Pantheon Report

Generated at 2018-12-20 08:18:04 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.
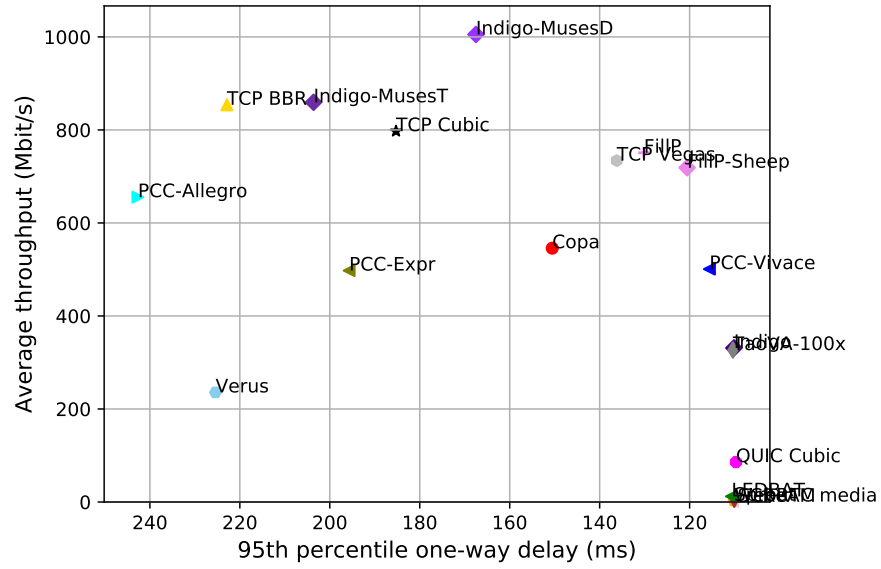
```
System info:
Linux 4.15.0-1025-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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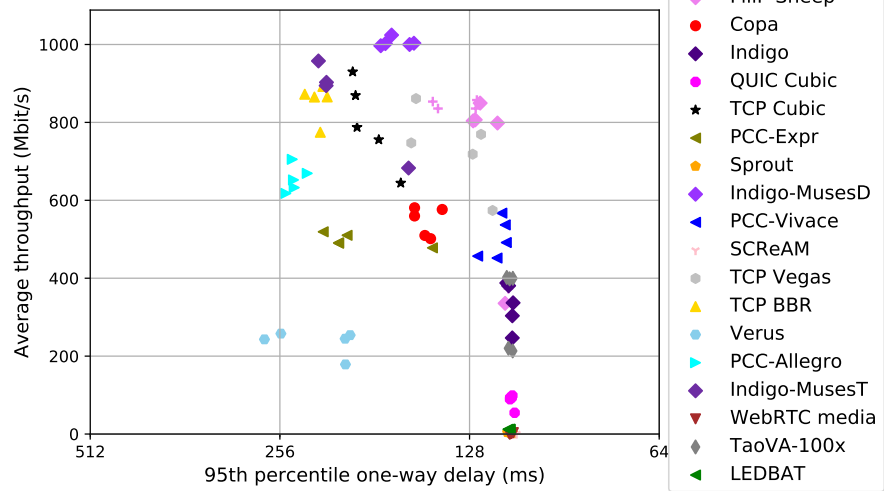
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from 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

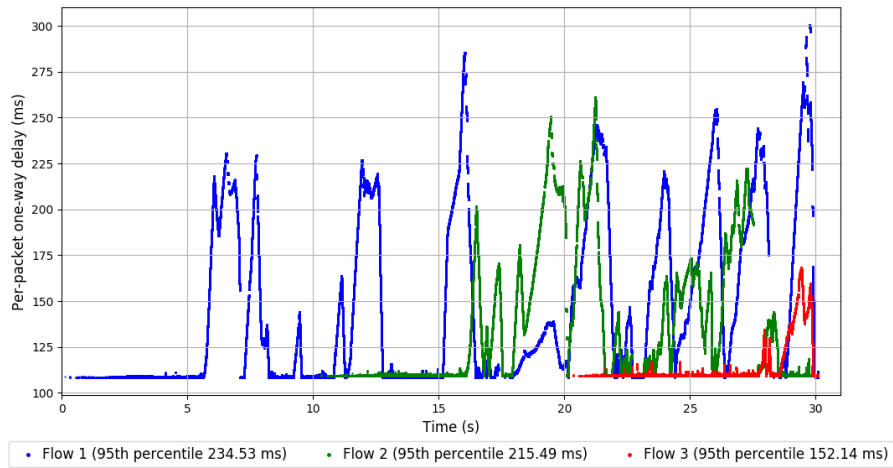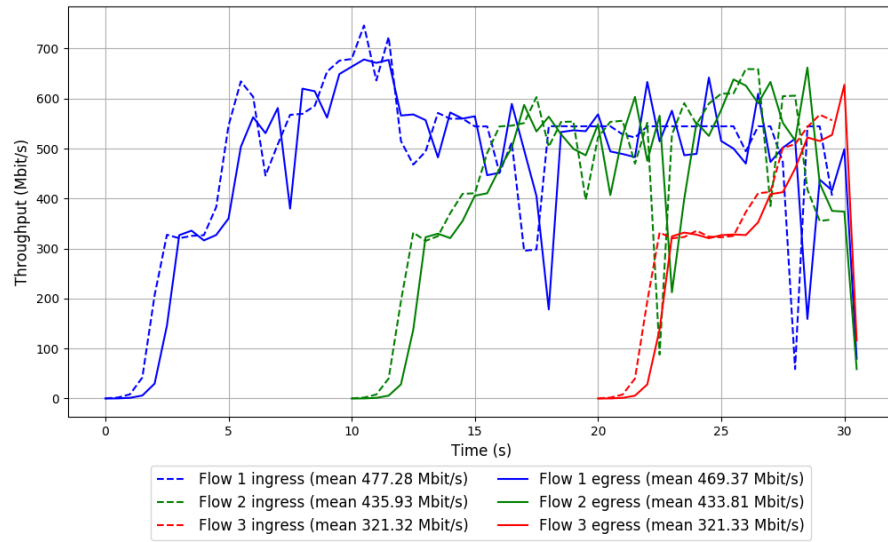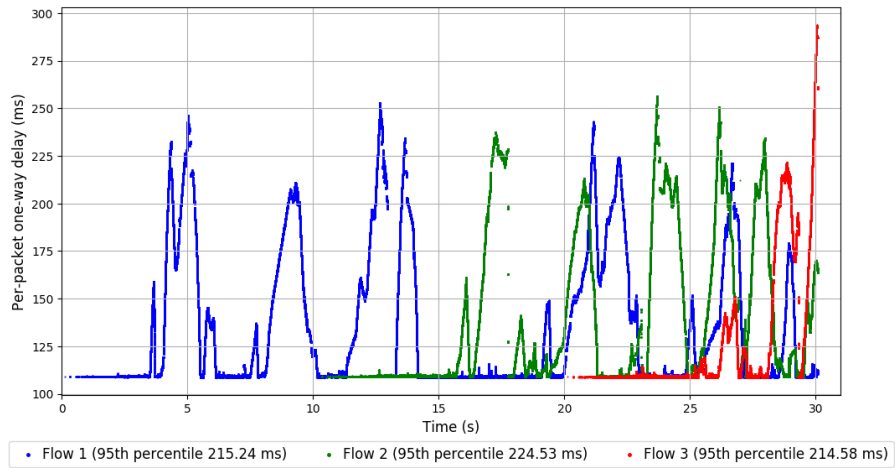| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	471.52	414.19	320.98	221.54	219.93	183.66	1.53	0.99	1.66
Copa	5	292.78	278.98	202.04	143.08	144.27	162.06	0.01	0.03	0.18
TCP Cubic	5	418.19	401.85	335.31	172.50	167.73	161.69	0.05	0.12	0.40
FillP	5	447.87	344.53	222.85	135.29	111.68	110.70	0.12	0.00	0.01
FillP-Sheep	5	423.18	329.26	230.77	124.22	113.24	112.07	0.02	0.00	0.00
Indigo	5	174.09	171.67	134.59	109.95	110.19	110.60	0.00	0.00	0.00
Indigo-MusesD	5	564.18	489.70	360.09	168.92	163.77	159.72	0.16	0.17	0.16
Indigo-MusesT	4	534.95	361.95	297.83	209.27	154.16	153.41	4.30	0.07	0.00
LEDBAT	5	7.84	5.21	2.55	110.57	110.50	110.25	0.00	0.00	0.00
PCC-Allegro	5	360.71	327.38	234.77	237.80	223.14	223.92	3.59	6.35	2.13
PCC-Expr	5	298.95	221.54	155.44	202.02	157.87	131.79	2.29	1.23	0.08
QUIC Cubic	5	45.40	45.34	31.97	109.56	109.20	109.36	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	109.30	109.04	109.14	0.00	0.00	0.00
Sprout	5	1.78	0.71	0.93	110.13	109.07	109.49	0.00	0.00	0.00
TaoVA-100x	5	166.08	164.22	153.86	109.91	110.16	109.82	0.00	0.08	0.00
TCP Vegas	5	404.37	327.97	334.90	135.06	122.15	157.88	0.04	0.13	0.12
Verus	5	145.91	102.52	67.69	236.43	194.33	150.04	4.33	0.00	1.24
PCC-Vivace	5	301.40	237.80	124.84	121.82	113.09	112.42	0.16	0.00	0.00
WebRTC media	5	0.43	0.50	0.12	109.23	109.49	109.73	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-20 03:15:33
End at: 2018-12-20 03:16:03
Local clock offset: -0.048 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2018-12-20 06:17:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 865.17 Mbit/s
95th percentile per-packet one-way delay: 225.648 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 469.37 Mbit/s
95th percentile per-packet one-way delay: 234.531 ms
Loss rate: 1.65%
-- Flow 2:
Average throughput: 433.81 Mbit/s
95th percentile per-packet one-way delay: 215.485 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 321.33 Mbit/s
95th percentile per-packet one-way delay: 152.138 ms
Loss rate: 0.00%
```

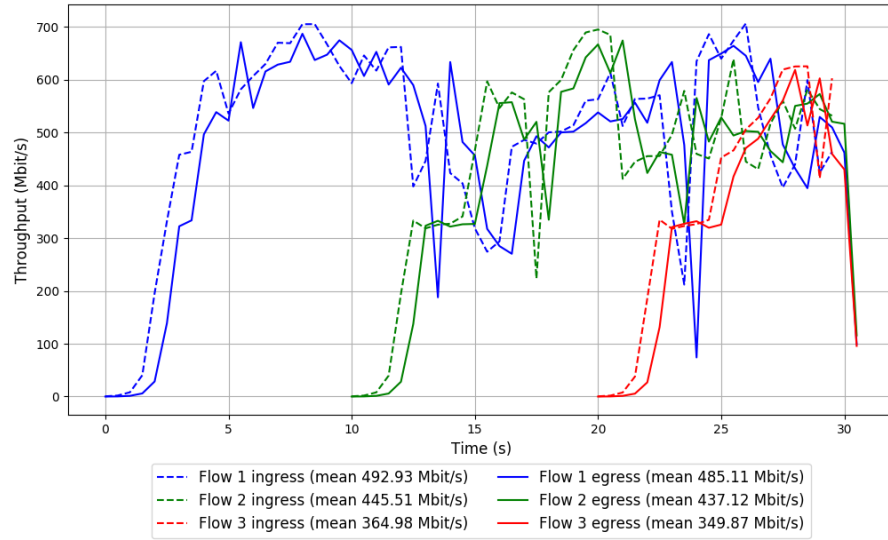Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-20 03:50:01
End at: 2018-12-20 03:50:31
Local clock offset: 0.192 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2018-12-20 06:18:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 892.40 Mbit/s
95th percentile per-packet one-way delay: 218.766 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 485.11 Mbit/s
95th percentile per-packet one-way delay: 215.243 ms
Loss rate: 1.59%
-- Flow 2:
Average throughput: 437.12 Mbit/s
95th percentile per-packet one-way delay: 224.526 ms
Loss rate: 1.89%
-- Flow 3:
Average throughput: 349.87 Mbit/s
95th percentile per-packet one-way delay: 214.580 ms
Loss rate: 4.14%
```

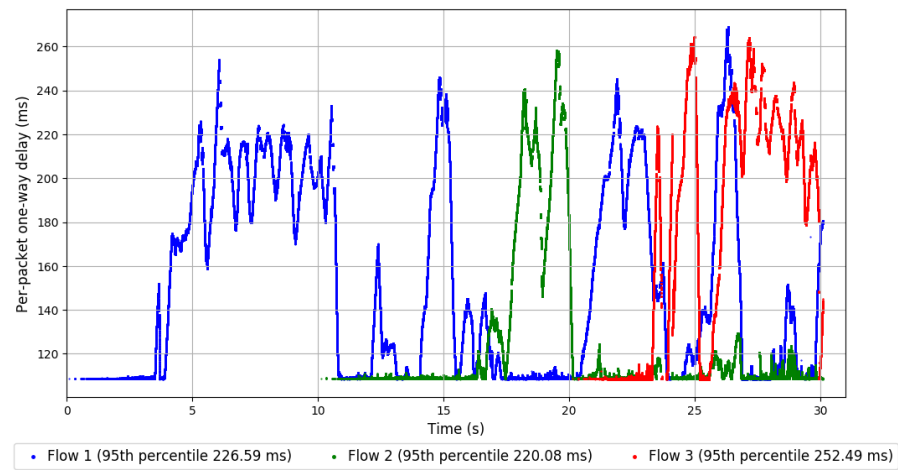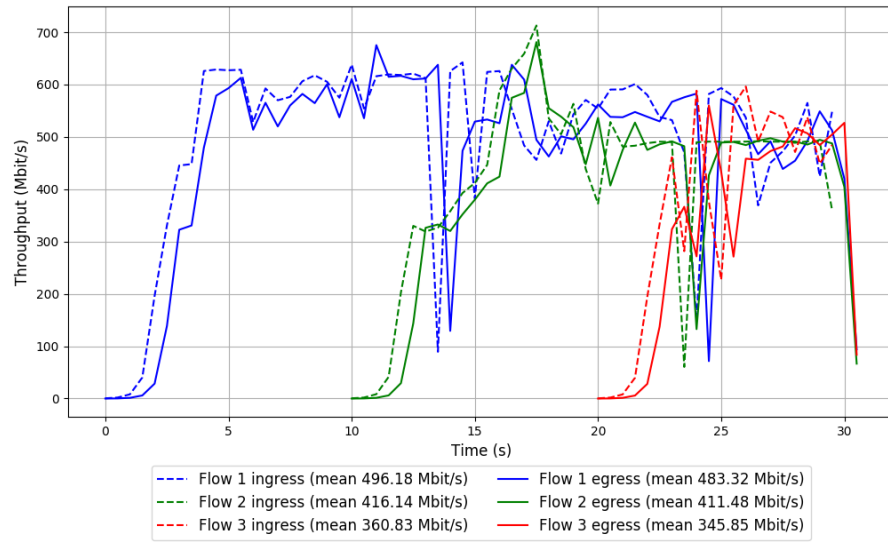Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-12-20 04:25:20
End at: 2018-12-20 04:25:50
Local clock offset: 0.549 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2018-12-20 06:18:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 872.39 Mbit/s
95th percentile per-packet one-way delay: 233.753 ms
Loss rate: 2.34%
-- Flow 1:
Average throughput: 483.32 Mbit/s
95th percentile per-packet one-way delay: 226.587 ms
Loss rate: 2.59%
-- Flow 2:
Average throughput: 411.48 Mbit/s
95th percentile per-packet one-way delay: 220.083 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 345.85 Mbit/s
95th percentile per-packet one-way delay: 252.489 ms
Loss rate: 4.15%
```

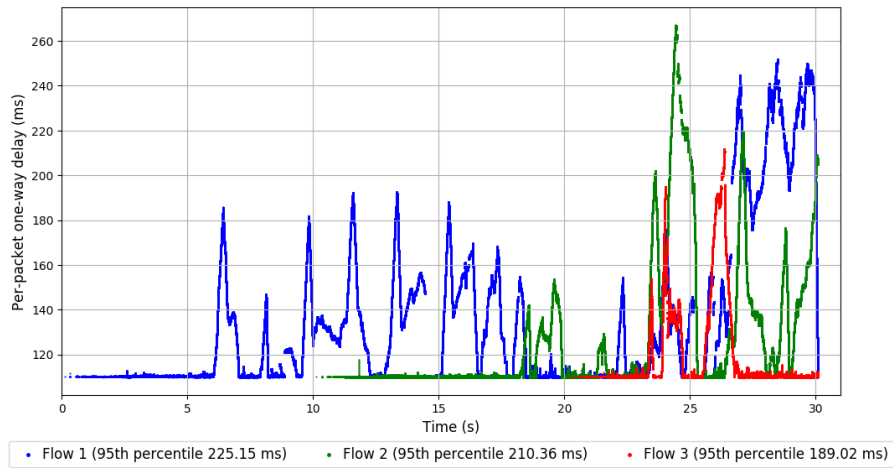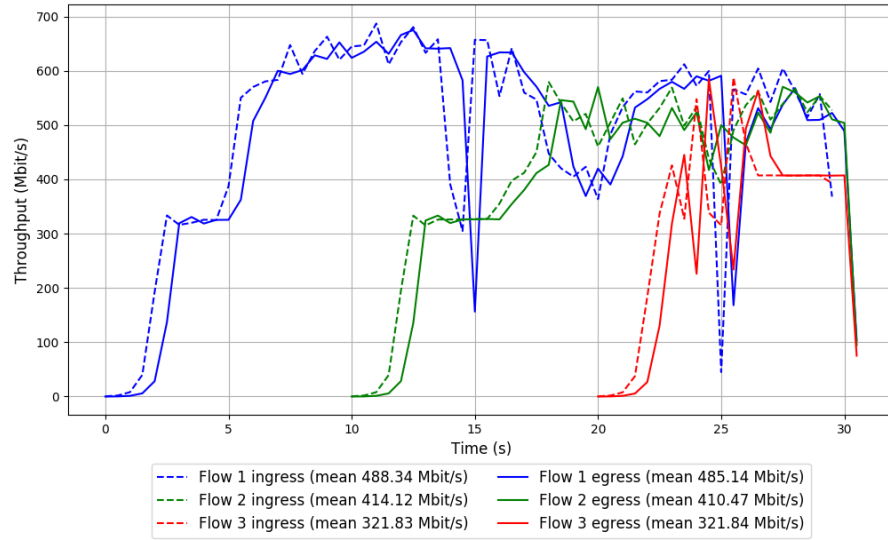Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-20 05:01:02
End at: 2018-12-20 05:01:32
Local clock offset: -0.63 ms
Remote clock offset: -0.126 ms


# Below is generated by plot.py at 2018-12-20 06:18:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 865.46 Mbit/s
95th percentile per-packet one-way delay: 215.333 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 485.14 Mbit/s
95th percentile per-packet one-way delay: 225.150 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 410.47 Mbit/s
95th percentile per-packet one-way delay: 210.356 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 321.84 Mbit/s
95th percentile per-packet one-way delay: 189.020 ms
Loss rate: 0.00%
```

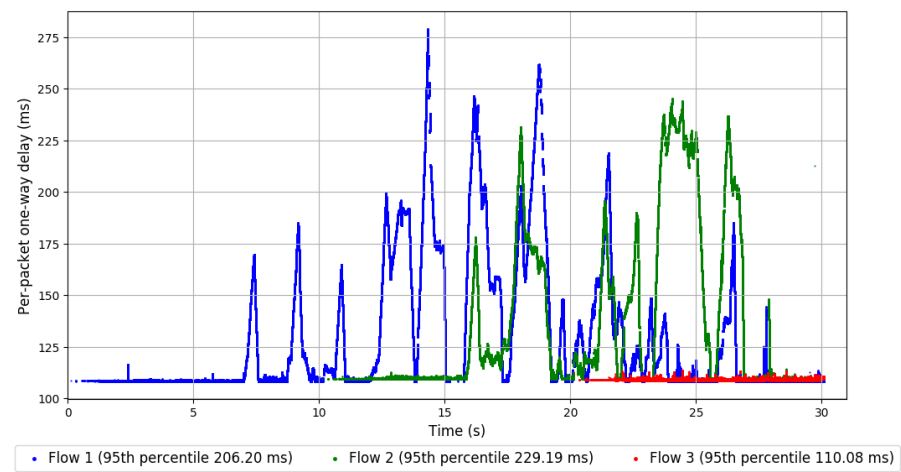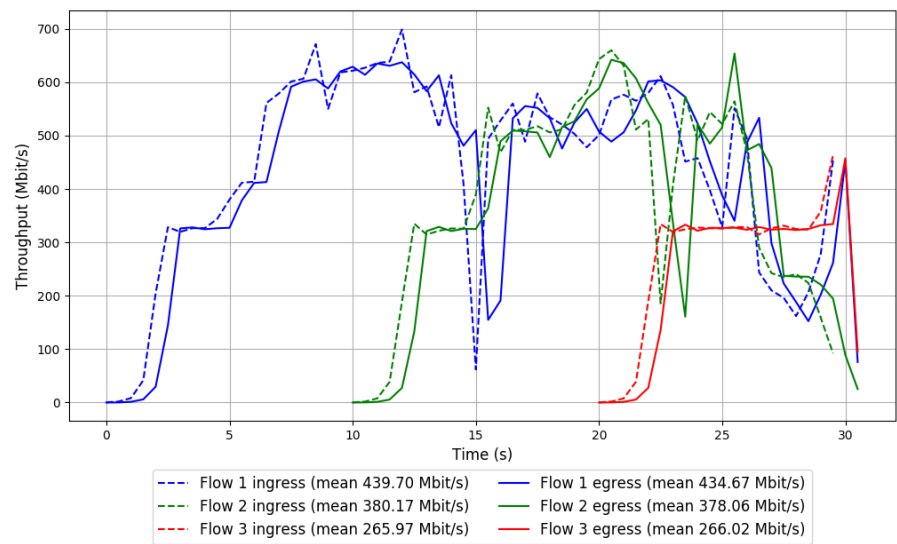Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-20 05:36:01
End at: 2018-12-20 05:36:31
Local clock offset: -0.456 ms
Remote clock offset: -0.421 ms

# Below is generated by plot.py at 2018-12-20 06:18:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 774.73 Mbit/s
95th percentile per-packet one-way delay: 220.847 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 434.67 Mbit/s
95th percentile per-packet one-way delay: 206.196 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 378.06 Mbit/s
95th percentile per-packet one-way delay: 229.190 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 266.02 Mbit/s
95th percentile per-packet one-way delay: 110.076 ms
Loss rate: 0.01%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 439.70 Mbit/s) --- Flow 1 egress (mean 434.67 Mbit/s)
Flow 2 ingress (mean 380.17 Mbit/s) --- Flow 2 egress (mean 378.06 Mbit/s)
Flow 3 ingress (mean 265.97 Mbit/s) --- Flow 3 egress (mean 266.02 Mbit/s)

Flow 1 (95th percentile 206.20 ms)   Flow 2 (95th percentile 229.19 ms)   Flow 3 (95th percentile 110.08 ms)

```
Run 1: Statistics of Copa

Start at: 2018-12-20 03:06:50
End at: 2018-12-20 03:07:20
Local clock offset: 0.496 ms
Remote clock offset: 0.172 ms


# Below is generated by plot.py at 2018-12-20 06:21:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 559.76 Mbit/s
95th percentile per-packet one-way delay: 156.500 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 311.40 Mbit/s
95th percentile per-packet one-way delay: 147.614 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 274.99 Mbit/s
95th percentile per-packet one-way delay: 148.780 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 196.14 Mbit/s
95th percentile per-packet one-way delay: 190.073 ms
Loss rate: 0.00%
```
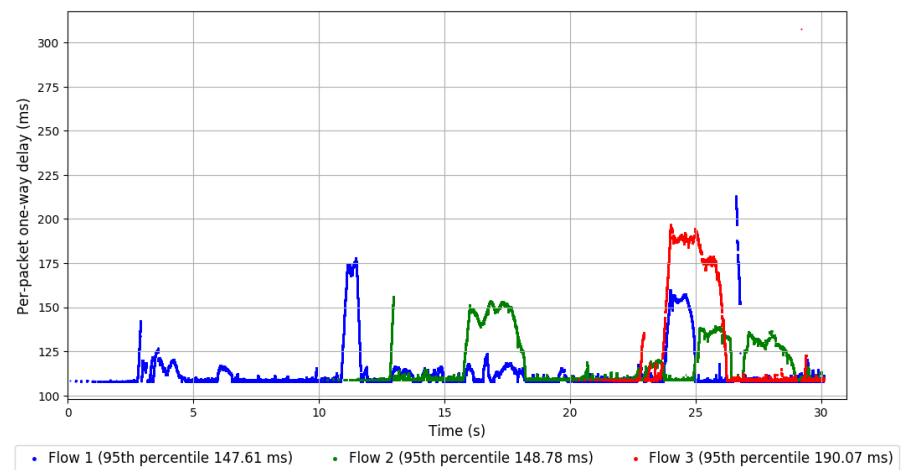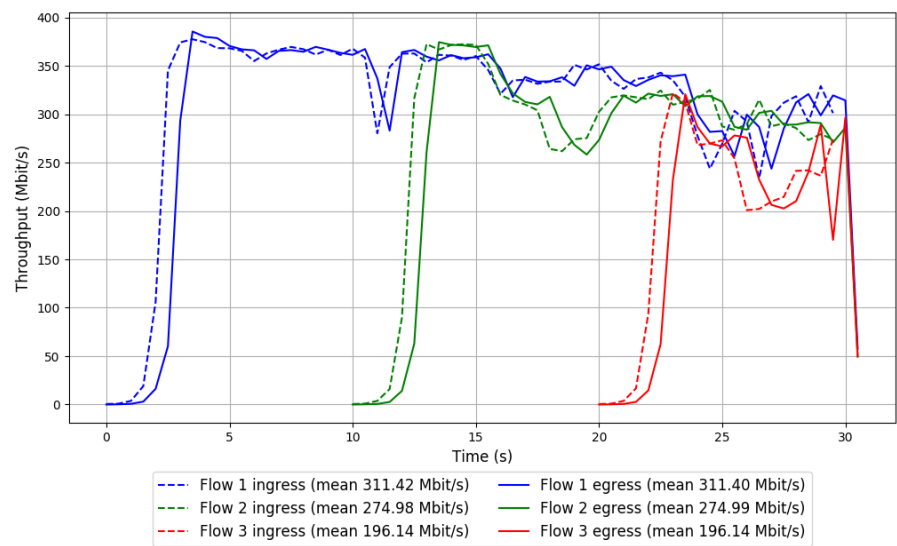
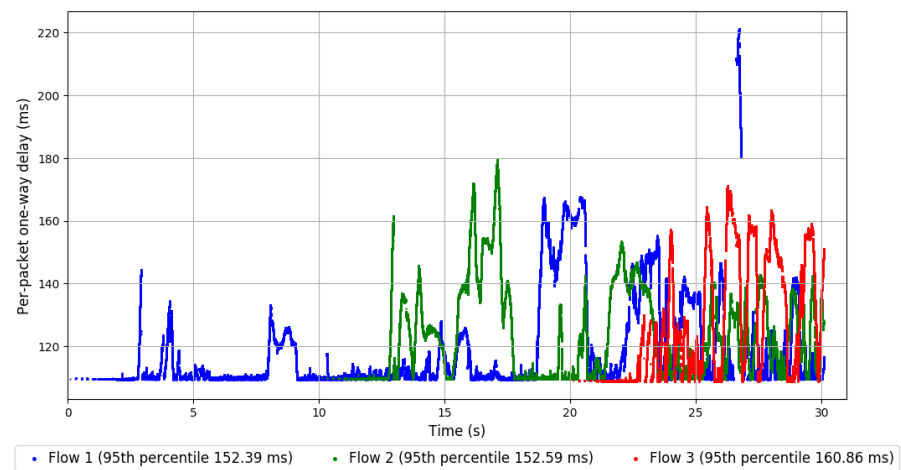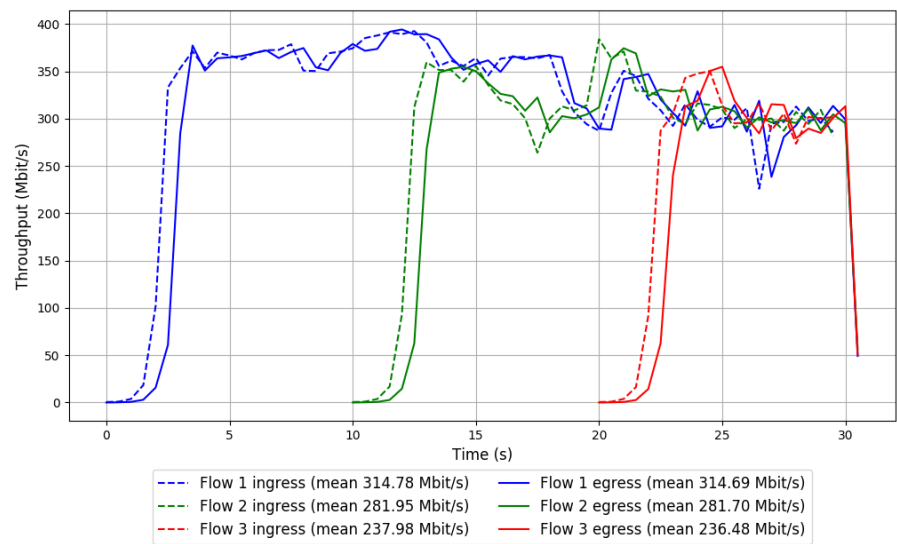Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-12-20 03:41:34
End at: 2018-12-20 03:42:04
Local clock offset: -0.728 ms
Remote clock offset: -0.224 ms

# Below is generated by plot.py at 2018-12-20 06:21:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 580.88 Mbit/s
95th percentile per-packet one-way delay: 156.483 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 314.69 Mbit/s
95th percentile per-packet one-way delay: 152.387 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 281.70 Mbit/s
95th percentile per-packet one-way delay: 152.590 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 236.48 Mbit/s
95th percentile per-packet one-way delay: 160.856 ms
Loss rate: 0.61%
```

Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-12-20 04:16:36
End at: 2018-12-20 04:17:06
Local clock offset: 0.165 ms
Remote clock offset: 0.003 ms


# Below is generated by plot.py at 2018-12-20 06:21:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.56 Mbit/s
95th percentile per-packet one-way delay: 147.585 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 237.99 Mbit/s
95th percentile per-packet one-way delay: 134.369 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 285.01 Mbit/s
95th percentile per-packet one-way delay: 133.857 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 221.97 Mbit/s
95th percentile per-packet one-way delay: 176.826 ms
Loss rate: 0.01%
```
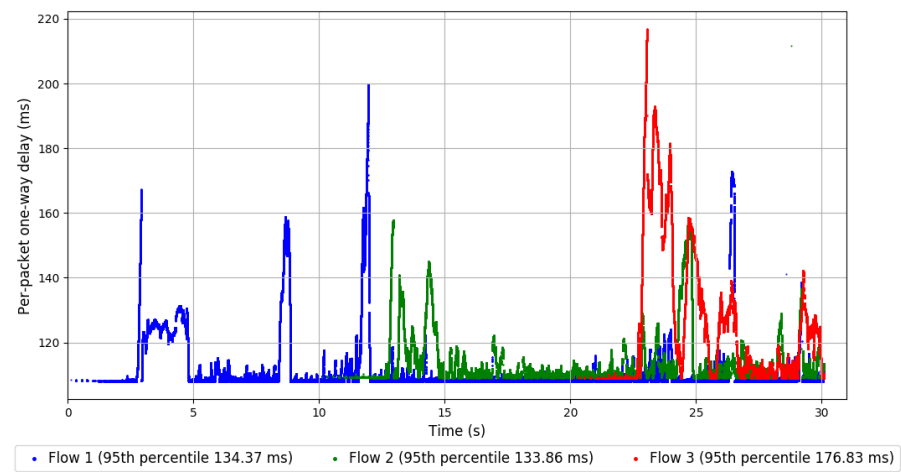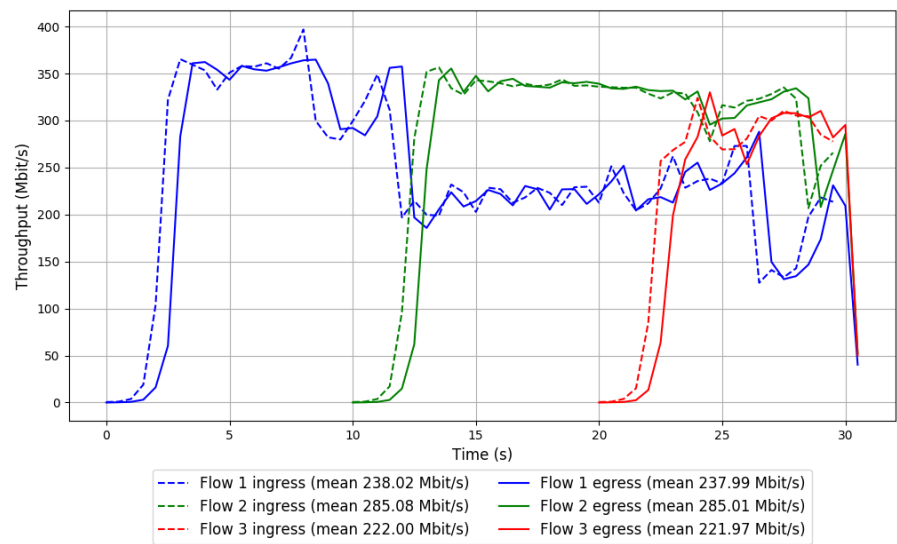
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 238.02 Mbit/s) — Flow 1 egress (mean 237.99 Mbit/s)
Flow 2 ingress (mean 285.08 Mbit/s) — Flow 2 egress (mean 285.01 Mbit/s)
Flow 3 ingress (mean 222.00 Mbit/s) — Flow 3 egress (mean 221.97 Mbit/s)

Flow 1 (95th percentile 134.37 ms)   Flow 2 (95th percentile 133.86 ms)   Flow 3 (95th percentile 176.83 ms)

```
Run 4: Statistics of Copa

Start at: 2018-12-20 04:51:47
End at: 2018-12-20 04:52:17
Local clock offset: -0.166 ms
Remote clock offset: 0.305 ms


# Below is generated by plot.py at 2018-12-20 06:33:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 509.74 Mbit/s
95th percentile per-packet one-way delay: 150.700 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 286.89 Mbit/s
95th percentile per-packet one-way delay: 147.772 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 267.34 Mbit/s
95th percentile per-packet one-way delay: 153.863 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 135.12 Mbit/s
95th percentile per-packet one-way delay: 128.137 ms
Loss rate: 0.04%
```
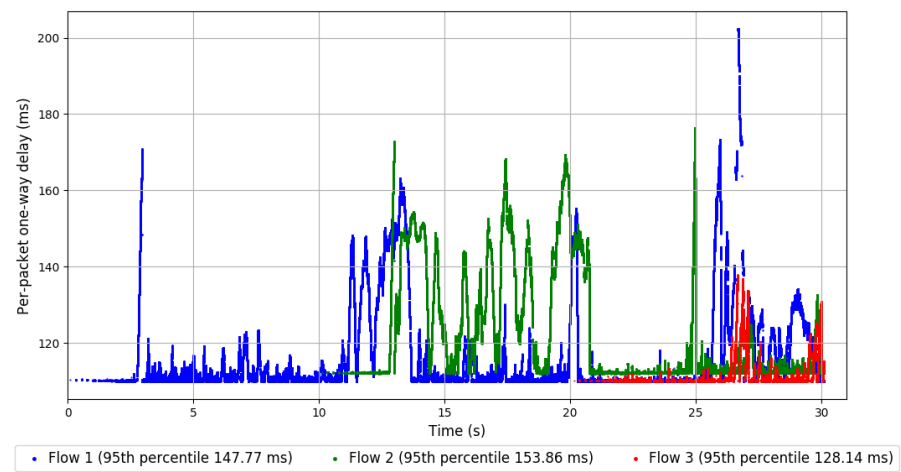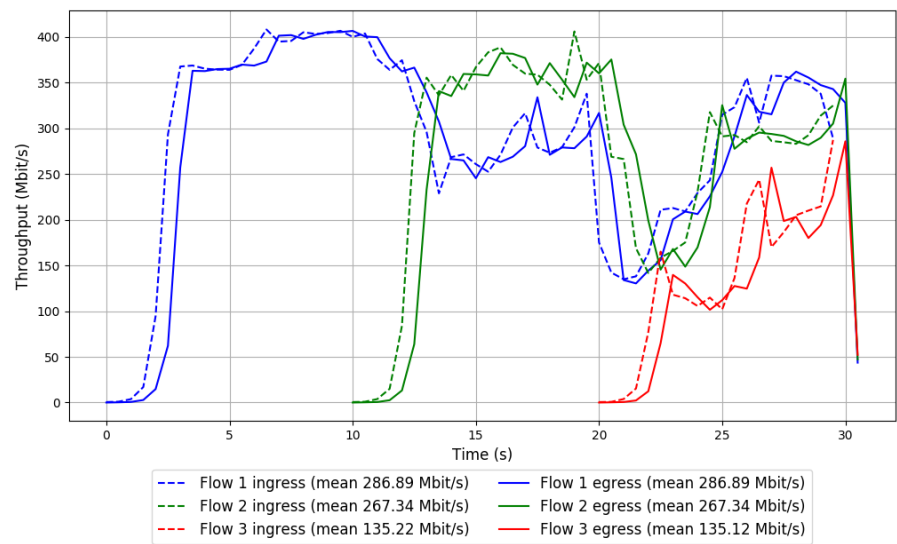
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-12-20 05:27:22
End at: 2018-12-20 05:27:52
Local clock offset: -0.283 ms
Remote clock offset: 0.26 ms


# Below is generated by plot.py at 2018-12-20 06:38:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 576.47 Mbit/s
95th percentile per-packet one-way delay: 141.439 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 312.92 Mbit/s
95th percentile per-packet one-way delay: 133.273 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 285.87 Mbit/s
95th percentile per-packet one-way delay: 132.264 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 220.49 Mbit/s
95th percentile per-packet one-way delay: 154.432 ms
Loss rate: 0.23%
```
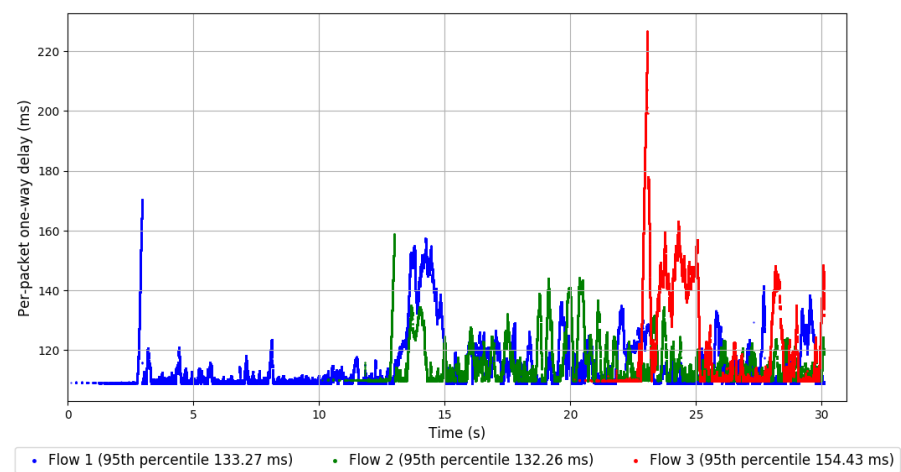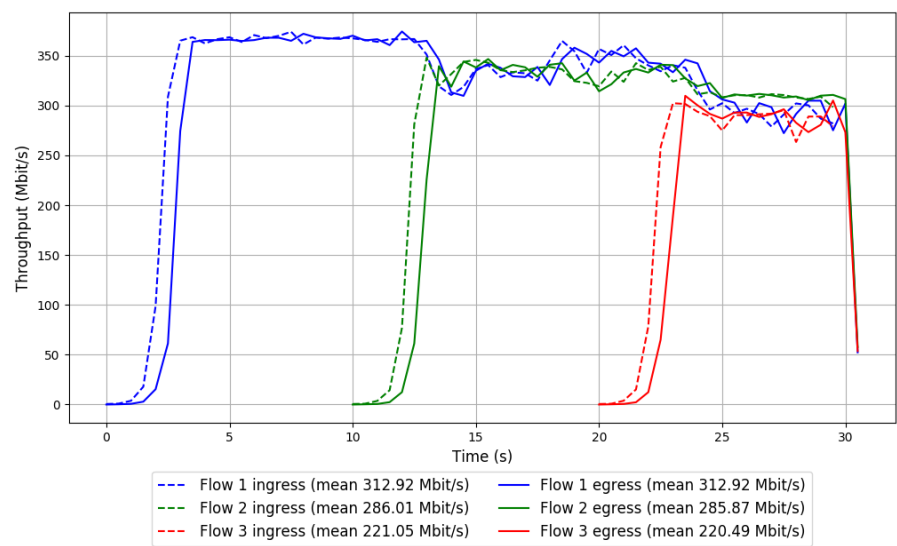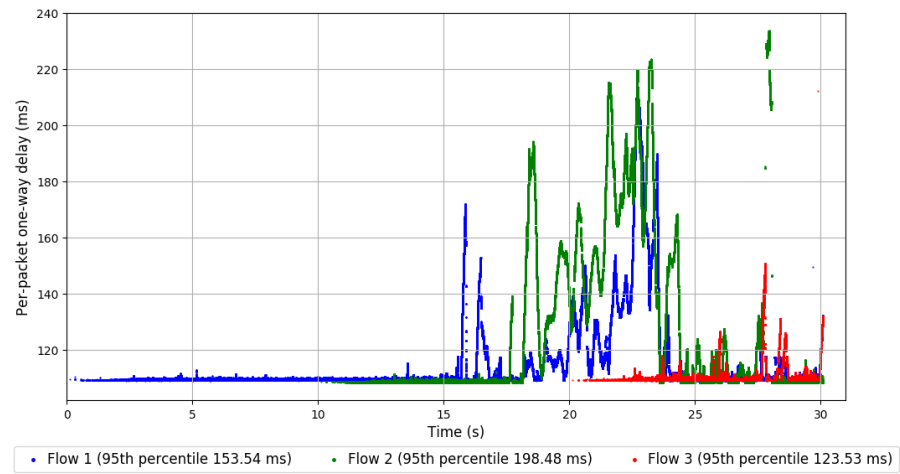
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 312.92 Mbit/s) --- Flow 1 egress (mean 312.92 Mbit/s)
Flow 2 ingress (mean 286.01 Mbit/s) --- Flow 2 egress (mean 285.87 Mbit/s)
Flow 3 ingress (mean 221.05 Mbit/s) --- Flow 3 egress (mean 220.49 Mbit/s)

