Pantheon Report

Generated at 2019-08-27 14:00:17 (UTC).

Data path: Brazil on `p4p1` (*remote*) →AWS Brazil 1 on `ens5` (*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 `gps.ntp.br` and have been applied to correct the timestamps in logs.
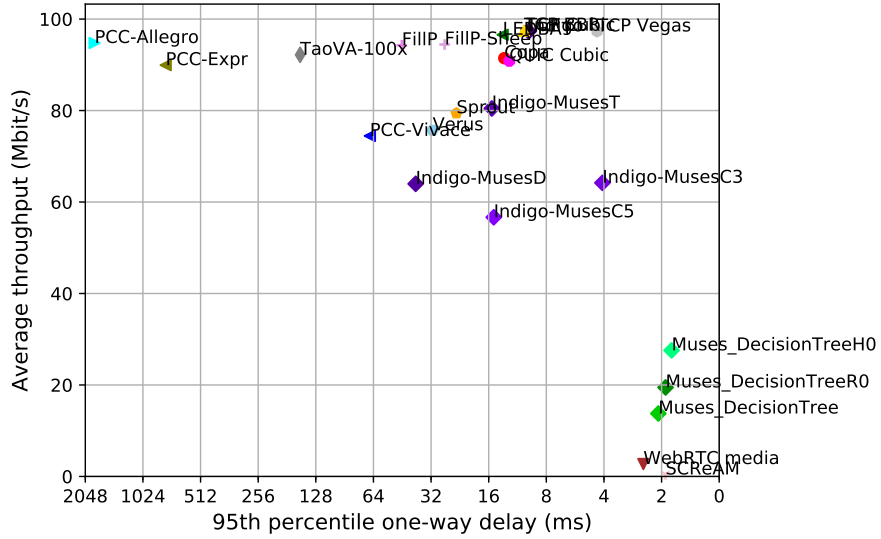
```
System info:
Linux 4.15.0-1043-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 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
```
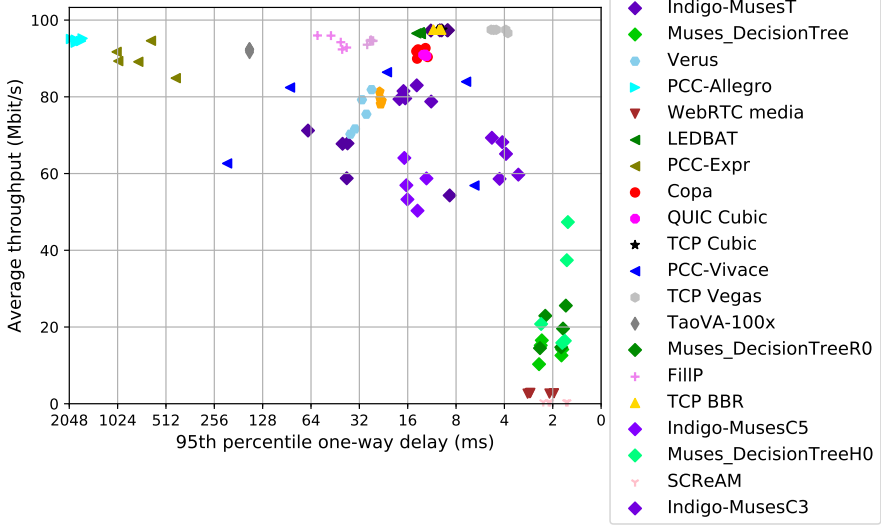
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

test from Brazil to AWS Brazil 1, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

3

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	59.24	40.96	32.99	10.43	10.37	10.51	0.53	0.74	0.95
Copa	5	54.47	39.86	31.38	12.40	13.04	15.50	0.04	0.10	0.12
TCP Cubic	5	59.58	40.65	32.49	10.33	10.07	10.23	0.08	0.15	0.24
FillP	5	56.96	41.69	28.77	31.98	45.67	49.81	0.15	1.28	1.68
FillP-Sheep	5	57.12	39.35	33.56	23.51	26.83	39.48	0.06	0.06	0.17
Indigo	5	59.72	40.61	32.34	9.40	10.23	8.50	0.03	0.39	0.10
Indigo-MusesC3	5	45.00	23.26	18.45	3.78	4.23	4.93	0.01	0.04	0.12
Indigo-MusesC5	5	30.46	28.65	32.10	11.79	15.43	18.10	0.03	0.06	0.20
Indigo-MusesD	5	38.88	22.85	42.50	9.25	10.37	48.24	0.04	0.07	2.29
Indigo-MusesT	5	51.10	37.17	24.77	14.09	16.15	16.25	0.02	0.07	0.22
LEDBAT	5	59.15	39.97	32.48	13.10	13.89	13.42	0.13	0.23	0.37
Muses_DecisionTree	5	7.39	6.48	6.44	2.08	2.05	2.17	0.01	0.02	0.02
Muses_DecisionTreeH0	5	19.78	8.80	6.18	1.63	1.69	1.74	0.01	0.02	0.02
Muses_DecisionTreeR0	5	12.76	6.73	7.04	1.83	1.87	1.93	0.01	0.01	0.03
PCC-Allegro	5	62.01	35.46	27.89	1966.77	929.50	41.18	15.51	8.47	0.32
PCC-Expr	5	55.18	38.06	28.57	540.15	636.43	102.39	18.53	8.26	0.22
QUIC Cubic	5	53.90	40.07	31.09	12.46	12.25	12.84	0.17	0.29	0.46
SCReAM	5	0.22	0.22	0.22	1.86	1.85	1.84	0.00	0.00	0.14
Sprout	5	43.01	38.76	32.19	22.30	23.56	24.88	0.10	0.13	0.34
TaoVA-100x	5	55.21	39.61	31.81	154.05	154.87	154.58	0.52	1.05	2.72
TCP Vegas	5	51.71	48.87	39.19	3.42	3.97	4.70	0.01	0.02	0.05
Verus	5	41.45	35.62	31.70	27.22	27.28	121.65	0.02	0.06	0.19
PCC-Vivace	5	42.66	34.94	25.91	17.69	77.15	66.51	0.15	0.20	1.00
WebRTC media	5	1.50	0.84	0.39	2.45	2.45	2.72	0.00	0.13	0.08

```
Run 1: Statistics of TCP BBR

Start at: 2019-08-27 11:26:08
End at: 2019-08-27 11:26:38
Local clock offset: -0.306 ms
Remote clock offset: -0.621 ms


# Below is generated by plot.py at 2019-08-27 13:46:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 10.215 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 10.316 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 40.96 Mbit/s
95th percentile per-packet one-way delay: 9.818 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 32.98 Mbit/s
95th percentile per-packet one-way delay: 9.720 ms
Loss rate: 0.70%
```
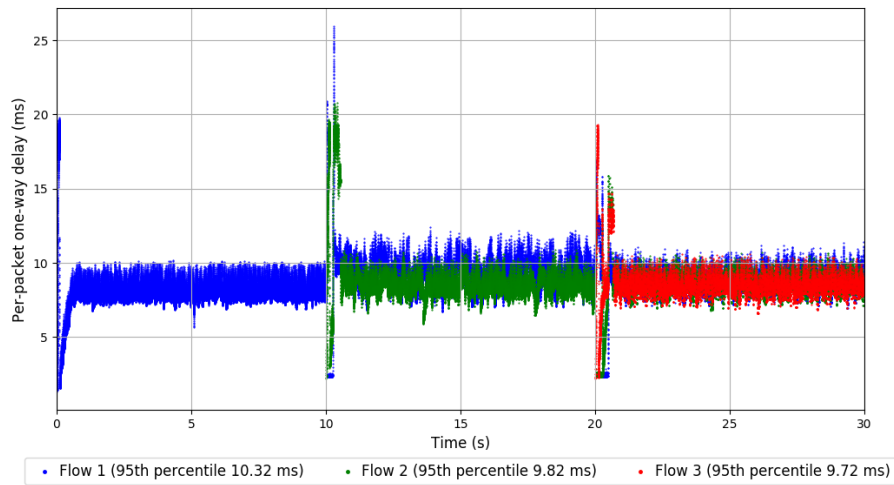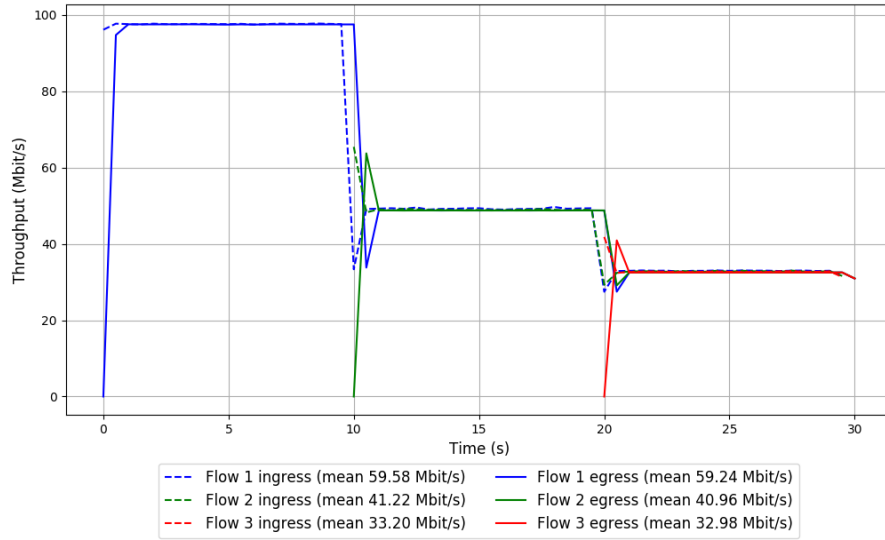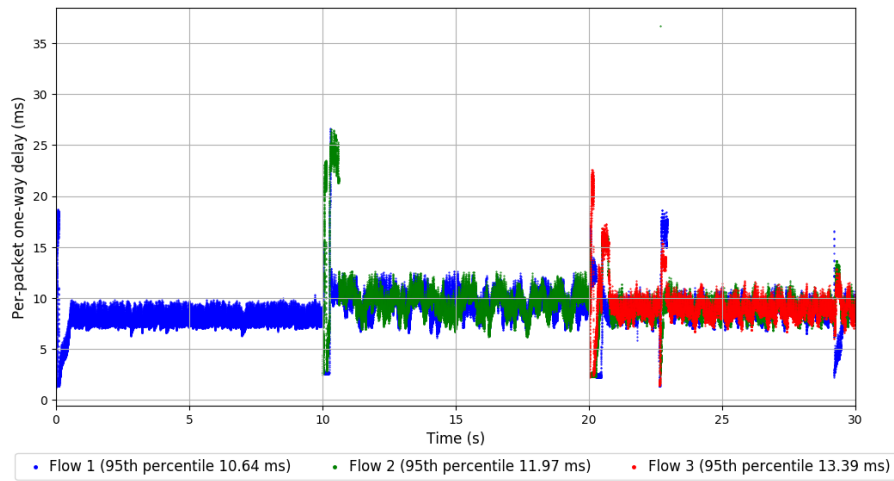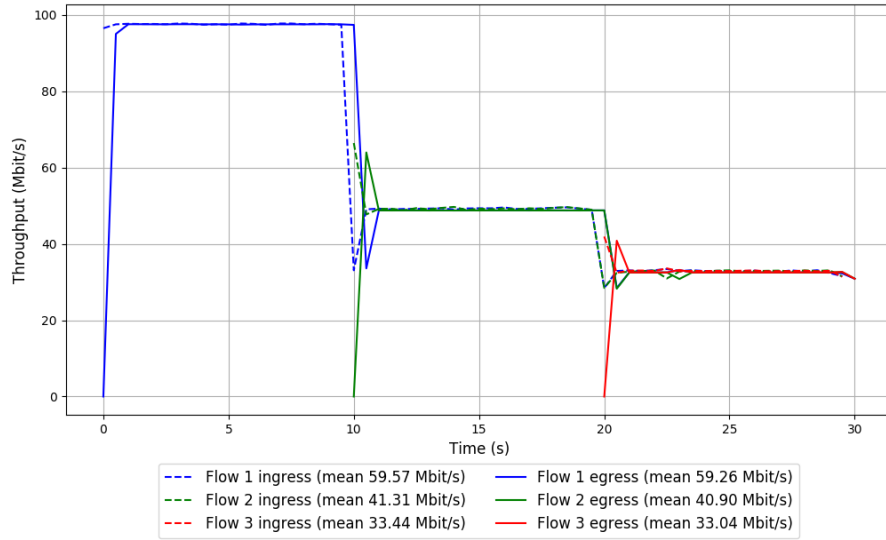
Run 1: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 59.58 Mbit/s) —— Flow 1 egress (mean 59.24 Mbit/s)
- - - Flow 2 ingress (mean 41.22 Mbit/s) —— Flow 2 egress (mean 40.96 Mbit/s)
- - - Flow 3 ingress (mean 33.20 Mbit/s) —— Flow 3 egress (mean 32.98 Mbit/s)

• Flow 1 (95th percentile 10.32 ms)   • Flow 2 (95th percentile 9.82 ms)   • Flow 3 (95th percentile 9.72 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2019-08-27 11:53:39
End at: 2019-08-27 11:54:09
Local clock offset: -0.228 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2019-08-27 13:46:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 11.087 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 59.26 Mbit/s
95th percentile per-packet one-way delay: 10.641 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 40.90 Mbit/s
95th percentile per-packet one-way delay: 11.968 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 33.04 Mbit/s
95th percentile per-packet one-way delay: 13.394 ms
Loss rate: 1.25%
```
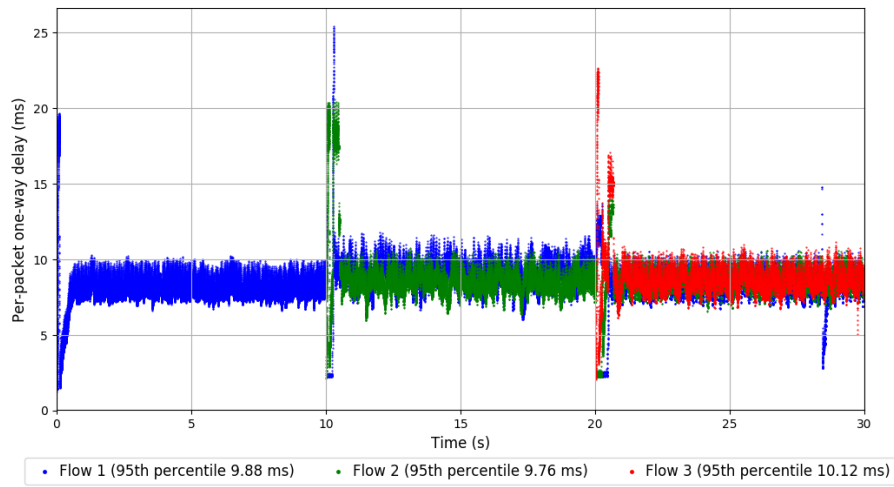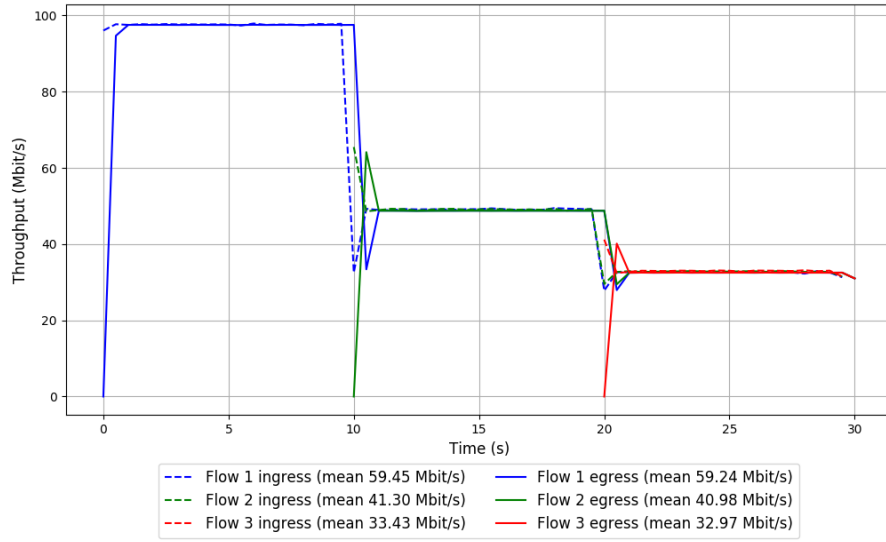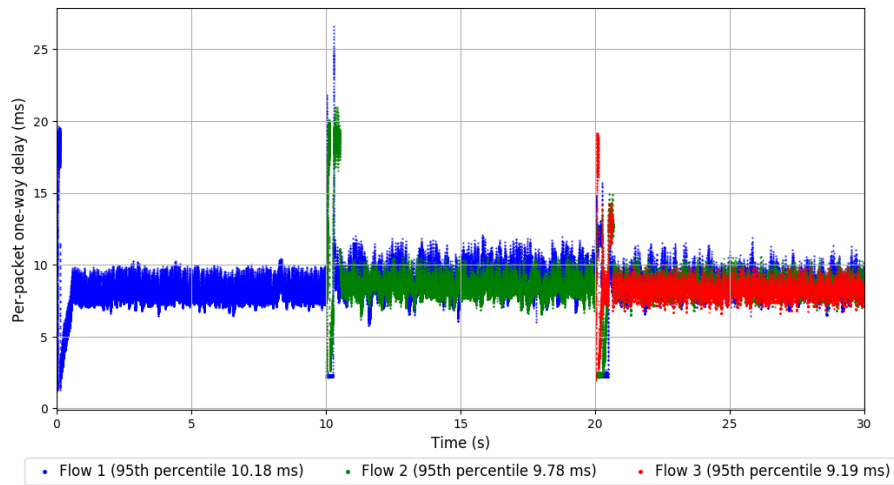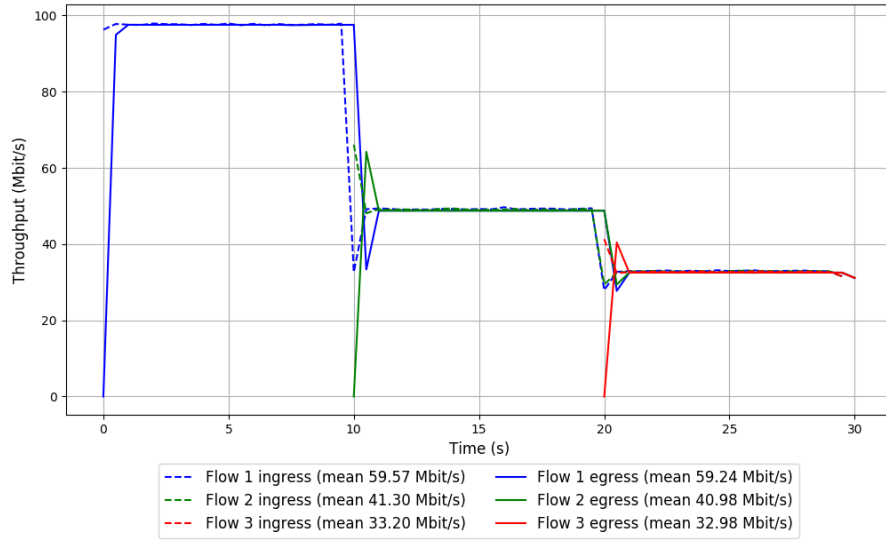
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.57 Mbit/s) — — Flow 1 egress (mean 59.26 Mbit/s)
Flow 2 ingress (mean 41.31 Mbit/s) — — Flow 2 egress (mean 40.90 Mbit/s)
Flow 3 ingress (mean 33.44 Mbit/s) — — Flow 3 egress (mean 33.04 Mbit/s)

• Flow 1 (95th percentile 10.64 ms)   • Flow 2 (95th percentile 11.97 ms)   • Flow 3 (95th percentile 13.39 ms)

8

```
Run 3: Statistics of TCP BBR

Start at: 2019-08-27 12:21:09
End at: 2019-08-27 12:21:39
Local clock offset: -0.14 ms
Remote clock offset: 0.382 ms


# Below is generated by plot.py at 2019-08-27 13:46:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 9.887 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 9.885 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 40.98 Mbit/s
95th percentile per-packet one-way delay: 9.763 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 32.97 Mbit/s
95th percentile per-packet one-way delay: 10.118 ms
Loss rate: 1.42%
```
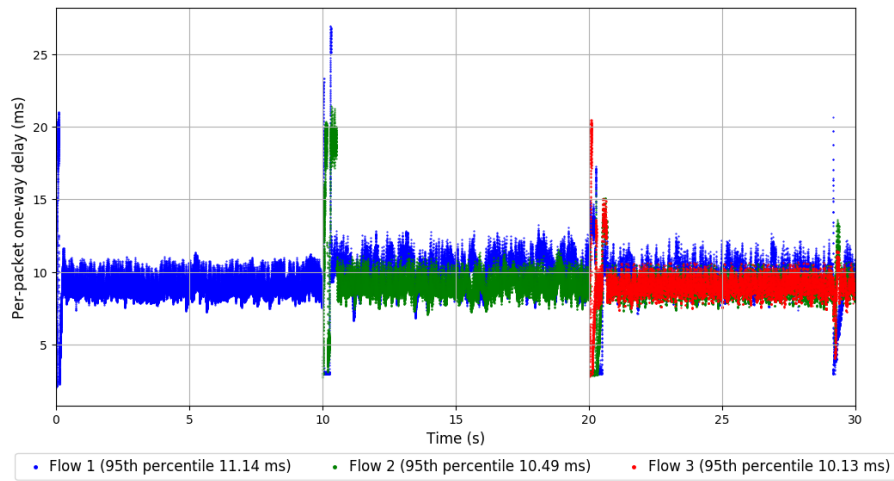
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2019-08-27 12:48:40
End at: 2019-08-27 12:49:10
Local clock offset: -0.211 ms
Remote clock offset: 0.62 ms


# Below is generated by plot.py at 2019-08-27 13:46:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 10.073 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 10.177 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 40.98 Mbit/s
95th percentile per-packet one-way delay: 9.783 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 32.98 Mbit/s
95th percentile per-packet one-way delay: 9.191 ms
Loss rate: 0.72%
```
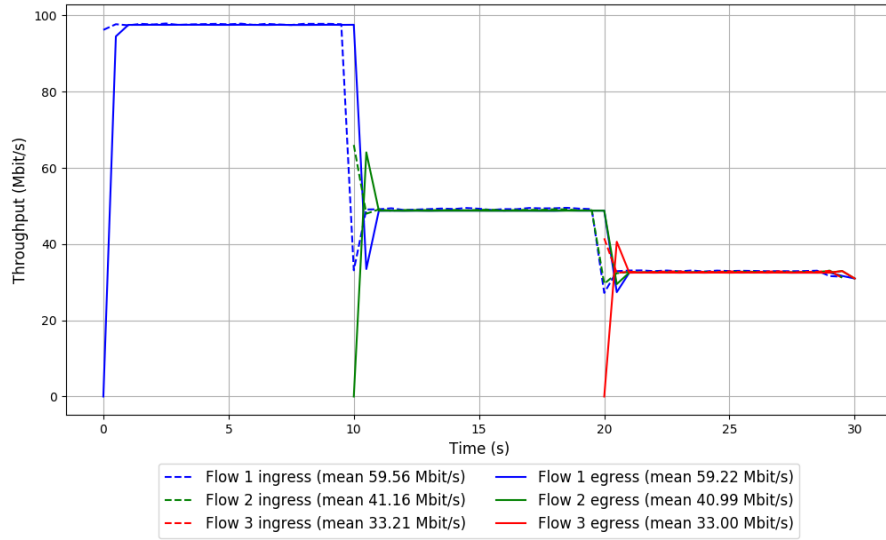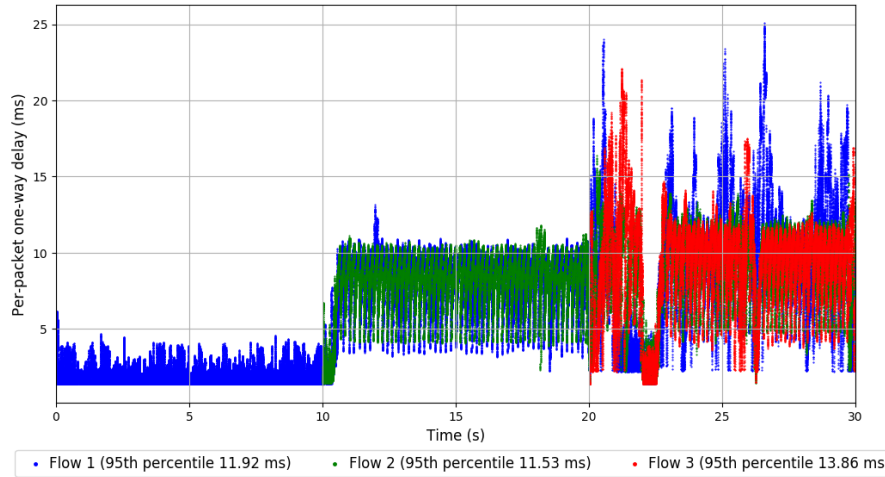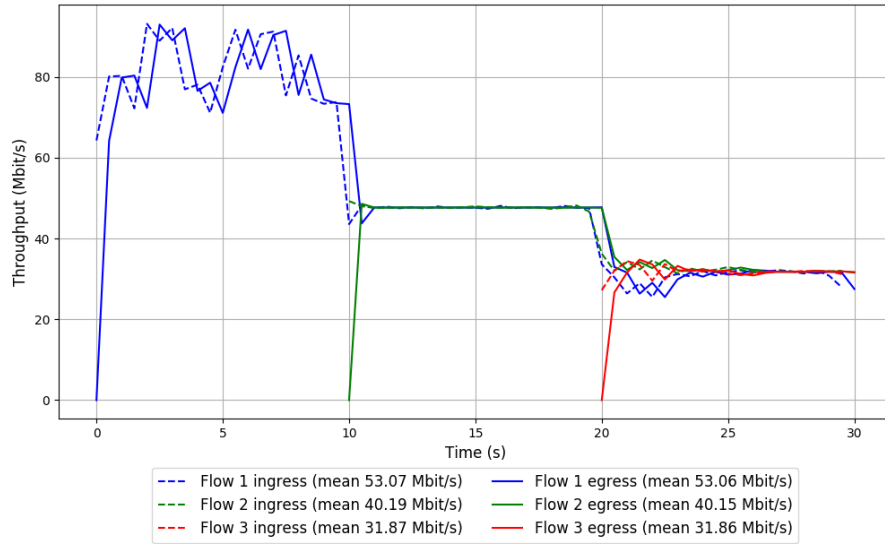
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.57 Mbit/s)   Flow 1 egress (mean 59.24 Mbit/s)
Flow 2 ingress (mean 41.30 Mbit/s)   Flow 2 egress (mean 40.98 Mbit/s)
Flow 3 ingress (mean 33.20 Mbit/s)   Flow 3 egress (mean 32.98 Mbit/s)

Flow 1 (95th percentile 10.18 ms)   Flow 2 (95th percentile 9.78 ms)   Flow 3 (95th percentile 9.19 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-08-27 13:16:11
End at: 2019-08-27 13:16:41
Local clock offset: 0.605 ms
Remote clock offset: 0.775 ms


# Below is generated by plot.py at 2019-08-27 13:46:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 11.049 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 59.22 Mbit/s
95th percentile per-packet one-way delay: 11.138 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 40.99 Mbit/s
95th percentile per-packet one-way delay: 10.495 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 33.00 Mbit/s
95th percentile per-packet one-way delay: 10.126 ms
Loss rate: 0.67%
```
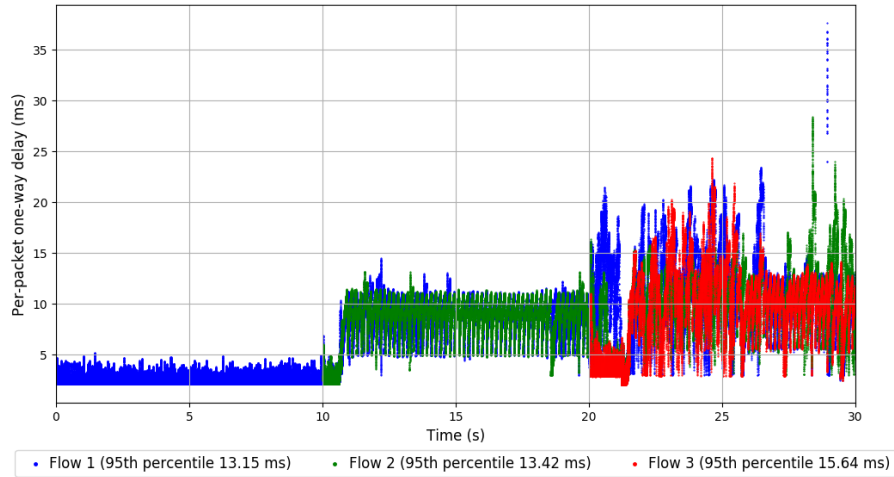
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-08-27 11:52:27
End at: 2019-08-27 11:52:57
Local clock offset: -0.25 ms
Remote clock offset: -0.129 ms


# Below is generated by plot.py at 2019-08-27 13:47:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.38 Mbit/s
95th percentile per-packet one-way delay: 12.019 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 53.06 Mbit/s
95th percentile per-packet one-way delay: 11.916 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.15 Mbit/s
95th percentile per-packet one-way delay: 11.534 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 31.86 Mbit/s
95th percentile per-packet one-way delay: 13.859 ms
Loss rate: 0.08%
```
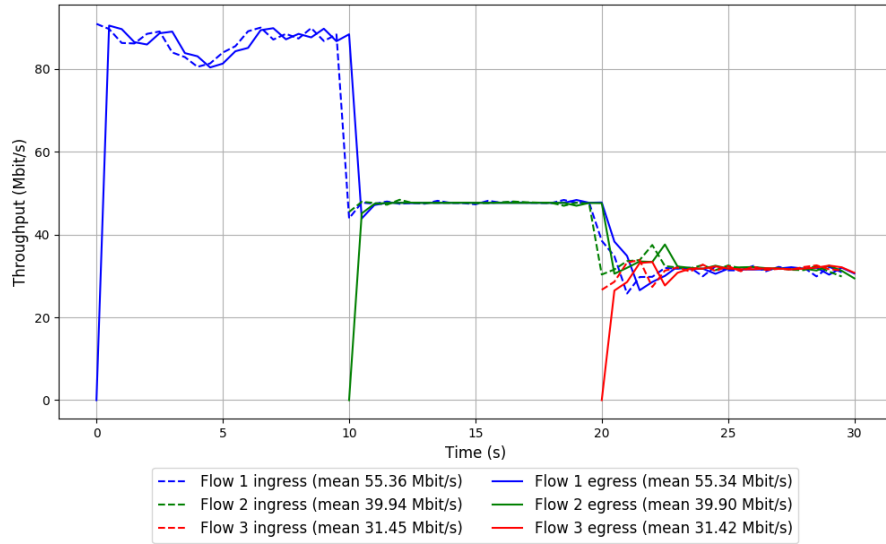
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-08-27 12:19:57
End at: 2019-08-27 12:20:27
Local clock offset: 0.611 ms
Remote clock offset: 0.361 ms


# Below is generated by plot.py at 2019-08-27 13:47:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.35 Mbit/s
95th percentile per-packet one-way delay: 13.790 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 55.34 Mbit/s
95th percentile per-packet one-way delay: 13.151 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 39.90 Mbit/s
95th percentile per-packet one-way delay: 13.418 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 31.42 Mbit/s
95th percentile per-packet one-way delay: 15.641 ms
Loss rate: 0.16%
```
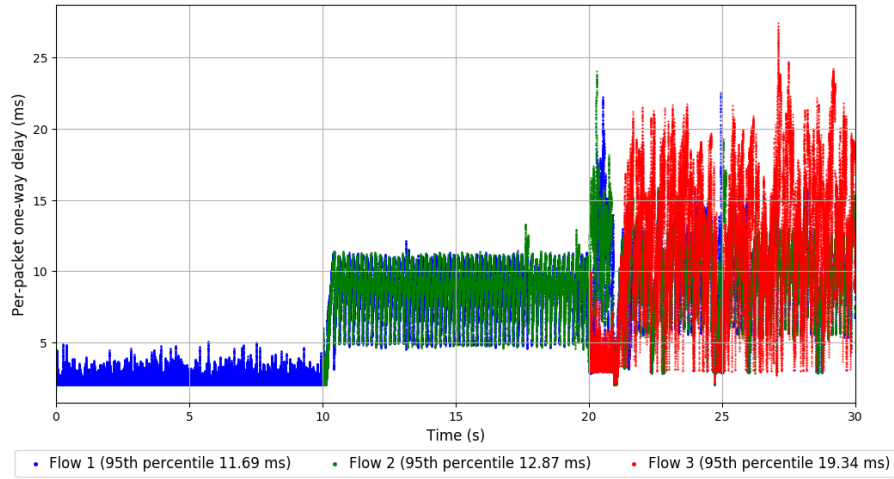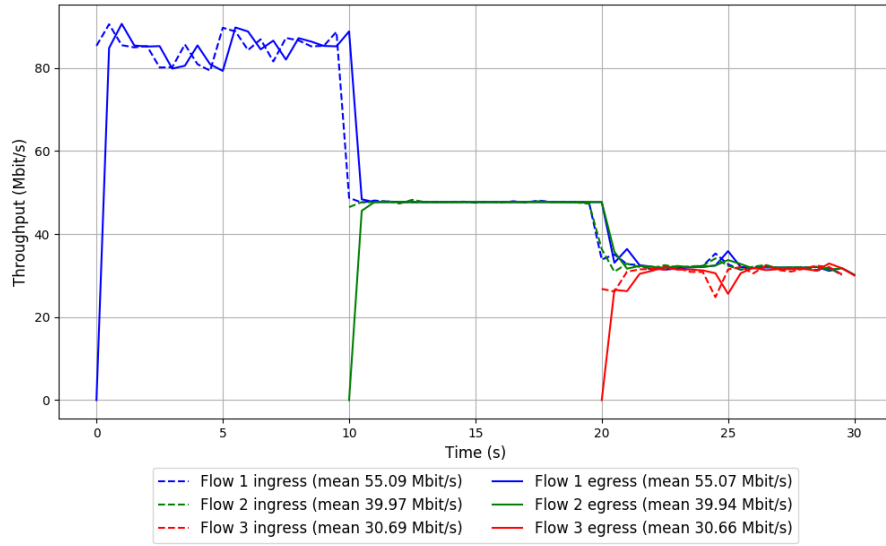
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-08-27 12:47:27
End at: 2019-08-27 12:47:57
Local clock offset: 0.563 ms
Remote clock offset: 0.544 ms


# Below is generated by plot.py at 2019-08-27 13:47:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.87 Mbit/s
95th percentile per-packet one-way delay: 14.137 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 55.07 Mbit/s
95th percentile per-packet one-way delay: 11.692 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 39.94 Mbit/s
95th percentile per-packet one-way delay: 12.869 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 30.66 Mbit/s
95th percentile per-packet one-way delay: 19.339 ms
Loss rate: 0.14%
```
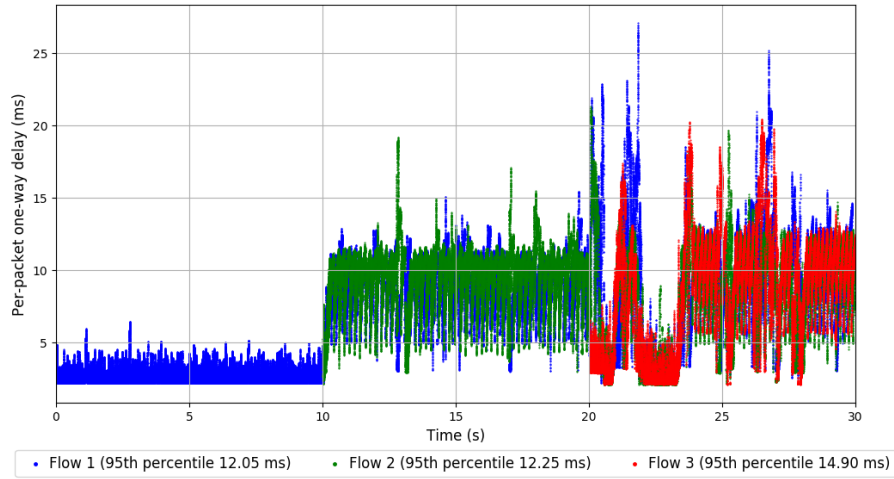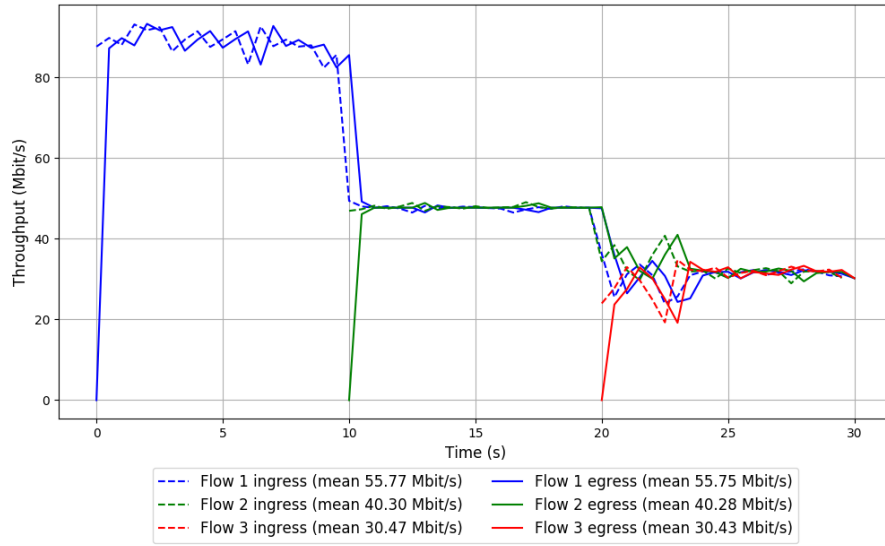
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-08-27 13:14:59
End at: 2019-08-27 13:15:29
Local clock offset: 0.591 ms
Remote clock offset: 0.683 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.70 Mbit/s
95th percentile per-packet one-way delay: 12.403 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 55.75 Mbit/s
95th percentile per-packet one-way delay: 12.050 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 40.28 Mbit/s
95th percentile per-packet one-way delay: 12.253 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 30.43 Mbit/s
95th percentile per-packet one-way delay: 14.902 ms
Loss rate: 0.16%
```
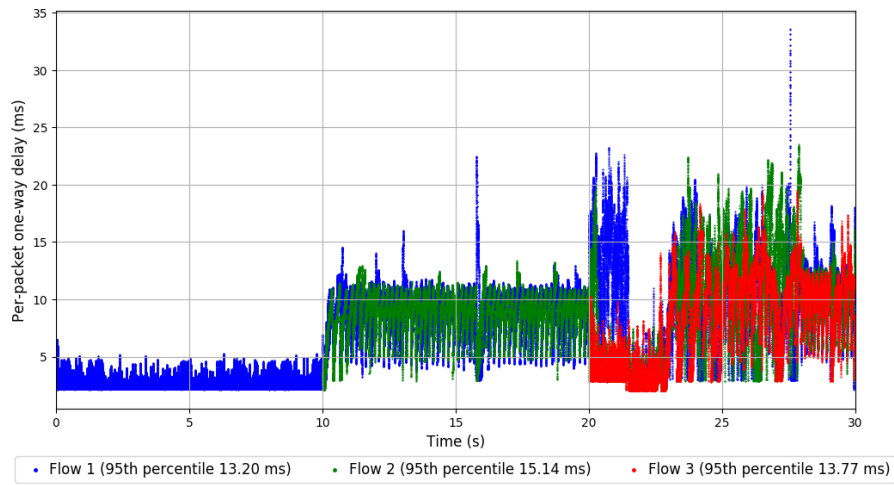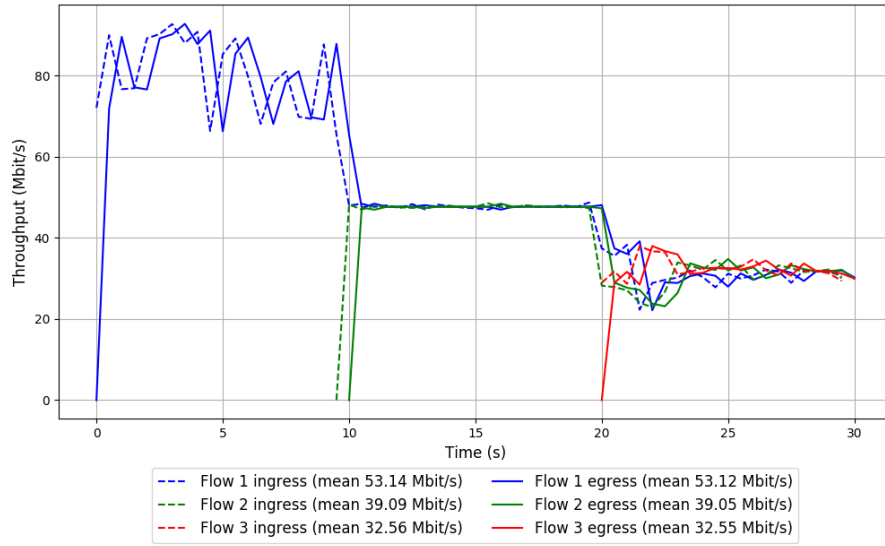
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-08-27 13:42:31
End at: 2019-08-27 13:43:01
Local clock offset: 0.716 ms
Remote clock offset: 0.666 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.96 Mbit/s
95th percentile per-packet one-way delay: 13.978 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 53.12 Mbit/s
95th percentile per-packet one-way delay: 13.203 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 39.05 Mbit/s
95th percentile per-packet one-way delay: 15.142 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 32.55 Mbit/s
95th percentile per-packet one-way delay: 13.772 ms
Loss rate: 0.08%
```
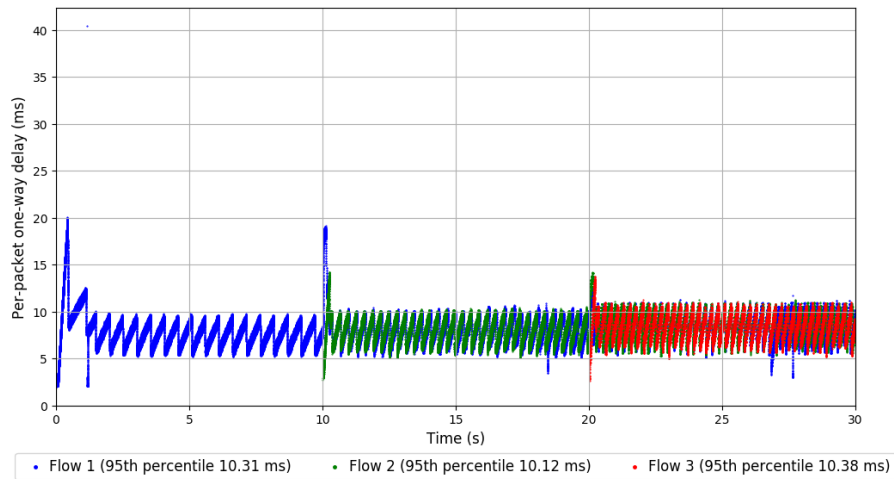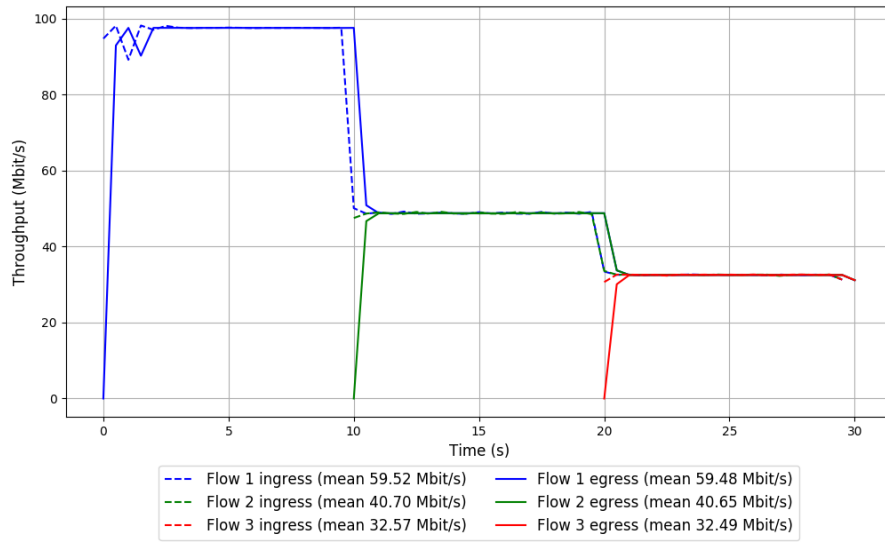
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-08-27 11:45:34
End at: 2019-08-27 11:46:04
Local clock offset: 0.447 ms
Remote clock offset: -0.192 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 10.217 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 59.48 Mbit/s
95th percentile per-packet one-way delay: 10.315 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 10.121 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 10.384 ms
Loss rate: 0.26%
```
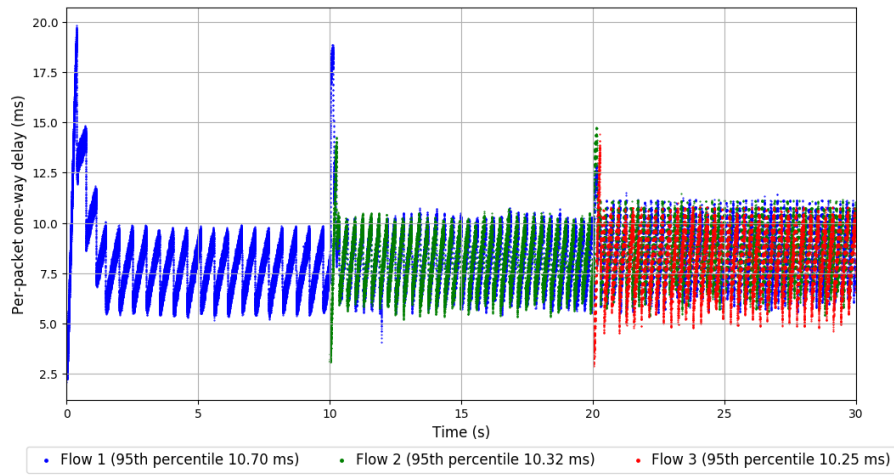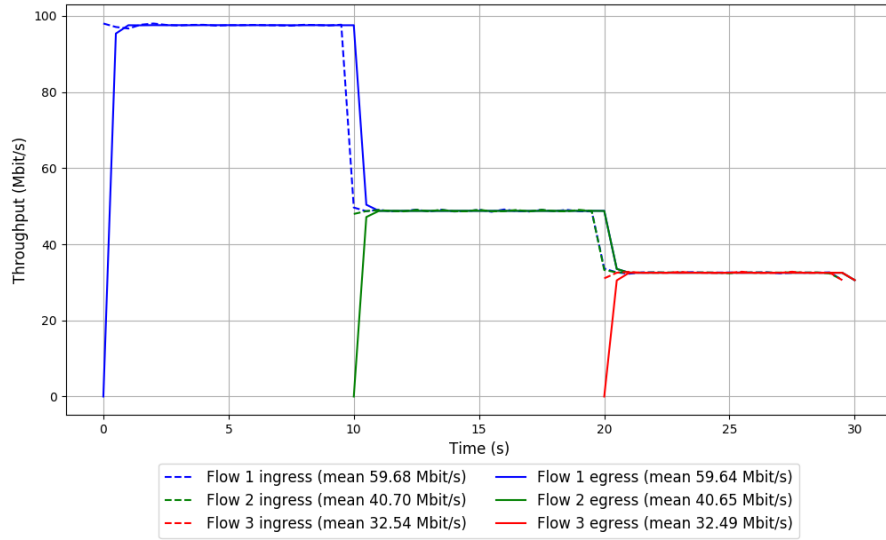
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.52 Mbit/s) — Flow 1 egress (mean 59.48 Mbit/s)
Flow 2 ingress (mean 40.70 Mbit/s) — Flow 2 egress (mean 40.65 Mbit/s)
Flow 3 ingress (mean 32.57 Mbit/s) — Flow 3 egress (mean 32.49 Mbit/s)

Flow 1 (95th percentile 10.31 ms)   Flow 2 (95th percentile 10.12 ms)   Flow 3 (95th percentile 10.38 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2019-08-27 12:13:04
End at: 2019-08-27 12:13:34
Local clock offset: 0.633 ms
Remote clock offset: 0.198 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.49 Mbit/s
95th percentile per-packet one-way delay: 10.388 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 59.64 Mbit/s
95th percentile per-packet one-way delay: 10.696 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 10.323 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 10.247 ms
Loss rate: 0.20%
```
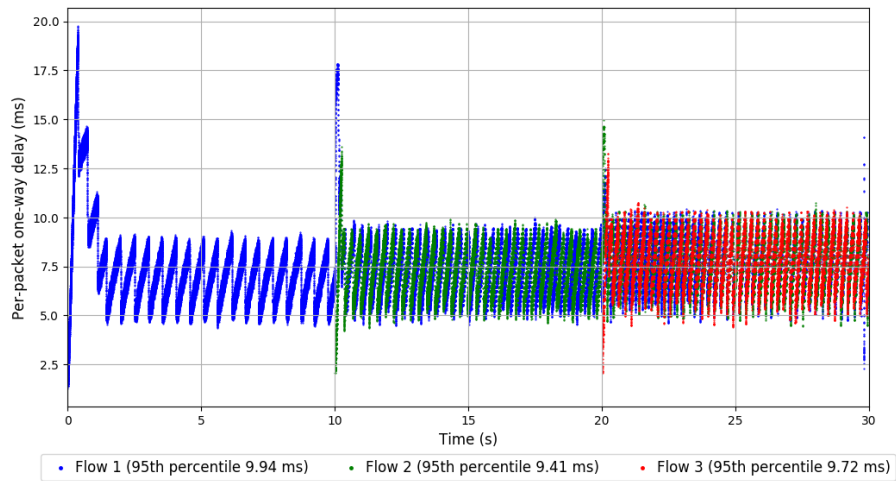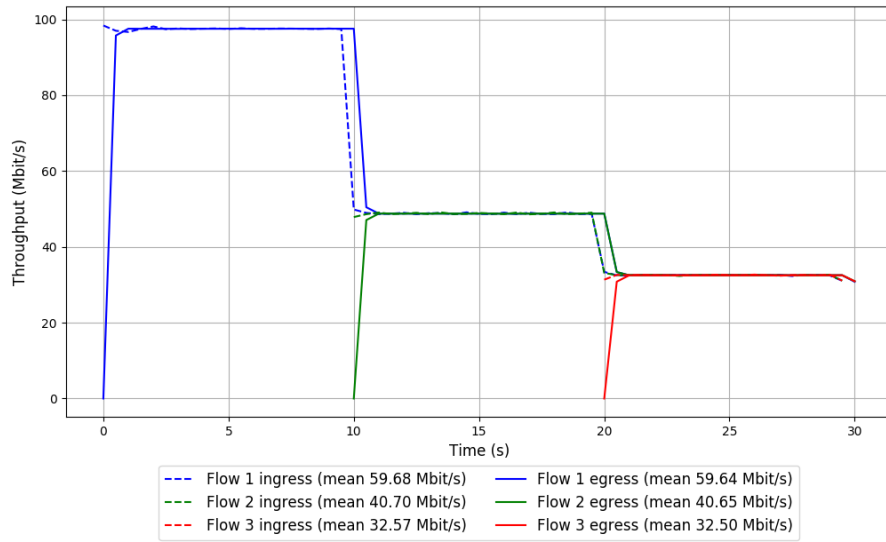
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-08-27 12:40:34
End at: 2019-08-27 12:41:04
Local clock offset: -0.131 ms
Remote clock offset: 0.562 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.50 Mbit/s
95th percentile per-packet one-way delay: 9.695 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 59.64 Mbit/s
95th percentile per-packet one-way delay: 9.941 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 9.409 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.50 Mbit/s
95th percentile per-packet one-way delay: 9.724 ms
Loss rate: 0.25%
```
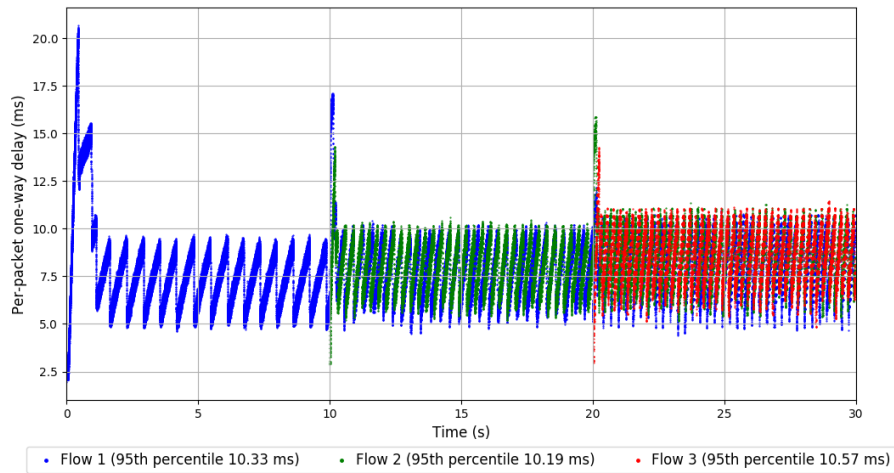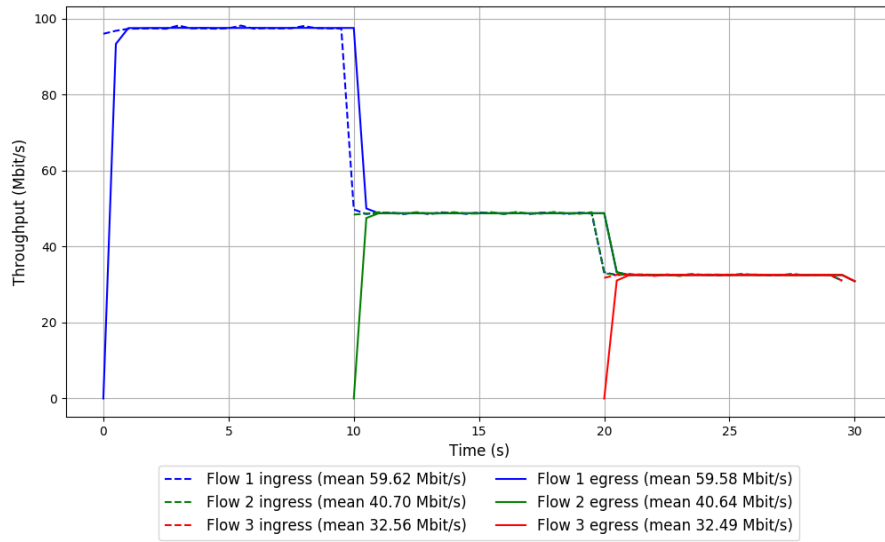
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.68 Mbit/s) --- Flow 1 egress (mean 59.64 Mbit/s)
Flow 2 ingress (mean 40.70 Mbit/s) --- Flow 2 egress (mean 40.65 Mbit/s)
Flow 3 ingress (mean 32.57 Mbit/s) --- Flow 3 egress (mean 32.50 Mbit/s)

Flow 1 (95th percentile 9.94 ms) · Flow 2 (95th percentile 9.41 ms) · Flow 3 (95th percentile 9.72 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-08-27 13:08:05
End at: 2019-08-27 13:08:35
Local clock offset: 0.575 ms
Remote clock offset: 0.703 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.46 Mbit/s
95th percentile per-packet one-way delay: 10.313 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 59.58 Mbit/s
95th percentile per-packet one-way delay: 10.327 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 10.187 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 10.572 ms
Loss rate: 0.24%
```
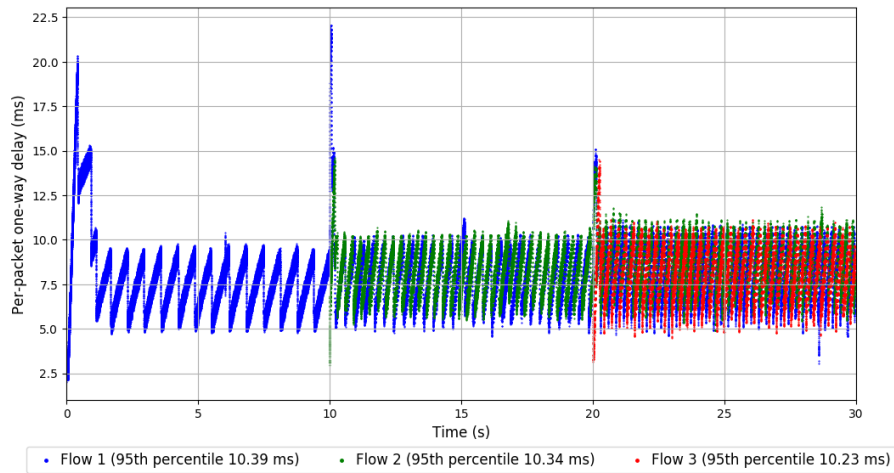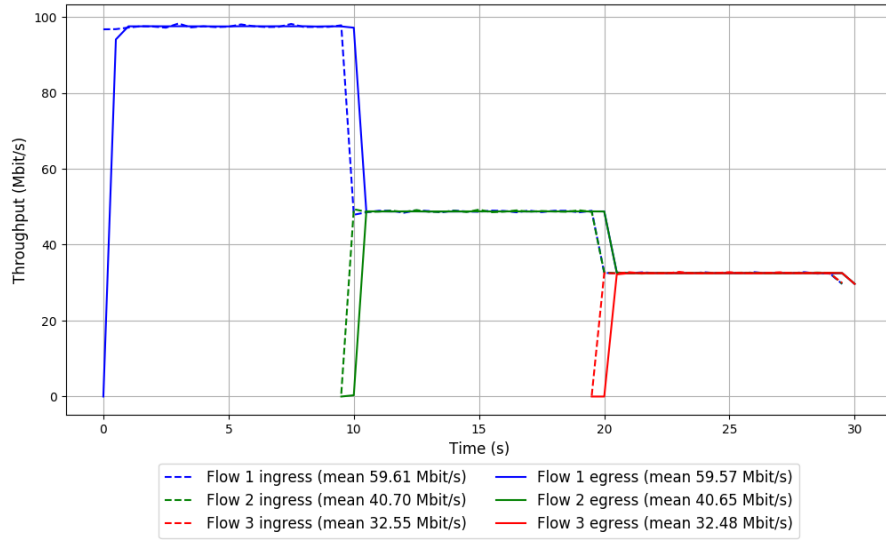
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.62 Mbit/s) --- Flow 1 egress (mean 59.58 Mbit/s)
Flow 2 ingress (mean 40.70 Mbit/s) --- Flow 2 egress (mean 40.64 Mbit/s)
Flow 3 ingress (mean 32.56 Mbit/s) --- Flow 3 egress (mean 32.49 Mbit/s)

