Pantheon Report

Generated at 2019-02-20 06:00:20 (UTC).

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

Repeated the test of 21 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.
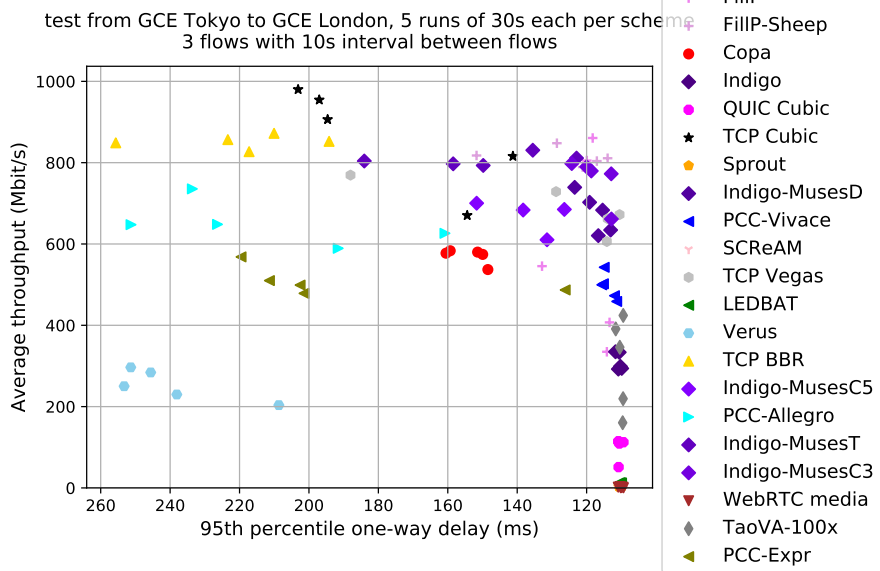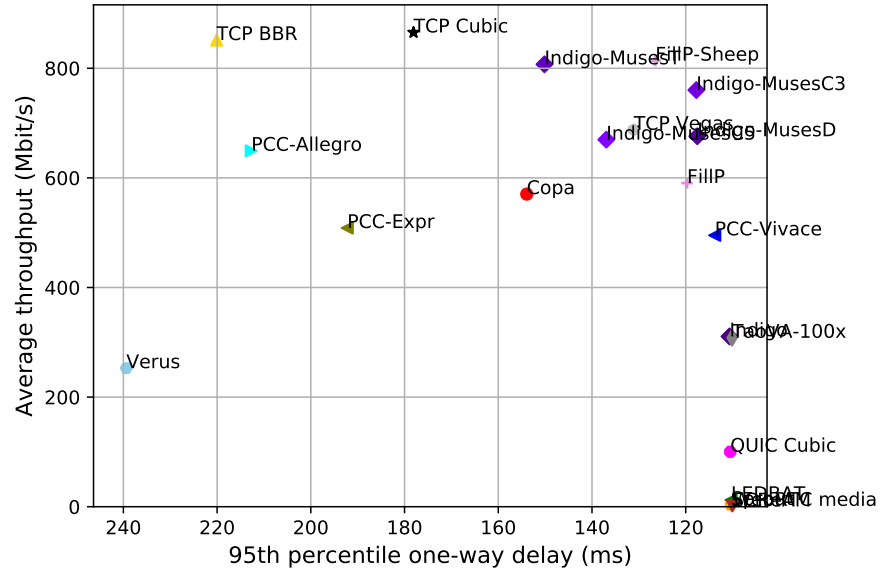
```
System info:
Linux 4.15.0-1026-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
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 London, 5 runs of 30s each per scheme
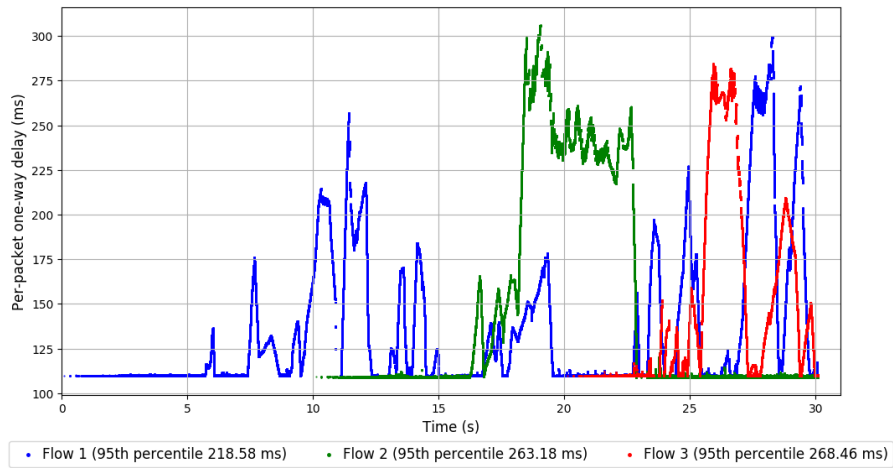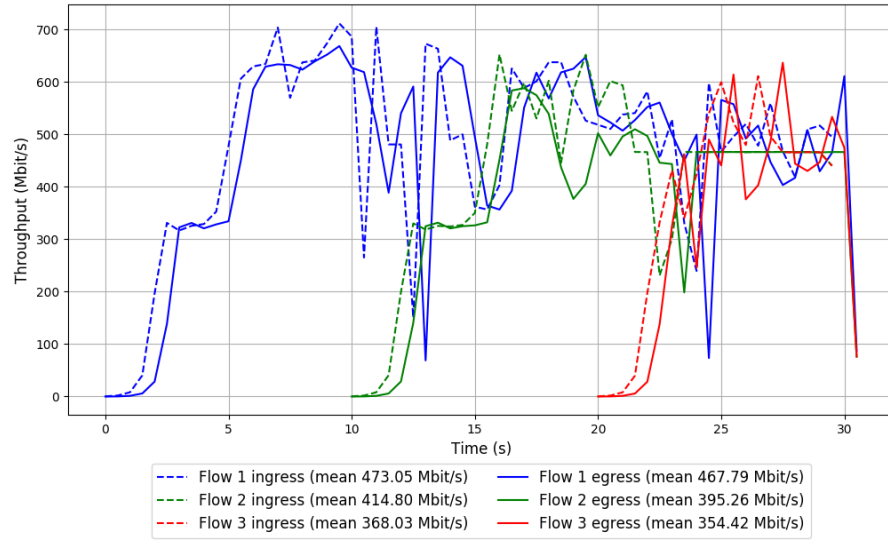3 flows with 10s interval between flows (mean of all runs by scheme)

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

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	470.15	402.77	340.12	213.27	200.07	207.19	0.94	2.21	1.98
Copa	5	307.15	284.38	222.15	141.28	158.02	169.07	0.02	0.03	0.00
TCP Cubic	5	451.14	449.23	346.04	163.35	178.04	166.61	0.12	0.15	0.65
FillP	5	292.22	339.57	220.23	122.11	112.74	113.14	0.03	0.00	0.01
FillP-Sheep	5	524.05	320.00	232.43	134.32	112.98	112.82	0.07	0.00	0.09
Indigo	5	164.88	157.31	129.94	110.24	110.88	110.82	0.00	0.00	0.00
Indigo-MusesC3	5	452.65	366.94	269.93	119.88	117.02	112.93	0.02	0.05	0.00
Indigo-MusesC5	4	408.15	342.31	153.49	138.17	141.46	111.58	0.05	0.00	0.00
Indigo-MusesD	5	408.87	347.09	159.96	118.17	118.66	110.58	0.00	0.00	0.03
Indigo-MusesT	5	502.95	418.93	133.93	156.13	126.36	111.03	0.08	0.00	0.00
LEDBAT	5	7.85	5.21	2.55	110.24	110.18	109.83	0.00	0.00	0.00
PCC-Allegro	5	359.03	312.81	251.54	208.43	178.05	211.43	2.50	1.87	2.92
PCC-Expr	5	306.29	223.93	160.95	194.00	160.08	178.60	2.55	1.54	0.50
QUIC Cubic	5	49.07	54.07	47.38	110.62	110.22	110.31	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	110.08	109.89	109.96	0.00	0.00	0.00
Sprout	5	1.91	0.89	1.60	110.22	109.34	110.12	0.00	0.00	0.00
TaoVA-100x	5	130.00	209.30	116.88	109.88	109.71	109.65	0.00	0.00	0.00
TCP Vegas	5	380.52	323.50	275.94	135.71	116.01	126.82	0.05	0.00	0.00
Verus	5	160.21	103.07	77.31	229.95	213.68	215.04	3.23	0.94	0.27
PCC-Vivace	5	316.00	201.45	136.97	119.12	110.64	112.23	0.16	0.00	0.01
WebRTC media	5	1.18	0.28	0.12	109.83	109.86	109.89	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-19 23:58:41
End at: 2019-02-19 23:59:11
Local clock offset: -1.068 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2019-02-20 03:44:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 848.79 Mbit/s
95th percentile per-packet one-way delay: 255.663 ms
Loss rate: 2.62%
-- Flow 1:
Average throughput: 467.79 Mbit/s
95th percentile per-packet one-way delay: 218.577 ms
Loss rate: 1.11%
-- Flow 2:
Average throughput: 395.26 Mbit/s
95th percentile per-packet one-way delay: 263.183 ms
Loss rate: 4.71%
-- Flow 3:
Average throughput: 354.42 Mbit/s
95th percentile per-packet one-way delay: 268.464 ms
Loss rate: 3.70%
```
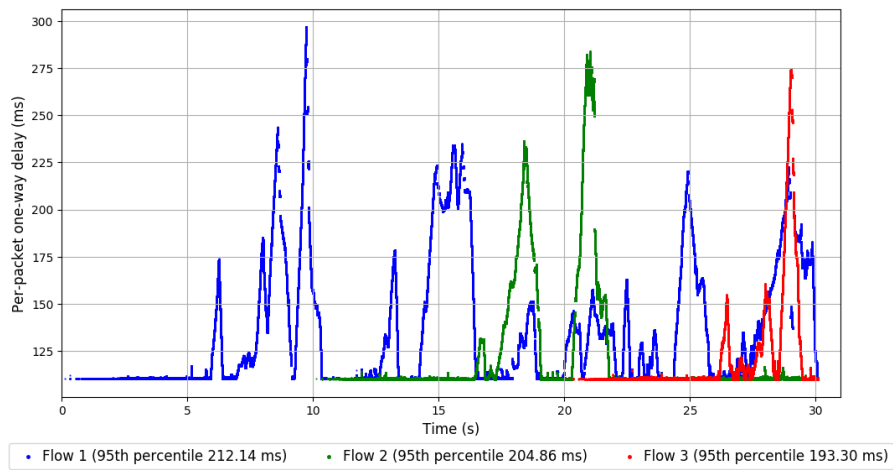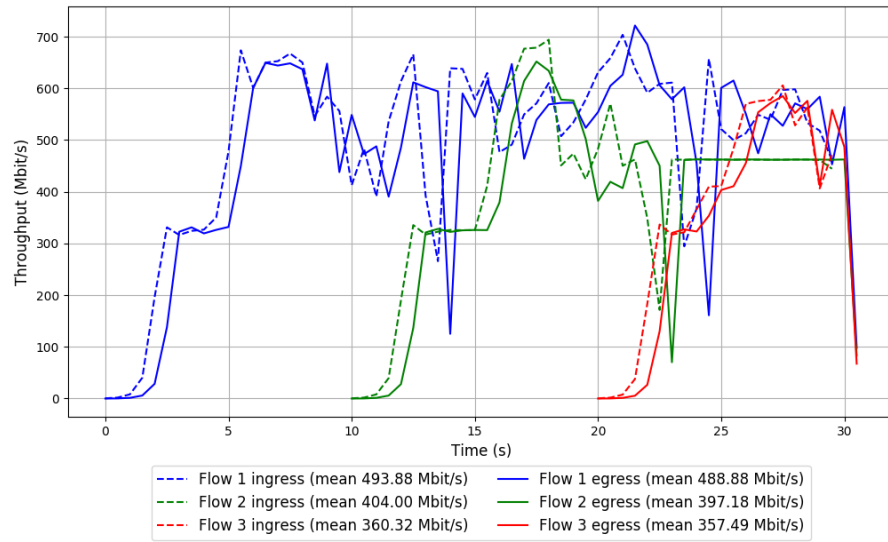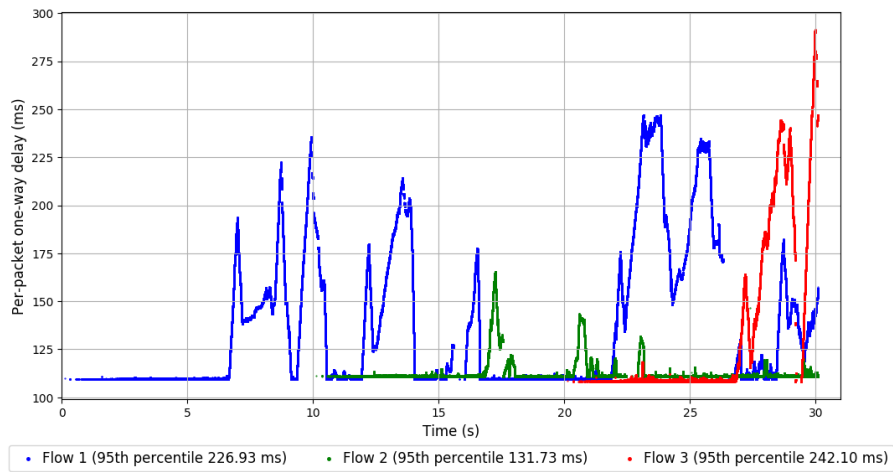
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 473.05 Mbit/s)   Flow 1 egress (mean 467.79 Mbit/s)
Flow 2 ingress (mean 414.80 Mbit/s)   Flow 2 egress (mean 395.26 Mbit/s)
Flow 3 ingress (mean 368.03 Mbit/s)   Flow 3 egress (mean 354.42 Mbit/s)

Flow 1 (95th percentile 218.58 ms)   Flow 2 (95th percentile 263.18 ms)   Flow 3 (95th percentile 268.46 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 00:41:06
End at: 2019-02-20 00:41:36
Local clock offset: -0.937 ms
Remote clock offset: 0.034 ms


# Below is generated by plot.py at 2019-02-20 03:45:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 872.20 Mbit/s
95th percentile per-packet one-way delay: 210.054 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 488.88 Mbit/s
95th percentile per-packet one-way delay: 212.140 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 397.18 Mbit/s
95th percentile per-packet one-way delay: 204.857 ms
Loss rate: 1.69%
-- Flow 3:
Average throughput: 357.49 Mbit/s
95th percentile per-packet one-way delay: 193.300 ms
Loss rate: 0.79%
```
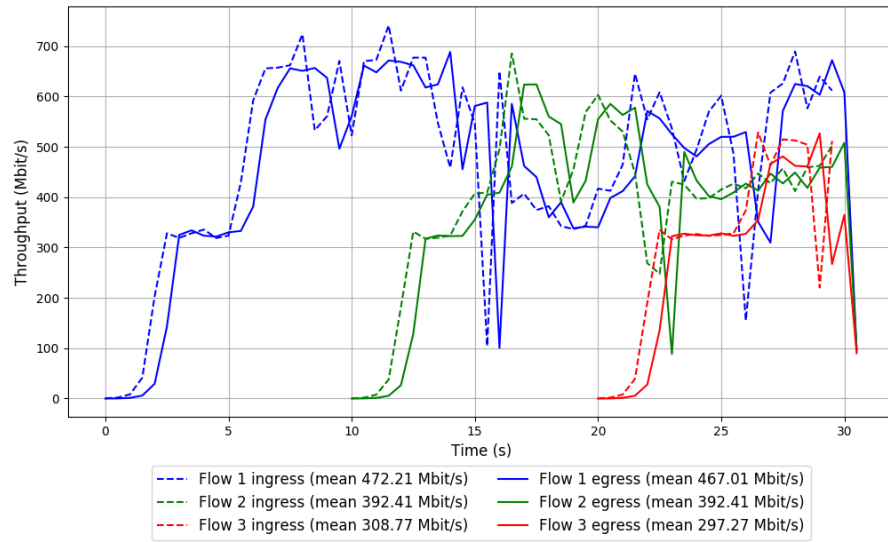
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 493.88 Mbit/s) --- Flow 1 egress (mean 488.88 Mbit/s)
Flow 2 ingress (mean 404.00 Mbit/s) --- Flow 2 egress (mean 397.18 Mbit/s)
Flow 3 ingress (mean 360.32 Mbit/s) --- Flow 3 egress (mean 357.49 Mbit/s)

Flow 1 (95th percentile 212.14 ms)   Flow 2 (95th percentile 204.86 ms)   Flow 3 (95th percentile 193.30 ms)
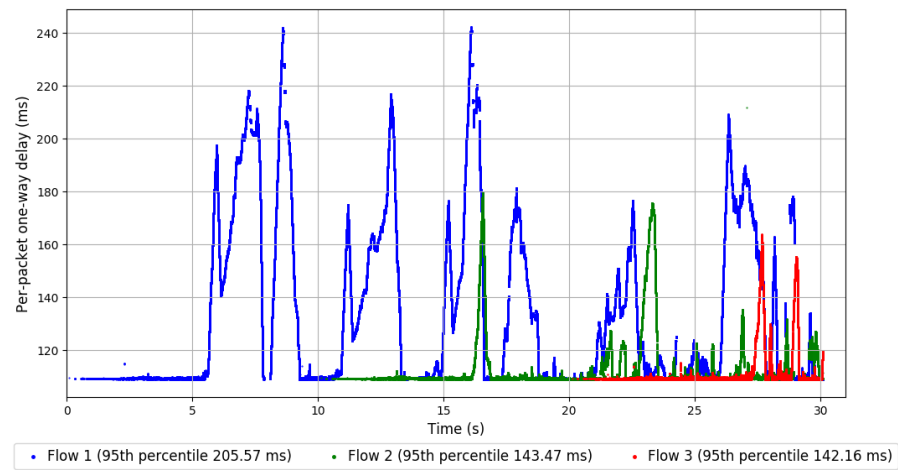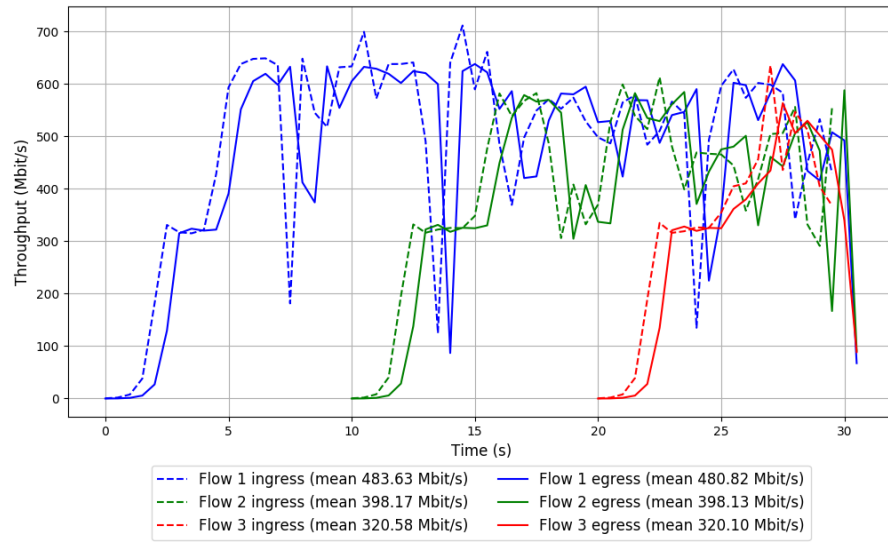
8

```
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 01:23:24
End at: 2019-02-20 01:23:54
Local clock offset: -0.06 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2019-02-20 03:45:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 827.12 Mbit/s
95th percentile per-packet one-way delay: 217.242 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 467.01 Mbit/s
95th percentile per-packet one-way delay: 226.925 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 392.41 Mbit/s
95th percentile per-packet one-way delay: 131.726 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 297.27 Mbit/s
95th percentile per-packet one-way delay: 242.097 ms
Loss rate: 3.70%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 472.21 Mbit/s) —— Flow 1 egress (mean 467.01 Mbit/s)
Flow 2 ingress (mean 392.41 Mbit/s) —— Flow 2 egress (mean 392.41 Mbit/s)
Flow 3 ingress (mean 308.77 Mbit/s) —— Flow 3 egress (mean 297.27 Mbit/s)

Flow 1 (95th percentile 226.93 ms)   Flow 2 (95th percentile 131.73 ms)   Flow 3 (95th percentile 242.10 ms)
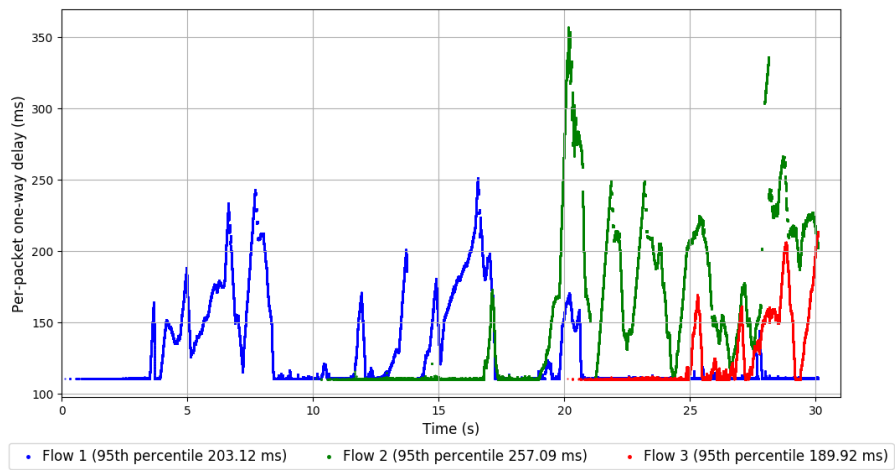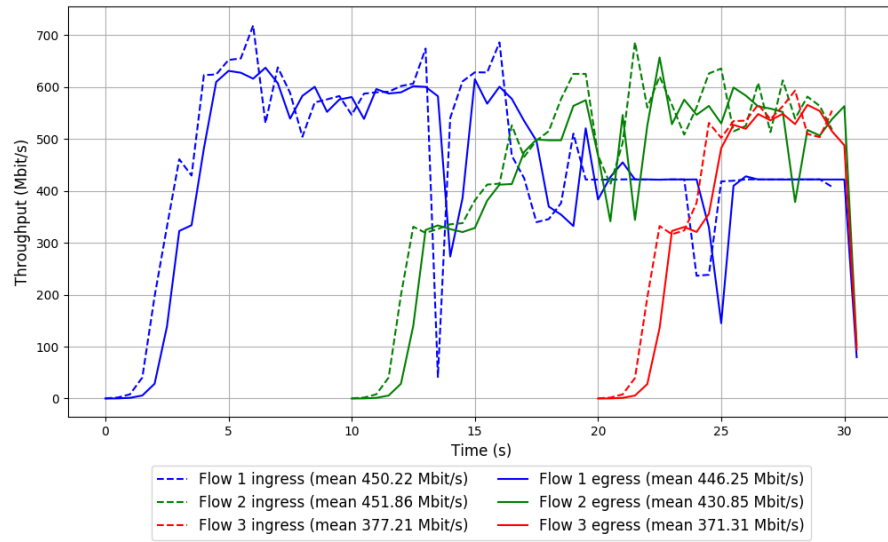
10

```
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 02:04:11
End at: 2019-02-20 02:04:41
Local clock offset: 0.086 ms
Remote clock offset: -0.066 ms


# Below is generated by plot.py at 2019-02-20 03:45:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 852.46 Mbit/s
95th percentile per-packet one-way delay: 194.197 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 480.82 Mbit/s
95th percentile per-packet one-way delay: 205.575 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 398.13 Mbit/s
95th percentile per-packet one-way delay: 143.468 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 320.10 Mbit/s
95th percentile per-packet one-way delay: 142.160 ms
Loss rate: 0.14%
```
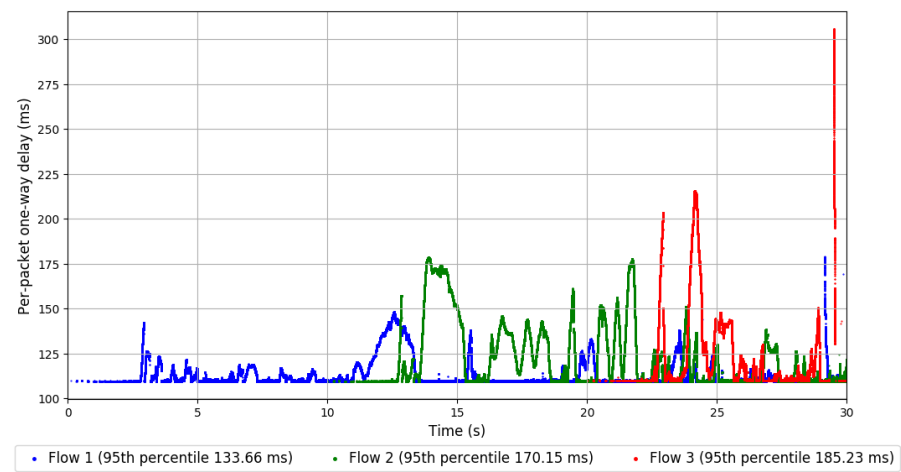
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 483.63 Mbit/s) — — — Flow 1 egress (mean 480.82 Mbit/s)
Flow 2 ingress (mean 398.17 Mbit/s) — — — Flow 2 egress (mean 398.13 Mbit/s)
Flow 3 ingress (mean 320.58 Mbit/s) — — — Flow 3 egress (mean 320.10 Mbit/s)

Flow 1 (95th percentile 205.57 ms)   Flow 2 (95th percentile 143.47 ms)   Flow 3 (95th percentile 142.16 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 02:45:31
End at: 2019-02-20 02:46:01
Local clock offset: -1.395 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2019-02-20 03:45:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 856.74 Mbit/s
95th percentile per-packet one-way delay: 223.368 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 446.25 Mbit/s
95th percentile per-packet one-way delay: 203.123 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 430.85 Mbit/s
95th percentile per-packet one-way delay: 257.094 ms
Loss rate: 4.65%
-- Flow 3:
Average throughput: 371.31 Mbit/s
95th percentile per-packet one-way delay: 189.923 ms
Loss rate: 1.56%
```
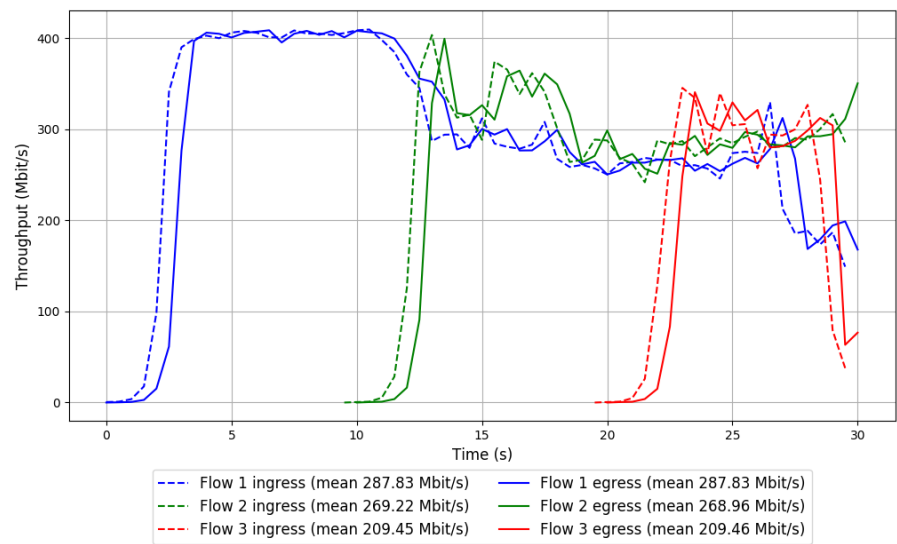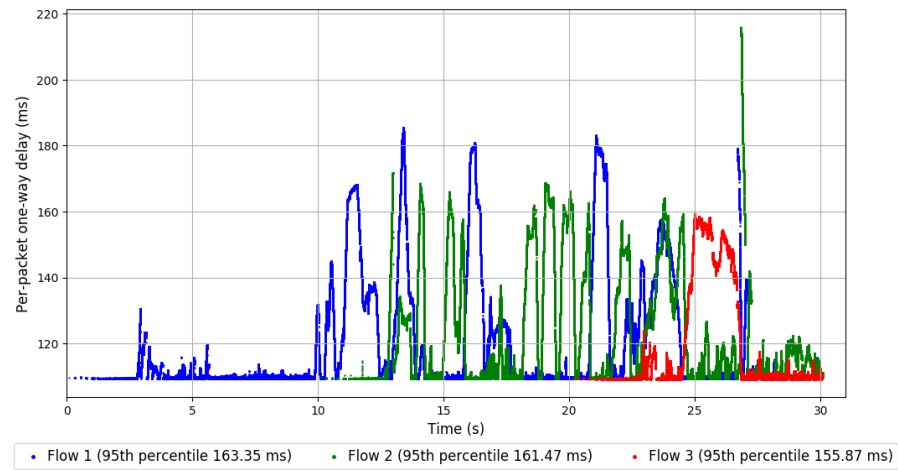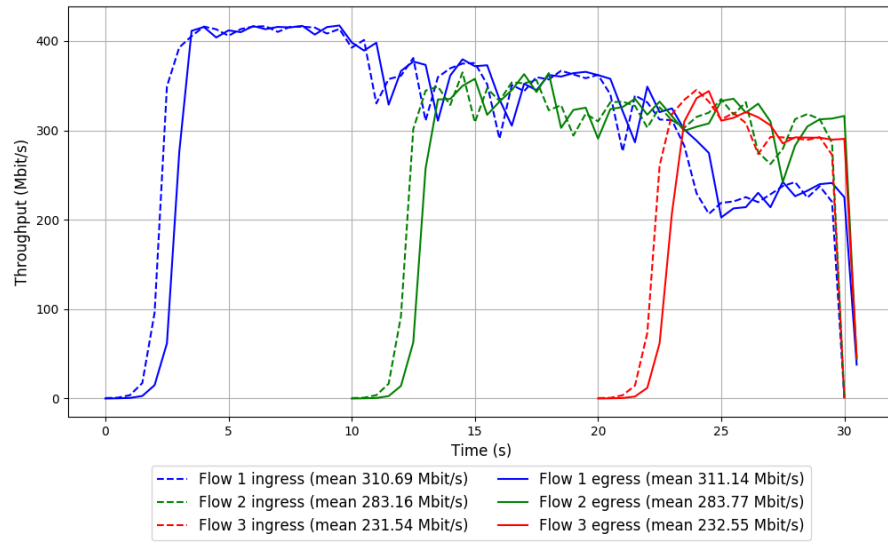
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 450.22 Mbit/s) Flow 1 egress (mean 446.25 Mbit/s)
Flow 2 ingress (mean 451.86 Mbit/s) Flow 2 egress (mean 430.85 Mbit/s)
Flow 3 ingress (mean 377.21 Mbit/s) Flow 3 egress (mean 371.31 Mbit/s)

Flow 1 (95th percentile 203.12 ms)   Flow 2 (95th percentile 257.09 ms)   Flow 3 (95th percentile 189.92 ms)

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```
Run 1: Statistics of Copa

Start at: 2019-02-19 23:51:40
End at: 2019-02-19 23:52:10
Local clock offset: -0.677 ms
Remote clock offset: 0.216 ms


# Below is generated by plot.py at 2019-02-20 03:47:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 537.10 Mbit/s
95th percentile per-packet one-way delay: 148.453 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 287.83 Mbit/s
95th percentile per-packet one-way delay: 133.655 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 268.96 Mbit/s
95th percentile per-packet one-way delay: 170.148 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 209.46 Mbit/s
95th percentile per-packet one-way delay: 185.233 ms
Loss rate: 0.00%
```
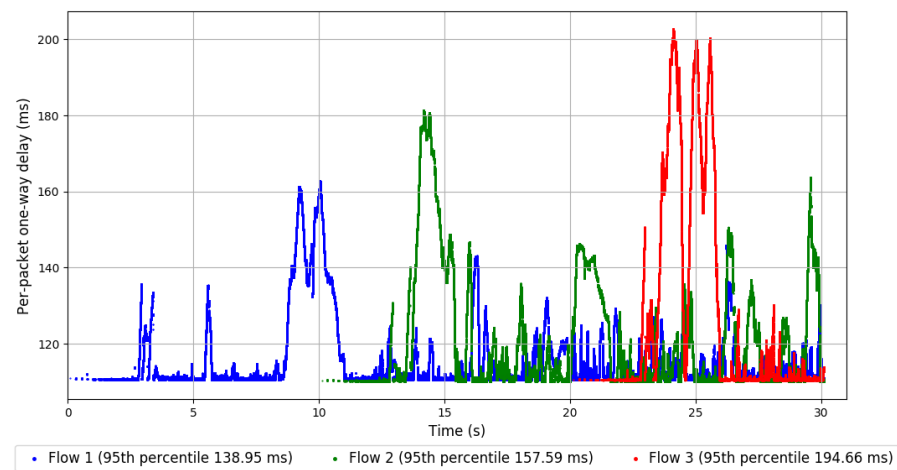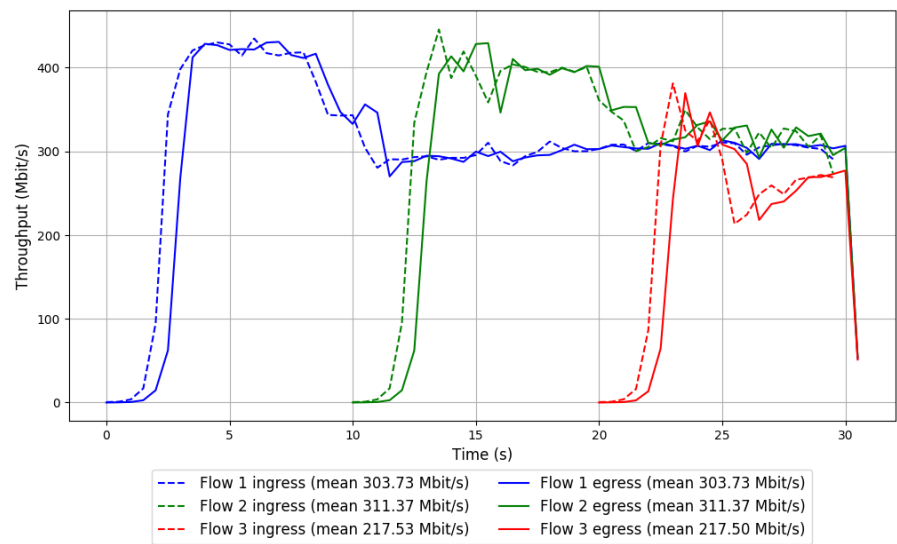
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 287.83 Mbit/s)   Flow 1 egress (mean 287.83 Mbit/s)
Flow 2 ingress (mean 269.22 Mbit/s)   Flow 2 egress (mean 268.96 Mbit/s)
Flow 3 ingress (mean 209.45 Mbit/s)   Flow 3 egress (mean 209.46 Mbit/s)

Flow 1 (95th percentile 133.66 ms)   Flow 2 (95th percentile 170.15 ms)   Flow 3 (95th percentile 185.23 ms)

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```
Run 2: Statistics of Copa

Start at: 2019-02-20 00:33:49
End at: 2019-02-20 00:34:19
Local clock offset: -0.217 ms
Remote clock offset: -0.039 ms


# Below is generated by plot.py at 2019-02-20 03:48:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 577.33 Mbit/s
95th percentile per-packet one-way delay: 160.511 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 311.14 Mbit/s
95th percentile per-packet one-way delay: 163.355 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 283.77 Mbit/s
95th percentile per-packet one-way delay: 161.473 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 232.55 Mbit/s
95th percentile per-packet one-way delay: 155.870 ms
Loss rate: 0.00%
```
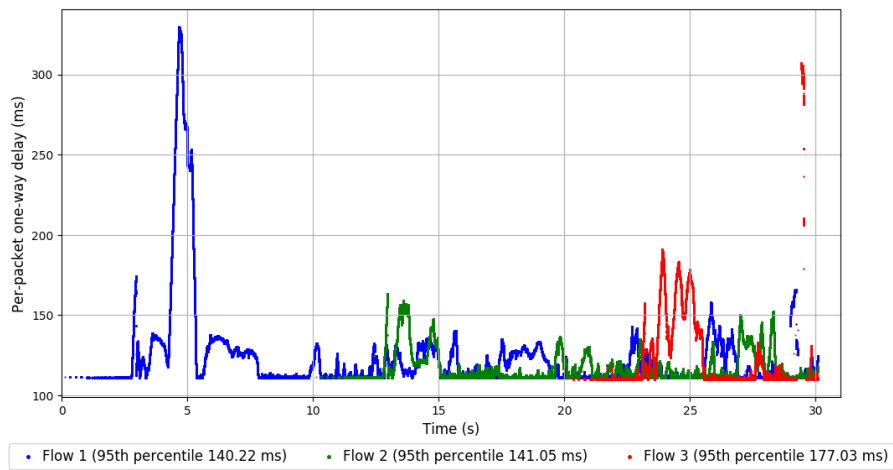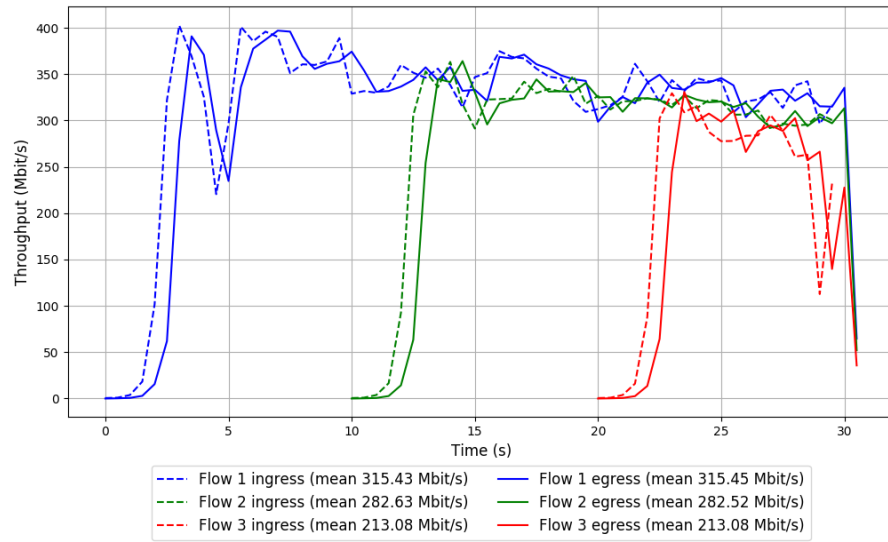
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-02-20 01:16:51
End at: 2019-02-20 01:17:21
Local clock offset: -1.298 ms
Remote clock offset: -0.107 ms


# Below is generated by plot.py at 2019-02-20 03:48:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 583.38 Mbit/s
95th percentile per-packet one-way delay: 159.302 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 303.73 Mbit/s
95th percentile per-packet one-way delay: 138.951 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 311.37 Mbit/s
95th percentile per-packet one-way delay: 157.590 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 217.50 Mbit/s
95th percentile per-packet one-way delay: 194.665 ms
Loss rate: 0.01%
```
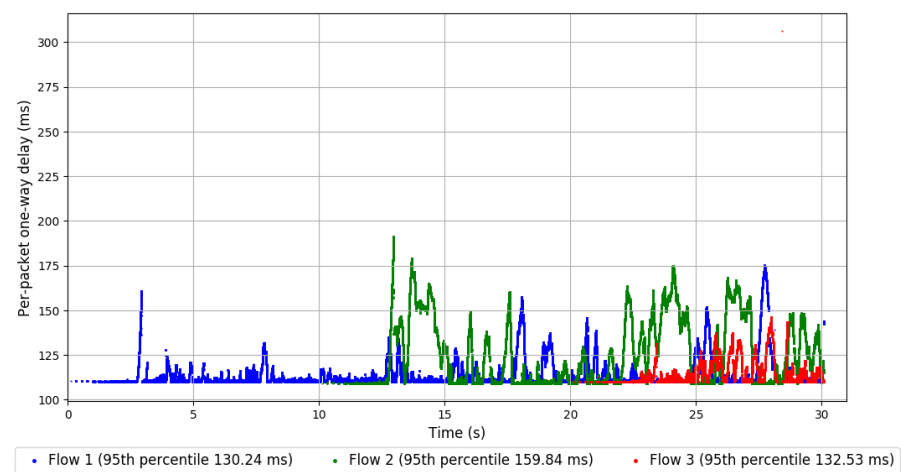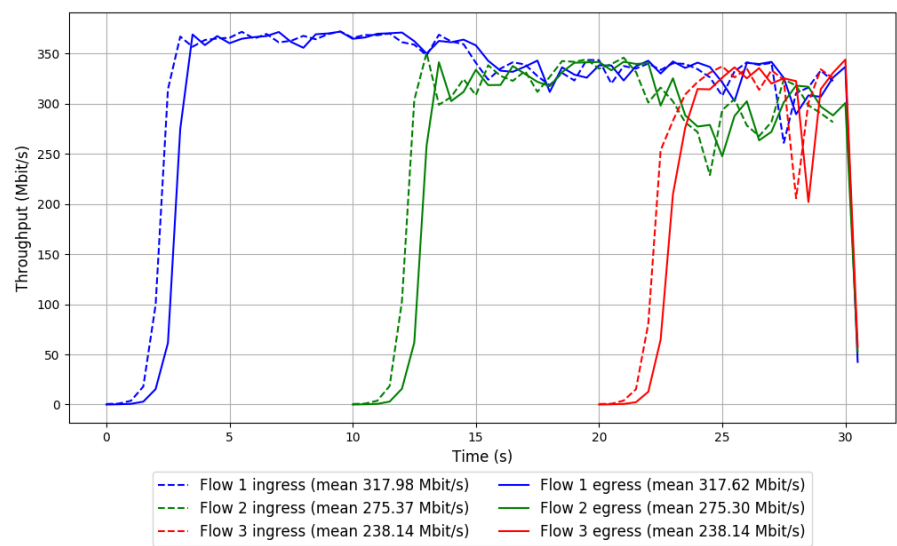
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 303.73 Mbit/s) --- Flow 1 egress (mean 303.73 Mbit/s)
Flow 2 ingress (mean 311.37 Mbit/s) --- Flow 2 egress (mean 311.37 Mbit/s)
Flow 3 ingress (mean 217.53 Mbit/s) --- Flow 3 egress (mean 217.50 Mbit/s)

Flow 1 (95th percentile 138.95 ms)   Flow 2 (95th percentile 157.59 ms)   Flow 3 (95th percentile 194.66 ms)

```
Run 4: Statistics of Copa

Start at: 2019-02-20 01:57:40
End at: 2019-02-20 01:58:10
Local clock offset: -1.477 ms
Remote clock offset: 0.282 ms


# Below is generated by plot.py at 2019-02-20 04:04:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 574.36 Mbit/s
95th percentile per-packet one-way delay: 149.943 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 315.45 Mbit/s
95th percentile per-packet one-way delay: 140.225 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 282.52 Mbit/s
95th percentile per-packet one-way delay: 141.054 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 213.08 Mbit/s
95th percentile per-packet one-way delay: 177.035 ms
Loss rate: 0.00%
```
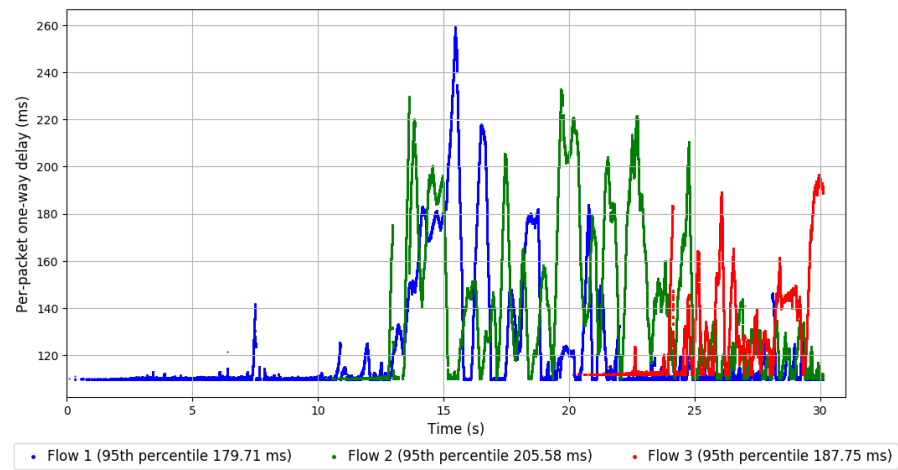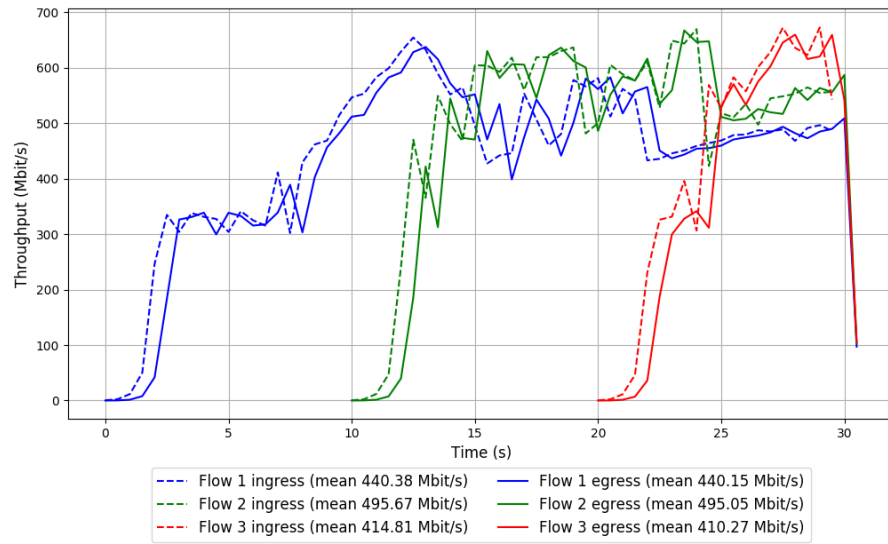
Run 4: Report of Copa — Data Link

- - - - Flow 1 ingress (mean 315.43 Mbit/s) ———— Flow 1 egress (mean 315.45 Mbit/s)
- - - - Flow 2 ingress (mean 282.63 Mbit/s) ———— Flow 2 egress (mean 282.52 Mbit/s)
- - - - Flow 3 ingress (mean 213.08 Mbit/s) ———— Flow 3 egress (mean 213.08 Mbit/s)

