Pantheon Report

Generated at 2019-11-24 09:47:29 (UTC).

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

Repeated the test of 24 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1044-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ de42328552b3776a75a932a94dfafd722537b0ec
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/muses_dtree @ 387225f7b5f61ddbe92d708a8869ffbb84eb3200
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```

```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from GCE Iowa to GCE Sydney, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
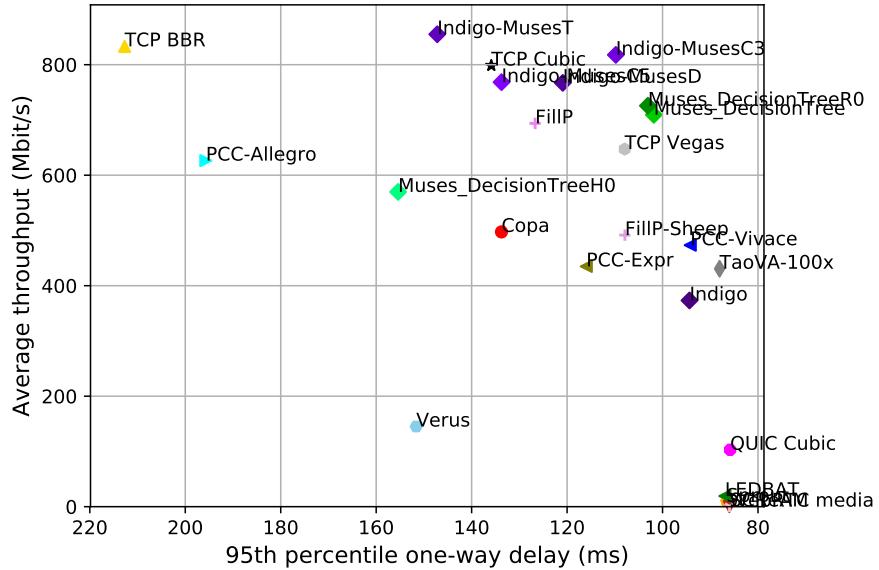
test from GCE Iowa to GCE Sydney, 5 runs of 30s each per scheme
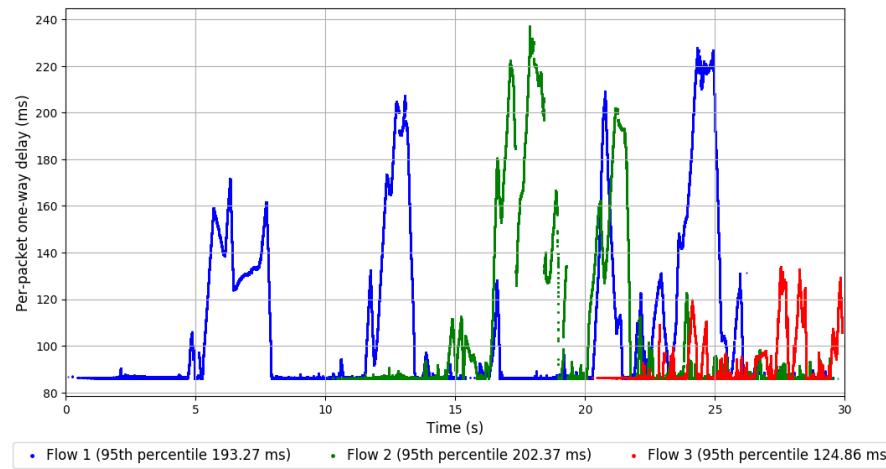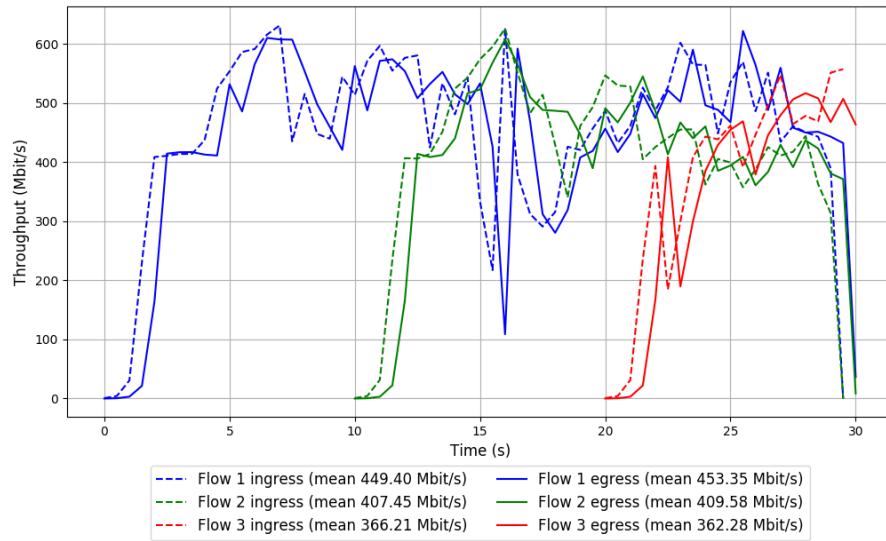3 flows with 10s interval between flows

3
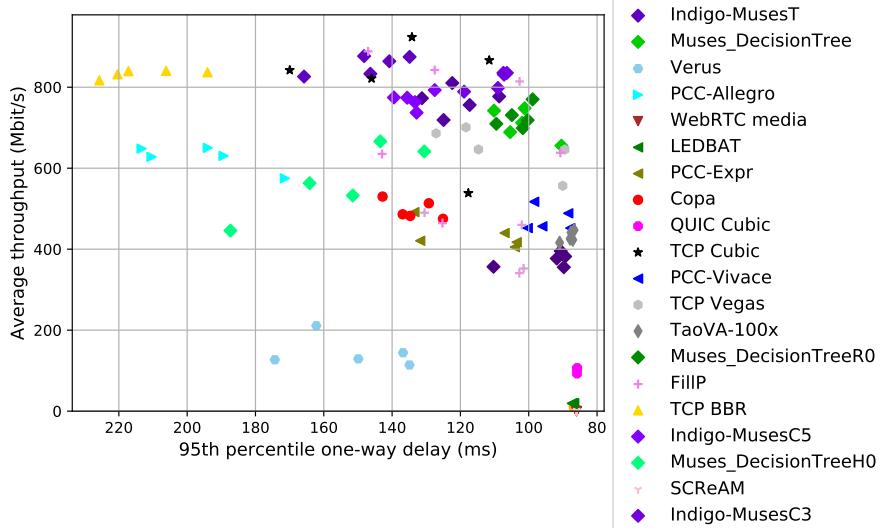
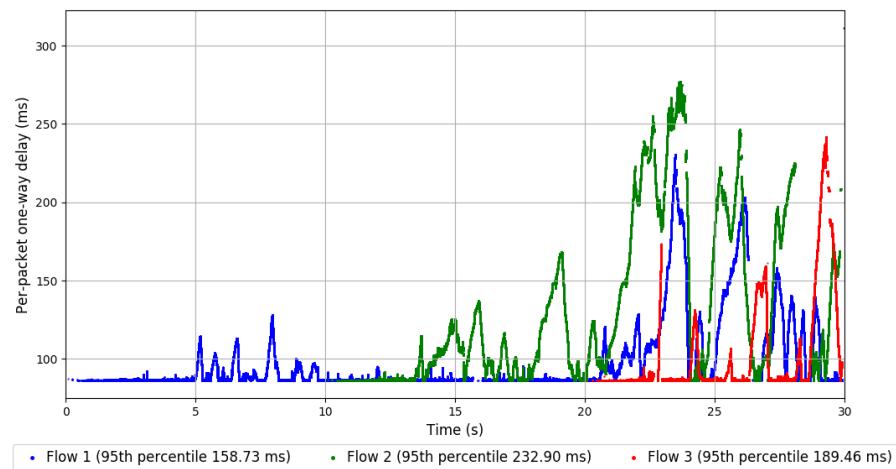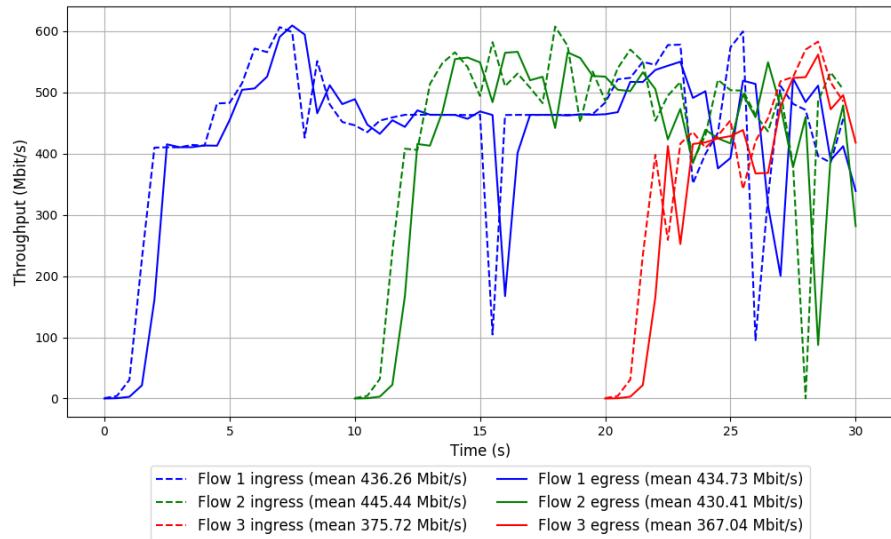| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	448.96	402.65	361.49	203.94	199.96	193.56	1.52	2.13	4.05
Copa	5	264.94	250.95	200.17	147.85	125.88	114.69	0.60	0.87	2.03
TCP Cubic	5	399.54	429.06	346.79	121.70	134.74	131.59	0.84	1.00	2.22
FillP	5	369.60	364.99	250.76	133.43	92.43	88.77	1.90	0.69	1.99
FillP-Sheep	5	190.16	328.62	254.48	126.41	91.62	89.36	0.75	0.74	1.98
Indigo	5	196.44	189.49	153.51	93.78	96.47	88.97	0.52	0.94	2.00
Indigo-MusesC3	5	483.46	400.00	298.84	108.33	113.58	91.43	0.39	0.83	3.18
Indigo-MusesC5	5	456.44	401.82	207.26	141.95	113.41	90.28	0.44	0.96	4.63
Indigo-MusesD	5	457.09	391.51	232.45	128.27	99.60	90.29	0.43	0.92	3.30
Indigo-MusesT	5	509.89	414.73	300.59	153.76	116.84	95.74	0.45	0.86	2.76
LEDBAT	5	12.50	8.27	4.01	87.10	86.80	86.36	1.15	1.74	3.52
Muses_DecisionTree	5	437.15	314.20	206.97	106.65	88.74	88.64	0.35	0.92	3.10
Muses_DecisionTreeH0	5	308.02	293.41	215.69	161.96	142.18	91.31	2.54	1.20	3.31
Muses_DecisionTreeR0	5	426.89	367.09	179.84	103.40	102.04	116.04	0.46	0.85	2.79
PCC-Allegro	5	343.57	311.01	235.39	185.89	174.71	173.88	2.84	2.84	2.60
PCC-Expr	5	241.08	218.18	150.70	116.89	108.07	123.80	0.69	1.21	2.23
QUIC Cubic	5	57.52	52.95	30.52	85.84	85.83	85.85	0.74	1.10	3.64
SCReAM	5	0.22	0.22	0.22	85.98	85.93	85.94	0.51	0.95	1.77
Sprout	5	4.56	4.42	3.97	86.66	86.56	86.63	0.73	1.03	1.75
TaoVA-100x	5	226.50	212.53	191.83	87.68	87.82	89.78	0.56	0.89	1.83
TCP Vegas	5	332.43	315.18	320.76	99.57	94.39	126.68	0.56	0.63	1.80
Verus	5	73.91	73.48	71.66	154.40	142.93	125.76	0.56	0.24	0.14
PCC-Vivace	5	285.52	218.63	131.15	104.11	94.53	94.46	0.59	1.02	2.47
WebRTC media	5	0.06	0.06	0.06	85.98	86.00	85.99	0.00	0.00	0.01

```
Run 1: Statistics of TCP BBR

Start at: 2019-11-24 03:52:16
End at: 2019-11-24 03:52:46
Local clock offset: 0.366 ms
Remote clock offset: 0.032 ms


# Below is generated by plot.py at 2019-11-24 07:21:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 836.97 Mbit/s
95th percentile per-packet one-way delay: 194.047 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 453.35 Mbit/s
95th percentile per-packet one-way delay: 193.267 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 409.58 Mbit/s
95th percentile per-packet one-way delay: 202.367 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 362.28 Mbit/s
95th percentile per-packet one-way delay: 124.860 ms
Loss rate: 2.78%
```

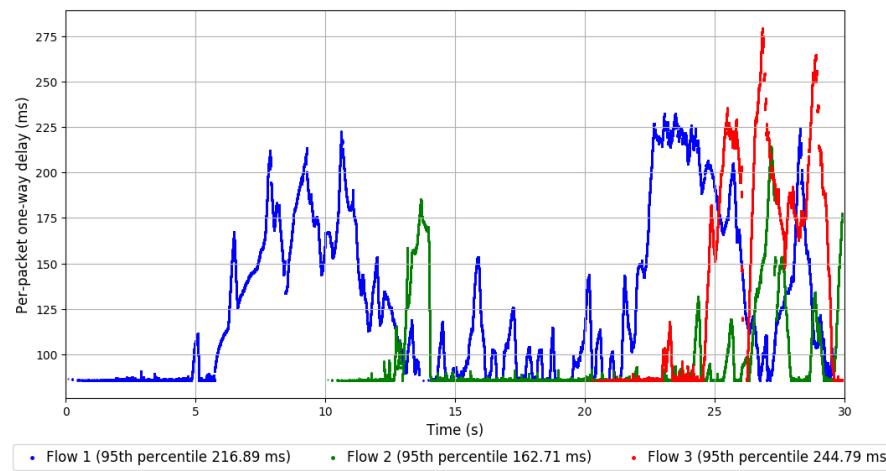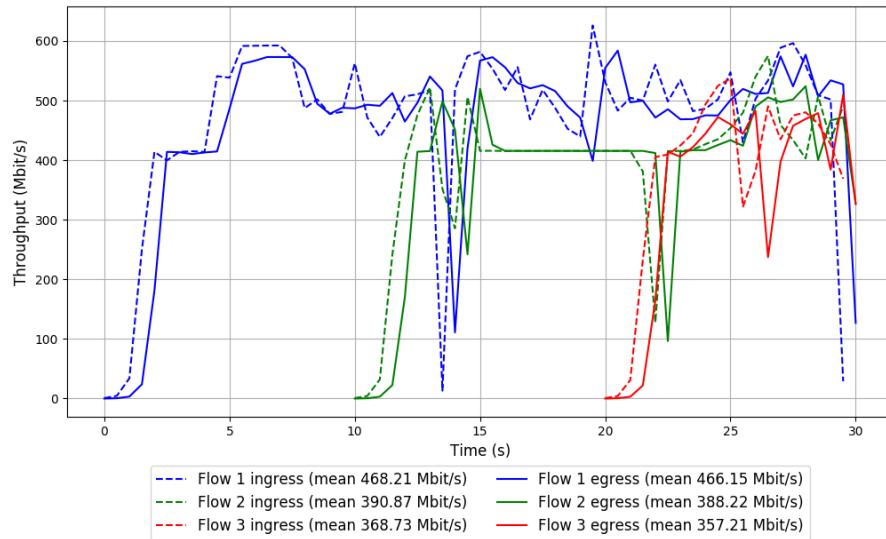Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 449.40 Mbit/s) — — — Flow 1 egress (mean 453.35 Mbit/s)
Flow 2 ingress (mean 407.45 Mbit/s) — — — Flow 2 egress (mean 409.58 Mbit/s)
Flow 3 ingress (mean 366.21 Mbit/s) — — — Flow 3 egress (mean 362.28 Mbit/s)

Flow 1 (95th percentile 193.27 ms) • Flow 2 (95th percentile 202.37 ms) • Flow 3 (95th percentile 124.86 ms)

6

```
Run 2: Statistics of TCP BBR

Start at: 2019-11-24 04:34:27
End at: 2019-11-24 04:34:57
Local clock offset: 0.356 ms
Remote clock offset: -0.08 ms


# Below is generated by plot.py at 2019-11-24 07:21:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 840.48 Mbit/s
95th percentile per-packet one-way delay: 206.170 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 434.73 Mbit/s
95th percentile per-packet one-way delay: 158.730 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 430.41 Mbit/s
95th percentile per-packet one-way delay: 232.902 ms
Loss rate: 3.94%
-- Flow 3:
Average throughput: 367.04 Mbit/s
95th percentile per-packet one-way delay: 189.458 ms
Loss rate: 4.00%
```

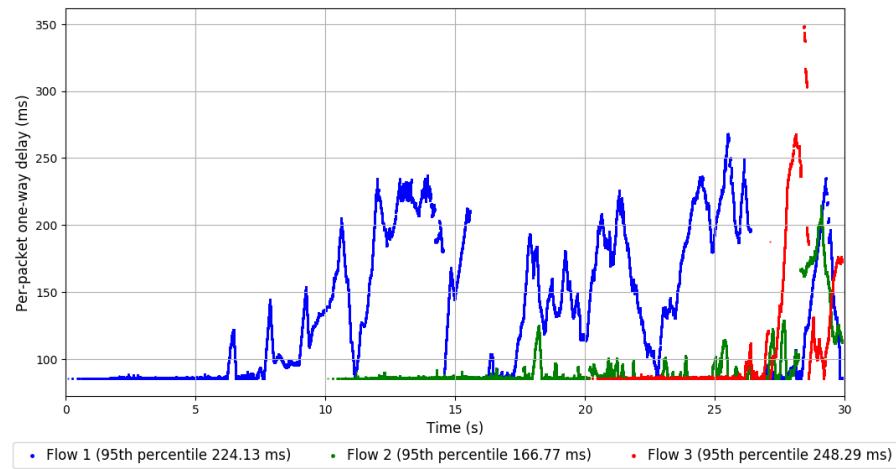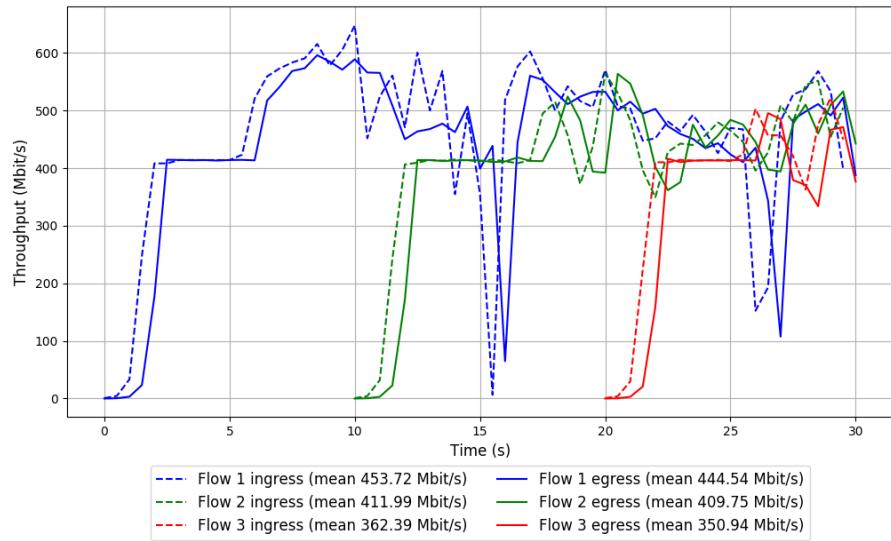Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 436.26 Mbit/s) --- Flow 1 egress (mean 434.73 Mbit/s)
Flow 2 ingress (mean 445.44 Mbit/s) --- Flow 2 egress (mean 430.41 Mbit/s)
Flow 3 ingress (mean 375.72 Mbit/s) --- Flow 3 egress (mean 367.04 Mbit/s)

Flow 1 (95th percentile 158.73 ms)   Flow 2 (95th percentile 232.90 ms)   Flow 3 (95th percentile 189.46 ms)

8

```
Run 3: Statistics of TCP BBR

Start at: 2019-11-24 05:16:14
End at: 2019-11-24 05:16:44
Local clock offset: -0.078 ms
Remote clock offset: -0.201 ms


# Below is generated by plot.py at 2019-11-24 07:21:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 839.79 Mbit/s
95th percentile per-packet one-way delay: 217.205 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 466.15 Mbit/s
95th percentile per-packet one-way delay: 216.892 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 388.22 Mbit/s
95th percentile per-packet one-way delay: 162.711 ms
Loss rate: 1.55%
-- Flow 3:
Average throughput: 357.21 Mbit/s
95th percentile per-packet one-way delay: 244.795 ms
Loss rate: 4.80%
```

# Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 468.21 Mbit/s) --- Flow 1 egress (mean 466.15 Mbit/s)
Flow 2 ingress (mean 390.87 Mbit/s) --- Flow 2 egress (mean 388.22 Mbit/s)
Flow 3 ingress (mean 368.73 Mbit/s) --- Flow 3 egress (mean 357.21 Mbit/s)

Flow 1 (95th percentile 216.89 ms) · Flow 2 (95th percentile 162.71 ms) · Flow 3 (95th percentile 244.79 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-11-24 05:57:56
End at: 2019-11-24 05:58:26
Local clock offset: -0.008 ms
Remote clock offset: -0.019 ms


# Below is generated by plot.py at 2019-11-24 07:21:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 831.91 Mbit/s
95th percentile per-packet one-way delay: 220.382 ms
Loss rate: 2.48%
-- Flow 1:
Average throughput: 444.54 Mbit/s
95th percentile per-packet one-way delay: 224.127 ms
Loss rate: 2.59%
-- Flow 2:
Average throughput: 409.75 Mbit/s
95th percentile per-packet one-way delay: 166.769 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 350.94 Mbit/s
95th percentile per-packet one-way delay: 248.290 ms
Loss rate: 4.84%
```

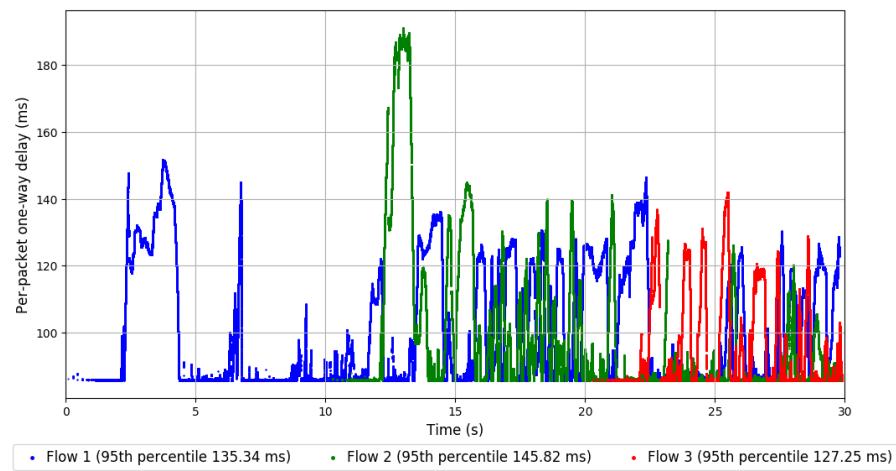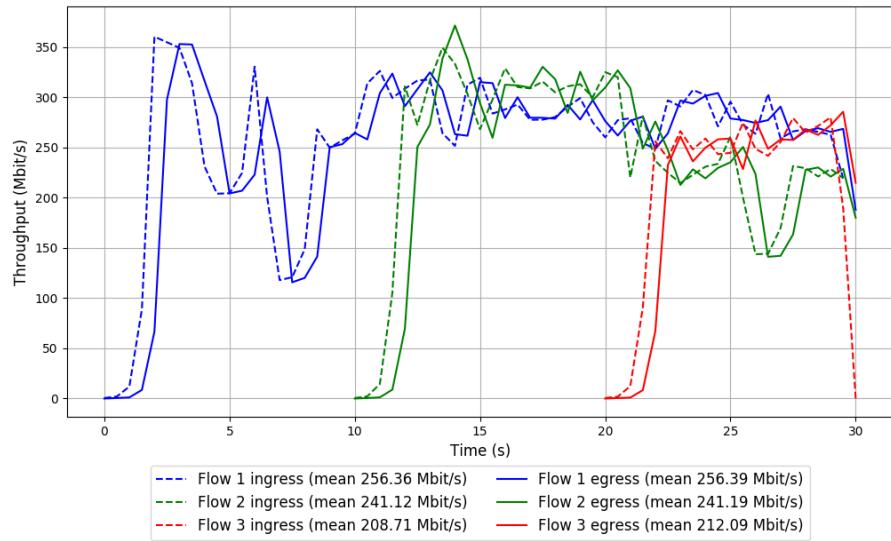Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 453.72 Mbit/s) --- Flow 1 egress (mean 444.54 Mbit/s)
Flow 2 ingress (mean 411.99 Mbit/s) --- Flow 2 egress (mean 409.75 Mbit/s)
Flow 3 ingress (mean 362.39 Mbit/s) --- Flow 3 egress (mean 350.94 Mbit/s)

Flow 1 (95th percentile 224.13 ms)   Flow 2 (95th percentile 166.77 ms)   Flow 3 (95th percentile 248.29 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-11-24 06:40:08
End at: 2019-11-24 06:40:38
Local clock offset: -0.016 ms
Remote clock offset: -0.113 ms


# Below is generated by plot.py at 2019-11-24 07:21:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 816.90 Mbit/s
95th percentile per-packet one-way delay: 225.701 ms
Loss rate: 3.13%
-- Flow 1:
Average throughput: 446.02 Mbit/s
95th percentile per-packet one-way delay: 226.660 ms
Loss rate: 2.71%
-- Flow 2:
Average throughput: 375.30 Mbit/s
95th percentile per-packet one-way delay: 235.074 ms
Loss rate: 3.55%
-- Flow 3:
Average throughput: 369.98 Mbit/s
95th percentile per-packet one-way delay: 160.418 ms
Loss rate: 3.81%
```
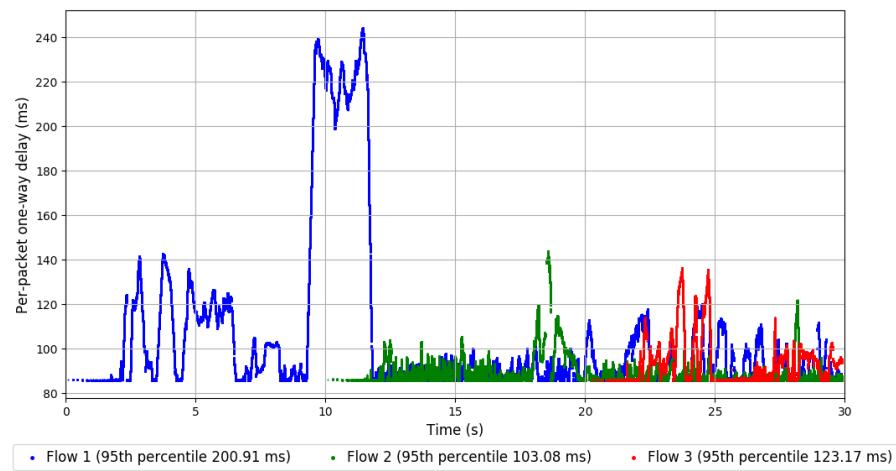
Run 5: Report of TCP BBR — Data Link
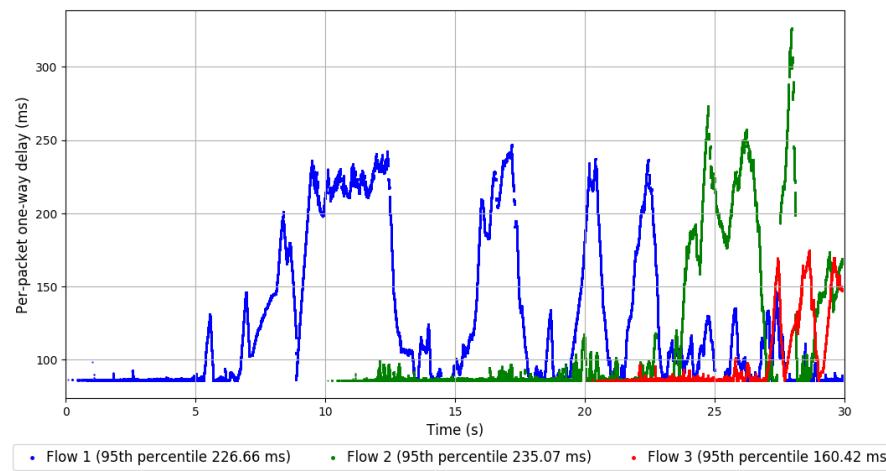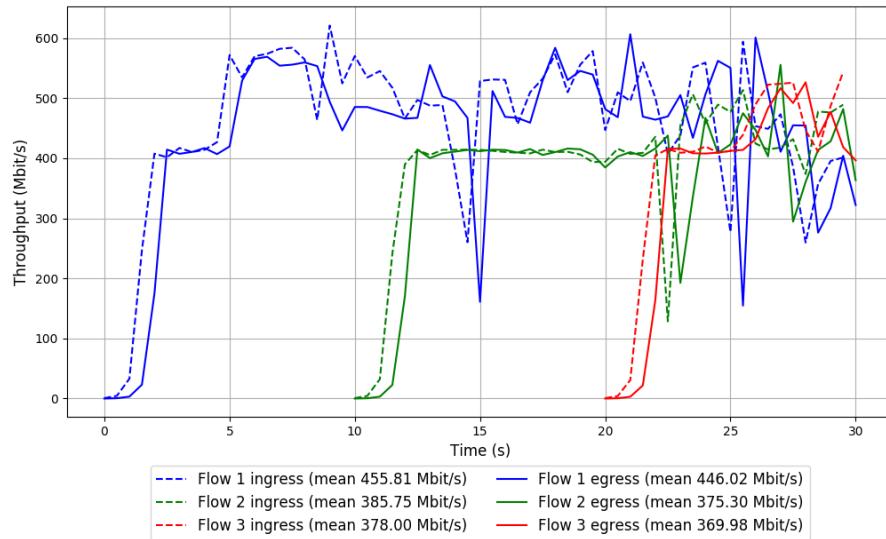
```
Run 1: Statistics of Copa

Start at: 2019-11-24 03:54:23
End at: 2019-11-24 03:54:53
Local clock offset: -0.021 ms
Remote clock offset: 0.055 ms


# Below is generated by plot.py at 2019-11-24 07:21:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 474.98 Mbit/s
95th percentile per-packet one-way delay: 125.095 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 258.62 Mbit/s
95th percentile per-packet one-way delay: 126.396 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 213.97 Mbit/s
95th percentile per-packet one-way delay: 98.965 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 225.96 Mbit/s
95th percentile per-packet one-way delay: 128.472 ms
Loss rate: 2.19%
```
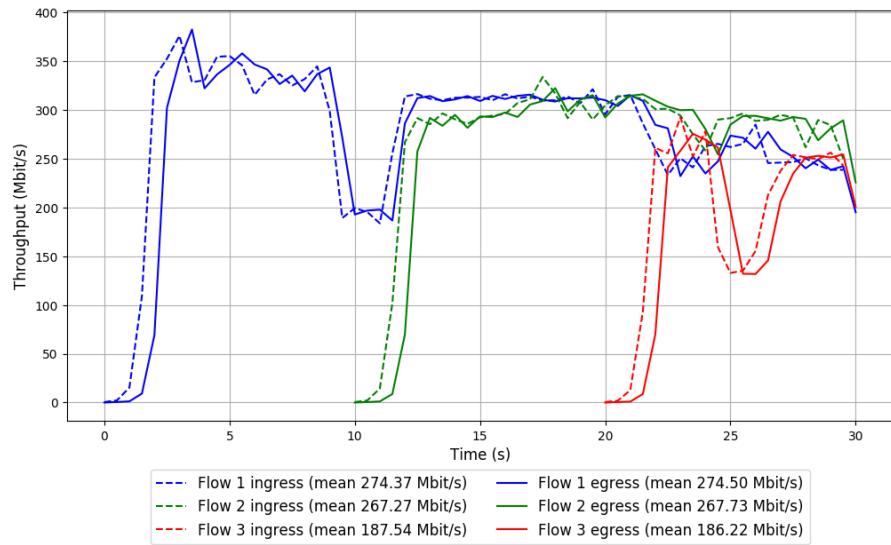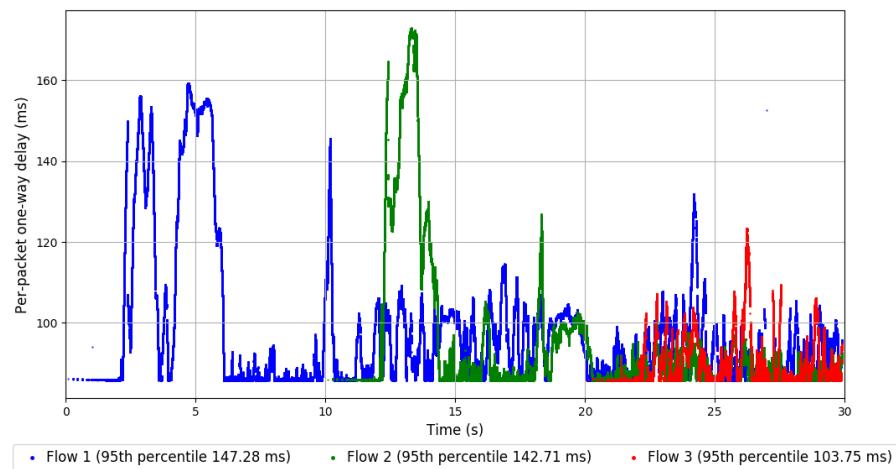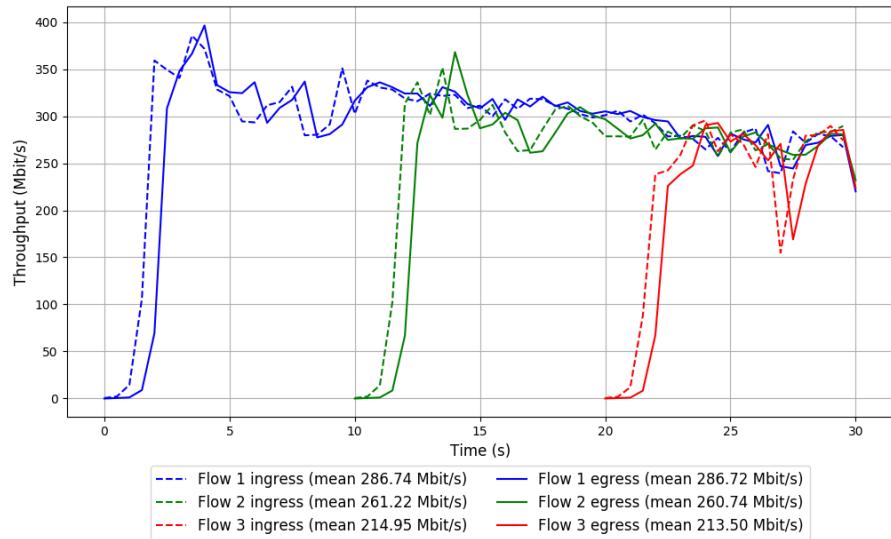
Run 1: Report of Copa — Data Link
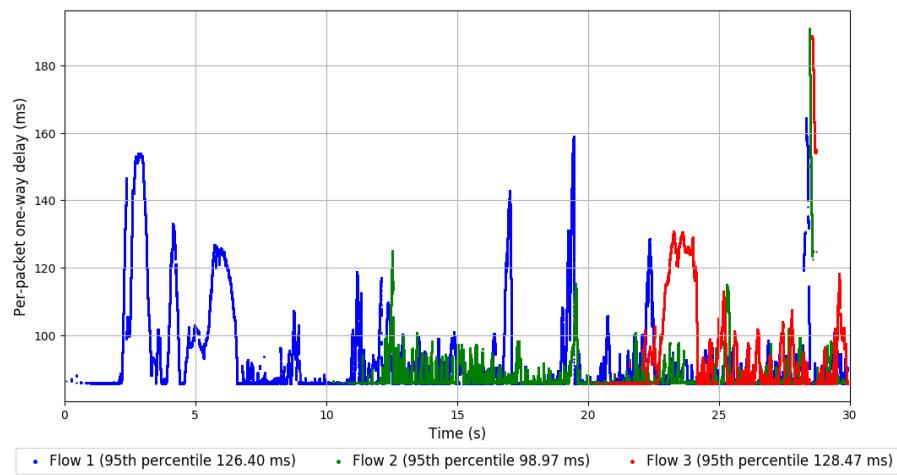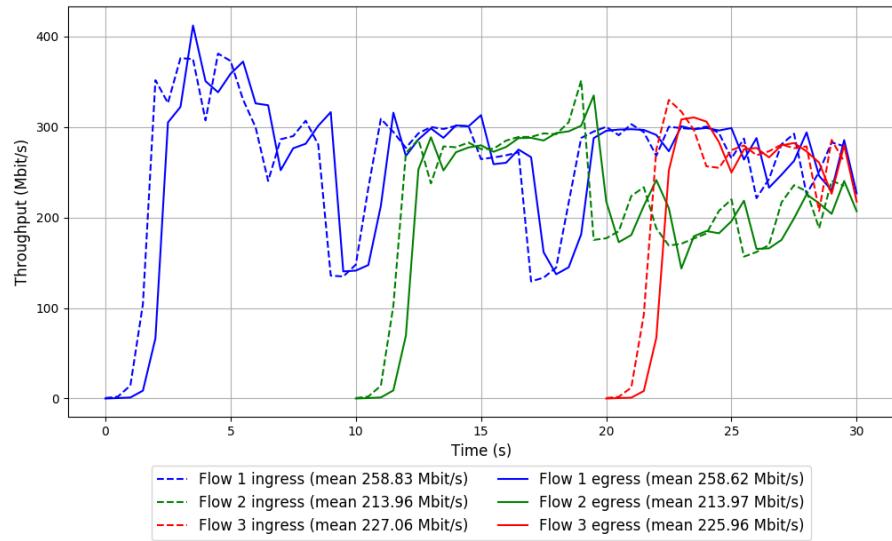
```
Run 2: Statistics of Copa