Flow 1 (95th percentile 133.27 ms) • Flow 2 (95th percentile 132.26 ms) • Flow 3 (95th percentile 154.43 ms)
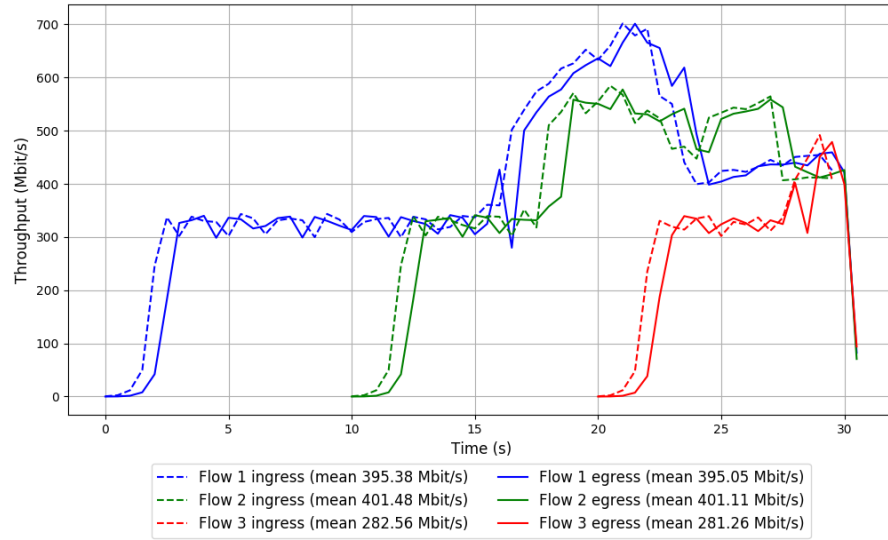
24

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-20 03:20:57
End at: 2018-12-20 03:21:27
Local clock offset: -0.329 ms
Remote clock offset: -0.134 ms


# Below is generated by plot.py at 2018-12-20 06:38:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 755.70 Mbit/s
95th percentile per-packet one-way delay: 178.352 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 395.05 Mbit/s
95th percentile per-packet one-way delay: 153.545 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 401.11 Mbit/s
95th percentile per-packet one-way delay: 198.481 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 281.26 Mbit/s
95th percentile per-packet one-way delay: 123.525 ms
Loss rate: 0.47%
```

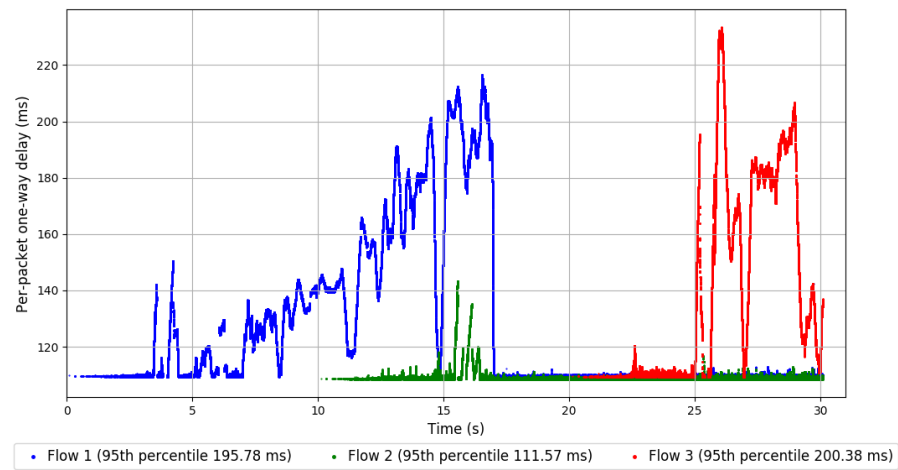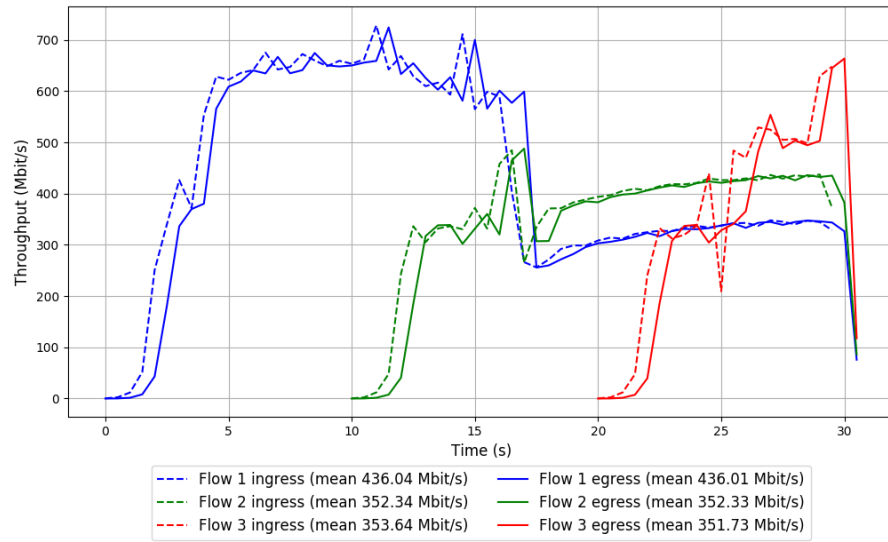Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-20 03:55:30
End at: 2018-12-20 03:56:00
Local clock offset: -0.102 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2018-12-20 06:38:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 787.54 Mbit/s
95th percentile per-packet one-way delay: 193.076 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 436.01 Mbit/s
95th percentile per-packet one-way delay: 195.782 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 352.33 Mbit/s
95th percentile per-packet one-way delay: 111.573 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 351.73 Mbit/s
95th percentile per-packet one-way delay: 200.384 ms
Loss rate: 0.55%
```

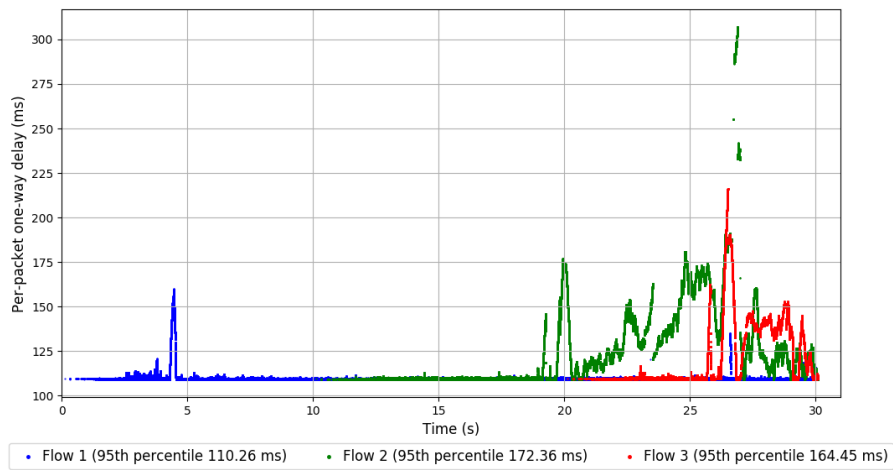## Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 436.04 Mbit/s) --- Flow 1 egress (mean 436.01 Mbit/s)
Flow 2 ingress (mean 352.34 Mbit/s) --- Flow 2 egress (mean 352.33 Mbit/s)
Flow 3 ingress (mean 353.64 Mbit/s) --- Flow 3 egress (mean 351.73 Mbit/s)

Flow 1 (95th percentile 195.78 ms) • Flow 2 (95th percentile 111.57 ms) • Flow 3 (95th percentile 200.38 ms)
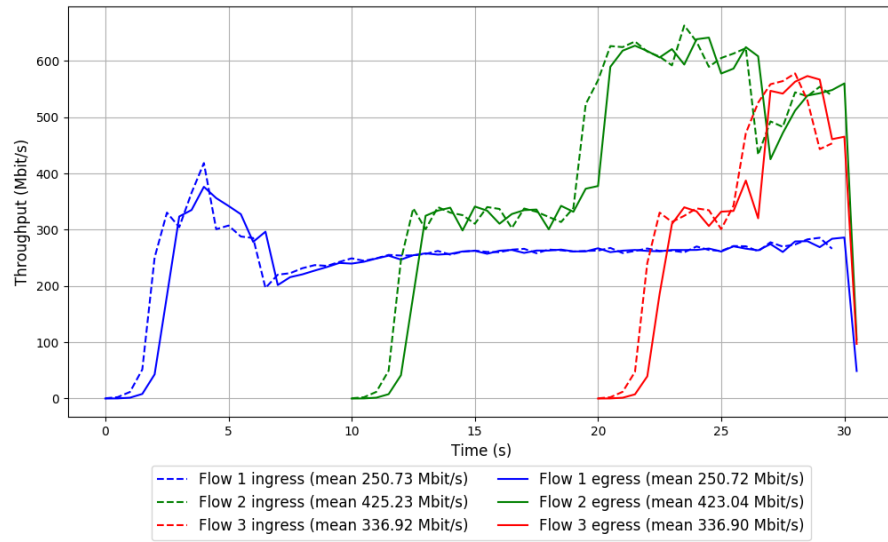
```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-20 04:30:31
End at: 2018-12-20 04:31:01
Local clock offset: 0.008 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2018-12-20 06:38:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 644.46 Mbit/s
95th percentile per-packet one-way delay: 164.586 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 250.72 Mbit/s
95th percentile per-packet one-way delay: 110.258 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 423.04 Mbit/s
95th percentile per-packet one-way delay: 172.361 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 336.90 Mbit/s
95th percentile per-packet one-way delay: 164.451 ms
Loss rate: 0.01%
```
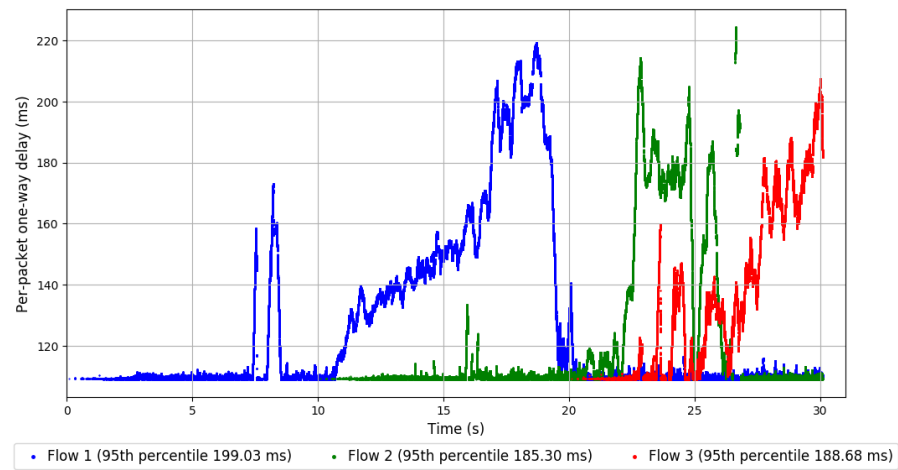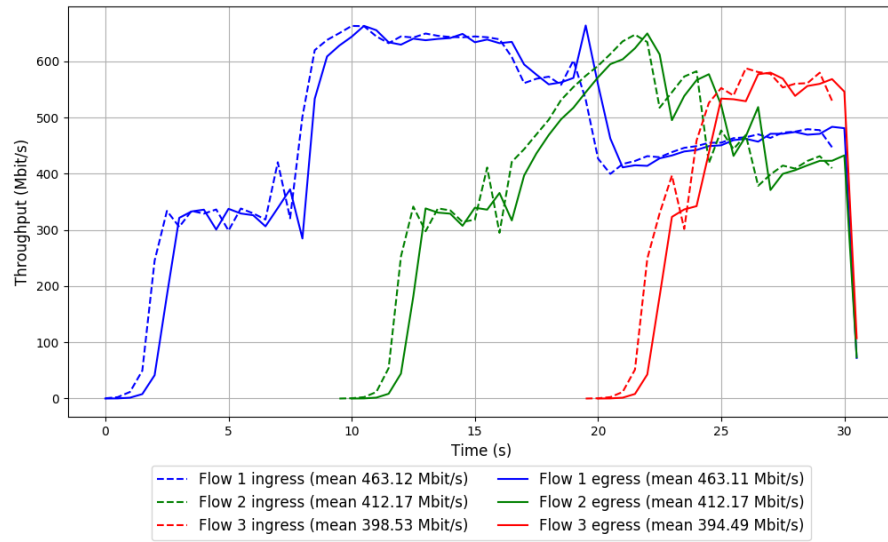
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 250.73 Mbit/s)   Flow 1 egress (mean 250.72 Mbit/s)
Flow 2 ingress (mean 425.23 Mbit/s)   Flow 2 egress (mean 423.04 Mbit/s)
Flow 3 ingress (mean 336.92 Mbit/s)   Flow 3 egress (mean 336.90 Mbit/s)

Flow 1 (95th percentile 110.26 ms)   Flow 2 (95th percentile 172.36 ms)   Flow 3 (95th percentile 164.45 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-20 05:06:27
End at: 2018-12-20 05:06:57
Local clock offset: 0.048 ms
Remote clock offset: -0.14 ms


# Below is generated by plot.py at 2018-12-20 06:38:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.13 Mbit/s
95th percentile per-packet one-way delay: 194.147 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 463.11 Mbit/s
95th percentile per-packet one-way delay: 199.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 412.17 Mbit/s
95th percentile per-packet one-way delay: 185.296 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 394.49 Mbit/s
95th percentile per-packet one-way delay: 188.682 ms
Loss rate: 0.99%
```

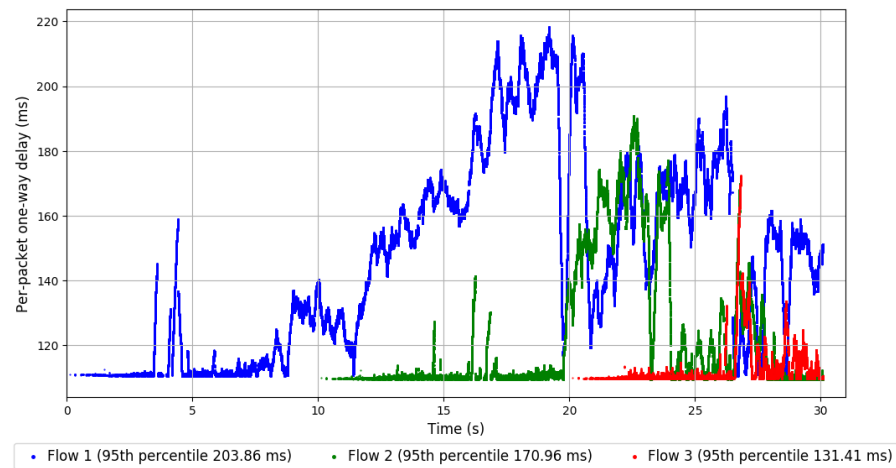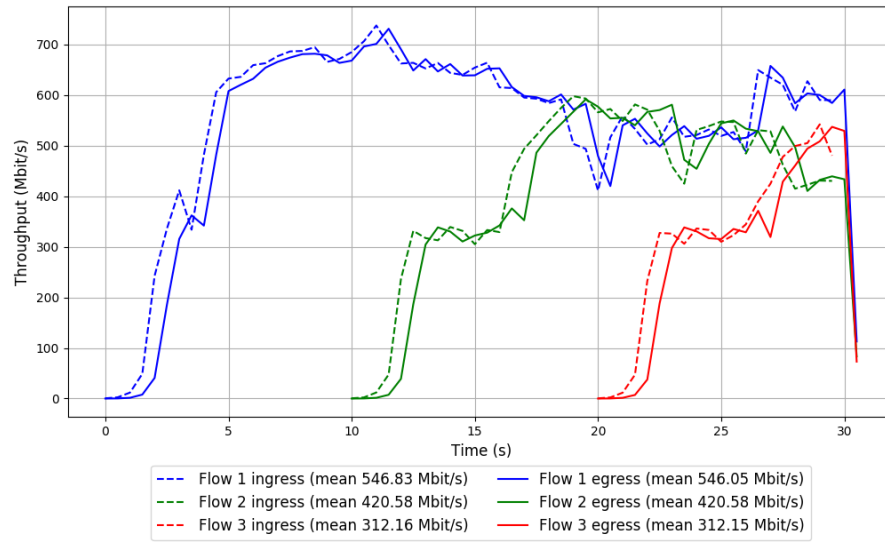# Run 4: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 463.12 Mbit/s)   —— Flow 1 egress (mean 463.11 Mbit/s)
- - - - Flow 2 ingress (mean 412.17 Mbit/s)   —— Flow 2 egress (mean 412.17 Mbit/s)
- - - - Flow 3 ingress (mean 398.53 Mbit/s)   —— Flow 3 egress (mean 394.49 Mbit/s)

• Flow 1 (95th percentile 199.03 ms)   • Flow 2 (95th percentile 185.30 ms)   • Flow 3 (95th percentile 188.68 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 05:41:25
End at: 2018-12-20 05:41:55
Local clock offset: -0.479 ms
Remote clock offset: -0.029 ms


# Below is generated by plot.py at 2018-12-20 06:38:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 929.92 Mbit/s
95th percentile per-packet one-way delay: 196.204 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 546.05 Mbit/s
95th percentile per-packet one-way delay: 203.861 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 420.58 Mbit/s
95th percentile per-packet one-way delay: 170.956 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 312.15 Mbit/s
95th percentile per-packet one-way delay: 131.406 ms
Loss rate: 0.00%
```

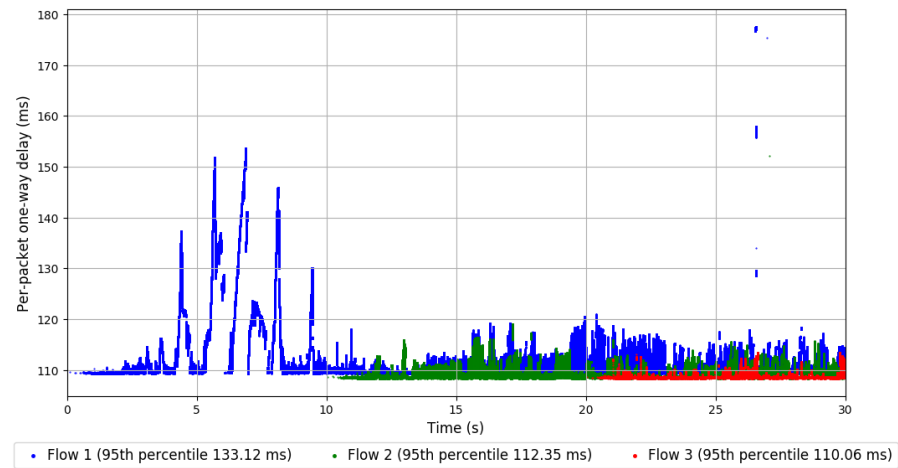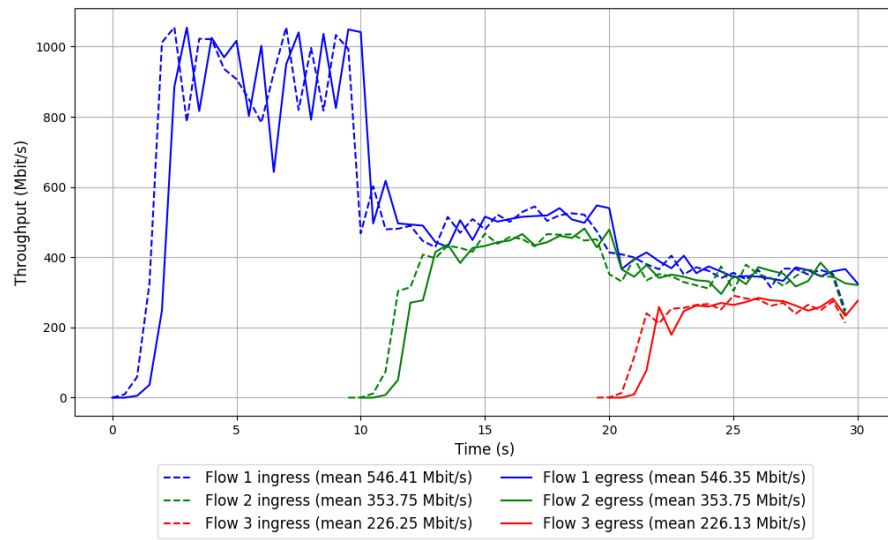Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 546.83 Mbit/s) --- Flow 1 egress (mean 546.05 Mbit/s)
Flow 2 ingress (mean 420.58 Mbit/s) --- Flow 2 egress (mean 420.58 Mbit/s)
Flow 3 ingress (mean 312.16 Mbit/s) --- Flow 3 egress (mean 312.15 Mbit/s)

Flow 1 (95th percentile 203.86 ms)   Flow 2 (95th percentile 170.96 ms)   Flow 3 (95th percentile 131.41 ms)
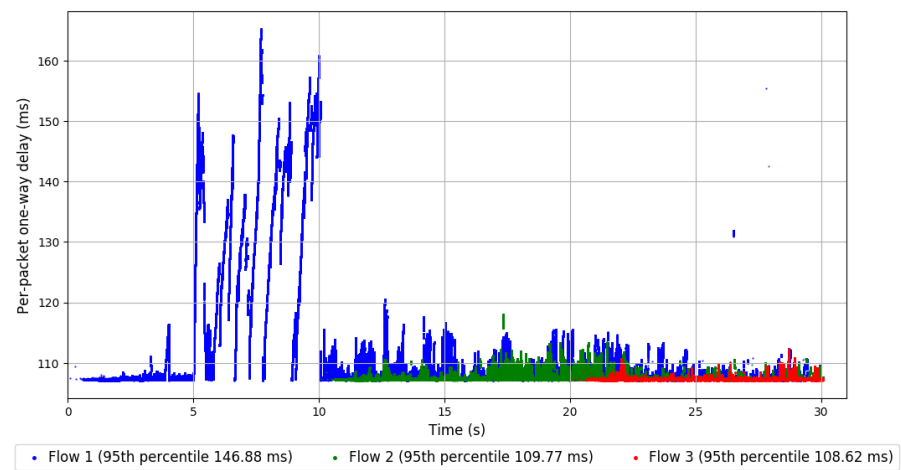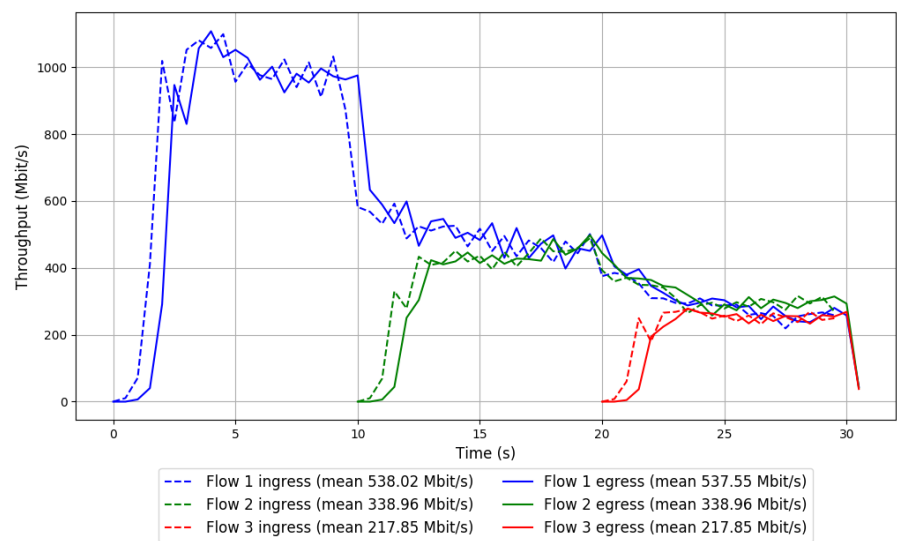
```
Run 1: Statistics of FillP

Start at: 2018-12-20 03:19:01
End at: 2018-12-20 03:19:31
Local clock offset: -0.15 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-12-20 06:40:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 857.39 Mbit/s
95th percentile per-packet one-way delay: 124.623 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 546.35 Mbit/s
95th percentile per-packet one-way delay: 133.122 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 353.75 Mbit/s
95th percentile per-packet one-way delay: 112.346 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 226.13 Mbit/s
95th percentile per-packet one-way delay: 110.064 ms
Loss rate: 0.05%
```
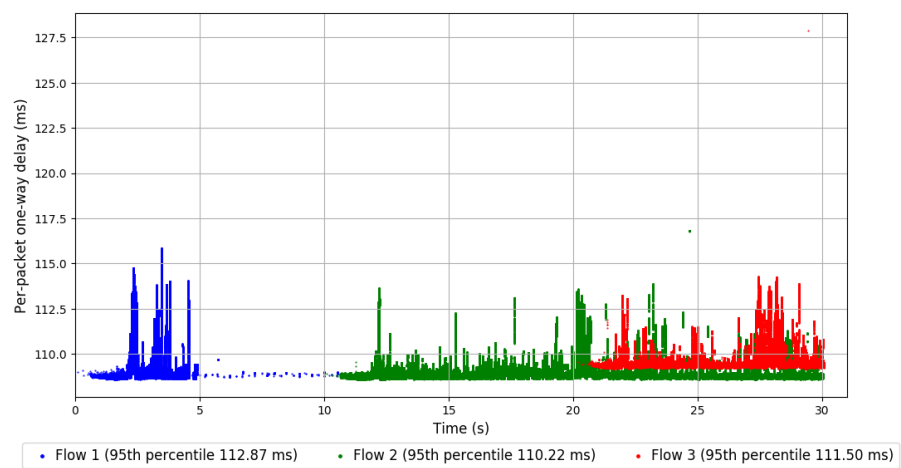
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-20 03:53:32
End at: 2018-12-20 03:54:02
Local clock offset: 0.745 ms
Remote clock offset: -0.429 ms


# Below is generated by plot.py at 2018-12-20 06:48:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 835.60 Mbit/s
95th percentile per-packet one-way delay: 143.647 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 537.55 Mbit/s
95th percentile per-packet one-way delay: 146.883 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 338.96 Mbit/s
95th percentile per-packet one-way delay: 109.772 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 217.85 Mbit/s
95th percentile per-packet one-way delay: 108.619 ms
Loss rate: 0.00%
```

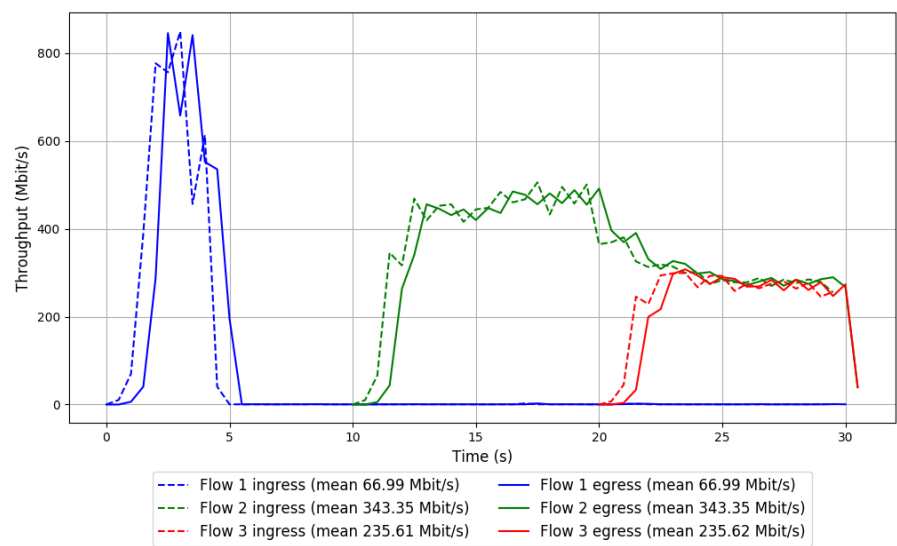# Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-12-20 04:28:52
End at: 2018-12-20 04:29:22
Local clock offset: -0.702 ms
Remote clock offset: -0.419 ms

# Below is generated by plot.py at 2018-12-20 06:48:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 373.05 Mbit/s
95th percentile per-packet one-way delay: 111.042 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.99 Mbit/s
95th percentile per-packet one-way delay: 112.866 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 343.35 Mbit/s
95th percentile per-packet one-way delay: 110.223 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 235.62 Mbit/s
95th percentile per-packet one-way delay: 111.500 ms
Loss rate: 0.00%
```
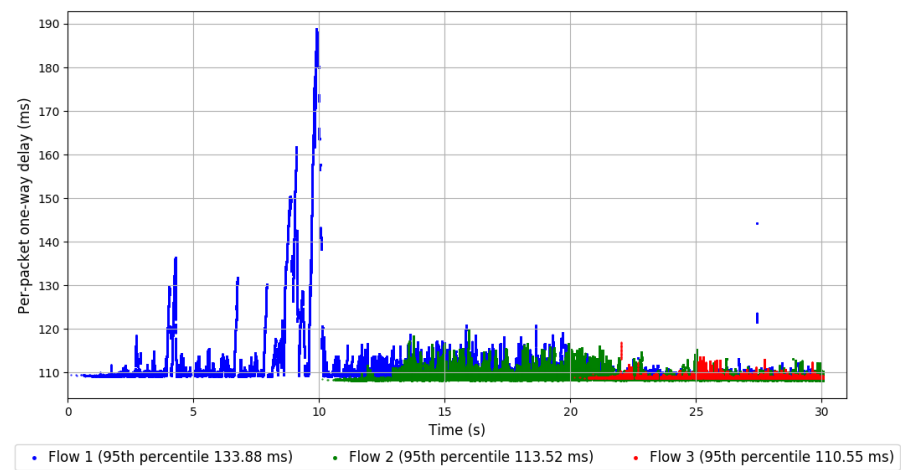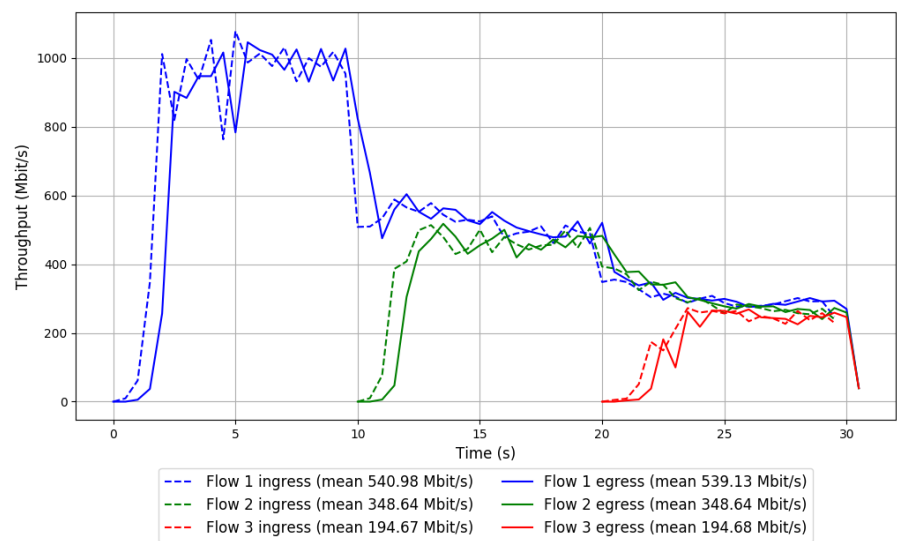
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 66.99 Mbit/s)   Flow 1 egress (mean 66.99 Mbit/s)
Flow 2 ingress (mean 343.35 Mbit/s)   Flow 2 egress (mean 343.35 Mbit/s)
Flow 3 ingress (mean 235.61 Mbit/s)   Flow 3 egress (mean 235.62 Mbit/s)

Flow 1 (95th percentile 112.87 ms)   Flow 2 (95th percentile 110.22 ms)   Flow 3 (95th percentile 111.50 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-20 05:04:29
End at: 2018-12-20 05:04:59
Local clock offset: 0.108 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-12-20 06:51:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 835.55 Mbit/s
95th percentile per-packet one-way delay: 125.163 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 539.13 Mbit/s
95th percentile per-packet one-way delay: 133.881 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 348.64 Mbit/s
95th percentile per-packet one-way delay: 113.521 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 194.68 Mbit/s
95th percentile per-packet one-way delay: 110.549 ms
Loss rate: 0.00%
```
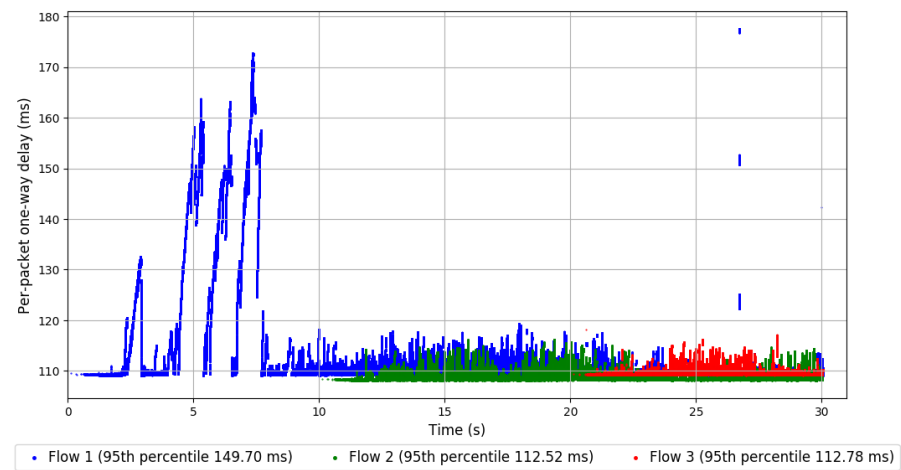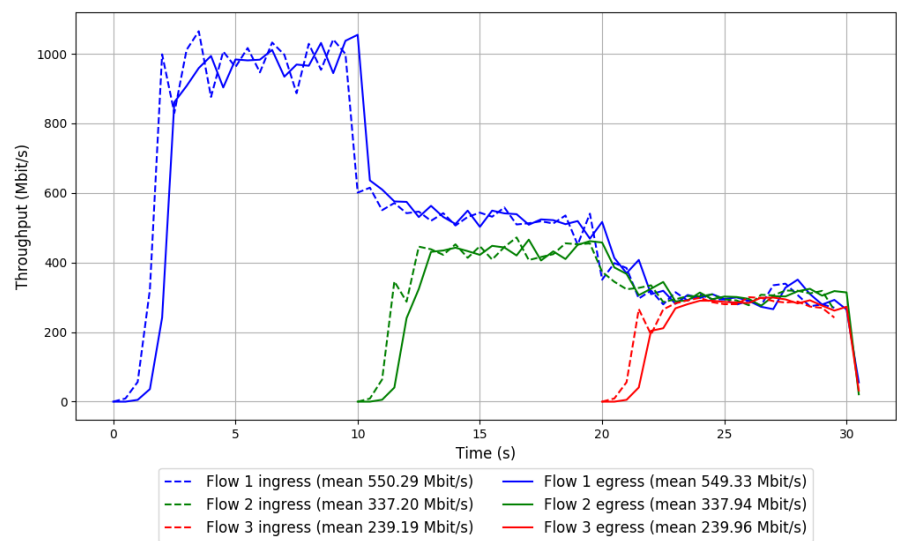
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 540.98 Mbit/s) — Flow 1 egress (mean 539.13 Mbit/s)
Flow 2 ingress (mean 348.64 Mbit/s) — Flow 2 egress (mean 348.64 Mbit/s)
Flow 3 ingress (mean 194.67 Mbit/s) — Flow 3 egress (mean 194.68 Mbit/s)

Flow 1 (95th percentile 133.88 ms) — Flow 2 (95th percentile 113.52 ms) — Flow 3 (95th percentile 110.55 ms)

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```
Run 5: Statistics of FillP

Start at: 2018-12-20 05:39:27
End at: 2018-12-20 05:39:57
Local clock offset: 0.064 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-12-20 06:53:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.46 Mbit/s
95th percentile per-packet one-way delay: 146.395 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 549.33 Mbit/s
95th percentile per-packet one-way delay: 149.699 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 337.94 Mbit/s
95th percentile per-packet one-way delay: 112.520 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 239.96 Mbit/s
95th percentile per-packet one-way delay: 112.782 ms
Loss rate: 0.00%
```
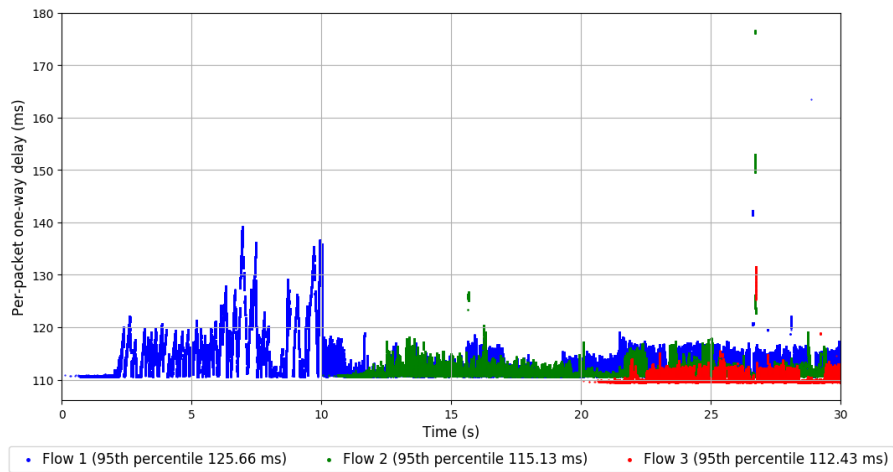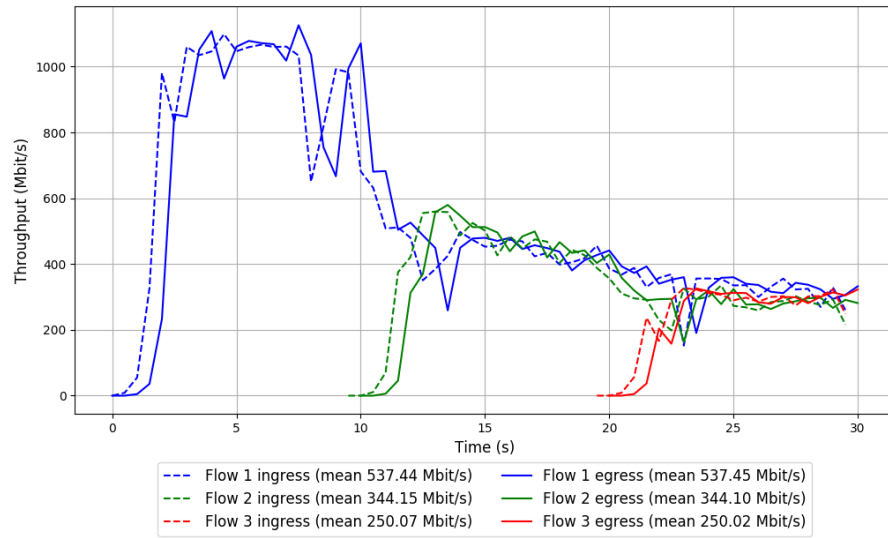
Run 5: Report of FillP — Data Link

- - - Flow 1 ingress (mean 550.29 Mbit/s)   —— Flow 1 egress (mean 549.33 Mbit/s)
- - - Flow 2 ingress (mean 337.20 Mbit/s)   —— Flow 2 egress (mean 337.94 Mbit/s)
- - - Flow 3 ingress (mean 239.19 Mbit/s)   —— Flow 3 egress (mean 239.96 Mbit/s)

• Flow 1 (95th percentile 149.70 ms)   • Flow 2 (95th percentile 112.52 ms)   • Flow 3 (95th percentile 112.78 ms)

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```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-20 02:51:36
End at: 2018-12-20 02:52:06
Local clock offset: -1.169 ms
Remote clock offset: 0.105 ms


# Below is generated by plot.py at 2018-12-20 06:54:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 849.56 Mbit/s
95th percentile per-packet one-way delay: 123.127 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 537.45 Mbit/s
95th percentile per-packet one-way delay: 125.656 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 344.10 Mbit/s
95th percentile per-packet one-way delay: 115.134 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 250.02 Mbit/s
95th percentile per-packet one-way delay: 112.430 ms
Loss rate: 0.00%
```
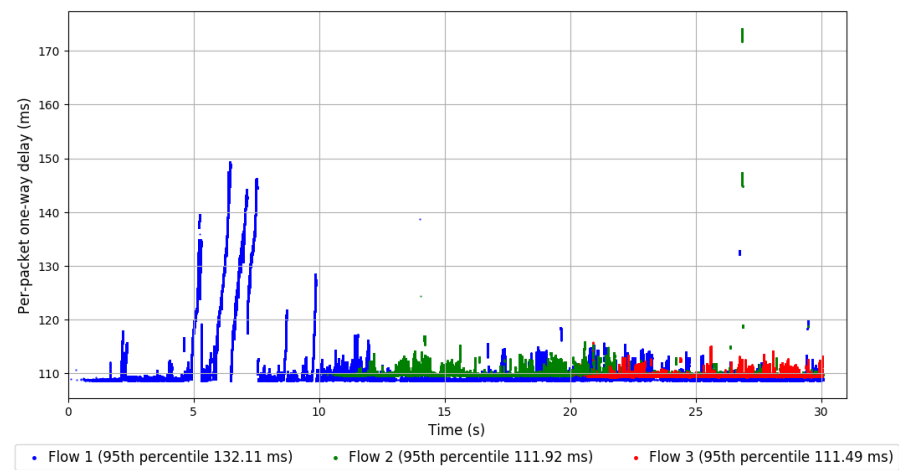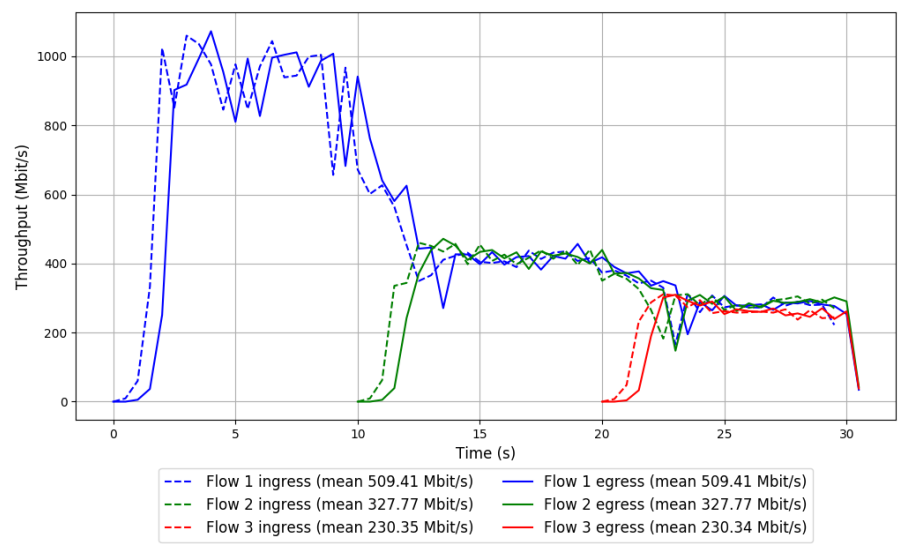
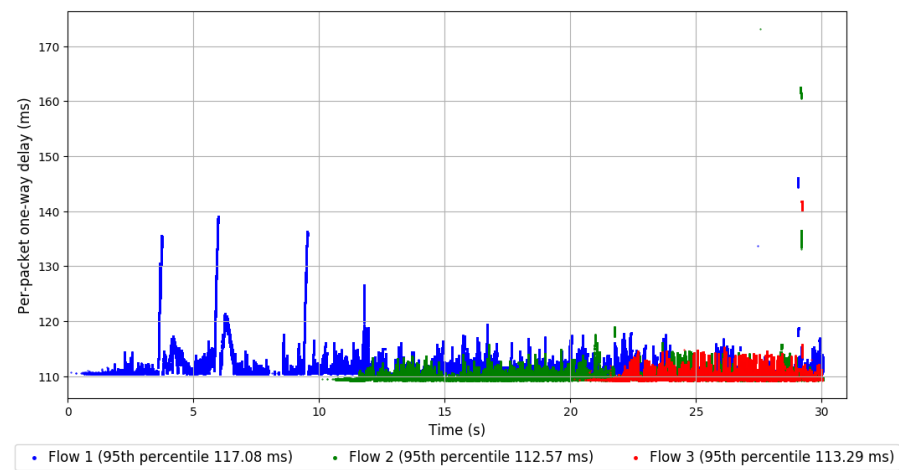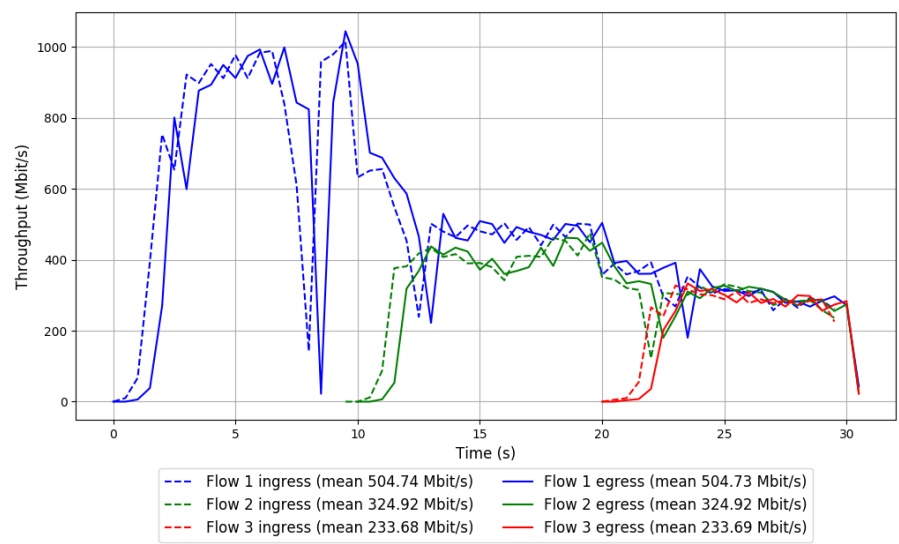Run 1: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 537.44 Mbit/s)   —— Flow 1 egress (mean 537.45 Mbit/s)
- - - - Flow 2 ingress (mean 344.15 Mbit/s)   —— Flow 2 egress (mean 344.10 Mbit/s)
- - - - Flow 3 ingress (mean 250.07 Mbit/s)   —— Flow 3 egress (mean 250.02 Mbit/s)

• Flow 1 (95th percentile 125.66 ms)   • Flow 2 (95th percentile 115.13 ms)   • Flow 3 (95th percentile 112.43 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-20 03:26:25
End at: 2018-12-20 03:26:55
Local clock offset: -0.152 ms
Remote clock offset: 0.174 ms


# Below is generated by plot.py at 2018-12-20 06:56:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 803.90 Mbit/s
95th percentile per-packet one-way delay: 126.318 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 509.41 Mbit/s
95th percentile per-packet one-way delay: 132.109 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 327.77 Mbit/s
95th percentile per-packet one-way delay: 111.918 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 230.34 Mbit/s
95th percentile per-packet one-way delay: 111.492 ms
Loss rate: 0.00%
```