- Flow 1 (95th percentile 140.22 ms)   - Flow 2 (95th percentile 141.05 ms)   - Flow 3 (95th percentile 177.03 ms)

```
Run 5: Statistics of Copa

Start at: 2019-02-20 02:38:55
End at: 2019-02-20 02:39:25
Local clock offset: -0.842 ms
Remote clock offset: -0.066 ms


# Below is generated by plot.py at 2019-02-20 04:05:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 579.99 Mbit/s
95th percentile per-packet one-way delay: 151.407 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 317.62 Mbit/s
95th percentile per-packet one-way delay: 130.237 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 275.30 Mbit/s
95th percentile per-packet one-way delay: 159.838 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 238.14 Mbit/s
95th percentile per-packet one-way delay: 132.531 ms
Loss rate: 0.00%
```
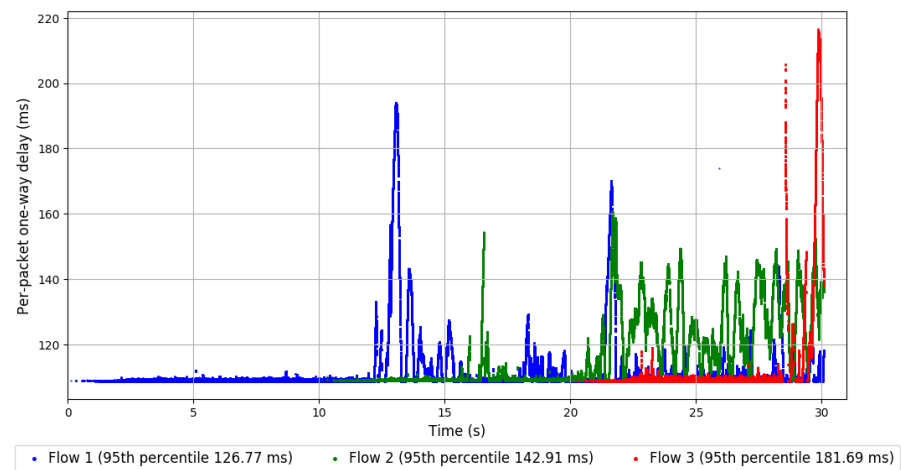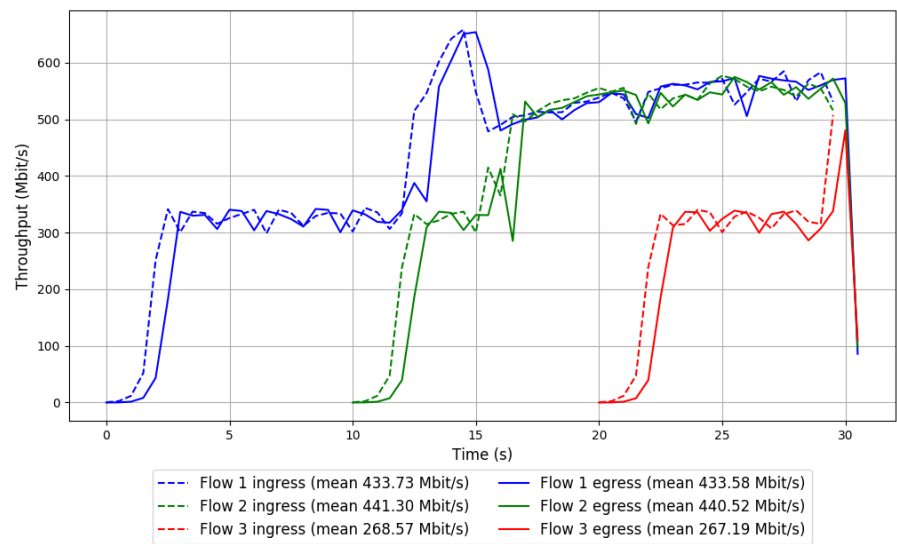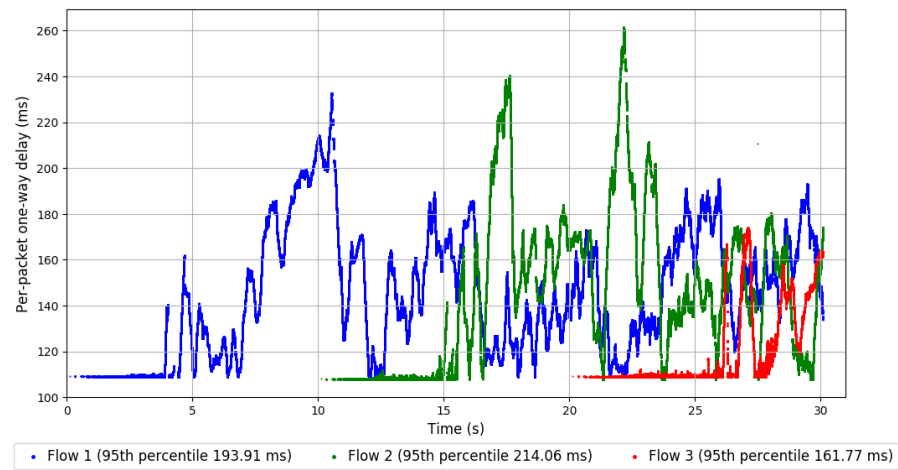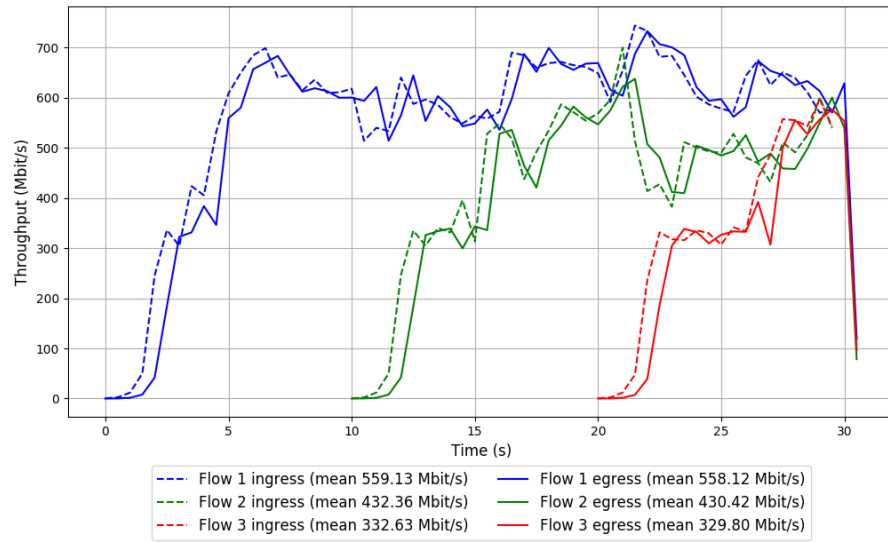
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 317.98 Mbit/s) ——— Flow 1 egress (mean 317.62 Mbit/s)
Flow 2 ingress (mean 275.37 Mbit/s) ——— Flow 2 egress (mean 275.30 Mbit/s)
Flow 3 ingress (mean 238.14 Mbit/s) ——— Flow 3 egress (mean 238.14 Mbit/s)

• Flow 1 (95th percentile 130.24 ms)   • Flow 2 (95th percentile 159.84 ms)   • Flow 3 (95th percentile 132.53 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 00:04:36
End at: 2019-02-20 00:05:06
Local clock offset: -0.735 ms
Remote clock offset: 0.259 ms


# Below is generated by plot.py at 2019-02-20 04:05:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 906.24 Mbit/s
95th percentile per-packet one-way delay: 194.622 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 440.15 Mbit/s
95th percentile per-packet one-way delay: 179.712 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 495.05 Mbit/s
95th percentile per-packet one-way delay: 205.580 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 410.27 Mbit/s
95th percentile per-packet one-way delay: 187.754 ms
Loss rate: 1.12%
```

Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 440.38 Mbit/s)   Flow 1 egress (mean 440.15 Mbit/s)
Flow 2 ingress (mean 495.67 Mbit/s)   Flow 2 egress (mean 495.05 Mbit/s)
Flow 3 ingress (mean 414.81 Mbit/s)   Flow 3 egress (mean 410.27 Mbit/s)

Flow 1 (95th percentile 179.71 ms)   Flow 2 (95th percentile 205.58 ms)   Flow 3 (95th percentile 187.75 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 00:47:20
End at: 2019-02-20 00:47:50
Local clock offset: -0.108 ms
Remote clock offset: -0.417 ms


# Below is generated by plot.py at 2019-02-20 04:05:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 815.81 Mbit/s
95th percentile per-packet one-way delay: 141.235 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 433.58 Mbit/s
95th percentile per-packet one-way delay: 126.768 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 440.52 Mbit/s
95th percentile per-packet one-way delay: 142.912 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 267.19 Mbit/s
95th percentile per-packet one-way delay: 181.689 ms
Loss rate: 0.52%
```
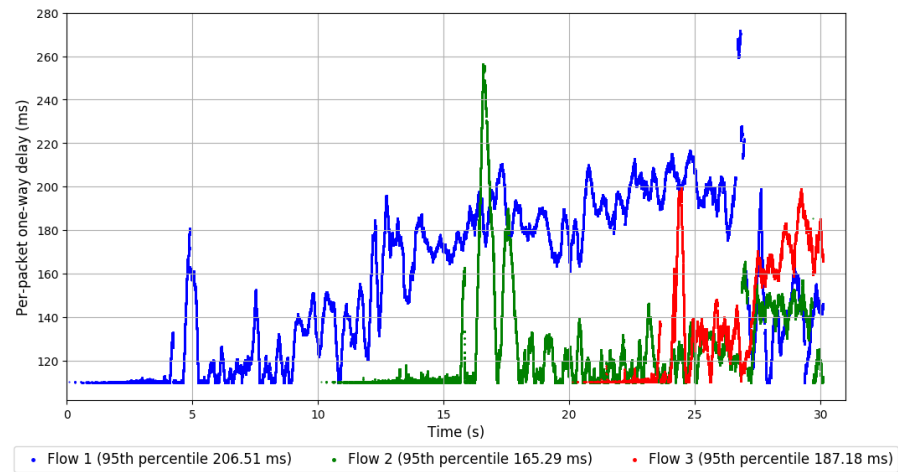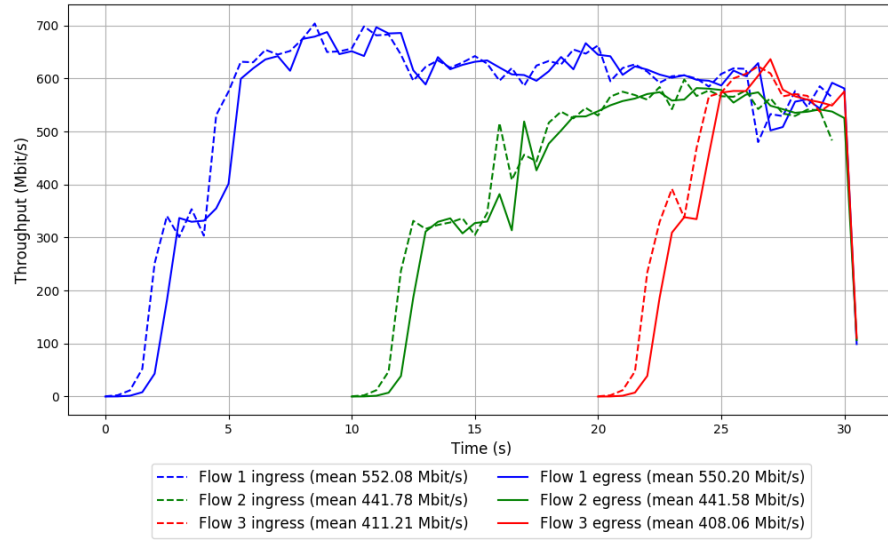
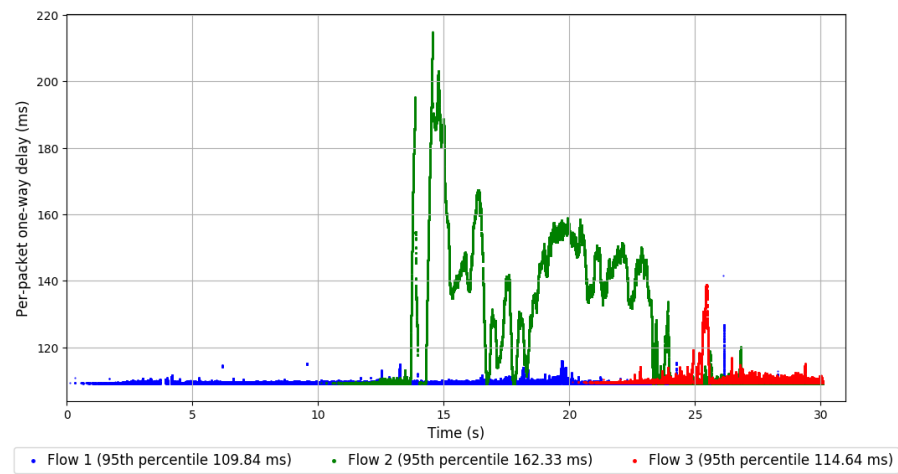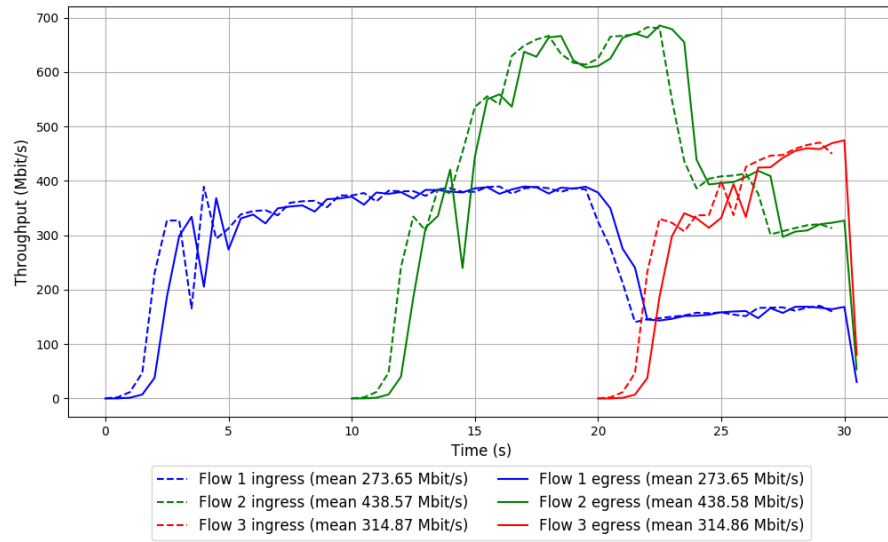Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 01:28:49
End at: 2019-02-20 01:29:19
Local clock offset: 0.028 ms
Remote clock offset: -0.383 ms


# Below is generated by plot.py at 2019-02-20 04:05:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 954.47 Mbit/s
95th percentile per-packet one-way delay: 197.025 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 558.12 Mbit/s
95th percentile per-packet one-way delay: 193.915 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 430.42 Mbit/s
95th percentile per-packet one-way delay: 214.063 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 329.80 Mbit/s
95th percentile per-packet one-way delay: 161.773 ms
Loss rate: 0.85%
```

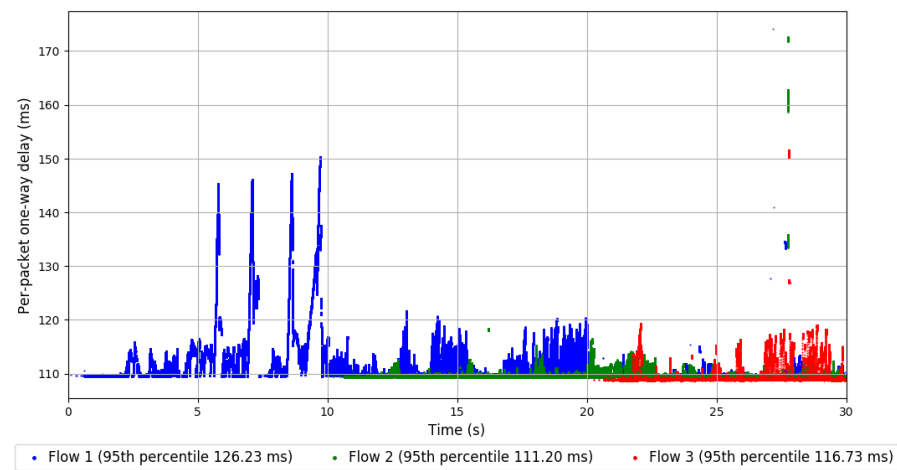Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 02:10:16
End at: 2019-02-20 02:10:46
Local clock offset: -0.775 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2019-02-20 04:06:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 980.04 Mbit/s
95th percentile per-packet one-way delay: 203.123 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 550.20 Mbit/s
95th percentile per-packet one-way delay: 206.507 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 441.58 Mbit/s
95th percentile per-packet one-way delay: 165.289 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 408.06 Mbit/s
95th percentile per-packet one-way delay: 187.182 ms
Loss rate: 0.76%
```

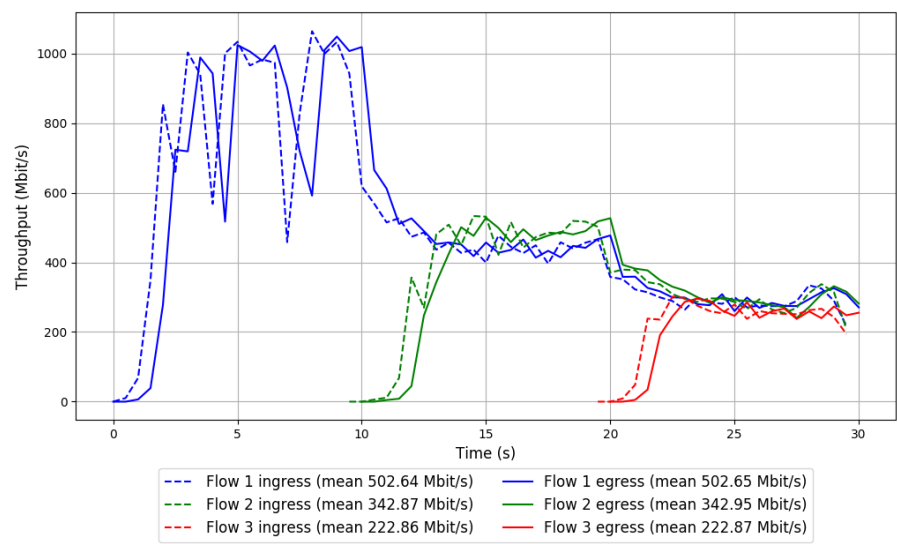Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 02:51:48
End at: 2019-02-20 02:52:18
Local clock offset: -0.07 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2019-02-20 04:06:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 670.28 Mbit/s
95th percentile per-packet one-way delay: 154.404 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 273.65 Mbit/s
95th percentile per-packet one-way delay: 109.839 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 438.58 Mbit/s
95th percentile per-packet one-way delay: 162.332 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 314.86 Mbit/s
95th percentile per-packet one-way delay: 114.641 ms
Loss rate: 0.00%
```

Run 5: Report of TCP Cubic — Data Link
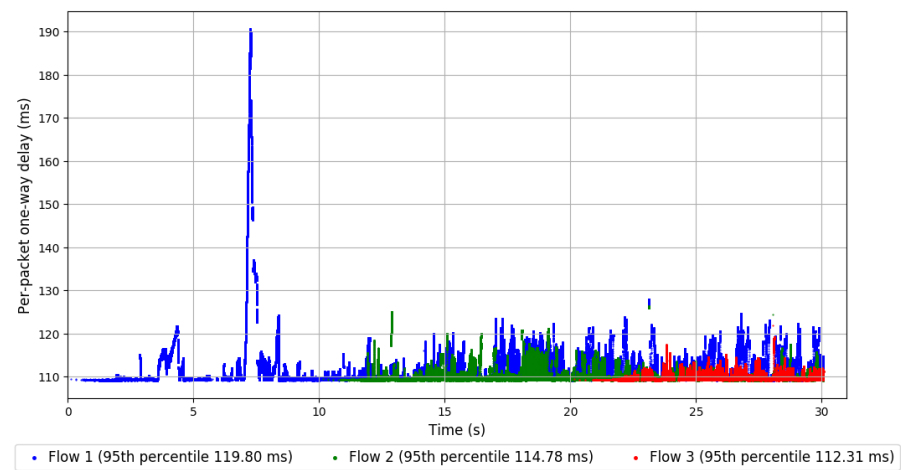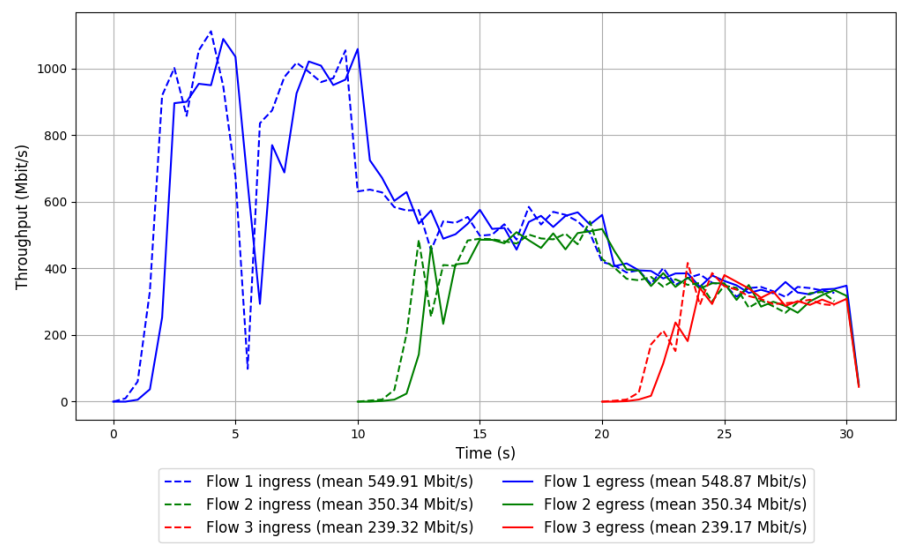

Flow 1 ingress (mean 273.65 Mbit/s) --- Flow 1 egress (mean 273.65 Mbit/s)
Flow 2 ingress (mean 438.57 Mbit/s) --- Flow 2 egress (mean 438.58 Mbit/s)
Flow 3 ingress (mean 314.87 Mbit/s) --- Flow 3 egress (mean 314.86 Mbit/s)

Flow 1 (95th percentile 109.84 ms) Flow 2 (95th percentile 162.33 ms) Flow 3 (95th percentile 114.64 ms)

```
Run 1: Statistics of FillP

Start at: 2019-02-19 23:56:33
End at: 2019-02-19 23:57:03
Local clock offset: -0.666 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2019-02-20 04:07:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 805.15 Mbit/s
95th percentile per-packet one-way delay: 119.940 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 502.65 Mbit/s
95th percentile per-packet one-way delay: 126.229 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 342.95 Mbit/s
95th percentile per-packet one-way delay: 111.200 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 222.87 Mbit/s
95th percentile per-packet one-way delay: 116.726 ms
Loss rate: 0.00%
```
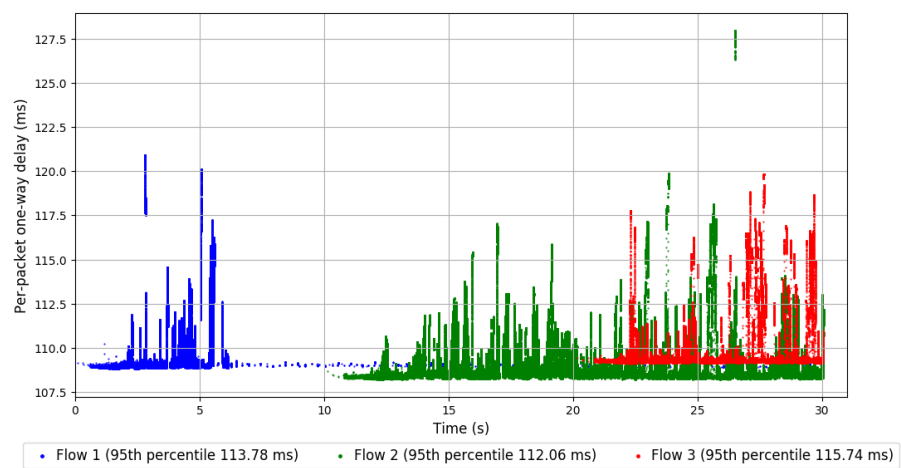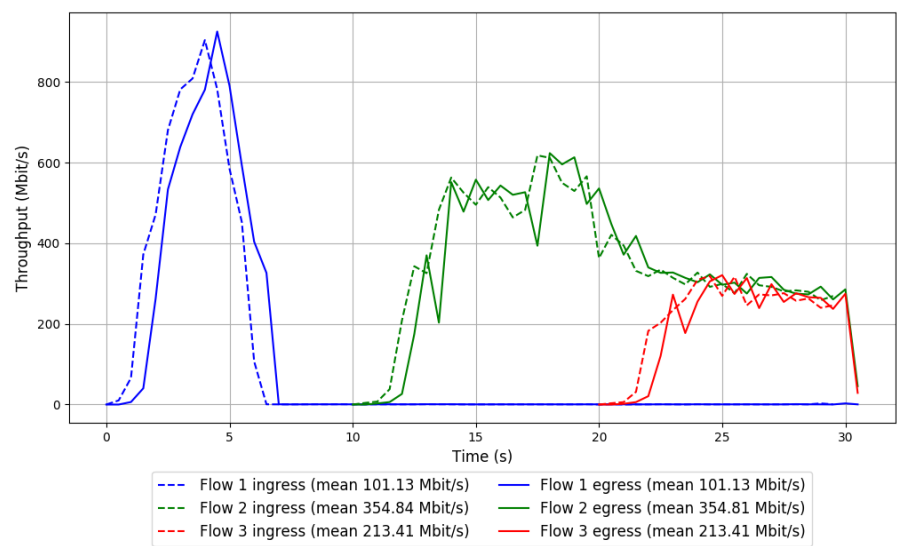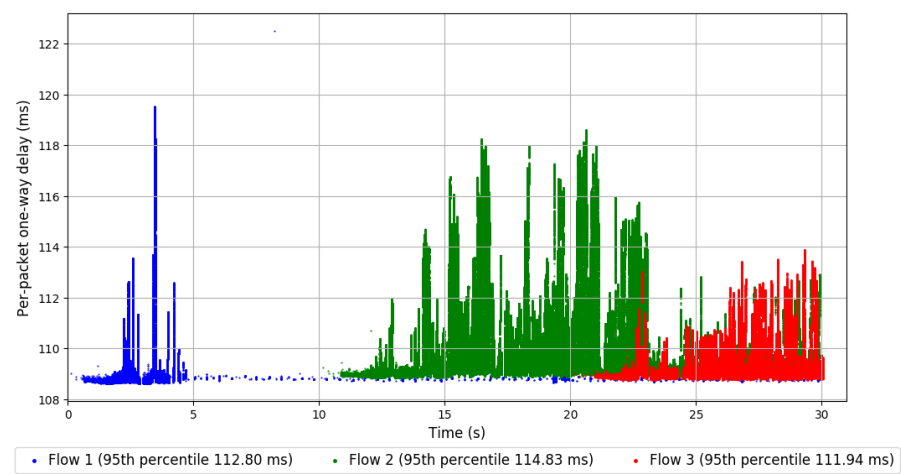
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 502.64 Mbit/s)   Flow 1 egress (mean 502.65 Mbit/s)
Flow 2 ingress (mean 342.87 Mbit/s)   Flow 2 egress (mean 342.95 Mbit/s)
Flow 3 ingress (mean 222.86 Mbit/s)   Flow 3 egress (mean 222.87 Mbit/s)

Flow 1 (95th percentile 126.23 ms)   Flow 2 (95th percentile 111.20 ms)   Flow 3 (95th percentile 116.73 ms)

```
Run 2: Statistics of FillP

Start at: 2019-02-20 00:38:46
End at: 2019-02-20 00:39:16
Local clock offset: -0.104 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2019-02-20 04:19:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 860.69 Mbit/s
95th percentile per-packet one-way delay: 118.251 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 548.87 Mbit/s
95th percentile per-packet one-way delay: 119.796 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 350.34 Mbit/s
95th percentile per-packet one-way delay: 114.783 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 239.17 Mbit/s
95th percentile per-packet one-way delay: 112.314 ms
Loss rate: 0.06%
```
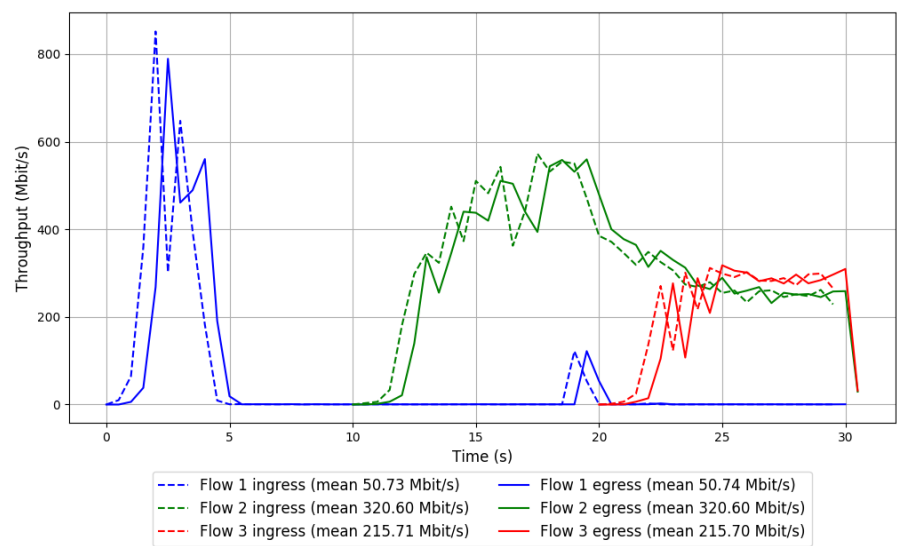
Run 2: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 549.91 Mbit/s)   ——— Flow 1 egress (mean 548.87 Mbit/s)
- - - - Flow 2 ingress (mean 350.34 Mbit/s)   ——— Flow 2 egress (mean 350.34 Mbit/s)
- - - - Flow 3 ingress (mean 239.32 Mbit/s)   ——— Flow 3 egress (mean 239.17 Mbit/s)

• Flow 1 (95th percentile 119.80 ms)   • Flow 2 (95th percentile 114.78 ms)   • Flow 3 (95th percentile 112.31 ms)
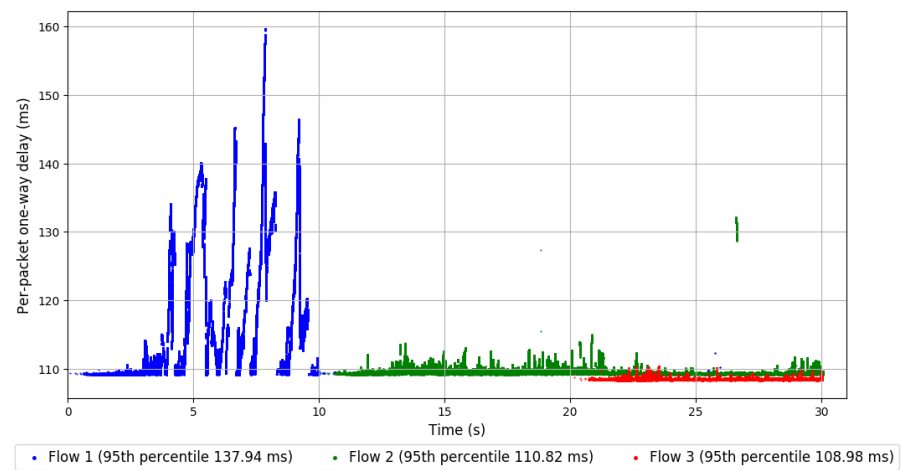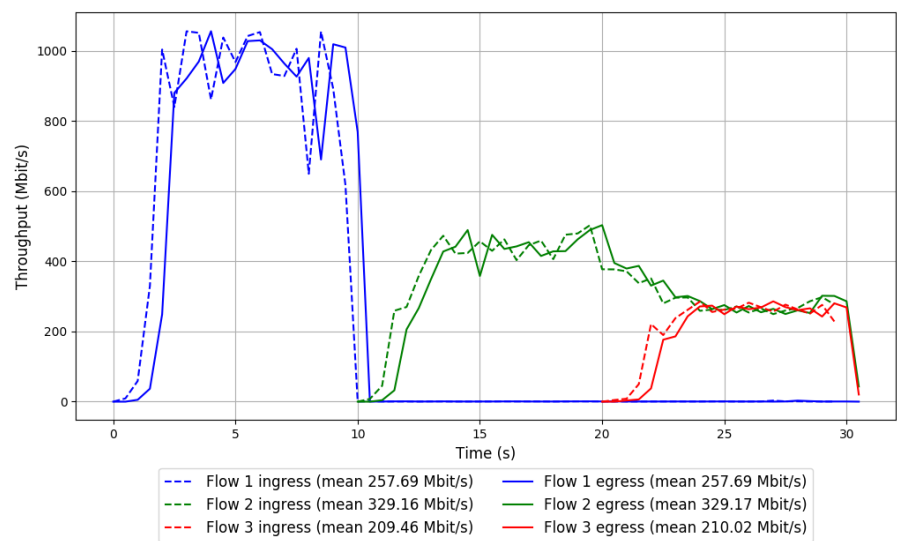
```
Run 3: Statistics of FillP

Start at: 2019-02-20 01:21:43
End at: 2019-02-20 01:22:13
Local clock offset: 0.082 ms
Remote clock offset: -0.031 ms


# Below is generated by plot.py at 2019-02-20 04:19:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 407.14 Mbit/s
95th percentile per-packet one-way delay: 113.395 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 101.13 Mbit/s
95th percentile per-packet one-way delay: 113.783 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 354.81 Mbit/s
95th percentile per-packet one-way delay: 112.065 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 213.41 Mbit/s
95th percentile per-packet one-way delay: 115.738 ms
Loss rate: 0.00%
```
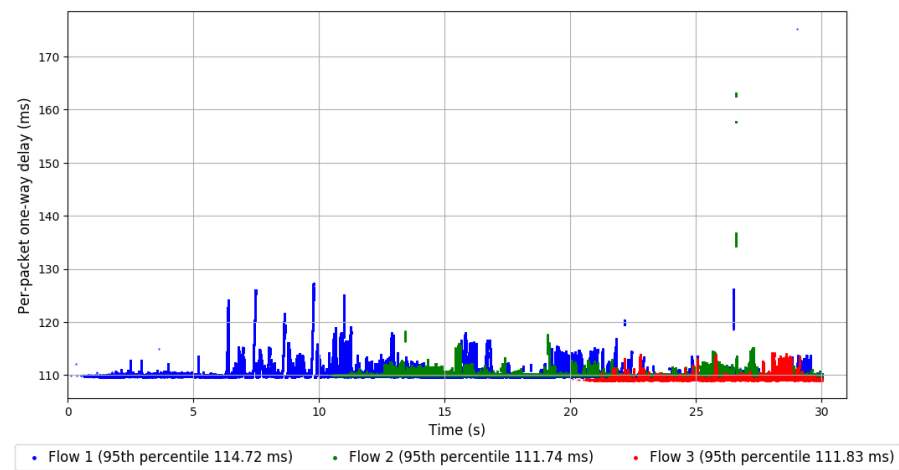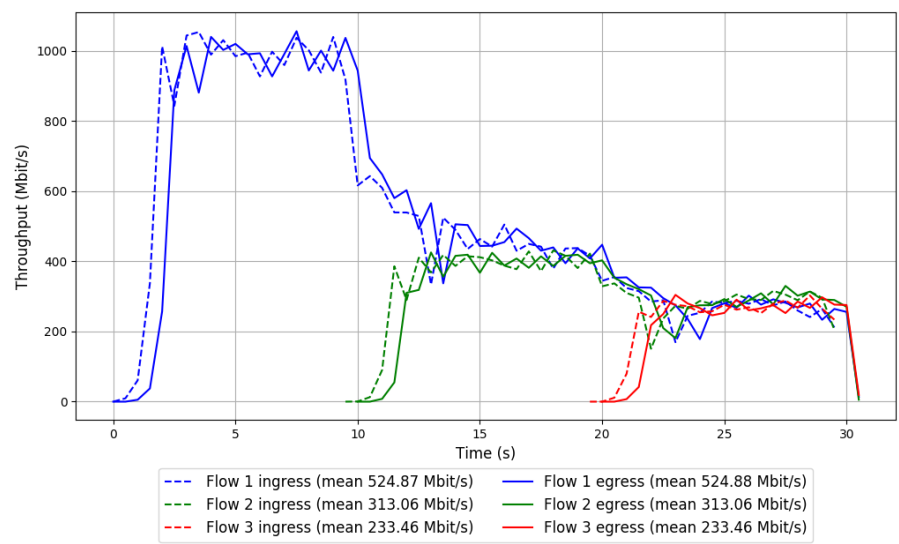
Run 3: Report of FillP — Data Link

- - - Flow 1 ingress (mean 101.13 Mbit/s) ——— Flow 1 egress (mean 101.13 Mbit/s)
- - - Flow 2 ingress (mean 354.84 Mbit/s) ——— Flow 2 egress (mean 354.81 Mbit/s)
- - - Flow 3 ingress (mean 213.41 Mbit/s) ——— Flow 3 egress (mean 213.41 Mbit/s)

• Flow 1 (95th percentile 113.78 ms)   • Flow 2 (95th percentile 112.06 ms)   • Flow 3 (95th percentile 115.74 ms)

40

```
Run 4: Statistics of FillP

Start at: 2019-02-20 02:02:35
End at: 2019-02-20 02:03:05
Local clock offset: 0.002 ms
Remote clock offset: -0.472 ms


# Below is generated by plot.py at 2019-02-20 04:19:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 334.85 Mbit/s
95th percentile per-packet one-way delay: 114.166 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.74 Mbit/s
95th percentile per-packet one-way delay: 112.802 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 320.60 Mbit/s
95th percentile per-packet one-way delay: 114.834 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 215.70 Mbit/s
95th percentile per-packet one-way delay: 111.936 ms
Loss rate: 0.00%
```
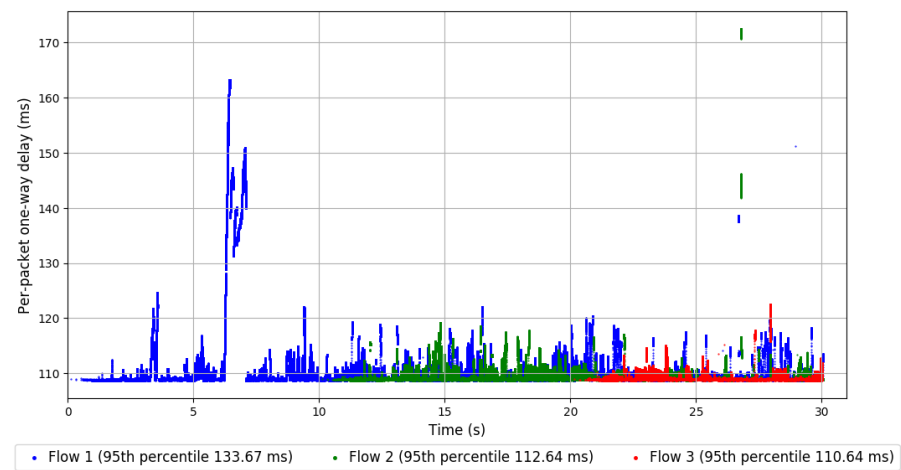
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 50.73 Mbit/s) — Flow 1 egress (mean 50.74 Mbit/s)
Flow 2 ingress (mean 320.60 Mbit/s) — Flow 2 egress (mean 320.60 Mbit/s)
Flow 3 ingress (mean 215.71 Mbit/s) — Flow 3 egress (mean 215.70 Mbit/s)

Flow 1 (95th percentile 112.80 ms) — Flow 2 (95th percentile 114.83 ms) — Flow 3 (95th percentile 111.94 ms)

```
Run 5: Statistics of FillP

Start at: 2019-02-20 02:43:40
End at: 2019-02-20 02:44:10
Local clock offset: -0.122 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2019-02-20 04:19:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 545.49 Mbit/s
95th percentile per-packet one-way delay: 132.846 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 257.69 Mbit/s
95th percentile per-packet one-way delay: 137.945 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 329.17 Mbit/s
95th percentile per-packet one-way delay: 110.821 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 210.02 Mbit/s
95th percentile per-packet one-way delay: 108.978 ms
Loss rate: 0.00%
```
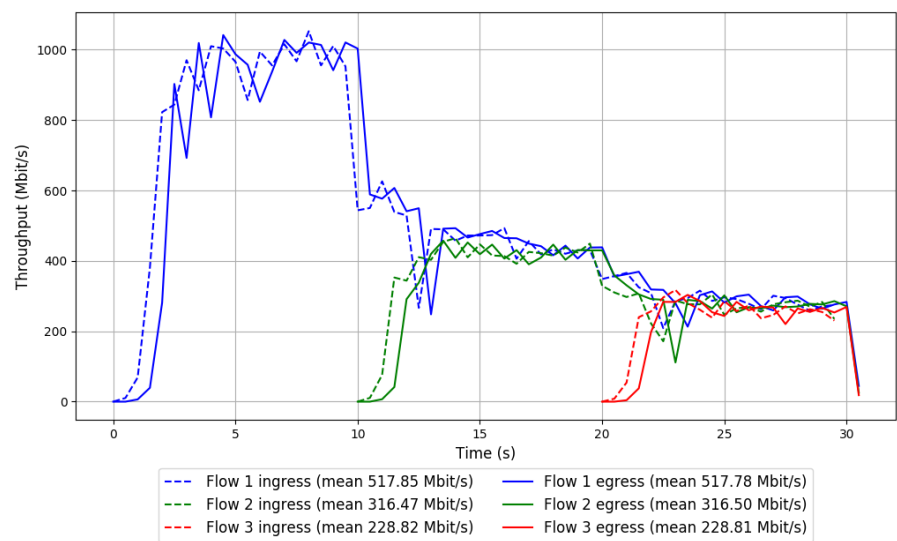
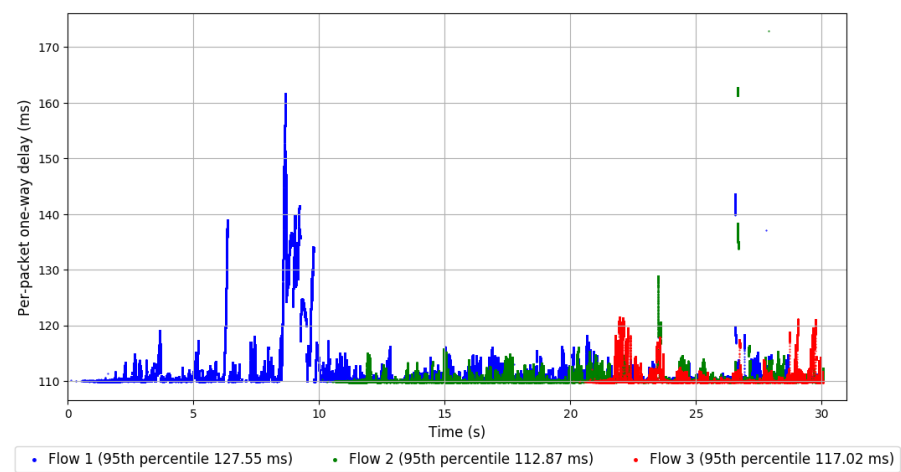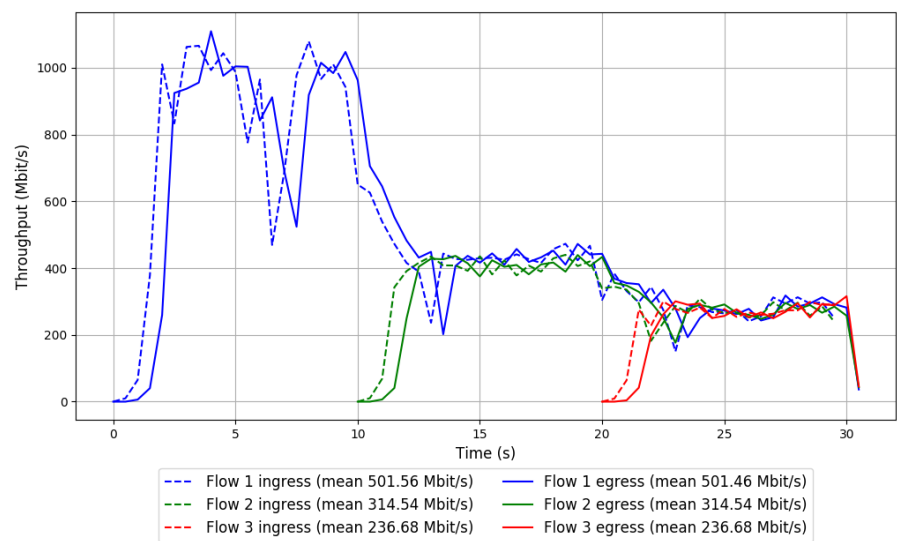# Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 00:24:12
End at: 2019-02-20 00:24:42
Local clock offset: -0.959 ms
Remote clock offset: -0.043 ms


# Below is generated by plot.py at 2019-02-20 04:22:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 810.91 Mbit/s
95th percentile per-packet one-way delay: 113.951 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 524.88 Mbit/s
95th percentile per-packet one-way delay: 114.717 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 313.06 Mbit/s
95th percentile per-packet one-way delay: 111.738 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 233.46 Mbit/s
95th percentile per-packet one-way delay: 111.825 ms
Loss rate: 0.00%
```

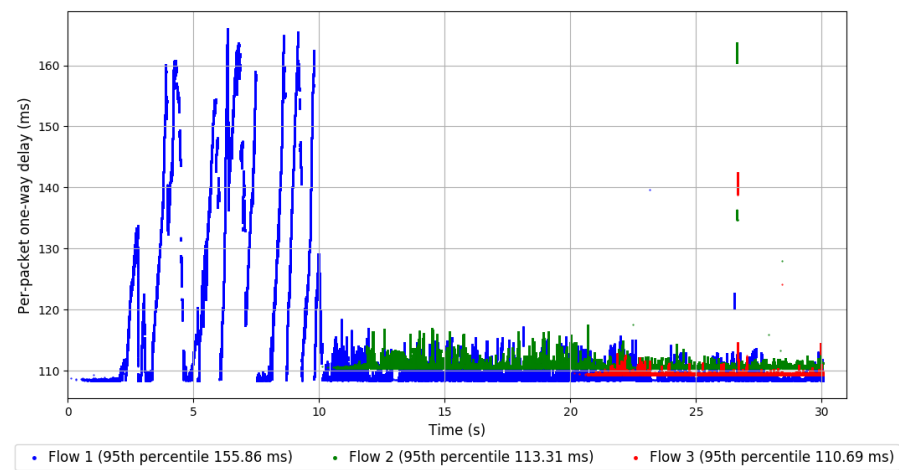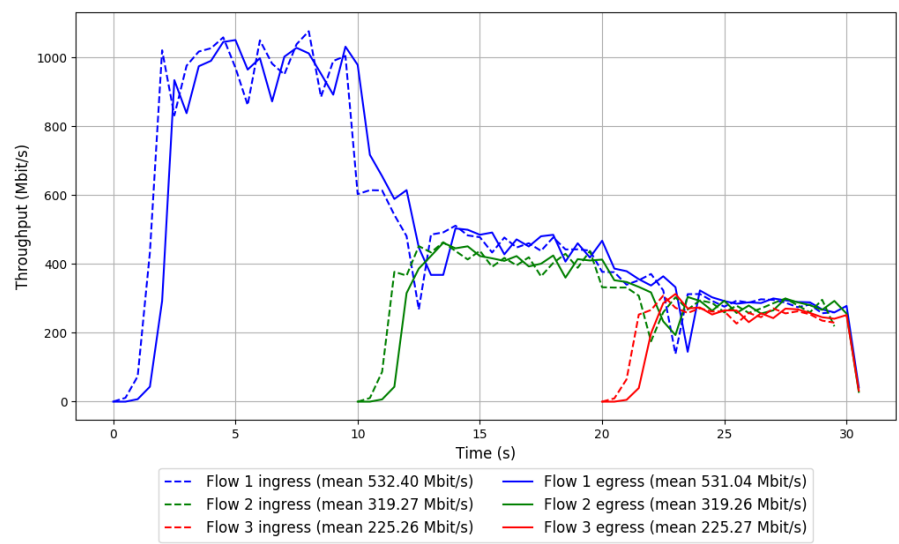Run 1: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 524.87 Mbit/s) ——— Flow 1 egress (mean 524.88 Mbit/s)
- - - Flow 2 ingress (mean 313.06 Mbit/s) ——— Flow 2 egress (mean 313.06 Mbit/s)
- - - Flow 3 ingress (mean 233.46 Mbit/s) ——— Flow 3 egress (mean 233.46 Mbit/s)

- Flow 1 (95th percentile 114.72 ms)   - Flow 2 (95th percentile 111.74 ms)   - Flow 3 (95th percentile 111.83 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 01:07:18
End at: 2019-02-20 01:07:48
Local clock offset: -0.058 ms
Remote clock offset: 0.274 ms


