3 (95th percentile 33.01 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2018-09-11 03:25:14
End at: 2018-09-11 03:25:44
Local clock offset: 1.485 ms
Remote clock offset: -7.588 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.26 Mbit/s
95th percentile per-packet one-way delay: 31.366 ms
Loss rate: 9.50%
-- Flow 1:
Average throughput: 48.61 Mbit/s
95th percentile per-packet one-way delay: 30.464 ms
Loss rate: 9.83%
-- Flow 2:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 31.527 ms
Loss rate: 9.00%
-- Flow 3:
Average throughput: 27.15 Mbit/s
95th percentile per-packet one-way delay: 31.985 ms
Loss rate: 9.13%
```
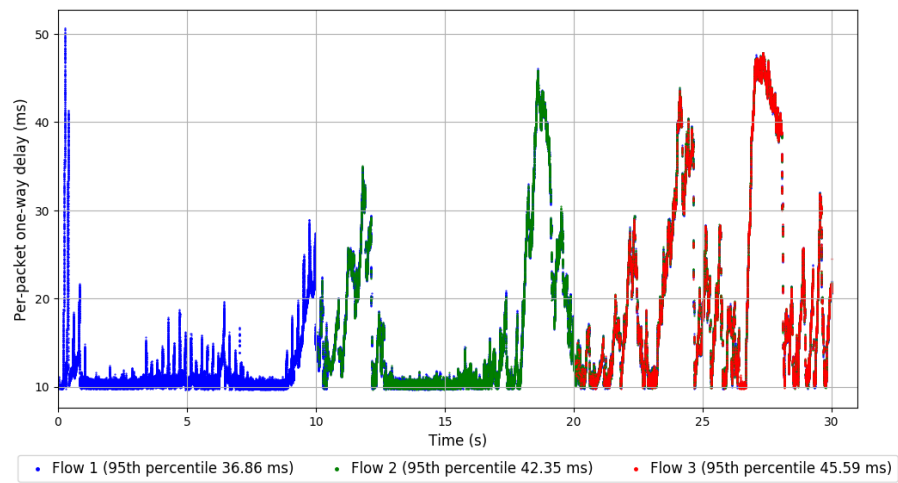
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 53.96 Mbit/s) --- Flow 1 egress (mean 48.61 Mbit/s)
Flow 2 ingress (mean 42.27 Mbit/s) --- Flow 2 egress (mean 38.42 Mbit/s)
Flow 3 ingress (mean 29.94 Mbit/s) --- Flow 3 egress (mean 27.15 Mbit/s)

Flow 1 (95th percentile 30.46 ms)   Flow 2 (95th percentile 31.53 ms)   Flow 3 (95th percentile 31.98 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-09-11 03:46:09
End at: 2018-09-11 03:46:39
Local clock offset: 0.821 ms
Remote clock offset: -3.713 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.92 Mbit/s
95th percentile per-packet one-way delay: 34.825 ms
Loss rate: 8.46%
-- Flow 1:
Average throughput: 53.89 Mbit/s
95th percentile per-packet one-way delay: 33.445 ms
Loss rate: 8.76%
-- Flow 2:
Average throughput: 35.69 Mbit/s
95th percentile per-packet one-way delay: 35.678 ms
Loss rate: 8.72%
-- Flow 3:
Average throughput: 36.90 Mbit/s
95th percentile per-packet one-way delay: 37.907 ms
Loss rate: 6.60%
```
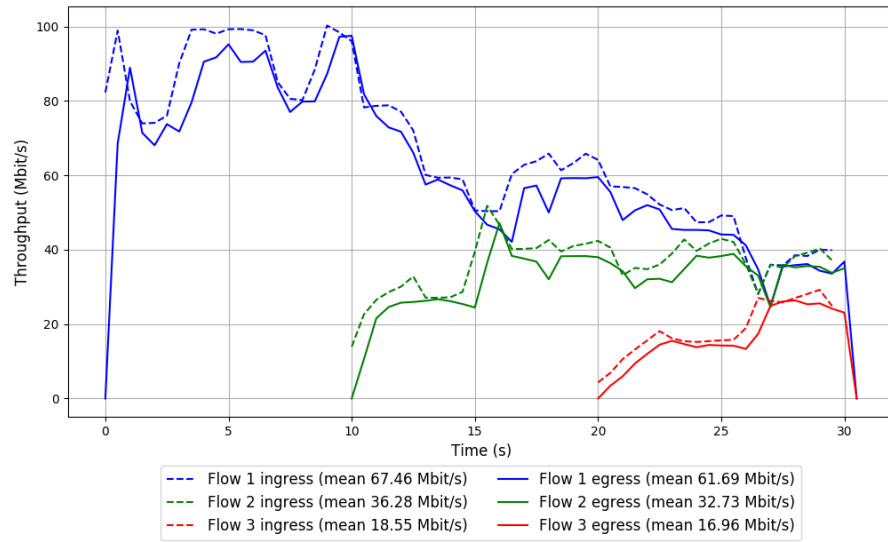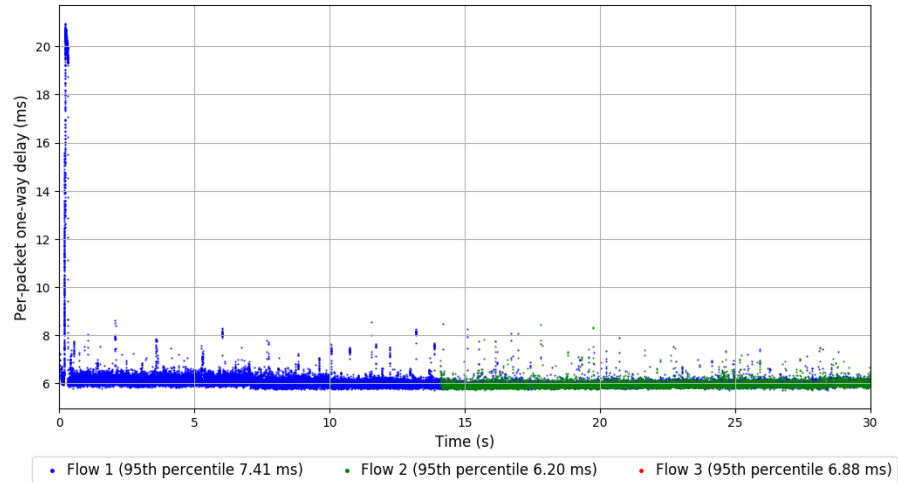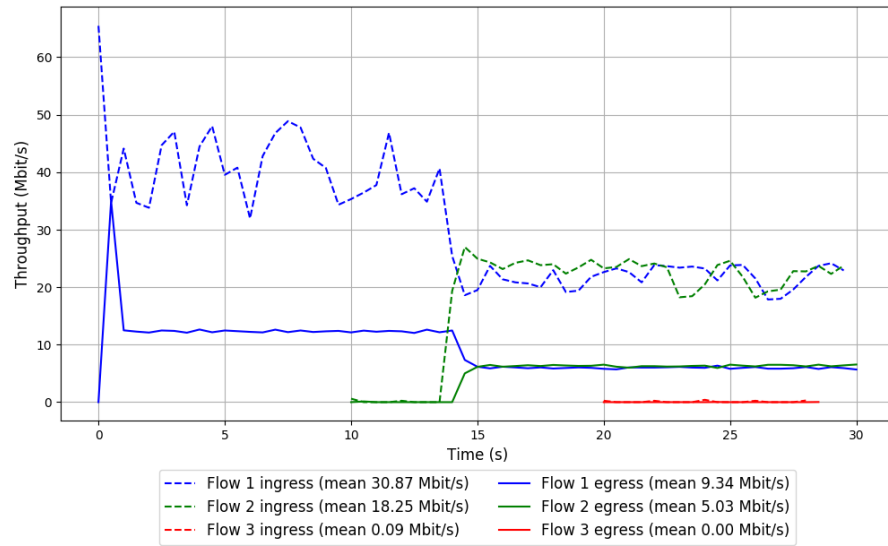
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-09-11 04:07:27
End at: 2018-09-11 04:07:57
Local clock offset: 0.523 ms
Remote clock offset: -4.37 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.13 Mbit/s
95th percentile per-packet one-way delay: 40.642 ms
Loss rate: 8.83%
-- Flow 1:
Average throughput: 61.69 Mbit/s
95th percentile per-packet one-way delay: 36.857 ms
Loss rate: 8.52%
-- Flow 2:
Average throughput: 32.73 Mbit/s
95th percentile per-packet one-way delay: 42.349 ms
Loss rate: 9.77%
-- Flow 3:
Average throughput: 16.96 Mbit/s
95th percentile per-packet one-way delay: 45.589 ms
Loss rate: 8.46%
```

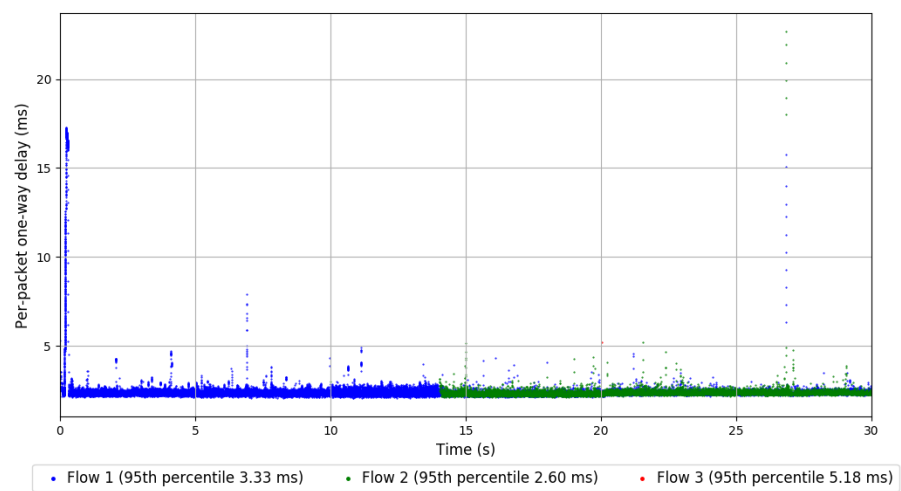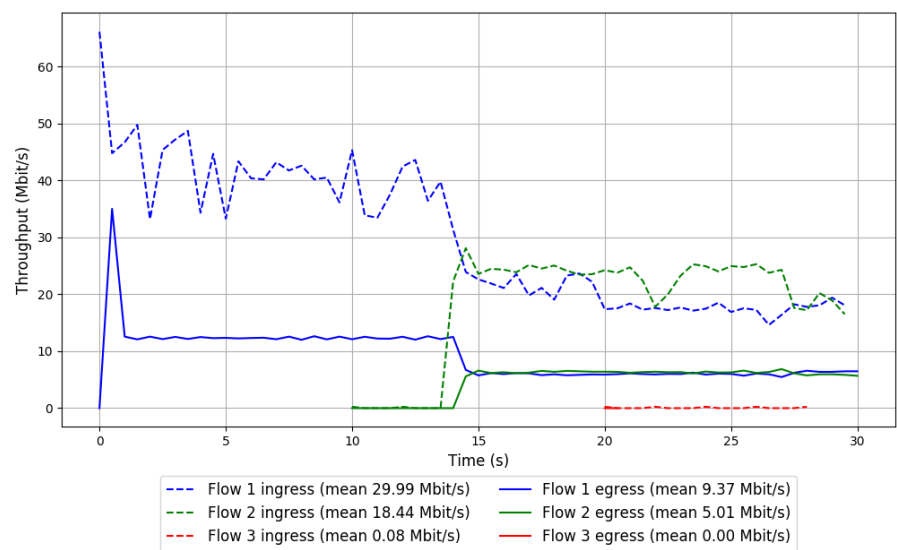Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-09-11 02:58:22
End at: 2018-09-11 02:58:52
Local clock offset: 1.185 ms
Remote clock offset: -4.856 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.69 Mbit/s
95th percentile per-packet one-way delay: 6.666 ms
Loss rate: 70.52%
-- Flow 1:
Average throughput: 9.34 Mbit/s
95th percentile per-packet one-way delay: 7.408 ms
Loss rate: 69.74%
-- Flow 2:
Average throughput: 5.03 Mbit/s
95th percentile per-packet one-way delay: 6.198 ms
Loss rate: 72.45%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6.875 ms
Loss rate: 96.47%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 30.87 Mbit/s)   Flow 1 egress (mean 9.34 Mbit/s)
Flow 2 ingress (mean 18.25 Mbit/s)   Flow 2 egress (mean 5.03 Mbit/s)
Flow 3 ingress (mean 0.09 Mbit/s)   Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 7.41 ms)   Flow 2 (95th percentile 6.20 ms)   Flow 3 (95th percentile 6.88 ms)

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Run 2: Statistics of Copa

Start at: 2018-09-11 03:19:31
End at: 2018-09-11 03:20:01
Local clock offset: 2.105 ms
Remote clock offset: -7.295 ms

Below is generated by plot.py at 2018-09-11 04:27:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.70 Mbit/s
95th percentile per-packet one-way delay: 2.825 ms
Loss rate: 69.97%
-- Flow 1:
Average throughput: 9.37 Mbit/s
95th percentile per-packet one-way delay: 3.334 ms
Loss rate: 68.76%
-- Flow 2:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 2.595 ms
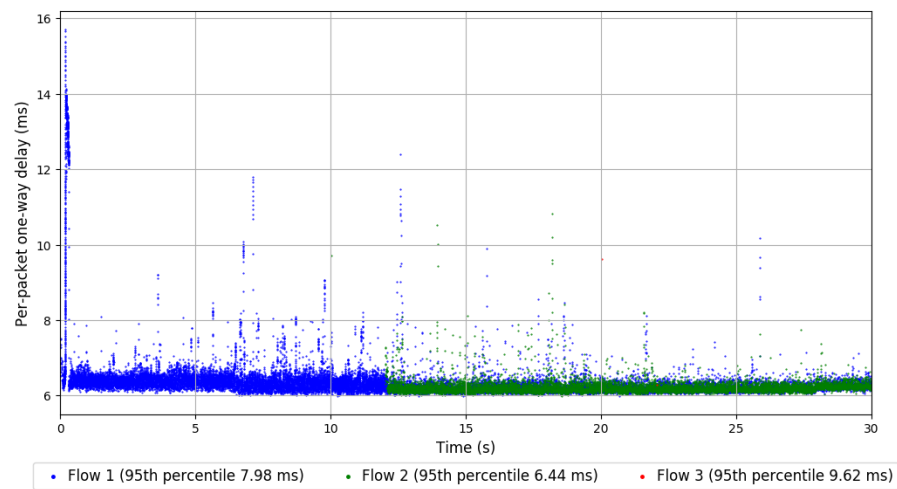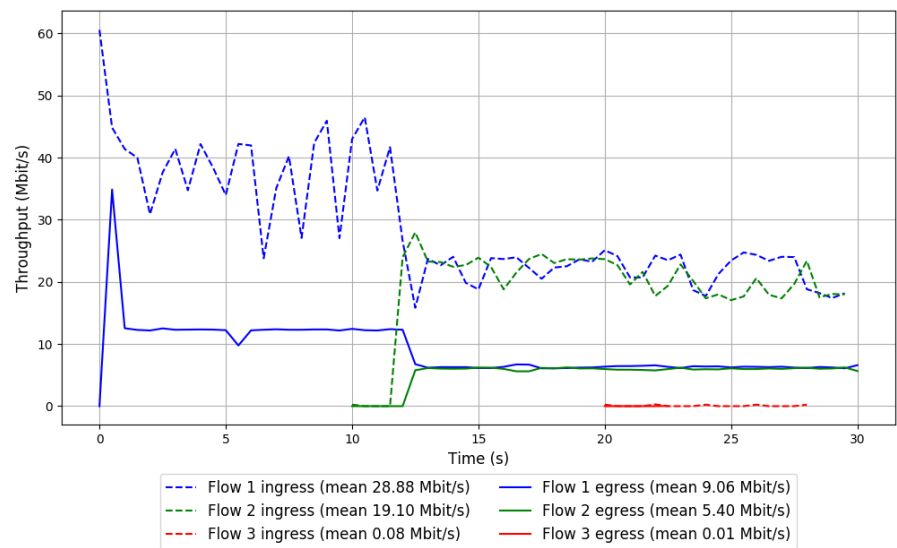Loss rate: 72.86%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5.176 ms
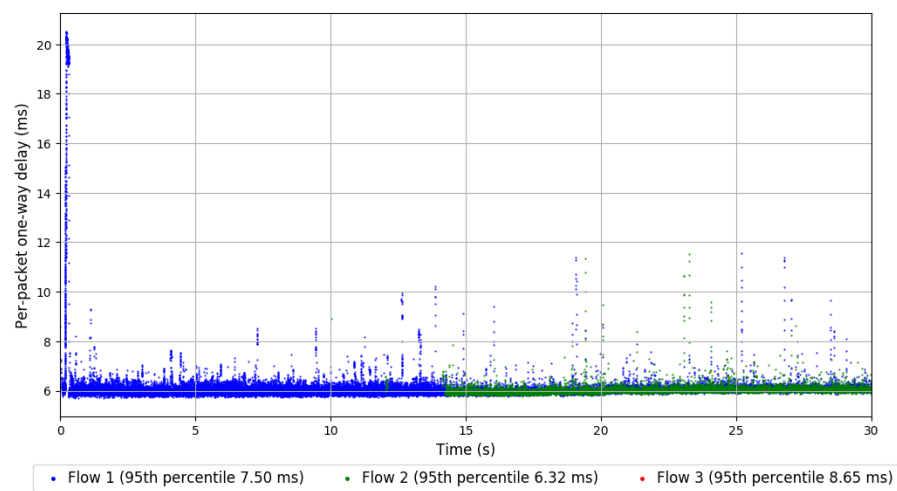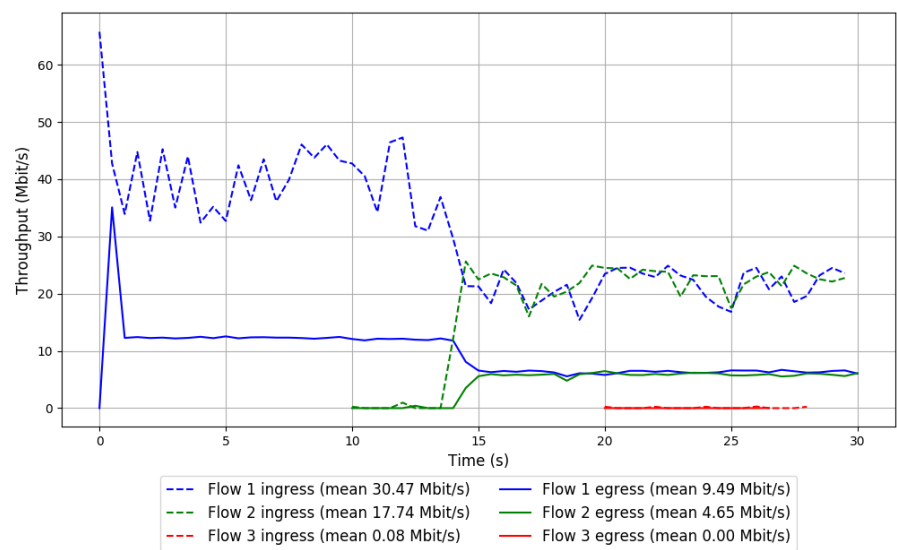Loss rate: 99.83%

Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 29.99 Mbit/s) --- Flow 1 egress (mean 9.37 Mbit/s)
Flow 2 ingress (mean 18.44 Mbit/s) --- Flow 2 egress (mean 5.01 Mbit/s)
Flow 3 ingress (mean 0.08 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 3.33 ms) • Flow 2 (95th percentile 2.60 ms) • Flow 3 (95th percentile 5.18 ms)

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```
Run 3: Statistics of Copa

Start at: 2018-09-11 03:40:25
End at: 2018-09-11 03:40:55
Local clock offset: 0.12 ms
Remote clock offset: -3.73 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.65 Mbit/s
95th percentile per-packet one-way delay: 7.065 ms
Loss rate: 69.59%
-- Flow 1:
Average throughput: 9.06 Mbit/s
95th percentile per-packet one-way delay: 7.983 ms
Loss rate: 68.64%
-- Flow 2:
Average throughput: 5.40 Mbit/s
95th percentile per-packet one-way delay: 6.439 ms
Loss rate: 71.71%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 9.617 ms
Loss rate: 97.92%
```
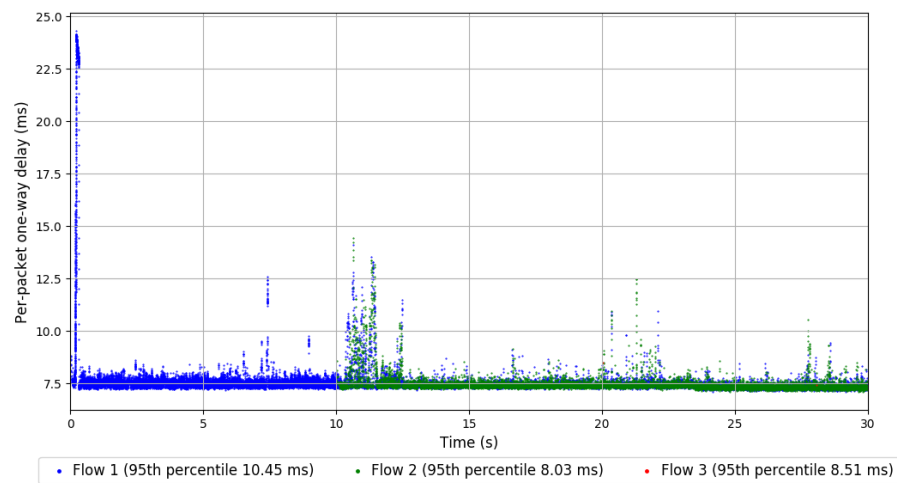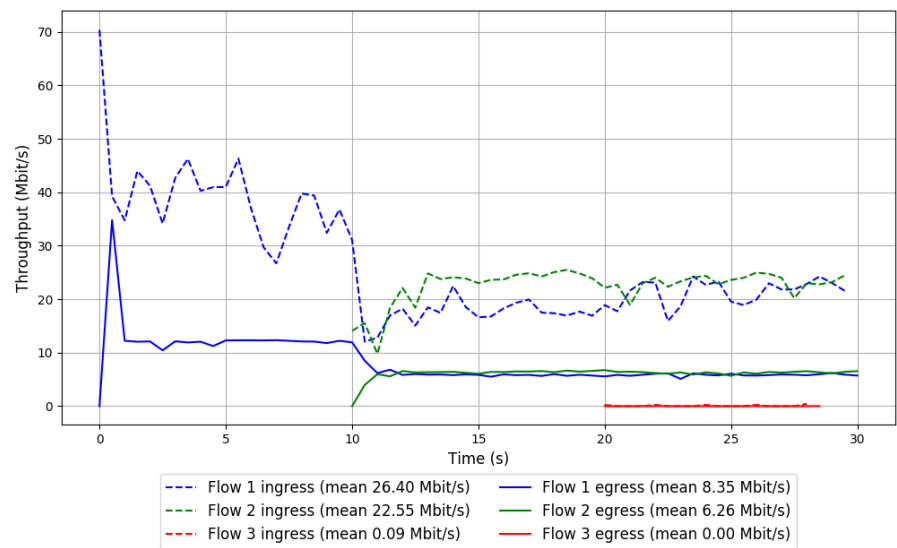
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 28.88 Mbit/s) — — — Flow 1 egress (mean 9.06 Mbit/s)
Flow 2 ingress (mean 19.10 Mbit/s) — — — Flow 2 egress (mean 5.40 Mbit/s)
Flow 3 ingress (mean 0.08 Mbit/s) — — — Flow 3 egress (mean 0.01 Mbit/s)

Flow 1 (95th percentile 7.98 ms)   Flow 2 (95th percentile 6.44 ms)   Flow 3 (95th percentile 9.62 ms)

```
Run 4: Statistics of Copa

Start at: 2018-09-11 04:01:33
End at: 2018-09-11 04:02:03
Local clock offset: 0.077 ms
Remote clock offset: -3.796 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.58 Mbit/s
95th percentile per-packet one-way delay: 6.805 ms
Loss rate: 70.25%
-- Flow 1:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 7.501 ms
Loss rate: 68.86%
-- Flow 2:
Average throughput: 4.65 Mbit/s
95th percentile per-packet one-way delay: 6.321 ms
Loss rate: 73.79%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8.654 ms
Loss rate: 97.92%
```
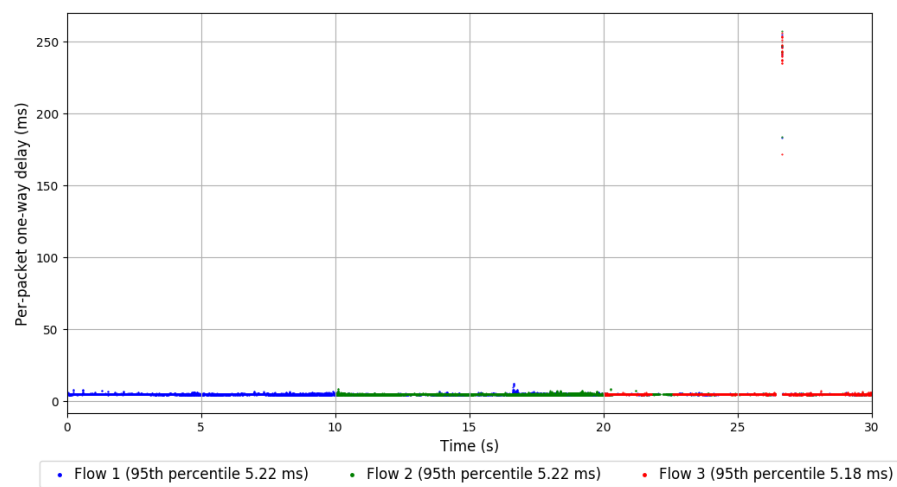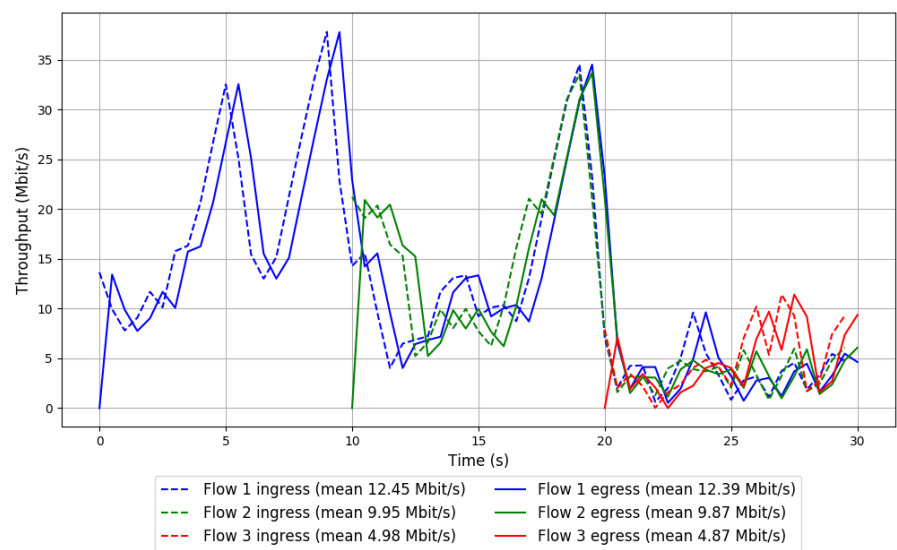
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-09-11 04:22:51
End at: 2018-09-11 04:23:21
Local clock offset: 1.521 ms
Remote clock offset: -2.088 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 8.820 ms
Loss rate: 69.80%
-- Flow 1:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 10.447 ms
Loss rate: 68.39%
-- Flow 2:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 8.026 ms
Loss rate: 72.23%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8.506 ms
Loss rate: 98.13%
```
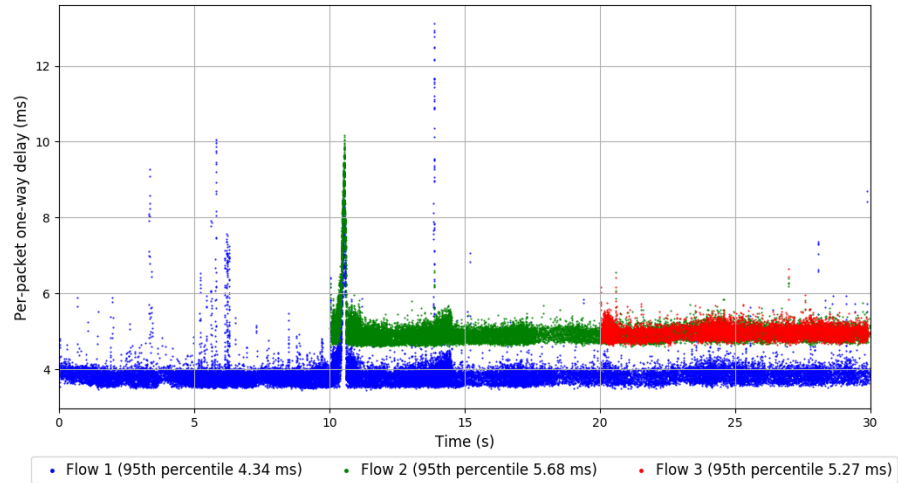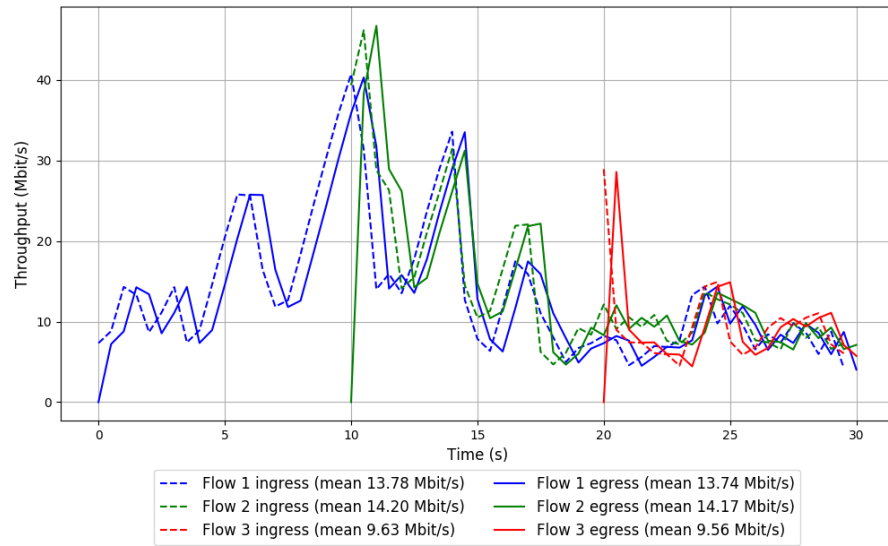
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-11 02:39:39
End at: 2018-09-11 02:40:10
Local clock offset: 1.554 ms
Remote clock offset: -4.931 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.59 Mbit/s
95th percentile per-packet one-way delay: 5.214 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 12.39 Mbit/s
95th percentile per-packet one-way delay: 5.217 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 9.87 Mbit/s
95th percentile per-packet one-way delay: 5.218 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 4.87 Mbit/s
95th percentile per-packet one-way delay: 5.178 ms
Loss rate: 2.15%
```
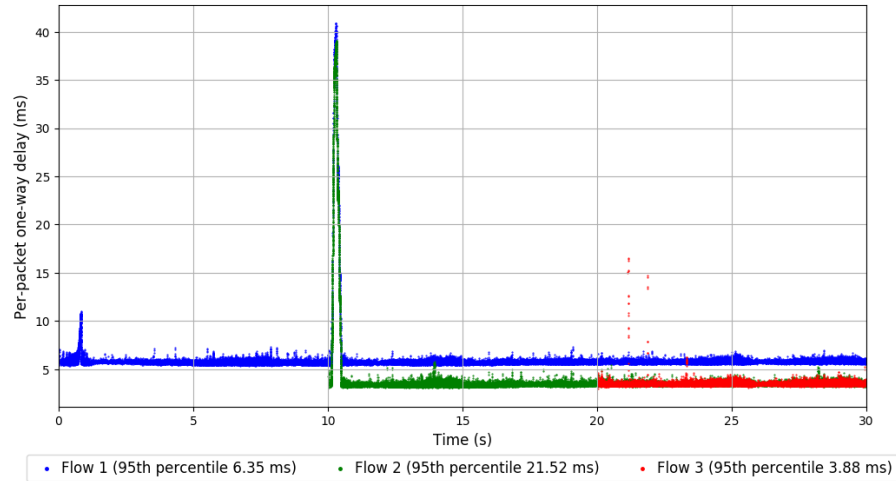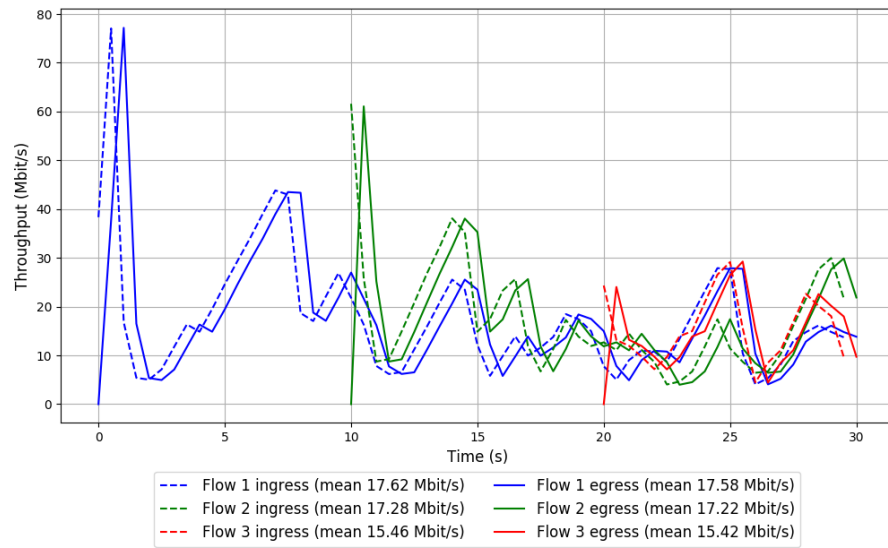
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-11 03:00:43
End at: 2018-09-11 03:01:13
Local clock offset: 2.873 ms
Remote clock offset: -5.317 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.36 Mbit/s
95th percentile per-packet one-way delay: 5.290 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 13.74 Mbit/s
95th percentile per-packet one-way delay: 4.342 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 14.17 Mbit/s
95th percentile per-packet one-way delay: 5.683 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 9.56 Mbit/s
95th percentile per-packet one-way delay: 5.270 ms
Loss rate: 0.65%
```
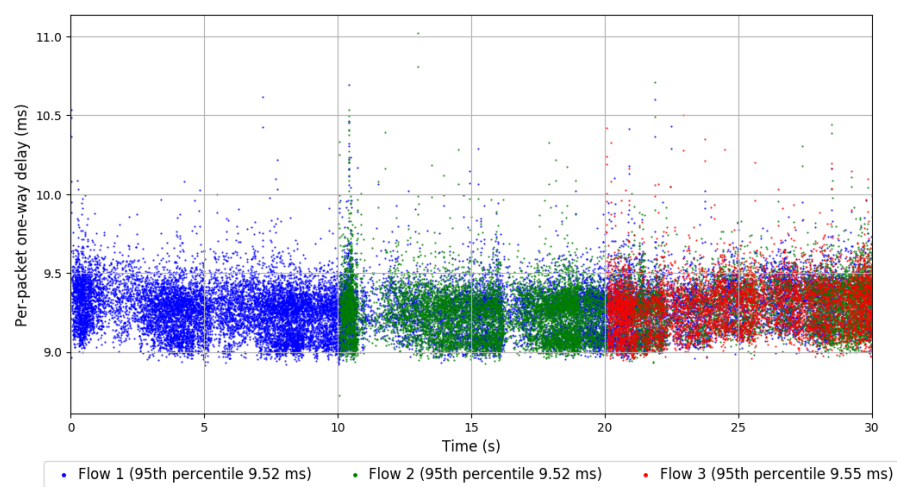
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-11 03:21:50
End at: 2018-09-11 03:22:20
Local clock offset: 1.64 ms
Remote clock offset: -6.741 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.18 Mbit/s
95th percentile per-packet one-way delay: 6.401 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 17.58 Mbit/s
95th percentile per-packet one-way delay: 6.350 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 17.22 Mbit/s
95th percentile per-packet one-way delay: 21.524 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 15.42 Mbit/s
95th percentile per-packet one-way delay: 3.884 ms
Loss rate: 0.30%
```
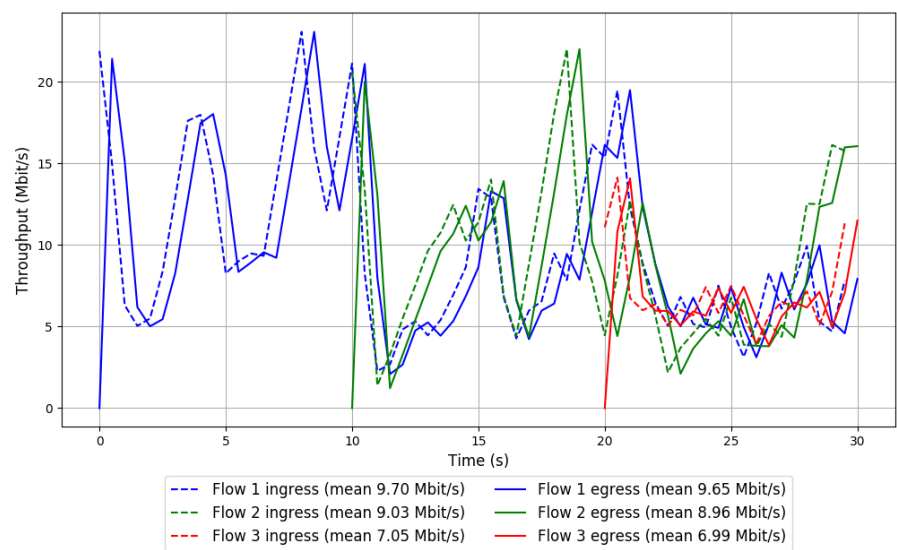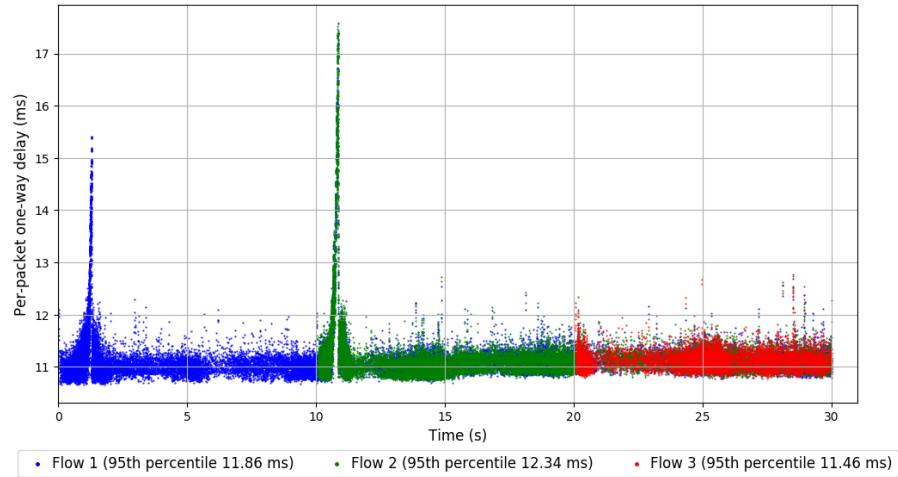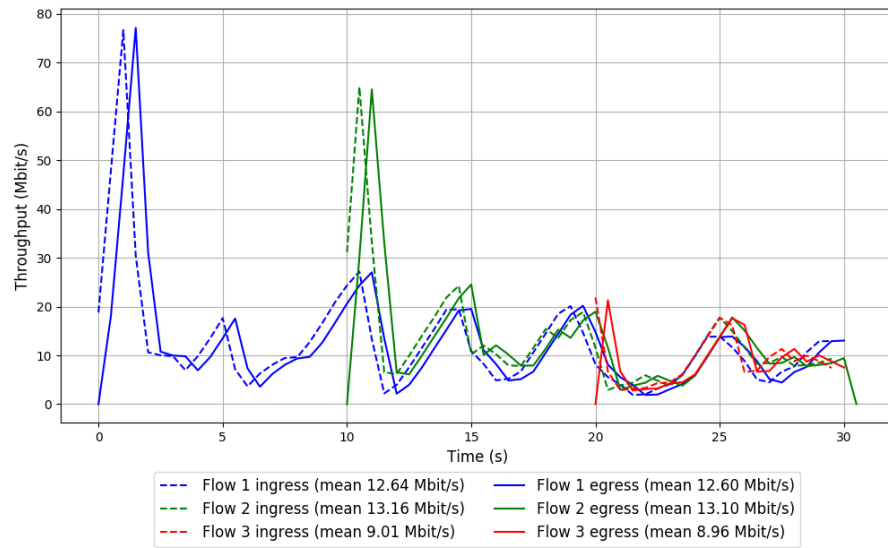
Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 17.62 Mbit/s)   —— Flow 1 egress (mean 17.58 Mbit/s)
- - - Flow 2 ingress (mean 17.28 Mbit/s)   —— Flow 2 egress (mean 17.22 Mbit/s)
- - - Flow 3 ingress (mean 15.46 Mbit/s)   —— Flow 3 egress (mean 15.42 Mbit/s)