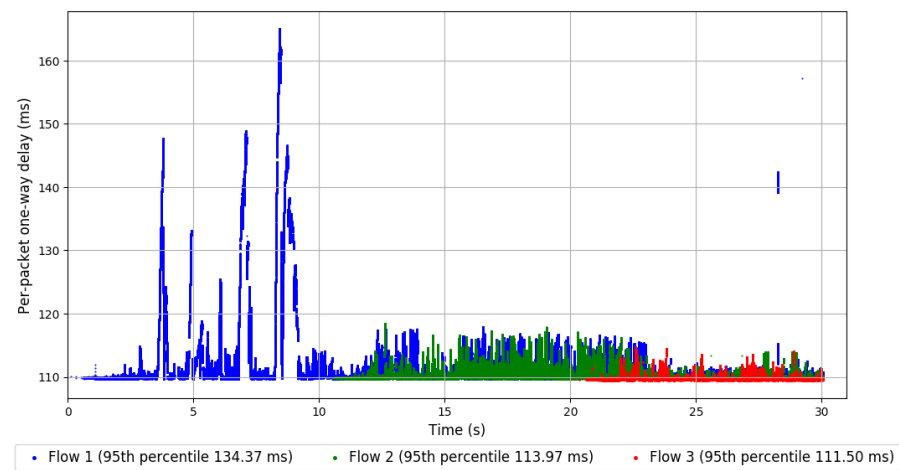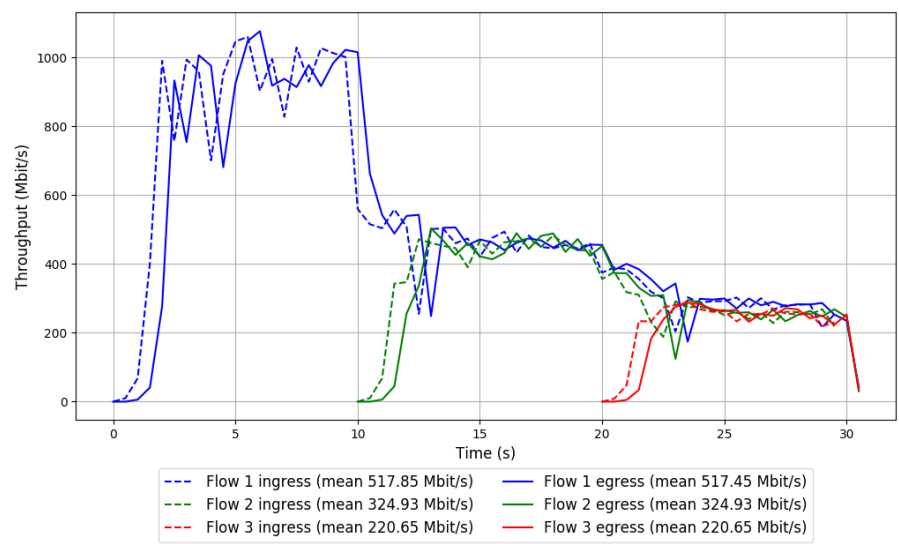Run 2: Report of FillP-Sheep — Data Link

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```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-20 04:01:14
End at: 2018-12-20 04:01:44
Local clock offset: -1.164 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-12-20 06:56:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 798.37 Mbit/s
95th percentile per-packet one-way delay: 115.573 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 504.73 Mbit/s
95th percentile per-packet one-way delay: 117.085 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 324.92 Mbit/s
95th percentile per-packet one-way delay: 112.568 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 233.69 Mbit/s
95th percentile per-packet one-way delay: 113.294 ms
Loss rate: 0.00%
```
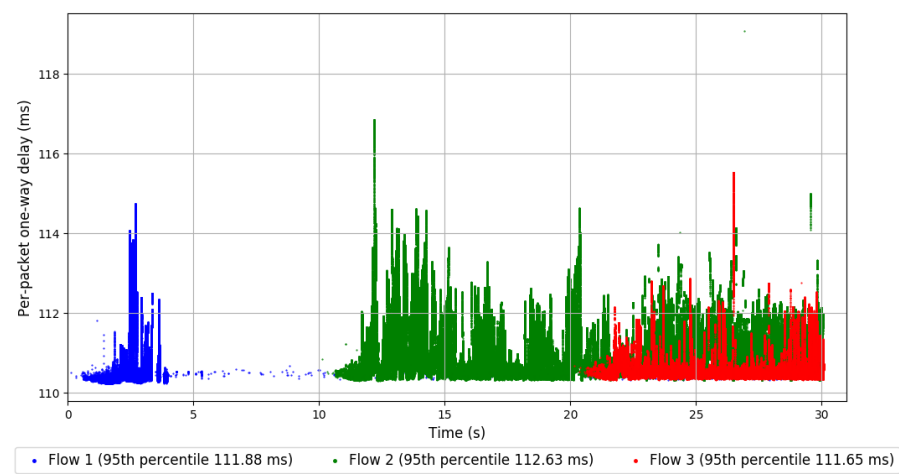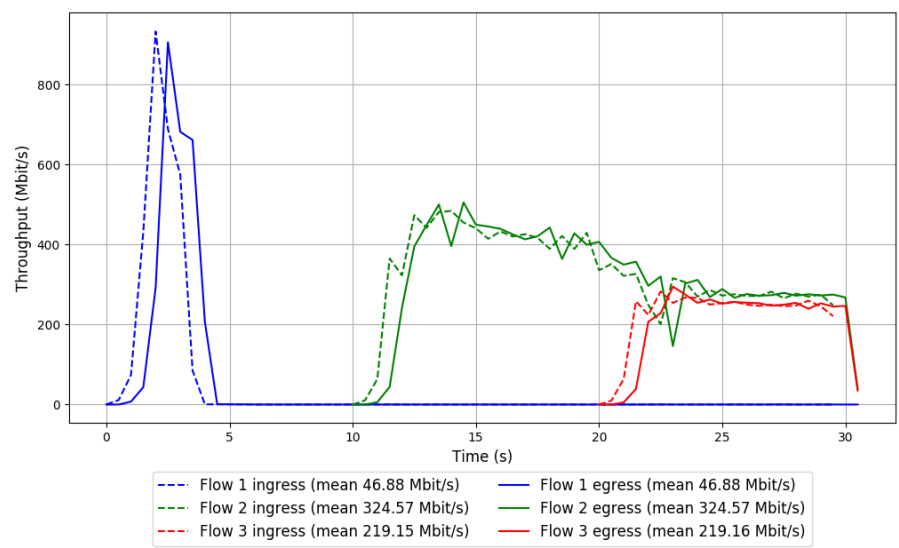
Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 504.74 Mbit/s)   Flow 1 egress (mean 504.73 Mbit/s)
Flow 2 ingress (mean 324.92 Mbit/s)   Flow 2 egress (mean 324.92 Mbit/s)
Flow 3 ingress (mean 233.68 Mbit/s)   Flow 3 egress (mean 233.69 Mbit/s)

Flow 1 (95th percentile 117.08 ms)   Flow 2 (95th percentile 112.57 ms)   Flow 3 (95th percentile 113.29 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-20 04:36:07
End at: 2018-12-20 04:36:37
Local clock offset: -0.324 ms
Remote clock offset: -0.008 ms


# Below is generated by plot.py at 2018-12-20 06:58:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 806.57 Mbit/s
95th percentile per-packet one-way delay: 125.359 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 517.45 Mbit/s
95th percentile per-packet one-way delay: 134.372 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 324.93 Mbit/s
95th percentile per-packet one-way delay: 113.973 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 220.65 Mbit/s
95th percentile per-packet one-way delay: 111.503 ms
Loss rate: 0.00%
```

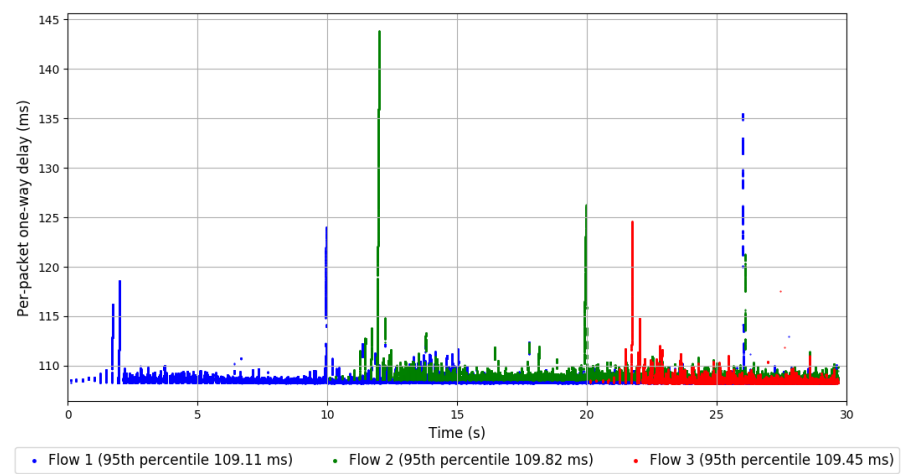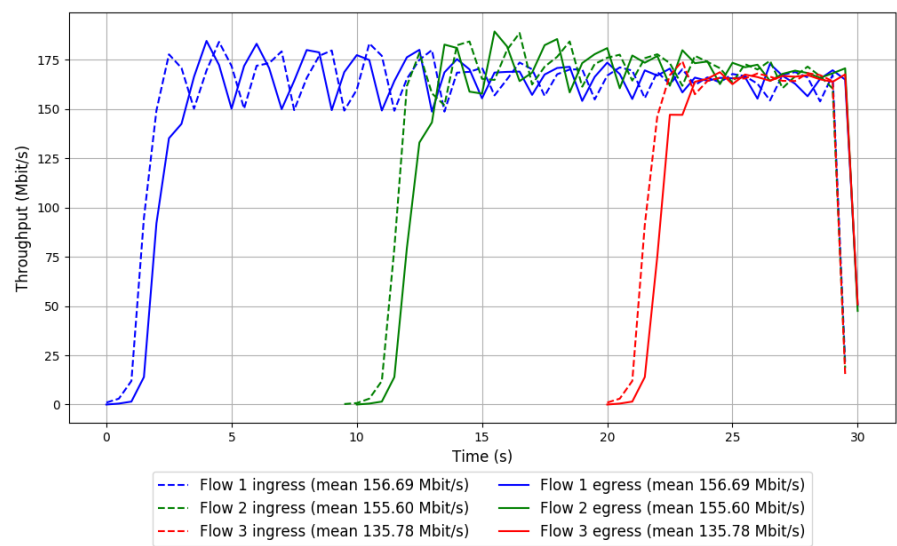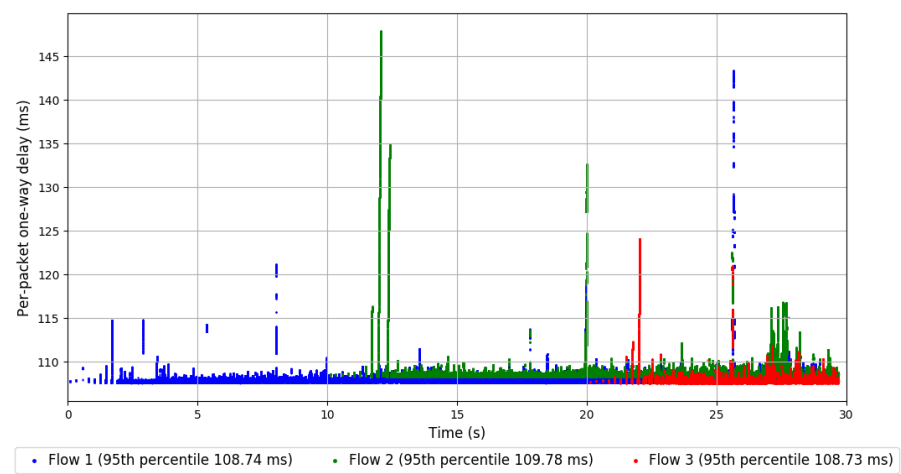## Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 517.85 Mbit/s) — Flow 1 egress (mean 517.45 Mbit/s)
Flow 2 ingress (mean 324.93 Mbit/s) — Flow 2 egress (mean 324.93 Mbit/s)
Flow 3 ingress (mean 220.65 Mbit/s) — Flow 3 egress (mean 220.65 Mbit/s)

Flow 1 (95th percentile 134.37 ms) • Flow 2 (95th percentile 113.97 ms) • Flow 3 (95th percentile 111.50 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 05:12:13
End at: 2018-12-20 05:12:43
Local clock offset: -0.754 ms
Remote clock offset: 0.247 ms


# Below is generated by plot.py at 2018-12-20 06:58:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 335.53 Mbit/s
95th percentile per-packet one-way delay: 112.398 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 46.88 Mbit/s
95th percentile per-packet one-way delay: 111.880 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 324.57 Mbit/s
95th percentile per-packet one-way delay: 112.627 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 219.16 Mbit/s
95th percentile per-packet one-way delay: 111.653 ms
Loss rate: 0.00%
```
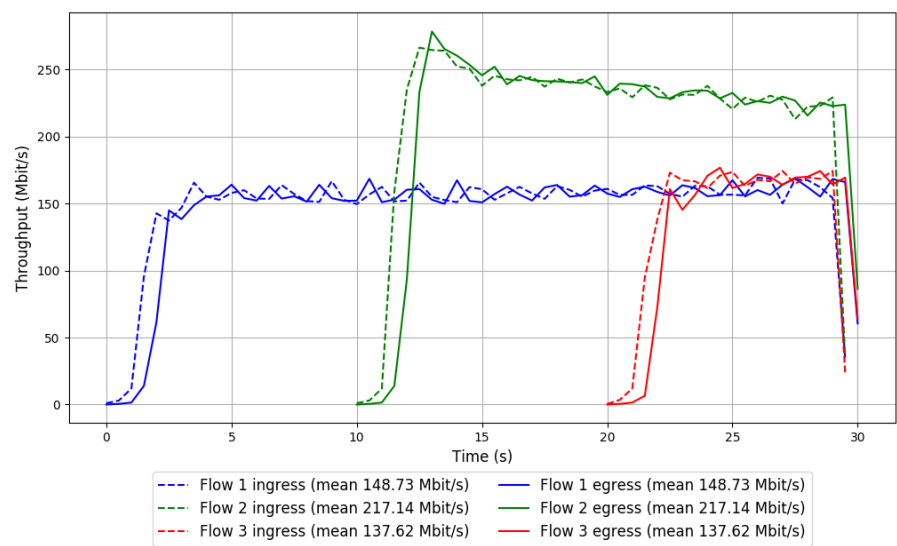
Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-12-20 03:05:00
End at: 2018-12-20 03:05:30
Local clock offset: 0.893 ms
Remote clock offset: 0.165 ms


# Below is generated by plot.py at 2018-12-20 06:59:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 303.57 Mbit/s
95th percentile per-packet one-way delay: 109.470 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 156.69 Mbit/s
95th percentile per-packet one-way delay: 109.105 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 155.60 Mbit/s
95th percentile per-packet one-way delay: 109.819 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 135.78 Mbit/s
95th percentile per-packet one-way delay: 109.449 ms
Loss rate: 0.00%
```
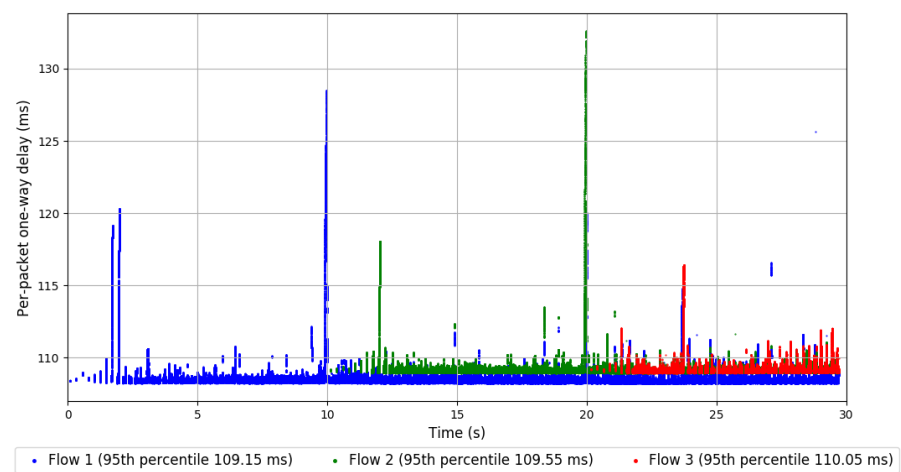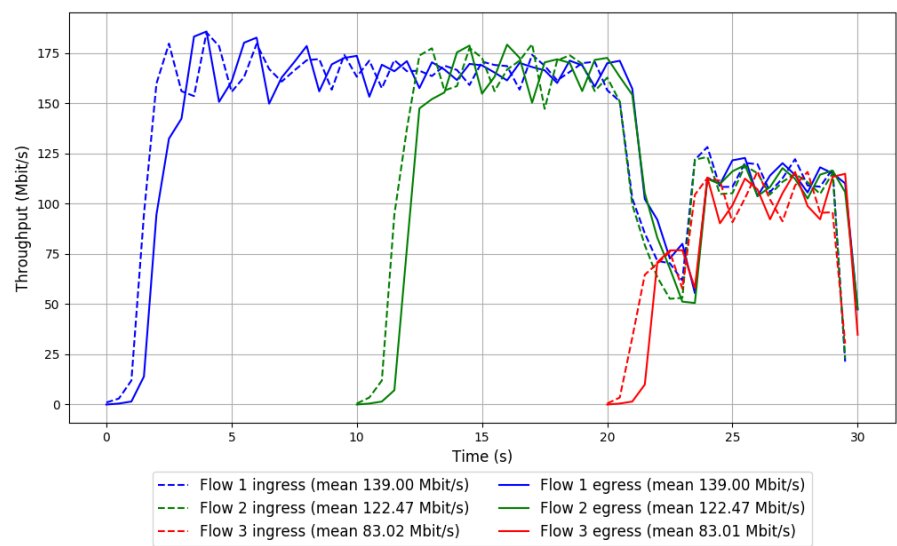
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-20 03:39:41
End at: 2018-12-20 03:40:11
Local clock offset: 0.453 ms
Remote clock offset: -0.253 ms

# Below is generated by plot.py at 2018-12-20 07:01:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 336.90 Mbit/s
95th percentile per-packet one-way delay: 109.169 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 148.73 Mbit/s
95th percentile per-packet one-way delay: 108.743 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 217.14 Mbit/s
95th percentile per-packet one-way delay: 109.785 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 137.62 Mbit/s
95th percentile per-packet one-way delay: 108.732 ms
Loss rate: 0.00%
```
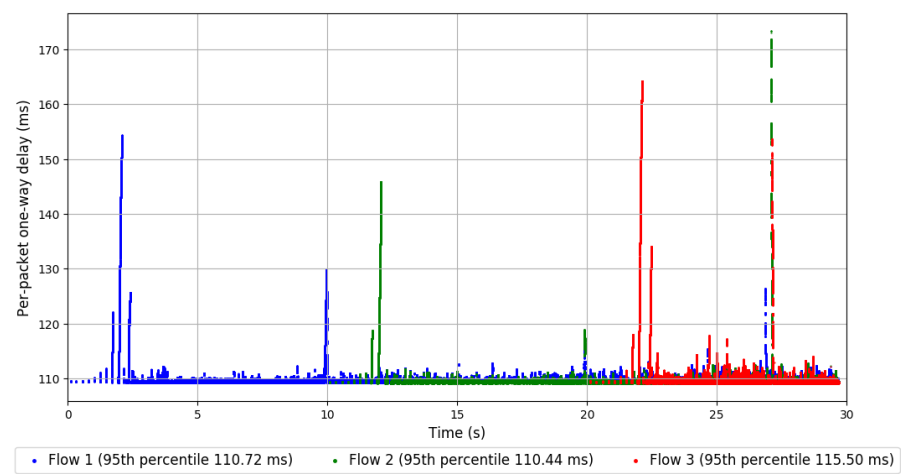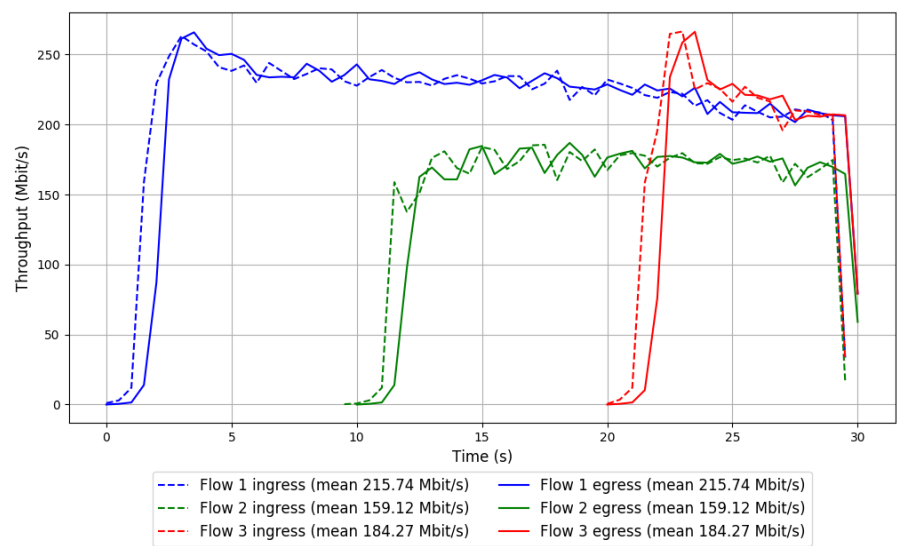
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-12-20 04:14:46
End at: 2018-12-20 04:15:16
Local clock offset: 0.069 ms
Remote clock offset: 0.049 ms


# Below is generated by plot.py at 2018-12-20 07:01:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 246.75 Mbit/s
95th percentile per-packet one-way delay: 109.487 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 139.00 Mbit/s
95th percentile per-packet one-way delay: 109.148 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 122.47 Mbit/s
95th percentile per-packet one-way delay: 109.545 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 83.01 Mbit/s
95th percentile per-packet one-way delay: 110.051 ms
Loss rate: 0.00%
```
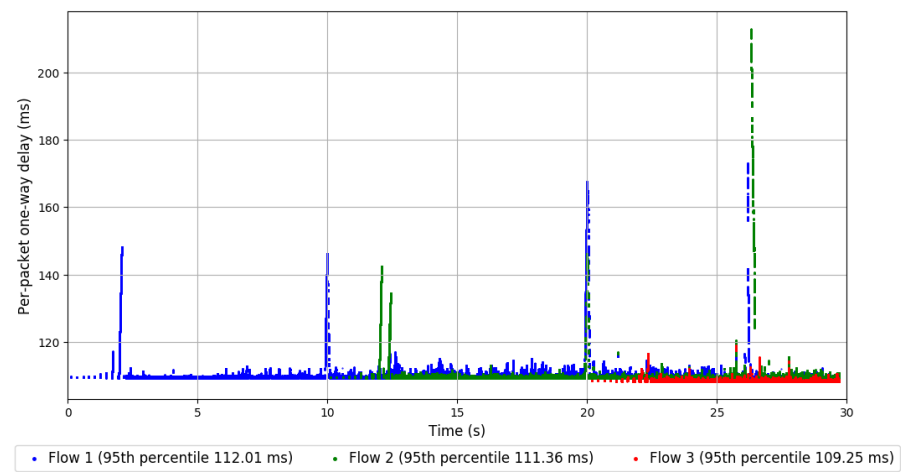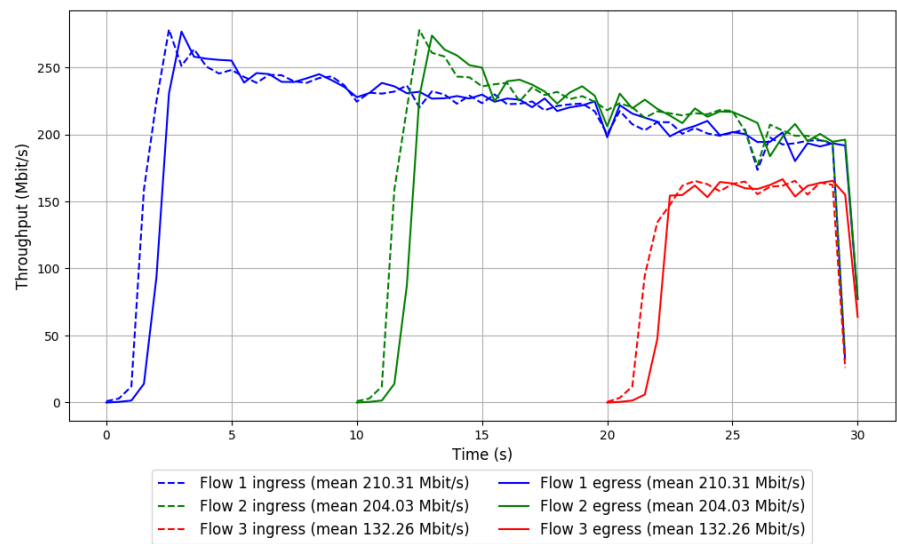
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-20 04:49:42
End at: 2018-12-20 04:50:12
Local clock offset: -0.036 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-12-20 07:06:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 380.63 Mbit/s
95th percentile per-packet one-way delay: 110.960 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.74 Mbit/s
95th percentile per-packet one-way delay: 110.721 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 159.12 Mbit/s
95th percentile per-packet one-way delay: 110.441 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 184.27 Mbit/s
95th percentile per-packet one-way delay: 115.504 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-20 05:25:25
End at: 2018-12-20 05:25:55
Local clock offset: -0.107 ms
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2018-12-20 07:06:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 387.81 Mbit/s
95th percentile per-packet one-way delay: 111.715 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 210.31 Mbit/s
95th percentile per-packet one-way delay: 112.010 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.03 Mbit/s
95th percentile per-packet one-way delay: 111.364 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 132.26 Mbit/s
95th percentile per-packet one-way delay: 109.247 ms
Loss rate: 0.00%
```
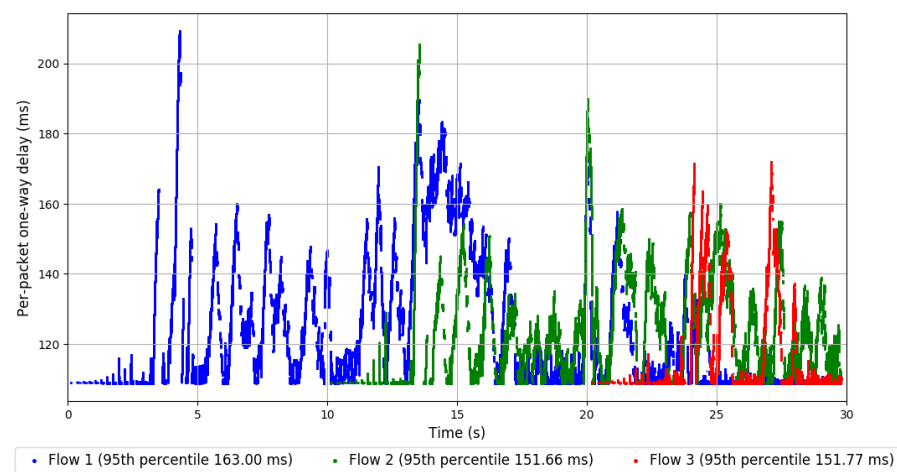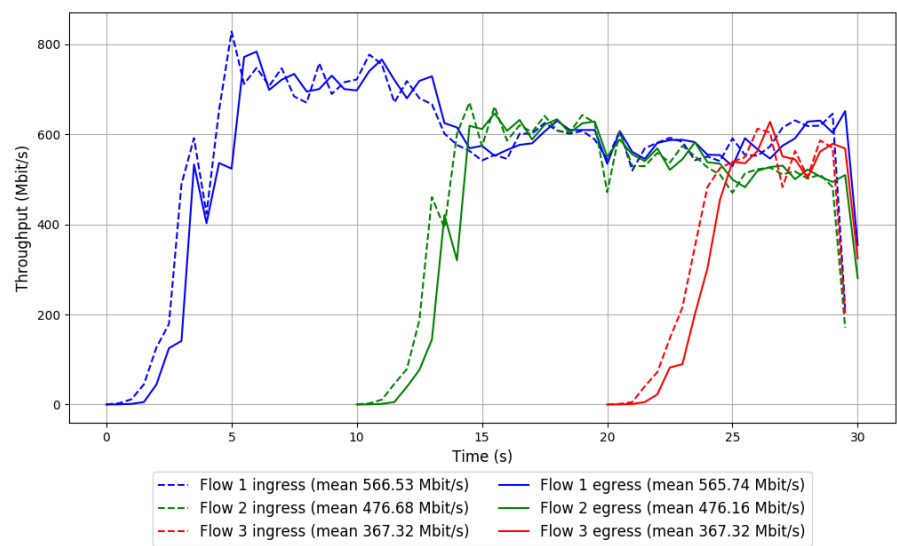
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-20 03:11:16
End at: 2018-12-20 03:11:46
Local clock offset: 0.228 ms
Remote clock offset: 0.094 ms


# Below is generated by plot.py at 2018-12-20 07:15:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 999.95 Mbit/s
95th percentile per-packet one-way delay: 159.371 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 565.74 Mbit/s
95th percentile per-packet one-way delay: 162.998 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 476.16 Mbit/s
95th percentile per-packet one-way delay: 151.658 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 367.32 Mbit/s
95th percentile per-packet one-way delay: 151.773 ms
Loss rate: 0.00%
```
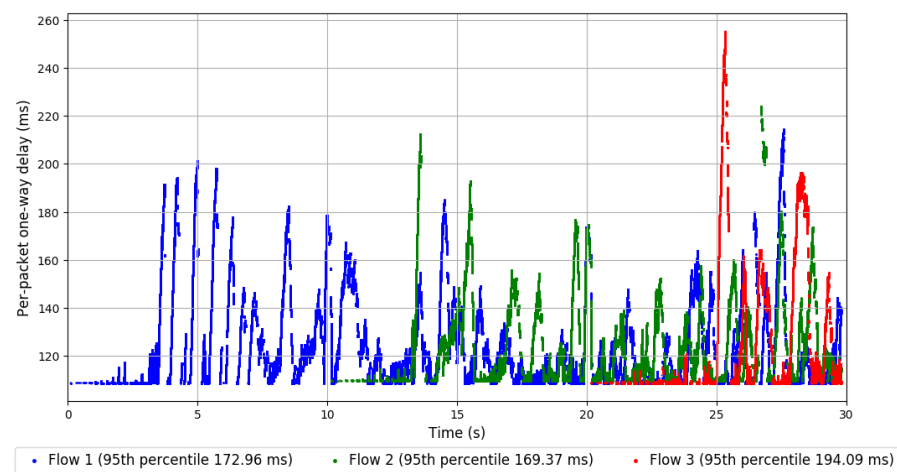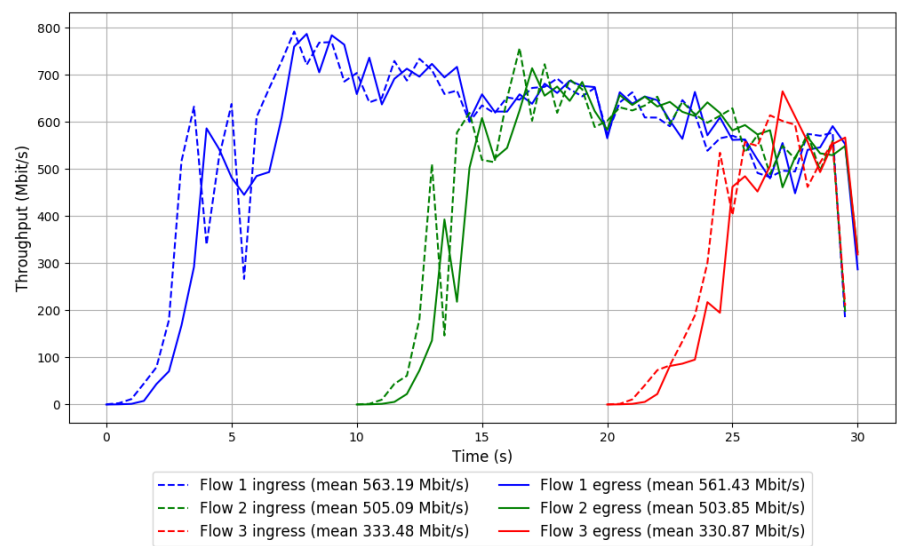
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-20 03:45:56
End at: 2018-12-20 03:46:26
Local clock offset: -0.152 ms
Remote clock offset: 0.187 ms