# Below is generated by plot.py at 2019-02-20 04:24:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 803.93 Mbit/s
95th percentile per-packet one-way delay: 117.051 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 517.78 Mbit/s
95th percentile per-packet one-way delay: 133.667 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 316.50 Mbit/s
95th percentile per-packet one-way delay: 112.645 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 228.81 Mbit/s
95th percentile per-packet one-way delay: 110.645 ms
Loss rate: 0.00%
```

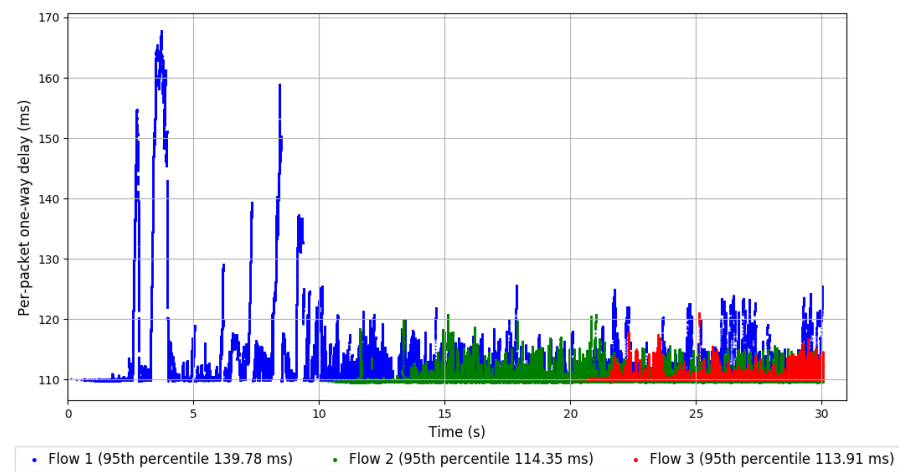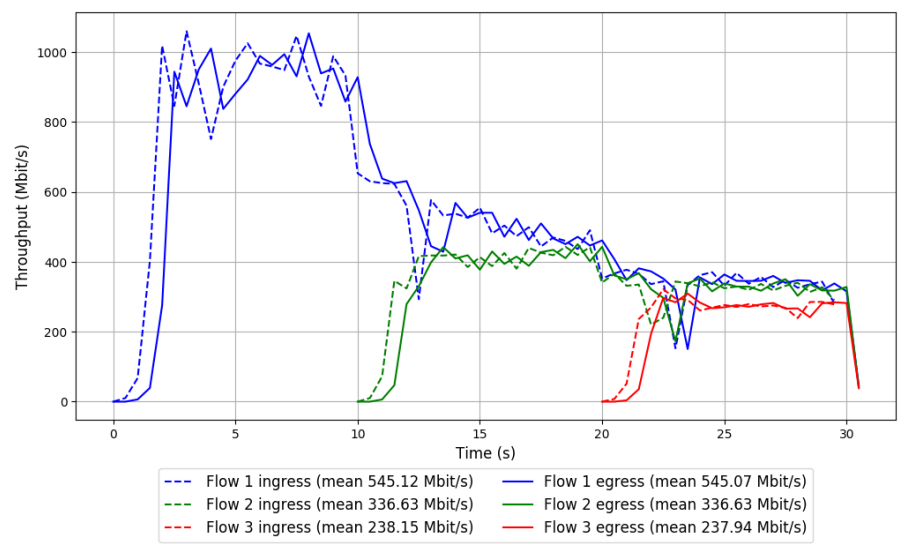Run 2: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 517.85 Mbit/s) —— Flow 1 egress (mean 517.78 Mbit/s)
- - - Flow 2 ingress (mean 316.47 Mbit/s) —— Flow 2 egress (mean 316.50 Mbit/s)
- - - Flow 3 ingress (mean 228.82 Mbit/s) —— Flow 3 egress (mean 228.81 Mbit/s)

• Flow 1 (95th percentile 133.67 ms)   • Flow 2 (95th percentile 112.64 ms)   • Flow 3 (95th percentile 110.64 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 01:47:57
End at: 2019-02-20 01:48:27
Local clock offset: -0.748 ms
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2019-02-20 04:24:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 789.17 Mbit/s
95th percentile per-packet one-way delay: 121.135 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 501.46 Mbit/s
95th percentile per-packet one-way delay: 127.552 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 314.54 Mbit/s
95th percentile per-packet one-way delay: 112.873 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 236.68 Mbit/s
95th percentile per-packet one-way delay: 117.017 ms
Loss rate: 0.00%
```

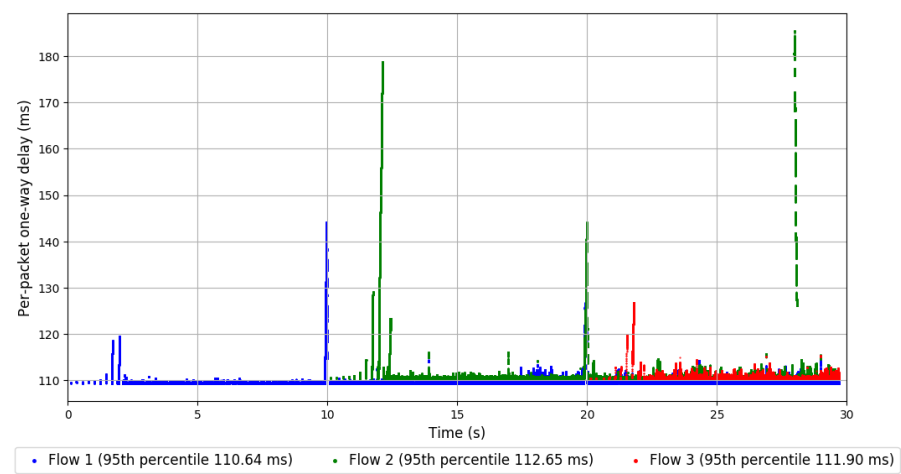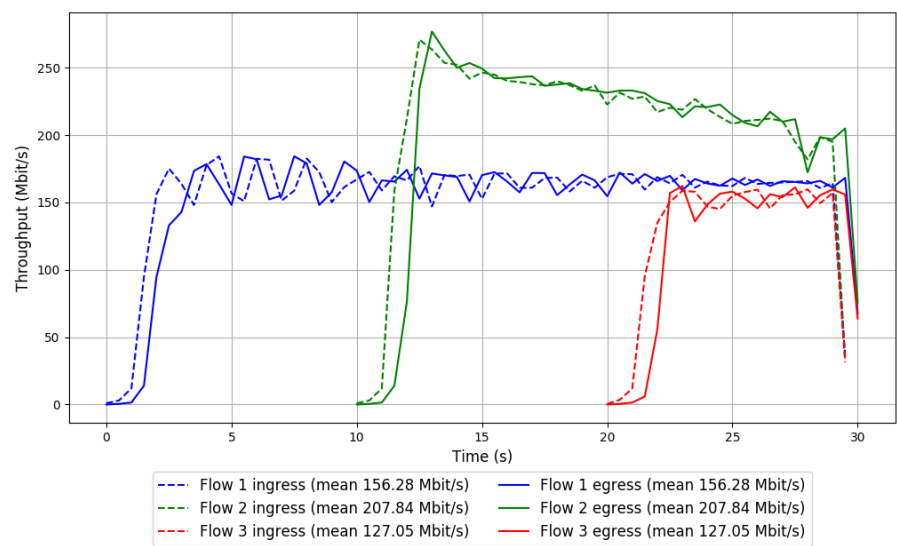# Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 501.56 Mbit/s) --- Flow 1 egress (mean 501.46 Mbit/s)
Flow 2 ingress (mean 314.54 Mbit/s) --- Flow 2 egress (mean 314.54 Mbit/s)
Flow 3 ingress (mean 236.68 Mbit/s) --- Flow 3 egress (mean 236.68 Mbit/s)

Flow 1 (95th percentile 127.55 ms)   •   Flow 2 (95th percentile 112.87 ms)   •   Flow 3 (95th percentile 117.02 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 02:29:59
End at: 2019-02-20 02:30:29
Local clock offset: -0.253 ms
Remote clock offset: -0.098 ms


# Below is generated by plot.py at 2019-02-20 04:26:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 817.69 Mbit/s
95th percentile per-packet one-way delay: 151.714 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 531.04 Mbit/s
95th percentile per-packet one-way delay: 155.861 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 319.26 Mbit/s
95th percentile per-packet one-way delay: 113.311 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 225.27 Mbit/s
95th percentile per-packet one-way delay: 110.687 ms
Loss rate: 0.00%
```

Run 4: Report of FillP-Sheep — Data Link
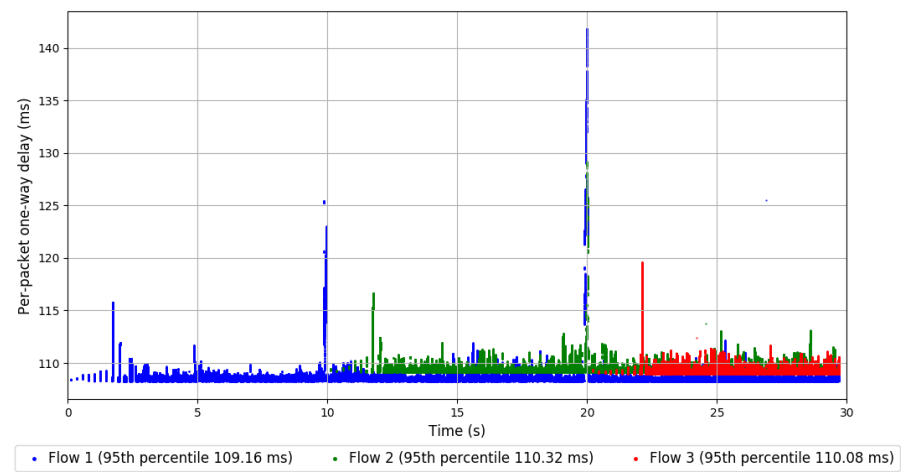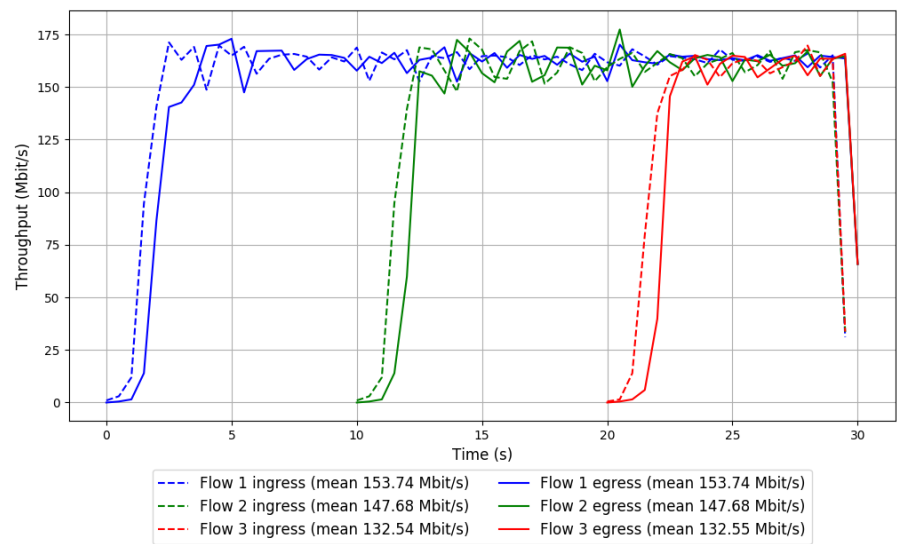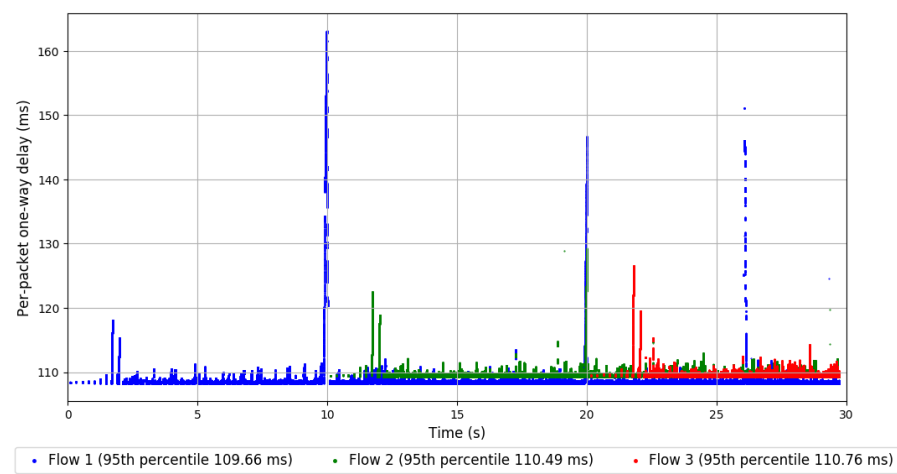

Flow 1 ingress (mean 532.40 Mbit/s) — Flow 1 egress (mean 531.04 Mbit/s)
Flow 2 ingress (mean 319.27 Mbit/s) — Flow 2 egress (mean 319.26 Mbit/s)
Flow 3 ingress (mean 225.26 Mbit/s) — Flow 3 egress (mean 225.27 Mbit/s)

Flow 1 (95th percentile 155.86 ms) — Flow 2 (95th percentile 113.31 ms) — Flow 3 (95th percentile 110.69 ms)
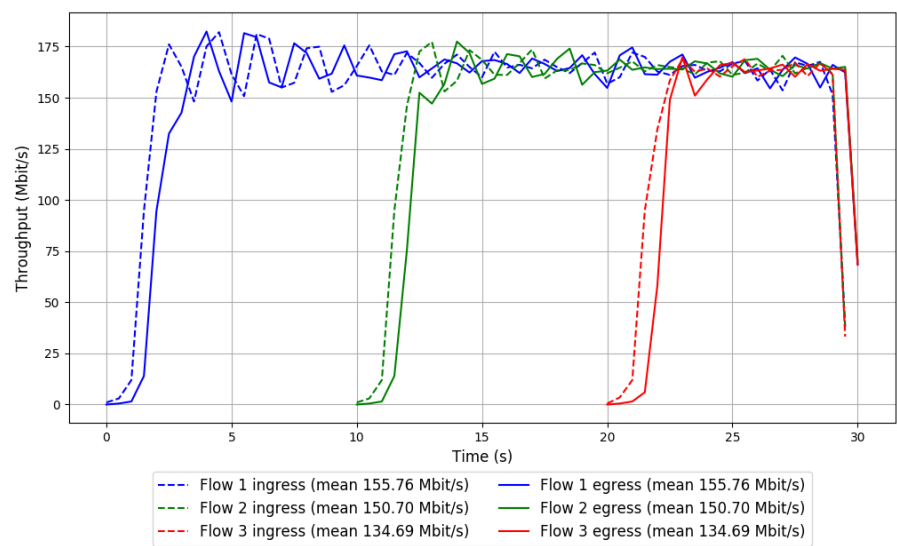
```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-20 03:10:10
End at: 2019-02-20 03:10:41
Local clock offset: -0.762 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2019-02-20 04:28:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 847.88 Mbit/s
95th percentile per-packet one-way delay: 128.562 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 545.07 Mbit/s
95th percentile per-packet one-way delay: 139.785 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 336.63 Mbit/s
95th percentile per-packet one-way delay: 114.348 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 237.94 Mbit/s
95th percentile per-packet one-way delay: 113.914 ms
Loss rate: 0.43%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 545.12 Mbit/s) --- Flow 1 egress (mean 545.07 Mbit/s)
Flow 2 ingress (mean 336.63 Mbit/s) --- Flow 2 egress (mean 336.63 Mbit/s)
Flow 3 ingress (mean 238.15 Mbit/s) --- Flow 3 egress (mean 237.94 Mbit/s)

Flow 1 (95th percentile 139.78 ms)   Flow 2 (95th percentile 114.35 ms)   Flow 3 (95th percentile 113.91 ms)
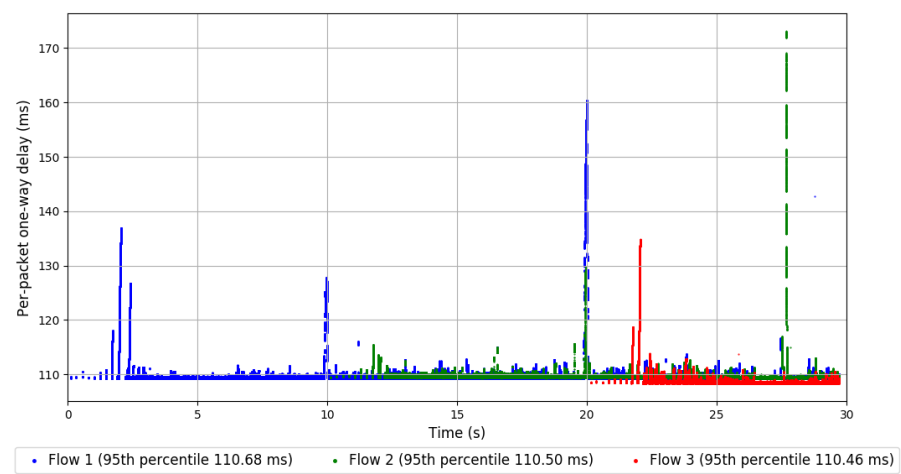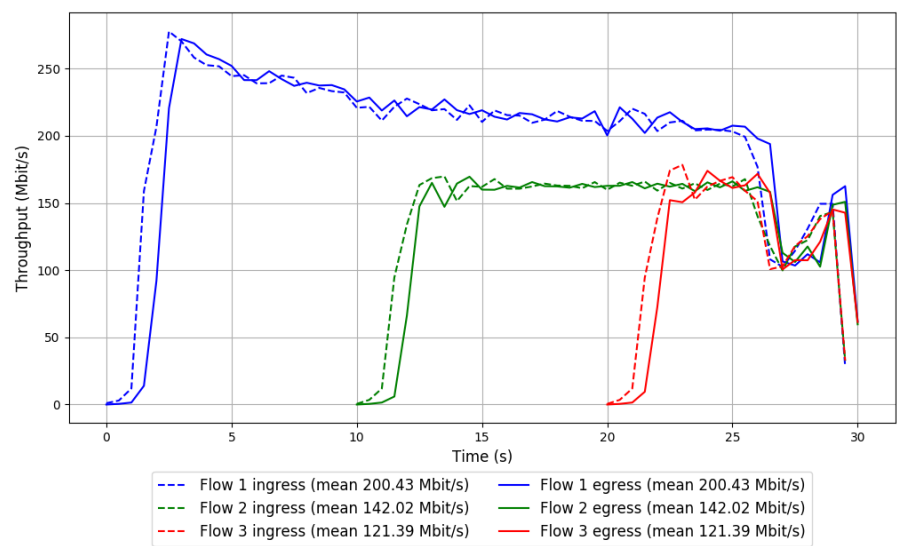
```
Run 1: Statistics of Indigo

Start at: 2019-02-20 00:17:14
End at: 2019-02-20 00:17:44
Local clock offset: -1.399 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2019-02-20 04:28:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 334.90 Mbit/s
95th percentile per-packet one-way delay: 111.682 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 156.28 Mbit/s
95th percentile per-packet one-way delay: 110.637 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 207.84 Mbit/s
95th percentile per-packet one-way delay: 112.650 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 127.05 Mbit/s
95th percentile per-packet one-way delay: 111.897 ms
Loss rate: 0.00%
```
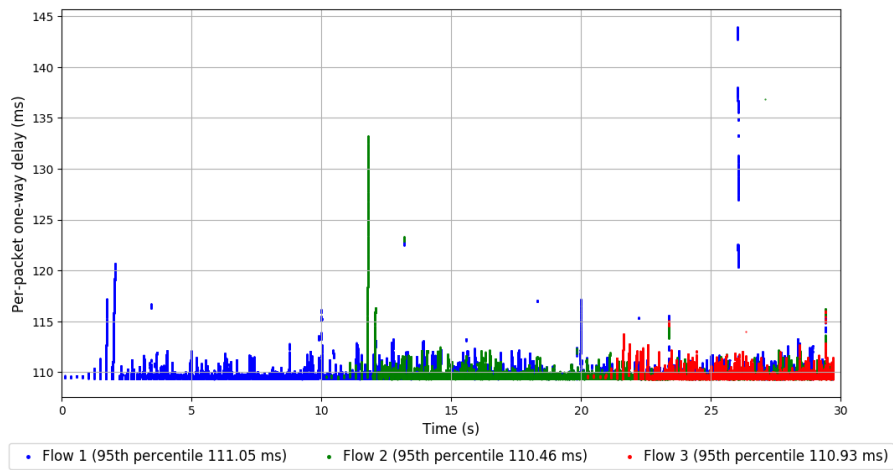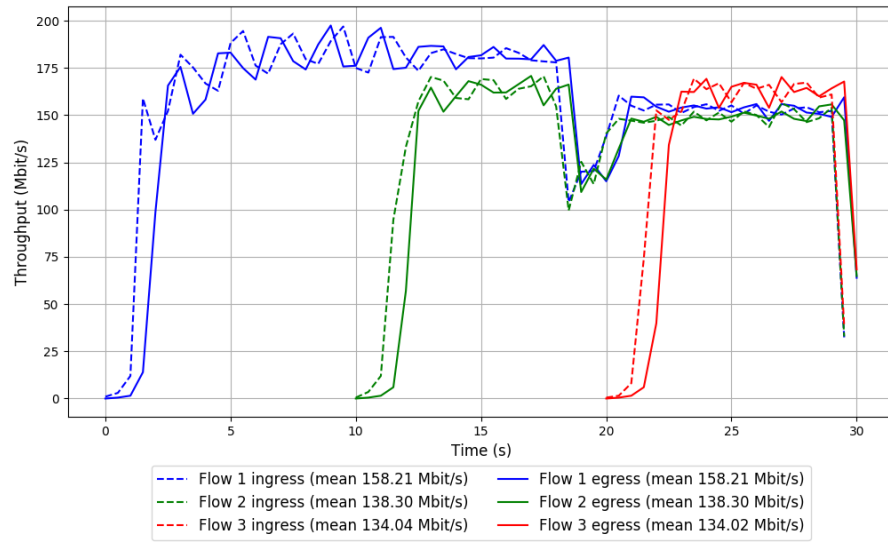
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-20 01:00:07
End at: 2019-02-20 01:00:37
Local clock offset: -0.018 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2019-02-20 04:28:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 293.97 Mbit/s
95th percentile per-packet one-way delay: 109.889 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 153.74 Mbit/s
95th percentile per-packet one-way delay: 109.155 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 147.68 Mbit/s
95th percentile per-packet one-way delay: 110.316 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 132.55 Mbit/s
95th percentile per-packet one-way delay: 110.078 ms
Loss rate: 0.00%
```

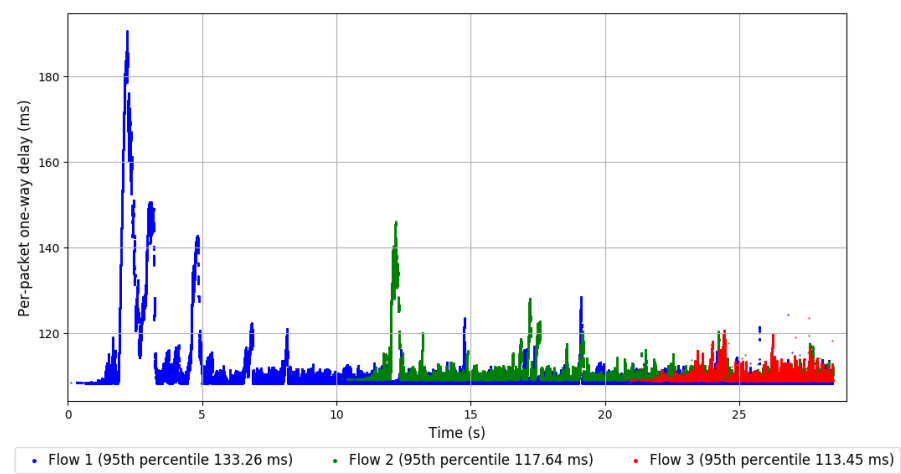## Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-02-20 01:40:58
End at: 2019-02-20 01:41:28
Local clock offset: -0.12 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2019-02-20 04:30:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 298.90 Mbit/s
95th percentile per-packet one-way delay: 110.262 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 155.76 Mbit/s
95th percentile per-packet one-way delay: 109.660 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 150.70 Mbit/s
95th percentile per-packet one-way delay: 110.492 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 134.69 Mbit/s
95th percentile per-packet one-way delay: 110.756 ms
Loss rate: 0.00%
```
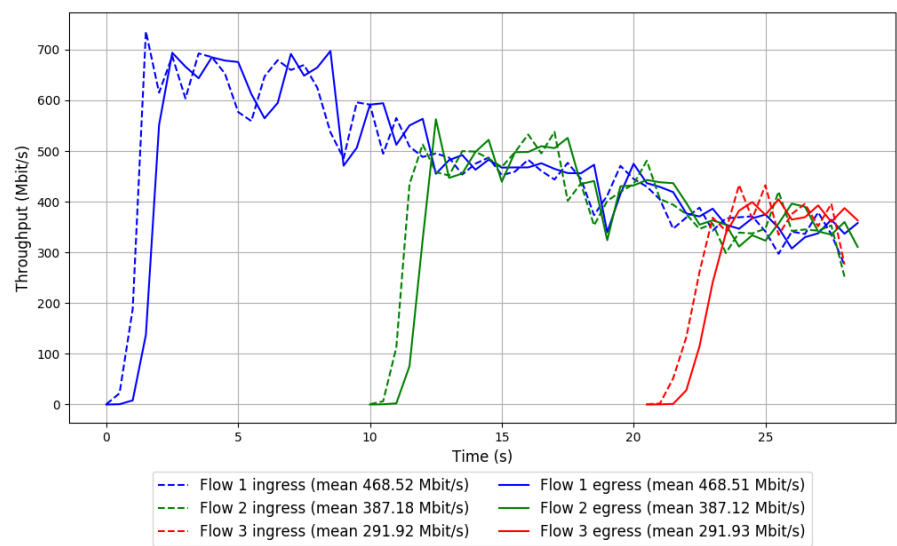
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-02-20 02:22:58
End at: 2019-02-20 02:23:28
Local clock offset: -0.199 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2019-02-20 04:35:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 333.61 Mbit/s
95th percentile per-packet one-way delay: 110.603 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.43 Mbit/s
95th percentile per-packet one-way delay: 110.678 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 142.02 Mbit/s
95th percentile per-packet one-way delay: 110.503 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 121.39 Mbit/s
95th percentile per-packet one-way delay: 110.459 ms
Loss rate: 0.00%
```
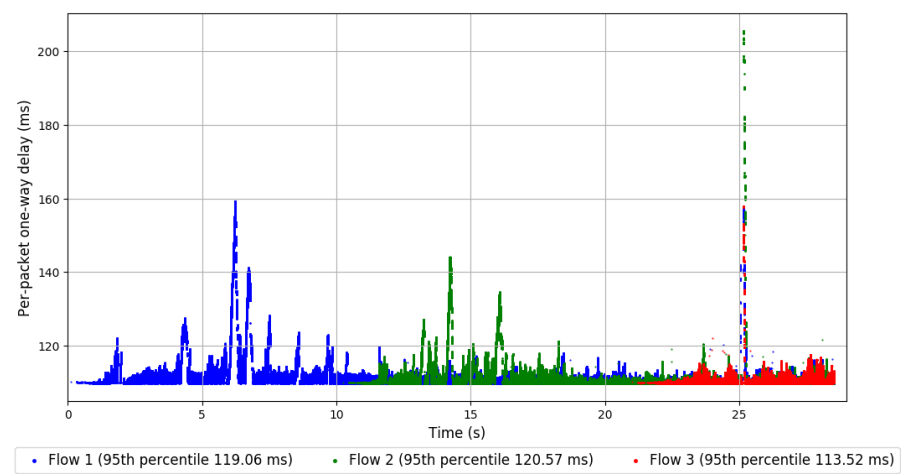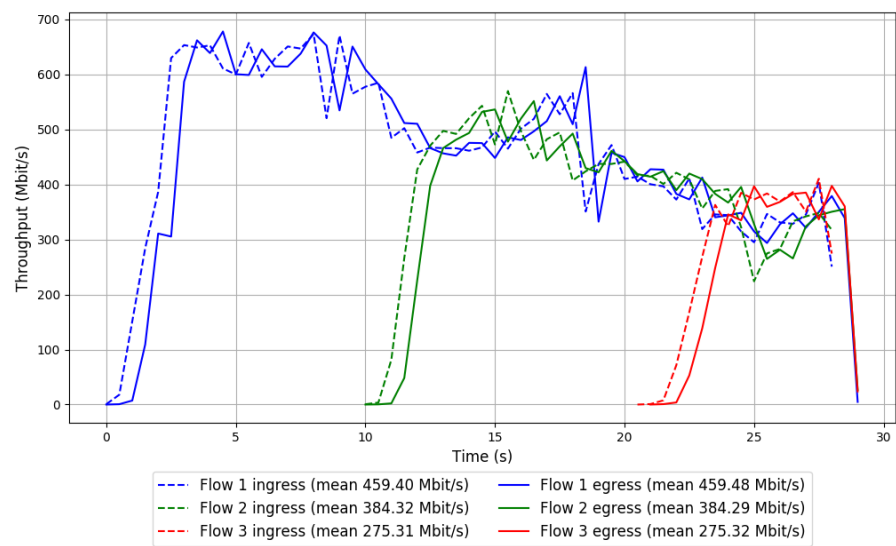
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-02-20 03:03:21
End at: 2019-02-20 03:03:51
Local clock offset: -0.418 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2019-02-20 04:35:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 292.32 Mbit/s
95th percentile per-packet one-way delay: 110.857 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 158.21 Mbit/s
95th percentile per-packet one-way delay: 111.048 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 138.30 Mbit/s
95th percentile per-packet one-way delay: 110.464 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 134.02 Mbit/s
95th percentile per-packet one-way delay: 110.927 ms
Loss rate: 0.01%
```

Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 00:12:53
End at: 2019-02-20 00:13:23
Local clock offset: -0.361 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2019-02-20 04:39:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 797.84 Mbit/s
95th percentile per-packet one-way delay: 124.283 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 468.51 Mbit/s
95th percentile per-packet one-way delay: 133.265 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 387.12 Mbit/s
95th percentile per-packet one-way delay: 117.635 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 291.93 Mbit/s
95th percentile per-packet one-way delay: 113.449 ms
Loss rate: 0.00%
```
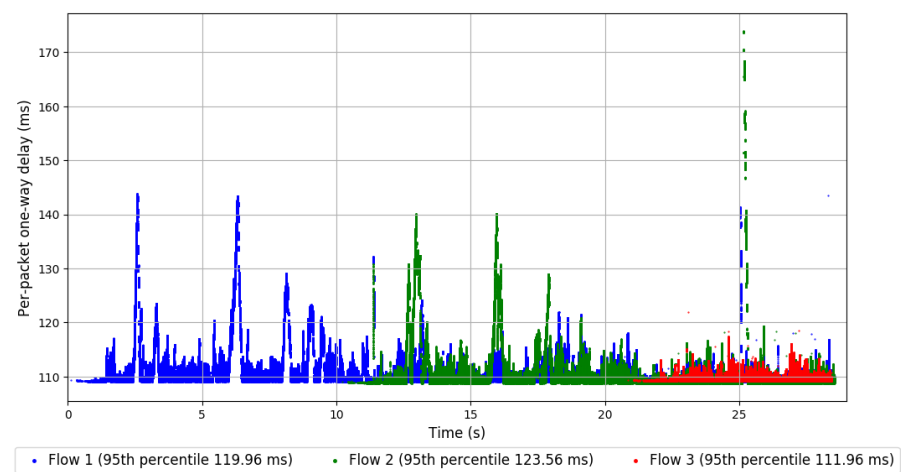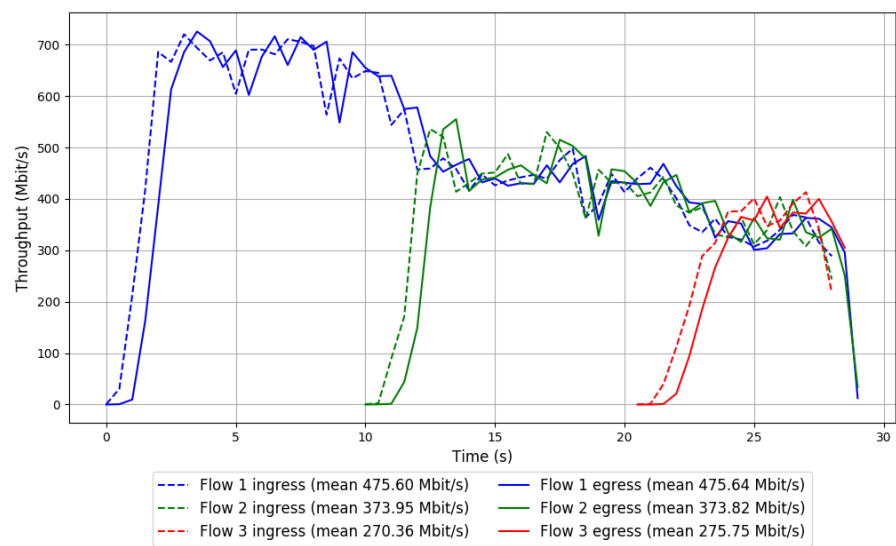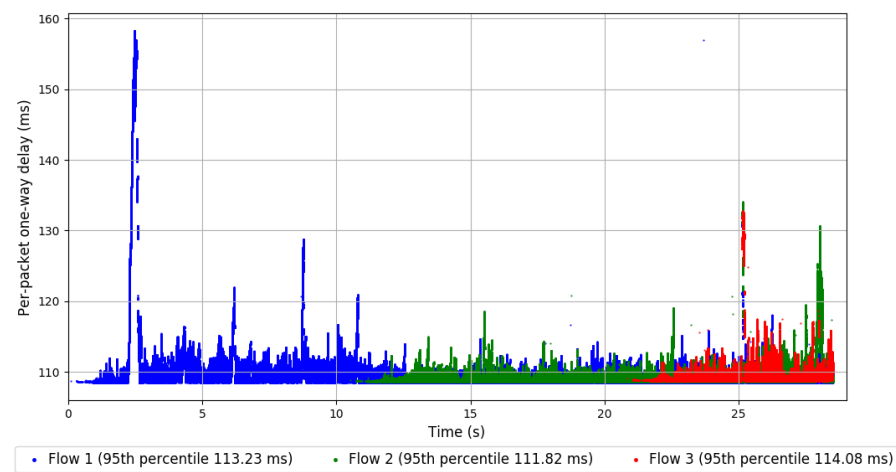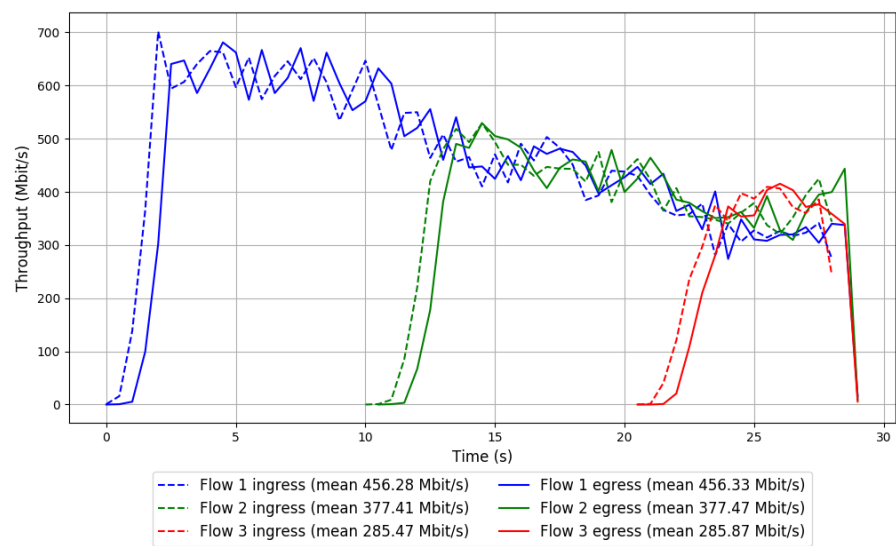
Run 1: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 468.52 Mbit/s) ——— Flow 1 egress (mean 468.51 Mbit/s)
- - - - Flow 2 ingress (mean 387.18 Mbit/s) ——— Flow 2 egress (mean 387.12 Mbit/s)
- - - - Flow 3 ingress (mean 291.92 Mbit/s) ——— Flow 3 egress (mean 291.93 Mbit/s)

• Flow 1 (95th percentile 133.26 ms)   • Flow 2 (95th percentile 117.64 ms)   • Flow 3 (95th percentile 113.45 ms)

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```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 00:55:34
End at: 2019-02-20 00:56:04
Local clock offset: -0.736 ms
Remote clock offset: -0.028 ms


# Below is generated by plot.py at 2019-02-20 04:39:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 779.57 Mbit/s
95th percentile per-packet one-way delay: 118.654 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 459.48 Mbit/s
95th percentile per-packet one-way delay: 119.060 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 384.29 Mbit/s
95th percentile per-packet one-way delay: 120.570 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 275.32 Mbit/s
95th percentile per-packet one-way delay: 113.524 ms
Loss rate: 0.00%
```
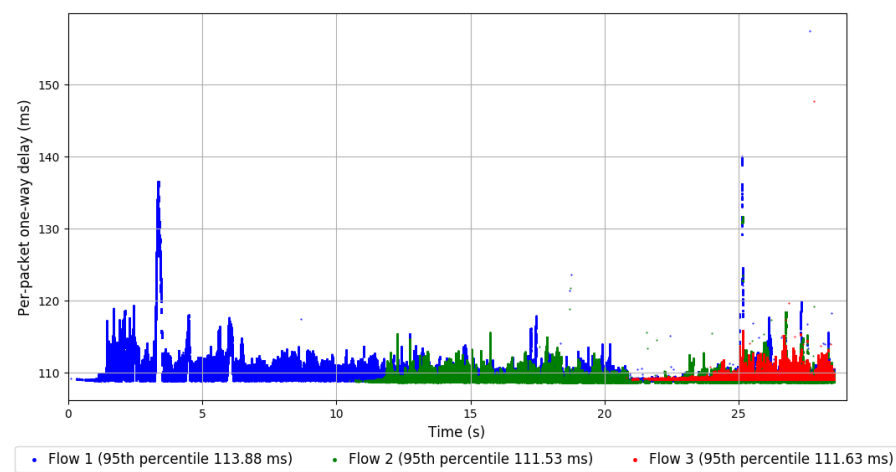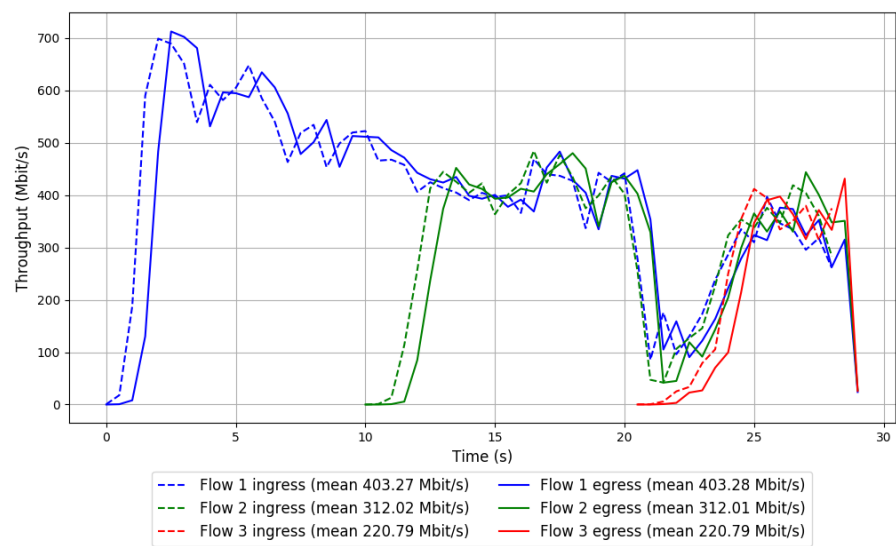
Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 01:36:44
End at: 2019-02-20 01:37:14
Local clock offset: 0.004 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2019-02-20 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 789.87 Mbit/s
95th percentile per-packet one-way delay: 119.981 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 475.64 Mbit/s
95th percentile per-packet one-way delay: 119.959 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 373.82 Mbit/s
95th percentile per-packet one-way delay: 123.556 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 275.75 Mbit/s
95th percentile per-packet one-way delay: 111.957 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 475.60 Mbit/s) —— Flow 1 egress (mean 475.64 Mbit/s)
- - - Flow 2 ingress (mean 373.95 Mbit/s) —— Flow 2 egress (mean 373.82 Mbit/s)
- - - Flow 3 ingress (mean 270.36 Mbit/s) —— Flow 3 egress (mean 275.75 Mbit/s)

• Flow 1 (95th percentile 119.96 ms)   • Flow 2 (95th percentile 123.56 ms)   • Flow 3 (95th percentile 111.96 ms)

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```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 02:18:43
End at: 2019-02-20 02:19:13
Local clock offset: 0.25 ms
Remote clock offset: -0.472 ms


# Below is generated by plot.py at 2019-02-20 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 772.60 Mbit/s
95th percentile per-packet one-way delay: 112.906 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 456.33 Mbit/s
95th percentile per-packet one-way delay: 113.227 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 377.47 Mbit/s
95th percentile per-packet one-way delay: 111.817 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 285.87 Mbit/s
95th percentile per-packet one-way delay: 114.079 ms
Loss rate: 0.00%
```
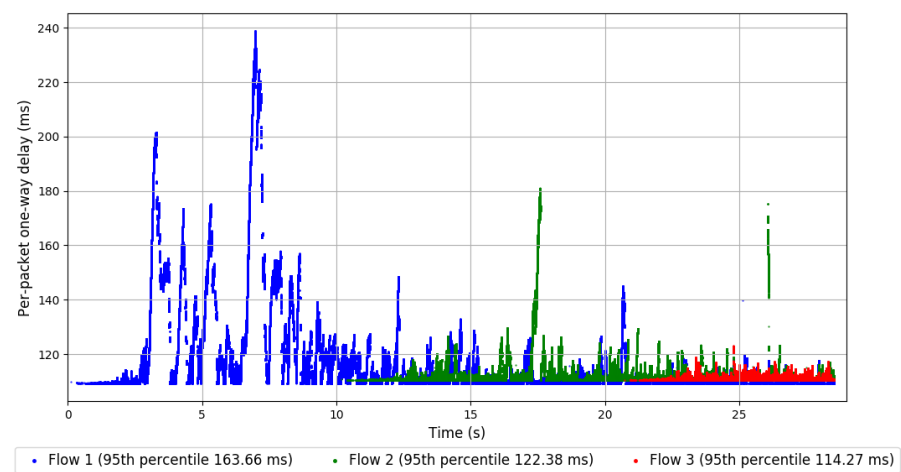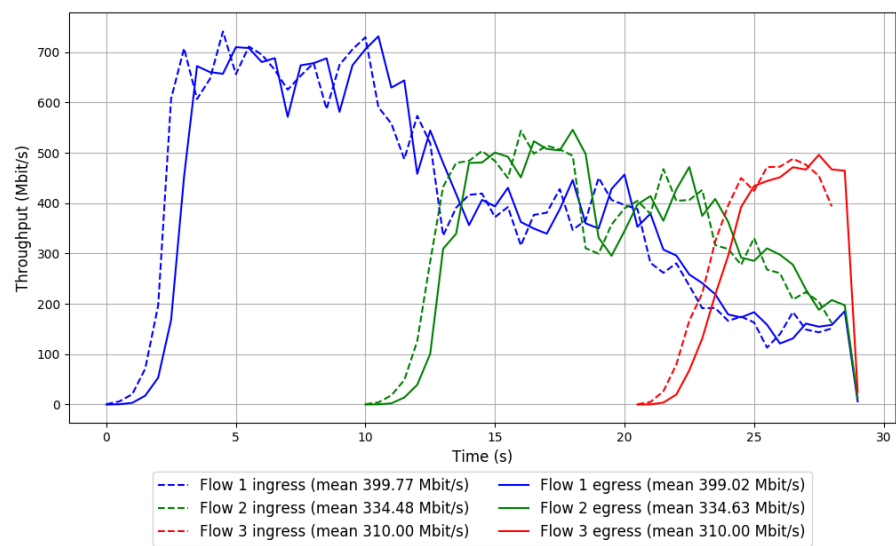
Run 4: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 456.28 Mbit/s)   —— Flow 1 egress (mean 456.33 Mbit/s)
- - - - Flow 2 ingress (mean 377.41 Mbit/s)   —— Flow 2 egress (mean 377.47 Mbit/s)
- - - - Flow 3 ingress (mean 285.47 Mbit/s)   —— Flow 3 egress (mean 285.87 Mbit/s)

- Flow 1 (95th percentile 113.23 ms)   • Flow 2 (95th percentile 111.82 ms)   • Flow 3 (95th percentile 114.08 ms)
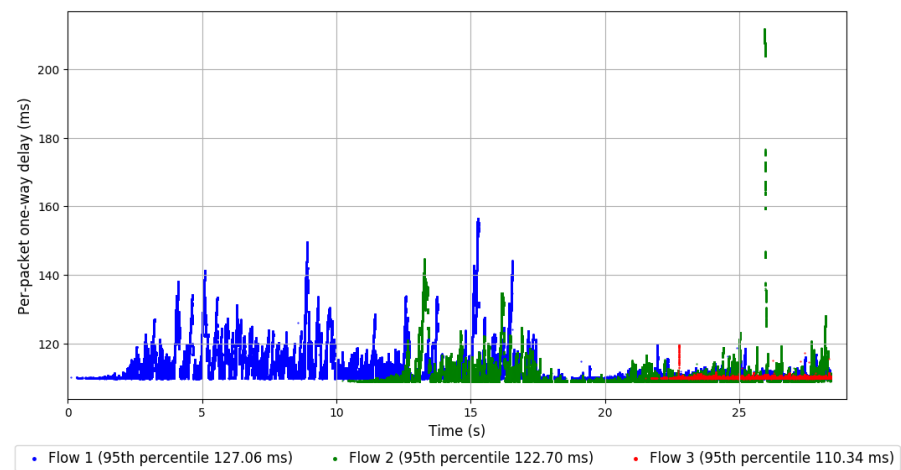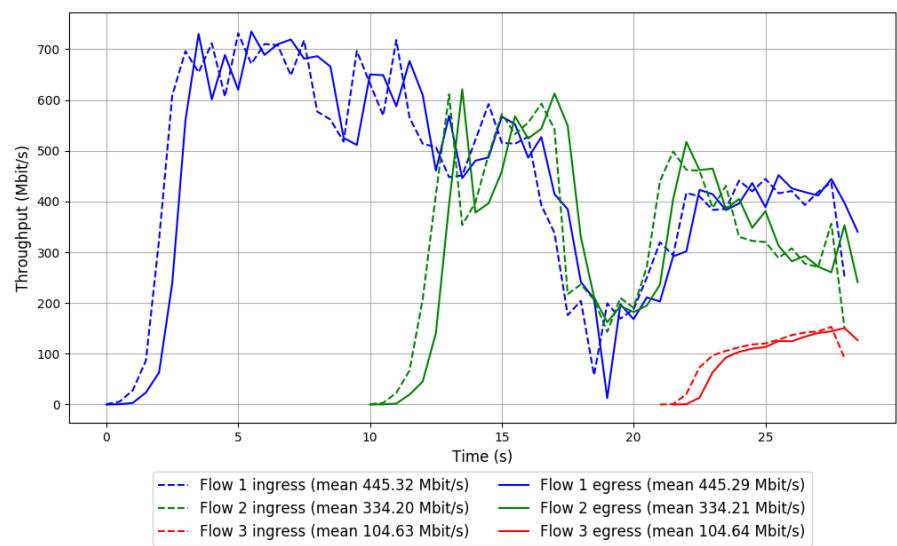
```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 02:59:15
End at: 2019-02-20 02:59:45
Local clock offset: 0.112 ms
Remote clock offset: -0.047 ms


