Pantheon Report

Generated at 2018-12-20 04:35:35 (UTC).

Data path: AWS California 1 on **ens5** (*local*) →Stanford on **eno1** (*remote*).

Repeated the test of 19 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.
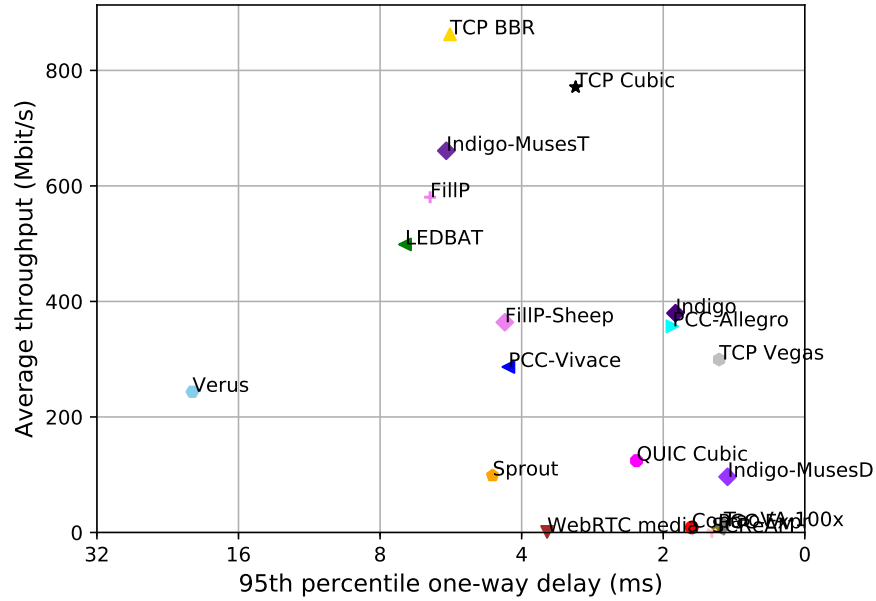
```
System info:
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```
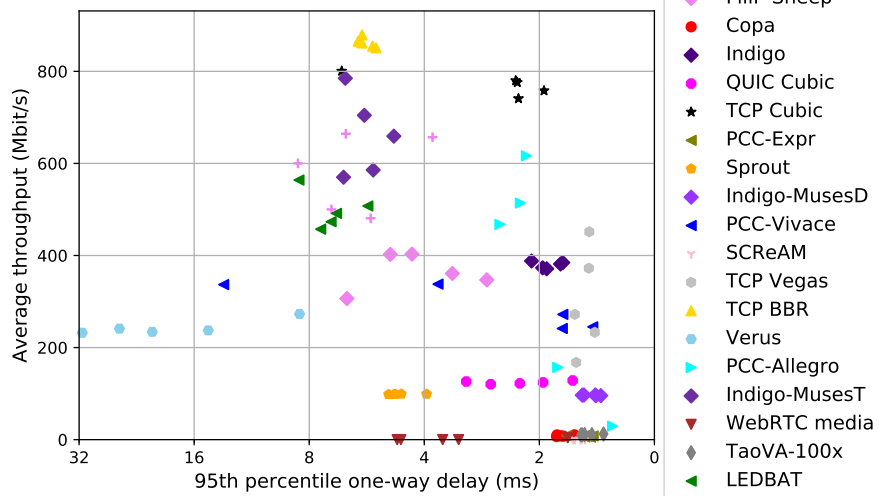
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

test from AWS California 1 to Stanford, 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	490.73	407.77	301.44	5.65	6.01	2.97	5.73	9.62	13.21
Copa	5	9.14	7.21	6.80	1.78	1.58	1.42	46.18	44.98	48.39
TCP Cubic	5	436.80	356.22	291.57	3.32	2.09	2.20	0.22	0.22	0.27
FillP	5	345.45	258.33	190.23	7.67	4.66	4.16	9.22	16.17	12.91
FillP-Sheep	5	311.17	64.63	29.85	4.63	1.99	2.40	3.76	4.24	6.29
Indigo	5	196.85	188.04	179.69	1.71	1.85	2.04	0.06	0.08	0.09
Indigo-MusesD	5	48.02	47.98	50.11	1.08	1.11	1.06	0.01	0.01	0.01
Indigo-MusesT	5	412.05	265.09	247.06	5.64	3.82	3.09	1.44	1.85	2.77
LEDBAT	5	270.19	247.64	202.05	7.50	6.45	5.80	0.25	0.31	0.36
PCC-Allegro	5	180.09	237.39	57.42	1.88	1.67	1.66	0.28	0.29	0.37
PCC-Expr	5	0.63	7.42	7.06	1.28	1.23	1.19	85.71	31.03	35.25
QUIC Cubic	5	67.07	59.79	53.34	1.62	2.12	5.55	0.01	0.02	0.04
SCReAM	5	0.22	0.22	0.22	1.34	1.29	1.32	0.00	0.00	0.00
Sprout	5	49.49	49.49	49.25	4.57	4.68	4.58	0.60	0.49	0.46
TaoVA-100x	5	5.34	7.08	6.72	1.20	1.08	1.10	53.23	56.95	66.77
TCP Vegas	5	122.72	156.24	218.40	1.20	1.15	1.38	0.04	0.04	0.06
Verus	5	124.48	118.98	121.29	18.03	17.01	44.85	4.33	4.84	6.77
PCC-Vivace	5	159.67	129.43	123.86	2.94	12.95	2.61	0.24	0.34	0.19
WebRTC media	5	0.48	0.32	0.15	3.74	3.69	3.13	0.00	0.01	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-20 01:55:41
End at: 2018-12-20 01:56:12
Local clock offset: 0.516 ms
Remote clock offset: 0.897 ms


# Below is generated by plot.py at 2018-12-20 04:03:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 851.04 Mbit/s
95th percentile per-packet one-way delay: 5.349 ms
Loss rate: 7.85%
-- Flow 1:
Average throughput: 459.31 Mbit/s
95th percentile per-packet one-way delay: 5.406 ms
Loss rate: 6.01%
-- Flow 2:
Average throughput: 448.05 Mbit/s
95th percentile per-packet one-way delay: 5.426 ms
Loss rate: 8.66%
-- Flow 3:
Average throughput: 280.19 Mbit/s
95th percentile per-packet one-way delay: 2.521 ms
Loss rate: 13.74%
```
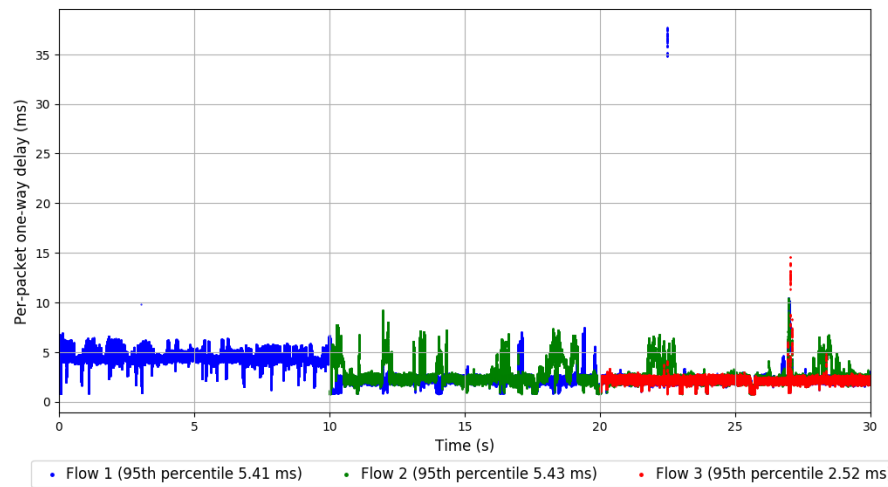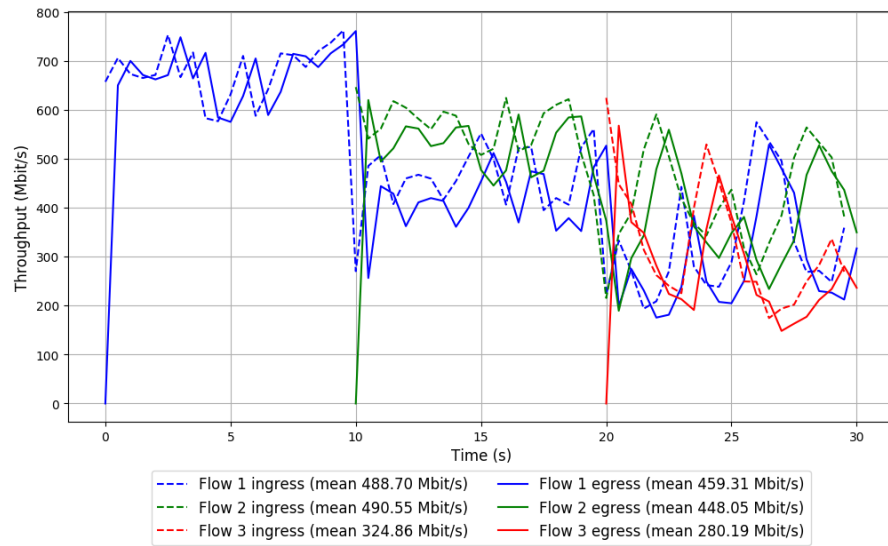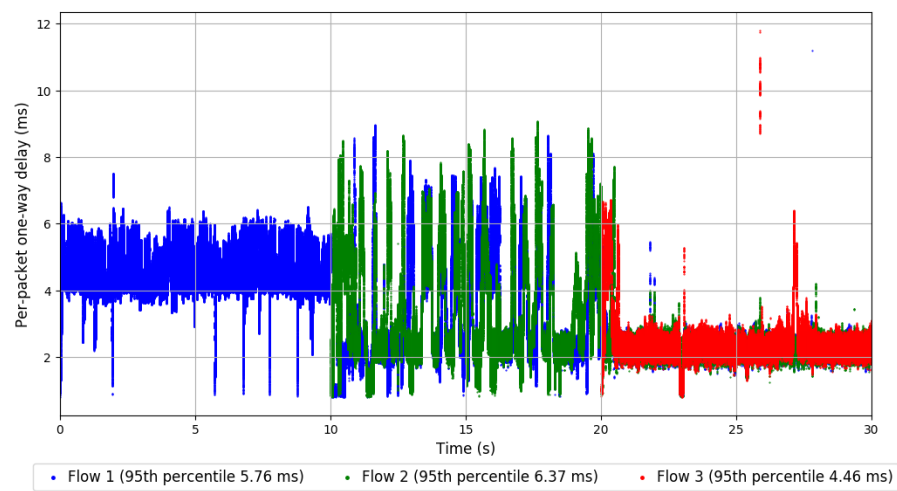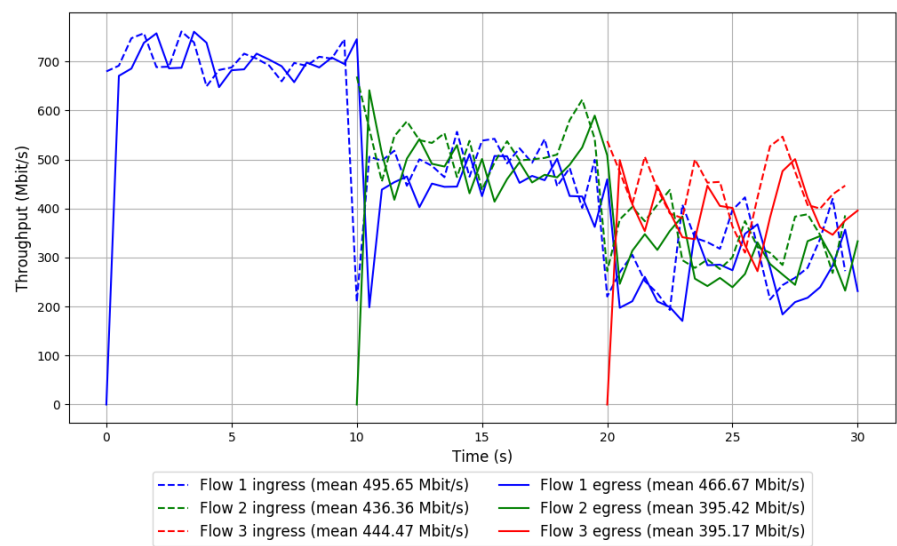
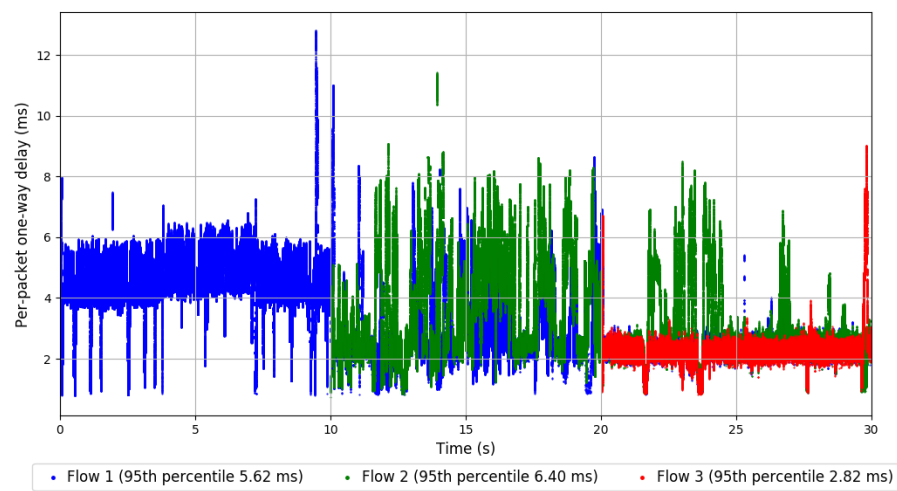Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-20 02:22:34
End at: 2018-12-20 02:23:04
Local clock offset: 3.574 ms
Remote clock offset: 1.207 ms


# Below is generated by plot.py at 2018-12-20 04:03:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.67 Mbit/s
95th percentile per-packet one-way delay: 5.821 ms
Loss rate: 7.77%
-- Flow 1:
Average throughput: 466.67 Mbit/s
95th percentile per-packet one-way delay: 5.761 ms
Loss rate: 5.84%
-- Flow 2:
Average throughput: 395.42 Mbit/s
95th percentile per-packet one-way delay: 6.368 ms
Loss rate: 9.38%
-- Flow 3:
Average throughput: 395.17 Mbit/s
95th percentile per-packet one-way delay: 4.460 ms
Loss rate: 11.09%
```

Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-12-20 02:49:31
End at: 2018-12-20 02:50:01
Local clock offset: 5.116 ms
Remote clock offset: -2.432 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 879.21 Mbit/s
95th percentile per-packet one-way delay: 5.818 ms
Loss rate: 7.63%
-- Flow 1:
Average throughput: 497.00 Mbit/s
95th percentile per-packet one-way delay: 5.622 ms
Loss rate: 6.18%
-- Flow 2:
Average throughput: 454.82 Mbit/s
95th percentile per-packet one-way delay: 6.404 ms
Loss rate: 8.41%
-- Flow 3:
Average throughput: 238.01 Mbit/s
95th percentile per-packet one-way delay: 2.817 ms
Loss rate: 13.19%
```
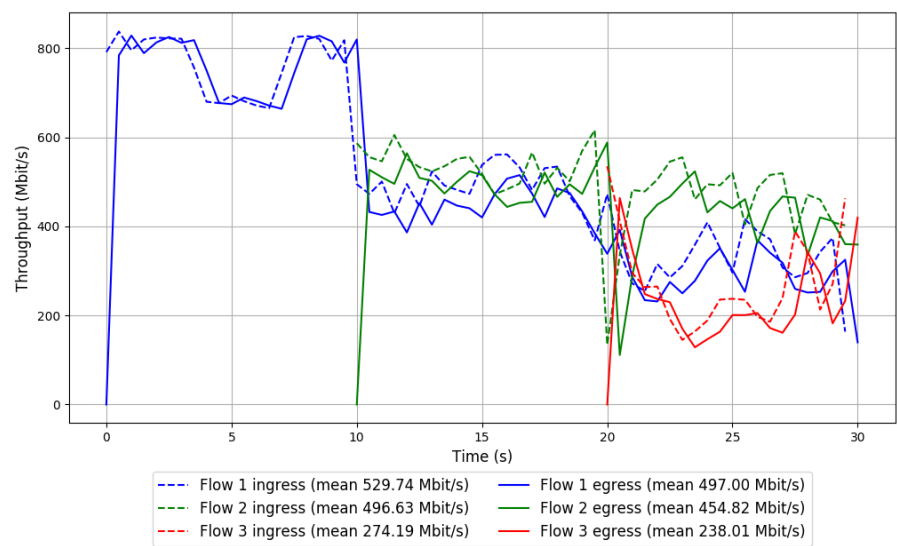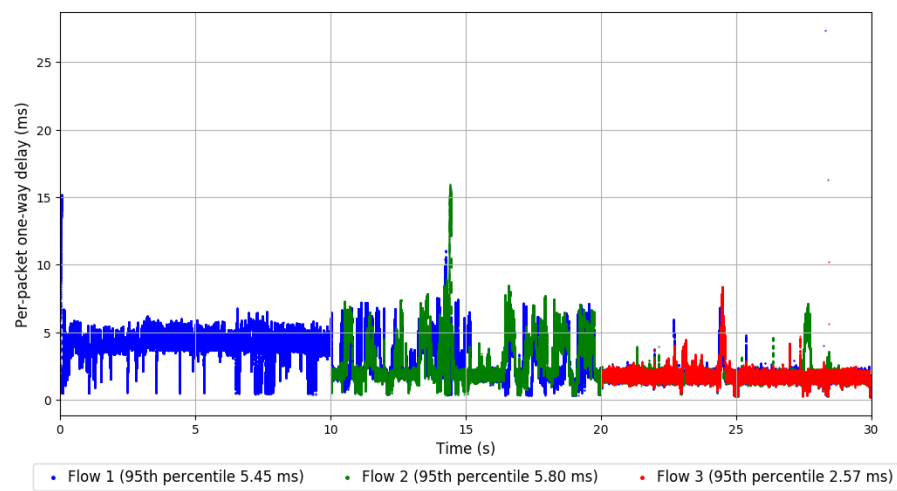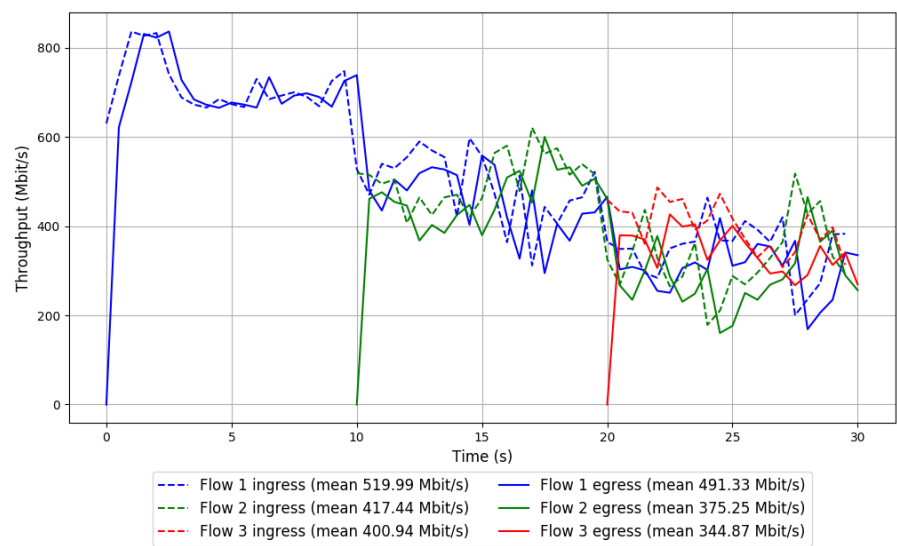
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 529.74 Mbit/s) — Flow 1 egress (mean 497.00 Mbit/s)
Flow 2 ingress (mean 496.63 Mbit/s) — Flow 2 egress (mean 454.82 Mbit/s)
Flow 3 ingress (mean 274.19 Mbit/s) — Flow 3 egress (mean 238.01 Mbit/s)

• Flow 1 (95th percentile 5.62 ms)   • Flow 2 (95th percentile 6.40 ms)   • Flow 3 (95th percentile 2.82 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-20 03:16:00
End at: 2018-12-20 03:16:30
Local clock offset: 1.297 ms
Remote clock offset: -2.842 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 854.75 Mbit/s
95th percentile per-packet one-way delay: 5.459 ms
Loss rate: 8.15%
-- Flow 1:
Average throughput: 491.33 Mbit/s
95th percentile per-packet one-way delay: 5.449 ms
Loss rate: 5.59%
-- Flow 2:
Average throughput: 375.25 Mbit/s
95th percentile per-packet one-way delay: 5.797 ms
Loss rate: 10.12%
-- Flow 3:
Average throughput: 344.87 Mbit/s
95th percentile per-packet one-way delay: 2.570 ms
Loss rate: 13.98%
```
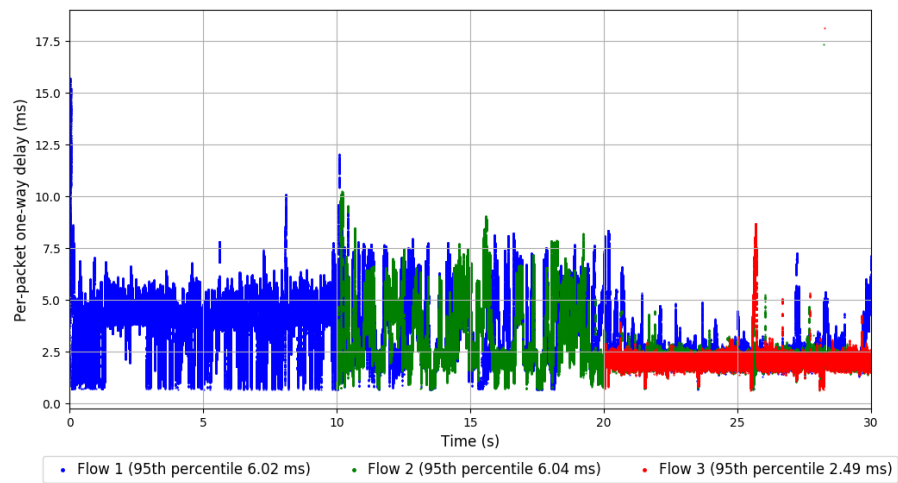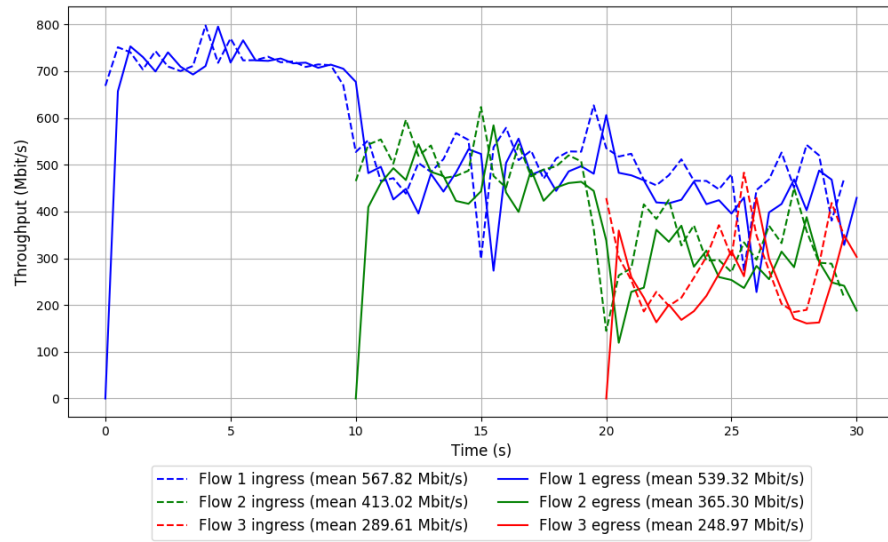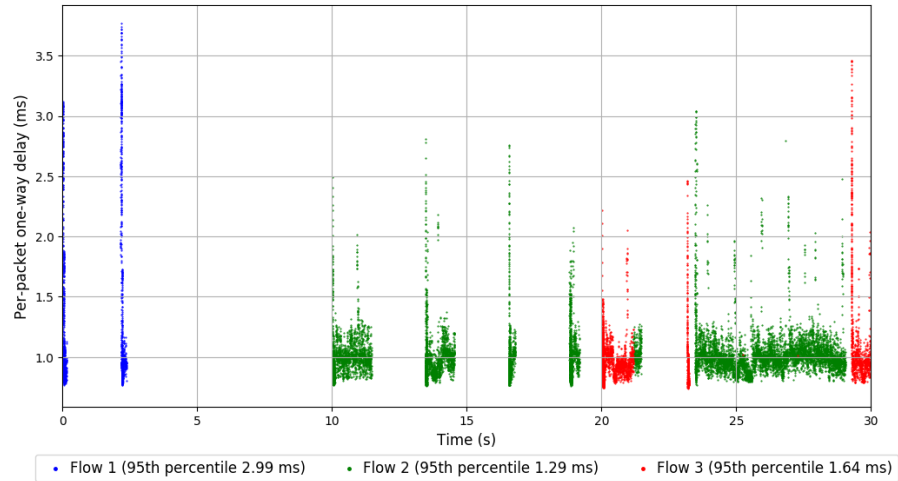
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 519.99 Mbit/s) — — — Flow 1 egress (mean 491.33 Mbit/s)
Flow 2 ingress (mean 417.44 Mbit/s) — — — Flow 2 egress (mean 375.25 Mbit/s)
Flow 3 ingress (mean 400.94 Mbit/s) — — — Flow 3 egress (mean 344.87 Mbit/s)

Flow 1 (95th percentile 5.45 ms)   • Flow 2 (95th percentile 5.80 ms)   • Flow 3 (95th percentile 2.57 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-20 03:42:34
End at: 2018-12-20 03:43:04
Local clock offset: -2.565 ms
Remote clock offset: 0.268 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 865.54 Mbit/s
95th percentile per-packet one-way delay: 5.959 ms
Loss rate: 7.86%
-- Flow 1:
Average throughput: 539.32 Mbit/s
95th percentile per-packet one-way delay: 6.016 ms
Loss rate: 5.02%
-- Flow 2:
Average throughput: 365.30 Mbit/s
95th percentile per-packet one-way delay: 6.038 ms
Loss rate: 11.55%
-- Flow 3:
Average throughput: 248.97 Mbit/s
95th percentile per-packet one-way delay: 2.491 ms
Loss rate: 14.03%
```
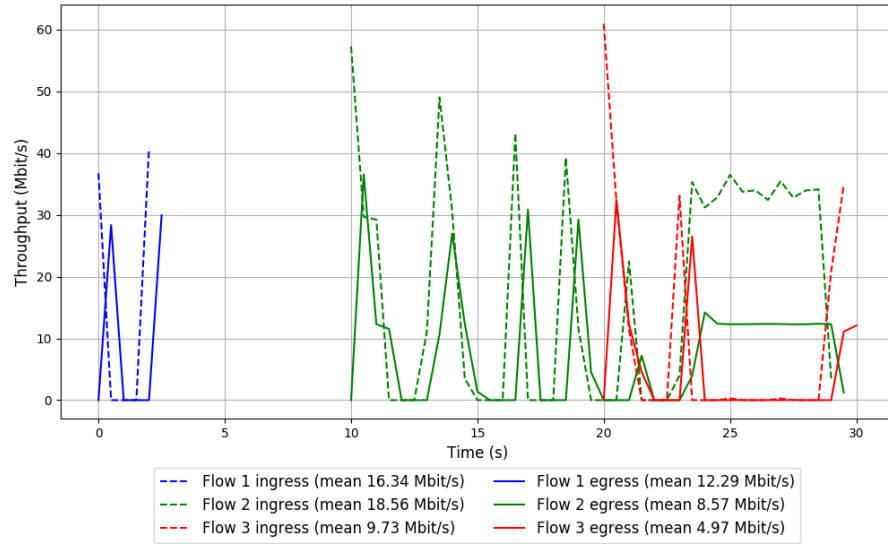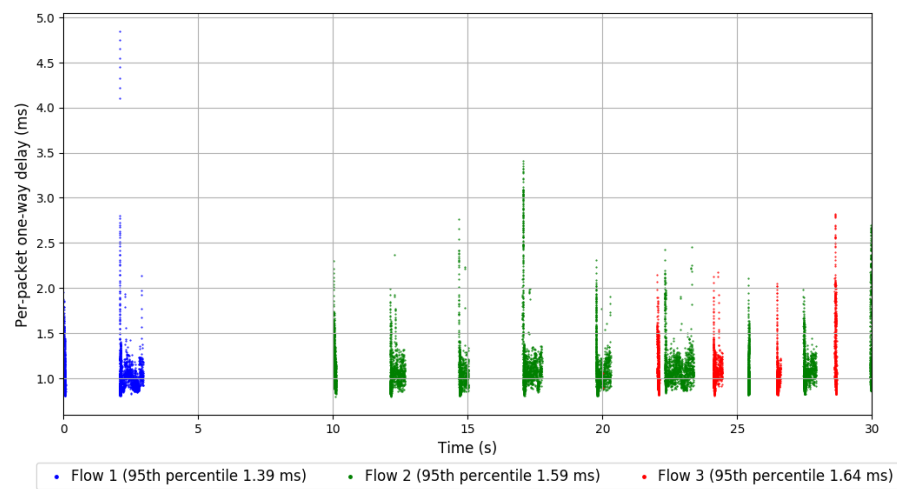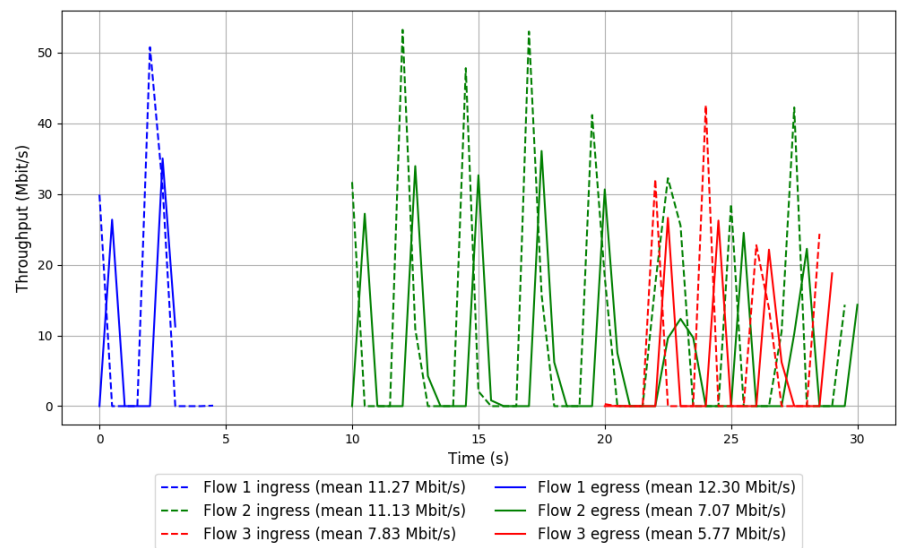
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 567.82 Mbit/s)   Flow 1 egress (mean 539.32 Mbit/s)
Flow 2 ingress (mean 413.02 Mbit/s)   Flow 2 egress (mean 365.30 Mbit/s)
Flow 3 ingress (mean 289.61 Mbit/s)   Flow 3 egress (mean 248.97 Mbit/s)

Flow 1 (95th percentile 6.02 ms)   Flow 2 (95th percentile 6.04 ms)   Flow 3 (95th percentile 2.49 ms)

14

```
Run 1: Statistics of Copa

Start at: 2018-12-20 01:54:27
End at: 2018-12-20 01:54:57
Local clock offset: 0.529 ms
Remote clock offset: 0.858 ms

# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.06 Mbit/s
95th percentile per-packet one-way delay: 1.622 ms
Loss rate: 50.58%
-- Flow 1:
Average throughput: 12.29 Mbit/s
95th percentile per-packet one-way delay: 2.994 ms
Loss rate: 24.83%
-- Flow 2:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 1.286 ms
Loss rate: 53.85%
-- Flow 3:
Average throughput: 4.97 Mbit/s
95th percentile per-packet one-way delay: 1.640 ms
Loss rate: 48.96%
```
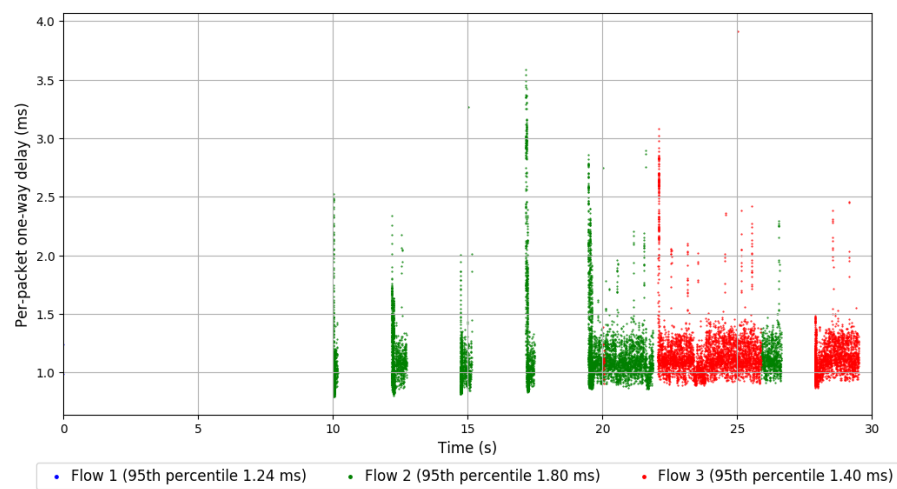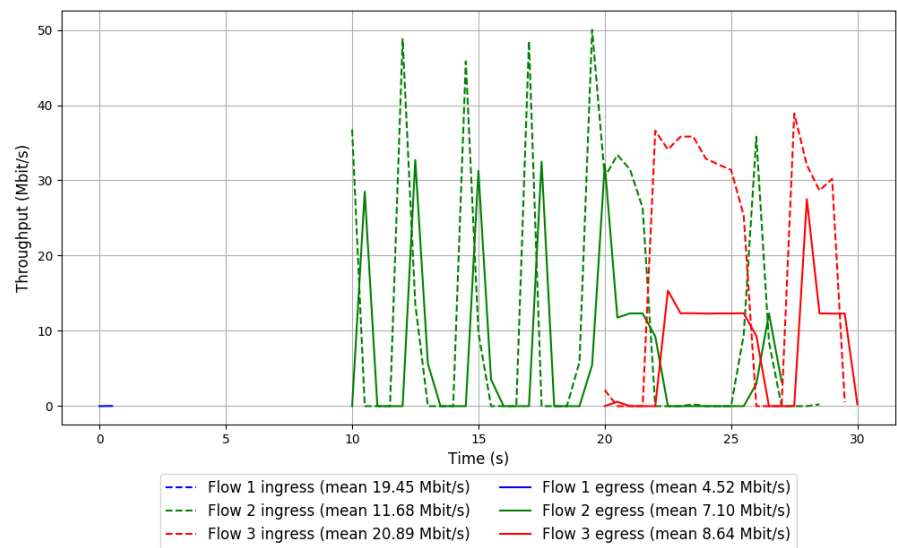
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-12-20 02:21:20
End at: 2018-12-20 02:21:50
Local clock offset: 3.463 ms
Remote clock offset: 1.19 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 1.580 ms
Loss rate: 34.25%
-- Flow 1:
Average throughput: 12.30 Mbit/s
95th percentile per-packet one-way delay: 1.390 ms
Loss rate: 34.96%
-- Flow 2:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 1.590 ms
Loss rate: 36.49%
-- Flow 3:
Average throughput: 5.77 Mbit/s
95th percentile per-packet one-way delay: 1.642 ms
Loss rate: 26.35%
```
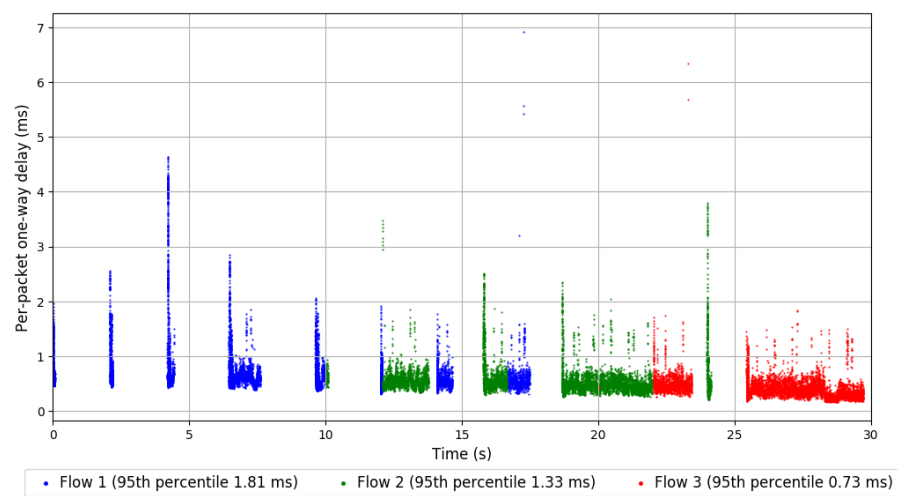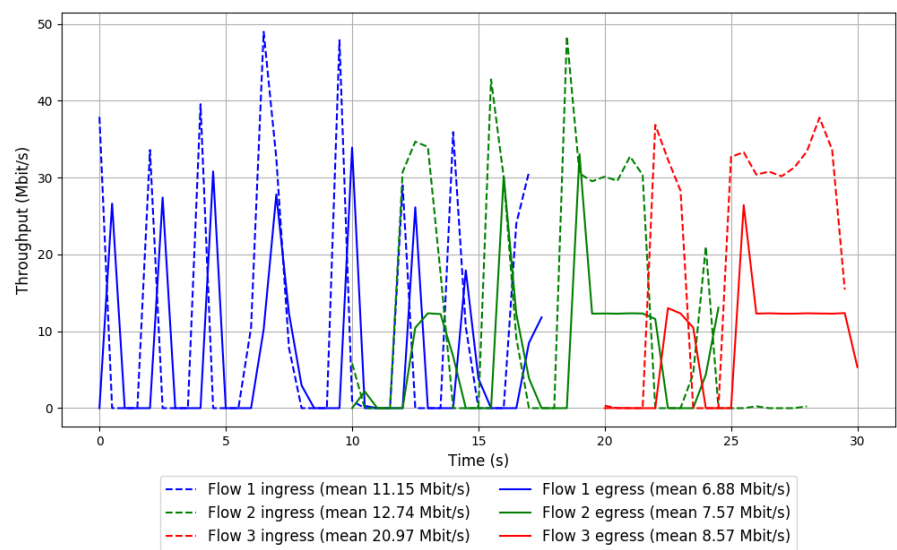
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-12-20 02:48:17
End at: 2018-12-20 02:48:47
Local clock offset: 5.082 ms
Remote clock offset: -2.154 ms

# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 1.701 ms
Loss rate: 51.92%
-- Flow 1:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 1.237 ms
Loss rate: 78.66%
-- Flow 2:
Average throughput: 7.10 Mbit/s
95th percentile per-packet one-way delay: 1.799 ms
Loss rate: 45.76%
-- Flow 3:
Average throughput: 8.64 Mbit/s
95th percentile per-packet one-way delay: 1.397 ms
Loss rate: 58.67%
```
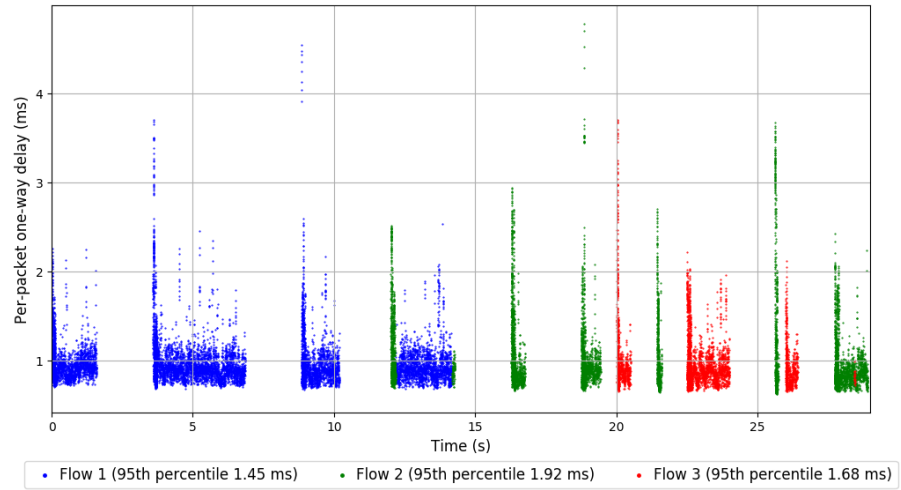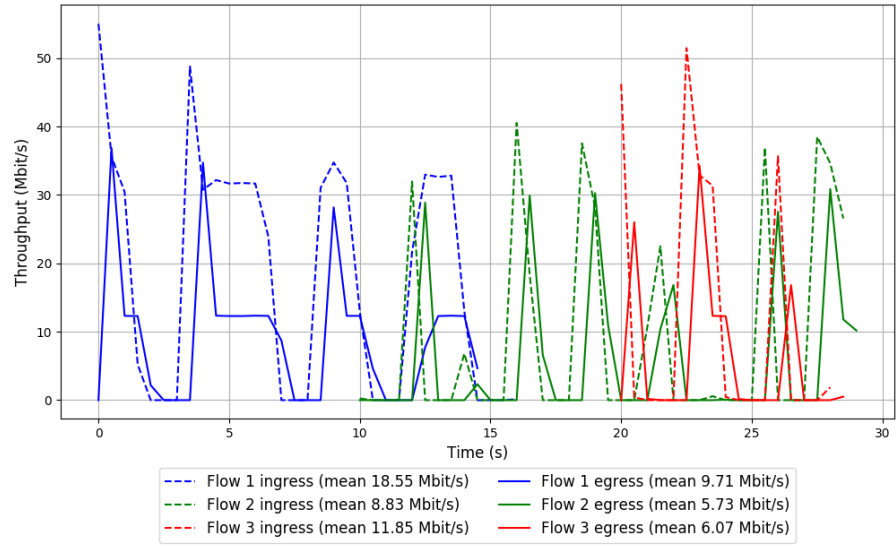
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 19.45 Mbit/s) --- Flow 1 egress (mean 4.52 Mbit/s) ---
Flow 2 ingress (mean 11.68 Mbit/s) --- Flow 2 egress (mean 7.10 Mbit/s) ---
Flow 3 ingress (mean 20.89 Mbit/s) --- Flow 3 egress (mean 8.64 Mbit/s) ---

