Pantheon Report

Generated at 2019-08-27 03:32:40 (UTC).

Data path: AWS California 2 on `ens5` (*local*) →Mexico on `em1` (*remote*).

Repeated the test of 24 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` 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
```
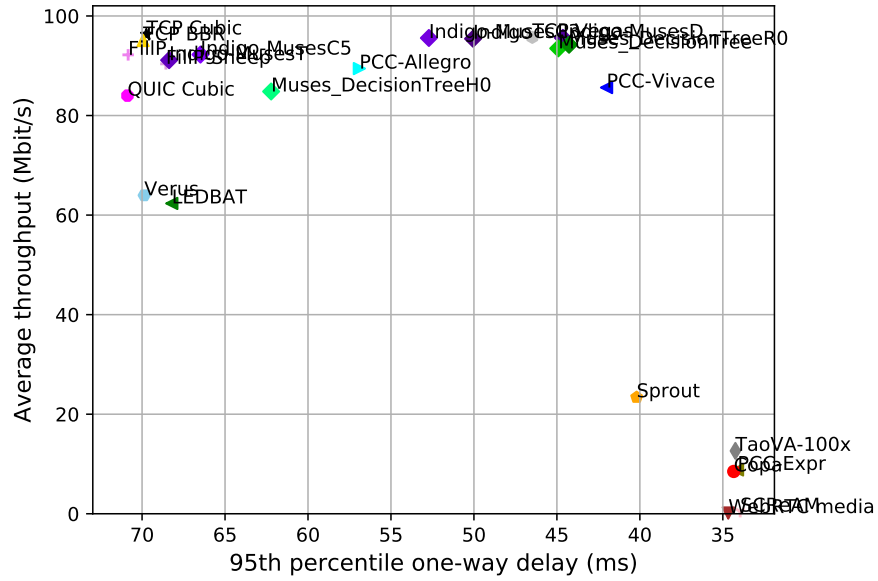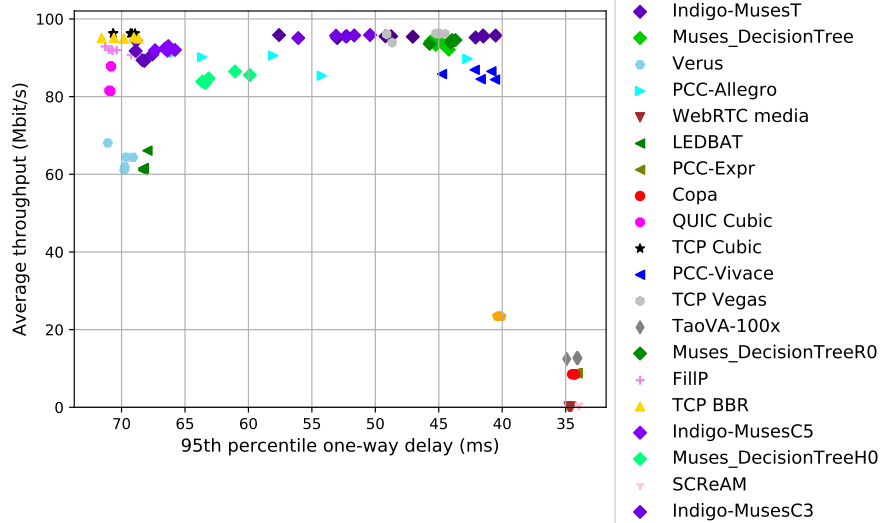
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS California 2 to Mexico, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from AWS California 2 to Mexico, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	59.85	33.91	38.83	68.92	70.78	71.08	6.48	9.15	10.68
Copa	5	0.00	10.52	4.49	33.95	34.72	34.09	97.77	69.95	76.86
TCP Cubic	5	76.41	19.28	21.22	69.54	70.37	70.09	0.96	0.69	0.95
FillP	5	58.52	41.87	17.74	69.49	72.01	71.54	29.41	46.28	51.45
FillP-Sheep	5	56.66	39.70	22.16	66.92	70.17	69.41	8.92	15.67	15.83
Indigo	5	66.62	28.51	30.37	46.59	53.31	56.53	0.01	0.07	0.03
Indigo-MusesC3	5	56.40	45.66	32.76	48.76	52.74	61.53	0.32	0.52	2.53
Indigo-MusesC5	5	58.68	50.27	4.02	64.66	67.98	69.47	10.27	17.65	26.41
Indigo-MusesD	5	55.76	47.20	32.45	41.03	44.44	46.54	0.04	0.01	0.02
Indigo-MusesT	5	59.84	46.41	4.51	66.71	69.93	69.92	16.60	29.40	28.55
LEDBAT	5	41.26	20.51	22.45	68.44	69.39	54.61	0.17	0.43	0.01
Muses_DecisionTree	5	47.68	37.51	64.62	42.57	45.44	48.38	0.13	0.02	0.43
Muses_DecisionTreeH0	5	61.42	31.97	7.04	60.38	64.81	62.37	4.56	7.66	6.68
Muses_DecisionTreeR0	5	53.77	34.14	55.10	42.90	44.74	48.14	0.15	0.14	0.53
PCC-Allegro	5	79.07	11.31	8.61	56.47	58.54	59.86	1.60	1.34	1.61
PCC-Expr	5	0.03	9.97	6.57	34.00	34.11	34.14	85.71	45.00	42.94
QUIC Cubic	5	63.14	26.32	10.36	70.78	71.05	71.19	2.60	1.30	1.26
SCReAM	5	0.21	0.21	0.22	33.94	33.94	33.94	0.00	0.00	0.00
Sprout	5	11.79	11.75	11.49	40.13	40.20	40.30	0.02	0.01	0.00
TaoVA-100x	5	6.59	7.86	4.17	35.22	34.47	34.00	86.90	85.52	84.80
TCP Vegas	5	77.81	17.25	19.31	46.30	45.94	43.57	0.41	0.00	0.00
Verus	5	43.87	24.94	16.07	69.47	69.57	74.37	28.74	29.25	42.13
PCC-Vivace	5	67.27	21.87	11.54	41.89	42.38	42.72	0.00	0.00	0.00
WebRTC media	5	0.05	0.05	0.05	34.64	34.66	34.70	0.00	0.01	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-08-26 23:41:28
End at: 2019-08-26 23:41:58
Local clock offset: -0.849 ms
Remote clock offset: 4.544 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.26 Mbit/s
95th percentile per-packet one-way delay: 69.024 ms
Loss rate: 7.82%
-- Flow 1:
Average throughput: 60.21 Mbit/s
95th percentile per-packet one-way delay: 68.015 ms
Loss rate: 6.62%
-- Flow 2:
Average throughput: 33.23 Mbit/s
95th percentile per-packet one-way delay: 69.909 ms
Loss rate: 9.90%
-- Flow 3:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 70.663 ms
Loss rate: 9.66%
```
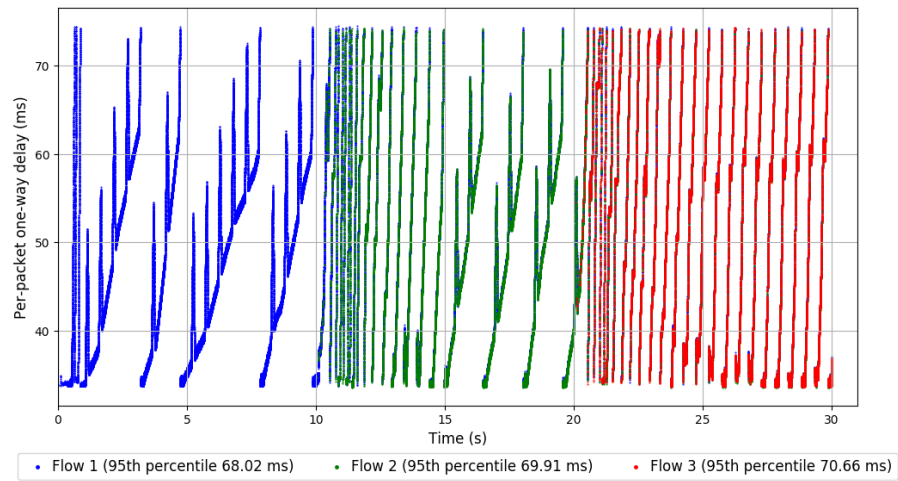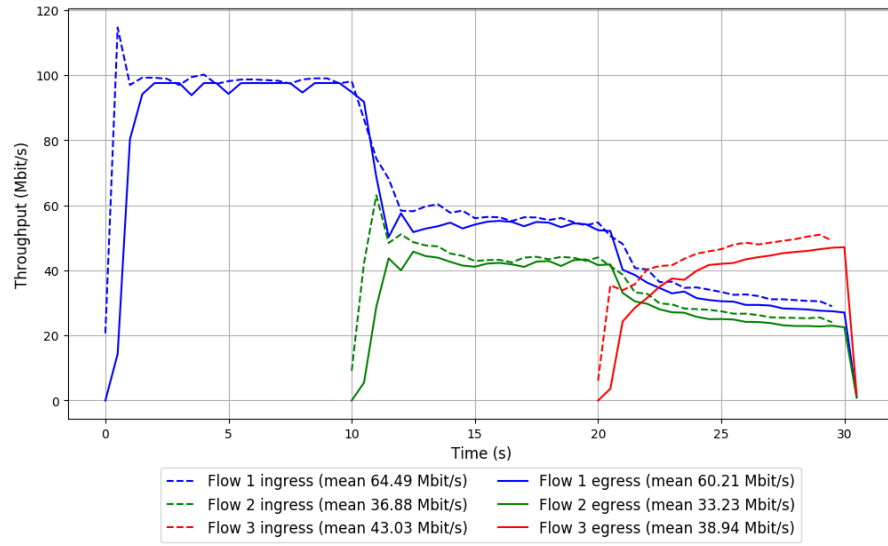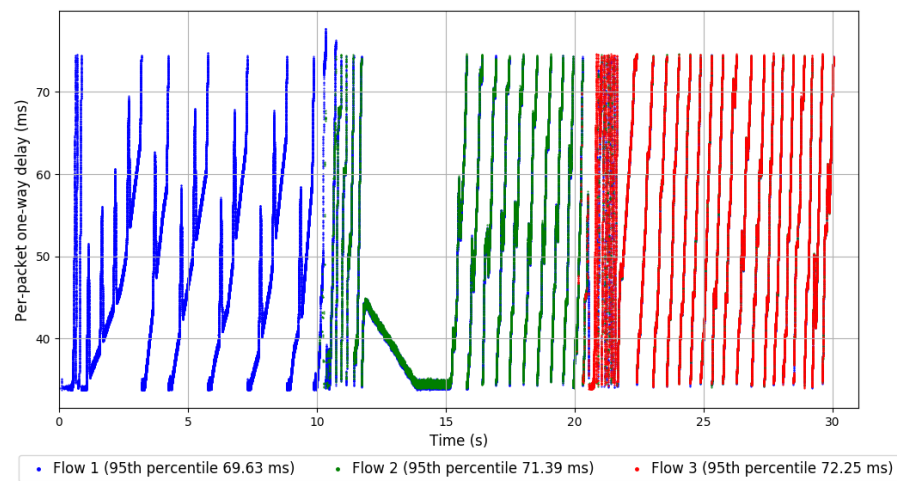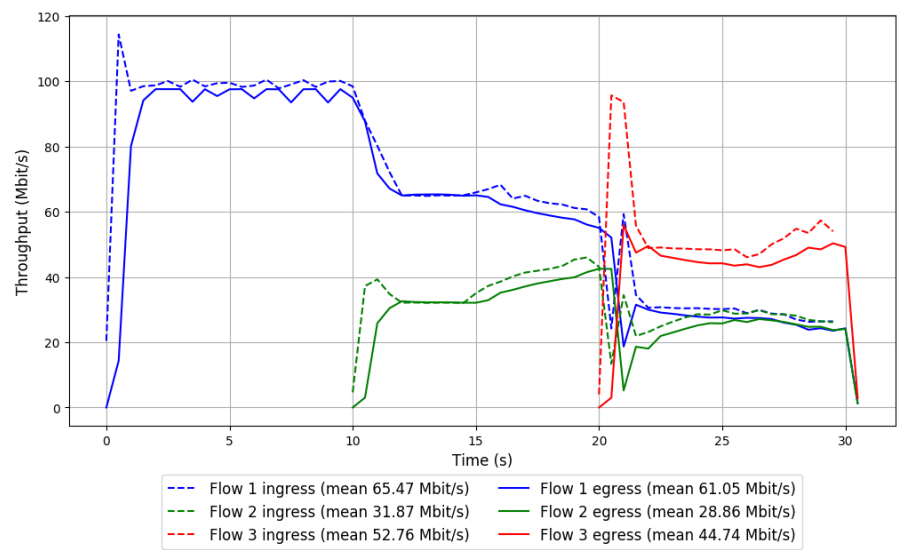
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 64.49 Mbit/s)   Flow 1 egress (mean 60.21 Mbit/s)
Flow 2 ingress (mean 36.88 Mbit/s)   Flow 2 egress (mean 33.23 Mbit/s)
Flow 3 ingress (mean 43.03 Mbit/s)   Flow 3 egress (mean 38.94 Mbit/s)

Flow 1 (95th percentile 68.02 ms)   Flow 2 (95th percentile 69.91 ms)   Flow 3 (95th percentile 70.66 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2019-08-27 00:29:03
End at: 2019-08-27 00:29:33
Local clock offset: -1.096 ms
Remote clock offset: 4.725 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.15 Mbit/s
95th percentile per-packet one-way delay: 70.607 ms
Loss rate: 8.72%
-- Flow 1:
Average throughput: 61.05 Mbit/s
95th percentile per-packet one-way delay: 69.626 ms
Loss rate: 6.74%
-- Flow 2:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 71.386 ms
Loss rate: 9.44%
-- Flow 3:
Average throughput: 44.74 Mbit/s
95th percentile per-packet one-way delay: 72.249 ms
Loss rate: 15.21%
```
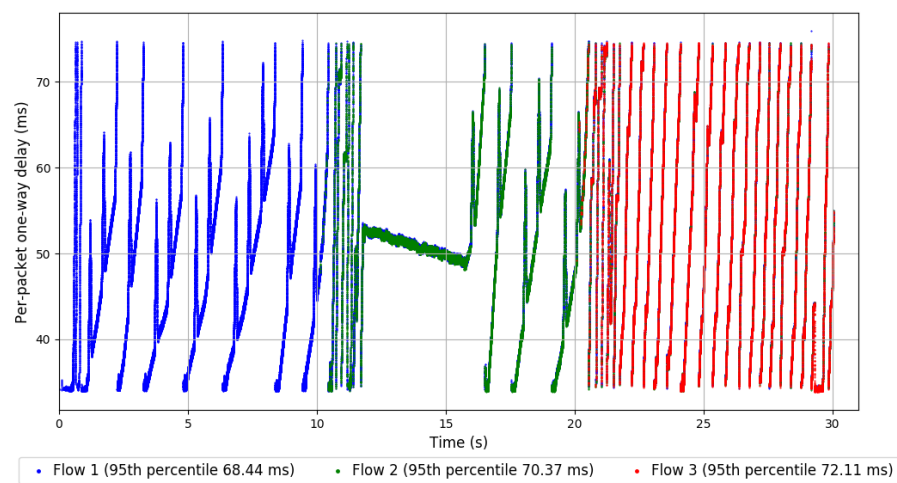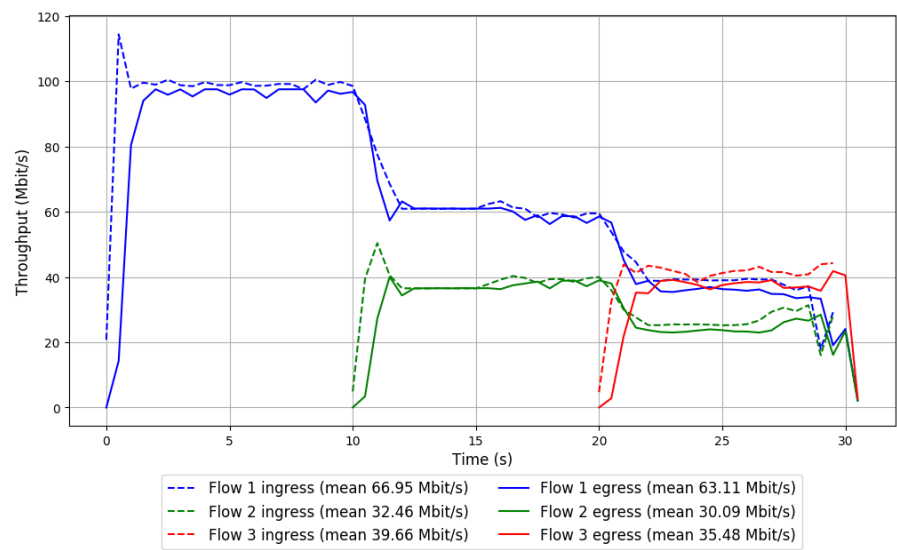
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-08-27 01:21:45
End at: 2019-08-27 01:22:15
Local clock offset: -0.926 ms
Remote clock offset: 6.235 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.94 Mbit/s
95th percentile per-packet one-way delay: 69.819 ms
Loss rate: 6.64%
-- Flow 1:
Average throughput: 63.11 Mbit/s
95th percentile per-packet one-way delay: 68.441 ms
Loss rate: 5.67%
-- Flow 2:
Average throughput: 30.09 Mbit/s
95th percentile per-packet one-way delay: 70.366 ms
Loss rate: 7.26%
-- Flow 3:
Average throughput: 35.48 Mbit/s
95th percentile per-packet one-way delay: 72.110 ms
Loss rate: 10.49%
```
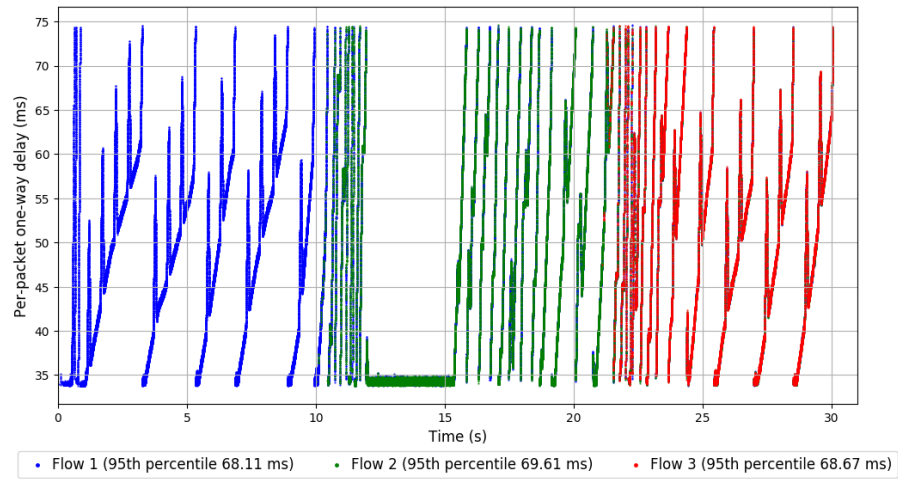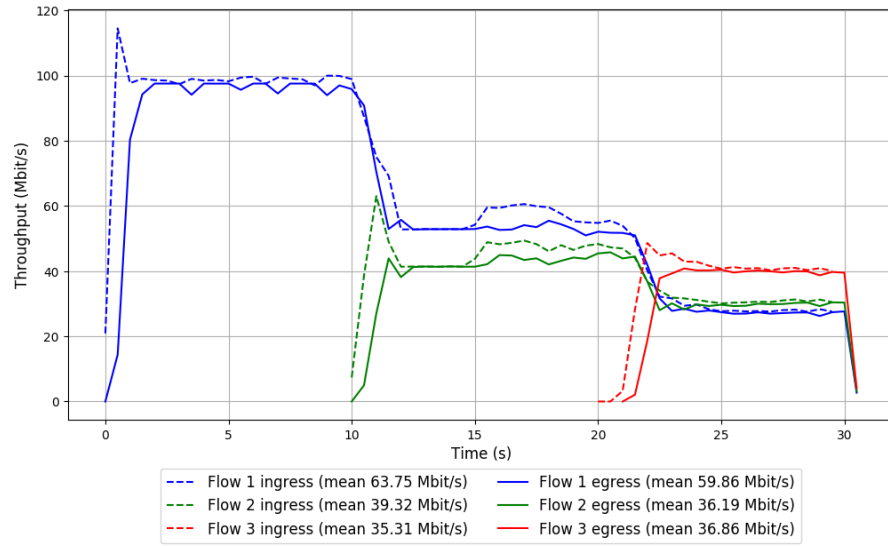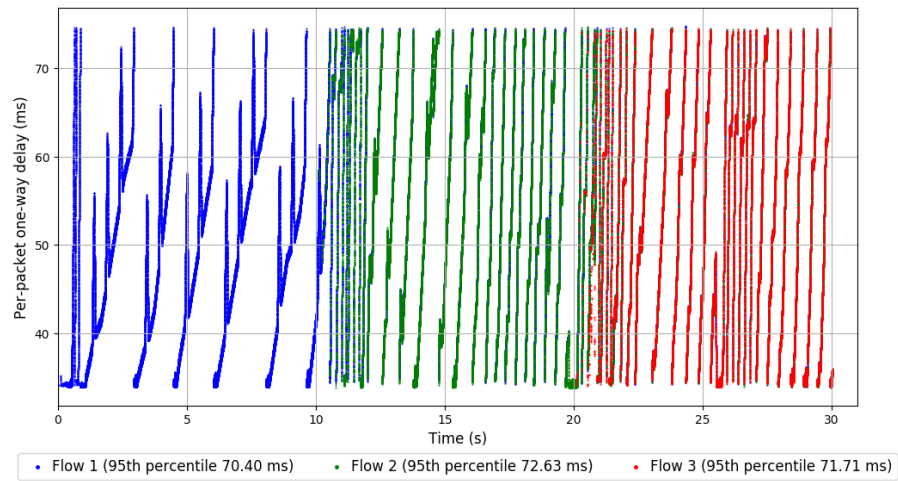
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 66.95 Mbit/s)   Flow 1 egress (mean 63.11 Mbit/s)
Flow 2 ingress (mean 32.46 Mbit/s)   Flow 2 egress (mean 30.09 Mbit/s)
Flow 3 ingress (mean 39.66 Mbit/s)   Flow 3 egress (mean 35.48 Mbit/s)

Flow 1 (95th percentile 68.44 ms)   Flow 2 (95th percentile 70.37 ms)   Flow 3 (95th percentile 72.11 ms)

10

```
Run 4: Statistics of TCP BBR

Start at: 2019-08-27 02:09:43
End at: 2019-08-27 02:10:13
Local clock offset: -0.917 ms
Remote clock offset: 3.117 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.98 Mbit/s
95th percentile per-packet one-way delay: 68.666 ms
Loss rate: 6.53%
-- Flow 1:
Average throughput: 59.86 Mbit/s
95th percentile per-packet one-way delay: 68.113 ms
Loss rate: 6.04%
-- Flow 2:
Average throughput: 36.19 Mbit/s
95th percentile per-packet one-way delay: 69.613 ms
Loss rate: 7.84%
-- Flow 3:
Average throughput: 36.86 Mbit/s
95th percentile per-packet one-way delay: 68.670 ms
Loss rate: 6.26%
```
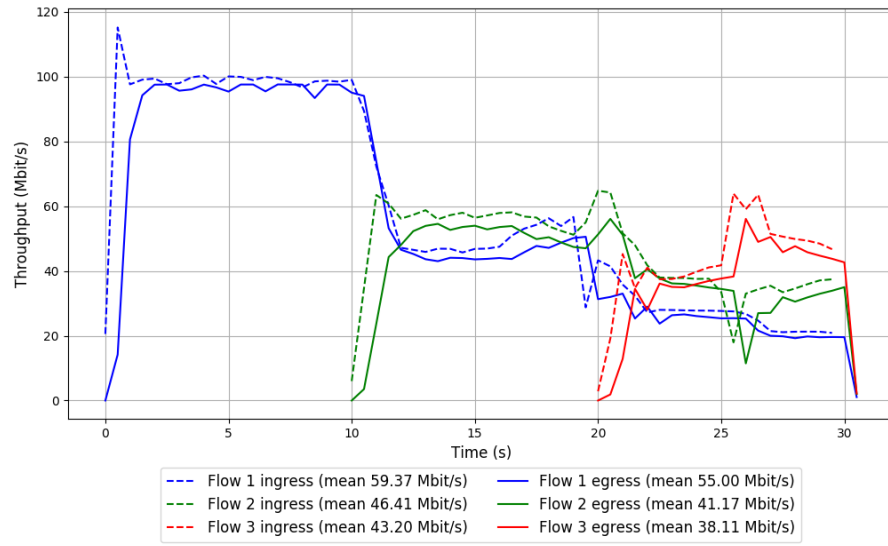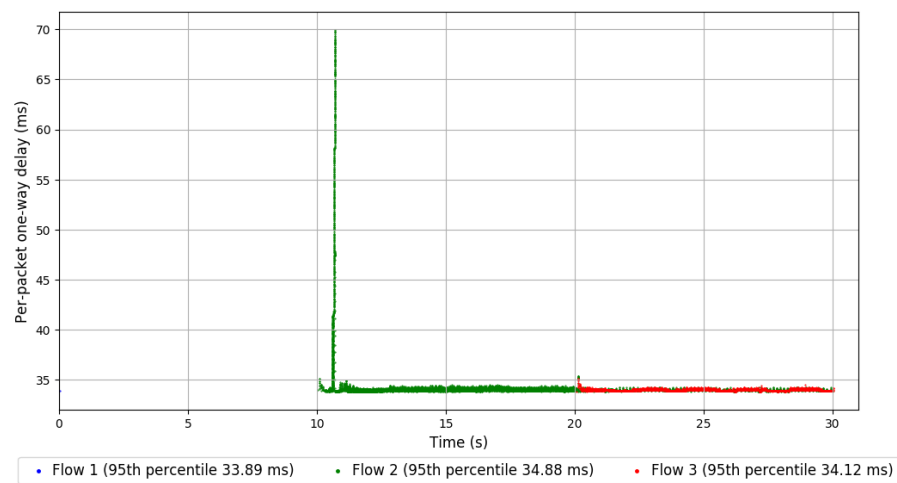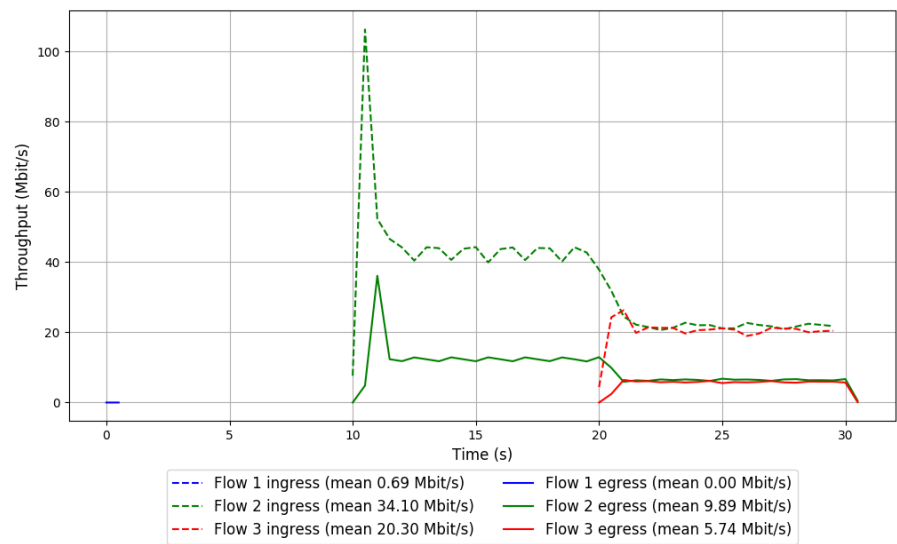
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 63.75 Mbit/s) --- Flow 1 egress (mean 59.86 Mbit/s)
Flow 2 ingress (mean 39.32 Mbit/s) --- Flow 2 egress (mean 36.19 Mbit/s)
Flow 3 ingress (mean 35.31 Mbit/s) --- Flow 3 egress (mean 36.86 Mbit/s)

Flow 1 (95th percentile 68.11 ms)　　Flow 2 (95th percentile 69.61 ms)　　Flow 3 (95th percentile 68.67 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-08-27 03:00:25
End at: 2019-08-27 03:00:55
Local clock offset: -1.332 ms
Remote clock offset: 4.348 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.09 Mbit/s
95th percentile per-packet one-way delay: 71.570 ms
Loss rate: 9.13%
-- Flow 1:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: 70.398 ms
Loss rate: 7.35%
-- Flow 2:
Average throughput: 41.17 Mbit/s
95th percentile per-packet one-way delay: 72.629 ms
Loss rate: 11.33%
-- Flow 3:
Average throughput: 38.11 Mbit/s
95th percentile per-packet one-way delay: 71.712 ms
Loss rate: 11.77%
```
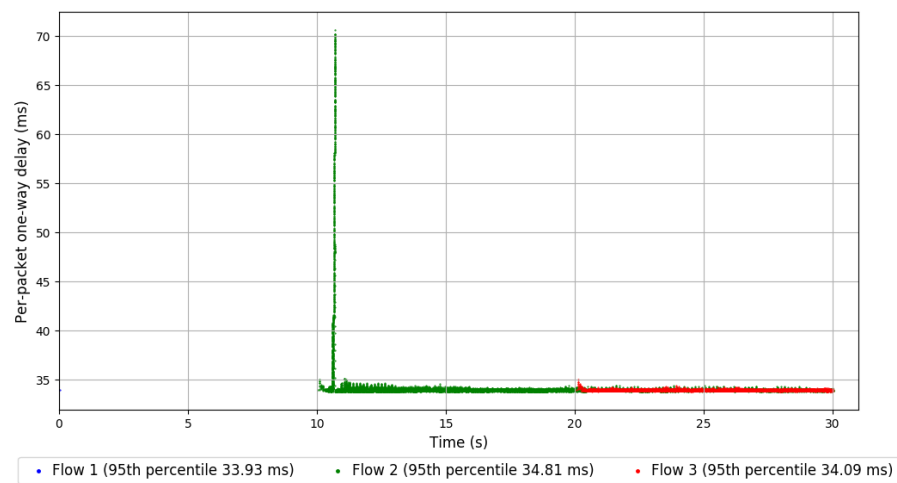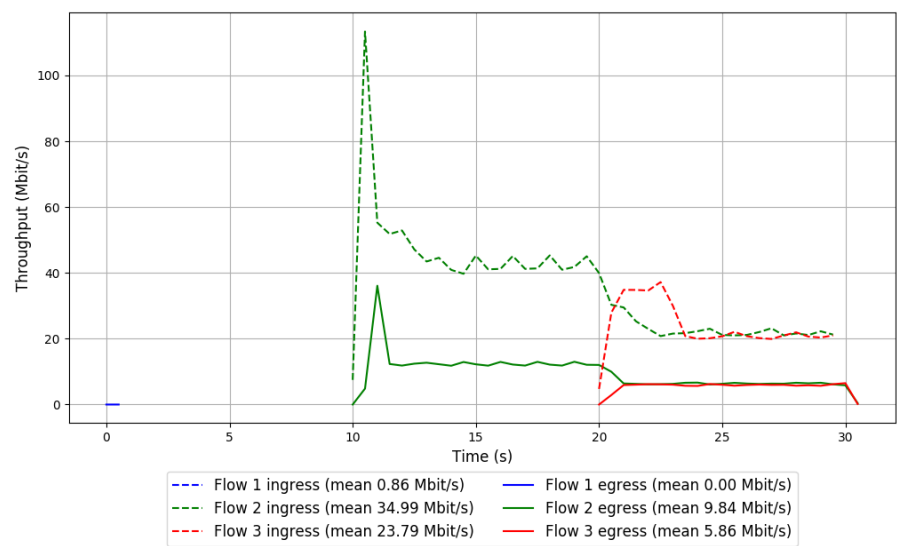
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.37 Mbit/s) --- Flow 1 egress (mean 55.00 Mbit/s)
Flow 2 ingress (mean 46.41 Mbit/s) --- Flow 2 egress (mean 41.17 Mbit/s)
Flow 3 ingress (mean 43.20 Mbit/s) --- Flow 3 egress (mean 38.11 Mbit/s)

Flow 1 (95th percentile 70.40 ms)   Flow 2 (95th percentile 72.63 ms)   Flow 3 (95th percentile 71.71 ms)

14

```
Run 1: Statistics of Copa

Start at: 2019-08-26 23:22:24
End at: 2019-08-26 23:22:54
Local clock offset: -0.64 ms
Remote clock offset: 4.641 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 34.310 ms
Loss rate: 71.15%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 33.892 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 9.89 Mbit/s
95th percentile per-packet one-way delay: 34.881 ms
Loss rate: 70.99%
-- Flow 3:
Average throughput: 5.74 Mbit/s
95th percentile per-packet one-way delay: 34.118 ms
Loss rate: 71.70%
```
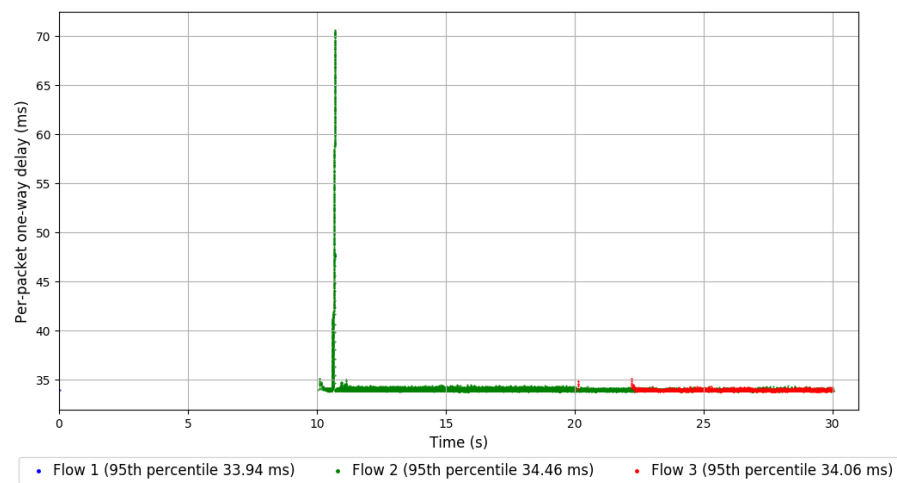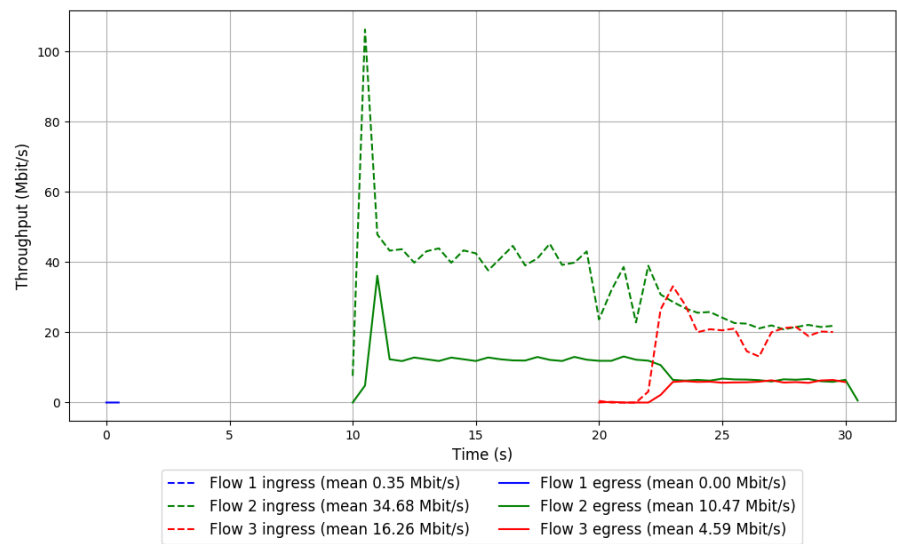
Run 1: Report of Copa — Data Link

- - - Flow 1 ingress (mean 0.69 Mbit/s)   —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 34.10 Mbit/s)   —— Flow 2 egress (mean 9.89 Mbit/s)
- - - Flow 3 ingress (mean 20.30 Mbit/s)   —— Flow 3 egress (mean 5.74 Mbit/s)

- Flow 1 (95th percentile 33.89 ms)   • Flow 2 (95th percentile 34.88 ms)   • Flow 3 (95th percentile 34.12 ms)

16

```
Run 2: Statistics of Copa

Start at: 2019-08-27 00:08:26
End at: 2019-08-27 00:08:56
Local clock offset: -1.056 ms
Remote clock offset: 6.337 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 34.321 ms
Loss rate: 72.77%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 33.927 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.84 Mbit/s
95th percentile per-packet one-way delay: 34.806 ms
Loss rate: 71.88%
-- Flow 3:
Average throughput: 5.86 Mbit/s
95th percentile per-packet one-way delay: 34.085 ms
Loss rate: 75.38%
```
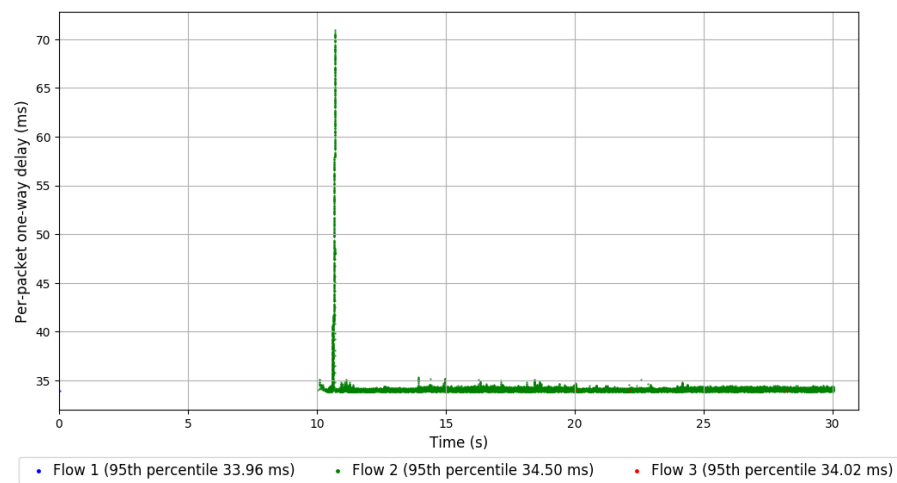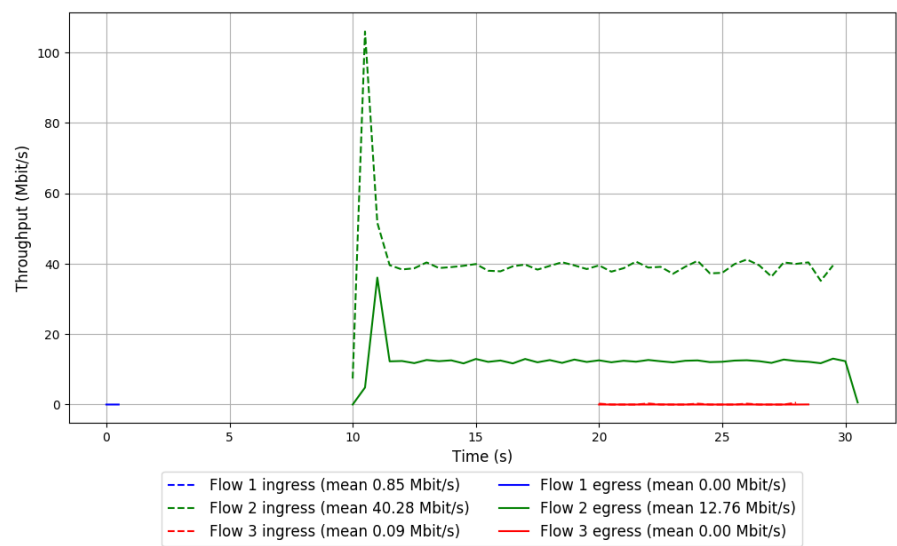
Run 2: Report of Copa — Data Link

- - - Flow 1 ingress (mean 0.86 Mbit/s)   —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 34.99 Mbit/s)   —— Flow 2 egress (mean 9.84 Mbit/s)
- - - Flow 3 ingress (mean 23.79 Mbit/s)   —— Flow 3 egress (mean 5.86 Mbit/s)

• Flow 1 (95th percentile 33.93 ms)   • Flow 2 (95th percentile 34.81 ms)   • Flow 3 (95th percentile 34.09 ms)

18

```
Run 3: Statistics of Copa

Start at: 2019-08-27 00:58:32
End at: 2019-08-27 00:59:02
Local clock offset: -1.055 ms
Remote clock offset: 5.168 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 34.257 ms
Loss rate: 70.18%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 33.938 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.47 Mbit/s
95th percentile per-packet one-way delay: 34.456 ms
Loss rate: 69.80%
-- Flow 3:
Average throughput: 4.59 Mbit/s
95th percentile per-packet one-way delay: 34.061 ms
Loss rate: 71.78%
```
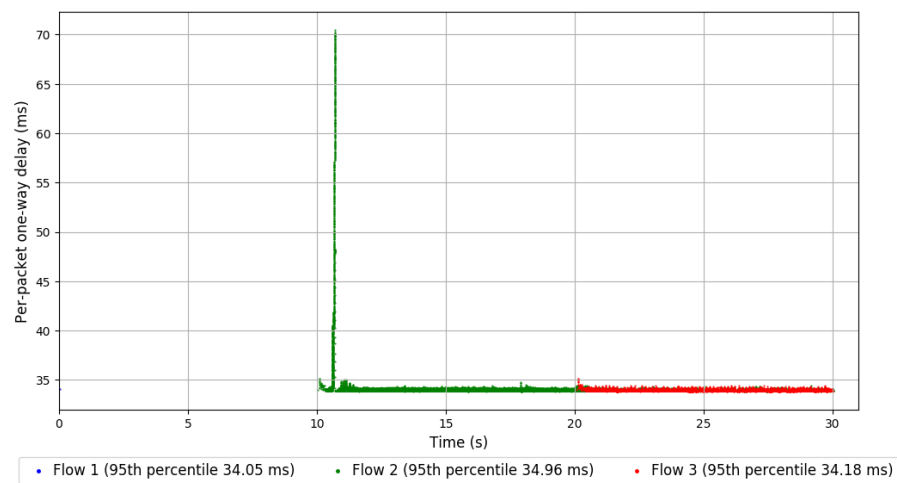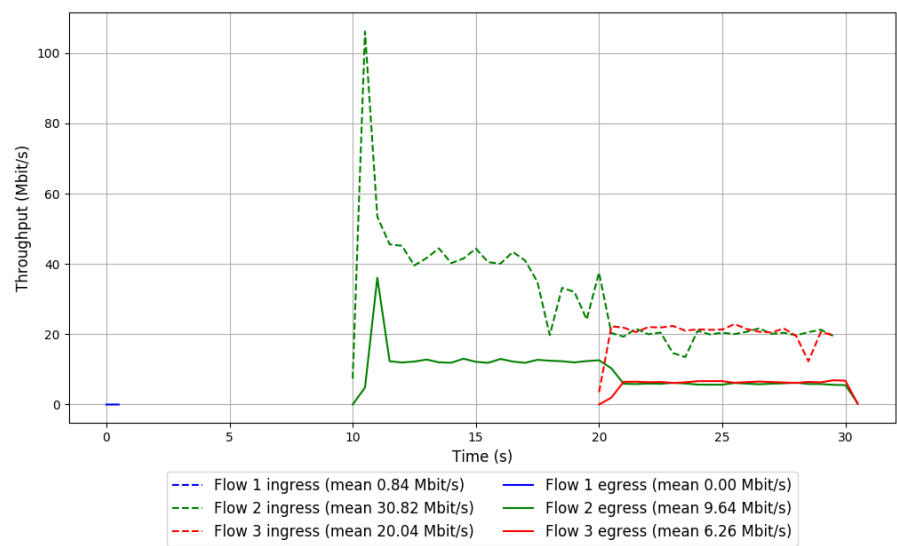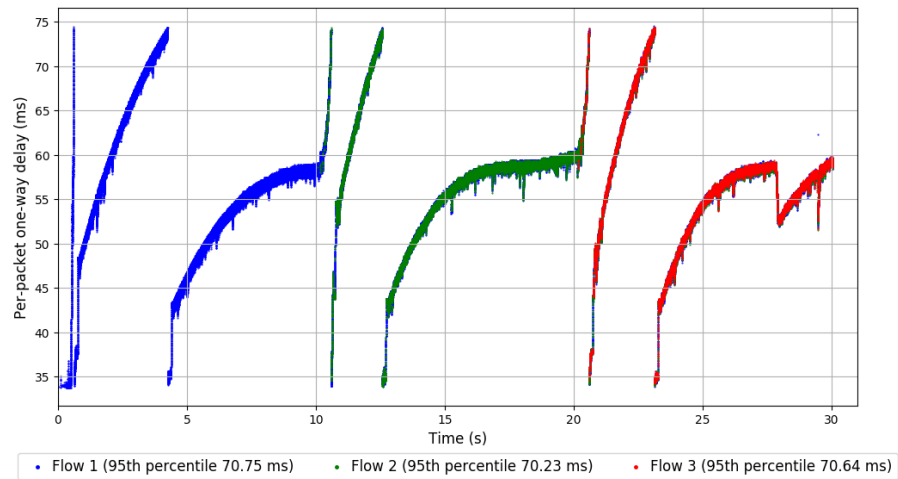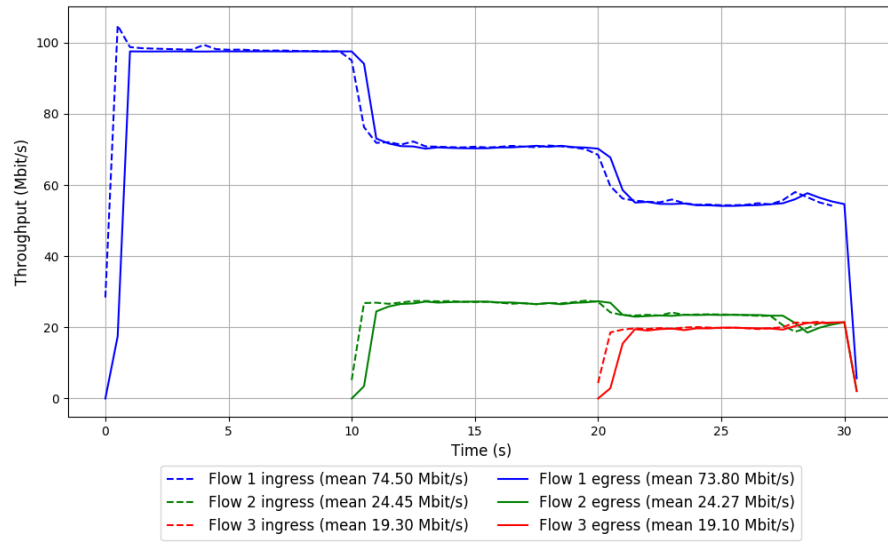
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 0.35 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 34.68 Mbit/s) --- Flow 2 egress (mean 10.47 Mbit/s)
Flow 3 ingress (mean 16.26 Mbit/s) --- Flow 3 egress (mean 4.59 Mbit/s)

Flow 1 (95th percentile 33.94 ms)   Flow 2 (95th percentile 34.46 ms)   Flow 3 (95th percentile 34.06 ms)

```
Run 4: Statistics of Copa

Start at: 2019-08-27 01:52:02
End at: 2019-08-27 01:52:32
Local clock offset: -0.866 ms
Remote clock offset: 3.279 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 34.497 ms
Loss rate: 68.36%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 33.962 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 12.76 Mbit/s
95th percentile per-packet one-way delay: 34.497 ms
Loss rate: 68.33%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 34.019 ms
Loss rate: 96.69%
```
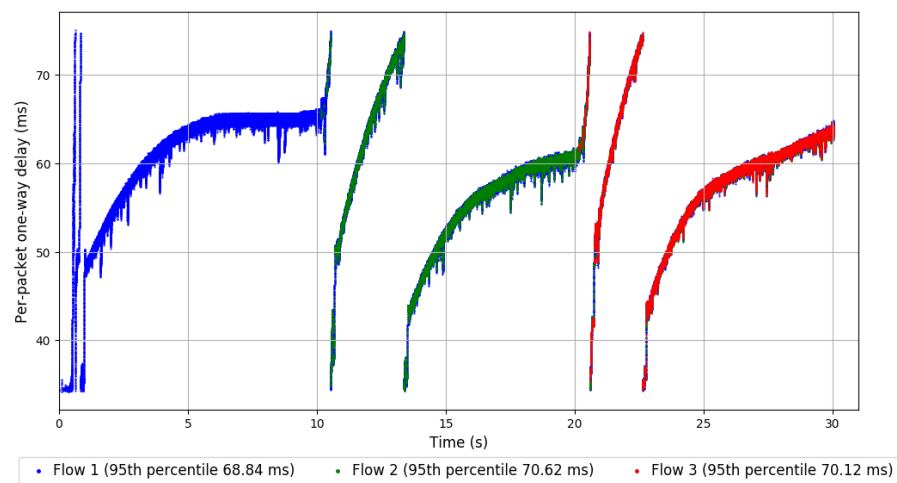
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-08-27 02:35:46
End at: 2019-08-27 02:36:16
Local clock offset: -1.173 ms
Remote clock offset: 3.846 ms


# Below is generated by plot.py at 2019-08-27 03:19:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 34.326 ms
Loss rate: 68.74%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 34.047 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.64 Mbit/s
95th percentile per-packet one-way delay: 34.958 ms
Loss rate: 68.74%
-- Flow 3:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 34.176 ms
Loss rate: 68.75%
```
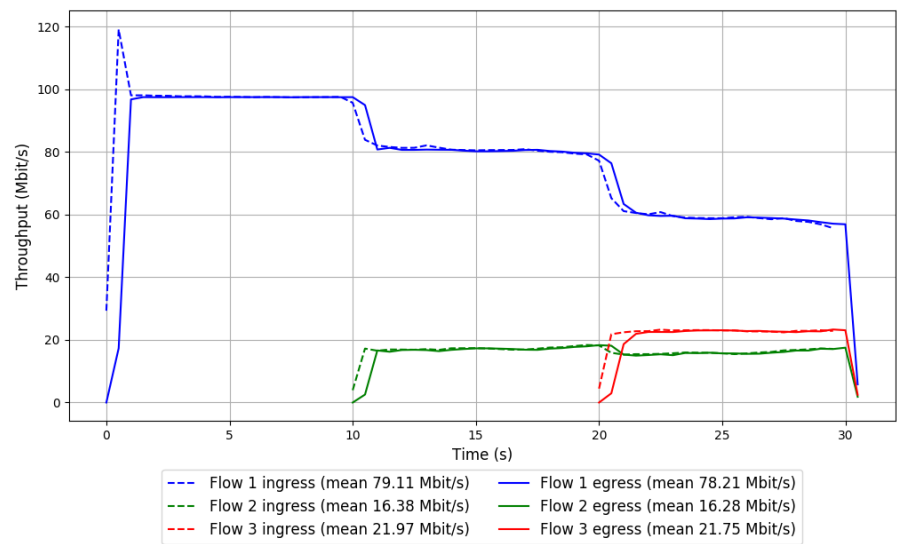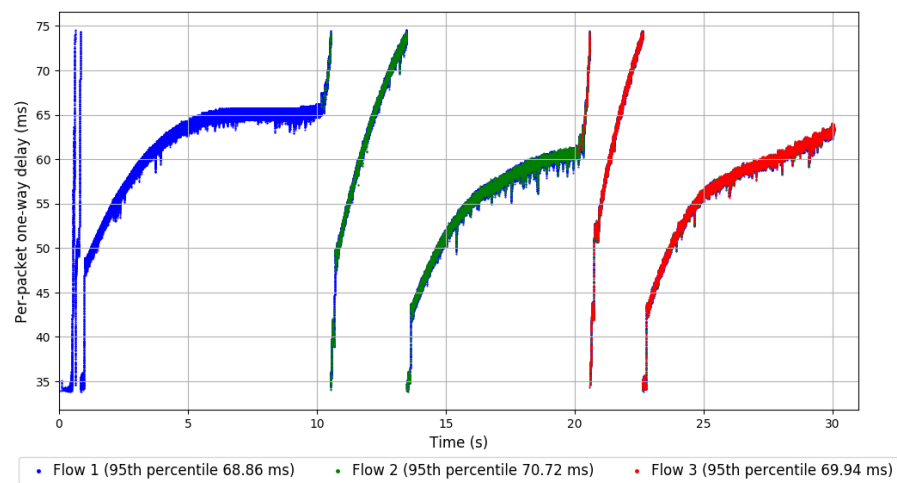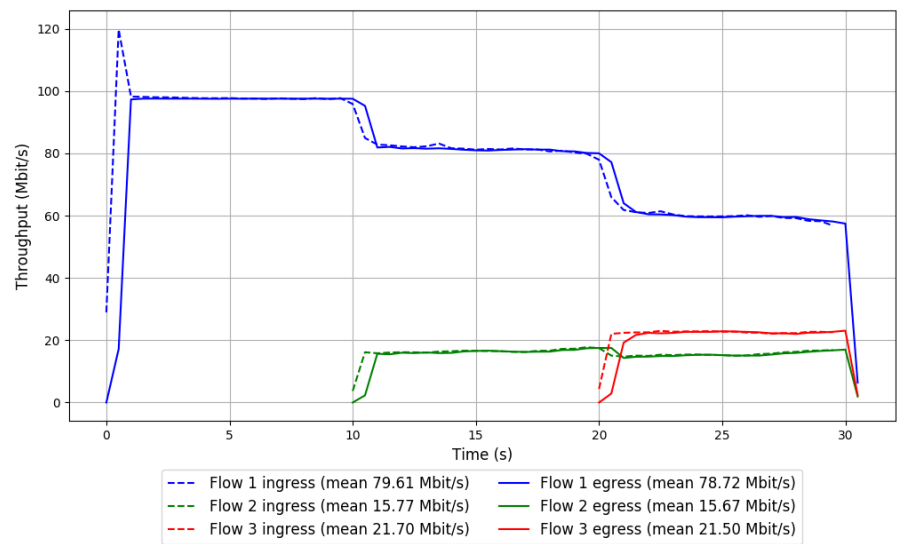
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 0.84 Mbit/s) — — — Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 30.82 Mbit/s) — — — Flow 2 egress (mean 9.64 Mbit/s)
Flow 3 ingress (mean 20.04 Mbit/s) — — — Flow 3 egress (mean 6.26 Mbit/s)

Flow 1 (95th percentile 34.05 ms)   Flow 2 (95th percentile 34.96 ms)   Flow 3 (95th percentile 34.18 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2019-08-26 23:31:30
End at: 2019-08-26 23:32:00
Local clock offset: -0.763 ms
Remote clock offset: 4.422 ms