# Below is generated by plot.py at 2019-02-20 04:42:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 661.44 Mbit/s
95th percentile per-packet one-way delay: 112.855 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 403.28 Mbit/s
95th percentile per-packet one-way delay: 113.877 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 312.01 Mbit/s
95th percentile per-packet one-way delay: 111.529 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 220.79 Mbit/s
95th percentile per-packet one-way delay: 111.631 ms
Loss rate: 0.00%
```
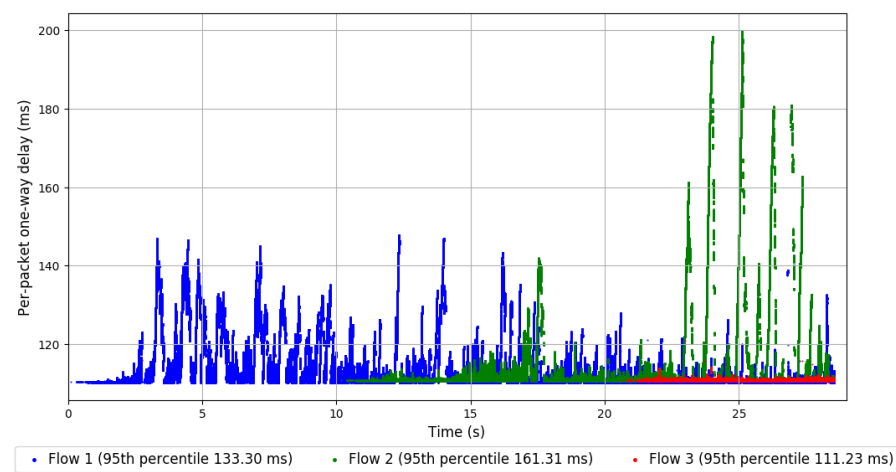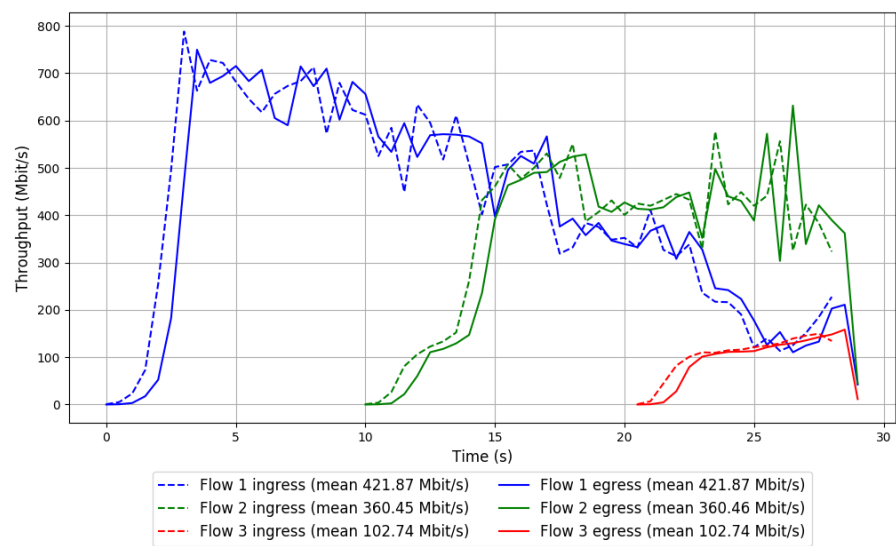
Run 5: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 403.27 Mbit/s)   Flow 1 egress (mean 403.28 Mbit/s)
Flow 2 ingress (mean 312.02 Mbit/s)   Flow 2 egress (mean 312.01 Mbit/s)
Flow 3 ingress (mean 220.79 Mbit/s)   Flow 3 egress (mean 220.79 Mbit/s)

Flow 1 (95th percentile 113.88 ms)   Flow 2 (95th percentile 111.53 ms)   Flow 3 (95th percentile 111.63 ms)

Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-19 23:46:00
End at: 2019-02-19 23:46:30
Local clock offset: -0.361 ms
Remote clock offset: -0.09 ms

Run 1: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 334.40 Mbit/s)   Flow 1 egress (mean 334.41 Mbit/s)
Flow 2 ingress (mean 311.20 Mbit/s)   Flow 2 egress (mean 311.46 Mbit/s)
Flow 3 ingress (mean 106.63 Mbit/s)   Flow 3 egress (mean 106.70 Mbit/s)

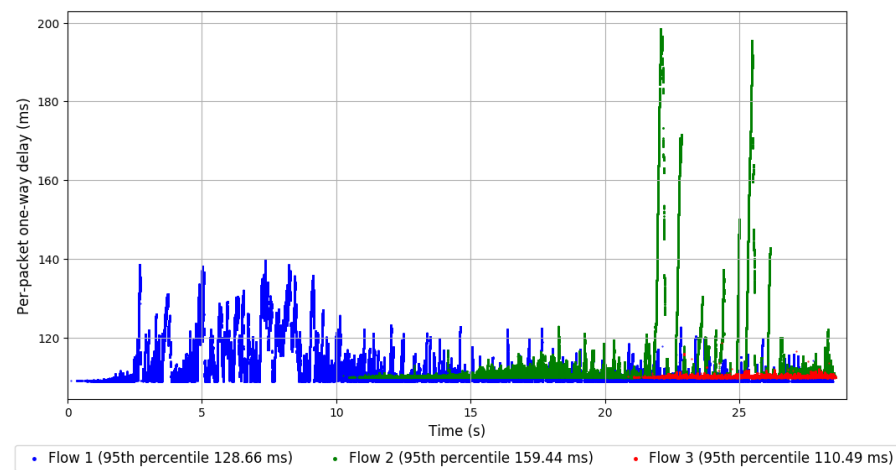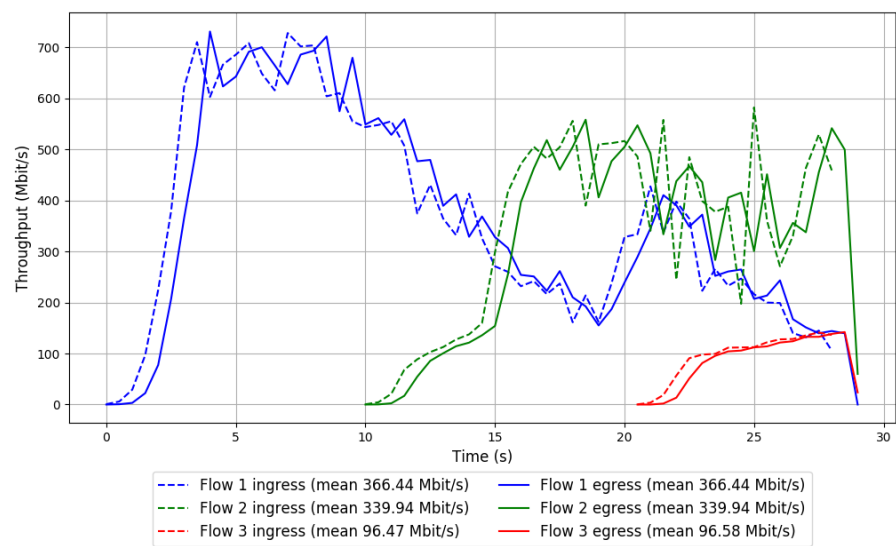Flow 1 (95th percentile 136.81 ms)   Flow 2 (95th percentile 118.53 ms)   Flow 3 (95th percentile 109.70 ms)

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 00:27:35
End at: 2019-02-20 00:28:05
Local clock offset: -0.973 ms
Remote clock offset: 0.335 ms


# Below is generated by plot.py at 2019-02-20 04:46:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 700.32 Mbit/s
95th percentile per-packet one-way delay: 151.687 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 399.02 Mbit/s
95th percentile per-packet one-way delay: 163.657 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 334.63 Mbit/s
95th percentile per-packet one-way delay: 122.377 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 310.00 Mbit/s
95th percentile per-packet one-way delay: 114.274 ms
Loss rate: 0.01%
```

Run 2: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 399.77 Mbit/s) Flow 1 egress (mean 399.02 Mbit/s)
Flow 2 ingress (mean 334.48 Mbit/s) Flow 2 egress (mean 334.63 Mbit/s)
Flow 3 ingress (mean 310.00 Mbit/s) Flow 3 egress (mean 310.00 Mbit/s)

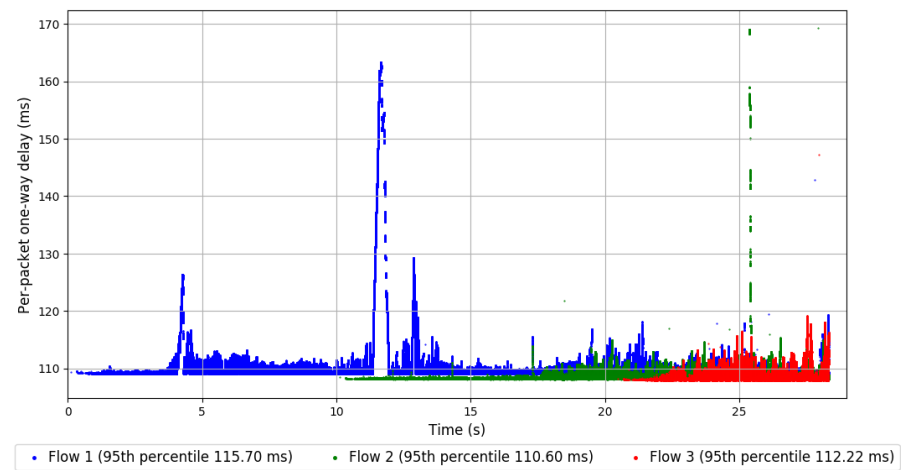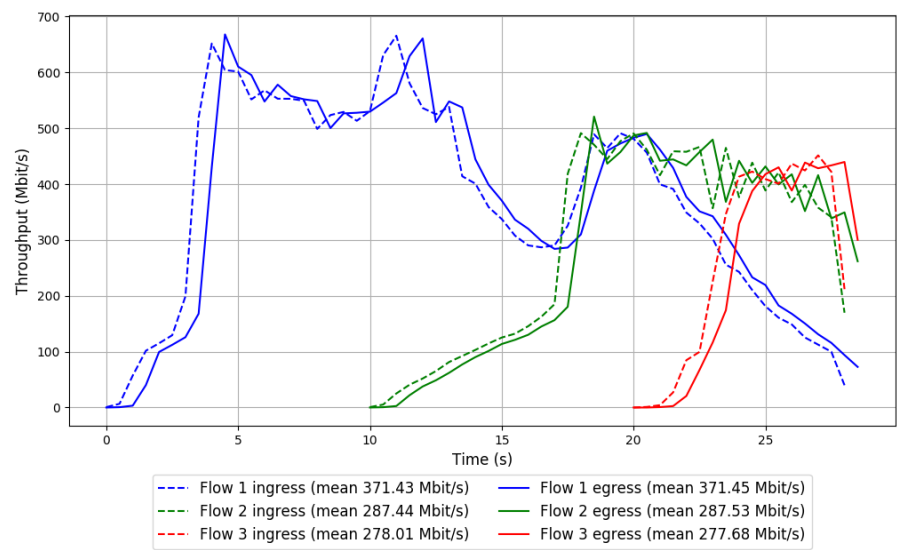Flow 1 (95th percentile 163.66 ms) Flow 2 (95th percentile 122.38 ms) Flow 3 (95th percentile 114.27 ms)

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 01:10:39
End at: 2019-02-20 01:11:09
Local clock offset: -0.68 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2019-02-20 04:48:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 685.04 Mbit/s
95th percentile per-packet one-way delay: 126.418 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 445.29 Mbit/s
95th percentile per-packet one-way delay: 127.055 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 334.21 Mbit/s
95th percentile per-packet one-way delay: 122.703 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 104.64 Mbit/s
95th percentile per-packet one-way delay: 110.338 ms
Loss rate: 0.00%
```
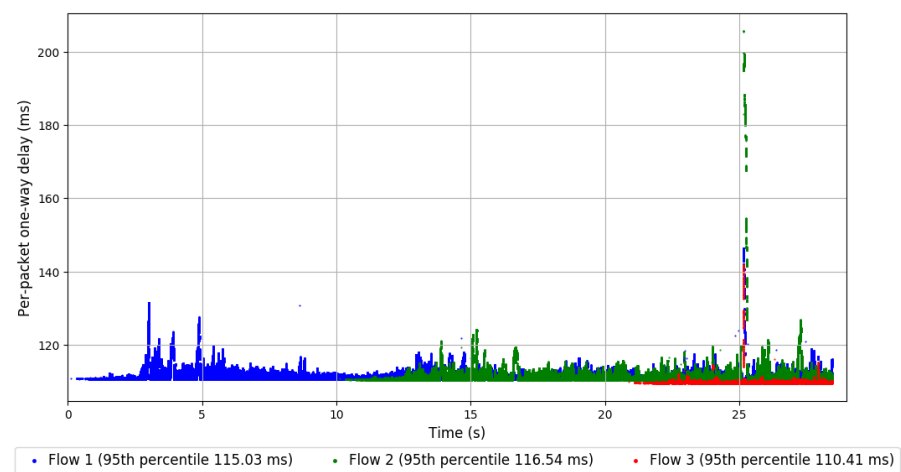
Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 01:51:17
End at: 2019-02-20 01:51:47
Local clock offset: -1.432 ms
Remote clock offset: -0.019 ms


# Below is generated by plot.py at 2019-02-20 04:52:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 683.47 Mbit/s
95th percentile per-packet one-way delay: 138.285 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 421.87 Mbit/s
95th percentile per-packet one-way delay: 133.304 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 360.46 Mbit/s
95th percentile per-packet one-way delay: 161.311 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 102.74 Mbit/s
95th percentile per-packet one-way delay: 111.234 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-MusesC5 — Data Link
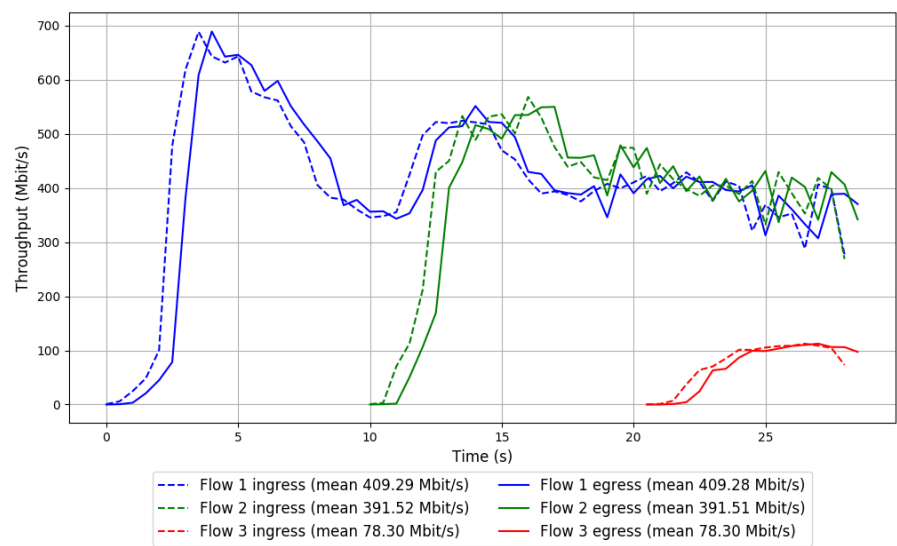

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```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 02:33:17
End at: 2019-02-20 02:33:47
Local clock offset: -0.734 ms
Remote clock offset: -0.062 ms

# Below is generated by plot.py at 2019-02-20 04:52:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 610.36 Mbit/s
95th percentile per-packet one-way delay: 131.412 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 366.44 Mbit/s
95th percentile per-packet one-way delay: 128.664 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 339.94 Mbit/s
95th percentile per-packet one-way delay: 159.436 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 96.58 Mbit/s
95th percentile per-packet one-way delay: 110.486 ms
Loss rate: 0.00%
```
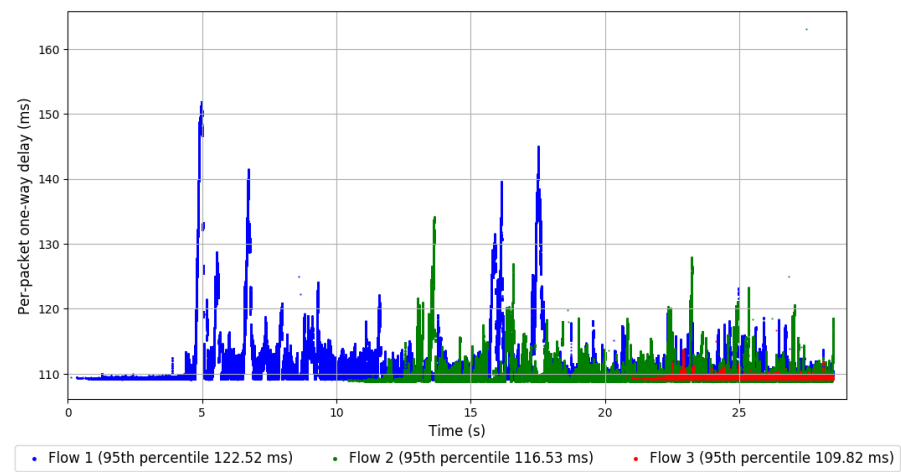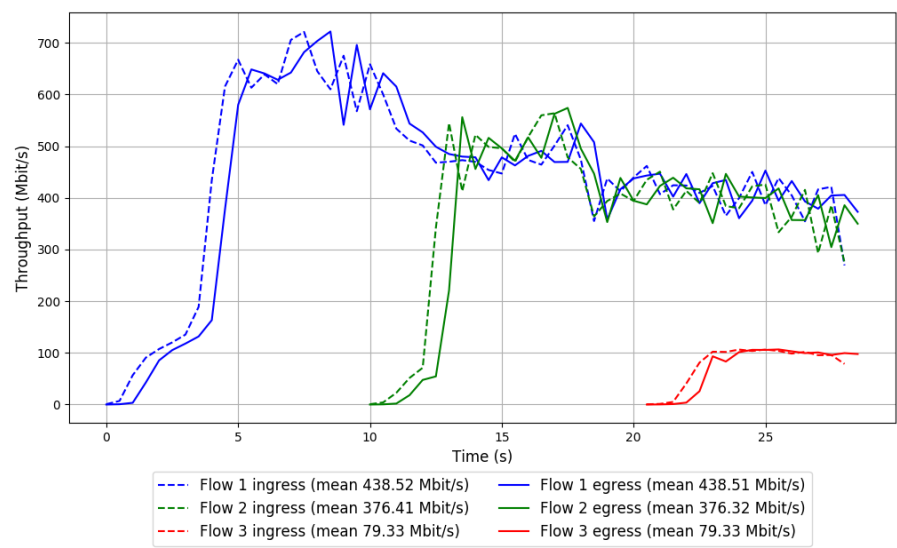
Run 5: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 366.44 Mbit/s)   Flow 1 egress (mean 366.44 Mbit/s)
Flow 2 ingress (mean 339.94 Mbit/s)   Flow 2 egress (mean 339.94 Mbit/s)
Flow 3 ingress (mean 96.47 Mbit/s)   Flow 3 egress (mean 96.58 Mbit/s)

Flow 1 (95th percentile 128.66 ms)   Flow 2 (95th percentile 159.44 ms)   Flow 3 (95th percentile 110.49 ms)
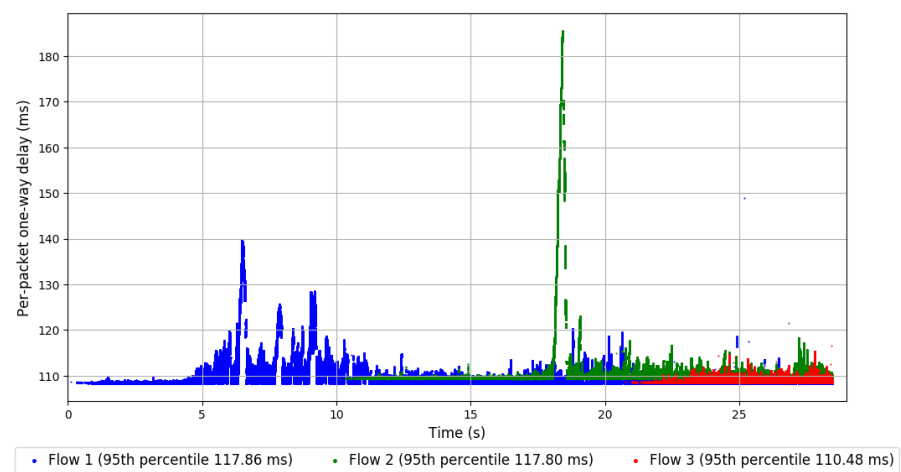
```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 00:10:55
End at: 2019-02-20 00:11:25
Local clock offset: -0.493 ms
Remote clock offset: -0.508 ms


# Below is generated by plot.py at 2019-02-20 04:52:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 634.31 Mbit/s
95th percentile per-packet one-way delay: 113.081 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 371.45 Mbit/s
95th percentile per-packet one-way delay: 115.702 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 287.53 Mbit/s
95th percentile per-packet one-way delay: 110.601 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 277.68 Mbit/s
95th percentile per-packet one-way delay: 112.219 ms
Loss rate: 0.13%
```
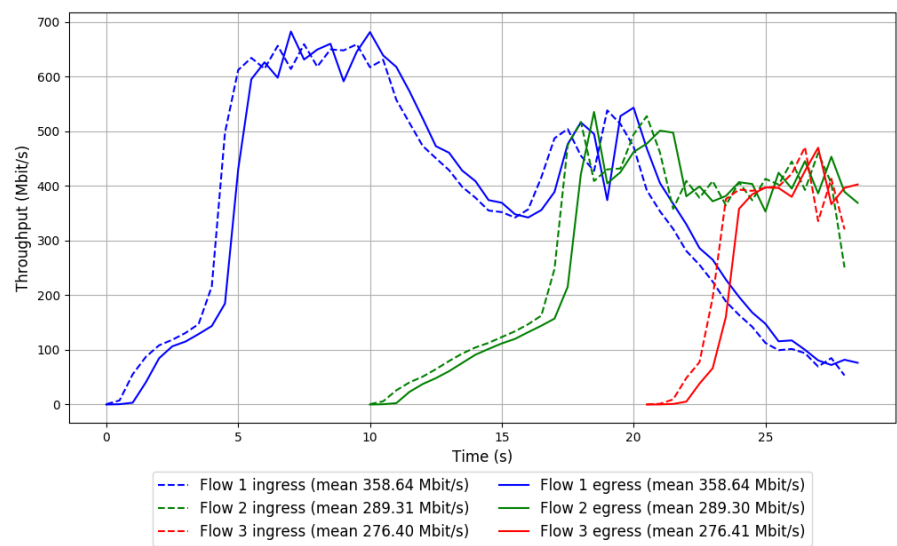
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 00:53:34
End at: 2019-02-20 00:54:04
Local clock offset: -1.467 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2019-02-20 04:54:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 683.32 Mbit/s
95th percentile per-packet one-way delay: 115.394 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 409.28 Mbit/s
95th percentile per-packet one-way delay: 115.025 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 391.51 Mbit/s
95th percentile per-packet one-way delay: 116.544 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 78.30 Mbit/s
95th percentile per-packet one-way delay: 110.408 ms
Loss rate: 0.00%
```
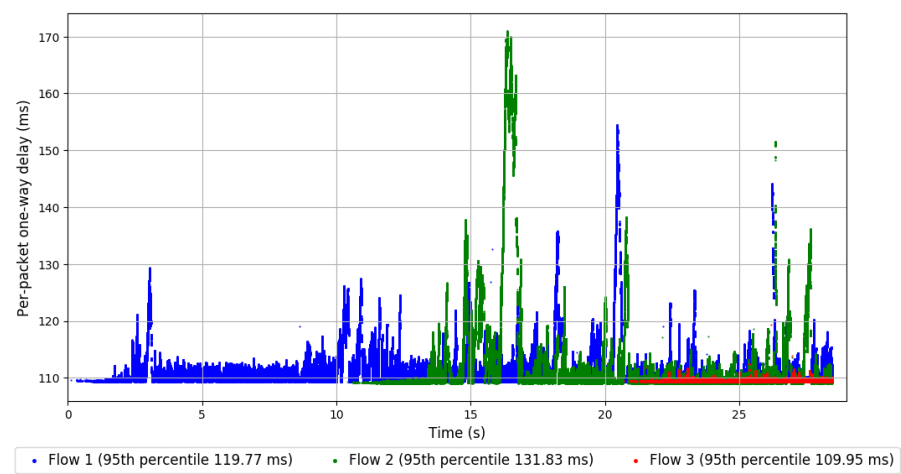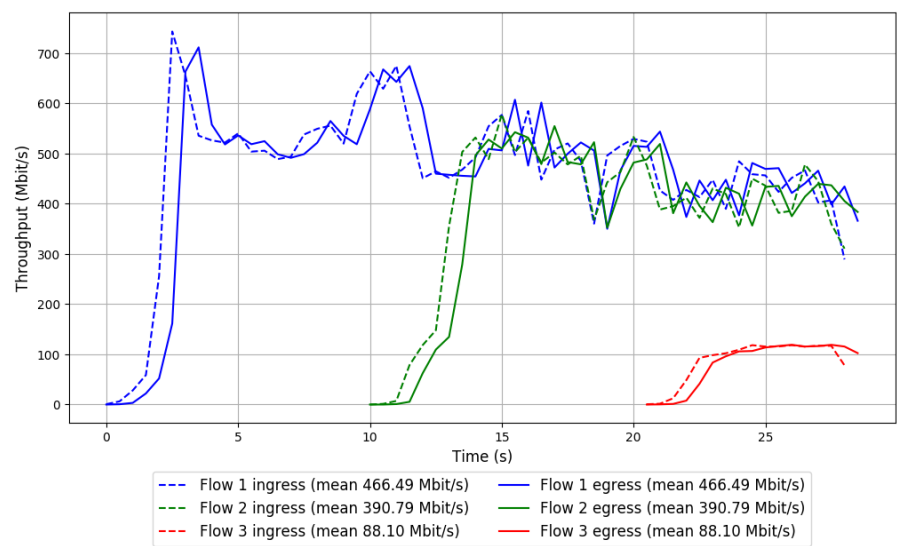
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 01:34:36
End at: 2019-02-20 01:35:06
Local clock offset: -0.003 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2019-02-20 04:55:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 702.51 Mbit/s
95th percentile per-packet one-way delay: 119.138 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 438.51 Mbit/s
95th percentile per-packet one-way delay: 122.521 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 376.32 Mbit/s
95th percentile per-packet one-way delay: 116.529 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 79.33 Mbit/s
95th percentile per-packet one-way delay: 109.824 ms
Loss rate: 0.00%
```
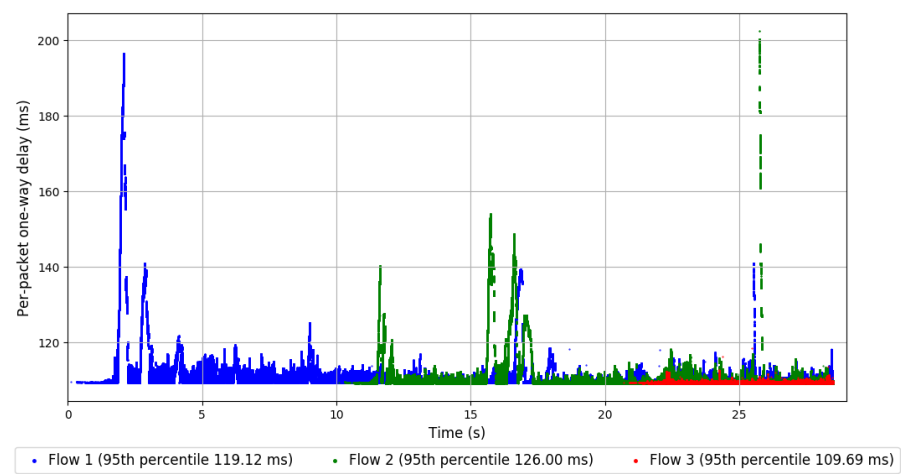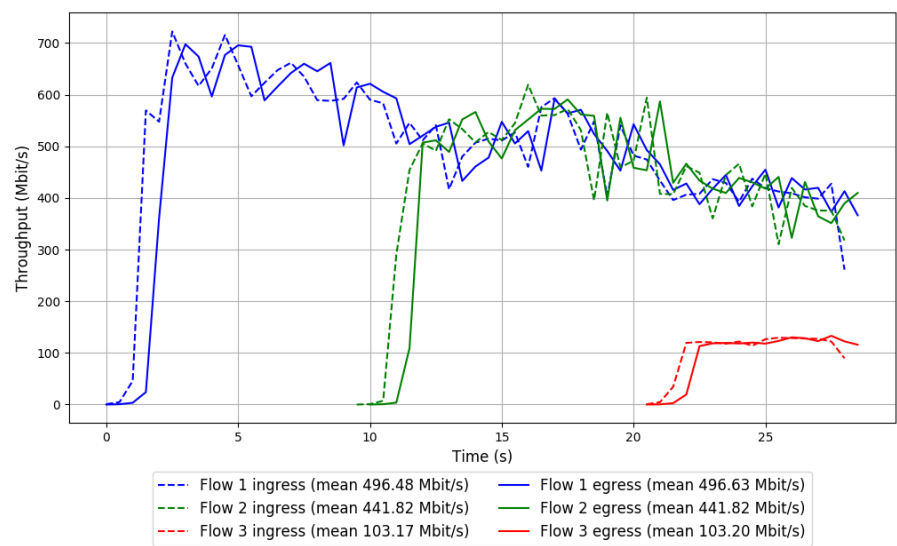
Run 3: Report of Indigo-MusesD — Data Link

90

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 02:16:42
End at: 2019-02-20 02:17:12
Local clock offset: -0.164 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2019-02-20 04:55:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 620.54 Mbit/s
95th percentile per-packet one-way delay: 116.630 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 358.64 Mbit/s
95th percentile per-packet one-way delay: 117.861 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 289.30 Mbit/s
95th percentile per-packet one-way delay: 117.797 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 276.41 Mbit/s
95th percentile per-packet one-way delay: 110.483 ms
Loss rate: 0.00%
```

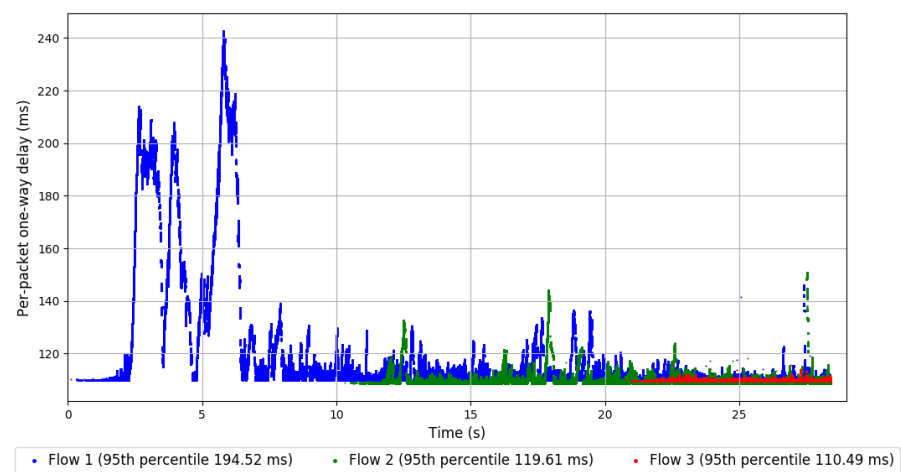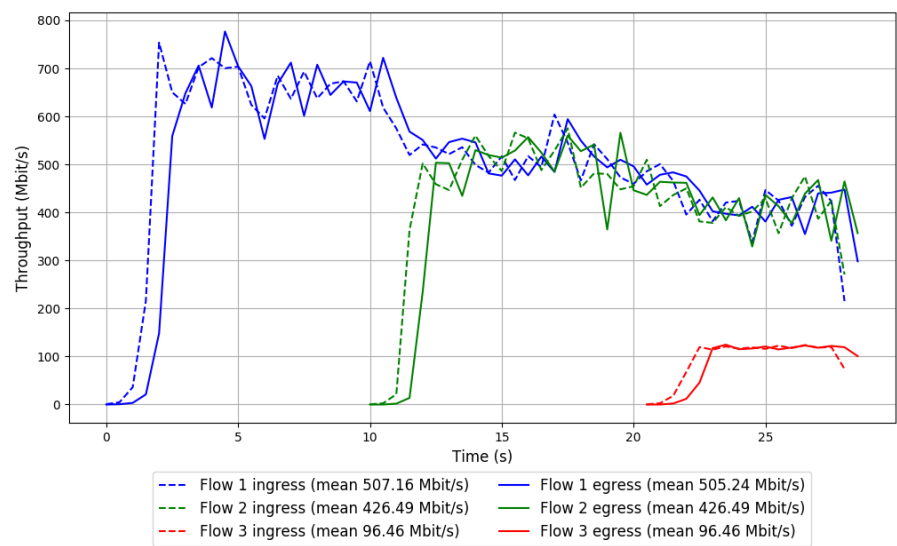# Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 02:57:13
End at: 2019-02-20 02:57:43
Local clock offset: -0.308 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2019-02-20 05:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 739.28 Mbit/s
95th percentile per-packet one-way delay: 123.437 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 466.49 Mbit/s
95th percentile per-packet one-way delay: 119.765 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 390.79 Mbit/s
95th percentile per-packet one-way delay: 131.834 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 88.10 Mbit/s
95th percentile per-packet one-way delay: 109.949 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-19 23:54:20
End at: 2019-02-19 23:54:51
Local clock offset: -0.945 ms
Remote clock offset: -0.462 ms


# Below is generated by plot.py at 2019-02-20 05:03:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 811.26 Mbit/s
95th percentile per-packet one-way delay: 122.905 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 496.63 Mbit/s
95th percentile per-packet one-way delay: 119.118 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 441.82 Mbit/s
95th percentile per-packet one-way delay: 126.002 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 103.20 Mbit/s
95th percentile per-packet one-way delay: 109.694 ms
Loss rate: 0.00%
```
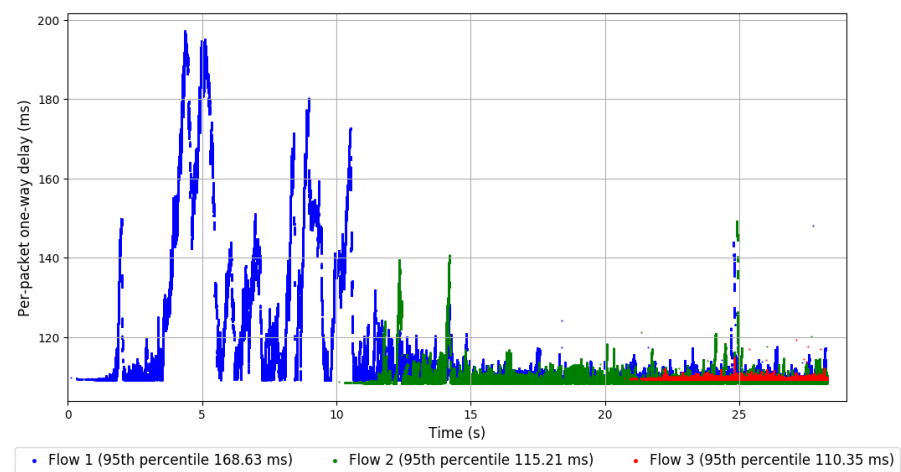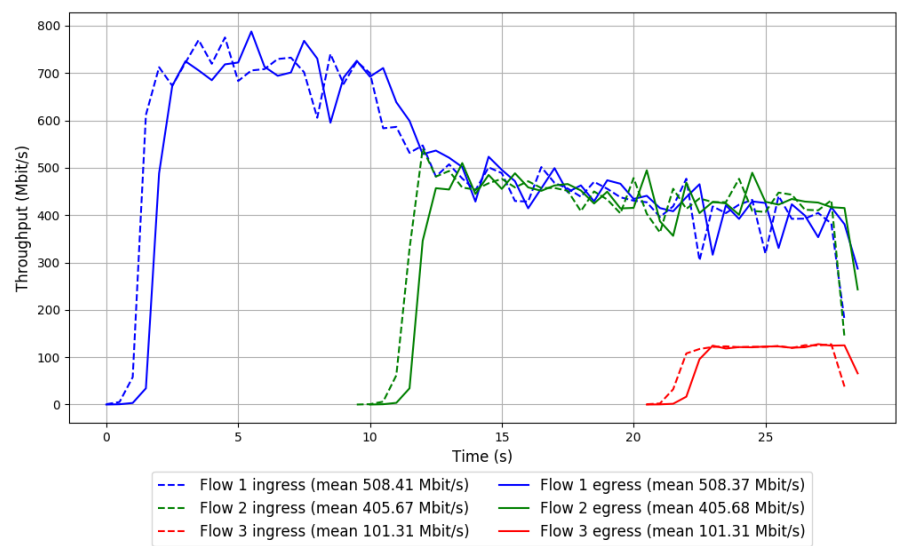
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 00:36:28
End at: 2019-02-20 00:36:58
Local clock offset: -0.967 ms
Remote clock offset: -0.398 ms


# Below is generated by plot.py at 2019-02-20 05:05:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 804.05 Mbit/s
95th percentile per-packet one-way delay: 184.054 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 505.24 Mbit/s
95th percentile per-packet one-way delay: 194.519 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 426.49 Mbit/s
95th percentile per-packet one-way delay: 119.609 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 96.46 Mbit/s
95th percentile per-packet one-way delay: 110.488 ms
Loss rate: 0.00%
```
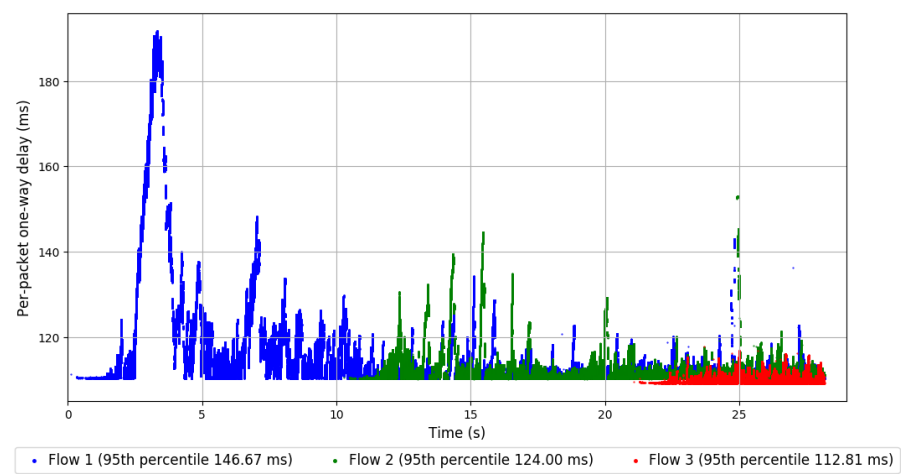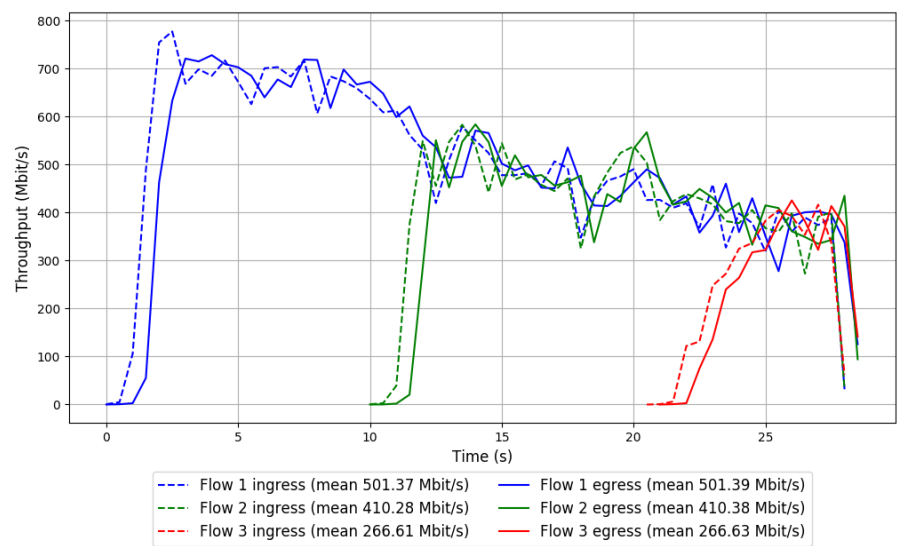
Run 2: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 507.16 Mbit/s) --- Flow 1 egress (mean 505.24 Mbit/s)
Flow 2 ingress (mean 426.49 Mbit/s) --- Flow 2 egress (mean 426.49 Mbit/s)
Flow 3 ingress (mean 96.46 Mbit/s) --- Flow 3 egress (mean 96.46 Mbit/s)

Flow 1 (95th percentile 194.52 ms) • Flow 2 (95th percentile 119.61 ms) • Flow 3 (95th percentile 110.49 ms)

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 01:19:29
End at: 2019-02-20 01:19:59
Local clock offset: -0.147 ms
Remote clock offset: -0.123 ms


# Below is generated by plot.py at 2019-02-20 05:06:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 797.18 Mbit/s
95th percentile per-packet one-way delay: 158.444 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 508.37 Mbit/s
95th percentile per-packet one-way delay: 168.628 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 405.68 Mbit/s
95th percentile per-packet one-way delay: 115.211 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 101.31 Mbit/s
95th percentile per-packet one-way delay: 110.346 ms
Loss rate: 0.00%
```
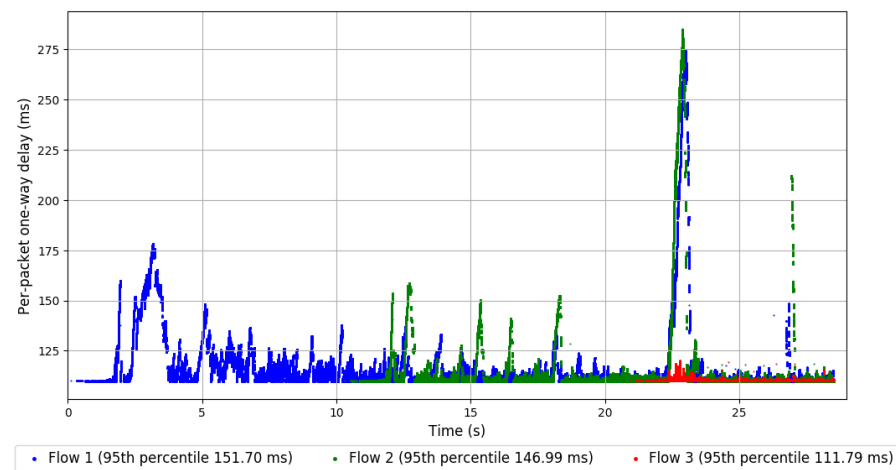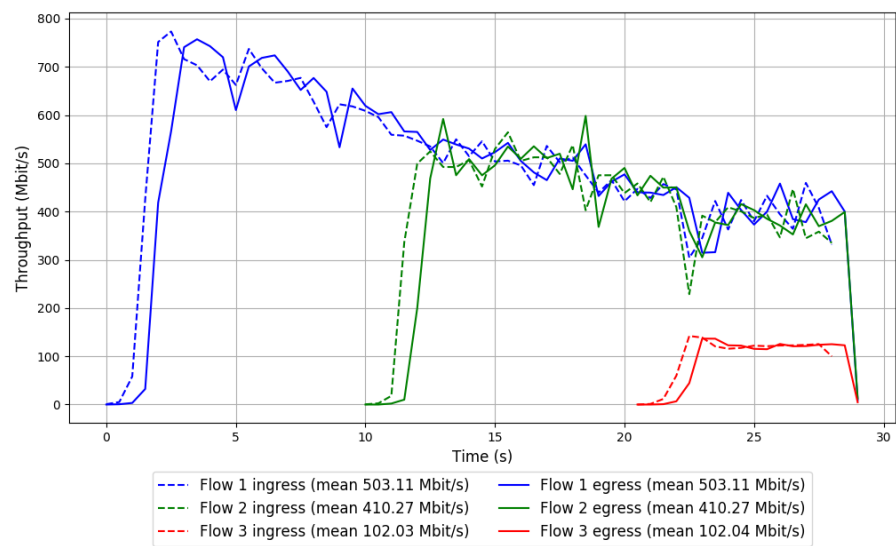
Run 3: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 508.41 Mbit/s) --- Flow 1 egress (mean 508.37 Mbit/s)
Flow 2 ingress (mean 405.67 Mbit/s) --- Flow 2 egress (mean 405.68 Mbit/s)
Flow 3 ingress (mean 101.31 Mbit/s) --- Flow 3 egress (mean 101.31 Mbit/s)

Flow 1 (95th percentile 168.63 ms)   Flow 2 (95th percentile 115.21 ms)   Flow 3 (95th percentile 110.35 ms)

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 02:00:11
End at: 2019-02-20 02:00:41
Local clock offset: -0.652 ms
Remote clock offset: 0.322 ms


# Below is generated by plot.py at 2019-02-20 05:07:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 830.67 Mbit/s
95th percentile per-packet one-way delay: 135.509 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 501.39 Mbit/s
95th percentile per-packet one-way delay: 146.670 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 410.38 Mbit/s
95th percentile per-packet one-way delay: 124.000 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 266.63 Mbit/s
95th percentile per-packet one-way delay: 112.810 ms
Loss rate: 0.00%
```
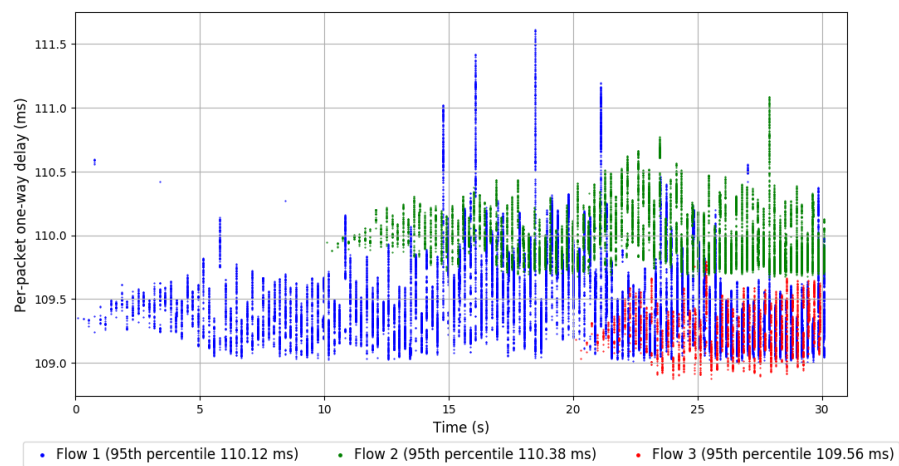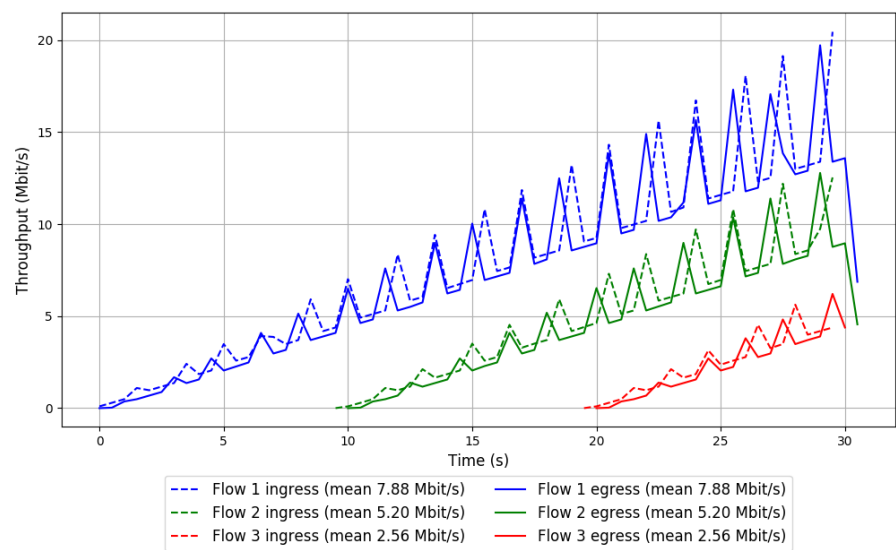
Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 02:41:26
End at: 2019-02-20 02:41:56
Local clock offset: -0.809 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2019-02-20 05:07:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 793.18 Mbit/s
95th percentile per-packet one-way delay: 149.791 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 503.11 Mbit/s
95th percentile per-packet one-way delay: 151.697 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 410.27 Mbit/s
95th percentile per-packet one-way delay: 146.993 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 102.04 Mbit/s
95th percentile per-packet one-way delay: 111.792 ms
Loss rate: 0.00%
```
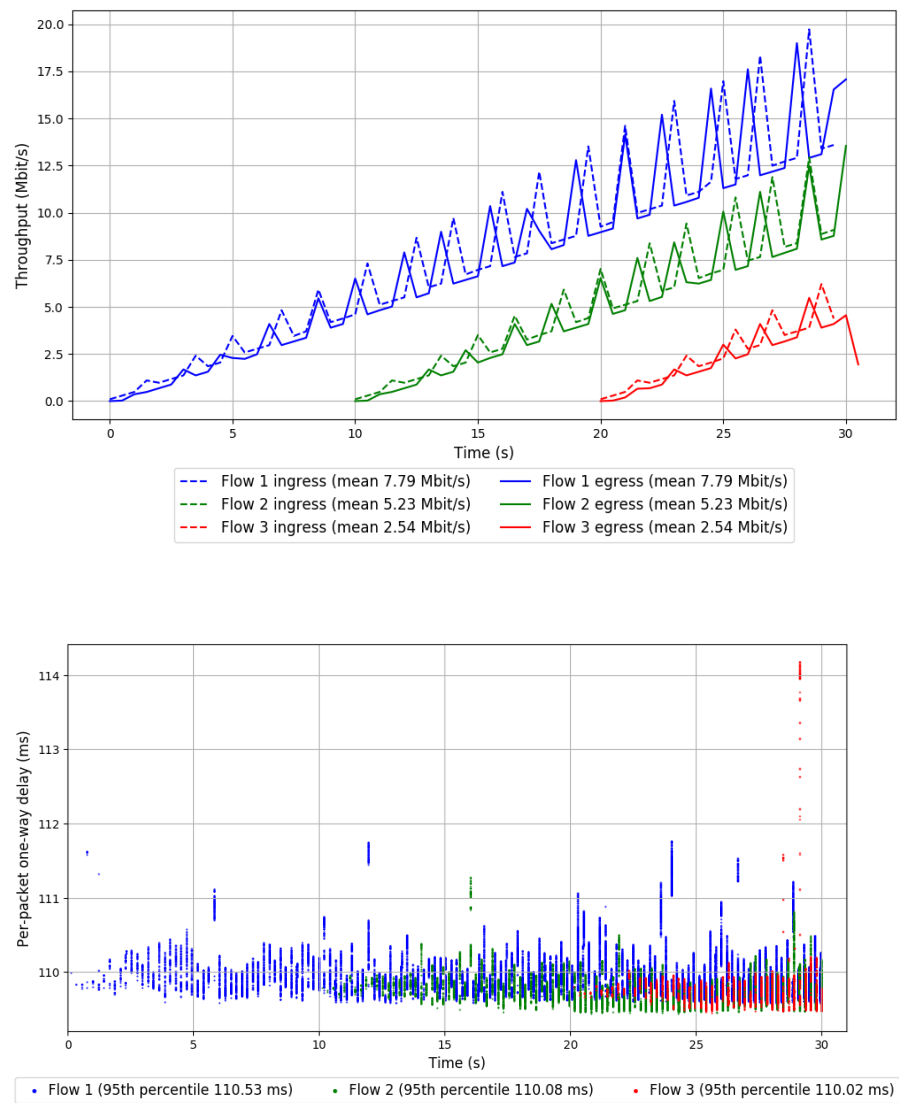
Run 5: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 503.11 Mbit/s) —— Flow 1 egress (mean 503.11 Mbit/s)
- - - Flow 2 ingress (mean 410.27 Mbit/s) —— Flow 2 egress (mean 410.27 Mbit/s)
- - - Flow 3 ingress (mean 102.03 Mbit/s) —— Flow 3 egress (mean 102.04 Mbit/s)

