Pantheon Report

Generated at 2018-11-16 05:24:08 (UTC).

Data path: GCE Tokyo on `ens4` (*remote*) →GCE Sydney on `ens4` (*local*).

Repeated the test of 18 congestion control schemes 5 times.

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

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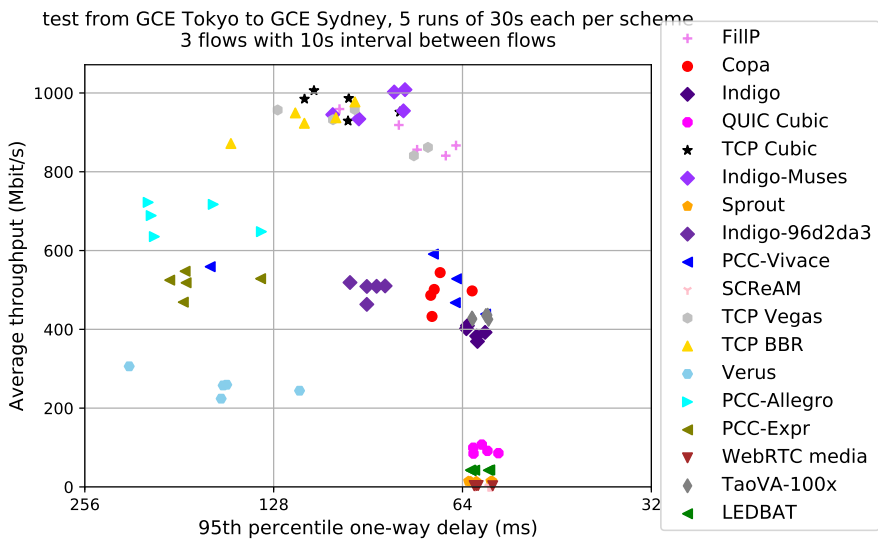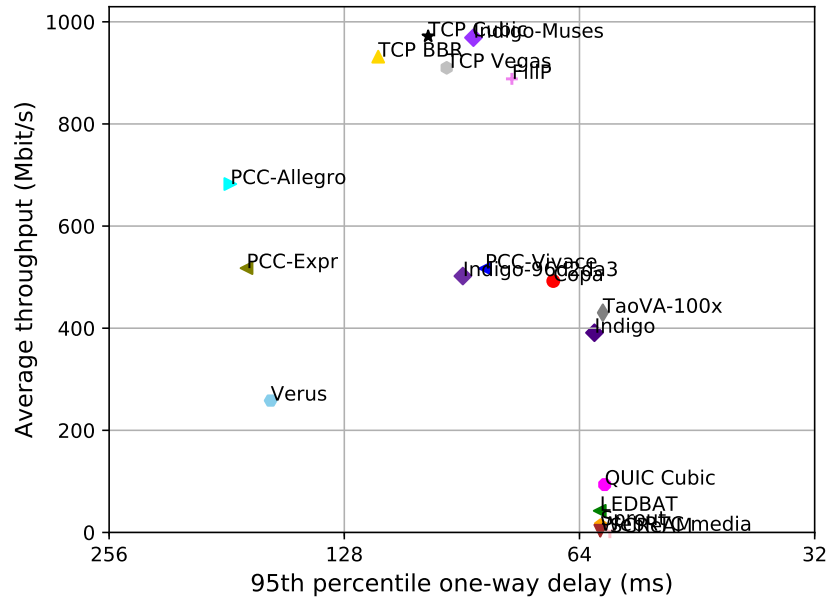
```
System info:
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
```

```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from GCE Tokyo to GCE Sydney, 5 runs of 30s each per scheme
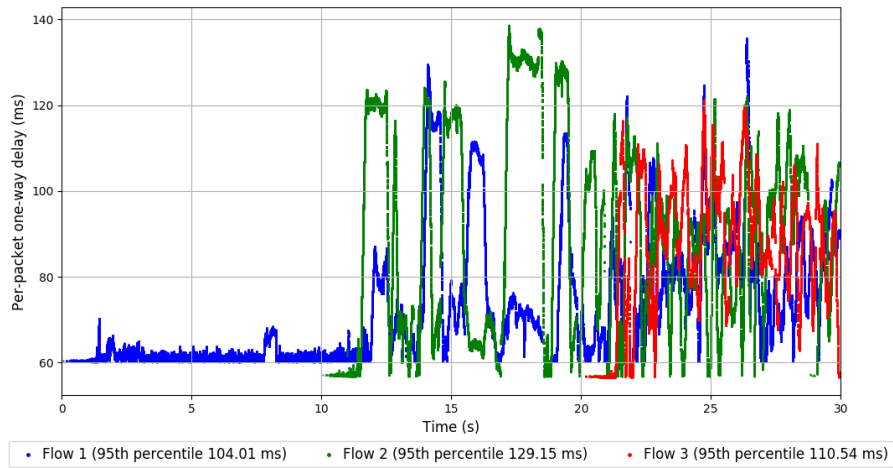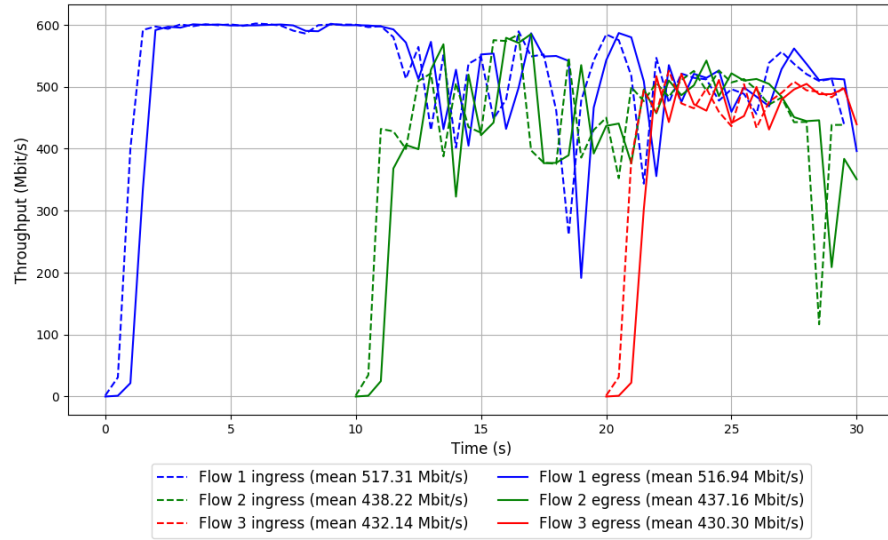3 flows with 10s interval between flows (mean of all runs by scheme)

test from GCE Tokyo to GCE Sydney, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

3

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	504.52	439.58	409.24	108.77	124.90	113.76	0.46	0.81	1.72
Copa	5	259.84	229.25	243.18	64.97	79.39	73.03	0.33	0.57	1.27
TCP Cubic	5	512.27	479.52	426.74	100.86	97.16	93.90	0.36	0.62	1.42
FillP	5	562.97	367.25	247.93	82.34	63.42	61.03	0.35	0.48	1.29
Indigo	5	209.46	191.08	167.50	61.01	60.43	61.12	0.39	0.63	1.35
Indigo-96d2da3	5	264.16	248.03	225.92	91.13	90.60	91.53	0.58	0.37	1.09
LEDBAT	5	27.33	18.21	9.13	59.79	59.72	58.99	0.78	1.17	2.34
Indigo-Muses	5	538.98	465.22	373.96	87.53	92.24	79.15	0.38	0.68	1.71
PCC-Allegro	5	403.20	297.28	250.69	183.00	131.34	115.63	3.81	3.81	1.47
PCC-Expr	5	303.15	262.91	121.84	174.77	155.36	118.53	3.92	3.42	1.92
QUIC Cubic	5	58.59	37.94	29.44	58.07	58.16	58.19	0.58	1.03	1.77
SCReAM	5	0.22	0.22	0.22	58.52	57.73	57.71	0.38	0.61	1.02
Sprout	5	7.32	7.18	6.98	59.61	58.76	58.13	0.45	0.54	1.48
TaoVA-100x	5	219.10	214.69	207.56	58.94	59.60	60.97	0.42	0.62	1.33
TCP Vegas	5	504.70	415.39	391.37	90.41	101.32	89.72	0.41	0.54	1.31
Verus	5	158.27	119.66	62.83	168.72	105.59	97.70	1.31	0.72	2.73
PCC-Vivace	5	333.38	211.74	131.50	90.58	69.41	60.26	0.52	0.74	2.12
WebRTC media	5	1.79	1.14	0.45	58.18	59.66	58.21	0.43	0.63	1.27

4

```
Run 1: Statistics of TCP BBR

Start at: 2018-11-16 00:19:26
End at: 2018-11-16 00:19:56
Local clock offset: -0.374 ms
Remote clock offset: -0.177 ms


# Below is generated by plot.py at 2018-11-16 03:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 949.44 Mbit/s
95th percentile per-packet one-way delay: 118.202 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 516.94 Mbit/s
95th percentile per-packet one-way delay: 104.006 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 437.16 Mbit/s
95th percentile per-packet one-way delay: 129.152 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 430.30 Mbit/s
95th percentile per-packet one-way delay: 110.543 ms
Loss rate: 1.60%
```
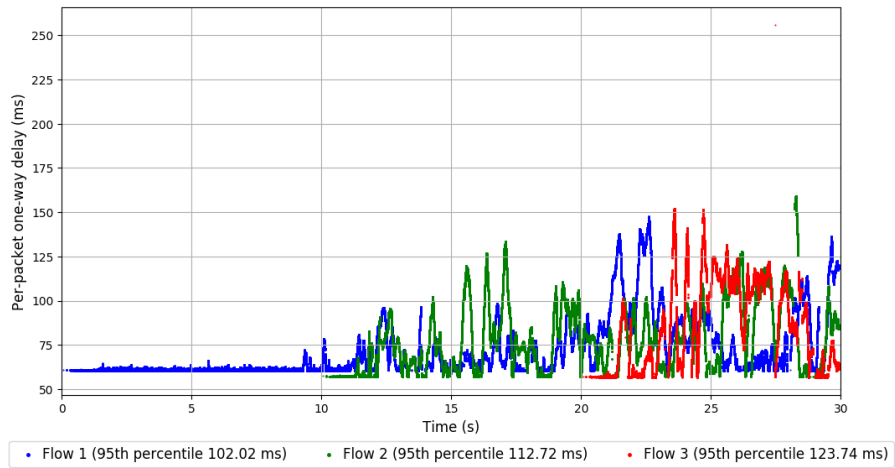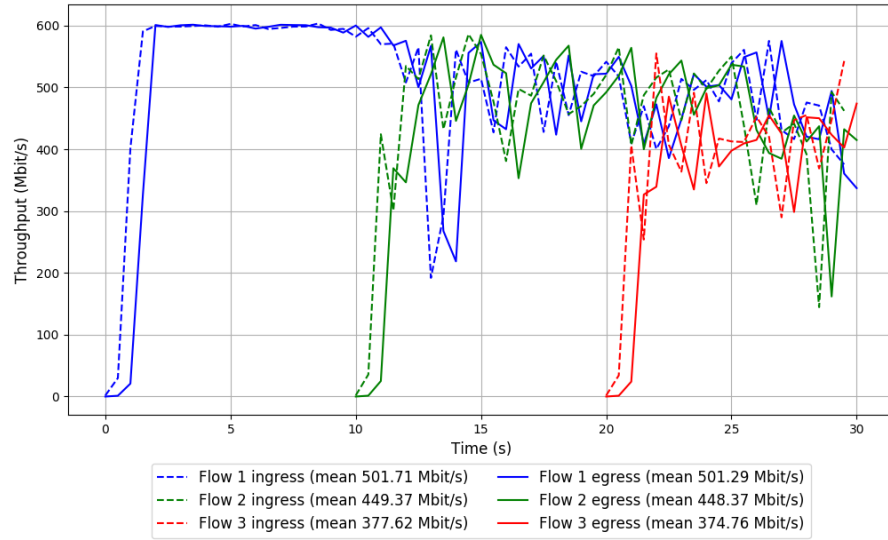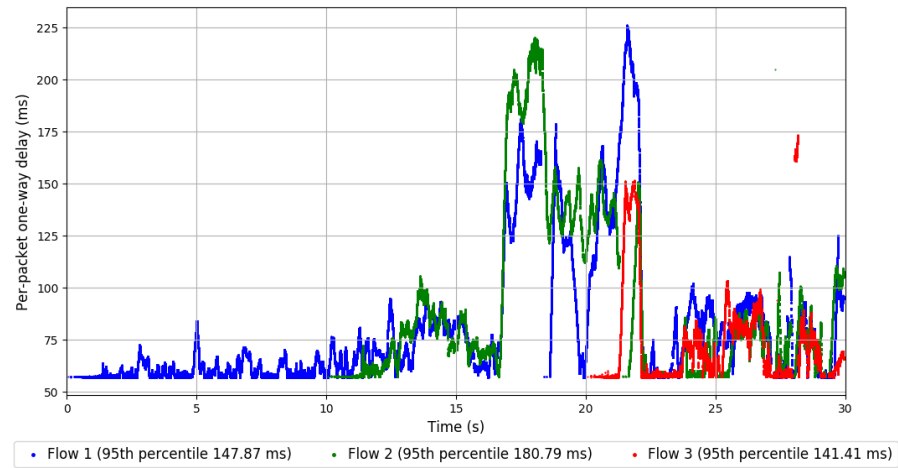
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 517.31 Mbit/s) --- Flow 1 egress (mean 516.94 Mbit/s)
Flow 2 ingress (mean 438.22 Mbit/s) --- Flow 2 egress (mean 437.16 Mbit/s)
Flow 3 ingress (mean 432.14 Mbit/s) --- Flow 3 egress (mean 430.30 Mbit/s)

Flow 1 (95th percentile 104.01 ms) • Flow 2 (95th percentile 129.15 ms) • Flow 3 (95th percentile 110.54 ms)
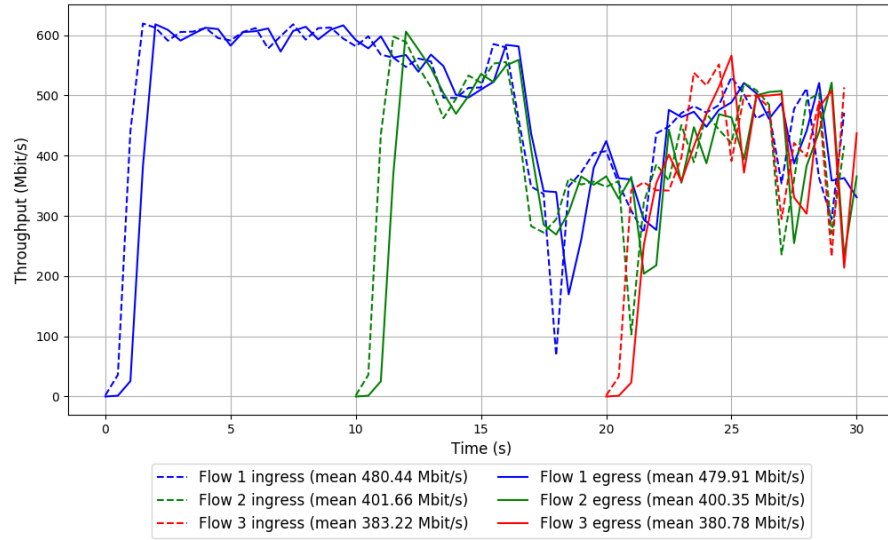
6

```
Run 2: Statistics of TCP BBR

Start at: 2018-11-16 00:52:41
End at: 2018-11-16 00:53:11
Local clock offset: -0.07 ms
Remote clock offset: 0.027 ms


# Below is generated by plot.py at 2018-11-16 03:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 923.12 Mbit/s
95th percentile per-packet one-way delay: 114.351 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 501.29 Mbit/s
95th percentile per-packet one-way delay: 102.019 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 448.37 Mbit/s
95th percentile per-packet one-way delay: 112.719 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 374.76 Mbit/s
95th percentile per-packet one-way delay: 123.743 ms
Loss rate: 1.89%
```
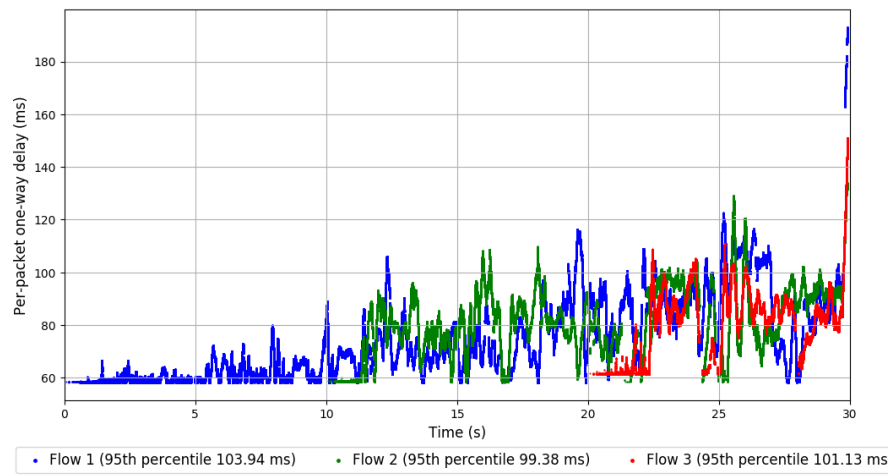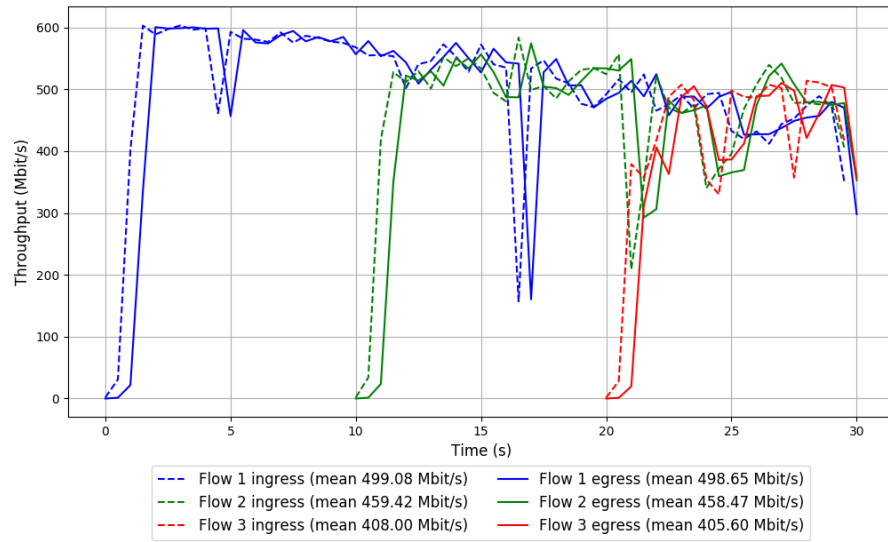
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 501.71 Mbit/s) ---- Flow 1 egress (mean 501.29 Mbit/s)
Flow 2 ingress (mean 449.37 Mbit/s) ---- Flow 2 egress (mean 448.37 Mbit/s)
Flow 3 ingress (mean 377.62 Mbit/s) ---- Flow 3 egress (mean 374.76 Mbit/s)

Flow 1 (95th percentile 102.02 ms)　Flow 2 (95th percentile 112.72 ms)　Flow 3 (95th percentile 123.74 ms)
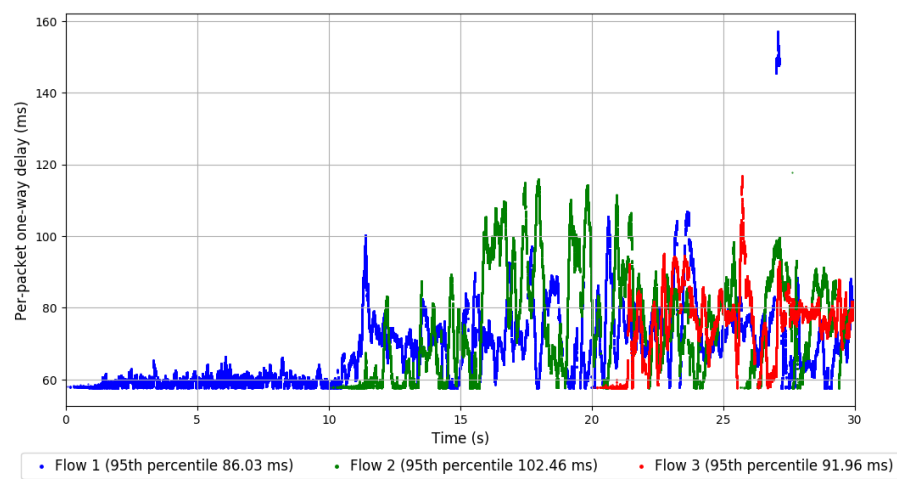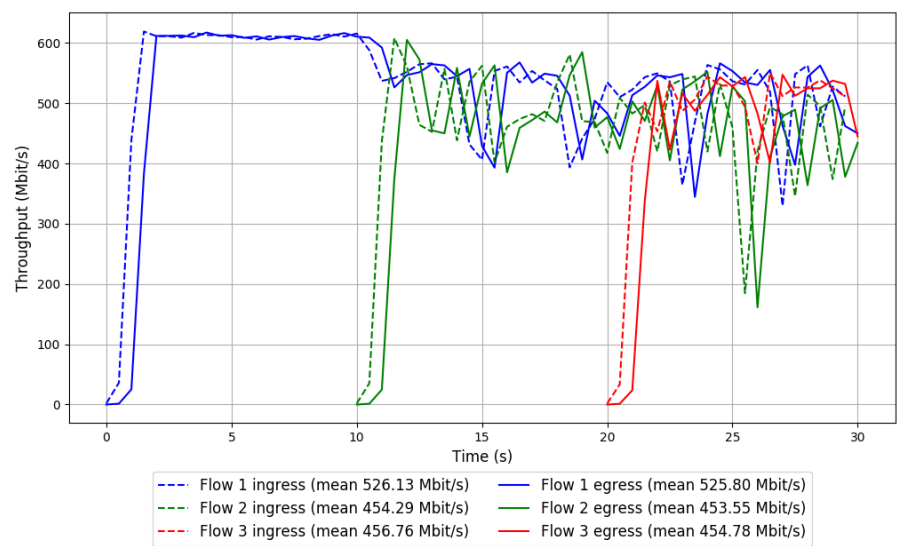
```
Run 3: Statistics of TCP BBR

Start at: 2018-11-16 01:24:47
End at: 2018-11-16 01:25:17
Local clock offset: -0.43 ms
Remote clock offset: -0.276 ms


# Below is generated by plot.py at 2018-11-16 03:13:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.78 Mbit/s
95th percentile per-packet one-way delay: 149.744 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 479.91 Mbit/s
95th percentile per-packet one-way delay: 147.873 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 400.35 Mbit/s
95th percentile per-packet one-way delay: 180.788 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 380.78 Mbit/s
95th percentile per-packet one-way delay: 141.407 ms
Loss rate: 1.80%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 480.44 Mbit/s) — — — Flow 1 egress (mean 479.91 Mbit/s)
Flow 2 ingress (mean 401.66 Mbit/s) — — — Flow 2 egress (mean 400.35 Mbit/s)
Flow 3 ingress (mean 383.22 Mbit/s) — — — Flow 3 egress (mean 380.78 Mbit/s)

Flow 1 (95th percentile 147.87 ms)   Flow 2 (95th percentile 180.79 ms)   Flow 3 (95th percentile 141.41 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-11-16 01:56:58
End at: 2018-11-16 01:57:28
Local clock offset: -0.045 ms
Remote clock offset: -1.319 ms


# Below is generated by plot.py at 2018-11-16 03:13:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 937.11 Mbit/s
95th percentile per-packet one-way delay: 101.865 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 498.65 Mbit/s
95th percentile per-packet one-way delay: 103.940 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 458.47 Mbit/s
95th percentile per-packet one-way delay: 99.379 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 405.60 Mbit/s
95th percentile per-packet one-way delay: 101.131 ms
Loss rate: 1.76%
```
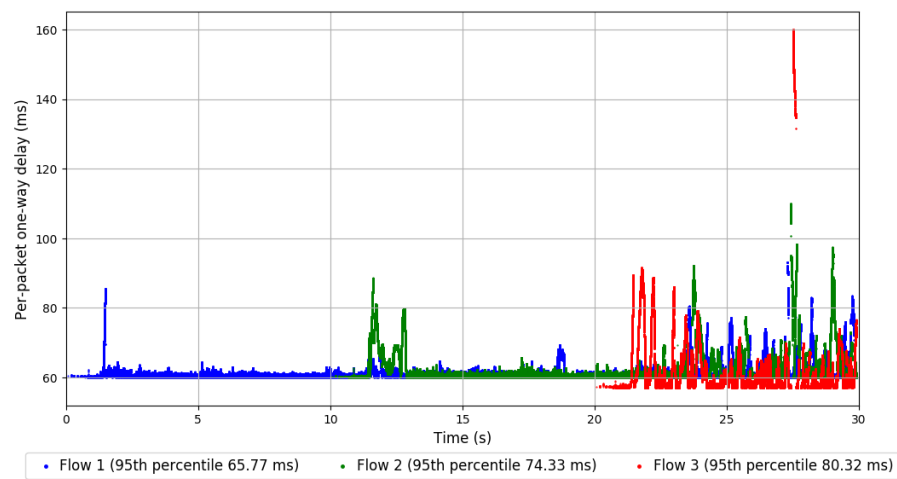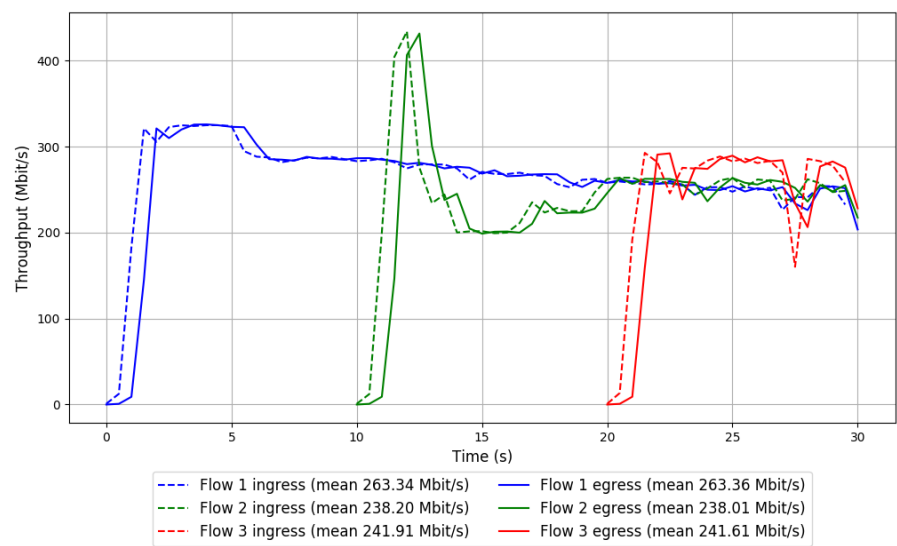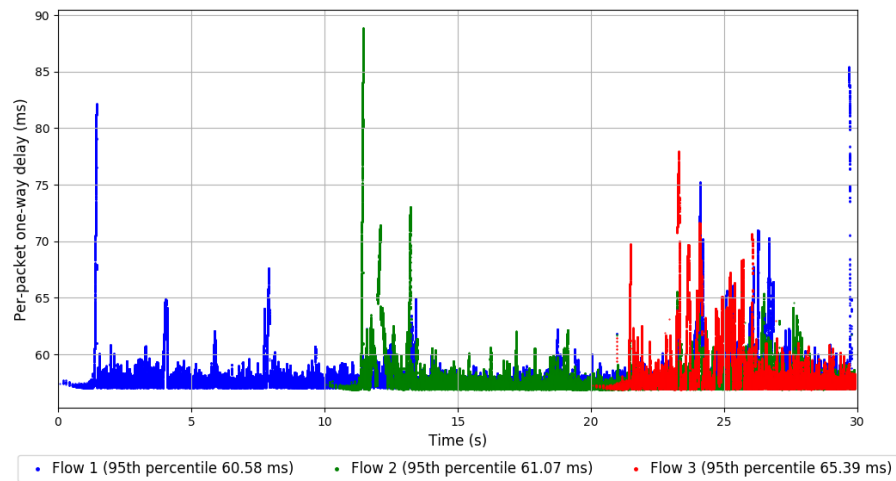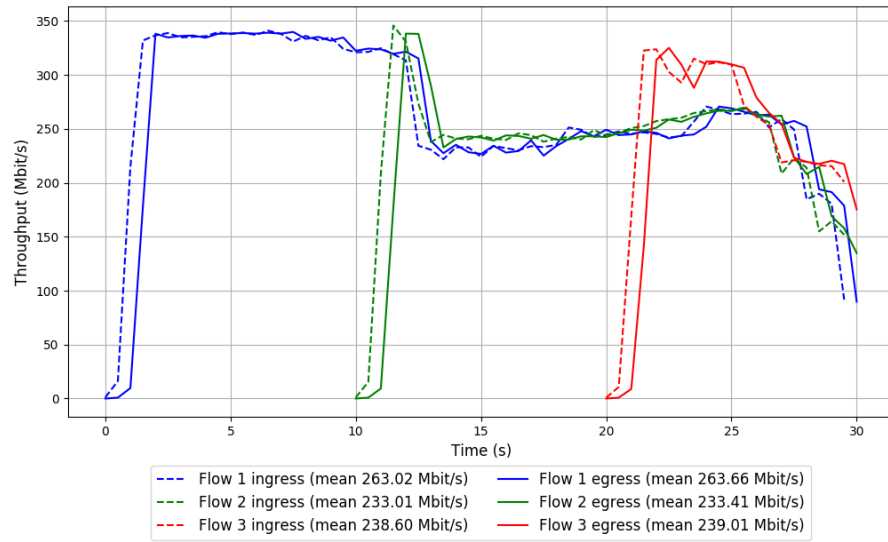
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-11-16 02:30:53
End at: 2018-11-16 02:31:23
Local clock offset: -0.148 ms
Remote clock offset: -0.789 ms


# Below is generated by plot.py at 2018-11-16 03:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 977.37 Mbit/s
95th percentile per-packet one-way delay: 94.971 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 525.80 Mbit/s
95th percentile per-packet one-way delay: 86.025 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 453.55 Mbit/s
95th percentile per-packet one-way delay: 102.463 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 454.78 Mbit/s
95th percentile per-packet one-way delay: 91.959 ms
Loss rate: 1.57%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 526.13 Mbit/s) ---- Flow 1 egress (mean 525.80 Mbit/s) ——
Flow 2 ingress (mean 454.29 Mbit/s) ---- Flow 2 egress (mean 453.55 Mbit/s) ——
Flow 3 ingress (mean 456.76 Mbit/s) ---- Flow 3 egress (mean 454.78 Mbit/s) ——

Flow 1 (95th percentile 86.03 ms)   Flow 2 (95th percentile 102.46 ms)   Flow 3 (95th percentile 91.96 ms)
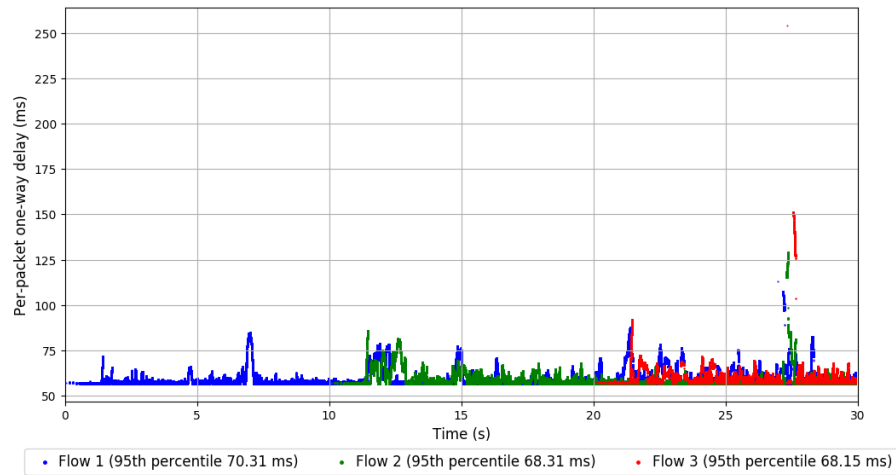
14

```
Run 1: Statistics of Copa

Start at: 2018-11-16 00:17:14
End at: 2018-11-16 00:17:44
Local clock offset: -0.183 ms
Remote clock offset: 0.0 ms


# Below is generated by plot.py at 2018-11-16 03:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.24 Mbit/s
95th percentile per-packet one-way delay: 71.000 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 263.36 Mbit/s
95th percentile per-packet one-way delay: 65.770 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 238.01 Mbit/s
95th percentile per-packet one-way delay: 74.327 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 241.61 Mbit/s
95th percentile per-packet one-way delay: 80.323 ms
Loss rate: 1.29%
```
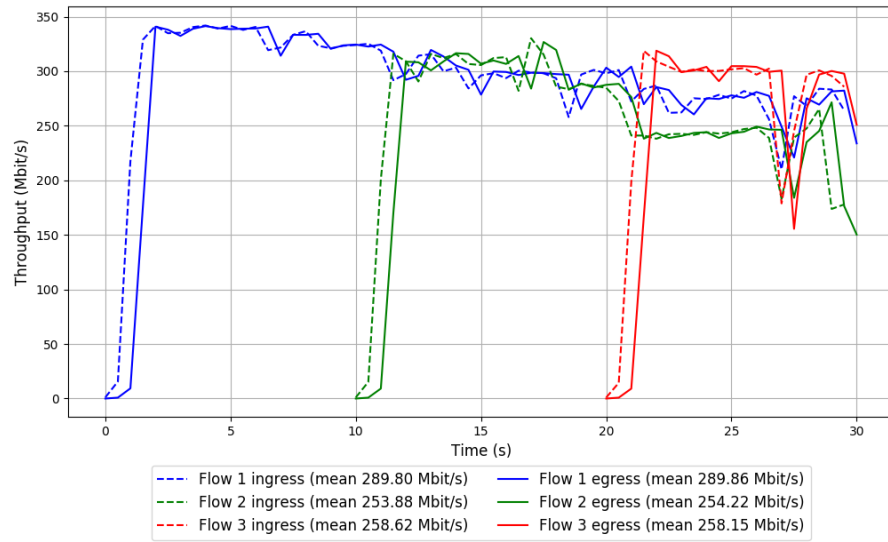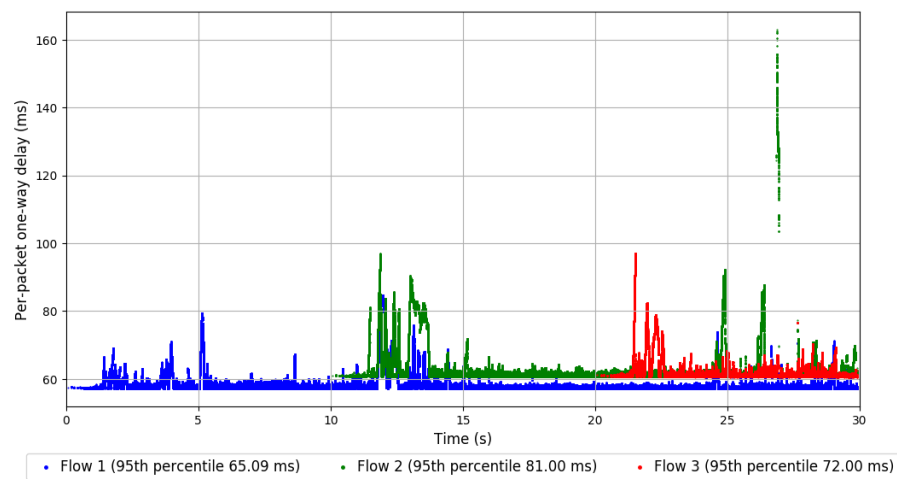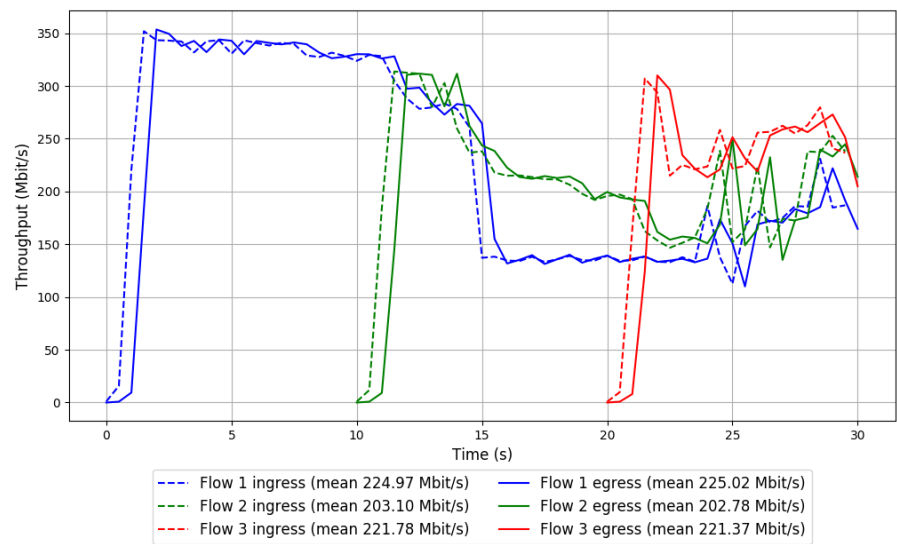
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-11-16 00:50:35
End at: 2018-11-16 00:51:05
Local clock offset: -0.081 ms
Remote clock offset: -0.194 ms


# Below is generated by plot.py at 2018-11-16 03:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 497.54 Mbit/s
95th percentile per-packet one-way delay: 61.771 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 263.66 Mbit/s
95th percentile per-packet one-way delay: 60.577 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 233.41 Mbit/s
95th percentile per-packet one-way delay: 61.070 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 239.01 Mbit/s
95th percentile per-packet one-way delay: 65.391 ms
Loss rate: 0.99%
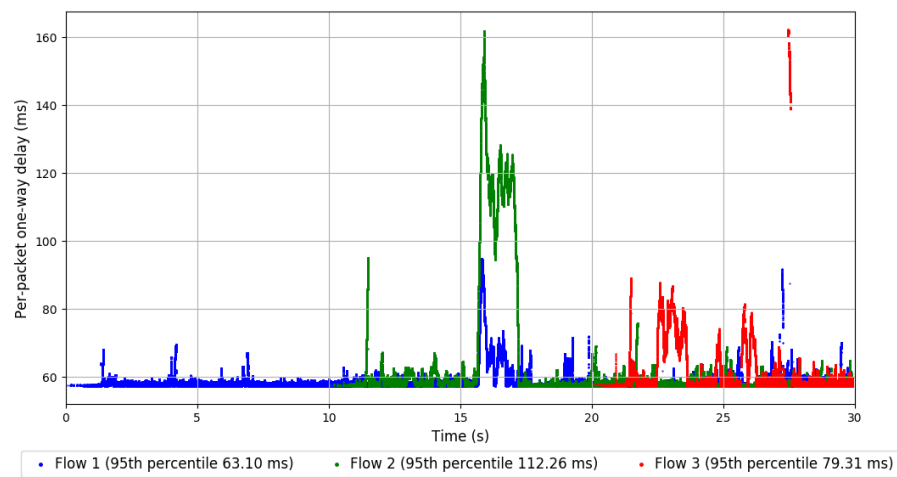```

Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-11-16 01:22:37
End at: 2018-11-16 01:23:07
Local clock offset: -0.328 ms
Remote clock offset: -0.245 ms

Below is generated by plot.py at 2018-11-16 03:14:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 544.01 Mbit/s
95th percentile per-packet one-way delay: 69.469 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 289.86 Mbit/s
95th percentile per-packet one-way delay: 70.312 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 254.22 Mbit/s
95th percentile per-packet one-way delay: 68.305 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 258.15 Mbit/s
95th percentile per-packet one-way delay: 68.146 ms
Loss rate: 1.35%
```
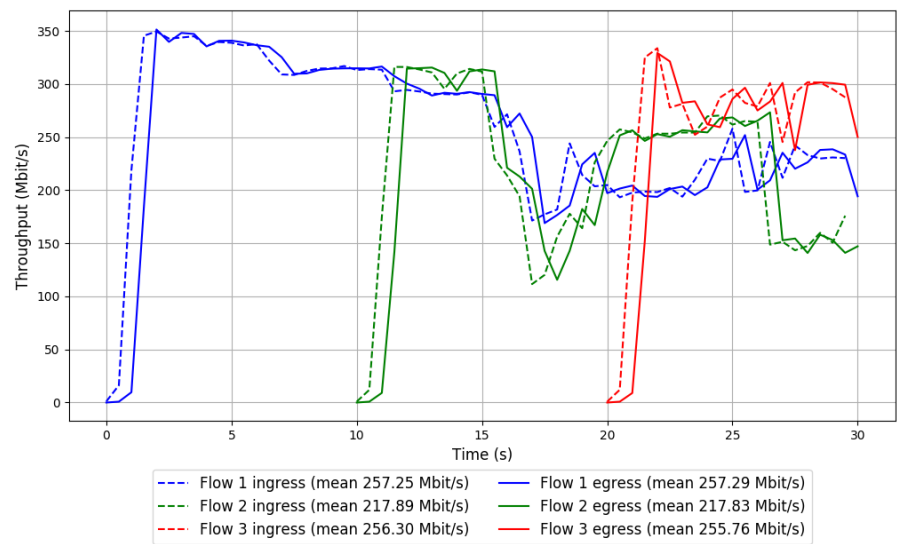
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-11-16 01:55:01
End at: 2018-11-16 01:55:31
Local clock offset: 0.17 ms
Remote clock offset: -0.235 ms

