Pantheon Report

Generated at 2019-07-18 15:38:31 (UTC).

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

Repeated the test of 24 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.
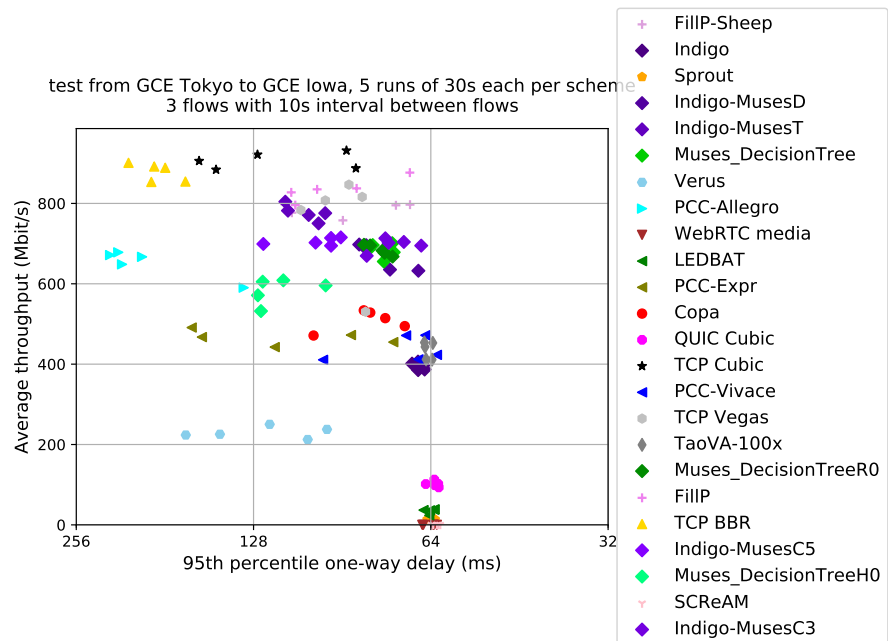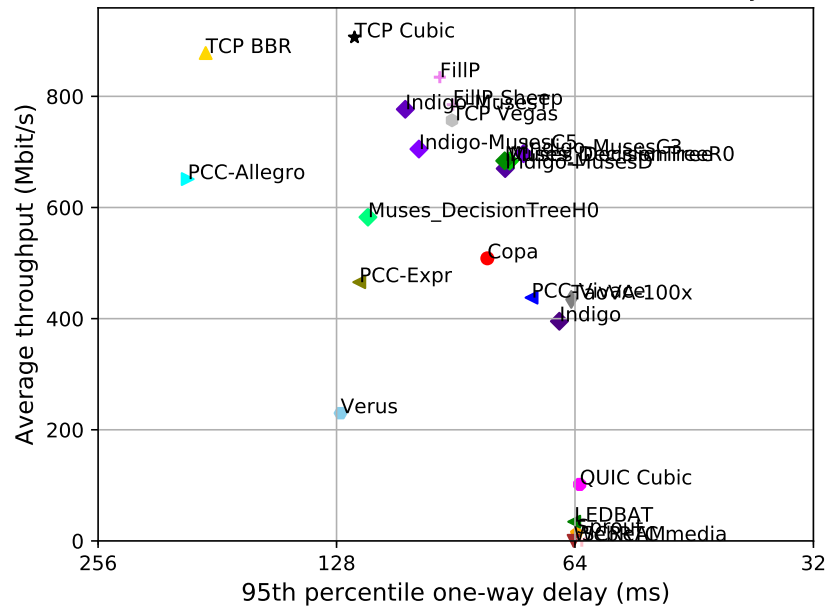
```
System info:
Linux 4.15.0-1036-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ de42328552b3776a75a932a94dfafd722537b0ec
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/muses_dtree @ 387225f7b5f61ddbe92d708a8869ffbb84eb3200
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 Iowa, 5 runs of 30s each per scheme
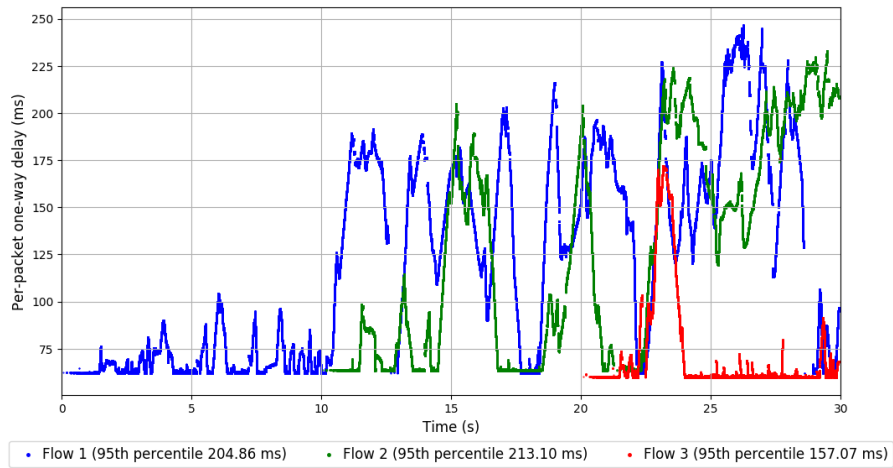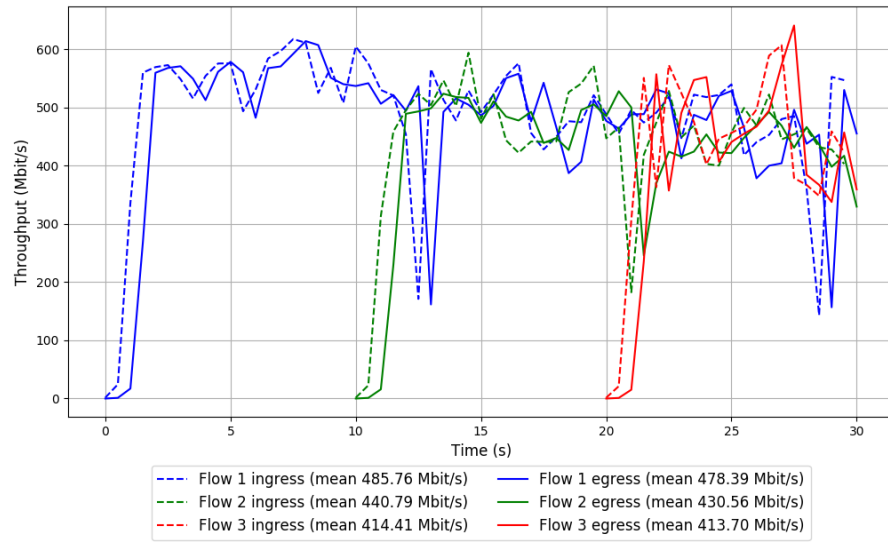3 flows with 10s interval between flows (mean of all runs by scheme)

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

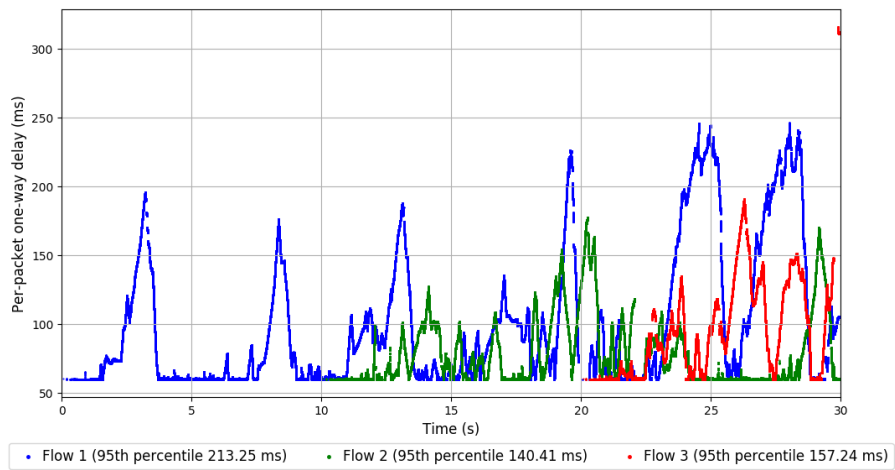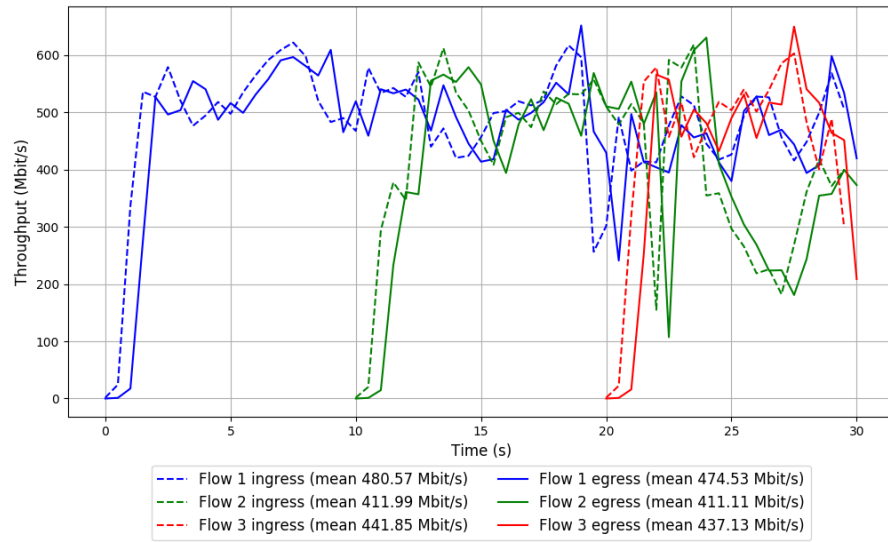| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	470.93	411.80	404.29	183.68	162.40	180.49	1.37	1.27	2.27
Copa	5	272.11	251.81	209.63	77.39	81.10	100.41	0.41	0.52	1.52
TCP Cubic	5	468.54	452.82	413.95	85.65	122.08	106.05	0.41	0.66	1.80
FillP	5	521.25	346.07	254.32	100.03	66.10	65.79	0.68	0.53	1.35
FillP-Sheep	5	504.91	306.74	232.73	98.04	66.07	65.34	0.69	0.58	1.38
Indigo	5	210.33	195.45	166.23	65.82	65.72	66.64	0.41	0.66	1.42
Indigo-MusesC3	5	420.48	341.32	233.67	73.68	76.56	67.49	0.28	0.61	2.49
Indigo-MusesC5	5	437.40	383.93	90.82	106.21	89.15	64.06	0.22	0.55	2.26
Indigo-MusesD	5	411.47	316.62	225.93	82.18	73.69	64.64	0.34	0.55	2.43
Indigo-MusesT	5	471.70	377.48	255.82	115.66	80.85	66.51	0.30	0.66	2.24
LEDBAT	5	21.47	15.96	7.89	63.55	62.74	61.30	0.76	1.25	2.52
Muses_DecisionTree	5	403.71	322.21	213.98	80.47	70.62	78.41	0.26	0.58	1.64
Muses_DecisionTreeH0	5	308.76	300.78	240.12	130.11	91.12	83.73	0.67	0.59	1.63
Muses_DecisionTreeR0	5	403.55	320.64	219.22	84.07	72.90	75.39	0.27	0.45	1.63
PCC-Allegro	5	347.79	333.47	254.05	200.93	179.46	103.81	4.10	5.02	1.65
PCC-Expr	5	273.88	214.08	151.85	131.50	80.69	76.64	0.79	0.67	1.59
QUIC Cubic	5	59.53	48.04	28.30	62.13	62.19	62.19	0.60	0.62	1.17
SCReAM	5	0.22	0.22	0.22	61.05	60.65	62.34	0.38	0.61	1.23
Sprout	5	6.90	6.79	6.48	62.47	62.11	63.45	0.32	0.72	1.41
TaoVA-100x	5	225.53	216.24	198.28	63.45	64.18	66.01	0.41	0.64	1.34
TCP Vegas	5	386.18	371.72	374.50	79.17	91.85	94.88	0.42	0.58	1.45
Verus	5	136.56	98.22	86.61	120.40	83.02	127.61	0.67	0.83	0.85
PCC-Vivace	5	282.51	174.41	120.93	72.32	63.96	75.48	0.41	1.01	1.73
WebRTC media	5	0.05	0.05	0.05	61.96	63.57	61.36	0.01	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-07-18 09:12:22
End at: 2019-07-18 09:12:52
Local clock offset: -0.119 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2019-07-18 13:00:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 901.06 Mbit/s
95th percentile per-packet one-way delay: 208.696 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 478.39 Mbit/s
95th percentile per-packet one-way delay: 204.856 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 430.56 Mbit/s
95th percentile per-packet one-way delay: 213.097 ms
Loss rate: 2.95%
-- Flow 3:
Average throughput: 413.70 Mbit/s
95th percentile per-packet one-way delay: 157.075 ms
Loss rate: 1.41%
```
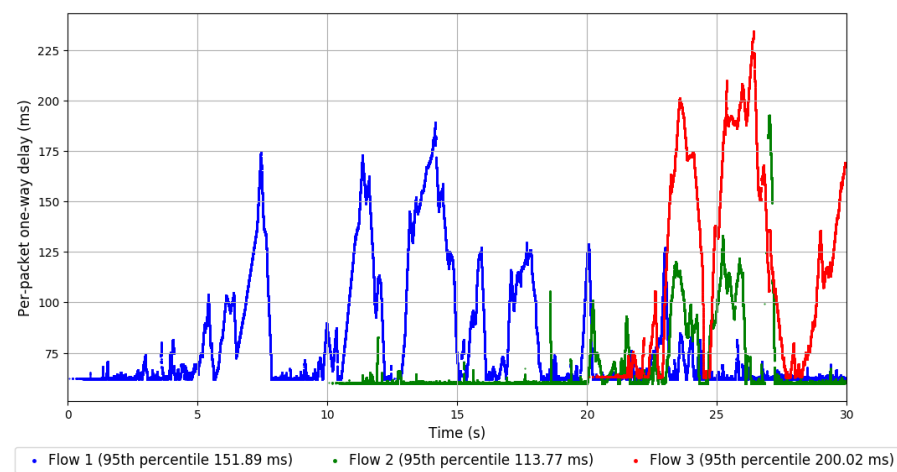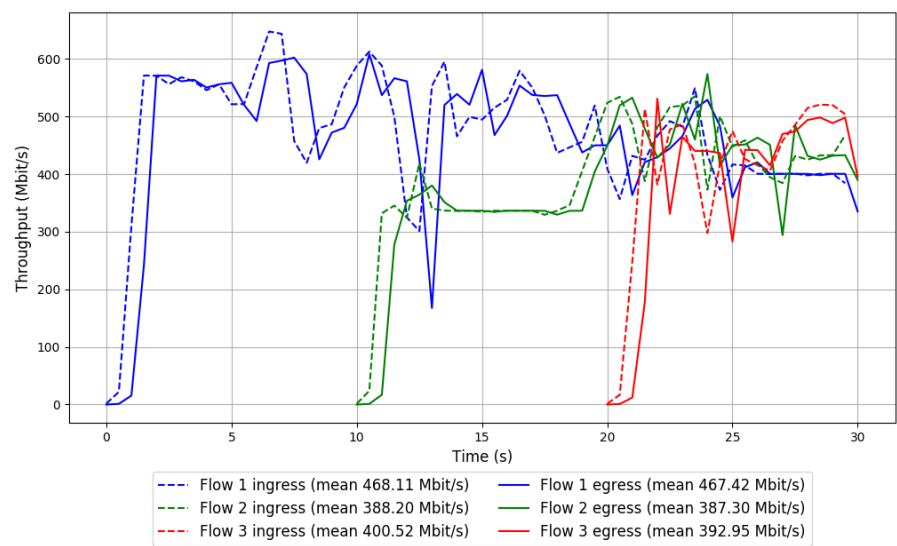
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-07-18 09:53:38
End at: 2019-07-18 09:54:08
Local clock offset: -0.058 ms
Remote clock offset: -0.148 ms


# Below is generated by plot.py at 2019-07-18 13:00:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 891.91 Mbit/s
95th percentile per-packet one-way delay: 188.728 ms
Loss rate: 1.51%
-- Flow 1:
Average throughput: 474.53 Mbit/s
95th percentile per-packet one-way delay: 213.250 ms
Loss rate: 1.66%
-- Flow 2:
Average throughput: 411.11 Mbit/s
95th percentile per-packet one-way delay: 140.410 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 437.13 Mbit/s
95th percentile per-packet one-way delay: 157.242 ms
Loss rate: 2.28%
```

Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 480.57 Mbit/s) --- Flow 1 egress (mean 474.53 Mbit/s)
Flow 2 ingress (mean 411.99 Mbit/s) --- Flow 2 egress (mean 411.11 Mbit/s)
Flow 3 ingress (mean 441.85 Mbit/s) --- Flow 3 egress (mean 437.13 Mbit/s)

Flow 1 (95th percentile 213.25 ms) • Flow 2 (95th percentile 140.41 ms) • Flow 3 (95th percentile 157.24 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2019-07-18 10:34:52
End at: 2019-07-18 10:35:22
Local clock offset: 0.015 ms
Remote clock offset: -0.192 ms


# Below is generated by plot.py at 2019-07-18 13:00:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 854.48 Mbit/s
95th percentile per-packet one-way delay: 167.058 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 467.42 Mbit/s
95th percentile per-packet one-way delay: 151.888 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 387.30 Mbit/s
95th percentile per-packet one-way delay: 113.768 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 392.95 Mbit/s
95th percentile per-packet one-way delay: 200.021 ms
Loss rate: 3.12%
```
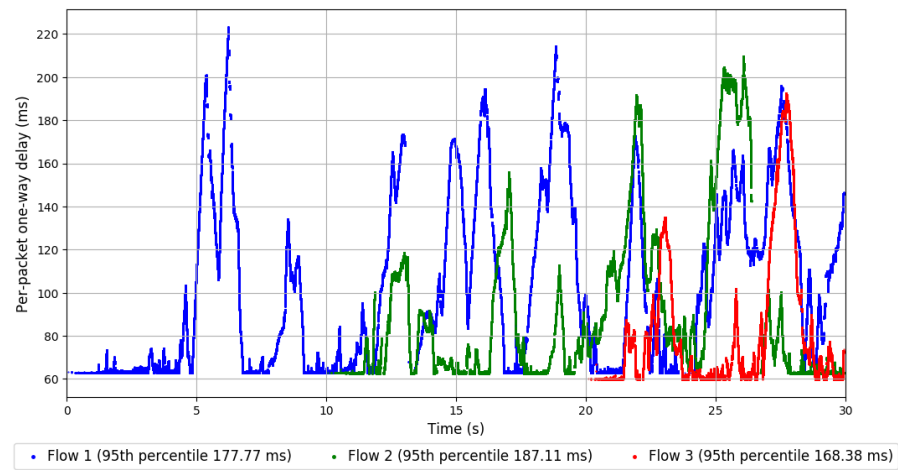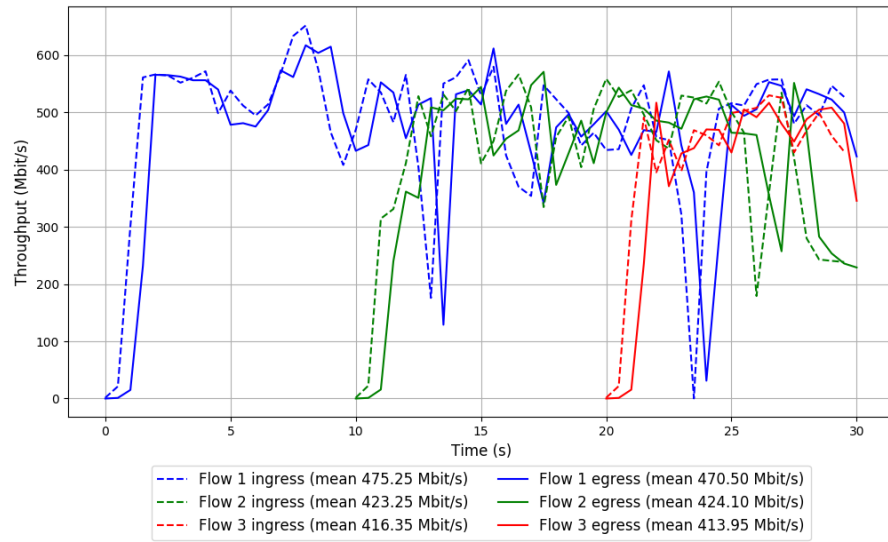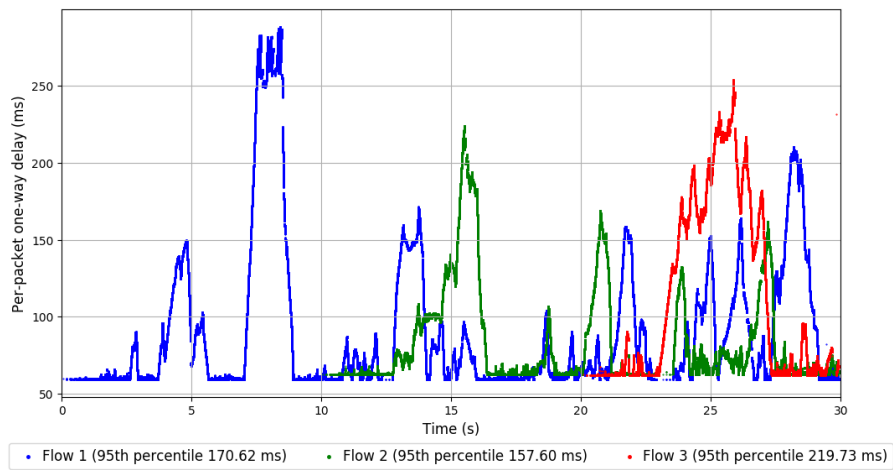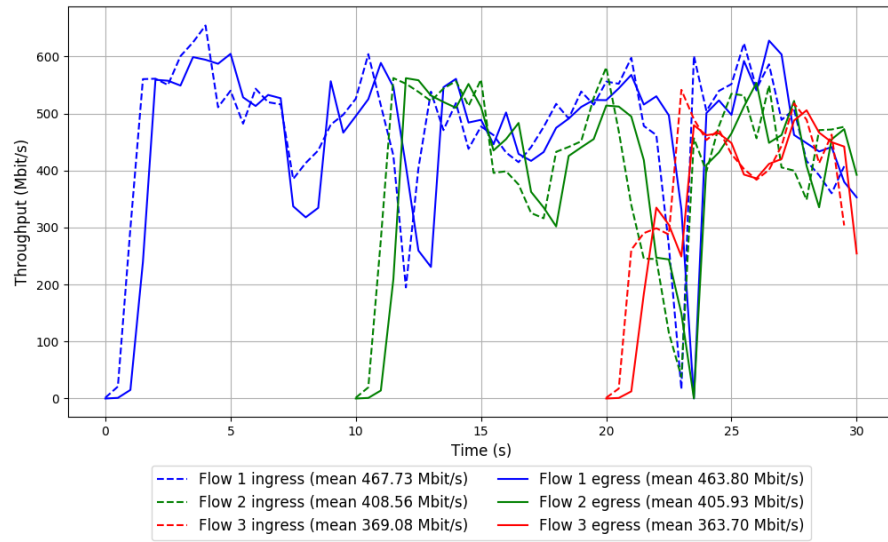
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 468.11 Mbit/s) --- Flow 1 egress (mean 467.42 Mbit/s)
Flow 2 ingress (mean 388.20 Mbit/s) --- Flow 2 egress (mean 387.30 Mbit/s)
Flow 3 ingress (mean 400.52 Mbit/s) --- Flow 3 egress (mean 392.95 Mbit/s)

Flow 1 (95th percentile 151.89 ms) Flow 2 (95th percentile 113.77 ms) Flow 3 (95th percentile 200.02 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-07-18 11:16:03
End at: 2019-07-18 11:16:33
Local clock offset: -0.055 ms
Remote clock offset: 0.124 ms


# Below is generated by plot.py at 2019-07-18 13:00:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 888.78 Mbit/s
95th percentile per-packet one-way delay: 180.795 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 470.50 Mbit/s
95th percentile per-packet one-way delay: 177.771 ms
Loss rate: 1.42%
-- Flow 2:
Average throughput: 424.10 Mbit/s
95th percentile per-packet one-way delay: 187.110 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 413.95 Mbit/s
95th percentile per-packet one-way delay: 168.378 ms
Loss rate: 1.81%
```
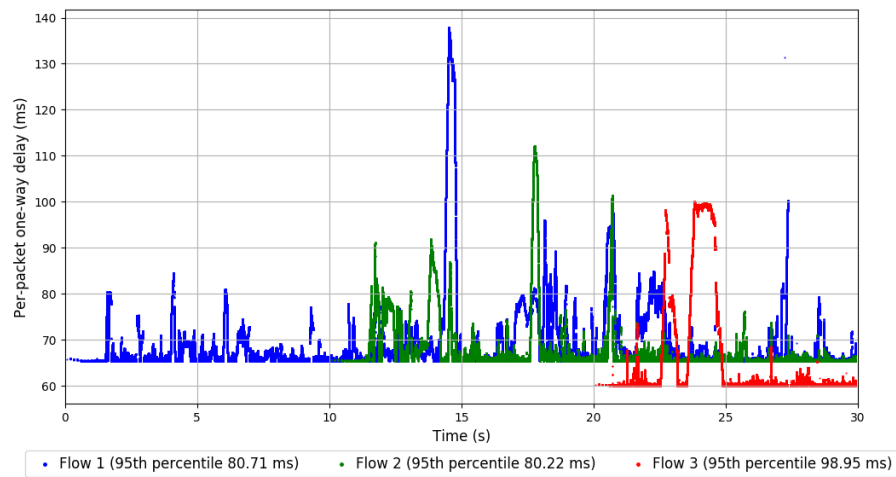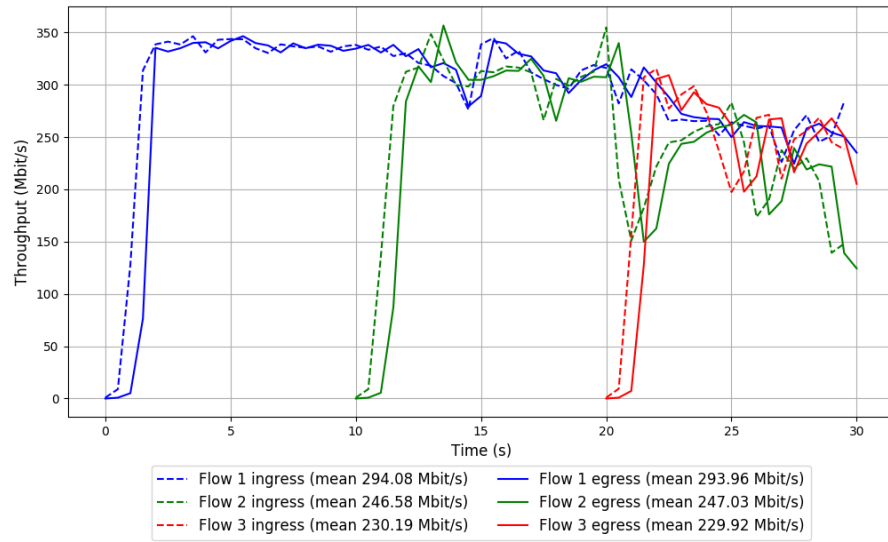
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 475.25 Mbit/s) — Flow 1 egress (mean 470.50 Mbit/s)
Flow 2 ingress (mean 423.25 Mbit/s) — Flow 2 egress (mean 424.10 Mbit/s)
Flow 3 ingress (mean 416.35 Mbit/s) — Flow 3 egress (mean 413.95 Mbit/s)

Flow 1 (95th percentile 177.77 ms)   Flow 2 (95th percentile 187.11 ms)   Flow 3 (95th percentile 168.38 ms)

12

```
Run 5: Statistics of TCP BBR

Start at: 2019-07-18 11:57:03
End at: 2019-07-18 11:57:33
Local clock offset: -0.044 ms
Remote clock offset: 0.382 ms


# Below is generated by plot.py at 2019-07-18 13:00:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.48 Mbit/s
95th percentile per-packet one-way delay: 190.886 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 463.80 Mbit/s
95th percentile per-packet one-way delay: 170.618 ms
Loss rate: 1.26%
-- Flow 2:
Average throughput: 405.93 Mbit/s
95th percentile per-packet one-way delay: 157.596 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 363.70 Mbit/s
95th percentile per-packet one-way delay: 219.728 ms
Loss rate: 2.73%
```

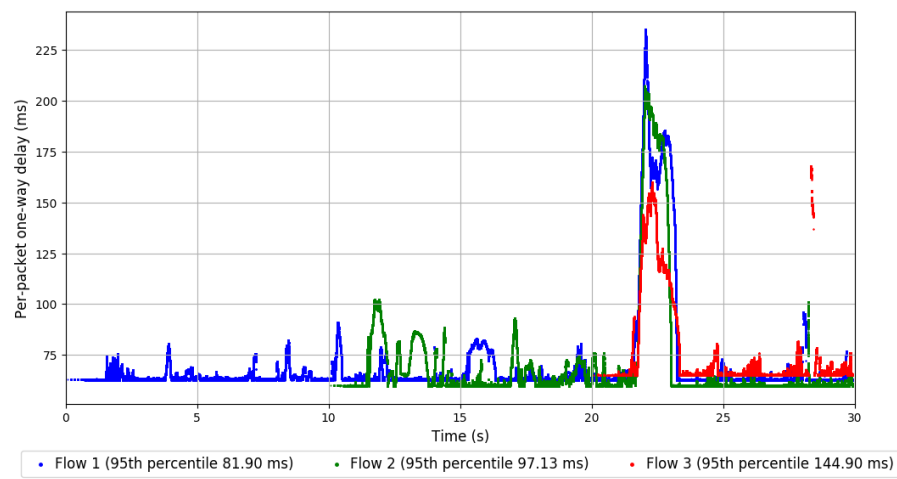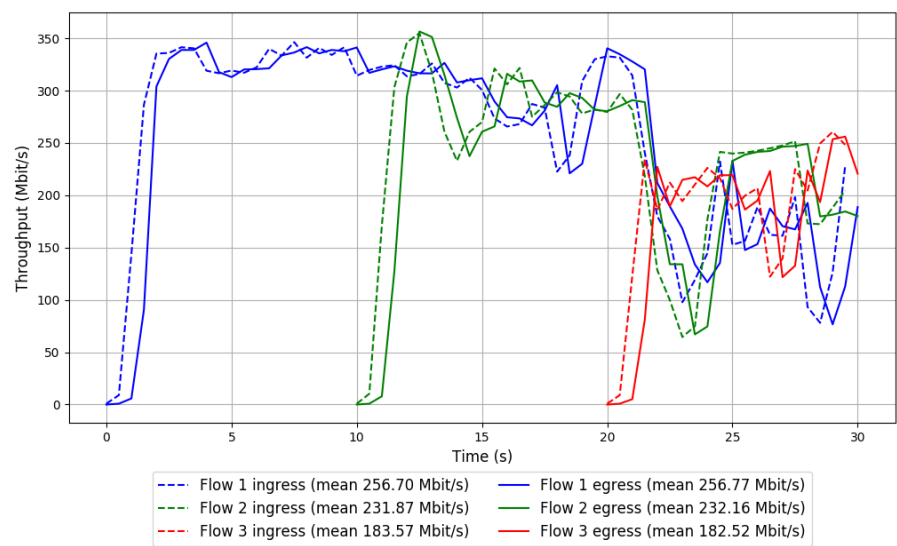Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-07-18 09:06:36
End at: 2019-07-18 09:07:06
Local clock offset: -0.08 ms
Remote clock offset: -0.139 ms


# Below is generated by plot.py at 2019-07-18 13:02:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 533.91 Mbit/s
95th percentile per-packet one-way delay: 83.181 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 293.96 Mbit/s
95th percentile per-packet one-way delay: 80.713 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 247.03 Mbit/s
95th percentile per-packet one-way delay: 80.220 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 229.92 Mbit/s
95th percentile per-packet one-way delay: 98.950 ms
Loss rate: 1.35%
```
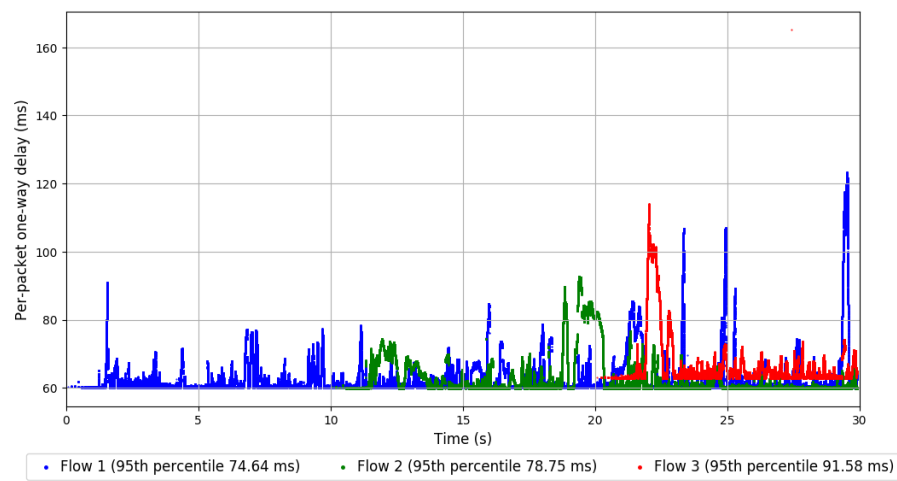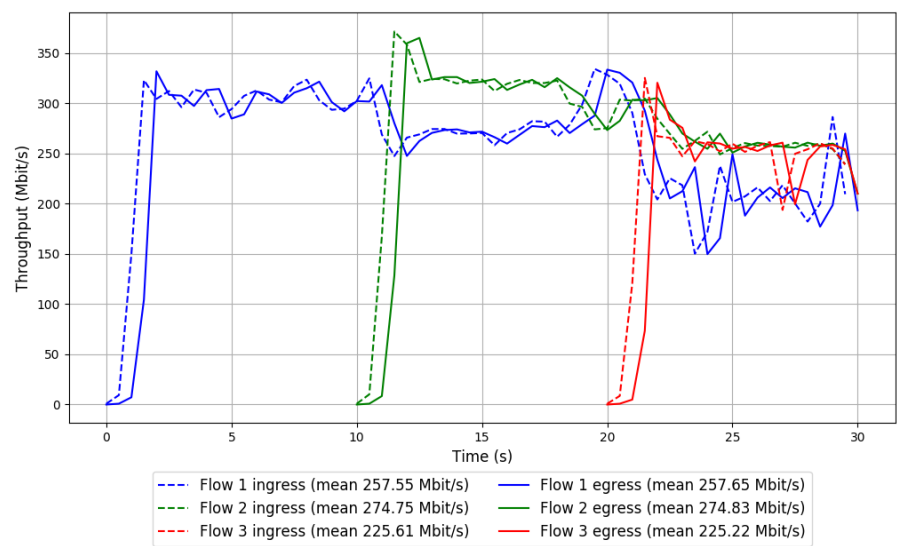
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-07-18 09:47:57
End at: 2019-07-18 09:48:27
Local clock offset: -0.068 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2019-07-18 13:02:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 471.24 Mbit/s
95th percentile per-packet one-way delay: 101.231 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 256.77 Mbit/s
95th percentile per-packet one-way delay: 81.904 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 232.16 Mbit/s
95th percentile per-packet one-way delay: 97.131 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 182.52 Mbit/s
95th percentile per-packet one-way delay: 144.898 ms
Loss rate: 1.82%
```
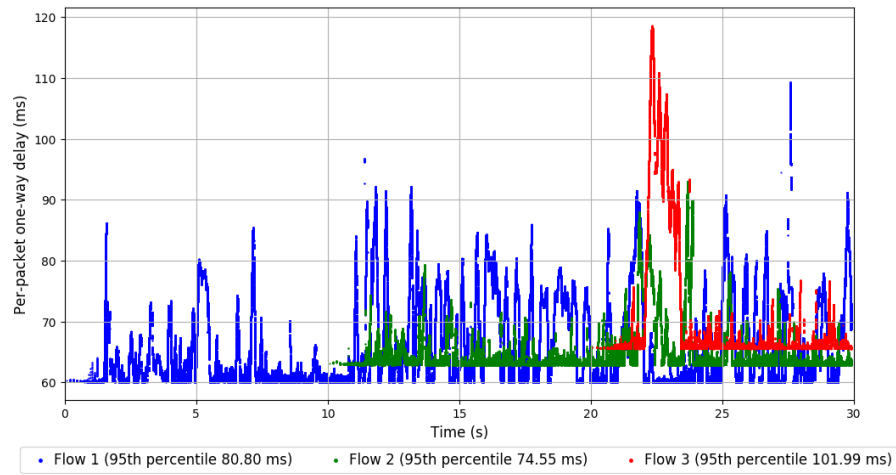
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 256.70 Mbit/s)   Flow 1 egress (mean 256.77 Mbit/s)
Flow 2 ingress (mean 231.87 Mbit/s)   Flow 2 egress (mean 232.16 Mbit/s)
Flow 3 ingress (mean 183.57 Mbit/s)   Flow 3 egress (mean 182.52 Mbit/s)

Flow 1 (95th percentile 81.90 ms)   Flow 2 (95th percentile 97.13 ms)   Flow 3 (95th percentile 144.90 ms)

```
Run 3: Statistics of Copa

Start at: 2019-07-18 10:29:09
End at: 2019-07-18 10:29:39
Local clock offset: -0.011 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2019-07-18 13:02:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 514.49 Mbit/s
95th percentile per-packet one-way delay: 76.482 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 257.65 Mbit/s
95th percentile per-packet one-way delay: 74.642 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 274.83 Mbit/s
95th percentile per-packet one-way delay: 78.750 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 225.22 Mbit/s
95th percentile per-packet one-way delay: 91.575 ms
Loss rate: 1.42%
```
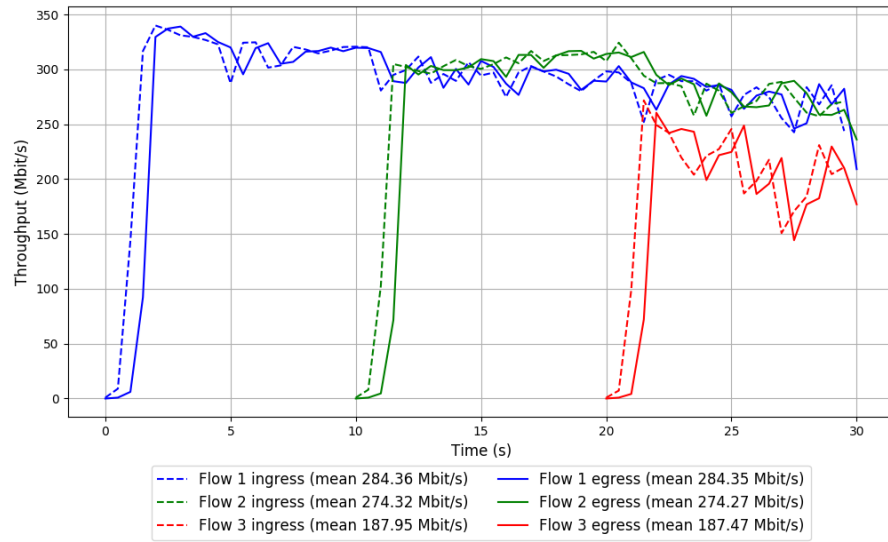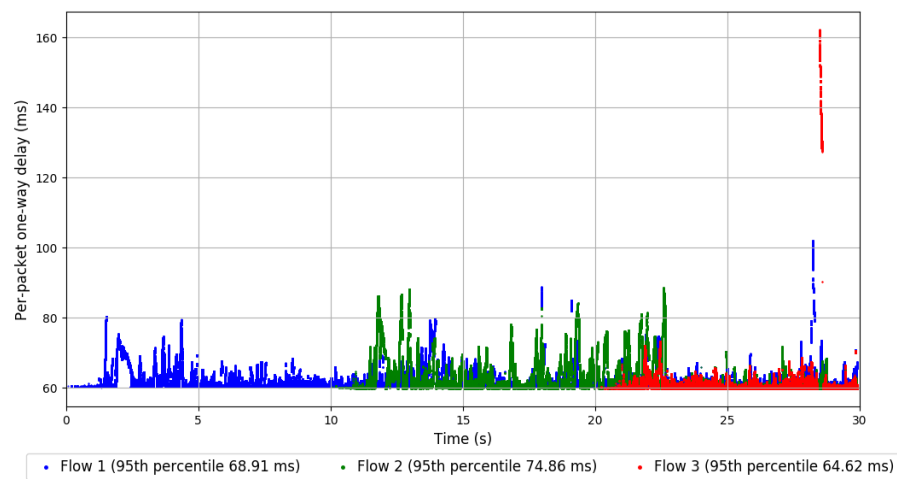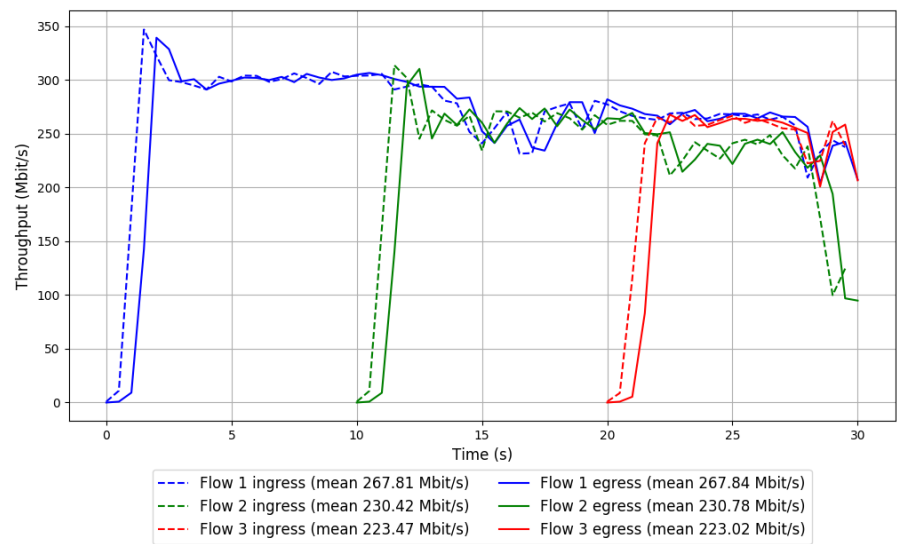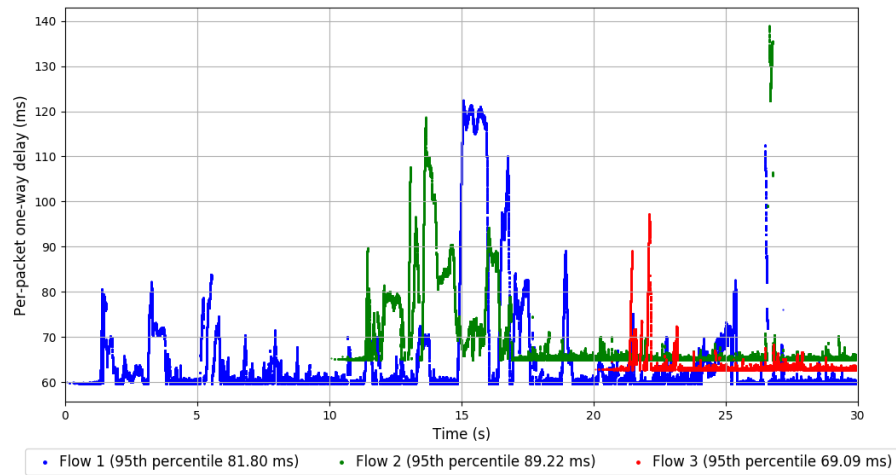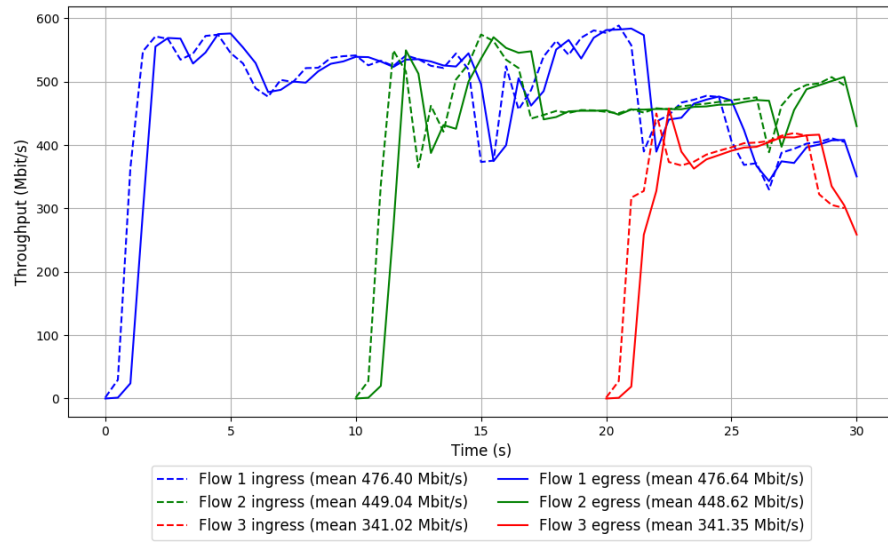
Run 3: Report of Copa — Data Link

- - - - Flow 1 ingress (mean 257.55 Mbit/s)   —— Flow 1 egress (mean 257.65 Mbit/s)
- - - - Flow 2 ingress (mean 274.75 Mbit/s)   —— Flow 2 egress (mean 274.83 Mbit/s)
- - - - Flow 3 ingress (mean 225.61 Mbit/s)   —— Flow 3 egress (mean 225.22 Mbit/s)

- Flow 1 (95th percentile 74.64 ms)   • Flow 2 (95th percentile 78.75 ms)   • Flow 3 (95th percentile 91.58 ms)

```
Run 4: Statistics of Copa

Start at: 2019-07-18 11:10:17
End at: 2019-07-18 11:10:47
Local clock offset: -0.033 ms
Remote clock offset: 0.04 ms


# Below is generated by plot.py at 2019-07-18 13:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 528.35 Mbit/s
95th percentile per-packet one-way delay: 81.101 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 284.35 Mbit/s
95th percentile per-packet one-way delay: 80.796 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 274.27 Mbit/s
95th percentile per-packet one-way delay: 74.546 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 187.47 Mbit/s
95th percentile per-packet one-way delay: 101.994 ms
Loss rate: 1.57%
```

Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-07-18 11:51:22
End at: 2019-07-18 11:51:52
Local clock offset: -0.047 ms
Remote clock offset: 0.006 ms


# Below is generated by plot.py at 2019-07-18 13:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 494.65 Mbit/s
95th percentile per-packet one-way delay: 70.864 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 267.84 Mbit/s
95th percentile per-packet one-way delay: 68.907 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 230.78 Mbit/s
95th percentile per-packet one-way delay: 74.860 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 223.02 Mbit/s
95th percentile per-packet one-way delay: 64.620 ms
Loss rate: 1.46%
```
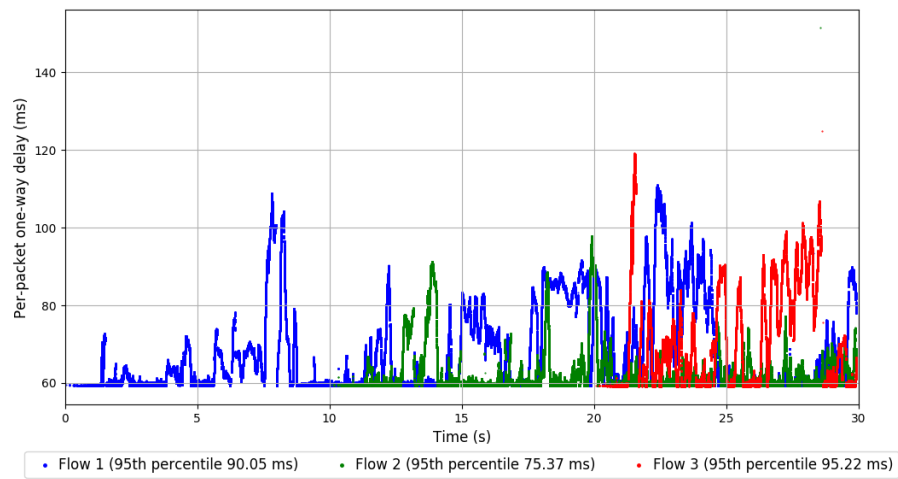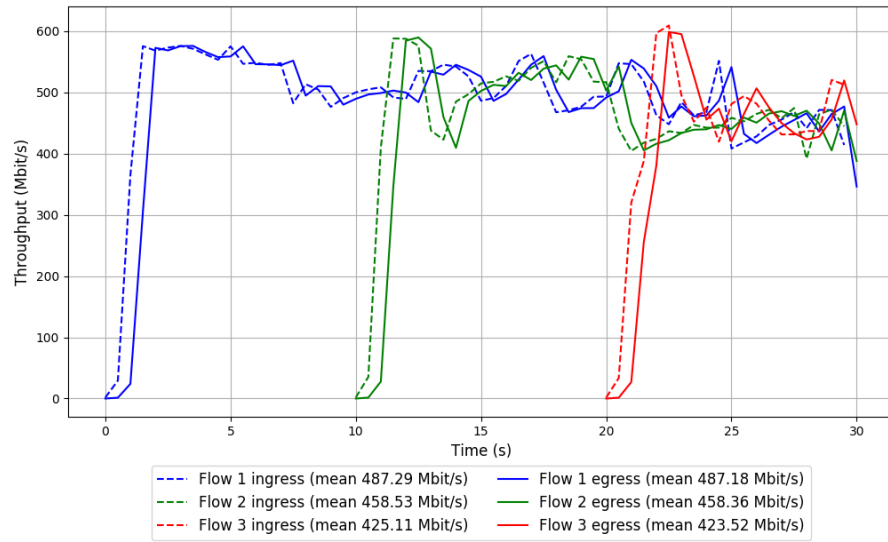
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-07-18 09:08:40
End at: 2019-07-18 09:09:10
Local clock offset: -0.088 ms
Remote clock offset: -0.091 ms


# Below is generated by plot.py at 2019-07-18 13:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 887.45 Mbit/s
95th percentile per-packet one-way delay: 85.787 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 476.64 Mbit/s
95th percentile per-packet one-way delay: 81.796 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 448.62 Mbit/s
95th percentile per-packet one-way delay: 89.222 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 341.35 Mbit/s
95th percentile per-packet one-way delay: 69.087 ms
Loss rate: 1.16%
```
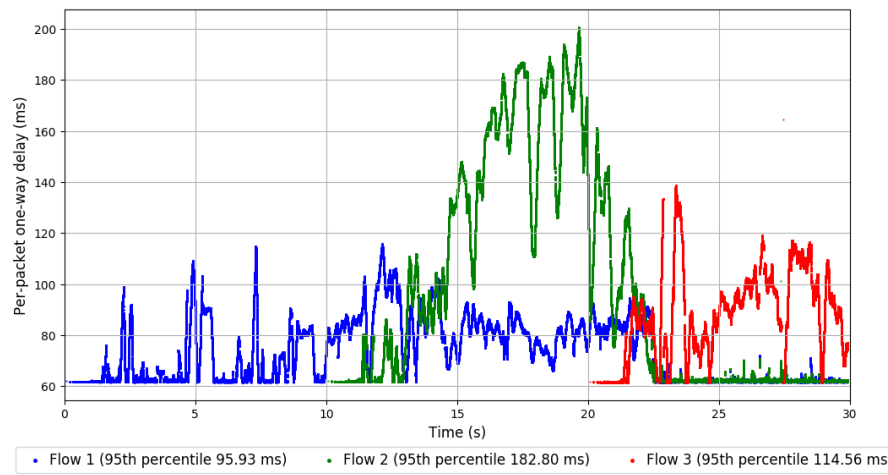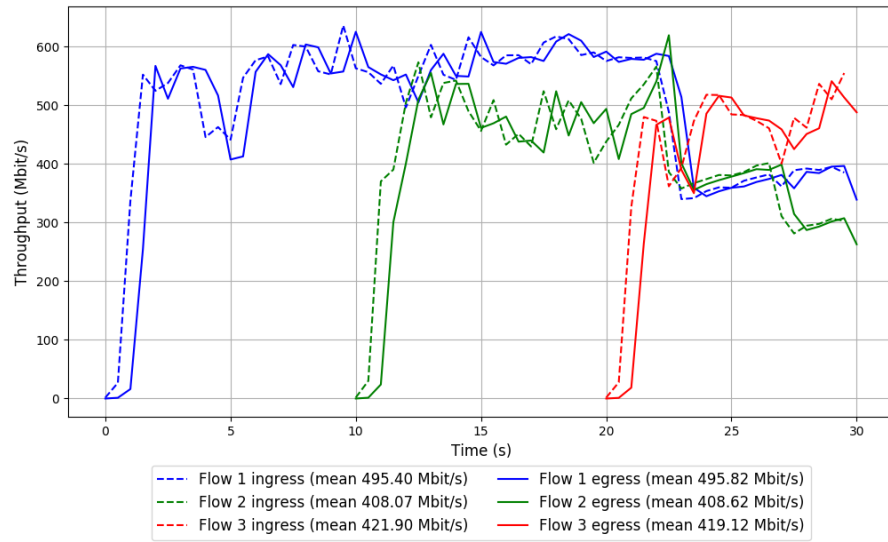
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-07-18 09:49:54
End at: 2019-07-18 09:50:24
Local clock offset: -0.035 ms
Remote clock offset: 0.53 ms


# Below is generated by plot.py at 2019-07-18 13:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 931.62 Mbit/s
95th percentile per-packet one-way delay: 89.003 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 487.18 Mbit/s
95th percentile per-packet one-way delay: 90.047 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 458.36 Mbit/s
95th percentile per-packet one-way delay: 75.368 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 423.52 Mbit/s
95th percentile per-packet one-way delay: 95.223 ms
Loss rate: 1.57%
```
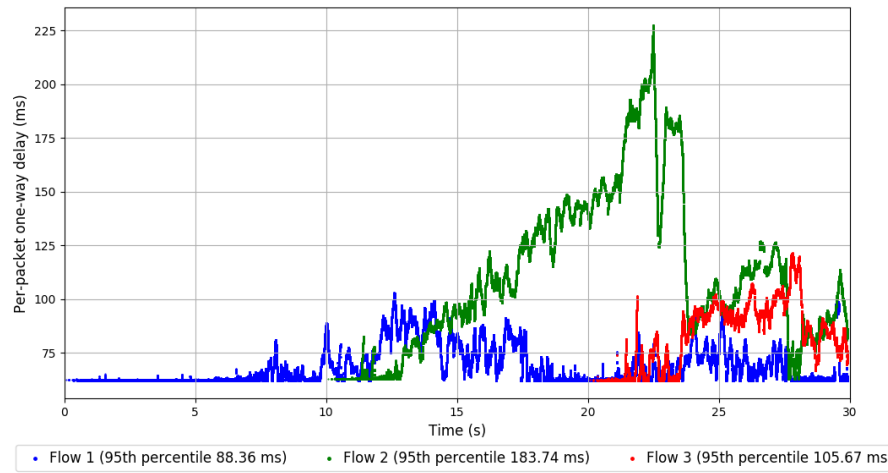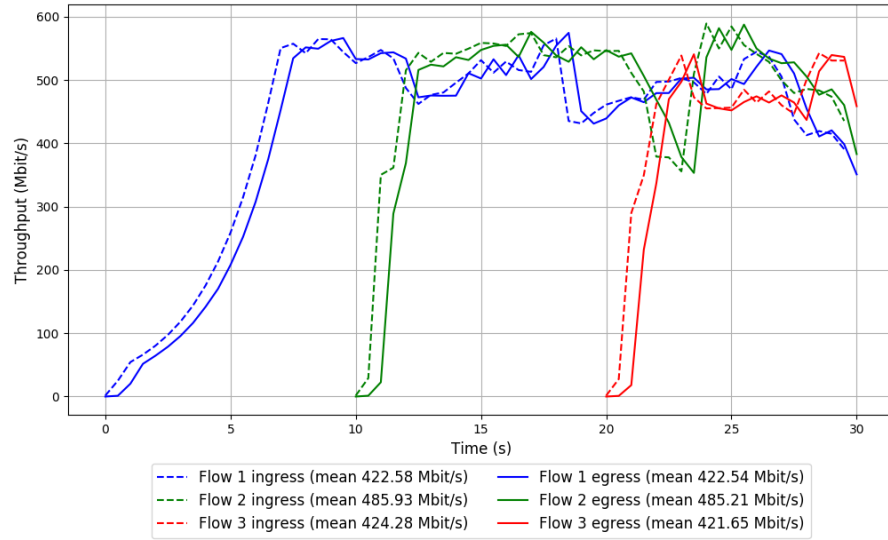
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-07-18 10:31:10
End at: 2019-07-18 10:31:40
Local clock offset: -0.009 ms
Remote clock offset: 0.451 ms