Start at: 2019-11-24 04:36:31
End at: 2019-11-24 04:37:01
Local clock offset: -0.045 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2019-11-24 07:22:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 486.16 Mbit/s
95th percentile per-packet one-way delay: 136.901 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 256.39 Mbit/s
95th percentile per-packet one-way delay: 135.339 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 241.19 Mbit/s
95th percentile per-packet one-way delay: 145.822 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 212.09 Mbit/s
95th percentile per-packet one-way delay: 127.250 ms
Loss rate: 0.53%
```
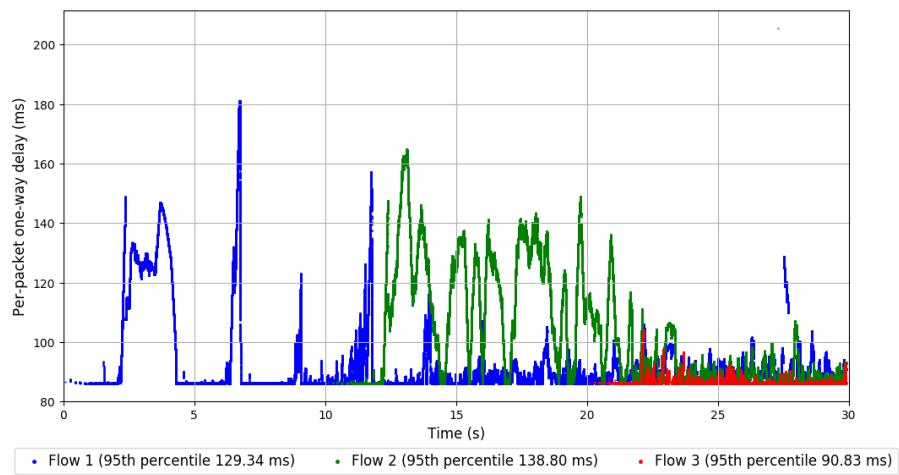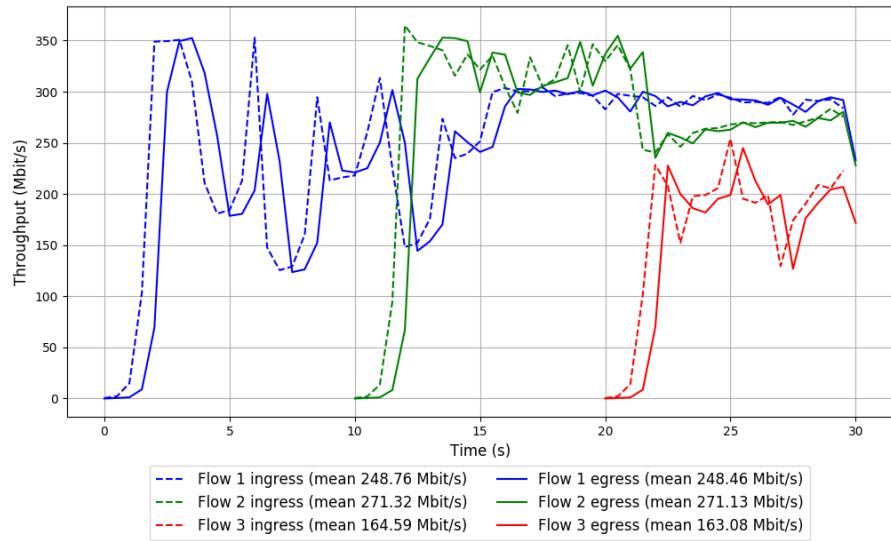
Run 2: Report of Copa — Data Link

- - - Flow 1 ingress (mean 256.36 Mbit/s) —— Flow 1 egress (mean 256.39 Mbit/s)
- - - Flow 2 ingress (mean 241.12 Mbit/s) —— Flow 2 egress (mean 241.19 Mbit/s)
- - - Flow 3 ingress (mean 208.71 Mbit/s) —— Flow 3 egress (mean 212.09 Mbit/s)

• Flow 1 (95th percentile 135.34 ms)   • Flow 2 (95th percentile 145.82 ms)   • Flow 3 (95th percentile 127.25 ms)

18

```
Run 3: Statistics of Copa

Start at: 2019-11-24 05:18:21
End at: 2019-11-24 05:18:51
Local clock offset: -0.001 ms
Remote clock offset: -0.189 ms


# Below is generated by plot.py at 2019-11-24 07:23:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 513.45 Mbit/s
95th percentile per-packet one-way delay: 129.238 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 274.50 Mbit/s
95th percentile per-packet one-way delay: 200.909 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 267.73 Mbit/s
95th percentile per-packet one-way delay: 103.078 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 186.22 Mbit/s
95th percentile per-packet one-way delay: 123.166 ms
Loss rate: 2.42%
```

Run 3: Report of Copa — Data Link

- - - Flow 1 ingress (mean 274.37 Mbit/s) ——— Flow 1 egress (mean 274.50 Mbit/s)
- - - Flow 2 ingress (mean 267.27 Mbit/s) ——— Flow 2 egress (mean 267.73 Mbit/s)
- - - Flow 3 ingress (mean 187.54 Mbit/s) ——— Flow 3 egress (mean 186.22 Mbit/s)

- Flow 1 (95th percentile 200.91 ms)　　• Flow 2 (95th percentile 103.08 ms)　　• Flow 3 (95th percentile 123.17 ms)

```
Run 4: Statistics of Copa

Start at: 2019-11-24 06:00:02
End at: 2019-11-24 06:00:32
Local clock offset: 0.039 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2019-11-24 07:38:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 529.97 Mbit/s
95th percentile per-packet one-way delay: 142.789 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 286.72 Mbit/s
95th percentile per-packet one-way delay: 147.276 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 260.74 Mbit/s
95th percentile per-packet one-way delay: 142.713 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 213.50 Mbit/s
95th percentile per-packet one-way delay: 103.747 ms
Loss rate: 2.37%
```
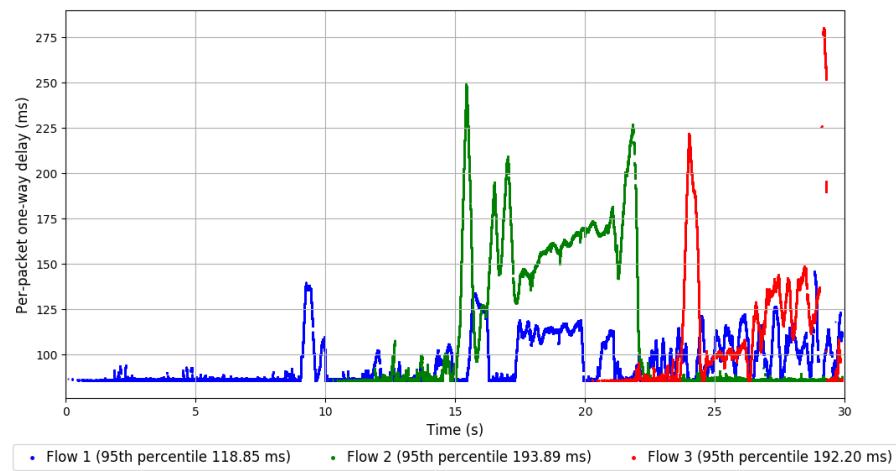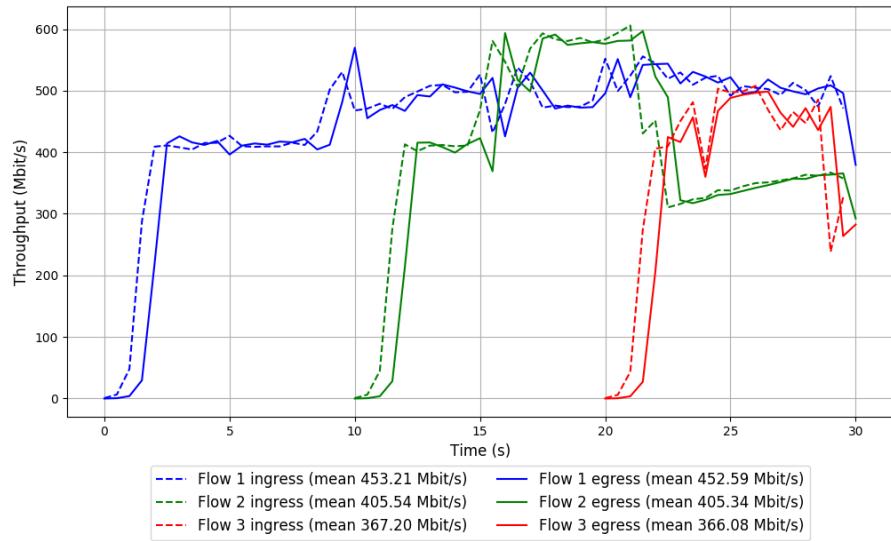
Run 4: Report of Copa — Data Link

- - - - Flow 1 ingress (mean 286.74 Mbit/s) —— Flow 1 egress (mean 286.72 Mbit/s)
- - - - Flow 2 ingress (mean 261.22 Mbit/s) —— Flow 2 egress (mean 260.74 Mbit/s)
- - - - Flow 3 ingress (mean 214.95 Mbit/s) —— Flow 3 egress (mean 213.50 Mbit/s)

- Flow 1 (95th percentile 147.28 ms) • Flow 2 (95th percentile 142.71 ms) • Flow 3 (95th percentile 103.75 ms)

```
Run 5: Statistics of Copa

Start at: 2019-11-24 06:42:12
End at: 2019-11-24 06:42:42
Local clock offset: 0.328 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2019-11-24 07:38:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 482.15 Mbit/s
95th percentile per-packet one-way delay: 134.701 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 248.46 Mbit/s
95th percentile per-packet one-way delay: 129.342 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 271.13 Mbit/s
95th percentile per-packet one-way delay: 138.801 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 163.08 Mbit/s
95th percentile per-packet one-way delay: 90.832 ms
Loss rate: 2.64%
```

Run 5: Report of Copa — Data Link

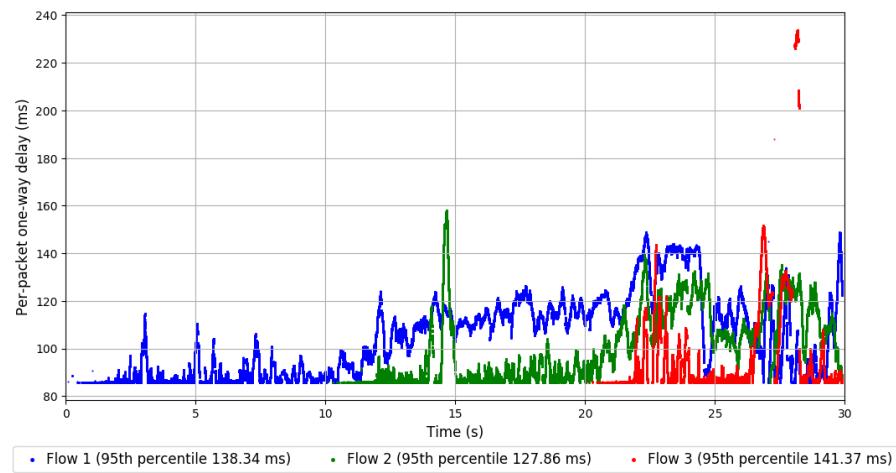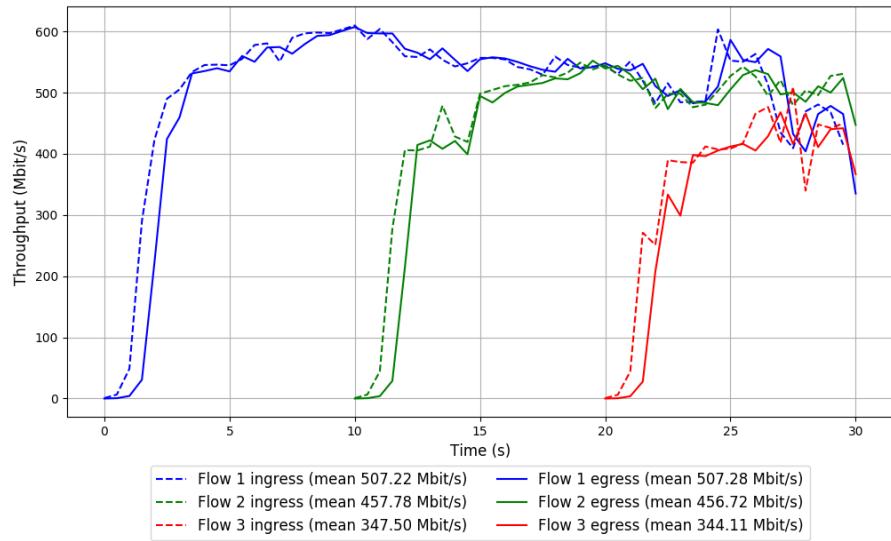Flow 1 ingress (mean 248.76 Mbit/s)   Flow 1 egress (mean 248.46 Mbit/s)
Flow 2 ingress (mean 271.32 Mbit/s)   Flow 2 egress (mean 271.13 Mbit/s)
Flow 3 ingress (mean 164.59 Mbit/s)   Flow 3 egress (mean 163.08 Mbit/s)

• Flow 1 (95th percentile 129.34 ms)   • Flow 2 (95th percentile 138.80 ms)   • Flow 3 (95th percentile 90.83 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2019-11-24 03:29:31
End at: 2019-11-24 03:30:01
Local clock offset: -0.033 ms
Remote clock offset: 0.029 ms


# Below is generated by plot.py at 2019-11-24 07:38:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 866.48 Mbit/s
95th percentile per-packet one-way delay: 111.556 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 464.72 Mbit/s
95th percentile per-packet one-way delay: 112.058 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 440.10 Mbit/s
95th percentile per-packet one-way delay: 110.490 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 333.15 Mbit/s
95th percentile per-packet one-way delay: 96.465 ms
Loss rate: 2.19%
```

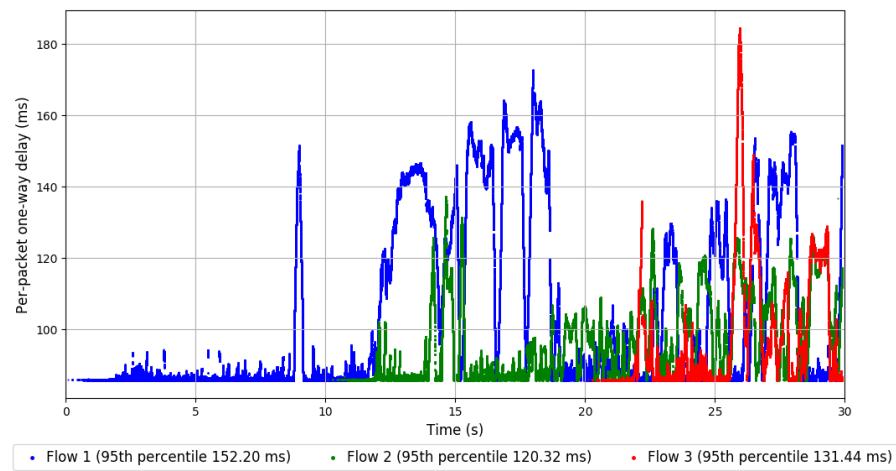Run 1: Report of TCP Cubic — Data Link
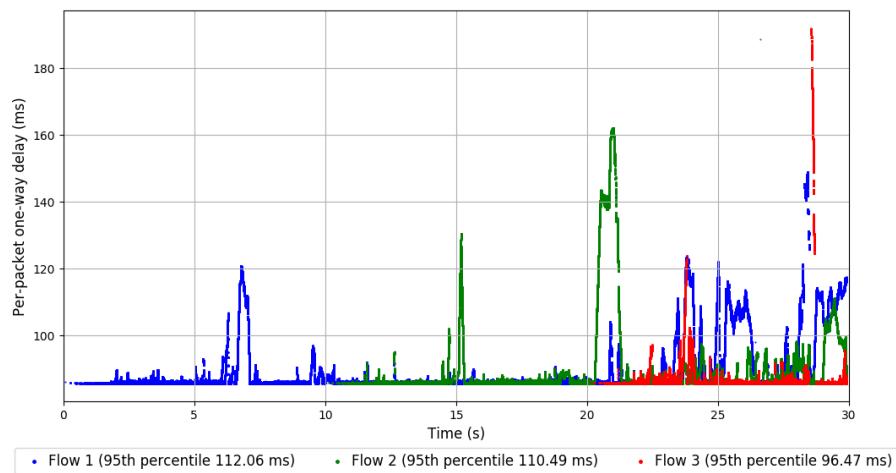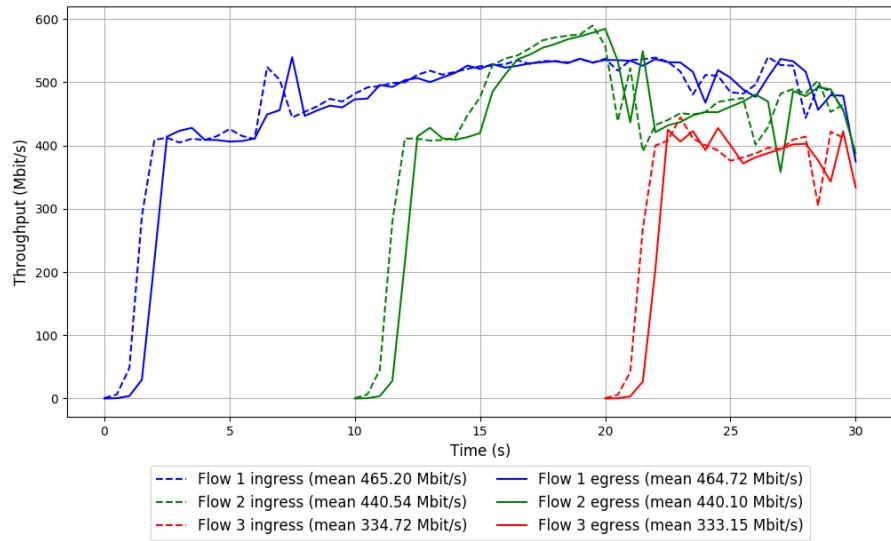
```
Run 2: Statistics of TCP Cubic

Start at: 2019-11-24 04:11:42
End at: 2019-11-24 04:12:12
Local clock offset: 0.028 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2019-11-24 07:38:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 842.08 Mbit/s
95th percentile per-packet one-way delay: 169.964 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 452.59 Mbit/s
95th percentile per-packet one-way delay: 118.847 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 405.34 Mbit/s
95th percentile per-packet one-way delay: 193.892 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 366.08 Mbit/s
95th percentile per-packet one-way delay: 192.198 ms
Loss rate: 2.02%
```

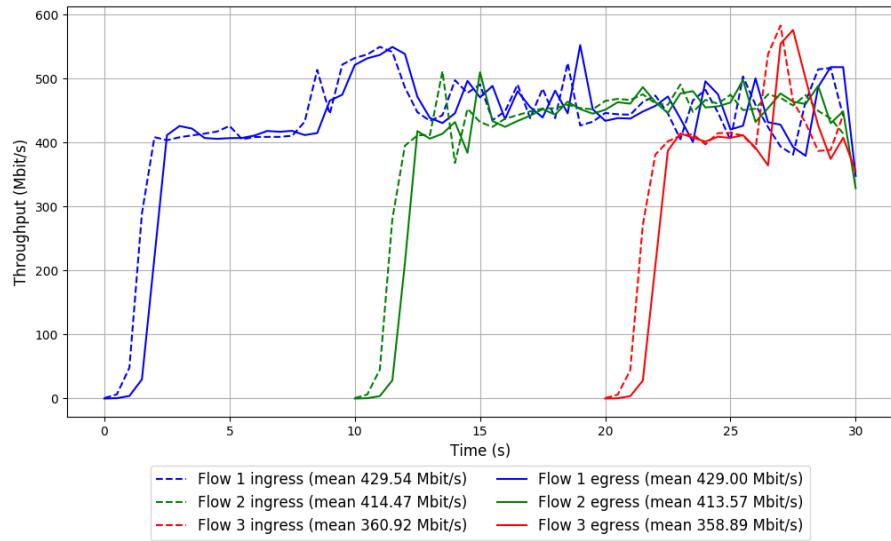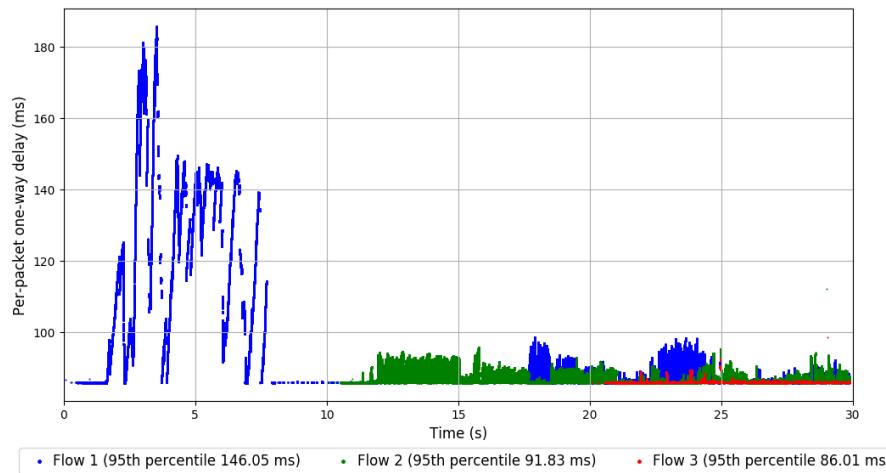# Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 453.21 Mbit/s) Flow 1 egress (mean 452.59 Mbit/s)
Flow 2 ingress (mean 405.54 Mbit/s) Flow 2 egress (mean 405.34 Mbit/s)
Flow 3 ingress (mean 367.20 Mbit/s) Flow 3 egress (mean 366.08 Mbit/s)

Flow 1 (95th percentile 118.85 ms)   Flow 2 (95th percentile 193.89 ms)   Flow 3 (95th percentile 192.20 ms)

28

```
Run 3: Statistics of TCP Cubic

Start at: 2019-11-24 04:53:47
End at: 2019-11-24 04:54:17
Local clock offset: -0.004 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2019-11-24 07:38:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 923.73 Mbit/s
95th percentile per-packet one-way delay: 134.190 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 507.28 Mbit/s
95th percentile per-packet one-way delay: 138.341 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 456.72 Mbit/s
95th percentile per-packet one-way delay: 127.862 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 344.11 Mbit/s
95th percentile per-packet one-way delay: 141.373 ms
Loss rate: 2.68%
```

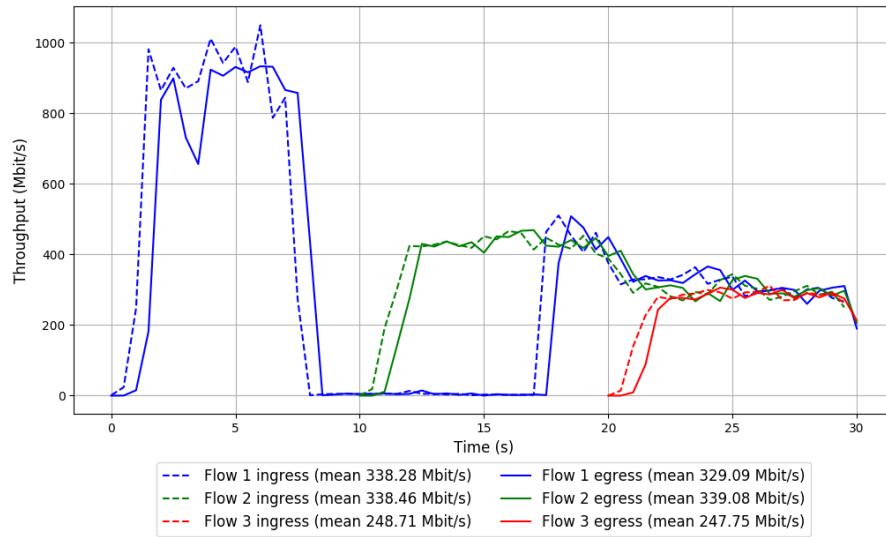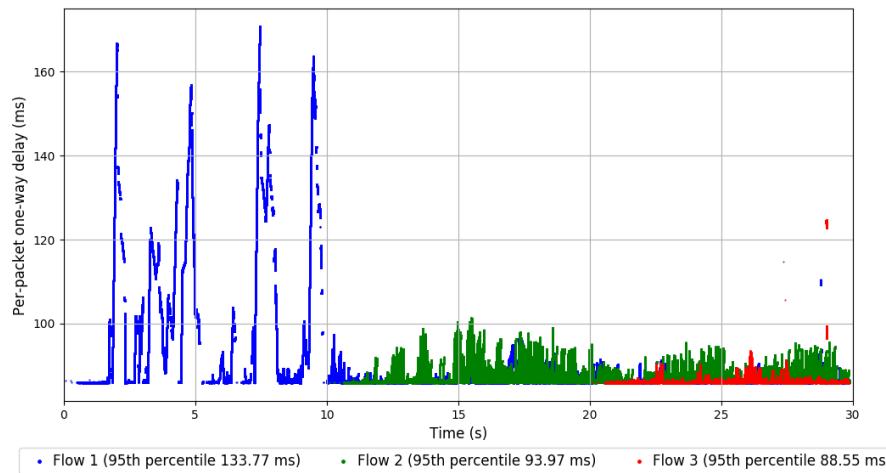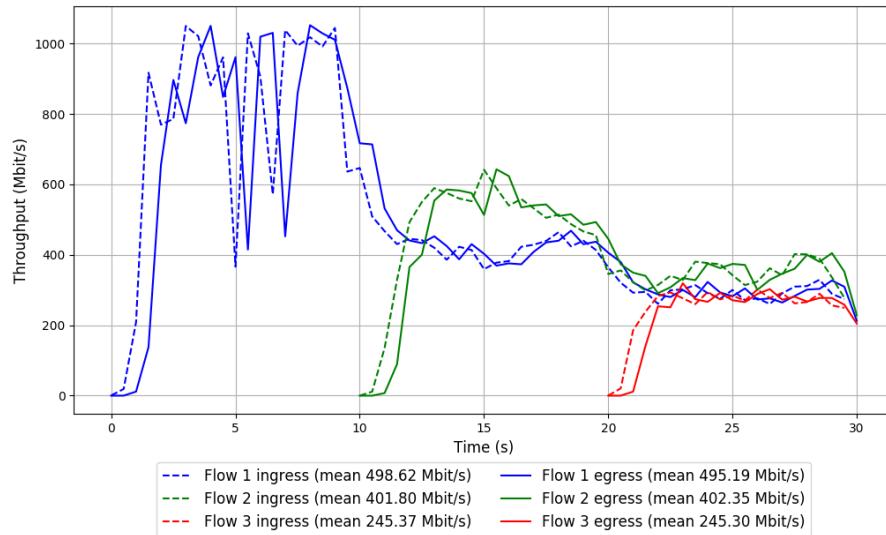Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 507.22 Mbit/s)   Flow 1 egress (mean 507.28 Mbit/s)
Flow 2 ingress (mean 457.78 Mbit/s)   Flow 2 egress (mean 456.72 Mbit/s)
Flow 3 ingress (mean 347.50 Mbit/s)   Flow 3 egress (mean 344.11 Mbit/s)

Flow 1 (95th percentile 138.34 ms)   Flow 2 (95th percentile 127.86 ms)   Flow 3 (95th percentile 141.37 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-11-24 05:35:36
End at: 2019-11-24 05:36:06
Local clock offset: -0.079 ms
Remote clock offset: -0.177 ms


# Below is generated by plot.py at 2019-11-24 07:38:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.45 Mbit/s
95th percentile per-packet one-way delay: 117.684 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 144.10 Mbit/s
95th percentile per-packet one-way delay: 87.074 ms
Loss rate: 1.56%
-- Flow 2:
Average throughput: 429.55 Mbit/s
95th percentile per-packet one-way delay: 121.149 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 331.73 Mbit/s
95th percentile per-packet one-way delay: 96.471 ms
Loss rate: 1.92%
```

Run 4: Report of TCP Cubic — Data Link
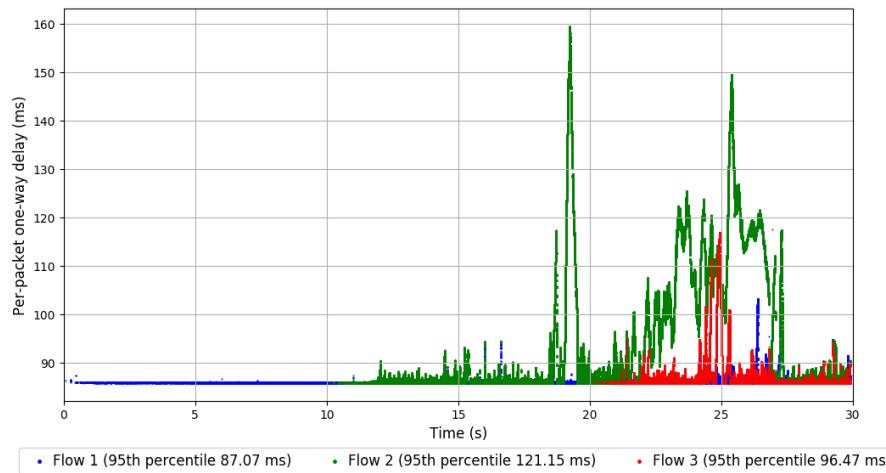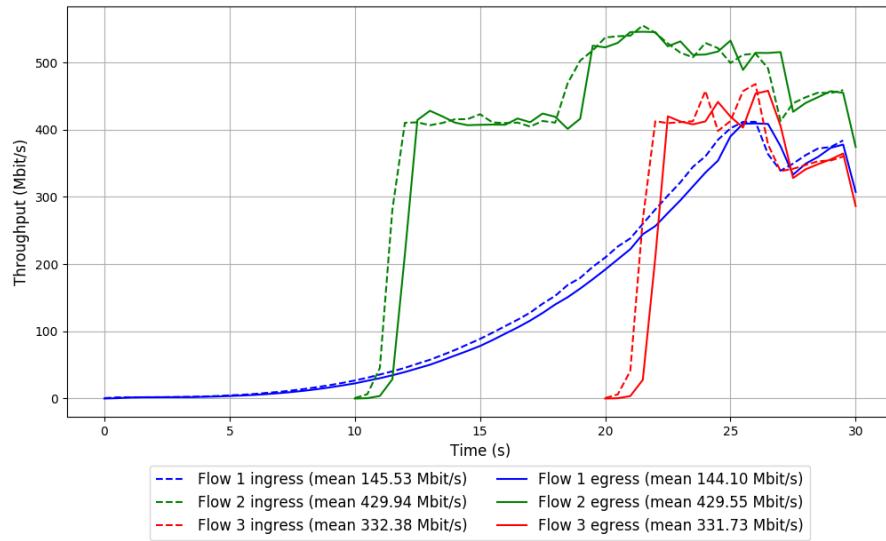
```
Run 5: Statistics of TCP Cubic

Start at: 2019-11-24 06:17:36
End at: 2019-11-24 06:18:06
Local clock offset: -0.045 ms
Remote clock offset: -0.088 ms


# Below is generated by plot.py at 2019-11-24 07:38:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 821.58 Mbit/s
95th percentile per-packet one-way delay: 146.006 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 429.00 Mbit/s
95th percentile per-packet one-way delay: 152.202 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 413.57 Mbit/s
95th percentile per-packet one-way delay: 120.318 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 358.89 Mbit/s
95th percentile per-packet one-way delay: 131.435 ms
Loss rate: 2.27%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 429.54 Mbit/s) ---- Flow 1 egress (mean 429.00 Mbit/s)
Flow 2 ingress (mean 414.47 Mbit/s) ---- Flow 2 egress (mean 413.57 Mbit/s)
Flow 3 ingress (mean 360.92 Mbit/s) ---- Flow 3 egress (mean 358.89 Mbit/s)

Flow 1 (95th percentile 152.20 ms)   Flow 2 (95th percentile 120.32 ms)   Flow 3 (95th percentile 131.44 ms)

```
Run 1: Statistics of FillP

Start at: 2019-11-24 03:24:35
End at: 2019-11-24 03:25:05
Local clock offset: -0.018 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2019-11-24 07:38:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 635.23 Mbit/s
95th percentile per-packet one-way delay: 142.942 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 329.09 Mbit/s
95th percentile per-packet one-way delay: 146.046 ms
Loss rate: 3.35%
-- Flow 2:
Average throughput: 339.08 Mbit/s
95th percentile per-packet one-way delay: 91.834 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 247.75 Mbit/s
95th percentile per-packet one-way delay: 86.011 ms
Loss rate: 2.18%
```
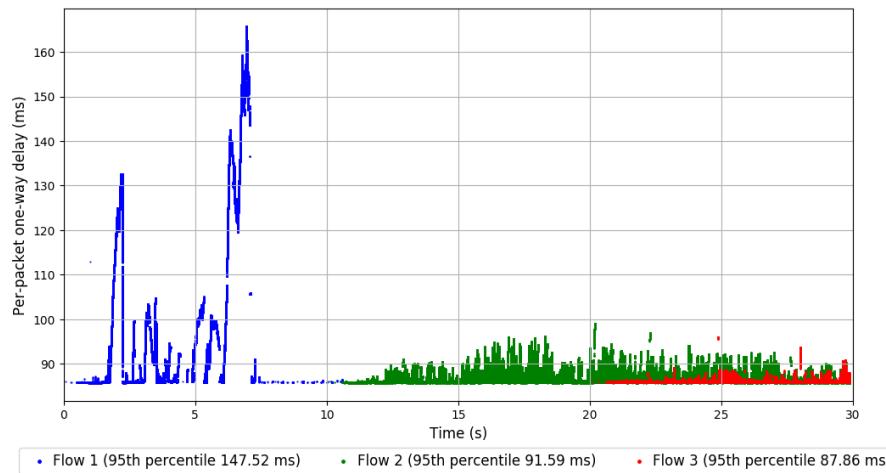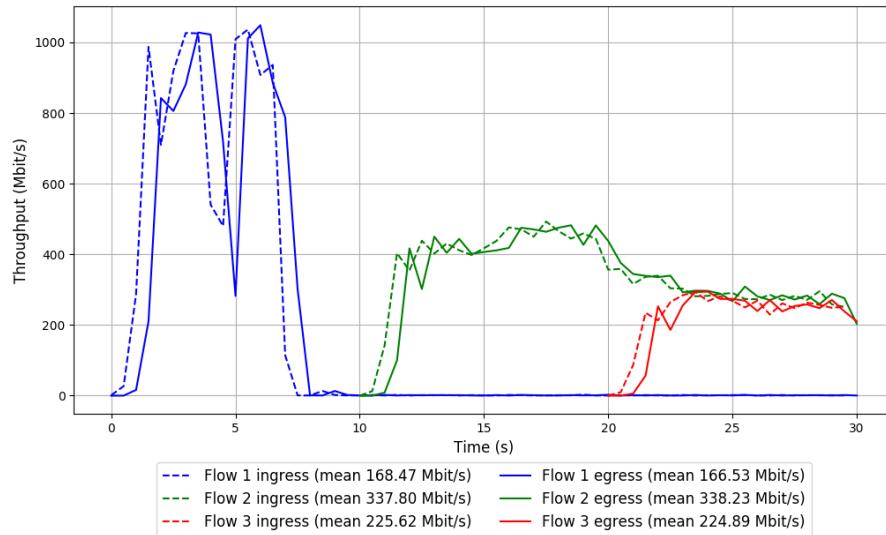
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 338.28 Mbit/s) --- Flow 1 egress (mean 329.09 Mbit/s)
Flow 2 ingress (mean 338.46 Mbit/s) --- Flow 2 egress (mean 339.08 Mbit/s)
Flow 3 ingress (mean 248.71 Mbit/s) --- Flow 3 egress (mean 247.75 Mbit/s)

Flow 1 (95th percentile 146.05 ms) · Flow 2 (95th percentile 91.83 ms) · Flow 3 (95th percentile 86.01 ms)

```
Run 2: Statistics of FillP

Start at: 2019-11-24 04:06:37
End at: 2019-11-24 04:07:07
Local clock offset: -0.013 ms
Remote clock offset: -0.068 ms


# Below is generated by plot.py at 2019-11-24 07:50:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 842.42 Mbit/s
95th percentile per-packet one-way delay: 127.512 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 495.19 Mbit/s
95th percentile per-packet one-way delay: 133.769 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 402.35 Mbit/s
95th percentile per-packet one-way delay: 93.965 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 245.30 Mbit/s
95th percentile per-packet one-way delay: 88.554 ms
Loss rate: 1.99%
```

Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 498.62 Mbit/s) — — — Flow 1 egress (mean 495.19 Mbit/s)
Flow 2 ingress (mean 401.80 Mbit/s) — — — Flow 2 egress (mean 402.35 Mbit/s)
Flow 3 ingress (mean 245.37 Mbit/s) — — — Flow 3 egress (mean 245.30 Mbit/s)

Flow 1 (95th percentile 133.77 ms) · Flow 2 (95th percentile 93.97 ms) · Flow 3 (95th percentile 88.55 ms)

```
Run 3: Statistics of FillP

Start at: 2019-11-24 04:48:40
End at: 2019-11-24 04:49:10
Local clock offset: 0.32 ms
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2019-11-24 07:56:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 888.60 Mbit/s
95th percentile per-packet one-way delay: 147.021 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 536.93 Mbit/s
95th percentile per-packet one-way delay: 149.684 ms
Loss rate: 2.69%
-- Flow 2:
Average throughput: 396.25 Mbit/s
95th percentile per-packet one-way delay: 93.469 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 271.74 Mbit/s
95th percentile per-packet one-way delay: 90.457 ms
Loss rate: 1.86%
```

Run 3: Report of FillP — Data Link
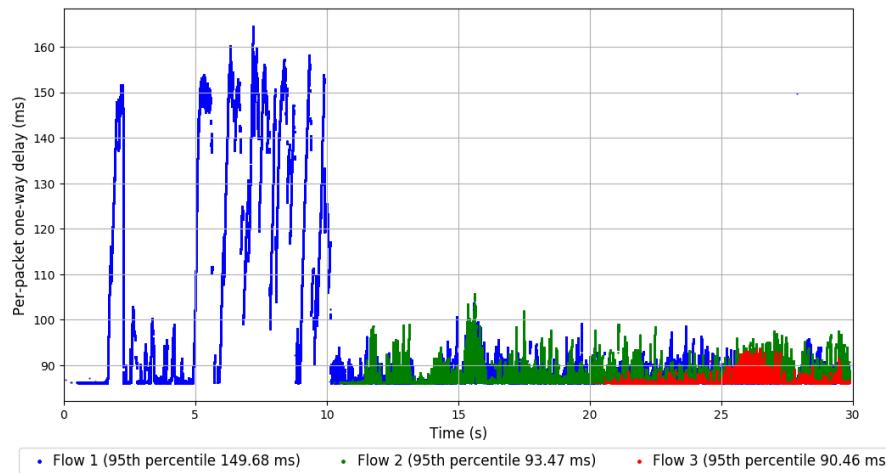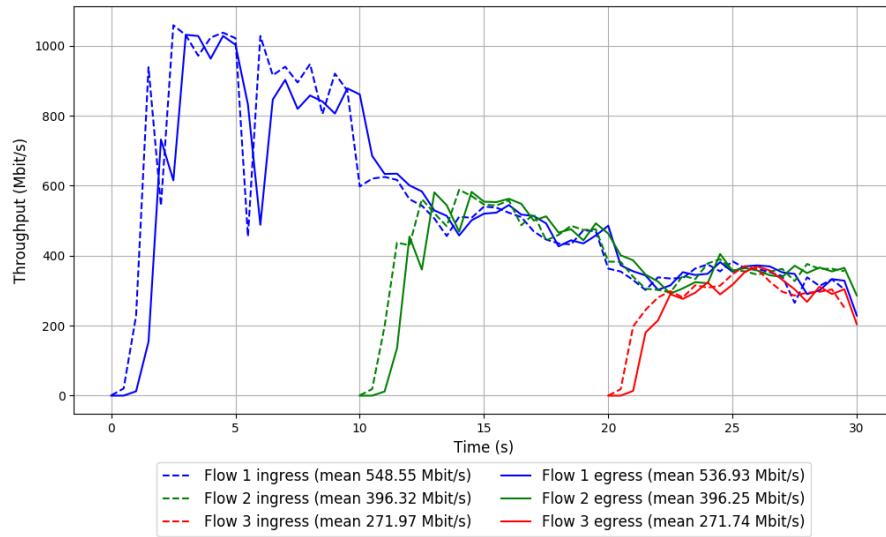
```
Run 4: Statistics of FillP

Start at: 2019-11-24 05:30:41
End at: 2019-11-24 05:31:11
Local clock offset: -0.035 ms
Remote clock offset: -0.168 ms


# Below is generated by plot.py at 2019-11-24 07:56:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 638.22 Mbit/s
95th percentile per-packet one-way delay: 90.732 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 320.28 Mbit/s
95th percentile per-packet one-way delay: 90.140 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 349.03 Mbit/s
95th percentile per-packet one-way delay: 91.264 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 264.14 Mbit/s
95th percentile per-packet one-way delay: 90.945 ms
Loss rate: 1.81%
```