# Below is generated by plot.py at 2019-08-27 03:19:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 70.672 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 73.80 Mbit/s
95th percentile per-packet one-way delay: 70.751 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 24.27 Mbit/s
95th percentile per-packet one-way delay: 70.233 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 19.10 Mbit/s
95th percentile per-packet one-way delay: 70.641 ms
Loss rate: 1.05%
```
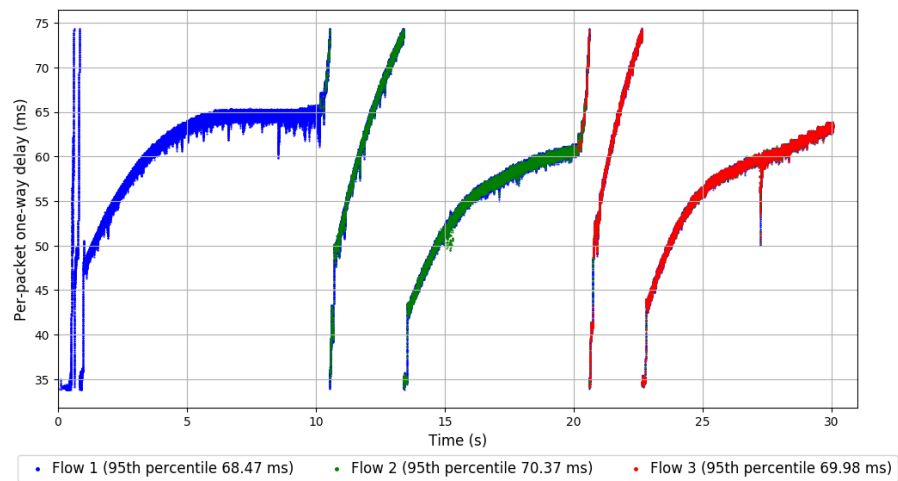
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-08-27 00:17:45
End at: 2019-08-27 00:18:15
Local clock offset: -1.092 ms
Remote clock offset: 6.202 ms


# Below is generated by plot.py at 2019-08-27 03:19:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 69.294 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 78.21 Mbit/s
95th percentile per-packet one-way delay: 68.838 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 16.28 Mbit/s
95th percentile per-packet one-way delay: 70.616 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 21.75 Mbit/s
95th percentile per-packet one-way delay: 70.121 ms
Loss rate: 0.97%
```
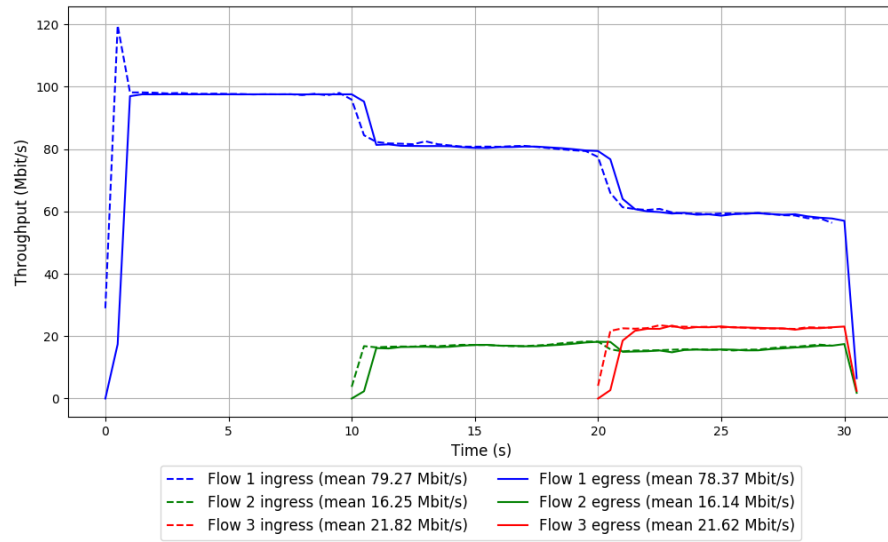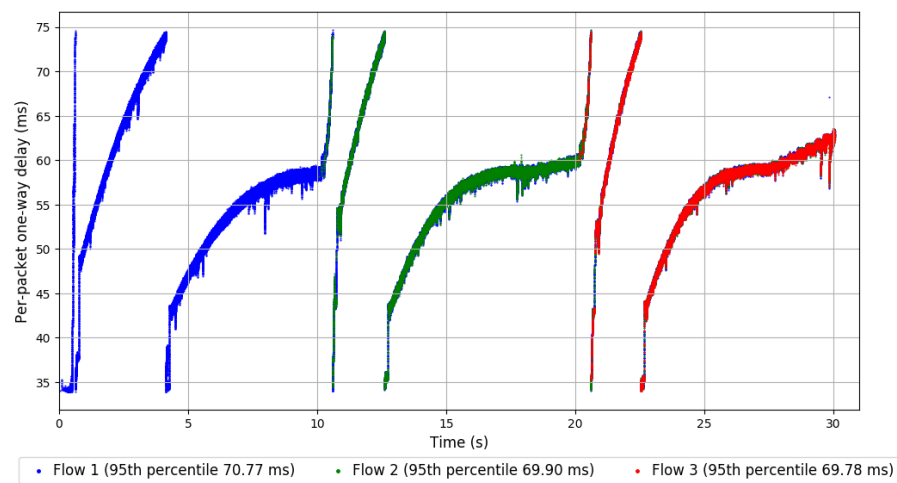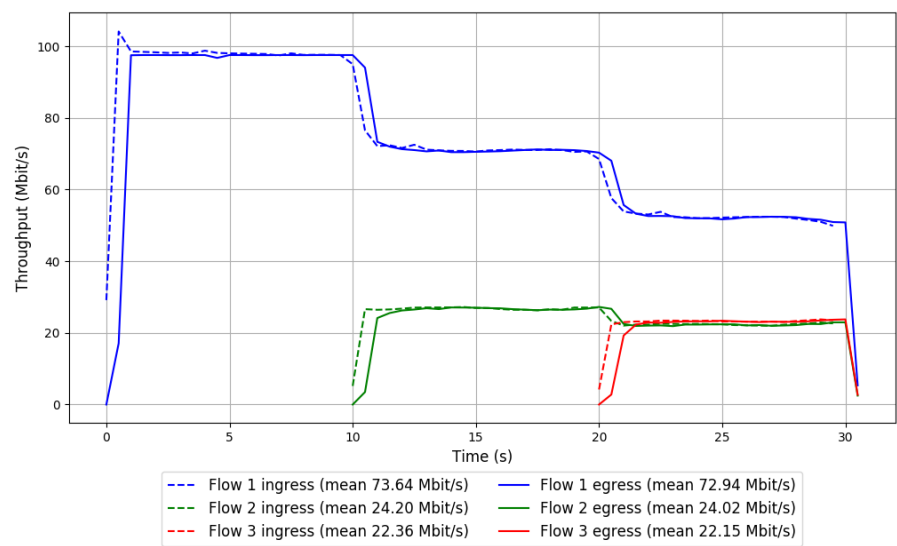
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-08-27 01:10:26
End at: 2019-08-27 01:10:56
Local clock offset: -0.934 ms
Remote clock offset: 6.0 ms


# Below is generated by plot.py at 2019-08-27 03:19:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.29 Mbit/s
95th percentile per-packet one-way delay: 69.173 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 78.72 Mbit/s
95th percentile per-packet one-way delay: 68.865 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 15.67 Mbit/s
95th percentile per-packet one-way delay: 70.725 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 21.50 Mbit/s
95th percentile per-packet one-way delay: 69.940 ms
Loss rate: 0.91%
```
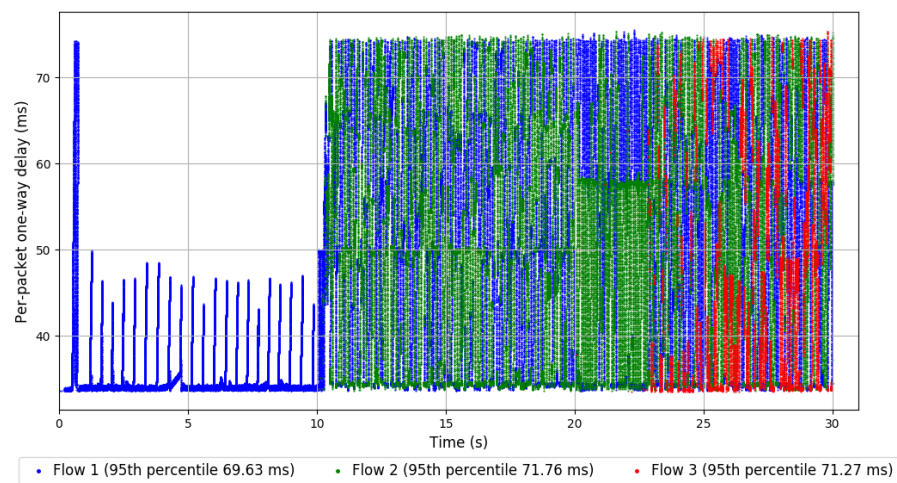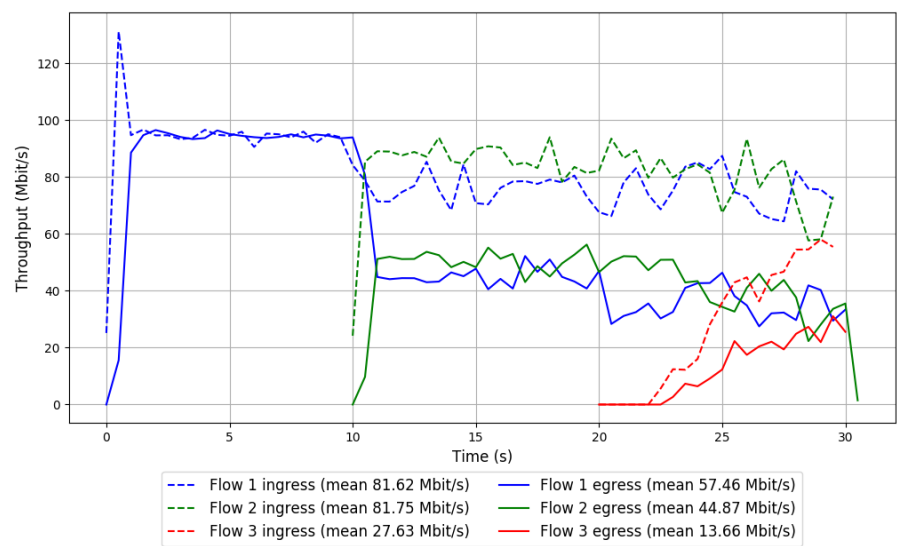
Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 79.61 Mbit/s) ——— Flow 1 egress (mean 78.72 Mbit/s)
- - - Flow 2 ingress (mean 15.77 Mbit/s) ——— Flow 2 egress (mean 15.67 Mbit/s)
- - - Flow 3 ingress (mean 21.70 Mbit/s) ——— Flow 3 egress (mean 21.50 Mbit/s)

• Flow 1 (95th percentile 68.86 ms)   • Flow 2 (95th percentile 70.72 ms)   • Flow 3 (95th percentile 69.94 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-08-27 02:00:28
End at: 2019-08-27 02:00:58
Local clock offset: -0.886 ms
Remote clock offset: 3.12 ms


# Below is generated by plot.py at 2019-08-27 03:20:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.29 Mbit/s
95th percentile per-packet one-way delay: 68.934 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 78.37 Mbit/s
95th percentile per-packet one-way delay: 68.474 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 16.14 Mbit/s
95th percentile per-packet one-way delay: 70.374 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 21.62 Mbit/s
95th percentile per-packet one-way delay: 69.980 ms
Loss rate: 0.89%
```
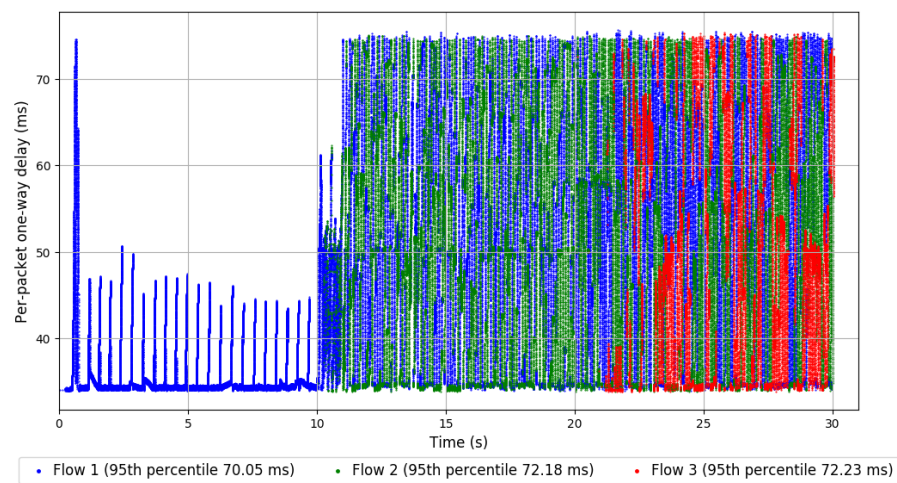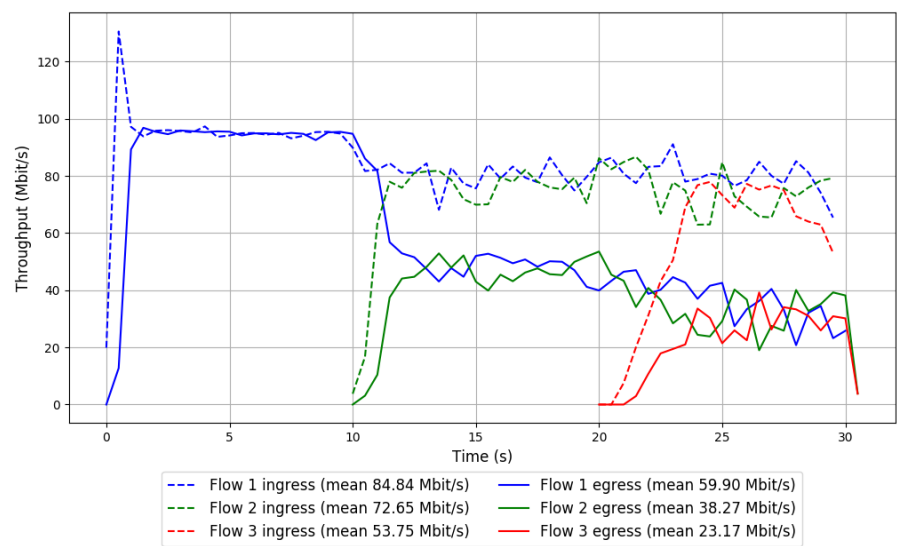
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 79.27 Mbit/s) --- Flow 1 egress (mean 78.37 Mbit/s)
Flow 2 ingress (mean 16.25 Mbit/s) --- Flow 2 egress (mean 16.14 Mbit/s)
Flow 3 ingress (mean 21.82 Mbit/s) --- Flow 3 egress (mean 21.62 Mbit/s)

Flow 1 (95th percentile 68.47 ms)   Flow 2 (95th percentile 70.37 ms)   Flow 3 (95th percentile 69.98 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2019-08-27 02:48:12
End at: 2019-08-27 02:48:42
Local clock offset: -1.258 ms
Remote clock offset: 4.334 ms


# Below is generated by plot.py at 2019-08-27 03:20:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 70.643 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 72.94 Mbit/s
95th percentile per-packet one-way delay: 70.772 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 24.02 Mbit/s
95th percentile per-packet one-way delay: 69.897 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 22.15 Mbit/s
95th percentile per-packet one-way delay: 69.784 ms
Loss rate: 0.92%
```
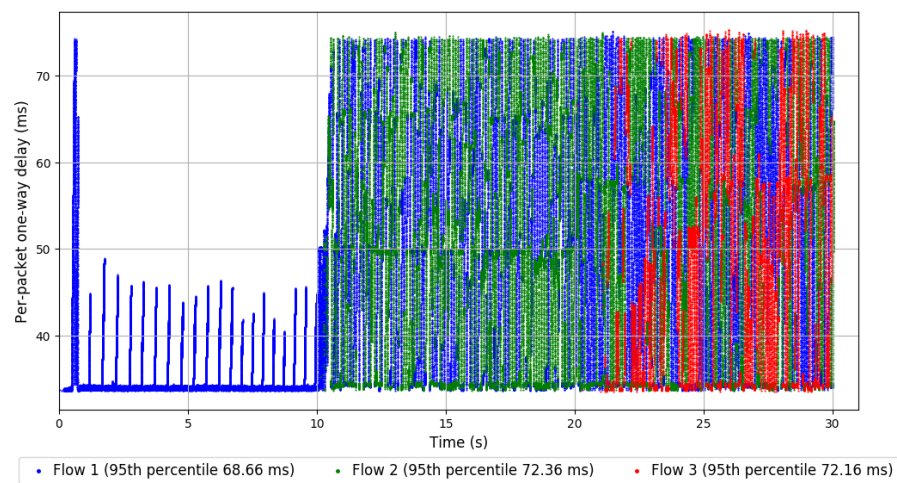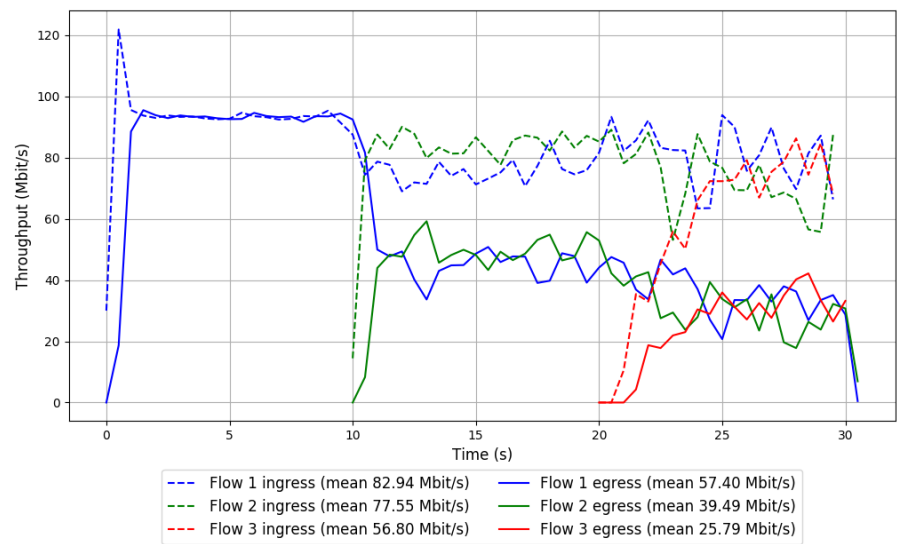
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 73.64 Mbit/s)   Flow 1 egress (mean 72.94 Mbit/s)
Flow 2 ingress (mean 24.20 Mbit/s)   Flow 2 egress (mean 24.02 Mbit/s)
Flow 3 ingress (mean 22.36 Mbit/s)   Flow 3 egress (mean 22.15 Mbit/s)

Flow 1 (95th percentile 70.77 ms)   Flow 2 (95th percentile 69.90 ms)   Flow 3 (95th percentile 69.78 ms)
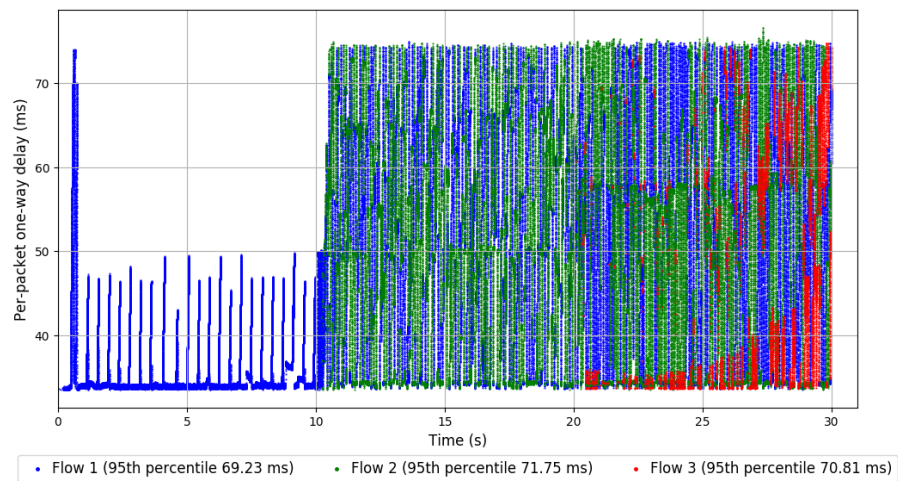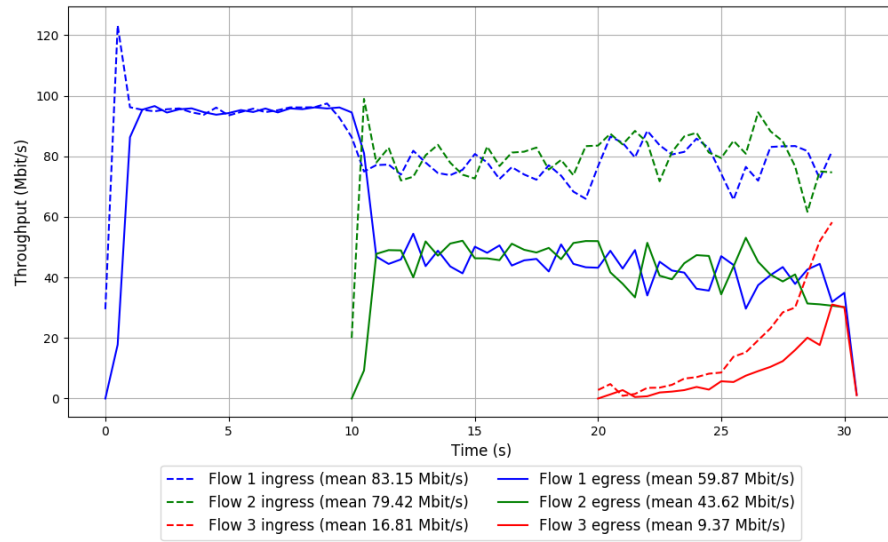
```
Run 1: Statistics of FillP

Start at: 2019-08-26 23:17:45
End at: 2019-08-26 23:18:15
Local clock offset: -0.623 ms
Remote clock offset: 4.646 ms


# Below is generated by plot.py at 2019-08-27 03:20:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.81 Mbit/s
95th percentile per-packet one-way delay: 70.708 ms
Loss rate: 36.76%
-- Flow 1:
Average throughput: 57.46 Mbit/s
95th percentile per-packet one-way delay: 69.632 ms
Loss rate: 29.62%
-- Flow 2:
Average throughput: 44.87 Mbit/s
95th percentile per-packet one-way delay: 71.757 ms
Loss rate: 45.11%
-- Flow 3:
Average throughput: 13.66 Mbit/s
95th percentile per-packet one-way delay: 71.271 ms
Loss rate: 50.76%
```

Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-08-27 00:03:10
End at: 2019-08-27 00:03:40
Local clock offset: -1.058 ms
Remote clock offset: 6.469 ms


# Below is generated by plot.py at 2019-08-27 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.93 Mbit/s
95th percentile per-packet one-way delay: 71.290 ms
Loss rate: 38.37%
-- Flow 1:
Average throughput: 59.90 Mbit/s
95th percentile per-packet one-way delay: 70.054 ms
Loss rate: 29.40%
-- Flow 2:
Average throughput: 38.27 Mbit/s
95th percentile per-packet one-way delay: 72.184 ms
Loss rate: 47.26%
-- Flow 3:
Average throughput: 23.17 Mbit/s
95th percentile per-packet one-way delay: 72.229 ms
Loss rate: 56.89%
```
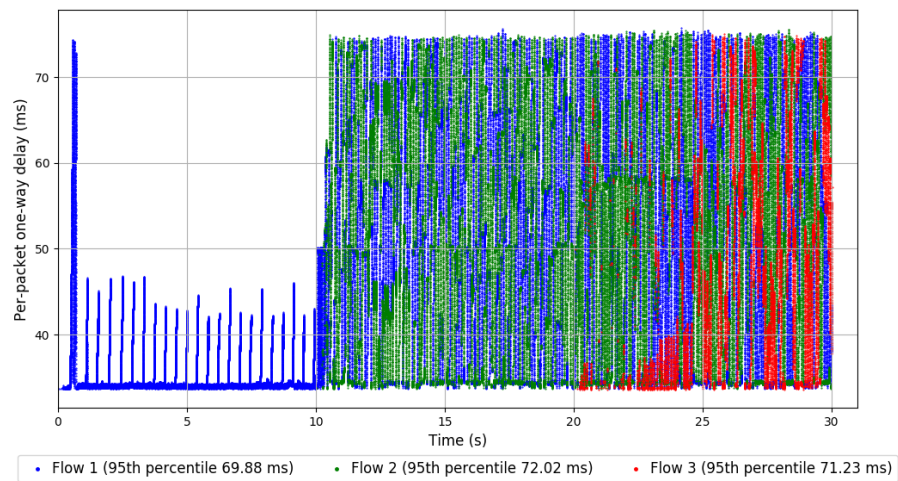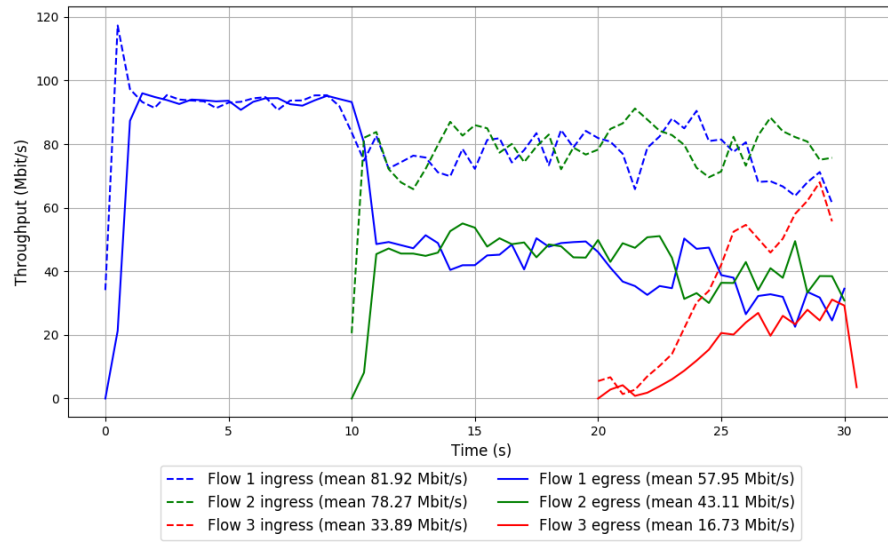
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-08-27 00:53:13
End at: 2019-08-27 00:53:43
Local clock offset: -1.097 ms
Remote clock offset: 4.677 ms


# Below is generated by plot.py at 2019-08-27 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.14 Mbit/s
95th percentile per-packet one-way delay: 70.794 ms
Loss rate: 39.86%
-- Flow 1:
Average throughput: 57.40 Mbit/s
95th percentile per-packet one-way delay: 68.655 ms
Loss rate: 30.80%
-- Flow 2:
Average throughput: 39.49 Mbit/s
95th percentile per-packet one-way delay: 72.362 ms
Loss rate: 48.99%
-- Flow 3:
Average throughput: 25.79 Mbit/s
95th percentile per-packet one-way delay: 72.160 ms
Loss rate: 54.76%
```
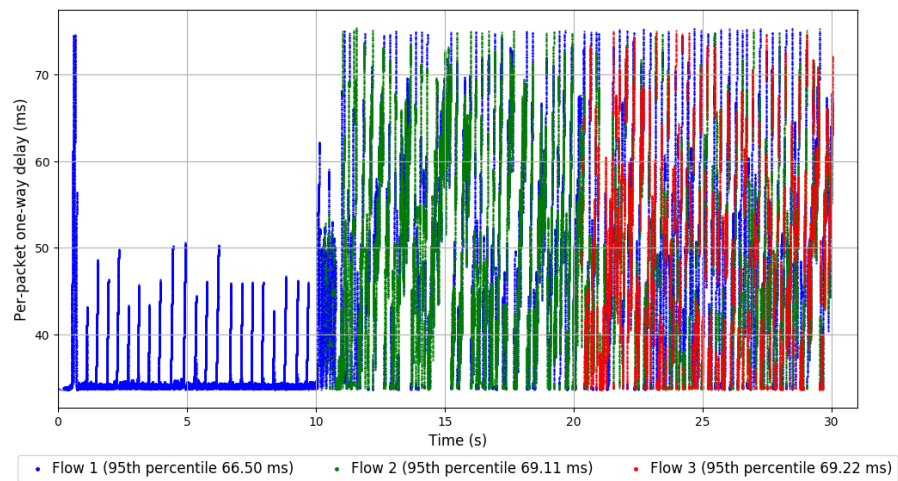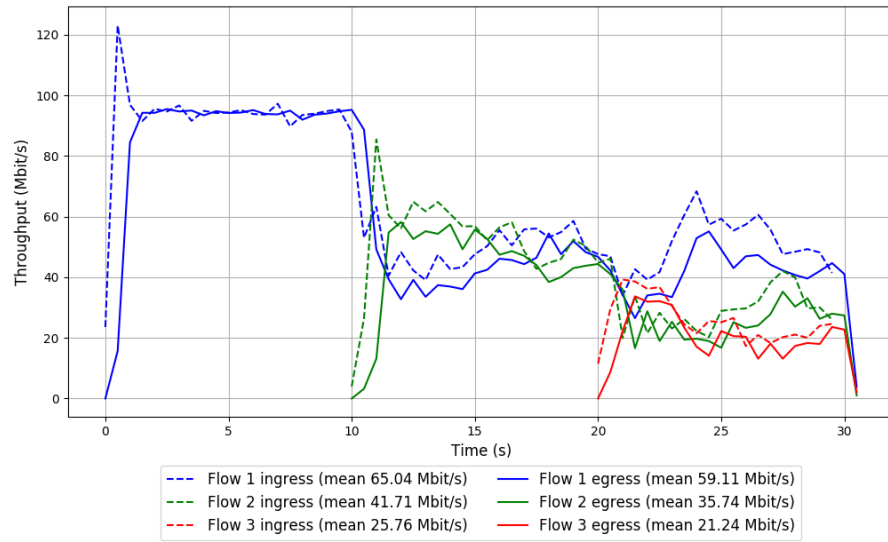
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-08-27 01:47:35
End at: 2019-08-27 01:48:05
Local clock offset: -0.861 ms
Remote clock offset: 3.344 ms


# Below is generated by plot.py at 2019-08-27 03:21:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.97 Mbit/s
95th percentile per-packet one-way delay: 70.385 ms
Loss rate: 35.03%
-- Flow 1:
Average throughput: 59.87 Mbit/s
95th percentile per-packet one-way delay: 69.234 ms
Loss rate: 27.99%
-- Flow 2:
Average throughput: 43.62 Mbit/s
95th percentile per-packet one-way delay: 71.750 ms
Loss rate: 45.12%
-- Flow 3:
Average throughput: 9.37 Mbit/s
95th percentile per-packet one-way delay: 70.811 ms
Loss rate: 44.26%
```
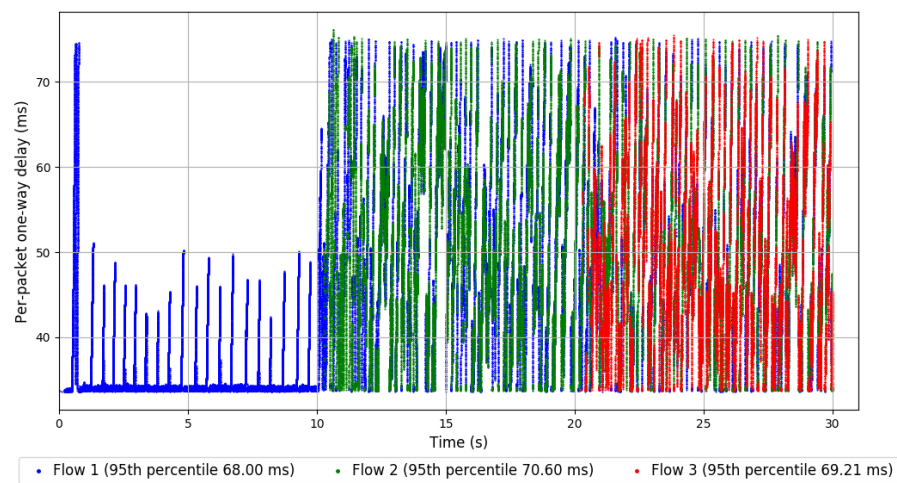
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-08-27 02:30:01
End at: 2019-08-27 02:30:31
Local clock offset: -1.168 ms
Remote clock offset: 3.108 ms


# Below is generated by plot.py at 2019-08-27 03:21:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.10 Mbit/s
95th percentile per-packet one-way delay: 71.017 ms
Loss rate: 36.52%
-- Flow 1:
Average throughput: 57.95 Mbit/s
95th percentile per-packet one-way delay: 69.877 ms
Loss rate: 29.25%
-- Flow 2:
Average throughput: 43.11 Mbit/s
95th percentile per-packet one-way delay: 72.016 ms
Loss rate: 44.92%
-- Flow 3:
Average throughput: 16.73 Mbit/s
95th percentile per-packet one-way delay: 71.233 ms
Loss rate: 50.58%
```
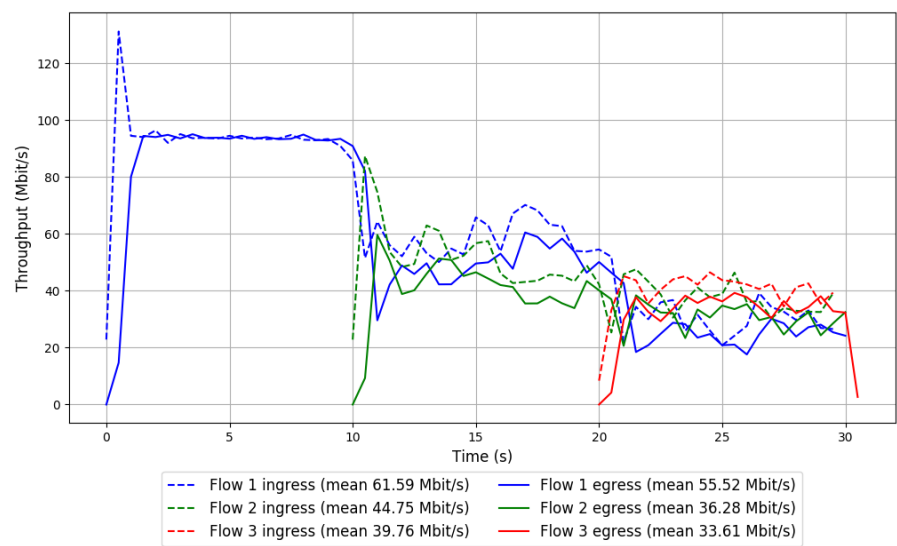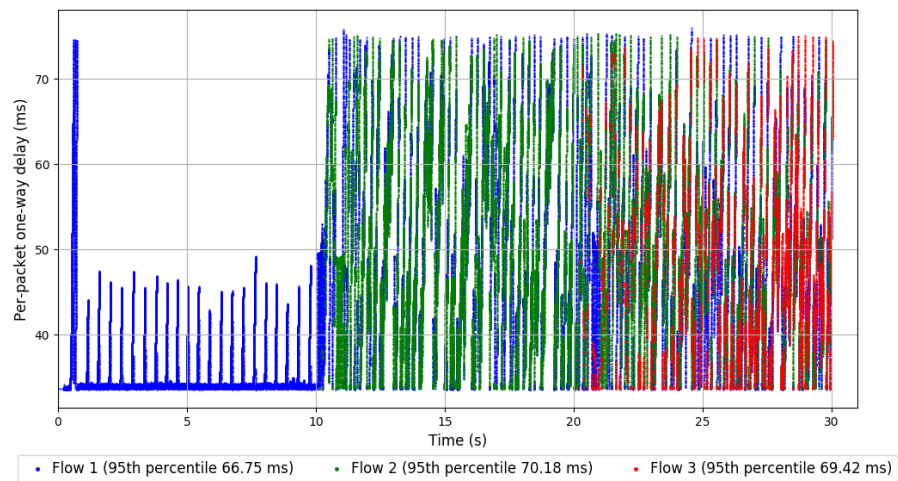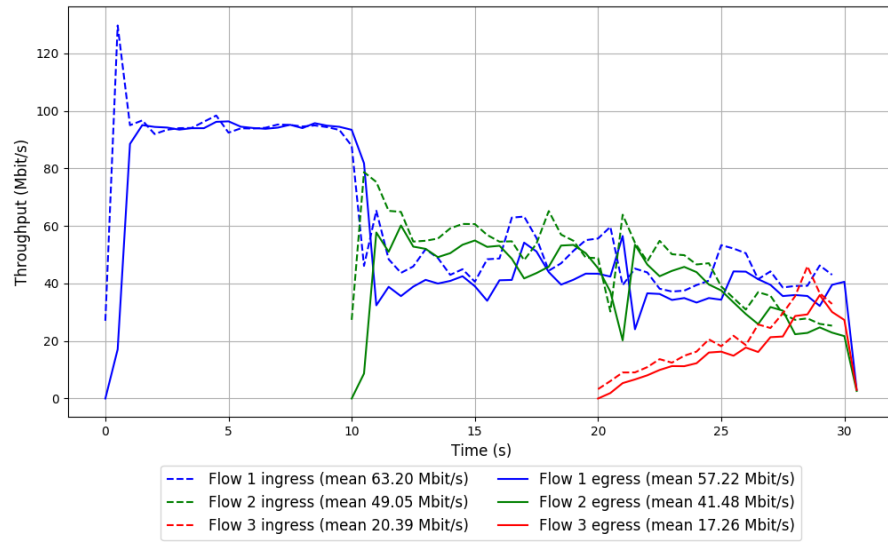
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 81.92 Mbit/s) --- Flow 1 egress (mean 57.95 Mbit/s) —
Flow 2 ingress (mean 78.27 Mbit/s) --- Flow 2 egress (mean 43.11 Mbit/s) —
Flow 3 ingress (mean 33.89 Mbit/s) --- Flow 3 egress (mean 16.73 Mbit/s) —

• Flow 1 (95th percentile 69.88 ms)   • Flow 2 (95th percentile 72.02 ms)   • Flow 3 (95th percentile 71.23 ms)

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-08-26 23:37:32
End at: 2019-08-26 23:38:02
Local clock offset: -0.809 ms
Remote clock offset: 4.477 ms


# Below is generated by plot.py at 2019-08-27 03:21:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.93 Mbit/s
95th percentile per-packet one-way delay: 67.820 ms
Loss rate: 11.14%
-- Flow 1:
Average throughput: 59.11 Mbit/s
95th percentile per-packet one-way delay: 66.498 ms
Loss rate: 9.03%
-- Flow 2:
Average throughput: 35.74 Mbit/s
95th percentile per-packet one-way delay: 69.111 ms
Loss rate: 14.20%
-- Flow 3:
Average throughput: 21.24 Mbit/s
95th percentile per-packet one-way delay: 69.219 ms
Loss rate: 17.24%
```
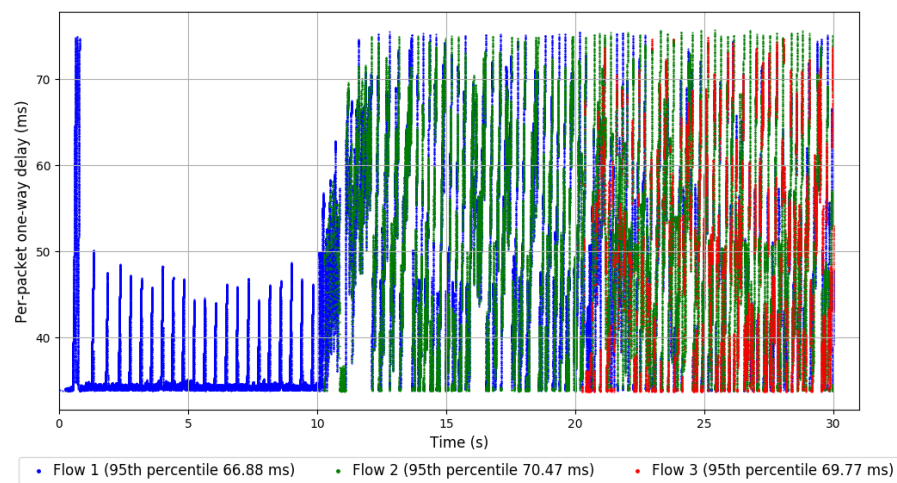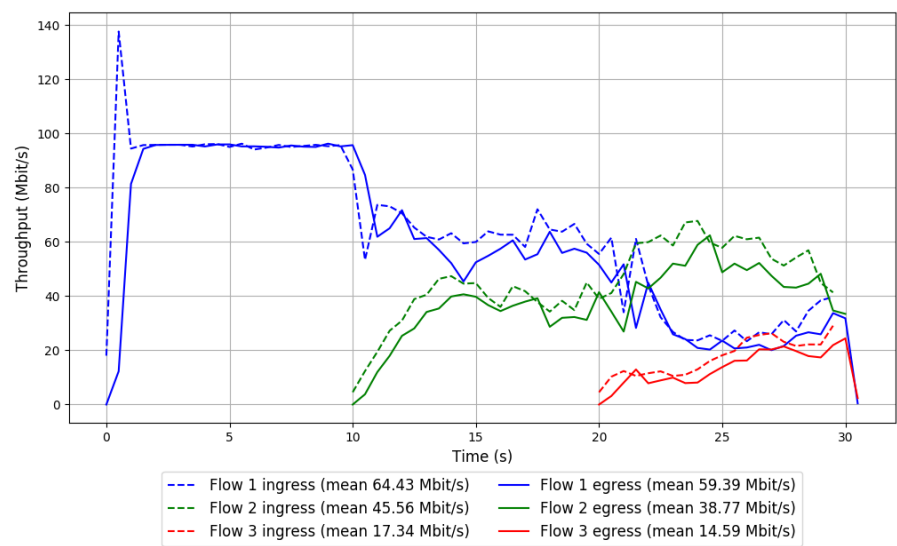
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-08-27 00:24:14
End at: 2019-08-27 00:24:44
Local clock offset: -1.094 ms
Remote clock offset: 5.059 ms


# Below is generated by plot.py at 2019-08-27 03:21:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.71 Mbit/s
95th percentile per-packet one-way delay: 69.248 ms
Loss rate: 13.16%
-- Flow 1:
Average throughput: 55.52 Mbit/s
95th percentile per-packet one-way delay: 68.000 ms
Loss rate: 9.83%
-- Flow 2:
Average throughput: 36.28 Mbit/s
95th percentile per-packet one-way delay: 70.601 ms
Loss rate: 18.92%
-- Flow 3:
Average throughput: 33.61 Mbit/s
95th percentile per-packet one-way delay: 69.206 ms
Loss rate: 15.67%
```
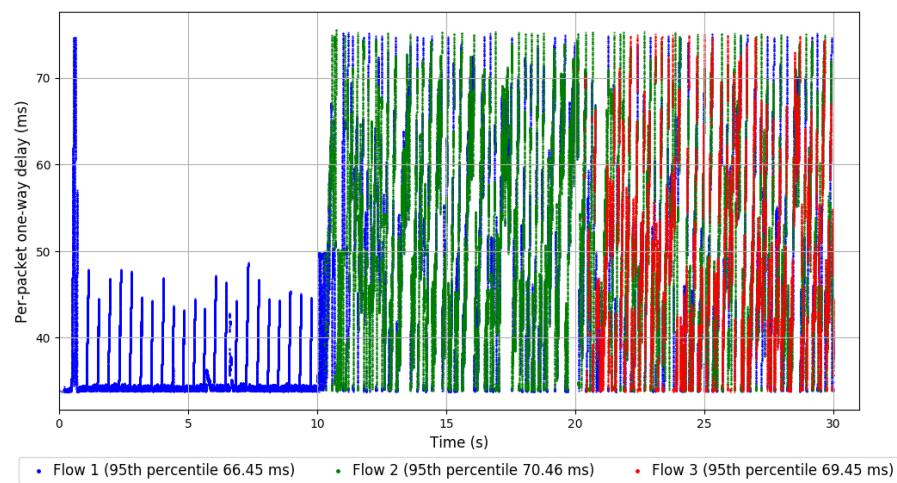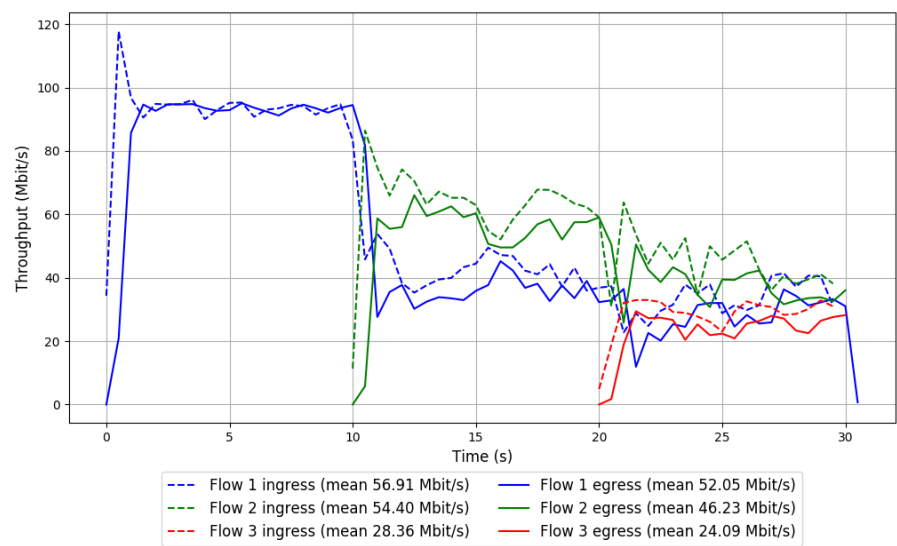
Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 61.59 Mbit/s)
Flow 2 ingress (mean 44.75 Mbit/s)
Flow 3 ingress (mean 39.76 Mbit/s)
Flow 1 egress (mean 55.52 Mbit/s)
Flow 2 egress (mean 36.28 Mbit/s)
Flow 3 egress (mean 33.61 Mbit/s)

Flow 1 (95th percentile 68.00 ms)
Flow 2 (95th percentile 70.60 ms)
Flow 3 (95th percentile 69.21 ms)

48

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-08-27 01:17:20
End at: 2019-08-27 01:17:50
Local clock offset: -0.891 ms
Remote clock offset: 6.153 ms


# Below is generated by plot.py at 2019-08-27 03:21:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.52 Mbit/s
95th percentile per-packet one-way delay: 68.496 ms
Loss rate: 11.64%
-- Flow 1:
Average throughput: 57.22 Mbit/s
95th percentile per-packet one-way delay: 66.755 ms
Loss rate: 9.38%
-- Flow 2:
Average throughput: 41.48 Mbit/s
95th percentile per-packet one-way delay: 70.184 ms
Loss rate: 15.31%
-- Flow 3:
Average throughput: 17.26 Mbit/s
95th percentile per-packet one-way delay: 69.417 ms
Loss rate: 15.00%
```

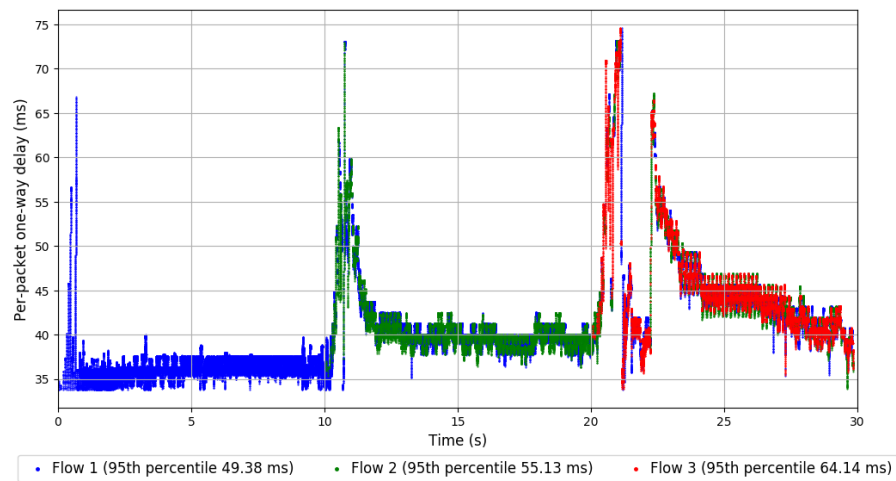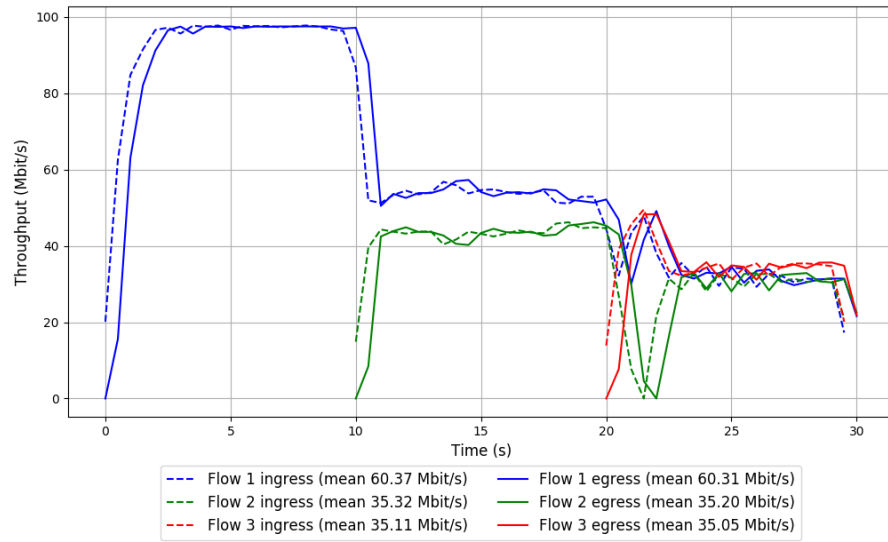# Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 63.20 Mbit/s)   Flow 1 egress (mean 57.22 Mbit/s)
Flow 2 ingress (mean 49.05 Mbit/s)   Flow 2 egress (mean 41.48 Mbit/s)
Flow 3 ingress (mean 20.39 Mbit/s)   Flow 3 egress (mean 17.26 Mbit/s)

Flow 1 (95th percentile 66.75 ms)   Flow 2 (95th percentile 70.18 ms)   Flow 3 (95th percentile 69.42 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-08-27 02:06:07
End at: 2019-08-27 02:06:37
Local clock offset: -0.913 ms
Remote clock offset: 3.165 ms


# Below is generated by plot.py at 2019-08-27 03:22:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.98 Mbit/s
95th percentile per-packet one-way delay: 68.492 ms
Loss rate: 10.40%
-- Flow 1:
Average throughput: 59.39 Mbit/s
95th percentile per-packet one-way delay: 66.882 ms
Loss rate: 7.79%
-- Flow 2:
Average throughput: 38.77 Mbit/s
95th percentile per-packet one-way delay: 70.475 ms
Loss rate: 14.91%
-- Flow 3:
Average throughput: 14.59 Mbit/s
95th percentile per-packet one-way delay: 69.766 ms
Loss rate: 15.87%
```
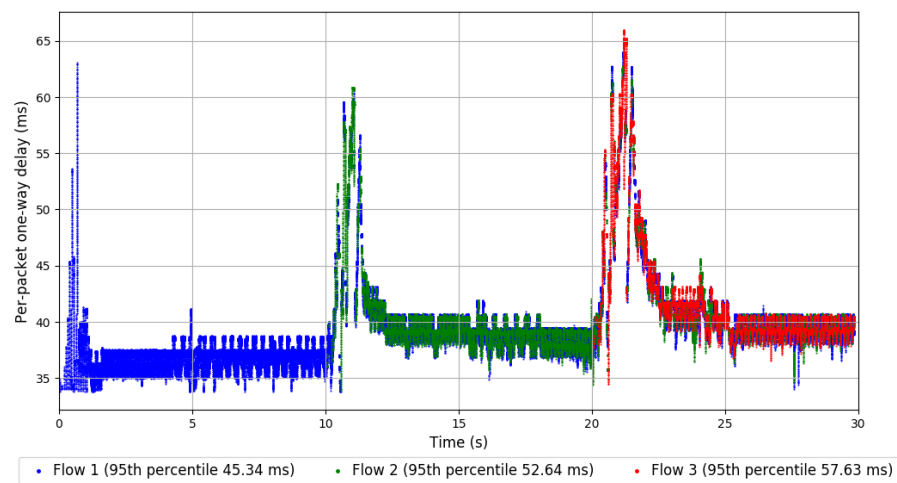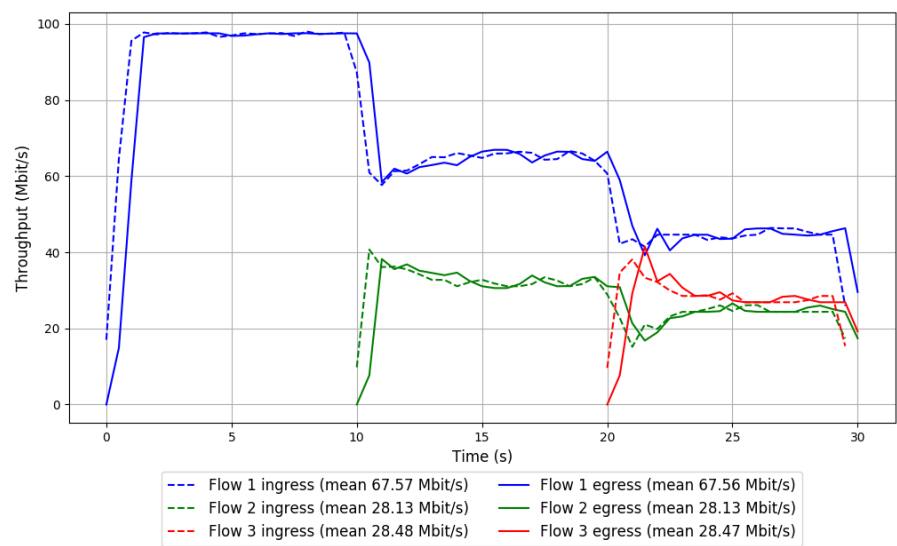
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-08-27 02:54:54
End at: 2019-08-27 02:55:24
Local clock offset: -1.318 ms
Remote clock offset: 4.318 ms


# Below is generated by plot.py at 2019-08-27 03:22:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.76 Mbit/s
95th percentile per-packet one-way delay: 68.764 ms
Loss rate: 11.46%
-- Flow 1:
Average throughput: 52.05 Mbit/s
95th percentile per-packet one-way delay: 66.453 ms
Loss rate: 8.55%
-- Flow 2:
Average throughput: 46.23 Mbit/s
95th percentile per-packet one-way delay: 70.463 ms
Loss rate: 15.02%
-- Flow 3:
Average throughput: 24.09 Mbit/s
95th percentile per-packet one-way delay: 69.450 ms
Loss rate: 15.36%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 56.91 Mbit/s) --- Flow 1 egress (mean 52.05 Mbit/s) ---
Flow 2 ingress (mean 54.40 Mbit/s) --- Flow 2 egress (mean 46.23 Mbit/s) ---
Flow 3 ingress (mean 28.36 Mbit/s) --- Flow 3 egress (mean 24.09 Mbit/s) ---

Flow 1 (95th percentile 66.45 ms) • Flow 2 (95th percentile 70.46 ms) • Flow 3 (95th percentile 69.45 ms)

```
Run 1: Statistics of Indigo

Start at: 2019-08-26 23:15:40
End at: 2019-08-26 23:16:10
Local clock offset: -0.646 ms
Remote clock offset: 4.757 ms