# Below is generated by plot.py at 2019-07-18 13:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 905.75 Mbit/s
95th percentile per-packet one-way delay: 158.372 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 495.82 Mbit/s
95th percentile per-packet one-way delay: 95.933 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 408.62 Mbit/s
95th percentile per-packet one-way delay: 182.802 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 419.12 Mbit/s
95th percentile per-packet one-way delay: 114.565 ms
Loss rate: 1.90%
```

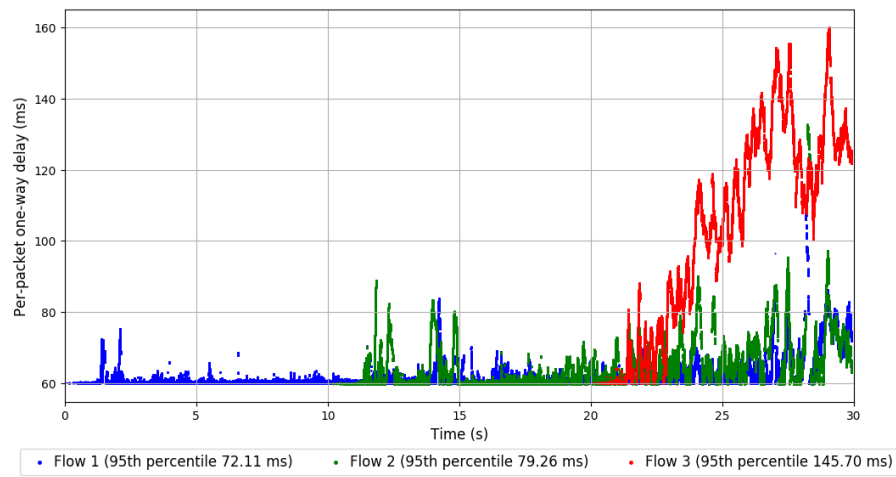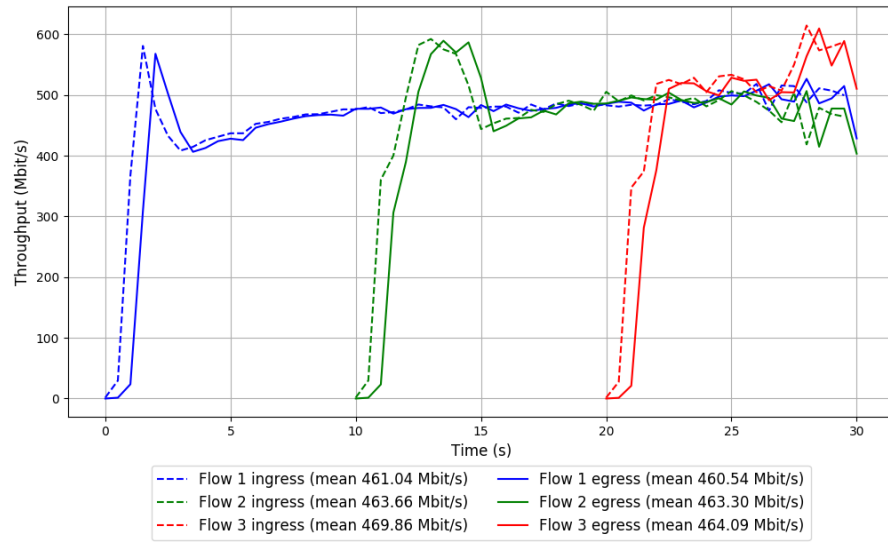Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-07-18 11:12:20
End at: 2019-07-18 11:12:50
Local clock offset: -0.046 ms
Remote clock offset: 0.061 ms


# Below is generated by plot.py at 2019-07-18 13:18:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.00 Mbit/s
95th percentile per-packet one-way delay: 148.197 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 422.54 Mbit/s
95th percentile per-packet one-way delay: 88.360 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 485.21 Mbit/s
95th percentile per-packet one-way delay: 183.744 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 421.65 Mbit/s
95th percentile per-packet one-way delay: 105.672 ms
Loss rate: 1.87%
```

Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-07-18 11:53:22
End at: 2019-07-18 11:53:52
Local clock offset: -0.0 ms
Remote clock offset: -0.042 ms


# Below is generated by plot.py at 2019-07-18 13:19:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 921.46 Mbit/s
95th percentile per-packet one-way delay: 126.042 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 460.54 Mbit/s
95th percentile per-packet one-way delay: 72.110 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 463.30 Mbit/s
95th percentile per-packet one-way delay: 79.262 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 464.09 Mbit/s
95th percentile per-packet one-way delay: 145.701 ms
Loss rate: 2.49%
```
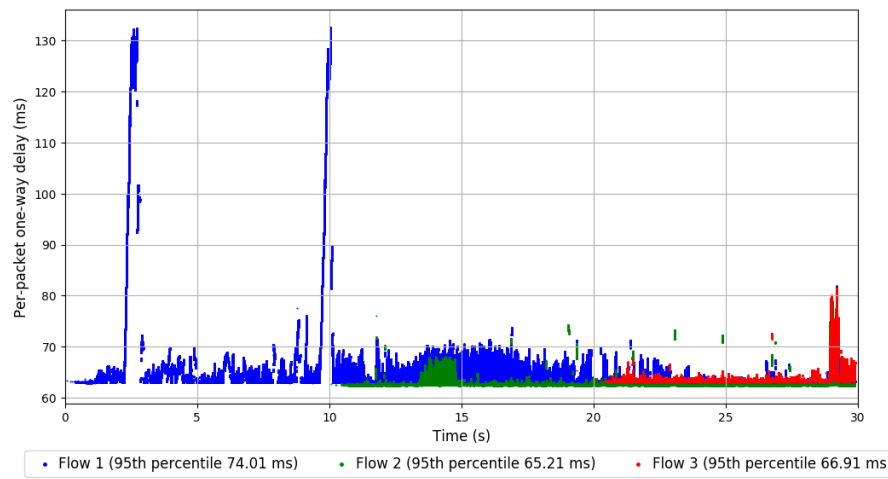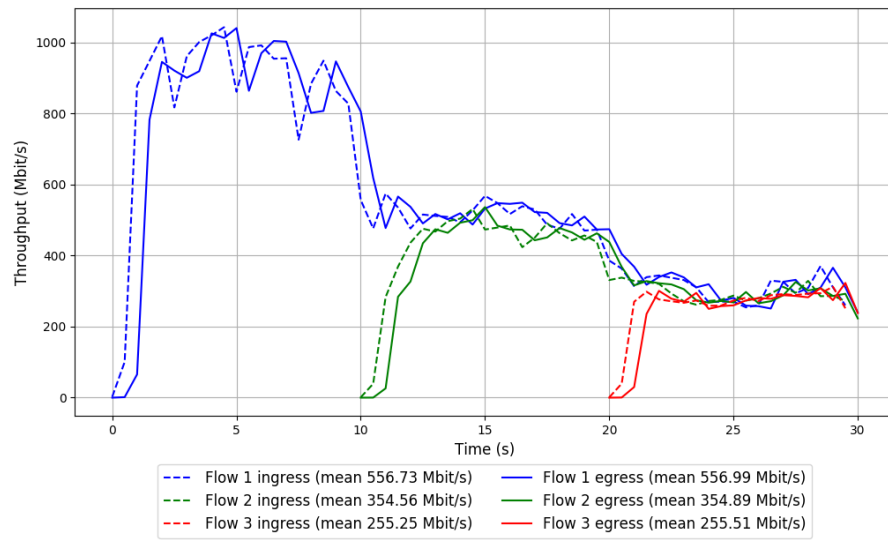
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2019-07-18 08:59:44
End at: 2019-07-18 09:00:14
Local clock offset: -0.072 ms
Remote clock offset: -0.15 ms

# Below is generated by plot.py at 2019-07-18 13:22:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 876.65 Mbit/s
95th percentile per-packet one-way delay: 69.472 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 556.99 Mbit/s
95th percentile per-packet one-way delay: 74.006 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 354.89 Mbit/s
95th percentile per-packet one-way delay: 65.211 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 255.51 Mbit/s
95th percentile per-packet one-way delay: 66.914 ms
Loss rate: 0.98%
```
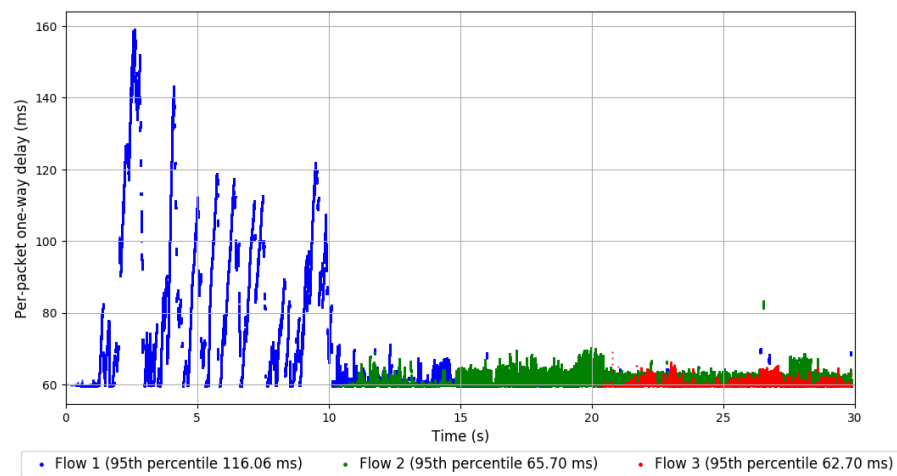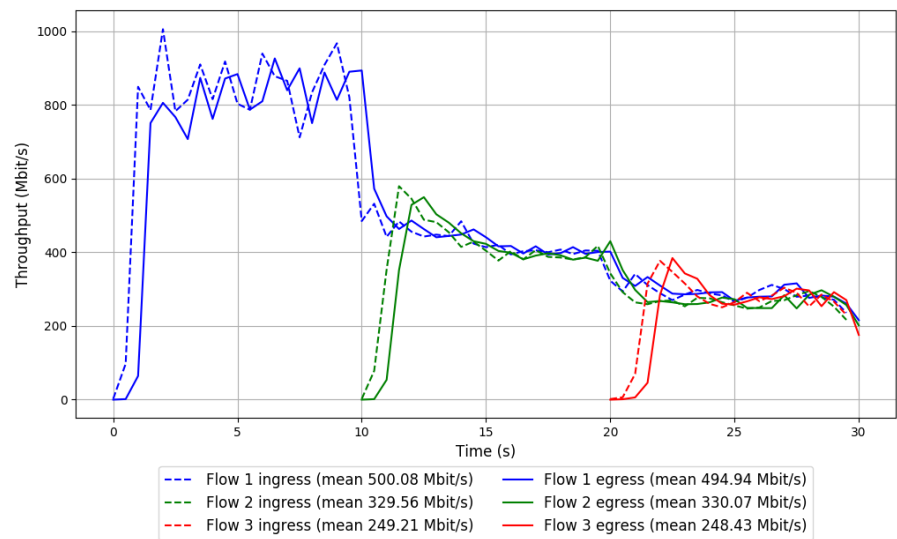
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-07-18 09:41:09
End at: 2019-07-18 09:41:39
Local clock offset: -0.072 ms
Remote clock offset: 0.011 ms


# Below is generated by plot.py at 2019-07-18 13:33:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 795.75 Mbit/s
95th percentile per-packet one-way delay: 108.728 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 494.94 Mbit/s
95th percentile per-packet one-way delay: 116.059 ms
Loss rate: 1.46%
-- Flow 2:
Average throughput: 330.07 Mbit/s
95th percentile per-packet one-way delay: 65.696 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 248.43 Mbit/s
95th percentile per-packet one-way delay: 62.702 ms
Loss rate: 1.49%
```

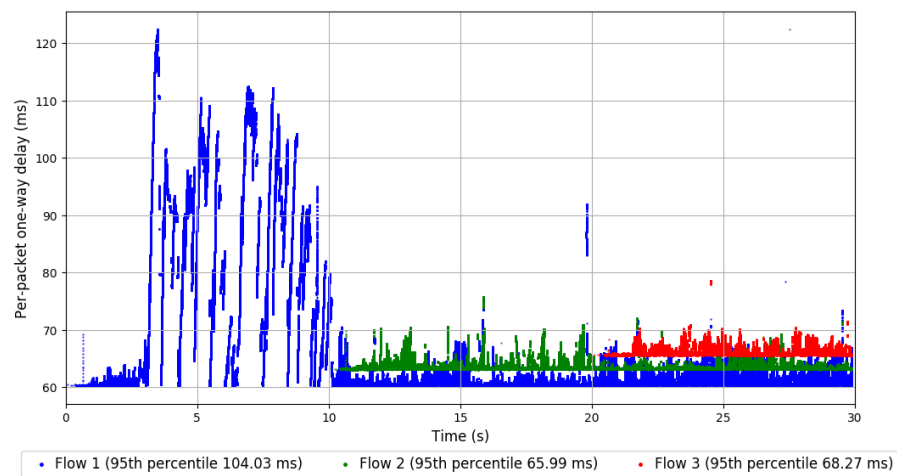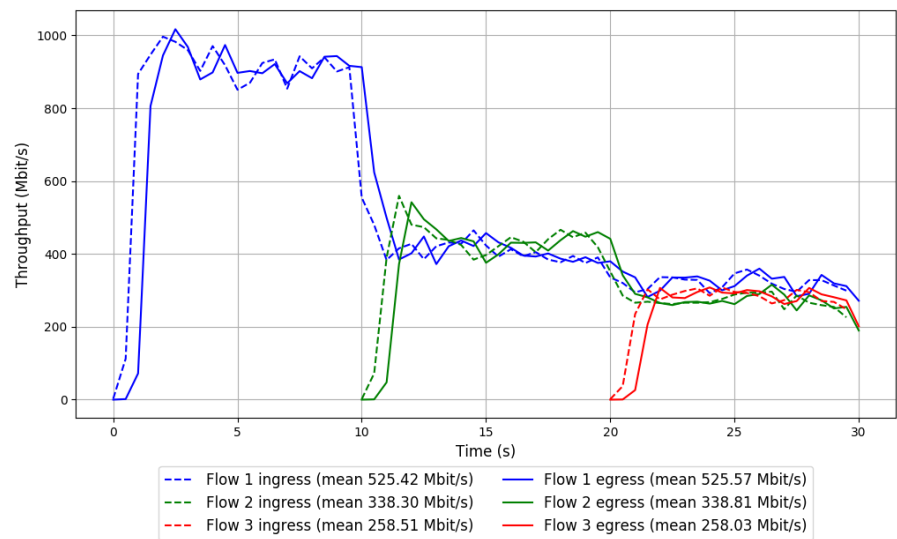Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-07-18 10:22:21
End at: 2019-07-18 10:22:51
Local clock offset: -0.005 ms
Remote clock offset: -0.224 ms


# Below is generated by plot.py at 2019-07-18 13:35:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 835.02 Mbit/s
95th percentile per-packet one-way delay: 99.829 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 525.57 Mbit/s
95th percentile per-packet one-way delay: 104.035 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 338.81 Mbit/s
95th percentile per-packet one-way delay: 65.993 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 258.03 Mbit/s
95th percentile per-packet one-way delay: 68.273 ms
Loss rate: 1.48%
```
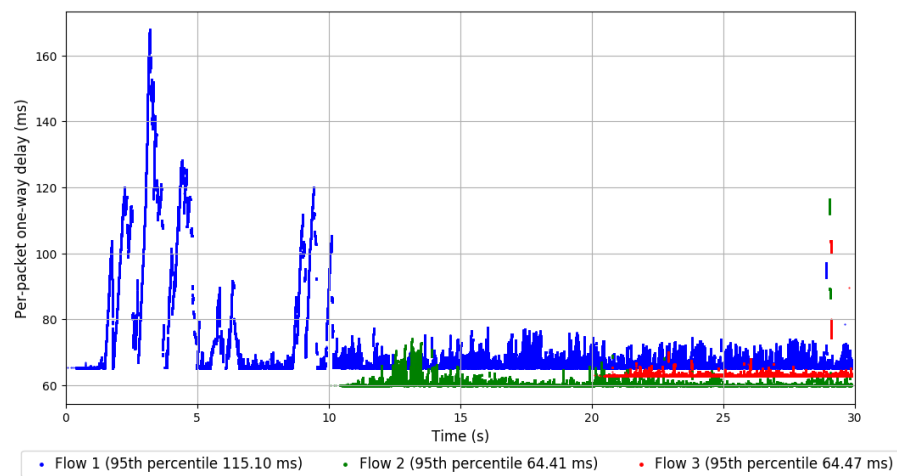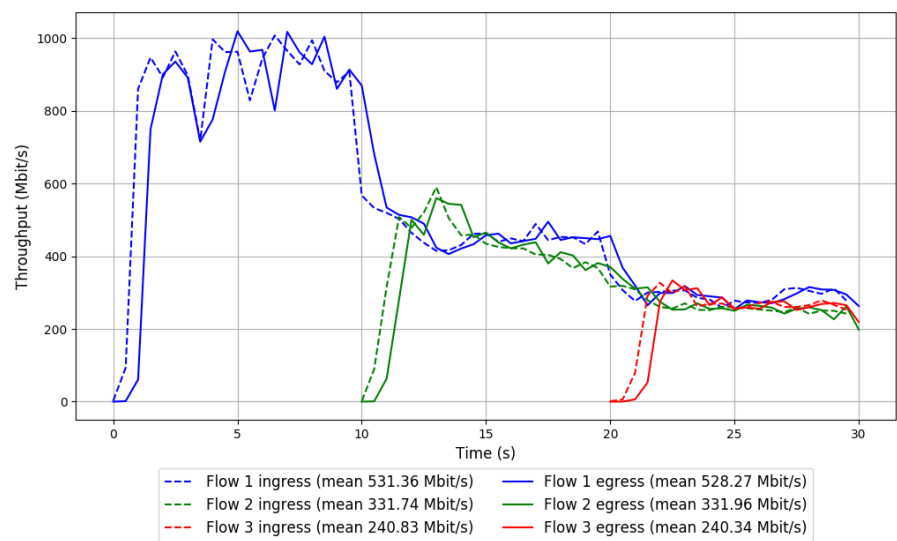
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 525.42 Mbit/s) Flow 1 egress (mean 525.57 Mbit/s)
Flow 2 ingress (mean 338.30 Mbit/s) Flow 2 egress (mean 338.81 Mbit/s)
Flow 3 ingress (mean 258.51 Mbit/s) Flow 3 egress (mean 258.03 Mbit/s)

Flow 1 (95th percentile 104.03 ms)   Flow 2 (95th percentile 65.99 ms)   Flow 3 (95th percentile 68.27 ms)

```
Run 4: Statistics of FillP

Start at: 2019-07-18 11:03:32
End at: 2019-07-18 11:04:02
Local clock offset: -0.023 ms
Remote clock offset: 0.104 ms


# Below is generated by plot.py at 2019-07-18 13:35:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 827.55 Mbit/s
95th percentile per-packet one-way delay: 110.454 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 528.27 Mbit/s
95th percentile per-packet one-way delay: 115.097 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 331.96 Mbit/s
95th percentile per-packet one-way delay: 64.414 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 240.34 Mbit/s
95th percentile per-packet one-way delay: 64.467 ms
Loss rate: 1.61%
```
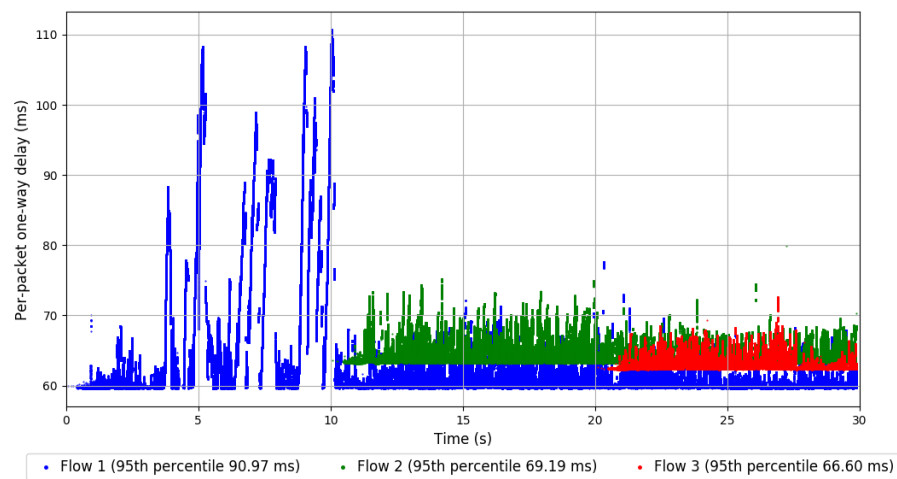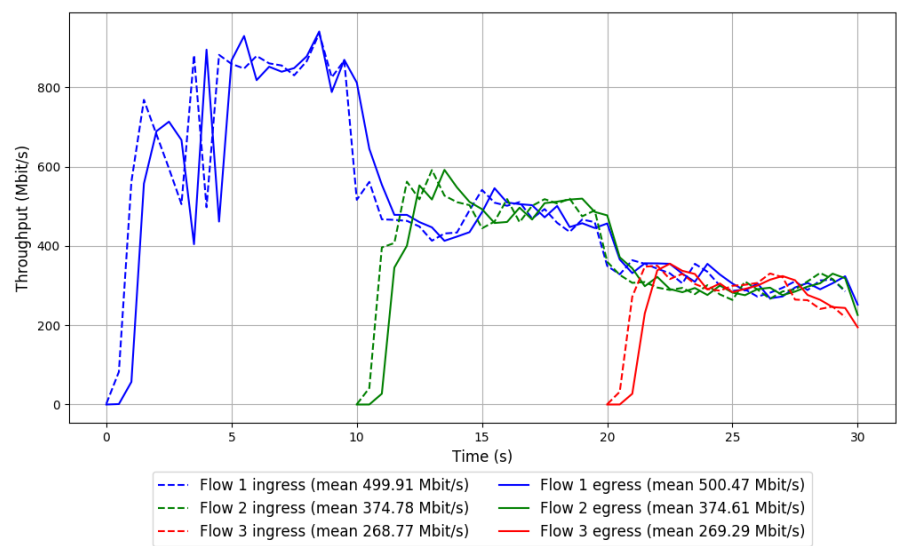
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-07-18 11:44:36
End at: 2019-07-18 11:45:06
Local clock offset: -0.021 ms
Remote clock offset: 0.089 ms


# Below is generated by plot.py at 2019-07-18 13:35:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 837.43 Mbit/s
95th percentile per-packet one-way delay: 85.543 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 500.47 Mbit/s
95th percentile per-packet one-way delay: 90.972 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 374.61 Mbit/s
95th percentile per-packet one-way delay: 69.193 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 269.29 Mbit/s
95th percentile per-packet one-way delay: 66.597 ms
Loss rate: 1.20%
```
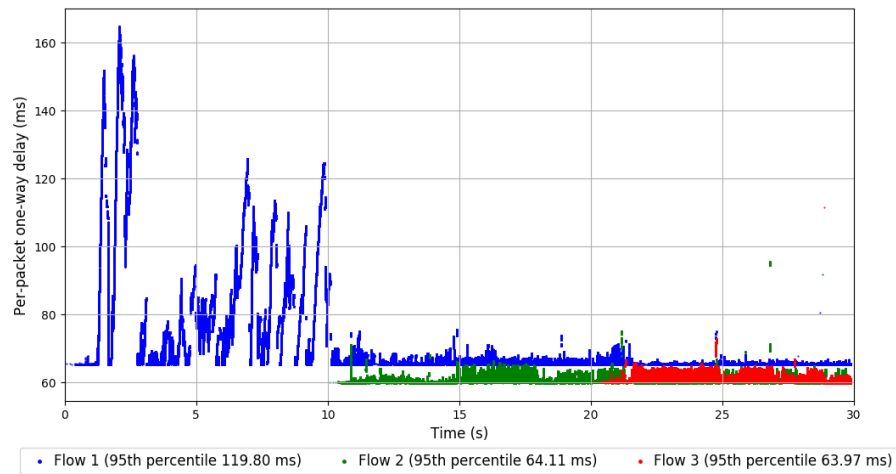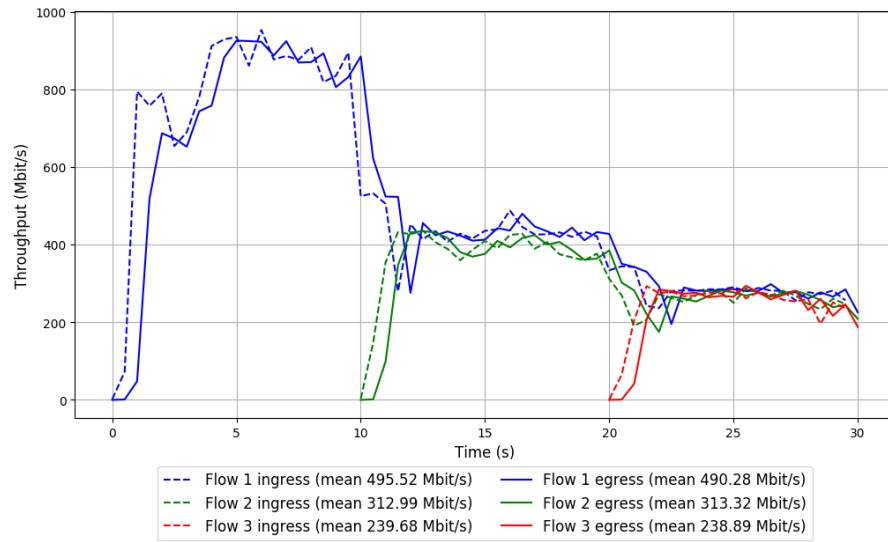
Run 5: Report of FillP — Data Link

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-07-18 09:23:23
End at: 2019-07-18 09:23:53
Local clock offset: -0.1 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2019-07-18 13:35:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 776.88 Mbit/s
95th percentile per-packet one-way delay: 110.185 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 490.28 Mbit/s
95th percentile per-packet one-way delay: 119.803 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 313.32 Mbit/s
95th percentile per-packet one-way delay: 64.112 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 238.89 Mbit/s
95th percentile per-packet one-way delay: 63.965 ms
Loss rate: 1.48%
```

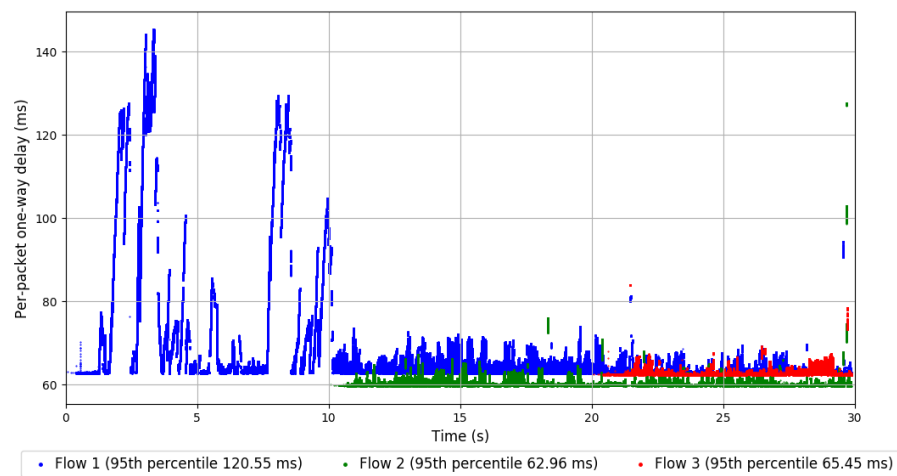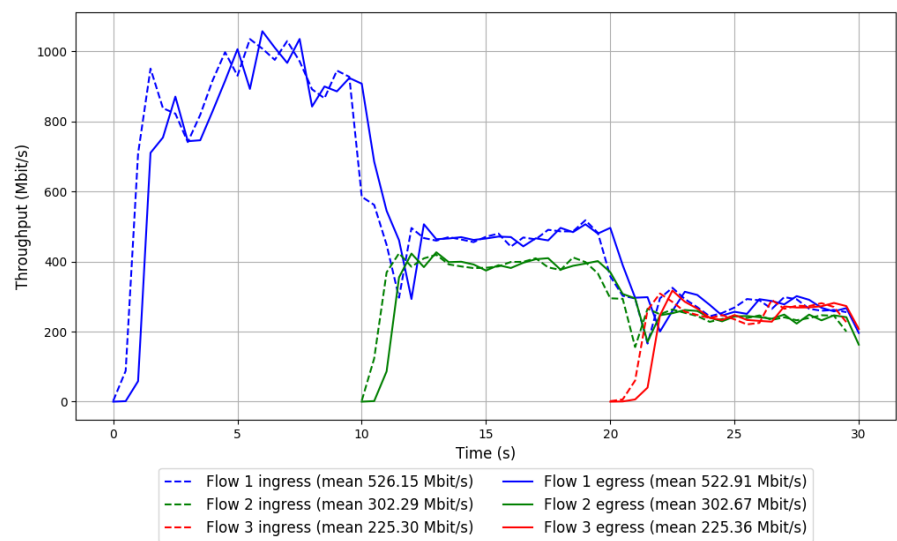Run 1: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 495.52 Mbit/s) ——— Flow 1 egress (mean 490.28 Mbit/s)
- - - - Flow 2 ingress (mean 312.99 Mbit/s) ——— Flow 2 egress (mean 313.32 Mbit/s)
- - - - Flow 3 ingress (mean 239.68 Mbit/s) ——— Flow 3 egress (mean 238.89 Mbit/s)

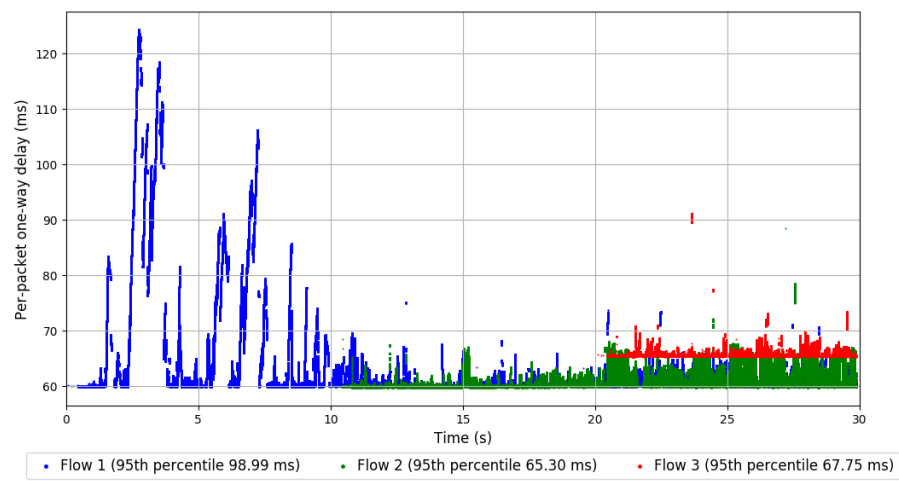• Flow 1 (95th percentile 119.80 ms)   • Flow 2 (95th percentile 64.11 ms)   • Flow 3 (95th percentile 63.97 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-07-18 10:04:39
End at: 2019-07-18 10:05:09
Local clock offset: -0.024 ms
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2019-07-18 13:35:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 797.97 Mbit/s
95th percentile per-packet one-way delay: 113.251 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 522.91 Mbit/s
95th percentile per-packet one-way delay: 120.548 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 302.67 Mbit/s
95th percentile per-packet one-way delay: 62.959 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 225.36 Mbit/s
95th percentile per-packet one-way delay: 65.450 ms
Loss rate: 1.28%
```

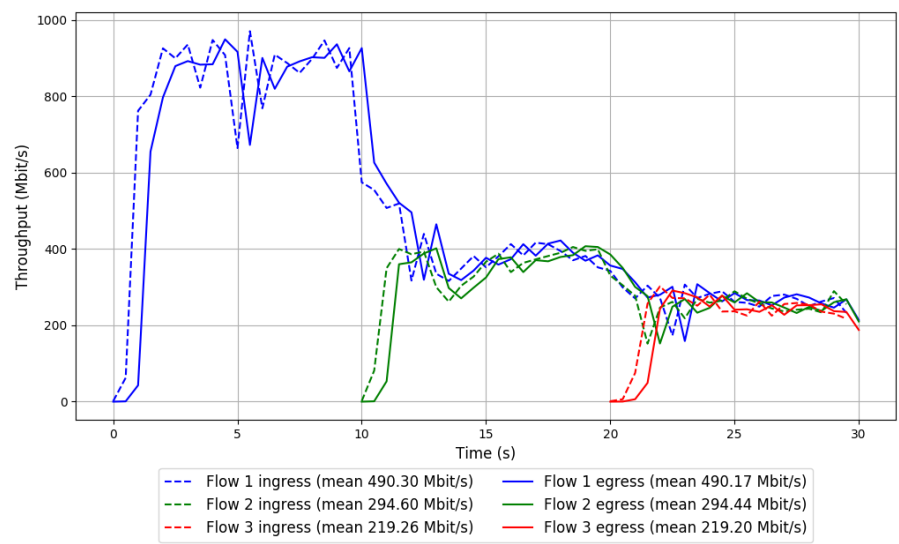Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 526.15 Mbit/s) --- Flow 1 egress (mean 522.91 Mbit/s)
Flow 2 ingress (mean 302.29 Mbit/s) --- Flow 2 egress (mean 302.67 Mbit/s)
Flow 3 ingress (mean 225.30 Mbit/s) --- Flow 3 egress (mean 225.36 Mbit/s)

Flow 1 (95th percentile 120.55 ms)   Flow 2 (95th percentile 62.96 ms)   Flow 3 (95th percentile 65.45 ms)

48

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-07-18 10:45:47
End at: 2019-07-18 10:46:17
Local clock offset: -0.013 ms
Remote clock offset: -0.203 ms


# Below is generated by plot.py at 2019-07-18 13:35:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.81 Mbit/s
95th percentile per-packet one-way delay: 90.260 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 490.17 Mbit/s
95th percentile per-packet one-way delay: 98.993 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 294.44 Mbit/s
95th percentile per-packet one-way delay: 65.299 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 219.20 Mbit/s
95th percentile per-packet one-way delay: 67.752 ms
Loss rate: 1.39%
```
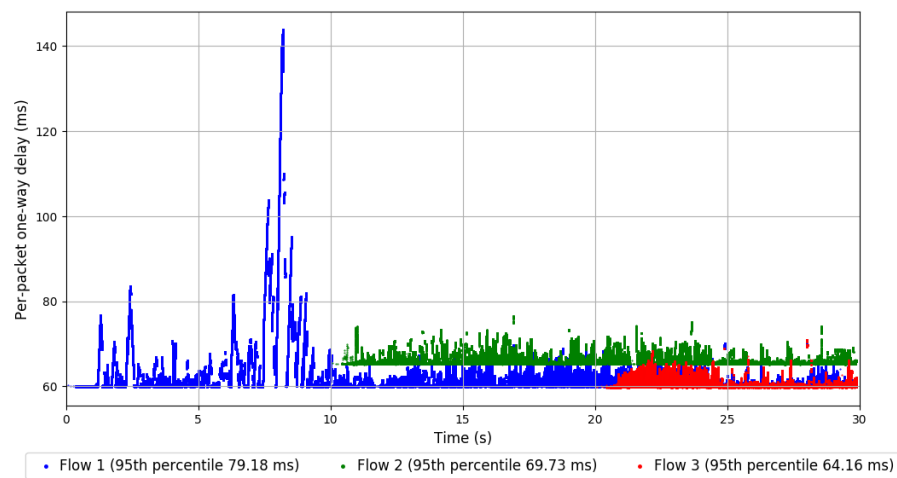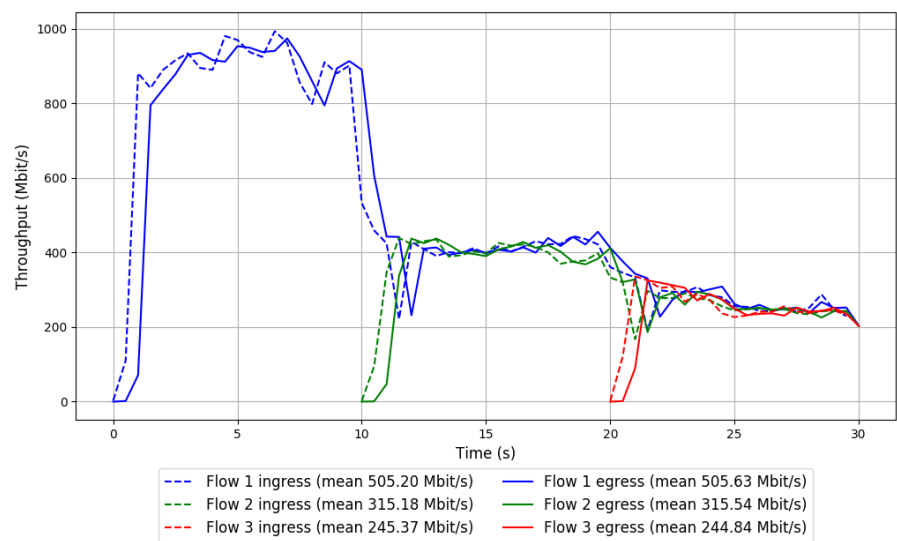
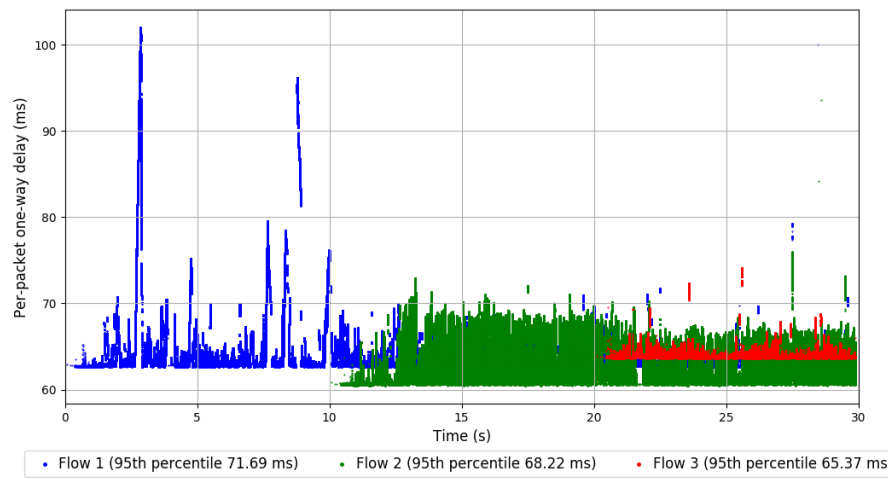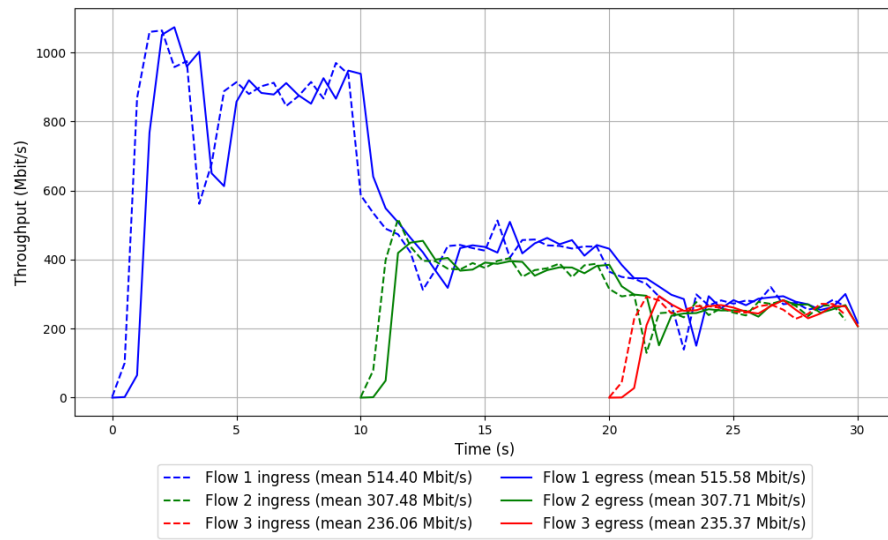Run 3: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 490.30 Mbit/s) ——— Flow 1 egress (mean 490.17 Mbit/s)
- - - Flow 2 ingress (mean 294.60 Mbit/s) ——— Flow 2 egress (mean 294.44 Mbit/s)
- - - Flow 3 ingress (mean 219.26 Mbit/s) ——— Flow 3 egress (mean 219.20 Mbit/s)

- Flow 1 (95th percentile 98.99 ms)   - Flow 2 (95th percentile 65.30 ms)   - Flow 3 (95th percentile 67.75 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-07-18 11:27:03
End at: 2019-07-18 11:27:33
Local clock offset: -0.028 ms
Remote clock offset: 0.03 ms


# Below is generated by plot.py at 2019-07-18 13:40:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 795.36 Mbit/s
95th percentile per-packet one-way delay: 73.357 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 505.63 Mbit/s
95th percentile per-packet one-way delay: 79.181 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 315.54 Mbit/s
95th percentile per-packet one-way delay: 69.735 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 244.84 Mbit/s
95th percentile per-packet one-way delay: 64.156 ms
Loss rate: 1.29%
```

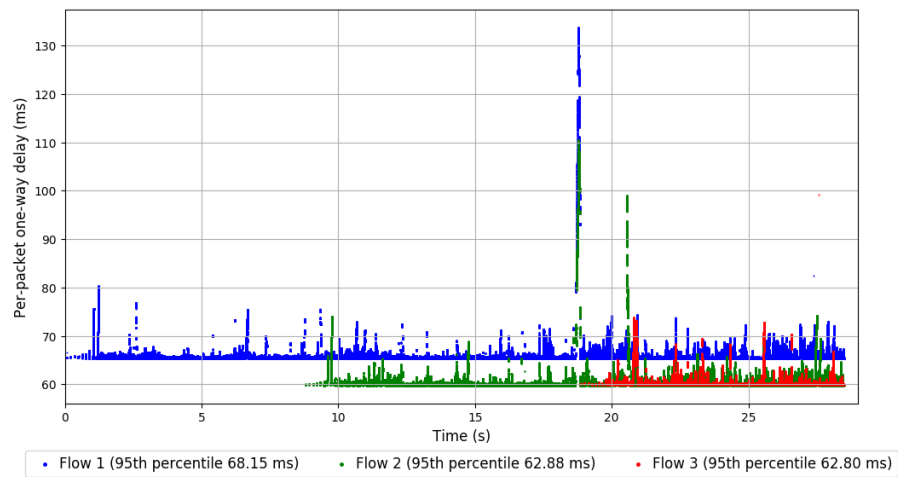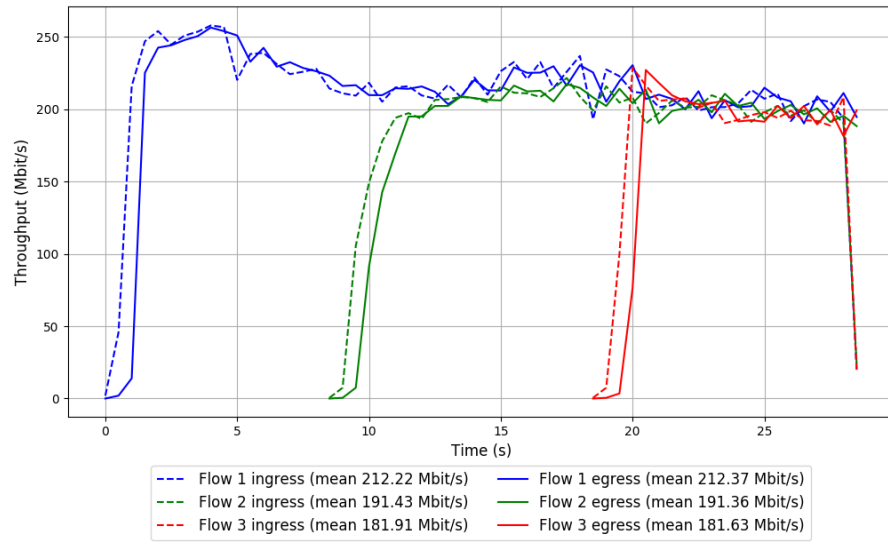# Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-07-18 12:08:02
End at: 2019-07-18 12:08:32
Local clock offset: -0.103 ms
Remote clock offset: -0.679 ms


# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 796.94 Mbit/s
95th percentile per-packet one-way delay: 69.426 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 515.58 Mbit/s
95th percentile per-packet one-way delay: 71.688 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 307.71 Mbit/s
95th percentile per-packet one-way delay: 68.220 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 235.37 Mbit/s
95th percentile per-packet one-way delay: 65.369 ms
Loss rate: 1.47%
```

Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2019-07-18 09:26:23
End at: 2019-07-18 09:26:53
Local clock offset: -0.082 ms
Remote clock offset: -0.153 ms


# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 406.36 Mbit/s
95th percentile per-packet one-way delay: 67.285 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 212.37 Mbit/s
95th percentile per-packet one-way delay: 68.154 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 191.36 Mbit/s
95th percentile per-packet one-way delay: 62.877 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 181.63 Mbit/s
95th percentile per-packet one-way delay: 62.804 ms
Loss rate: 1.42%
```
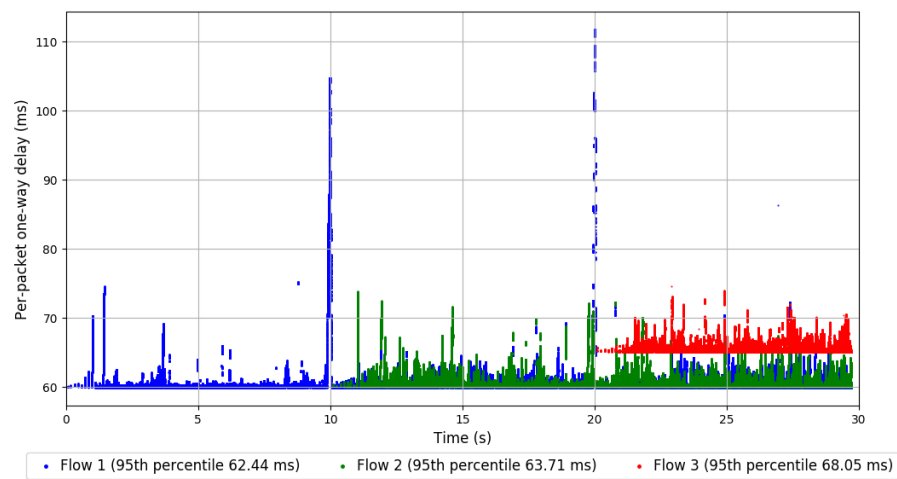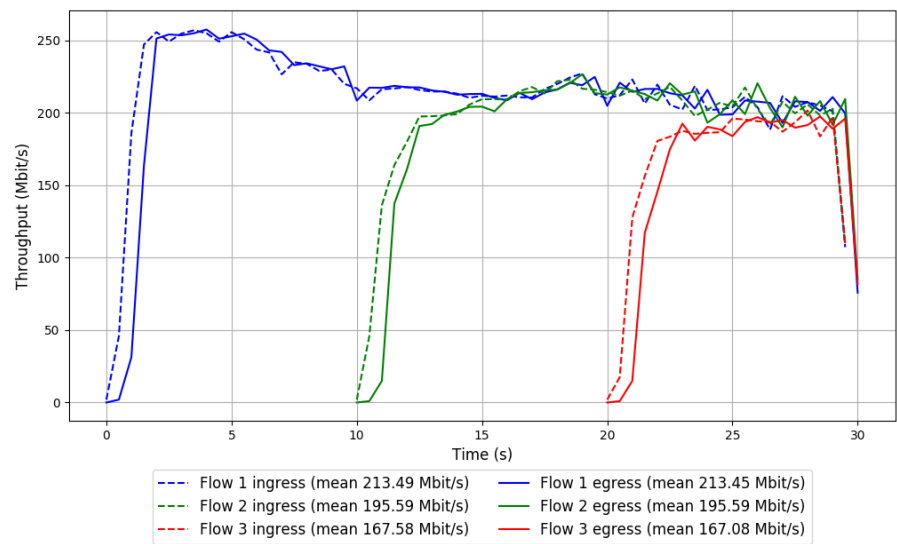
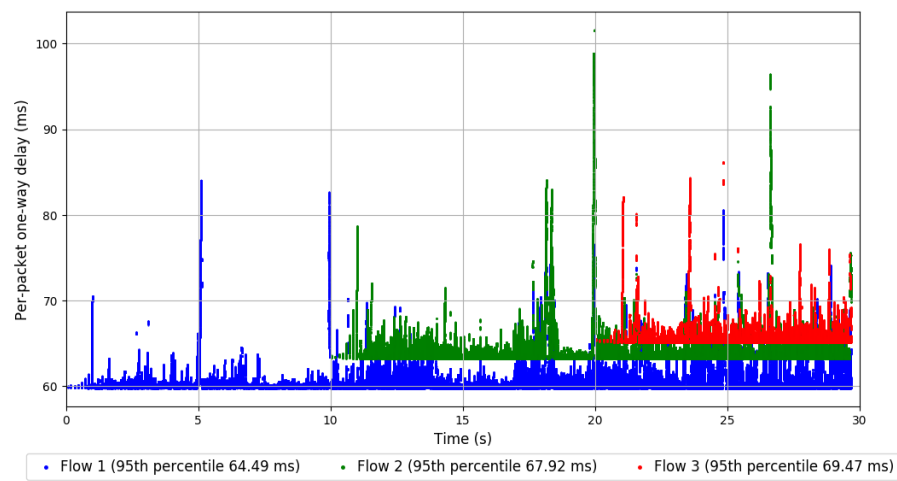Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-07-18 10:07:40
End at: 2019-07-18 10:08:10
Local clock offset: -0.006 ms
Remote clock offset: -0.22 ms


# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 396.90 Mbit/s
95th percentile per-packet one-way delay: 65.893 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 213.45 Mbit/s
95th percentile per-packet one-way delay: 62.437 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 195.59 Mbit/s
95th percentile per-packet one-way delay: 63.708 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 167.08 Mbit/s
95th percentile per-packet one-way delay: 68.051 ms
Loss rate: 1.57%
```
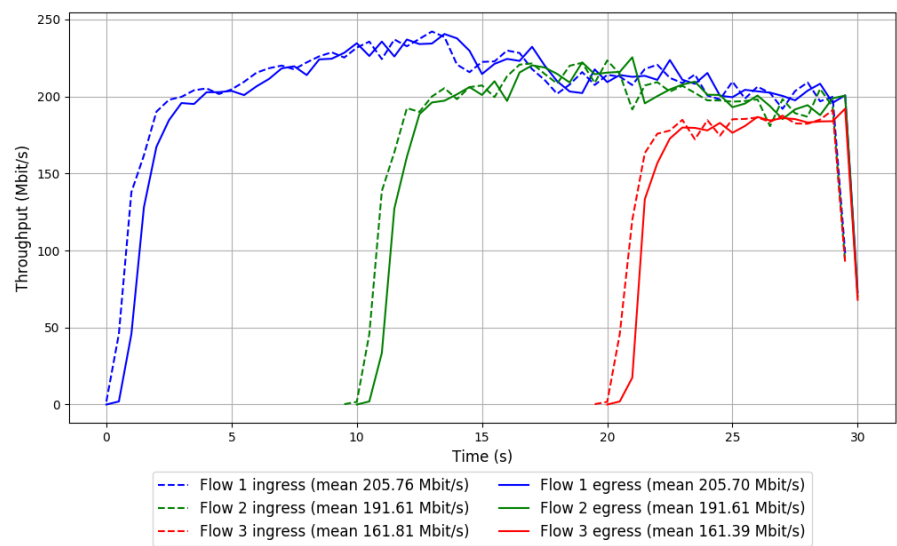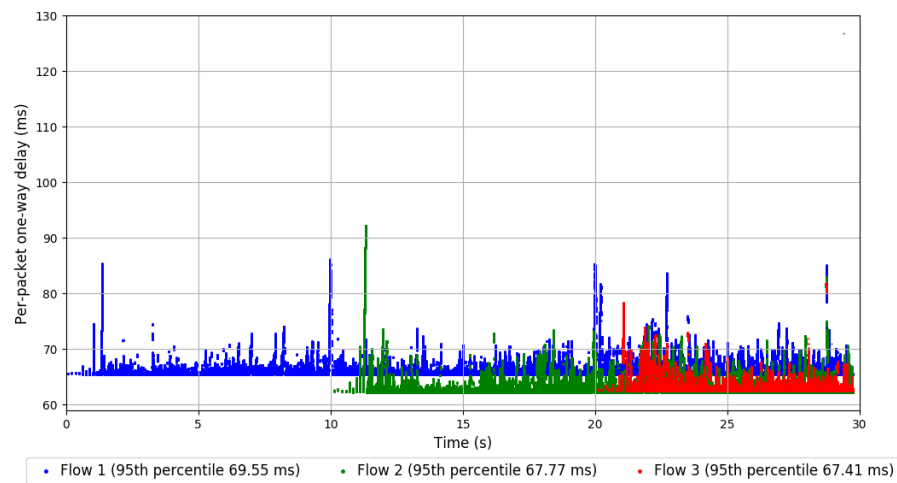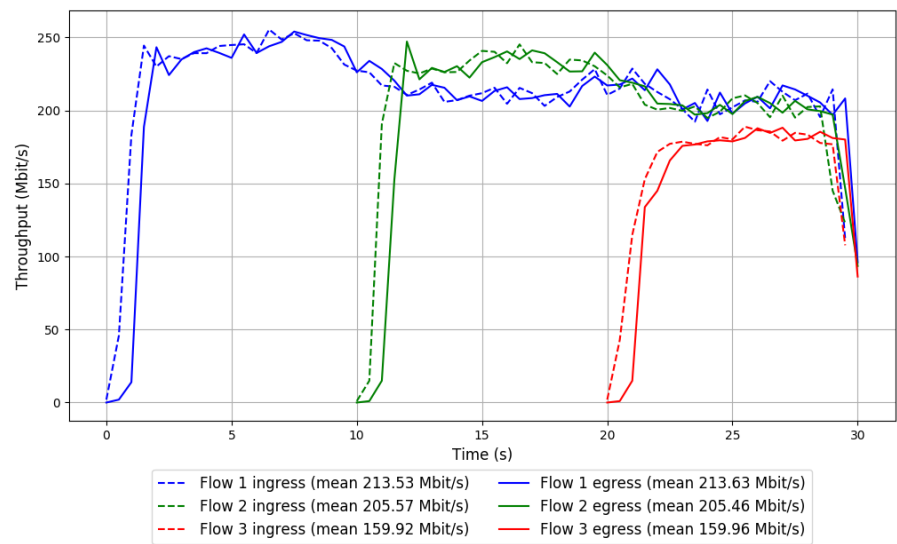
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 213.49 Mbit/s) --- Flow 1 egress (mean 213.45 Mbit/s)
Flow 2 ingress (mean 195.59 Mbit/s) --- Flow 2 egress (mean 195.59 Mbit/s)
Flow 3 ingress (mean 167.58 Mbit/s) --- Flow 3 egress (mean 167.08 Mbit/s)