Flow 1 (95th percentile 10.33 ms) • Flow 2 (95th percentile 10.19 ms) • Flow 3 (95th percentile 10.57 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2019-08-27 13:35:37
End at: 2019-08-27 13:36:07
Local clock offset: 0.704 ms
Remote clock offset: 0.655 ms


# Below is generated by plot.py at 2019-08-27 13:48:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 10.336 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 59.57 Mbit/s
95th percentile per-packet one-way delay: 10.392 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 10.335 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 32.48 Mbit/s
95th percentile per-packet one-way delay: 10.234 ms
Loss rate: 0.23%
```
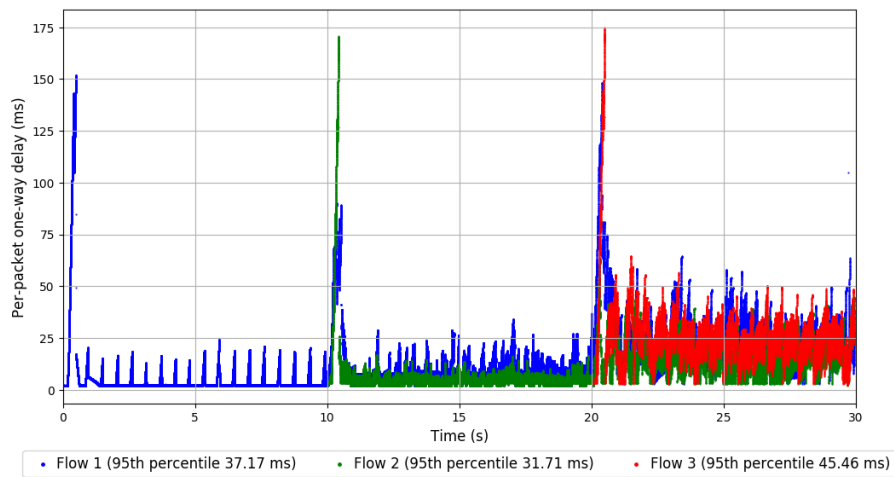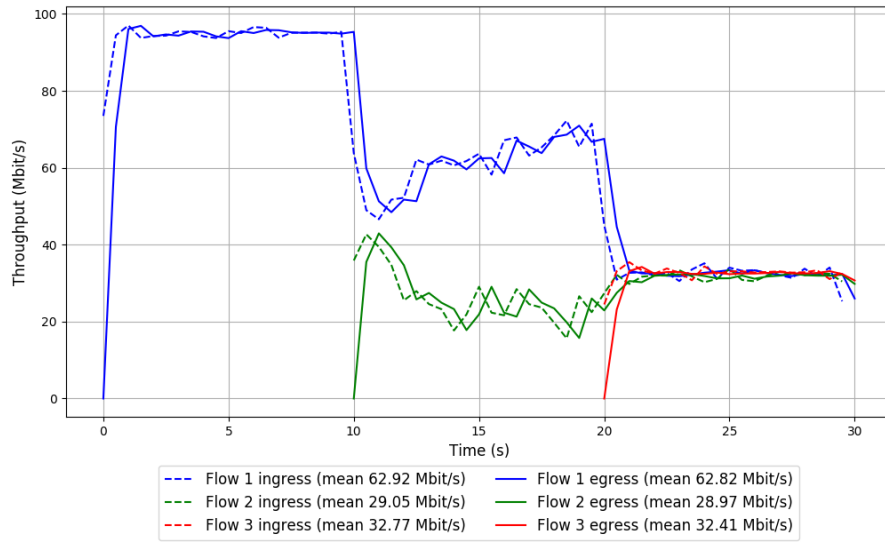
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.61 Mbit/s) —— Flow 1 egress (mean 59.57 Mbit/s)
Flow 2 ingress (mean 40.70 Mbit/s) —— Flow 2 egress (mean 40.65 Mbit/s)
Flow 3 ingress (mean 32.55 Mbit/s) —— Flow 3 egress (mean 32.48 Mbit/s)

Flow 1 (95th percentile 10.39 ms) • Flow 2 (95th percentile 10.34 ms) • Flow 3 (95th percentile 10.23 ms)

```
Run 1: Statistics of FillP

Start at: 2019-08-27 11:30:39
End at: 2019-08-27 11:31:09
Local clock offset: 0.407 ms
Remote clock offset: -0.579 ms


# Below is generated by plot.py at 2019-08-27 13:48:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.84 Mbit/s
95th percentile per-packet one-way delay: 38.385 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 62.82 Mbit/s
95th percentile per-packet one-way delay: 37.173 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 28.97 Mbit/s
95th percentile per-packet one-way delay: 31.713 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 32.41 Mbit/s
95th percentile per-packet one-way delay: 45.460 ms
Loss rate: 1.13%
```
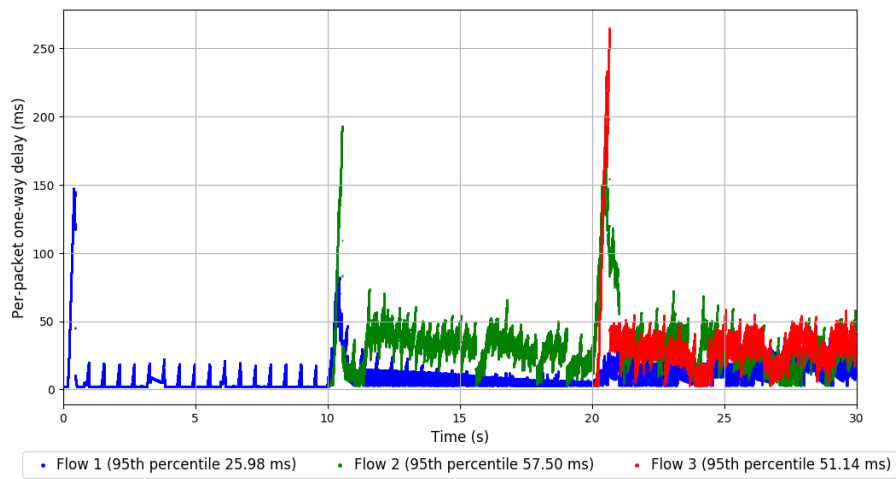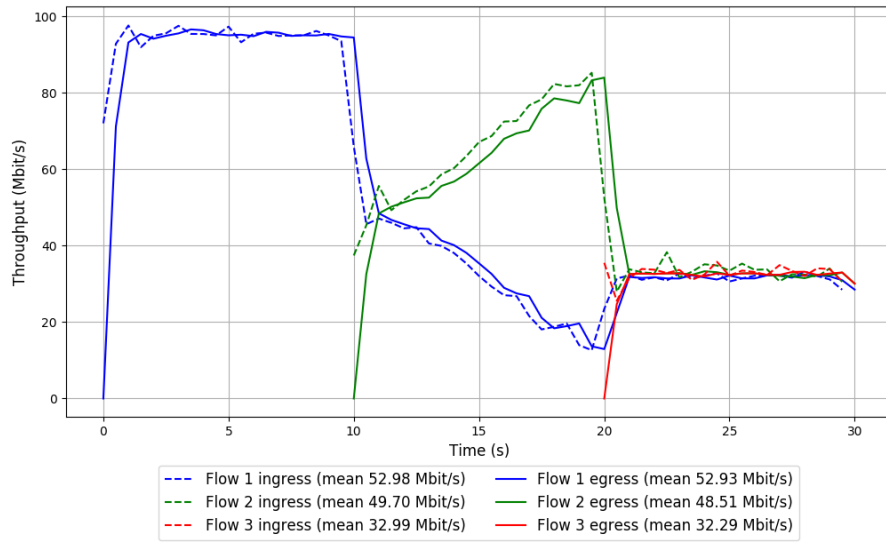
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-08-27 11:58:10
End at: 2019-08-27 11:58:40
Local clock offset: 0.568 ms
Remote clock offset: 0.006 ms

# Below is generated by plot.py at 2019-08-27 13:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.95 Mbit/s
95th percentile per-packet one-way delay: 48.073 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 52.93 Mbit/s
95th percentile per-packet one-way delay: 25.979 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 48.51 Mbit/s
95th percentile per-packet one-way delay: 57.500 ms
Loss rate: 2.33%
-- Flow 3:
Average throughput: 32.29 Mbit/s
95th percentile per-packet one-way delay: 51.142 ms
Loss rate: 2.15%
```
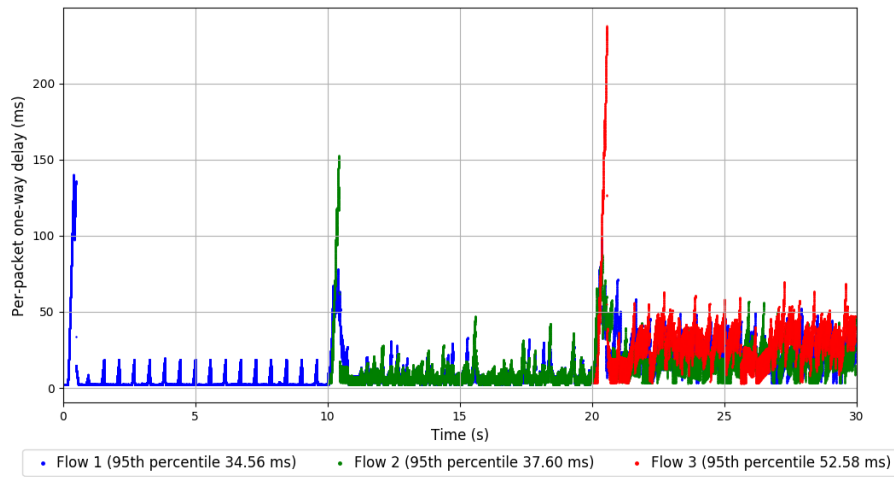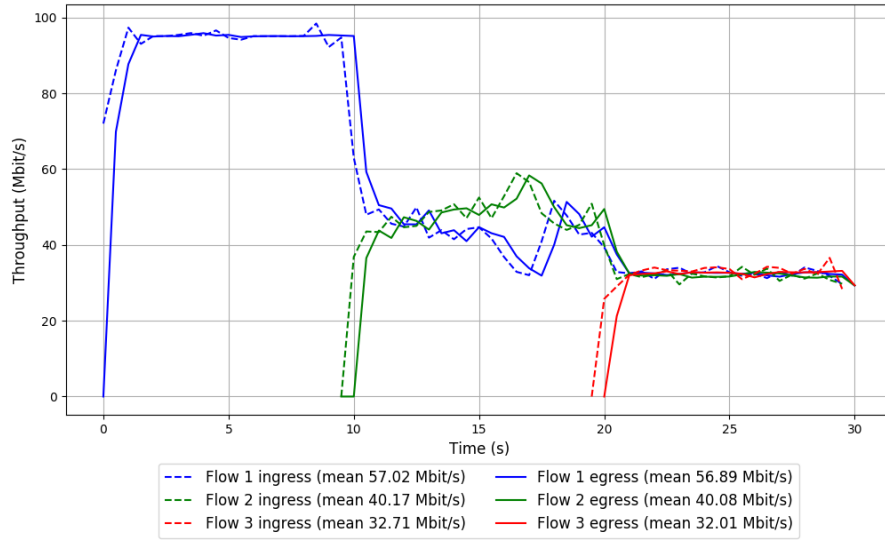
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 52.98 Mbit/s) — Flow 1 egress (mean 52.93 Mbit/s)
Flow 2 ingress (mean 49.70 Mbit/s) — Flow 2 egress (mean 48.51 Mbit/s)
Flow 3 ingress (mean 32.99 Mbit/s) — Flow 3 egress (mean 32.29 Mbit/s)

Flow 1 (95th percentile 25.98 ms) · Flow 2 (95th percentile 57.50 ms) · Flow 3 (95th percentile 51.14 ms)

```
Run 3: Statistics of FillP

Start at: 2019-08-27 12:25:41
End at: 2019-08-27 12:26:11
Local clock offset: 0.649 ms
Remote clock offset: 0.373 ms


# Below is generated by plot.py at 2019-08-27 13:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.23 Mbit/s
95th percentile per-packet one-way delay: 41.771 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 56.89 Mbit/s
95th percentile per-packet one-way delay: 34.557 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 40.08 Mbit/s
95th percentile per-packet one-way delay: 37.601 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 32.01 Mbit/s
95th percentile per-packet one-way delay: 52.582 ms
Loss rate: 2.02%
```
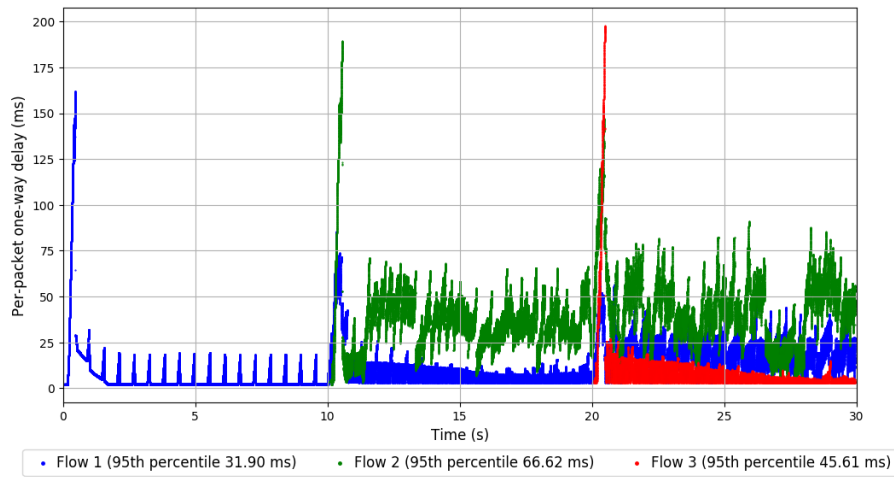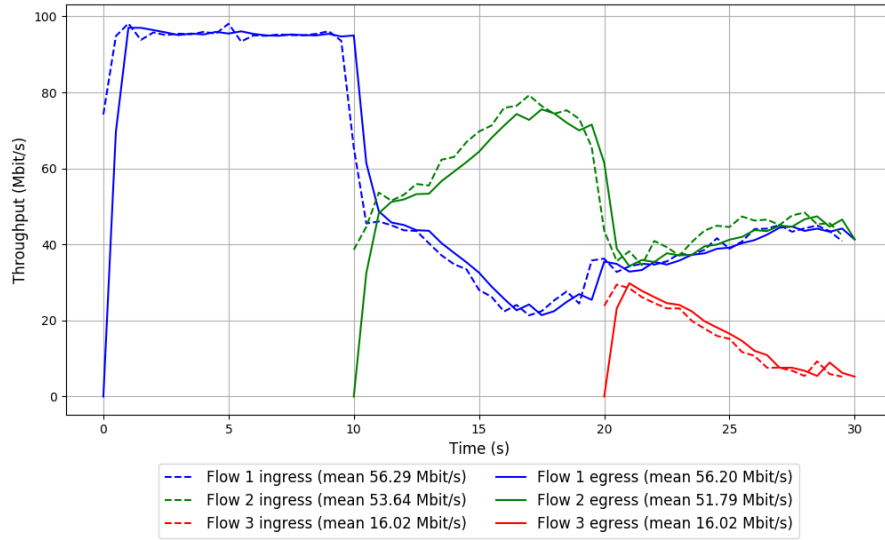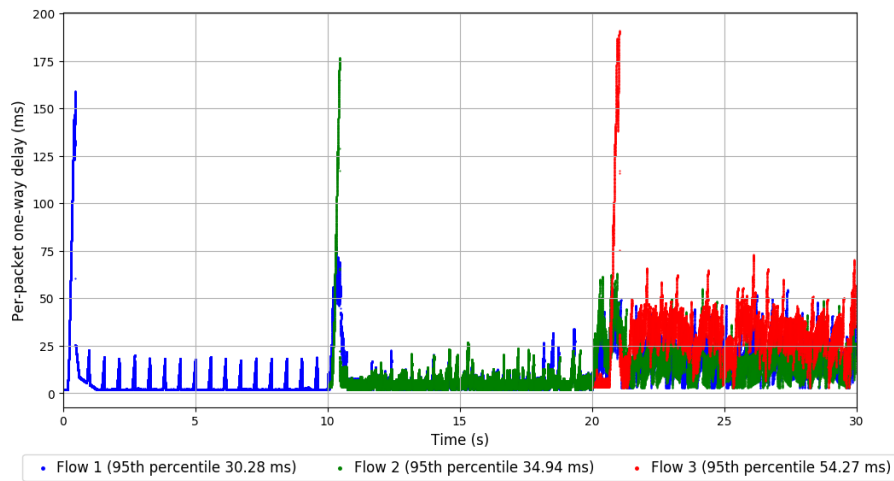
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 57.02 Mbit/s) --- Flow 1 egress (mean 56.89 Mbit/s)
Flow 2 ingress (mean 40.17 Mbit/s) --- Flow 2 egress (mean 40.08 Mbit/s)
Flow 3 ingress (mean 32.71 Mbit/s) --- Flow 3 egress (mean 32.01 Mbit/s)

Flow 1 (95th percentile 34.56 ms)   Flow 2 (95th percentile 37.60 ms)   Flow 3 (95th percentile 52.58 ms)

```
Run 4: Statistics of FillP

Start at: 2019-08-27 12:53:11
End at: 2019-08-27 12:53:41
Local clock offset: 0.623 ms
Remote clock offset: 0.51 ms


# Below is generated by plot.py at 2019-08-27 13:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.99 Mbit/s
95th percentile per-packet one-way delay: 58.304 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 56.20 Mbit/s
95th percentile per-packet one-way delay: 31.897 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 51.79 Mbit/s
95th percentile per-packet one-way delay: 66.620 ms
Loss rate: 3.45%
-- Flow 3:
Average throughput: 16.02 Mbit/s
95th percentile per-packet one-way delay: 45.611 ms
Loss rate: 0.02%
```
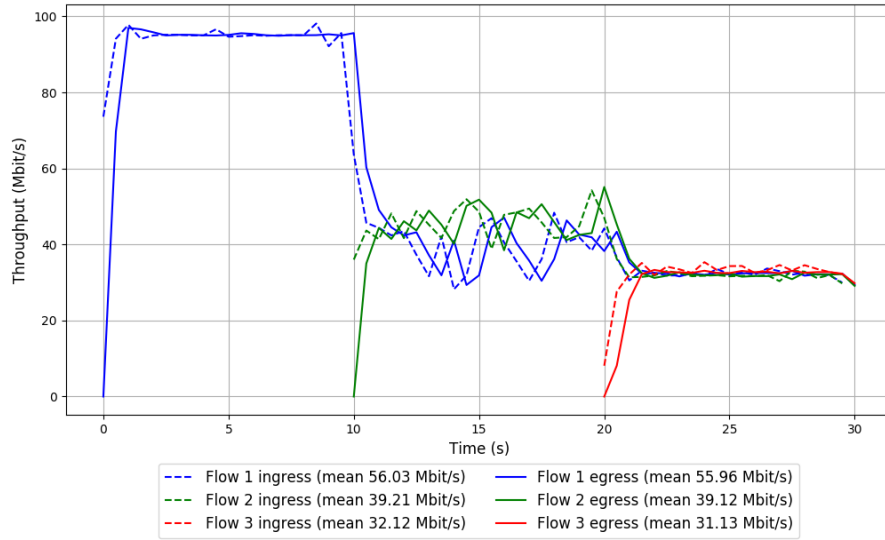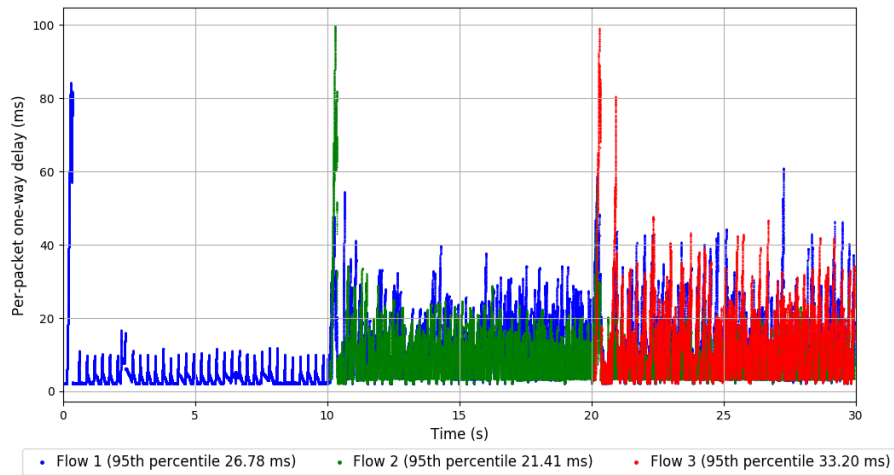
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-08-27 13:20:42
End at: 2019-08-27 13:21:12
Local clock offset: 0.607 ms
Remote clock offset: 0.683 ms


# Below is generated by plot.py at 2019-08-27 13:49:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.36 Mbit/s
95th percentile per-packet one-way delay: 40.922 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 55.96 Mbit/s
95th percentile per-packet one-way delay: 30.281 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 39.12 Mbit/s
95th percentile per-packet one-way delay: 34.937 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 31.13 Mbit/s
95th percentile per-packet one-way delay: 54.271 ms
Loss rate: 3.07%
```
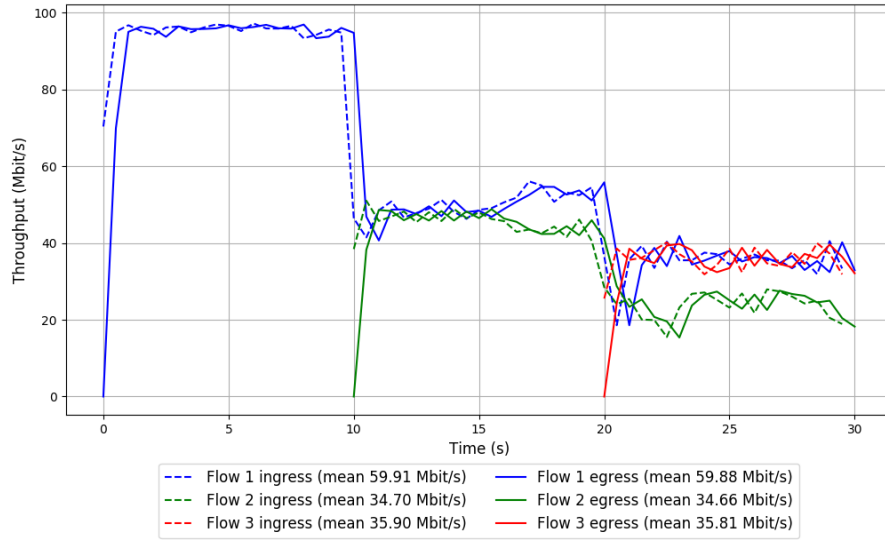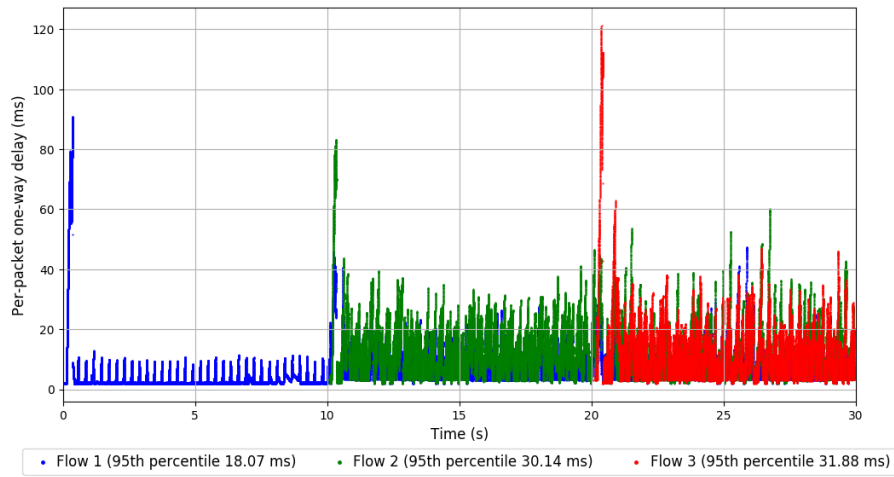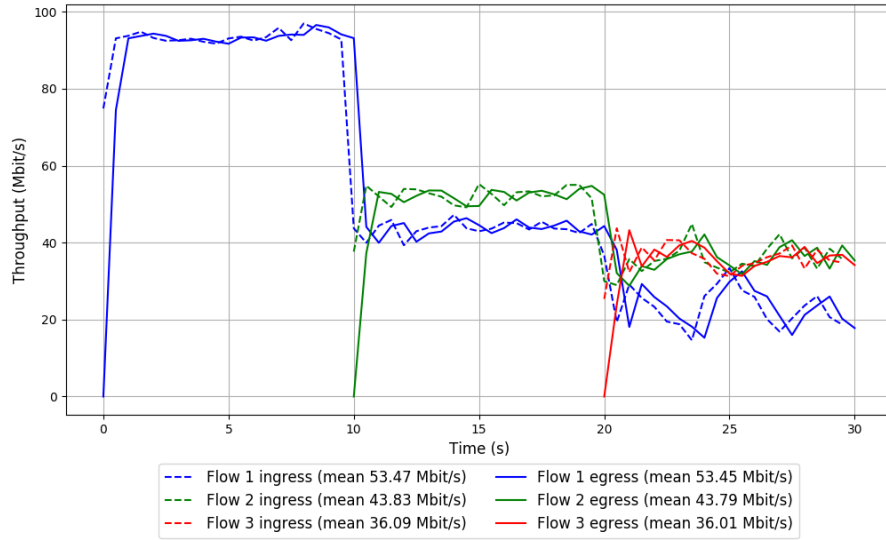
Run 5: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 56.03 Mbit/s) ——— Flow 1 egress (mean 55.96 Mbit/s)
- - - - Flow 2 ingress (mean 39.21 Mbit/s) ——— Flow 2 egress (mean 39.12 Mbit/s)
- - - - Flow 3 ingress (mean 32.12 Mbit/s) ——— Flow 3 egress (mean 31.13 Mbit/s)

- Flow 1 (95th percentile 30.28 ms) - Flow 2 (95th percentile 34.94 ms) - Flow 3 (95th percentile 54.27 ms)

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-08-27 11:31:47
End at: 2019-08-27 11:32:17
Local clock offset: 0.498 ms
Remote clock offset: -0.538 ms


# Below is generated by plot.py at 2019-08-27 13:49:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.83 Mbit/s
95th percentile per-packet one-way delay: 27.108 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 59.88 Mbit/s
95th percentile per-packet one-way delay: 26.776 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 34.66 Mbit/s
95th percentile per-packet one-way delay: 21.414 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 35.81 Mbit/s
95th percentile per-packet one-way delay: 33.204 ms
Loss rate: 0.15%
```
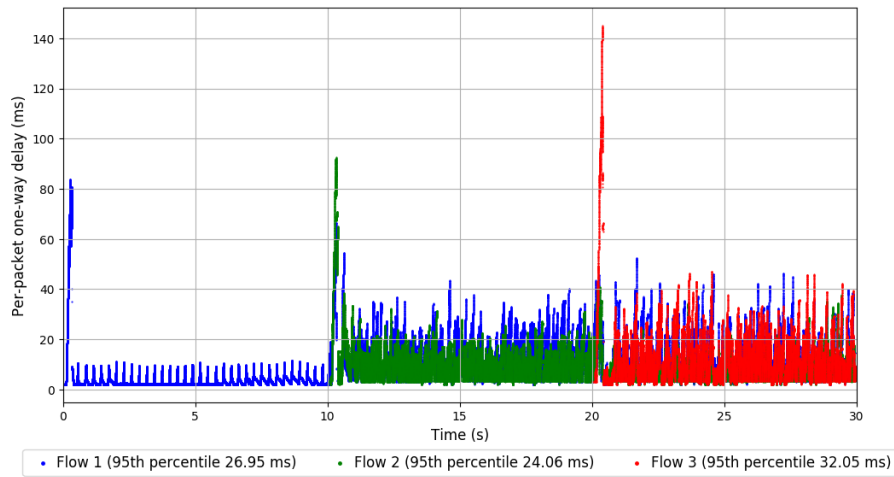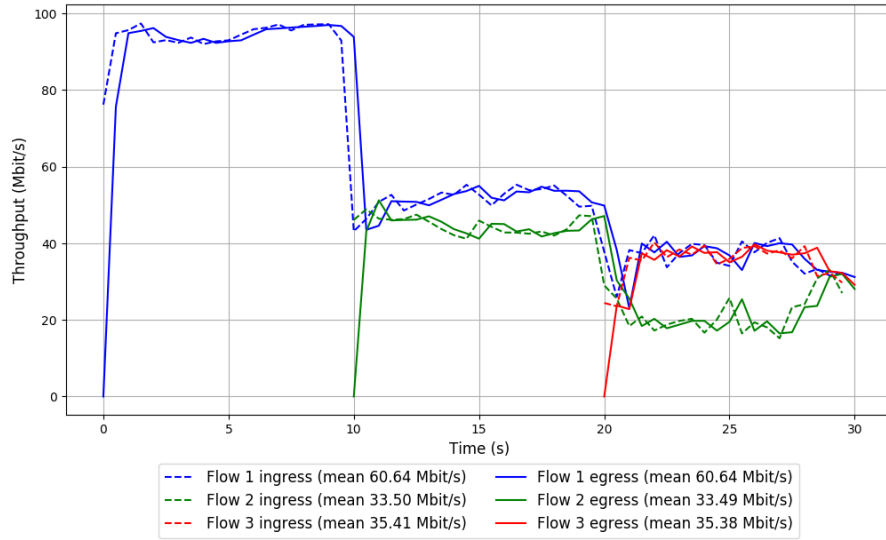
Run 1: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 59.91 Mbit/s) —— Flow 1 egress (mean 59.88 Mbit/s)
- - - Flow 2 ingress (mean 34.70 Mbit/s) —— Flow 2 egress (mean 34.66 Mbit/s)
- - - Flow 3 ingress (mean 35.90 Mbit/s) —— Flow 3 egress (mean 35.81 Mbit/s)

• Flow 1 (95th percentile 26.78 ms)   • Flow 2 (95th percentile 21.41 ms)   • Flow 3 (95th percentile 33.20 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-08-27 11:59:19
End at: 2019-08-27 11:59:49
Local clock offset: 0.564 ms
Remote clock offset: 0.014 ms


# Below is generated by plot.py at 2019-08-27 13:49:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.54 Mbit/s
95th percentile per-packet one-way delay: 26.526 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 53.45 Mbit/s
95th percentile per-packet one-way delay: 18.069 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 43.79 Mbit/s
95th percentile per-packet one-way delay: 30.137 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 36.01 Mbit/s
95th percentile per-packet one-way delay: 31.879 ms
Loss rate: 0.11%
```
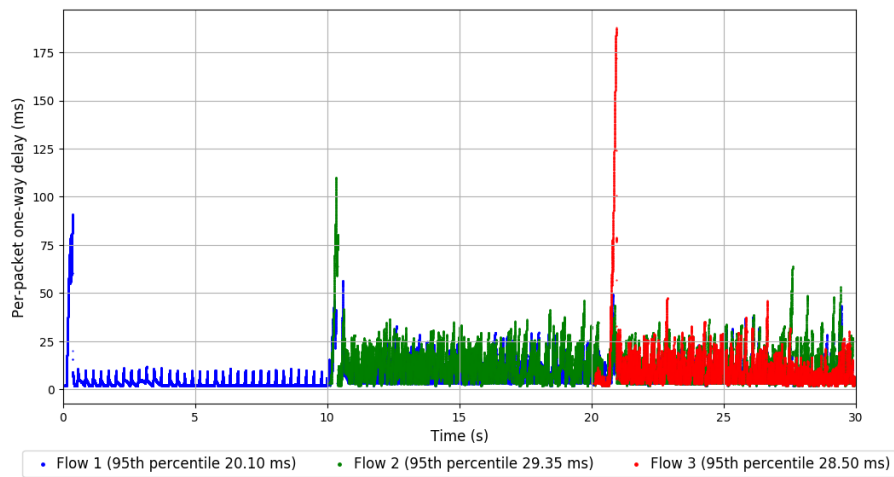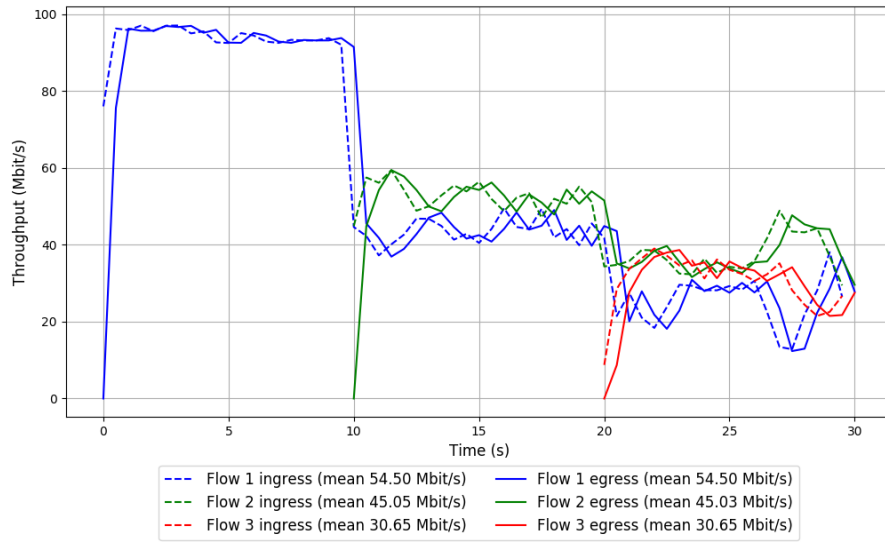
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-08-27 12:26:50
End at: 2019-08-27 12:27:20
Local clock offset: 0.563 ms
Remote clock offset: 0.366 ms


# Below is generated by plot.py at 2019-08-27 13:49:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.65 Mbit/s
95th percentile per-packet one-way delay: 27.446 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 60.64 Mbit/s
95th percentile per-packet one-way delay: 26.955 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 33.49 Mbit/s
95th percentile per-packet one-way delay: 24.058 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 35.38 Mbit/s
95th percentile per-packet one-way delay: 32.049 ms
Loss rate: 0.11%
```
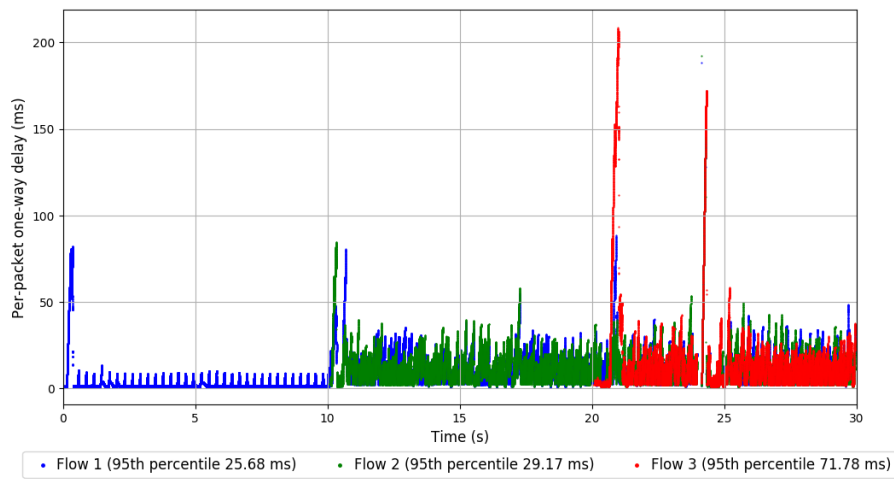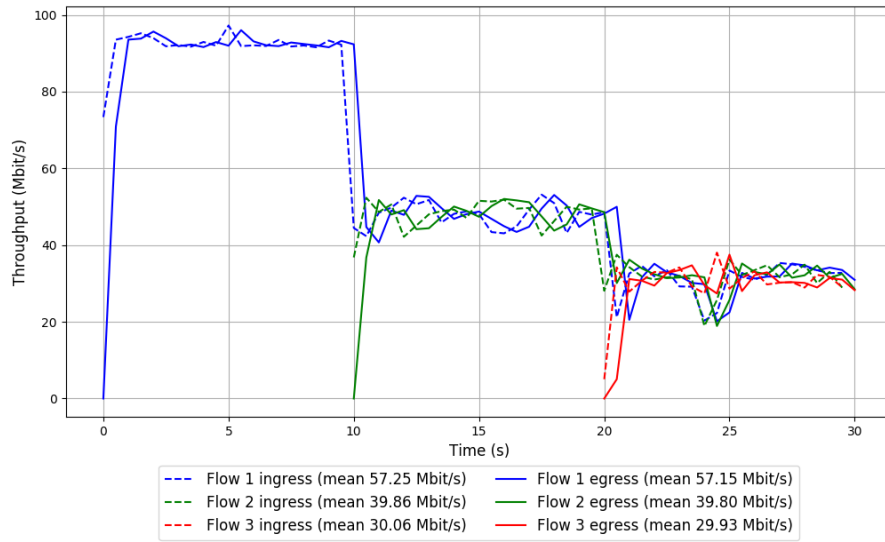
Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 60.64 Mbit/s) — — — Flow 1 egress (mean 60.64 Mbit/s)
Flow 2 ingress (mean 33.50 Mbit/s) — — — Flow 2 egress (mean 33.49 Mbit/s)
Flow 3 ingress (mean 35.41 Mbit/s) — — — Flow 3 egress (mean 35.38 Mbit/s)

Flow 1 (95th percentile 26.95 ms) • Flow 2 (95th percentile 24.06 ms) • Flow 3 (95th percentile 32.05 ms)

50

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-08-27 12:54:20
End at: 2019-08-27 12:54:50
Local clock offset: 0.626 ms
Remote clock offset: 0.61 ms


# Below is generated by plot.py at 2019-08-27 13:50:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.60 Mbit/s
95th percentile per-packet one-way delay: 26.270 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 54.50 Mbit/s
95th percentile per-packet one-way delay: 20.097 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 45.03 Mbit/s
95th percentile per-packet one-way delay: 29.350 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 30.65 Mbit/s
95th percentile per-packet one-way delay: 28.496 ms
Loss rate: 0.01%
```
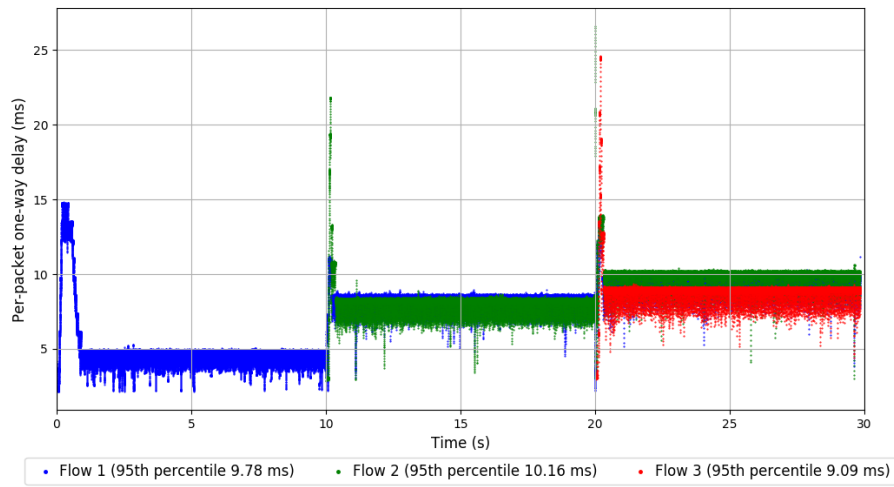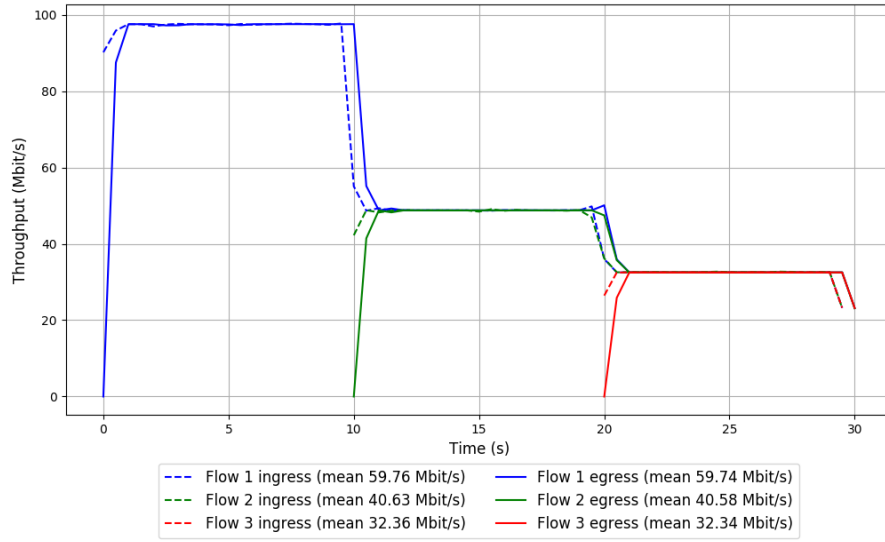
Run 4: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 54.50 Mbit/s) —— Flow 1 egress (mean 54.50 Mbit/s)
- - - - Flow 2 ingress (mean 45.05 Mbit/s) —— Flow 2 egress (mean 45.03 Mbit/s)
- - - - Flow 3 ingress (mean 30.65 Mbit/s) —— Flow 3 egress (mean 30.65 Mbit/s)

- Flow 1 (95th percentile 20.10 ms) • Flow 2 (95th percentile 29.35 ms) • Flow 3 (95th percentile 28.50 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-08-27 13:21:50
End at: 2019-08-27 13:22:20
Local clock offset: -0.139 ms
Remote clock offset: 0.709 ms


# Below is generated by plot.py at 2019-08-27 13:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.58 Mbit/s
95th percentile per-packet one-way delay: 28.590 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 57.15 Mbit/s
95th percentile per-packet one-way delay: 25.675 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 39.80 Mbit/s
95th percentile per-packet one-way delay: 29.173 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 29.93 Mbit/s
95th percentile per-packet one-way delay: 71.779 ms
Loss rate: 0.46%
```
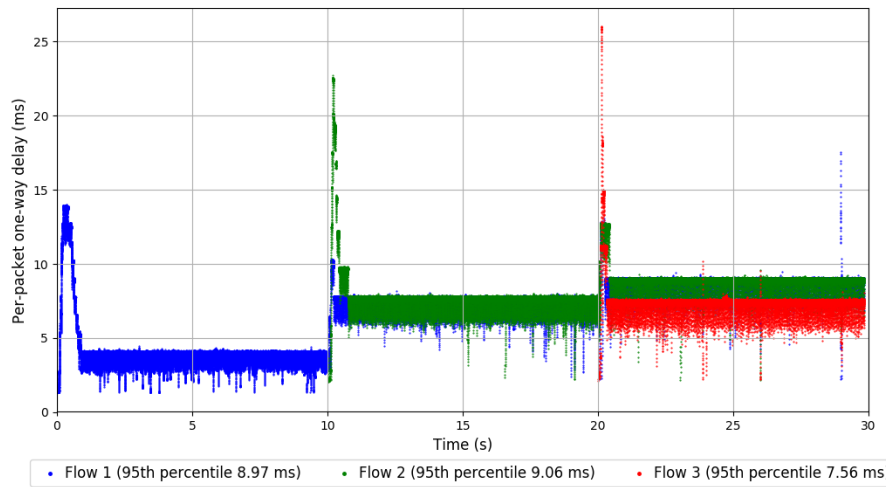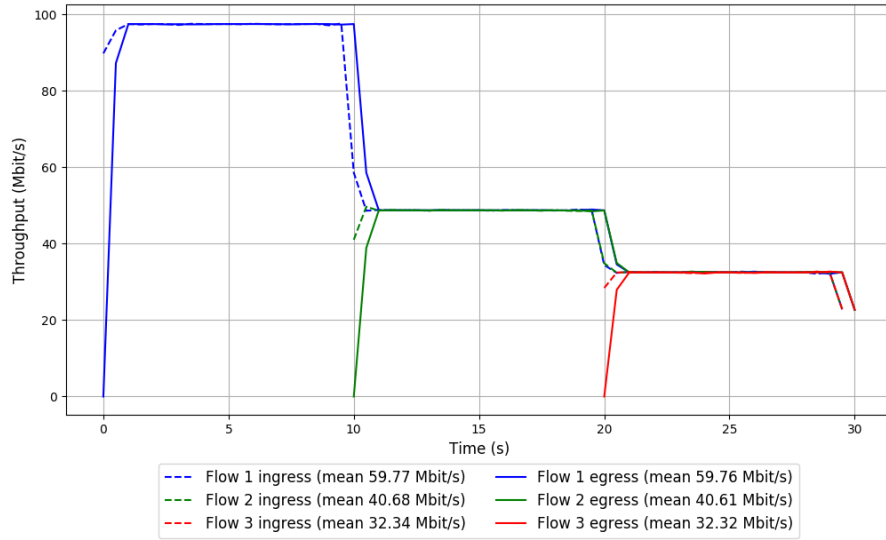
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 57.25 Mbit/s) —— Flow 1 egress (mean 57.15 Mbit/s)
Flow 2 ingress (mean 39.86 Mbit/s) —— Flow 2 egress (mean 39.80 Mbit/s)
Flow 3 ingress (mean 30.06 Mbit/s) —— Flow 3 egress (mean 29.93 Mbit/s)

Flow 1 (95th percentile 25.68 ms) • Flow 2 (95th percentile 29.17 ms) • Flow 3 (95th percentile 71.78 ms)

```
Run 1: Statistics of Indigo

Start at: 2019-08-27 11:46:43
End at: 2019-08-27 11:47:13
Local clock offset: 0.506 ms
Remote clock offset: -0.209 ms


# Below is generated by plot.py at 2019-08-27 13:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 10.099 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 59.74 Mbit/s
95th percentile per-packet one-way delay: 9.775 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.58 Mbit/s
95th percentile per-packet one-way delay: 10.161 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 9.092 ms
Loss rate: 0.10%
```
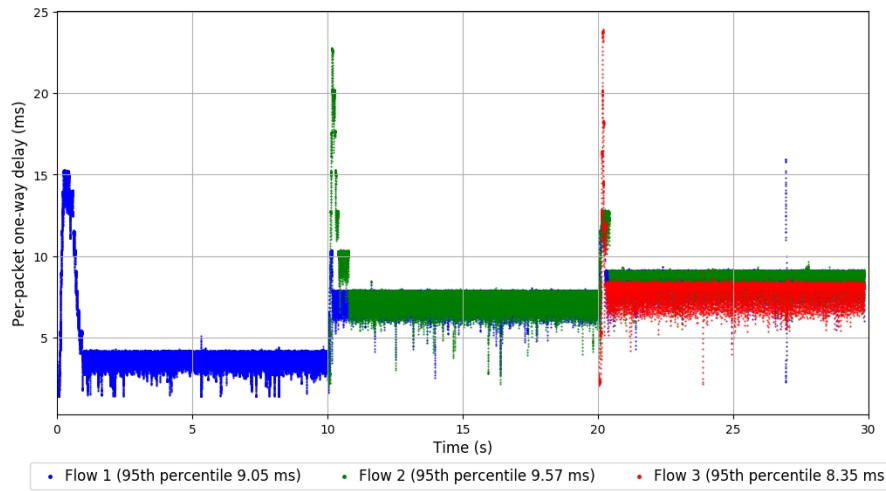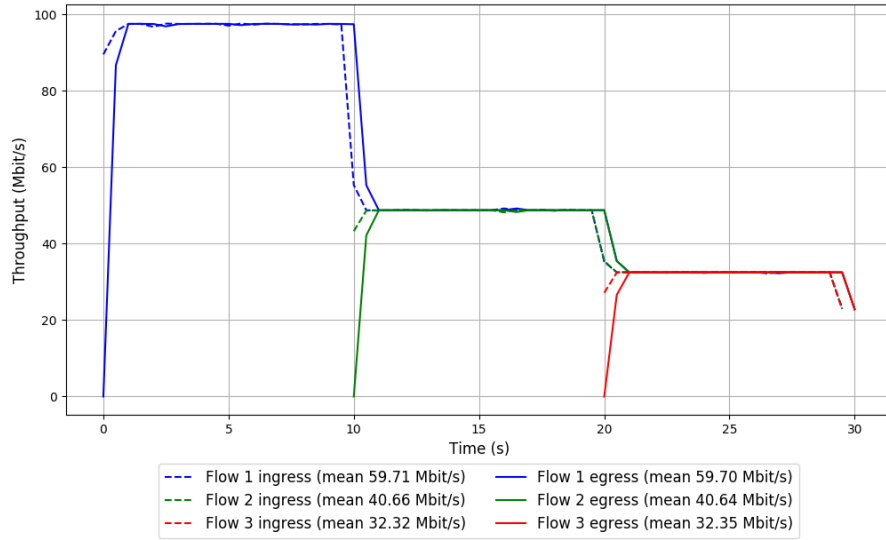
Run 1: Report of Indigo — Data Link

Run 2: Statistics of Indigo

Start at: 2019-08-27 12:14:14
End at: 2019-08-27 12:14:44
Local clock offset: -0.222 ms
Remote clock offset: 0.27 ms

Below is generated by plot.py at 2019-08-27 13:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 97.35 Mbit/s
95th percentile per-packet one-way delay: 8.991 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 59.76 Mbit/s
95th percentile per-packet one-way delay: 8.974 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.61 Mbit/s
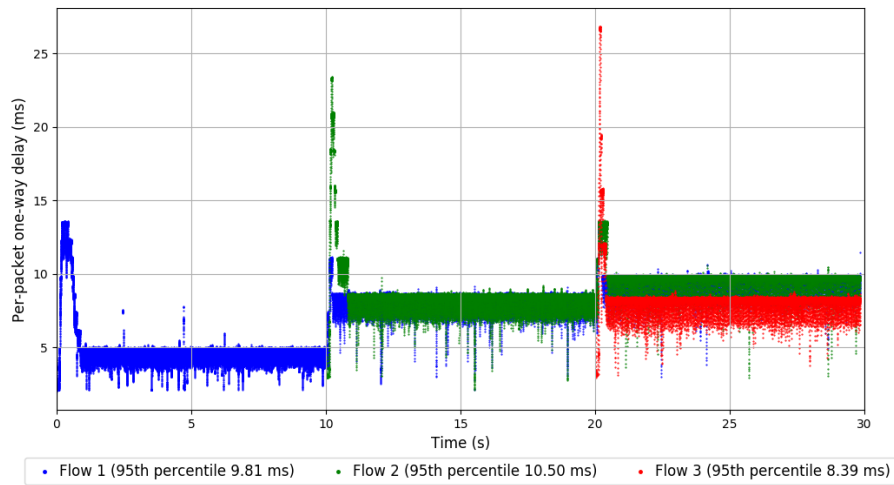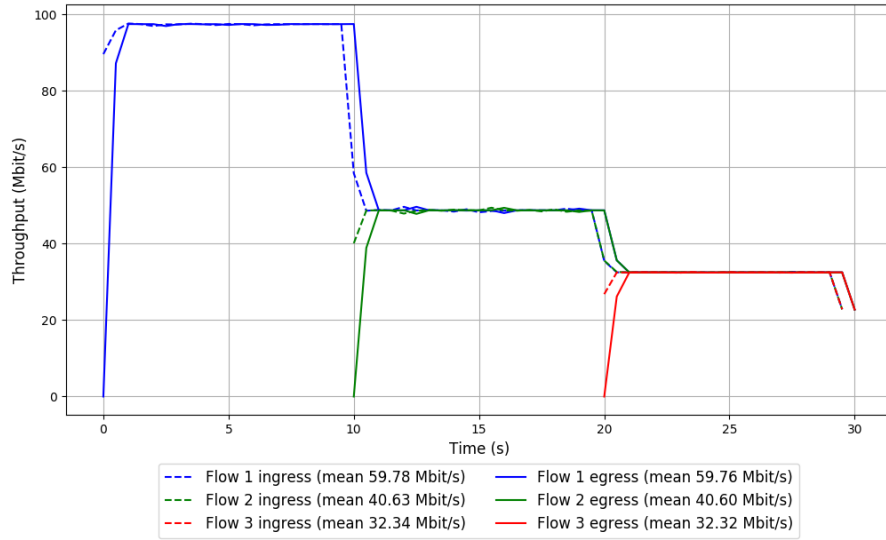95th percentile per-packet one-way delay: 9.063 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: 7.560 ms
Loss rate: 0.10%