• Flow 1 (95th percentile 6.35 ms)   • Flow 2 (95th percentile 21.52 ms)   • Flow 3 (95th percentile 3.88 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-09-11 03:42:44
End at: 2018-09-11 03:43:14
Local clock offset: 1.086 ms
Remote clock offset: -1.983 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.94 Mbit/s
95th percentile per-packet one-way delay: 9.522 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 9.518 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 8.96 Mbit/s
95th percentile per-packet one-way delay: 9.517 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 6.99 Mbit/s
95th percentile per-packet one-way delay: 9.551 ms
Loss rate: 0.92%
```
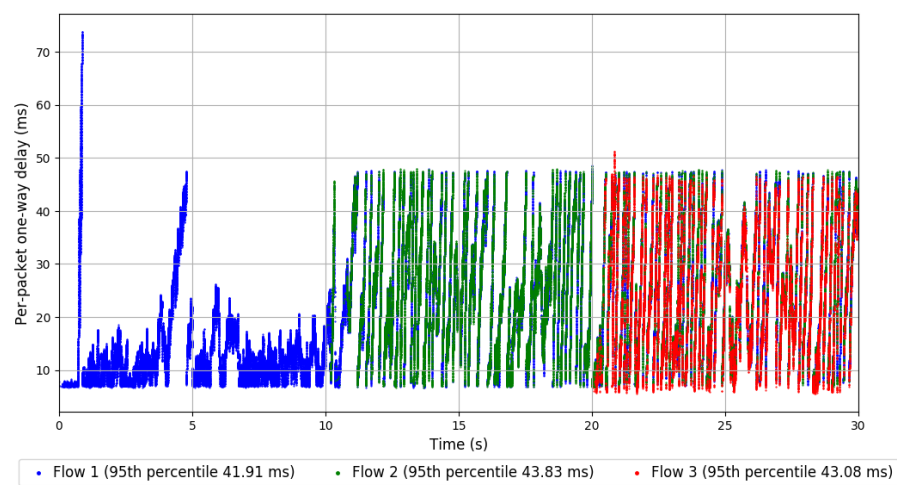
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-09-11 04:03:53
End at: 2018-09-11 04:04:23
Local clock offset: 0.34 ms
Remote clock offset: -3.253 ms


# Below is generated by plot.py at 2018-09-11 04:27:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.31 Mbit/s
95th percentile per-packet one-way delay: 11.872 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 11.860 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 12.343 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 8.96 Mbit/s
95th percentile per-packet one-way delay: 11.456 ms
Loss rate: 0.60%
```
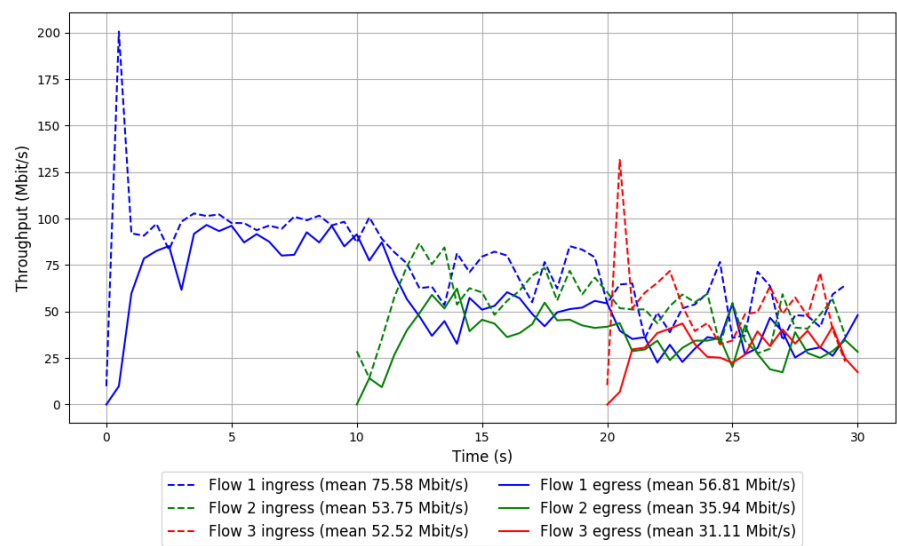
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 12.64 Mbit/s)   Flow 1 egress (mean 12.60 Mbit/s)
Flow 2 ingress (mean 13.16 Mbit/s)   Flow 2 egress (mean 13.10 Mbit/s)
Flow 3 ingress (mean 9.01 Mbit/s)   Flow 3 egress (mean 8.96 Mbit/s)

Flow 1 (95th percentile 11.86 ms)   Flow 2 (95th percentile 12.34 ms)   Flow 3 (95th percentile 11.46 ms)
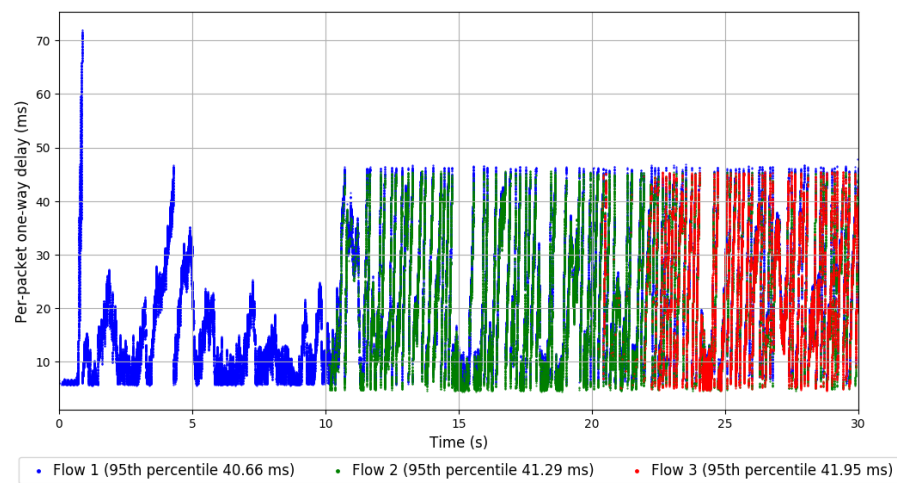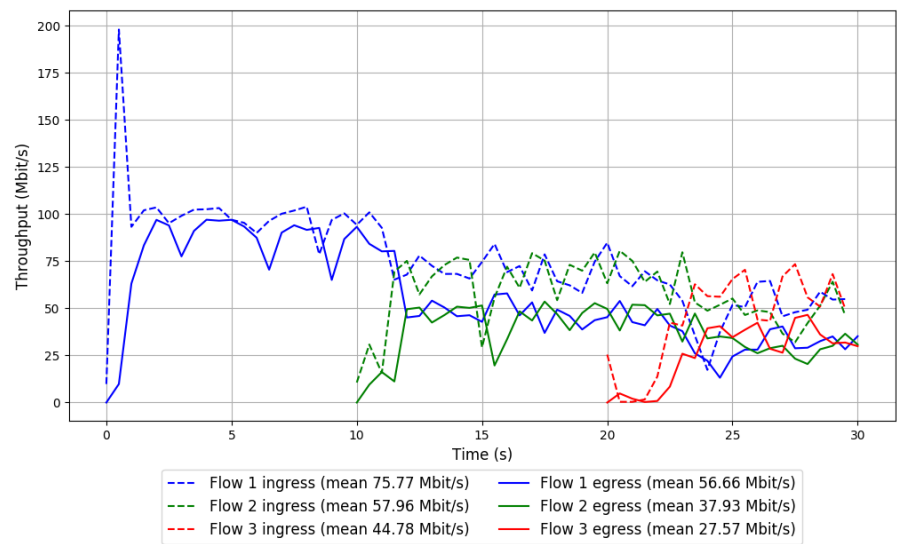
```
Run 1: Statistics of FillP

Start at: 2018-09-11 02:47:50
End at: 2018-09-11 02:48:20
Local clock offset: 1.214 ms
Remote clock offset: -4.534 ms

# Below is generated by plot.py at 2018-09-11 04:28:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.09 Mbit/s
95th percentile per-packet one-way delay: 42.802 ms
Loss rate: 29.21%
-- Flow 1:
Average throughput: 56.81 Mbit/s
95th percentile per-packet one-way delay: 41.907 ms
Loss rate: 24.76%
-- Flow 2:
Average throughput: 35.94 Mbit/s
95th percentile per-packet one-way delay: 43.833 ms
Loss rate: 33.05%
-- Flow 3:
Average throughput: 31.11 Mbit/s
95th percentile per-packet one-way delay: 43.082 ms
Loss rate: 40.58%
```
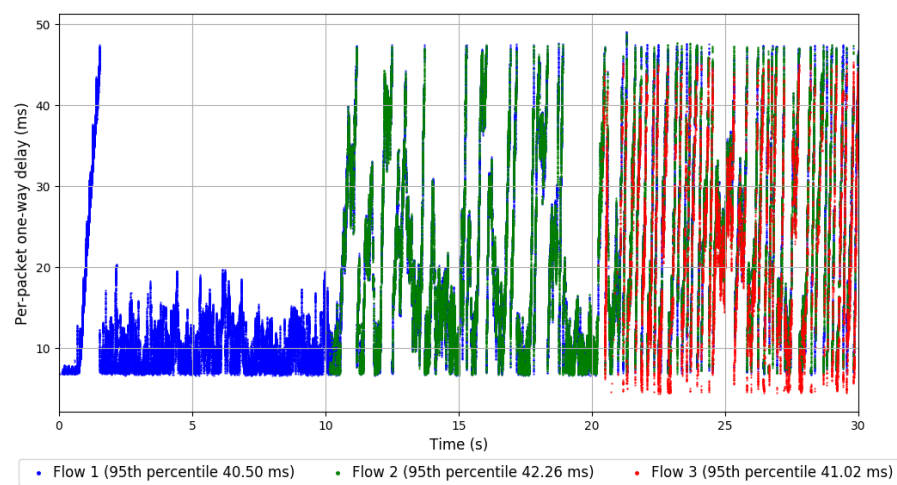
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-09-11 03:08:58
End at: 2018-09-11 03:09:28
Local clock offset: 1.33 ms
Remote clock offset: -5.554 ms

# Below is generated by plot.py at 2018-09-11 04:28:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.87 Mbit/s
95th percentile per-packet one-way delay: 41.027 ms
Loss rate: 29.58%
-- Flow 1:
Average throughput: 56.66 Mbit/s
95th percentile per-packet one-way delay: 40.665 ms
Loss rate: 25.14%
-- Flow 2:
Average throughput: 37.93 Mbit/s
95th percentile per-packet one-way delay: 41.288 ms
Loss rate: 34.46%
-- Flow 3:
Average throughput: 27.57 Mbit/s
95th percentile per-packet one-way delay: 41.947 ms
Loss rate: 39.54%
```
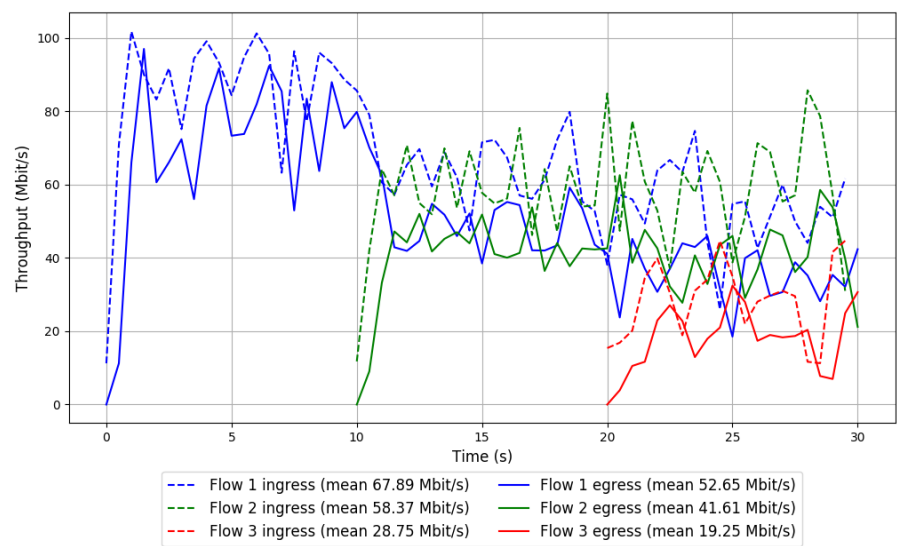
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-09-11 03:29:59
End at: 2018-09-11 03:30:29
Local clock offset: 0.39 ms
Remote clock offset: -6.228 ms


# Below is generated by plot.py at 2018-09-11 04:28:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.61 Mbit/s
95th percentile per-packet one-way delay: 41.225 ms
Loss rate: 25.43%
-- Flow 1:
Average throughput: 52.65 Mbit/s
95th percentile per-packet one-way delay: 40.502 ms
Loss rate: 22.37%
-- Flow 2:
Average throughput: 41.61 Mbit/s
95th percentile per-packet one-way delay: 42.255 ms
Loss rate: 28.62%
-- Flow 3:
Average throughput: 19.25 Mbit/s
95th percentile per-packet one-way delay: 41.024 ms
Loss rate: 34.23%
```

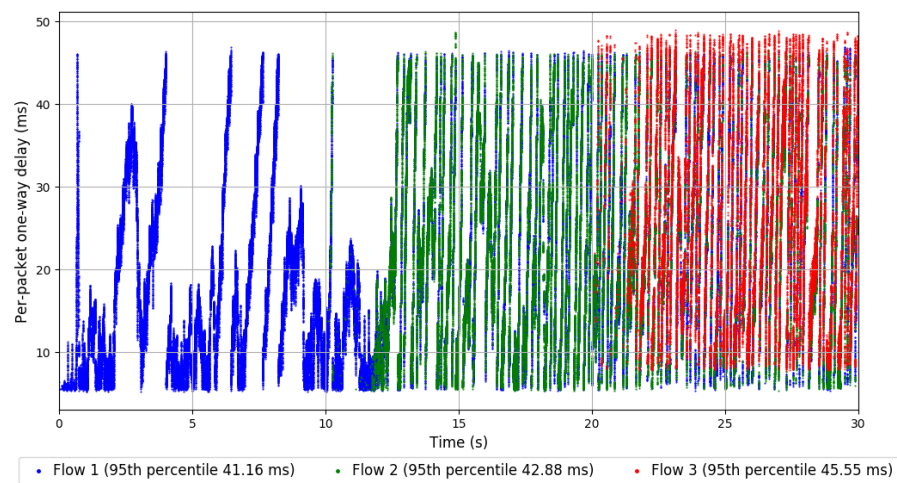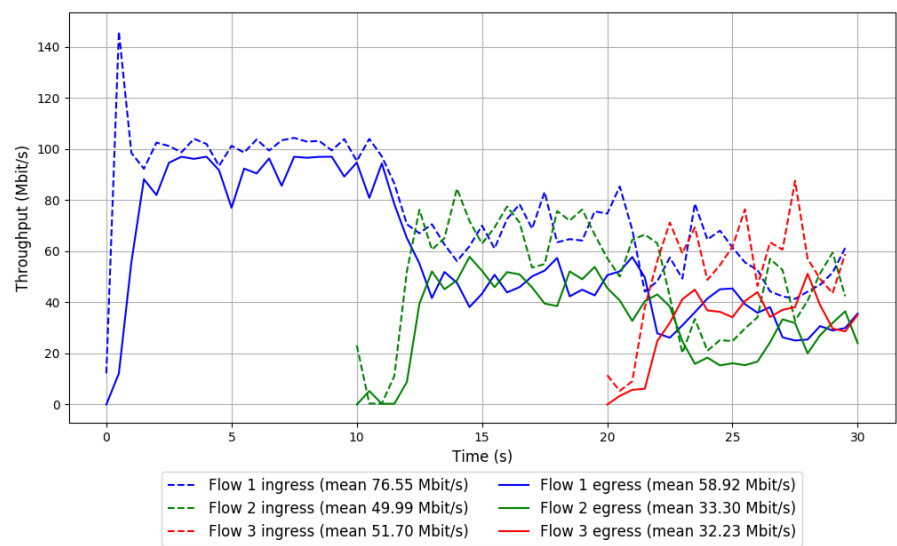Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-09-11 03:51:01
End at: 2018-09-11 03:51:31
Local clock offset: 0.601 ms
Remote clock offset: -3.143 ms


# Below is generated by plot.py at 2018-09-11 04:28:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.83 Mbit/s
95th percentile per-packet one-way delay: 42.448 ms
Loss rate: 27.61%
-- Flow 1:
Average throughput: 58.92 Mbit/s
95th percentile per-packet one-way delay: 41.163 ms
Loss rate: 22.94%
-- Flow 2:
Average throughput: 33.30 Mbit/s
95th percentile per-packet one-way delay: 42.877 ms
Loss rate: 33.28%
-- Flow 3:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 45.553 ms
Loss rate: 37.45%
```
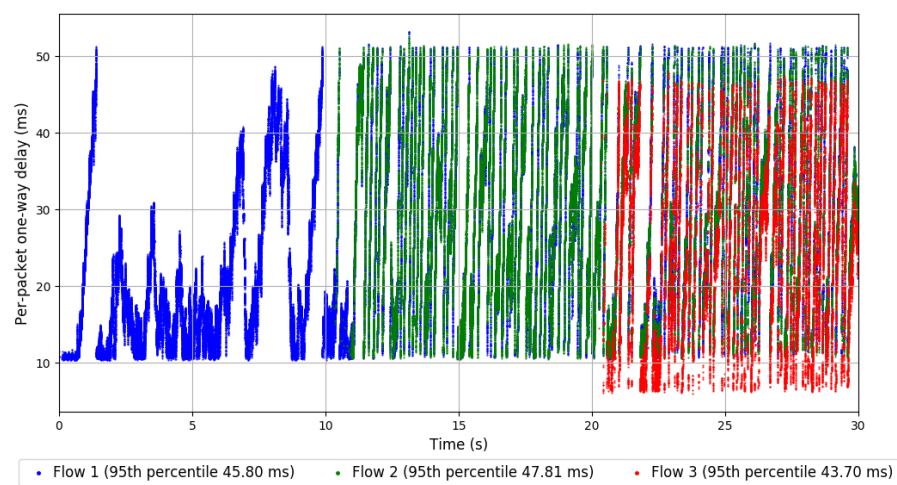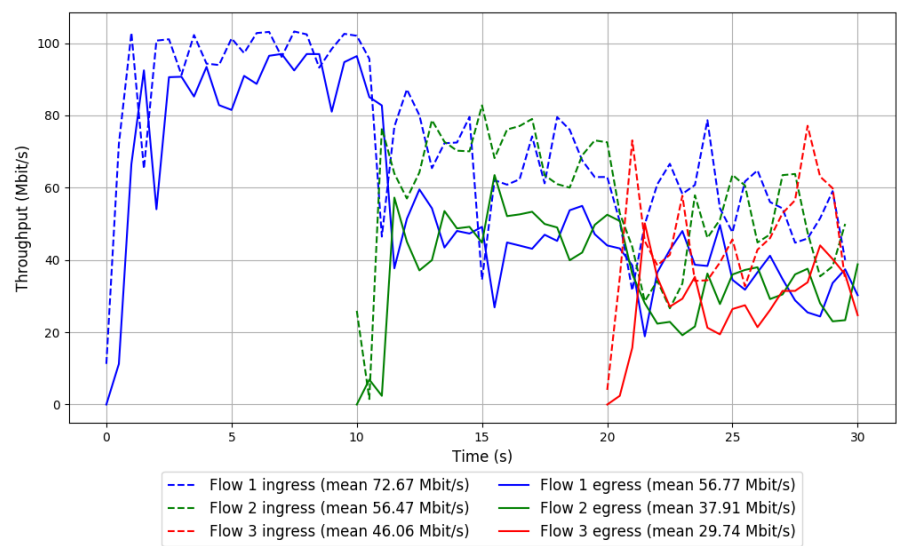
Run 4: Report of FillP — Data Link

- Flow 1 ingress (mean 76.55 Mbit/s)
- Flow 1 egress (mean 58.92 Mbit/s)
- Flow 2 ingress (mean 49.99 Mbit/s)
- Flow 2 egress (mean 33.30 Mbit/s)
- Flow 3 ingress (mean 51.70 Mbit/s)
- Flow 3 egress (mean 32.23 Mbit/s)

- Flow 1 (95th percentile 41.16 ms)
- Flow 2 (95th percentile 42.88 ms)
- Flow 3 (95th percentile 45.55 ms)

```
Run 5: Statistics of FillP

Start at: 2018-09-11 04:12:14
End at: 2018-09-11 04:12:44
Local clock offset: 0.879 ms
Remote clock offset: -3.419 ms


# Below is generated by plot.py at 2018-09-11 04:28:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.65 Mbit/s
95th percentile per-packet one-way delay: 46.312 ms
Loss rate: 26.95%
-- Flow 1:
Average throughput: 56.77 Mbit/s
95th percentile per-packet one-way delay: 45.805 ms
Loss rate: 21.85%
-- Flow 2:
Average throughput: 37.91 Mbit/s
95th percentile per-packet one-way delay: 47.810 ms
Loss rate: 32.85%
-- Flow 3:
Average throughput: 29.74 Mbit/s
95th percentile per-packet one-way delay: 43.696 ms
Loss rate: 36.69%
```

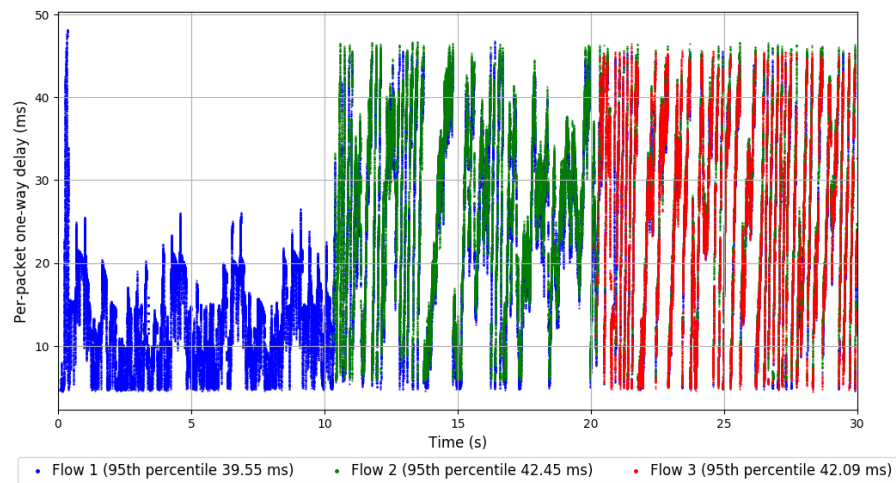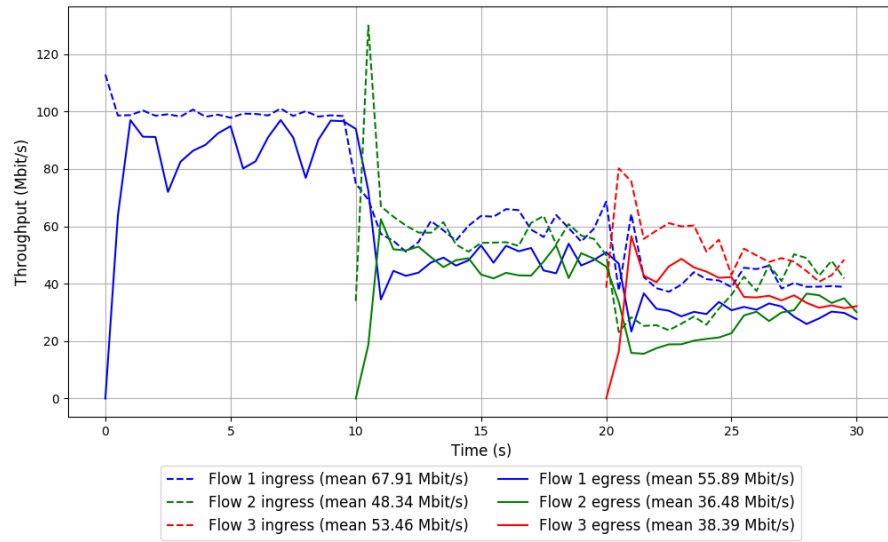Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-11 02:59:31
End at: 2018-09-11 03:00:01
Local clock offset: 2.702 ms
Remote clock offset: -4.346 ms

# Below is generated by plot.py at 2018-09-11 04:28:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.88 Mbit/s
95th percentile per-packet one-way delay: 41.123 ms
Loss rate: 21.10%
-- Flow 1:
Average throughput: 55.89 Mbit/s
95th percentile per-packet one-way delay: 39.551 ms
Loss rate: 17.65%
-- Flow 2:
Average throughput: 36.48 Mbit/s
95th percentile per-packet one-way delay: 42.448 ms
Loss rate: 24.46%
-- Flow 3:
Average throughput: 38.39 Mbit/s
95th percentile per-packet one-way delay: 42.085 ms
Loss rate: 28.19%
```

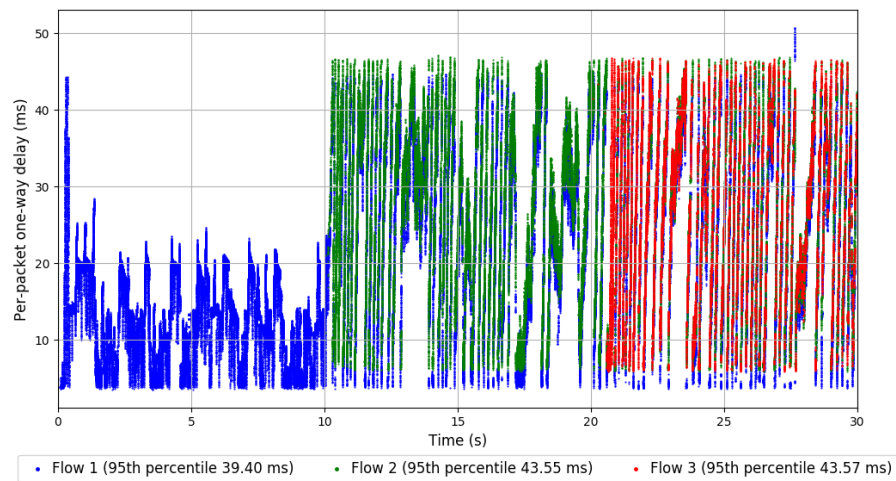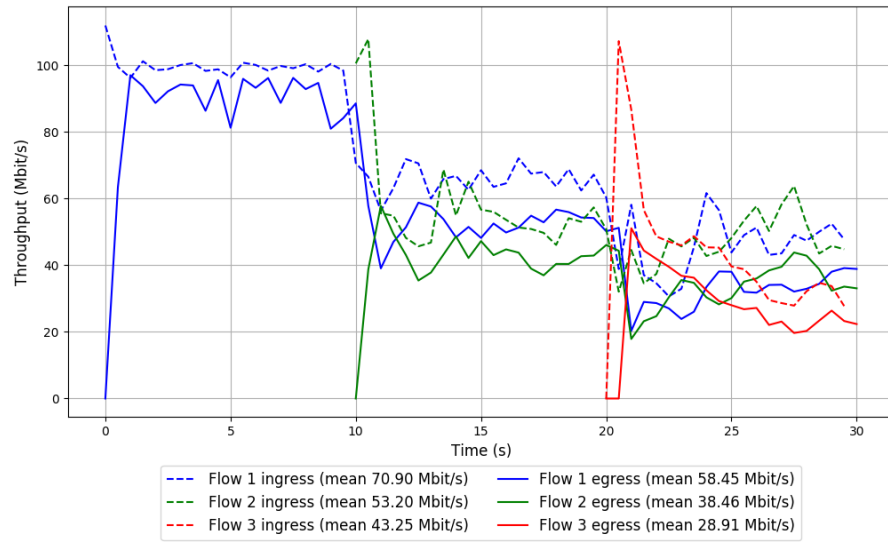Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 67.91 Mbit/s)   Flow 1 egress (mean 55.89 Mbit/s)
Flow 2 ingress (mean 48.34 Mbit/s)   Flow 2 egress (mean 36.48 Mbit/s)
Flow 3 ingress (mean 53.46 Mbit/s)   Flow 3 egress (mean 38.39 Mbit/s)

Flow 1 (95th percentile 39.55 ms)   Flow 2 (95th percentile 42.45 ms)   Flow 3 (95th percentile 42.09 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-11 03:20:39
End at: 2018-09-11 03:21:09
Local clock offset: 1.902 ms
Remote clock offset: -5.912 ms


# Below is generated by plot.py at 2018-09-11 04:28:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.62 Mbit/s
95th percentile per-packet one-way delay: 41.634 ms
Loss rate: 22.32%
-- Flow 1:
Average throughput: 58.45 Mbit/s
95th percentile per-packet one-way delay: 39.400 ms
Loss rate: 17.47%
-- Flow 2:
Average throughput: 38.46 Mbit/s
95th percentile per-packet one-way delay: 43.546 ms
Loss rate: 27.62%
-- Flow 3:
Average throughput: 28.91 Mbit/s
95th percentile per-packet one-way delay: 43.568 ms
Loss rate: 33.19%
```

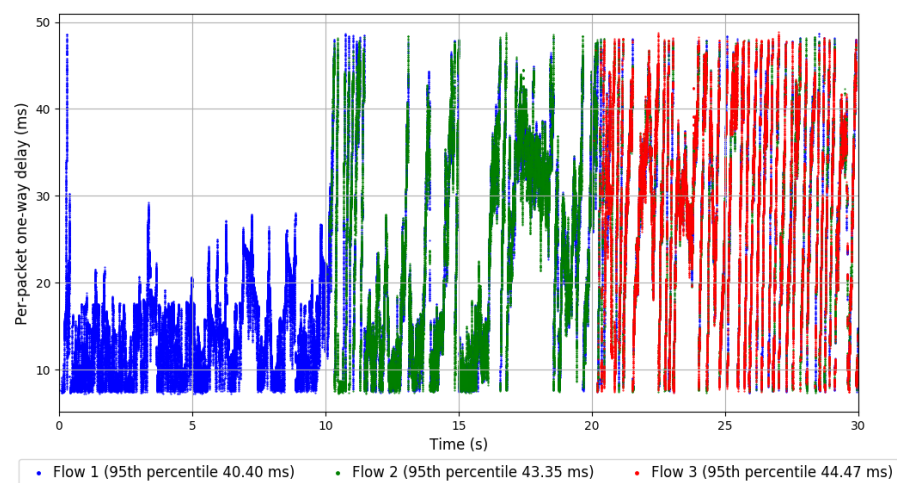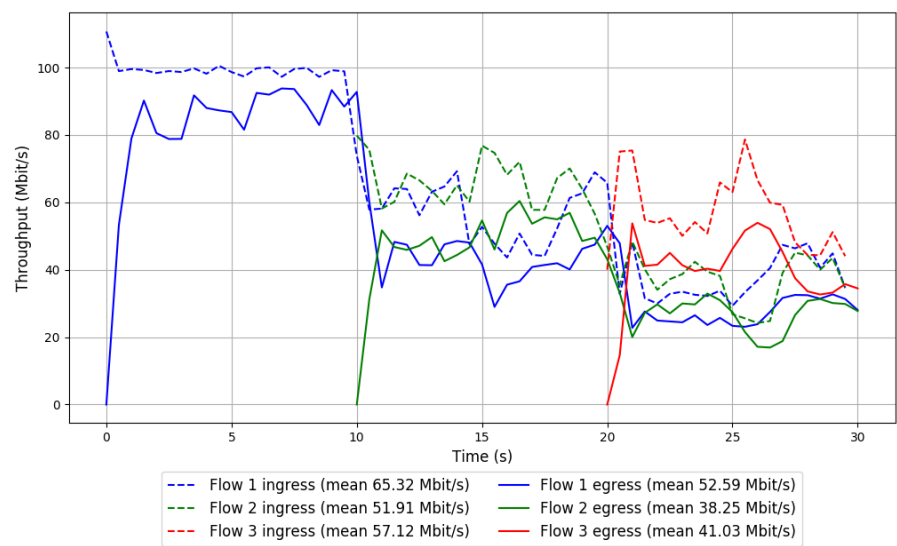Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 70.90 Mbit/s) — — — Flow 1 egress (mean 58.45 Mbit/s)
Flow 2 ingress (mean 53.20 Mbit/s) — — — Flow 2 egress (mean 38.46 Mbit/s)
Flow 3 ingress (mean 43.25 Mbit/s) — — — Flow 3 egress (mean 28.91 Mbit/s)

Flow 1 (95th percentile 39.40 ms)   Flow 2 (95th percentile 43.55 ms)   Flow 3 (95th percentile 43.57 ms)
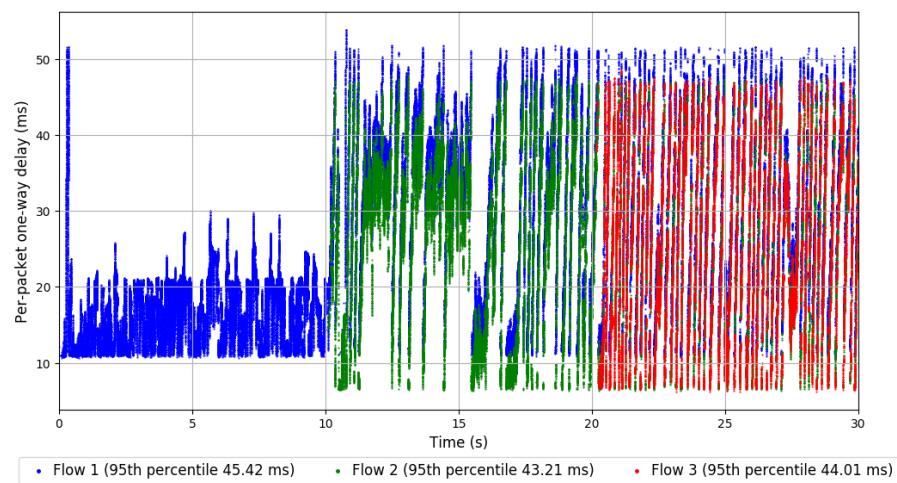
48

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-11 03:41:33
End at: 2018-09-11 03:42:03
Local clock offset: -0.152 ms
Remote clock offset: -2.552 ms


# Below is generated by plot.py at 2018-09-11 04:28:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.61 Mbit/s
95th percentile per-packet one-way delay: 42.566 ms
Loss rate: 22.89%
-- Flow 1:
Average throughput: 52.59 Mbit/s
95th percentile per-packet one-way delay: 40.396 ms
Loss rate: 19.47%
-- Flow 2:
Average throughput: 38.25 Mbit/s
95th percentile per-packet one-way delay: 43.350 ms
Loss rate: 26.35%
-- Flow 3:
Average throughput: 41.03 Mbit/s
95th percentile per-packet one-way delay: 44.466 ms
Loss rate: 28.34%
```

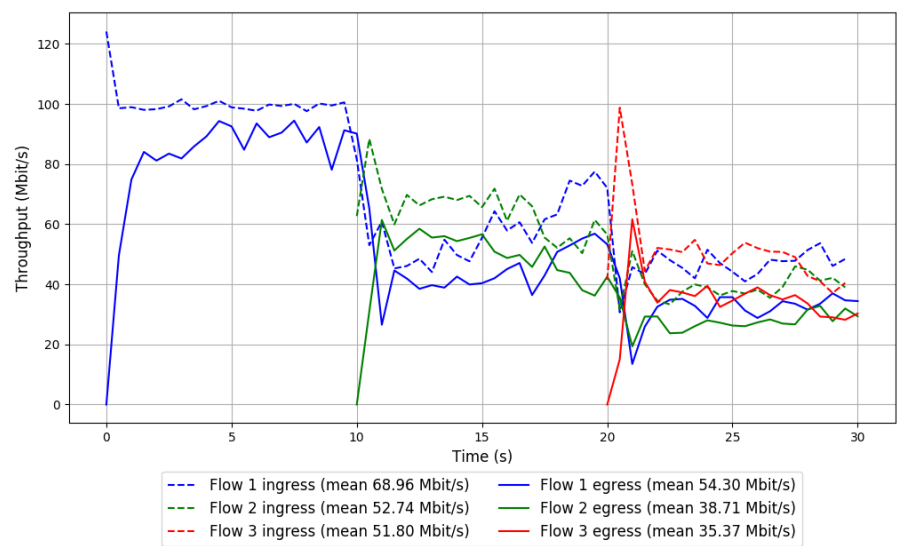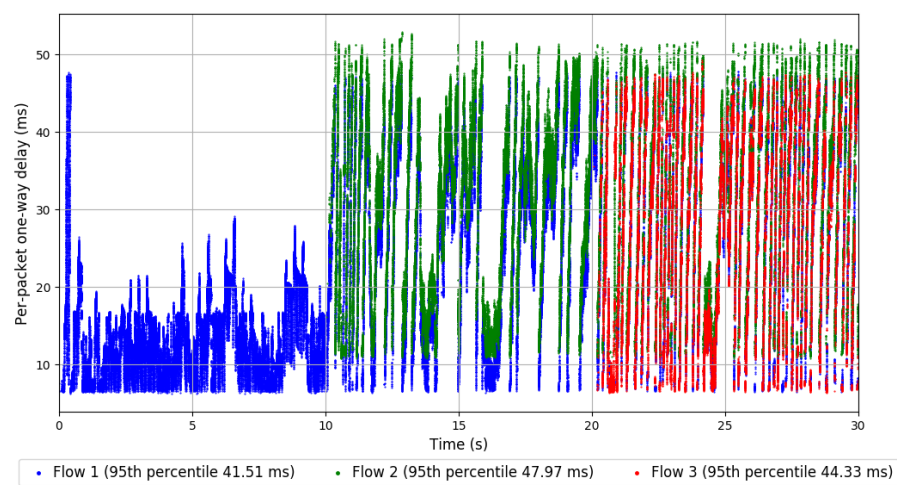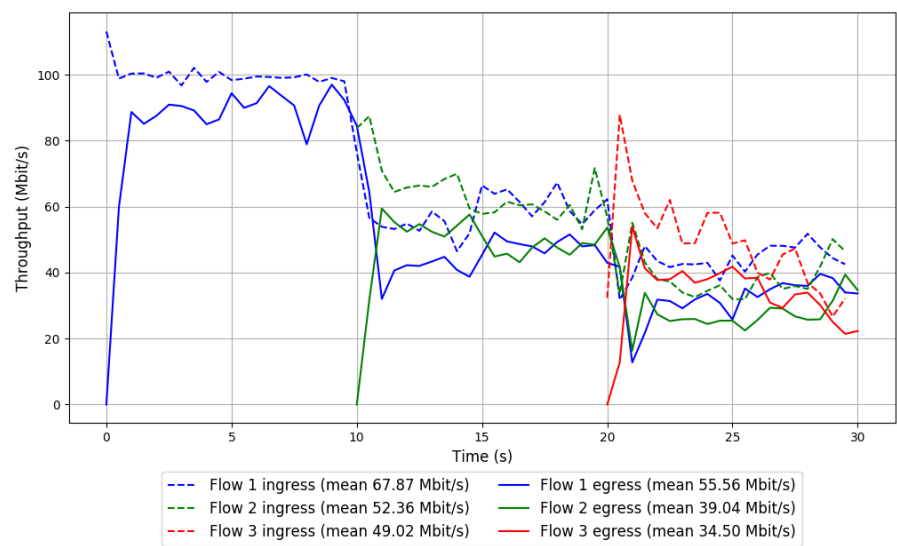Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 65.32 Mbit/s) --- Flow 1 egress (mean 52.59 Mbit/s)
Flow 2 ingress (mean 51.91 Mbit/s) --- Flow 2 egress (mean 38.25 Mbit/s)
Flow 3 ingress (mean 57.12 Mbit/s) --- Flow 3 egress (mean 41.03 Mbit/s)

Flow 1 (95th percentile 40.40 ms)   Flow 2 (95th percentile 43.35 ms)   Flow 3 (95th percentile 44.47 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-11 04:02:41
End at: 2018-09-11 04:03:11
Local clock offset: -0.531 ms
Remote clock offset: -3.845 ms