Flow 1 (95th percentile 62.44 ms)   Flow 2 (95th percentile 63.71 ms)   Flow 3 (95th percentile 68.05 ms)

```
Run 3: Statistics of Indigo

Start at: 2019-07-18 10:48:46
End at: 2019-07-18 10:49:16
Local clock offset: -0.004 ms
Remote clock offset: -0.068 ms


# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 385.22 Mbit/s
95th percentile per-packet one-way delay: 67.252 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 205.70 Mbit/s
95th percentile per-packet one-way delay: 64.490 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 191.61 Mbit/s
95th percentile per-packet one-way delay: 67.925 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 161.39 Mbit/s
95th percentile per-packet one-way delay: 69.469 ms
Loss rate: 1.54%
```

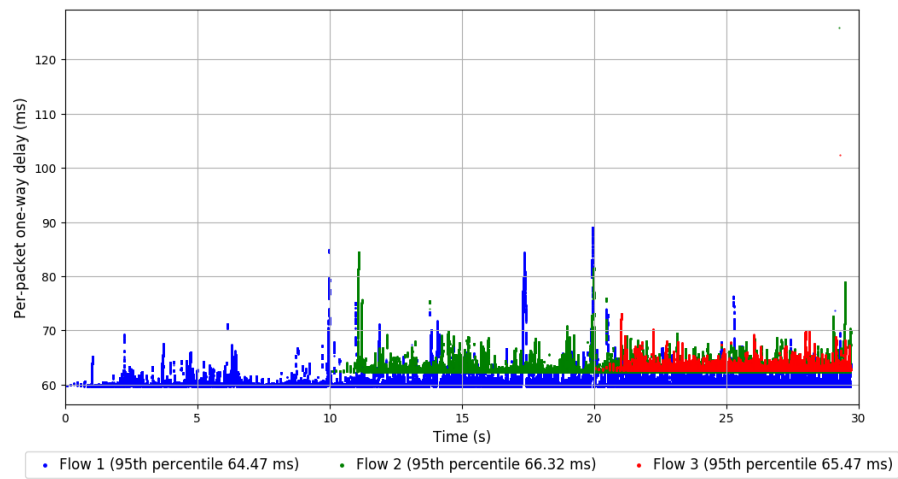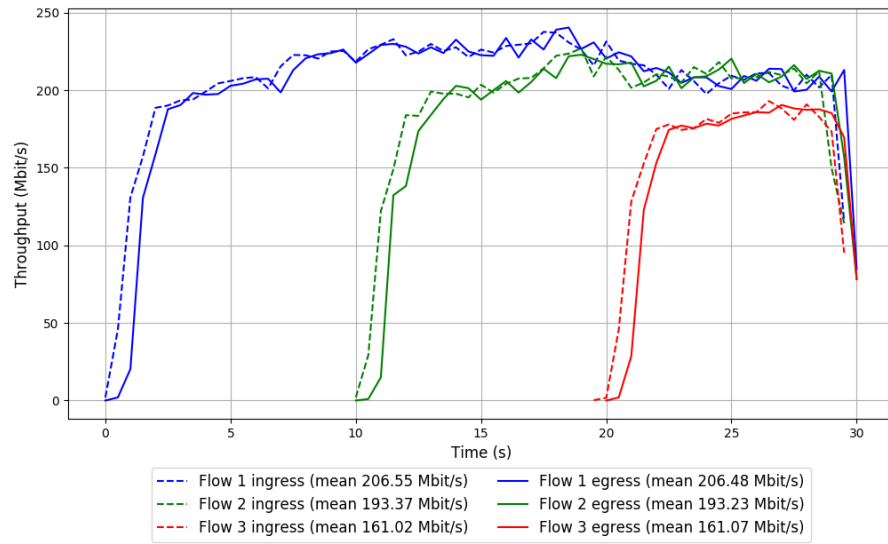## Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-07-18 11:30:03
End at: 2019-07-18 11:30:33
Local clock offset: -0.025 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 401.34 Mbit/s
95th percentile per-packet one-way delay: 68.863 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 213.63 Mbit/s
95th percentile per-packet one-way delay: 69.550 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 205.46 Mbit/s
95th percentile per-packet one-way delay: 67.771 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 159.96 Mbit/s
95th percentile per-packet one-way delay: 67.414 ms
Loss rate: 1.31%
```
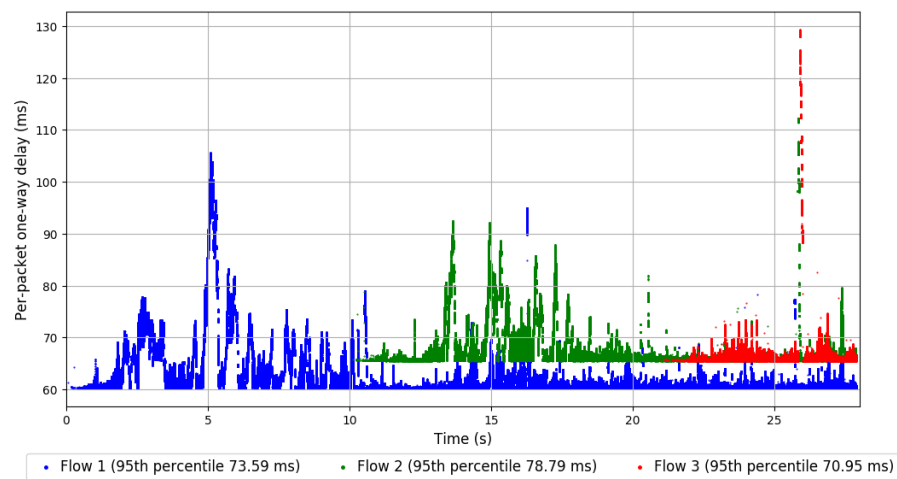
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-07-18 12:11:03
End at: 2019-07-18 12:11:33
Local clock offset: -0.09 ms
Remote clock offset: -0.024 ms


# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 386.67 Mbit/s
95th percentile per-packet one-way delay: 65.571 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 206.48 Mbit/s
95th percentile per-packet one-way delay: 64.473 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 193.23 Mbit/s
95th percentile per-packet one-way delay: 66.323 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 161.07 Mbit/s
95th percentile per-packet one-way delay: 65.470 ms
Loss rate: 1.28%
```

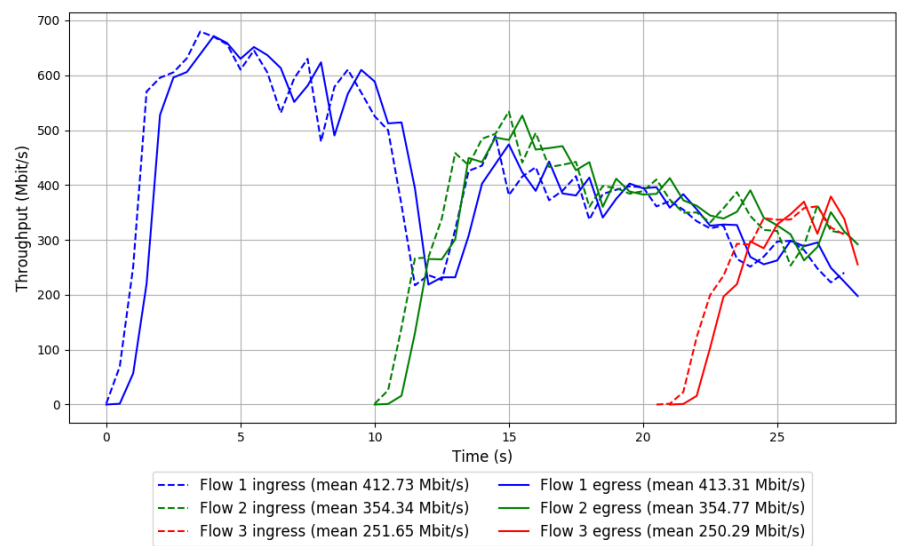Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-07-18 09:01:34
End at: 2019-07-18 09:02:04
Local clock offset: -0.028 ms
Remote clock offset: -0.358 ms

# Below is generated by plot.py at 2019-07-18 13:52:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 701.93 Mbit/s
95th percentile per-packet one-way delay: 75.481 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 413.31 Mbit/s
95th percentile per-packet one-way delay: 73.590 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 354.77 Mbit/s
95th percentile per-packet one-way delay: 78.789 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 250.29 Mbit/s
95th percentile per-packet one-way delay: 70.955 ms
Loss rate: 2.37%
```
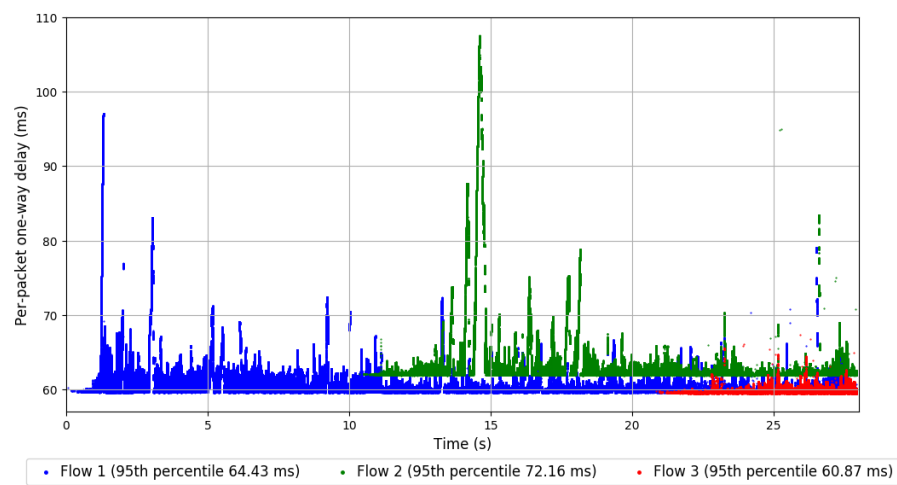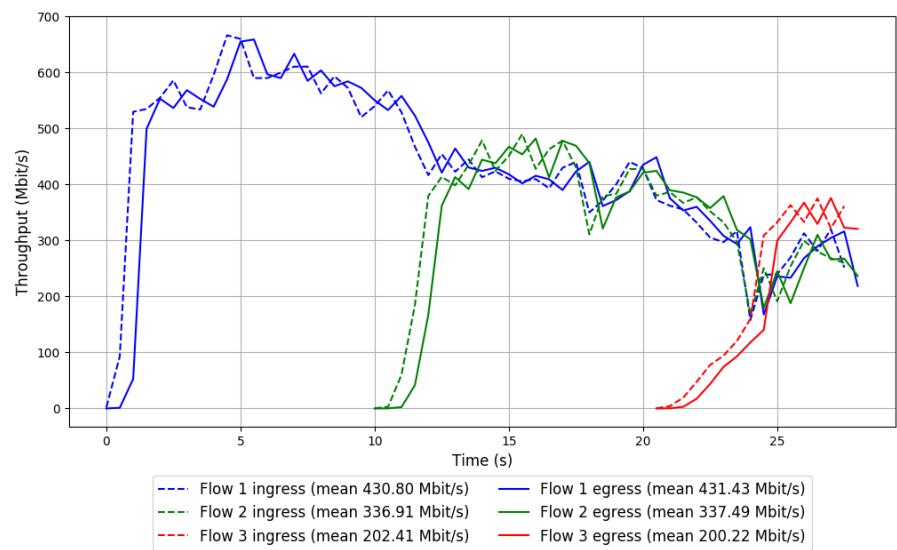
Run 1: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 412.73 Mbit/s) ——— Flow 1 egress (mean 413.31 Mbit/s)
- - - - Flow 2 ingress (mean 354.34 Mbit/s) ——— Flow 2 egress (mean 354.77 Mbit/s)
- - - - Flow 3 ingress (mean 251.65 Mbit/s) ——— Flow 3 egress (mean 250.29 Mbit/s)

• Flow 1 (95th percentile 73.59 ms)   • Flow 2 (95th percentile 78.79 ms)   • Flow 3 (95th percentile 70.95 ms)

66

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-07-18 09:42:56
End at: 2019-07-18 09:43:26
Local clock offset: -0.07 ms
Remote clock offset: 0.111 ms


# Below is generated by plot.py at 2019-07-18 13:54:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 694.96 Mbit/s
95th percentile per-packet one-way delay: 66.446 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 431.43 Mbit/s
95th percentile per-packet one-way delay: 64.434 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 337.49 Mbit/s
95th percentile per-packet one-way delay: 72.162 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 200.22 Mbit/s
95th percentile per-packet one-way delay: 60.871 ms
Loss rate: 2.79%
```
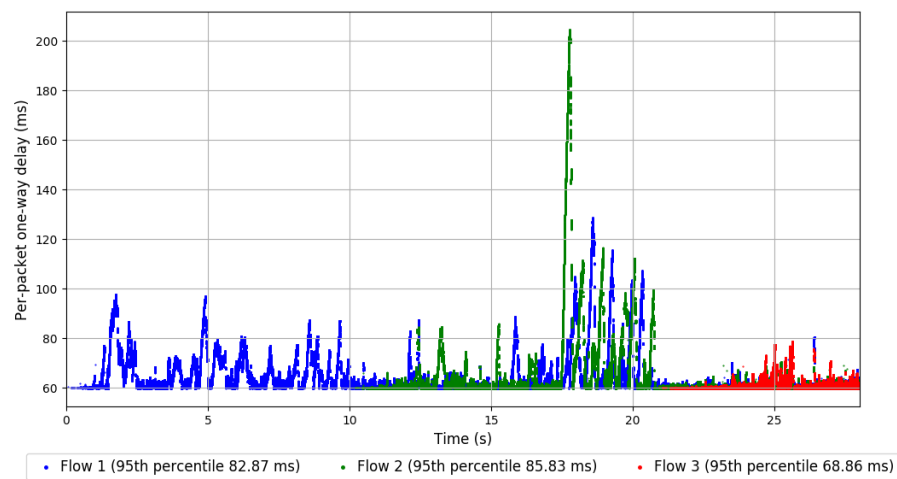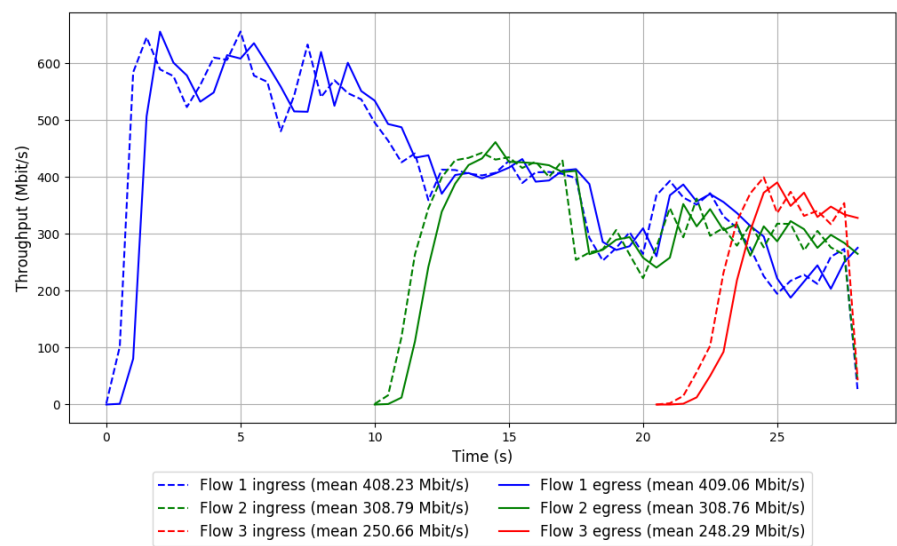
Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-07-18 10:24:09
End at: 2019-07-18 10:24:39
Local clock offset: -0.024 ms
Remote clock offset: -0.18 ms

# Below is generated by plot.py at 2019-07-18 14:00:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 669.57 Mbit/s
95th percentile per-packet one-way delay: 82.229 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 409.06 Mbit/s
95th percentile per-packet one-way delay: 82.873 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 308.76 Mbit/s
95th percentile per-packet one-way delay: 85.828 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 248.29 Mbit/s
95th percentile per-packet one-way delay: 68.857 ms
Loss rate: 2.61%
```
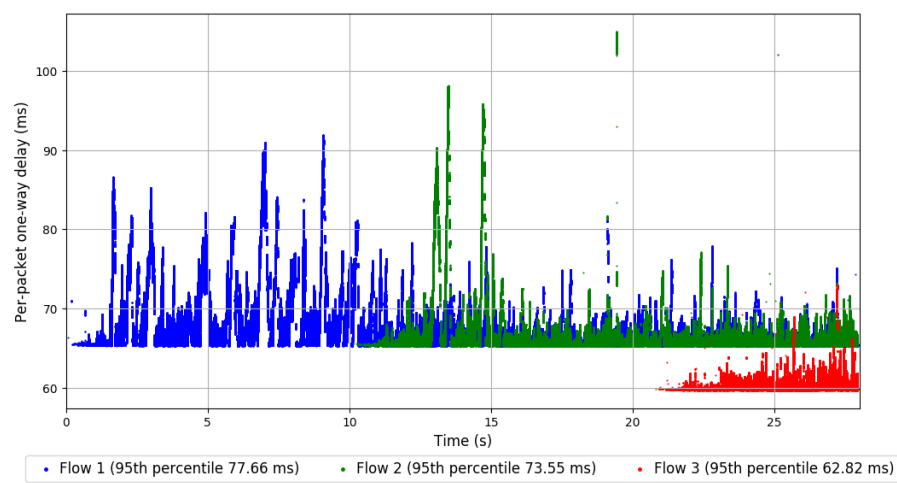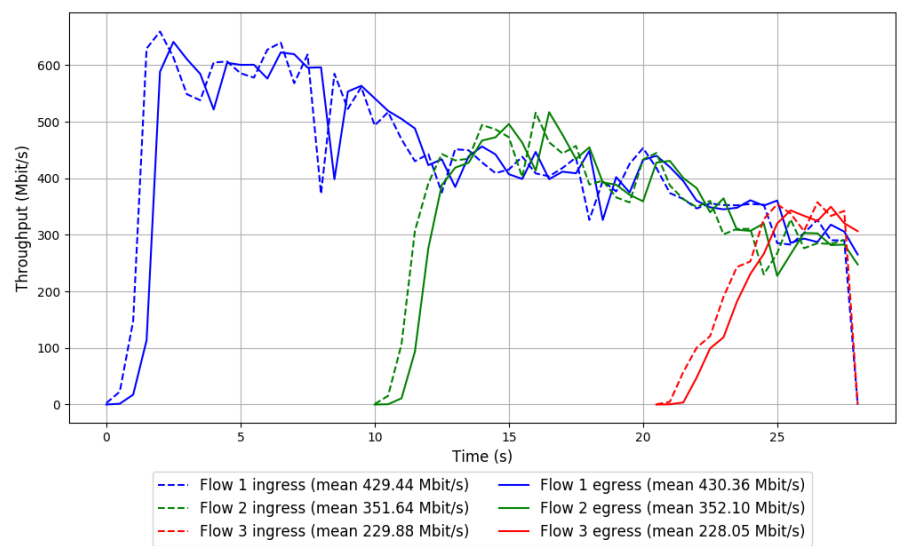
Run 3: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 408.23 Mbit/s) --- Flow 1 egress (mean 409.06 Mbit/s)
Flow 2 ingress (mean 308.79 Mbit/s) --- Flow 2 egress (mean 308.76 Mbit/s)
Flow 3 ingress (mean 250.66 Mbit/s) --- Flow 3 egress (mean 248.29 Mbit/s)

Flow 1 (95th percentile 82.87 ms)   Flow 2 (95th percentile 85.83 ms)   Flow 3 (95th percentile 68.86 ms)

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-07-18 11:05:20
End at: 2019-07-18 11:05:50
Local clock offset: -0.065 ms
Remote clock offset: 0.085 ms


# Below is generated by plot.py at 2019-07-18 14:01:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 713.20 Mbit/s
95th percentile per-packet one-way delay: 76.450 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 430.36 Mbit/s
95th percentile per-packet one-way delay: 77.656 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 352.10 Mbit/s
95th percentile per-packet one-way delay: 73.548 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 228.05 Mbit/s
95th percentile per-packet one-way delay: 62.824 ms
Loss rate: 2.50%
```
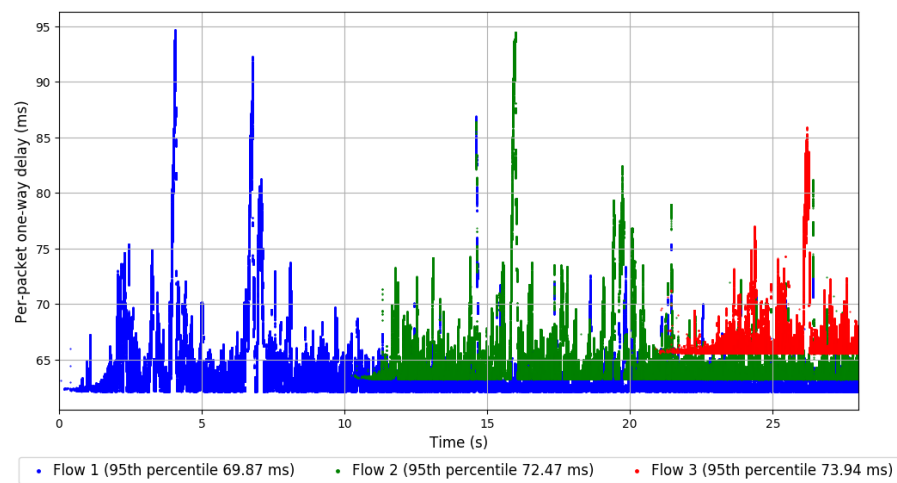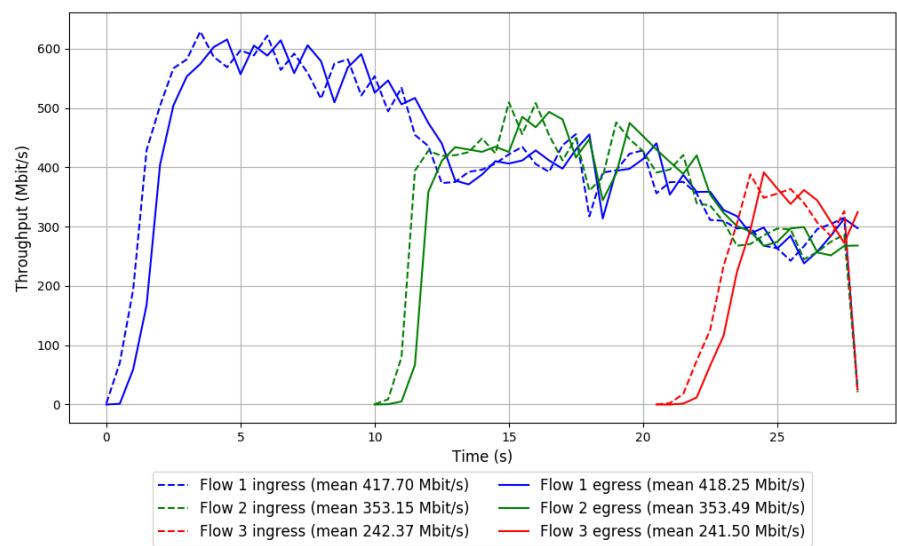
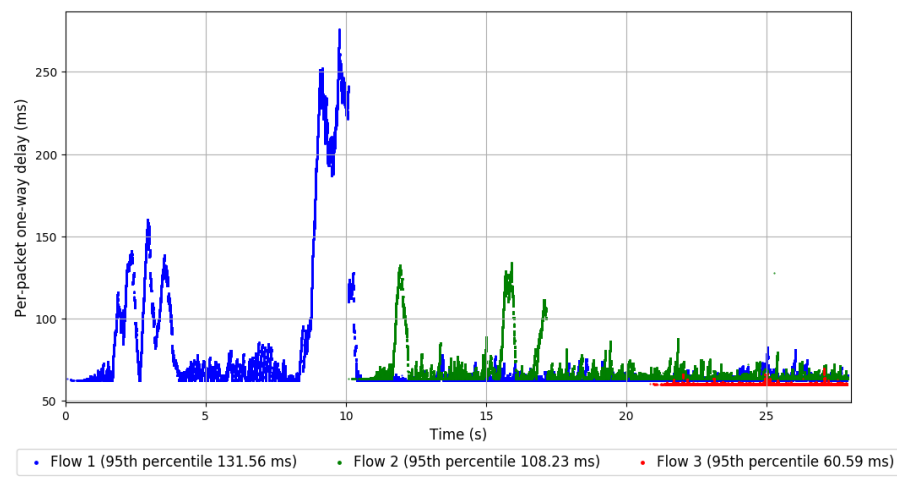Run 4: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 429.44 Mbit/s) ——— Flow 1 egress (mean 430.36 Mbit/s)
- - - - Flow 2 ingress (mean 351.64 Mbit/s) ——— Flow 2 egress (mean 352.10 Mbit/s)
- - - - Flow 3 ingress (mean 229.88 Mbit/s) ——— Flow 3 egress (mean 228.05 Mbit/s)

• Flow 1 (95th percentile 77.66 ms)   • Flow 2 (95th percentile 73.55 ms)   • Flow 3 (95th percentile 62.82 ms)
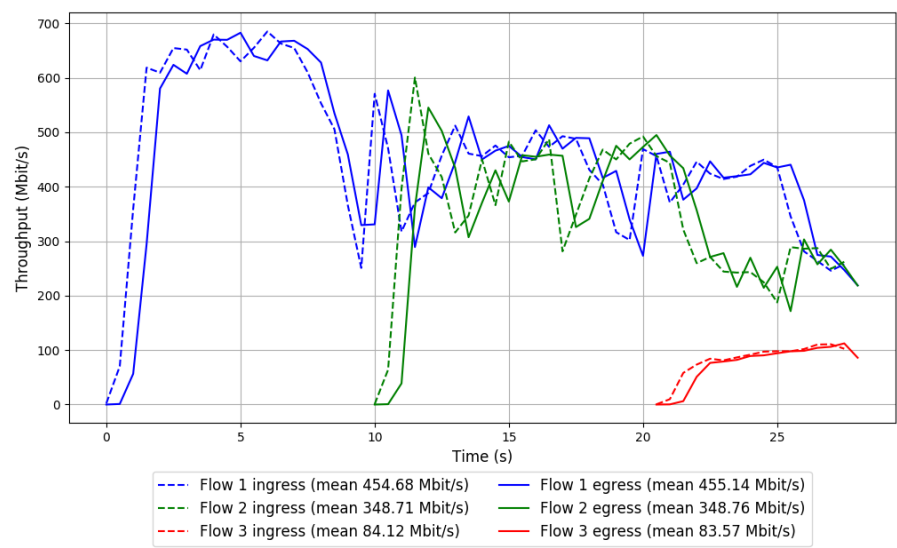
```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-07-18 11:46:24
End at: 2019-07-18 11:46:54
Local clock offset: 0.016 ms
Remote clock offset: 0.014 ms

# Below is generated by plot.py at 2019-07-18 14:01:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 704.15 Mbit/s
95th percentile per-packet one-way delay: 71.119 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 418.25 Mbit/s
95th percentile per-packet one-way delay: 69.870 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 353.49 Mbit/s
95th percentile per-packet one-way delay: 72.474 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 241.50 Mbit/s
95th percentile per-packet one-way delay: 73.943 ms
Loss rate: 2.19%
```

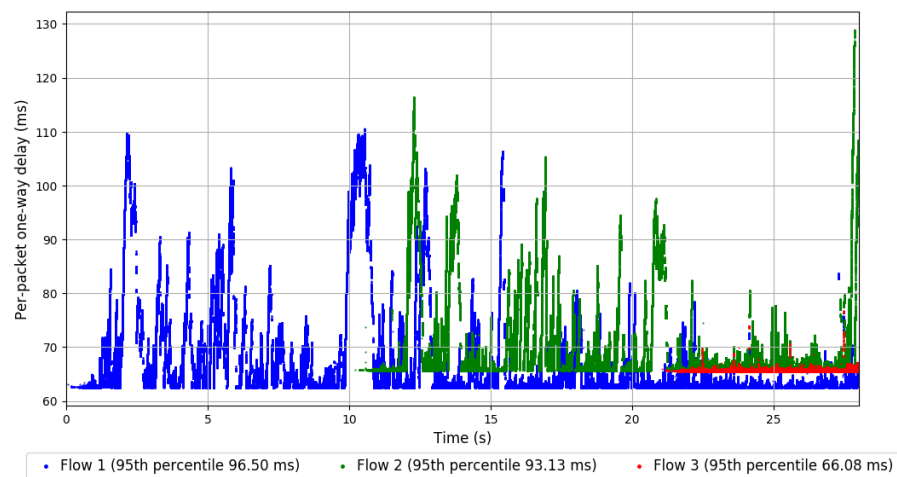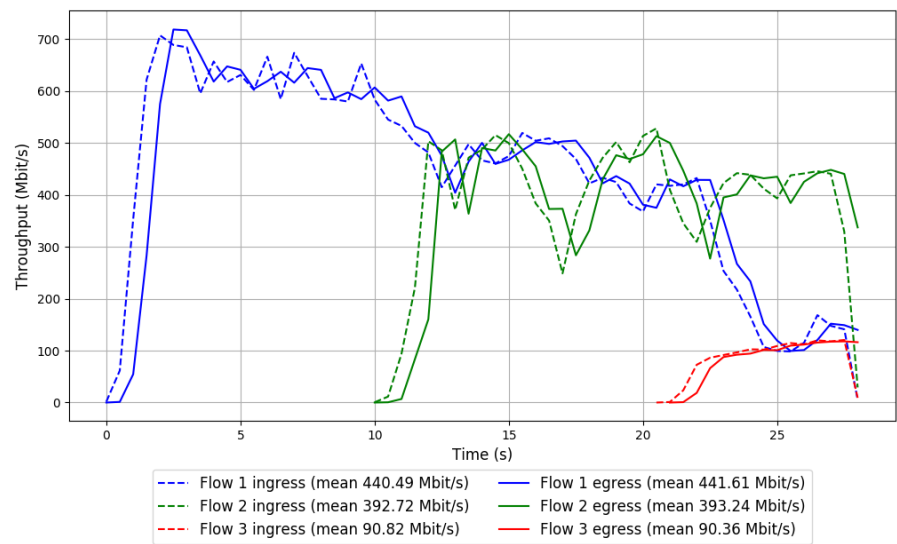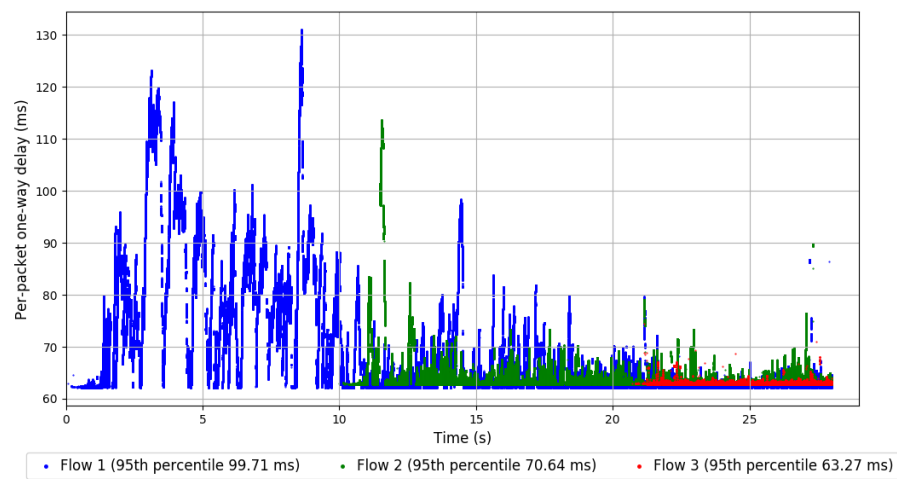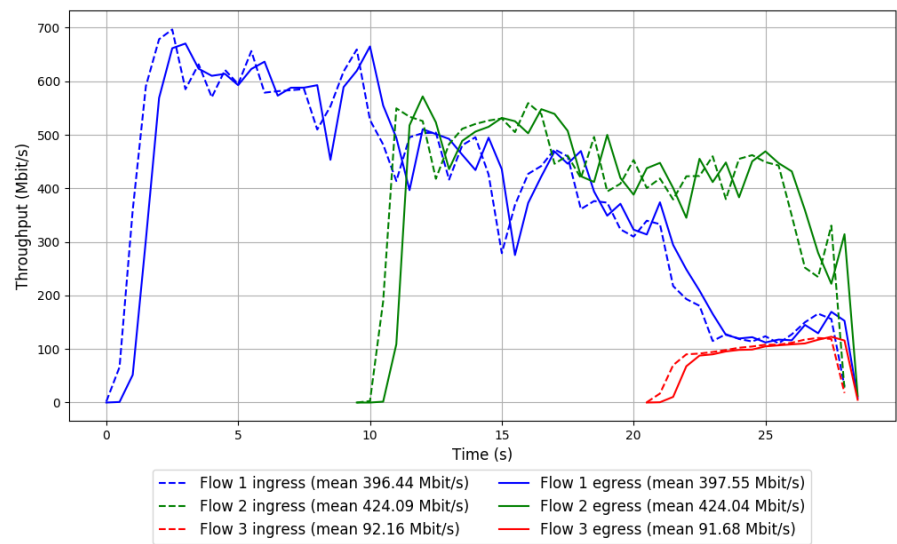Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-07-18 09:16:04
End at: 2019-07-18 09:16:34
Local clock offset: -0.077 ms
Remote clock offset: -0.314 ms


# Below is generated by plot.py at 2019-07-18 14:01:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 699.13 Mbit/s
95th percentile per-packet one-way delay: 123.197 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 455.14 Mbit/s
95th percentile per-packet one-way delay: 131.560 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 348.76 Mbit/s
95th percentile per-packet one-way delay: 108.230 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 83.57 Mbit/s
95th percentile per-packet one-way delay: 60.591 ms
Loss rate: 2.47%
```

Run 1: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 454.68 Mbit/s) —— Flow 1 egress (mean 455.14 Mbit/s)
- - - Flow 2 ingress (mean 348.71 Mbit/s) —— Flow 2 egress (mean 348.76 Mbit/s)
- - - Flow 3 ingress (mean 84.12 Mbit/s) —— Flow 3 egress (mean 83.57 Mbit/s)

• Flow 1 (95th percentile 131.56 ms)   • Flow 2 (95th percentile 108.23 ms)   • Flow 3 (95th percentile 60.59 ms)

76

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-07-18 09:57:21
End at: 2019-07-18 09:57:51
Local clock offset: -0.026 ms
Remote clock offset: -0.172 ms

# Below is generated by plot.py at 2019-07-18 14:01:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 714.03 Mbit/s
95th percentile per-packet one-way delay: 94.534 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 441.61 Mbit/s
95th percentile per-packet one-way delay: 96.498 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 393.24 Mbit/s
95th percentile per-packet one-way delay: 93.127 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 90.36 Mbit/s
95th percentile per-packet one-way delay: 66.075 ms
Loss rate: 2.28%
```

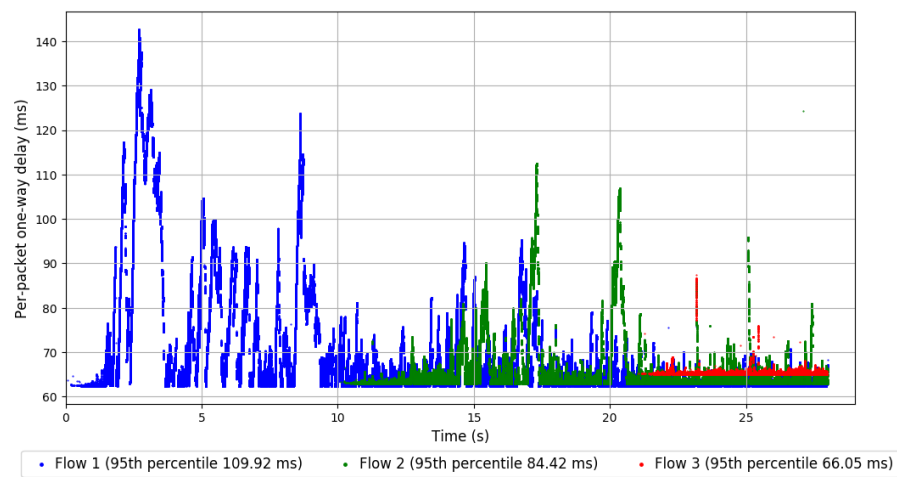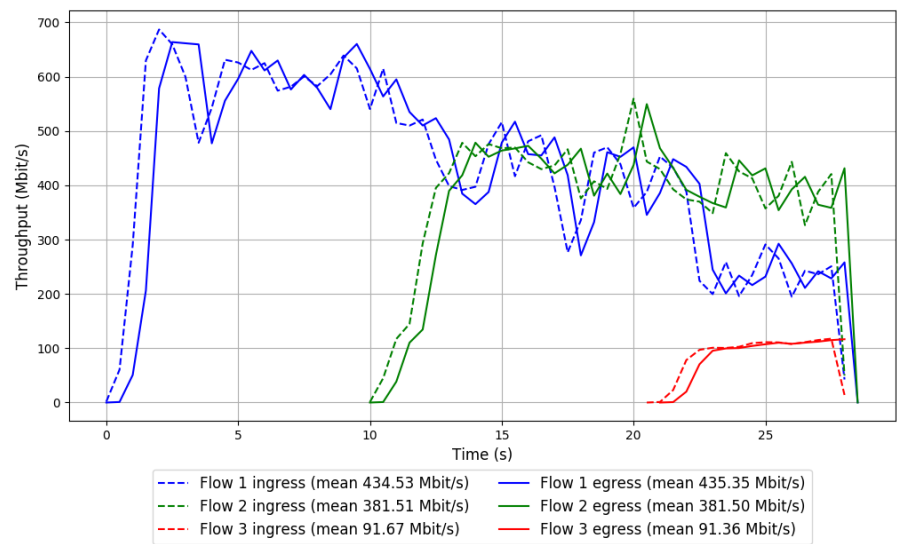# Run 2: Report of Indigo-MusesC5 — Data Link

- Flow 1 ingress (mean 440.49 Mbit/s)
- Flow 1 egress (mean 441.61 Mbit/s)
- Flow 2 ingress (mean 392.72 Mbit/s)
- Flow 2 egress (mean 393.24 Mbit/s)
- Flow 3 ingress (mean 90.82 Mbit/s)
- Flow 3 egress (mean 90.36 Mbit/s)

- Flow 1 (95th percentile 96.50 ms)
- Flow 2 (95th percentile 93.13 ms)
- Flow 3 (95th percentile 66.08 ms)

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-07-18 10:38:28
End at: 2019-07-18 10:38:58
Local clock offset: -0.0 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2019-07-18 14:02:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 694.72 Mbit/s
95th percentile per-packet one-way delay: 94.539 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 397.55 Mbit/s
95th percentile per-packet one-way delay: 99.708 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 424.04 Mbit/s
95th percentile per-packet one-way delay: 70.644 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 91.68 Mbit/s
95th percentile per-packet one-way delay: 63.265 ms
Loss rate: 2.15%
```
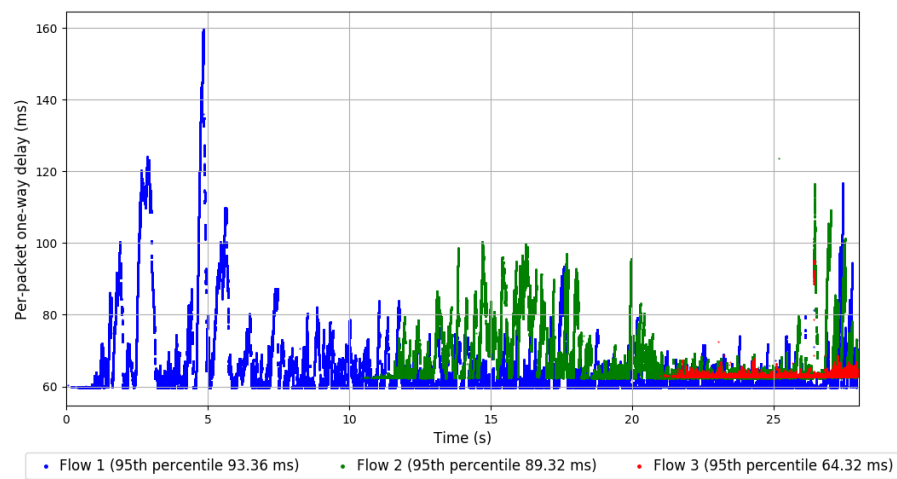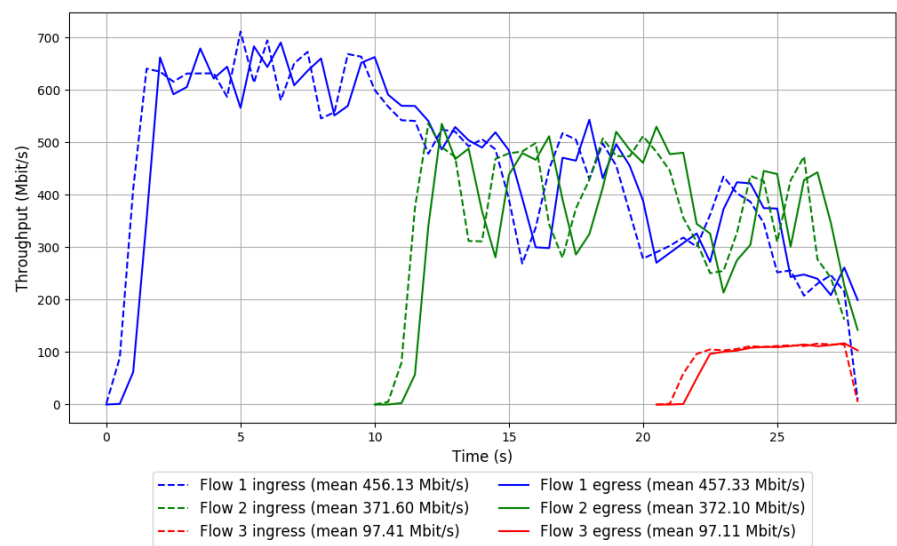
Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-07-18 11:19:44
End at: 2019-07-18 11:20:14
Local clock offset: -0.047 ms
Remote clock offset: 0.081 ms


# Below is generated by plot.py at 2019-07-18 14:05:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 702.45 Mbit/s
95th percentile per-packet one-way delay: 100.450 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 435.35 Mbit/s
95th percentile per-packet one-way delay: 109.920 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 381.50 Mbit/s
95th percentile per-packet one-way delay: 84.423 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 91.36 Mbit/s
95th percentile per-packet one-way delay: 66.053 ms
Loss rate: 2.26%
```
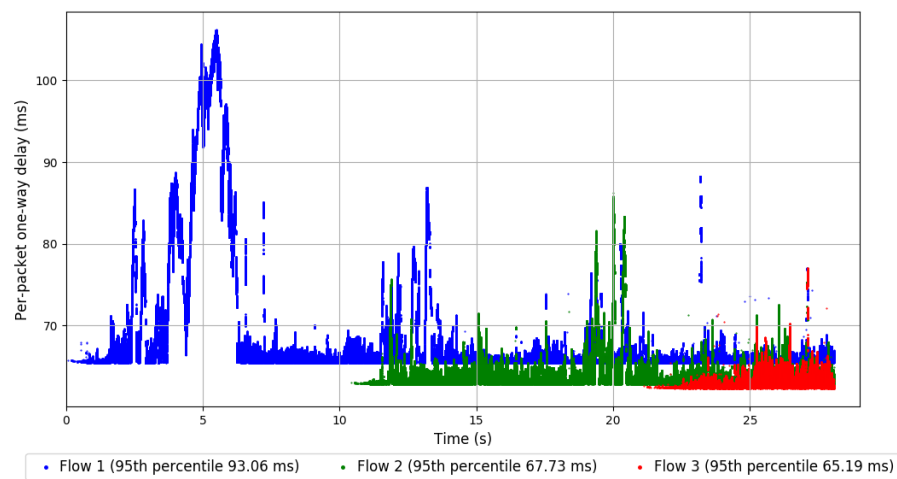
Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-07-18 12:00:43
End at: 2019-07-18 12:01:13
Local clock offset: -0.055 ms
Remote clock offset: 0.105 ms


# Below is generated by plot.py at 2019-07-18 14:07:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 715.44 Mbit/s
95th percentile per-packet one-way delay: 91.000 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 457.33 Mbit/s
95th percentile per-packet one-way delay: 93.357 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 372.10 Mbit/s
95th percentile per-packet one-way delay: 89.317 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 64.324 ms
Loss rate: 2.16%
```
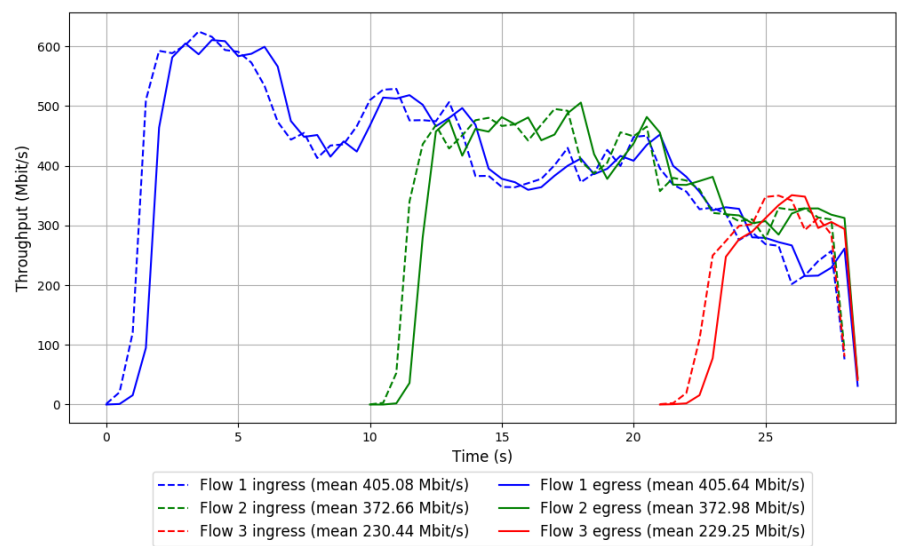
Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-07-18 09:30:02
End at: 2019-07-18 09:30:32
Local clock offset: -0.104 ms
Remote clock offset: 0.034 ms


# Below is generated by plot.py at 2019-07-18 14:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 697.69 Mbit/s
95th percentile per-packet one-way delay: 84.678 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 405.64 Mbit/s
95th percentile per-packet one-way delay: 93.056 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 372.98 Mbit/s
95th percentile per-packet one-way delay: 67.732 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 229.25 Mbit/s
95th percentile per-packet one-way delay: 65.189 ms
Loss rate: 2.30%
```
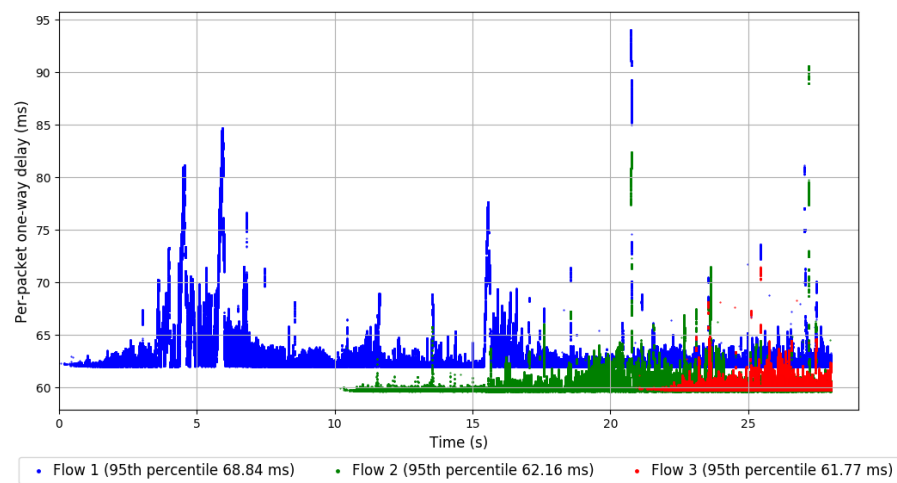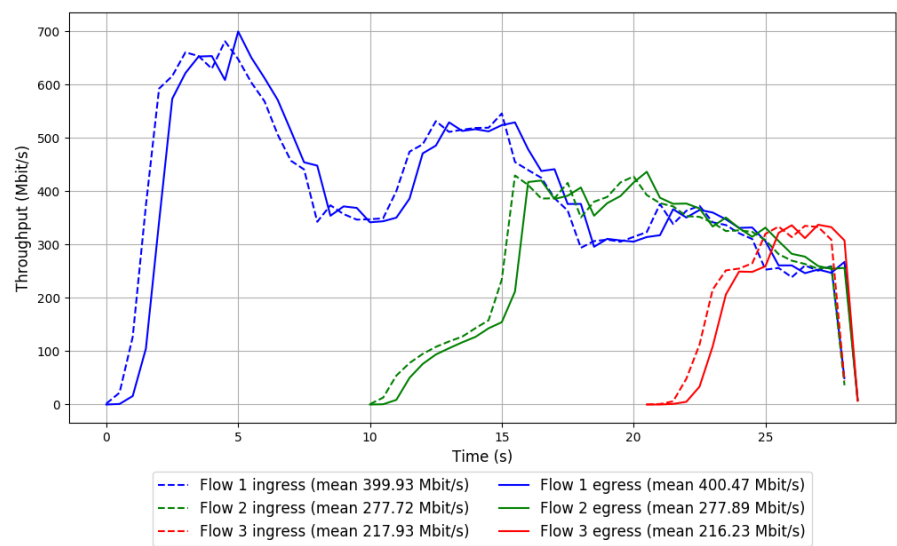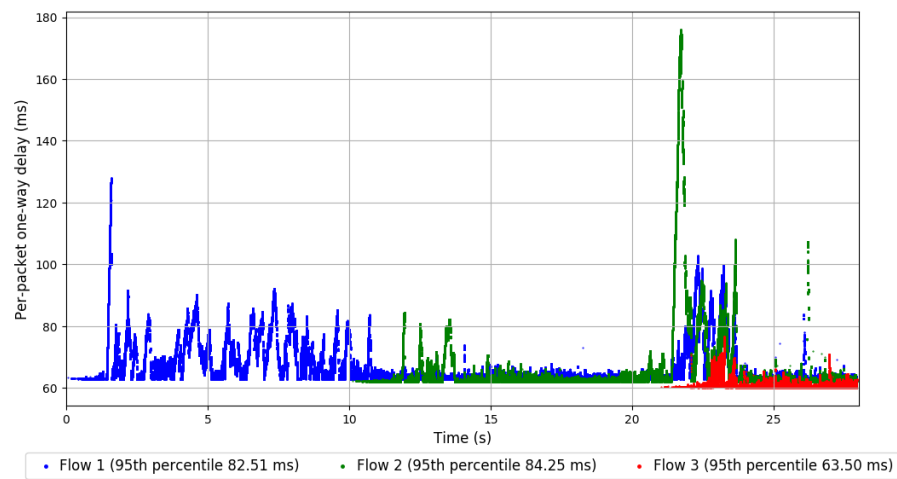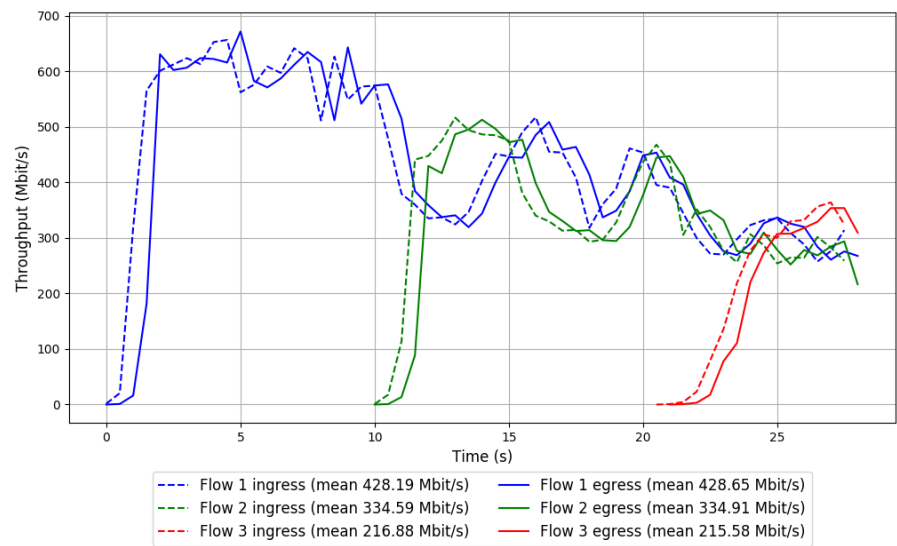
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-07-18 10:11:18
End at: 2019-07-18 10:11:48
Local clock offset: -0.016 ms
Remote clock offset: 0.034 ms

# Below is generated by plot.py at 2019-07-18 14:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 632.46 Mbit/s
95th percentile per-packet one-way delay: 67.192 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 400.47 Mbit/s
95th percentile per-packet one-way delay: 68.839 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 277.89 Mbit/s
95th percentile per-packet one-way delay: 62.157 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 216.23 Mbit/s
95th percentile per-packet one-way delay: 61.775 ms
Loss rate: 2.45%
```

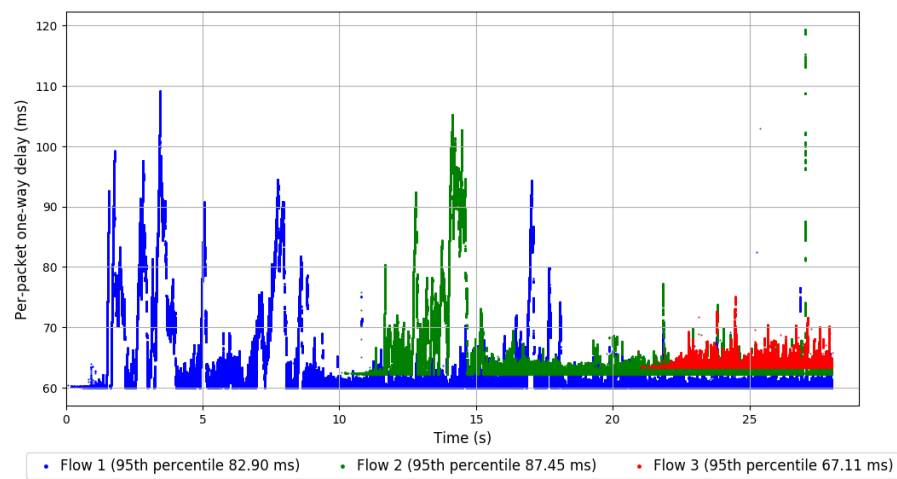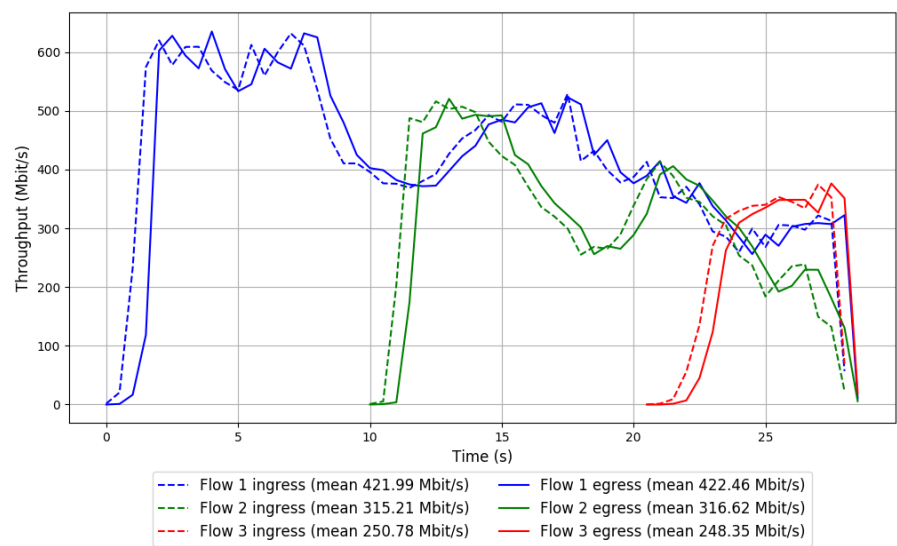Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-07-18 10:52:22
End at: 2019-07-18 10:52:52
Local clock offset: -0.032 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2019-07-18 14:13:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 696.11 Mbit/s
95th percentile per-packet one-way delay: 82.409 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 428.65 Mbit/s
95th percentile per-packet one-way delay: 82.514 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 334.91 Mbit/s
95th percentile per-packet one-way delay: 84.245 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 215.58 Mbit/s
95th percentile per-packet one-way delay: 63.502 ms
Loss rate: 2.30%
```

Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-07-18 11:33:44
End at: 2019-07-18 11:34:14
Local clock offset: -0.016 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2019-07-18 14:13:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 688.68 Mbit/s
95th percentile per-packet one-way delay: 82.658 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 422.46 Mbit/s
95th percentile per-packet one-way delay: 82.898 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 316.62 Mbit/s
95th percentile per-packet one-way delay: 87.453 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 248.35 Mbit/s
95th percentile per-packet one-way delay: 67.108 ms
Loss rate: 2.72%
```
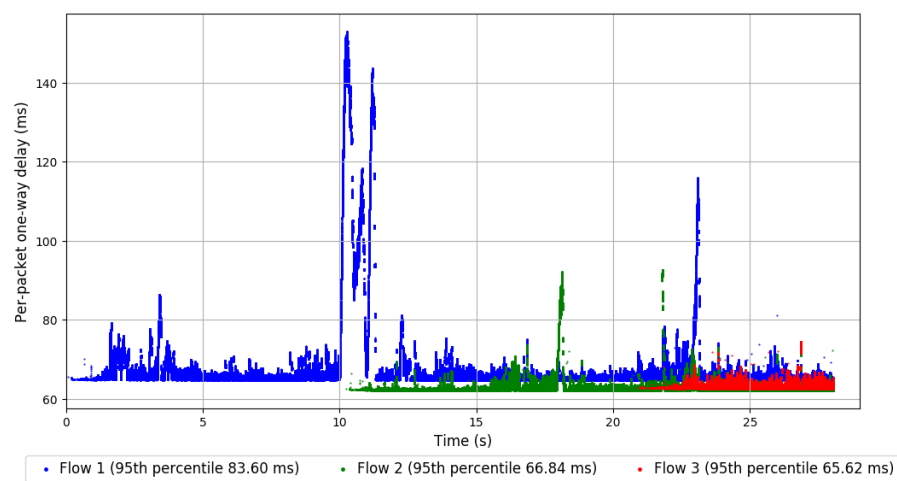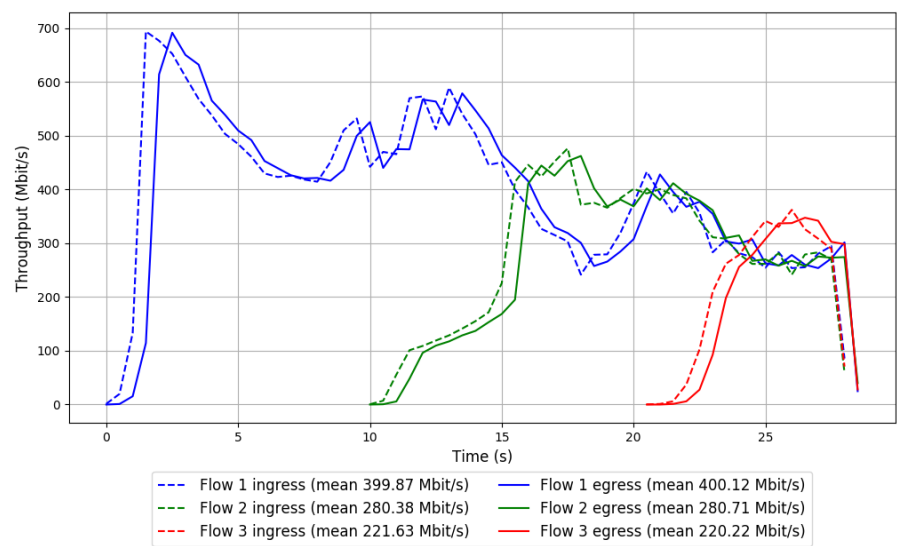
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-07-18 12:14:43
End at: 2019-07-18 12:15:13
Local clock offset: -0.08 ms
Remote clock offset: 0.625 ms


# Below is generated by plot.py at 2019-07-18 14:13:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 635.23 Mbit/s
95th percentile per-packet one-way delay: 75.077 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 400.12 Mbit/s
95th percentile per-packet one-way delay: 83.602 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 280.71 Mbit/s
95th percentile per-packet one-way delay: 66.843 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 220.22 Mbit/s
95th percentile per-packet one-way delay: 65.616 ms
Loss rate: 2.39%
```
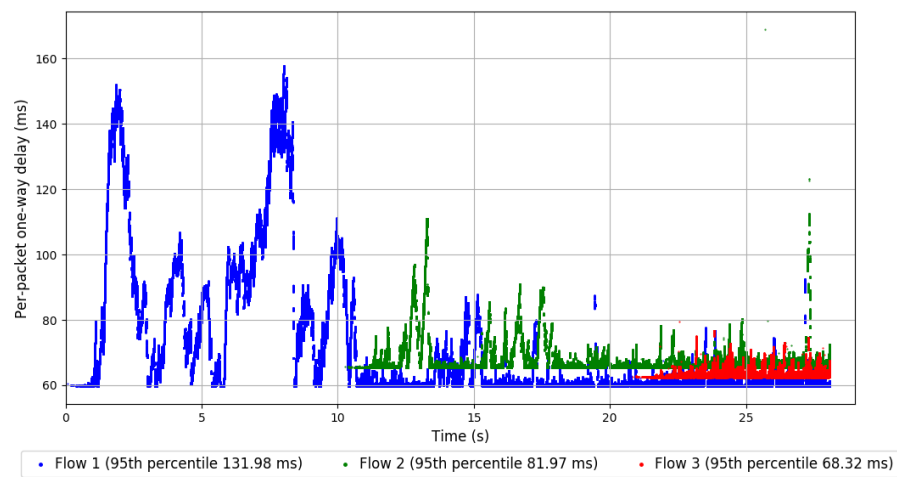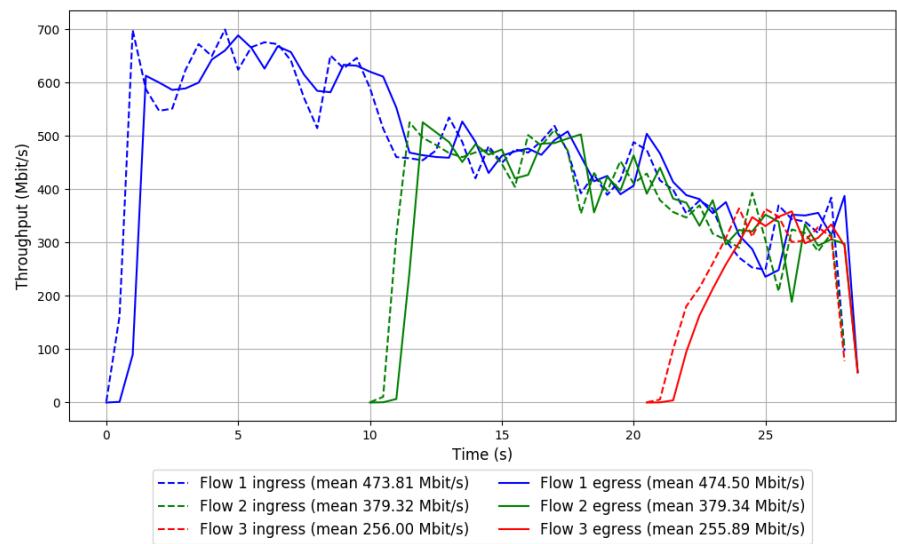
Run 5: Report of Indigo-MusesD — Data Link

94

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-07-18 09:20:20
End at: 2019-07-18 09:20:50
Local clock offset: -0.07 ms
Remote clock offset: 0.019 ms


# Below is generated by plot.py at 2019-07-18 14:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 782.01 Mbit/s
95th percentile per-packet one-way delay: 111.890 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 474.50 Mbit/s
95th percentile per-packet one-way delay: 131.979 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 379.34 Mbit/s
95th percentile per-packet one-way delay: 81.970 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 255.89 Mbit/s
95th percentile per-packet one-way delay: 68.320 ms
Loss rate: 1.80%
```
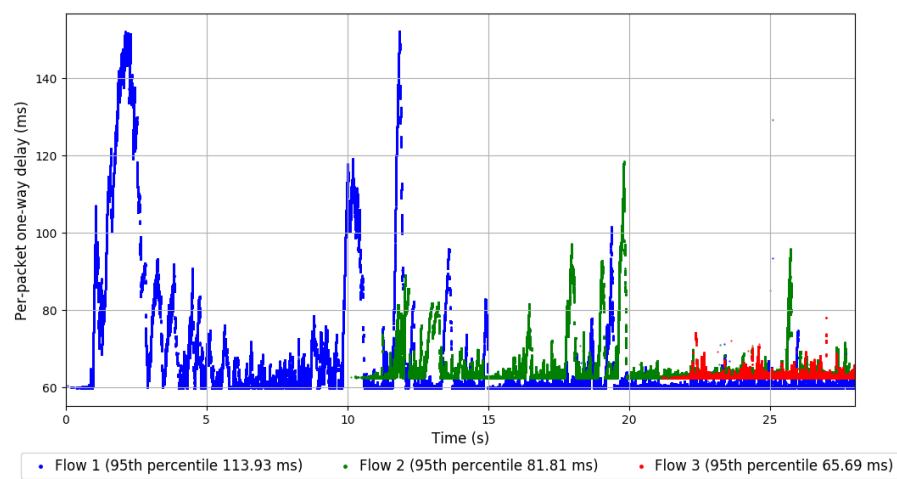
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-07-18 10:01:37
End at: 2019-07-18 10:02:07
Local clock offset: -0.033 ms
Remote clock offset: -0.16 ms


# Below is generated by plot.py at 2019-07-18 14:19:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 771.23 Mbit/s
95th percentile per-packet one-way delay: 103.171 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 469.19 Mbit/s
95th percentile per-packet one-way delay: 113.931 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 372.07 Mbit/s
95th percentile per-packet one-way delay: 81.811 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 259.21 Mbit/s
95th percentile per-packet one-way delay: 65.687 ms
Loss rate: 1.76%
```
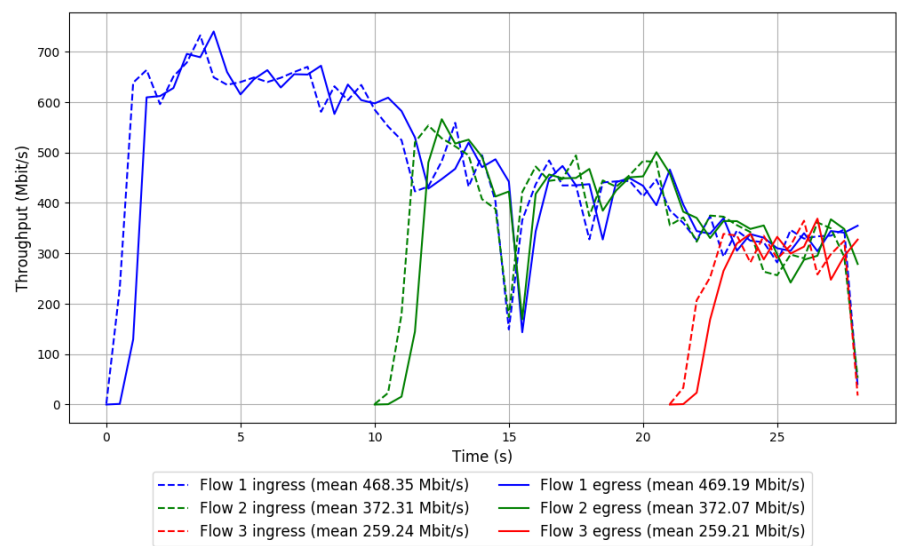
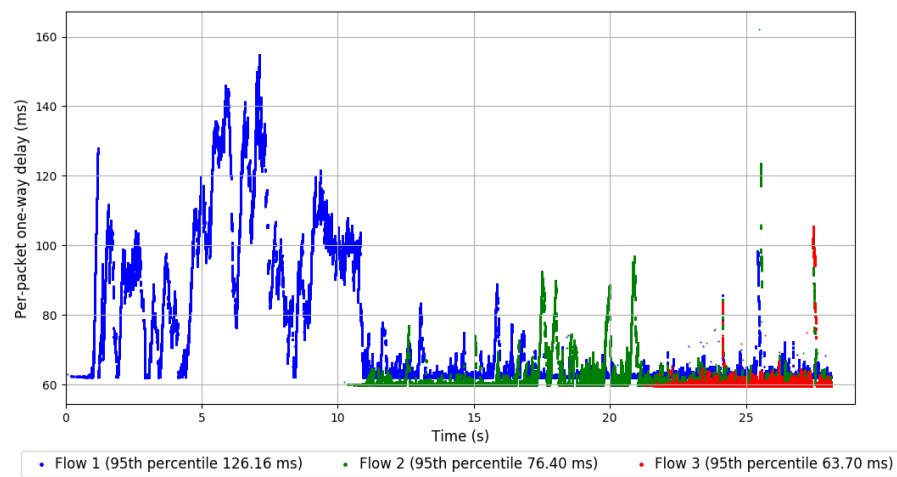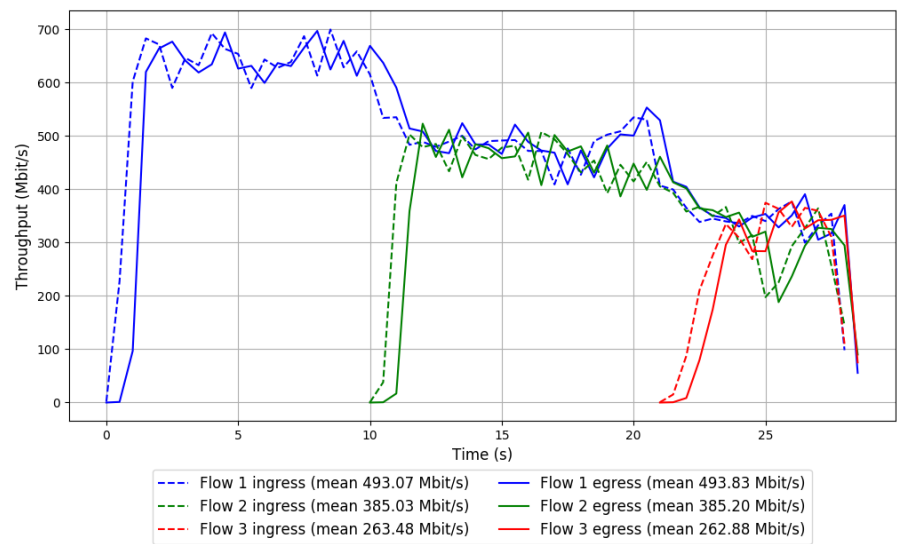Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-07-18 10:42:42
End at: 2019-07-18 10:43:12
Local clock offset: -0.003 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2019-07-18 14:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 804.27 Mbit/s
95th percentile per-packet one-way delay: 113.048 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 493.83 Mbit/s
95th percentile per-packet one-way delay: 126.162 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 385.20 Mbit/s
95th percentile per-packet one-way delay: 76.398 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 262.88 Mbit/s
95th percentile per-packet one-way delay: 63.702 ms
Loss rate: 1.99%
```

Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-07-18 11:23:59
End at: 2019-07-18 11:24:29
Local clock offset: -0.018 ms
Remote clock offset: 0.017 ms


# Below is generated by plot.py at 2019-07-18 14:26:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 775.79 Mbit/s
95th percentile per-packet one-way delay: 96.719 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 468.61 Mbit/s
95th percentile per-packet one-way delay: 102.154 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 381.87 Mbit/s
95th percentile per-packet one-way delay: 76.626 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 248.19 Mbit/s
95th percentile per-packet one-way delay: 68.488 ms
Loss rate: 2.77%
```
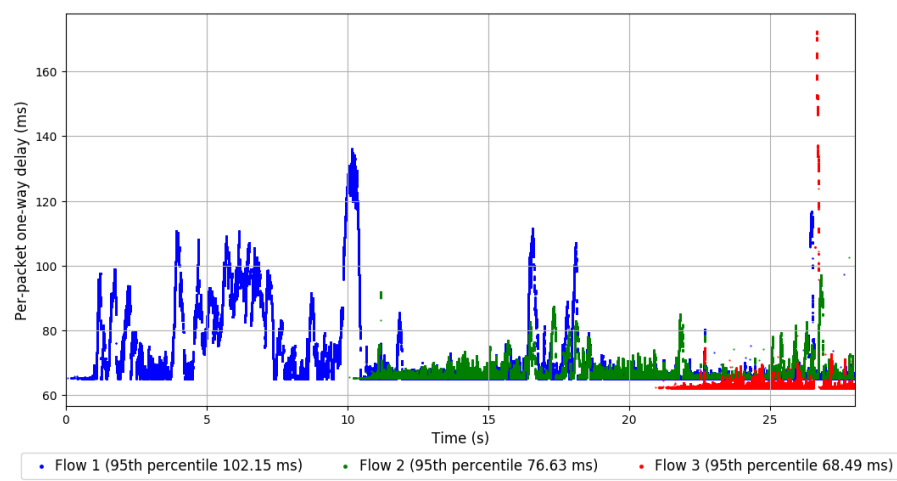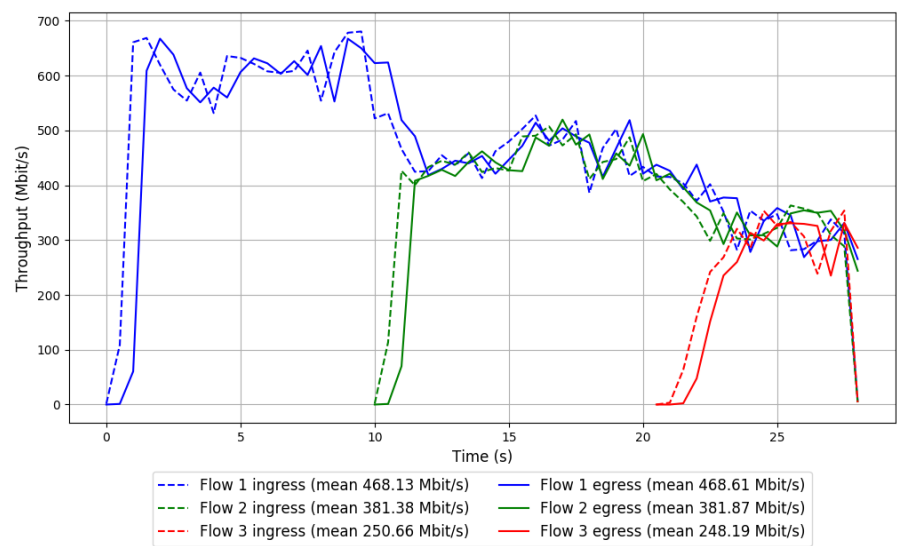
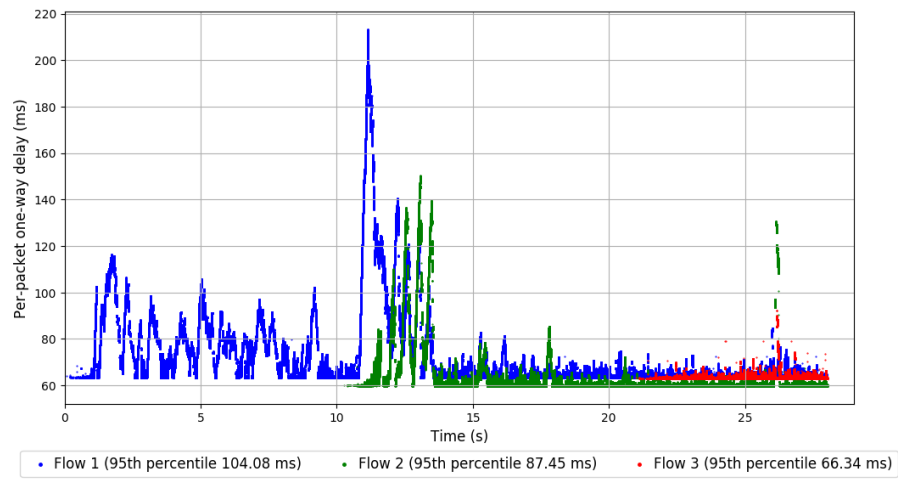Run 4: Report of Indigo-MusesT — Data Link

- - - - Flow 1 ingress (mean 468.13 Mbit/s)   —— Flow 1 egress (mean 468.61 Mbit/s)
- - - - Flow 2 ingress (mean 381.38 Mbit/s)   —— Flow 2 egress (mean 381.87 Mbit/s)
- - - - Flow 3 ingress (mean 250.66 Mbit/s)   —— Flow 3 egress (mean 248.19 Mbit/s)

- Flow 1 (95th percentile 102.15 ms)   • Flow 2 (95th percentile 76.63 ms)   • Flow 3 (95th percentile 68.49 ms)
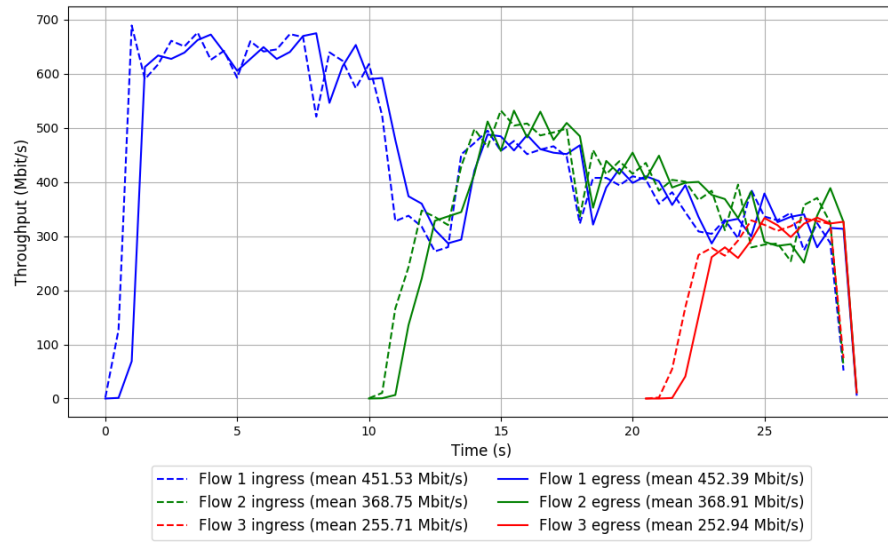
```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-07-18 12:05:00
End at: 2019-07-18 12:05:30
Local clock offset: -0.083 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2019-07-18 14:26:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 750.37 Mbit/s
95th percentile per-packet one-way delay: 99.264 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 452.39 Mbit/s
95th percentile per-packet one-way delay: 104.085 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 368.91 Mbit/s
95th percentile per-packet one-way delay: 87.454 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 252.94 Mbit/s
95th percentile per-packet one-way delay: 66.337 ms
Loss rate: 2.86%
```

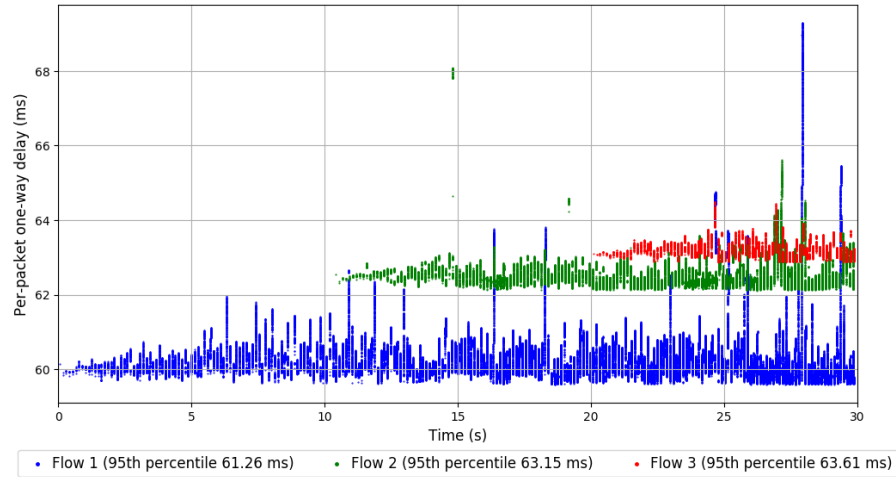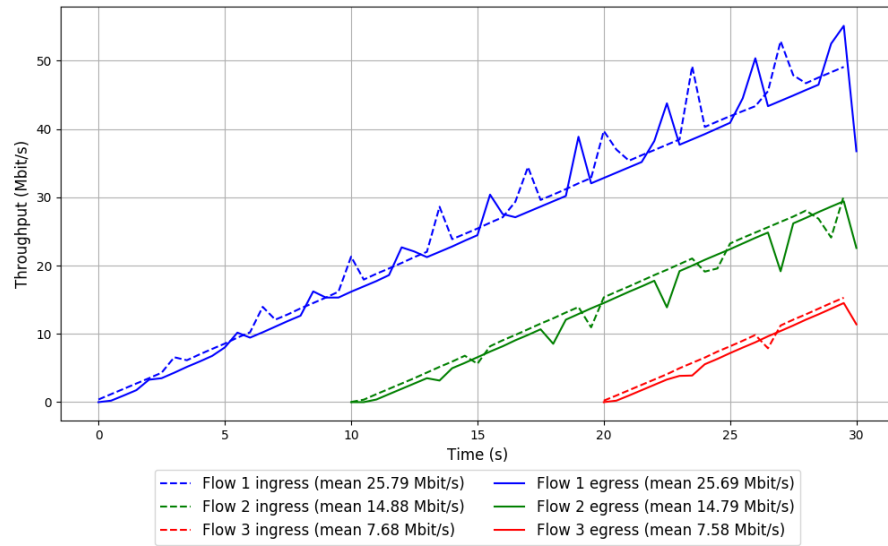Run 5: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 451.53 Mbit/s) --- Flow 1 egress (mean 452.39 Mbit/s)
Flow 2 ingress (mean 368.75 Mbit/s) --- Flow 2 egress (mean 368.91 Mbit/s)
Flow 3 ingress (mean 255.71 Mbit/s) --- Flow 3 egress (mean 252.94 Mbit/s)

Flow 1 (95th percentile 104.08 ms)   Flow 2 (95th percentile 87.45 ms)   Flow 3 (95th percentile 66.34 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2019-07-18 09:17:50
End at: 2019-07-18 09:18:20
Local clock offset: -0.081 ms
Remote clock offset: 0.014 ms


# Below is generated by plot.py at 2019-07-18 14:26:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.80 Mbit/s
95th percentile per-packet one-way delay: 63.200 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 25.69 Mbit/s
95th percentile per-packet one-way delay: 61.260 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 14.79 Mbit/s
95th percentile per-packet one-way delay: 63.146 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 63.606 ms
Loss rate: 2.56%
```
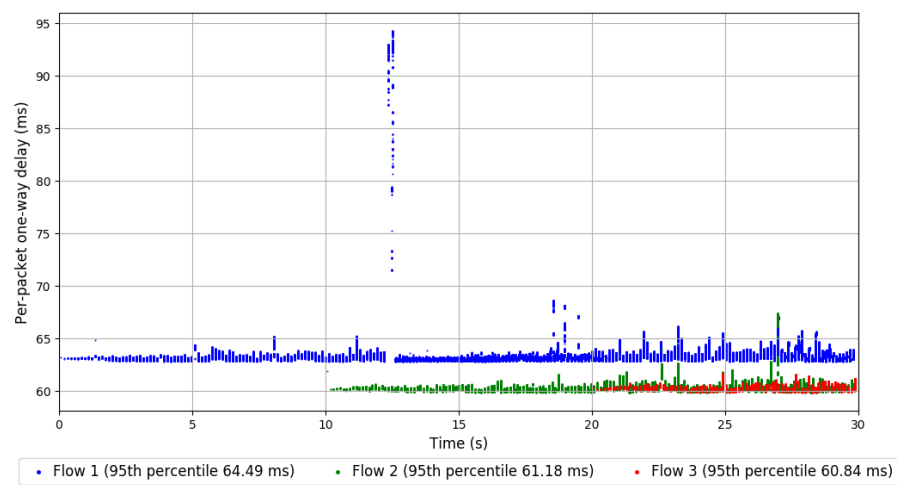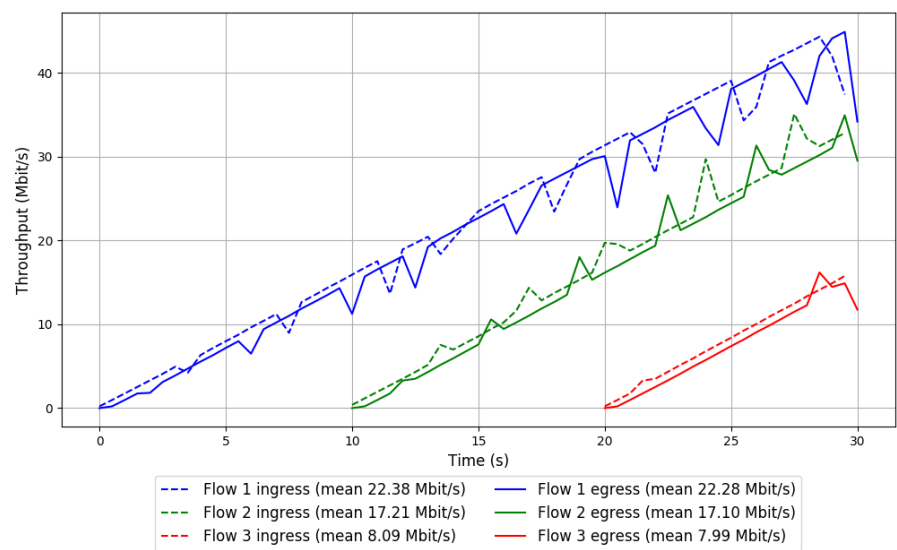
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-07-18 09:59:09
End at: 2019-07-18 09:59:39
Local clock offset: -0.035 ms
Remote clock offset: -0.157 ms


# Below is generated by plot.py at 2019-07-18 14:26:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.23 Mbit/s
95th percentile per-packet one-way delay: 64.222 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 22.28 Mbit/s
95th percentile per-packet one-way delay: 64.491 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 17.10 Mbit/s
95th percentile per-packet one-way delay: 61.178 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 7.99 Mbit/s
95th percentile per-packet one-way delay: 60.842 ms
Loss rate: 2.50%
```
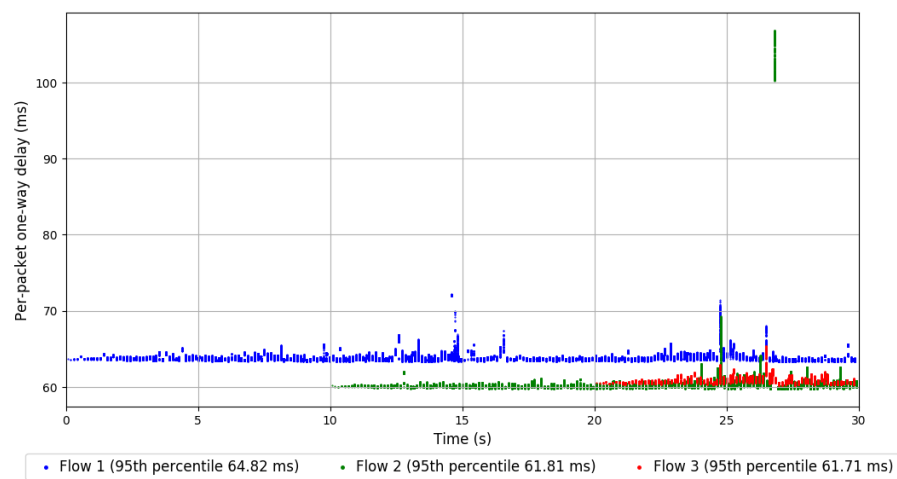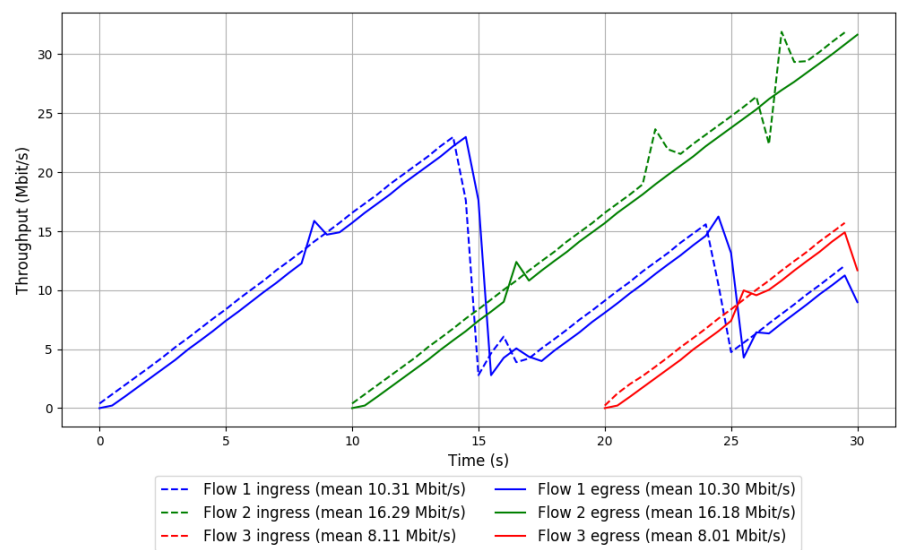
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 22.38 Mbit/s)   Flow 1 egress (mean 22.28 Mbit/s)
Flow 2 ingress (mean 17.21 Mbit/s)   Flow 2 egress (mean 17.10 Mbit/s)
Flow 3 ingress (mean 8.09 Mbit/s)   Flow 3 egress (mean 7.99 Mbit/s)

Flow 1 (95th percentile 64.49 ms)   Flow 2 (95th percentile 61.18 ms)   Flow 3 (95th percentile 60.84 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2019-07-18 10:40:14
End at: 2019-07-18 10:40:44
Local clock offset: 0.01 ms
Remote clock offset: -0.262 ms

# Below is generated by plot.py at 2019-07-18 14:26:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.65 Mbit/s
95th percentile per-packet one-way delay: 64.404 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 10.30 Mbit/s
95th percentile per-packet one-way delay: 64.818 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 16.18 Mbit/s
95th percentile per-packet one-way delay: 61.809 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 61.710 ms
Loss rate: 2.51%
```
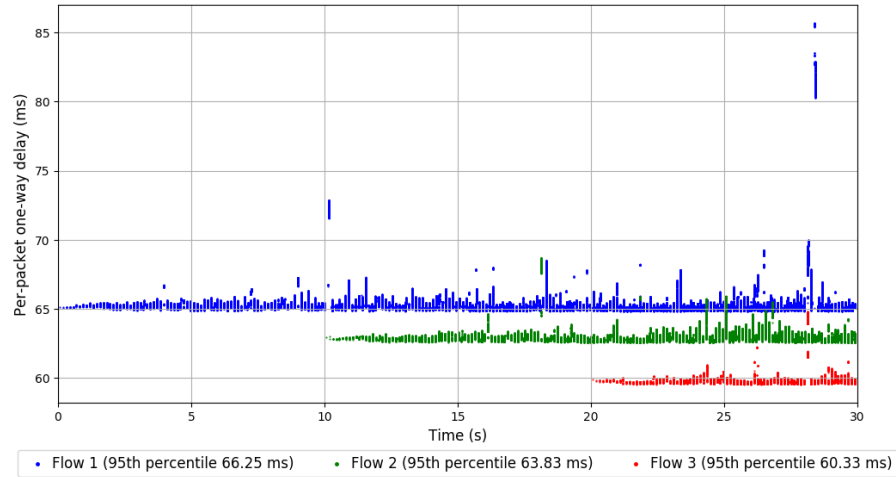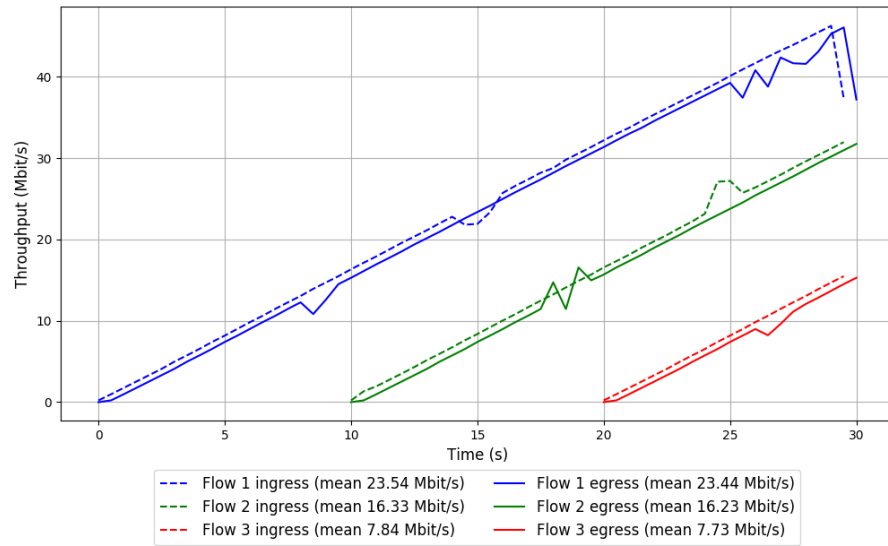
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 10.31 Mbit/s)   Flow 1 egress (mean 10.30 Mbit/s)
Flow 2 ingress (mean 16.29 Mbit/s)   Flow 2 egress (mean 16.18 Mbit/s)
Flow 3 ingress (mean 8.11 Mbit/s)   Flow 3 egress (mean 8.01 Mbit/s)

Flow 1 (95th percentile 64.82 ms)   Flow 2 (95th percentile 61.81 ms)   Flow 3 (95th percentile 61.71 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2019-07-18 11:21:30
End at: 2019-07-18 11:22:00
Local clock offset: -0.034 ms
Remote clock offset: 0.243 ms


# Below is generated by plot.py at 2019-07-18 14:26:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.77 Mbit/s
95th percentile per-packet one-way delay: 65.856 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 66.248 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 16.23 Mbit/s
95th percentile per-packet one-way delay: 63.831 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 7.73 Mbit/s
95th percentile per-packet one-way delay: 60.326 ms
Loss rate: 2.53%
```
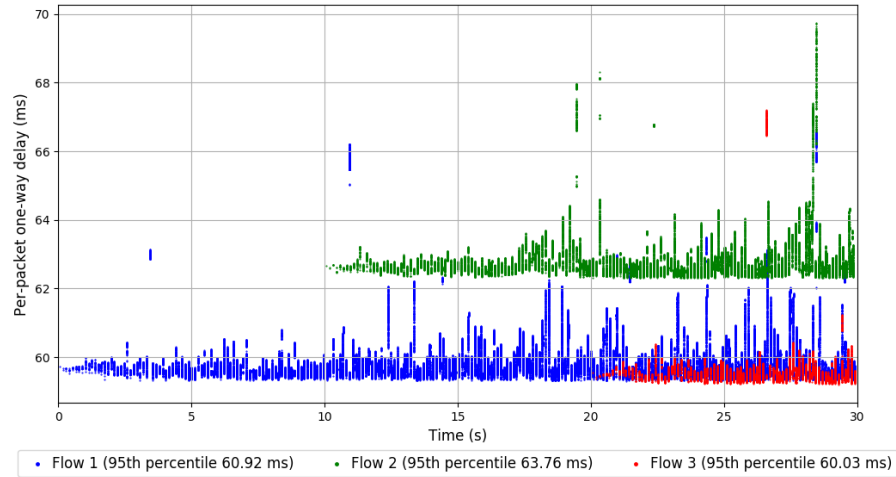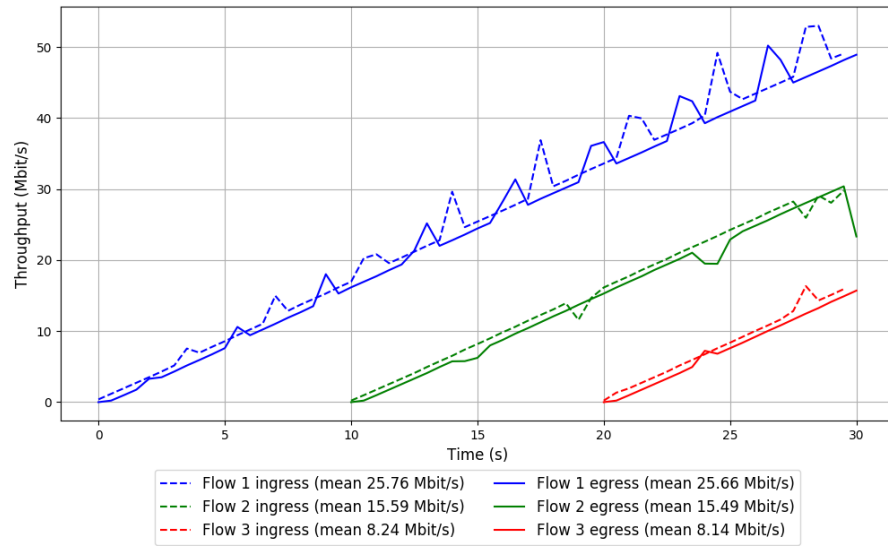
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-07-18 12:02:30
End at: 2019-07-18 12:03:00
Local clock offset: -0.059 ms
Remote clock offset: 0.55 ms


# Below is generated by plot.py at 2019-07-18 14:26:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.59 Mbit/s
95th percentile per-packet one-way delay: 63.058 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 25.66 Mbit/s
95th percentile per-packet one-way delay: 60.916 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 15.49 Mbit/s
95th percentile per-packet one-way delay: 63.758 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 60.031 ms
Loss rate: 2.48%
```
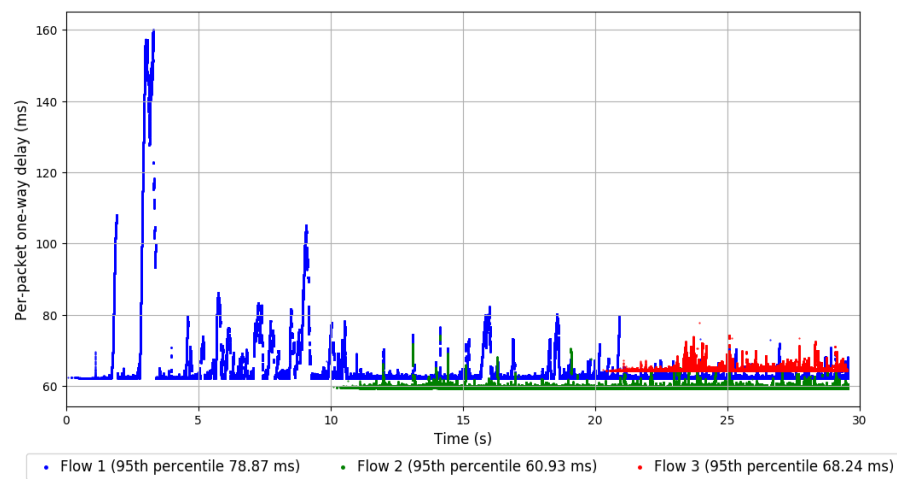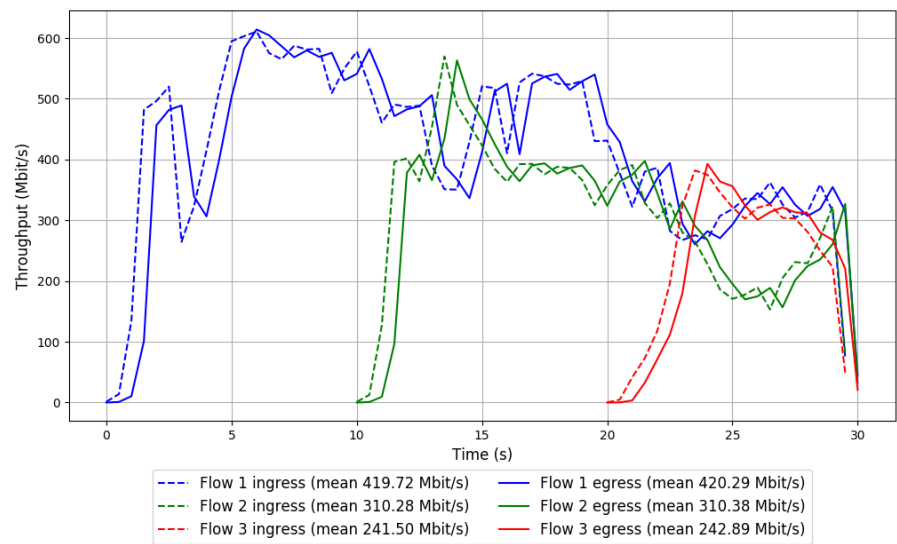
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-07-18 09:28:13
End at: 2019-07-18 09:28:43
Local clock offset: -0.138 ms
Remote clock offset: 0.701 ms


# Below is generated by plot.py at 2019-07-18 14:28:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 701.01 Mbit/s
95th percentile per-packet one-way delay: 74.416 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 420.29 Mbit/s
95th percentile per-packet one-way delay: 78.871 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 310.38 Mbit/s
95th percentile per-packet one-way delay: 60.931 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 242.89 Mbit/s
95th percentile per-packet one-way delay: 68.237 ms
Loss rate: 1.08%
```
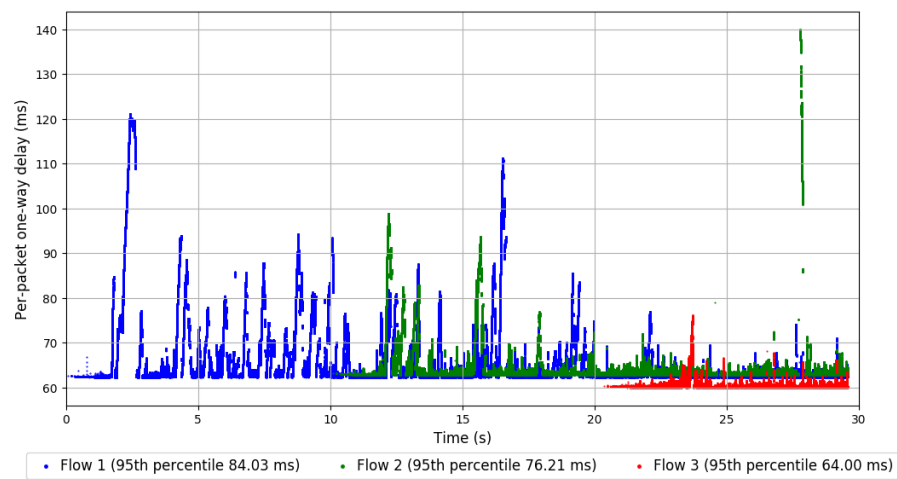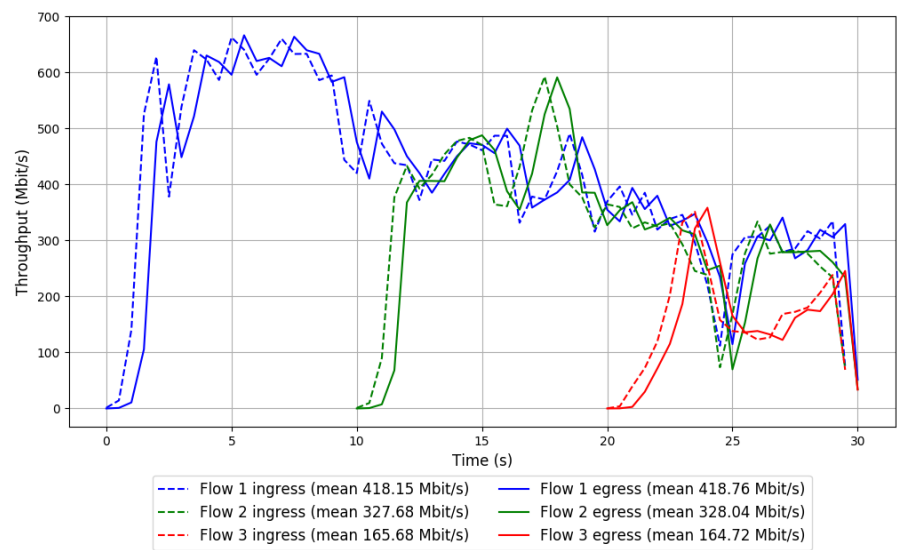
Run 1: Report of Muses_DecisionTree — Data Link

Flow 1 ingress (mean 419.72 Mbit/s) --- Flow 1 egress (mean 420.29 Mbit/s)
Flow 2 ingress (mean 310.28 Mbit/s) --- Flow 2 egress (mean 310.38 Mbit/s)
Flow 3 ingress (mean 241.50 Mbit/s) --- Flow 3 egress (mean 242.89 Mbit/s)

Flow 1 (95th percentile 78.87 ms)   Flow 2 (95th percentile 60.93 ms)   Flow 3 (95th percentile 68.24 ms)
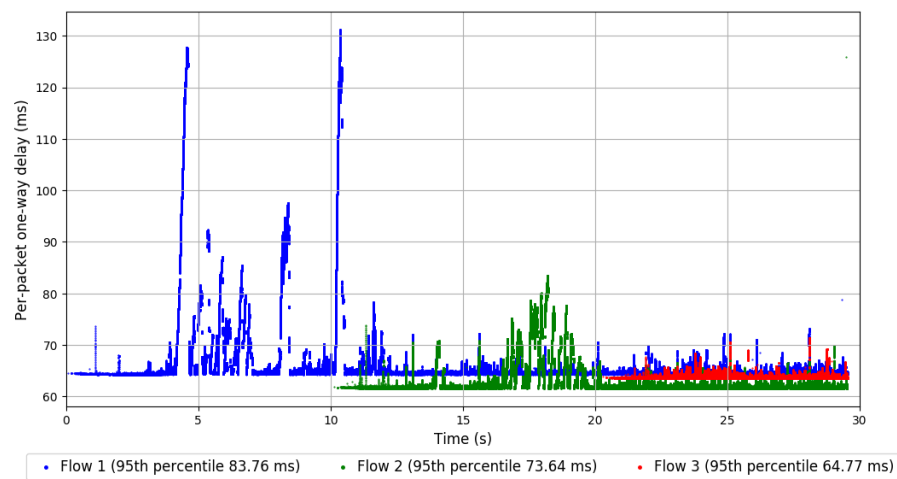
```
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-07-18 10:09:30
End at: 2019-07-18 10:10:00
Local clock offset: -0.032 ms
Remote clock offset: -0.228 ms


# Below is generated by plot.py at 2019-07-18 14:28:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 686.52 Mbit/s
95th percentile per-packet one-way delay: 81.433 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 418.76 Mbit/s
95th percentile per-packet one-way delay: 84.030 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 328.04 Mbit/s
95th percentile per-packet one-way delay: 76.211 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 164.72 Mbit/s
95th percentile per-packet one-way delay: 63.999 ms
Loss rate: 1.86%
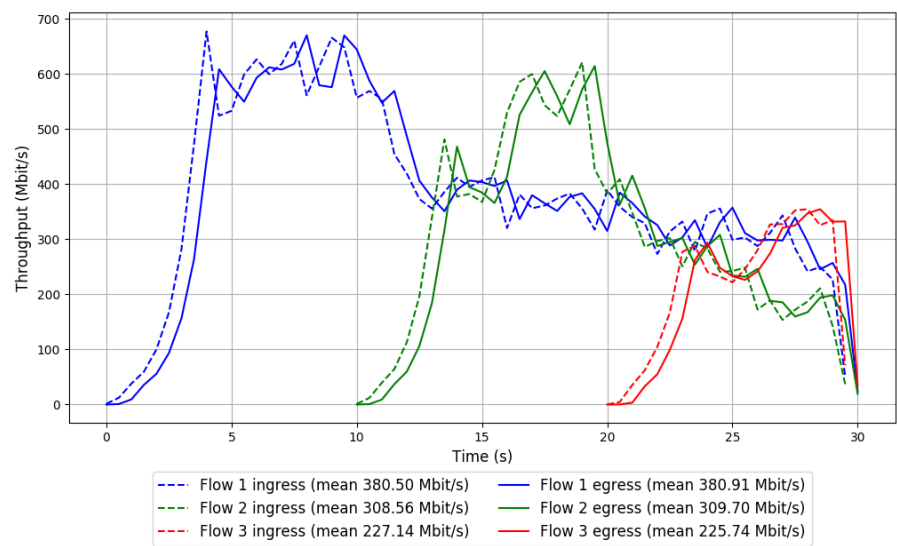```

Run 2: Report of Muses_DecisionTree — Data Link

```
Run 3: Statistics of Muses_DecisionTree

Start at: 2019-07-18 10:50:35
End at: 2019-07-18 10:51:05
Local clock offset: -0.011 ms
Remote clock offset: -1.441 ms