Below is generated by plot.py at 2018-11-16 03:28:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 432.70 Mbit/s
95th percentile per-packet one-way delay: 71.573 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 225.02 Mbit/s
95th percentile per-packet one-way delay: 65.091 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 202.78 Mbit/s
95th percentile per-packet one-way delay: 81.001 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 221.37 Mbit/s
95th percentile per-packet one-way delay: 72.004 ms
Loss rate: 1.35%
```
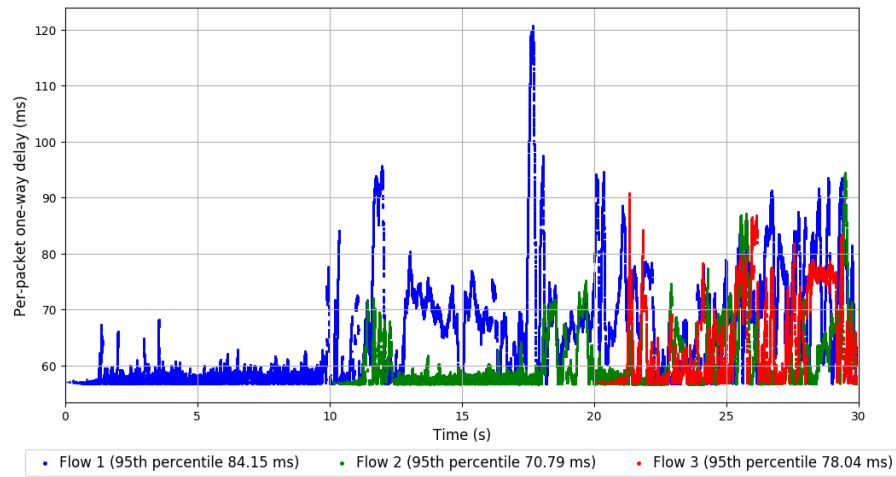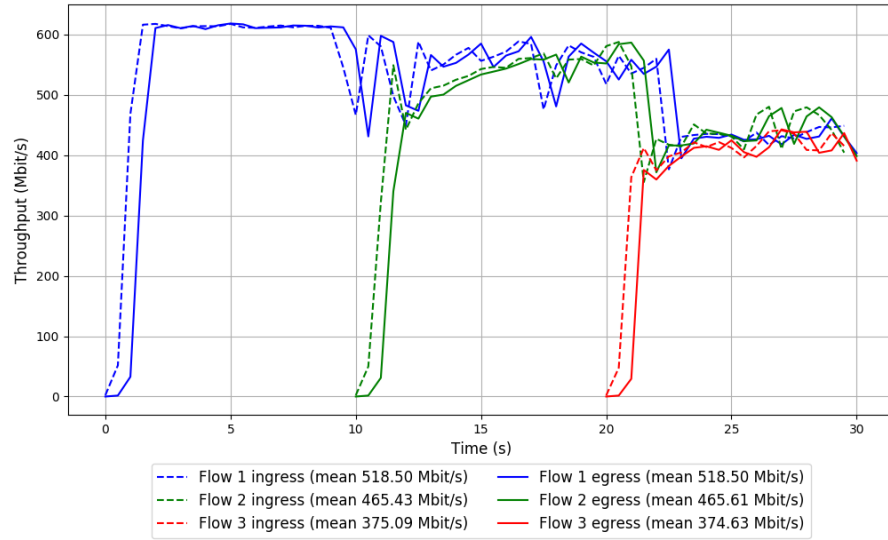
Run 4: Report of Copa — Data Link



Flow 1 ingress (mean 224.97 Mbit/s) — — — Flow 1 egress (mean 225.02 Mbit/s)
Flow 2 ingress (mean 203.10 Mbit/s) — — — Flow 2 egress (mean 202.78 Mbit/s)
Flow 3 ingress (mean 221.78 Mbit/s) — — — Flow 3 egress (mean 221.37 Mbit/s)



Flow 1 (95th percentile 65.09 ms)   Flow 2 (95th percentile 81.00 ms)   Flow 3 (95th percentile 72.00 ms)

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```
Run 5: Statistics of Copa

Start at: 2018-11-16 02:28:17
End at: 2018-11-16 02:28:47
Local clock offset: 0.317 ms
Remote clock offset: -0.025 ms

Below is generated by plot.py at 2018-11-16 03:30:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 486.37 Mbit/s
95th percentile per-packet one-way delay: 71.907 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 257.29 Mbit/s
95th percentile per-packet one-way delay: 63.099 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 217.83 Mbit/s
95th percentile per-packet one-way delay: 112.257 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 255.76 Mbit/s
95th percentile per-packet one-way delay: 79.308 ms
Loss rate: 1.35%
```
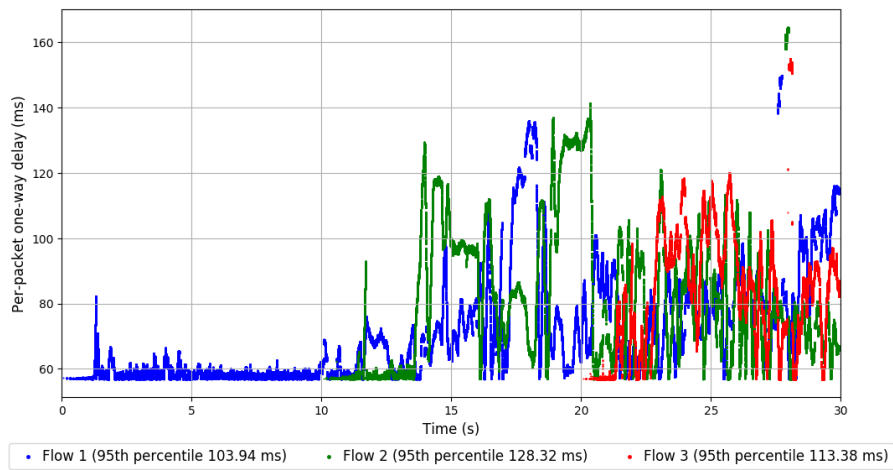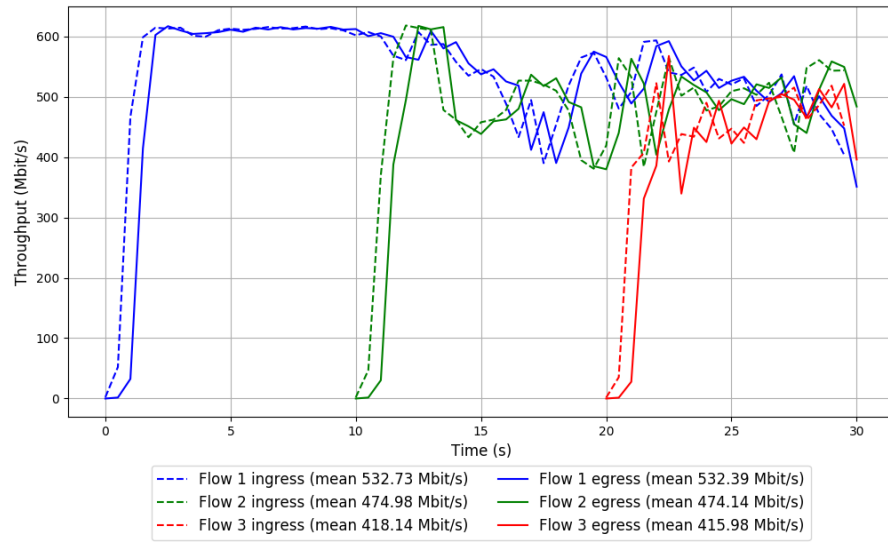
Run 5: Report of Copa — Data Link



Flow 1 ingress (mean 257.25 Mbit/s) — — — Flow 1 egress (mean 257.29 Mbit/s)
Flow 2 ingress (mean 217.89 Mbit/s) — — — Flow 2 egress (mean 217.83 Mbit/s)
Flow 3 ingress (mean 256.30 Mbit/s) — — — Flow 3 egress (mean 255.76 Mbit/s)



Flow 1 (95th percentile 63.10 ms)    Flow 2 (95th percentile 112.26 ms)    Flow 3 (95th percentile 79.31 ms)
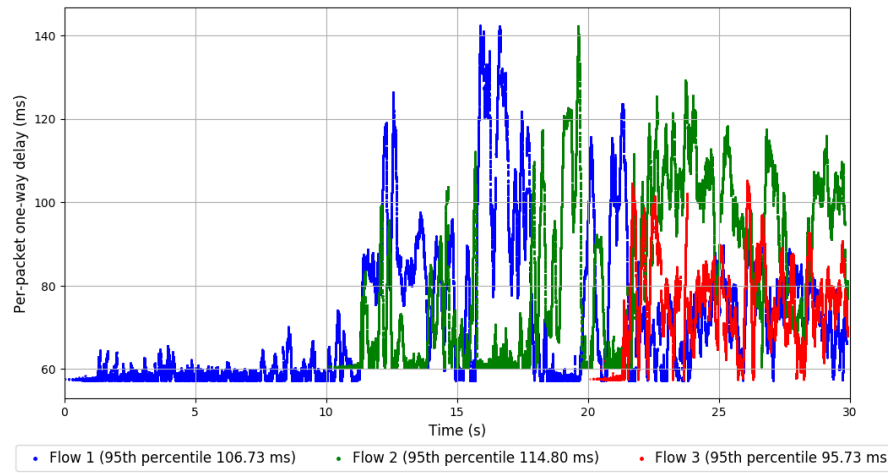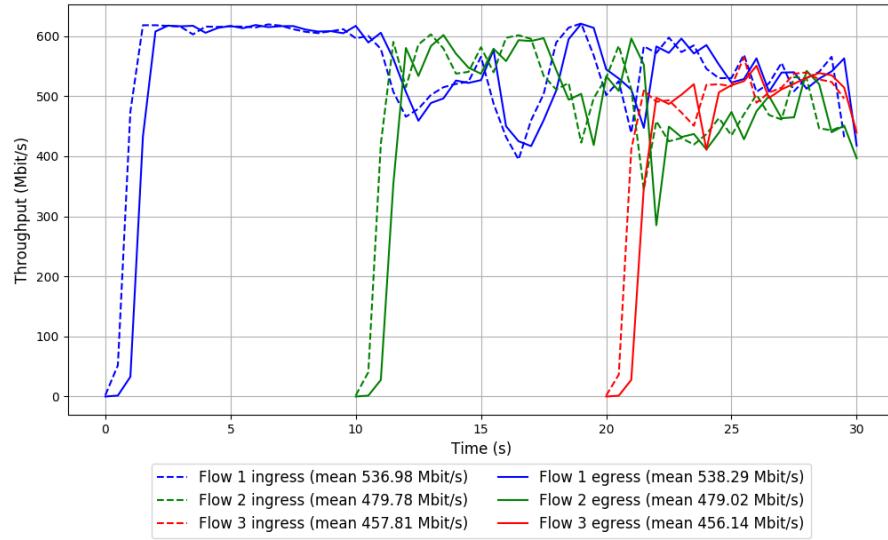
24

```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 23:59:34
End at: 2018-11-16 00:00:04
Local clock offset: -0.144 ms
Remote clock offset: -0.019 ms

Below is generated by plot.py at 2018-11-16 03:32:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 951.63 Mbit/s
95th percentile per-packet one-way delay: 80.584 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 518.50 Mbit/s
95th percentile per-packet one-way delay: 84.154 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 465.61 Mbit/s
95th percentile per-packet one-way delay: 70.788 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 374.63 Mbit/s
95th percentile per-packet one-way delay: 78.042 ms
Loss rate: 1.17%
```
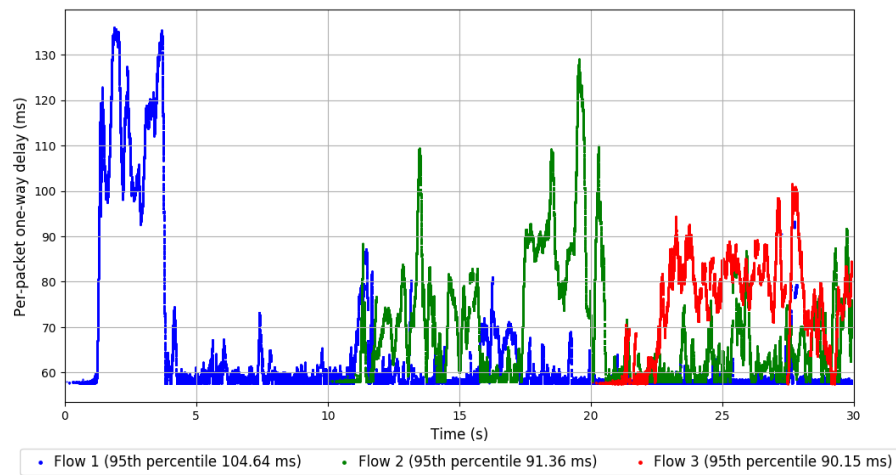
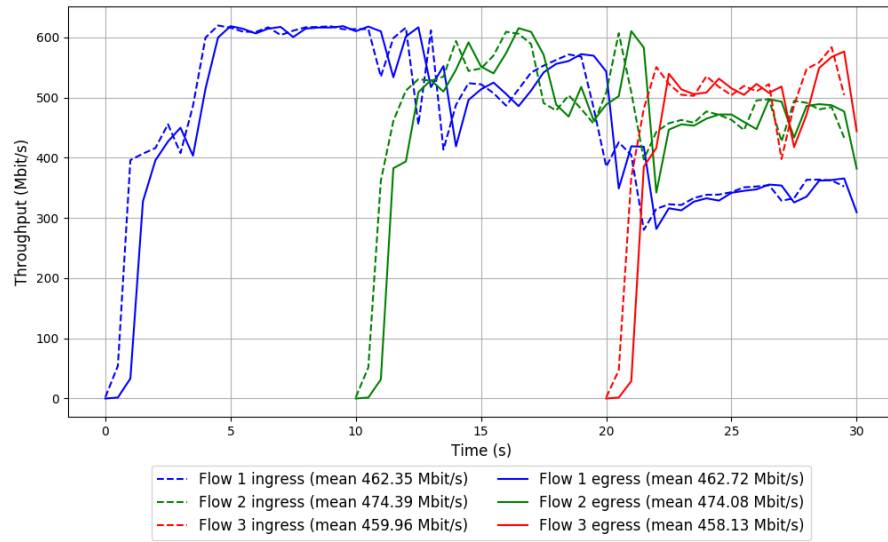Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-11-16 00:33:05
End at: 2018-11-16 00:33:35
Local clock offset: 0.024 ms
Remote clock offset: 0.122 ms

# Below is generated by plot.py at 2018-11-16 03:33:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 984.71 Mbit/s
95th percentile per-packet one-way delay: 114.290 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 532.39 Mbit/s
95th percentile per-packet one-way delay: 103.940 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 474.14 Mbit/s
95th percentile per-packet one-way delay: 128.324 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 415.98 Mbit/s
95th percentile per-packet one-way delay: 113.384 ms
Loss rate: 1.67%
```

Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 532.73 Mbit/s) --- Flow 1 egress (mean 532.39 Mbit/s)
Flow 2 ingress (mean 474.98 Mbit/s) --- Flow 2 egress (mean 474.14 Mbit/s)
Flow 3 ingress (mean 418.14 Mbit/s) --- Flow 3 egress (mean 415.98 Mbit/s)

Flow 1 (95th percentile 103.94 ms)   Flow 2 (95th percentile 128.32 ms)   Flow 3 (95th percentile 113.38 ms)
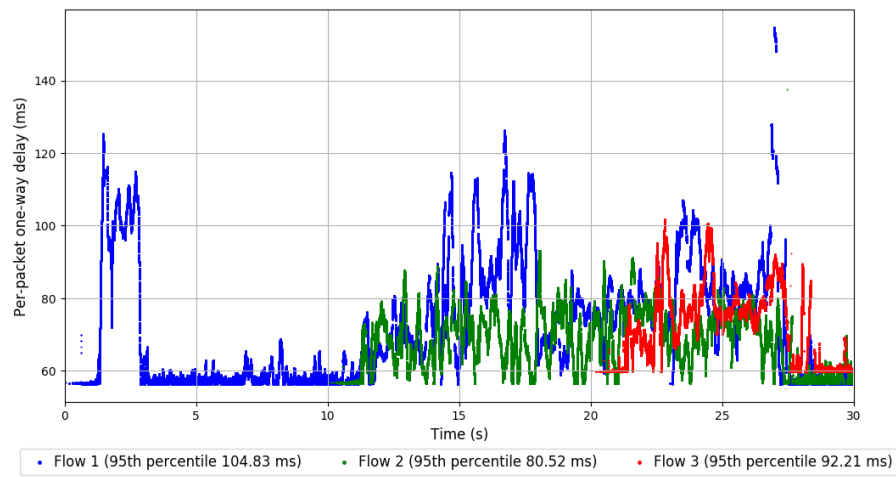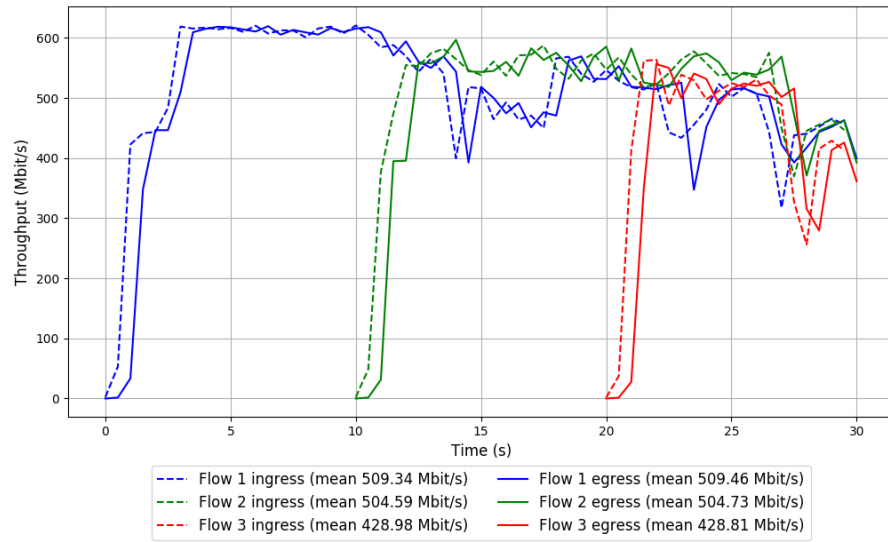
28

```
Run 3: Statistics of TCP Cubic

Start at: 2018-11-16 01:05:15
End at: 2018-11-16 01:05:45
Local clock offset: -0.113 ms
Remote clock offset: -0.474 ms


# Below is generated by plot.py at 2018-11-16 03:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1006.20 Mbit/s
95th percentile per-packet one-way delay: 110.387 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 538.29 Mbit/s
95th percentile per-packet one-way delay: 106.732 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 479.02 Mbit/s
95th percentile per-packet one-way delay: 114.803 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 456.14 Mbit/s
95th percentile per-packet one-way delay: 95.728 ms
Loss rate: 1.52%
```

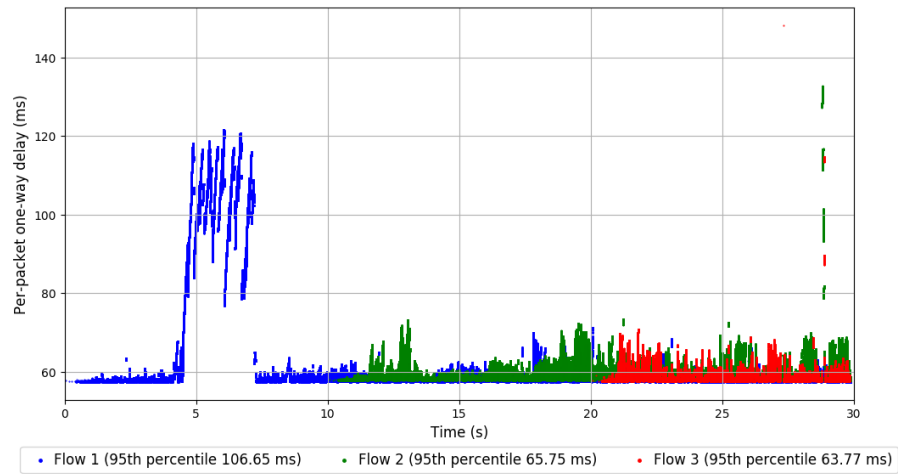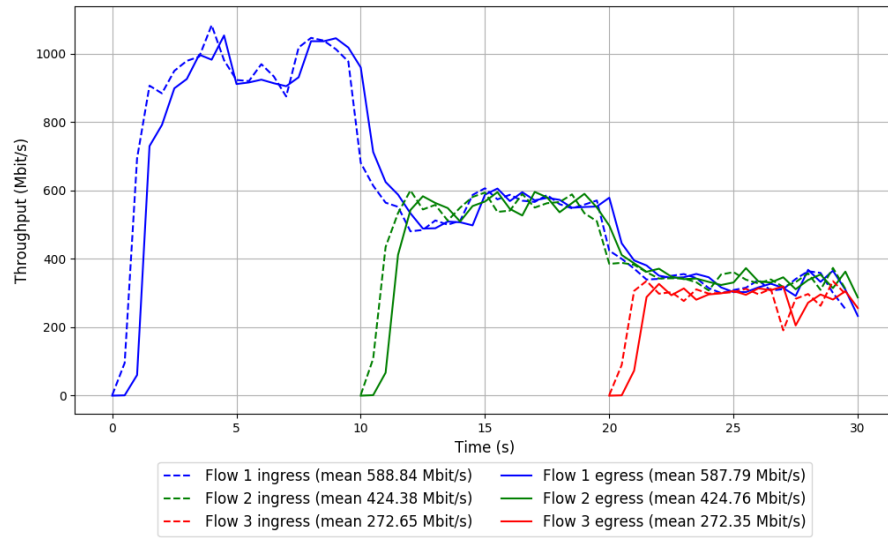Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-11-16 01:37:14
End at: 2018-11-16 01:37:44
Local clock offset: 0.227 ms
Remote clock offset: -0.498 ms


# Below is generated by plot.py at 2018-11-16 03:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 929.13 Mbit/s
95th percentile per-packet one-way delay: 97.417 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 462.72 Mbit/s
95th percentile per-packet one-way delay: 104.640 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 474.08 Mbit/s
95th percentile per-packet one-way delay: 91.363 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 458.13 Mbit/s
95th percentile per-packet one-way delay: 90.147 ms
Loss rate: 1.54%
```

Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-11-16 02:09:33
End at: 2018-11-16 02:10:03
Local clock offset: -0.598 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-11-16 03:34:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 986.48 Mbit/s
95th percentile per-packet one-way delay: 97.169 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 509.46 Mbit/s
95th percentile per-packet one-way delay: 104.834 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 504.73 Mbit/s
95th percentile per-packet one-way delay: 80.521 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 428.81 Mbit/s
95th percentile per-packet one-way delay: 92.207 ms
Loss rate: 1.22%
```
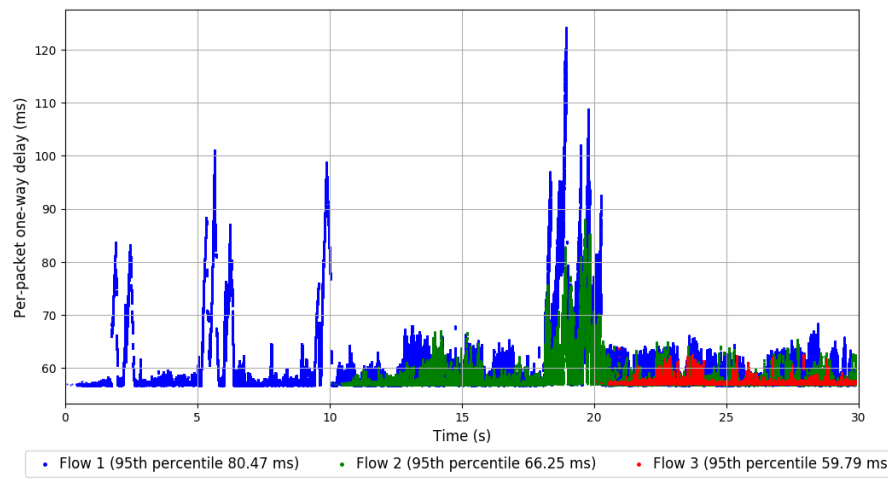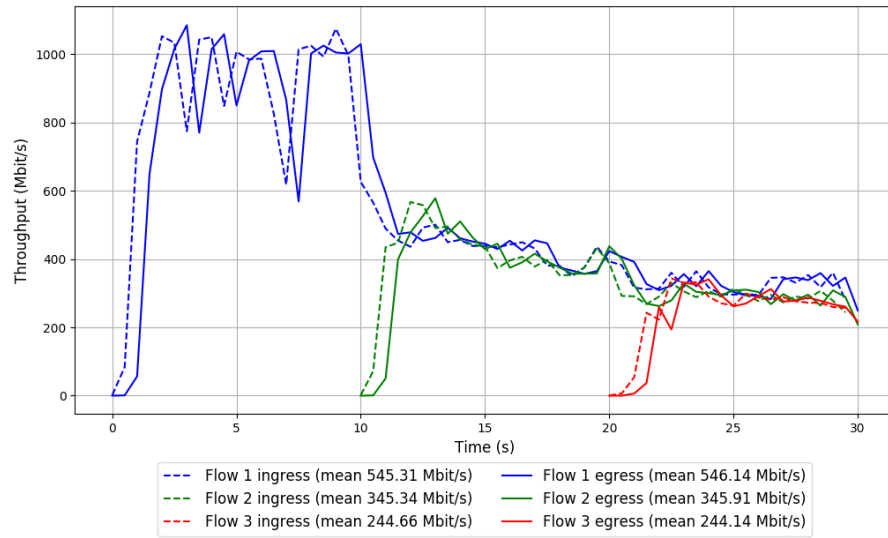
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 509.34 Mbit/s)   Flow 1 egress (mean 509.46 Mbit/s)
Flow 2 ingress (mean 504.59 Mbit/s)   Flow 2 egress (mean 504.73 Mbit/s)
Flow 3 ingress (mean 428.98 Mbit/s)   Flow 3 egress (mean 428.81 Mbit/s)

Flow 1 (95th percentile 104.83 ms)   Flow 2 (95th percentile 80.52 ms)   Flow 3 (95th percentile 92.21 ms)

```
Run 1: Statistics of FillP

Start at: 2018-11-16 00:23:27
End at: 2018-11-16 00:23:57
Local clock offset: -0.149 ms
Remote clock offset: -0.629 ms


# Below is generated by plot.py at 2018-11-16 03:37:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 959.19 Mbit/s
95th percentile per-packet one-way delay: 100.514 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 587.79 Mbit/s
95th percentile per-packet one-way delay: 106.650 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 424.76 Mbit/s
95th percentile per-packet one-way delay: 65.746 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 272.35 Mbit/s
95th percentile per-packet one-way delay: 63.774 ms
Loss rate: 1.49%
```
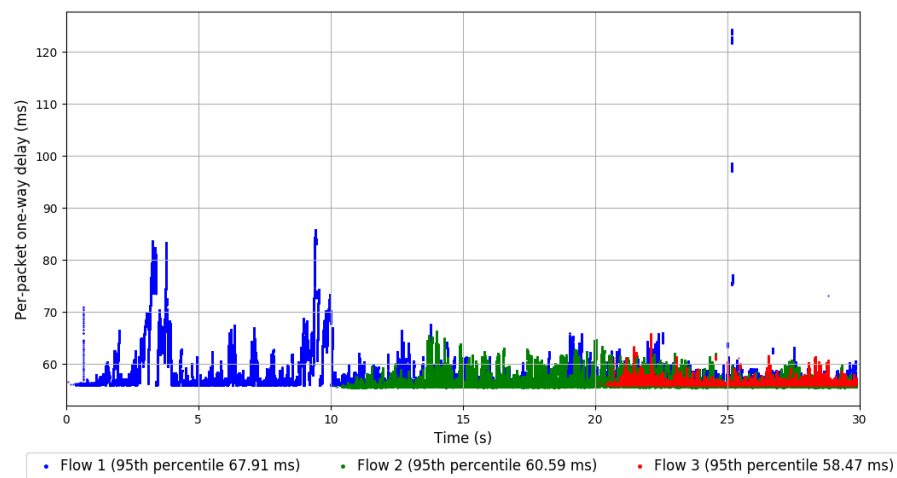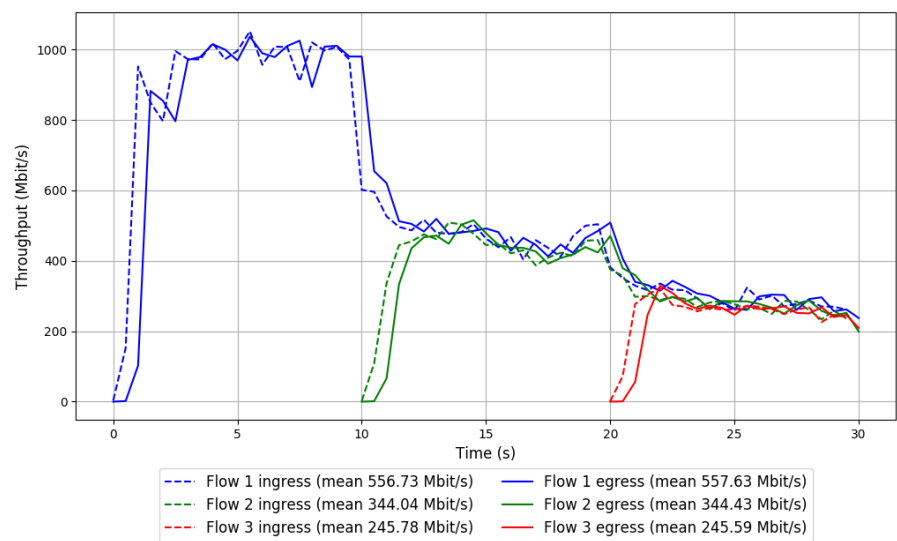
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-11-16 00:56:33
End at: 2018-11-16 00:57:03
Local clock offset: -0.115 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-11-16 03:50:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 856.06 Mbit/s
95th percentile per-packet one-way delay: 75.602 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 546.14 Mbit/s
95th percentile per-packet one-way delay: 80.465 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 345.91 Mbit/s
95th percentile per-packet one-way delay: 66.247 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 244.14 Mbit/s
95th percentile per-packet one-way delay: 59.794 ms
Loss rate: 1.30%
```
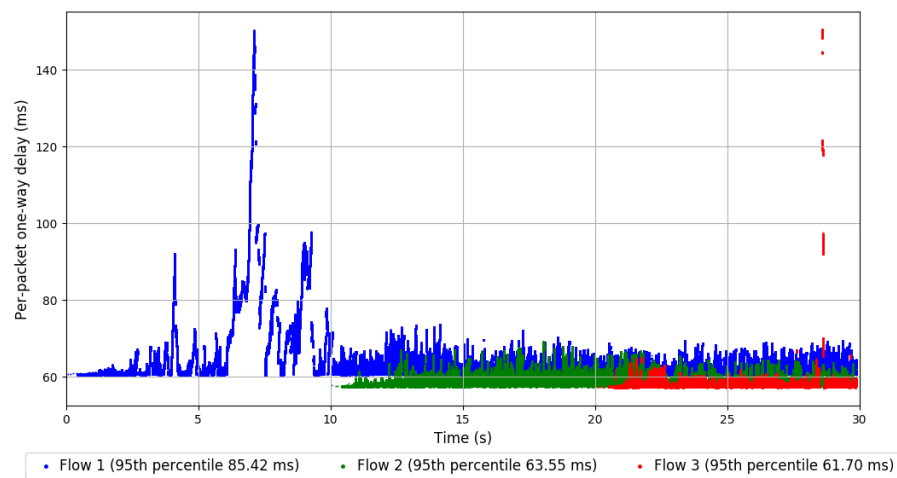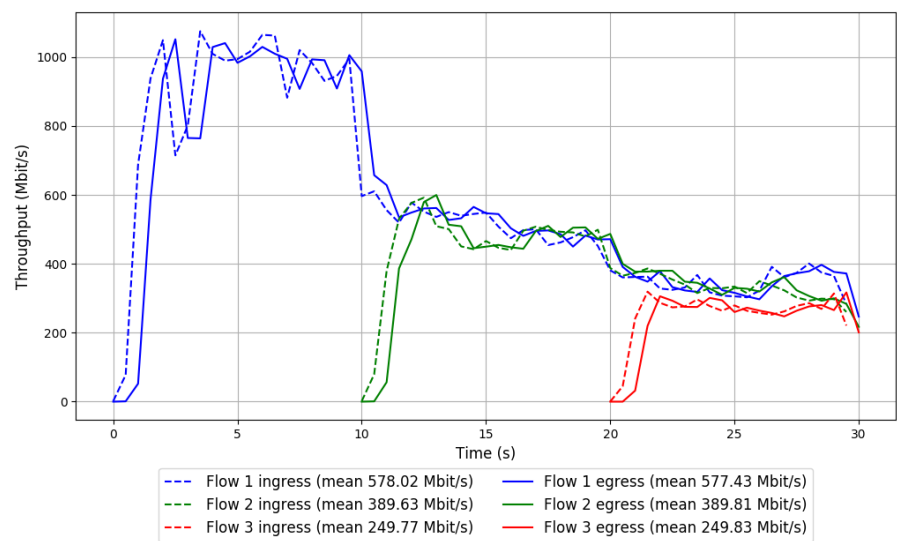
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-11-16 01:28:27
End at: 2018-11-16 01:28:57
Local clock offset: -0.204 ms
Remote clock offset: 1.008 ms

# Below is generated by plot.py at 2018-11-16 03:53:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 866.79 Mbit/s
95th percentile per-packet one-way delay: 65.541 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 557.63 Mbit/s
95th percentile per-packet one-way delay: 67.905 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 344.43 Mbit/s
95th percentile per-packet one-way delay: 60.593 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 245.59 Mbit/s
95th percentile per-packet one-way delay: 58.472 ms
Loss rate: 1.17%
```
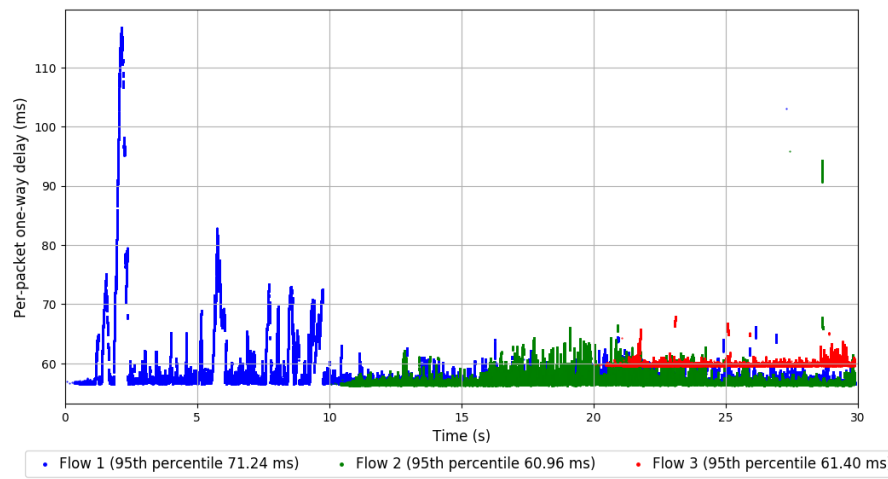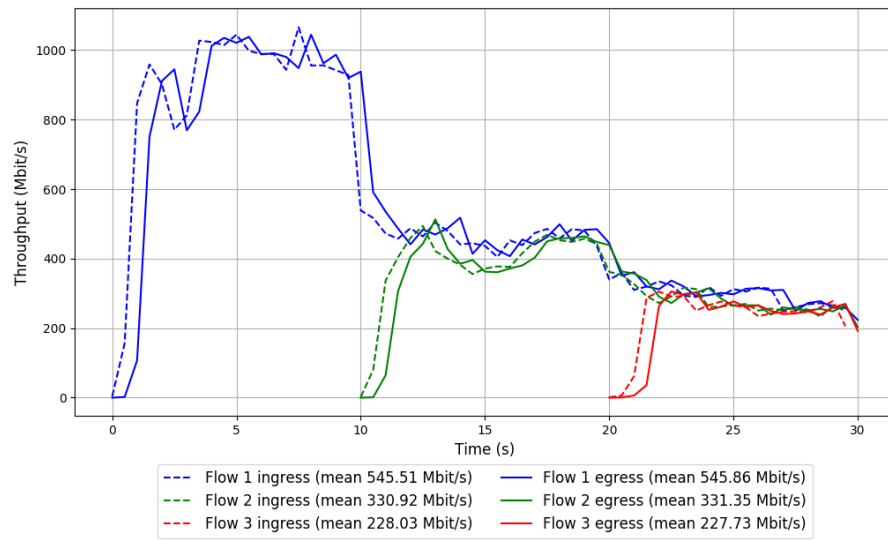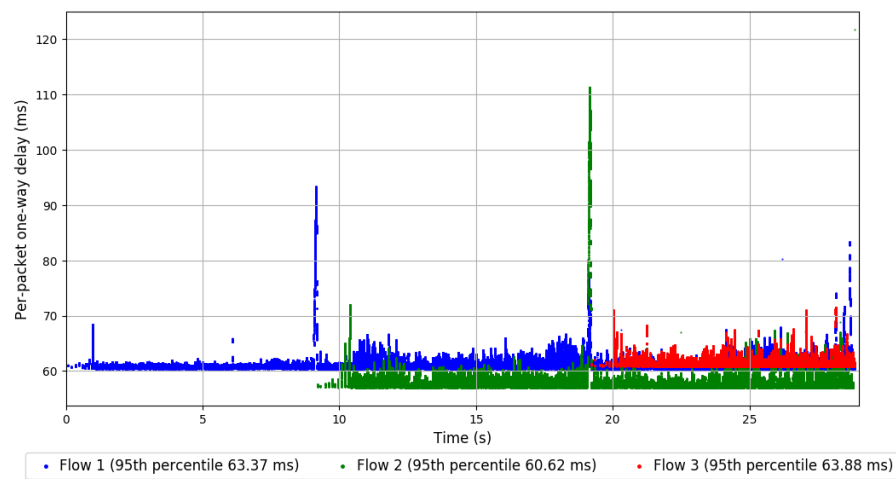
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-11-16 02:00:52
End at: 2018-11-16 02:01:22
Local clock offset: 0.013 ms
Remote clock offset: -0.19 ms


# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 918.63 Mbit/s
95th percentile per-packet one-way delay: 80.844 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 577.43 Mbit/s
95th percentile per-packet one-way delay: 85.415 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 389.81 Mbit/s
95th percentile per-packet one-way delay: 63.552 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 249.83 Mbit/s
95th percentile per-packet one-way delay: 61.701 ms
Loss rate: 1.24%
```
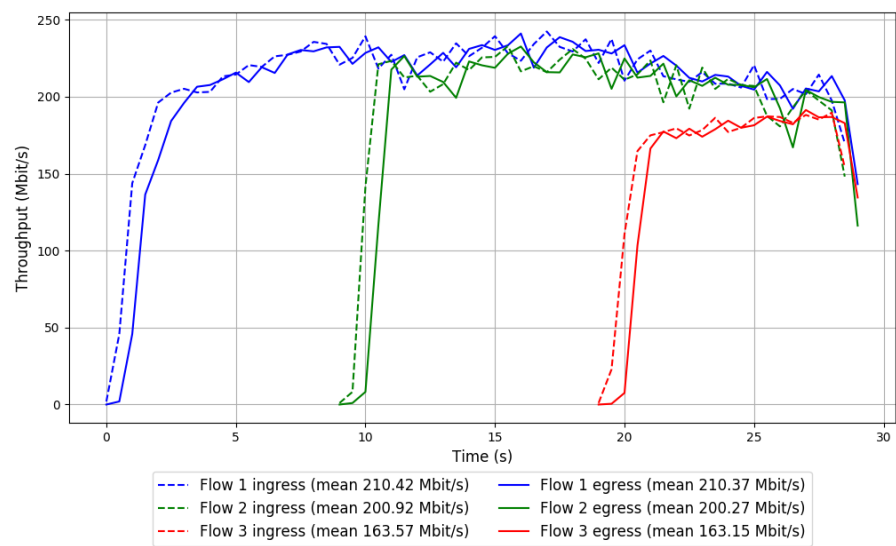
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-11-16 02:35:15
End at: 2018-11-16 02:35:45
Local clock offset: -0.087 ms
Remote clock offset: 0.4 ms


# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 840.77 Mbit/s
95th percentile per-packet one-way delay: 68.050 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 545.86 Mbit/s
95th percentile per-packet one-way delay: 71.243 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 331.35 Mbit/s
95th percentile per-packet one-way delay: 60.957 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 227.73 Mbit/s
95th percentile per-packet one-way delay: 61.399 ms
Loss rate: 1.23%
```
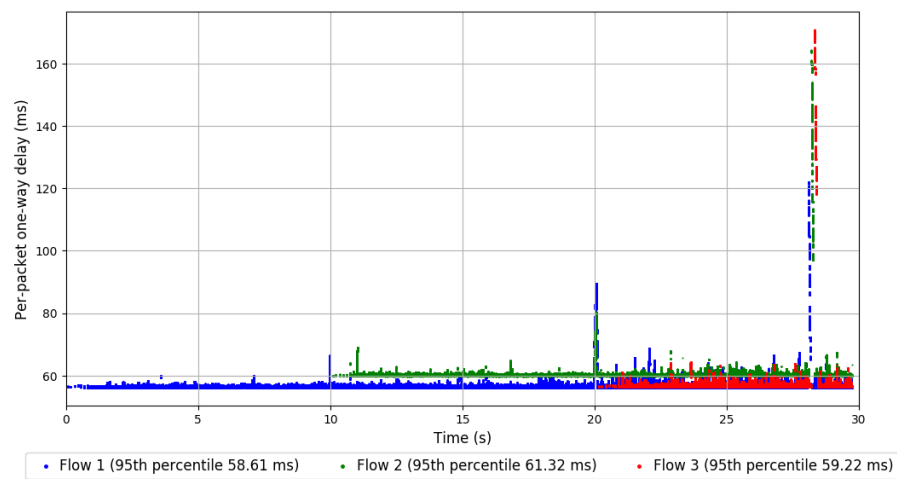
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-11-16 00:09:17
End at: 2018-11-16 00:09:47
Local clock offset: 0.265 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 401.66 Mbit/s
95th percentile per-packet one-way delay: 63.094 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 210.37 Mbit/s
95th percentile per-packet one-way delay: 63.365 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 200.27 Mbit/s
95th percentile per-packet one-way delay: 60.624 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 163.15 Mbit/s
95th percentile per-packet one-way delay: 63.883 ms
Loss rate: 1.44%
```
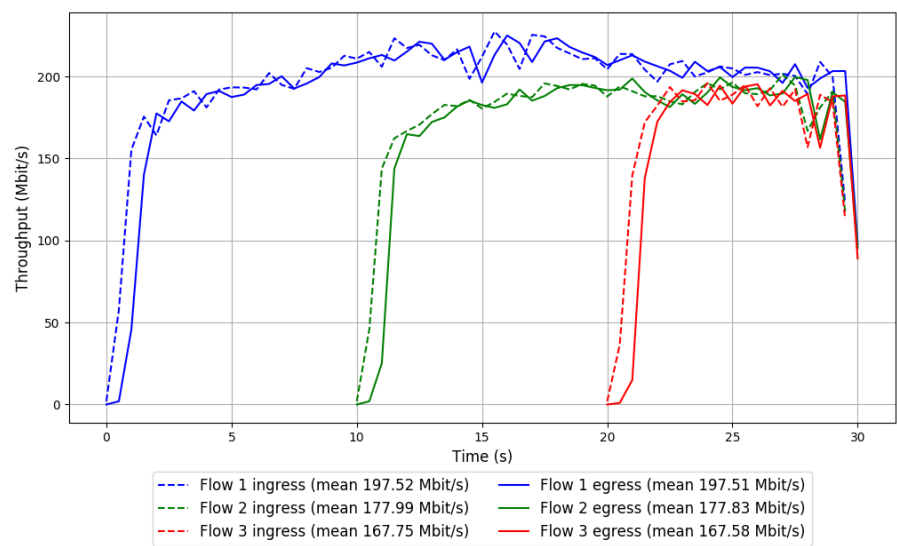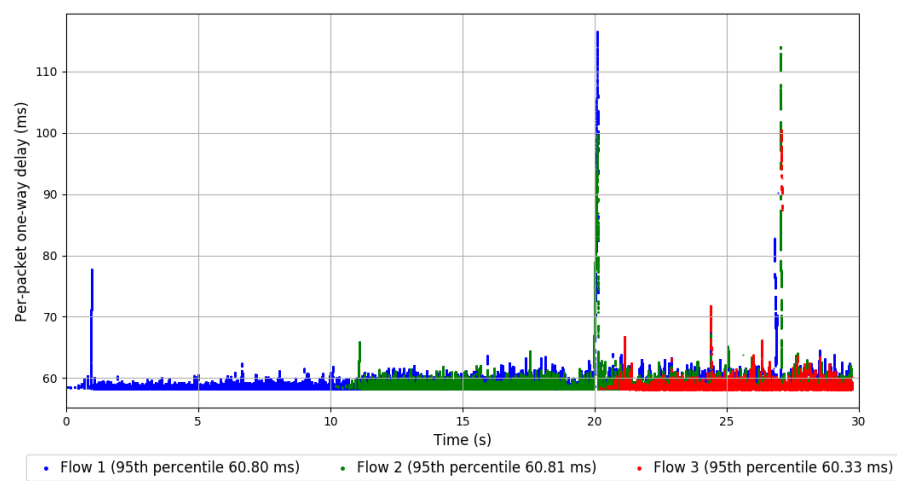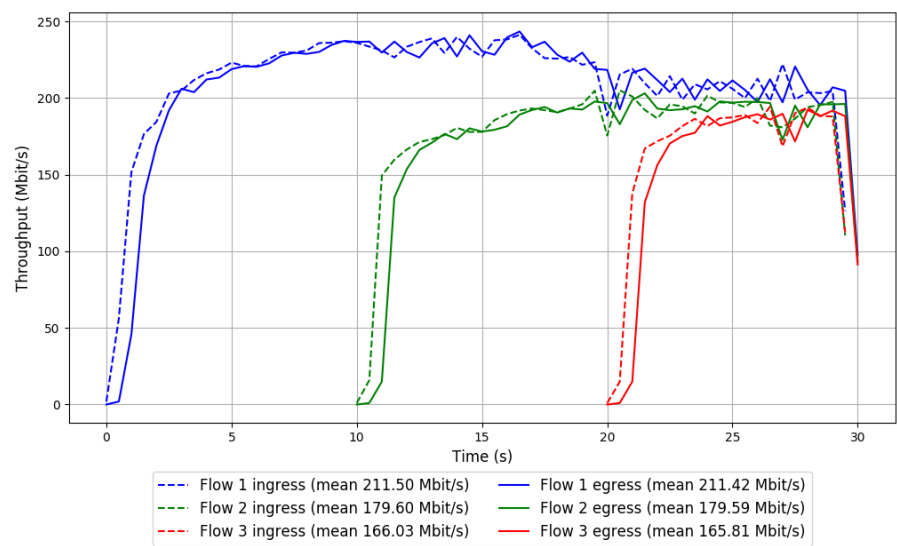
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-11-16 00:42:51
End at: 2018-11-16 00:43:21
Local clock offset: -0.572 ms
Remote clock offset: 0.194 ms


# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 369.27 Mbit/s
95th percentile per-packet one-way delay: 60.579 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 197.51 Mbit/s
95th percentile per-packet one-way delay: 58.613 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 177.83 Mbit/s
95th percentile per-packet one-way delay: 61.324 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 167.58 Mbit/s
95th percentile per-packet one-way delay: 59.216 ms
Loss rate: 1.28%
```
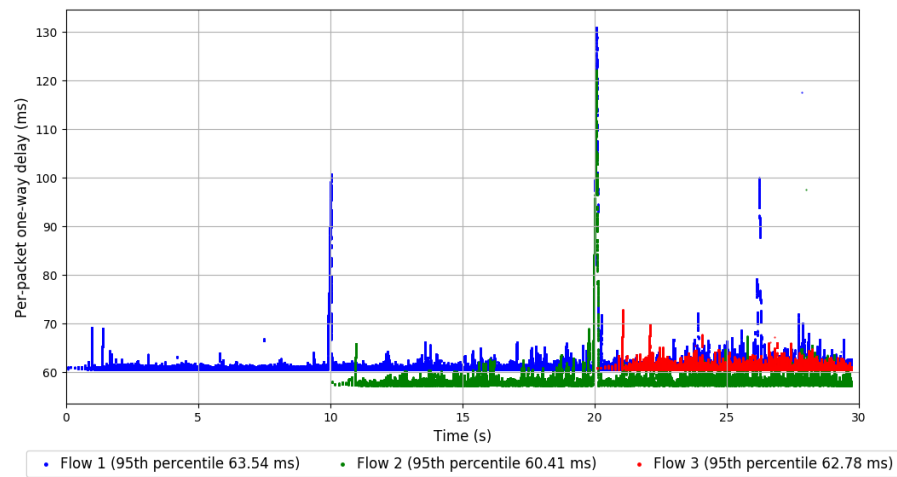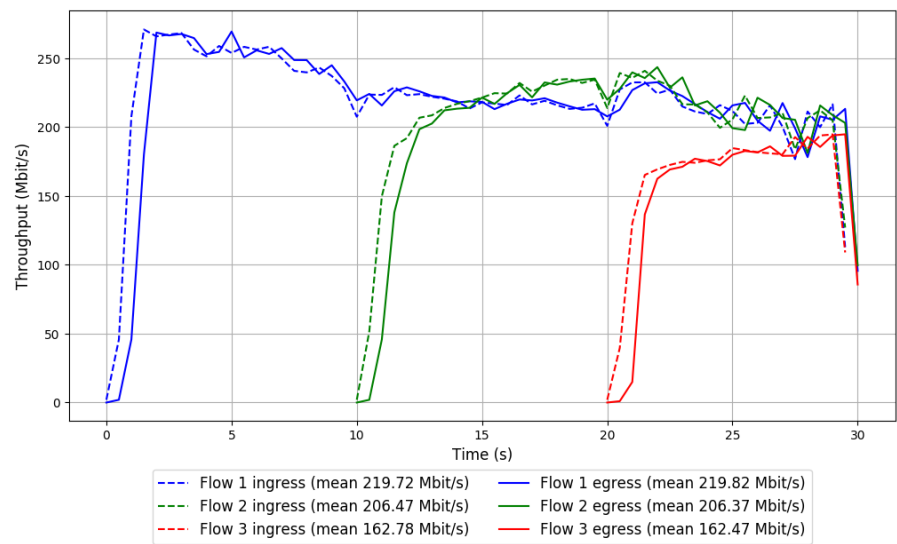
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-11-16 01:14:42
End at: 2018-11-16 01:15:12
Local clock offset: -0.116 ms
Remote clock offset: -1.451 ms


# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 382.93 Mbit/s
95th percentile per-packet one-way delay: 60.761 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 211.42 Mbit/s
95th percentile per-packet one-way delay: 60.803 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 179.59 Mbit/s
95th percentile per-packet one-way delay: 60.806 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 165.81 Mbit/s
95th percentile per-packet one-way delay: 60.327 ms
Loss rate: 1.32%
```
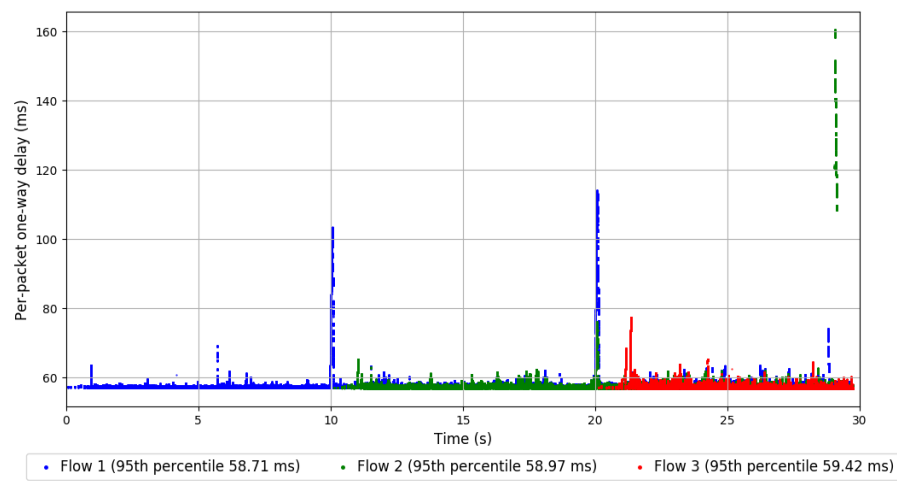
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-11-16 01:46:46
End at: 2018-11-16 01:47:16
Local clock offset: -0.237 ms
Remote clock offset: -0.478 ms

# Below is generated by plot.py at 2018-11-16 03:55:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 409.23 Mbit/s
95th percentile per-packet one-way delay: 62.863 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 219.82 Mbit/s
95th percentile per-packet one-way delay: 63.539 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 206.37 Mbit/s
95th percentile per-packet one-way delay: 60.410 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 162.47 Mbit/s
95th percentile per-packet one-way delay: 62.777 ms
Loss rate: 1.40%
```

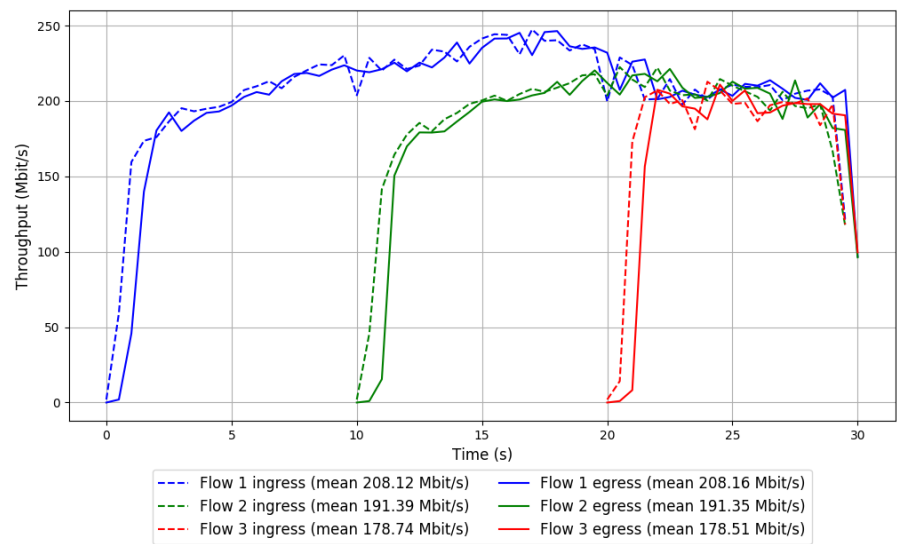Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-11-16 02:19:39
End at: 2018-11-16 02:20:09
Local clock offset: -0.103 ms
Remote clock offset: -0.146 ms


# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 392.33 Mbit/s
95th percentile per-packet one-way delay: 58.911 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 208.16 Mbit/s
95th percentile per-packet one-way delay: 58.714 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 191.35 Mbit/s
95th percentile per-packet one-way delay: 58.973 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 178.51 Mbit/s
95th percentile per-packet one-way delay: 59.421 ms
Loss rate: 1.30%
```
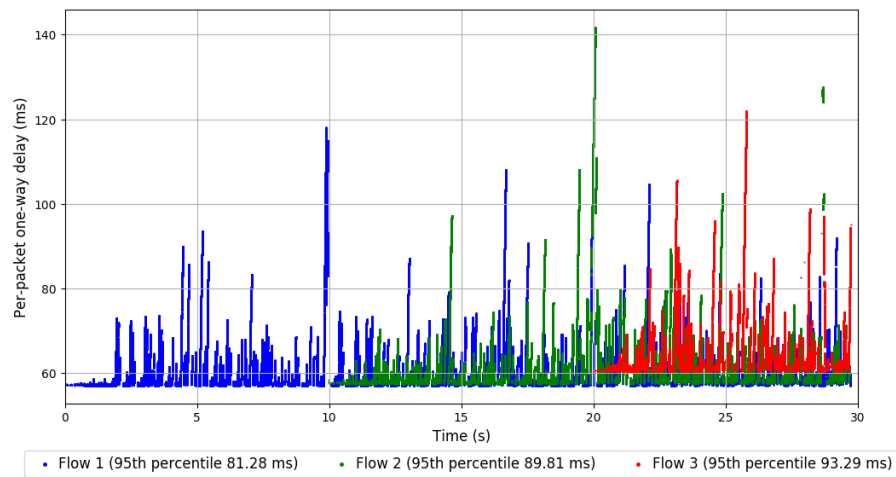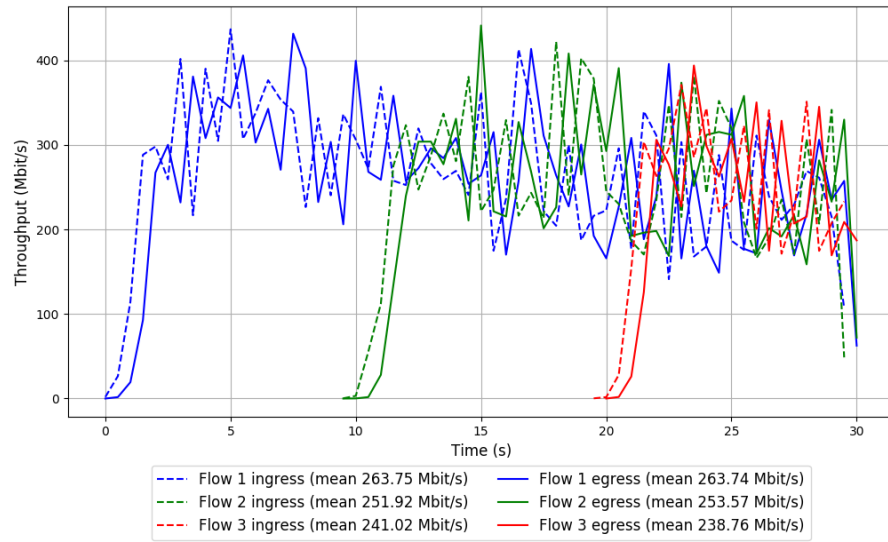
Run 5: Report of Indigo — Data Link

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

Start at: 2018-11-16 00:21:33
End at: 2018-11-16 00:22:03
Local clock offset: 0.258 ms
Remote clock offset: 0.028 ms


# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 510.19 Mbit/s
95th percentile per-packet one-way delay: 85.017 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 263.74 Mbit/s
95th percentile per-packet one-way delay: 81.281 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 253.57 Mbit/s
95th percentile per-packet one-way delay: 89.809 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 238.76 Mbit/s
95th percentile per-packet one-way delay: 93.287 ms
Loss rate: 1.66%
```

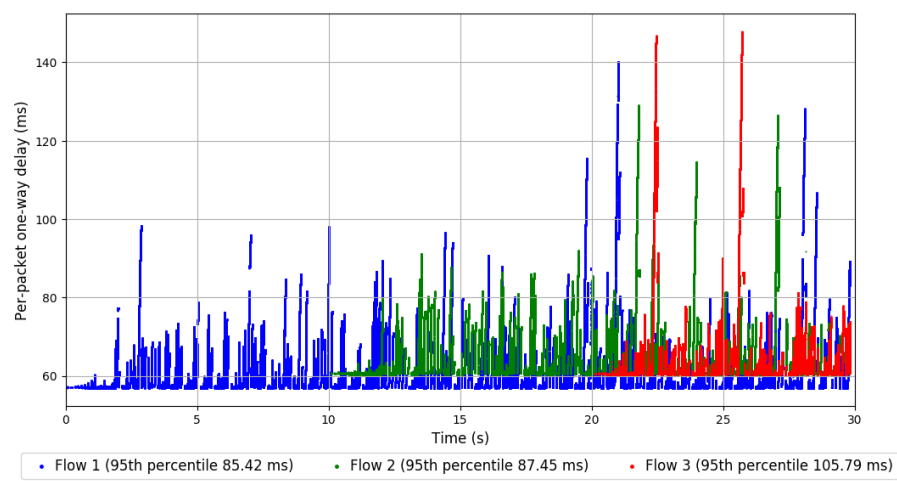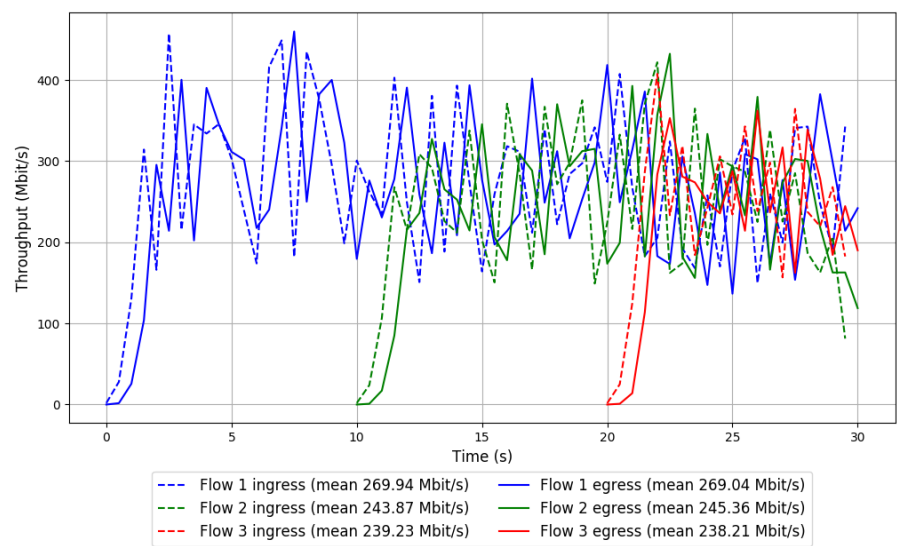Run 1: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-11-16 00:54:49
End at: 2018-11-16 00:55:19
Local clock offset: 0.068 ms
Remote clock offset: -0.007 ms


# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 509.24 Mbit/s
95th percentile per-packet one-way delay: 87.713 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 269.04 Mbit/s
95th percentile per-packet one-way delay: 85.421 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 245.36 Mbit/s
95th percentile per-packet one-way delay: 87.449 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 238.21 Mbit/s
95th percentile per-packet one-way delay: 105.789 ms
Loss rate: 1.10%
```

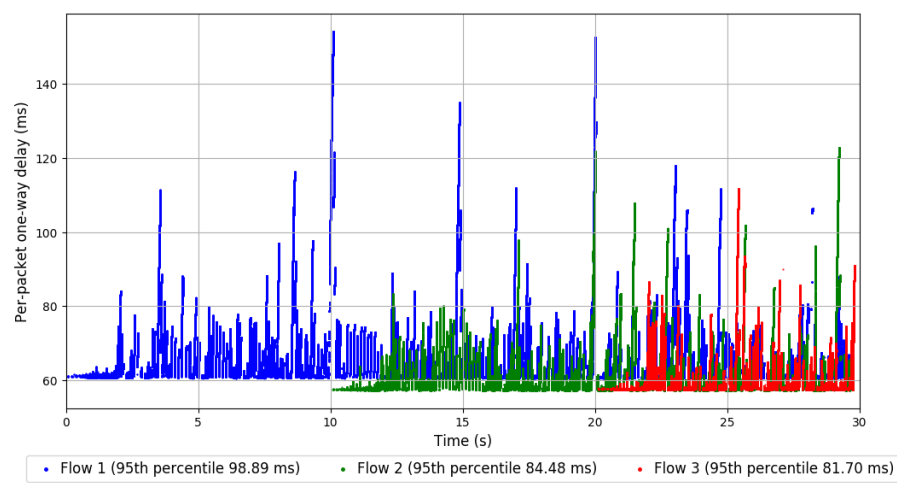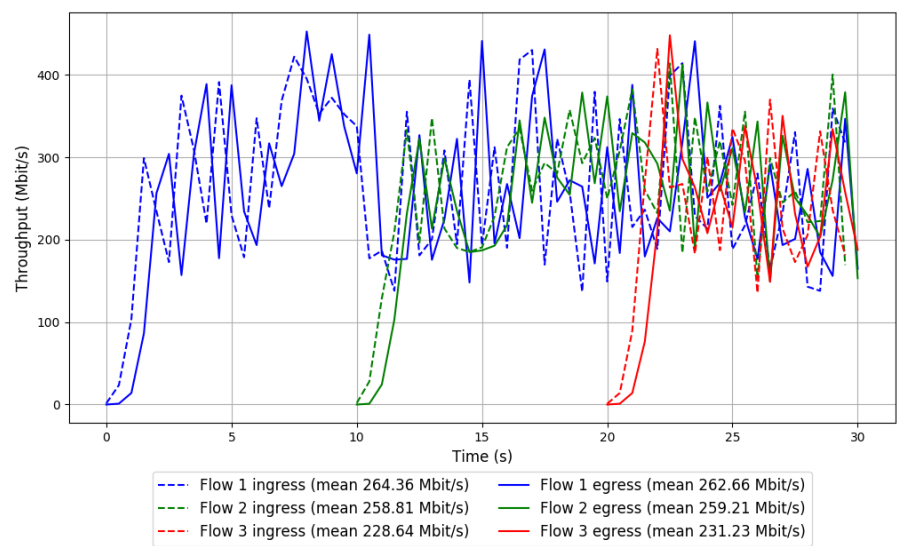Run 2: Report of Indigo-96d2da3 — Data Link

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-16 01:26:46
End at: 2018-11-16 01:27:16
Local clock offset: -0.16 ms
Remote clock offset: -0.771 ms


# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.86 Mbit/s
95th percentile per-packet one-way delay: 90.918 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 262.66 Mbit/s
95th percentile per-packet one-way delay: 98.885 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 259.21 Mbit/s
95th percentile per-packet one-way delay: 84.481 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 231.23 Mbit/s
95th percentile per-packet one-way delay: 81.697 ms
Loss rate: 0.13%
```

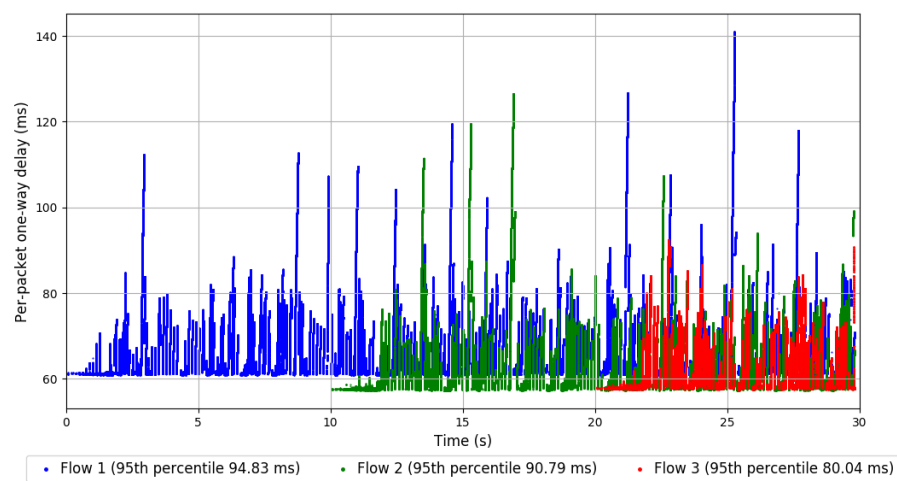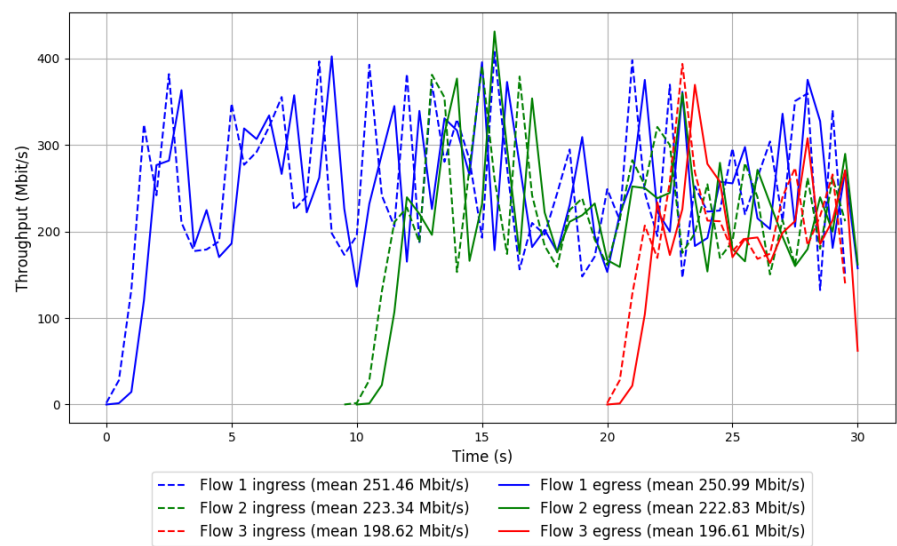Run 3: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-11-16 01:59:03
End at: 2018-11-16 01:59:33
Local clock offset: 0.091 ms
Remote clock offset: -0.239 ms


# Below is generated by plot.py at 2018-11-16 04:03:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 463.39 Mbit/s
95th percentile per-packet one-way delay: 90.928 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 250.99 Mbit/s
95th percentile per-packet one-way delay: 94.829 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 222.83 Mbit/s
95th percentile per-packet one-way delay: 90.789 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 196.61 Mbit/s
95th percentile per-packet one-way delay: 80.040 ms
Loss rate: 2.01%
```

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

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

Start at: 2018-11-16 02:33:23
End at: 2018-11-16 02:33:53
Local clock offset: 0.084 ms
Remote clock offset: 0.476 ms


# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.85 Mbit/s
95th percentile per-packet one-way delay: 96.717 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 274.39 Mbit/s
95th percentile per-packet one-way delay: 95.226 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 259.19 Mbit/s
95th percentile per-packet one-way delay: 100.487 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 224.79 Mbit/s
95th percentile per-packet one-way delay: 96.845 ms
Loss rate: 0.56%
```
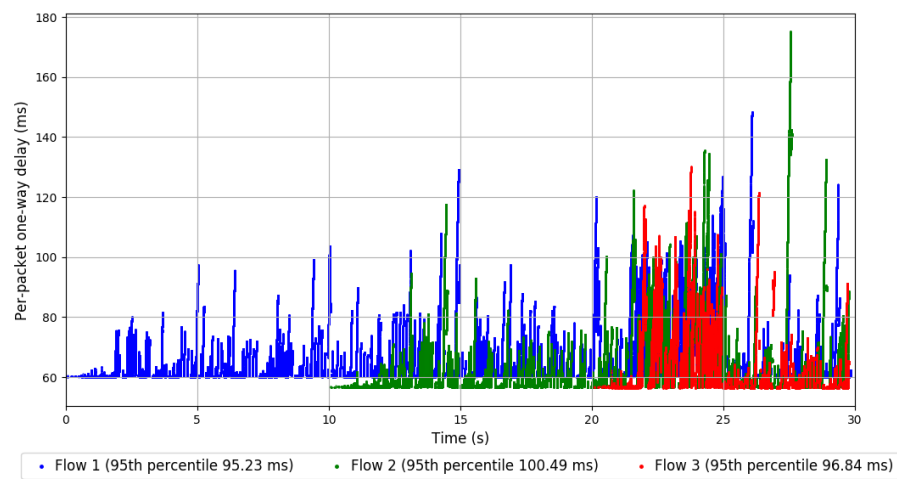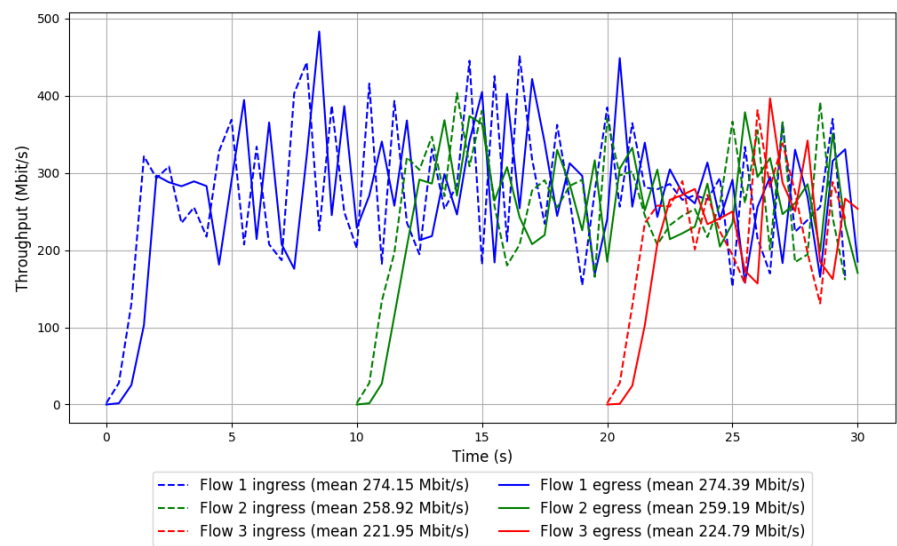
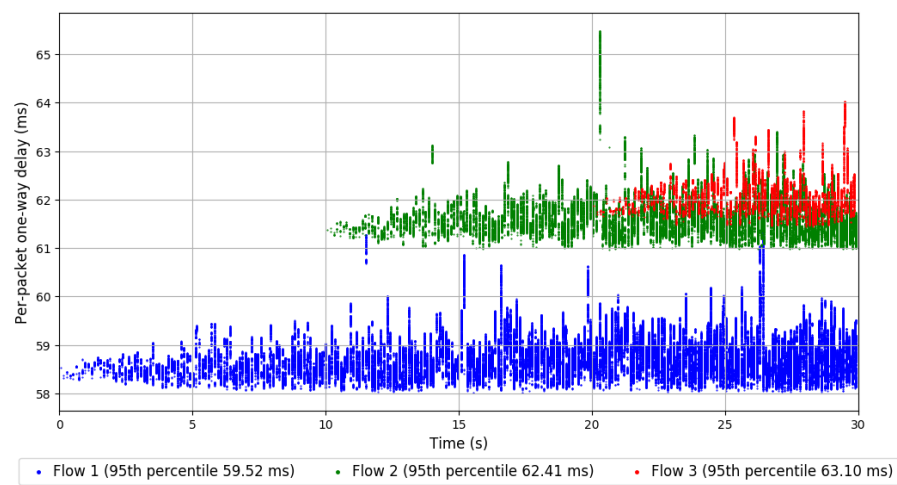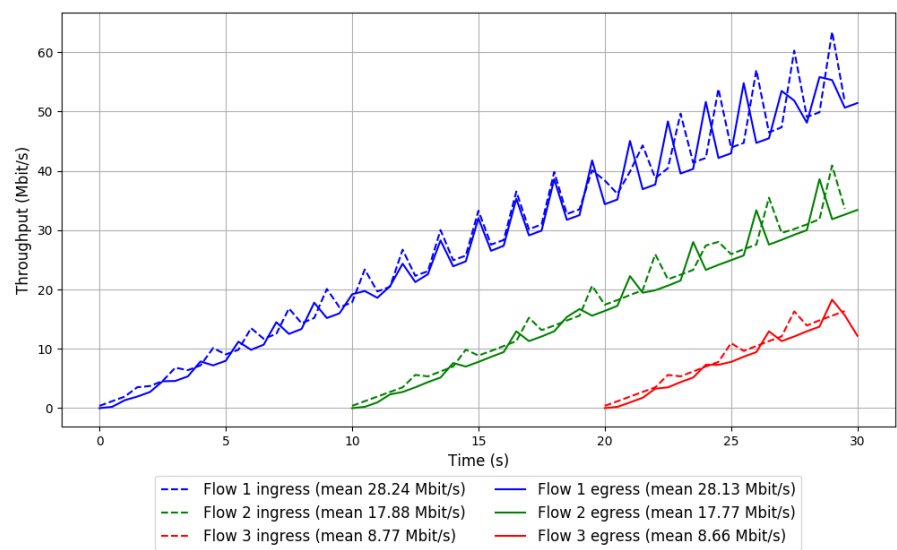Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-11-16 00:14:42
End at: 2018-11-16 00:15:12
Local clock offset: 0.259 ms
Remote clock offset: -0.665 ms


# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.76 Mbit/s
95th percentile per-packet one-way delay: 62.156 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 28.13 Mbit/s
95th percentile per-packet one-way delay: 59.523 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 17.77 Mbit/s
95th percentile per-packet one-way delay: 62.407 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 8.66 Mbit/s
95th percentile per-packet one-way delay: 63.102 ms
Loss rate: 2.41%
```

Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 28.24 Mbit/s)   Flow 1 egress (mean 28.13 Mbit/s)
Flow 2 ingress (mean 17.88 Mbit/s)   Flow 2 egress (mean 17.77 Mbit/s)
Flow 3 ingress (mean 8.77 Mbit/s)   Flow 3 egress (mean 8.66 Mbit/s)

Flow 1 (95th percentile 59.52 ms)   Flow 2 (95th percentile 62.41 ms)   Flow 3 (95th percentile 63.10 ms)