Flow 1 (95th percentile 1.24 ms) • Flow 2 (95th percentile 1.80 ms) • Flow 3 (95th percentile 1.40 ms)

```
Run 4: Statistics of Copa

Start at: 2018-12-20 03:14:46
End at: 2018-12-20 03:15:16
Local clock offset: 1.643 ms
Remote clock offset: -3.322 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.45 Mbit/s
95th percentile per-packet one-way delay: 1.391 ms
Loss rate: 50.68%
-- Flow 1:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 1.809 ms
Loss rate: 38.29%
-- Flow 2:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 1.326 ms
Loss rate: 53.68%
-- Flow 3:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 0.728 ms
Loss rate: 59.14%
```
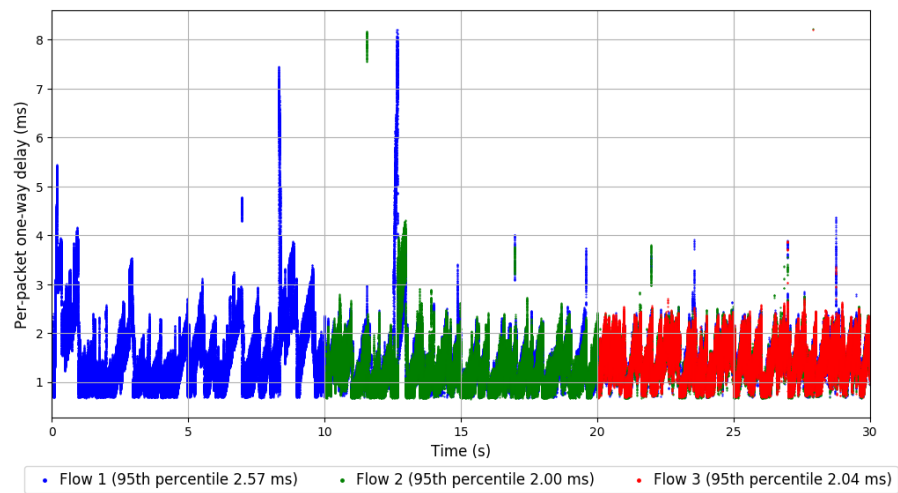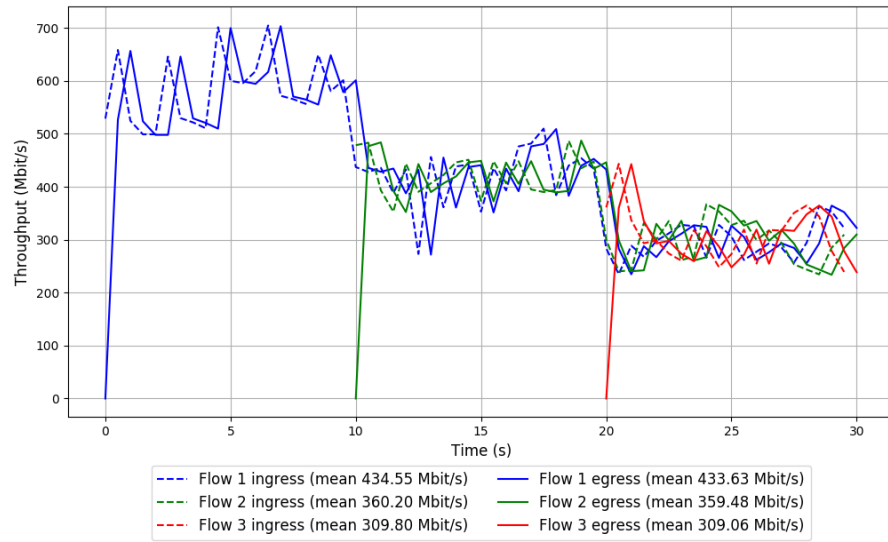
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-12-20 03:41:20
End at: 2018-12-20 03:41:50
Local clock offset: -2.385 ms
Remote clock offset: 0.261 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.28 Mbit/s
95th percentile per-packet one-way delay: 1.692 ms
Loss rate: 47.62%
-- Flow 1:
Average throughput: 9.71 Mbit/s
95th percentile per-packet one-way delay: 1.448 ms
Loss rate: 54.15%
-- Flow 2:
Average throughput: 5.73 Mbit/s
95th percentile per-packet one-way delay: 1.919 ms
Loss rate: 35.14%
-- Flow 3:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 1.678 ms
Loss rate: 48.82%
```
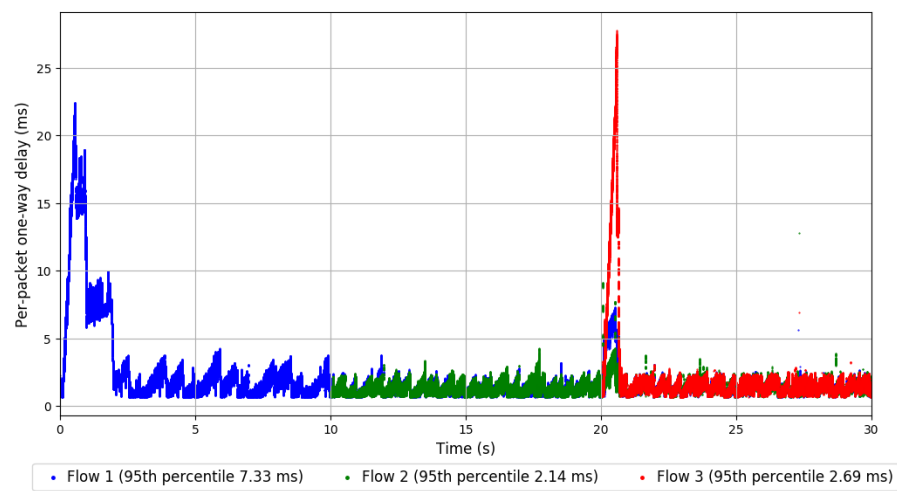
Run 5: Report of Copa — Data Link

24

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-20 01:36:02
End at: 2018-12-20 01:36:32
Local clock offset: 0.728 ms
Remote clock offset: 0.562 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 775.92 Mbit/s
95th percentile per-packet one-way delay: 2.285 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 433.63 Mbit/s
95th percentile per-packet one-way delay: 2.570 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 359.48 Mbit/s
95th percentile per-packet one-way delay: 2.005 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 309.06 Mbit/s
95th percentile per-packet one-way delay: 2.041 ms
Loss rate: 0.23%
```
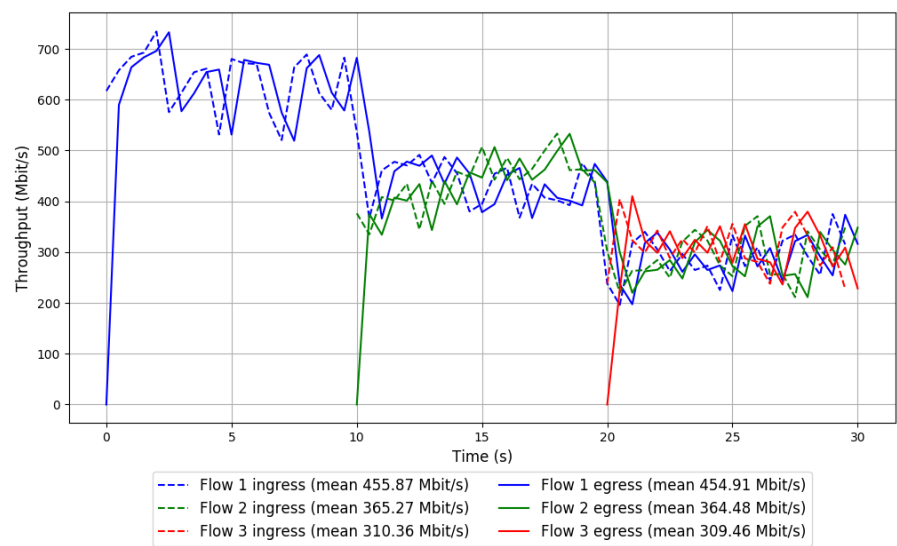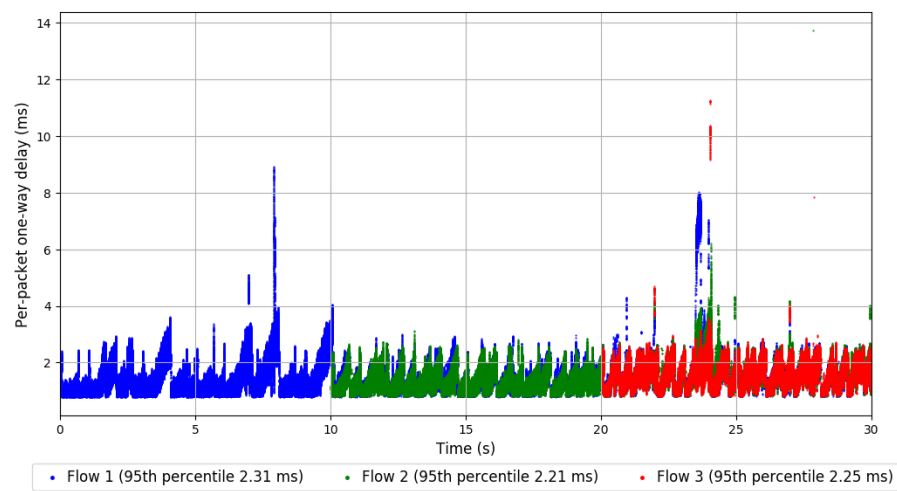
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-20 02:02:55
End at: 2018-12-20 02:03:25
Local clock offset: 0.541 ms
Remote clock offset: 1.007 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 800.57 Mbit/s
95th percentile per-packet one-way delay: 6.579 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 454.91 Mbit/s
95th percentile per-packet one-way delay: 7.334 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 364.48 Mbit/s
95th percentile per-packet one-way delay: 2.139 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 309.46 Mbit/s
95th percentile per-packet one-way delay: 2.690 ms
Loss rate: 0.29%
```
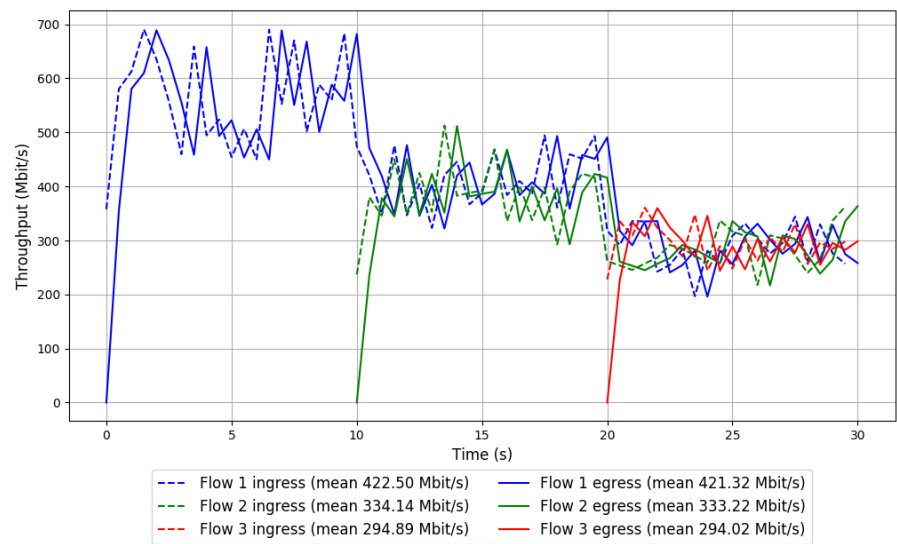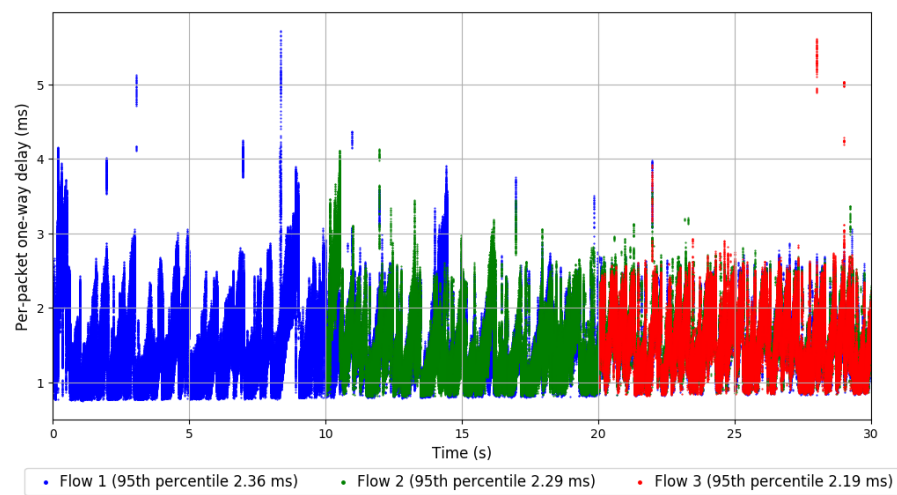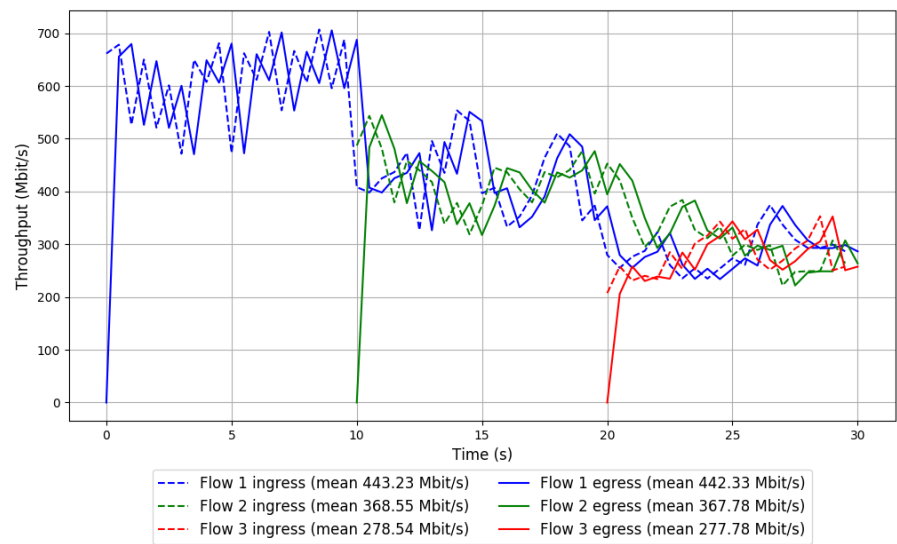
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-20 02:29:51
End at: 2018-12-20 02:30:21
Local clock offset: 4.114 ms
Remote clock offset: 1.364 ms


# Below is generated by plot.py at 2018-12-20 04:03:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 740.86 Mbit/s
95th percentile per-packet one-way delay: 2.268 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 421.32 Mbit/s
95th percentile per-packet one-way delay: 2.312 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 333.22 Mbit/s
95th percentile per-packet one-way delay: 2.208 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 294.02 Mbit/s
95th percentile per-packet one-way delay: 2.246 ms
Loss rate: 0.29%
```
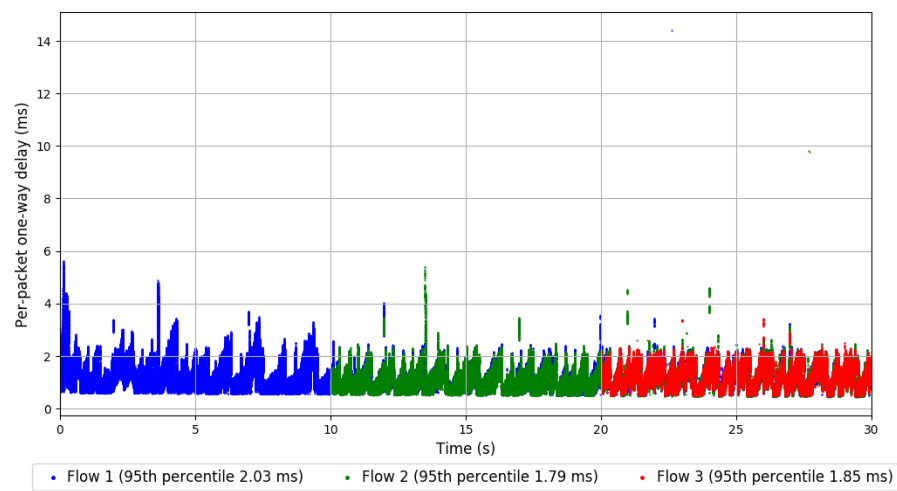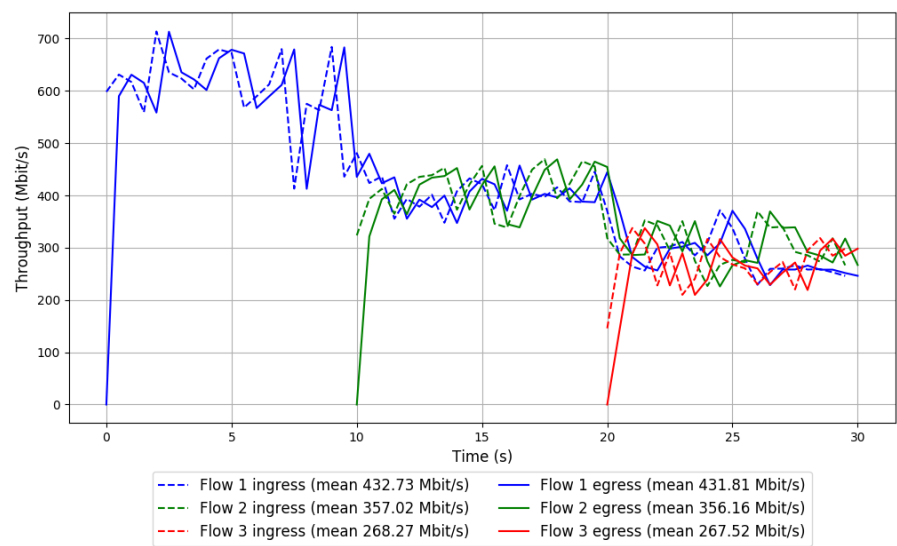
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-20 02:56:42
End at: 2018-12-20 02:57:12
Local clock offset: 5.451 ms
Remote clock offset: -3.431 ms


# Below is generated by plot.py at 2018-12-20 04:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 779.83 Mbit/s
95th percentile per-packet one-way delay: 2.306 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 442.33 Mbit/s
95th percentile per-packet one-way delay: 2.357 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 367.78 Mbit/s
95th percentile per-packet one-way delay: 2.289 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 277.78 Mbit/s
95th percentile per-packet one-way delay: 2.191 ms
Loss rate: 0.26%
```

Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 03:23:13
End at: 2018-12-20 03:23:43
Local clock offset: -0.075 ms
Remote clock offset: -1.091 ms


# Below is generated by plot.py at 2018-12-20 04:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.98 Mbit/s
95th percentile per-packet one-way delay: 1.919 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 431.81 Mbit/s
95th percentile per-packet one-way delay: 2.031 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 356.16 Mbit/s
95th percentile per-packet one-way delay: 1.795 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 267.52 Mbit/s
95th percentile per-packet one-way delay: 1.846 ms
Loss rate: 0.28%
```
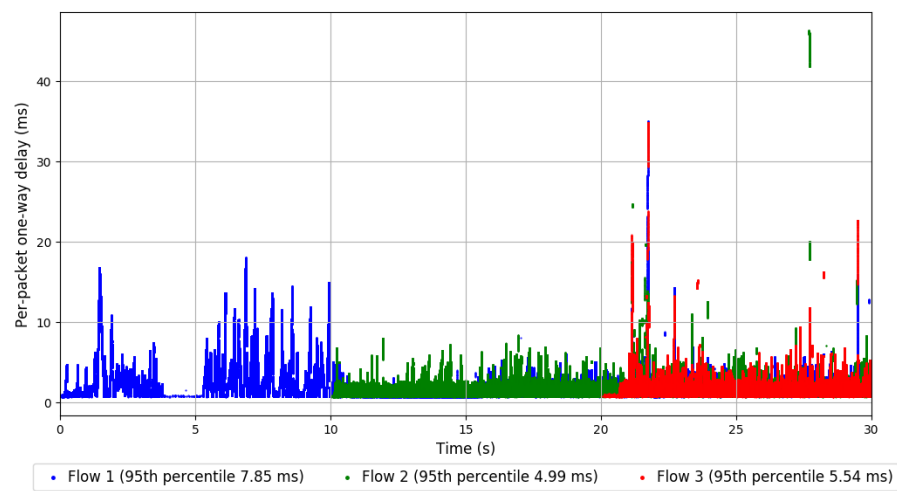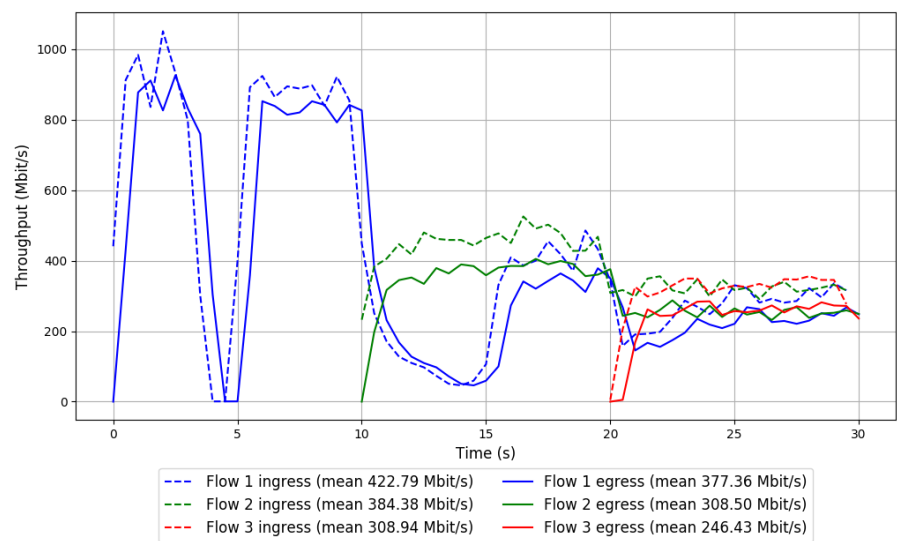
Run 5: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 432.73 Mbit/s) ——— Flow 1 egress (mean 431.81 Mbit/s)
- - - - Flow 2 ingress (mean 357.02 Mbit/s) ——— Flow 2 egress (mean 356.16 Mbit/s)
- - - - Flow 3 ingress (mean 268.27 Mbit/s) ——— Flow 3 egress (mean 267.52 Mbit/s)

• Flow 1 (95th percentile 2.03 ms)   • Flow 2 (95th percentile 1.79 ms)   • Flow 3 (95th percentile 1.85 ms)

```
Run 1: Statistics of FillP

Start at: 2018-12-20 01:42:53
End at: 2018-12-20 01:43:23
Local clock offset: 0.584 ms
Remote clock offset: 0.618 ms

# Below is generated by plot.py at 2018-12-20 04:12:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 664.32 Mbit/s
95th percentile per-packet one-way delay: 6.417 ms
Loss rate: 14.93%
-- Flow 1:
Average throughput: 377.36 Mbit/s
95th percentile per-packet one-way delay: 7.852 ms
Loss rate: 10.74%
-- Flow 2:
Average throughput: 308.50 Mbit/s
95th percentile per-packet one-way delay: 4.985 ms
Loss rate: 19.74%
-- Flow 3:
Average throughput: 246.43 Mbit/s
95th percentile per-packet one-way delay: 5.545 ms
Loss rate: 20.20%
```
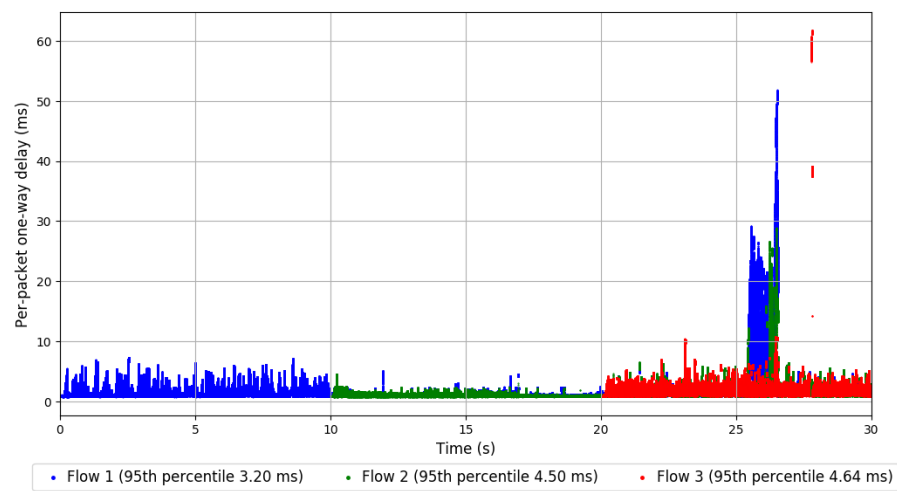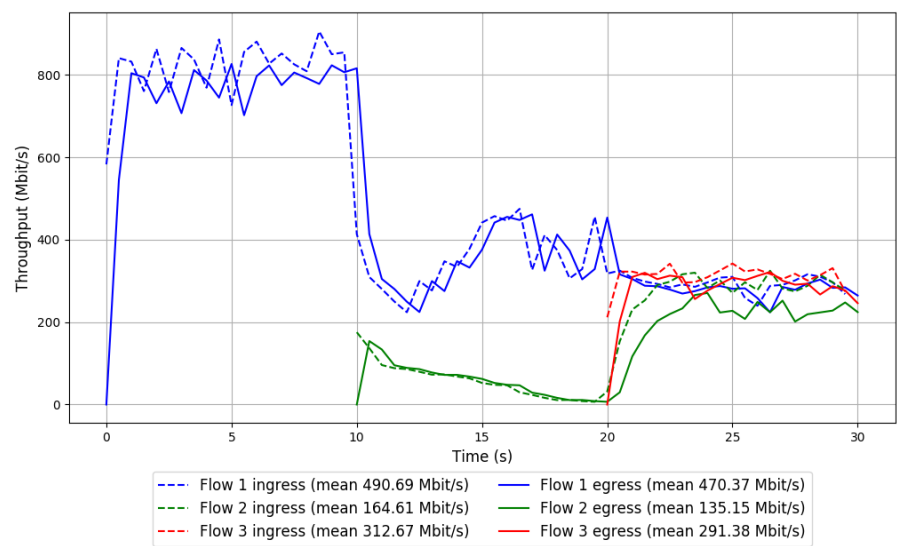
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-20 02:09:49
End at: 2018-12-20 02:10:19
Local clock offset: 1.745 ms
Remote clock offset: 0.952 ms

# Below is generated by plot.py at 2018-12-20 04:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 656.92 Mbit/s
95th percentile per-packet one-way delay: 3.806 ms
Loss rate: 6.67%
-- Flow 1:
Average throughput: 470.37 Mbit/s
95th percentile per-packet one-way delay: 3.197 ms
Loss rate: 4.14%
-- Flow 2:
Average throughput: 135.15 Mbit/s
95th percentile per-packet one-way delay: 4.501 ms
Loss rate: 17.89%
-- Flow 3:
Average throughput: 291.38 Mbit/s
95th percentile per-packet one-way delay: 4.638 ms
Loss rate: 6.81%
```
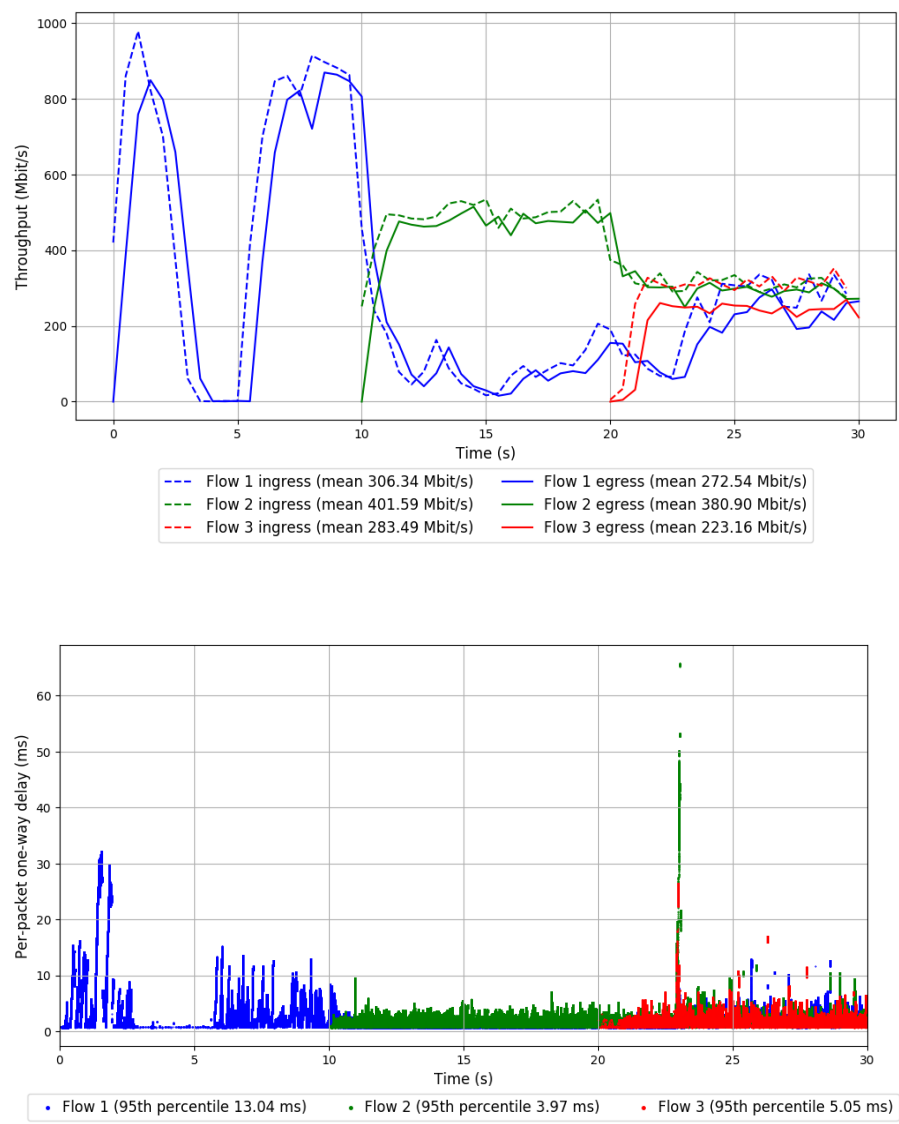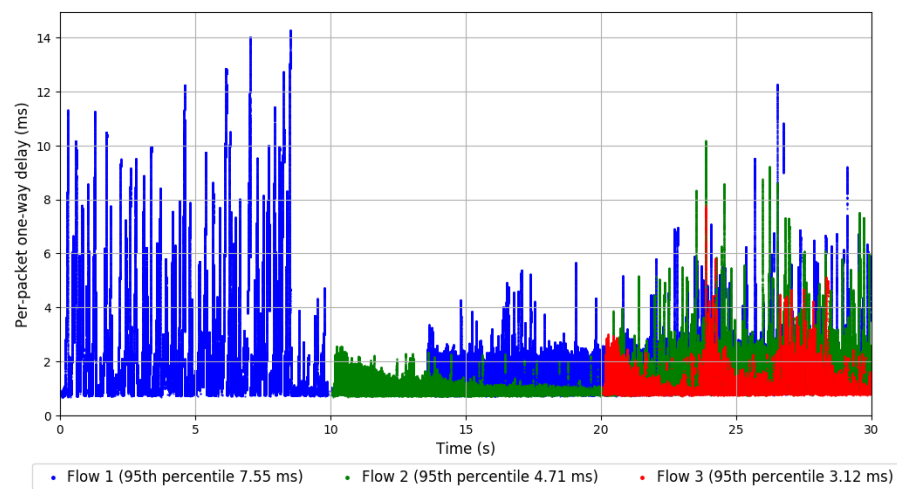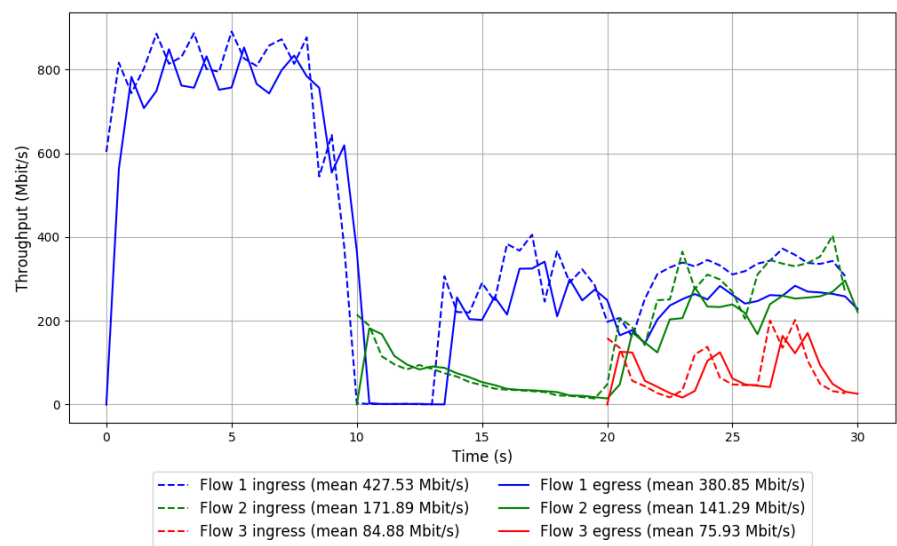
Run 2: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 490.69 Mbit/s) ——— Flow 1 egress (mean 470.37 Mbit/s)
- - - - Flow 2 ingress (mean 164.61 Mbit/s) ——— Flow 2 egress (mean 135.15 Mbit/s)
- - - - Flow 3 ingress (mean 312.67 Mbit/s) ——— Flow 3 egress (mean 291.38 Mbit/s)

- Flow 1 (95th percentile 3.20 ms) • Flow 2 (95th percentile 4.50 ms) • Flow 3 (95th percentile 4.64 ms)

```
Run 3: Statistics of FillP

Start at: 2018-12-20 02:36:41
End at: 2018-12-20 02:37:11
Local clock offset: 4.504 ms
Remote clock offset: 1.435 ms


# Below is generated by plot.py at 2018-12-20 04:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 600.12 Mbit/s
95th percentile per-packet one-way delay: 8.563 ms
Loss rate: 10.12%
-- Flow 1:
Average throughput: 272.54 Mbit/s
95th percentile per-packet one-way delay: 13.036 ms
Loss rate: 11.03%
-- Flow 2:
Average throughput: 380.90 Mbit/s
95th percentile per-packet one-way delay: 3.968 ms
Loss rate: 5.16%
-- Flow 3:
Average throughput: 223.16 Mbit/s
95th percentile per-packet one-way delay: 5.054 ms
Loss rate: 21.28%
```
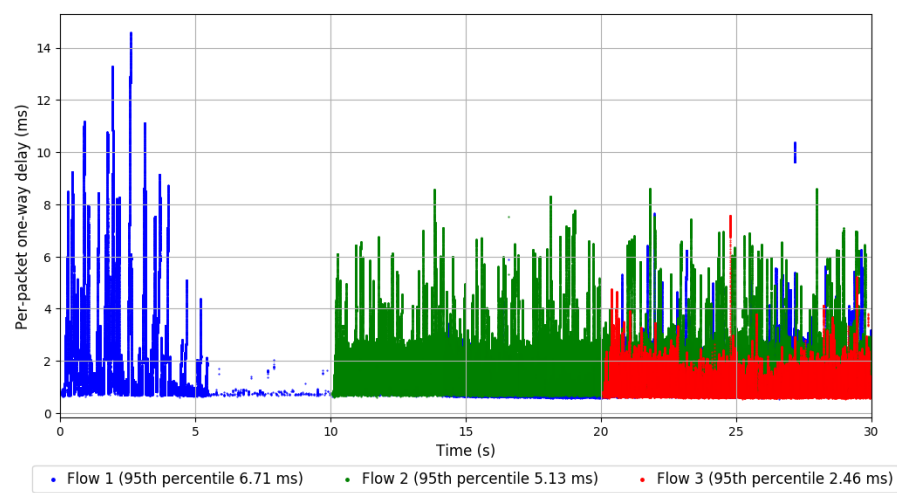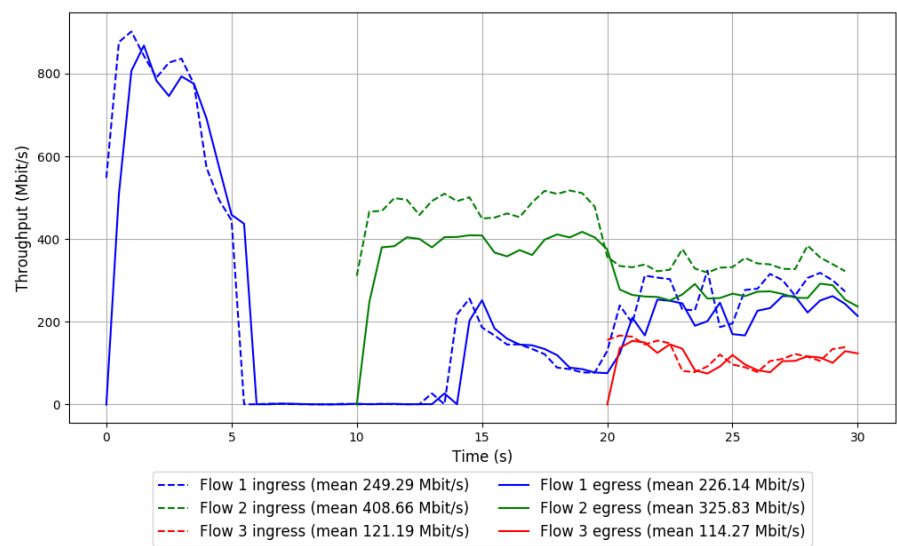
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 306.34 Mbit/s) --- Flow 1 egress (mean 272.54 Mbit/s)
Flow 2 ingress (mean 401.59 Mbit/s) --- Flow 2 egress (mean 380.90 Mbit/s)
Flow 3 ingress (mean 283.49 Mbit/s) --- Flow 3 egress (mean 223.16 Mbit/s)

Flow 1 (95th percentile 13.04 ms)   Flow 2 (95th percentile 3.97 ms)   Flow 3 (95th percentile 5.05 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-20 03:03:33
End at: 2018-12-20 03:04:03
Local clock offset: 5.756 ms
Remote clock offset: -4.129 ms


# Below is generated by plot.py at 2018-12-20 04:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 500.03 Mbit/s
95th percentile per-packet one-way delay: 6.997 ms
Loss rate: 12.28%
-- Flow 1:
Average throughput: 380.85 Mbit/s
95th percentile per-packet one-way delay: 7.547 ms
Loss rate: 10.92%
-- Flow 2:
Average throughput: 141.29 Mbit/s
95th percentile per-packet one-way delay: 4.712 ms
Loss rate: 17.80%
-- Flow 3:
Average throughput: 75.93 Mbit/s
95th percentile per-packet one-way delay: 3.118 ms
Loss rate: 10.54%
```
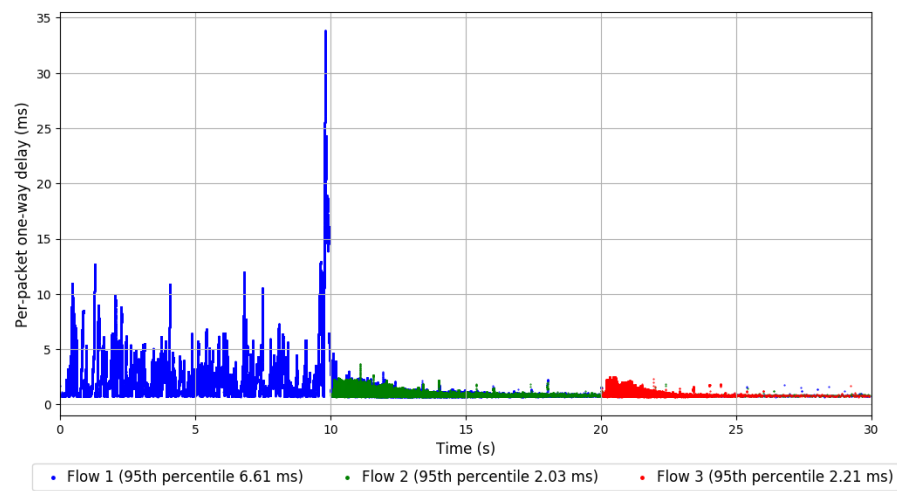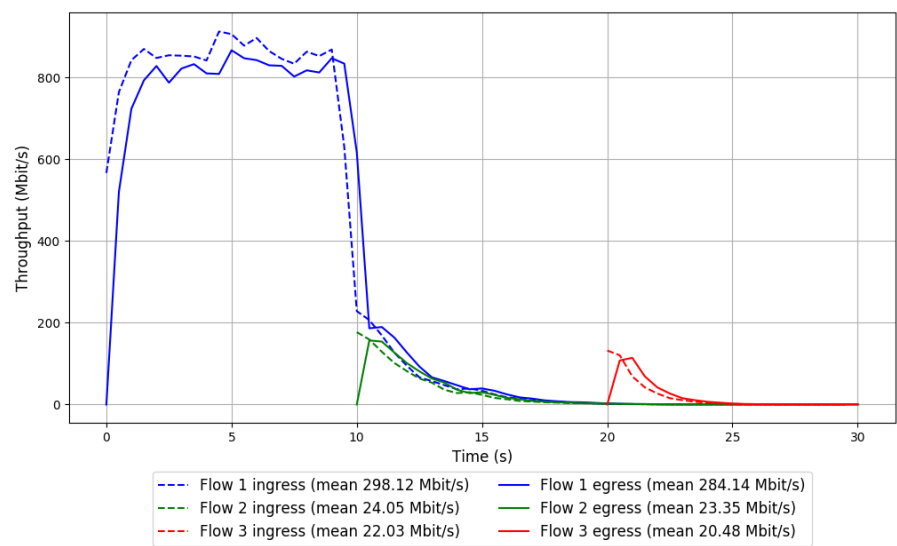
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-12-20 03:30:05
End at: 2018-12-20 03:30:35
Local clock offset: -0.913 ms
Remote clock offset: -0.256 ms