Run 4: Report of FillP — Data Link
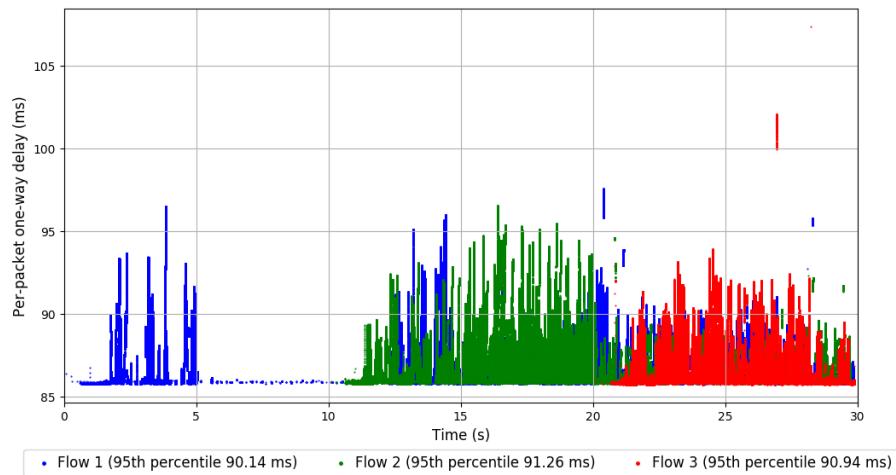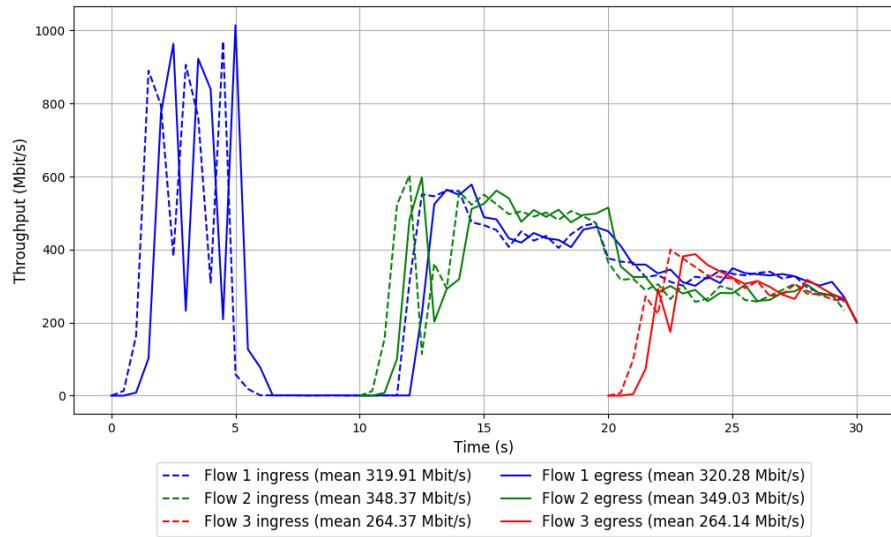
```
Run 5: Statistics of FillP

Start at: 2019-11-24 06:12:48
End at: 2019-11-24 06:13:18
Local clock offset: -0.015 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2019-11-24 07:56:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 464.40 Mbit/s
95th percentile per-packet one-way delay: 125.255 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 166.53 Mbit/s
95th percentile per-packet one-way delay: 147.520 ms
Loss rate: 1.66%
-- Flow 2:
Average throughput: 338.23 Mbit/s
95th percentile per-packet one-way delay: 91.595 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 224.89 Mbit/s
95th percentile per-packet one-way delay: 87.860 ms
Loss rate: 2.10%
```
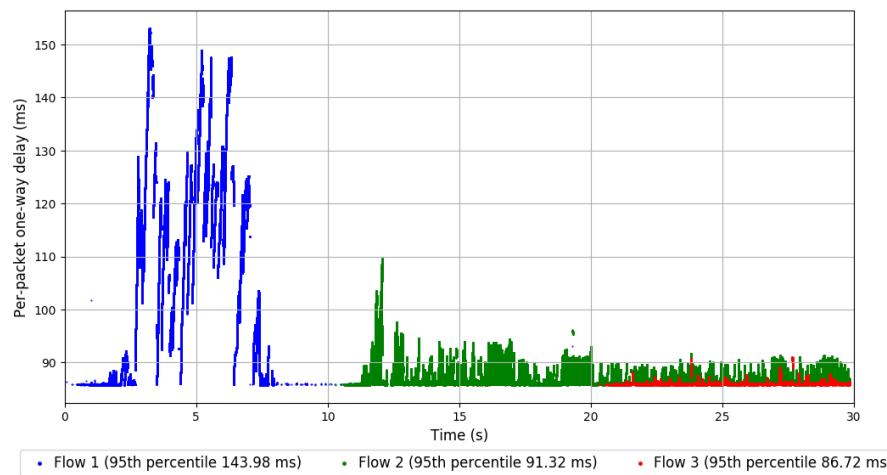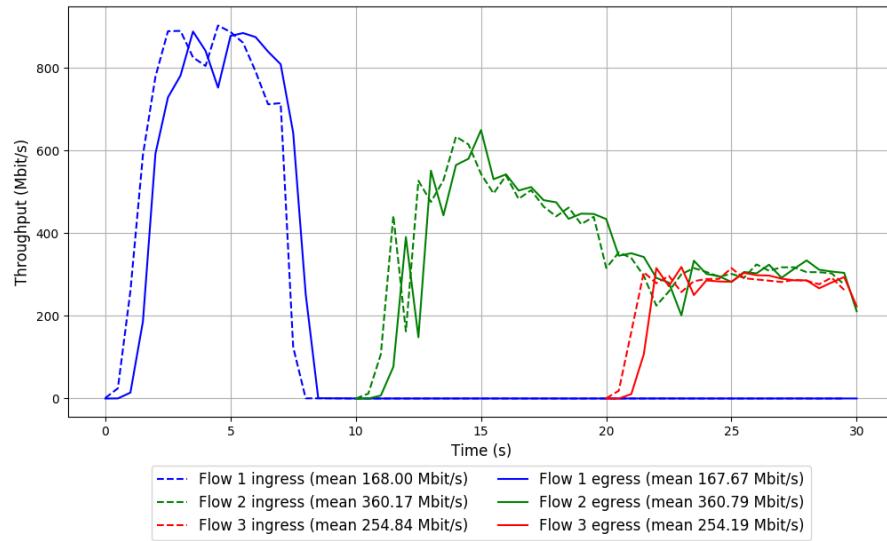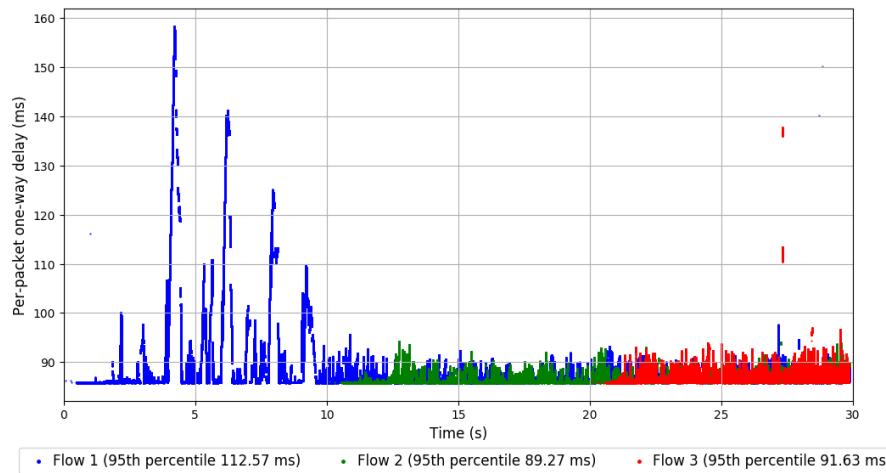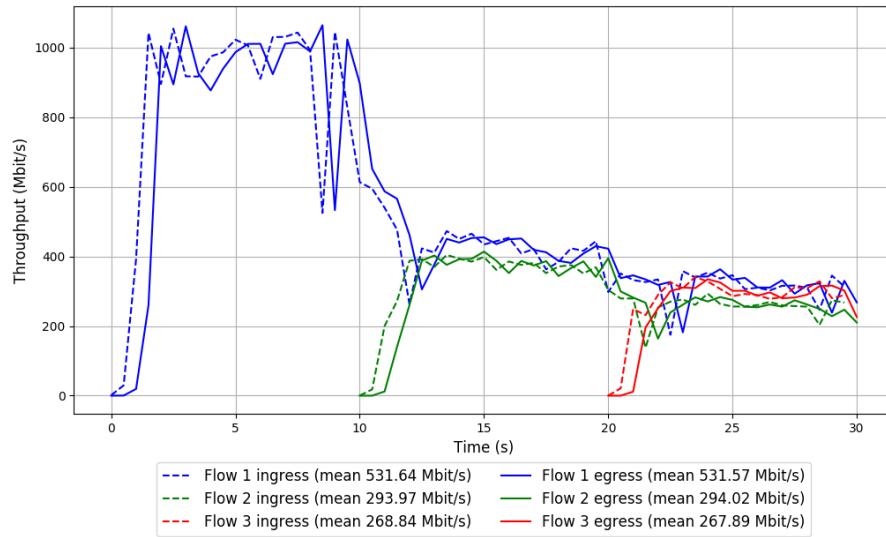
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 168.47 Mbit/s)   Flow 1 egress (mean 166.53 Mbit/s)
Flow 2 ingress (mean 337.80 Mbit/s)   Flow 2 egress (mean 338.23 Mbit/s)
Flow 3 ingress (mean 225.62 Mbit/s)   Flow 3 egress (mean 224.89 Mbit/s)

Flow 1 (95th percentile 147.52 ms)   Flow 2 (95th percentile 91.59 ms)   Flow 3 (95th percentile 87.86 ms)

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-11-24 03:58:18
End at: 2019-11-24 03:58:48
Local clock offset: -0.055 ms
Remote clock offset: -0.019 ms


# Below is generated by plot.py at 2019-11-24 07:56:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 340.95 Mbit/s
95th percentile per-packet one-way delay: 102.751 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 54.28 Mbit/s
95th percentile per-packet one-way delay: 141.475 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 311.20 Mbit/s
95th percentile per-packet one-way delay: 86.724 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 244.01 Mbit/s
95th percentile per-packet one-way delay: 88.820 ms
Loss rate: 2.15%
```

Run 1: Report of FillP-Sheep — Data Link
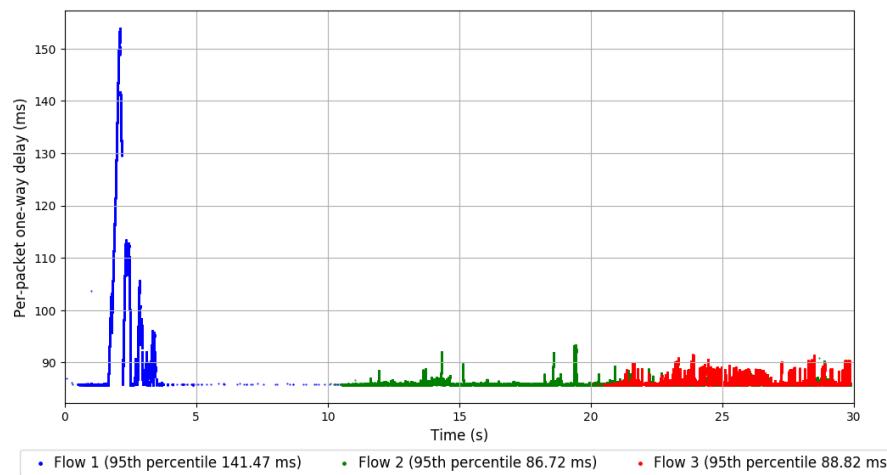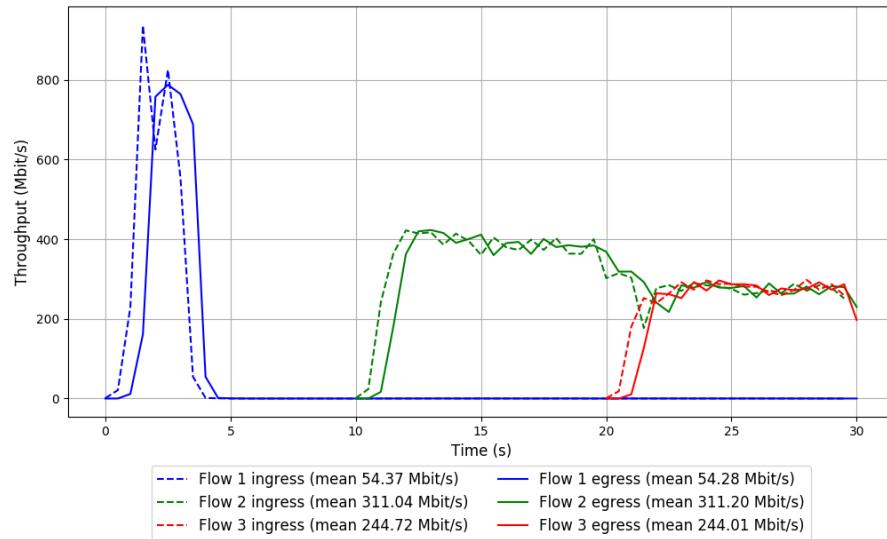
```
Run 2: Statistics of FillP-Sheep

Start at: 2019-11-24 04:40:27
End at: 2019-11-24 04:40:57
Local clock offset: 0.042 ms
Remote clock offset: -0.111 ms


# Below is generated by plot.py at 2019-11-24 07:56:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 352.40 Mbit/s
95th percentile per-packet one-way delay: 101.499 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 70.06 Mbit/s
95th percentile per-packet one-way delay: 114.146 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 310.81 Mbit/s
95th percentile per-packet one-way delay: 90.120 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 232.84 Mbit/s
95th percentile per-packet one-way delay: 88.593 ms
Loss rate: 1.83%
```

Run 2: Report of FillP-Sheep — Data Link
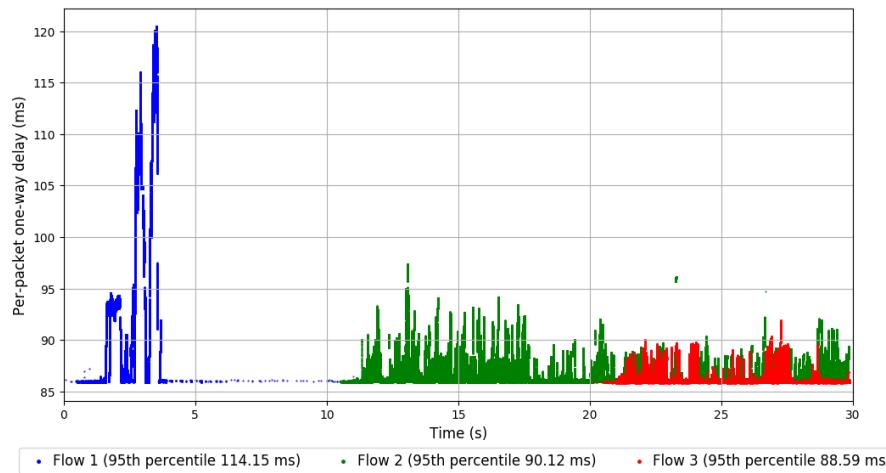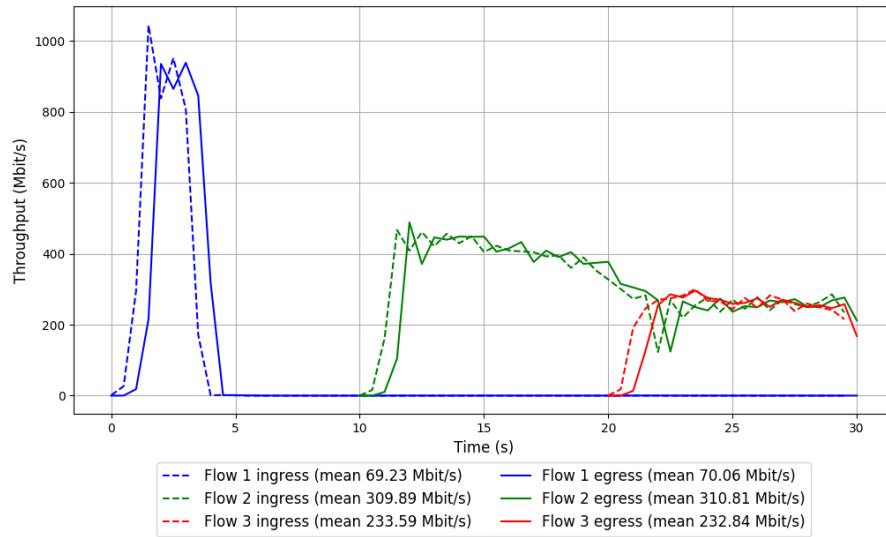
```
Run 3: Statistics of FillP-Sheep

Start at: 2019-11-24 05:22:21
End at: 2019-11-24 05:22:51
Local clock offset: -0.052 ms
Remote clock offset: -0.184 ms


# Below is generated by plot.py at 2019-11-24 07:56:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 489.99 Mbit/s
95th percentile per-packet one-way delay: 130.500 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 167.67 Mbit/s
95th percentile per-packet one-way delay: 143.977 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 360.79 Mbit/s
95th percentile per-packet one-way delay: 91.319 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 254.19 Mbit/s
95th percentile per-packet one-way delay: 86.719 ms
Loss rate: 1.89%
```

Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 168.00 Mbit/s)   Flow 1 egress (mean 167.67 Mbit/s)
Flow 2 ingress (mean 360.17 Mbit/s)   Flow 2 egress (mean 360.79 Mbit/s)
Flow 3 ingress (mean 254.84 Mbit/s)   Flow 3 egress (mean 254.19 Mbit/s)

Flow 1 (95th percentile 143.98 ms)   Flow 2 (95th percentile 91.32 ms)   Flow 3 (95th percentile 86.72 ms)
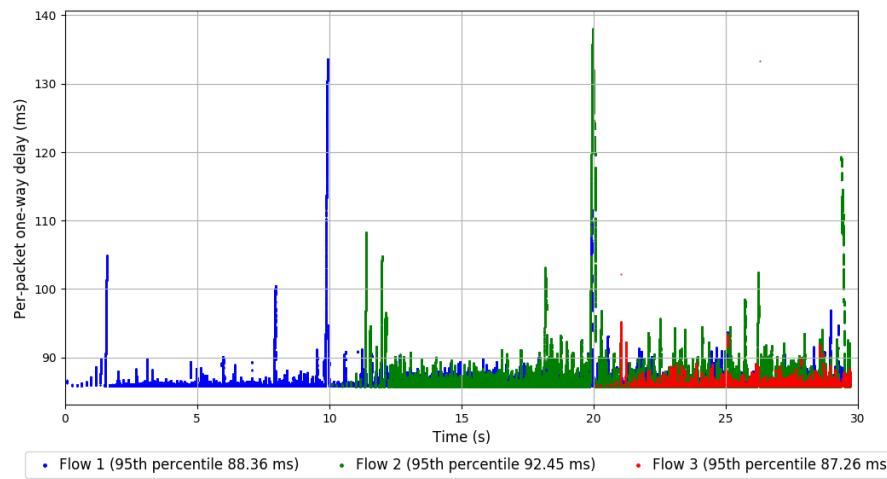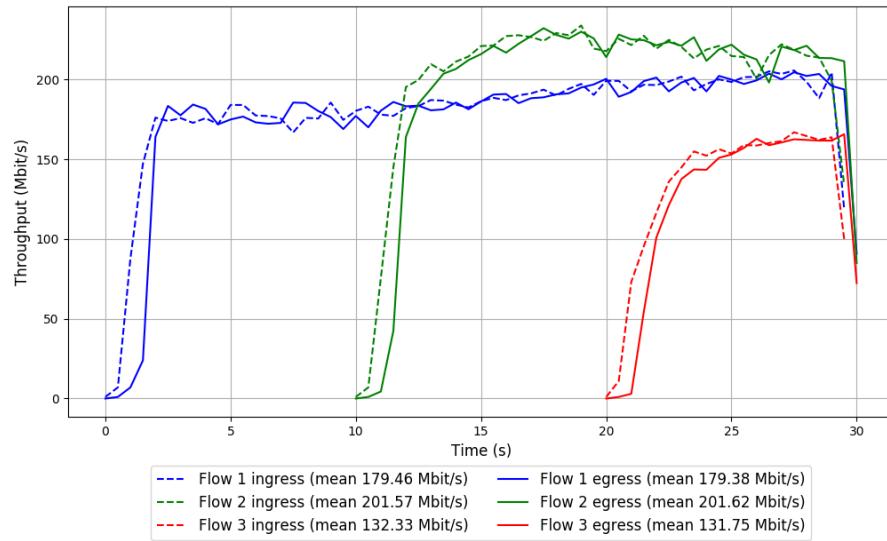
```
Run 4: Statistics of FillP-Sheep

Start at: 2019-11-24 06:04:11
End at: 2019-11-24 06:04:41
Local clock offset: -0.009 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2019-11-24 07:56:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 814.39 Mbit/s
95th percentile per-packet one-way delay: 102.673 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 531.57 Mbit/s
95th percentile per-packet one-way delay: 112.572 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 294.02 Mbit/s
95th percentile per-packet one-way delay: 89.272 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 267.89 Mbit/s
95th percentile per-packet one-way delay: 91.629 ms
Loss rate: 2.09%
```

Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 531.64 Mbit/s) --- Flow 1 egress (mean 531.57 Mbit/s)
Flow 2 ingress (mean 293.97 Mbit/s) --- Flow 2 egress (mean 294.02 Mbit/s)
Flow 3 ingress (mean 268.84 Mbit/s) --- Flow 3 egress (mean 267.89 Mbit/s)

Flow 1 (95th percentile 112.57 ms) Flow 2 (95th percentile 89.27 ms) Flow 3 (95th percentile 91.63 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-11-24 06:46:12
End at: 2019-11-24 06:46:42
Local clock offset: 0.313 ms
Remote clock offset: -0.071 ms


# Below is generated by plot.py at 2019-11-24 07:56:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 459.93 Mbit/s
95th percentile per-packet one-way delay: 102.025 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 127.22 Mbit/s
95th percentile per-packet one-way delay: 119.903 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 366.27 Mbit/s
95th percentile per-packet one-way delay: 100.669 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 273.47 Mbit/s
95th percentile per-packet one-way delay: 91.030 ms
Loss rate: 1.92%
```

Run 5: Report of FillP-Sheep — Data Link
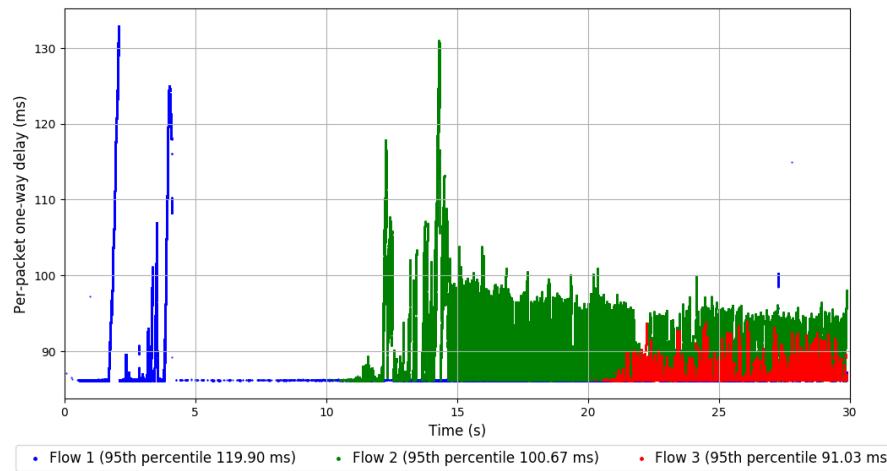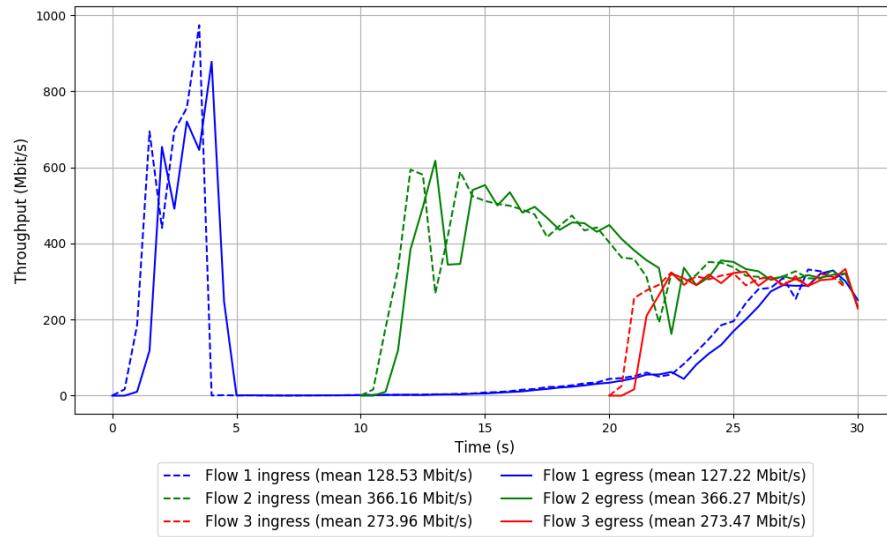
```
Run 1: Statistics of Indigo

Start at: 2019-11-24 03:19:36
End at: 2019-11-24 03:20:07
Local clock offset: 0.324 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2019-11-24 07:57:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 382.03 Mbit/s
95th percentile per-packet one-way delay: 89.343 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 194.08 Mbit/s
95th percentile per-packet one-way delay: 88.862 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 194.68 Mbit/s
95th percentile per-packet one-way delay: 89.938 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 164.72 Mbit/s
95th percentile per-packet one-way delay: 88.725 ms
Loss rate: 2.16%
```
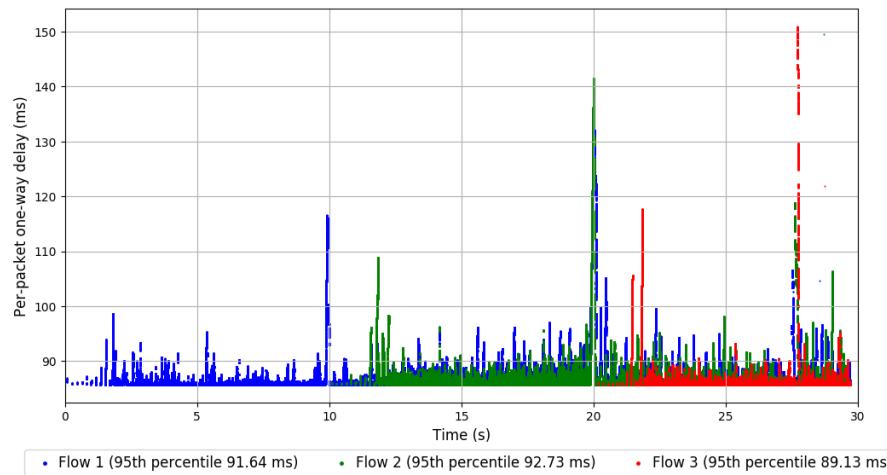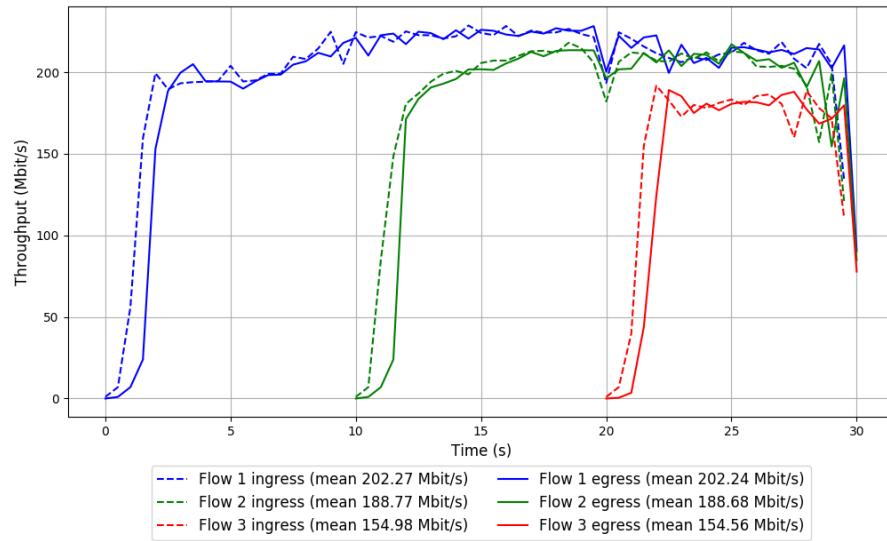
Run 1: Report of Indigo — Data Link
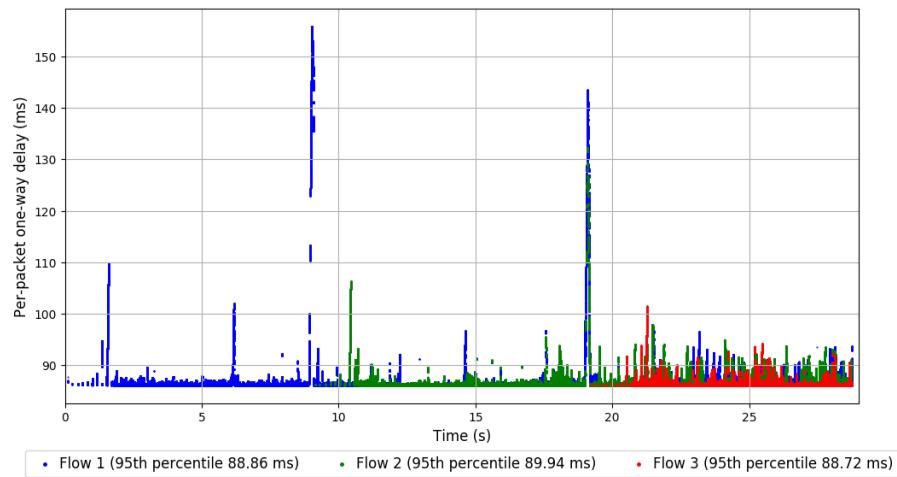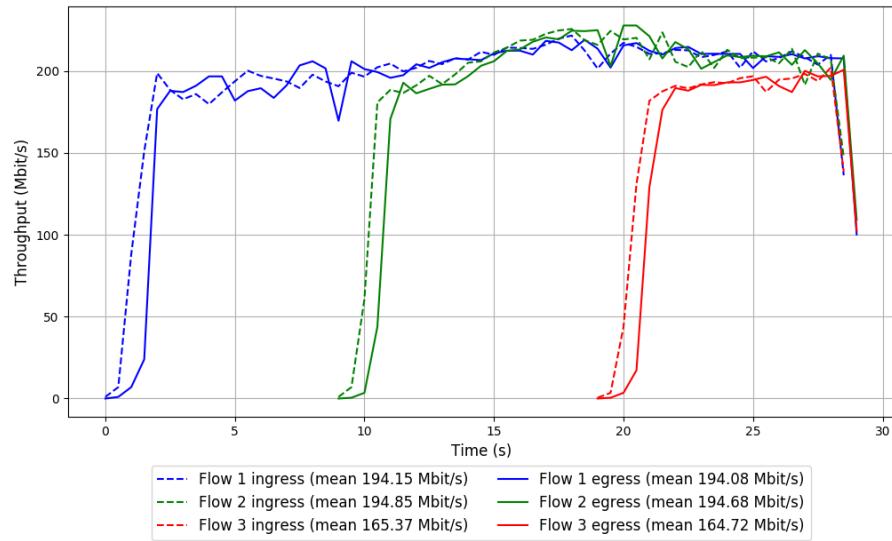
```
Run 2: Statistics of Indigo

Start at: 2019-11-24 04:01:37
End at: 2019-11-24 04:02:07
Local clock offset: -0.032 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2019-11-24 07:59:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 356.61 Mbit/s
95th percentile per-packet one-way delay: 110.313 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 197.18 Mbit/s
95th percentile per-packet one-way delay: 108.845 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 171.88 Mbit/s
95th percentile per-packet one-way delay: 117.537 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 144.81 Mbit/s
95th percentile per-packet one-way delay: 88.780 ms
Loss rate: 2.14%
```

Run 2: Report of Indigo — Data Link
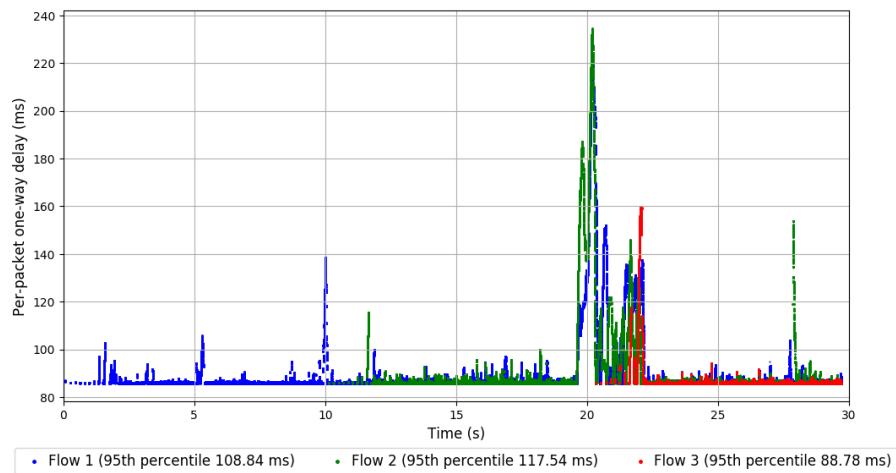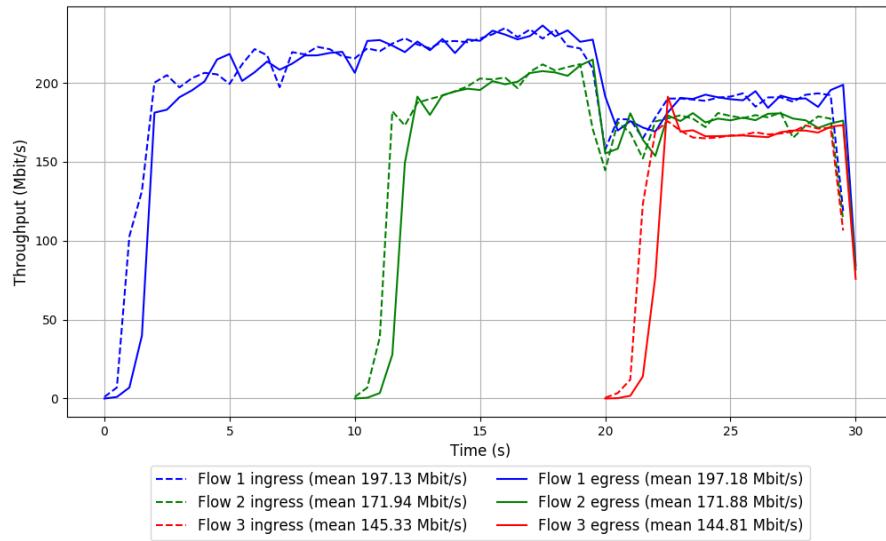
```
Run 3: Statistics of Indigo

Start at: 2019-11-24 04:43:41
End at: 2019-11-24 04:44:11
Local clock offset: -0.035 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2019-11-24 08:01:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 355.49 Mbit/s
95th percentile per-packet one-way delay: 89.723 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 179.38 Mbit/s
95th percentile per-packet one-way delay: 88.357 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 201.62 Mbit/s
95th percentile per-packet one-way delay: 92.448 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 131.75 Mbit/s
95th percentile per-packet one-way delay: 87.256 ms
Loss rate: 2.20%
```
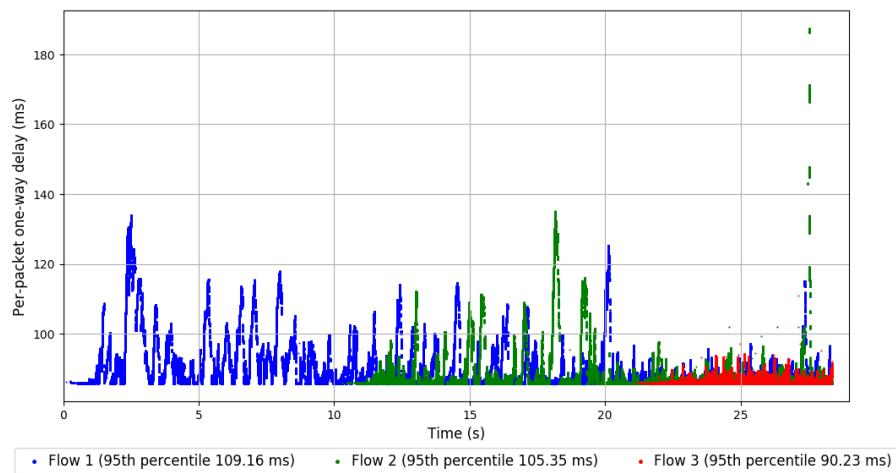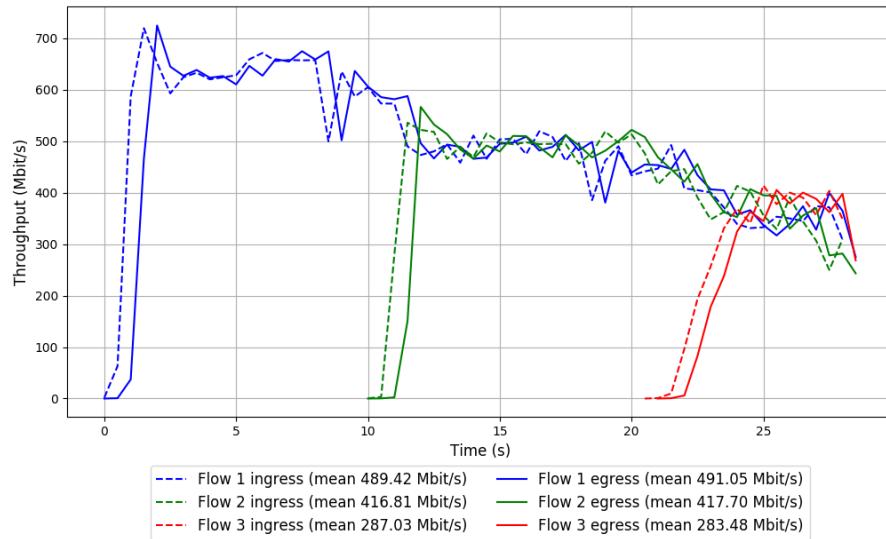
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-11-24 05:25:38
End at: 2019-11-24 05:26:08
Local clock offset: -0.014 ms
Remote clock offset: -0.159 ms