# Below is generated by plot.py at 2018-09-11 04:29:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.81 Mbit/s
95th percentile per-packet one-way delay: 44.489 ms
Loss rate: 24.21%
-- Flow 1:
Average throughput: 54.30 Mbit/s
95th percentile per-packet one-way delay: 45.424 ms
Loss rate: 21.19%
-- Flow 2:
Average throughput: 38.71 Mbit/s
95th percentile per-packet one-way delay: 43.212 ms
Loss rate: 26.52%
-- Flow 3:
Average throughput: 35.37 Mbit/s
95th percentile per-packet one-way delay: 44.008 ms
Loss rate: 31.62%
```

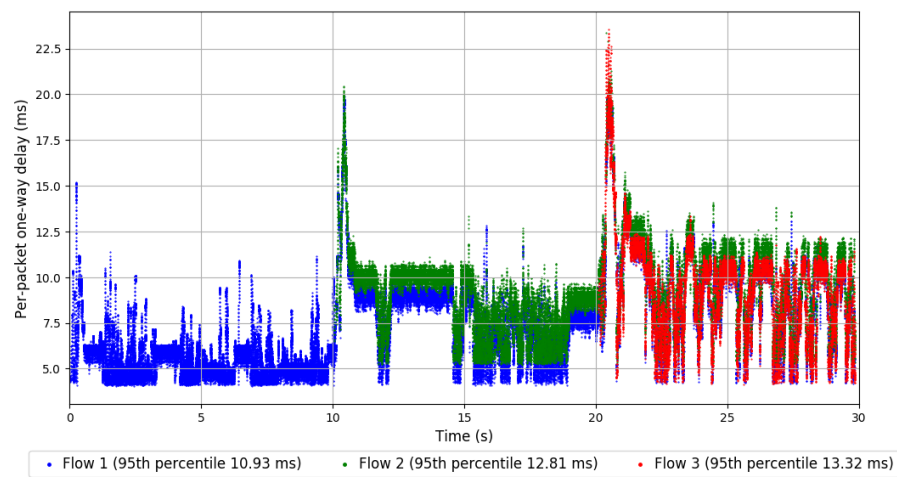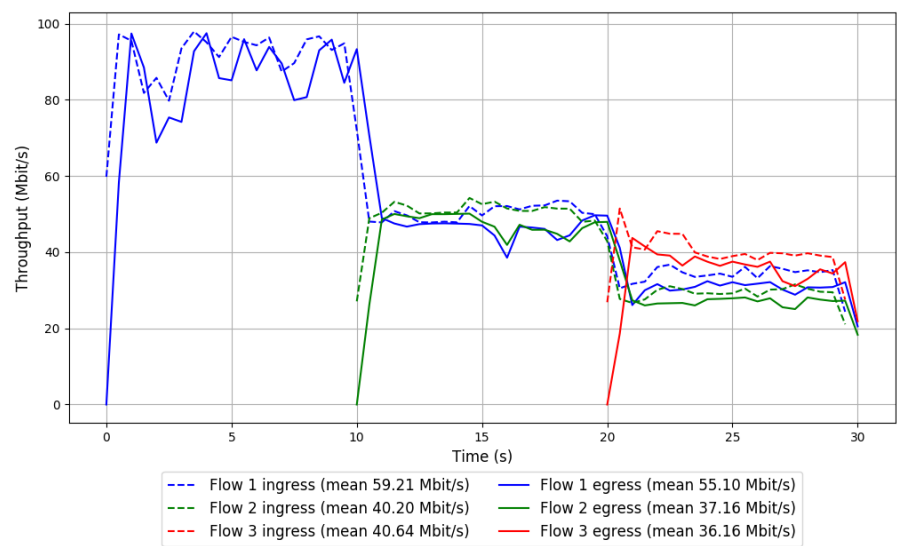# Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 68.96 Mbit/s) — Flow 1 egress (mean 54.30 Mbit/s)
Flow 2 ingress (mean 52.74 Mbit/s) — Flow 2 egress (mean 38.71 Mbit/s)
Flow 3 ingress (mean 51.80 Mbit/s) — Flow 3 egress (mean 35.37 Mbit/s)

Flow 1 (95th percentile 45.42 ms)   Flow 2 (95th percentile 43.21 ms)   Flow 3 (95th percentile 44.01 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-11 04:23:59
End at: 2018-09-11 04:24:29
Local clock offset: 1.617 ms
Remote clock offset: -2.696 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.94 Mbit/s
95th percentile per-packet one-way delay: 44.884 ms
Loss rate: 21.87%
-- Flow 1:
Average throughput: 55.56 Mbit/s
95th percentile per-packet one-way delay: 41.507 ms
Loss rate: 18.14%
-- Flow 2:
Average throughput: 39.04 Mbit/s
95th percentile per-packet one-way delay: 47.966 ms
Loss rate: 25.44%
-- Flow 3:
Average throughput: 34.50 Mbit/s
95th percentile per-packet one-way delay: 44.333 ms
Loss rate: 29.80%
```

Run 5: Report of FillP-Sheep — Data Link
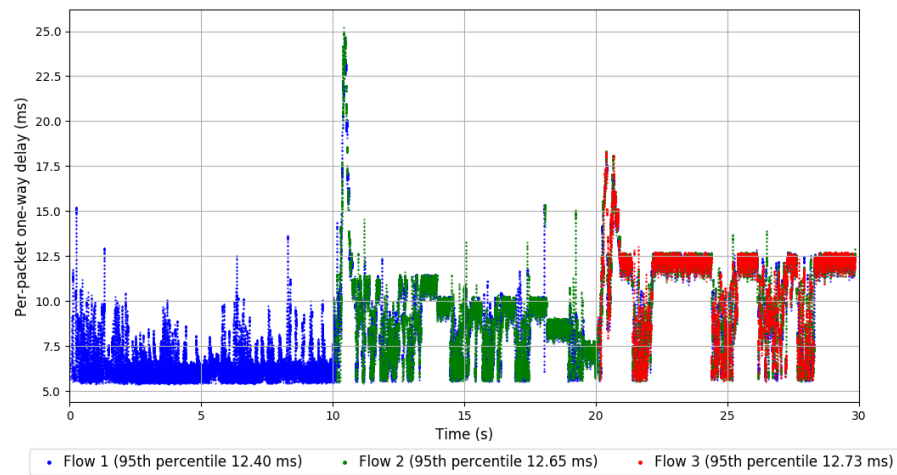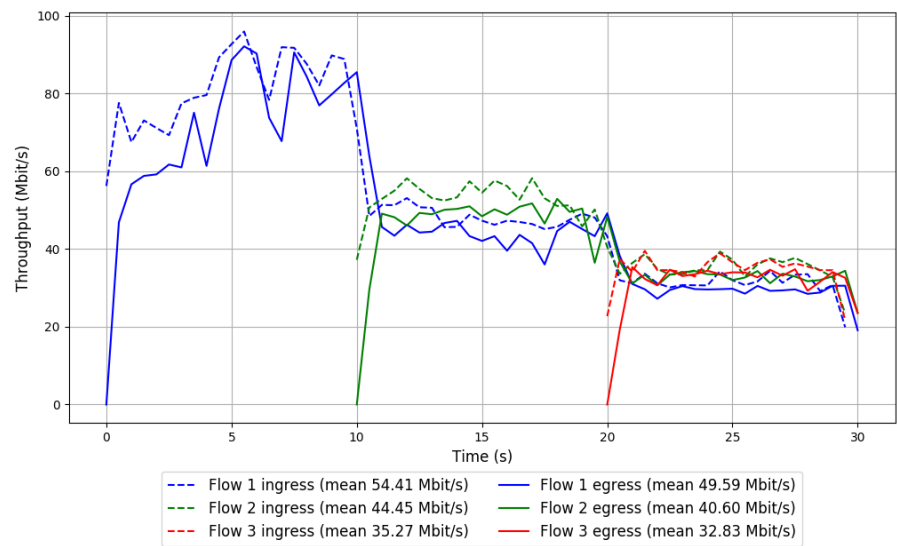

Flow 1 ingress (mean 67.87 Mbit/s) --- Flow 1 egress (mean 55.56 Mbit/s)
Flow 2 ingress (mean 52.36 Mbit/s) --- Flow 2 egress (mean 39.04 Mbit/s)
Flow 3 ingress (mean 49.02 Mbit/s) --- Flow 3 egress (mean 34.50 Mbit/s)

Flow 1 (95th percentile 41.51 ms)   Flow 2 (95th percentile 47.97 ms)   Flow 3 (95th percentile 44.33 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-09-11 02:54:46
End at: 2018-09-11 02:55:16
Local clock offset: 1.818 ms
Remote clock offset: -5.839 ms

# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.56 Mbit/s
95th percentile per-packet one-way delay: 11.932 ms
Loss rate: 7.66%
-- Flow 1:
Average throughput: 55.10 Mbit/s
95th percentile per-packet one-way delay: 10.934 ms
Loss rate: 6.93%
-- Flow 2:
Average throughput: 37.16 Mbit/s
95th percentile per-packet one-way delay: 12.807 ms
Loss rate: 7.57%
-- Flow 3:
Average throughput: 36.16 Mbit/s
95th percentile per-packet one-way delay: 13.317 ms
Loss rate: 11.04%
```
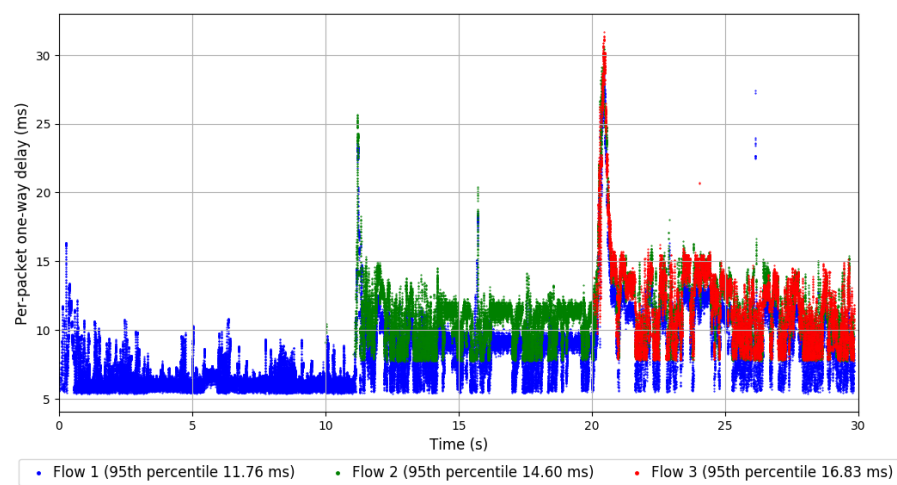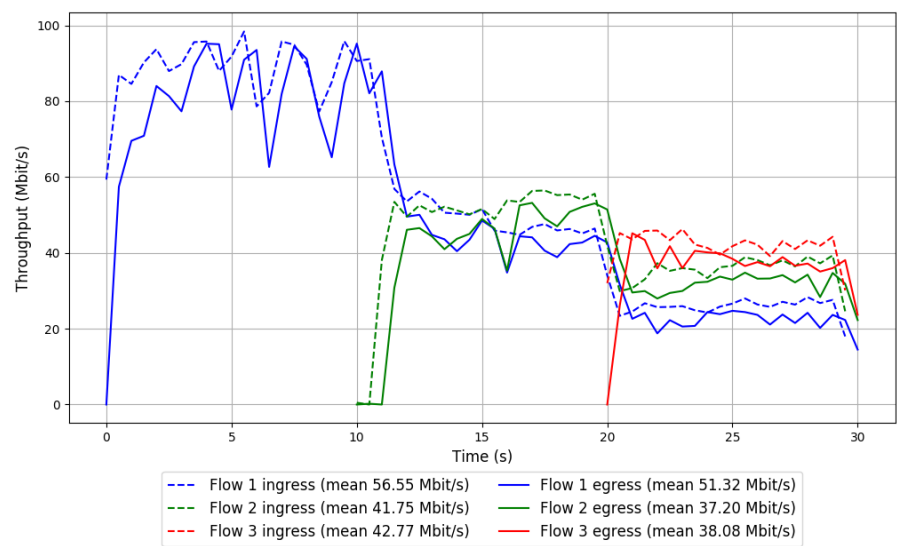
Run 1: Report of Indigo — Data Link

- - - Flow 1 ingress (mean 59.21 Mbit/s)   —— Flow 1 egress (mean 55.10 Mbit/s)
- - - Flow 2 ingress (mean 40.20 Mbit/s)   —— Flow 2 egress (mean 37.16 Mbit/s)
- - - Flow 3 ingress (mean 40.64 Mbit/s)   —— Flow 3 egress (mean 36.16 Mbit/s)

• Flow 1 (95th percentile 10.93 ms)   • Flow 2 (95th percentile 12.81 ms)   • Flow 3 (95th percentile 13.32 ms)

```
Run 2: Statistics of Indigo

Start at: 2018-09-11 03:15:54
End at: 2018-09-11 03:16:24
Local clock offset: 1.326 ms
Remote clock offset: -7.039 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.29 Mbit/s
95th percentile per-packet one-way delay: 12.590 ms
Loss rate: 8.54%
-- Flow 1:
Average throughput: 49.59 Mbit/s
95th percentile per-packet one-way delay: 12.399 ms
Loss rate: 8.86%
-- Flow 2:
Average throughput: 40.60 Mbit/s
95th percentile per-packet one-way delay: 12.652 ms
Loss rate: 8.63%
-- Flow 3:
Average throughput: 32.83 Mbit/s
95th percentile per-packet one-way delay: 12.726 ms
Loss rate: 6.86%
```
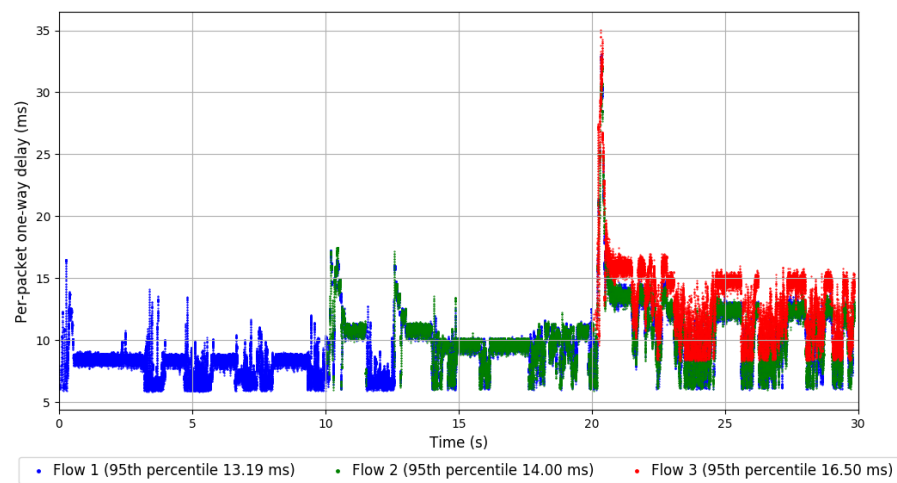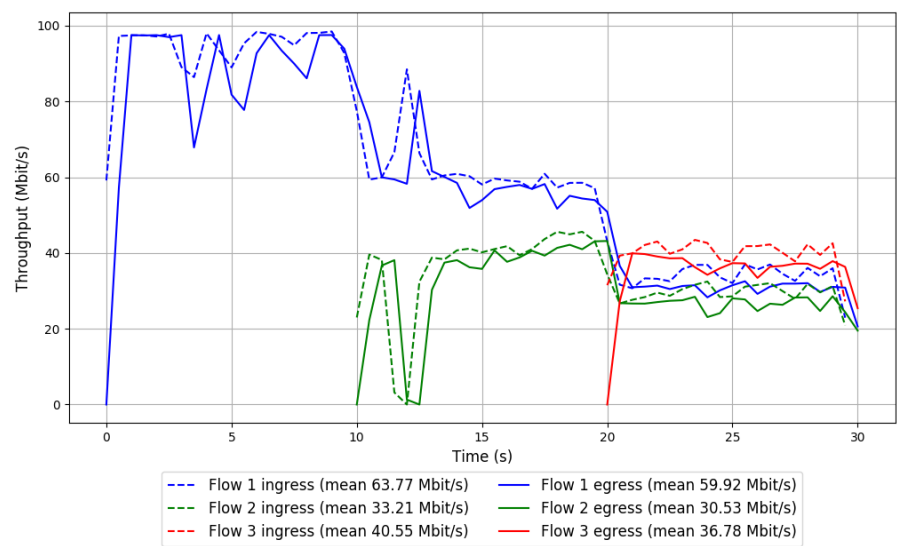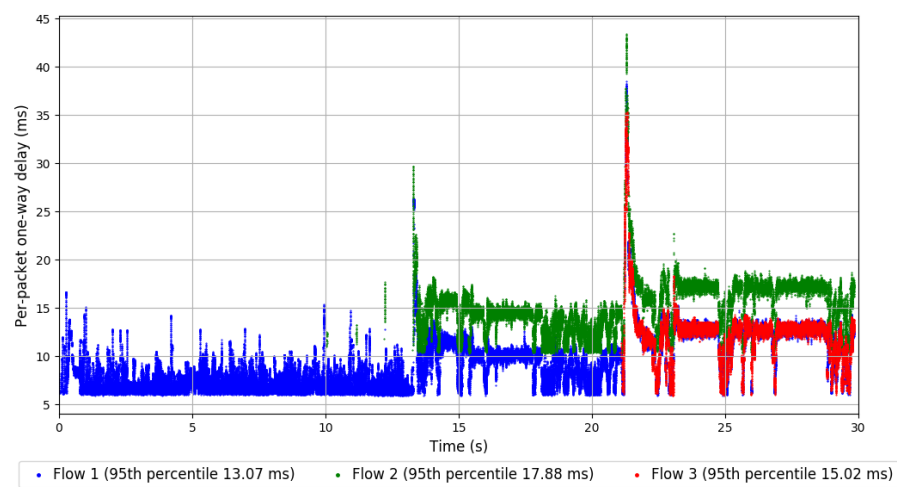
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 54.41 Mbit/s) --- Flow 1 egress (mean 49.59 Mbit/s)
Flow 2 ingress (mean 44.45 Mbit/s) --- Flow 2 egress (mean 40.60 Mbit/s)
Flow 3 ingress (mean 35.27 Mbit/s) --- Flow 3 egress (mean 32.83 Mbit/s)

Flow 1 (95th percentile 12.40 ms) Flow 2 (95th percentile 12.65 ms) Flow 3 (95th percentile 12.73 ms)

58

```
Run 3: Statistics of Indigo

Start at: 2018-09-11 03:36:49
End at: 2018-09-11 03:37:19
Local clock offset: 0.183 ms
Remote clock offset: -4.657 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.47 Mbit/s
95th percentile per-packet one-way delay: 14.216 ms
Loss rate: 9.96%
-- Flow 1:
Average throughput: 51.32 Mbit/s
95th percentile per-packet one-way delay: 11.760 ms
Loss rate: 9.24%
-- Flow 2:
Average throughput: 37.20 Mbit/s
95th percentile per-packet one-way delay: 14.598 ms
Loss rate: 10.90%
-- Flow 3:
Average throughput: 38.08 Mbit/s
95th percentile per-packet one-way delay: 16.833 ms
Loss rate: 10.99%
```
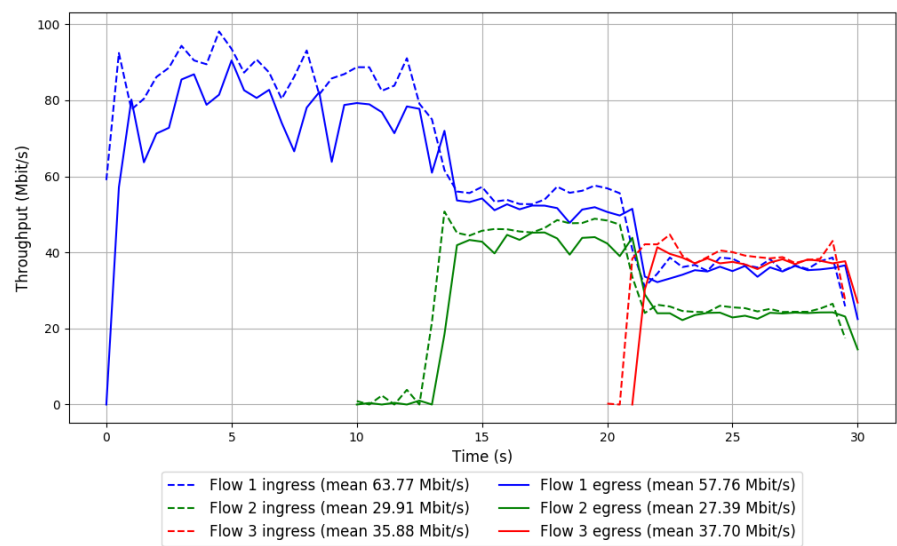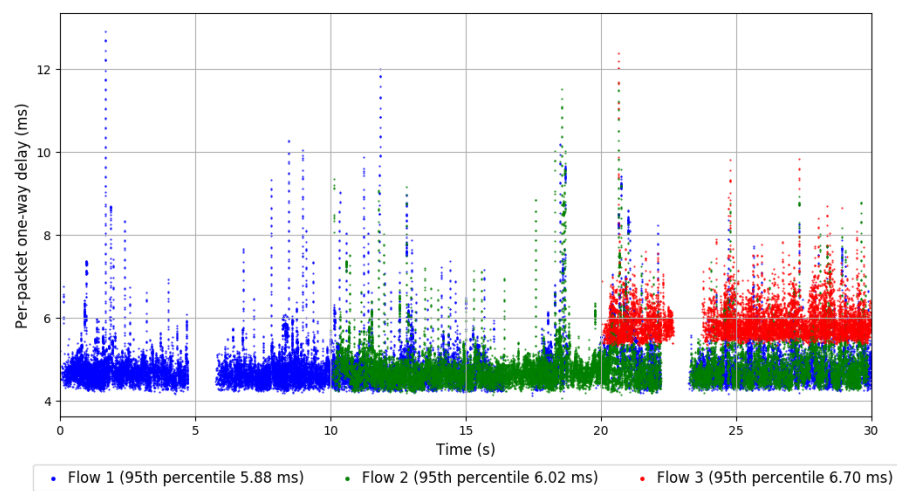
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-09-11 03:57:56
End at: 2018-09-11 03:58:26
Local clock offset: 0.144 ms
Remote clock offset: -3.061 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.22 Mbit/s
95th percentile per-packet one-way delay: 14.959 ms
Loss rate: 6.91%
-- Flow 1:
Average throughput: 59.92 Mbit/s
95th percentile per-packet one-way delay: 13.189 ms
Loss rate: 6.03%
-- Flow 2:
Average throughput: 30.53 Mbit/s
95th percentile per-packet one-way delay: 13.997 ms
Loss rate: 8.05%
-- Flow 3:
Average throughput: 36.78 Mbit/s
95th percentile per-packet one-way delay: 16.503 ms
Loss rate: 9.27%
```
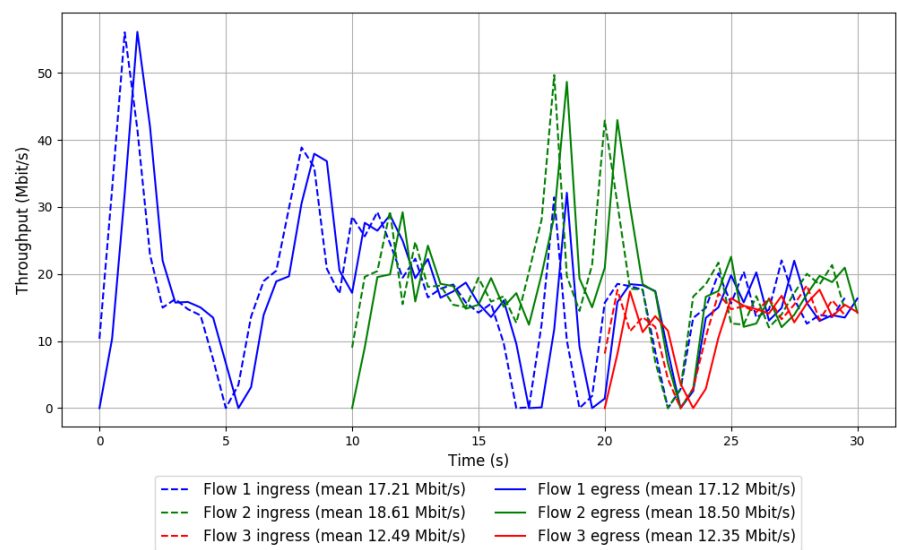
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-09-11 04:19:18
End at: 2018-09-11 04:19:48
Local clock offset: 1.168 ms
Remote clock offset: -3.607 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.04 Mbit/s
95th percentile per-packet one-way delay: 17.157 ms
Loss rate: 8.74%
-- Flow 1:
Average throughput: 57.76 Mbit/s
95th percentile per-packet one-way delay: 13.073 ms
Loss rate: 9.41%
-- Flow 2:
Average throughput: 27.39 Mbit/s
95th percentile per-packet one-way delay: 17.876 ms
Loss rate: 8.42%
-- Flow 3:
Average throughput: 37.70 Mbit/s
95th percentile per-packet one-way delay: 15.018 ms
Loss rate: 5.66%
```
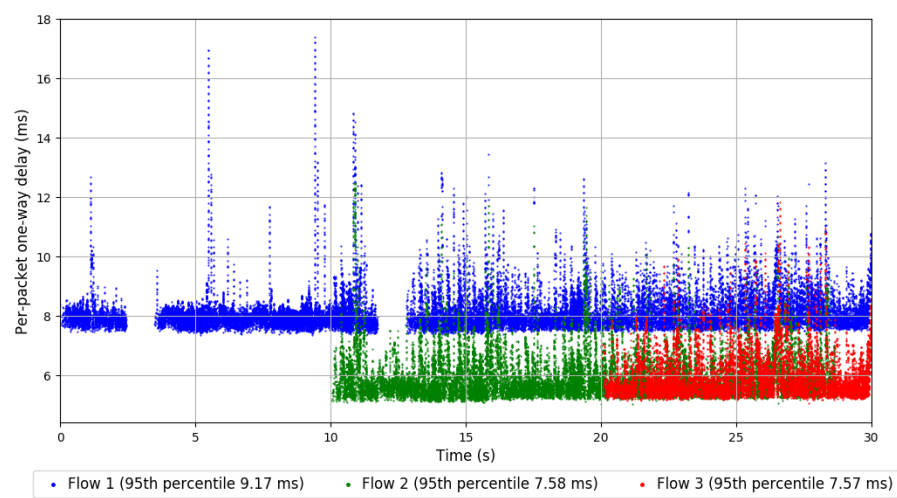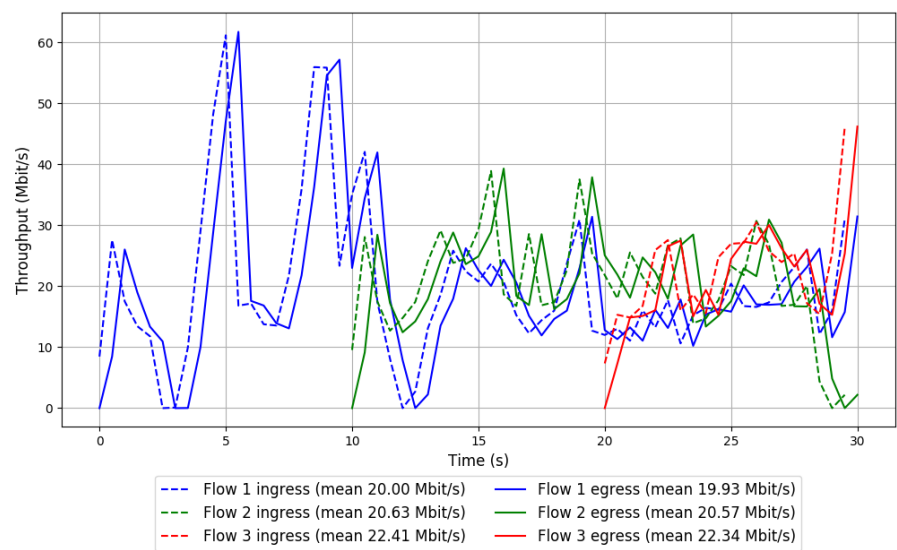
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-09-11 02:52:27
End at: 2018-09-11 02:52:57
Local clock offset: 2.429 ms
Remote clock offset: -5.034 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.46 Mbit/s
95th percentile per-packet one-way delay: 6.212 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 17.12 Mbit/s
95th percentile per-packet one-way delay: 5.878 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 18.50 Mbit/s
95th percentile per-packet one-way delay: 6.016 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 12.35 Mbit/s
95th percentile per-packet one-way delay: 6.701 ms
Loss rate: 1.10%
```
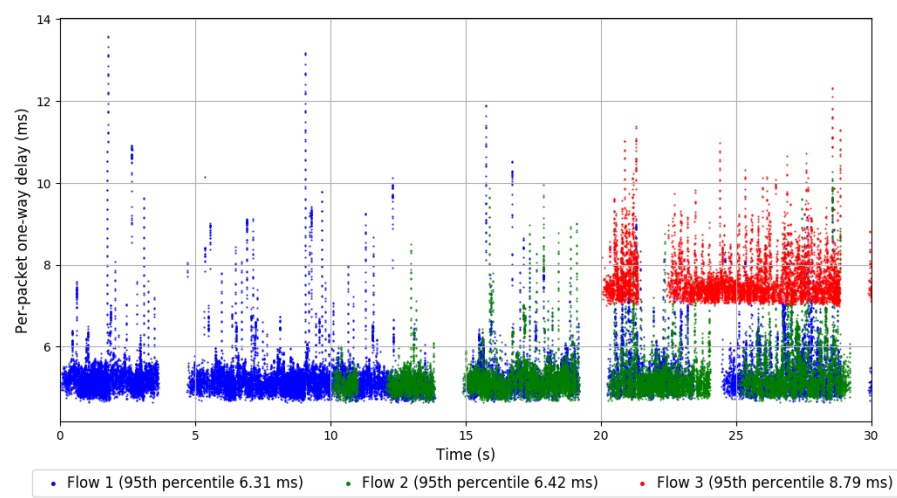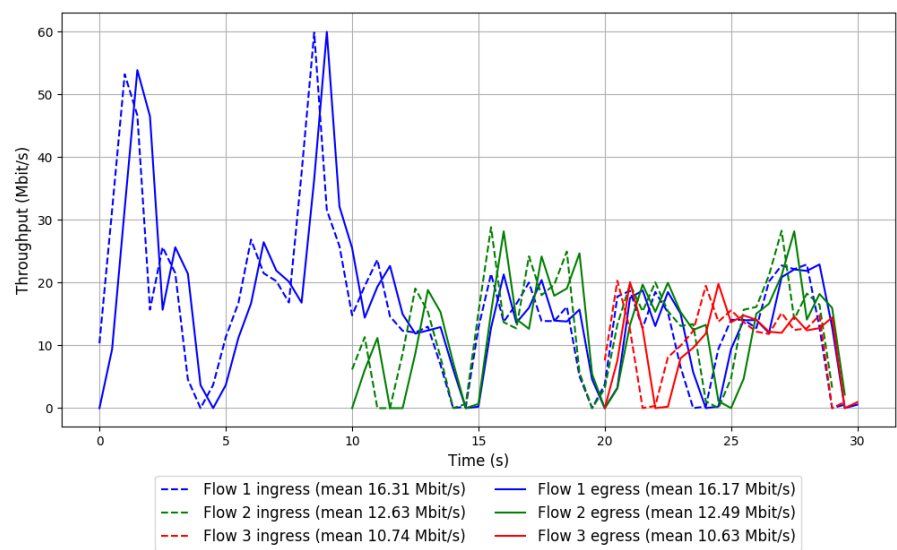
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-09-11 03:13:35
End at: 2018-09-11 03:14:05
Local clock offset: -3.713 ms
Remote clock offset: -10.106 ms

# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.05 Mbit/s
95th percentile per-packet one-way delay: 8.770 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 19.93 Mbit/s
95th percentile per-packet one-way delay: 9.173 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 20.57 Mbit/s
95th percentile per-packet one-way delay: 7.582 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 22.34 Mbit/s
95th percentile per-packet one-way delay: 7.567 ms
Loss rate: 0.26%
```
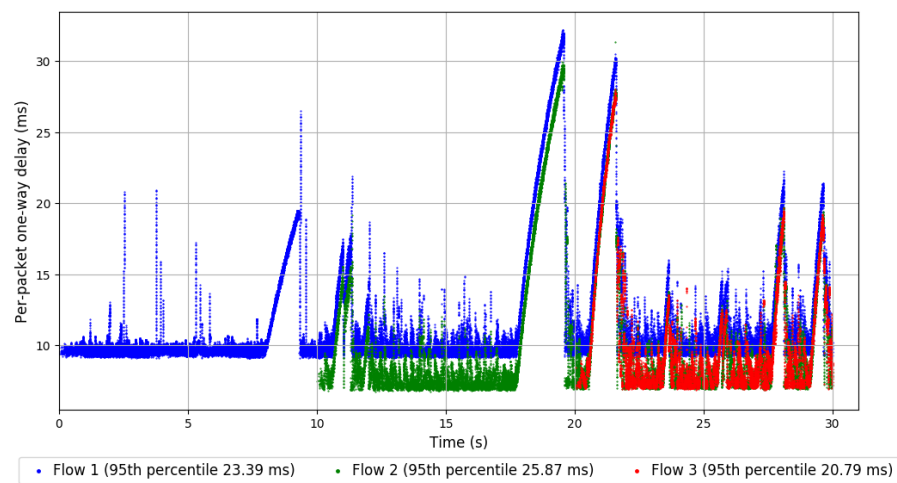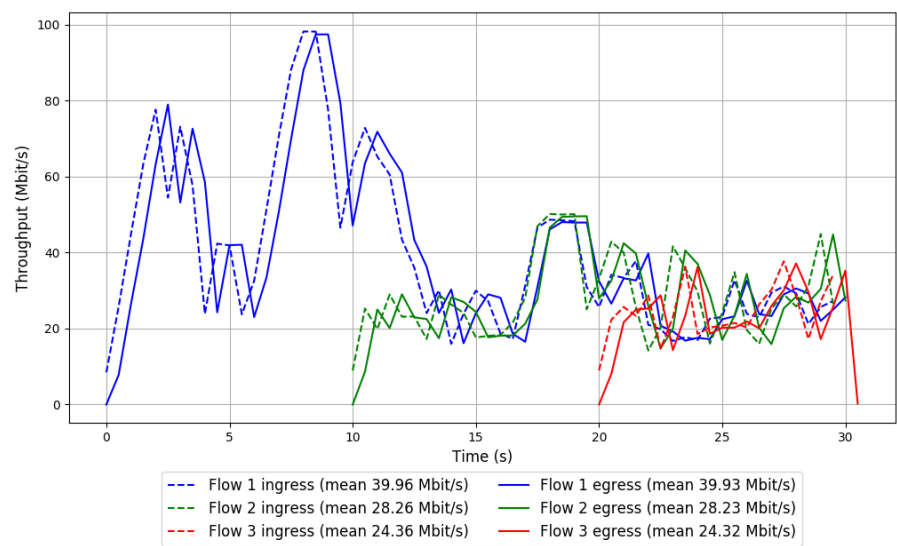
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-09-11 03:34:32
End at: 2018-09-11 03:35:02
Local clock offset: 1.458 ms
Remote clock offset: -4.353 ms


# Below is generated by plot.py at 2018-09-11 04:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.70 Mbit/s
95th percentile per-packet one-way delay: 7.733 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 16.17 Mbit/s
95th percentile per-packet one-way delay: 6.306 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 12.49 Mbit/s
95th percentile per-packet one-way delay: 6.421 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 10.63 Mbit/s
95th percentile per-packet one-way delay: 8.787 ms
Loss rate: 0.99%
```
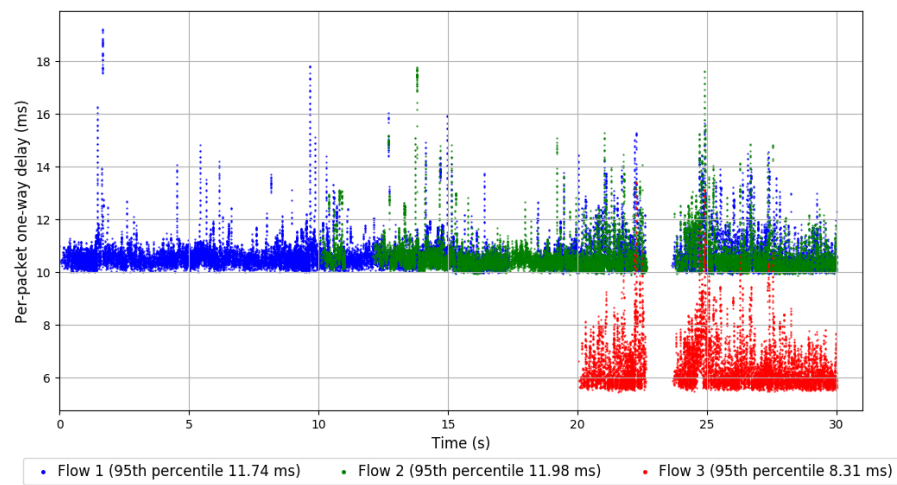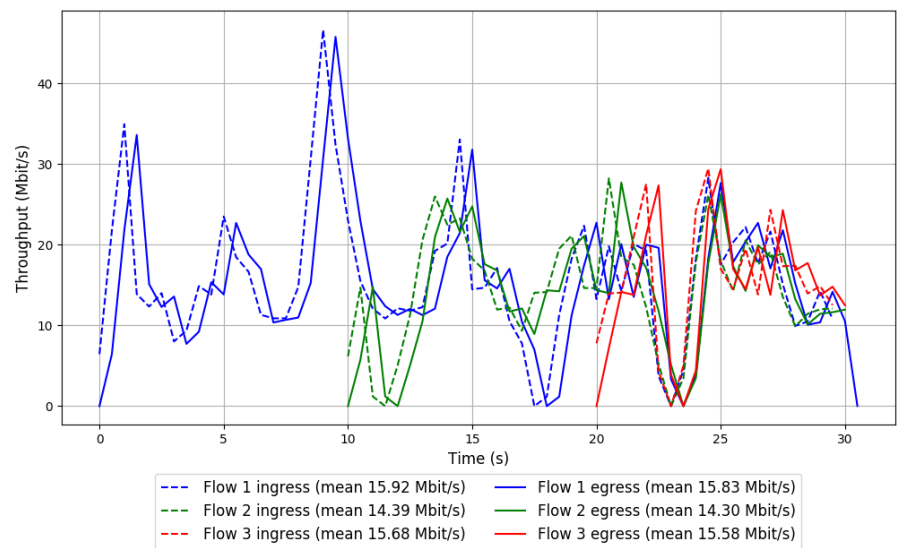
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 16.31 Mbit/s)   Flow 1 egress (mean 16.17 Mbit/s)
Flow 2 ingress (mean 12.63 Mbit/s)   Flow 2 egress (mean 12.49 Mbit/s)
Flow 3 ingress (mean 10.74 Mbit/s)   Flow 3 egress (mean 10.63 Mbit/s)

Flow 1 (95th percentile 6.31 ms)   Flow 2 (95th percentile 6.42 ms)   Flow 3 (95th percentile 8.79 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-09-11 03:55:35
End at: 2018-09-11 03:56:05
Local clock offset: -1.618 ms
Remote clock offset: -3.89 ms