# Below is generated by plot.py at 2018-12-20 04:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 480.87 Mbit/s
95th percentile per-packet one-way delay: 5.525 ms
Loss rate: 14.36%
-- Flow 1:
Average throughput: 226.14 Mbit/s
95th percentile per-packet one-way delay: 6.707 ms
Loss rate: 9.29%
-- Flow 2:
Average throughput: 325.83 Mbit/s
95th percentile per-packet one-way delay: 5.134 ms
Loss rate: 20.27%
-- Flow 3:
Average throughput: 114.27 Mbit/s
95th percentile per-packet one-way delay: 2.459 ms
Loss rate: 5.71%
```
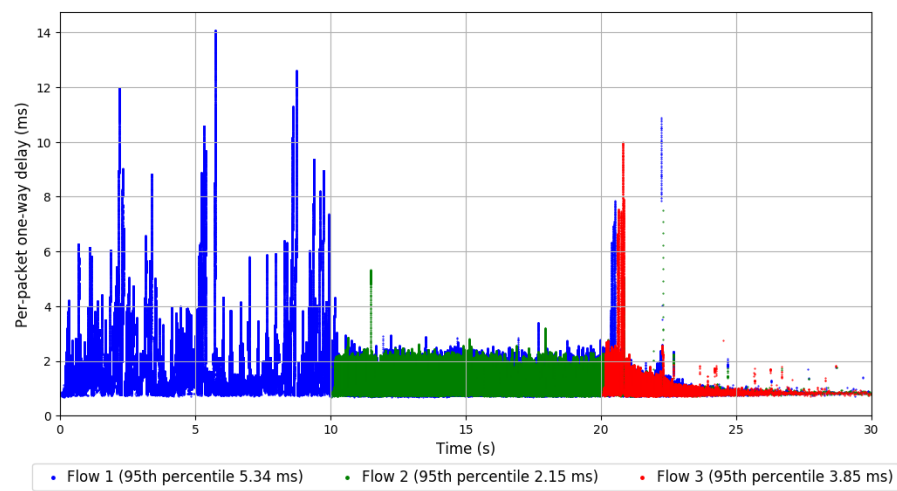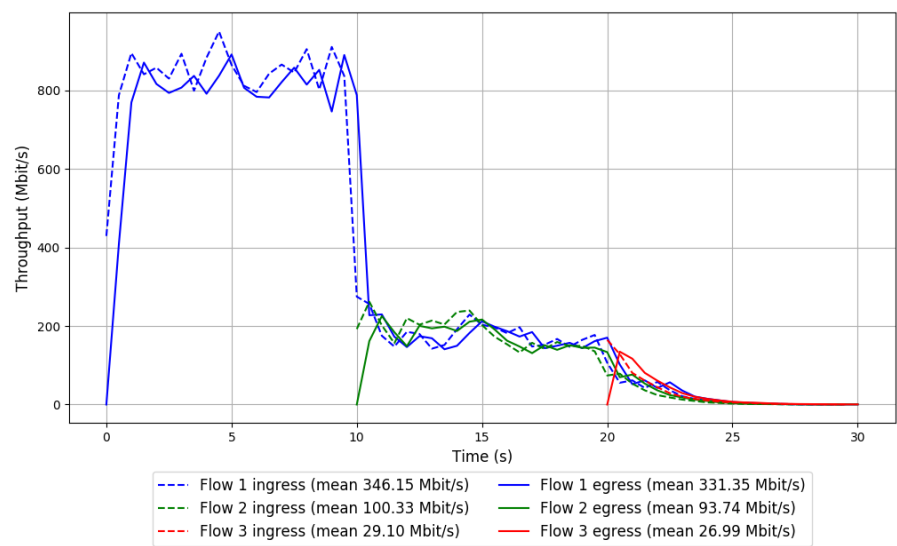
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-20 01:53:05
End at: 2018-12-20 01:53:35
Local clock offset: 0.517 ms
Remote clock offset: 0.802 ms


# Below is generated by plot.py at 2018-12-20 04:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.45 Mbit/s
95th percentile per-packet one-way delay: 6.375 ms
Loss rate: 4.66%
-- Flow 1:
Average throughput: 284.14 Mbit/s
95th percentile per-packet one-way delay: 6.614 ms
Loss rate: 4.69%
-- Flow 2:
Average throughput: 23.35 Mbit/s
95th percentile per-packet one-way delay: 2.033 ms
Loss rate: 2.92%
-- Flow 3:
Average throughput: 20.48 Mbit/s
95th percentile per-packet one-way delay: 2.208 ms
Loss rate: 7.02%
```
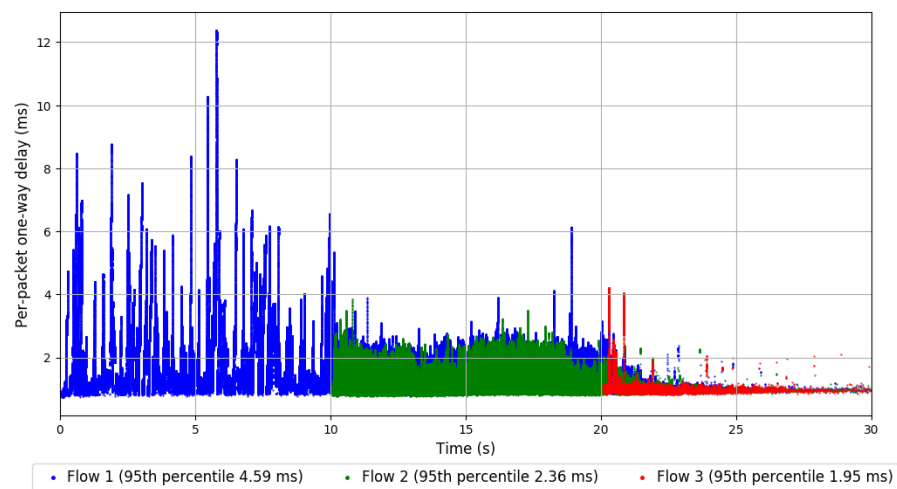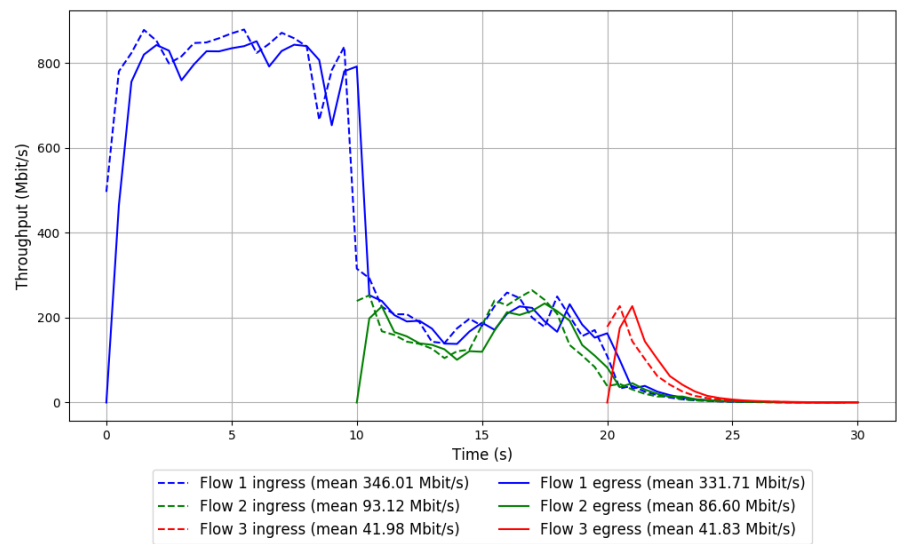
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-20 02:19:54
End at: 2018-12-20 02:20:24
Local clock offset: 3.333 ms
Remote clock offset: 1.109 ms


# Below is generated by plot.py at 2018-12-20 04:13:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.42 Mbit/s
95th percentile per-packet one-way delay: 4.908 ms
Loss rate: 4.71%
-- Flow 1:
Average throughput: 331.35 Mbit/s
95th percentile per-packet one-way delay: 5.344 ms
Loss rate: 4.28%
-- Flow 2:
Average throughput: 93.74 Mbit/s
95th percentile per-packet one-way delay: 2.153 ms
Loss rate: 6.58%
-- Flow 3:
Average throughput: 26.99 Mbit/s
95th percentile per-packet one-way delay: 3.849 ms
Loss rate: 7.25%
```
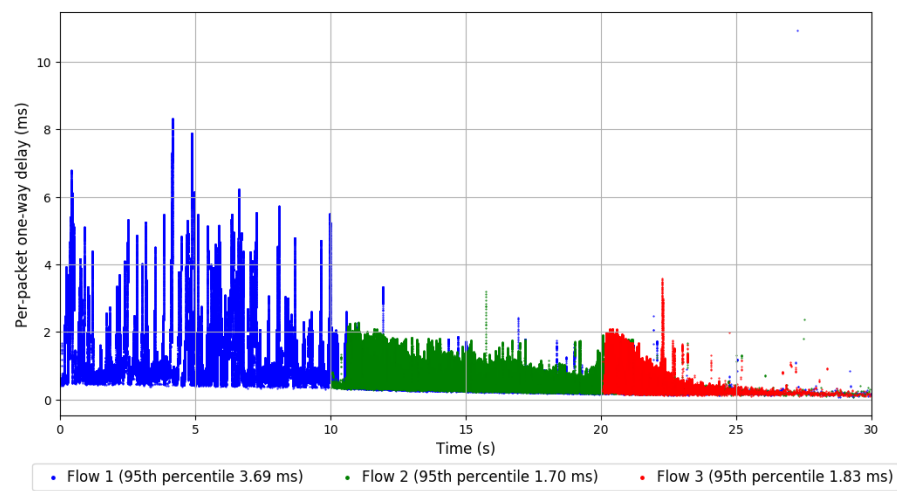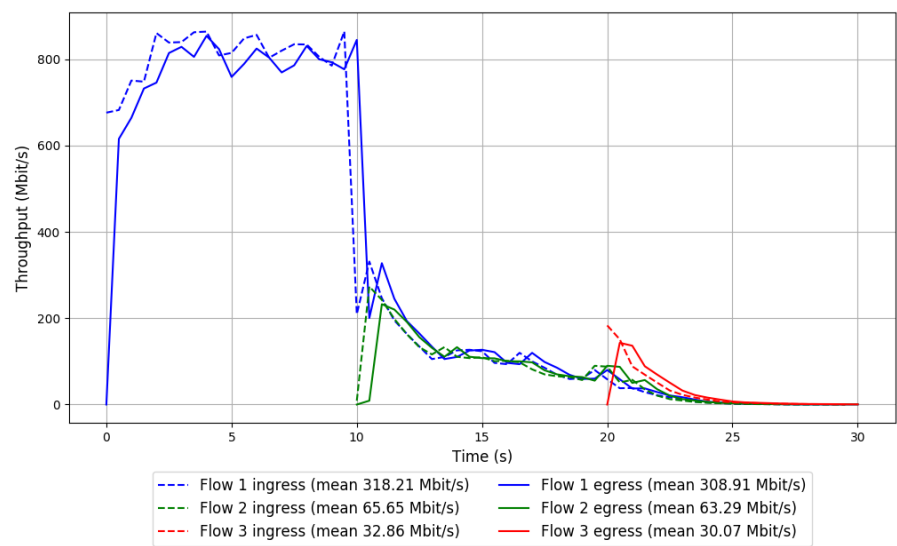
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-20 02:46:51
End at: 2018-12-20 02:47:21
Local clock offset: 4.994 ms
Remote clock offset: -1.851 ms


# Below is generated by plot.py at 2018-12-20 04:15:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.96 Mbit/s
95th percentile per-packet one-way delay: 4.309 ms
Loss rate: 4.43%
-- Flow 1:
Average throughput: 331.71 Mbit/s
95th percentile per-packet one-way delay: 4.595 ms
Loss rate: 4.13%
-- Flow 2:
Average throughput: 86.60 Mbit/s
95th percentile per-packet one-way delay: 2.362 ms
Loss rate: 7.01%
-- Flow 3:
Average throughput: 41.83 Mbit/s
95th percentile per-packet one-way delay: 1.947 ms
Loss rate: 0.37%
```

Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-20 03:13:22
End at: 2018-12-20 03:13:52
Local clock offset: 2.035 ms
Remote clock offset: -3.921 ms


# Below is generated by plot.py at 2018-12-20 04:15:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 360.97 Mbit/s
95th percentile per-packet one-way delay: 3.378 ms
Loss rate: 3.17%
-- Flow 1:
Average throughput: 308.91 Mbit/s
95th percentile per-packet one-way delay: 3.693 ms
Loss rate: 2.93%
-- Flow 2:
Average throughput: 63.29 Mbit/s
95th percentile per-packet one-way delay: 1.699 ms
Loss rate: 3.59%
-- Flow 3:
Average throughput: 30.07 Mbit/s
95th percentile per-packet one-way delay: 1.830 ms
Loss rate: 8.49%
```
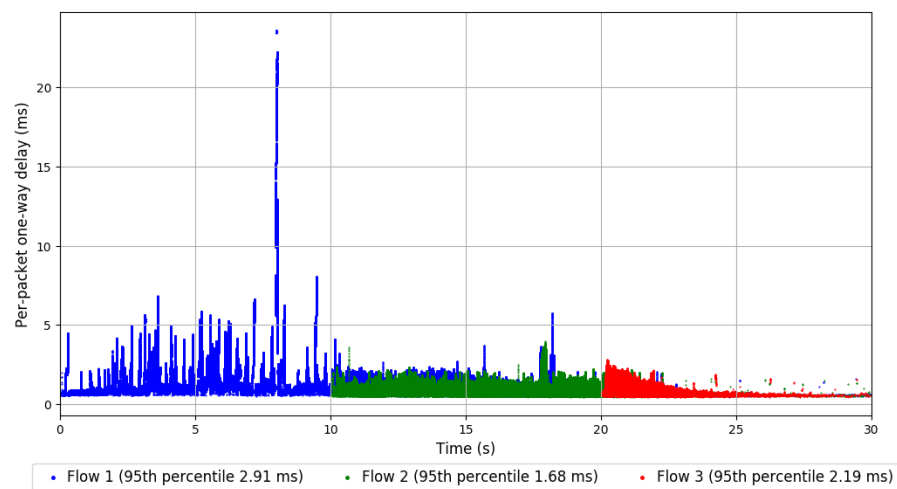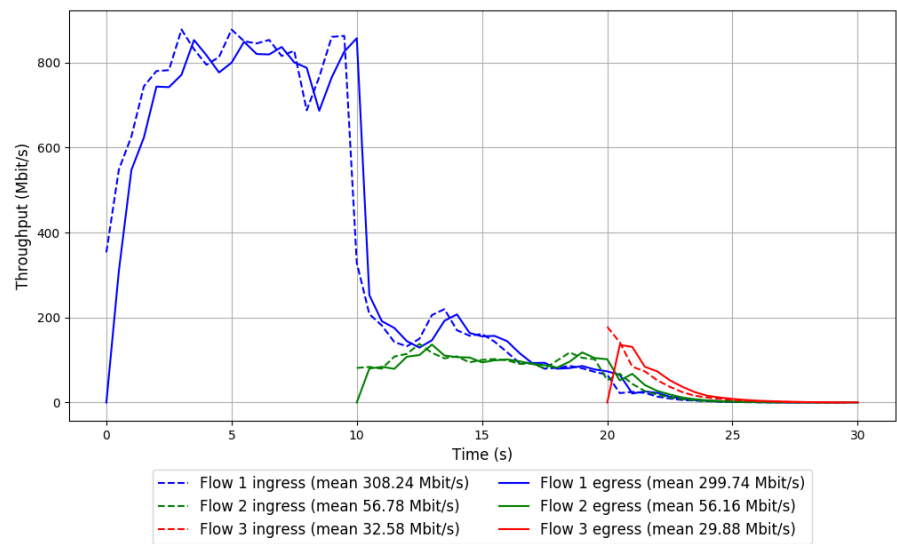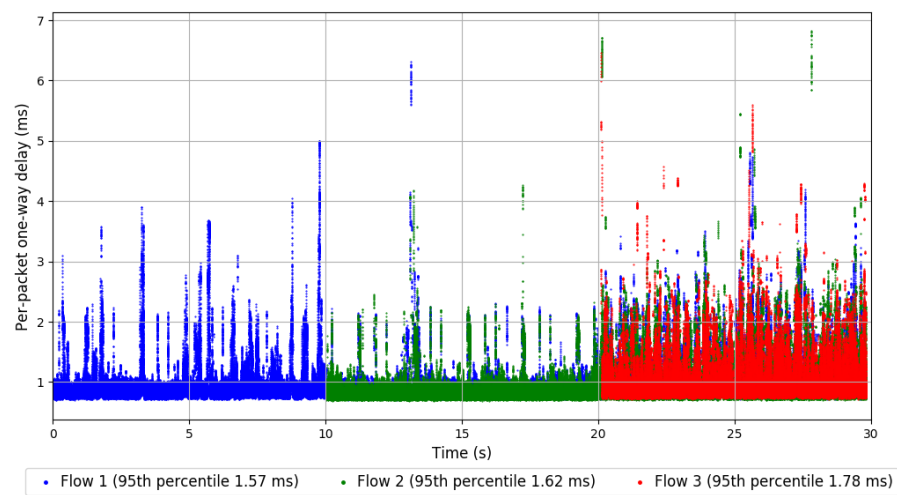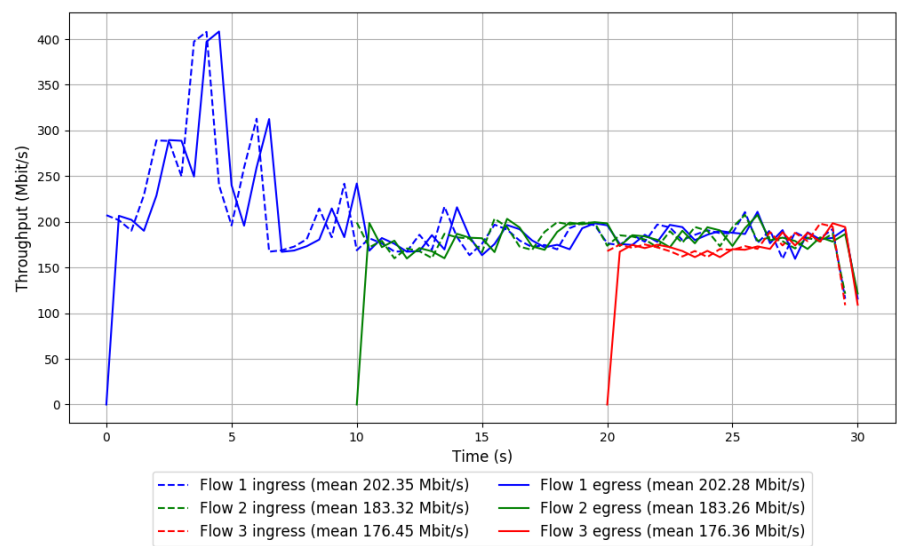
Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 318.21 Mbit/s) --- Flow 1 egress (mean 308.91 Mbit/s)
Flow 2 ingress (mean 65.65 Mbit/s) --- Flow 2 egress (mean 63.29 Mbit/s)
Flow 3 ingress (mean 32.86 Mbit/s) --- Flow 3 egress (mean 30.07 Mbit/s)

• Flow 1 (95th percentile 3.69 ms)   • Flow 2 (95th percentile 1.70 ms)   • Flow 3 (95th percentile 1.83 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 03:39:57
End at: 2018-12-20 03:40:27
Local clock offset: -2.16 ms
Remote clock offset: 0.15 ms


# Below is generated by plot.py at 2018-12-20 04:15:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 347.02 Mbit/s
95th percentile per-packet one-way delay: 2.745 ms
Loss rate: 2.75%
-- Flow 1:
Average throughput: 299.74 Mbit/s
95th percentile per-packet one-way delay: 2.913 ms
Loss rate: 2.76%
-- Flow 2:
Average throughput: 56.16 Mbit/s
95th percentile per-packet one-way delay: 1.678 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 29.88 Mbit/s
95th percentile per-packet one-way delay: 2.188 ms
Loss rate: 8.30%
```
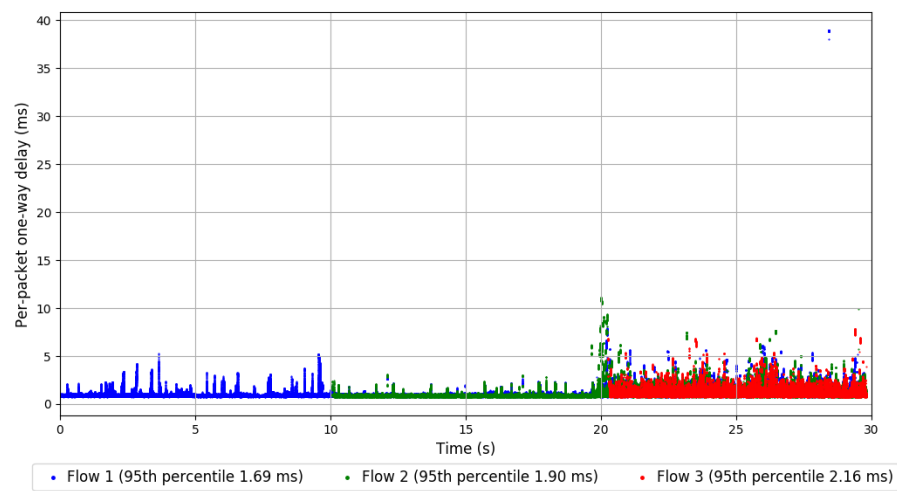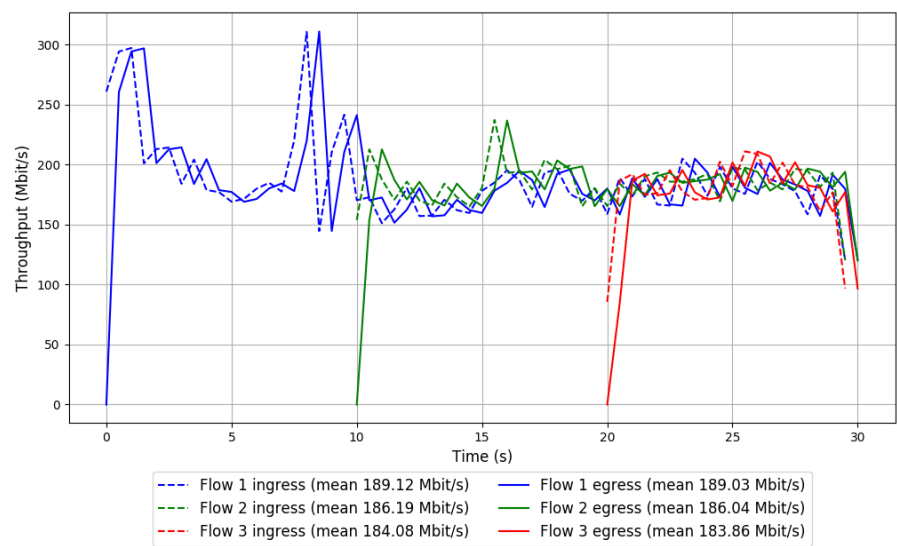
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 308.24 Mbit/s) --- Flow 1 egress (mean 299.74 Mbit/s)
Flow 2 ingress (mean 56.78 Mbit/s) --- Flow 2 egress (mean 56.16 Mbit/s)
Flow 3 ingress (mean 32.58 Mbit/s) --- Flow 3 egress (mean 29.88 Mbit/s)

Flow 1 (95th percentile 2.91 ms)   Flow 2 (95th percentile 1.68 ms)   Flow 3 (95th percentile 2.19 ms)

54

```
Run 1: Statistics of Indigo

Start at: 2018-12-20 01:34:31
End at: 2018-12-20 01:35:02
Local clock offset: 0.73 ms
Remote clock offset: 0.586 ms

# Below is generated by plot.py at 2018-12-20 04:15:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 381.51 Mbit/s
95th percentile per-packet one-way delay: 1.632 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 202.28 Mbit/s
95th percentile per-packet one-way delay: 1.575 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 183.26 Mbit/s
95th percentile per-packet one-way delay: 1.624 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 176.36 Mbit/s
95th percentile per-packet one-way delay: 1.777 ms
Loss rate: 0.06%
```
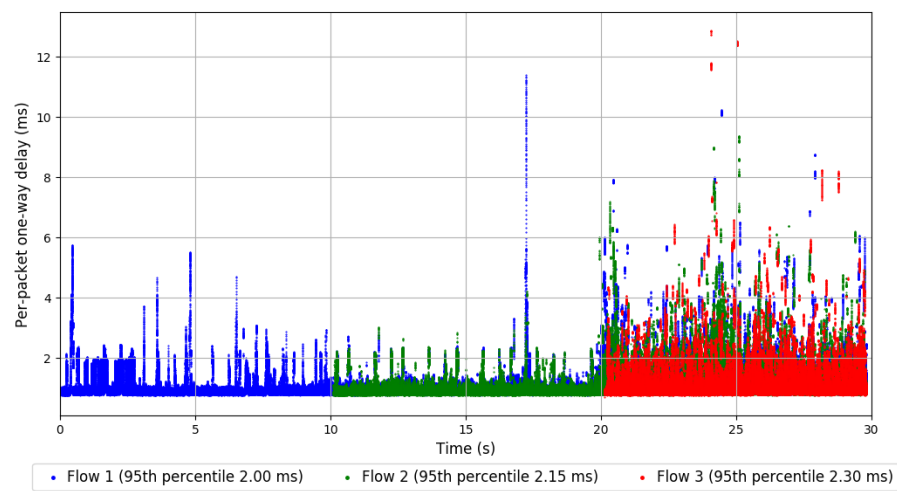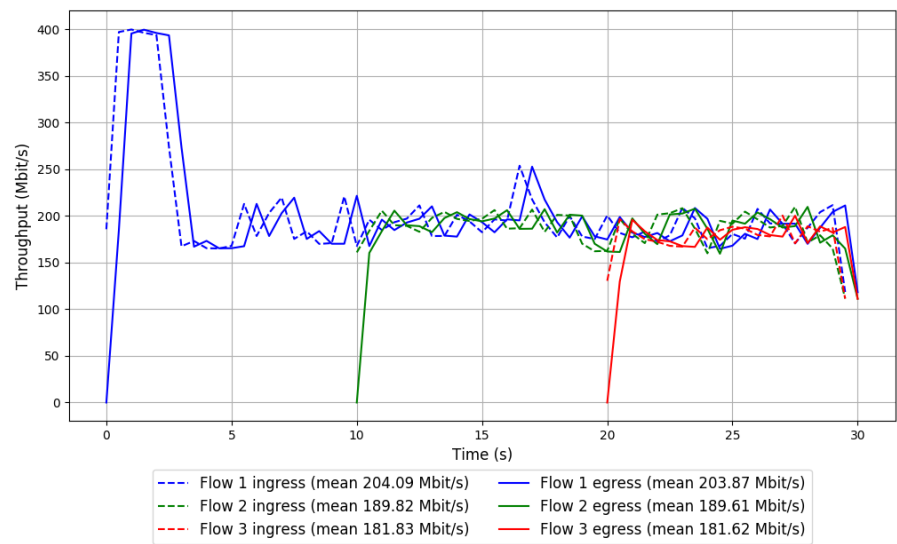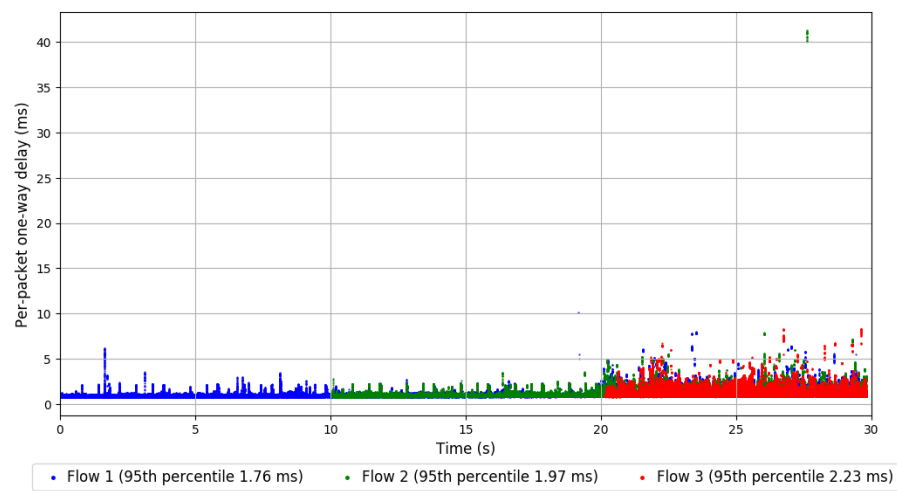
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-20 02:01:25
End at: 2018-12-20 02:01:55
Local clock offset: 0.541 ms
Remote clock offset: 1.008 ms

# Below is generated by plot.py at 2018-12-20 04:15:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 371.13 Mbit/s
95th percentile per-packet one-way delay: 1.872 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 189.03 Mbit/s
95th percentile per-packet one-way delay: 1.687 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 186.04 Mbit/s
95th percentile per-packet one-way delay: 1.898 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 183.86 Mbit/s
95th percentile per-packet one-way delay: 2.163 ms
Loss rate: 0.12%
```
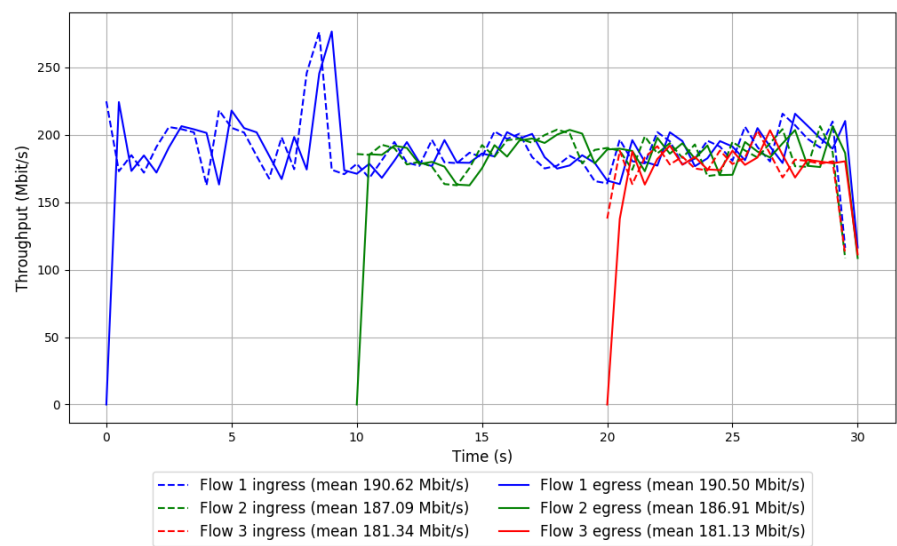
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-12-20 02:28:20
End at: 2018-12-20 02:28:50
Local clock offset: 4.007 ms
Remote clock offset: 1.276 ms

# Below is generated by plot.py at 2018-12-20 04:16:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 388.08 Mbit/s
95th percentile per-packet one-way delay: 2.096 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 203.87 Mbit/s
95th percentile per-packet one-way delay: 1.997 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 189.61 Mbit/s
95th percentile per-packet one-way delay: 2.145 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 181.62 Mbit/s
95th percentile per-packet one-way delay: 2.298 ms
Loss rate: 0.11%
```
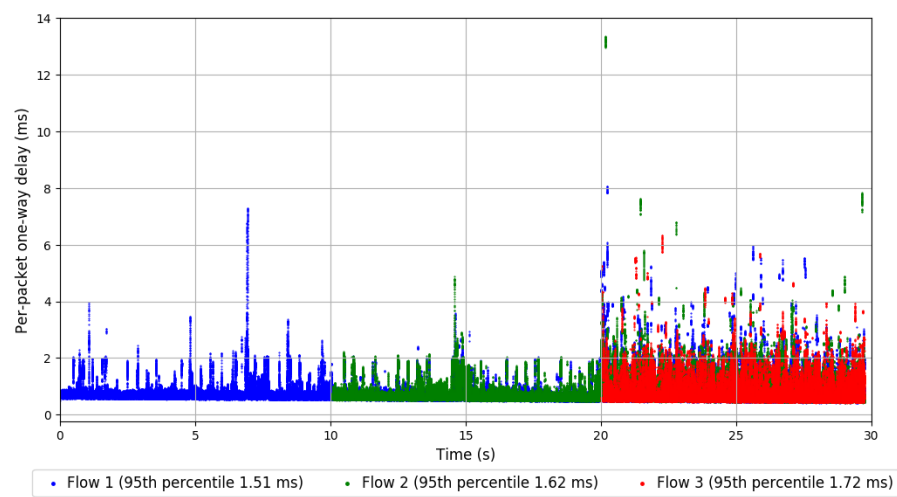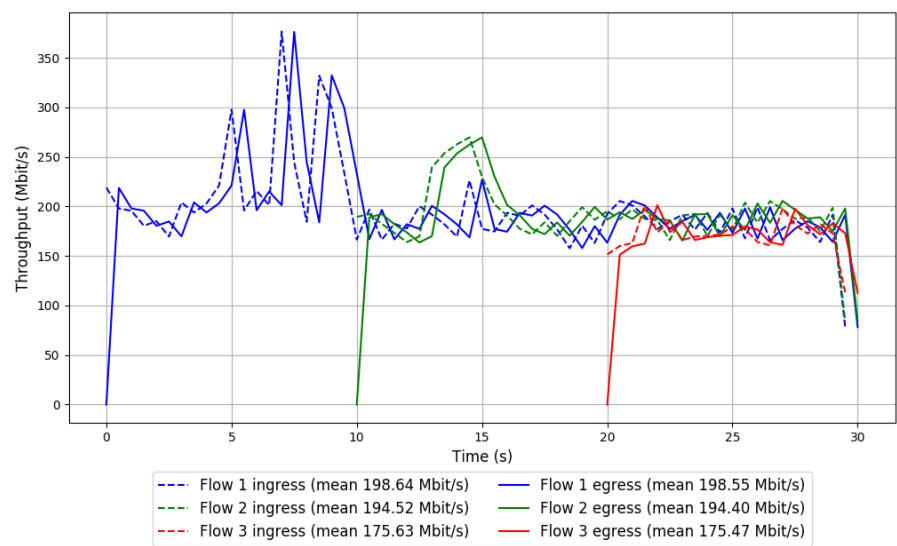
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-20 02:55:11
End at: 2018-12-20 02:55:41
Local clock offset: 5.38 ms
Remote clock offset: -3.252 ms


# Below is generated by plot.py at 2018-12-20 04:16:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 373.25 Mbit/s
95th percentile per-packet one-way delay: 1.943 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 190.50 Mbit/s
95th percentile per-packet one-way delay: 1.763 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 186.91 Mbit/s
95th percentile per-packet one-way delay: 1.965 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 181.13 Mbit/s
95th percentile per-packet one-way delay: 2.230 ms
Loss rate: 0.11%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-20 03:21:43
End at: 2018-12-20 03:22:13
Local clock offset: 0.142 ms
Remote clock offset: -1.354 ms

# Below is generated by plot.py at 2018-12-20 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 384.60 Mbit/s
95th percentile per-packet one-way delay: 1.593 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 198.55 Mbit/s
95th percentile per-packet one-way delay: 1.510 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 194.40 Mbit/s
95th percentile per-packet one-way delay: 1.620 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 175.47 Mbit/s
95th percentile per-packet one-way delay: 1.722 ms
Loss rate: 0.07%
```
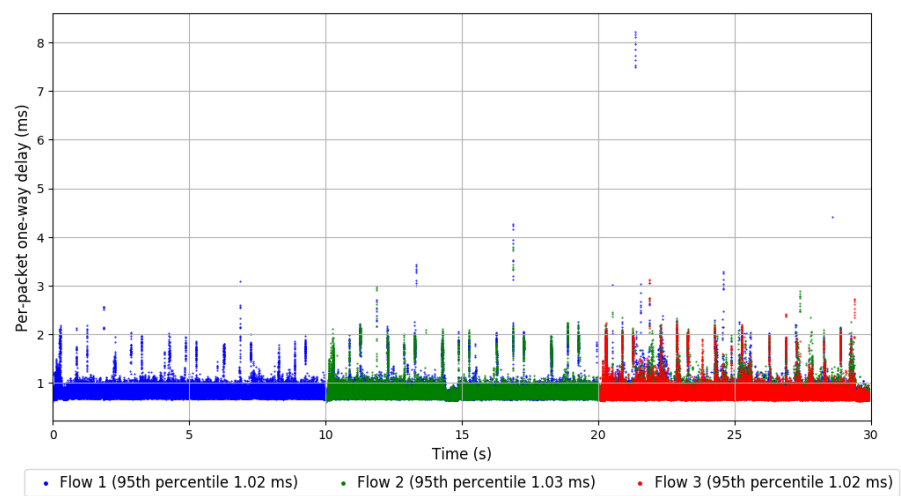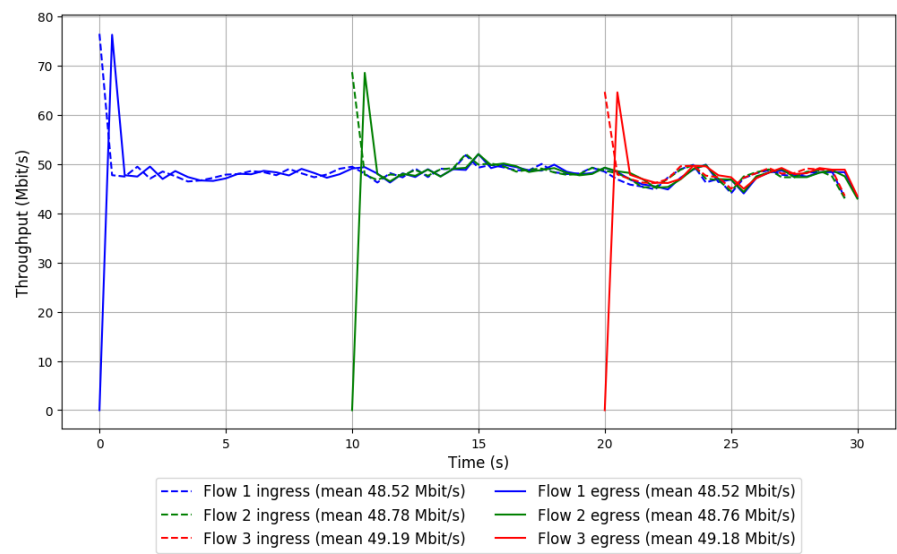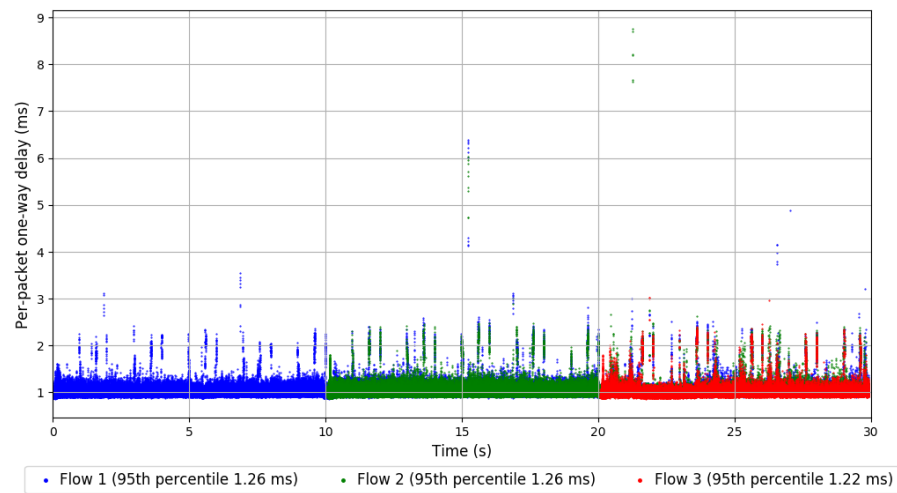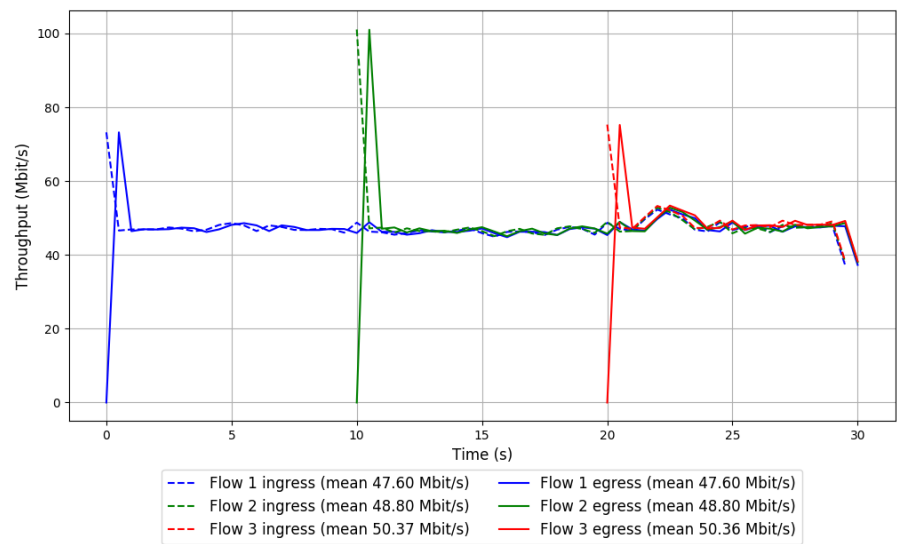
Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 198.64 Mbit/s) --- Flow 1 egress (mean 198.55 Mbit/s) —
Flow 2 ingress (mean 194.52 Mbit/s) --- Flow 2 egress (mean 194.40 Mbit/s) —
Flow 3 ingress (mean 175.63 Mbit/s) --- Flow 3 egress (mean 175.47 Mbit/s) —

• Flow 1 (95th percentile 1.51 ms)   • Flow 2 (95th percentile 1.62 ms)   • Flow 3 (95th percentile 1.72 ms)

```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-20 01:57:30
End at: 2018-12-20 01:58:00
Local clock offset: 0.531 ms
Remote clock offset: 0.833 ms

# Below is generated by plot.py at 2018-12-20 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 1.027 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 48.52 Mbit/s
95th percentile per-packet one-way delay: 1.025 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 48.76 Mbit/s
95th percentile per-packet one-way delay: 1.031 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 49.18 Mbit/s
95th percentile per-packet one-way delay: 1.025 ms
Loss rate: 0.01%
```
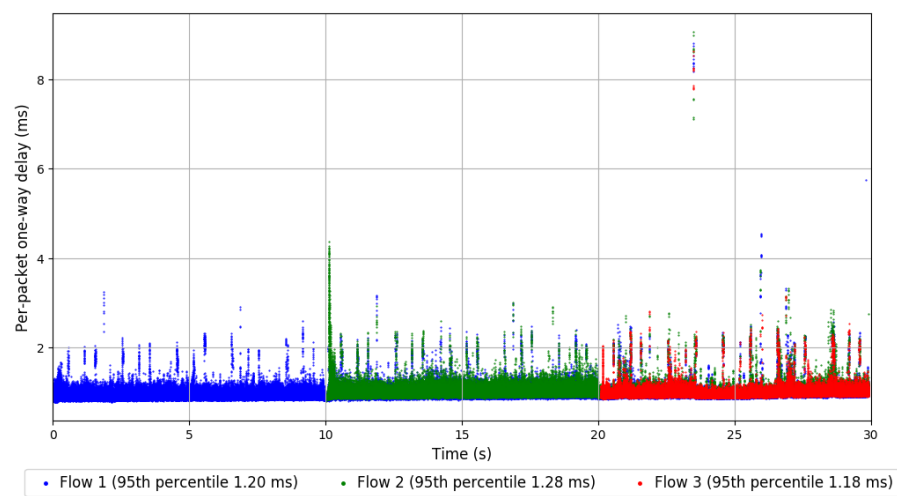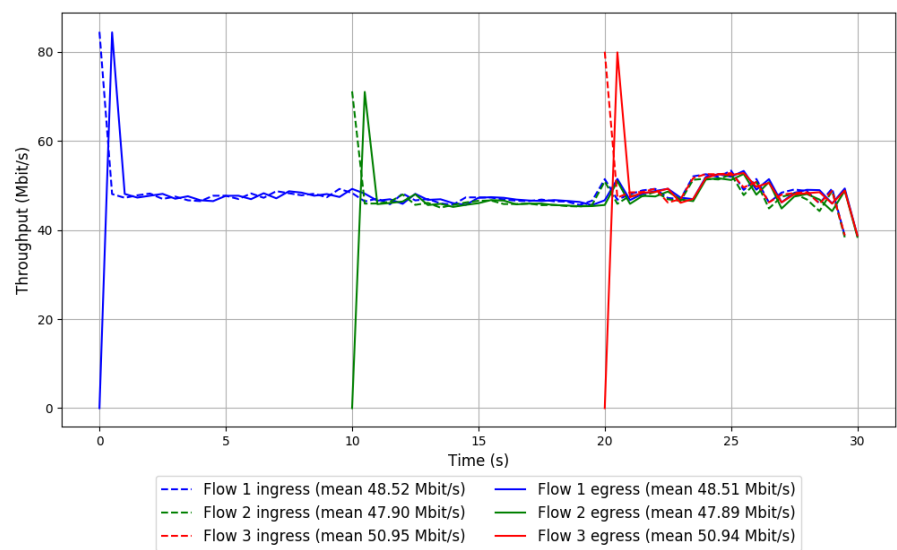
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-20 02:24:23
End at: 2018-12-20 02:24:53
Local clock offset: 3.726 ms
Remote clock offset: 1.311 ms

# Below is generated by plot.py at 2018-12-20 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.58 Mbit/s
95th percentile per-packet one-way delay: 1.254 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 47.60 Mbit/s
95th percentile per-packet one-way delay: 1.263 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 48.80 Mbit/s
95th percentile per-packet one-way delay: 1.256 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 50.36 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.01%
```
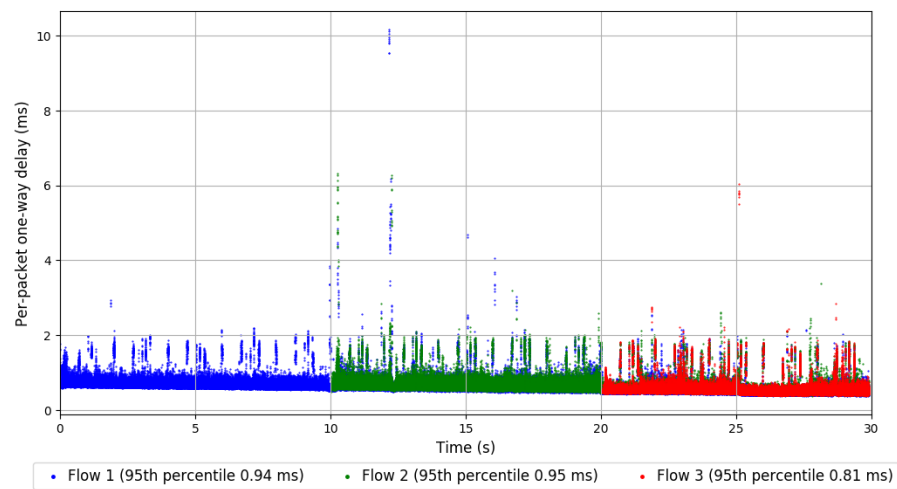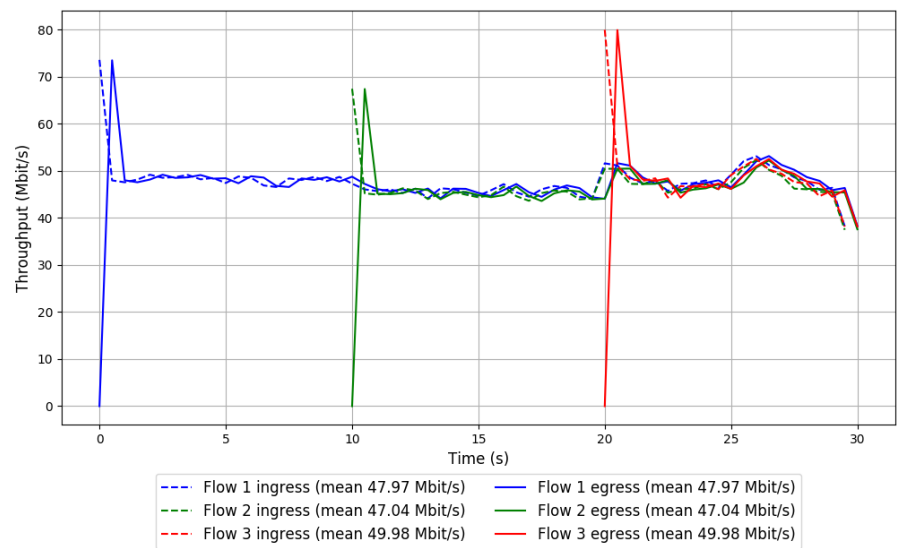
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-20 02:51:21
End at: 2018-12-20 02:51:51
Local clock offset: 5.206 ms
Remote clock offset: -2.678 ms