66

```
Run 2: Statistics of LEDBAT

Start at: 2018-11-16 00:48:06
End at: 2018-11-16 00:48:36
Local clock offset: 0.313 ms
Remote clock offset: 0.006 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.52 Mbit/s
95th percentile per-packet one-way delay: 61.987 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 26.70 Mbit/s
95th percentile per-packet one-way delay: 61.949 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 17.78 Mbit/s
95th percentile per-packet one-way delay: 62.158 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 9.26 Mbit/s
95th percentile per-packet one-way delay: 58.595 ms
Loss rate: 2.33%
```
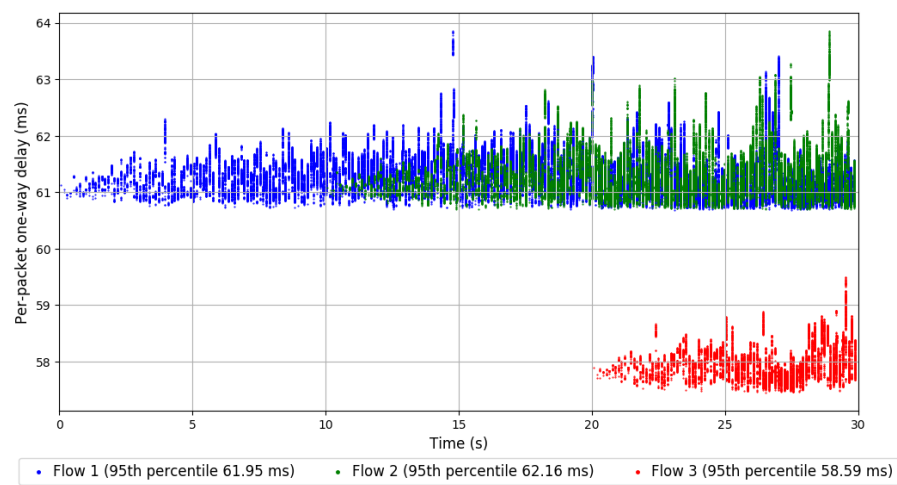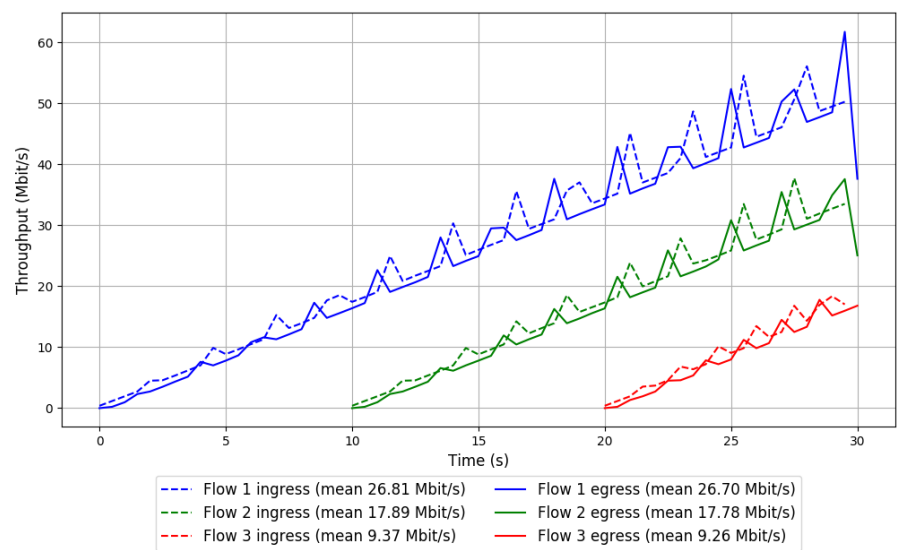
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-11-16 01:20:07
End at: 2018-11-16 01:20:37
Local clock offset: 0.278 ms
Remote clock offset: 0.452 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.17 Mbit/s
95th percentile per-packet one-way delay: 58.212 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 26.67 Mbit/s
95th percentile per-packet one-way delay: 58.332 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 18.83 Mbit/s
95th percentile per-packet one-way delay: 57.859 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.24 Mbit/s
95th percentile per-packet one-way delay: 57.717 ms
Loss rate: 2.33%
```
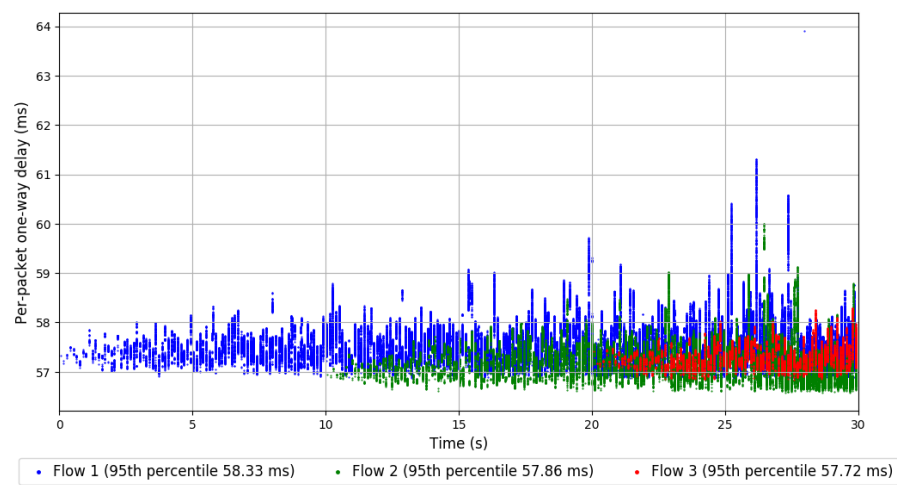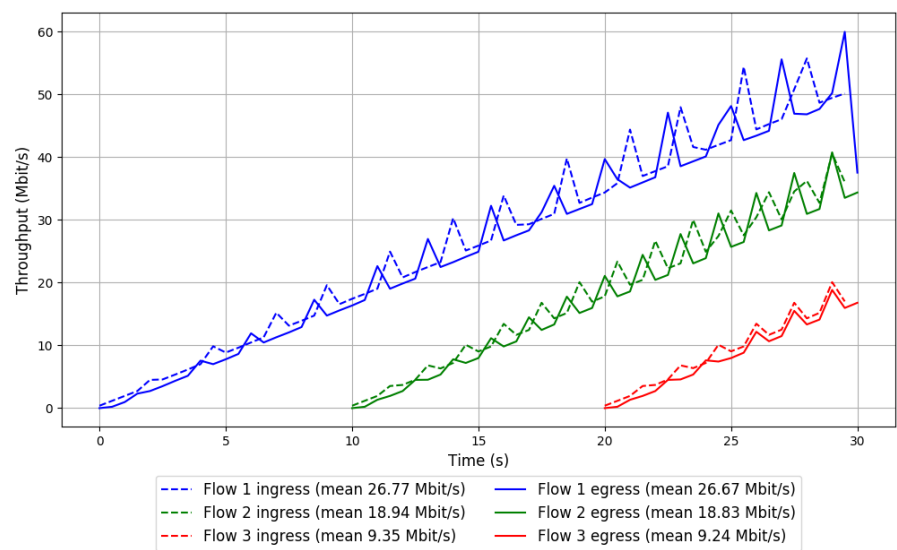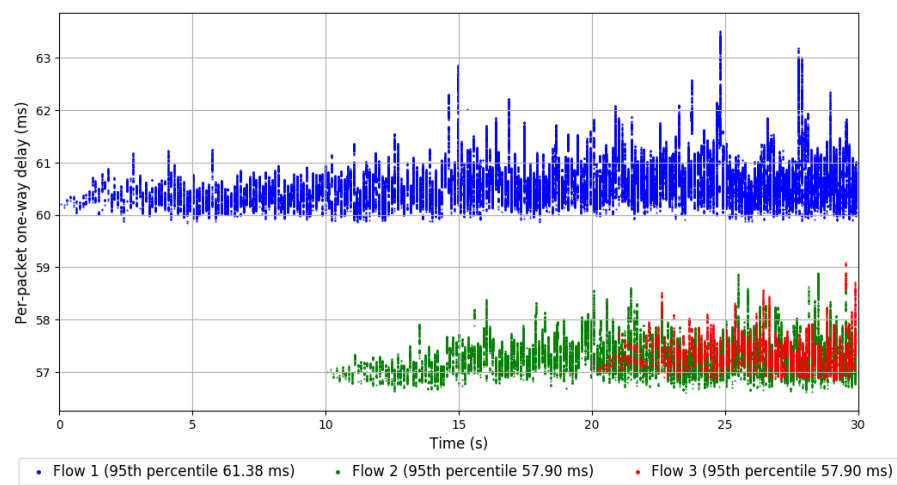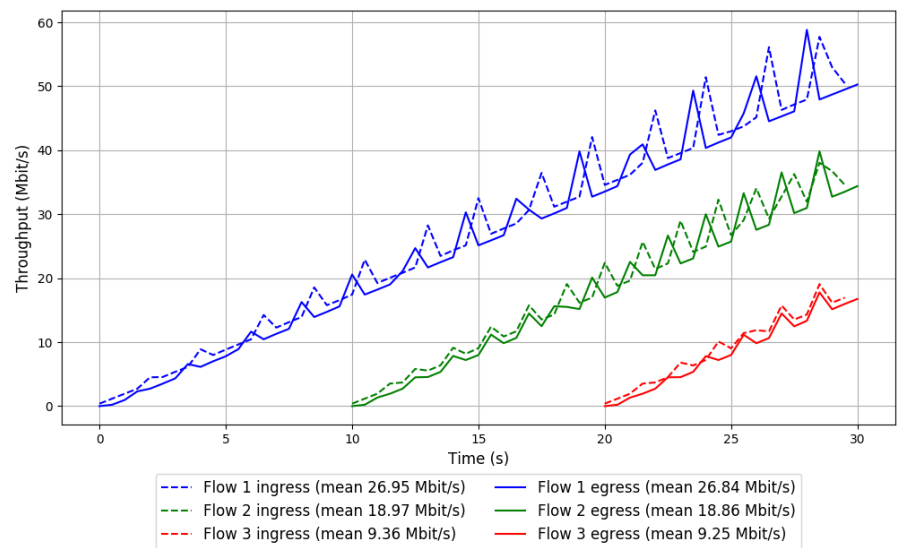
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-11-16 01:52:31
End at: 2018-11-16 01:53:01
Local clock offset: -0.481 ms
Remote clock offset: -0.361 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.40 Mbit/s
95th percentile per-packet one-way delay: 61.201 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 26.84 Mbit/s
95th percentile per-packet one-way delay: 61.383 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 57.901 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 57.895 ms
Loss rate: 2.32%
```

Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 26.95 Mbit/s) ---- Flow 1 egress (mean 26.84 Mbit/s)
Flow 2 ingress (mean 18.97 Mbit/s) ---- Flow 2 egress (mean 18.86 Mbit/s)
Flow 3 ingress (mean 9.36 Mbit/s) ---- Flow 3 egress (mean 9.25 Mbit/s)

Flow 1 (95th percentile 61.38 ms)   Flow 2 (95th percentile 57.90 ms)   Flow 3 (95th percentile 57.90 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-11-16 02:25:46
End at: 2018-11-16 02:26:16
Local clock offset: -0.126 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2018-11-16 04:04:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.13 Mbit/s
95th percentile per-packet one-way delay: 57.908 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 28.30 Mbit/s
95th percentile per-packet one-way delay: 57.774 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 17.80 Mbit/s
95th percentile per-packet one-way delay: 58.290 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 9.26 Mbit/s
95th percentile per-packet one-way delay: 57.645 ms
Loss rate: 2.33%
```
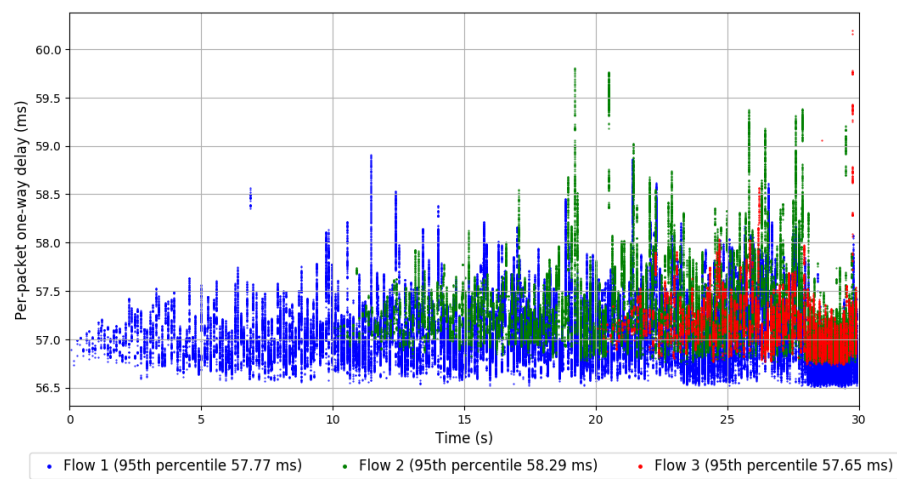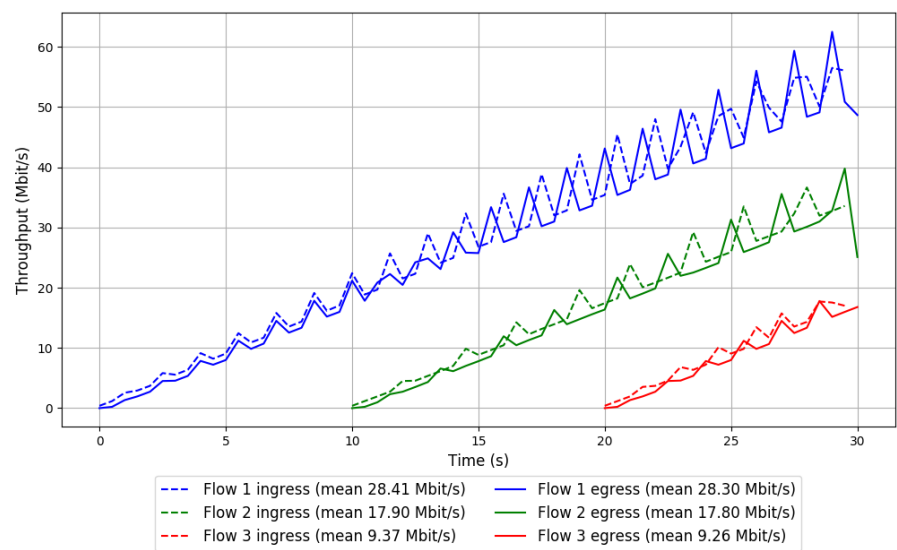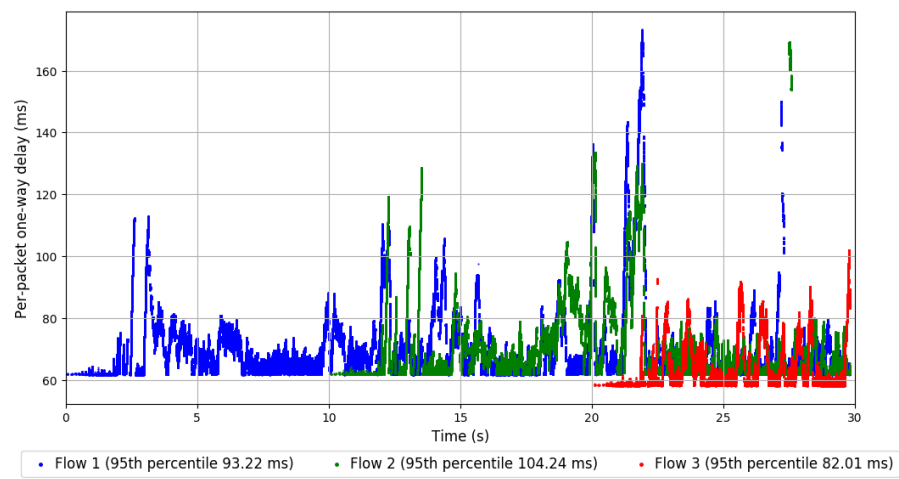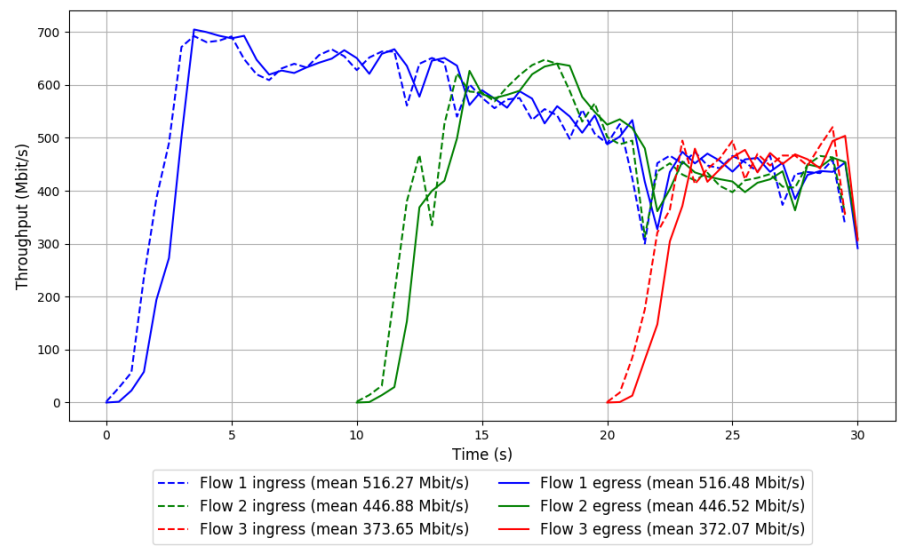
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-16 00:11:13
End at: 2018-11-16 00:11:43
Local clock offset: -0.145 ms
Remote clock offset: -1.393 ms


# Below is generated by plot.py at 2018-11-16 04:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 934.12 Mbit/s
95th percentile per-packet one-way delay: 93.633 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 516.48 Mbit/s
95th percentile per-packet one-way delay: 93.215 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 446.52 Mbit/s
95th percentile per-packet one-way delay: 104.237 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 372.07 Mbit/s
95th percentile per-packet one-way delay: 82.009 ms
Loss rate: 1.64%
```

Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-16 00:44:46
End at: 2018-11-16 00:45:16
Local clock offset: -0.116 ms
Remote clock offset: 0.377 ms

# Below is generated by plot.py at 2018-11-16 04:18:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 954.63 Mbit/s
95th percentile per-packet one-way delay: 79.490 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 518.89 Mbit/s
95th percentile per-packet one-way delay: 80.296 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 496.22 Mbit/s
95th percentile per-packet one-way delay: 79.211 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 329.27 Mbit/s
95th percentile per-packet one-way delay: 77.634 ms
Loss rate: 1.89%
```
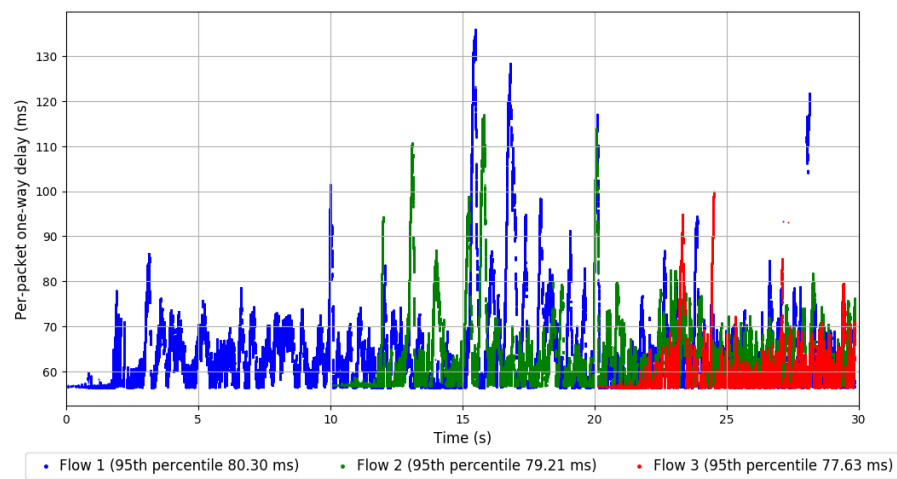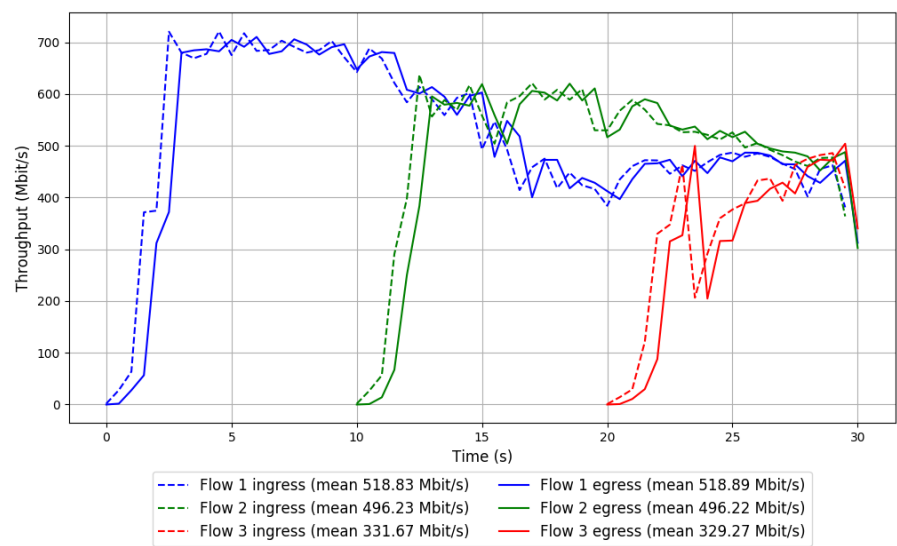
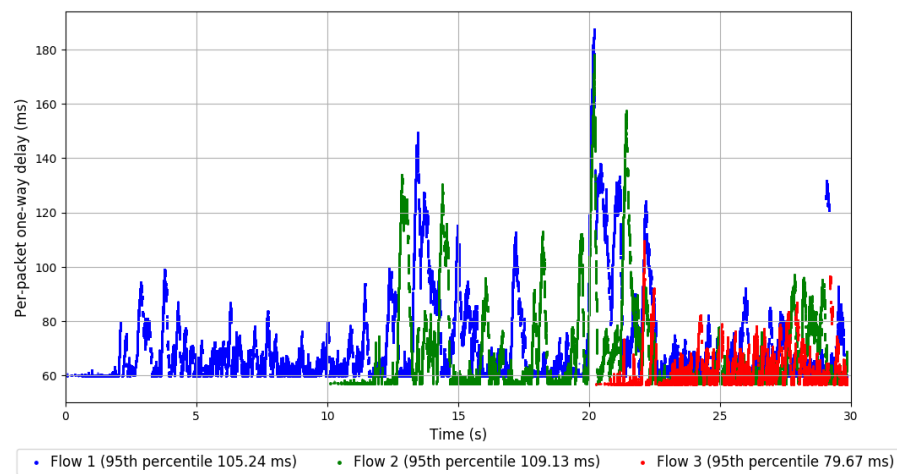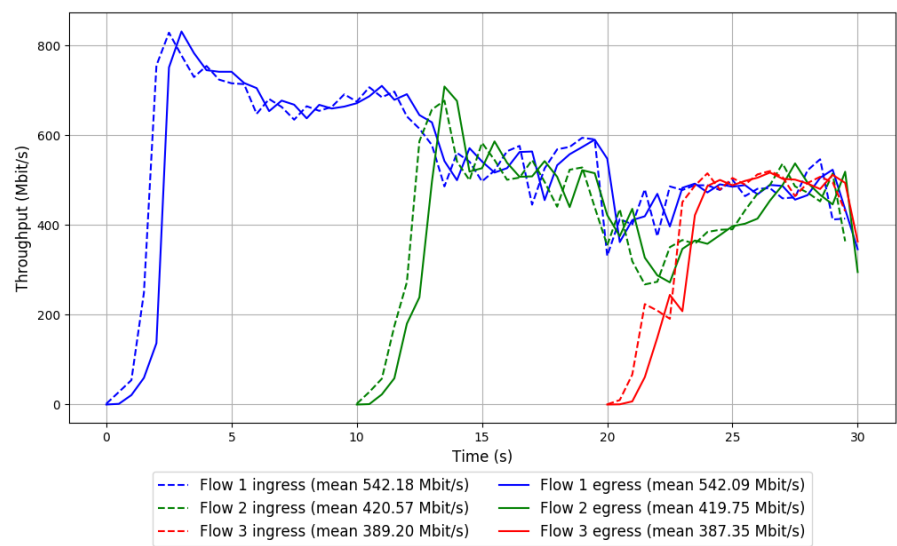Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-16 01:16:39
End at: 2018-11-16 01:17:09
Local clock offset: -0.29 ms
Remote clock offset: -0.124 ms

# Below is generated by plot.py at 2018-11-16 04:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 945.06 Mbit/s
95th percentile per-packet one-way delay: 103.044 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 542.09 Mbit/s
95th percentile per-packet one-way delay: 105.243 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 419.75 Mbit/s
95th percentile per-packet one-way delay: 109.129 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 387.35 Mbit/s
95th percentile per-packet one-way delay: 79.668 ms
Loss rate: 1.67%
```

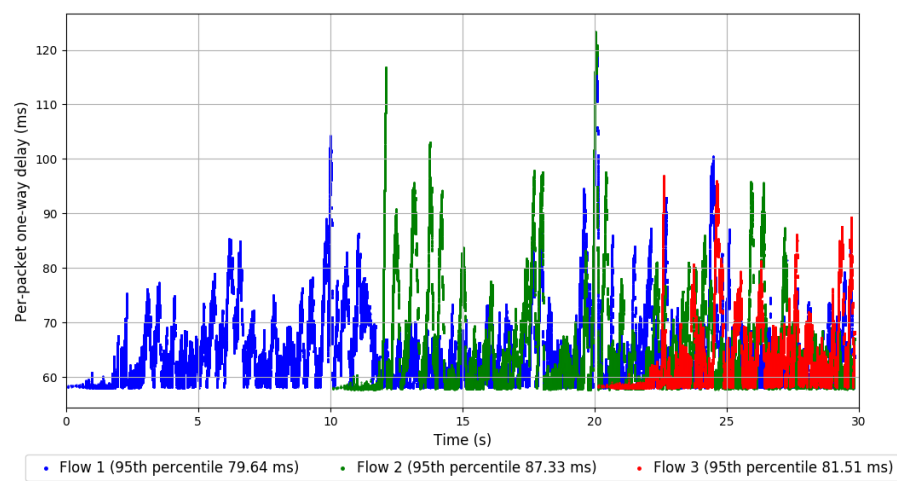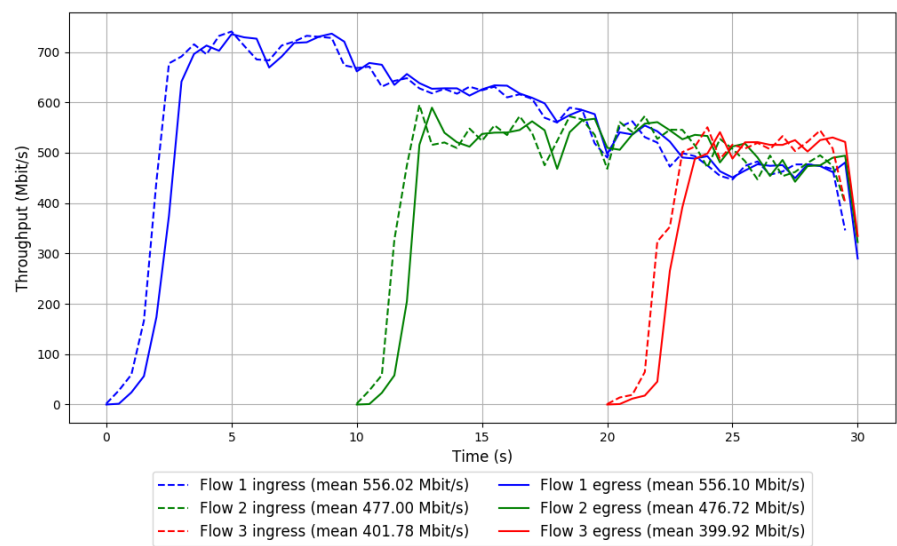Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-16 01:48:47
End at: 2018-11-16 01:49:17
Local clock offset: -0.25 ms
Remote clock offset: -0.993 ms

# Below is generated by plot.py at 2018-11-16 04:20:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1002.51 Mbit/s
95th percentile per-packet one-way delay: 82.223 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 556.10 Mbit/s
95th percentile per-packet one-way delay: 79.641 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 476.72 Mbit/s
95th percentile per-packet one-way delay: 87.325 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 399.92 Mbit/s
95th percentile per-packet one-way delay: 81.506 ms
Loss rate: 1.64%
```

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-16 02:21:55
End at: 2018-11-16 02:22:25
Local clock offset: -0.334 ms
Remote clock offset: 1.072 ms


# Below is generated by plot.py at 2018-11-16 04:21:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1008.42 Mbit/s
95th percentile per-packet one-way delay: 79.038 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 561.33 Mbit/s
95th percentile per-packet one-way delay: 79.247 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 486.87 Mbit/s
95th percentile per-packet one-way delay: 81.304 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 381.21 Mbit/s
95th percentile per-packet one-way delay: 74.936 ms
Loss rate: 1.72%
```
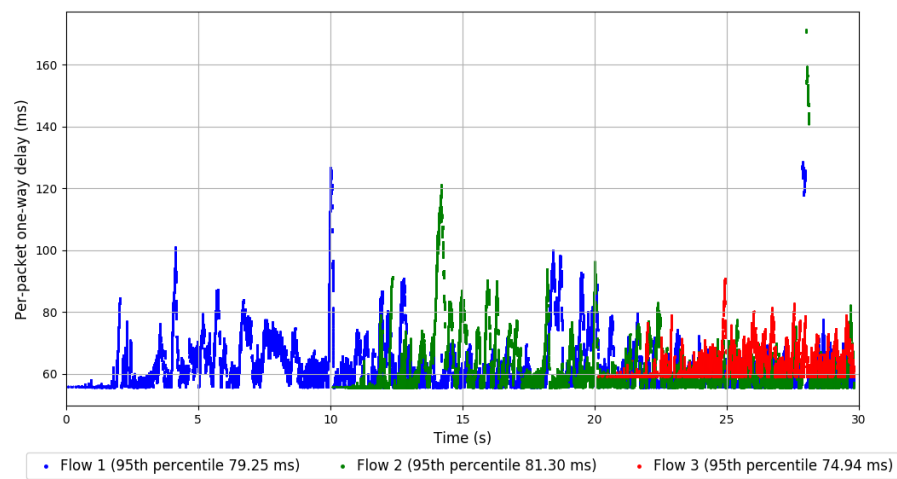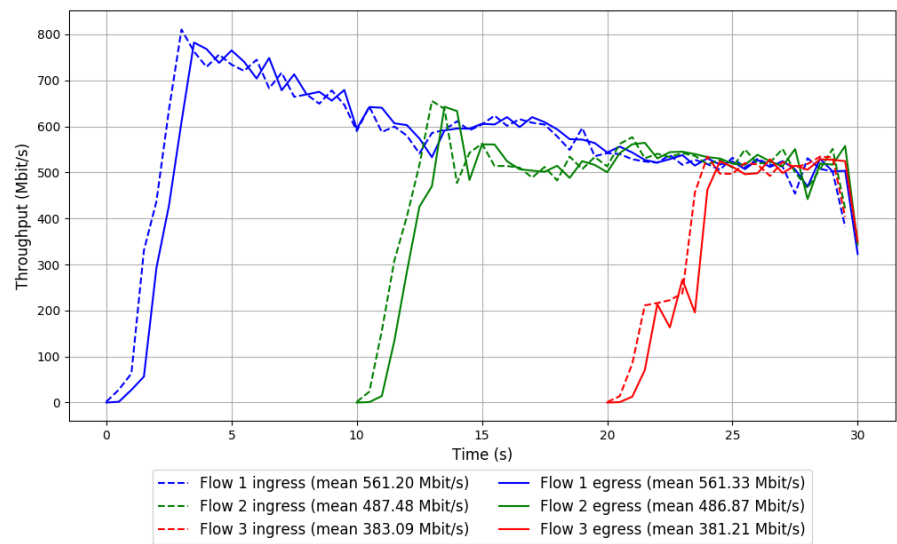
Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 561.20 Mbit/s)   Flow 1 egress (mean 561.33 Mbit/s)
Flow 2 ingress (mean 487.48 Mbit/s)   Flow 2 egress (mean 486.87 Mbit/s)
Flow 3 ingress (mean 383.09 Mbit/s)   Flow 3 egress (mean 381.21 Mbit/s)

Flow 1 (95th percentile 79.25 ms)   Flow 2 (95th percentile 81.30 ms)   Flow 3 (95th percentile 74.94 ms)
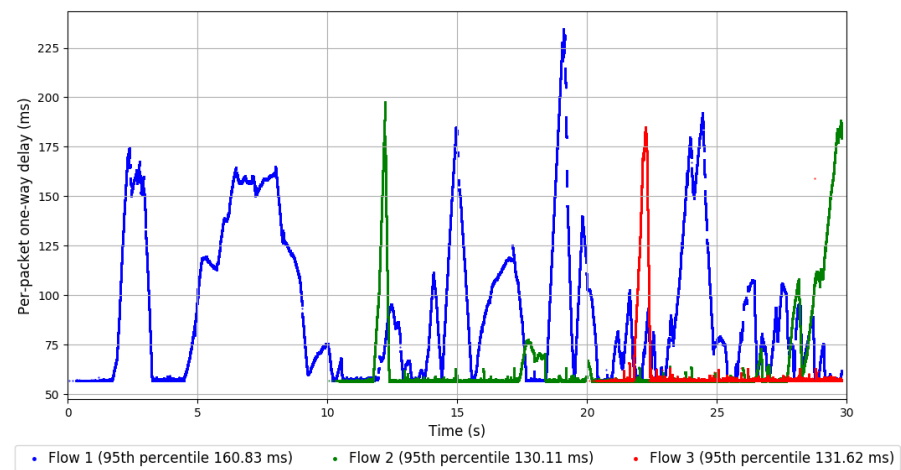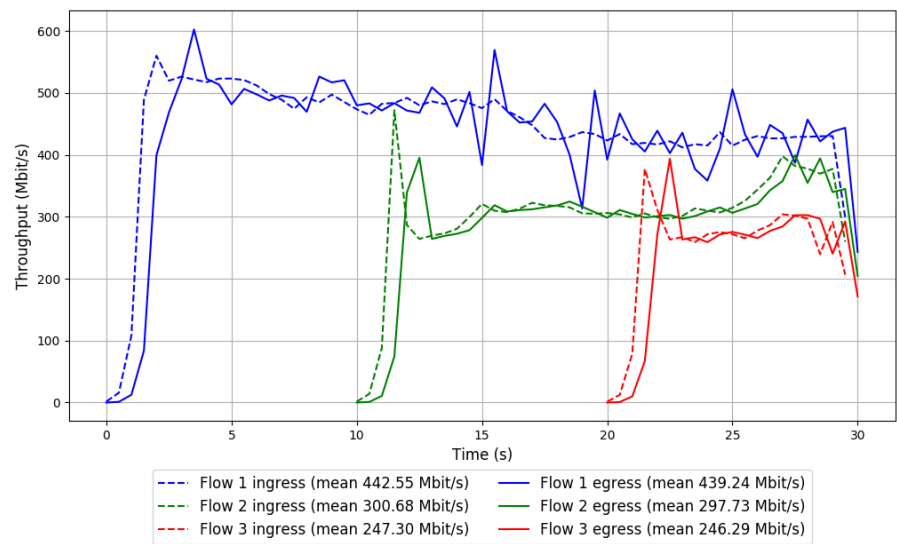
```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 23:57:24
End at: 2018-11-15 23:57:54
Local clock offset: -0.162 ms
Remote clock offset: 0.223 ms


# Below is generated by plot.py at 2018-11-16 04:31:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 717.18 Mbit/s
95th percentile per-packet one-way delay: 159.770 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 439.24 Mbit/s
95th percentile per-packet one-way delay: 160.833 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 297.73 Mbit/s
95th percentile per-packet one-way delay: 130.112 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 246.29 Mbit/s
95th percentile per-packet one-way delay: 131.625 ms
Loss rate: 1.57%
```

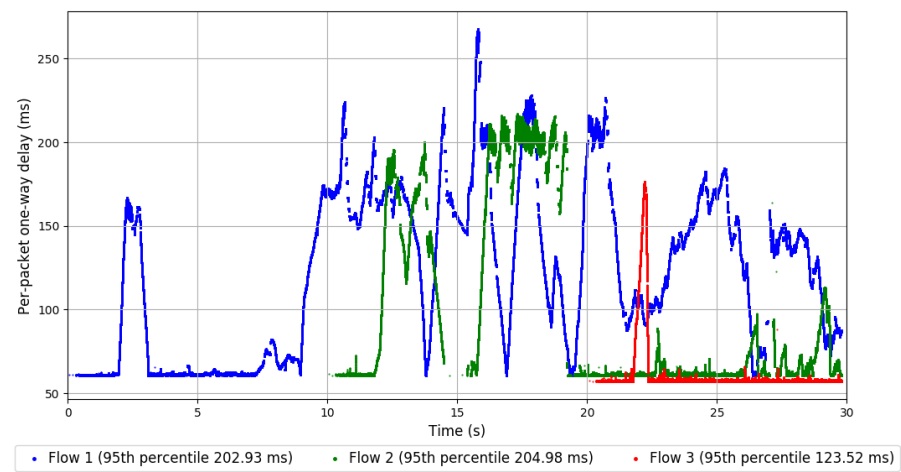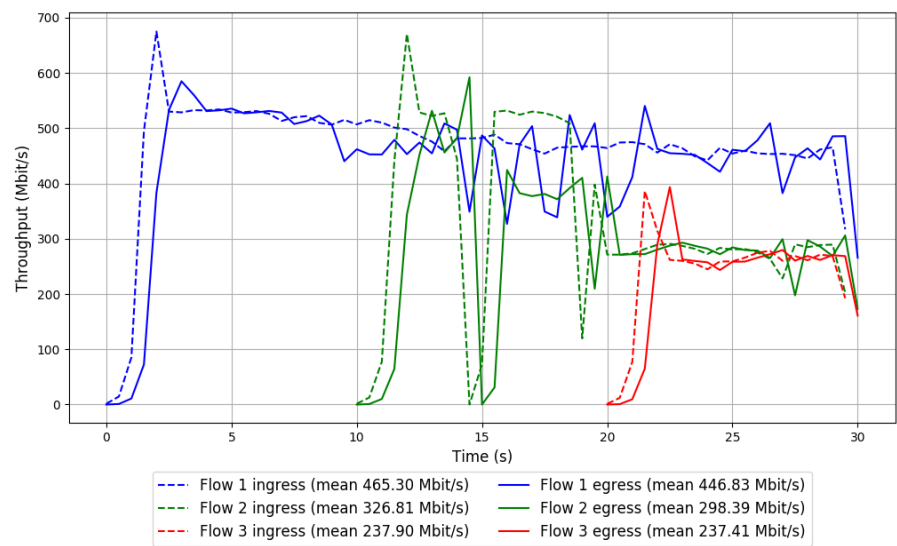Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-16 00:30:29
End at: 2018-11-16 00:30:59
Local clock offset: -0.361 ms
Remote clock offset: -0.573 ms


# Below is generated by plot.py at 2018-11-16 04:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 722.28 Mbit/s
95th percentile per-packet one-way delay: 202.860 ms
Loss rate: 5.44%
-- Flow 1:
Average throughput: 446.83 Mbit/s
95th percentile per-packet one-way delay: 202.933 ms
Loss rate: 4.35%
-- Flow 2:
Average throughput: 298.39 Mbit/s
95th percentile per-packet one-way delay: 204.979 ms
Loss rate: 9.24%
-- Flow 3:
Average throughput: 237.41 Mbit/s
95th percentile per-packet one-way delay: 123.523 ms
Loss rate: 1.39%
```

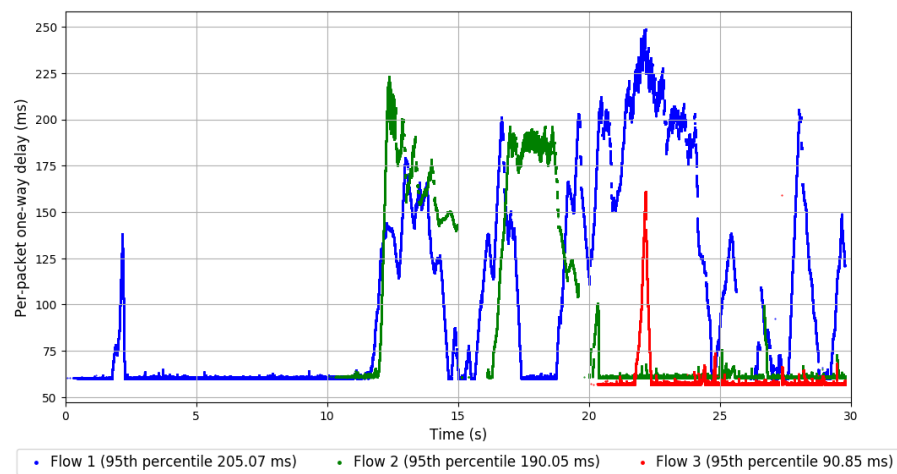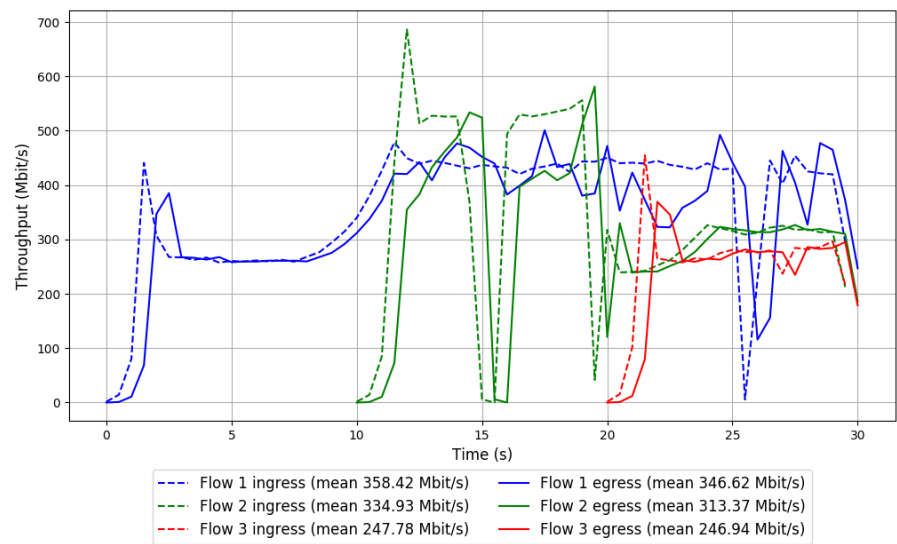Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-16 01:03:20
End at: 2018-11-16 01:03:50
Local clock offset: -0.373 ms
Remote clock offset: -0.488 ms


# Below is generated by plot.py at 2018-11-16 04:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 635.38 Mbit/s
95th percentile per-packet one-way delay: 198.329 ms
Loss rate: 4.52%
-- Flow 1:
Average throughput: 346.62 Mbit/s
95th percentile per-packet one-way delay: 205.069 ms
Loss rate: 3.68%
-- Flow 2:
Average throughput: 313.37 Mbit/s
95th percentile per-packet one-way delay: 190.054 ms
Loss rate: 7.00%
-- Flow 3:
Average throughput: 246.94 Mbit/s
95th percentile per-packet one-way delay: 90.853 ms
Loss rate: 1.50%
```