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-08-27 12:41:44
End at: 2019-08-27 12:42:14
Local clock offset: -0.14 ms
Remote clock offset: 0.562 ms


# Below is generated by plot.py at 2019-08-27 13:50:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 9.068 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 59.70 Mbit/s
95th percentile per-packet one-way delay: 9.052 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 9.573 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 32.35 Mbit/s
95th percentile per-packet one-way delay: 8.345 ms
Loss rate: 0.10%
```
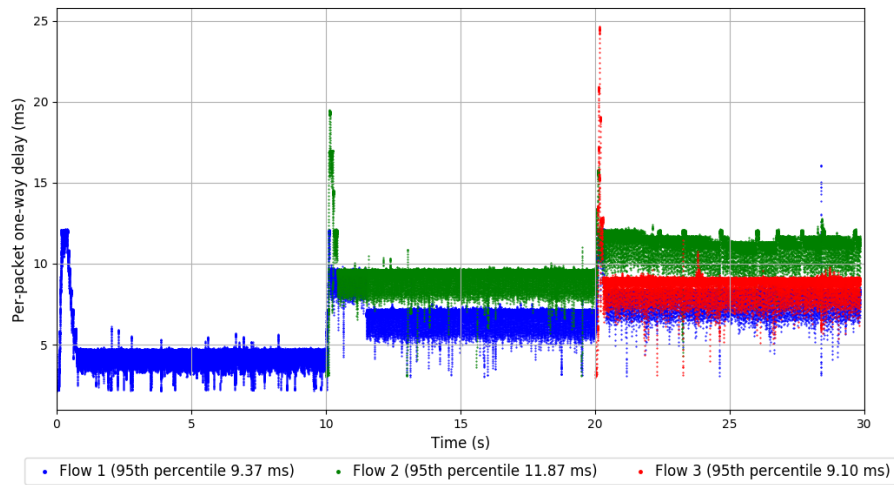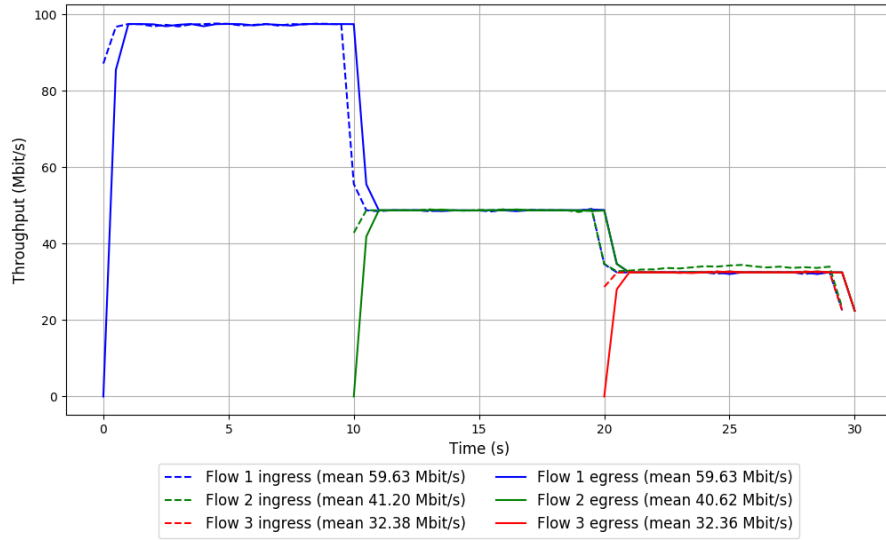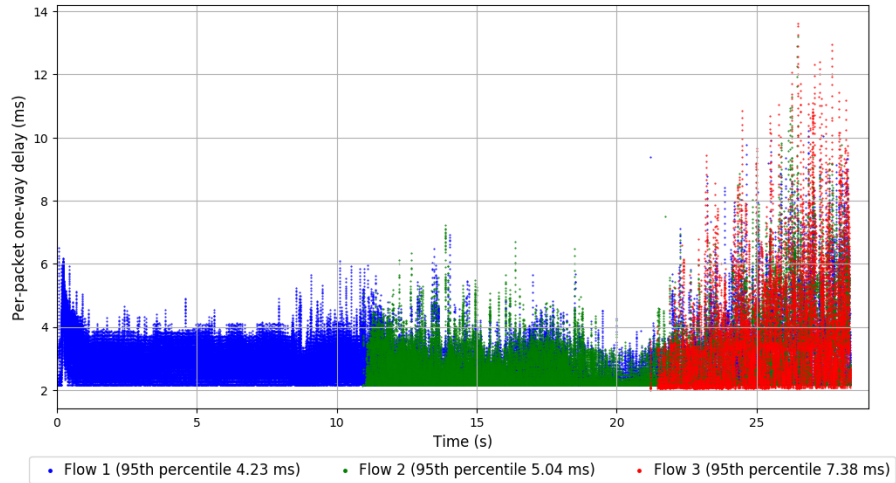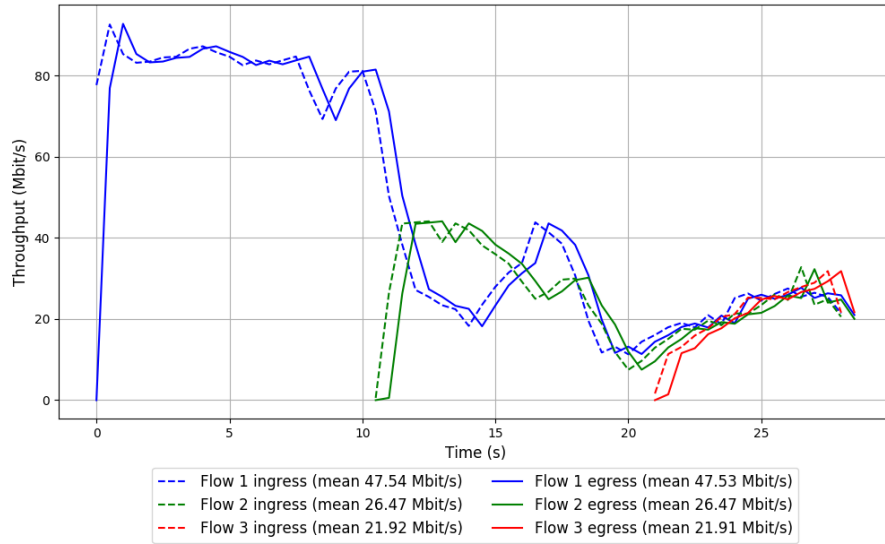
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-08-27 13:09:15
End at: 2019-08-27 13:09:45
Local clock offset: 0.58 ms
Remote clock offset: 0.708 ms


# Below is generated by plot.py at 2019-08-27 13:50:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 9.828 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 59.76 Mbit/s
95th percentile per-packet one-way delay: 9.810 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.60 Mbit/s
95th percentile per-packet one-way delay: 10.501 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: 8.393 ms
Loss rate: 0.11%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-08-27 13:36:47
End at: 2019-08-27 13:37:17
Local clock offset: 0.633 ms
Remote clock offset: 0.641 ms


# Below is generated by plot.py at 2019-08-27 13:51:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.28 Mbit/s
95th percentile per-packet one-way delay: 11.478 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 59.63 Mbit/s
95th percentile per-packet one-way delay: 9.366 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 40.62 Mbit/s
95th percentile per-packet one-way delay: 11.865 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 32.36 Mbit/s
95th percentile per-packet one-way delay: 9.102 ms
Loss rate: 0.10%
```
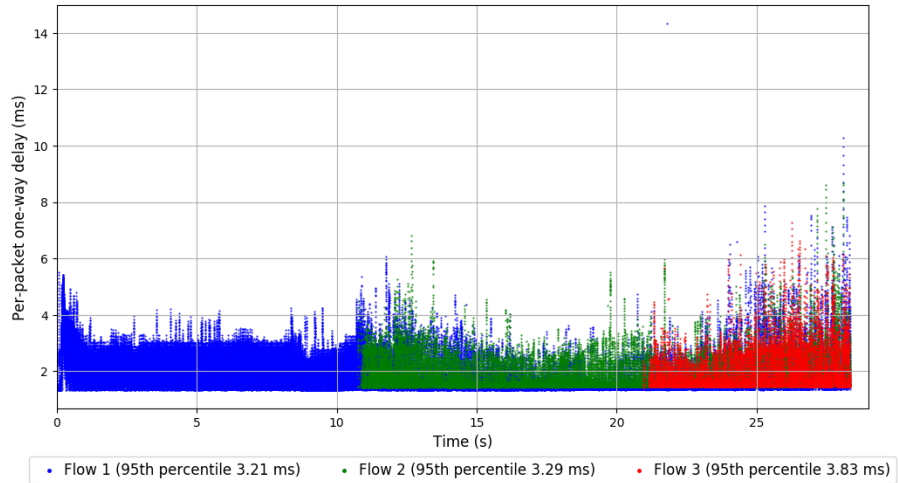
Run 5: Report of Indigo — Data Link

64

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-08-27 11:48:59
End at: 2019-08-27 11:49:29
Local clock offset: 0.518 ms
Remote clock offset: -0.169 ms


# Below is generated by plot.py at 2019-08-27 13:51:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.33 Mbit/s
95th percentile per-packet one-way delay: 4.786 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 47.53 Mbit/s
95th percentile per-packet one-way delay: 4.229 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 26.47 Mbit/s
95th percentile per-packet one-way delay: 5.043 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 21.91 Mbit/s
95th percentile per-packet one-way delay: 7.380 ms
Loss rate: 0.00%
```
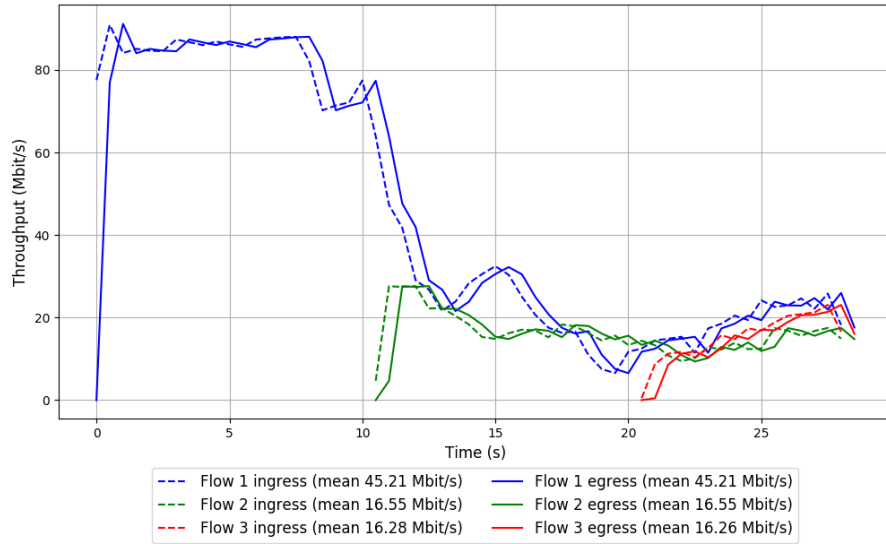
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-08-27 12:16:29
End at: 2019-08-27 12:16:59
Local clock offset: -0.143 ms
Remote clock offset: 0.269 ms


# Below is generated by plot.py at 2019-08-27 13:51:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.72 Mbit/s
95th percentile per-packet one-way delay: 3.275 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 45.21 Mbit/s
95th percentile per-packet one-way delay: 3.214 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 16.55 Mbit/s
95th percentile per-packet one-way delay: 3.286 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 16.26 Mbit/s
95th percentile per-packet one-way delay: 3.831 ms
Loss rate: 0.19%
```
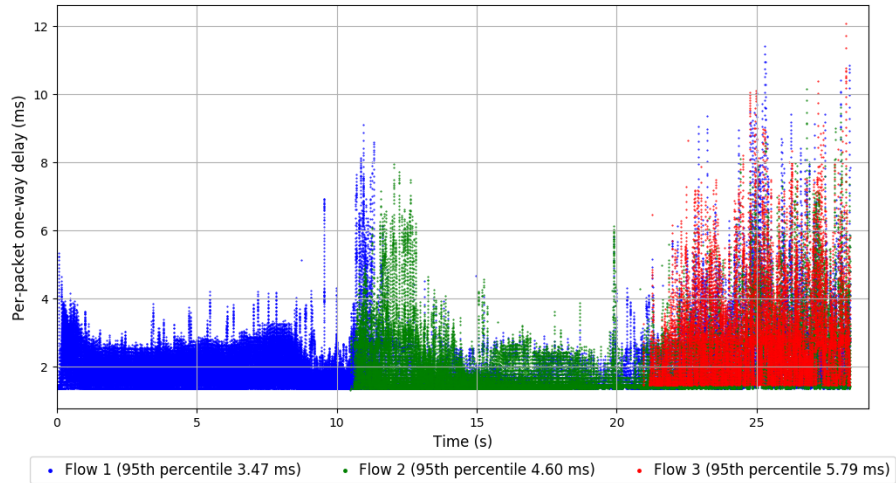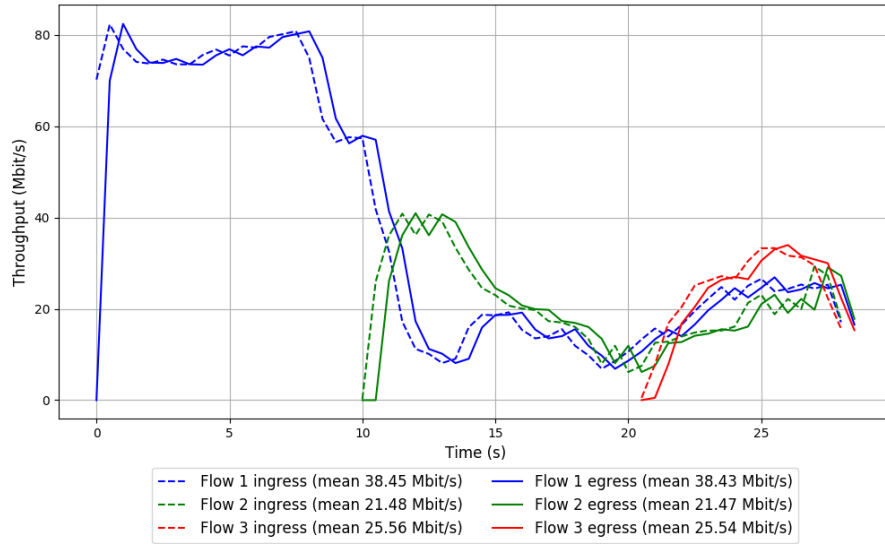
Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-08-27 12:44:00
End at: 2019-08-27 12:44:30
Local clock offset: -0.142 ms
Remote clock offset: 0.517 ms


# Below is generated by plot.py at 2019-08-27 13:51:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.62 Mbit/s
95th percentile per-packet one-way delay: 4.287 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 38.43 Mbit/s
95th percentile per-packet one-way delay: 3.472 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 21.47 Mbit/s
95th percentile per-packet one-way delay: 4.598 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 25.54 Mbit/s
95th percentile per-packet one-way delay: 5.795 ms
Loss rate: 0.08%
```
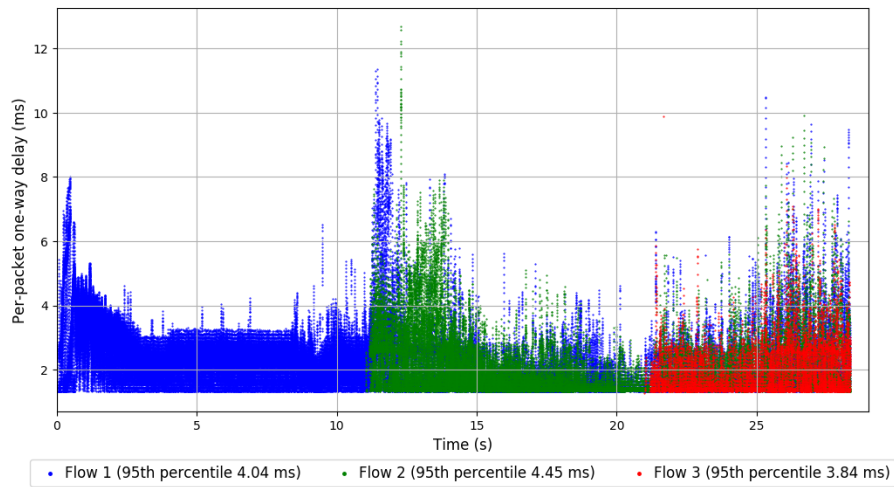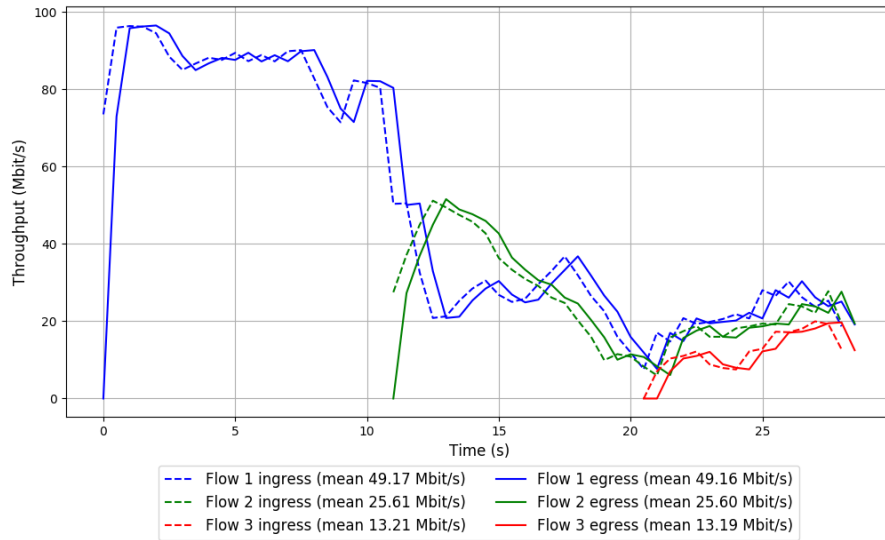
Run 3: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 38.45 Mbit/s) —— Flow 1 egress (mean 38.43 Mbit/s)
- - - - Flow 2 ingress (mean 21.48 Mbit/s) —— Flow 2 egress (mean 21.47 Mbit/s)
- - - - Flow 3 ingress (mean 25.56 Mbit/s) —— Flow 3 egress (mean 25.54 Mbit/s)

• Flow 1 (95th percentile 3.47 ms)   • Flow 2 (95th percentile 4.60 ms)   • Flow 3 (95th percentile 5.79 ms)

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-08-27 13:11:31
End at: 2019-08-27 13:12:01
Local clock offset: -0.197 ms
Remote clock offset: 0.681 ms


# Below is generated by plot.py at 2019-08-27 13:51:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.19 Mbit/s
95th percentile per-packet one-way delay: 4.120 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 49.16 Mbit/s
95th percentile per-packet one-way delay: 4.037 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 25.60 Mbit/s
95th percentile per-packet one-way delay: 4.451 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 13.19 Mbit/s
95th percentile per-packet one-way delay: 3.838 ms
Loss rate: 0.17%
```
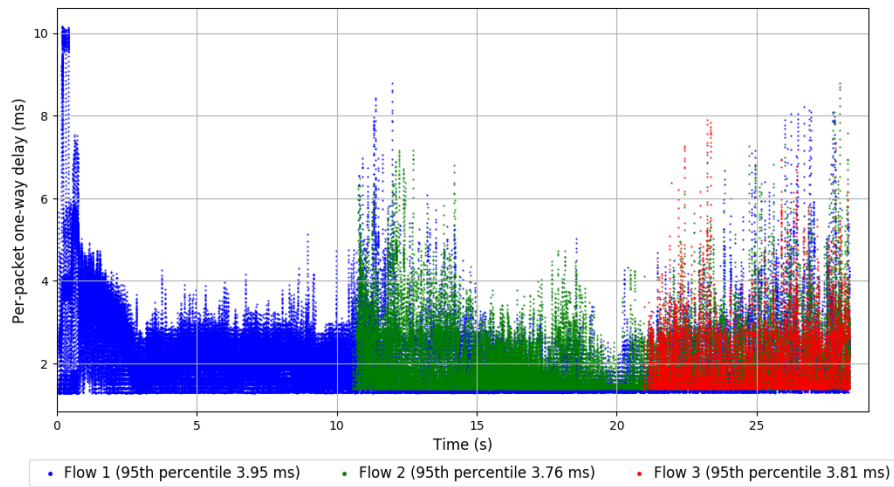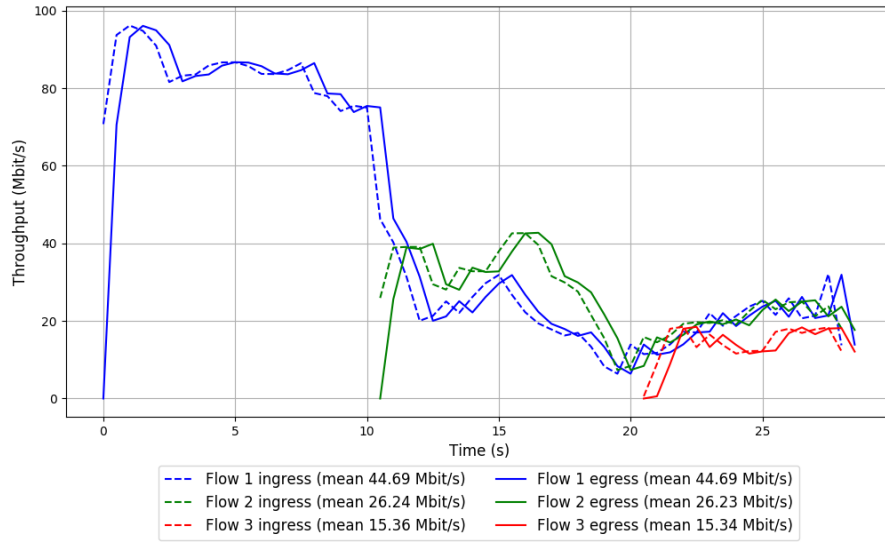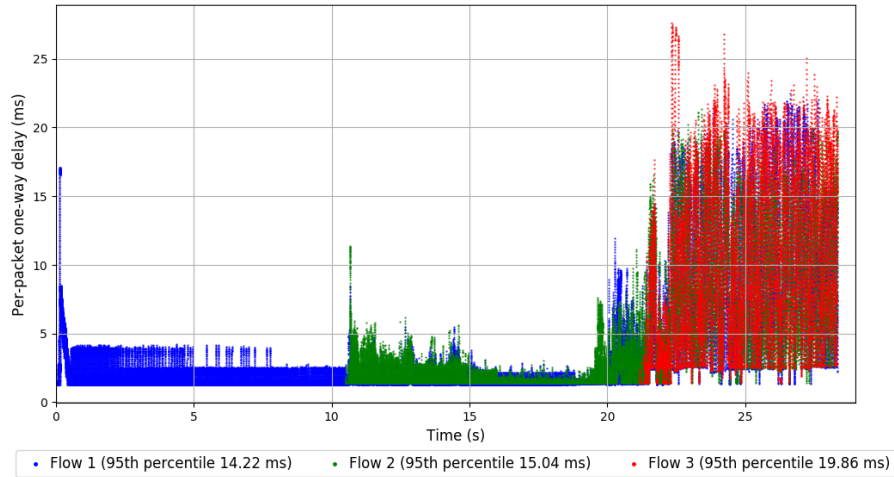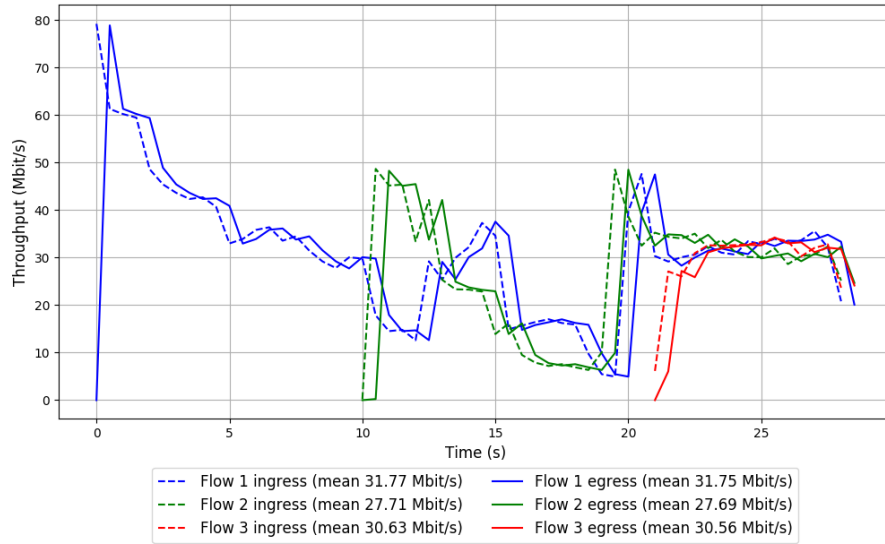
Run 4: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 49.17 Mbit/s) --- Flow 1 egress (mean 49.16 Mbit/s)
Flow 2 ingress (mean 25.61 Mbit/s) --- Flow 2 egress (mean 25.60 Mbit/s)
Flow 3 ingress (mean 13.21 Mbit/s) --- Flow 3 egress (mean 13.19 Mbit/s)

Flow 1 (95th percentile 4.04 ms) • Flow 2 (95th percentile 4.45 ms) • Flow 3 (95th percentile 3.84 ms)

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-08-27 13:39:03
End at: 2019-08-27 13:39:33
Local clock offset: -0.06 ms
Remote clock offset: 0.695 ms


# Below is generated by plot.py at 2019-08-27 13:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.12 Mbit/s
95th percentile per-packet one-way delay: 3.910 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 44.69 Mbit/s
95th percentile per-packet one-way delay: 3.953 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.23 Mbit/s
95th percentile per-packet one-way delay: 3.757 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 15.34 Mbit/s
95th percentile per-packet one-way delay: 3.813 ms
Loss rate: 0.17%
```
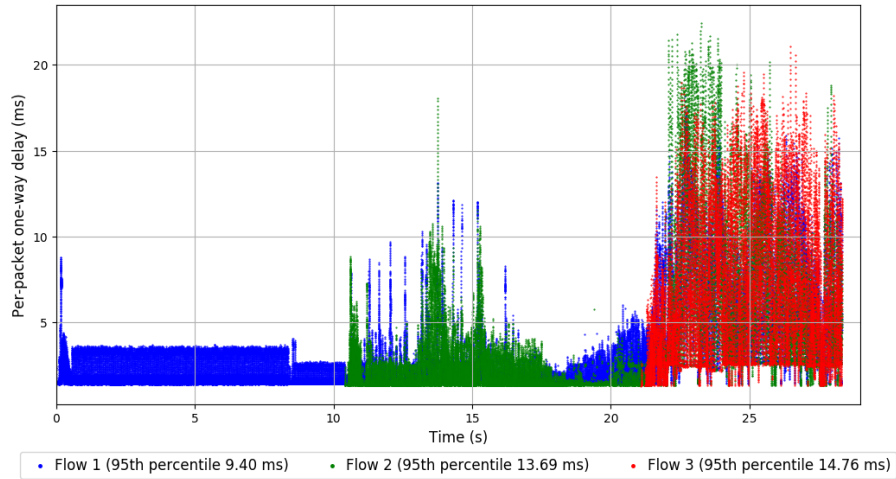
Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-08-27 11:44:26
End at: 2019-08-27 11:44:56
Local clock offset: -0.257 ms
Remote clock offset: -0.269 ms


# Below is generated by plot.py at 2019-08-27 13:51:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.94 Mbit/s
95th percentile per-packet one-way delay: 16.307 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 31.75 Mbit/s
95th percentile per-packet one-way delay: 14.222 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 27.69 Mbit/s
95th percentile per-packet one-way delay: 15.045 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 30.56 Mbit/s
95th percentile per-packet one-way delay: 19.859 ms
Loss rate: 0.20%
```
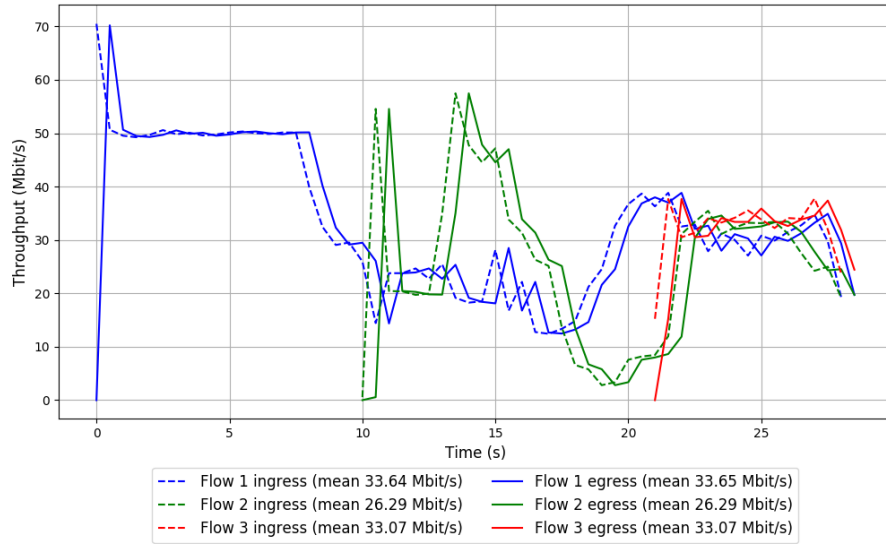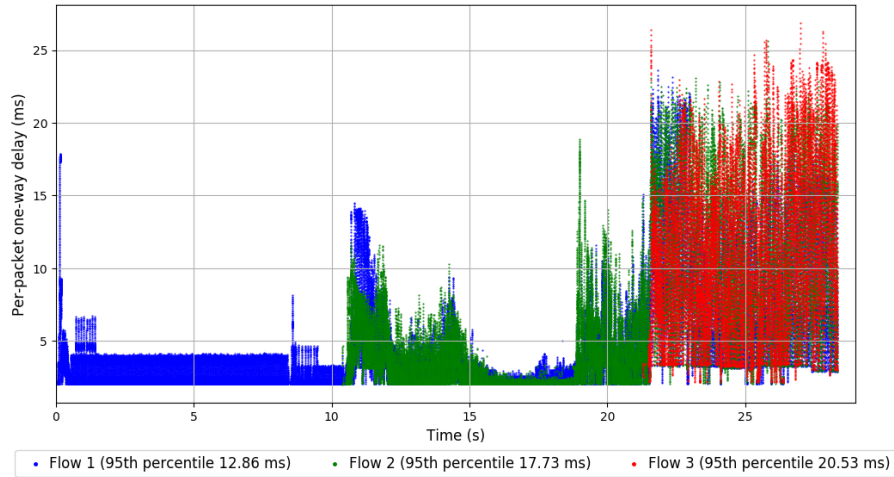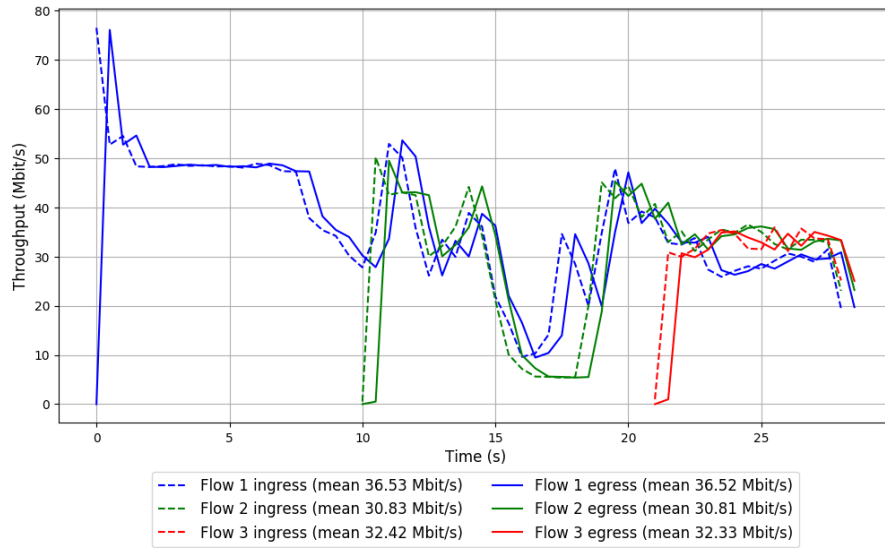
Run 1: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 31.77 Mbit/s)   Flow 1 egress (mean 31.75 Mbit/s)
Flow 2 ingress (mean 27.71 Mbit/s)   Flow 2 egress (mean 27.69 Mbit/s)
Flow 3 ingress (mean 30.63 Mbit/s)   Flow 3 egress (mean 30.56 Mbit/s)

Flow 1 (95th percentile 14.22 ms)   Flow 2 (95th percentile 15.04 ms)   Flow 3 (95th percentile 19.86 ms)

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-08-27 12:11:57
End at: 2019-08-27 12:12:27
Local clock offset: -0.148 ms
Remote clock offset: 0.198 ms


# Below is generated by plot.py at 2019-08-27 13:51:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.73 Mbit/s
95th percentile per-packet one-way delay: 12.226 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 33.65 Mbit/s
95th percentile per-packet one-way delay: 9.405 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 26.29 Mbit/s
95th percentile per-packet one-way delay: 13.693 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 33.07 Mbit/s
95th percentile per-packet one-way delay: 14.758 ms
Loss rate: 0.05%
```
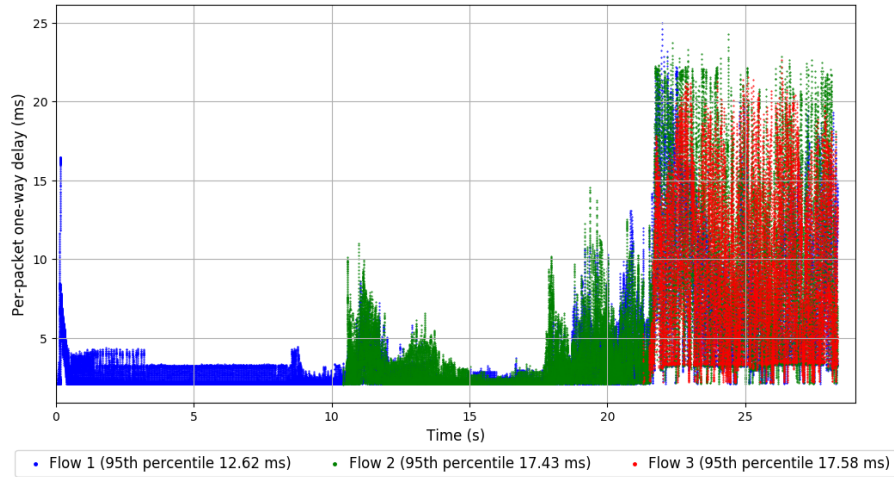
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-08-27 12:39:27
End at: 2019-08-27 12:39:57
Local clock offset: 0.565 ms
Remote clock offset: 0.506 ms


# Below is generated by plot.py at 2019-08-27 13:51:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.07 Mbit/s
95th percentile per-packet one-way delay: 16.792 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 36.52 Mbit/s
95th percentile per-packet one-way delay: 12.859 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 30.81 Mbit/s
95th percentile per-packet one-way delay: 17.733 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 32.33 Mbit/s
95th percentile per-packet one-way delay: 20.528 ms
Loss rate: 0.18%
```
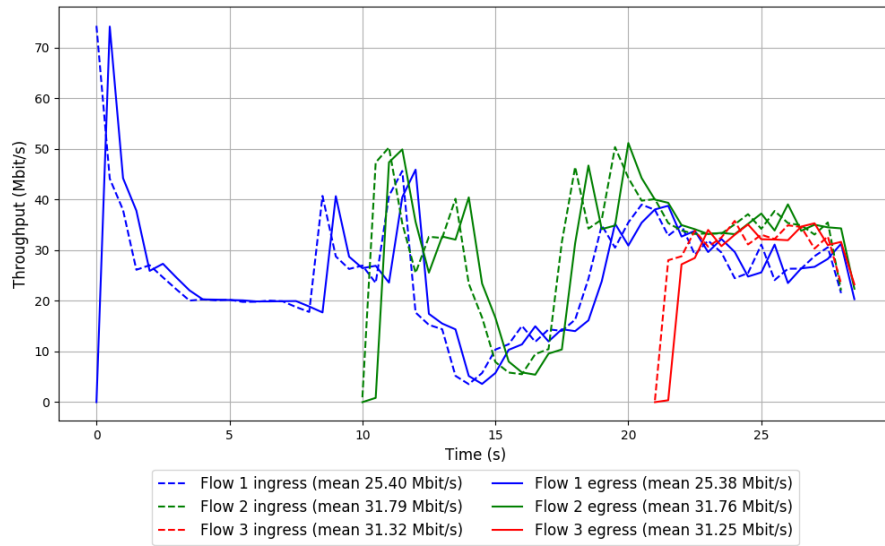
Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-08-27 13:06:58
End at: 2019-08-27 13:07:28
Local clock offset: 0.576 ms
Remote clock offset: 0.648 ms


# Below is generated by plot.py at 2019-08-27 13:51:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.26 Mbit/s
95th percentile per-packet one-way delay: 16.065 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 25.38 Mbit/s
95th percentile per-packet one-way delay: 12.618 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 31.76 Mbit/s
95th percentile per-packet one-way delay: 17.425 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 31.25 Mbit/s
95th percentile per-packet one-way delay: 17.583 ms
Loss rate: 0.27%
```
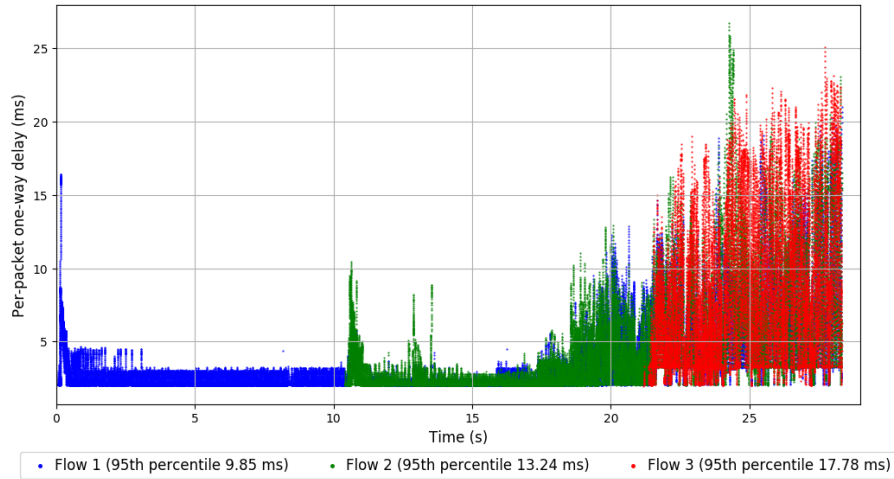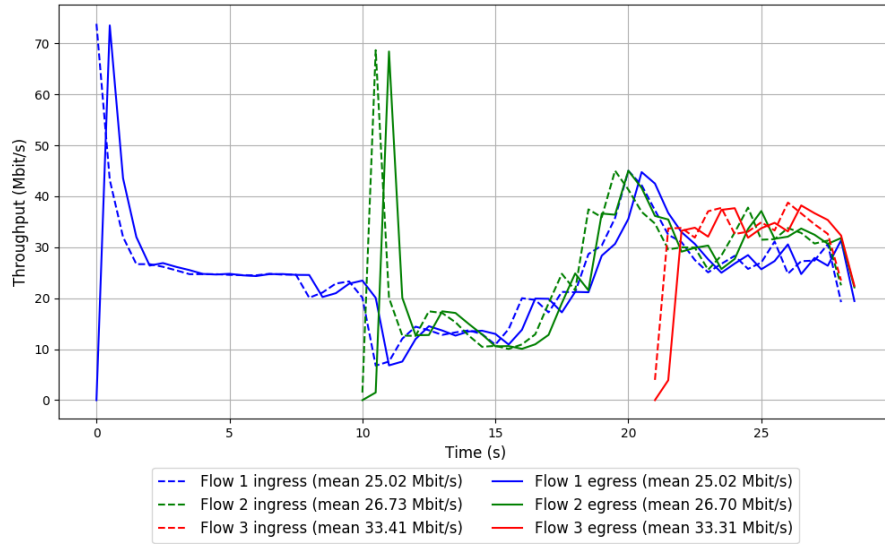
Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-08-27 13:34:30
End at: 2019-08-27 13:35:00
Local clock offset: 0.686 ms
Remote clock offset: 0.718 ms


# Below is generated by plot.py at 2019-08-27 13:51:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.32 Mbit/s
95th percentile per-packet one-way delay: 13.903 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 25.02 Mbit/s
95th percentile per-packet one-way delay: 9.845 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.70 Mbit/s
95th percentile per-packet one-way delay: 13.238 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 33.31 Mbit/s
95th percentile per-packet one-way delay: 17.783 ms
Loss rate: 0.30%
```
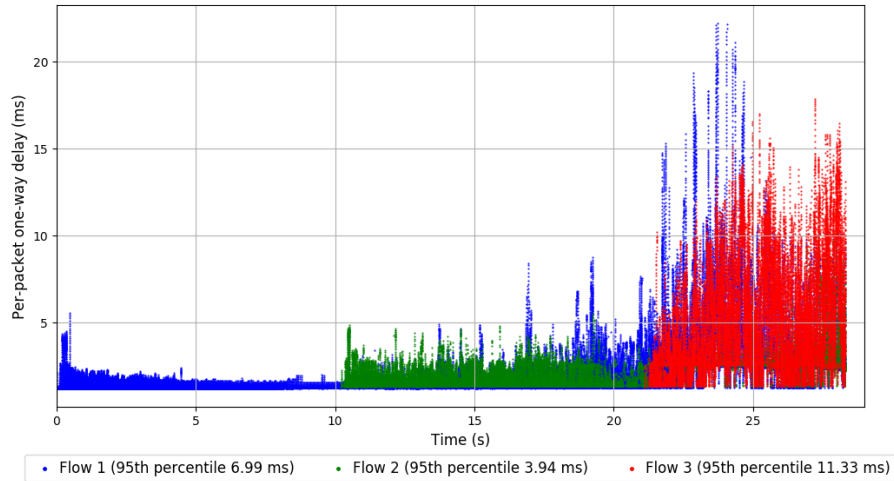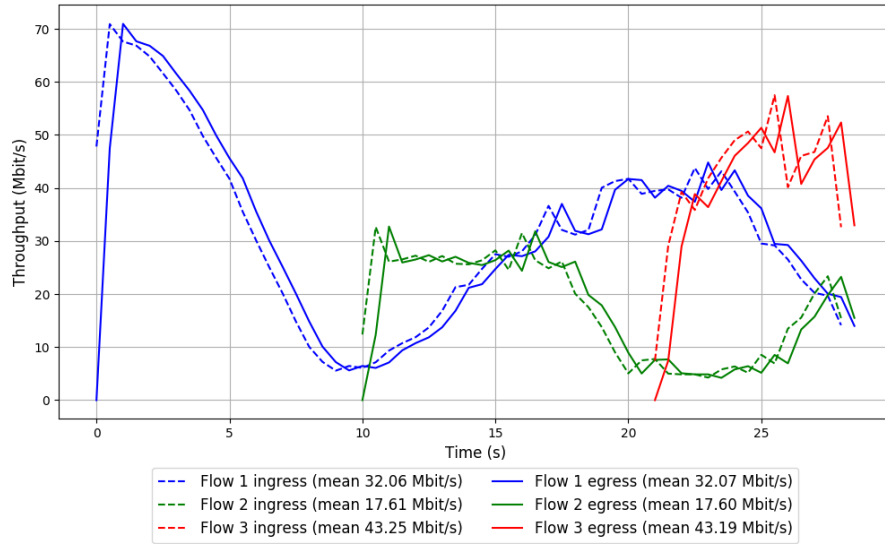
Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-08-27 11:42:10
End at: 2019-08-27 11:42:40
Local clock offset: -0.332 ms
Remote clock offset: -0.332 ms

# Below is generated by plot.py at 2019-08-27 13:51:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.30 Mbit/s
95th percentile per-packet one-way delay: 8.768 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 32.07 Mbit/s
95th percentile per-packet one-way delay: 6.993 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 17.60 Mbit/s
95th percentile per-packet one-way delay: 3.939 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 43.19 Mbit/s
95th percentile per-packet one-way delay: 11.333 ms
Loss rate: 0.16%
```
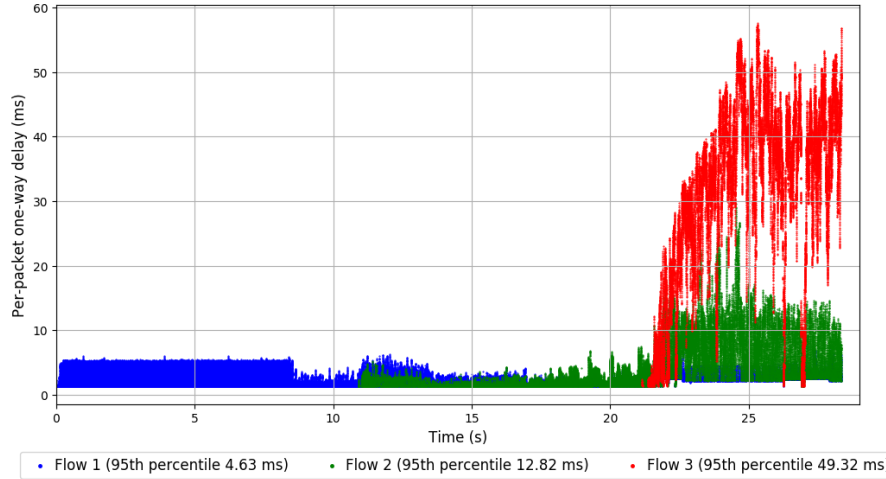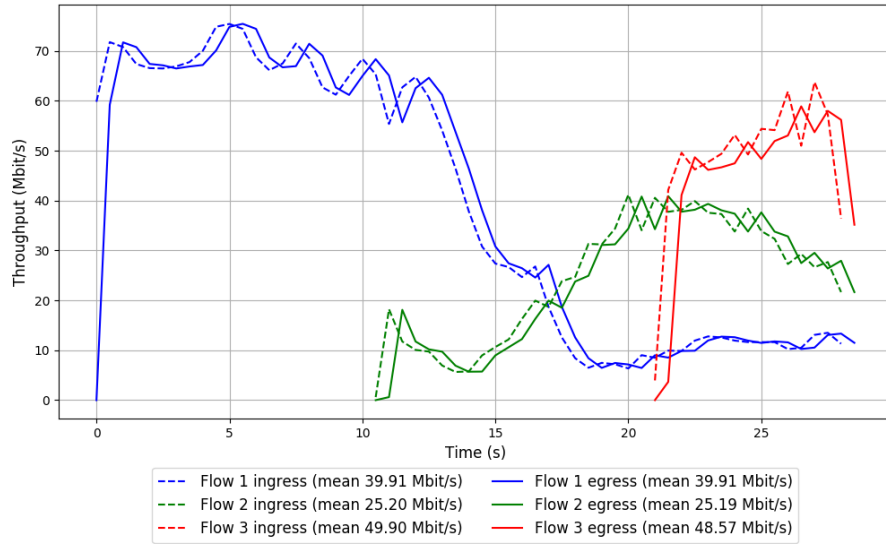
Run 1: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 32.06 Mbit/s) — Flow 1 egress (mean 32.07 Mbit/s)
Flow 2 ingress (mean 17.61 Mbit/s) — Flow 2 egress (mean 17.60 Mbit/s)
Flow 3 ingress (mean 43.25 Mbit/s) — Flow 3 egress (mean 43.19 Mbit/s)

Flow 1 (95th percentile 6.99 ms) ⋅ Flow 2 (95th percentile 3.94 ms) ⋅ Flow 3 (95th percentile 11.33 ms)

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-08-27 12:09:39
End at: 2019-08-27 12:10:09
Local clock offset: -0.16 ms
Remote clock offset: 0.142 ms


# Below is generated by plot.py at 2019-08-27 13:51:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.76 Mbit/s
95th percentile per-packet one-way delay: 40.708 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 39.91 Mbit/s
95th percentile per-packet one-way delay: 4.628 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 25.19 Mbit/s
95th percentile per-packet one-way delay: 12.824 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 48.57 Mbit/s
95th percentile per-packet one-way delay: 49.321 ms
Loss rate: 2.71%
```
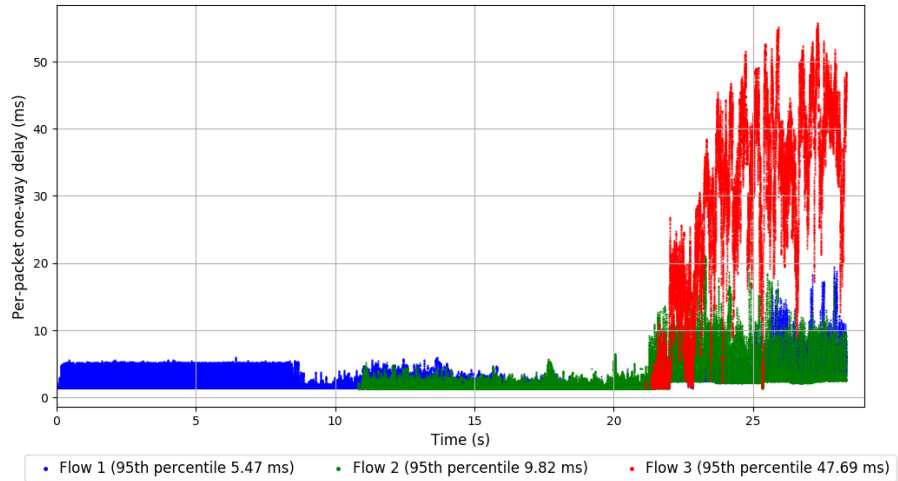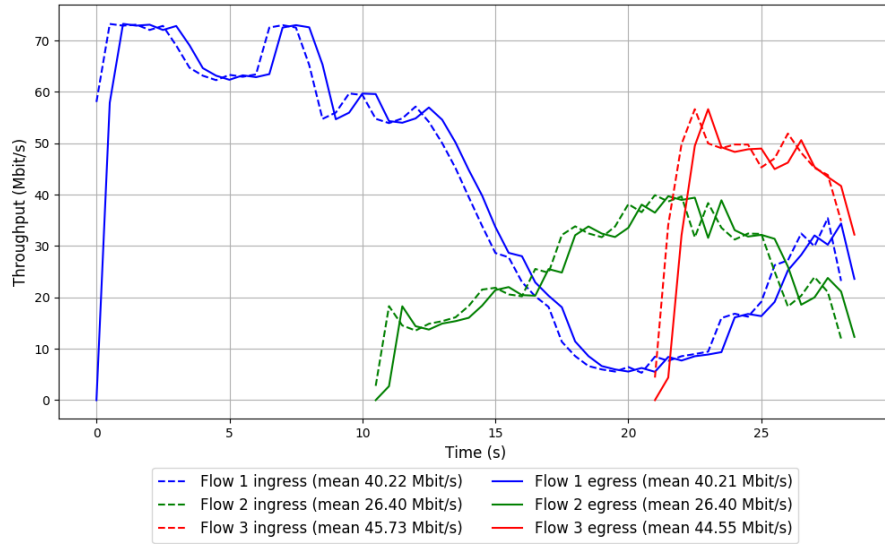
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-08-27 12:37:10
End at: 2019-08-27 12:37:40
Local clock offset: -0.194 ms
Remote clock offset: 0.482 ms