# Below is generated by plot.py at 2019-08-27 03:22:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.09 Mbit/s
95th percentile per-packet one-way delay: 53.004 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 60.31 Mbit/s
95th percentile per-packet one-way delay: 49.377 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 35.20 Mbit/s
95th percentile per-packet one-way delay: 55.127 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 35.05 Mbit/s
95th percentile per-packet one-way delay: 64.140 ms
Loss rate: 0.17%
```
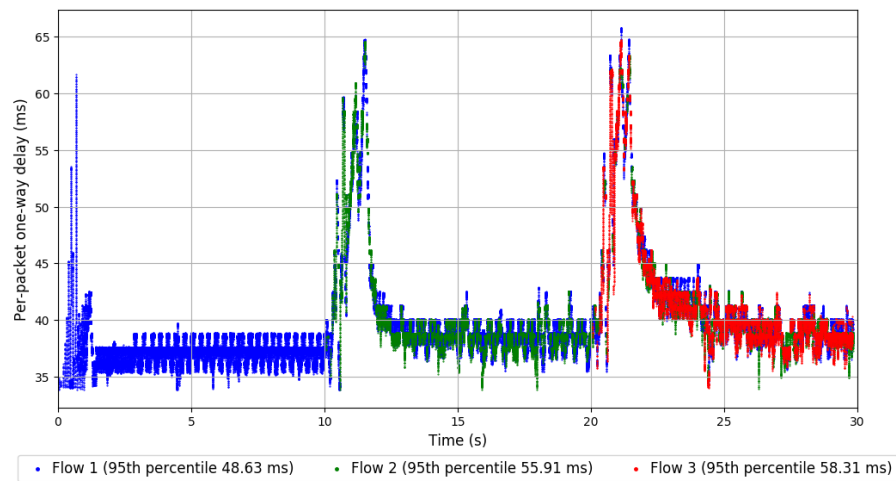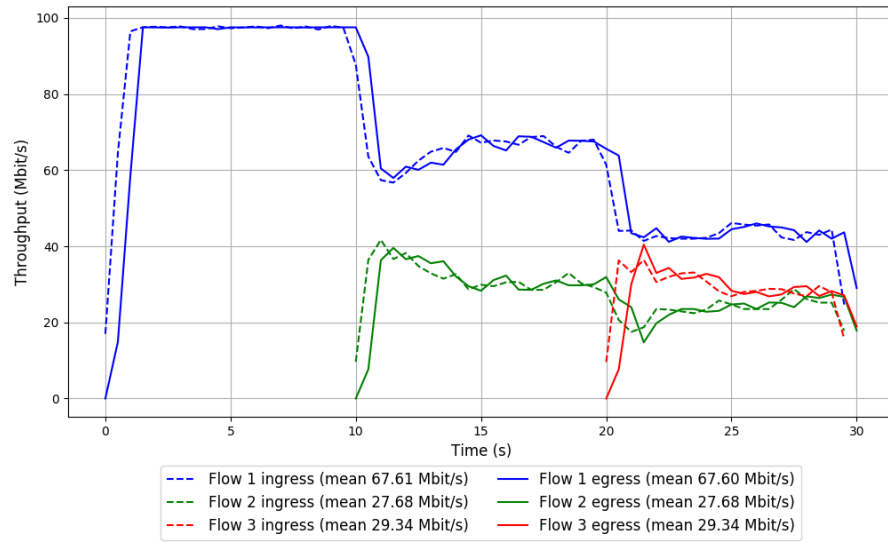
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-08-27 00:00:48
End at: 2019-08-27 00:01:18
Local clock offset: -1.04 ms
Remote clock offset: 6.129 ms


# Below is generated by plot.py at 2019-08-27 03:22:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.54 Mbit/s
95th percentile per-packet one-way delay: 49.202 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.56 Mbit/s
95th percentile per-packet one-way delay: 45.338 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.13 Mbit/s
95th percentile per-packet one-way delay: 52.644 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 28.47 Mbit/s
95th percentile per-packet one-way delay: 57.628 ms
Loss rate: 0.00%
```
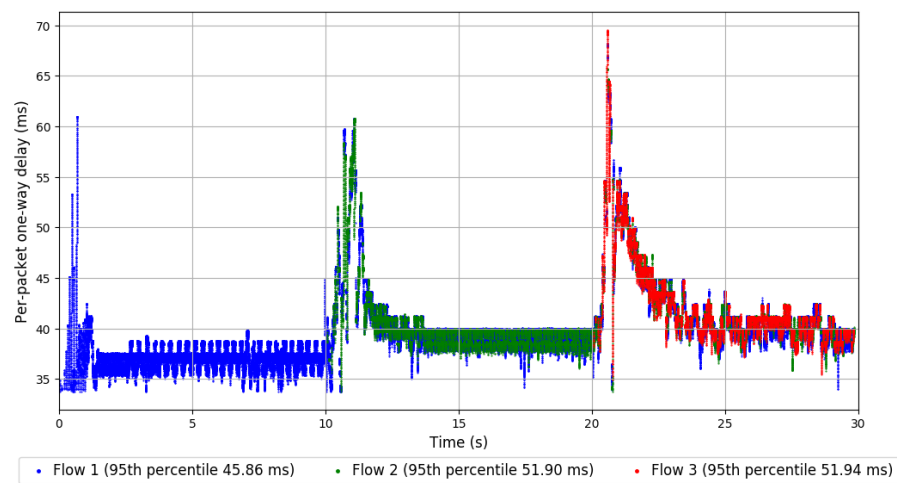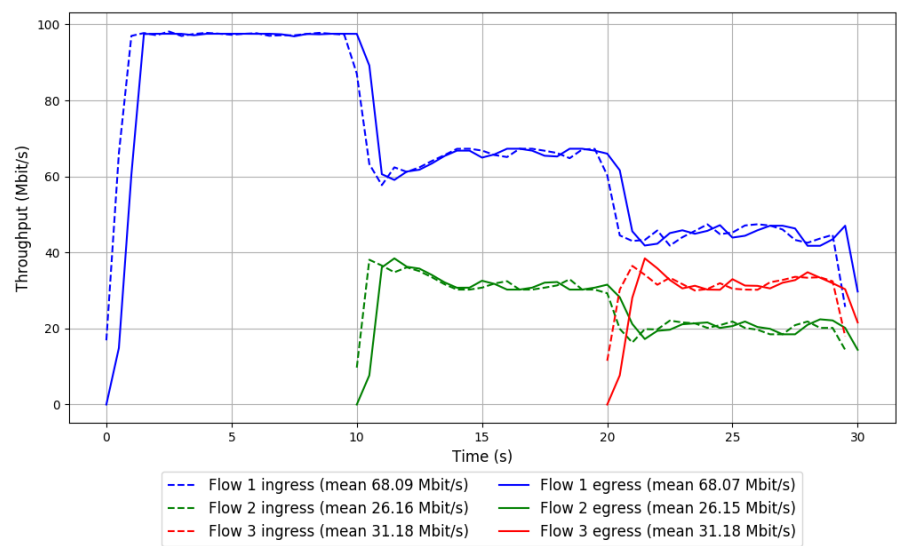
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-08-27 00:50:31
End at: 2019-08-27 00:51:01
Local clock offset: -1.121 ms
Remote clock offset: 4.262 ms


# Below is generated by plot.py at 2019-08-27 03:22:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.43 Mbit/s
95th percentile per-packet one-way delay: 47.045 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 69.55 Mbit/s
95th percentile per-packet one-way delay: 43.741 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 25.37 Mbit/s
95th percentile per-packet one-way delay: 50.959 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 27.82 Mbit/s
95th percentile per-packet one-way delay: 50.621 ms
Loss rate: 0.00%
```
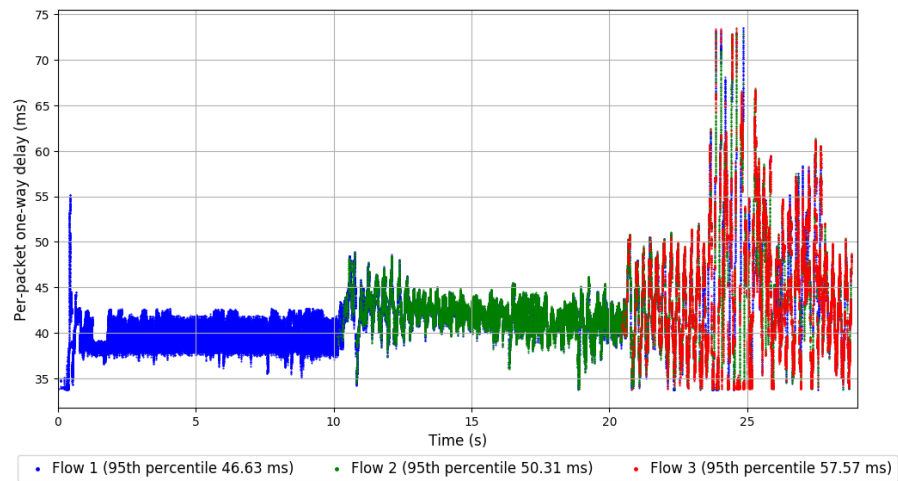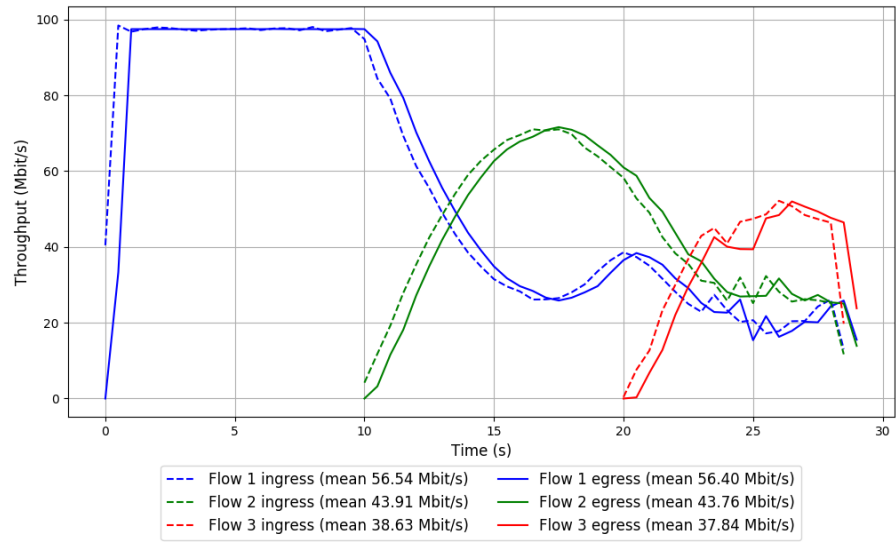
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-08-27 01:45:37
End at: 2019-08-27 01:46:08
Local clock offset: -0.88 ms
Remote clock offset: 3.639 ms


# Below is generated by plot.py at 2019-08-27 03:22:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.55 Mbit/s
95th percentile per-packet one-way delay: 52.258 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.60 Mbit/s
95th percentile per-packet one-way delay: 48.630 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 27.68 Mbit/s
95th percentile per-packet one-way delay: 55.910 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 29.34 Mbit/s
95th percentile per-packet one-way delay: 58.311 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-08-27 02:27:12
End at: 2019-08-27 02:27:42
Local clock offset: -1.087 ms
Remote clock offset: 3.075 ms


# Below is generated by plot.py at 2019-08-27 03:23:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.54 Mbit/s
95th percentile per-packet one-way delay: 48.753 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 68.07 Mbit/s
95th percentile per-packet one-way delay: 45.857 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.15 Mbit/s
95th percentile per-packet one-way delay: 51.904 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 31.18 Mbit/s
95th percentile per-packet one-way delay: 51.935 ms
Loss rate: 0.00%
```
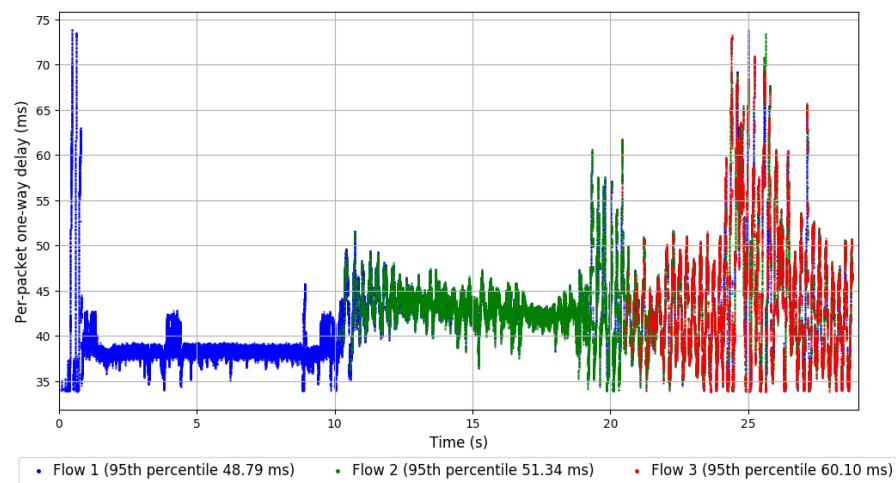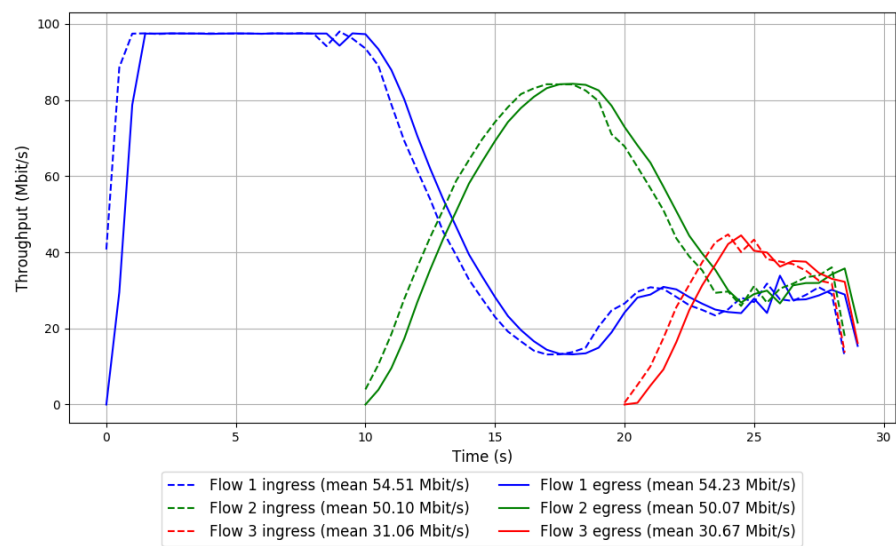
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-08-26 23:50:05
End at: 2019-08-26 23:50:35
Local clock offset: -0.963 ms
Remote clock offset: 5.656 ms

# Below is generated by plot.py at 2019-08-27 03:23:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.86 Mbit/s
95th percentile per-packet one-way delay: 50.414 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 56.40 Mbit/s
95th percentile per-packet one-way delay: 46.629 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 43.76 Mbit/s
95th percentile per-packet one-way delay: 50.312 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 37.84 Mbit/s
95th percentile per-packet one-way delay: 57.571 ms
Loss rate: 1.93%
```
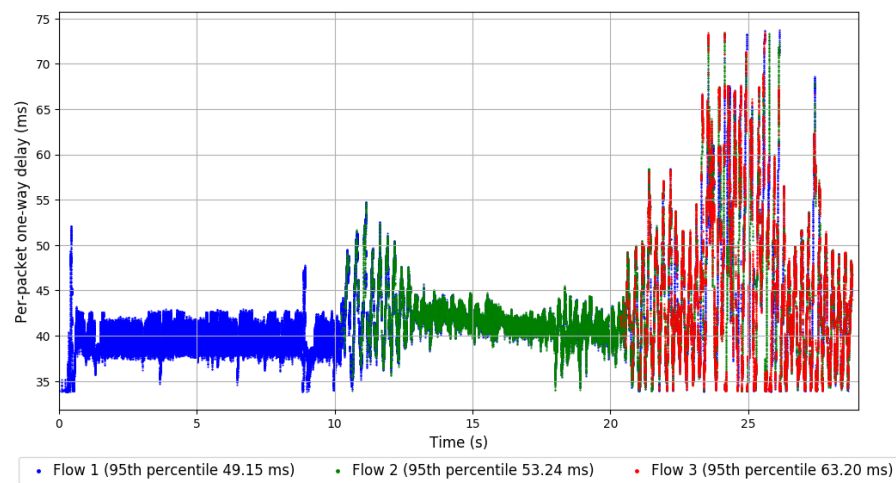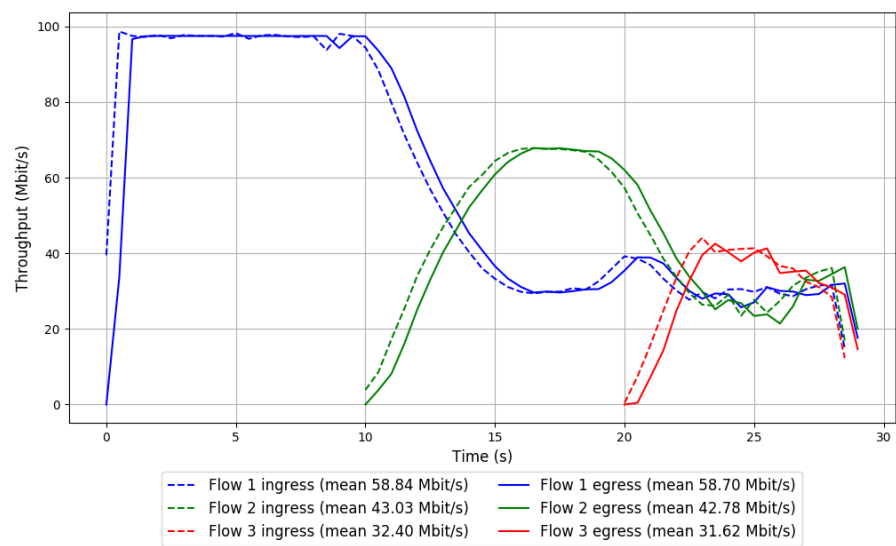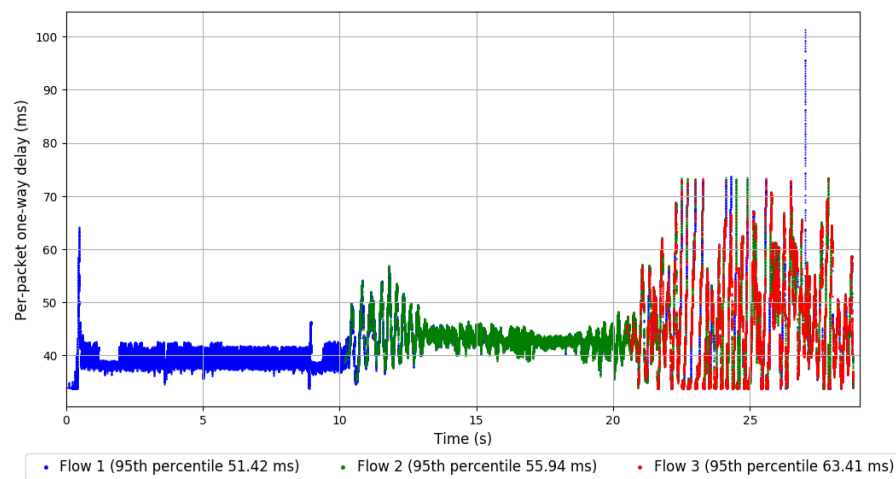
Run 1: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 56.54 Mbit/s) ——— Flow 1 egress (mean 56.40 Mbit/s)
- - - Flow 2 ingress (mean 43.91 Mbit/s) ——— Flow 2 egress (mean 43.76 Mbit/s)
- - - Flow 3 ingress (mean 38.63 Mbit/s) ——— Flow 3 egress (mean 37.84 Mbit/s)

- Flow 1 (95th percentile 46.63 ms)   - Flow 2 (95th percentile 50.31 ms)   - Flow 3 (95th percentile 57.57 ms)

66

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-08-27 00:38:25
End at: 2019-08-27 00:38:55
Local clock offset: -1.154 ms
Remote clock offset: 4.339 ms


# Below is generated by plot.py at 2019-08-27 03:23:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.75 Mbit/s
95th percentile per-packet one-way delay: 51.662 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 54.23 Mbit/s
95th percentile per-packet one-way delay: 48.790 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 50.07 Mbit/s
95th percentile per-packet one-way delay: 51.343 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 30.67 Mbit/s
95th percentile per-packet one-way delay: 60.101 ms
Loss rate: 1.11%
```
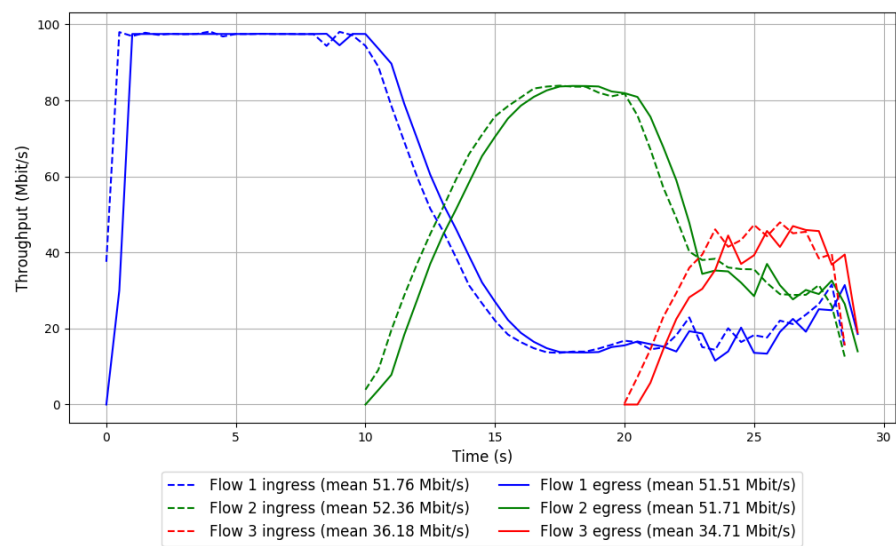
Run 2: Report of Indigo-MusesC3 — Data Link

68

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-08-27 01:33:02
End at: 2019-08-27 01:33:32
Local clock offset: -0.912 ms
Remote clock offset: 4.595 ms


# Below is generated by plot.py at 2019-08-27 03:23:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 53.096 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 58.70 Mbit/s
95th percentile per-packet one-way delay: 49.154 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 42.78 Mbit/s
95th percentile per-packet one-way delay: 53.240 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 31.62 Mbit/s
95th percentile per-packet one-way delay: 63.205 ms
Loss rate: 2.38%
```
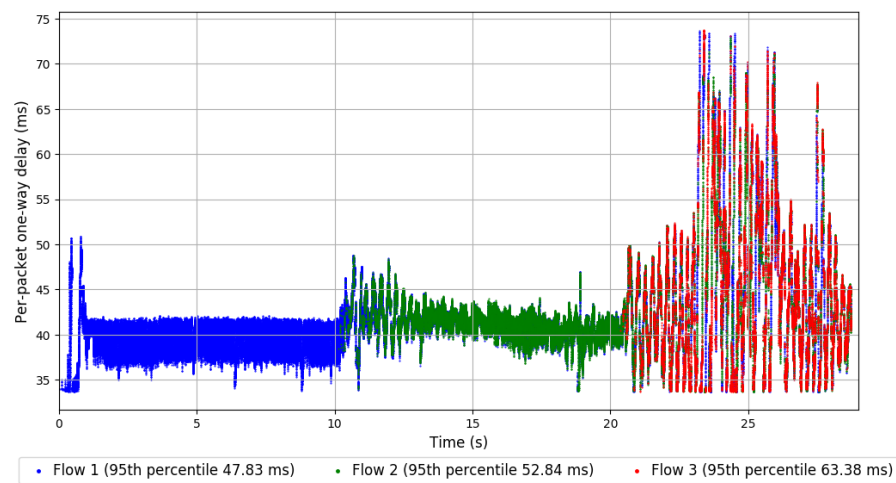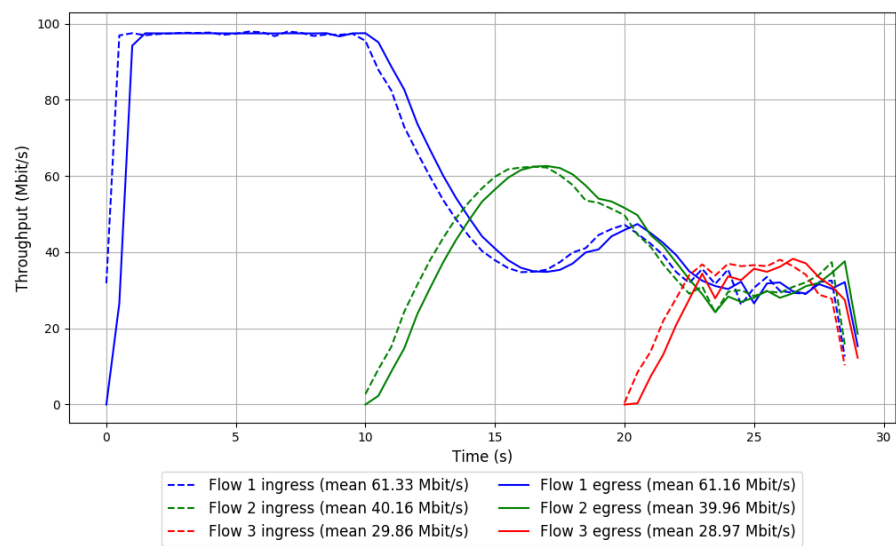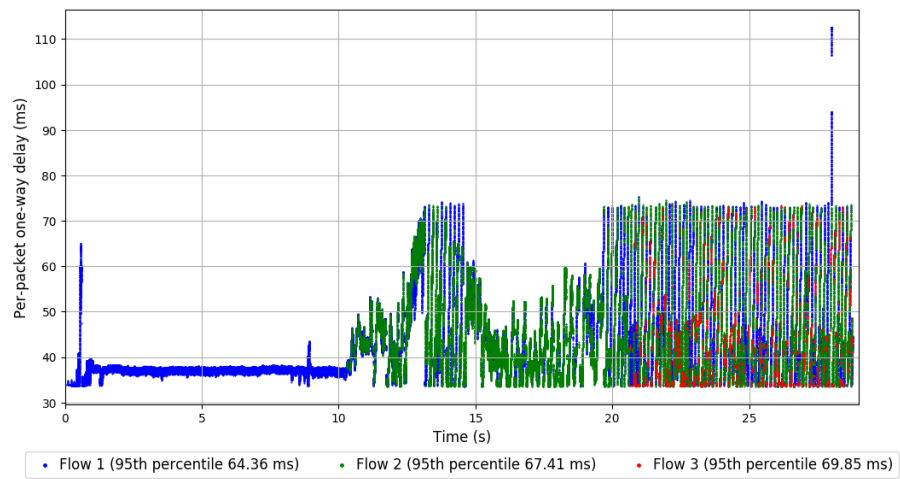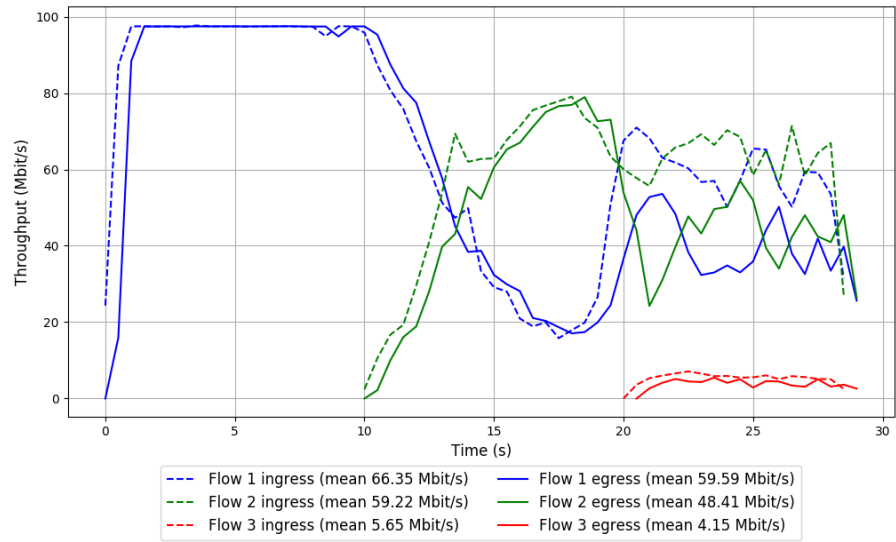
Run 3: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 58.84 Mbit/s)   —— Flow 1 egress (mean 58.70 Mbit/s)
- - - - Flow 2 ingress (mean 43.03 Mbit/s)   —— Flow 2 egress (mean 42.78 Mbit/s)
- - - - Flow 3 ingress (mean 32.40 Mbit/s)   —— Flow 3 egress (mean 31.62 Mbit/s)

- Flow 1 (95th percentile 49.15 ms)   • Flow 2 (95th percentile 53.24 ms)   • Flow 3 (95th percentile 63.20 ms)

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-08-27 02:17:32
End at: 2019-08-27 02:18:02
Local clock offset: -0.992 ms
Remote clock offset: 3.073 ms


# Below is generated by plot.py at 2019-08-27 03:23:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.09 Mbit/s
95th percentile per-packet one-way delay: 56.074 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 51.51 Mbit/s
95th percentile per-packet one-way delay: 51.421 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 51.71 Mbit/s
95th percentile per-packet one-way delay: 55.943 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 34.71 Mbit/s
95th percentile per-packet one-way delay: 63.407 ms
Loss rate: 4.28%
```
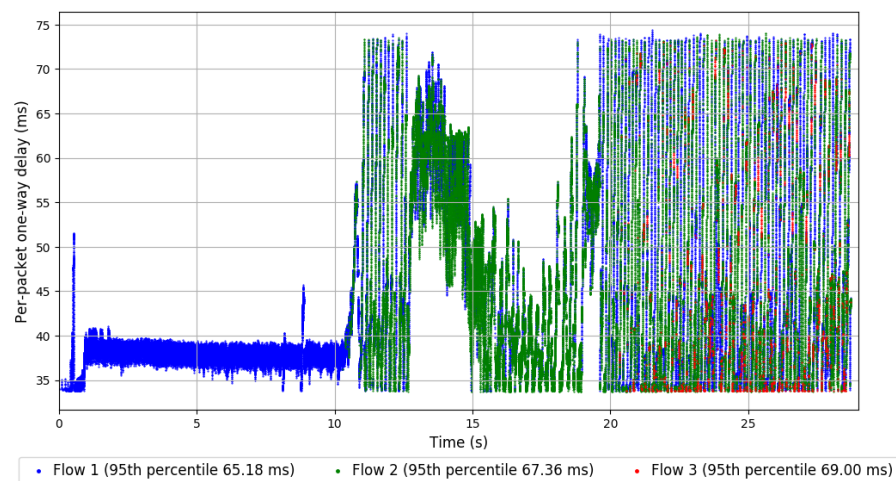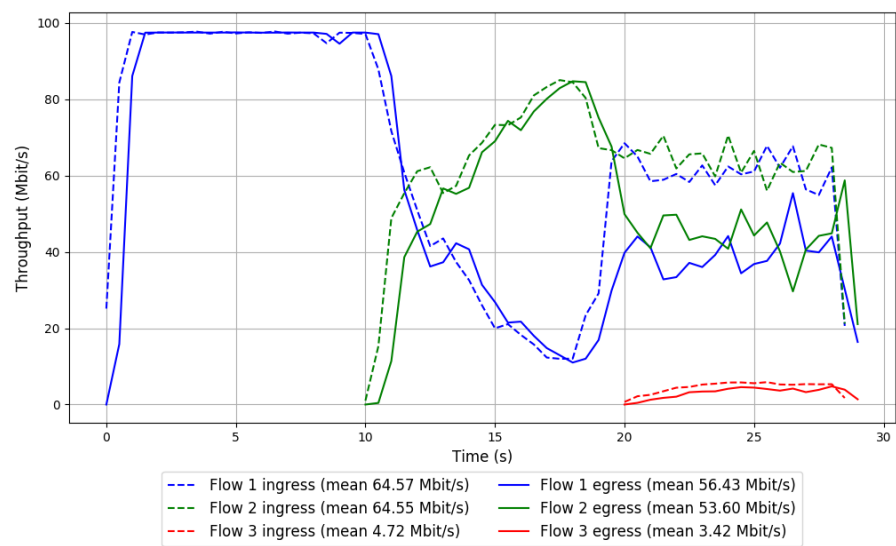
Run 4: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 51.76 Mbit/s)   —— Flow 1 egress (mean 51.51 Mbit/s)
- - - - Flow 2 ingress (mean 52.36 Mbit/s)   —— Flow 2 egress (mean 51.71 Mbit/s)
- - - - Flow 3 ingress (mean 36.18 Mbit/s)   —— Flow 3 egress (mean 34.71 Mbit/s)

- Flow 1 (95th percentile 51.42 ms)   • Flow 2 (95th percentile 55.94 ms)   • Flow 3 (95th percentile 63.41 ms)

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-08-27 03:12:26
End at: 2019-08-27 03:12:56
Local clock offset: -1.313 ms
Remote clock offset: 5.139 ms


# Below is generated by plot.py at 2019-08-27 03:23:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.51 Mbit/s
95th percentile per-packet one-way delay: 52.329 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 61.16 Mbit/s
95th percentile per-packet one-way delay: 47.829 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 39.96 Mbit/s
95th percentile per-packet one-way delay: 52.842 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 28.97 Mbit/s
95th percentile per-packet one-way delay: 63.376 ms
Loss rate: 2.94%
```
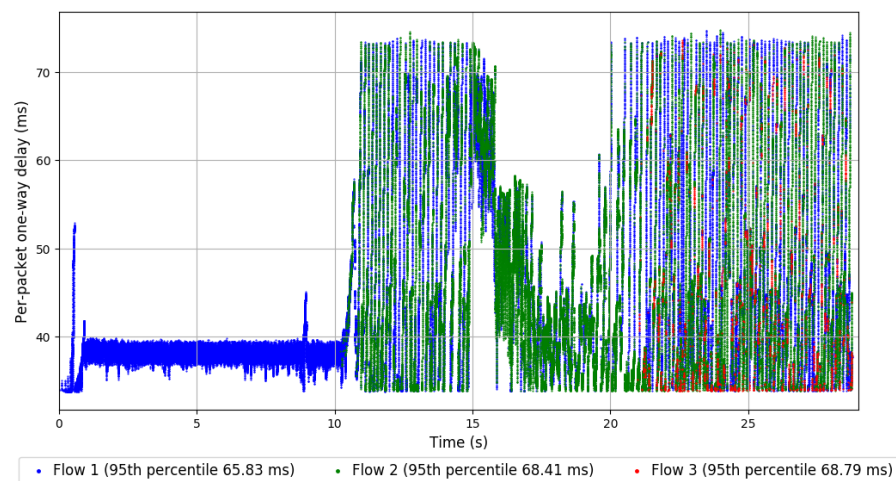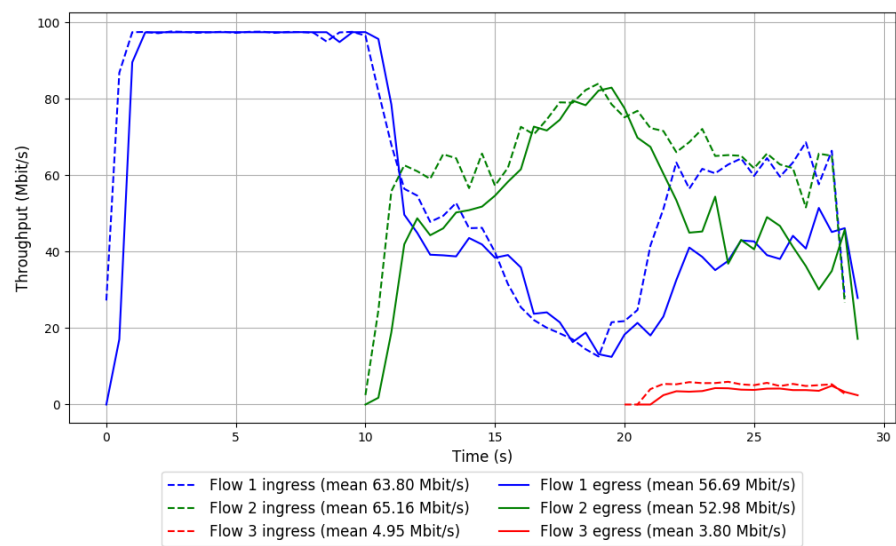
Run 5: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 61.33 Mbit/s) — — — Flow 1 egress (mean 61.16 Mbit/s)
Flow 2 ingress (mean 40.16 Mbit/s) — — — Flow 2 egress (mean 39.96 Mbit/s)
Flow 3 ingress (mean 29.86 Mbit/s) — — — Flow 3 egress (mean 28.97 Mbit/s)

Flow 1 (95th percentile 47.83 ms) • Flow 2 (95th percentile 52.84 ms) • Flow 3 (95th percentile 63.38 ms)

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-08-26 23:43:30
End at: 2019-08-26 23:44:00
Local clock offset: -0.878 ms
Remote clock offset: 4.848 ms

# Below is generated by plot.py at 2019-08-27 03:23:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.03 Mbit/s
95th percentile per-packet one-way delay: 65.792 ms
Loss rate: 13.31%
-- Flow 1:
Average throughput: 59.59 Mbit/s
95th percentile per-packet one-way delay: 64.365 ms
Loss rate: 10.16%
-- Flow 2:
Average throughput: 48.41 Mbit/s
95th percentile per-packet one-way delay: 67.408 ms
Loss rate: 18.22%
-- Flow 3:
Average throughput: 4.15 Mbit/s
95th percentile per-packet one-way delay: 69.852 ms
Loss rate: 26.95%
```
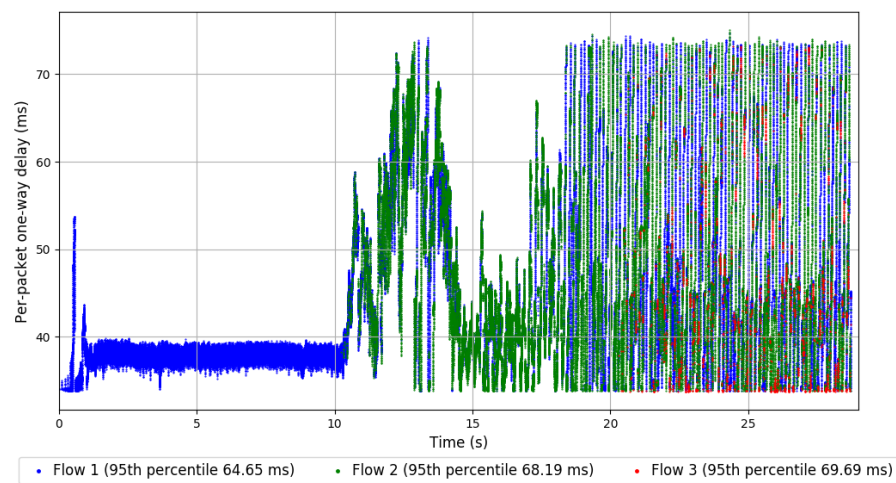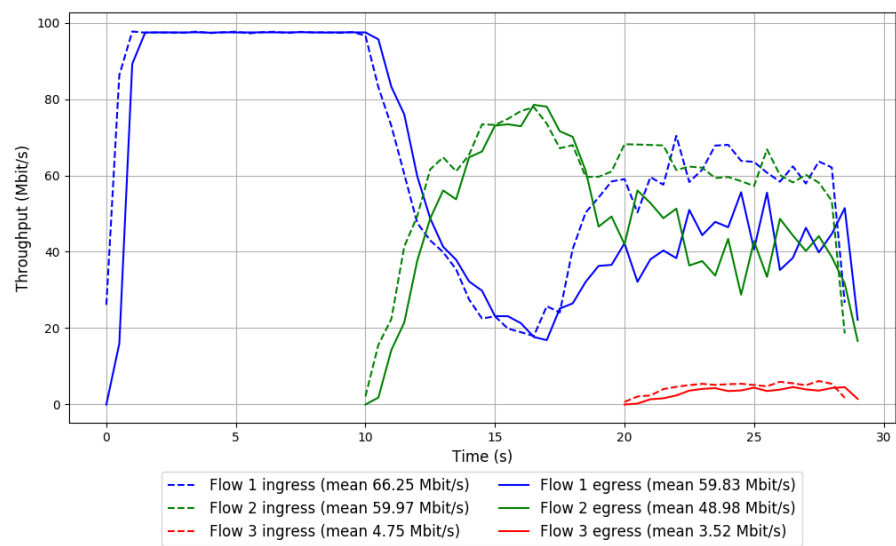
Run 1: Report of Indigo-MusesC5 — Data Link

- - - - Flow 1 ingress (mean 66.35 Mbit/s) —— Flow 1 egress (mean 59.59 Mbit/s)
- - - - Flow 2 ingress (mean 59.22 Mbit/s) —— Flow 2 egress (mean 48.41 Mbit/s)
- - - - Flow 3 ingress (mean 5.65 Mbit/s) —— Flow 3 egress (mean 4.15 Mbit/s)

- Flow 1 (95th percentile 64.36 ms)   • Flow 2 (95th percentile 67.41 ms)   • Flow 3 (95th percentile 69.85 ms)

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-08-27 00:31:10
End at: 2019-08-27 00:31:40
Local clock offset: -1.127 ms
Remote clock offset: 4.51 ms


# Below is generated by plot.py at 2019-08-27 03:23:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.83 Mbit/s
95th percentile per-packet one-way delay: 66.385 ms
Loss rate: 14.46%
-- Flow 1:
Average throughput: 56.43 Mbit/s
95th percentile per-packet one-way delay: 65.179 ms
Loss rate: 12.58%
-- Flow 2:
Average throughput: 53.60 Mbit/s
95th percentile per-packet one-way delay: 67.365 ms
Loss rate: 16.94%
-- Flow 3:
Average throughput: 3.42 Mbit/s
95th percentile per-packet one-way delay: 69.004 ms
Loss rate: 27.56%
```
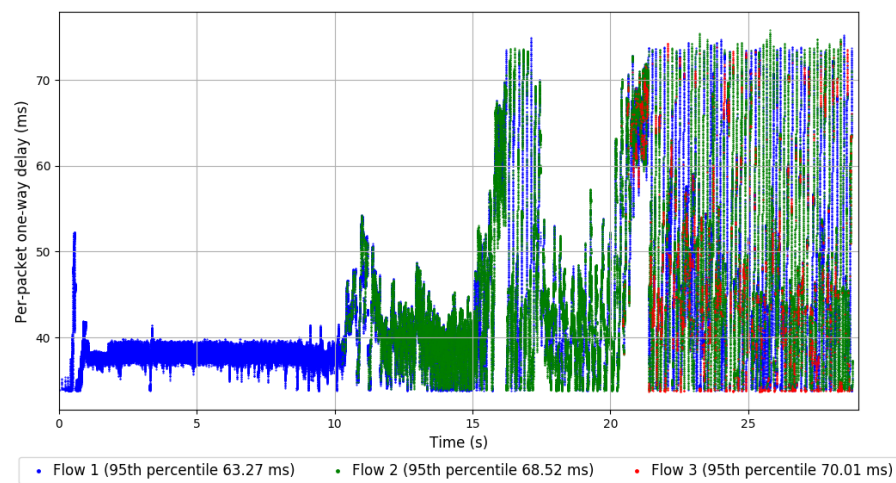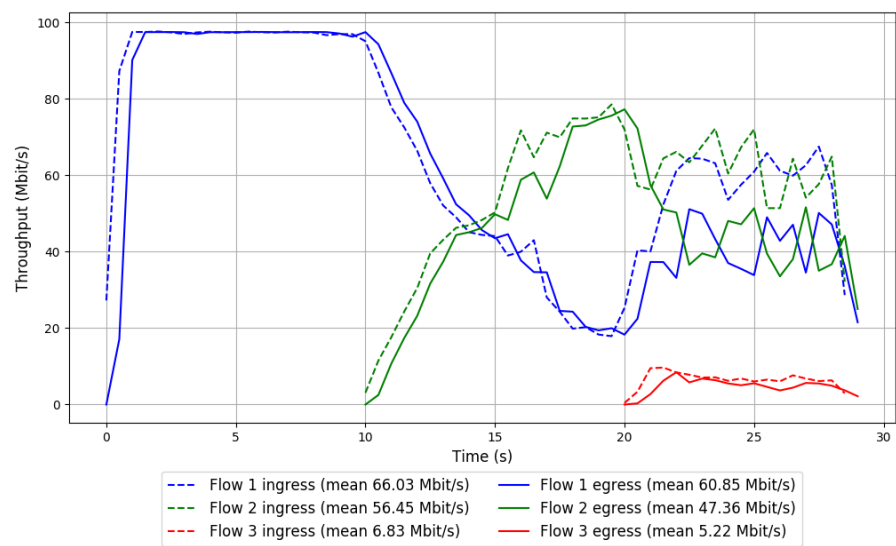
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-08-27 01:24:17
End at: 2019-08-27 01:24:47
Local clock offset: -0.918 ms
Remote clock offset: 5.861 ms


# Below is generated by plot.py at 2019-08-27 03:24:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.94 Mbit/s
95th percentile per-packet one-way delay: 67.358 ms
Loss rate: 14.31%
-- Flow 1:
Average throughput: 56.69 Mbit/s
95th percentile per-packet one-way delay: 65.830 ms
Loss rate: 11.13%
-- Flow 2:
Average throughput: 52.98 Mbit/s
95th percentile per-packet one-way delay: 68.405 ms
Loss rate: 18.67%
-- Flow 3:
Average throughput: 3.80 Mbit/s
95th percentile per-packet one-way delay: 68.792 ms
Loss rate: 27.82%
```
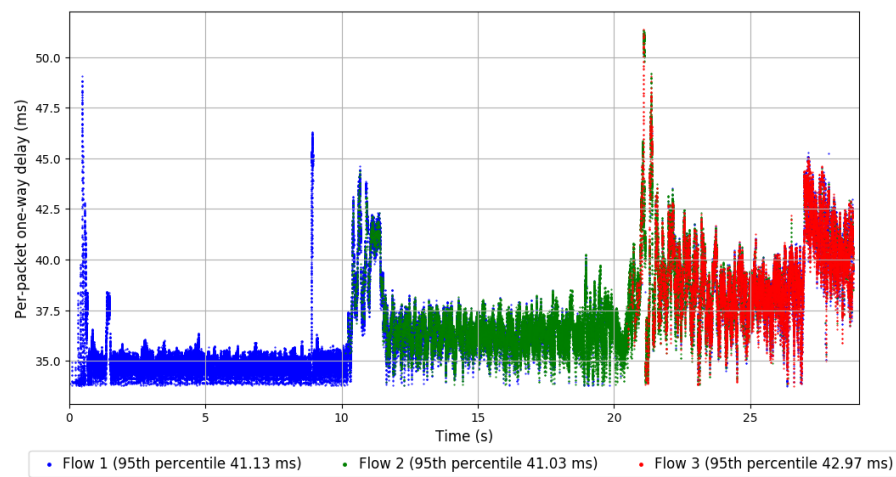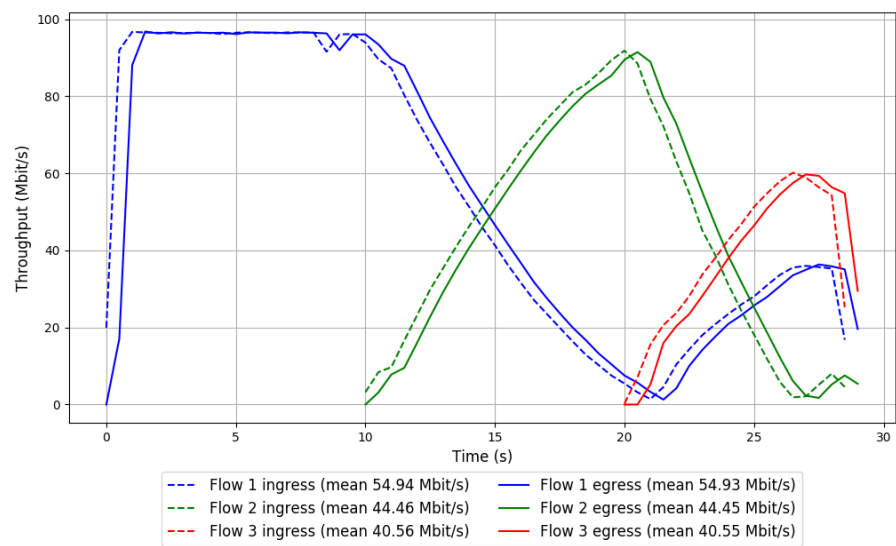
Run 3: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 63.80 Mbit/s) --- Flow 1 egress (mean 56.69 Mbit/s)
Flow 2 ingress (mean 65.16 Mbit/s) --- Flow 2 egress (mean 52.98 Mbit/s)
Flow 3 ingress (mean 4.95 Mbit/s) --- Flow 3 egress (mean 3.80 Mbit/s)

Flow 1 (95th percentile 65.83 ms) Flow 2 (95th percentile 68.41 ms) Flow 3 (95th percentile 68.79 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-08-27 02:11:37
End at: 2019-08-27 02:12:07
Local clock offset: -0.926 ms
Remote clock offset: 3.057 ms


# Below is generated by plot.py at 2019-08-27 03:24:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.41 Mbit/s
95th percentile per-packet one-way delay: 66.559 ms
Loss rate: 13.02%
-- Flow 1:
Average throughput: 59.83 Mbit/s
95th percentile per-packet one-way delay: 64.653 ms
Loss rate: 9.66%
-- Flow 2:
Average throughput: 48.98 Mbit/s
95th percentile per-packet one-way delay: 68.187 ms
Loss rate: 18.31%
-- Flow 3:
Average throughput: 3.52 Mbit/s
95th percentile per-packet one-way delay: 69.693 ms
Loss rate: 25.93%
```
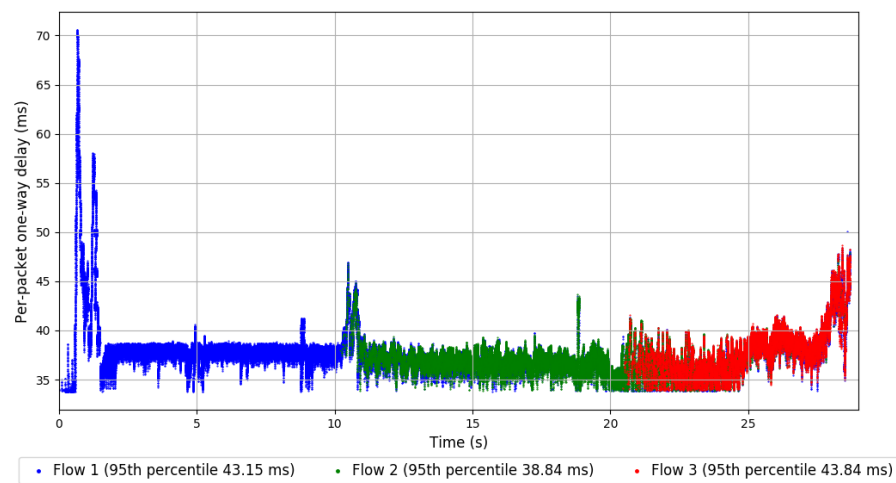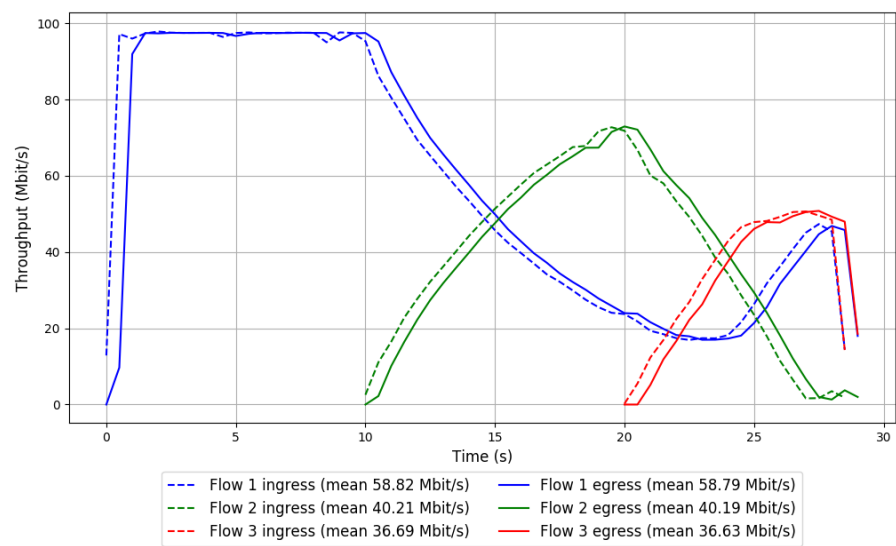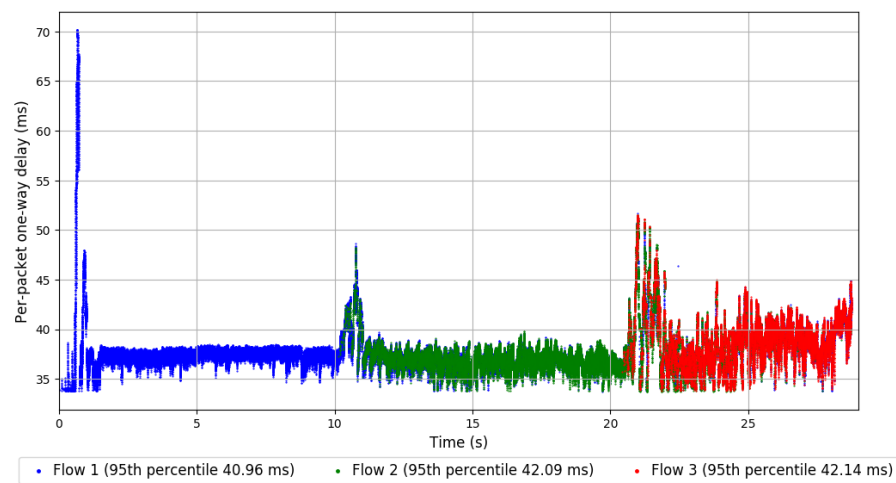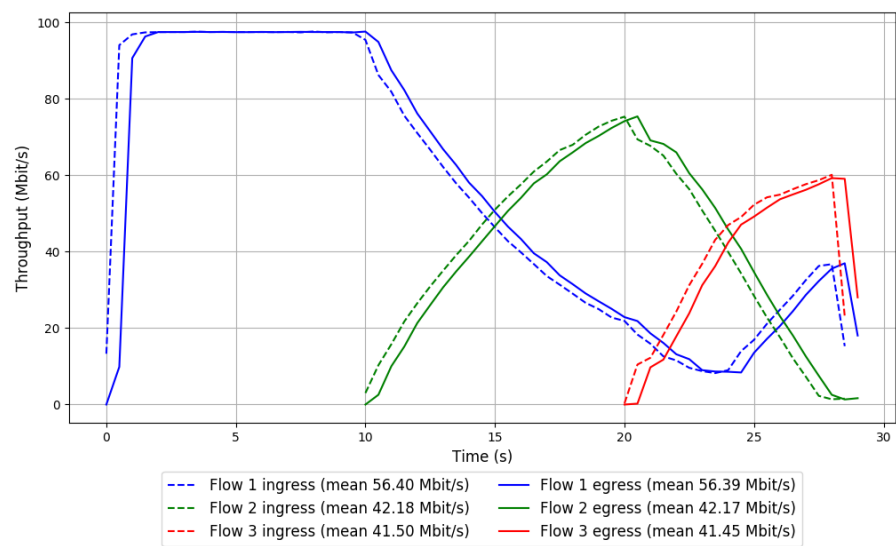
Run 4: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 66.25 Mbit/s)   —— Flow 1 egress (mean 59.83 Mbit/s)
- - - Flow 2 ingress (mean 59.97 Mbit/s)   —— Flow 2 egress (mean 48.98 Mbit/s)
- - - Flow 3 ingress (mean 4.75 Mbit/s)   —— Flow 3 egress (mean 3.52 Mbit/s)

• Flow 1 (95th percentile 64.65 ms)   • Flow 2 (95th percentile 68.19 ms)   • Flow 3 (95th percentile 69.69 ms)

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-08-27 03:03:25
End at: 2019-08-27 03:03:55
Local clock offset: -1.328 ms
Remote clock offset: 4.251 ms


# Below is generated by plot.py at 2019-08-27 03:24:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.01 Mbit/s
95th percentile per-packet one-way delay: 66.314 ms
Loss rate: 11.03%
-- Flow 1:
Average throughput: 60.85 Mbit/s
95th percentile per-packet one-way delay: 63.267 ms
Loss rate: 7.84%
-- Flow 2:
Average throughput: 47.36 Mbit/s
95th percentile per-packet one-way delay: 68.518 ms
Loss rate: 16.10%
-- Flow 3:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 70.011 ms
Loss rate: 23.78%
```
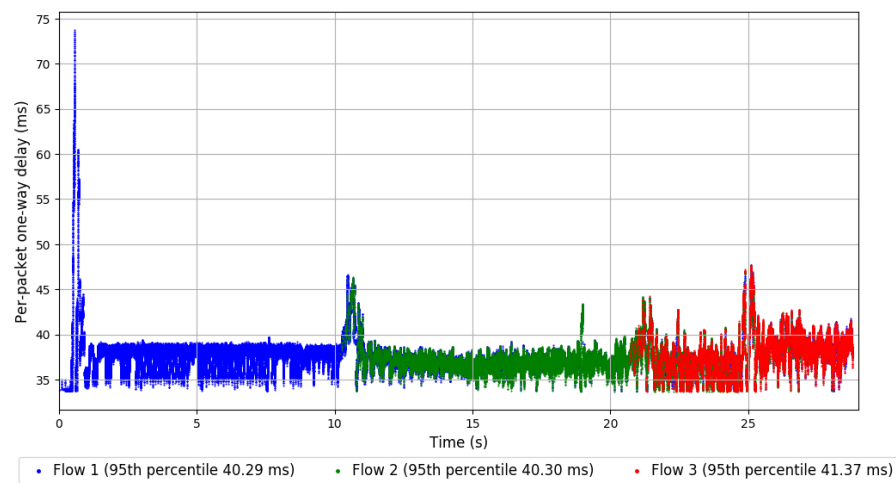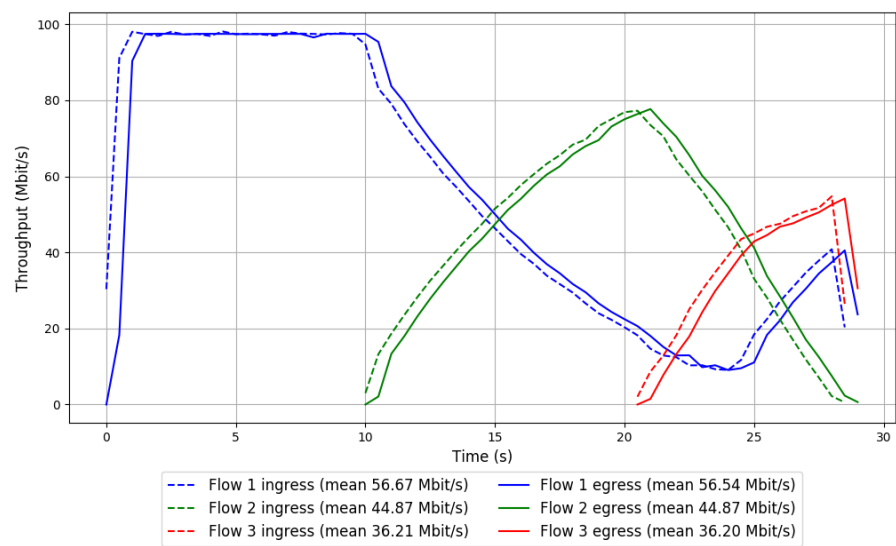
Run 5: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 66.03 Mbit/s) --- Flow 1 egress (mean 60.85 Mbit/s)
Flow 2 ingress (mean 56.45 Mbit/s) --- Flow 2 egress (mean 47.36 Mbit/s)
Flow 3 ingress (mean 6.83 Mbit/s) --- Flow 3 egress (mean 5.22 Mbit/s)