# Below is generated by plot.py at 2018-09-11 04:30:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.81 Mbit/s
95th percentile per-packet one-way delay: 24.331 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 39.93 Mbit/s
95th percentile per-packet one-way delay: 23.389 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 28.23 Mbit/s
95th percentile per-packet one-way delay: 25.869 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 24.32 Mbit/s
95th percentile per-packet one-way delay: 20.786 ms
Loss rate: 0.14%
```
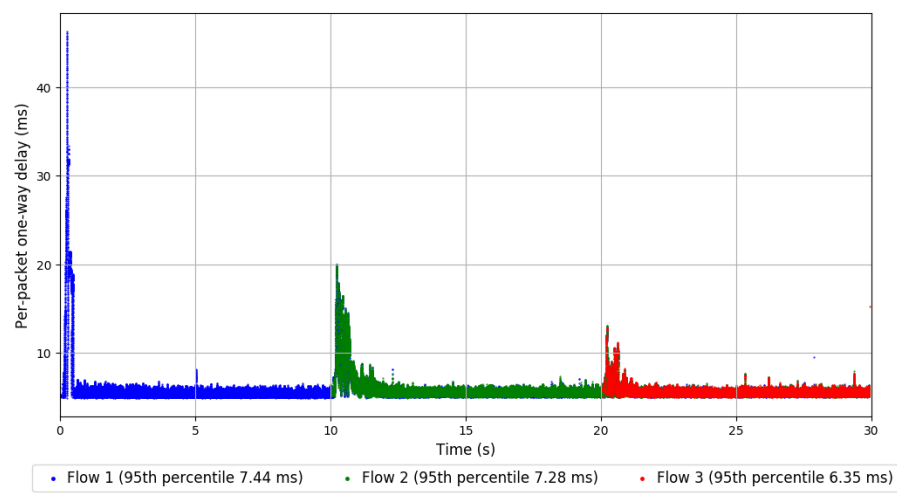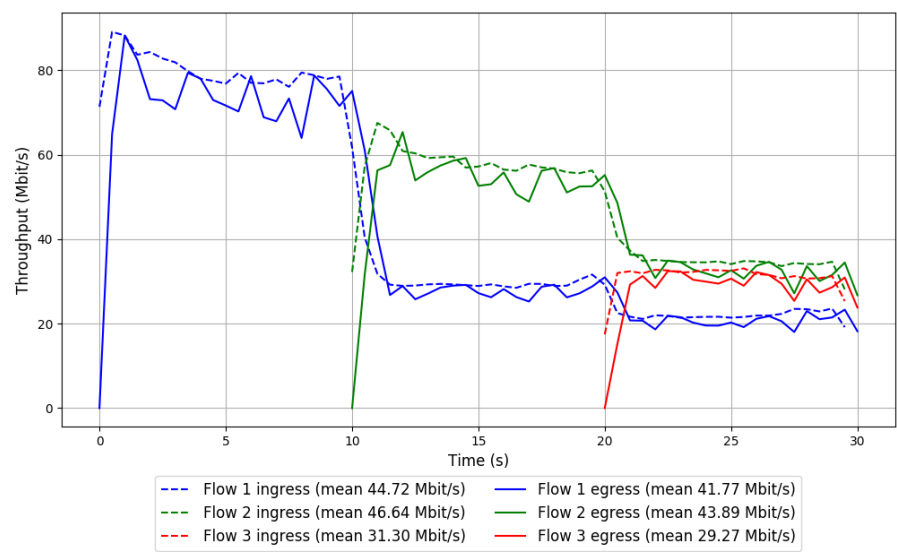
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 39.96 Mbit/s)   Flow 1 egress (mean 39.93 Mbit/s)
Flow 2 ingress (mean 28.26 Mbit/s)   Flow 2 egress (mean 28.23 Mbit/s)
Flow 3 ingress (mean 24.36 Mbit/s)   Flow 3 egress (mean 24.32 Mbit/s)

Flow 1 (95th percentile 23.39 ms)   Flow 2 (95th percentile 25.87 ms)   Flow 3 (95th percentile 20.79 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-09-11 04:17:00
End at: 2018-09-11 04:17:30
Local clock offset: 2.278 ms
Remote clock offset: -2.781 ms


# Below is generated by plot.py at 2018-09-11 04:30:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.54 Mbit/s
95th percentile per-packet one-way delay: 11.679 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 15.83 Mbit/s
95th percentile per-packet one-way delay: 11.740 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 14.30 Mbit/s
95th percentile per-packet one-way delay: 11.982 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 15.58 Mbit/s
95th percentile per-packet one-way delay: 8.313 ms
Loss rate: 0.64%
```
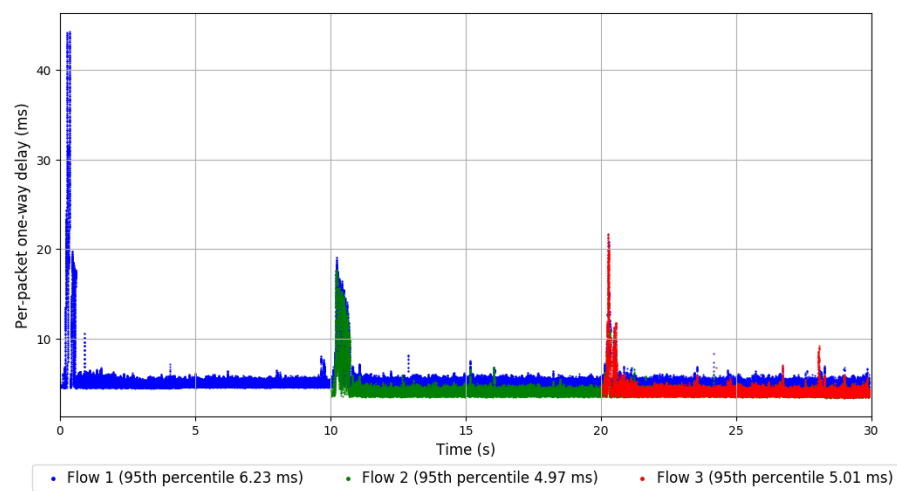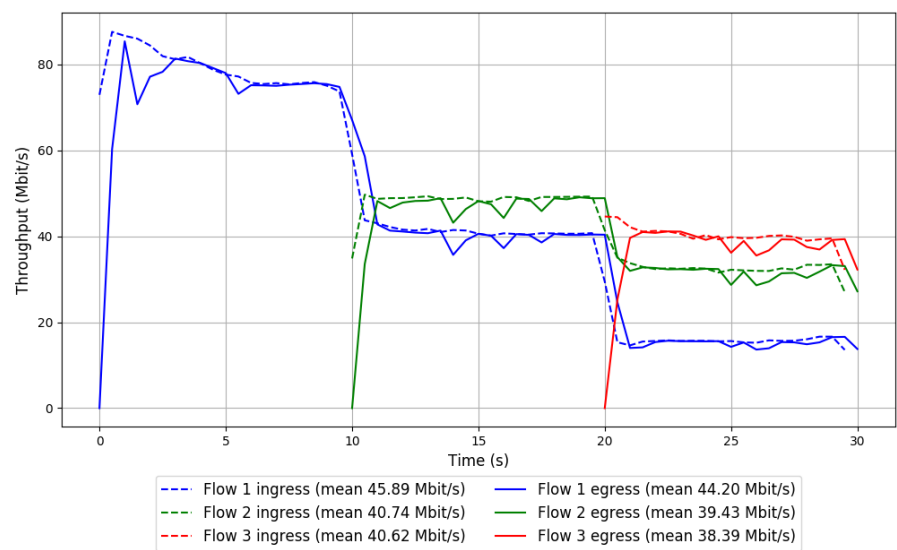
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-11 02:46:38
End at: 2018-09-11 02:47:08
Local clock offset: 2.713 ms
Remote clock offset: -4.956 ms


# Below is generated by plot.py at 2018-09-11 04:30:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.61 Mbit/s
95th percentile per-packet one-way delay: 7.132 ms
Loss rate: 6.31%
-- Flow 1:
Average throughput: 41.77 Mbit/s
95th percentile per-packet one-way delay: 7.440 ms
Loss rate: 6.59%
-- Flow 2:
Average throughput: 43.89 Mbit/s
95th percentile per-packet one-way delay: 7.279 ms
Loss rate: 5.88%
-- Flow 3:
Average throughput: 29.27 Mbit/s
95th percentile per-packet one-way delay: 6.351 ms
Loss rate: 6.39%
```

Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-11 03:07:46
End at: 2018-09-11 03:08:16
Local clock offset: 2.031 ms
Remote clock offset: -6.105 ms

# Below is generated by plot.py at 2018-09-11 04:30:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.12 Mbit/s
95th percentile per-packet one-way delay: 5.888 ms
Loss rate: 3.80%
-- Flow 1:
Average throughput: 44.20 Mbit/s
95th percentile per-packet one-way delay: 6.232 ms
Loss rate: 3.66%
-- Flow 2:
Average throughput: 39.43 Mbit/s
95th percentile per-packet one-way delay: 4.973 ms
Loss rate: 3.20%
-- Flow 3:
Average throughput: 38.39 Mbit/s
95th percentile per-packet one-way delay: 5.012 ms
Loss rate: 5.49%
```
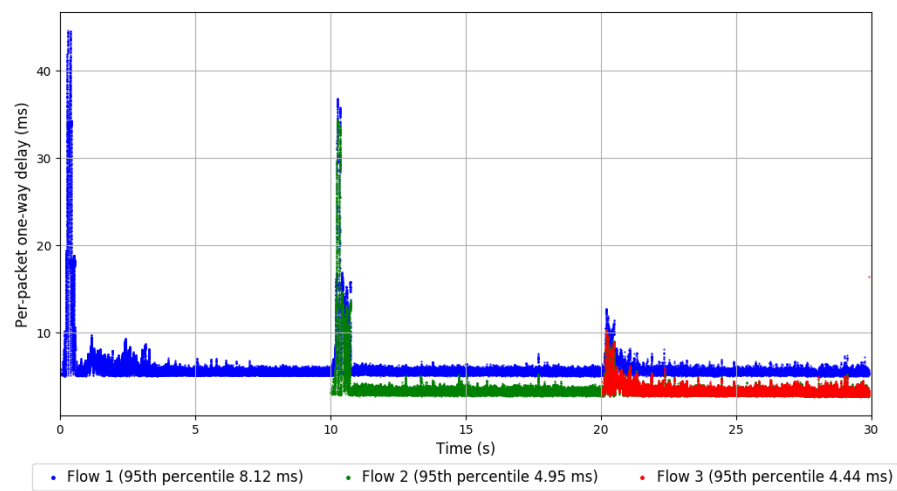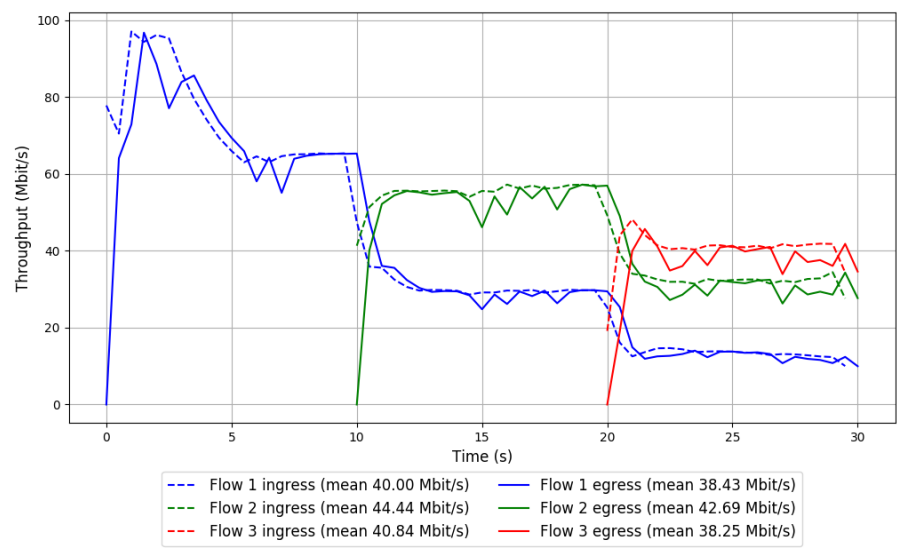
Run 2: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 45.89 Mbit/s)   Flow 1 egress (mean 44.20 Mbit/s)
Flow 2 ingress (mean 40.74 Mbit/s)   Flow 2 egress (mean 39.43 Mbit/s)
Flow 3 ingress (mean 40.62 Mbit/s)   Flow 3 egress (mean 38.39 Mbit/s)

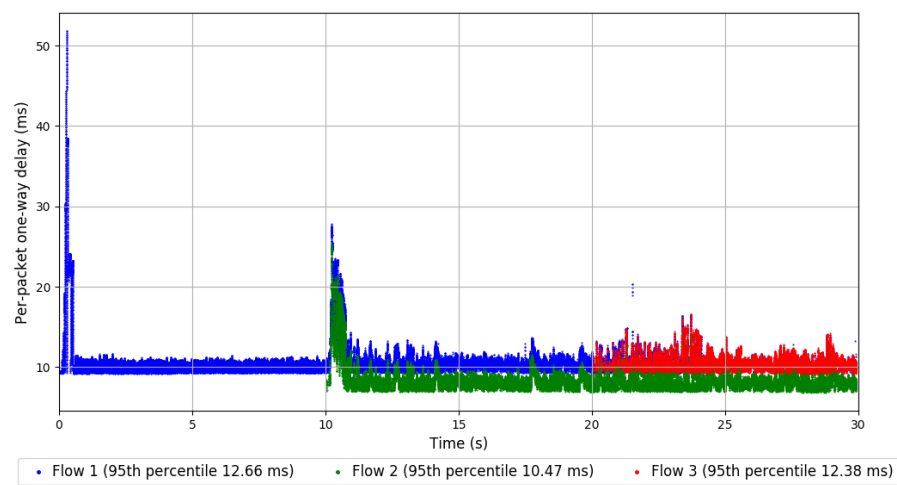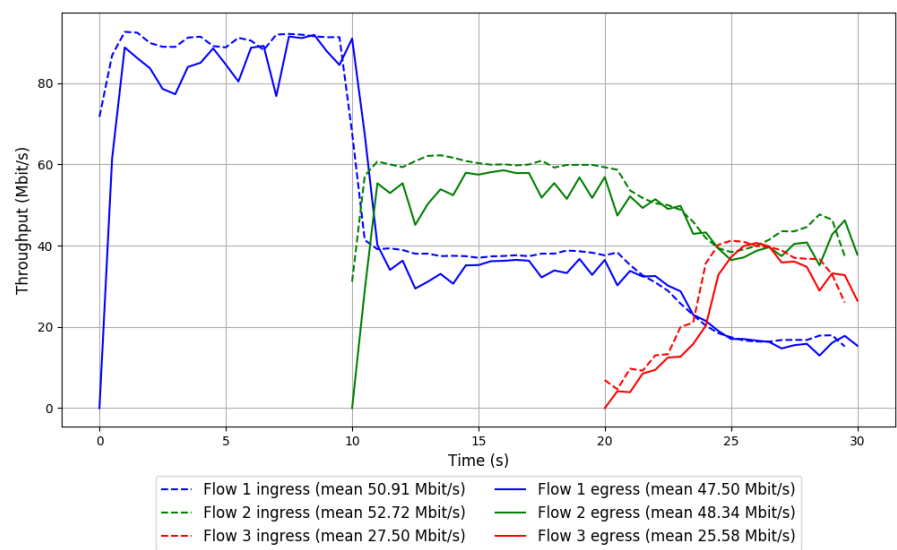Flow 1 (95th percentile 6.23 ms)   Flow 2 (95th percentile 4.97 ms)   Flow 3 (95th percentile 5.01 ms)

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-11 03:28:48
End at: 2018-09-11 03:29:18
Local clock offset: 1.226 ms
Remote clock offset: -7.41 ms


# Below is generated by plot.py at 2018-09-11 04:30:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.46 Mbit/s
95th percentile per-packet one-way delay: 7.127 ms
Loss rate: 4.31%
-- Flow 1:
Average throughput: 38.43 Mbit/s
95th percentile per-packet one-way delay: 8.124 ms
Loss rate: 3.94%
-- Flow 2:
Average throughput: 42.69 Mbit/s
95th percentile per-packet one-way delay: 4.950 ms
Loss rate: 3.93%
-- Flow 3:
Average throughput: 38.25 Mbit/s
95th percentile per-packet one-way delay: 4.436 ms
Loss rate: 6.22%
```
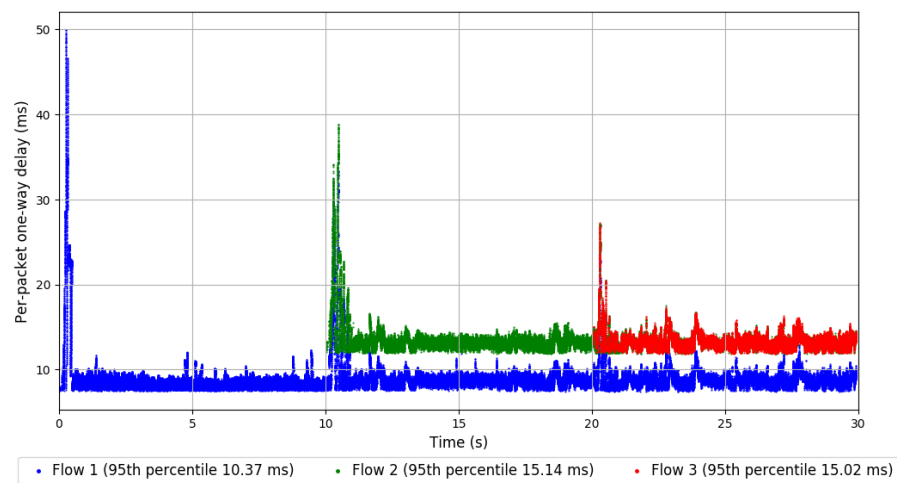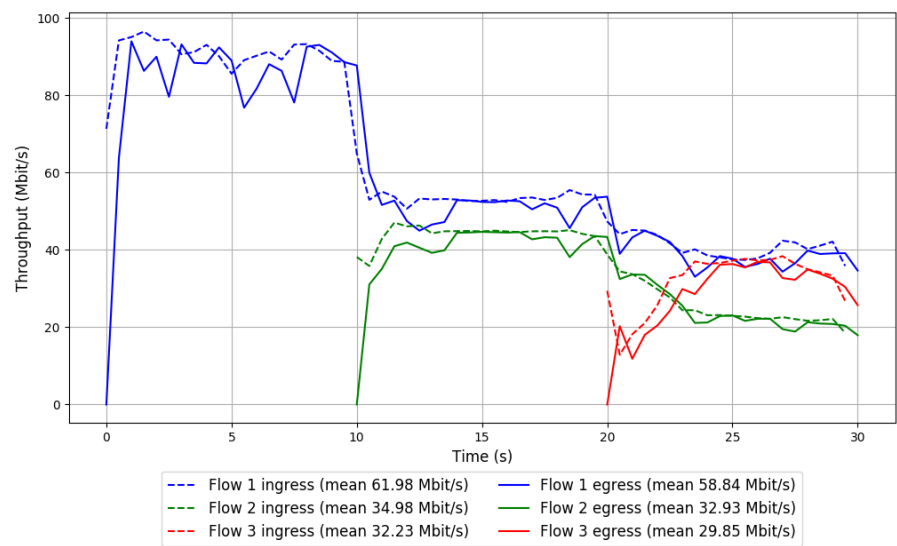
Run 3: Report of Indigo-Muses — Data Link

- - - Flow 1 ingress (mean 40.00 Mbit/s) ——— Flow 1 egress (mean 38.43 Mbit/s)
- - - Flow 2 ingress (mean 44.44 Mbit/s) ——— Flow 2 egress (mean 42.69 Mbit/s)
- - - Flow 3 ingress (mean 40.84 Mbit/s) ——— Flow 3 egress (mean 38.25 Mbit/s)

- Flow 1 (95th percentile 8.12 ms) - Flow 2 (95th percentile 4.95 ms) - Flow 3 (95th percentile 4.44 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-09-11 03:49:49
End at: 2018-09-11 03:50:19
Local clock offset: -0.658 ms
Remote clock offset: -3.082 ms


# Below is generated by plot.py at 2018-09-11 04:30:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.11 Mbit/s
95th percentile per-packet one-way delay: 12.089 ms
Loss rate: 7.32%
-- Flow 1:
Average throughput: 47.50 Mbit/s
95th percentile per-packet one-way delay: 12.659 ms
Loss rate: 6.71%
-- Flow 2:
Average throughput: 48.34 Mbit/s
95th percentile per-packet one-way delay: 10.473 ms
Loss rate: 8.30%
-- Flow 3:
Average throughput: 25.58 Mbit/s
95th percentile per-packet one-way delay: 12.379 ms
Loss rate: 6.98%
```

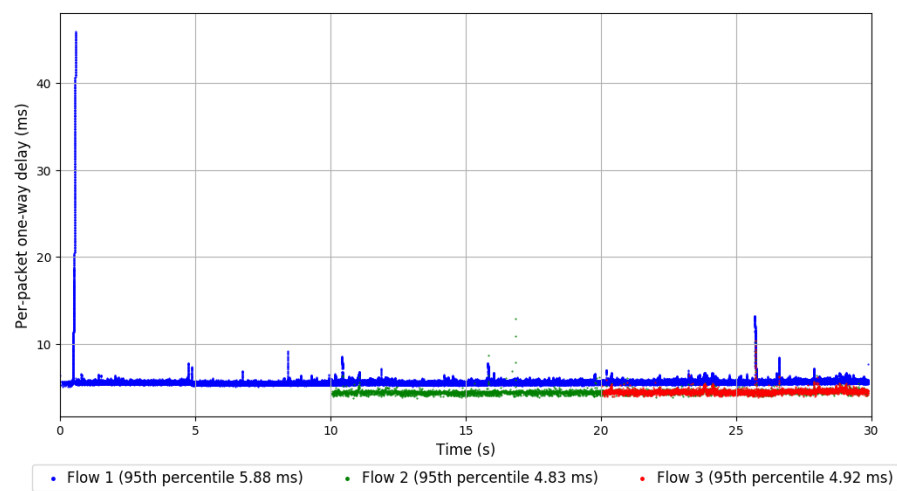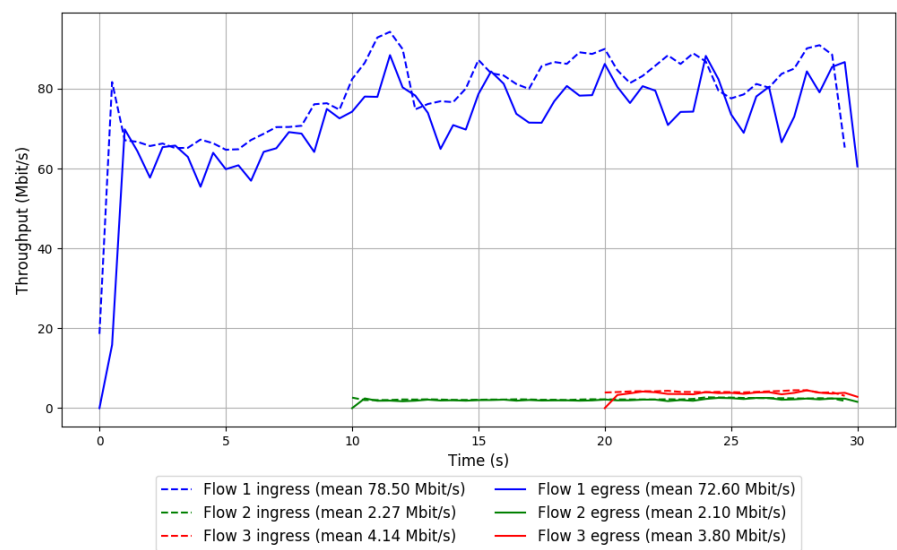Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-09-11 04:11:02
End at: 2018-09-11 04:11:32
Local clock offset: 0.478 ms
Remote clock offset: -2.428 ms


# Below is generated by plot.py at 2018-09-11 04:30:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.60 Mbit/s
95th percentile per-packet one-way delay: 14.243 ms
Loss rate: 5.52%
-- Flow 1:
Average throughput: 58.84 Mbit/s
95th percentile per-packet one-way delay: 10.373 ms
Loss rate: 5.06%
-- Flow 2:
Average throughput: 32.93 Mbit/s
95th percentile per-packet one-way delay: 15.136 ms
Loss rate: 5.86%
-- Flow 3:
Average throughput: 29.85 Mbit/s
95th percentile per-packet one-way delay: 15.021 ms
Loss rate: 7.42%
```

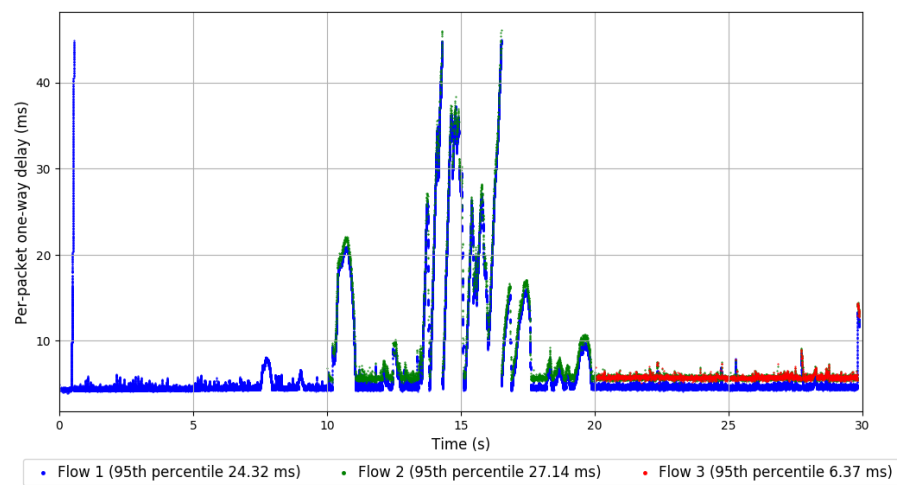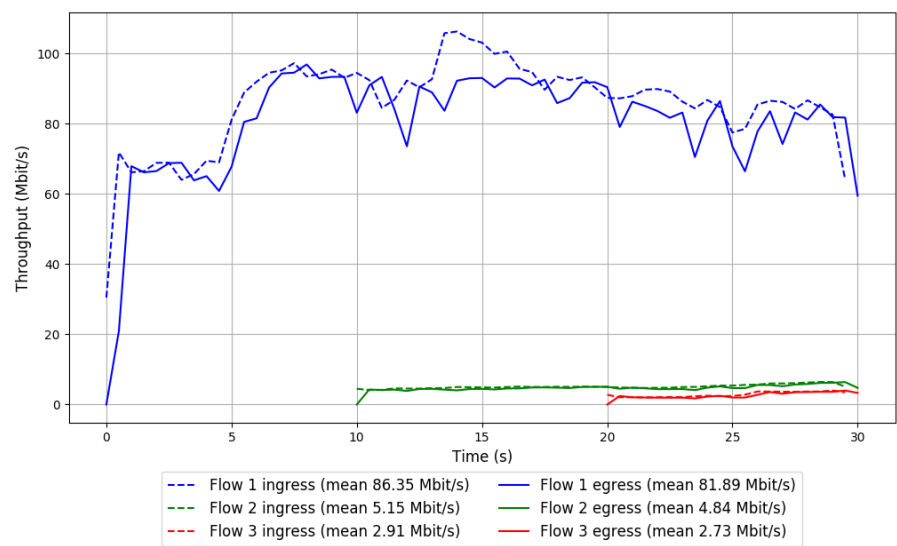Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 61.98 Mbit/s) --- Flow 1 egress (mean 58.84 Mbit/s)
Flow 2 ingress (mean 34.98 Mbit/s) --- Flow 2 egress (mean 32.93 Mbit/s)
Flow 3 ingress (mean 32.23 Mbit/s) --- Flow 3 egress (mean 29.85 Mbit/s)

Flow 1 (95th percentile 10.37 ms)   Flow 2 (95th percentile 15.14 ms)   Flow 3 (95th percentile 15.02 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-11 02:50:10
End at: 2018-09-11 02:50:40
Local clock offset: 1.763 ms
Remote clock offset: -5.752 ms


# Below is generated by plot.py at 2018-09-11 04:30:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.24 Mbit/s
95th percentile per-packet one-way delay: 5.872 ms
Loss rate: 7.53%
-- Flow 1:
Average throughput: 72.60 Mbit/s
95th percentile per-packet one-way delay: 5.881 ms
Loss rate: 7.52%
-- Flow 2:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 4.827 ms
Loss rate: 7.73%
-- Flow 3:
Average throughput: 3.80 Mbit/s
95th percentile per-packet one-way delay: 4.920 ms
Loss rate: 8.29%
```

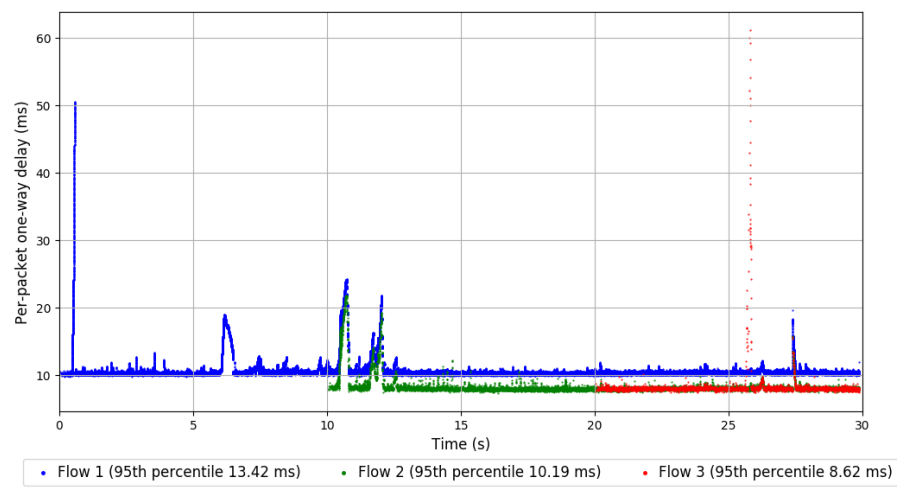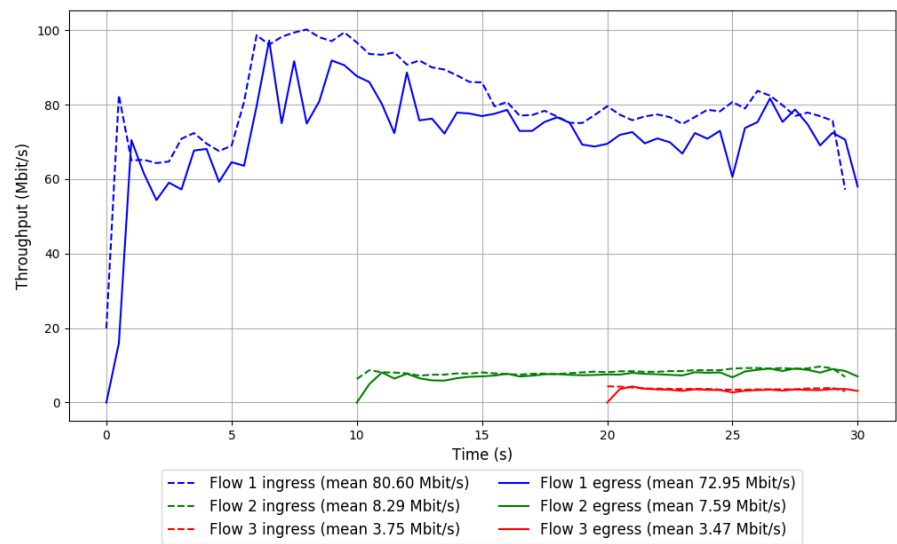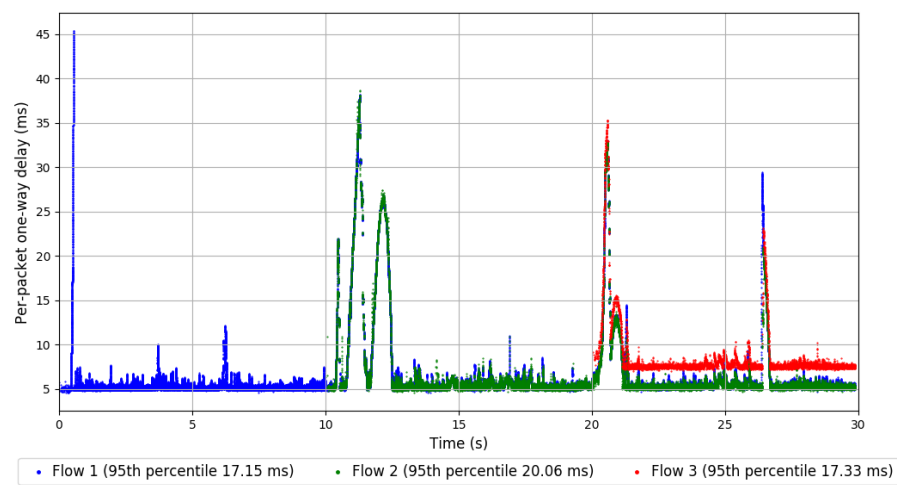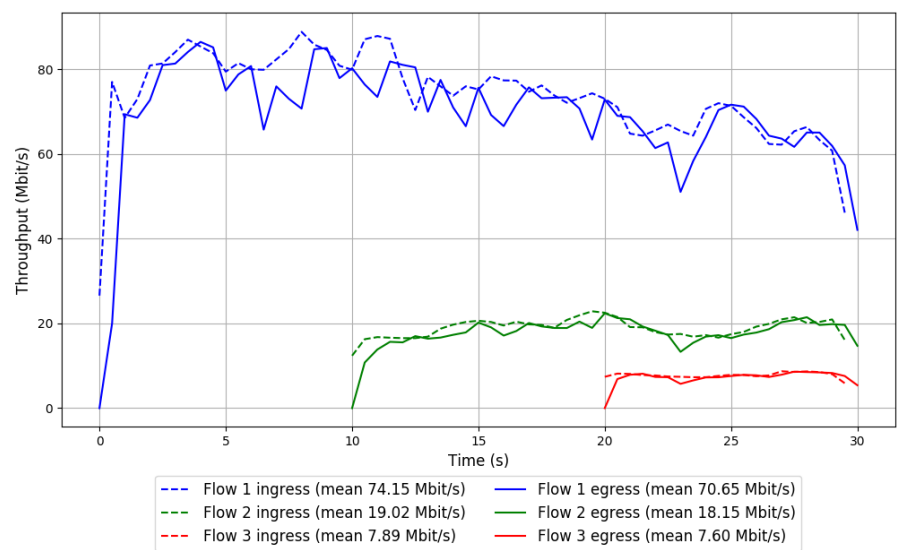Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-11 03:11:16
End at: 2018-09-11 03:11:46
Local clock offset: 1.706 ms
Remote clock offset: -5.643 ms


# Below is generated by plot.py at 2018-09-11 04:30:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.01 Mbit/s
95th percentile per-packet one-way delay: 24.292 ms
Loss rate: 5.18%
-- Flow 1:
Average throughput: 81.89 Mbit/s
95th percentile per-packet one-way delay: 24.317 ms
Loss rate: 5.14%
-- Flow 2:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 27.137 ms
Loss rate: 5.91%
-- Flow 3:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 6.366 ms
Loss rate: 6.06%
```

Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 86.35 Mbit/s) --- Flow 1 egress (mean 81.89 Mbit/s)
Flow 2 ingress (mean 5.15 Mbit/s) --- Flow 2 egress (mean 4.84 Mbit/s)
Flow 3 ingress (mean 2.91 Mbit/s) --- Flow 3 egress (mean 2.73 Mbit/s)

Flow 1 (95th percentile 24.32 ms)   Flow 2 (95th percentile 27.14 ms)   Flow 3 (95th percentile 6.37 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-11 03:32:16
End at: 2018-09-11 03:32:46
Local clock offset: 0.419 ms
Remote clock offset: -2.712 ms


# Below is generated by plot.py at 2018-09-11 04:31:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.14 Mbit/s
95th percentile per-packet one-way delay: 13.145 ms
Loss rate: 9.41%
-- Flow 1:
Average throughput: 72.95 Mbit/s
95th percentile per-packet one-way delay: 13.424 ms
Loss rate: 9.50%
-- Flow 2:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 10.191 ms
Loss rate: 8.45%
-- Flow 3:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 8.624 ms
Loss rate: 7.43%
```
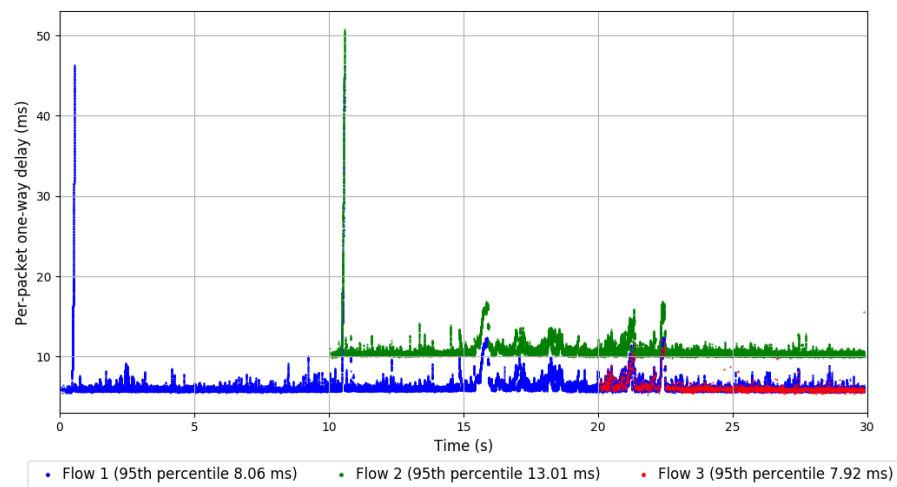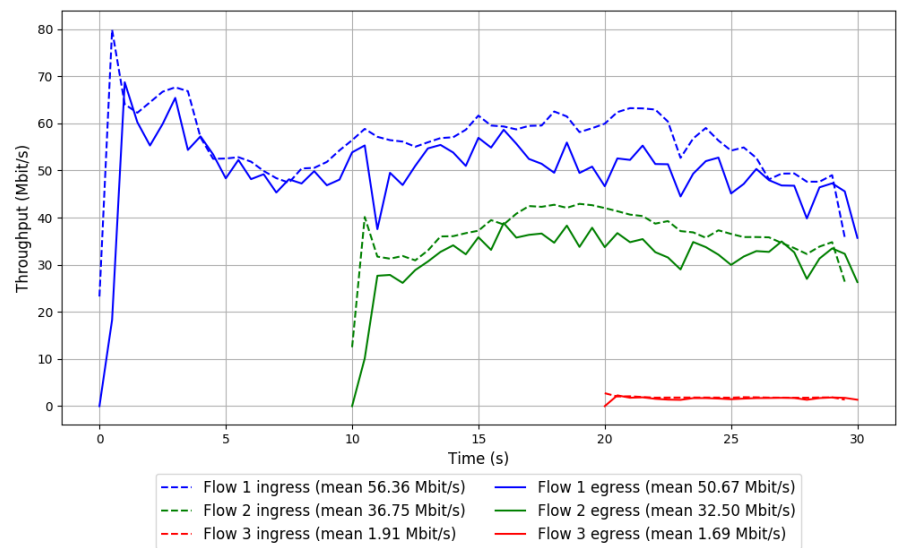
Run 3: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 80.60 Mbit/s) —— Flow 1 egress (mean 72.95 Mbit/s)
- - - Flow 2 ingress (mean 8.29 Mbit/s) —— Flow 2 egress (mean 7.59 Mbit/s)
- - - Flow 3 ingress (mean 3.75 Mbit/s) —— Flow 3 egress (mean 3.47 Mbit/s)