# Below is generated by plot.py at 2019-08-27 13:51:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.86 Mbit/s
95th percentile per-packet one-way delay: 37.926 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: 5.469 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 26.40 Mbit/s
95th percentile per-packet one-way delay: 9.823 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 44.55 Mbit/s
95th percentile per-packet one-way delay: 47.691 ms
Loss rate: 2.62%
```
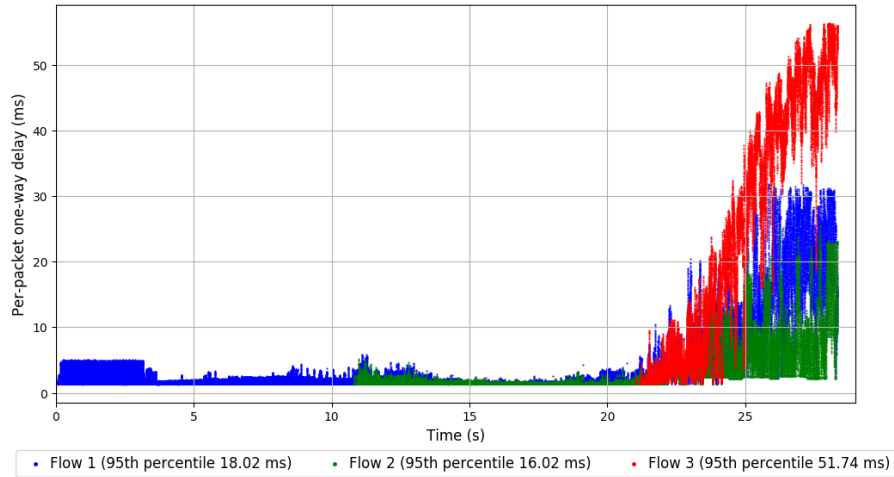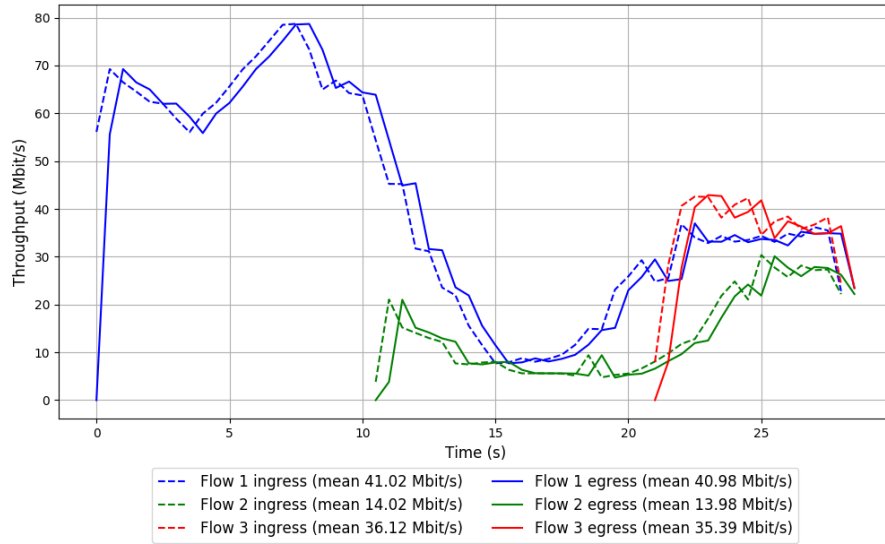
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-08-27 13:04:41
End at: 2019-08-27 13:05:11
Local clock offset: -0.209 ms
Remote clock offset: 0.626 ms


# Below is generated by plot.py at 2019-08-27 13:52:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.77 Mbit/s
95th percentile per-packet one-way delay: 38.349 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 40.98 Mbit/s
95th percentile per-packet one-way delay: 18.021 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 13.98 Mbit/s
95th percentile per-packet one-way delay: 16.017 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 35.39 Mbit/s
95th percentile per-packet one-way delay: 51.743 ms
Loss rate: 2.01%
```
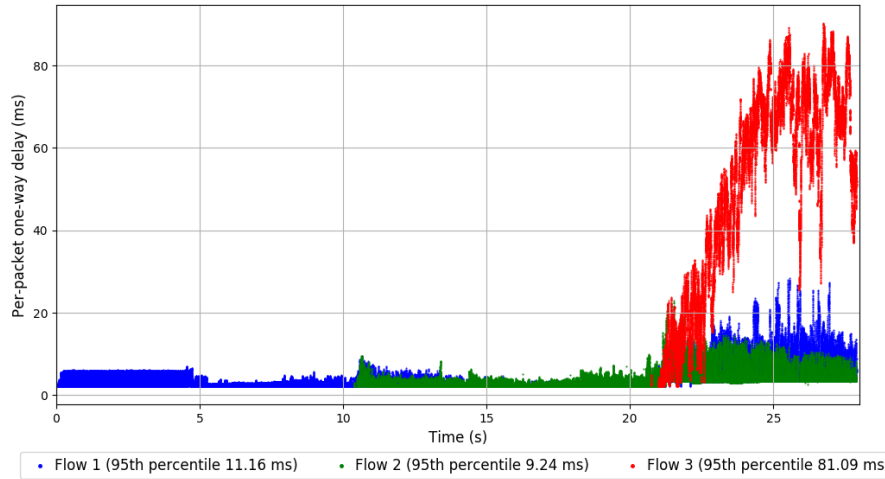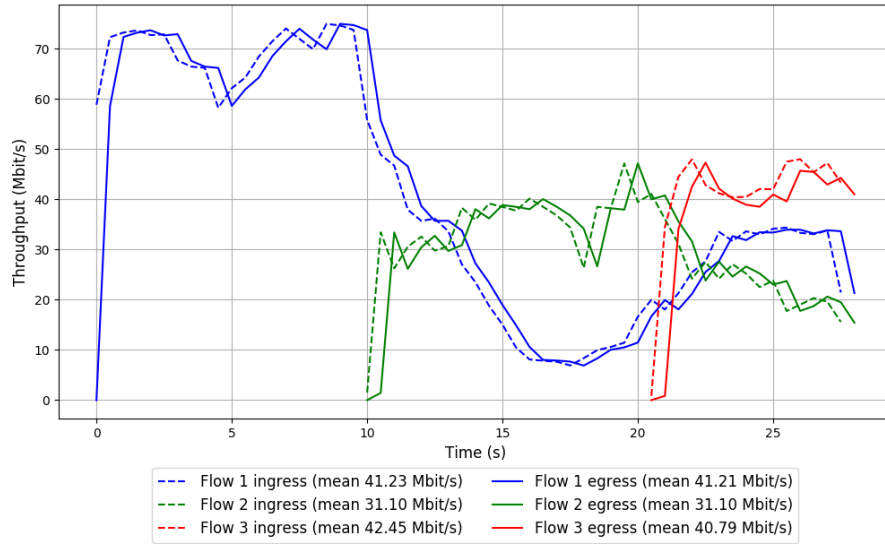
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-08-27 13:32:12
End at: 2019-08-27 13:32:42
Local clock offset: 0.681 ms
Remote clock offset: 0.659 ms


# Below is generated by plot.py at 2019-08-27 13:52:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.21 Mbit/s
95th percentile per-packet one-way delay: 66.821 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 41.21 Mbit/s
95th percentile per-packet one-way delay: 11.158 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 31.10 Mbit/s
95th percentile per-packet one-way delay: 9.237 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 40.79 Mbit/s
95th percentile per-packet one-way delay: 81.092 ms
Loss rate: 3.93%
```
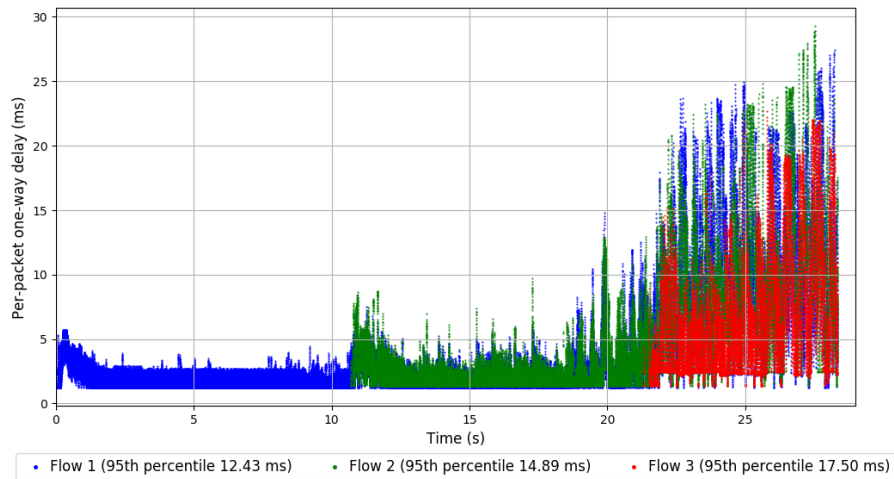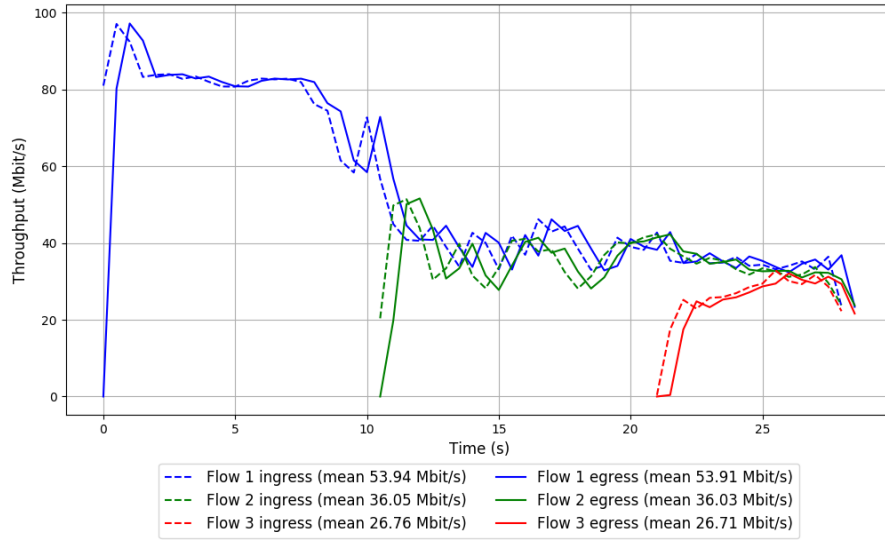
Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-08-27 11:32:56
End at: 2019-08-27 11:33:26
Local clock offset: -0.353 ms
Remote clock offset: -0.489 ms


# Below is generated by plot.py at 2019-08-27 13:52:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.99 Mbit/s
95th percentile per-packet one-way delay: 14.057 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 53.91 Mbit/s
95th percentile per-packet one-way delay: 12.431 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 36.03 Mbit/s
95th percentile per-packet one-way delay: 14.886 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 26.71 Mbit/s
95th percentile per-packet one-way delay: 17.501 ms
Loss rate: 0.20%
```
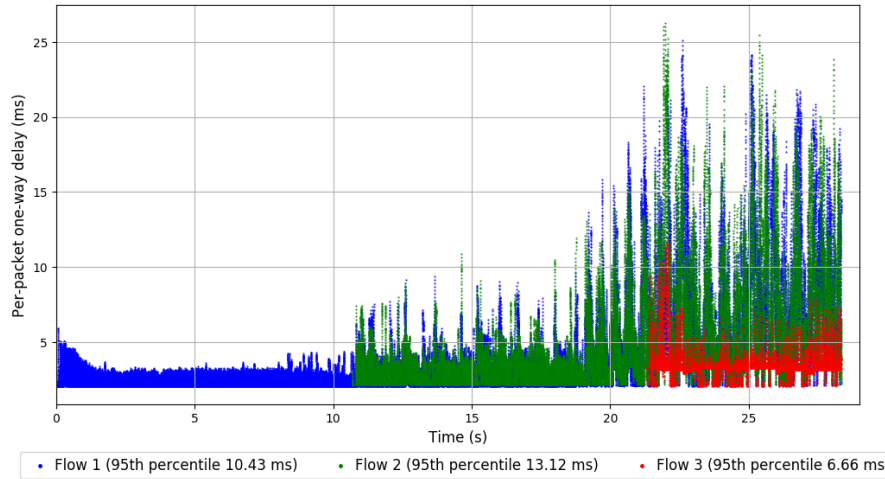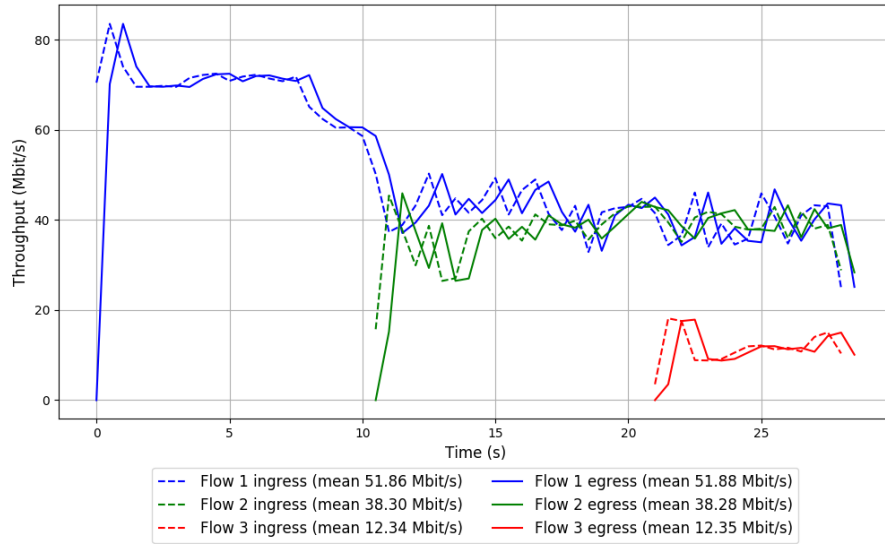
Run 1: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 53.94 Mbit/s)   —— Flow 1 egress (mean 53.91 Mbit/s)
- - - Flow 2 ingress (mean 36.05 Mbit/s)   —— Flow 2 egress (mean 36.03 Mbit/s)
- - - Flow 3 ingress (mean 26.76 Mbit/s)   —— Flow 3 egress (mean 26.71 Mbit/s)

• Flow 1 (95th percentile 12.43 ms)   • Flow 2 (95th percentile 14.89 ms)   • Flow 3 (95th percentile 17.50 ms)

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-08-27 12:00:27
End at: 2019-08-27 12:00:57
Local clock offset: 0.589 ms
Remote clock offset: 0.027 ms


# Below is generated by plot.py at 2019-08-27 13:52:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.77 Mbit/s
95th percentile per-packet one-way delay: 11.424 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 51.88 Mbit/s
95th percentile per-packet one-way delay: 10.433 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 38.28 Mbit/s
95th percentile per-packet one-way delay: 13.123 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 12.35 Mbit/s
95th percentile per-packet one-way delay: 6.657 ms
Loss rate: 0.19%
```
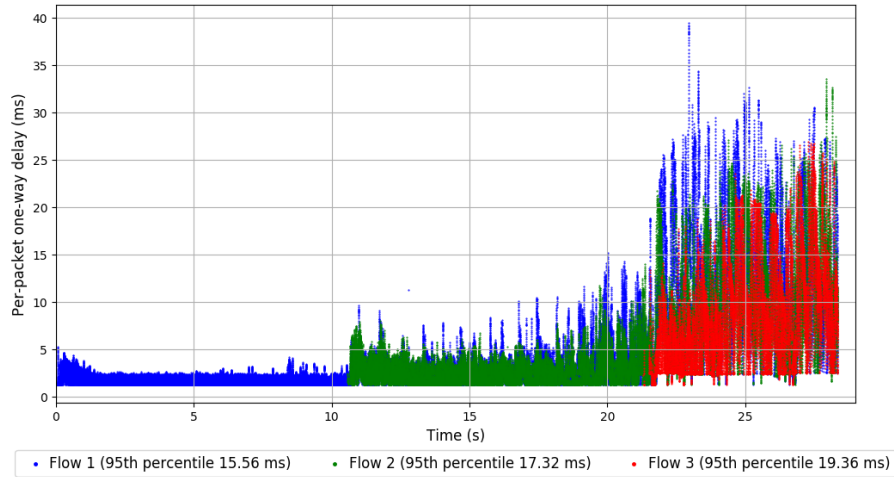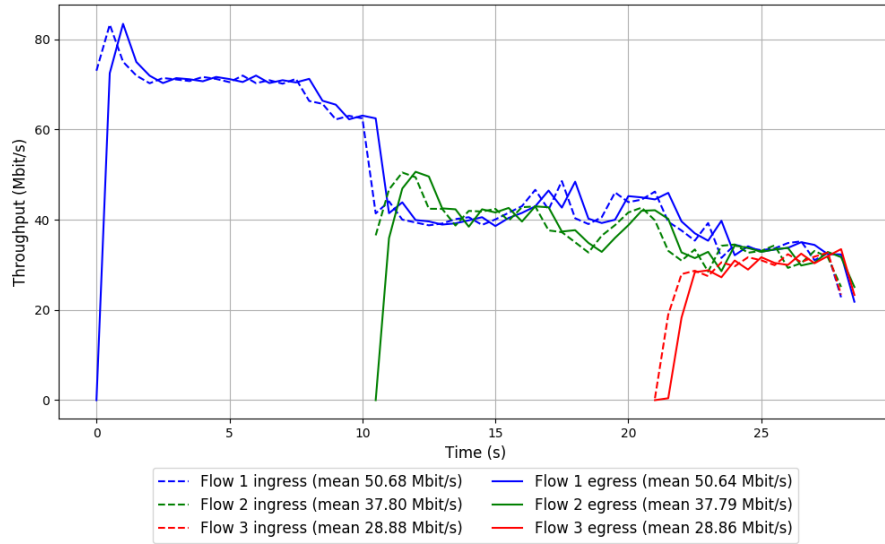
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-08-27 12:27:58
End at: 2019-08-27 12:28:28
Local clock offset: -0.154 ms
Remote clock offset: 0.41 ms


# Below is generated by plot.py at 2019-08-27 13:52:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.50 Mbit/s
95th percentile per-packet one-way delay: 16.996 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 50.64 Mbit/s
95th percentile per-packet one-way delay: 15.559 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 37.79 Mbit/s
95th percentile per-packet one-way delay: 17.325 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 19.364 ms
Loss rate: 0.14%
```
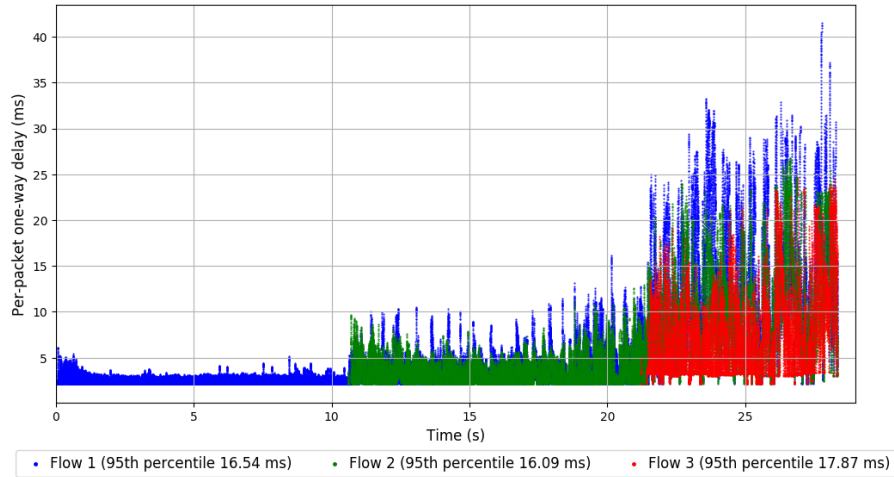
Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-08-27 12:55:28
End at: 2019-08-27 12:55:58
Local clock offset: 0.609 ms
Remote clock offset: 0.643 ms


# Below is generated by plot.py at 2019-08-27 13:52:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.61 Mbit/s
95th percentile per-packet one-way delay: 16.577 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 49.53 Mbit/s
95th percentile per-packet one-way delay: 16.543 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 37.06 Mbit/s
95th percentile per-packet one-way delay: 16.086 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 27.29 Mbit/s
95th percentile per-packet one-way delay: 17.871 ms
Loss rate: 0.16%
```
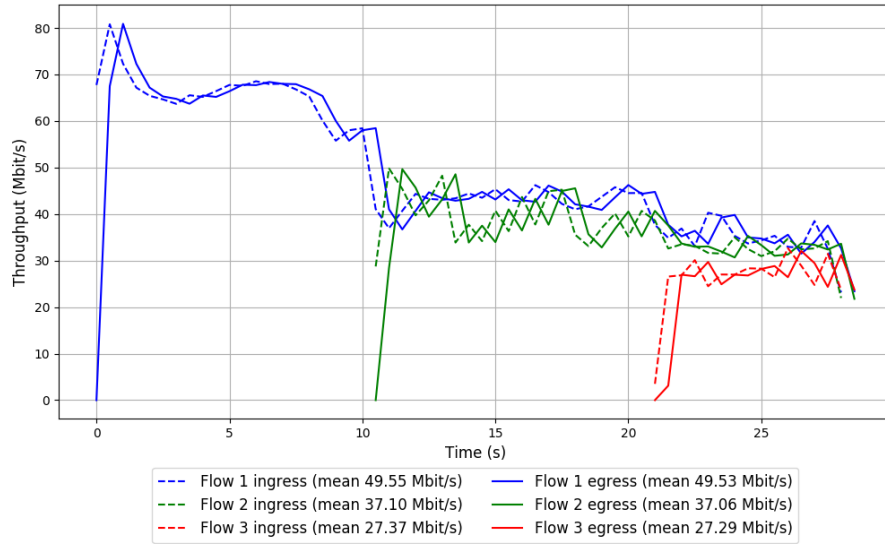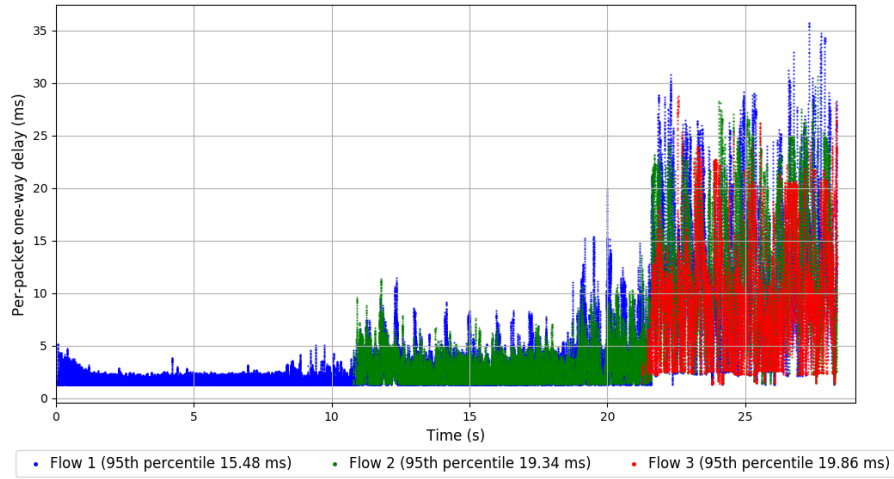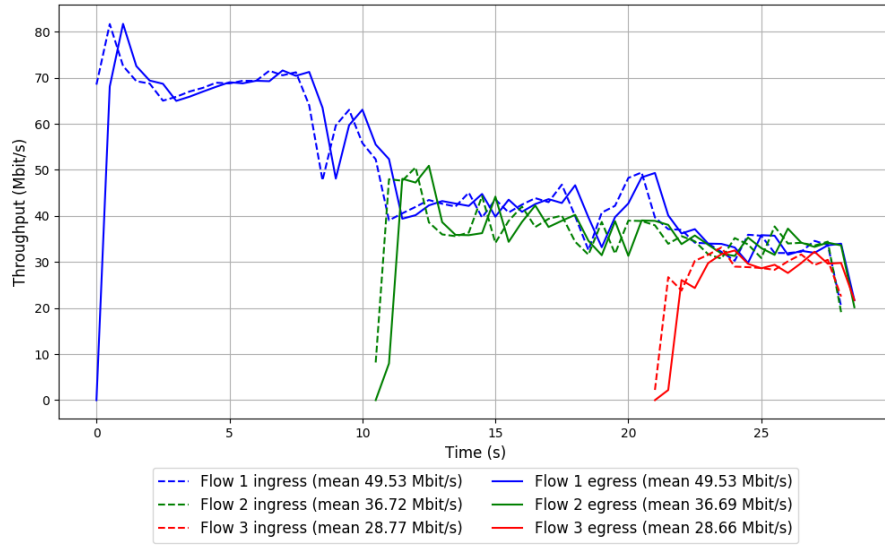
Run 4: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 49.55 Mbit/s) —— Flow 1 egress (mean 49.53 Mbit/s)
- - - Flow 2 ingress (mean 37.10 Mbit/s) —— Flow 2 egress (mean 37.06 Mbit/s)
- - - Flow 3 ingress (mean 27.37 Mbit/s) —— Flow 3 egress (mean 27.29 Mbit/s)

- Flow 1 (95th percentile 16.54 ms)   - Flow 2 (95th percentile 16.09 ms)   - Flow 3 (95th percentile 17.87 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-08-27 13:22:59
End at: 2019-08-27 13:23:29
Local clock offset: -0.147 ms
Remote clock offset: 0.763 ms


# Below is generated by plot.py at 2019-08-27 13:52:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.40 Mbit/s
95th percentile per-packet one-way delay: 18.005 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 49.53 Mbit/s
95th percentile per-packet one-way delay: 15.482 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 36.69 Mbit/s
95th percentile per-packet one-way delay: 19.345 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 28.66 Mbit/s
95th percentile per-packet one-way delay: 19.864 ms
Loss rate: 0.42%
```
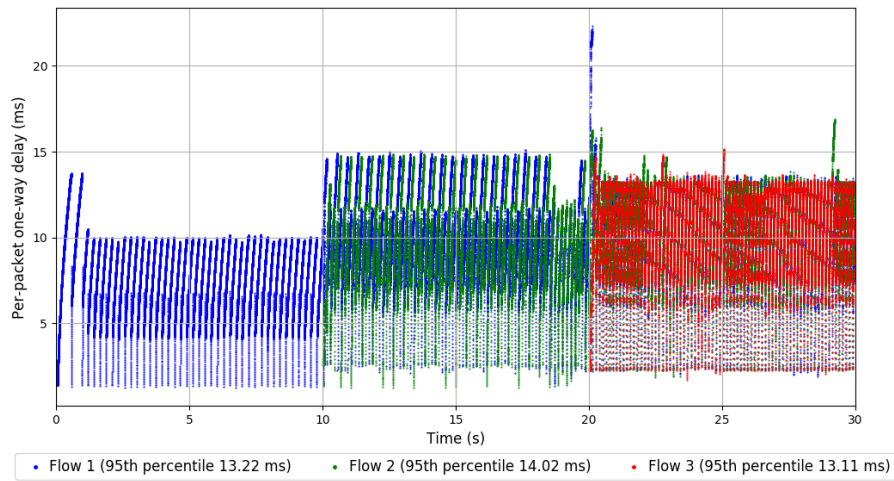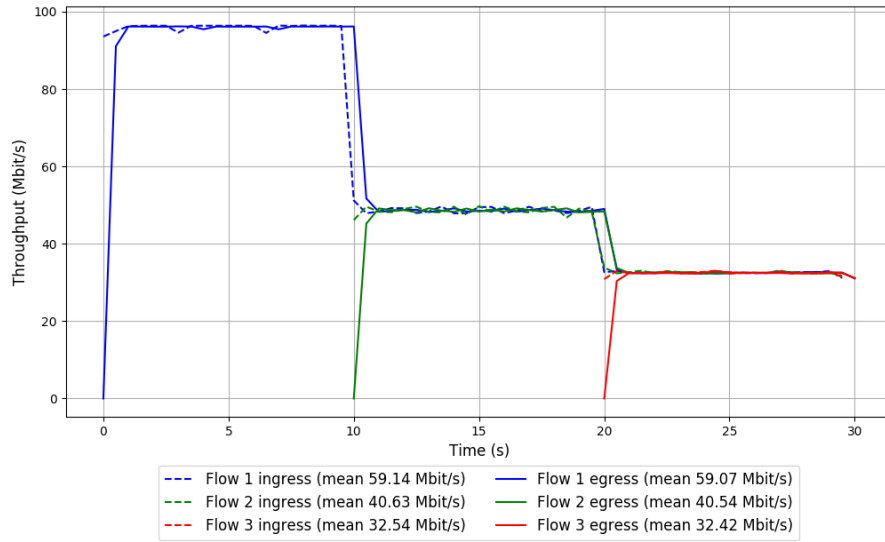
Run 5: Report of Indigo-MusesT — Data Link

- Flow 1 ingress (mean 49.53 Mbit/s)
- Flow 2 ingress (mean 36.72 Mbit/s)
- Flow 3 ingress (mean 28.77 Mbit/s)
- Flow 1 egress (mean 49.53 Mbit/s)
- Flow 2 egress (mean 36.69 Mbit/s)
- Flow 3 egress (mean 28.66 Mbit/s)

- Flow 1 (95th percentile 15.48 ms)
- Flow 2 (95th percentile 19.34 ms)
- Flow 3 (95th percentile 19.86 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2019-08-27 11:50:07
End at: 2019-08-27 11:50:37
Local clock offset: -0.261 ms
Remote clock offset: -0.197 ms


# Below is generated by plot.py at 2019-08-27 13:53:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.85 Mbit/s
95th percentile per-packet one-way delay: 13.450 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 59.07 Mbit/s
95th percentile per-packet one-way delay: 13.221 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 40.54 Mbit/s
95th percentile per-packet one-way delay: 14.017 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 32.42 Mbit/s
95th percentile per-packet one-way delay: 13.107 ms
Loss rate: 0.40%
```
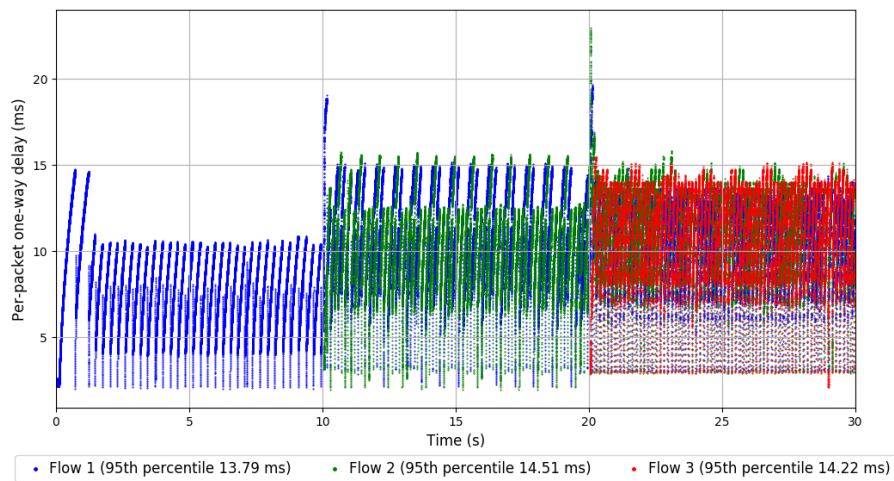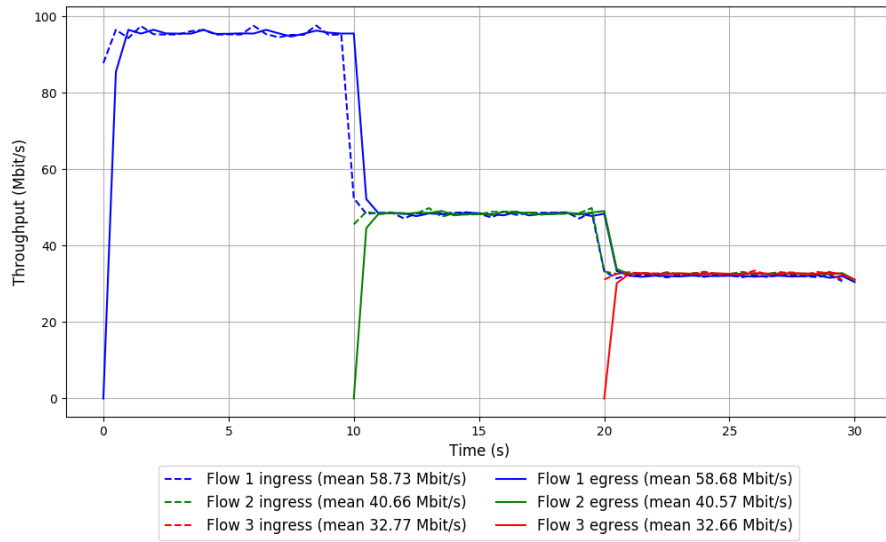
Run 1: Report of LEDBAT — Data Link

- - - Flow 1 ingress (mean 59.14 Mbit/s)   —— Flow 1 egress (mean 59.07 Mbit/s)
- - - Flow 2 ingress (mean 40.63 Mbit/s)   —— Flow 2 egress (mean 40.54 Mbit/s)
- - - Flow 3 ingress (mean 32.54 Mbit/s)   —— Flow 3 egress (mean 32.42 Mbit/s)

- Flow 1 (95th percentile 13.22 ms)   • Flow 2 (95th percentile 14.02 ms)   • Flow 3 (95th percentile 13.11 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2019-08-27 12:17:37
End at: 2019-08-27 12:18:07
Local clock offset: 0.607 ms
Remote clock offset: 0.287 ms


# Below is generated by plot.py at 2019-08-27 13:53:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.53 Mbit/s
95th percentile per-packet one-way delay: 14.147 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 58.68 Mbit/s
95th percentile per-packet one-way delay: 13.791 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 40.57 Mbit/s
95th percentile per-packet one-way delay: 14.512 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 32.66 Mbit/s
95th percentile per-packet one-way delay: 14.223 ms
Loss rate: 0.38%
```
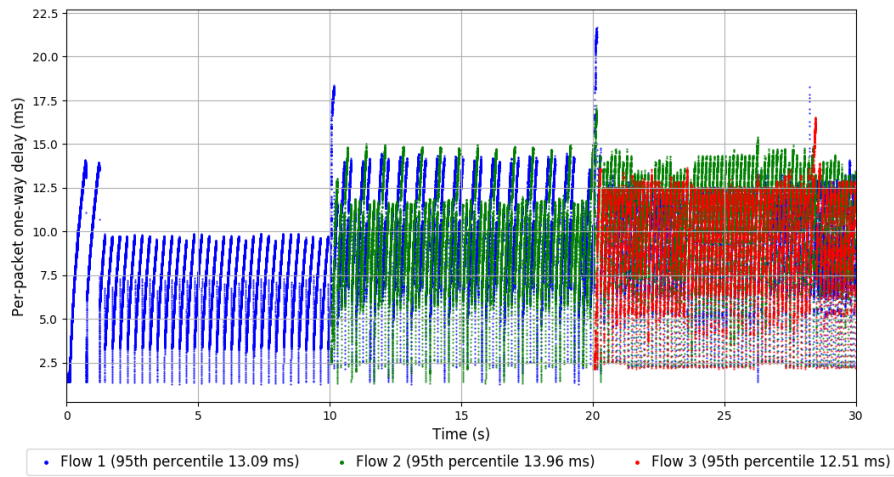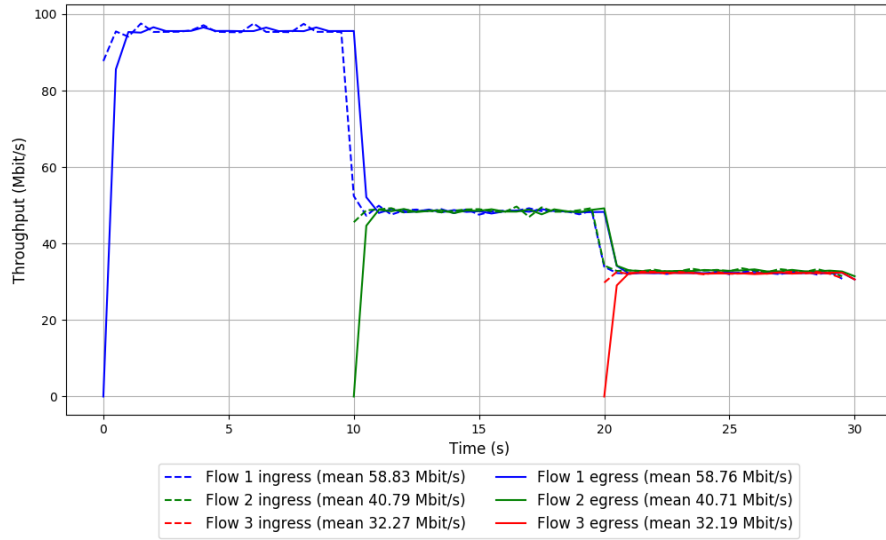
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-08-27 12:45:07
End at: 2019-08-27 12:45:37
Local clock offset: -0.156 ms
Remote clock offset: 0.572 ms


# Below is generated by plot.py at 2019-08-27 13:53:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.56 Mbit/s
95th percentile per-packet one-way delay: 13.467 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 58.76 Mbit/s
95th percentile per-packet one-way delay: 13.090 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 40.71 Mbit/s
95th percentile per-packet one-way delay: 13.961 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 12.508 ms
Loss rate: 0.33%
```
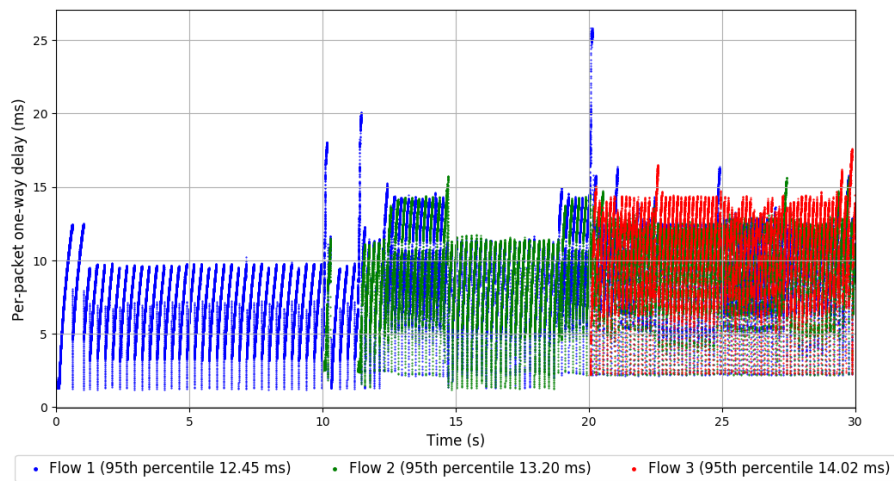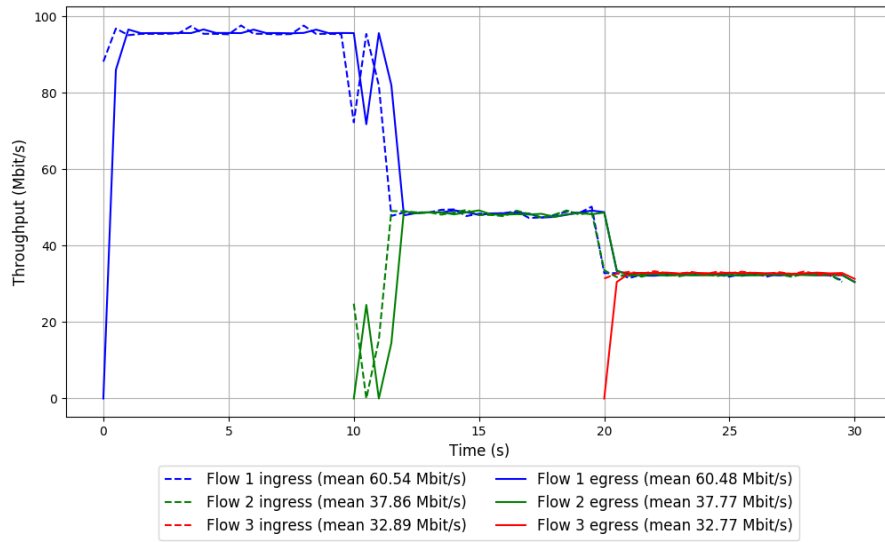
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 58.83 Mbit/s) --- Flow 1 egress (mean 58.76 Mbit/s)
Flow 2 ingress (mean 40.79 Mbit/s) --- Flow 2 egress (mean 40.71 Mbit/s)
Flow 3 ingress (mean 32.27 Mbit/s) --- Flow 3 egress (mean 32.19 Mbit/s)

Flow 1 (95th percentile 13.09 ms)   Flow 2 (95th percentile 13.96 ms)   Flow 3 (95th percentile 12.51 ms)

110

```
Run 4: Statistics of LEDBAT

Start at: 2019-08-27 13:12:39
End at: 2019-08-27 13:13:09
Local clock offset: -0.191 ms
Remote clock offset: 0.685 ms


# Below is generated by plot.py at 2019-08-27 13:53:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.52 Mbit/s
95th percentile per-packet one-way delay: 13.342 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 60.48 Mbit/s
95th percentile per-packet one-way delay: 12.446 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 37.77 Mbit/s
95th percentile per-packet one-way delay: 13.204 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 32.77 Mbit/s
95th percentile per-packet one-way delay: 14.024 ms
Loss rate: 0.40%
```
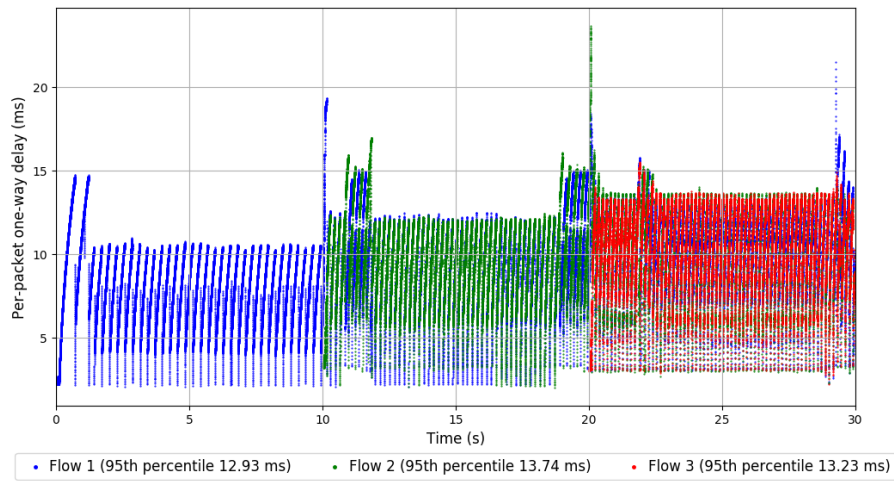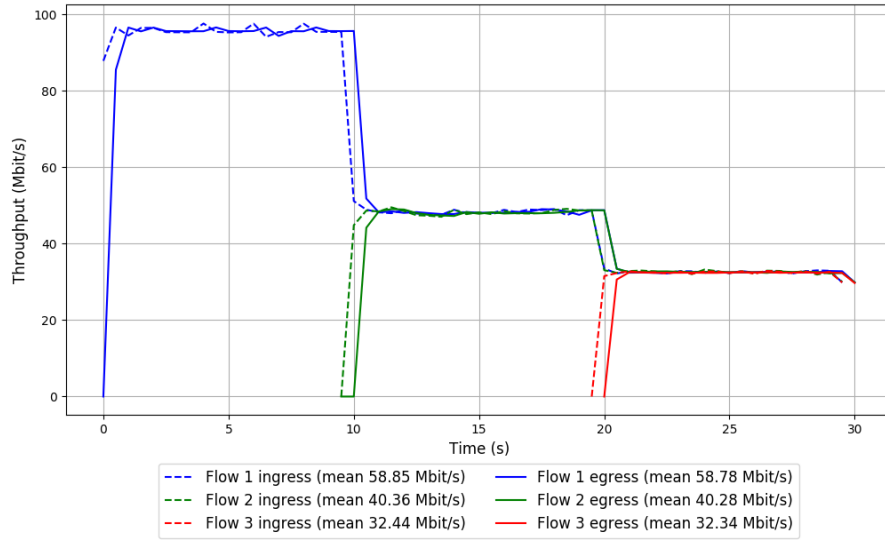
Run 4: Report of LEDBAT — Data Link

- - - Flow 1 ingress (mean 60.54 Mbit/s) —— Flow 1 egress (mean 60.48 Mbit/s)
- - - Flow 2 ingress (mean 37.86 Mbit/s) —— Flow 2 egress (mean 37.77 Mbit/s)
- - - Flow 3 ingress (mean 32.89 Mbit/s) —— Flow 3 egress (mean 32.77 Mbit/s)

• Flow 1 (95th percentile 12.45 ms)   • Flow 2 (95th percentile 13.20 ms)   • Flow 3 (95th percentile 14.02 ms)

112

```
Run 5: Statistics of LEDBAT

Start at: 2019-08-27 13:40:11
End at: 2019-08-27 13:40:41
Local clock offset: 0.712 ms
Remote clock offset: 0.639 ms

# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.37 Mbit/s
95th percentile per-packet one-way delay: 13.250 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 12.933 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 40.28 Mbit/s
95th percentile per-packet one-way delay: 13.739 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 13.234 ms
Loss rate: 0.34%
```
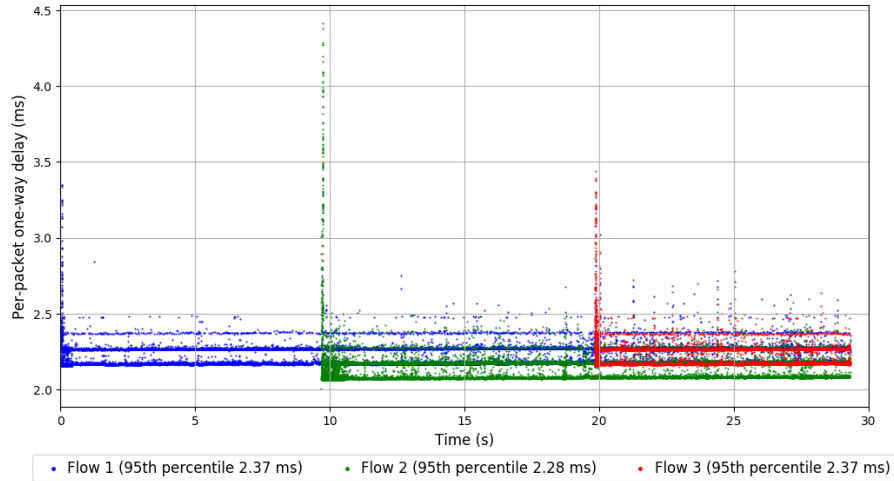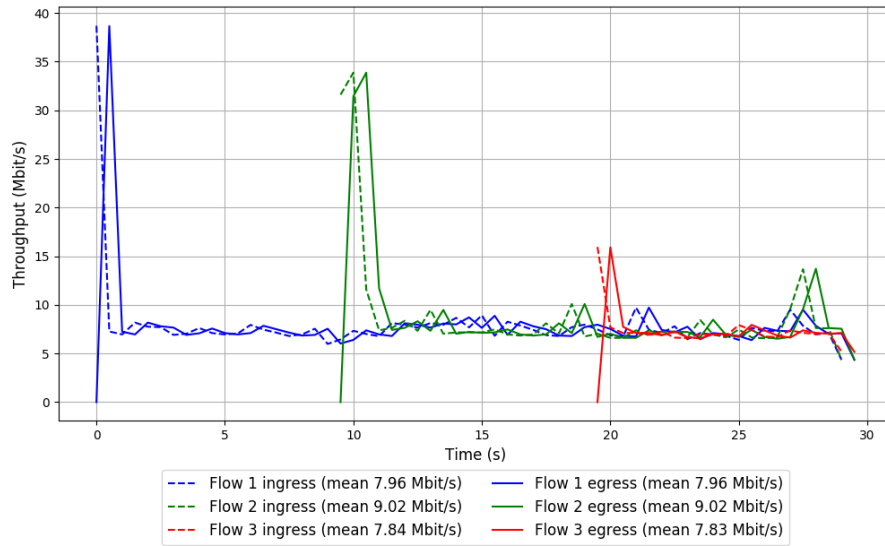
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 11:38:47
End at: 2019-08-27 11:39:17
Local clock offset: 0.489 ms
Remote clock offset: -0.383 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.53 Mbit/s
95th percentile per-packet one-way delay: 2.340 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 7.96 Mbit/s
95th percentile per-packet one-way delay: 2.369 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 9.02 Mbit/s
95th percentile per-packet one-way delay: 2.280 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 2.369 ms
Loss rate: 0.02%
```
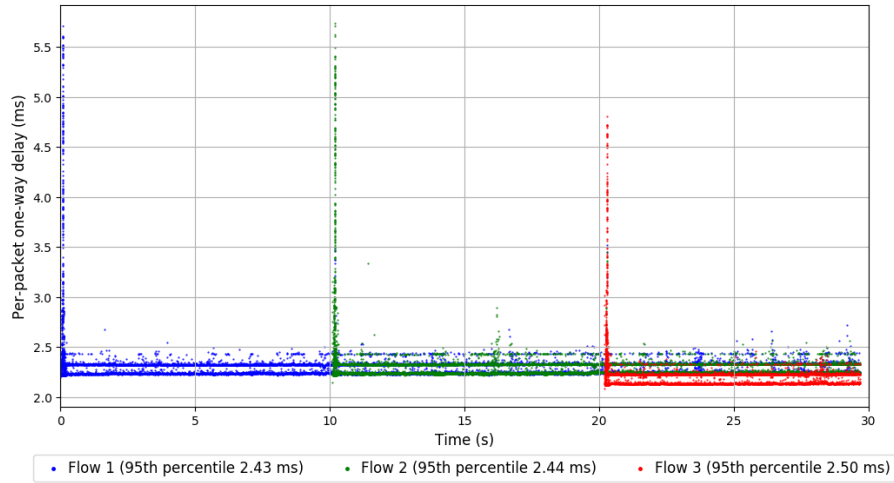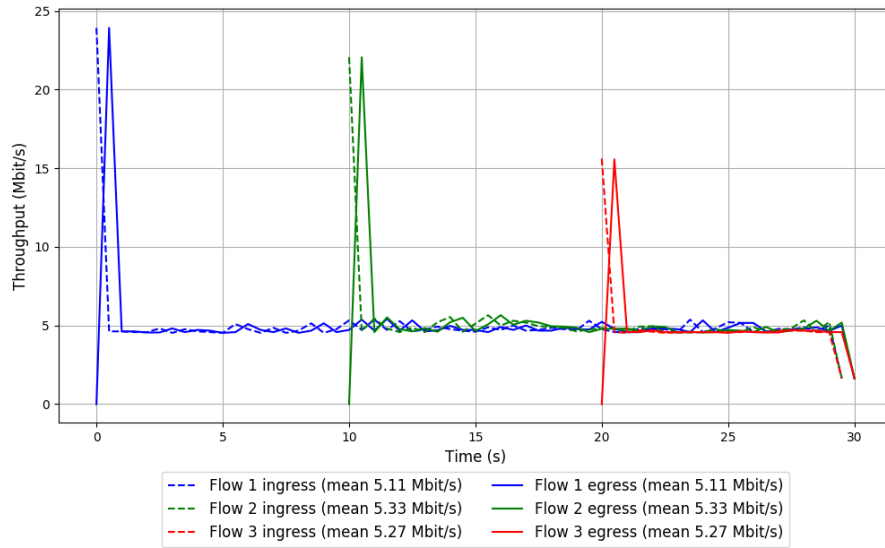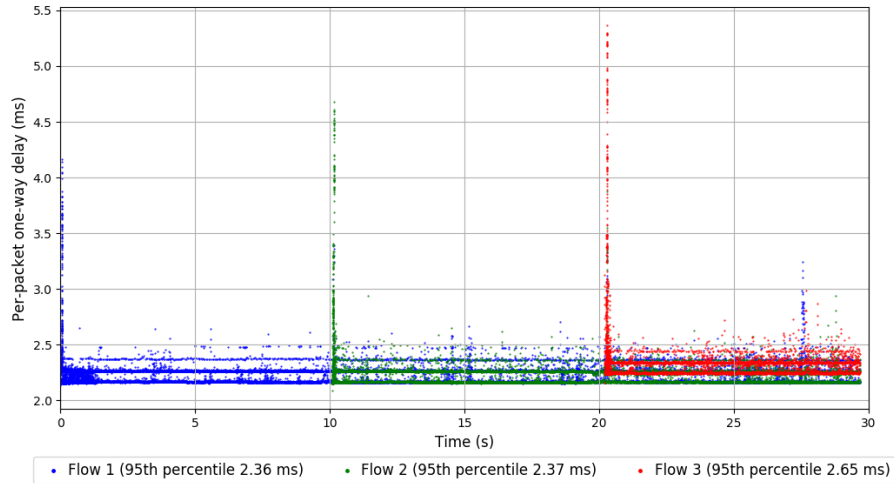
Run 1: Report of Muses_DecisionTree — Data Link

- - - Flow 1 ingress (mean 7.96 Mbit/s)   —— Flow 1 egress (mean 7.96 Mbit/s)
- - - Flow 2 ingress (mean 9.02 Mbit/s)   —— Flow 2 egress (mean 9.02 Mbit/s)
- - - Flow 3 ingress (mean 7.84 Mbit/s)   —— Flow 3 egress (mean 7.83 Mbit/s)