# Below is generated by plot.py at 2018-12-20 07:15:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1002.21 Mbit/s
95th percentile per-packet one-way delay: 174.089 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 561.43 Mbit/s
95th percentile per-packet one-way delay: 172.958 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 503.85 Mbit/s
95th percentile per-packet one-way delay: 169.369 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 330.87 Mbit/s
95th percentile per-packet one-way delay: 194.086 ms
Loss rate: 0.79%
```
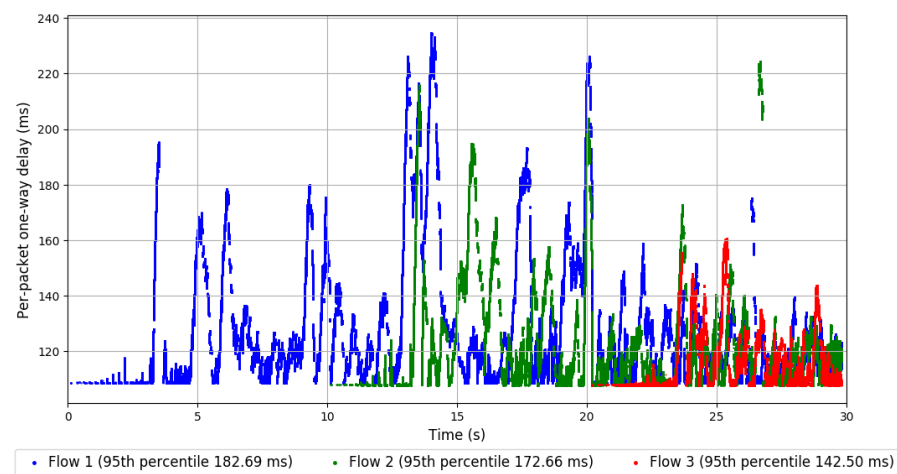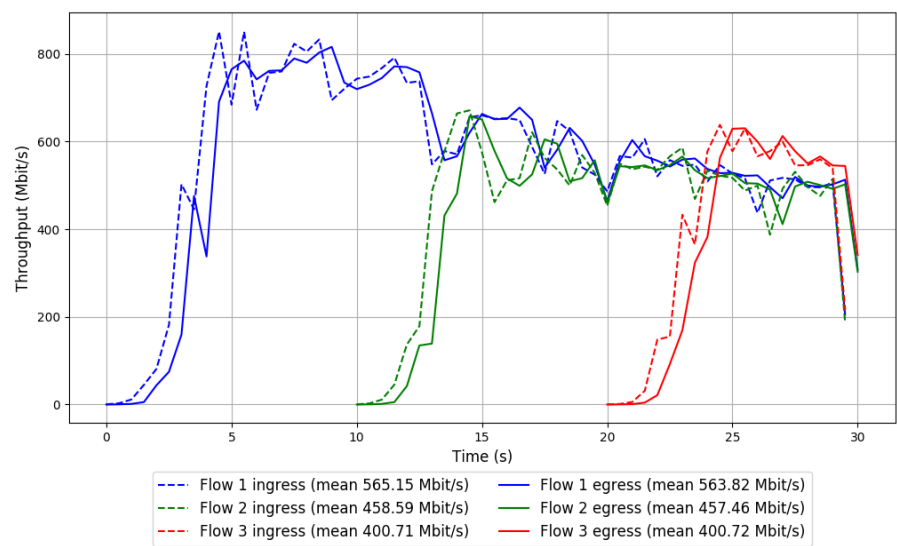
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-20 04:21:08
End at: 2018-12-20 04:21:38
Local clock offset: 0.541 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-12-20 07:18:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 996.85 Mbit/s
95th percentile per-packet one-way delay: 177.064 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 563.82 Mbit/s
95th percentile per-packet one-way delay: 182.689 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 457.46 Mbit/s
95th percentile per-packet one-way delay: 172.664 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 400.72 Mbit/s
95th percentile per-packet one-way delay: 142.505 ms
Loss rate: 0.00%
```
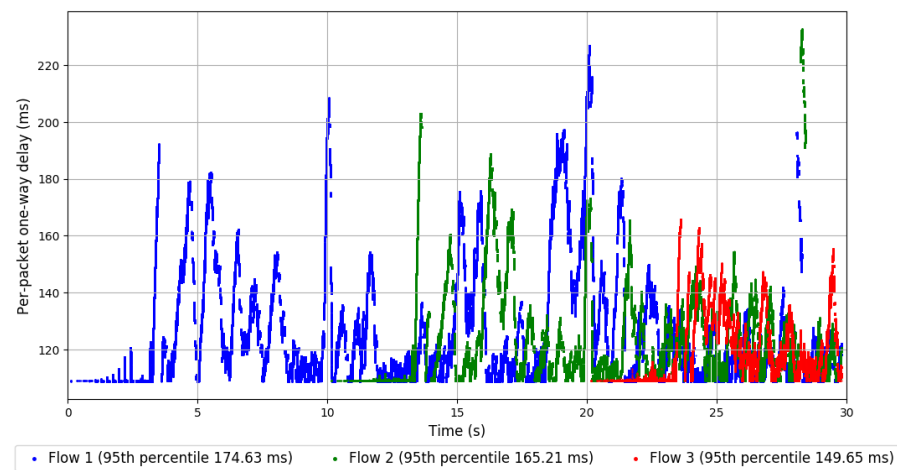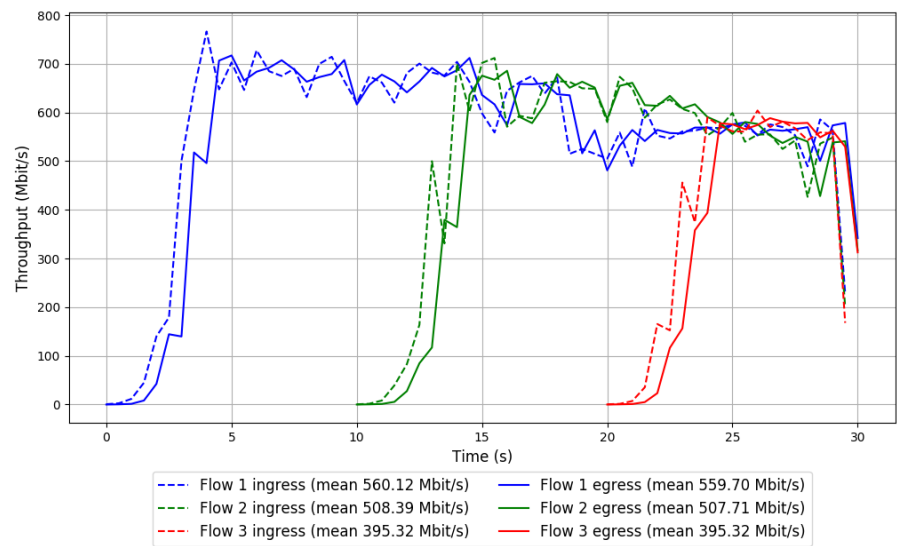
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-20 04:56:26
End at: 2018-12-20 04:56:56
Local clock offset: 0.053 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-12-20 07:19:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1024.21 Mbit/s
95th percentile per-packet one-way delay: 170.196 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 559.70 Mbit/s
95th percentile per-packet one-way delay: 174.627 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 507.71 Mbit/s
95th percentile per-packet one-way delay: 165.211 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 395.32 Mbit/s
95th percentile per-packet one-way delay: 149.650 ms
Loss rate: 0.00%
```
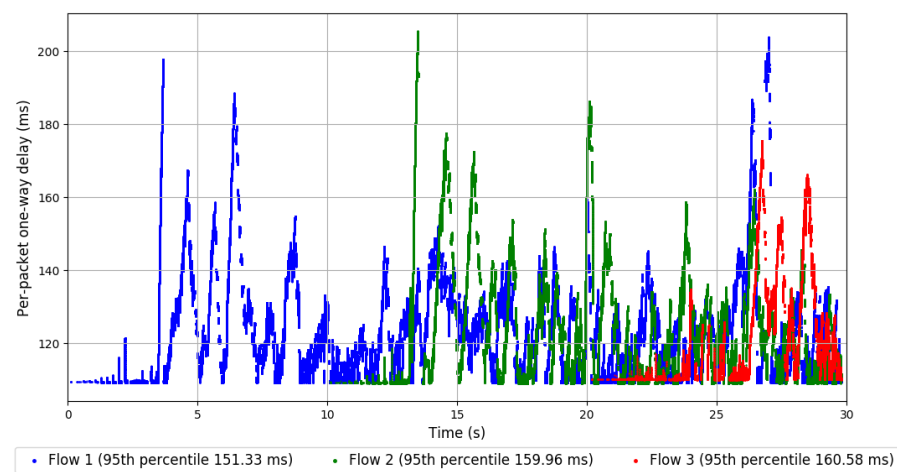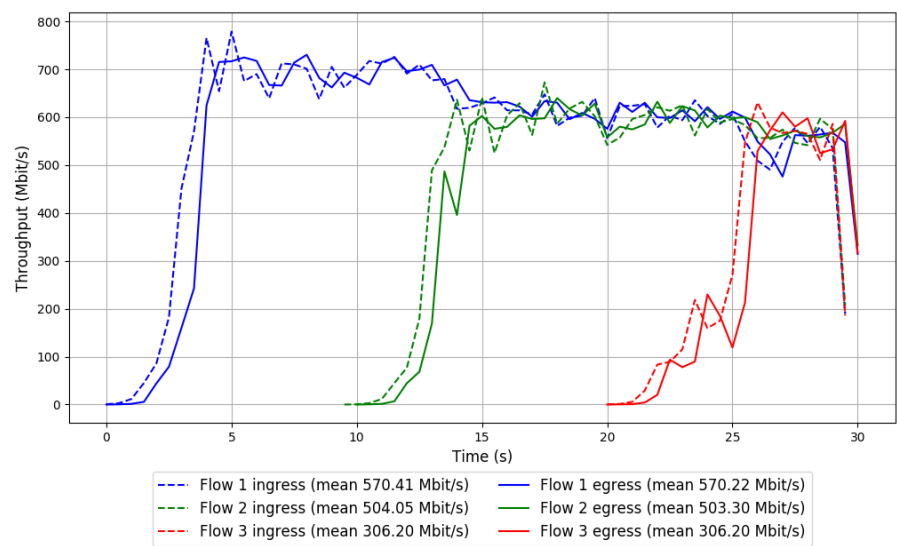
Run 4: Report of Indigo-MusesD — Data Link

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```
Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 05:31:44
End at: 2018-12-20 05:32:15
Local clock offset: -0.871 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2018-12-20 07:19:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1003.20 Mbit/s
95th percentile per-packet one-way delay: 156.860 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 570.22 Mbit/s
95th percentile per-packet one-way delay: 151.326 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 503.30 Mbit/s
95th percentile per-packet one-way delay: 159.957 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 306.20 Mbit/s
95th percentile per-packet one-way delay: 160.579 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesD — Data Link
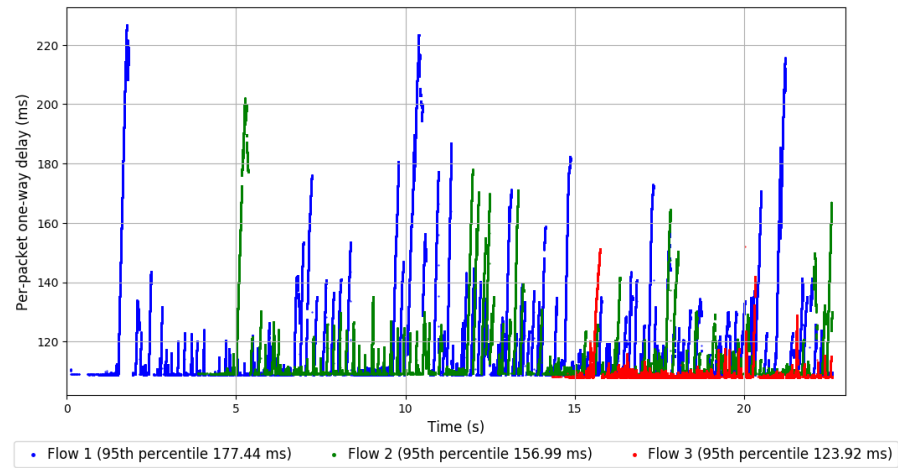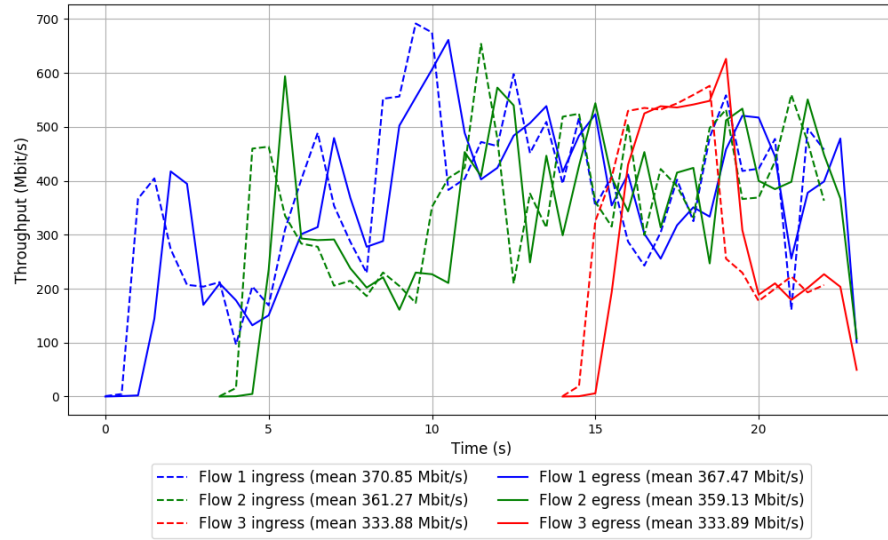
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-20 03:03:09
End at: 2018-12-20 03:03:39
Local clock offset: 0.025 ms
Remote clock offset: -0.213 ms

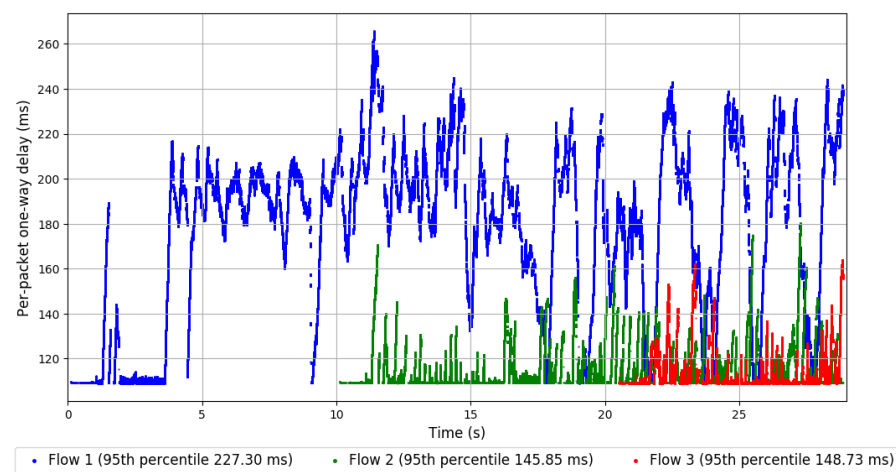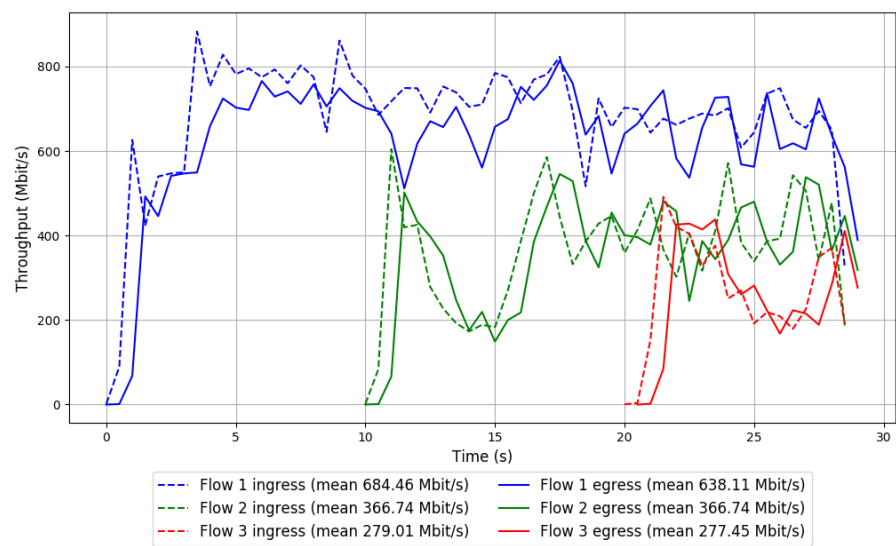# Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-20 03:37:32
End at: 2018-12-20 03:38:02
Local clock offset: -0.244 ms
Remote clock offset: -0.245 ms

# Below is generated by plot.py at 2018-12-20 07:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 957.71 Mbit/s
95th percentile per-packet one-way delay: 222.353 ms
Loss rate: 4.62%
-- Flow 1:
Average throughput: 638.11 Mbit/s
95th percentile per-packet one-way delay: 227.299 ms
Loss rate: 6.78%
-- Flow 2:
Average throughput: 366.74 Mbit/s
95th percentile per-packet one-way delay: 145.846 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 277.45 Mbit/s
95th percentile per-packet one-way delay: 148.733 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 684.46 Mbit/s) --- Flow 1 egress (mean 638.11 Mbit/s)
Flow 2 ingress (mean 366.74 Mbit/s) --- Flow 2 egress (mean 366.74 Mbit/s)
Flow 3 ingress (mean 279.01 Mbit/s) --- Flow 3 egress (mean 277.45 Mbit/s)

Flow 1 (95th percentile 227.30 ms)   Flow 2 (95th percentile 145.85 ms)   Flow 3 (95th percentile 148.73 ms)

```
Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-20 04:12:44
End at: 2018-12-20 04:13:14
Local clock offset: -0.227 ms
Remote clock offset: 0.39 ms


# Below is generated by plot.py at 2018-12-20 07:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 682.88 Mbit/s
95th percentile per-packet one-way delay: 159.963 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 355.39 Mbit/s
95th percentile per-packet one-way delay: 170.578 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 363.83 Mbit/s
95th percentile per-packet one-way delay: 158.146 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 295.66 Mbit/s
95th percentile per-packet one-way delay: 137.712 ms
Loss rate: 0.00%
```
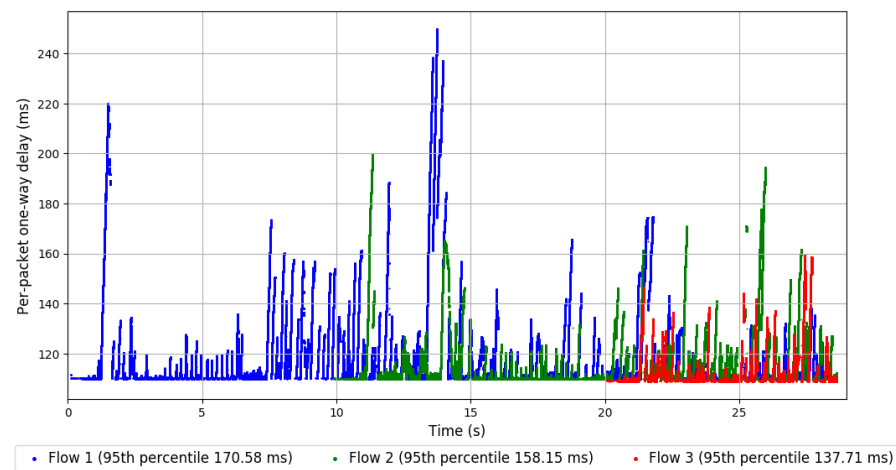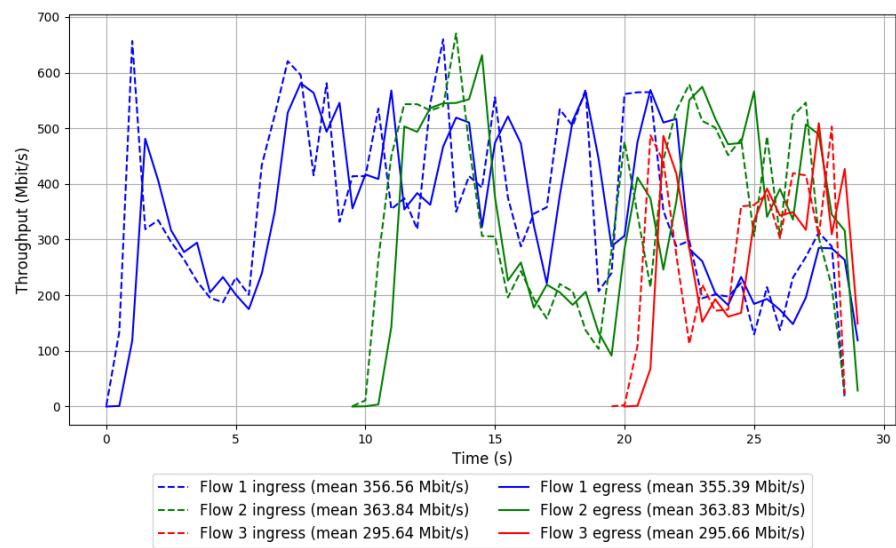
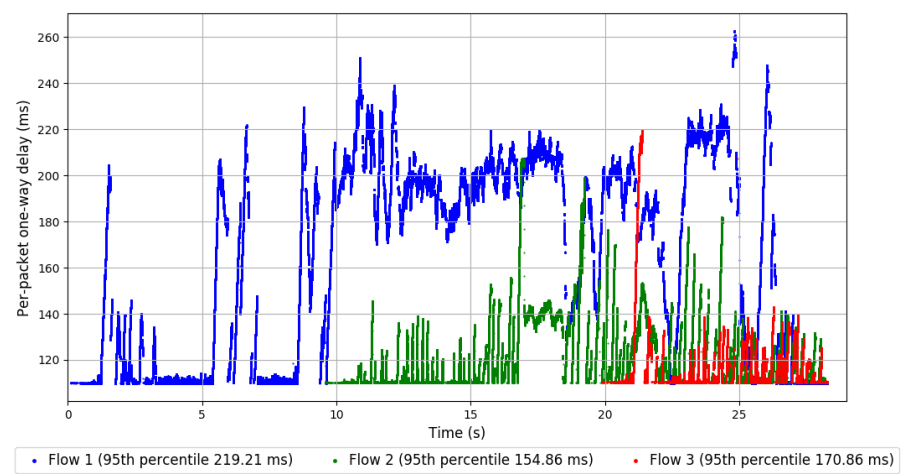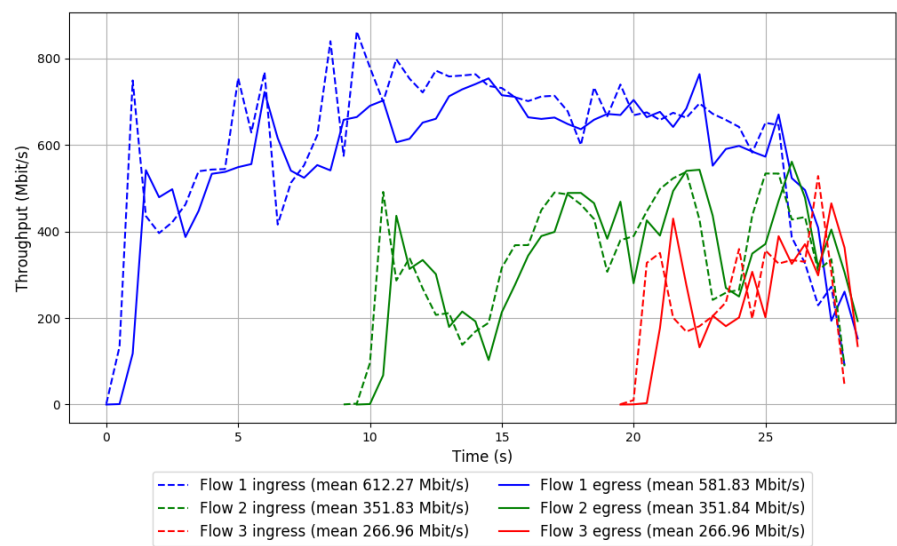Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-20 04:47:35
End at: 2018-12-20 04:48:05
Local clock offset: -0.744 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2018-12-20 07:27:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 894.38 Mbit/s
95th percentile per-packet one-way delay: 216.183 ms
Loss rate: 3.29%
-- Flow 1:
Average throughput: 581.83 Mbit/s
95th percentile per-packet one-way delay: 219.209 ms
Loss rate: 4.97%
-- Flow 2:
Average throughput: 351.84 Mbit/s
95th percentile per-packet one-way delay: 154.856 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 266.96 Mbit/s
95th percentile per-packet one-way delay: 170.858 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 612.27 Mbit/s) --- Flow 1 egress (mean 581.83 Mbit/s)
Flow 2 ingress (mean 351.83 Mbit/s) --- Flow 2 egress (mean 351.84 Mbit/s)
Flow 3 ingress (mean 266.96 Mbit/s) --- Flow 3 egress (mean 266.96 Mbit/s)

Flow 1 (95th percentile 219.21 ms) • Flow 2 (95th percentile 154.86 ms) • Flow 3 (95th percentile 170.86 ms)
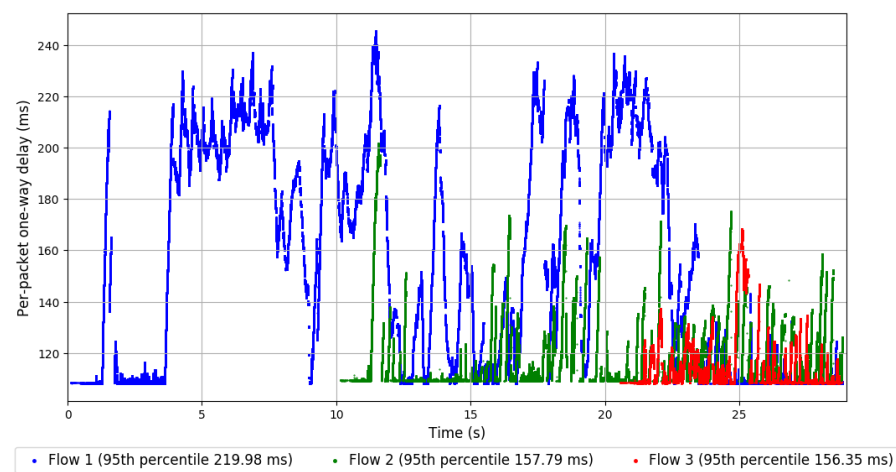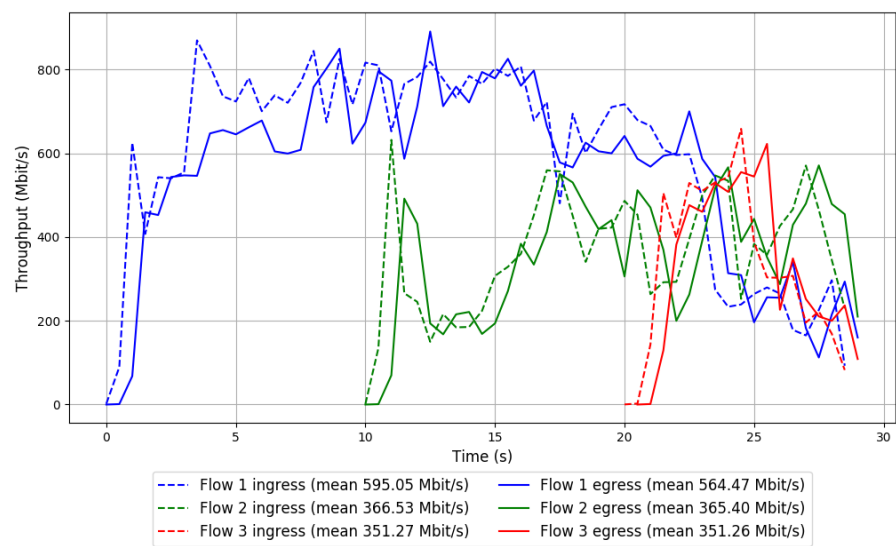
```
Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 05:23:17
End at: 2018-12-20 05:23:47
Local clock offset: -0.089 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-12-20 07:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 902.88 Mbit/s
95th percentile per-packet one-way delay: 215.932 ms
Loss rate: 3.35%
-- Flow 1:
Average throughput: 564.47 Mbit/s
95th percentile per-packet one-way delay: 219.976 ms
Loss rate: 5.14%
-- Flow 2:
Average throughput: 365.40 Mbit/s
95th percentile per-packet one-way delay: 157.789 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 351.26 Mbit/s
95th percentile per-packet one-way delay: 156.352 ms
Loss rate: 0.00%
```
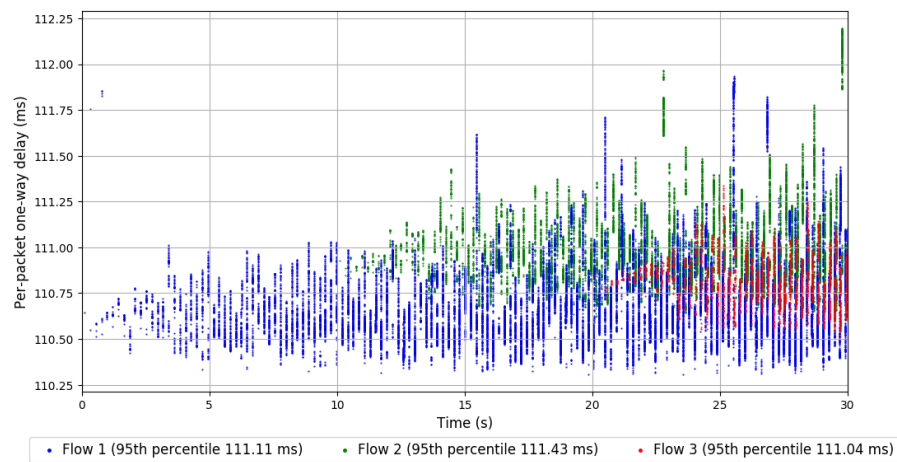
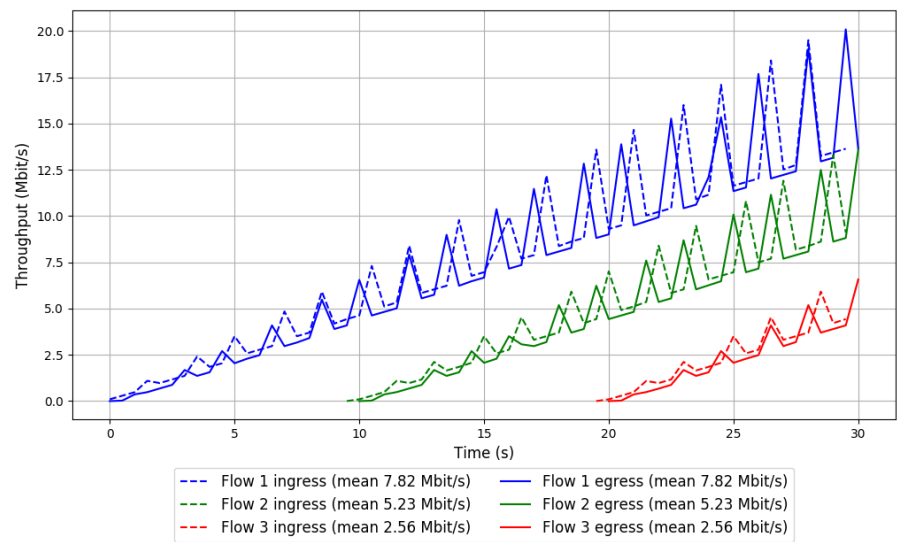Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-20 02:53:32
End at: 2018-12-20 02:54:02
Local clock offset: -1.273 ms
Remote clock offset: 0.122 ms


# Below is generated by plot.py at 2018-12-20 07:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.13 Mbit/s
95th percentile per-packet one-way delay: 111.250 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 111.108 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 111.429 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 111.037 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

- - - - Flow 1 ingress (mean 7.82 Mbit/s)   ——— Flow 1 egress (mean 7.82 Mbit/s)
- - - - Flow 2 ingress (mean 5.23 Mbit/s)   ——— Flow 2 egress (mean 5.23 Mbit/s)
- - - - Flow 3 ingress (mean 2.56 Mbit/s)   ——— Flow 3 egress (mean 2.56 Mbit/s)

- Flow 1 (95th percentile 111.11 ms)   • Flow 2 (95th percentile 111.43 ms)   • Flow 3 (95th percentile 111.04 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-20 03:28:19
End at: 2018-12-20 03:28:49
Local clock offset: -0.198 ms
Remote clock offset: -0.16 ms

# Below is generated by plot.py at 2018-12-20 07:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.19 Mbit/s
95th percentile per-packet one-way delay: 110.445 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 110.211 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.21 Mbit/s
95th percentile per-packet one-way delay: 110.722 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 110.112 ms
Loss rate: 0.00%
```
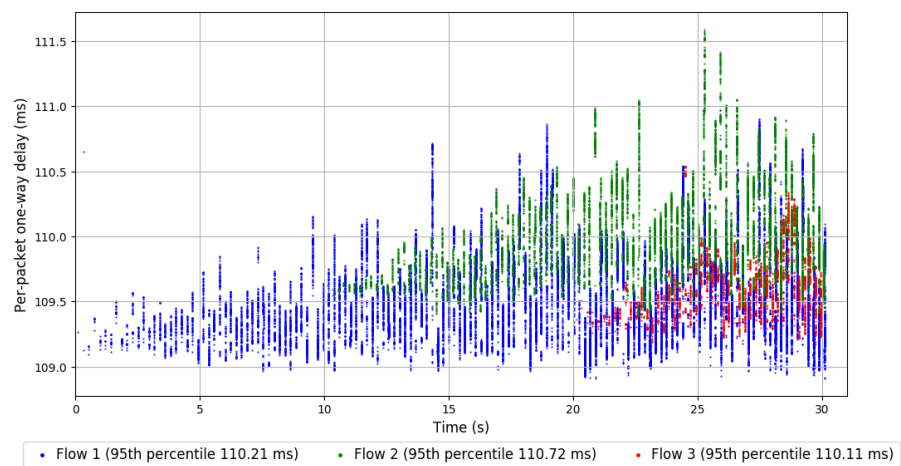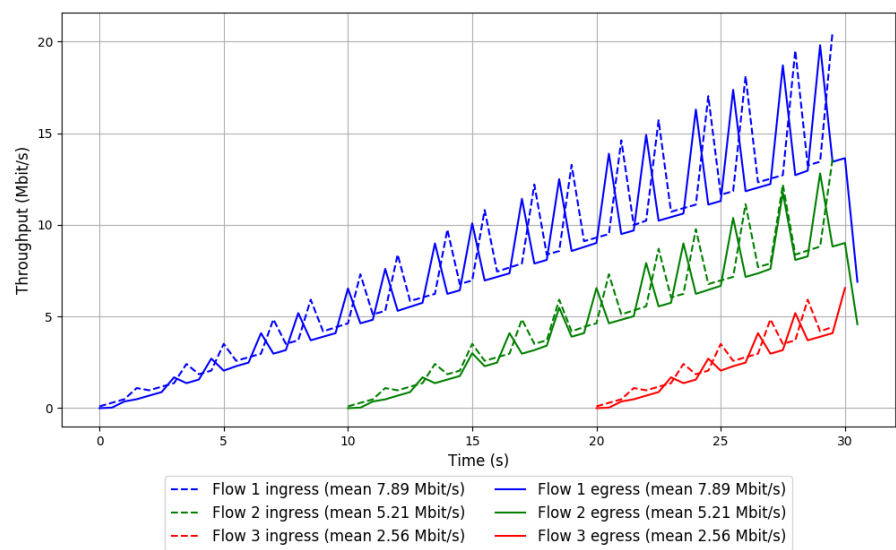
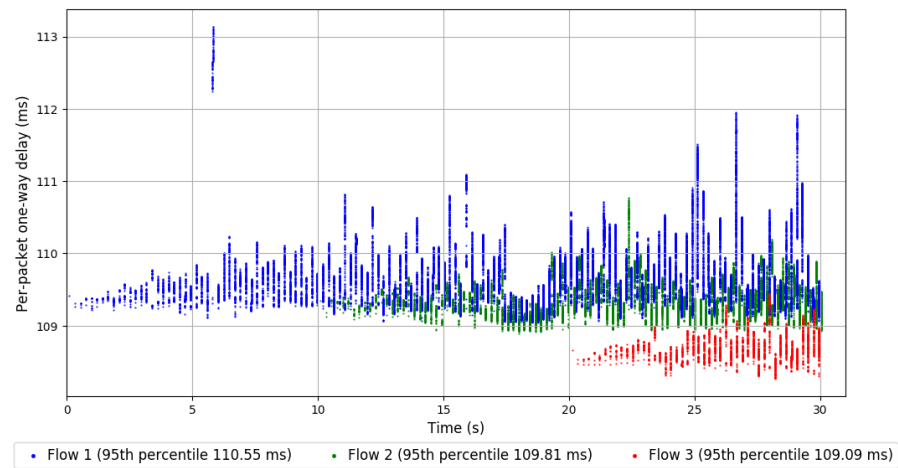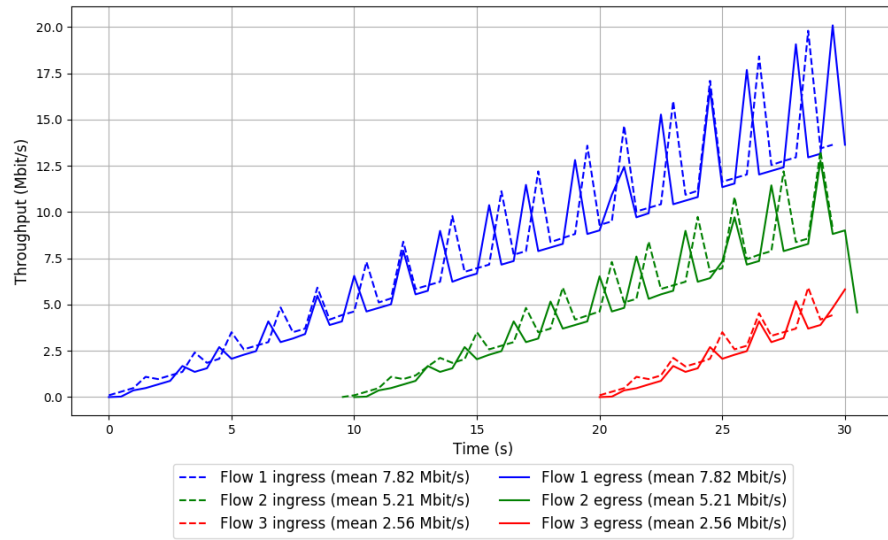## Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-20 04:03:32
End at: 2018-12-20 04:04:02
Local clock offset: 0.024 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2018-12-20 07:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.10 Mbit/s
95th percentile per-packet one-way delay: 110.387 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 110.549 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.21 Mbit/s
95th percentile per-packet one-way delay: 109.812 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 109.087 ms
Loss rate: 0.00%
```
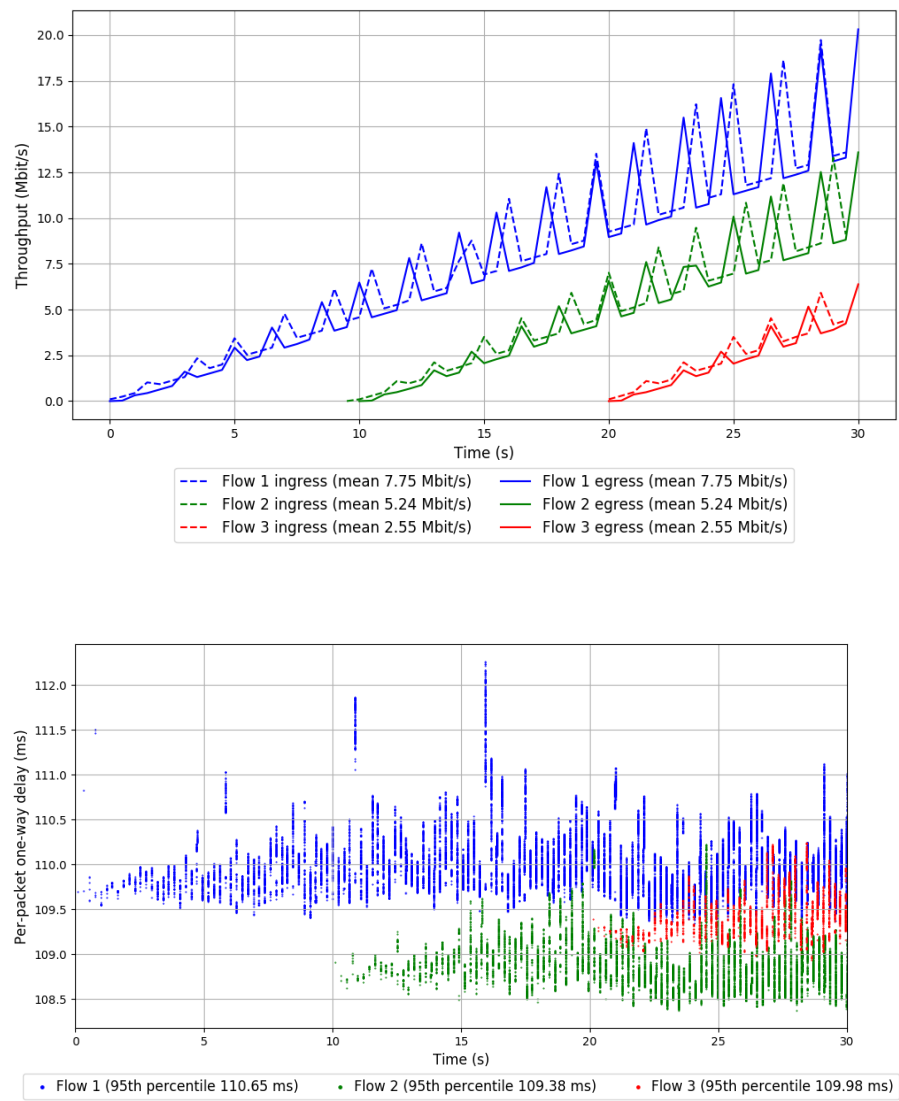
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-20 04:38:03
End at: 2018-12-20 04:38:33
Local clock offset: -0.017 ms
Remote clock offset: -0.038 ms


# Below is generated by plot.py at 2018-12-20 07:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 110.494 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 110.653 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 109.381 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.55 Mbit/s
95th percentile per-packet one-way delay: 109.978 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-20 05:13:46
End at: 2018-12-20 05:14:16
Local clock offset: -0.687 ms
Remote clock offset: 0.264 ms


# Below is generated by plot.py at 2018-12-20 07:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 110.913 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 110.337 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.14 Mbit/s
95th percentile per-packet one-way delay: 111.164 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.54 Mbit/s
95th percentile per-packet one-way delay: 111.024 ms
Loss rate: 0.00%
```
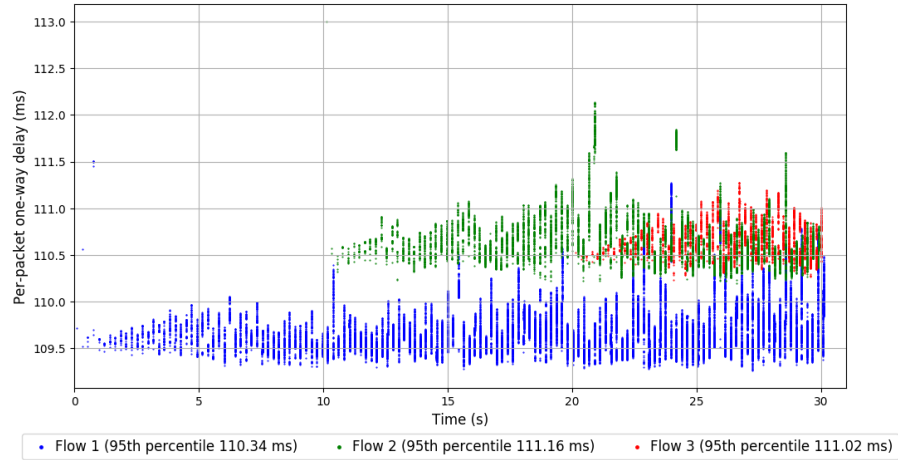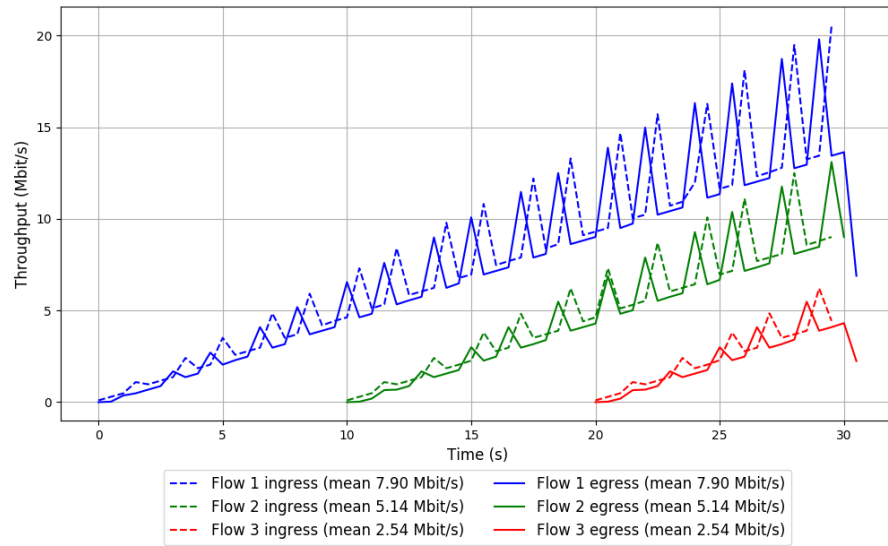
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-20 03:09:05
End at: 2018-12-20 03:09:35
Local clock offset: 0.86 ms
Remote clock offset: 0.15 ms


# Below is generated by plot.py at 2018-12-20 07:44:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 705.16 Mbit/s
95th percentile per-packet one-way delay: 244.682 ms
Loss rate: 5.34%
-- Flow 1:
Average throughput: 359.21 Mbit/s
95th percentile per-packet one-way delay: 234.073 ms
Loss rate: 1.95%
-- Flow 2:
Average throughput: 404.68 Mbit/s
95th percentile per-packet one-way delay: 258.708 ms
Loss rate: 10.18%
-- Flow 3:
Average throughput: 236.52 Mbit/s
95th percentile per-packet one-way delay: 247.248 ms
Loss rate: 2.80%
```
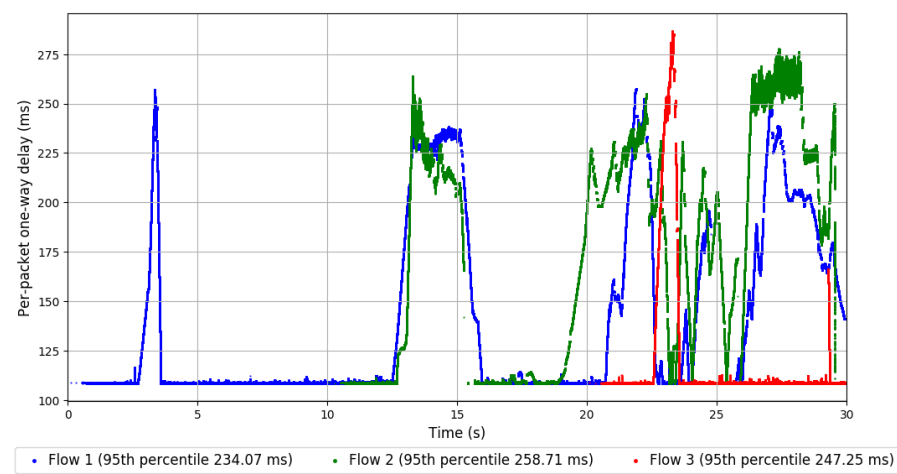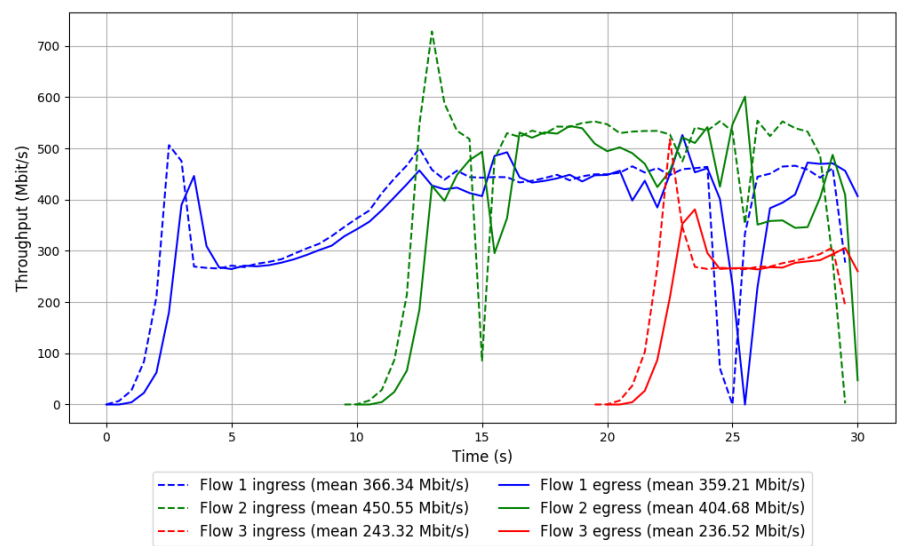
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-20 03:43:51
End at: 2018-12-20 03:44:21
Local clock offset: -0.817 ms
Remote clock offset: 0.162 ms


# Below is generated by plot.py at 2018-12-20 07:44:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 652.30 Mbit/s
95th percentile per-packet one-way delay: 243.581 ms
Loss rate: 5.29%
-- Flow 1:
Average throughput: 401.53 Mbit/s
95th percentile per-packet one-way delay: 256.183 ms
Loss rate: 7.23%
-- Flow 2:
Average throughput: 261.70 Mbit/s
95th percentile per-packet one-way delay: 207.113 ms
Loss rate: 2.88%
-- Flow 3:
Average throughput: 233.61 Mbit/s
95th percentile per-packet one-way delay: 181.396 ms
Loss rate: 0.00%
```
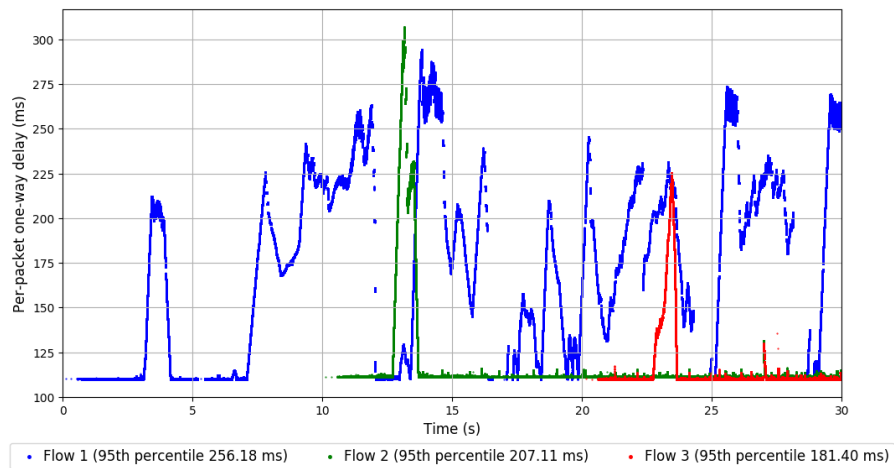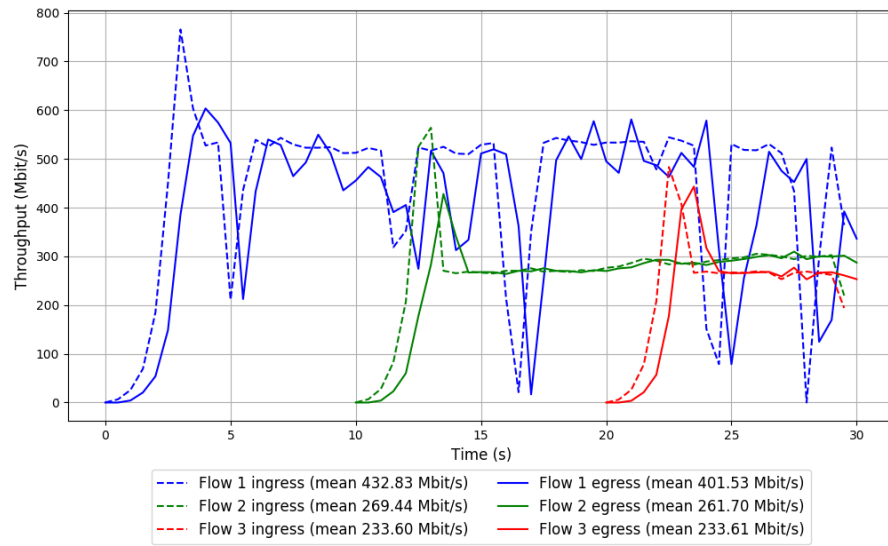
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 432.83 Mbit/s) ---- Flow 1 egress (mean 401.53 Mbit/s) ——
Flow 2 ingress (mean 269.44 Mbit/s) ---- Flow 2 egress (mean 261.70 Mbit/s) ——
Flow 3 ingress (mean 233.60 Mbit/s) ---- Flow 3 egress (mean 233.61 Mbit/s) ——