• Flow 1 (95th percentile 151.70 ms)   • Flow 2 (95th percentile 146.99 ms)   • Flow 3 (95th percentile 111.79 ms)
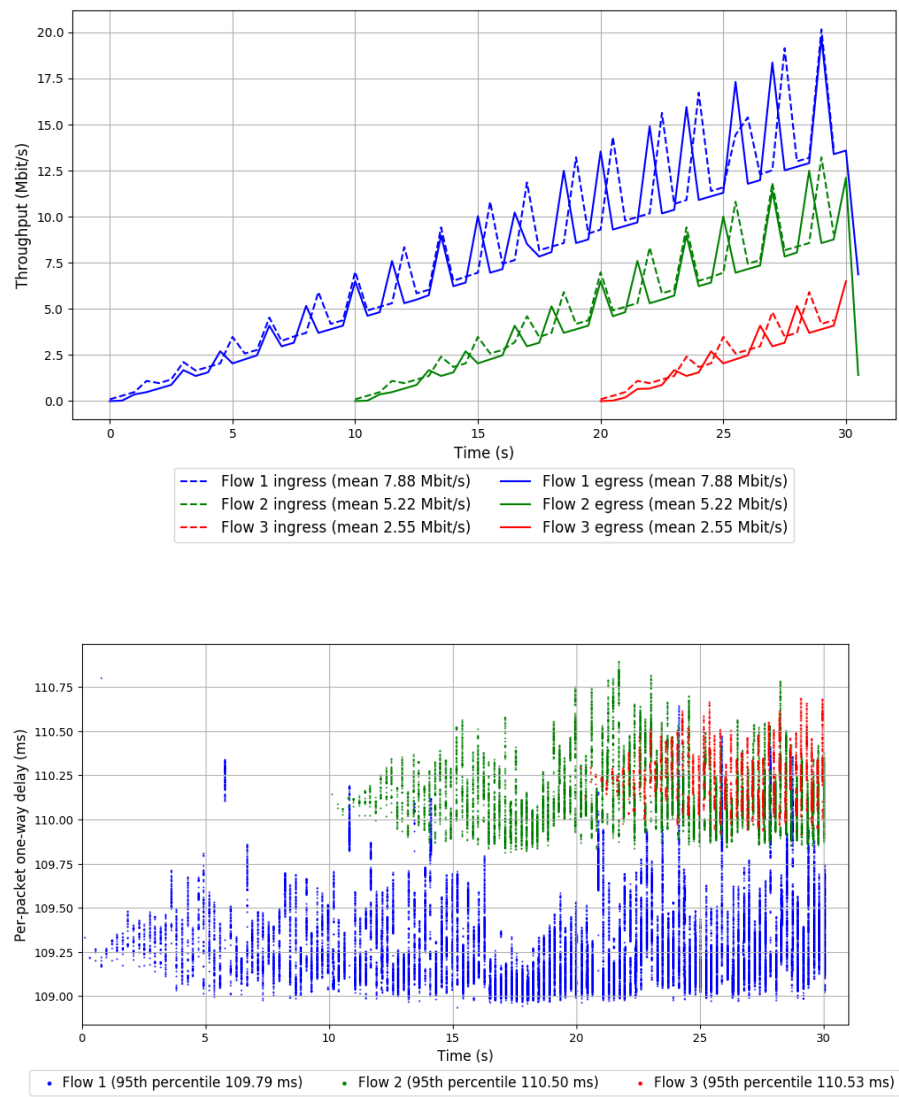
```
Run 1: Statistics of LEDBAT

Start at: 2019-02-20 00:19:07
End at: 2019-02-20 00:19:37
Local clock offset: -0.848 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2019-02-20 05:07:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.18 Mbit/s
95th percentile per-packet one-way delay: 110.258 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.88 Mbit/s
95th percentile per-packet one-way delay: 110.125 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.20 Mbit/s
95th percentile per-packet one-way delay: 110.381 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 109.561 ms
Loss rate: 0.00%
```

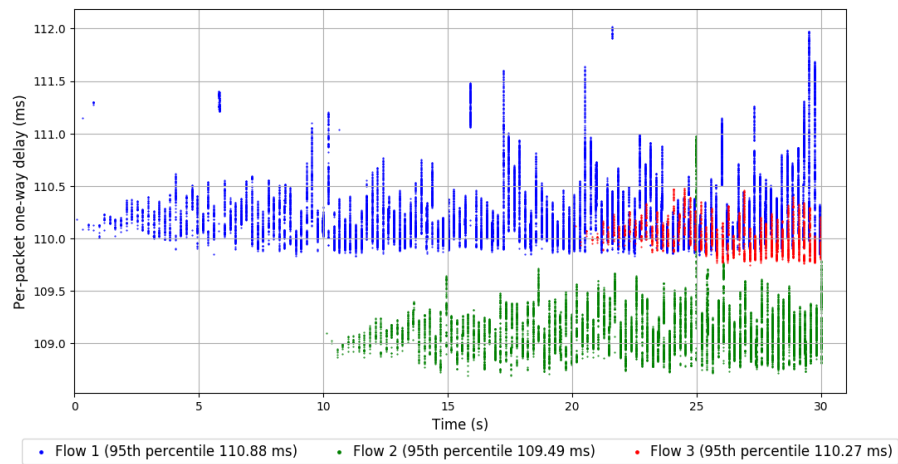# Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-20 01:02:11
End at: 2019-02-20 01:02:41
Local clock offset: -0.129 ms
Remote clock offset: 0.327 ms


# Below is generated by plot.py at 2019-02-20 05:07:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 110.378 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 110.535 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 110.081 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.54 Mbit/s
95th percentile per-packet one-way delay: 110.019 ms
Loss rate: 0.00%
```
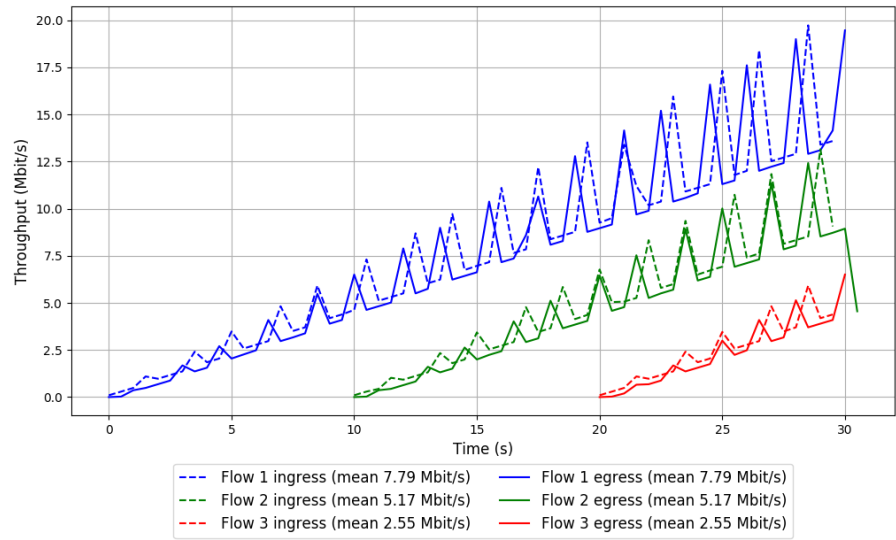
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 01:42:54
End at: 2019-02-20 01:43:24
Local clock offset: -0.834 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2019-02-20 05:07:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.18 Mbit/s
95th percentile per-packet one-way delay: 110.377 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.88 Mbit/s
95th percentile per-packet one-way delay: 109.786 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 110.497 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.55 Mbit/s
95th percentile per-packet one-way delay: 110.526 ms
Loss rate: 0.00%
```
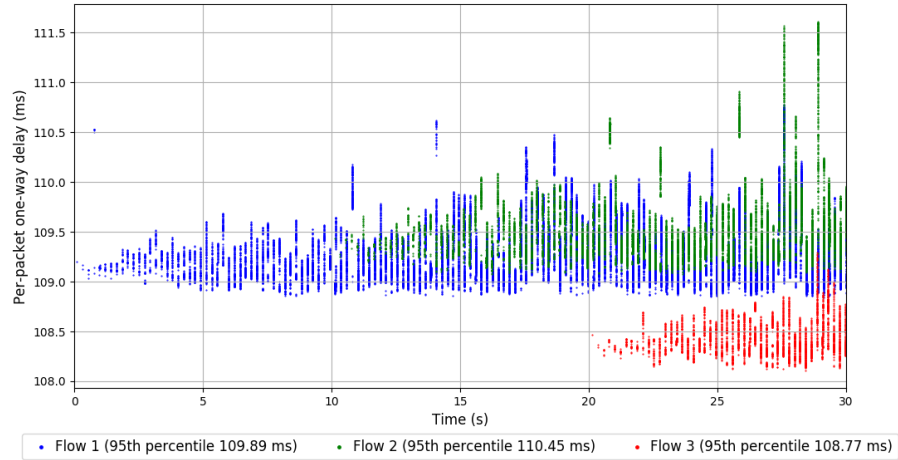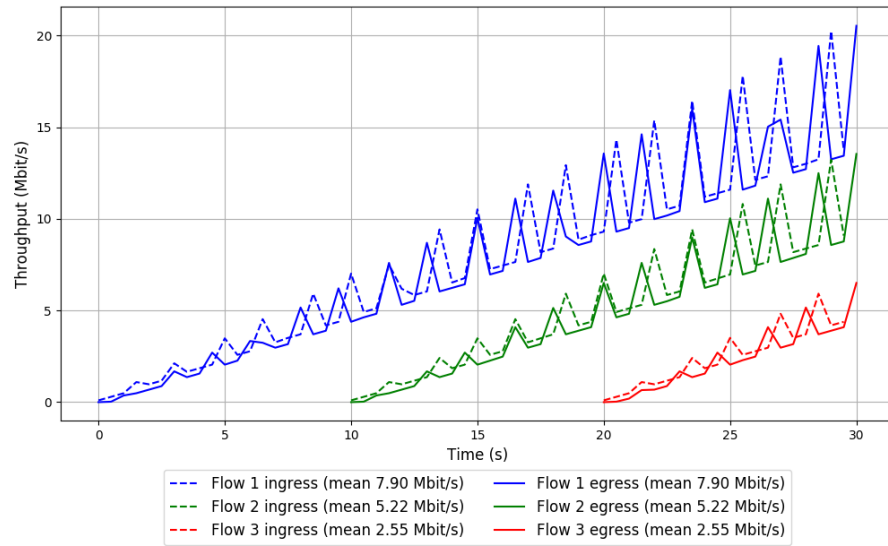
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 7.88 Mbit/s) — Flow 1 egress (mean 7.88 Mbit/s)
Flow 2 ingress (mean 5.22 Mbit/s) — Flow 2 egress (mean 5.22 Mbit/s)
Flow 3 ingress (mean 2.55 Mbit/s) — Flow 3 egress (mean 2.55 Mbit/s)

Flow 1 (95th percentile 109.79 ms)   Flow 2 (95th percentile 110.50 ms)   Flow 3 (95th percentile 110.53 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 02:24:55
End at: 2019-02-20 02:25:25
Local clock offset: -0.607 ms
Remote clock offset: -0.129 ms


# Below is generated by plot.py at 2019-02-20 05:07:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.06 Mbit/s
95th percentile per-packet one-way delay: 110.741 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 110.880 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.17 Mbit/s
95th percentile per-packet one-way delay: 109.493 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.55 Mbit/s
95th percentile per-packet one-way delay: 110.266 ms
Loss rate: 0.00%
```
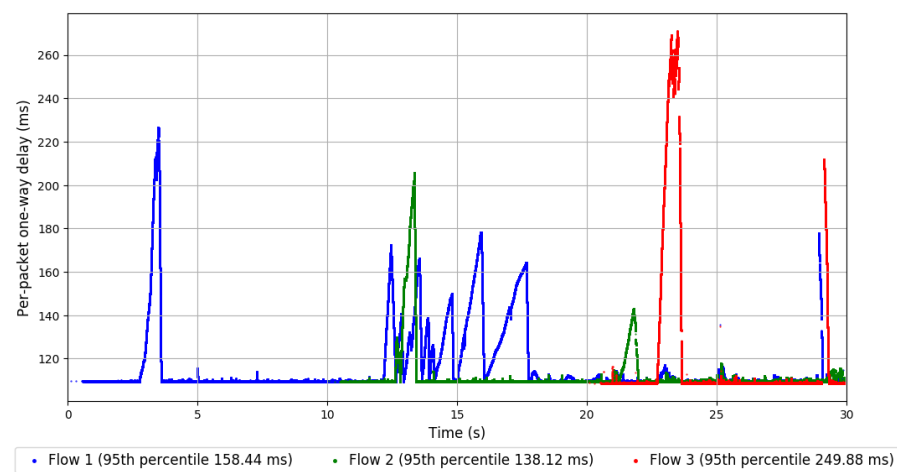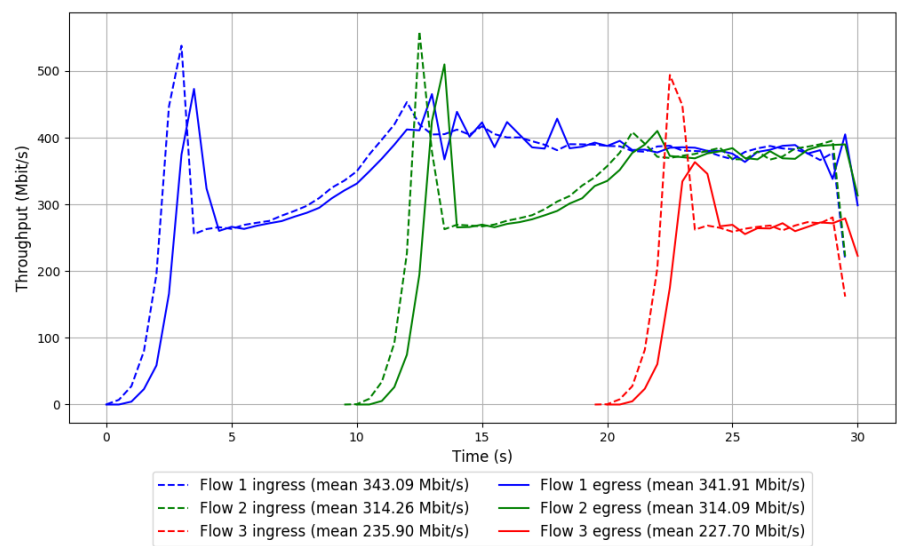
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-20 03:05:16
End at: 2019-02-20 03:05:46
Local clock offset: -0.098 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2019-02-20 05:07:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.22 Mbit/s
95th percentile per-packet one-way delay: 109.944 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 109.888 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 110.454 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.55 Mbit/s
95th percentile per-packet one-way delay: 108.768 ms
Loss rate: 0.00%
```
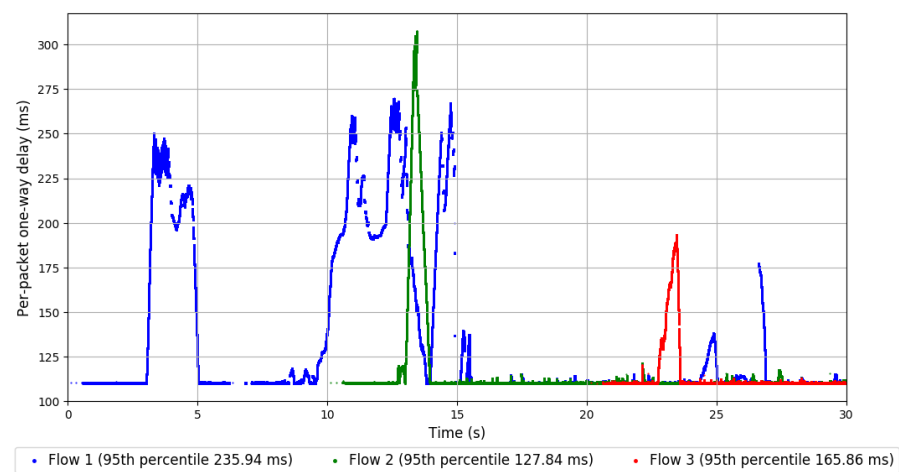
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-20 00:08:24
End at: 2019-02-20 00:08:54
Local clock offset: -0.601 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2019-02-20 05:16:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 626.25 Mbit/s
95th percentile per-packet one-way delay: 160.804 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 341.91 Mbit/s
95th percentile per-packet one-way delay: 158.442 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 314.09 Mbit/s
95th percentile per-packet one-way delay: 138.115 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 227.70 Mbit/s
95th percentile per-packet one-way delay: 249.881 ms
Loss rate: 3.48%
```
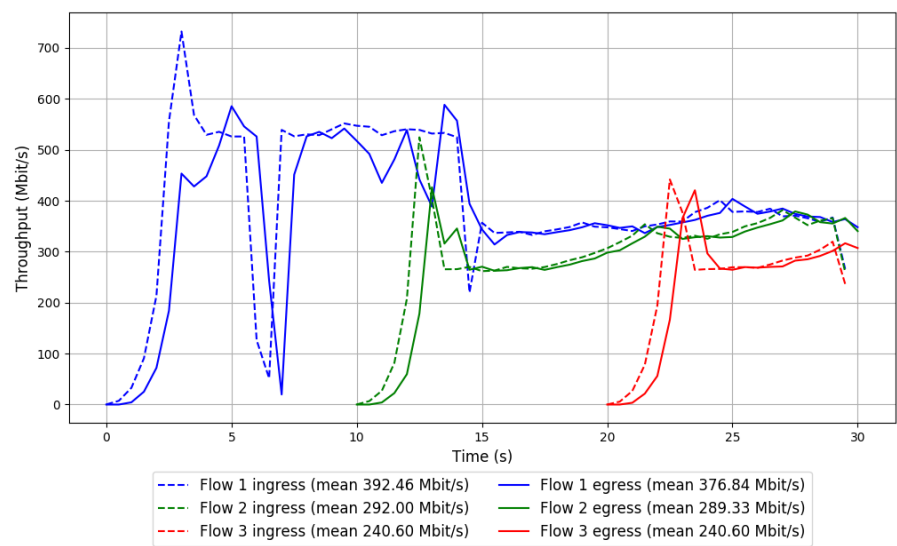
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 00:51:04
End at: 2019-02-20 00:51:34
Local clock offset: -0.827 ms
Remote clock offset: 0.322 ms

# Below is generated by plot.py at 2019-02-20 05:18:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 648.25 Mbit/s
95th percentile per-packet one-way delay: 226.342 ms
Loss rate: 2.62%
-- Flow 1:
Average throughput: 376.84 Mbit/s
95th percentile per-packet one-way delay: 235.939 ms
Loss rate: 3.98%
-- Flow 2:
Average throughput: 289.33 Mbit/s
95th percentile per-packet one-way delay: 127.836 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 240.60 Mbit/s
95th percentile per-packet one-way delay: 165.860 ms
Loss rate: 0.01%
```
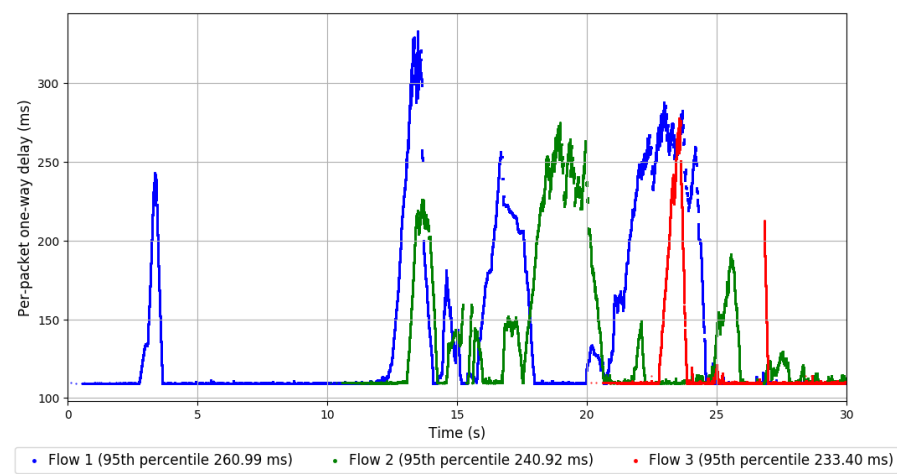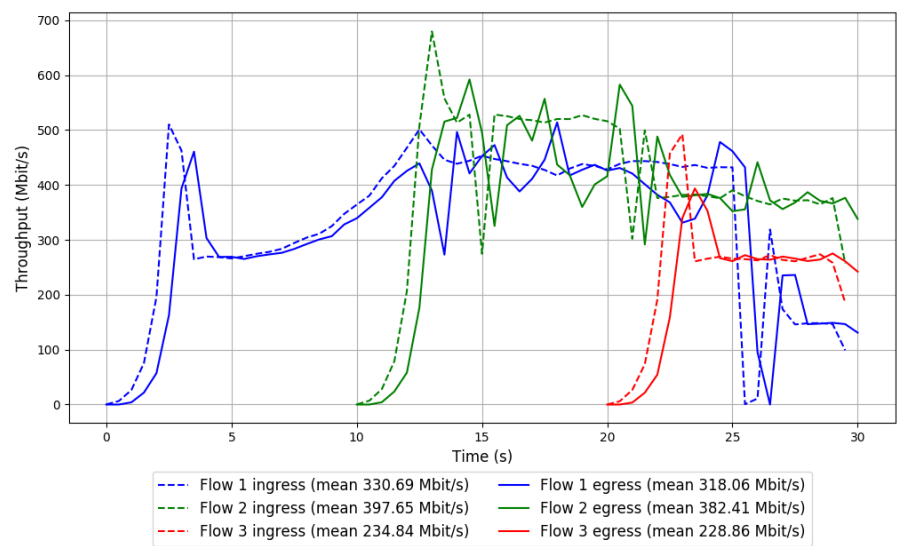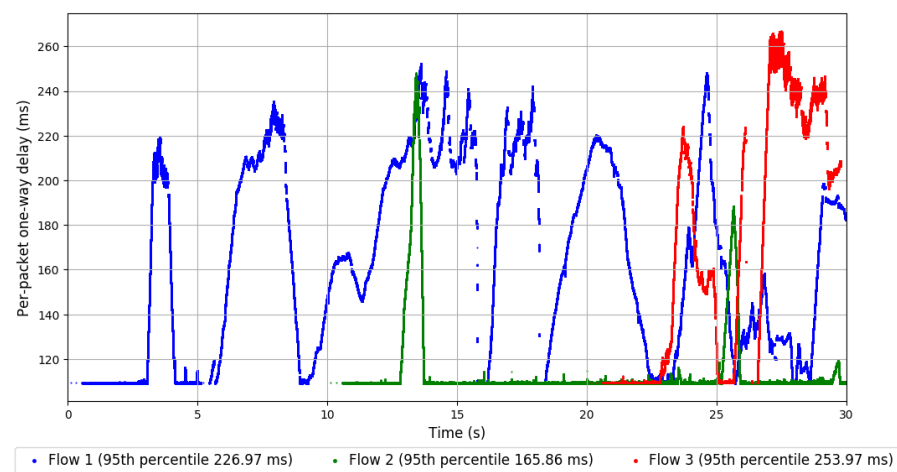
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 01:32:24
End at: 2019-02-20 01:32:54
Local clock offset: -0.109 ms
Remote clock offset: 0.369 ms


# Below is generated by plot.py at 2019-02-20 05:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 647.55 Mbit/s
95th percentile per-packet one-way delay: 251.257 ms
Loss rate: 3.76%
-- Flow 1:
Average throughput: 318.06 Mbit/s
95th percentile per-packet one-way delay: 260.989 ms
Loss rate: 3.88%
-- Flow 2:
Average throughput: 382.41 Mbit/s
95th percentile per-packet one-way delay: 240.920 ms
Loss rate: 3.91%
-- Flow 3:
Average throughput: 228.86 Mbit/s
95th percentile per-packet one-way delay: 233.400 ms
Loss rate: 2.72%
```

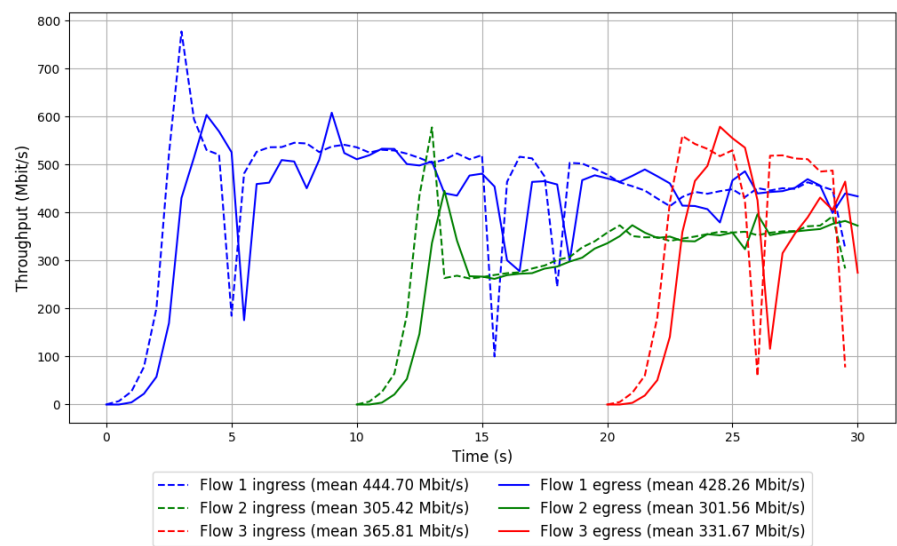## Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 330.69 Mbit/s) --- Flow 1 egress (mean 318.06 Mbit/s)
Flow 2 ingress (mean 397.65 Mbit/s) --- Flow 2 egress (mean 382.41 Mbit/s)
Flow 3 ingress (mean 234.84 Mbit/s) --- Flow 3 egress (mean 228.86 Mbit/s)

Flow 1 (95th percentile 260.99 ms) • Flow 2 (95th percentile 240.92 ms) • Flow 3 (95th percentile 233.40 ms)
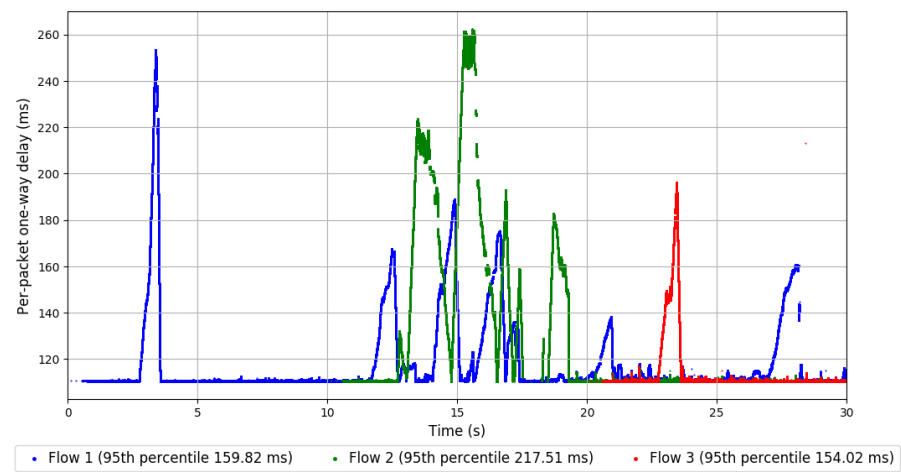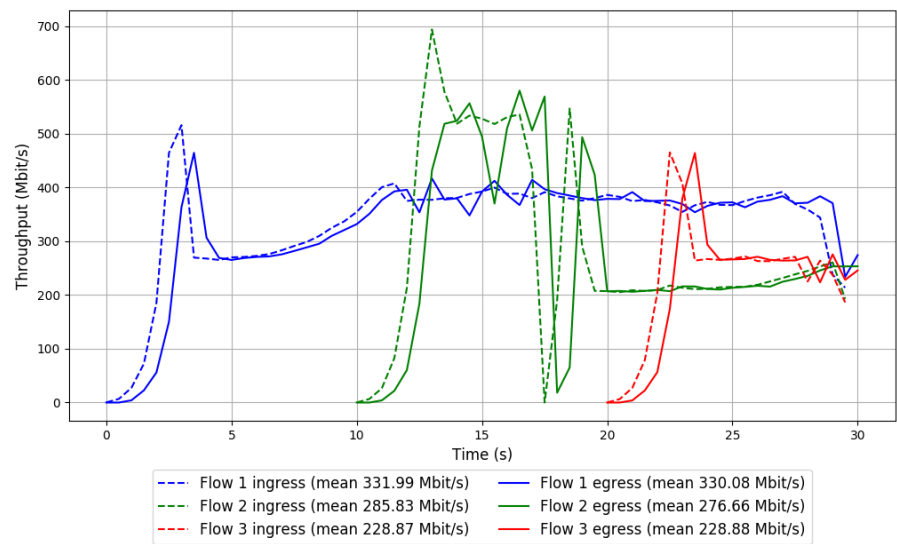
```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 02:14:09
End at: 2019-02-20 02:14:39
Local clock offset: -0.013 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2019-02-20 05:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 735.53 Mbit/s
95th percentile per-packet one-way delay: 233.589 ms
Loss rate: 3.76%
-- Flow 1:
Average throughput: 428.26 Mbit/s
95th percentile per-packet one-way delay: 226.970 ms
Loss rate: 3.69%
-- Flow 2:
Average throughput: 301.56 Mbit/s
95th percentile per-packet one-way delay: 165.857 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 331.67 Mbit/s
95th percentile per-packet one-way delay: 253.974 ms
Loss rate: 8.40%
```

Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 444.70 Mbit/s) — Flow 1 egress (mean 428.26 Mbit/s)
Flow 2 ingress (mean 305.42 Mbit/s) — Flow 2 egress (mean 301.56 Mbit/s)
Flow 3 ingress (mean 365.81 Mbit/s) — Flow 3 egress (mean 331.67 Mbit/s)

Flow 1 (95th percentile 226.97 ms) — Flow 2 (95th percentile 165.86 ms) — Flow 3 (95th percentile 253.97 ms)
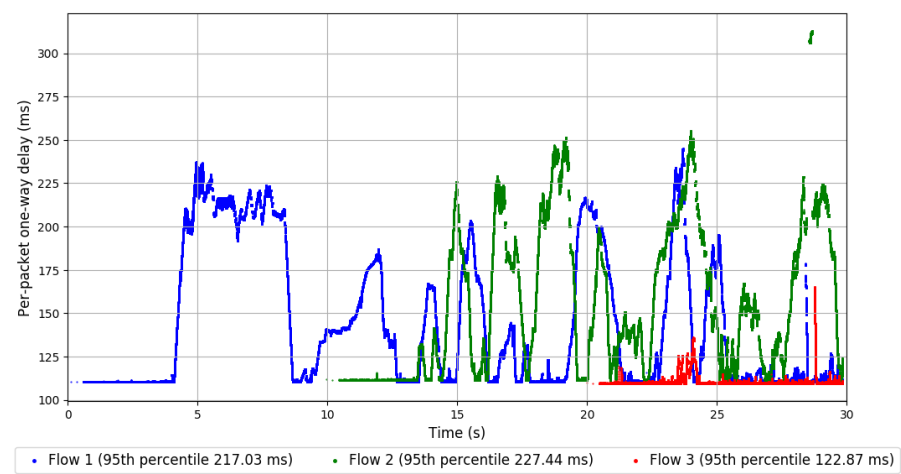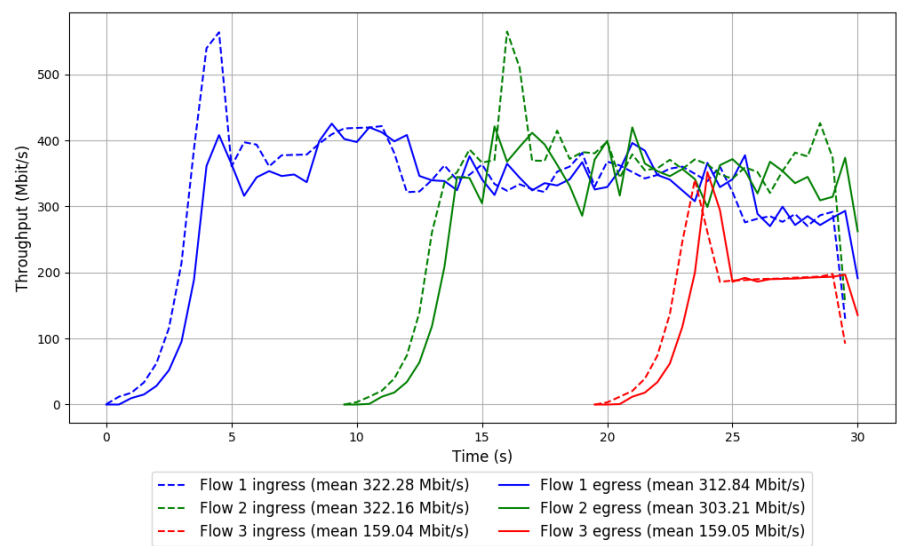
```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-20 02:55:07
End at: 2019-02-20 02:55:37
Local clock offset: -1.375 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2019-02-20 05:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 589.32 Mbit/s
95th percentile per-packet one-way delay: 191.567 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 330.08 Mbit/s
95th percentile per-packet one-way delay: 159.819 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 276.66 Mbit/s
95th percentile per-packet one-way delay: 217.514 ms
Loss rate: 3.21%
-- Flow 3:
Average throughput: 228.88 Mbit/s
95th percentile per-packet one-way delay: 154.018 ms
Loss rate: 0.00%
```

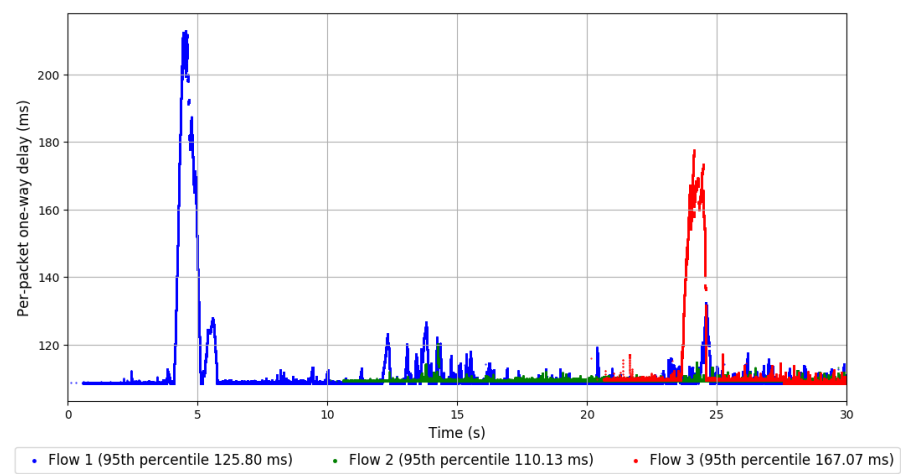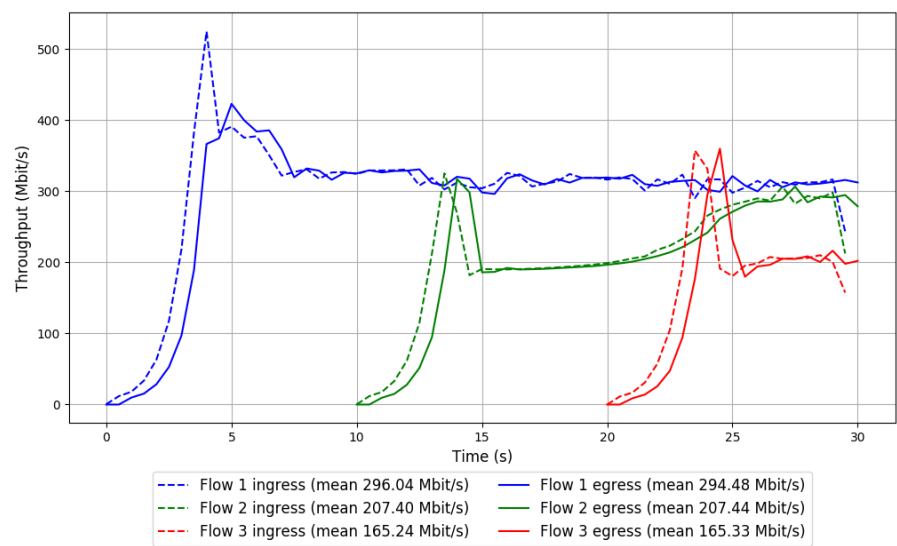Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 00:21:42
End at: 2019-02-20 00:22:12
Local clock offset: -1.467 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2019-02-20 05:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 568.24 Mbit/s
95th percentile per-packet one-way delay: 219.573 ms
Loss rate: 3.75%
-- Flow 1:
Average throughput: 312.84 Mbit/s
95th percentile per-packet one-way delay: 217.028 ms
Loss rate: 2.94%
-- Flow 2:
Average throughput: 303.21 Mbit/s
95th percentile per-packet one-way delay: 227.438 ms
Loss rate: 5.90%
-- Flow 3:
Average throughput: 159.05 Mbit/s
95th percentile per-packet one-way delay: 122.873 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 322.28 Mbit/s) ---- Flow 1 egress (mean 312.84 Mbit/s) ——
Flow 2 ingress (mean 322.16 Mbit/s) ---- Flow 2 egress (mean 303.21 Mbit/s) ——
Flow 3 ingress (mean 159.04 Mbit/s) ---- Flow 3 egress (mean 159.05 Mbit/s) ——

Flow 1 (95th percentile 217.03 ms)   Flow 2 (95th percentile 227.44 ms)   Flow 3 (95th percentile 122.87 ms)
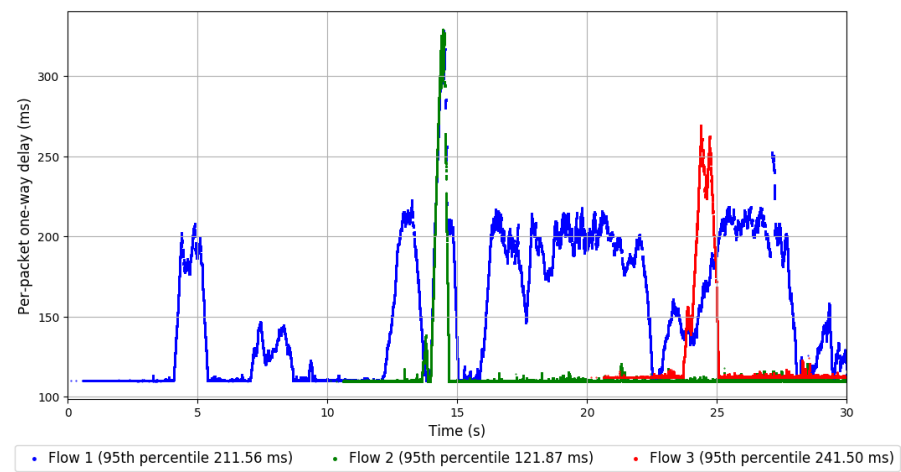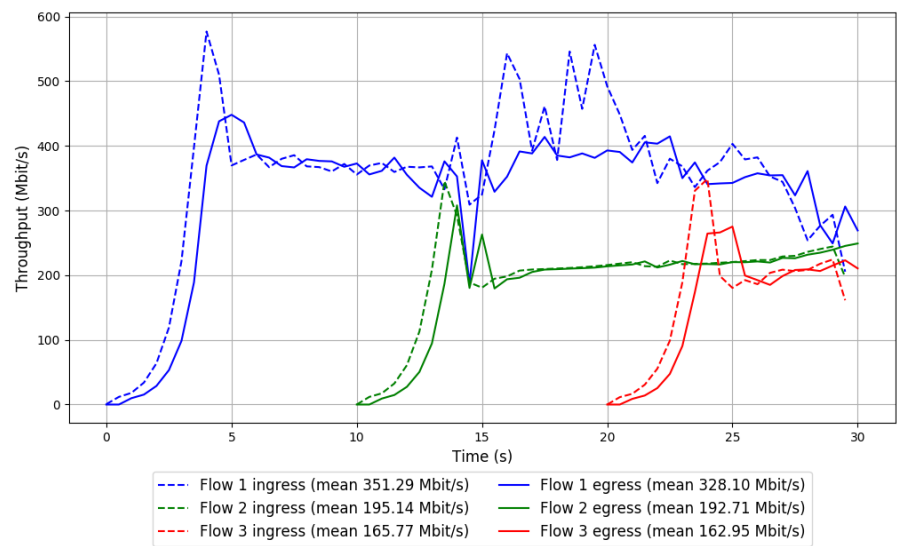
```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 01:04:46
End at: 2019-02-20 01:05:16
Local clock offset: -0.317 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2019-02-20 05:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 486.94 Mbit/s
95th percentile per-packet one-way delay: 126.183 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 294.48 Mbit/s
95th percentile per-packet one-way delay: 125.804 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 207.44 Mbit/s
95th percentile per-packet one-way delay: 110.131 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 165.33 Mbit/s
95th percentile per-packet one-way delay: 167.075 ms
Loss rate: 0.02%
```

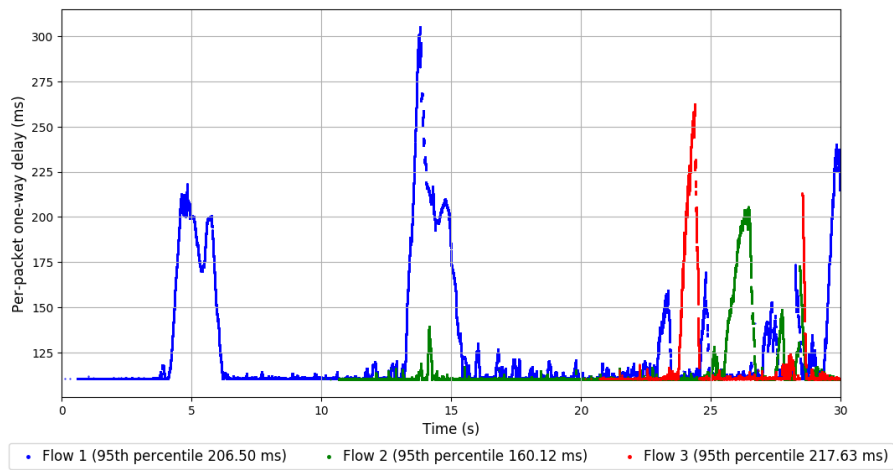Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 296.04 Mbit/s)   Flow 1 egress (mean 294.48 Mbit/s)
Flow 2 ingress (mean 207.40 Mbit/s)   Flow 2 egress (mean 207.44 Mbit/s)
Flow 3 ingress (mean 165.24 Mbit/s)   Flow 3 egress (mean 165.33 Mbit/s)

Flow 1 (95th percentile 125.80 ms)   Flow 2 (95th percentile 110.13 ms)   Flow 3 (95th percentile 167.07 ms)
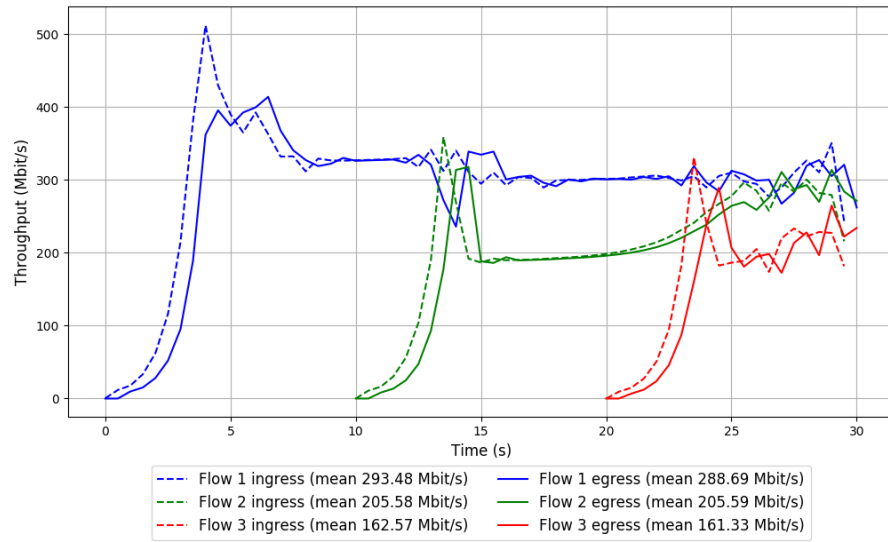
```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 01:45:29
End at: 2019-02-20 01:45:59
Local clock offset: -0.766 ms
Remote clock offset: -0.022 ms