• Flow 1 (95th percentile 2.37 ms)   • Flow 2 (95th percentile 2.28 ms)   • Flow 3 (95th percentile 2.37 ms)

```
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 12:06:17
End at: 2019-08-27 12:06:47
Local clock offset: 0.624 ms
Remote clock offset: 0.089 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.31 Mbit/s
95th percentile per-packet one-way delay: 2.434 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 5.11 Mbit/s
95th percentile per-packet one-way delay: 2.432 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.33 Mbit/s
95th percentile per-packet one-way delay: 2.436 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 2.499 ms
Loss rate: 0.00%
```
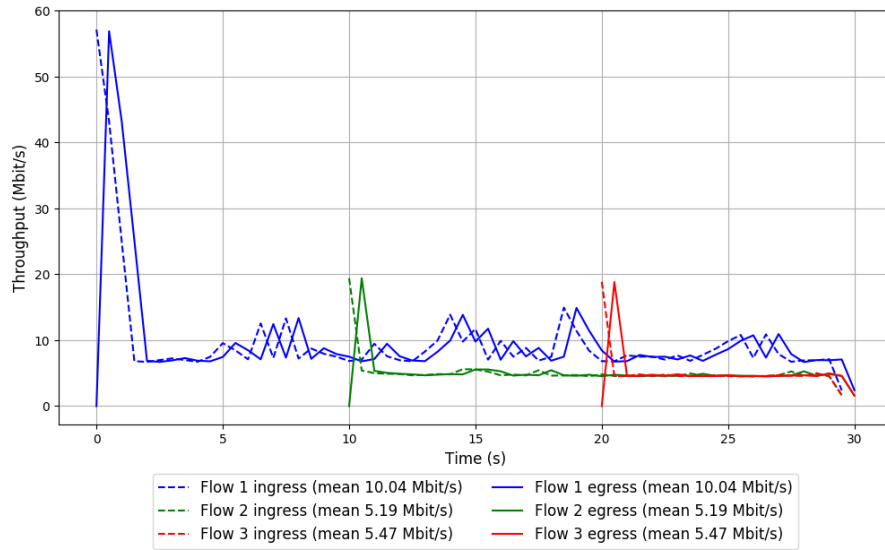
Run 2: Report of Muses_DecisionTree — Data Link

```
Run 3: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 12:33:49
End at: 2019-08-27 12:34:19
Local clock offset: 0.627 ms
Remote clock offset: 0.42 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.22 Mbit/s
95th percentile per-packet one-way delay: 2.376 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 10.04 Mbit/s
95th percentile per-packet one-way delay: 2.362 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.19 Mbit/s
95th percentile per-packet one-way delay: 2.371 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 5.47 Mbit/s
95th percentile per-packet one-way delay: 2.655 ms
Loss rate: 0.05%
```
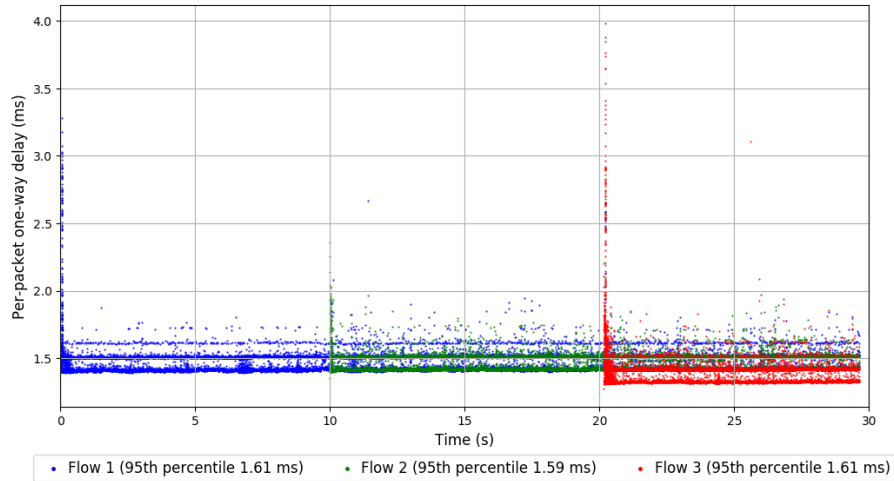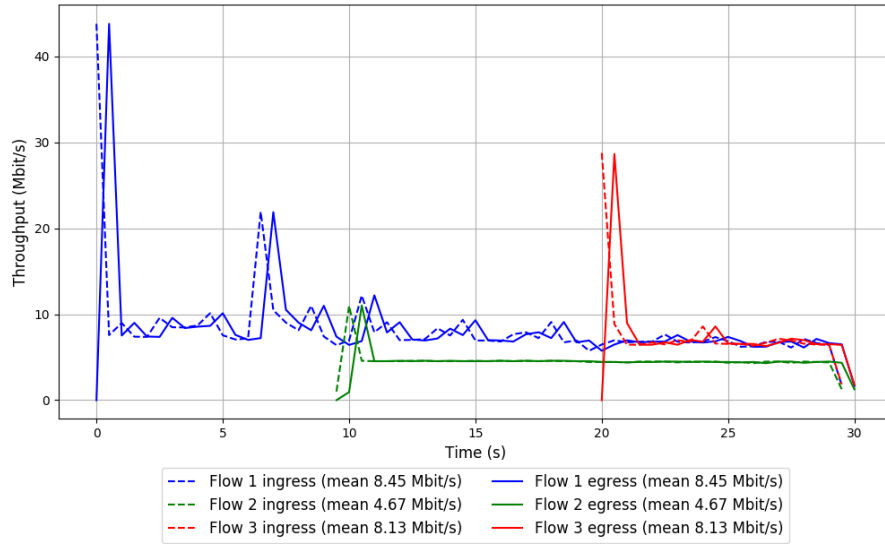
Run 3: Report of Muses_DecisionTree — Data Link

```
Run 4: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 13:01:19
End at: 2019-08-27 13:01:49
Local clock offset: -0.184 ms
Remote clock offset: 0.654 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.15 Mbit/s
95th percentile per-packet one-way delay: 1.607 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: 1.609 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 1.586 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 8.13 Mbit/s
95th percentile per-packet one-way delay: 1.609 ms
Loss rate: 0.03%
```
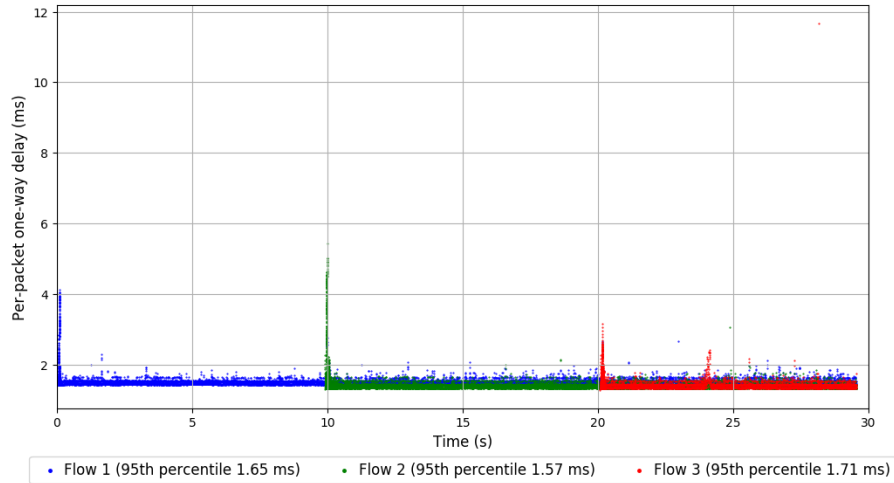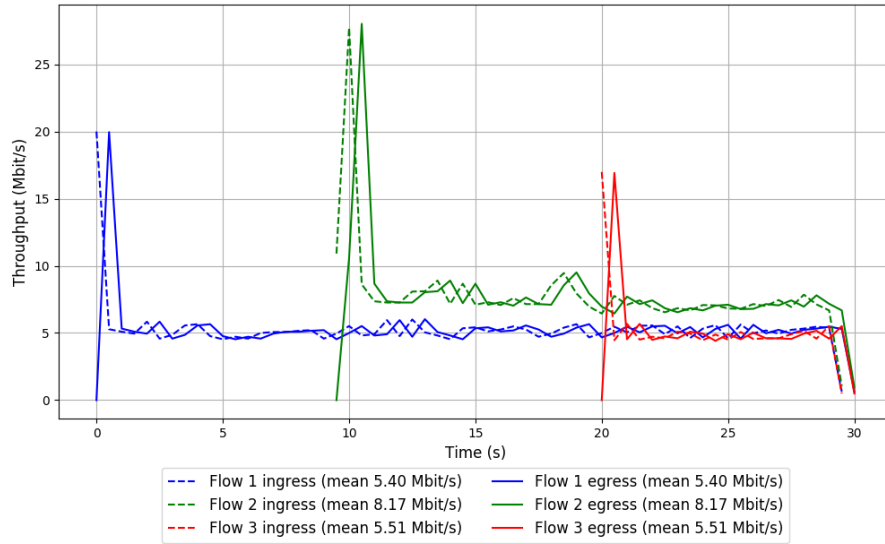
Run 4: Report of Muses_DecisionTree — Data Link

```
Run 5: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 13:28:50
End at: 2019-08-27 13:29:20
Local clock offset: -0.105 ms
Remote clock offset: 0.71 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 1.640 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 5.40 Mbit/s
95th percentile per-packet one-way delay: 1.646 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 8.17 Mbit/s
95th percentile per-packet one-way delay: 1.567 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 5.51 Mbit/s
95th percentile per-packet one-way delay: 1.714 ms
Loss rate: 0.00%
```
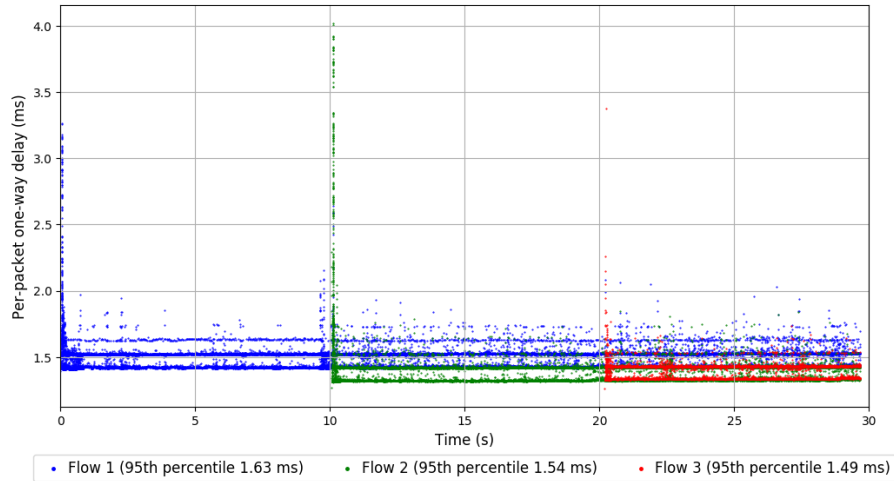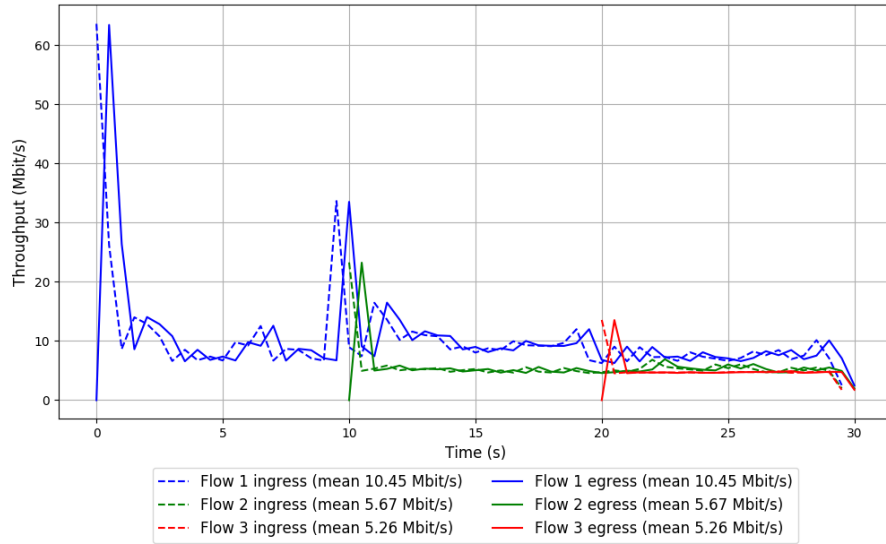
Run 5: Report of Muses_DecisionTree — Data Link

```
Run 1: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 11:28:28
End at: 2019-08-27 11:28:58
Local clock offset: -0.277 ms
Remote clock offset: -0.544 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.88 Mbit/s
95th percentile per-packet one-way delay: 1.607 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 10.45 Mbit/s
95th percentile per-packet one-way delay: 1.626 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 5.67 Mbit/s
95th percentile per-packet one-way delay: 1.539 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 1.486 ms
Loss rate: 0.00%
```
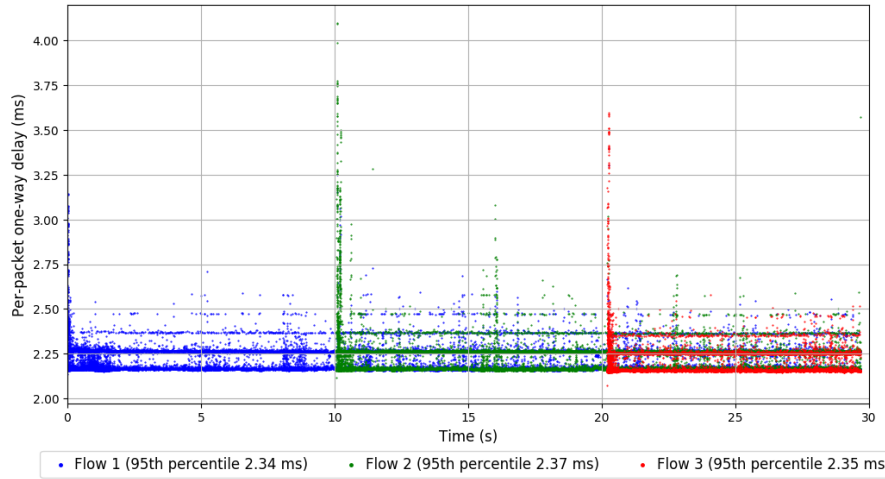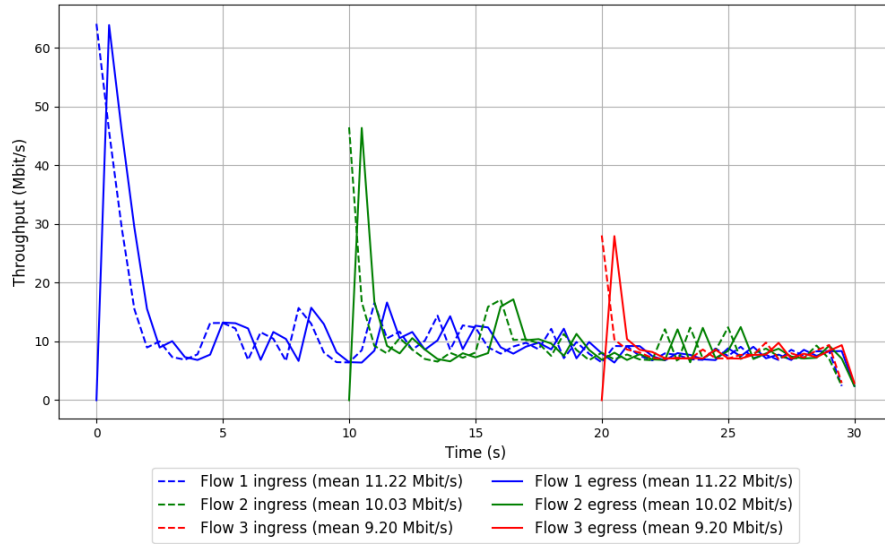
Run 1: Report of Muses_DecisionTreeH0 — Data Link

```
Run 2: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 11:55:58
End at: 2019-08-27 11:56:28
Local clock offset: 0.547 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.79 Mbit/s
95th percentile per-packet one-way delay: 2.363 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.22 Mbit/s
95th percentile per-packet one-way delay: 2.337 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 10.02 Mbit/s
95th percentile per-packet one-way delay: 2.368 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: 2.354 ms
Loss rate: 0.05%
```
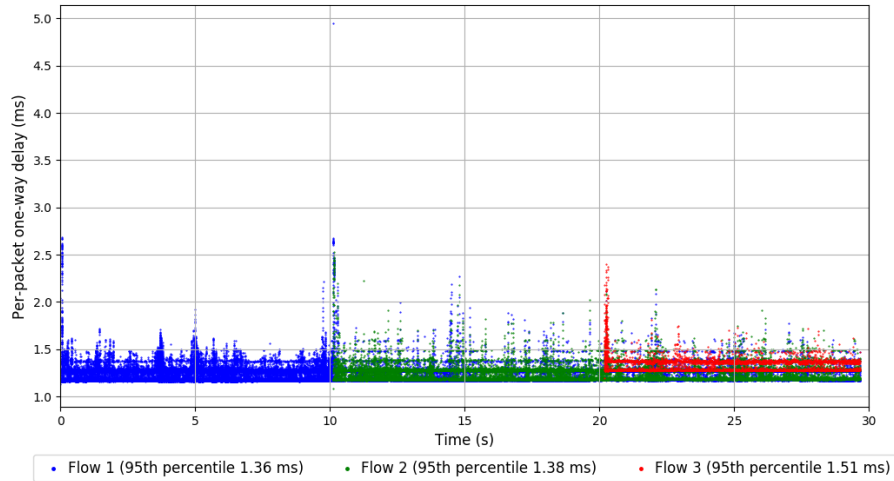
Run 2: Report of Muses_DecisionTreeH0 — Data Link

```
Run 3: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 12:23:28
End at: 2019-08-27 12:23:58
Local clock offset: -0.19 ms
Remote clock offset: 0.464 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.35 Mbit/s
95th percentile per-packet one-way delay: 1.374 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 1.361 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.86 Mbit/s
95th percentile per-packet one-way delay: 1.381 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 4.83 Mbit/s
95th percentile per-packet one-way delay: 1.511 ms
Loss rate: 0.05%
```
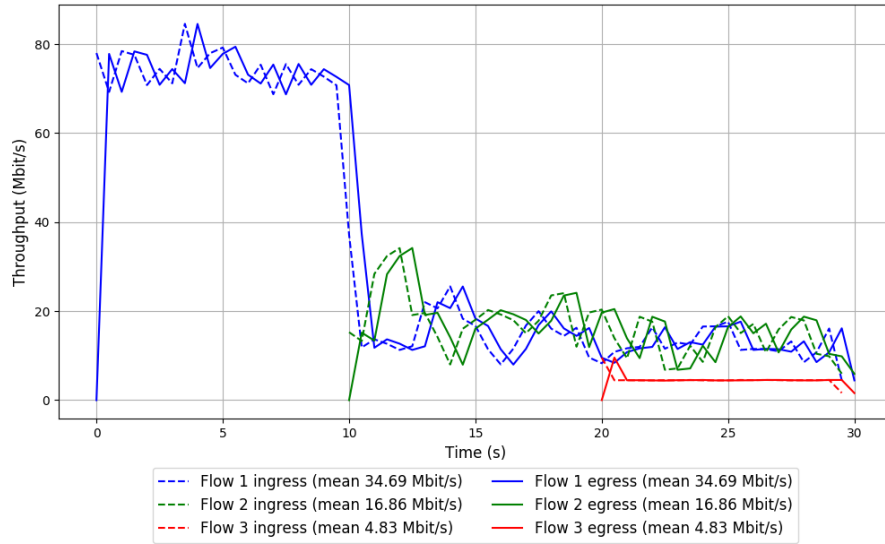
Run 3: Report of Muses_DecisionTreeH0 — Data Link

```
Run 4: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 12:50:59
End at: 2019-08-27 12:51:29
Local clock offset: -0.157 ms
Remote clock offset: 0.683 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.41 Mbit/s
95th percentile per-packet one-way delay: 1.418 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 31.80 Mbit/s
95th percentile per-packet one-way delay: 1.375 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.67 Mbit/s
95th percentile per-packet one-way delay: 1.579 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 1.646 ms
Loss rate: 0.00%
```
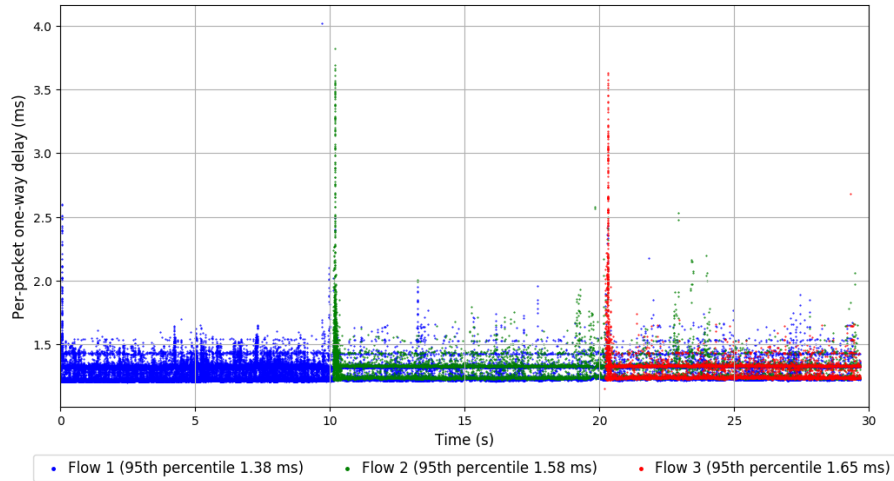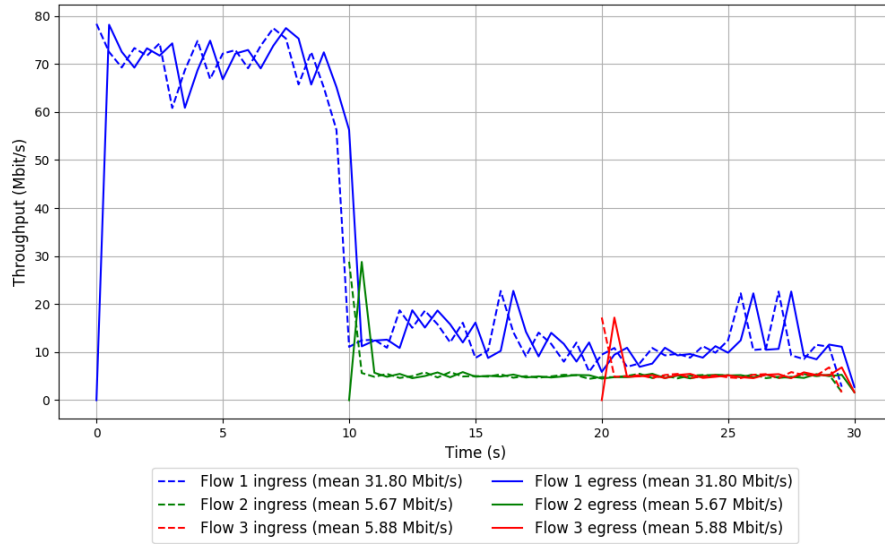
Run 4: Report of Muses_DecisionTreeH0 — Data Link

```
Run 5: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 13:18:30
End at: 2019-08-27 13:19:00
Local clock offset: -0.214 ms
Remote clock offset: 0.749 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.40 Mbit/s
95th percentile per-packet one-way delay: 1.501 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 10.74 Mbit/s
95th percentile per-packet one-way delay: 1.475 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 1.580 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 5.73 Mbit/s
95th percentile per-packet one-way delay: 1.698 ms
Loss rate: 0.00%
```
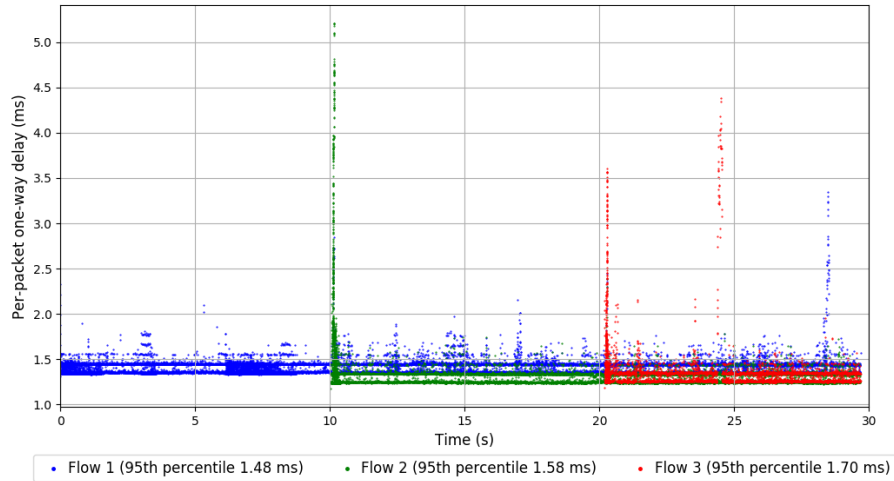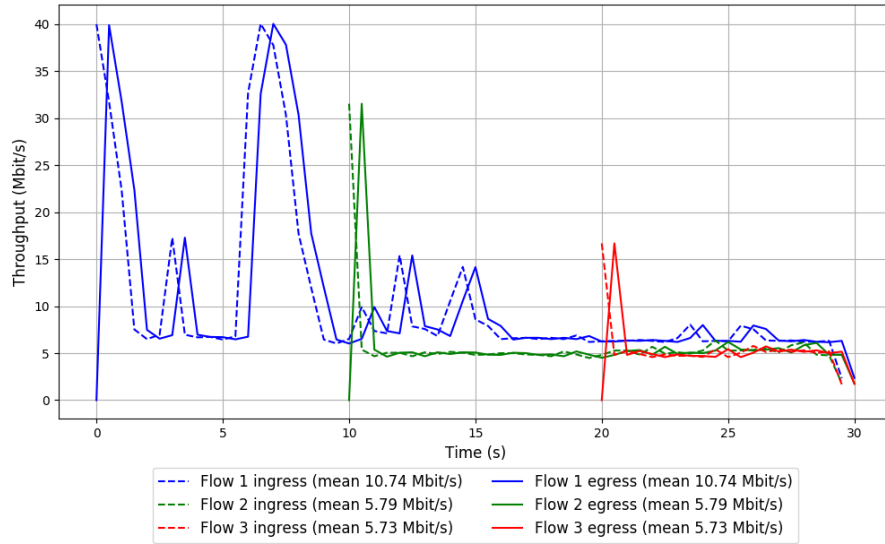
Run 5: Report of Muses_DecisionTreeH0 — Data Link

```
Run 1: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 11:41:03
End at: 2019-08-27 11:41:33
Local clock offset: -0.329 ms
Remote clock offset: -0.346 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.58 Mbit/s
95th percentile per-packet one-way delay: 1.459 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 17.81 Mbit/s
95th percentile per-packet one-way delay: 1.381 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 1.539 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 8.30 Mbit/s
95th percentile per-packet one-way delay: 1.562 ms
Loss rate: 0.03%
```
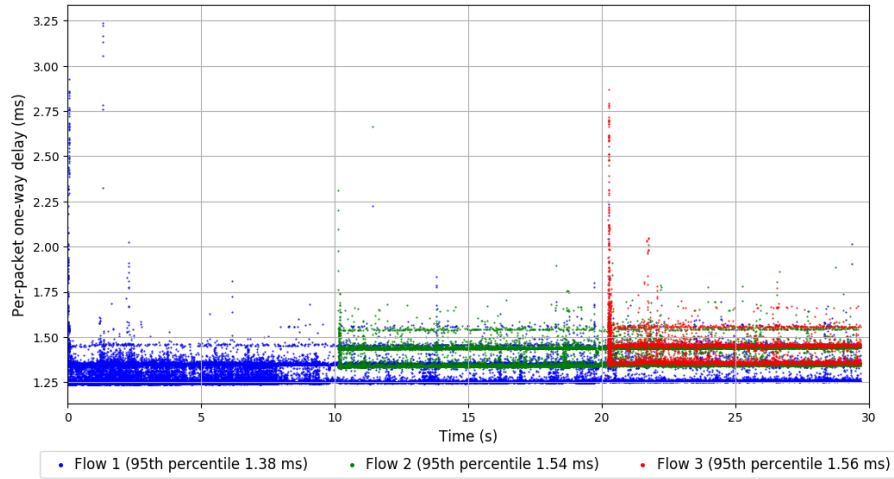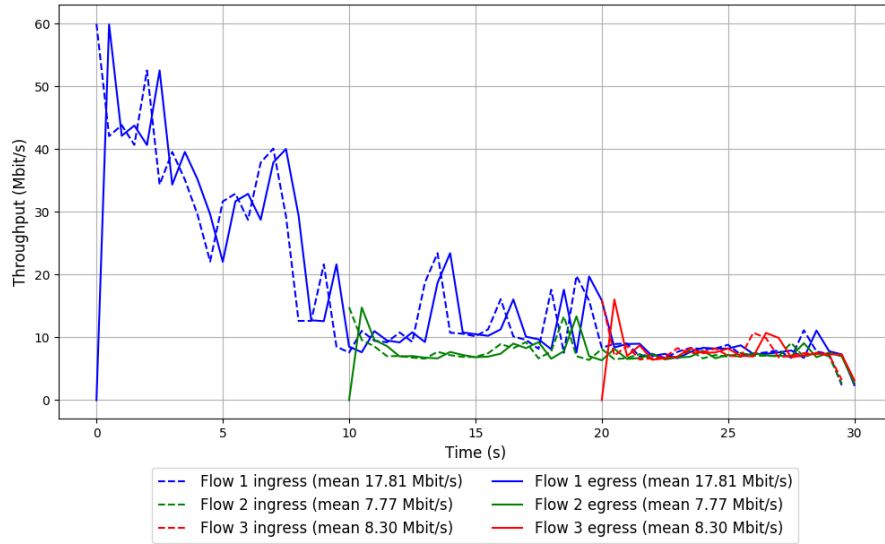
Run 1: Report of Muses_DecisionTreeR0 — Data Link

Flow 1 ingress (mean 17.81 Mbit/s) --- Flow 1 egress (mean 17.81 Mbit/s)
Flow 2 ingress (mean 7.77 Mbit/s) --- Flow 2 egress (mean 7.77 Mbit/s)
Flow 3 ingress (mean 8.30 Mbit/s) --- Flow 3 egress (mean 8.30 Mbit/s)

Flow 1 (95th percentile 1.38 ms) • Flow 2 (95th percentile 1.54 ms) • Flow 3 (95th percentile 1.56 ms)

```
Run 2: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 12:08:33
End at: 2019-08-27 12:09:03
Local clock offset: 0.566 ms
Remote clock offset: 0.096 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.50 Mbit/s
95th percentile per-packet one-way delay: 2.402 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 2.406 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 2.312 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.02 Mbit/s
95th percentile per-packet one-way delay: 2.296 ms
Loss rate: 0.02%
```
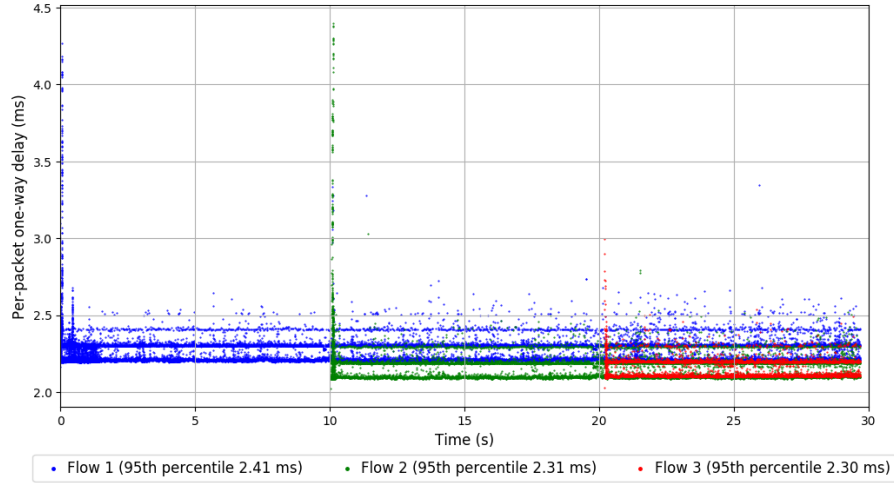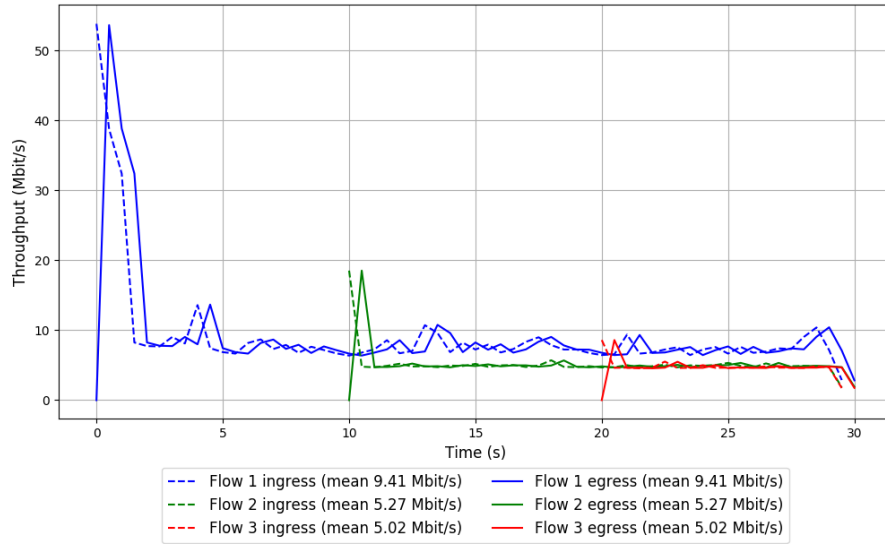
Run 2: Report of Muses_DecisionTreeR0 — Data Link

```
Run 3: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 12:36:04
End at: 2019-08-27 12:36:34
Local clock offset: -0.144 ms
Remote clock offset: 0.479 ms


# Below is generated by plot.py at 2019-08-27 13:53:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.72 Mbit/s
95th percentile per-packet one-way delay: 1.648 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 5.84 Mbit/s
95th percentile per-packet one-way delay: 1.654 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.79 Mbit/s
95th percentile per-packet one-way delay: 1.558 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 5.44 Mbit/s
95th percentile per-packet one-way delay: 1.827 ms
Loss rate: 0.05%
```
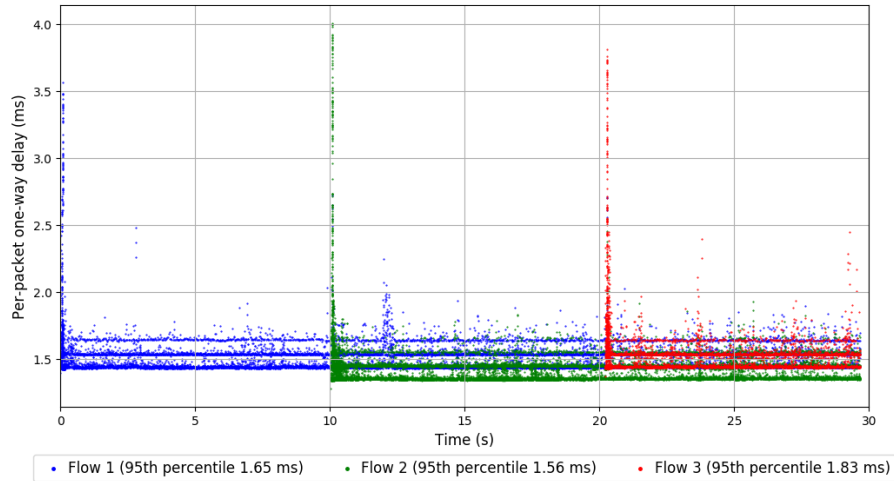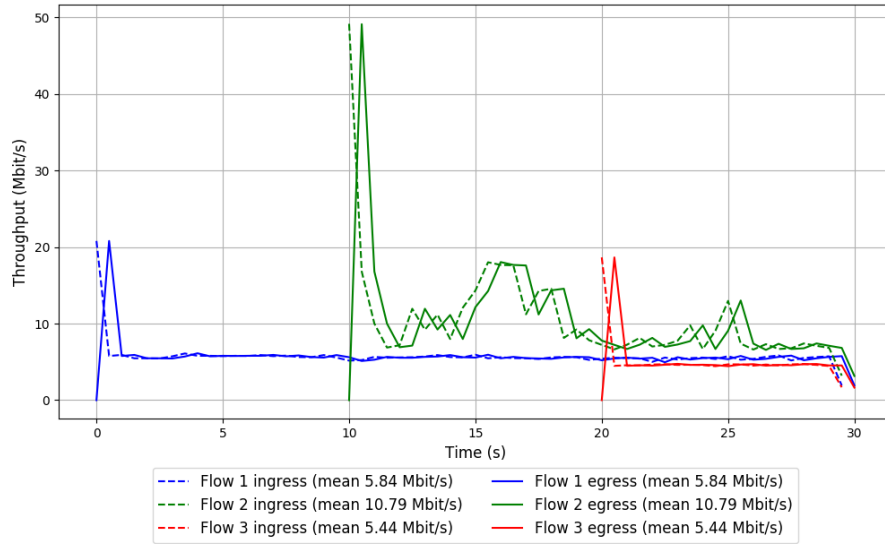
Run 3: Report of Muses_DecisionTreeR0 — Data Link

```
Run 4: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 13:03:34
End at: 2019-08-27 13:04:04
Local clock offset: 0.579 ms
Remote clock offset: 0.722 ms


# Below is generated by plot.py at 2019-08-27 13:53:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.93 Mbit/s
95th percentile per-packet one-way delay: 2.226 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 17.41 Mbit/s
95th percentile per-packet one-way delay: 2.155 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.64 Mbit/s
95th percentile per-packet one-way delay: 2.297 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 2.323 ms
Loss rate: 0.02%
```
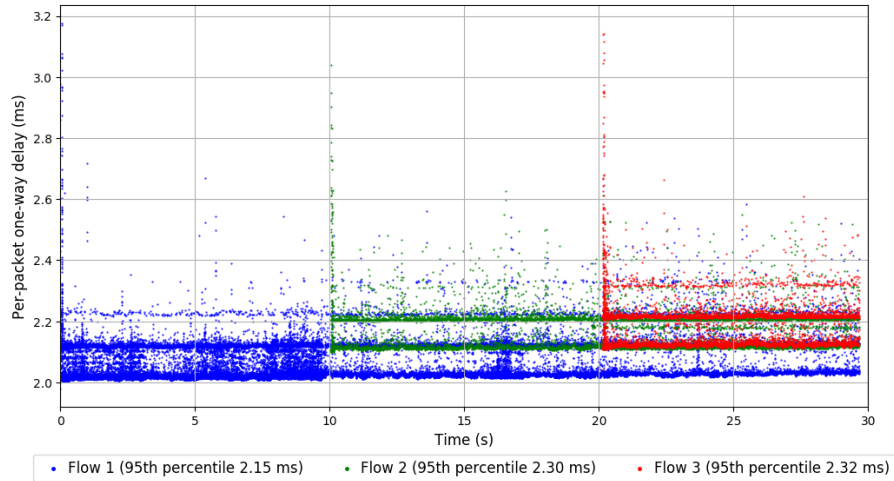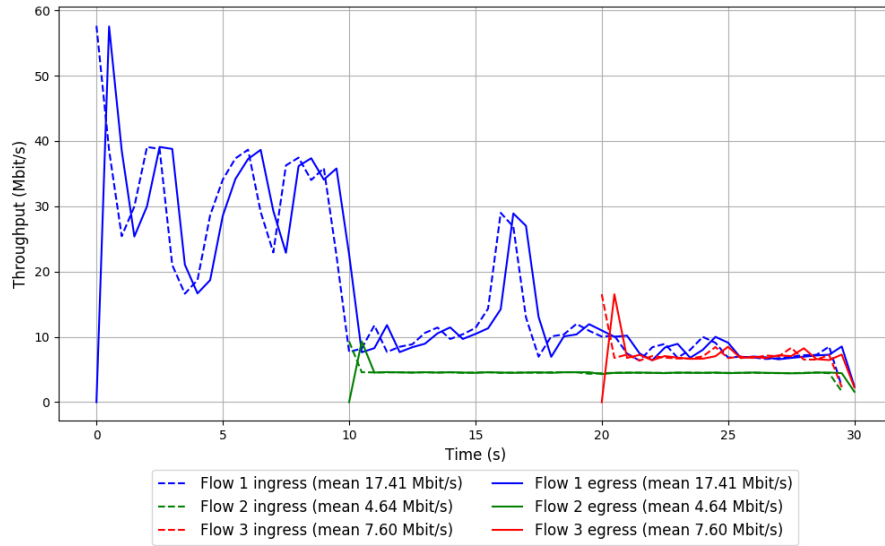
Run 4: Report of Muses_DecisionTreeR0 — Data Link

```
Run 5: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 13:31:06
End at: 2019-08-27 13:31:36
Local clock offset: -0.103 ms
Remote clock offset: 0.653 ms


# Below is generated by plot.py at 2019-08-27 13:53:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.59 Mbit/s
95th percentile per-packet one-way delay: 1.575 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 13.32 Mbit/s
95th percentile per-packet one-way delay: 1.560 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 5.18 Mbit/s
95th percentile per-packet one-way delay: 1.665 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 8.85 Mbit/s
95th percentile per-packet one-way delay: 1.621 ms
Loss rate: 0.03%
```
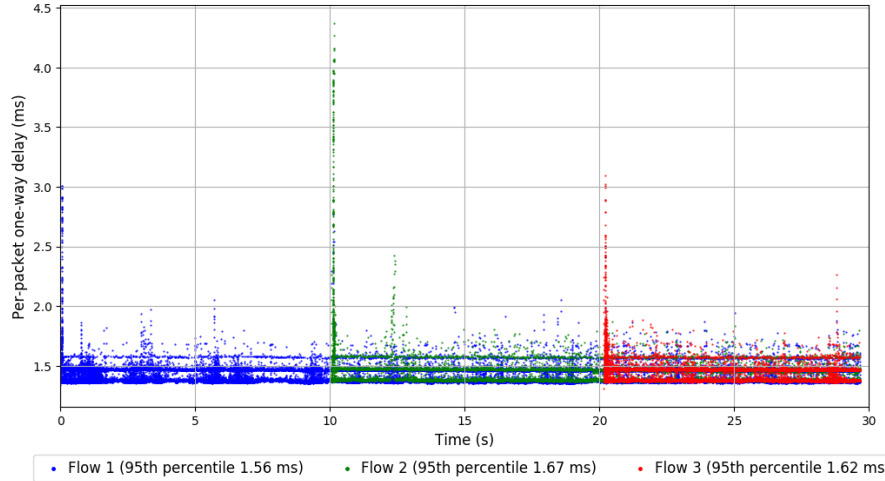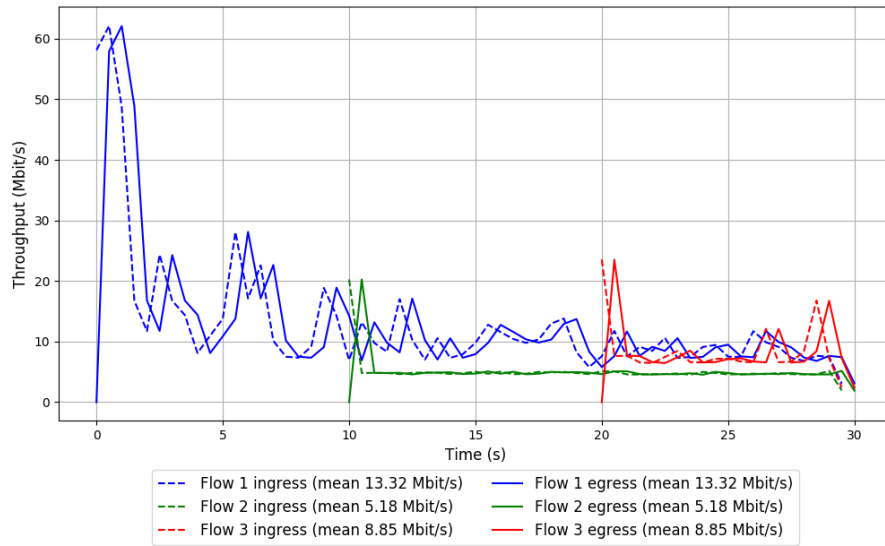
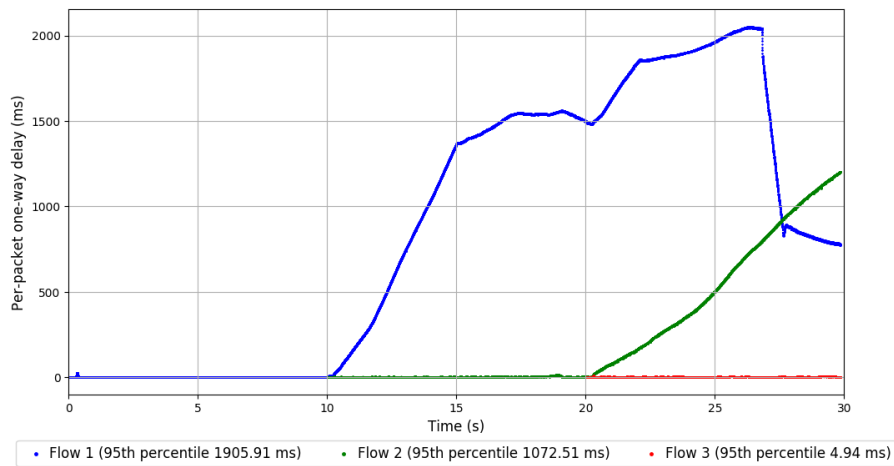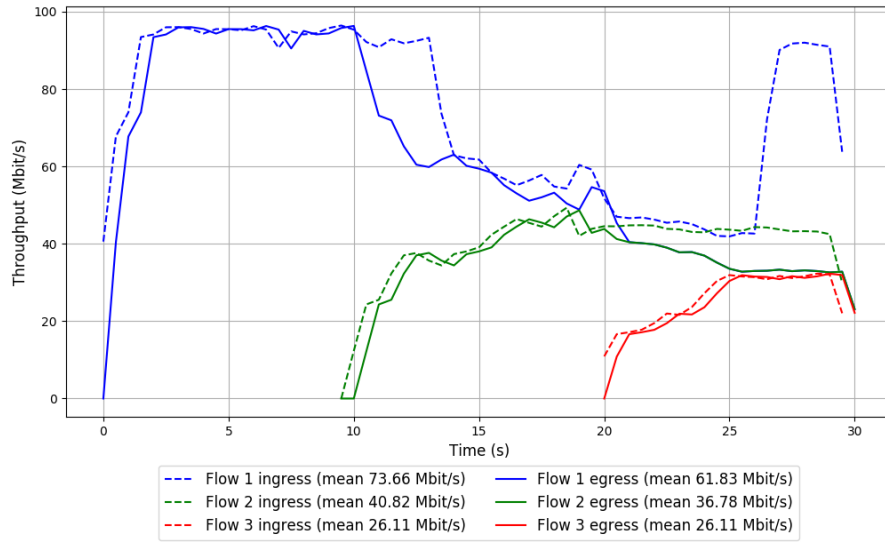Run 5: Report of Muses_DecisionTreeR0 — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-08-27 11:43:17
End at: 2019-08-27 11:43:47
Local clock offset: -0.284 ms
Remote clock offset: -0.388 ms


# Below is generated by plot.py at 2019-08-27 13:54:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.89 Mbit/s
95th percentile per-packet one-way delay: 1864.531 ms
Loss rate: 13.29%
-- Flow 1:
Average throughput: 61.83 Mbit/s
95th percentile per-packet one-way delay: 1905.911 ms
Loss rate: 16.07%
-- Flow 2:
Average throughput: 36.78 Mbit/s
95th percentile per-packet one-way delay: 1072.508 ms
Loss rate: 9.92%
-- Flow 3:
Average throughput: 26.11 Mbit/s
95th percentile per-packet one-way delay: 4.943 ms
Loss rate: 0.05%
```

Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 73.66 Mbit/s) --- Flow 1 egress (mean 61.83 Mbit/s)
Flow 2 ingress (mean 40.82 Mbit/s) --- Flow 2 egress (mean 36.78 Mbit/s)
Flow 3 ingress (mean 26.11 Mbit/s) --- Flow 3 egress (mean 26.11 Mbit/s)

Flow 1 (95th percentile 1905.91 ms)   Flow 2 (95th percentile 1072.51 ms)   Flow 3 (95th percentile 4.94 ms)

146

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-08-27 12:10:47
End at: 2019-08-27 12:11:17
Local clock offset: -0.14 ms
Remote clock offset: 0.224 ms


# Below is generated by plot.py at 2019-08-27 13:54:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.22 Mbit/s
95th percentile per-packet one-way delay: 1691.579 ms
Loss rate: 15.21%
-- Flow 1:
Average throughput: 64.92 Mbit/s
95th percentile per-packet one-way delay: 1985.686 ms
Loss rate: 17.41%
-- Flow 2:
Average throughput: 31.79 Mbit/s
95th percentile per-packet one-way delay: 1320.910 ms
Loss rate: 13.81%
-- Flow 3:
Average throughput: 27.89 Mbit/s
95th percentile per-packet one-way delay: 4.871 ms
Loss rate: 0.04%
```
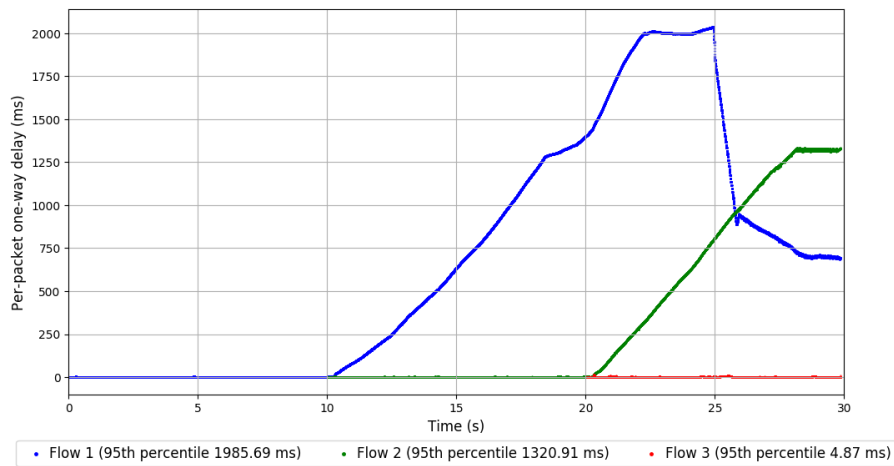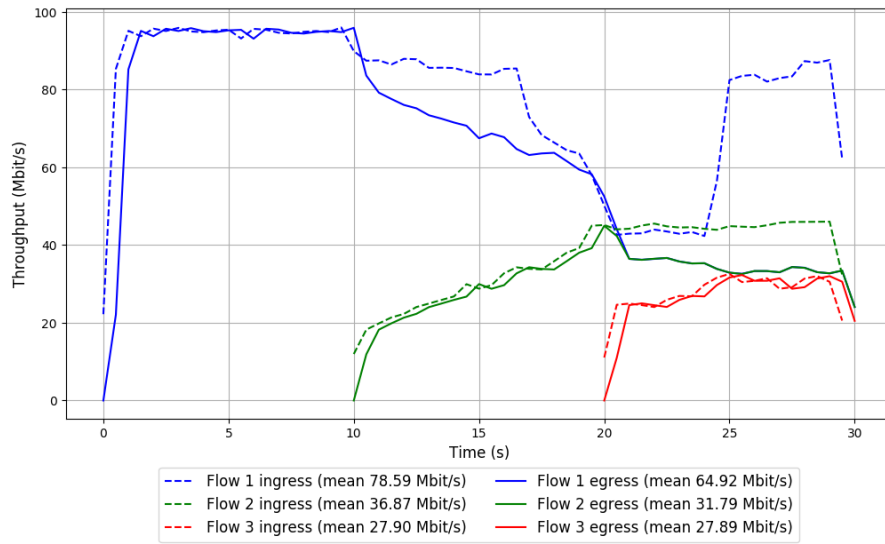
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 78.59 Mbit/s) --- Flow 1 egress (mean 64.92 Mbit/s)
Flow 2 ingress (mean 36.87 Mbit/s) --- Flow 2 egress (mean 31.79 Mbit/s)
Flow 3 ingress (mean 27.90 Mbit/s) --- Flow 3 egress (mean 27.89 Mbit/s)

Flow 1 (95th percentile 1985.69 ms)   Flow 2 (95th percentile 1320.91 ms)   Flow 3 (95th percentile 4.87 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-08-27 12:38:18
End at: 2019-08-27 12:38:48
Local clock offset: -0.142 ms
Remote clock offset: 0.513 ms


# Below is generated by plot.py at 2019-08-27 13:54:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.11 Mbit/s
95th percentile per-packet one-way delay: 1869.072 ms
Loss rate: 5.90%
-- Flow 1:
Average throughput: 62.78 Mbit/s
95th percentile per-packet one-way delay: 1989.421 ms
Loss rate: 8.46%
-- Flow 2:
Average throughput: 32.06 Mbit/s
95th percentile per-packet one-way delay: 10.662 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 30.50 Mbit/s
95th percentile per-packet one-way delay: 119.837 ms
Loss rate: 0.89%
```
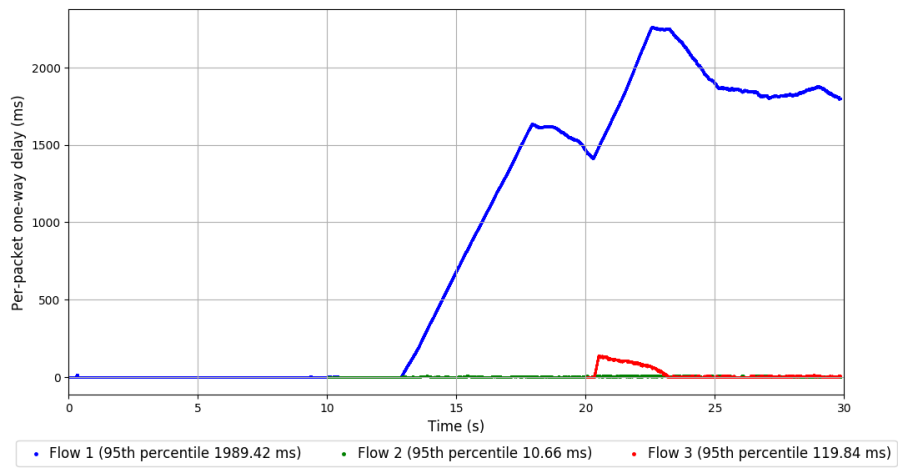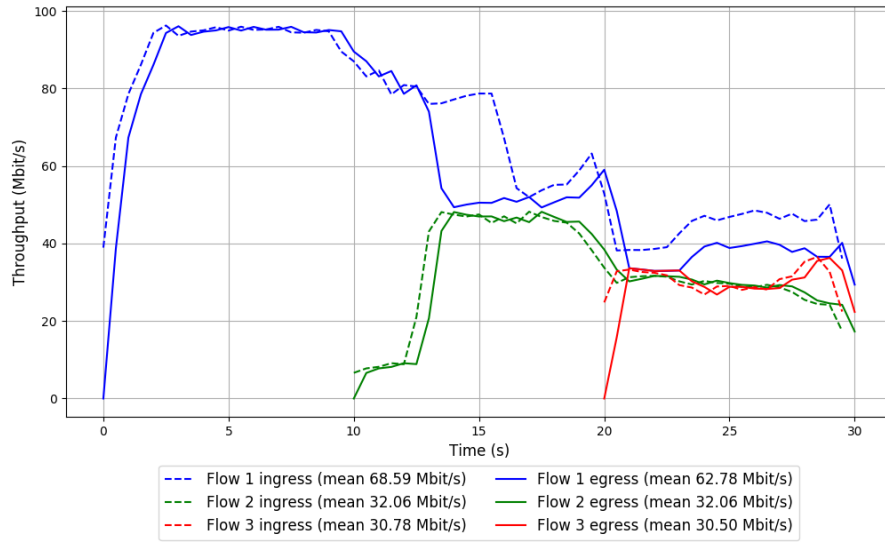
Run 3: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 68.59 Mbit/s)   —— Flow 1 egress (mean 62.78 Mbit/s)
- - - Flow 2 ingress (mean 32.06 Mbit/s)   —— Flow 2 egress (mean 32.06 Mbit/s)
- - - Flow 3 ingress (mean 30.78 Mbit/s)   —— Flow 3 egress (mean 30.50 Mbit/s)

• Flow 1 (95th percentile 1989.42 ms)   • Flow 2 (95th percentile 10.66 ms)   • Flow 3 (95th percentile 119.84 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-08-27 13:05:48
End at: 2019-08-27 13:06:18
Local clock offset: 0.572 ms
Remote clock offset: 0.694 ms


# Below is generated by plot.py at 2019-08-27 13:54:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.55 Mbit/s
95th percentile per-packet one-way delay: 1731.139 ms
Loss rate: 16.06%
-- Flow 1:
Average throughput: 59.73 Mbit/s
95th percentile per-packet one-way delay: 1889.012 ms
Loss rate: 20.12%
-- Flow 2:
Average throughput: 39.04 Mbit/s
95th percentile per-packet one-way delay: 1329.462 ms
Loss rate: 10.45%
-- Flow 3:
Average throughput: 26.92 Mbit/s
95th percentile per-packet one-way delay: 23.478 ms
Loss rate: 0.19%
```
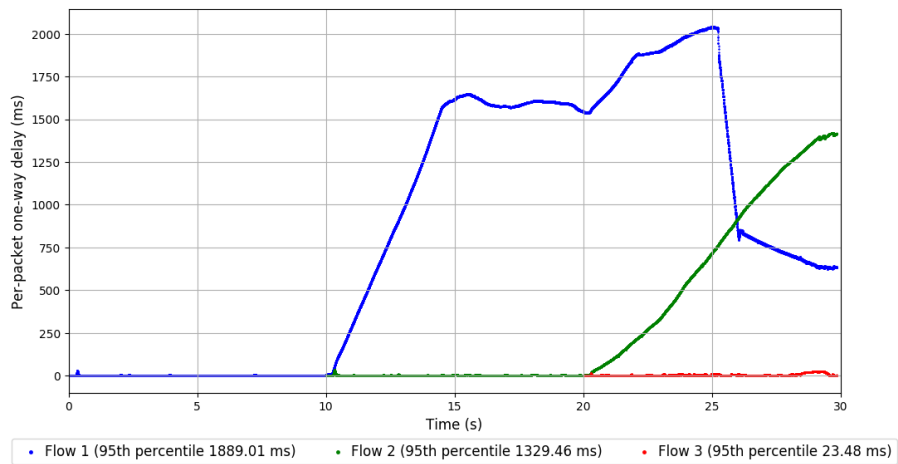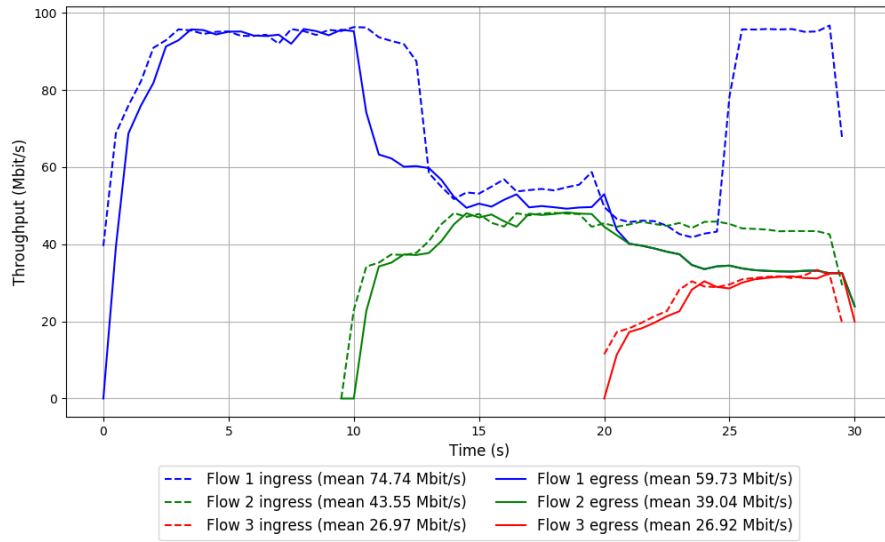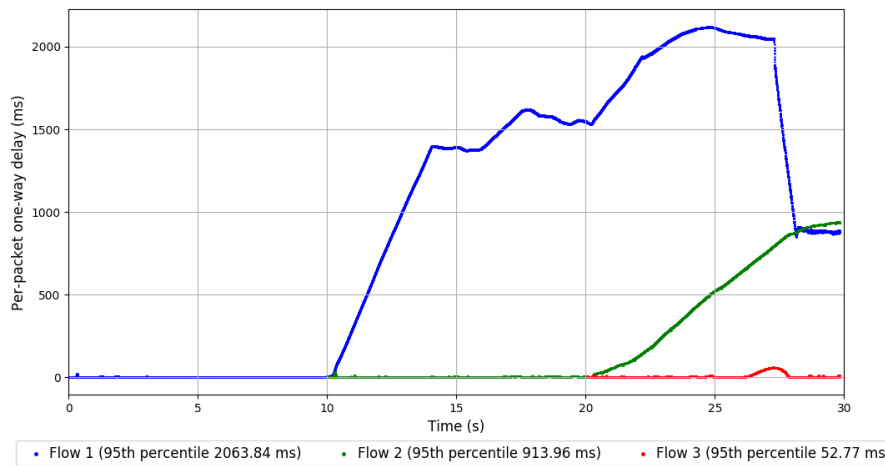
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 74.74 Mbit/s) — Flow 1 egress (mean 59.73 Mbit/s)
Flow 2 ingress (mean 43.55 Mbit/s) — Flow 2 egress (mean 39.04 Mbit/s)
Flow 3 ingress (mean 26.97 Mbit/s) — Flow 3 egress (mean 26.92 Mbit/s)