# Below is generated by plot.py at 2019-11-24 08:03:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 395.26 Mbit/s
95th percentile per-packet one-way delay: 90.628 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 209.33 Mbit/s
95th percentile per-packet one-way delay: 91.180 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 190.61 Mbit/s
95th percentile per-packet one-way delay: 89.716 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 171.70 Mbit/s
95th percentile per-packet one-way delay: 90.964 ms
Loss rate: 1.42%
```

Run 4: Report of Indigo — Data Link
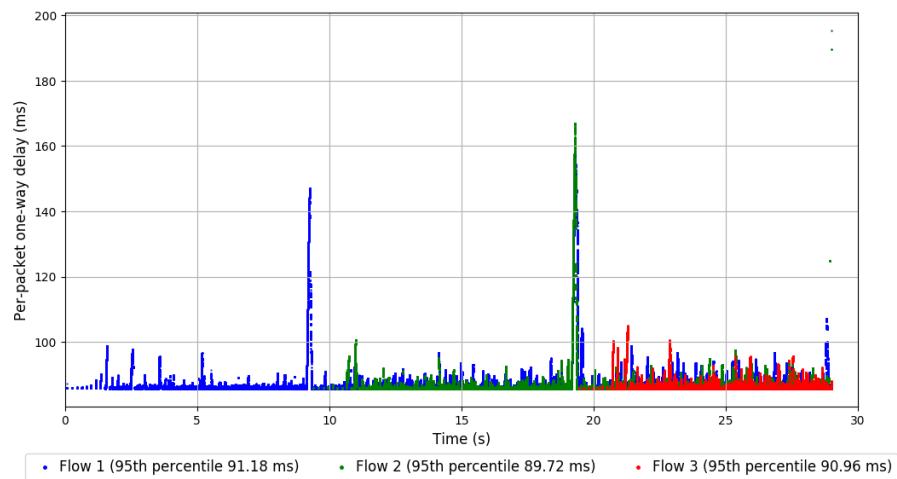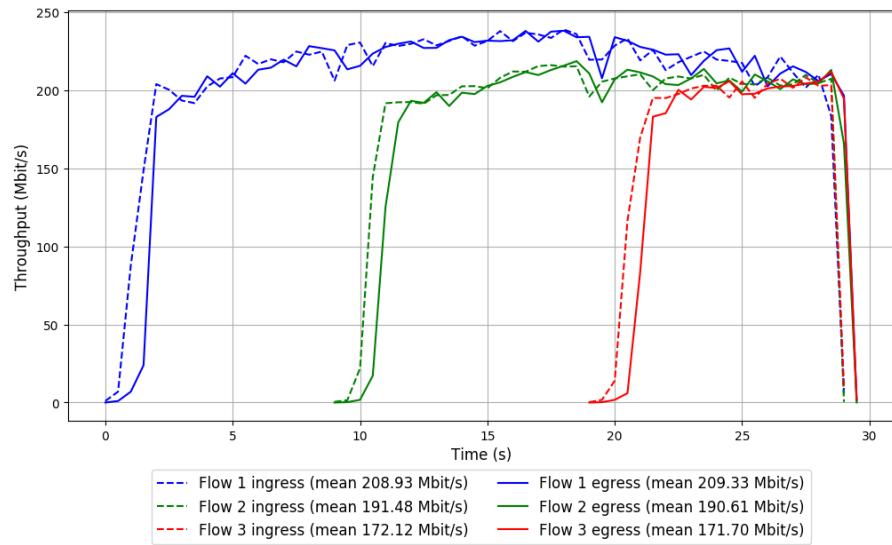
```
Run 5: Statistics of Indigo

Start at: 2019-11-24 06:07:47
End at: 2019-11-24 06:08:17
Local clock offset: -0.006 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2019-11-24 08:03:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 377.00 Mbit/s
95th percentile per-packet one-way delay: 91.779 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 202.24 Mbit/s
95th percentile per-packet one-way delay: 91.637 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 188.68 Mbit/s
95th percentile per-packet one-way delay: 92.732 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 154.56 Mbit/s
95th percentile per-packet one-way delay: 89.127 ms
Loss rate: 2.06%
```
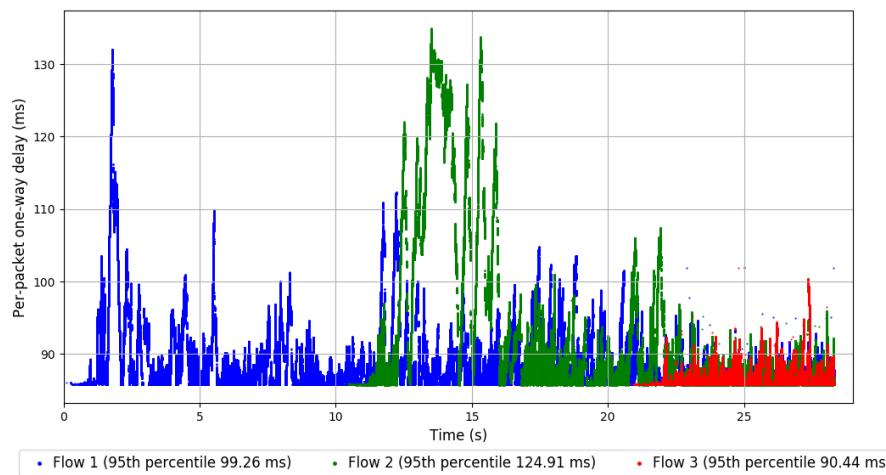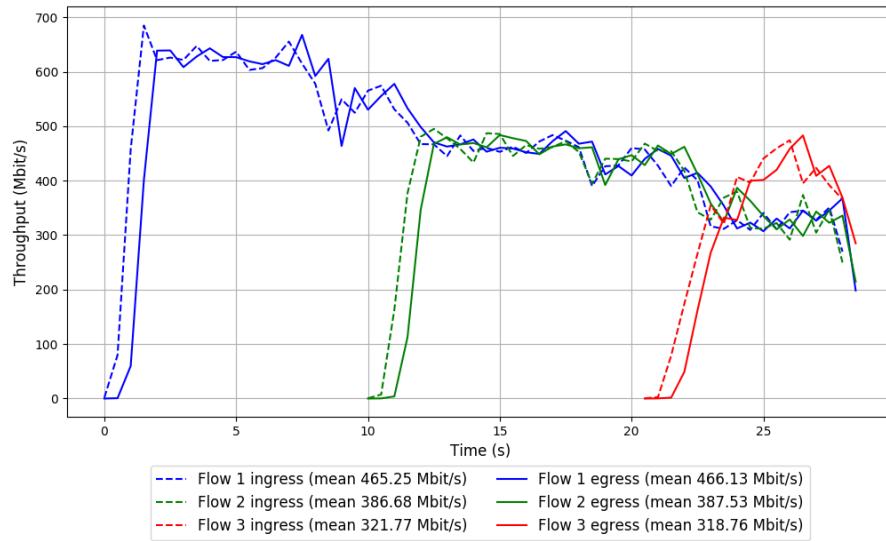
Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 202.27 Mbit/s) --- Flow 1 egress (mean 202.24 Mbit/s)
Flow 2 ingress (mean 188.77 Mbit/s) --- Flow 2 egress (mean 188.68 Mbit/s)
Flow 3 ingress (mean 154.98 Mbit/s) --- Flow 3 egress (mean 154.56 Mbit/s)

Flow 1 (95th percentile 91.64 ms)   Flow 2 (95th percentile 92.73 ms)   Flow 3 (95th percentile 89.13 ms)

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-11-24 03:42:45
End at: 2019-11-24 03:43:15
Local clock offset: -0.014 ms
Remote clock offset: 0.026 ms


# Below is generated by plot.py at 2019-11-24 08:09:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 835.40 Mbit/s
95th percentile per-packet one-way delay: 107.416 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 502.50 Mbit/s
95th percentile per-packet one-way delay: 106.332 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 401.22 Mbit/s
95th percentile per-packet one-way delay: 111.002 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 290.56 Mbit/s
95th percentile per-packet one-way delay: 89.887 ms
Loss rate: 3.39%
```
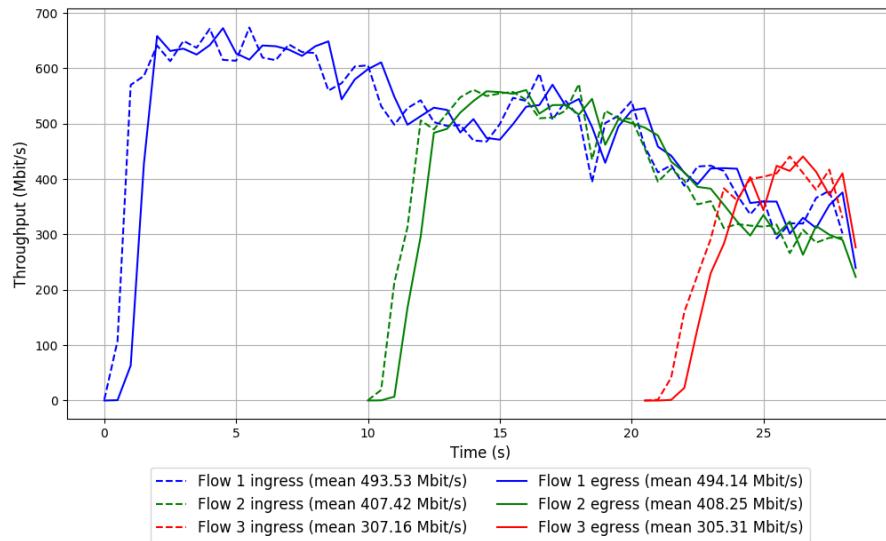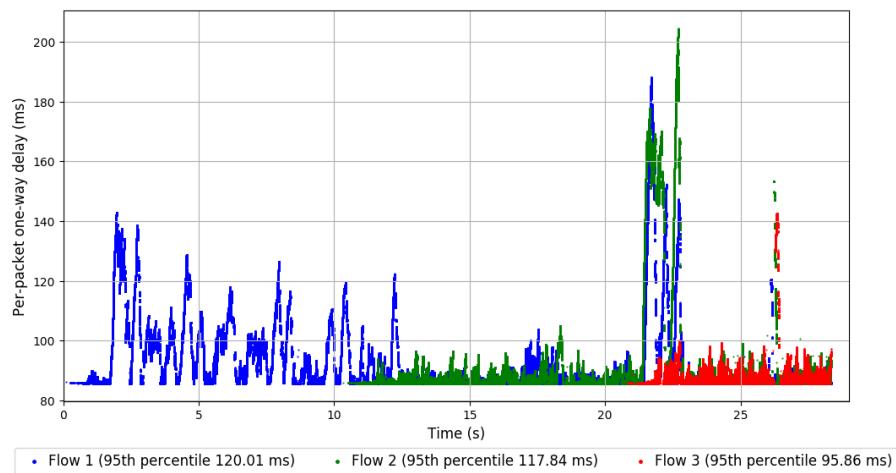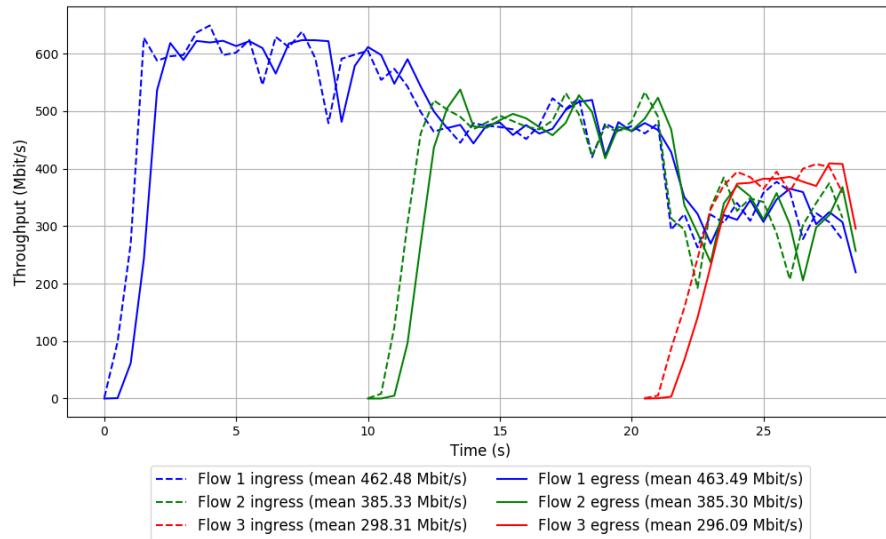
Run 1: Report of Indigo-MusesC3 — Data Link
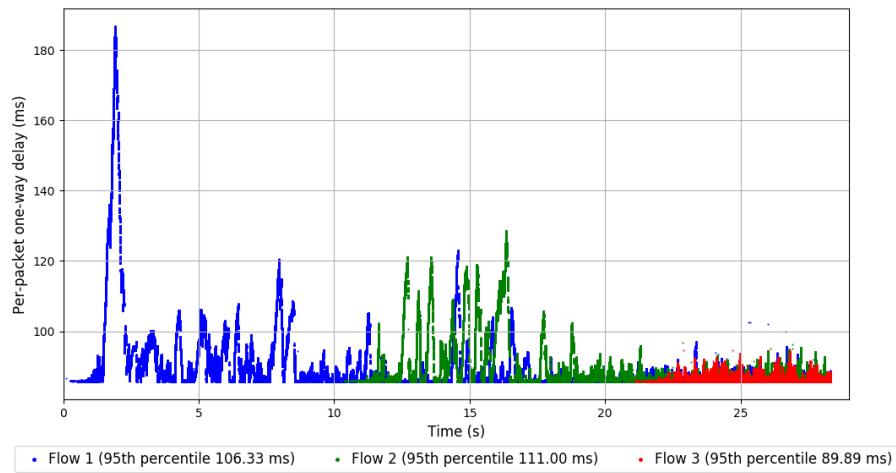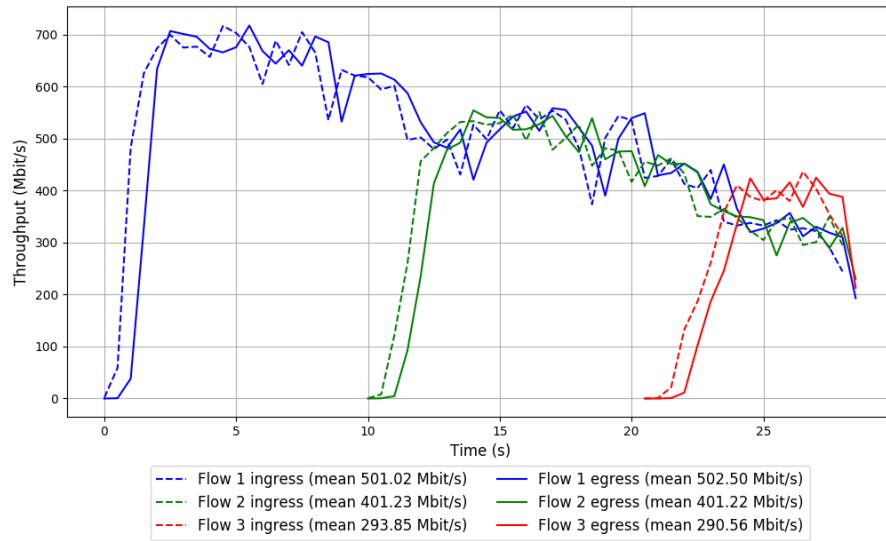
```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-11-24 04:24:51
End at: 2019-11-24 04:25:21
Local clock offset: 0.039 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2019-11-24 08:10:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 831.03 Mbit/s
95th percentile per-packet one-way delay: 107.218 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 491.05 Mbit/s
95th percentile per-packet one-way delay: 109.155 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 417.70 Mbit/s
95th percentile per-packet one-way delay: 105.354 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 283.48 Mbit/s
95th percentile per-packet one-way delay: 90.234 ms
Loss rate: 3.51%
```

Run 2: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 489.42 Mbit/s) --- Flow 1 egress (mean 491.05 Mbit/s)
Flow 2 ingress (mean 416.81 Mbit/s) --- Flow 2 egress (mean 417.70 Mbit/s)
Flow 3 ingress (mean 287.03 Mbit/s) --- Flow 3 egress (mean 283.48 Mbit/s)

Flow 1 (95th percentile 109.16 ms)   Flow 2 (95th percentile 105.35 ms)   Flow 3 (95th percentile 90.23 ms)

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-11-24 05:06:46
End at: 2019-11-24 05:07:16
Local clock offset: -0.062 ms
Remote clock offset: -0.148 ms


# Below is generated by plot.py at 2019-11-24 08:10:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 798.14 Mbit/s
95th percentile per-packet one-way delay: 109.021 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 466.13 Mbit/s
95th percentile per-packet one-way delay: 99.256 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 387.53 Mbit/s
95th percentile per-packet one-way delay: 124.913 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 318.76 Mbit/s
95th percentile per-packet one-way delay: 90.443 ms
Loss rate: 3.20%
```

Run 3: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 465.25 Mbit/s) —— Flow 1 egress (mean 466.13 Mbit/s)
- - - Flow 2 ingress (mean 386.68 Mbit/s) —— Flow 2 egress (mean 387.53 Mbit/s)
- - - Flow 3 ingress (mean 321.77 Mbit/s) —— Flow 3 egress (mean 318.76 Mbit/s)

• Flow 1 (95th percentile 99.26 ms) • Flow 2 (95th percentile 124.91 ms) • Flow 3 (95th percentile 90.44 ms)

70

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-11-24 05:48:24
End at: 2019-11-24 05:48:54
Local clock offset: -0.028 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2019-11-24 08:12:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 835.30 Mbit/s
95th percentile per-packet one-way delay: 106.397 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 494.14 Mbit/s
95th percentile per-packet one-way delay: 106.878 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 408.25 Mbit/s
95th percentile per-packet one-way delay: 108.785 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 305.31 Mbit/s
95th percentile per-packet one-way delay: 90.707 ms
Loss rate: 2.87%
```
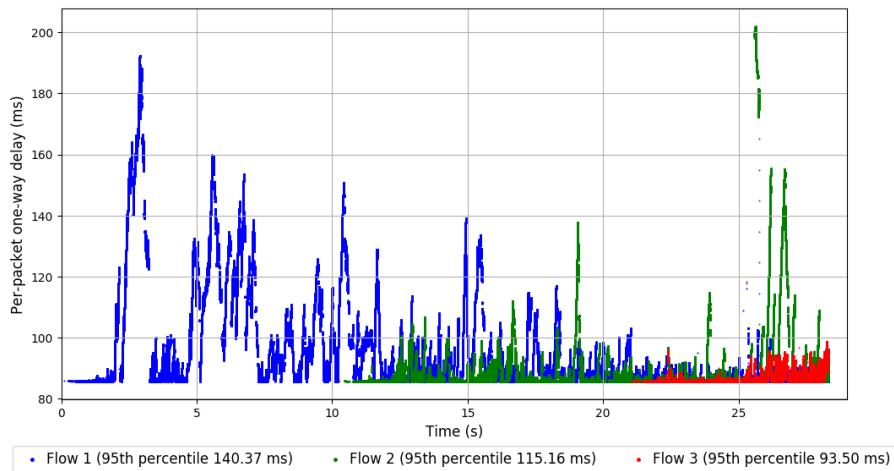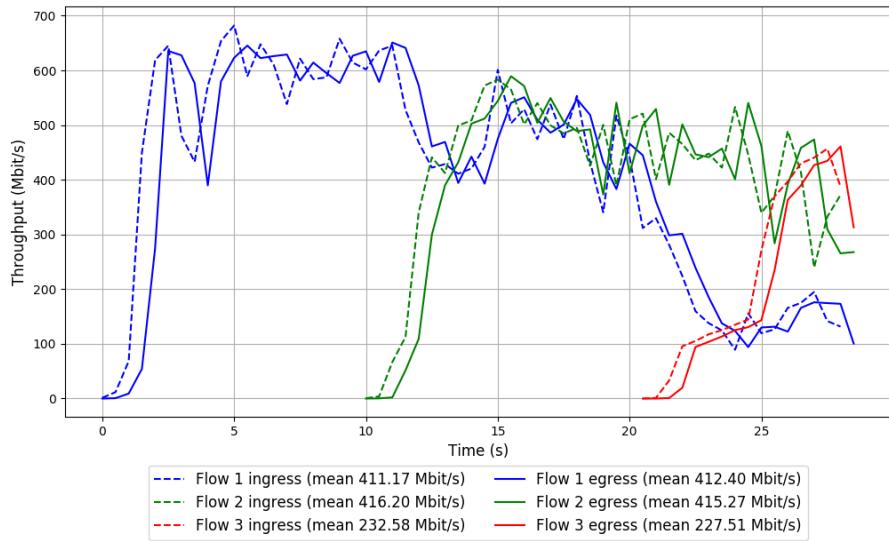
Run 4: Report of Indigo-MusesC3 — Data Link
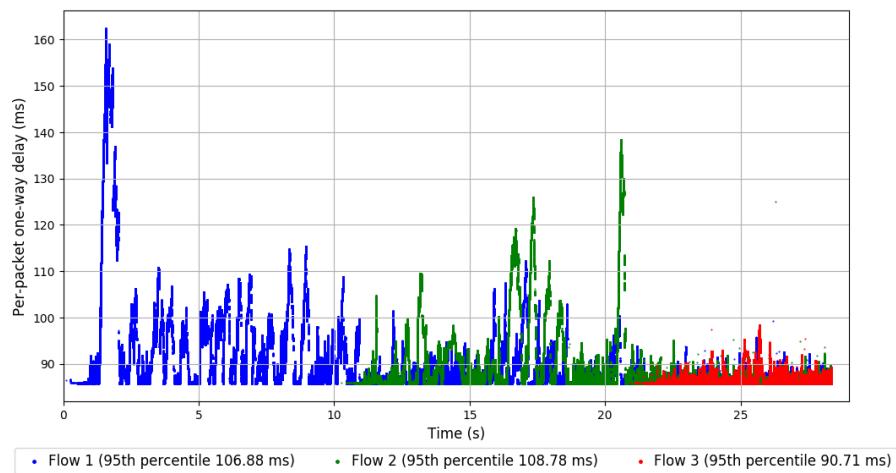
```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-11-24 06:30:39
End at: 2019-11-24 06:31:09
Local clock offset: -0.105 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2019-11-24 08:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 789.00 Mbit/s
95th percentile per-packet one-way delay: 118.924 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 463.49 Mbit/s
95th percentile per-packet one-way delay: 120.014 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 385.30 Mbit/s
95th percentile per-packet one-way delay: 117.837 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 296.09 Mbit/s
95th percentile per-packet one-way delay: 95.859 ms
Loss rate: 2.93%
```

Run 5: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 462.48 Mbit/s) --- Flow 1 egress (mean 463.49 Mbit/s) ---
Flow 2 ingress (mean 385.33 Mbit/s) --- Flow 2 egress (mean 385.30 Mbit/s) ---
Flow 3 ingress (mean 298.31 Mbit/s) --- Flow 3 egress (mean 296.09 Mbit/s) ---

Flow 1 (95th percentile 120.01 ms) Flow 2 (95th percentile 117.84 ms) Flow 3 (95th percentile 95.86 ms)

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-11-24 03:21:28
End at: 2019-11-24 03:21:58
Local clock offset: -0.092 ms
Remote clock offset: -0.014 ms

# Below is generated by plot.py at 2019-11-24 08:14:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 774.04 Mbit/s
95th percentile per-packet one-way delay: 135.579 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 469.90 Mbit/s
95th percentile per-packet one-way delay: 154.583 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 372.54 Mbit/s
95th percentile per-packet one-way delay: 105.466 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 248.29 Mbit/s
95th percentile per-packet one-way delay: 88.427 ms
Loss rate: 4.03%
```

Run 1: Report of Indigo-MusesC5 — Data Link
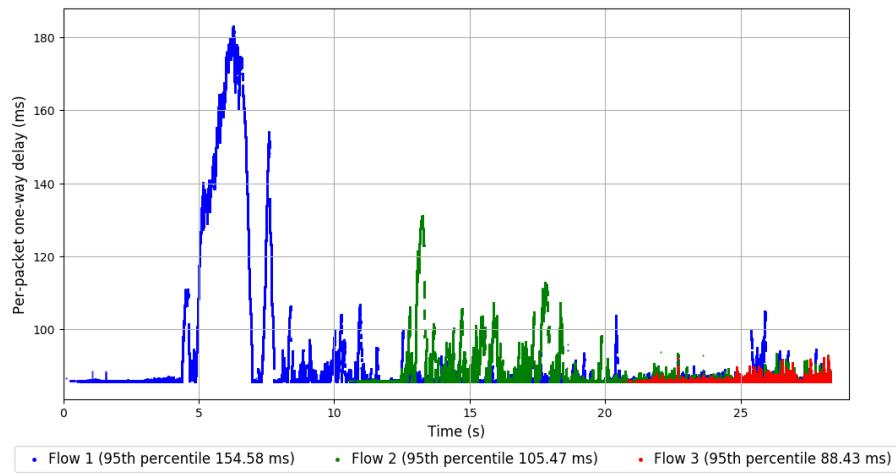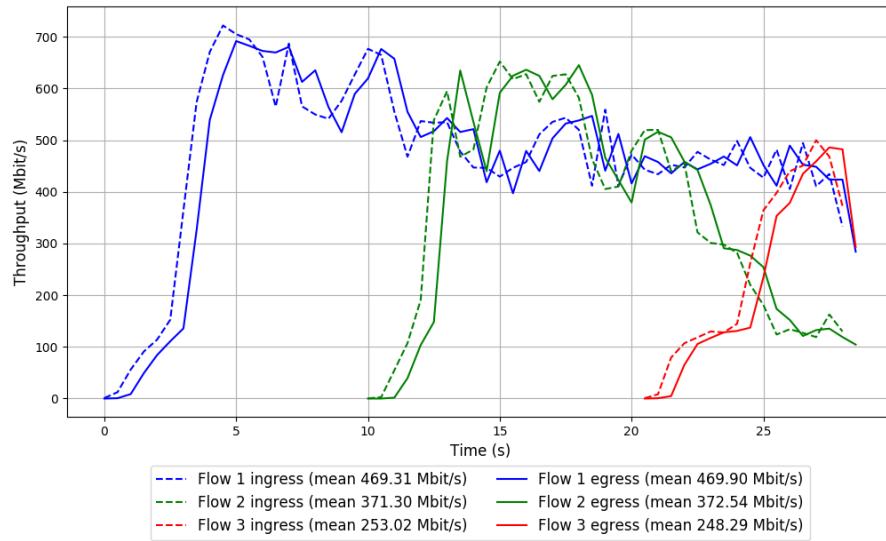
```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-11-24 04:03:28
End at: 2019-11-24 04:03:58
Local clock offset: 0.033 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2019-11-24 08:17:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 792.92 Mbit/s
95th percentile per-packet one-way delay: 127.525 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 473.64 Mbit/s
95th percentile per-packet one-way delay: 132.115 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 407.46 Mbit/s
95th percentile per-packet one-way delay: 98.208 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 216.17 Mbit/s
95th percentile per-packet one-way delay: 90.232 ms
Loss rate: 4.50%
```

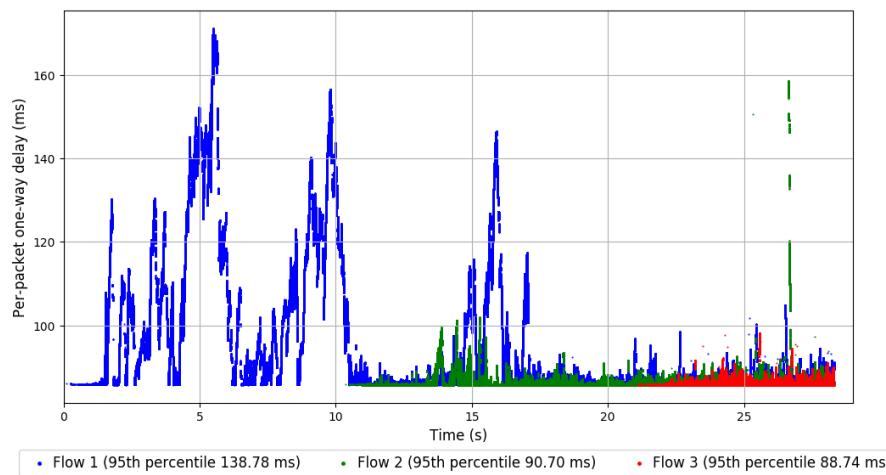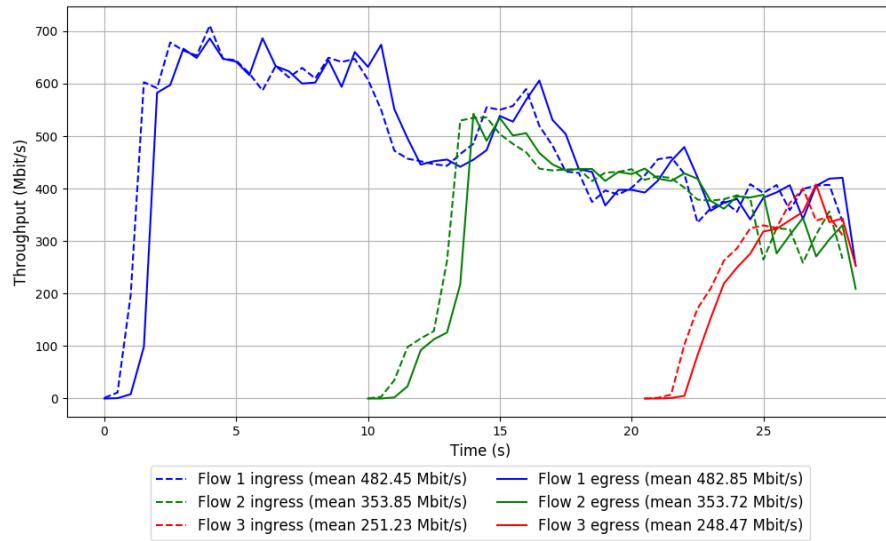Run 2: Report of Indigo-MusesC5 — Data Link
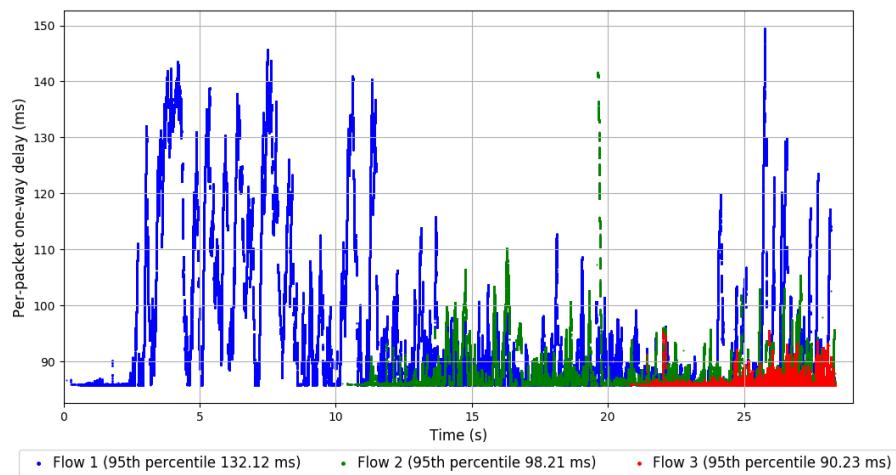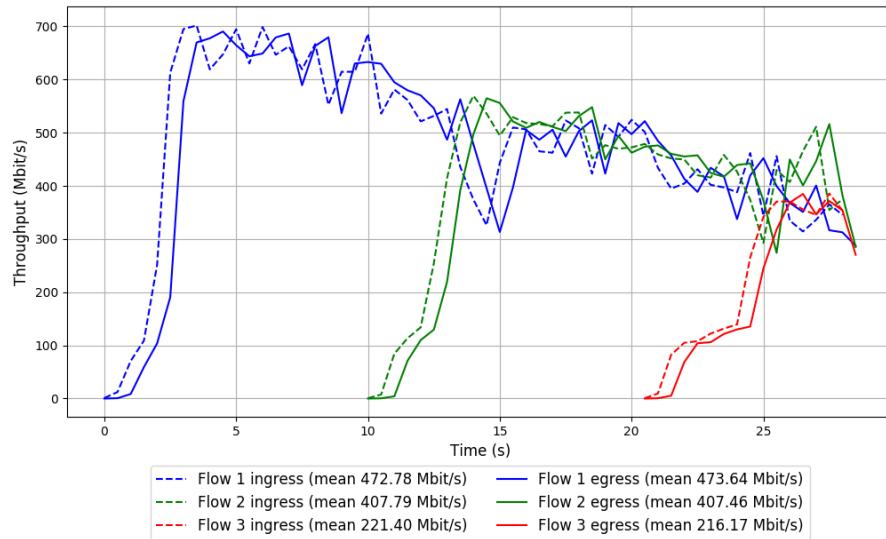
```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-11-24 04:45:31
End at: 2019-11-24 04:46:01
Local clock offset: -0.064 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2019-11-24 08:17:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 737.17 Mbit/s
95th percentile per-packet one-way delay: 132.824 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 412.40 Mbit/s
95th percentile per-packet one-way delay: 140.371 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 415.27 Mbit/s
95th percentile per-packet one-way delay: 115.160 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 227.51 Mbit/s
95th percentile per-packet one-way delay: 93.502 ms
Loss rate: 4.43%
```

Run 3: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 411.17 Mbit/s) --- Flow 1 egress (mean 412.40 Mbit/s)
Flow 2 ingress (mean 416.20 Mbit/s) --- Flow 2 egress (mean 415.27 Mbit/s)
Flow 3 ingress (mean 232.58 Mbit/s) --- Flow 3 egress (mean 227.51 Mbit/s)

Flow 1 (95th percentile 140.37 ms) • Flow 2 (95th percentile 115.16 ms) • Flow 3 (95th percentile 93.50 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-11-24 05:27:32
End at: 2019-11-24 05:28:02
Local clock offset: -0.062 ms
Remote clock offset: -0.236 ms

# Below is generated by plot.py at 2019-11-24 08:22:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 774.64 Mbit/s
95th percentile per-packet one-way delay: 139.468 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 476.33 Mbit/s
95th percentile per-packet one-way delay: 144.044 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 389.93 Mbit/s
95th percentile per-packet one-way delay: 132.620 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 186.70 Mbit/s
95th percentile per-packet one-way delay: 89.333 ms
Loss rate: 4.41%
```

Run 4: Report of Indigo-MusesC5 — Data Link
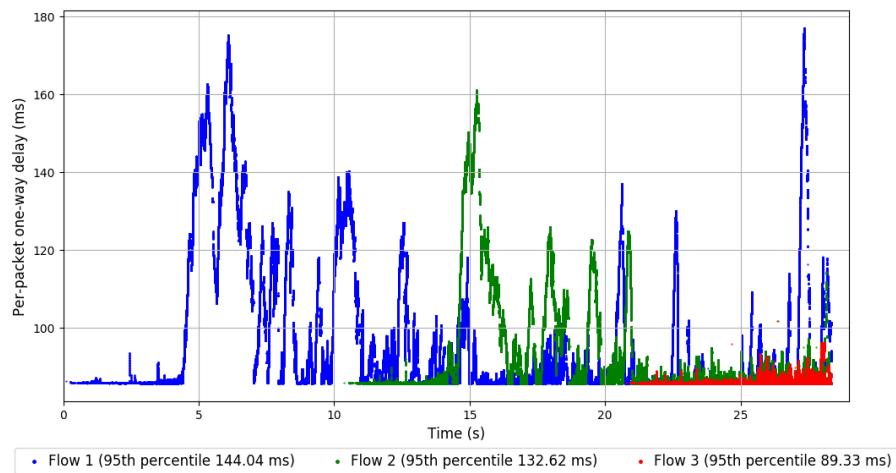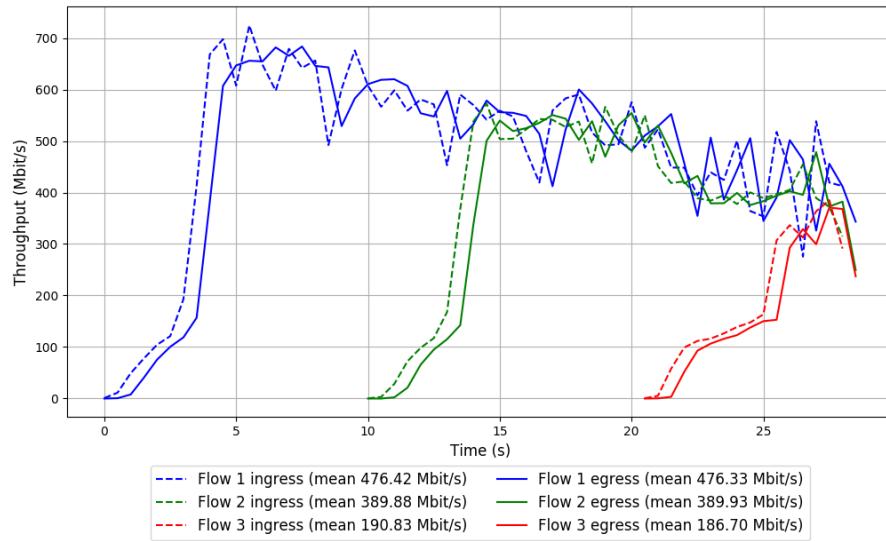
```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-11-24 06:09:40
End at: 2019-11-24 06:10:10
Local clock offset: 0.319 ms
Remote clock offset: -0.055 ms


# Below is generated by plot.py at 2019-11-24 08:23:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 763.18 Mbit/s
95th percentile per-packet one-way delay: 133.302 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 449.94 Mbit/s
95th percentile per-packet one-way delay: 138.637 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 423.90 Mbit/s
95th percentile per-packet one-way delay: 115.600 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 157.65 Mbit/s
95th percentile per-packet one-way delay: 89.921 ms
Loss rate: 5.78%
```
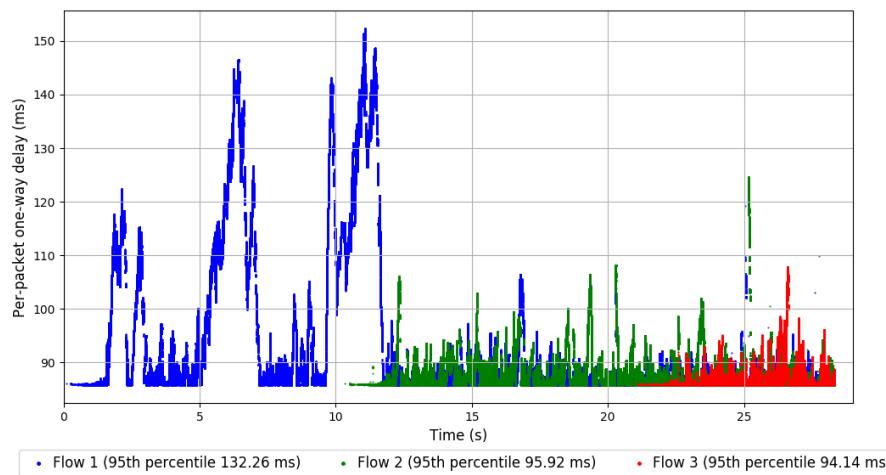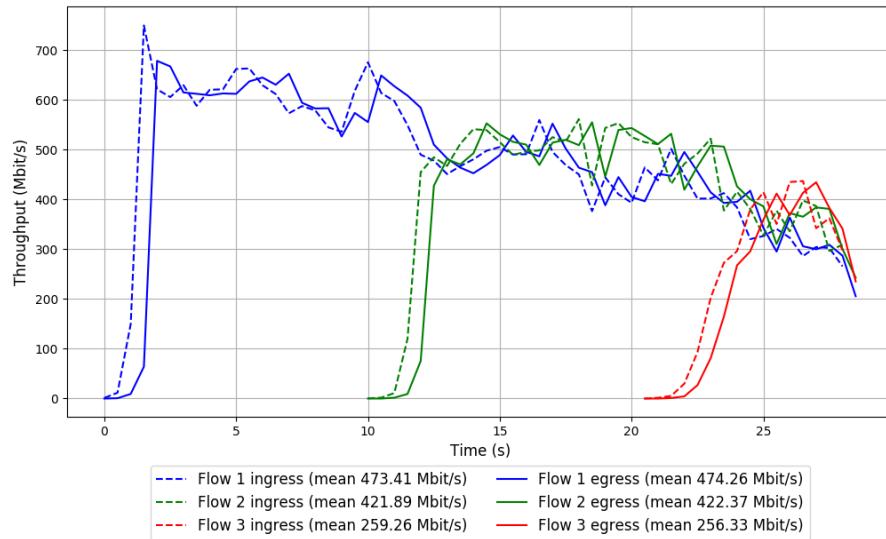
Run 5: Report of Indigo-MusesC5 — Data Link
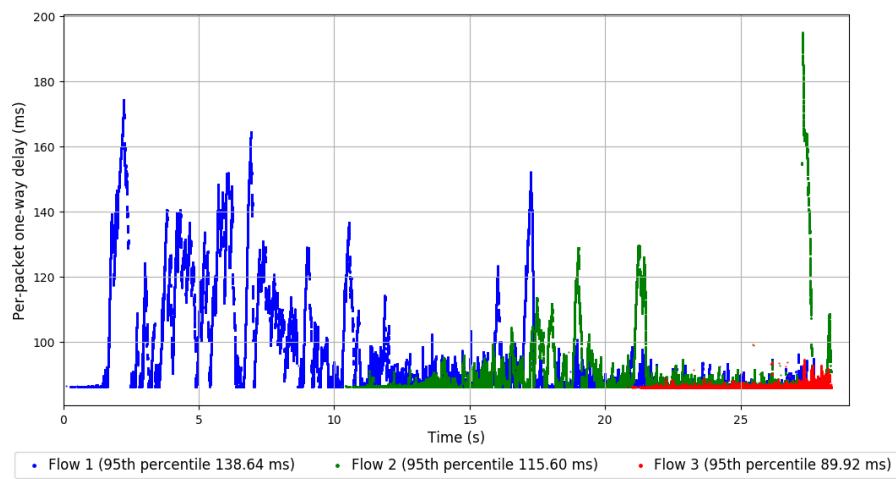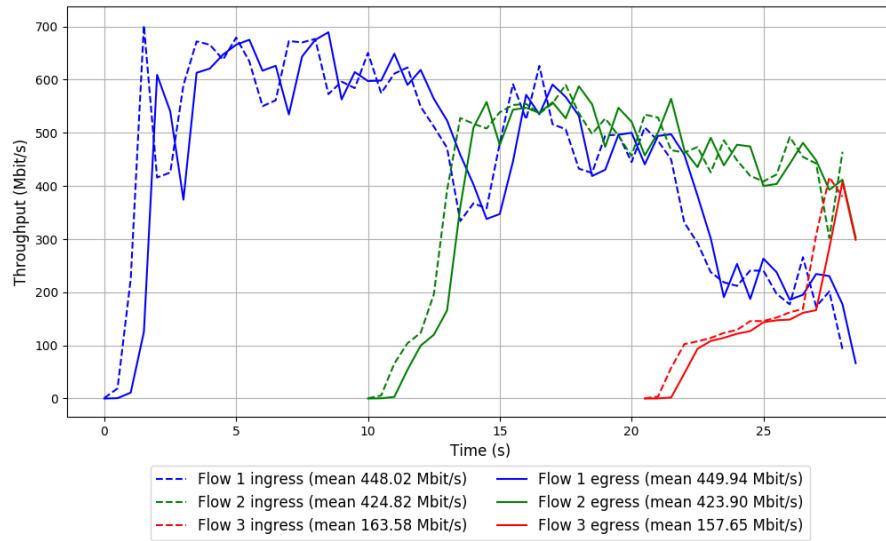
```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-11-24 03:34:42
End at: 2019-11-24 03:35:12
Local clock offset: 0.007 ms
Remote clock offset: 0.037 ms


# Below is generated by plot.py at 2019-11-24 08:24:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 777.17 Mbit/s
95th percentile per-packet one-way delay: 108.652 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 475.97 Mbit/s
95th percentile per-packet one-way delay: 118.066 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 371.51 Mbit/s
95th percentile per-packet one-way delay: 89.610 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 253.80 Mbit/s
95th percentile per-packet one-way delay: 91.262 ms
Loss rate: 3.82%
```