Flow 1 (95th percentile 63.27 ms)   Flow 2 (95th percentile 68.52 ms)   Flow 3 (95th percentile 70.01 ms)

84

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-08-26 23:29:33
End at: 2019-08-26 23:30:03
Local clock offset: -0.709 ms
Remote clock offset: 4.37 ms


# Below is generated by plot.py at 2019-08-27 03:24:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.49 Mbit/s
95th percentile per-packet one-way delay: 41.485 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 54.93 Mbit/s
95th percentile per-packet one-way delay: 41.126 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 44.45 Mbit/s
95th percentile per-packet one-way delay: 41.032 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 40.55 Mbit/s
95th percentile per-packet one-way delay: 42.966 ms
Loss rate: 0.00%
```
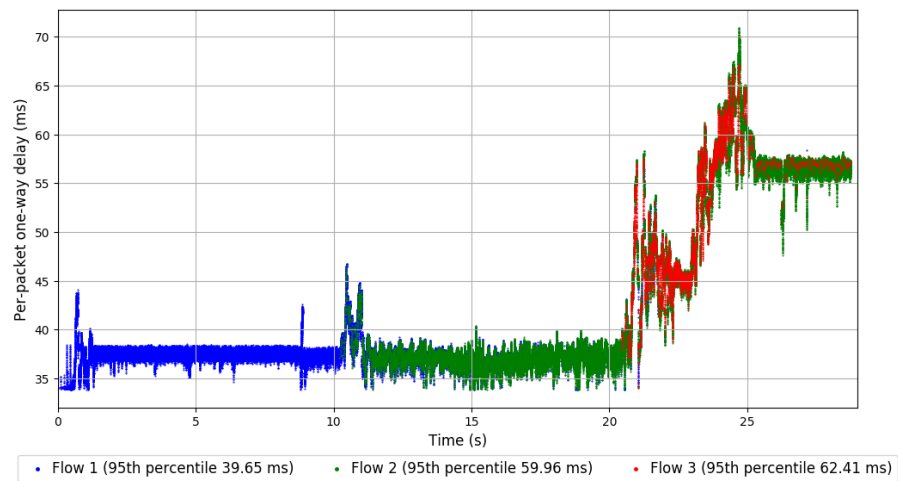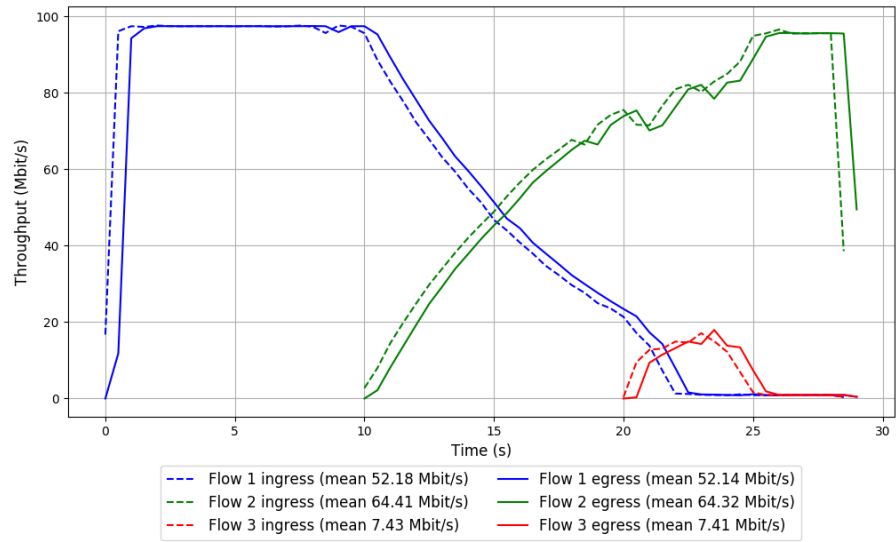
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-08-27 00:15:47
End at: 2019-08-27 00:16:18
Local clock offset: -1.053 ms
Remote clock offset: 6.14 ms


# Below is generated by plot.py at 2019-08-27 03:24:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 42.099 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 58.79 Mbit/s
95th percentile per-packet one-way delay: 43.146 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 40.19 Mbit/s
95th percentile per-packet one-way delay: 38.837 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.63 Mbit/s
95th percentile per-packet one-way delay: 43.835 ms
Loss rate: 0.05%
```
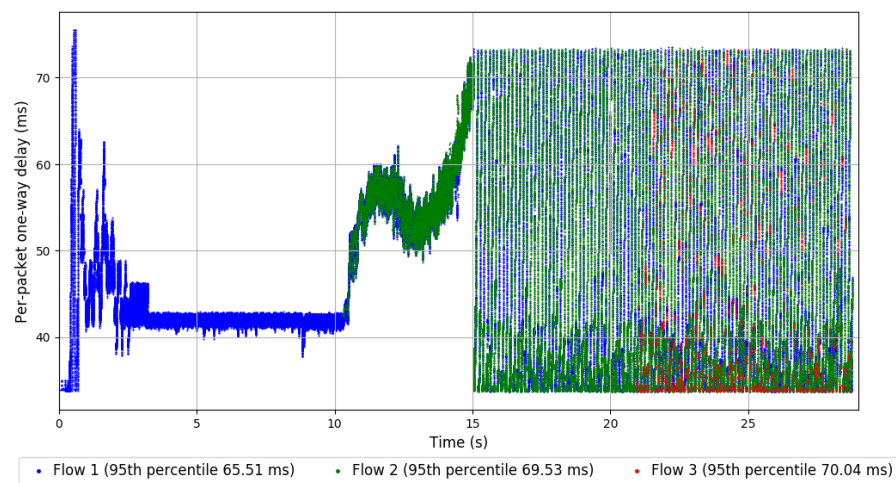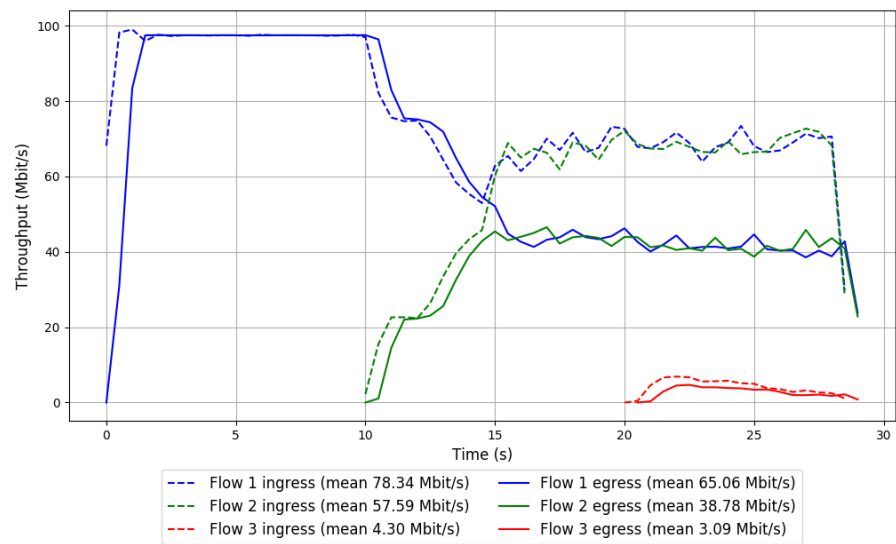
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-08-27 01:08:21
End at: 2019-08-27 01:08:51
Local clock offset: -0.982 ms
Remote clock offset: 5.824 ms


# Below is generated by plot.py at 2019-08-27 03:24:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.74 Mbit/s
95th percentile per-packet one-way delay: 41.506 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.39 Mbit/s
95th percentile per-packet one-way delay: 40.963 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.17 Mbit/s
95th percentile per-packet one-way delay: 42.090 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 41.45 Mbit/s
95th percentile per-packet one-way delay: 42.136 ms
Loss rate: 0.03%
```
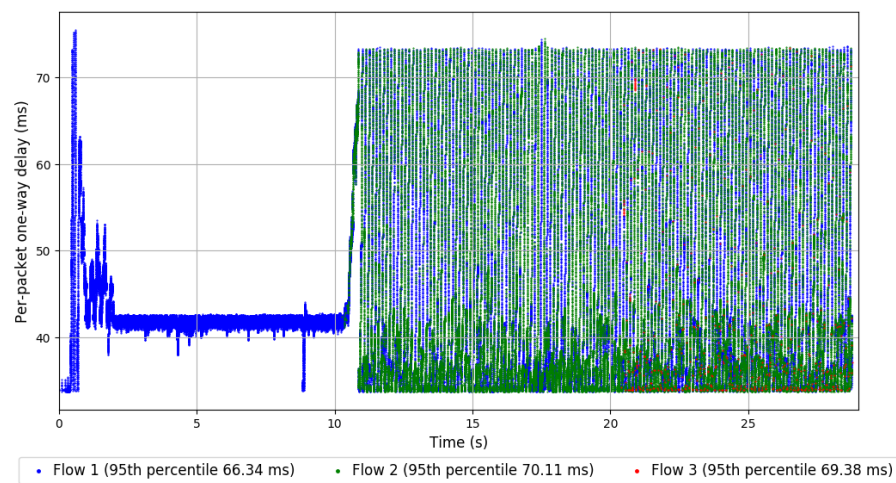
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-08-27 01:58:36
End at: 2019-08-27 01:59:06
Local clock offset: -0.902 ms
Remote clock offset: 3.042 ms


# Below is generated by plot.py at 2019-08-27 03:24:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.74 Mbit/s
95th percentile per-packet one-way delay: 40.523 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 40.293 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 44.87 Mbit/s
95th percentile per-packet one-way delay: 40.296 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.20 Mbit/s
95th percentile per-packet one-way delay: 41.372 ms
Loss rate: 0.00%
```
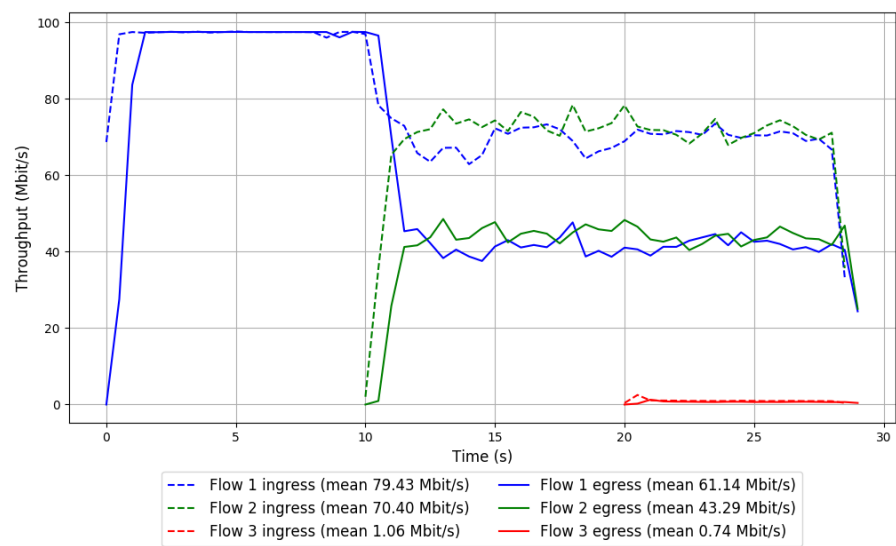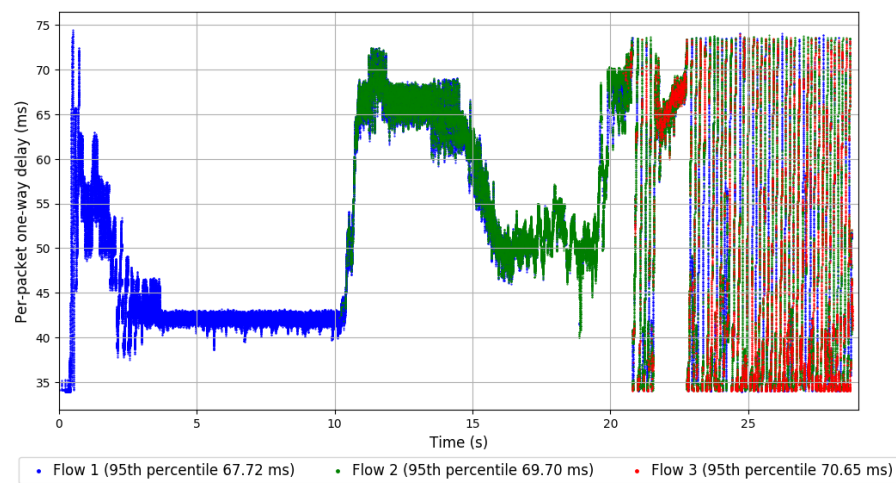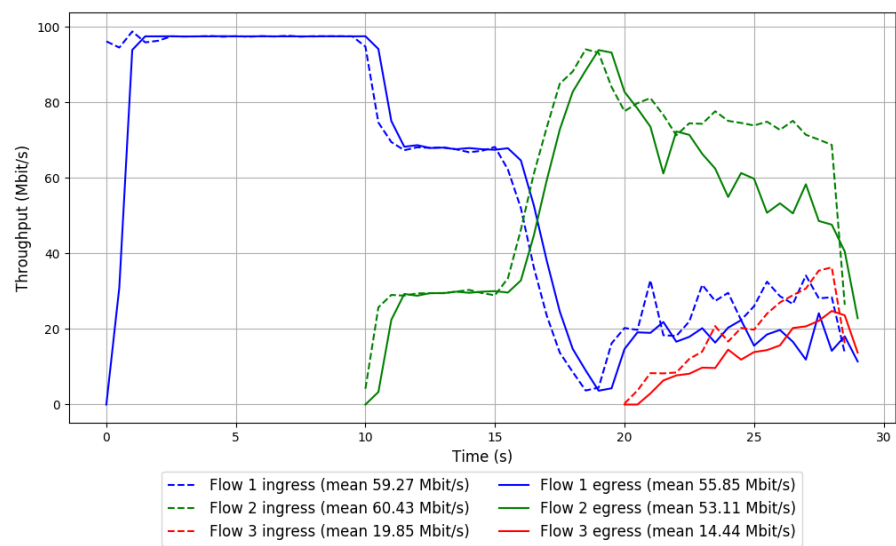
Run 4: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 56.67 Mbit/s) --- Flow 1 egress (mean 56.54 Mbit/s)
Flow 2 ingress (mean 44.87 Mbit/s) --- Flow 2 egress (mean 44.87 Mbit/s)
Flow 3 ingress (mean 36.21 Mbit/s) --- Flow 3 egress (mean 36.20 Mbit/s)

Flow 1 (95th percentile 40.29 ms) Flow 2 (95th percentile 40.30 ms) Flow 3 (95th percentile 41.37 ms)

92

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-08-27 02:45:50
End at: 2019-08-27 02:46:20
Local clock offset: -1.267 ms
Remote clock offset: 4.269 ms


# Below is generated by plot.py at 2019-08-27 03:24:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 57.586 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 52.14 Mbit/s
95th percentile per-packet one-way delay: 39.646 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 64.32 Mbit/s
95th percentile per-packet one-way delay: 59.961 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 7.41 Mbit/s
95th percentile per-packet one-way delay: 62.409 ms
Loss rate: 0.00%
```
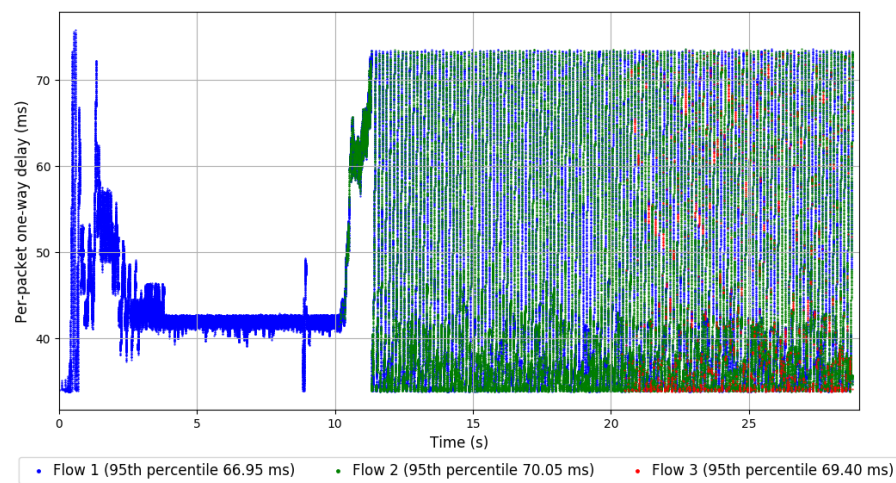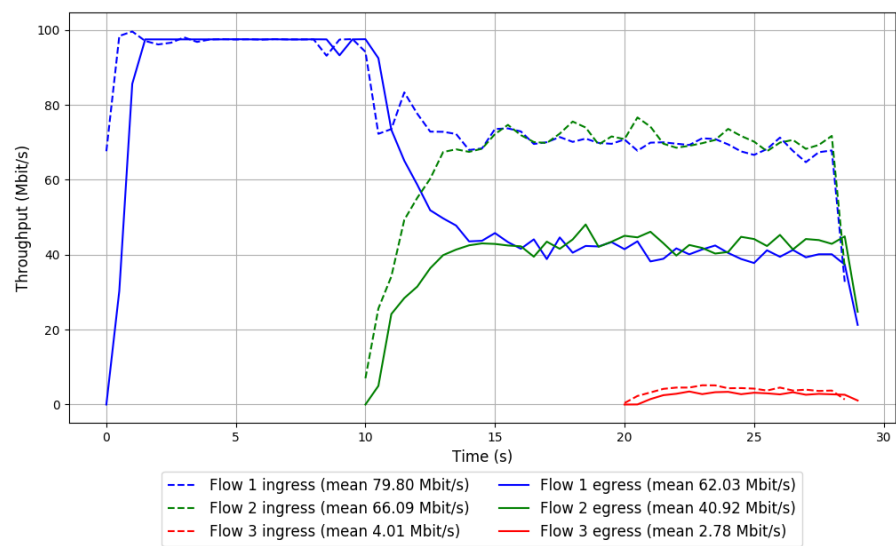
Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-08-26 23:45:17
End at: 2019-08-26 23:45:47
Local clock offset: -0.881 ms
Remote clock offset: 5.2 ms

# Below is generated by plot.py at 2019-08-27 03:25:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.88 Mbit/s
95th percentile per-packet one-way delay: 67.568 ms
Loss rate: 22.08%
-- Flow 1:
Average throughput: 65.06 Mbit/s
95th percentile per-packet one-way delay: 65.511 ms
Loss rate: 16.92%
-- Flow 2:
Average throughput: 38.78 Mbit/s
95th percentile per-packet one-way delay: 69.530 ms
Loss rate: 32.64%
-- Flow 3:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 70.043 ms
Loss rate: 32.44%
```
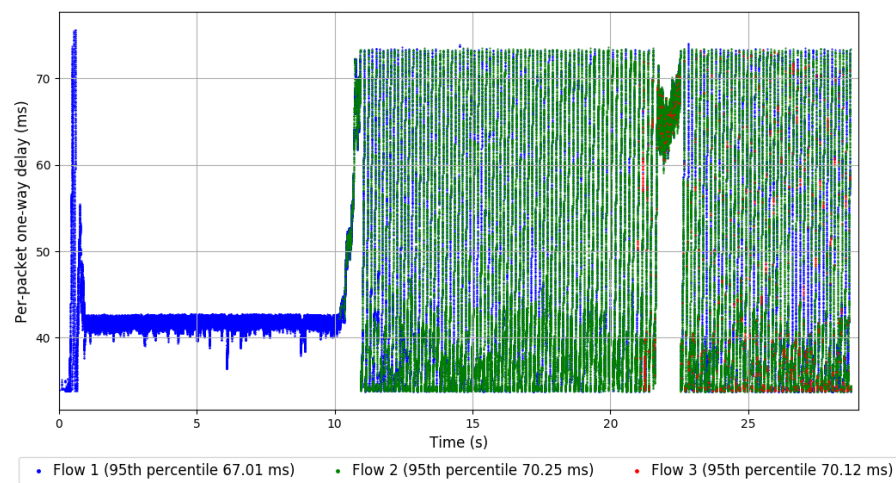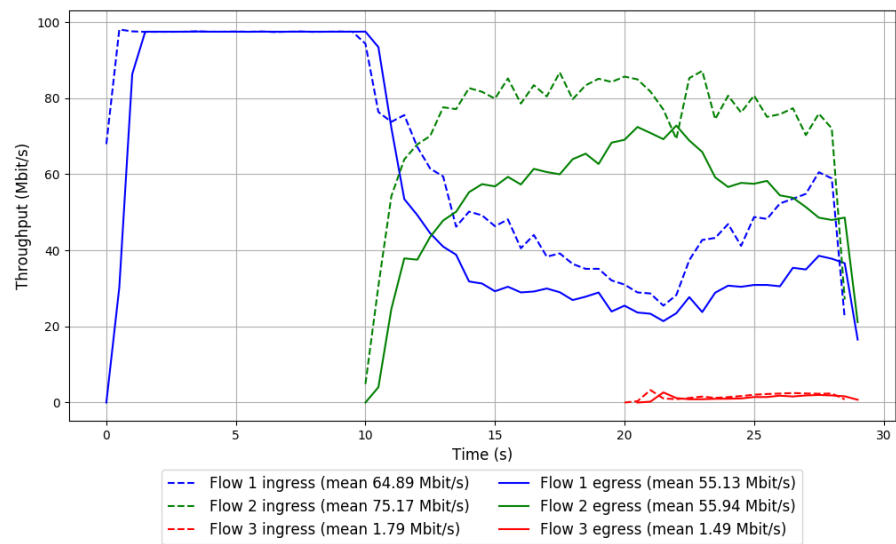
Run 1: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 78.34 Mbit/s)   Flow 1 egress (mean 65.06 Mbit/s)
Flow 2 ingress (mean 57.59 Mbit/s)   Flow 2 egress (mean 38.78 Mbit/s)
Flow 3 ingress (mean 4.30 Mbit/s)   Flow 3 egress (mean 3.09 Mbit/s)

Flow 1 (95th percentile 65.51 ms)   Flow 2 (95th percentile 69.53 ms)   Flow 3 (95th percentile 70.04 ms)

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-08-27 00:33:02
End at: 2019-08-27 00:33:32
Local clock offset: -1.14 ms
Remote clock offset: 4.453 ms


# Below is generated by plot.py at 2019-08-27 03:25:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.21 Mbit/s
95th percentile per-packet one-way delay: 68.193 ms
Loss rate: 28.65%
-- Flow 1:
Average throughput: 61.14 Mbit/s
95th percentile per-packet one-way delay: 66.339 ms
Loss rate: 23.02%
-- Flow 2:
Average throughput: 43.29 Mbit/s
95th percentile per-packet one-way delay: 70.110 ms
Loss rate: 38.52%
-- Flow 3:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 69.380 ms
Loss rate: 30.30%
```

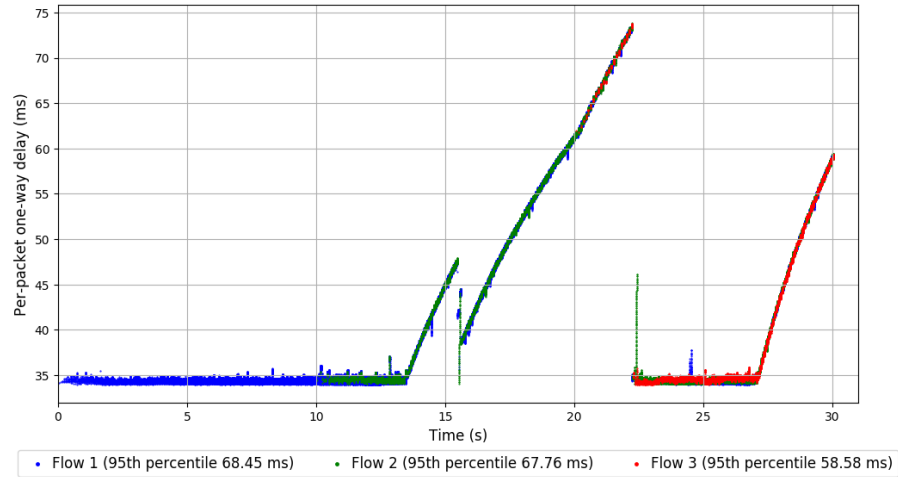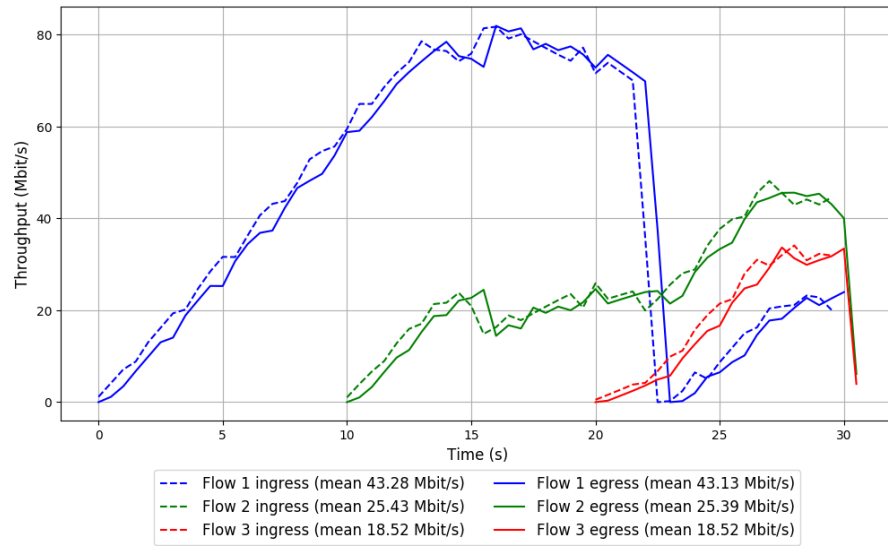Run 2: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 79.43 Mbit/s) —— Flow 1 egress (mean 61.14 Mbit/s)
- - - Flow 2 ingress (mean 70.40 Mbit/s) —— Flow 2 egress (mean 43.29 Mbit/s)
- - - Flow 3 ingress (mean 1.06 Mbit/s) —— Flow 3 egress (mean 0.74 Mbit/s)

• Flow 1 (95th percentile 66.34 ms)　　• Flow 2 (95th percentile 70.11 ms)　　• Flow 3 (95th percentile 69.38 ms)

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-08-27 01:27:13
End at: 2019-08-27 01:27:43
Local clock offset: -0.925 ms
Remote clock offset: 5.51 ms


# Below is generated by plot.py at 2019-08-27 03:25:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.41 Mbit/s
95th percentile per-packet one-way delay: 68.851 ms
Loss rate: 9.33%
-- Flow 1:
Average throughput: 55.85 Mbit/s
95th percentile per-packet one-way delay: 67.724 ms
Loss rate: 5.72%
-- Flow 2:
Average throughput: 53.11 Mbit/s
95th percentile per-packet one-way delay: 69.699 ms
Loss rate: 12.11%
-- Flow 3:
Average throughput: 14.44 Mbit/s
95th percentile per-packet one-way delay: 70.650 ms
Loss rate: 27.49%
```
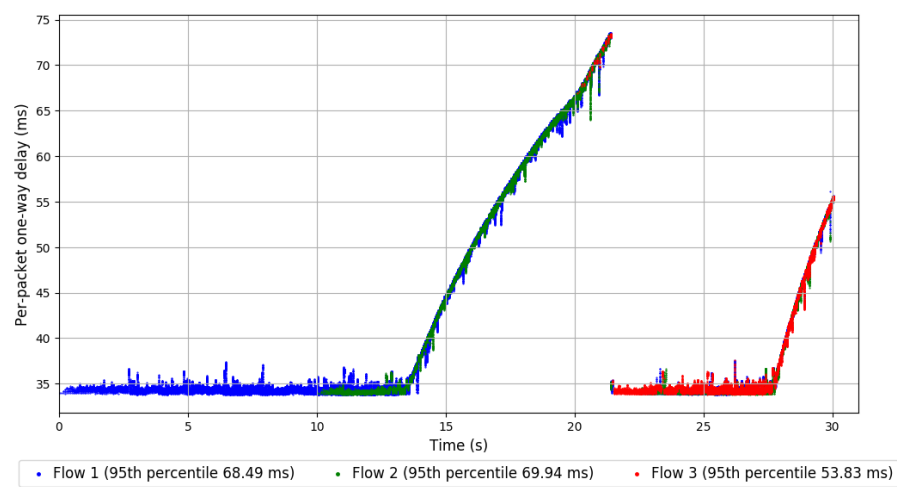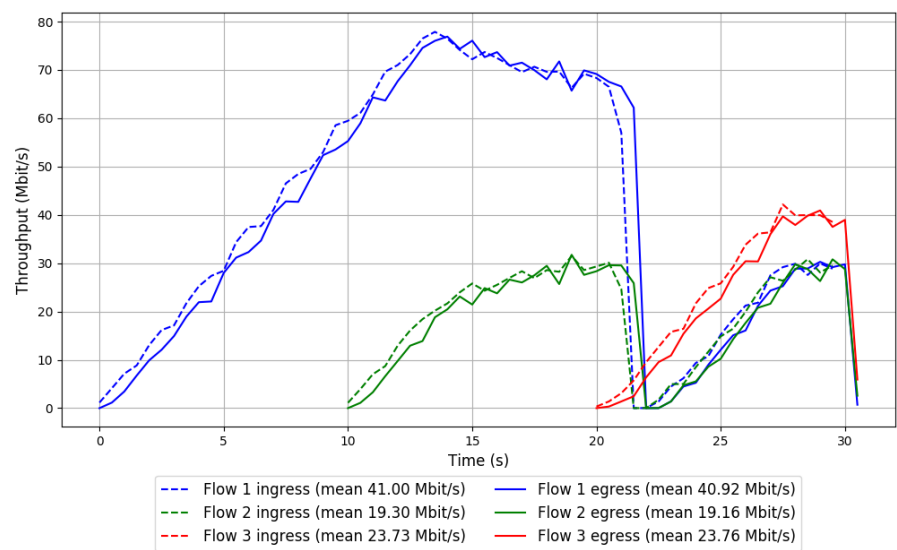
Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-08-27 02:13:31
End at: 2019-08-27 02:14:01
Local clock offset: -0.963 ms
Remote clock offset: 3.126 ms


# Below is generated by plot.py at 2019-08-27 03:25:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.36 Mbit/s
95th percentile per-packet one-way delay: 68.347 ms
Loss rate: 27.83%
-- Flow 1:
Average throughput: 62.03 Mbit/s
95th percentile per-packet one-way delay: 66.955 ms
Loss rate: 22.27%
-- Flow 2:
Average throughput: 40.92 Mbit/s
95th percentile per-packet one-way delay: 70.046 ms
Loss rate: 38.10%
-- Flow 3:
Average throughput: 2.78 Mbit/s
95th percentile per-packet one-way delay: 69.400 ms
Loss rate: 30.61%
```
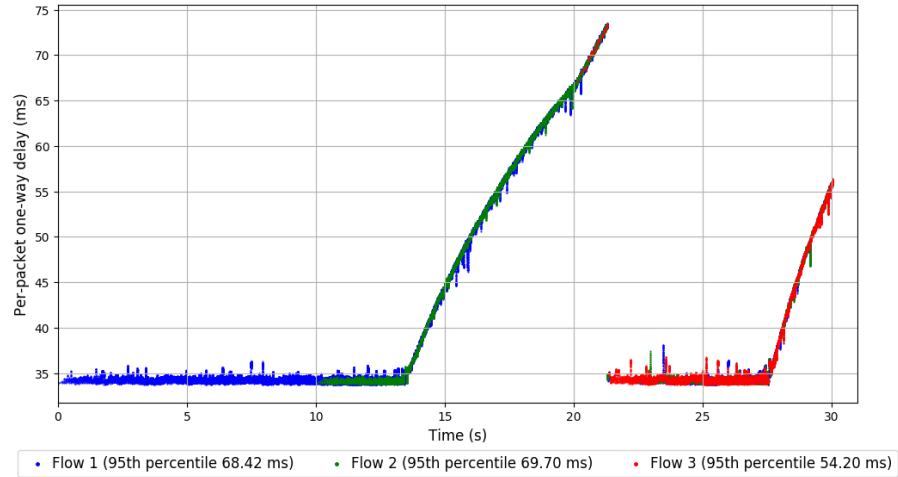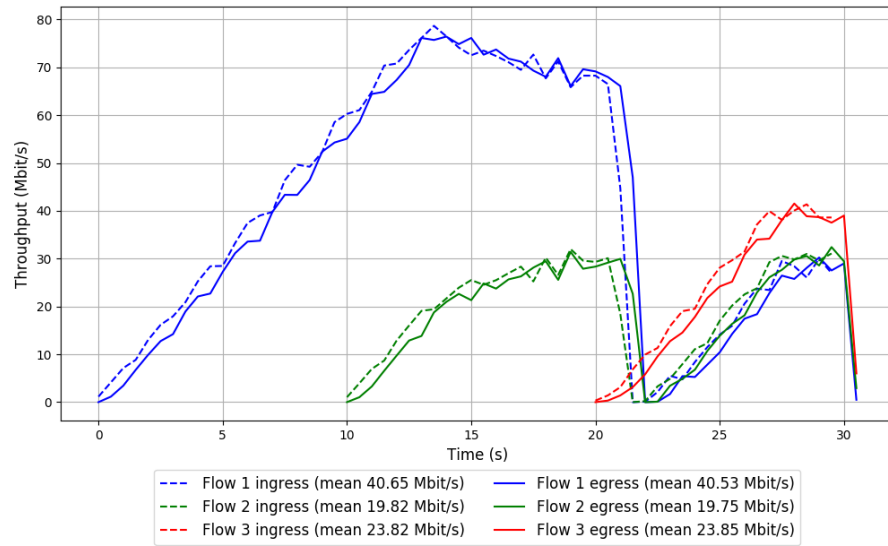
Run 4: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 79.80 Mbit/s) — Flow 1 egress (mean 62.03 Mbit/s)
Flow 2 ingress (mean 66.09 Mbit/s) — Flow 2 egress (mean 40.92 Mbit/s)
Flow 3 ingress (mean 4.01 Mbit/s) — Flow 3 egress (mean 2.78 Mbit/s)

Flow 1 (95th percentile 66.95 ms)   Flow 2 (95th percentile 70.05 ms)   Flow 3 (95th percentile 69.40 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-08-27 03:06:17
End at: 2019-08-27 03:06:47
Local clock offset: -1.359 ms
Remote clock offset: 4.345 ms


# Below is generated by plot.py at 2019-08-27 03:25:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.76 Mbit/s
95th percentile per-packet one-way delay: 68.889 ms
Loss rate: 19.59%
-- Flow 1:
Average throughput: 55.13 Mbit/s
95th percentile per-packet one-way delay: 67.013 ms
Loss rate: 15.05%
-- Flow 2:
Average throughput: 55.94 Mbit/s
95th percentile per-packet one-way delay: 70.248 ms
Loss rate: 25.61%
-- Flow 3:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 70.117 ms
Loss rate: 21.92%
```
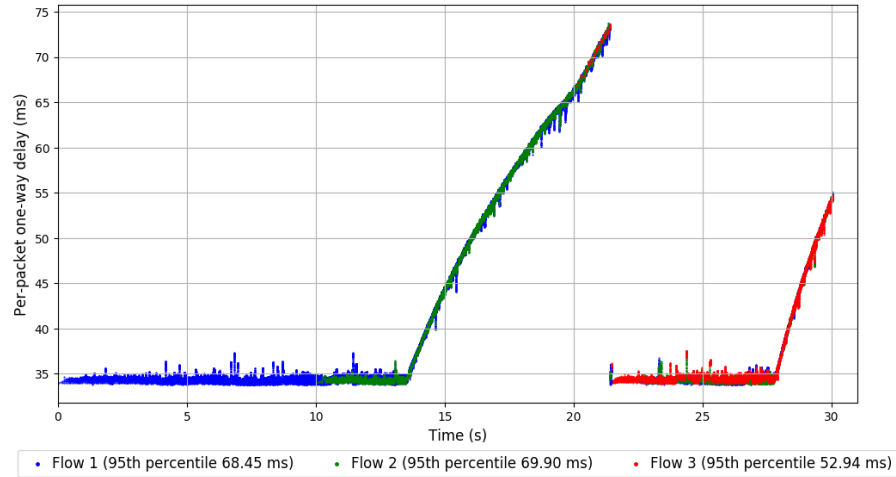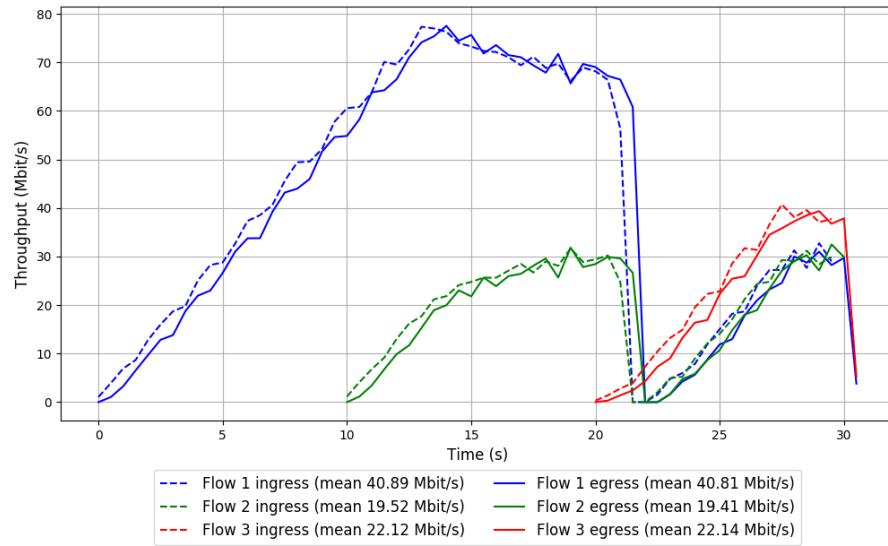
Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-08-26 23:39:29
End at: 2019-08-26 23:39:59
Local clock offset: -0.832 ms
Remote clock offset: 4.706 ms


# Below is generated by plot.py at 2019-08-27 03:25:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.09 Mbit/s
95th percentile per-packet one-way delay: 67.960 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 43.13 Mbit/s
95th percentile per-packet one-way delay: 68.452 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 25.39 Mbit/s
95th percentile per-packet one-way delay: 67.758 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 18.52 Mbit/s
95th percentile per-packet one-way delay: 58.584 ms
Loss rate: 0.03%
```
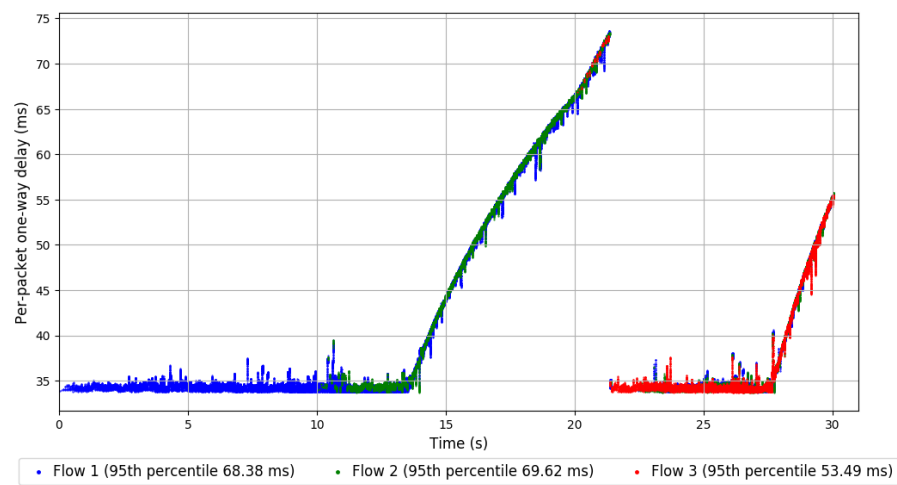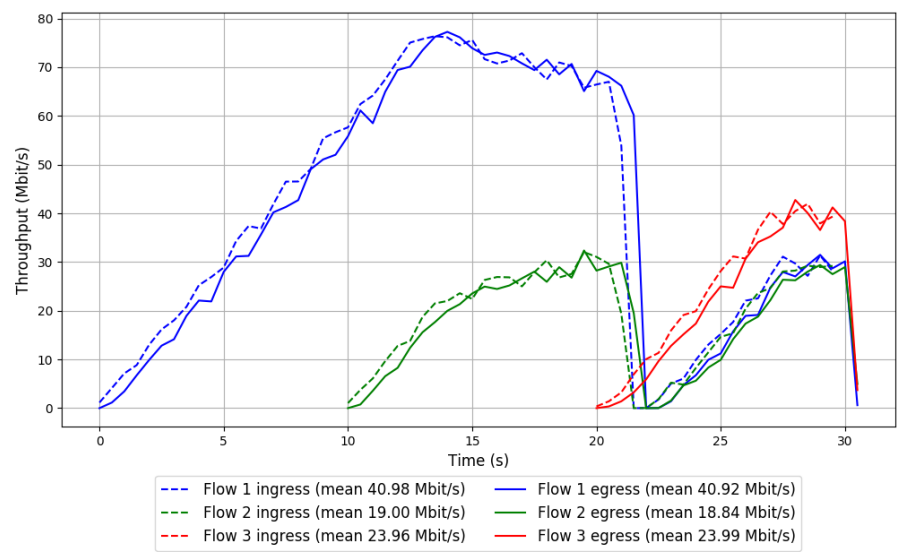
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-08-27 00:26:38
End at: 2019-08-27 00:27:08
Local clock offset: -1.118 ms
Remote clock offset: 4.917 ms


# Below is generated by plot.py at 2019-08-27 03:25:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.56 Mbit/s
95th percentile per-packet one-way delay: 68.288 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 40.92 Mbit/s
95th percentile per-packet one-way delay: 68.486 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 19.16 Mbit/s
95th percentile per-packet one-way delay: 69.944 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 23.76 Mbit/s
95th percentile per-packet one-way delay: 53.834 ms
Loss rate: 0.01%
```
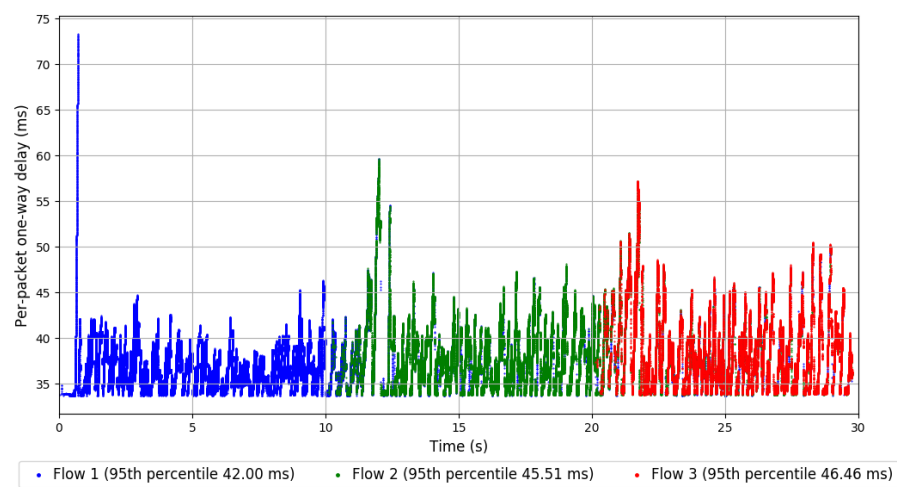
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-08-27 01:19:29
End at: 2019-08-27 01:19:59
Local clock offset: -0.928 ms
Remote clock offset: 6.104 ms


# Below is generated by plot.py at 2019-08-27 03:25:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.58 Mbit/s
95th percentile per-packet one-way delay: 68.241 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 40.53 Mbit/s
95th percentile per-packet one-way delay: 68.418 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 19.75 Mbit/s
95th percentile per-packet one-way delay: 69.699 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 23.85 Mbit/s
95th percentile per-packet one-way delay: 54.201 ms
Loss rate: 0.00%
```
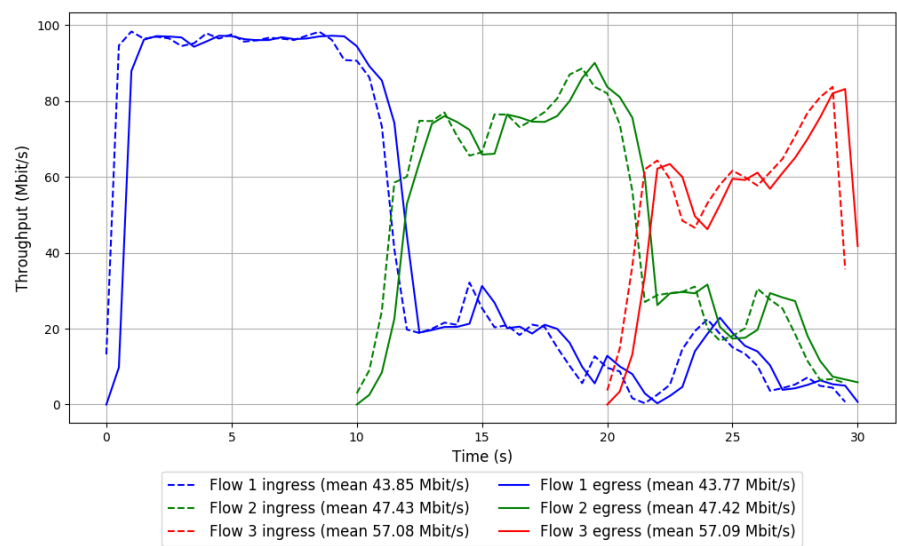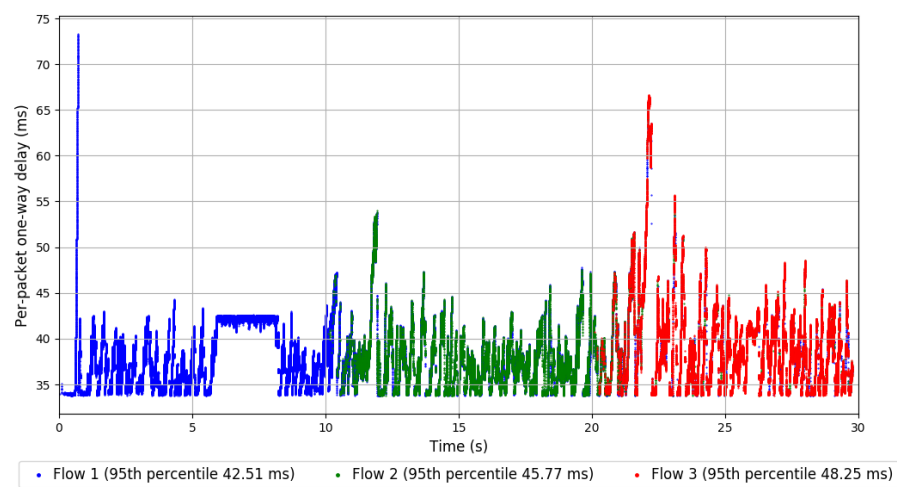
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-08-27 02:07:59
End at: 2019-08-27 02:08:29
Local clock offset: -0.918 ms
Remote clock offset: 3.124 ms


# Below is generated by plot.py at 2019-08-27 03:26:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.04 Mbit/s
95th percentile per-packet one-way delay: 68.306 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 40.81 Mbit/s
95th percentile per-packet one-way delay: 68.451 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 19.41 Mbit/s
95th percentile per-packet one-way delay: 69.904 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 22.14 Mbit/s
95th percentile per-packet one-way delay: 52.943 ms
Loss rate: 0.01%
```
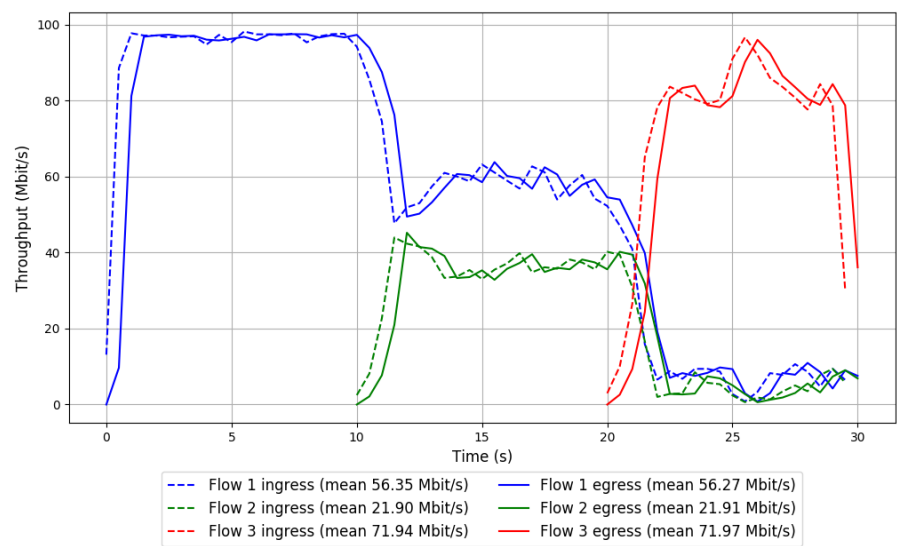
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-08-27 02:57:36
End at: 2019-08-27 02:58:06
Local clock offset: -1.324 ms
Remote clock offset: 4.189 ms