# Below is generated by plot.py at 2019-02-20 05:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 510.00 Mbit/s
95th percentile per-packet one-way delay: 211.401 ms
Loss rate: 4.80%
-- Flow 1:
Average throughput: 328.10 Mbit/s
95th percentile per-packet one-way delay: 211.560 ms
Loss rate: 6.60%
-- Flow 2:
Average throughput: 192.71 Mbit/s
95th percentile per-packet one-way delay: 121.871 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 162.95 Mbit/s
95th percentile per-packet one-way delay: 241.495 ms
Loss rate: 1.72%
```
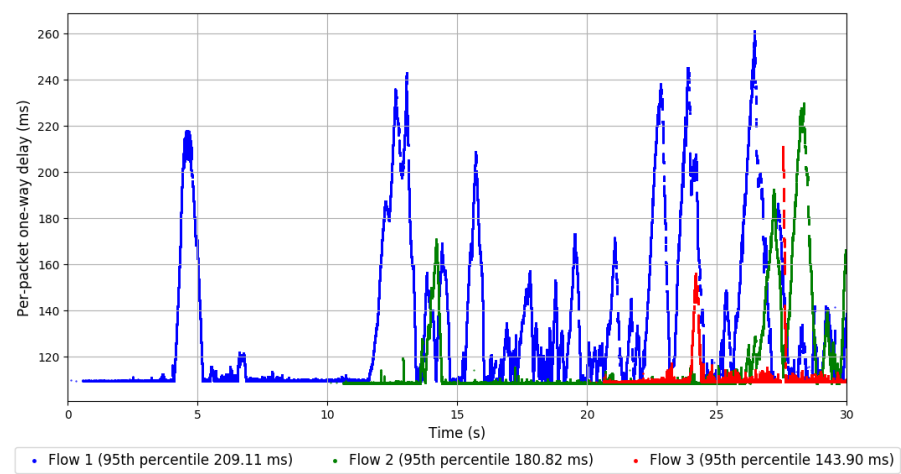
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 351.29 Mbit/s) ---- Flow 1 egress (mean 328.10 Mbit/s) ——
Flow 2 ingress (mean 195.14 Mbit/s) ---- Flow 2 egress (mean 192.71 Mbit/s) ——
Flow 3 ingress (mean 165.77 Mbit/s) ---- Flow 3 egress (mean 162.95 Mbit/s) ——

Flow 1 (95th percentile 211.56 ms)   Flow 2 (95th percentile 121.87 ms)   Flow 3 (95th percentile 241.50 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 02:27:29
End at: 2019-02-20 02:27:59
Local clock offset: -1.317 ms
Remote clock offset: -0.125 ms


# Below is generated by plot.py at 2019-02-20 05:36:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 478.51 Mbit/s
95th percentile per-packet one-way delay: 201.432 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 288.69 Mbit/s
95th percentile per-packet one-way delay: 206.499 ms
Loss rate: 1.63%
-- Flow 2:
Average throughput: 205.59 Mbit/s
95th percentile per-packet one-way delay: 160.124 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 161.33 Mbit/s
95th percentile per-packet one-way delay: 217.633 ms
Loss rate: 0.76%
```
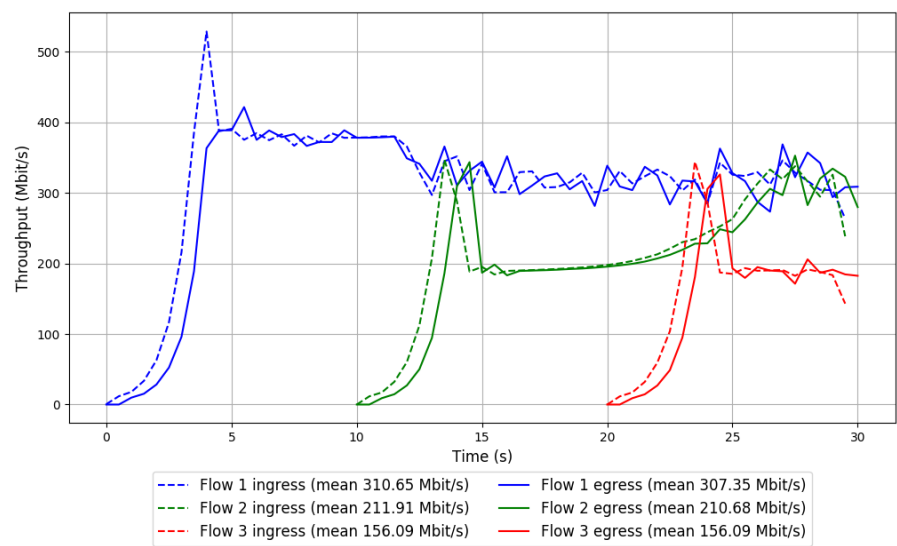
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-20 03:07:51
End at: 2019-02-20 03:08:21
Local clock offset: -0.104 ms
Remote clock offset: 0.33 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 498.91 Mbit/s
95th percentile per-packet one-way delay: 202.559 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 307.35 Mbit/s
95th percentile per-packet one-way delay: 209.112 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 210.68 Mbit/s
95th percentile per-packet one-way delay: 180.825 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 156.09 Mbit/s
95th percentile per-packet one-way delay: 143.904 ms
Loss rate: 0.00%
```
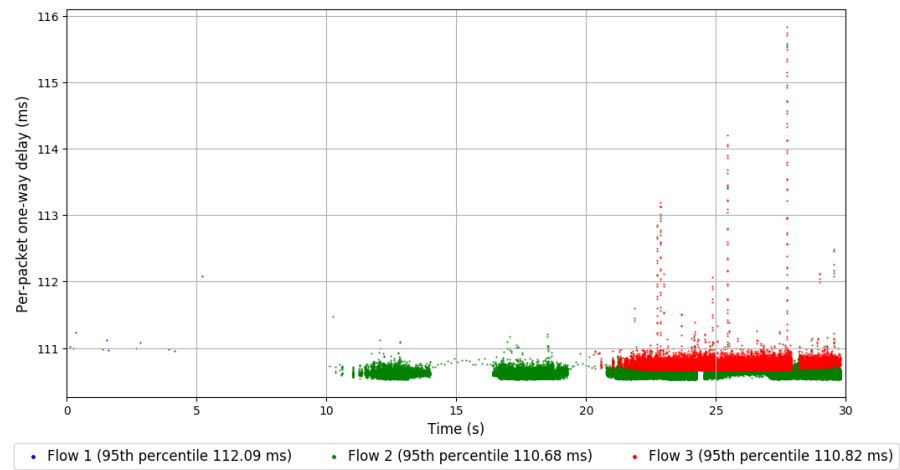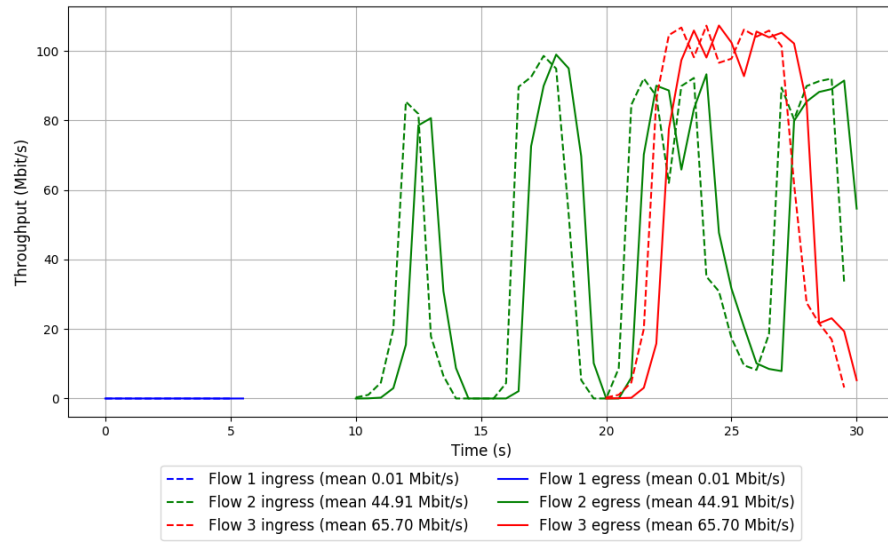
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 310.65 Mbit/s) --- Flow 1 egress (mean 307.35 Mbit/s)
Flow 2 ingress (mean 211.91 Mbit/s) --- Flow 2 egress (mean 210.68 Mbit/s)
Flow 3 ingress (mean 156.09 Mbit/s) --- Flow 3 egress (mean 156.09 Mbit/s)

Flow 1 (95th percentile 209.11 ms) Flow 2 (95th percentile 180.82 ms) Flow 3 (95th percentile 143.90 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 00:03:14
End at: 2019-02-20 00:03:44
Local clock offset: -1.707 ms
Remote clock offset: 0.289 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.20 Mbit/s
95th percentile per-packet one-way delay: 110.785 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 112.086 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 44.91 Mbit/s
95th percentile per-packet one-way delay: 110.681 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 65.70 Mbit/s
95th percentile per-packet one-way delay: 110.819 ms
Loss rate: 0.00%
```
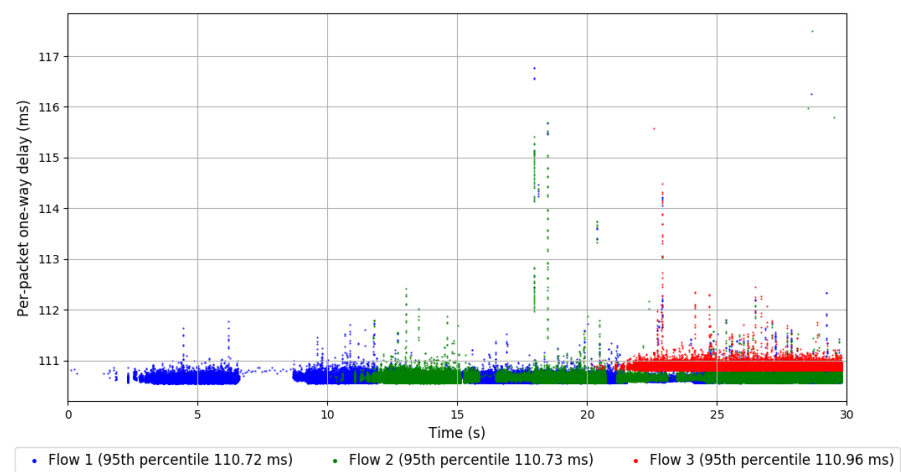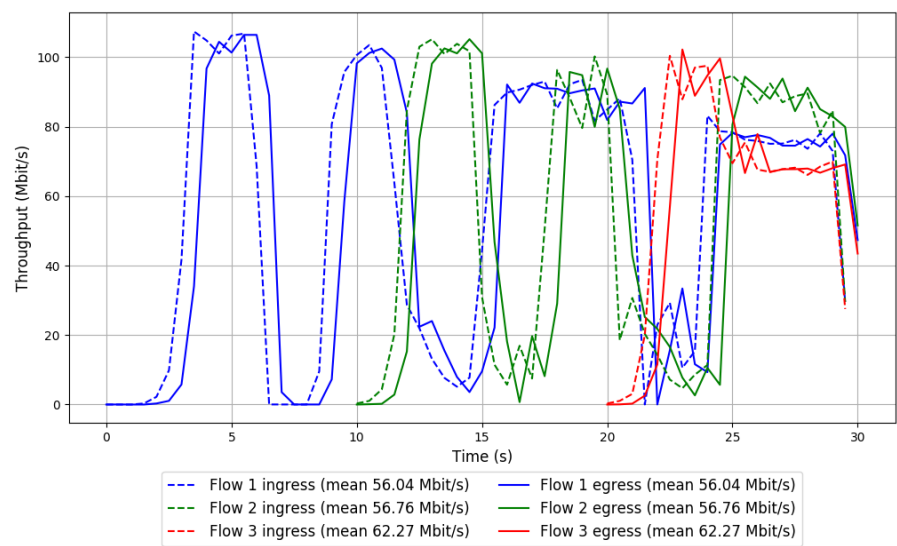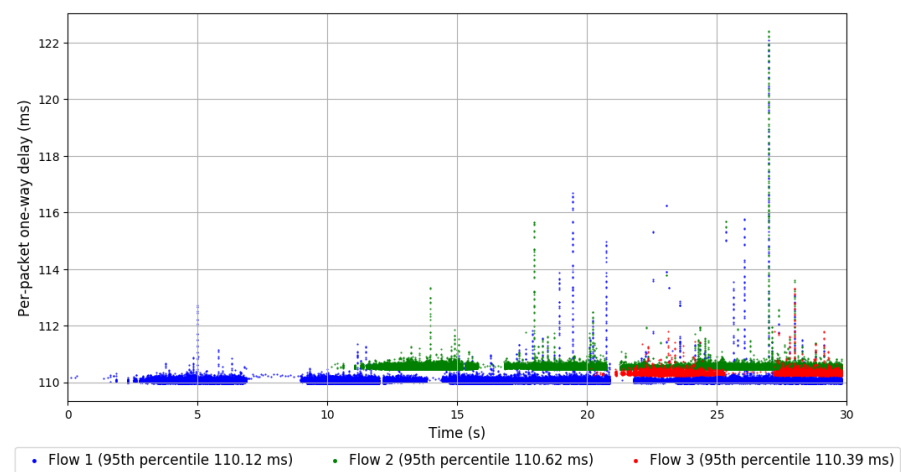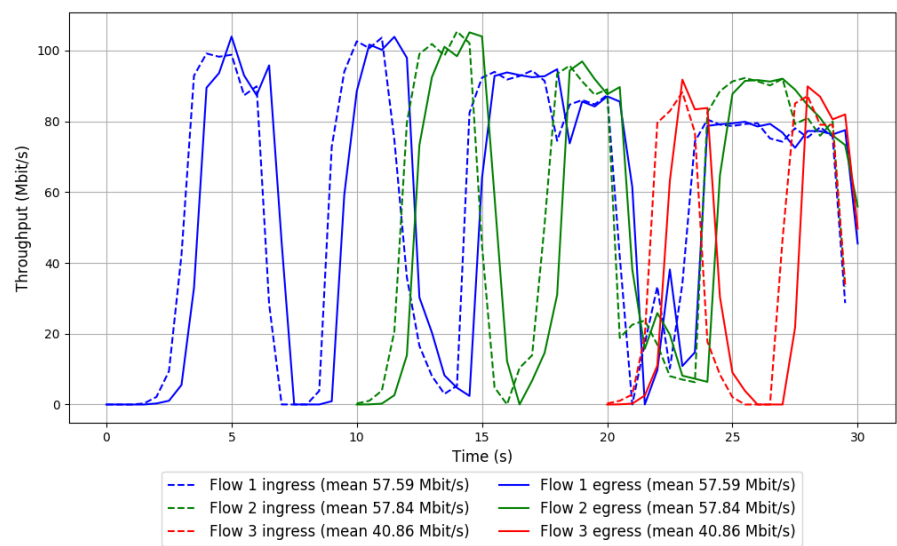
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.01 Mbit/s) --- Flow 1 egress (mean 0.01 Mbit/s)
Flow 2 ingress (mean 44.91 Mbit/s) --- Flow 2 egress (mean 44.91 Mbit/s)
Flow 3 ingress (mean 65.70 Mbit/s) --- Flow 3 egress (mean 65.70 Mbit/s)

Flow 1 (95th percentile 112.09 ms)   Flow 2 (95th percentile 110.68 ms)   Flow 3 (95th percentile 110.82 ms)
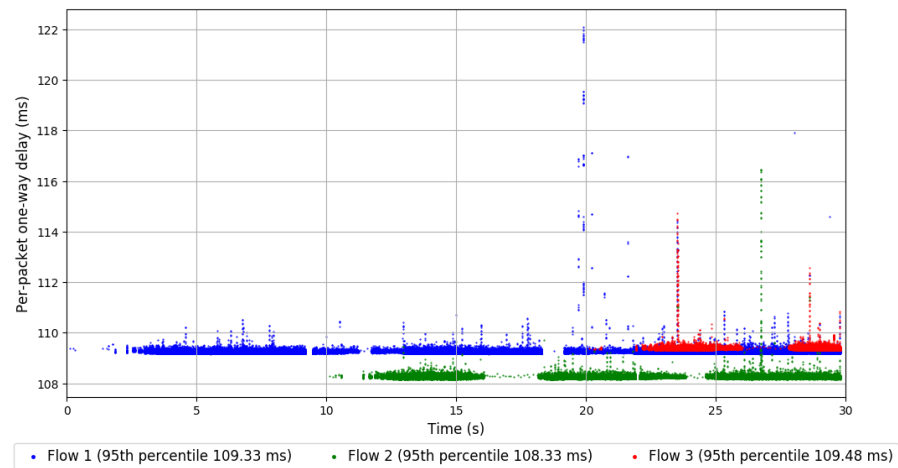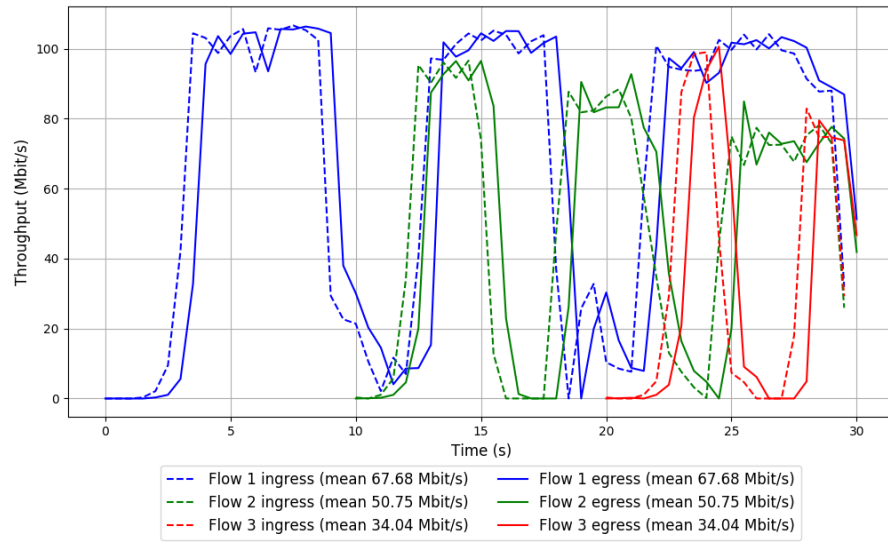
136

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 00:45:55
End at: 2019-02-20 00:46:25
Local clock offset: -1.648 ms
Remote clock offset: -0.06 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 113.91 Mbit/s
95th percentile per-packet one-way delay: 110.887 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.04 Mbit/s
95th percentile per-packet one-way delay: 110.716 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 56.76 Mbit/s
95th percentile per-packet one-way delay: 110.733 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.27 Mbit/s
95th percentile per-packet one-way delay: 110.958 ms
Loss rate: 0.00%
```

Run 2: Report of QUIC Cubic — Data Link

- Flow 1 ingress (mean 56.04 Mbit/s)
- Flow 1 egress (mean 56.04 Mbit/s)
- Flow 2 ingress (mean 56.76 Mbit/s)
- Flow 2 egress (mean 56.76 Mbit/s)
- Flow 3 ingress (mean 62.27 Mbit/s)
- Flow 3 egress (mean 62.27 Mbit/s)

- Flow 1 (95th percentile 110.72 ms)
- Flow 2 (95th percentile 110.73 ms)
- Flow 3 (95th percentile 110.96 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 01:27:24
End at: 2019-02-20 01:27:54
Local clock offset: -1.188 ms
Remote clock offset: -0.039 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 109.19 Mbit/s
95th percentile per-packet one-way delay: 110.574 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.59 Mbit/s
95th percentile per-packet one-way delay: 110.125 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 57.84 Mbit/s
95th percentile per-packet one-way delay: 110.616 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 40.86 Mbit/s
95th percentile per-packet one-way delay: 110.390 ms
Loss rate: 0.00%
```
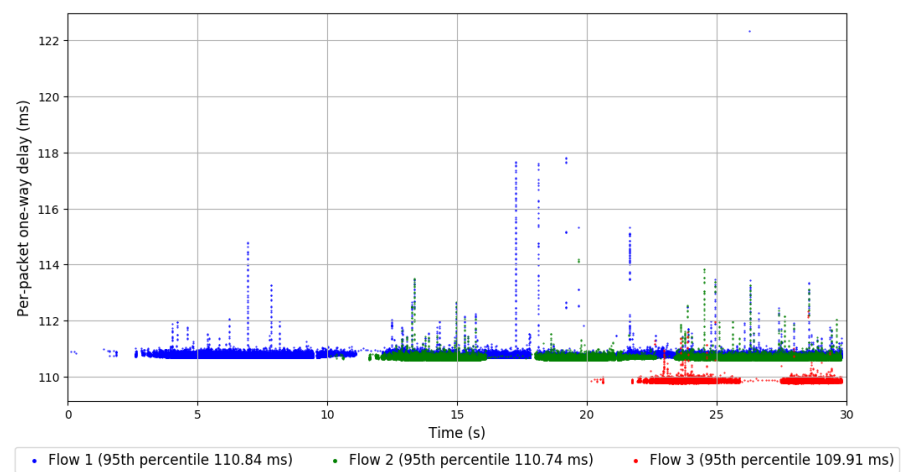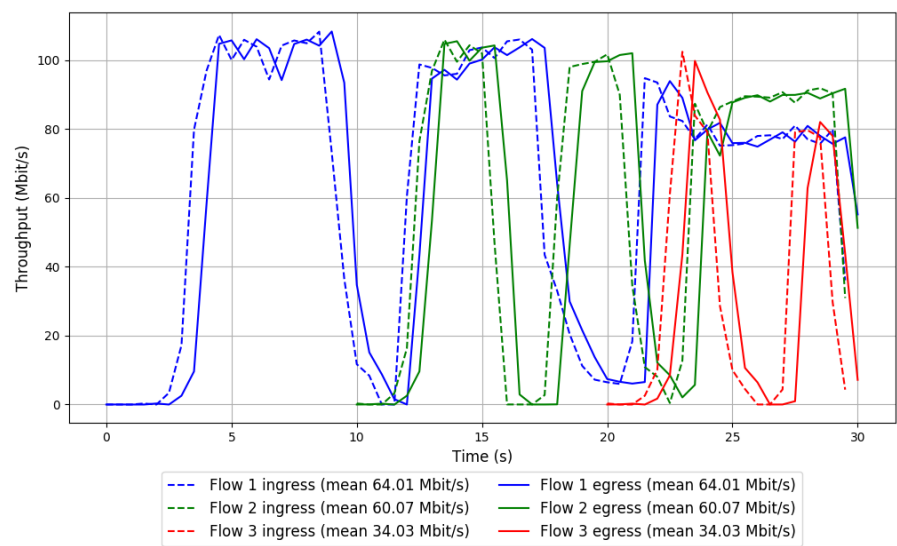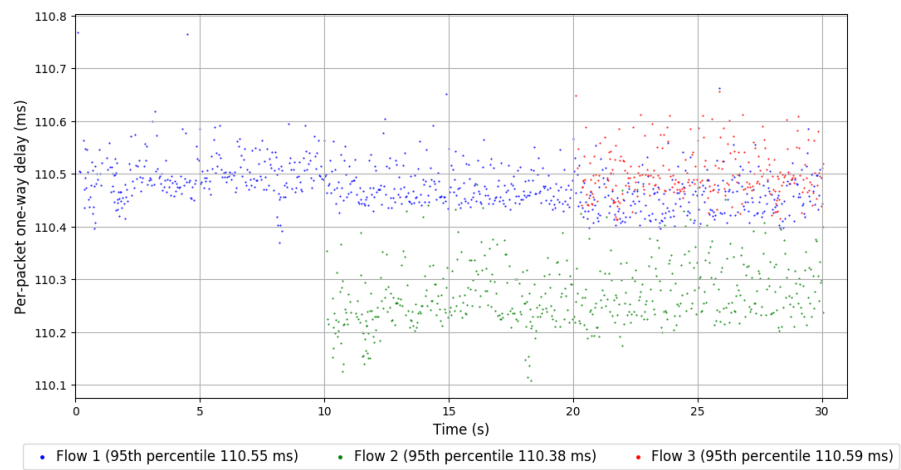
Run 3: Report of QUIC Cubic — Data Link

- - - - Flow 1 ingress (mean 57.59 Mbit/s) ——— Flow 1 egress (mean 57.59 Mbit/s)
- - - - Flow 2 ingress (mean 57.84 Mbit/s) ——— Flow 2 egress (mean 57.84 Mbit/s)
- - - - Flow 3 ingress (mean 40.86 Mbit/s) ——— Flow 3 egress (mean 40.86 Mbit/s)

• Flow 1 (95th percentile 110.12 ms)   • Flow 2 (95th percentile 110.62 ms)   • Flow 3 (95th percentile 110.39 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 02:08:50
End at: 2019-02-20 02:09:20
Local clock offset: -0.085 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 112.41 Mbit/s
95th percentile per-packet one-way delay: 109.388 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.68 Mbit/s
95th percentile per-packet one-way delay: 109.330 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.75 Mbit/s
95th percentile per-packet one-way delay: 108.335 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.04 Mbit/s
95th percentile per-packet one-way delay: 109.477 ms
Loss rate: 0.00%
```

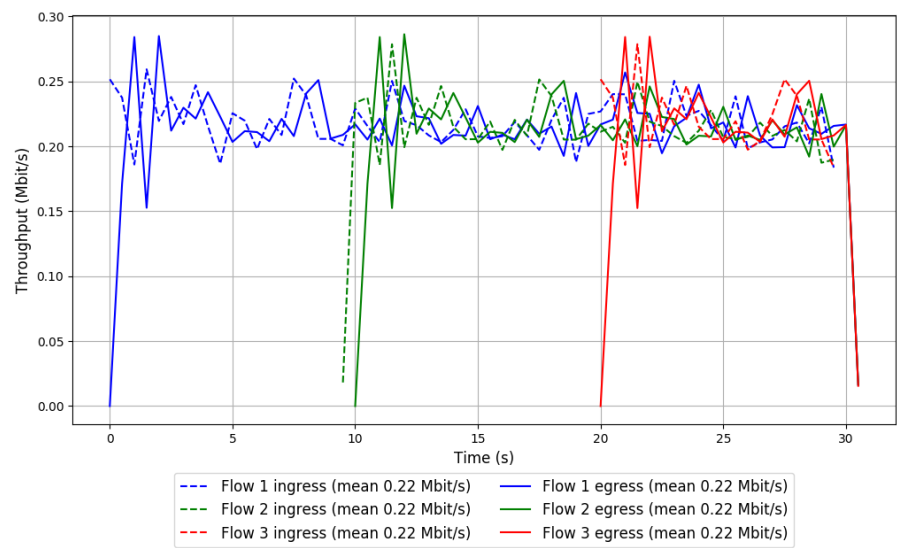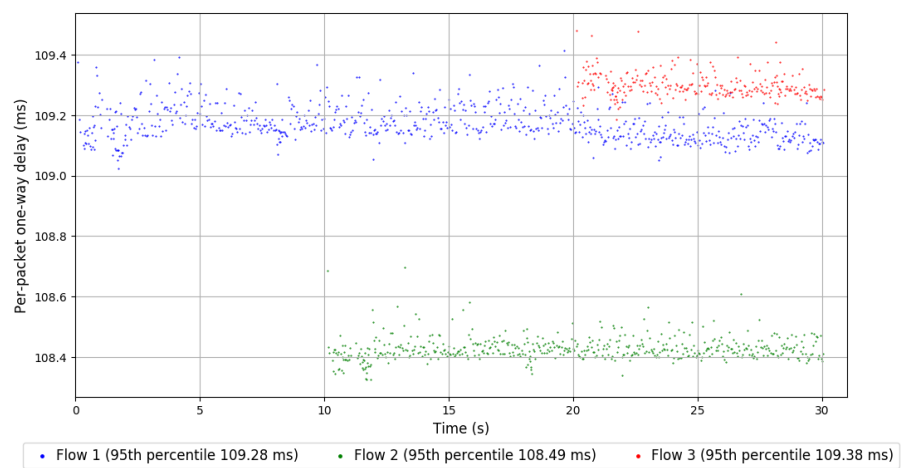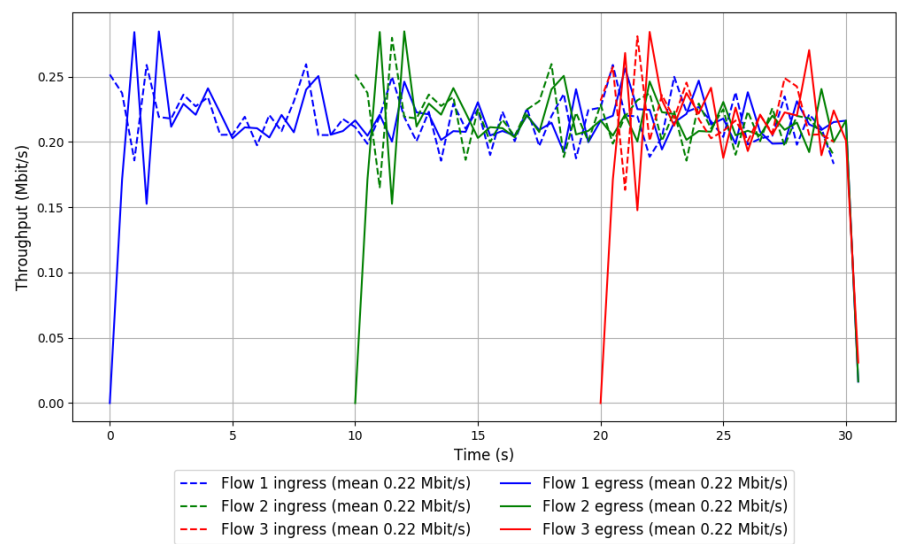# Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 67.68 Mbit/s)   Flow 1 egress (mean 67.68 Mbit/s)
Flow 2 ingress (mean 50.75 Mbit/s)   Flow 2 egress (mean 50.75 Mbit/s)
Flow 3 ingress (mean 34.04 Mbit/s)   Flow 3 egress (mean 34.04 Mbit/s)

Flow 1 (95th percentile 109.33 ms)   Flow 2 (95th percentile 108.33 ms)   Flow 3 (95th percentile 109.48 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 02:50:21
End at: 2019-02-20 02:50:51
Local clock offset: -1.38 ms
Remote clock offset: 0.268 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 114.85 Mbit/s
95th percentile per-packet one-way delay: 110.816 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 64.01 Mbit/s
95th percentile per-packet one-way delay: 110.836 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.07 Mbit/s
95th percentile per-packet one-way delay: 110.739 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.03 Mbit/s
95th percentile per-packet one-way delay: 109.912 ms
Loss rate: 0.00%
```

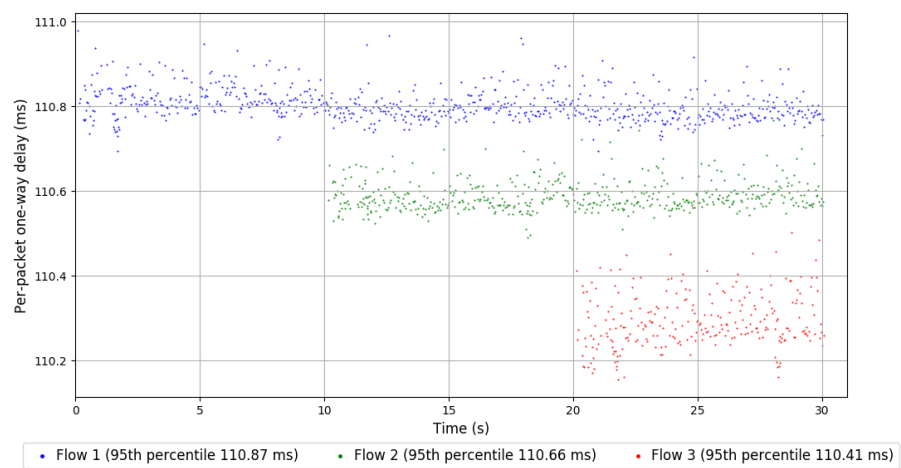# Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-02-20 00:20:26
End at: 2019-02-20 00:20:56
Local clock offset: -1.082 ms
Remote clock offset: 0.303 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 110.552 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.552 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.376 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.589 ms
Loss rate: 0.00%
```
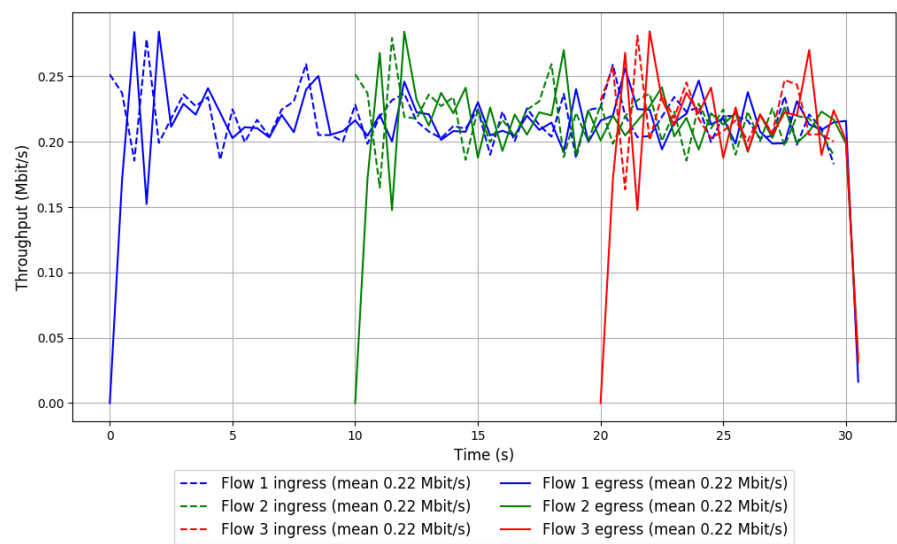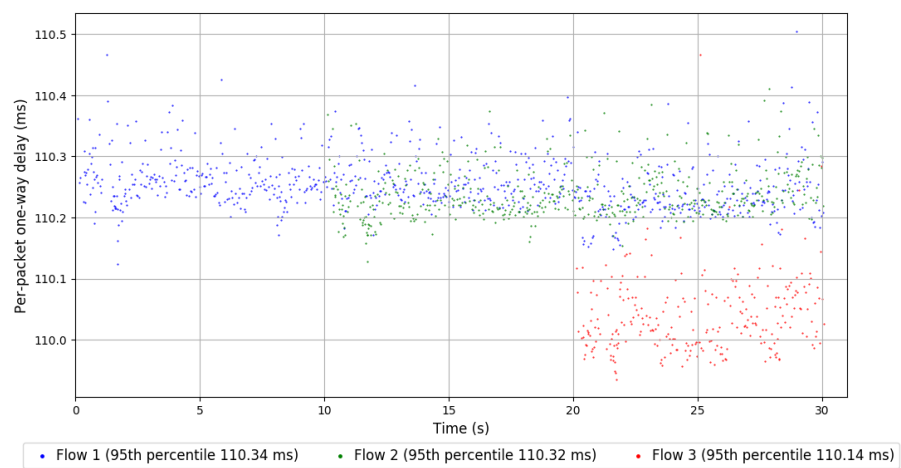
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-02-20 01:03:30
End at: 2019-02-20 01:04:00
Local clock offset: -0.036 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.318 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.276 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.494 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.375 ms
Loss rate: 0.00%
```
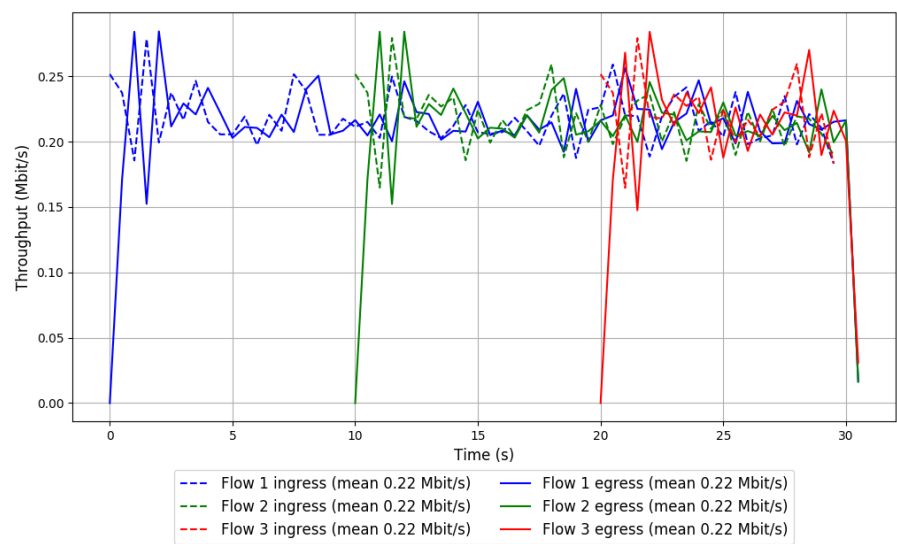
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-02-20 01:44:12
End at: 2019-02-20 01:44:42
Local clock offset: -1.364 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 110.851 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.874 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.658 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.405 ms
Loss rate: 0.00%
```
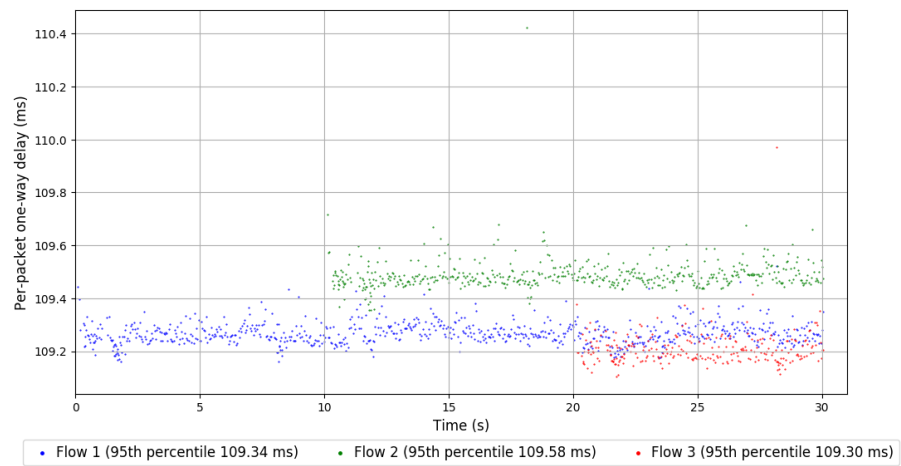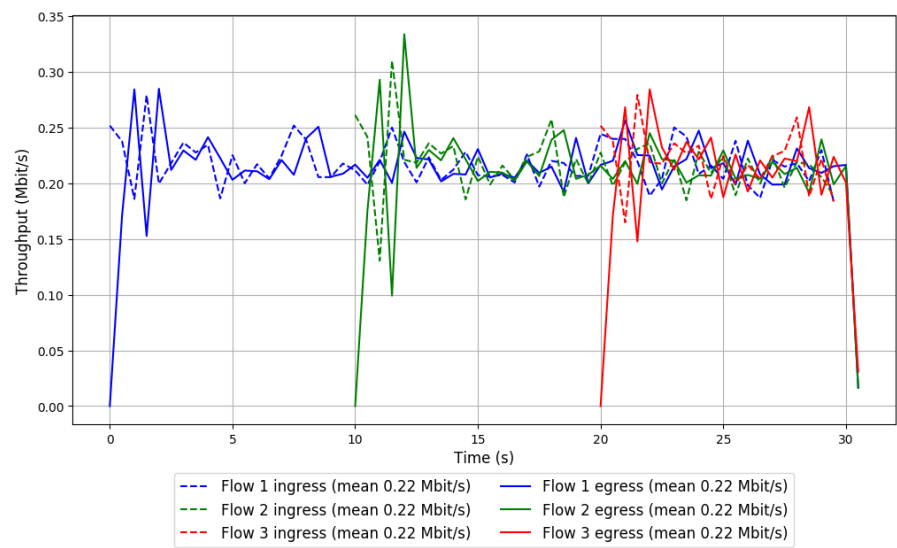
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s)   Flow 1 egress (mean 0.22 Mbit/s)
Flow 2 ingress (mean 0.22 Mbit/s)   Flow 2 egress (mean 0.22 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 110.87 ms)   Flow 2 (95th percentile 110.66 ms)   Flow 3 (95th percentile 110.41 ms)