• Flow 1 (95th percentile 256.18 ms) • Flow 2 (95th percentile 207.11 ms) • Flow 3 (95th percentile 181.40 ms)
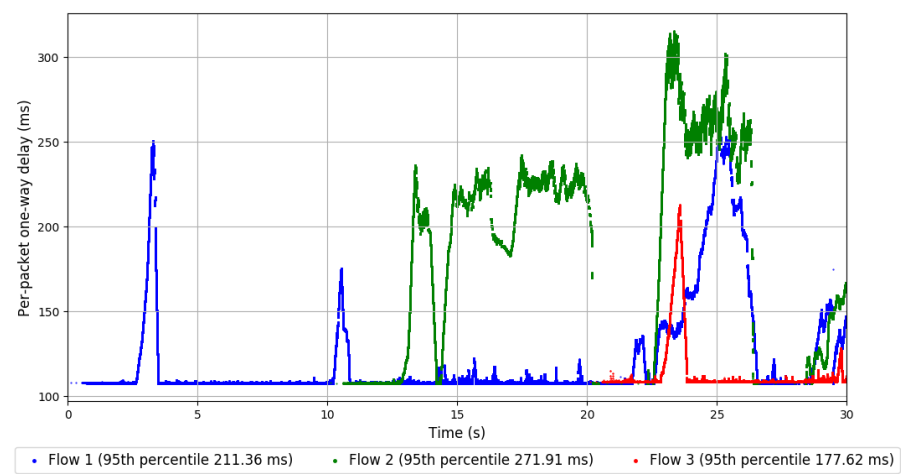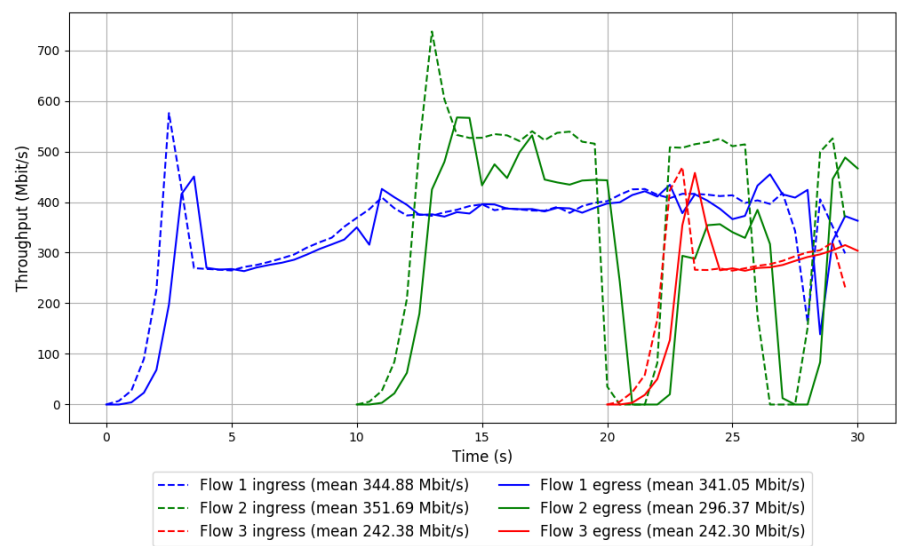
```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-20 04:19:00
End at: 2018-12-20 04:19:30
Local clock offset: 0.539 ms
Remote clock offset: -0.012 ms


# Below is generated by plot.py at 2018-12-20 07:44:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 617.77 Mbit/s
95th percentile per-packet one-way delay: 250.499 ms
Loss rate: 6.16%
-- Flow 1:
Average throughput: 341.05 Mbit/s
95th percentile per-packet one-way delay: 211.362 ms
Loss rate: 1.11%
-- Flow 2:
Average throughput: 296.37 Mbit/s
95th percentile per-packet one-way delay: 271.909 ms
Loss rate: 15.72%
-- Flow 3:
Average throughput: 242.30 Mbit/s
95th percentile per-packet one-way delay: 177.620 ms
Loss rate: 0.01%
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 344.88 Mbit/s) --- Flow 1 egress (mean 341.05 Mbit/s)
Flow 2 ingress (mean 351.69 Mbit/s) --- Flow 2 egress (mean 296.37 Mbit/s)
Flow 3 ingress (mean 242.38 Mbit/s) --- Flow 3 egress (mean 242.30 Mbit/s)

Flow 1 (95th percentile 211.36 ms) · Flow 2 (95th percentile 271.91 ms) · Flow 3 (95th percentile 177.62 ms)
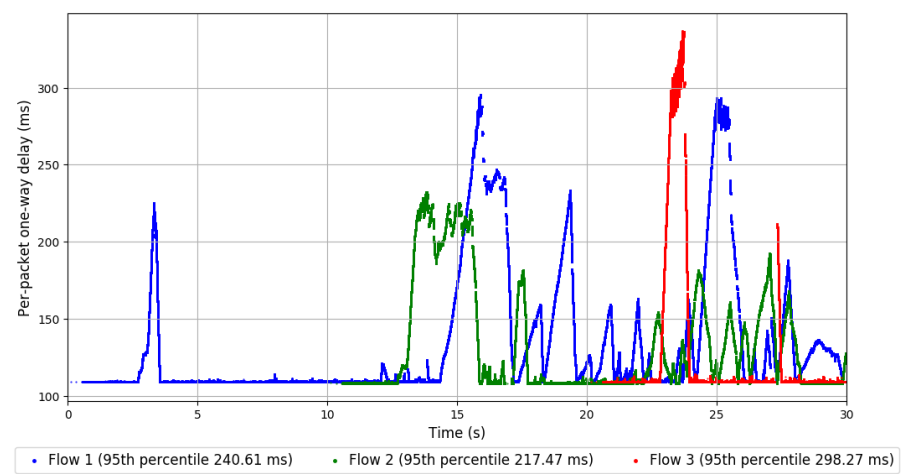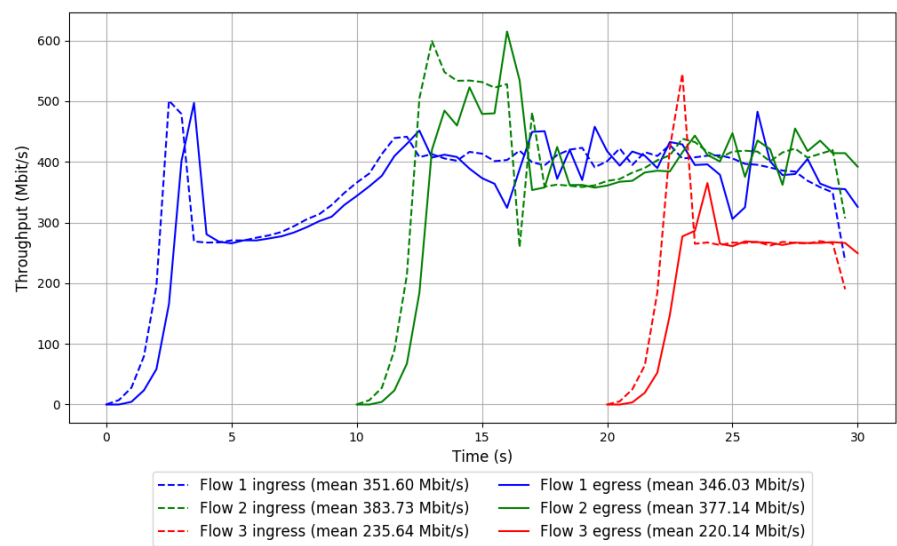
```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-20 04:54:06
End at: 2018-12-20 04:54:36
Local clock offset: -0.001 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-12-20 07:44:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 669.16 Mbit/s
95th percentile per-packet one-way delay: 231.627 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 346.03 Mbit/s
95th percentile per-packet one-way delay: 240.612 ms
Loss rate: 1.59%
-- Flow 2:
Average throughput: 377.14 Mbit/s
95th percentile per-packet one-way delay: 217.469 ms
Loss rate: 1.69%
-- Flow 3:
Average throughput: 220.14 Mbit/s
95th percentile per-packet one-way delay: 298.266 ms
Loss rate: 6.58%
```

Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 351.60 Mbit/s)   Flow 1 egress (mean 346.03 Mbit/s)
Flow 2 ingress (mean 383.73 Mbit/s)   Flow 2 egress (mean 377.14 Mbit/s)
Flow 3 ingress (mean 235.64 Mbit/s)   Flow 3 egress (mean 220.14 Mbit/s)

Flow 1 (95th percentile 240.61 ms)   Flow 2 (95th percentile 217.47 ms)   Flow 3 (95th percentile 298.27 ms)
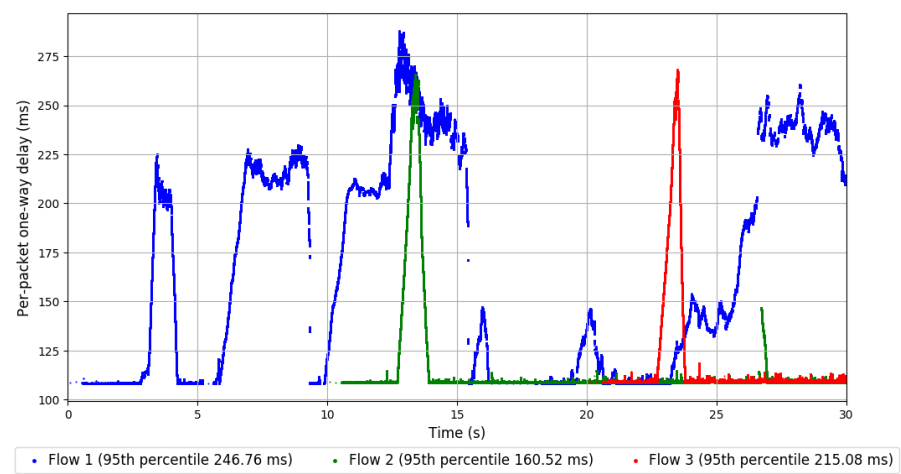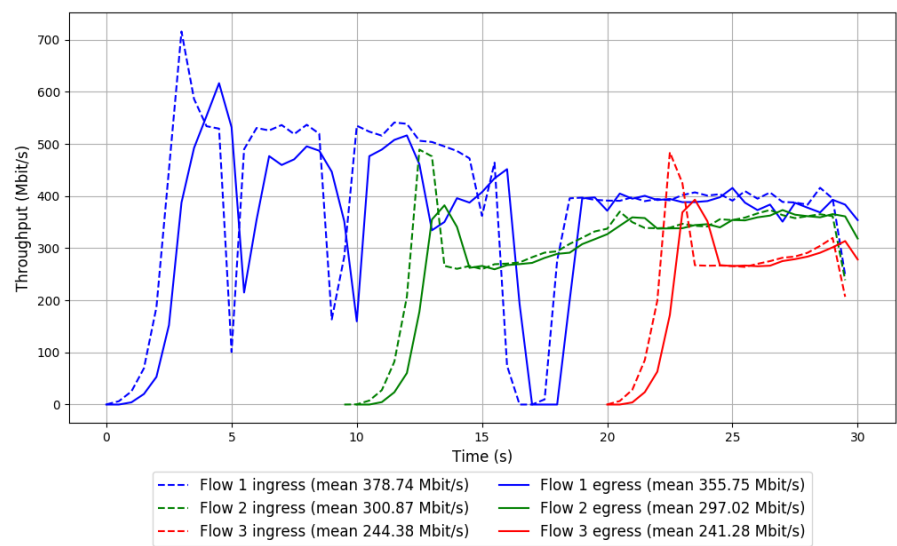
```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 05:29:40
End at: 2018-12-20 05:30:10
Local clock offset: -0.003 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2018-12-20 07:44:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 632.68 Mbit/s
95th percentile per-packet one-way delay: 242.904 ms
Loss rate: 4.02%
-- Flow 1:
Average throughput: 355.75 Mbit/s
95th percentile per-packet one-way delay: 246.764 ms
Loss rate: 6.06%
-- Flow 2:
Average throughput: 297.02 Mbit/s
95th percentile per-packet one-way delay: 160.524 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 241.28 Mbit/s
95th percentile per-packet one-way delay: 215.077 ms
Loss rate: 1.27%
```

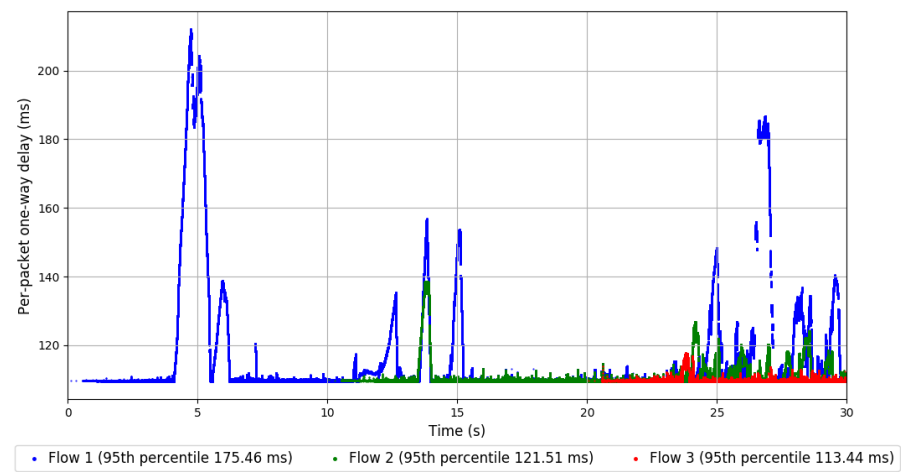## Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 378.74 Mbit/s)   Flow 1 egress (mean 355.75 Mbit/s)
Flow 2 ingress (mean 300.87 Mbit/s)   Flow 2 egress (mean 297.02 Mbit/s)
Flow 3 ingress (mean 244.38 Mbit/s)   Flow 3 egress (mean 241.28 Mbit/s)

Flow 1 (95th percentile 246.76 ms)   Flow 2 (95th percentile 160.52 ms)   Flow 3 (95th percentile 215.08 ms)
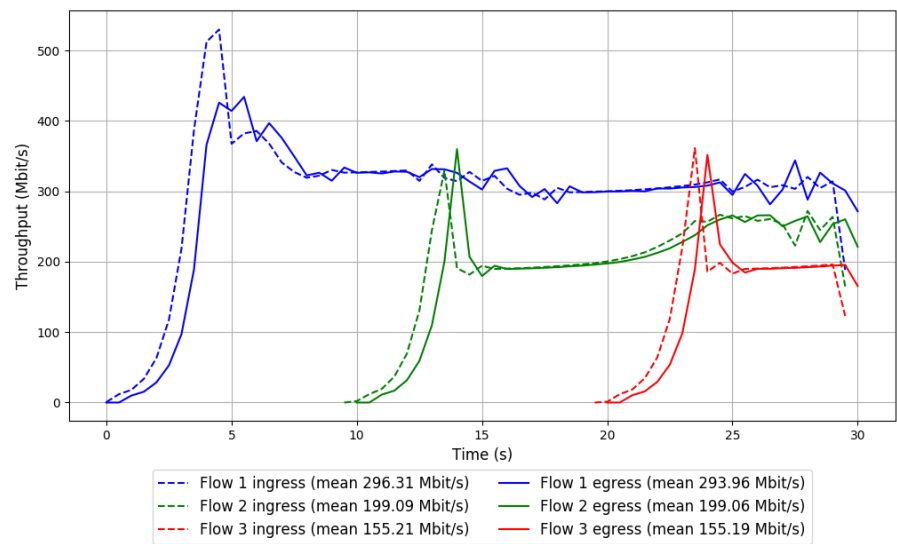
```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-20 03:22:59
End at: 2018-12-20 03:23:29
Local clock offset: -0.223 ms
Remote clock offset: 0.221 ms

# Below is generated by plot.py at 2018-12-20 07:44:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 477.94 Mbit/s
95th percentile per-packet one-way delay: 146.605 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 293.96 Mbit/s
95th percentile per-packet one-way delay: 175.458 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 199.06 Mbit/s
95th percentile per-packet one-way delay: 121.509 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 155.19 Mbit/s
95th percentile per-packet one-way delay: 113.439 ms
Loss rate: 0.03%
```
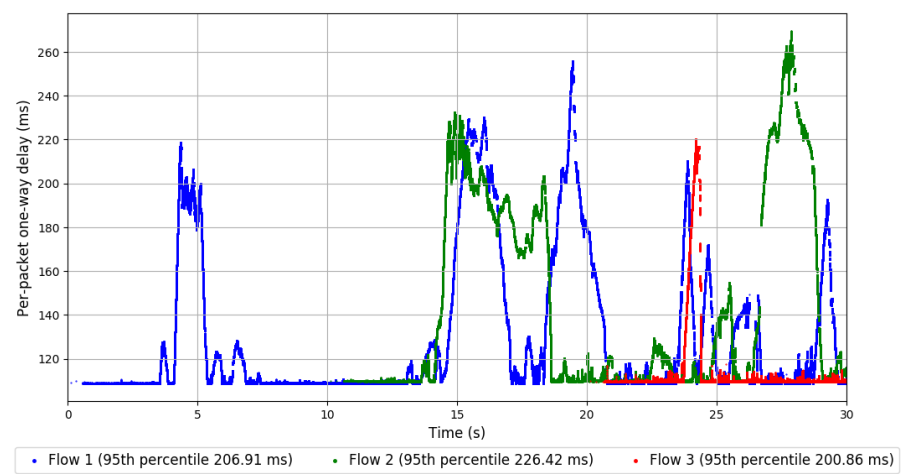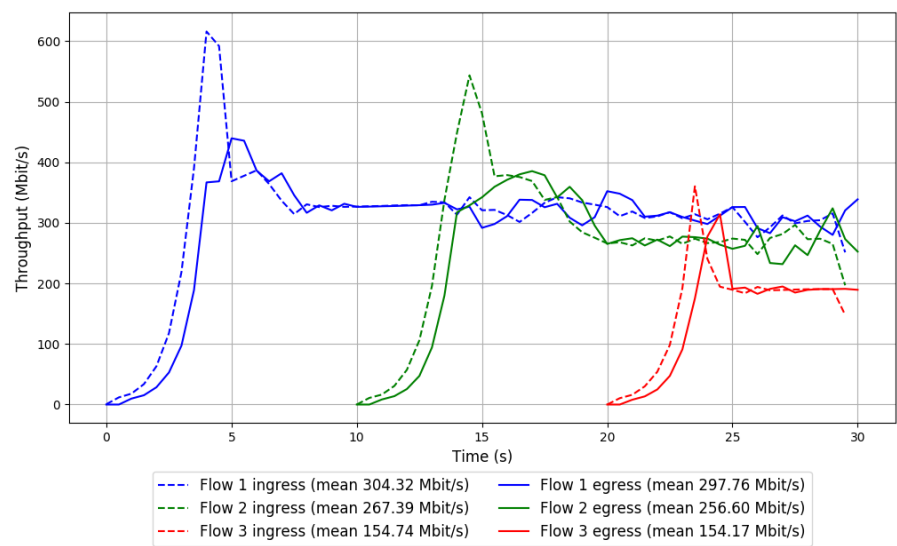
Run 1: Report of PCC-Expr — Data Link

- Flow 1 ingress (mean 296.31 Mbit/s)
- Flow 1 egress (mean 293.96 Mbit/s)
- Flow 2 ingress (mean 199.09 Mbit/s)
- Flow 2 egress (mean 199.06 Mbit/s)
- Flow 3 ingress (mean 155.21 Mbit/s)
- Flow 3 egress (mean 155.19 Mbit/s)

- Flow 1 (95th percentile 175.46 ms)
- Flow 2 (95th percentile 121.51 ms)
- Flow 3 (95th percentile 113.44 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-20 03:57:33
End at: 2018-12-20 03:58:03
Local clock offset: -0.315 ms
Remote clock offset: 0.306 ms


# Below is generated by plot.py at 2018-12-20 07:48:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 519.19 Mbit/s
95th percentile per-packet one-way delay: 218.537 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 297.76 Mbit/s
95th percentile per-packet one-way delay: 206.909 ms
Loss rate: 2.15%
-- Flow 2:
Average throughput: 256.60 Mbit/s
95th percentile per-packet one-way delay: 226.423 ms
Loss rate: 4.03%
-- Flow 3:
Average throughput: 154.17 Mbit/s
95th percentile per-packet one-way delay: 200.863 ms
Loss rate: 0.37%
```
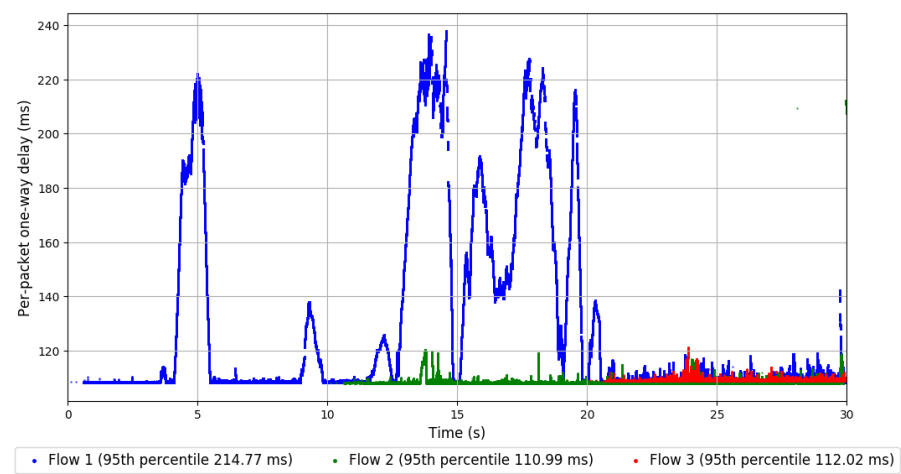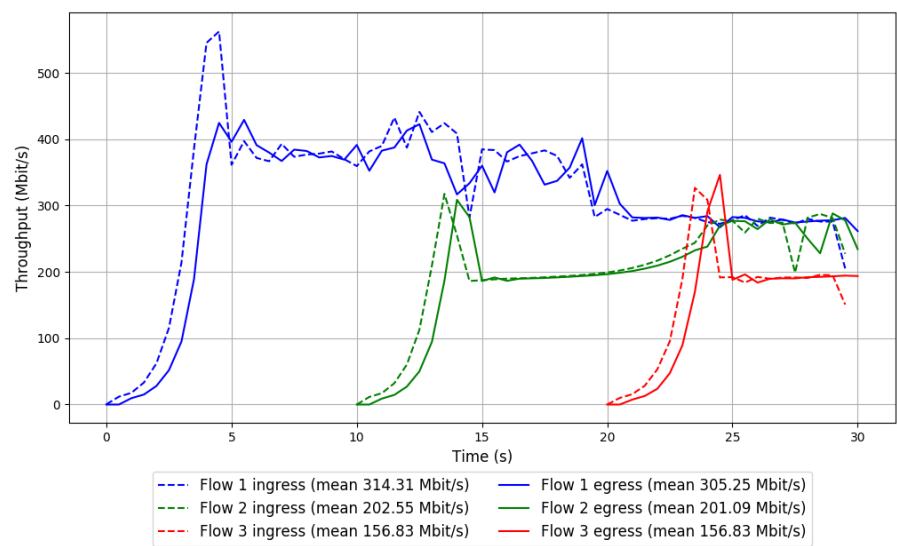
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 304.32 Mbit/s) --- Flow 1 egress (mean 297.76 Mbit/s)
Flow 2 ingress (mean 267.39 Mbit/s) --- Flow 2 egress (mean 256.60 Mbit/s)
Flow 3 ingress (mean 154.74 Mbit/s) --- Flow 3 egress (mean 154.17 Mbit/s)

Flow 1 (95th percentile 206.91 ms)   Flow 2 (95th percentile 226.42 ms)   Flow 3 (95th percentile 200.86 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-20 04:32:31
End at: 2018-12-20 04:33:01
Local clock offset: 0.103 ms
Remote clock offset: -0.02 ms


# Below is generated by plot.py at 2018-12-20 07:49:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.71 Mbit/s
95th percentile per-packet one-way delay: 206.662 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 305.25 Mbit/s
95th percentile per-packet one-way delay: 214.769 ms
Loss rate: 2.89%
-- Flow 2:
Average throughput: 201.09 Mbit/s
95th percentile per-packet one-way delay: 110.986 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 156.83 Mbit/s
95th percentile per-packet one-way delay: 112.024 ms
Loss rate: 0.00%
```
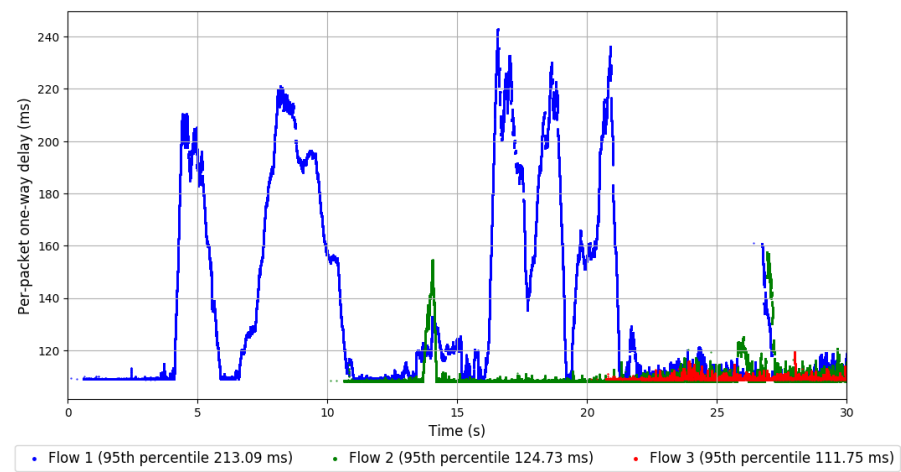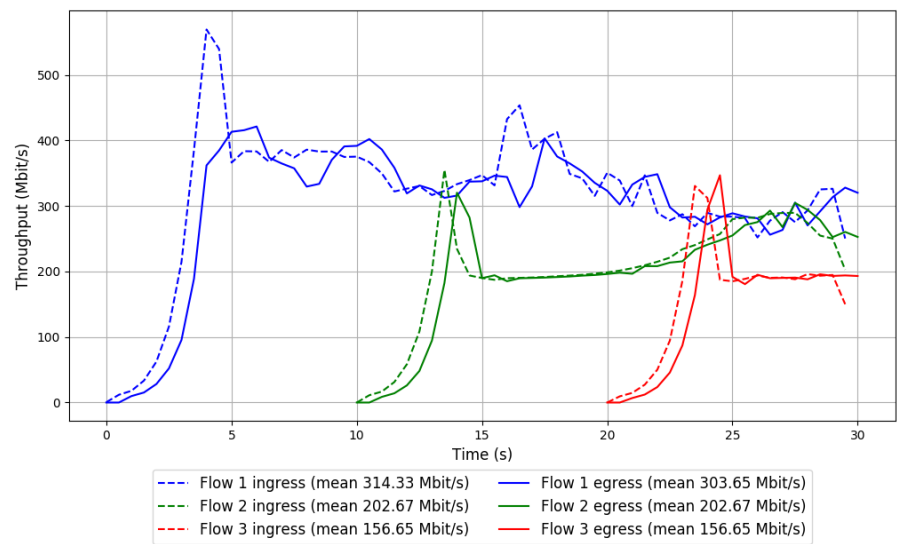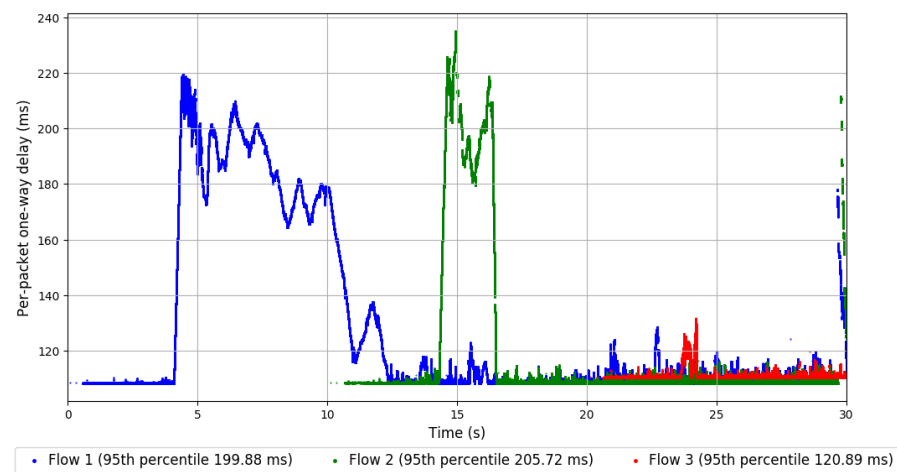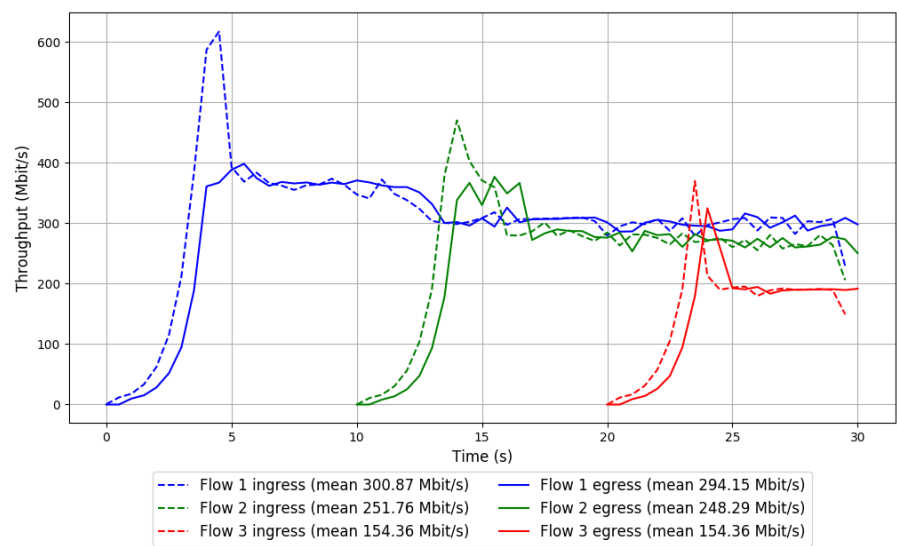
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 314.31 Mbit/s) —— Flow 1 egress (mean 305.25 Mbit/s)
Flow 2 ingress (mean 202.55 Mbit/s) —— Flow 2 egress (mean 201.09 Mbit/s)
Flow 3 ingress (mean 156.83 Mbit/s) —— Flow 3 egress (mean 156.83 Mbit/s)

Flow 1 (95th percentile 214.77 ms) • Flow 2 (95th percentile 110.99 ms) • Flow 3 (95th percentile 112.02 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-20 05:08:42
End at: 2018-12-20 05:09:12
Local clock offset: 0.479 ms
Remote clock offset: 0.244 ms

# Below is generated by plot.py at 2018-12-20 07:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 489.96 Mbit/s
95th percentile per-packet one-way delay: 206.492 ms
Loss rate: 2.13%
-- Flow 1:
Average throughput: 303.65 Mbit/s
95th percentile per-packet one-way delay: 213.085 ms
Loss rate: 3.39%
-- Flow 2:
Average throughput: 202.67 Mbit/s
95th percentile per-packet one-way delay: 124.735 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 156.65 Mbit/s
95th percentile per-packet one-way delay: 111.750 ms
Loss rate: 0.00%
```
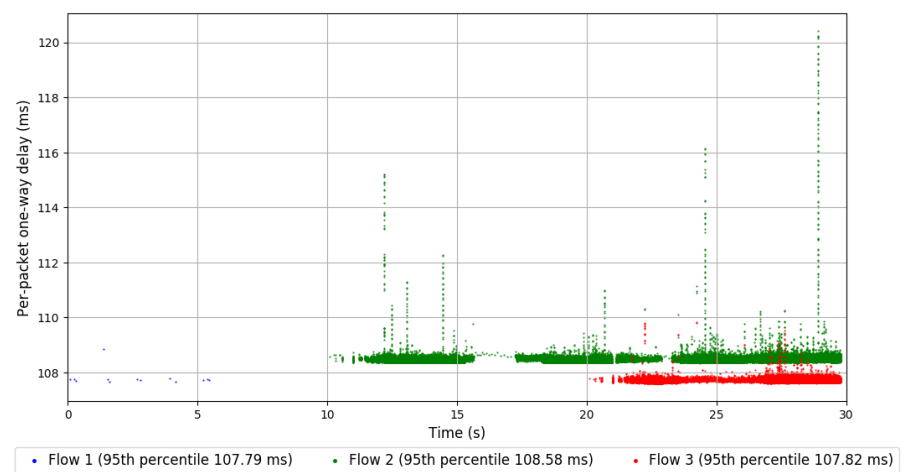
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-20 05:43:36
End at: 2018-12-20 05:44:06
Local clock offset: 0.483 ms
Remote clock offset: -0.403 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 510.17 Mbit/s
95th percentile per-packet one-way delay: 200.269 ms
Loss rate: 1.74%
-- Flow 1:
Average throughput: 294.15 Mbit/s
95th percentile per-packet one-way delay: 199.879 ms
Loss rate: 2.23%
-- Flow 2:
Average throughput: 248.29 Mbit/s
95th percentile per-packet one-way delay: 205.720 ms
Loss rate: 1.38%
-- Flow 3:
Average throughput: 154.36 Mbit/s
95th percentile per-packet one-way delay: 120.895 ms
Loss rate: 0.00%
```

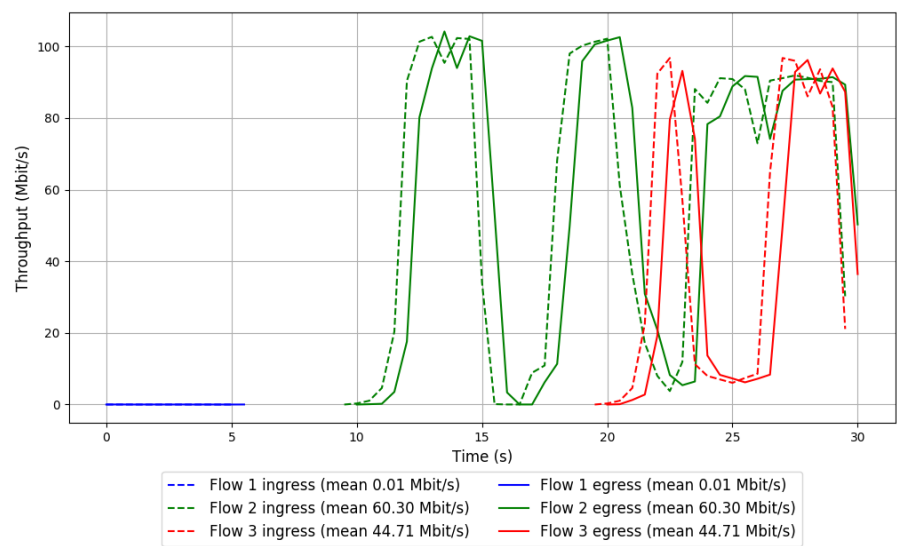## Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-20 03:25:04
End at: 2018-12-20 03:25:34
Local clock offset: 0.472 ms
Remote clock offset: -0.177 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.58 Mbit/s
95th percentile per-packet one-way delay: 108.559 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 107.790 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.30 Mbit/s
95th percentile per-packet one-way delay: 108.576 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 44.71 Mbit/s
95th percentile per-packet one-way delay: 107.817 ms
Loss rate: 0.00%
```
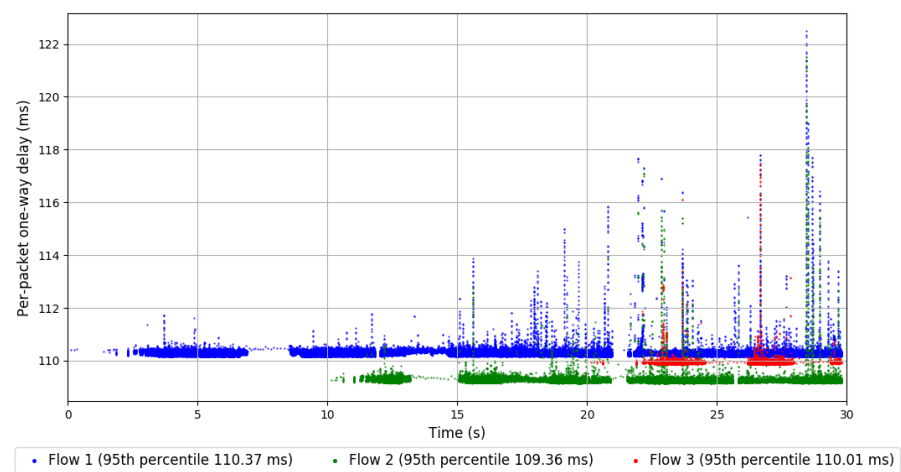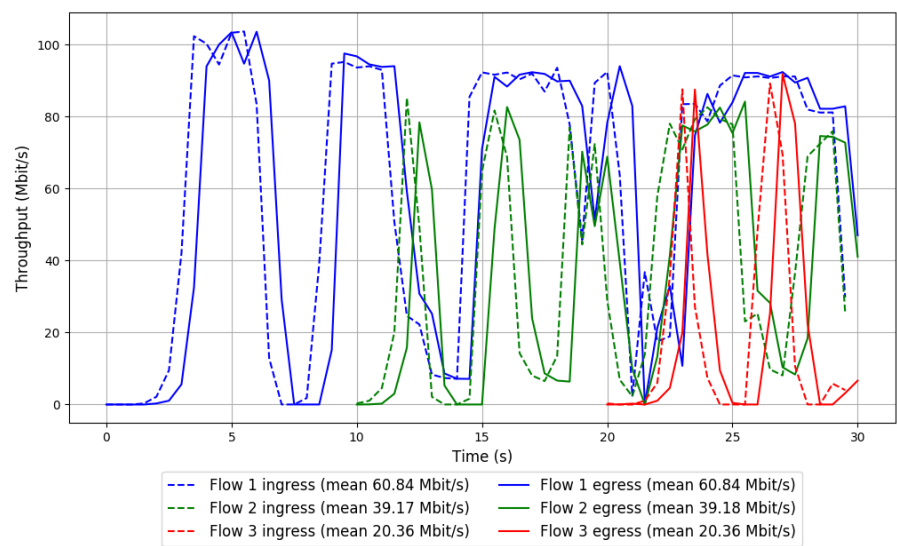
Run 1: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 0.01 Mbit/s)   —— Flow 1 egress (mean 0.01 Mbit/s)
- - - Flow 2 ingress (mean 60.30 Mbit/s)   —— Flow 2 egress (mean 60.30 Mbit/s)
- - - Flow 3 ingress (mean 44.71 Mbit/s)   —— Flow 3 egress (mean 44.71 Mbit/s)