# Below is generated by plot.py at 2018-12-20 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.06 Mbit/s
95th percentile per-packet one-way delay: 1.226 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 48.51 Mbit/s
95th percentile per-packet one-way delay: 1.197 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 47.89 Mbit/s
95th percentile per-packet one-way delay: 1.283 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 50.94 Mbit/s
95th percentile per-packet one-way delay: 1.182 ms
Loss rate: 0.01%
```
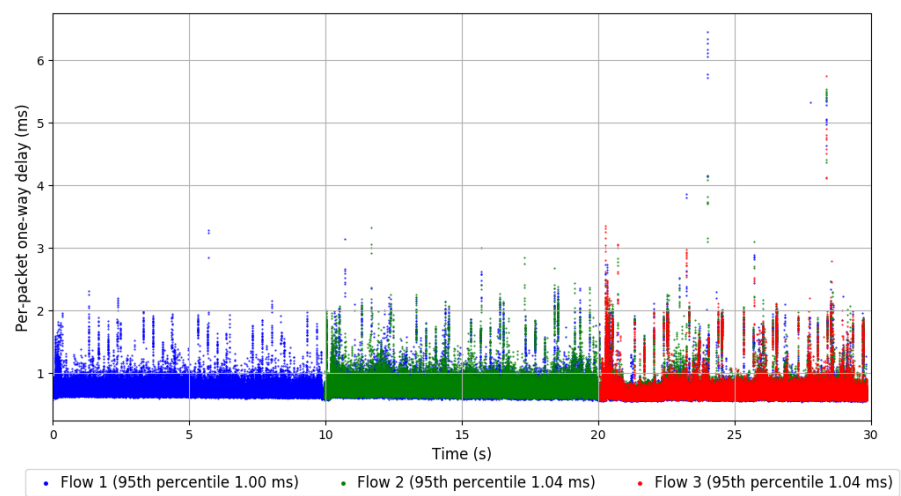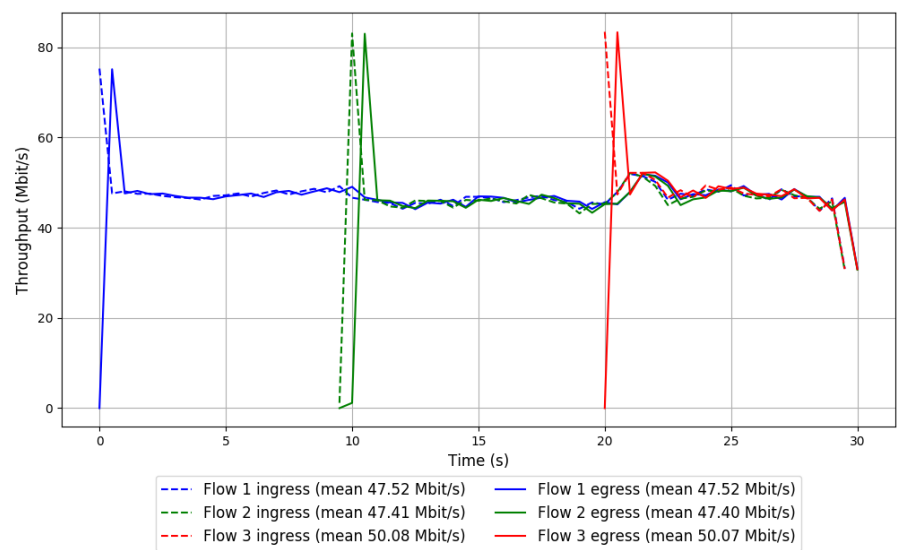
Run 3: Report of Indigo-MusesD — Data Link

- - - Flow 1 ingress (mean 48.52 Mbit/s)   —— Flow 1 egress (mean 48.51 Mbit/s)
- - - Flow 2 ingress (mean 47.90 Mbit/s)   —— Flow 2 egress (mean 47.89 Mbit/s)
- - - Flow 3 ingress (mean 50.95 Mbit/s)   —— Flow 3 egress (mean 50.94 Mbit/s)

• Flow 1 (95th percentile 1.20 ms)   • Flow 2 (95th percentile 1.28 ms)   • Flow 3 (95th percentile 1.18 ms)

70

```
Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-20 03:17:49
End at: 2018-12-20 03:18:19
Local clock offset: 0.876 ms
Remote clock offset: -2.171 ms


# Below is generated by plot.py at 2018-12-20 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.66 Mbit/s
95th percentile per-packet one-way delay: 0.932 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 47.97 Mbit/s
95th percentile per-packet one-way delay: 0.941 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 47.04 Mbit/s
95th percentile per-packet one-way delay: 0.949 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.98 Mbit/s
95th percentile per-packet one-way delay: 0.808 ms
Loss rate: 0.00%
```
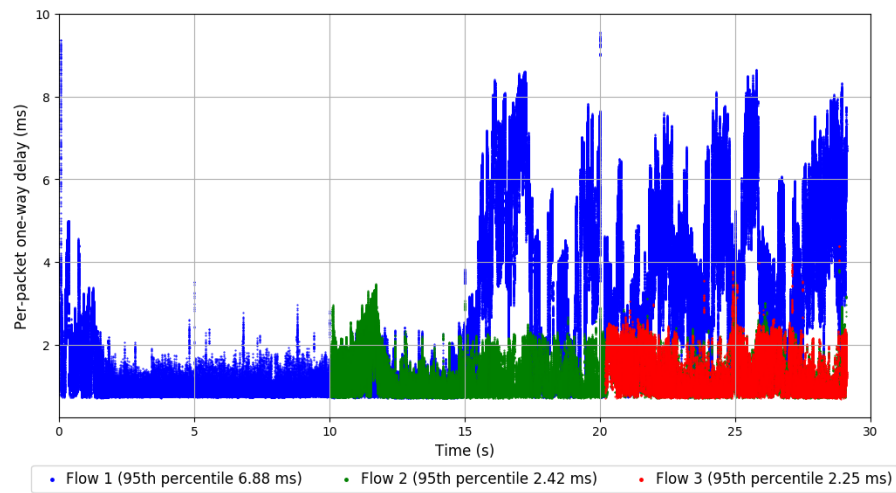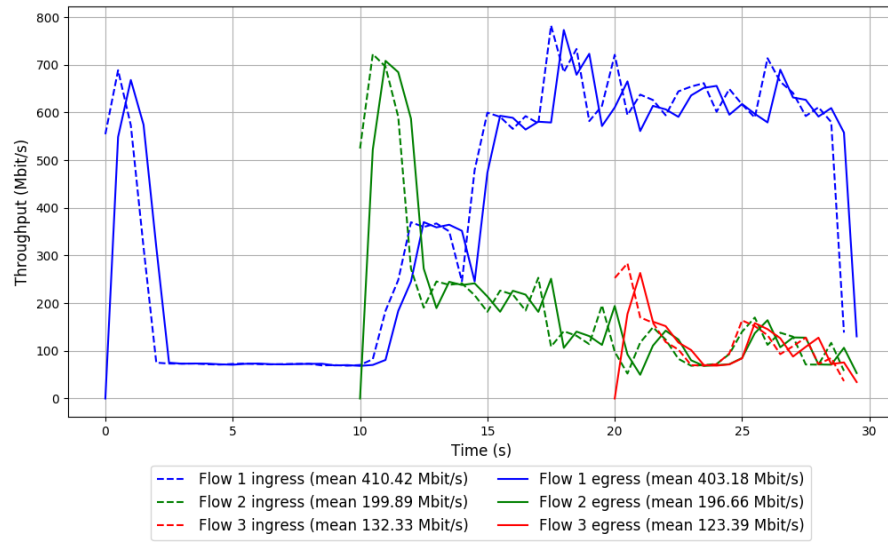
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 03:44:23
End at: 2018-12-20 03:44:53
Local clock offset: -2.785 ms
Remote clock offset: 0.249 ms

# Below is generated by plot.py at 2018-12-20 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.50 Mbit/s
95th percentile per-packet one-way delay: 1.017 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 47.52 Mbit/s
95th percentile per-packet one-way delay: 0.996 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 47.40 Mbit/s
95th percentile per-packet one-way delay: 1.043 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 50.07 Mbit/s
95th percentile per-packet one-way delay: 1.045 ms
Loss rate: 0.02%
```
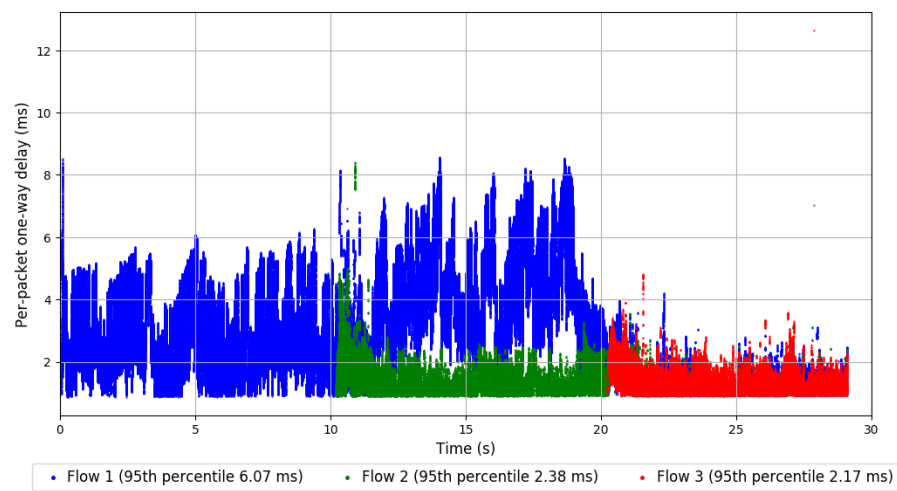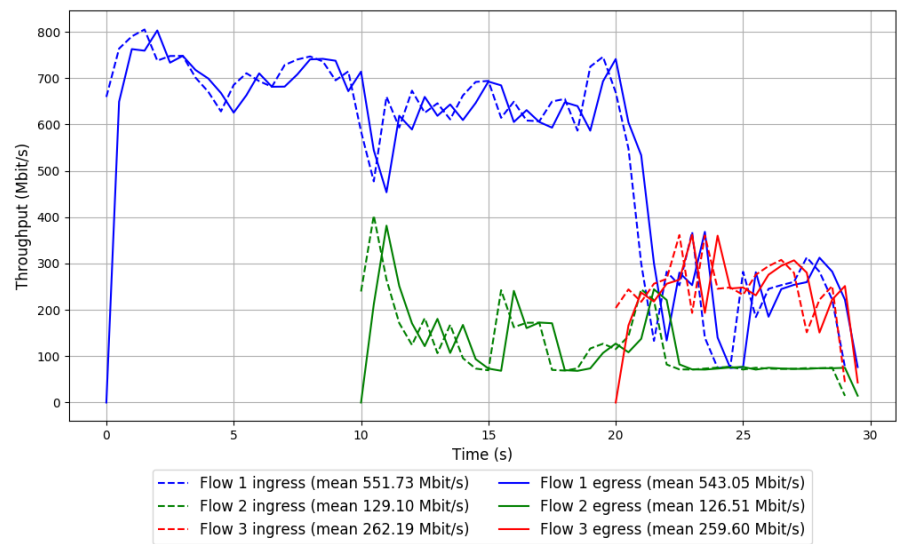
Run 5: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 47.52 Mbit/s) --- Flow 1 egress (mean 47.52 Mbit/s)
Flow 2 ingress (mean 47.41 Mbit/s) --- Flow 2 egress (mean 47.40 Mbit/s)
Flow 3 ingress (mean 50.08 Mbit/s) --- Flow 3 egress (mean 50.07 Mbit/s)

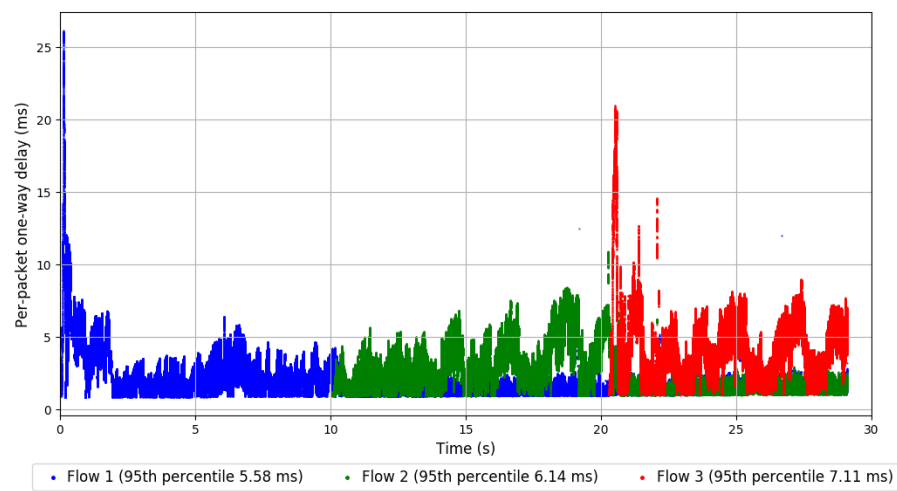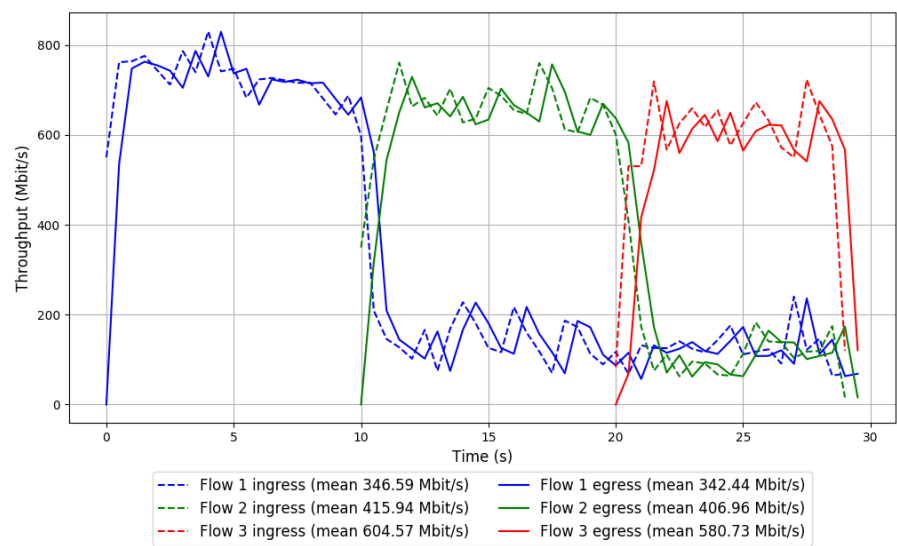Flow 1 (95th percentile 1.00 ms) · Flow 2 (95th percentile 1.04 ms) · Flow 3 (95th percentile 1.04 ms)

74

```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-20 01:47:12
End at: 2018-12-20 01:47:42
Local clock offset: 0.541 ms
Remote clock offset: 0.64 ms

# Below is generated by plot.py at 2018-12-20 04:22:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 569.99 Mbit/s
95th percentile per-packet one-way delay: 6.506 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 403.18 Mbit/s
95th percentile per-packet one-way delay: 6.883 ms
Loss rate: 1.76%
-- Flow 2:
Average throughput: 196.66 Mbit/s
95th percentile per-packet one-way delay: 2.419 ms
Loss rate: 1.61%
-- Flow 3:
Average throughput: 123.39 Mbit/s
95th percentile per-packet one-way delay: 2.246 ms
Loss rate: 6.79%
```

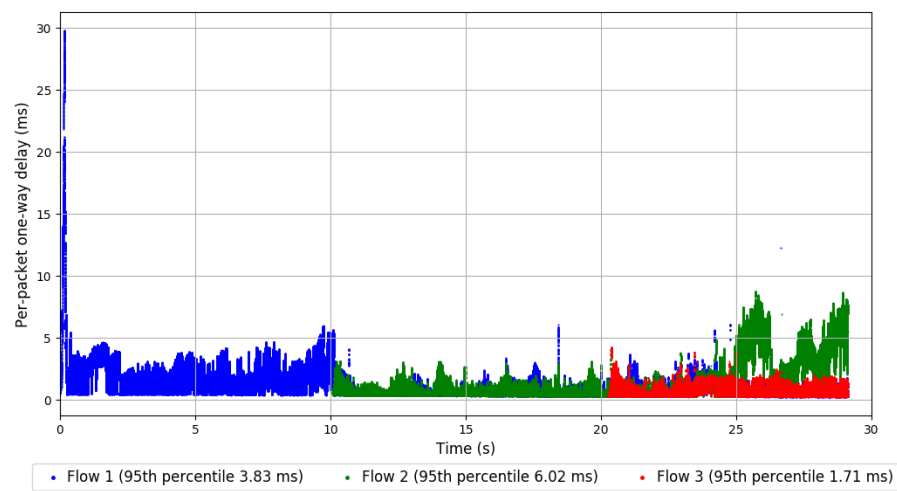Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-20 02:14:03
End at: 2018-12-20 02:14:33
Local clock offset: 2.562 ms
Remote clock offset: 1.099 ms


# Below is generated by plot.py at 2018-12-20 04:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 704.48 Mbit/s
95th percentile per-packet one-way delay: 5.740 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 543.05 Mbit/s
95th percentile per-packet one-way delay: 6.070 ms
Loss rate: 1.57%
-- Flow 2:
Average throughput: 126.51 Mbit/s
95th percentile per-packet one-way delay: 2.383 ms
Loss rate: 2.00%
-- Flow 3:
Average throughput: 259.60 Mbit/s
95th percentile per-packet one-way delay: 2.175 ms
Loss rate: 0.99%
```

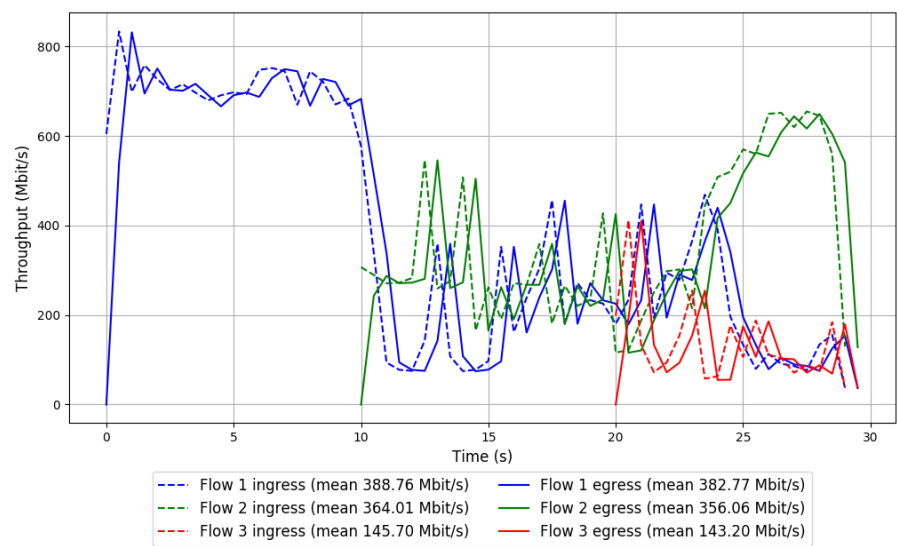Run 2: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 551.73 Mbit/s)   Flow 1 egress (mean 543.05 Mbit/s)
Flow 2 ingress (mean 129.10 Mbit/s)   Flow 2 egress (mean 126.51 Mbit/s)
Flow 3 ingress (mean 262.19 Mbit/s)   Flow 3 egress (mean 259.60 Mbit/s)

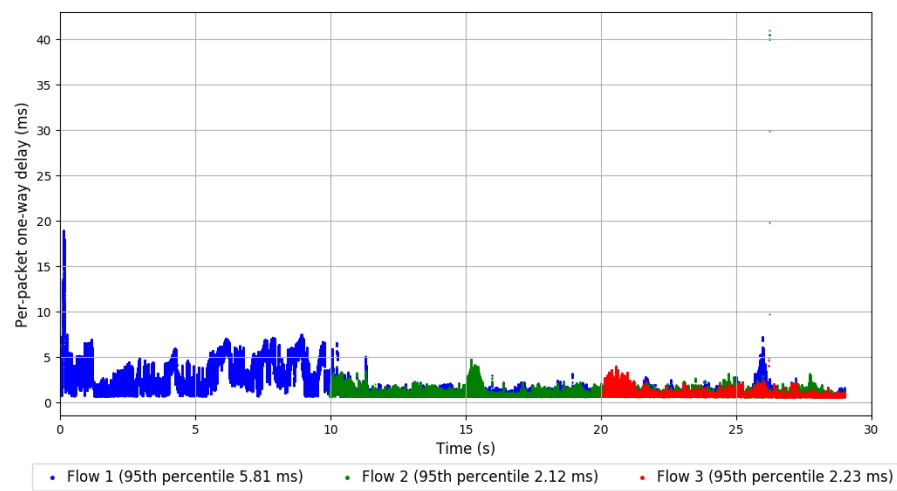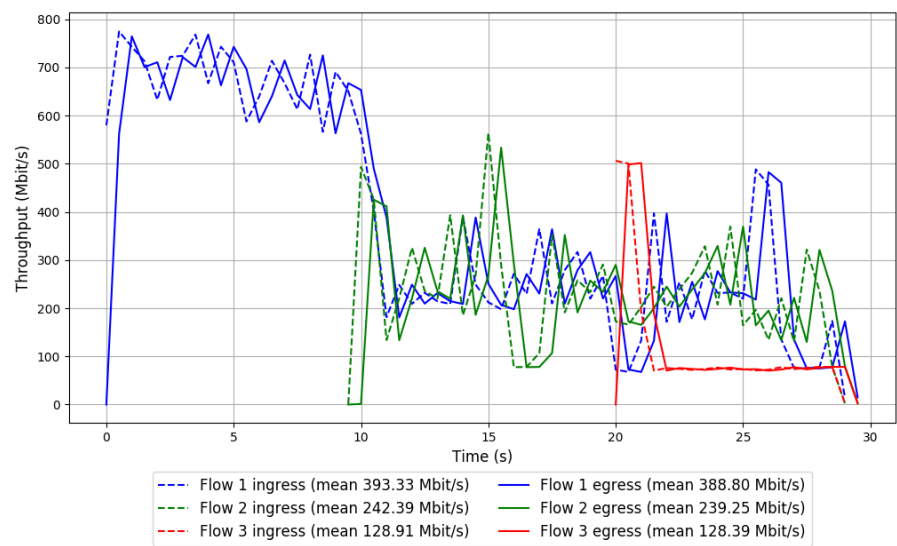Flow 1 (95th percentile 6.07 ms)   Flow 2 (95th percentile 2.38 ms)   Flow 3 (95th percentile 2.17 ms)

```
Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-20 02:40:53
End at: 2018-12-20 02:41:23
Local clock offset: 4.718 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2018-12-20 04:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 784.92 Mbit/s
95th percentile per-packet one-way delay: 6.436 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 342.44 Mbit/s
95th percentile per-packet one-way delay: 5.584 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 406.96 Mbit/s
95th percentile per-packet one-way delay: 6.142 ms
Loss rate: 2.15%
-- Flow 3:
Average throughput: 580.73 Mbit/s
95th percentile per-packet one-way delay: 7.112 ms
Loss rate: 3.94%
```
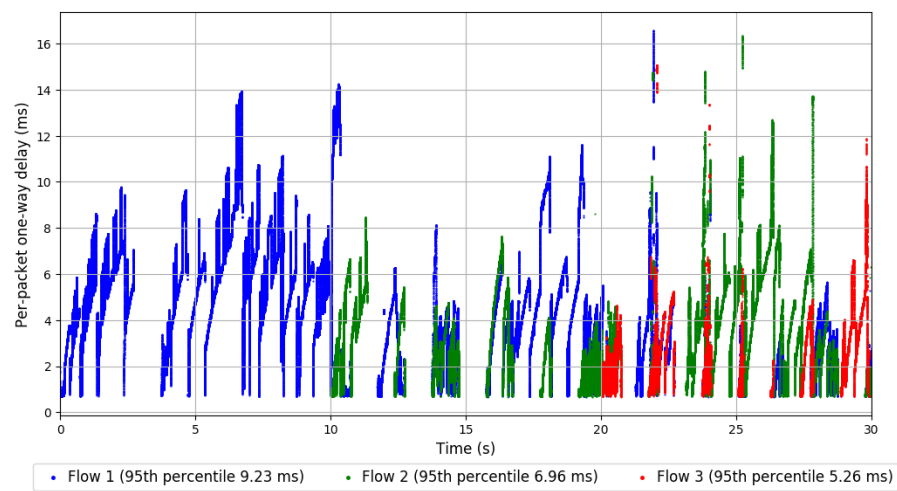
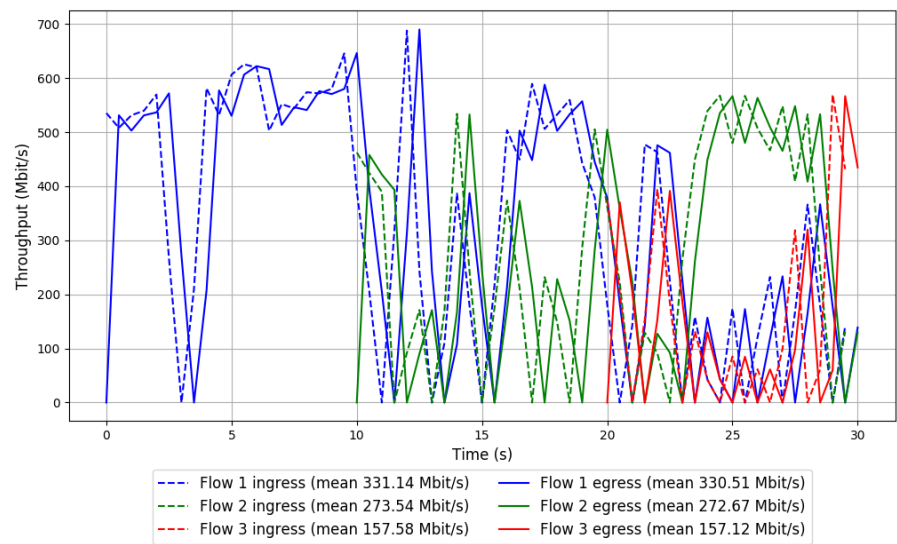# Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-20 03:07:32
End at: 2018-12-20 03:08:02
Local clock offset: 4.595 ms
Remote clock offset: -4.468 ms


# Below is generated by plot.py at 2018-12-20 04:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 659.17 Mbit/s
95th percentile per-packet one-way delay: 4.805 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 382.77 Mbit/s
95th percentile per-packet one-way delay: 3.827 ms
Loss rate: 1.54%
-- Flow 2:
Average throughput: 356.06 Mbit/s
95th percentile per-packet one-way delay: 6.024 ms
Loss rate: 2.18%
-- Flow 3:
Average throughput: 143.20 Mbit/s
95th percentile per-packet one-way delay: 1.707 ms
Loss rate: 1.71%
```

Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 03:34:07
End at: 2018-12-20 03:34:37
Local clock offset: -1.258 ms
Remote clock offset: -0.002 ms


# Below is generated by plot.py at 2018-12-20 04:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 585.68 Mbit/s
95th percentile per-packet one-way delay: 5.441 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 388.80 Mbit/s
95th percentile per-packet one-way delay: 5.812 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 239.25 Mbit/s
95th percentile per-packet one-way delay: 2.124 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 128.39 Mbit/s
95th percentile per-packet one-way delay: 2.225 ms
Loss rate: 0.41%
```
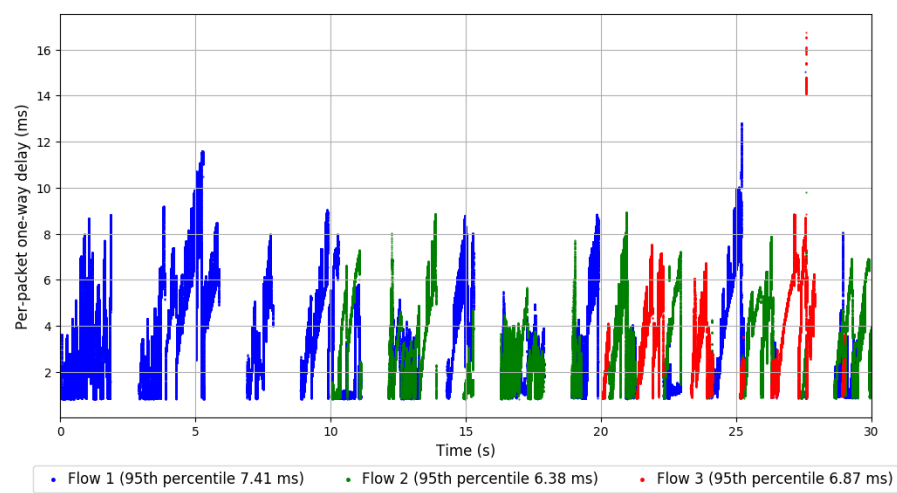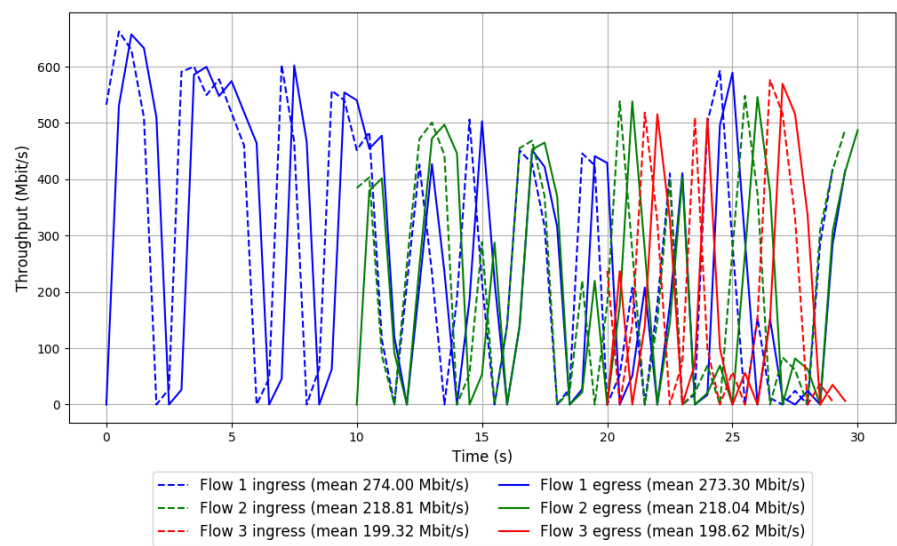
Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-20 01:49:59
End at: 2018-12-20 01:50:29
Local clock offset: 0.525 ms
Remote clock offset: 0.658 ms

# Below is generated by plot.py at 2018-12-20 04:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 563.90 Mbit/s
95th percentile per-packet one-way delay: 8.512 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 330.51 Mbit/s
95th percentile per-packet one-way delay: 9.231 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 272.67 Mbit/s
95th percentile per-packet one-way delay: 6.955 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 157.12 Mbit/s
95th percentile per-packet one-way delay: 5.261 ms
Loss rate: 0.29%
```
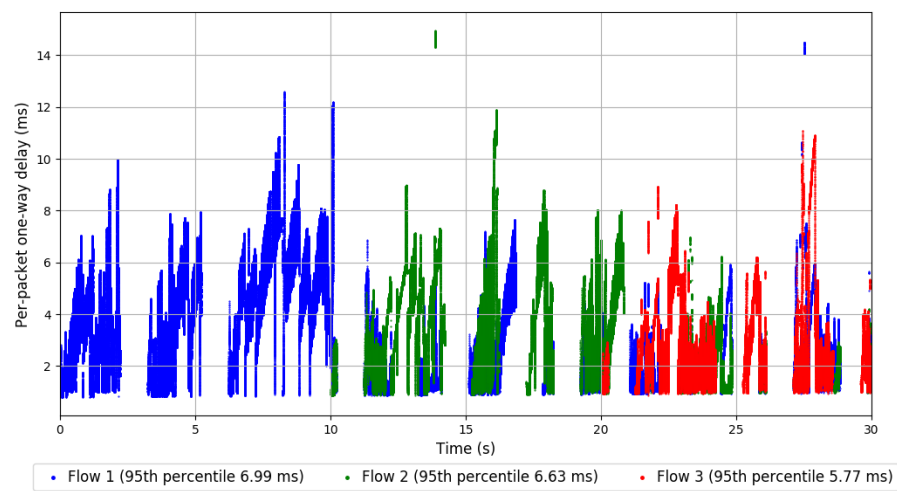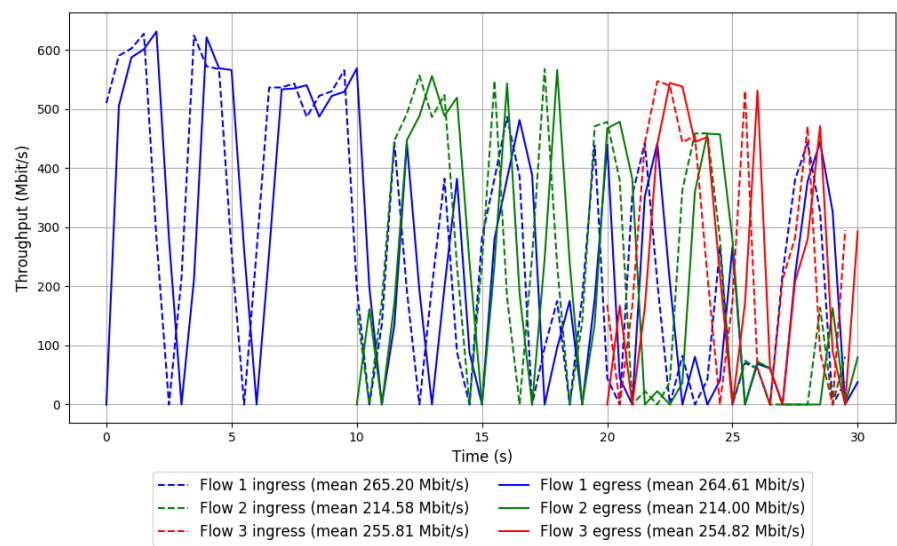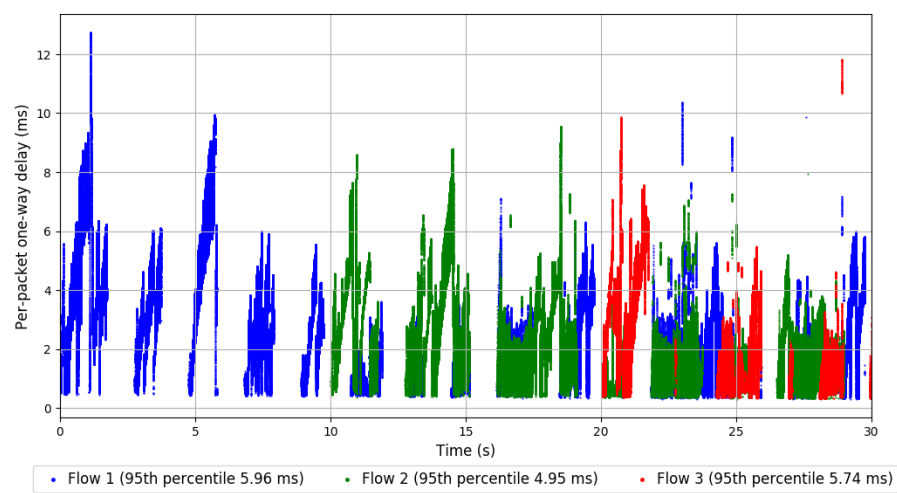
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 331.14 Mbit/s)   Flow 1 egress (mean 330.51 Mbit/s)
Flow 2 ingress (mean 273.54 Mbit/s)   Flow 2 egress (mean 272.67 Mbit/s)
Flow 3 ingress (mean 157.58 Mbit/s)   Flow 3 egress (mean 157.12 Mbit/s)

Flow 1 (95th percentile 9.23 ms)   Flow 2 (95th percentile 6.96 ms)   Flow 3 (95th percentile 5.26 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-20 02:16:54
End at: 2018-12-20 02:17:24
Local clock offset: 2.999 ms
Remote clock offset: 1.146 ms

# Below is generated by plot.py at 2018-12-20 04:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 473.35 Mbit/s
95th percentile per-packet one-way delay: 7.014 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 273.30 Mbit/s
95th percentile per-packet one-way delay: 7.408 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 218.04 Mbit/s
95th percentile per-packet one-way delay: 6.380 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 198.62 Mbit/s
95th percentile per-packet one-way delay: 6.873 ms
Loss rate: 0.34%
```
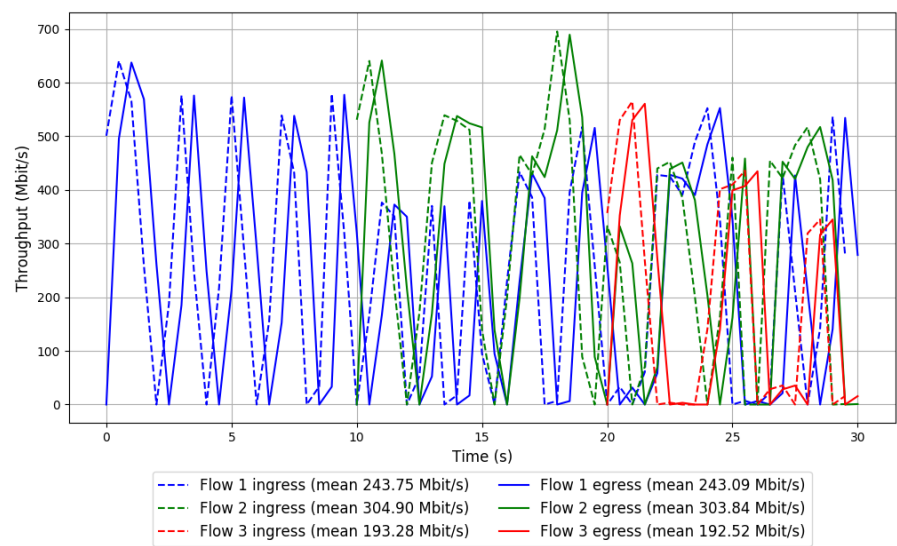
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 274.00 Mbit/s) — Flow 1 egress (mean 273.30 Mbit/s)
Flow 2 ingress (mean 218.81 Mbit/s) — Flow 2 egress (mean 218.04 Mbit/s)
Flow 3 ingress (mean 199.32 Mbit/s) — Flow 3 egress (mean 198.62 Mbit/s)

Flow 1 (95th percentile 7.41 ms)   Flow 2 (95th percentile 6.38 ms)   Flow 3 (95th percentile 6.87 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-20 02:43:47
End at: 2018-12-20 02:44:17
Local clock offset: 4.862 ms
Remote clock offset: -1.037 ms


# Below is generated by plot.py at 2018-12-20 04:25:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 491.43 Mbit/s
95th percentile per-packet one-way delay: 6.787 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 264.61 Mbit/s
95th percentile per-packet one-way delay: 6.992 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 214.00 Mbit/s
95th percentile per-packet one-way delay: 6.635 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 254.82 Mbit/s
95th percentile per-packet one-way delay: 5.766 ms
Loss rate: 0.38%
```
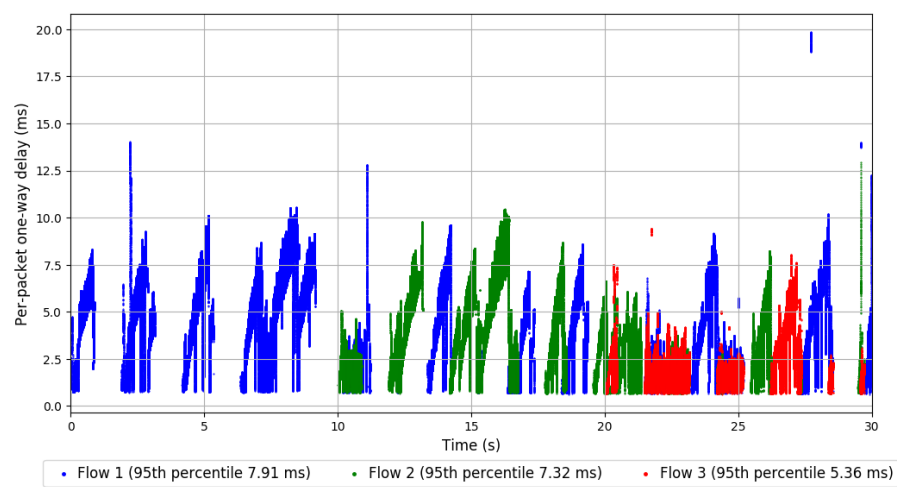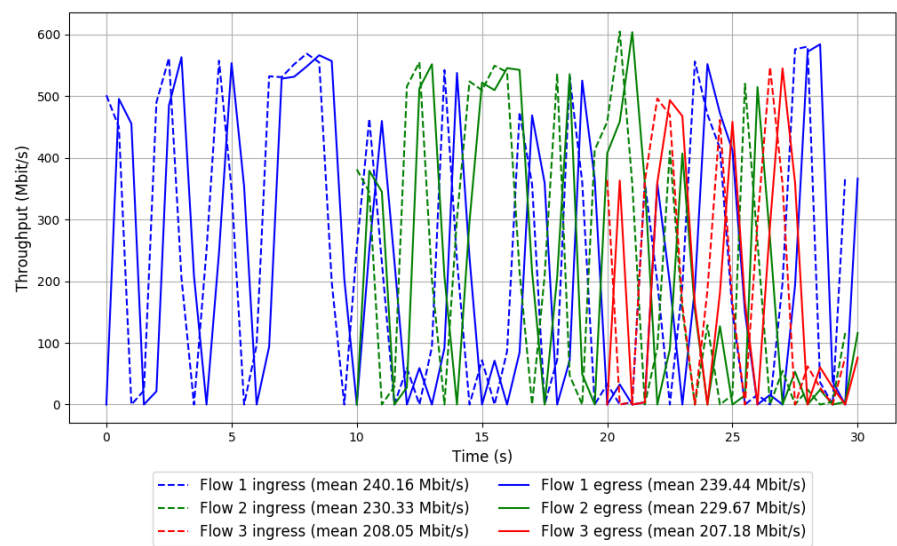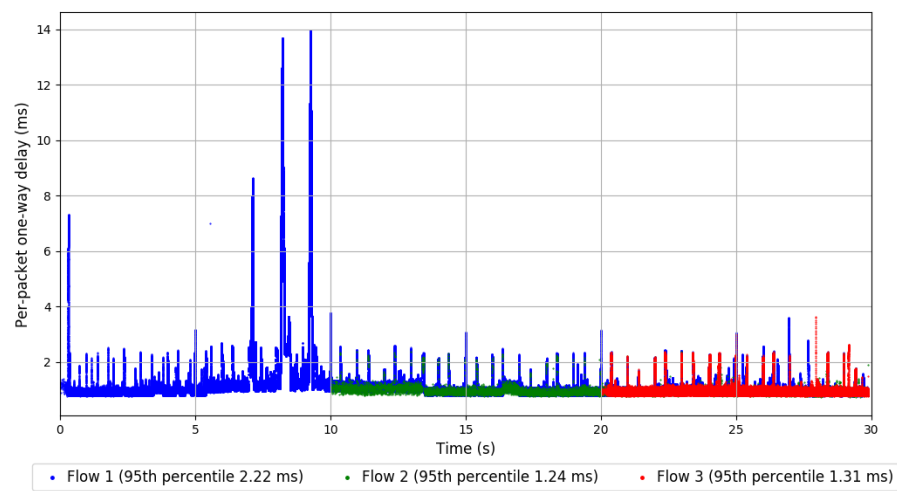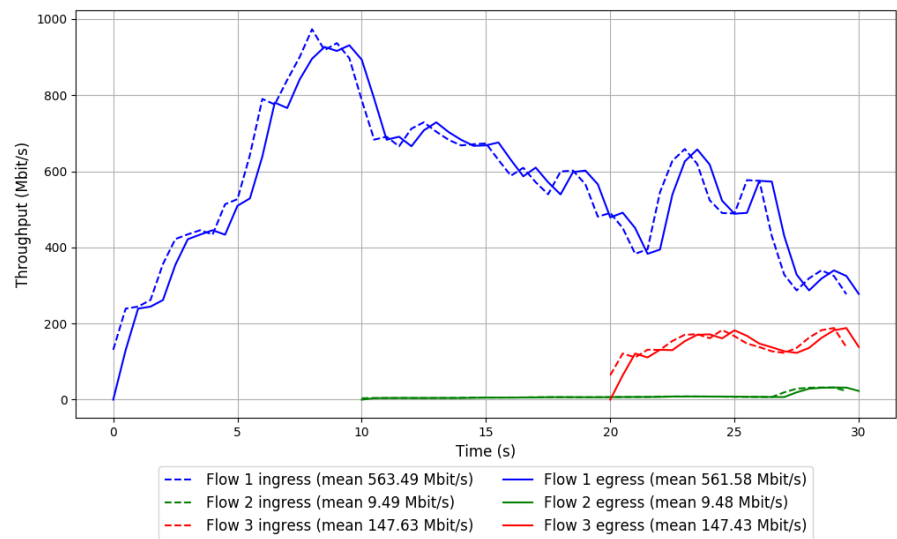
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-20 03:10:21
End at: 2018-12-20 03:10:51
Local clock offset: 3.273 ms
Remote clock offset: -4.674 ms