Flow 1 (95th percentile 1889.01 ms)   Flow 2 (95th percentile 1329.46 ms)   Flow 3 (95th percentile 23.48 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-08-27 13:33:20
End at: 2019-08-27 13:33:50
Local clock offset: 0.678 ms
Remote clock offset: 0.679 ms


# Below is generated by plot.py at 2019-08-27 13:54:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.07 Mbit/s
95th percentile per-packet one-way delay: 1998.809 ms
Loss rate: 12.36%
-- Flow 1:
Average throughput: 60.80 Mbit/s
95th percentile per-packet one-way delay: 2063.838 ms
Loss rate: 15.50%
-- Flow 2:
Average throughput: 37.63 Mbit/s
95th percentile per-packet one-way delay: 913.955 ms
Loss rate: 8.14%
-- Flow 3:
Average throughput: 28.02 Mbit/s
95th percentile per-packet one-way delay: 52.772 ms
Loss rate: 0.41%
```
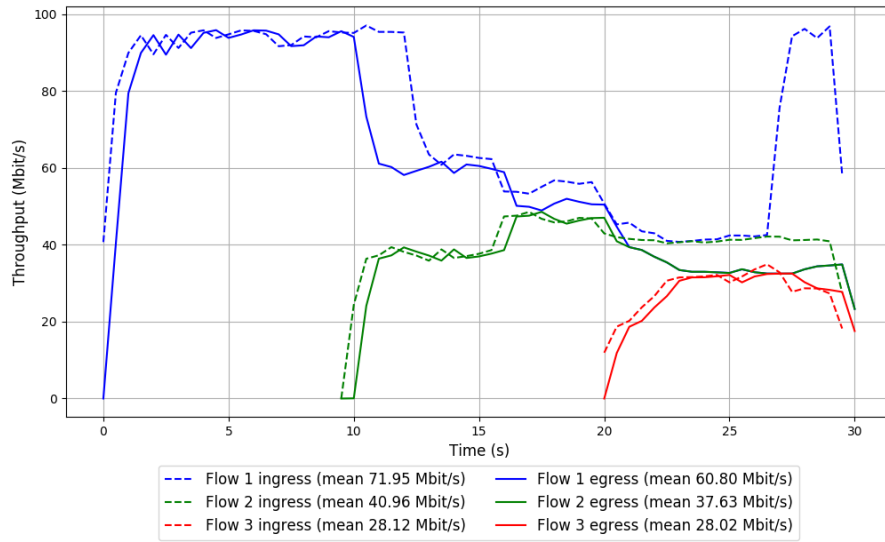
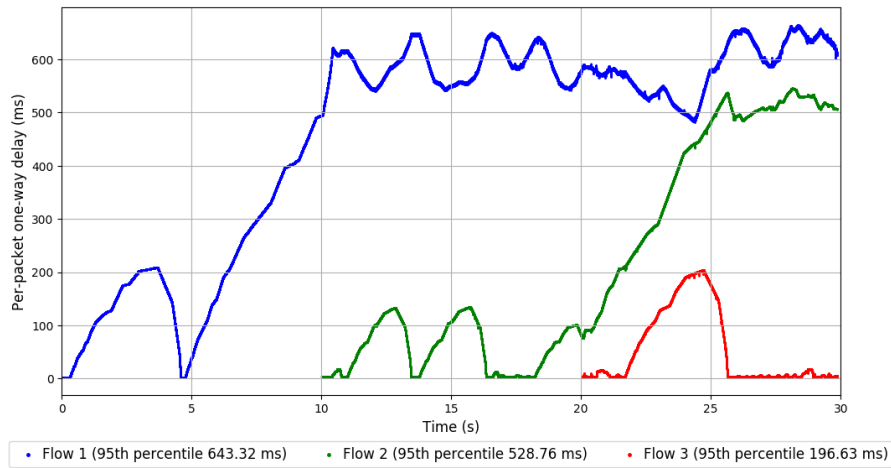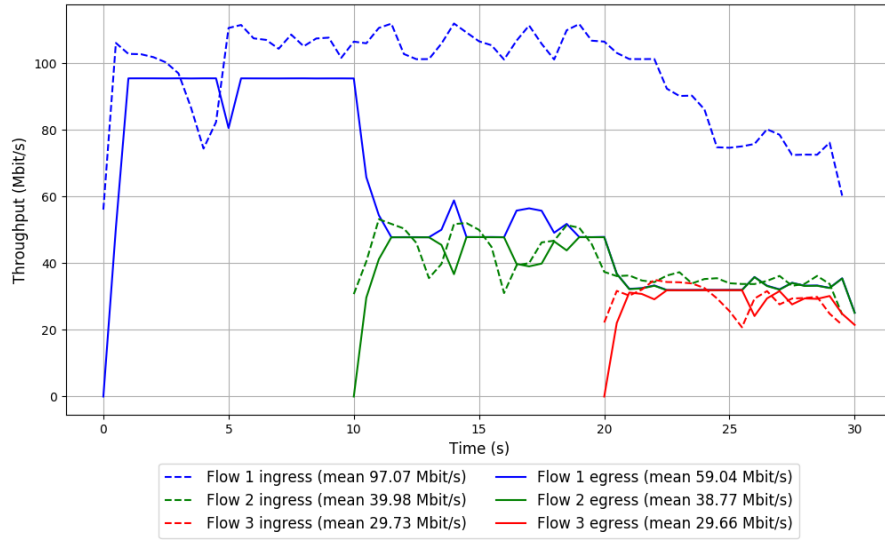Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 71.95 Mbit/s) --- Flow 1 egress (mean 60.80 Mbit/s)
Flow 2 ingress (mean 40.96 Mbit/s) --- Flow 2 egress (mean 37.63 Mbit/s)
Flow 3 ingress (mean 28.12 Mbit/s) --- Flow 3 egress (mean 28.02 Mbit/s)

Flow 1 (95th percentile 2063.84 ms)   Flow 2 (95th percentile 913.96 ms)   Flow 3 (95th percentile 52.77 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2019-08-27 11:36:26
End at: 2019-08-27 11:36:56
Local clock offset: 0.478 ms
Remote clock offset: -0.486 ms


# Below is generated by plot.py at 2019-08-27 13:55:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.61 Mbit/s
95th percentile per-packet one-way delay: 634.970 ms
Loss rate: 29.12%
-- Flow 1:
Average throughput: 59.04 Mbit/s
95th percentile per-packet one-way delay: 643.316 ms
Loss rate: 39.18%
-- Flow 2:
Average throughput: 38.77 Mbit/s
95th percentile per-packet one-way delay: 528.758 ms
Loss rate: 3.06%
-- Flow 3:
Average throughput: 29.66 Mbit/s
95th percentile per-packet one-way delay: 196.630 ms
Loss rate: 0.27%
```

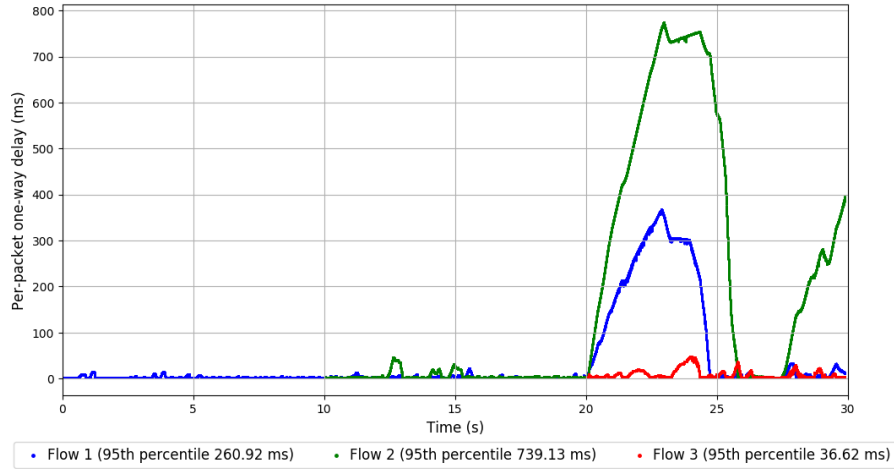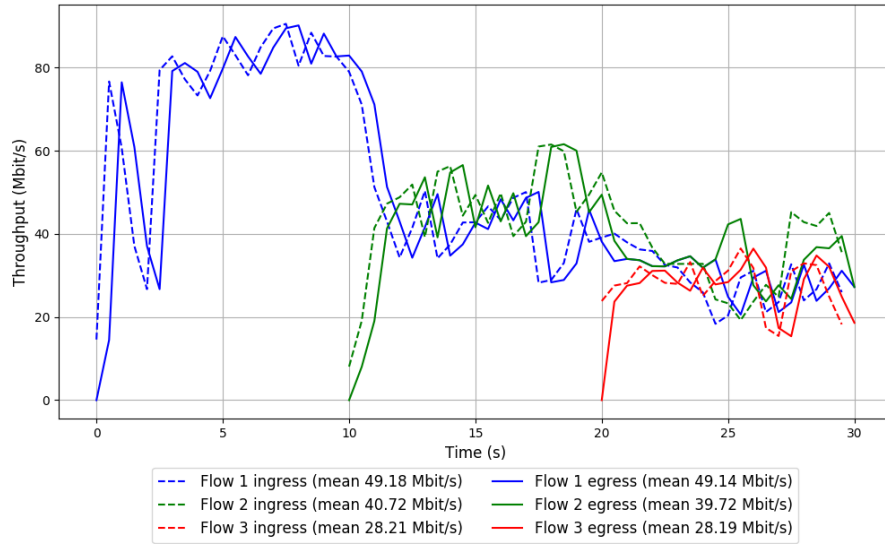# Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 97.07 Mbit/s)   Flow 1 egress (mean 59.04 Mbit/s)
Flow 2 ingress (mean 39.98 Mbit/s)   Flow 2 egress (mean 38.77 Mbit/s)
Flow 3 ingress (mean 29.73 Mbit/s)   Flow 3 egress (mean 29.66 Mbit/s)

Flow 1 (95th percentile 643.32 ms)   Flow 2 (95th percentile 528.76 ms)   Flow 3 (95th percentile 196.63 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-08-27 12:03:57
End at: 2019-08-27 12:04:27
Local clock offset: 0.588 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2019-08-27 13:55:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.87 Mbit/s
95th percentile per-packet one-way delay: 445.063 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 49.14 Mbit/s
95th percentile per-packet one-way delay: 260.922 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 39.72 Mbit/s
95th percentile per-packet one-way delay: 739.134 ms
Loss rate: 2.47%
-- Flow 3:
Average throughput: 28.19 Mbit/s
95th percentile per-packet one-way delay: 36.619 ms
Loss rate: 0.10%
```
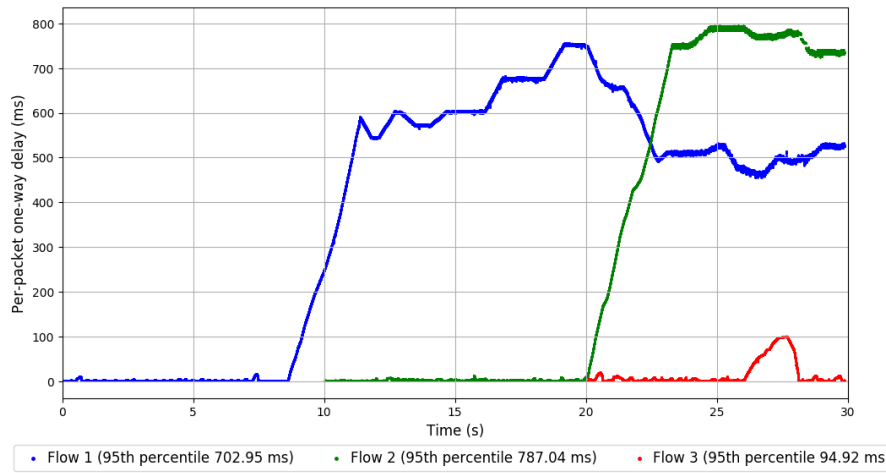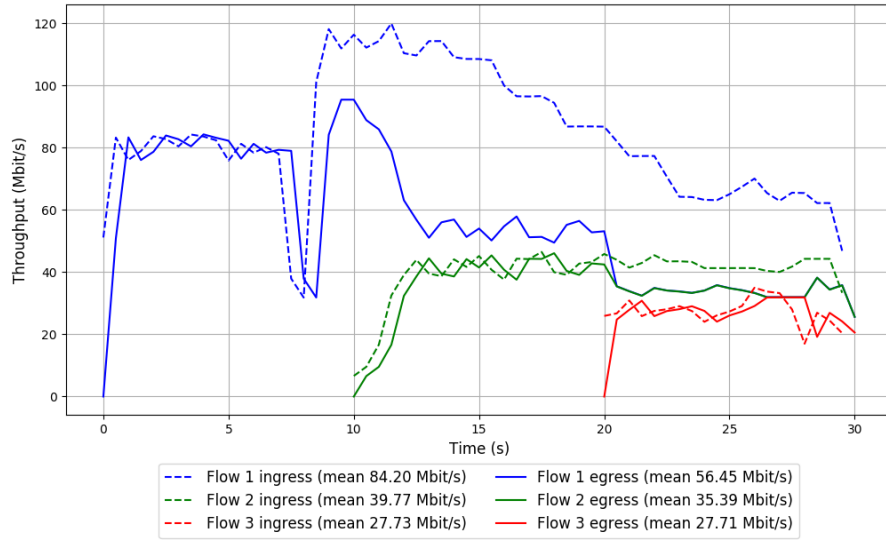
Run 2: Report of PCC-Expr — Data Link

- - - Flow 1 ingress (mean 49.18 Mbit/s)   —— Flow 1 egress (mean 49.14 Mbit/s)
- - - Flow 2 ingress (mean 40.72 Mbit/s)   —— Flow 2 egress (mean 39.72 Mbit/s)
- - - Flow 3 ingress (mean 28.21 Mbit/s)   —— Flow 3 egress (mean 28.19 Mbit/s)

• Flow 1 (95th percentile 260.92 ms)   • Flow 2 (95th percentile 739.13 ms)   • Flow 3 (95th percentile 36.62 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2019-08-27 12:31:28
End at: 2019-08-27 12:31:58
Local clock offset: -0.138 ms
Remote clock offset: 0.519 ms


# Below is generated by plot.py at 2019-08-27 13:55:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.13 Mbit/s
95th percentile per-packet one-way delay: 761.238 ms
Loss rate: 25.61%
-- Flow 1:
Average throughput: 56.45 Mbit/s
95th percentile per-packet one-way delay: 702.946 ms
Loss rate: 32.96%
-- Flow 2:
Average throughput: 35.39 Mbit/s
95th percentile per-packet one-way delay: 787.040 ms
Loss rate: 11.03%
-- Flow 3:
Average throughput: 27.71 Mbit/s
95th percentile per-packet one-way delay: 94.921 ms
Loss rate: 0.10%
```
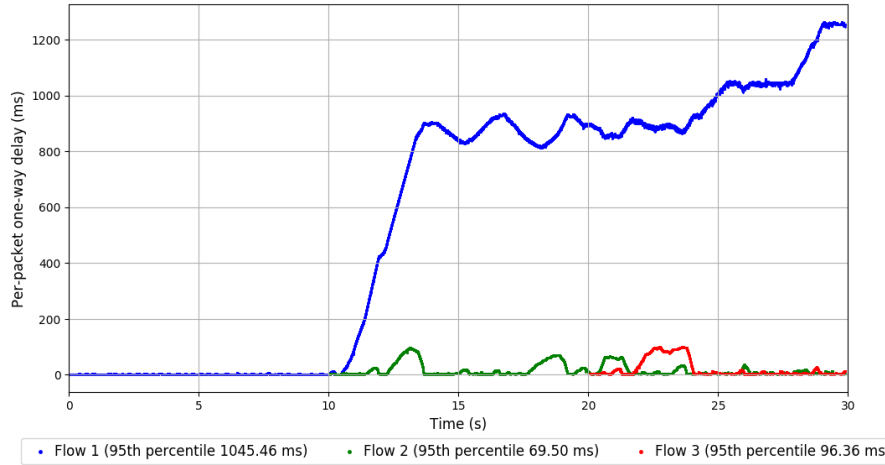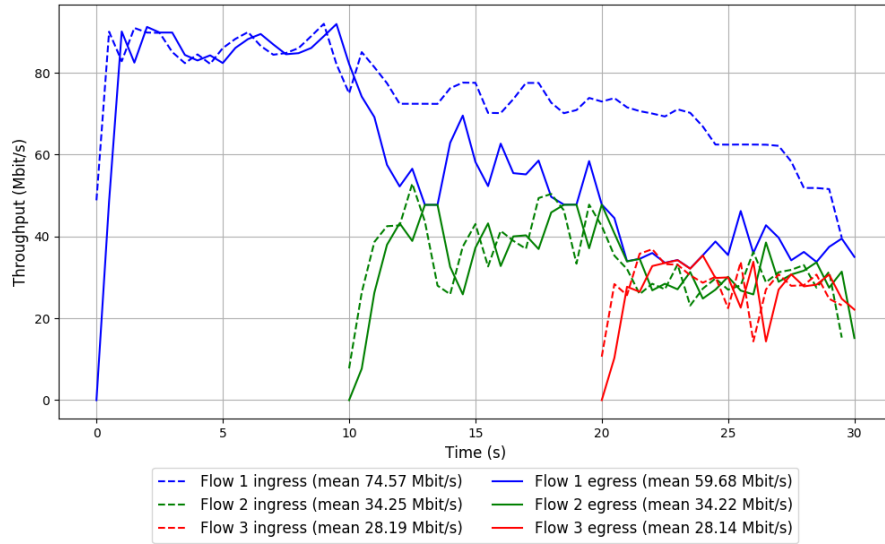
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-08-27 12:58:59
End at: 2019-08-27 12:59:29
Local clock offset: -0.197 ms
Remote clock offset: 0.672 ms


# Below is generated by plot.py at 2019-08-27 13:56:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.72 Mbit/s
95th percentile per-packet one-way delay: 1039.187 ms
Loss rate: 14.01%
-- Flow 1:
Average throughput: 59.68 Mbit/s
95th percentile per-packet one-way delay: 1045.456 ms
Loss rate: 19.98%
-- Flow 2:
Average throughput: 34.22 Mbit/s
95th percentile per-packet one-way delay: 69.499 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 28.14 Mbit/s
95th percentile per-packet one-way delay: 96.357 ms
Loss rate: 0.28%
```
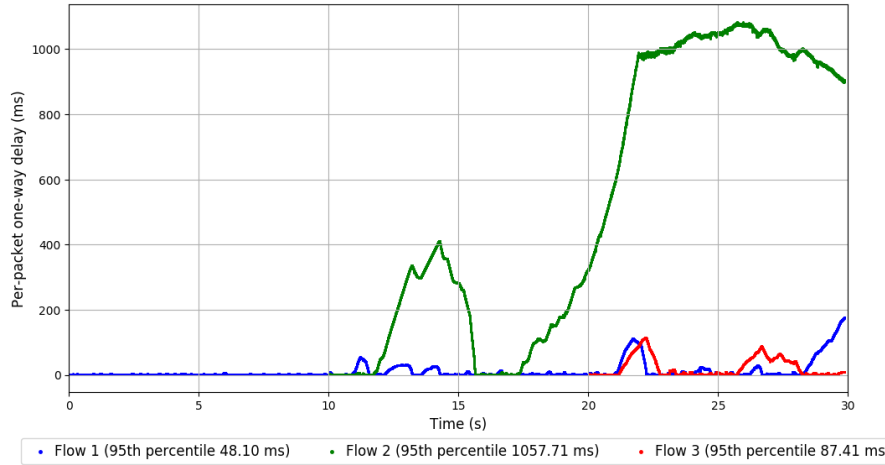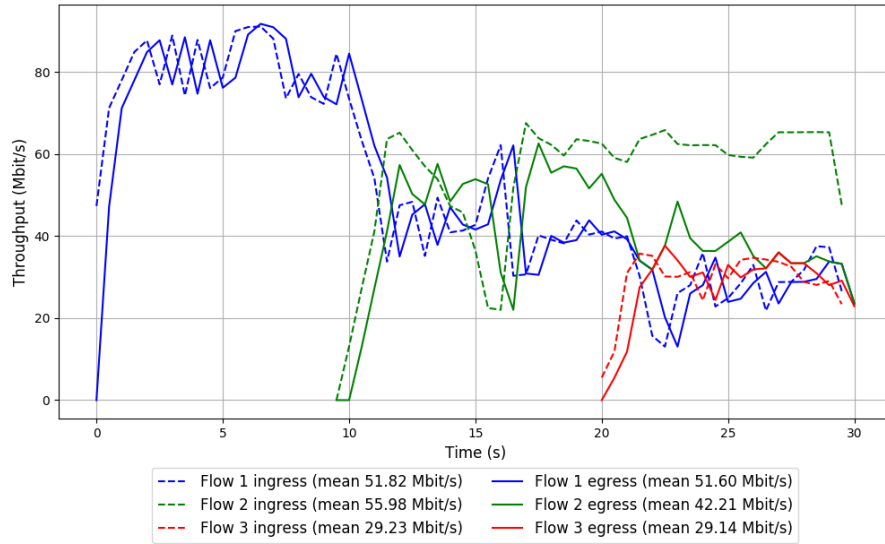
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-08-27 13:26:29
End at: 2019-08-27 13:26:59
Local clock offset: -0.19 ms
Remote clock offset: 0.676 ms


# Below is generated by plot.py at 2019-08-27 13:56:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.31 Mbit/s
95th percentile per-packet one-way delay: 1014.989 ms
Loss rate: 9.55%
-- Flow 1:
Average throughput: 51.60 Mbit/s
95th percentile per-packet one-way delay: 48.098 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 42.21 Mbit/s
95th percentile per-packet one-way delay: 1057.708 ms
Loss rate: 24.61%
-- Flow 3:
Average throughput: 29.14 Mbit/s
95th percentile per-packet one-way delay: 87.405 ms
Loss rate: 0.37%
```
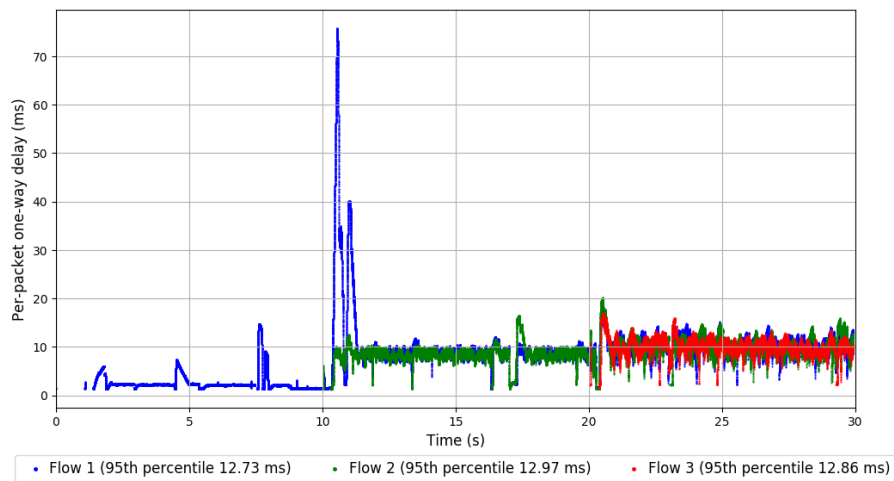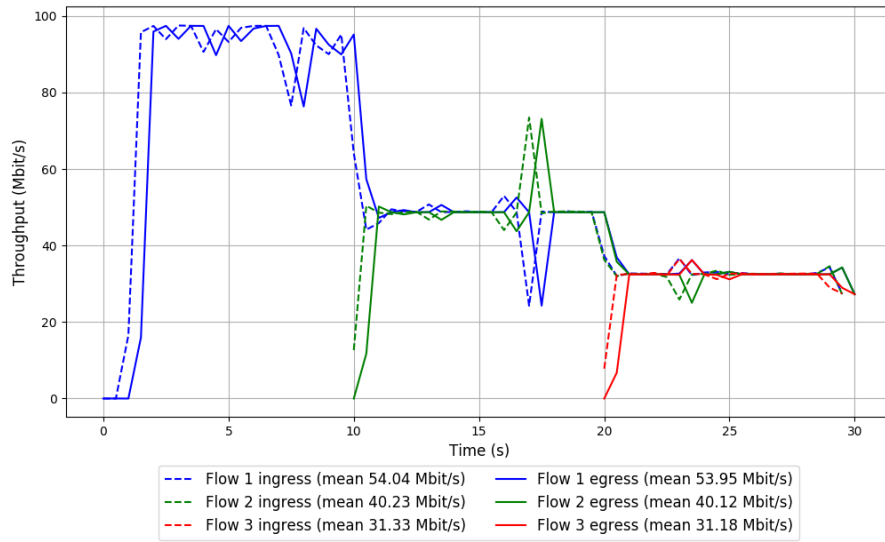
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-08-27 11:34:04
End at: 2019-08-27 11:34:34
Local clock offset: -0.303 ms
Remote clock offset: -0.535 ms


# Below is generated by plot.py at 2019-08-27 13:56:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.96 Mbit/s
95th percentile per-packet one-way delay: 12.830 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 53.95 Mbit/s
95th percentile per-packet one-way delay: 12.735 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 40.12 Mbit/s
95th percentile per-packet one-way delay: 12.973 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 31.18 Mbit/s
95th percentile per-packet one-way delay: 12.863 ms
Loss rate: 0.51%
```
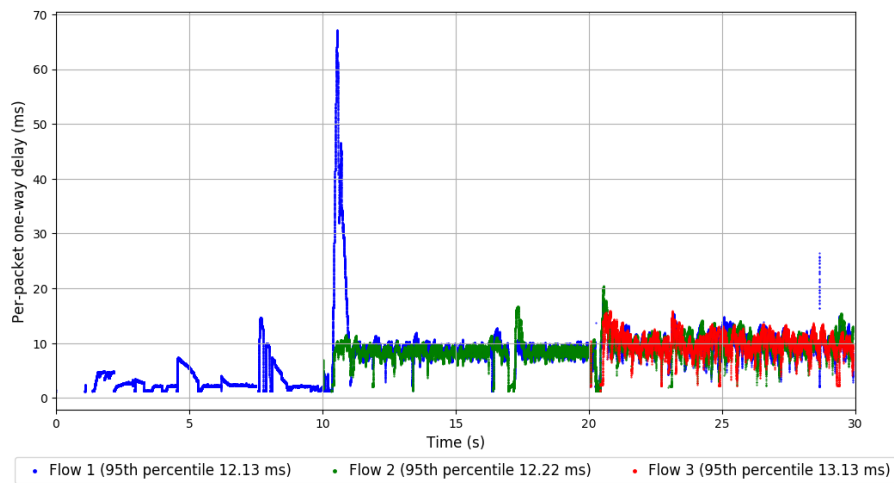
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-08-27 12:01:36
End at: 2019-08-27 12:02:06
Local clock offset: -0.2 ms
Remote clock offset: 0.054 ms


# Below is generated by plot.py at 2019-08-27 13:56:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.04 Mbit/s
95th percentile per-packet one-way delay: 12.442 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 54.07 Mbit/s
95th percentile per-packet one-way delay: 12.134 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 40.19 Mbit/s
95th percentile per-packet one-way delay: 12.222 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 30.97 Mbit/s
95th percentile per-packet one-way delay: 13.130 ms
Loss rate: 0.43%
```
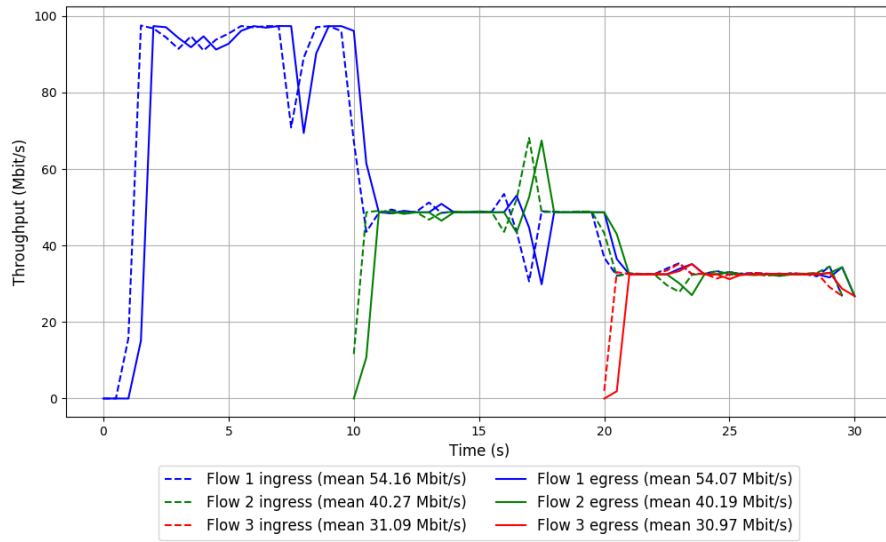
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-08-27 12:29:07
End at: 2019-08-27 12:29:37
Local clock offset: -0.114 ms
Remote clock offset: 0.442 ms


# Below is generated by plot.py at 2019-08-27 13:56:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.61 Mbit/s
95th percentile per-packet one-way delay: 12.231 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 53.66 Mbit/s
95th percentile per-packet one-way delay: 12.000 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 40.10 Mbit/s
95th percentile per-packet one-way delay: 11.952 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 31.04 Mbit/s
95th percentile per-packet one-way delay: 13.063 ms
Loss rate: 0.43%
```
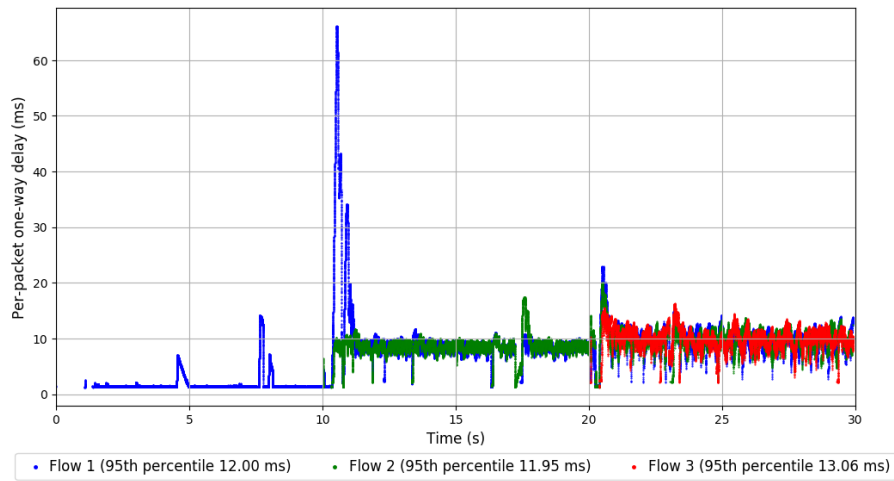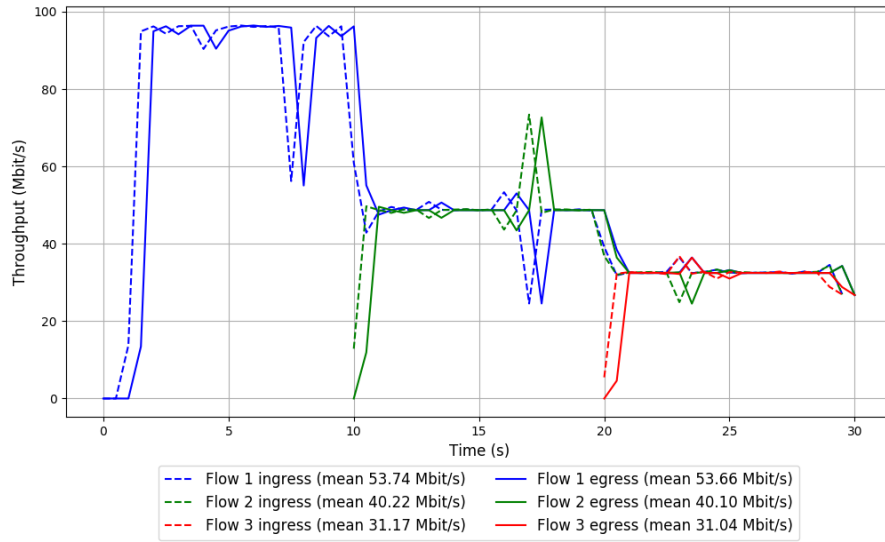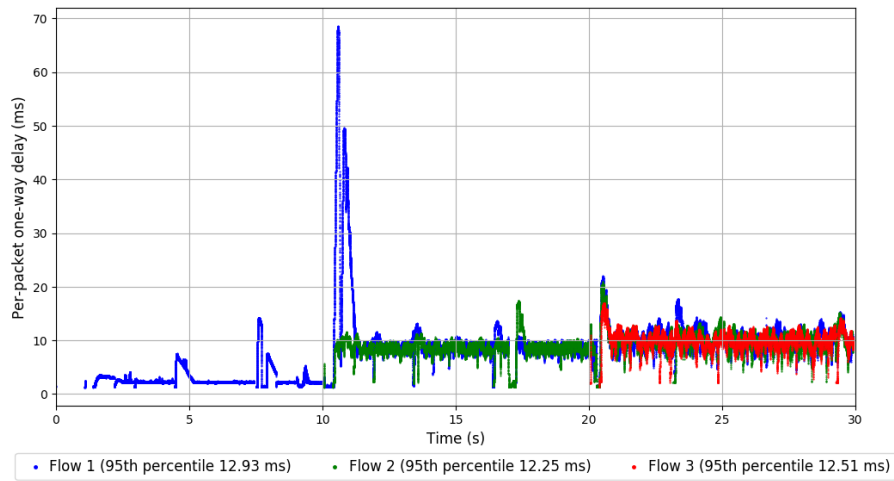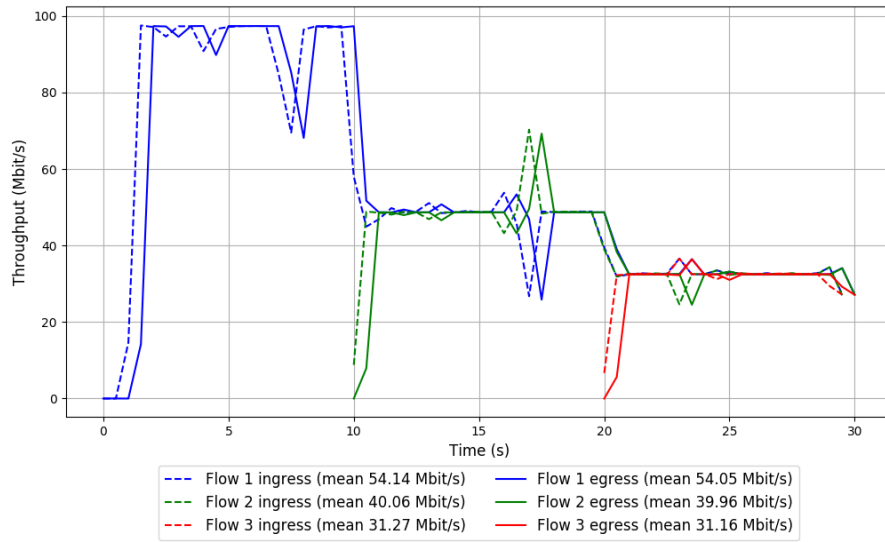
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 53.74 Mbit/s) ---- Flow 1 egress (mean 53.66 Mbit/s)
Flow 2 ingress (mean 40.22 Mbit/s) ---- Flow 2 egress (mean 40.10 Mbit/s)
Flow 3 ingress (mean 31.17 Mbit/s) ---- Flow 3 egress (mean 31.04 Mbit/s)

Flow 1 (95th percentile 12.00 ms) • Flow 2 (95th percentile 11.95 ms) • Flow 3 (95th percentile 13.06 ms)

170

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-08-27 12:56:37
End at: 2019-08-27 12:57:07
Local clock offset: -0.167 ms
Remote clock offset: 0.632 ms


# Below is generated by plot.py at 2019-08-27 13:56:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.93 Mbit/s
95th percentile per-packet one-way delay: 12.626 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 54.05 Mbit/s
95th percentile per-packet one-way delay: 12.933 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 39.96 Mbit/s
95th percentile per-packet one-way delay: 12.246 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 31.16 Mbit/s
95th percentile per-packet one-way delay: 12.510 ms
Loss rate: 0.51%
```
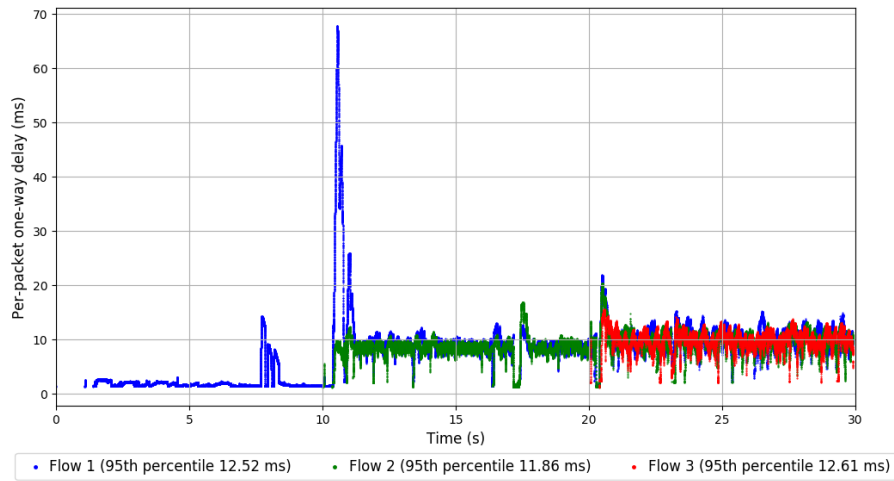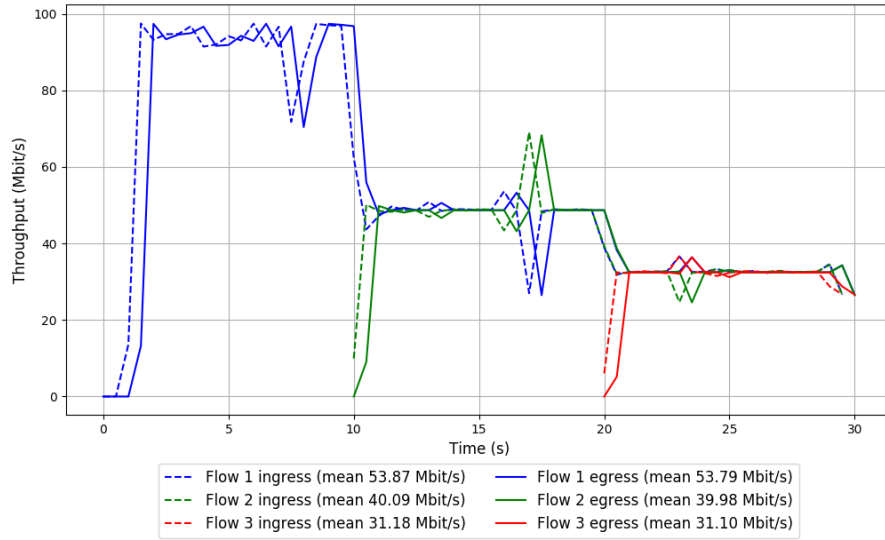
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 54.14 Mbit/s)   Flow 1 egress (mean 54.05 Mbit/s)
Flow 2 ingress (mean 40.06 Mbit/s)   Flow 2 egress (mean 39.96 Mbit/s)
Flow 3 ingress (mean 31.27 Mbit/s)   Flow 3 egress (mean 31.16 Mbit/s)

Flow 1 (95th percentile 12.93 ms)   Flow 2 (95th percentile 12.25 ms)   Flow 3 (95th percentile 12.51 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-08-27 13:24:07
End at: 2019-08-27 13:24:37
Local clock offset: -0.174 ms
Remote clock offset: 0.797 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.65 Mbit/s
95th percentile per-packet one-way delay: 12.311 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 53.79 Mbit/s
95th percentile per-packet one-way delay: 12.517 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 39.98 Mbit/s
95th percentile per-packet one-way delay: 11.857 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 31.10 Mbit/s
95th percentile per-packet one-way delay: 12.611 ms
Loss rate: 0.43%
```
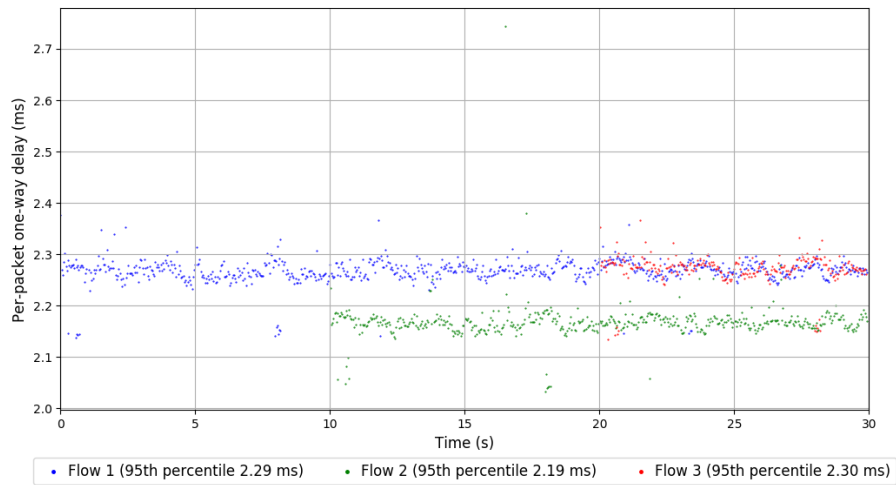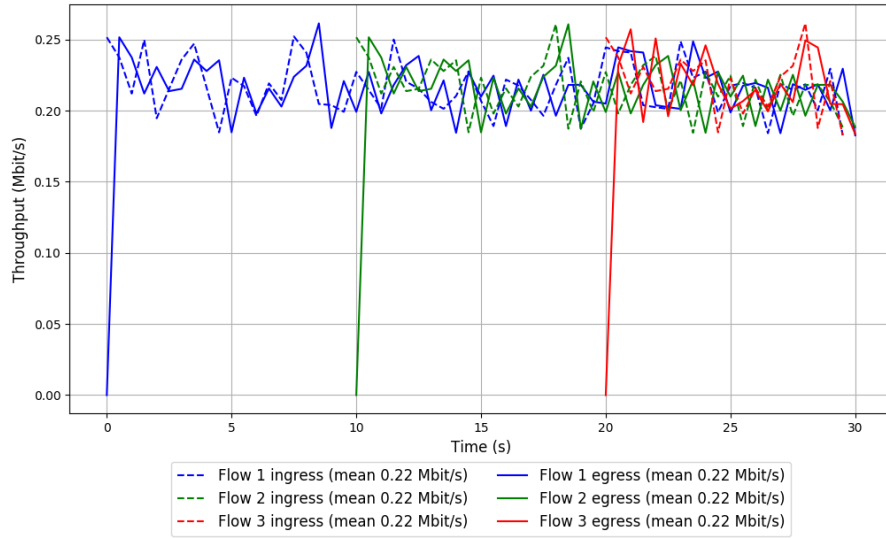
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 53.87 Mbit/s) — Flow 1 egress (mean 53.79 Mbit/s)
Flow 2 ingress (mean 40.09 Mbit/s) — Flow 2 egress (mean 39.98 Mbit/s)
Flow 3 ingress (mean 31.18 Mbit/s) — Flow 3 egress (mean 31.10 Mbit/s)

Flow 1 (95th percentile 12.52 ms)   Flow 2 (95th percentile 11.86 ms)   Flow 3 (95th percentile 12.61 ms)