- Flow 1 (95th percentile 107.79 ms)   • Flow 2 (95th percentile 108.58 ms)   • Flow 3 (95th percentile 107.82 ms)
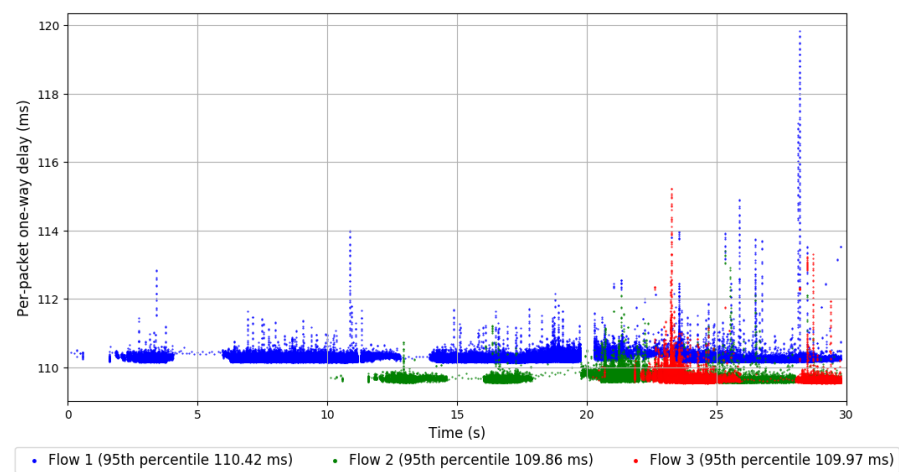
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-20 03:59:48
End at: 2018-12-20 04:00:18
Local clock offset: -1.284 ms
Remote clock offset: -0.396 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.40 Mbit/s
95th percentile per-packet one-way delay: 110.348 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.84 Mbit/s
95th percentile per-packet one-way delay: 110.371 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 39.18 Mbit/s
95th percentile per-packet one-way delay: 109.365 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.36 Mbit/s
95th percentile per-packet one-way delay: 110.008 ms
Loss rate: 0.00%
```

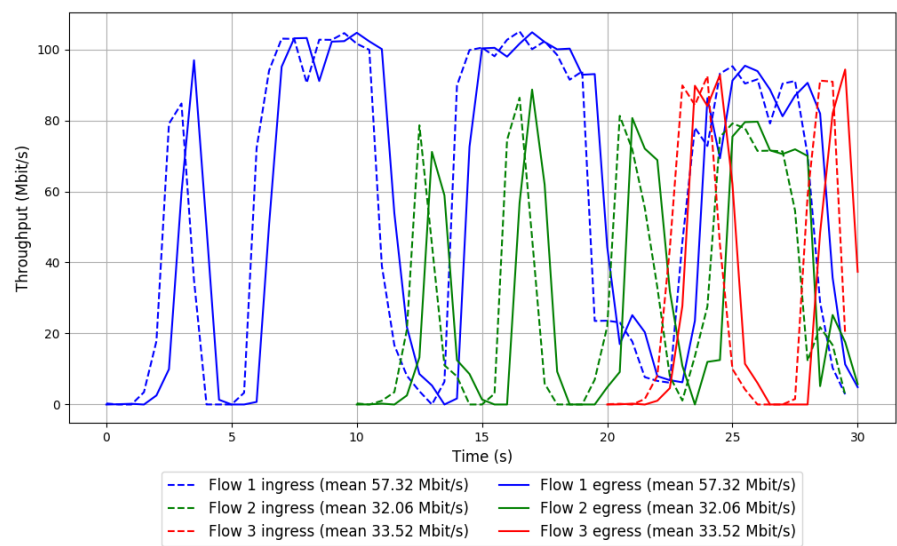## Run 2: Report of QUIC Cubic — Data Link

- Flow 1 ingress (mean 60.84 Mbit/s)
- Flow 1 egress (mean 60.84 Mbit/s)
- Flow 2 ingress (mean 39.17 Mbit/s)
- Flow 2 egress (mean 39.18 Mbit/s)
- Flow 3 ingress (mean 20.36 Mbit/s)
- Flow 3 egress (mean 20.36 Mbit/s)

- Flow 1 (95th percentile 110.37 ms)
- Flow 2 (95th percentile 109.36 ms)
- Flow 3 (95th percentile 110.01 ms)

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```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-20 04:34:43
End at: 2018-12-20 04:35:13
Local clock offset: -1.287 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.37 Mbit/s
95th percentile per-packet one-way delay: 110.389 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.32 Mbit/s
95th percentile per-packet one-way delay: 110.424 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 32.06 Mbit/s
95th percentile per-packet one-way delay: 109.856 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 33.52 Mbit/s
95th percentile per-packet one-way delay: 109.970 ms
Loss rate: 0.00%
```
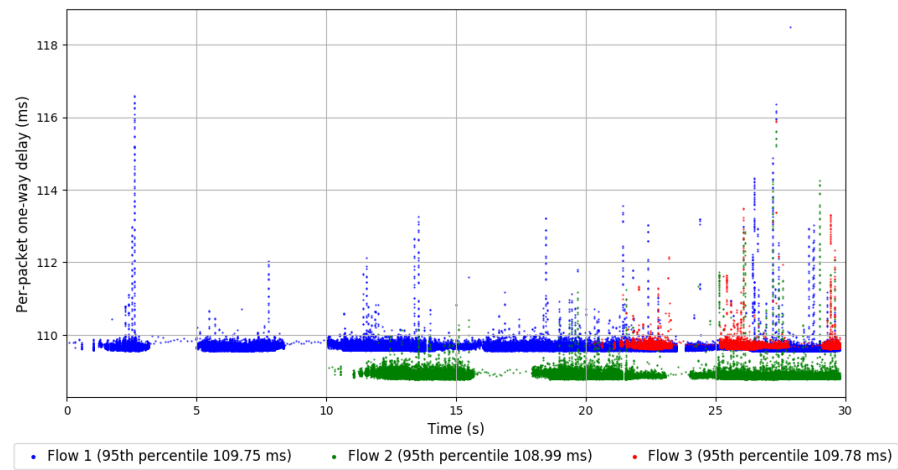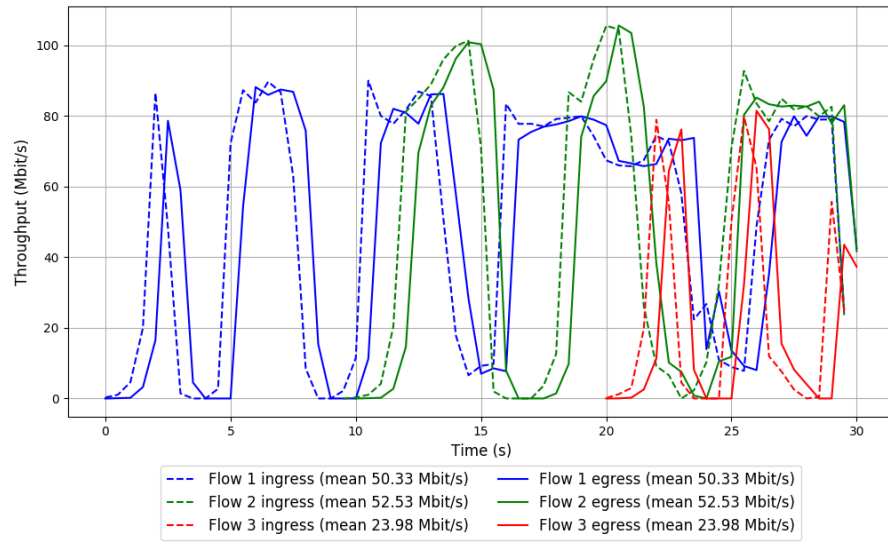
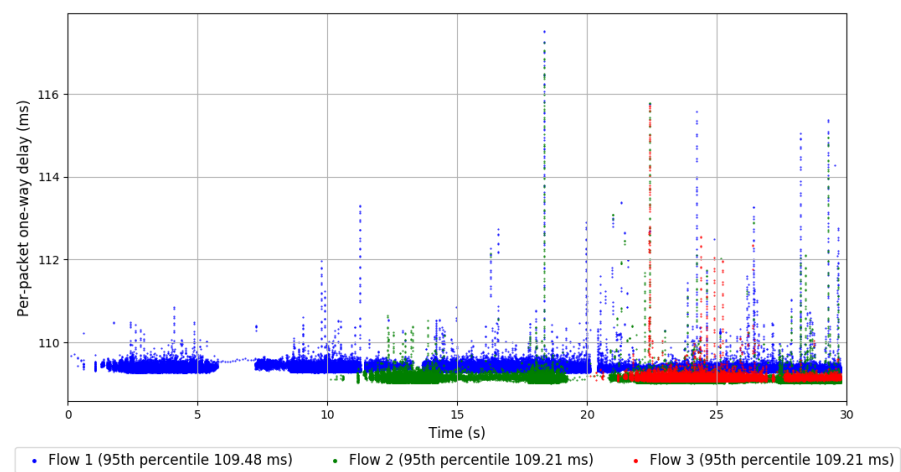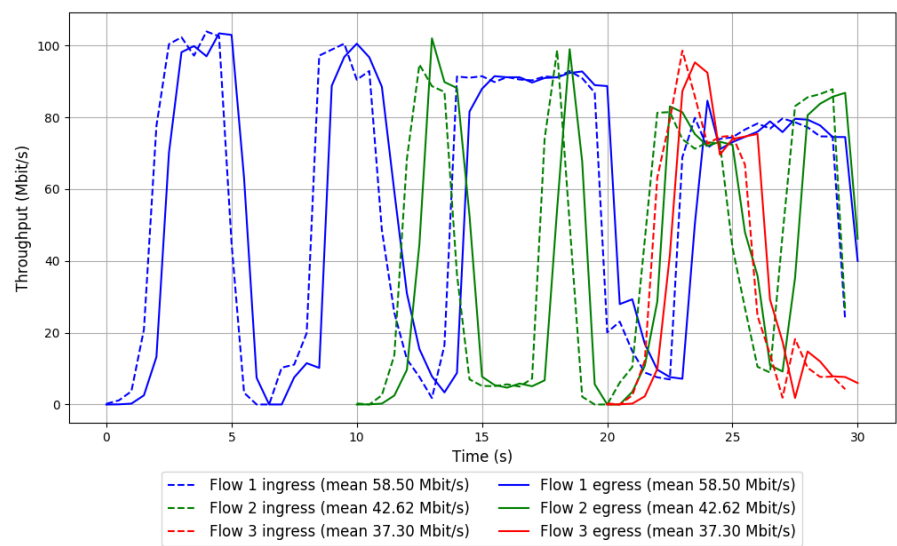# Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 57.32 Mbit/s) — — — Flow 1 egress (mean 57.32 Mbit/s)
Flow 2 ingress (mean 32.06 Mbit/s) — — — Flow 2 egress (mean 32.06 Mbit/s)
Flow 3 ingress (mean 33.52 Mbit/s) — — — Flow 3 egress (mean 33.52 Mbit/s)

Flow 1 (95th percentile 110.42 ms)   Flow 2 (95th percentile 109.86 ms)   Flow 3 (95th percentile 109.97 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-20 05:10:50
End at: 2018-12-20 05:11:20
Local clock offset: -0.109 ms
Remote clock offset: 0.254 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 109.732 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.33 Mbit/s
95th percentile per-packet one-way delay: 109.751 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 52.53 Mbit/s
95th percentile per-packet one-way delay: 108.994 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 23.98 Mbit/s
95th percentile per-packet one-way delay: 109.778 ms
Loss rate: 0.00%
```

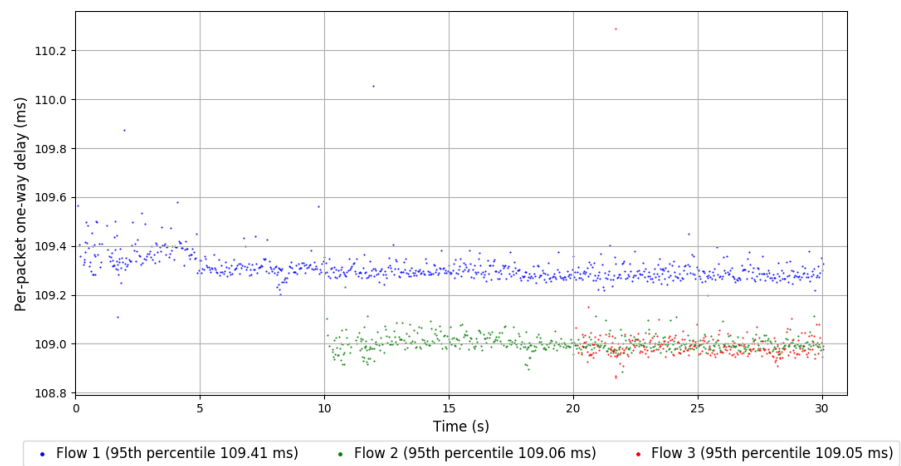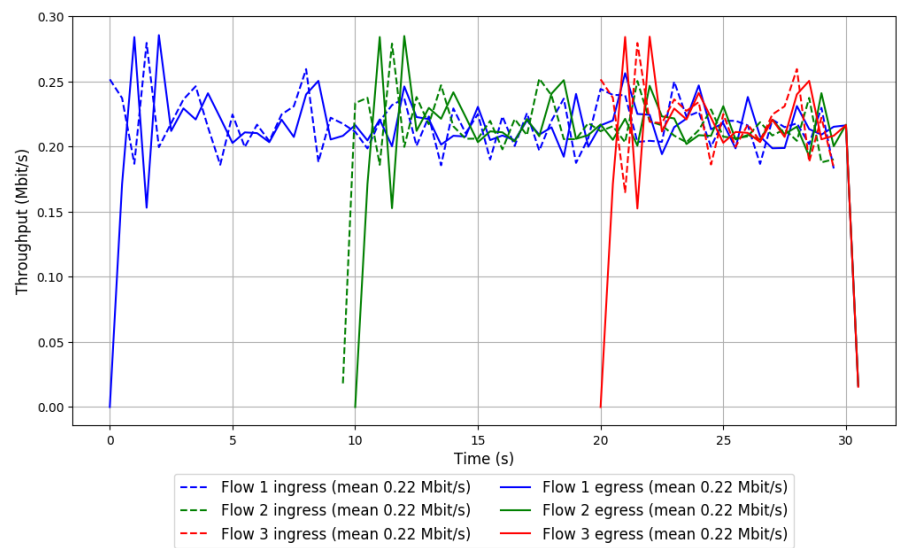# Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 05:45:46
End at: 2018-12-20 05:46:16
Local clock offset: -0.068 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.86 Mbit/s
95th percentile per-packet one-way delay: 109.455 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.50 Mbit/s
95th percentile per-packet one-way delay: 109.481 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.62 Mbit/s
95th percentile per-packet one-way delay: 109.214 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 37.30 Mbit/s
95th percentile per-packet one-way delay: 109.208 ms
Loss rate: 0.00%
```

Run 5: Report of QUIC Cubic — Data Link
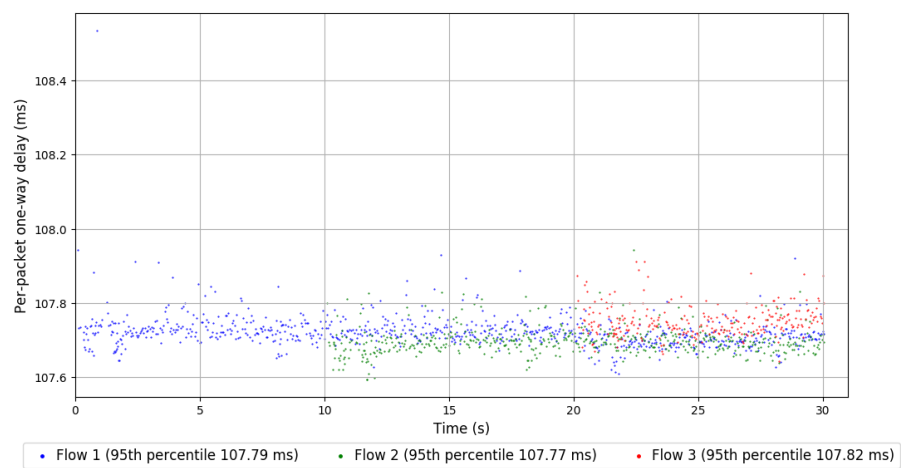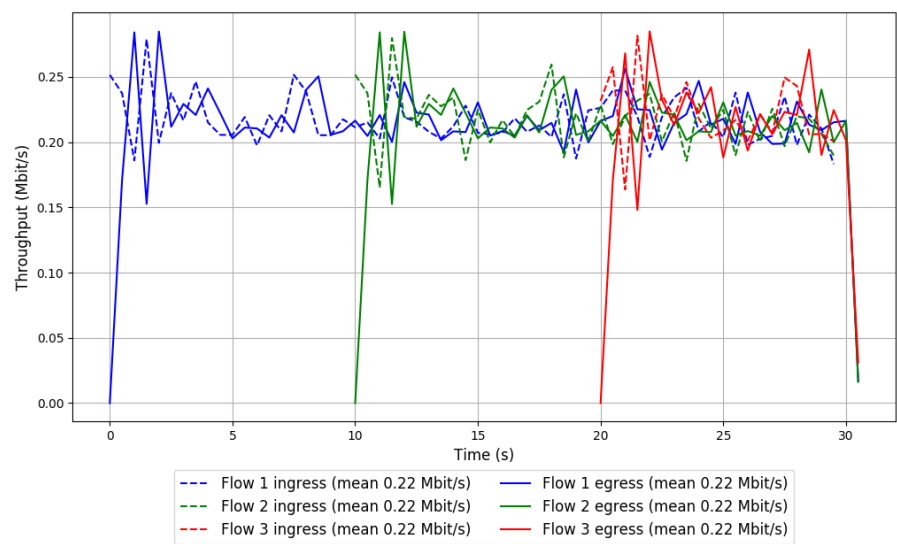
```
Run 1: Statistics of SCReAM

Start at: 2018-12-20 02:59:52
End at: 2018-12-20 03:00:22
Local clock offset: 0.634 ms
Remote clock offset: 0.478 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.375 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.405 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.064 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.048 ms
Loss rate: 0.00%
```

Run 1: 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 109.41 ms)   • Flow 2 (95th percentile 109.06 ms)   • Flow 3 (95th percentile 109.05 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-12-20 03:34:17
End at: 2018-12-20 03:34:47
Local clock offset: 0.545 ms
Remote clock offset: -0.245 ms

# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 107.796 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.787 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.769 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.824 ms
Loss rate: 0.00%
```
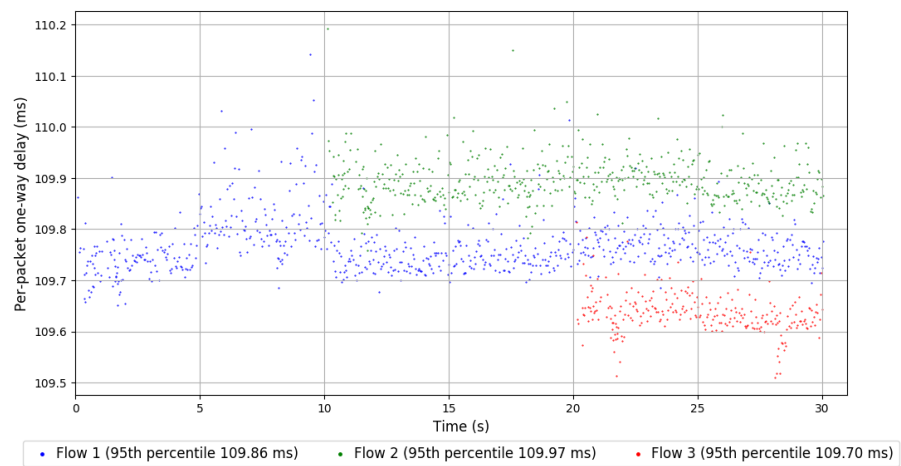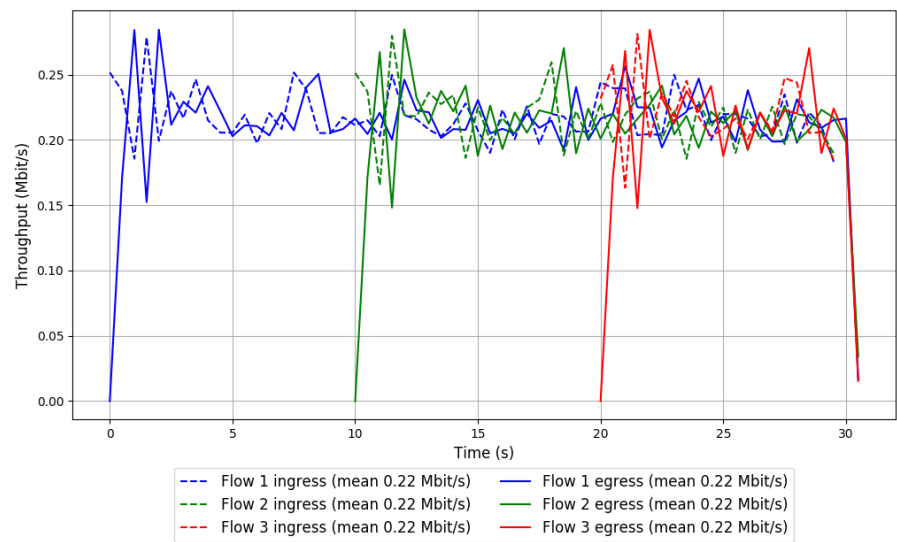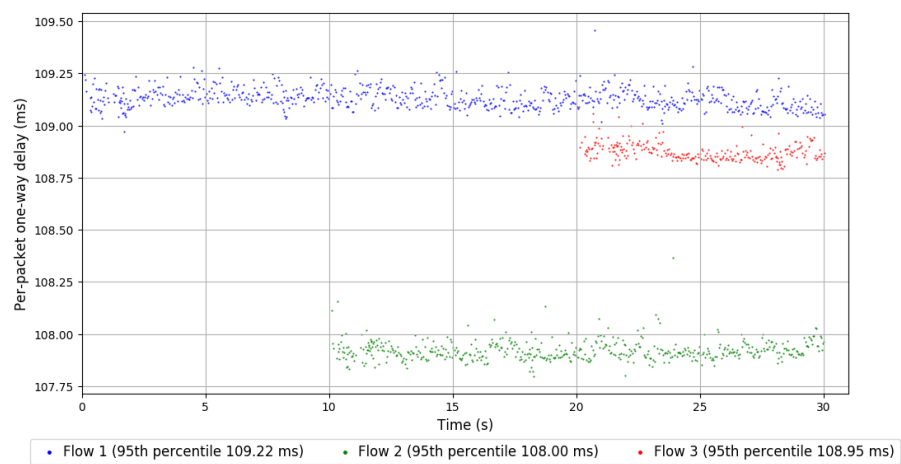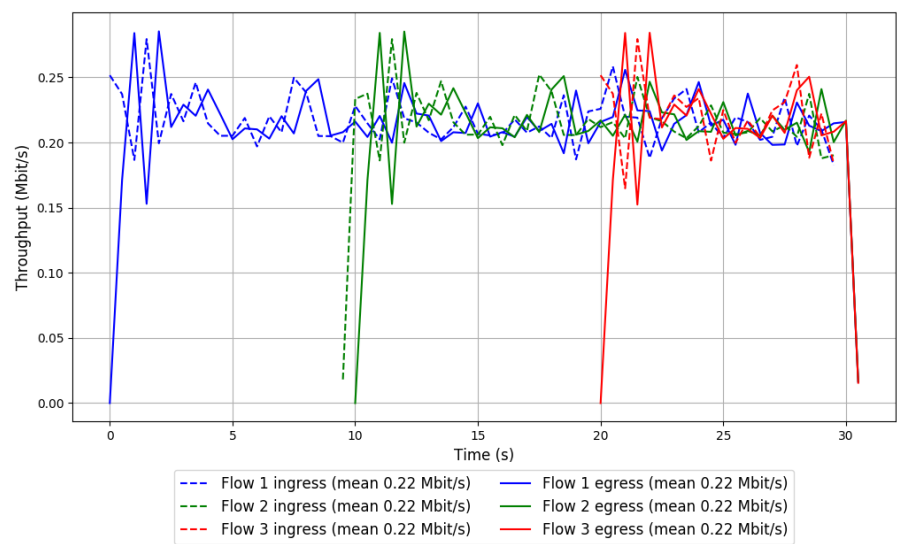
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-20 04:09:27
End at: 2018-12-20 04:09:57
Local clock offset: -0.045 ms
Remote clock offset: 0.381 ms

# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.939 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.863 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.967 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.704 ms
Loss rate: 0.00%
```
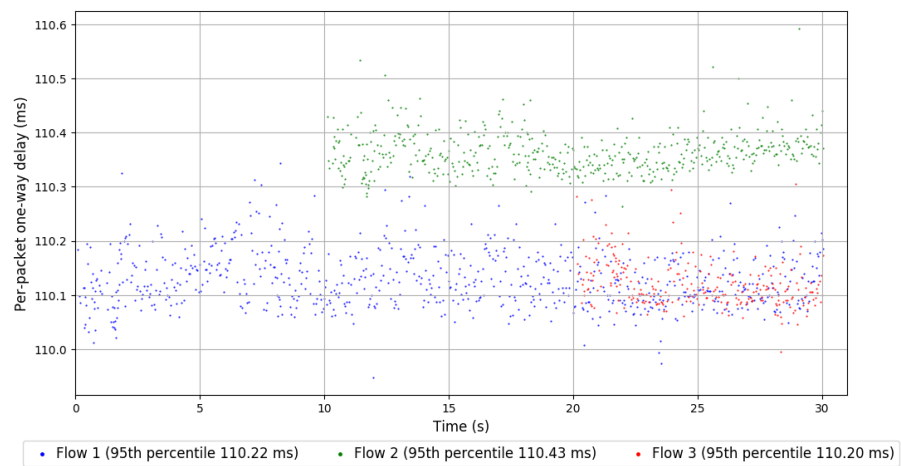
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-20 04:44:27
End at: 2018-12-20 04:44:57
Local clock offset: 0.451 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.191 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.215 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.995 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.950 ms
Loss rate: 0.00%
```

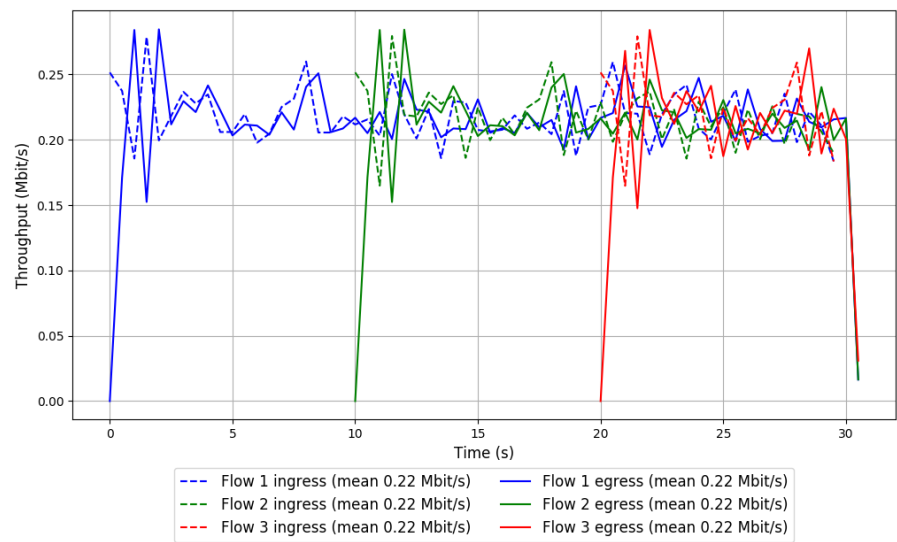# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-20 05:20:07
End at: 2018-12-20 05:20:37
Local clock offset: -0.893 ms
Remote clock offset: -0.111 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 110.397 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.218 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.428 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.196 ms
Loss rate: 0.00%
```

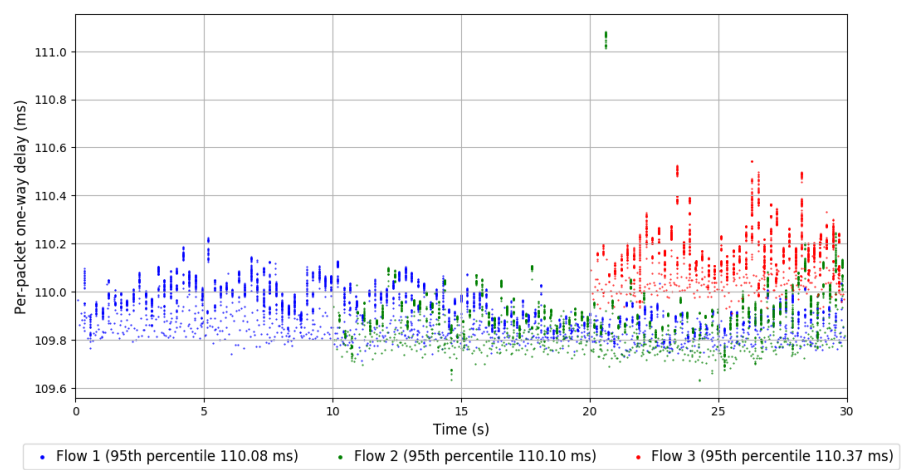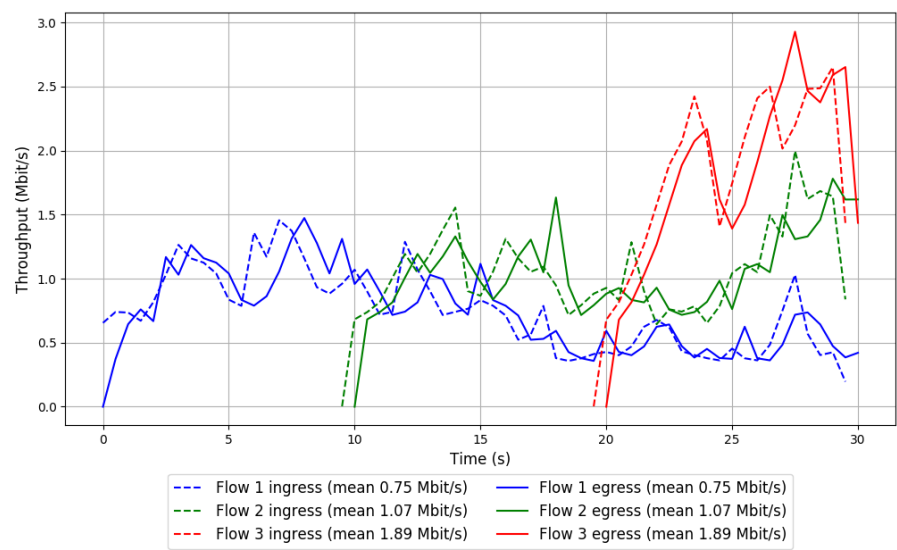# Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2018-12-20 02:58:35
End at: 2018-12-20 02:59:05
Local clock offset: -0.544 ms
Remote clock offset: 0.128 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 110.250 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 110.083 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 110.103 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 110.372 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-20 03:33:01
End at: 2018-12-20 03:33:31
Local clock offset: 0.325 ms
Remote clock offset: 0.13 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 109.354 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 109.349 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 108.500 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 109.403 ms
Loss rate: 0.00%
```
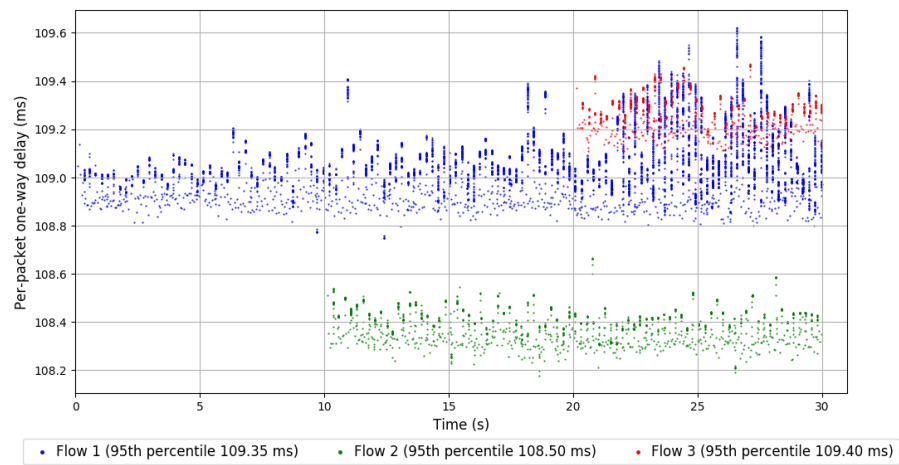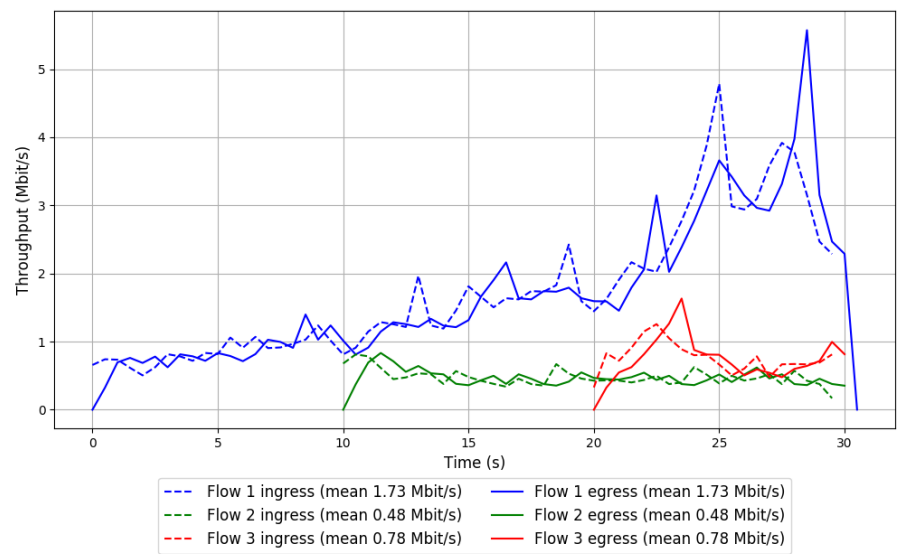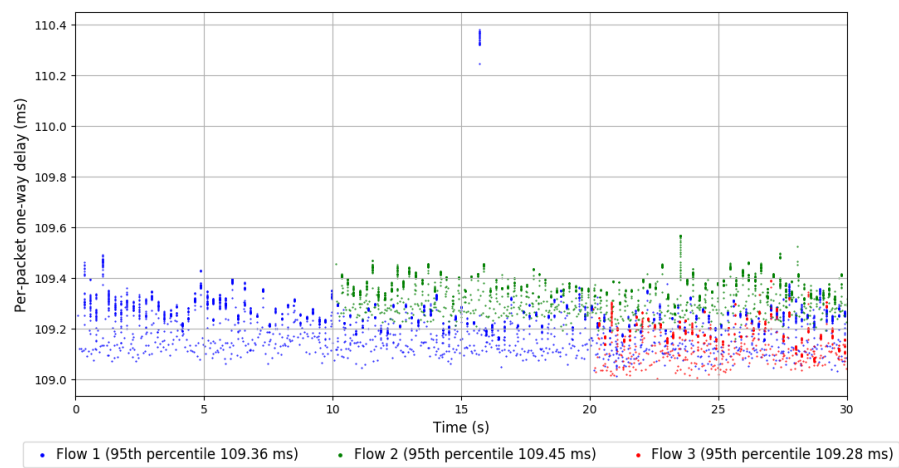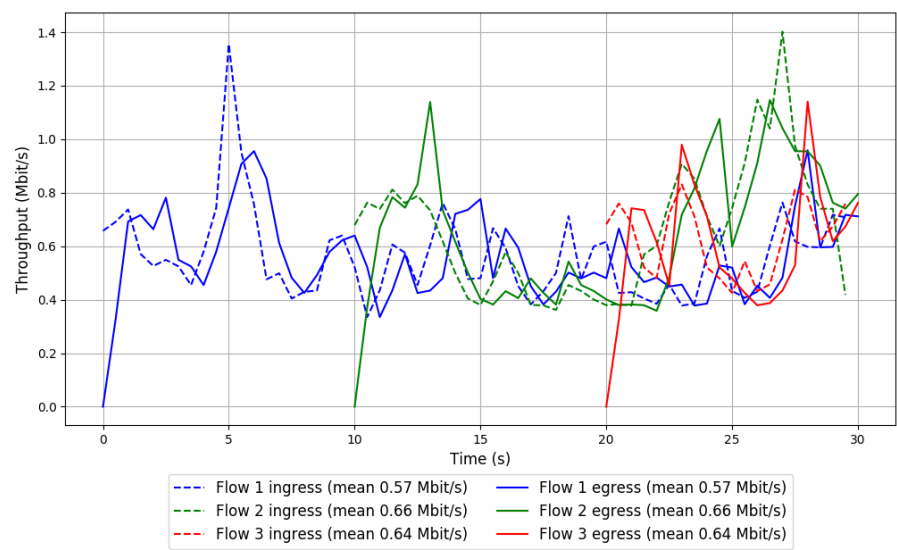
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-20 04:08:10
End at: 2018-12-20 04:08:40
Local clock offset: 0.532 ms
Remote clock offset: 0.374 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 109.426 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 109.355 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 109.450 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 109.281 ms
Loss rate: 0.00%
```
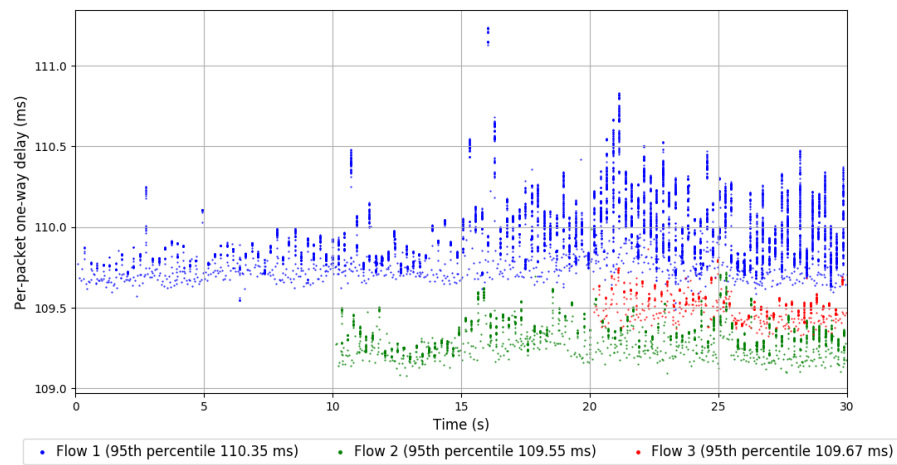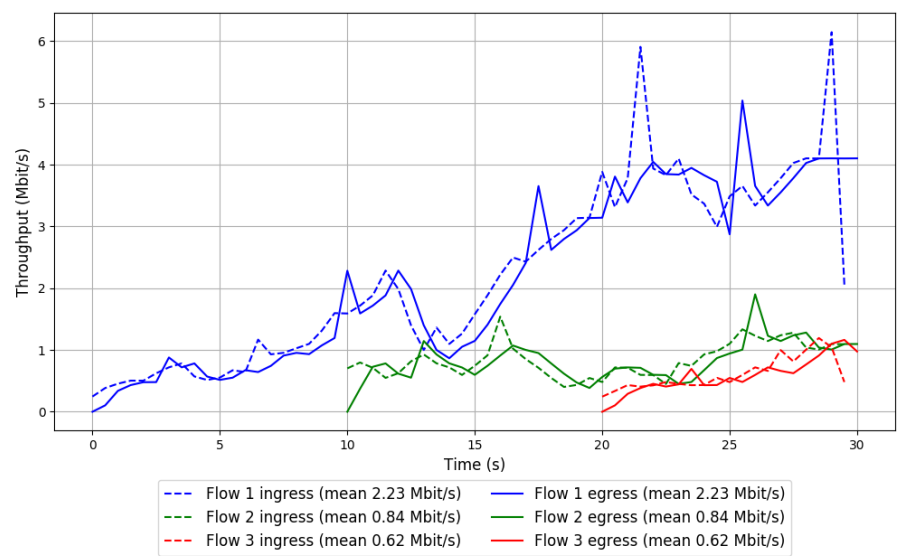
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-20 04:43:09
End at: 2018-12-20 04:43:39
Local clock offset: -0.107 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 110.305 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 110.347 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 109.553 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 109.675 ms
Loss rate: 0.00%
```
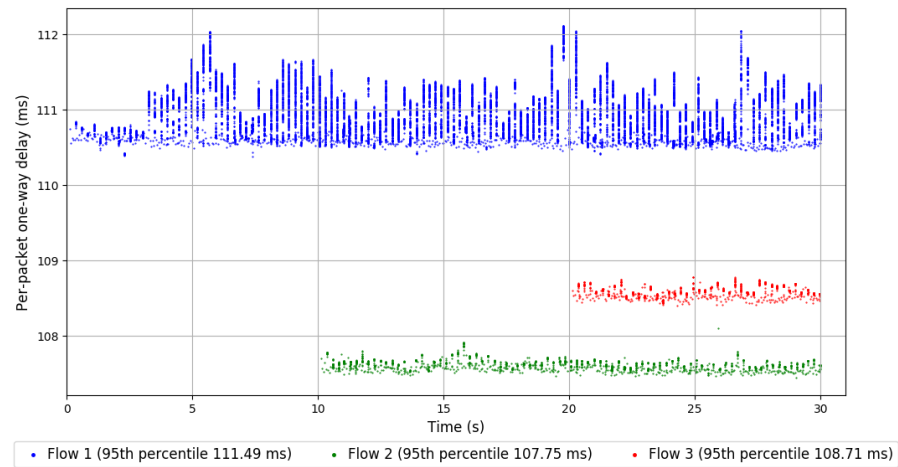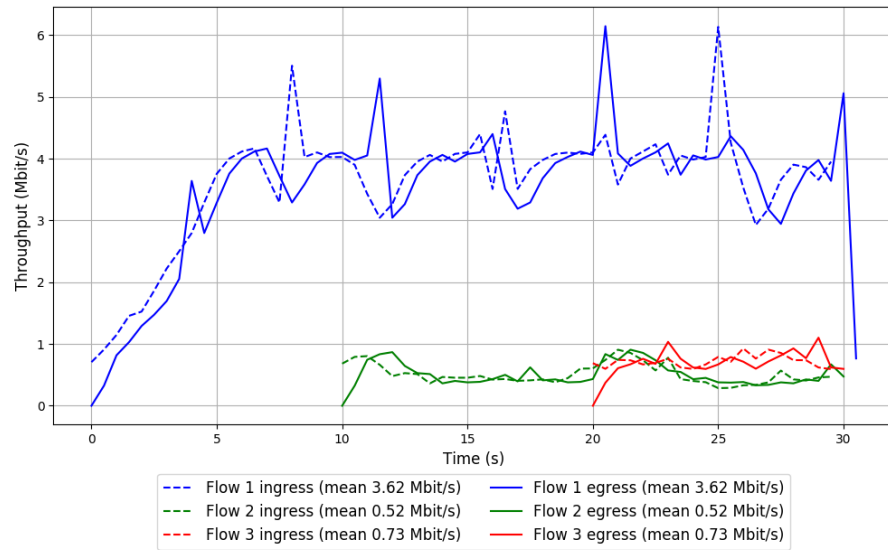
Run 4: Report of Sprout — Data Link

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```
Run 5: Statistics of Sprout

Start at: 2018-12-20 05:18:50
End at: 2018-12-20 05:19:20
Local clock offset: 0.687 ms
Remote clock offset: -0.116 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 111.456 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.62 Mbit/s
95th percentile per-packet one-way delay: 111.494 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 107.745 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 108.706 ms
Loss rate: 0.00%
```
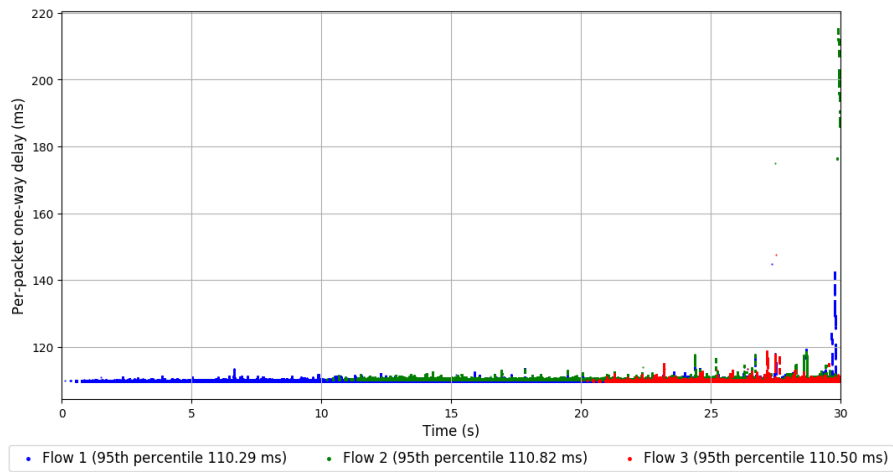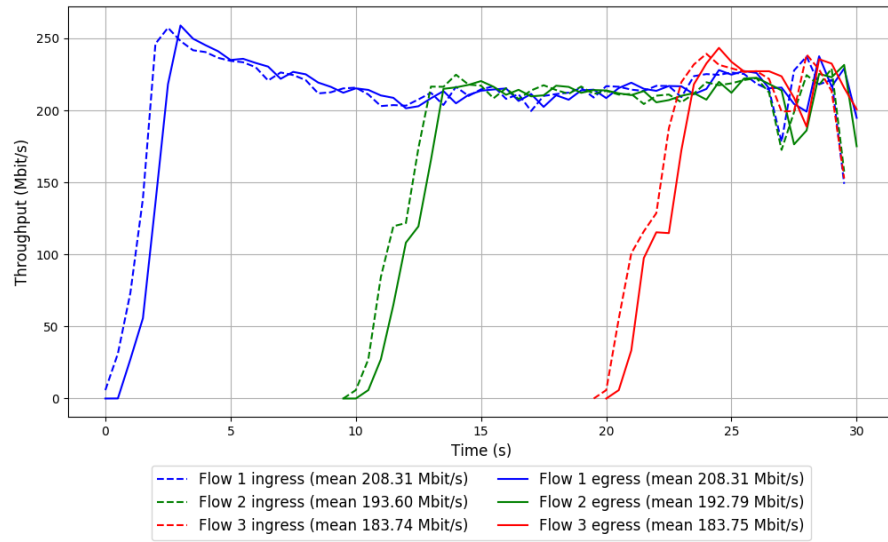
Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-20 02:56:36
End at: 2018-12-20 02:57:06
Local clock offset: -0.619 ms
Remote clock offset: 0.165 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 398.44 Mbit/s
95th percentile per-packet one-way delay: 110.565 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 208.31 Mbit/s
95th percentile per-packet one-way delay: 110.290 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.79 Mbit/s
95th percentile per-packet one-way delay: 110.818 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 183.75 Mbit/s
95th percentile per-packet one-way delay: 110.505 ms
Loss rate: 0.00%
```

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

- - - Flow 1 ingress (mean 208.31 Mbit/s) —— Flow 1 egress (mean 208.31 Mbit/s)
- - - Flow 2 ingress (mean 193.60 Mbit/s) —— Flow 2 egress (mean 192.79 Mbit/s)
- - - Flow 3 ingress (mean 183.74 Mbit/s) —— Flow 3 egress (mean 183.75 Mbit/s)

• Flow 1 (95th percentile 110.29 ms)   • Flow 2 (95th percentile 110.82 ms)   • Flow 3 (95th percentile 110.50 ms)
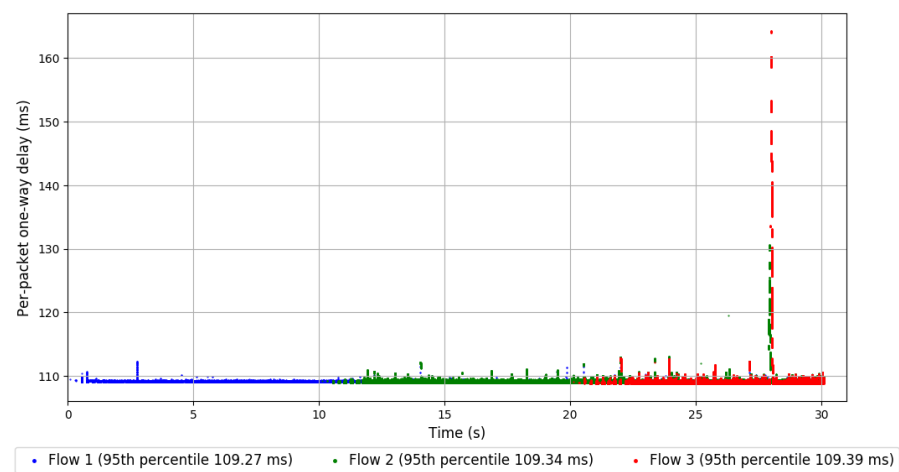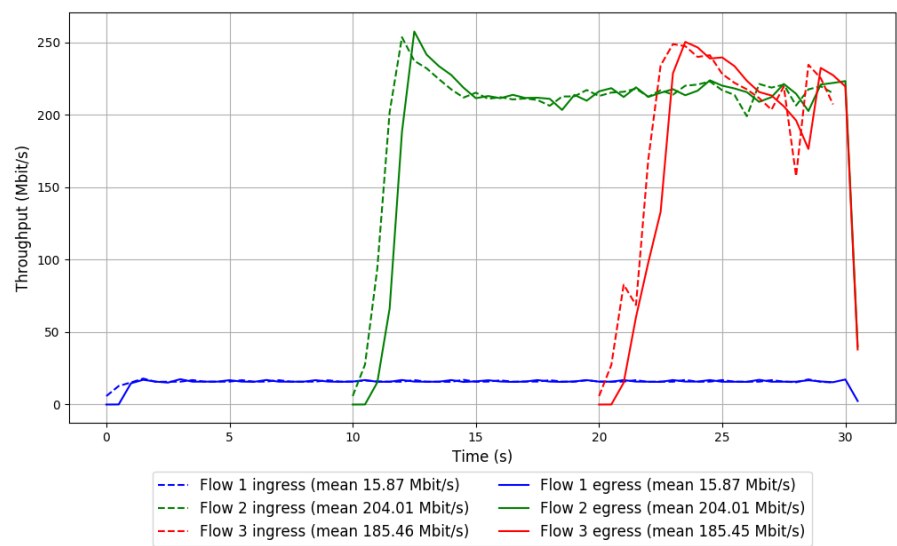
```
Run 2: Statistics of TaoVA-100x