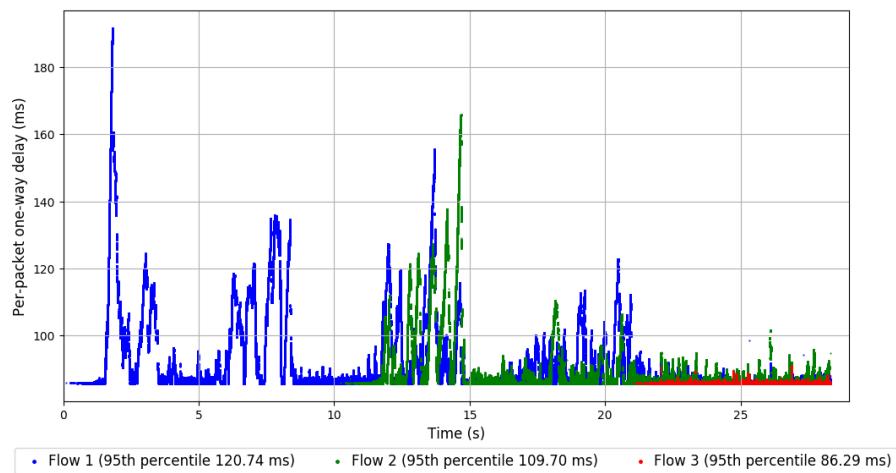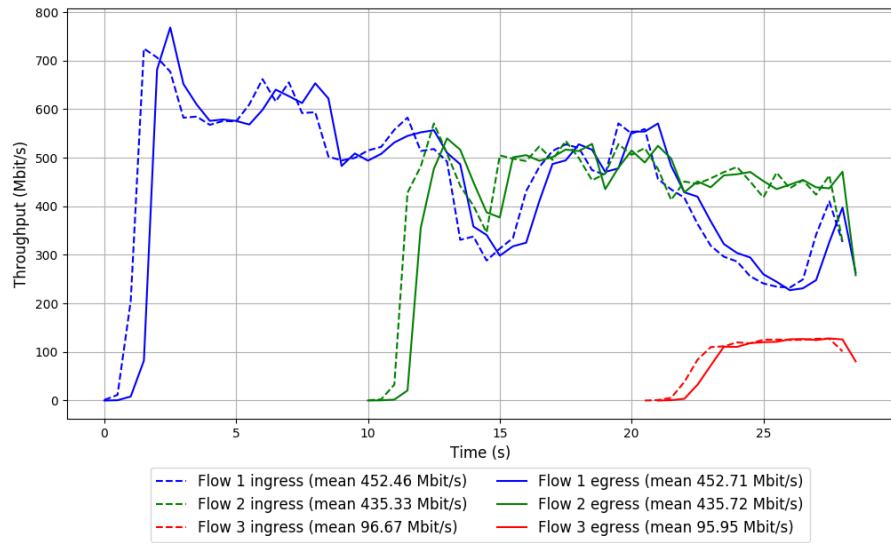Run 1: Report of Indigo-MusesD — Data Link
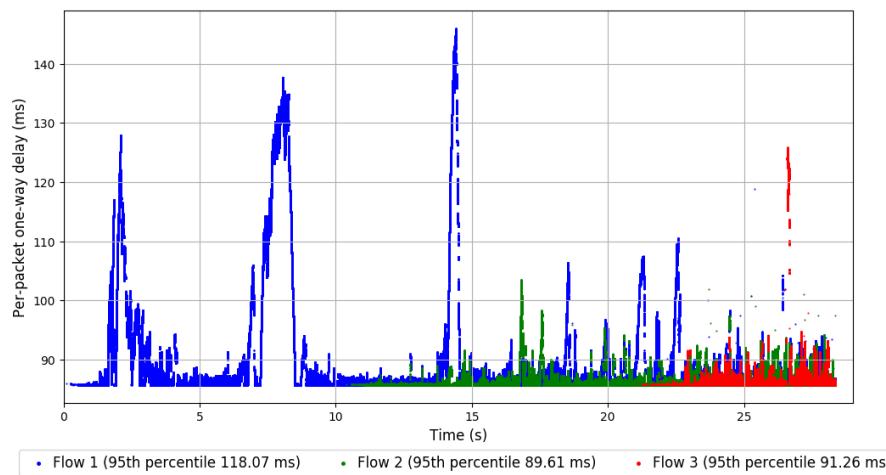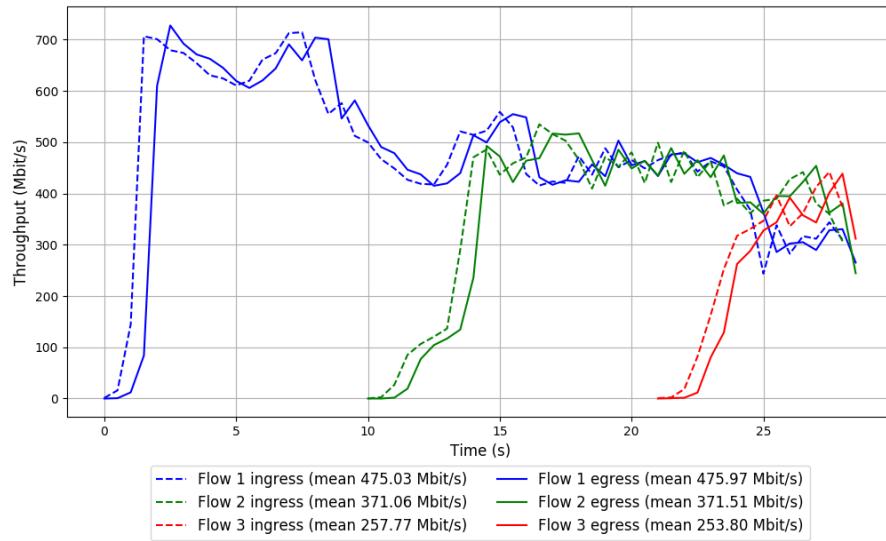
```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-11-24 04:16:53
End at: 2019-11-24 04:17:23
Local clock offset: -0.023 ms
Remote clock offset: -0.071 ms


# Below is generated by plot.py at 2019-11-24 08:25:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 772.79 Mbit/s
95th percentile per-packet one-way delay: 131.266 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 482.85 Mbit/s
95th percentile per-packet one-way delay: 138.779 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 353.72 Mbit/s
95th percentile per-packet one-way delay: 90.703 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 248.47 Mbit/s
95th percentile per-packet one-way delay: 88.742 ms
Loss rate: 3.36%
```

Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-11-24 04:58:54
End at: 2019-11-24 04:59:24
Local clock offset: -0.044 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2019-11-24 08:25:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 719.02 Mbit/s
95th percentile per-packet one-way delay: 124.930 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 399.65 Mbit/s
95th percentile per-packet one-way delay: 131.497 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 374.24 Mbit/s
95th percentile per-packet one-way delay: 112.079 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 307.71 Mbit/s
95th percentile per-packet one-way delay: 91.022 ms
Loss rate: 2.95%
```

Run 3: Report of Indigo-MusesD — Data Link

90
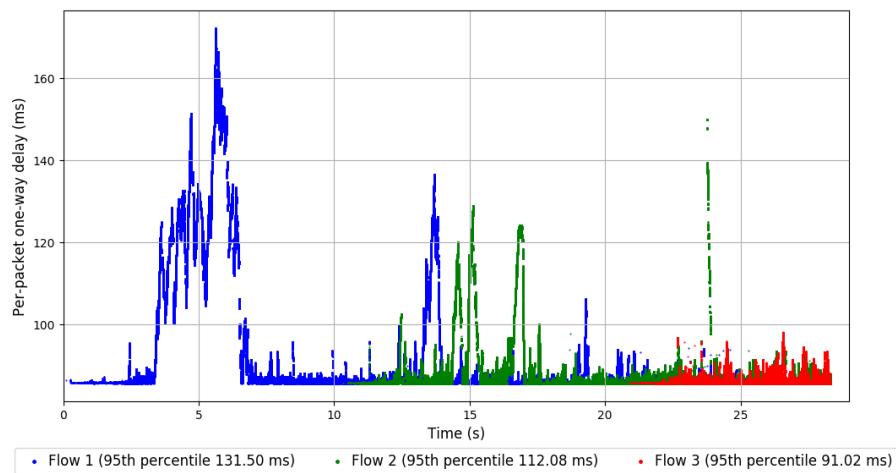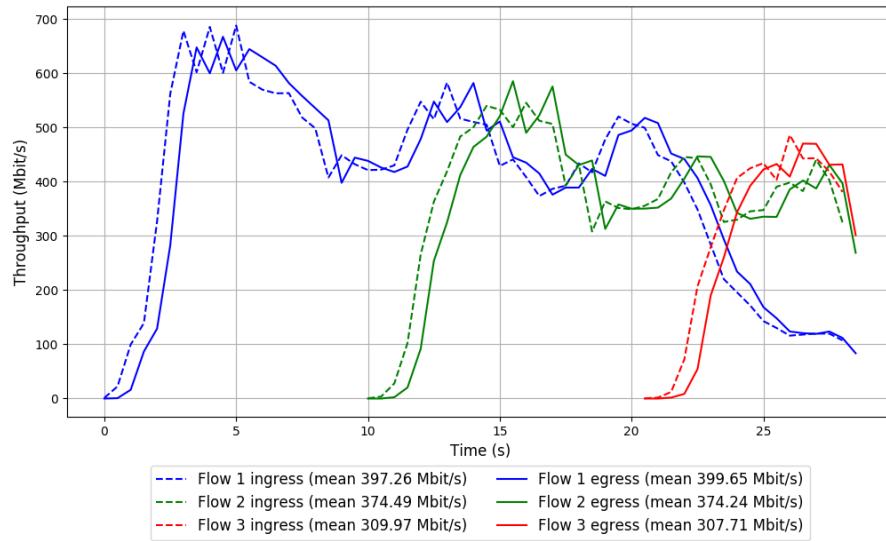
```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-11-24 05:40:28
End at: 2019-11-24 05:40:58
Local clock offset: -0.025 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2019-11-24 08:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 810.39 Mbit/s
95th percentile per-packet one-way delay: 122.383 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 474.26 Mbit/s
95th percentile per-packet one-way delay: 132.264 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 422.37 Mbit/s
95th percentile per-packet one-way delay: 95.917 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 256.33 Mbit/s
95th percentile per-packet one-way delay: 94.137 ms
Loss rate: 3.38%
```
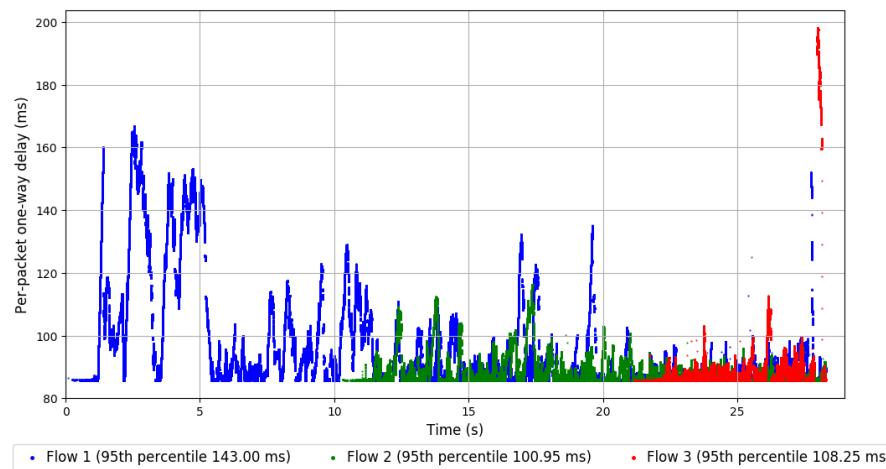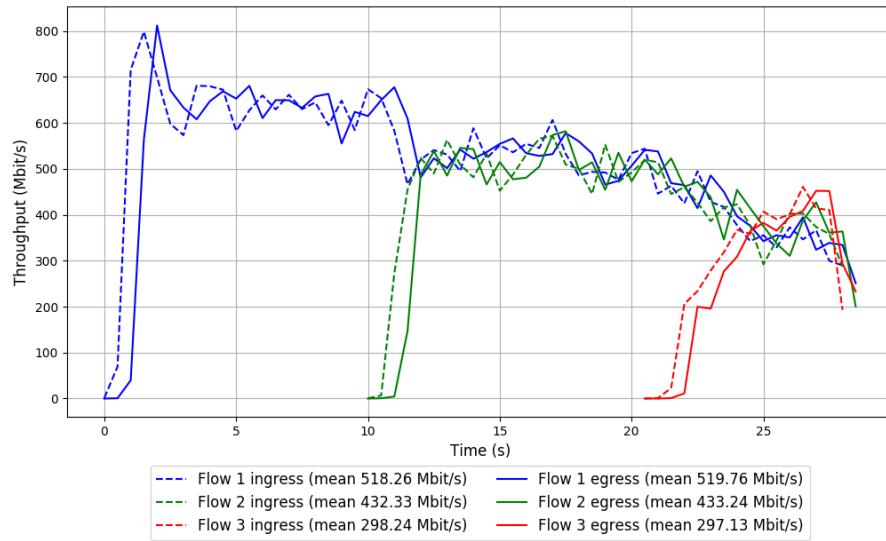
Run 4: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 473.41 Mbit/s) --- Flow 1 egress (mean 474.26 Mbit/s)
Flow 2 ingress (mean 421.89 Mbit/s) --- Flow 2 egress (mean 422.37 Mbit/s)
Flow 3 ingress (mean 259.26 Mbit/s) --- Flow 3 egress (mean 256.33 Mbit/s)

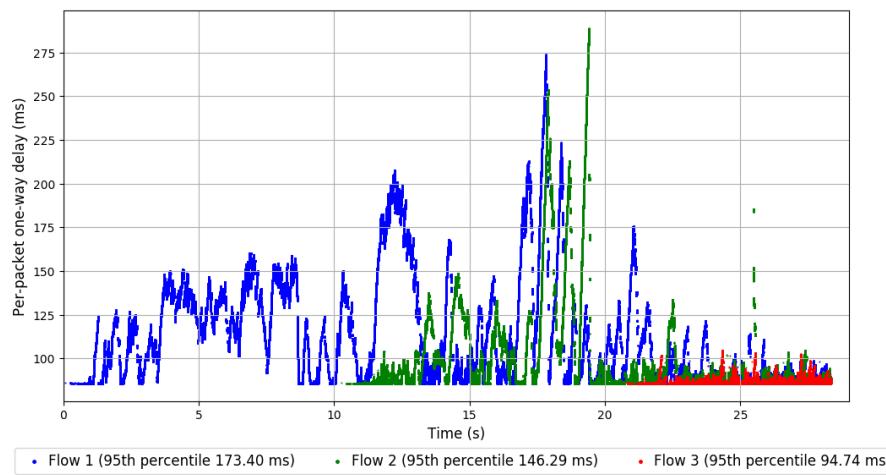Flow 1 (95th percentile 132.26 ms)   Flow 2 (95th percentile 95.92 ms)   Flow 3 (95th percentile 94.14 ms)

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-11-24 06:22:44
End at: 2019-11-24 06:23:14
Local clock offset: -0.05 ms
Remote clock offset: -0.112 ms


# Below is generated by plot.py at 2019-11-24 08:30:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 756.18 Mbit/s
95th percentile per-packet one-way delay: 117.288 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 452.71 Mbit/s
95th percentile per-packet one-way delay: 120.743 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 435.72 Mbit/s
95th percentile per-packet one-way delay: 109.703 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 95.95 Mbit/s
95th percentile per-packet one-way delay: 86.286 ms
Loss rate: 3.00%
```
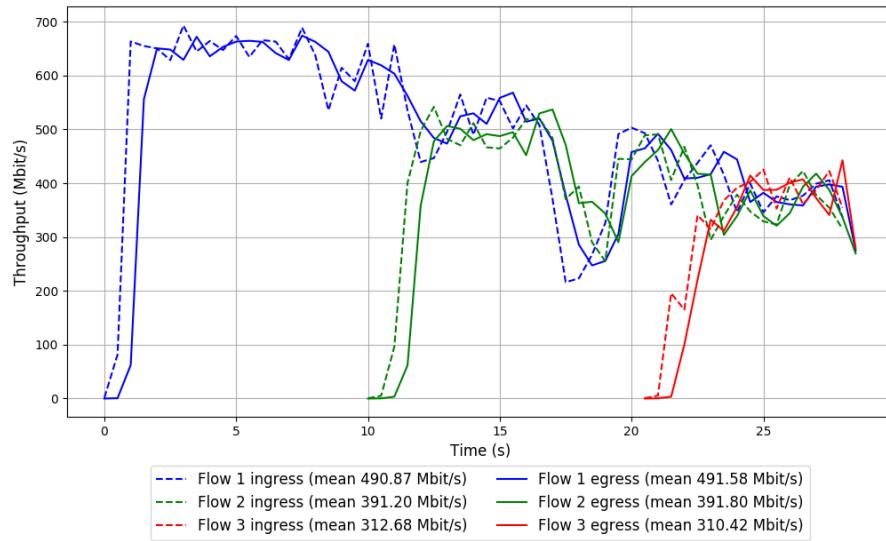
Run 5: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 452.46 Mbit/s) — Flow 1 egress (mean 452.71 Mbit/s)
Flow 2 ingress (mean 435.33 Mbit/s) — Flow 2 egress (mean 435.72 Mbit/s)
Flow 3 ingress (mean 96.67 Mbit/s) — Flow 3 egress (mean 95.95 Mbit/s)

Flow 1 (95th percentile 120.74 ms)   Flow 2 (95th percentile 109.70 ms)   Flow 3 (95th percentile 86.29 ms)

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-11-24 03:26:19
End at: 2019-11-24 03:26:49
Local clock offset: 0.312 ms
Remote clock offset: -0.017 ms


# Below is generated by plot.py at 2019-11-24 08:32:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 876.83 Mbit/s
95th percentile per-packet one-way delay: 148.196 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 531.10 Mbit/s
95th percentile per-packet one-way delay: 153.084 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 419.72 Mbit/s
95th percentile per-packet one-way delay: 88.319 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 287.55 Mbit/s
95th percentile per-packet one-way delay: 92.196 ms
Loss rate: 2.17%
```

Run 1: Report of Indigo-MusesT — Data Link
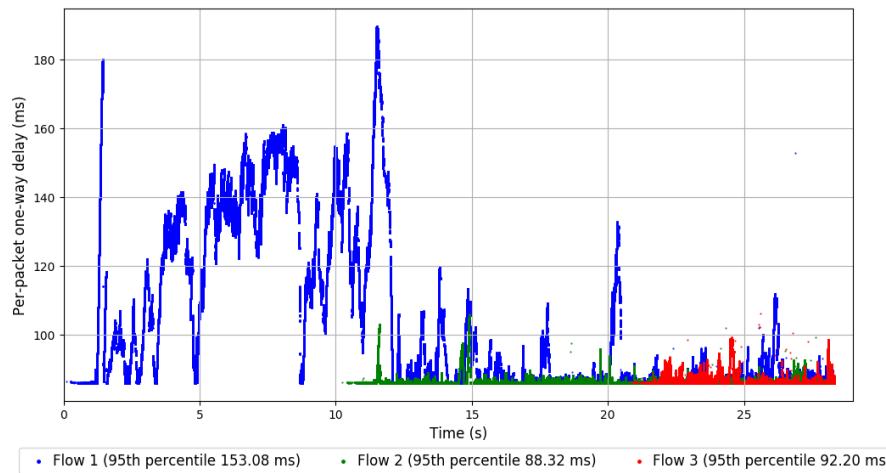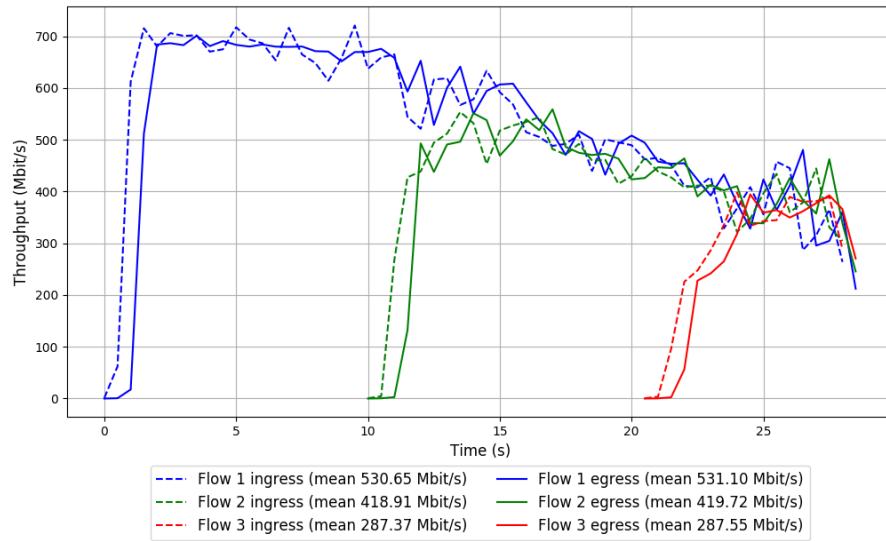
```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-11-24 04:08:29
End at: 2019-11-24 04:08:59
Local clock offset: -0.016 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2019-11-24 08:37:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 864.09 Mbit/s
95th percentile per-packet one-way delay: 140.810 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 512.00 Mbit/s
95th percentile per-packet one-way delay: 147.316 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 425.77 Mbit/s
95th percentile per-packet one-way delay: 110.861 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 295.84 Mbit/s
95th percentile per-packet one-way delay: 91.805 ms
Loss rate: 2.88%
```

Run 2: Report of Indigo-MusesT — Data Link
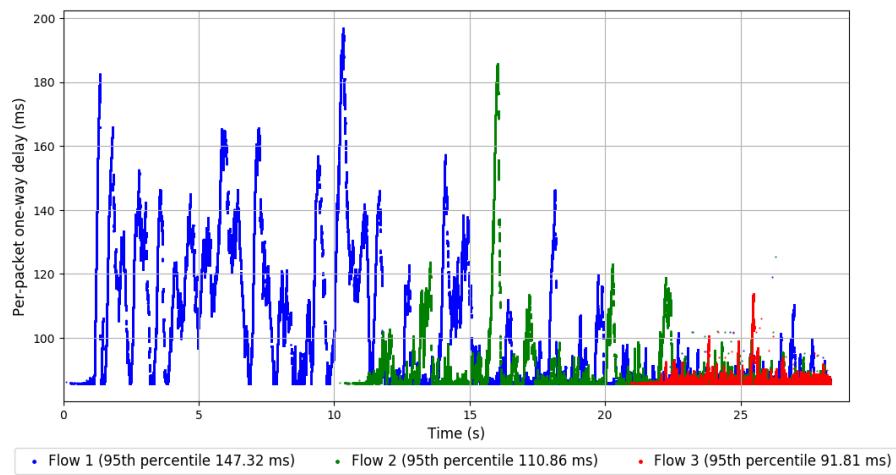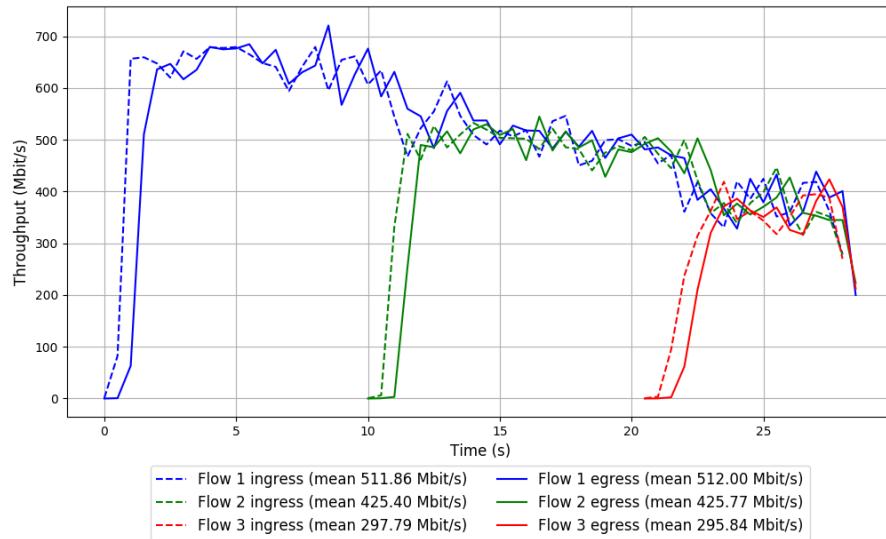
```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-11-24 04:50:34
End at: 2019-11-24 04:51:04
Local clock offset: -0.003 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2019-11-24 08:38:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 874.88 Mbit/s
95th percentile per-packet one-way delay: 134.876 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 519.76 Mbit/s
95th percentile per-packet one-way delay: 142.998 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 433.24 Mbit/s
95th percentile per-packet one-way delay: 100.948 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 297.13 Mbit/s
95th percentile per-packet one-way delay: 108.252 ms
Loss rate: 2.74%
```

Run 3: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 518.26 Mbit/s) ---- Flow 1 egress (mean 519.76 Mbit/s) ——
Flow 2 ingress (mean 432.33 Mbit/s) ---- Flow 2 egress (mean 433.24 Mbit/s) ——
Flow 3 ingress (mean 298.24 Mbit/s) ---- Flow 3 egress (mean 297.13 Mbit/s) ——

Flow 1 (95th percentile 143.00 ms)   Flow 2 (95th percentile 100.95 ms)   Flow 3 (95th percentile 108.25 ms)

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-11-24 05:32:24
End at: 2019-11-24 05:32:54
Local clock offset: -0.081 ms
Remote clock offset: -0.224 ms


# Below is generated by plot.py at 2019-11-24 08:38:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 826.25 Mbit/s
95th percentile per-packet one-way delay: 165.777 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 491.58 Mbit/s
95th percentile per-packet one-way delay: 173.396 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 391.80 Mbit/s
95th percentile per-packet one-way delay: 146.293 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 310.42 Mbit/s
95th percentile per-packet one-way delay: 94.744 ms
Loss rate: 2.91%
```

Run 4: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 490.87 Mbit/s) --- Flow 1 egress (mean 491.58 Mbit/s)
Flow 2 ingress (mean 391.20 Mbit/s) --- Flow 2 egress (mean 391.80 Mbit/s)
Flow 3 ingress (mean 312.68 Mbit/s) --- Flow 3 egress (mean 310.42 Mbit/s)

• Flow 1 (95th percentile 173.40 ms)   • Flow 2 (95th percentile 146.29 ms)   • Flow 3 (95th percentile 94.74 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-11-24 06:14:24
End at: 2019-11-24 06:14:54
Local clock offset: 0.001 ms
Remote clock offset: -0.086 ms


# Below is generated by plot.py at 2019-11-24 08:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.19 Mbit/s
95th percentile per-packet one-way delay: 146.370 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 495.02 Mbit/s
95th percentile per-packet one-way delay: 151.991 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 403.11 Mbit/s
95th percentile per-packet one-way delay: 137.781 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 312.03 Mbit/s
95th percentile per-packet one-way delay: 91.713 ms
Loss rate: 3.12%
```

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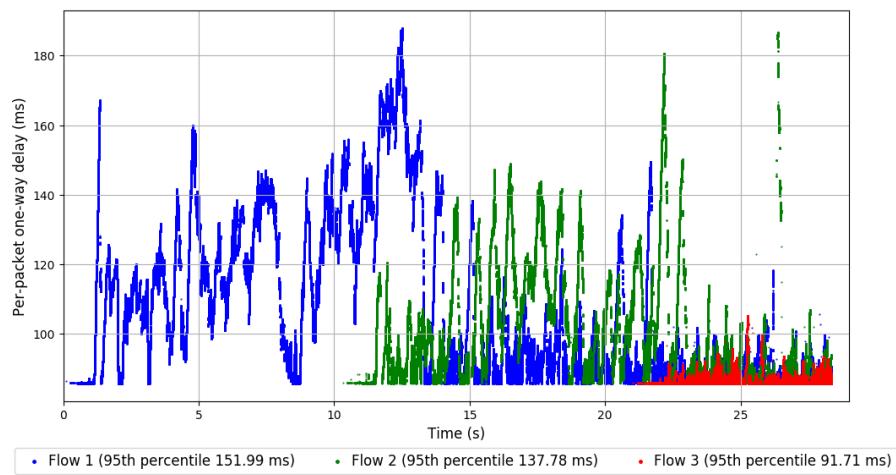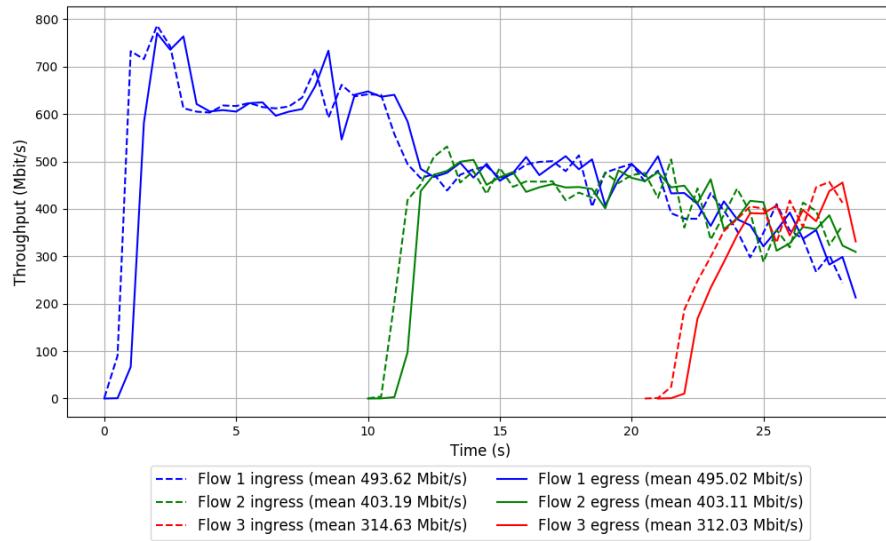
```
Run 1: Statistics of LEDBAT

Start at: 2019-11-24 03:31:33
End at: 2019-11-24 03:32:03
Local clock offset: 0.027 ms
Remote clock offset: 0.023 ms


# Below is generated by plot.py at 2019-11-24 08:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.31 Mbit/s
95th percentile per-packet one-way delay: 86.702 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.52 Mbit/s
95th percentile per-packet one-way delay: 86.705 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.30 Mbit/s
95th percentile per-packet one-way delay: 86.732 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 86.616 ms
Loss rate: 3.53%
```

Run 1: Report of LEDBAT — Data Link
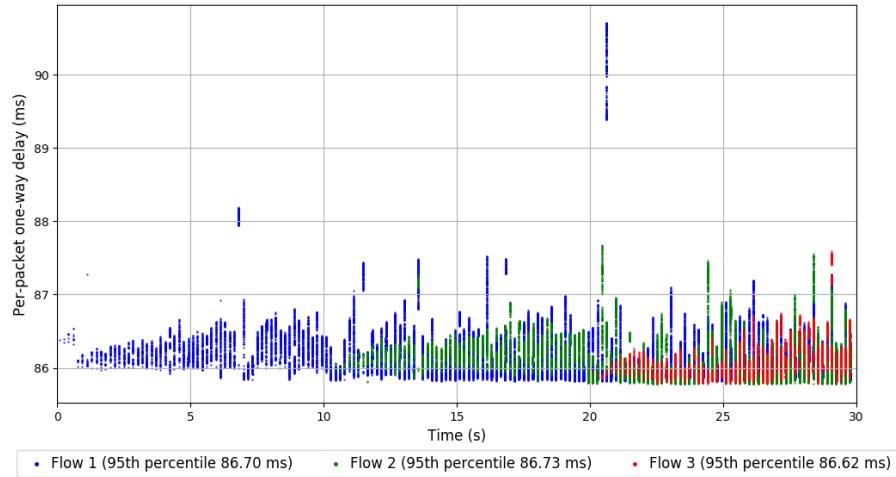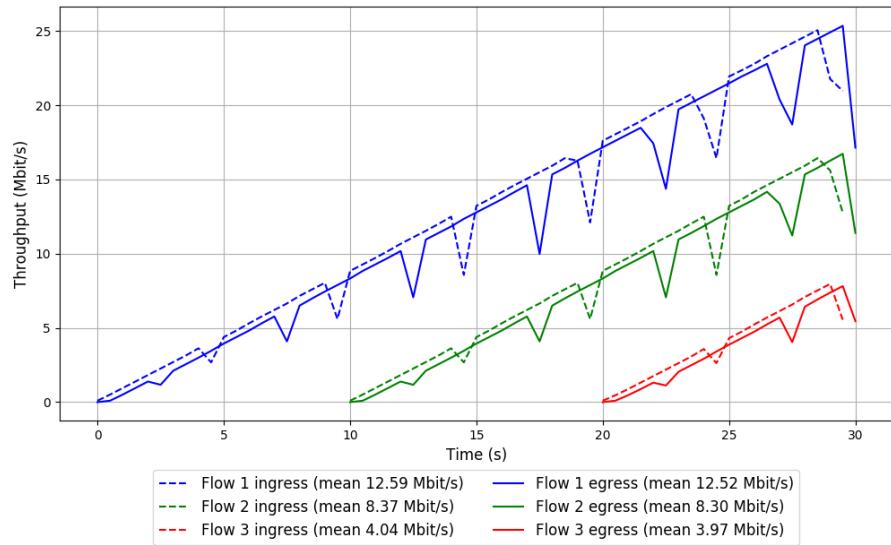
```
Run 2: Statistics of LEDBAT

Start at: 2019-11-24 04:13:42
End at: 2019-11-24 04:14:12
Local clock offset: -0.034 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2019-11-24 08:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.31 Mbit/s
95th percentile per-packet one-way delay: 86.830 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.53 Mbit/s
95th percentile per-packet one-way delay: 87.023 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 86.755 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.263 ms
Loss rate: 3.53%
```

Run 2: Report of LEDBAT — Data Link
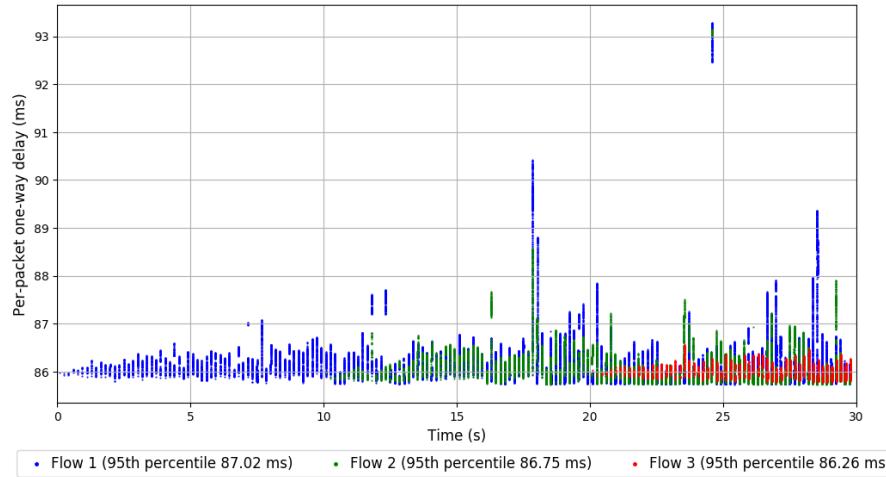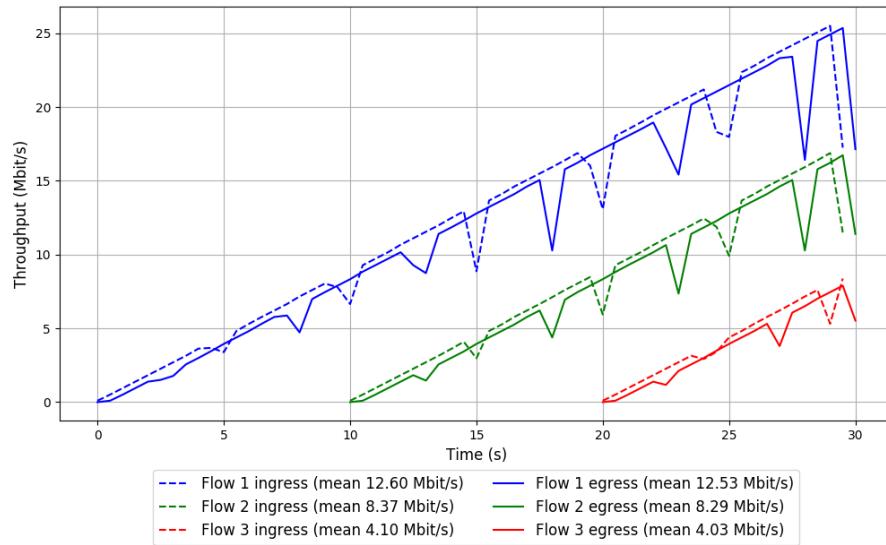
```
Run 3: Statistics of LEDBAT