• Flow 1 (95th percentile 13.42 ms)　　• Flow 2 (95th percentile 10.19 ms)　　• Flow 3 (95th percentile 8.62 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-11 03:53:19
End at: 2018-09-11 03:53:49
Local clock offset: 0.095 ms
Remote clock offset: -4.324 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.22 Mbit/s
95th percentile per-packet one-way delay: 17.743 ms
Loss rate: 4.68%
-- Flow 1:
Average throughput: 70.65 Mbit/s
95th percentile per-packet one-way delay: 17.147 ms
Loss rate: 4.73%
-- Flow 2:
Average throughput: 18.15 Mbit/s
95th percentile per-packet one-way delay: 20.059 ms
Loss rate: 4.59%
-- Flow 3:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 17.329 ms
Loss rate: 3.77%
```
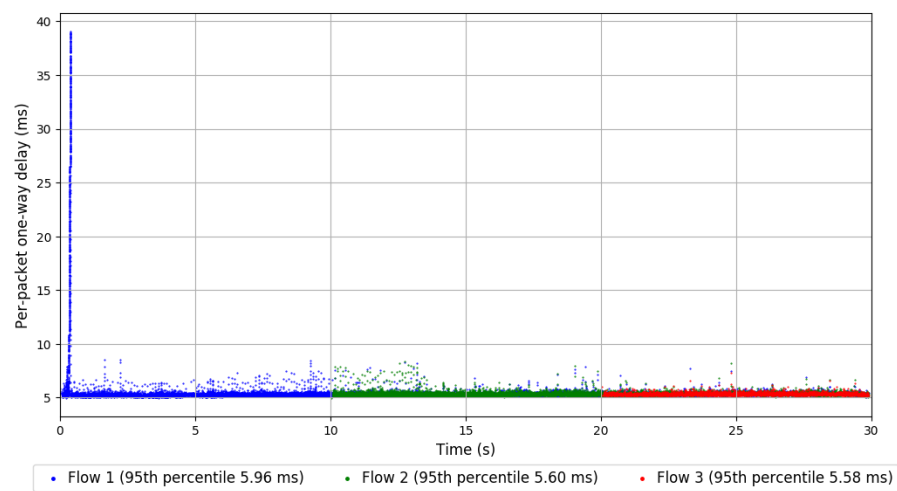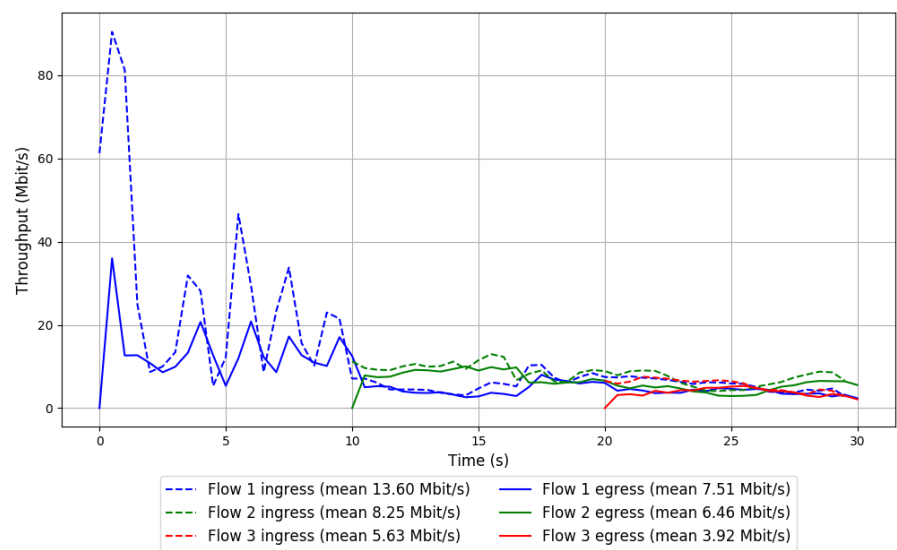
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-09-11 04:14:42
End at: 2018-09-11 04:15:12
Local clock offset: 1.631 ms
Remote clock offset: -3.341 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.83 Mbit/s
95th percentile per-packet one-way delay: 11.431 ms
Loss rate: 10.55%
-- Flow 1:
Average throughput: 50.67 Mbit/s
95th percentile per-packet one-way delay: 8.060 ms
Loss rate: 10.10%
-- Flow 2:
Average throughput: 32.50 Mbit/s
95th percentile per-packet one-way delay: 13.014 ms
Loss rate: 11.56%
-- Flow 3:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 7.916 ms
Loss rate: 11.54%
```
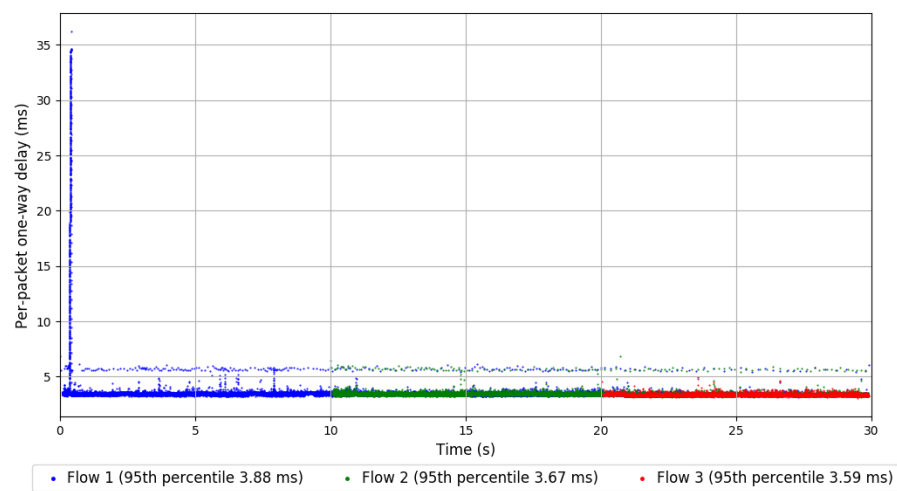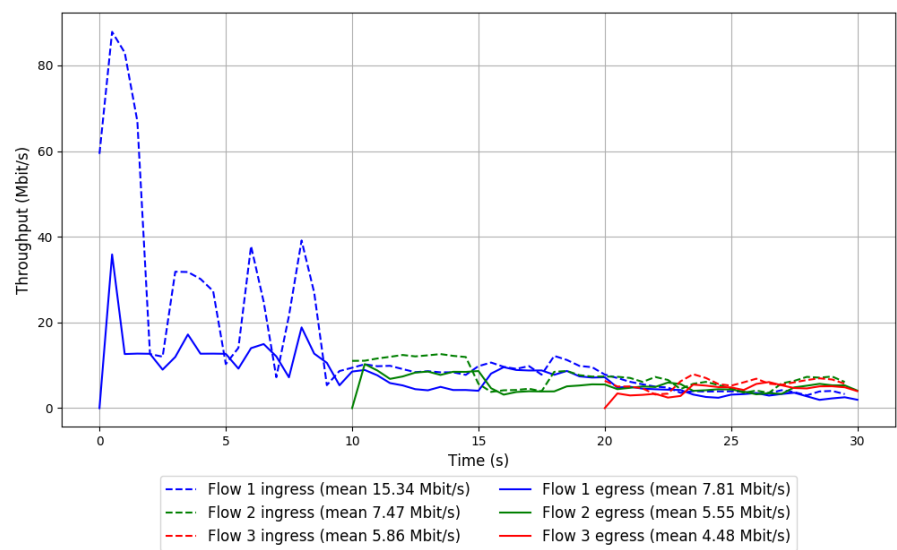
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 56.36 Mbit/s)   Flow 1 egress (mean 50.67 Mbit/s)
Flow 2 ingress (mean 36.75 Mbit/s)   Flow 2 egress (mean 32.50 Mbit/s)
Flow 3 ingress (mean 1.91 Mbit/s)   Flow 3 egress (mean 1.69 Mbit/s)

Flow 1 (95th percentile 8.06 ms)   Flow 2 (95th percentile 13.01 ms)   Flow 3 (95th percentile 7.92 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-11 02:57:14
End at: 2018-09-11 02:57:44
Local clock offset: 1.351 ms
Remote clock offset: -5.446 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 5.688 ms
Loss rate: 37.46%
-- Flow 1:
Average throughput: 7.51 Mbit/s
95th percentile per-packet one-way delay: 5.958 ms
Loss rate: 44.77%
-- Flow 2:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 5.603 ms
Loss rate: 21.74%
-- Flow 3:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 5.584 ms
Loss rate: 30.42%
```
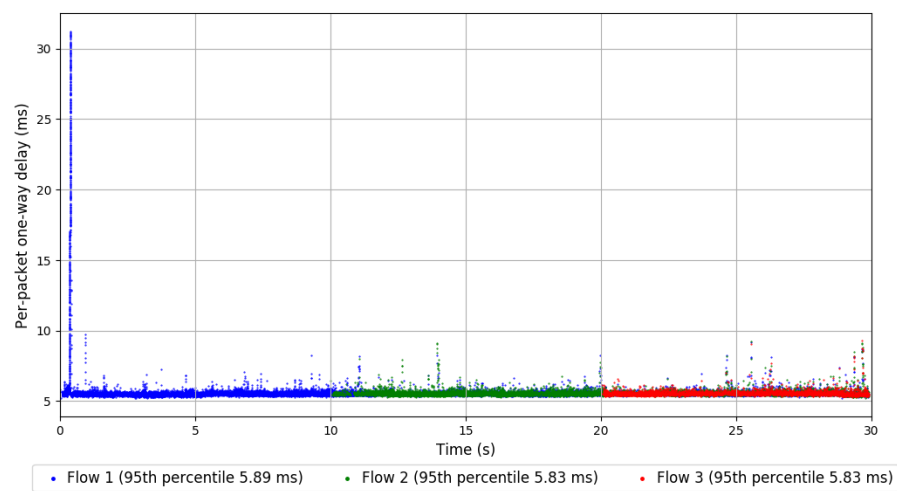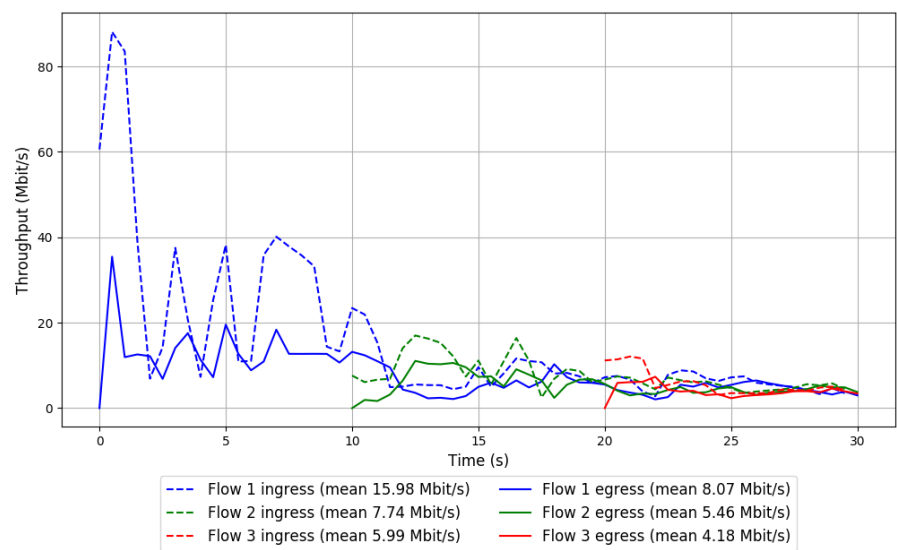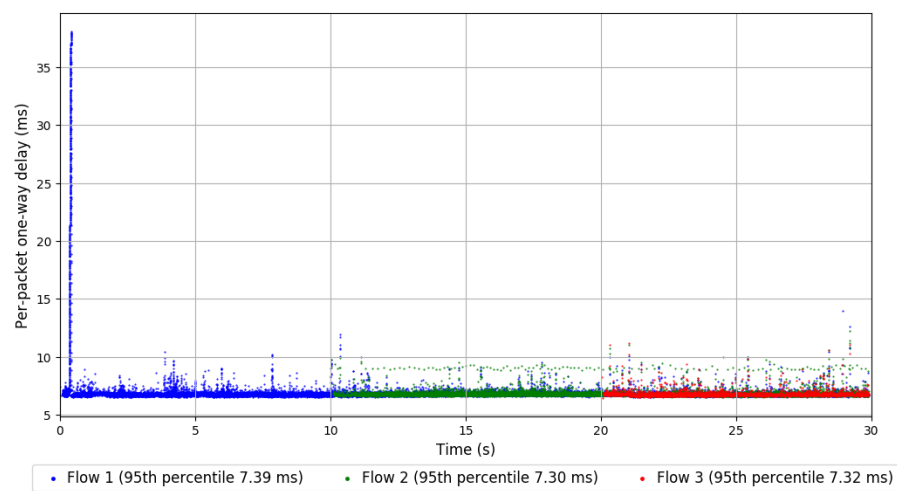
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 13.60 Mbit/s)   Flow 1 egress (mean 7.51 Mbit/s)
Flow 2 ingress (mean 8.25 Mbit/s)   Flow 2 egress (mean 6.46 Mbit/s)
Flow 3 ingress (mean 5.63 Mbit/s)   Flow 3 egress (mean 3.92 Mbit/s)

Flow 1 (95th percentile 5.96 ms)   Flow 2 (95th percentile 5.60 ms)   Flow 3 (95th percentile 5.58 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-11 03:18:24
End at: 2018-09-11 03:18:54
Local clock offset: 2.507 ms
Remote clock offset: -5.837 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 3.741 ms
Loss rate: 41.69%
-- Flow 1:
Average throughput: 7.81 Mbit/s
95th percentile per-packet one-way delay: 3.883 ms
Loss rate: 49.11%
-- Flow 2:
Average throughput: 5.55 Mbit/s
95th percentile per-packet one-way delay: 3.667 ms
Loss rate: 25.80%
-- Flow 3:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 3.591 ms
Loss rate: 23.67%
```
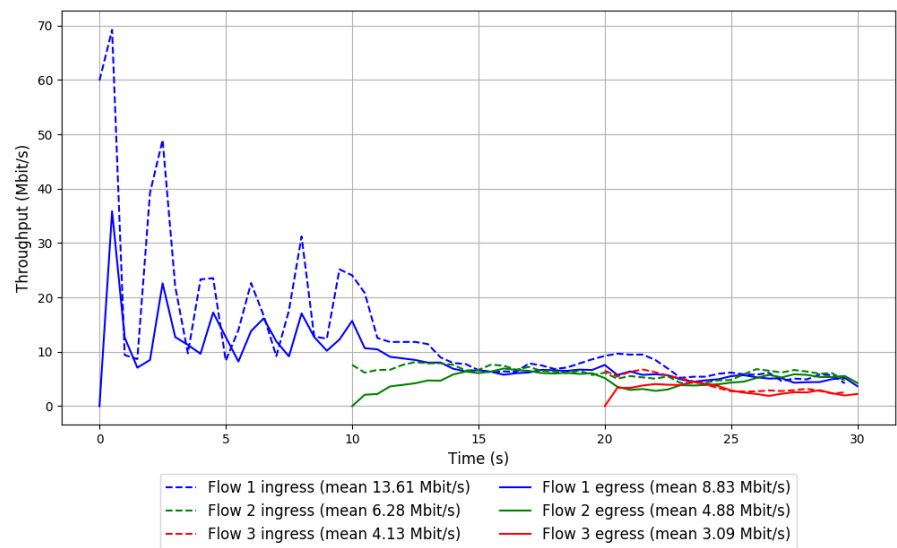
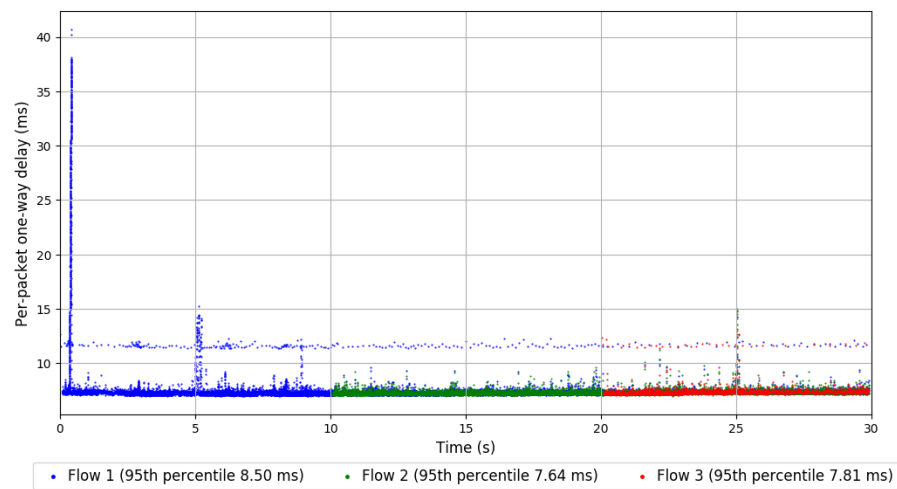Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-11 03:39:18
End at: 2018-09-11 03:39:48
Local clock offset: 0.79 ms
Remote clock offset: -3.922 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.08 Mbit/s
95th percentile per-packet one-way delay: 5.864 ms
Loss rate: 43.39%
-- Flow 1:
Average throughput: 8.07 Mbit/s
95th percentile per-packet one-way delay: 5.894 ms
Loss rate: 49.51%
-- Flow 2:
Average throughput: 5.46 Mbit/s
95th percentile per-packet one-way delay: 5.832 ms
Loss rate: 29.47%
-- Flow 3:
Average throughput: 4.18 Mbit/s
95th percentile per-packet one-way delay: 5.829 ms
Loss rate: 30.12%
```
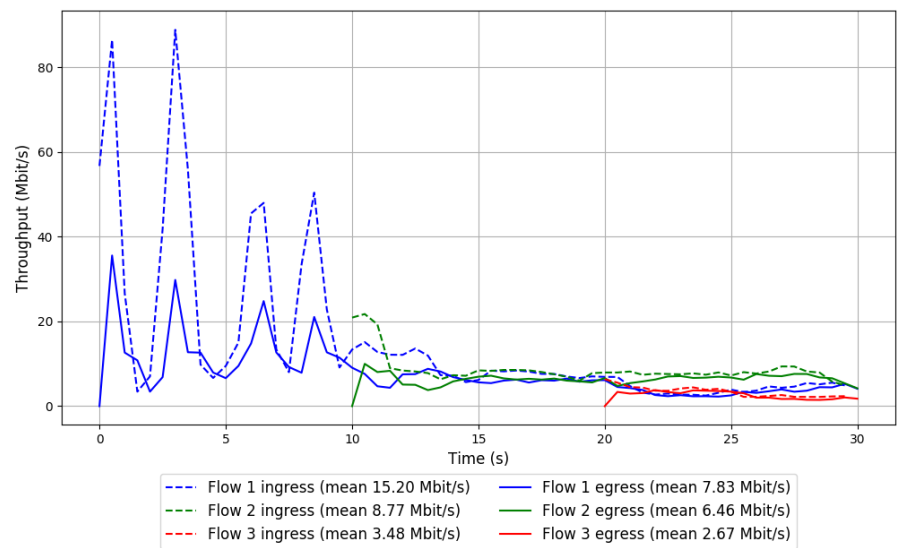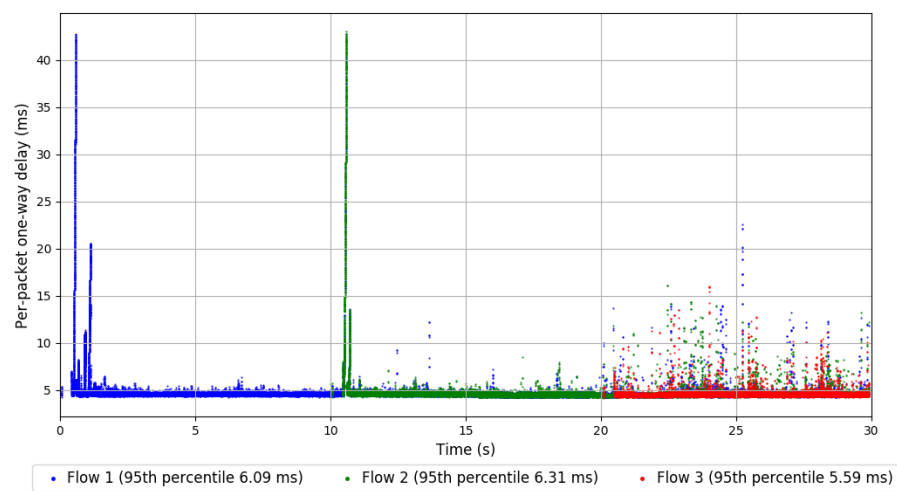
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 15.98 Mbit/s) --- Flow 1 egress (mean 8.07 Mbit/s)
Flow 2 ingress (mean 7.74 Mbit/s) --- Flow 2 egress (mean 5.46 Mbit/s)
Flow 3 ingress (mean 5.99 Mbit/s) --- Flow 3 egress (mean 4.18 Mbit/s)

Flow 1 (95th percentile 5.89 ms)   Flow 2 (95th percentile 5.83 ms)   Flow 3 (95th percentile 5.83 ms)

100

```
Run 4: Statistics of PCC-Expr

Start at: 2018-09-11 04:00:26
End at: 2018-09-11 04:00:56
Local clock offset: -0.009 ms
Remote clock offset: -3.001 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 7.347 ms
Loss rate: 31.62%
-- Flow 1:
Average throughput: 8.83 Mbit/s
95th percentile per-packet one-way delay: 7.388 ms
Loss rate: 35.11%
-- Flow 2:
Average throughput: 4.88 Mbit/s
95th percentile per-packet one-way delay: 7.305 ms
Loss rate: 22.37%
-- Flow 3:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 7.320 ms
Loss rate: 25.06%
```
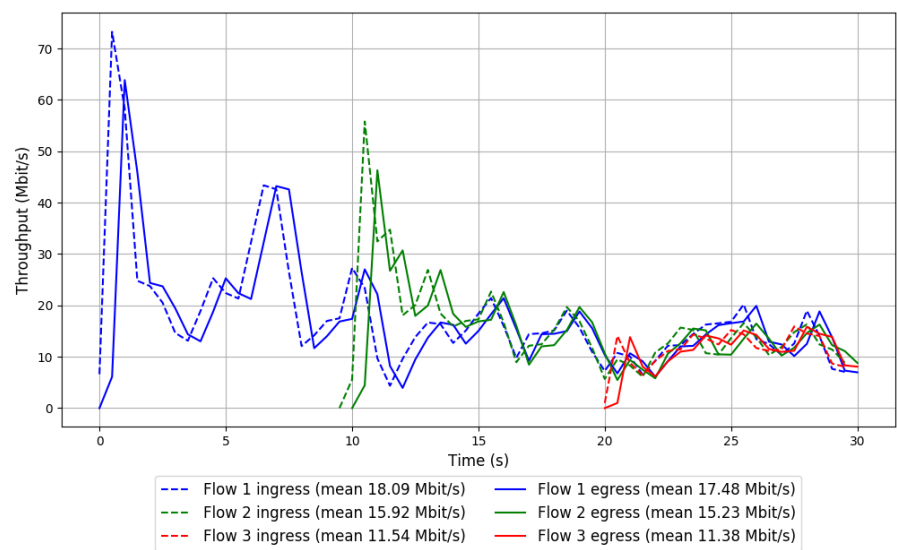
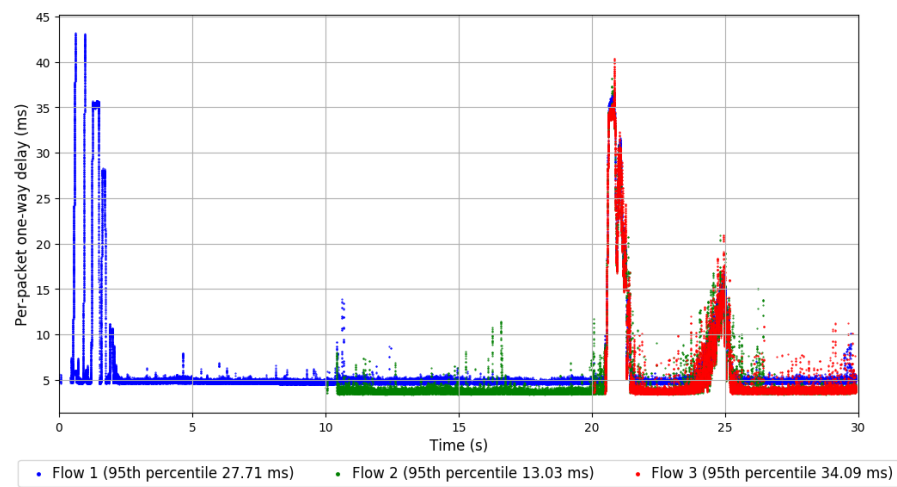Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-11 04:21:43
End at: 2018-09-11 04:22:13
Local clock offset: 0.375 ms
Remote clock offset: -3.324 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.02 Mbit/s
95th percentile per-packet one-way delay: 7.863 ms
Loss rate: 41.32%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 8.503 ms
Loss rate: 48.47%
-- Flow 2:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 7.641 ms
Loss rate: 26.29%
-- Flow 3:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 7.807 ms
Loss rate: 23.09%
```
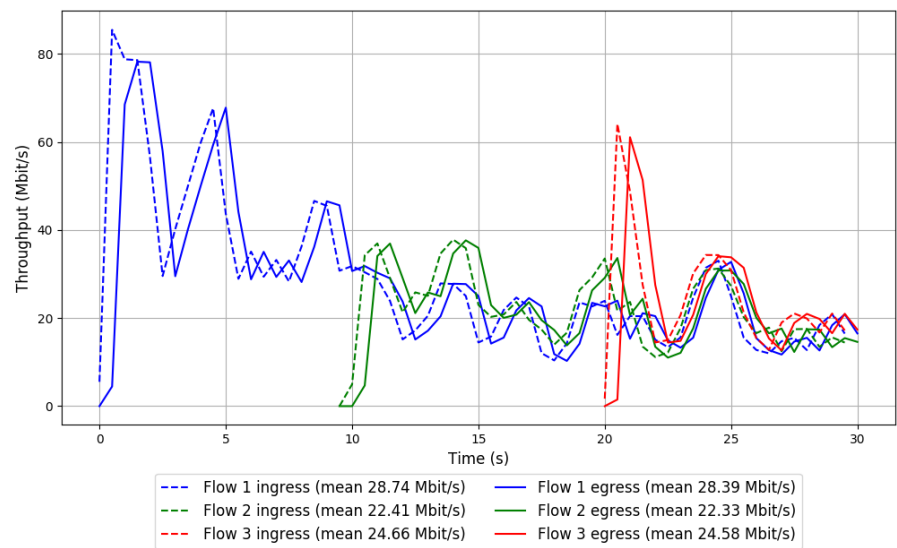
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 15.20 Mbit/s) Flow 1 egress (mean 7.83 Mbit/s)
Flow 2 ingress (mean 8.77 Mbit/s)   Flow 2 egress (mean 6.46 Mbit/s)
Flow 3 ingress (mean 3.48 Mbit/s)   Flow 3 egress (mean 2.67 Mbit/s)

Flow 1 (95th percentile 8.50 ms)   Flow 2 (95th percentile 7.64 ms)   Flow 3 (95th percentile 7.81 ms)
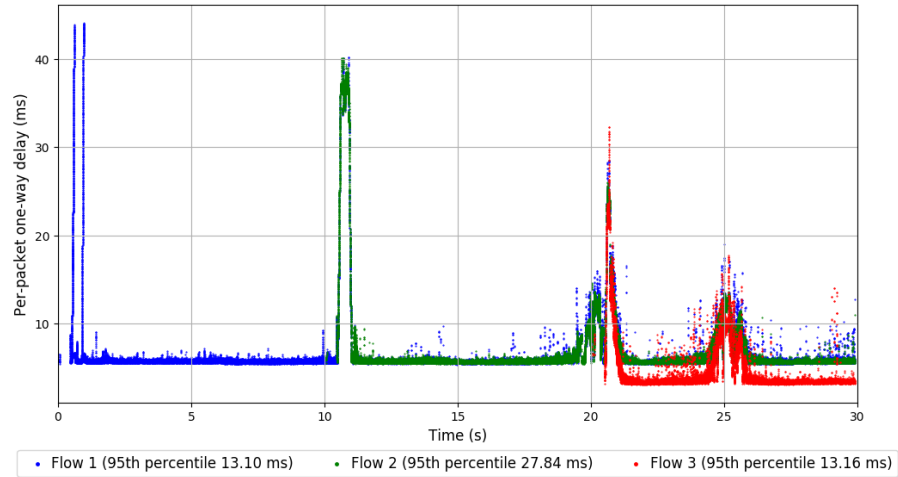
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-11 02:45:29
End at: 2018-09-11 02:45:59
Local clock offset: 2.151 ms
Remote clock offset: -5.028 ms


# Below is generated by plot.py at 2018-09-11 04:31:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 31.37 Mbit/s
95th percentile per-packet one-way delay: 6.018 ms
Loss rate: 3.45%
-- Flow 1:
Average throughput: 17.48 Mbit/s
95th percentile per-packet one-way delay: 6.092 ms
Loss rate: 3.36%
-- Flow 2:
Average throughput: 15.23 Mbit/s
95th percentile per-packet one-way delay: 6.314 ms
Loss rate: 4.32%
-- Flow 3:
Average throughput: 11.38 Mbit/s
95th percentile per-packet one-way delay: 5.590 ms
Loss rate: 1.43%
```
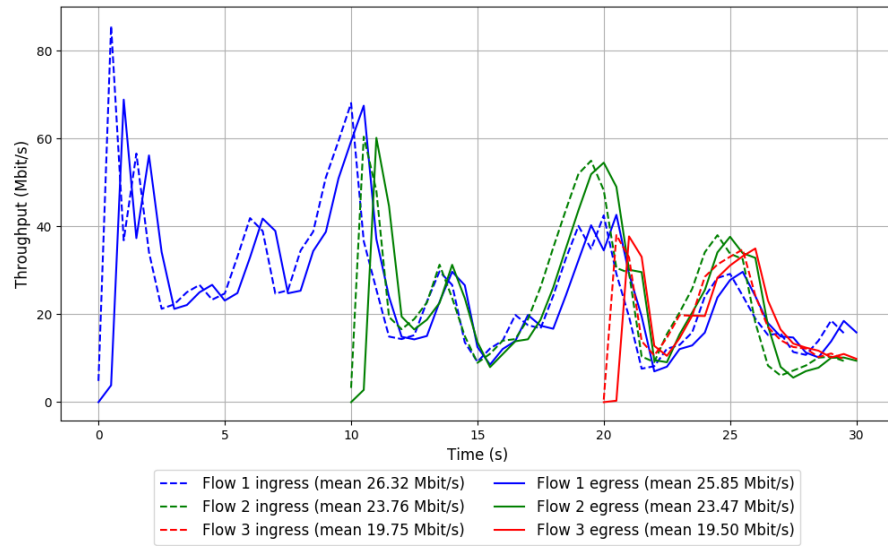
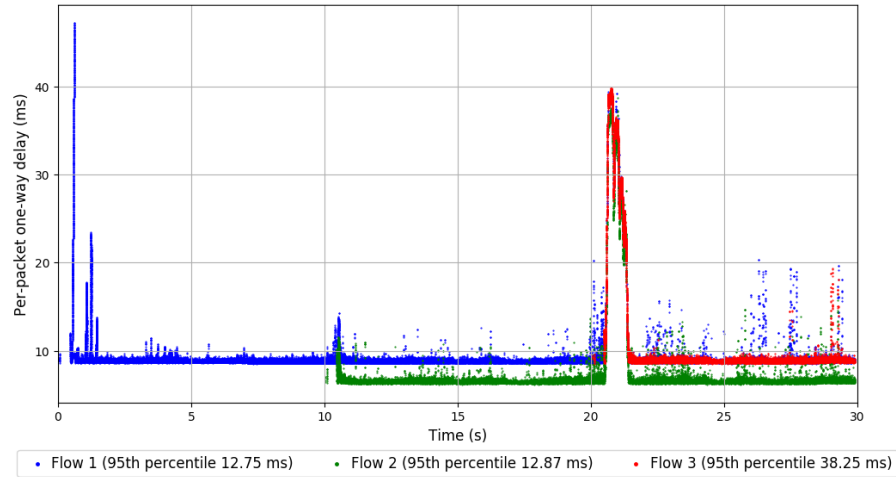Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-11 03:06:36
End at: 2018-09-11 03:07:06
Local clock offset: 2.139 ms
Remote clock offset: -5.948 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.36 Mbit/s
95th percentile per-packet one-way delay: 27.365 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 28.39 Mbit/s
95th percentile per-packet one-way delay: 27.711 ms
Loss rate: 1.23%
-- Flow 2:
Average throughput: 22.33 Mbit/s
95th percentile per-packet one-way delay: 13.025 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 24.58 Mbit/s
95th percentile per-packet one-way delay: 34.092 ms
Loss rate: 0.34%
```
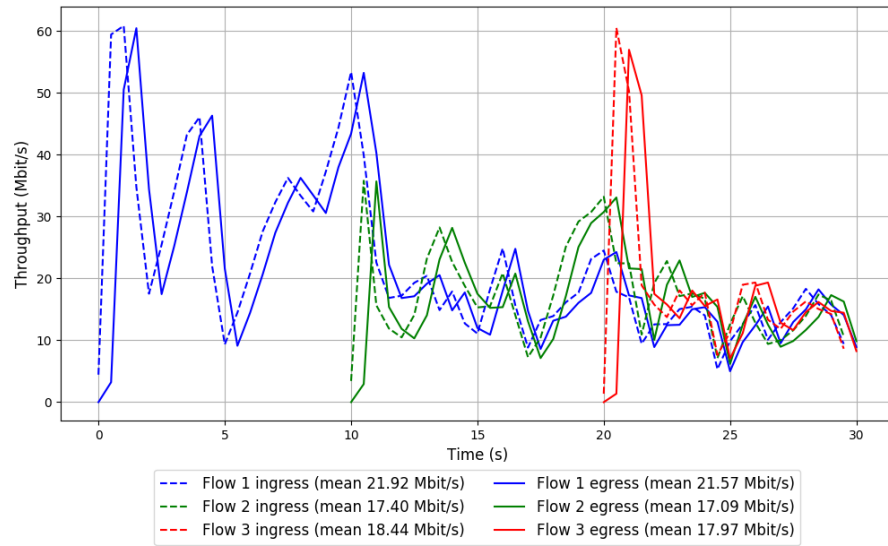
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-11 03:27:39
End at: 2018-09-11 03:28:09
Local clock offset: 1.926 ms
Remote clock offset: -6.348 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.90 Mbit/s
95th percentile per-packet one-way delay: 15.430 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 25.85 Mbit/s
95th percentile per-packet one-way delay: 13.102 ms
Loss rate: 1.76%
-- Flow 2:
Average throughput: 23.47 Mbit/s
95th percentile per-packet one-way delay: 27.840 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 19.50 Mbit/s
95th percentile per-packet one-way delay: 13.159 ms
Loss rate: 1.33%
```
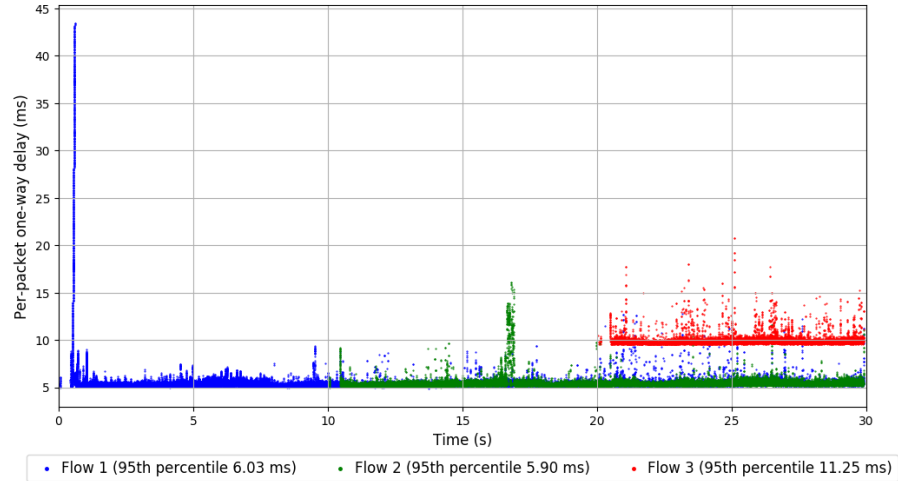
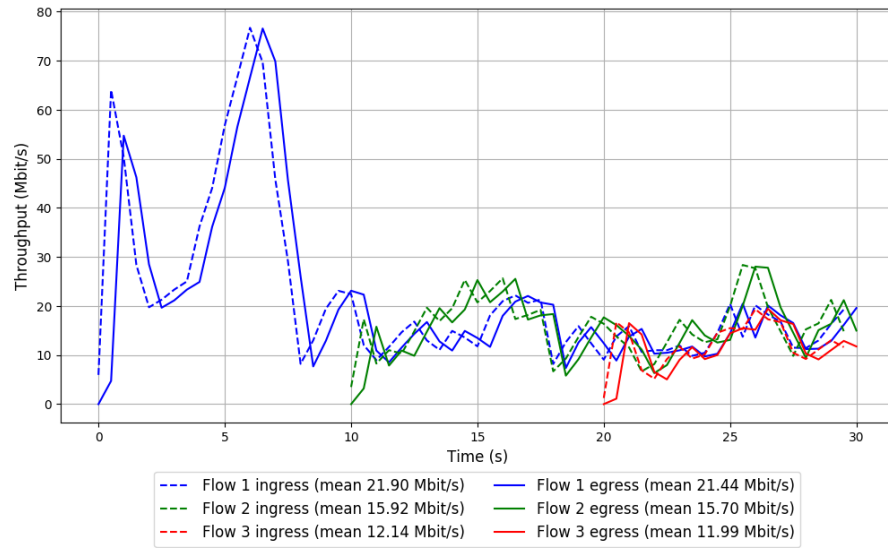Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-09-11 03:48:40
End at: 2018-09-11 03:49:10
Local clock offset: -0.29 ms
Remote clock offset: -3.336 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.86 Mbit/s
95th percentile per-packet one-way delay: 25.975 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 21.57 Mbit/s
95th percentile per-packet one-way delay: 12.752 ms
Loss rate: 1.62%
-- Flow 2:
Average throughput: 17.09 Mbit/s
95th percentile per-packet one-way delay: 12.868 ms
Loss rate: 1.76%
-- Flow 3:
Average throughput: 17.97 Mbit/s
95th percentile per-packet one-way delay: 38.249 ms
Loss rate: 2.56%
```
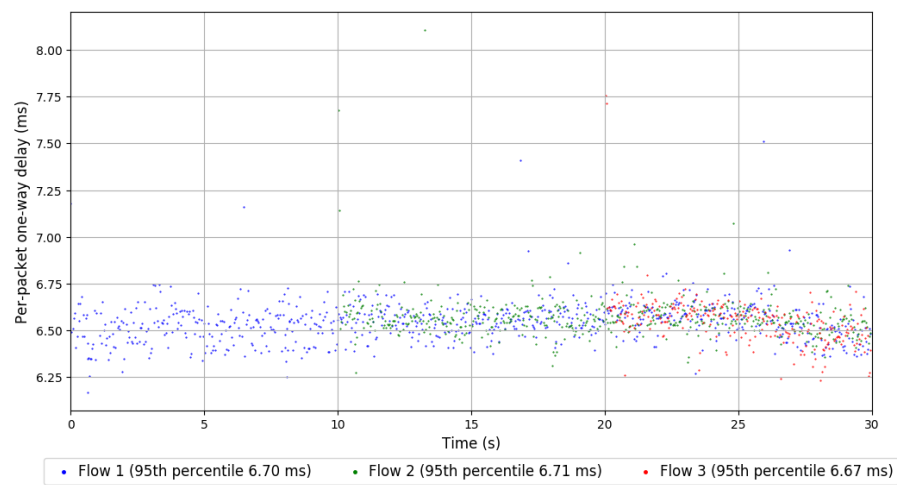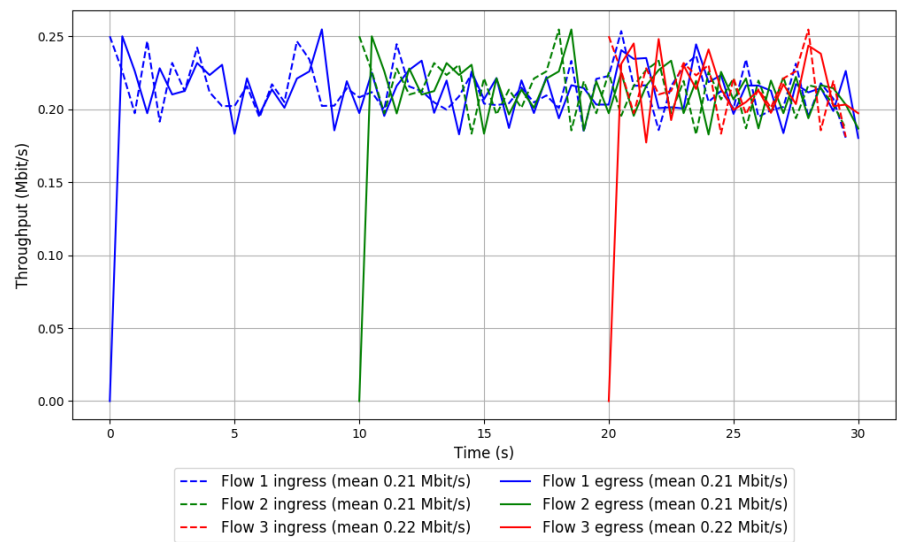
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-09-11 04:09:53
End at: 2018-09-11 04:10:23
Local clock offset: 0.47 ms
Remote clock offset: -4.776 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.83 Mbit/s
95th percentile per-packet one-way delay: 9.948 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 21.44 Mbit/s
95th percentile per-packet one-way delay: 6.030 ms
Loss rate: 2.12%
-- Flow 2:
Average throughput: 15.70 Mbit/s
95th percentile per-packet one-way delay: 5.901 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 11.250 ms
Loss rate: 1.20%
```
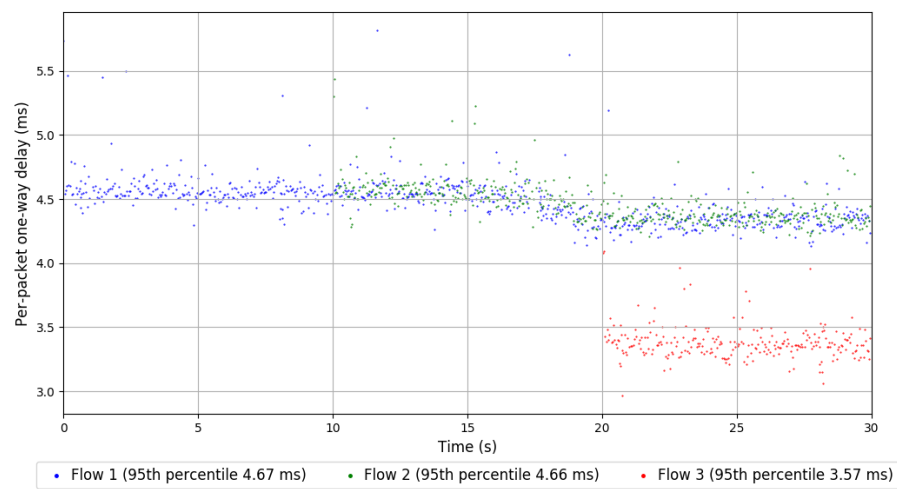
Run 5: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 21.90 Mbit/s) —— Flow 1 egress (mean 21.44 Mbit/s)
- - - Flow 2 ingress (mean 15.92 Mbit/s) —— Flow 2 egress (mean 15.70 Mbit/s)
- - - Flow 3 ingress (mean 12.14 Mbit/s) —— Flow 3 egress (mean 11.99 Mbit/s)

- Flow 1 (95th percentile 6.03 ms)   - Flow 2 (95th percentile 5.90 ms)   - Flow 3 (95th percentile 11.25 ms)
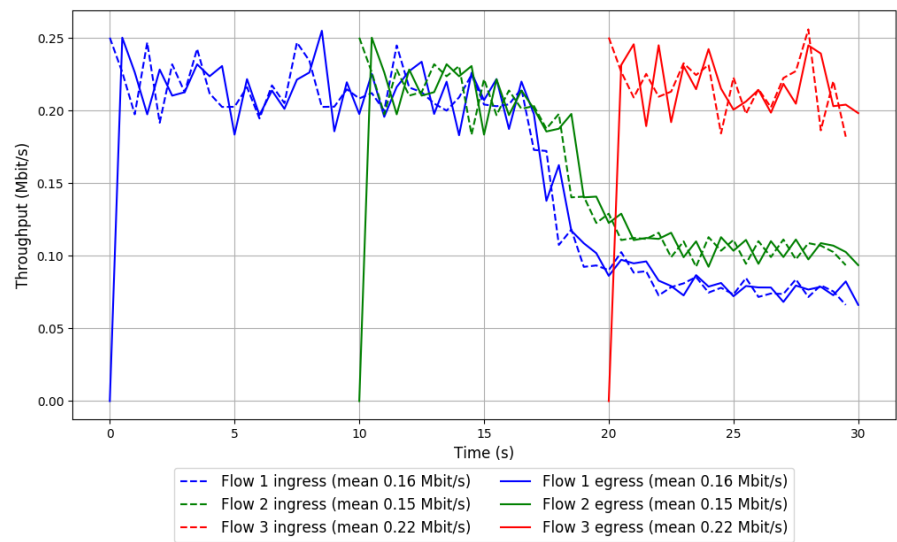
```
Run 1: Statistics of SCReAM