```
Run 4: Statistics of SCReAM

Start at: 2019-02-20 02:26:13
End at: 2019-02-20 02:26:43
Local clock offset: -0.751 ms
Remote clock offset: -0.072 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 110.328 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.340 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.318 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.139 ms
Loss rate: 0.00%
```
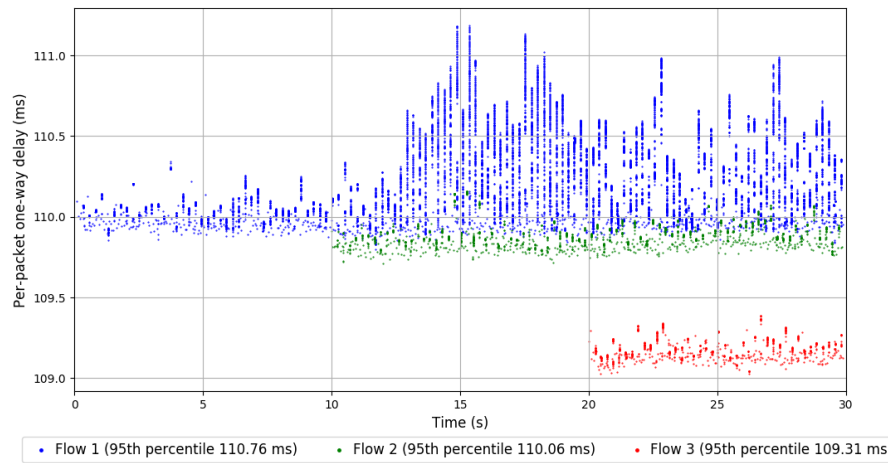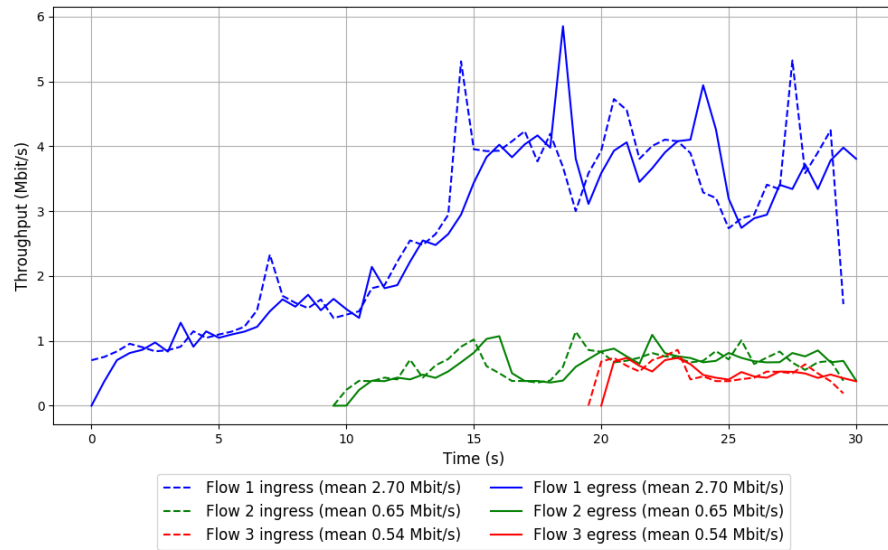
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-02-20 03:06:35
End at: 2019-02-20 03:07:05
Local clock offset: -0.084 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.526 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.342 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.582 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.303 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-02-20 00:07:07
End at: 2019-02-20 00:07:37
Local clock offset: -1.072 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 110.713 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 110.757 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 110.065 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 109.305 ms
Loss rate: 0.00%
```
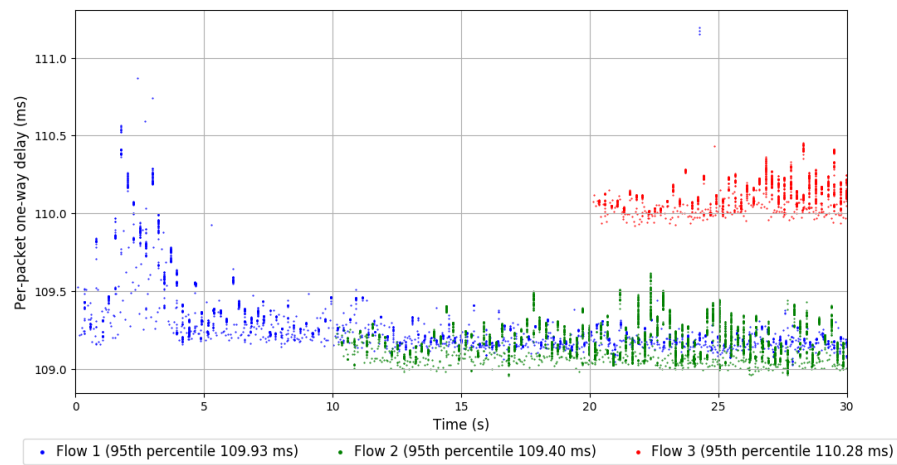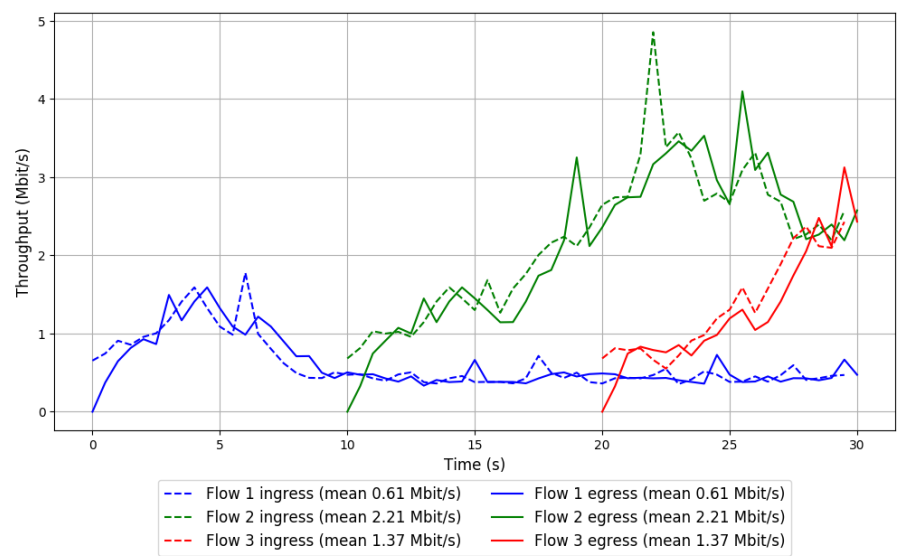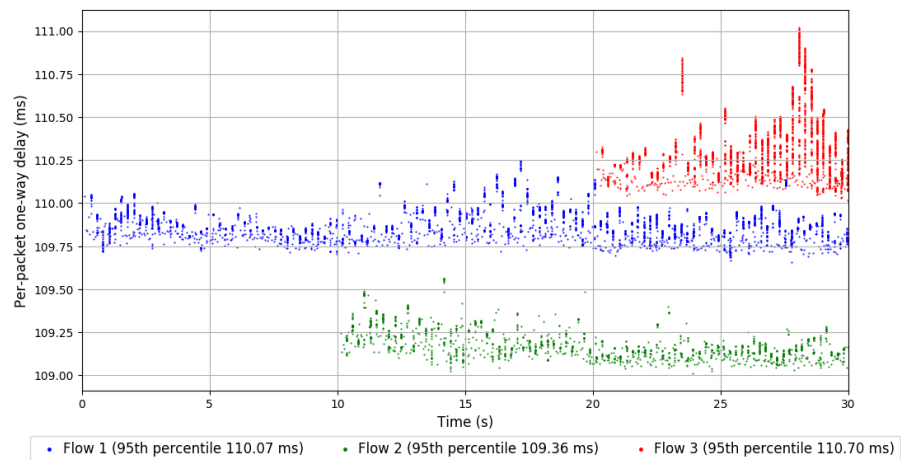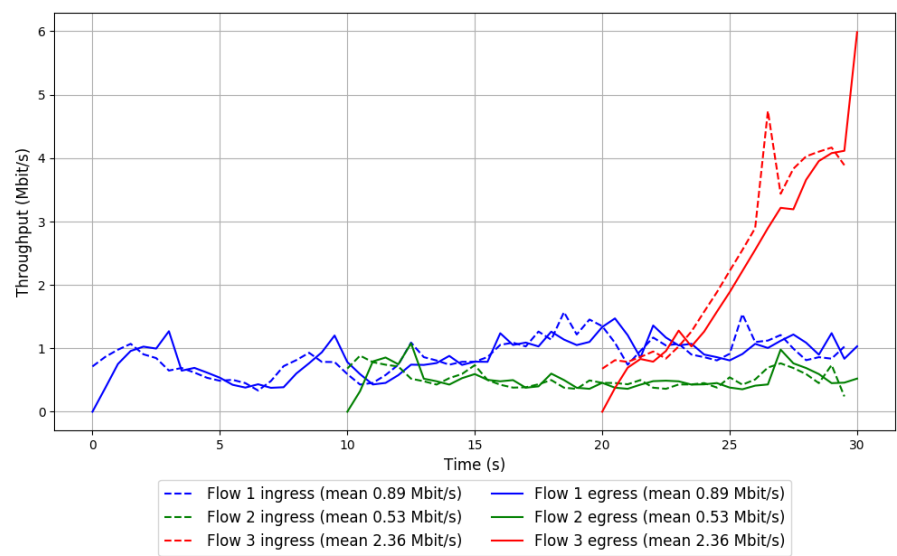
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-20 00:49:47
End at: 2019-02-20 00:50:17
Local clock offset: -0.818 ms
Remote clock offset: -0.021 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.53 Mbit/s
95th percentile per-packet one-way delay: 110.196 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 109.932 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 109.399 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 110.281 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-02-20 01:31:07
End at: 2019-02-20 01:31:37
Local clock offset: -0.728 ms
Remote clock offset: -0.025 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 110.491 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 110.069 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 109.358 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 110.705 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-20 02:12:52
End at: 2019-02-20 02:13:22
Local clock offset: -0.003 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.28 Mbit/s
95th percentile per-packet one-way delay: 109.816 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 109.853 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 108.399 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 109.373 ms
Loss rate: 0.00%
```
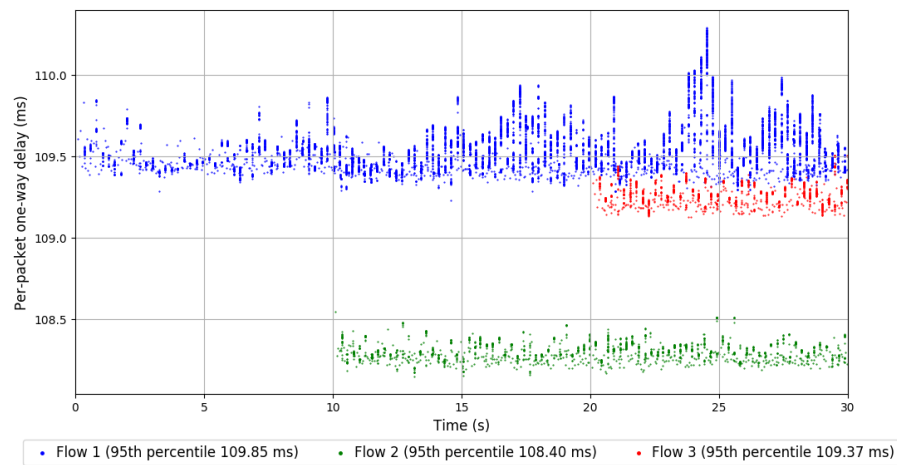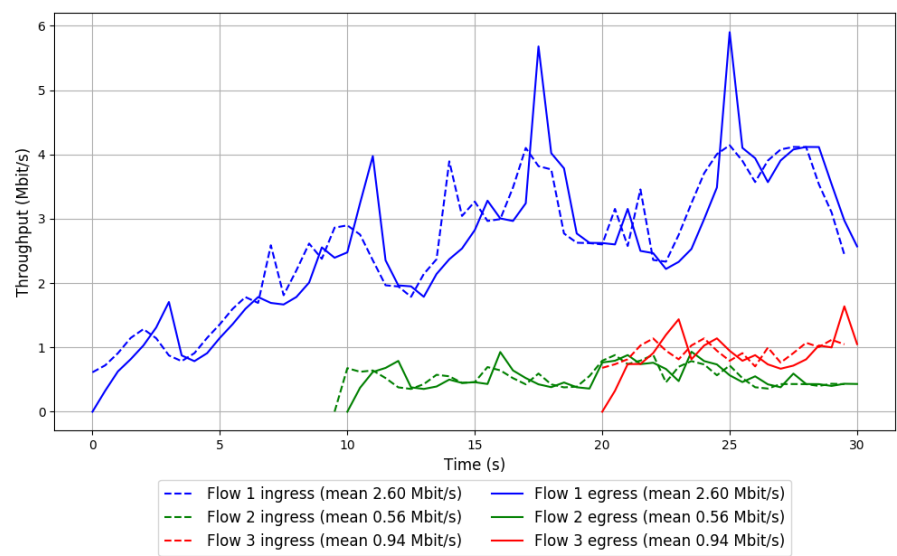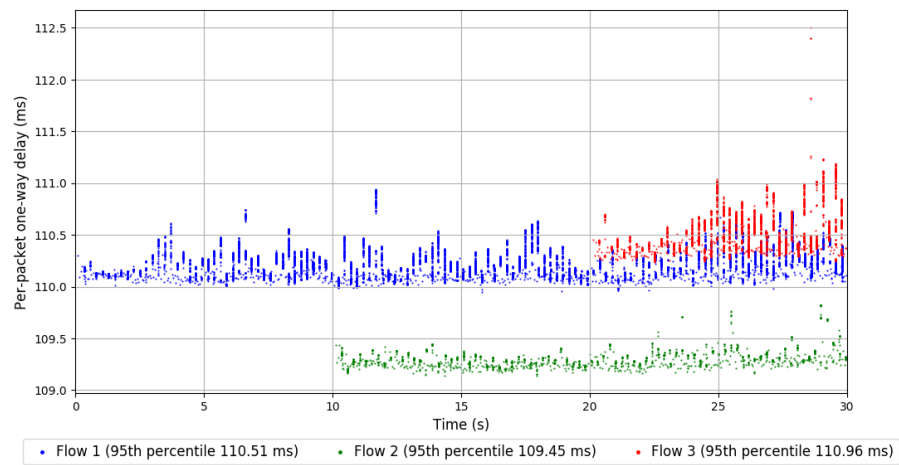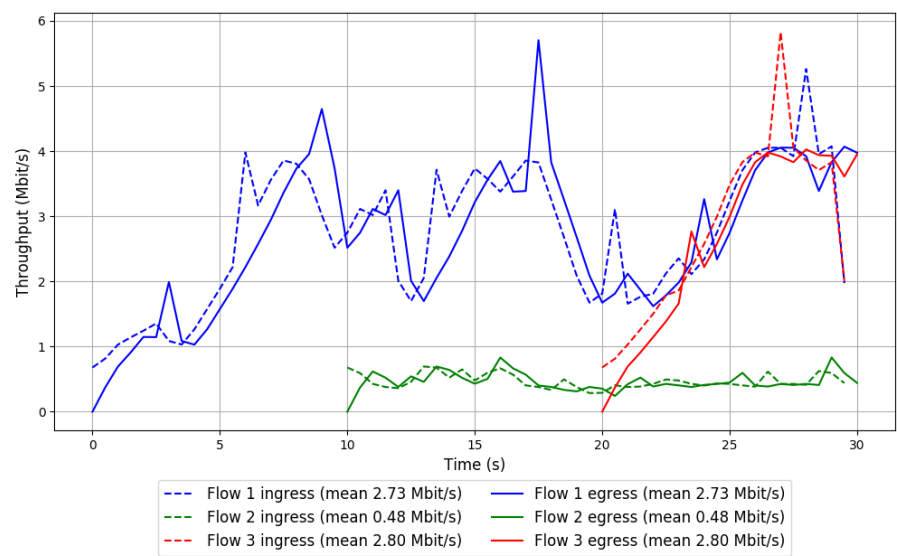
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-02-20 02:53:50
End at: 2019-02-20 02:54:20
Local clock offset: -0.992 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2019-02-20 05:37:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 110.685 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 110.508 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 109.455 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 110.957 ms
Loss rate: 0.00%
```
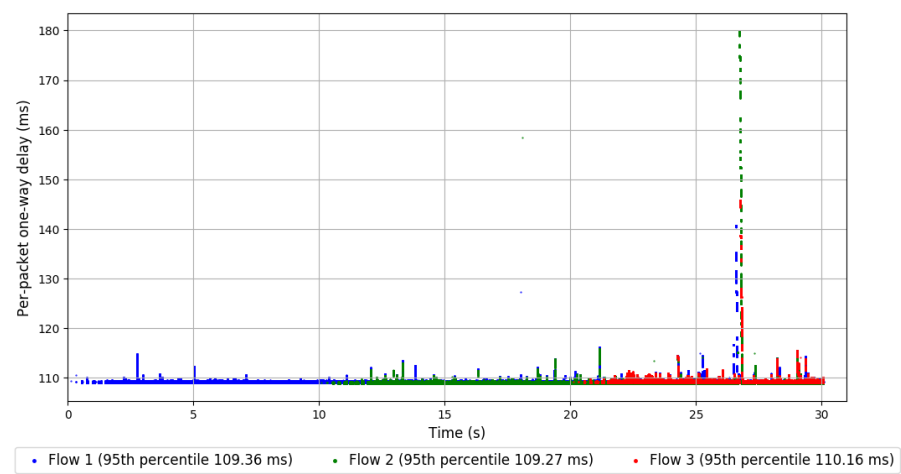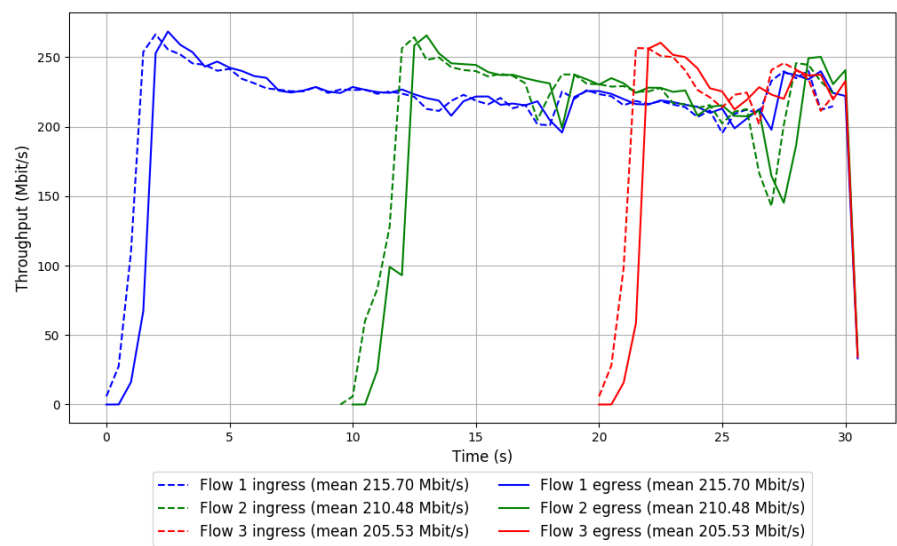
Run 5: Report of Sprout — Data Link

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

Start at: 2019-02-20 00:01:07
End at: 2019-02-20 00:01:37
Local clock offset: -0.321 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2019-02-20 05:44:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 424.25 Mbit/s
95th percentile per-packet one-way delay: 109.451 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.70 Mbit/s
95th percentile per-packet one-way delay: 109.355 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 210.48 Mbit/s
95th percentile per-packet one-way delay: 109.273 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 205.53 Mbit/s
95th percentile per-packet one-way delay: 110.158 ms
Loss rate: 0.00%
```

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

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

Start at: 2019-02-20 00:43:55
End at: 2019-02-20 00:44:25
Local clock offset: -0.246 ms
Remote clock offset: 0.015 ms


# Below is generated by plot.py at 2019-02-20 05:44:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 219.53 Mbit/s
95th percentile per-packet one-way delay: 109.490 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.85 Mbit/s
95th percentile per-packet one-way delay: 108.545 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 219.04 Mbit/s
95th percentile per-packet one-way delay: 109.530 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 173.88 Mbit/s
95th percentile per-packet one-way delay: 108.709 ms
Loss rate: 0.00%
```
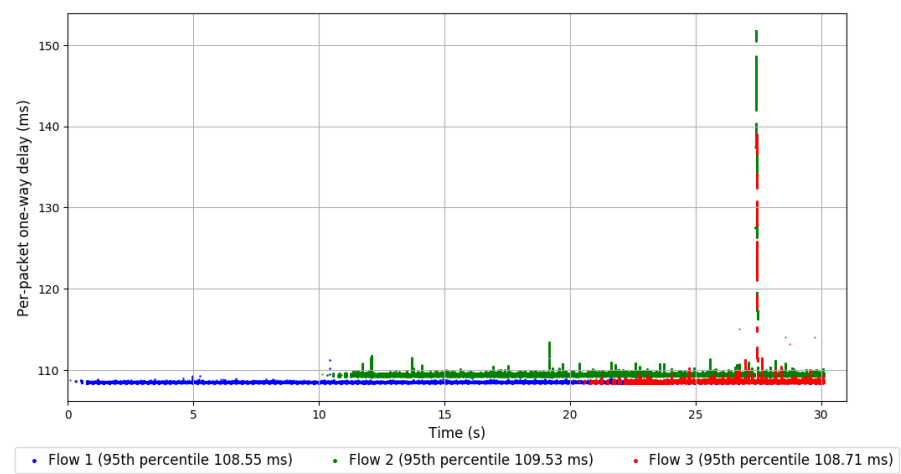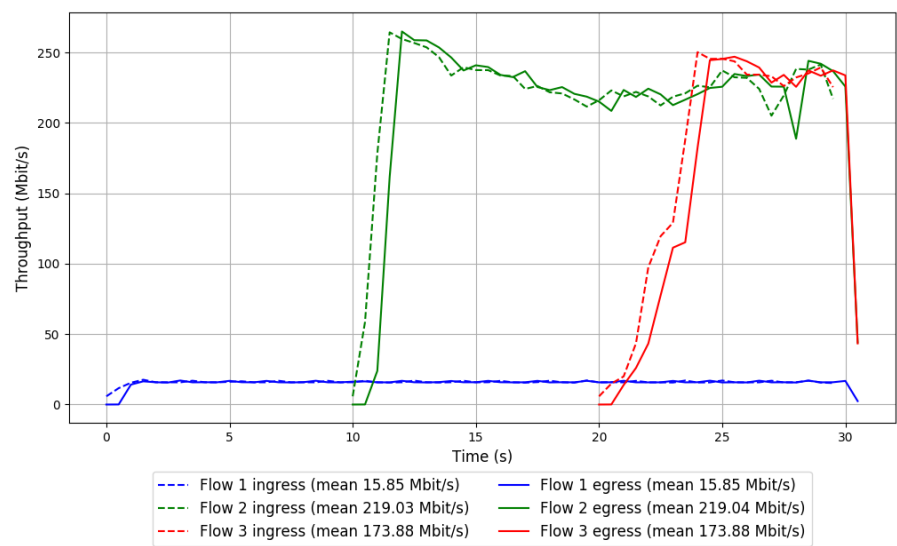
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 15.85 Mbit/s) --- Flow 1 egress (mean 15.85 Mbit/s) ——
Flow 2 ingress (mean 219.03 Mbit/s) --- Flow 2 egress (mean 219.04 Mbit/s) ——
Flow 3 ingress (mean 173.88 Mbit/s) --- Flow 3 egress (mean 173.88 Mbit/s) ——

Flow 1 (95th percentile 108.55 ms) · Flow 2 (95th percentile 109.53 ms) · Flow 3 (95th percentile 108.71 ms) ·
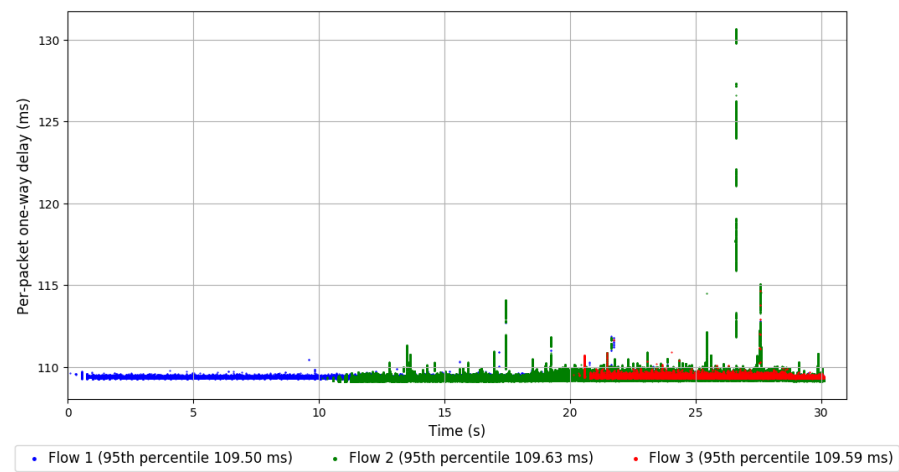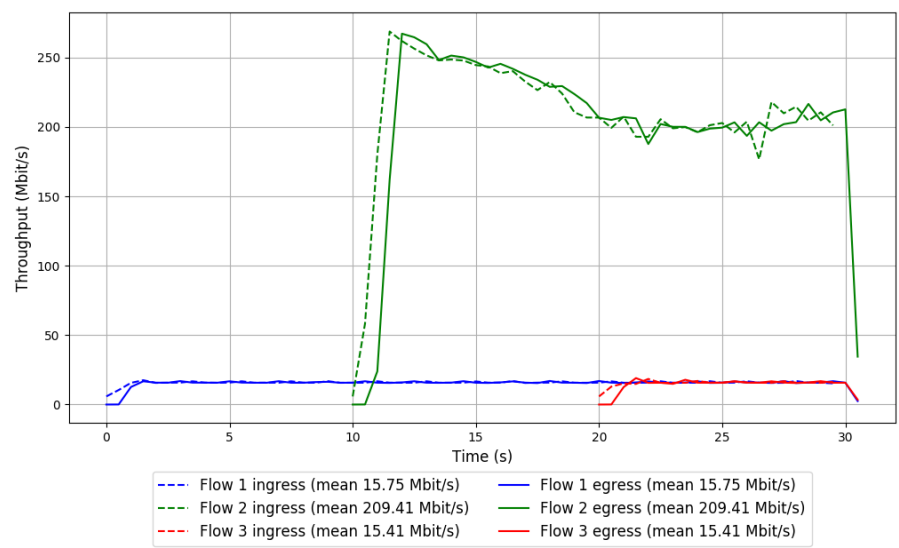
```
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-20 01:25:47
End at: 2019-02-20 01:26:17
Local clock offset: 0.005 ms
Remote clock offset: -0.072 ms


# Below is generated by plot.py at 2019-02-20 05:44:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 160.37 Mbit/s
95th percentile per-packet one-way delay: 109.615 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.75 Mbit/s
95th percentile per-packet one-way delay: 109.504 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 209.41 Mbit/s
95th percentile per-packet one-way delay: 109.629 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 15.41 Mbit/s
95th percentile per-packet one-way delay: 109.594 ms
Loss rate: 0.00%
```

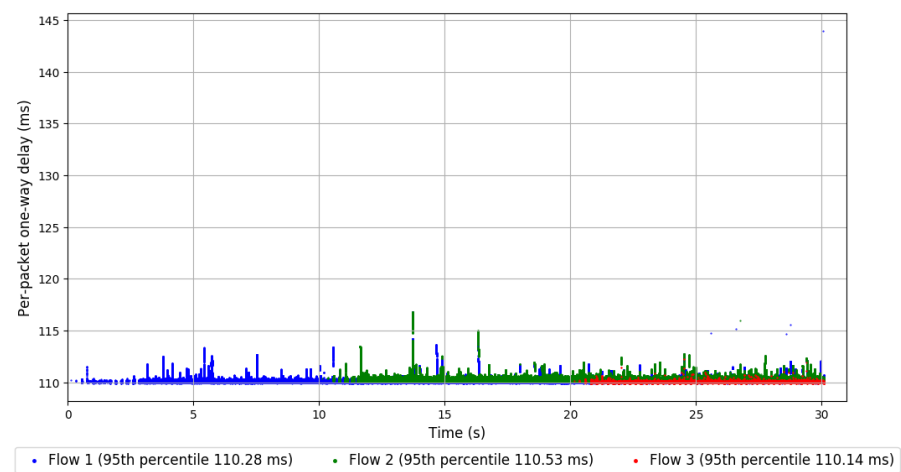# Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 15.75 Mbit/s) --- Flow 1 egress (mean 15.75 Mbit/s)
Flow 2 ingress (mean 209.41 Mbit/s) --- Flow 2 egress (mean 209.41 Mbit/s)
Flow 3 ingress (mean 15.41 Mbit/s) --- Flow 3 egress (mean 15.41 Mbit/s)

Flow 1 (95th percentile 109.50 ms)   Flow 2 (95th percentile 109.63 ms)   Flow 3 (95th percentile 109.59 ms)
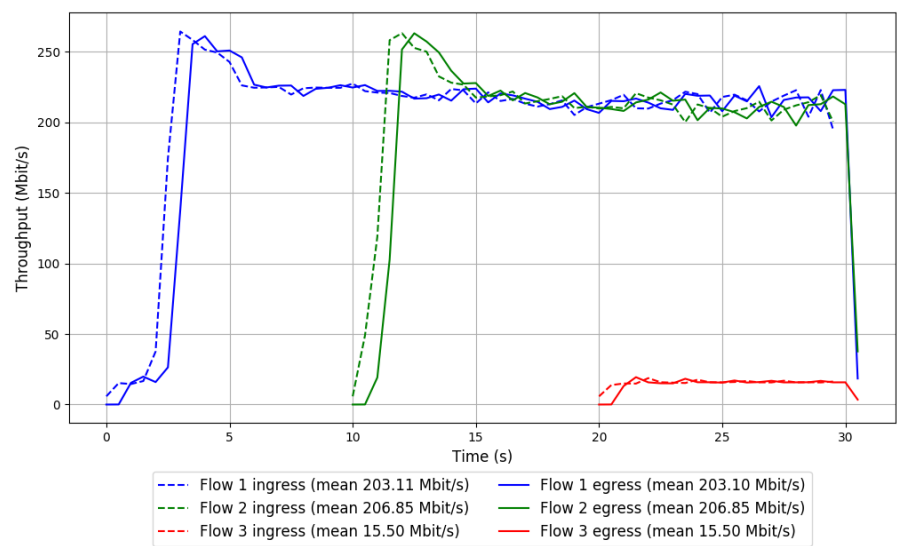
170

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

Start at: 2019-02-20 02:06:49
End at: 2019-02-20 02:07:19
Local clock offset: -0.881 ms
Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2019-02-20 05:44:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 346.00 Mbit/s
95th percentile per-packet one-way delay: 110.442 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 203.10 Mbit/s
95th percentile per-packet one-way delay: 110.277 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 206.85 Mbit/s
95th percentile per-packet one-way delay: 110.532 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 15.50 Mbit/s
95th percentile per-packet one-way delay: 110.140 ms
Loss rate: 0.00%
```

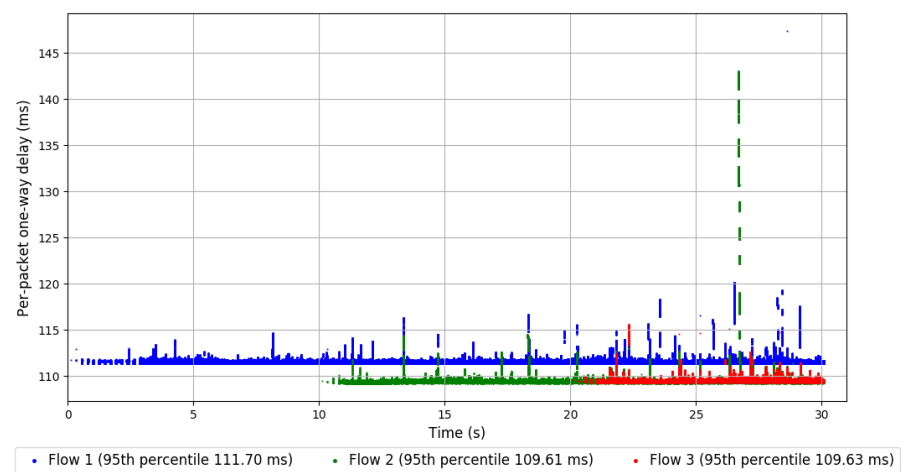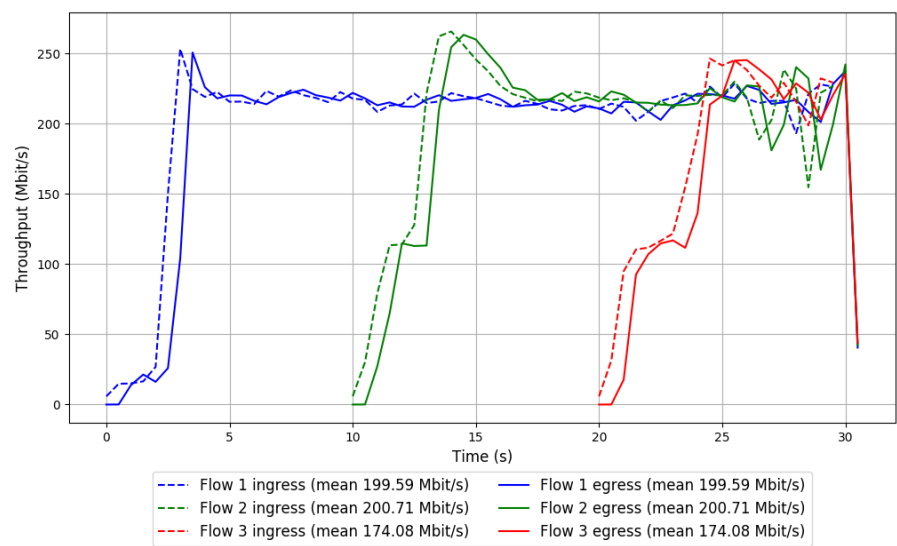Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 203.11 Mbit/s) — — — Flow 1 egress (mean 203.10 Mbit/s)
Flow 2 ingress (mean 206.85 Mbit/s) — — — Flow 2 egress (mean 206.85 Mbit/s)
Flow 3 ingress (mean 15.50 Mbit/s) — — — Flow 3 egress (mean 15.50 Mbit/s)

Flow 1 (95th percentile 110.28 ms)   Flow 2 (95th percentile 110.53 ms)   Flow 3 (95th percentile 110.14 ms)

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

Start at: 2019-02-20 02:48:04
End at: 2019-02-20 02:48:34
Local clock offset: -0.327 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2019-02-20 05:44:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.06 Mbit/s
95th percentile per-packet one-way delay: 111.619 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.59 Mbit/s
95th percentile per-packet one-way delay: 111.703 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 200.71 Mbit/s
95th percentile per-packet one-way delay: 109.608 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.08 Mbit/s
95th percentile per-packet one-way delay: 109.630 ms
Loss rate: 0.00%
```

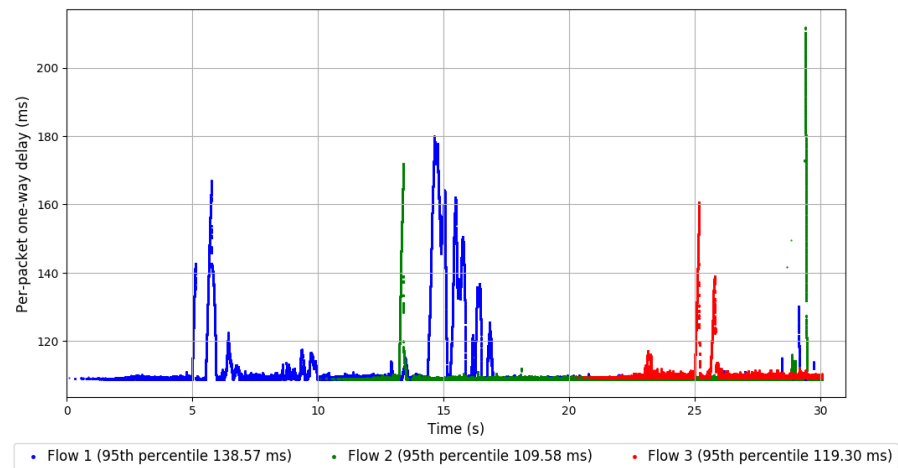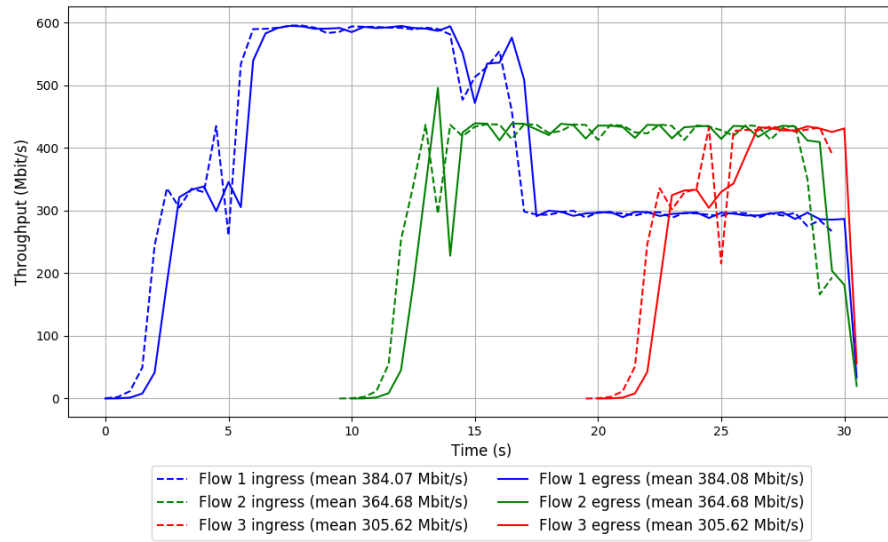## Run 5: Report of TaoVA-100x — Data Link

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```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-19 23:47:43
End at: 2019-02-19 23:48:13
Local clock offset: -0.299 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2019-02-20 05:46:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 728.79 Mbit/s
95th percentile per-packet one-way delay: 128.797 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 384.08 Mbit/s
95th percentile per-packet one-way delay: 138.571 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 364.68 Mbit/s
95th percentile per-packet one-way delay: 109.578 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 305.62 Mbit/s
95th percentile per-packet one-way delay: 119.300 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 00:29:50
End at: 2019-02-20 00:30:20
Local clock offset: -1.591 ms
Remote clock offset: 0.013 ms


# Below is generated by plot.py at 2019-02-20 05:47:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 662.17 Mbit/s
95th percentile per-packet one-way delay: 113.926 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 346.45 Mbit/s
95th percentile per-packet one-way delay: 110.422 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 332.25 Mbit/s
95th percentile per-packet one-way delay: 113.845 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 284.12 Mbit/s
95th percentile per-packet one-way delay: 118.137 ms
Loss rate: 0.00%
```
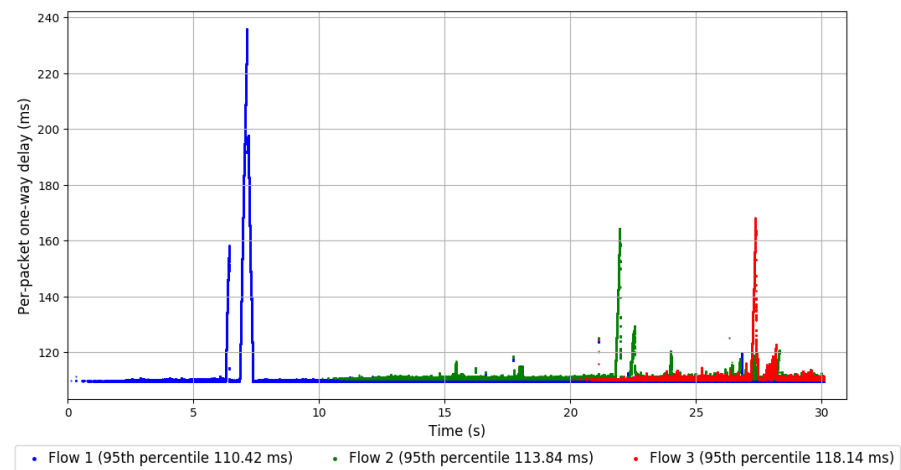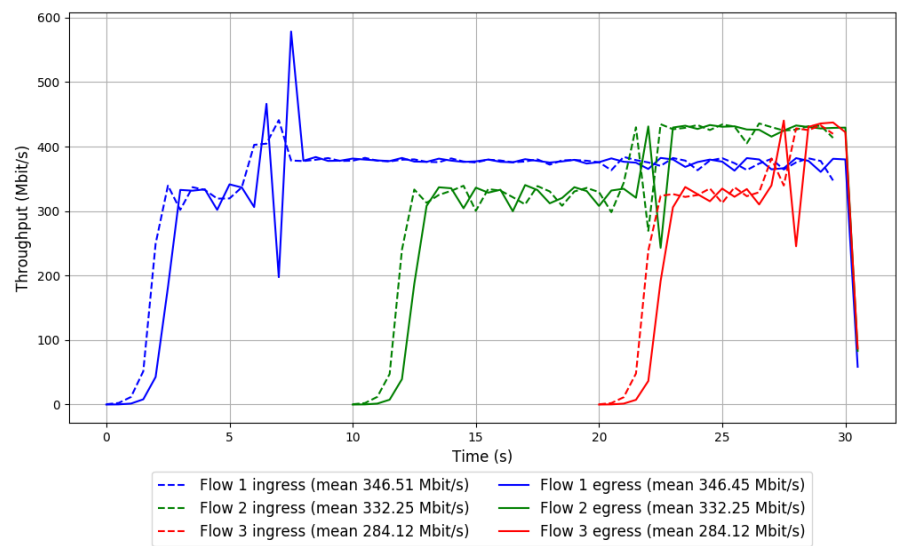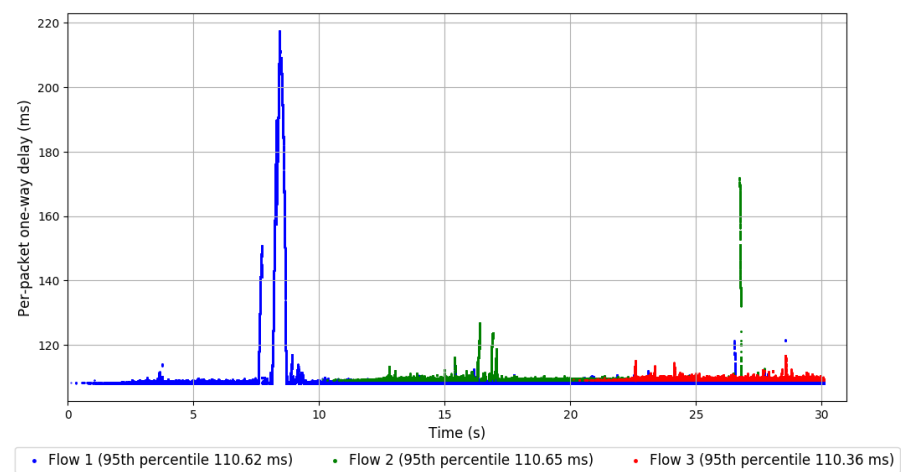
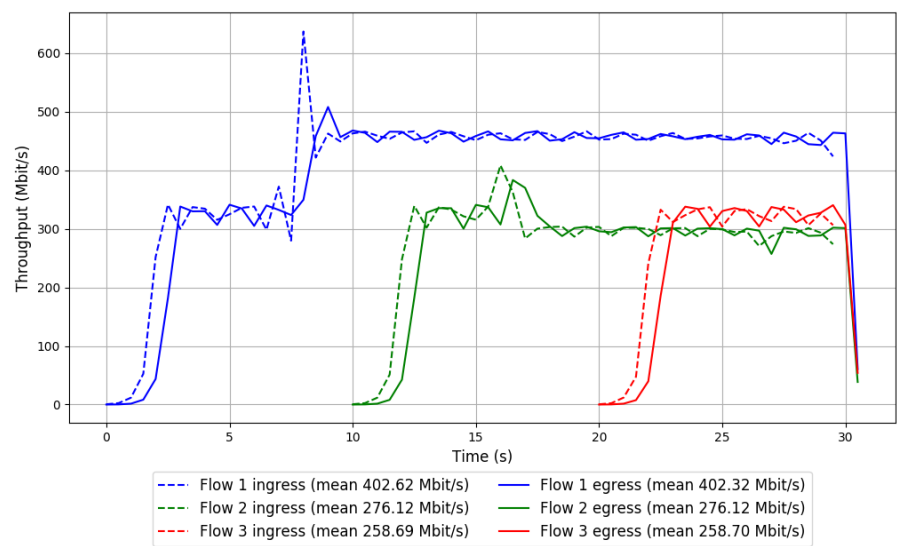## Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 01:12:59
End at: 2019-02-20 01:13:29
Local clock offset: 0.106 ms
Remote clock offset: -0.043 ms


# Below is generated by plot.py at 2019-02-20 05:49:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 672.25 Mbit/s
95th percentile per-packet one-way delay: 110.509 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 402.32 Mbit/s
95th percentile per-packet one-way delay: 110.623 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 276.12 Mbit/s
95th percentile per-packet one-way delay: 110.648 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 258.70 Mbit/s
95th percentile per-packet one-way delay: 110.360 ms
Loss rate: 0.00%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 402.62 Mbit/s) — Flow 1 egress (mean 402.32 Mbit/s)
Flow 2 ingress (mean 276.12 Mbit/s) — Flow 2 egress (mean 276.12 Mbit/s)
Flow 3 ingress (mean 258.69 Mbit/s) — Flow 3 egress (mean 258.70 Mbit/s)

Flow 1 (95th percentile 110.62 ms) • Flow 2 (95th percentile 110.65 ms) • Flow 3 (95th percentile 110.36 ms)
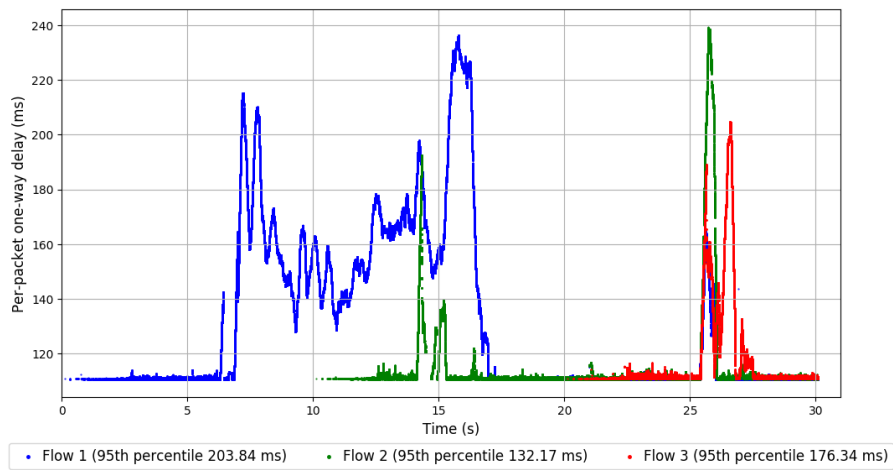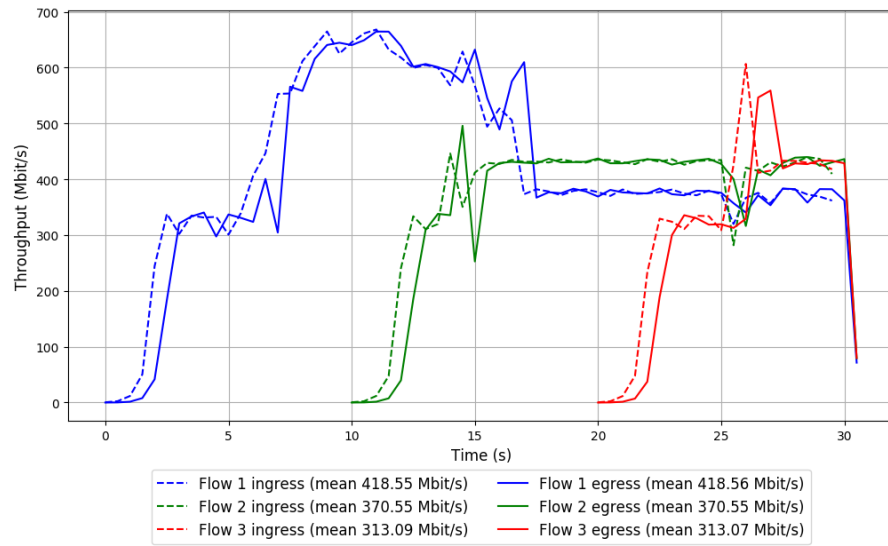
```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-20 01:53:18
End at: 2019-02-20 01:53:48
Local clock offset: -1.591 ms
Remote clock offset: -0.012 ms


# Below is generated by plot.py at 2019-02-20 05:52:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 769.38 Mbit/s
95th percentile per-packet one-way delay: 188.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 418.56 Mbit/s
95th percentile per-packet one-way delay: 203.837 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 370.55 Mbit/s
95th percentile per-packet one-way delay: 132.167 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 313.07 Mbit/s
95th percentile per-packet one-way delay: 176.343 ms
Loss rate: 0.00%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 418.55 Mbit/s)   Flow 1 egress (mean 418.56 Mbit/s)
Flow 2 ingress (mean 370.55 Mbit/s)   Flow 2 egress (mean 370.55 Mbit/s)
Flow 3 ingress (mean 313.09 Mbit/s)   Flow 3 egress (mean 313.07 Mbit/s)

Flow 1 (95th percentile 203.84 ms)   Flow 2 (95th percentile 132.17 ms)   Flow 3 (95th percentile 176.34 ms)
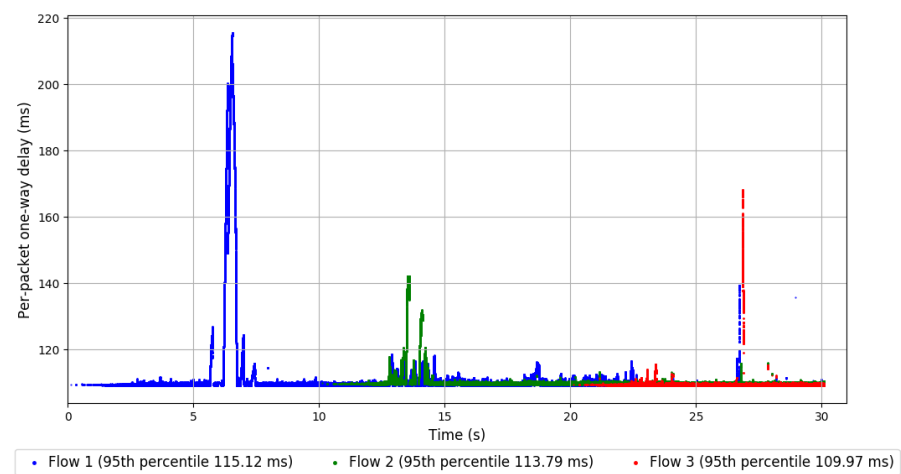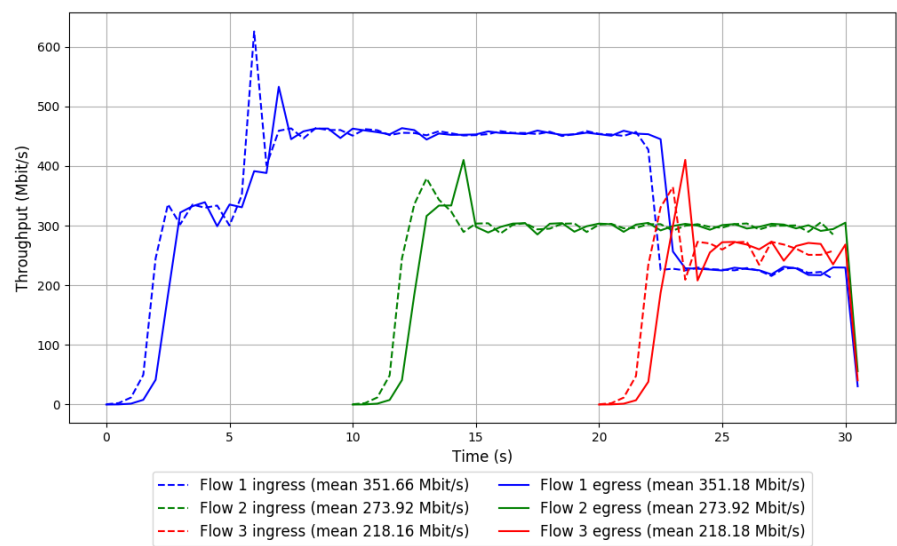
```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 02:35:08
End at: 2019-02-20 02:35:38
Local clock offset: -0.263 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2019-02-20 05:52:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 606.02 Mbit/s
95th percentile per-packet one-way delay: 114.168 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 351.18 Mbit/s
95th percentile per-packet one-way delay: 115.122 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 273.92 Mbit/s
95th percentile per-packet one-way delay: 113.794 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 218.18 Mbit/s
95th percentile per-packet one-way delay: 109.970 ms
Loss rate: 0.00%
```

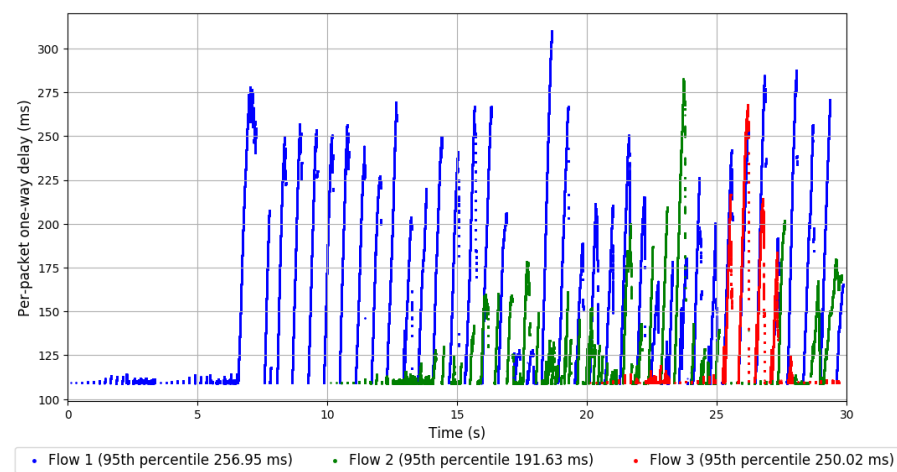## Run 5: Report of TCP Vegas — Data Link

- - - - Flow 1 ingress (mean 351.66 Mbit/s) —— Flow 1 egress (mean 351.18 Mbit/s)
- - - - Flow 2 ingress (mean 273.92 Mbit/s) —— Flow 2 egress (mean 273.92 Mbit/s)
- - - - Flow 3 ingress (mean 218.16 Mbit/s) —— Flow 3 egress (mean 218.18 Mbit/s)

- Flow 1 (95th percentile 115.12 ms)　　• Flow 2 (95th percentile 113.79 ms)　　• Flow 3 (95th percentile 109.97 ms)
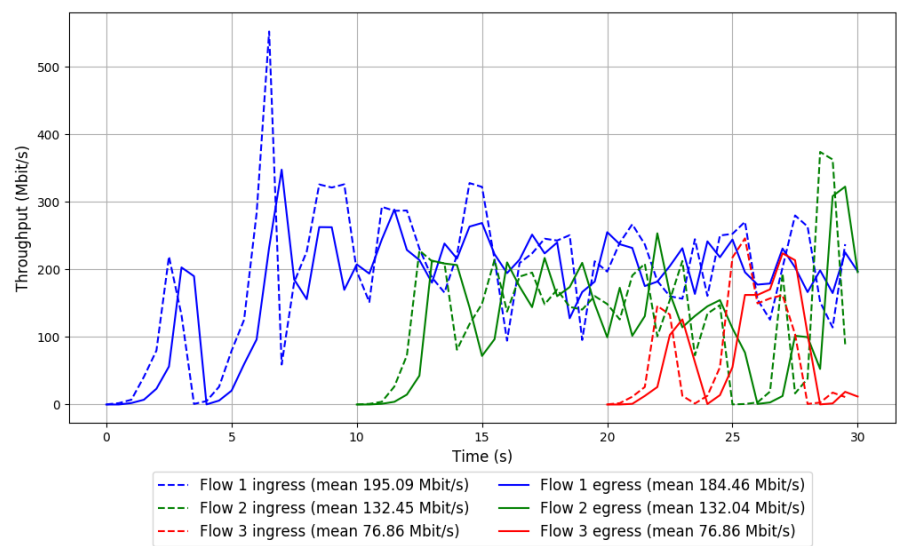
```
Run 1: Statistics of Verus

Start at: 2019-02-19 23:49:44
End at: 2019-02-19 23:50:14
Local clock offset: -0.495 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2019-02-20 05:54:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 296.58 Mbit/s
95th percentile per-packet one-way delay: 251.336 ms
Loss rate: 3.46%
-- Flow 1:
Average throughput: 184.46 Mbit/s
95th percentile per-packet one-way delay: 256.954 ms
Loss rate: 5.45%
-- Flow 2:
Average throughput: 132.04 Mbit/s
95th percentile per-packet one-way delay: 191.635 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 76.86 Mbit/s
95th percentile per-packet one-way delay: 250.023 ms
Loss rate: 0.00%
```