# Below is generated by plot.py at 2019-08-27 03:26:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.42 Mbit/s
95th percentile per-packet one-way delay: 68.251 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 40.92 Mbit/s
95th percentile per-packet one-way delay: 68.384 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 18.84 Mbit/s
95th percentile per-packet one-way delay: 69.620 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 23.99 Mbit/s
95th percentile per-packet one-way delay: 53.488 ms
Loss rate: 0.00%
```
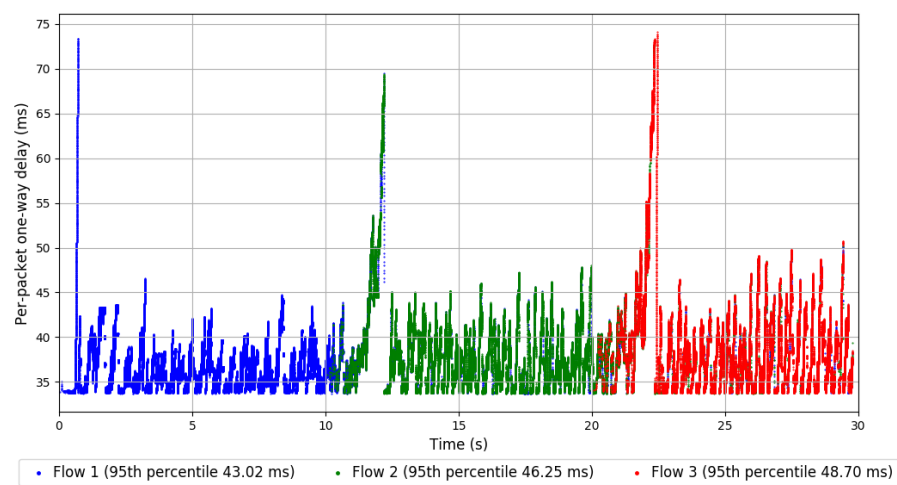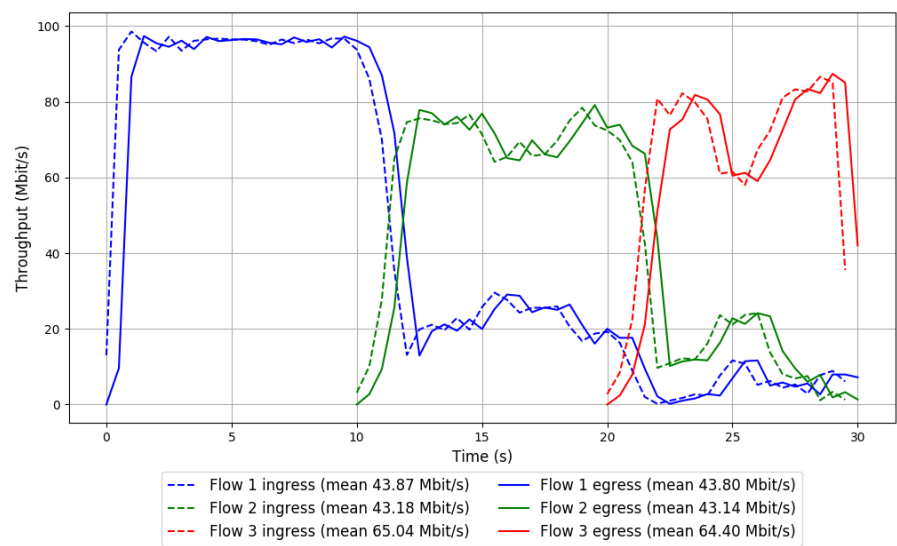
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-08-26 23:11:48
End at: 2019-08-26 23:12:18
Local clock offset: -0.56 ms
Remote clock offset: 4.972 ms


# Below is generated by plot.py at 2019-08-27 03:26:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.68 Mbit/s
95th percentile per-packet one-way delay: 44.691 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 43.77 Mbit/s
95th percentile per-packet one-way delay: 42.003 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 47.42 Mbit/s
95th percentile per-packet one-way delay: 45.507 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 57.09 Mbit/s
95th percentile per-packet one-way delay: 46.457 ms
Loss rate: 0.00%
```
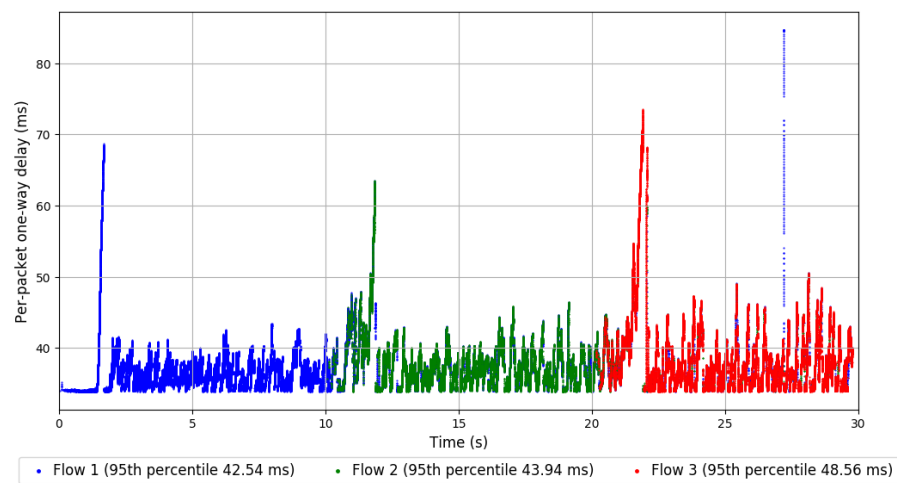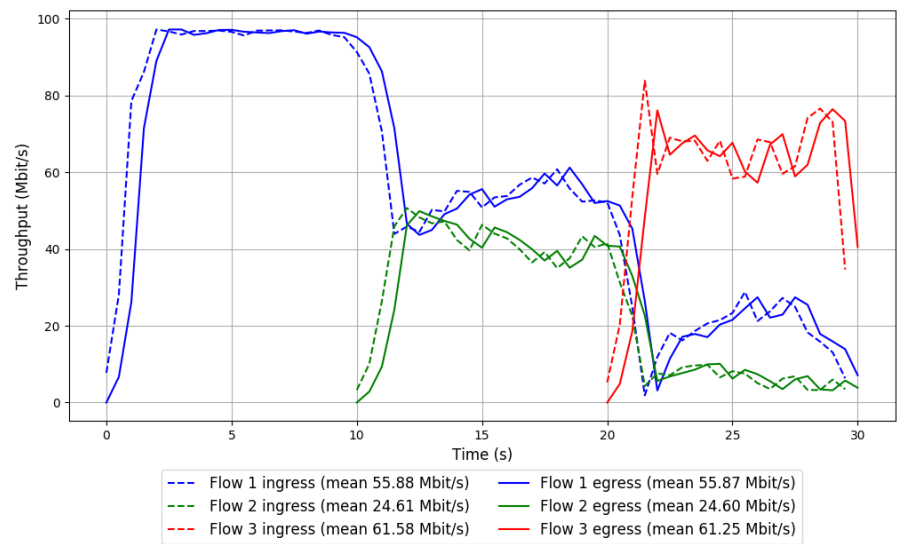
Run 1: Report of Muses_DecisionTree — Data Link

```
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-08-26 23:56:46
End at: 2019-08-26 23:57:16
Local clock offset: -1.032 ms
Remote clock offset: 6.077 ms


# Below is generated by plot.py at 2019-08-27 03:26:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.12 Mbit/s
95th percentile per-packet one-way delay: 44.828 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 56.27 Mbit/s
95th percentile per-packet one-way delay: 42.511 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 21.91 Mbit/s
95th percentile per-packet one-way delay: 45.774 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 71.97 Mbit/s
95th percentile per-packet one-way delay: 48.249 ms
Loss rate: 0.00%
```
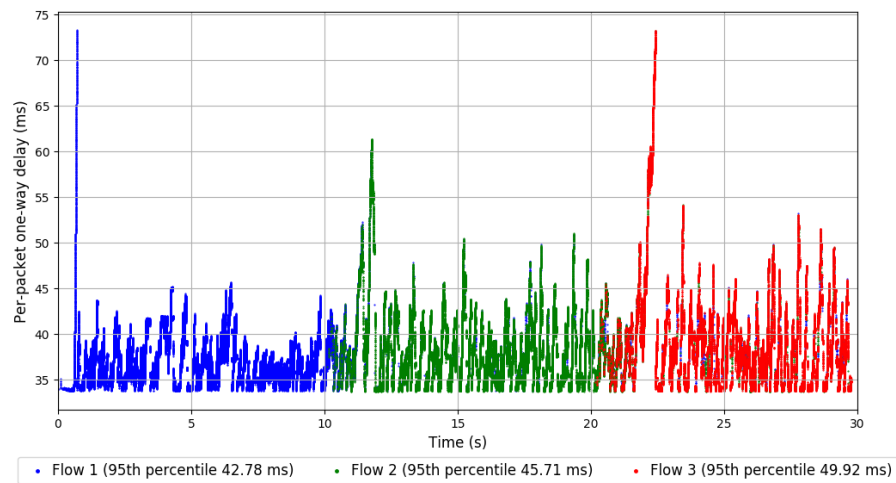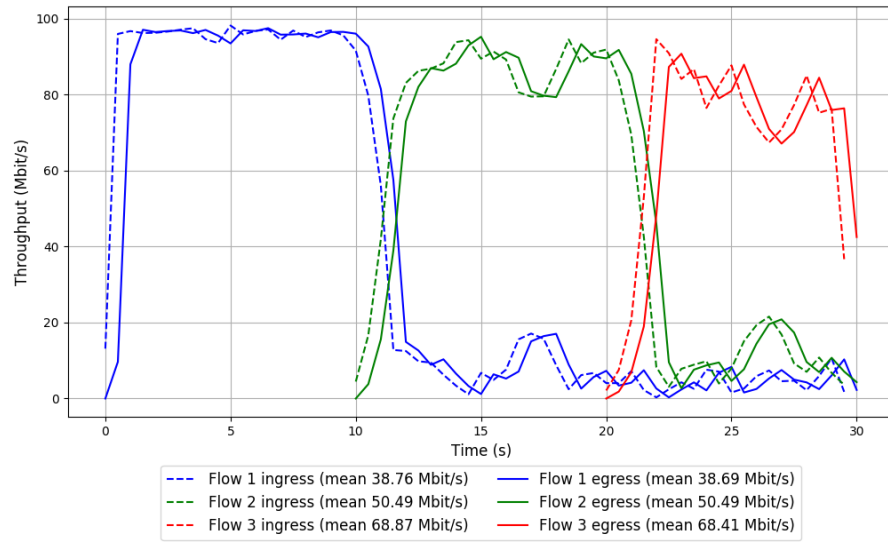
Run 2: Report of Muses_DecisionTree — Data Link

Run 3: Statistics of Muses_DecisionTree

Start at: 2019-08-27 00:46:19
End at: 2019-08-27 00:46:50
Local clock offset: -1.171 ms
Remote clock offset: 3.923 ms

Below is generated by plot.py at 2019-08-27 03:26:58
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.34 Mbit/s
95th percentile per-packet one-way delay: 45.230 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 43.80 Mbit/s
95th percentile per-packet one-way delay: 43.018 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 43.14 Mbit/s
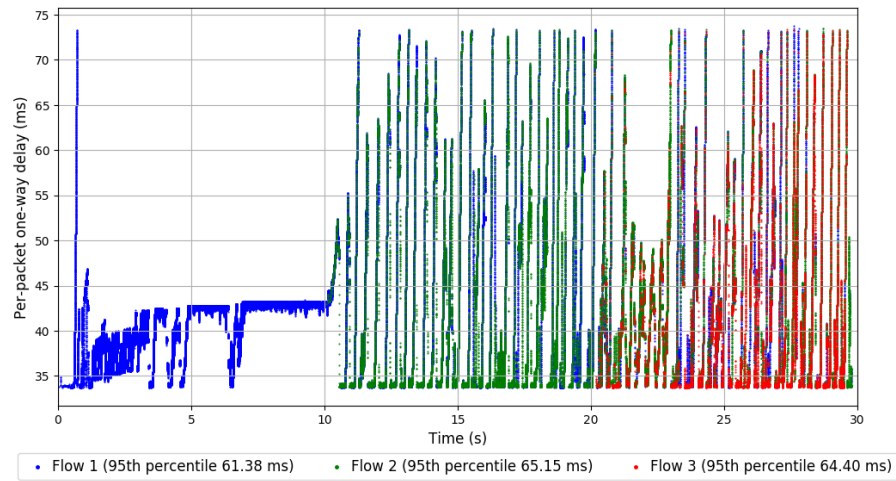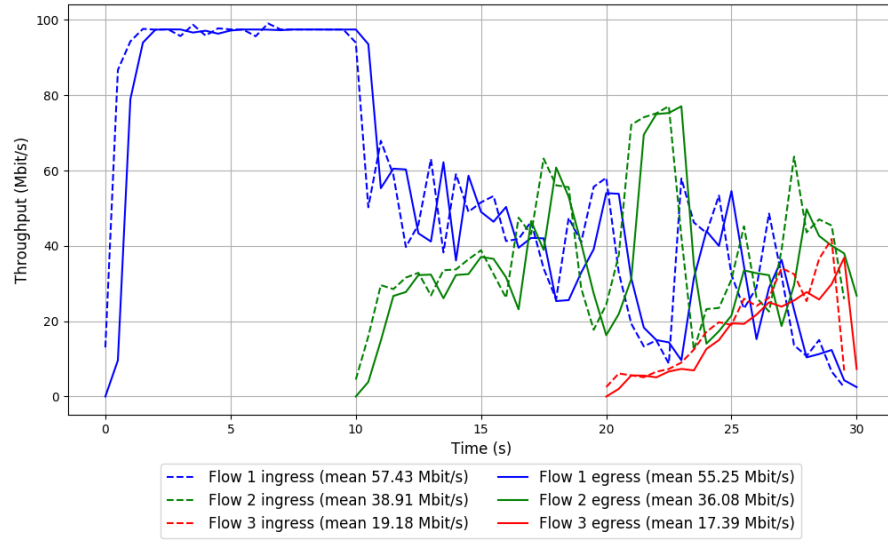95th percentile per-packet one-way delay: 46.249 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 64.40 Mbit/s
95th percentile per-packet one-way delay: 48.705 ms
Loss rate: 0.95%

Run 3: Report of Muses_DecisionTree — Data Link

Flow 1 ingress (mean 43.87 Mbit/s)   Flow 1 egress (mean 43.80 Mbit/s)
Flow 2 ingress (mean 43.18 Mbit/s)   Flow 2 egress (mean 43.14 Mbit/s)
Flow 3 ingress (mean 65.04 Mbit/s)   Flow 3 egress (mean 64.40 Mbit/s)

Flow 1 (95th percentile 43.02 ms)   Flow 2 (95th percentile 46.25 ms)   Flow 3 (95th percentile 48.70 ms)

```
Run 4: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 01:39:26
End at: 2019-08-27 01:39:56
Local clock offset: -0.903 ms
Remote clock offset: 4.042 ms


# Below is generated by plot.py at 2019-08-27 03:26:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.11 Mbit/s
95th percentile per-packet one-way delay: 44.209 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 55.87 Mbit/s
95th percentile per-packet one-way delay: 42.536 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.60 Mbit/s
95th percentile per-packet one-way delay: 43.943 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 61.25 Mbit/s
95th percentile per-packet one-way delay: 48.564 ms
Loss rate: 0.54%
```
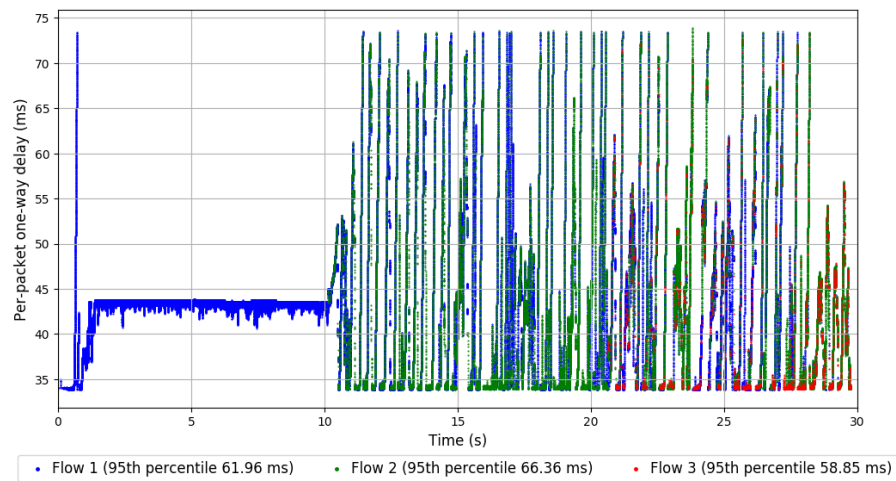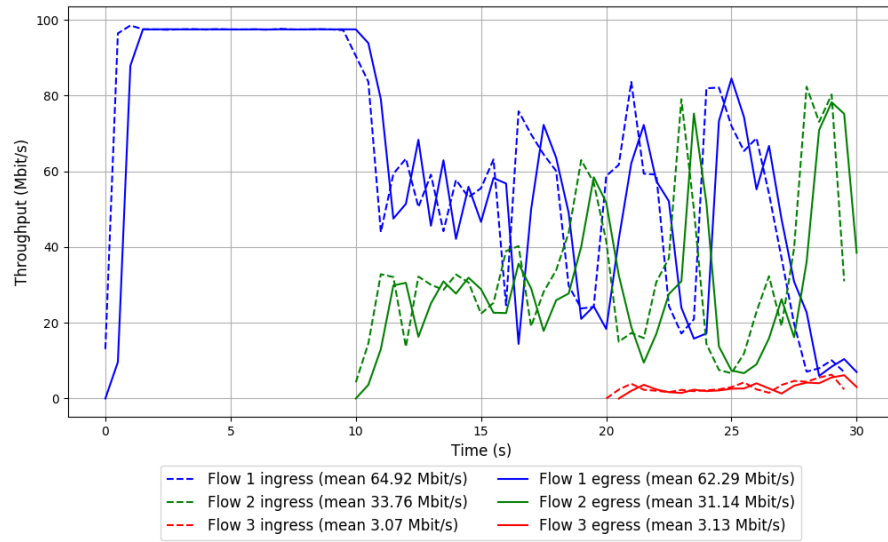
Run 4: Report of Muses_DecisionTree — Data Link

Flow 1 ingress (mean 55.88 Mbit/s) --- Flow 1 egress (mean 55.87 Mbit/s)
Flow 2 ingress (mean 24.61 Mbit/s) --- Flow 2 egress (mean 24.60 Mbit/s)
Flow 3 ingress (mean 61.58 Mbit/s) --- Flow 3 egress (mean 61.25 Mbit/s)

Flow 1 (95th percentile 42.54 ms)   Flow 2 (95th percentile 43.94 ms)   Flow 3 (95th percentile 48.56 ms)

```
Run 5: Statistics of Muses\_DecisionTree

Start at: 2019-08-27 02:22:50
End at: 2019-08-27 02:23:20
Local clock offset: -1.072 ms
Remote clock offset: 3.042 ms


# Below is generated by plot.py at 2019-08-27 03:27:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.20 Mbit/s
95th percentile per-packet one-way delay: 45.636 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 38.69 Mbit/s
95th percentile per-packet one-way delay: 42.784 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 50.49 Mbit/s
95th percentile per-packet one-way delay: 45.711 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 68.41 Mbit/s
95th percentile per-packet one-way delay: 49.920 ms
Loss rate: 0.65%
```
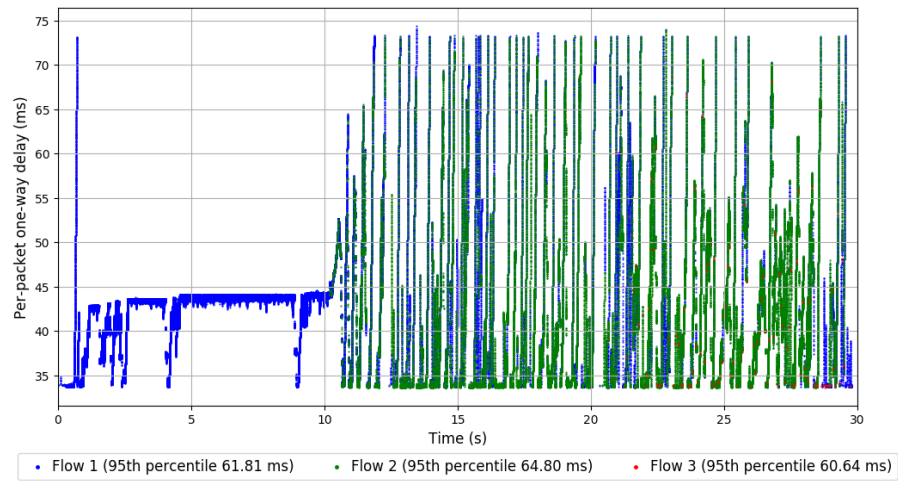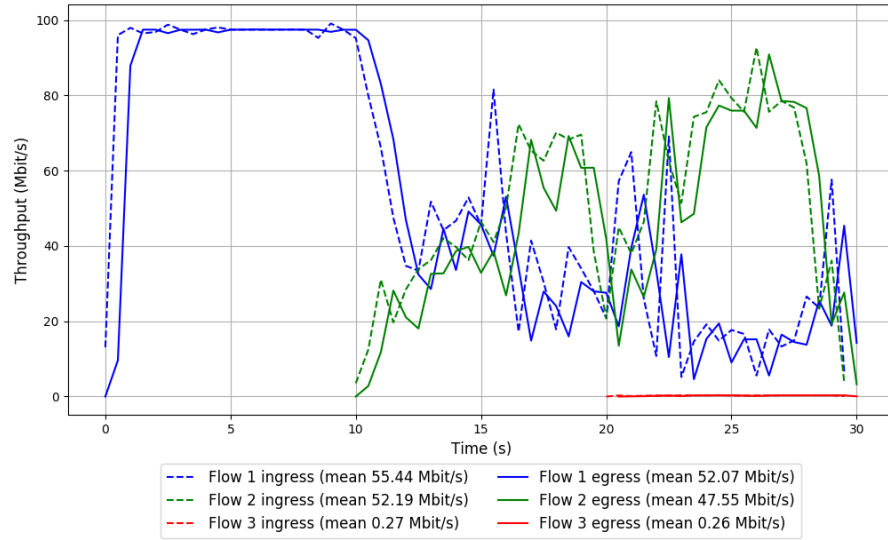
Run 5: Report of Muses_DecisionTree — Data Link

```
Run 1: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-26 23:27:48
End at: 2019-08-26 23:28:18
Local clock offset: -0.696 ms
Remote clock offset: 4.395 ms


# Below is generated by plot.py at 2019-08-27 03:27:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.71 Mbit/s
95th percentile per-packet one-way delay: 63.134 ms
Loss rate: 5.21%
-- Flow 1:
Average throughput: 55.25 Mbit/s
95th percentile per-packet one-way delay: 61.385 ms
Loss rate: 3.80%
-- Flow 2:
Average throughput: 36.08 Mbit/s
95th percentile per-packet one-way delay: 65.150 ms
Loss rate: 7.30%
-- Flow 3:
Average throughput: 17.39 Mbit/s
95th percentile per-packet one-way delay: 64.397 ms
Loss rate: 9.59%
```
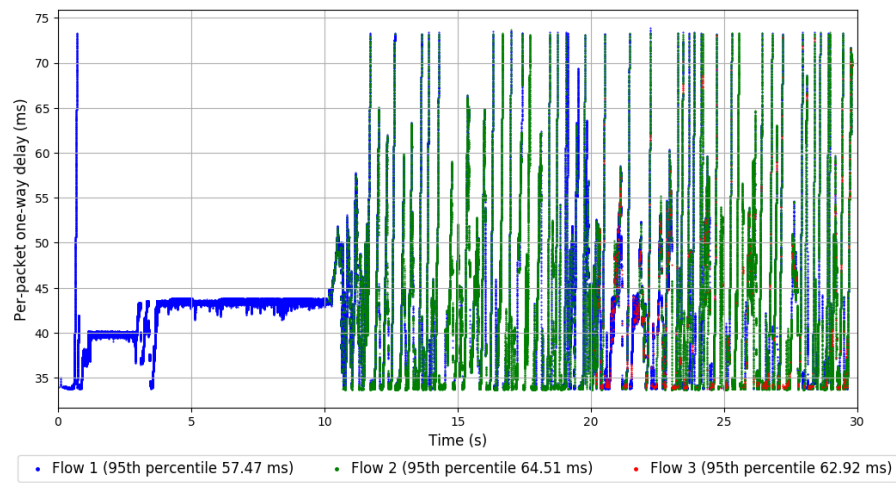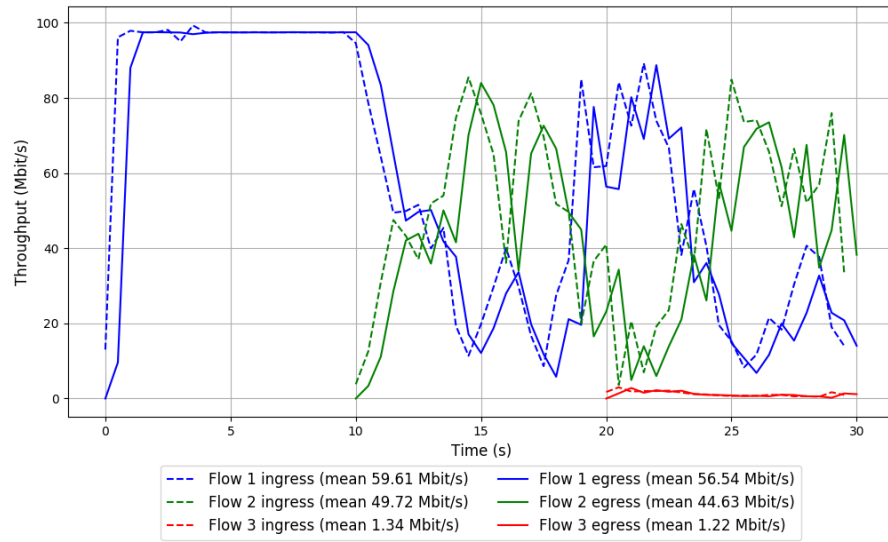
Run 1: Report of Muses_DecisionTreeH0 — Data Link

126

```
Run 2: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 00:13:49
End at: 2019-08-27 00:14:19
Local clock offset: -1.092 ms
Remote clock offset: 6.45 ms


# Below is generated by plot.py at 2019-08-27 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.89 Mbit/s
95th percentile per-packet one-way delay: 63.634 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 62.29 Mbit/s
95th percentile per-packet one-way delay: 61.960 ms
Loss rate: 4.06%
-- Flow 2:
Average throughput: 31.14 Mbit/s
95th percentile per-packet one-way delay: 66.355 ms
Loss rate: 7.82%
-- Flow 3:
Average throughput: 3.13 Mbit/s
95th percentile per-packet one-way delay: 58.853 ms
Loss rate: 3.43%
```
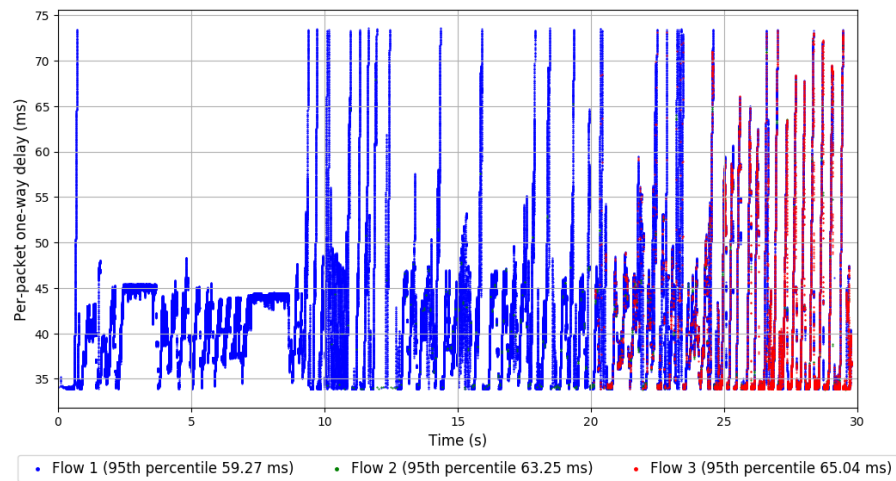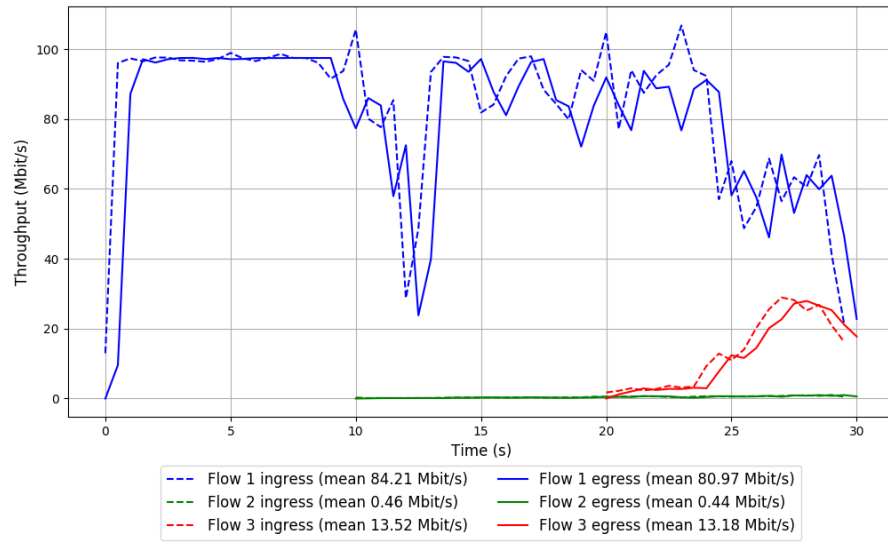
Run 2: Report of Muses_DecisionTreeH0 — Data Link

Flow 1 ingress (mean 64.92 Mbit/s) --- Flow 1 egress (mean 62.29 Mbit/s)
Flow 2 ingress (mean 33.76 Mbit/s) --- Flow 2 egress (mean 31.14 Mbit/s)
Flow 3 ingress (mean 3.07 Mbit/s) --- Flow 3 egress (mean 3.13 Mbit/s)

Flow 1 (95th percentile 61.96 ms) • Flow 2 (95th percentile 66.36 ms) • Flow 3 (95th percentile 58.85 ms)

```
Run 3: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 01:06:09
End at: 2019-08-27 01:06:39
Local clock offset: -1.005 ms
Remote clock offset: 5.619 ms


# Below is generated by plot.py at 2019-08-27 03:27:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.51 Mbit/s
95th percentile per-packet one-way delay: 63.404 ms
Loss rate: 7.18%
-- Flow 1:
Average throughput: 52.07 Mbit/s
95th percentile per-packet one-way delay: 61.811 ms
Loss rate: 6.08%
-- Flow 2:
Average throughput: 47.55 Mbit/s
95th percentile per-packet one-way delay: 64.797 ms
Loss rate: 8.94%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 60.642 ms
Loss rate: 9.43%
```
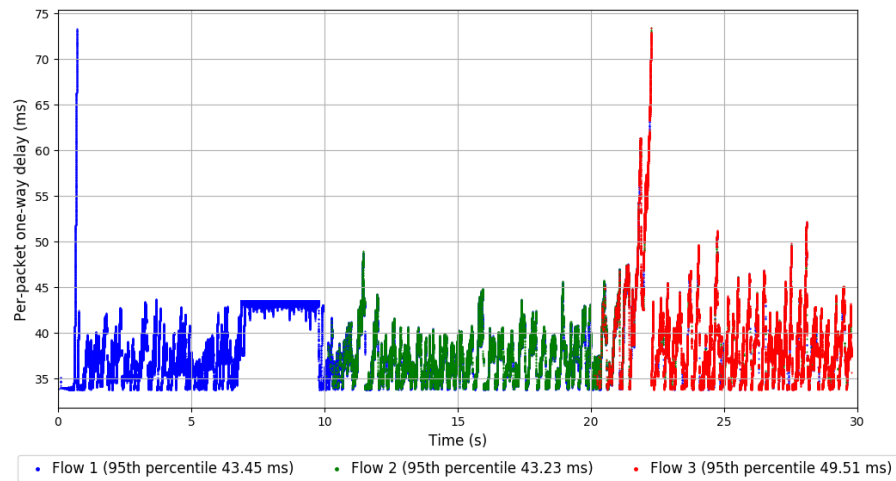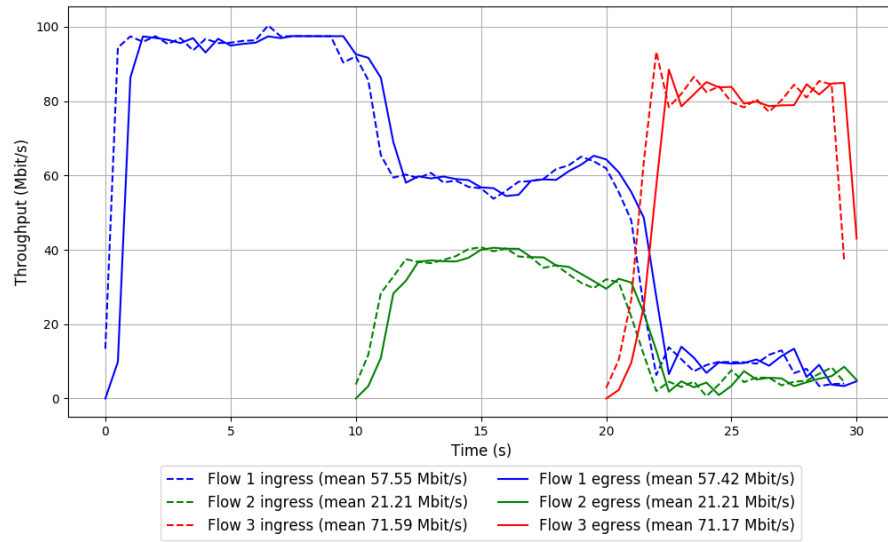
Run 3: Report of Muses_DecisionTreeH0 — Data Link

```
Run 4: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 01:56:57
End at: 2019-08-27 01:57:27
Local clock offset: -0.845 ms
Remote clock offset: 3.115 ms


# Below is generated by plot.py at 2019-08-27 03:27:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.49 Mbit/s
95th percentile per-packet one-way delay: 61.054 ms
Loss rate: 6.85%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 57.468 ms
Loss rate: 5.03%
-- Flow 2:
Average throughput: 44.63 Mbit/s
95th percentile per-packet one-way delay: 64.511 ms
Loss rate: 10.13%
-- Flow 3:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 62.916 ms
Loss rate: 8.51%
```
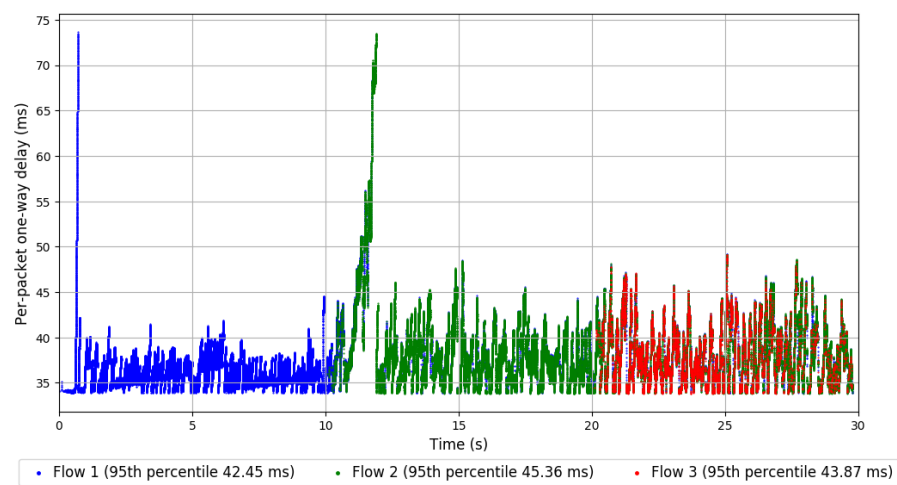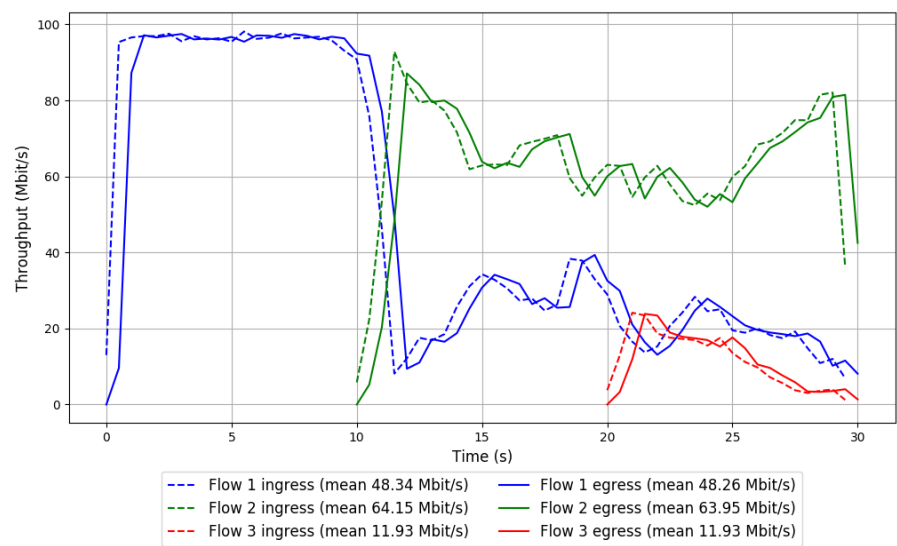
Run 4: Report of Muses_DecisionTreeH0 — Data Link

- - - Flow 1 ingress (mean 59.61 Mbit/s)   —— Flow 1 egress (mean 56.54 Mbit/s)
- - - Flow 2 ingress (mean 49.72 Mbit/s)   —— Flow 2 egress (mean 44.63 Mbit/s)
- - - Flow 3 ingress (mean 1.34 Mbit/s)   —— Flow 3 egress (mean 1.22 Mbit/s)

• Flow 1 (95th percentile 57.47 ms)   • Flow 2 (95th percentile 64.51 ms)   • Flow 3 (95th percentile 62.92 ms)

```
Run 5: Statistics of Muses\_DecisionTreeH0

Start at: 2019-08-27 02:43:36
End at: 2019-08-27 02:44:06
Local clock offset: -1.245 ms
Remote clock offset: 4.163 ms


# Below is generated by plot.py at 2019-08-27 03:27:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.55 Mbit/s
95th percentile per-packet one-way delay: 59.884 ms
Loss rate: 3.77%
-- Flow 1:
Average throughput: 80.97 Mbit/s
95th percentile per-packet one-way delay: 59.272 ms
Loss rate: 3.83%
-- Flow 2:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.246 ms
Loss rate: 4.12%
-- Flow 3:
Average throughput: 13.18 Mbit/s
95th percentile per-packet one-way delay: 65.036 ms
Loss rate: 2.46%
```
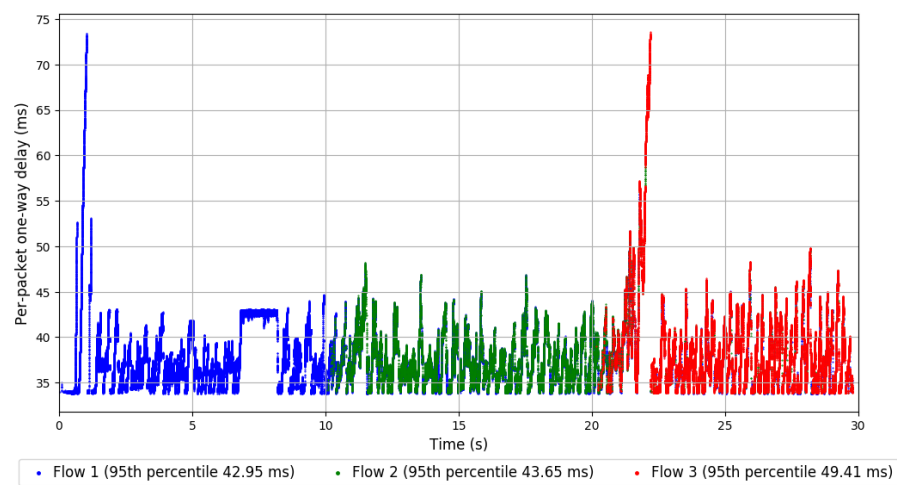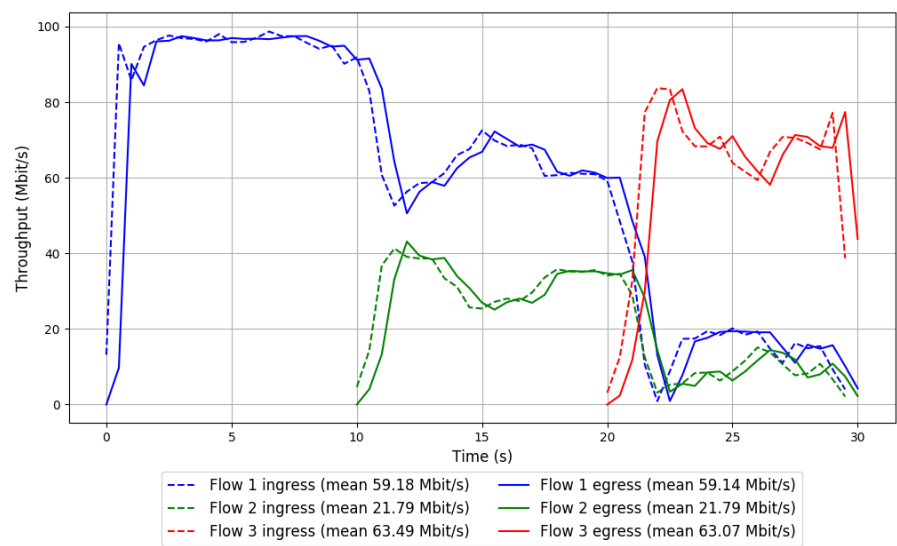
Run 5: Report of Muses_DecisionTreeH0 — Data Link

```
Run 1: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-26 23:23:36
End at: 2019-08-26 23:24:06
Local clock offset: -0.677 ms
Remote clock offset: 4.611 ms


# Below is generated by plot.py at 2019-08-27 03:28:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.49 Mbit/s
95th percentile per-packet one-way delay: 43.956 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 57.42 Mbit/s
95th percentile per-packet one-way delay: 43.454 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 21.21 Mbit/s
95th percentile per-packet one-way delay: 43.229 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 71.17 Mbit/s
95th percentile per-packet one-way delay: 49.512 ms
Loss rate: 0.59%
```
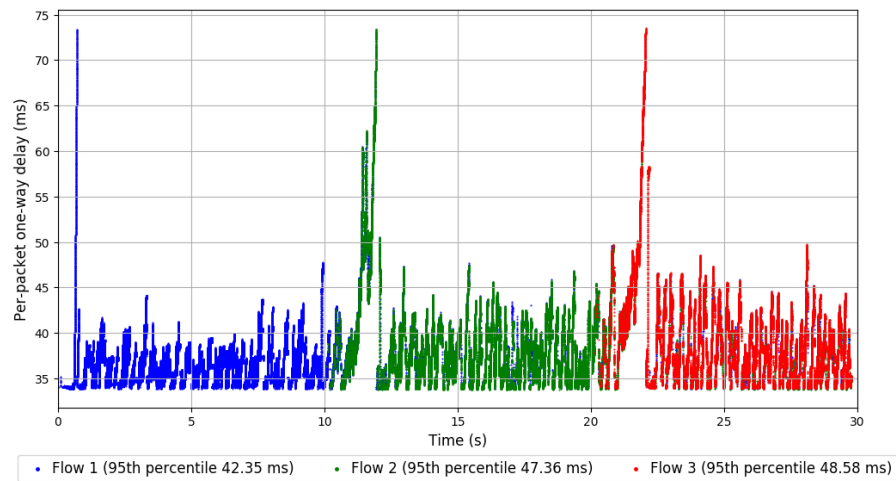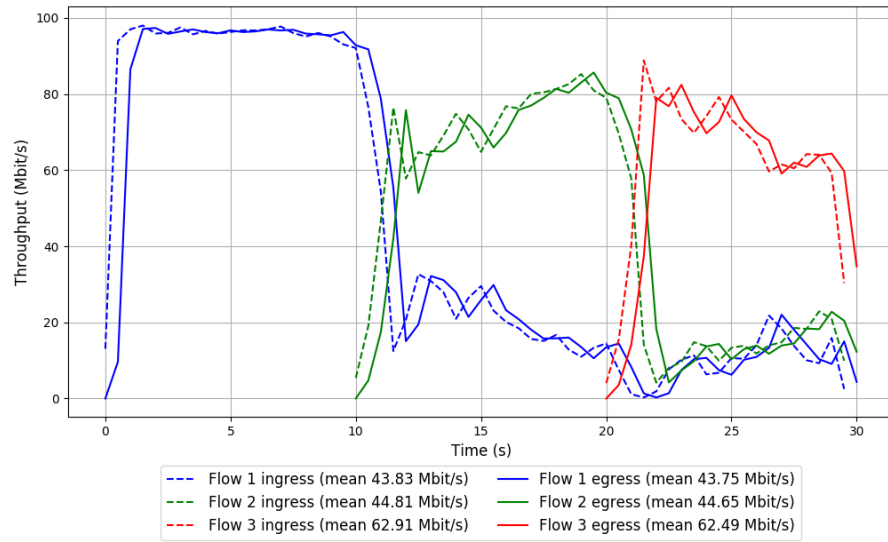
Run 1: Report of Muses_DecisionTreeR0 — Data Link

```
Run 2: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 00:09:43
End at: 2019-08-27 00:10:13
Local clock offset: -1.058 ms
Remote clock offset: 6.47 ms


# Below is generated by plot.py at 2019-08-27 03:28:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.50 Mbit/s
95th percentile per-packet one-way delay: 43.943 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 48.26 Mbit/s
95th percentile per-packet one-way delay: 42.450 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 63.95 Mbit/s
95th percentile per-packet one-way delay: 45.357 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 43.866 ms
Loss rate: 0.00%
```
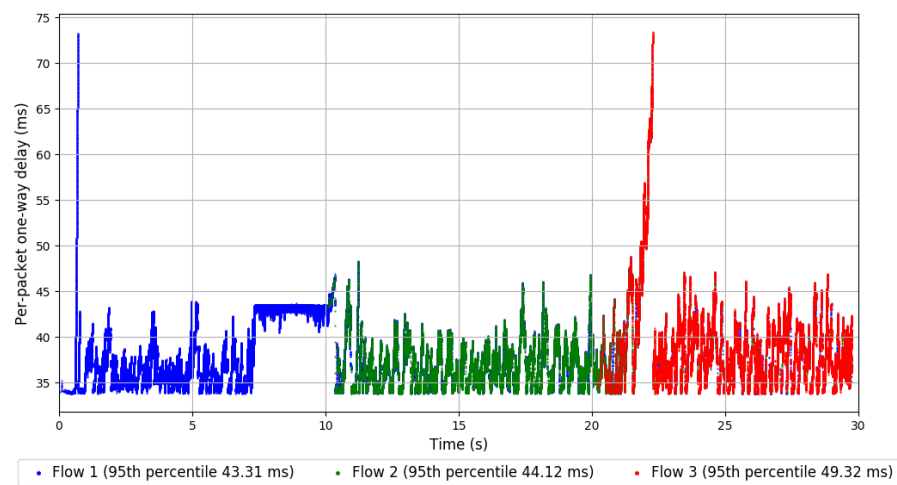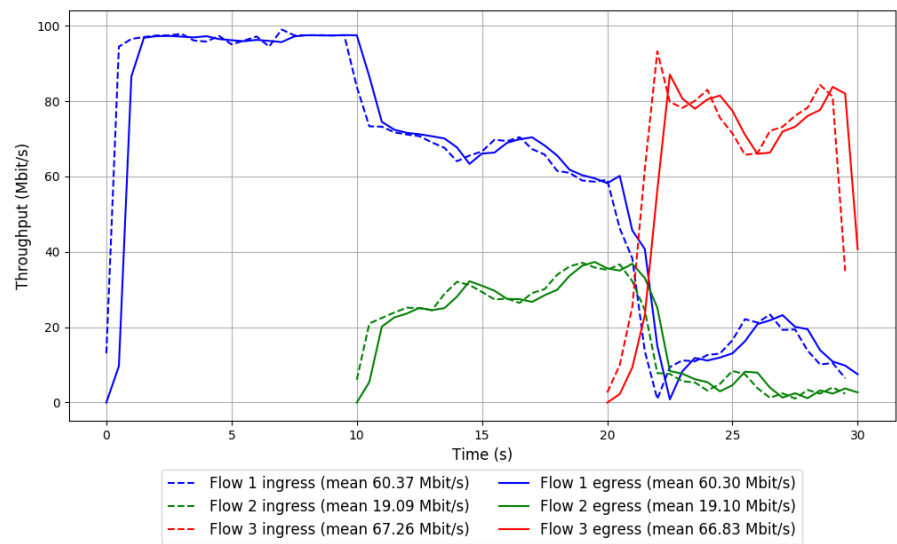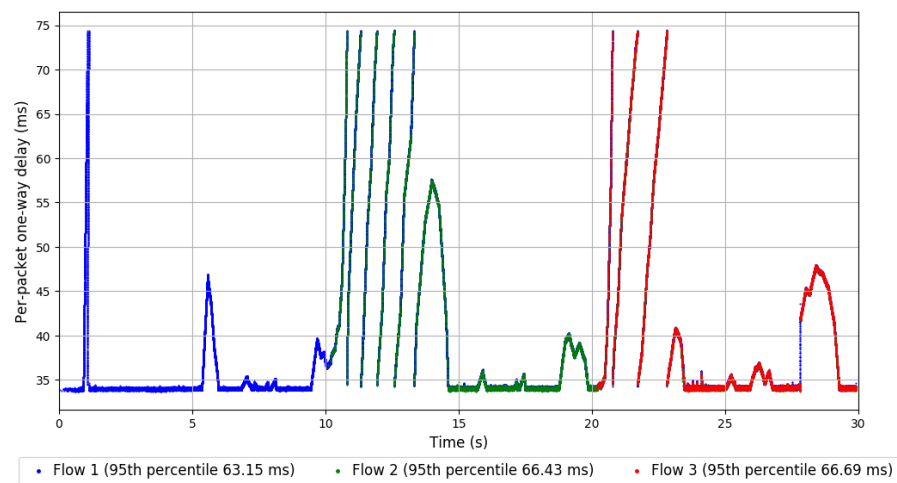
Run 2: Report of Muses_DecisionTreeR0 — Data Link

138

```
Run 3: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 00:59:47
End at: 2019-08-27 01:00:17
Local clock offset: -1.039 ms
Remote clock offset: 5.338 ms


# Below is generated by plot.py at 2019-08-27 03:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.93 Mbit/s
95th percentile per-packet one-way delay: 44.035 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 59.14 Mbit/s
95th percentile per-packet one-way delay: 42.947 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 21.79 Mbit/s
95th percentile per-packet one-way delay: 43.652 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 63.07 Mbit/s
95th percentile per-packet one-way delay: 49.411 ms
Loss rate: 0.71%
```
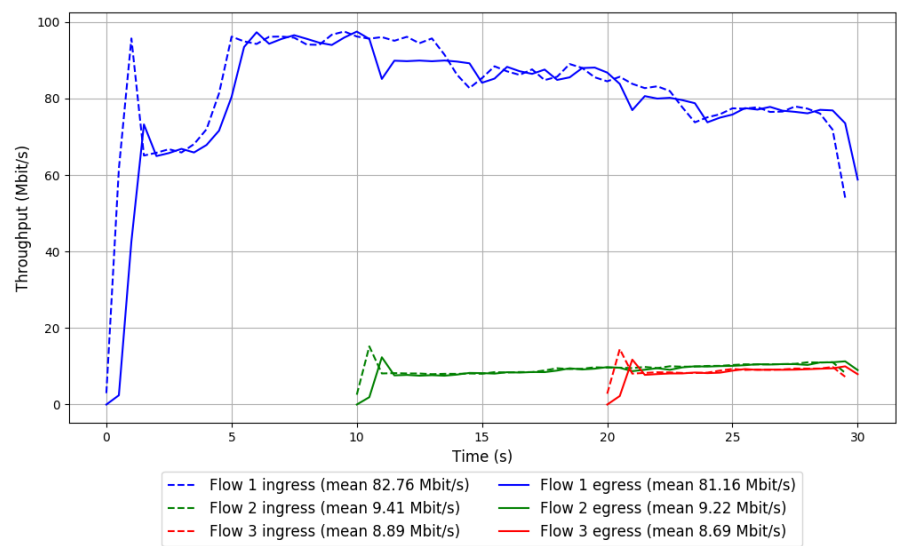
Run 3: Report of Muses_DecisionTreeR0 — Data Link

```
Run 4: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 01:53:19
End at: 2019-08-27 01:53:49
Local clock offset: -0.837 ms
Remote clock offset: 3.265 ms


# Below is generated by plot.py at 2019-08-27 03:28:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.59 Mbit/s
95th percentile per-packet one-way delay: 45.720 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 43.75 Mbit/s
95th percentile per-packet one-way delay: 42.348 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 44.65 Mbit/s
95th percentile per-packet one-way delay: 47.359 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 62.49 Mbit/s
95th percentile per-packet one-way delay: 48.582 ms
Loss rate: 0.69%
```
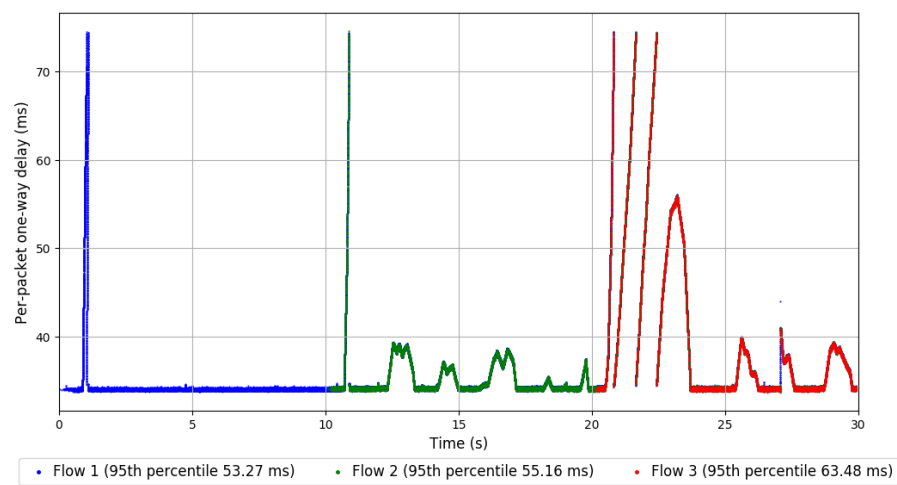
Run 4: Report of Muses_DecisionTreeR0 — Data Link

```
Run 5: Statistics of Muses\_DecisionTreeR0

Start at: 2019-08-27 02:37:17
End at: 2019-08-27 02:37:47
Local clock offset: -1.186 ms
Remote clock offset: 3.876 ms


# Below is generated by plot.py at 2019-08-27 03:28:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.57 Mbit/s
95th percentile per-packet one-way delay: 43.688 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 60.30 Mbit/s
95th percentile per-packet one-way delay: 43.311 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 19.10 Mbit/s
95th percentile per-packet one-way delay: 44.123 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 66.83 Mbit/s
95th percentile per-packet one-way delay: 49.317 ms
Loss rate: 0.64%
```
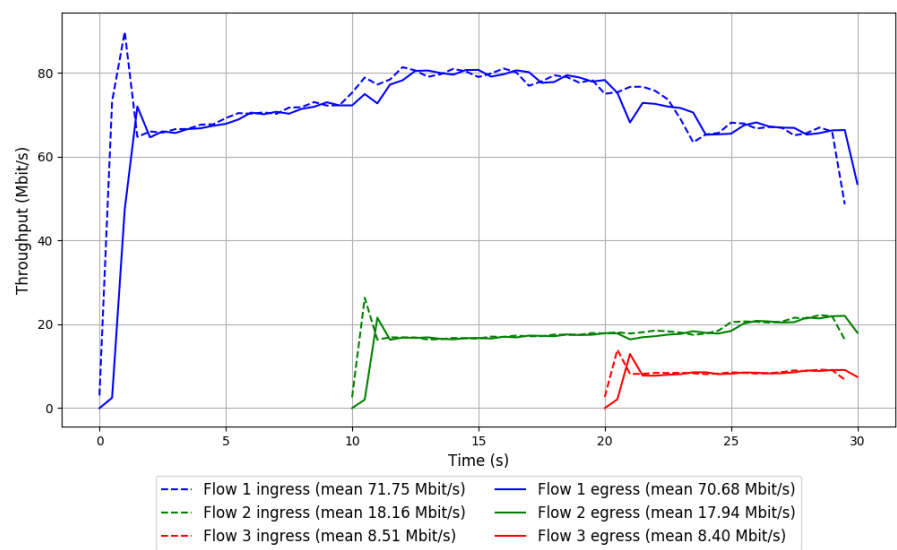
Run 5: Report of Muses_DecisionTreeR0 — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-08-26 23:20:46
End at: 2019-08-26 23:21:16
Local clock offset: -0.604 ms
Remote clock offset: 4.628 ms


# Below is generated by plot.py at 2019-08-27 03:28:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.15 Mbit/s
95th percentile per-packet one-way delay: 63.644 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 81.16 Mbit/s
95th percentile per-packet one-way delay: 63.153 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 66.430 ms
Loss rate: 2.02%
-- Flow 3:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 66.689 ms
Loss rate: 2.23%
```
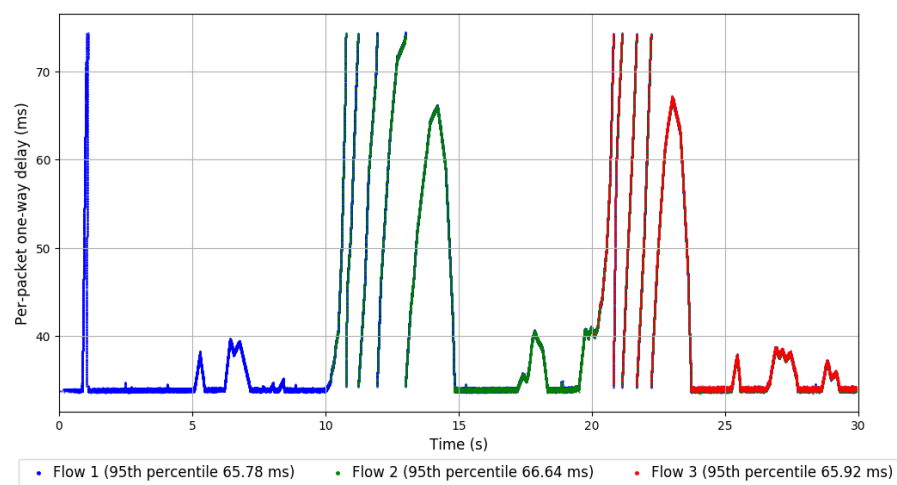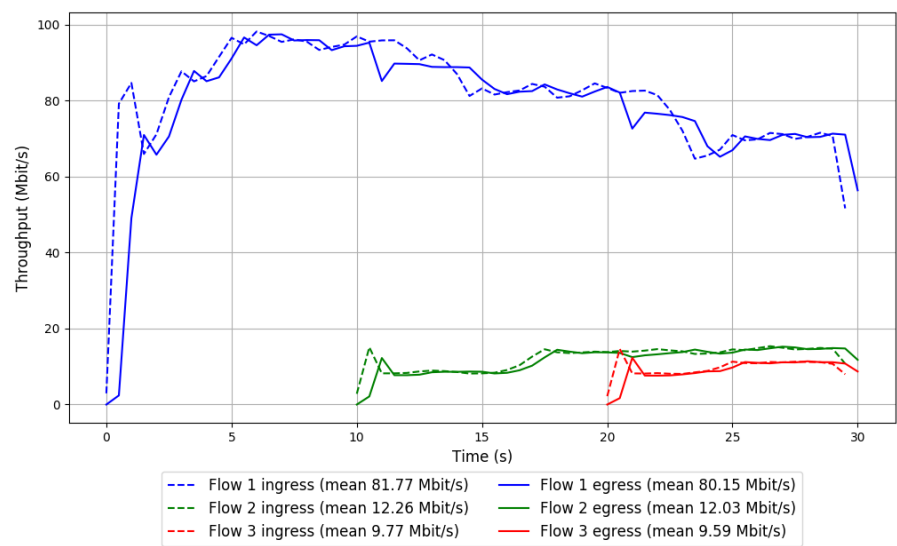
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-08-27 00:06:42
End at: 2019-08-27 00:07:12
Local clock offset: -1.048 ms
Remote clock offset: 6.318 ms


# Below is generated by plot.py at 2019-08-27 03:29:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.38 Mbit/s
95th percentile per-packet one-way delay: 54.216 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 70.68 Mbit/s
95th percentile per-packet one-way delay: 53.268 ms
Loss rate: 1.50%
-- Flow 2:
Average throughput: 17.94 Mbit/s
95th percentile per-packet one-way delay: 55.164 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 63.481 ms
Loss rate: 1.32%
```
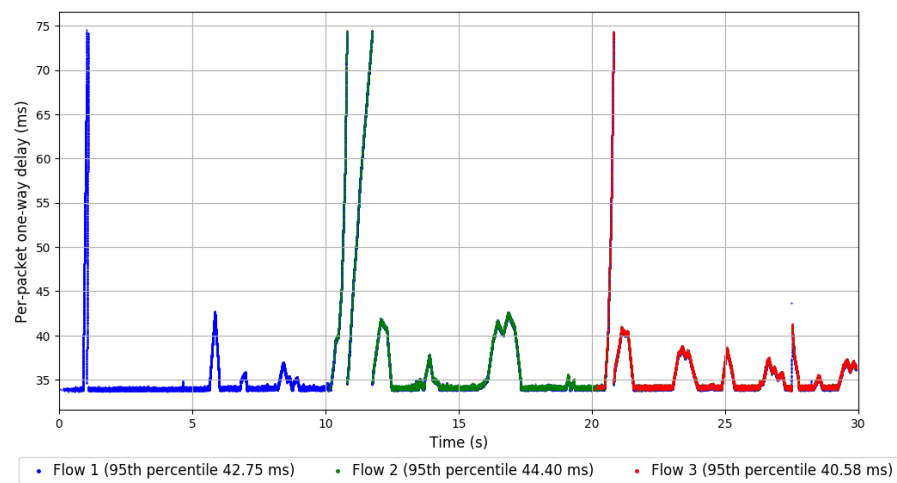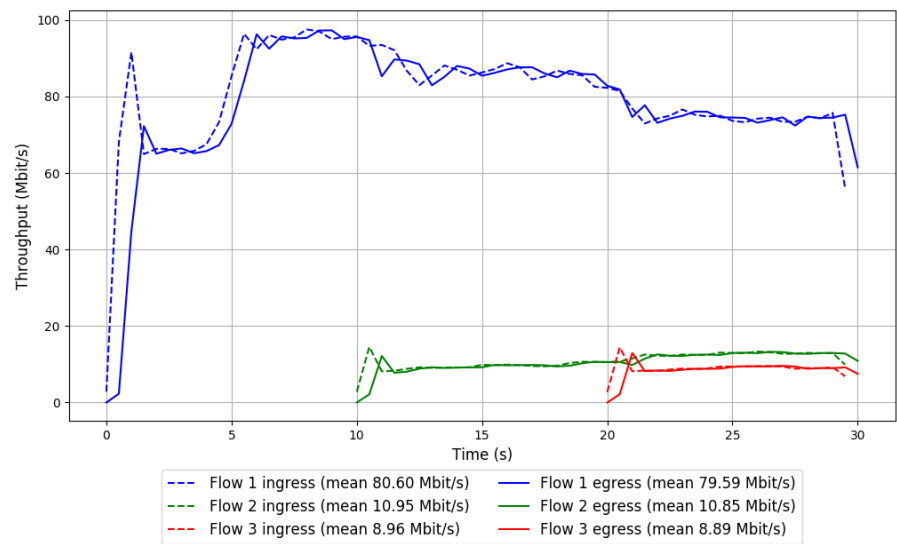
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-08-27 00:56:29
End at: 2019-08-27 00:56:59
Local clock offset: -1.076 ms
Remote clock offset: 4.933 ms