Start at: 2019-11-24 04:55:51
End at: 2019-11-24 04:56:21
Local clock offset: -0.026 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2019-11-24 08:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.22 Mbit/s
95th percentile per-packet one-way delay: 87.028 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.46 Mbit/s
95th percentile per-packet one-way delay: 87.361 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.24 Mbit/s
95th percentile per-packet one-way delay: 86.673 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.110 ms
Loss rate: 3.50%
```

Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 12.53 Mbit/s)   Flow 1 egress (mean 12.46 Mbit/s)
Flow 2 ingress (mean 8.32 Mbit/s)   Flow 2 egress (mean 8.24 Mbit/s)
Flow 3 ingress (mean 4.10 Mbit/s)   Flow 3 egress (mean 4.03 Mbit/s)

Flow 1 (95th percentile 87.36 ms)   Flow 2 (95th percentile 86.67 ms)   Flow 3 (95th percentile 86.11 ms)
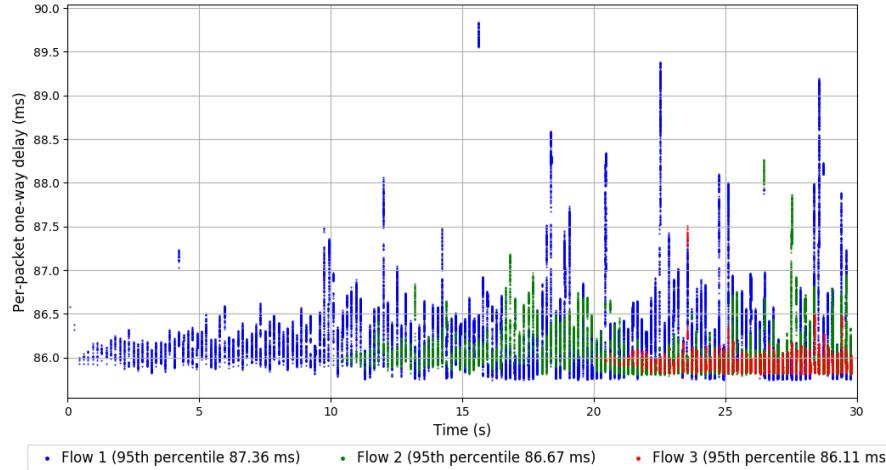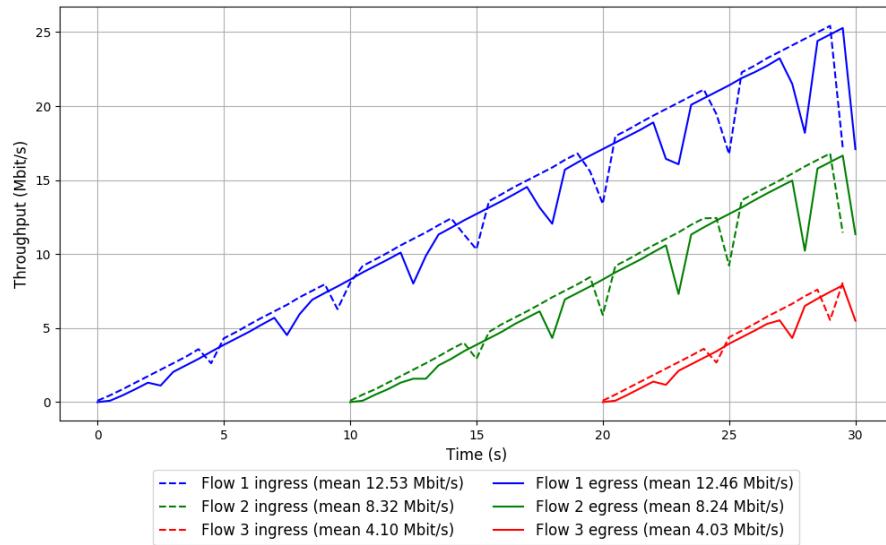
```
Run 4: Statistics of LEDBAT

Start at: 2019-11-24 05:37:21
End at: 2019-11-24 05:37:51
Local clock offset: 0.322 ms
Remote clock offset: -0.166 ms


# Below is generated by plot.py at 2019-11-24 08:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.29 Mbit/s
95th percentile per-packet one-way delay: 87.365 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 87.478 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 87.259 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 86.640 ms
Loss rate: 3.53%
```

Run 4: Report of LEDBAT — Data Link
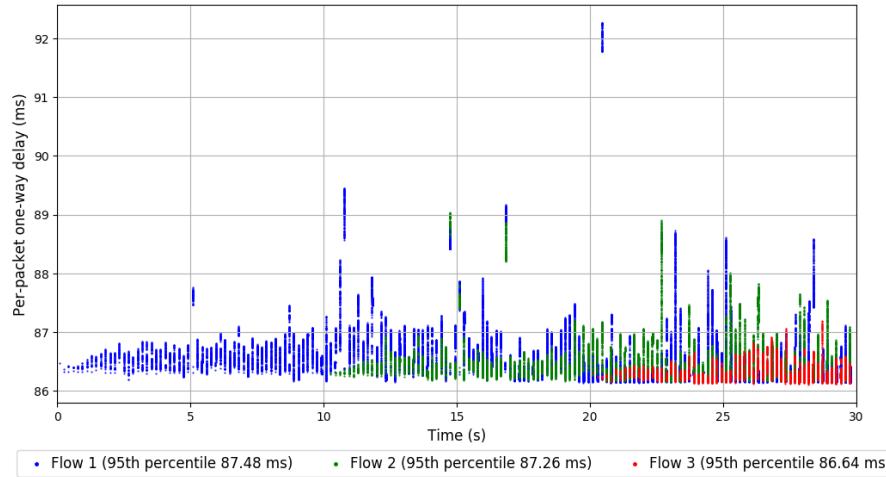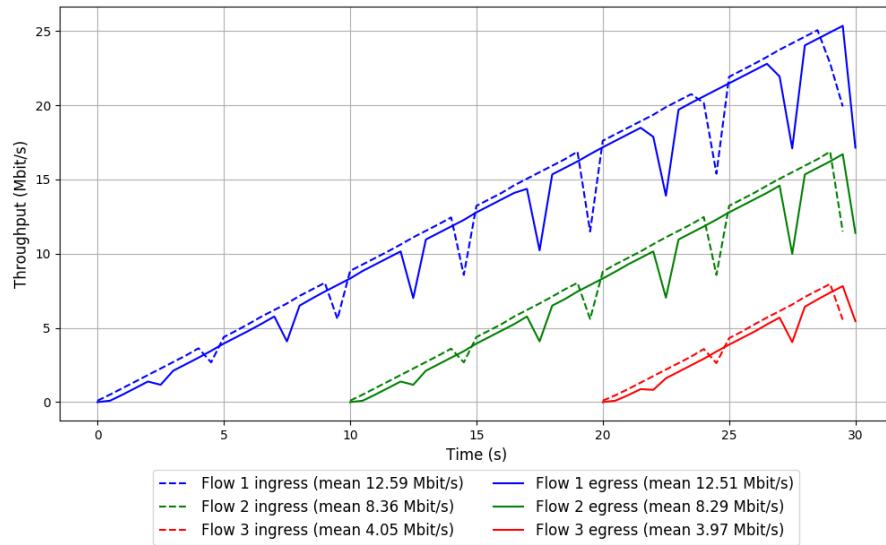
```
Run 5: Statistics of LEDBAT

Start at: 2019-11-24 06:19:36
End at: 2019-11-24 06:20:06
Local clock offset: -0.055 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2019-11-24 08:40:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.23 Mbit/s
95th percentile per-packet one-way delay: 86.805 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 86.940 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.23 Mbit/s
95th percentile per-packet one-way delay: 86.605 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.04 Mbit/s
95th percentile per-packet one-way delay: 86.153 ms
Loss rate: 3.53%
```
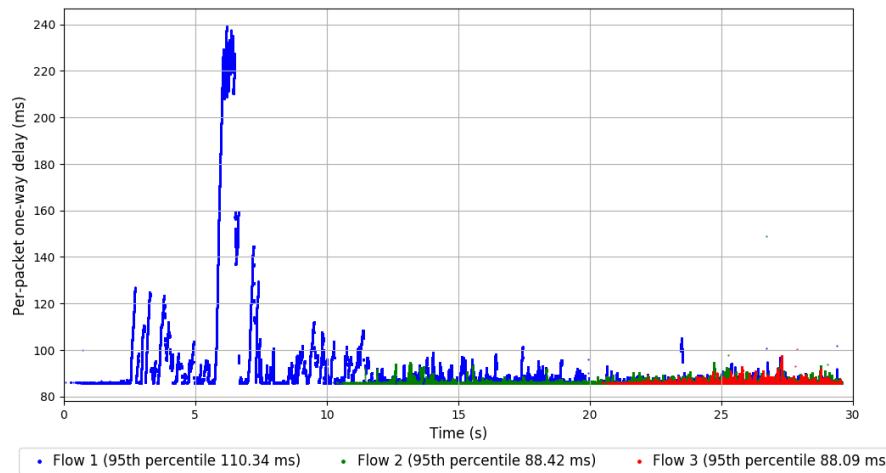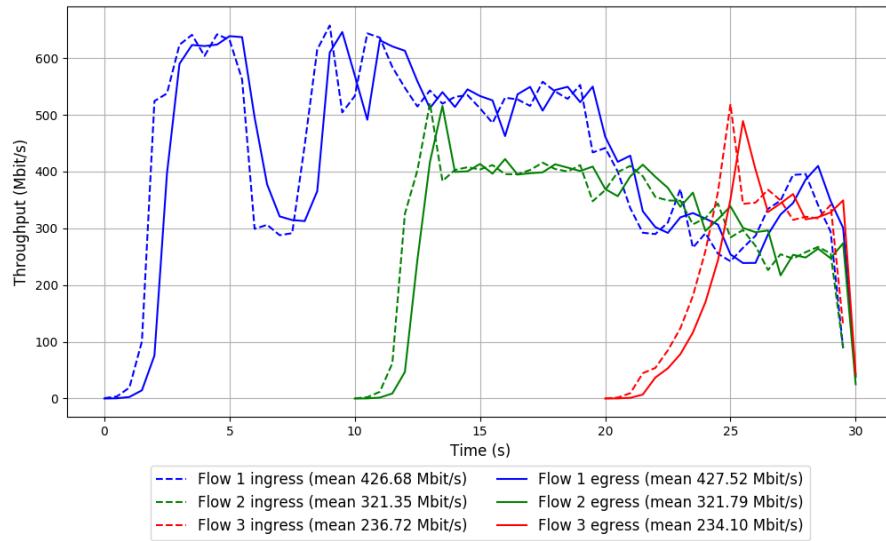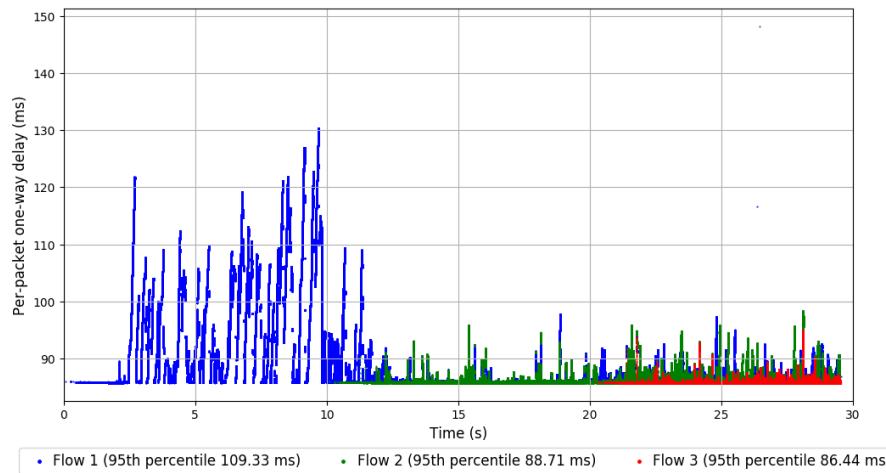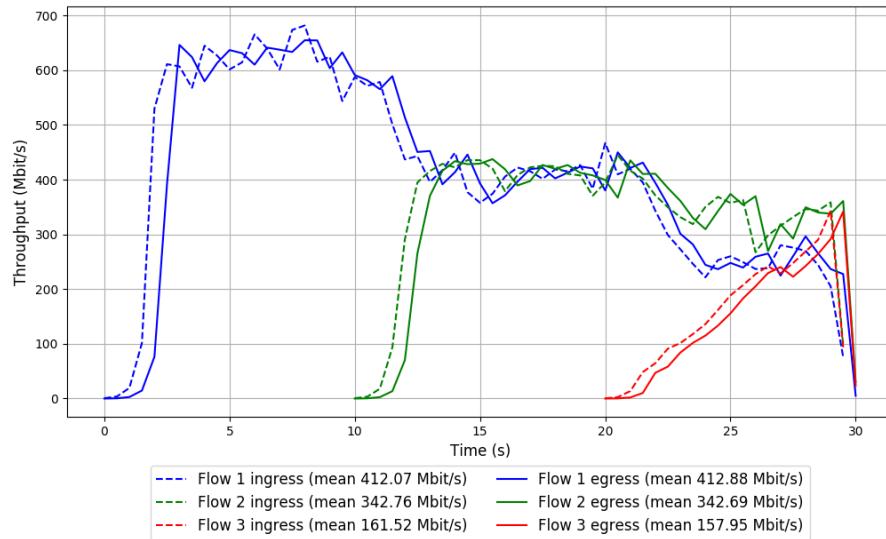
Run 5: Report of LEDBAT — Data Link
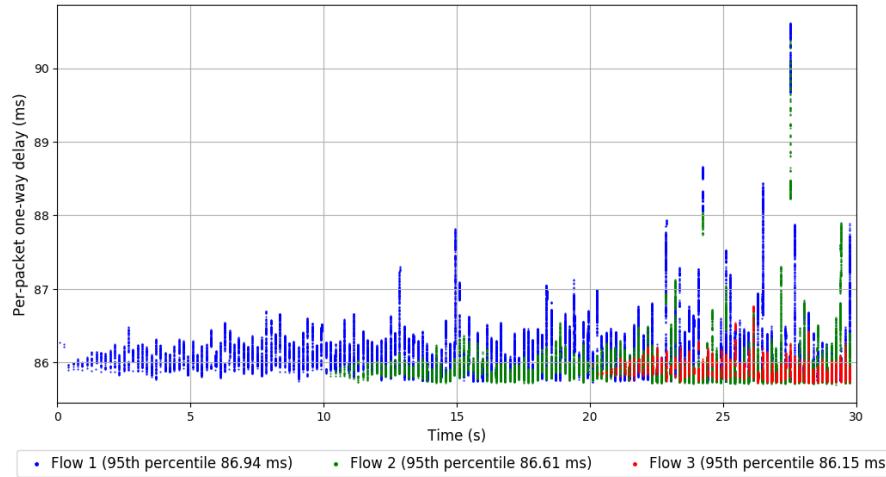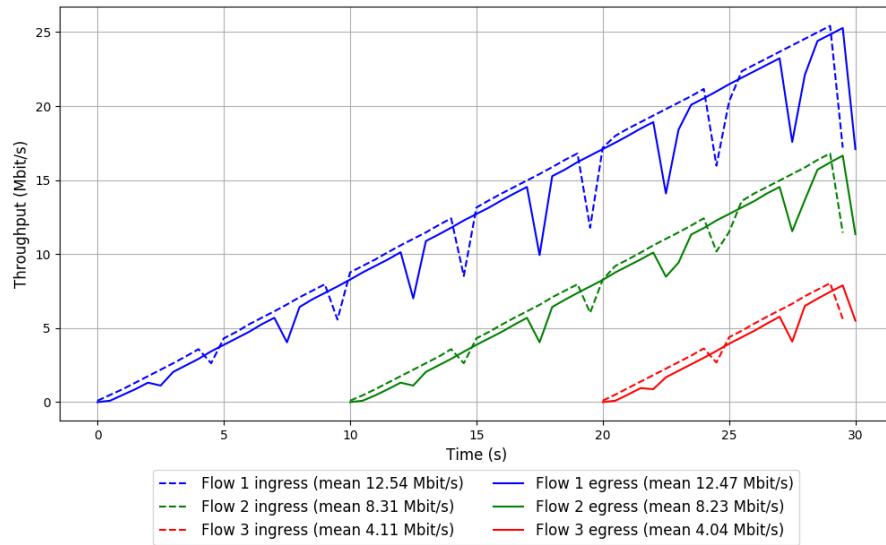
```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-11-24 03:50:23
End at: 2019-11-24 03:50:53
Local clock offset: -0.039 ms
Remote clock offset: 0.039 ms

# Below is generated by plot.py at 2019-11-24 08:42:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 748.00 Mbit/s
95th percentile per-packet one-way delay: 101.207 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 458.81 Mbit/s
95th percentile per-packet one-way delay: 107.094 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 334.32 Mbit/s
95th percentile per-packet one-way delay: 88.434 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 216.53 Mbit/s
95th percentile per-packet one-way delay: 89.269 ms
Loss rate: 2.48%
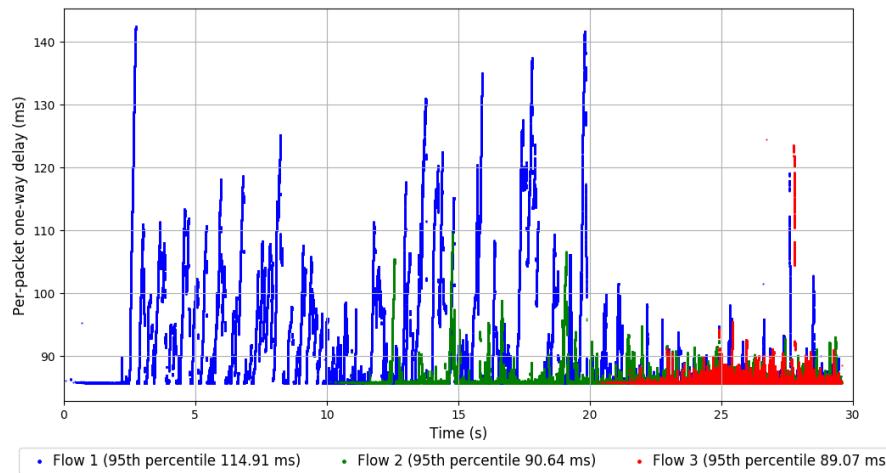```

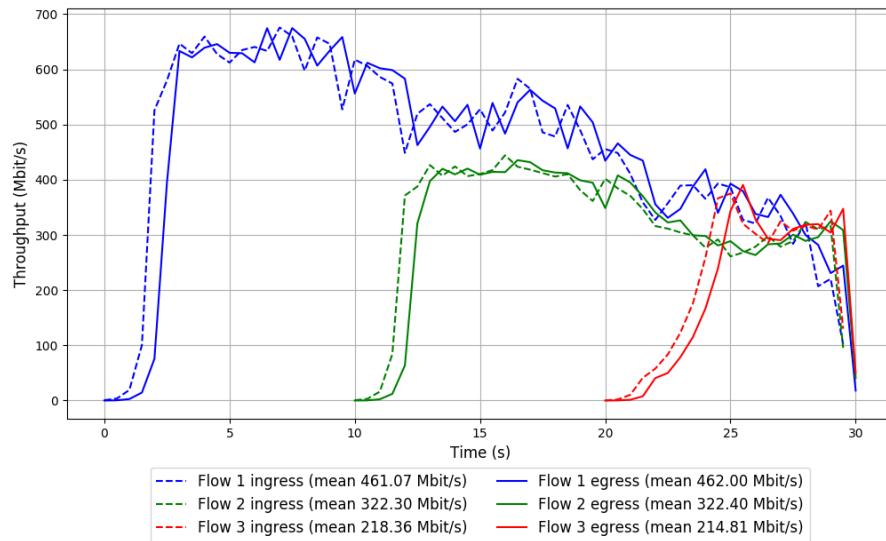Run 1: Report of Muses_DecisionTree — Data Link
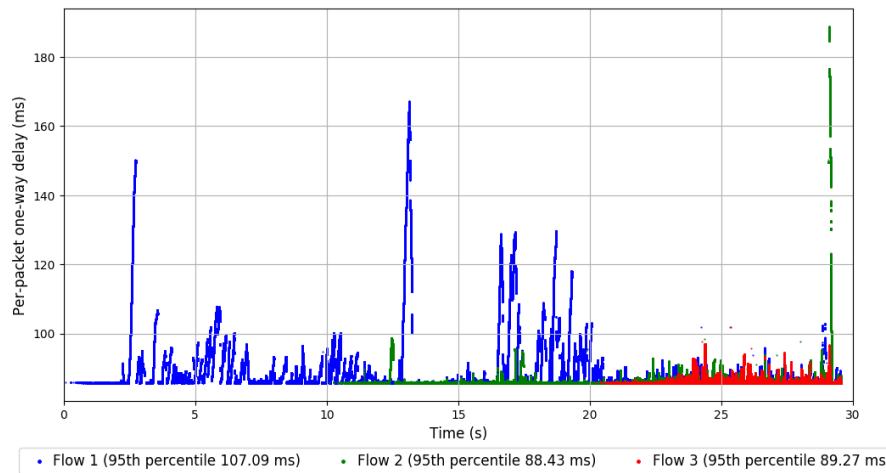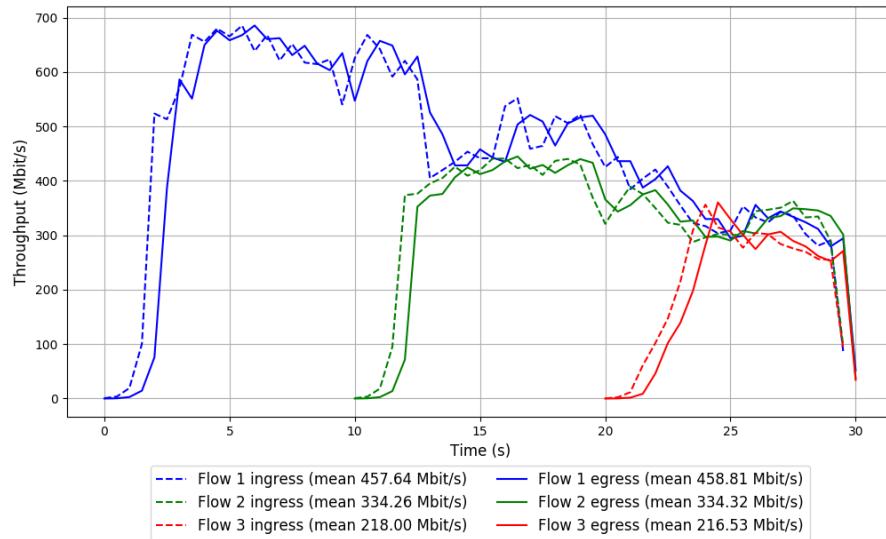
Run 2: Statistics of Muses\\_DecisionTree

Start at: 2019-11-24 04:32:37
End at: 2019-11-24 04:33:07
Local clock offset: -0.003 ms
Remote clock offset: -0.071 ms

# Below is generated by plot.py at 2019-11-24 08:42:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 655.58 Mbit/s
95th percentile per-packet one-way delay: 90.433 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 424.53 Mbit/s
95th percentile per-packet one-way delay: 91.587 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 249.80 Mbit/s
95th percentile per-packet one-way delay: 87.506 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 211.47 Mbit/s
95th percentile per-packet one-way delay: 90.346 ms
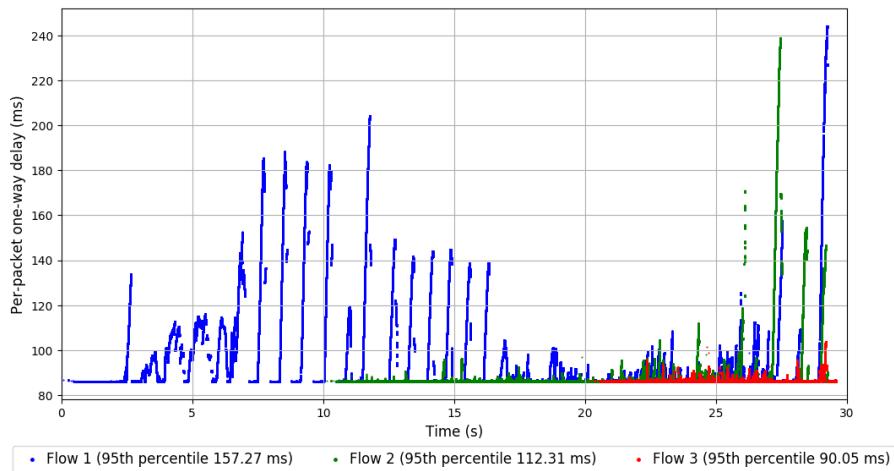Loss rate: 2.70%

Run 2: Report of Muses_DecisionTree — Data Link
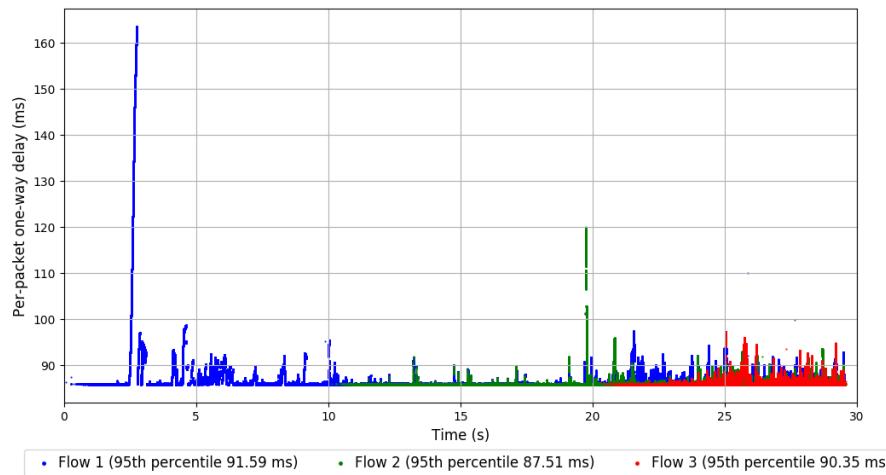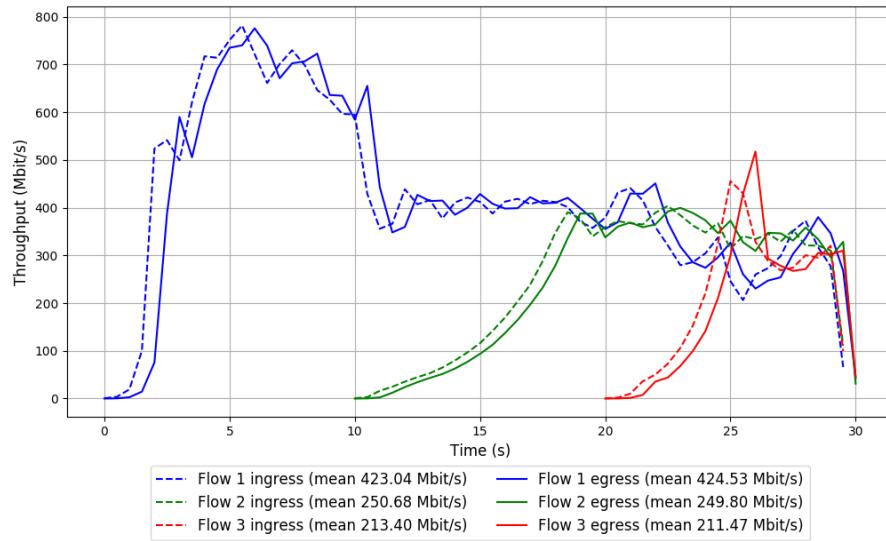
```
Run 3: Statistics of Muses_DecisionTree

Start at: 2019-11-24 05:14:22
End at: 2019-11-24 05:14:52
Local clock offset: -0.022 ms
Remote clock offset: -0.161 ms

Below is generated by plot.py at 2019-11-24 08:43:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 712.14 Mbit/s
95th percentile per-packet one-way delay: 101.933 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 427.52 Mbit/s
95th percentile per-packet one-way delay: 110.339 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 321.79 Mbit/s
95th percentile per-packet one-way delay: 88.416 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 234.10 Mbit/s
95th percentile per-packet one-way delay: 88.089 ms
Loss rate: 2.94%
```
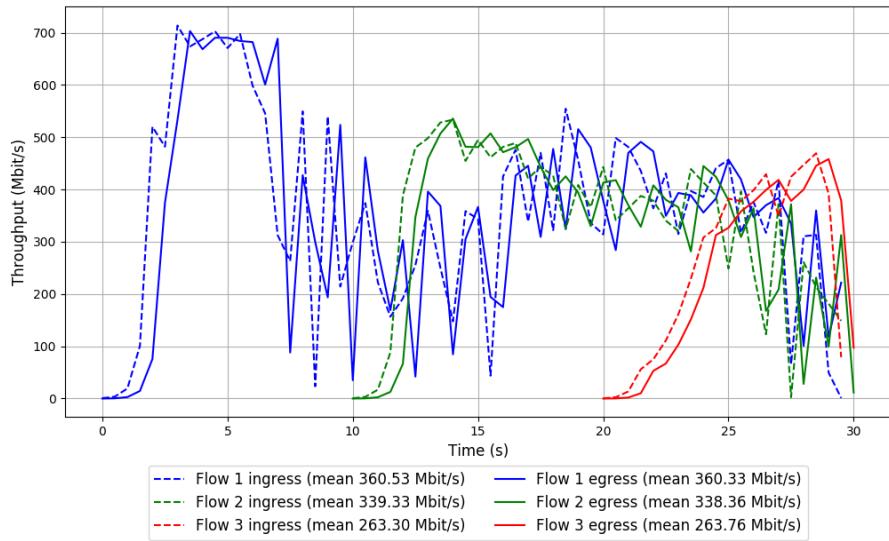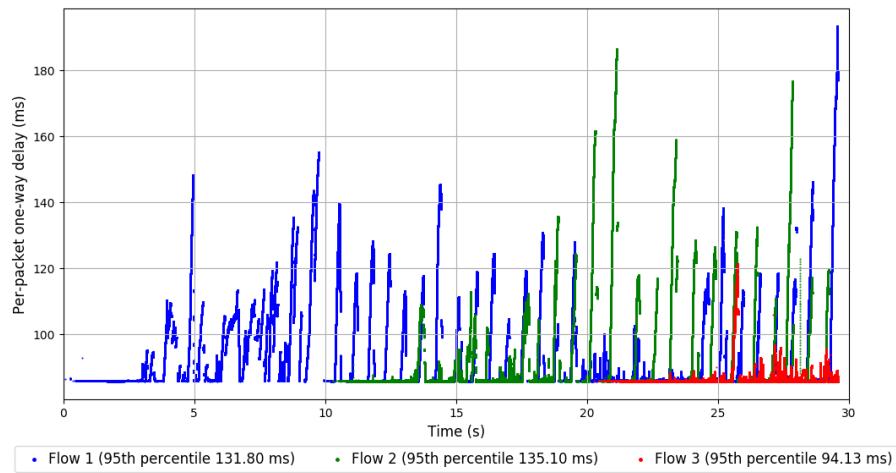
# Run 3: Report of Muses_DecisionTree — Data Link

```
Run 4: Statistics of Muses_DecisionTree

Start at: 2019-11-24 05:56:04
End at: 2019-11-24 05:56:34
Local clock offset: -0.026 ms
Remote clock offset: -0.075 ms

Below is generated by plot.py at 2019-11-24 08:45:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 689.03 Mbit/s
95th percentile per-packet one-way delay: 105.439 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 412.88 Mbit/s
95th percentile per-packet one-way delay: 109.329 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 342.69 Mbit/s
95th percentile per-packet one-way delay: 88.713 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 157.95 Mbit/s
95th percentile per-packet one-way delay: 86.445 ms
Loss rate: 4.01%
```
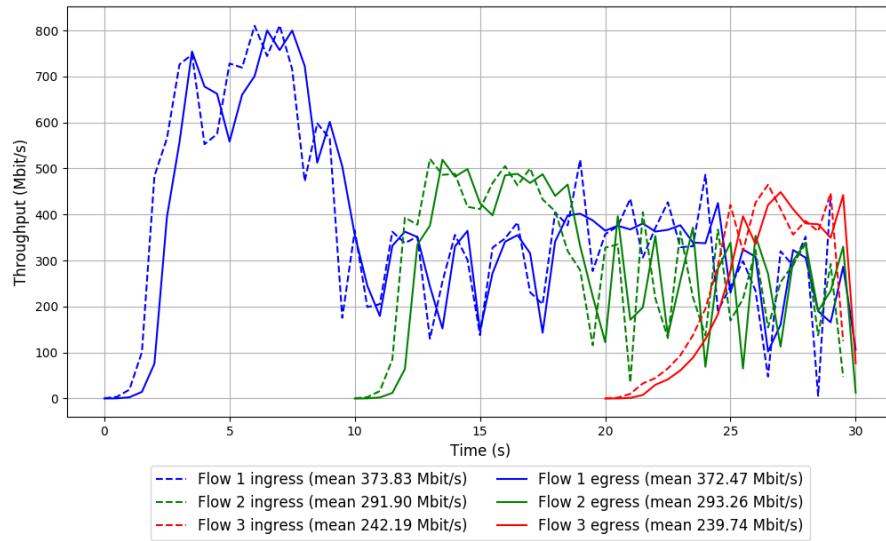
Run 4: Report of Muses_DecisionTree — Data Link

```
Run 5: Statistics of Muses_DecisionTree

Start at: 2019-11-24 06:38:14
End at: 2019-11-24 06:38:44
Local clock offset: -0.058 ms
Remote clock offset: -0.113 ms

Below is generated by plot.py at 2019-11-24 08:51:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 742.09 Mbit/s
95th percentile per-packet one-way delay: 110.156 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 462.00 Mbit/s
95th percentile per-packet one-way delay: 114.914 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 322.40 Mbit/s
95th percentile per-packet one-way delay: 90.643 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 214.81 Mbit/s
95th percentile per-packet one-way delay: 89.067 ms
Loss rate: 3.37%
```
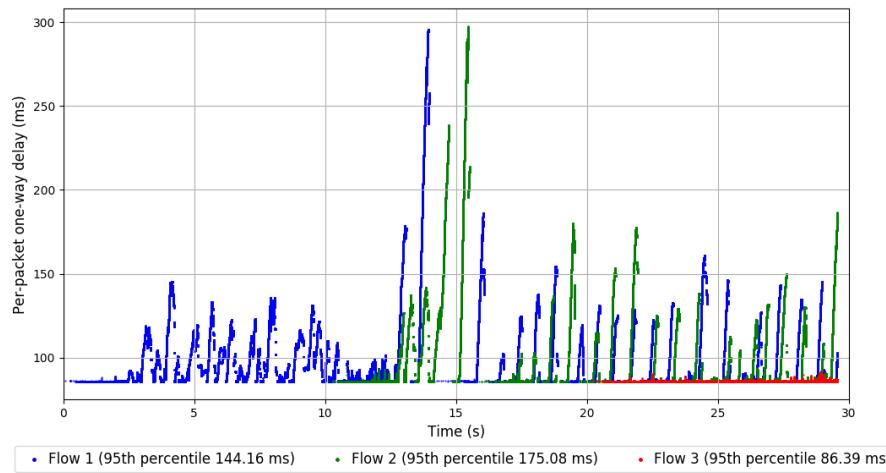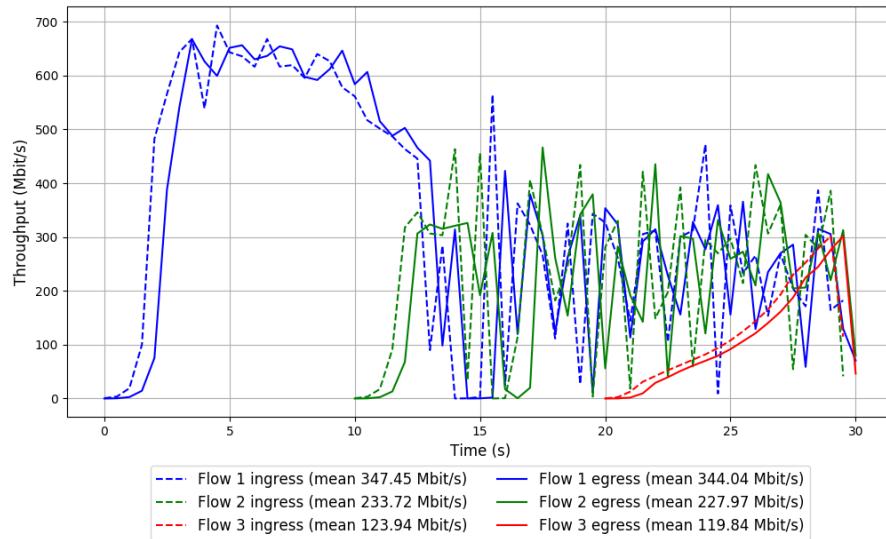
Run 5: Report of Muses_DecisionTree — Data Link

```
Run 1: Statistics of Muses_DecisionTreeH0

Start at: 2019-11-24 03:17:46
End at: 2019-11-24 03:18:16
Local clock offset: 0.334 ms
Remote clock offset: -0.074 ms

Below is generated by plot.py at 2019-11-24 08:51:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 666.20 Mbit/s
95th percentile per-packet one-way delay: 143.448 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 360.33 Mbit/s
95th percentile per-packet one-way delay: 157.271 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 338.36 Mbit/s
95th percentile per-packet one-way delay: 112.313 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 263.76 Mbit/s
95th percentile per-packet one-way delay: 90.049 ms
Loss rate: 1.68%
```
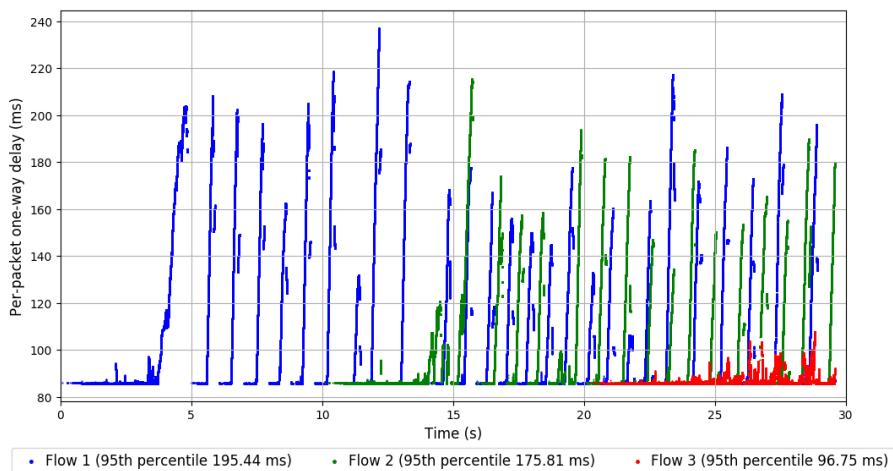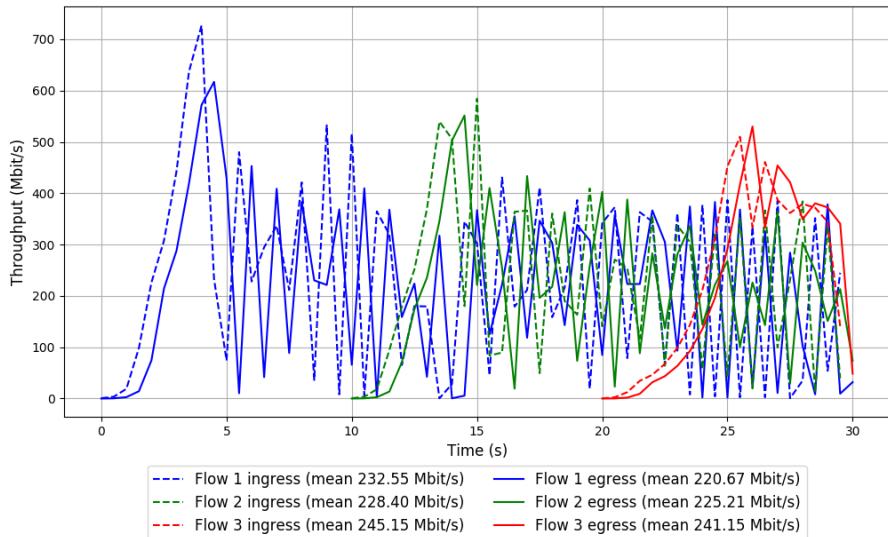
Run 1: Report of Muses_DecisionTreeH0 — Data Link