Start at: 2018-09-11 02:49:03
End at: 2018-09-11 02:49:33
Local clock offset: 1.373 ms
Remote clock offset: -5.016 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 6.695 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 6.696 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 6.707 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 6.672 ms
Loss rate: 0.00%
```
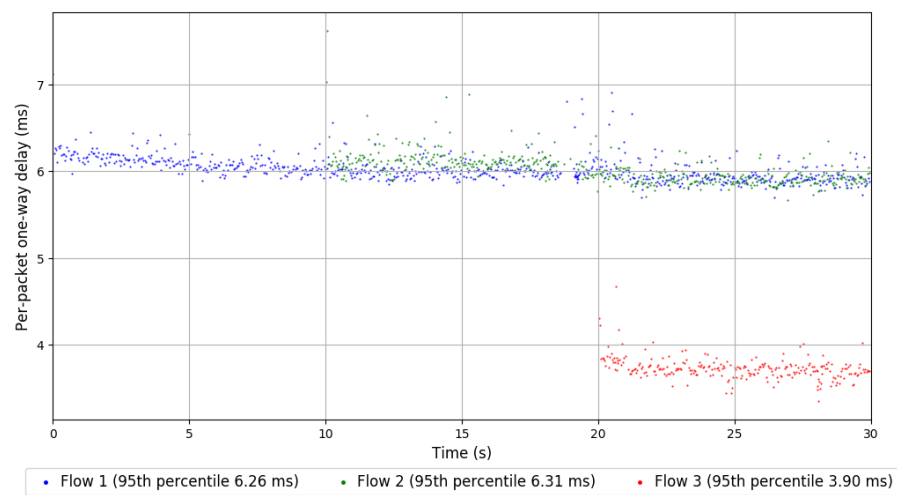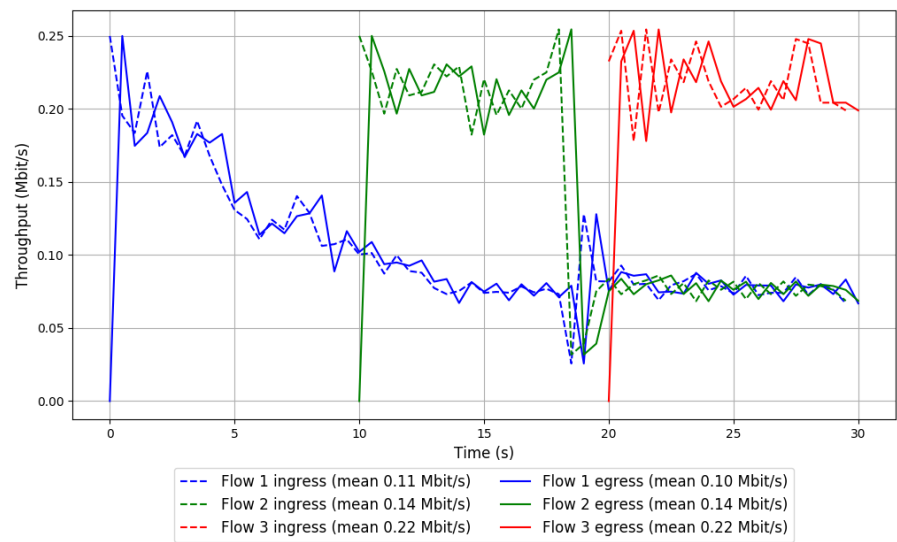
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-09-11 03:10:10
End at: 2018-09-11 03:10:40
Local clock offset: 2.804 ms
Remote clock offset: -5.564 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 4.654 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 4.673 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 4.661 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 3.569 ms
Loss rate: 0.00%
```
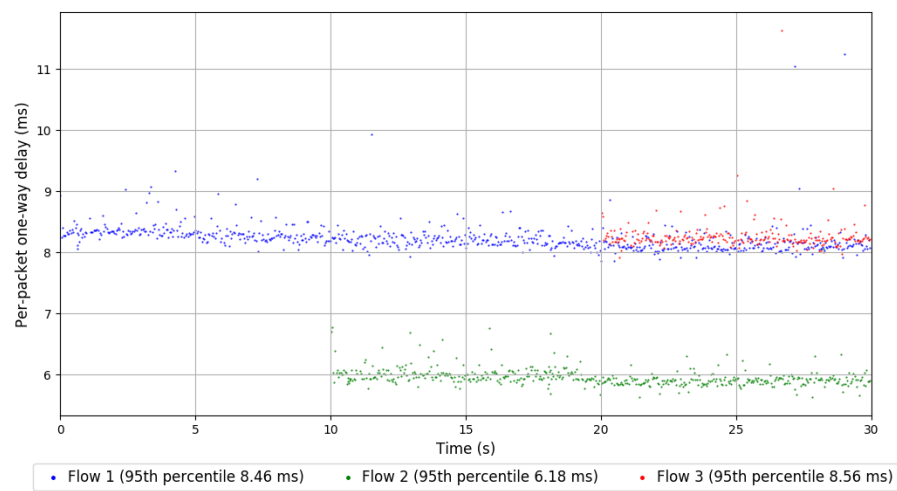
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-09-11 03:31:10
End at: 2018-09-11 03:31:40
Local clock offset: 1.346 ms
Remote clock offset: -6.058 ms

# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 6.240 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 6.261 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 6.309 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 3.900 ms
Loss rate: 0.00%
```
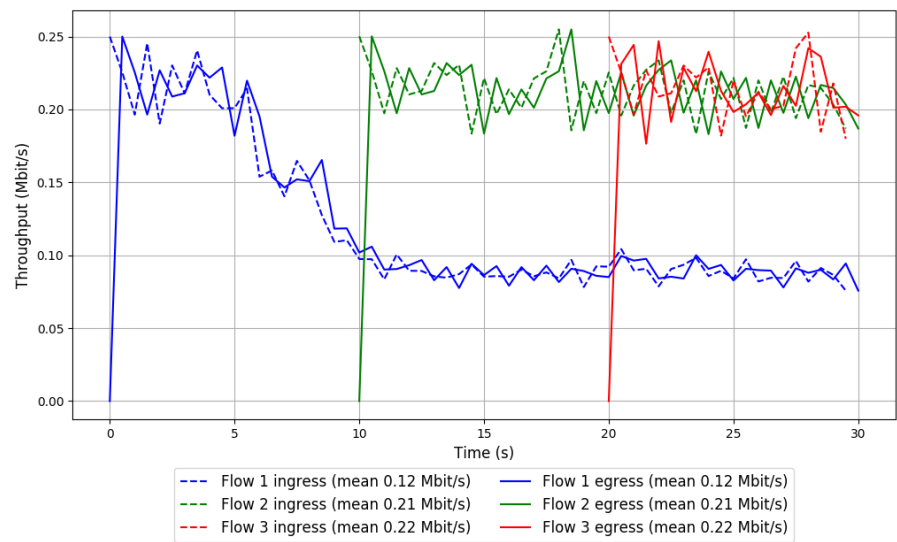
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-09-11 03:52:13
End at: 2018-09-11 03:52:43
Local clock offset: -1.123 ms
Remote clock offset: -4.645 ms


# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 8.437 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 8.465 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 6.177 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 8.557 ms
Loss rate: 0.00%
```
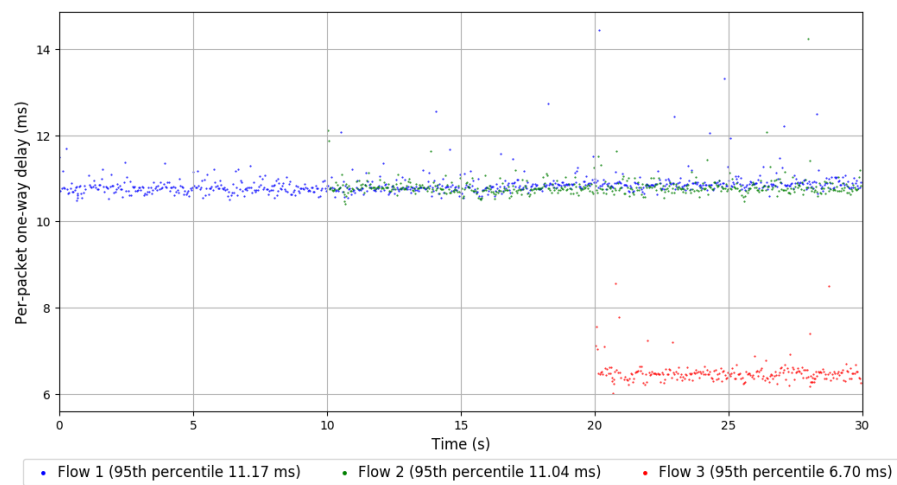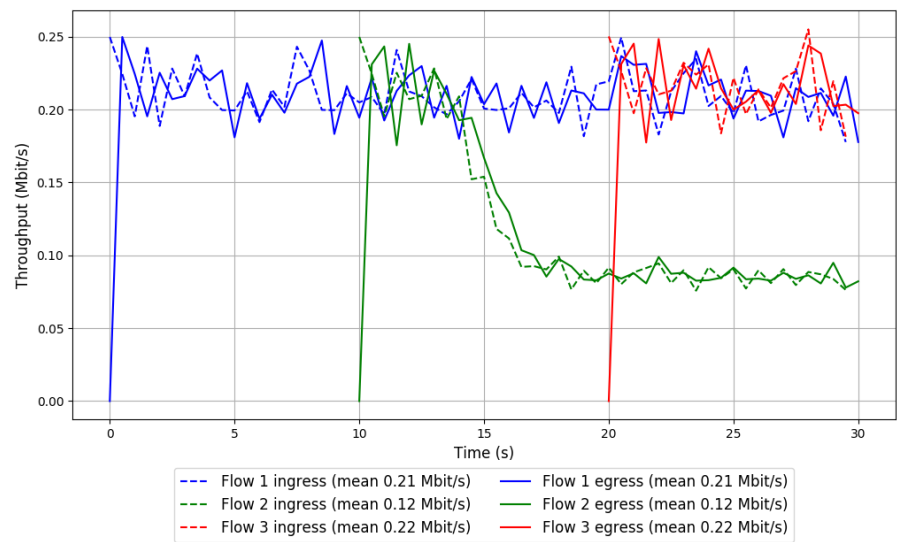
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-09-11 04:13:36
End at: 2018-09-11 04:14:06
Local clock offset: 1.294 ms
Remote clock offset: -3.015 ms

# Below is generated by plot.py at 2018-09-11 04:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 11.071 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 11.169 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 11.040 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 6.704 ms
Loss rate: 0.00%
```
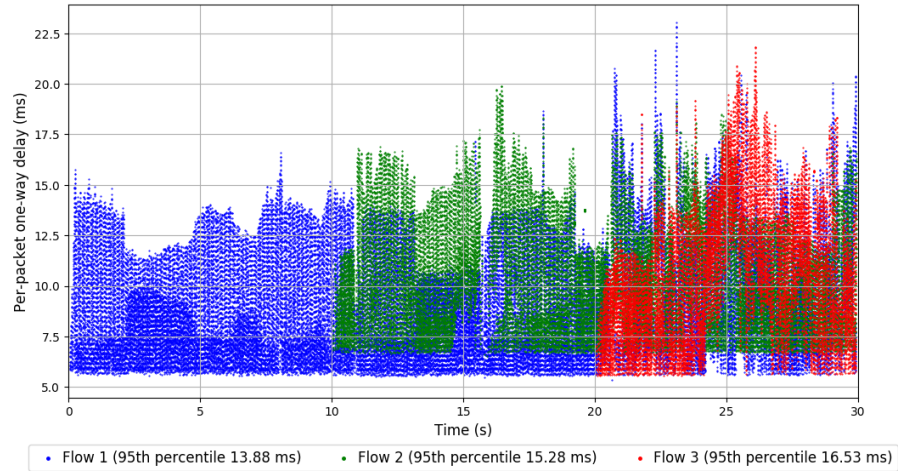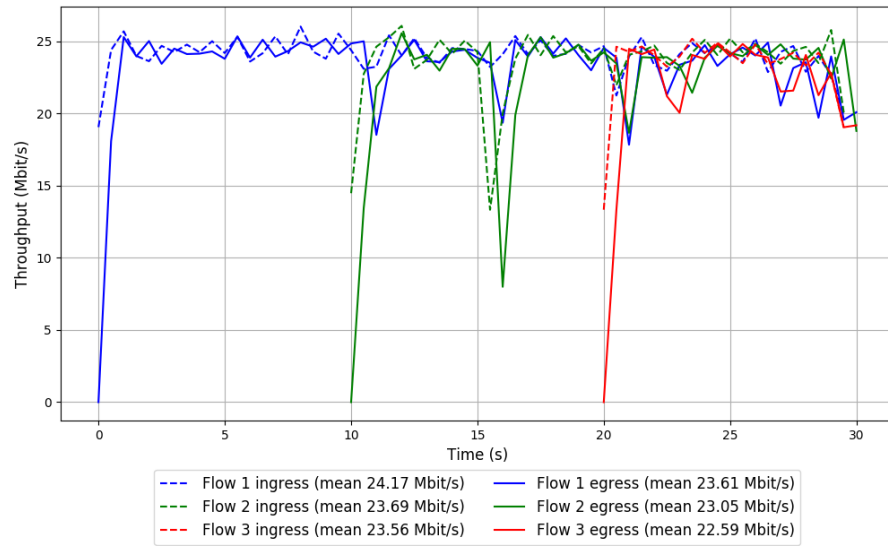
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-09-11 02:40:48
End at: 2018-09-11 02:41:18
Local clock offset: 1.043 ms
Remote clock offset: -4.551 ms


# Below is generated by plot.py at 2018-09-11 04:32:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.39 Mbit/s
95th percentile per-packet one-way delay: 15.030 ms
Loss rate: 2.73%
-- Flow 1:
Average throughput: 23.61 Mbit/s
95th percentile per-packet one-way delay: 13.881 ms
Loss rate: 2.30%
-- Flow 2:
Average throughput: 23.05 Mbit/s
95th percentile per-packet one-way delay: 15.280 ms
Loss rate: 2.70%
-- Flow 3:
Average throughput: 22.59 Mbit/s
95th percentile per-packet one-way delay: 16.529 ms
Loss rate: 4.11%
```

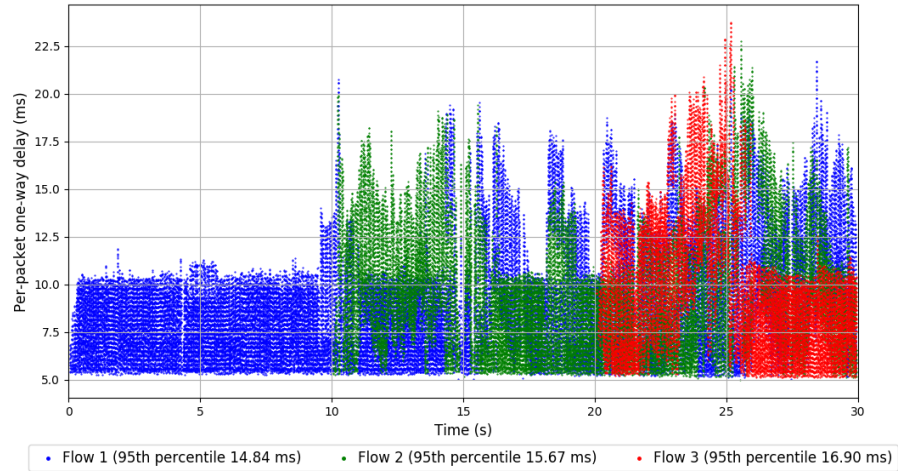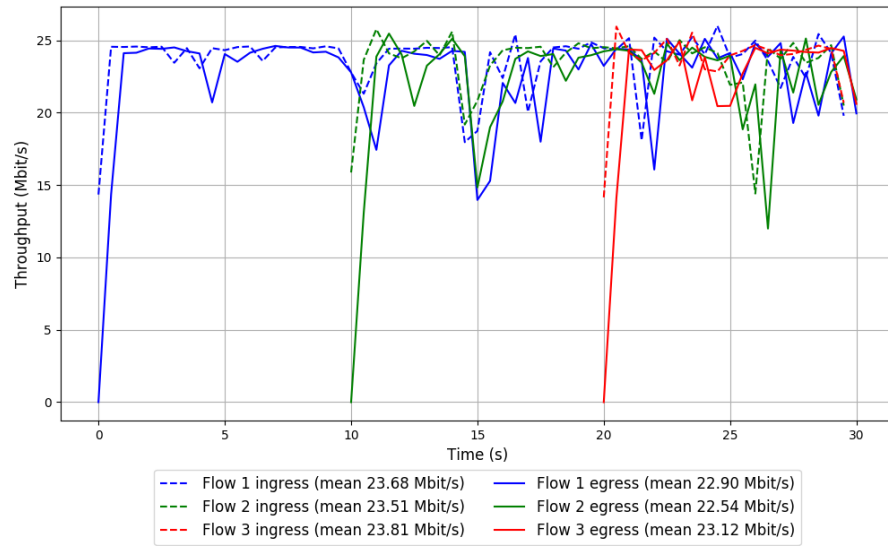Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-09-11 03:01:50
End at: 2018-09-11 03:02:20
Local clock offset: 1.65 ms
Remote clock offset: -4.865 ms


# Below is generated by plot.py at 2018-09-11 04:32:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.54 Mbit/s
95th percentile per-packet one-way delay: 15.477 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 22.90 Mbit/s
95th percentile per-packet one-way delay: 14.844 ms
Loss rate: 3.29%
-- Flow 2:
Average throughput: 22.54 Mbit/s
95th percentile per-packet one-way delay: 15.671 ms
Loss rate: 4.12%
-- Flow 3:
Average throughput: 23.12 Mbit/s
95th percentile per-packet one-way delay: 16.903 ms
Loss rate: 2.87%
```
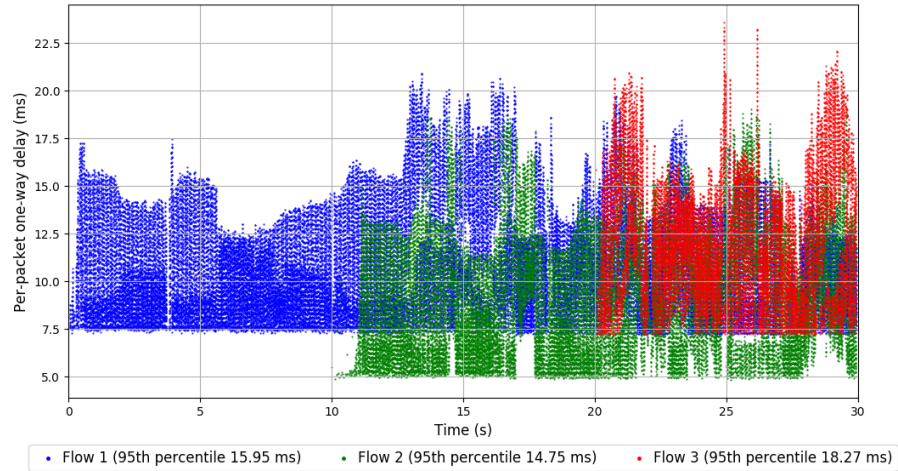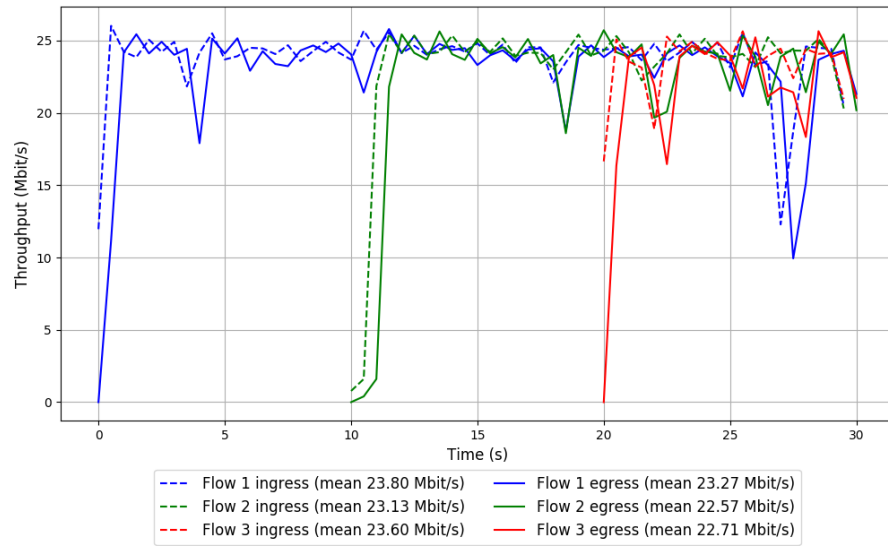
Run 2: Report of Sprout — Data Link

Flow 1 ingress (mean 23.68 Mbit/s) --- Flow 1 egress (mean 22.90 Mbit/s)
Flow 2 ingress (mean 23.51 Mbit/s) --- Flow 2 egress (mean 22.54 Mbit/s)
Flow 3 ingress (mean 23.81 Mbit/s) --- Flow 3 egress (mean 23.12 Mbit/s)

Flow 1 (95th percentile 14.84 ms)   Flow 2 (95th percentile 15.67 ms)   Flow 3 (95th percentile 16.90 ms)

```
Run 3: Statistics of Sprout

Start at: 2018-09-11 03:22:58
End at: 2018-09-11 03:23:28
Local clock offset: 0.56 ms
Remote clock offset: -6.063 ms


# Below is generated by plot.py at 2018-09-11 04:32:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.78 Mbit/s
95th percentile per-packet one-way delay: 16.166 ms
Loss rate: 2.55%
-- Flow 1:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 15.952 ms
Loss rate: 2.24%
-- Flow 2:
Average throughput: 22.57 Mbit/s
95th percentile per-packet one-way delay: 14.746 ms
Loss rate: 2.41%
-- Flow 3:
Average throughput: 22.71 Mbit/s
95th percentile per-packet one-way delay: 18.275 ms
Loss rate: 3.79%
```
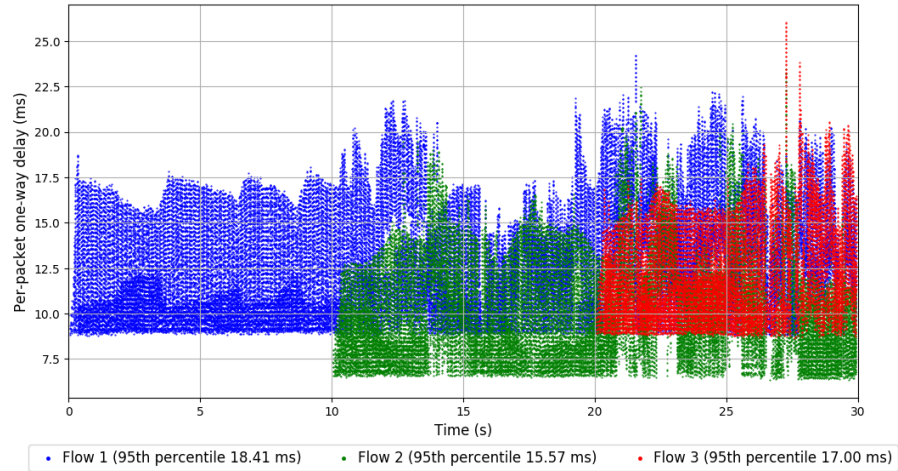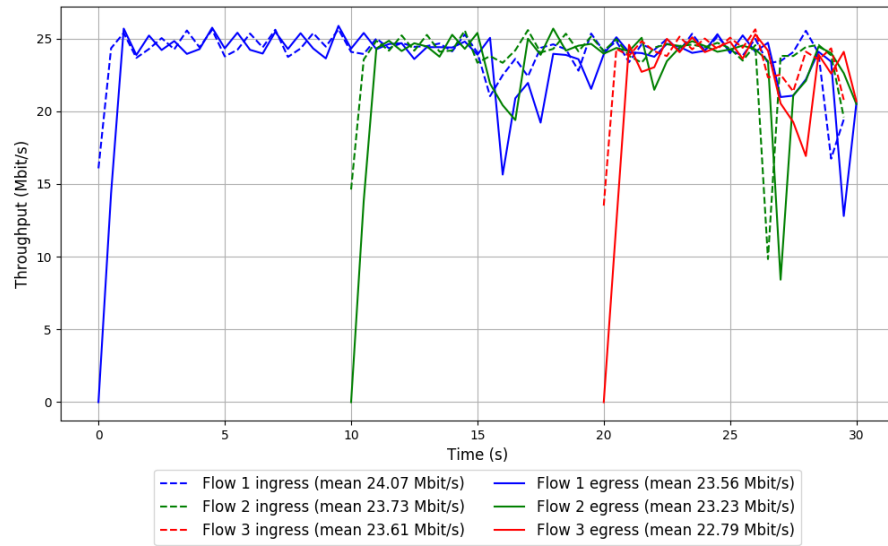
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-09-11 03:43:52
End at: 2018-09-11 03:44:22
Local clock offset: 0.057 ms
Remote clock offset: -3.149 ms

# Below is generated by plot.py at 2018-09-11 04:32:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.54 Mbit/s
95th percentile per-packet one-way delay: 17.585 ms
Loss rate: 2.31%
-- Flow 1:
Average throughput: 23.56 Mbit/s
95th percentile per-packet one-way delay: 18.409 ms
Loss rate: 2.07%
-- Flow 2:
Average throughput: 23.23 Mbit/s
95th percentile per-packet one-way delay: 15.567 ms
Loss rate: 2.12%
-- Flow 3:
Average throughput: 22.79 Mbit/s
95th percentile per-packet one-way delay: 16.998 ms
Loss rate: 3.42%
```
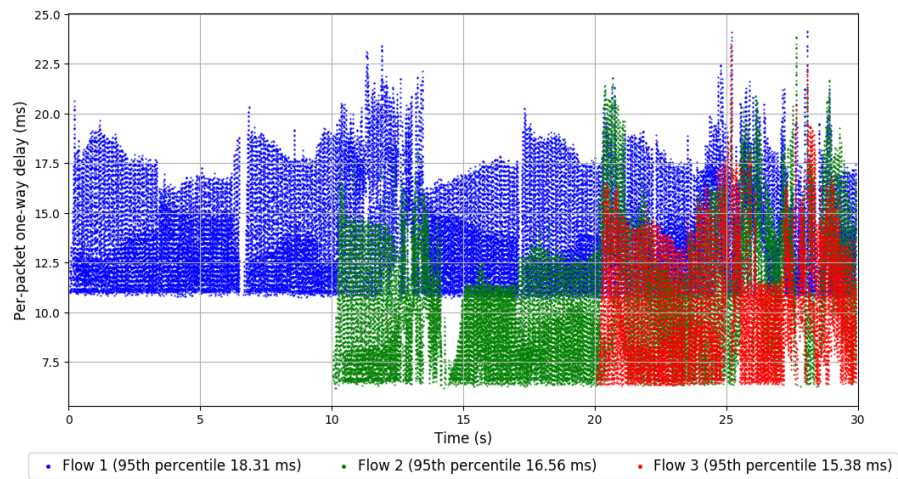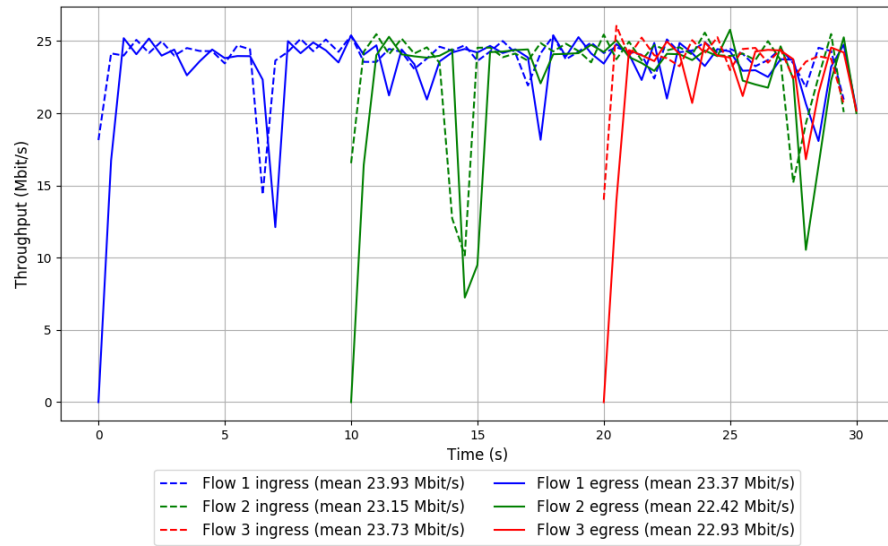
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-09-11 04:05:08
End at: 2018-09-11 04:05:38
Local clock offset: 0.083 ms
Remote clock offset: -3.626 ms


# Below is generated by plot.py at 2018-09-11 04:32:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.86 Mbit/s
95th percentile per-packet one-way delay: 17.776 ms
Loss rate: 2.79%
-- Flow 1:
Average throughput: 23.37 Mbit/s
95th percentile per-packet one-way delay: 18.307 ms
Loss rate: 2.39%
-- Flow 2:
Average throughput: 22.42 Mbit/s
95th percentile per-packet one-way delay: 16.562 ms
Loss rate: 3.15%
-- Flow 3:
Average throughput: 22.93 Mbit/s
95th percentile per-packet one-way delay: 15.375 ms
Loss rate: 3.32%
```
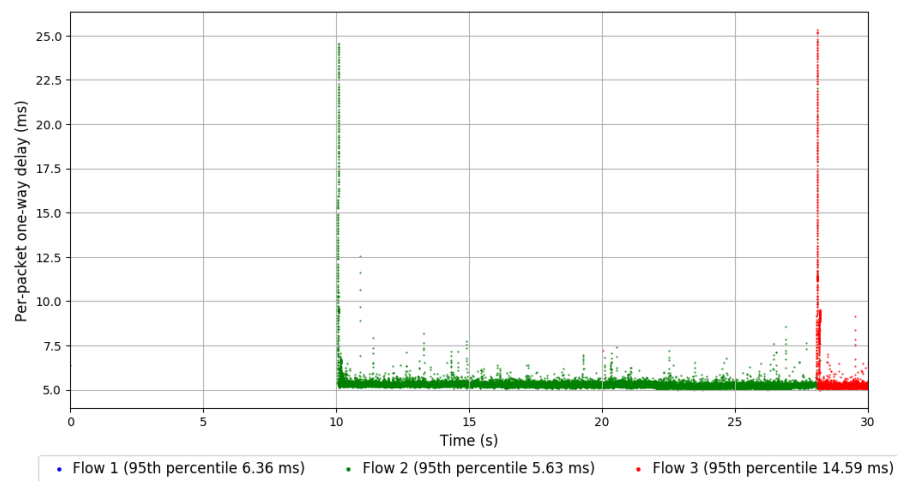
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 23.93 Mbit/s)   Flow 1 egress (mean 23.37 Mbit/s)
Flow 2 ingress (mean 23.15 Mbit/s)   Flow 2 egress (mean 22.42 Mbit/s)
Flow 3 ingress (mean 23.73 Mbit/s)   Flow 3 egress (mean 22.93 Mbit/s)

Flow 1 (95th percentile 18.31 ms)   Flow 2 (95th percentile 16.56 ms)   Flow 3 (95th percentile 15.38 ms)
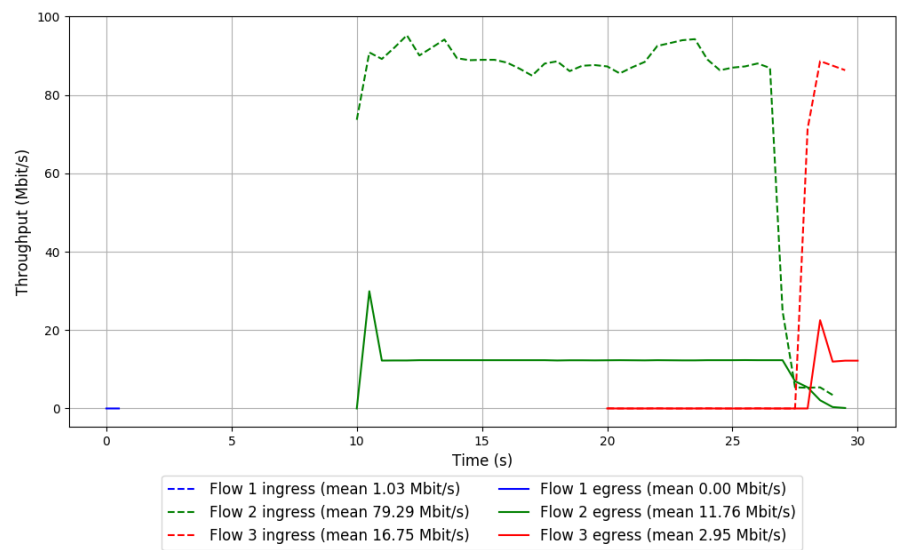
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-11 02:53:37
End at: 2018-09-11 02:54:07
Local clock offset: 1.836 ms
Remote clock offset: -4.861 ms


# Below is generated by plot.py at 2018-09-11 04:32:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 5.909 ms
Loss rate: 84.99%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6.359 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 5.635 ms
Loss rate: 85.28%
-- Flow 3:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 14.591 ms
Loss rate: 82.37%
```
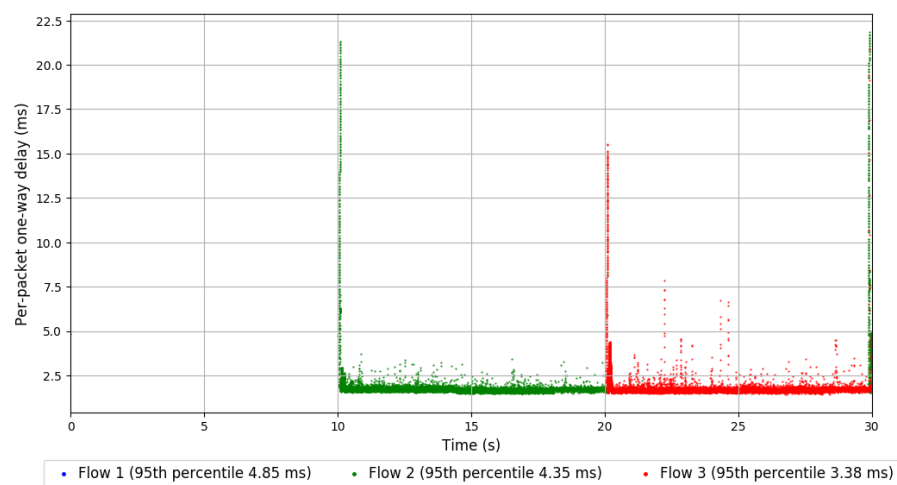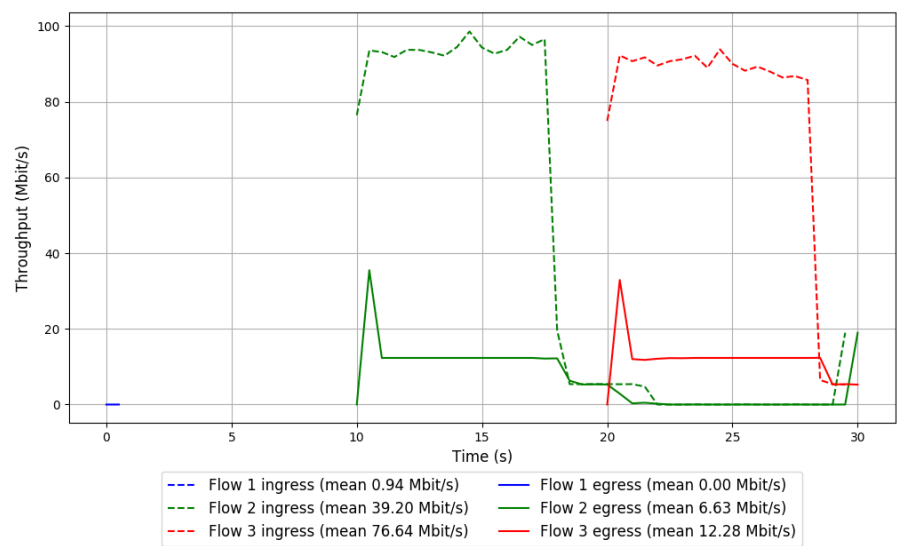
Run 1: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 1.03 Mbit/s) — Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 79.29 Mbit/s) — Flow 2 egress (mean 11.76 Mbit/s)
- - - Flow 3 ingress (mean 16.75 Mbit/s) — Flow 3 egress (mean 2.95 Mbit/s)

- Flow 1 (95th percentile 6.36 ms)   • Flow 2 (95th percentile 5.63 ms)   • Flow 3 (95th percentile 14.59 ms)

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

Start at: 2018-09-11 03:14:45
End at: 2018-09-11 03:15:15
Local clock offset: 2.529 ms
Remote clock offset: -7.489 ms