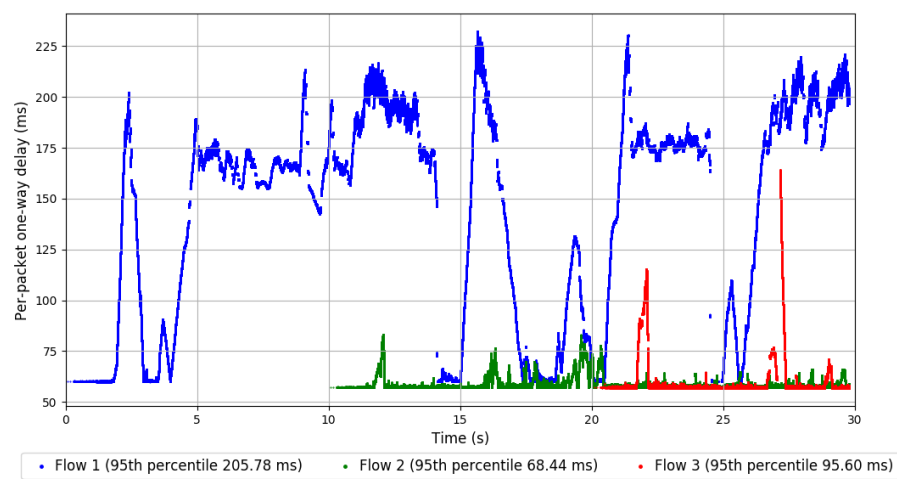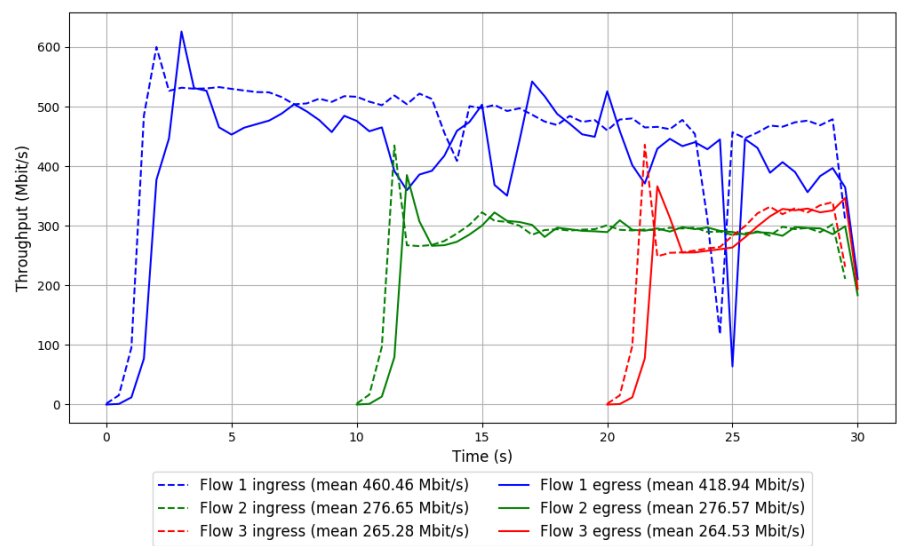Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-16 01:35:14
End at: 2018-11-16 01:35:44
Local clock offset: -0.249 ms
Remote clock offset: -0.288 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 688.74 Mbit/s
95th percentile per-packet one-way delay: 200.636 ms
Loss rate: 6.24%
-- Flow 1:
Average throughput: 418.94 Mbit/s
95th percentile per-packet one-way delay: 205.783 ms
Loss rate: 9.39%
-- Flow 2:
Average throughput: 276.57 Mbit/s
95th percentile per-packet one-way delay: 68.436 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 264.53 Mbit/s
95th percentile per-packet one-way delay: 95.604 ms
Loss rate: 1.46%
```

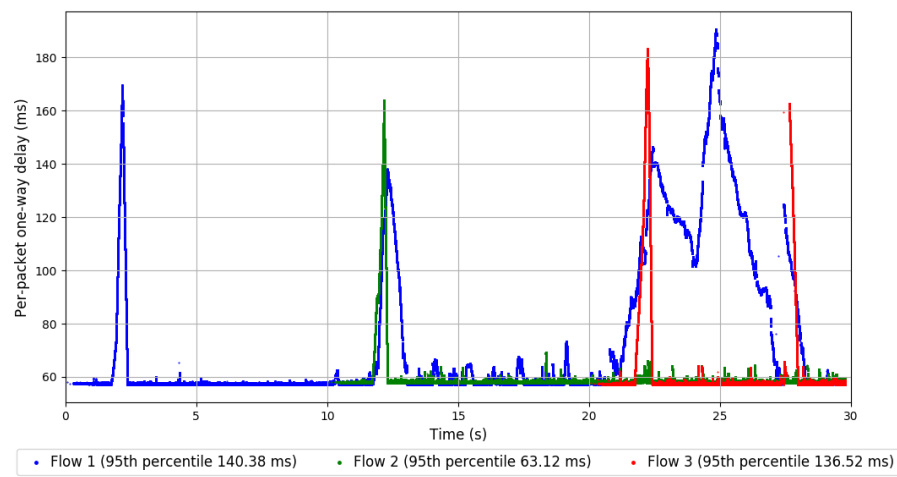Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-16 02:07:38
End at: 2018-11-16 02:08:08
Local clock offset: 0.138 ms
Remote clock offset: -0.228 ms

# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 648.00 Mbit/s
95th percentile per-packet one-way delay: 133.888 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 364.38 Mbit/s
95th percentile per-packet one-way delay: 140.380 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 300.34 Mbit/s
95th percentile per-packet one-way delay: 63.121 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 258.29 Mbit/s
95th percentile per-packet one-way delay: 136.523 ms
Loss rate: 1.44%
```
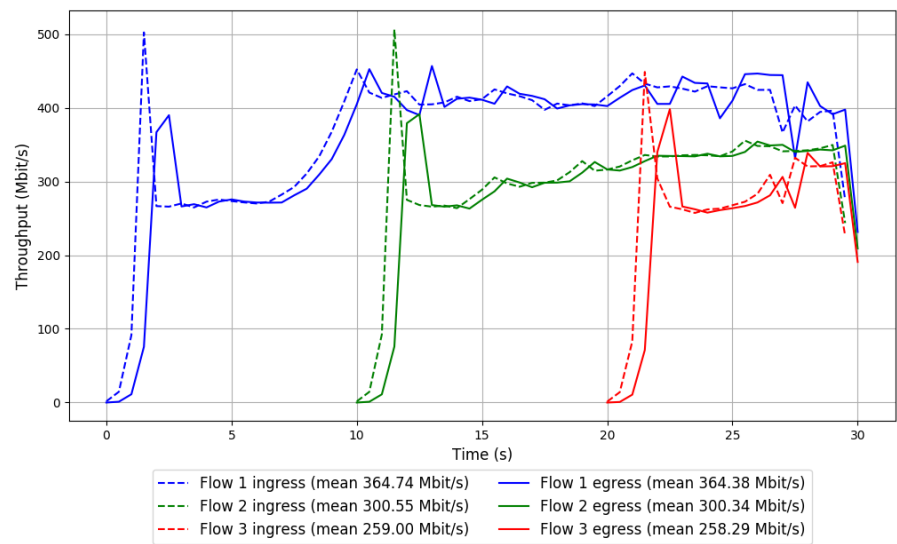
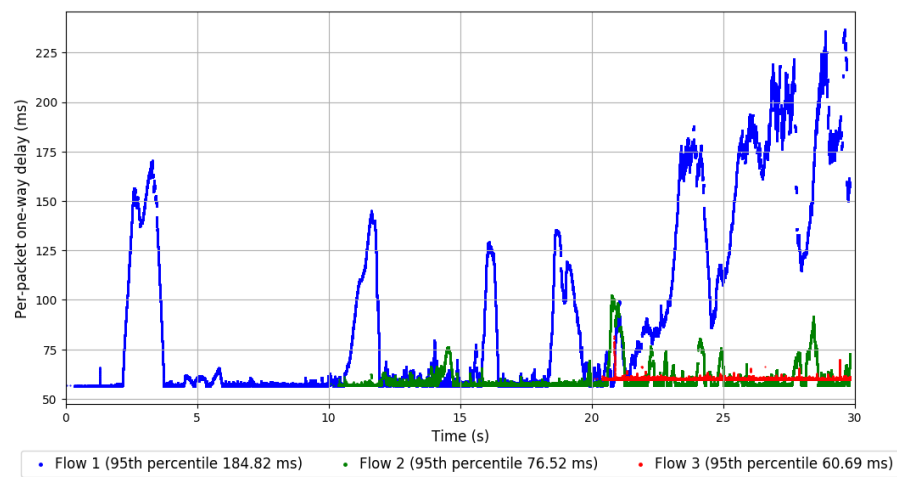Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-16 00:07:12
End at: 2018-11-16 00:07:42
Local clock offset: -0.184 ms
Remote clock offset: 0.073 ms


# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.24 Mbit/s
95th percentile per-packet one-way delay: 176.529 ms
Loss rate: 3.77%
-- Flow 1:
Average throughput: 321.09 Mbit/s
95th percentile per-packet one-way delay: 184.823 ms
Loss rate: 5.46%
-- Flow 2:
Average throughput: 267.81 Mbit/s
95th percentile per-packet one-way delay: 76.519 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 59.51 Mbit/s
95th percentile per-packet one-way delay: 60.689 ms
Loss rate: 1.84%
```

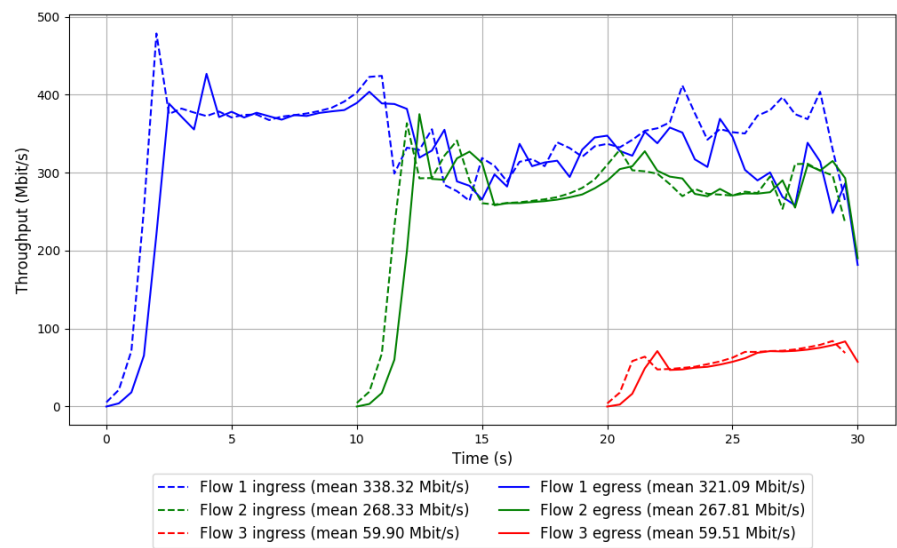Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-16 00:40:42
End at: 2018-11-16 00:41:12
Local clock offset: -0.145 ms
Remote clock offset: -0.153 ms


# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.99 Mbit/s
95th percentile per-packet one-way delay: 178.350 ms
Loss rate: 3.08%
-- Flow 1:
Average throughput: 277.77 Mbit/s
95th percentile per-packet one-way delay: 199.999 ms
Loss rate: 4.17%
-- Flow 2:
Average throughput: 271.99 Mbit/s
95th percentile per-packet one-way delay: 176.475 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 32.73 Mbit/s
95th percentile per-packet one-way delay: 57.456 ms
Loss rate: 1.51%
```
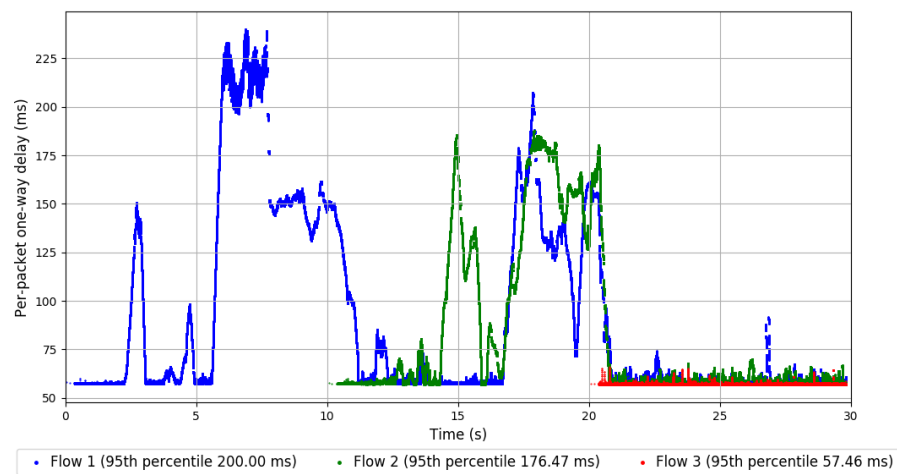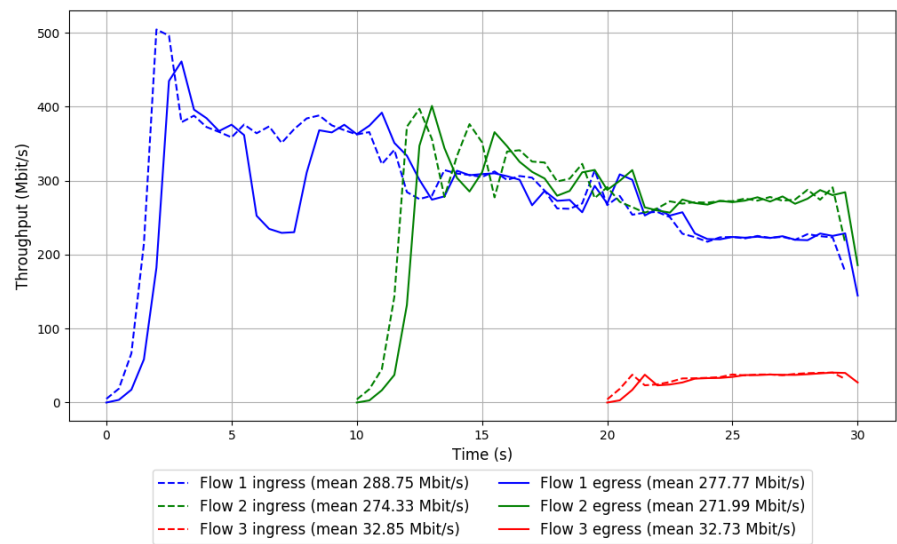
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 288.75 Mbit/s) --- Flow 1 egress (mean 277.77 Mbit/s)
Flow 2 ingress (mean 274.33 Mbit/s) --- Flow 2 egress (mean 271.99 Mbit/s)
Flow 3 ingress (mean 32.85 Mbit/s) --- Flow 3 egress (mean 32.73 Mbit/s)

Flow 1 (95th percentile 200.00 ms)   Flow 2 (95th percentile 176.47 ms)   Flow 3 (95th percentile 57.46 ms)
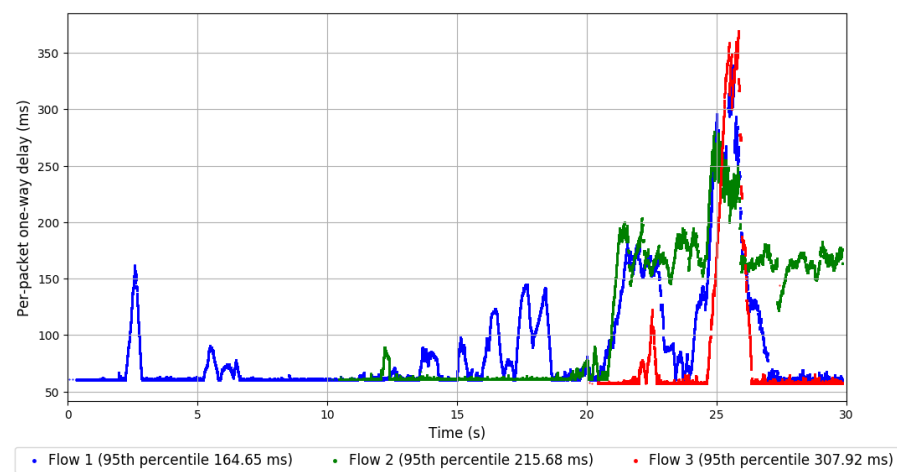
```
Run 3: Statistics of PCC-Expr

Start at: 2018-11-16 01:12:33
End at: 2018-11-16 01:13:03
Local clock offset: 0.281 ms
Remote clock offset: -0.184 ms


# Below is generated by plot.py at 2018-11-16 04:47:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 524.88 Mbit/s
95th percentile per-packet one-way delay: 187.463 ms
Loss rate: 6.34%
-- Flow 1:
Average throughput: 303.55 Mbit/s
95th percentile per-packet one-way delay: 164.652 ms
Loss rate: 2.73%
-- Flow 2:
Average throughput: 250.71 Mbit/s
95th percentile per-packet one-way delay: 215.681 ms
Loss rate: 12.74%
-- Flow 3:
Average throughput: 168.50 Mbit/s
95th percentile per-packet one-way delay: 307.923 ms
Loss rate: 4.73%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 310.85 Mbit/s)   Flow 1 egress (mean 303.55 Mbit/s)
Flow 2 ingress (mean 285.57 Mbit/s)   Flow 2 egress (mean 250.71 Mbit/s)
Flow 3 ingress (mean 174.78 Mbit/s)   Flow 3 egress (mean 168.50 Mbit/s)

Flow 1 (95th percentile 164.65 ms)   Flow 2 (95th percentile 215.68 ms)   Flow 3 (95th percentile 307.92 ms)
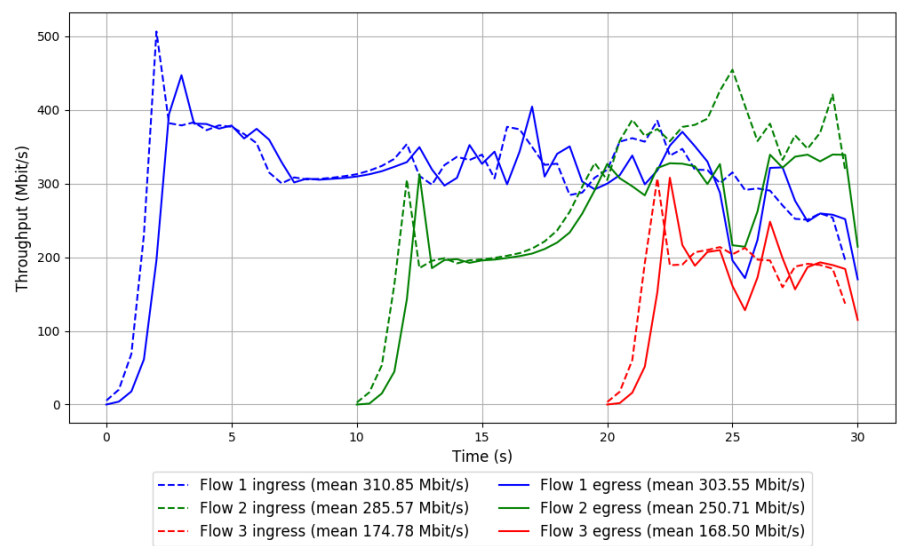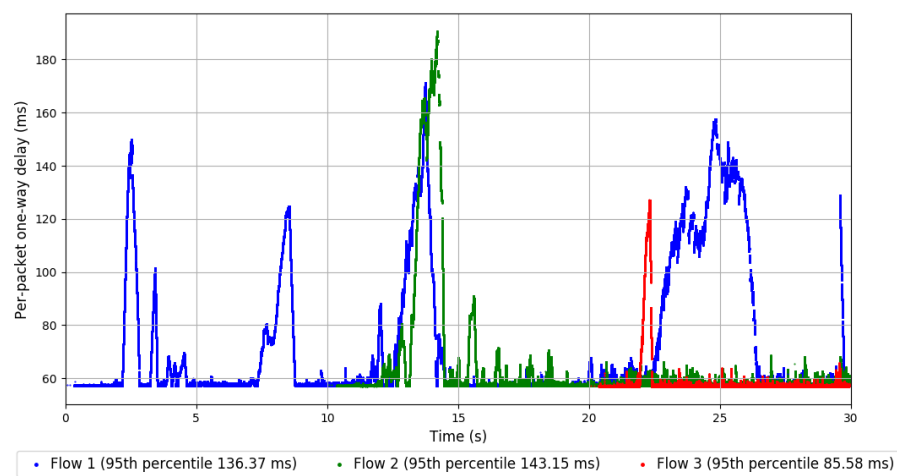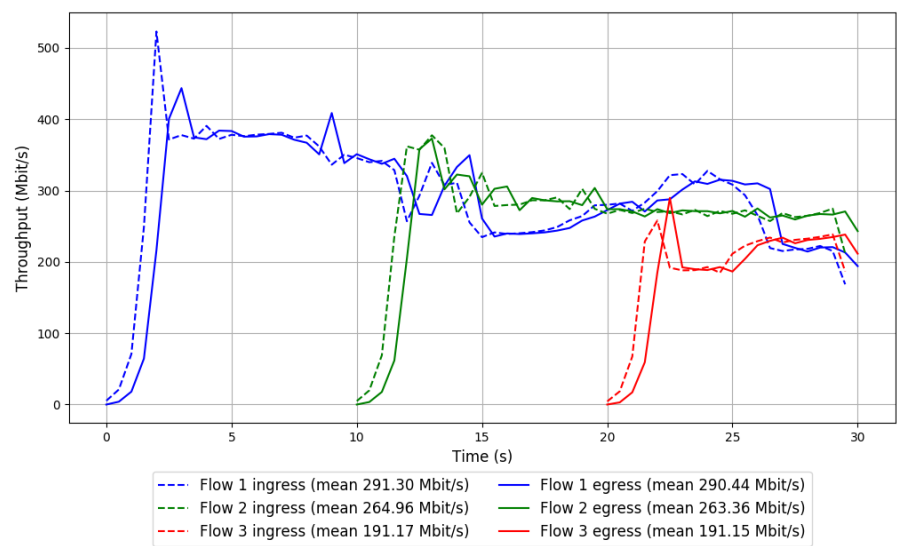
```
Run 4: Statistics of PCC-Expr

Start at: 2018-11-16 01:44:22
End at: 2018-11-16 01:44:52
Local clock offset: -0.464 ms
Remote clock offset: -0.675 ms


# Below is generated by plot.py at 2018-11-16 04:52:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 528.62 Mbit/s
95th percentile per-packet one-way delay: 134.288 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 290.44 Mbit/s
95th percentile per-packet one-way delay: 136.369 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 263.36 Mbit/s
95th percentile per-packet one-way delay: 143.151 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 191.15 Mbit/s
95th percentile per-packet one-way delay: 85.585 ms
Loss rate: 0.07%
```

Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-11-16 02:17:07
End at: 2018-11-16 02:17:37
Local clock offset: -0.101 ms
Remote clock offset: 0.063 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 547.42 Mbit/s
95th percentile per-packet one-way delay: 177.167 ms
Loss rate: 4.78%
-- Flow 1:
Average throughput: 322.91 Mbit/s
95th percentile per-packet one-way delay: 188.003 ms
Loss rate: 6.93%
-- Flow 2:
Average throughput: 260.67 Mbit/s
95th percentile per-packet one-way delay: 164.977 ms
Loss rate: 1.54%
-- Flow 3:
Average throughput: 157.33 Mbit/s
95th percentile per-packet one-way delay: 80.972 ms
Loss rate: 1.43%
```
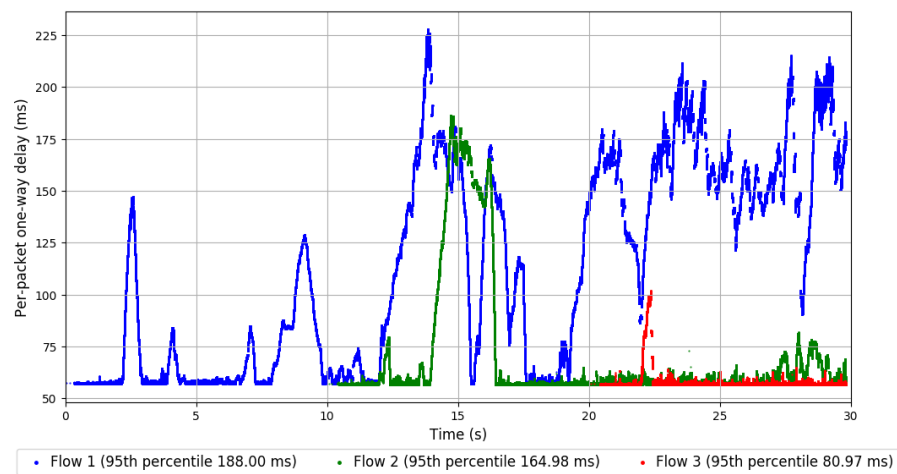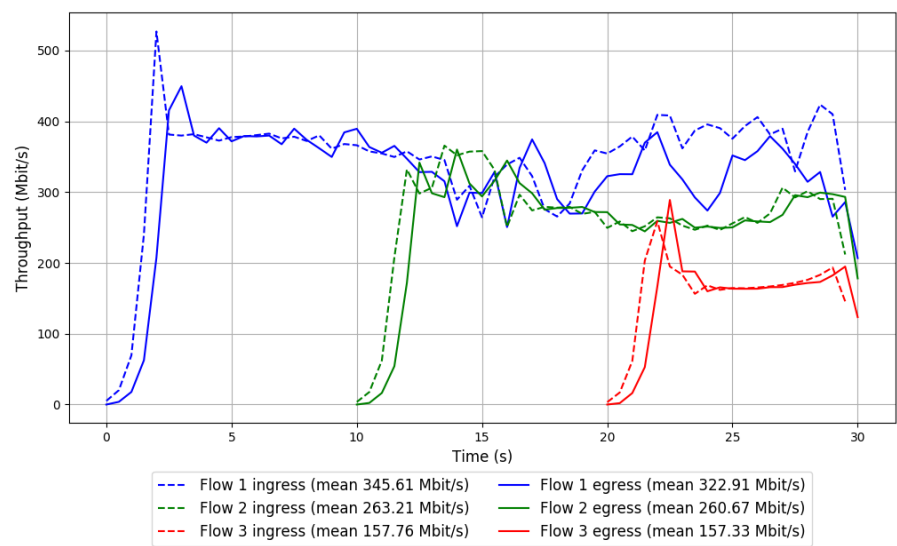
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-16 00:13:22
End at: 2018-11-16 00:13:52
Local clock offset: -0.124 ms
Remote clock offset: 0.58 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.42 Mbit/s
95th percentile per-packet one-way delay: 59.621 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 69.91 Mbit/s
95th percentile per-packet one-way delay: 56.431 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 59.749 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 29.98 Mbit/s
95th percentile per-packet one-way delay: 56.873 ms
Loss rate: 0.22%
```
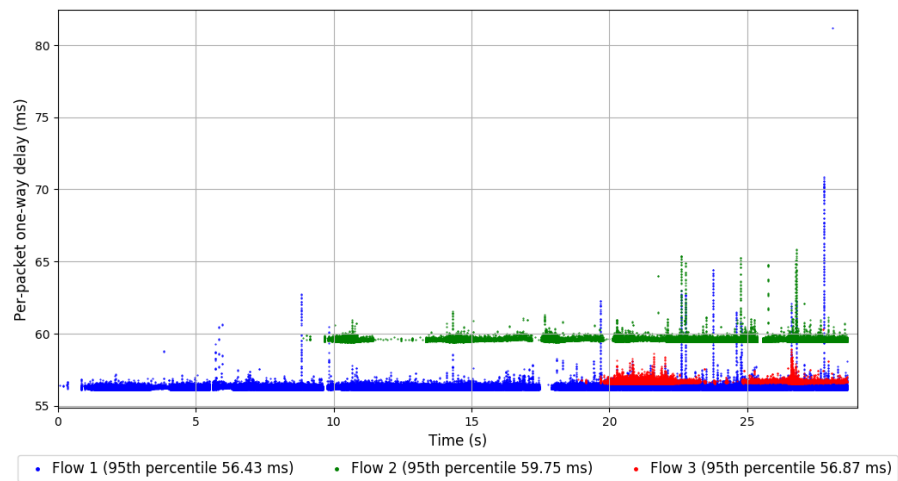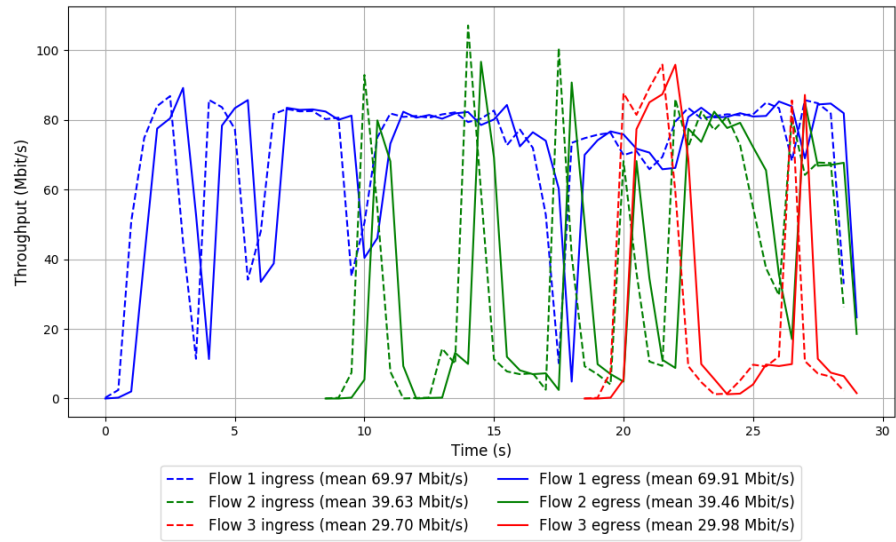
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-16 00:46:48
End at: 2018-11-16 00:47:18
Local clock offset: -0.134 ms
Remote clock offset: 1.23 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.66 Mbit/s
95th percentile per-packet one-way delay: 56.100 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 49.54 Mbit/s
95th percentile per-packet one-way delay: 55.861 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 44.65 Mbit/s
95th percentile per-packet one-way delay: 56.180 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 19.83 Mbit/s
95th percentile per-packet one-way delay: 55.952 ms
Loss rate: 3.56%
```

Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 49.64 Mbit/s)   Flow 1 egress (mean 49.54 Mbit/s)
Flow 2 ingress (mean 44.84 Mbit/s)   Flow 2 egress (mean 44.65 Mbit/s)
Flow 3 ingress (mean 20.32 Mbit/s)   Flow 3 egress (mean 19.83 Mbit/s)

Flow 1 (95th percentile 55.86 ms)   Flow 2 (95th percentile 56.18 ms)   Flow 3 (95th percentile 55.95 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-16 01:18:48
End at: 2018-11-16 01:19:18
Local clock offset: 0.321 ms
Remote clock offset: -0.551 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.59 Mbit/s
95th percentile per-packet one-way delay: 61.465 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 56.89 Mbit/s
95th percentile per-packet one-way delay: 61.519 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 31.92 Mbit/s
95th percentile per-packet one-way delay: 58.182 ms
Loss rate: 1.91%
-- Flow 3:
Average throughput: 19.88 Mbit/s
95th percentile per-packet one-way delay: 57.820 ms
Loss rate: 0.38%
```
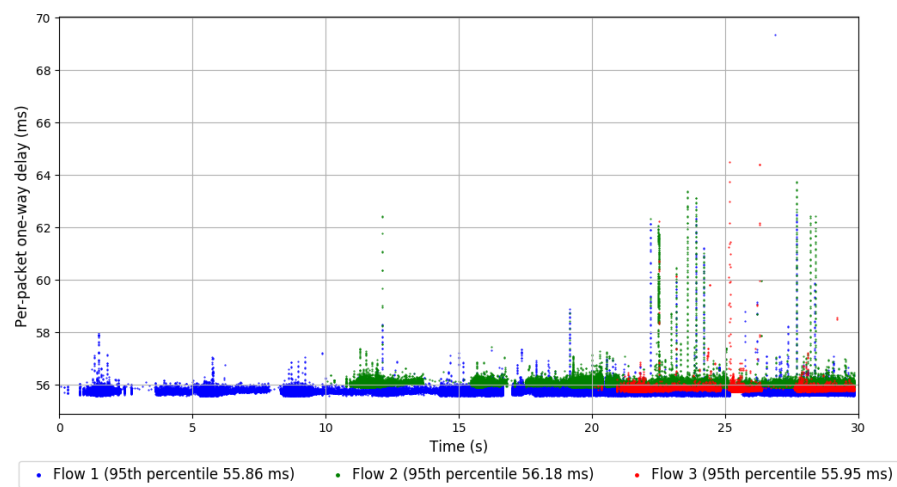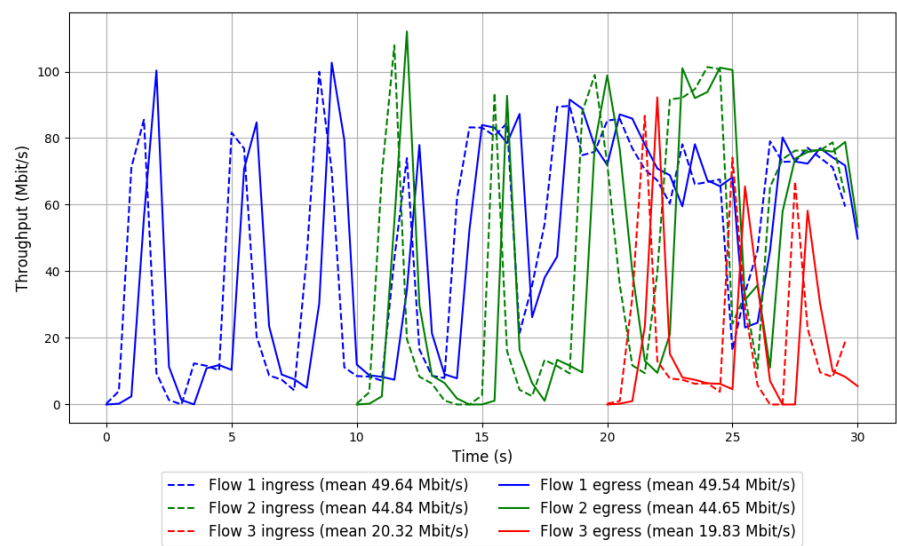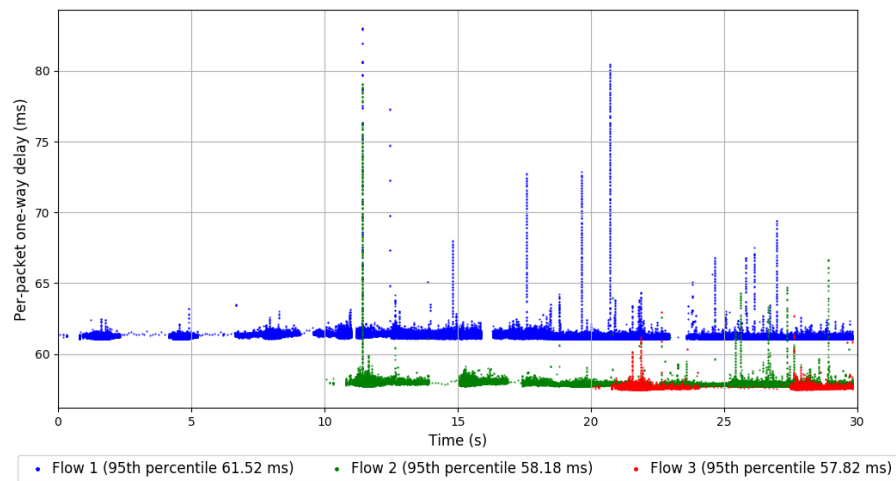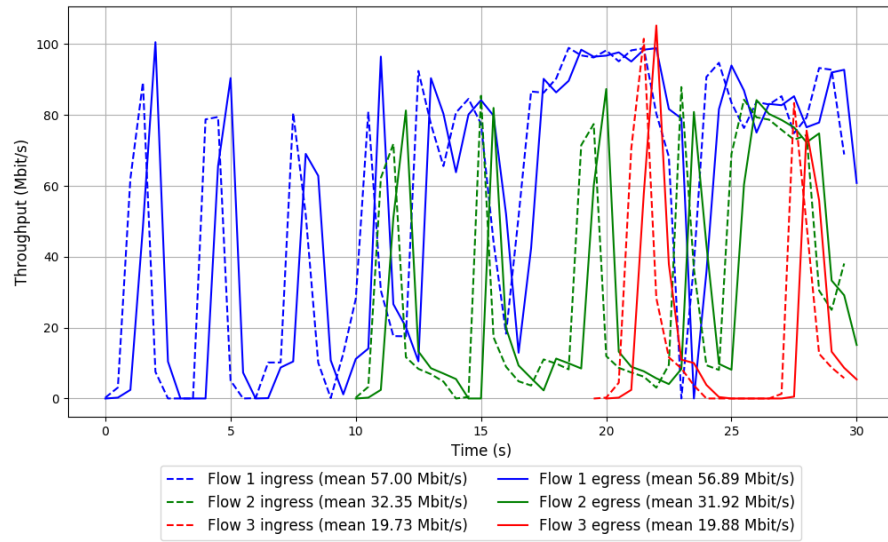
Run 3: Report of QUIC Cubic — Data Link

Legend (throughput plot):
- Flow 1 ingress (mean 57.00 Mbit/s)
- Flow 1 egress (mean 56.89 Mbit/s)
- Flow 2 ingress (mean 32.35 Mbit/s)
- Flow 2 egress (mean 31.92 Mbit/s)
- Flow 3 ingress (mean 19.73 Mbit/s)
- Flow 3 egress (mean 19.88 Mbit/s)

Legend (delay plot):
- Flow 1 (95th percentile 61.52 ms)
- Flow 2 (95th percentile 58.18 ms)
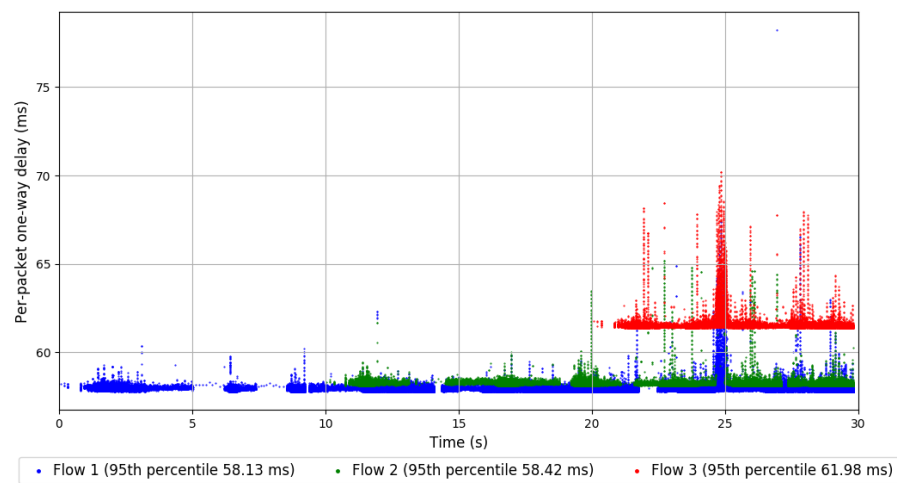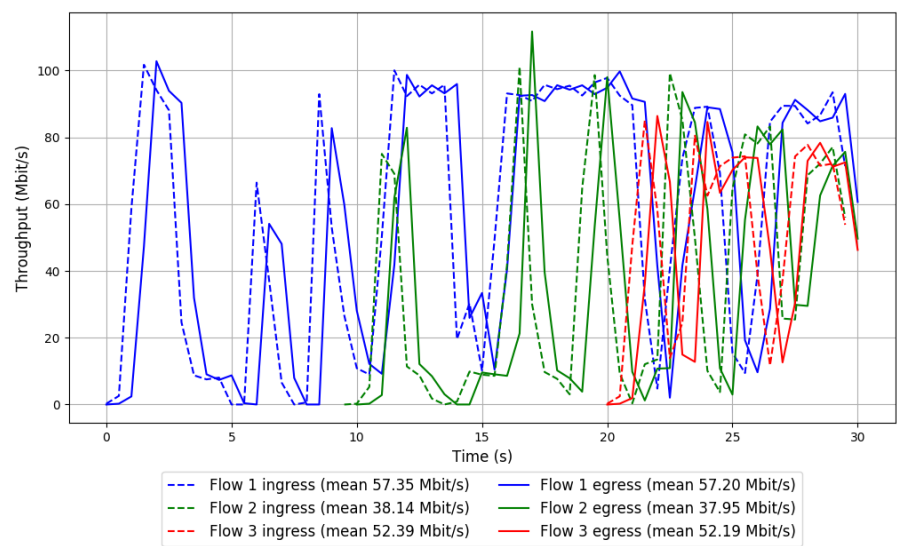- Flow 3 (95th percentile 57.82 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-16 01:51:12
End at: 2018-11-16 01:51:42
Local clock offset: -0.112 ms
Remote clock offset: -0.969 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.47 Mbit/s
95th percentile per-packet one-way delay: 61.515 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 57.20 Mbit/s
95th percentile per-packet one-way delay: 58.128 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 37.95 Mbit/s
95th percentile per-packet one-way delay: 58.424 ms
Loss rate: 1.06%
-- Flow 3:
Average throughput: 52.19 Mbit/s
95th percentile per-packet one-way delay: 61.985 ms
Loss rate: 1.57%
```