Below is generated by plot.py at 2019-07-18 14:28:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 655.47 Mbit/s
95th percentile per-packet one-way delay: 76.918 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 380.91 Mbit/s
95th percentile per-packet one-way delay: 83.758 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 309.70 Mbit/s
95th percentile per-packet one-way delay: 73.635 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 225.74 Mbit/s
95th percentile per-packet one-way delay: 64.771 ms
Loss rate: 1.92%
```
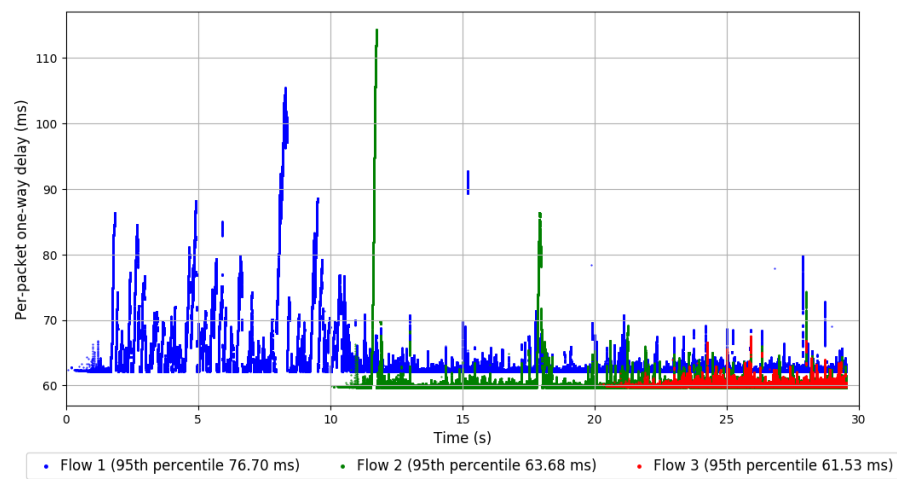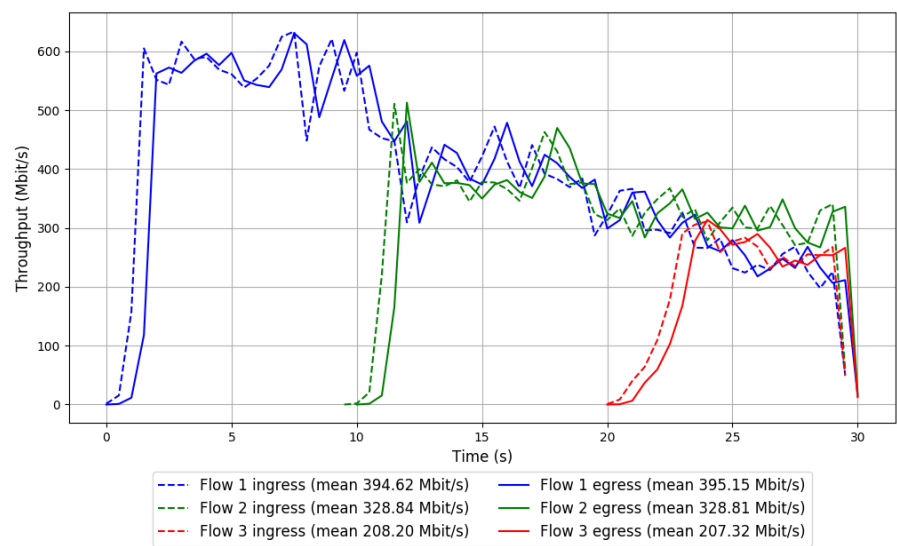
# Run 3: Report of Muses_DecisionTree — Data Link



Flow 1 ingress (mean 380.50 Mbit/s)  Flow 1 egress (mean 380.91 Mbit/s)
Flow 2 ingress (mean 308.56 Mbit/s)  Flow 2 egress (mean 309.70 Mbit/s)
Flow 3 ingress (mean 227.14 Mbit/s)  Flow 3 egress (mean 225.74 Mbit/s)



Flow 1 (95th percentile 83.76 ms)    Flow 2 (95th percentile 73.64 ms)    Flow 3 (95th percentile 64.77 ms)
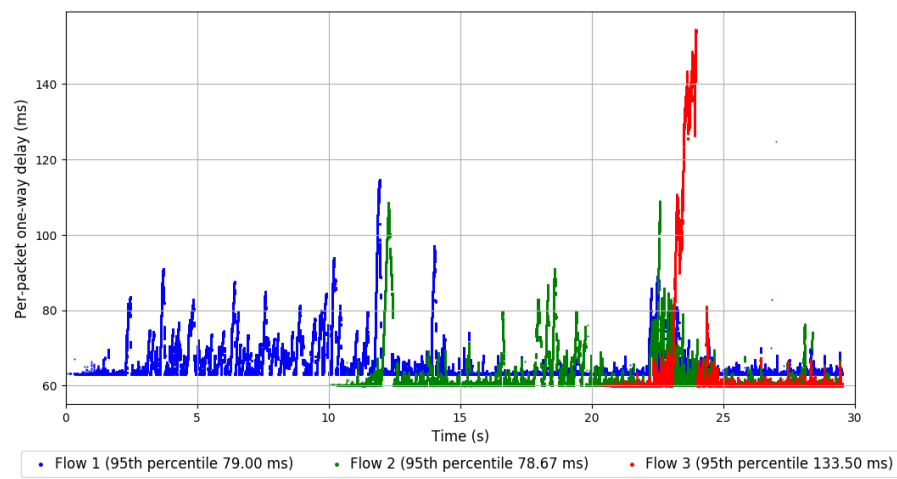
```
Run 4: Statistics of Muses_DecisionTree

Start at: 2019-07-18 11:31:55
End at: 2019-07-18 11:32:25
Local clock offset: -0.032 ms
Remote clock offset: 0.045 ms

Below is generated by plot.py at 2019-07-18 14:28:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 678.47 Mbit/s
95th percentile per-packet one-way delay: 73.984 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 395.15 Mbit/s
95th percentile per-packet one-way delay: 76.697 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 328.81 Mbit/s
95th percentile per-packet one-way delay: 63.676 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 207.32 Mbit/s
95th percentile per-packet one-way delay: 61.526 ms
Loss rate: 1.72%
```
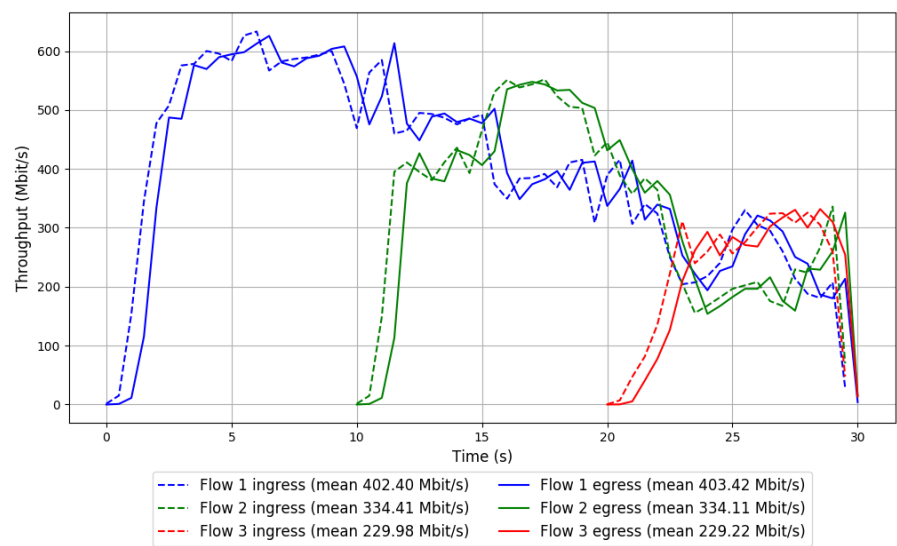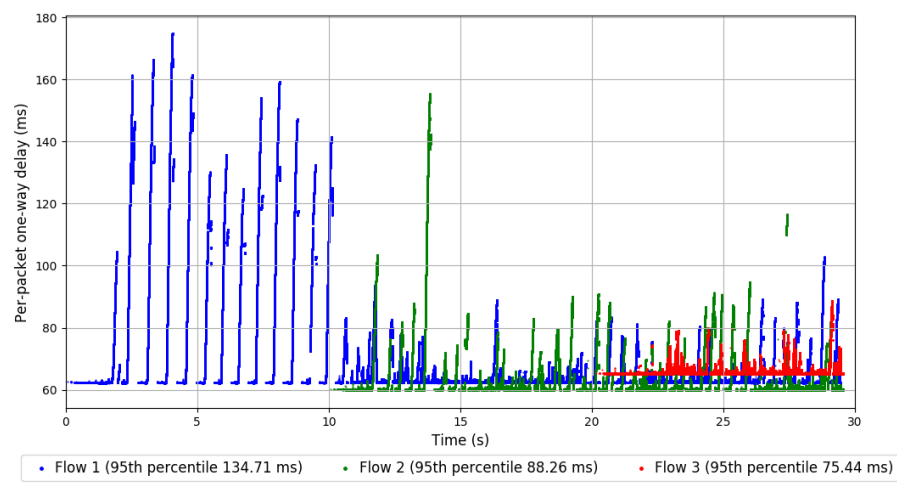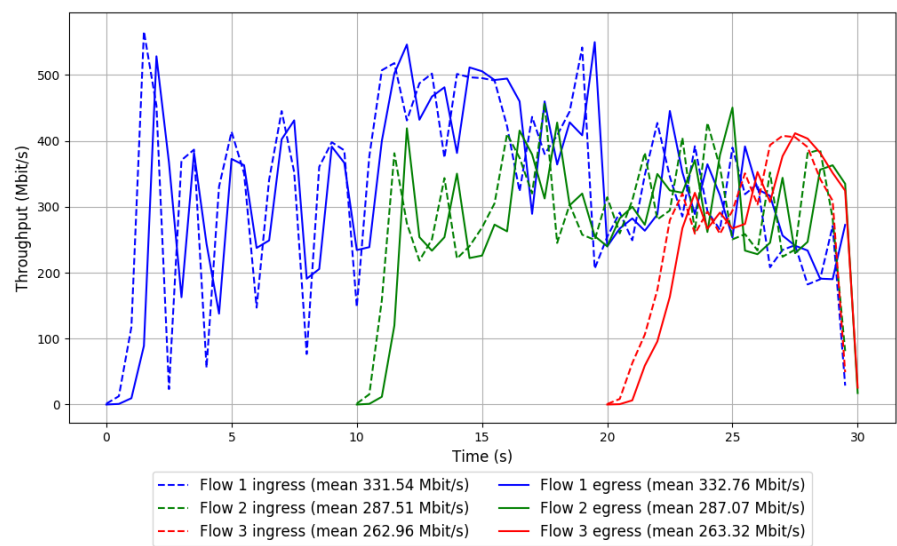
Run 4: Report of Muses_DecisionTree — Data Link



Flow 1 ingress (mean 394.62 Mbit/s)    Flow 1 egress (mean 395.15 Mbit/s)
Flow 2 ingress (mean 328.84 Mbit/s)    Flow 2 egress (mean 328.81 Mbit/s)
Flow 3 ingress (mean 208.20 Mbit/s)    Flow 3 egress (mean 207.32 Mbit/s)



Flow 1 (95th percentile 76.70 ms)    Flow 2 (95th percentile 63.68 ms)    Flow 3 (95th percentile 61.53 ms)
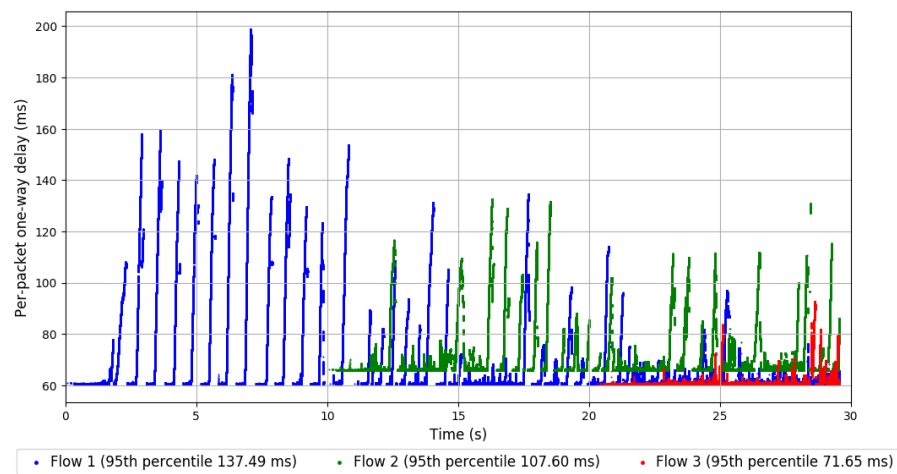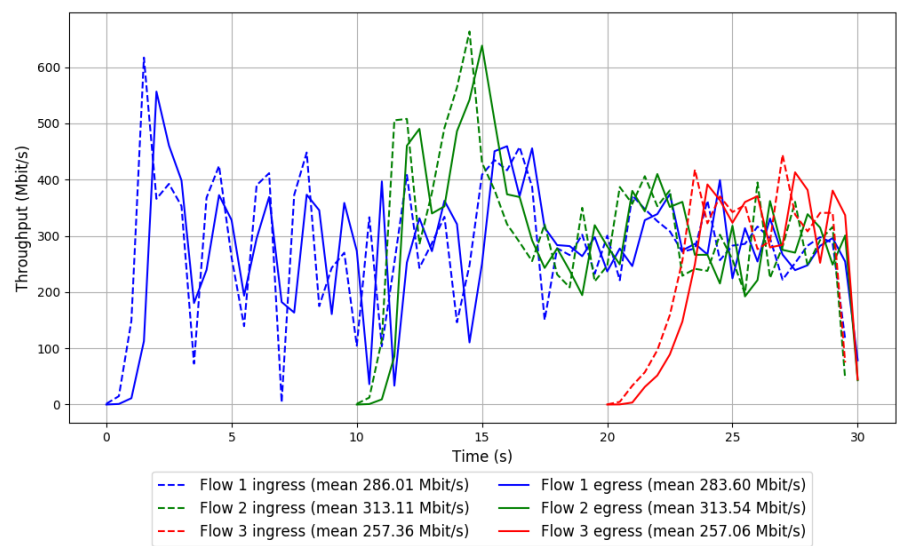
```
Run 5: Statistics of Muses_DecisionTree

Start at: 2019-07-18 12:12:54
End at: 2019-07-18 12:13:24
Local clock offset: -0.093 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2019-07-18 14:33:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 696.31 Mbit/s
95th percentile per-packet one-way delay: 80.326 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 403.42 Mbit/s
95th percentile per-packet one-way delay: 78.998 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 334.11 Mbit/s
95th percentile per-packet one-way delay: 78.666 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 229.22 Mbit/s
95th percentile per-packet one-way delay: 133.503 ms
Loss rate: 1.61%
```

Run 5: Report of Muses_DecisionTree — Data Link



Flow 1 ingress (mean 402.40 Mbit/s) --- Flow 1 egress (mean 403.42 Mbit/s)
Flow 2 ingress (mean 334.41 Mbit/s) --- Flow 2 egress (mean 334.11 Mbit/s)
Flow 3 ingress (mean 229.98 Mbit/s) --- Flow 3 egress (mean 229.22 Mbit/s)



Flow 1 (95th percentile 79.00 ms) • Flow 2 (95th percentile 78.67 ms) • Flow 3 (95th percentile 133.50 ms)

```
Run 1: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-18 09:10:38
End at: 2019-07-18 09:11:08
Local clock offset: -0.097 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2019-07-18 14:34:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 605.25 Mbit/s
95th percentile per-packet one-way delay: 123.504 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 332.76 Mbit/s
95th percentile per-packet one-way delay: 134.707 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 287.07 Mbit/s
95th percentile per-packet one-way delay: 88.256 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 263.32 Mbit/s
95th percentile per-packet one-way delay: 75.436 ms
Loss rate: 1.22%
```

Run 1: Report of Muses_DecisionTreeH0 — Data Link

```
Run 2: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-18 09:51:56
End at: 2019-07-18 09:52:26
Local clock offset: -0.053 ms
Remote clock offset: -0.738 ms


# Below is generated by plot.py at 2019-07-18 14:36:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 571.28 Mbit/s
95th percentile per-packet one-way delay: 125.844 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 283.60 Mbit/s
95th percentile per-packet one-way delay: 137.488 ms
Loss rate: 1.26%
-- Flow 2:
Average throughput: 313.54 Mbit/s
95th percentile per-packet one-way delay: 107.598 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 257.06 Mbit/s
95th percentile per-packet one-way delay: 71.653 ms
Loss rate: 1.55%
```
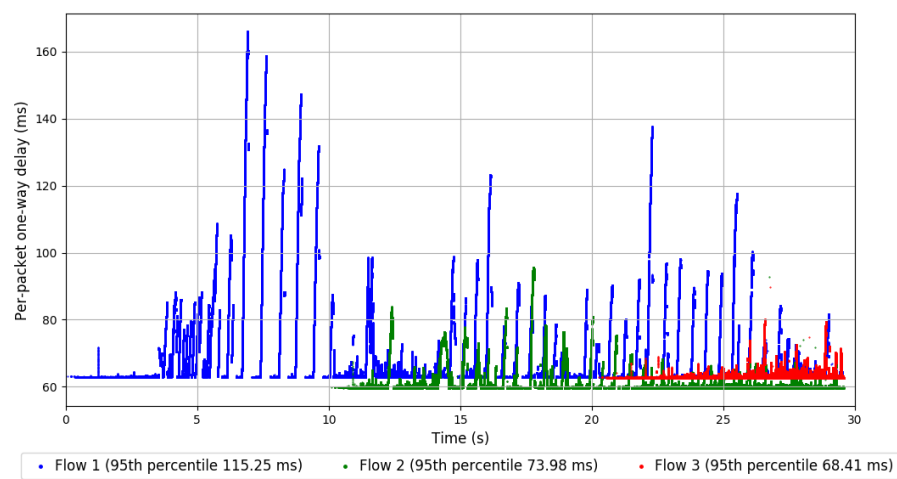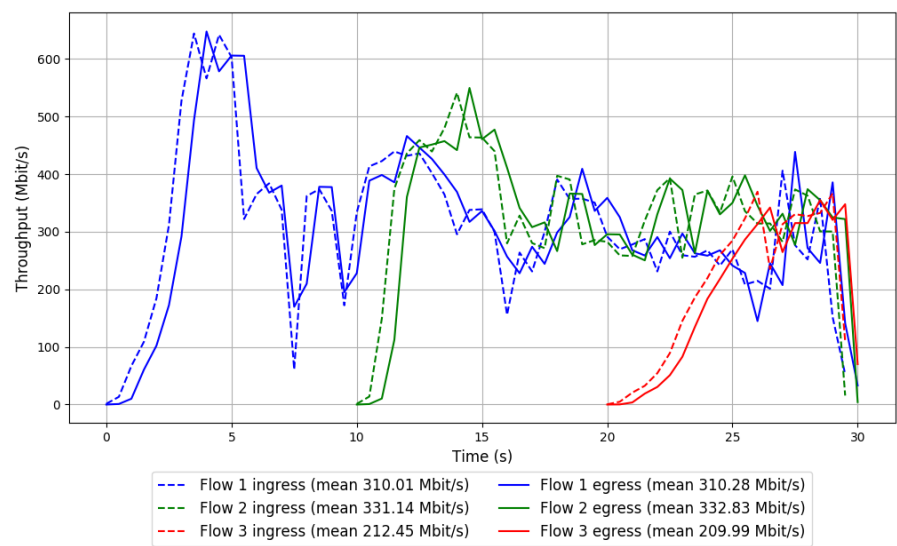
Run 2: Report of Muses_DecisionTreeH0 — Data Link

```
Run 3: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-18 10:33:09
End at: 2019-07-18 10:33:39
Local clock offset: -0.024 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2019-07-18 14:37:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 595.95 Mbit/s
95th percentile per-packet one-way delay: 96.562 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 310.28 Mbit/s
95th percentile per-packet one-way delay: 115.251 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 332.83 Mbit/s
95th percentile per-packet one-way delay: 73.982 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 209.99 Mbit/s
95th percentile per-packet one-way delay: 68.412 ms
Loss rate: 2.45%
```
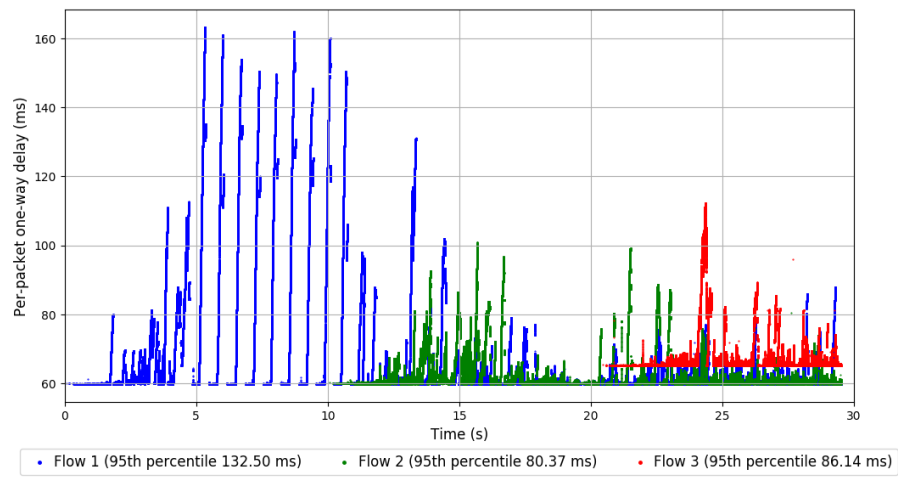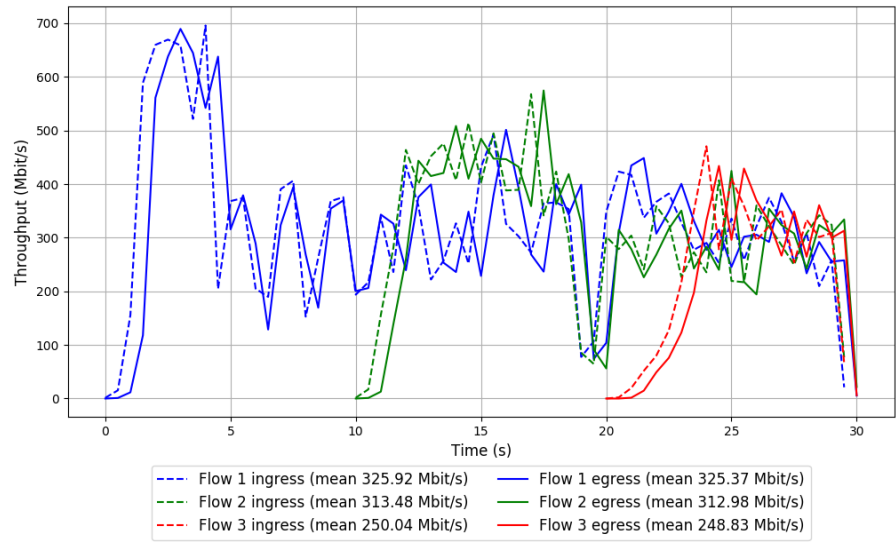
Run 3: Report of Muses_DecisionTreeH0 — Data Link

Flow 1 ingress (mean 310.01 Mbit/s) --- Flow 1 egress (mean 310.28 Mbit/s)
Flow 2 ingress (mean 331.14 Mbit/s) --- Flow 2 egress (mean 332.83 Mbit/s)
Flow 3 ingress (mean 212.45 Mbit/s) --- Flow 3 egress (mean 209.99 Mbit/s)

Flow 1 (95th percentile 115.25 ms) • Flow 2 (95th percentile 73.98 ms) • Flow 3 (95th percentile 68.41 ms)

Run 4: Statistics of Muses_DecisionTreeH0

Start at: 2019-07-18 11:14:19
End at: 2019-07-18 11:14:49
Local clock offset: -0.043 ms
Remote clock offset: 0.02 ms

Below is generated by plot.py at 2019-07-18 14:39:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 608.60 Mbit/s
95th percentile per-packet one-way delay: 113.922 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 325.37 Mbit/s
95th percentile per-packet one-way delay: 132.495 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 312.98 Mbit/s
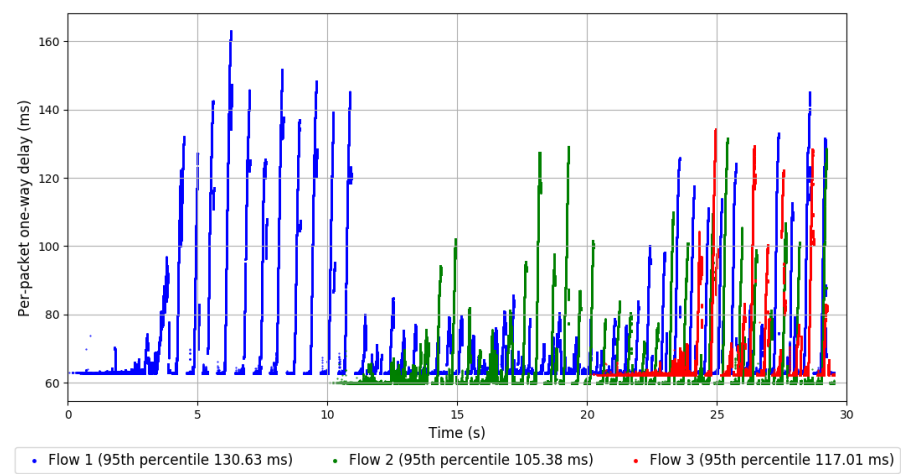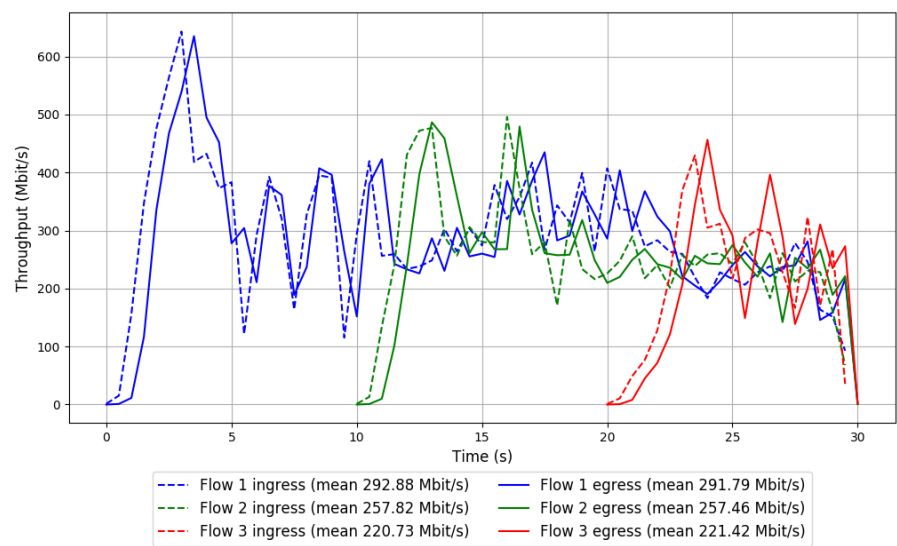95th percentile per-packet one-way delay: 80.366 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 248.83 Mbit/s
95th percentile per-packet one-way delay: 86.141 ms
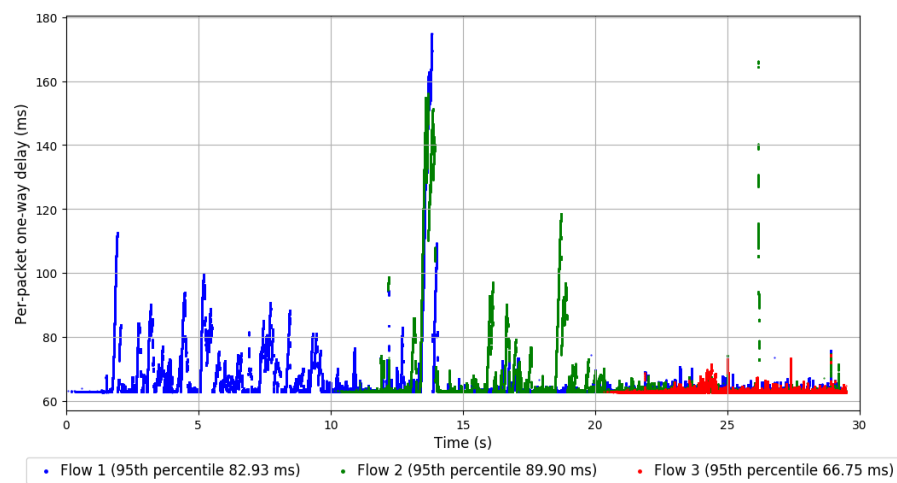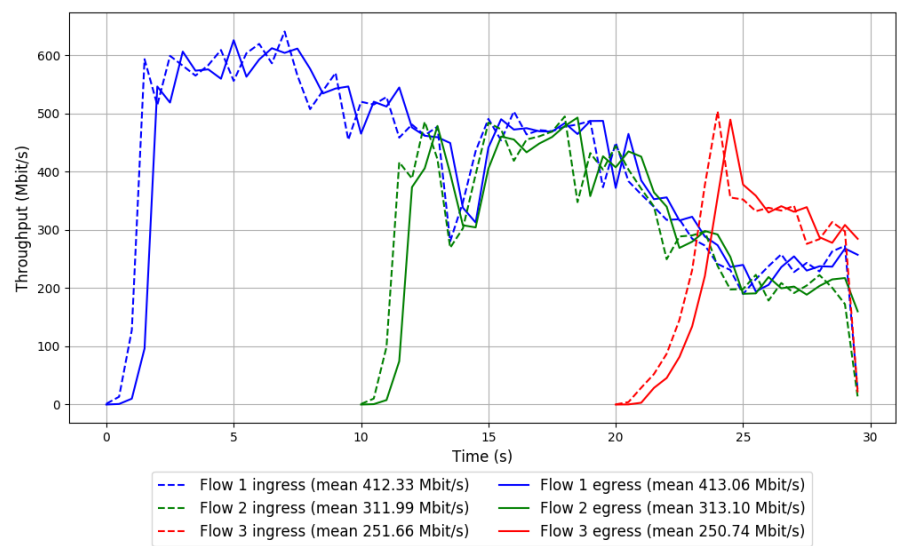Loss rate: 1.88%

Run 4: Report of Muses_DecisionTreeH0 — Data Link

```
Run 5: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-18 11:55:22
End at: 2019-07-18 11:55:53
Local clock offset: -0.012 ms
Remote clock offset: 0.011 ms


# Below is generated by plot.py at 2019-07-18 14:39:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 532.11 Mbit/s
95th percentile per-packet one-way delay: 124.338 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 291.79 Mbit/s
95th percentile per-packet one-way delay: 130.632 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 257.46 Mbit/s
95th percentile per-packet one-way delay: 105.379 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 221.42 Mbit/s
95th percentile per-packet one-way delay: 117.011 ms
Loss rate: 1.04%
```
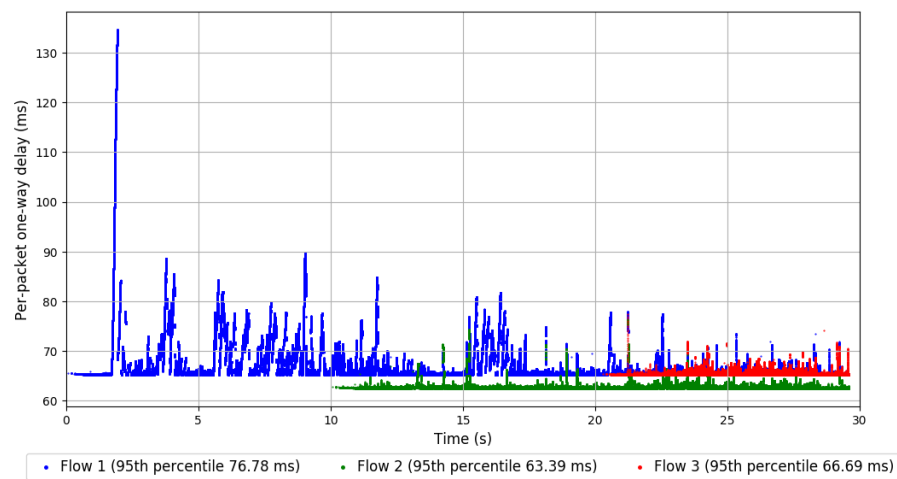
Run 5: Report of Muses_DecisionTreeH0 — Data Link

Flow 1 ingress (mean 292.88 Mbit/s) --- Flow 1 egress (mean 291.79 Mbit/s)
Flow 2 ingress (mean 257.82 Mbit/s) --- Flow 2 egress (mean 257.46 Mbit/s)
Flow 3 ingress (mean 220.73 Mbit/s) --- Flow 3 egress (mean 221.42 Mbit/s)

Flow 1 (95th percentile 130.63 ms)   Flow 2 (95th percentile 105.38 ms)   Flow 3 (95th percentile 117.01 ms)

134

```
Run 1: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-18 08:55:58
End at: 2019-07-18 08:56:28
Local clock offset: -0.065 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2019-07-18 14:41:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 697.03 Mbit/s
95th percentile per-packet one-way delay: 83.111 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 413.06 Mbit/s
95th percentile per-packet one-way delay: 82.934 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 313.10 Mbit/s
95th percentile per-packet one-way delay: 89.897 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 250.74 Mbit/s
95th percentile per-packet one-way delay: 66.746 ms
Loss rate: 1.68%
```
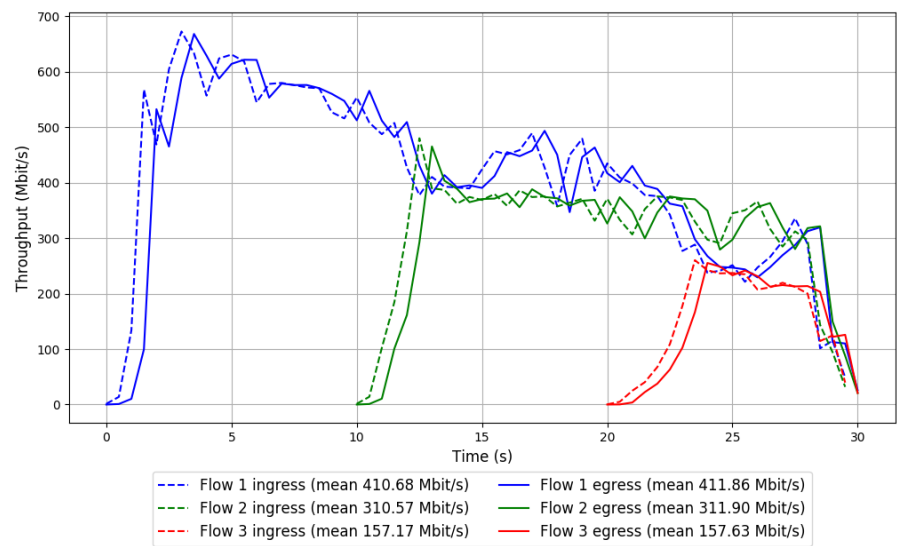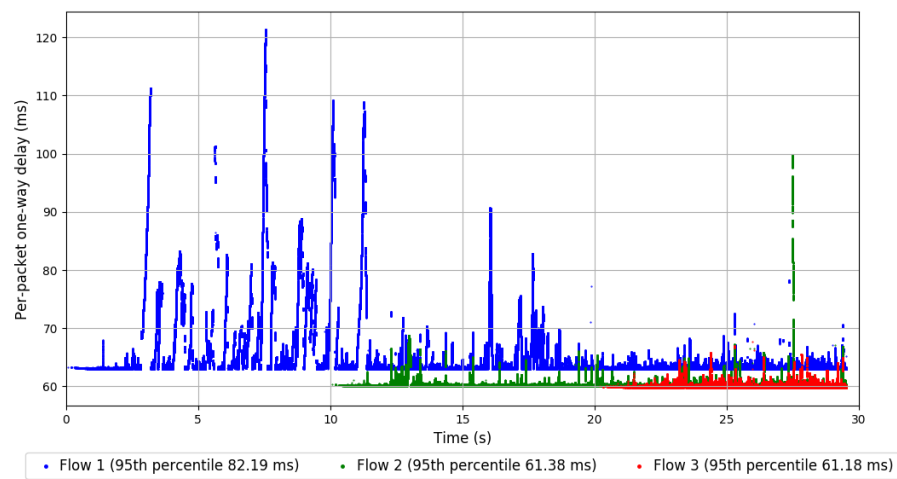
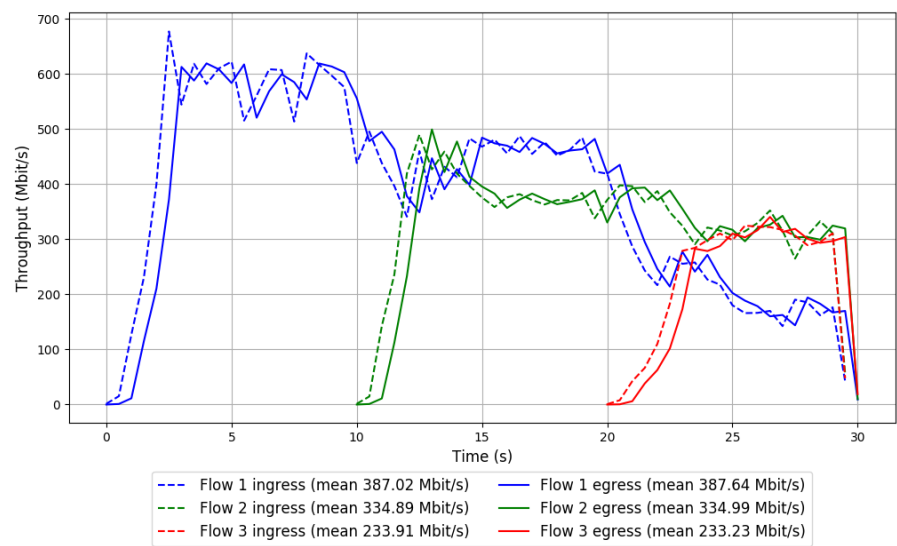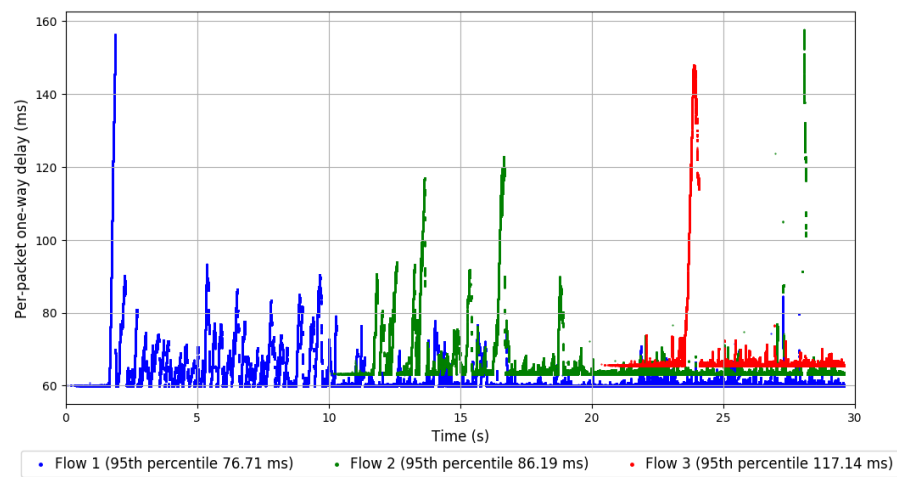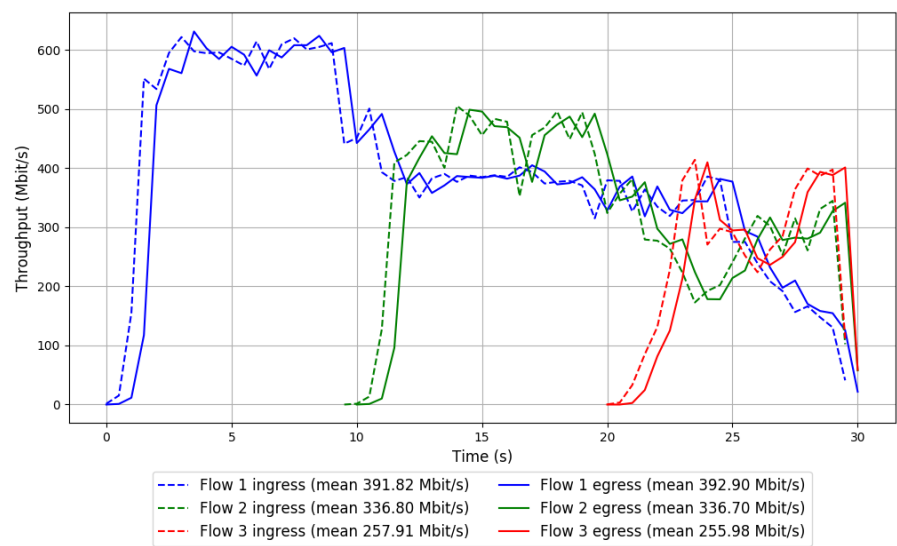Run 1: Report of Muses_DecisionTreeR0 — Data Link

```
Run 2: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-18 09:37:22
End at: 2019-07-18 09:37:52
Local clock offset: -0.112 ms
Remote clock offset: 0.08 ms


# Below is generated by plot.py at 2019-07-18 14:41:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 667.77 Mbit/s
95th percentile per-packet one-way delay: 74.319 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 411.86 Mbit/s
95th percentile per-packet one-way delay: 76.776 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 311.90 Mbit/s
95th percentile per-packet one-way delay: 63.391 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 157.63 Mbit/s
95th percentile per-packet one-way delay: 66.685 ms
Loss rate: 1.09%
```

Run 2: Report of Muses_DecisionTreeR0 — Data Link

Flow 1 ingress (mean 410.68 Mbit/s)   Flow 1 egress (mean 411.86 Mbit/s)
Flow 2 ingress (mean 310.57 Mbit/s)   Flow 2 egress (mean 311.90 Mbit/s)
Flow 3 ingress (mean 157.17 Mbit/s)   Flow 3 egress (mean 157.63 Mbit/s)

Flow 1 (95th percentile 76.78 ms)   Flow 2 (95th percentile 63.39 ms)   Flow 3 (95th percentile 66.69 ms)
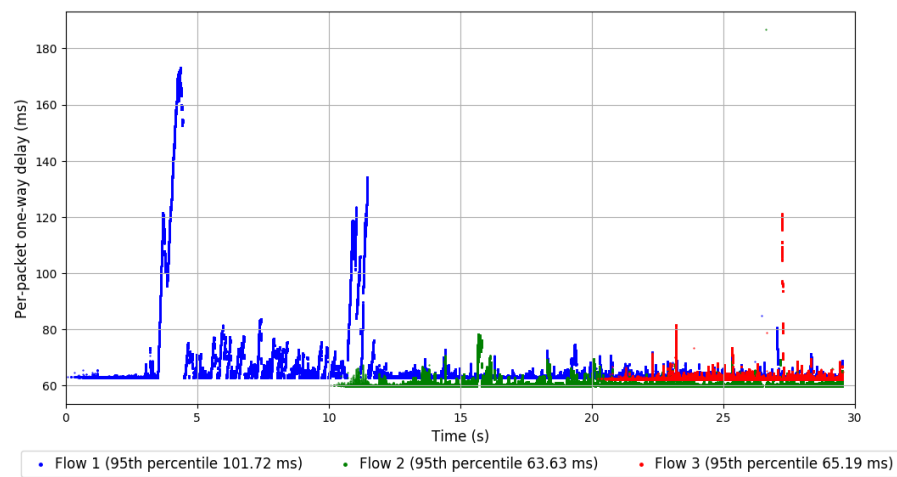
```
Run 3: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-18 10:18:35
End at: 2019-07-18 10:19:05
Local clock offset: -0.026 ms
Remote clock offset: -0.222 ms


# Below is generated by plot.py at 2019-07-18 14:46:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 682.62 Mbit/s
95th percentile per-packet one-way delay: 77.288 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 387.64 Mbit/s
95th percentile per-packet one-way delay: 82.189 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 334.99 Mbit/s
95th percentile per-packet one-way delay: 61.380 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 233.23 Mbit/s
95th percentile per-packet one-way delay: 61.178 ms
Loss rate: 1.57%
```

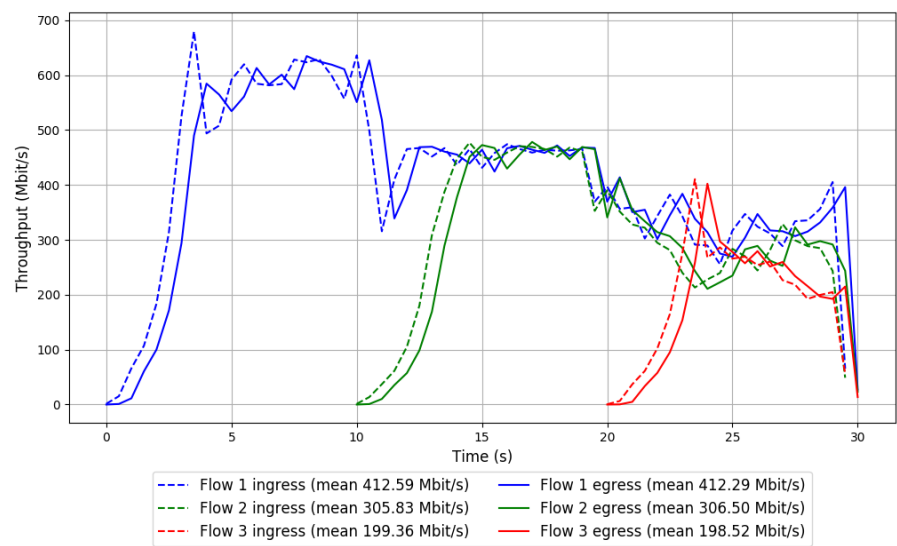Run 3: Report of Muses_DecisionTreeR0 — Data Link

```
Run 4: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-18 10:59:43
End at: 2019-07-18 11:00:13
Local clock offset: -0.005 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2019-07-18 14:47:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 695.32 Mbit/s
95th percentile per-packet one-way delay: 81.127 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 392.90 Mbit/s
95th percentile per-packet one-way delay: 76.713 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 336.70 Mbit/s
95th percentile per-packet one-way delay: 86.190 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 255.98 Mbit/s
95th percentile per-packet one-way delay: 117.137 ms
Loss rate: 2.12%
```
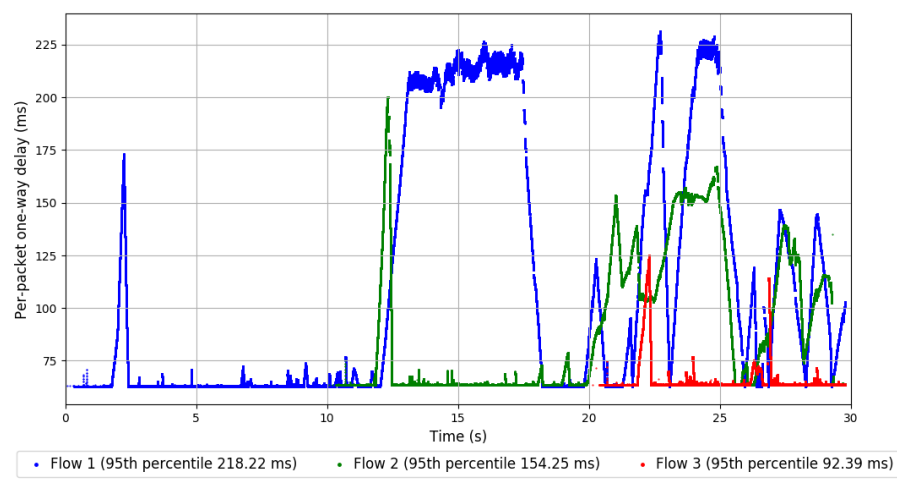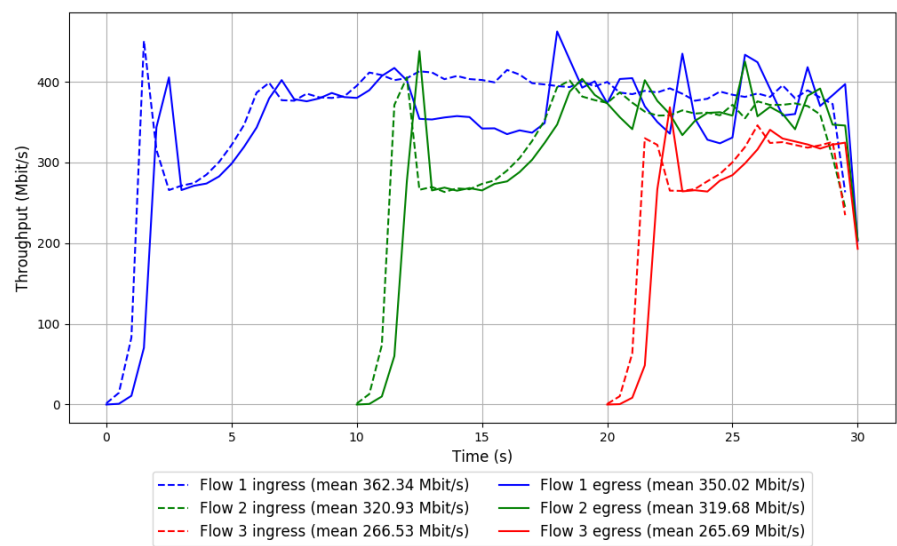
Run 4: Report of Muses_DecisionTreeR0 — Data Link

Flow 1 ingress (mean 391.82 Mbit/s) --- Flow 1 egress (mean 392.90 Mbit/s)
Flow 2 ingress (mean 336.80 Mbit/s) --- Flow 2 egress (mean 336.70 Mbit/s)
Flow 3 ingress (mean 257.91 Mbit/s) --- Flow 3 egress (mean 255.98 Mbit/s)

Flow 1 (95th percentile 76.71 ms) • Flow 2 (95th percentile 86.19 ms) • Flow 3 (95th percentile 117.14 ms)

```
Run 5: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-18 11:40:55
End at: 2019-07-18 11:41:25
Local clock offset: -0.021 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2019-07-18 14:48:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 677.12 Mbit/s
95th percentile per-packet one-way delay: 76.683 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 412.29 Mbit/s
95th percentile per-packet one-way delay: 101.717 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 306.50 Mbit/s
95th percentile per-packet one-way delay: 63.632 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 198.52 Mbit/s
95th percentile per-packet one-way delay: 65.188 ms
Loss rate: 1.69%
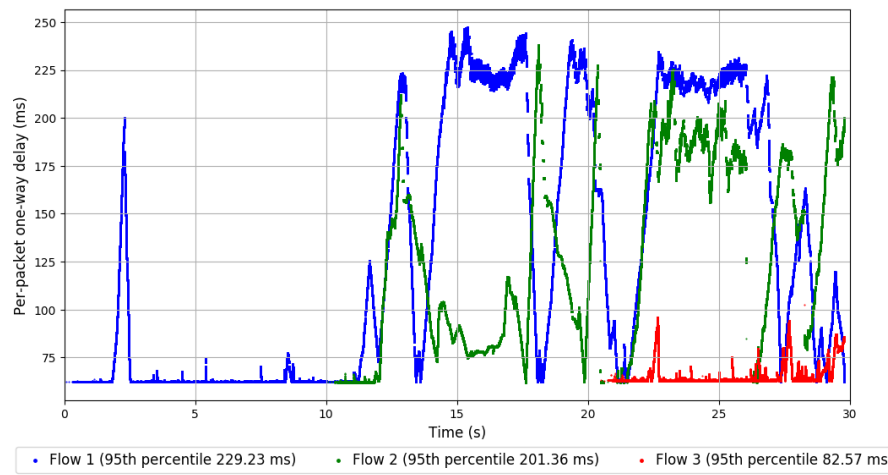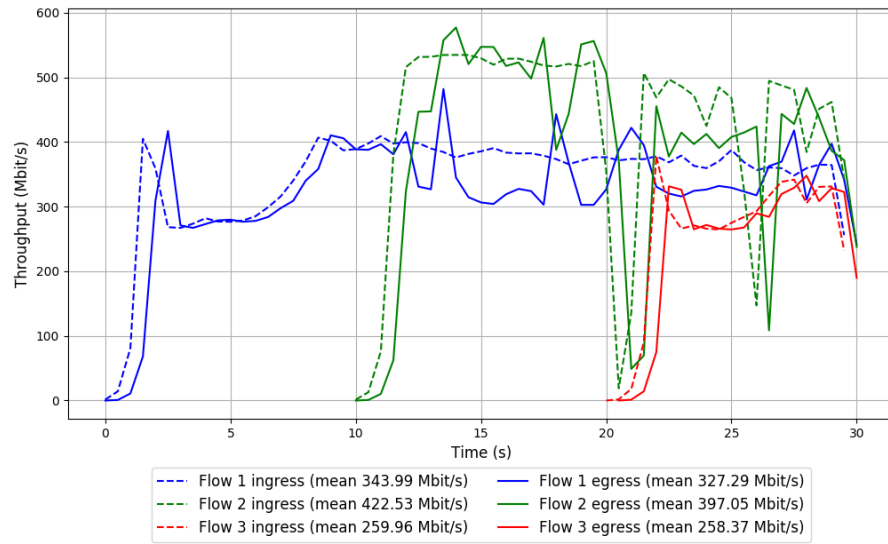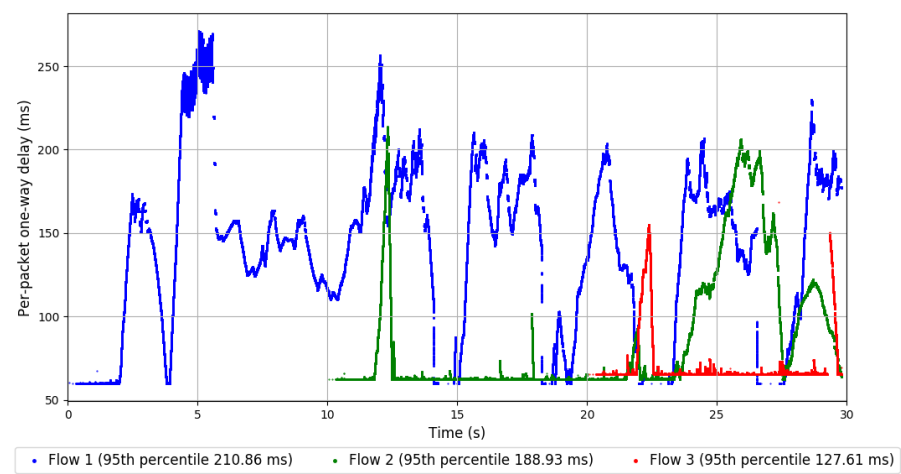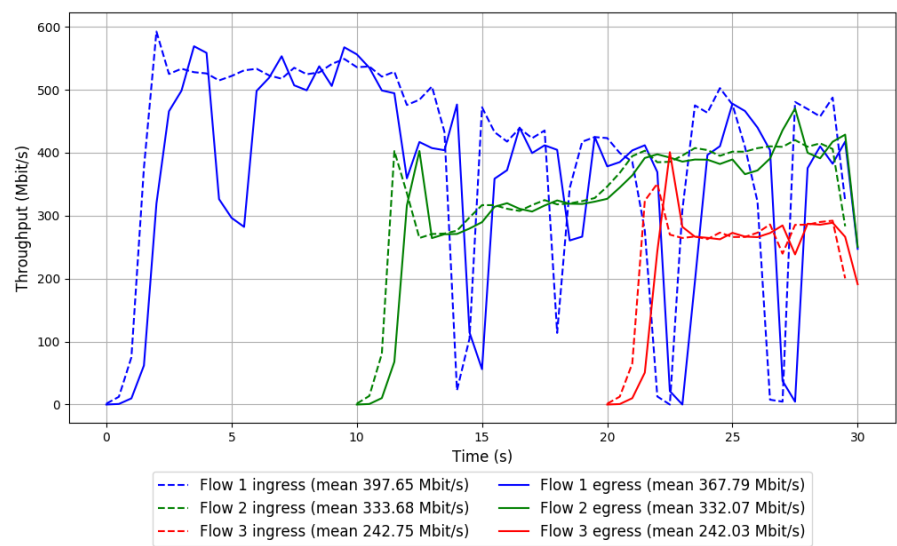```

Run 5: Report of Muses_DecisionTreeR0 — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-07-18 08:57:47
End at: 2019-07-18 08:58:17
Local clock offset: -0.04 ms
Remote clock offset: -0.641 ms