# Below is generated by plot.py at 2018-09-11 04:32:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 3.711 ms
Loss rate: 83.52%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4.849 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 4.349 ms
Loss rate: 83.07%
-- Flow 3:
Average throughput: 12.28 Mbit/s
95th percentile per-packet one-way delay: 3.382 ms
Loss rate: 83.98%
```
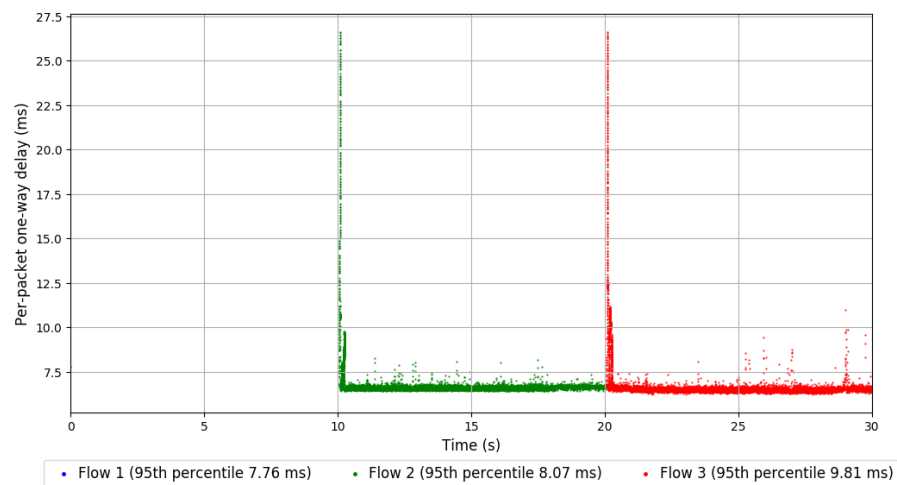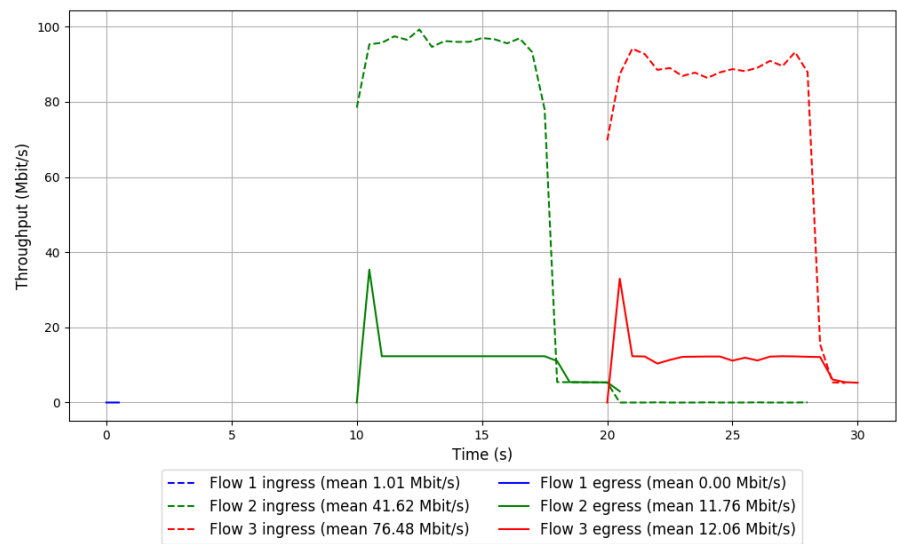
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.94 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 39.20 Mbit/s) --- Flow 2 egress (mean 6.63 Mbit/s)
Flow 3 ingress (mean 76.64 Mbit/s) --- Flow 3 egress (mean 12.28 Mbit/s)

Flow 1 (95th percentile 4.85 ms) · Flow 2 (95th percentile 4.35 ms) · Flow 3 (95th percentile 3.38 ms)

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

Start at: 2018-09-11 03:35:40
End at: 2018-09-11 03:36:10
Local clock offset: 1.244 ms
Remote clock offset: -2.765 ms


# Below is generated by plot.py at 2018-09-11 04:32:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.07 Mbit/s
95th percentile per-packet one-way delay: 8.723 ms
Loss rate: 84.16%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7.760 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 8.069 ms
Loss rate: 84.08%
-- Flow 3:
Average throughput: 12.06 Mbit/s
95th percentile per-packet one-way delay: 9.815 ms
Loss rate: 84.23%
```
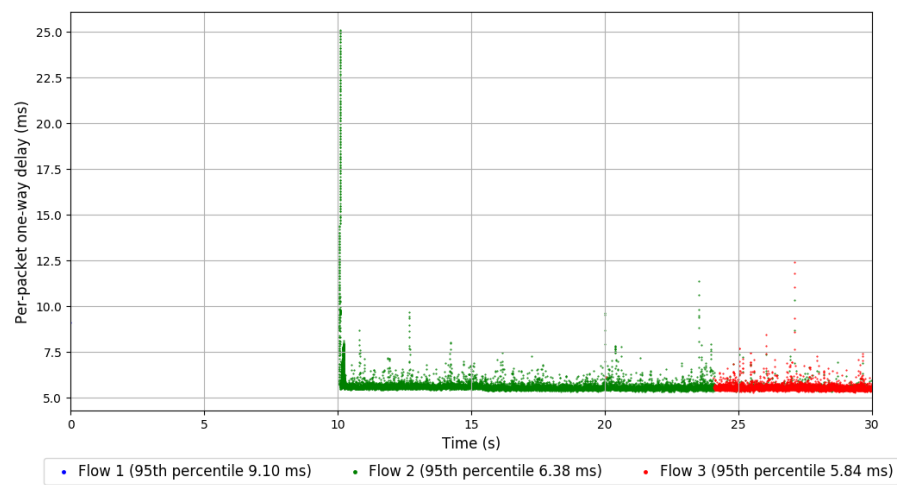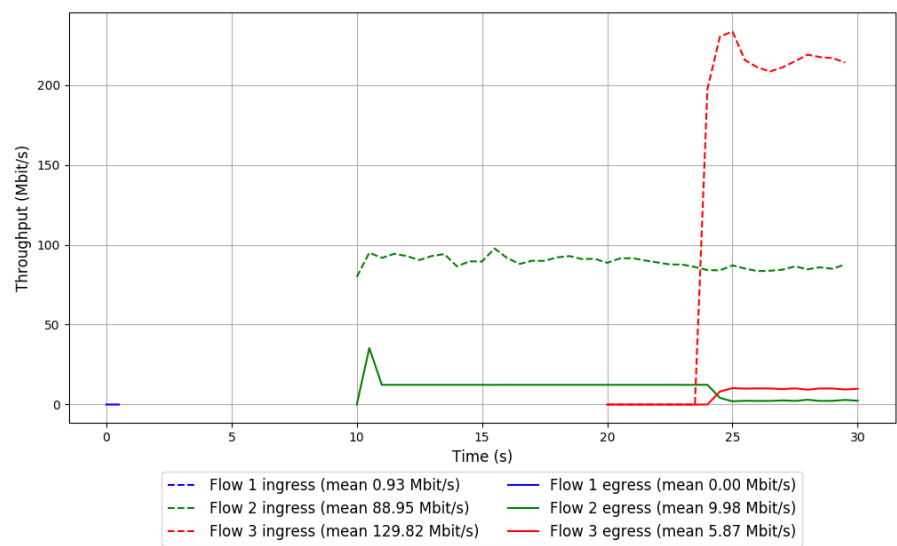
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 1.01 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 41.62 Mbit/s) --- Flow 2 egress (mean 11.76 Mbit/s)
Flow 3 ingress (mean 76.48 Mbit/s) --- Flow 3 egress (mean 12.06 Mbit/s)

• Flow 1 (95th percentile 7.76 ms)   • Flow 2 (95th percentile 8.07 ms)   • Flow 3 (95th percentile 9.81 ms)

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

Start at: 2018-09-11 03:56:47
End at: 2018-09-11 03:57:17
Local clock offset: -0.326 ms
Remote clock offset: -4.051 ms


# Below is generated by plot.py at 2018-09-11 04:32:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: 6.219 ms
Loss rate: 91.60%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9.096 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.98 Mbit/s
95th percentile per-packet one-way delay: 6.382 ms
Loss rate: 88.78%
-- Flow 3:
Average throughput: 5.87 Mbit/s
95th percentile per-packet one-way delay: 5.838 ms
Loss rate: 95.48%
```
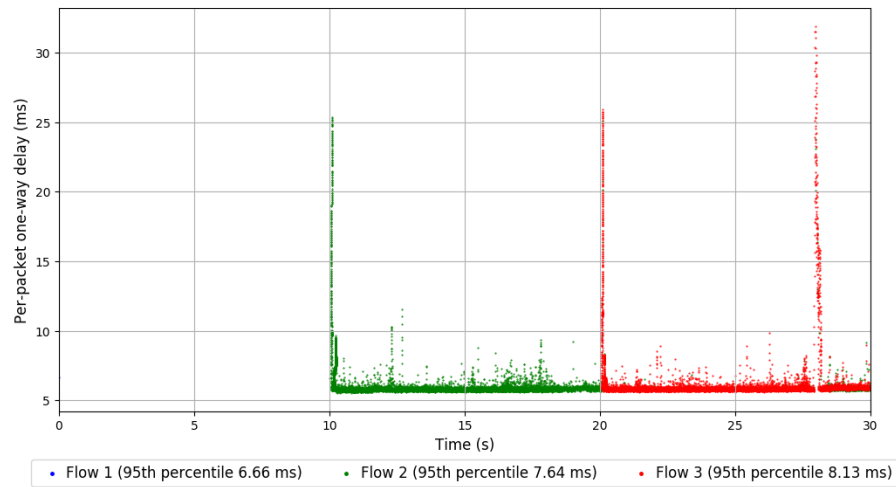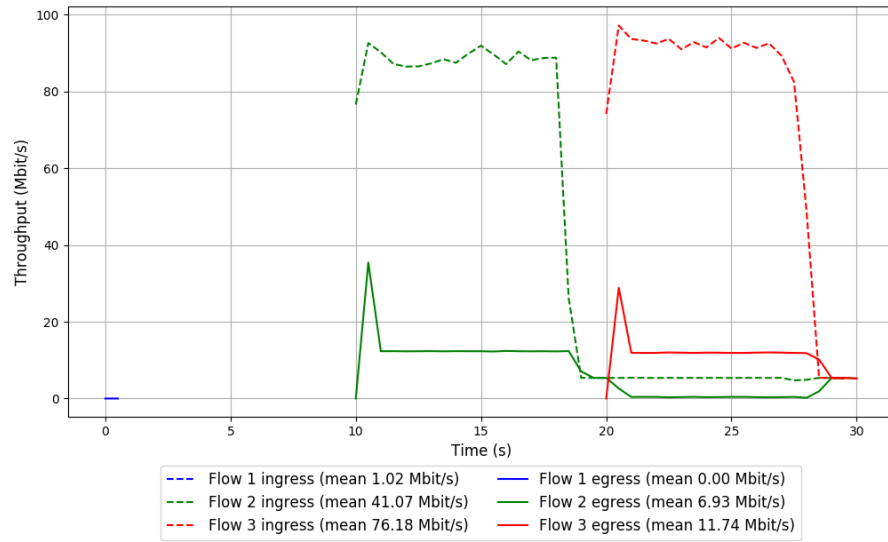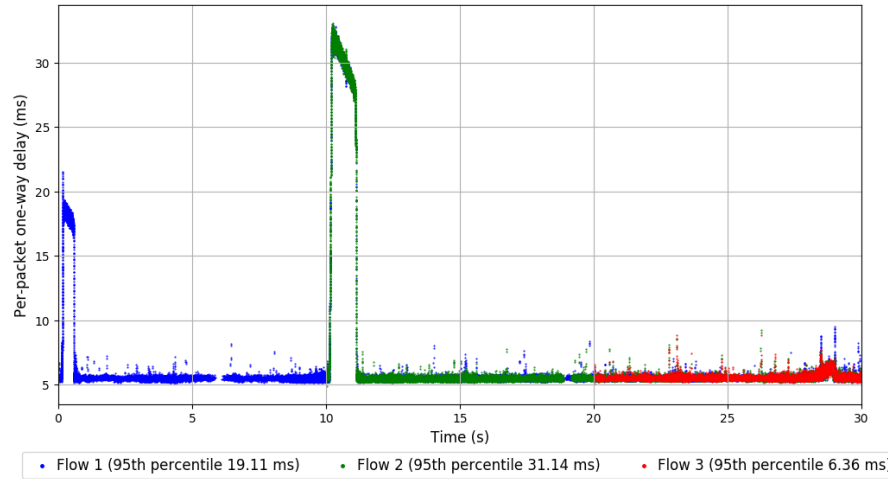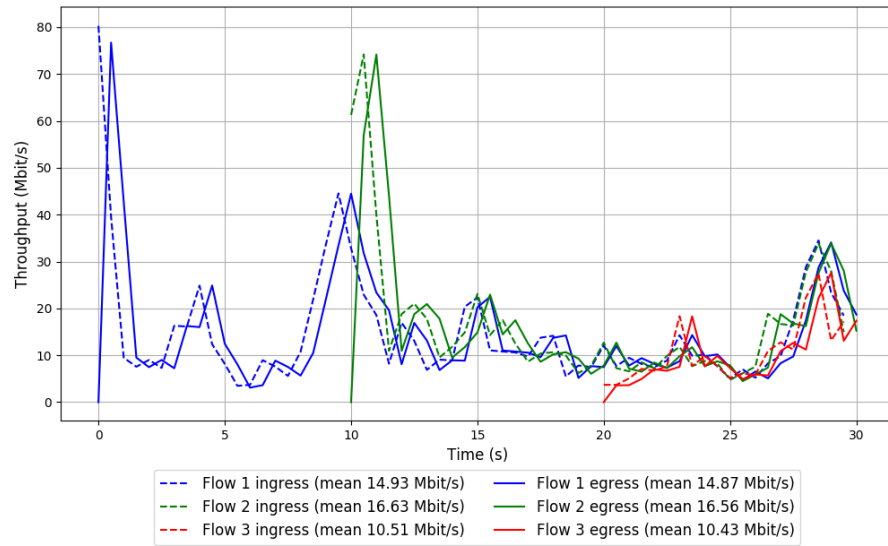
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.93 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 88.95 Mbit/s) --- Flow 2 egress (mean 9.98 Mbit/s)
Flow 3 ingress (mean 129.82 Mbit/s) --- Flow 3 egress (mean 5.87 Mbit/s)

Flow 1 (95th percentile 9.10 ms)   Flow 2 (95th percentile 6.38 ms)   Flow 3 (95th percentile 5.84 ms)

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

Start at: 2018-09-11 04:18:10
End at: 2018-09-11 04:18:40
Local clock offset: 2.011 ms
Remote clock offset: -3.079 ms


# Below is generated by plot.py at 2018-09-11 04:32:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 7.899 ms
Loss rate: 83.84%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6.659 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 6.93 Mbit/s
95th percentile per-packet one-way delay: 7.641 ms
Loss rate: 83.14%
-- Flow 3:
Average throughput: 11.74 Mbit/s
95th percentile per-packet one-way delay: 8.128 ms
Loss rate: 84.59%
```

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

- - - Flow 1 ingress (mean 1.02 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 41.07 Mbit/s) —— Flow 2 egress (mean 6.93 Mbit/s)
- - - Flow 3 ingress (mean 76.18 Mbit/s) —— Flow 3 egress (mean 11.74 Mbit/s)

• Flow 1 (95th percentile 6.66 ms)   • Flow 2 (95th percentile 7.64 ms)   • Flow 3 (95th percentile 8.13 ms)
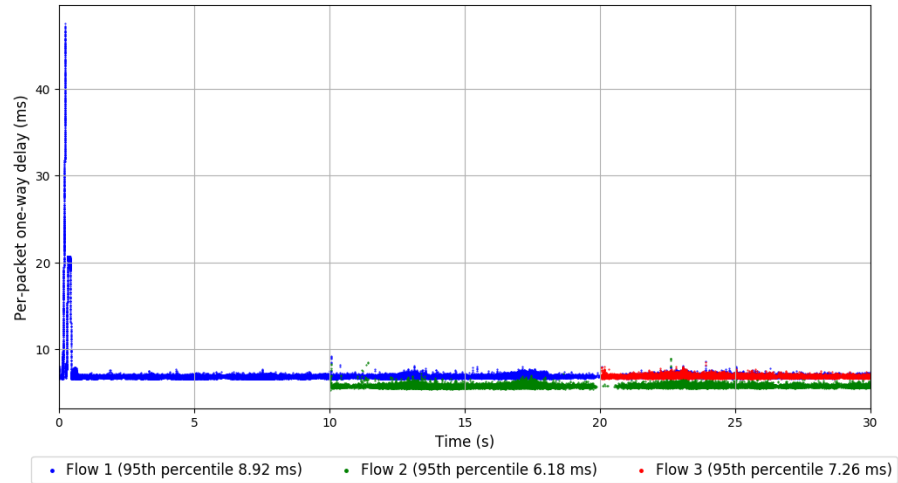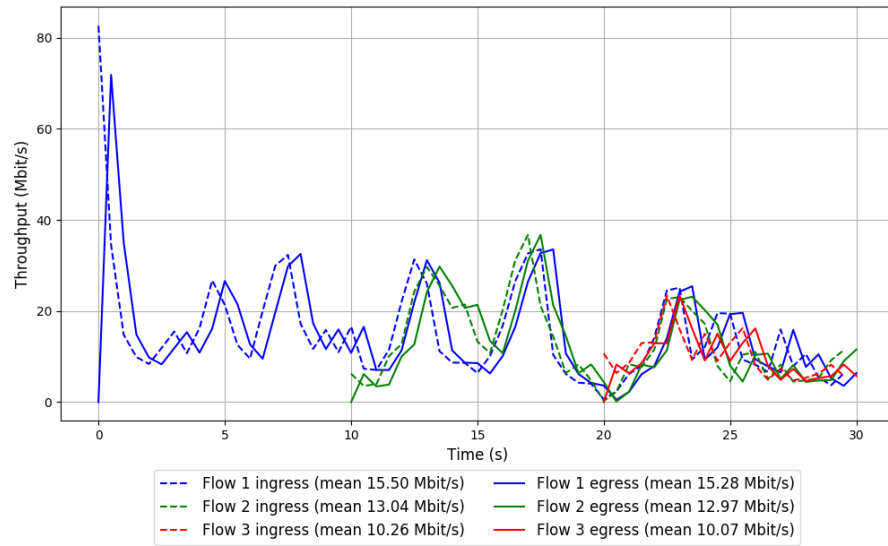
```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-11 02:41:57
End at: 2018-09-11 02:42:27
Local clock offset: 1.729 ms
Remote clock offset: -4.249 ms


# Below is generated by plot.py at 2018-09-11 04:32:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.37 Mbit/s
95th percentile per-packet one-way delay: 30.134 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 14.87 Mbit/s
95th percentile per-packet one-way delay: 19.106 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 16.56 Mbit/s
95th percentile per-packet one-way delay: 31.143 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 10.43 Mbit/s
95th percentile per-packet one-way delay: 6.362 ms
Loss rate: 0.72%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-11 03:02:59
End at: 2018-09-11 03:03:29
Local clock offset: 1.467 ms
Remote clock offset: -4.703 ms


# Below is generated by plot.py at 2018-09-11 04:32:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.27 Mbit/s
95th percentile per-packet one-way delay: 7.370 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 15.28 Mbit/s
95th percentile per-packet one-way delay: 8.916 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 6.182 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 10.07 Mbit/s
95th percentile per-packet one-way delay: 7.259 ms
Loss rate: 1.90%
```
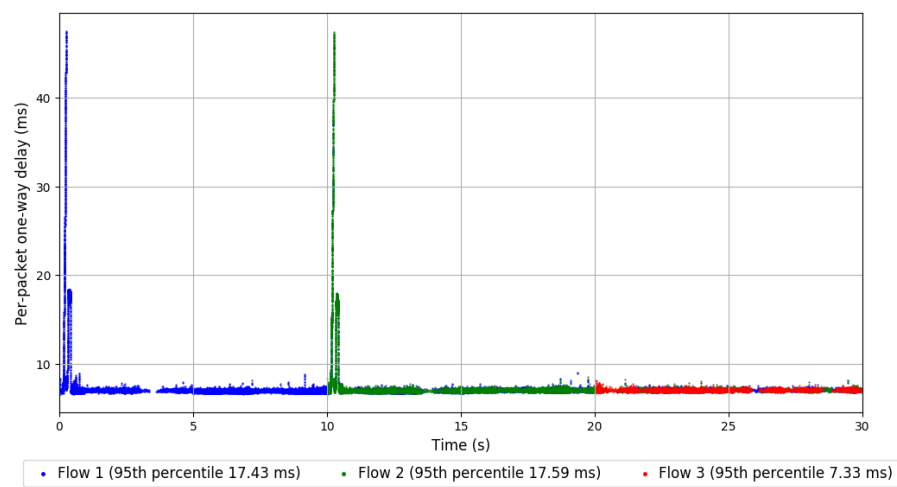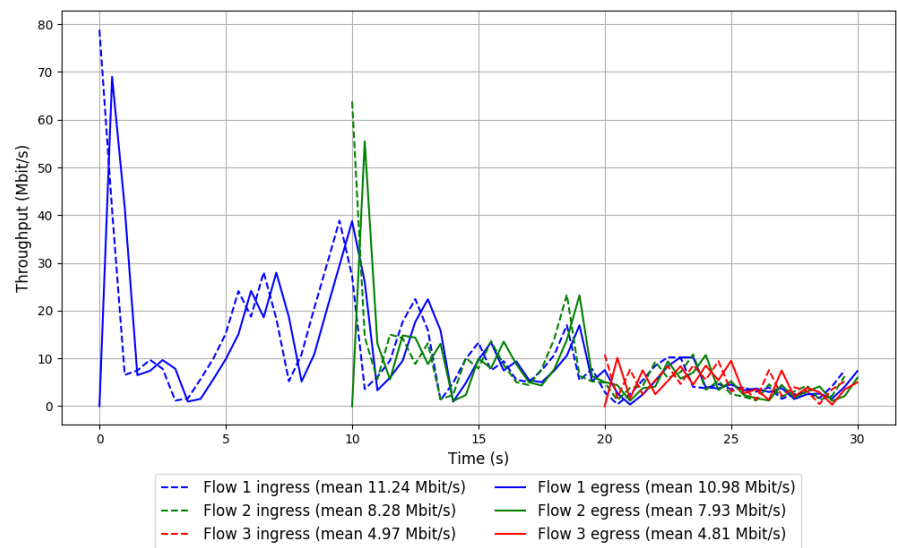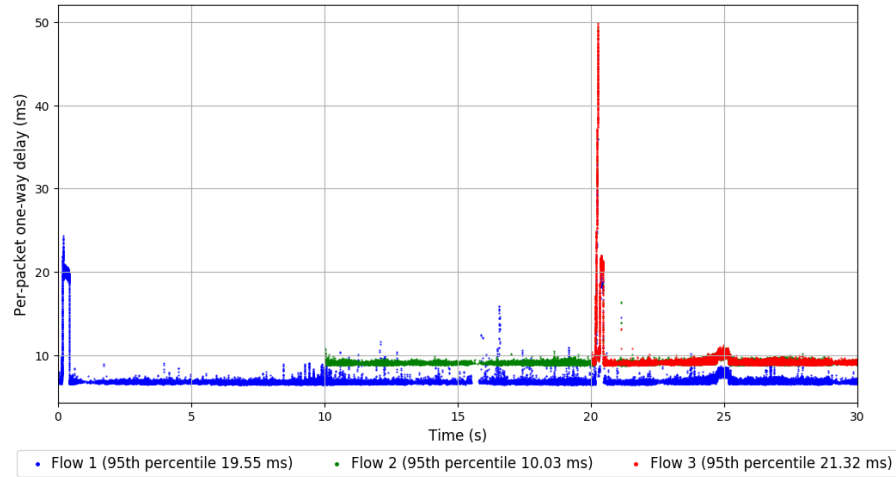
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-11 03:24:06
End at: 2018-09-11 03:24:36
Local clock offset: 1.719 ms
Remote clock offset: -5.4 ms


# Below is generated by plot.py at 2018-09-11 04:32:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.86 Mbit/s
95th percentile per-packet one-way delay: 17.133 ms
Loss rate: 2.97%
-- Flow 1:
Average throughput: 10.98 Mbit/s
95th percentile per-packet one-way delay: 17.426 ms
Loss rate: 2.35%
-- Flow 2:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 17.588 ms
Loss rate: 4.21%
-- Flow 3:
Average throughput: 4.81 Mbit/s
95th percentile per-packet one-way delay: 7.325 ms
Loss rate: 3.10%
```
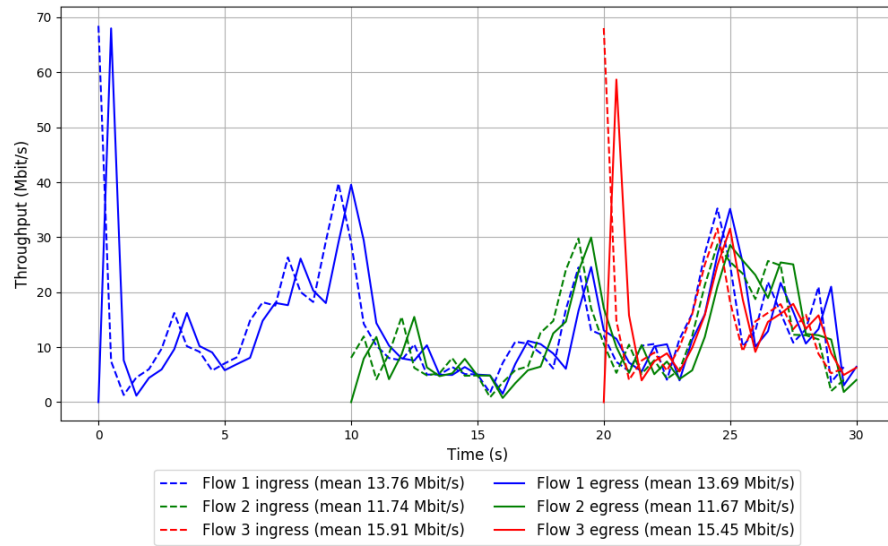
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-09-11 03:45:01
End at: 2018-09-11 03:45:31
Local clock offset: -0.847 ms
Remote clock offset: -3.928 ms


# Below is generated by plot.py at 2018-09-11 04:32:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.60 Mbit/s
95th percentile per-packet one-way delay: 19.125 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 13.69 Mbit/s
95th percentile per-packet one-way delay: 19.548 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 11.67 Mbit/s
95th percentile per-packet one-way delay: 10.032 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 15.45 Mbit/s
95th percentile per-packet one-way delay: 21.316 ms
Loss rate: 2.92%
```

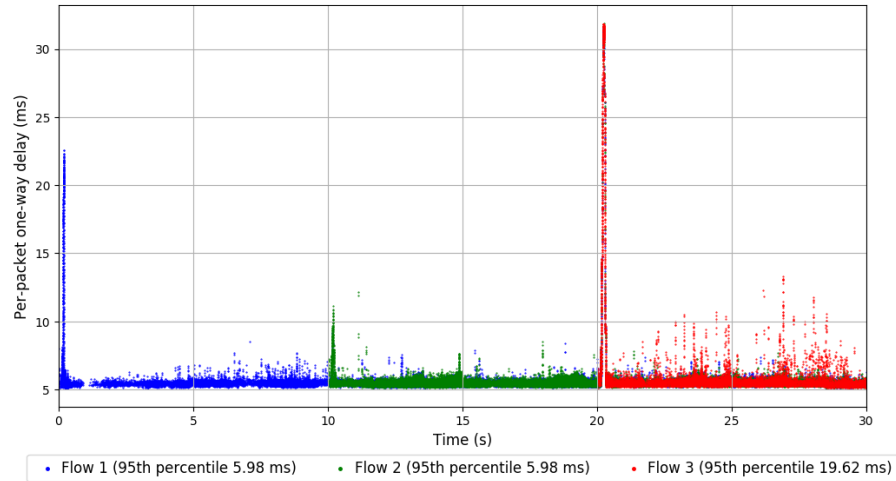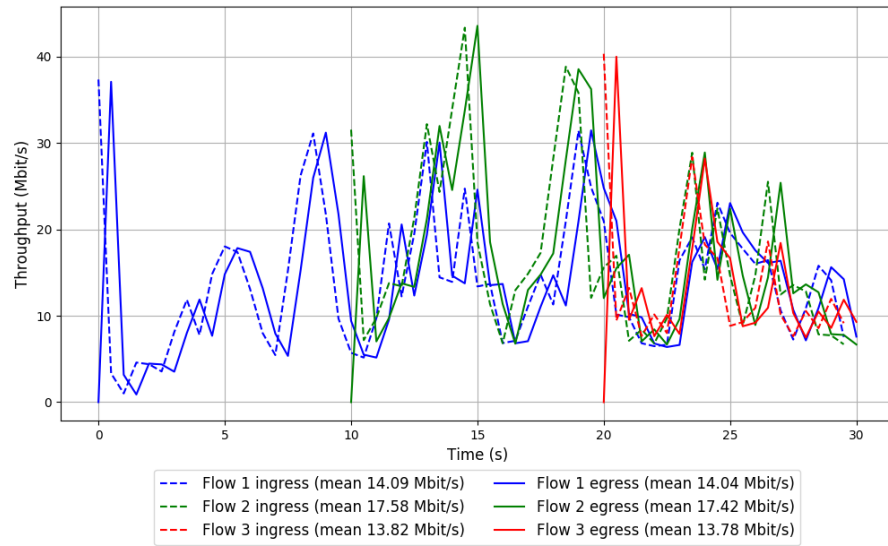Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-09-11 04:06:18
End at: 2018-09-11 04:06:48
Local clock offset: 0.604 ms
Remote clock offset: -4.424 ms


# Below is generated by plot.py at 2018-09-11 04:32:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.23 Mbit/s
95th percentile per-packet one-way delay: 6.217 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 14.04 Mbit/s
95th percentile per-packet one-way delay: 5.982 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 17.42 Mbit/s
95th percentile per-packet one-way delay: 5.980 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 13.78 Mbit/s
95th percentile per-packet one-way delay: 19.617 ms
Loss rate: 0.26%
```

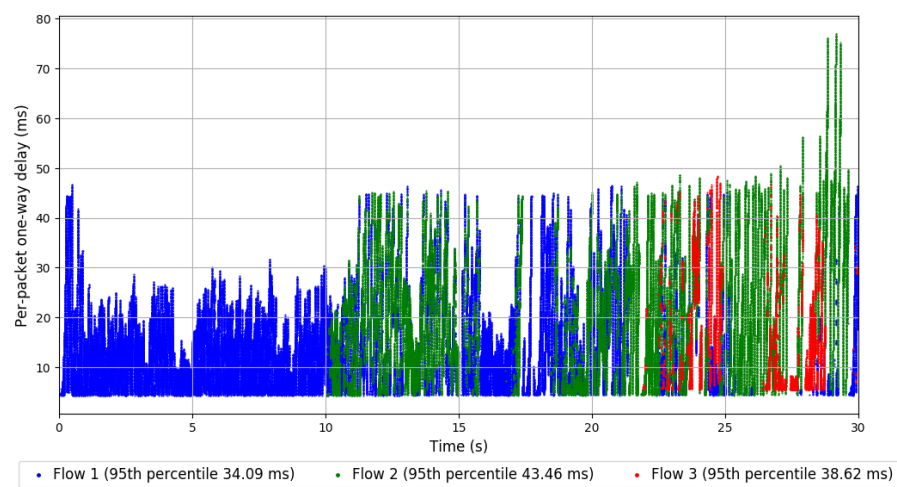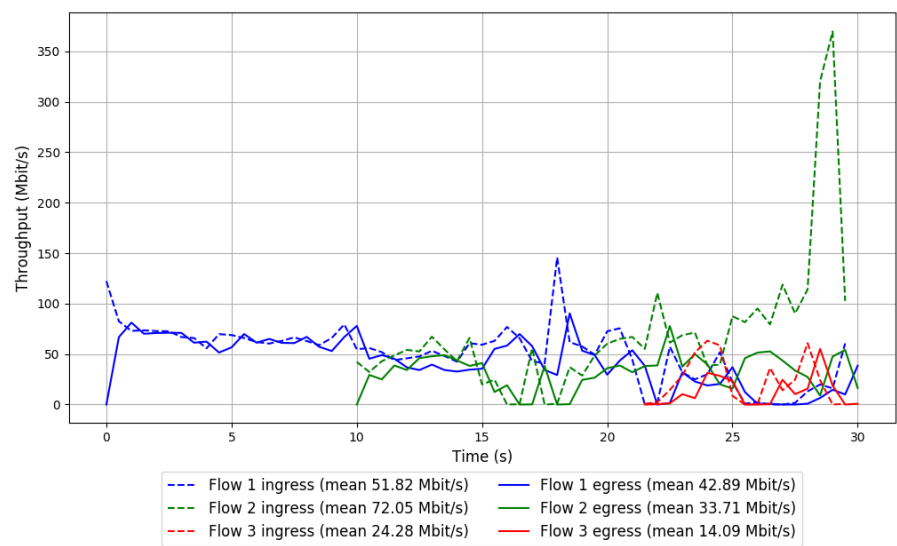Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-09-11 02:44:18
End at: 2018-09-11 02:44:48
Local clock offset: 1.673 ms
Remote clock offset: -5.429 ms

# Below is generated by plot.py at 2018-09-11 04:33:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.71 Mbit/s
95th percentile per-packet one-way delay: 39.436 ms
Loss rate: 34.74%
-- Flow 1:
Average throughput: 42.89 Mbit/s
95th percentile per-packet one-way delay: 34.087 ms
Loss rate: 17.18%
-- Flow 2:
Average throughput: 33.71 Mbit/s
95th percentile per-packet one-way delay: 43.459 ms
Loss rate: 53.12%
-- Flow 3:
Average throughput: 14.09 Mbit/s
95th percentile per-packet one-way delay: 38.623 ms
Loss rate: 41.79%
```
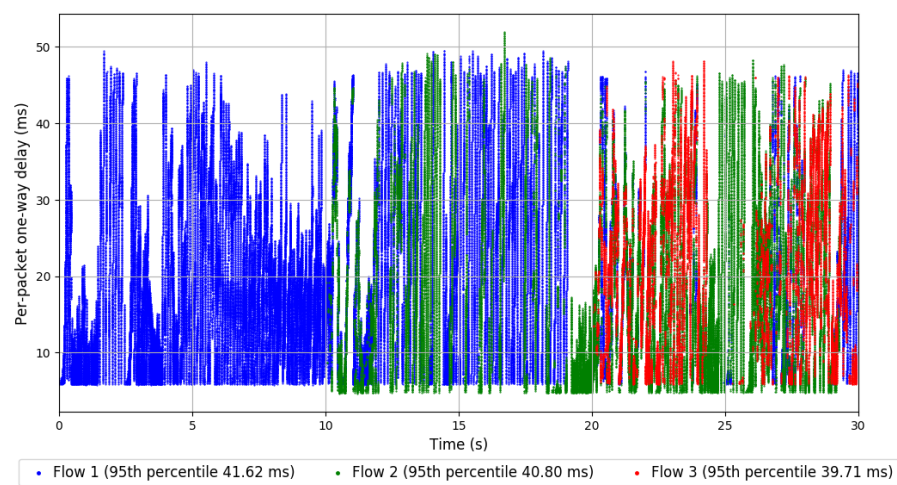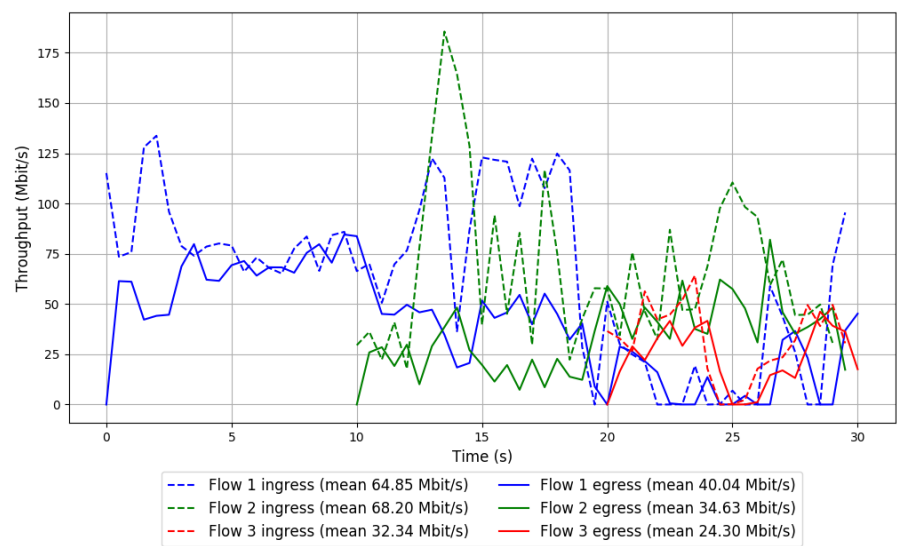
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 51.82 Mbit/s)   Flow 1 egress (mean 42.89 Mbit/s)
Flow 2 ingress (mean 72.05 Mbit/s)   Flow 2 egress (mean 33.71 Mbit/s)
Flow 3 ingress (mean 24.28 Mbit/s)   Flow 3 egress (mean 14.09 Mbit/s)

Flow 1 (95th percentile 34.09 ms)   Flow 2 (95th percentile 43.46 ms)   Flow 3 (95th percentile 38.62 ms)

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```
Run 2: Statistics of Verus

Start at: 2018-09-11 03:05:23
End at: 2018-09-11 03:05:53
Local clock offset: 0.925 ms
Remote clock offset: -5.929 ms

# Below is generated by plot.py at 2018-09-11 04:33:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.39 Mbit/s
95th percentile per-packet one-way delay: 41.140 ms
Loss rate: 41.13%
-- Flow 1:
Average throughput: 40.04 Mbit/s
95th percentile per-packet one-way delay: 41.616 ms
Loss rate: 38.21%
-- Flow 2:
Average throughput: 34.63 Mbit/s
95th percentile per-packet one-way delay: 40.804 ms
Loss rate: 49.41%
-- Flow 3:
Average throughput: 24.30 Mbit/s
95th percentile per-packet one-way delay: 39.711 ms
Loss rate: 24.64%
```

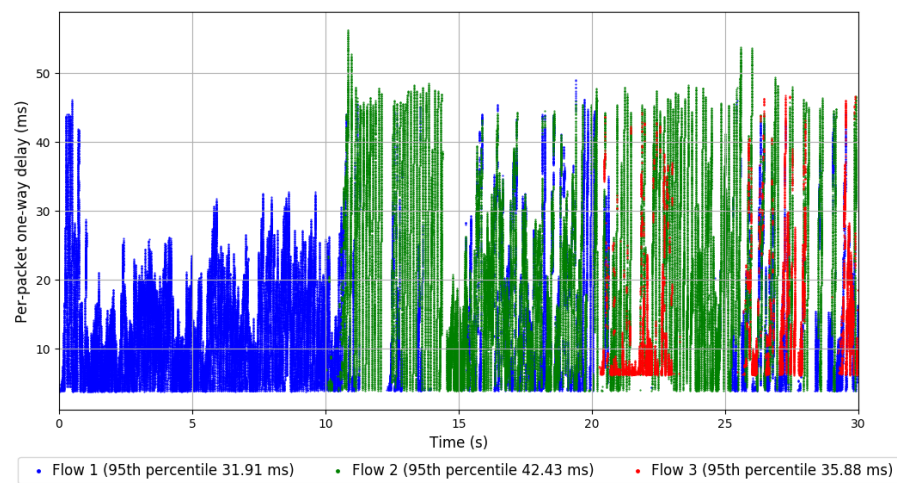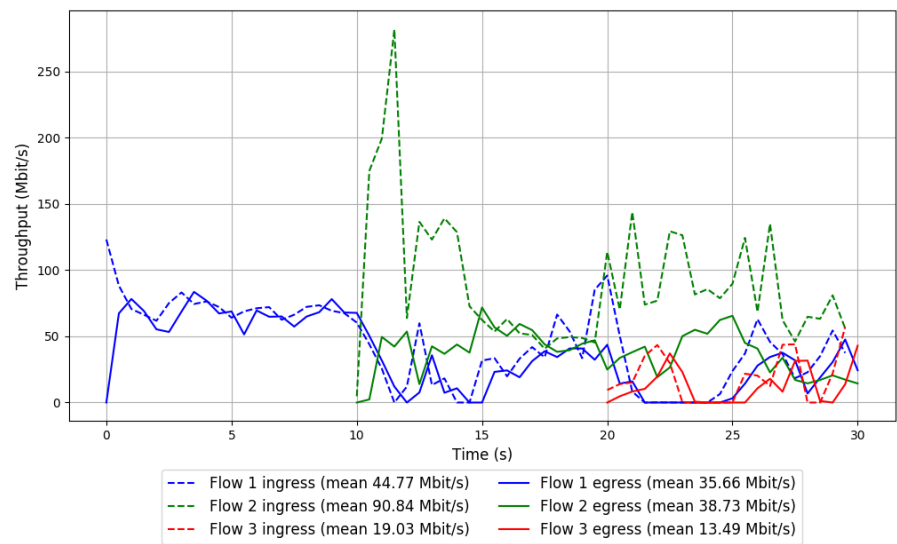Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-09-11 03:26:27
End at: 2018-09-11 03:26:57
Local clock offset: 2.069 ms
Remote clock offset: -5.637 ms


# Below is generated by plot.py at 2018-09-11 04:33:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.75 Mbit/s
95th percentile per-packet one-way delay: 38.849 ms
Loss rate: 40.86%
-- Flow 1:
Average throughput: 35.66 Mbit/s
95th percentile per-packet one-way delay: 31.911 ms
Loss rate: 20.32%
-- Flow 2:
Average throughput: 38.73 Mbit/s
95th percentile per-packet one-way delay: 42.429 ms
Loss rate: 57.32%
-- Flow 3:
Average throughput: 13.49 Mbit/s
95th percentile per-packet one-way delay: 35.878 ms
Loss rate: 29.05%
```
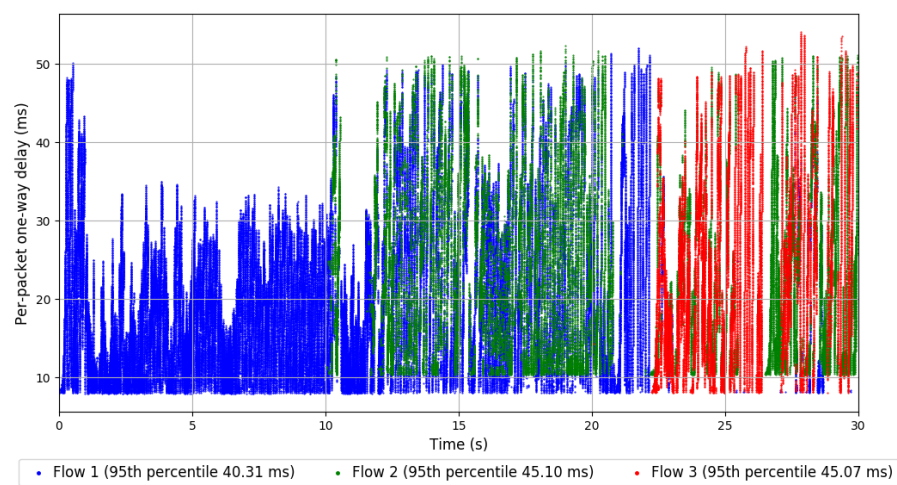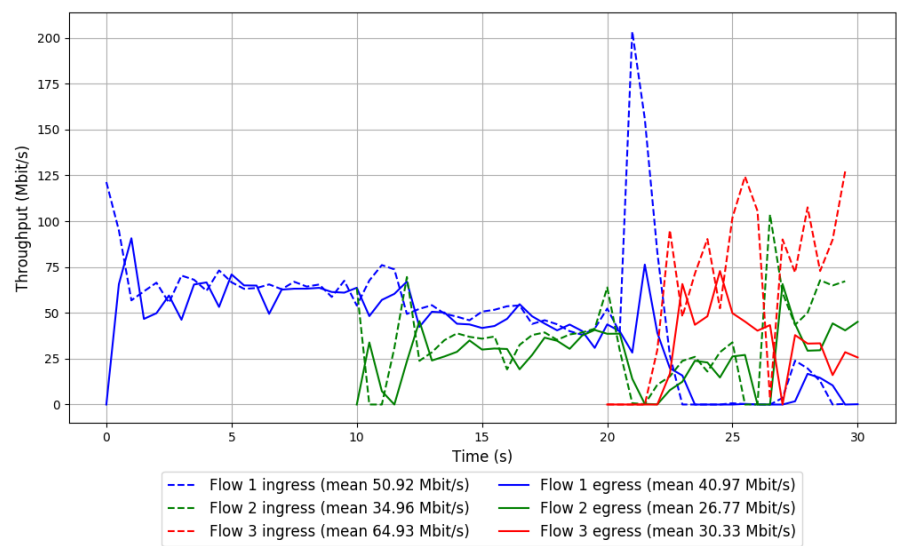
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 44.77 Mbit/s) — Flow 1 egress (mean 35.66 Mbit/s)
Flow 2 ingress (mean 90.84 Mbit/s) — Flow 2 egress (mean 38.73 Mbit/s)
Flow 3 ingress (mean 19.03 Mbit/s) — Flow 3 egress (mean 13.49 Mbit/s)