# Below is generated by plot.py at 2019-08-27 03:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.31 Mbit/s
95th percentile per-packet one-way delay: 65.865 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 80.15 Mbit/s
95th percentile per-packet one-way delay: 65.784 ms
Loss rate: 1.98%
-- Flow 2:
Average throughput: 12.03 Mbit/s
95th percentile per-packet one-way delay: 66.644 ms
Loss rate: 1.86%
-- Flow 3:
Average throughput: 9.59 Mbit/s
95th percentile per-packet one-way delay: 65.918 ms
Loss rate: 1.94%
```
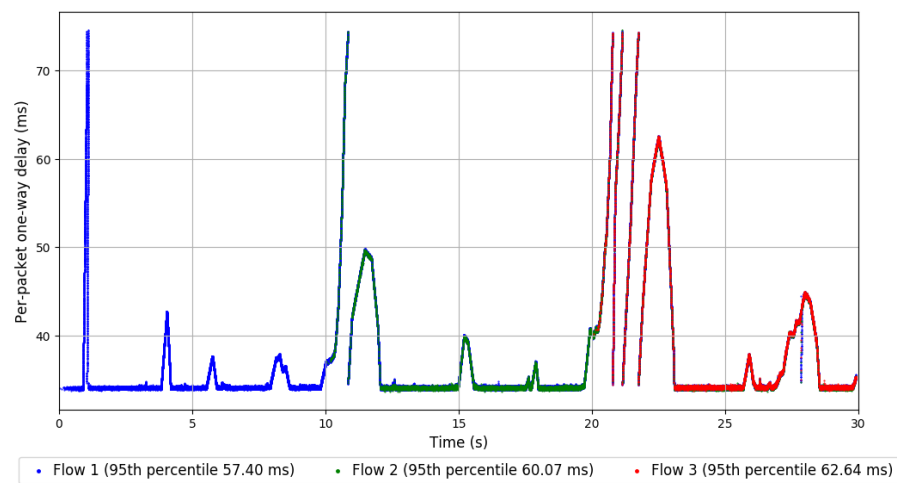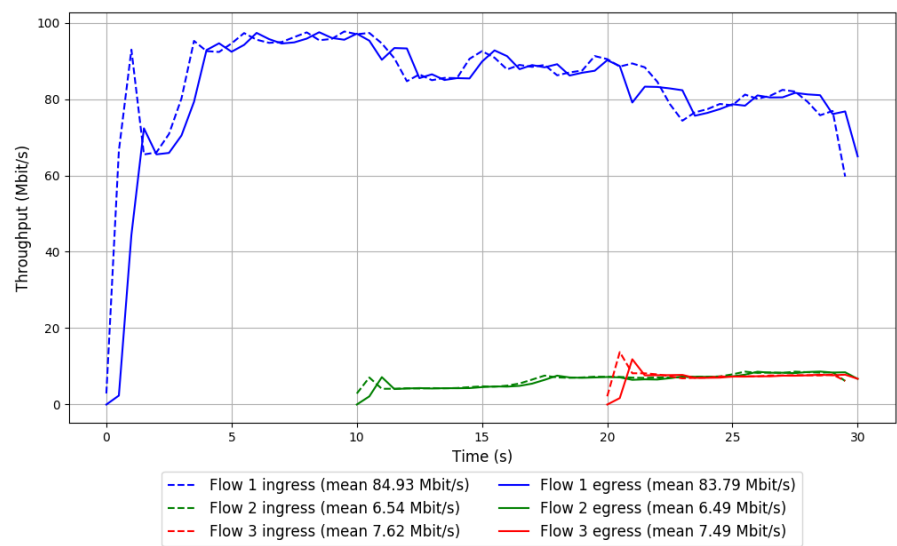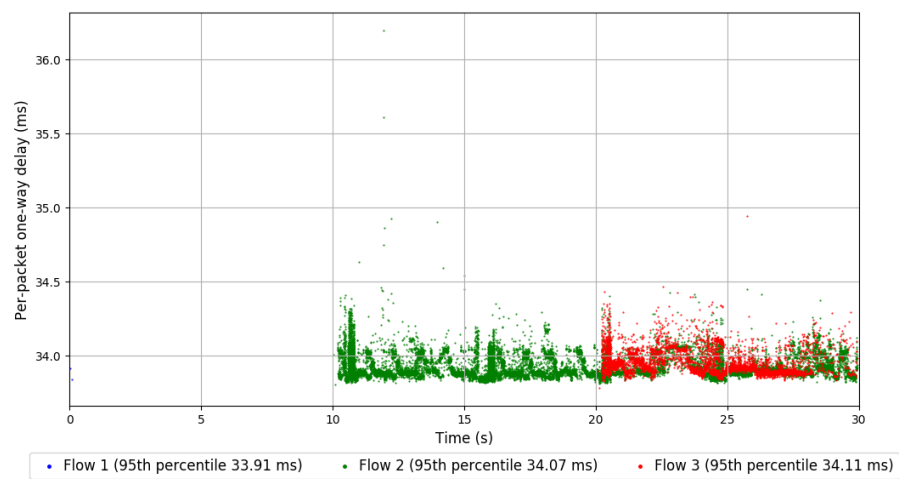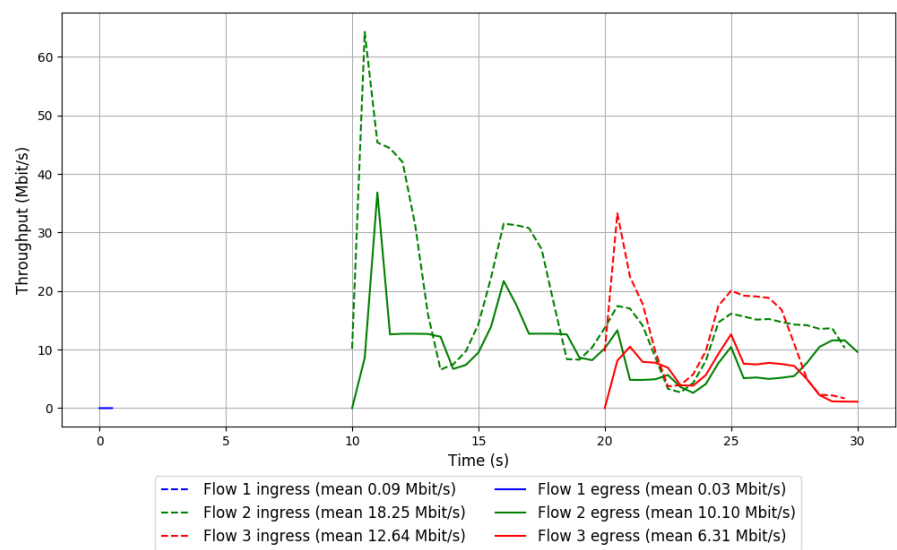
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 81.77 Mbit/s) --- Flow 1 egress (mean 80.15 Mbit/s)
Flow 2 ingress (mean 12.26 Mbit/s) --- Flow 2 egress (mean 12.03 Mbit/s)
Flow 3 ingress (mean 9.77 Mbit/s) --- Flow 3 egress (mean 9.59 Mbit/s)

Flow 1 (95th percentile 65.78 ms) • Flow 2 (95th percentile 66.64 ms) • Flow 3 (95th percentile 65.92 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-08-27 01:50:27
End at: 2019-08-27 01:50:57
Local clock offset: -0.863 ms
Remote clock offset: 3.242 ms


# Below is generated by plot.py at 2019-08-27 03:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.74 Mbit/s
95th percentile per-packet one-way delay: 42.745 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 79.59 Mbit/s
95th percentile per-packet one-way delay: 42.754 ms
Loss rate: 1.25%
-- Flow 2:
Average throughput: 10.85 Mbit/s
95th percentile per-packet one-way delay: 44.395 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 8.89 Mbit/s
95th percentile per-packet one-way delay: 40.584 ms
Loss rate: 0.82%
```

Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-08-27 02:33:32
End at: 2019-08-27 02:34:02
Local clock offset: -1.187 ms
Remote clock offset: 3.558 ms


# Below is generated by plot.py at 2019-08-27 03:29:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.57 Mbit/s
95th percentile per-packet one-way delay: 58.050 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 83.79 Mbit/s
95th percentile per-packet one-way delay: 57.400 ms
Loss rate: 1.34%
-- Flow 2:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 60.069 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 7.49 Mbit/s
95th percentile per-packet one-way delay: 62.636 ms
Loss rate: 1.75%
```
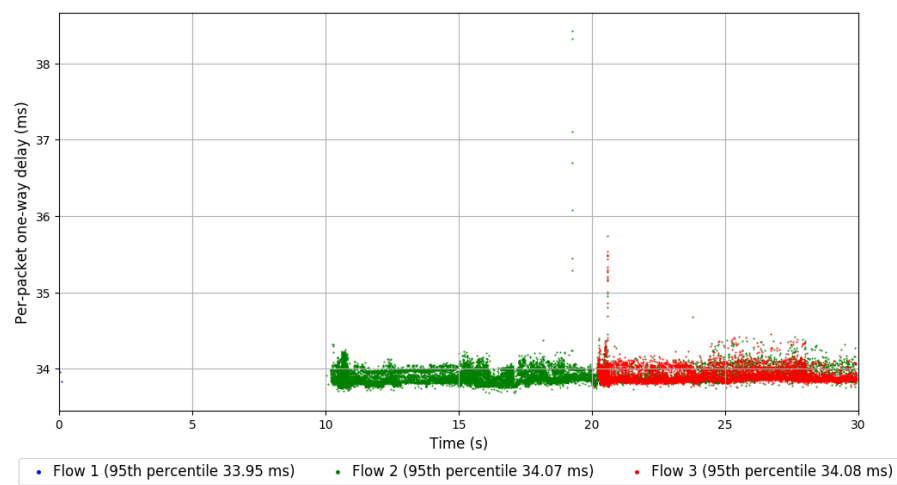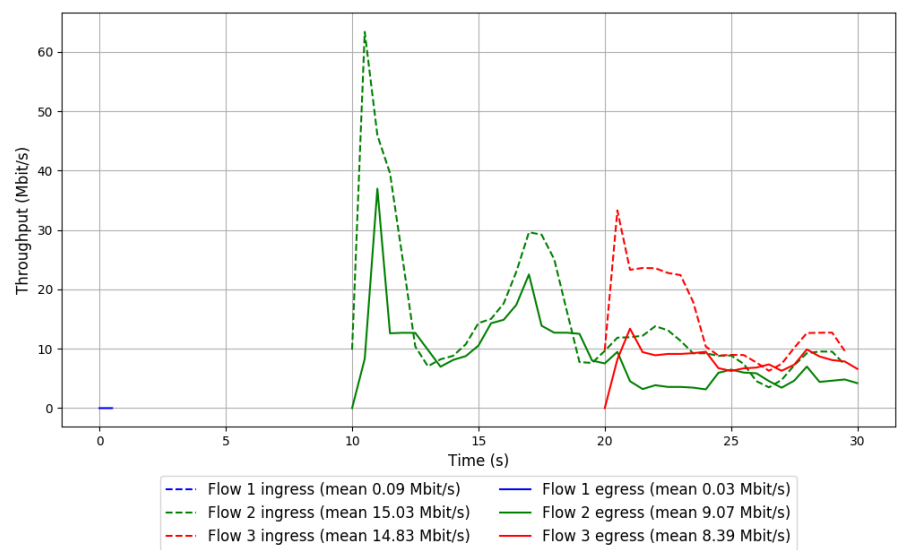
Run 5: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 84.93 Mbit/s) —— Flow 1 egress (mean 83.79 Mbit/s)
- - - Flow 2 ingress (mean 6.54 Mbit/s) —— Flow 2 egress (mean 6.49 Mbit/s)
- - - Flow 3 ingress (mean 7.62 Mbit/s) —— Flow 3 egress (mean 7.49 Mbit/s)

- Flow 1 (95th percentile 57.40 ms)   • Flow 2 (95th percentile 60.07 ms)   • Flow 3 (95th percentile 62.64 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2019-08-26 23:34:53
End at: 2019-08-26 23:35:23
Local clock offset: -0.77 ms
Remote clock offset: 4.518 ms


# Below is generated by plot.py at 2019-08-27 03:29:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 34.089 ms
Loss rate: 46.03%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 33.914 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 10.10 Mbit/s
95th percentile per-packet one-way delay: 34.072 ms
Loss rate: 44.63%
-- Flow 3:
Average throughput: 6.31 Mbit/s
95th percentile per-packet one-way delay: 34.111 ms
Loss rate: 50.09%
```
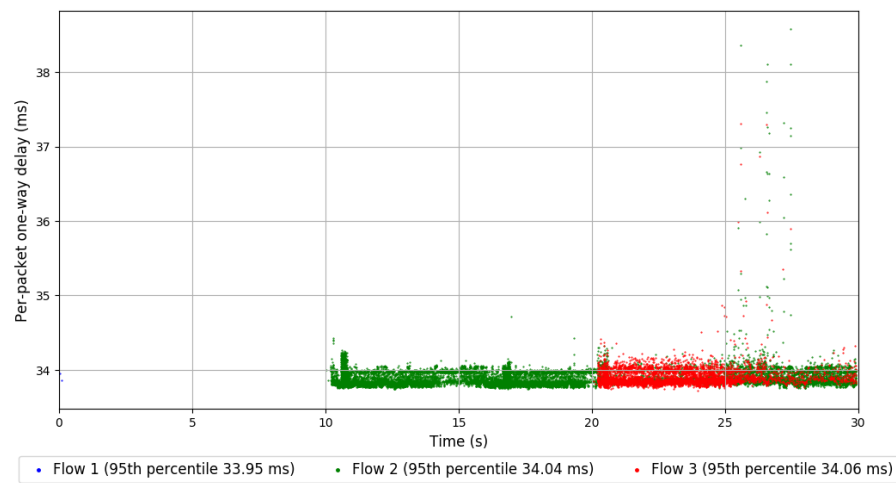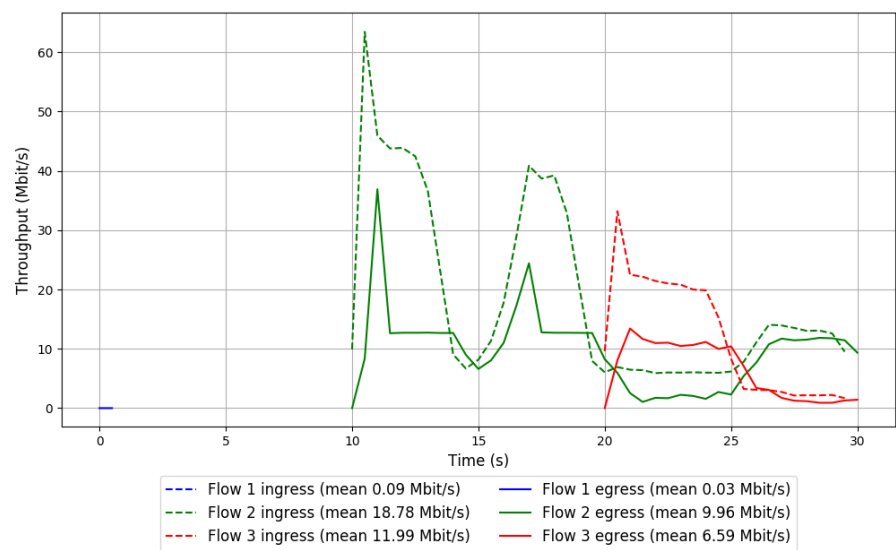
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-08-27 00:21:21
End at: 2019-08-27 00:21:51
Local clock offset: -1.091 ms
Remote clock offset: 5.279 ms


# Below is generated by plot.py at 2019-08-27 03:29:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 34.074 ms
Loss rate: 40.92%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 33.952 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 9.07 Mbit/s
95th percentile per-packet one-way delay: 34.071 ms
Loss rate: 39.66%
-- Flow 3:
Average throughput: 8.39 Mbit/s
95th percentile per-packet one-way delay: 34.083 ms
Loss rate: 43.48%
```
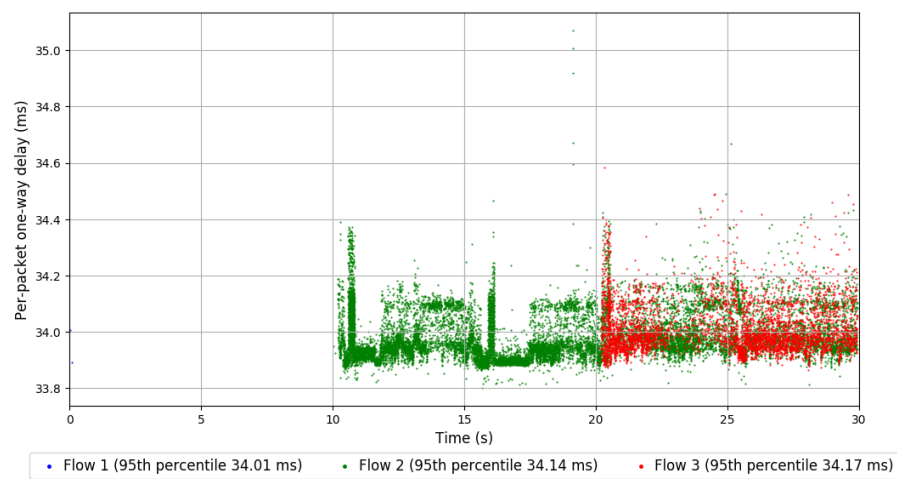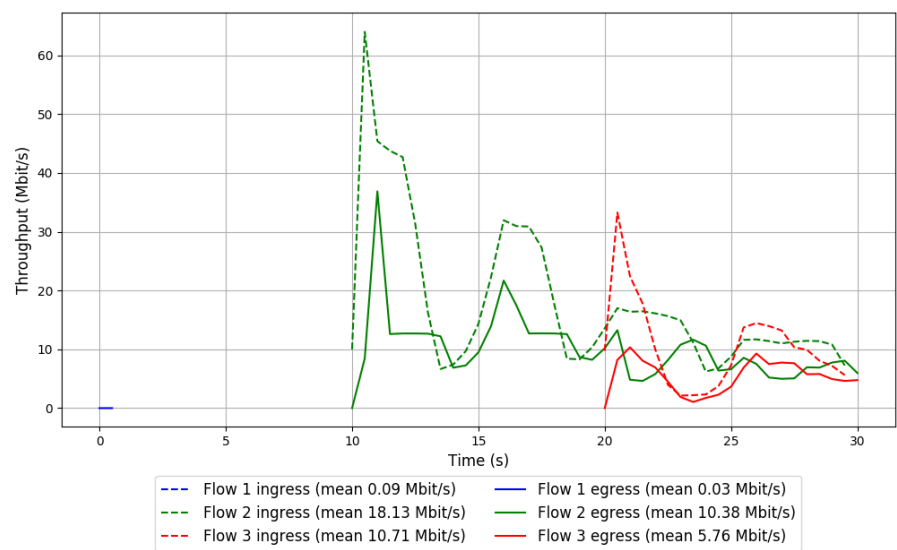
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 0.09 Mbit/s)   Flow 1 egress (mean 0.03 Mbit/s)
Flow 2 ingress (mean 15.03 Mbit/s)   Flow 2 egress (mean 9.07 Mbit/s)
Flow 3 ingress (mean 14.83 Mbit/s)   Flow 3 egress (mean 8.39 Mbit/s)

Flow 1 (95th percentile 33.95 ms)   Flow 2 (95th percentile 34.07 ms)   Flow 3 (95th percentile 34.08 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2019-08-27 01:14:28
End at: 2019-08-27 01:14:58
Local clock offset: -0.93 ms
Remote clock offset: 6.102 ms


# Below is generated by plot.py at 2019-08-27 03:29:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 34.043 ms
Loss rate: 46.49%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 33.951 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 9.96 Mbit/s
95th percentile per-packet one-way delay: 34.036 ms
Loss rate: 46.95%
-- Flow 3:
Average throughput: 6.59 Mbit/s
95th percentile per-packet one-way delay: 34.064 ms
Loss rate: 45.05%
```
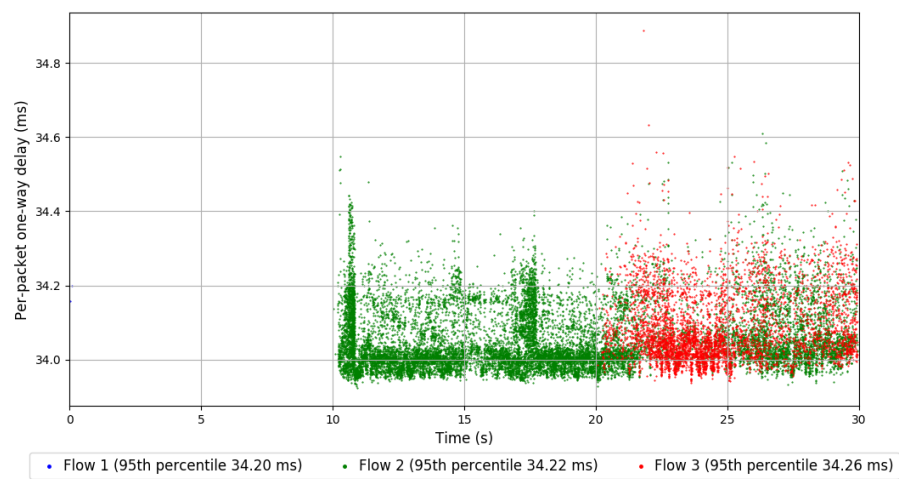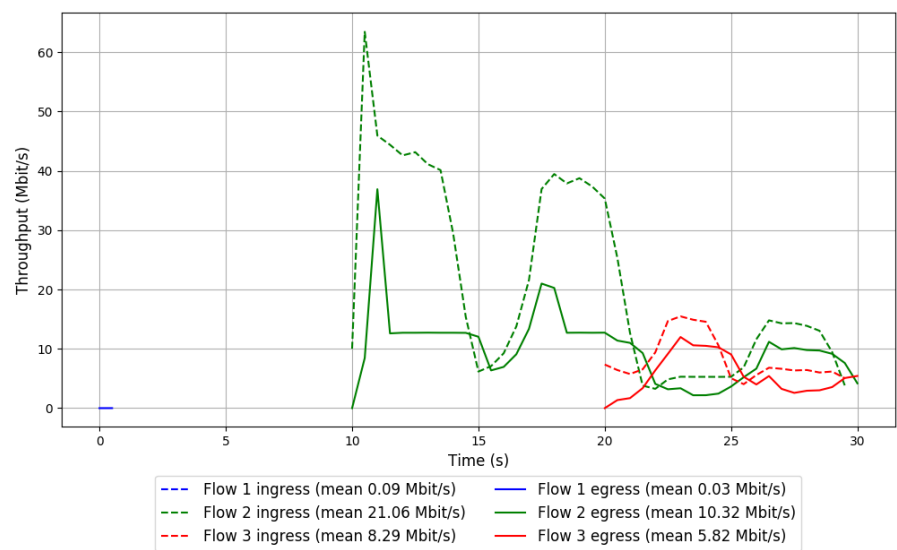
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-08-27 02:03:35
End at: 2019-08-27 02:04:05
Local clock offset: -0.899 ms
Remote clock offset: 3.134 ms


# Below is generated by plot.py at 2019-08-27 03:29:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 34.147 ms
Loss rate: 43.55%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 34.007 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 10.38 Mbit/s
95th percentile per-packet one-way delay: 34.138 ms
Loss rate: 42.76%
-- Flow 3:
Average throughput: 5.76 Mbit/s
95th percentile per-packet one-way delay: 34.169 ms
Loss rate: 46.23%
```
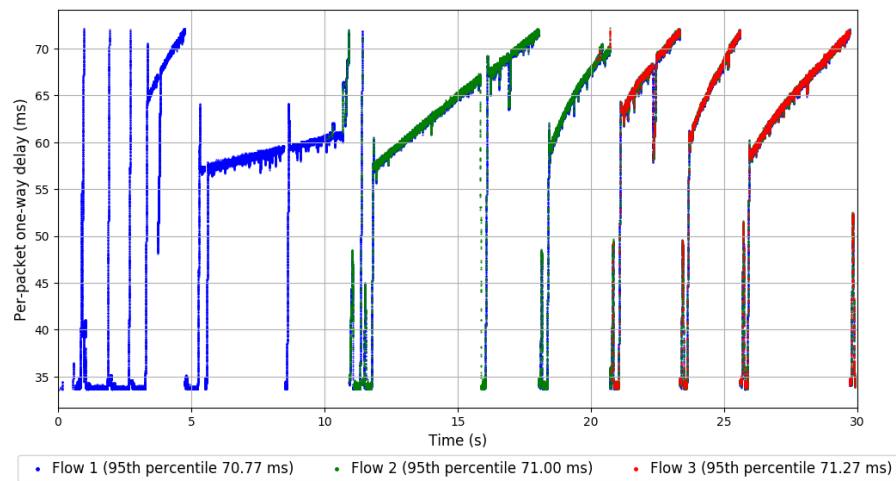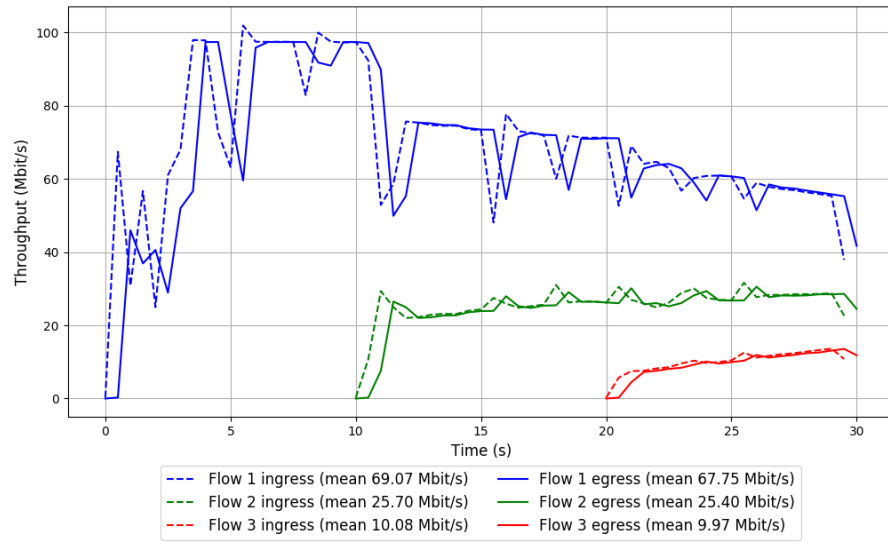
Run 4: Report of PCC-Expr — Data Link

162

```
Run 5: Statistics of PCC-Expr

Start at: 2019-08-27 02:52:00
End at: 2019-08-27 02:52:30
Local clock offset: -1.285 ms
Remote clock offset: 4.377 ms


# Below is generated by plot.py at 2019-08-27 03:29:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.78 Mbit/s
95th percentile per-packet one-way delay: 34.230 ms
Loss rate: 47.54%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 34.198 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 10.32 Mbit/s
95th percentile per-packet one-way delay: 34.216 ms
Loss rate: 51.00%
-- Flow 3:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 34.263 ms
Loss rate: 29.87%
```
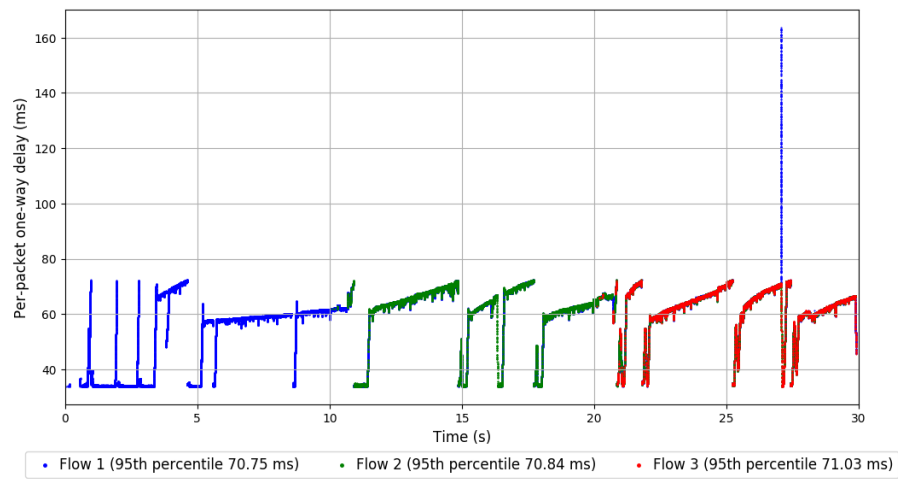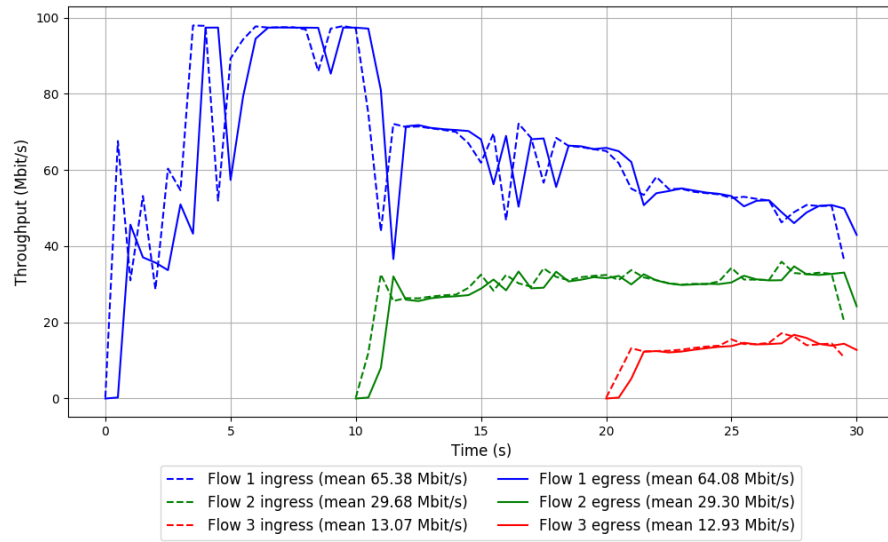
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-08-26 23:52:28
End at: 2019-08-26 23:52:58
Local clock offset: -0.991 ms
Remote clock offset: 5.749 ms

# Below is generated by plot.py at 2019-08-27 03:29:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.88 Mbit/s
95th percentile per-packet one-way delay: 70.845 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 67.75 Mbit/s
95th percentile per-packet one-way delay: 70.768 ms
Loss rate: 1.91%
-- Flow 2:
Average throughput: 25.40 Mbit/s
95th percentile per-packet one-way delay: 71.000 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 9.97 Mbit/s
95th percentile per-packet one-way delay: 71.269 ms
Loss rate: 1.50%
```
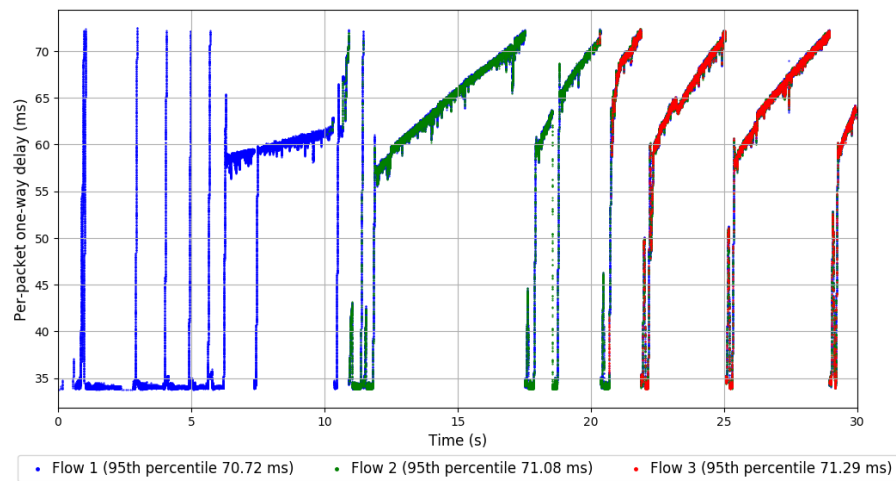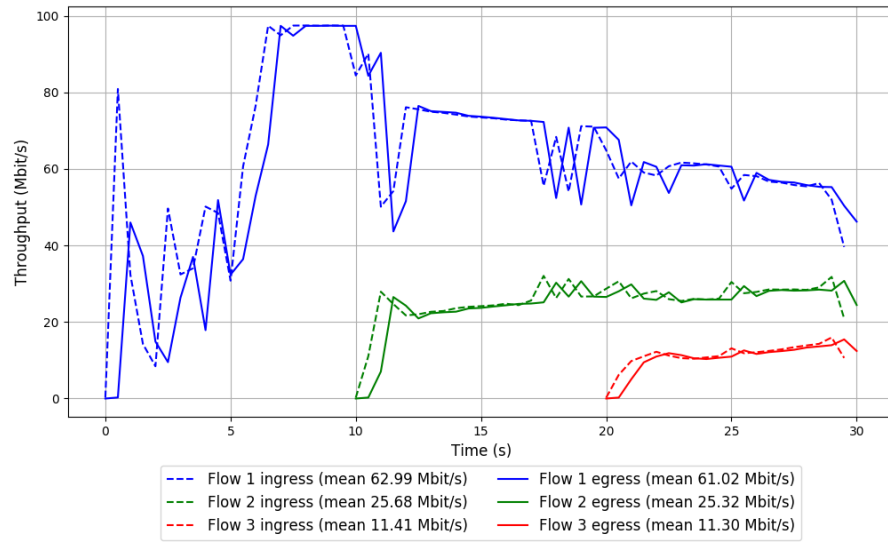
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 69.07 Mbit/s) — Flow 1 egress (mean 67.75 Mbit/s)
Flow 2 ingress (mean 25.70 Mbit/s) — Flow 2 egress (mean 25.40 Mbit/s)
Flow 3 ingress (mean 10.08 Mbit/s) — Flow 3 egress (mean 9.97 Mbit/s)

Flow 1 (95th percentile 70.77 ms)   Flow 2 (95th percentile 71.00 ms)   Flow 3 (95th percentile 71.27 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-08-27 00:41:36
End at: 2019-08-27 00:42:06
Local clock offset: -1.151 ms
Remote clock offset: 4.215 ms


# Below is generated by plot.py at 2019-08-27 03:30:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.72 Mbit/s
95th percentile per-packet one-way delay: 70.808 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 64.08 Mbit/s
95th percentile per-packet one-way delay: 70.746 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 29.30 Mbit/s
95th percentile per-packet one-way delay: 70.844 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 12.93 Mbit/s
95th percentile per-packet one-way delay: 71.034 ms
Loss rate: 1.21%
```
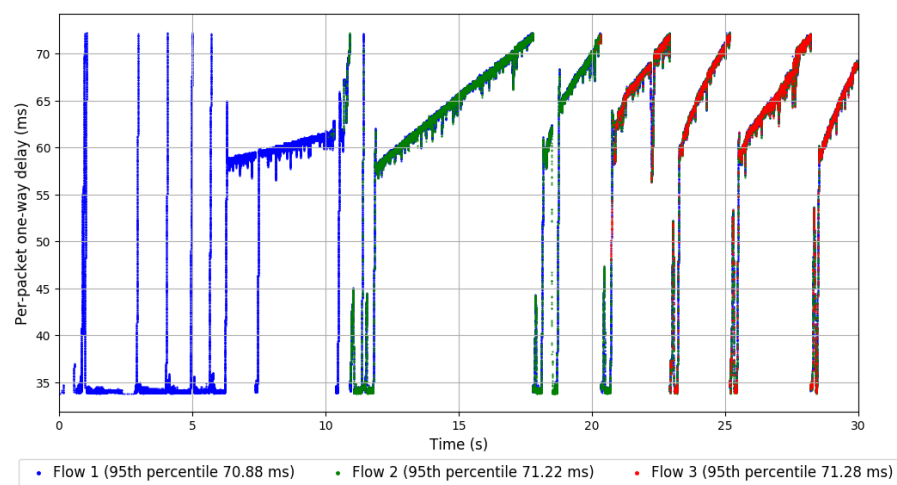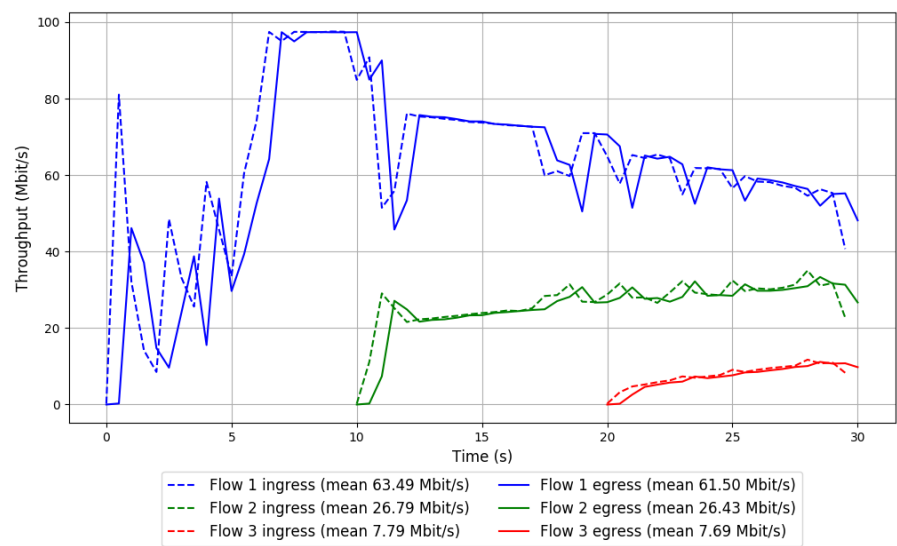
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-08-27 01:35:35
End at: 2019-08-27 01:36:05
Local clock offset: -0.894 ms
Remote clock offset: 4.281 ms


# Below is generated by plot.py at 2019-08-27 03:30:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.53 Mbit/s
95th percentile per-packet one-way delay: 70.890 ms
Loss rate: 2.60%
-- Flow 1:
Average throughput: 61.02 Mbit/s
95th percentile per-packet one-way delay: 70.723 ms
Loss rate: 3.02%
-- Flow 2:
Average throughput: 25.32 Mbit/s
95th percentile per-packet one-way delay: 71.083 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 11.30 Mbit/s
95th percentile per-packet one-way delay: 71.288 ms
Loss rate: 1.07%
```
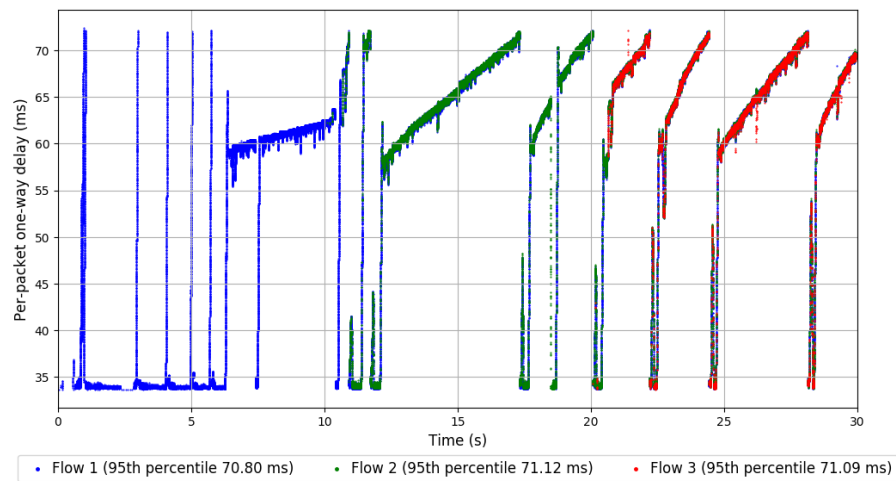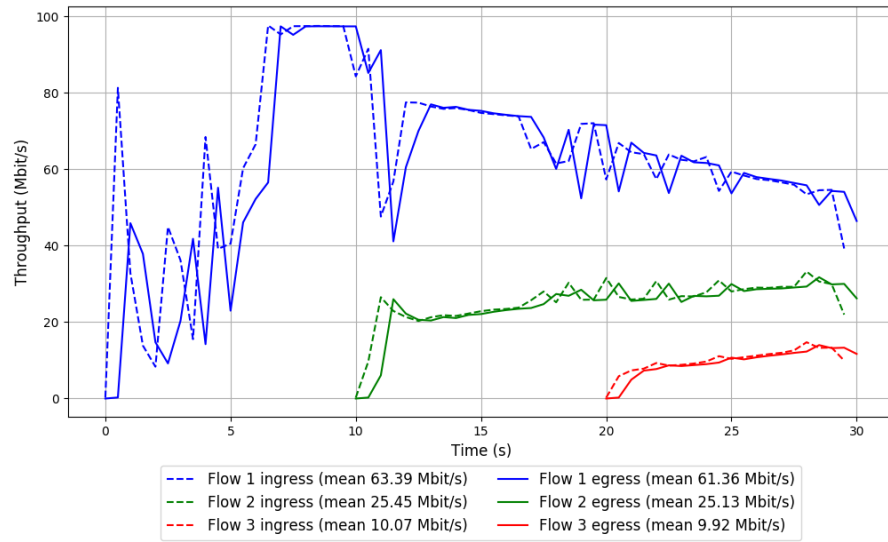
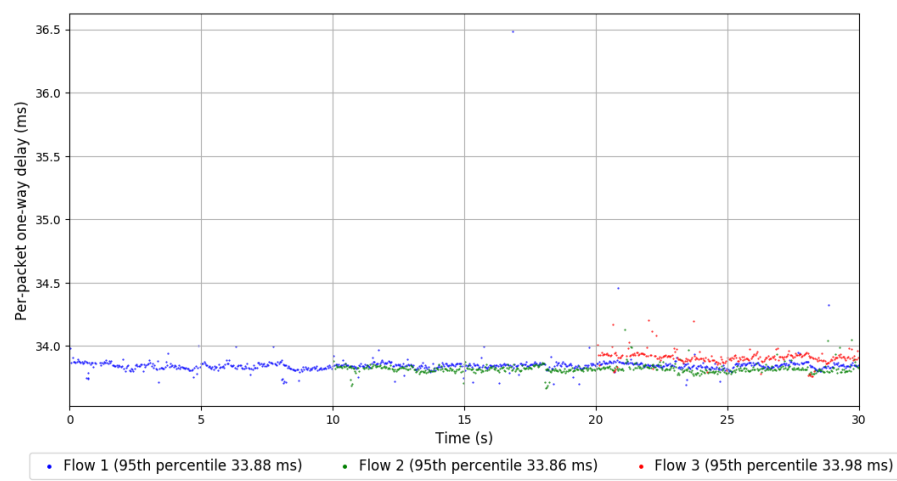Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-08-27 02:19:34
End at: 2019-08-27 02:20:04
Local clock offset: -1.028 ms
Remote clock offset: 3.16 ms