# Below is generated by plot.py at 2019-07-18 15:00:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 648.38 Mbit/s
95th percentile per-packet one-way delay: 214.026 ms
Loss rate: 2.62%
-- Flow 1:
Average throughput: 350.02 Mbit/s
95th percentile per-packet one-way delay: 218.218 ms
Loss rate: 3.81%
-- Flow 2:
Average throughput: 319.68 Mbit/s
95th percentile per-packet one-way delay: 154.246 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 265.69 Mbit/s
95th percentile per-packet one-way delay: 92.387 ms
Loss rate: 1.60%
```

Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 362.34 Mbit/s) --- Flow 1 egress (mean 350.02 Mbit/s)
Flow 2 ingress (mean 320.93 Mbit/s) --- Flow 2 egress (mean 319.68 Mbit/s)
Flow 3 ingress (mean 266.53 Mbit/s) --- Flow 3 egress (mean 265.69 Mbit/s)

Flow 1 (95th percentile 218.22 ms)   Flow 2 (95th percentile 154.25 ms)   Flow 3 (95th percentile 92.39 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-07-18 09:39:09
End at: 2019-07-18 09:39:39
Local clock offset: -0.093 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2019-07-18 15:02:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 671.47 Mbit/s
95th percentile per-packet one-way delay: 224.254 ms
Loss rate: 5.42%
-- Flow 1:
Average throughput: 327.29 Mbit/s
95th percentile per-packet one-way delay: 229.228 ms
Loss rate: 5.26%
-- Flow 2:
Average throughput: 397.05 Mbit/s
95th percentile per-packet one-way delay: 201.356 ms
Loss rate: 6.63%
-- Flow 3:
Average throughput: 258.37 Mbit/s
95th percentile per-packet one-way delay: 82.566 ms
Loss rate: 1.94%
```
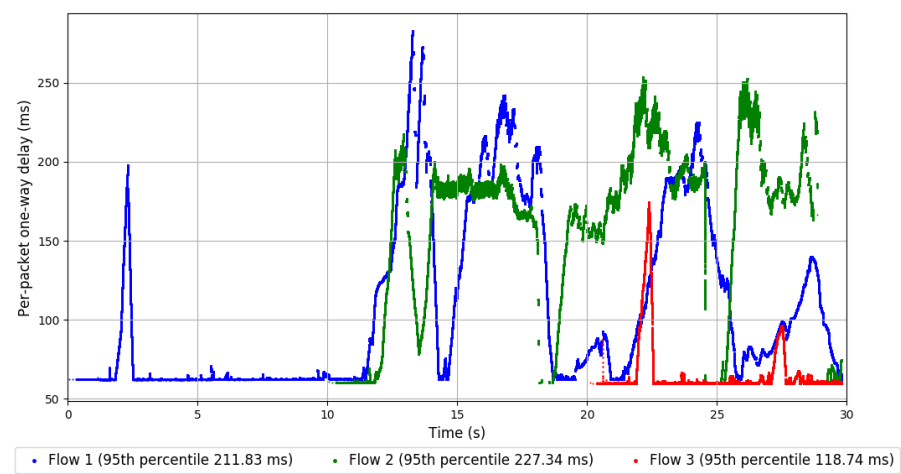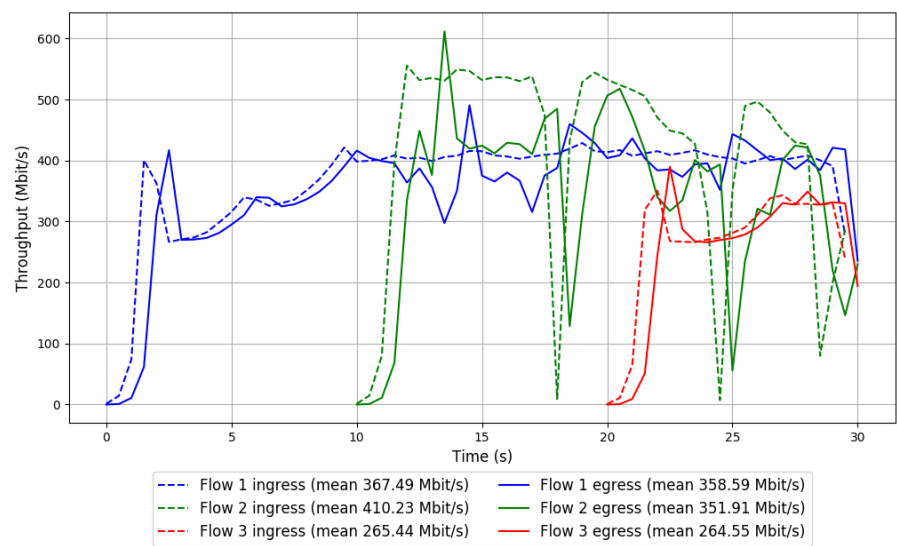
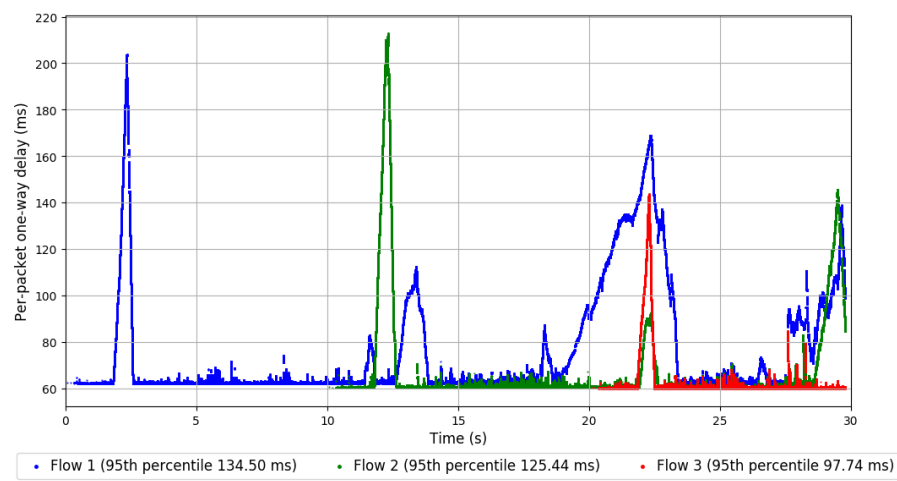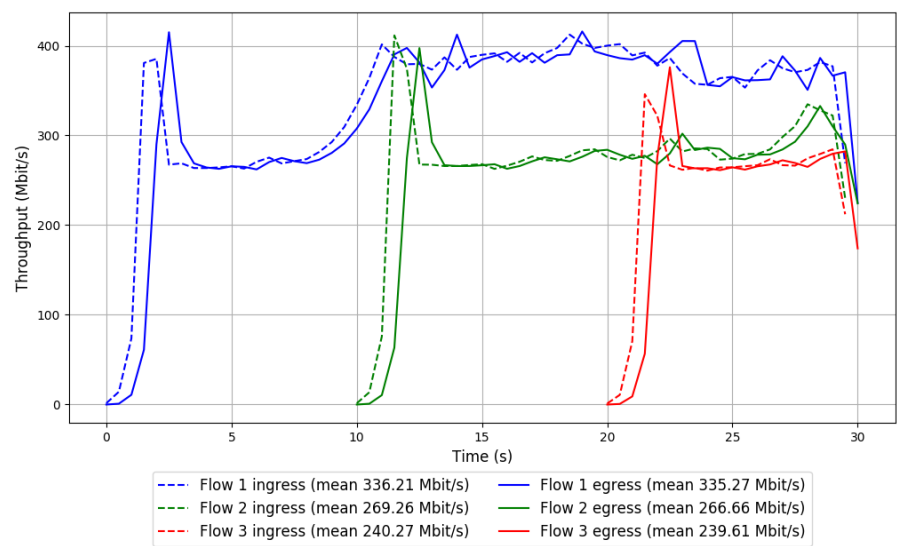Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-07-18 10:20:23
End at: 2019-07-18 10:20:53
Local clock offset: -0.034 ms
Remote clock offset: -0.116 ms


# Below is generated by plot.py at 2019-07-18 15:03:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 667.07 Mbit/s
95th percentile per-packet one-way delay: 197.919 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 367.79 Mbit/s
95th percentile per-packet one-way delay: 210.859 ms
Loss rate: 7.88%
-- Flow 2:
Average throughput: 332.07 Mbit/s
95th percentile per-packet one-way delay: 188.934 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 242.03 Mbit/s
95th percentile per-packet one-way delay: 127.606 ms
Loss rate: 1.54%
```
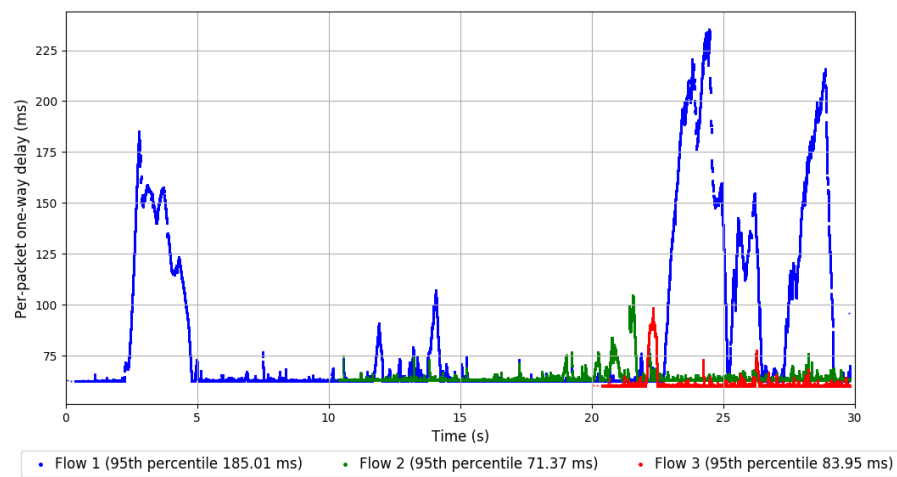
Run 3: Report of PCC-Allegro — Data Link

Legend:
- Flow 1 ingress (mean 397.65 Mbit/s)
- Flow 1 egress (mean 367.79 Mbit/s)
- Flow 2 ingress (mean 333.68 Mbit/s)
- Flow 2 egress (mean 332.07 Mbit/s)
- Flow 3 ingress (mean 242.75 Mbit/s)
- Flow 3 egress (mean 242.03 Mbit/s)

Legend:
- Flow 1 (95th percentile 210.86 ms)
- Flow 2 (95th percentile 188.93 ms)
- Flow 3 (95th percentile 127.61 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-07-18 11:01:32
End at: 2019-07-18 11:02:02
Local clock offset: -0.02 ms
Remote clock offset: 0.216 ms

# Below is generated by plot.py at 2019-07-18 15:06:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 678.28 Mbit/s
95th percentile per-packet one-way delay: 217.204 ms
Loss rate: 7.16%
-- Flow 1:
Average throughput: 358.59 Mbit/s
95th percentile per-packet one-way delay: 211.832 ms
Loss rate: 2.83%
-- Flow 2:
Average throughput: 351.91 Mbit/s
95th percentile per-packet one-way delay: 227.336 ms
Loss rate: 14.76%
-- Flow 3:
Average throughput: 264.55 Mbit/s
95th percentile per-packet one-way delay: 118.742 ms
Loss rate: 1.60%
```

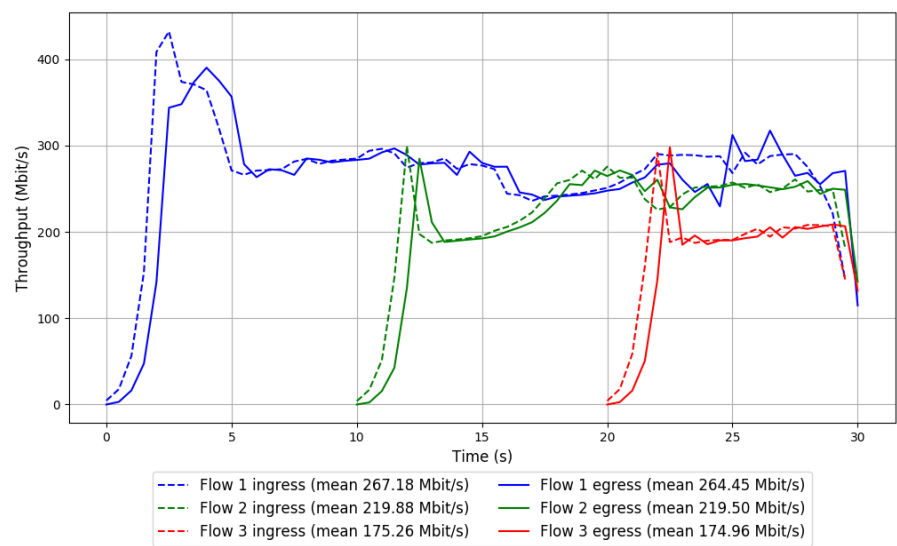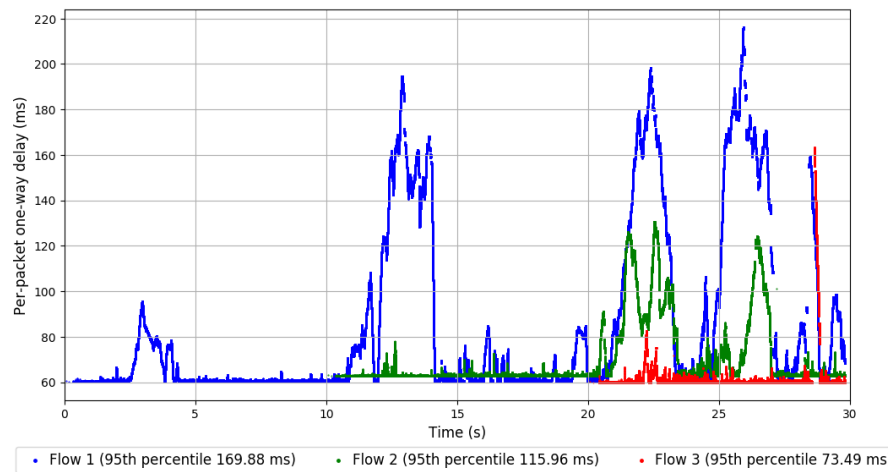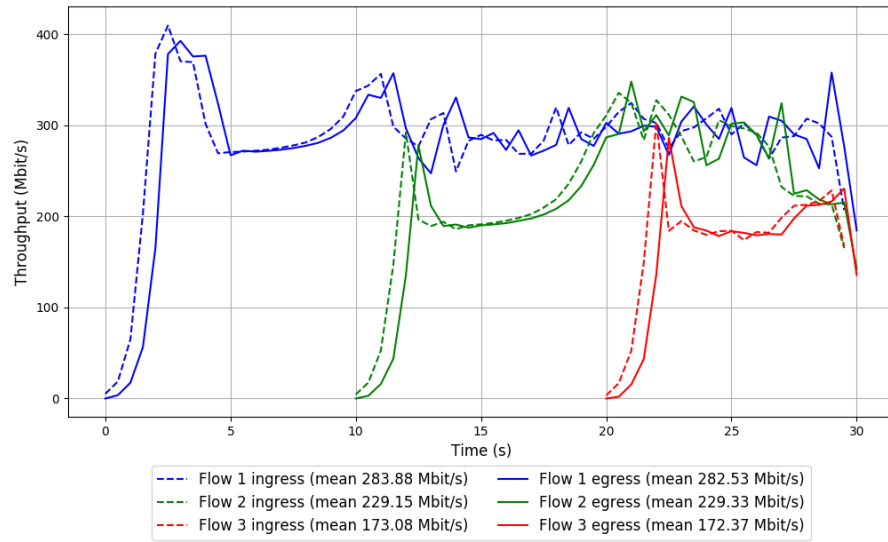Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 367.49 Mbit/s) --- Flow 1 egress (mean 358.59 Mbit/s)
Flow 2 ingress (mean 410.23 Mbit/s) --- Flow 2 egress (mean 351.91 Mbit/s)
Flow 3 ingress (mean 265.44 Mbit/s) --- Flow 3 egress (mean 264.55 Mbit/s)

Flow 1 (95th percentile 211.83 ms)   Flow 2 (95th percentile 227.34 ms)   Flow 3 (95th percentile 118.74 ms)
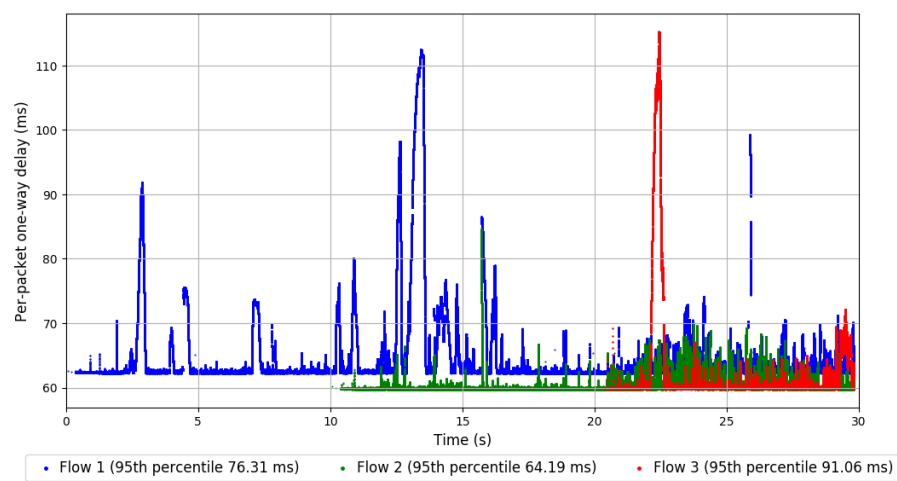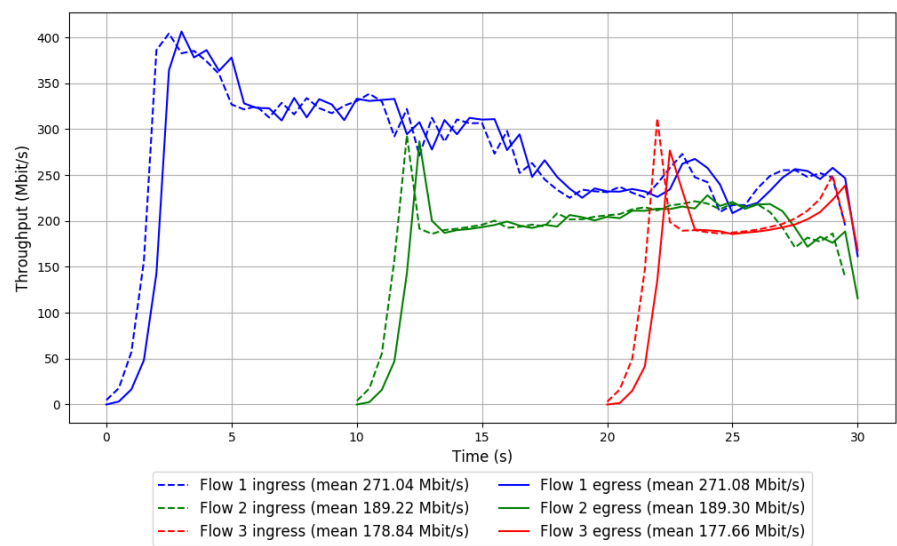
```
Run 5: Statistics of PCC-Allegro

Start at: 2019-07-18 11:42:43
End at: 2019-07-18 11:43:13
Local clock offset: 0.009 ms
Remote clock offset: -0.026 ms

# Below is generated by plot.py at 2019-07-18 15:06:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.37 Mbit/s
95th percentile per-packet one-way delay: 133.015 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 335.27 Mbit/s
95th percentile per-packet one-way delay: 134.503 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 266.66 Mbit/s
95th percentile per-packet one-way delay: 125.440 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 239.61 Mbit/s
95th percentile per-packet one-way delay: 97.743 ms
Loss rate: 1.56%
```

Run 5: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 336.21 Mbit/s)   ——— Flow 1 egress (mean 335.27 Mbit/s)
- - - - Flow 2 ingress (mean 269.26 Mbit/s)   ——— Flow 2 egress (mean 266.66 Mbit/s)
- - - - Flow 3 ingress (mean 240.27 Mbit/s)   ——— Flow 3 egress (mean 239.61 Mbit/s)

- Flow 1 (95th percentile 134.50 ms)   • Flow 2 (95th percentile 125.44 ms)   • Flow 3 (95th percentile 97.74 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2019-07-18 09:31:49
End at: 2019-07-18 09:32:19
Local clock offset: -0.085 ms
Remote clock offset: -0.07 ms


# Below is generated by plot.py at 2019-07-18 15:06:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.34 Mbit/s
95th percentile per-packet one-way delay: 156.654 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 264.45 Mbit/s
95th percentile per-packet one-way delay: 185.006 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 219.50 Mbit/s
95th percentile per-packet one-way delay: 71.373 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 174.96 Mbit/s
95th percentile per-packet one-way delay: 83.951 ms
Loss rate: 1.10%
```
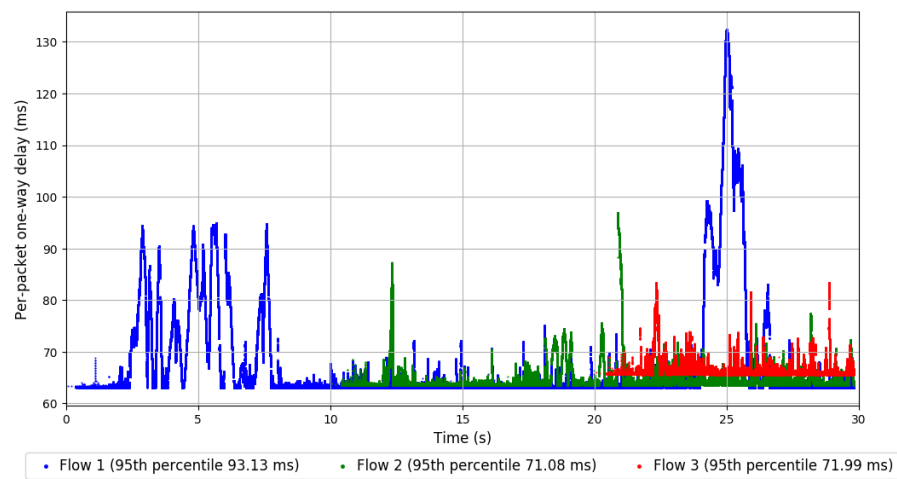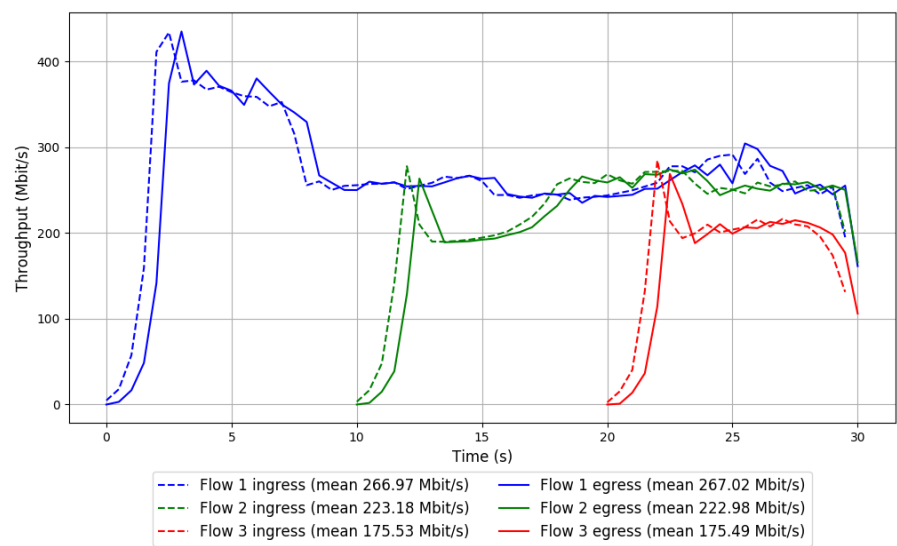
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 267.18 Mbit/s) ---- Flow 1 egress (mean 264.45 Mbit/s) ——
Flow 2 ingress (mean 219.88 Mbit/s) ---- Flow 2 egress (mean 219.50 Mbit/s) ——
Flow 3 ingress (mean 175.26 Mbit/s) ---- Flow 3 egress (mean 174.96 Mbit/s) ——

• Flow 1 (95th percentile 185.01 ms)   • Flow 2 (95th percentile 71.37 ms)   • Flow 3 (95th percentile 83.95 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-07-18 10:13:02
End at: 2019-07-18 10:13:32
Local clock offset: -0.003 ms
Remote clock offset: -0.194 ms


# Below is generated by plot.py at 2019-07-18 15:06:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 491.08 Mbit/s
95th percentile per-packet one-way delay: 163.048 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 282.53 Mbit/s
95th percentile per-packet one-way delay: 169.884 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 229.33 Mbit/s
95th percentile per-packet one-way delay: 115.960 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 172.37 Mbit/s
95th percentile per-packet one-way delay: 73.493 ms
Loss rate: 1.63%
```
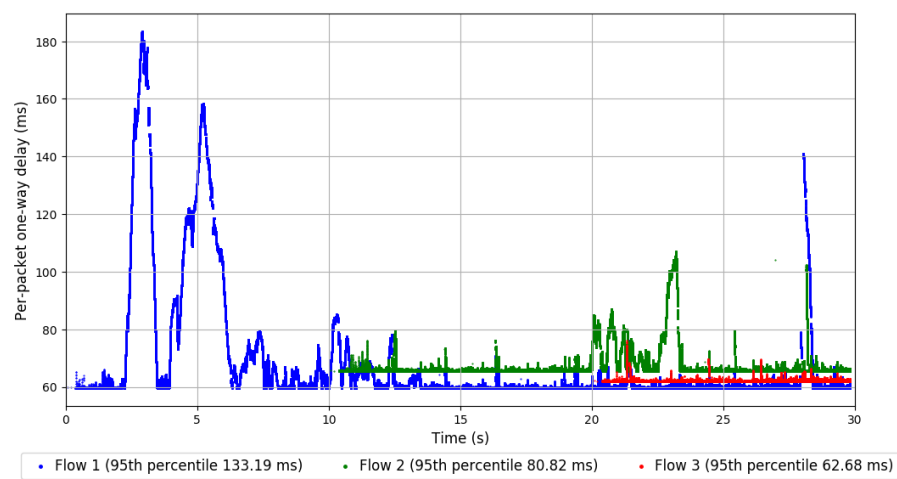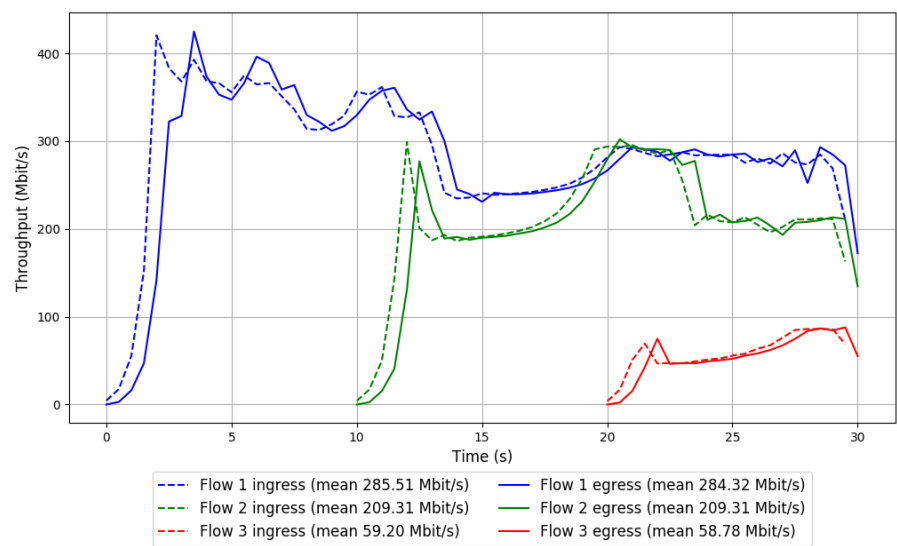
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-07-18 10:54:08
End at: 2019-07-18 10:54:38
Local clock offset: -0.014 ms
Remote clock offset: -0.058 ms


# Below is generated by plot.py at 2019-07-18 15:06:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 454.83 Mbit/s
95th percentile per-packet one-way delay: 74.126 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 271.08 Mbit/s
95th percentile per-packet one-way delay: 76.311 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 189.30 Mbit/s
95th percentile per-packet one-way delay: 64.192 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 177.66 Mbit/s
95th percentile per-packet one-way delay: 91.061 ms
Loss rate: 1.87%
```
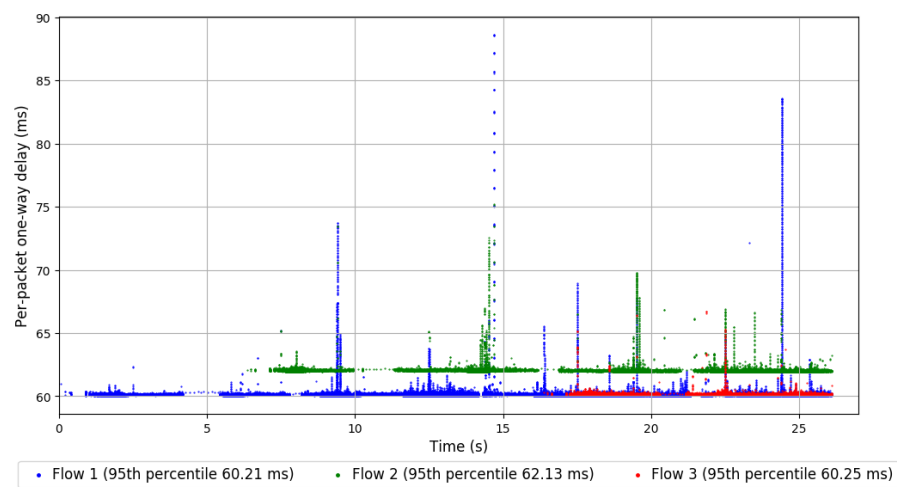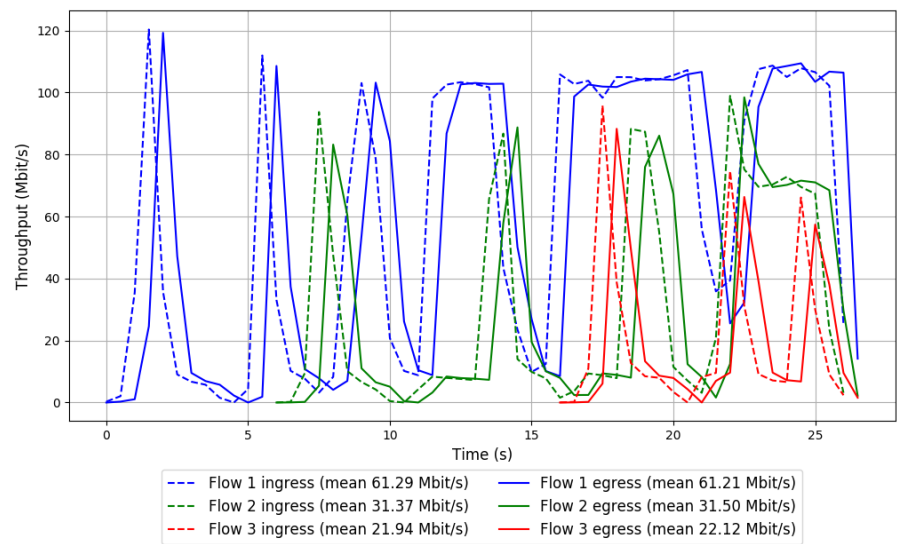
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-07-18 11:35:31
End at: 2019-07-18 11:36:01
Local clock offset: -0.009 ms
Remote clock offset: -0.318 ms


# Below is generated by plot.py at 2019-07-18 15:16:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 472.43 Mbit/s
95th percentile per-packet one-way delay: 87.466 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 267.02 Mbit/s
95th percentile per-packet one-way delay: 93.130 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 222.98 Mbit/s
95th percentile per-packet one-way delay: 71.078 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 175.49 Mbit/s
95th percentile per-packet one-way delay: 71.993 ms
Loss rate: 1.36%
```

Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-07-18 12:16:27
End at: 2019-07-18 12:16:57
Local clock offset: -0.157 ms
Remote clock offset: 0.014 ms


# Below is generated by plot.py at 2019-07-18 15:17:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 442.41 Mbit/s
95th percentile per-packet one-way delay: 117.836 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 284.32 Mbit/s
95th percentile per-packet one-way delay: 133.186 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 209.31 Mbit/s
95th percentile per-packet one-way delay: 80.824 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 62.682 ms
Loss rate: 2.00%
```
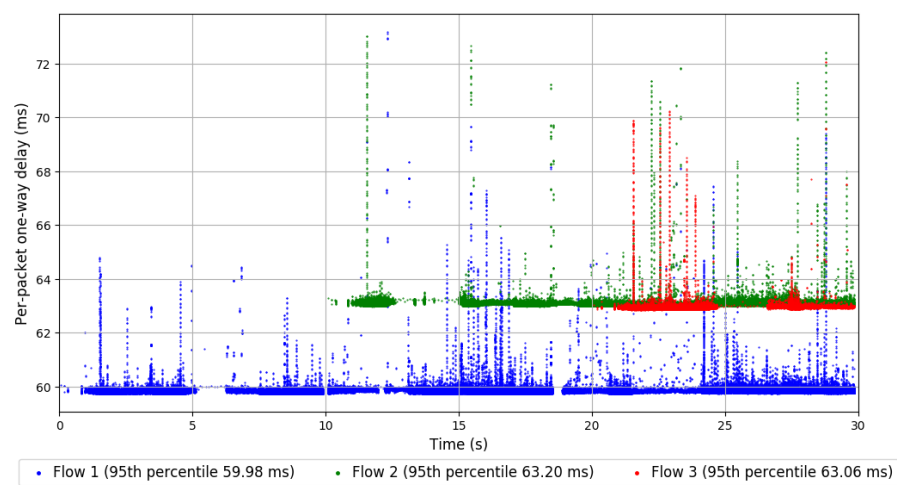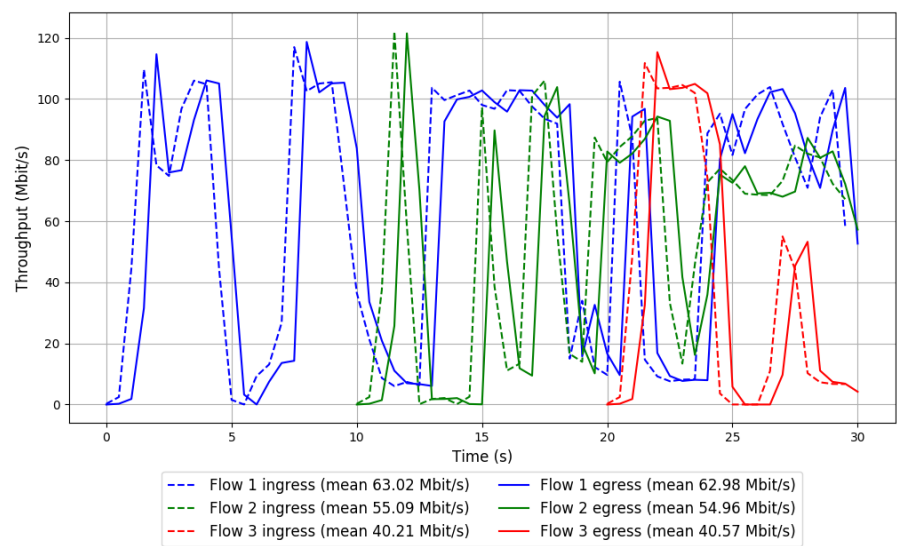
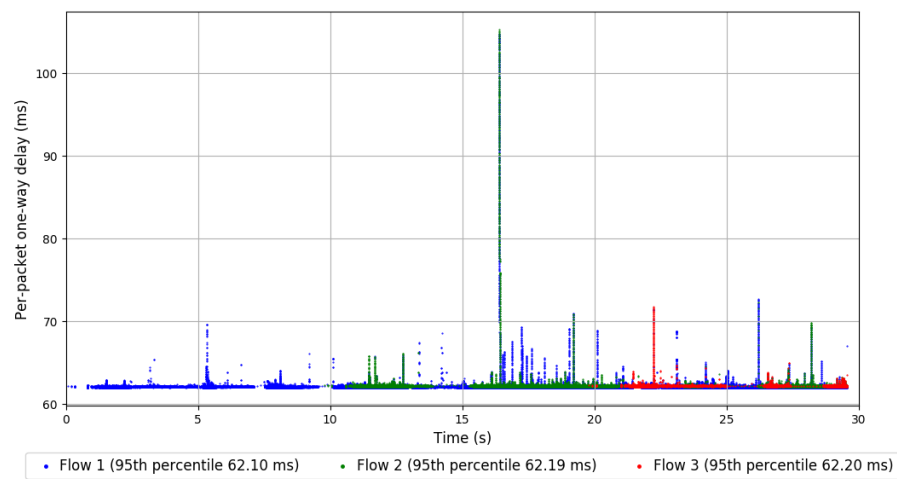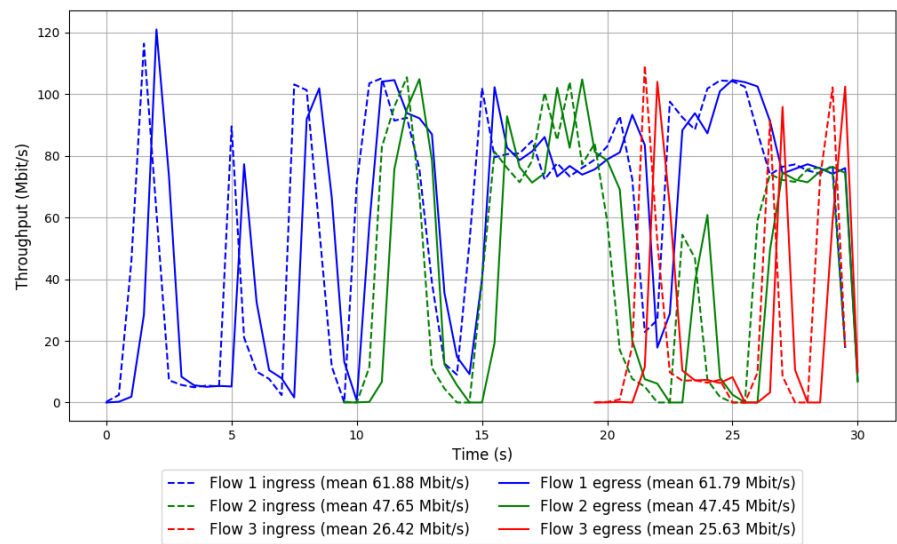Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-07-18 09:03:22
End at: 2019-07-18 09:03:52
Local clock offset: -0.055 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2019-07-18 15:17:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 62.054 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 61.21 Mbit/s
95th percentile per-packet one-way delay: 60.206 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 31.50 Mbit/s
95th percentile per-packet one-way delay: 62.130 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 22.12 Mbit/s
95th percentile per-packet one-way delay: 60.246 ms
Loss rate: 0.40%
```

Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-07-18 09:44:42
End at: 2019-07-18 09:45:12
Local clock offset: -0.066 ms
Remote clock offset: -0.19 ms


# Below is generated by plot.py at 2019-07-18 15:17:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 112.72 Mbit/s
95th percentile per-packet one-way delay: 63.138 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 62.98 Mbit/s
95th percentile per-packet one-way delay: 59.978 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 54.96 Mbit/s
95th percentile per-packet one-way delay: 63.200 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 40.57 Mbit/s
95th percentile per-packet one-way delay: 63.064 ms
Loss rate: 0.42%
```
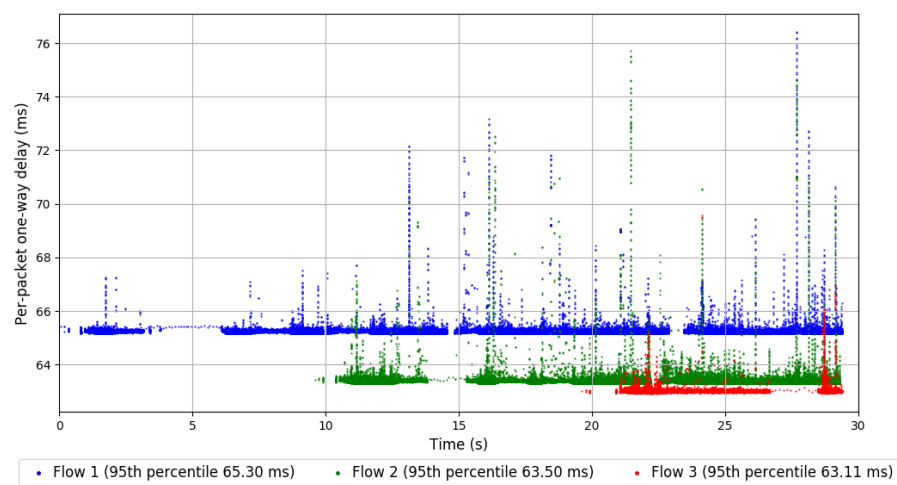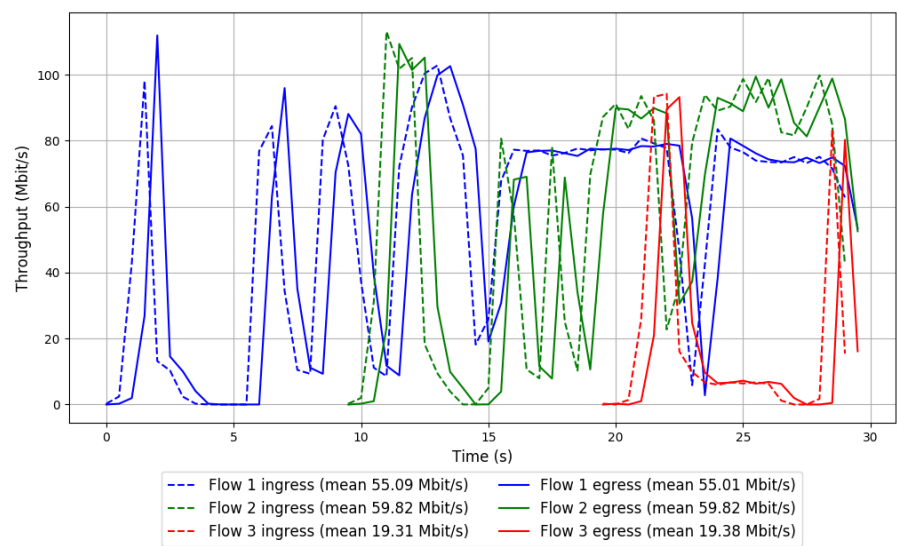
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 63.02 Mbit/s)   Flow 1 egress (mean 62.98 Mbit/s)
Flow 2 ingress (mean 55.09 Mbit/s)   Flow 2 egress (mean 54.96 Mbit/s)
Flow 3 ingress (mean 40.21 Mbit/s)   Flow 3 egress (mean 40.57 Mbit/s)

Flow 1 (95th percentile 59.98 ms)   Flow 2 (95th percentile 63.20 ms)   Flow 3 (95th percentile 63.06 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-07-18 10:25:54
End at: 2019-07-18 10:26:24
Local clock offset: -0.008 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2019-07-18 15:17:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 102.08 Mbit/s
95th percentile per-packet one-way delay: 62.171 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 61.79 Mbit/s
95th percentile per-packet one-way delay: 62.100 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 47.45 Mbit/s
95th percentile per-packet one-way delay: 62.188 ms
Loss rate: 1.06%
-- Flow 3:
Average throughput: 25.63 Mbit/s
95th percentile per-packet one-way delay: 62.205 ms
Loss rate: 4.17%
```
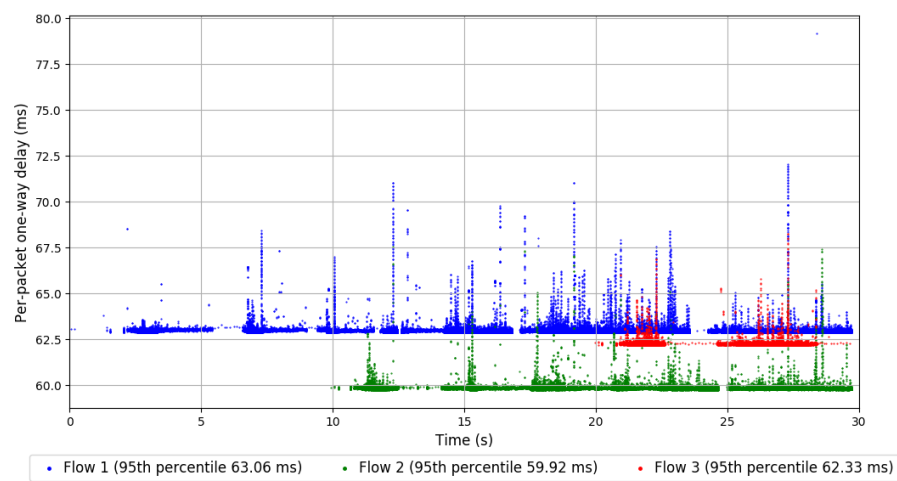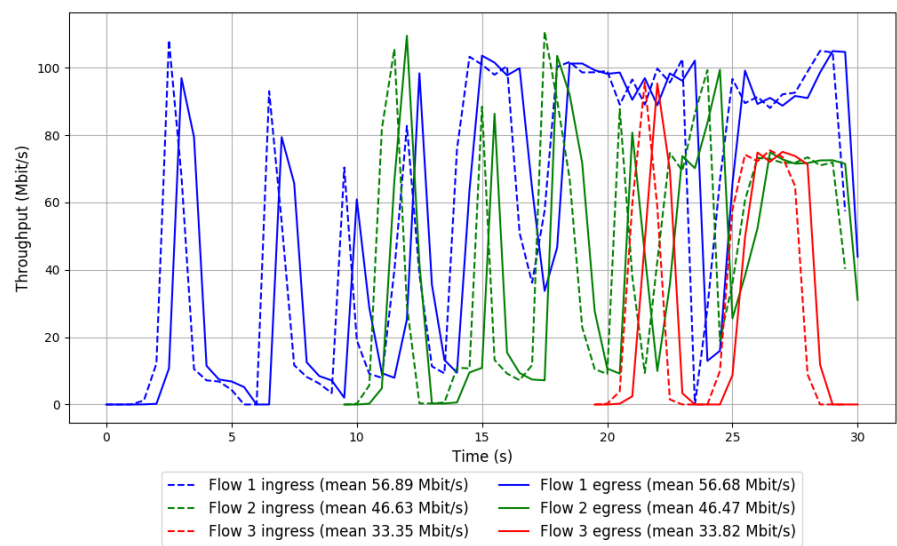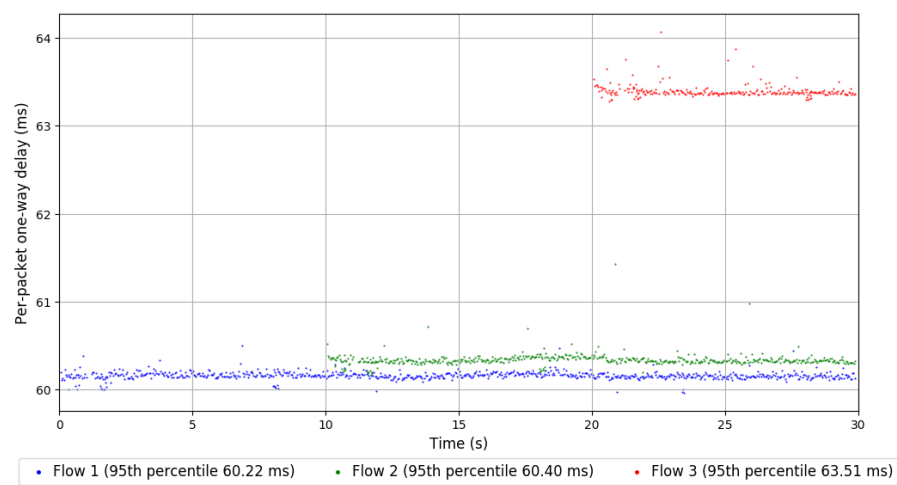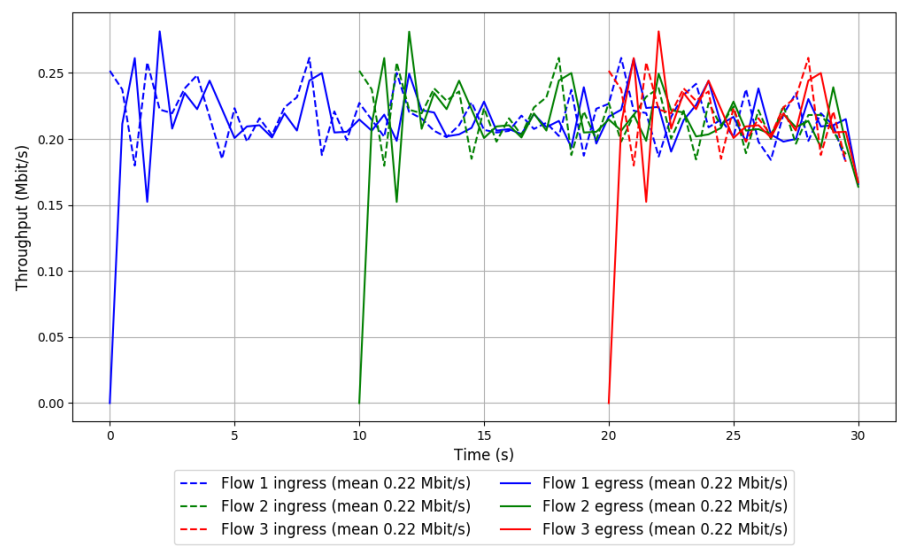
Run 3: Report of QUIC Cubic — Data Link