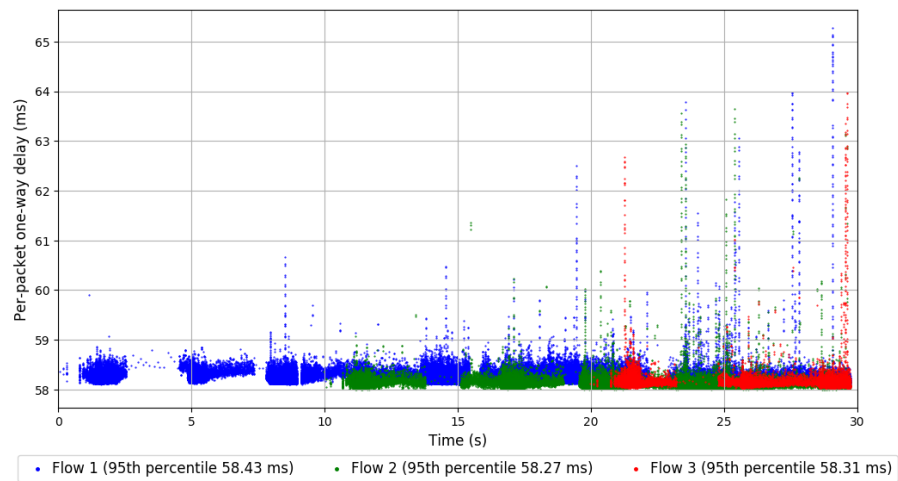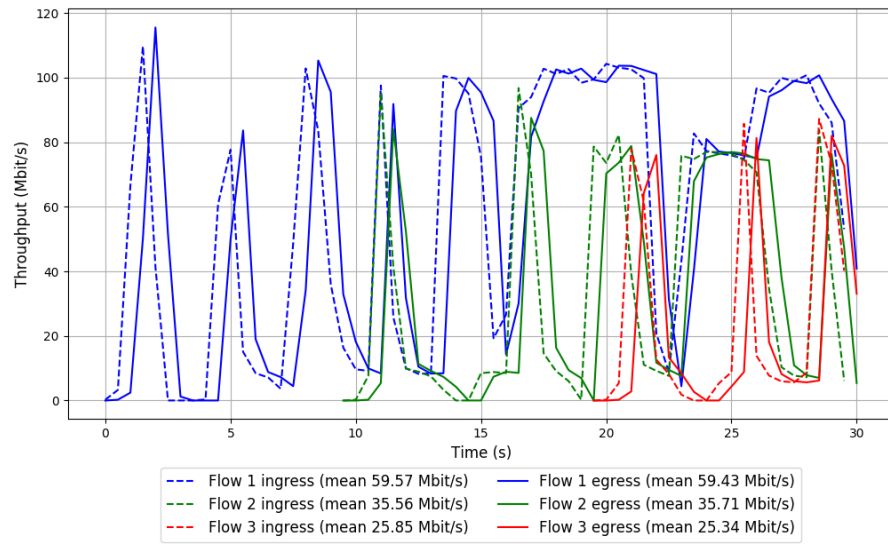Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-16 02:24:24
End at: 2018-11-16 02:24:54
Local clock offset: 0.365 ms
Remote clock offset: -0.719 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.56 Mbit/s
95th percentile per-packet one-way delay: 58.402 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 59.43 Mbit/s
95th percentile per-packet one-way delay: 58.428 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 35.71 Mbit/s
95th percentile per-packet one-way delay: 58.273 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 25.34 Mbit/s
95th percentile per-packet one-way delay: 58.313 ms
Loss rate: 3.13%
```

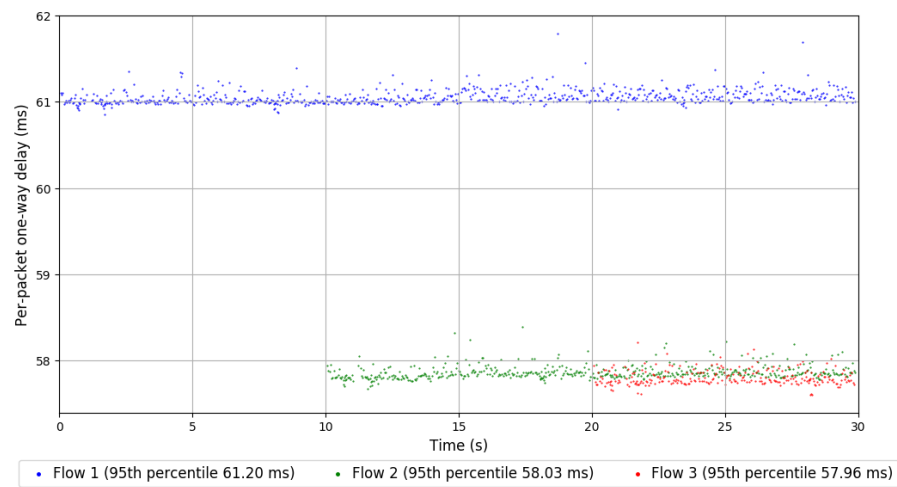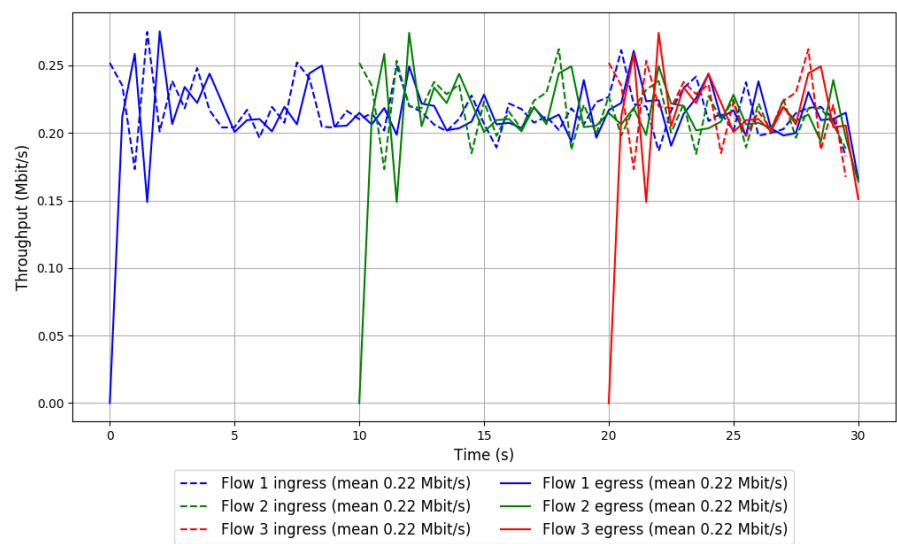Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-11-16 00:16:02
End at: 2018-11-16 00:16:32
Local clock offset: -0.169 ms
Remote clock offset: -0.703 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 61.159 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.195 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.029 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.958 ms
Loss rate: 1.11%
```
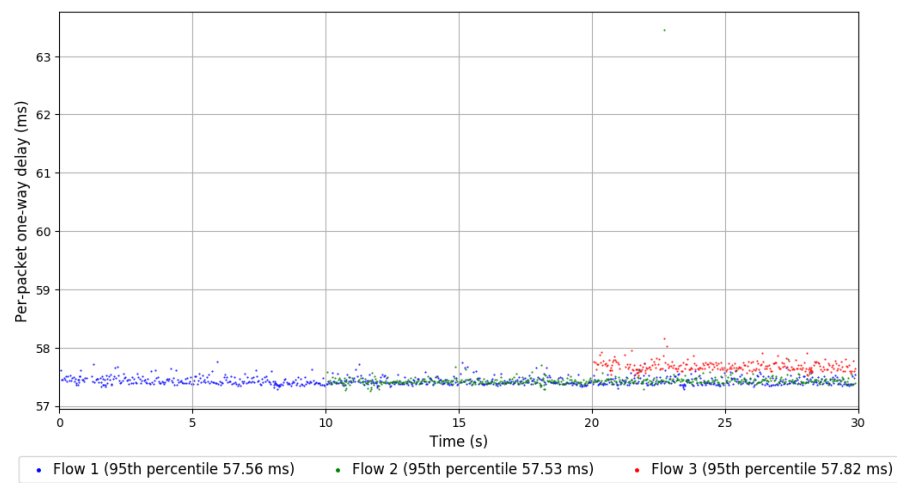
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-11-16 00:49:23
End at: 2018-11-16 00:49:53
Local clock offset: -0.36 ms
Remote clock offset: -0.591 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.724 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.558 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.526 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.819 ms
Loss rate: 1.09%
```
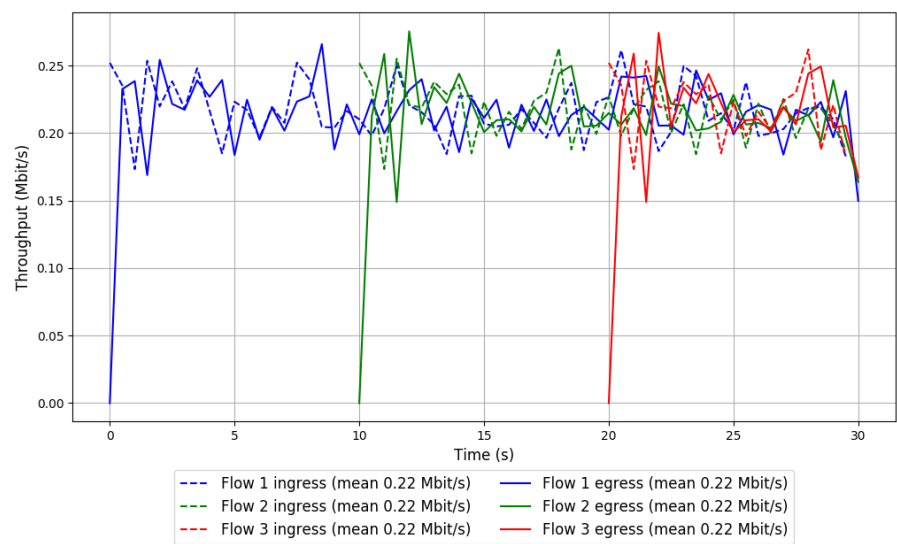
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-11-16 01:21:24
End at: 2018-11-16 01:21:54
Local clock offset: -0.304 ms
Remote clock offset: -0.794 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 58.170 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.188 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.209 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.778 ms
Loss rate: 1.09%
```
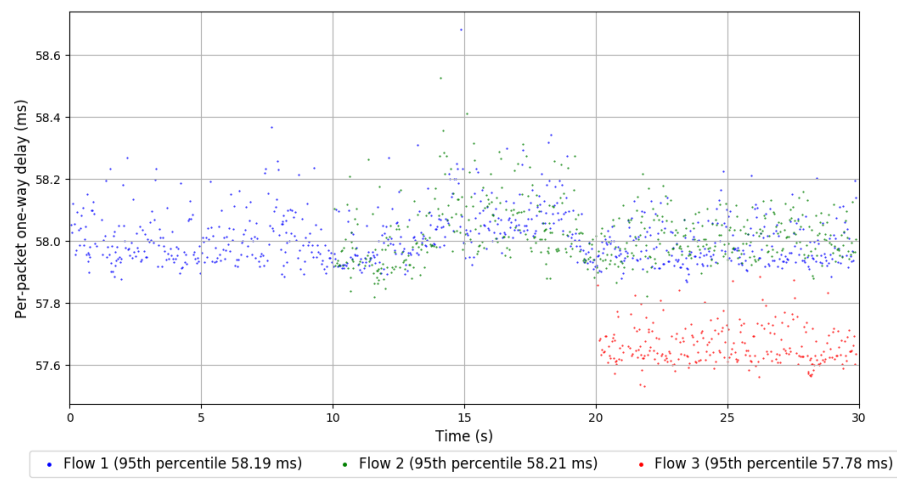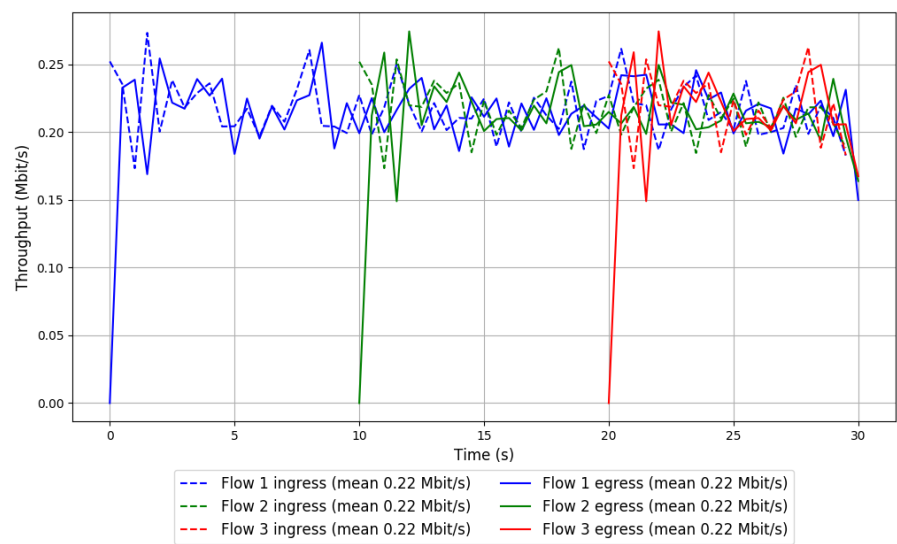
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-11-16 01:53:49
End at: 2018-11-16 01:54:19
Local clock offset: -0.012 ms
Remote clock offset: -0.275 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 58.097 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.170 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.857 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.780 ms
Loss rate: 1.09%
```
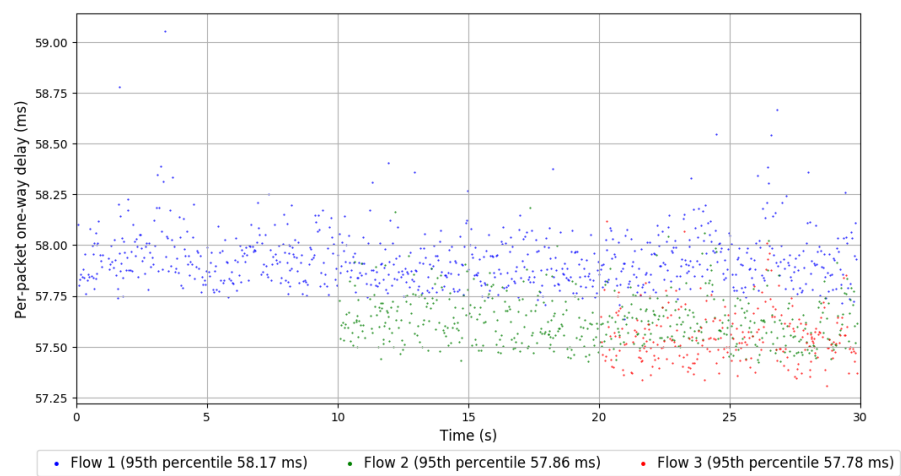
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-11-16 02:27:05
End at: 2018-11-16 02:27:35
Local clock offset: -0.298 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.432 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.480 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.038 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.195 ms
Loss rate: 0.73%
```
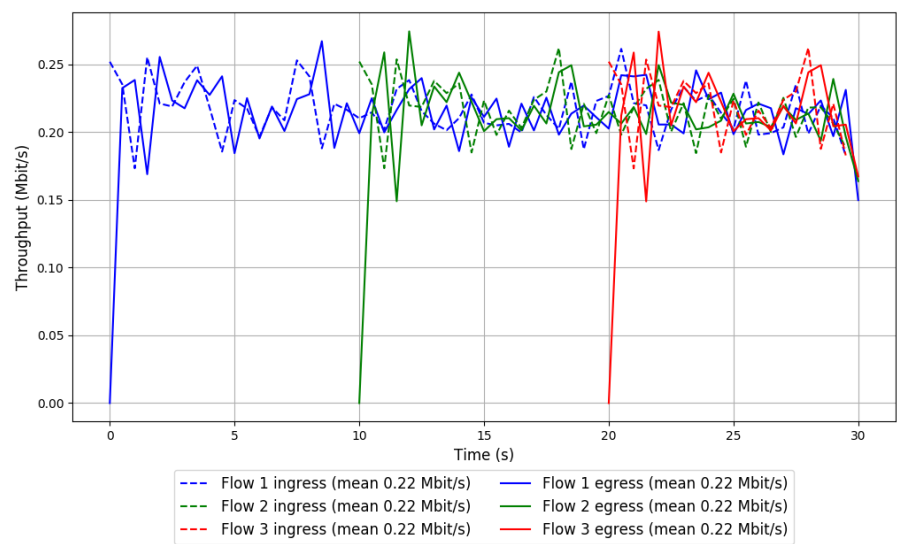
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-11-15 23:54:19
End at: 2018-11-15 23:54:49
Local clock offset: -0.142 ms
Remote clock offset: -0.177 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.45 Mbit/s
95th percentile per-packet one-way delay: 57.706 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 57.695 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 57.709 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 57.742 ms
Loss rate: 1.57%
```
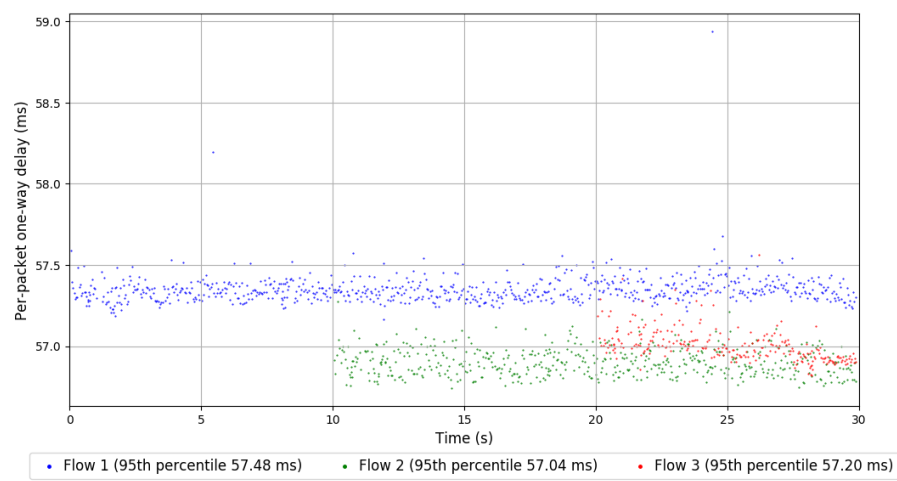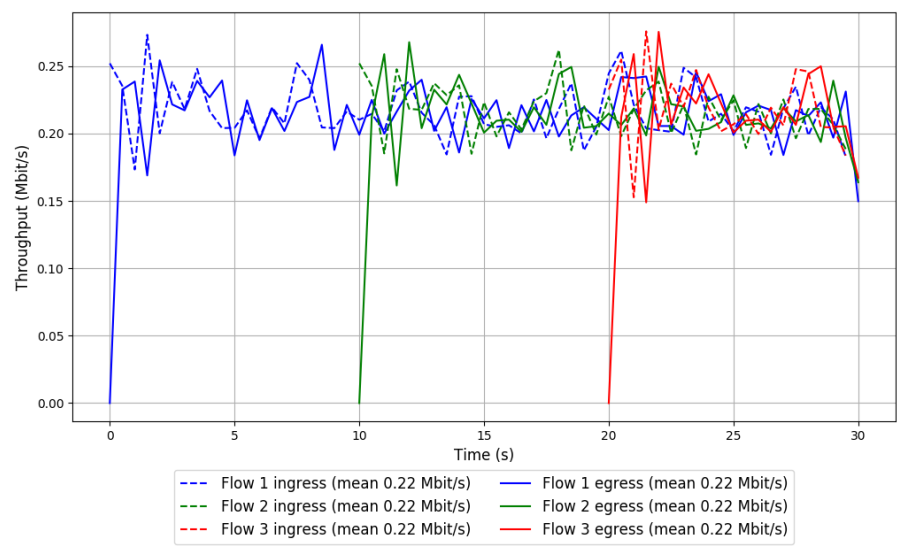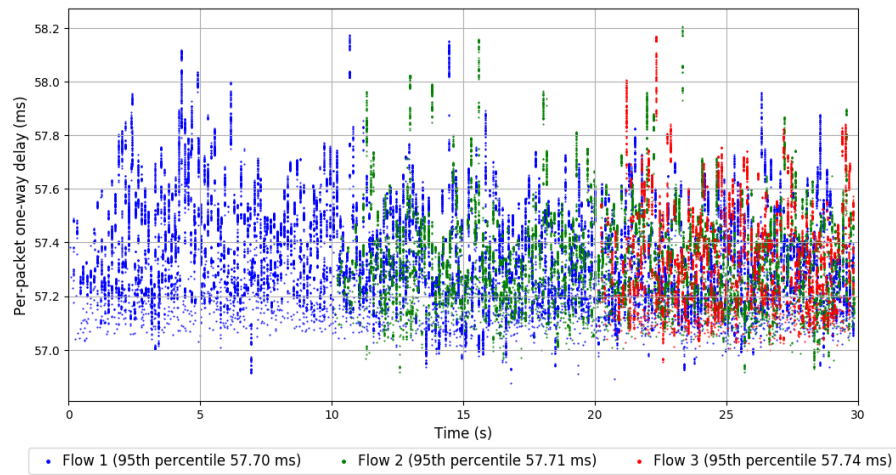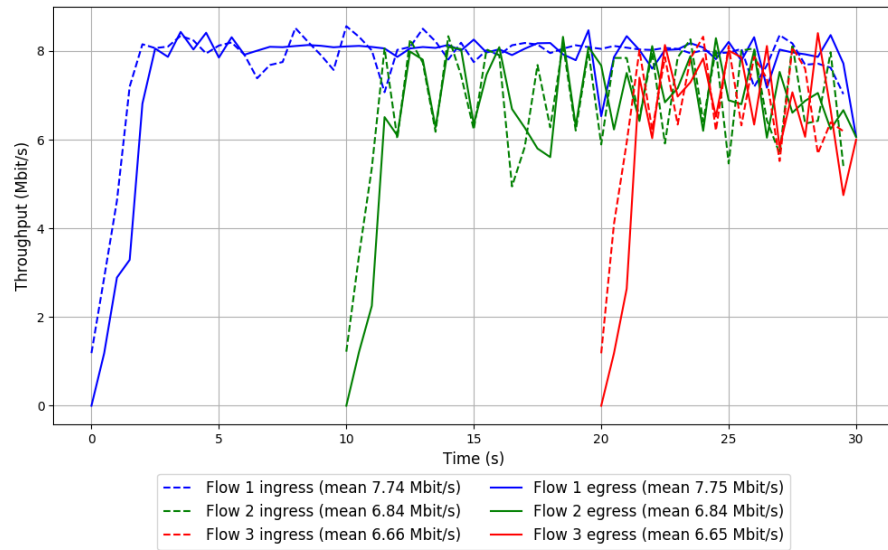
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-11-16 00:27:13
End at: 2018-11-16 00:27:43
Local clock offset: -0.12 ms
Remote clock offset: -1.508 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.55 Mbit/s
95th percentile per-packet one-way delay: 62.619 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 7.04 Mbit/s
95th percentile per-packet one-way delay: 62.748 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 7.70 Mbit/s
95th percentile per-packet one-way delay: 59.284 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 7.37 Mbit/s
95th percentile per-packet one-way delay: 59.151 ms
Loss rate: 1.38%
```

Run 2: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 7.04 Mbit/s) —— Flow 1 egress (mean 7.04 Mbit/s)
- - - Flow 2 ingress (mean 7.71 Mbit/s) —— Flow 2 egress (mean 7.70 Mbit/s)
- - - Flow 3 ingress (mean 7.36 Mbit/s) —— Flow 3 egress (mean 7.37 Mbit/s)

- Flow 1 (95th percentile 62.75 ms)   - Flow 2 (95th percentile 59.28 ms)   - Flow 3 (95th percentile 59.15 ms)

```
Run 3: Statistics of Sprout

Start at: 2018-11-16 01:00:21
End at: 2018-11-16 01:00:51
Local clock offset: -0.559 ms
Remote clock offset: -0.165 ms

# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.96 Mbit/s
95th percentile per-packet one-way delay: 57.419 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 57.478 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 7.63 Mbit/s
95th percentile per-packet one-way delay: 57.199 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 6.56 Mbit/s
95th percentile per-packet one-way delay: 57.371 ms
Loss rate: 1.56%
```
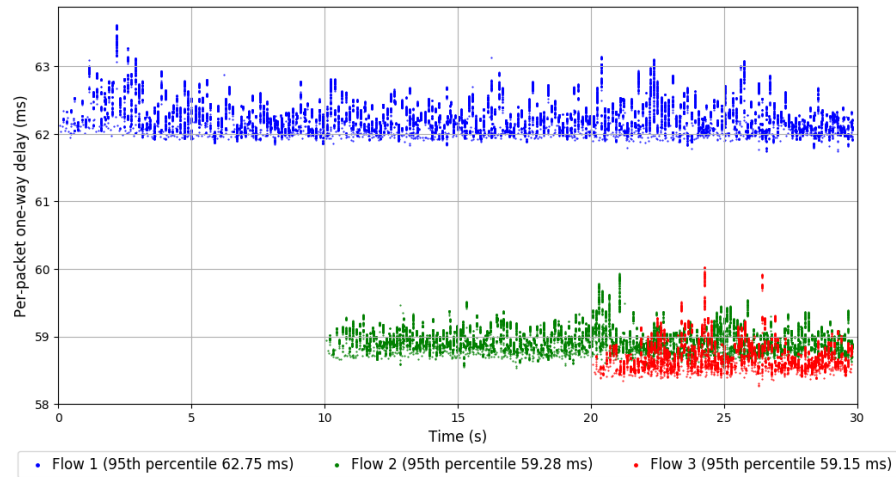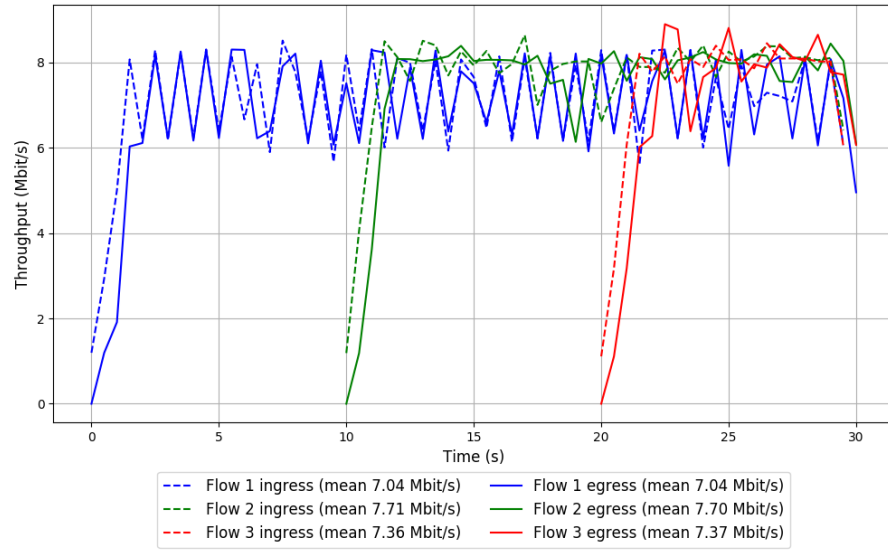
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-11-16 01:32:03
End at: 2018-11-16 01:32:33
Local clock offset: -0.003 ms
Remote clock offset: -1.496 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.85 Mbit/s
95th percentile per-packet one-way delay: 62.132 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 59.187 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 62.295 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: 59.237 ms
Loss rate: 1.47%
```
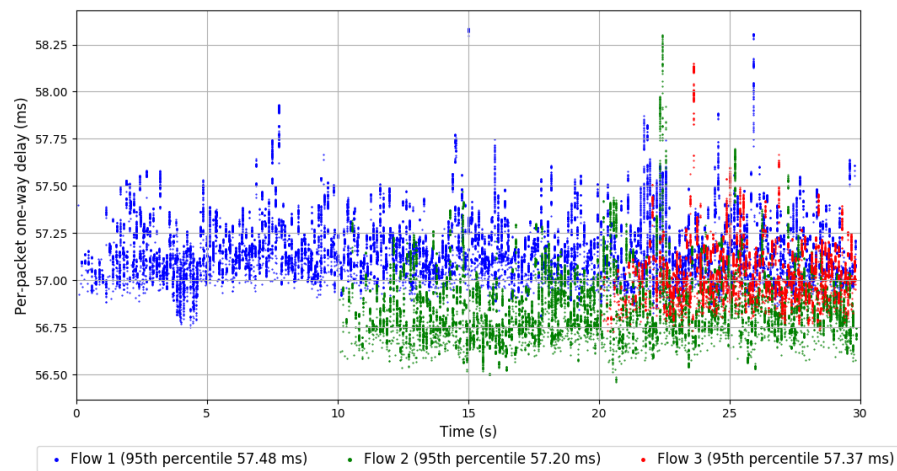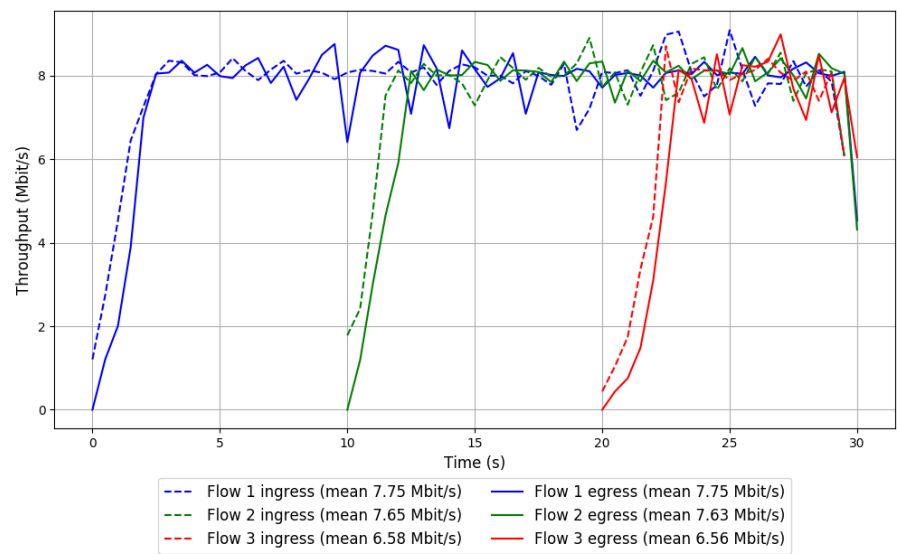
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-11-16 02:04:32
End at: 2018-11-16 02:05:02
Local clock offset: -0.403 ms
Remote clock offset: -0.06 ms


# Below is generated by plot.py at 2018-11-16 04:54:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 60.836 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 60.942 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 57.303 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 57.152 ms
Loss rate: 1.40%
```
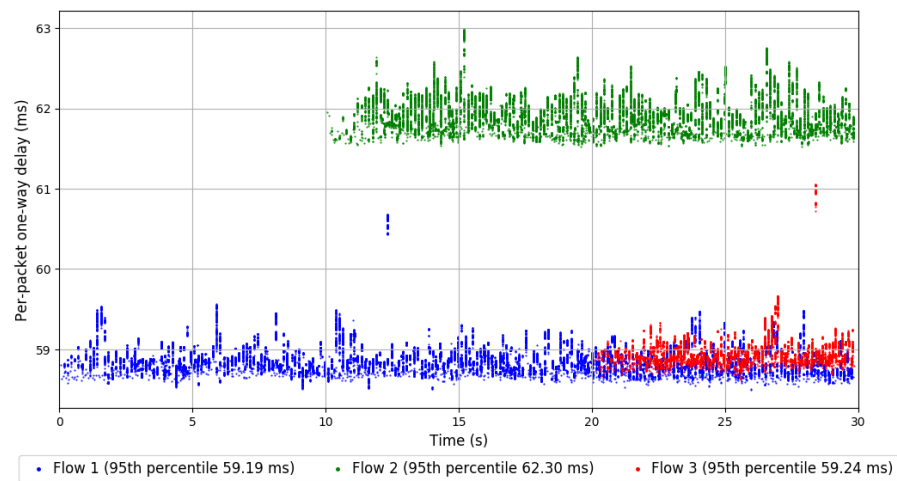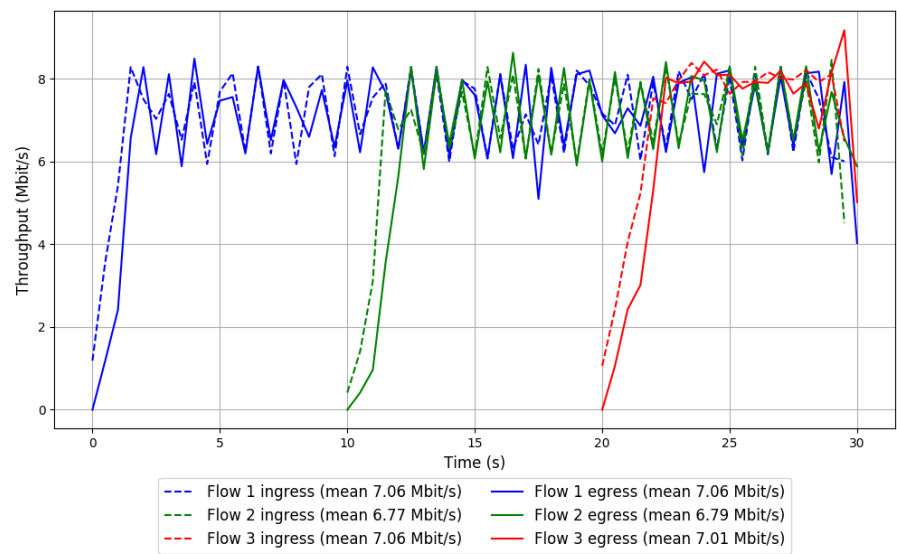
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 7.03 Mbit/s) — — — Flow 1 egress (mean 7.02 Mbit/s)
Flow 2 ingress (mean 6.92 Mbit/s) — — — Flow 2 egress (mean 6.92 Mbit/s)
Flow 3 ingress (mean 7.30 Mbit/s) — — — Flow 3 egress (mean 7.29 Mbit/s)

Flow 1 (95th percentile 60.94 ms) • Flow 2 (95th percentile 57.30 ms) • Flow 3 (95th percentile 57.15 ms)
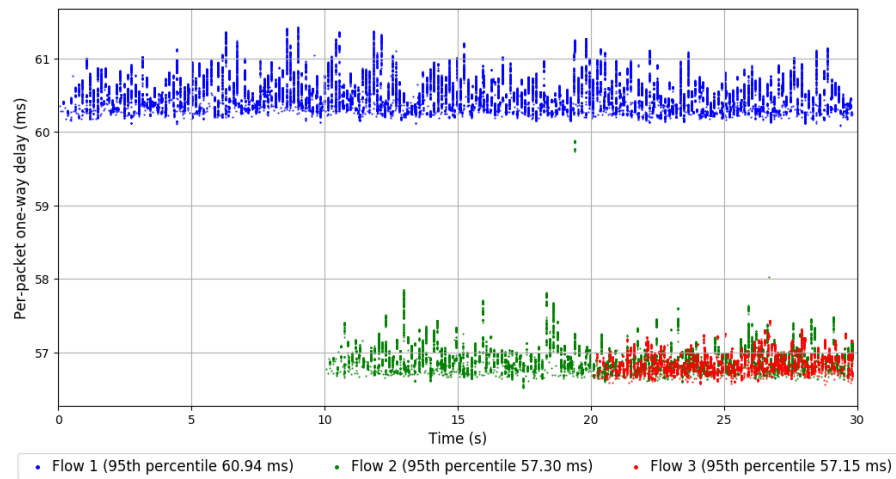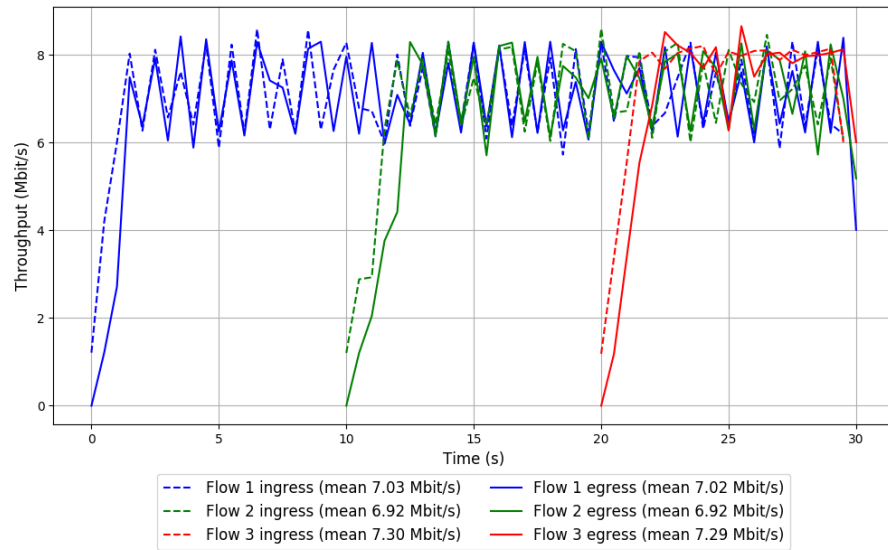
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-16 00:05:14
End at: 2018-11-16 00:05:44
Local clock offset: -0.378 ms
Remote clock offset: 0.023 ms

# Below is generated by plot.py at 2018-11-16 05:00:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 428.68 Mbit/s
95th percentile per-packet one-way delay: 61.802 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 219.64 Mbit/s
95th percentile per-packet one-way delay: 57.982 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 211.50 Mbit/s
95th percentile per-packet one-way delay: 61.093 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 207.41 Mbit/s
95th percentile per-packet one-way delay: 67.867 ms
Loss rate: 1.30%
```

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

- Flow 1 ingress (mean 219.69 Mbit/s)
- Flow 1 egress (mean 219.64 Mbit/s)
- Flow 2 ingress (mean 211.47 Mbit/s)
- Flow 2 egress (mean 211.50 Mbit/s)
- Flow 3 ingress (mean 207.65 Mbit/s)
- Flow 3 egress (mean 207.41 Mbit/s)

- Flow 1 (95th percentile 57.98 ms)
- Flow 2 (95th percentile 61.09 ms)
- Flow 3 (95th percentile 67.87 ms)
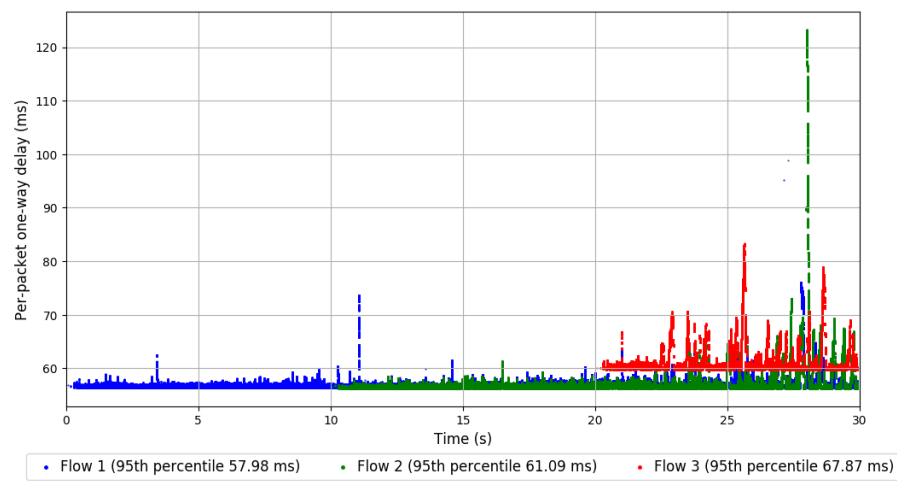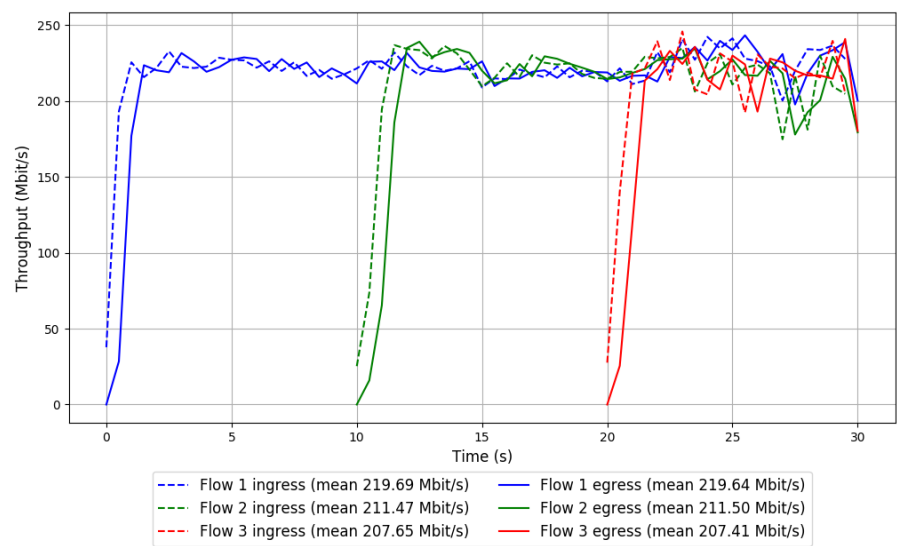
```
Run 2: Statistics of TaoVA-100x

Start at: 2018-11-16 00:38:38
End at: 2018-11-16 00:39:08
Local clock offset: -0.332 ms
Remote clock offset: -0.655 ms