# Below is generated by plot.py at 2019-08-27 03:30:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.56 Mbit/s
95th percentile per-packet one-way delay: 70.979 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 61.50 Mbit/s
95th percentile per-packet one-way delay: 70.884 ms
Loss rate: 3.02%
-- Flow 2:
Average throughput: 26.43 Mbit/s
95th percentile per-packet one-way delay: 71.225 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 7.69 Mbit/s
95th percentile per-packet one-way delay: 71.282 ms
Loss rate: 1.33%
```
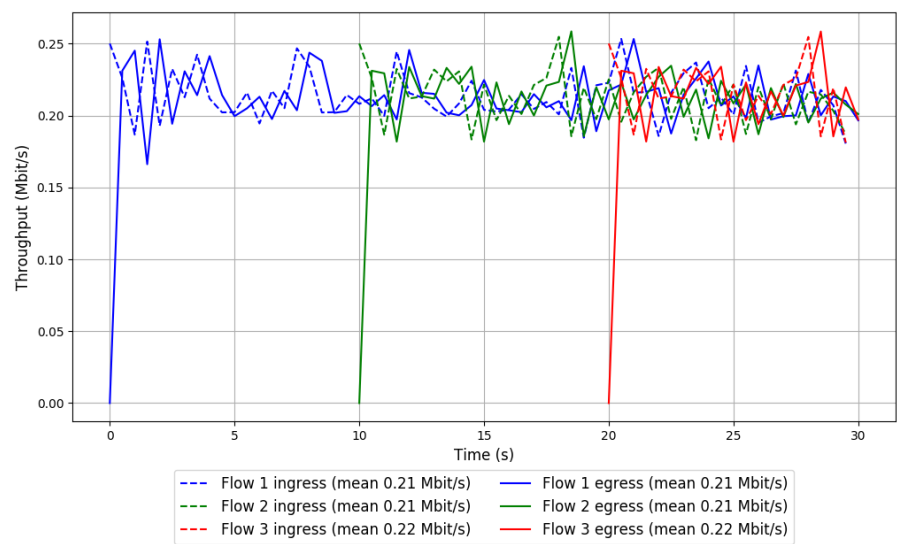
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-08-27 03:14:35
End at: 2019-08-27 03:15:05
Local clock offset: -1.291 ms
Remote clock offset: 5.374 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.31 Mbit/s
95th percentile per-packet one-way delay: 70.877 ms
Loss rate: 2.64%
-- Flow 1:
Average throughput: 61.36 Mbit/s
95th percentile per-packet one-way delay: 70.801 ms
Loss rate: 3.10%
-- Flow 2:
Average throughput: 25.13 Mbit/s
95th percentile per-packet one-way delay: 71.123 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 9.92 Mbit/s
95th percentile per-packet one-way delay: 71.086 ms
Loss rate: 1.20%
```
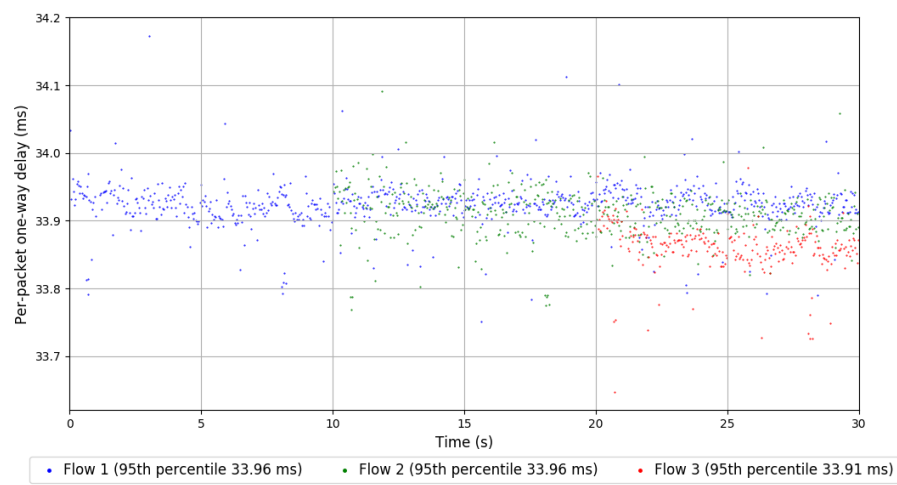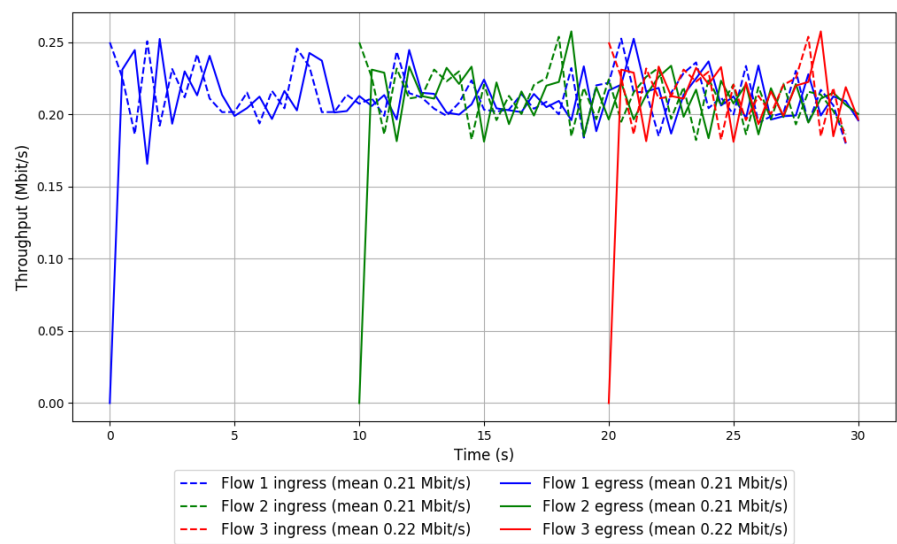
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-08-26 23:19:37
End at: 2019-08-26 23:20:07
Local clock offset: -0.657 ms
Remote clock offset: 4.581 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.931 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.884 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.862 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.978 ms
Loss rate: 0.00%
```
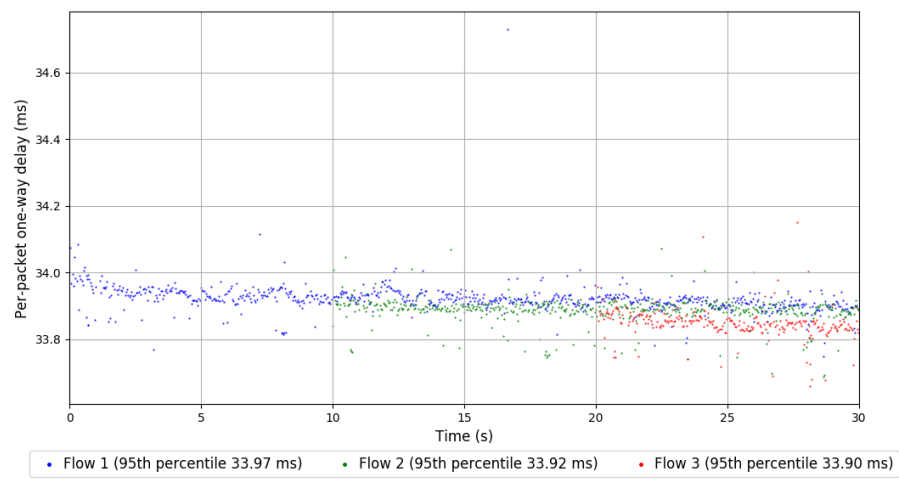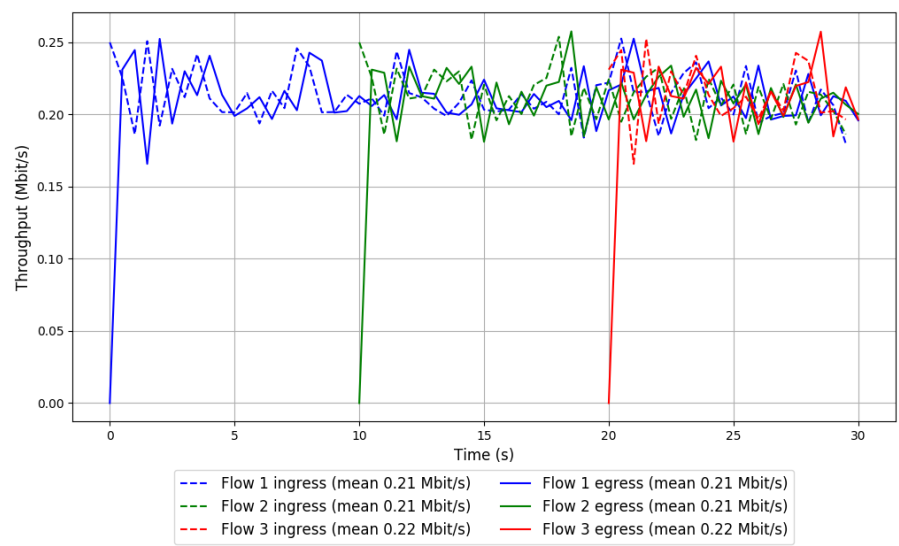
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-08-27 00:05:32
End at: 2019-08-27 00:06:02
Local clock offset: -1.055 ms
Remote clock offset: 6.195 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.957 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.961 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.958 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.907 ms
Loss rate: 0.00%
```
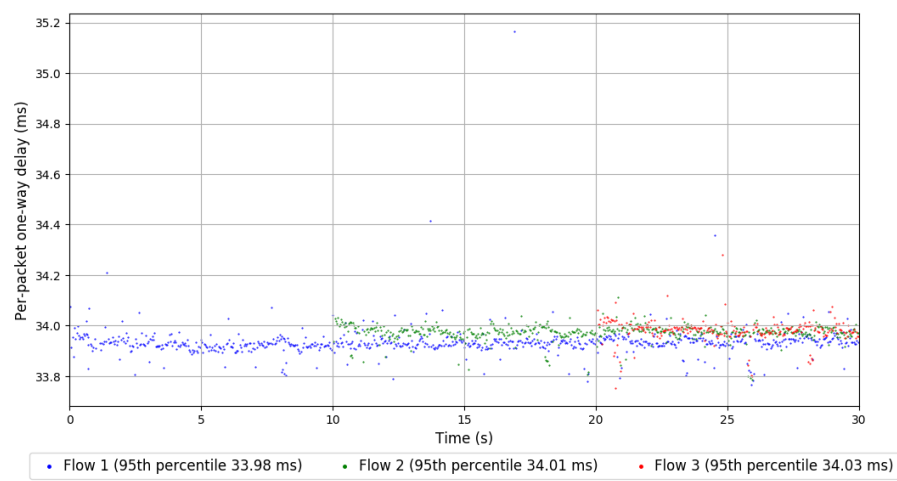
Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) — Flow 1 egress (mean 0.21 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s) — Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s) — Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 33.96 ms)　Flow 2 (95th percentile 33.96 ms)　Flow 3 (95th percentile 33.91 ms)

```
Run 3: Statistics of SCReAM

Start at: 2019-08-27 00:55:19
End at: 2019-08-27 00:55:49
Local clock offset: -1.063 ms
Remote clock offset: 4.868 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.958 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.971 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.920 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.895 ms
Loss rate: 0.00%
```
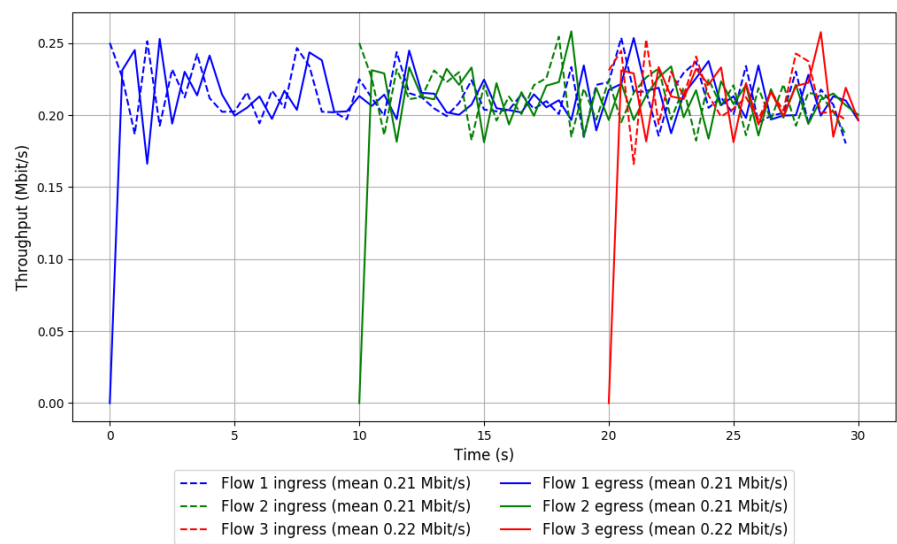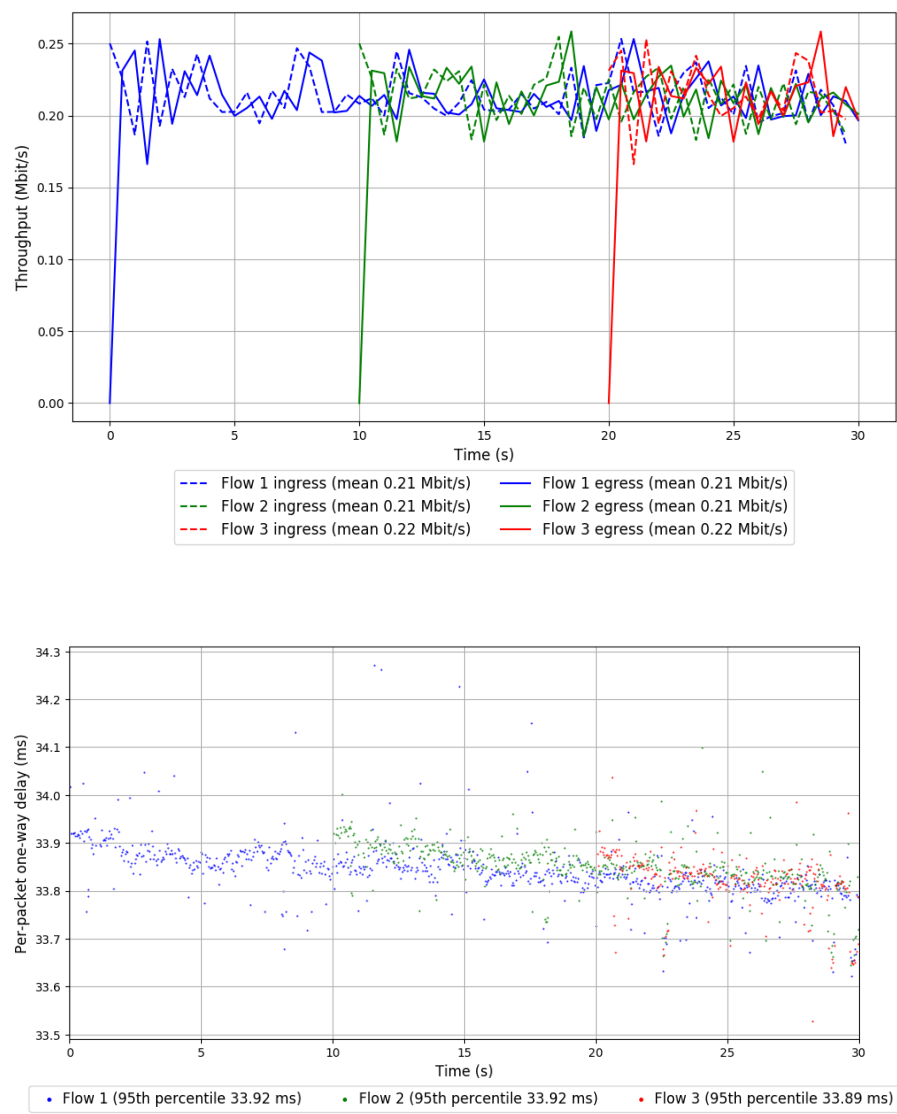
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   Flow 1 egress (mean 0.21 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s)   Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 33.97 ms)   Flow 2 (95th percentile 33.92 ms)   Flow 3 (95th percentile 33.90 ms)

```
Run 4: Statistics of SCReAM

Start at: 2019-08-27 01:49:16
End at: 2019-08-27 01:49:46
Local clock offset: -0.89 ms
Remote clock offset: 3.242 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 34.014 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.980 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 34.012 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 34.030 ms
Loss rate: 0.00%
```
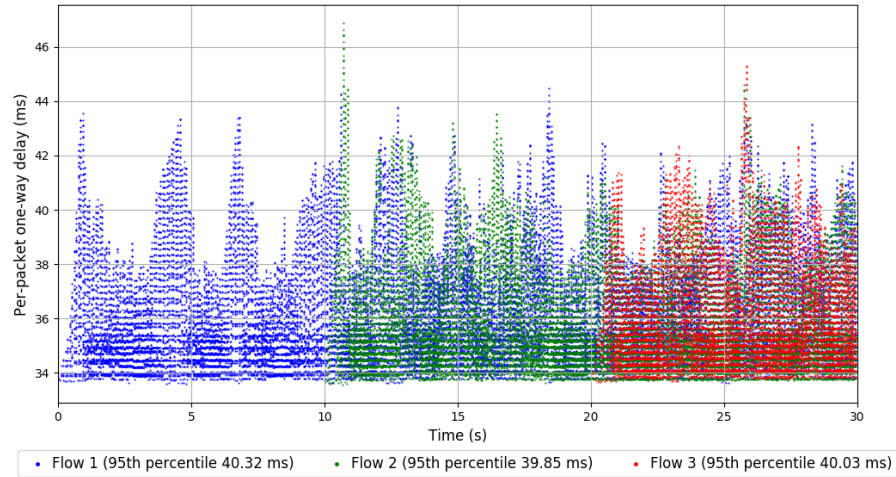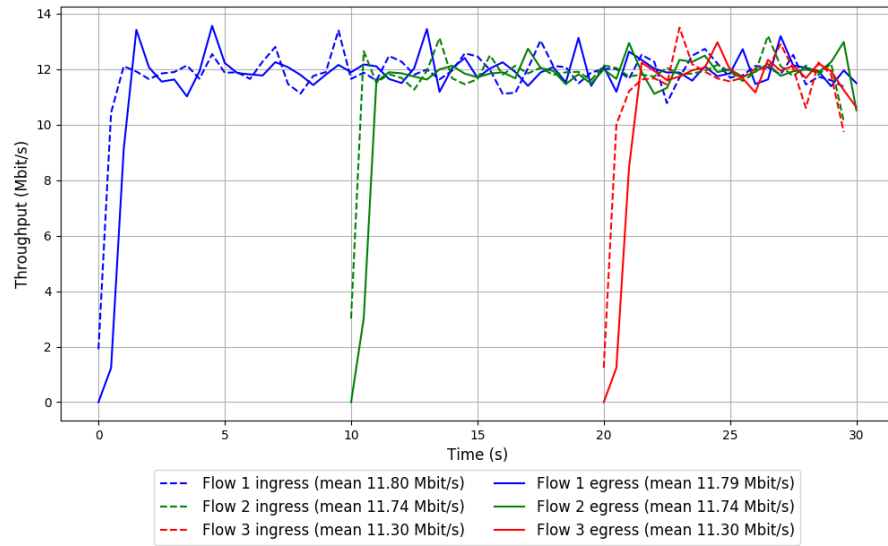
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-08-27 02:32:21
End at: 2019-08-27 02:32:51
Local clock offset: -1.174 ms
Remote clock offset: 3.263 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.920 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.920 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.925 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.886 ms
Loss rate: 0.00%
```
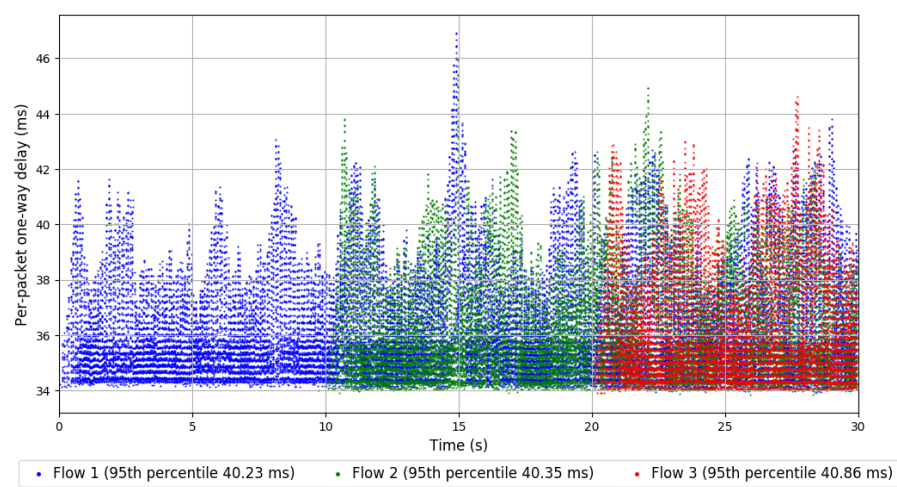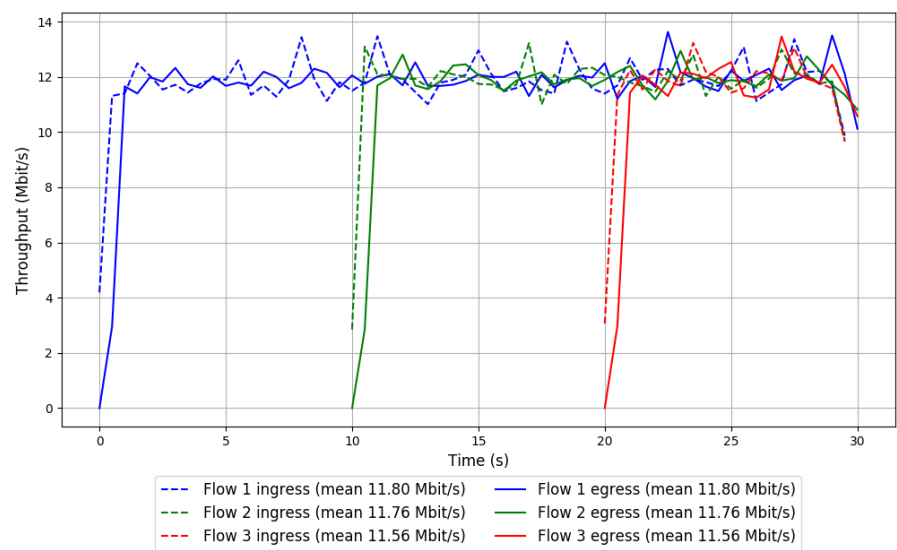
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-08-26 23:10:31
End at: 2019-08-26 23:11:01
Local clock offset: -0.56 ms
Remote clock offset: 5.021 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.33 Mbit/s
95th percentile per-packet one-way delay: 40.124 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 40.321 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 11.74 Mbit/s
95th percentile per-packet one-way delay: 39.855 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.30 Mbit/s
95th percentile per-packet one-way delay: 40.026 ms
Loss rate: 0.00%
```
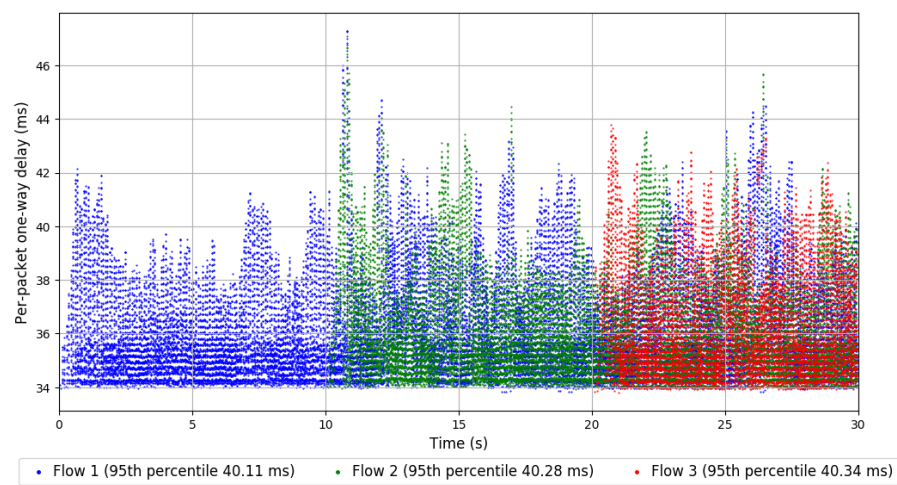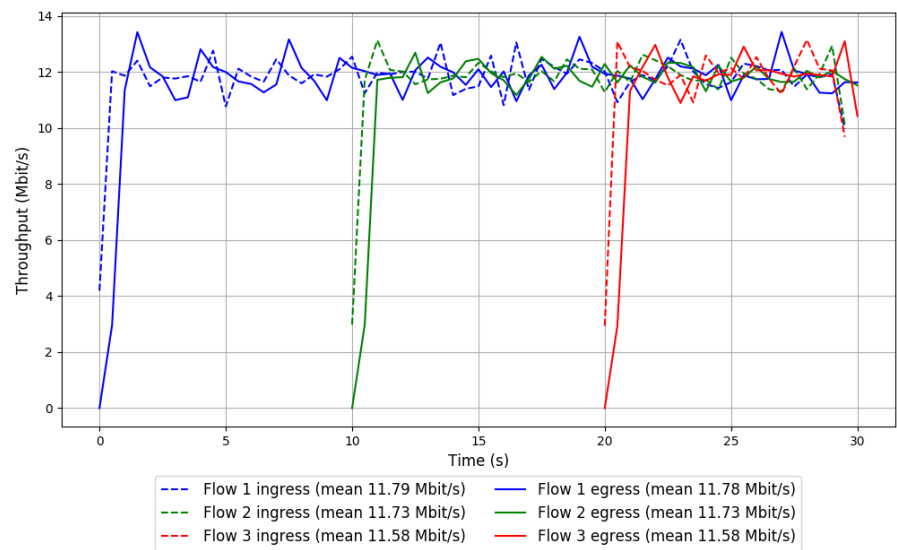
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-08-26 23:55:11
End at: 2019-08-26 23:55:41
Local clock offset: -1.009 ms
Remote clock offset: 6.258 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 40.406 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 40.229 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 40.348 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.56 Mbit/s
95th percentile per-packet one-way delay: 40.861 ms
Loss rate: 0.00%
```
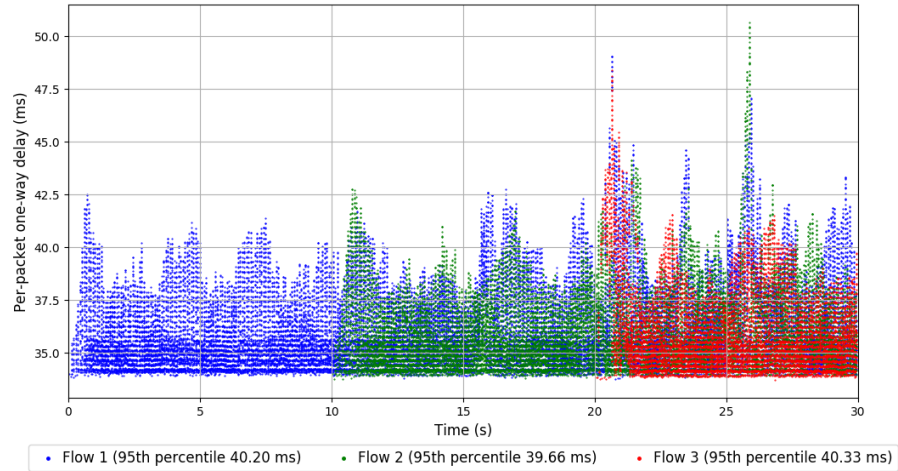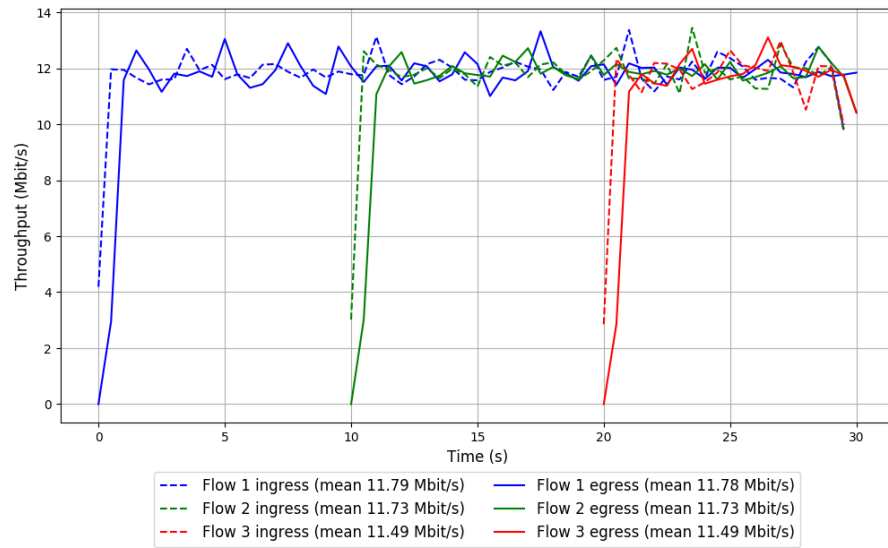
Run 2: Report of Sprout — Data Link

188

```
Run 3: Statistics of Sprout

Start at: 2019-08-27 00:44:57
End at: 2019-08-27 00:45:27
Local clock offset: -1.163 ms
Remote clock offset: 4.093 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.41 Mbit/s
95th percentile per-packet one-way delay: 40.214 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 40.113 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 11.73 Mbit/s
95th percentile per-packet one-way delay: 40.284 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 11.58 Mbit/s
95th percentile per-packet one-way delay: 40.338 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-08-27 01:38:02
End at: 2019-08-27 01:38:32
Local clock offset: -0.881 ms
Remote clock offset: 4.095 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 40.055 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 40.195 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.73 Mbit/s
95th percentile per-packet one-way delay: 39.660 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.49 Mbit/s
95th percentile per-packet one-way delay: 40.326 ms
Loss rate: 0.00%
```
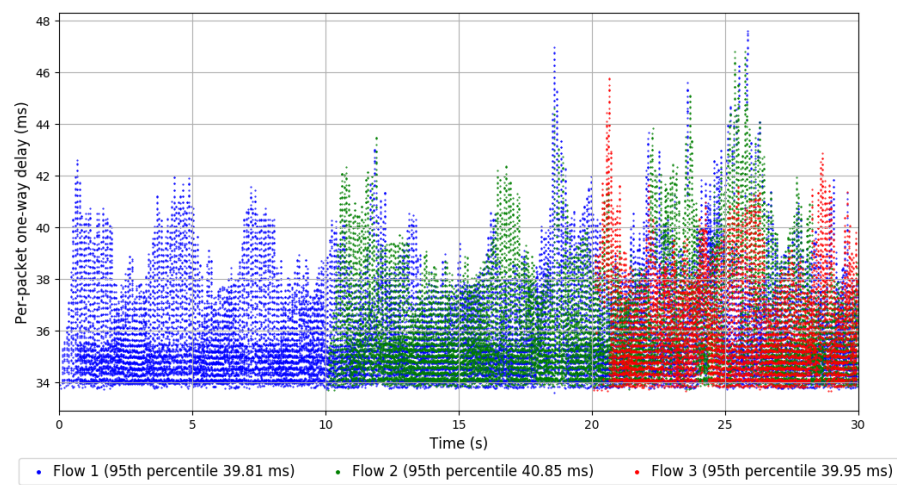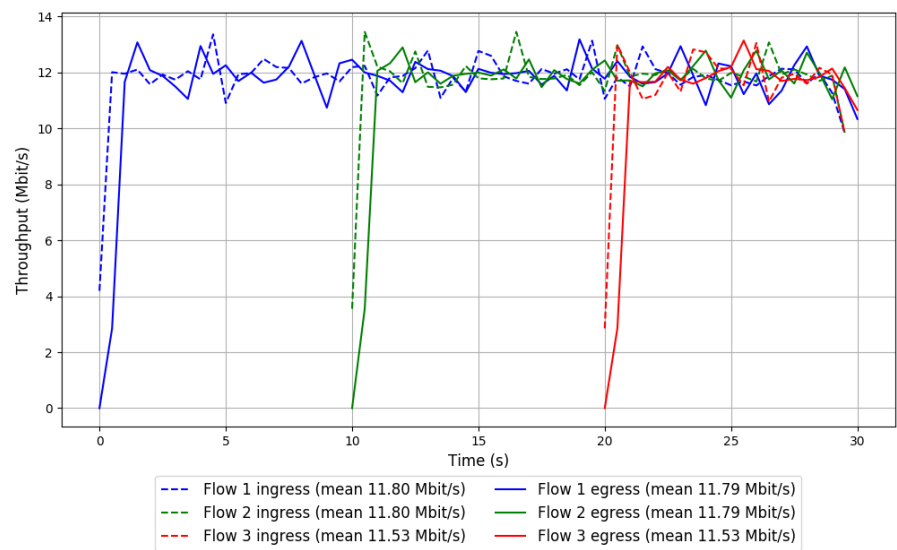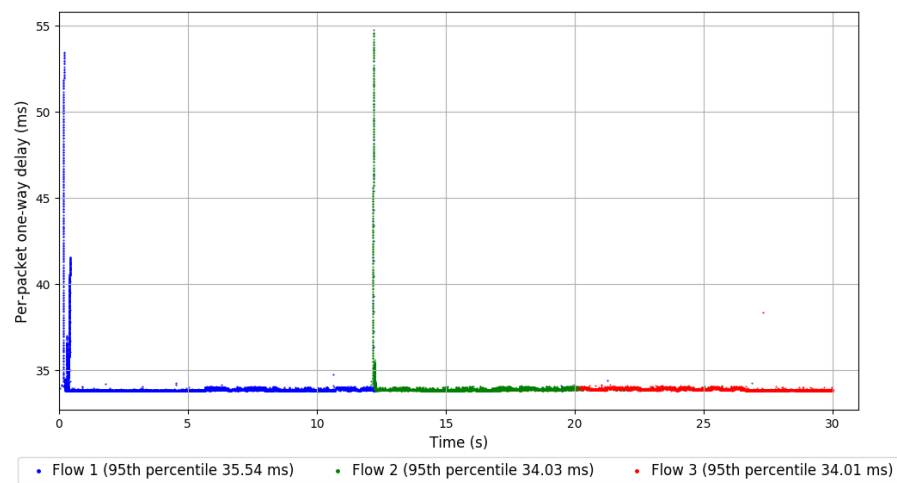
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-08-27 02:21:32
End at: 2019-08-27 02:22:02
Local clock offset: -1.059 ms
Remote clock offset: 3.073 ms


# Below is generated by plot.py at 2019-08-27 03:30:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.45 Mbit/s
95th percentile per-packet one-way delay: 40.176 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 39.813 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 40.854 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.53 Mbit/s
95th percentile per-packet one-way delay: 39.945 ms
Loss rate: 0.00%
```
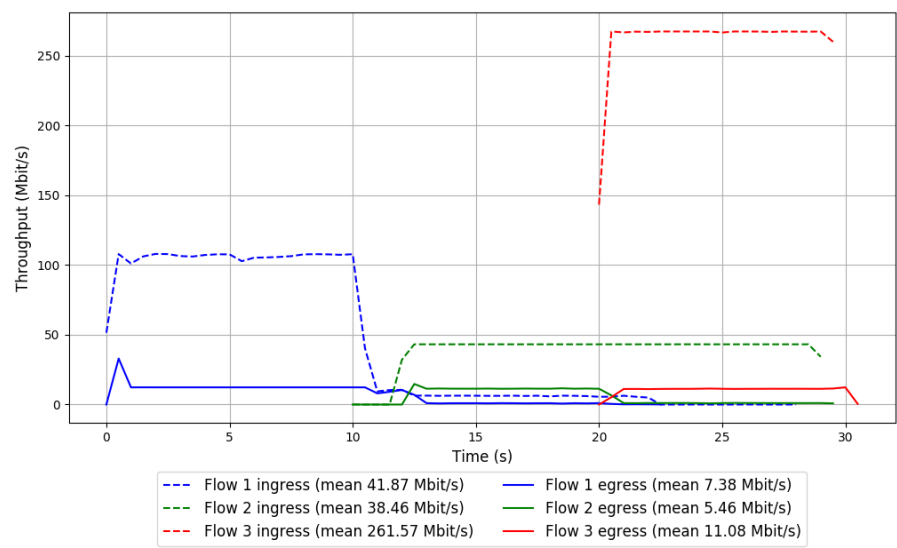
Run 5: Report of Sprout — Data Link

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

Start at: 2019-08-26 23:36:09
End at: 2019-08-26 23:36:39
Local clock offset: -0.789 ms
Remote clock offset: 4.508 ms


# Below is generated by plot.py at 2019-08-27 03:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 34.037 ms
Loss rate: 91.62%
-- Flow 1:
Average throughput: 7.38 Mbit/s
95th percentile per-packet one-way delay: 35.542 ms
Loss rate: 86.15%
-- Flow 2:
Average throughput: 5.46 Mbit/s
95th percentile per-packet one-way delay: 34.032 ms
Loss rate: 85.86%
-- Flow 3:
Average throughput: 11.08 Mbit/s
95th percentile per-packet one-way delay: 34.005 ms
Loss rate: 95.77%
```
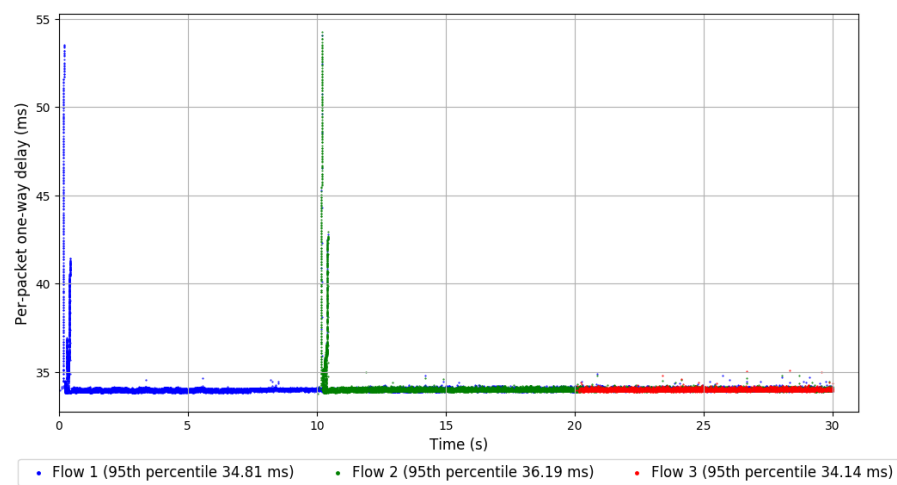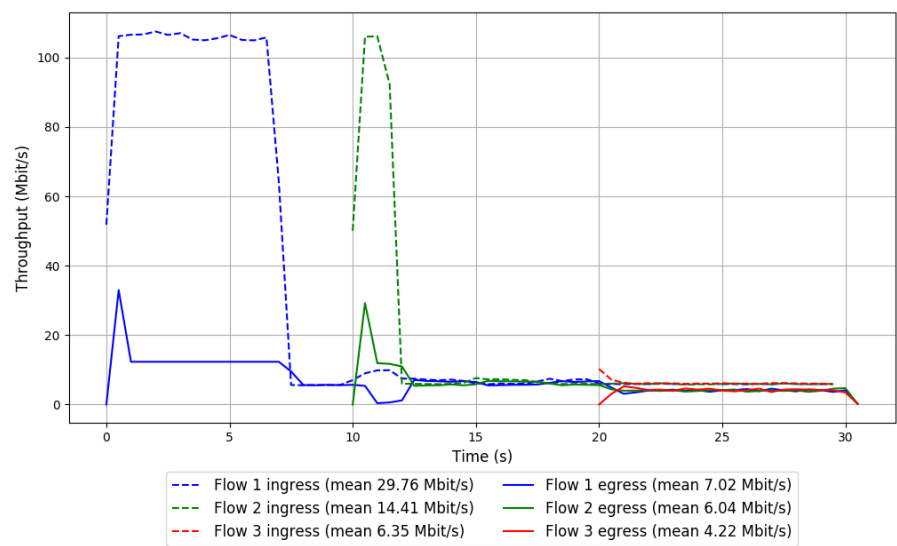
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-08-27 00:22:44
End at: 2019-08-27 00:23:14
Local clock offset: -1.058 ms
Remote clock offset: 5.275 ms


# Below is generated by plot.py at 2019-08-27 03:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.45 Mbit/s
95th percentile per-packet one-way delay: 34.913 ms
Loss rate: 69.99%
-- Flow 1:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 34.814 ms
Loss rate: 76.41%
-- Flow 2:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 36.186 ms
Loss rate: 58.11%
-- Flow 3:
Average throughput: 4.22 Mbit/s
95th percentile per-packet one-way delay: 34.142 ms
Loss rate: 33.56%
```
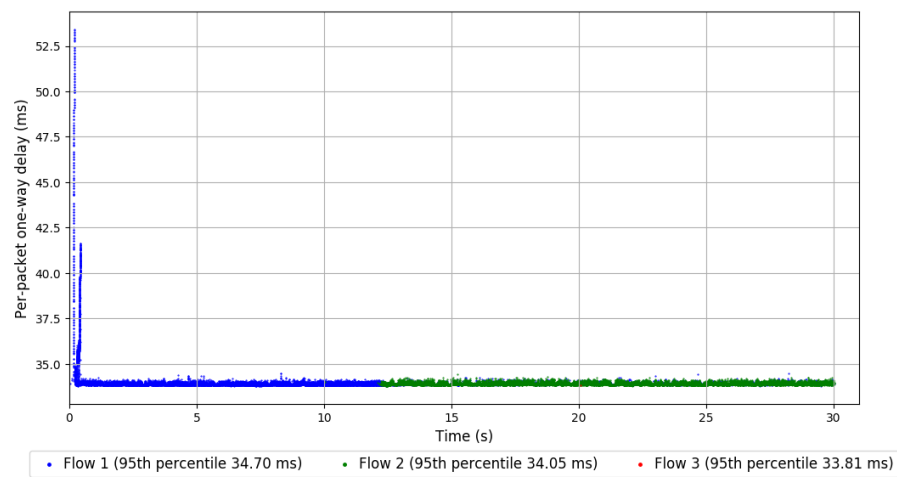
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-08-27 01:15:56
End at: 2019-08-27 01:16:26
Local clock offset: -0.922 ms
Remote clock offset: 6.172 ms


# Below is generated by plot.py at 2019-08-27 03:30:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 34.088 ms
Loss rate: 95.14%
-- Flow 1:
Average throughput: 6.93 Mbit/s
95th percentile per-packet one-way delay: 34.702 ms
Loss rate: 93.46%
-- Flow 2:
Average throughput: 8.63 Mbit/s
95th percentile per-packet one-way delay: 34.050 ms
Loss rate: 96.29%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 33.814 ms
Loss rate: 99.16%
```
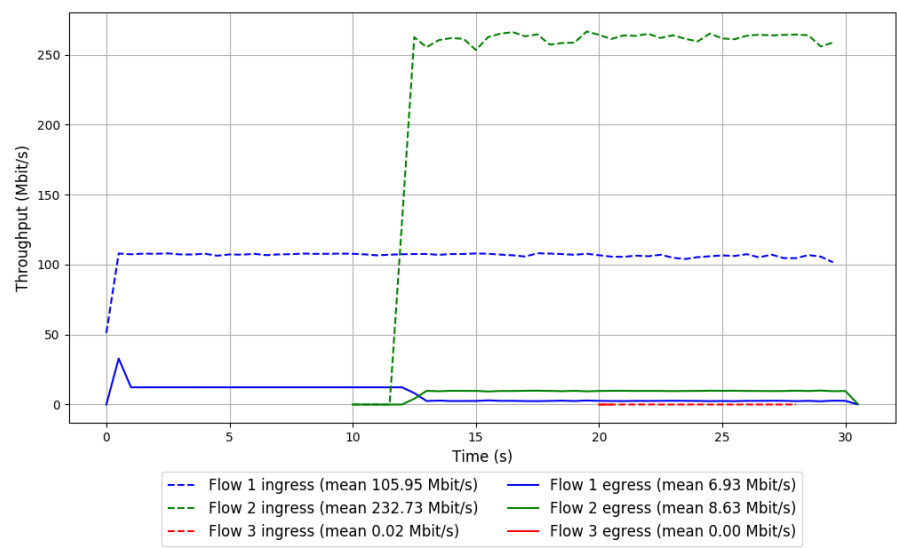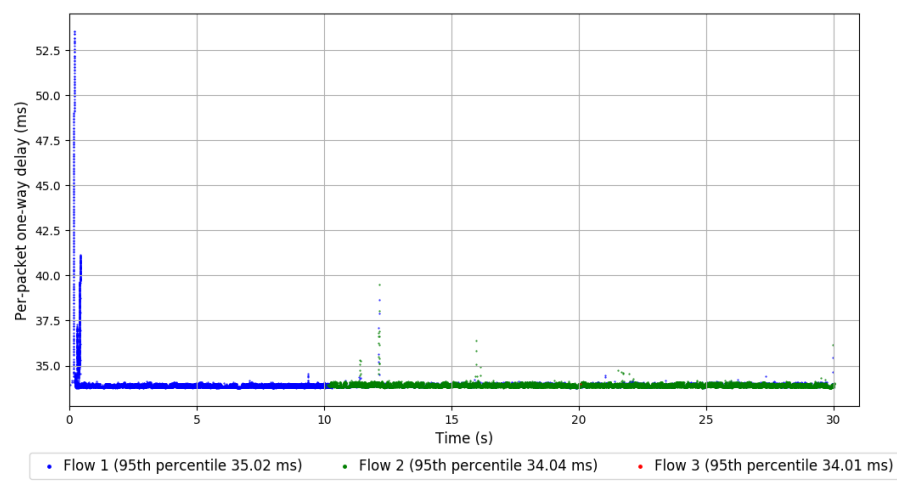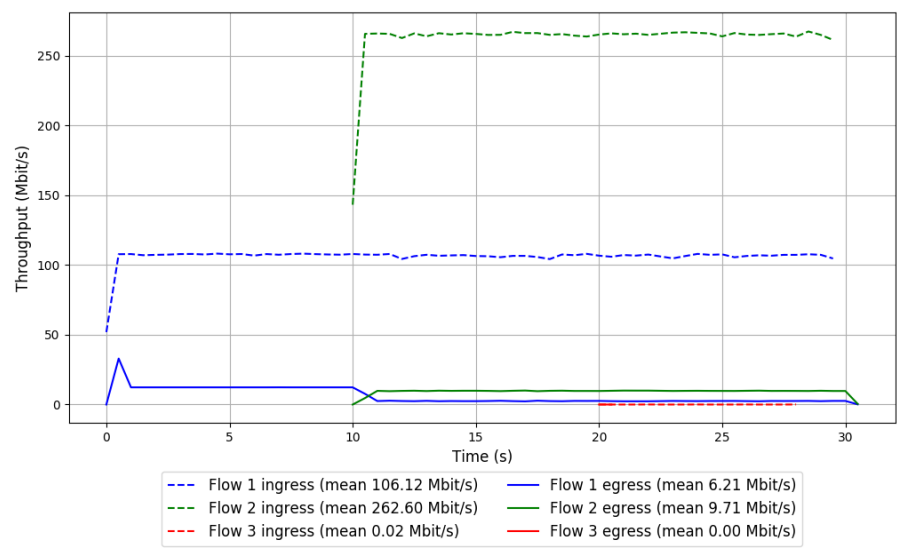
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 105.95 Mbit/s)
Flow 2 ingress (mean 232.73 Mbit/s)
Flow 3 ingress (mean 0.02 Mbit/s)
Flow 1 egress (mean 6.93 Mbit/s)
Flow 2 egress (mean 8.63 Mbit/s)
Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 34.70 ms)
Flow 2 (95th percentile 34.05 ms)
Flow 3 (95th percentile 33.81 ms)

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

Start at: 2019-08-27 02:04:49
End at: 2019-08-27 02:05:19
Local clock offset: -0.873 ms
Remote clock offset: 3.078 ms


# Below is generated by plot.py at 2019-08-27 03:31:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 34.064 ms
Loss rate: 95.49%
-- Flow 1:
Average throughput: 6.21 Mbit/s
95th percentile per-packet one-way delay: 35.018 ms
Loss rate: 94.15%
-- Flow 2:
Average throughput: 9.71 Mbit/s
95th percentile per-packet one-way delay: 34.044 ms
Loss rate: 96.30%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 34.005 ms
Loss rate: 99.16%
```
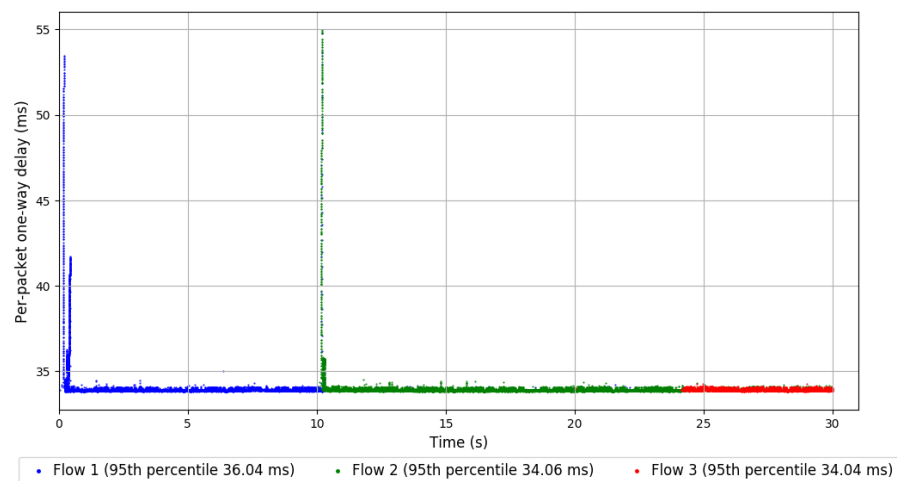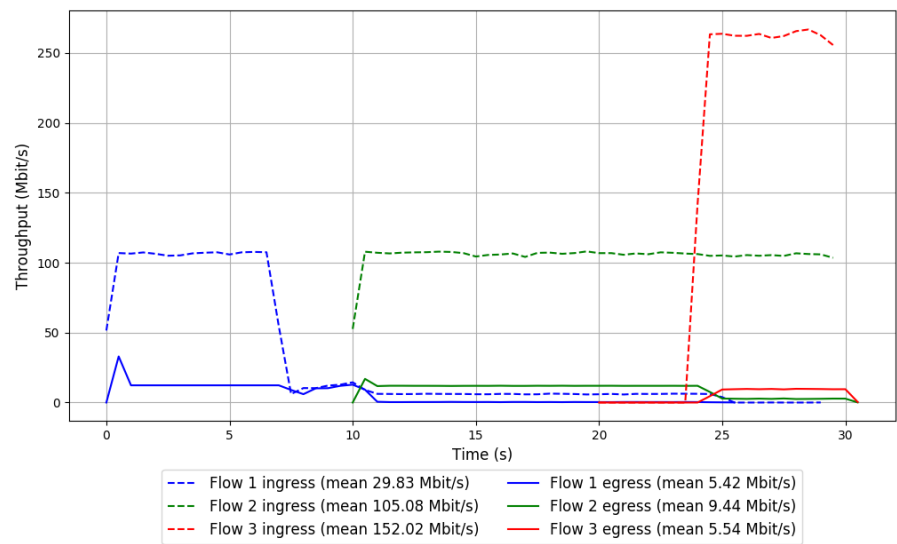
Run 4: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 106.12 Mbit/s) ——— Flow 1 egress (mean 6.21 Mbit/s)
- - - Flow 2 ingress (mean 262.60 Mbit/s) ——— Flow 2 egress (mean 9.71 Mbit/s)
- - - Flow 3 ingress (mean 0.02 Mbit/s) ——— Flow 3 egress (mean 0.00 Mbit/s)

- Flow 1 (95th percentile 35.02 ms) • Flow 2 (95th percentile 34.04 ms) • Flow 3 (95th percentile 34.01 ms)

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

Start at: 2019-08-27 02:53:22
End at: 2019-08-27 02:53:52
Local clock offset: -1.274 ms
Remote clock offset: 4.224 ms


# Below is generated by plot.py at 2019-08-27 03:31:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 34.120 ms
Loss rate: 91.53%
-- Flow 1:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 36.042 ms
Loss rate: 84.35%
-- Flow 2:
Average throughput: 9.44 Mbit/s
95th percentile per-packet one-way delay: 34.056 ms
Loss rate: 91.02%
-- Flow 3:
Average throughput: 5.54 Mbit/s
95th percentile per-packet one-way delay: 34.043 ms
Loss rate: 96.36%
```
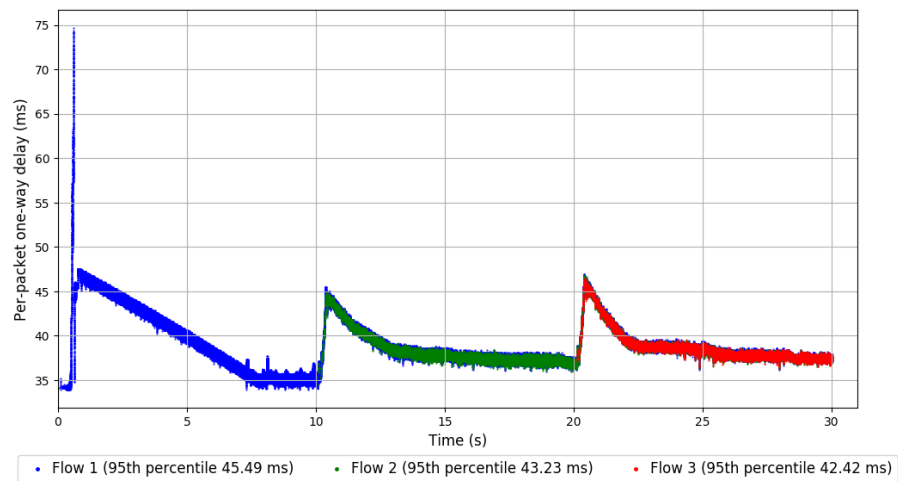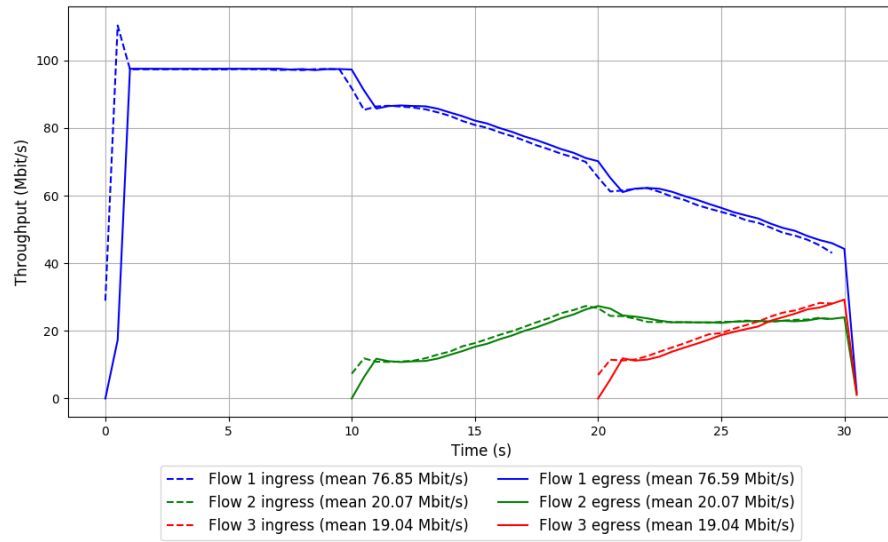
Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2019-08-26 23:47:05
End at: 2019-08-26 23:47:35
Local clock offset: -0.945 ms
Remote clock offset: 5.402 ms


# Below is generated by plot.py at 2019-08-27 03:31:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 45.223 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 76.59 Mbit/s
95th percentile per-packet one-way delay: 45.488 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 20.07 Mbit/s
95th percentile per-packet one-way delay: 43.233 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.04 Mbit/s
95th percentile per-packet one-way delay: 42.418 ms
Loss rate: 0.01%
```
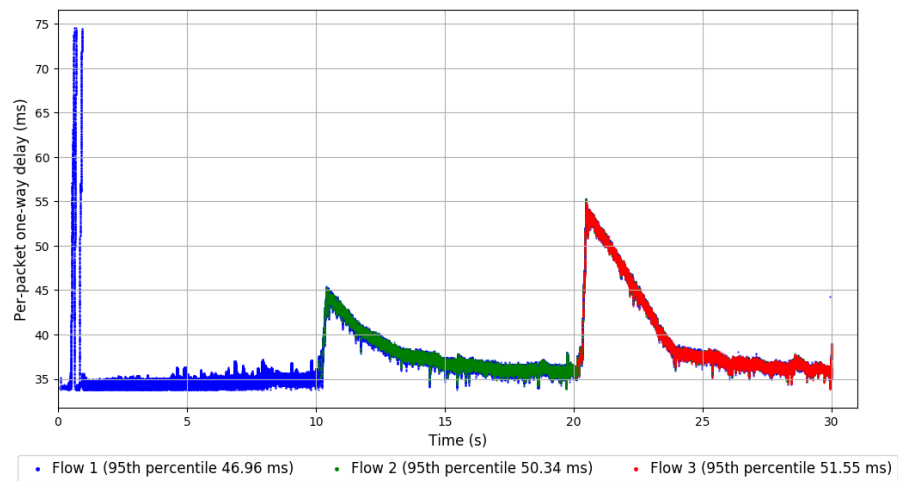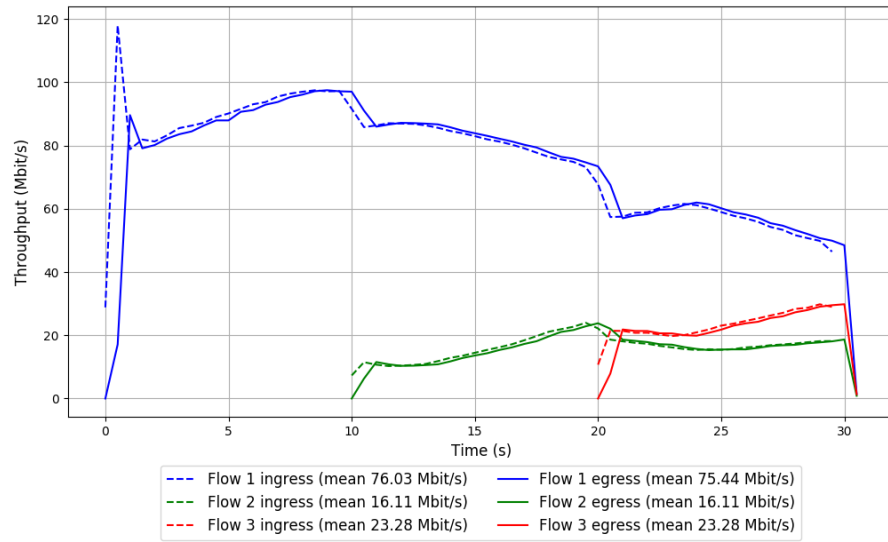
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-08-27 00:35:20
End at: 2019-08-27 00:35:50
Local clock offset: -1.135 ms
Remote clock offset: 4.41 ms


# Below is generated by plot.py at 2019-08-27 03:31:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.90 Mbit/s
95th percentile per-packet one-way delay: 48.672 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 75.44 Mbit/s
95th percentile per-packet one-way delay: 46.958 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 16.11 Mbit/s
95th percentile per-packet one-way delay: 50.337 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 23.28 Mbit/s
95th percentile per-packet one-way delay: 51.547 ms
Loss rate: 0.00%
```
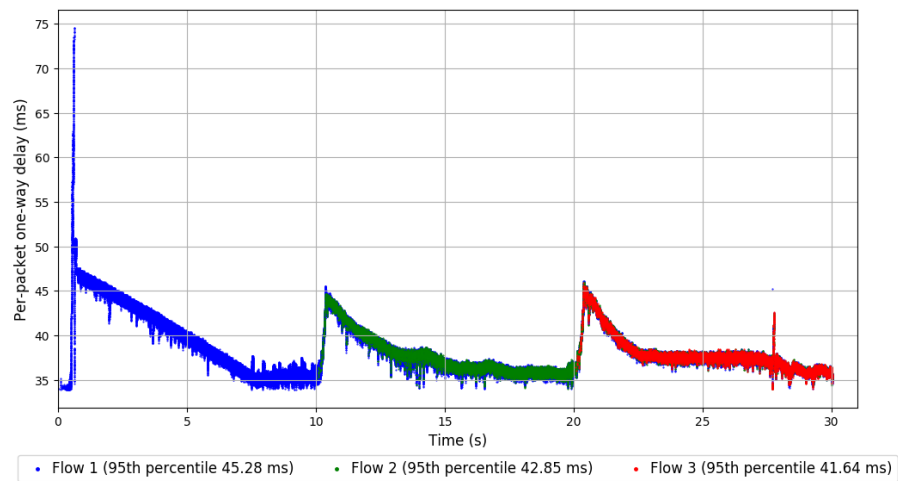
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-08-27 01:30:25
End at: 2019-08-27 01:30:55
Local clock offset: -0.914 ms
Remote clock offset: 4.976 ms


# Below is generated by plot.py at 2019-08-27 03:31:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 44.918 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 78.54 Mbit/s
95th percentile per-packet one-way delay: 45.281 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 16.80 Mbit/s
95th percentile per-packet one-way delay: 42.847 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.52 Mbit/s
95th percentile per-packet one-way delay: 41.642 ms
Loss rate: 0.00%
```
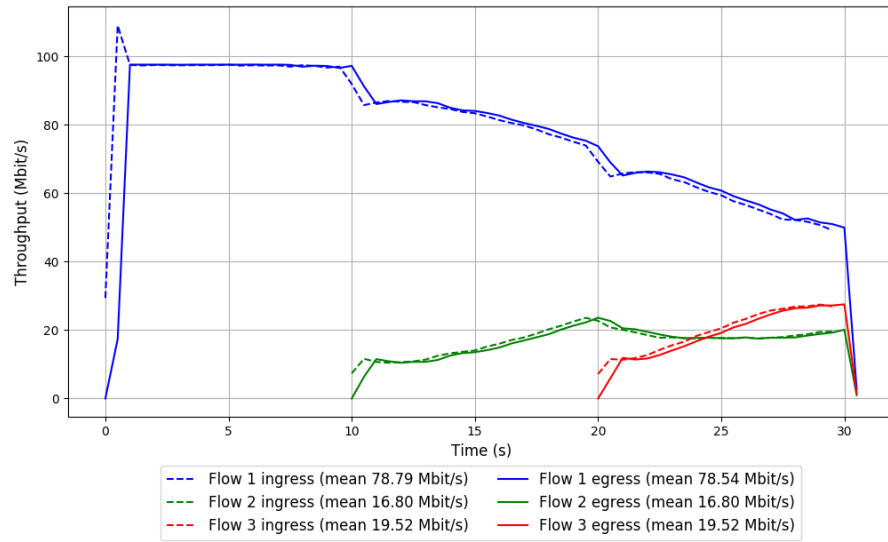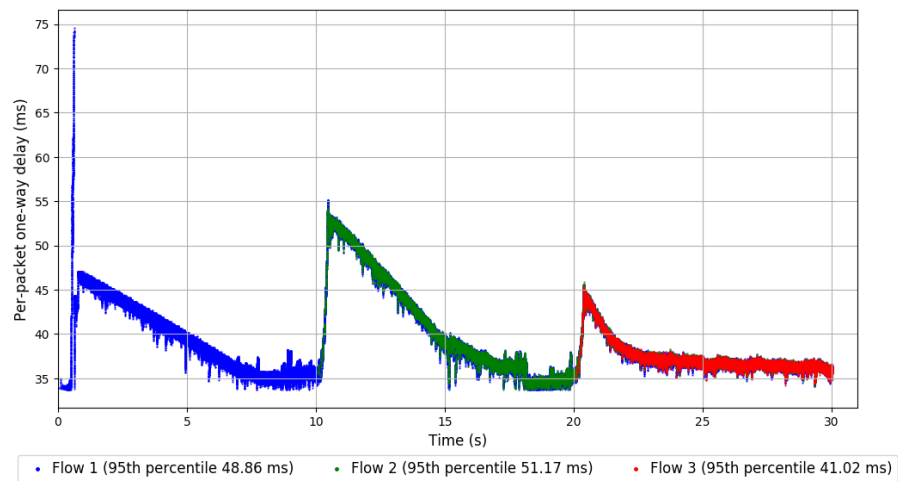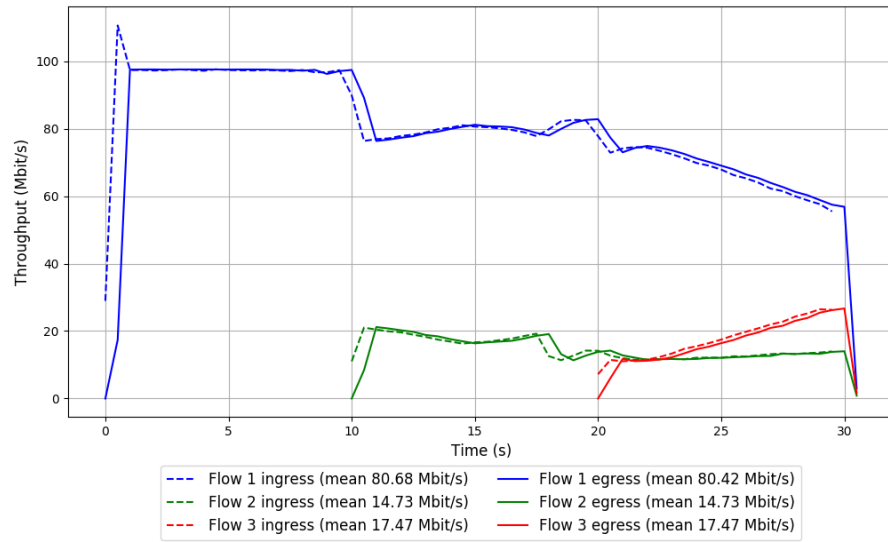
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 78.79 Mbit/s)   Flow 1 egress (mean 78.54 Mbit/s)
Flow 2 ingress (mean 16.80 Mbit/s)   Flow 2 egress (mean 16.80 Mbit/s)
Flow 3 ingress (mean 19.52 Mbit/s)   Flow 3 egress (mean 19.52 Mbit/s)

Flow 1 (95th percentile 45.28 ms)   Flow 2 (95th percentile 42.85 ms)   Flow 3 (95th percentile 41.64 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2019-08-27 02:15:25
End at: 2019-08-27 02:15:55
Local clock offset: -0.969 ms
Remote clock offset: 3.009 ms