# Below is generated by plot.py at 2018-12-20 04:28:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.49 Mbit/s
95th percentile per-packet one-way delay: 5.620 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 243.09 Mbit/s
95th percentile per-packet one-way delay: 5.960 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 303.84 Mbit/s
95th percentile per-packet one-way delay: 4.947 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 192.52 Mbit/s
95th percentile per-packet one-way delay: 5.735 ms
Loss rate: 0.38%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-20 03:36:53
End at: 2018-12-20 03:37:23
Local clock offset: -1.655 ms
Remote clock offset: 0.169 ms

# Below is generated by plot.py at 2018-12-20 04:28:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 457.18 Mbit/s
95th percentile per-packet one-way delay: 7.467 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 239.44 Mbit/s
95th percentile per-packet one-way delay: 7.911 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 229.67 Mbit/s
95th percentile per-packet one-way delay: 7.321 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 207.18 Mbit/s
95th percentile per-packet one-way delay: 5.363 ms
Loss rate: 0.42%
```
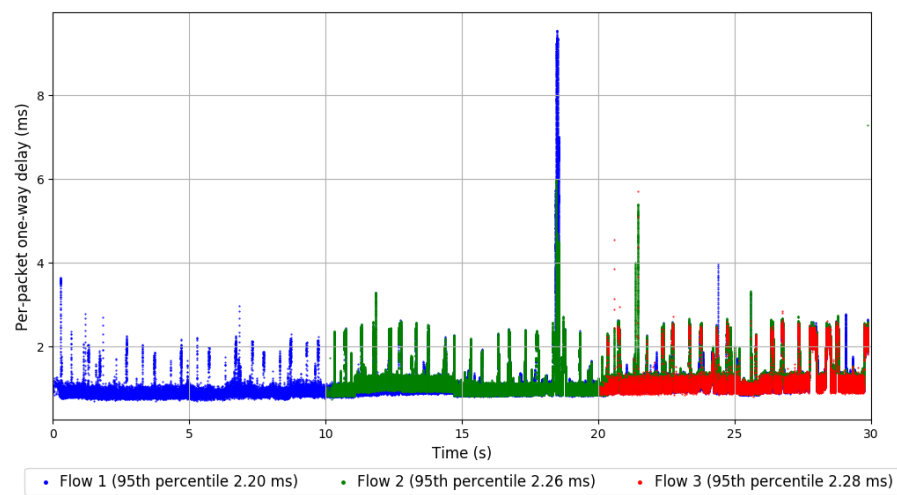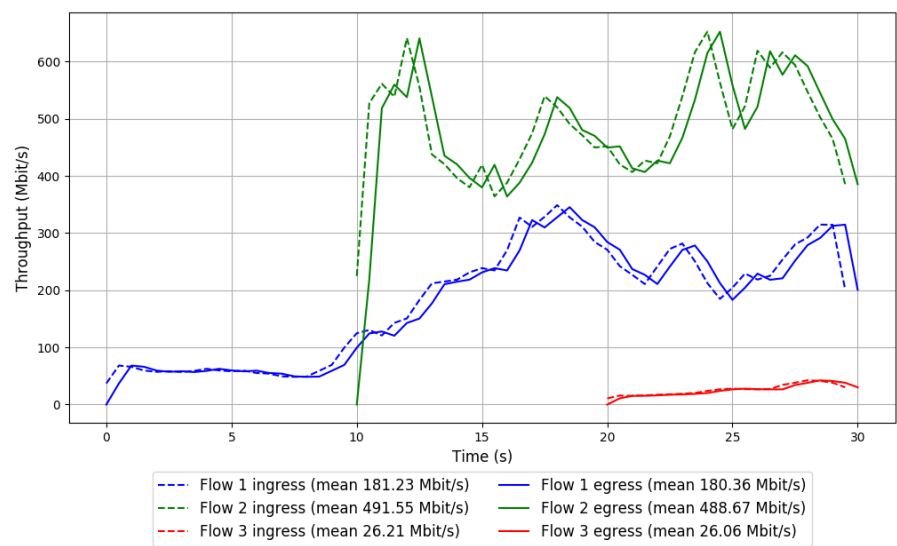
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-20 01:45:44
End at: 2018-12-20 01:46:14
Local clock offset: 0.557 ms
Remote clock offset: 0.684 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 616.50 Mbit/s
95th percentile per-packet one-way delay: 2.162 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 561.58 Mbit/s
95th percentile per-packet one-way delay: 2.221 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 9.48 Mbit/s
95th percentile per-packet one-way delay: 1.235 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 147.43 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.13%
```
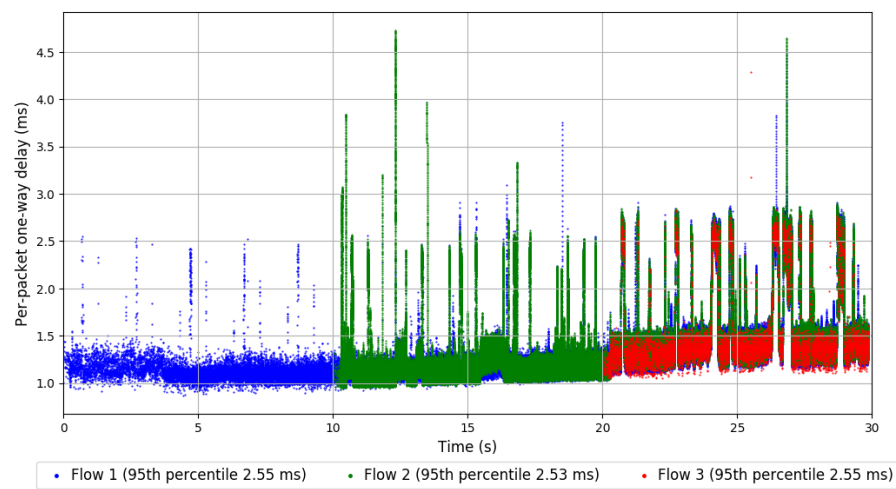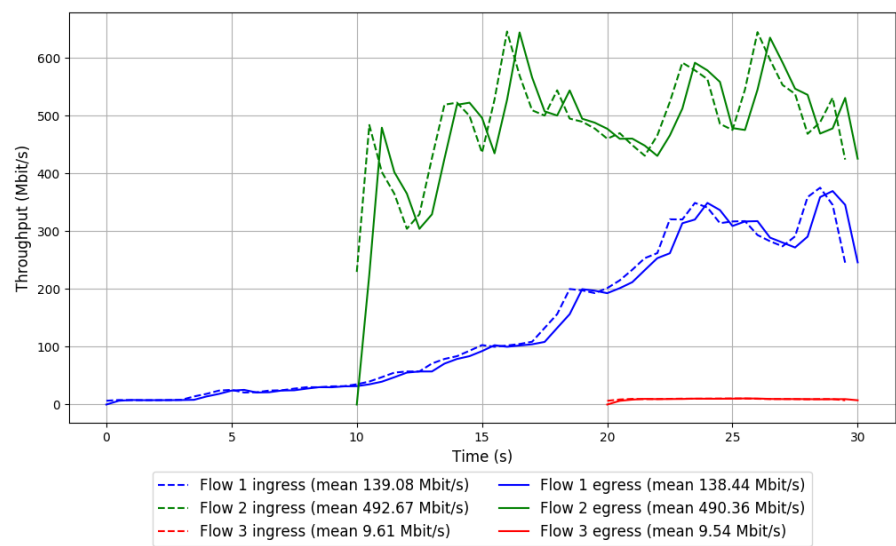
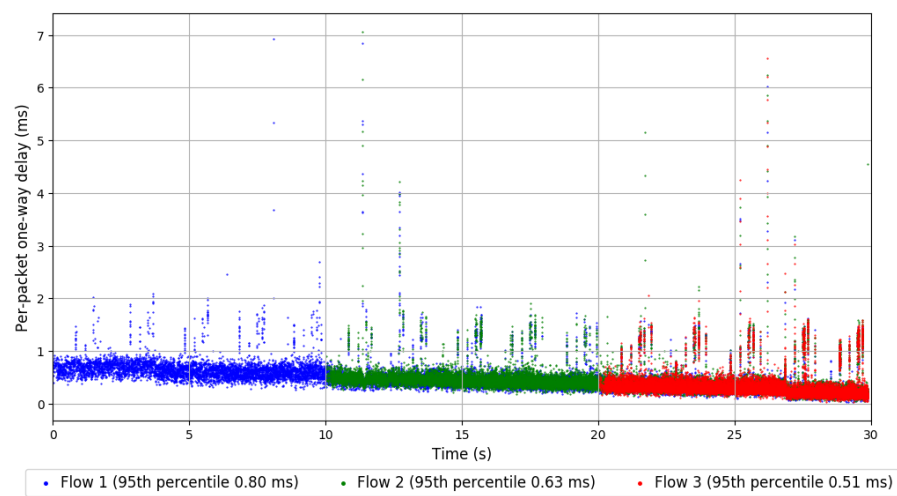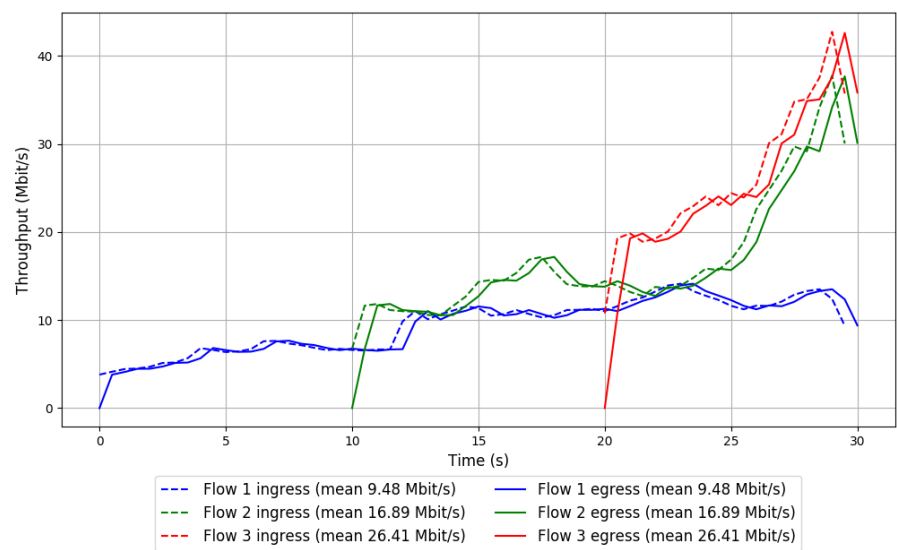Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-20 02:12:37
End at: 2018-12-20 02:13:07
Local clock offset: 2.332 ms
Remote clock offset: 1.004 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 513.90 Mbit/s
95th percentile per-packet one-way delay: 2.242 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 180.36 Mbit/s
95th percentile per-packet one-way delay: 2.203 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 488.67 Mbit/s
95th percentile per-packet one-way delay: 2.263 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 26.06 Mbit/s
95th percentile per-packet one-way delay: 2.280 ms
Loss rate: 0.55%
```

Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-20 02:39:28
End at: 2018-12-20 02:39:58
Local clock offset: 4.66 ms
Remote clock offset: 0.611 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.64 Mbit/s
95th percentile per-packet one-way delay: 2.536 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 138.44 Mbit/s
95th percentile per-packet one-way delay: 2.548 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 490.36 Mbit/s
95th percentile per-packet one-way delay: 2.529 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 9.54 Mbit/s
95th percentile per-packet one-way delay: 2.553 ms
Loss rate: 0.84%
```
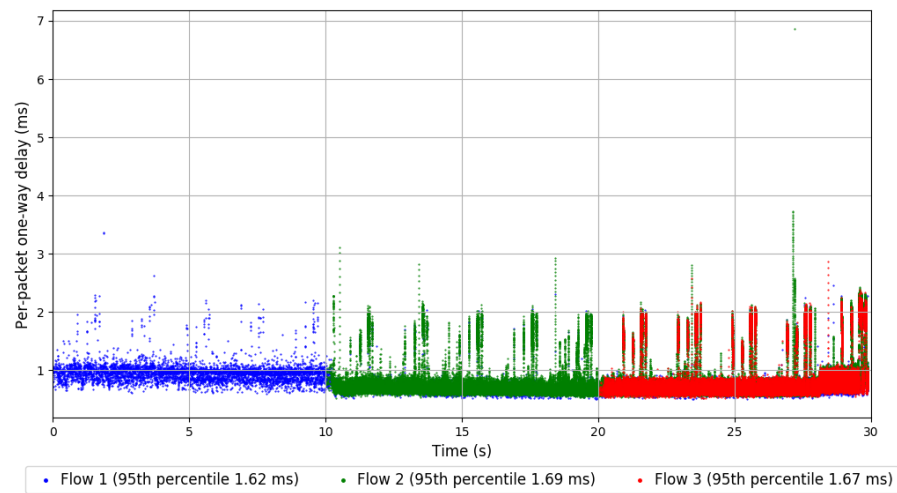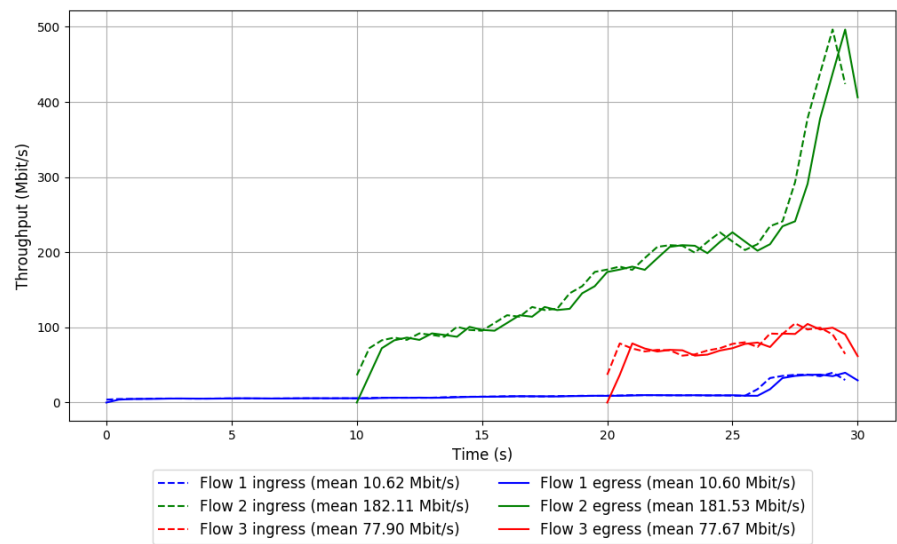
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-20 03:06:17
End at: 2018-12-20 03:06:47
Local clock offset: 5.481 ms
Remote clock offset: -4.306 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.43 Mbit/s
95th percentile per-packet one-way delay: 0.727 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 9.48 Mbit/s
95th percentile per-packet one-way delay: 0.795 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 16.89 Mbit/s
95th percentile per-packet one-way delay: 0.630 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 26.41 Mbit/s
95th percentile per-packet one-way delay: 0.508 ms
Loss rate: 0.00%
```
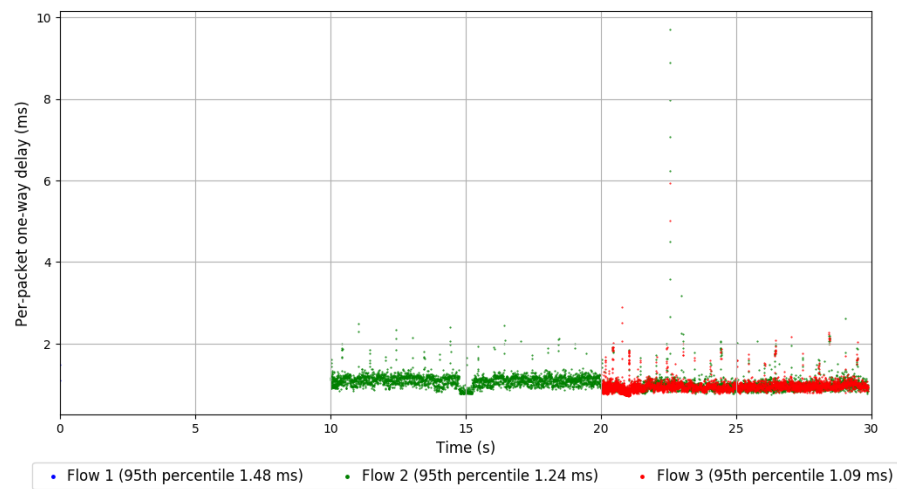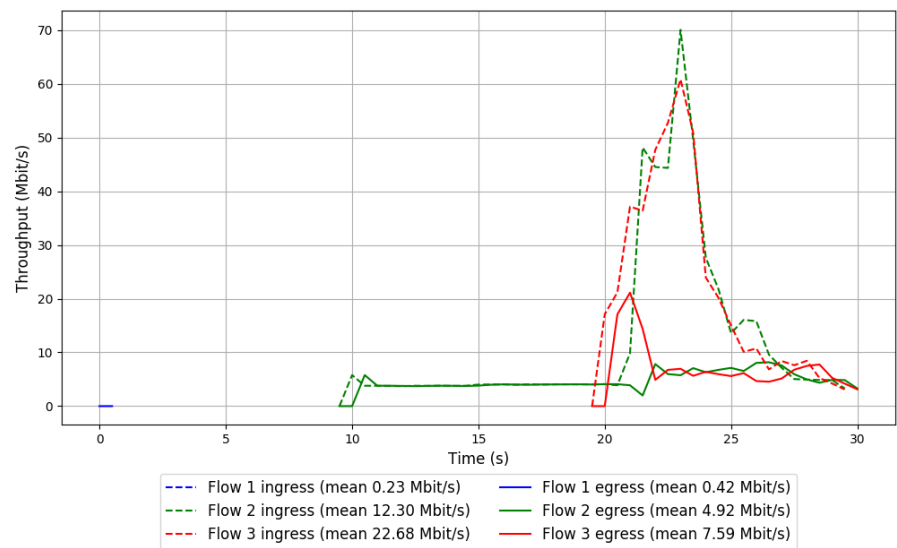
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 03:32:49
End at: 2018-12-20 03:33:19
Local clock offset: -1.176 ms
Remote clock offset: -0.167 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 156.94 Mbit/s
95th percentile per-packet one-way delay: 1.680 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 10.60 Mbit/s
95th percentile per-packet one-way delay: 1.622 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 181.53 Mbit/s
95th percentile per-packet one-way delay: 1.689 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 77.67 Mbit/s
95th percentile per-packet one-way delay: 1.669 ms
Loss rate: 0.31%
```
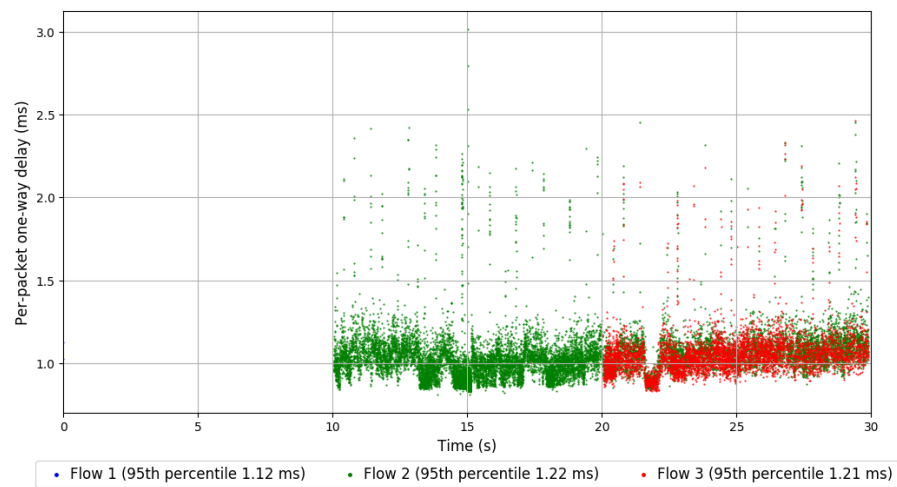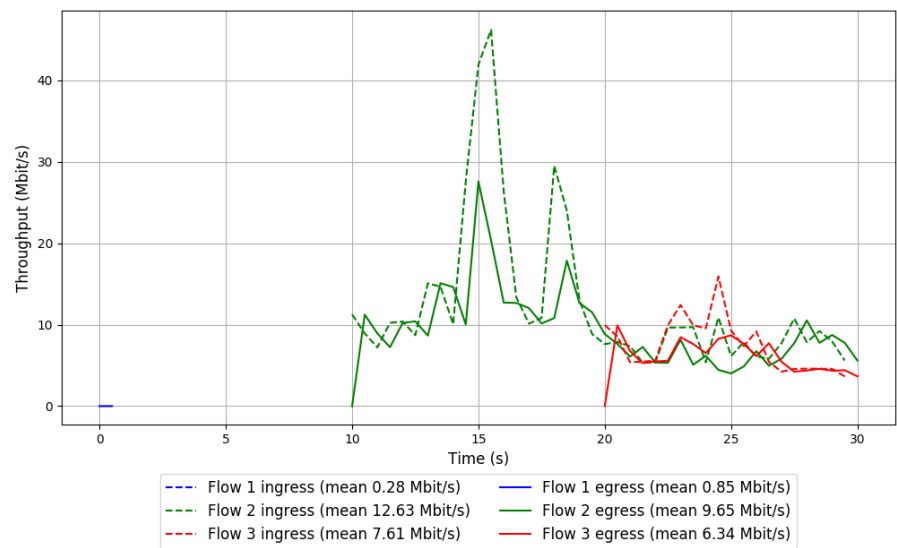
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-20 01:44:30
End at: 2018-12-20 01:45:00
Local clock offset: 0.551 ms
Remote clock offset: 0.596 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 1.210 ms
Loss rate: 63.13%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 1.478 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 4.92 Mbit/s
95th percentile per-packet one-way delay: 1.237 ms
Loss rate: 60.03%
-- Flow 3:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 66.53%
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-20 02:11:23
End at: 2018-12-20 02:11:53
Local clock offset: 2.118 ms
Remote clock offset: 0.984 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.52 Mbit/s
95th percentile per-packet one-way delay: 1.215 ms
Loss rate: 21.99%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 1.218 ms
Loss rate: 23.58%
-- Flow 3:
Average throughput: 6.34 Mbit/s
95th percentile per-packet one-way delay: 1.209 ms
Loss rate: 16.67%
```
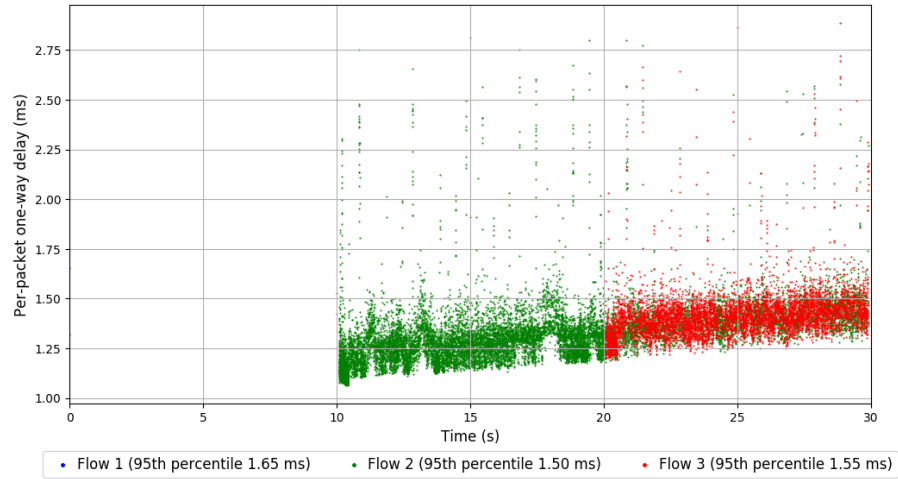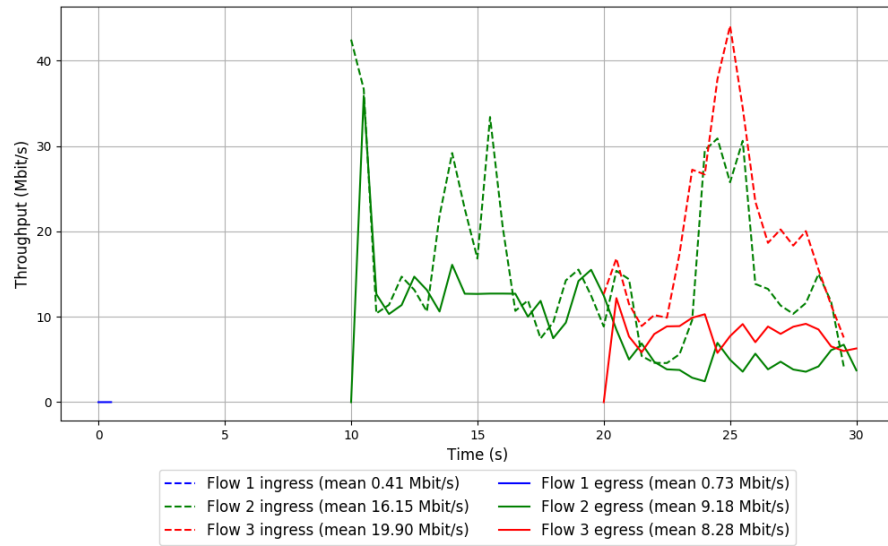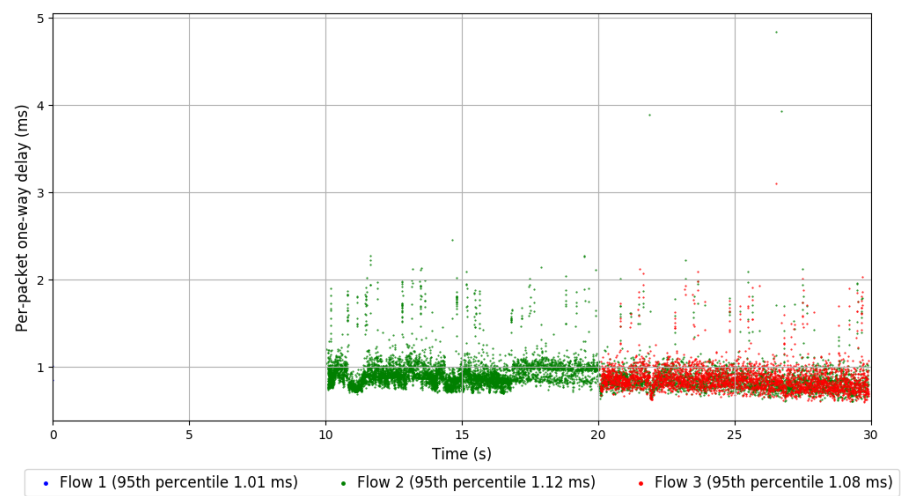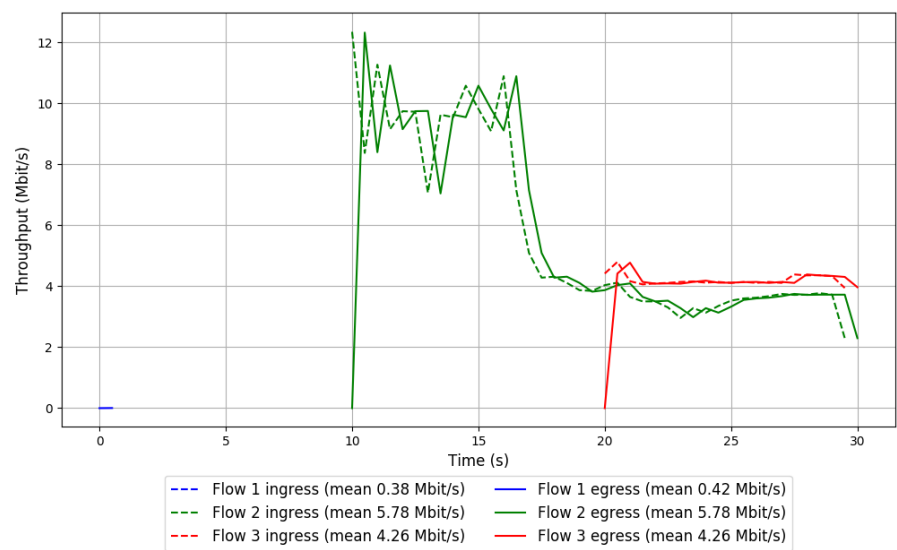
Run 2: Report of PCC-Expr — Data Link

- - - - Flow 1 ingress (mean 0.28 Mbit/s)
——— Flow 1 egress (mean 0.85 Mbit/s)
- - - - Flow 2 ingress (mean 12.63 Mbit/s)
——— Flow 2 egress (mean 9.65 Mbit/s)
- - - - Flow 3 ingress (mean 7.61 Mbit/s)
——— Flow 3 egress (mean 6.34 Mbit/s)

- Flow 1 (95th percentile 1.12 ms)
- Flow 2 (95th percentile 1.22 ms)
- Flow 3 (95th percentile 1.21 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-20 02:38:14
End at: 2018-12-20 02:38:44
Local clock offset: 4.548 ms
Remote clock offset: 1.244 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.84 Mbit/s
95th percentile per-packet one-way delay: 1.523 ms
Loss rate: 48.94%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 1.652 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 9.18 Mbit/s
95th percentile per-packet one-way delay: 1.503 ms
Loss rate: 43.15%
-- Flow 3:
Average throughput: 8.28 Mbit/s
95th percentile per-packet one-way delay: 1.547 ms
Loss rate: 58.38%
```
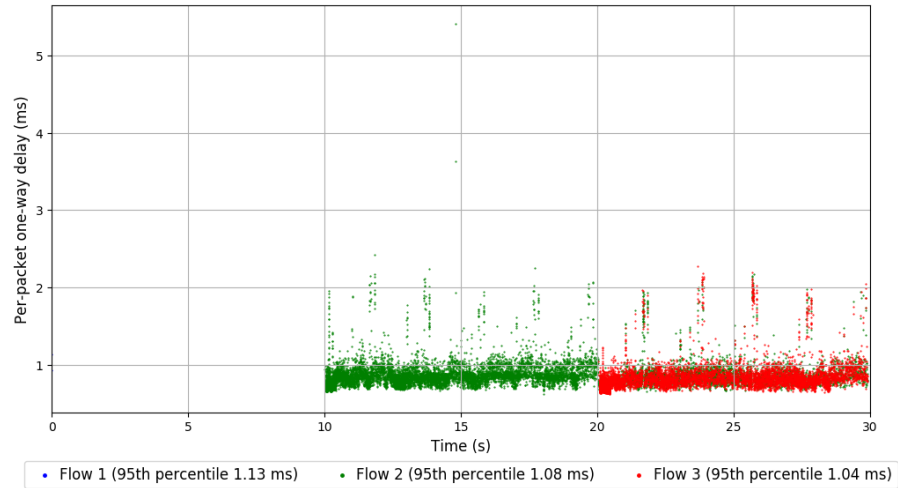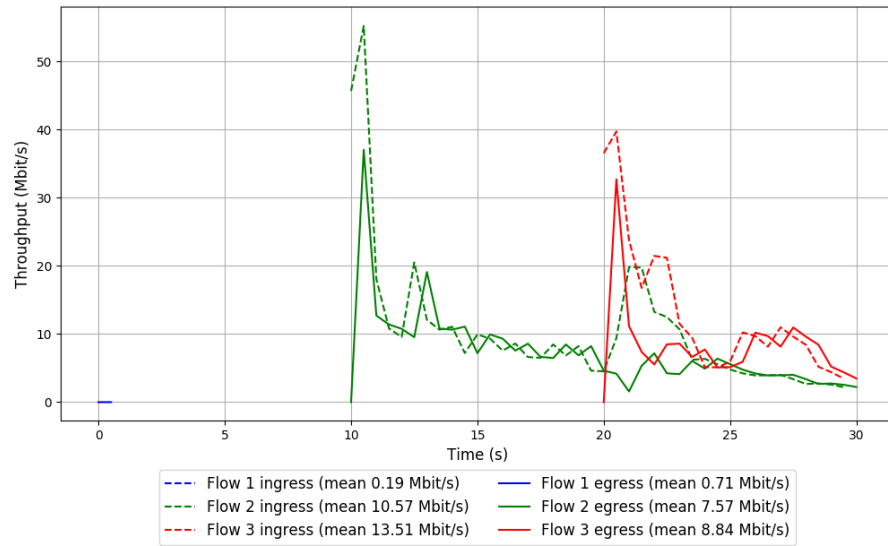
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-20 03:05:03
End at: 2018-12-20 03:05:33
Local clock offset: 5.825 ms
Remote clock offset: -4.261 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 1.111 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 1.012 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 1.120 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 4.26 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.06%
```
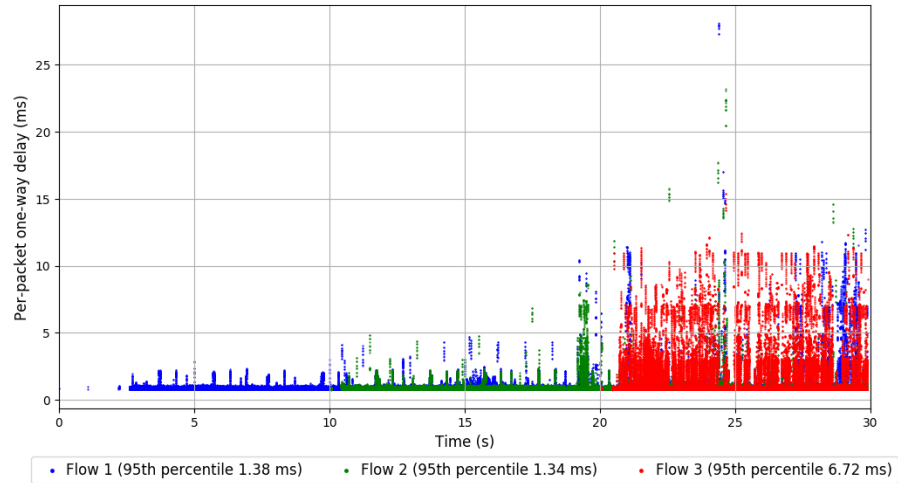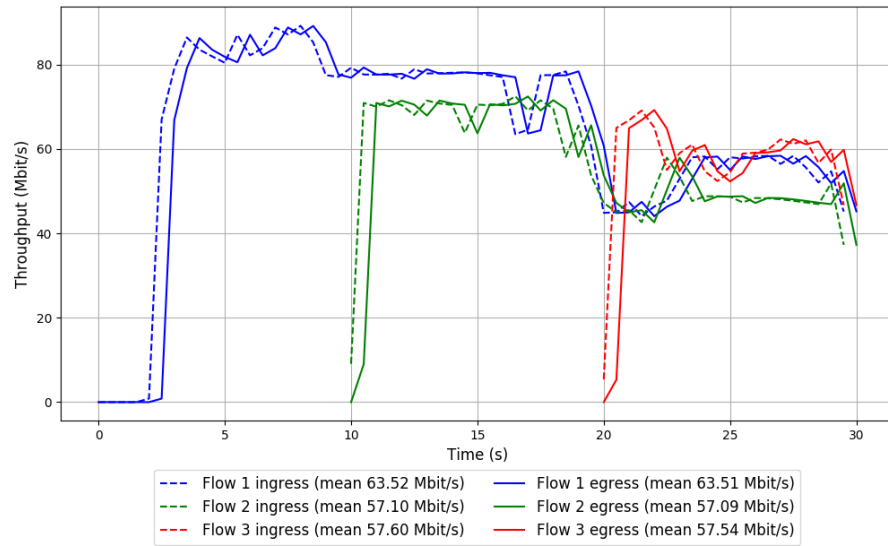
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 0.38 Mbit/s) --- Flow 1 egress (mean 0.42 Mbit/s)
Flow 2 ingress (mean 5.78 Mbit/s) --- Flow 2 egress (mean 5.78 Mbit/s)
Flow 3 ingress (mean 4.26 Mbit/s) --- Flow 3 egress (mean 4.26 Mbit/s)

Flow 1 (95th percentile 1.01 ms)   Flow 2 (95th percentile 1.12 ms)   Flow 3 (95th percentile 1.08 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-20 03:31:35
End at: 2018-12-20 03:32:05
Local clock offset: -1.056 ms
Remote clock offset: -0.194 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 1.065 ms
Loss rate: 30.80%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 1.130 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 1.076 ms
Loss rate: 28.38%
-- Flow 3:
Average throughput: 8.84 Mbit/s
95th percentile per-packet one-way delay: 1.039 ms
Loss rate: 34.60%
```
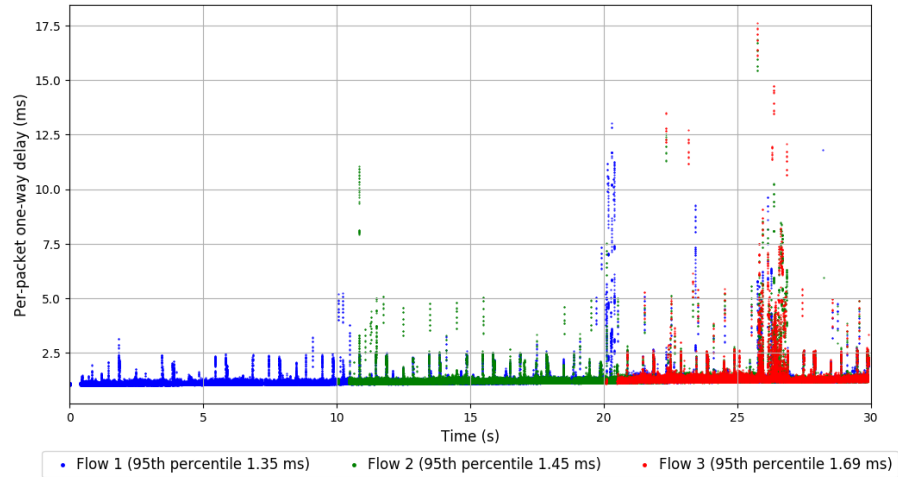
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-20 01:38:55
End at: 2018-12-20 01:39:25
Local clock offset: 0.645 ms
Remote clock offset: 0.642 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.41 Mbit/s
95th percentile per-packet one-way delay: 2.681 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 63.51 Mbit/s
95th percentile per-packet one-way delay: 1.378 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 57.09 Mbit/s
95th percentile per-packet one-way delay: 1.339 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 57.54 Mbit/s
95th percentile per-packet one-way delay: 6.721 ms
Loss rate: 0.04%
```
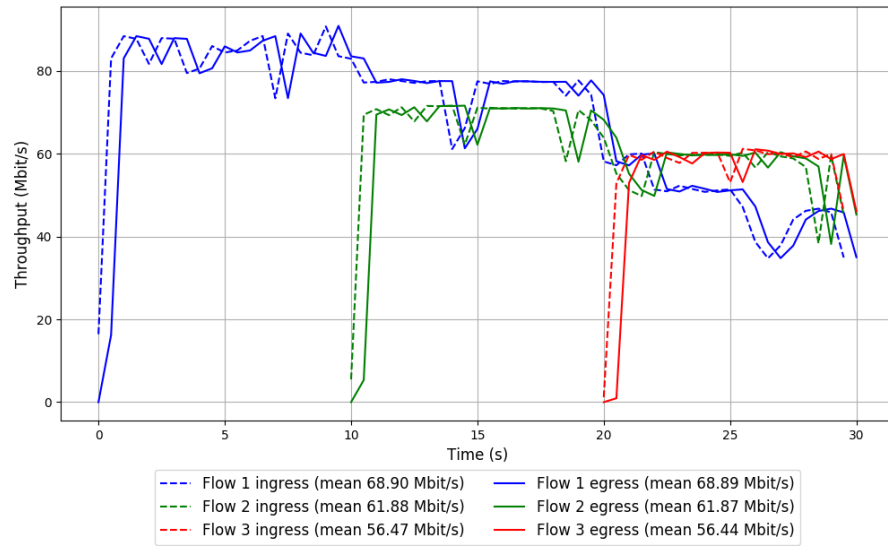
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-20 02:05:49
End at: 2018-12-20 02:06:19
Local clock offset: 0.557 ms
Remote clock offset: 1.092 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 128.54 Mbit/s
95th percentile per-packet one-way delay: 1.421 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 68.89 Mbit/s
95th percentile per-packet one-way delay: 1.348 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 61.87 Mbit/s
95th percentile per-packet one-way delay: 1.446 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 56.44 Mbit/s
95th percentile per-packet one-way delay: 1.692 ms
Loss rate: 0.02%
```
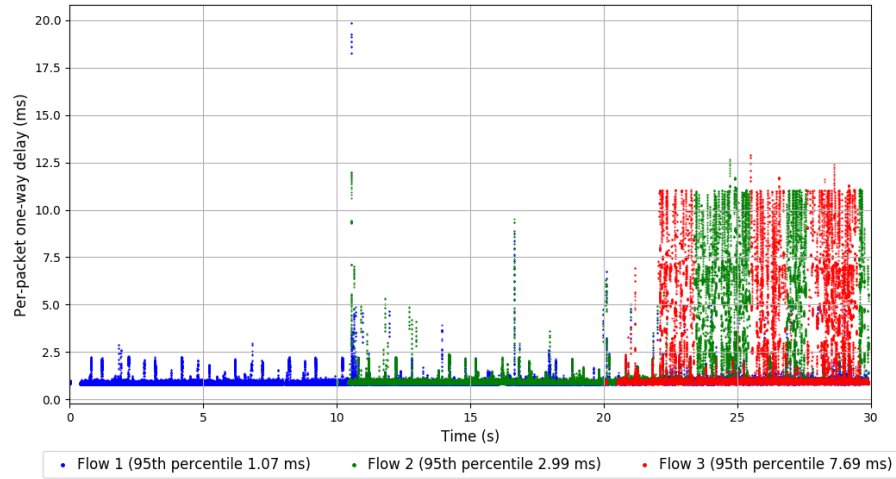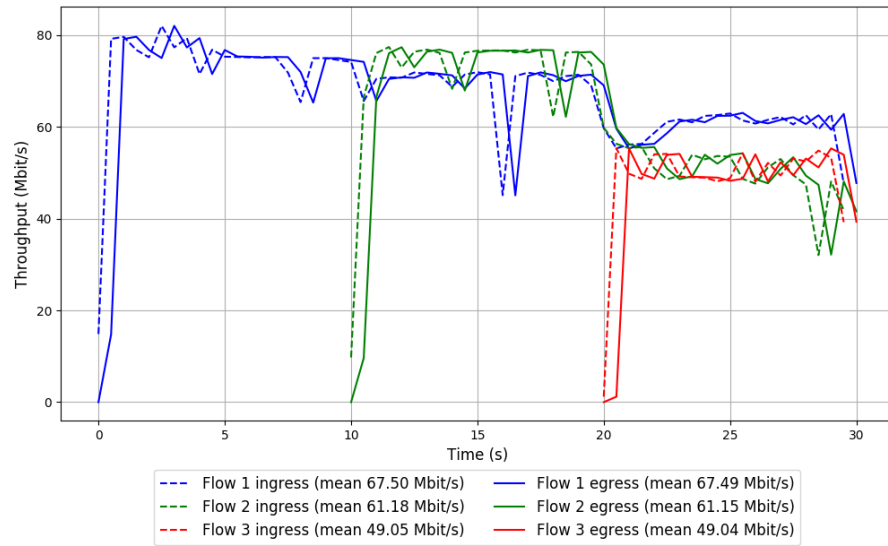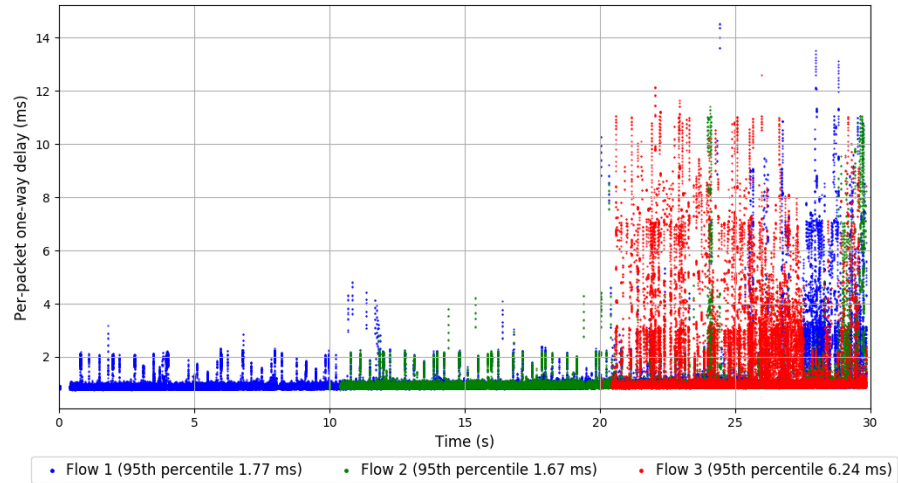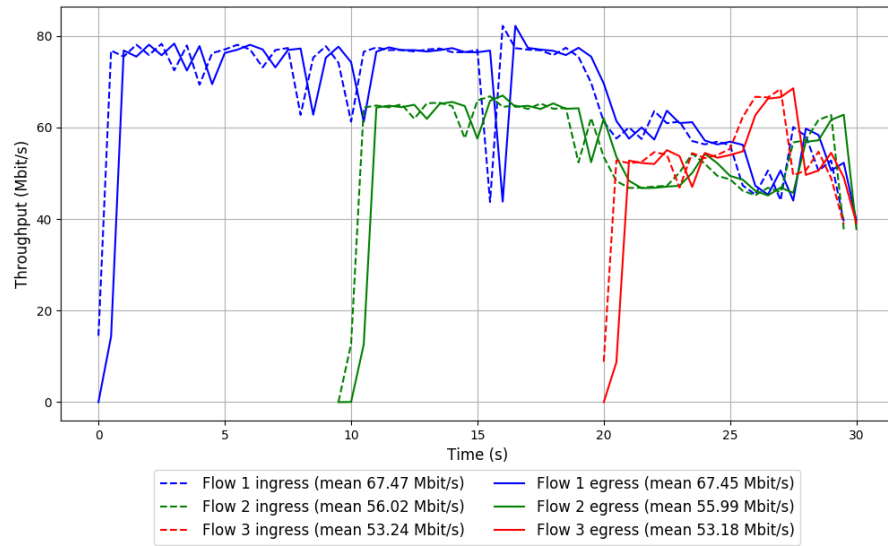
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-20 02:32:43
End at: 2018-12-20 02:33:13
Local clock offset: 4.288 ms
Remote clock offset: 1.447 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 124.26 Mbit/s
95th percentile per-packet one-way delay: 1.935 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 67.49 Mbit/s
95th percentile per-packet one-way delay: 1.072 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 61.15 Mbit/s
95th percentile per-packet one-way delay: 2.990 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 49.04 Mbit/s
95th percentile per-packet one-way delay: 7.694 ms
Loss rate: 0.03%
```
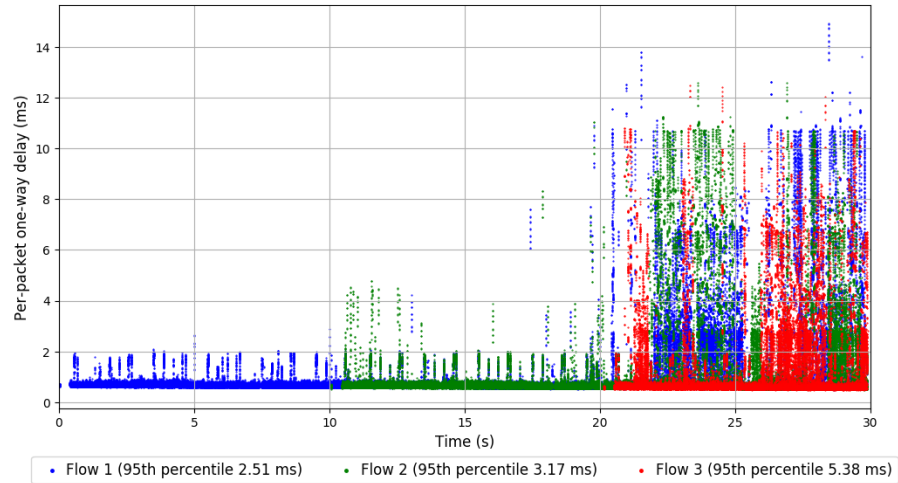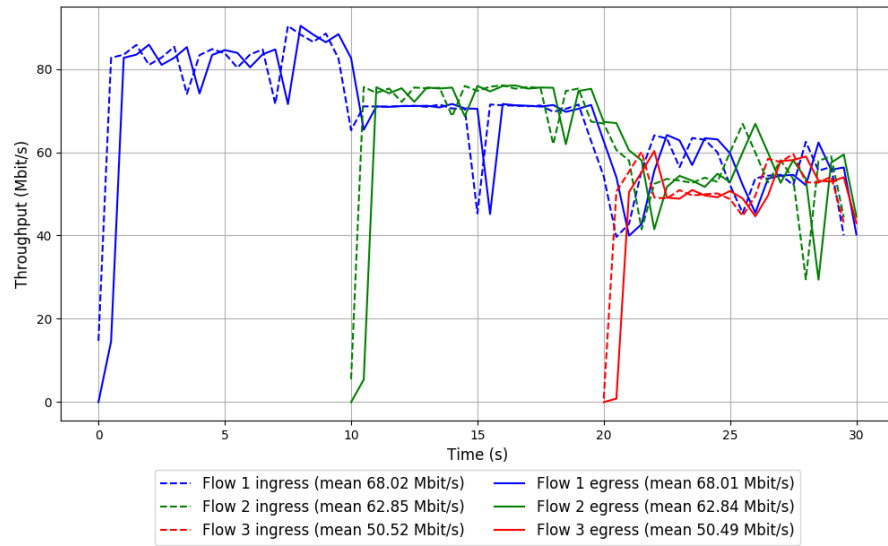
Run 3: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 67.50 Mbit/s) —— Flow 1 egress (mean 67.49 Mbit/s)
- - - Flow 2 ingress (mean 61.18 Mbit/s) —— Flow 2 egress (mean 61.15 Mbit/s)
- - - Flow 3 ingress (mean 49.05 Mbit/s) —— Flow 3 egress (mean 49.04 Mbit/s)

• Flow 1 (95th percentile 1.07 ms)   • Flow 2 (95th percentile 2.99 ms)   • Flow 3 (95th percentile 7.69 ms)

120

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-20 02:59:35
End at: 2018-12-20 03:00:05
Local clock offset: 5.57 ms
Remote clock offset: -3.752 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 122.22 Mbit/s
95th percentile per-packet one-way delay: 2.250 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 67.45 Mbit/s
95th percentile per-packet one-way delay: 1.774 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 55.99 Mbit/s
95th percentile per-packet one-way delay: 1.673 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 53.18 Mbit/s
95th percentile per-packet one-way delay: 6.237 ms
Loss rate: 0.03%
```
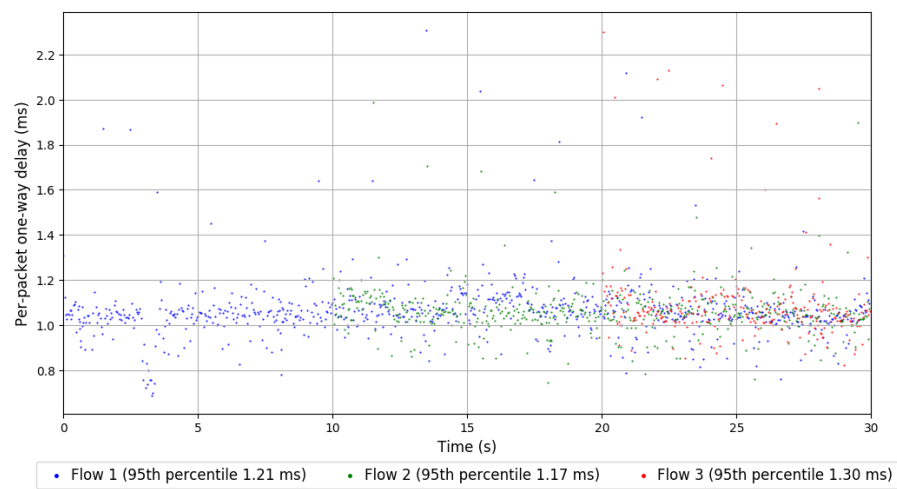
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 03:26:06
End at: 2018-12-20 03:26:36
Local clock offset: -0.458 ms
Remote clock offset: -0.704 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.21 Mbit/s
95th percentile per-packet one-way delay: 3.107 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 68.01 Mbit/s
95th percentile per-packet one-way delay: 2.508 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 62.84 Mbit/s
95th percentile per-packet one-way delay: 3.166 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 50.49 Mbit/s
95th percentile per-packet one-way delay: 5.383 ms
Loss rate: 0.06%
```
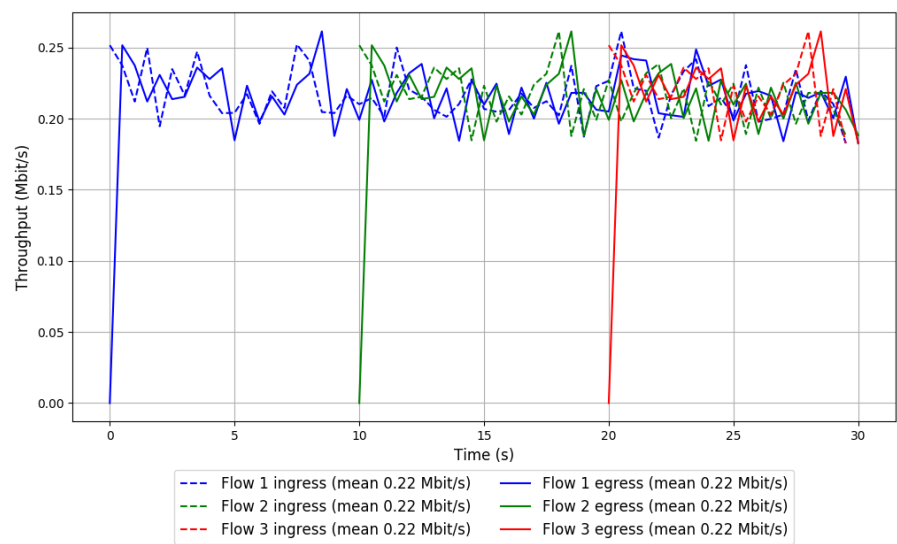
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-12-20 01:37:41
End at: 2018-12-20 01:38:11
Local clock offset: 0.69 ms
Remote clock offset: 0.559 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.208 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.211 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.172 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.299 ms
Loss rate: 0.00%
```
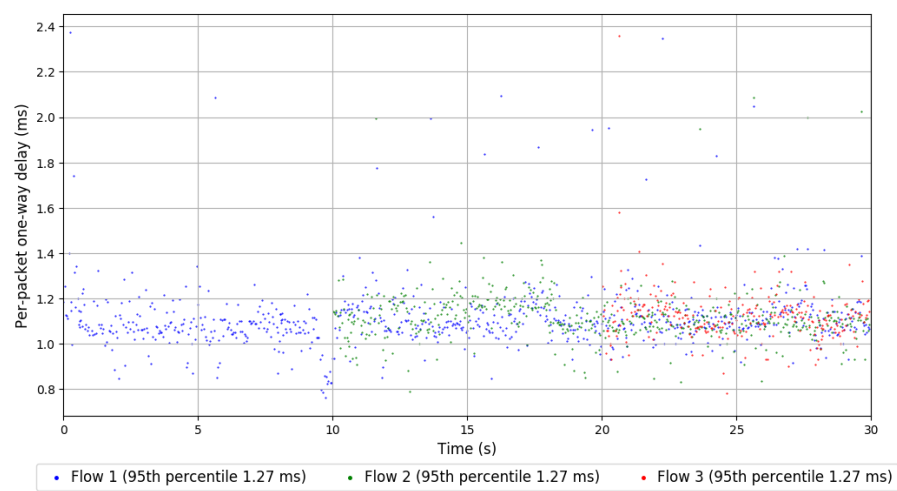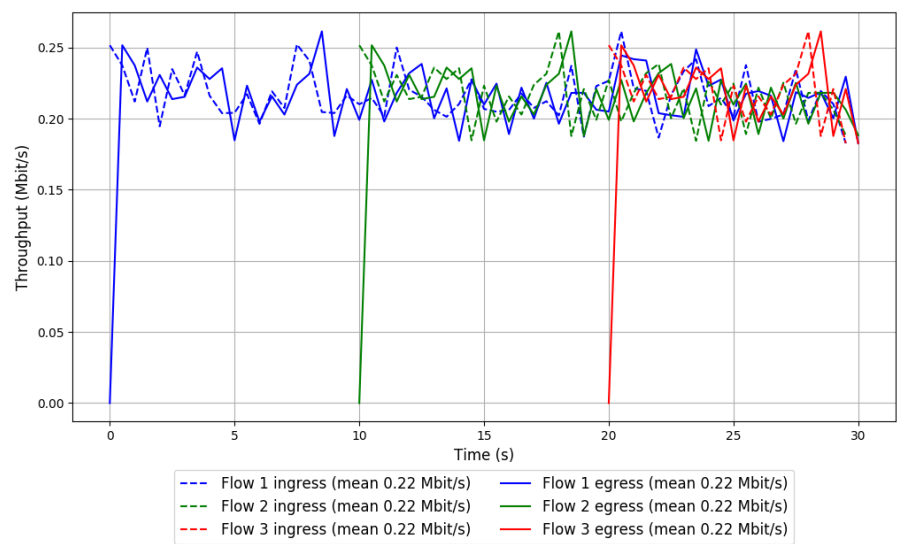
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-20 02:04:35
End at: 2018-12-20 02:05:05
Local clock offset: 0.538 ms
Remote clock offset: 1.014 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.270 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.274 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.270 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.273 ms
Loss rate: 0.00%
```
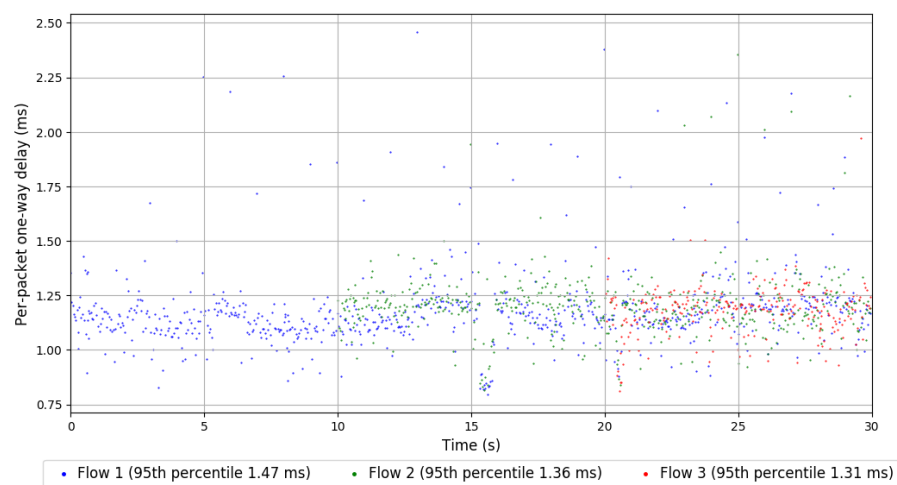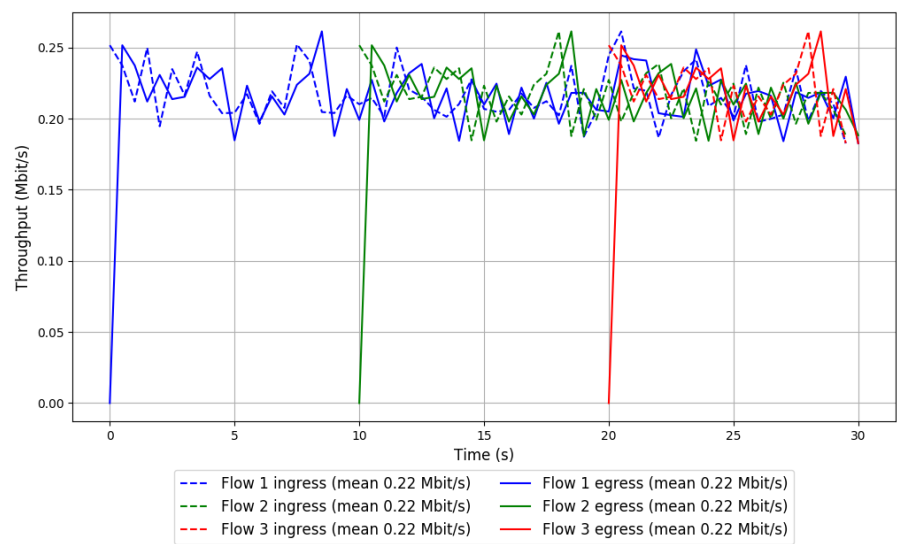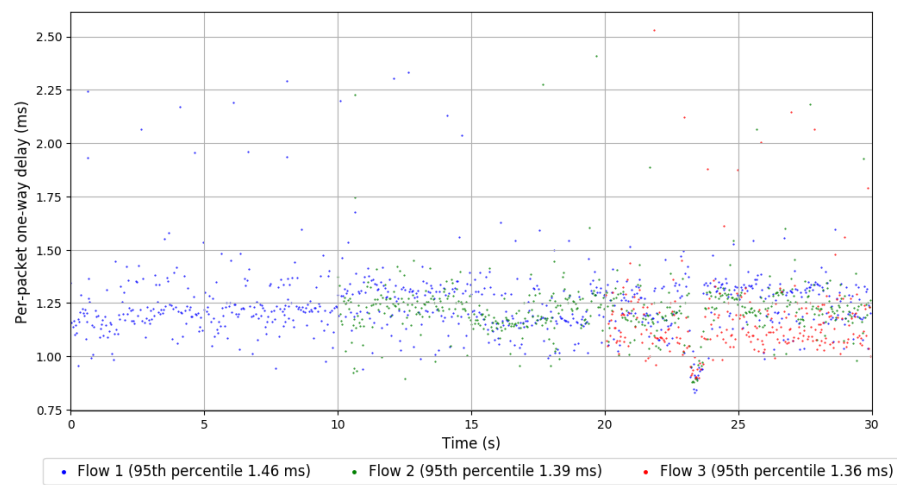
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-20 02:31:29
End at: 2018-12-20 02:31:59
Local clock offset: 4.228 ms
Remote clock offset: 1.379 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.386 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.471 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.00%
```
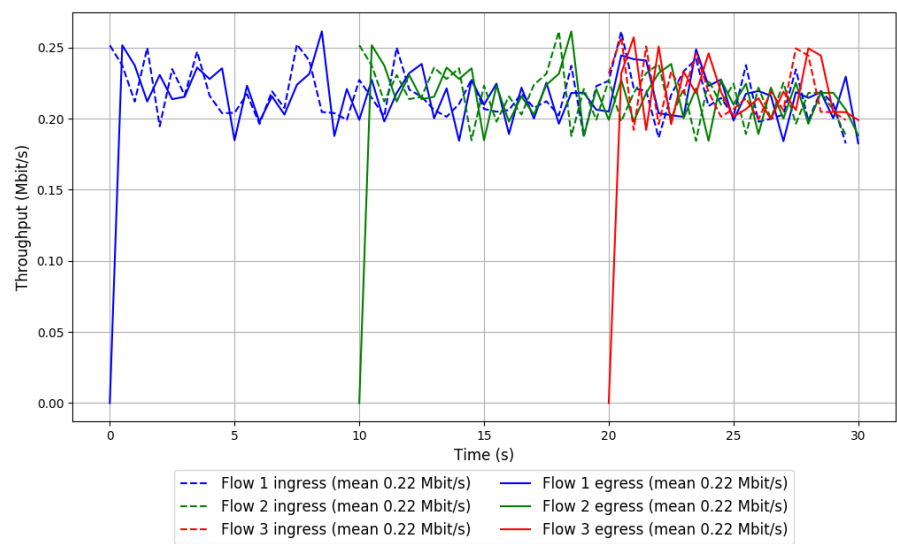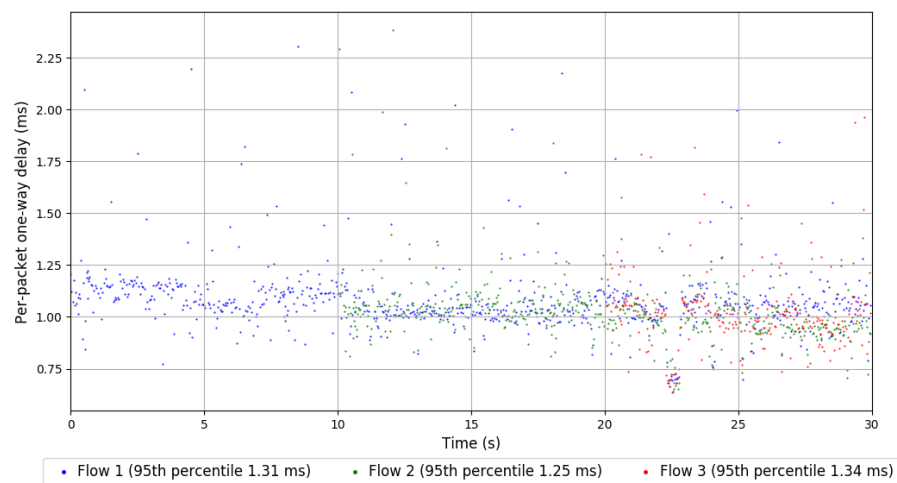
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-20 02:58:21
End at: 2018-12-20 02:58:51
Local clock offset: 5.511 ms
Remote clock offset: -3.619 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.419 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.457 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.389 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
```
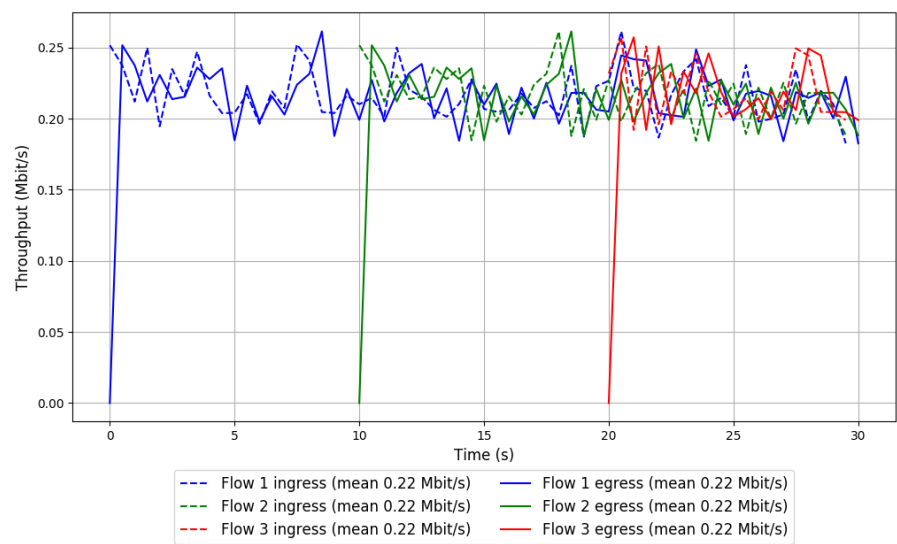
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-20 03:24:52
End at: 2018-12-20 03:25:22
Local clock offset: -0.313 ms
Remote clock offset: -0.753 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.284 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.308 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.254 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.336 ms
Loss rate: 0.00%
```
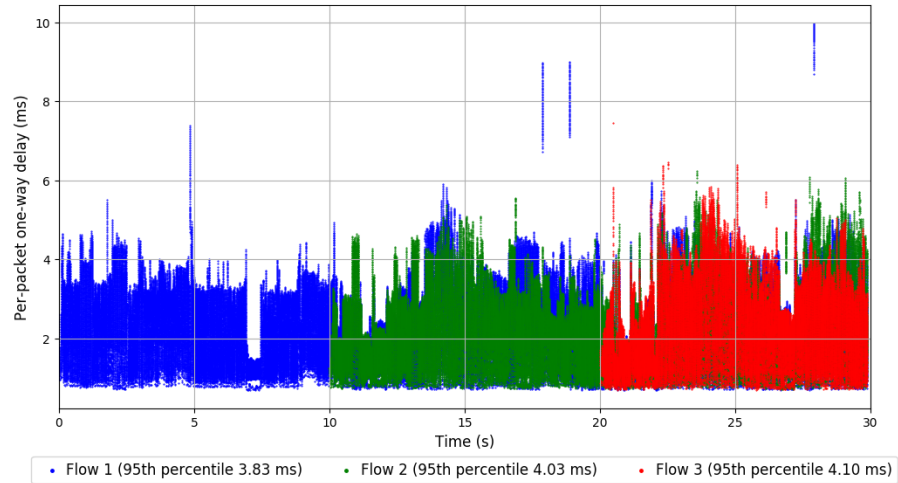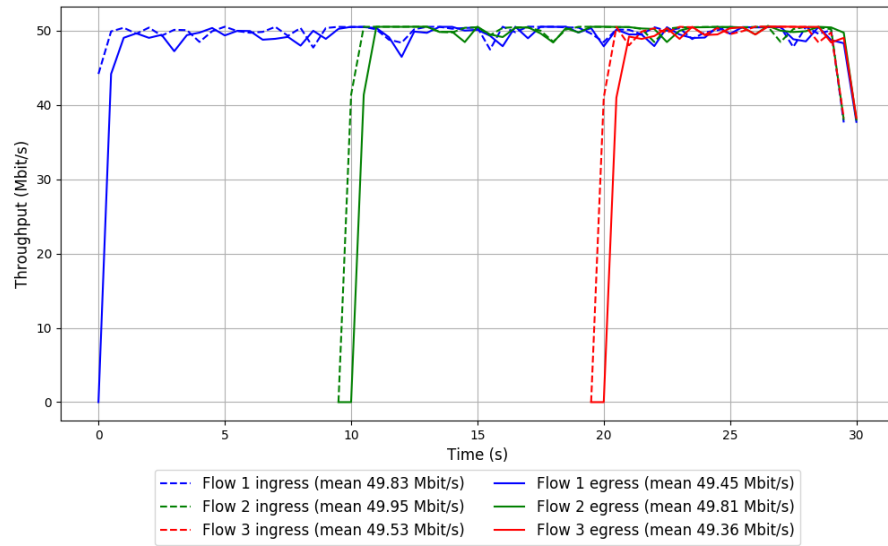
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-12-20 01:41:37
End at: 2018-12-20 01:42:07
Local clock offset: 0.604 ms
Remote clock offset: 0.544 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.95 Mbit/s
95th percentile per-packet one-way delay: 3.946 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 49.45 Mbit/s
95th percentile per-packet one-way delay: 3.835 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 49.81 Mbit/s
95th percentile per-packet one-way delay: 4.028 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 49.36 Mbit/s
95th percentile per-packet one-way delay: 4.096 ms
Loss rate: 0.32%
```
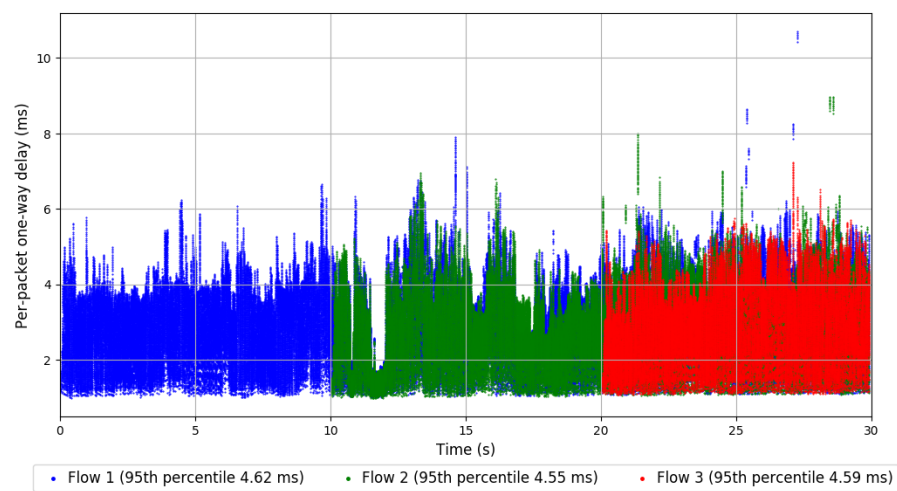
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-20 02:08:33
End at: 2018-12-20 02:09:03
Local clock offset: 1.457 ms
Remote clock offset: 1.108 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.24 Mbit/s
95th percentile per-packet one-way delay: 4.595 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 49.76 Mbit/s
95th percentile per-packet one-way delay: 4.623 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 49.74 Mbit/s
95th percentile per-packet one-way delay: 4.554 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 49.47 Mbit/s
95th percentile per-packet one-way delay: 4.592 ms
Loss rate: 0.33%
```
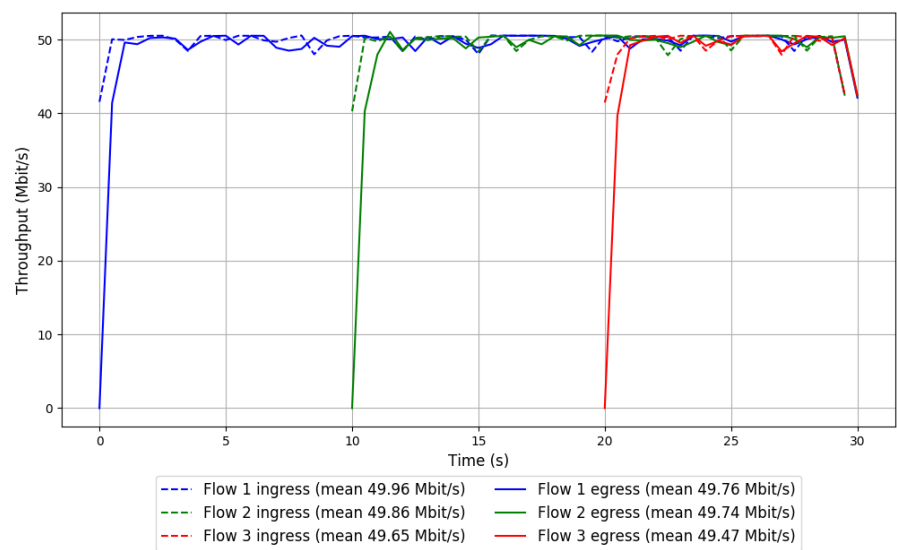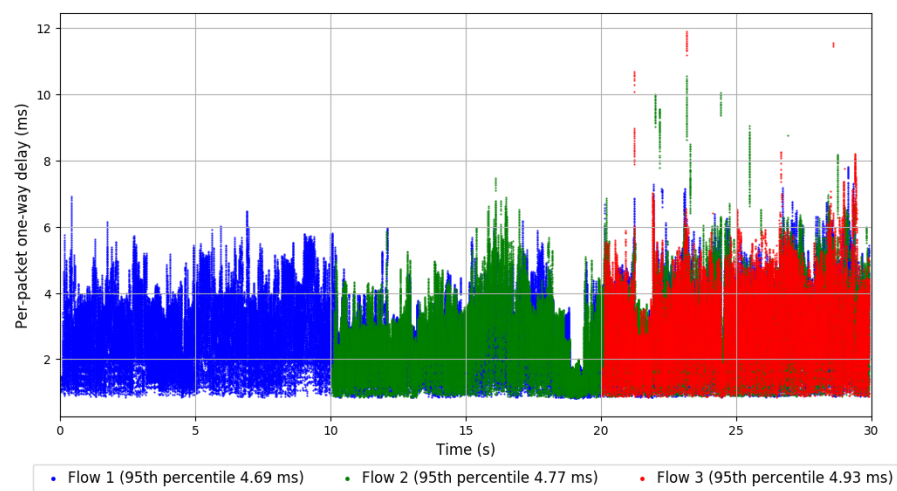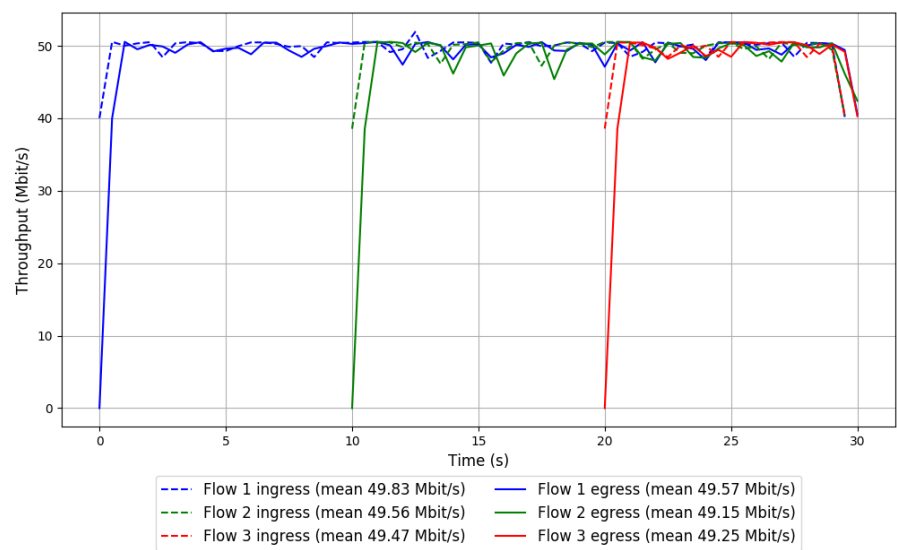
Run 2: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 49.96 Mbit/s) —— Flow 1 egress (mean 49.76 Mbit/s)
- - - Flow 2 ingress (mean 49.86 Mbit/s) —— Flow 2 egress (mean 49.74 Mbit/s)
- - - Flow 3 ingress (mean 49.65 Mbit/s) —— Flow 3 egress (mean 49.47 Mbit/s)