# Below is generated by plot.py at 2018-11-16 05:00:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.22 Mbit/s
95th percentile per-packet one-way delay: 61.676 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 217.38 Mbit/s
95th percentile per-packet one-way delay: 61.791 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 214.29 Mbit/s
95th percentile per-packet one-way delay: 61.614 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 201.17 Mbit/s
95th percentile per-packet one-way delay: 59.564 ms
Loss rate: 1.41%
```
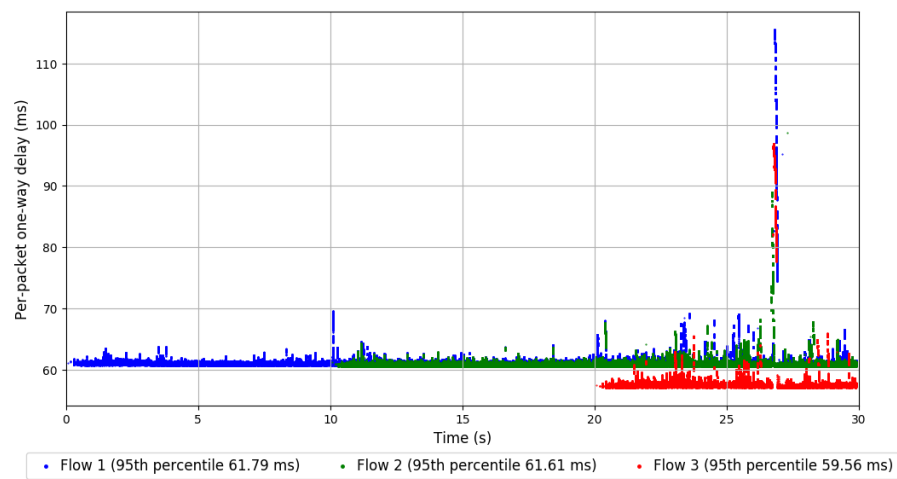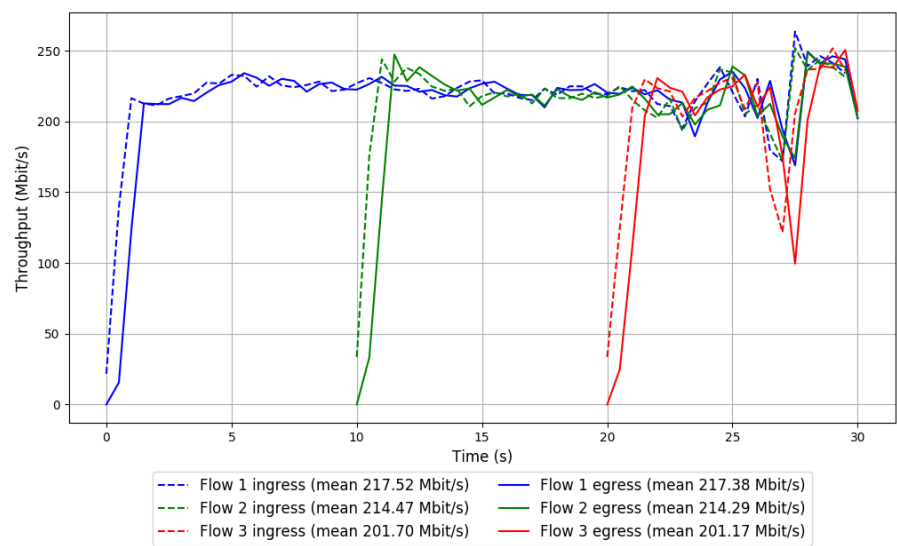
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 217.52 Mbit/s)   Flow 1 egress (mean 217.38 Mbit/s)
Flow 2 ingress (mean 214.47 Mbit/s)   Flow 2 egress (mean 214.29 Mbit/s)
Flow 3 ingress (mean 201.70 Mbit/s)   Flow 3 egress (mean 201.17 Mbit/s)

Flow 1 (95th percentile 61.79 ms)   Flow 2 (95th percentile 61.61 ms)   Flow 3 (95th percentile 59.56 ms)
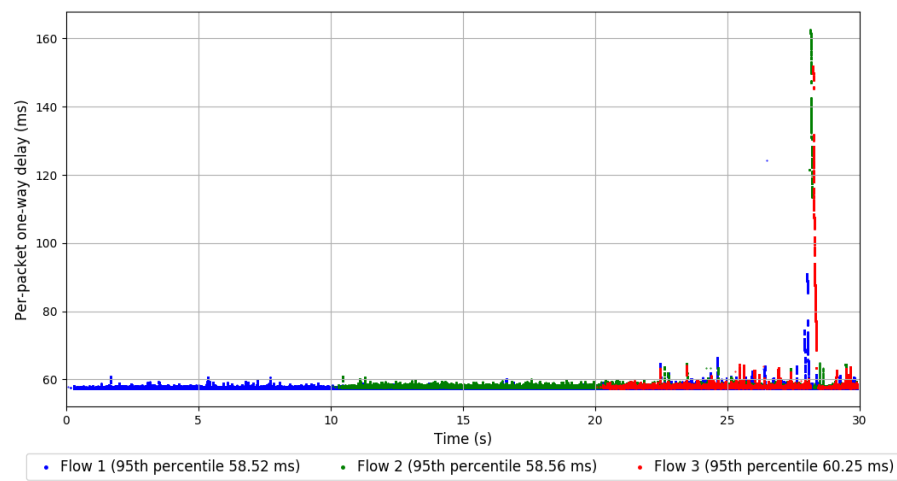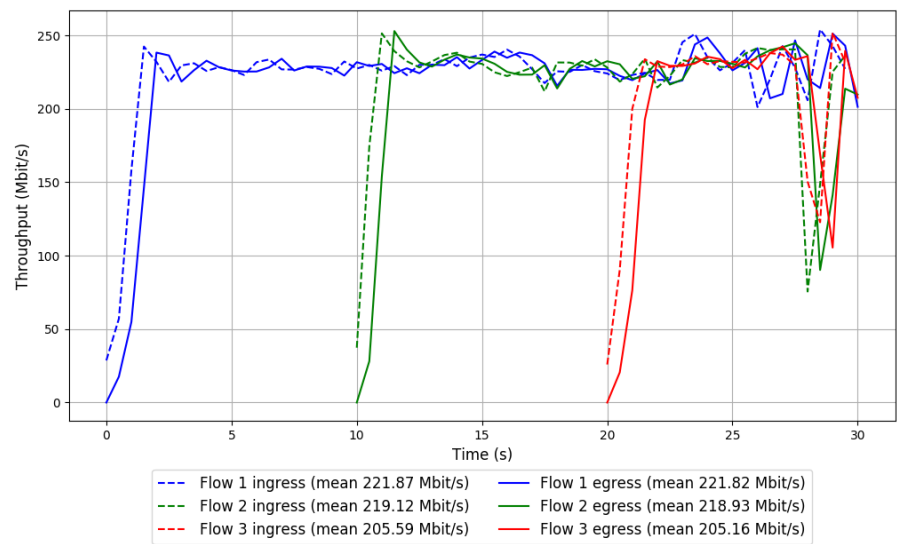
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-11-16 01:10:36
End at: 2018-11-16 01:11:06
Local clock offset: 0.153 ms
Remote clock offset: -0.449 ms


# Below is generated by plot.py at 2018-11-16 05:01:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 435.02 Mbit/s
95th percentile per-packet one-way delay: 58.742 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 221.82 Mbit/s
95th percentile per-packet one-way delay: 58.519 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 218.93 Mbit/s
95th percentile per-packet one-way delay: 58.562 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 205.16 Mbit/s
95th percentile per-packet one-way delay: 60.252 ms
Loss rate: 1.36%
```

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

Flow 1 ingress (mean 221.87 Mbit/s) Flow 1 egress (mean 221.82 Mbit/s)
Flow 2 ingress (mean 219.12 Mbit/s) Flow 2 egress (mean 218.93 Mbit/s)
Flow 3 ingress (mean 205.59 Mbit/s) Flow 3 egress (mean 205.16 Mbit/s)

Flow 1 (95th percentile 58.52 ms)   Flow 2 (95th percentile 58.56 ms)   Flow 3 (95th percentile 60.25 ms)
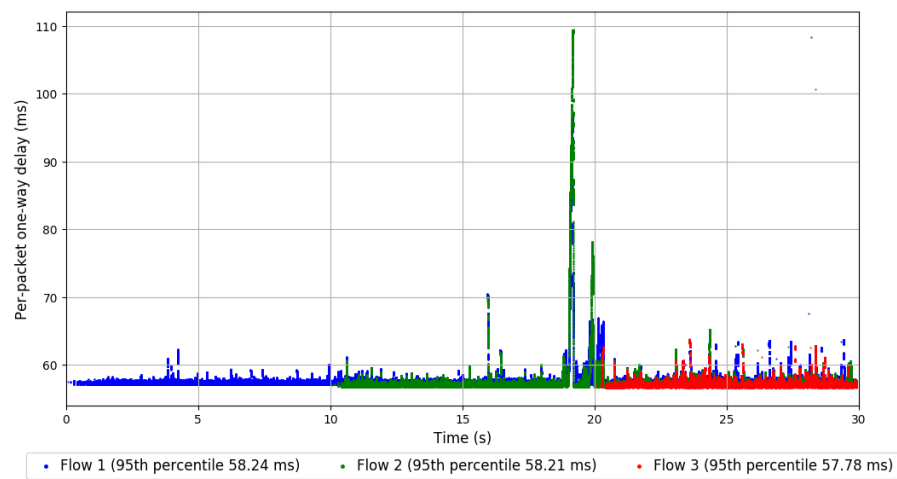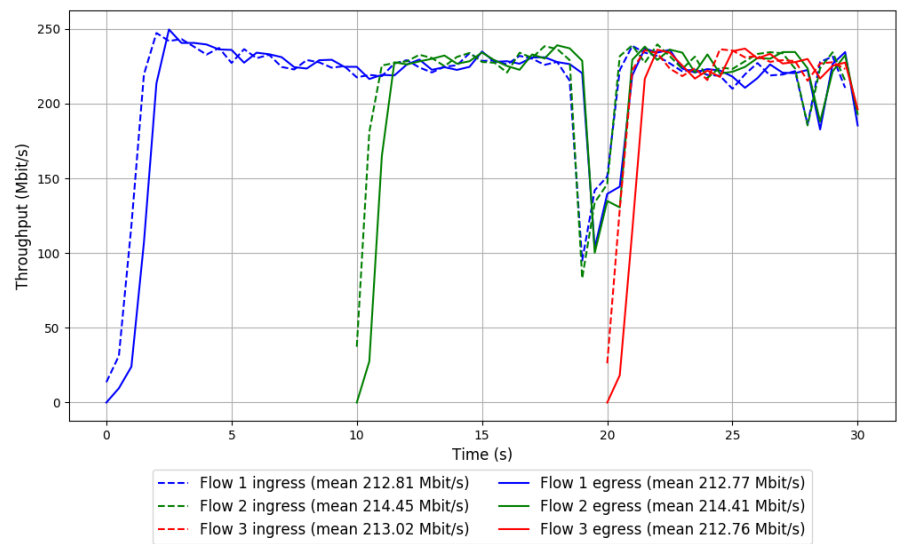
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-11-16 01:42:22
End at: 2018-11-16 01:42:52
Local clock offset: -0.11 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2018-11-16 05:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.45 Mbit/s
95th percentile per-packet one-way delay: 58.164 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 212.77 Mbit/s
95th percentile per-packet one-way delay: 58.242 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 214.41 Mbit/s
95th percentile per-packet one-way delay: 58.210 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 212.76 Mbit/s
95th percentile per-packet one-way delay: 57.785 ms
Loss rate: 1.27%
```

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

Flow 1 ingress (mean 212.81 Mbit/s) --- Flow 1 egress (mean 212.77 Mbit/s)
Flow 2 ingress (mean 214.45 Mbit/s) --- Flow 2 egress (mean 214.41 Mbit/s)
Flow 3 ingress (mean 213.02 Mbit/s) --- Flow 3 egress (mean 212.76 Mbit/s)

Flow 1 (95th percentile 58.24 ms) • Flow 2 (95th percentile 58.21 ms) • Flow 3 (95th percentile 57.78 ms)
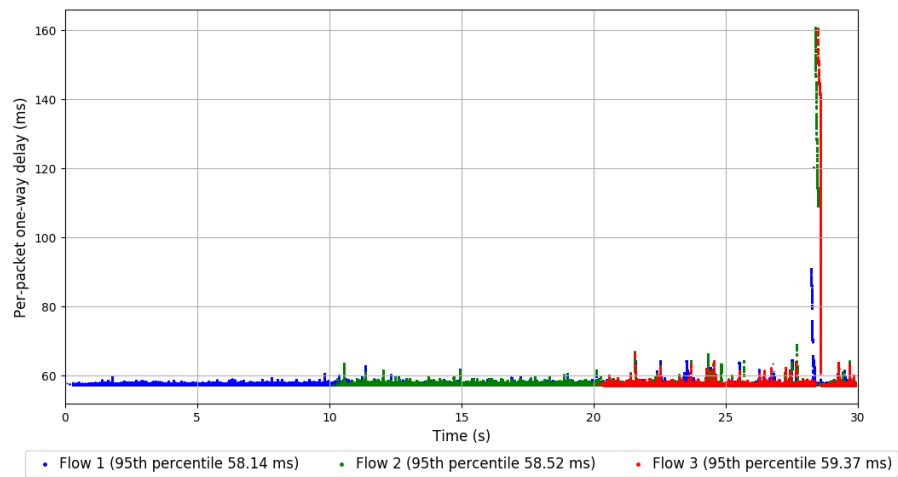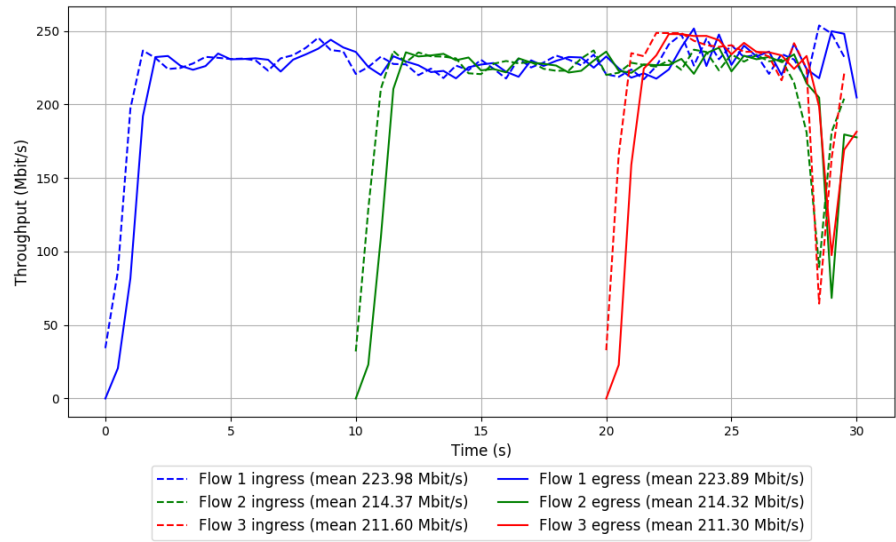
```
Run 5: Statistics of TaoVA-100x

Start at: 2018-11-16 02:14:54
End at: 2018-11-16 02:15:24
Local clock offset: -0.541 ms
Remote clock offset: -0.827 ms


# Below is generated by plot.py at 2018-11-16 05:04:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 435.96 Mbit/s
95th percentile per-packet one-way delay: 58.353 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 223.89 Mbit/s
95th percentile per-packet one-way delay: 58.144 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 214.32 Mbit/s
95th percentile per-packet one-way delay: 58.516 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 211.30 Mbit/s
95th percentile per-packet one-way delay: 59.372 ms
Loss rate: 1.30%
```

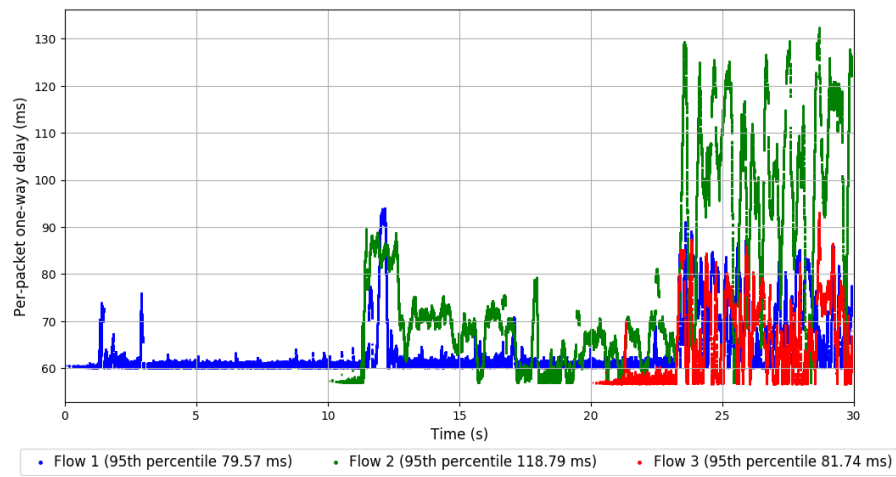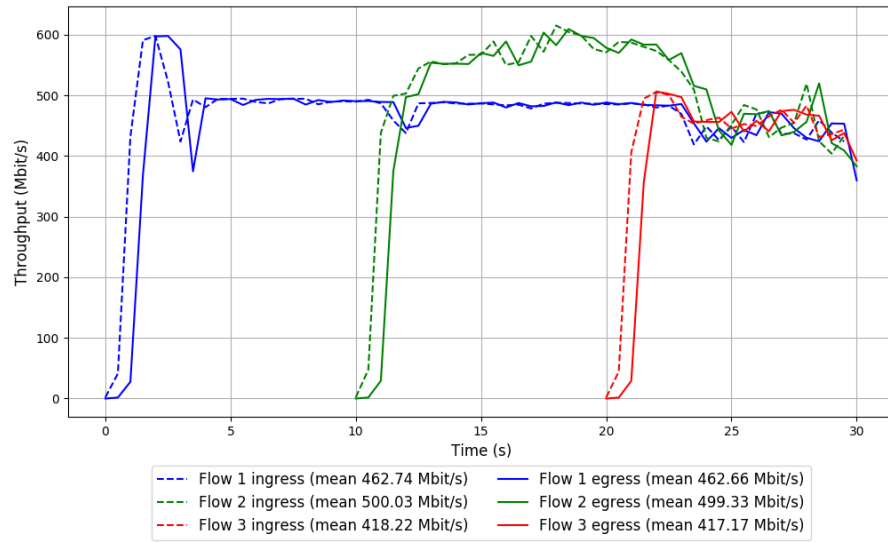# Run 5: Report of TaoVA-100x — Data Link

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-11-16 00:03:06
End at: 2018-11-16 00:03:36
Local clock offset: -0.317 ms
Remote clock offset: -0.218 ms


# Below is generated by plot.py at 2018-11-16 05:07:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 932.16 Mbit/s
95th percentile per-packet one-way delay: 102.952 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 462.66 Mbit/s
95th percentile per-packet one-way delay: 79.570 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 499.33 Mbit/s
95th percentile per-packet one-way delay: 118.787 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 417.17 Mbit/s
95th percentile per-packet one-way delay: 81.744 ms
Loss rate: 1.39%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-11-16 00:36:29
End at: 2018-11-16 00:36:59
Local clock offset: 0.274 ms
Remote clock offset: 0.381 ms


# Below is generated by plot.py at 2018-11-16 05:11:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.88 Mbit/s
95th percentile per-packet one-way delay: 72.655 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 558.78 Mbit/s
95th percentile per-packet one-way delay: 73.666 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 246.77 Mbit/s
95th percentile per-packet one-way delay: 57.511 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 421.38 Mbit/s
95th percentile per-packet one-way delay: 72.326 ms
Loss rate: 1.35%
```
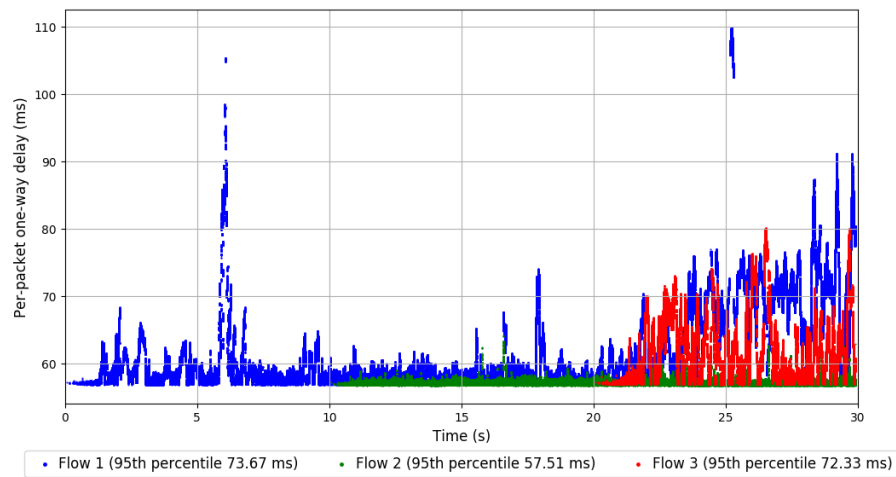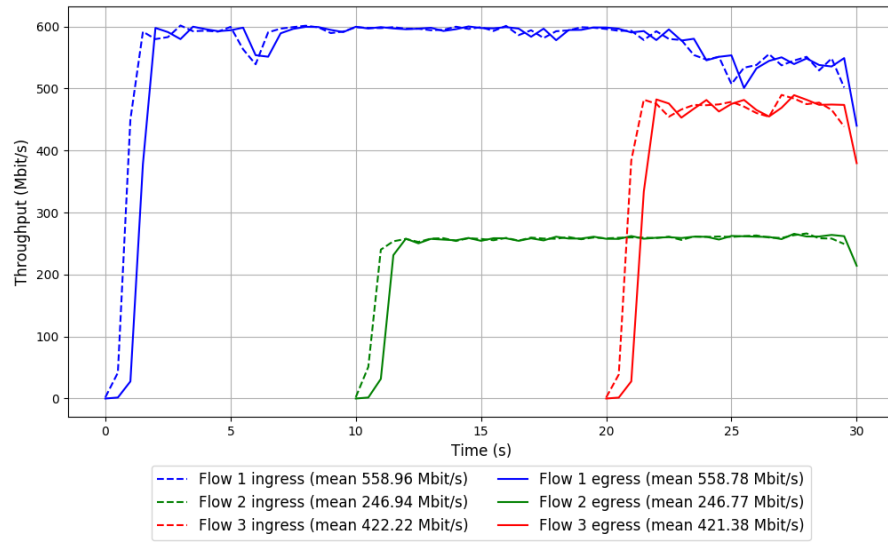
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-11-16 01:08:33
End at: 2018-11-16 01:09:03
Local clock offset: -0.112 ms
Remote clock offset: -0.21 ms


# Below is generated by plot.py at 2018-11-16 05:16:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 956.80 Mbit/s
95th percentile per-packet one-way delay: 126.132 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 516.57 Mbit/s
95th percentile per-packet one-way delay: 117.659 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 473.84 Mbit/s
95th percentile per-packet one-way delay: 182.718 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 379.65 Mbit/s
95th percentile per-packet one-way delay: 112.919 ms
Loss rate: 1.53%
```
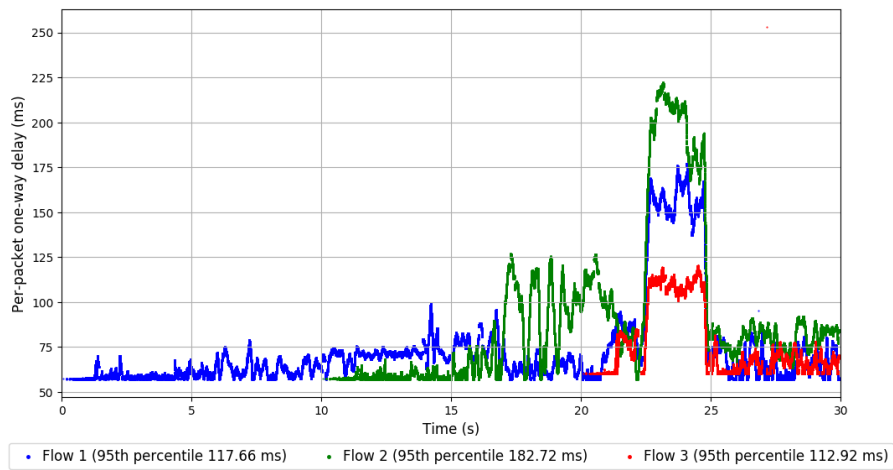
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 516.49 Mbit/s) — Flow 1 egress (mean 516.57 Mbit/s)
Flow 2 ingress (mean 474.69 Mbit/s) — Flow 2 egress (mean 473.84 Mbit/s)
Flow 3 ingress (mean 381.01 Mbit/s) — Flow 3 egress (mean 379.65 Mbit/s)

Flow 1 (95th percentile 117.66 ms)   Flow 2 (95th percentile 182.72 ms)   Flow 3 (95th percentile 112.92 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-11-16 01:40:26
End at: 2018-11-16 01:40:56
Local clock offset: -0.478 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2018-11-16 05:18:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 840.52 Mbit/s
95th percentile per-packet one-way delay: 76.503 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 470.18 Mbit/s
95th percentile per-packet one-way delay: 76.807 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 396.71 Mbit/s
95th percentile per-packet one-way delay: 73.880 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 323.55 Mbit/s
95th percentile per-packet one-way delay: 88.474 ms
Loss rate: 0.89%
```
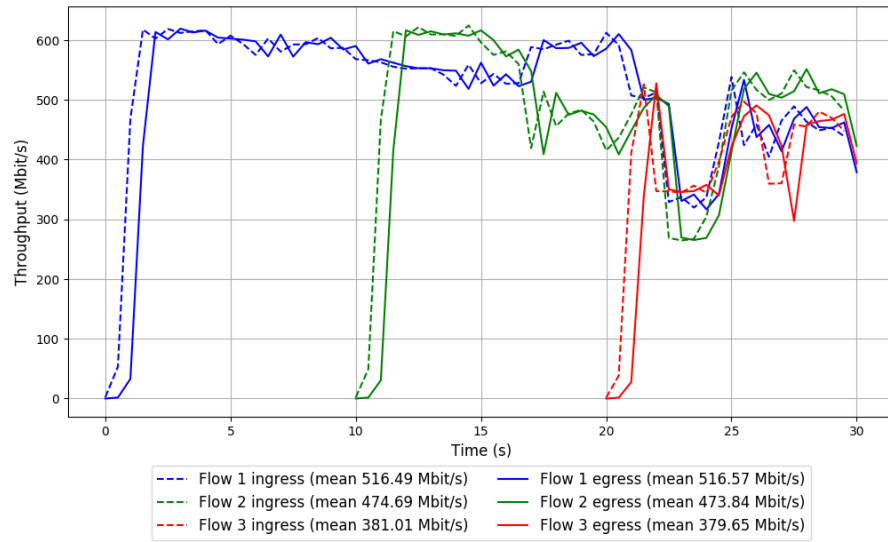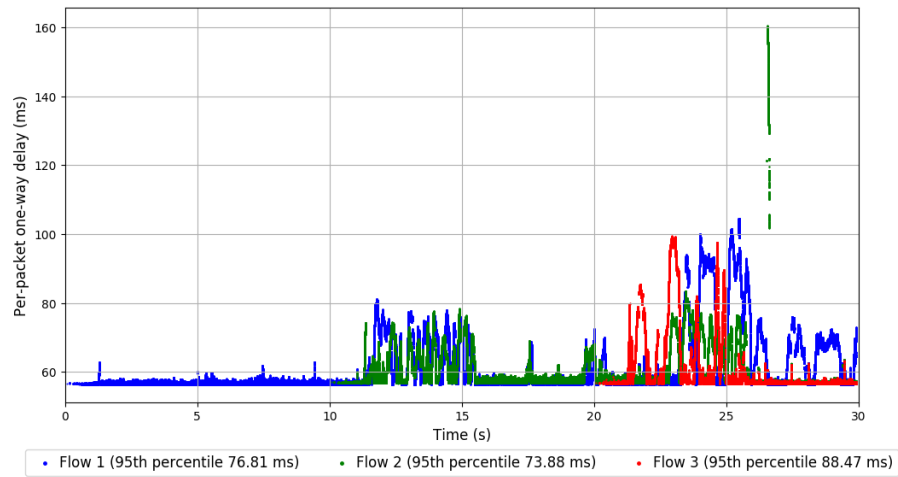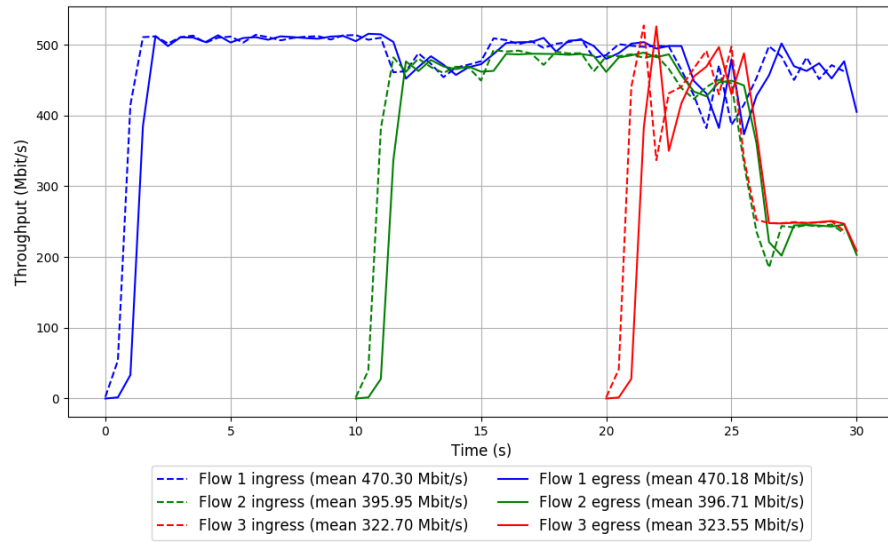
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 470.30 Mbit/s) --- Flow 1 egress (mean 470.18 Mbit/s)
Flow 2 ingress (mean 395.95 Mbit/s) --- Flow 2 egress (mean 396.71 Mbit/s)
Flow 3 ingress (mean 322.70 Mbit/s) --- Flow 3 egress (mean 323.55 Mbit/s)

Flow 1 (95th percentile 76.81 ms)   Flow 2 (95th percentile 73.88 ms)   Flow 3 (95th percentile 88.47 ms)
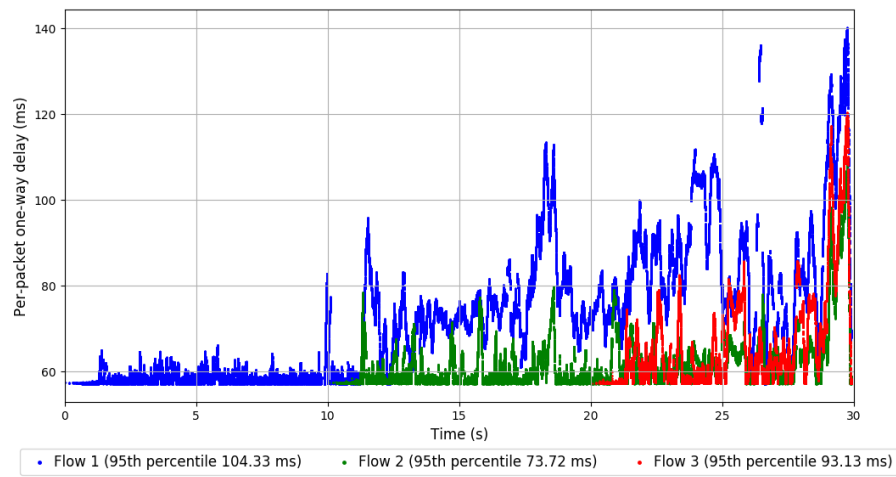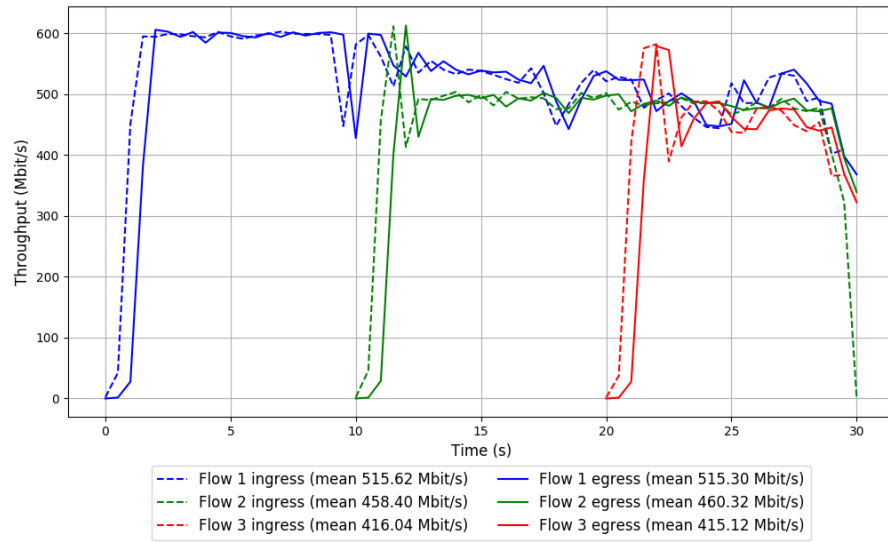
```
Run 5: Statistics of TCP Vegas

Start at: 2018-11-16 02:12:51
End at: 2018-11-16 02:13:21
Local clock offset: -0.56 ms
Remote clock offset: -0.808 ms


# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 958.09 Mbit/s
95th percentile per-packet one-way delay: 95.048 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 515.30 Mbit/s
95th percentile per-packet one-way delay: 104.325 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 460.32 Mbit/s
95th percentile per-packet one-way delay: 73.723 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 415.12 Mbit/s
95th percentile per-packet one-way delay: 93.133 ms
Loss rate: 1.38%
```

Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 515.62 Mbit/s)   Flow 1 egress (mean 515.30 Mbit/s)
Flow 2 ingress (mean 458.40 Mbit/s)   Flow 2 egress (mean 460.32 Mbit/s)
Flow 3 ingress (mean 416.04 Mbit/s)   Flow 3 egress (mean 415.12 Mbit/s)

Flow 1 (95th percentile 104.33 ms)   Flow 2 (95th percentile 73.72 ms)   Flow 3 (95th percentile 93.13 ms)
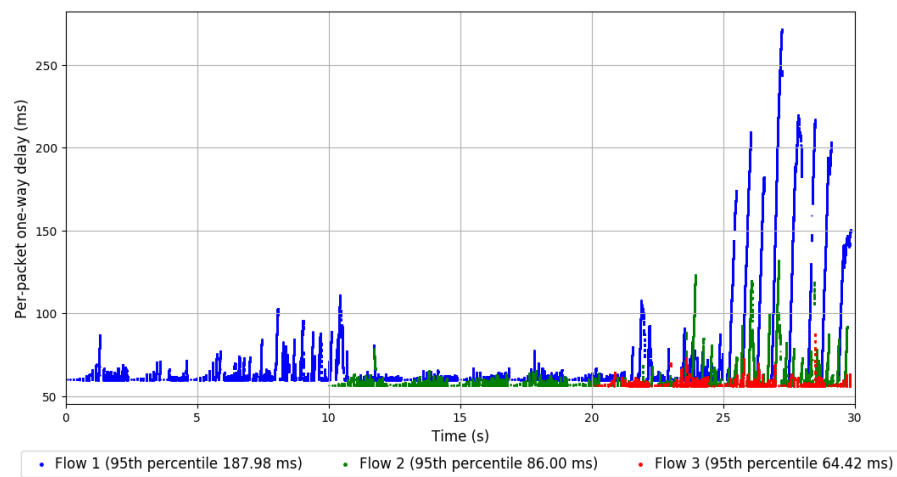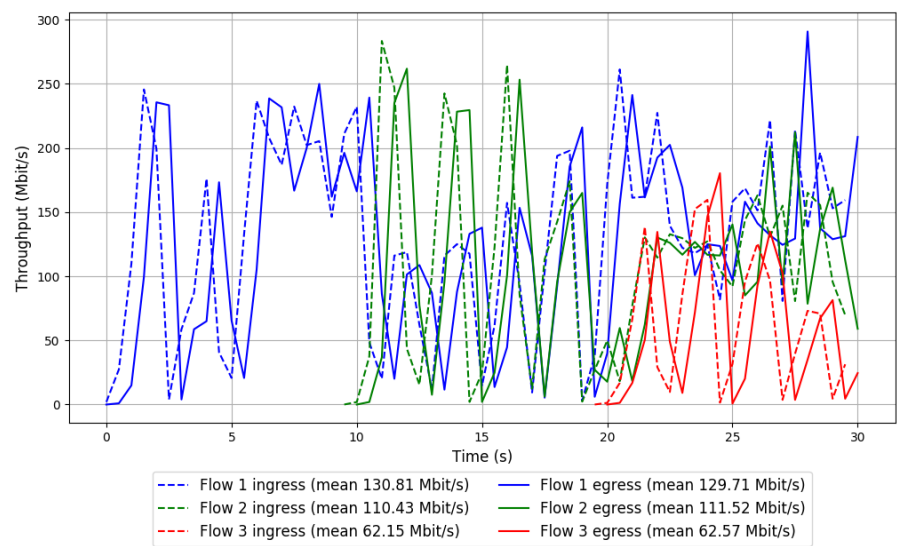
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```
Run 1: Statistics of Verus

Start at: 2018-11-16 00:25:37
End at: 2018-11-16 00:26:07
Local clock offset: -0.523 ms
Remote clock offset: -0.002 ms


# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 224.06 Mbit/s
95th percentile per-packet one-way delay: 155.194 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 129.71 Mbit/s
95th percentile per-packet one-way delay: 187.983 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 111.52 Mbit/s
95th percentile per-packet one-way delay: 85.996 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 62.57 Mbit/s
95th percentile per-packet one-way delay: 64.416 ms
Loss rate: 0.55%
```

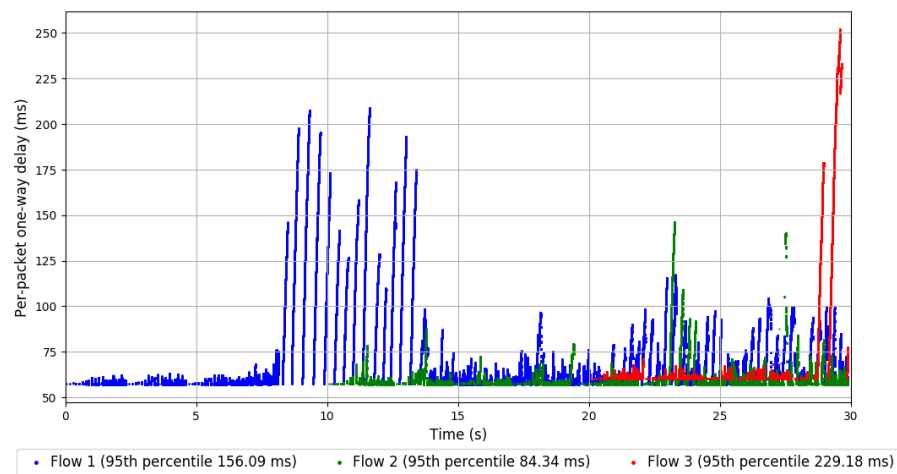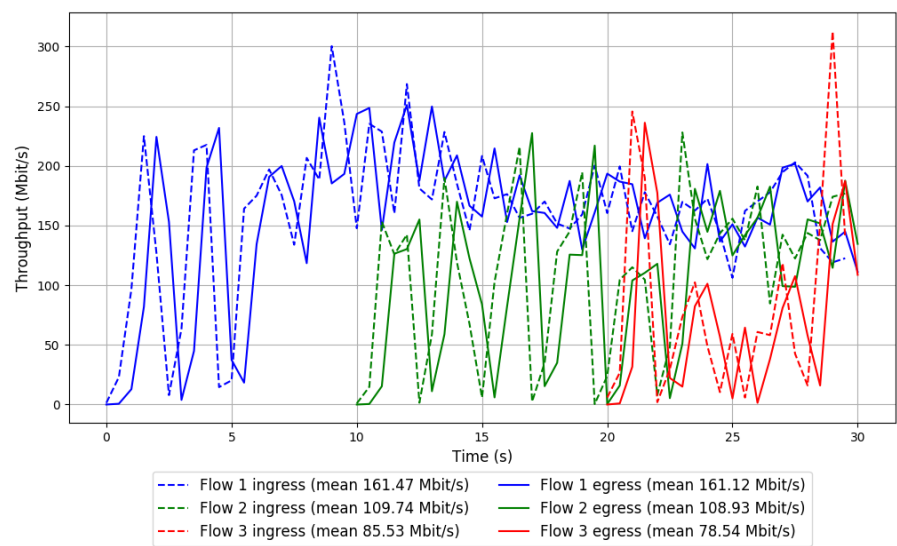Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-11-16 00:58:35
End at: 2018-11-16 00:59:05
Local clock offset: -0.127 ms
Remote clock offset: -0.374 ms


# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 259.37 Mbit/s
95th percentile per-packet one-way delay: 152.045 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 161.12 Mbit/s
95th percentile per-packet one-way delay: 156.090 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 108.93 Mbit/s
95th percentile per-packet one-way delay: 84.342 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 78.54 Mbit/s
95th percentile per-packet one-way delay: 229.178 ms
Loss rate: 9.26%
```

Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 161.47 Mbit/s) --- Flow 1 egress (mean 161.12 Mbit/s)
Flow 2 ingress (mean 109.74 Mbit/s) --- Flow 2 egress (mean 108.93 Mbit/s)
Flow 3 ingress (mean 85.53 Mbit/s) --- Flow 3 egress (mean 78.54 Mbit/s)

Flow 1 (95th percentile 156.09 ms)   Flow 2 (95th percentile 84.34 ms)   Flow 3 (95th percentile 229.18 ms)
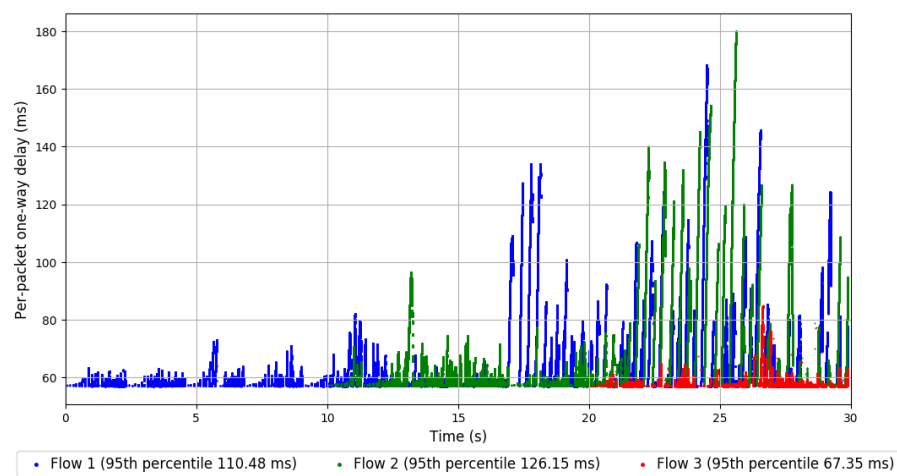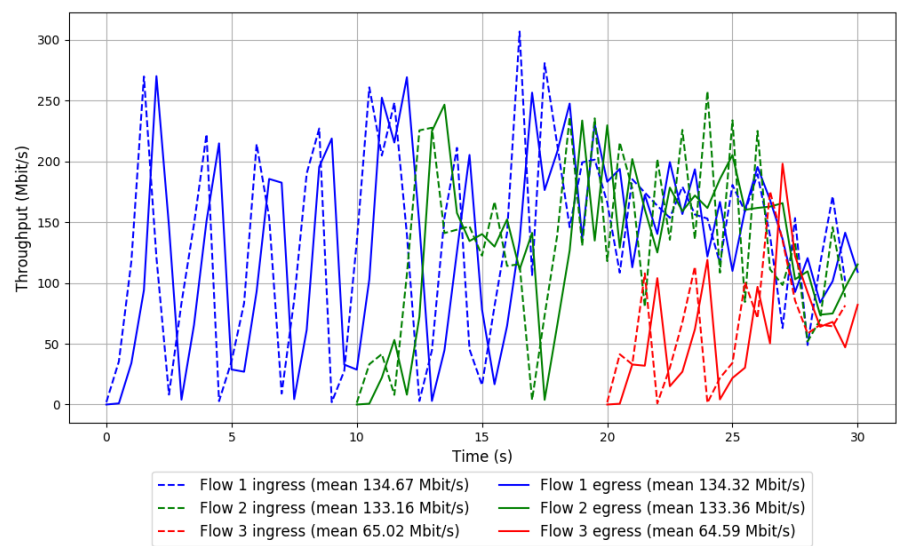
```
Run 3: Statistics of Verus

Start at: 2018-11-16 01:30:22
End at: 2018-11-16 01:30:52
Local clock offset: 0.08 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.23 Mbit/s
95th percentile per-packet one-way delay: 116.394 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 134.32 Mbit/s
95th percentile per-packet one-way delay: 110.478 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 133.36 Mbit/s
95th percentile per-packet one-way delay: 126.146 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 64.59 Mbit/s
95th percentile per-packet one-way delay: 67.352 ms
Loss rate: 1.70%
```