# Below is generated by plot.py at 2019-08-27 03:31:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.04 Mbit/s
95th percentile per-packet one-way delay: 49.103 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 80.42 Mbit/s
95th percentile per-packet one-way delay: 48.859 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 14.73 Mbit/s
95th percentile per-packet one-way delay: 51.175 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 17.47 Mbit/s
95th percentile per-packet one-way delay: 41.020 ms
Loss rate: 0.00%
```
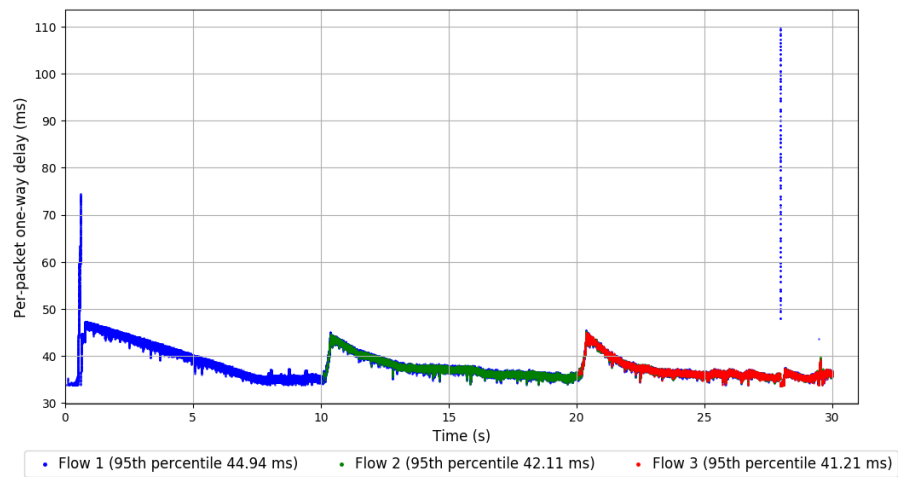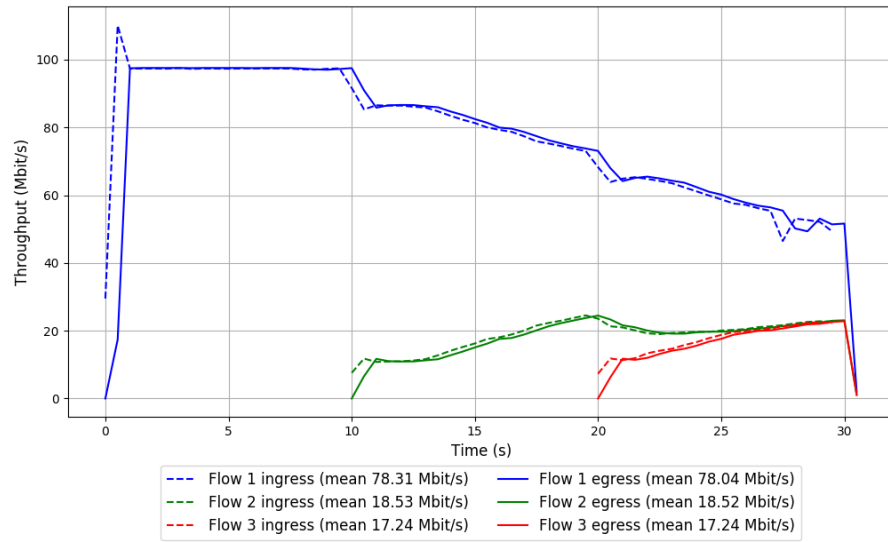
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 80.68 Mbit/s)   Flow 1 egress (mean 80.42 Mbit/s)
Flow 2 ingress (mean 14.73 Mbit/s)   Flow 2 egress (mean 14.73 Mbit/s)
Flow 3 ingress (mean 17.47 Mbit/s)   Flow 3 egress (mean 17.47 Mbit/s)

Flow 1 (95th percentile 48.86 ms)   Flow 2 (95th percentile 51.17 ms)   Flow 3 (95th percentile 41.02 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2019-08-27 03:09:07
End at: 2019-08-27 03:09:37
Local clock offset: -1.364 ms
Remote clock offset: 4.729 ms


# Below is generated by plot.py at 2019-08-27 03:31:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.12 Mbit/s
95th percentile per-packet one-way delay: 44.498 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 78.04 Mbit/s
95th percentile per-packet one-way delay: 44.938 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 18.52 Mbit/s
95th percentile per-packet one-way delay: 42.112 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 17.24 Mbit/s
95th percentile per-packet one-way delay: 41.214 ms
Loss rate: 0.00%
```
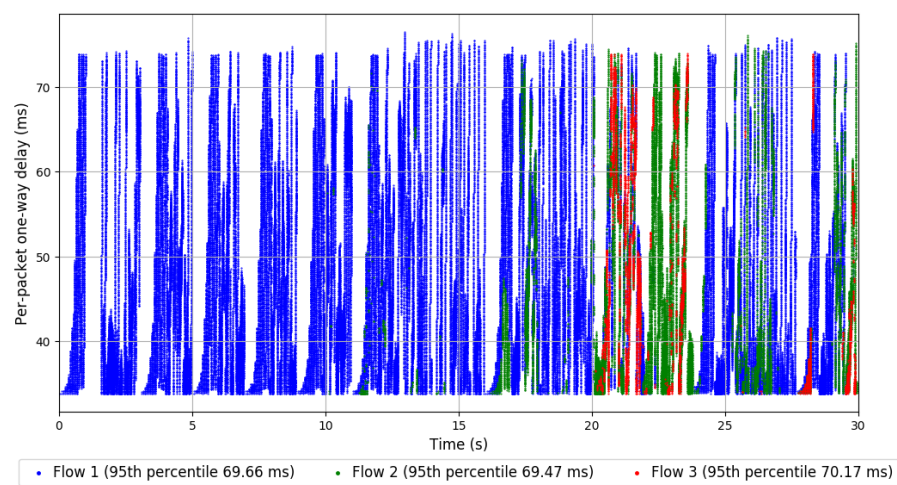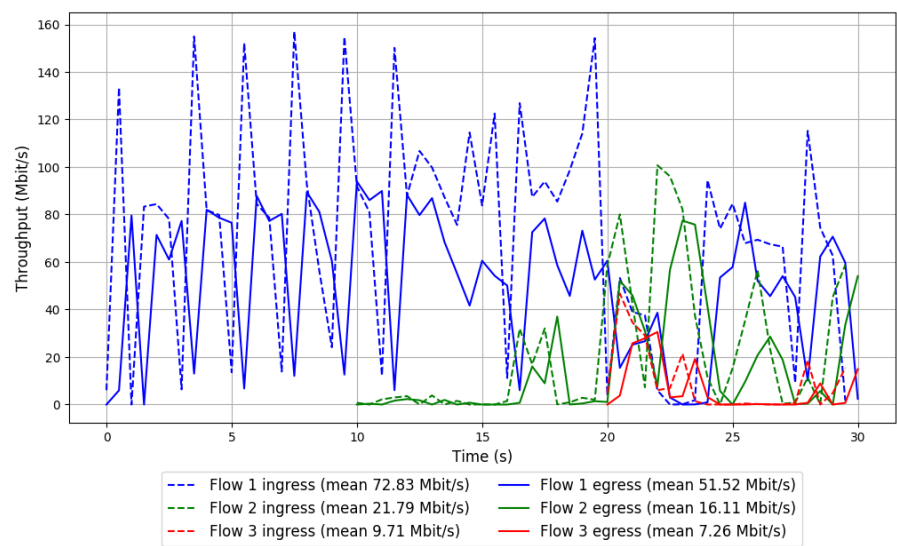
Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-08-26 23:13:56
End at: 2019-08-26 23:14:26
Local clock offset: -0.613 ms
Remote clock offset: 4.901 ms


# Below is generated by plot.py at 2019-08-27 03:31:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.42 Mbit/s
95th percentile per-packet one-way delay: 69.645 ms
Loss rate: 28.76%
-- Flow 1:
Average throughput: 51.52 Mbit/s
95th percentile per-packet one-way delay: 69.657 ms
Loss rate: 29.42%
-- Flow 2:
Average throughput: 16.11 Mbit/s
95th percentile per-packet one-way delay: 69.468 ms
Loss rate: 26.15%
-- Flow 3:
Average throughput: 7.26 Mbit/s
95th percentile per-packet one-way delay: 70.172 ms
Loss rate: 25.59%
```
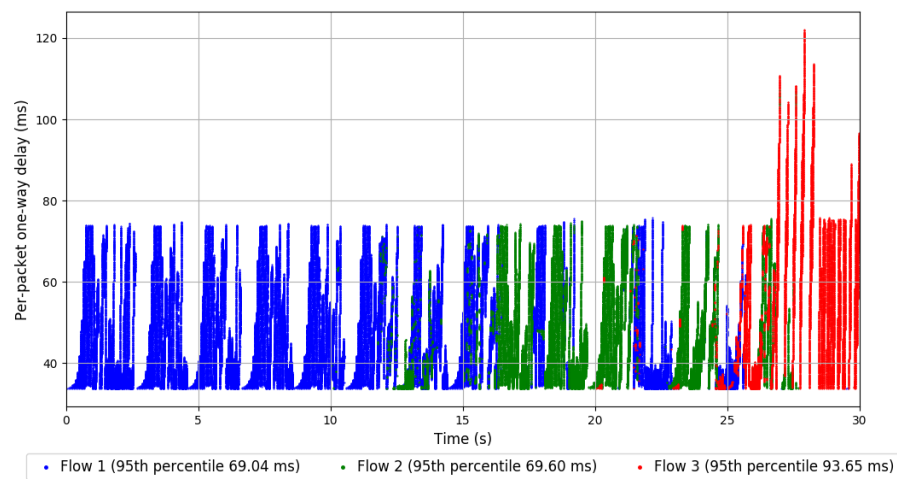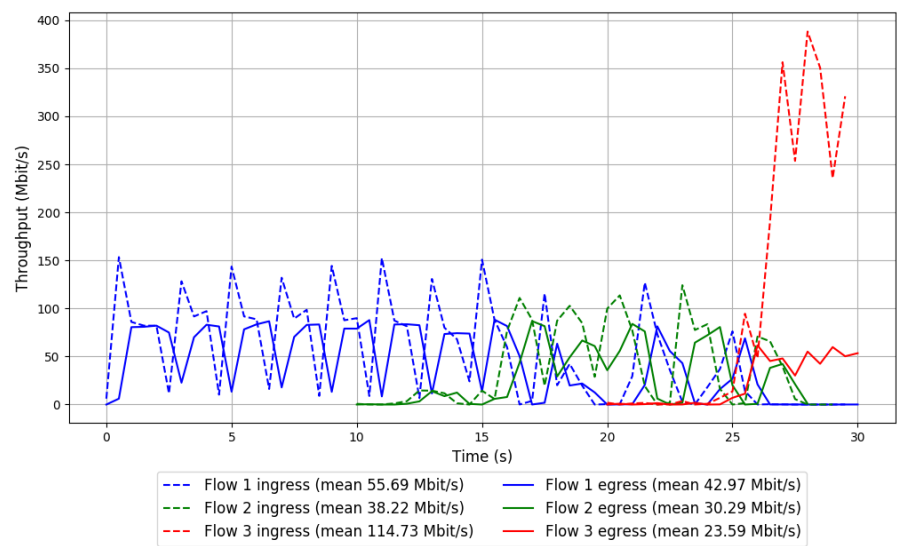
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-08-26 23:58:44
End at: 2019-08-26 23:59:14
Local clock offset: -1.02 ms
Remote clock offset: 6.135 ms


# Below is generated by plot.py at 2019-08-27 03:32:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.07 Mbit/s
95th percentile per-packet one-way delay: 71.083 ms
Loss rate: 41.96%
-- Flow 1:
Average throughput: 42.97 Mbit/s
95th percentile per-packet one-way delay: 69.037 ms
Loss rate: 23.00%
-- Flow 2:
Average throughput: 30.29 Mbit/s
95th percentile per-packet one-way delay: 69.601 ms
Loss rate: 26.77%
-- Flow 3:
Average throughput: 23.59 Mbit/s
95th percentile per-packet one-way delay: 93.653 ms
Loss rate: 79.32%
```

Run 2: Report of Verus — Data Link

218

```
Run 3: Statistics of Verus

Start at: 2019-08-27 00:48:13
End at: 2019-08-27 00:48:43
Local clock offset: -1.163 ms
Remote clock offset: 4.009 ms


# Below is generated by plot.py at 2019-08-27 03:32:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.06 Mbit/s
95th percentile per-packet one-way delay: 69.783 ms
Loss rate: 34.91%
-- Flow 1:
Average throughput: 45.45 Mbit/s
95th percentile per-packet one-way delay: 69.832 ms
Loss rate: 35.60%
-- Flow 2:
Average throughput: 21.30 Mbit/s
95th percentile per-packet one-way delay: 69.374 ms
Loss rate: 31.76%
-- Flow 3:
Average throughput: 9.26 Mbit/s
95th percentile per-packet one-way delay: 70.382 ms
Loss rate: 37.17%
```
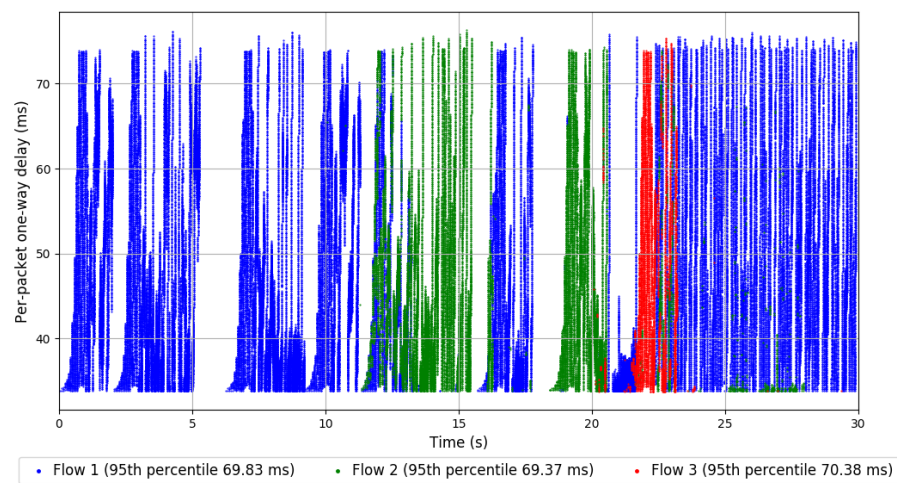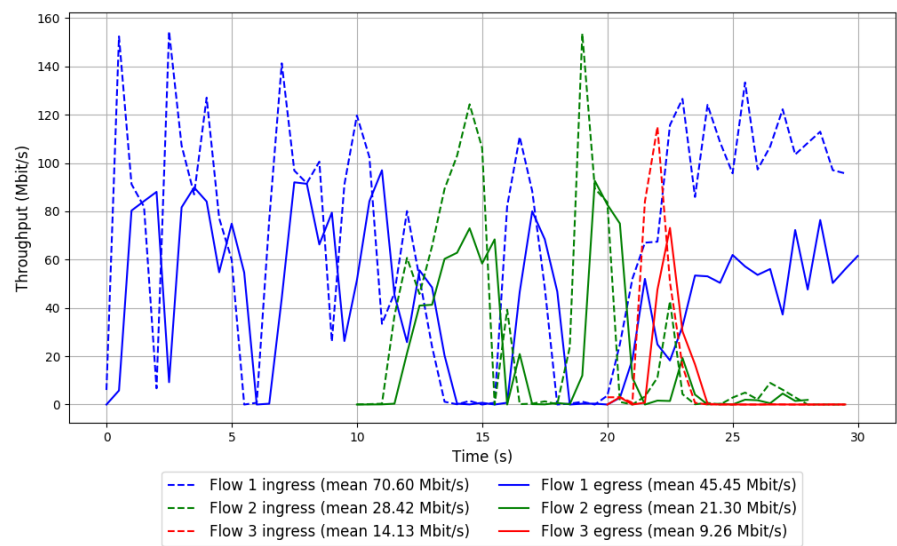
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-08-27 01:42:23
End at: 2019-08-27 01:42:53
Local clock offset: -0.912 ms
Remote clock offset: 3.791 ms


# Below is generated by plot.py at 2019-08-27 03:32:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.93 Mbit/s
95th percentile per-packet one-way delay: 69.751 ms
Loss rate: 32.51%
-- Flow 1:
Average throughput: 35.93 Mbit/s
95th percentile per-packet one-way delay: 69.617 ms
Loss rate: 29.93%
-- Flow 2:
Average throughput: 25.92 Mbit/s
95th percentile per-packet one-way delay: 70.572 ms
Loss rate: 31.38%
-- Flow 3:
Average throughput: 35.05 Mbit/s
95th percentile per-packet one-way delay: 68.580 ms
Loss rate: 41.38%
```
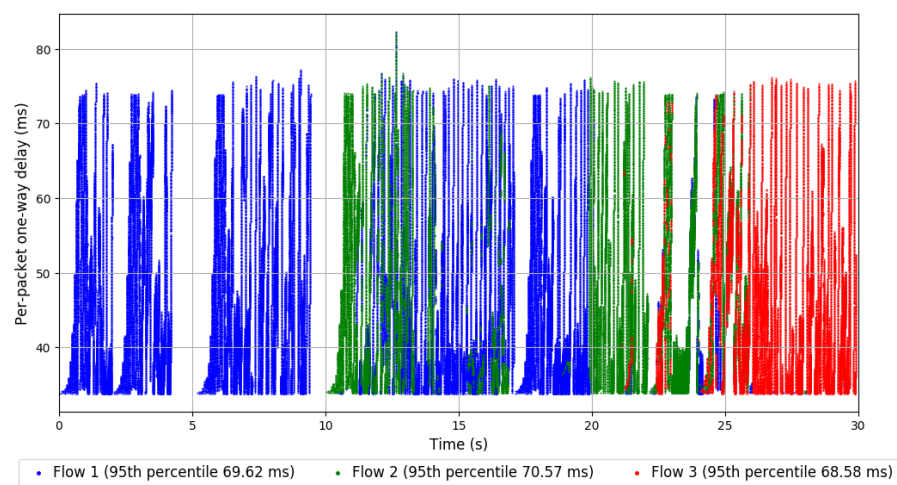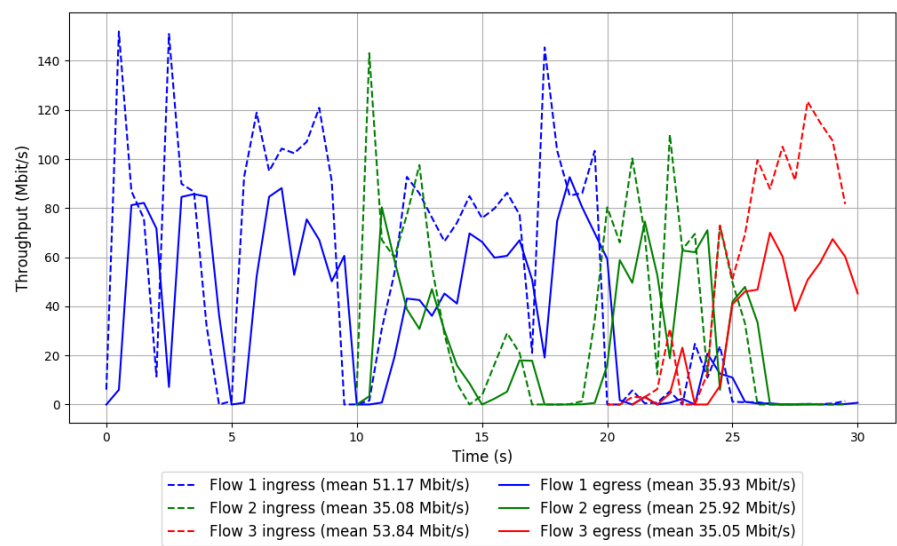
Run 4: Report of Verus — Data Link

Legend (top chart):
- Flow 1 ingress (mean 51.17 Mbit/s)
- Flow 1 egress (mean 35.93 Mbit/s)
- Flow 2 ingress (mean 35.08 Mbit/s)
- Flow 2 egress (mean 25.92 Mbit/s)
- Flow 3 ingress (mean 53.84 Mbit/s)
- Flow 3 egress (mean 35.05 Mbit/s)

Legend (bottom chart):
- Flow 1 (95th percentile 69.62 ms)
- Flow 2 (95th percentile 70.57 ms)
- Flow 3 (95th percentile 68.58 ms)

```
Run 5: Statistics of Verus

Start at: 2019-08-27 02:25:06
End at: 2019-08-27 02:25:36
Local clock offset: -1.094 ms
Remote clock offset: 3.066 ms


# Below is generated by plot.py at 2019-08-27 03:32:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.38 Mbit/s
95th percentile per-packet one-way delay: 69.093 ms
Loss rate: 27.27%
-- Flow 1:
Average throughput: 43.46 Mbit/s
95th percentile per-packet one-way delay: 69.202 ms
Loss rate: 25.77%
-- Flow 2:
Average throughput: 31.07 Mbit/s
95th percentile per-packet one-way delay: 68.817 ms
Loss rate: 30.21%
-- Flow 3:
Average throughput: 5.18 Mbit/s
95th percentile per-packet one-way delay: 69.057 ms
Loss rate: 27.21%
```
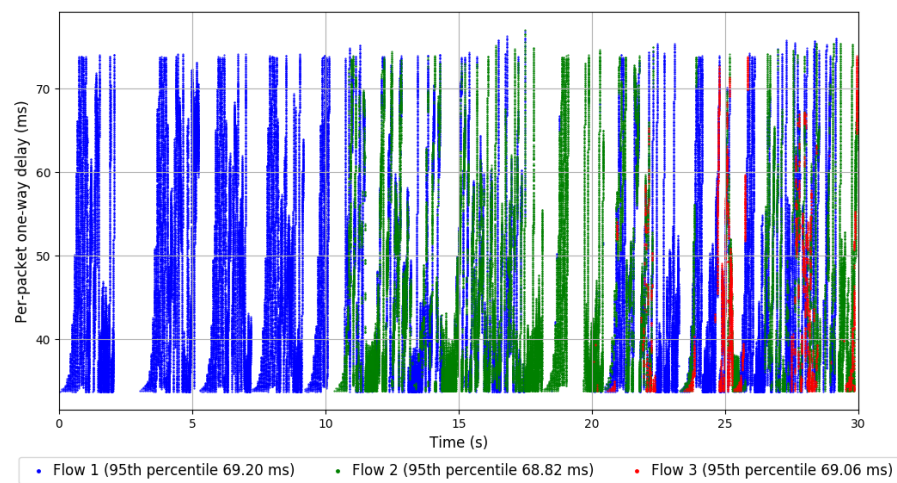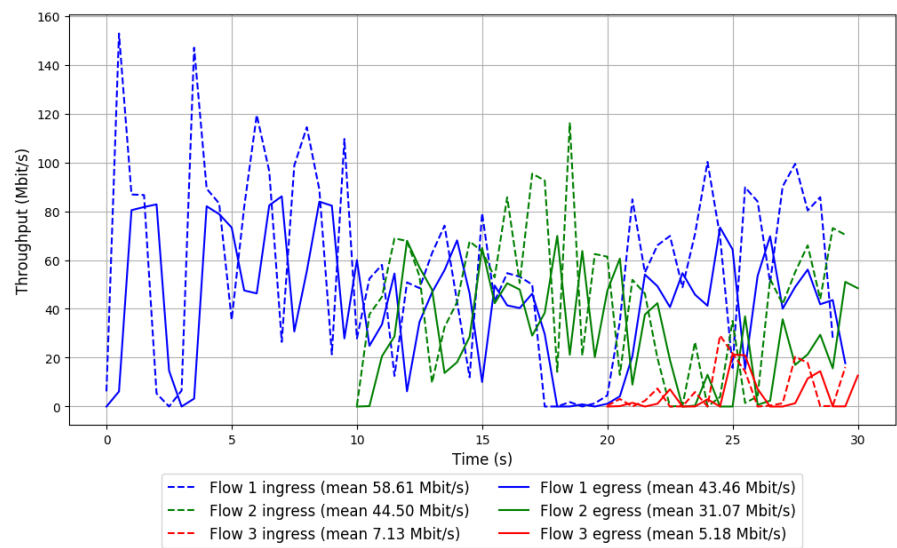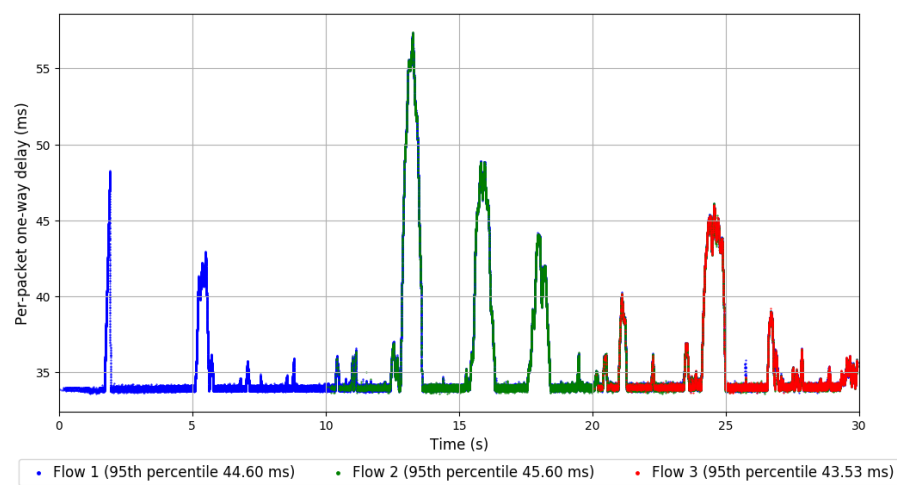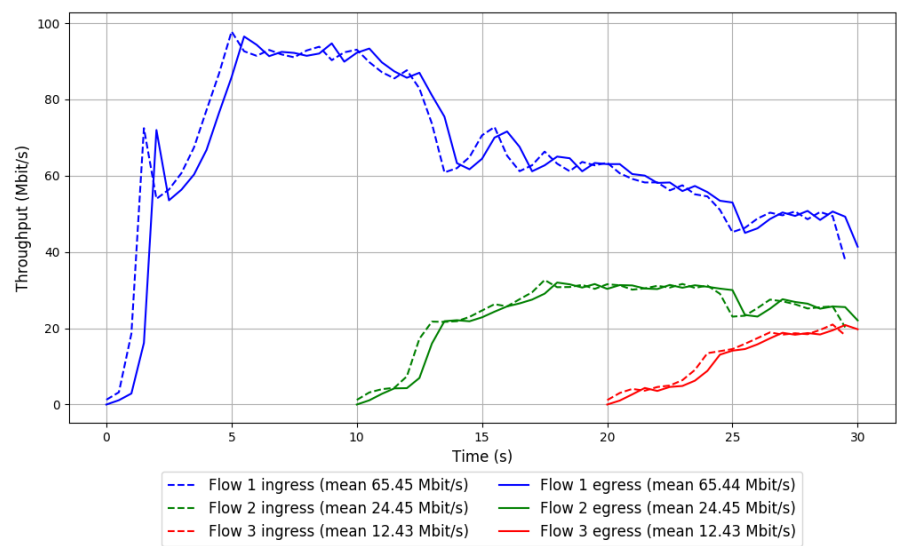
Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 58.61 Mbit/s)   Flow 1 egress (mean 43.46 Mbit/s)
Flow 2 ingress (mean 44.50 Mbit/s)   Flow 2 egress (mean 31.07 Mbit/s)
Flow 3 ingress (mean 7.13 Mbit/s)   Flow 3 egress (mean 5.18 Mbit/s)

Flow 1 (95th percentile 69.20 ms)   Flow 2 (95th percentile 68.82 ms)   Flow 3 (95th percentile 69.06 ms)

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-08-26 23:25:25
End at: 2019-08-26 23:25:55
Local clock offset: -0.683 ms
Remote clock offset: 4.486 ms


# Below is generated by plot.py at 2019-08-27 03:32:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.81 Mbit/s
95th percentile per-packet one-way delay: 44.749 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 65.44 Mbit/s
95th percentile per-packet one-way delay: 44.602 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.45 Mbit/s
95th percentile per-packet one-way delay: 45.598 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 43.533 ms
Loss rate: 0.00%
```
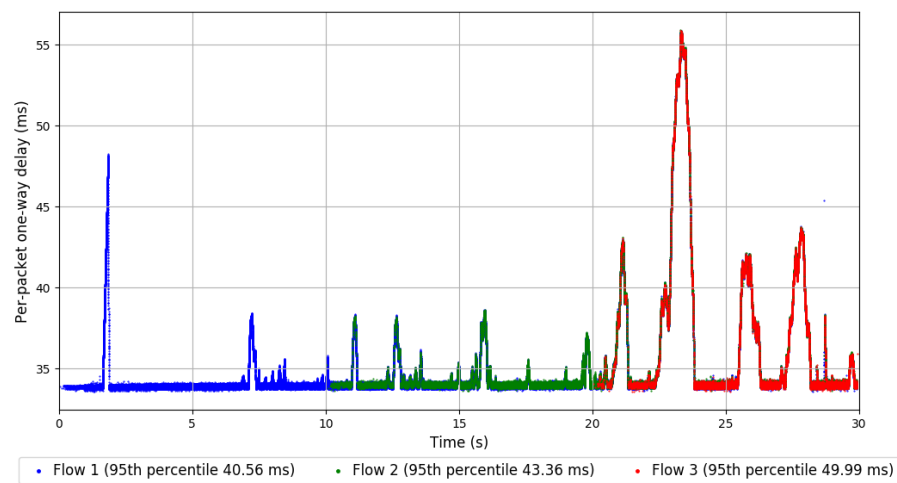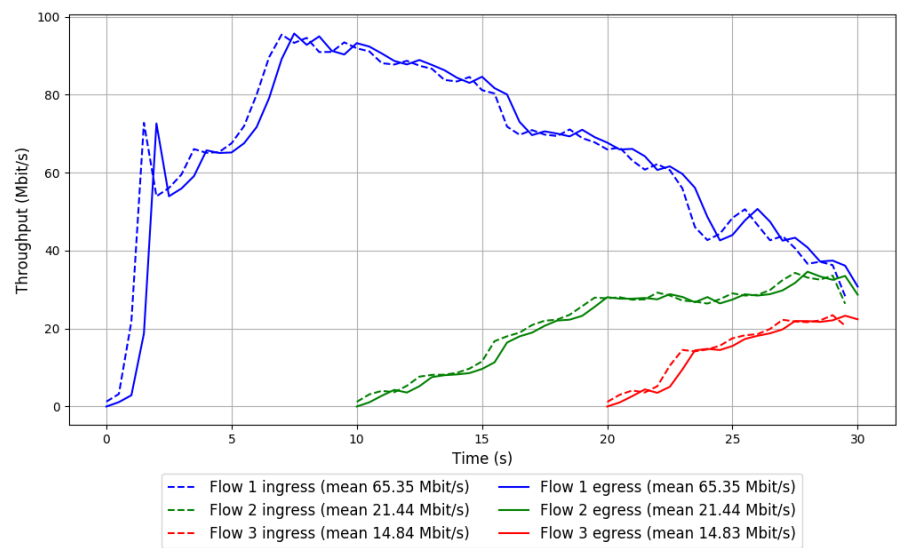
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-08-27 00:11:38
End at: 2019-08-27 00:12:08
Local clock offset: -1.06 ms
Remote clock offset: 6.364 ms


# Below is generated by plot.py at 2019-08-27 03:32:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.50 Mbit/s
95th percentile per-packet one-way delay: 41.697 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 65.35 Mbit/s
95th percentile per-packet one-way delay: 40.564 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 21.44 Mbit/s
95th percentile per-packet one-way delay: 43.356 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 14.83 Mbit/s
95th percentile per-packet one-way delay: 49.995 ms
Loss rate: 0.00%
```
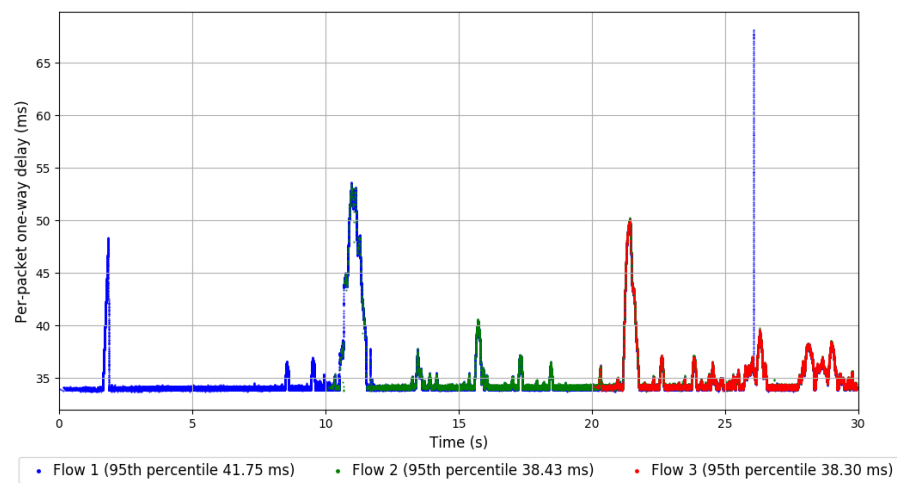
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-08-27 01:03:21
End at: 2019-08-27 01:03:51
Local clock offset: -1.011 ms
Remote clock offset: 5.652 ms


# Below is generated by plot.py at 2019-08-27 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.39 Mbit/s
95th percentile per-packet one-way delay: 40.569 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.09 Mbit/s
95th percentile per-packet one-way delay: 41.752 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.54 Mbit/s
95th percentile per-packet one-way delay: 38.429 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 38.302 ms
Loss rate: 0.00%
```
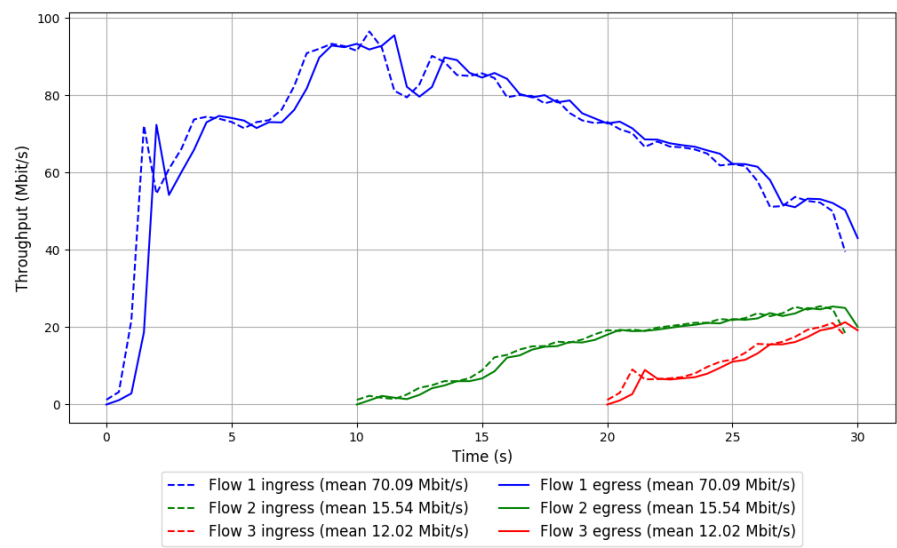
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-08-27 01:55:04
End at: 2019-08-27 01:55:34
Local clock offset: -0.868 ms
Remote clock offset: 3.126 ms


# Below is generated by plot.py at 2019-08-27 03:32:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.91 Mbit/s
95th percentile per-packet one-way delay: 42.171 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 69.04 Mbit/s
95th percentile per-packet one-way delay: 41.579 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 21.25 Mbit/s
95th percentile per-packet one-way delay: 43.875 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.33 Mbit/s
95th percentile per-packet one-way delay: 42.590 ms
Loss rate: 0.00%
```
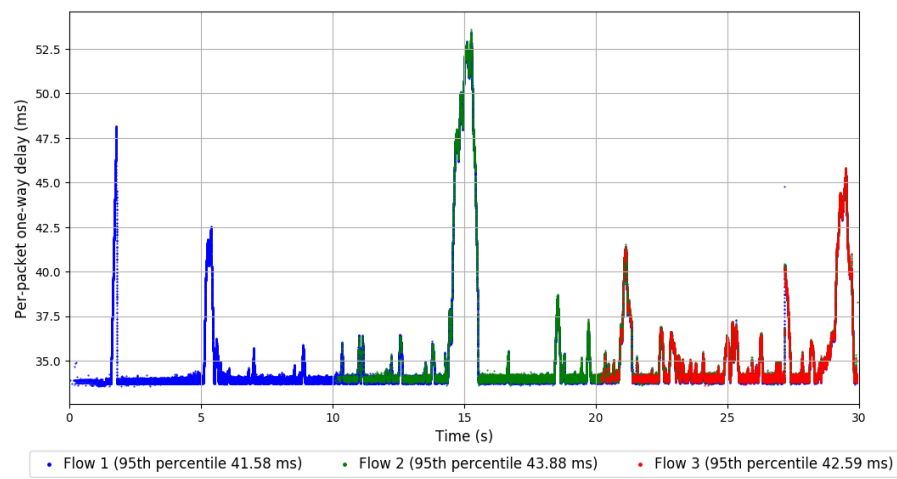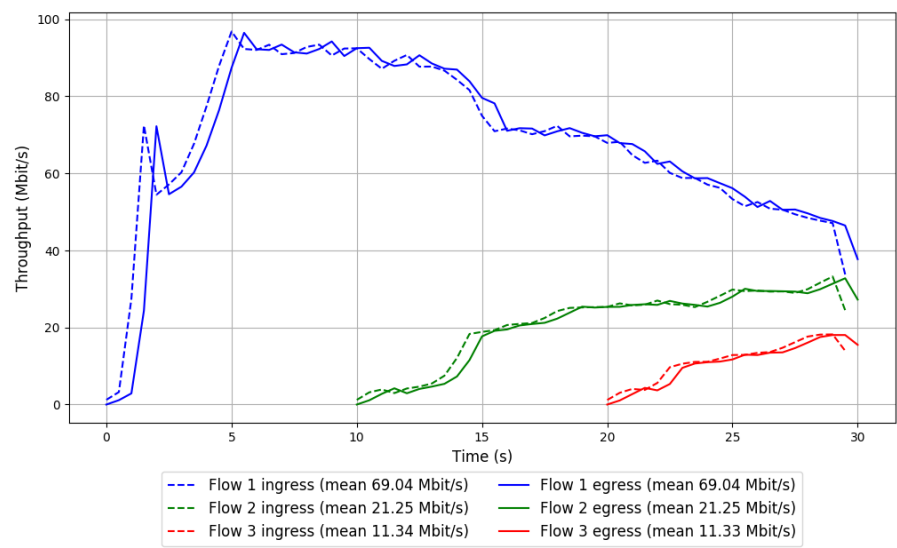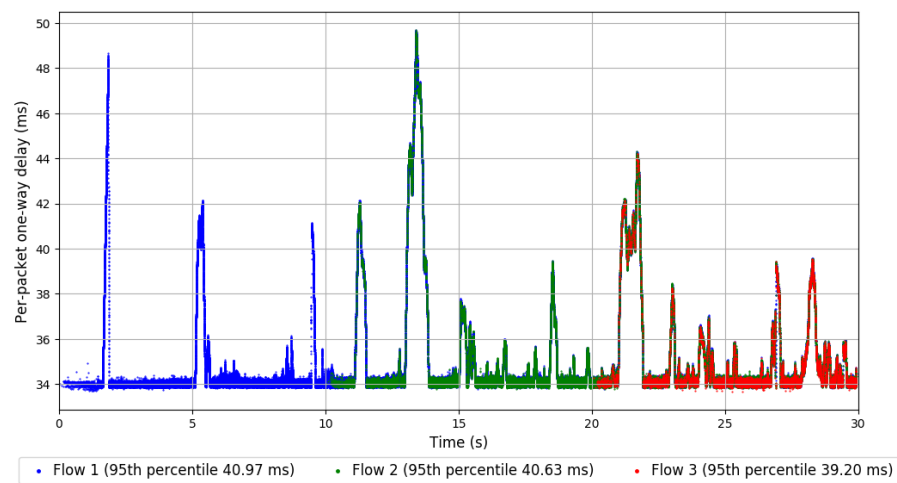
Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 69.04 Mbit/s) — Flow 1 egress (mean 69.04 Mbit/s)
Flow 2 ingress (mean 21.25 Mbit/s) — Flow 2 egress (mean 21.25 Mbit/s)
Flow 3 ingress (mean 11.34 Mbit/s) — Flow 3 egress (mean 11.33 Mbit/s)

Flow 1 (95th percentile 41.58 ms) · Flow 2 (95th percentile 43.88 ms) · Flow 3 (95th percentile 42.59 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-08-27 02:40:09
End at: 2019-08-27 02:40:39
Local clock offset: -1.201 ms
Remote clock offset: 4.063 ms


# Below is generated by plot.py at 2019-08-27 03:32:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.50 Mbit/s
95th percentile per-packet one-way delay: 40.855 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.41 Mbit/s
95th percentile per-packet one-way delay: 40.966 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.68 Mbit/s
95th percentile per-packet one-way delay: 40.630 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.09 Mbit/s
95th percentile per-packet one-way delay: 39.203 ms
Loss rate: 0.00%
```
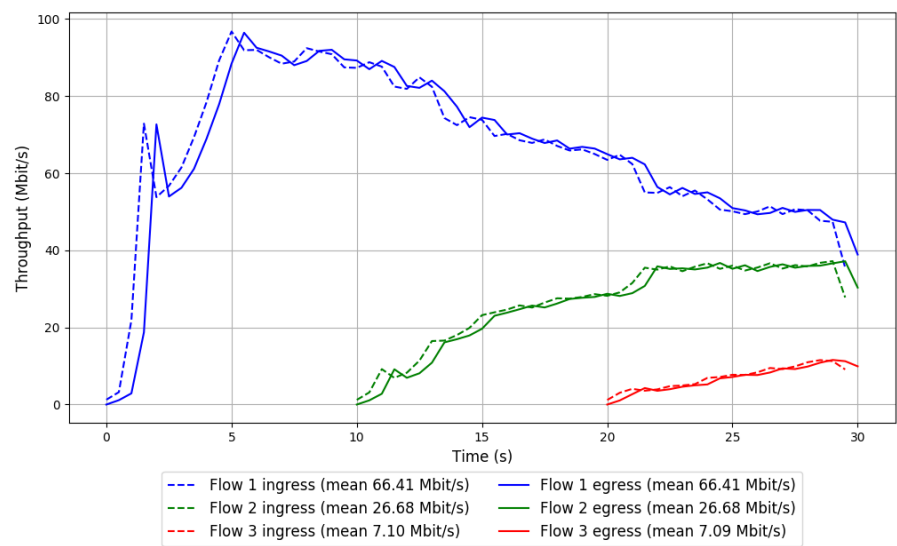
Run 5: Report of PCC-Vivace — Data Link

234

```
Run 1: Statistics of WebRTC media

Start at: 2019-08-26 23:33:44
End at: 2019-08-26 23:34:14
Local clock offset: -0.768 ms
Remote clock offset: 4.426 ms

# Below is generated by plot.py at 2019-08-27 03:32:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 34.713 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.571 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.757 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.707 ms
Loss rate: 0.00%
```
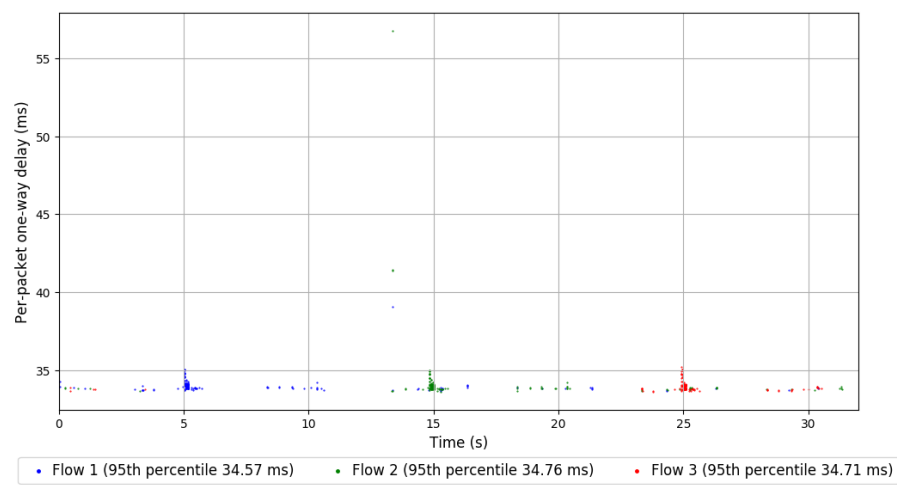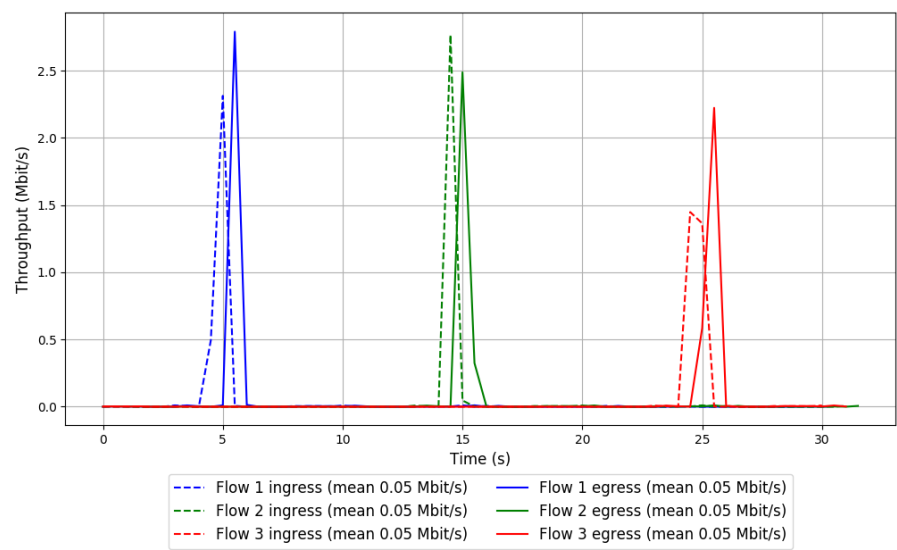
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-08-27 00:20:11
End at: 2019-08-27 00:20:41
Local clock offset: -1.063 ms
Remote clock offset: 5.459 ms


# Below is generated by plot.py at 2019-08-27 03:32:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 34.760 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.878 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.769 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.560 ms
Loss rate: 0.00%
```
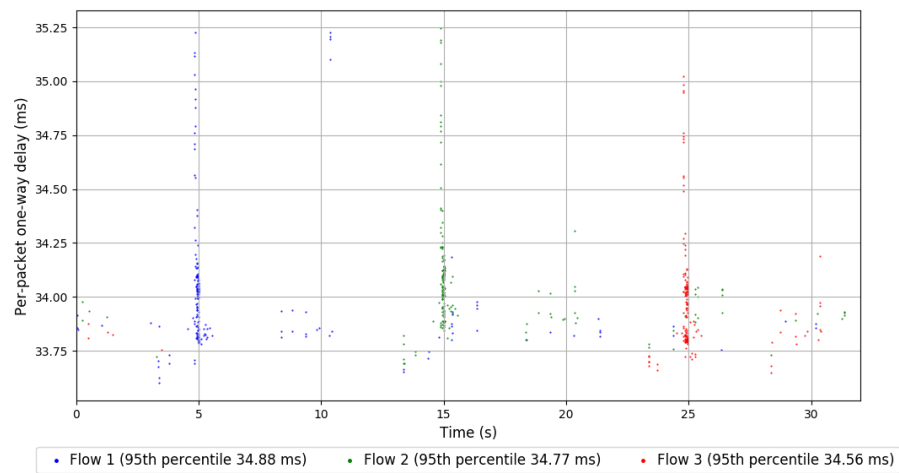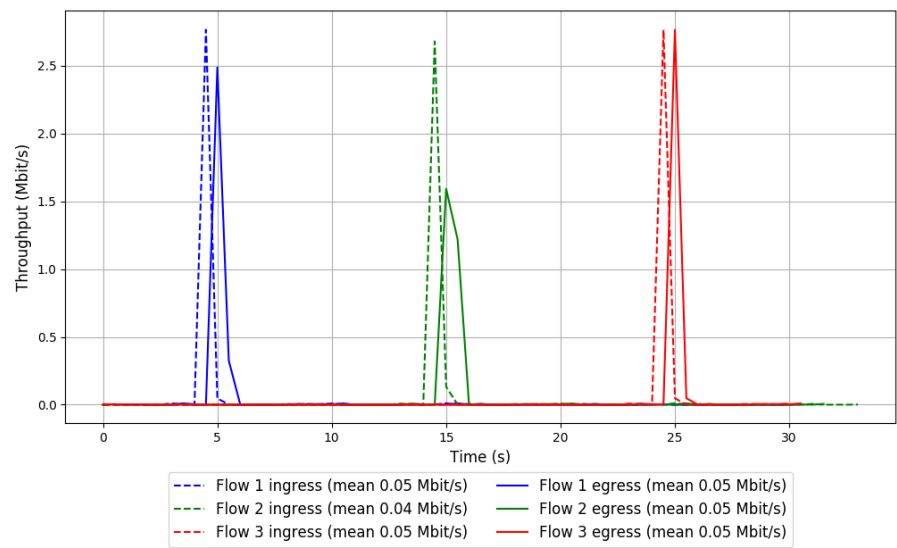
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-08-27 01:13:18
End at: 2019-08-27 01:13:48
Local clock offset: -0.963 ms
Remote clock offset: 6.043 ms

# Below is generated by plot.py at 2019-08-27 03:32:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 34.543 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.541 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.497 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.737 ms
Loss rate: 0.00%
```
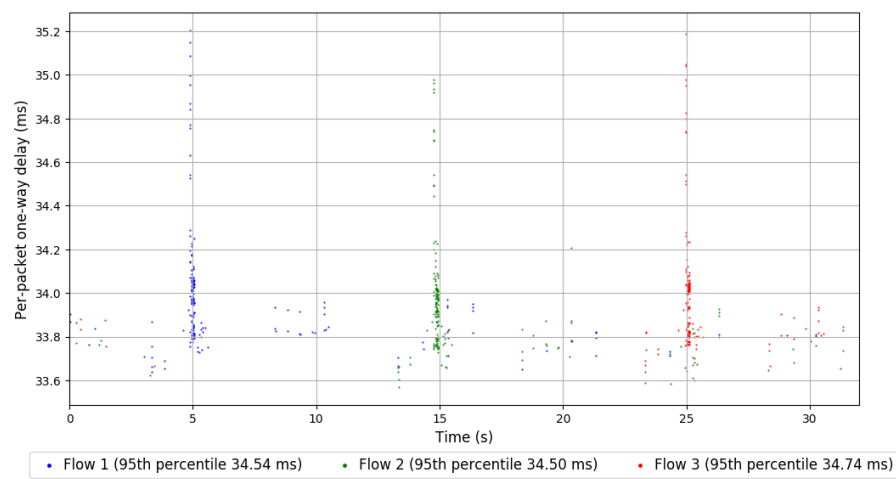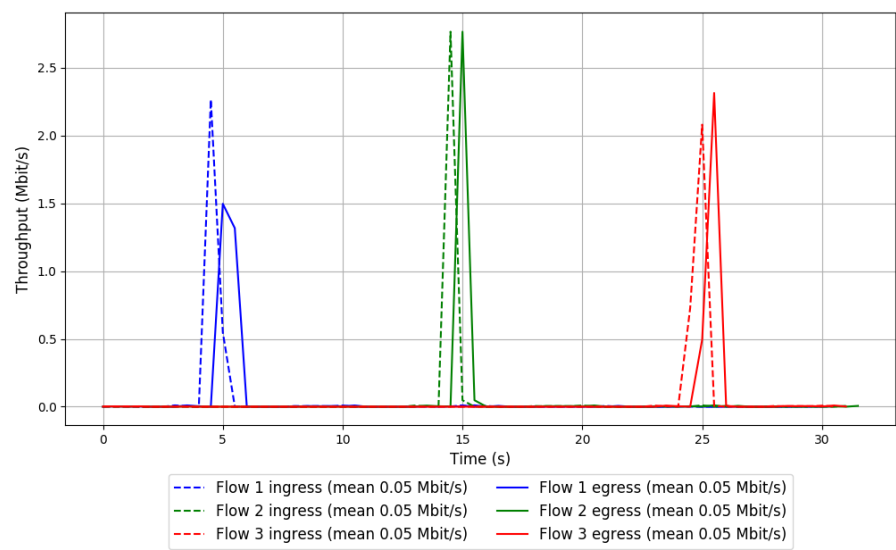
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-08-27 02:02:25
End at: 2019-08-27 02:02:55
Local clock offset: -0.905 ms
Remote clock offset: 3.156 ms


# Below is generated by plot.py at 2019-08-27 03:32:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 34.720 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.640 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.677 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.757 ms
Loss rate: 0.00%
```
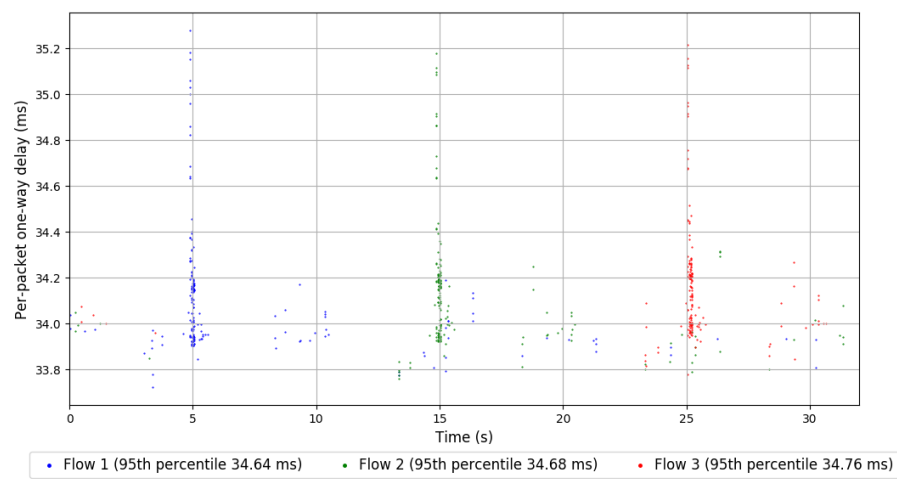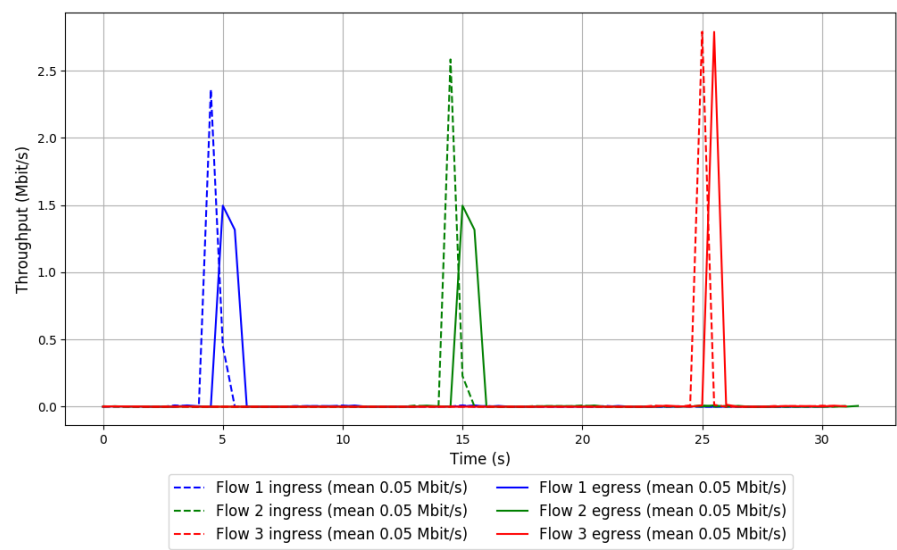
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-08-27 02:50:48
End at: 2019-08-27 02:51:18
Local clock offset: -1.257 ms
Remote clock offset: 4.288 ms


# Below is generated by plot.py at 2019-08-27 03:32:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 34.623 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.588 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.599 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 34.733 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link