170

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-07-18 11:07:07
End at: 2019-07-18 11:07:37
Local clock offset: -0.006 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 101.63 Mbit/s
95th percentile per-packet one-way delay: 65.274 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 55.01 Mbit/s
95th percentile per-packet one-way delay: 65.300 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 59.82 Mbit/s
95th percentile per-packet one-way delay: 63.500 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.38 Mbit/s
95th percentile per-packet one-way delay: 63.110 ms
Loss rate: 0.88%
```
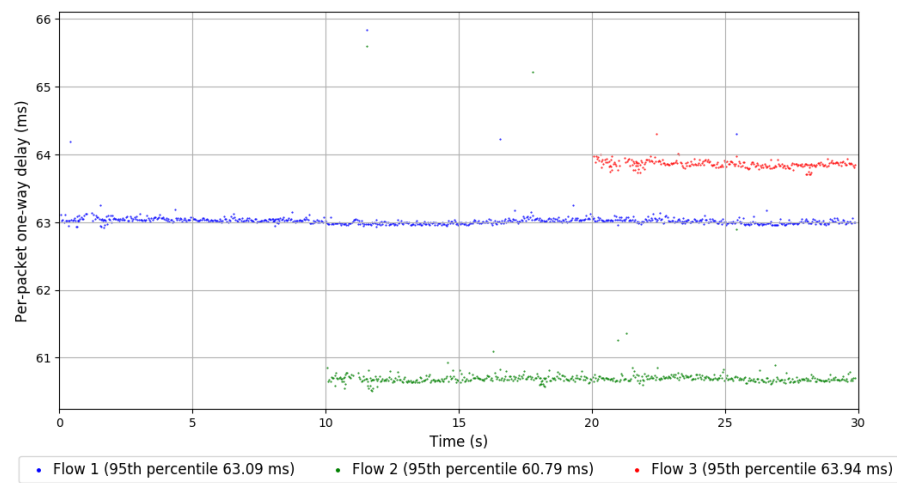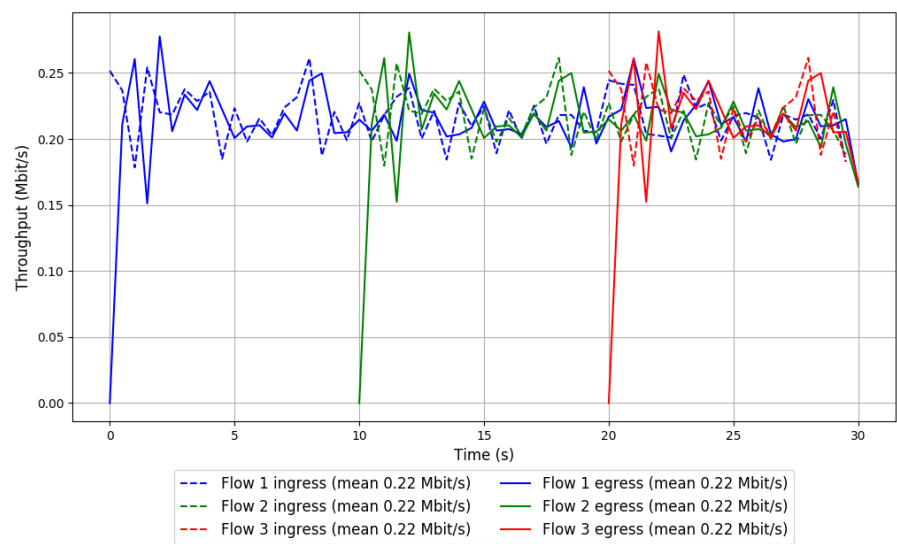
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 55.09 Mbit/s) — — — Flow 1 egress (mean 55.01 Mbit/s)
Flow 2 ingress (mean 59.82 Mbit/s) — — — Flow 2 egress (mean 59.82 Mbit/s)
Flow 3 ingress (mean 19.31 Mbit/s) — — — Flow 3 egress (mean 19.38 Mbit/s)

Flow 1 (95th percentile 65.30 ms)   Flow 2 (95th percentile 63.50 ms)   Flow 3 (95th percentile 63.11 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-07-18 11:48:11
End at: 2019-07-18 11:48:41
Local clock offset: -0.03 ms
Remote clock offset: 0.039 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.72 Mbit/s
95th percentile per-packet one-way delay: 63.012 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 56.68 Mbit/s
95th percentile per-packet one-way delay: 63.062 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 46.47 Mbit/s
95th percentile per-packet one-way delay: 59.922 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 33.82 Mbit/s
95th percentile per-packet one-way delay: 62.329 ms
Loss rate: 0.00%
```
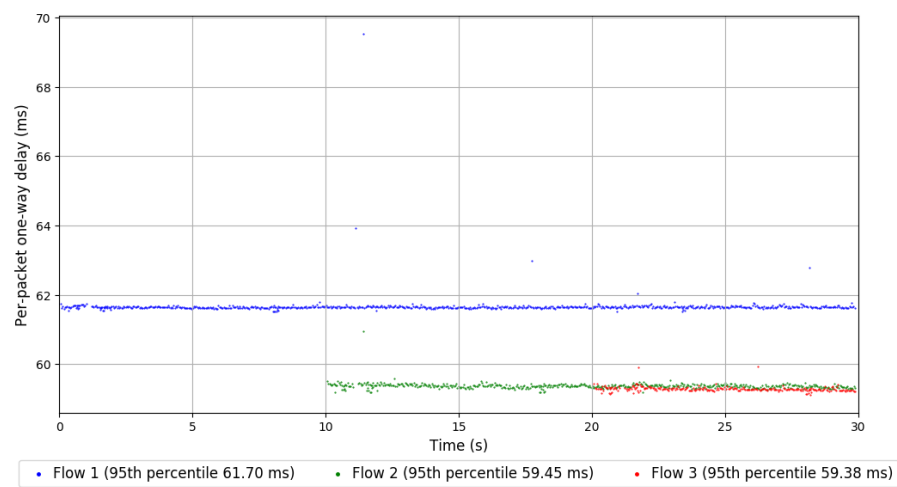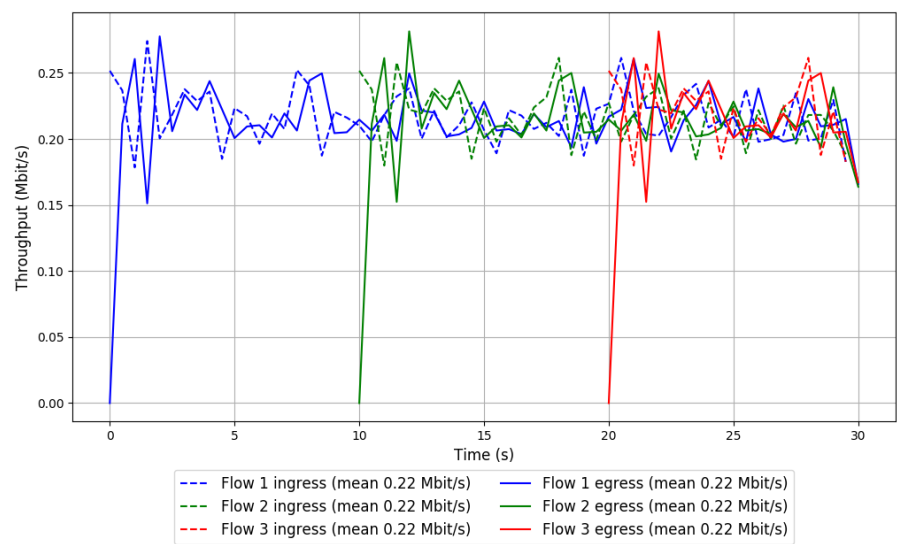
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-07-18 09:19:07
End at: 2019-07-18 09:19:37
Local clock offset: -0.117 ms
Remote clock offset: -0.127 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.396 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.224 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.398 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.505 ms
Loss rate: 1.08%
```

Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-07-18 10:00:25
End at: 2019-07-18 10:00:55
Local clock offset: -0.02 ms
Remote clock offset: -0.886 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.886 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.091 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.787 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.941 ms
Loss rate: 1.08%
```
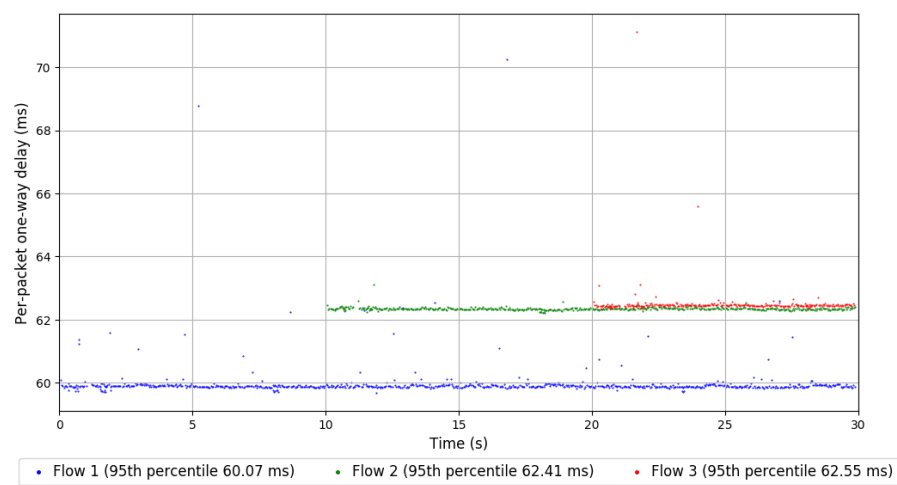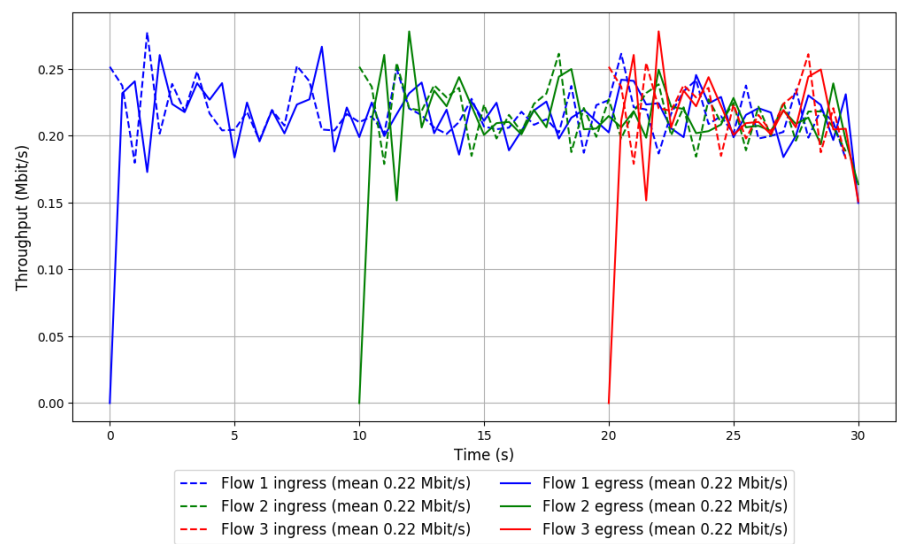
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-07-18 10:41:29
End at: 2019-07-18 10:41:59
Local clock offset: -0.016 ms
Remote clock offset: 0.411 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 61.684 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.702 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.450 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.375 ms
Loss rate: 1.08%
```
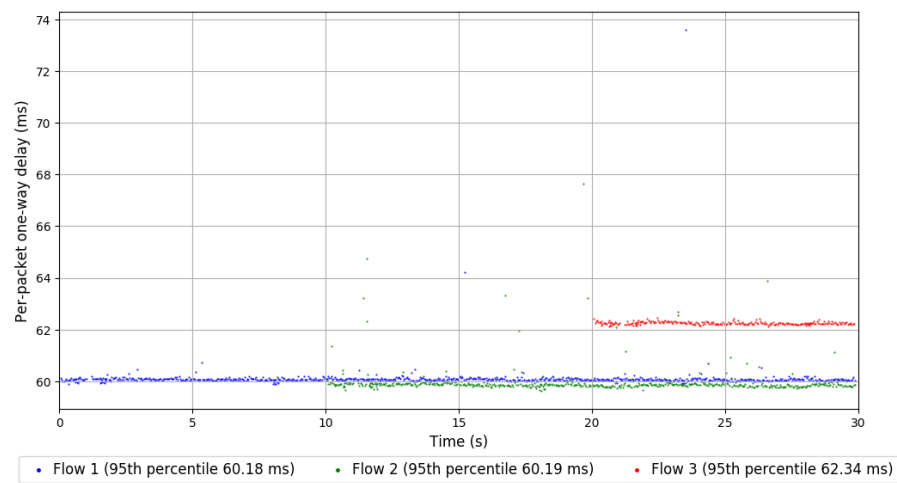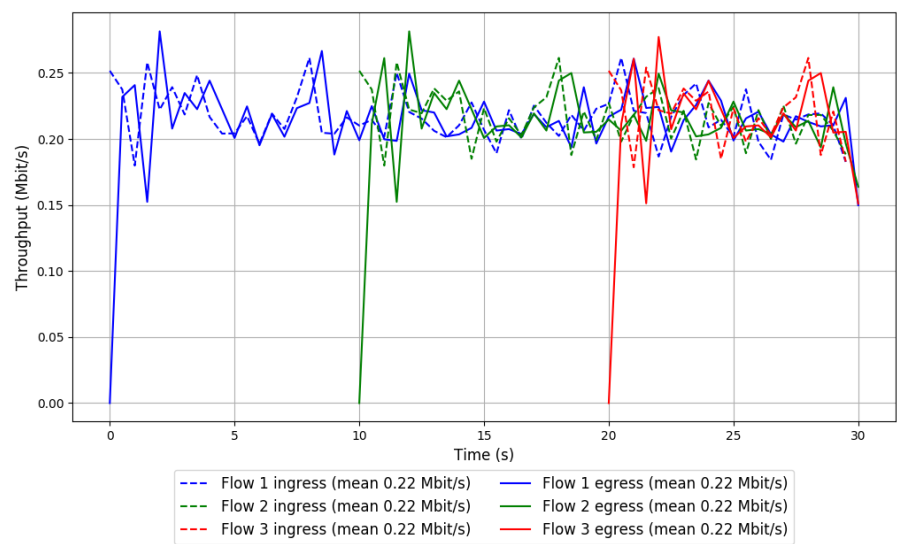
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-07-18 11:22:47
End at: 2019-07-18 11:23:17
Local clock offset: -0.034 ms
Remote clock offset: 0.098 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 62.472 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.073 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.413 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.549 ms
Loss rate: 1.45%
```
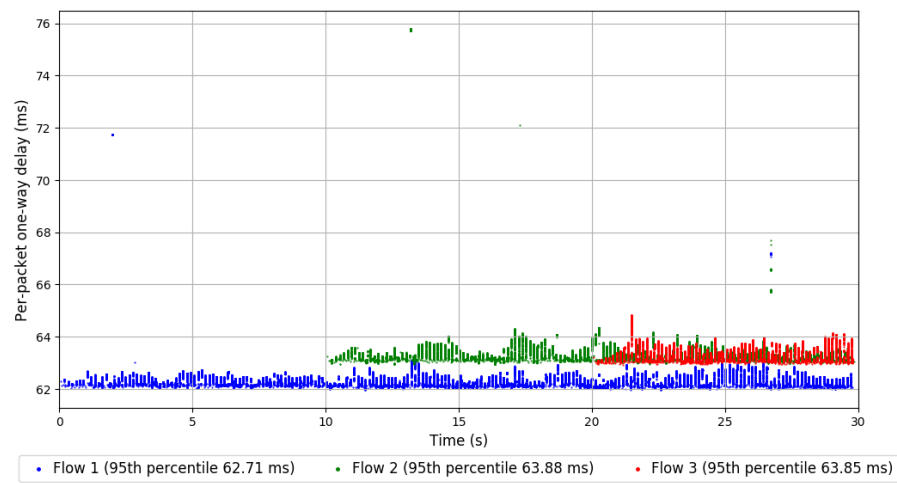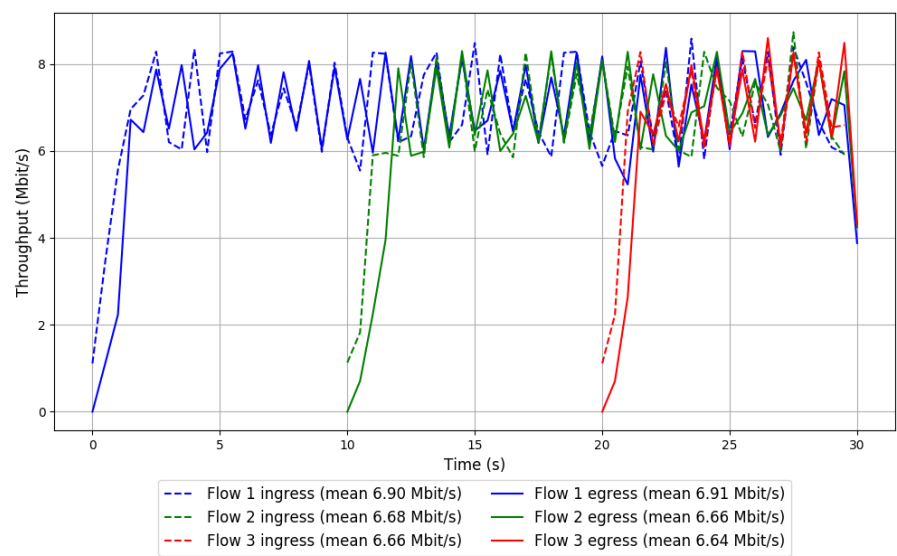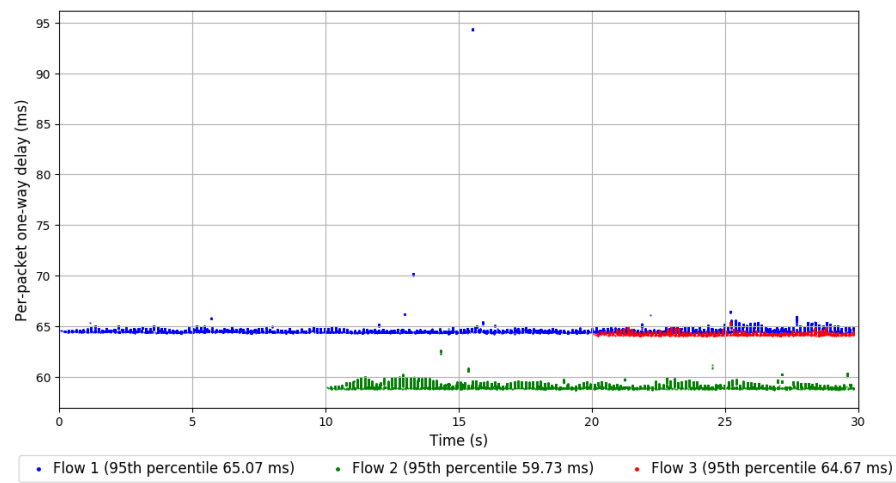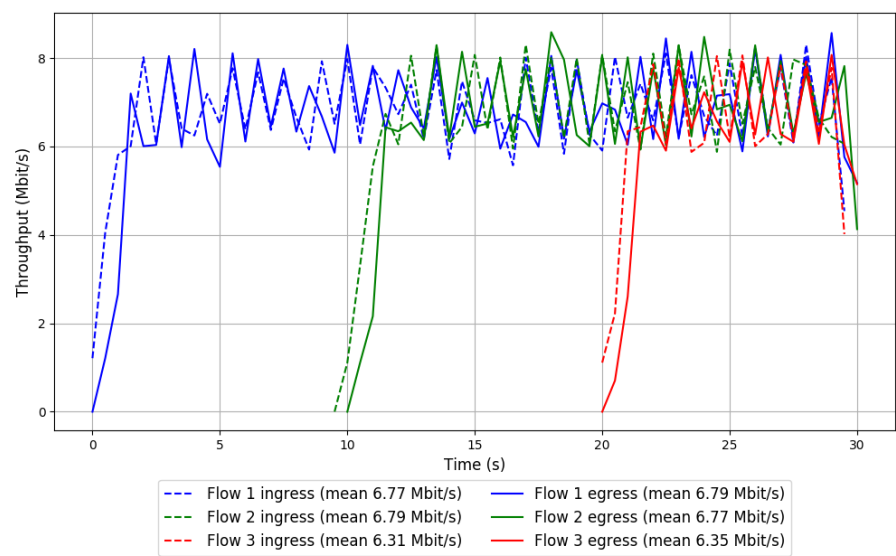
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-07-18 12:03:47
End at: 2019-07-18 12:04:17
Local clock offset: -0.065 ms
Remote clock offset: 0.051 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 62.280 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.181 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.192 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.343 ms
Loss rate: 1.45%
```

Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-07-18 09:25:09
End at: 2019-07-18 09:25:39
Local clock offset: -0.091 ms
Remote clock offset: 0.019 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.49 Mbit/s
95th percentile per-packet one-way delay: 63.718 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 6.91 Mbit/s
95th percentile per-packet one-way delay: 62.714 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 6.66 Mbit/s
95th percentile per-packet one-way delay: 63.880 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 63.849 ms
Loss rate: 1.73%
```
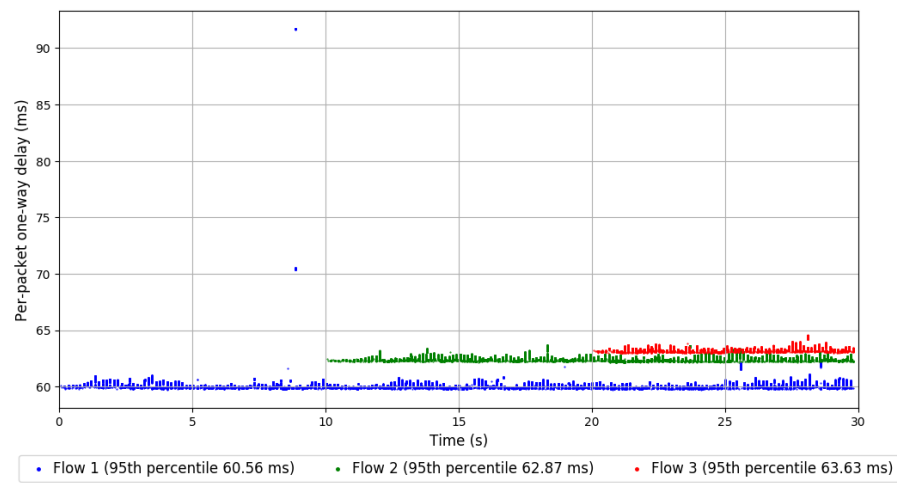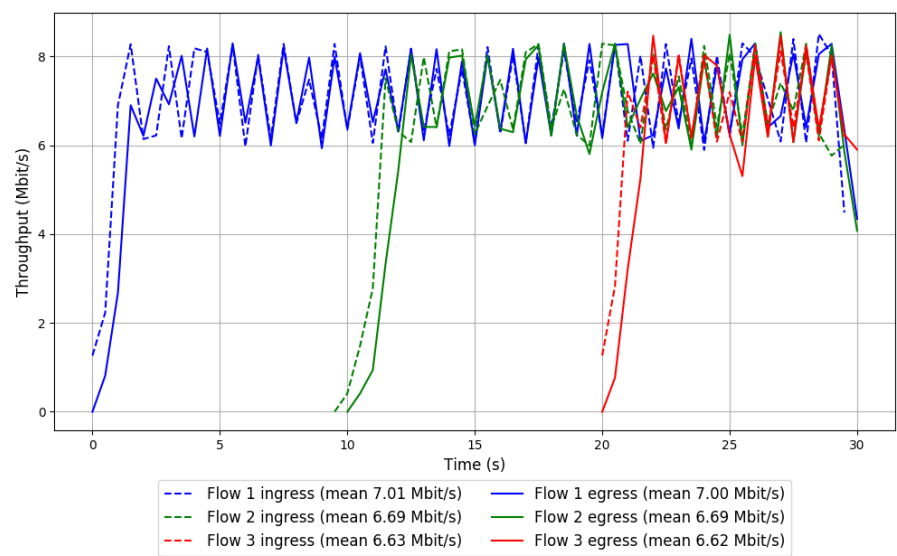
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-07-18 10:06:25
End at: 2019-07-18 10:06:55
Local clock offset: -0.013 ms
Remote clock offset: 1.062 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.36 Mbit/s
95th percentile per-packet one-way delay: 64.901 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 65.072 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 6.77 Mbit/s
95th percentile per-packet one-way delay: 59.733 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 6.35 Mbit/s
95th percentile per-packet one-way delay: 64.667 ms
Loss rate: 0.69%
```
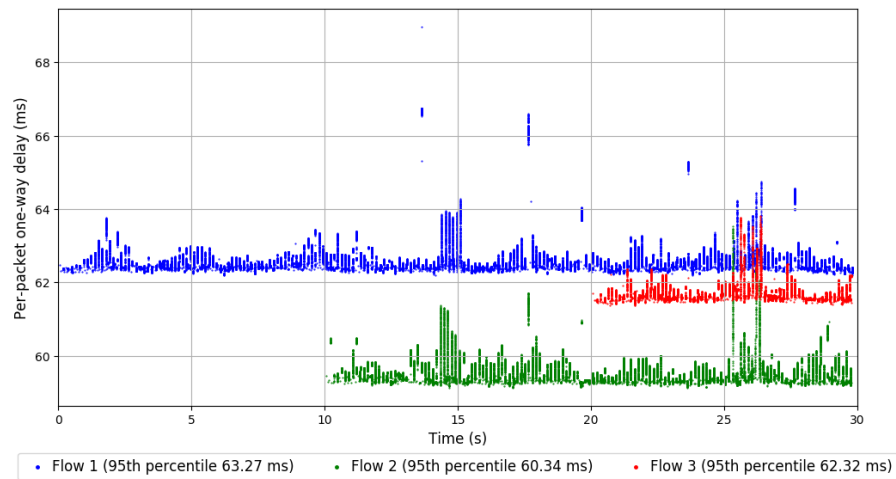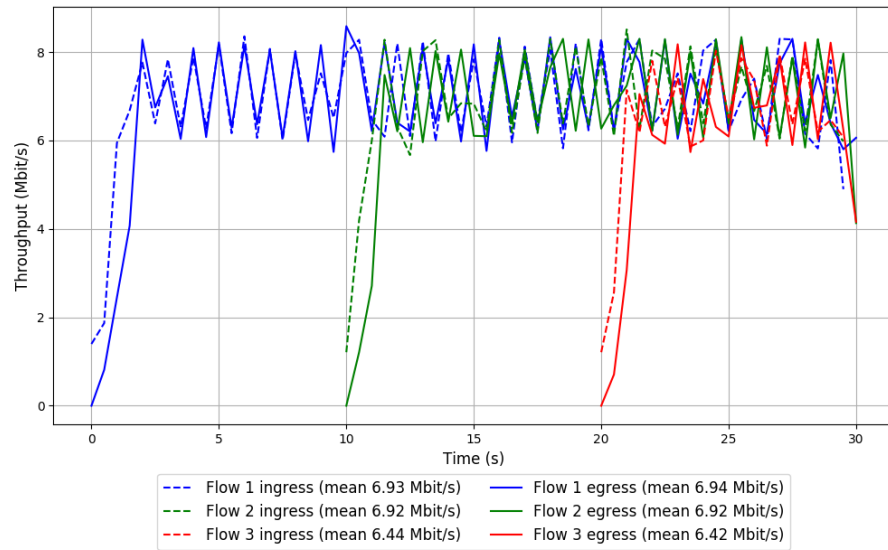
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-07-18 10:47:32
End at: 2019-07-18 10:48:02
Local clock offset: -0.014 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.60 Mbit/s
95th percentile per-packet one-way delay: 63.309 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 7.00 Mbit/s
95th percentile per-packet one-way delay: 60.556 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 62.866 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 6.62 Mbit/s
95th percentile per-packet one-way delay: 63.631 ms
Loss rate: 1.58%
```
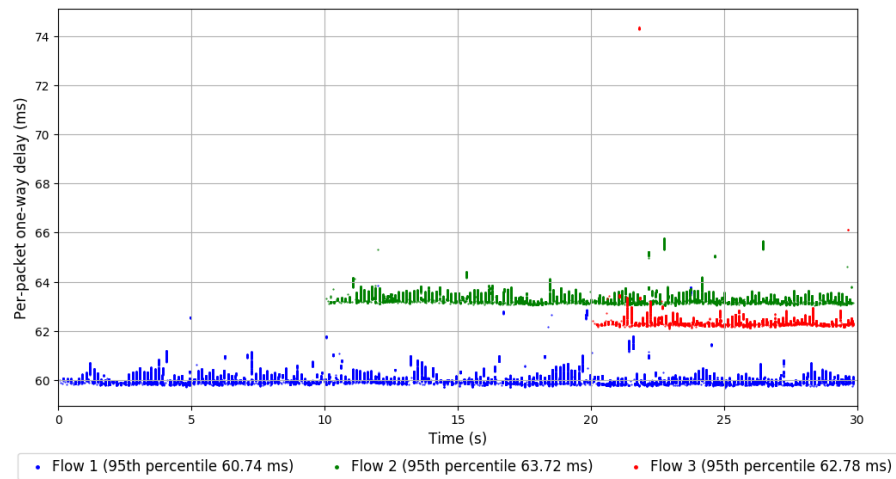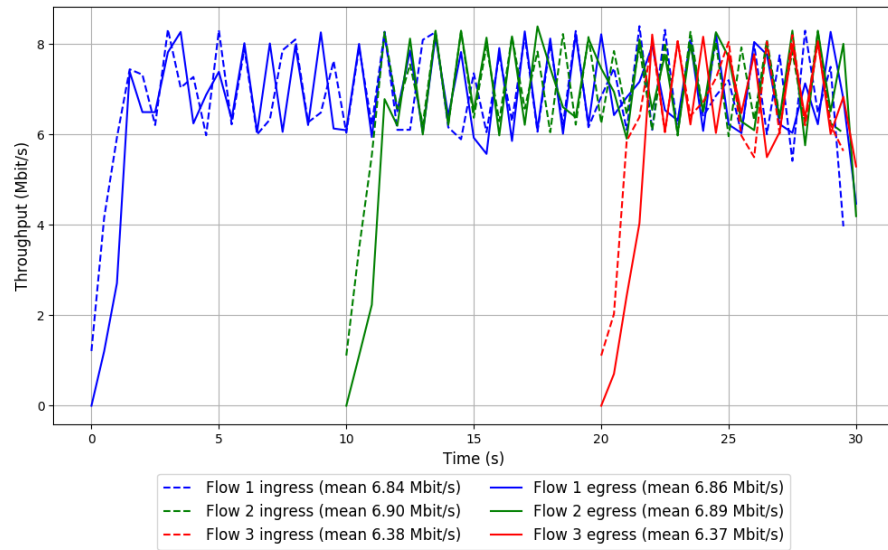
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-07-18 11:28:49
End at: 2019-07-18 11:29:19
Local clock offset: -0.04 ms
Remote clock offset: 0.77 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.62 Mbit/s
95th percentile per-packet one-way delay: 62.951 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 6.94 Mbit/s
95th percentile per-packet one-way delay: 63.271 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 60.337 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 6.42 Mbit/s
95th percentile per-packet one-way delay: 62.317 ms
Loss rate: 1.68%
```
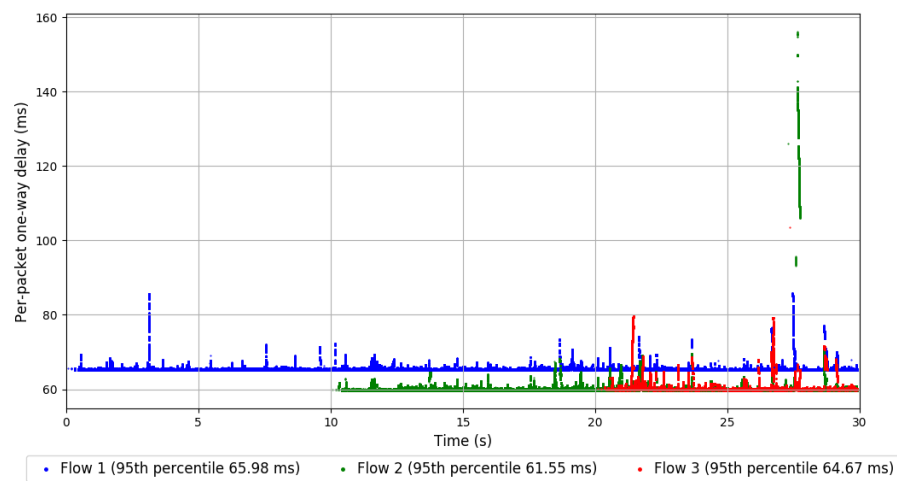
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-07-18 12:09:49
End at: 2019-07-18 12:10:19
Local clock offset: -0.076 ms
Remote clock offset: 0.016 ms


# Below is generated by plot.py at 2019-07-18 15:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.51 Mbit/s
95th percentile per-packet one-way delay: 63.544 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 6.86 Mbit/s
95th percentile per-packet one-way delay: 60.742 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 63.724 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 62.782 ms
Loss rate: 1.39%
```
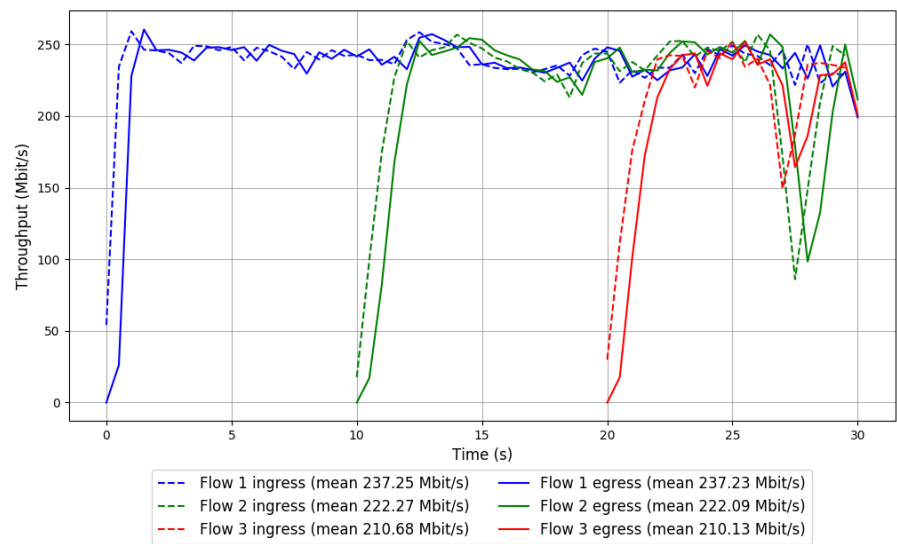
Run 5: Report of Sprout — Data Link

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

Start at: 2019-07-18 09:04:40
End at: 2019-07-18 09:05:10
Local clock offset: -0.037 ms
Remote clock offset: -0.058 ms


# Below is generated by plot.py at 2019-07-18 15:22:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 453.96 Mbit/s
95th percentile per-packet one-way delay: 65.637 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 237.23 Mbit/s
95th percentile per-packet one-way delay: 65.976 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 222.09 Mbit/s
95th percentile per-packet one-way delay: 61.554 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 210.13 Mbit/s
95th percentile per-packet one-way delay: 64.673 ms
Loss rate: 1.49%
```
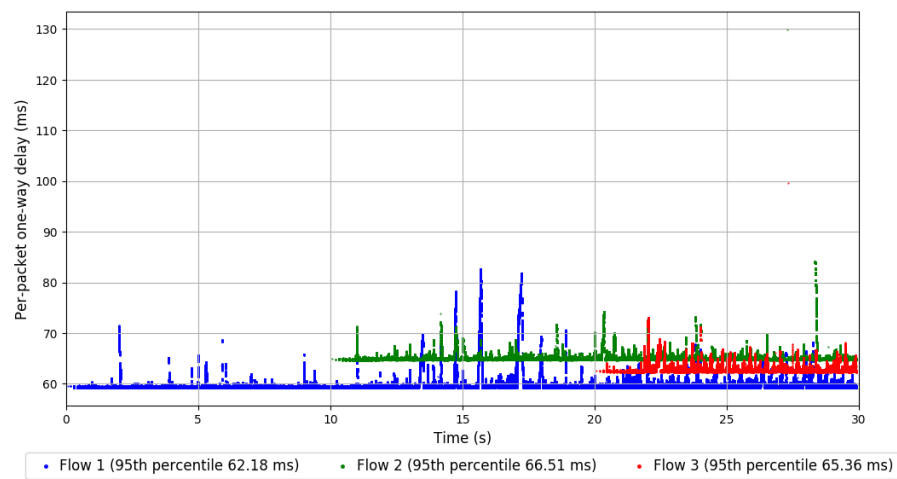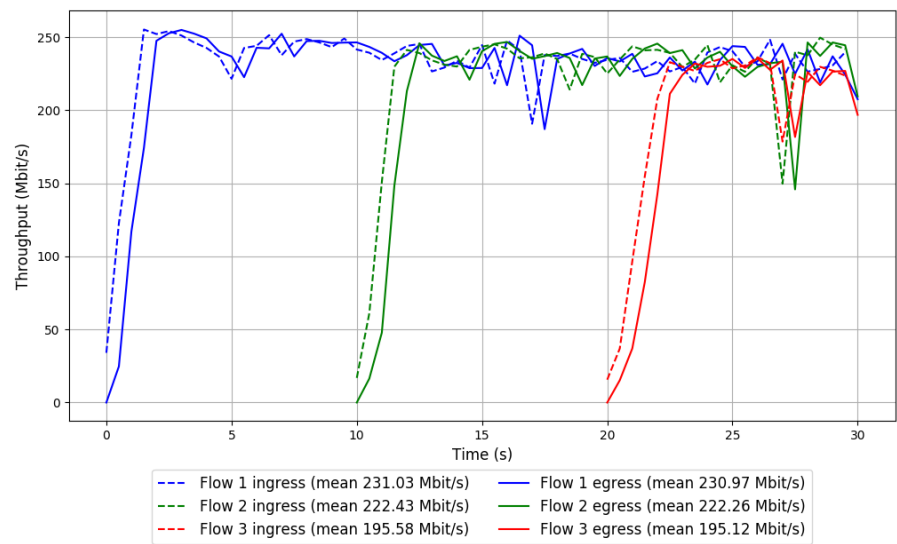
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 237.25 Mbit/s)   Flow 1 egress (mean 237.23 Mbit/s)
Flow 2 ingress (mean 222.27 Mbit/s)   Flow 2 egress (mean 222.09 Mbit/s)
Flow 3 ingress (mean 210.68 Mbit/s)   Flow 3 egress (mean 210.13 Mbit/s)

Flow 1 (95th percentile 65.98 ms)   Flow 2 (95th percentile 61.55 ms)   Flow 3 (95th percentile 64.67 ms)
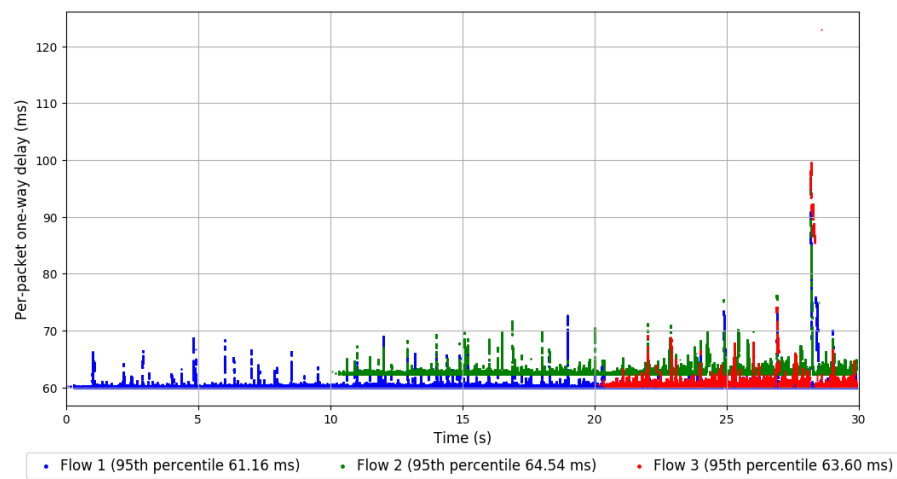
196

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

Start at: 2019-07-18 09:46:02
End at: 2019-07-18 09:46:32
Local clock offset: -0.077 ms
Remote clock offset: 0.408 ms


# Below is generated by plot.py at 2019-07-18 15:22:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 443.04 Mbit/s
95th percentile per-packet one-way delay: 65.469 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 230.97 Mbit/s
95th percentile per-packet one-way delay: 62.183 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 222.26 Mbit/s
95th percentile per-packet one-way delay: 66.510 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 195.12 Mbit/s
95th percentile per-packet one-way delay: 65.359 ms
Loss rate: 1.50%
```

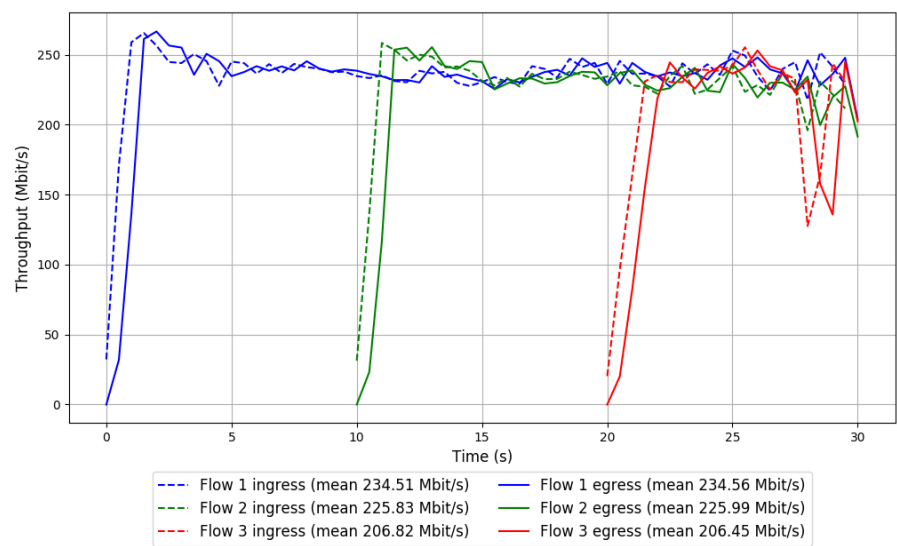Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 231.03 Mbit/s) --- Flow 1 egress (mean 230.97 Mbit/s)
Flow 2 ingress (mean 222.43 Mbit/s) --- Flow 2 egress (mean 222.26 Mbit/s)
Flow 3 ingress (mean 195.58 Mbit/s) --- Flow 3 egress (mean 195.12 Mbit/s)

Flow 1 (95th percentile 62.18 ms) • Flow 2 (95th percentile 66.51 ms) • Flow 3 (95th percentile 65.36 ms)

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

Start at: 2019-07-18 10:27:13
End at: 2019-07-18 10:27:43
Local clock offset: -0.019 ms
Remote clock offset: -0.287 ms


# Below is generated by plot.py at 2019-07-18 15:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.81 Mbit/s
95th percentile per-packet one-way delay: 63.501 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 234.56 Mbit/s
95th percentile per-packet one-way delay: 61.165 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 225.99 Mbit/s
95th percentile per-packet one-way delay: 64.540 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 206.45 Mbit/s
95th percentile per-packet one-way delay: 63.602 ms
Loss rate: 1.38%
```
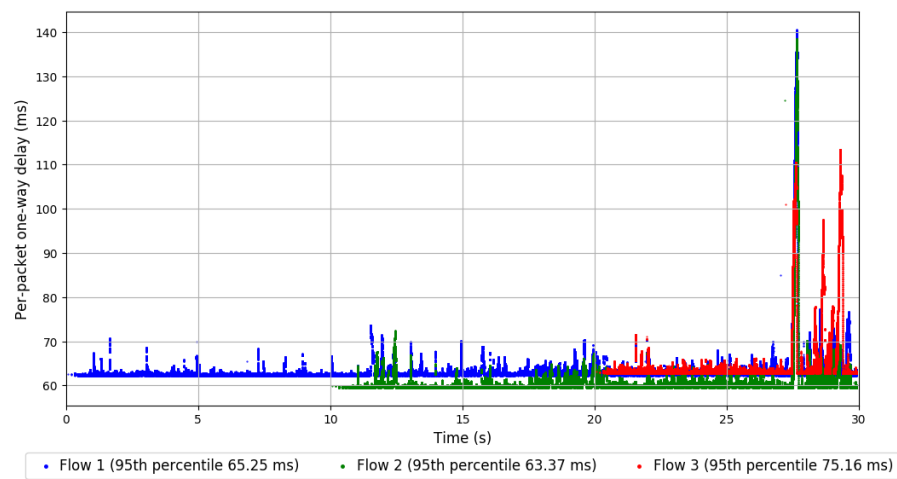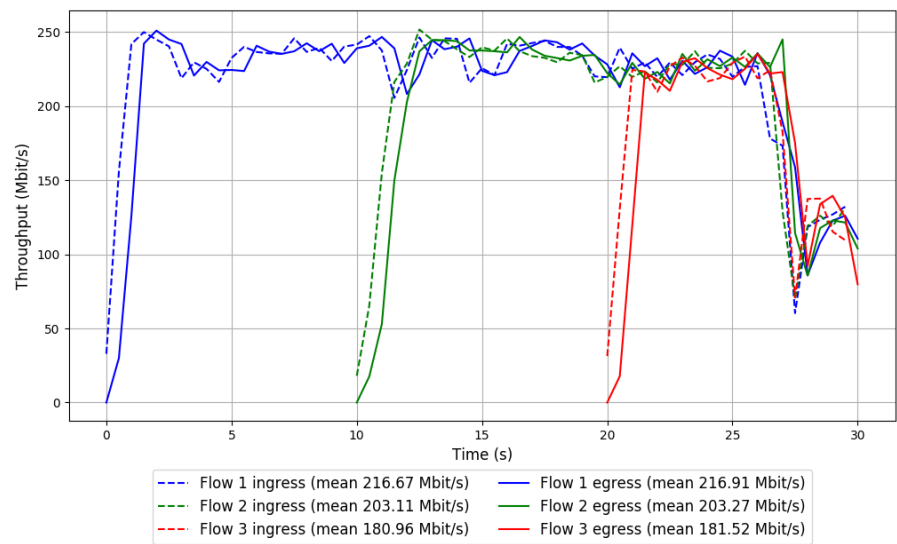
Run 3: Report of TaoVA-100x — Data Link

200

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

Start at: 2019-07-18 11:08:26
End at: 2019-07-18 11:08:56
Local clock offset: -0.041 ms
Remote clock offset: 0.127 ms


# Below is generated by plot.py at 2019-07-18 15:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 411.77 Mbit/s
95th percentile per-packet one-way delay: 65.190 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 216.91 Mbit/s
95th percentile per-packet one-way delay: 65.245 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 203.27 Mbit/s
95th percentile per-packet one-way delay: 63.370 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 181.52 Mbit/s
95th percentile per-packet one-way delay: 75.158 ms
Loss rate: 0.97%
```
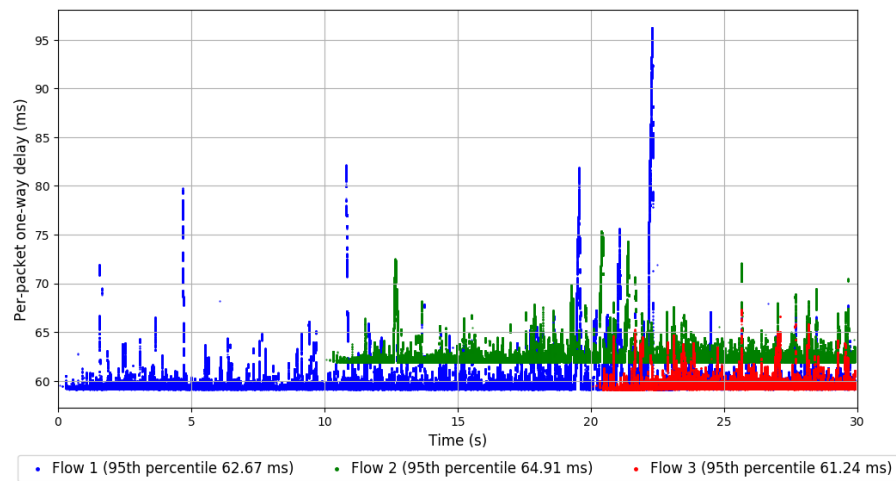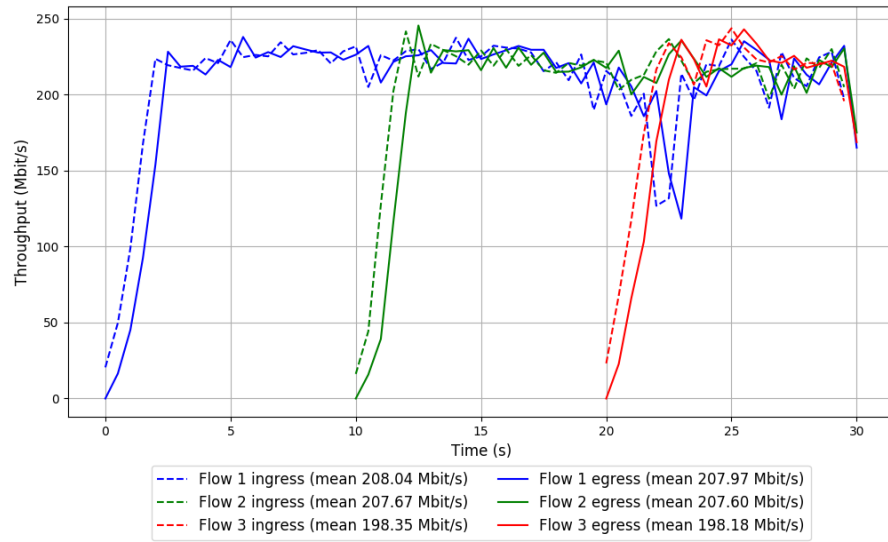
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-07-18 11:49:30
End at: 2019-07-18 11:50:00
Local clock offset: -0.013 ms
Remote clock offset: 0.761 ms


# Below is generated by plot.py at 2019-07-18 15:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 411.23 Mbit/s
95th percentile per-packet one-way delay: 63.679 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 207.97 Mbit/s
95th percentile per-packet one-way delay: 62.667 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 207.60 Mbit/s
95th percentile per-packet one-way delay: 64.914 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 198.18 Mbit/s
95th percentile per-packet one-way delay: 61.244 ms
Loss rate: 1.36%
```
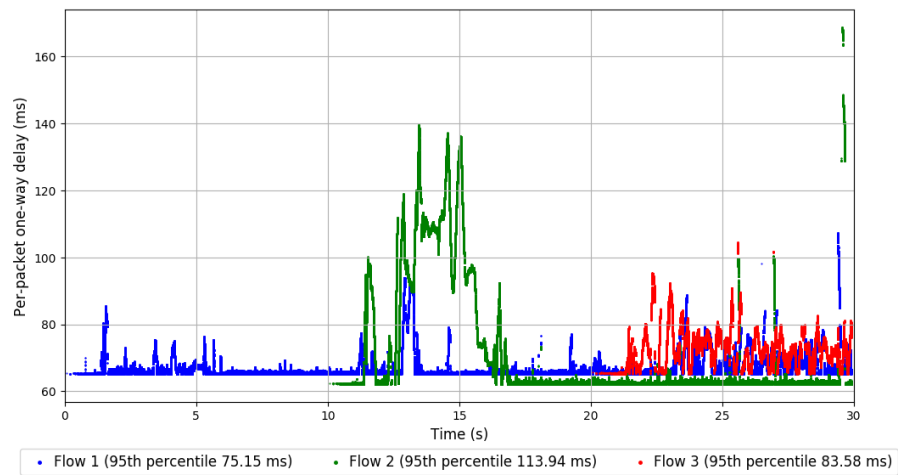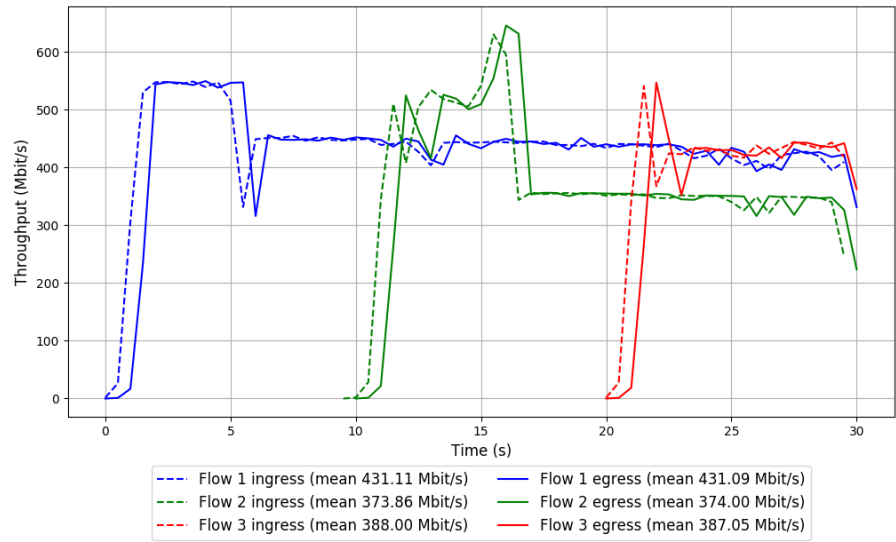
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 208.04 Mbit/s) --- Flow 1 egress (mean 207.97 Mbit/s)
Flow 2 ingress (mean 207.67 Mbit/s) --- Flow 2 egress (mean 207.60 Mbit/s)
Flow 3 ingress (mean 198.35 Mbit/s) --- Flow 3 egress (mean 198.18 Mbit/s)

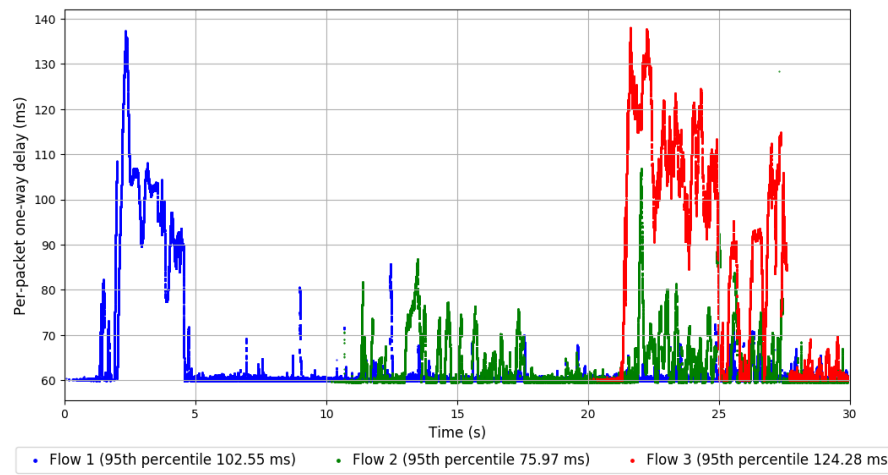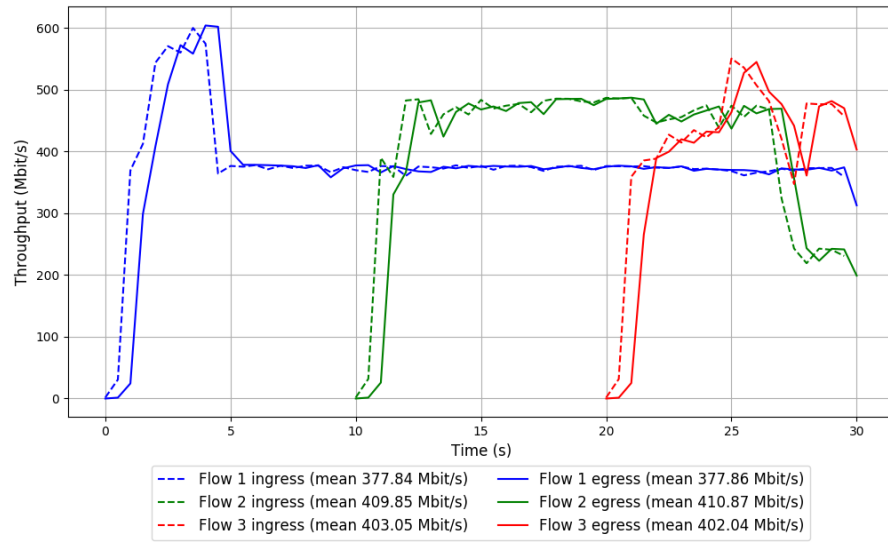Flow 1 (95th percentile 62.67 ms) • Flow 2 (95th percentile 64.91 ms) • Flow 3 (95th percentile 61.24 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2019-07-18 09:33:45
End at: 2019-07-18 09:34:15
Local clock offset: -0.107 ms
Remote clock offset: 0.022 ms


# Below is generated by plot.py at 2019-07-18 15:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 807.45 Mbit/s
95th percentile per-packet one-way delay: 96.674 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 431.09 Mbit/s
95th percentile per-packet one-way delay: 75.151 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 374.00 Mbit/s
95th percentile per-packet one-way delay: 113.941 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 387.05 Mbit/s
95th percentile per-packet one-way delay: 83.577 ms
Loss rate: 1.50%
```

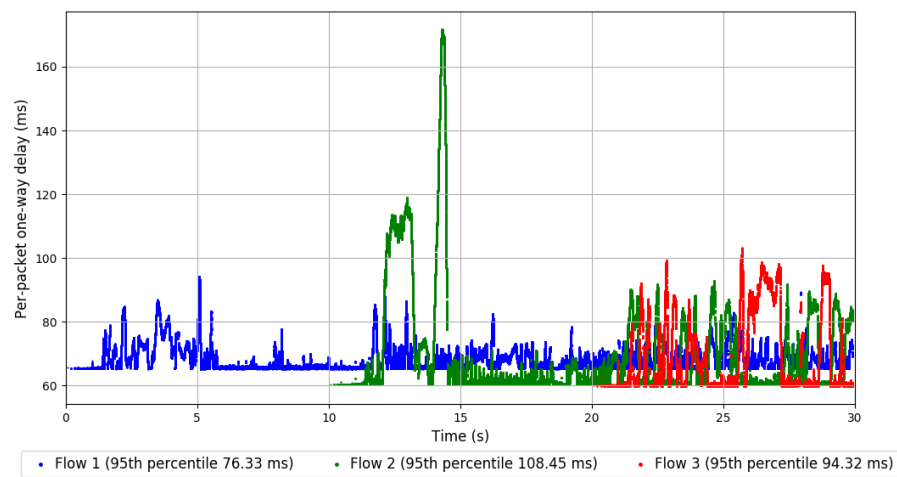Run 1: Report of TCP Vegas — Data Link
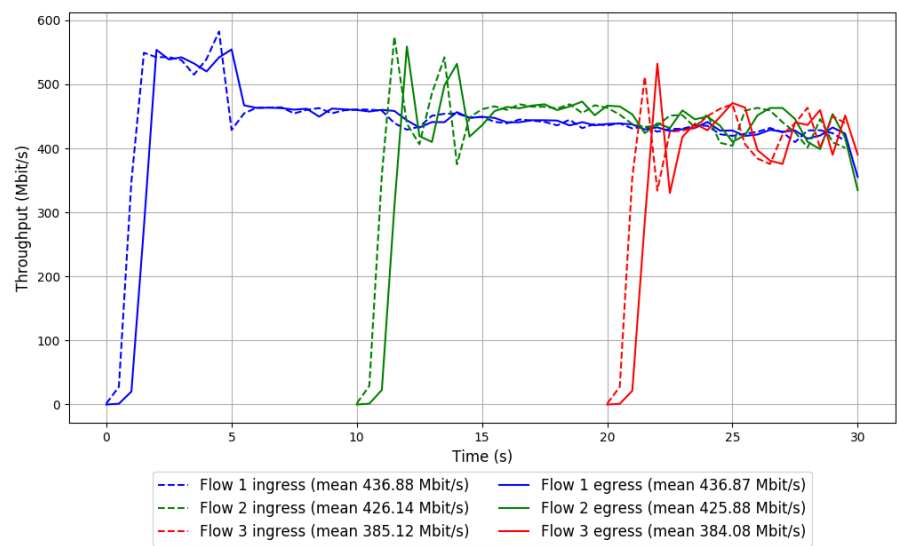