- Flow 1 (95th percentile 4.62 ms)   • Flow 2 (95th percentile 4.55 ms)   • Flow 3 (95th percentile 4.59 ms)

```
Run 3: Statistics of Sprout

Start at: 2018-12-20 02:35:25
End at: 2018-12-20 02:35:55
Local clock offset: 4.425 ms
Remote clock offset: 1.494 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.54 Mbit/s
95th percentile per-packet one-way delay: 4.759 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 49.57 Mbit/s
95th percentile per-packet one-way delay: 4.687 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 49.15 Mbit/s
95th percentile per-packet one-way delay: 4.768 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 49.25 Mbit/s
95th percentile per-packet one-way delay: 4.931 ms
Loss rate: 0.41%
```
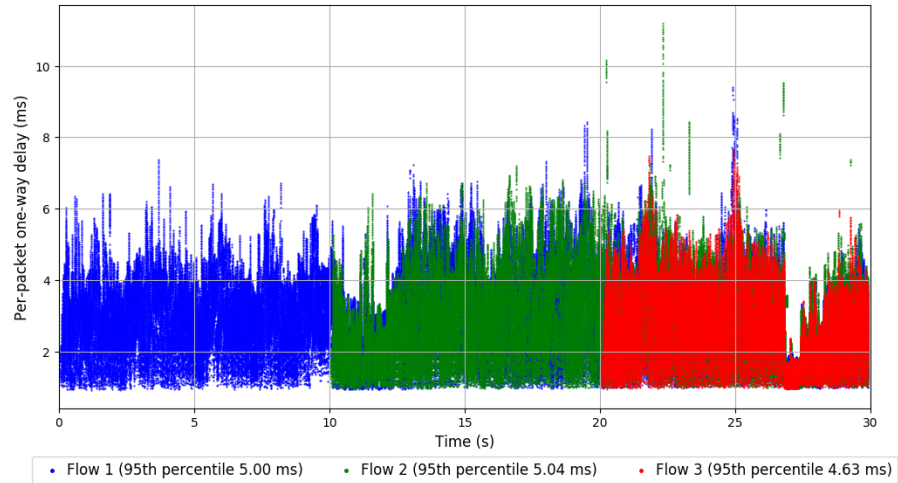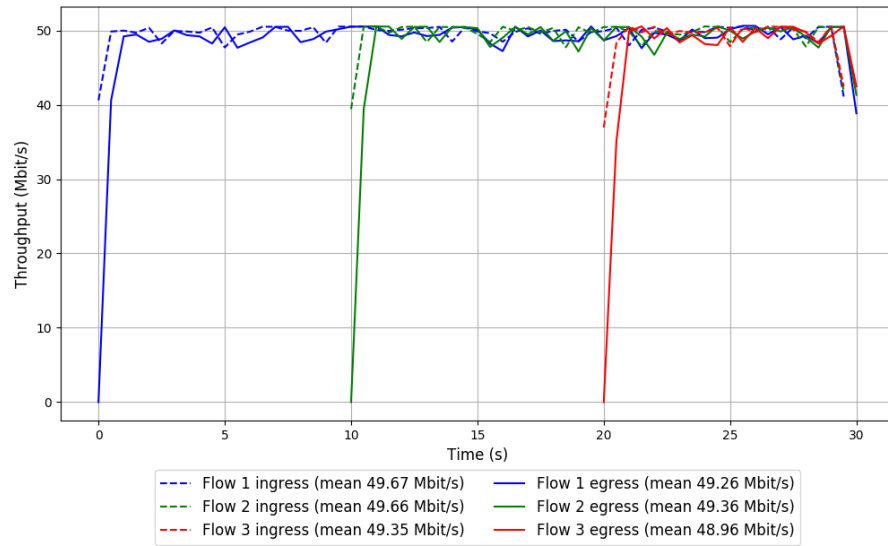
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-20 03:02:18
End at: 2018-12-20 03:02:48
Local clock offset: 5.701 ms
Remote clock offset: -3.896 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.28 Mbit/s
95th percentile per-packet one-way delay: 4.959 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 49.26 Mbit/s
95th percentile per-packet one-way delay: 4.998 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 49.36 Mbit/s
95th percentile per-packet one-way delay: 5.045 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 48.96 Mbit/s
95th percentile per-packet one-way delay: 4.626 ms
Loss rate: 0.77%
```
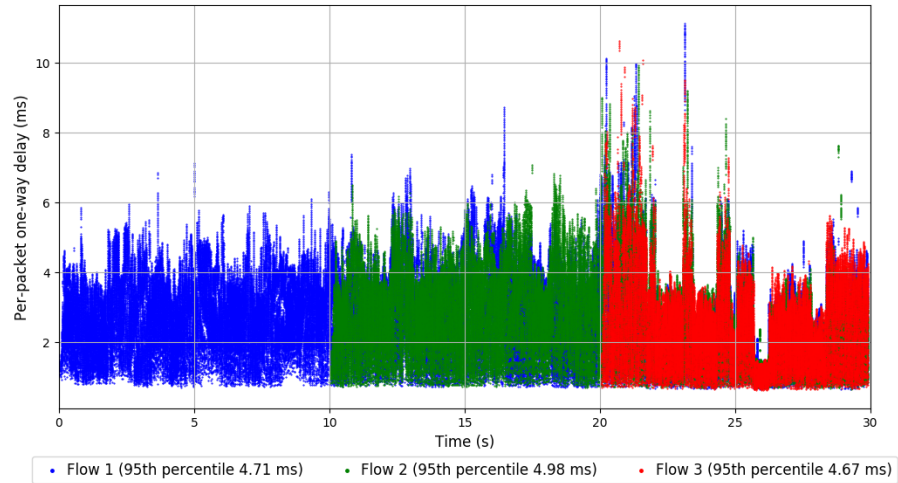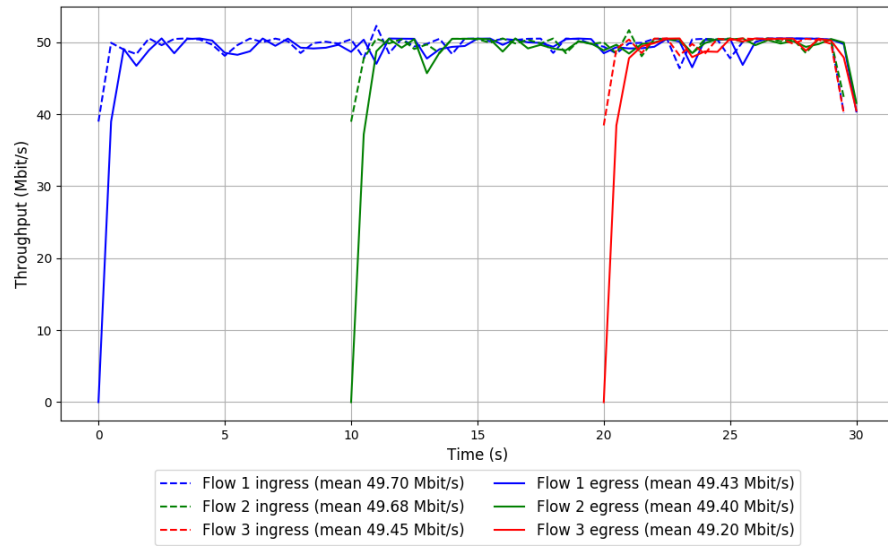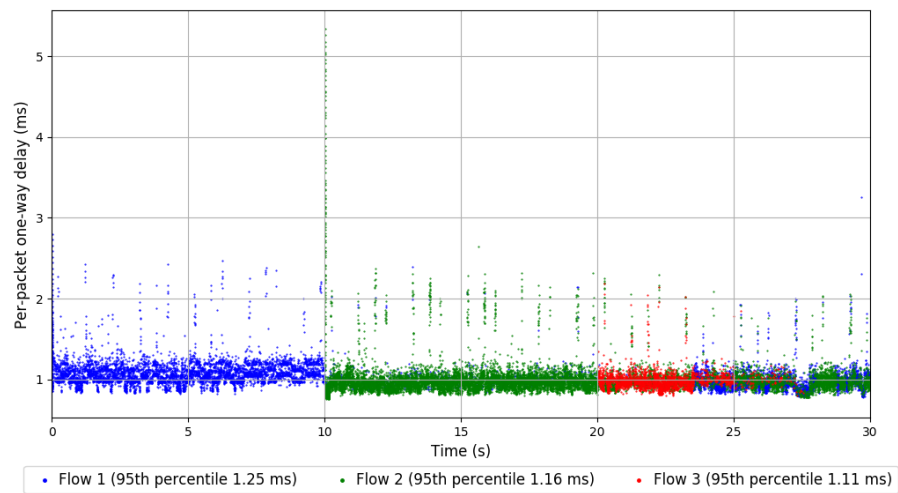
Run 4: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 49.67 Mbit/s)   —— Flow 1 egress (mean 49.26 Mbit/s)
- - - Flow 2 ingress (mean 49.66 Mbit/s)   —— Flow 2 egress (mean 49.36 Mbit/s)
- - - Flow 3 ingress (mean 49.35 Mbit/s)   —— Flow 3 egress (mean 48.96 Mbit/s)

• Flow 1 (95th percentile 5.00 ms)   • Flow 2 (95th percentile 5.04 ms)   • Flow 3 (95th percentile 4.63 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-12-20 03:28:49
End at: 2018-12-20 03:29:19
Local clock offset: -0.776 ms
Remote clock offset: -0.34 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.53 Mbit/s
95th percentile per-packet one-way delay: 4.797 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 49.43 Mbit/s
95th percentile per-packet one-way delay: 4.710 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 49.40 Mbit/s
95th percentile per-packet one-way delay: 4.980 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 49.20 Mbit/s
95th percentile per-packet one-way delay: 4.673 ms
Loss rate: 0.48%
```
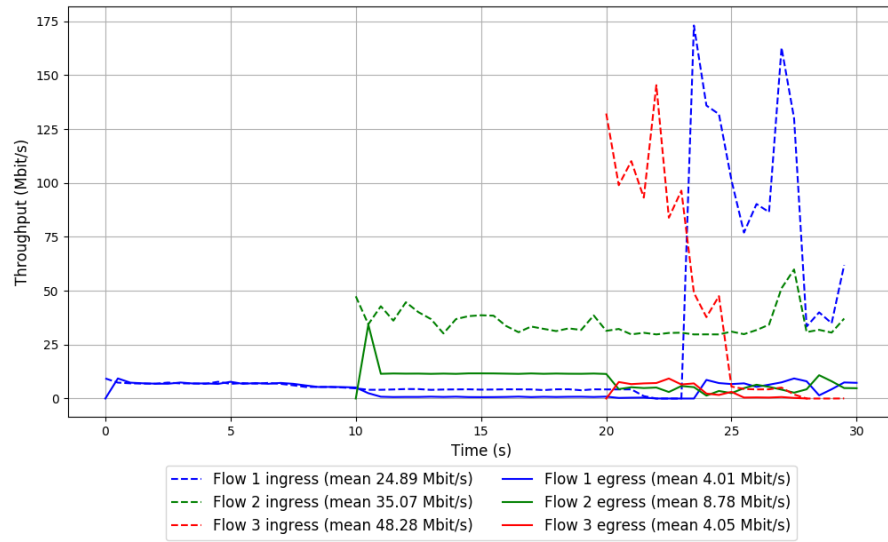
Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-20 01:58:47
End at: 2018-12-20 01:59:17
Local clock offset: 0.527 ms
Remote clock offset: 0.958 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.88 Mbit/s
95th percentile per-packet one-way delay: 1.214 ms
Loss rate: 82.89%
-- Flow 1:
Average throughput: 4.01 Mbit/s
95th percentile per-packet one-way delay: 1.253 ms
Loss rate: 83.87%
-- Flow 2:
Average throughput: 8.78 Mbit/s
95th percentile per-packet one-way delay: 1.156 ms
Loss rate: 74.95%
-- Flow 3:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 1.114 ms
Loss rate: 93.38%
```
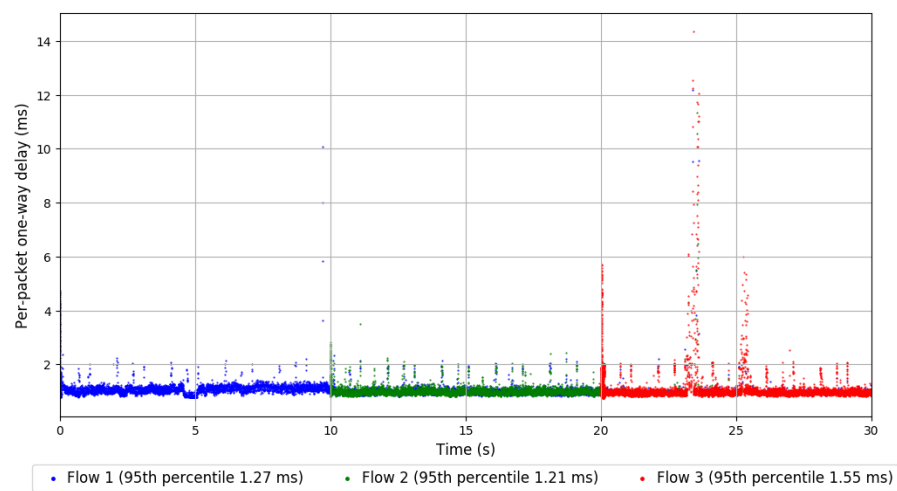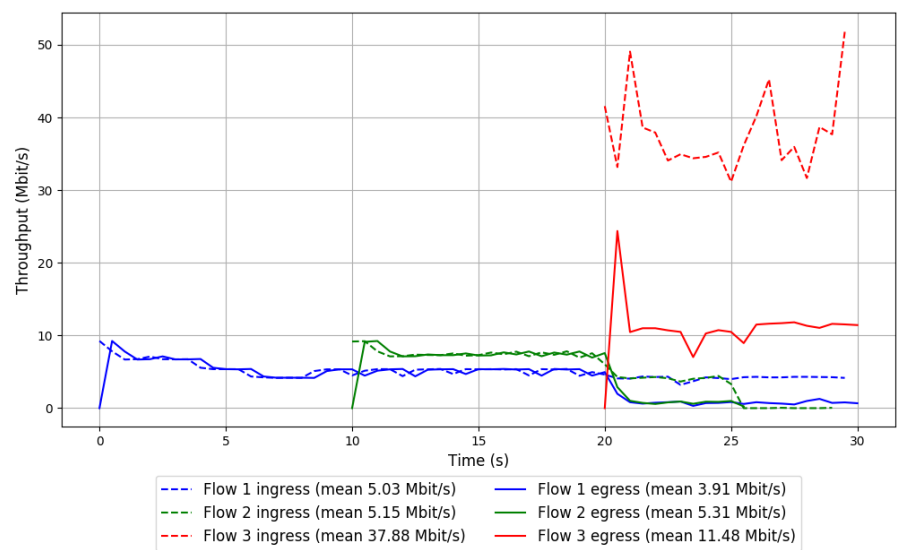
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 02:25:40
End at: 2018-12-20 02:26:10
Local clock offset: 3.828 ms
Remote clock offset: 1.243 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.44 Mbit/s
95th percentile per-packet one-way delay: 1.276 ms
Loss rate: 50.18%
-- Flow 1:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 1.266 ms
Loss rate: 22.29%
-- Flow 2:
Average throughput: 5.31 Mbit/s
95th percentile per-packet one-way delay: 1.205 ms
Loss rate: 18.25%
-- Flow 3:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 1.555 ms
Loss rate: 69.70%
```