Flow 1 ingress (mean 360.53 Mbit/s)　　Flow 1 egress (mean 360.33 Mbit/s)
Flow 2 ingress (mean 339.33 Mbit/s)　　Flow 2 egress (mean 338.36 Mbit/s)
Flow 3 ingress (mean 263.30 Mbit/s)　　Flow 3 egress (mean 263.76 Mbit/s)



Flow 1 (95th percentile 157.27 ms)　　Flow 2 (95th percentile 112.31 ms)　　Flow 3 (95th percentile 90.05 ms)
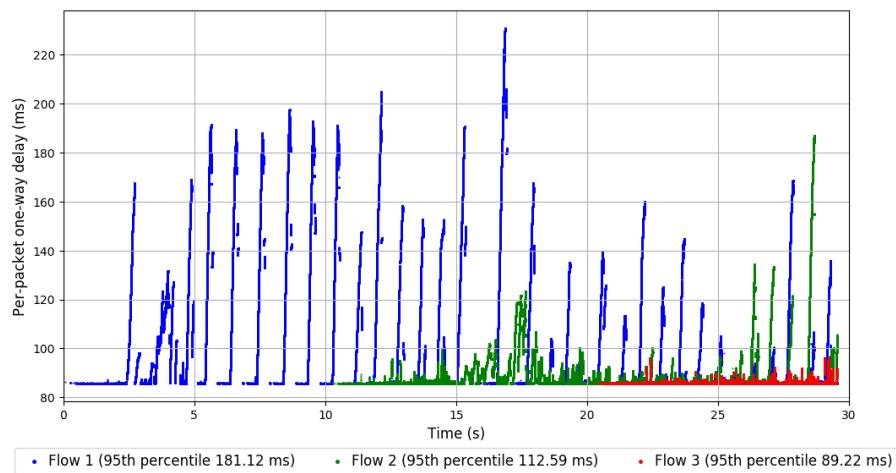
```
Run 2: Statistics of Muses_DecisionTreeH0

Start at: 2019-11-24 03:59:49
End at: 2019-11-24 04:00:19
Local clock offset: -0.008 ms
Remote clock offset: -0.031 ms

Below is generated by plot.py at 2019-11-24 08:51:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 641.37 Mbit/s
95th percentile per-packet one-way delay: 130.572 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 372.47 Mbit/s
95th percentile per-packet one-way delay: 131.796 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 293.26 Mbit/s
95th percentile per-packet one-way delay: 135.098 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 239.74 Mbit/s
95th percentile per-packet one-way delay: 94.132 ms
Loss rate: 2.81%
```
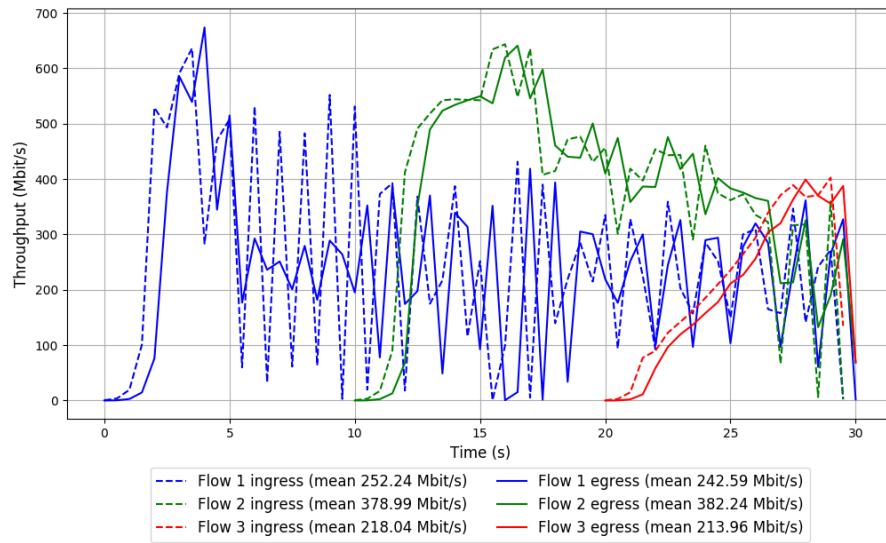
Run 2: Report of Muses_DecisionTreeH0 — Data Link

```
Run 3: Statistics of Muses_DecisionTreeH0

Start at: 2019-11-24 04:41:57
End at: 2019-11-24 04:42:27
Local clock offset: -0.059 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2019-11-24 08:51:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 532.53 Mbit/s
95th percentile per-packet one-way delay: 151.516 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 344.04 Mbit/s
95th percentile per-packet one-way delay: 144.157 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 227.97 Mbit/s
95th percentile per-packet one-way delay: 175.081 ms
Loss rate: 2.73%
-- Flow 3:
Average throughput: 119.84 Mbit/s
95th percentile per-packet one-way delay: 86.392 ms
Loss rate: 5.05%
```
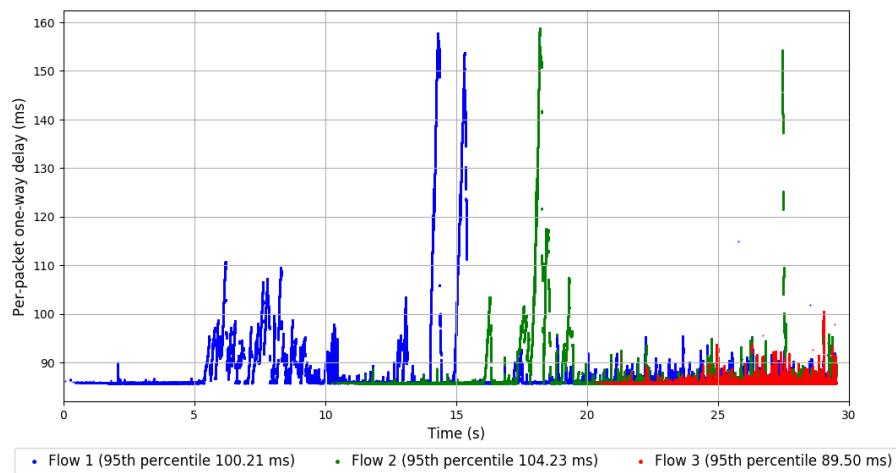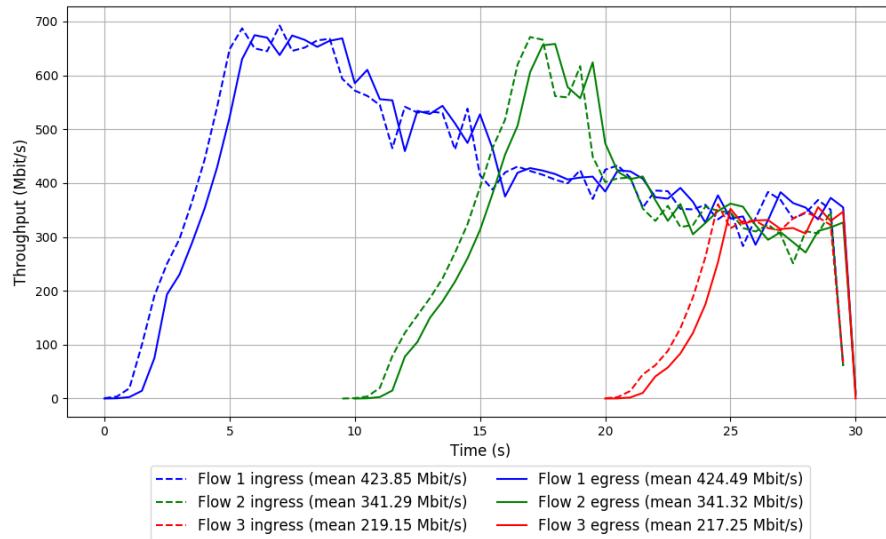
Run 3: Report of Muses_DecisionTreeH0 — Data Link

Run 4: Statistics of Muses\_DecisionTreeH0

Start at: 2019-11-24 05:23:58
End at: 2019-11-24 05:24:28
Local clock offset: -0.047 ms
Remote clock offset: -0.188 ms


# Below is generated by plot.py at 2019-11-24 08:51:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 445.86 Mbit/s
95th percentile per-packet one-way delay: 187.327 ms
Loss rate: 3.96%
-- Flow 1:
Average throughput: 220.67 Mbit/s
95th percentile per-packet one-way delay: 195.437 ms
Loss rate: 5.66%
-- Flow 2:
Average throughput: 225.21 Mbit/s
95th percentile per-packet one-way delay: 175.811 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 241.15 Mbit/s
95th percentile per-packet one-way delay: 96.755 ms
Loss rate: 3.38%
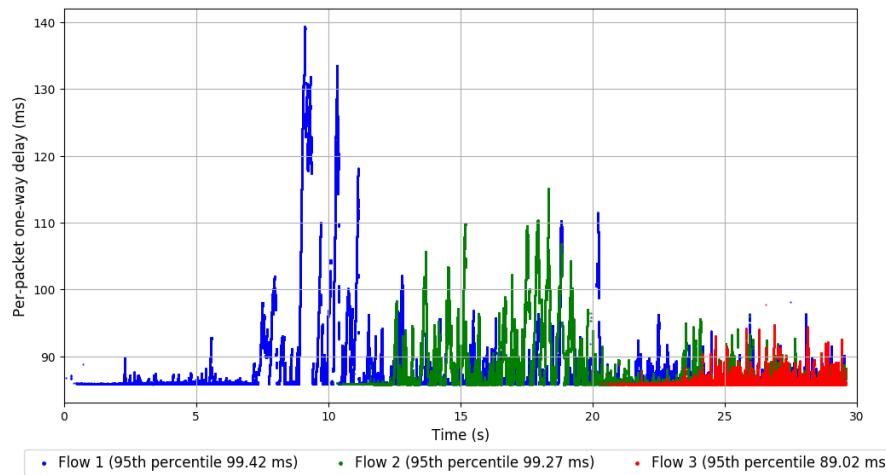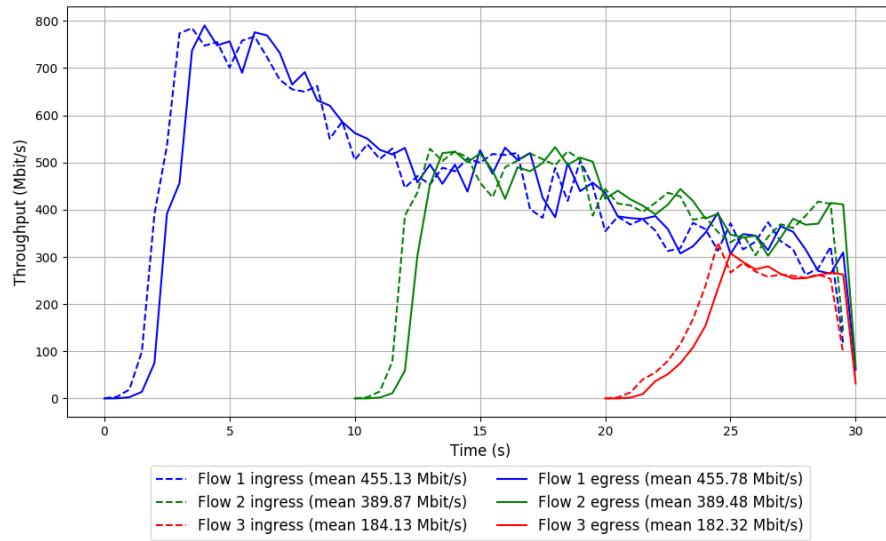
Run 4: Report of Muses_DecisionTreeH0 — Data Link

```
Run 5: Statistics of Muses\_DecisionTreeH0

Start at: 2019-11-24 06:06:01
End at: 2019-11-24 06:06:31
Local clock offset: -0.019 ms
Remote clock offset: -0.011 ms


# Below is generated by plot.py at 2019-11-24 08:53:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 562.97 Mbit/s
95th percentile per-packet one-way delay: 164.155 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 242.59 Mbit/s
95th percentile per-packet one-way delay: 181.118 ms
Loss rate: 4.38%
-- Flow 2:
Average throughput: 382.24 Mbit/s
95th percentile per-packet one-way delay: 112.593 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 213.96 Mbit/s
95th percentile per-packet one-way delay: 89.220 ms
Loss rate: 3.64%
```

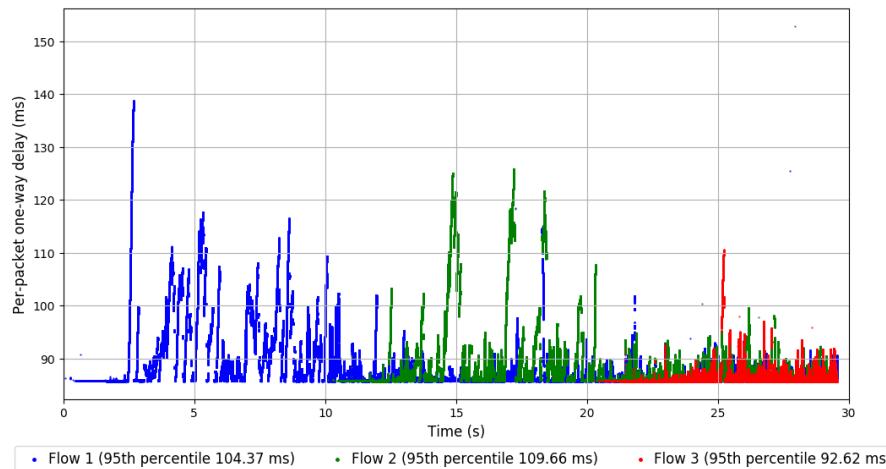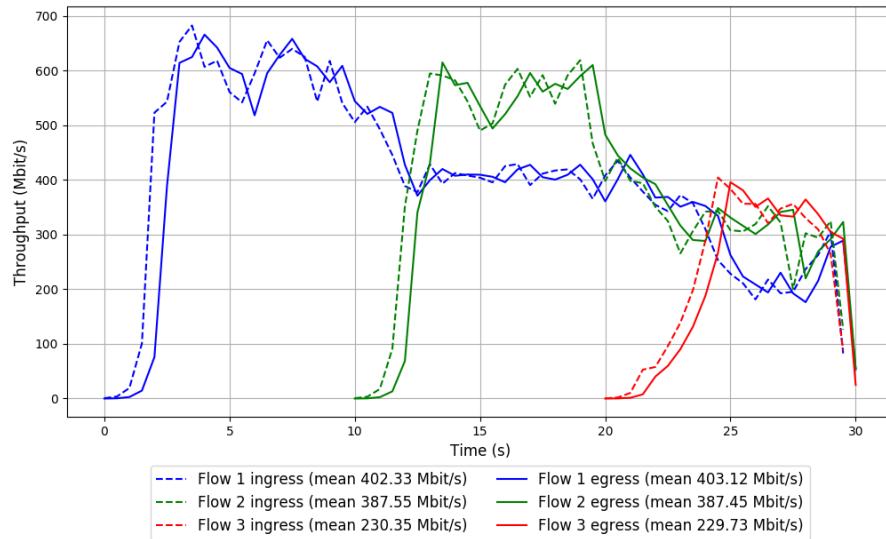Run 5: Report of Muses_DecisionTreeH0 — Data Link

```
Run 1: Statistics of Muses\_DecisionTreeR0

Start at: 2019-11-24 03:44:41
End at: 2019-11-24 03:45:11
Local clock offset: -0.003 ms
Remote clock offset: 0.081 ms


# Below is generated by plot.py at 2019-11-24 08:56:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 718.73 Mbit/s
95th percentile per-packet one-way delay: 100.319 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 424.49 Mbit/s
95th percentile per-packet one-way delay: 100.210 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 341.32 Mbit/s
95th percentile per-packet one-way delay: 104.230 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 217.25 Mbit/s
95th percentile per-packet one-way delay: 89.495 ms
Loss rate: 2.66%
```

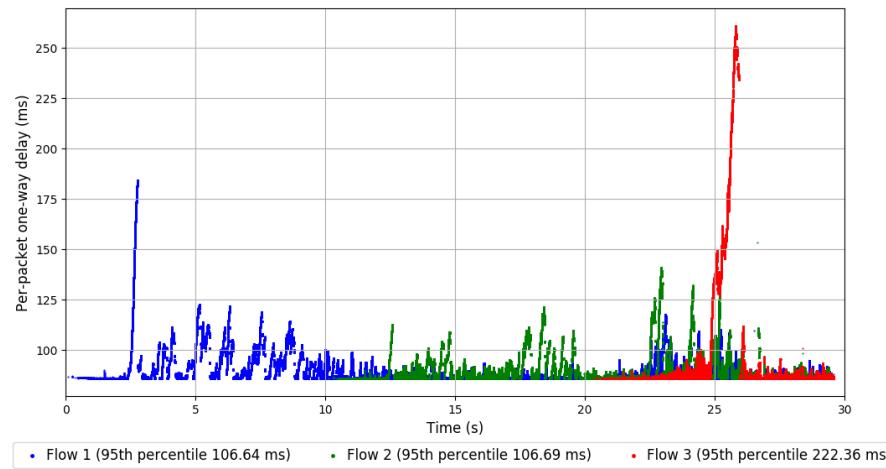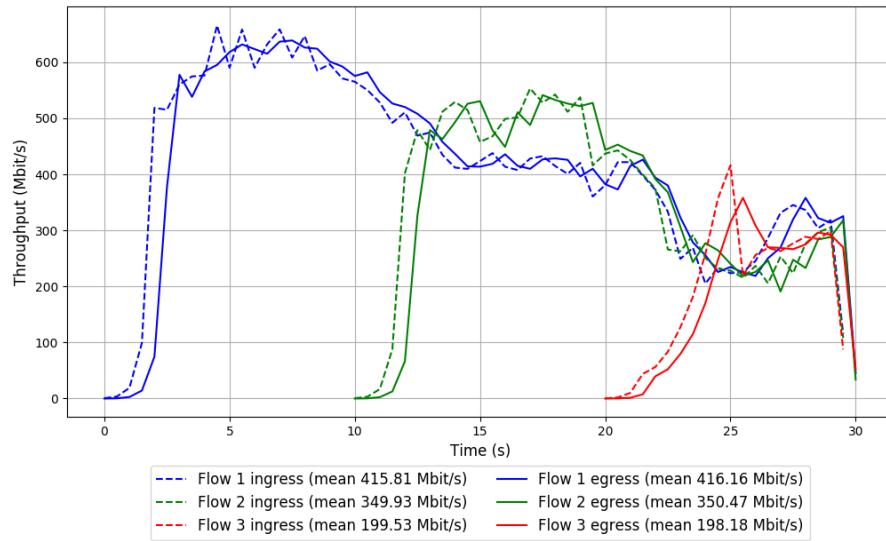Run 1: Report of Muses_DecisionTreeR0 — Data Link

```
Run 2: Statistics of Muses\_DecisionTreeR0

Start at: 2019-11-24 04:26:49
End at: 2019-11-24 04:27:19
Local clock offset: -0.01 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2019-11-24 08:59:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 770.10 Mbit/s
95th percentile per-packet one-way delay: 98.860 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 455.78 Mbit/s
95th percentile per-packet one-way delay: 99.417 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 389.48 Mbit/s
95th percentile per-packet one-way delay: 99.268 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 182.32 Mbit/s
95th percentile per-packet one-way delay: 89.023 ms
Loss rate: 2.79%
```
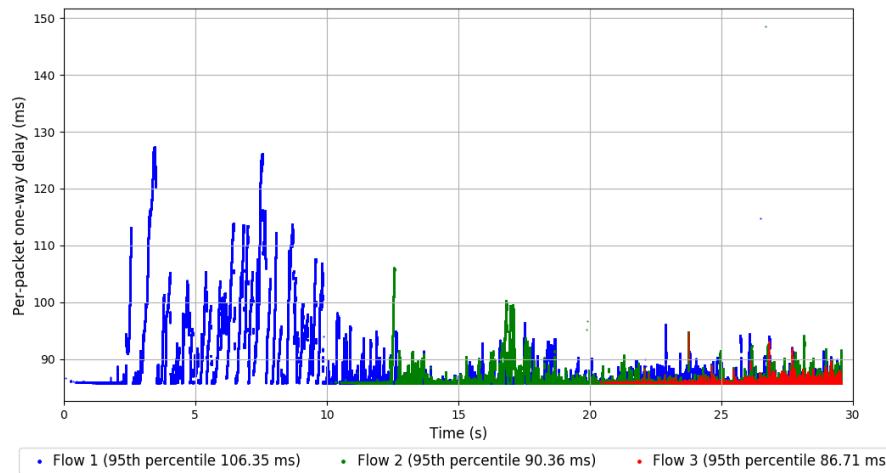
Run 2: Report of Muses_DecisionTreeR0 — Data Link

```
Run 3: Statistics of Muses\_DecisionTreeR0

Start at: 2019-11-24 05:08:41
End at: 2019-11-24 05:09:11
Local clock offset: -0.058 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2019-11-24 09:01:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 731.15 Mbit/s
95th percentile per-packet one-way delay: 104.934 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 403.12 Mbit/s
95th percentile per-packet one-way delay: 104.366 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 387.45 Mbit/s
95th percentile per-packet one-way delay: 109.658 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 229.73 Mbit/s
95th percentile per-packet one-way delay: 92.616 ms
Loss rate: 2.08%
```
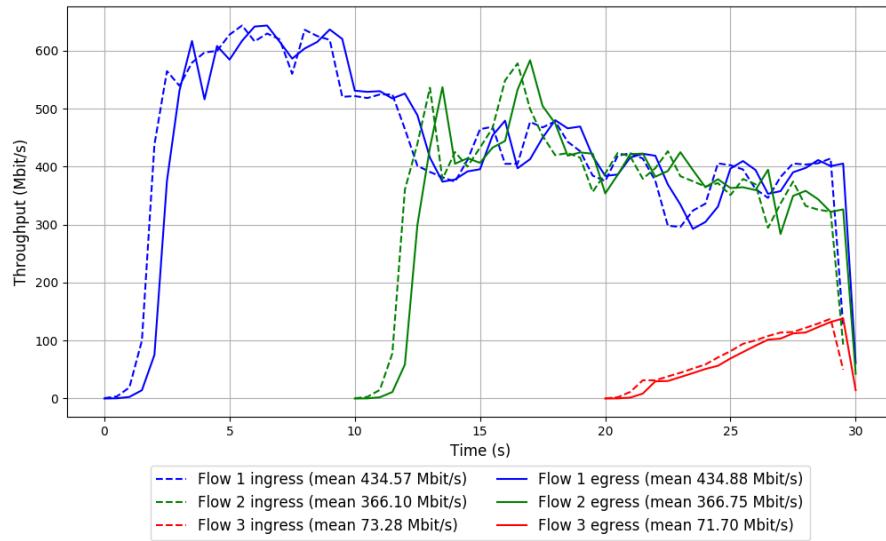
Run 3: Report of Muses_DecisionTreeR0 — Data Link

```
Run 4: Statistics of Muses\_DecisionTreeR0

Start at: 2019-11-24 05:50:22
End at: 2019-11-24 05:50:52
Local clock offset: -0.04 ms
Remote clock offset: -0.025 ms


# Below is generated by plot.py at 2019-11-24 09:02:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 709.57 Mbit/s
95th percentile per-packet one-way delay: 109.491 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 416.16 Mbit/s
95th percentile per-packet one-way delay: 106.637 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 350.47 Mbit/s
95th percentile per-packet one-way delay: 106.686 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 198.18 Mbit/s
95th percentile per-packet one-way delay: 222.358 ms
Loss rate: 2.48%
```

Run 4: Report of Muses_DecisionTreeR0 — Data Link

```
Run 5: Statistics of Muses\_DecisionTreeR0

Start at: 2019-11-24 06:32:34
End at: 2019-11-24 06:33:04
Local clock offset: -0.015 ms
Remote clock offset: -0.124 ms


# Below is generated by plot.py at 2019-11-24 09:02:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 698.94 Mbit/s
95th percentile per-packet one-way delay: 101.743 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 434.88 Mbit/s
95th percentile per-packet one-way delay: 106.347 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 366.75 Mbit/s
95th percentile per-packet one-way delay: 90.364 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 71.70 Mbit/s
95th percentile per-packet one-way delay: 86.707 ms
Loss rate: 3.92%
```

Run 5: Report of Muses_DecisionTreeR0 — Data Link

Flow 1 ingress (mean 434.57 Mbit/s)   Flow 1 egress (mean 434.88 Mbit/s)
Flow 2 ingress (mean 366.10 Mbit/s)   Flow 2 egress (mean 366.75 Mbit/s)
Flow 3 ingress (mean 73.28 Mbit/s)   Flow 3 egress (mean 71.70 Mbit/s)

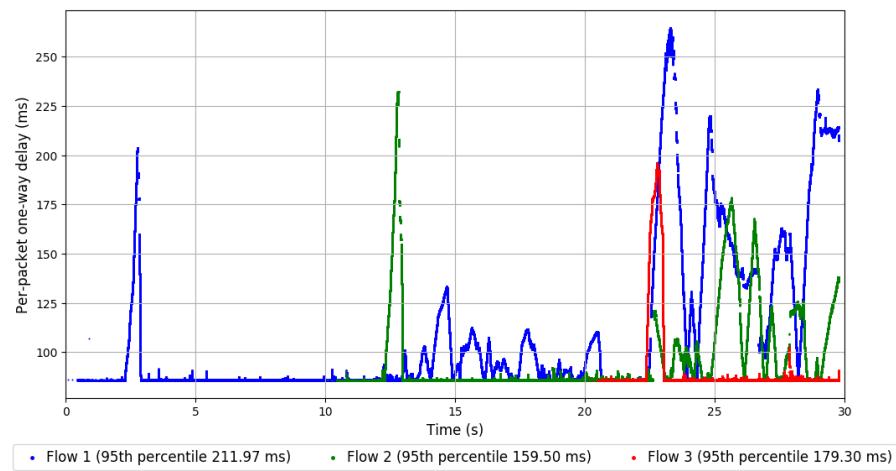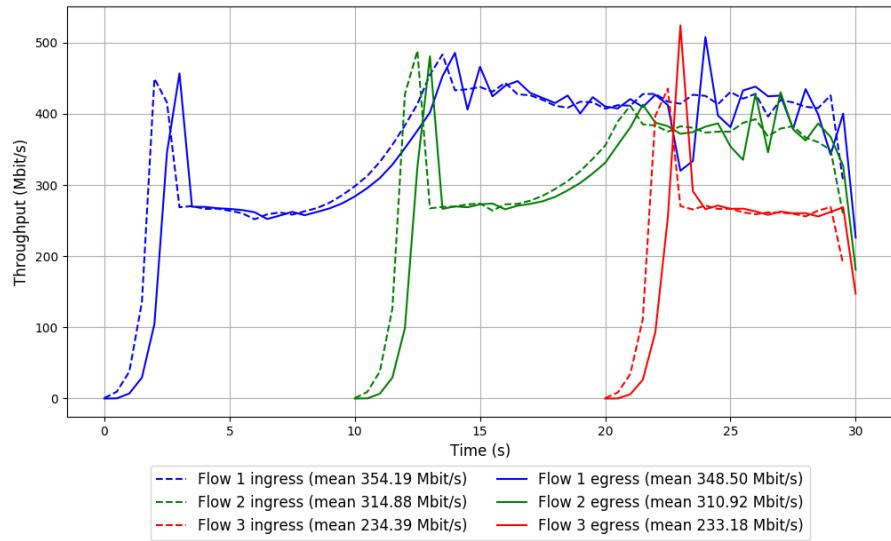Flow 1 (95th percentile 106.35 ms)   Flow 2 (95th percentile 90.36 ms)   Flow 3 (95th percentile 86.71 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-11-24 03:46:34
End at: 2019-11-24 03:47:05
Local clock offset: -0.011 ms
Remote clock offset: 0.066 ms


# Below is generated by plot.py at 2019-11-24 09:13:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 650.26 Mbit/s
95th percentile per-packet one-way delay: 193.952 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 301.12 Mbit/s
95th percentile per-packet one-way delay: 139.851 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 412.05 Mbit/s
95th percentile per-packet one-way delay: 218.522 ms
Loss rate: 4.36%
-- Flow 3:
Average throughput: 233.01 Mbit/s
95th percentile per-packet one-way delay: 206.482 ms
Loss rate: 4.02%
```

Run 1: Report of PCC-Allegro — Data Link
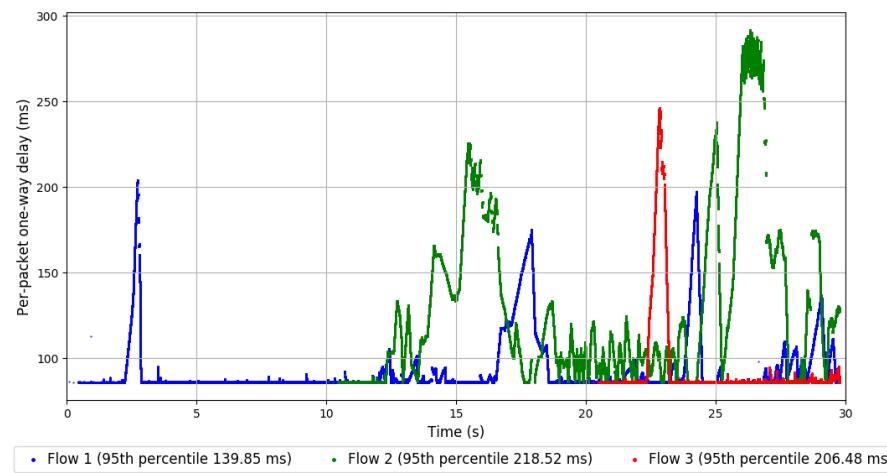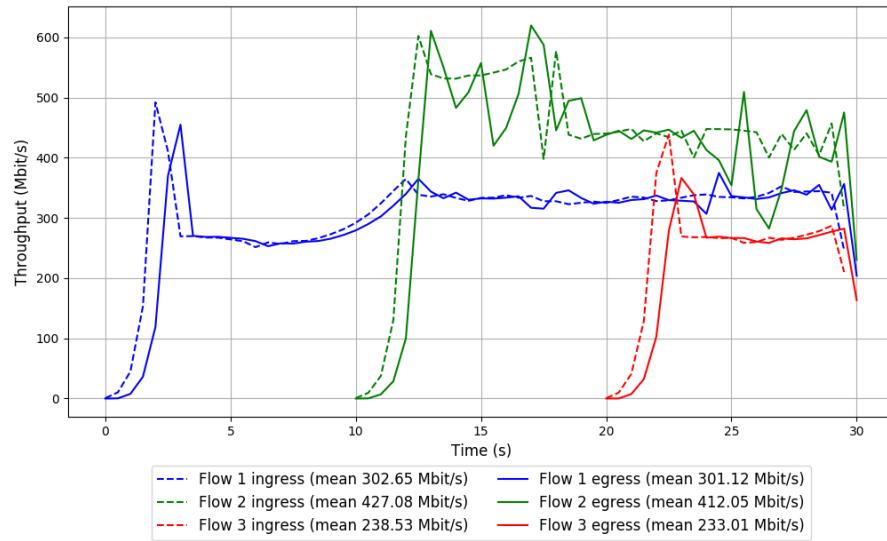
```
Run 2: Statistics of PCC-Allegro

Start at: 2019-11-24 04:28:45
End at: 2019-11-24 04:29:15
Local clock offset: -0.018 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2019-11-24 09:13:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 648.28 Mbit/s
95th percentile per-packet one-way delay: 213.325 ms
Loss rate: 4.67%
-- Flow 1:
Average throughput: 379.86 Mbit/s
95th percentile per-packet one-way delay: 215.338 ms
Loss rate: 6.14%
-- Flow 2:
Average throughput: 288.94 Mbit/s
95th percentile per-packet one-way delay: 188.782 ms
Loss rate: 2.66%
-- Flow 3:
Average throughput: 235.94 Mbit/s
95th percentile per-packet one-way delay: 143.538 ms
Loss rate: 2.14%
```

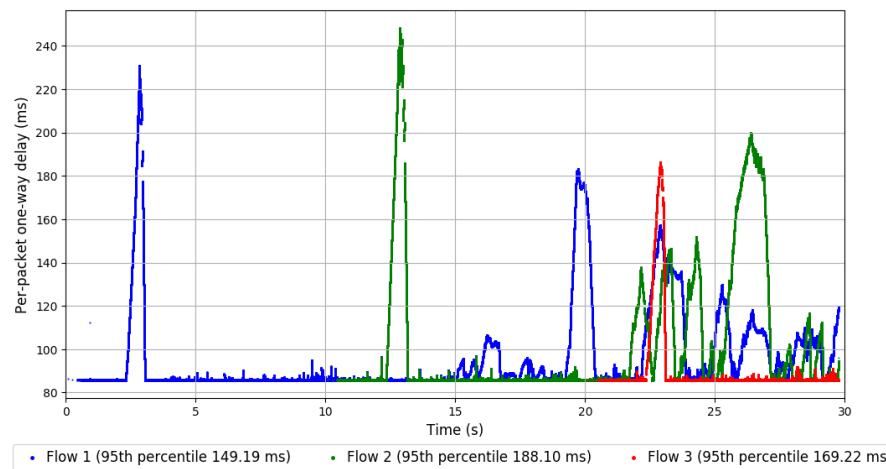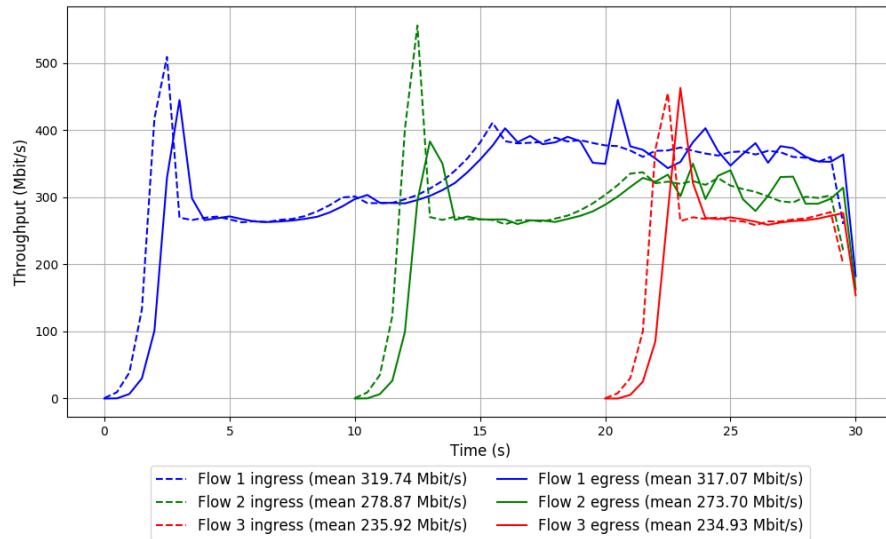Run 2: Report of PCC-Allegro — Data Link
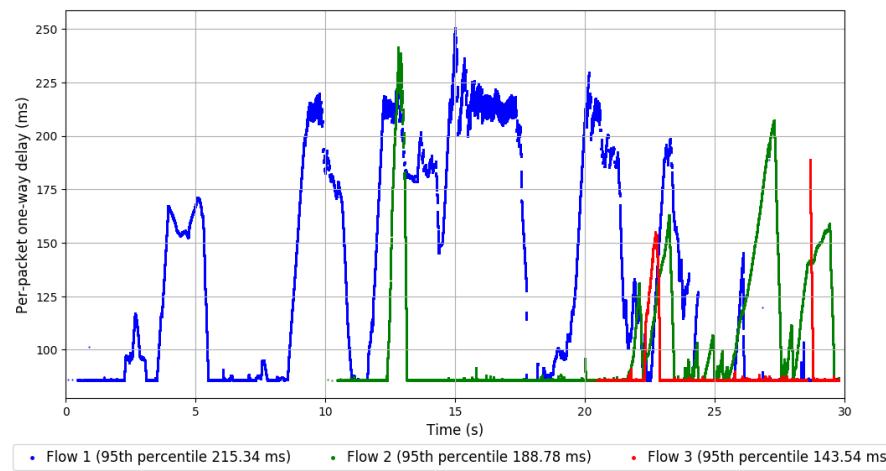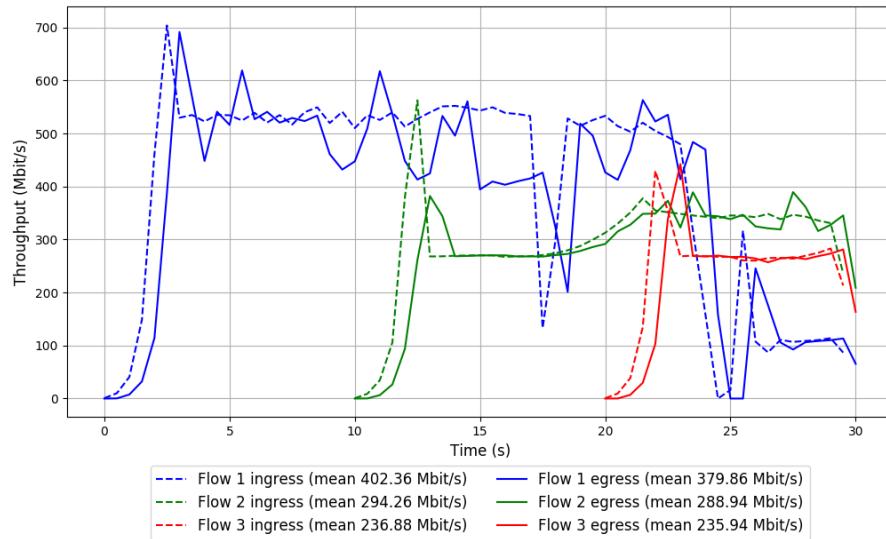
```
Run 3: Statistics of PCC-Allegro

Start at: 2019-11-24 05:10:35
End at: 2019-11-24 05:11:05
Local clock offset: -0.059 ms
Remote clock offset: -0.149 ms