Flow 1 (95th percentile 31.91 ms)   Flow 2 (95th percentile 42.43 ms)   Flow 3 (95th percentile 35.88 ms)

```
Run 4: Statistics of Verus

Start at: 2018-09-11 03:47:26
End at: 2018-09-11 03:47:56
Local clock offset: -1.023 ms
Remote clock offset: -2.506 ms


# Below is generated by plot.py at 2018-09-11 04:33:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.53 Mbit/s
95th percentile per-packet one-way delay: 42.906 ms
Loss rate: 28.06%
-- Flow 1:
Average throughput: 40.97 Mbit/s
95th percentile per-packet one-way delay: 40.313 ms
Loss rate: 19.60%
-- Flow 2:
Average throughput: 26.77 Mbit/s
95th percentile per-packet one-way delay: 45.097 ms
Loss rate: 23.39%
-- Flow 3:
Average throughput: 30.33 Mbit/s
95th percentile per-packet one-way delay: 45.074 ms
Loss rate: 53.16%
```

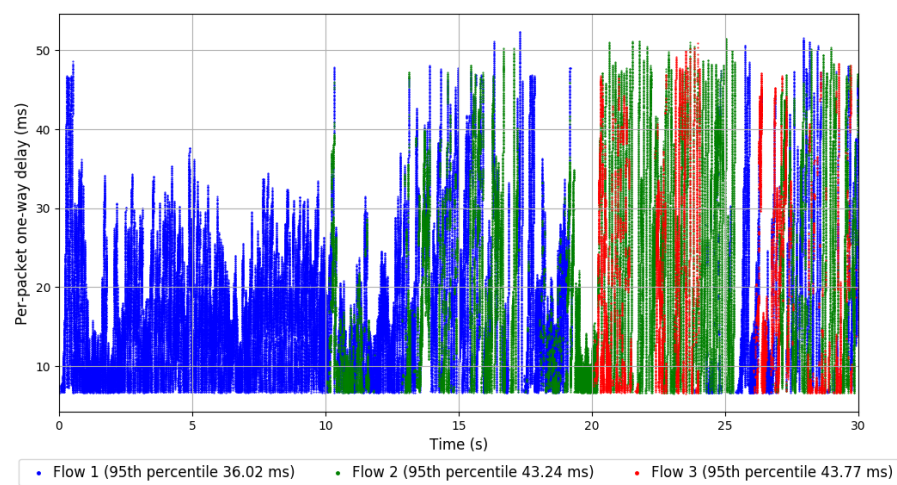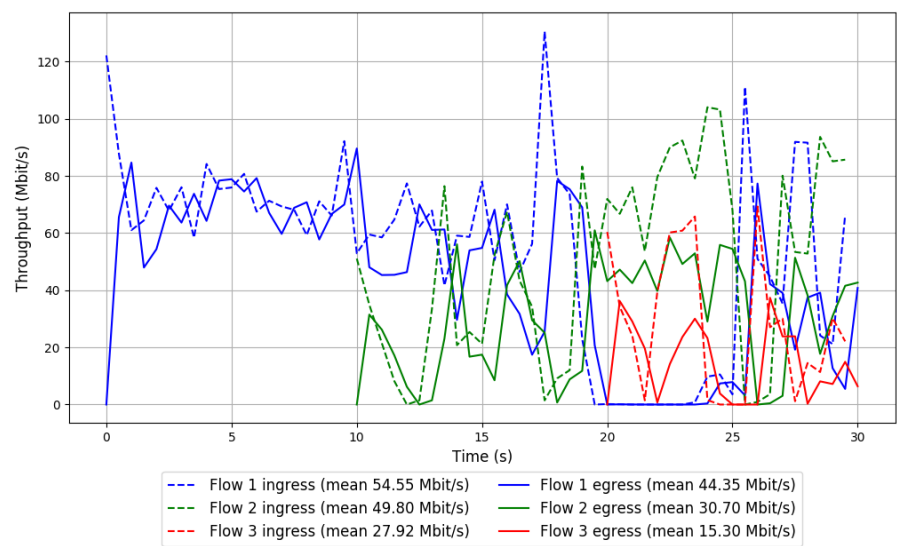Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-09-11 04:08:40
End at: 2018-09-11 04:09:10
Local clock offset: 1.156 ms
Remote clock offset: -2.532 ms


# Below is generated by plot.py at 2018-09-11 04:33:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.83 Mbit/s
95th percentile per-packet one-way delay: 40.477 ms
Loss rate: 27.90%
-- Flow 1:
Average throughput: 44.35 Mbit/s
95th percentile per-packet one-way delay: 36.023 ms
Loss rate: 18.64%
-- Flow 2:
Average throughput: 30.70 Mbit/s
95th percentile per-packet one-way delay: 43.241 ms
Loss rate: 38.27%
-- Flow 3:
Average throughput: 15.30 Mbit/s
95th percentile per-packet one-way delay: 43.775 ms
Loss rate: 45.37%
```

Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-11 02:56:00
End at: 2018-09-11 02:56:30
Local clock offset: 2.16 ms
Remote clock offset: -5.369 ms


# Below is generated by plot.py at 2018-09-11 04:33:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.78 Mbit/s
95th percentile per-packet one-way delay: 13.302 ms
Loss rate: 3.54%
-- Flow 1:
Average throughput: 52.65 Mbit/s
95th percentile per-packet one-way delay: 11.367 ms
Loss rate: 3.49%
-- Flow 2:
Average throughput: 39.04 Mbit/s
95th percentile per-packet one-way delay: 14.613 ms
Loss rate: 3.66%
-- Flow 3:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 13.576 ms
Loss rate: 3.26%
```
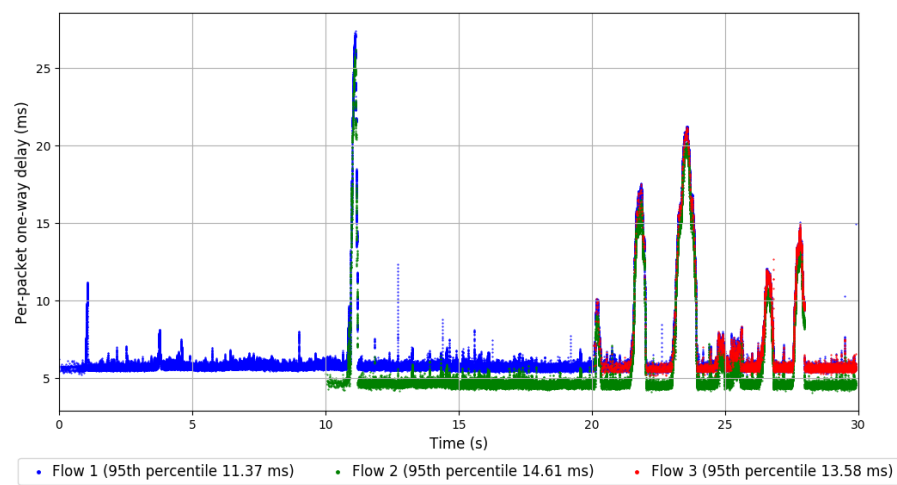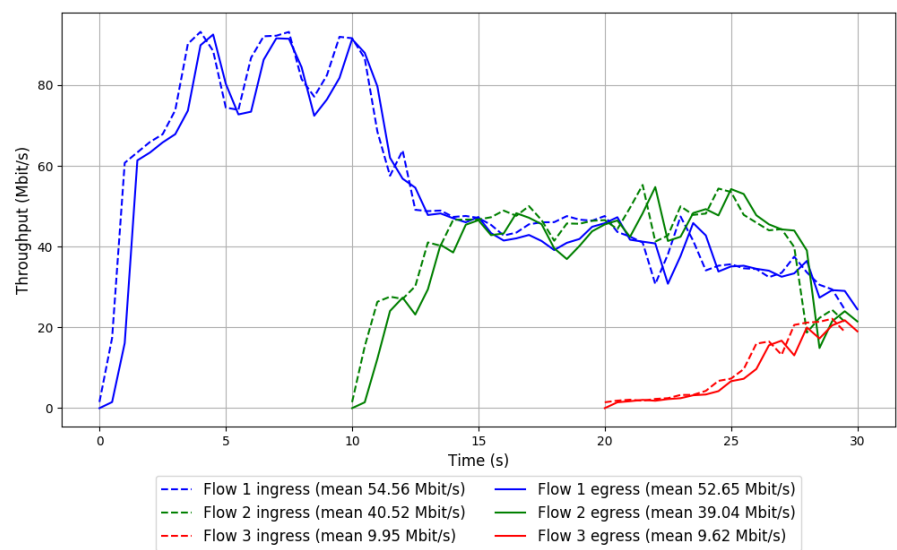
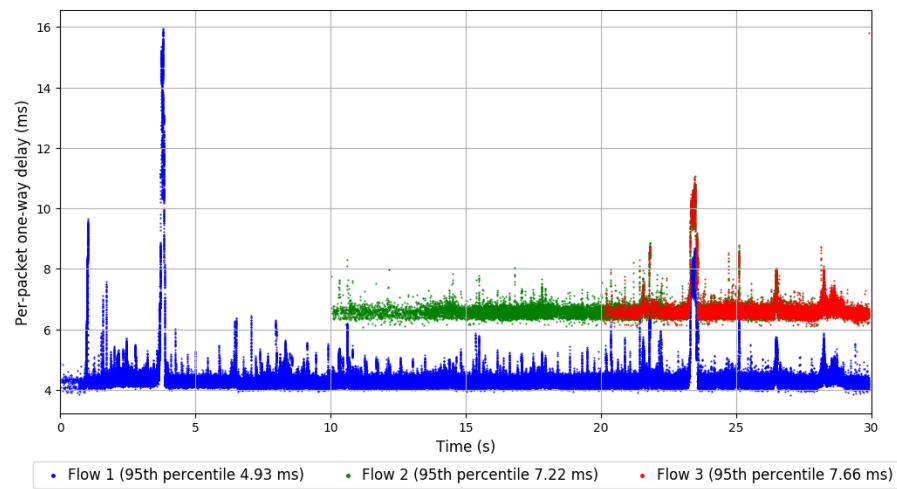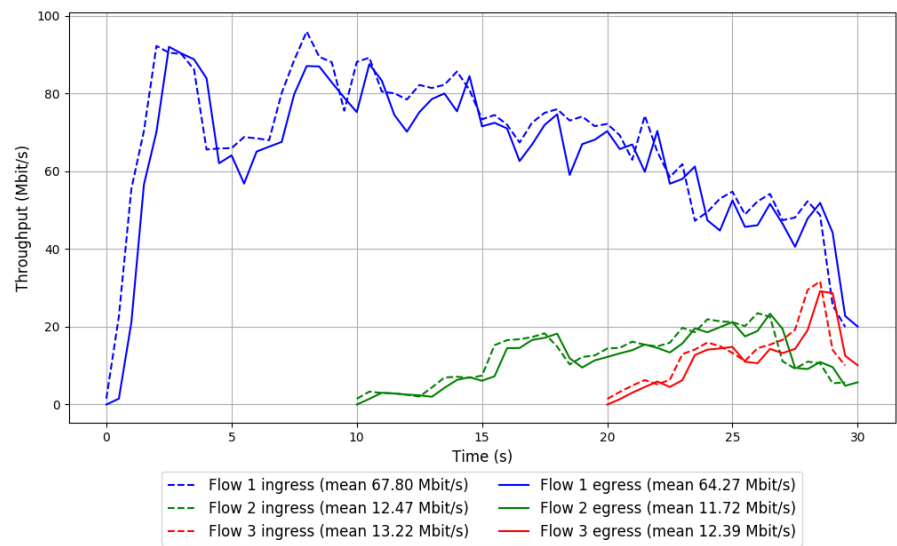Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-11 03:17:08
End at: 2018-09-11 03:17:38
Local clock offset: 2.408 ms
Remote clock offset: -5.102 ms


# Below is generated by plot.py at 2018-09-11 04:33:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.13 Mbit/s
95th percentile per-packet one-way delay: 6.743 ms
Loss rate: 5.35%
-- Flow 1:
Average throughput: 64.27 Mbit/s
95th percentile per-packet one-way delay: 4.928 ms
Loss rate: 5.20%
-- Flow 2:
Average throughput: 11.72 Mbit/s
95th percentile per-packet one-way delay: 7.218 ms
Loss rate: 6.08%
-- Flow 3:
Average throughput: 12.39 Mbit/s
95th percentile per-packet one-way delay: 7.661 ms
Loss rate: 6.20%
```

Run 2: Report of PCC-Vivace — Data Link

- - - Flow 1 ingress (mean 67.80 Mbit/s) —— Flow 1 egress (mean 64.27 Mbit/s)
- - - Flow 2 ingress (mean 12.47 Mbit/s) —— Flow 2 egress (mean 11.72 Mbit/s)
- - - Flow 3 ingress (mean 13.22 Mbit/s) —— Flow 3 egress (mean 12.39 Mbit/s)

- Flow 1 (95th percentile 4.93 ms)   - Flow 2 (95th percentile 7.22 ms)   - Flow 3 (95th percentile 7.66 ms)
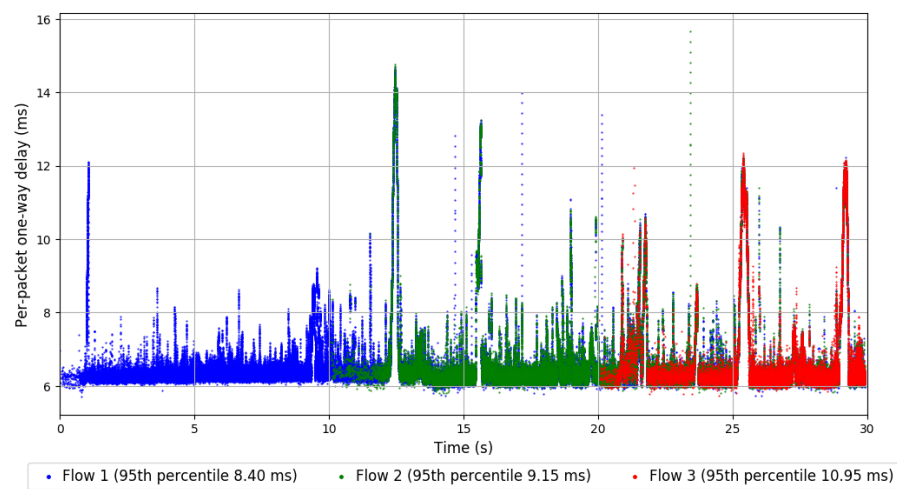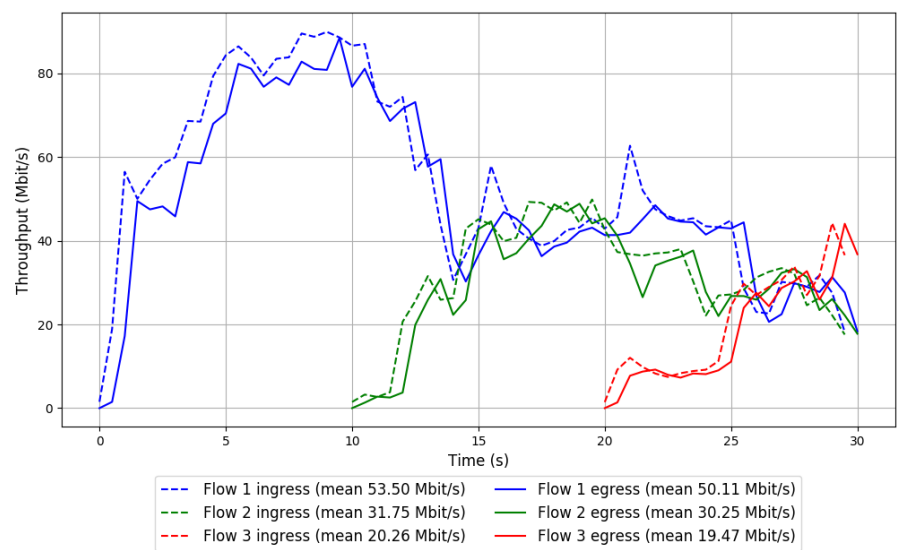
```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-11 03:38:03
End at: 2018-09-11 03:38:33
Local clock offset: 0.42 ms
Remote clock offset: -3.708 ms


# Below is generated by plot.py at 2018-09-11 04:33:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.66 Mbit/s
95th percentile per-packet one-way delay: 8.826 ms
Loss rate: 5.73%
-- Flow 1:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 8.399 ms
Loss rate: 6.34%
-- Flow 2:
Average throughput: 30.25 Mbit/s
95th percentile per-packet one-way delay: 9.154 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 19.47 Mbit/s
95th percentile per-packet one-way delay: 10.948 ms
Loss rate: 3.90%
```

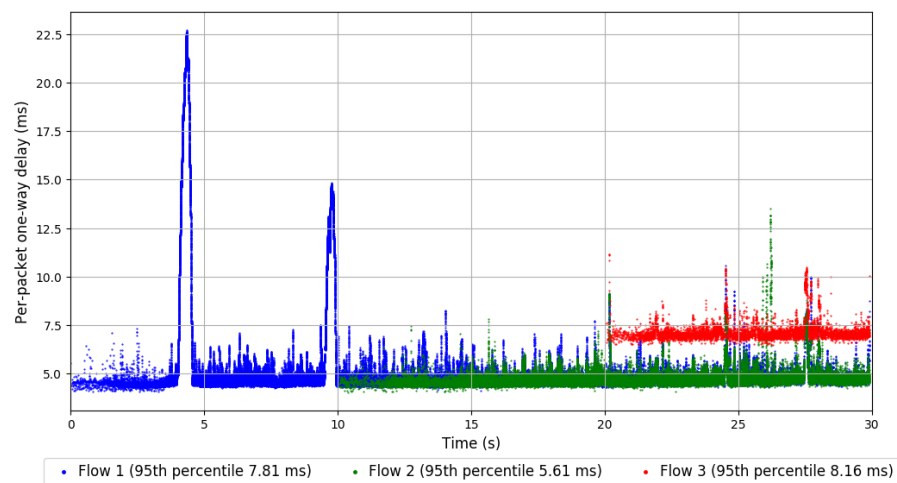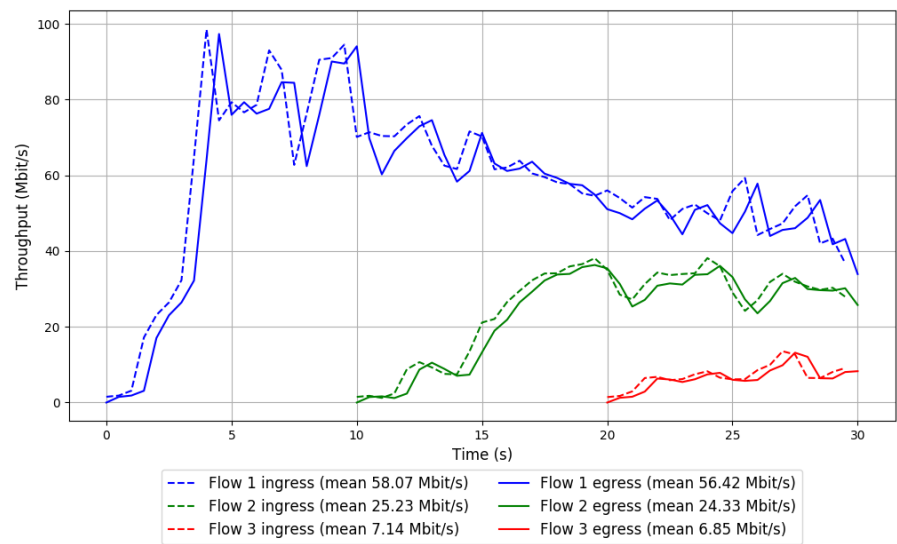Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-11 03:59:12
End at: 2018-09-11 03:59:42
Local clock offset: 0.871 ms
Remote clock offset: -4.145 ms


# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.86 Mbit/s
95th percentile per-packet one-way delay: 7.284 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 56.42 Mbit/s
95th percentile per-packet one-way delay: 7.813 ms
Loss rate: 2.83%
-- Flow 2:
Average throughput: 24.33 Mbit/s
95th percentile per-packet one-way delay: 5.611 ms
Loss rate: 3.55%
-- Flow 3:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 8.163 ms
Loss rate: 4.02%
```
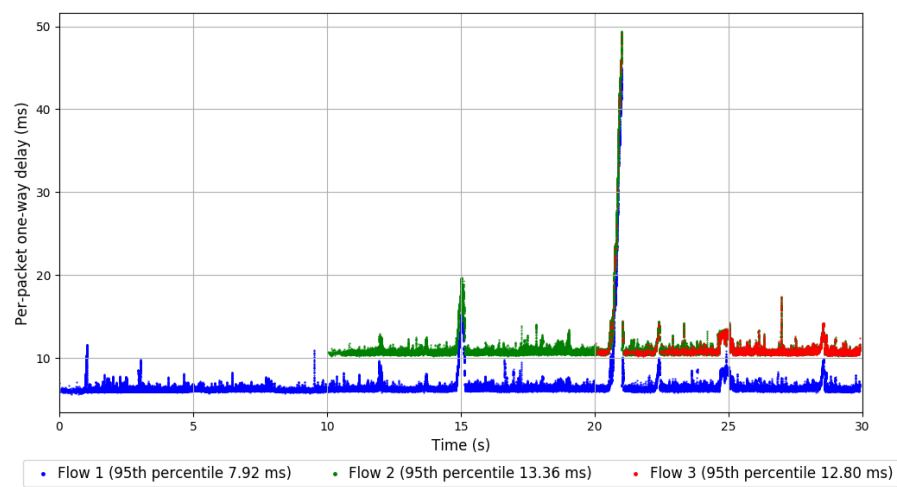
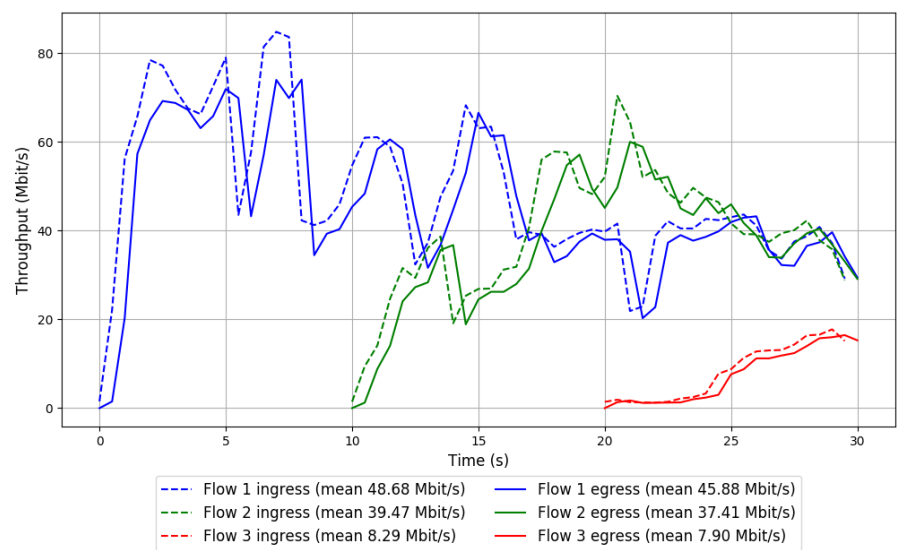Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-09-11 04:20:31
End at: 2018-09-11 04:21:01
Local clock offset: 1.438 ms
Remote clock offset: -3.393 ms


# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.36 Mbit/s
95th percentile per-packet one-way delay: 11.959 ms
Loss rate: 5.54%
-- Flow 1:
Average throughput: 45.88 Mbit/s
95th percentile per-packet one-way delay: 7.924 ms
Loss rate: 5.76%
-- Flow 2:
Average throughput: 37.41 Mbit/s
95th percentile per-packet one-way delay: 13.362 ms
Loss rate: 5.22%
-- Flow 3:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 12.798 ms
Loss rate: 4.63%
```

Run 5: Report of PCC-Vivace — Data Link

- - - - Flow 1 ingress (mean 48.68 Mbit/s) —— Flow 1 egress (mean 45.88 Mbit/s)
- - - - Flow 2 ingress (mean 39.47 Mbit/s) —— Flow 2 egress (mean 37.41 Mbit/s)
- - - - Flow 3 ingress (mean 8.29 Mbit/s) —— Flow 3 egress (mean 7.90 Mbit/s)

- Flow 1 (95th percentile 7.92 ms)   - Flow 2 (95th percentile 13.36 ms)   - Flow 3 (95th percentile 12.80 ms)
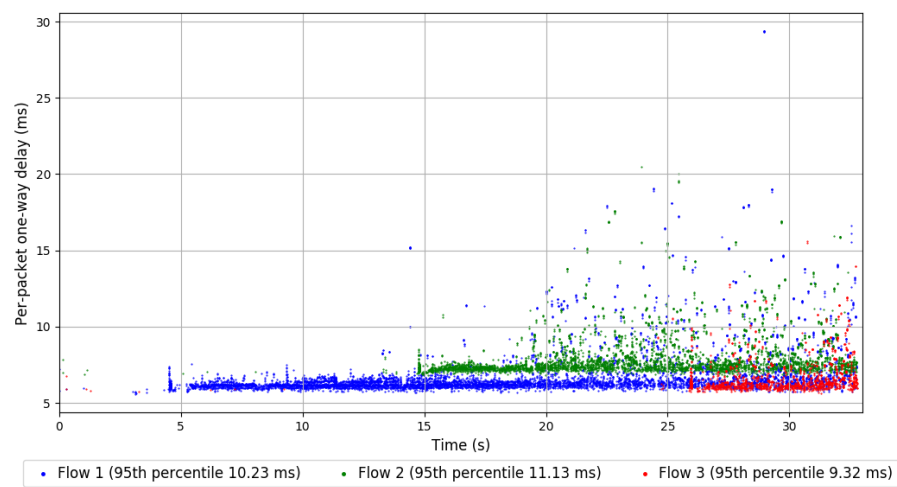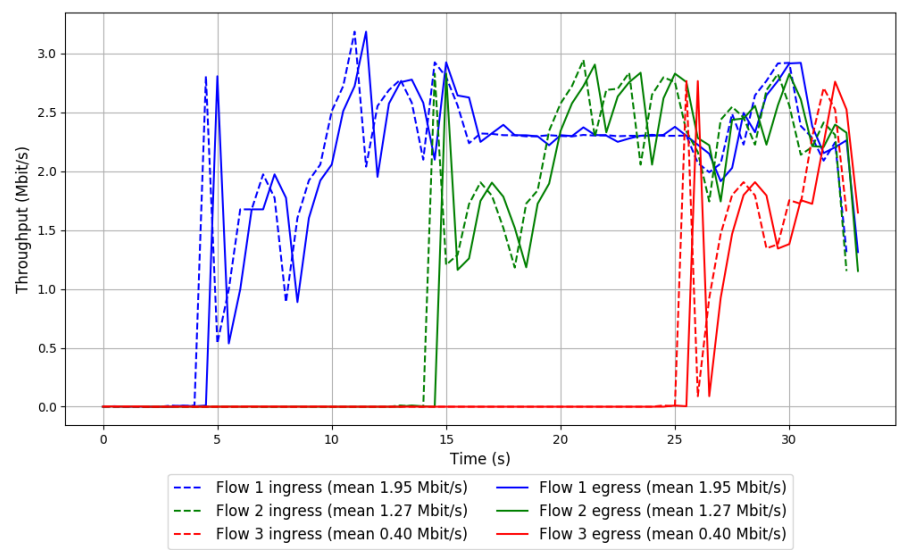
```
Run 1: Statistics of WebRTC media

Start at: 2018-09-11 02:51:20
End at: 2018-09-11 02:51:50
Local clock offset: 0.933 ms
Remote clock offset: -4.889 ms


# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 10.574 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 10.227 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 11.130 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 9.319 ms
Loss rate: 0.00%
```
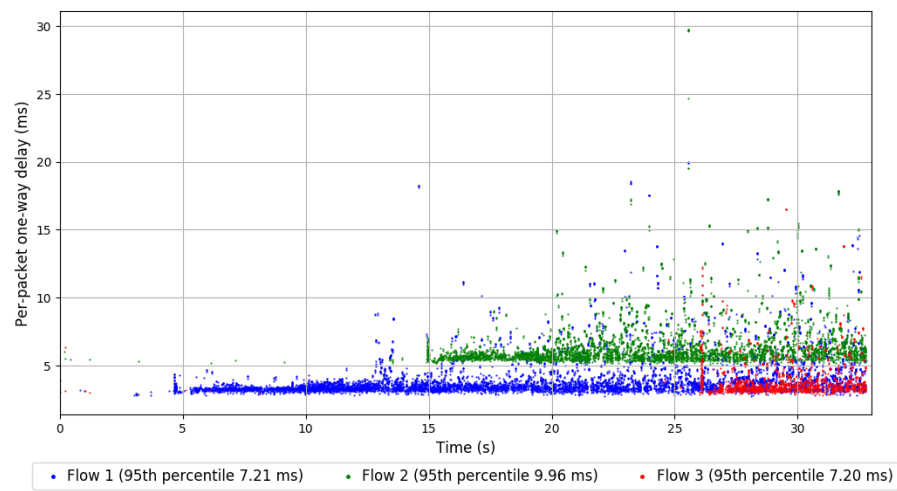
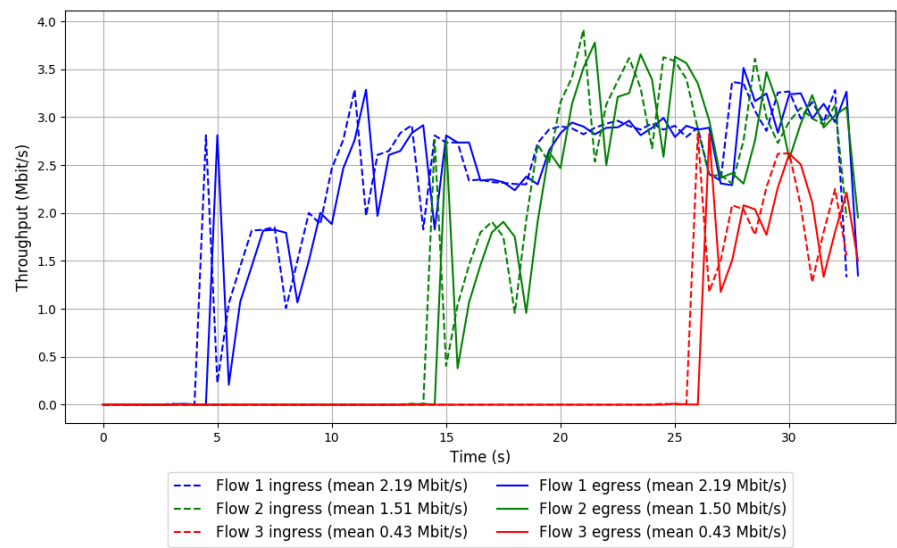Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-11 03:12:28
End at: 2018-09-11 03:12:58
Local clock offset: 1.155 ms
Remote clock offset: -7.353 ms


# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 8.692 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 7.210 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 9.957 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 7.202 ms
Loss rate: 0.41%
```

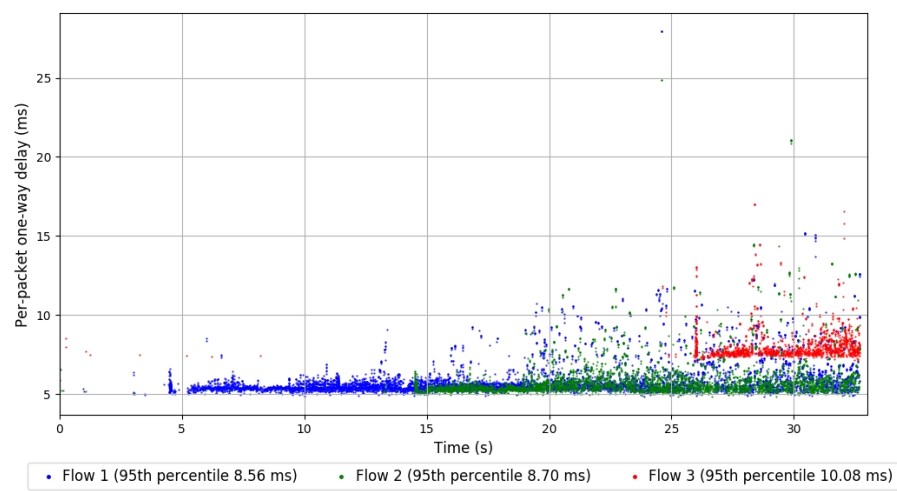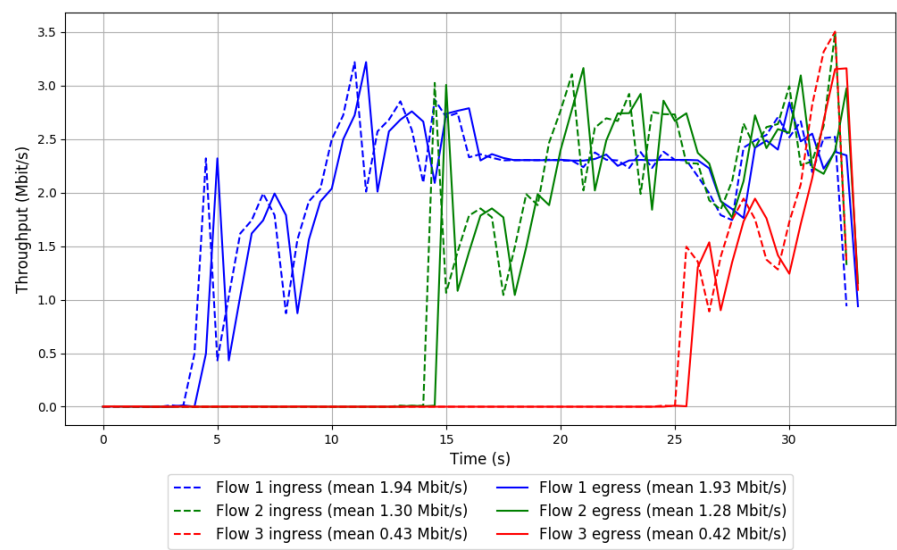Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-09-11 03:33:25
End at: 2018-09-11 03:33:55
Local clock offset: 0.86 ms
Remote clock offset: -4.697 ms


# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.62 Mbit/s
95th percentile per-packet one-way delay: 9.001 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 8.558 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 8.695 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 10.083 ms
Loss rate: 3.30%
```

Run 3: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.94 Mbit/s)   Flow 1 egress (mean 1.93 Mbit/s)
Flow 2 ingress (mean 1.30 Mbit/s)   Flow 2 egress (mean 1.28 Mbit/s)
Flow 3 ingress (mean 0.43 Mbit/s)   Flow 3 egress (mean 0.42 Mbit/s)

Flow 1 (95th percentile 8.56 ms)   Flow 2 (95th percentile 8.70 ms)   Flow 3 (95th percentile 10.08 ms)
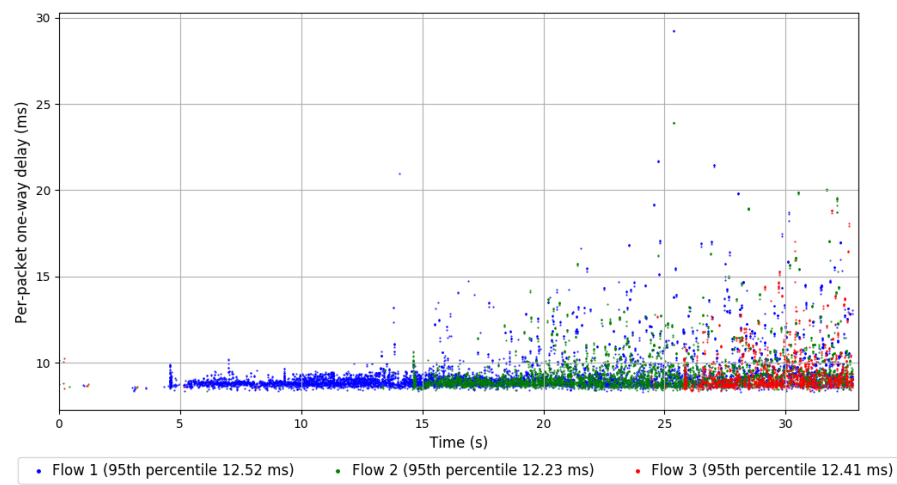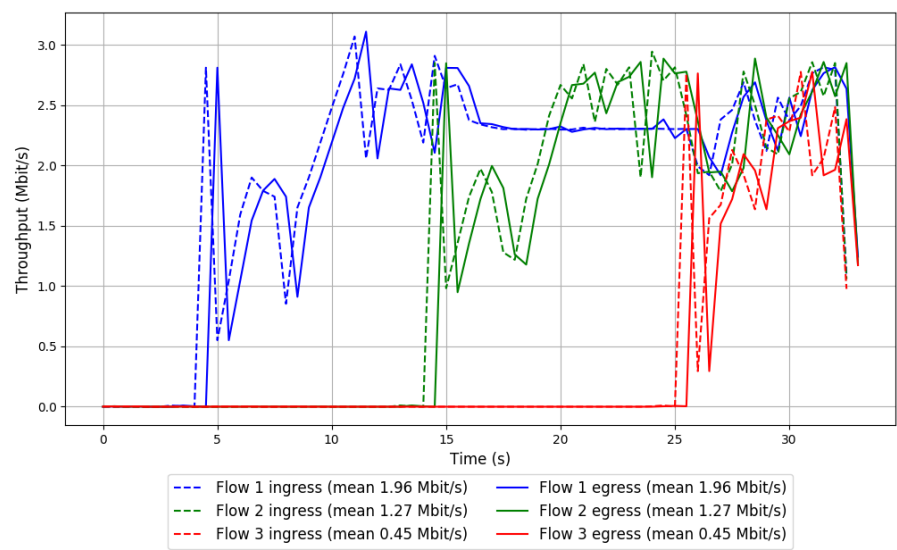
```
Run 4: Statistics of WebRTC media

Start at: 2018-09-11 03:54:29
End at: 2018-09-11 03:54:59
Local clock offset: 0.125 ms
Remote clock offset: -2.846 ms

# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 12.323 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 12.523 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 12.229 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 12.410 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-09-11 04:15:53
End at: 2018-09-11 04:16:23
Local clock offset: 1.465 ms
Remote clock offset: -2.745 ms


# Below is generated by plot.py at 2018-09-11 04:33:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: 14.344 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 2.52 Mbit/s
95th percentile per-packet one-way delay: 14.461 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 14.560 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 10.476 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link