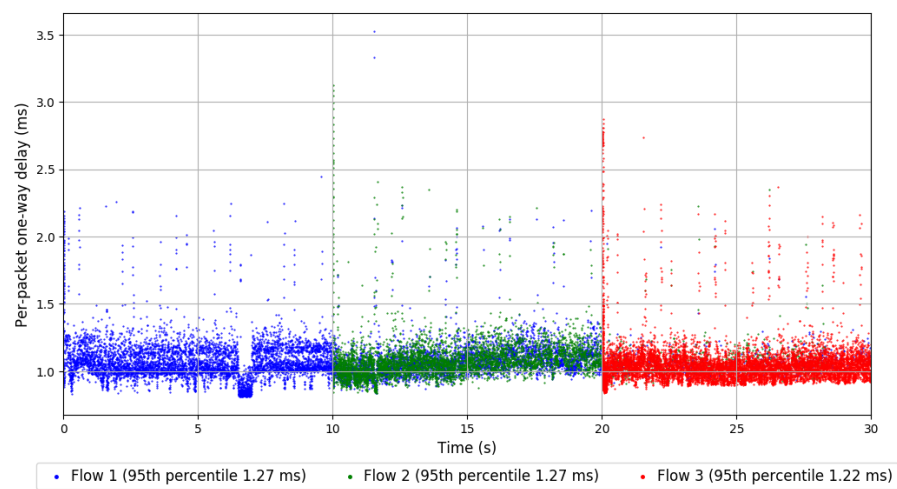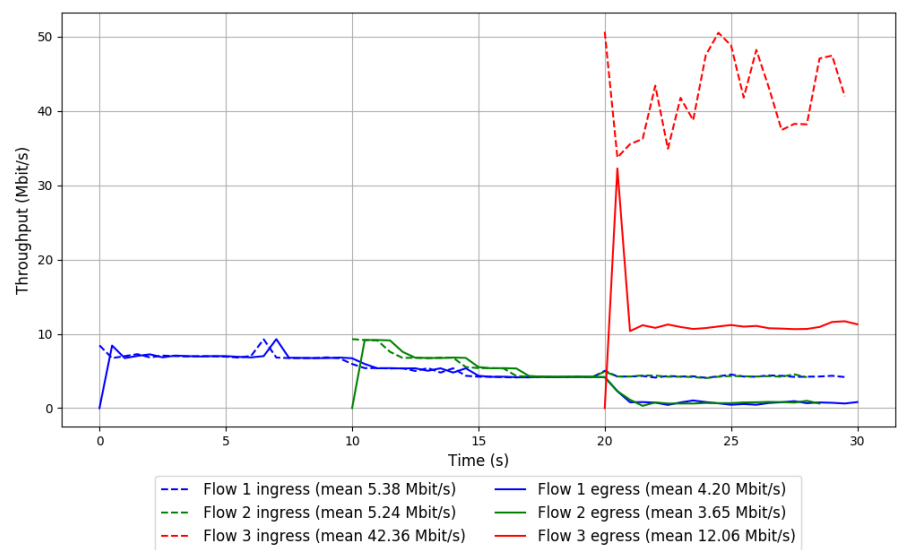Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 02:52:38
End at: 2018-12-20 02:53:08
Local clock offset: 5.264 ms
Remote clock offset: -2.897 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.45 Mbit/s
95th percentile per-packet one-way delay: 1.257 ms
Loss rate: 53.96%
-- Flow 1:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 1.269 ms
Loss rate: 21.86%
-- Flow 2:
Average throughput: 3.65 Mbit/s
95th percentile per-packet one-way delay: 1.275 ms
Loss rate: 30.70%
-- Flow 3:
Average throughput: 12.06 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 71.53%
```

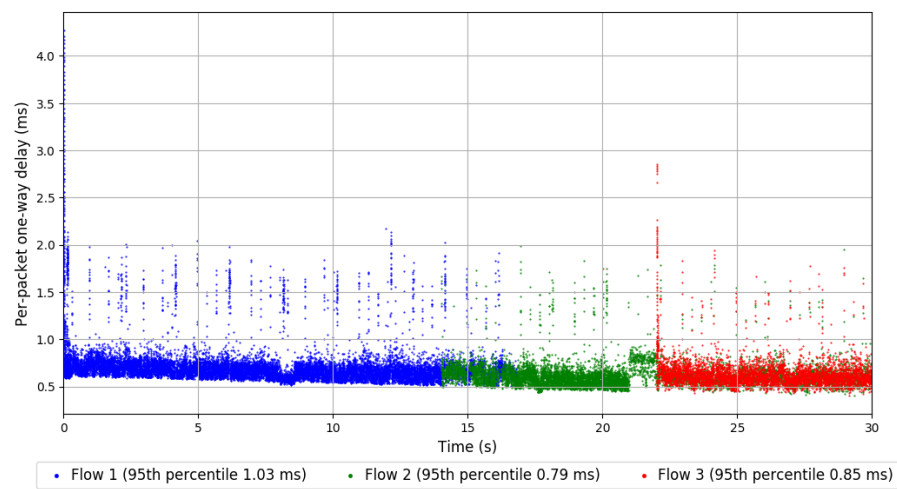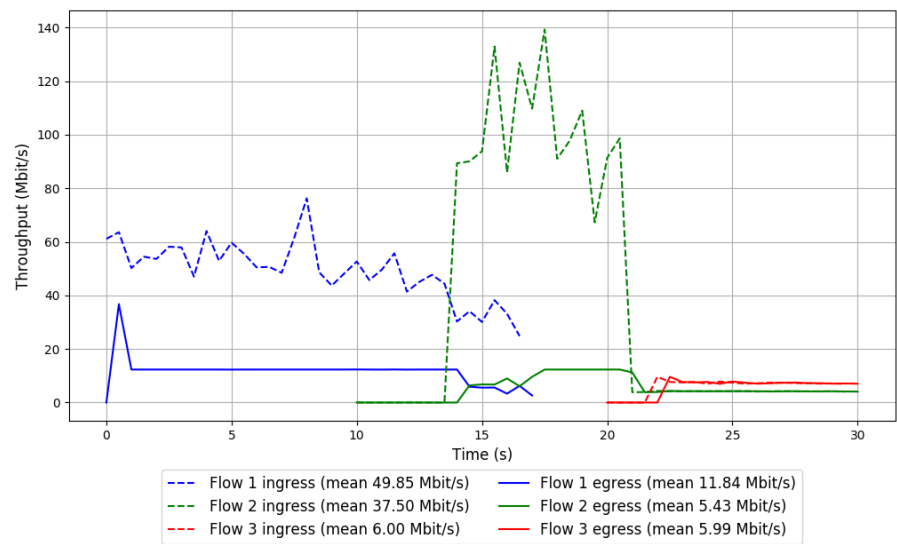Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 03:19:06
End at: 2018-12-20 03:19:36
Local clock offset: 0.629 ms
Remote clock offset: -1.876 ms


# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.26 Mbit/s
95th percentile per-packet one-way delay: 0.884 ms
Loss rate: 77.70%
-- Flow 1:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 1.026 ms
Loss rate: 76.26%
-- Flow 2:
Average throughput: 5.43 Mbit/s
95th percentile per-packet one-way delay: 0.791 ms
Loss rate: 85.51%
-- Flow 3:
Average throughput: 5.99 Mbit/s
95th percentile per-packet one-way delay: 0.854 ms
Loss rate: 0.06%
```

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

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

Start at: 2018-12-20 03:45:40
End at: 2018-12-20 03:46:10
Local clock offset: -2.939 ms
Remote clock offset: 0.334 ms

# Below is generated by plot.py at 2018-12-20 04:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.86 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 72.96%
-- Flow 1:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 1.206 ms
Loss rate: 61.89%
-- Flow 2:
Average throughput: 12.22 Mbit/s
95th percentile per-packet one-way delay: 0.975 ms
Loss rate: 75.35%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 0.737 ms
Loss rate: 99.16%
```
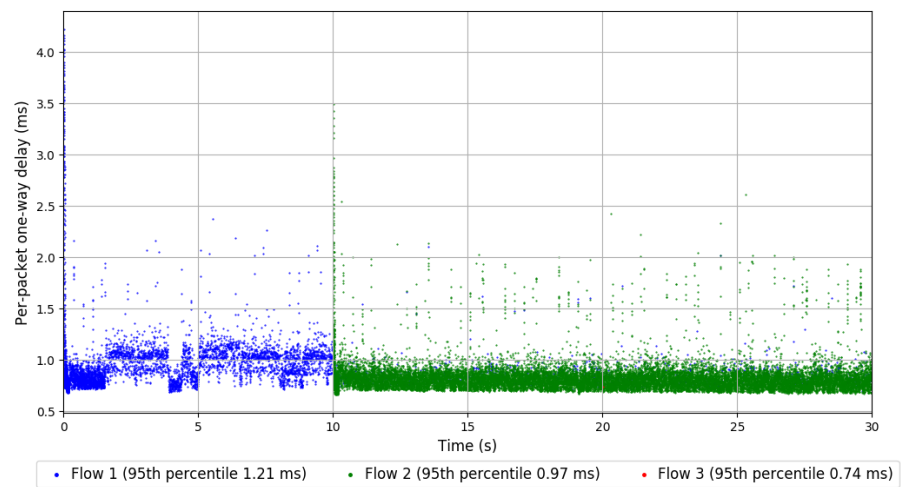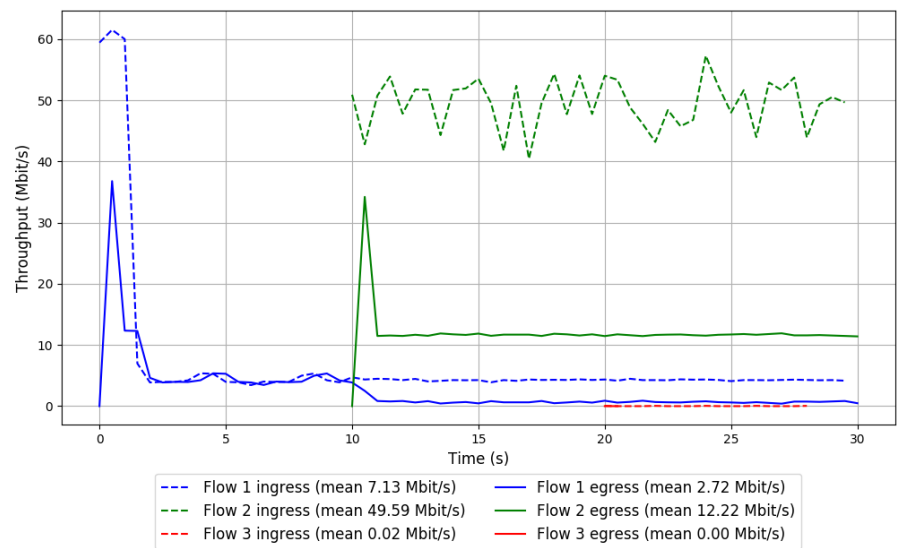
Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-20 02:00:02
End at: 2018-12-20 02:00:32
Local clock offset: 0.506 ms
Remote clock offset: 0.965 ms


# Below is generated by plot.py at 2018-12-20 04:32:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 272.13 Mbit/s
95th percentile per-packet one-way delay: 1.383 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 90.85 Mbit/s
95th percentile per-packet one-way delay: 1.291 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 91.98 Mbit/s
95th percentile per-packet one-way delay: 1.215 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 360.94 Mbit/s
95th percentile per-packet one-way delay: 2.107 ms
Loss rate: 0.11%
```
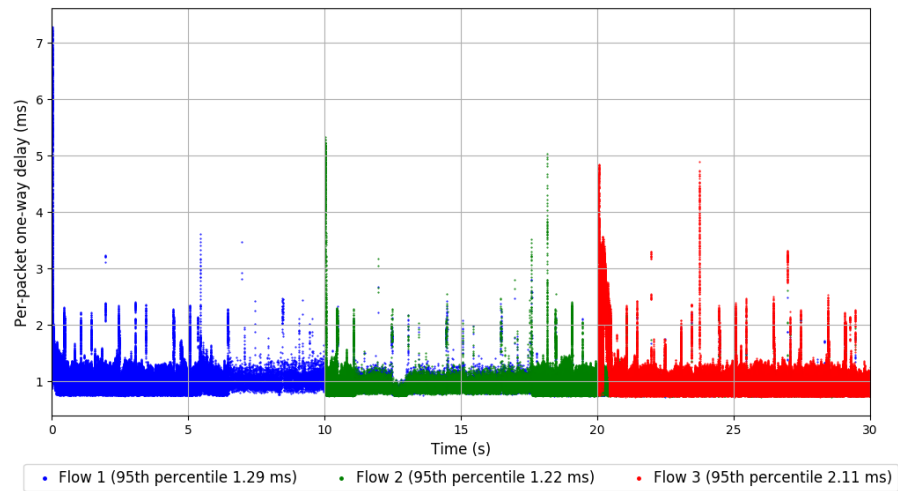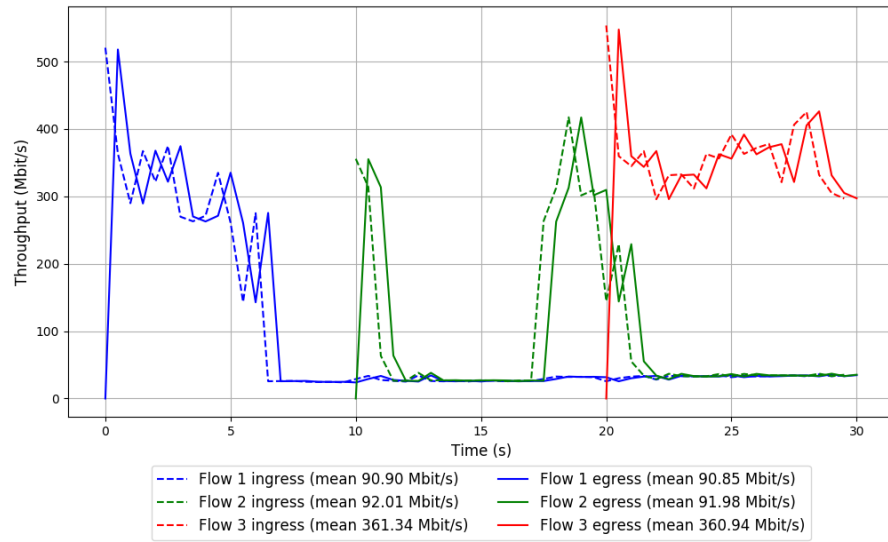
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-20 02:26:54
End at: 2018-12-20 02:27:24
Local clock offset: 3.941 ms
Remote clock offset: 1.225 ms


# Below is generated by plot.py at 2018-12-20 04:33:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 372.35 Mbit/s
95th percentile per-packet one-way delay: 1.140 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 151.97 Mbit/s
95th percentile per-packet one-way delay: 1.104 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 267.26 Mbit/s
95th percentile per-packet one-way delay: 1.136 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 127.34 Mbit/s
95th percentile per-packet one-way delay: 1.276 ms
Loss rate: 0.06%
```
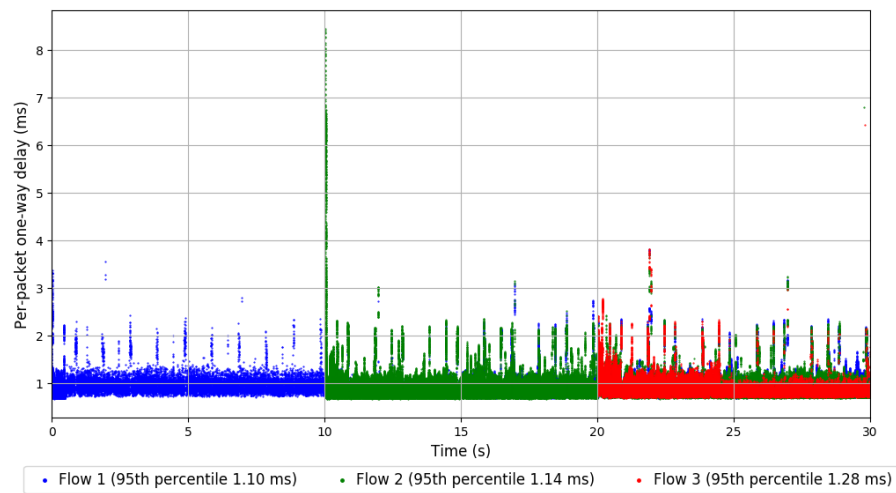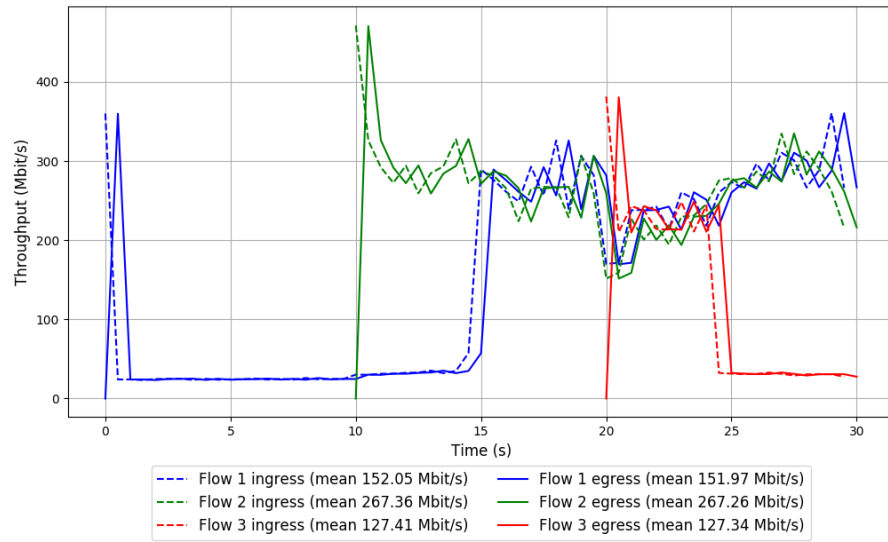
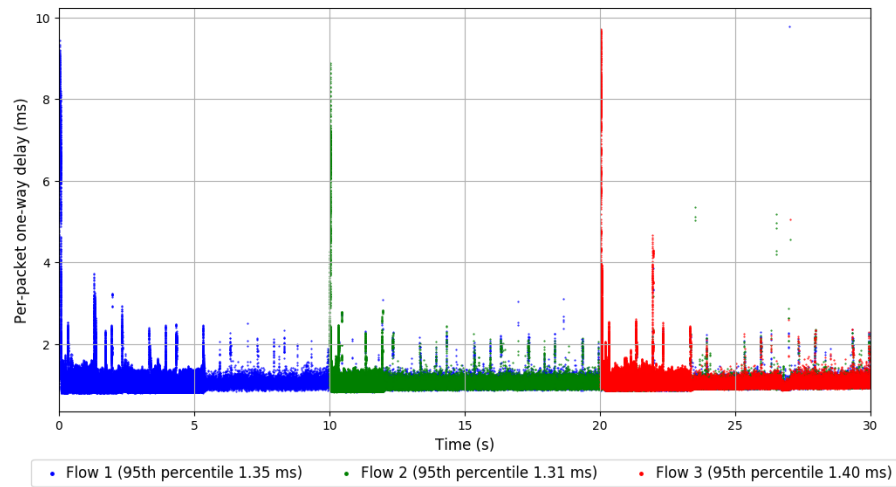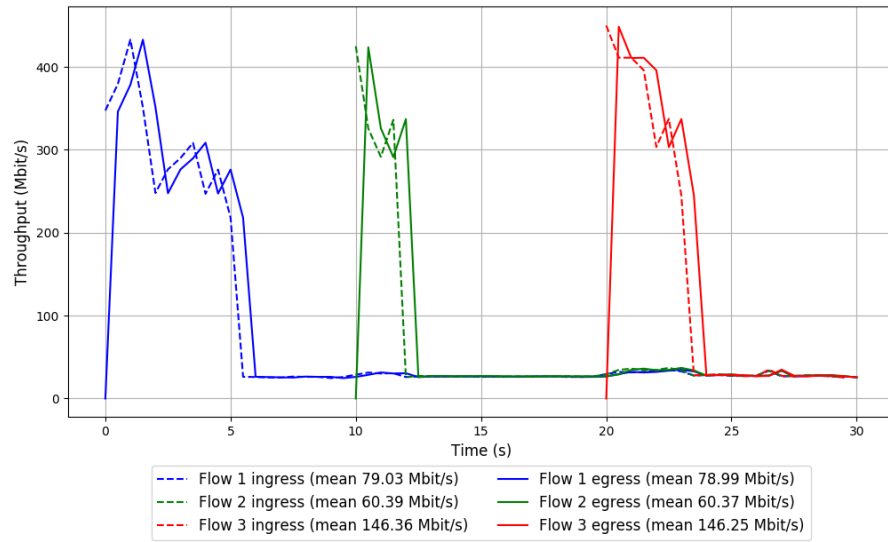## Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-20 02:53:52
End at: 2018-12-20 02:54:22
Local clock offset: 5.306 ms
Remote clock offset: -3.053 ms


# Below is generated by plot.py at 2018-12-20 04:33:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 167.85 Mbit/s
95th percentile per-packet one-way delay: 1.360 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 78.99 Mbit/s
95th percentile per-packet one-way delay: 1.351 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 60.37 Mbit/s
95th percentile per-packet one-way delay: 1.309 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 146.25 Mbit/s
95th percentile per-packet one-way delay: 1.397 ms
Loss rate: 0.07%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 79.03 Mbit/s) --- Flow 1 egress (mean 78.99 Mbit/s)
Flow 2 ingress (mean 60.39 Mbit/s) --- Flow 2 egress (mean 60.37 Mbit/s)
Flow 3 ingress (mean 146.36 Mbit/s) --- Flow 3 egress (mean 146.25 Mbit/s)

• Flow 1 (95th percentile 1.35 ms) • Flow 2 (95th percentile 1.31 ms) • Flow 3 (95th percentile 1.40 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-20 03:20:21
End at: 2018-12-20 03:20:51
Local clock offset: 0.393 ms
Remote clock offset: -1.546 ms


# Below is generated by plot.py at 2018-12-20 04:33:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 233.21 Mbit/s
95th percentile per-packet one-way delay: 1.037 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 71.70 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 103.76 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 277.87 Mbit/s
95th percentile per-packet one-way delay: 0.934 ms
Loss rate: 0.01%
```
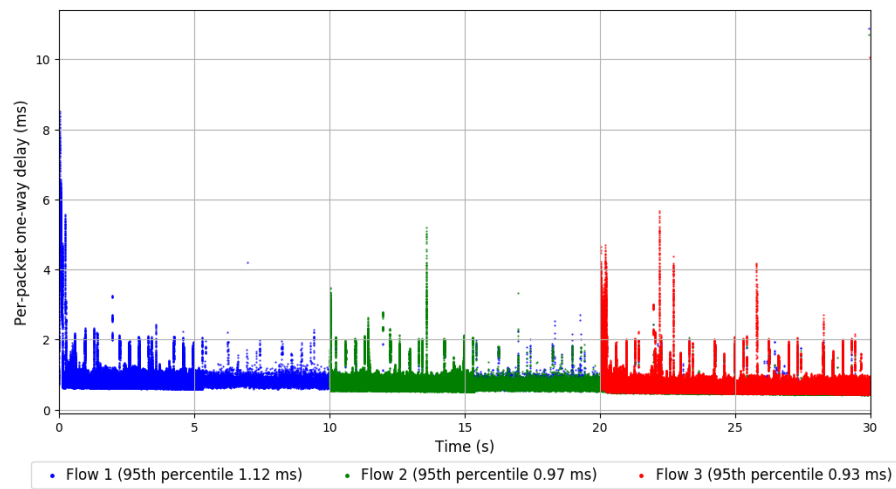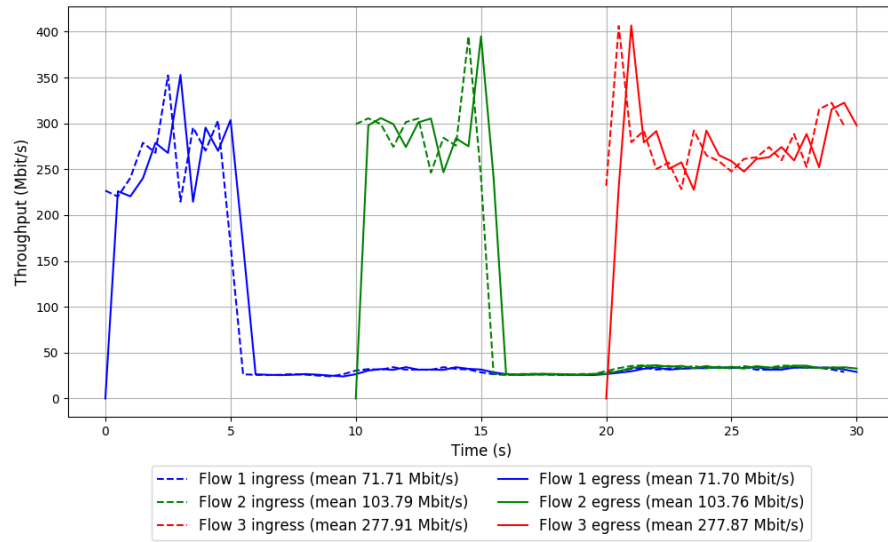
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 03:46:55
End at: 2018-12-20 03:47:25
Local clock offset: -3.119 ms
Remote clock offset: 0.235 ms


# Below is generated by plot.py at 2018-12-20 04:34:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 451.53 Mbit/s
95th percentile per-packet one-way delay: 1.132 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 220.07 Mbit/s
95th percentile per-packet one-way delay: 1.130 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 257.81 Mbit/s
95th percentile per-packet one-way delay: 1.121 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 179.60 Mbit/s
95th percentile per-packet one-way delay: 1.188 ms
Loss rate: 0.06%
```
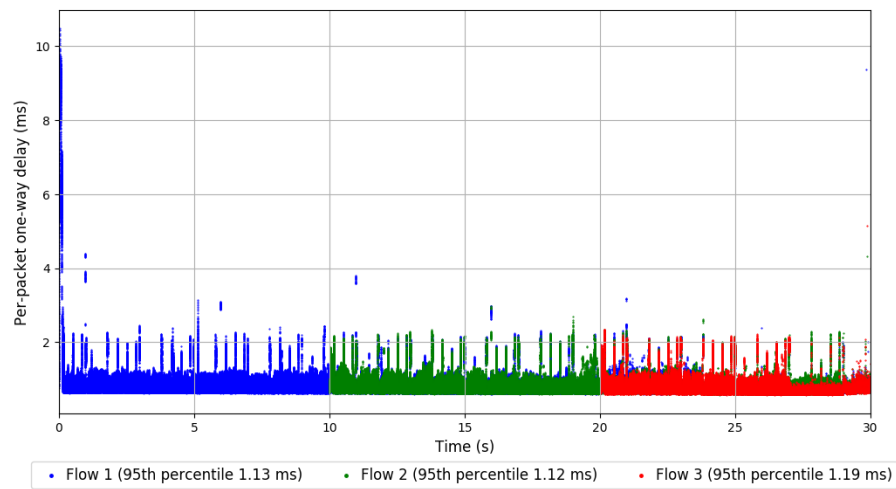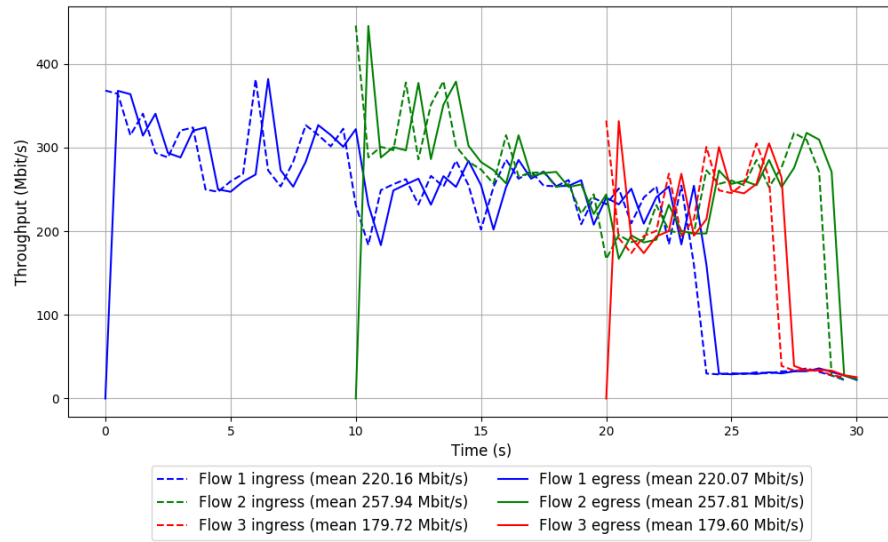
Run 5: Report of TCP Vegas — Data Link

164

```
Run 1: Statistics of Verus

Start at: 2018-12-20 01:40:13
End at: 2018-12-20 01:40:43
Local clock offset: 0.633 ms
Remote clock offset: 0.553 ms


# Below is generated by plot.py at 2018-12-20 04:34:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 232.21 Mbit/s
95th percentile per-packet one-way delay: 31.395 ms
Loss rate: 5.09%
-- Flow 1:
Average throughput: 119.06 Mbit/s
95th percentile per-packet one-way delay: 19.318 ms
Loss rate: 5.07%
-- Flow 2:
Average throughput: 92.51 Mbit/s
95th percentile per-packet one-way delay: 28.094 ms
Loss rate: 4.91%
-- Flow 3:
Average throughput: 157.94 Mbit/s
95th percentile per-packet one-way delay: 52.110 ms
Loss rate: 5.36%
```
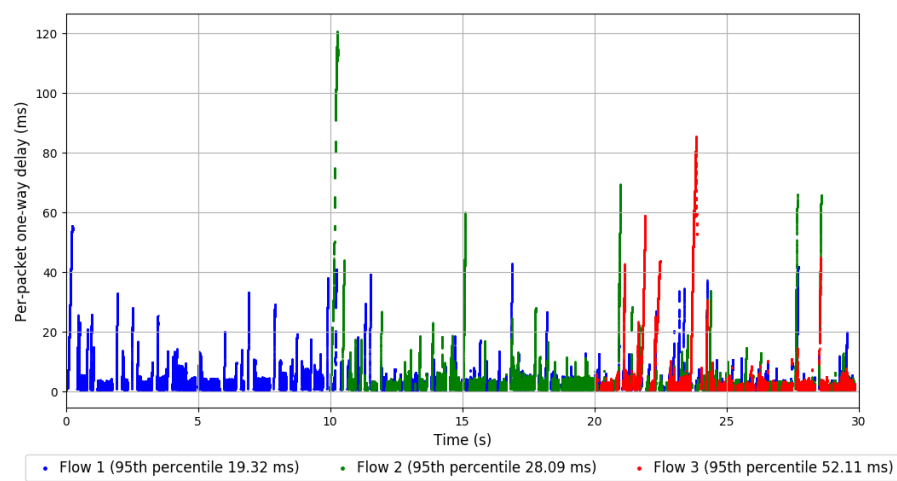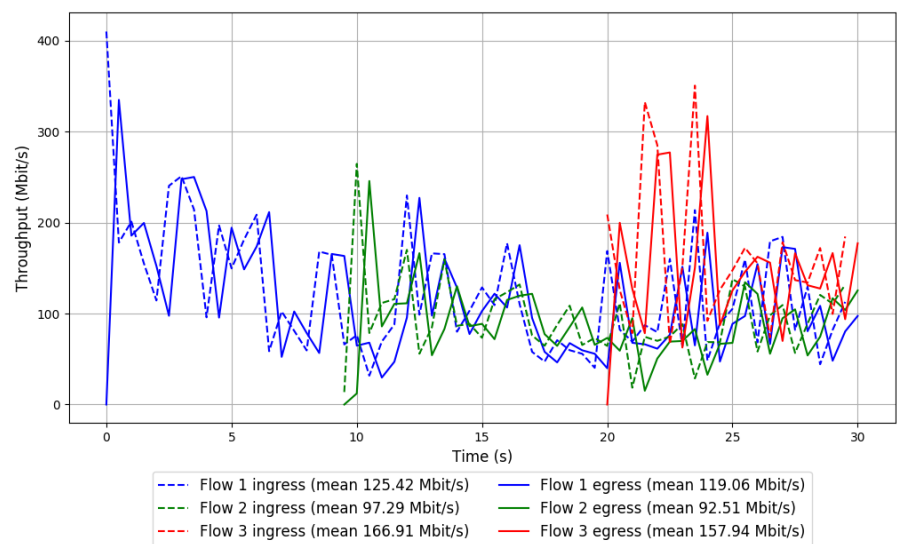
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-20 02:07:07
End at: 2018-12-20 02:07:37
Local clock offset: 1.024 ms
Remote clock offset: 1.094 ms


# Below is generated by plot.py at 2018-12-20 04:34:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 272.99 Mbit/s
95th percentile per-packet one-way delay: 8.480 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 153.74 Mbit/s
95th percentile per-packet one-way delay: 6.242 ms
Loss rate: 2.08%
-- Flow 2:
Average throughput: 128.44 Mbit/s
95th percentile per-packet one-way delay: 10.779 ms
Loss rate: 3.50%
-- Flow 3:
Average throughput: 102.16 Mbit/s
95th percentile per-packet one-way delay: 9.177 ms
Loss rate: 5.28%
```
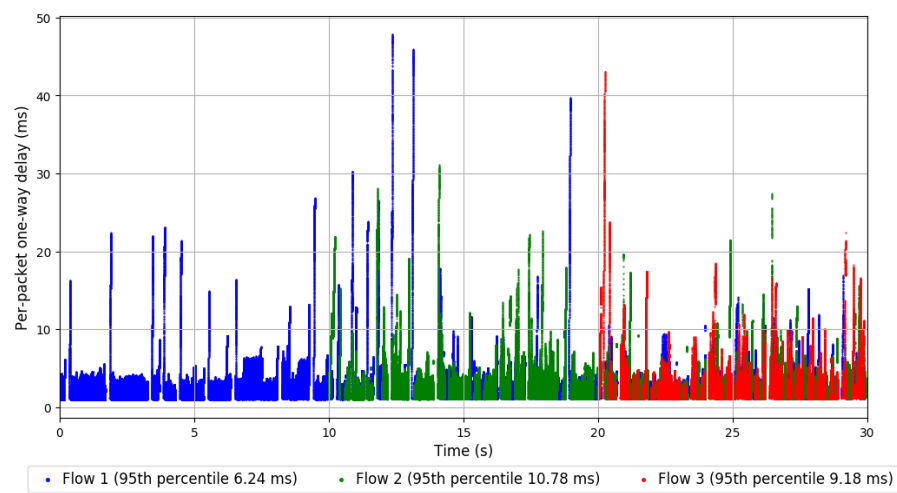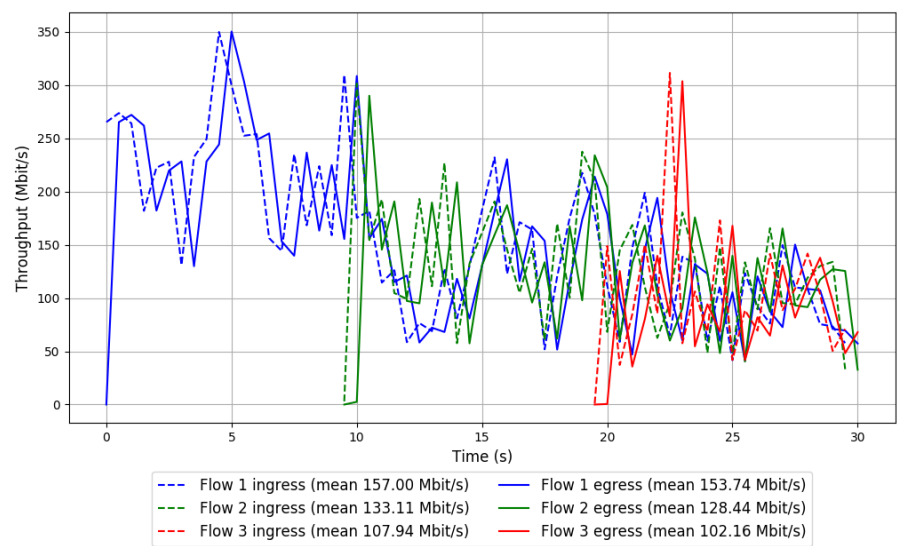
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-20 02:34:01
End at: 2018-12-20 02:34:31
Local clock offset: 4.364 ms
Remote clock offset: 1.405 ms