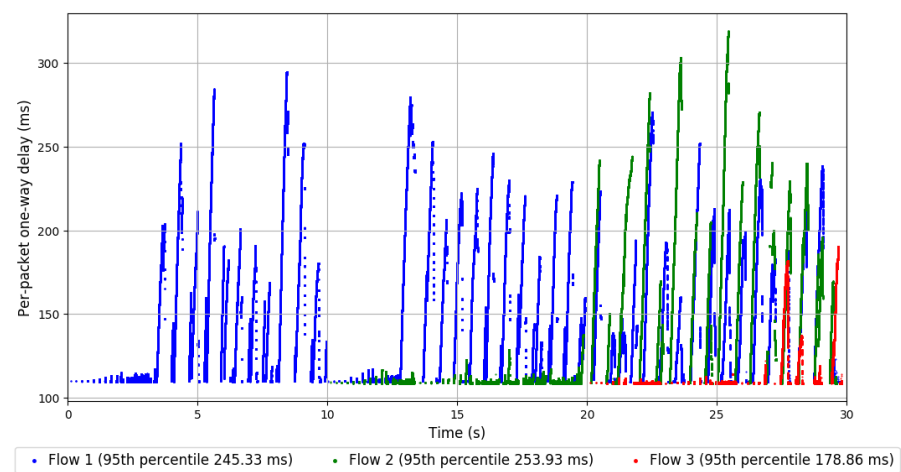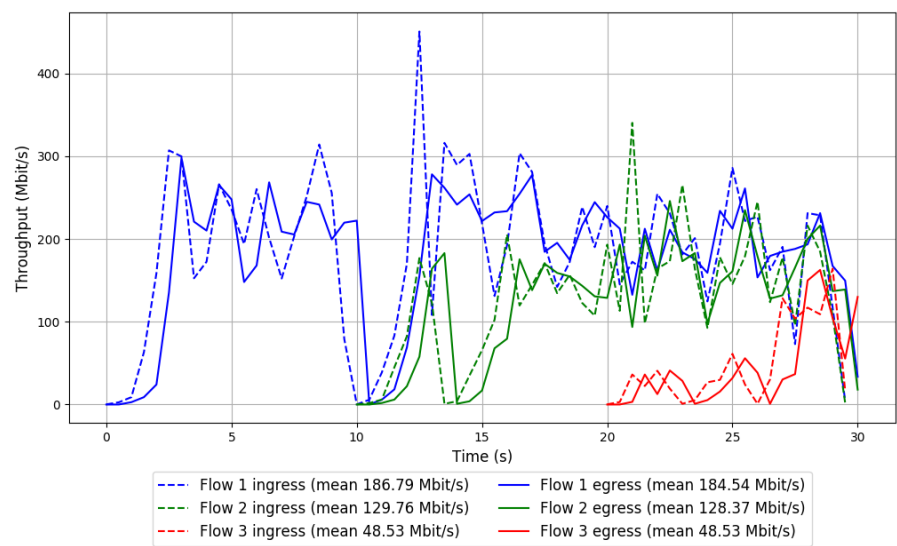# Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-02-20 00:32:00
End at: 2019-02-20 00:32:30
Local clock offset: -0.746 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2019-02-20 05:55:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 284.04 Mbit/s
95th percentile per-packet one-way delay: 245.588 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 184.54 Mbit/s
95th percentile per-packet one-way delay: 245.332 ms
Loss rate: 1.21%
-- Flow 2:
Average throughput: 128.37 Mbit/s
95th percentile per-packet one-way delay: 253.929 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 48.53 Mbit/s
95th percentile per-packet one-way delay: 178.857 ms
Loss rate: 0.00%
```
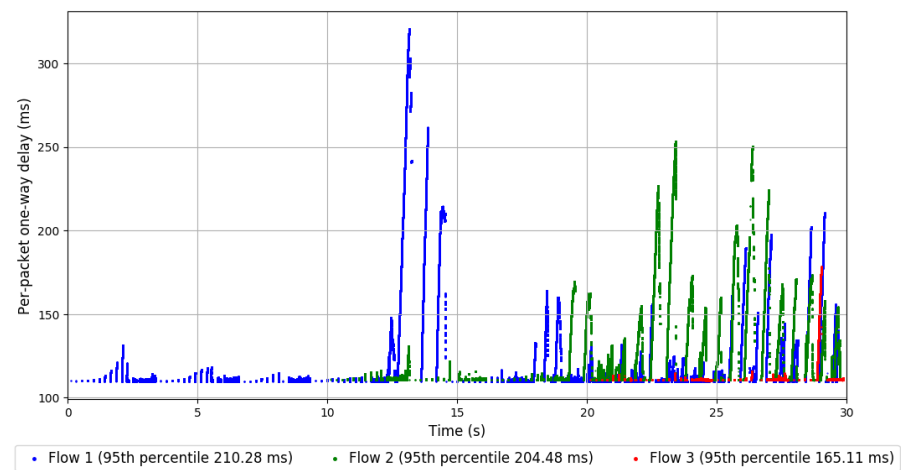
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 186.79 Mbit/s) --- Flow 1 egress (mean 184.54 Mbit/s)
Flow 2 ingress (mean 129.76 Mbit/s) --- Flow 2 egress (mean 128.37 Mbit/s)
Flow 3 ingress (mean 48.53 Mbit/s) --- Flow 3 egress (mean 48.53 Mbit/s)

Flow 1 (95th percentile 245.33 ms)   Flow 2 (95th percentile 253.93 ms)   Flow 3 (95th percentile 178.86 ms)
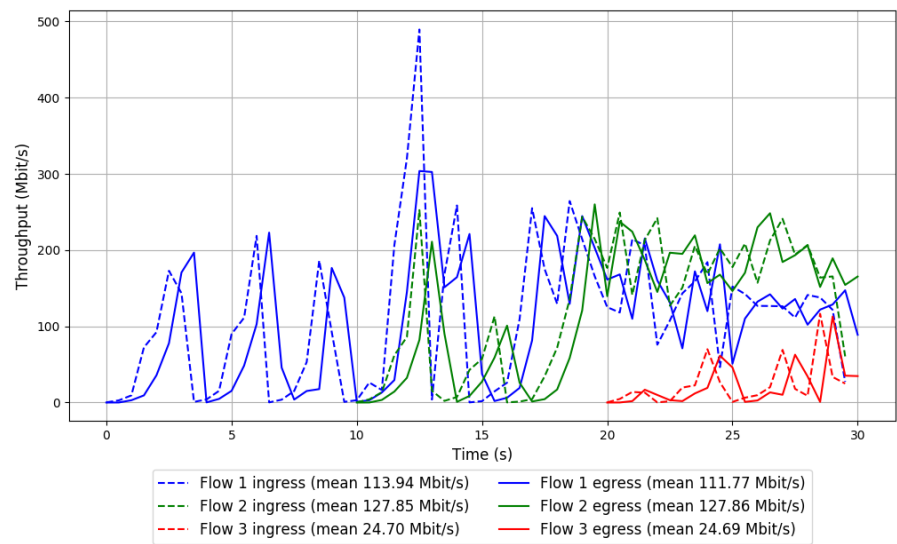
```
Run 3: Statistics of Verus

Start at: 2019-02-20 01:15:08
End at: 2019-02-20 01:15:38
Local clock offset: -1.372 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2019-02-20 05:55:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 203.66 Mbit/s
95th percentile per-packet one-way delay: 208.669 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 111.77 Mbit/s
95th percentile per-packet one-way delay: 210.283 ms
Loss rate: 1.80%
-- Flow 2:
Average throughput: 127.86 Mbit/s
95th percentile per-packet one-way delay: 204.478 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 24.69 Mbit/s
95th percentile per-packet one-way delay: 165.106 ms
Loss rate: 0.00%
```

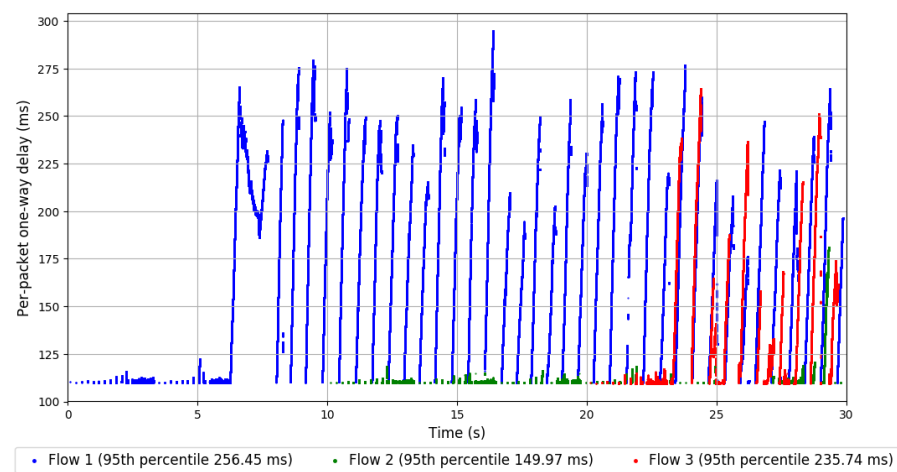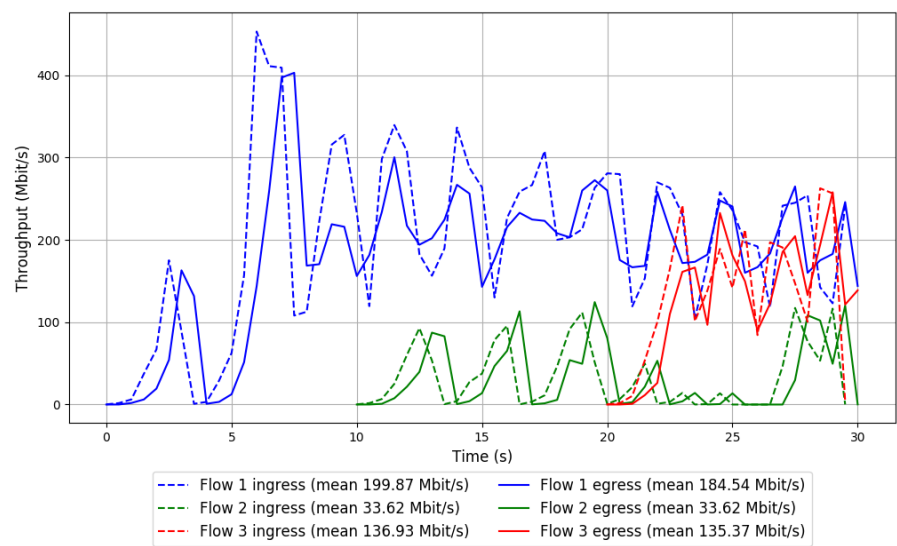## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-02-20 01:55:42
End at: 2019-02-20 01:56:12
Local clock offset: -0.705 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2019-02-20 05:56:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 250.15 Mbit/s
95th percentile per-packet one-way delay: 253.246 ms
Loss rate: 5.86%
-- Flow 1:
Average throughput: 184.54 Mbit/s
95th percentile per-packet one-way delay: 256.448 ms
Loss rate: 7.67%
-- Flow 2:
Average throughput: 33.62 Mbit/s
95th percentile per-packet one-way delay: 149.972 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 135.37 Mbit/s
95th percentile per-packet one-way delay: 235.736 ms
Loss rate: 0.60%
```
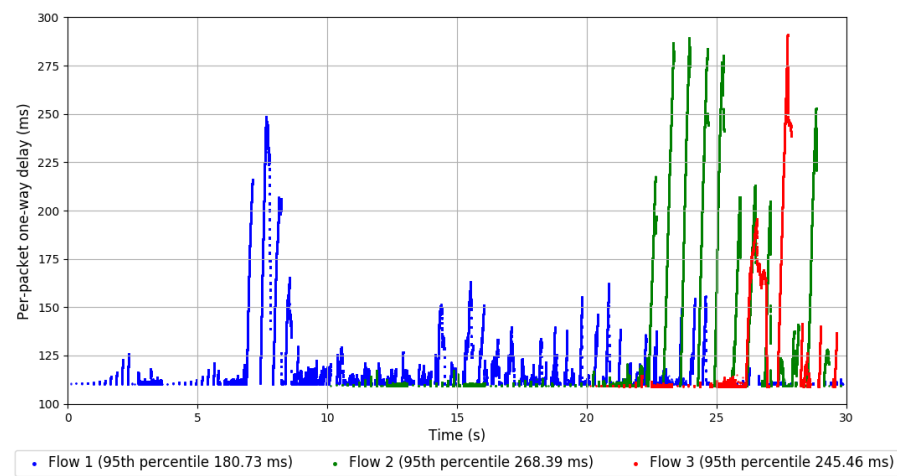
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 199.87 Mbit/s) — Flow 1 egress (mean 184.54 Mbit/s)
Flow 2 ingress (mean 33.62 Mbit/s) — Flow 2 egress (mean 33.62 Mbit/s)
Flow 3 ingress (mean 136.93 Mbit/s) — Flow 3 egress (mean 135.37 Mbit/s)

Flow 1 (95th percentile 256.45 ms) • Flow 2 (95th percentile 149.97 ms) • Flow 3 (95th percentile 235.74 ms)
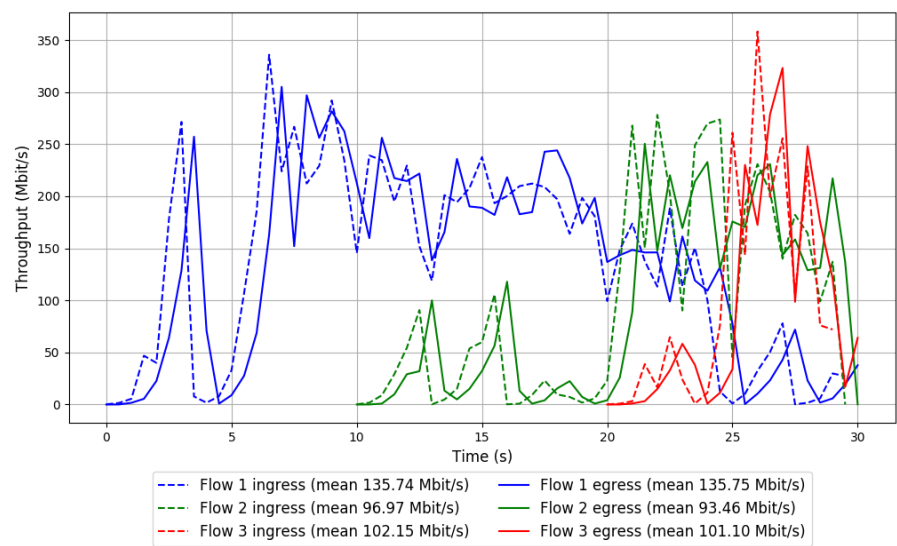
192

```
Run 5: Statistics of Verus

Start at: 2019-02-20 02:37:08
End at: 2019-02-20 02:37:38
Local clock offset: -0.081 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2019-02-20 05:56:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 229.81 Mbit/s
95th percentile per-packet one-way delay: 238.072 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 135.75 Mbit/s
95th percentile per-packet one-way delay: 180.730 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 93.46 Mbit/s
95th percentile per-packet one-way delay: 268.387 ms
Loss rate: 3.62%
-- Flow 3:
Average throughput: 101.10 Mbit/s
95th percentile per-packet one-way delay: 245.456 ms
Loss rate: 0.76%
```

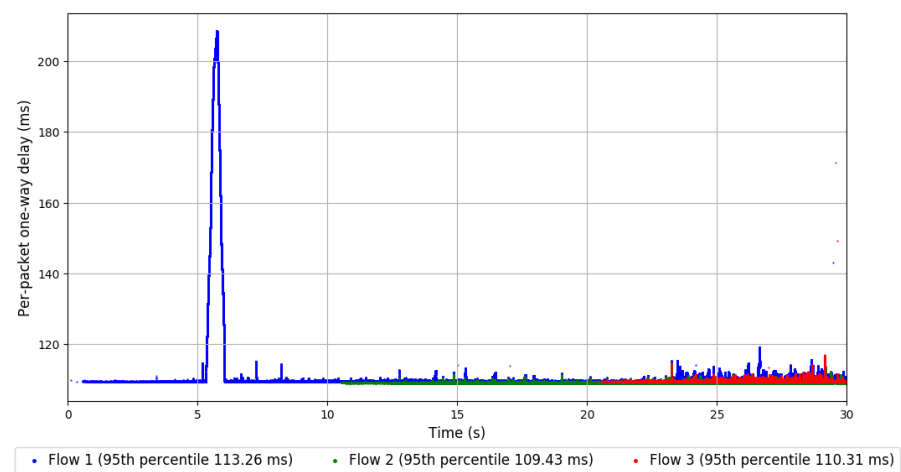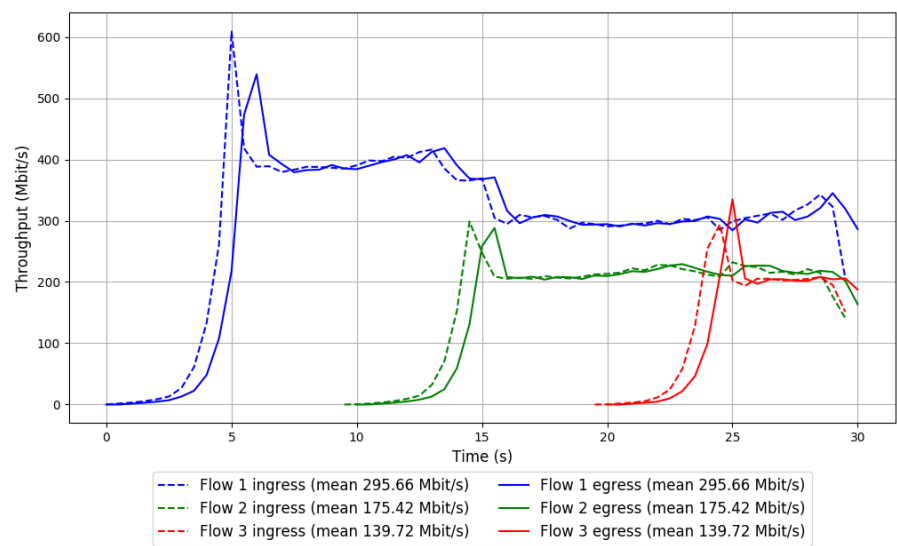## Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 00:15:19
End at: 2019-02-20 00:15:49
Local clock offset: -0.373 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2019-02-20 05:58:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 458.66 Mbit/s
95th percentile per-packet one-way delay: 111.342 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 295.66 Mbit/s
95th percentile per-packet one-way delay: 113.262 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 175.42 Mbit/s
95th percentile per-packet one-way delay: 109.431 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 139.72 Mbit/s
95th percentile per-packet one-way delay: 110.309 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

- – – Flow 1 ingress (mean 295.66 Mbit/s)
- —— Flow 1 egress (mean 295.66 Mbit/s)
- – – Flow 2 ingress (mean 175.42 Mbit/s)
- —— Flow 2 egress (mean 175.42 Mbit/s)
- – – Flow 3 ingress (mean 139.72 Mbit/s)
- —— Flow 3 egress (mean 139.72 Mbit/s)

- Flow 1 (95th percentile 113.26 ms)
- Flow 2 (95th percentile 109.43 ms)
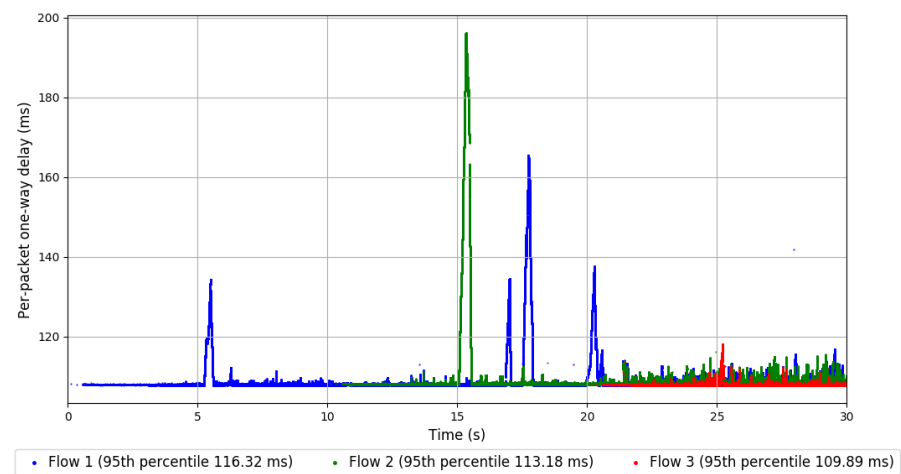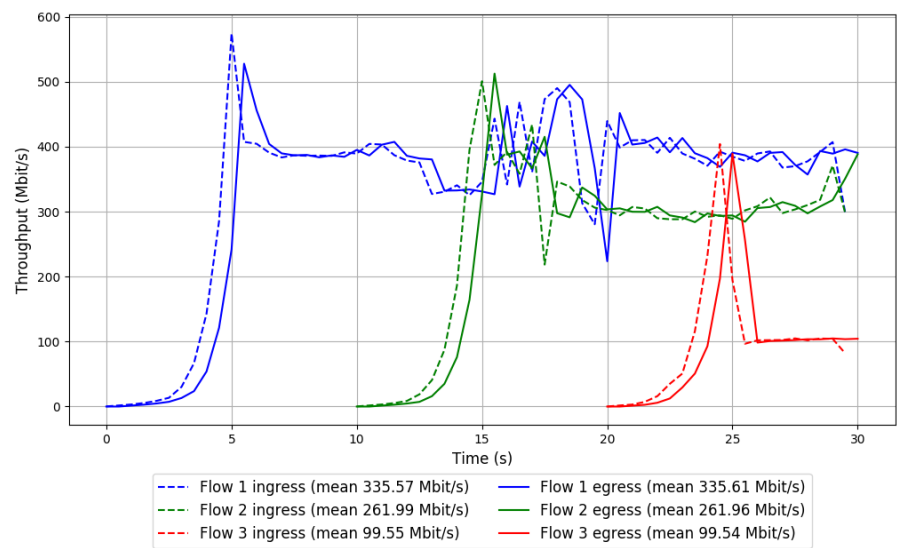- Flow 3 (95th percentile 110.31 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 00:57:57
End at: 2019-02-20 00:58:27
Local clock offset: 1.292 ms
Remote clock offset: -0.084 ms


# Below is generated by plot.py at 2019-02-20 05:59:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.65 Mbit/s
95th percentile per-packet one-way delay: 114.939 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 335.61 Mbit/s
95th percentile per-packet one-way delay: 116.324 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 261.96 Mbit/s
95th percentile per-packet one-way delay: 113.178 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 99.54 Mbit/s
95th percentile per-packet one-way delay: 109.891 ms
Loss rate: 0.02%
```

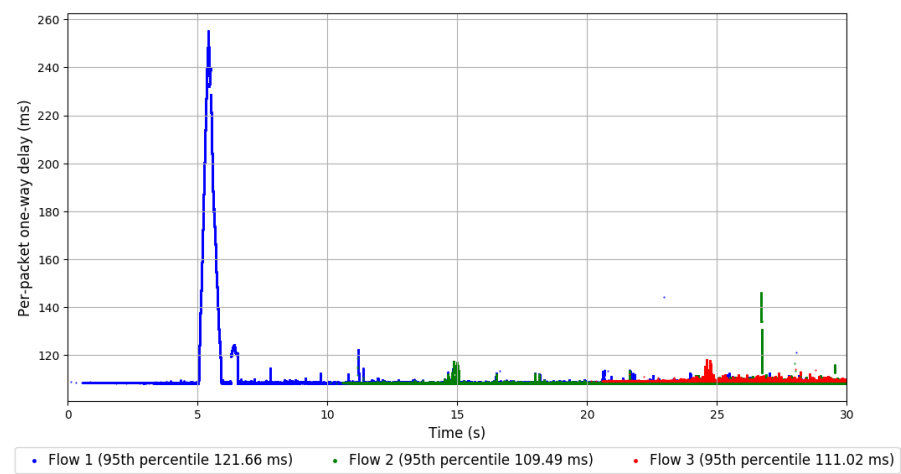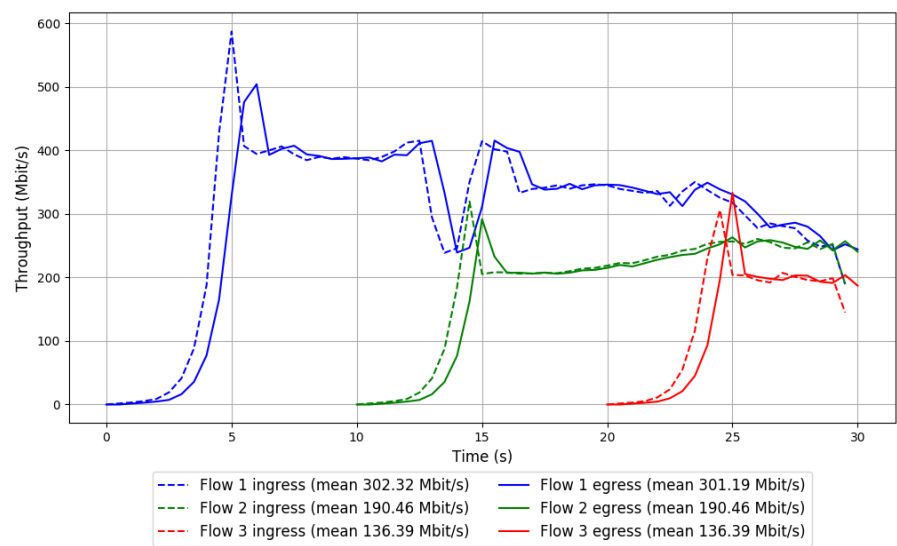# Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 335.57 Mbit/s) — Flow 1 egress (mean 335.61 Mbit/s)
Flow 2 ingress (mean 261.99 Mbit/s) — Flow 2 egress (mean 261.96 Mbit/s)
Flow 3 ingress (mean 99.55 Mbit/s) — Flow 3 egress (mean 99.54 Mbit/s)

Flow 1 (95th percentile 116.32 ms)   Flow 2 (95th percentile 113.18 ms)   Flow 3 (95th percentile 109.89 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 01:38:56
End at: 2019-02-20 01:39:26
Local clock offset: -0.105 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2019-02-20 06:00:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 472.79 Mbit/s
95th percentile per-packet one-way delay: 111.980 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 301.19 Mbit/s
95th percentile per-packet one-way delay: 121.658 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 190.46 Mbit/s
95th percentile per-packet one-way delay: 109.486 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 136.39 Mbit/s
95th percentile per-packet one-way delay: 111.021 ms
Loss rate: 0.00%
```

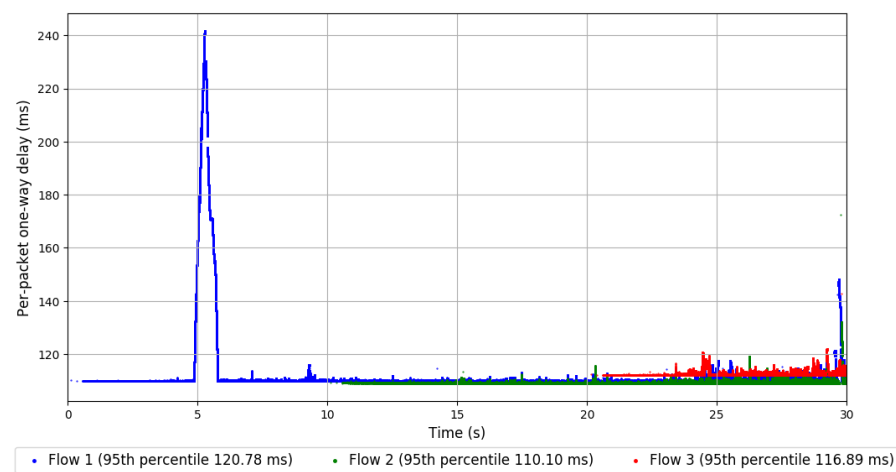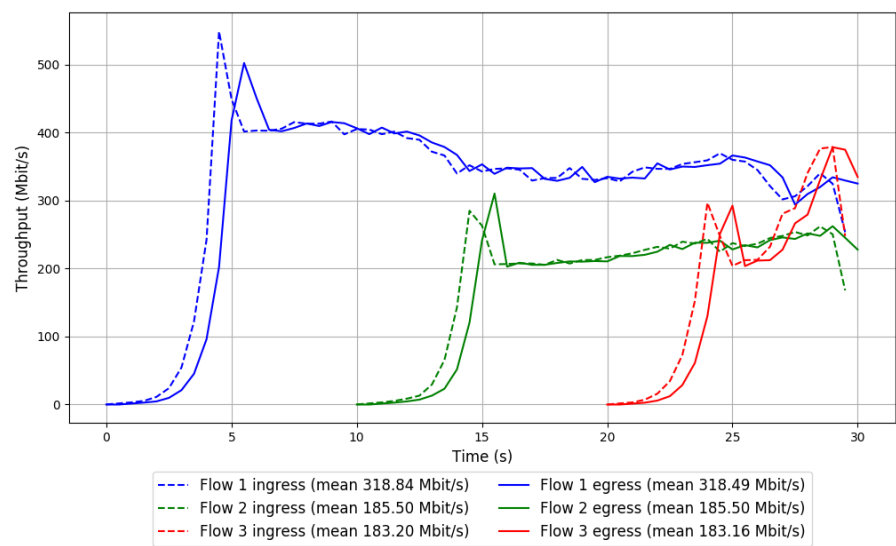## Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 02:20:53
End at: 2019-02-20 02:21:23
Local clock offset: -0.708 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2019-02-20 06:00:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 502.15 Mbit/s
95th percentile per-packet one-way delay: 115.163 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 318.49 Mbit/s
95th percentile per-packet one-way delay: 120.776 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 185.50 Mbit/s
95th percentile per-packet one-way delay: 110.101 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 183.16 Mbit/s
95th percentile per-packet one-way delay: 116.895 ms
Loss rate: 0.03%
```

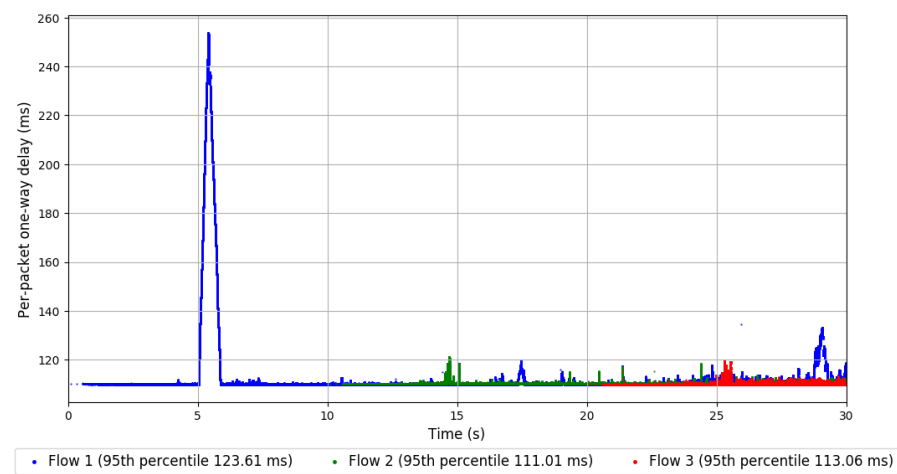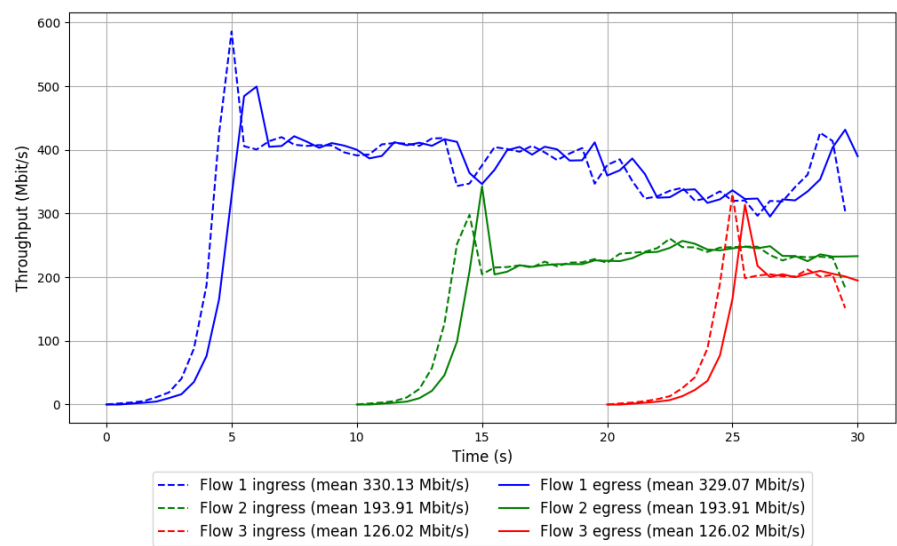# Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 03:01:18
End at: 2019-02-20 03:01:48
Local clock offset: -0.871 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2019-02-20 06:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 499.58 Mbit/s
95th percentile per-packet one-way delay: 115.631 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 329.07 Mbit/s
95th percentile per-packet one-way delay: 123.605 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 193.91 Mbit/s
95th percentile per-packet one-way delay: 111.009 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 126.02 Mbit/s
95th percentile per-packet one-way delay: 113.055 ms
Loss rate: 0.00%
```

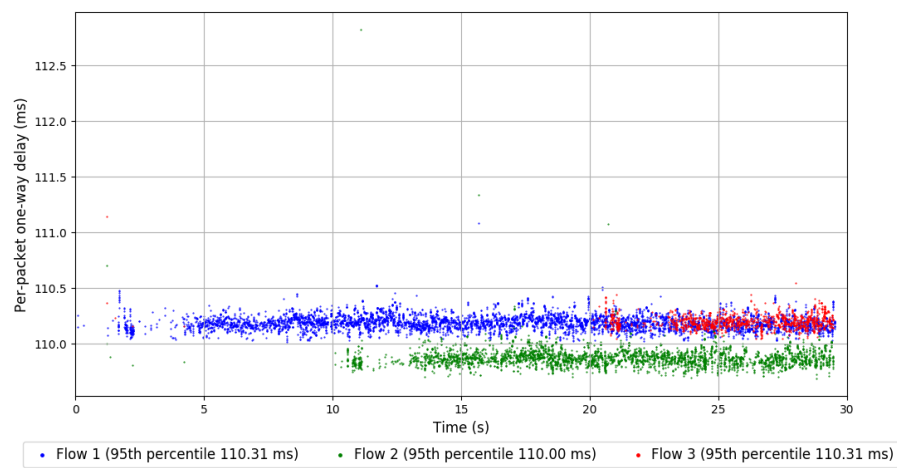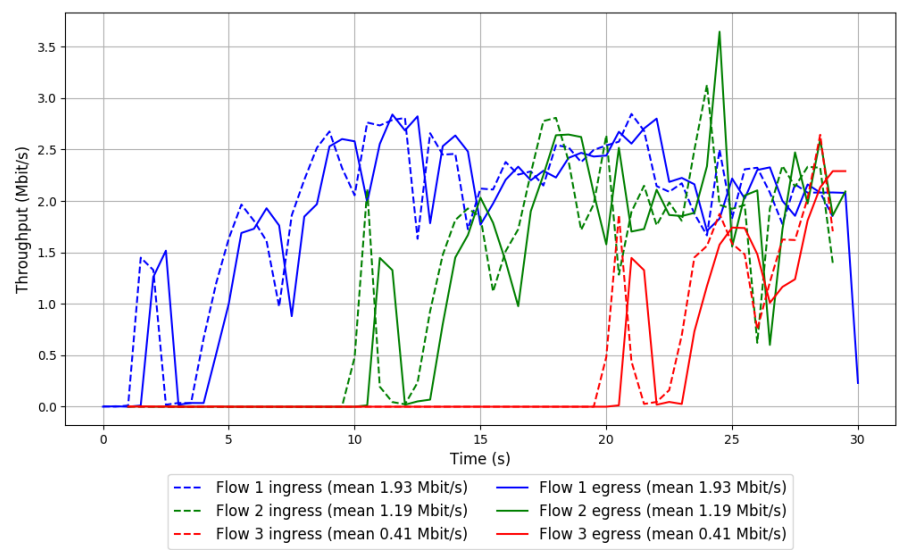Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-02-19 23:44:43
End at: 2019-02-19 23:45:13
Local clock offset: -0.654 ms
Remote clock offset: 0.259 ms


# Below is generated by plot.py at 2019-02-20 06:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 110.287 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 110.305 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 109.997 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 110.309 ms
Loss rate: 0.00%
```

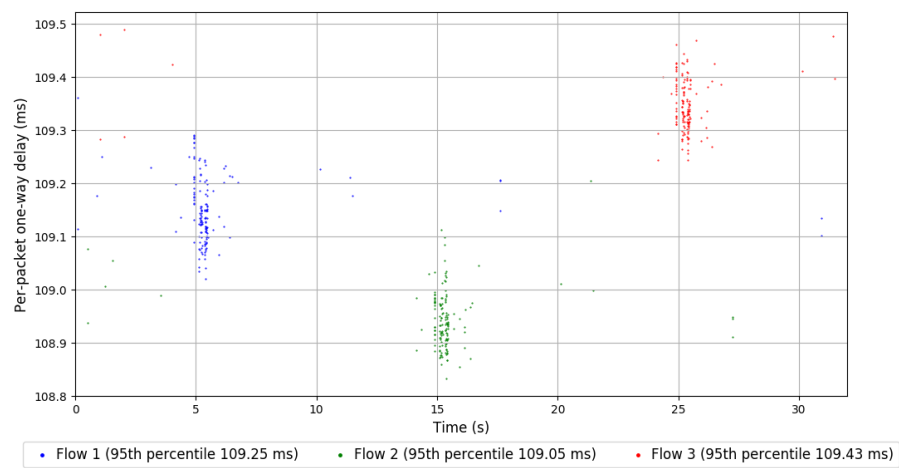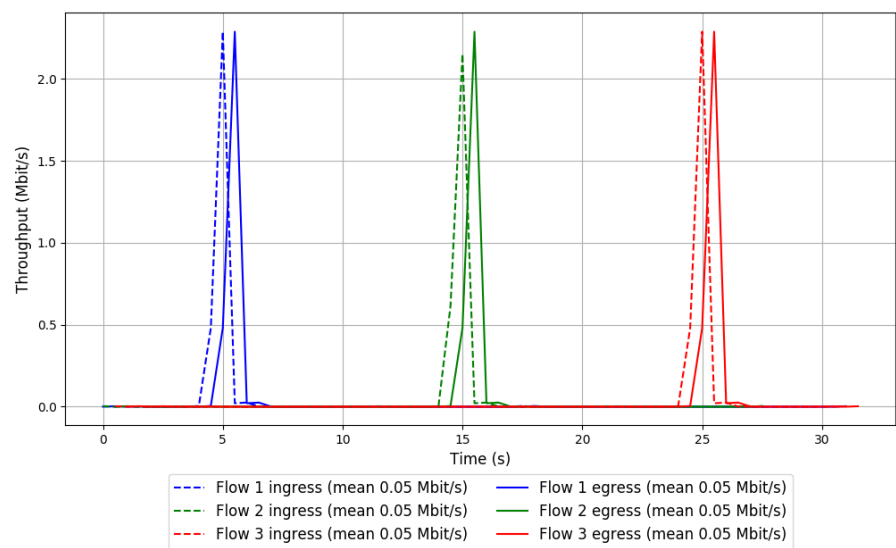Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 00:26:19
End at: 2019-02-20 00:26:49
Local clock offset: -0.086 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2019-02-20 06:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 109.403 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.250 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.046 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.430 ms
Loss rate: 0.00%
```

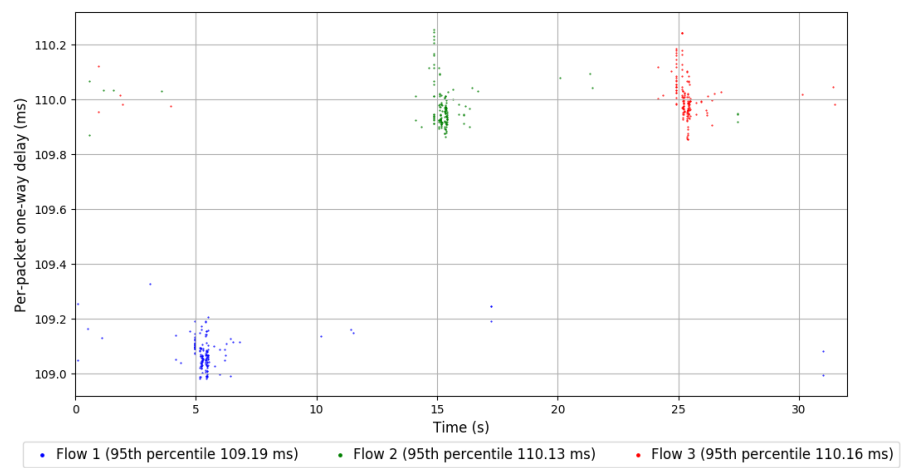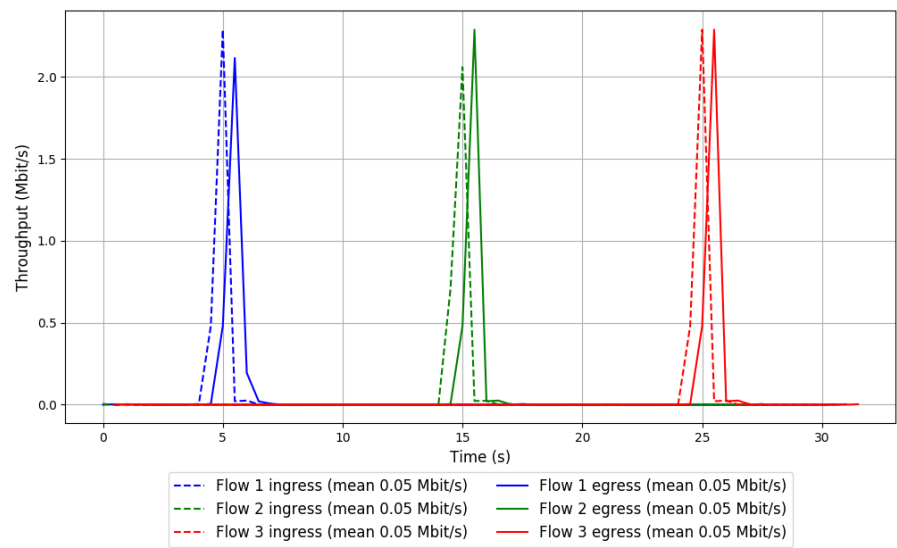Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 01:09:23
End at: 2019-02-20 01:09:53
Local clock offset: -0.7 ms
Remote clock offset: -0.088 ms


# Below is generated by plot.py at 2019-02-20 06:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 110.117 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.189 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.127 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.163 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

Flow 1 ingress (mean 0.05 Mbit/s) --- Flow 1 egress (mean 0.05 Mbit/s) ---
Flow 2 ingress (mean 0.05 Mbit/s) --- Flow 2 egress (mean 0.05 Mbit/s) ---
Flow 3 ingress (mean 0.05 Mbit/s) --- Flow 3 egress (mean 0.05 Mbit/s)

• Flow 1 (95th percentile 109.19 ms)   • Flow 2 (95th percentile 110.13 ms)   • Flow 3 (95th percentile 110.16 ms)
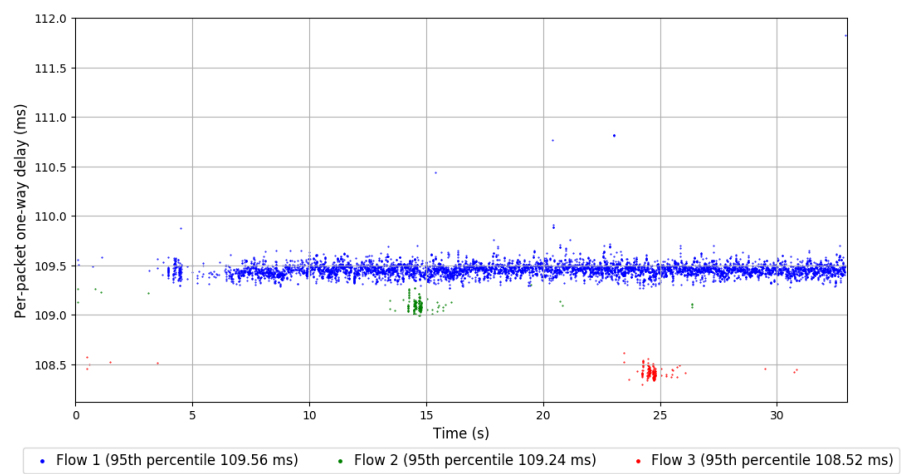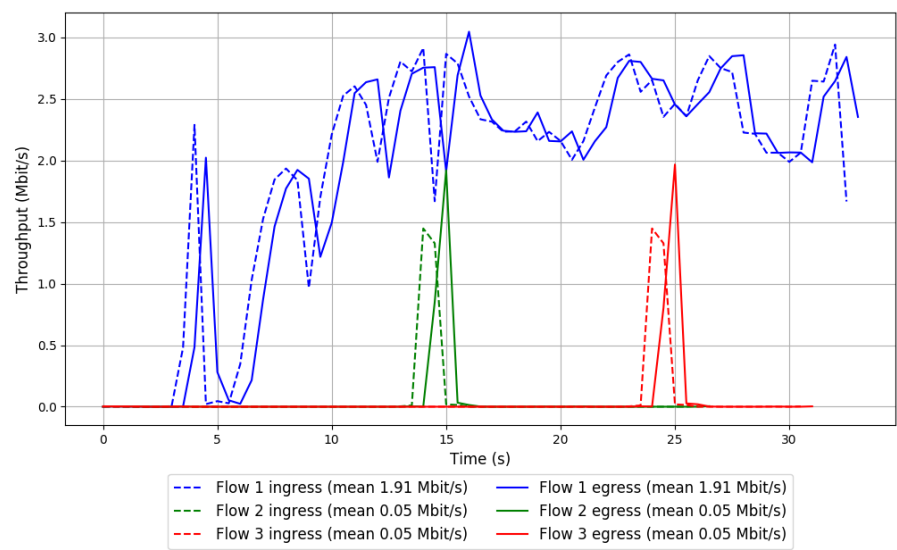
```
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 01:50:01
End at: 2019-02-20 01:50:31
Local clock offset: -0.122 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2019-02-20 06:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 109.553 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 109.555 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.242 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 108.523 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.91 Mbit/s) — — — Flow 1 egress (mean 1.91 Mbit/s)
Flow 2 ingress (mean 0.05 Mbit/s) — — — Flow 2 egress (mean 0.05 Mbit/s)
Flow 3 ingress (mean 0.05 Mbit/s) — — — Flow 3 egress (mean 0.05 Mbit/s)

Flow 1 (95th percentile 109.56 ms) • Flow 2 (95th percentile 109.24 ms) • Flow 3 (95th percentile 108.52 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-20 02:32:01
End at: 2019-02-20 02:32:31
Local clock offset: -1.445 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2019-02-20 06:00:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 110.873 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 110.856 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.871 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 111.020 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link