```
Run 1: Statistics of SCReAM

Start at: 2019-08-27 11:47:54
End at: 2019-08-27 11:48:24
Local clock offset: 0.53 ms
Remote clock offset: -0.287 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 2.292 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.294 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.192 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.298 ms
Loss rate: 0.35%
```
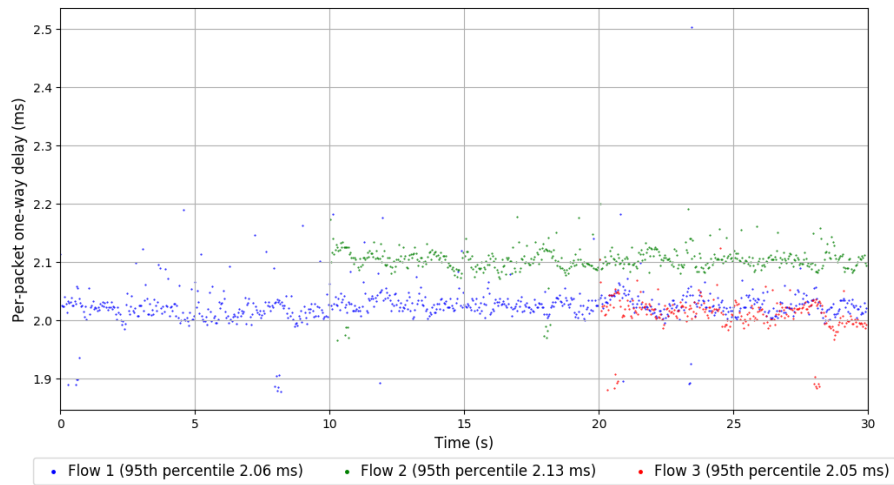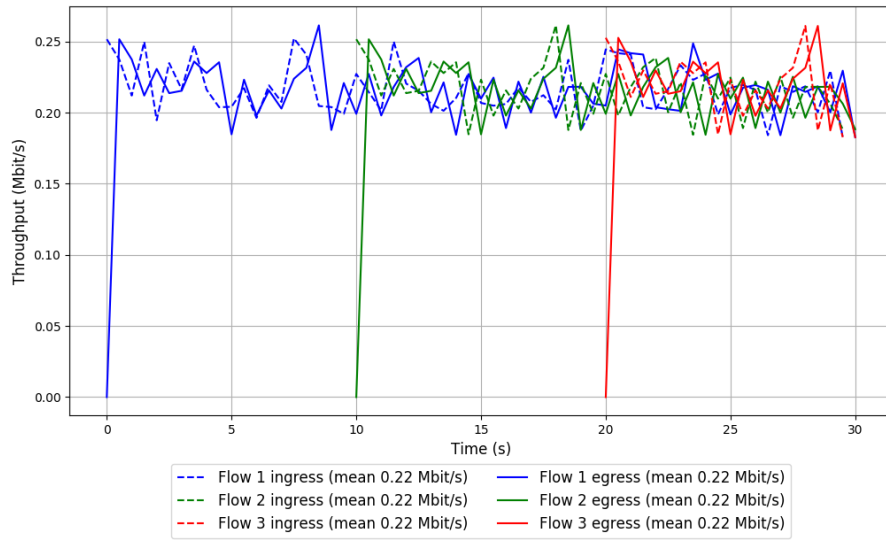
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-08-27 12:15:24
End at: 2019-08-27 12:15:54
Local clock offset: 0.564 ms
Remote clock offset: 0.292 ms

# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 2.121 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.061 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.135 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.049 ms
Loss rate: 0.00%
```
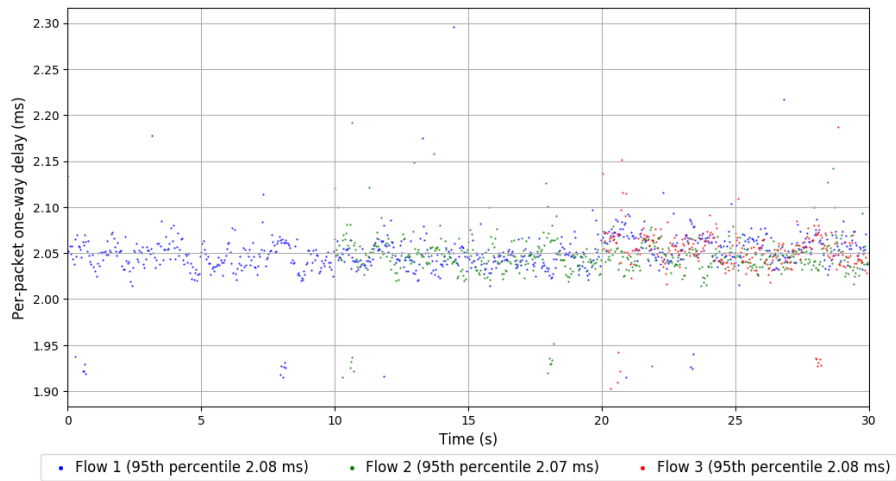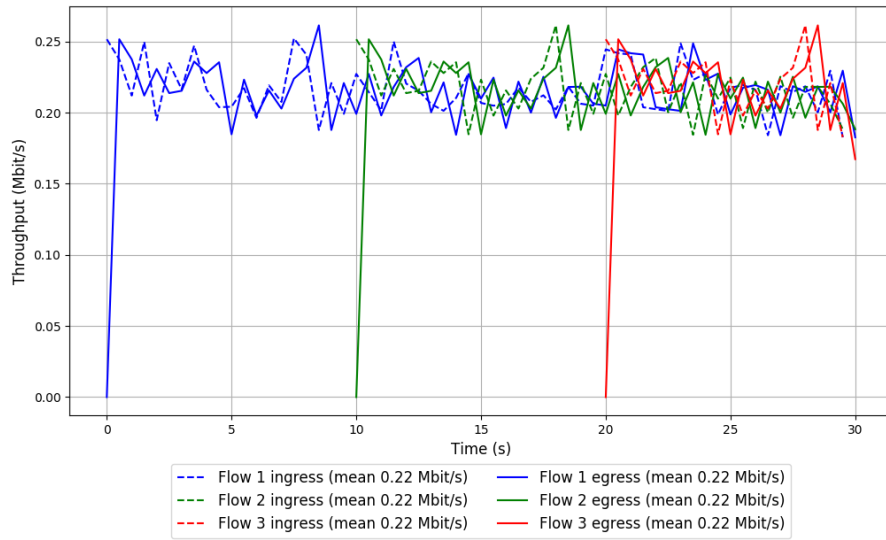
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-08-27 12:42:54
End at: 2019-08-27 12:43:24
Local clock offset: 0.552 ms
Remote clock offset: 0.618 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 2.077 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.077 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.074 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.080 ms
Loss rate: 0.35%
```
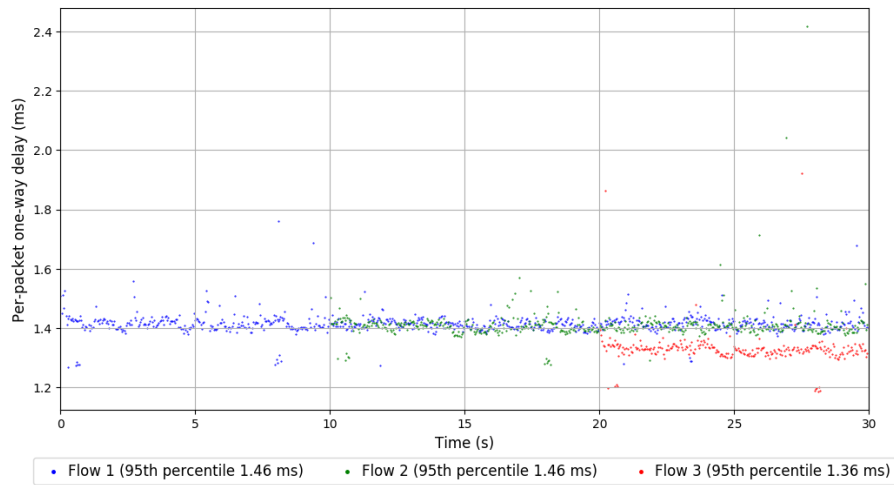
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-08-27 13:10:25
End at: 2019-08-27 13:10:55
Local clock offset: -0.194 ms
Remote clock offset: 0.694 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.448 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.455 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.458 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
```
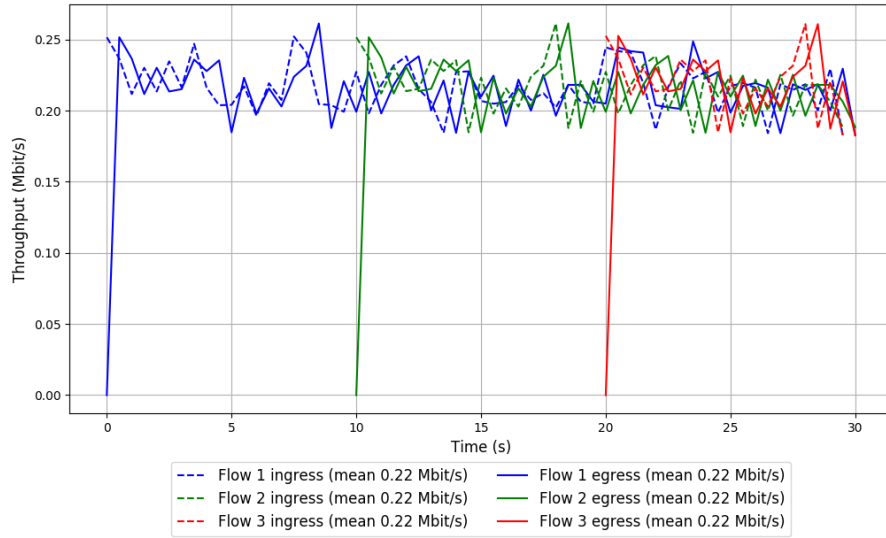
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-08-27 13:37:57
End at: 2019-08-27 13:38:27
Local clock offset: -0.066 ms
Remote clock offset: 0.65 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.387 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.394 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.371 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.395 ms
Loss rate: 0.00%
```
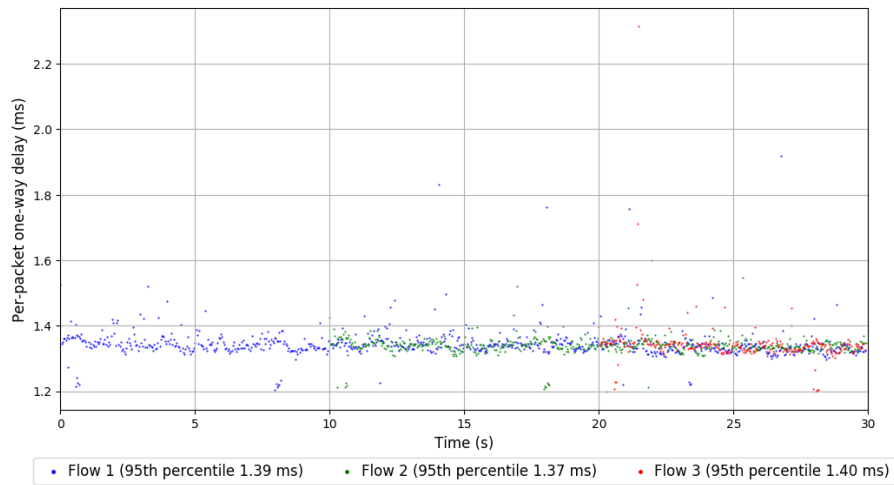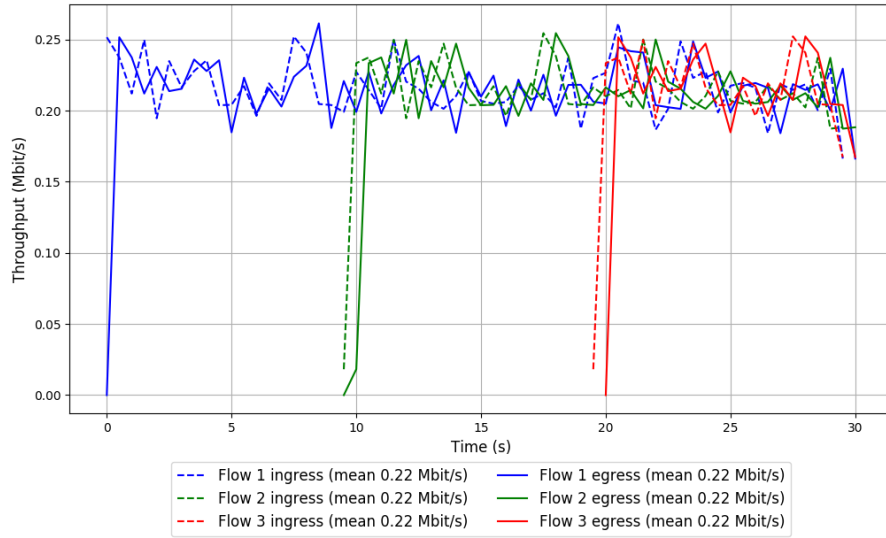
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-08-27 11:37:40
End at: 2019-08-27 11:38:10
Local clock offset: -0.288 ms
Remote clock offset: -0.427 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.95 Mbit/s
95th percentile per-packet one-way delay: 23.186 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 41.97 Mbit/s
95th percentile per-packet one-way delay: 21.164 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 39.63 Mbit/s
95th percentile per-packet one-way delay: 22.697 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 25.661 ms
Loss rate: 0.52%
```
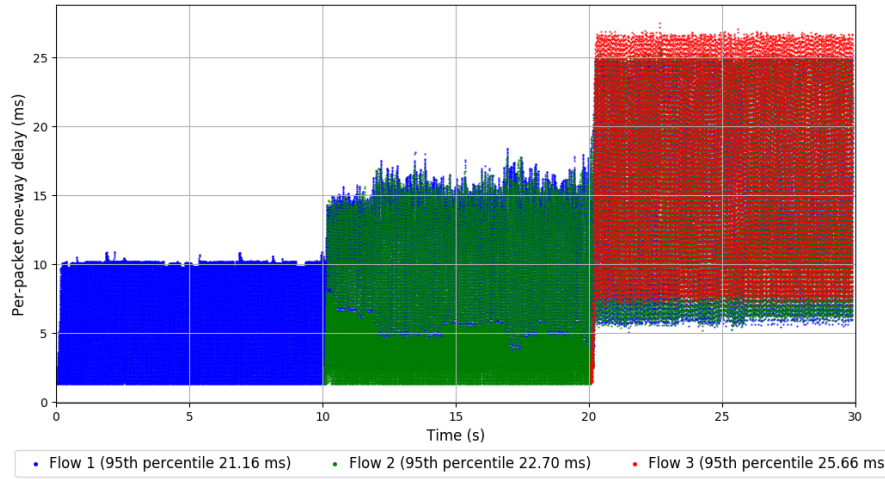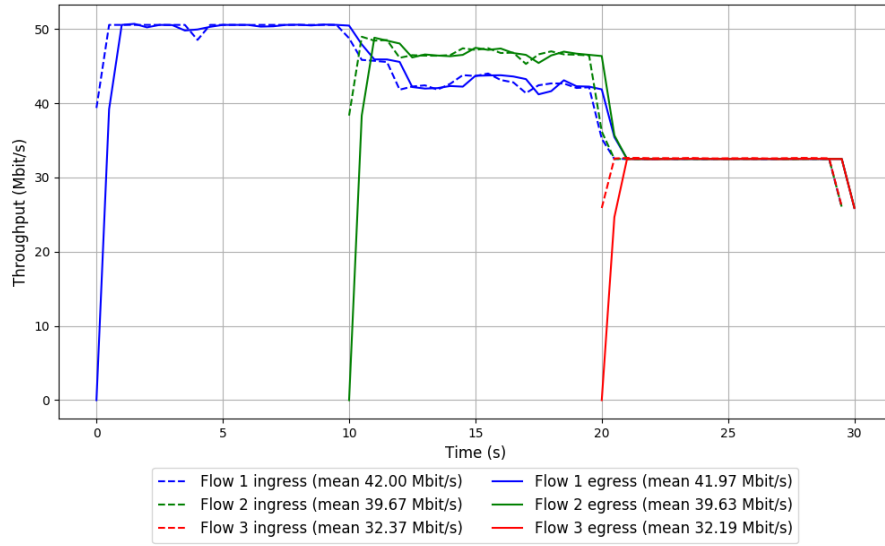
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-08-27 12:05:09
End at: 2019-08-27 12:05:39
Local clock offset: -0.17 ms
Remote clock offset: 0.058 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.36 Mbit/s
95th percentile per-packet one-way delay: 23.940 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 43.84 Mbit/s
95th percentile per-packet one-way delay: 22.550 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 40.43 Mbit/s
95th percentile per-packet one-way delay: 23.893 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 25.376 ms
Loss rate: 0.32%
```
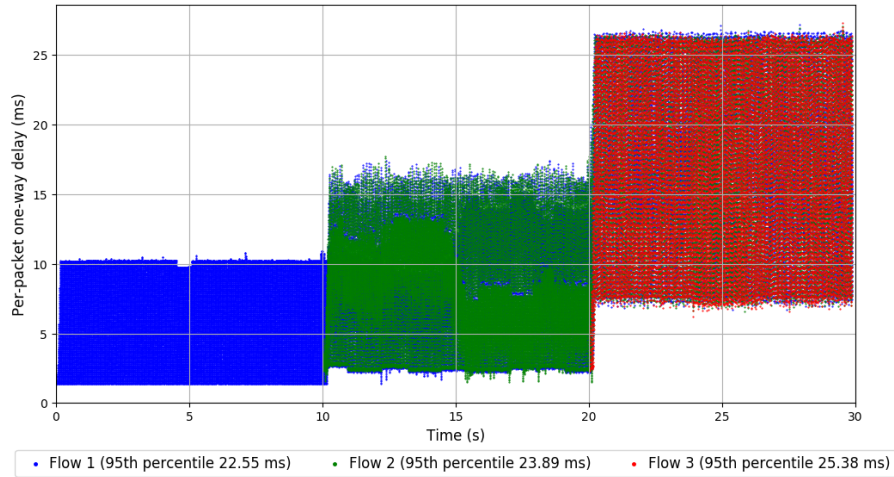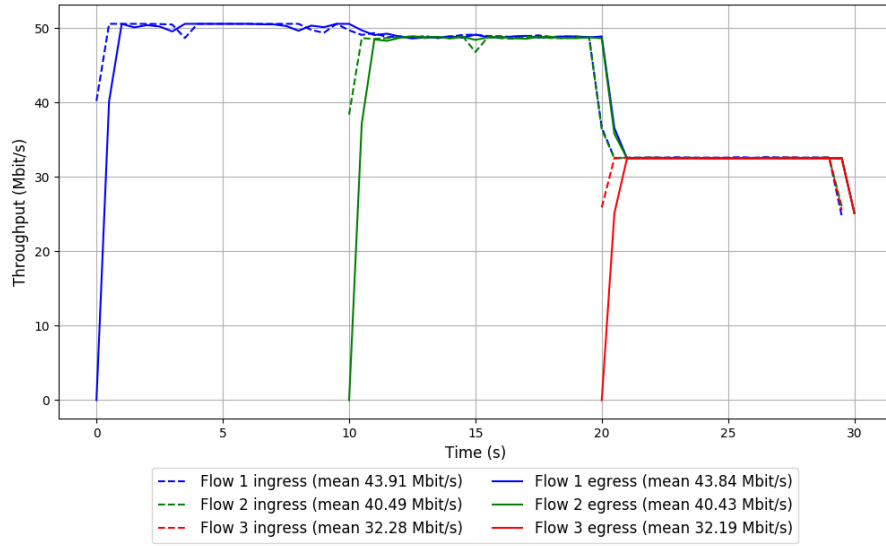
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-08-27 12:32:42
End at: 2019-08-27 12:33:12
Local clock offset: -0.155 ms
Remote clock offset: 0.446 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.59 Mbit/s
95th percentile per-packet one-way delay: 23.738 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 43.69 Mbit/s
95th percentile per-packet one-way delay: 22.622 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 37.95 Mbit/s
95th percentile per-packet one-way delay: 22.916 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 25.674 ms
Loss rate: 0.46%
```
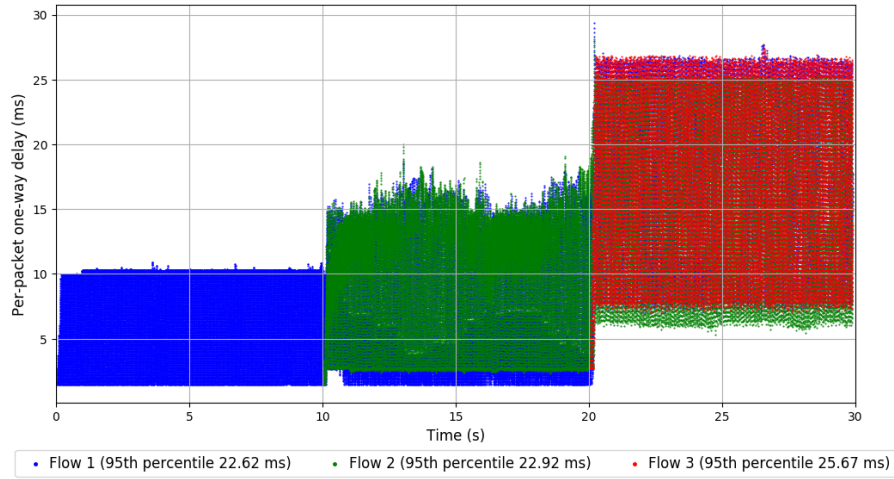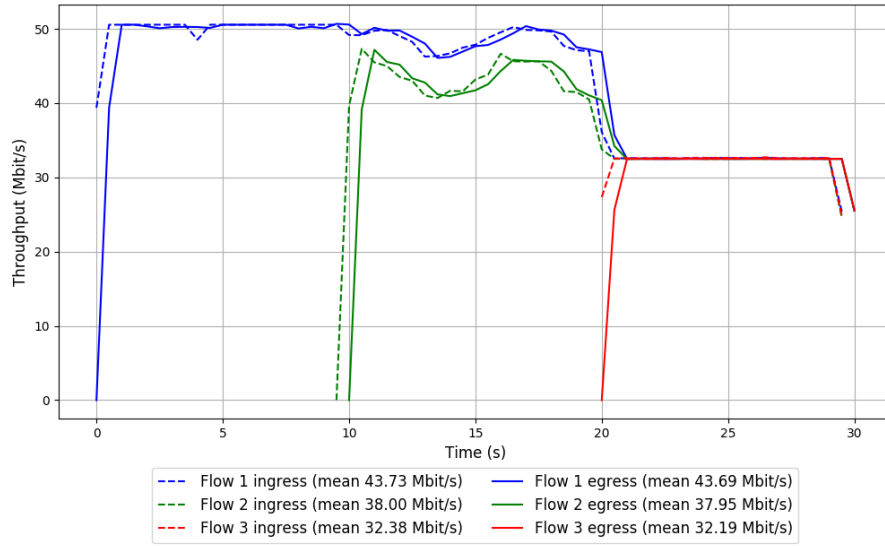
Run 3: Report of Sprout — Data Link

Flow 1 ingress (mean 43.73 Mbit/s) --- Flow 1 egress (mean 43.69 Mbit/s)
Flow 2 ingress (mean 38.00 Mbit/s) --- Flow 2 egress (mean 37.95 Mbit/s)
Flow 3 ingress (mean 32.38 Mbit/s) --- Flow 3 egress (mean 32.19 Mbit/s)

Flow 1 (95th percentile 22.62 ms) Flow 2 (95th percentile 22.92 ms) Flow 3 (95th percentile 25.67 ms)

```
Run 4: Statistics of Sprout

Start at: 2019-08-27 13:00:12
End at: 2019-08-27 13:00:42
Local clock offset: -0.198 ms
Remote clock offset: 0.63 ms


# Below is generated by plot.py at 2019-08-27 13:57:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.12 Mbit/s
95th percentile per-packet one-way delay: 23.469 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 42.87 Mbit/s
95th percentile per-packet one-way delay: 22.669 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 38.52 Mbit/s
95th percentile per-packet one-way delay: 24.139 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 32.20 Mbit/s
95th percentile per-packet one-way delay: 23.594 ms
Loss rate: 0.23%
```
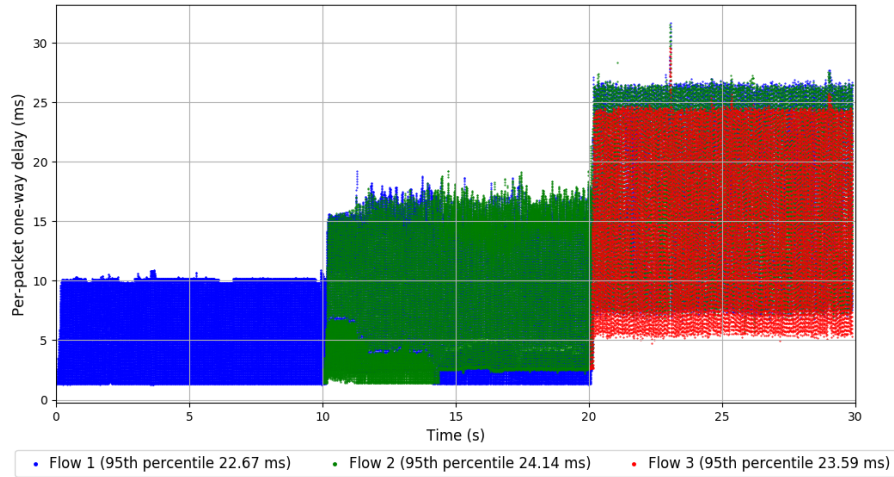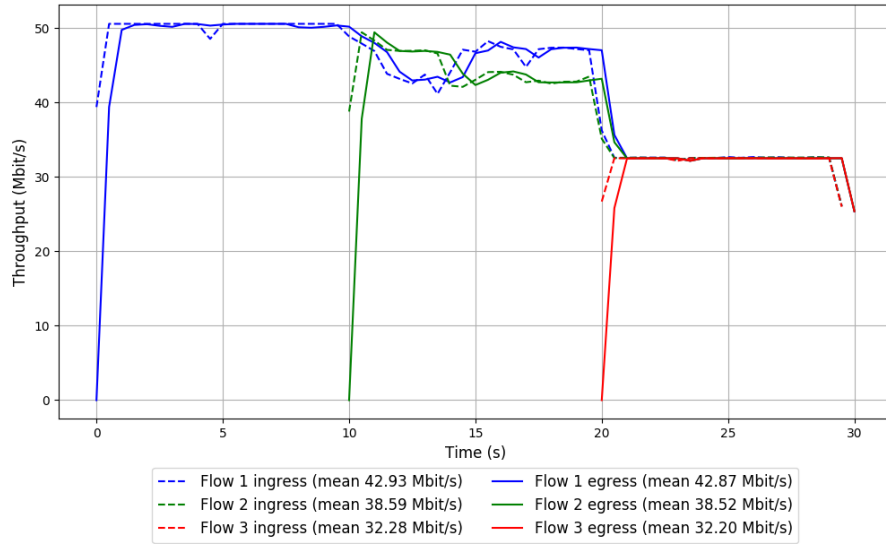
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-08-27 13:27:42
End at: 2019-08-27 13:28:12
Local clock offset: -0.178 ms
Remote clock offset: 0.662 ms


# Below is generated by plot.py at 2019-08-27 13:57:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.09 Mbit/s
95th percentile per-packet one-way delay: 23.588 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 42.68 Mbit/s
95th percentile per-packet one-way delay: 22.492 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 37.27 Mbit/s
95th percentile per-packet one-way delay: 24.134 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 24.108 ms
Loss rate: 0.19%
```
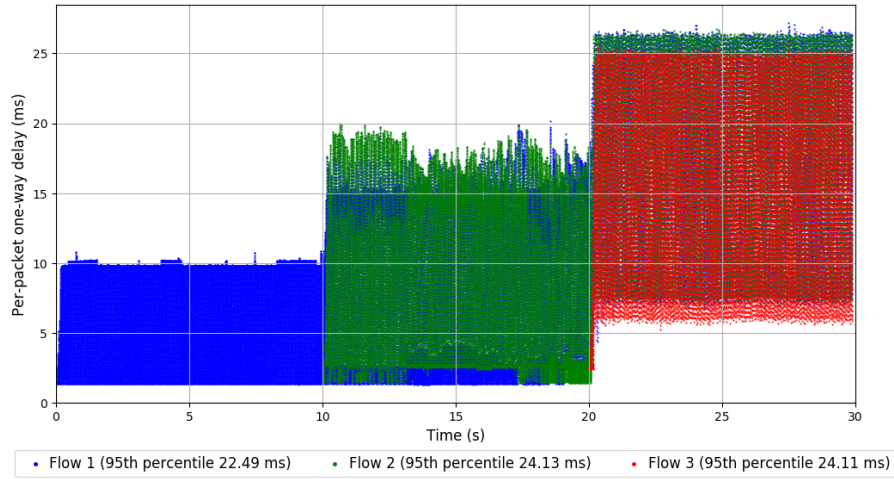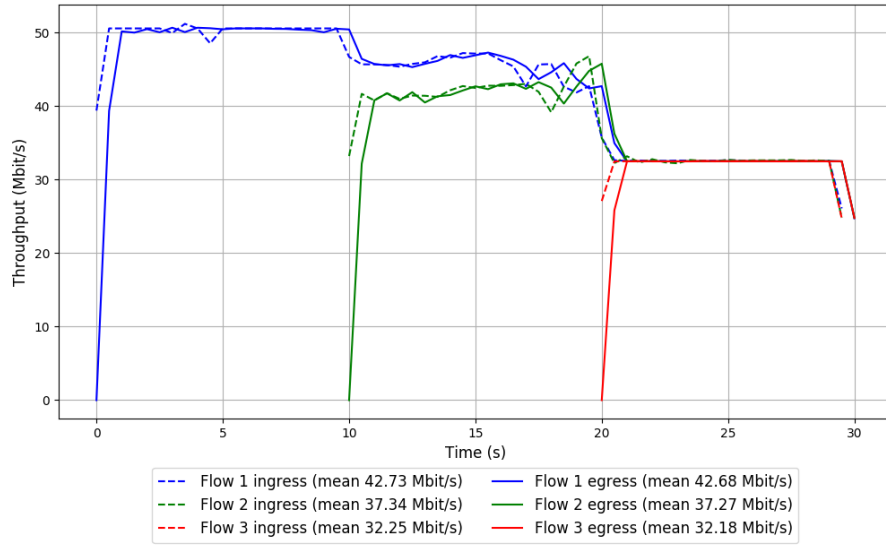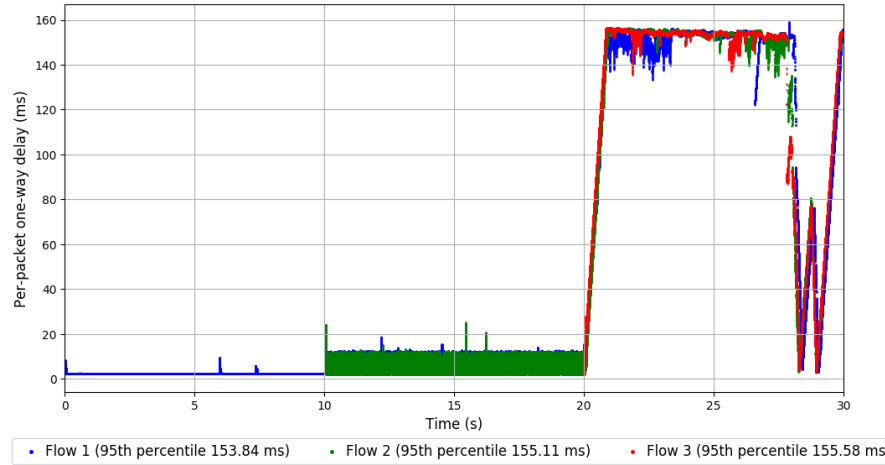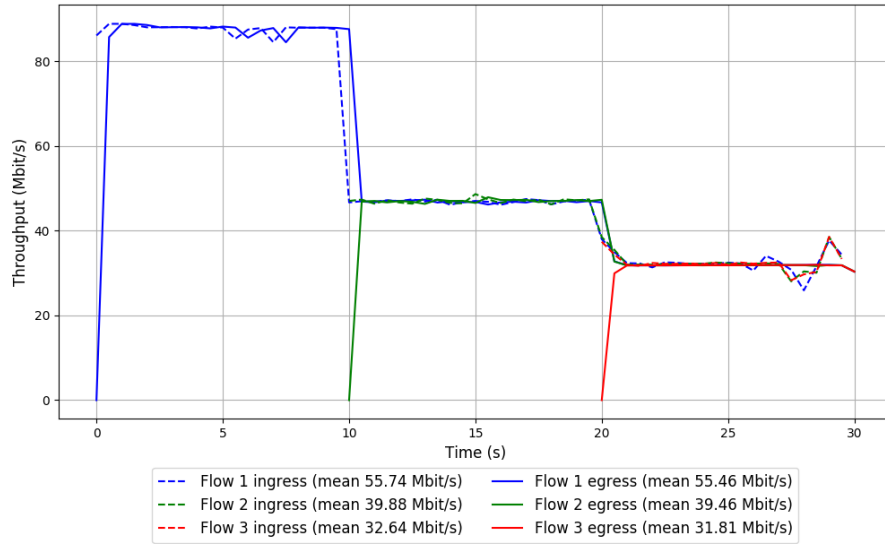
Run 5: Report of Sprout — Data Link

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

Start at: 2019-08-27 11:35:14
End at: 2019-08-27 11:35:44
Local clock offset: 0.49 ms
Remote clock offset: -0.459 ms

# Below is generated by plot.py at 2019-08-27 13:58:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.30 Mbit/s
95th percentile per-packet one-way delay: 154.793 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 55.46 Mbit/s
95th percentile per-packet one-way delay: 153.845 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 155.106 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 31.81 Mbit/s
95th percentile per-packet one-way delay: 155.576 ms
Loss rate: 2.62%
```

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

- - - Flow 1 ingress (mean 55.74 Mbit/s)   —— Flow 1 egress (mean 55.46 Mbit/s)
- - - Flow 2 ingress (mean 39.88 Mbit/s)   —— Flow 2 egress (mean 39.46 Mbit/s)
- - - Flow 3 ingress (mean 32.64 Mbit/s)   —— Flow 3 egress (mean 31.81 Mbit/s)

- Flow 1 (95th percentile 153.84 ms)   • Flow 2 (95th percentile 155.11 ms)   • Flow 3 (95th percentile 155.58 ms)

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

Start at: 2019-08-27 12:02:45
End at: 2019-08-27 12:03:15
Local clock offset: 0.607 ms
Remote clock offset: 0.031 ms


# Below is generated by plot.py at 2019-08-27 13:58:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.46 Mbit/s
95th percentile per-packet one-way delay: 154.740 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 55.60 Mbit/s
95th percentile per-packet one-way delay: 152.694 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 39.43 Mbit/s
95th percentile per-packet one-way delay: 155.524 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 31.87 Mbit/s
95th percentile per-packet one-way delay: 155.167 ms
Loss rate: 2.93%
```
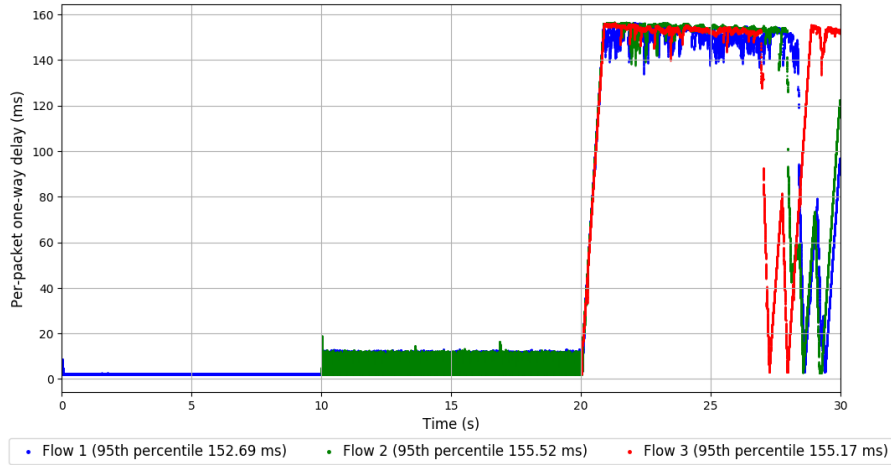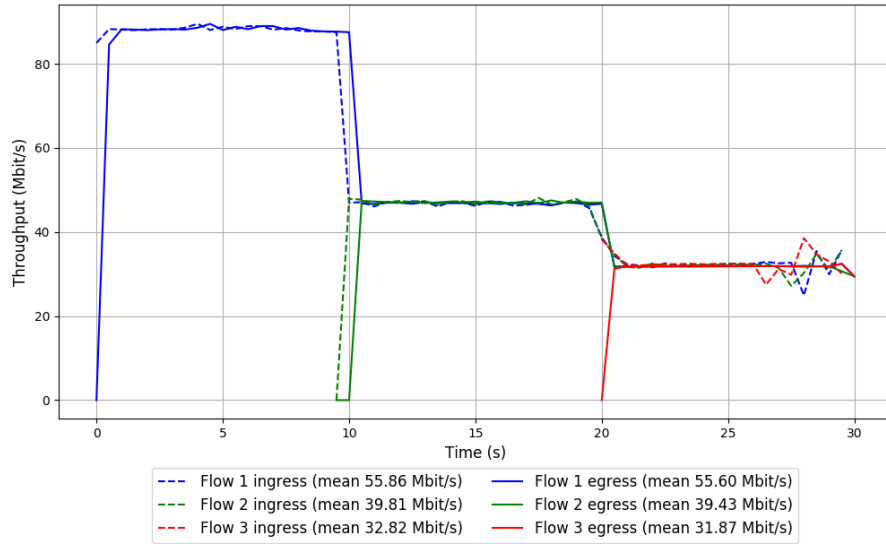
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-08-27 12:30:16
End at: 2019-08-27 12:30:46
Local clock offset: -0.208 ms
Remote clock offset: 0.448 ms


# Below is generated by plot.py at 2019-08-27 13:58:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.64 Mbit/s
95th percentile per-packet one-way delay: 154.443 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 54.14 Mbit/s
95th percentile per-packet one-way delay: 155.000 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 40.44 Mbit/s
95th percentile per-packet one-way delay: 154.039 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 31.78 Mbit/s
95th percentile per-packet one-way delay: 153.314 ms
Loss rate: 2.89%
```
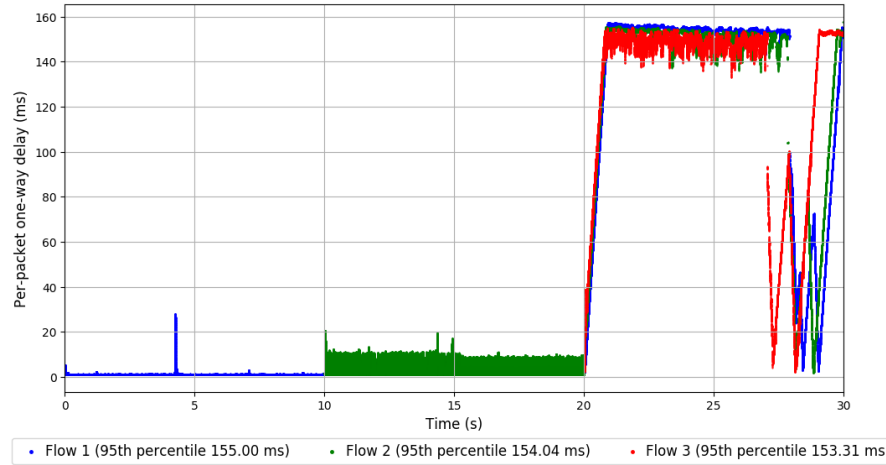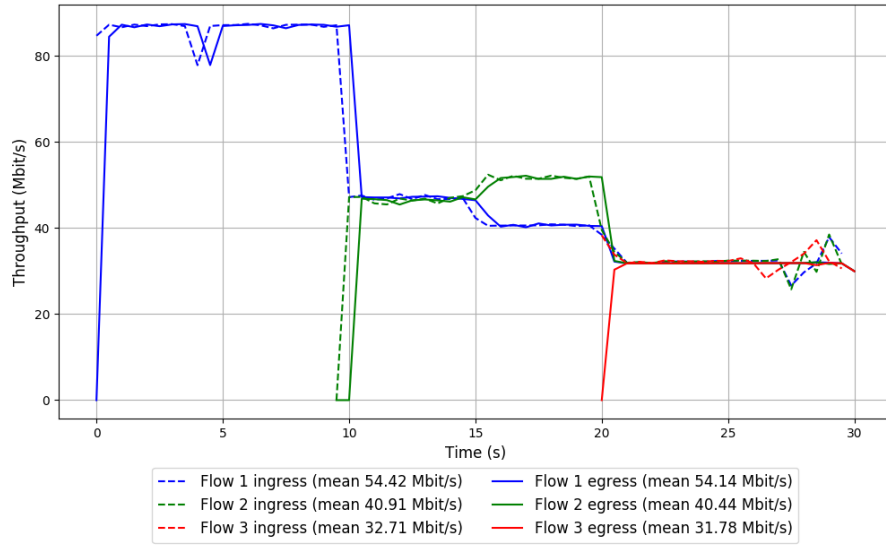
Run 3: Report of TaoVA-100x — Data Link

- Flow 1 ingress (mean 54.42 Mbit/s)
- Flow 1 egress (mean 54.14 Mbit/s)
- Flow 2 ingress (mean 40.91 Mbit/s)
- Flow 2 egress (mean 40.44 Mbit/s)
- Flow 3 ingress (mean 32.71 Mbit/s)
- Flow 3 egress (mean 31.78 Mbit/s)

- Flow 1 (95th percentile 155.00 ms)
- Flow 2 (95th percentile 154.04 ms)
- Flow 3 (95th percentile 153.31 ms)

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

Start at: 2019-08-27 12:57:46
End at: 2019-08-27 12:58:16
Local clock offset: -0.17 ms
Remote clock offset: 0.617 ms


# Below is generated by plot.py at 2019-08-27 13:58:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.35 Mbit/s
95th percentile per-packet one-way delay: 154.061 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 55.45 Mbit/s
95th percentile per-packet one-way delay: 153.671 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 154.386 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 31.80 Mbit/s
95th percentile per-packet one-way delay: 154.215 ms
Loss rate: 2.51%
```
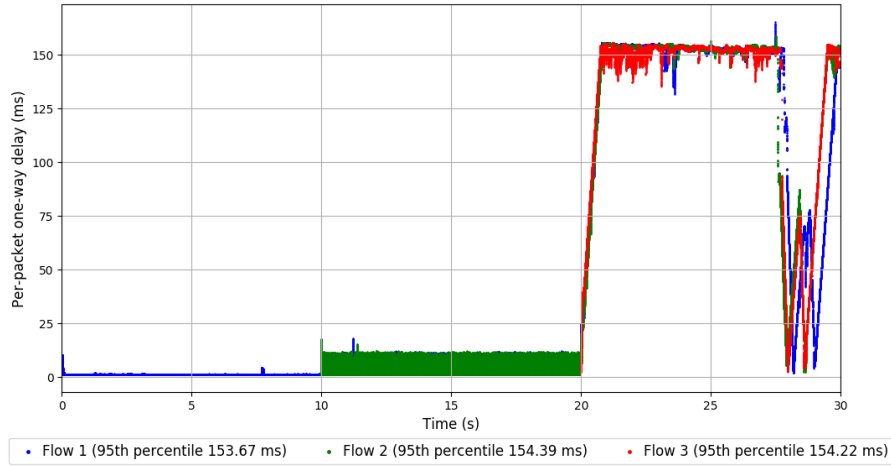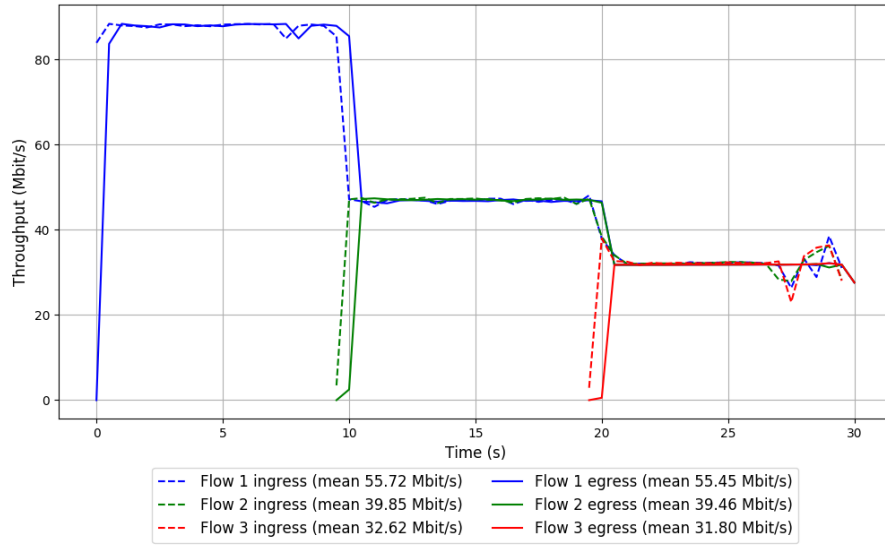
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.72 Mbit/s) ---- Flow 1 egress (mean 55.45 Mbit/s) ——
Flow 2 ingress (mean 39.85 Mbit/s) ---- Flow 2 egress (mean 39.46 Mbit/s) ——
Flow 3 ingress (mean 32.62 Mbit/s) ---- Flow 3 egress (mean 31.80 Mbit/s) ——

Flow 1 (95th percentile 153.67 ms) • Flow 2 (95th percentile 154.39 ms) • Flow 3 (95th percentile 154.22 ms)

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

Start at: 2019-08-27 13:25:17
End at: 2019-08-27 13:25:47
Local clock offset: -0.136 ms
Remote clock offset: 0.841 ms


# Below is generated by plot.py at 2019-08-27 13:58:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.16 Mbit/s
95th percentile per-packet one-way delay: 155.080 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 155.052 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 39.24 Mbit/s
95th percentile per-packet one-way delay: 155.279 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 31.78 Mbit/s
95th percentile per-packet one-way delay: 154.624 ms
Loss rate: 2.67%
```
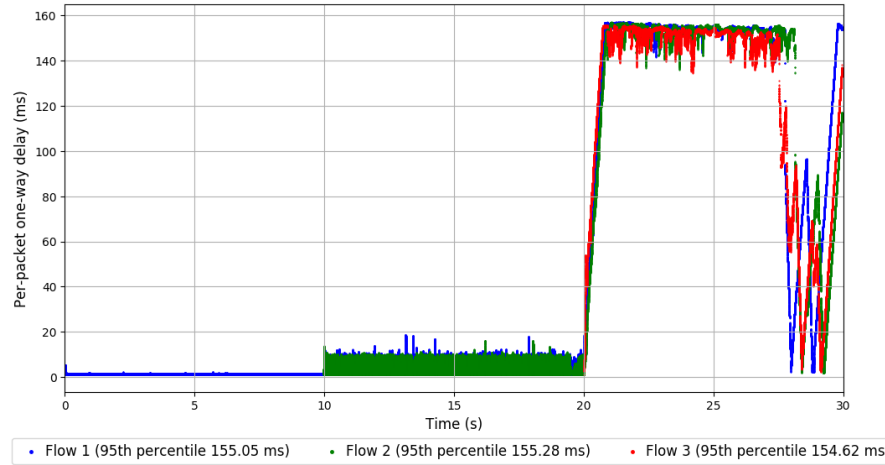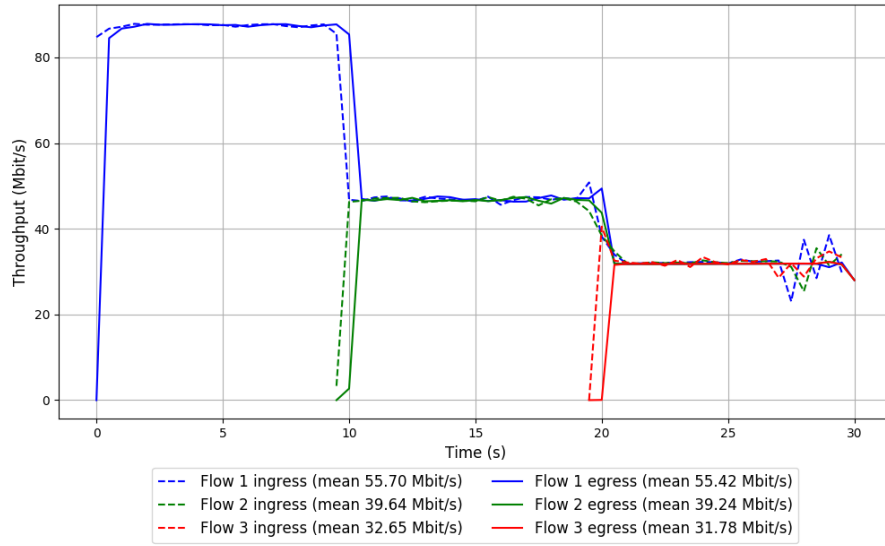
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.70 Mbit/s)   Flow 1 egress (mean 55.42 Mbit/s)
Flow 2 ingress (mean 39.64 Mbit/s)   Flow 2 egress (mean 39.24 Mbit/s)
Flow 3 ingress (mean 32.65 Mbit/s)   Flow 3 egress (mean 31.78 Mbit/s)

Flow 1 (95th percentile 155.05 ms)   Flow 2 (95th percentile 155.28 ms)   Flow 3 (95th percentile 154.62 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2019-08-27 11:51:18
End at: 2019-08-27 11:51:48
Local clock offset: 0.552 ms
Remote clock offset: -0.118 ms


# Below is generated by plot.py at 2019-08-27 13:58:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 4.498 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 54.40 Mbit/s
95th percentile per-packet one-way delay: 3.693 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 45.91 Mbit/s
95th percentile per-packet one-way delay: 4.526 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 37.61 Mbit/s
95th percentile per-packet one-way delay: 4.867 ms
Loss rate: 0.04%
```
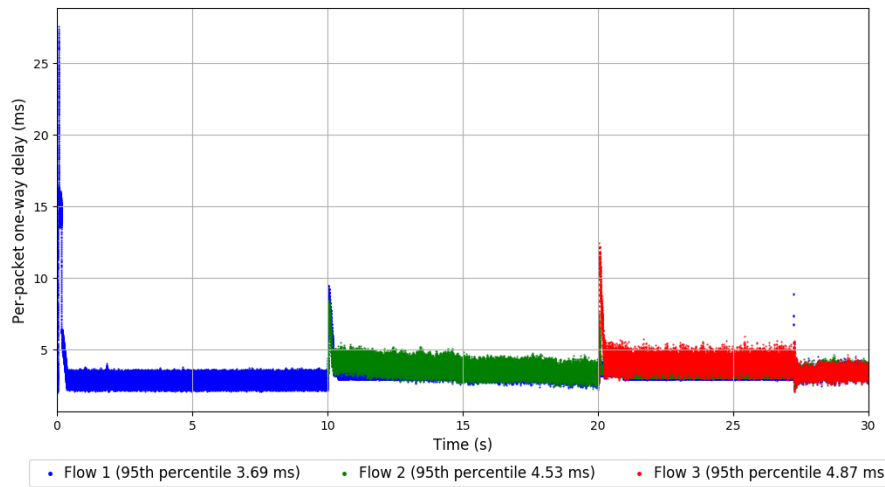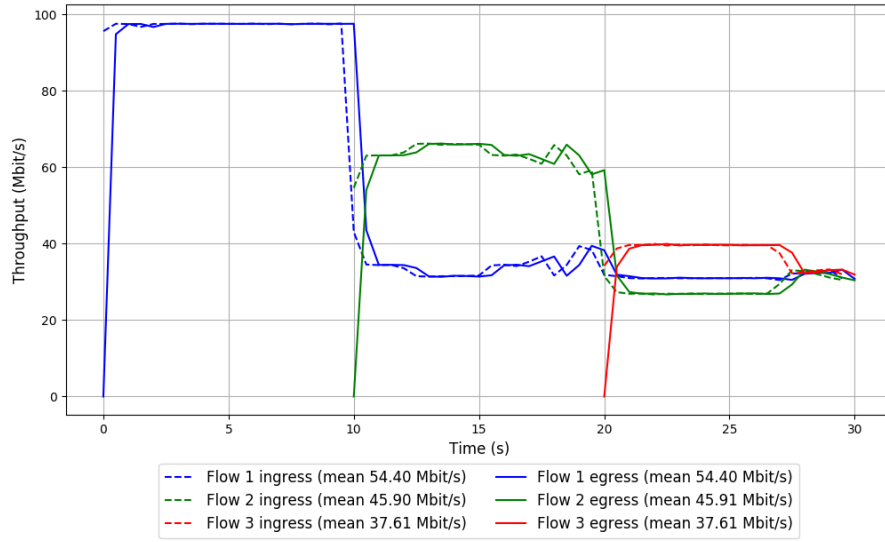
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-08-27 12:18:48
End at: 2019-08-27 12:19:18
Local clock offset: 0.636 ms
Remote clock offset: 0.341 ms


# Below is generated by plot.py at 2019-08-27 13:58:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.49 Mbit/s
95th percentile per-packet one-way delay: 4.834 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 52.56 Mbit/s
95th percentile per-packet one-way delay: 3.584 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 4.459 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 34.45 Mbit/s
95th percentile per-packet one-way delay: 5.079 ms
Loss rate: 0.06%
```
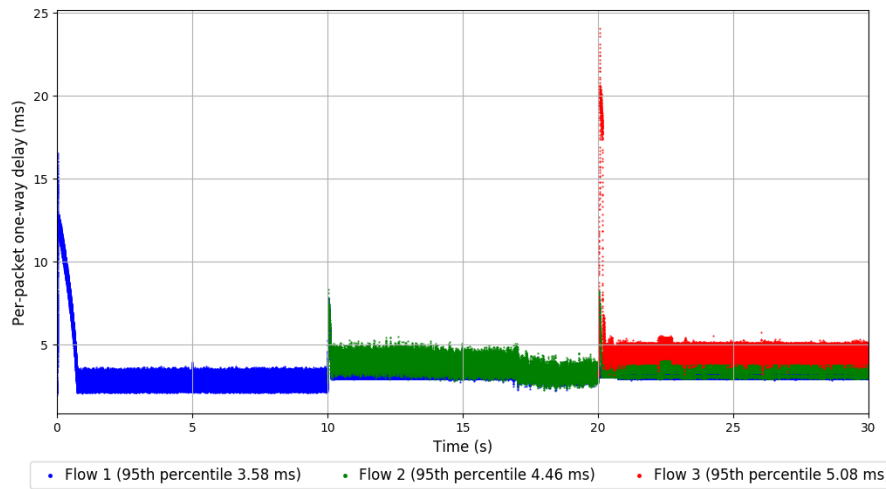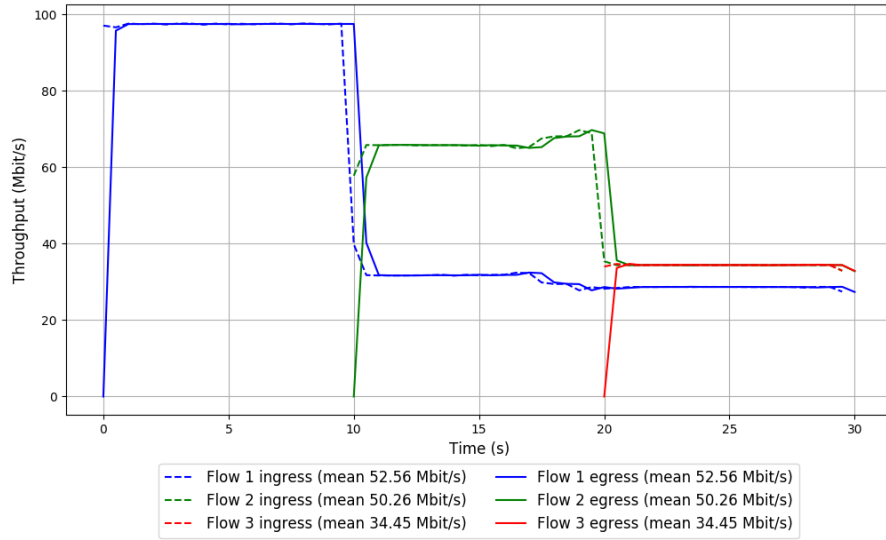
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-08-27 12:46:18
End at: 2019-08-27 12:46:48
Local clock offset: -0.142 ms
Remote clock offset: 0.558 ms


# Below is generated by plot.py at 2019-08-27 13:58:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.61 Mbit/s
95th percentile per-packet one-way delay: 3.807 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 47.70 Mbit/s
95th percentile per-packet one-way delay: 3.186 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 49.57 Mbit/s
95th percentile per-packet one-way delay: 3.264 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 47.82 Mbit/s
95th percentile per-packet one-way delay: 4.120 ms
Loss rate: 0.04%
```
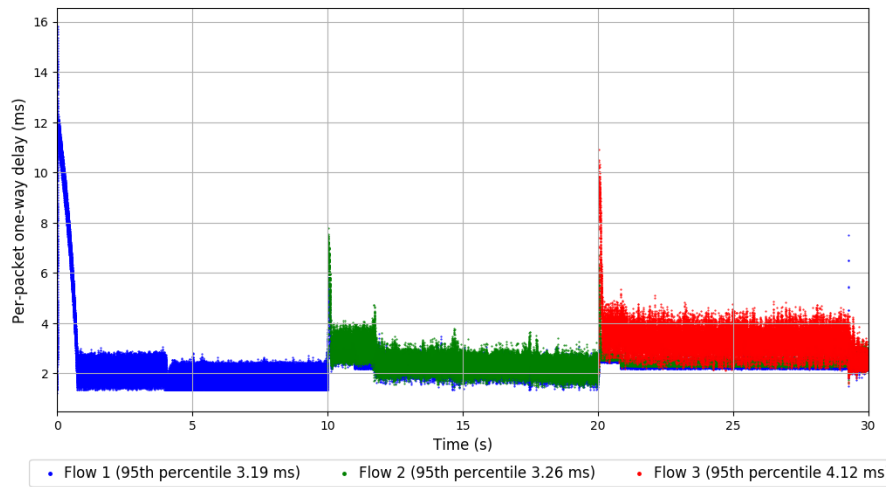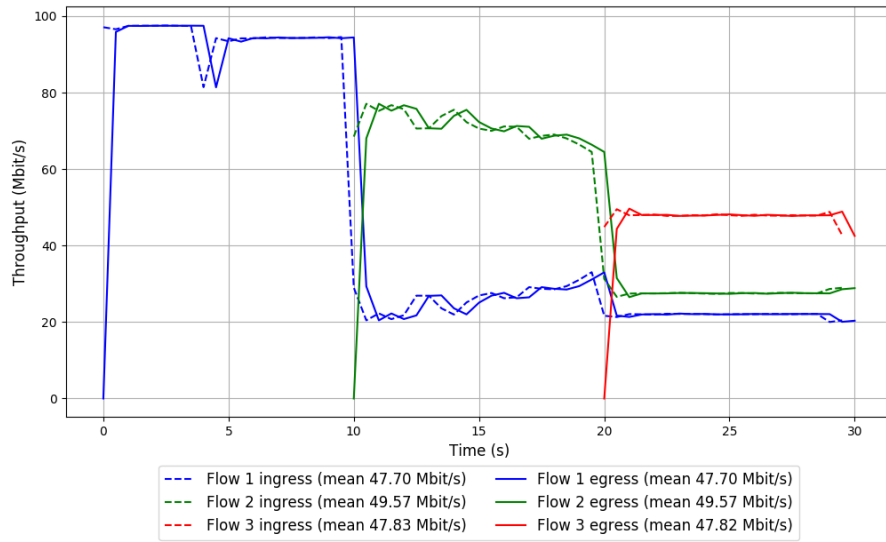
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-08-27 13:13:49
End at: 2019-08-27 13:14:19
Local clock offset: 0.609 ms
Remote clock offset: 0.663 ms


# Below is generated by plot.py at 2019-08-27 13:59:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.43 Mbit/s
95th percentile per-packet one-way delay: 4.669 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 51.08 Mbit/s
95th percentile per-packet one-way delay: 3.861 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 49.40 Mbit/s
95th percentile per-packet one-way delay: 4.249 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 40.40 Mbit/s
95th percentile per-packet one-way delay: 5.144 ms
Loss rate: 0.04%
```
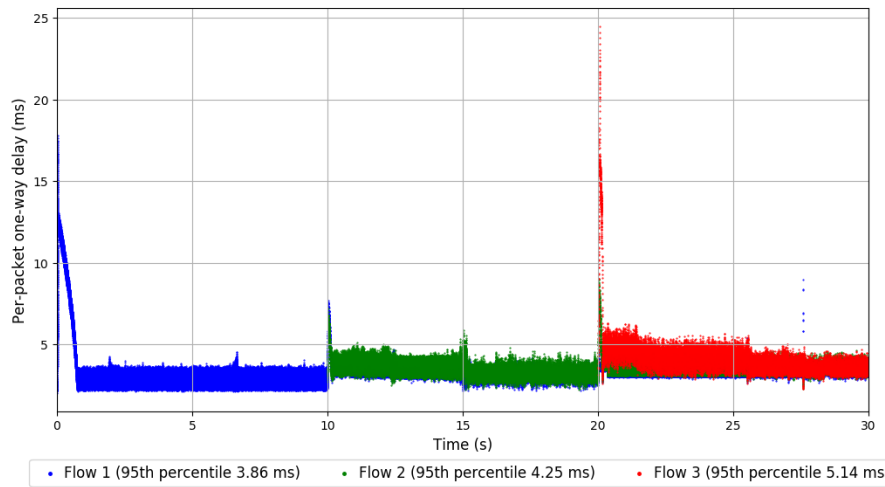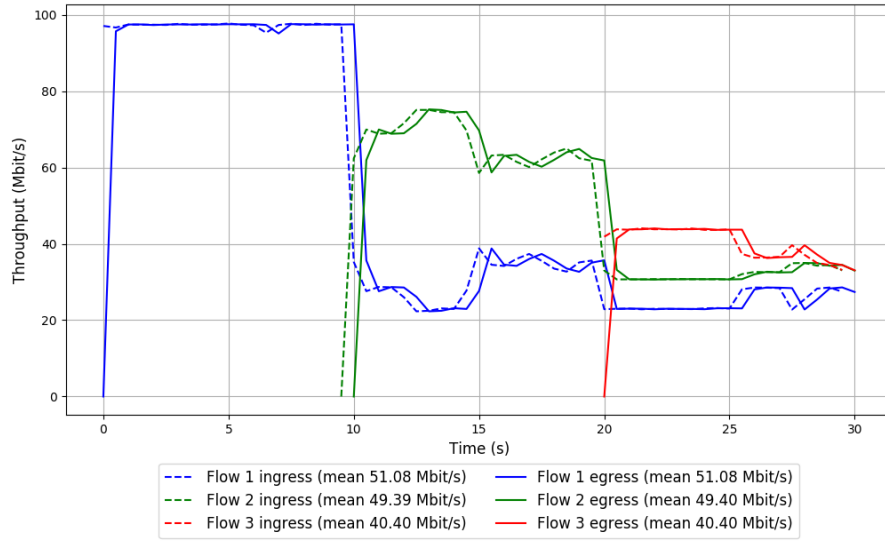
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-08-27 13:41:21
End at: 2019-08-27 13:41:51
Local clock offset: -0.126 ms
Remote clock offset: 0.677 ms