# Below is generated by plot.py at 2018-12-20 04:34:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 234.18 Mbit/s
95th percentile per-packet one-way delay: 20.595 ms
Loss rate: 5.71%
-- Flow 1:
Average throughput: 111.75 Mbit/s
95th percentile per-packet one-way delay: 25.984 ms
Loss rate: 6.39%
-- Flow 2:
Average throughput: 105.93 Mbit/s
95th percentile per-packet one-way delay: 18.157 ms
Loss rate: 6.11%
-- Flow 3:
Average throughput: 157.07 Mbit/s
95th percentile per-packet one-way delay: 9.434 ms
Loss rate: 3.65%
```
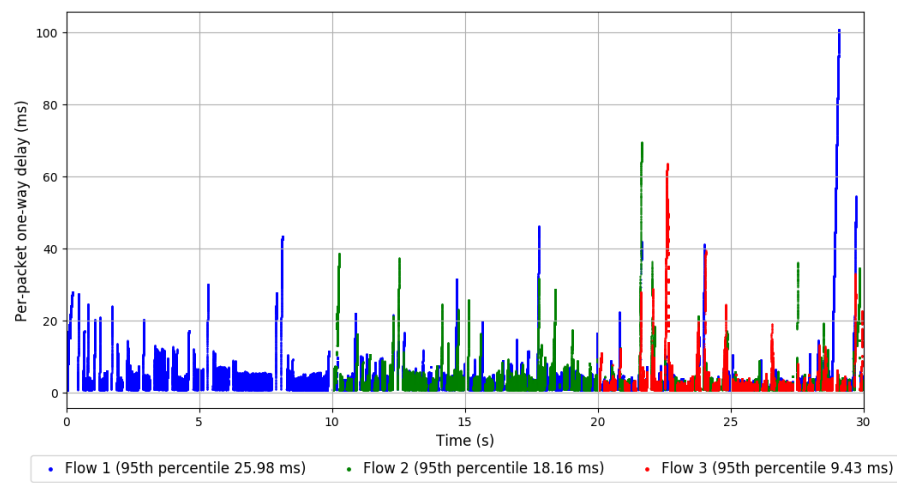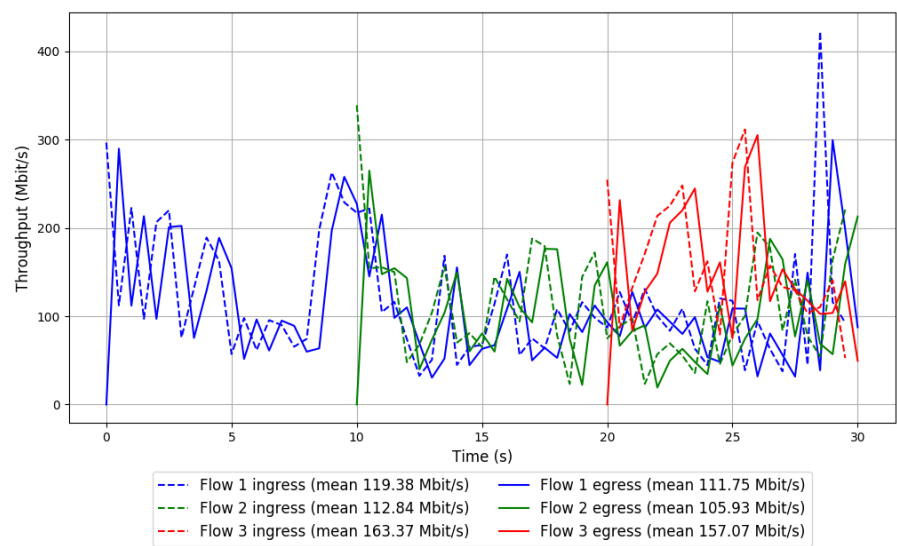
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 119.38 Mbit/s) — Flow 1 egress (mean 111.75 Mbit/s)
Flow 2 ingress (mean 112.84 Mbit/s) — Flow 2 egress (mean 105.93 Mbit/s)
Flow 3 ingress (mean 163.37 Mbit/s) — Flow 3 egress (mean 157.07 Mbit/s)

Flow 1 (95th percentile 25.98 ms) — Flow 2 (95th percentile 18.16 ms) — Flow 3 (95th percentile 9.43 ms)
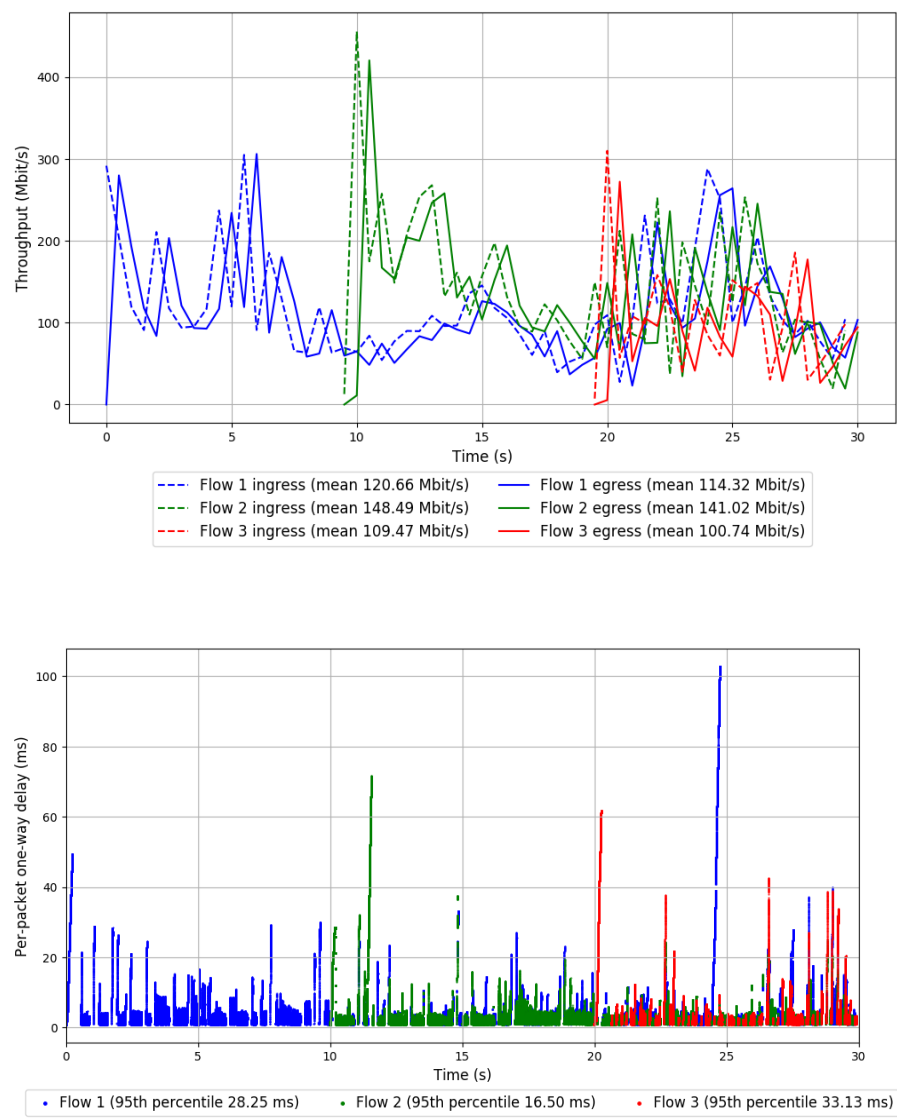
```
Run 4: Statistics of Verus

Start at: 2018-12-20 03:00:53
End at: 2018-12-20 03:01:23
Local clock offset: 5.635 ms
Remote clock offset: -3.806 ms


# Below is generated by plot.py at 2018-12-20 04:34:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 241.07 Mbit/s
95th percentile per-packet one-way delay: 25.095 ms
Loss rate: 5.55%
-- Flow 1:
Average throughput: 114.32 Mbit/s
95th percentile per-packet one-way delay: 28.251 ms
Loss rate: 5.26%
-- Flow 2:
Average throughput: 141.02 Mbit/s
95th percentile per-packet one-way delay: 16.497 ms
Loss rate: 5.03%
-- Flow 3:
Average throughput: 100.74 Mbit/s
95th percentile per-packet one-way delay: 33.128 ms
Loss rate: 7.95%
```

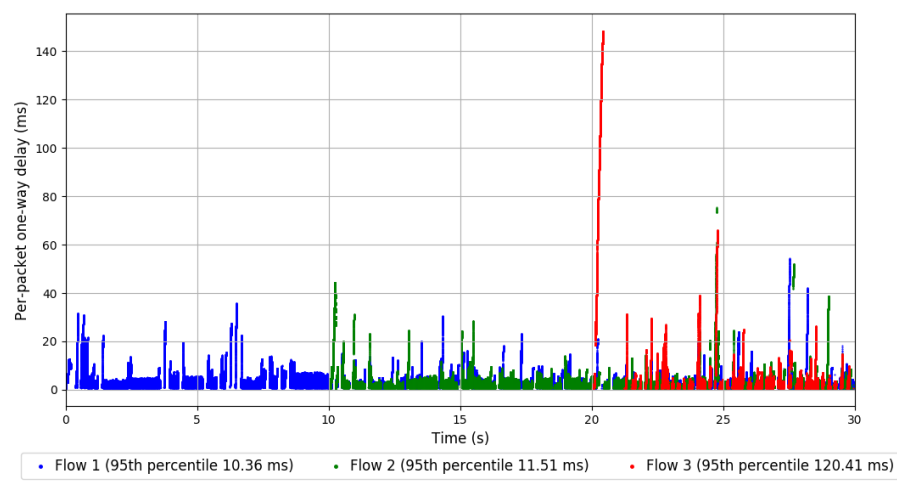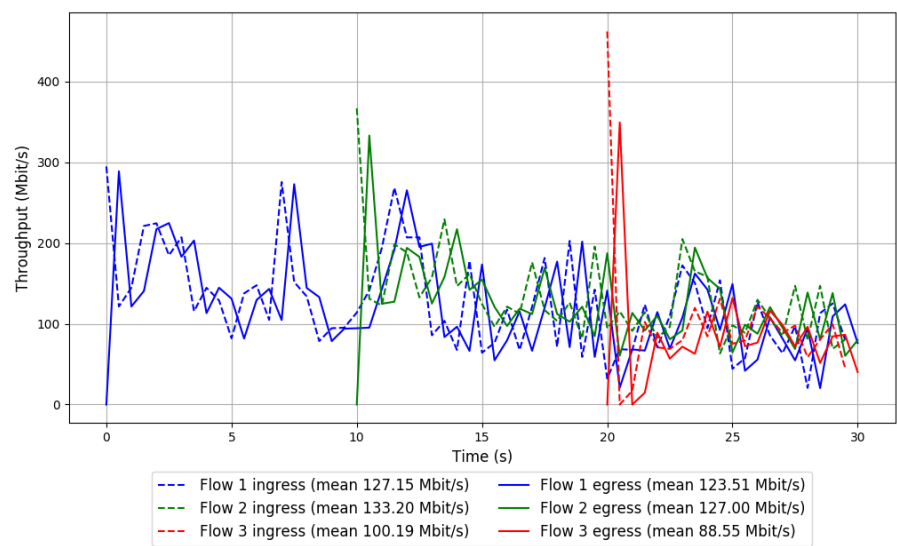Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-20 03:27:24
End at: 2018-12-20 03:27:54
Local clock offset: -0.607 ms
Remote clock offset: -0.526 ms


# Below is generated by plot.py at 2018-12-20 04:34:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 237.32 Mbit/s
95th percentile per-packet one-way delay: 14.700 ms
Loss rate: 4.67%
-- Flow 1:
Average throughput: 123.51 Mbit/s
95th percentile per-packet one-way delay: 10.357 ms
Loss rate: 2.86%
-- Flow 2:
Average throughput: 127.00 Mbit/s
95th percentile per-packet one-way delay: 11.510 ms
Loss rate: 4.65%
-- Flow 3:
Average throughput: 88.55 Mbit/s
95th percentile per-packet one-way delay: 120.406 ms
Loss rate: 11.62%
```

Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-20 01:51:38
End at: 2018-12-20 01:52:08
Local clock offset: 0.531 ms
Remote clock offset: 0.72 ms


# Below is generated by plot.py at 2018-12-20 04:34:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 272.05 Mbit/s
95th percentile per-packet one-way delay: 1.592 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 150.21 Mbit/s
95th percentile per-packet one-way delay: 1.104 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 117.56 Mbit/s
95th percentile per-packet one-way delay: 1.193 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 132.19 Mbit/s
95th percentile per-packet one-way delay: 5.808 ms
Loss rate: 0.21%
```
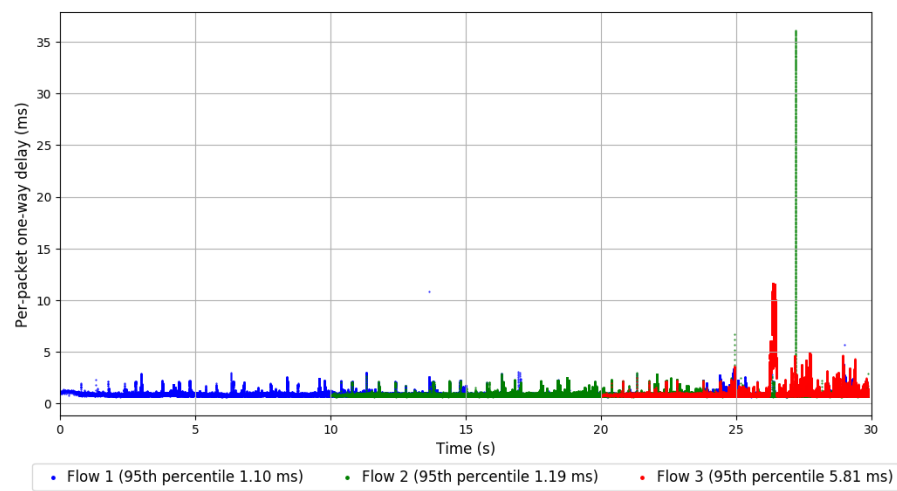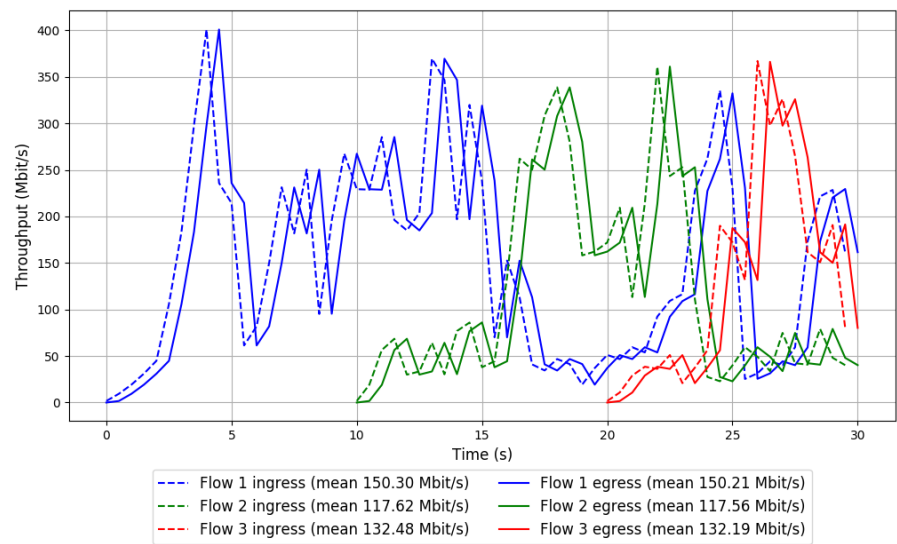
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-20 02:18:29
End at: 2018-12-20 02:18:59
Local clock offset: 3.177 ms
Remote clock offset: 1.13 ms


# Below is generated by plot.py at 2018-12-20 04:34:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 241.41 Mbit/s
95th percentile per-packet one-way delay: 1.602 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 126.38 Mbit/s
95th percentile per-packet one-way delay: 1.108 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 86.45 Mbit/s
95th percentile per-packet one-way delay: 1.180 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 174.26 Mbit/s
95th percentile per-packet one-way delay: 2.830 ms
Loss rate: 0.23%
```
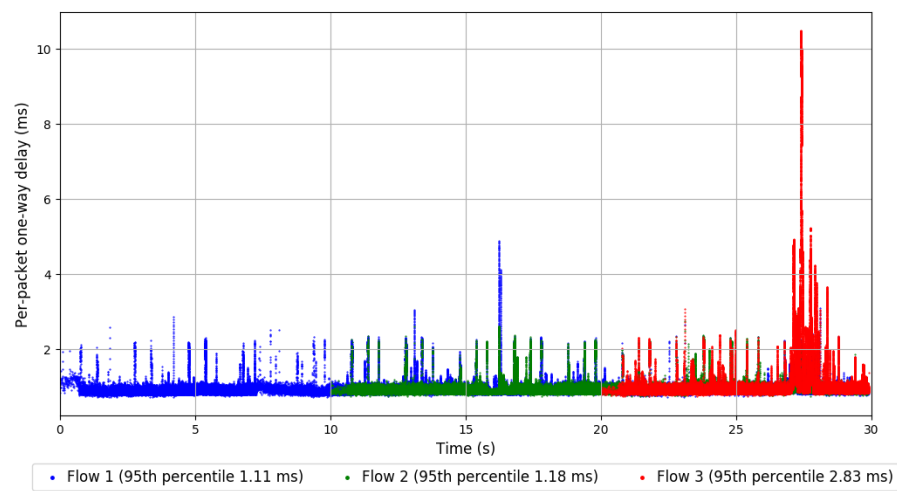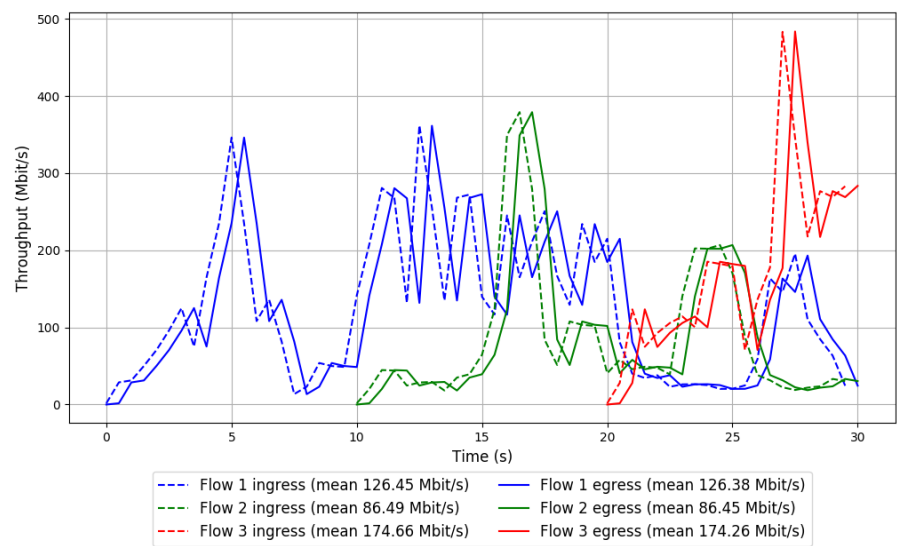
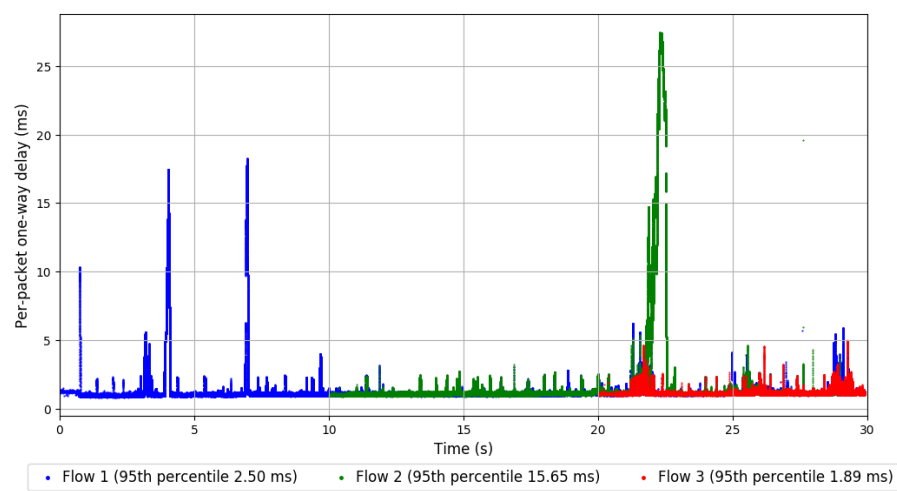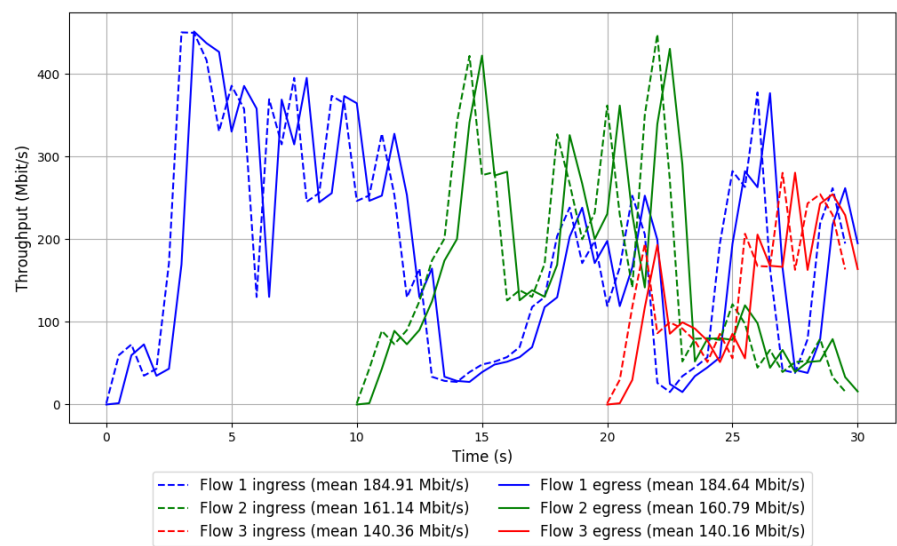Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-20 02:45:22
End at: 2018-12-20 02:45:52
Local clock offset: 4.931 ms
Remote clock offset: -1.389 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 337.80 Mbit/s
95th percentile per-packet one-way delay: 3.683 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 184.64 Mbit/s
95th percentile per-packet one-way delay: 2.504 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 160.79 Mbit/s
95th percentile per-packet one-way delay: 15.649 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 140.16 Mbit/s
95th percentile per-packet one-way delay: 1.886 ms
Loss rate: 0.15%
```

Run 3: Report of PCC-Vivace — Data Link

- - - - Flow 1 ingress (mean 184.91 Mbit/s)   —— Flow 1 egress (mean 184.64 Mbit/s)
- - - - Flow 2 ingress (mean 161.14 Mbit/s)   —— Flow 2 egress (mean 160.79 Mbit/s)
- - - - Flow 3 ingress (mean 140.36 Mbit/s)   —— Flow 3 egress (mean 140.16 Mbit/s)

- Flow 1 (95th percentile 2.50 ms)   • Flow 2 (95th percentile 15.65 ms)   • Flow 3 (95th percentile 1.89 ms)
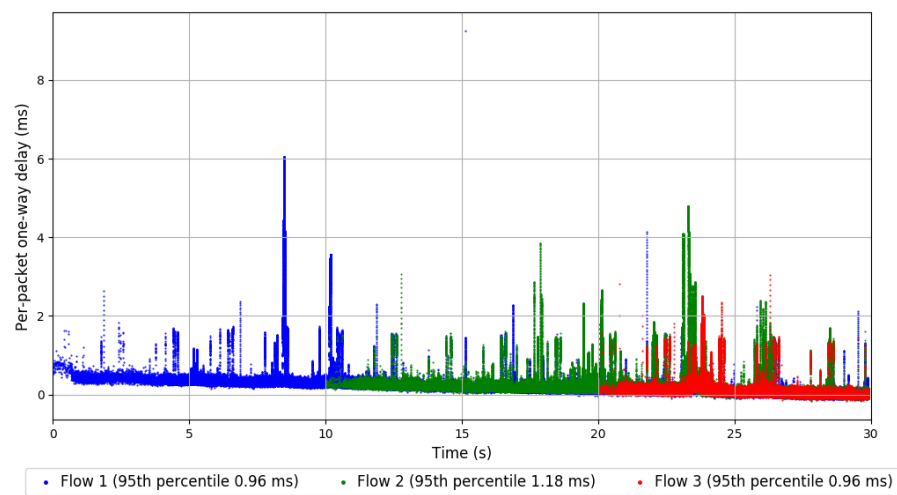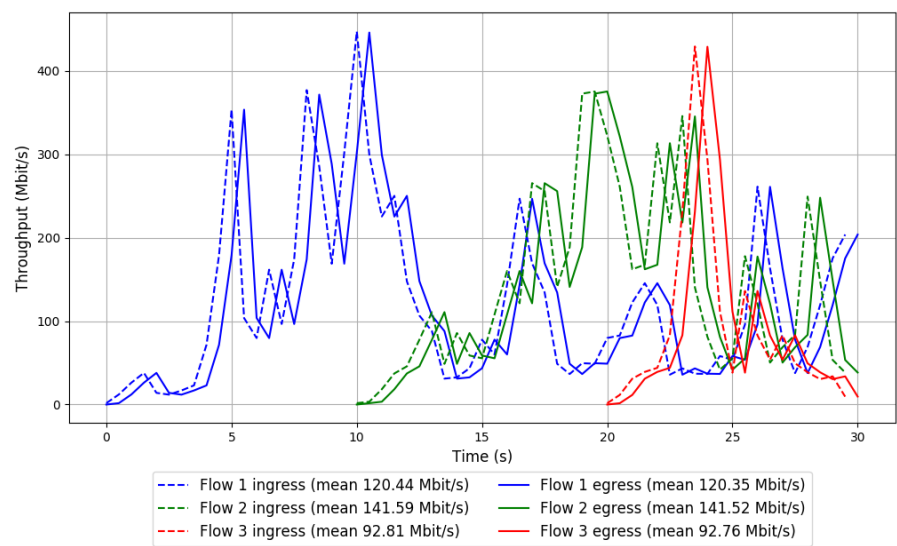
```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-20 03:11:57
End at: 2018-12-20 03:12:27
Local clock offset: 2.598 ms
Remote clock offset: -4.719 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 245.10 Mbit/s
95th percentile per-packet one-way delay: 1.072 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 120.35 Mbit/s
95th percentile per-packet one-way delay: 0.959 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 141.52 Mbit/s
95th percentile per-packet one-way delay: 1.181 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 92.76 Mbit/s
95th percentile per-packet one-way delay: 0.963 ms
Loss rate: 0.06%
```

Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 03:38:27
End at: 2018-12-20 03:38:57
Local clock offset: -1.939 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 336.79 Mbit/s
95th percentile per-packet one-way delay: 13.395 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 216.75 Mbit/s
95th percentile per-packet one-way delay: 9.031 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 140.84 Mbit/s
95th percentile per-packet one-way delay: 45.552 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 79.92 Mbit/s
95th percentile per-packet one-way delay: 1.575 ms
Loss rate: 0.32%
```
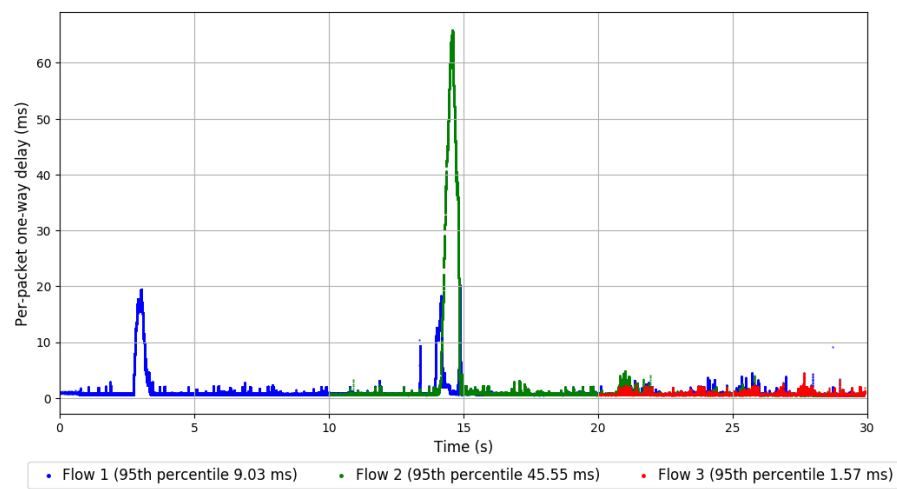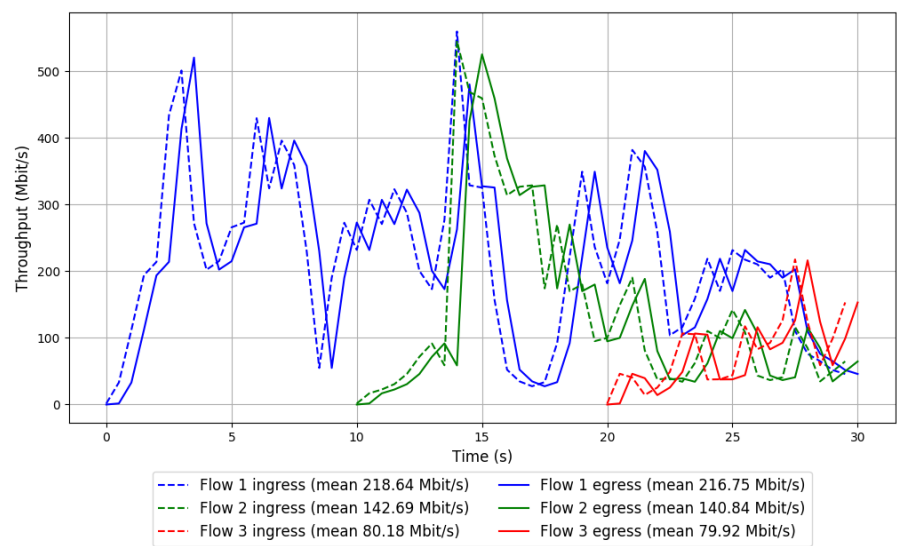
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 218.64 Mbit/s) --- Flow 1 egress (mean 216.75 Mbit/s)
Flow 2 ingress (mean 142.69 Mbit/s) --- Flow 2 egress (mean 140.84 Mbit/s)
Flow 3 ingress (mean 80.18 Mbit/s) --- Flow 3 egress (mean 79.92 Mbit/s)

Flow 1 (95th percentile 9.03 ms) • Flow 2 (95th percentile 45.55 ms) • Flow 3 (95th percentile 1.57 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-20 01:48:46
End at: 2018-12-20 01:49:16
Local clock offset: 0.571 ms
Remote clock offset: 0.659 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 1.506 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 1.525 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 1.647 ms
Loss rate: 0.00%
```
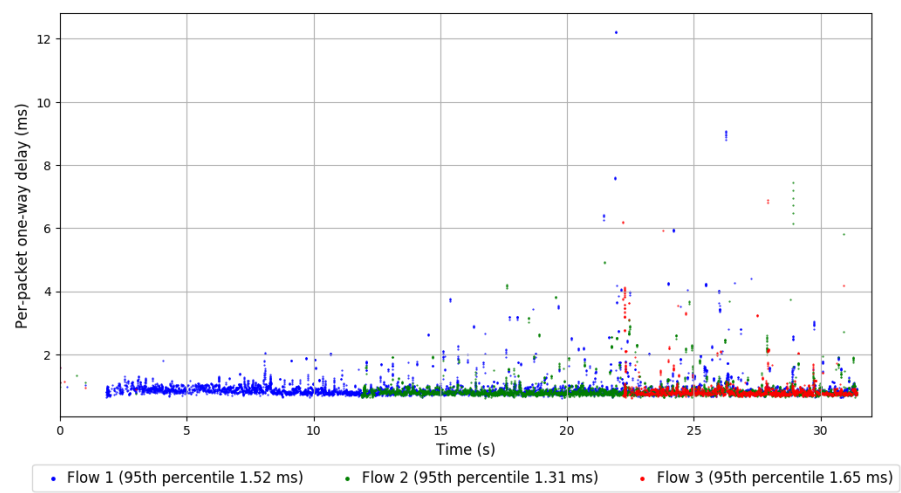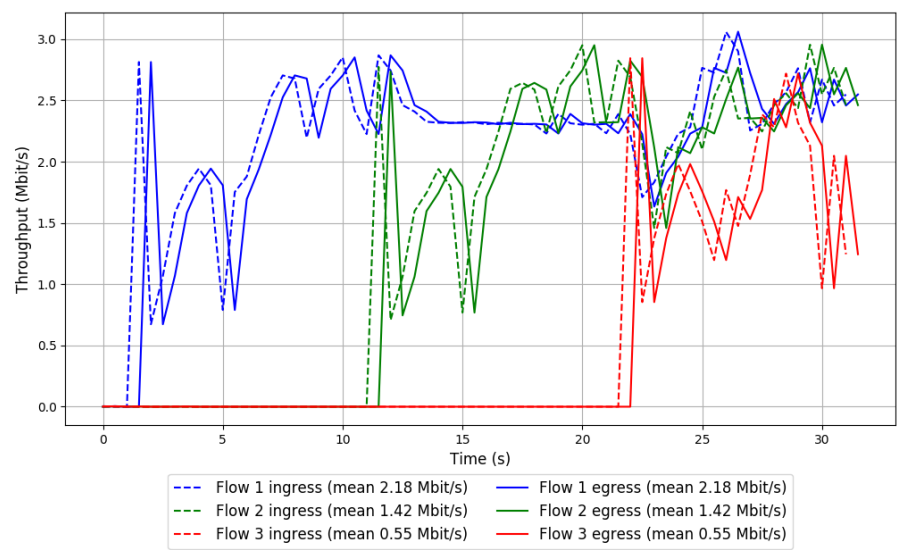
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-20 02:15:41
End at: 2018-12-20 02:16:11
Local clock offset: 2.807 ms
Remote clock offset: 1.079 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 4.711 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.179 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.425 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.258 ms
Loss rate: 0.00%
```
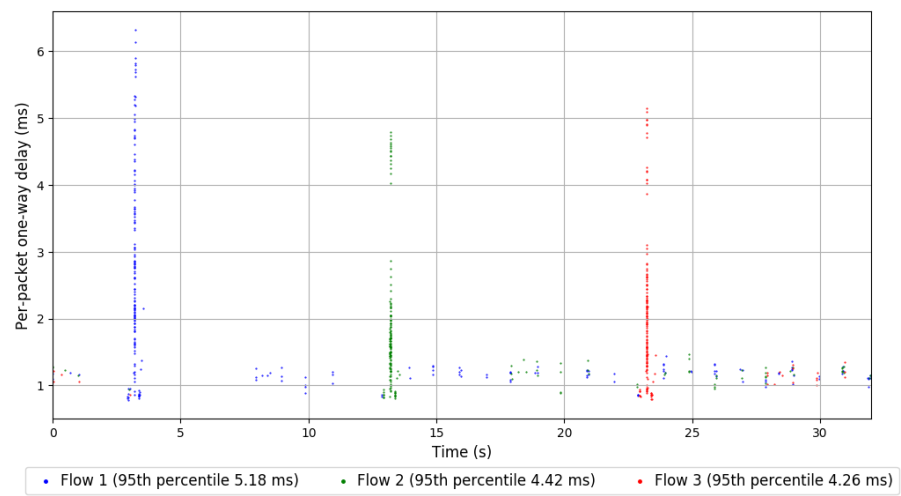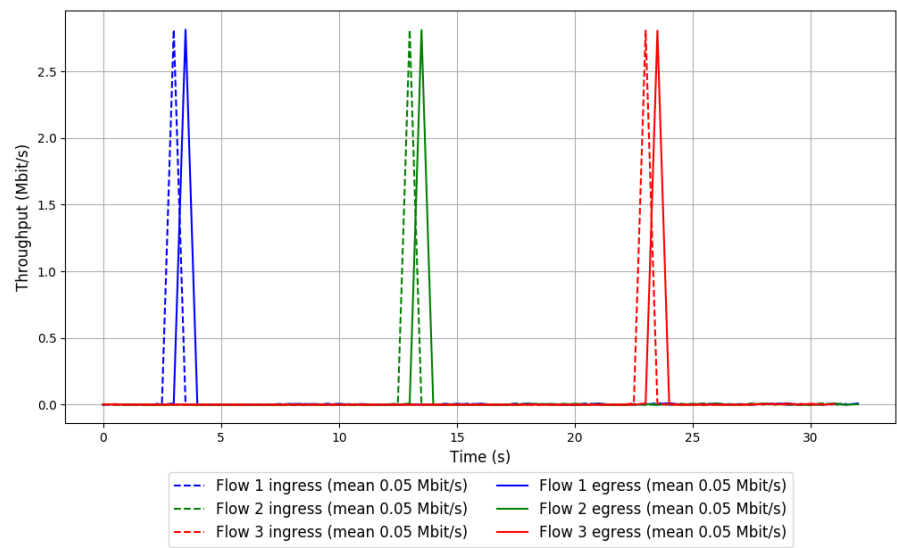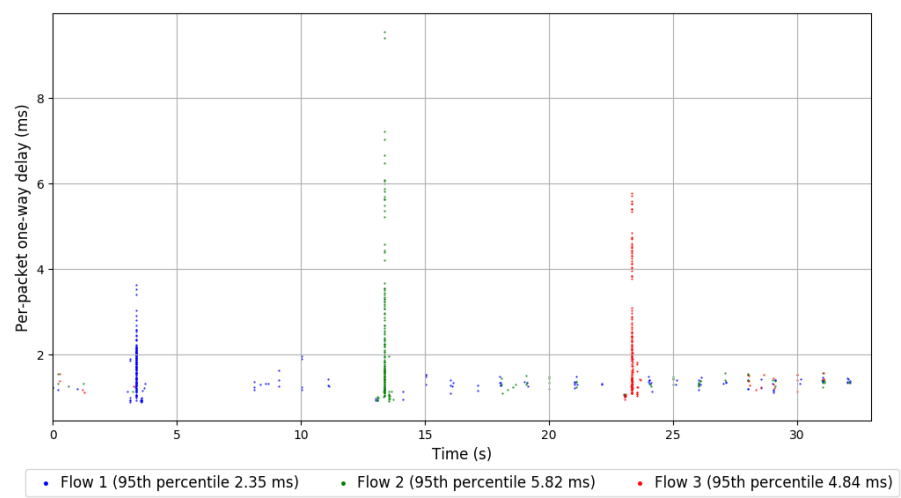
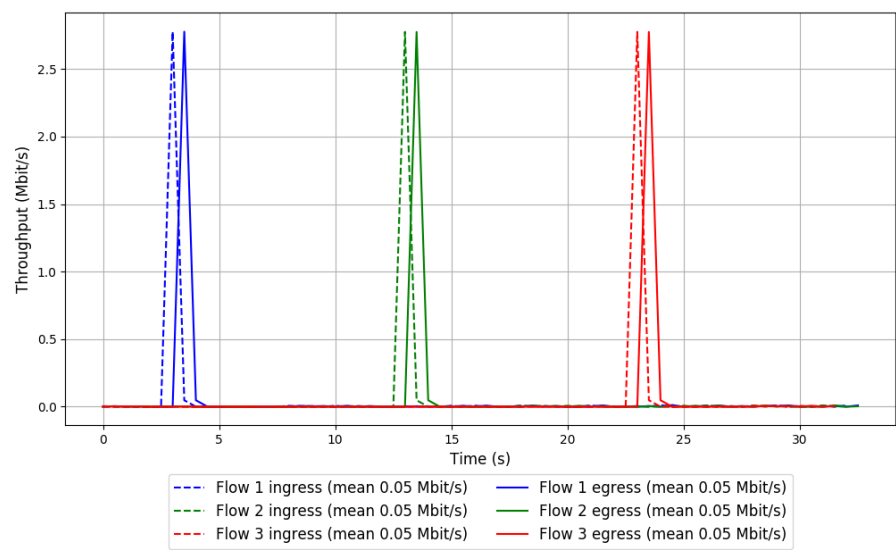Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-20 02:42:33
End at: 2018-12-20 02:43:03
Local clock offset: 4.794 ms
Remote clock offset: -0.577 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 4.605 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.353 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.822 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.844 ms
Loss rate: 0.00%
```

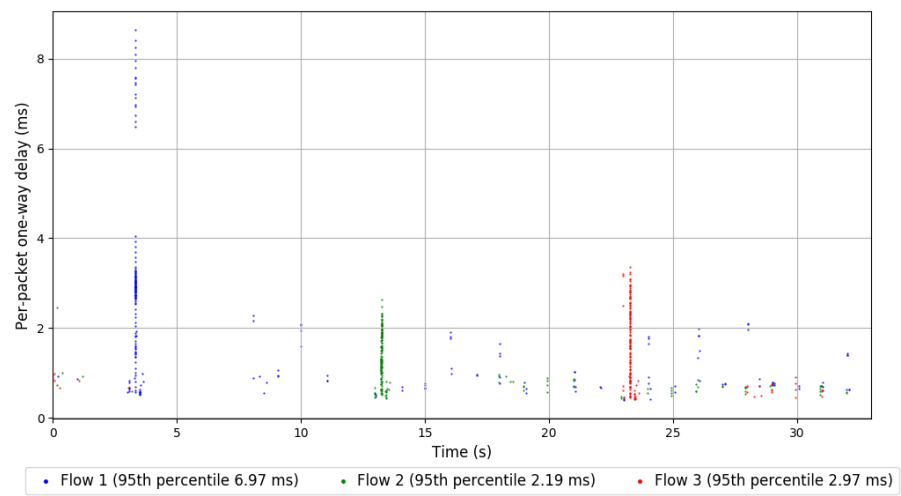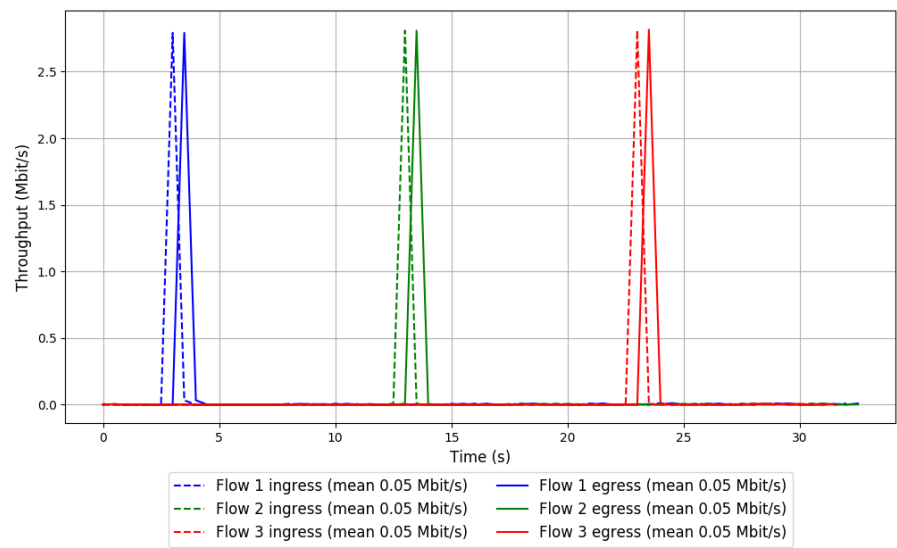Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-20 03:09:08
End at: 2018-12-20 03:09:38
Local clock offset: 3.775 ms
Remote clock offset: -4.539 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 3.253 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6.970 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.185 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.968 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-20 03:35:40
End at: 2018-12-20 03:36:10
Local clock offset: -1.369 ms
Remote clock offset: 0.003 ms


# Below is generated by plot.py at 2018-12-20 04:35:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 3.581 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.648 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.683 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.949 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link