206

```
Run 2: Statistics of TCP Vegas

Start at: 2019-07-18 10:15:00
End at: 2019-07-18 10:15:30
Local clock offset: -0.025 ms
Remote clock offset: -0.006 ms


# Below is generated by plot.py at 2019-07-18 15:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 783.55 Mbit/s
95th percentile per-packet one-way delay: 106.381 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 377.86 Mbit/s
95th percentile per-packet one-way delay: 102.550 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 410.87 Mbit/s
95th percentile per-packet one-way delay: 75.966 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 402.04 Mbit/s
95th percentile per-packet one-way delay: 124.278 ms
Loss rate: 1.46%
```
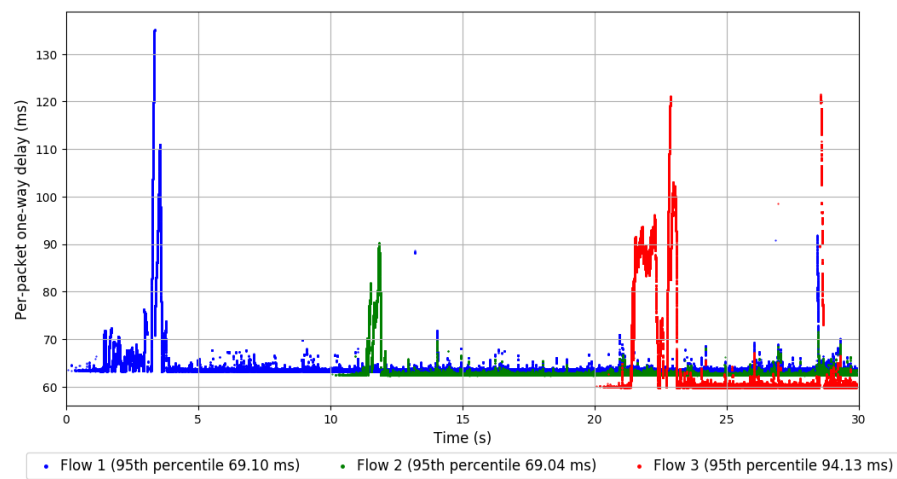
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-07-18 10:56:03
End at: 2019-07-18 10:56:33
Local clock offset: -0.006 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2019-07-18 15:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 846.74 Mbit/s
95th percentile per-packet one-way delay: 88.158 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 436.87 Mbit/s
95th percentile per-packet one-way delay: 76.332 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 425.88 Mbit/s
95th percentile per-packet one-way delay: 108.447 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 384.08 Mbit/s
95th percentile per-packet one-way delay: 94.320 ms
Loss rate: 1.50%
```
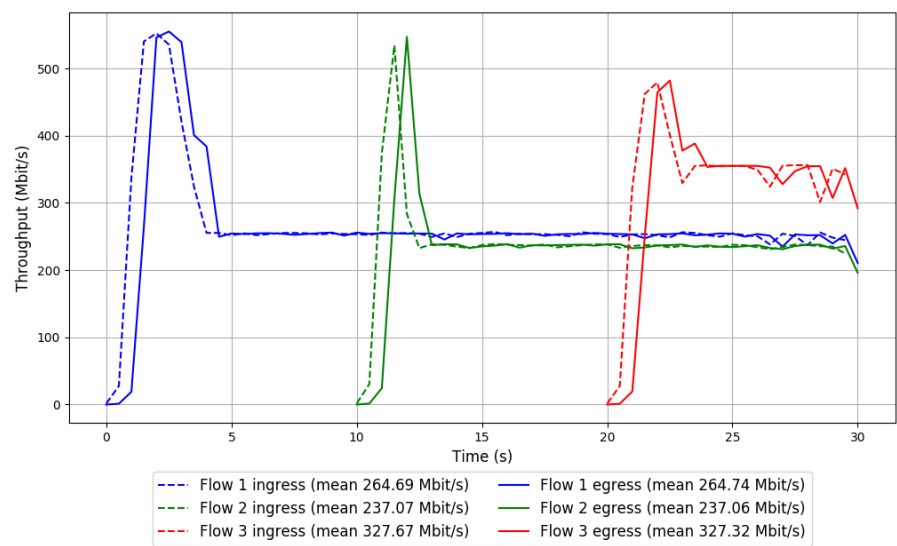
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 436.88 Mbit/s) ——— Flow 1 egress (mean 436.87 Mbit/s)
Flow 2 ingress (mean 426.14 Mbit/s) ——— Flow 2 egress (mean 425.88 Mbit/s)
Flow 3 ingress (mean 385.12 Mbit/s) ——— Flow 3 egress (mean 384.08 Mbit/s)

Flow 1 (95th percentile 76.33 ms)   Flow 2 (95th percentile 108.45 ms)   Flow 3 (95th percentile 94.32 ms)
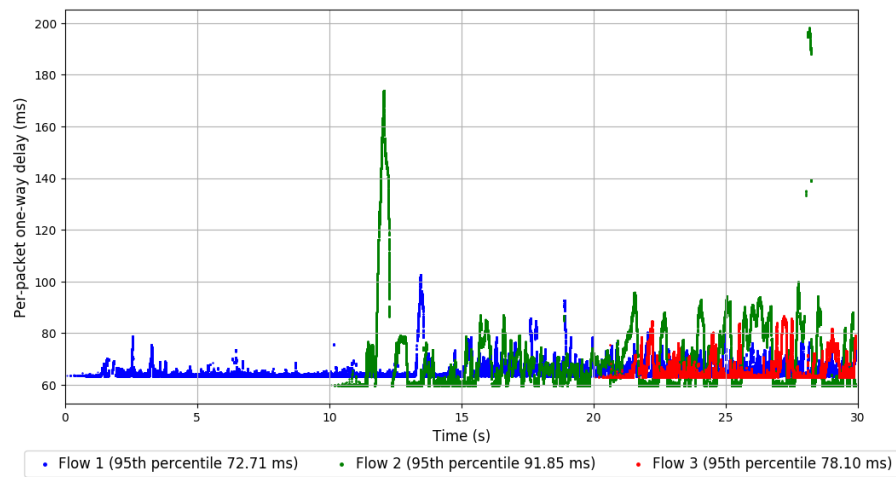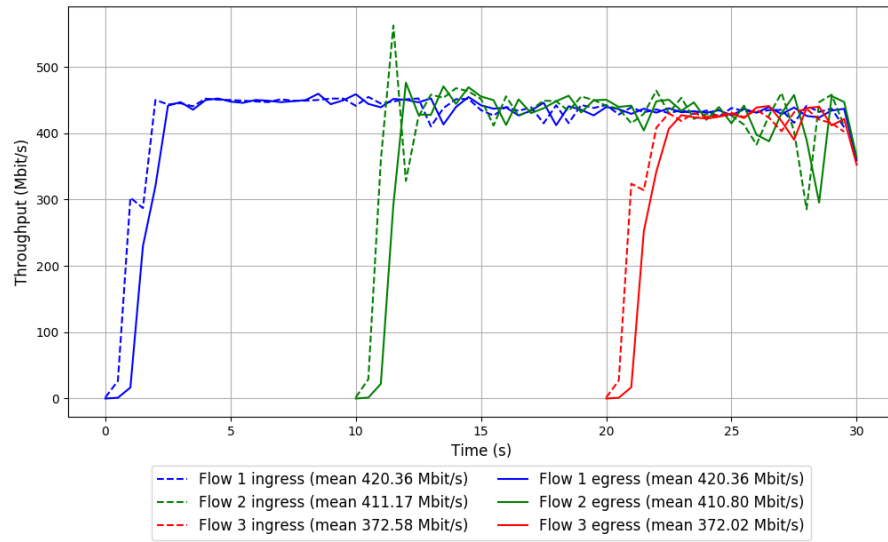
```
Run 4: Statistics of TCP Vegas

Start at: 2019-07-18 11:37:28
End at: 2019-07-18 11:37:58
Local clock offset: -0.009 ms
Remote clock offset: -0.011 ms


# Below is generated by plot.py at 2019-07-18 15:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.36 Mbit/s
95th percentile per-packet one-way delay: 82.608 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 264.74 Mbit/s
95th percentile per-packet one-way delay: 69.098 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 237.06 Mbit/s
95th percentile per-packet one-way delay: 69.043 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 327.32 Mbit/s
95th percentile per-packet one-way delay: 94.131 ms
Loss rate: 1.36%
```
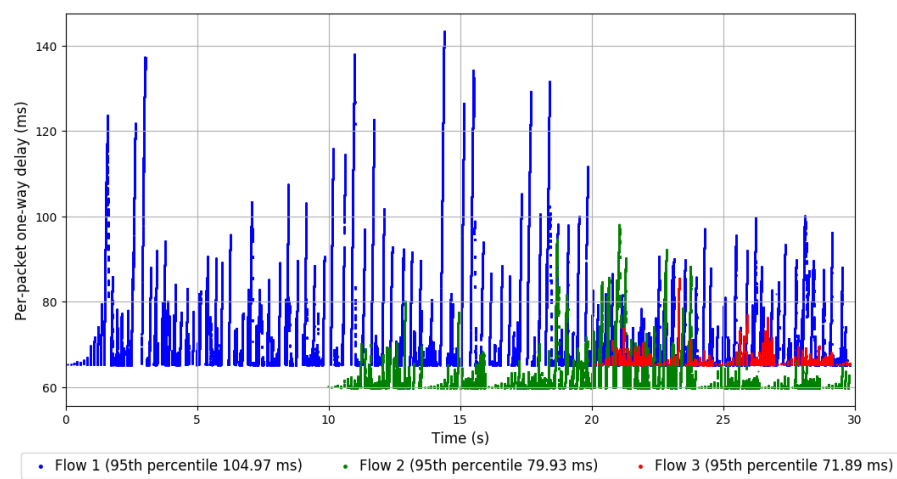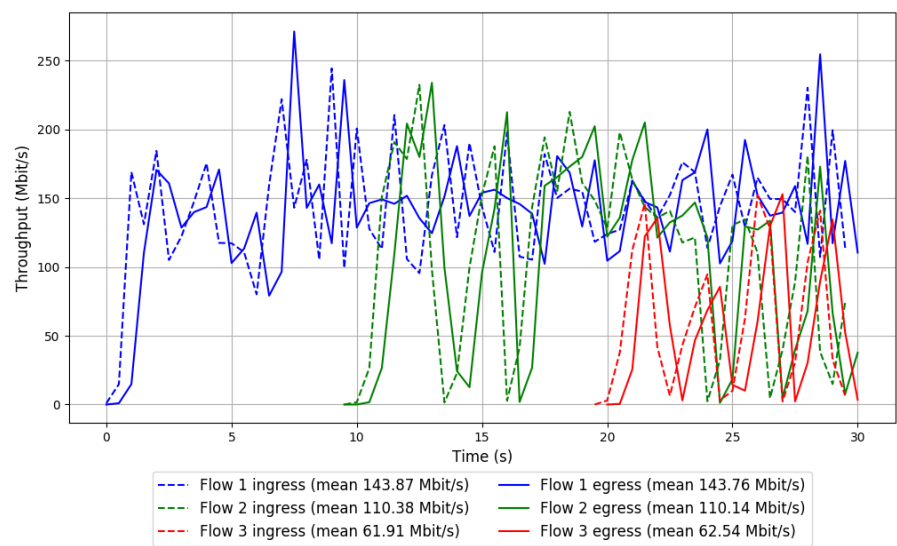
Run 4: Report of TCP Vegas — Data Link

- Flow 1 ingress (mean 264.69 Mbit/s)
- Flow 1 egress (mean 264.74 Mbit/s)
- Flow 2 ingress (mean 237.07 Mbit/s)
- Flow 2 egress (mean 237.06 Mbit/s)
- Flow 3 ingress (mean 327.67 Mbit/s)
- Flow 3 egress (mean 327.32 Mbit/s)

- Flow 1 (95th percentile 69.10 ms)
- Flow 2 (95th percentile 69.04 ms)
- Flow 3 (95th percentile 94.13 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2019-07-18 12:18:22
End at: 2019-07-18 12:18:52
Local clock offset: -0.127 ms
Remote clock offset: -0.027 ms


# Below is generated by plot.py at 2019-07-18 15:36:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 816.19 Mbit/s
95th percentile per-packet one-way delay: 83.695 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 420.36 Mbit/s
95th percentile per-packet one-way delay: 72.707 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 410.80 Mbit/s
95th percentile per-packet one-way delay: 91.848 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 372.02 Mbit/s
95th percentile per-packet one-way delay: 78.102 ms
Loss rate: 1.44%
```

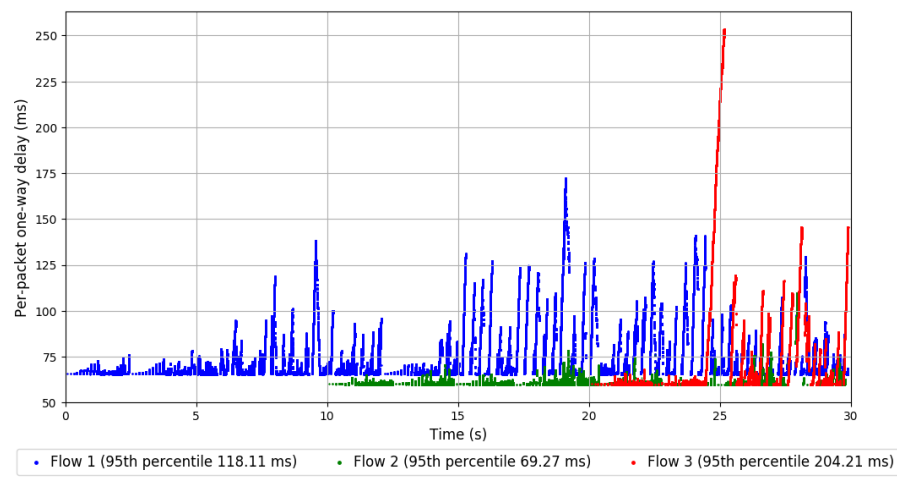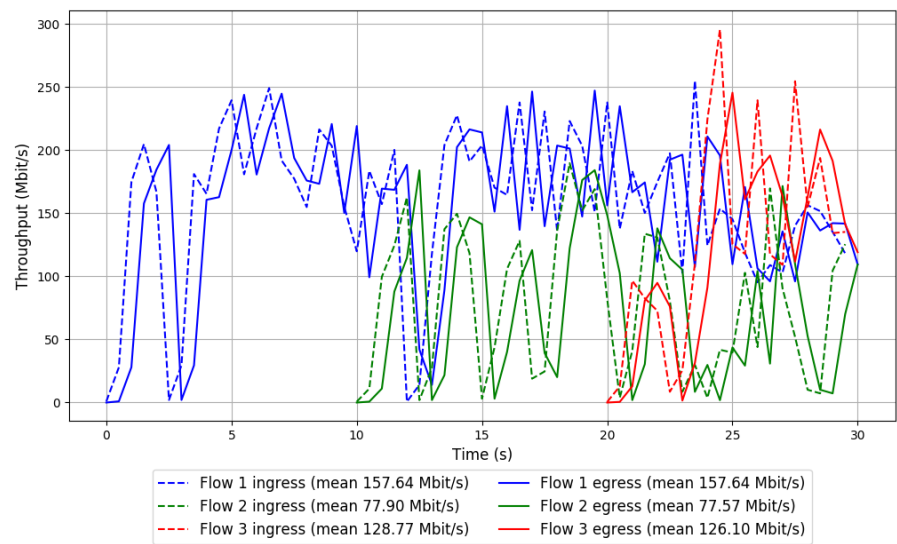Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-07-18 09:14:27
End at: 2019-07-18 09:14:57
Local clock offset: -0.075 ms
Remote clock offset: -0.038 ms


# Below is generated by plot.py at 2019-07-18 15:36:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 237.64 Mbit/s
95th percentile per-packet one-way delay: 96.048 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 143.76 Mbit/s
95th percentile per-packet one-way delay: 104.969 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 110.14 Mbit/s
95th percentile per-packet one-way delay: 79.928 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 62.54 Mbit/s
95th percentile per-packet one-way delay: 71.893 ms
Loss rate: 0.31%
```

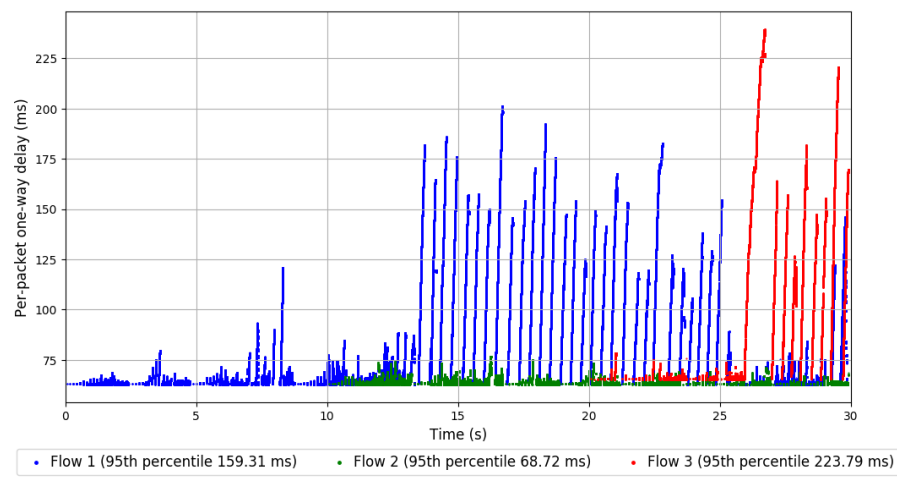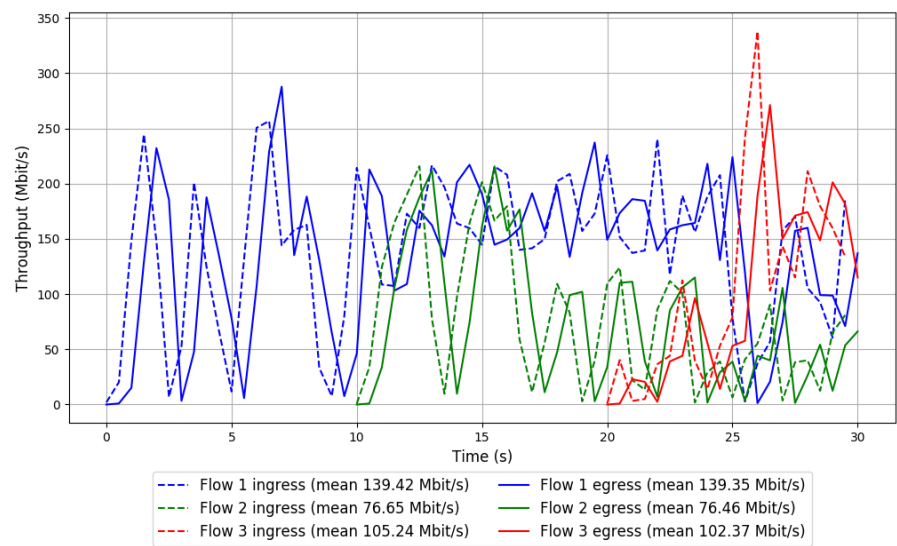Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-07-18 09:55:43
End at: 2019-07-18 09:56:13
Local clock offset: -0.066 ms
Remote clock offset: -0.126 ms


# Below is generated by plot.py at 2019-07-18 15:36:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 250.26 Mbit/s
95th percentile per-packet one-way delay: 120.168 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 157.64 Mbit/s
95th percentile per-packet one-way delay: 118.111 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 77.57 Mbit/s
95th percentile per-packet one-way delay: 69.272 ms
Loss rate: 1.63%
-- Flow 3:
Average throughput: 126.10 Mbit/s
95th percentile per-packet one-way delay: 204.206 ms
Loss rate: 1.67%
```

Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-07-18 10:36:53
End at: 2019-07-18 10:37:23
Local clock offset: -0.026 ms
Remote clock offset: -0.196 ms


# Below is generated by plot.py at 2019-07-18 15:36:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 223.63 Mbit/s
95th percentile per-packet one-way delay: 166.824 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 139.35 Mbit/s
95th percentile per-packet one-way delay: 159.305 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 76.46 Mbit/s
95th percentile per-packet one-way delay: 68.720 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 102.37 Mbit/s
95th percentile per-packet one-way delay: 223.793 ms
Loss rate: 2.17%
```
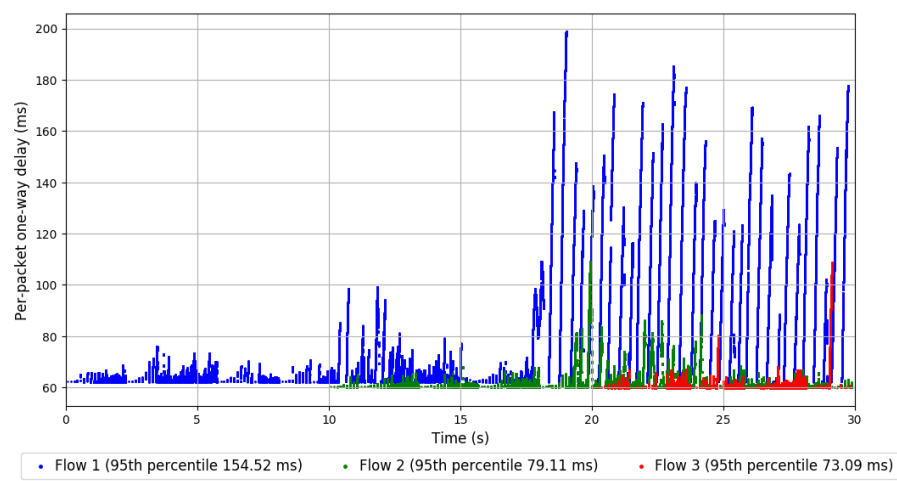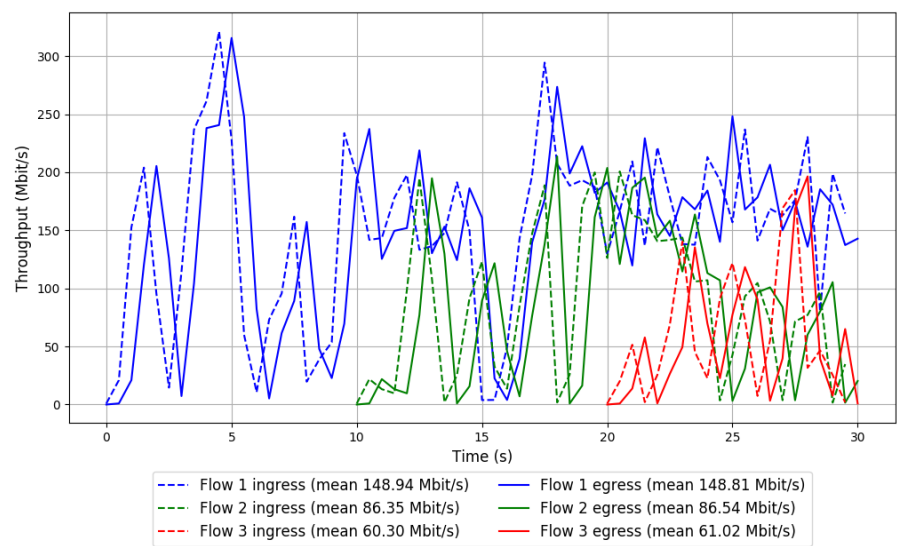
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-07-18 11:18:08
End at: 2019-07-18 11:18:38
Local clock offset: -0.005 ms
Remote clock offset: 0.075 ms


# Below is generated by plot.py at 2019-07-18 15:36:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 225.56 Mbit/s
95th percentile per-packet one-way delay: 145.973 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 148.81 Mbit/s
95th percentile per-packet one-way delay: 154.524 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 86.54 Mbit/s
95th percentile per-packet one-way delay: 79.107 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 61.02 Mbit/s
95th percentile per-packet one-way delay: 73.093 ms
Loss rate: 0.08%
```
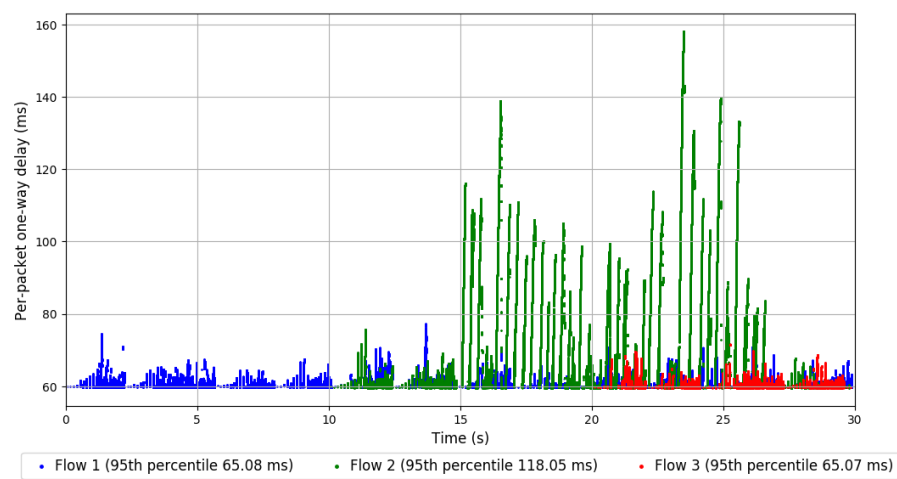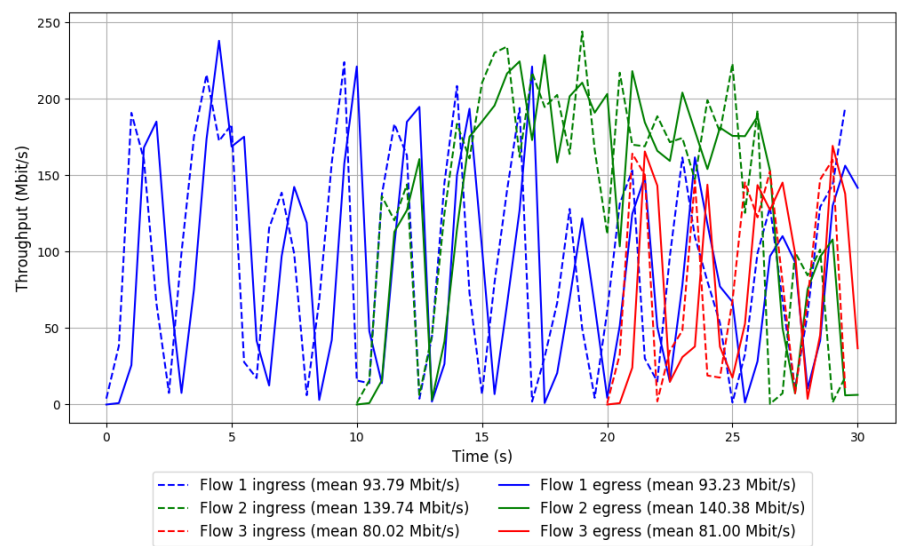
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-07-18 11:59:07
End at: 2019-07-18 11:59:37
Local clock offset: -0.113 ms
Remote clock offset: 0.048 ms


# Below is generated by plot.py at 2019-07-18 15:37:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 212.43 Mbit/s
95th percentile per-packet one-way delay: 103.569 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 93.23 Mbit/s
95th percentile per-packet one-way delay: 65.075 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 140.38 Mbit/s
95th percentile per-packet one-way delay: 118.051 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 81.00 Mbit/s
95th percentile per-packet one-way delay: 65.070 ms
Loss rate: 0.04%
```

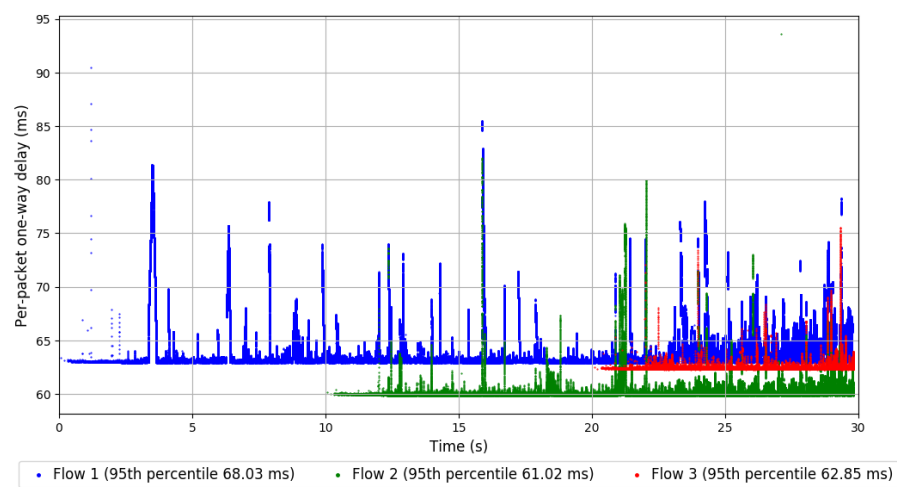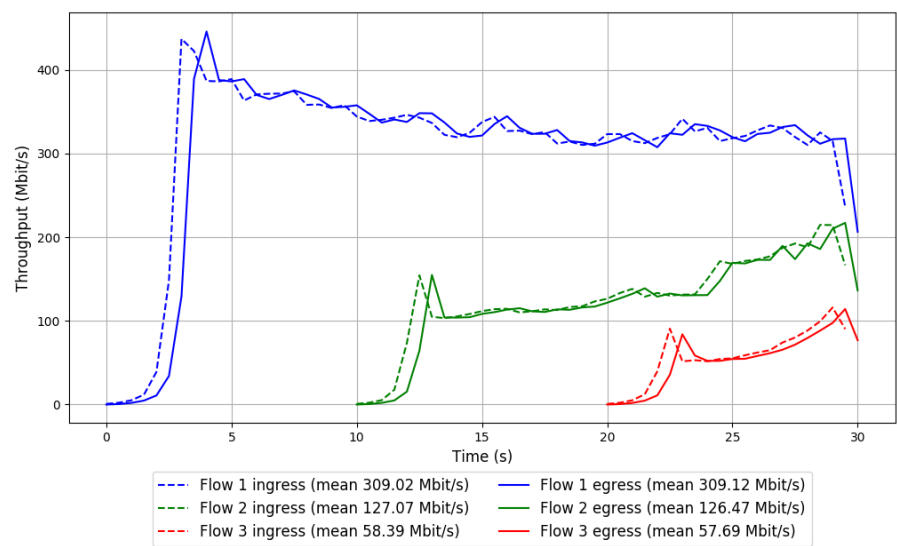Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-07-18 09:35:40
End at: 2019-07-18 09:36:10
Local clock offset: -0.115 ms
Remote clock offset: -0.198 ms


# Below is generated by plot.py at 2019-07-18 15:37:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 411.92 Mbit/s
95th percentile per-packet one-way delay: 67.177 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 309.12 Mbit/s
95th percentile per-packet one-way delay: 68.032 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 126.47 Mbit/s
95th percentile per-packet one-way delay: 61.024 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 57.69 Mbit/s
95th percentile per-packet one-way delay: 62.855 ms
Loss rate: 2.46%
```

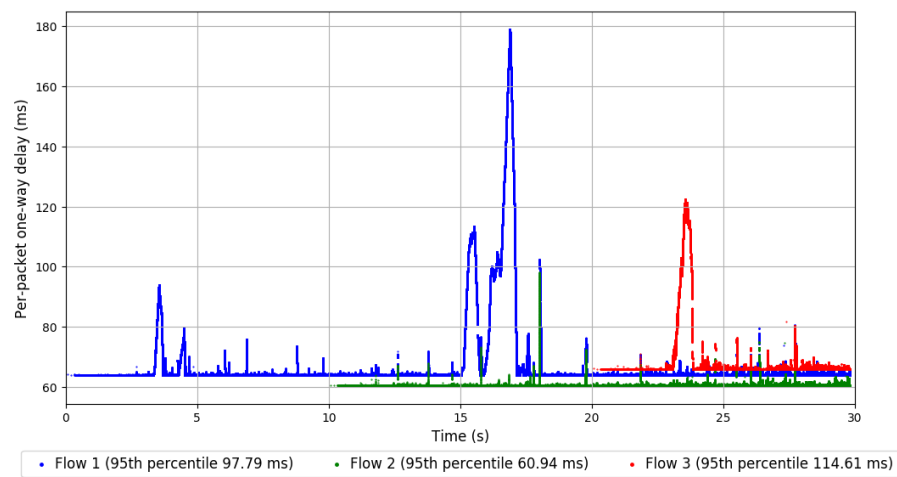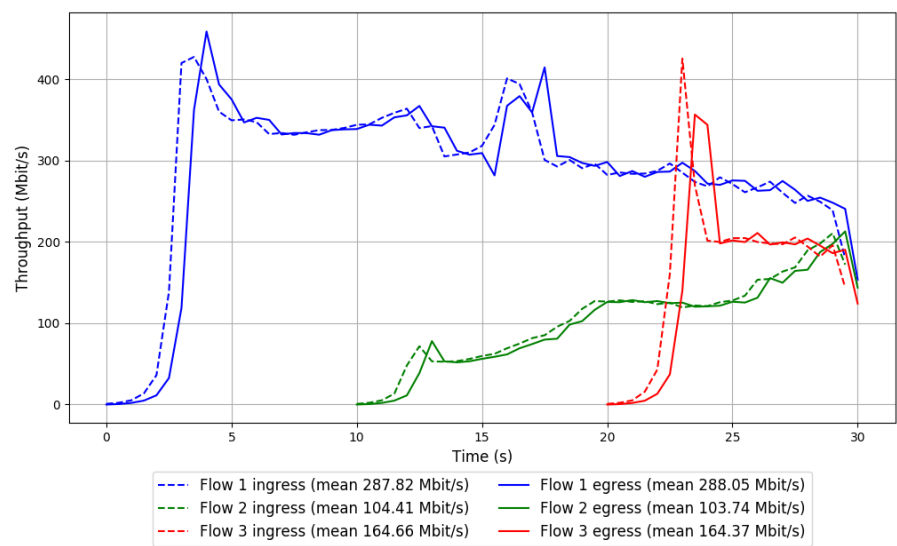Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-07-18 10:16:53
End at: 2019-07-18 10:17:23
Local clock offset: -0.018 ms
Remote clock offset: -0.837 ms


# Below is generated by plot.py at 2019-07-18 15:37:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 410.73 Mbit/s
95th percentile per-packet one-way delay: 97.531 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 288.05 Mbit/s
95th percentile per-packet one-way delay: 97.787 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 103.74 Mbit/s
95th percentile per-packet one-way delay: 60.935 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 164.37 Mbit/s
95th percentile per-packet one-way delay: 114.605 ms
Loss rate: 1.47%
```

Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-07-18 10:57:59
End at: 2019-07-18 10:58:29
Local clock offset: -0.016 ms
Remote clock offset: 0.879 ms


# Below is generated by plot.py at 2019-07-18 15:37:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 423.11 Mbit/s
95th percentile per-packet one-way delay: 62.492 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 221.44 Mbit/s
95th percentile per-packet one-way delay: 61.329 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 229.00 Mbit/s
95th percentile per-packet one-way delay: 62.652 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 152.03 Mbit/s
95th percentile per-packet one-way delay: 69.522 ms
Loss rate: 1.55%
```
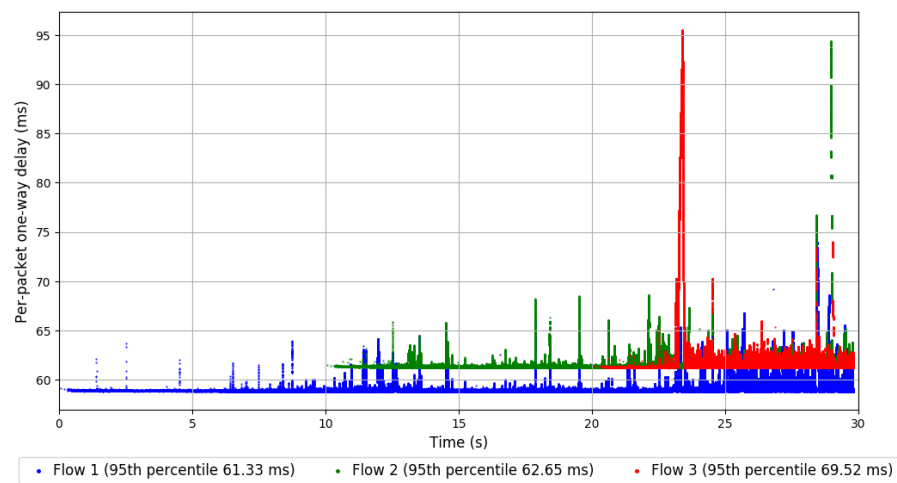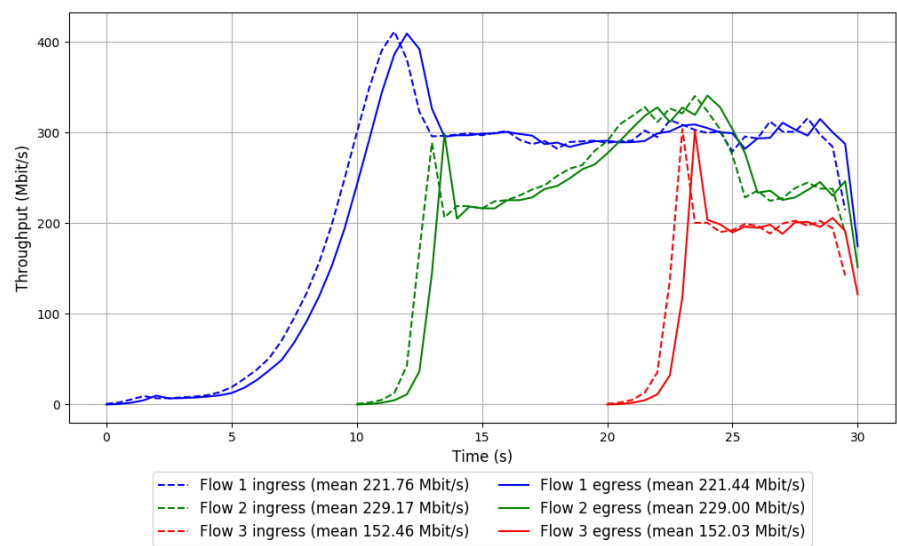
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-07-18 11:39:09
End at: 2019-07-18 11:39:39
Local clock offset: -0.004 ms
Remote clock offset: 0.097 ms


# Below is generated by plot.py at 2019-07-18 15:38:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 471.89 Mbit/s
95th percentile per-packet one-way delay: 65.406 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 278.19 Mbit/s
95th percentile per-packet one-way delay: 61.875 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 251.92 Mbit/s
95th percentile per-packet one-way delay: 69.960 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 81.24 Mbit/s
95th percentile per-packet one-way delay: 66.047 ms
Loss rate: 1.49%
```
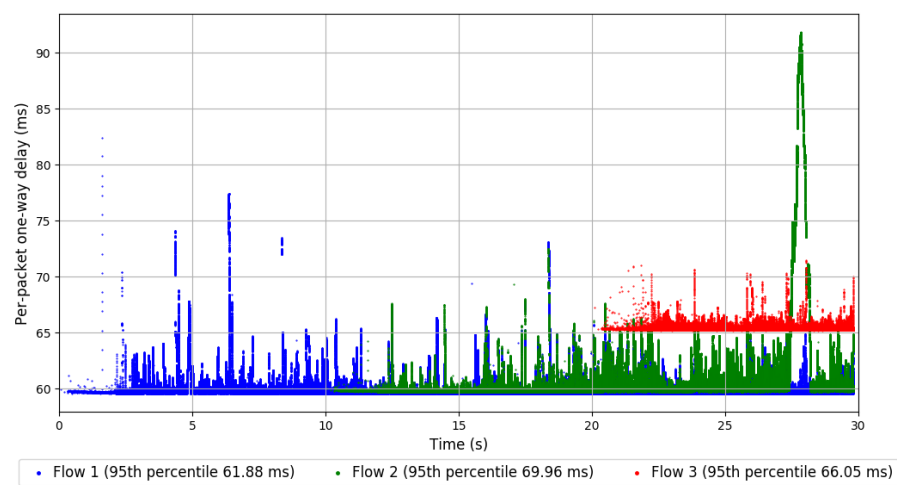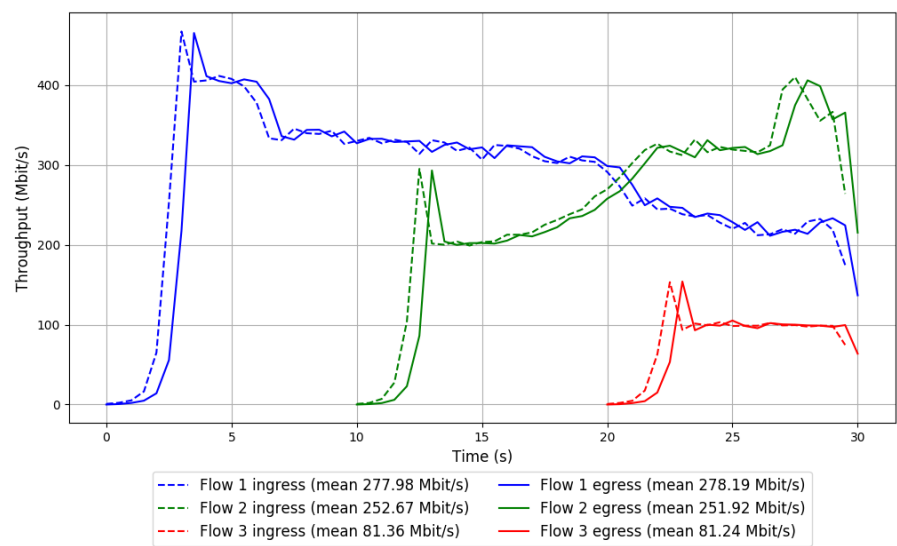
Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 277.98 Mbit/s) — Flow 1 egress (mean 278.19 Mbit/s)
Flow 2 ingress (mean 252.67 Mbit/s) — Flow 2 egress (mean 251.92 Mbit/s)
Flow 3 ingress (mean 81.36 Mbit/s) — Flow 3 egress (mean 81.24 Mbit/s)

Flow 1 (95th percentile 61.88 ms) · Flow 2 (95th percentile 69.96 ms) · Flow 3 (95th percentile 66.05 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-07-18 12:20:17
End at: 2019-07-18 12:20:47
Local clock offset: -0.083 ms
Remote clock offset: 0.012 ms


# Below is generated by plot.py at 2019-07-18 15:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 471.37 Mbit/s
95th percentile per-packet one-way delay: 70.505 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 315.77 Mbit/s
95th percentile per-packet one-way delay: 72.575 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 160.90 Mbit/s
95th percentile per-packet one-way delay: 65.221 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 149.32 Mbit/s
95th percentile per-packet one-way delay: 64.395 ms
Loss rate: 1.70%
```
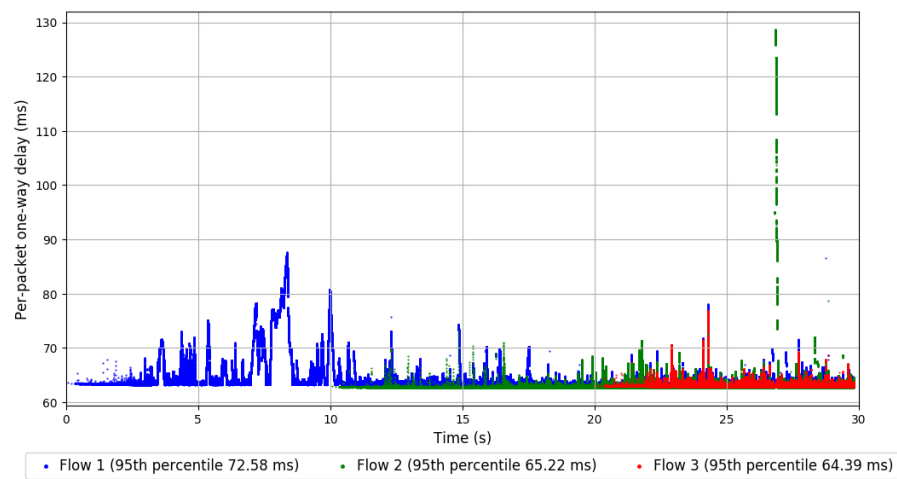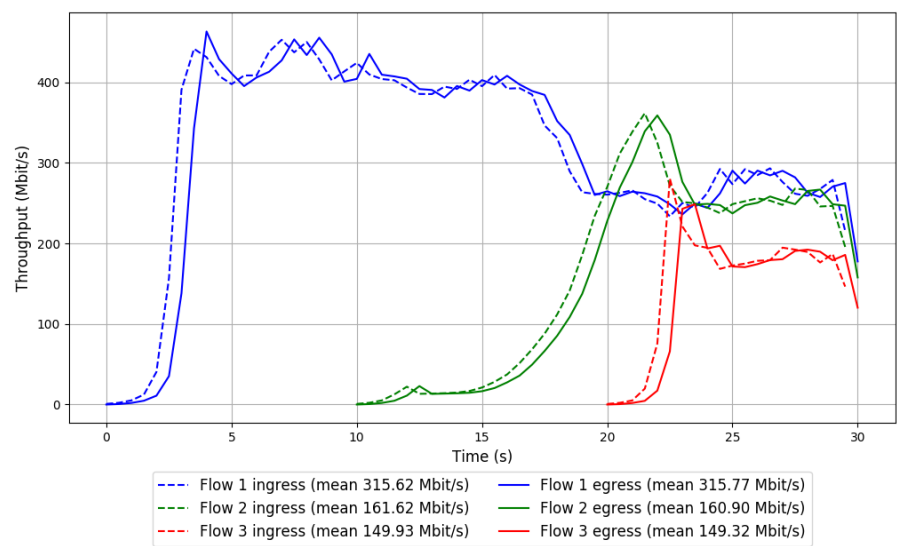
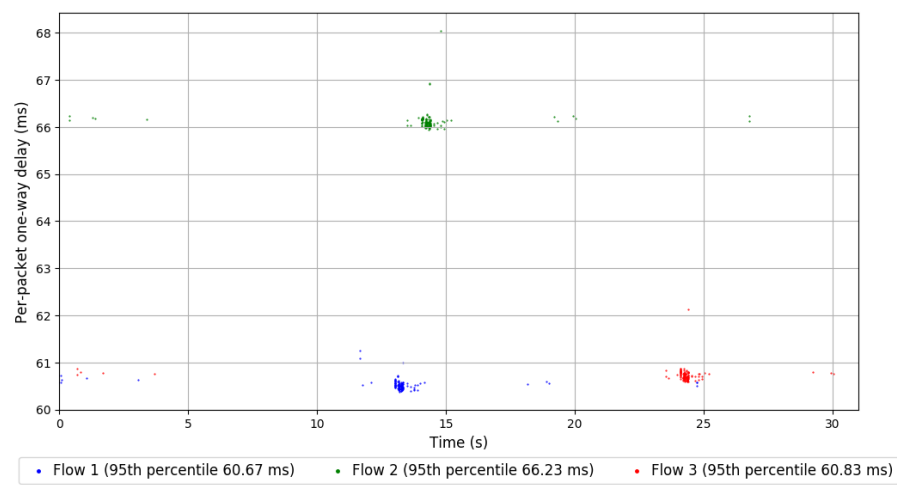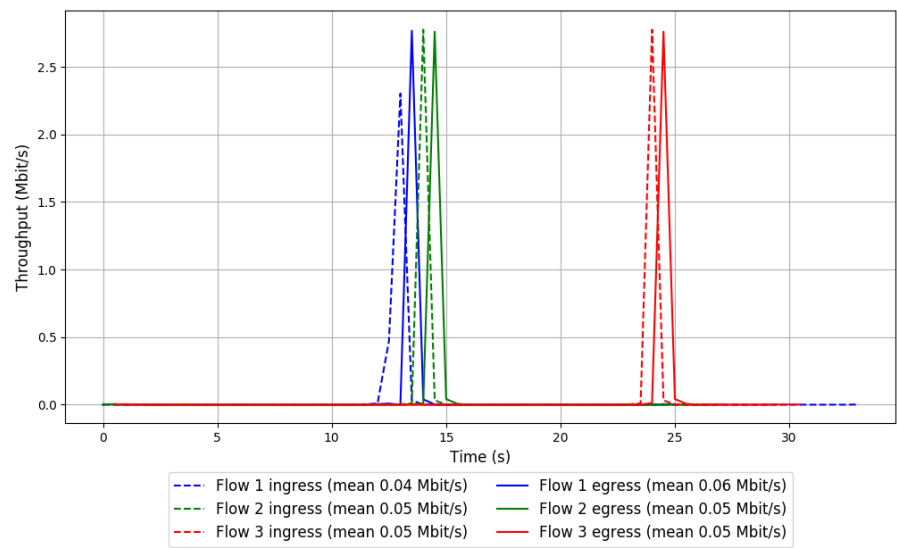Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-07-18 09:22:10
End at: 2019-07-18 09:22:40
Local clock offset: -0.094 ms
Remote clock offset: -0.722 ms


# Below is generated by plot.py at 2019-07-18 15:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 66.170 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 60.675 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 66.230 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.829 ms
Loss rate: 0.00%
```

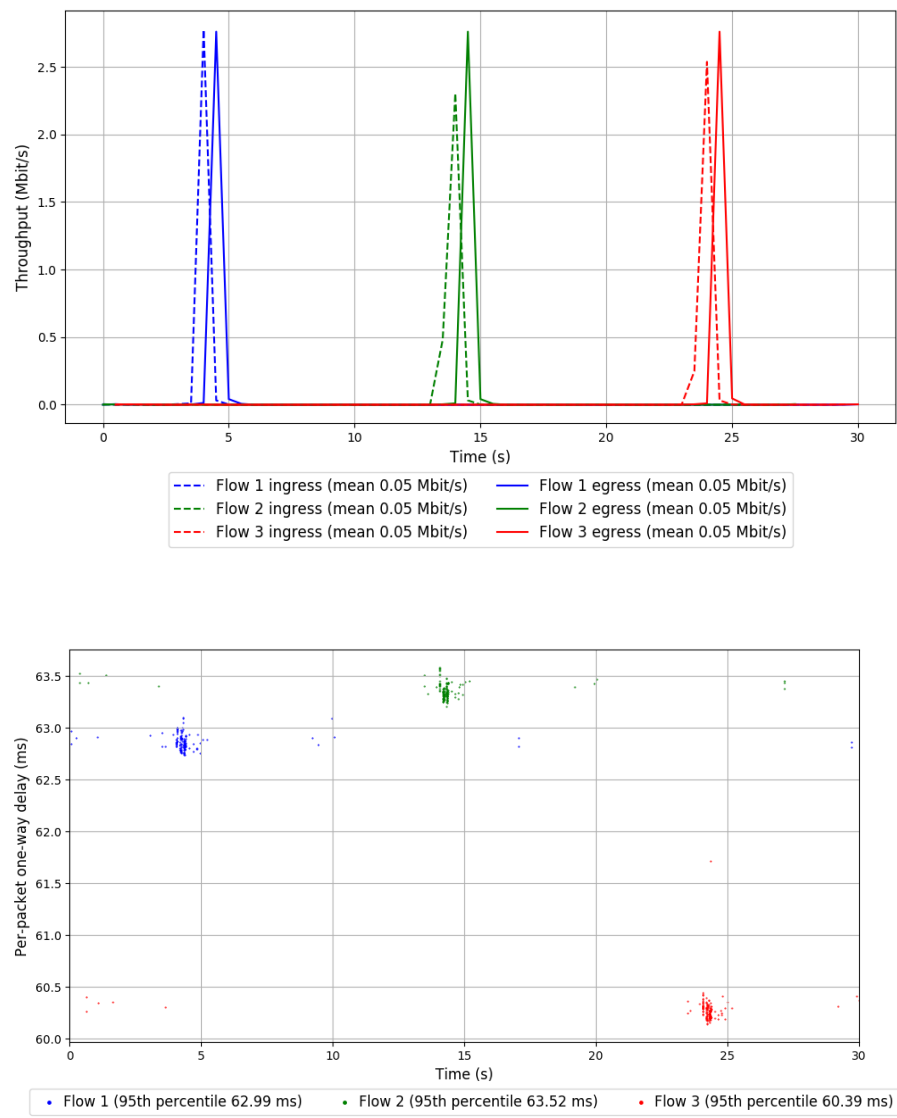Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-07-18 10:03:27
End at: 2019-07-18 10:03:57
Local clock offset: -0.039 ms
Remote clock offset: -0.116 ms


# Below is generated by plot.py at 2019-07-18 15:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 63.435 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 62.988 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.519 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.392 ms
Loss rate: 0.00%
```

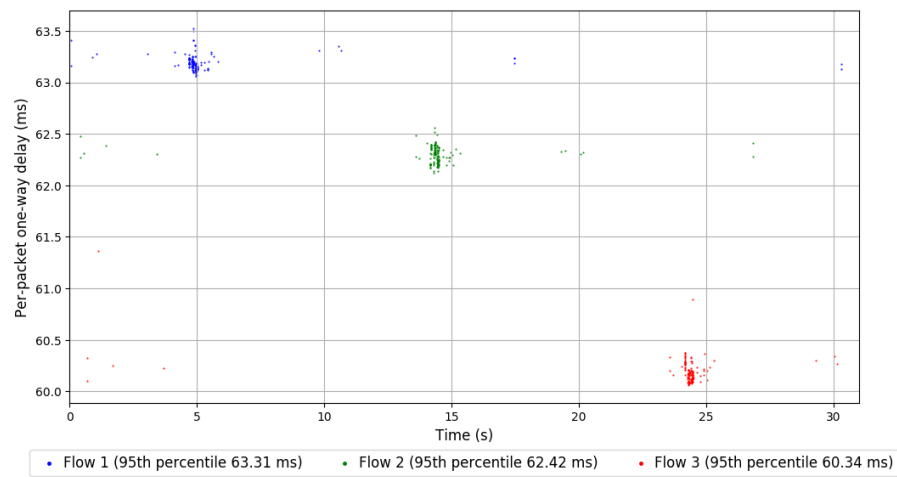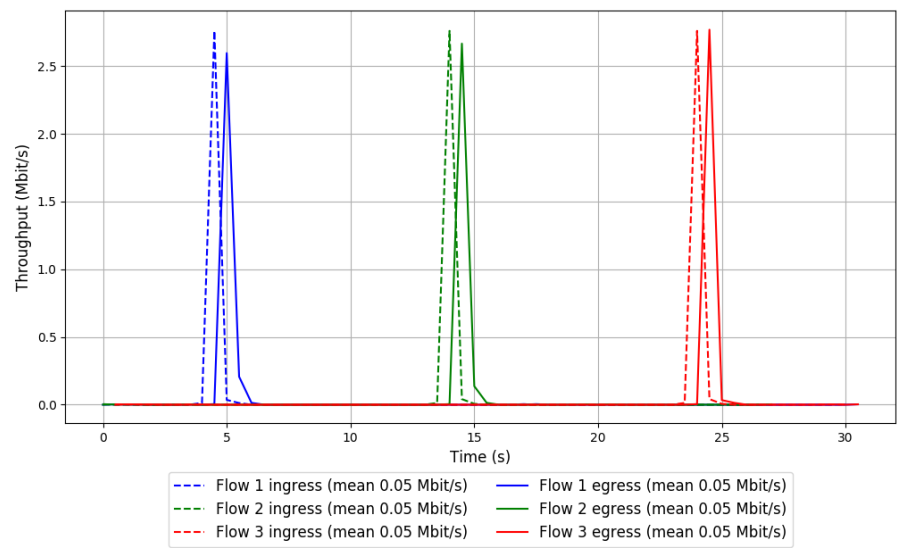Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-07-18 10:44:35
End at: 2019-07-18 10:45:05
Local clock offset: -0.028 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2019-07-18 15:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 63.249 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.314 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 62.419 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.344 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-07-18 11:25:50
End at: 2019-07-18 11:26:20
Local clock offset: -0.022 ms
Remote clock offset: 0.655 ms


# Below is generated by plot.py at 2019-07-18 15:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 62.518 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 59.368 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 59.744 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 62.549 ms
Loss rate: 0.00%
```
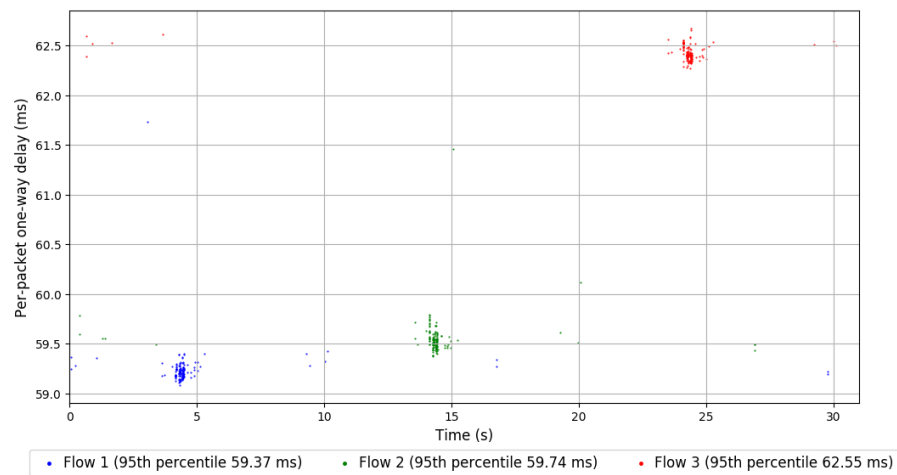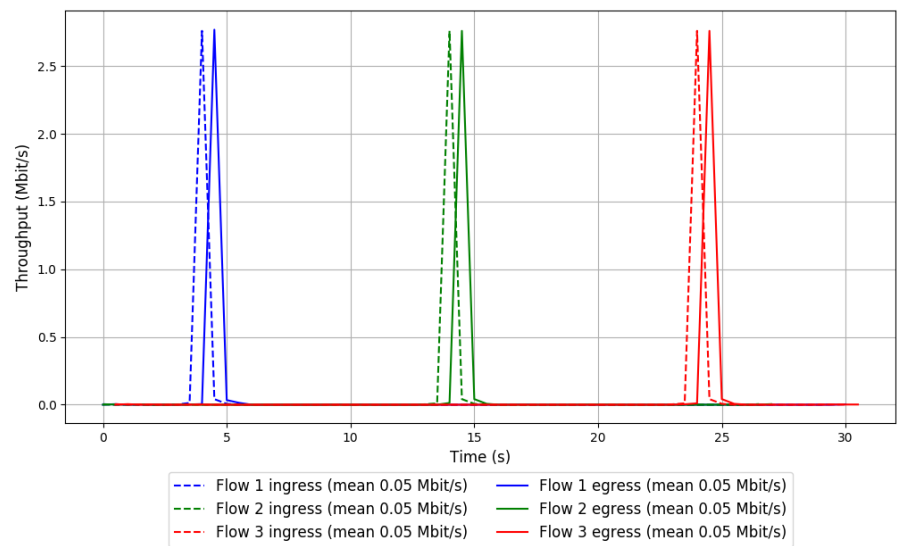
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-07-18 12:06:50
End at: 2019-07-18 12:07:20
Local clock offset: -0.061 ms
Remote clock offset: -0.256 ms


# Below is generated by plot.py at 2019-07-18 15:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 65.912 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.476 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 65.957 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 62.694 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link