Start at: 2018-12-20 03:31:21
End at: 2018-12-20 03:31:51
Local clock offset: -0.18 ms
Remote clock offset: -0.209 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 213.35 Mbit/s
95th percentile per-packet one-way delay: 109.334 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.87 Mbit/s
95th percentile per-packet one-way delay: 109.266 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.01 Mbit/s
95th percentile per-packet one-way delay: 109.337 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 185.45 Mbit/s
95th percentile per-packet one-way delay: 109.386 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 15.87 Mbit/s)   Flow 1 egress (mean 15.87 Mbit/s)
Flow 2 ingress (mean 204.01 Mbit/s)   Flow 2 egress (mean 204.01 Mbit/s)
Flow 3 ingress (mean 185.46 Mbit/s)   Flow 3 egress (mean 185.45 Mbit/s)

• Flow 1 (95th percentile 109.27 ms)   • Flow 2 (95th percentile 109.34 ms)   • Flow 3 (95th percentile 109.39 ms)

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

Start at: 2018-12-20 04:06:28
End at: 2018-12-20 04:06:58
Local clock offset: -1.341 ms
Remote clock offset: 0.336 ms


# Below is generated by plot.py at 2018-12-20 07:59:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 220.08 Mbit/s
95th percentile per-packet one-way delay: 111.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 204.44 Mbit/s
95th percentile per-packet one-way delay: 111.036 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.82 Mbit/s
95th percentile per-packet one-way delay: 110.172 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 15.36 Mbit/s
95th percentile per-packet one-way delay: 110.186 ms
Loss rate: 0.00%
```
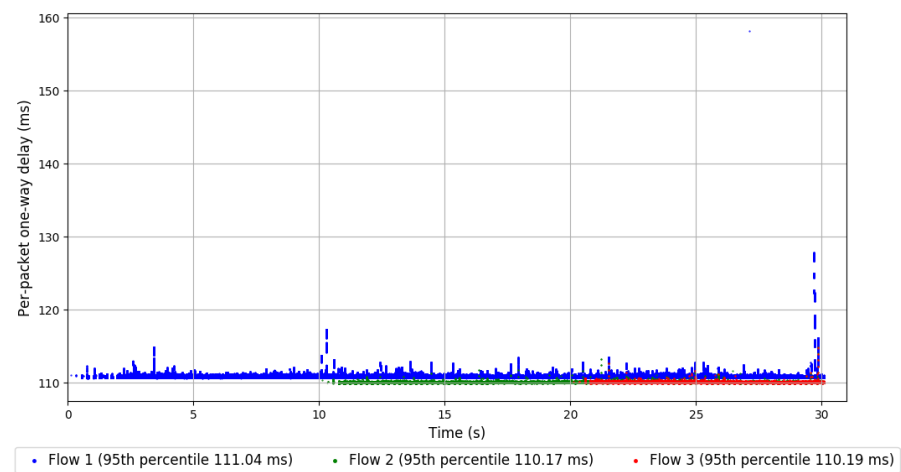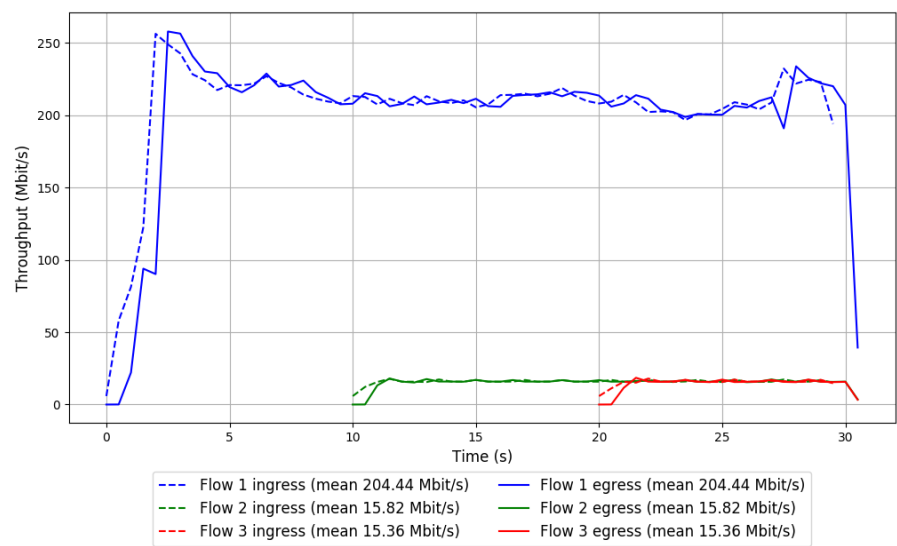
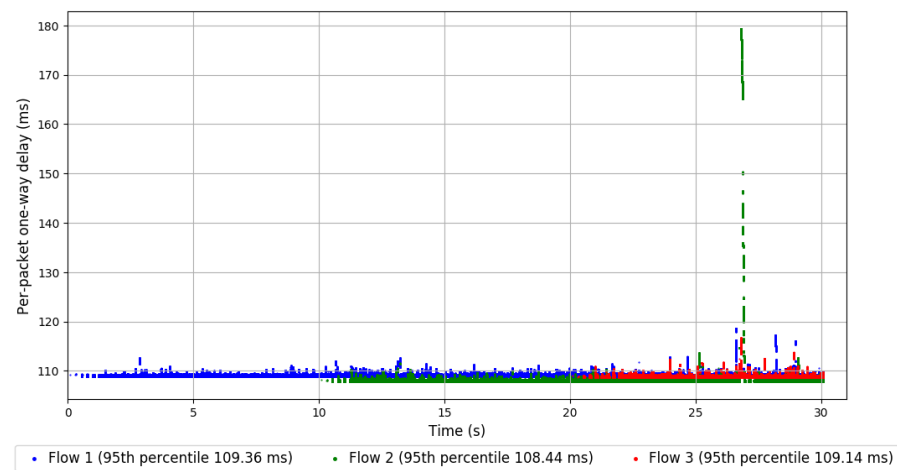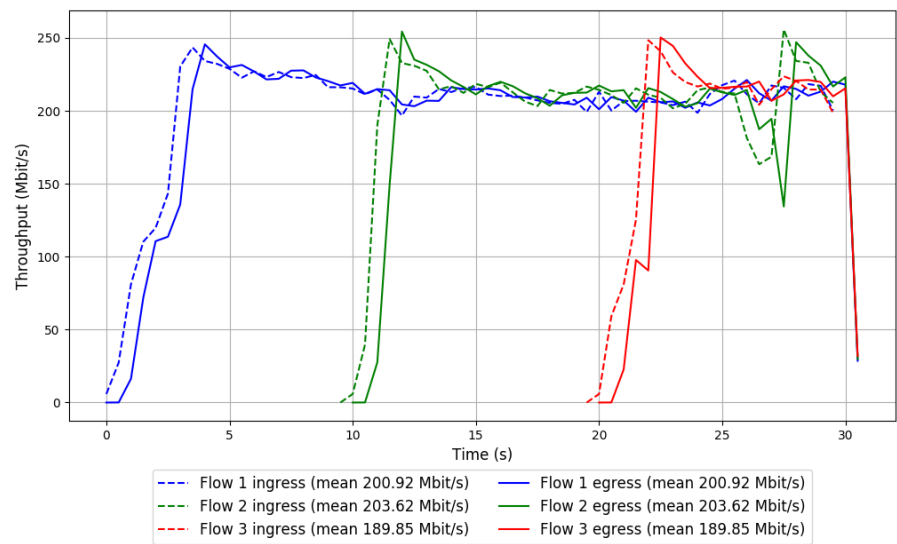## Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 204.44 Mbit/s) — Flow 1 egress (mean 204.44 Mbit/s)
Flow 2 ingress (mean 15.82 Mbit/s) — Flow 2 egress (mean 15.82 Mbit/s)
Flow 3 ingress (mean 15.36 Mbit/s) — Flow 3 egress (mean 15.36 Mbit/s)

Flow 1 (95th percentile 111.04 ms)   Flow 2 (95th percentile 110.17 ms)   Flow 3 (95th percentile 110.19 ms)

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

Start at: 2018-12-20 04:41:09
End at: 2018-12-20 04:41:39
Local clock offset: 0.071 ms
Remote clock offset: -0.426 ms


# Below is generated by plot.py at 2018-12-20 08:00:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 399.79 Mbit/s
95th percentile per-packet one-way delay: 109.265 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.92 Mbit/s
95th percentile per-packet one-way delay: 109.359 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 203.62 Mbit/s
95th percentile per-packet one-way delay: 108.438 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 189.85 Mbit/s
95th percentile per-packet one-way delay: 109.142 ms
Loss rate: 0.00%
```

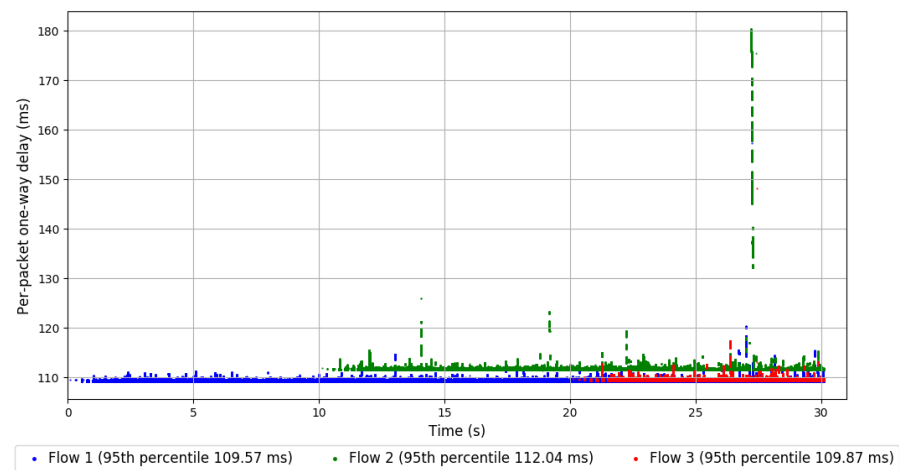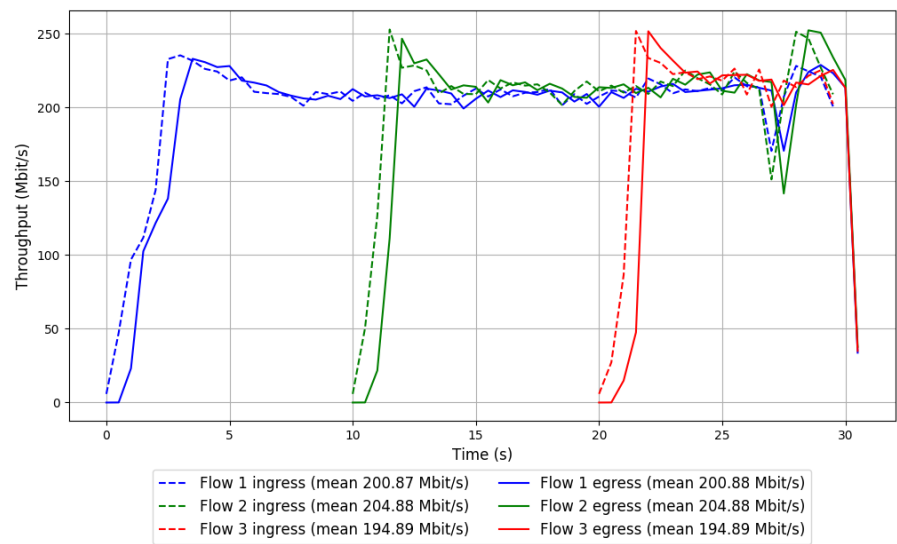# Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 200.92 Mbit/s) --- Flow 1 egress (mean 200.92 Mbit/s)
Flow 2 ingress (mean 203.62 Mbit/s) --- Flow 2 egress (mean 203.62 Mbit/s)
Flow 3 ingress (mean 189.85 Mbit/s) --- Flow 3 egress (mean 189.85 Mbit/s)

Flow 1 (95th percentile 109.36 ms)   Flow 2 (95th percentile 108.44 ms)   Flow 3 (95th percentile 109.14 ms)

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

Start at: 2018-12-20 05:16:50
End at: 2018-12-20 05:17:20
Local clock offset: -0.152 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2018-12-20 08:02:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.04 Mbit/s
95th percentile per-packet one-way delay: 111.716 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.88 Mbit/s
95th percentile per-packet one-way delay: 109.574 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.88 Mbit/s
95th percentile per-packet one-way delay: 112.042 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 194.89 Mbit/s
95th percentile per-packet one-way delay: 109.869 ms
Loss rate: 0.00%
```
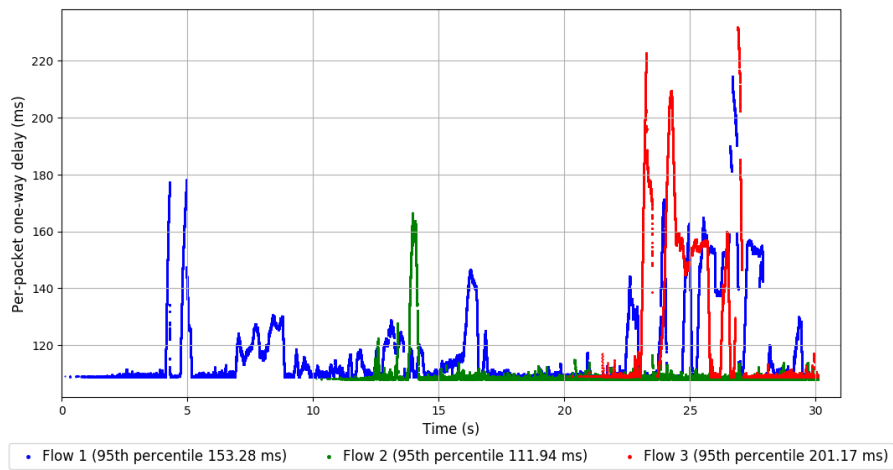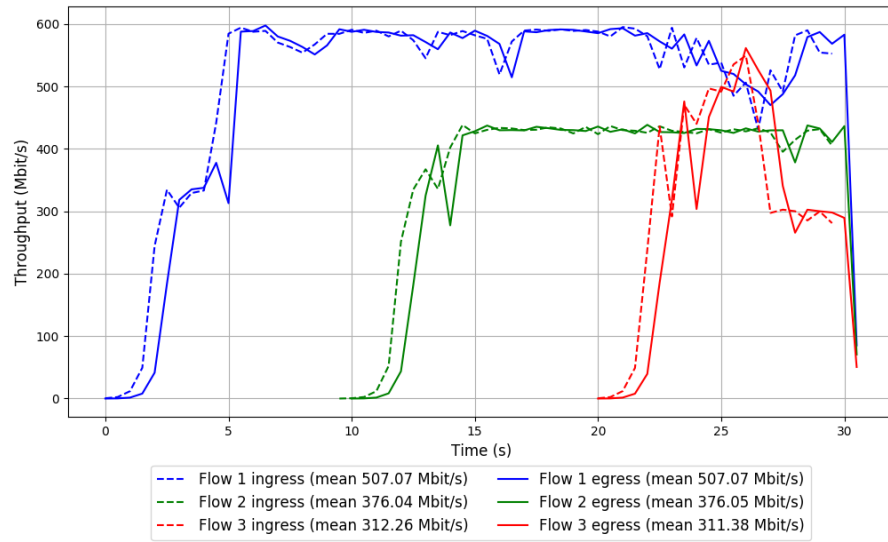
Run 5: Report of TaoVA-100x — Data Link

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-20 03:13:28
End at: 2018-12-20 03:13:58
Local clock offset: 0.647 ms
Remote clock offset: 0.344 ms


# Below is generated by plot.py at 2018-12-20 08:06:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.15 Mbit/s
95th percentile per-packet one-way delay: 155.653 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 507.07 Mbit/s
95th percentile per-packet one-way delay: 153.280 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 376.05 Mbit/s
95th percentile per-packet one-way delay: 111.945 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 311.38 Mbit/s
95th percentile per-packet one-way delay: 201.171 ms
Loss rate: 0.29%
```

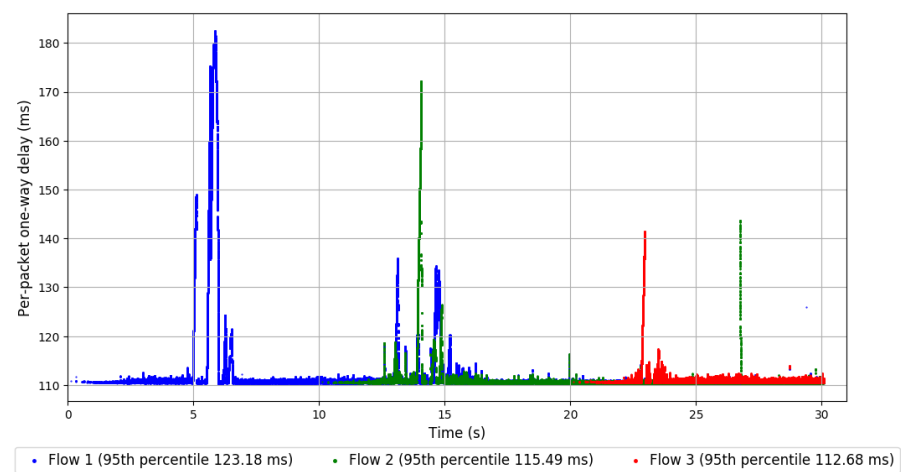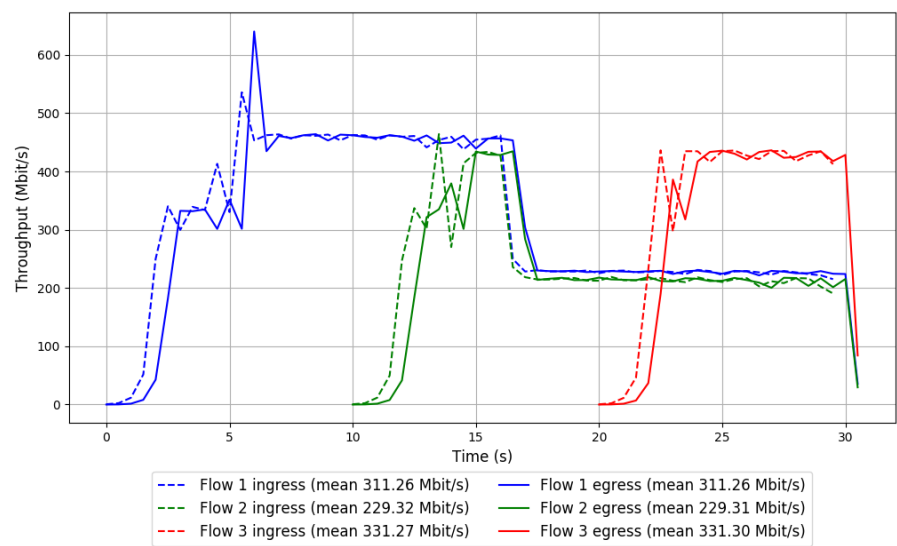## Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 507.07 Mbit/s) — — — Flow 1 egress (mean 507.07 Mbit/s)
Flow 2 ingress (mean 376.04 Mbit/s) — — — Flow 2 egress (mean 376.05 Mbit/s)
Flow 3 ingress (mean 312.26 Mbit/s) — — — Flow 3 egress (mean 311.38 Mbit/s)

Flow 1 (95th percentile 153.28 ms)   Flow 2 (95th percentile 111.94 ms)   Flow 3 (95th percentile 201.17 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-20 03:48:09
End at: 2018-12-20 03:48:39
Local clock offset: -1.524 ms
Remote clock offset: -0.131 ms

# Below is generated by plot.py at 2018-12-20 08:06:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 573.96 Mbit/s
95th percentile per-packet one-way delay: 117.658 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 311.26 Mbit/s
95th percentile per-packet one-way delay: 123.182 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 229.31 Mbit/s
95th percentile per-packet one-way delay: 115.492 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 331.30 Mbit/s
95th percentile per-packet one-way delay: 112.676 ms
Loss rate: 0.00%
```

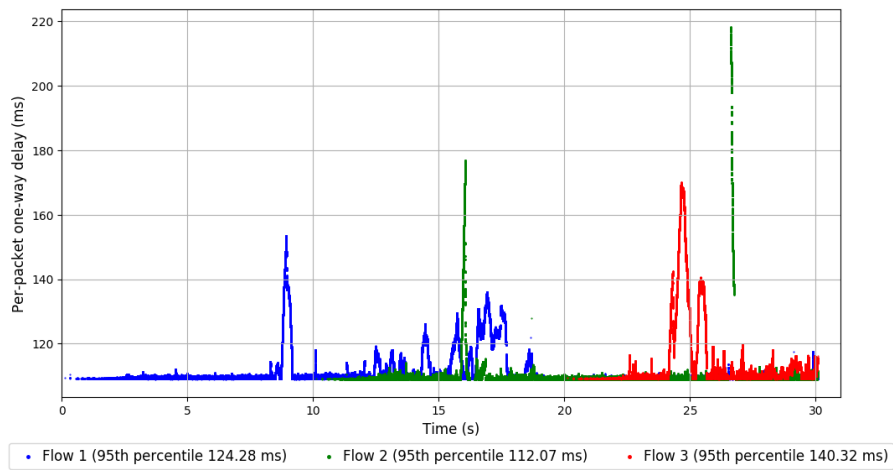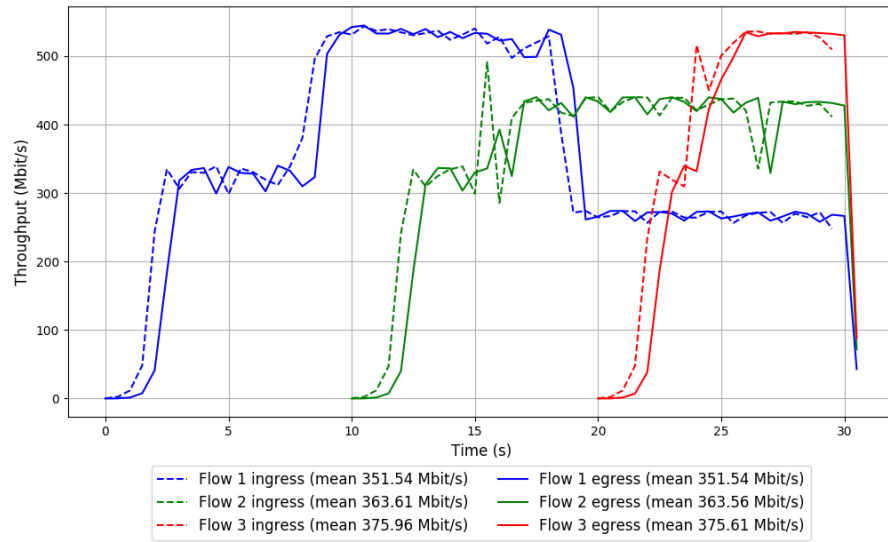Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-20 04:23:21
End at: 2018-12-20 04:23:51
Local clock offset: 0.029 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2018-12-20 08:07:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 718.37 Mbit/s
95th percentile per-packet one-way delay: 126.538 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 351.54 Mbit/s
95th percentile per-packet one-way delay: 124.284 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 363.56 Mbit/s
95th percentile per-packet one-way delay: 112.066 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 375.61 Mbit/s
95th percentile per-packet one-way delay: 140.321 ms
Loss rate: 0.08%
```

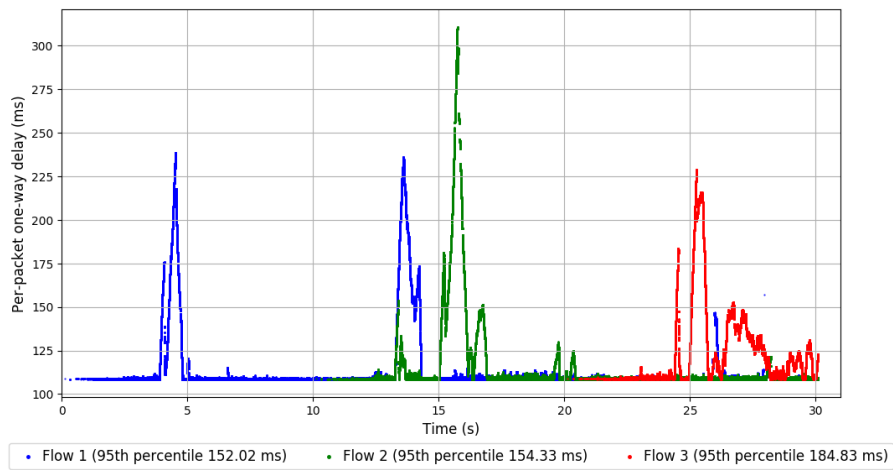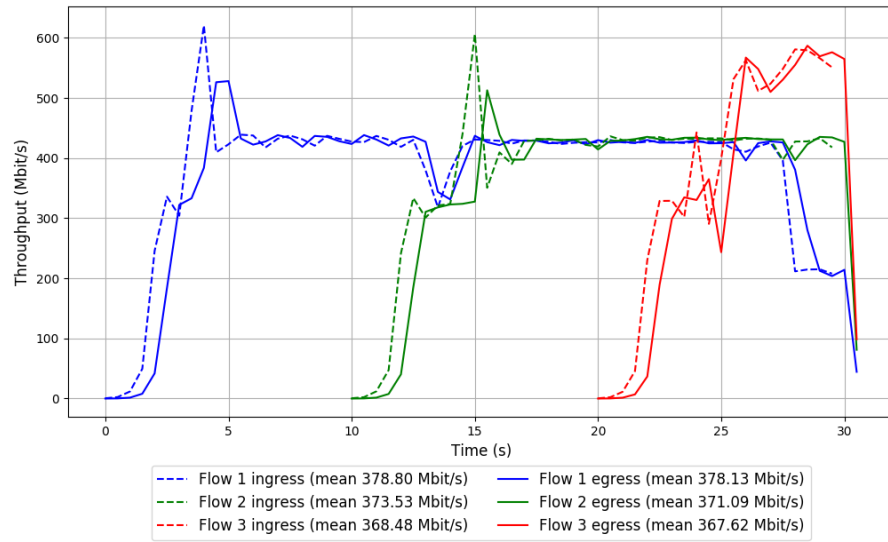Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-20 04:59:00
End at: 2018-12-20 04:59:30
Local clock offset: 0.65 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2018-12-20 08:13:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 747.35 Mbit/s
95th percentile per-packet one-way delay: 158.397 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 378.13 Mbit/s
95th percentile per-packet one-way delay: 152.023 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 371.09 Mbit/s
95th percentile per-packet one-way delay: 154.331 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 367.62 Mbit/s
95th percentile per-packet one-way delay: 184.829 ms
Loss rate: 0.21%
```
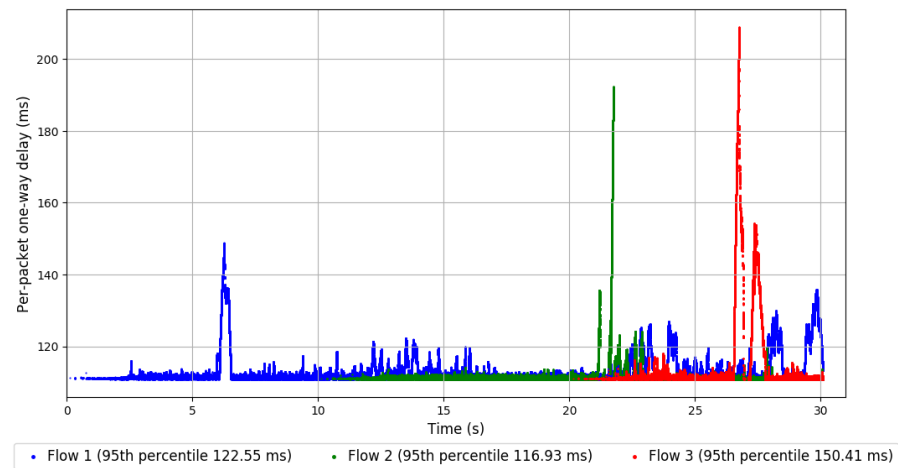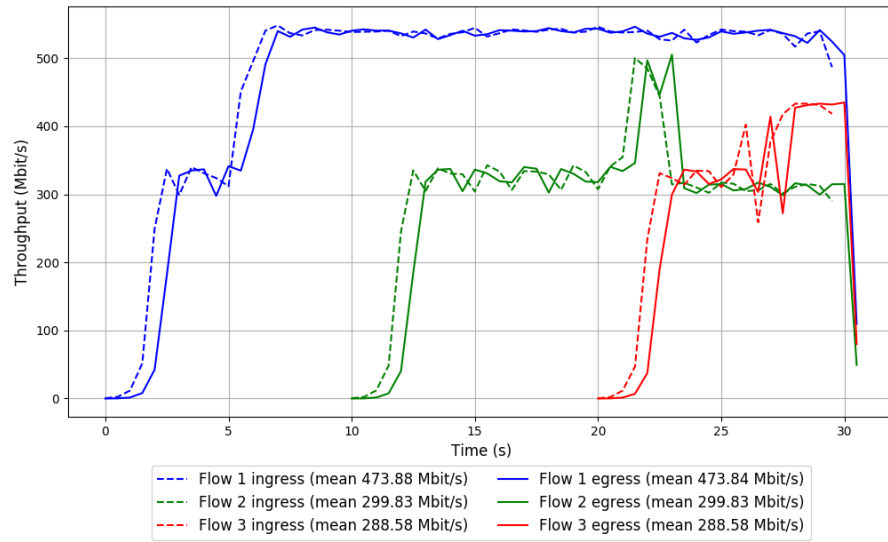
Run 4: Report of TCP Vegas — Data Link

- Flow 1 ingress (mean 378.80 Mbit/s)
- Flow 1 egress (mean 378.13 Mbit/s)
- Flow 2 ingress (mean 373.53 Mbit/s)
- Flow 2 egress (mean 371.09 Mbit/s)
- Flow 3 ingress (mean 368.48 Mbit/s)
- Flow 3 egress (mean 367.62 Mbit/s)

- Flow 1 (95th percentile 152.02 ms)
- Flow 2 (95th percentile 154.33 ms)
- Flow 3 (95th percentile 184.83 ms)

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```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 05:33:59
End at: 2018-12-20 05:34:29
Local clock offset: -1.455 ms
Remote clock offset: 0.301 ms


# Below is generated by plot.py at 2018-12-20 08:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 769.32 Mbit/s
95th percentile per-packet one-way delay: 122.726 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 473.84 Mbit/s
95th percentile per-packet one-way delay: 122.547 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 299.83 Mbit/s
95th percentile per-packet one-way delay: 116.927 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 288.58 Mbit/s
95th percentile per-packet one-way delay: 150.412 ms
Loss rate: 0.00%
```
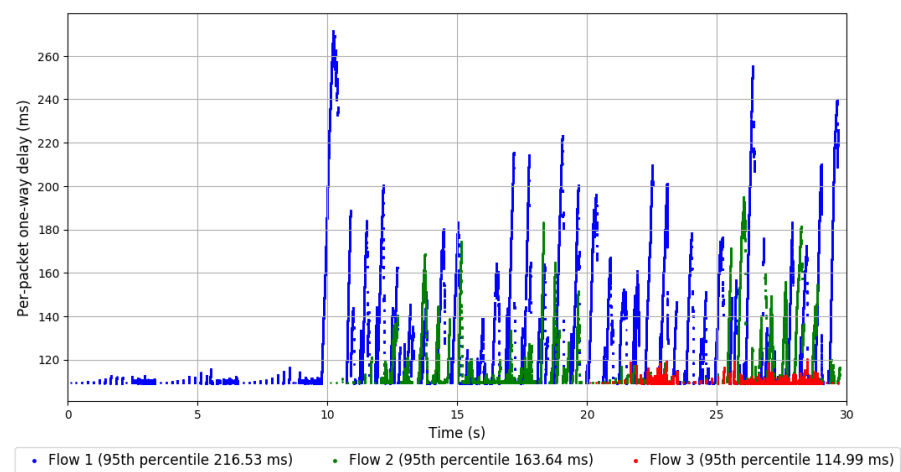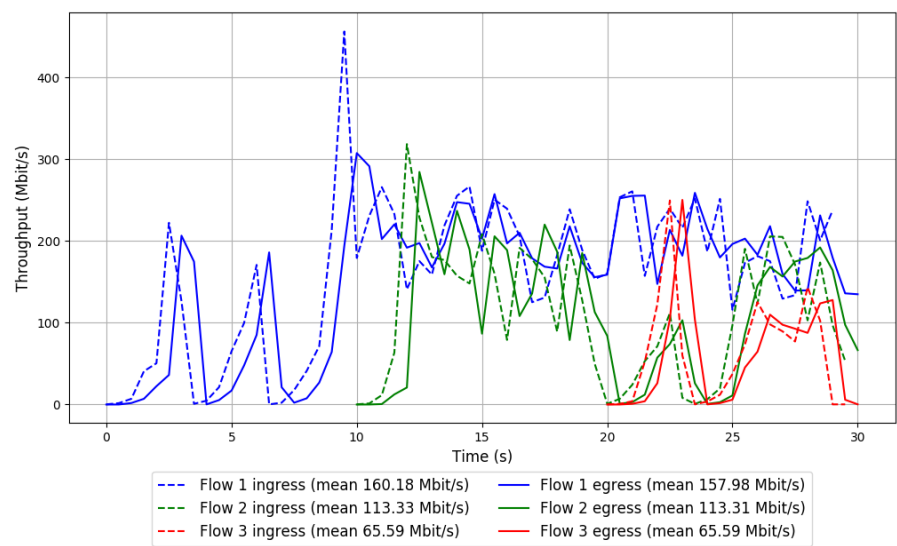
Run 5: Report of TCP Vegas — Data Link

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```
Run 1: Statistics of Verus

Start at: 2018-12-20 02:54:51
End at: 2018-12-20 02:55:21
Local clock offset: 0.137 ms
Remote clock offset: 0.132 ms