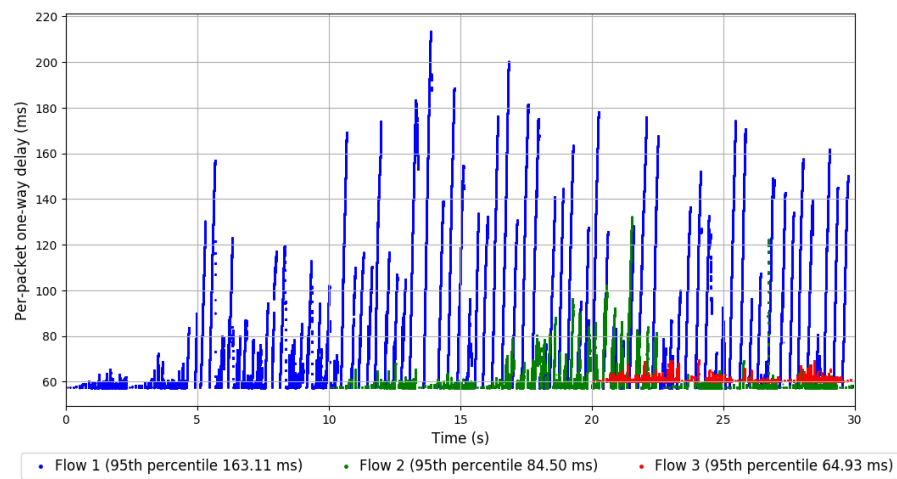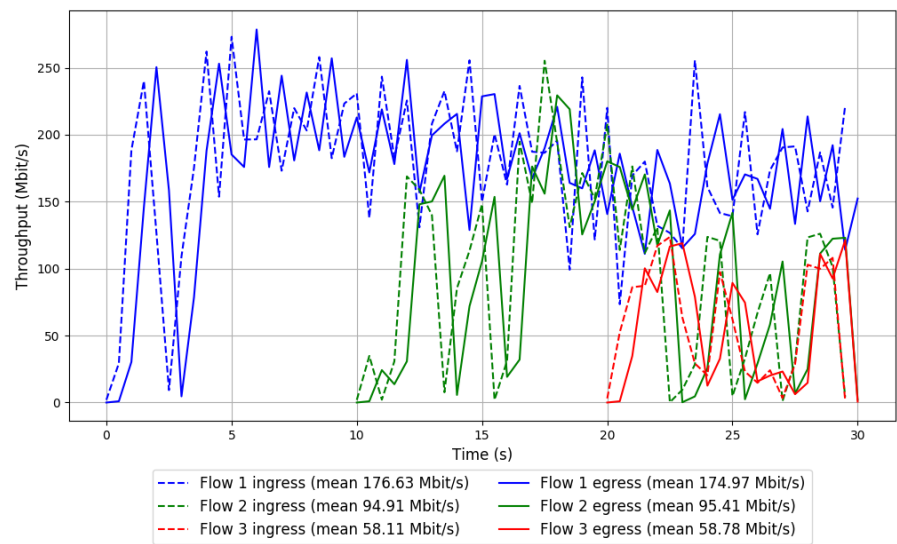Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-11-16 02:02:54
End at: 2018-11-16 02:03:24
Local clock offset: -0.419 ms
Remote clock offset: -0.611 ms


# Below is generated by plot.py at 2018-11-16 05:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 257.58 Mbit/s
95th percentile per-packet one-way delay: 154.068 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 174.97 Mbit/s
95th percentile per-packet one-way delay: 163.108 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 95.41 Mbit/s
95th percentile per-packet one-way delay: 84.503 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 64.926 ms
Loss rate: 0.07%
```
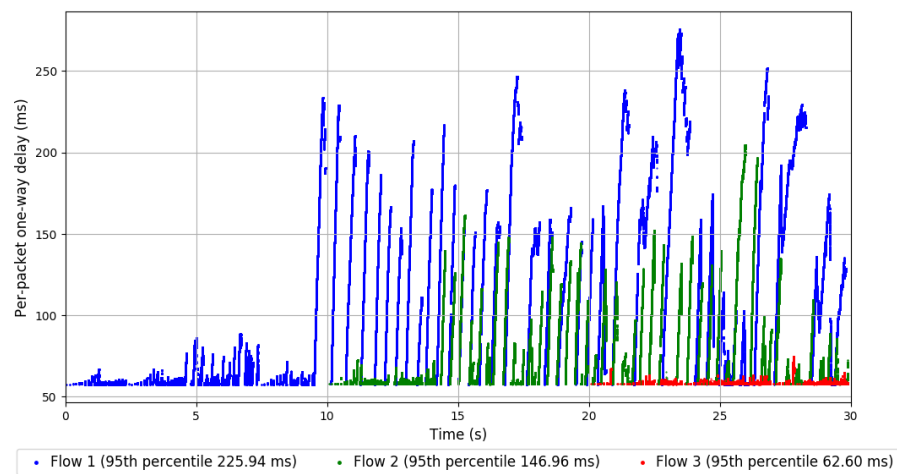
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 176.63 Mbit/s)   Flow 1 egress (mean 174.97 Mbit/s)
Flow 2 ingress (mean 94.91 Mbit/s)   Flow 2 egress (mean 95.41 Mbit/s)
Flow 3 ingress (mean 58.11 Mbit/s)   Flow 3 egress (mean 58.78 Mbit/s)

Flow 1 (95th percentile 163.11 ms)   Flow 2 (95th percentile 84.50 ms)   Flow 3 (95th percentile 64.93 ms)
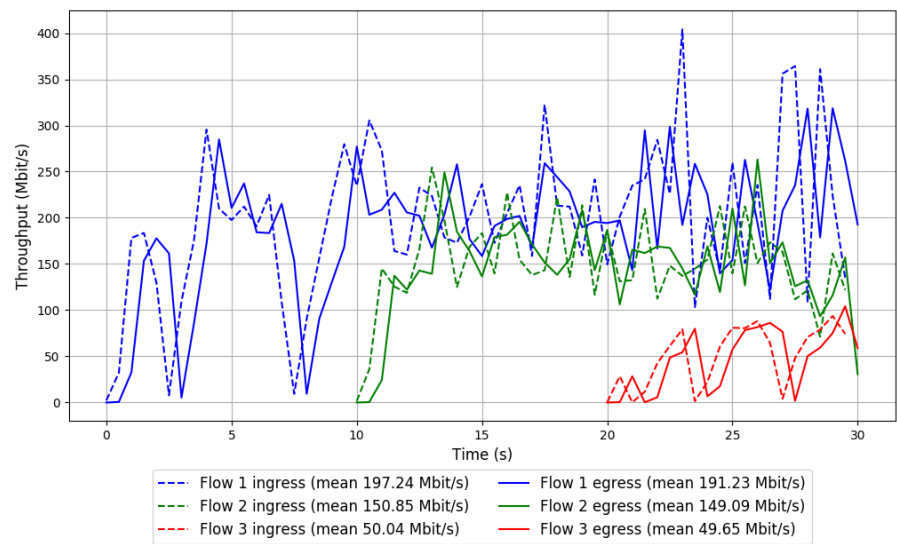
```
Run 5: Statistics of Verus

Start at: 2018-11-16 02:37:16
End at: 2018-11-16 02:37:46
Local clock offset: 0.256 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-11-16 05:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.12 Mbit/s
95th percentile per-packet one-way delay: 217.497 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 191.23 Mbit/s
95th percentile per-packet one-way delay: 225.943 ms
Loss rate: 3.67%
-- Flow 2:
Average throughput: 149.09 Mbit/s
95th percentile per-packet one-way delay: 146.960 ms
Loss rate: 1.61%
-- Flow 3:
Average throughput: 49.65 Mbit/s
95th percentile per-packet one-way delay: 62.605 ms
Loss rate: 2.05%
```

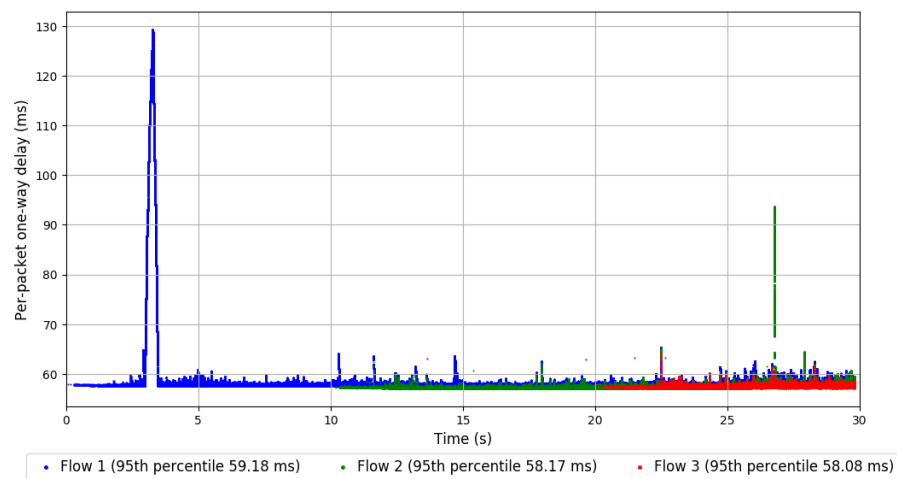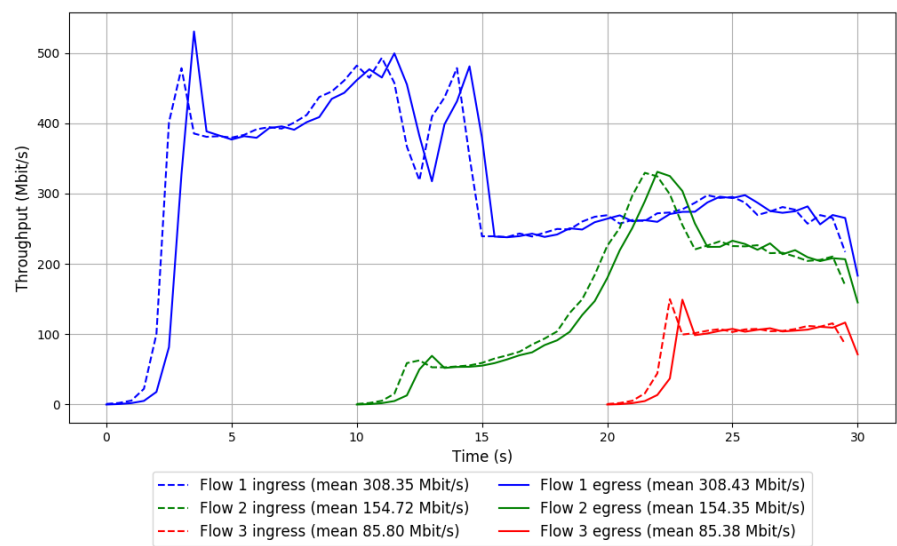Run 5: Report of Verus — Data Link

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```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 23:55:33
End at: 2018-11-15 23:56:03
Local clock offset: 0.258 ms
Remote clock offset: -0.277 ms


# Below is generated by plot.py at 2018-11-16 05:22:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 438.72 Mbit/s
95th percentile per-packet one-way delay: 58.798 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 308.43 Mbit/s
95th percentile per-packet one-way delay: 59.178 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 154.35 Mbit/s
95th percentile per-packet one-way delay: 58.166 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 85.38 Mbit/s
95th percentile per-packet one-way delay: 58.075 ms
Loss rate: 1.65%
```
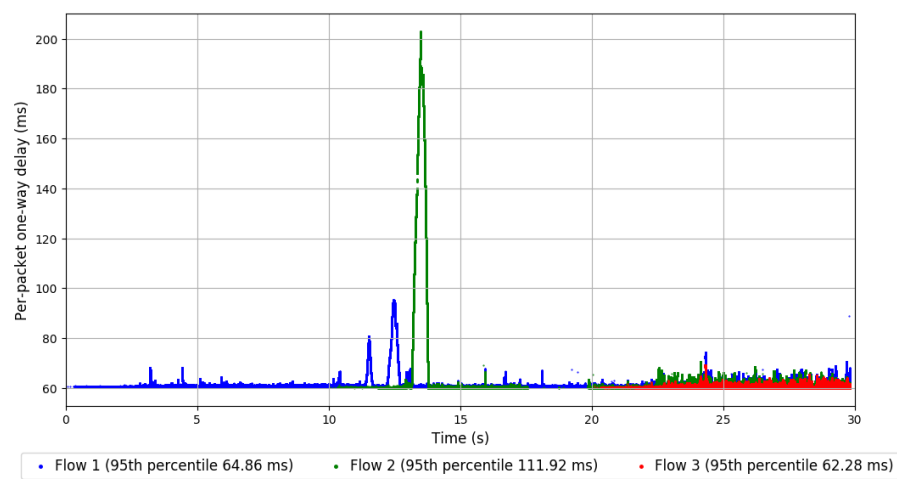
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 308.35 Mbit/s) — Flow 1 egress (mean 308.43 Mbit/s)
Flow 2 ingress (mean 154.72 Mbit/s) — Flow 2 egress (mean 154.35 Mbit/s)
Flow 3 ingress (mean 85.80 Mbit/s) — Flow 3 egress (mean 85.38 Mbit/s)

Flow 1 (95th percentile 59.18 ms) • Flow 2 (95th percentile 58.17 ms) • Flow 3 (95th percentile 58.08 ms)
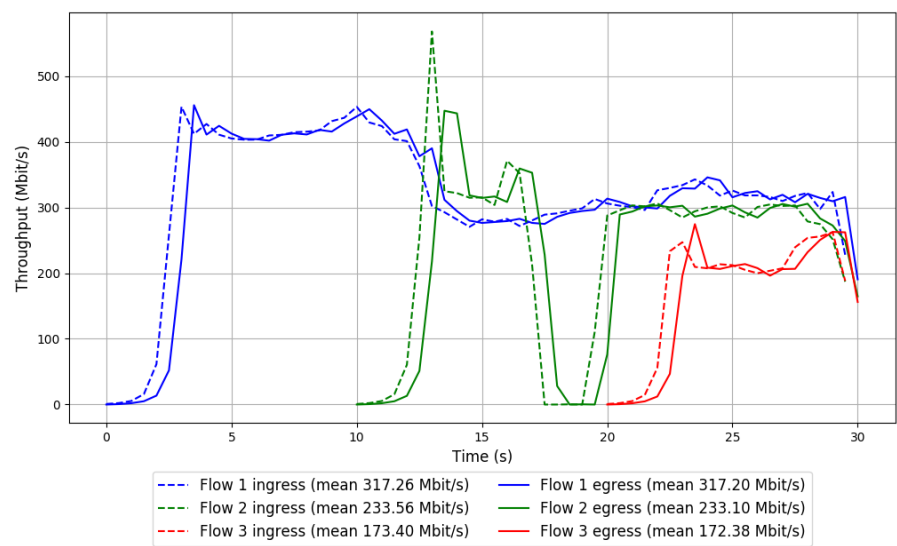
```
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-16 00:28:27
End at: 2018-11-16 00:28:57
Local clock offset: -0.142 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2018-11-16 05:22:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 528.27 Mbit/s
95th percentile per-packet one-way delay: 65.399 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 317.20 Mbit/s
95th percentile per-packet one-way delay: 64.860 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 233.10 Mbit/s
95th percentile per-packet one-way delay: 111.916 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 172.38 Mbit/s
95th percentile per-packet one-way delay: 62.282 ms
Loss rate: 1.78%
```

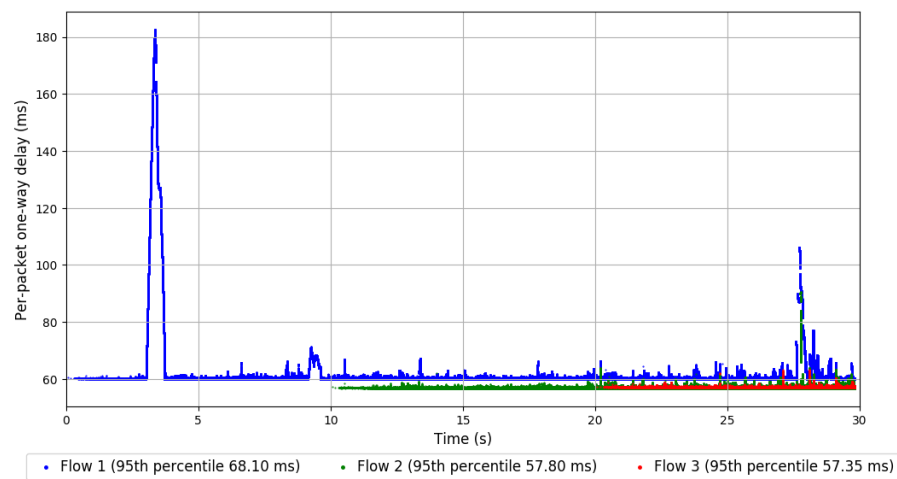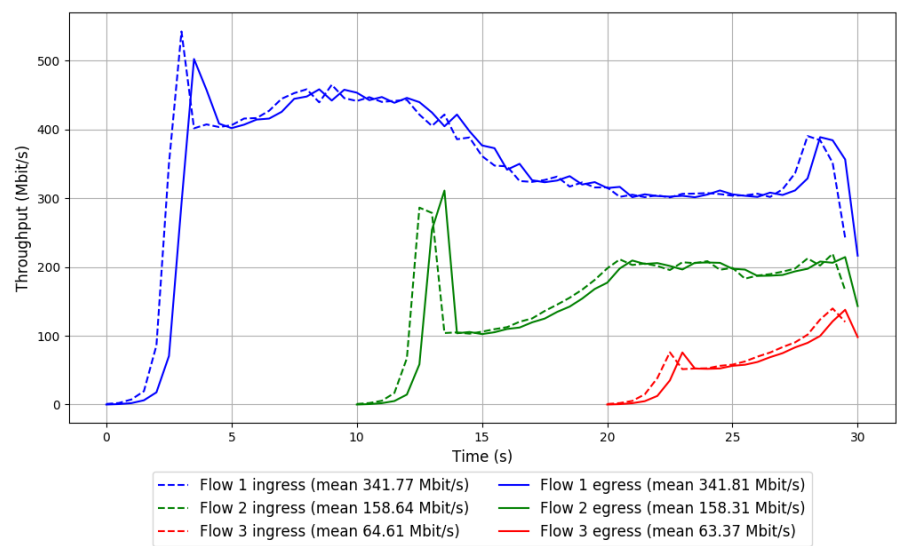Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 317.26 Mbit/s) --- Flow 1 egress (mean 317.20 Mbit/s)
Flow 2 ingress (mean 233.56 Mbit/s) --- Flow 2 egress (mean 233.10 Mbit/s)
Flow 3 ingress (mean 173.40 Mbit/s) --- Flow 3 egress (mean 172.38 Mbit/s)

Flow 1 (95th percentile 64.86 ms) • Flow 2 (95th percentile 111.92 ms) • Flow 3 (95th percentile 62.28 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-16 01:01:35
End at: 2018-11-16 01:02:05
Local clock offset: -0.114 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2018-11-16 05:23:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.65 Mbit/s
95th percentile per-packet one-way delay: 65.717 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 341.81 Mbit/s
95th percentile per-packet one-way delay: 68.103 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 158.31 Mbit/s
95th percentile per-packet one-way delay: 57.804 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 63.37 Mbit/s
95th percentile per-packet one-way delay: 57.349 ms
Loss rate: 3.06%
```

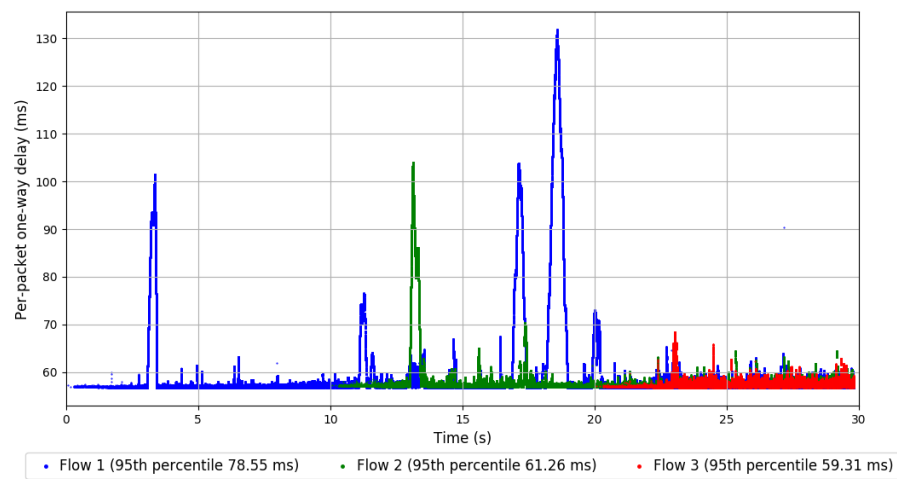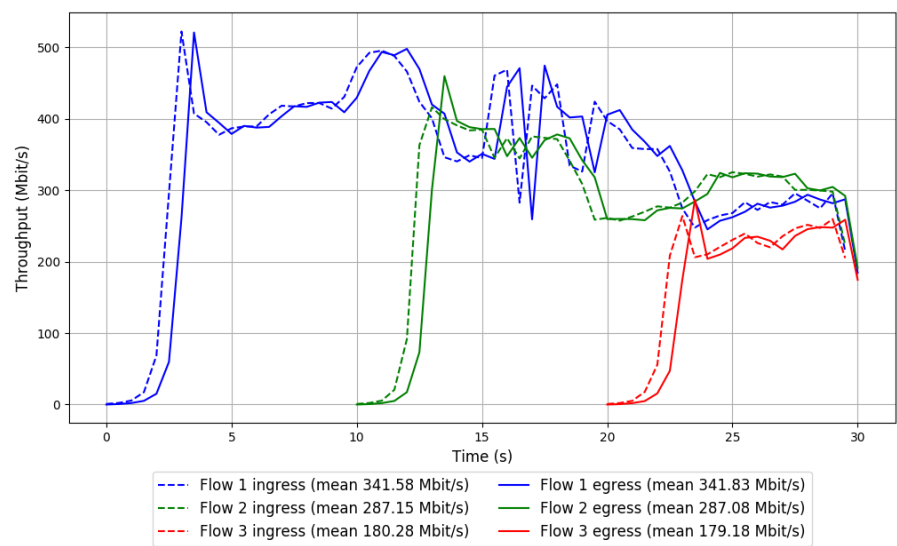## Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-16 01:33:17
End at: 2018-11-16 01:33:47
Local clock offset: -0.415 ms
Remote clock offset: -0.316 ms


# Below is generated by plot.py at 2018-11-16 05:23:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.99 Mbit/s
95th percentile per-packet one-way delay: 71.223 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 341.83 Mbit/s
95th percentile per-packet one-way delay: 78.553 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 287.08 Mbit/s
95th percentile per-packet one-way delay: 61.263 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 179.18 Mbit/s
95th percentile per-packet one-way delay: 59.310 ms
Loss rate: 1.77%
```
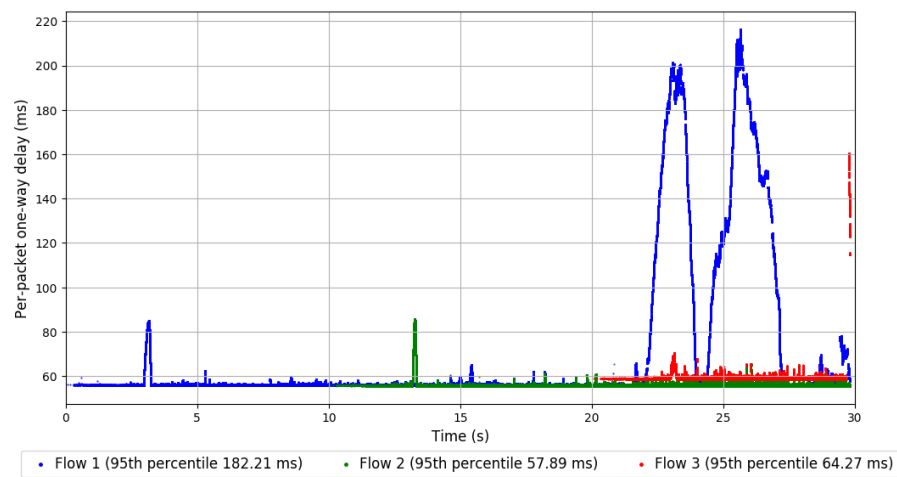
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-16 02:05:46
End at: 2018-11-16 02:06:16
Local clock offset: -0.2 ms
Remote clock offset: 1.127 ms


# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 558.99 Mbit/s
95th percentile per-packet one-way delay: 161.580 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 357.63 Mbit/s
95th percentile per-packet one-way delay: 182.212 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 225.85 Mbit/s
95th percentile per-packet one-way delay: 57.889 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 157.20 Mbit/s
95th percentile per-packet one-way delay: 64.270 ms
Loss rate: 2.36%
```
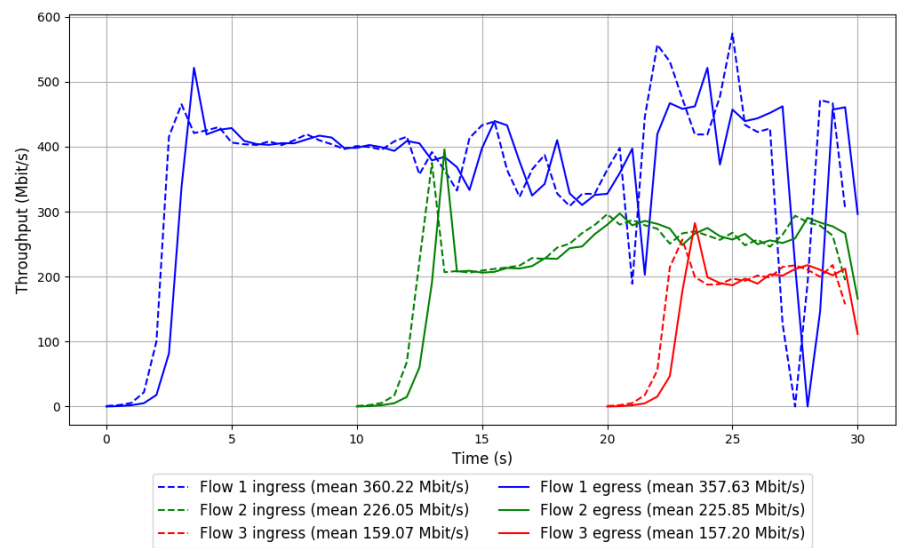
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-11-16 00:01:54
End at: 2018-11-16 00:02:24
Local clock offset: -0.148 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 57.284 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 57.262 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 57.327 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.174 ms
Loss rate: 1.40%
```
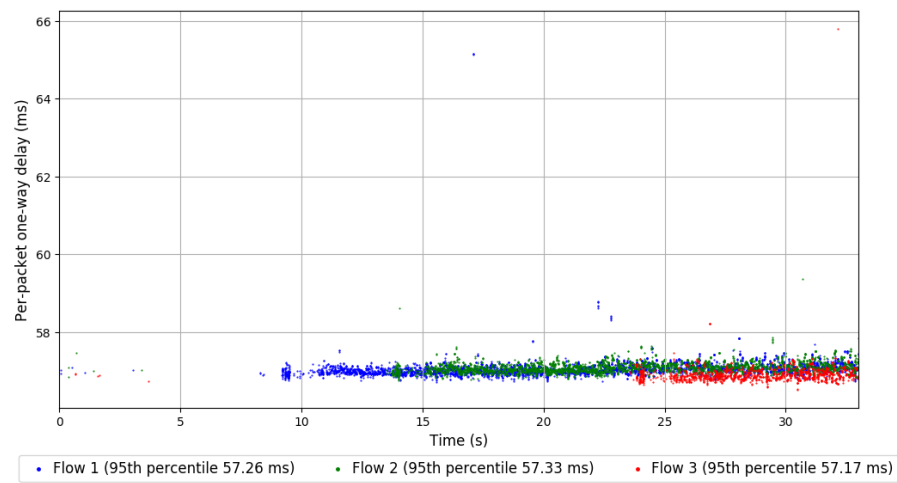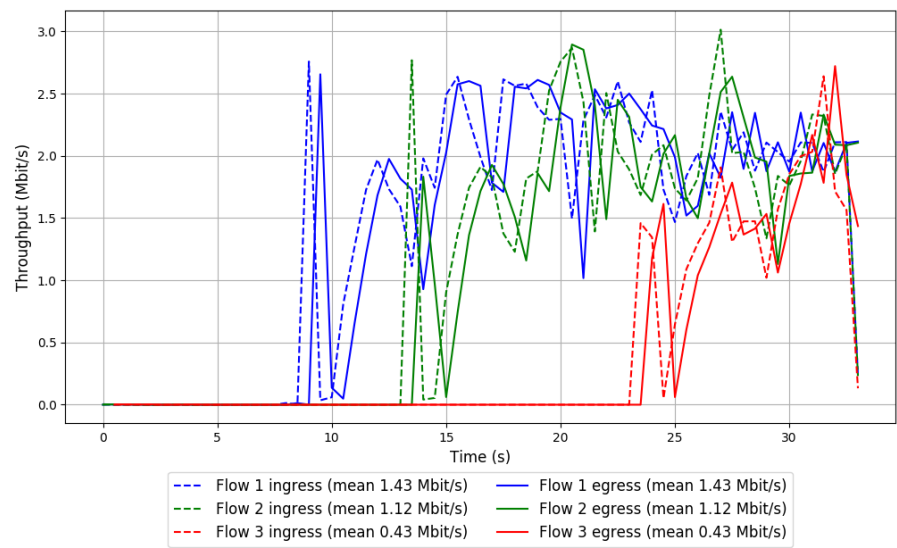
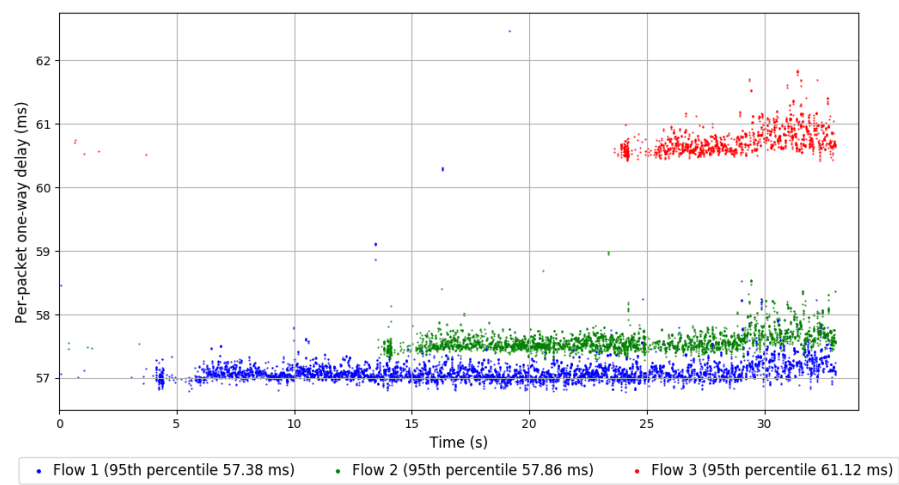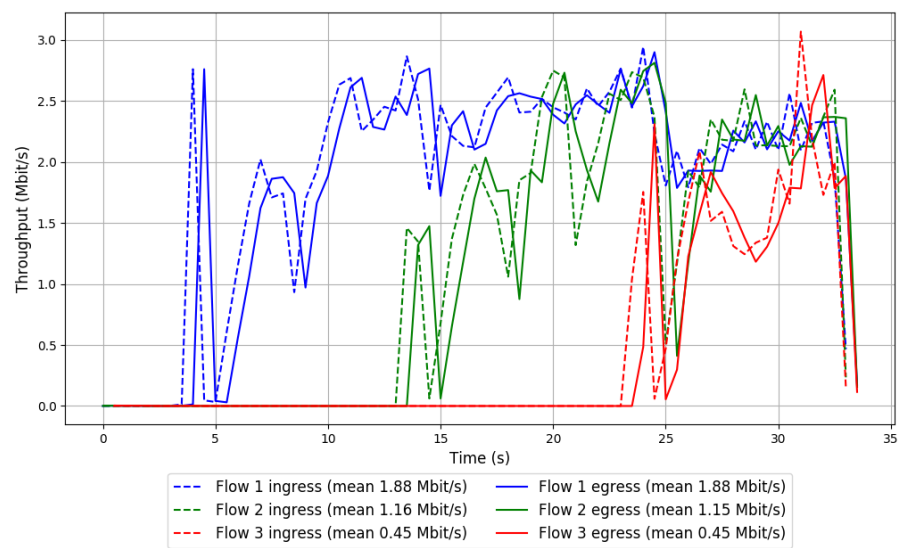Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-11-16 00:35:17
End at: 2018-11-16 00:35:47
Local clock offset: -0.149 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.46 Mbit/s
95th percentile per-packet one-way delay: 60.762 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 57.375 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 57.863 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 61.117 ms
Loss rate: 0.97%
```

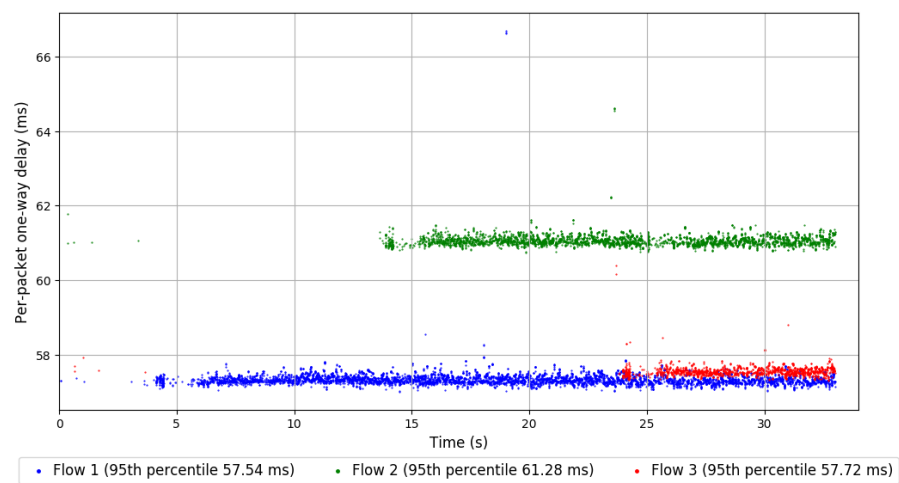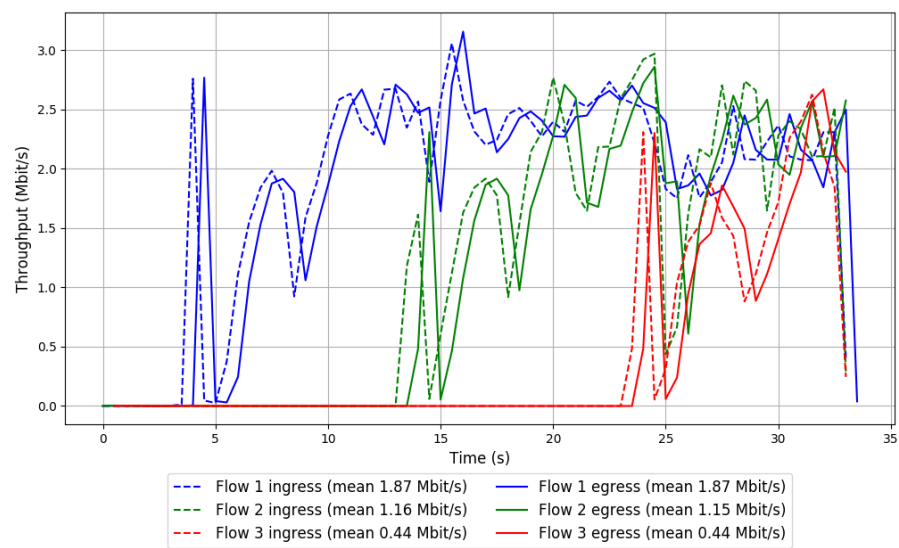Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-11-16 01:07:20
End at: 2018-11-16 01:07:50
Local clock offset: 0.019 ms
Remote clock offset: -0.223 ms


# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 61.181 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 57.538 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 61.277 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 57.716 ms
Loss rate: 1.31%
```

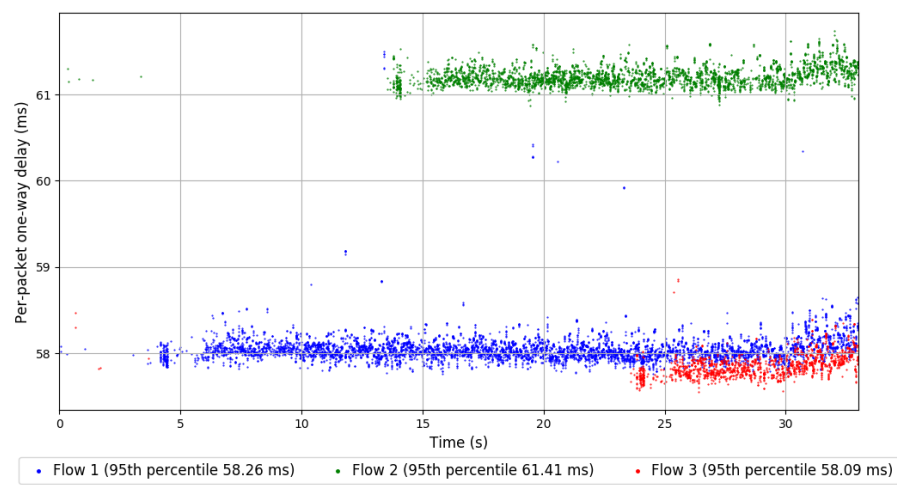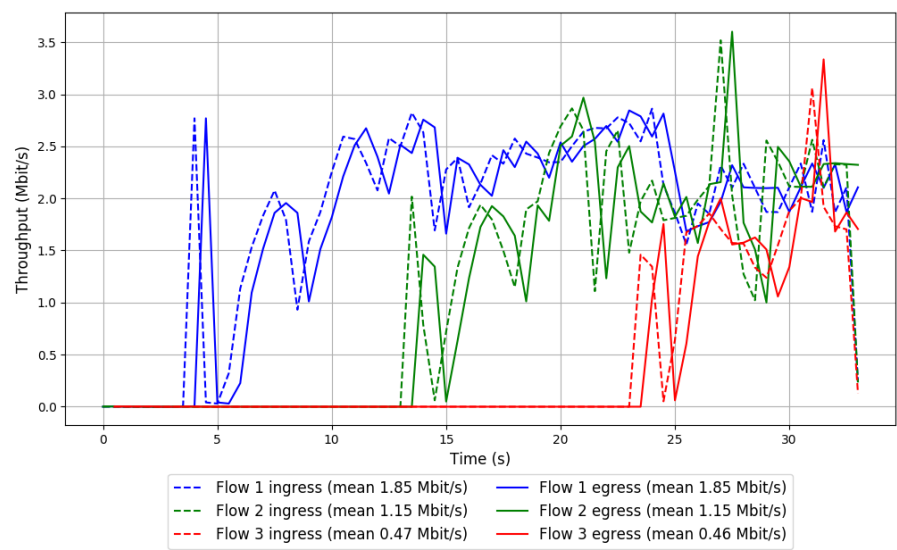Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-11-16 01:39:14
End at: 2018-11-16 01:39:44
Local clock offset: 0.16 ms
Remote clock offset: -0.478 ms


# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 61.316 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 58.260 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 61.406 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 58.090 ms
Loss rate: 0.87%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-11-16 02:11:38
End at: 2018-11-16 02:12:08
Local clock offset: 0.102 ms
Remote clock offset: 0.511 ms


# Below is generated by plot.py at 2018-11-16 05:24:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 60.428 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 60.450 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 60.426 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 56.965 ms
Loss rate: 1.78%
```

Run 5: Report of WebRTC media — Data Link