# Below is generated by plot.py at 2019-08-27 13:59:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 3.922 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 52.83 Mbit/s
95th percentile per-packet one-way delay: 2.768 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 49.23 Mbit/s
95th percentile per-packet one-way delay: 3.333 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 35.69 Mbit/s
95th percentile per-packet one-way delay: 4.265 ms
Loss rate: 0.05%
```
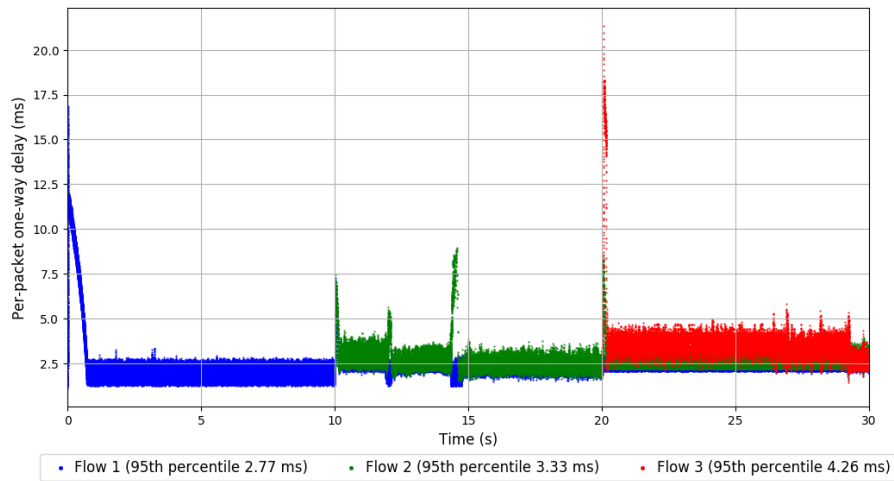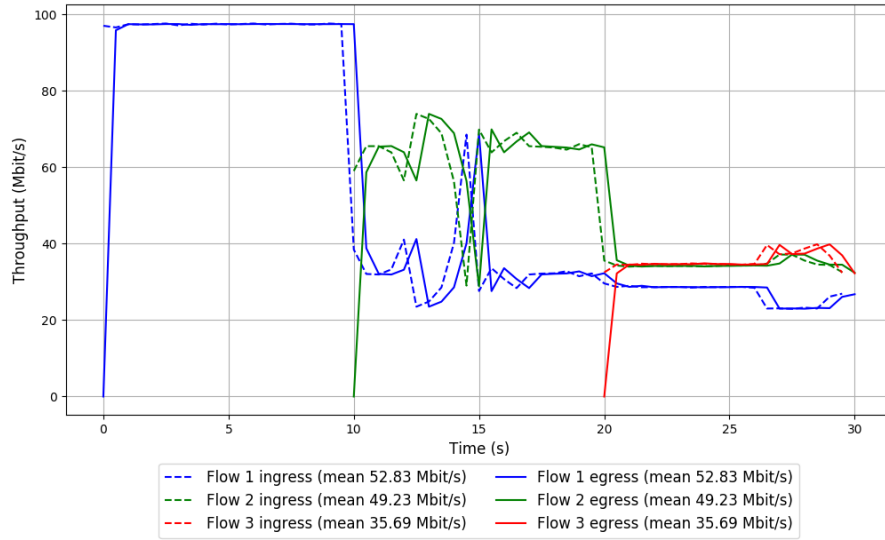
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 52.83 Mbit/s)   Flow 1 egress (mean 52.83 Mbit/s)
Flow 2 ingress (mean 49.23 Mbit/s)   Flow 2 egress (mean 49.23 Mbit/s)
Flow 3 ingress (mean 35.69 Mbit/s)   Flow 3 egress (mean 35.69 Mbit/s)

Flow 1 (95th percentile 2.77 ms)   Flow 2 (95th percentile 3.33 ms)   Flow 3 (95th percentile 4.26 ms)

214

```
Run 1: Statistics of Verus

Start at: 2019-08-27 11:27:18
End at: 2019-08-27 11:27:48
Local clock offset: -0.382 ms
Remote clock offset: -0.616 ms


# Below is generated by plot.py at 2019-08-27 13:59:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.87 Mbit/s
95th percentile per-packet one-way delay: 26.847 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 48.51 Mbit/s
95th percentile per-packet one-way delay: 22.305 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 35.60 Mbit/s
95th percentile per-packet one-way delay: 23.354 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 29.10 Mbit/s
95th percentile per-packet one-way delay: 135.818 ms
Loss rate: 0.20%
```
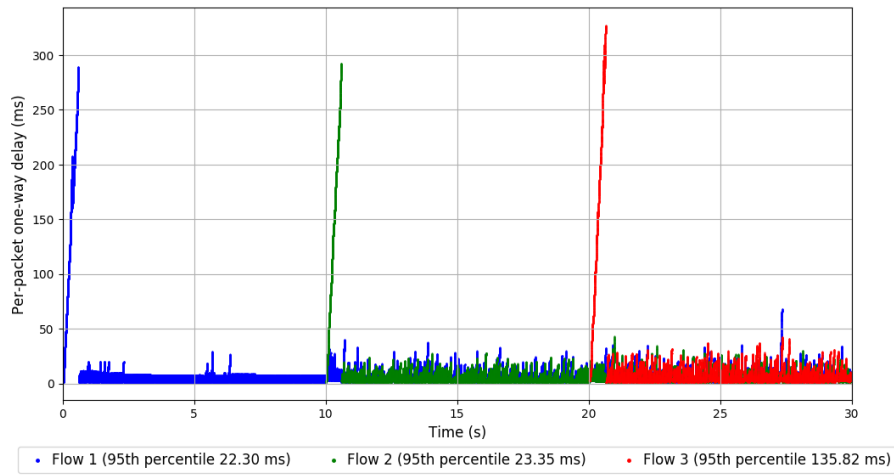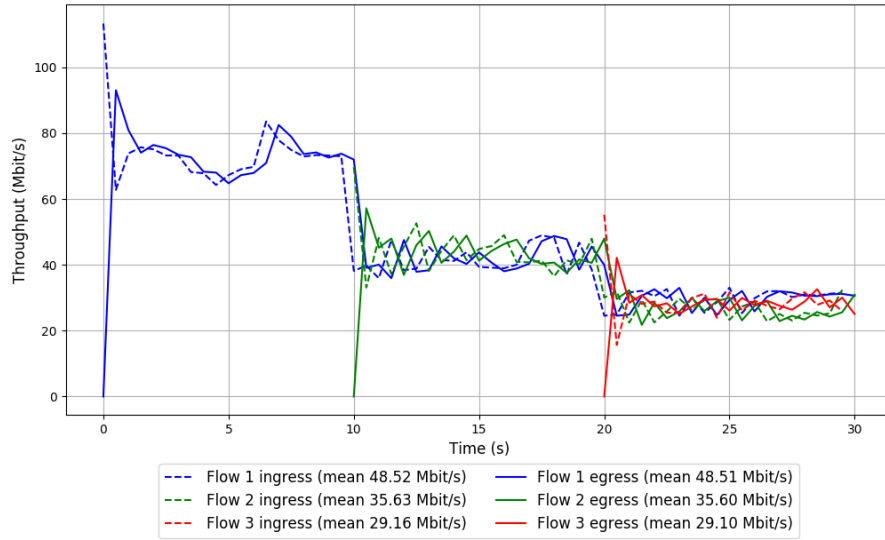
Run 1: Report of Verus — Data Link

- - - Flow 1 ingress (mean 48.52 Mbit/s)   —— Flow 1 egress (mean 48.51 Mbit/s)
- - - Flow 2 ingress (mean 35.63 Mbit/s)   —— Flow 2 egress (mean 35.60 Mbit/s)
- - - Flow 3 ingress (mean 29.16 Mbit/s)   —— Flow 3 egress (mean 29.10 Mbit/s)

• Flow 1 (95th percentile 22.30 ms)   • Flow 2 (95th percentile 23.35 ms)   • Flow 3 (95th percentile 135.82 ms)

```
Run 2: Statistics of Verus

Start at: 2019-08-27 11:54:49
End at: 2019-08-27 11:55:19
Local clock offset: -0.237 ms
Remote clock offset: -0.098 ms


# Below is generated by plot.py at 2019-08-27 13:59:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.24 Mbit/s
95th percentile per-packet one-way delay: 30.841 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 47.31 Mbit/s
95th percentile per-packet one-way delay: 24.259 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 33.85 Mbit/s
95th percentile per-packet one-way delay: 27.420 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 28.28 Mbit/s
95th percentile per-packet one-way delay: 159.593 ms
Loss rate: 0.15%
```
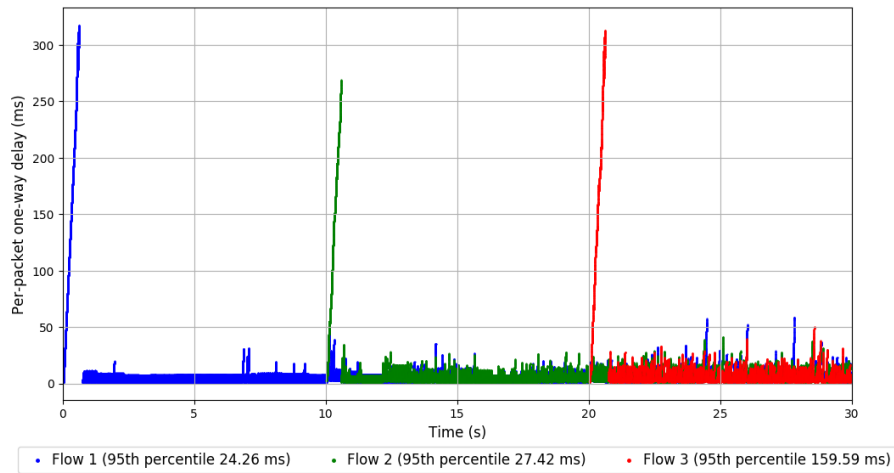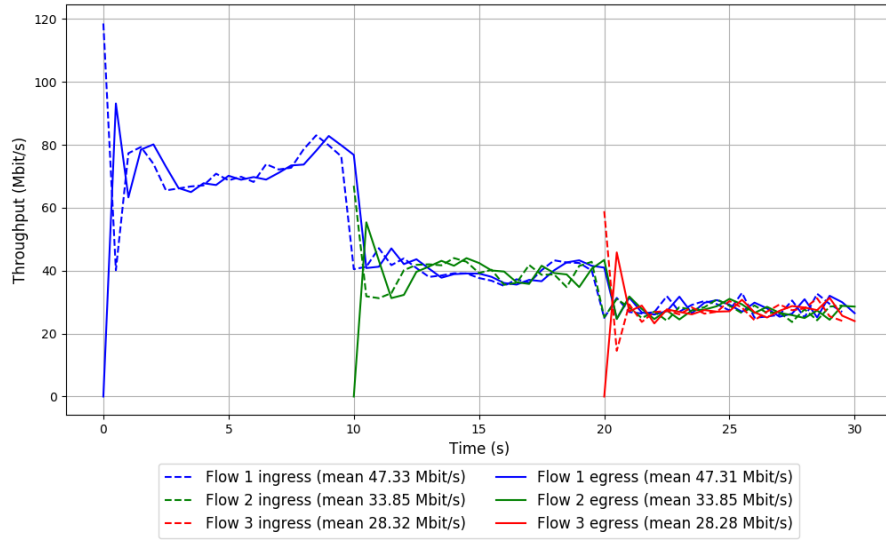
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-08-27 12:22:19
End at: 2019-08-27 12:22:49
Local clock offset: -0.194 ms
Remote clock offset: 0.327 ms


# Below is generated by plot.py at 2019-08-27 13:59:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.47 Mbit/s
95th percentile per-packet one-way delay: 28.940 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 38.77 Mbit/s
95th percentile per-packet one-way delay: 24.839 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 38.36 Mbit/s
95th percentile per-packet one-way delay: 27.379 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 33.55 Mbit/s
95th percentile per-packet one-way delay: 104.878 ms
Loss rate: 0.18%
```
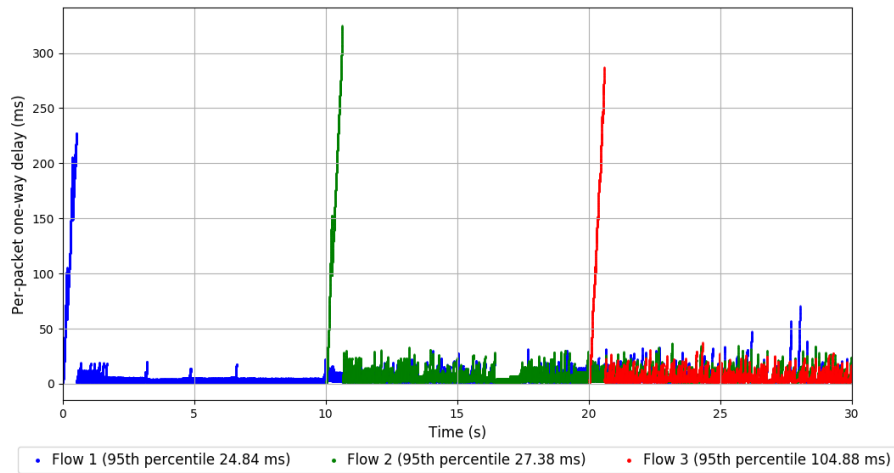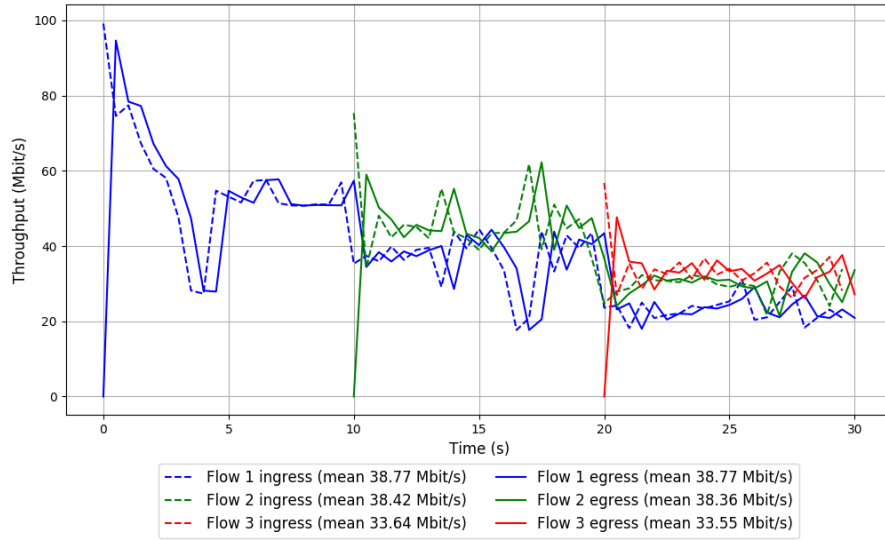
Run 3: Report of Verus — Data Link

Throughput (Mbit/s) vs Time (s)

- - - Flow 1 ingress (mean 38.77 Mbit/s) —— Flow 1 egress (mean 38.77 Mbit/s)
- - - Flow 2 ingress (mean 38.42 Mbit/s) —— Flow 2 egress (mean 38.36 Mbit/s)
- - - Flow 3 ingress (mean 33.64 Mbit/s) —— Flow 3 egress (mean 33.55 Mbit/s)

Per-packet one-way delay (ms) vs Time (s)

• Flow 1 (95th percentile 24.84 ms)   • Flow 2 (95th percentile 27.38 ms)   • Flow 3 (95th percentile 104.88 ms)

```
Run 4: Statistics of Verus

Start at: 2019-08-27 12:49:49
End at: 2019-08-27 12:50:19
Local clock offset: 0.6 ms
Remote clock offset: 0.686 ms


# Below is generated by plot.py at 2019-08-27 13:59:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.63 Mbit/s
95th percentile per-packet one-way delay: 34.054 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 34.56 Mbit/s
95th percentile per-packet one-way delay: 33.865 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 24.919 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 32.27 Mbit/s
95th percentile per-packet one-way delay: 123.794 ms
Loss rate: 0.32%
```
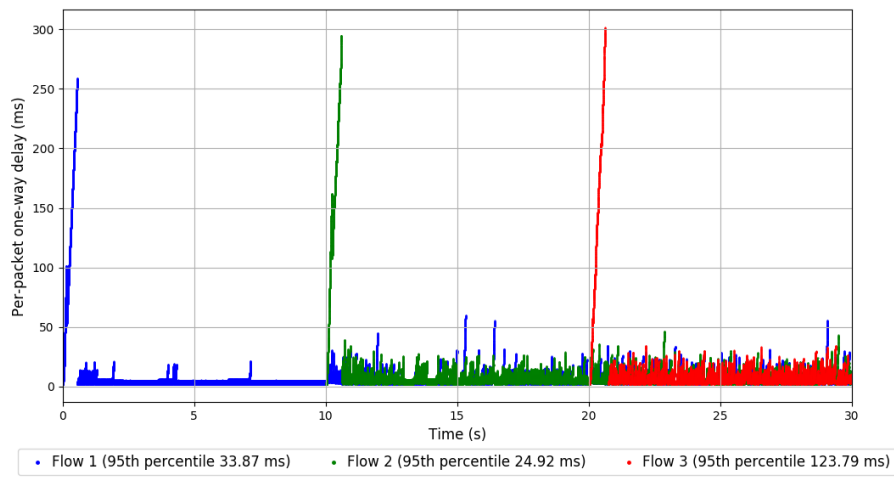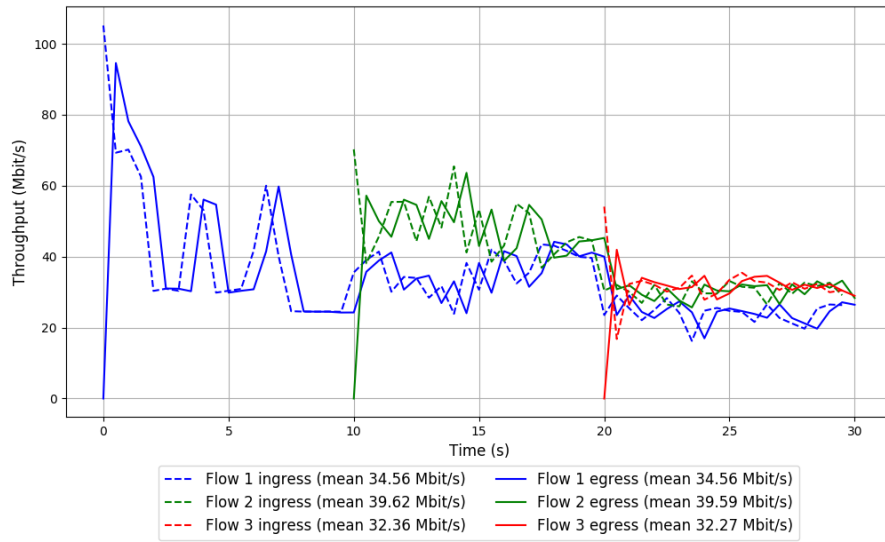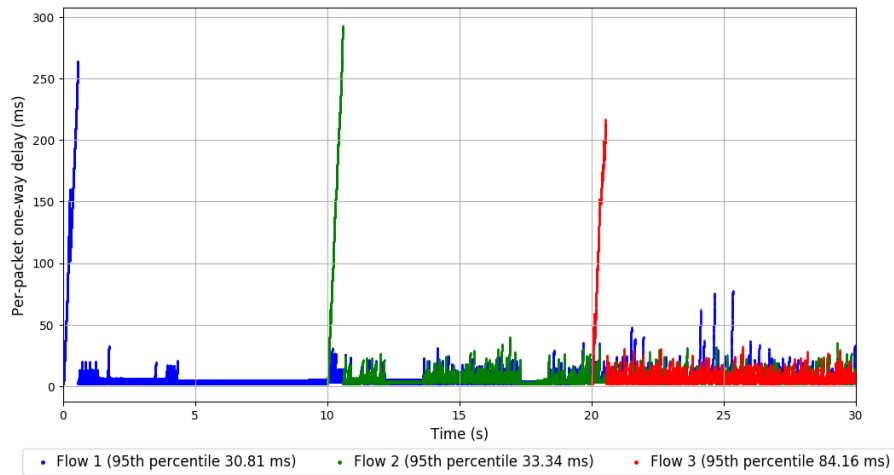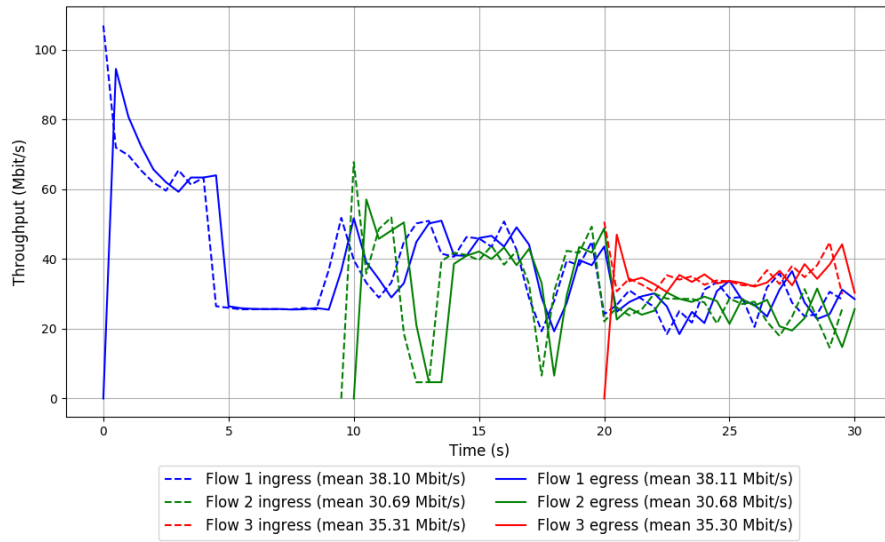
Run 4: Report of Verus — Data Link

- Flow 1 ingress (mean 34.56 Mbit/s)
- Flow 1 egress (mean 34.56 Mbit/s)
- Flow 2 ingress (mean 39.62 Mbit/s)
- Flow 2 egress (mean 39.59 Mbit/s)
- Flow 3 ingress (mean 32.36 Mbit/s)
- Flow 3 egress (mean 32.27 Mbit/s)

- Flow 1 (95th percentile 33.87 ms)
- Flow 2 (95th percentile 24.92 ms)
- Flow 3 (95th percentile 123.79 ms)

```
Run 5: Statistics of Verus

Start at: 2019-08-27 13:17:21
End at: 2019-08-27 13:17:51
Local clock offset: 0.553 ms
Remote clock offset: 0.689 ms


# Below is generated by plot.py at 2019-08-27 13:59:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.26 Mbit/s
95th percentile per-packet one-way delay: 36.393 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 38.11 Mbit/s
95th percentile per-packet one-way delay: 30.810 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 30.68 Mbit/s
95th percentile per-packet one-way delay: 33.345 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 35.30 Mbit/s
95th percentile per-packet one-way delay: 84.160 ms
Loss rate: 0.08%
```
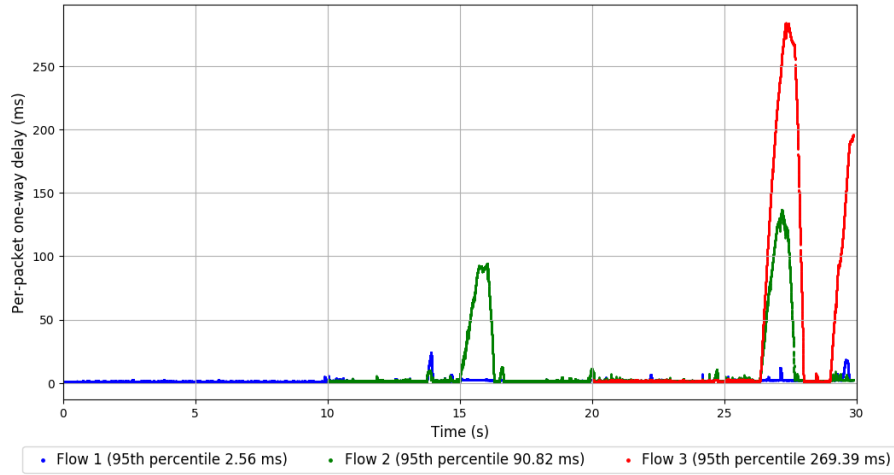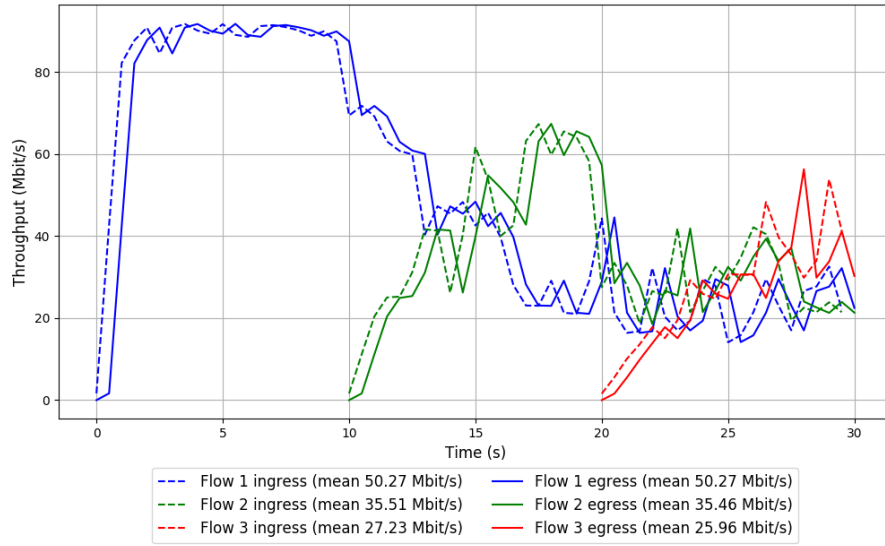
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-08-27 11:39:53
End at: 2019-08-27 11:40:23
Local clock offset: -0.299 ms
Remote clock offset: -0.435 ms

# Below is generated by plot.py at 2019-08-27 14:00:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.42 Mbit/s
95th percentile per-packet one-way delay: 86.483 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 2.562 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 35.46 Mbit/s
95th percentile per-packet one-way delay: 90.817 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 25.96 Mbit/s
95th percentile per-packet one-way delay: 269.390 ms
Loss rate: 4.76%
```

Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-08-27 12:07:23
End at: 2019-08-27 12:07:53
Local clock offset: -0.221 ms
Remote clock offset: 0.157 ms


# Below is generated by plot.py at 2019-08-27 14:00:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.41 Mbit/s
95th percentile per-packet one-way delay: 21.548 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 53.51 Mbit/s
95th percentile per-packet one-way delay: 43.002 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 38.00 Mbit/s
95th percentile per-packet one-way delay: 3.362 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 23.12 Mbit/s
95th percentile per-packet one-way delay: 44.522 ms
Loss rate: 0.10%
```
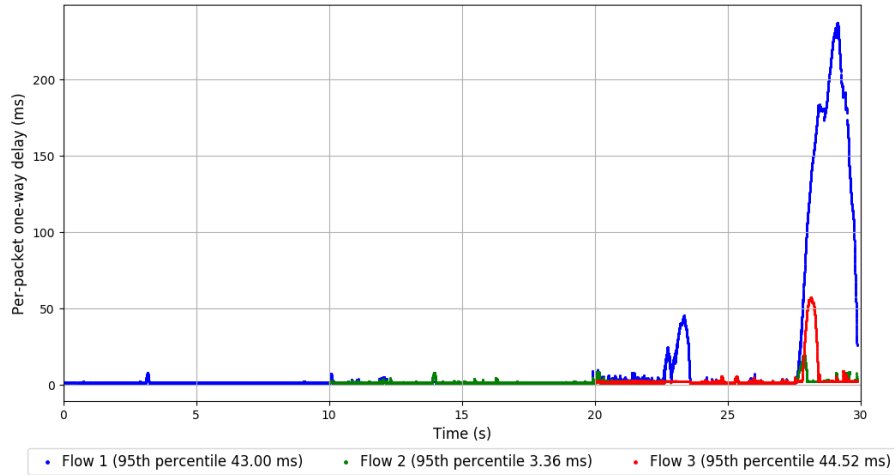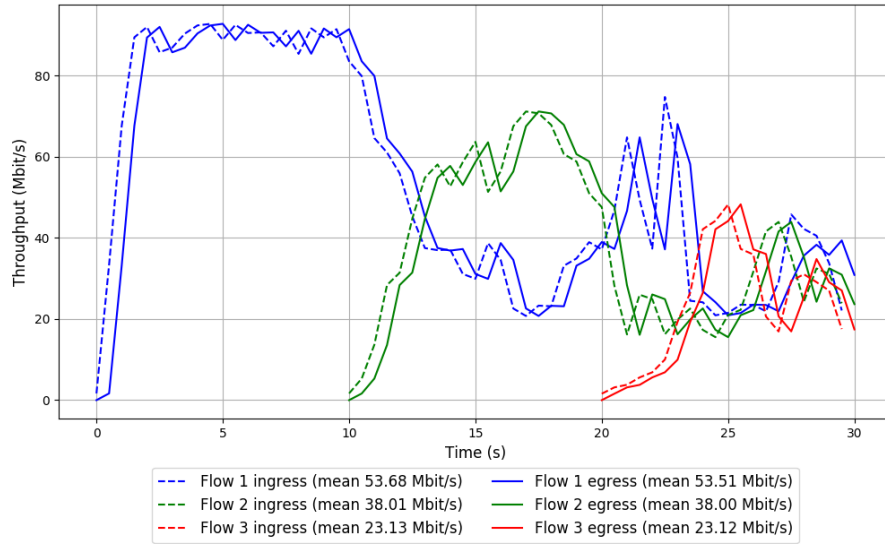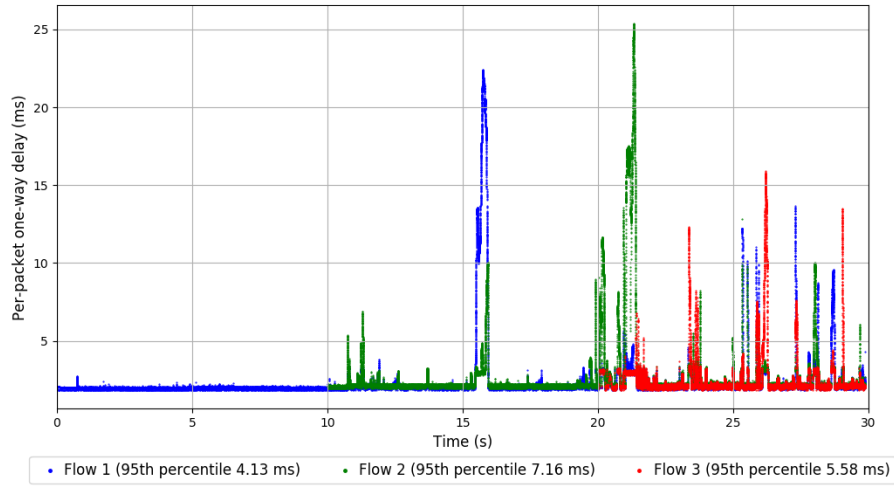
Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 53.68 Mbit/s) — Flow 1 egress (mean 53.51 Mbit/s)
Flow 2 ingress (mean 38.01 Mbit/s) — Flow 2 egress (mean 38.00 Mbit/s)
Flow 3 ingress (mean 23.13 Mbit/s) — Flow 3 egress (mean 23.12 Mbit/s)

Flow 1 (95th percentile 43.00 ms)   Flow 2 (95th percentile 3.36 ms)   Flow 3 (95th percentile 44.52 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-08-27 12:34:55
End at: 2019-08-27 12:35:25
Local clock offset: 0.556 ms
Remote clock offset: 0.494 ms


# Below is generated by plot.py at 2019-08-27 14:00:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.88 Mbit/s
95th percentile per-packet one-way delay: 6.148 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 25.02 Mbit/s
95th percentile per-packet one-way delay: 4.127 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 32.95 Mbit/s
95th percentile per-packet one-way delay: 7.162 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 30.12 Mbit/s
95th percentile per-packet one-way delay: 5.582 ms
Loss rate: 0.02%
```
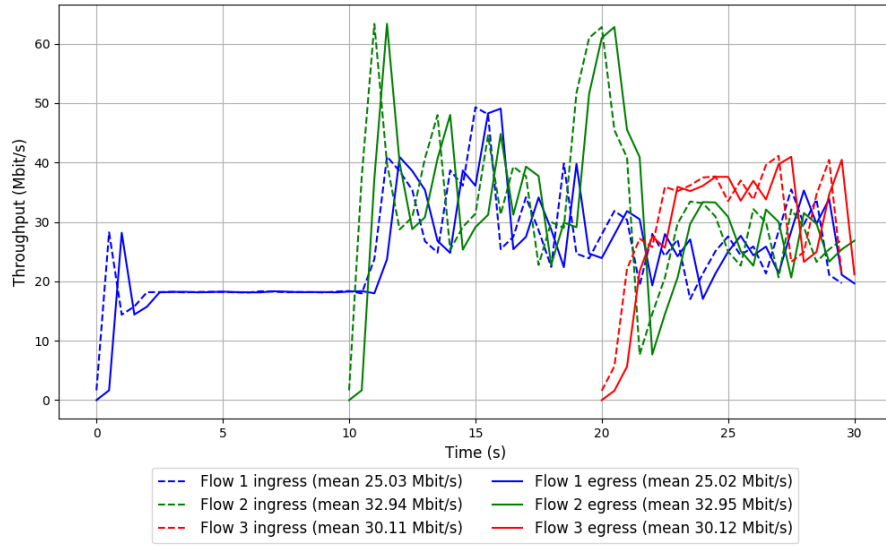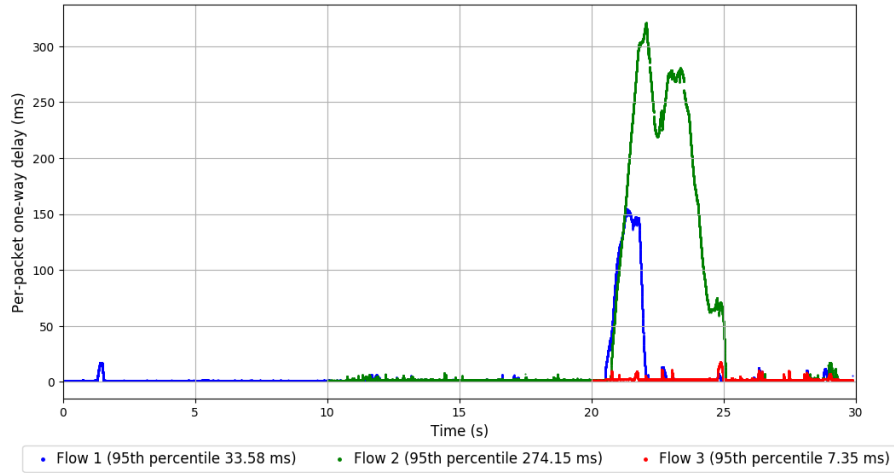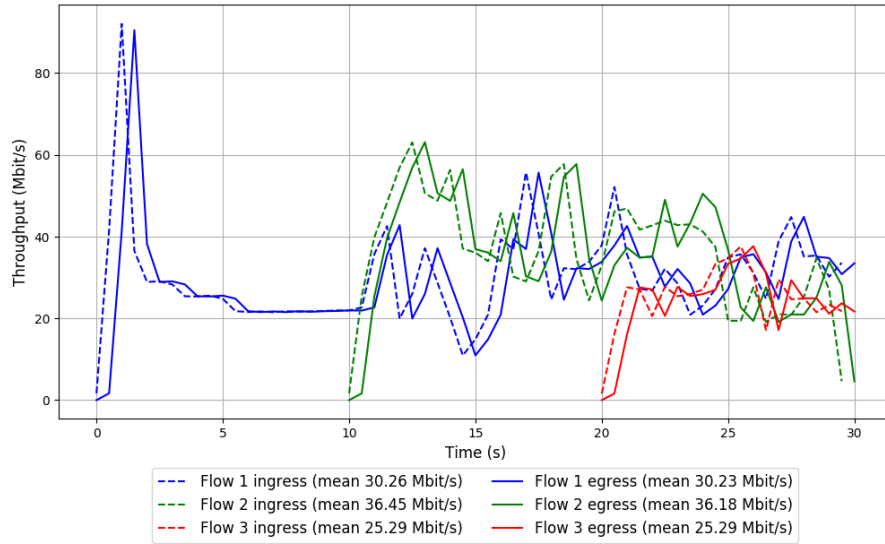
Run 3: Report of PCC-Vivace — Data Link

- - - Flow 1 ingress (mean 25.03 Mbit/s)   — Flow 1 egress (mean 25.02 Mbit/s)
- - - Flow 2 ingress (mean 32.94 Mbit/s)   — Flow 2 egress (mean 32.95 Mbit/s)
- - - Flow 3 ingress (mean 30.11 Mbit/s)   — Flow 3 egress (mean 30.12 Mbit/s)

- Flow 1 (95th percentile 4.13 ms)   • Flow 2 (95th percentile 7.16 ms)   • Flow 3 (95th percentile 5.58 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-08-27 13:02:25
End at: 2019-08-27 13:02:55
Local clock offset: -0.267 ms
Remote clock offset: 0.675 ms


# Below is generated by plot.py at 2019-08-27 14:00:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.63 Mbit/s
95th percentile per-packet one-way delay: 213.075 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 30.23 Mbit/s
95th percentile per-packet one-way delay: 33.584 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 36.18 Mbit/s
95th percentile per-packet one-way delay: 274.147 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 25.29 Mbit/s
95th percentile per-packet one-way delay: 7.348 ms
Loss rate: 0.03%
```
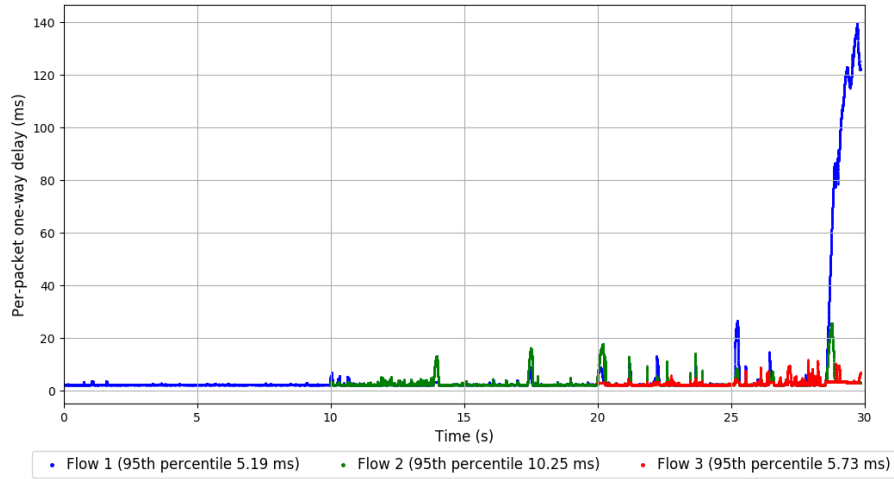
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-08-27 13:29:56
End at: 2019-08-27 13:30:26
Local clock offset: 0.675 ms
Remote clock offset: 0.733 ms


# Below is generated by plot.py at 2019-08-27 14:00:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.94 Mbit/s
95th percentile per-packet one-way delay: 6.928 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 54.28 Mbit/s
95th percentile per-packet one-way delay: 5.191 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 32.12 Mbit/s
95th percentile per-packet one-way delay: 10.250 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 25.04 Mbit/s
95th percentile per-packet one-way delay: 5.732 ms
Loss rate: 0.11%
```
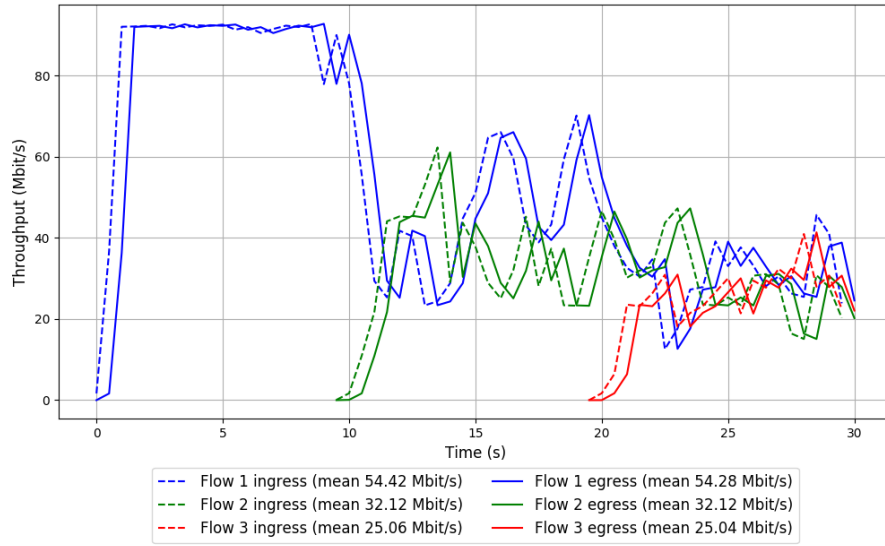
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-08-27 11:29:34
End at: 2019-08-27 11:30:04
Local clock offset: 0.5 ms
Remote clock offset: -0.569 ms


# Below is generated by plot.py at 2019-08-27 14:00:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 2.867 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 2.800 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 2.910 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 3.420 ms
Loss rate: 0.37%
```
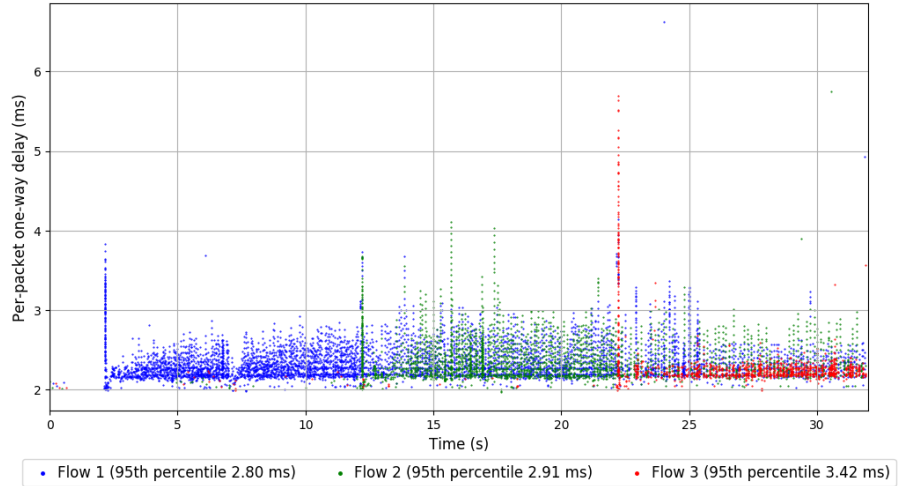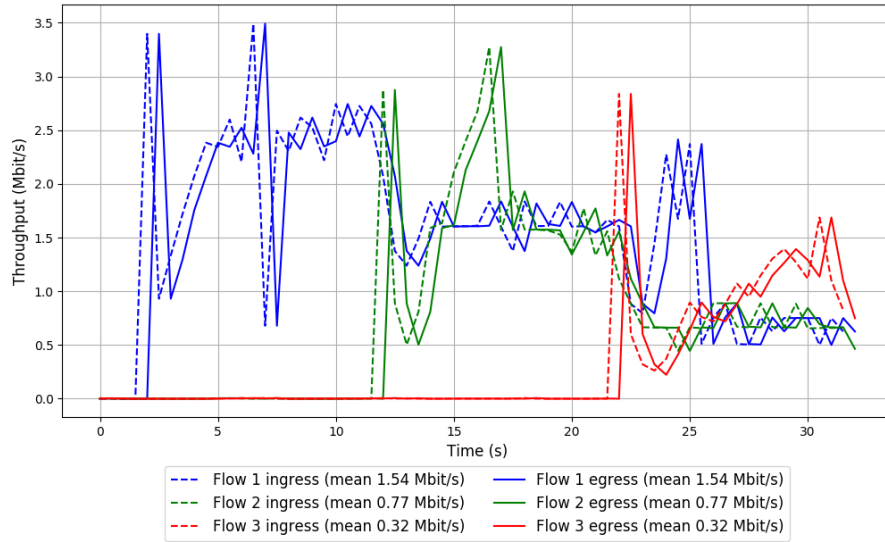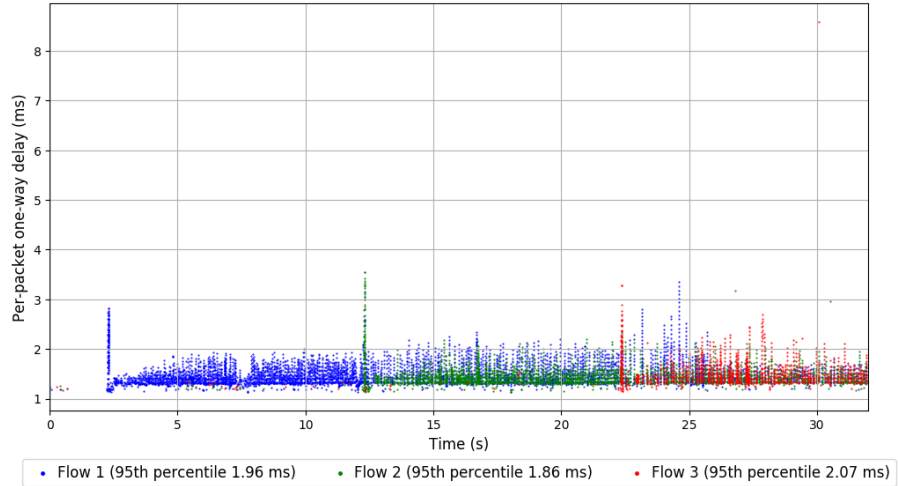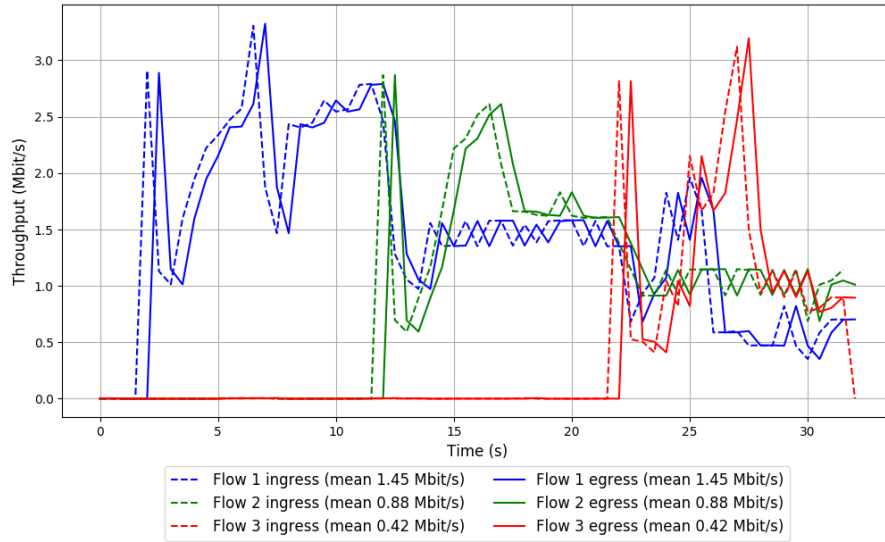
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-08-27 11:57:05
End at: 2019-08-27 11:57:35
Local clock offset: -0.213 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2019-08-27 14:00:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 1.952 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 1.955 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 1.864 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 2.069 ms
Loss rate: 0.01%
```

Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-08-27 12:24:36
End at: 2019-08-27 12:25:06
Local clock offset: 0.569 ms
Remote clock offset: 0.448 ms


# Below is generated by plot.py at 2019-08-27 14:00:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.76 Mbit/s
95th percentile per-packet one-way delay: 2.777 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 2.722 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 2.757 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 3.029 ms
Loss rate: 0.00%
```
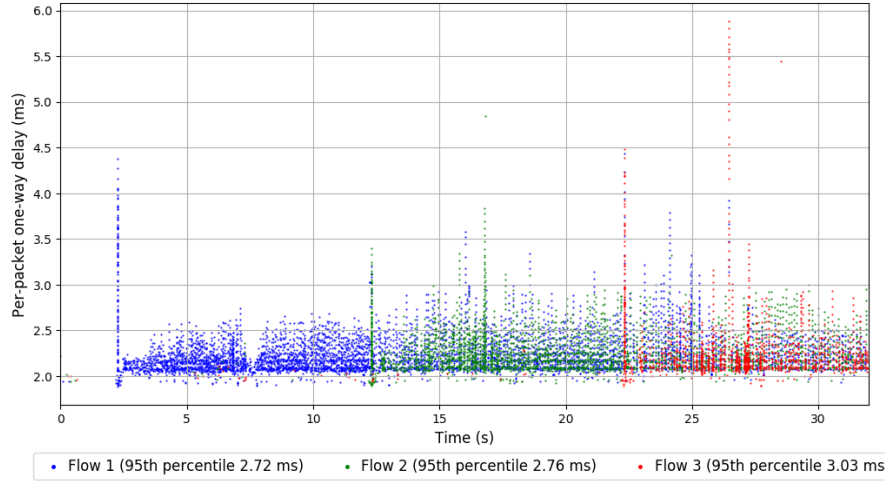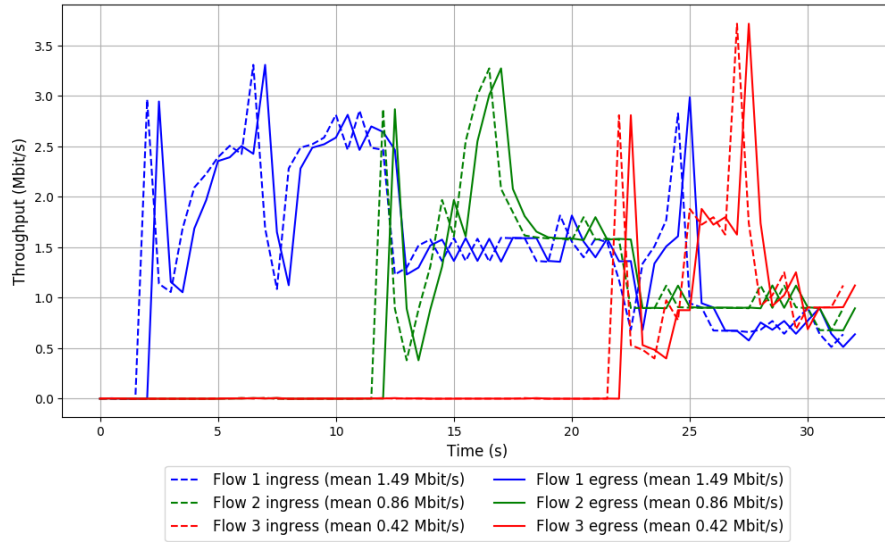
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-08-27 12:52:05
End at: 2019-08-27 12:52:35
Local clock offset: 0.556 ms
Remote clock offset: 0.628 ms


# Below is generated by plot.py at 2019-08-27 14:00:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.82 Mbit/s
95th percentile per-packet one-way delay: 2.759 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 2.653 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 2.640 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 3.086 ms
Loss rate: 0.00%
```
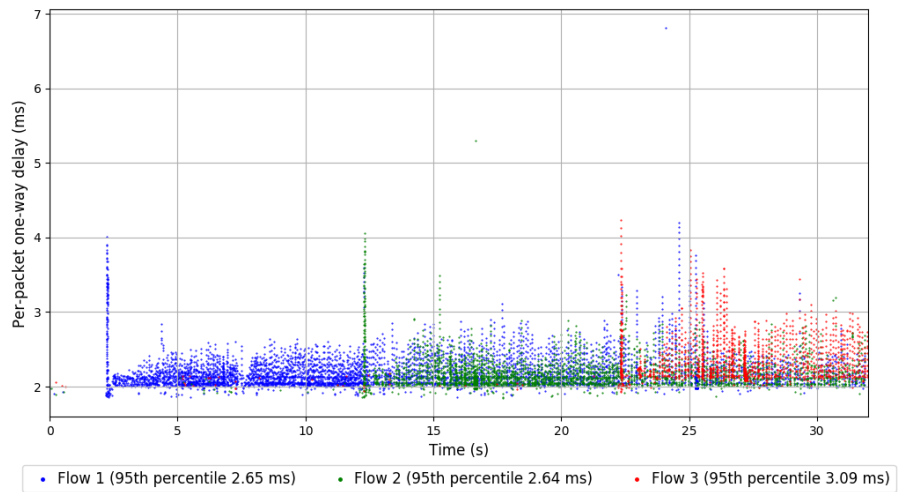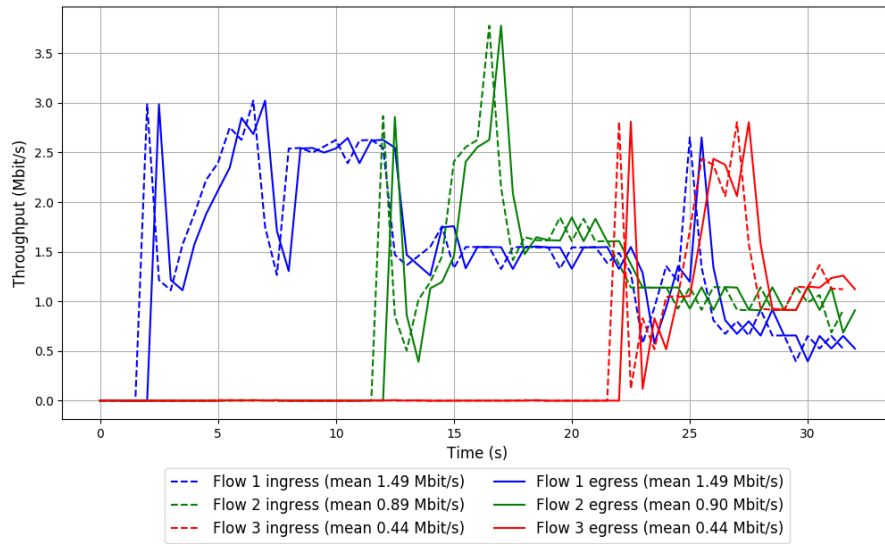
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-08-27 13:19:36
End at: 2019-08-27 13:20:06
Local clock offset: -0.157 ms
Remote clock offset: 0.713 ms


# Below is generated by plot.py at 2019-08-27 14:00:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.65 Mbit/s
95th percentile per-packet one-way delay: 2.096 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 2.109 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 2.102 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 2.018 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link