# Below is generated by plot.py at 2018-12-20 08:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 253.88 Mbit/s
95th percentile per-packet one-way delay: 198.023 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 157.98 Mbit/s
95th percentile per-packet one-way delay: 216.528 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 113.31 Mbit/s
95th percentile per-packet one-way delay: 163.643 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 65.59 Mbit/s
95th percentile per-packet one-way delay: 114.991 ms
Loss rate: 0.00%
```

Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-20 03:29:37
End at: 2018-12-20 03:30:07
Local clock offset: 0.402 ms
Remote clock offset: -0.21 ms

# Below is generated by plot.py at 2018-12-20 08:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.72 Mbit/s
95th percentile per-packet one-way delay: 201.690 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 164.93 Mbit/s
95th percentile per-packet one-way delay: 215.014 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 91.04 Mbit/s
95th percentile per-packet one-way delay: 177.714 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 60.79 Mbit/s
95th percentile per-packet one-way delay: 118.329 ms
Loss rate: 0.00%
```
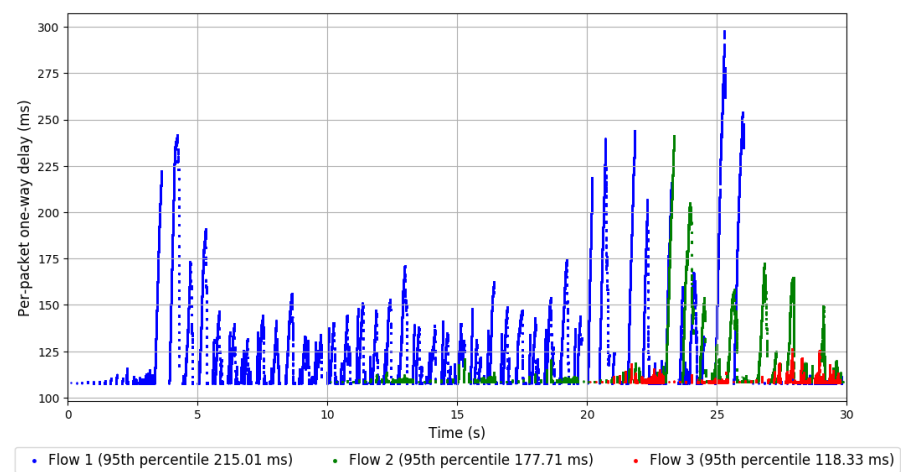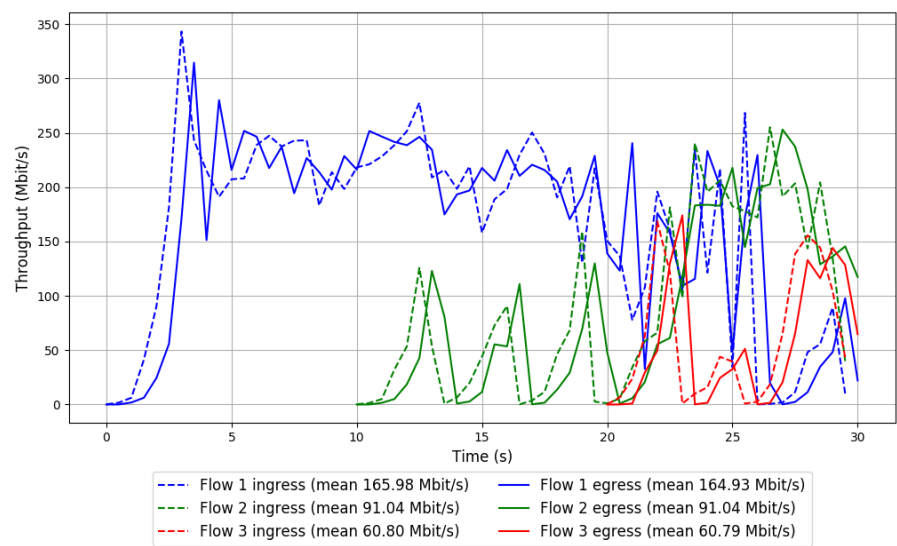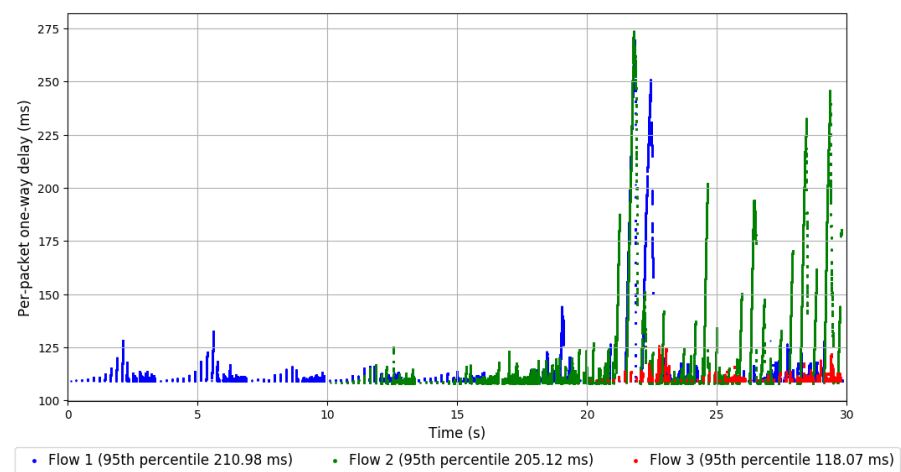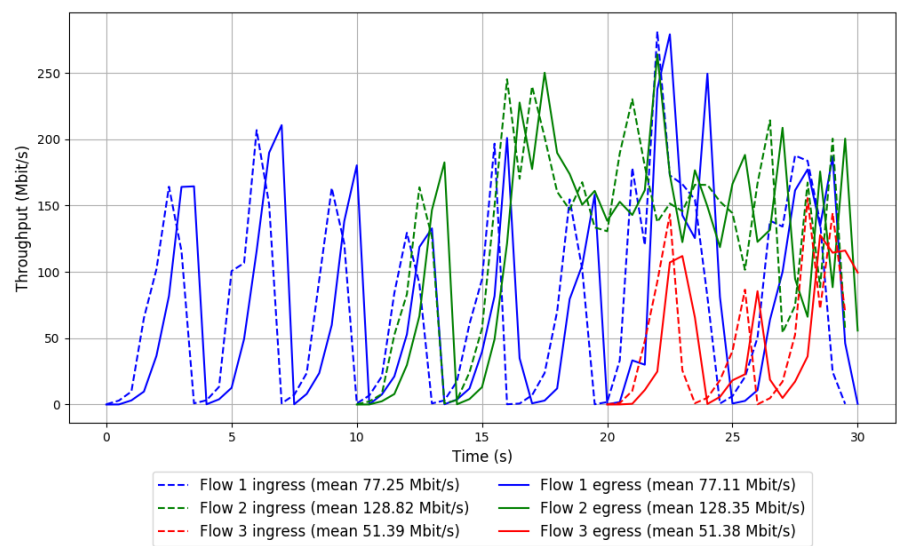
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 165.98 Mbit/s)   Flow 1 egress (mean 164.93 Mbit/s)
Flow 2 ingress (mean 91.04 Mbit/s)   Flow 2 egress (mean 91.04 Mbit/s)
Flow 3 ingress (mean 60.80 Mbit/s)   Flow 3 egress (mean 60.79 Mbit/s)

Flow 1 (95th percentile 215.01 ms)   Flow 2 (95th percentile 177.71 ms)   Flow 3 (95th percentile 118.33 ms)

```
Run 3: Statistics of Verus

Start at: 2018-12-20 04:04:50
End at: 2018-12-20 04:05:20
Local clock offset: -0.021 ms
Remote clock offset: -0.002 ms


# Below is generated by plot.py at 2018-12-20 08:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 178.73 Mbit/s
95th percentile per-packet one-way delay: 201.436 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 77.11 Mbit/s
95th percentile per-packet one-way delay: 210.983 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 128.35 Mbit/s
95th percentile per-packet one-way delay: 205.117 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.38 Mbit/s
95th percentile per-packet one-way delay: 118.074 ms
Loss rate: 0.00%
```
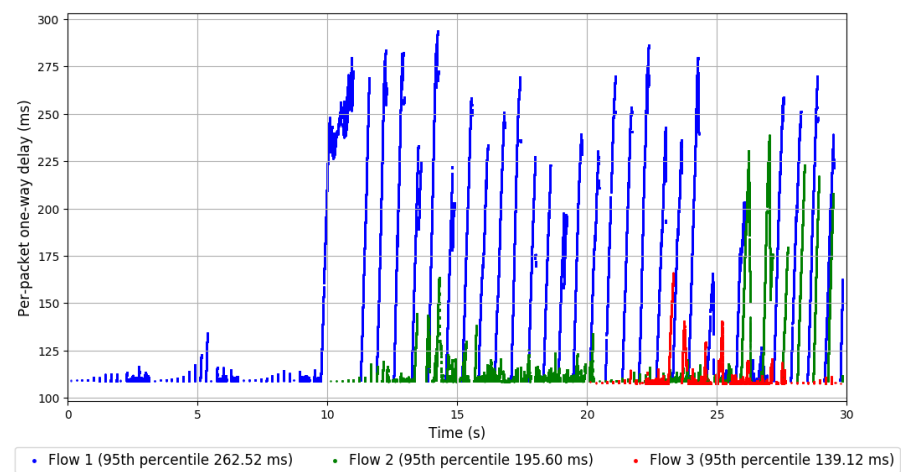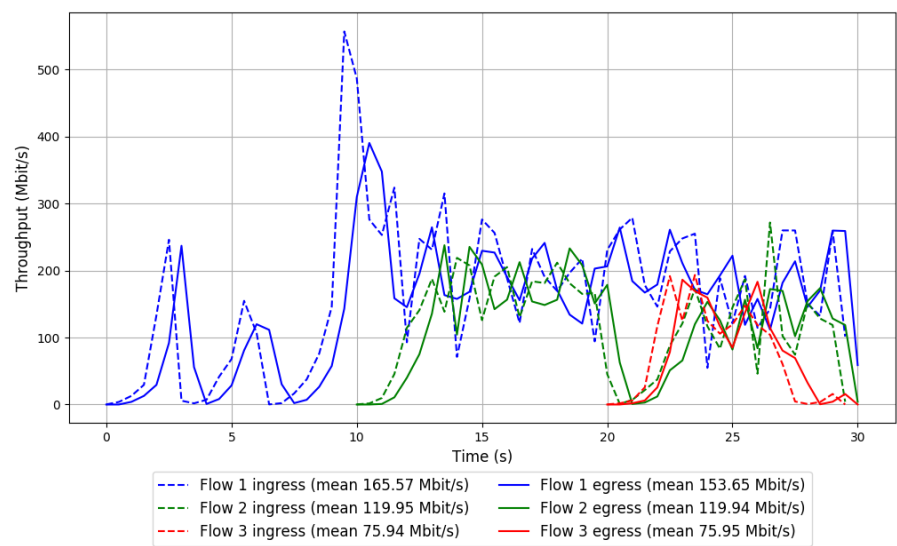
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 77.25 Mbit/s) — Flow 1 egress (mean 77.11 Mbit/s)
Flow 2 ingress (mean 128.82 Mbit/s) — Flow 2 egress (mean 128.35 Mbit/s)
Flow 3 ingress (mean 51.39 Mbit/s) — Flow 3 egress (mean 51.38 Mbit/s)

Flow 1 (95th percentile 210.98 ms) • Flow 2 (95th percentile 205.12 ms) • Flow 3 (95th percentile 118.07 ms)

```
Run 4: Statistics of Verus

Start at: 2018-12-20 04:39:22
End at: 2018-12-20 04:39:52
Local clock offset: 0.031 ms
Remote clock offset: -0.39 ms

# Below is generated by plot.py at 2018-12-20 08:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 257.81 Mbit/s
95th percentile per-packet one-way delay: 255.053 ms
Loss rate: 4.42%
-- Flow 1:
Average throughput: 153.65 Mbit/s
95th percentile per-packet one-way delay: 262.523 ms
Loss rate: 7.20%
-- Flow 2:
Average throughput: 119.94 Mbit/s
95th percentile per-packet one-way delay: 195.601 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 75.95 Mbit/s
95th percentile per-packet one-way delay: 139.121 ms
Loss rate: 0.00%
```

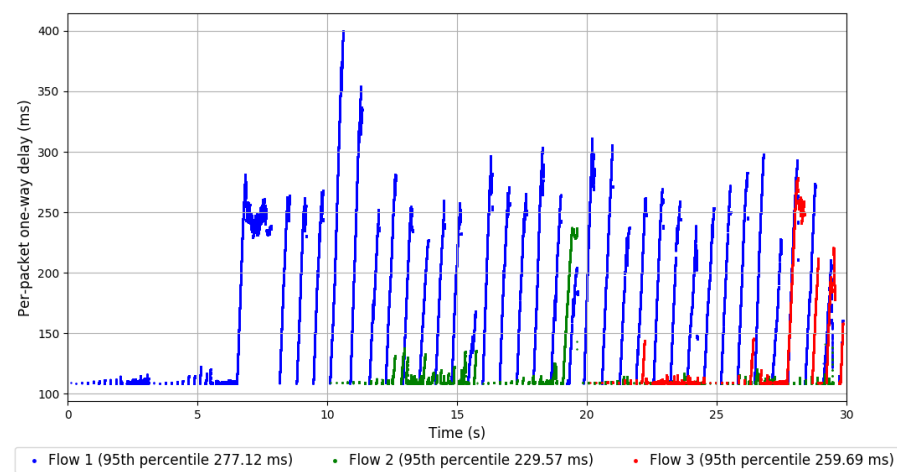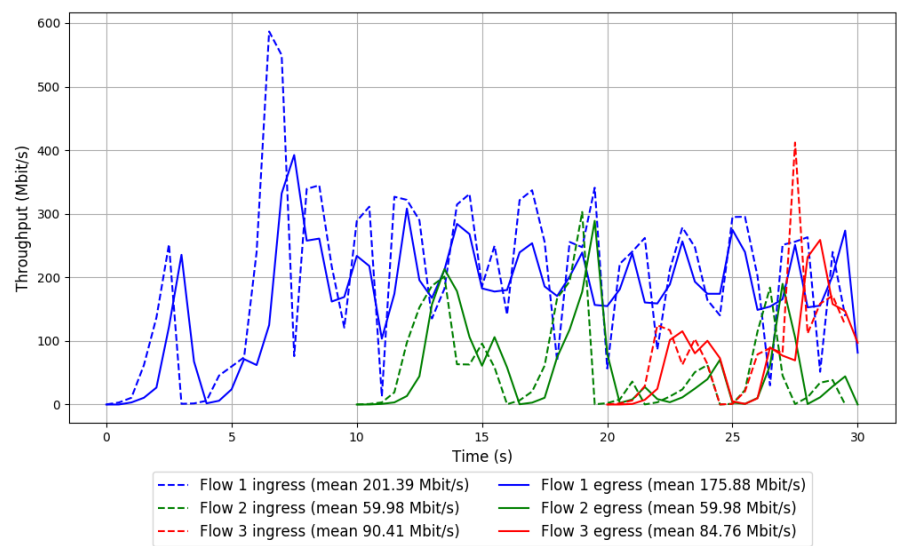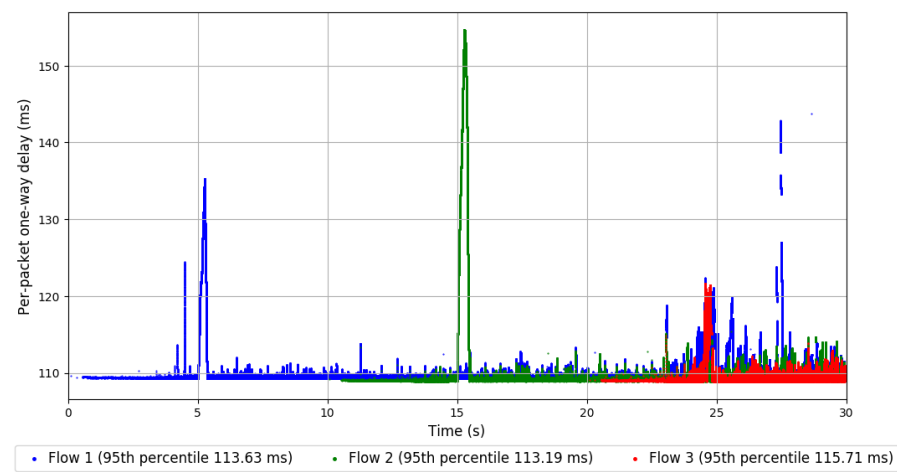## Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-20 05:15:05
End at: 2018-12-20 05:15:35
Local clock offset: 0.403 ms
Remote clock offset: -0.473 ms


# Below is generated by plot.py at 2018-12-20 08:15:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 243.07 Mbit/s
95th percentile per-packet one-way delay: 270.850 ms
Loss rate: 10.11%
-- Flow 1:
Average throughput: 175.88 Mbit/s
95th percentile per-packet one-way delay: 277.124 ms
Loss rate: 12.66%
-- Flow 2:
Average throughput: 59.98 Mbit/s
95th percentile per-packet one-way delay: 229.571 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 84.76 Mbit/s
95th percentile per-packet one-way delay: 259.688 ms
Loss rate: 6.22%
```

Run 5: Report of Verus — Data Link

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```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-20 03:01:08
End at: 2018-12-20 03:01:38
Local clock offset: 0.162 ms
Remote clock offset: 0.145 ms


# Below is generated by plot.py at 2018-12-20 08:17:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.01 Mbit/s
95th percentile per-packet one-way delay: 113.742 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 342.83 Mbit/s
95th percentile per-packet one-way delay: 113.630 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 263.52 Mbit/s
95th percentile per-packet one-way delay: 113.189 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 147.76 Mbit/s
95th percentile per-packet one-way delay: 115.706 ms
Loss rate: 0.00%
```
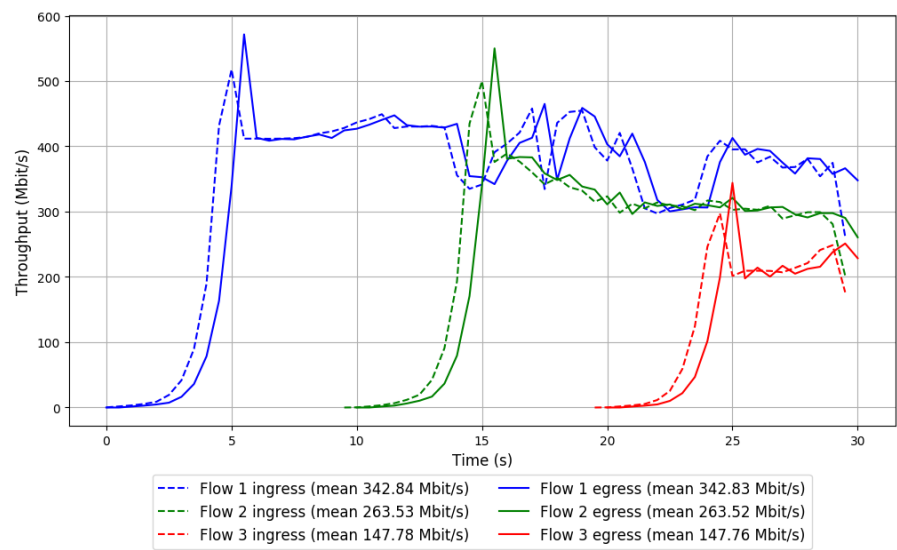
Run 1: Report of PCC-Vivace — Data Link

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```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-20 03:35:33
End at: 2018-12-20 03:36:03
Local clock offset: -0.238 ms
Remote clock offset: -0.27 ms

# Below is generated by plot.py at 2018-12-20 08:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 536.88 Mbit/s
95th percentile per-packet one-way delay: 112.345 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 317.20 Mbit/s
95th percentile per-packet one-way delay: 113.015 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 266.97 Mbit/s
95th percentile per-packet one-way delay: 111.813 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 127.75 Mbit/s
95th percentile per-packet one-way delay: 110.380 ms
Loss rate: 0.00%
```
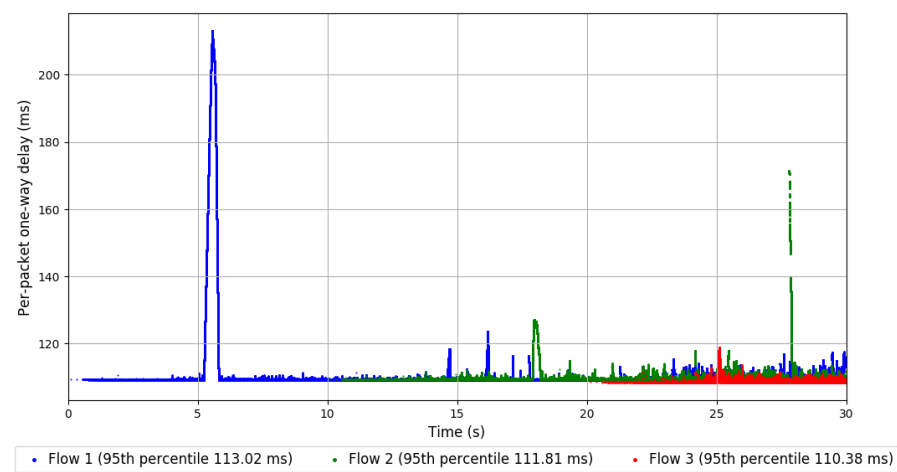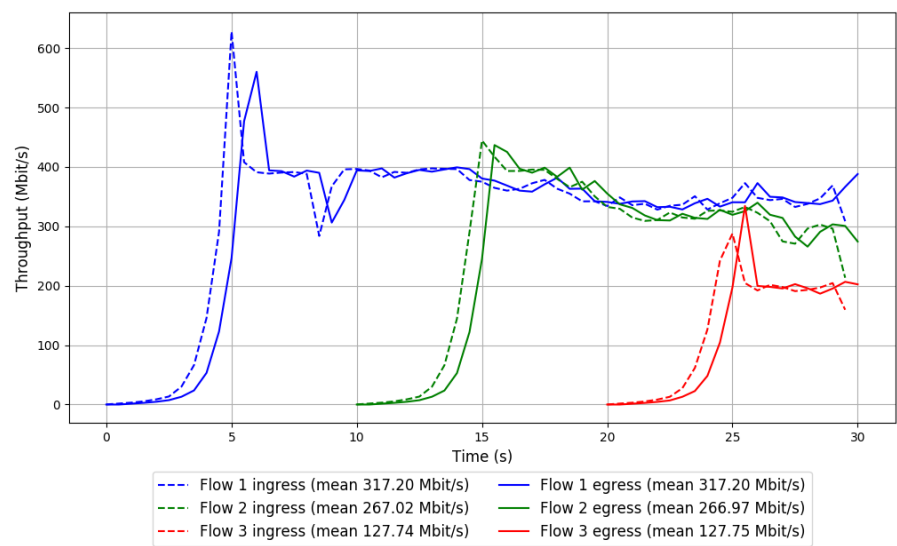
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-20 04:10:43
End at: 2018-12-20 04:11:13
Local clock offset: -0.099 ms
Remote clock offset: 0.008 ms


# Below is generated by plot.py at 2018-12-20 08:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 491.60 Mbit/s
95th percentile per-packet one-way delay: 111.922 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 318.87 Mbit/s
95th percentile per-packet one-way delay: 114.788 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 191.57 Mbit/s
95th percentile per-packet one-way delay: 110.474 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 137.50 Mbit/s
95th percentile per-packet one-way delay: 109.935 ms
Loss rate: 0.00%
```
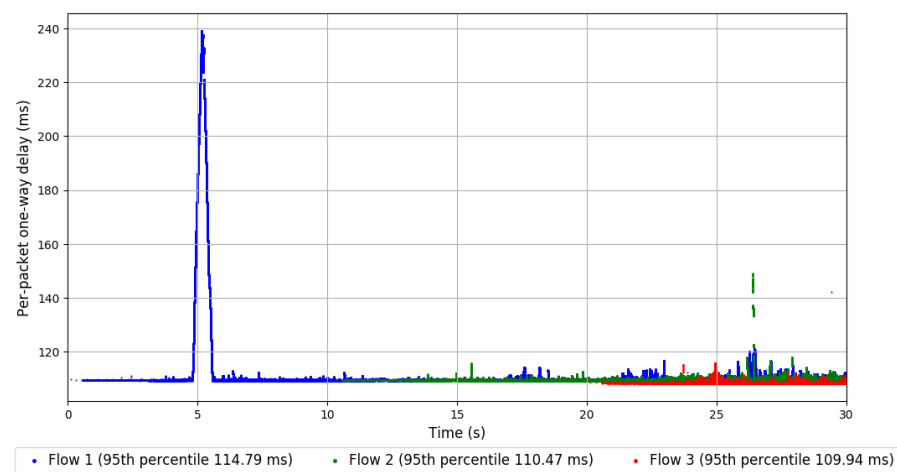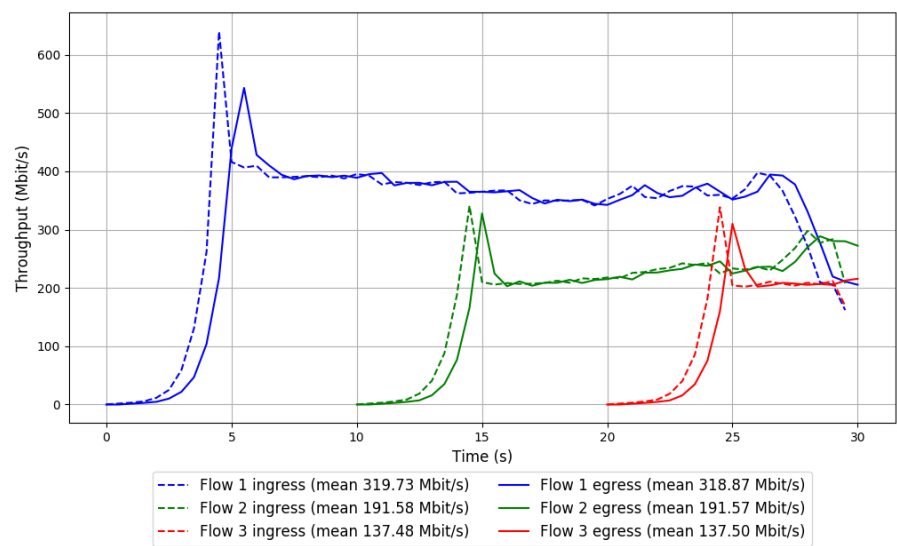
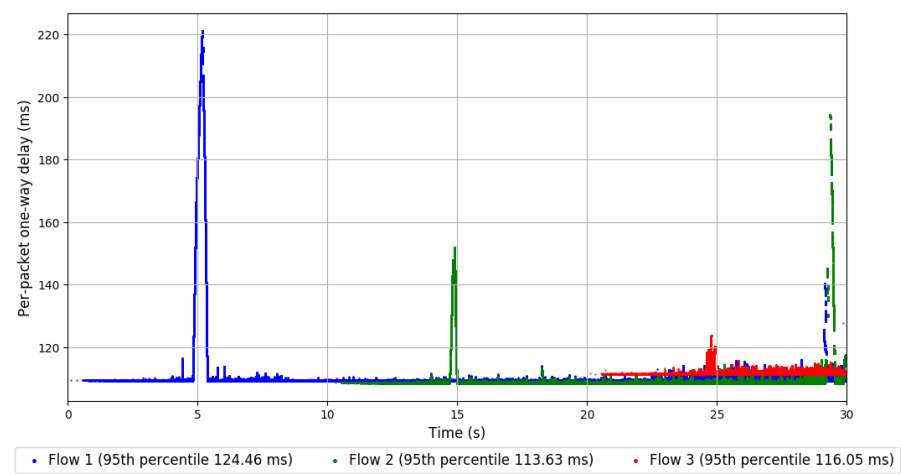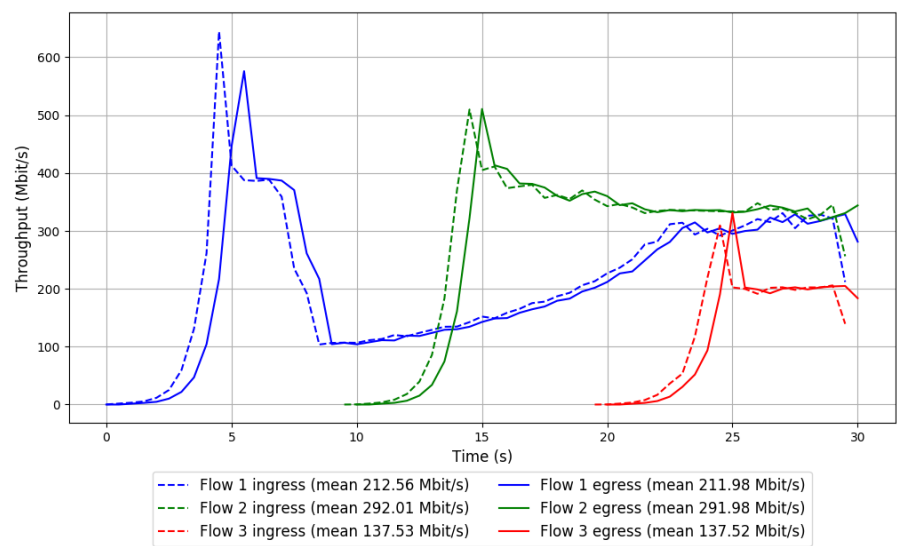Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-20 04:45:43
End at: 2018-12-20 04:46:13
Local clock offset: -0.145 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2018-12-20 08:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 451.78 Mbit/s
95th percentile per-packet one-way delay: 115.773 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 211.98 Mbit/s
95th percentile per-packet one-way delay: 124.457 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 291.98 Mbit/s
95th percentile per-packet one-way delay: 113.631 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 137.52 Mbit/s
95th percentile per-packet one-way delay: 116.048 ms
Loss rate: 0.01%
```
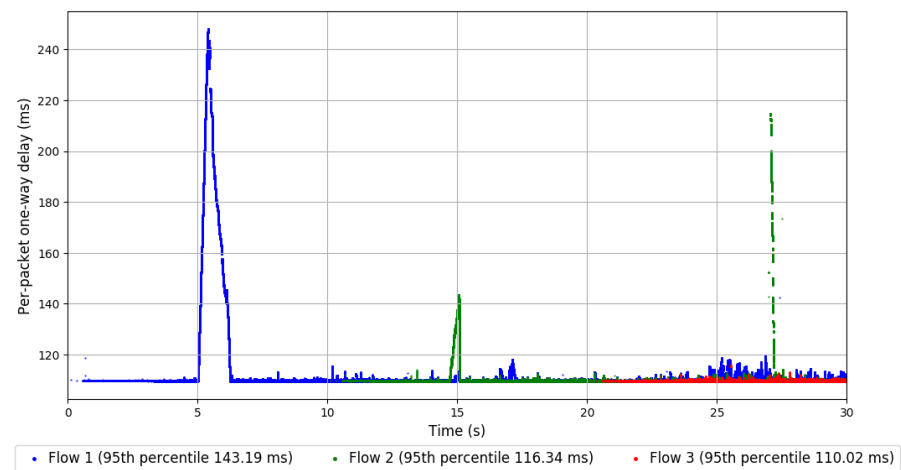
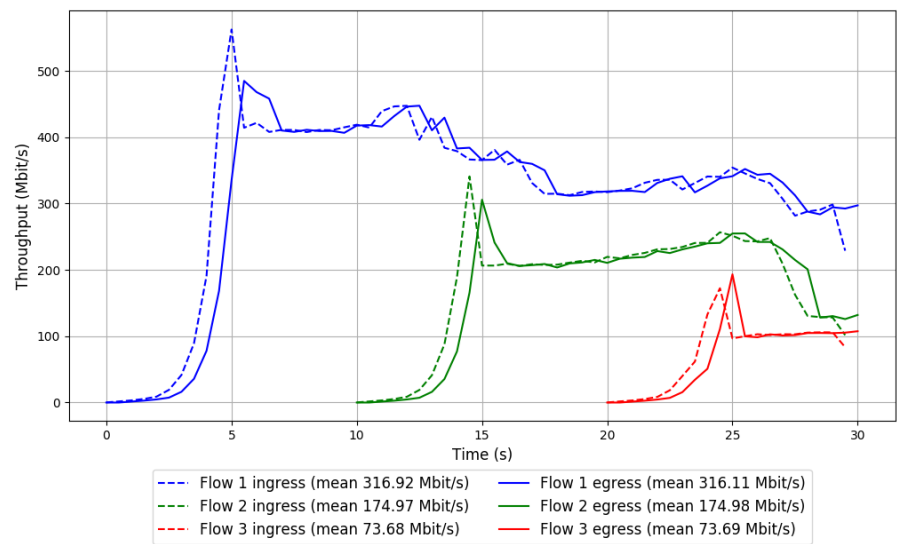## Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 05:21:23
End at: 2018-12-20 05:21:53
Local clock offset: -0.29 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-12-20 08:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 456.75 Mbit/s
95th percentile per-packet one-way delay: 124.260 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 316.11 Mbit/s
95th percentile per-packet one-way delay: 143.192 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 174.98 Mbit/s
95th percentile per-packet one-way delay: 116.341 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 73.69 Mbit/s
95th percentile per-packet one-way delay: 110.015 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 316.92 Mbit/s) --- Flow 1 egress (mean 316.11 Mbit/s)
Flow 2 ingress (mean 174.97 Mbit/s) --- Flow 2 egress (mean 174.98 Mbit/s)
Flow 3 ingress (mean 73.68 Mbit/s) --- Flow 3 egress (mean 73.69 Mbit/s)

Flow 1 (95th percentile 143.19 ms)   Flow 2 (95th percentile 116.34 ms)   Flow 3 (95th percentile 110.02 ms)
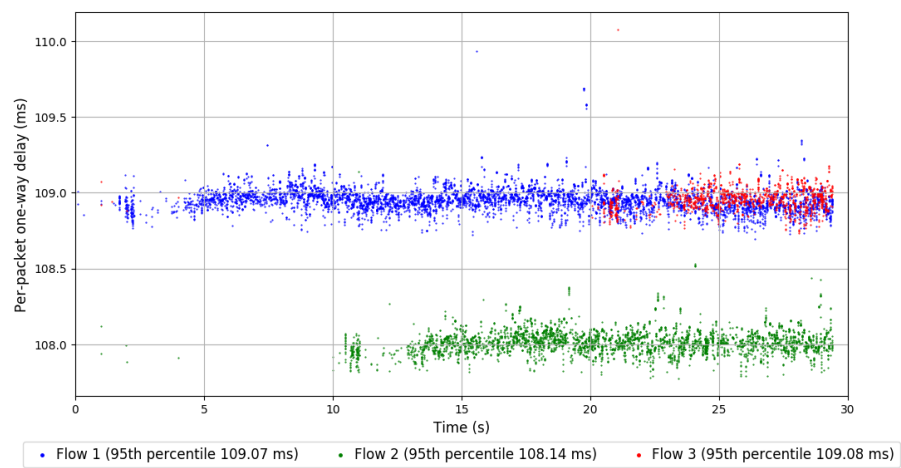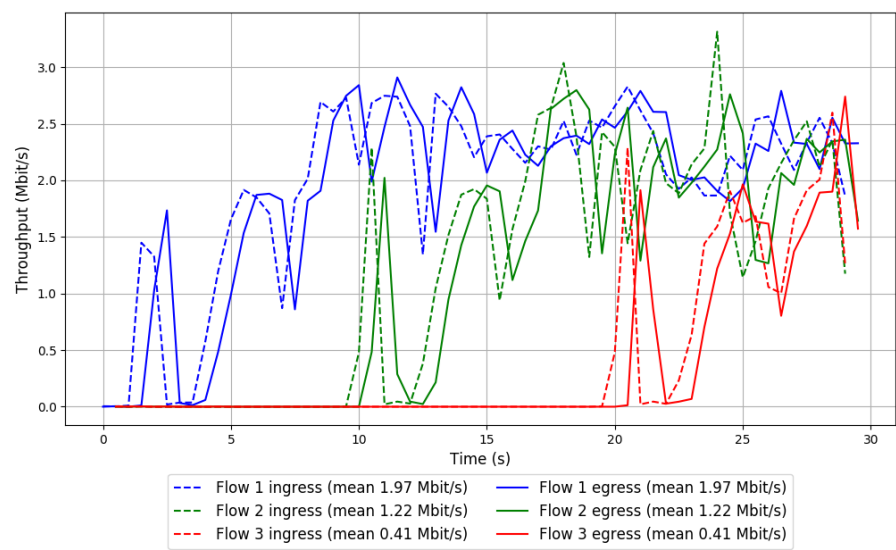
```
Run 1: Statistics of WebRTC media

Start at: 2018-12-20 03:17:43
End at: 2018-12-20 03:18:13
Local clock offset: 0.48 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-12-20 08:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 109.053 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 109.069 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 108.136 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 109.085 ms
Loss rate: 0.00%
```
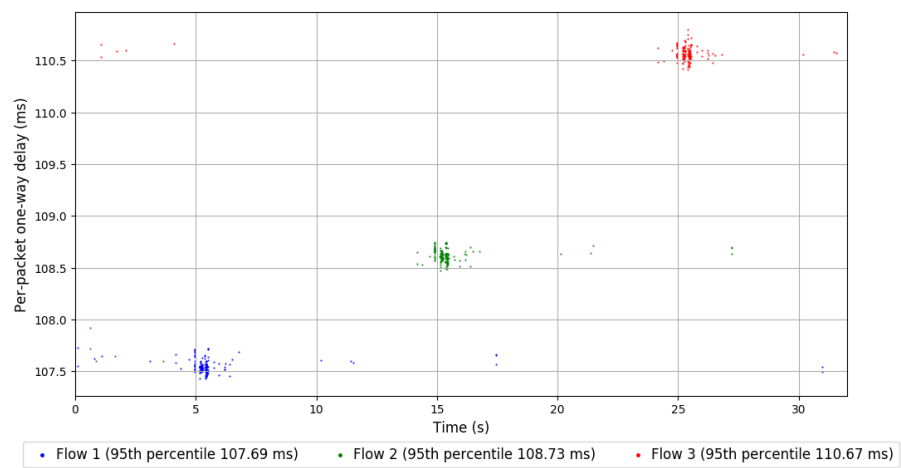
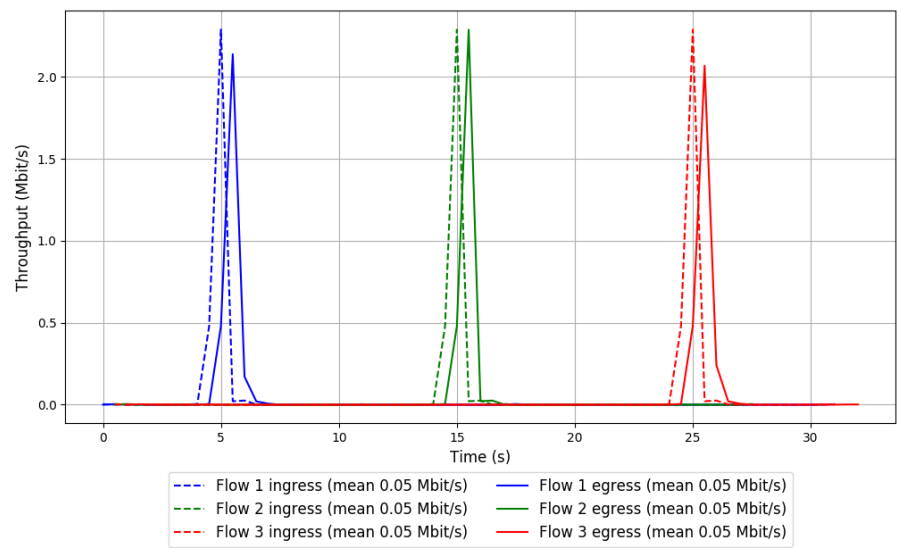Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-20 03:52:16
End at: 2018-12-20 03:52:46
Local clock offset: 0.445 ms
Remote clock offset: -0.444 ms

# Below is generated by plot.py at 2018-12-20 08:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 110.639 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 107.689 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 108.733 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.673 ms
Loss rate: 0.00%
```

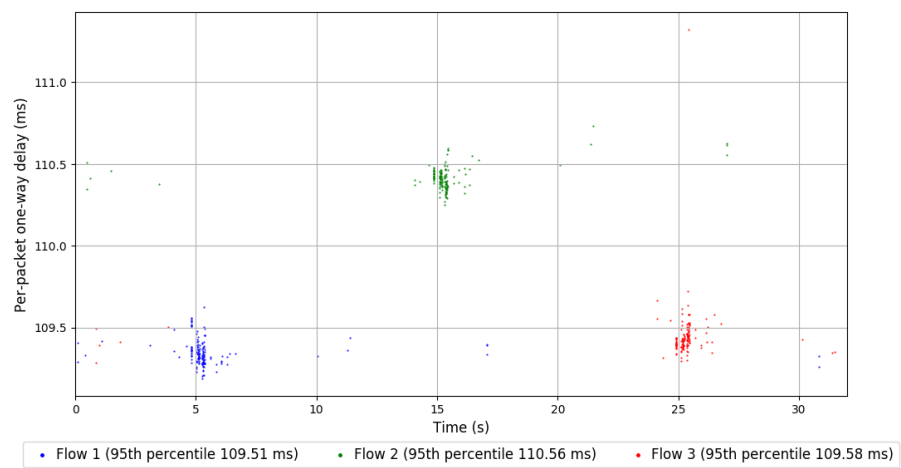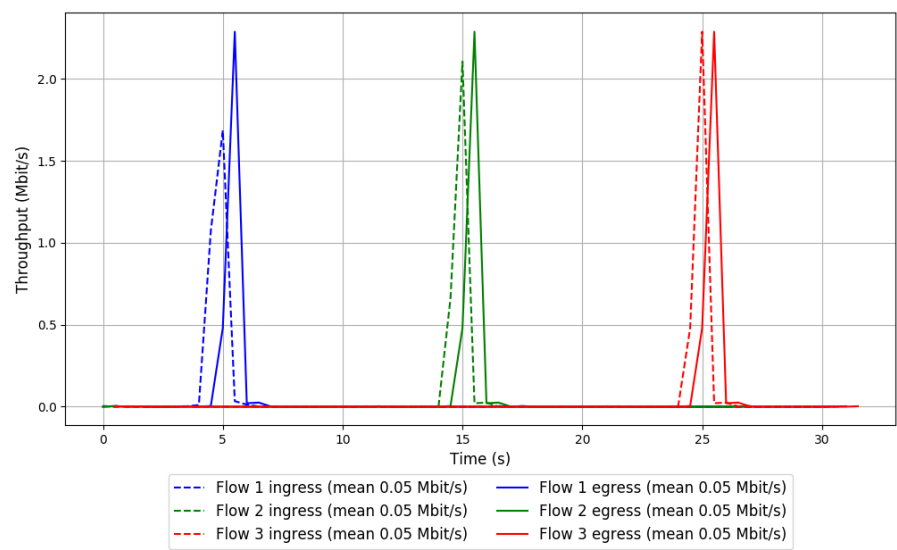Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-20 04:27:36
End at: 2018-12-20 04:28:06
Local clock offset: -0.042 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2018-12-20 08:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 110.472 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.510 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.559 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.580 ms
Loss rate: 0.00%
```

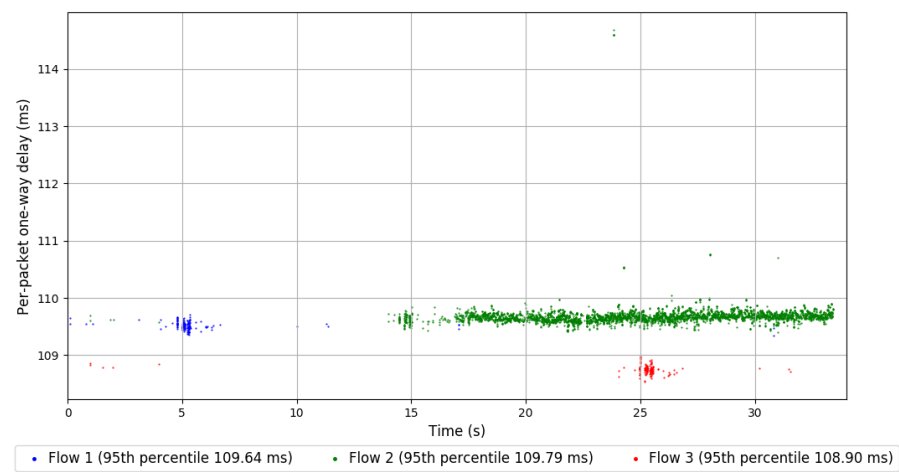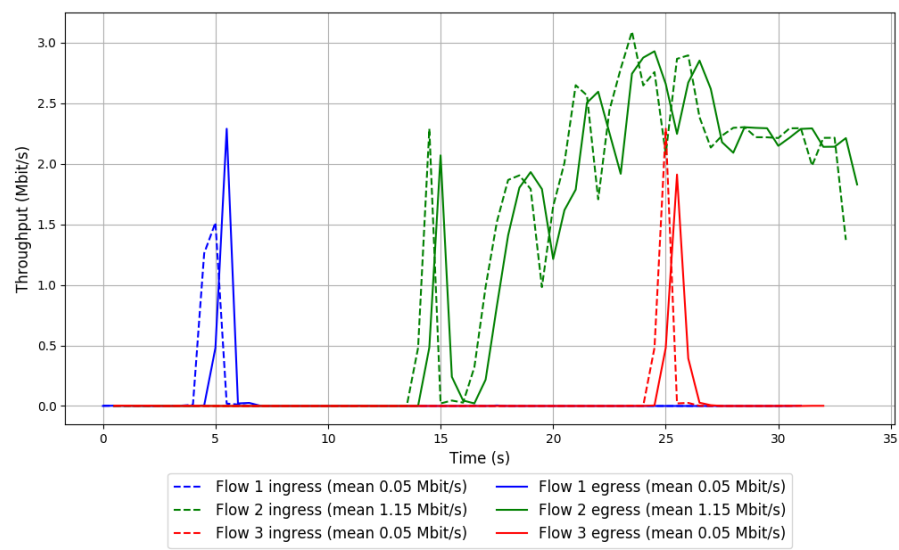Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-20 05:03:12
End at: 2018-12-20 05:03:42
Local clock offset: -0.218 ms
Remote clock offset: -0.119 ms


# Below is generated by plot.py at 2018-12-20 08:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 109.789 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.638 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 109.792 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 108.904 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-20 05:38:11
End at: 2018-12-20 05:38:41
Local clock offset: -0.876 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-12-20 08:18:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 110.359 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.263 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.226 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 110.386 ms
Loss rate: 0.00%
```

Run 5: 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 110.26 ms) • Flow 2 (95th percentile 110.23 ms) • Flow 3 (95th percentile 110.39 ms)