# Below is generated by plot.py at 2019-11-24 09:14:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 630.46 Mbit/s
95th percentile per-packet one-way delay: 189.347 ms
Loss rate: 2.17%
-- Flow 1:
Average throughput: 348.50 Mbit/s
95th percentile per-packet one-way delay: 211.965 ms
Loss rate: 2.18%
-- Flow 2:
Average throughput: 310.92 Mbit/s
95th percentile per-packet one-way delay: 159.496 ms
Loss rate: 2.11%
-- Flow 3:
Average throughput: 233.18 Mbit/s
95th percentile per-packet one-way delay: 179.300 ms
Loss rate: 2.26%
```

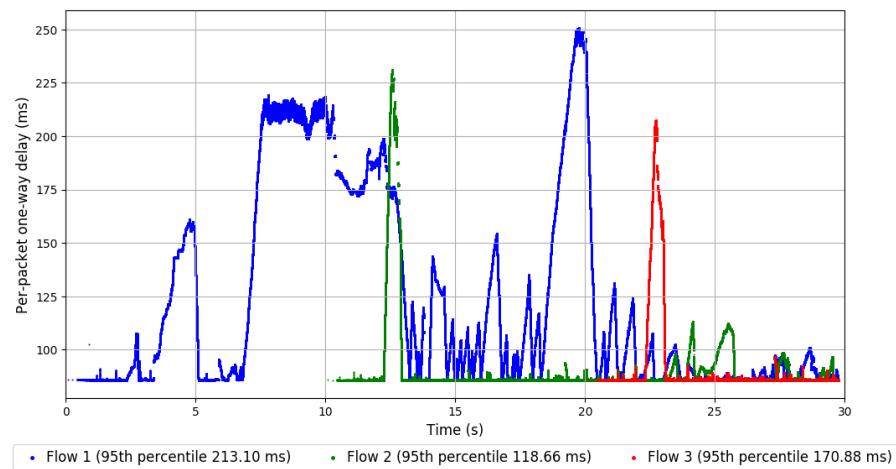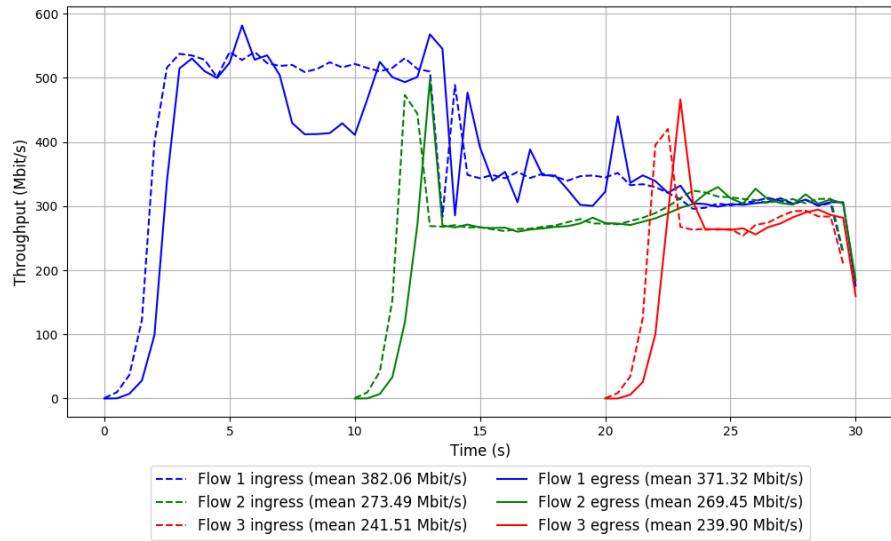# Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 354.19 Mbit/s) — Flow 1 egress (mean 348.50 Mbit/s)
Flow 2 ingress (mean 314.88 Mbit/s) — Flow 2 egress (mean 310.92 Mbit/s)
Flow 3 ingress (mean 234.39 Mbit/s) — Flow 3 egress (mean 233.18 Mbit/s)

Flow 1 (95th percentile 211.97 ms) — Flow 2 (95th percentile 159.50 ms) — Flow 3 (95th percentile 179.30 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-11-24 05:52:16
End at: 2019-11-24 05:52:46
Local clock offset: -0.027 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2019-11-24 09:17:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 574.90 Mbit/s
95th percentile per-packet one-way delay: 171.388 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 317.07 Mbit/s
95th percentile per-packet one-way delay: 149.189 ms
Loss rate: 1.41%
-- Flow 2:
Average throughput: 273.70 Mbit/s
95th percentile per-packet one-way delay: 188.104 ms
Loss rate: 2.71%
-- Flow 3:
Average throughput: 234.93 Mbit/s
95th percentile per-packet one-way delay: 169.222 ms
Loss rate: 2.18%
```

Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 319.74 Mbit/s)   Flow 1 egress (mean 317.07 Mbit/s)
Flow 2 ingress (mean 278.87 Mbit/s)   Flow 2 egress (mean 273.70 Mbit/s)
Flow 3 ingress (mean 235.92 Mbit/s)   Flow 3 egress (mean 234.93 Mbit/s)

Flow 1 (95th percentile 149.19 ms)   Flow 2 (95th percentile 188.10 ms)   Flow 3 (95th percentile 169.22 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-11-24 06:34:26
End at: 2019-11-24 06:34:56
Local clock offset: -0.038 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2019-11-24 09:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 628.05 Mbit/s
95th percentile per-packet one-way delay: 210.418 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 371.32 Mbit/s
95th percentile per-packet one-way delay: 213.105 ms
Loss rate: 3.37%
-- Flow 2:
Average throughput: 269.45 Mbit/s
95th percentile per-packet one-way delay: 118.663 ms
Loss rate: 2.34%
-- Flow 3:
Average throughput: 239.90 Mbit/s
95th percentile per-packet one-way delay: 170.882 ms
Loss rate: 2.42%
```

Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 382.06 Mbit/s) ---- Flow 1 egress (mean 371.32 Mbit/s)
Flow 2 ingress (mean 273.49 Mbit/s) ---- Flow 2 egress (mean 269.45 Mbit/s)
Flow 3 ingress (mean 241.51 Mbit/s) ---- Flow 3 egress (mean 239.90 Mbit/s)

Flow 1 (95th percentile 213.10 ms)   Flow 2 (95th percentile 118.66 ms)   Flow 3 (95th percentile 170.88 ms)

154

```
Run 1: Statistics of PCC-Expr

Start at: 2019-11-24 03:56:25
End at: 2019-11-24 03:56:55
Local clock offset: 0.018 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2019-11-24 09:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 405.22 Mbit/s
95th percentile per-packet one-way delay: 104.059 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 239.67 Mbit/s
95th percentile per-packet one-way delay: 110.695 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 204.87 Mbit/s
95th percentile per-packet one-way delay: 89.408 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 91.03 Mbit/s
95th percentile per-packet one-way delay: 86.237 ms
Loss rate: 2.59%
```
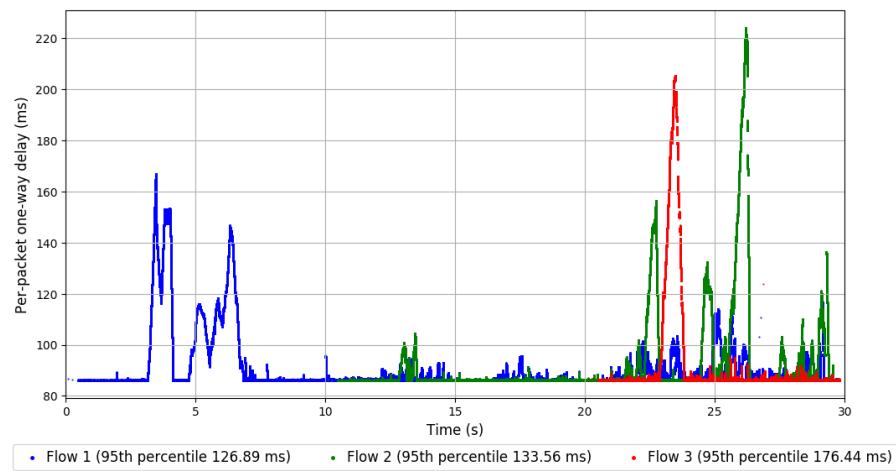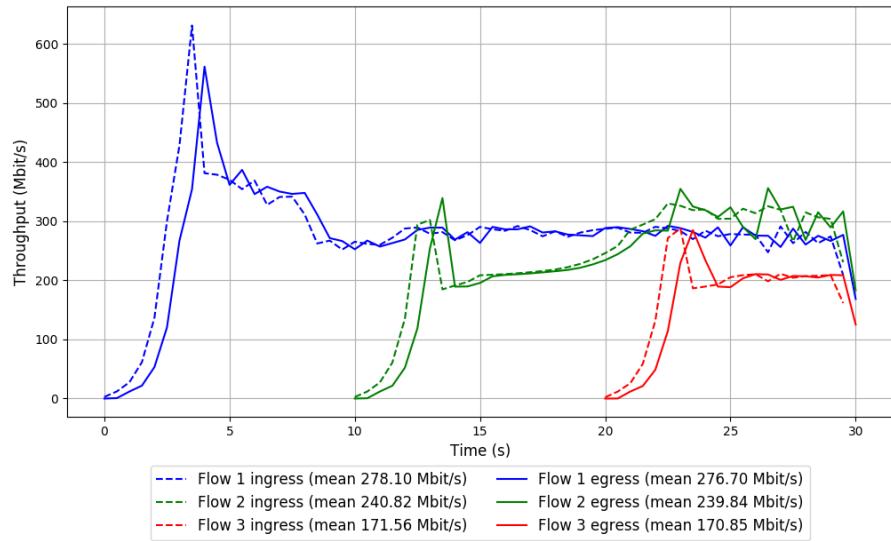
Run 1: Report of PCC-Expr — Data Link
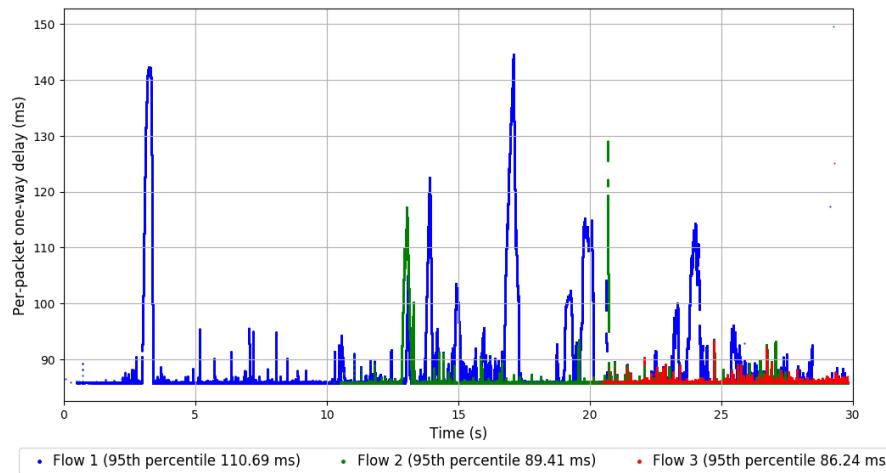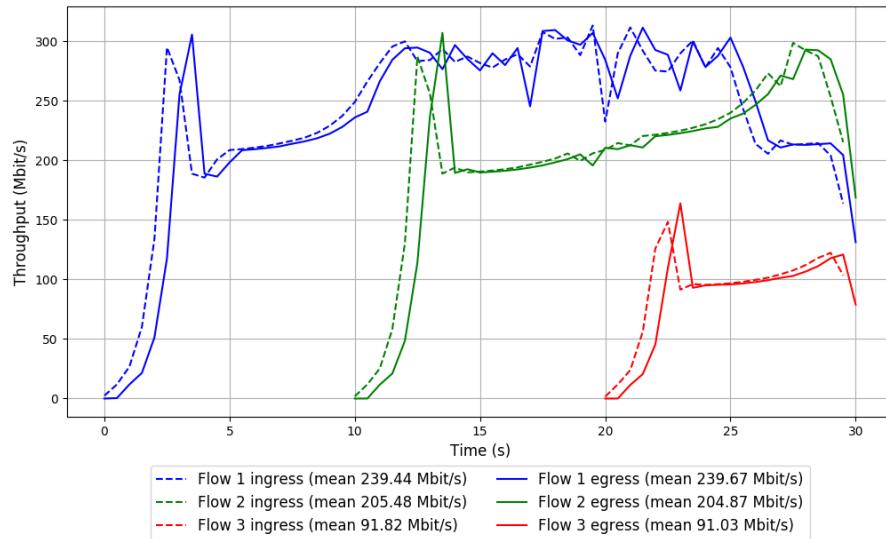
```
Run 2: Statistics of PCC-Expr

Start at: 2019-11-24 04:38:33
End at: 2019-11-24 04:39:03
Local clock offset: -0.03 ms
Remote clock offset: -0.081 ms

# Below is generated by plot.py at 2019-11-24 09:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 417.20 Mbit/s
95th percentile per-packet one-way delay: 103.532 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 221.70 Mbit/s
95th percentile per-packet one-way delay: 96.933 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 214.61 Mbit/s
95th percentile per-packet one-way delay: 108.114 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 162.96 Mbit/s
95th percentile per-packet one-way delay: 106.650 ms
Loss rate: 2.12%
```

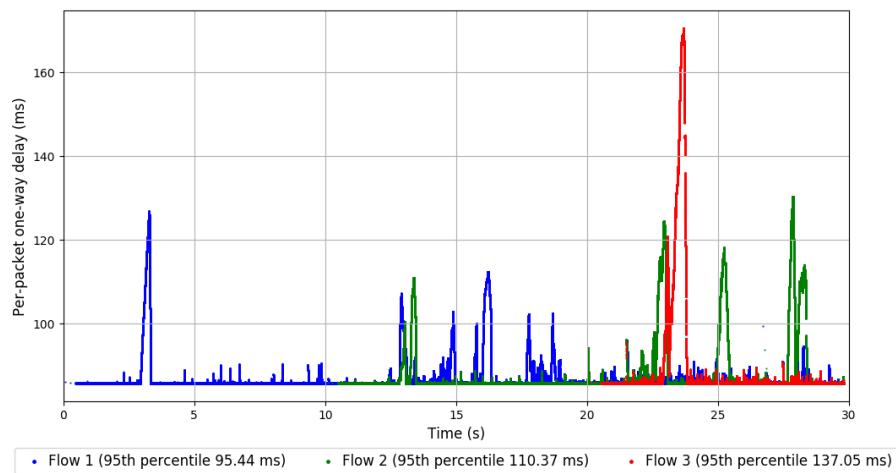# Run 2: Report of PCC-Expr — Data Link
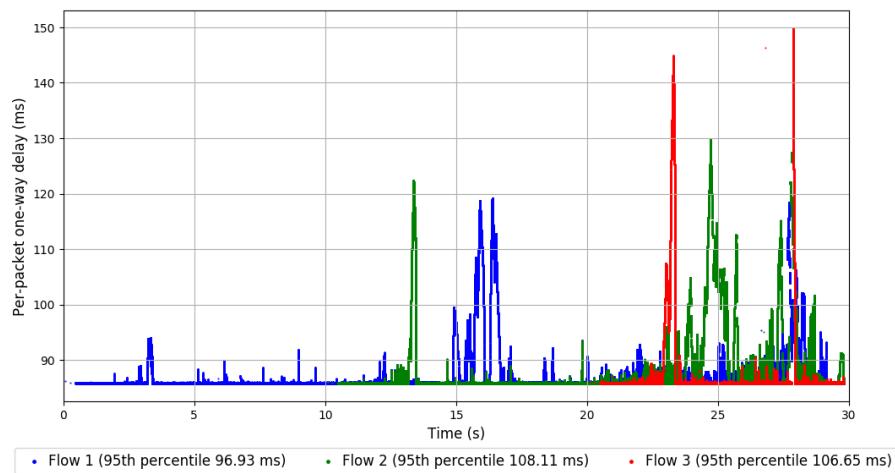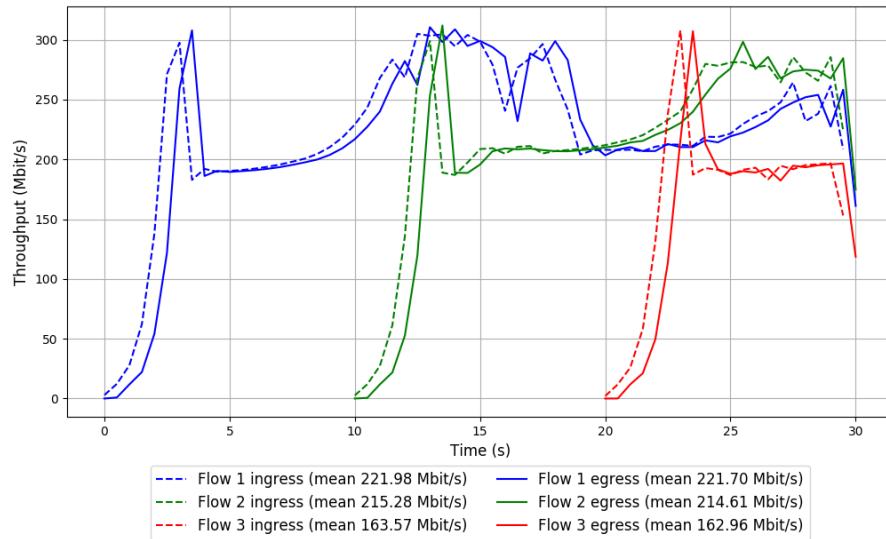
```
Run 3: Statistics of PCC-Expr

Start at: 2019-11-24 05:20:27
End at: 2019-11-24 05:20:57
Local clock offset: 0.274 ms
Remote clock offset: -0.221 ms


# Below is generated by plot.py at 2019-11-24 09:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 420.74 Mbit/s
95th percentile per-packet one-way delay: 131.780 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 238.67 Mbit/s
95th percentile per-packet one-way delay: 154.483 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 194.06 Mbit/s
95th percentile per-packet one-way delay: 98.898 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 163.84 Mbit/s
95th percentile per-packet one-way delay: 112.605 ms
Loss rate: 2.17%
```

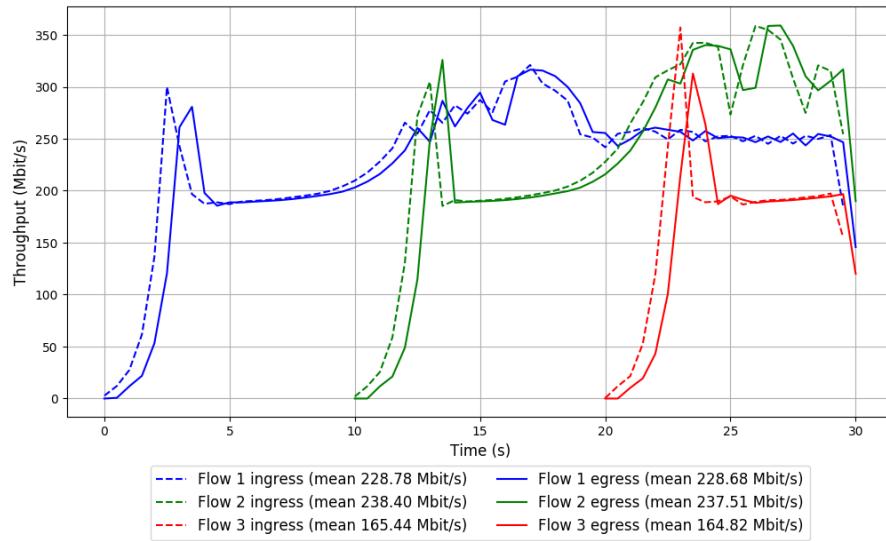Run 3: Report of PCC-Expr — Data Link
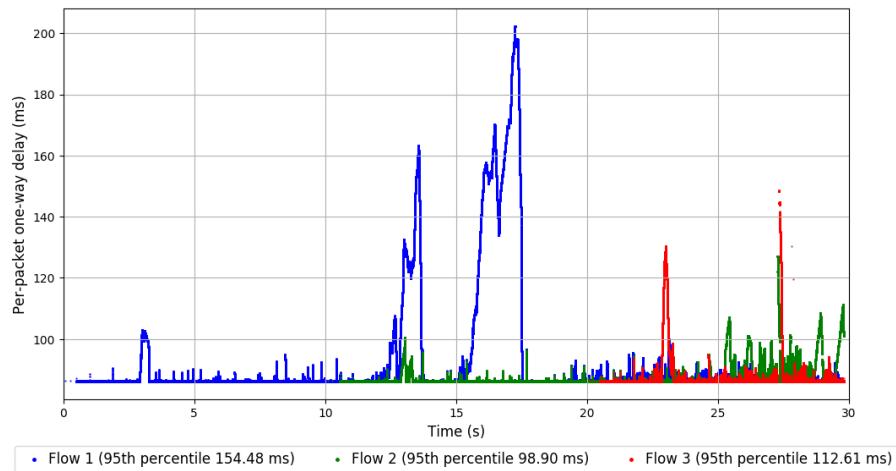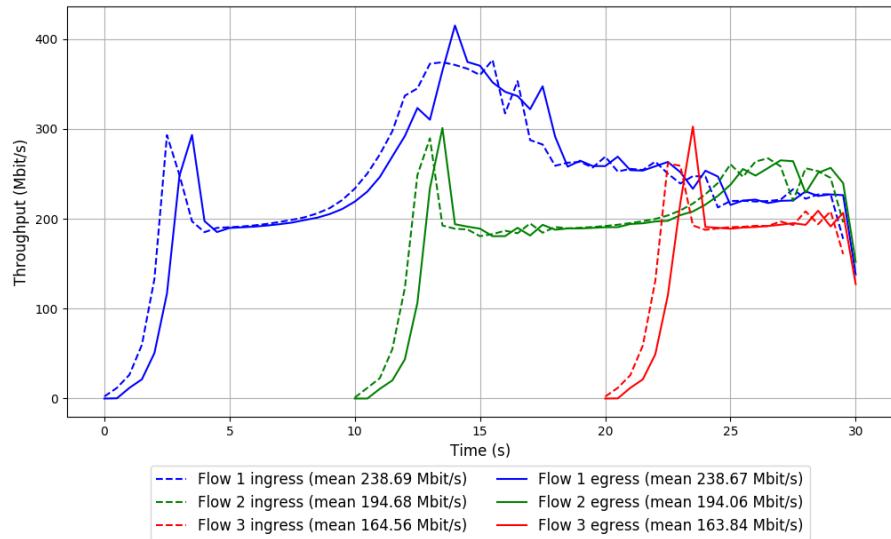
```
Run 4: Statistics of PCC-Expr

Start at: 2019-11-24 06:02:09
End at: 2019-11-24 06:02:39
Local clock offset: 0.331 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 491.43 Mbit/s
95th percentile per-packet one-way delay: 133.484 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 276.70 Mbit/s
95th percentile per-packet one-way delay: 126.885 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 239.84 Mbit/s
95th percentile per-packet one-way delay: 133.563 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 170.85 Mbit/s
95th percentile per-packet one-way delay: 176.442 ms
Loss rate: 2.17%
```

Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 278.10 Mbit/s)   Flow 1 egress (mean 276.70 Mbit/s)
Flow 2 ingress (mean 240.82 Mbit/s)   Flow 2 egress (mean 239.84 Mbit/s)
Flow 3 ingress (mean 171.56 Mbit/s)   Flow 3 egress (mean 170.85 Mbit/s)

Flow 1 (95th percentile 126.89 ms)   Flow 2 (95th percentile 133.56 ms)   Flow 3 (95th percentile 176.44 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2019-11-24 06:44:15
End at: 2019-11-24 06:44:45
Local clock offset: -0.086 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 439.94 Mbit/s
95th percentile per-packet one-way delay: 107.074 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 228.68 Mbit/s
95th percentile per-packet one-way delay: 95.439 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 237.51 Mbit/s
95th percentile per-packet one-way delay: 110.374 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 164.82 Mbit/s
95th percentile per-packet one-way delay: 137.049 ms
Loss rate: 2.11%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 228.78 Mbit/s)
Flow 1 egress (mean 228.68 Mbit/s)
Flow 2 ingress (mean 238.40 Mbit/s)
Flow 2 egress (mean 237.51 Mbit/s)
Flow 3 ingress (mean 165.44 Mbit/s)
Flow 3 egress (mean 164.82 Mbit/s)

Flow 1 (95th percentile 95.44 ms)
Flow 2 (95th percentile 110.37 ms)
Flow 3 (95th percentile 137.05 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-11-24 03:39:26
End at: 2019-11-24 03:39:56
Local clock offset: -0.016 ms
Remote clock offset: 0.057 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 106.45 Mbit/s
95th percentile per-packet one-way delay: 85.814 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 60.19 Mbit/s
95th percentile per-packet one-way delay: 85.821 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 55.75 Mbit/s
95th percentile per-packet one-way delay: 85.758 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 22.05 Mbit/s
95th percentile per-packet one-way delay: 85.838 ms
Loss rate: 5.70%
```

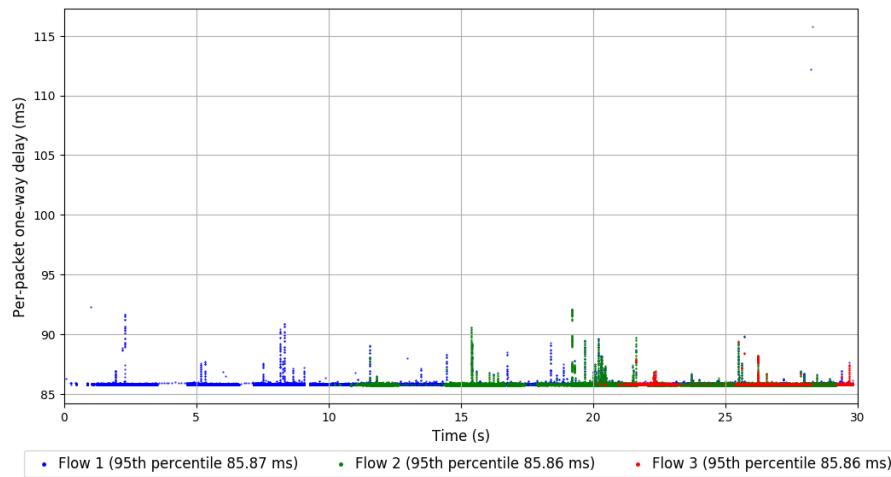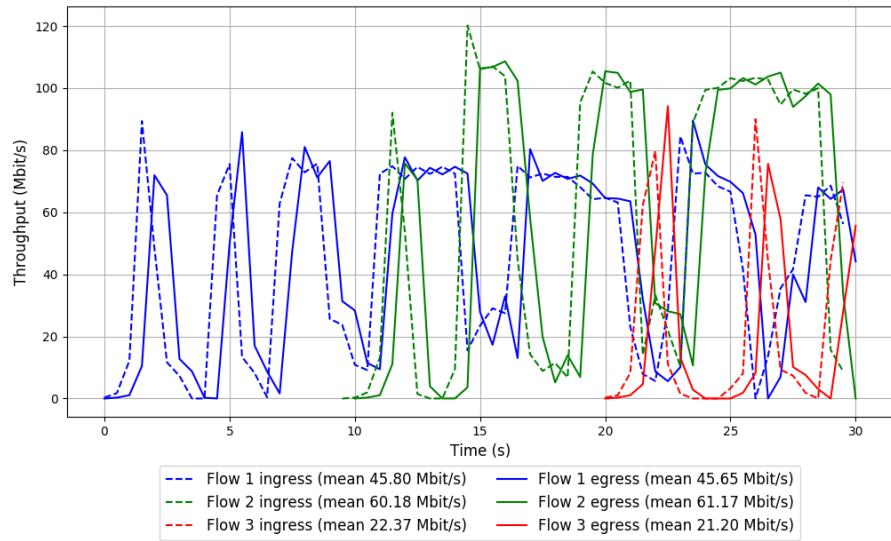Run 1: Report of QUIC Cubic — Data Link
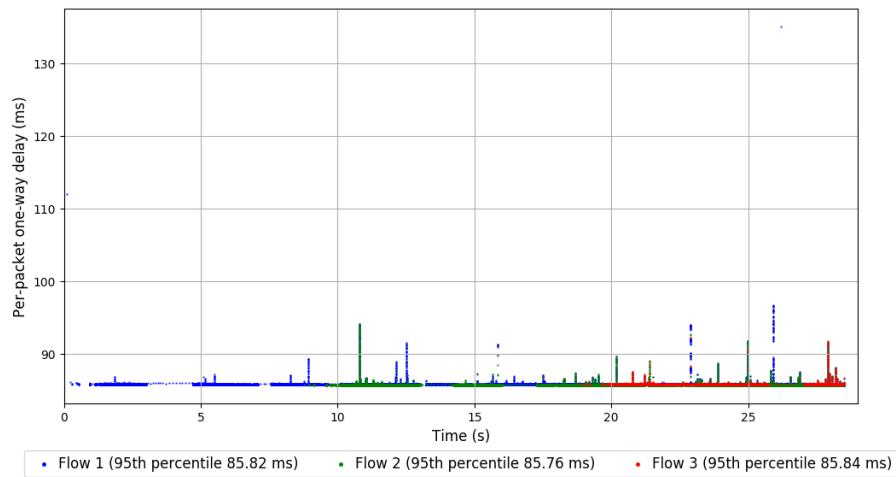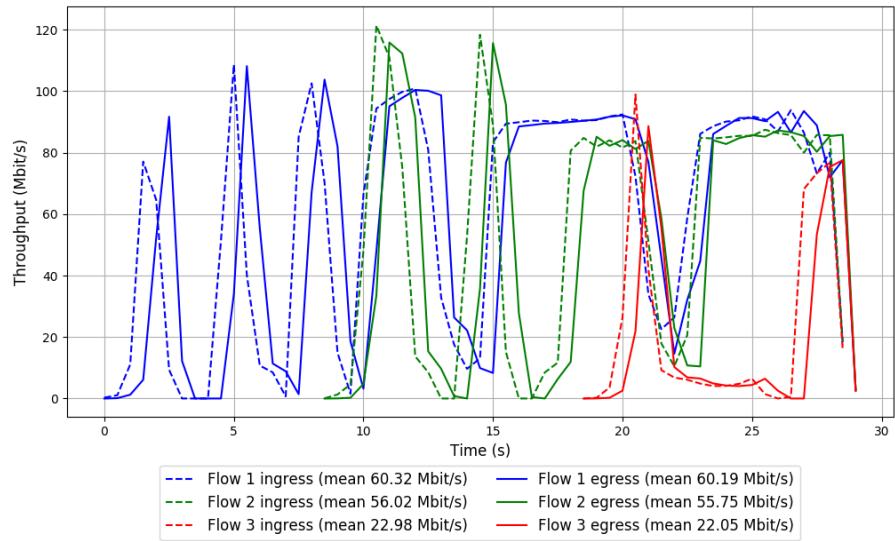
```
Run 2: Statistics of QUIC Cubic

Start at: 2019-11-24 04:21:32
End at: 2019-11-24 04:22:02
Local clock offset: -0.033 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 104.64 Mbit/s
95th percentile per-packet one-way delay: 85.874 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 62.02 Mbit/s
95th percentile per-packet one-way delay: 85.883 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 41.60 Mbit/s
95th percentile per-packet one-way delay: 85.844 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 46.00 Mbit/s
95th percentile per-packet one-way delay: 85.843 ms
Loss rate: 0.48%
```

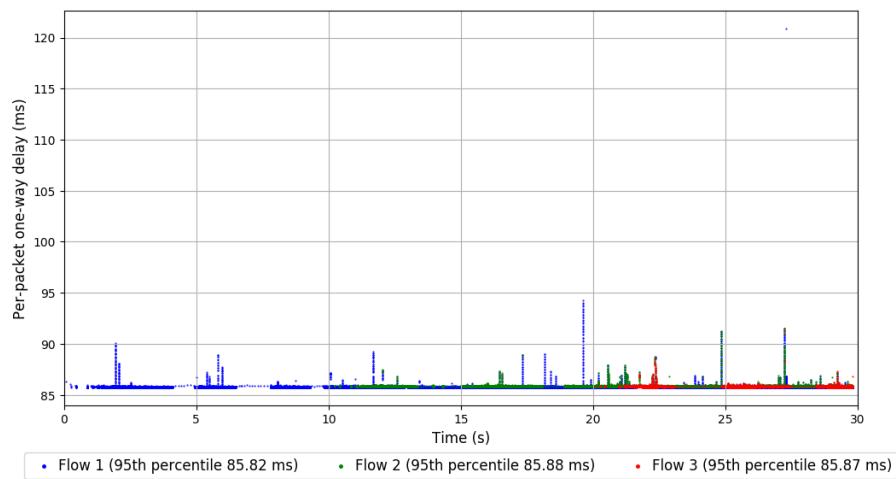Run 2: Report of QUIC Cubic — Data Link
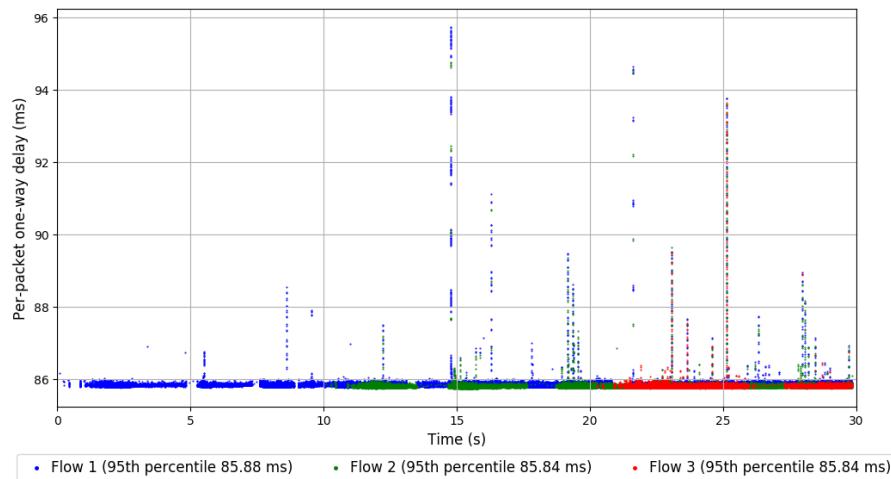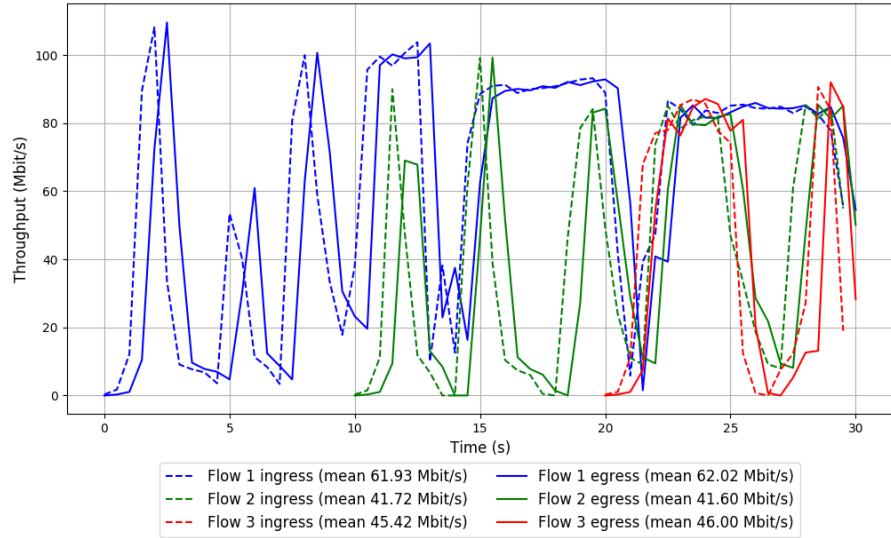
```
Run 3: Statistics of QUIC Cubic

Start at: 2019-11-24 05:03:29
End at: 2019-11-24 05:03:59
Local clock offset: -0.086 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 105.08 Mbit/s
95th percentile per-packet one-way delay: 85.802 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 61.78 Mbit/s
95th percentile per-packet one-way delay: 85.796 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 48.34 Mbit/s
95th percentile per-packet one-way delay: 85.791 ms
Loss rate: 1.54%
-- Flow 3:
Average throughput: 34.24 Mbit/s
95th percentile per-packet one-way delay: 85.835 ms
Loss rate: 0.55%
```

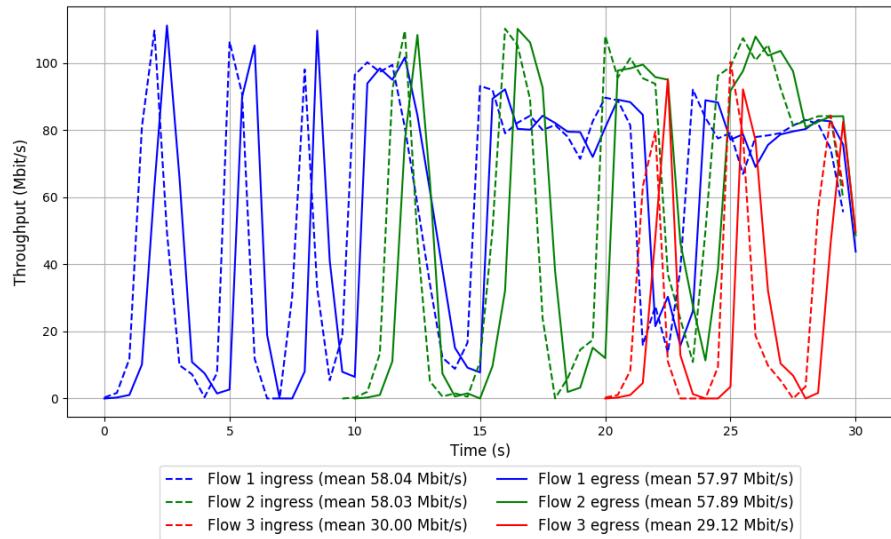Run 3: Report of QUIC Cubic — Data Link
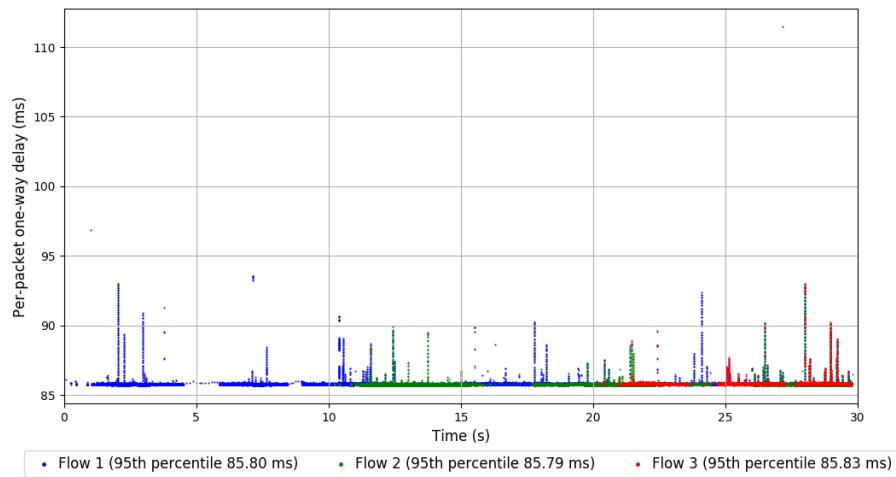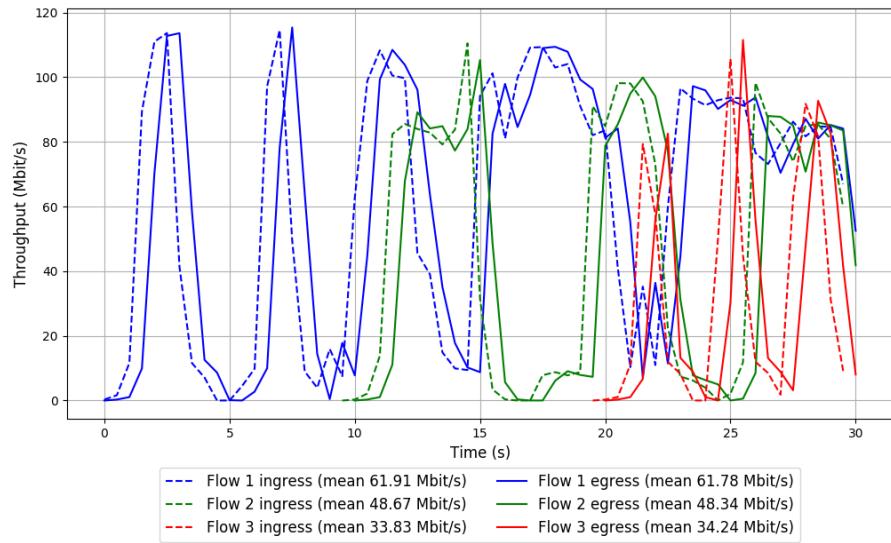
```
Run 4: Statistics of QUIC Cubic

Start at: 2019-11-24 05:45:07
End at: 2019-11-24 05:45:37
Local clock offset: -0.052 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.75 Mbit/s
95th percentile per-packet one-way delay: 85.869 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 45.65 Mbit/s
95th percentile per-packet one-way delay: 85.873 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 61.17 Mbit/s
95th percentile per-packet one-way delay: 85.860 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 21.20 Mbit/s
95th percentile per-packet one-way delay: 85.860 ms
Loss rate: 6.87%
```

Run 4: Report of QUIC Cubic — Data Link

172

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-11-24 06:27:20
End at: 2019-11-24 06:27:50
Local clock offset: -0.028 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 105.93 Mbit/s
95th percentile per-packet one-way delay: 85.862 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 57.97 Mbit/s
95th percentile per-packet one-way delay: 85.819 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 57.89 Mbit/s
95th percentile per-packet one-way delay: 85.877 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 29.12 Mbit/s
95th percentile per-packet one-way delay: 85.868 ms
Loss rate: 4.61%
```

Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 58.04 Mbit/s)   Flow 1 egress (mean 57.97 Mbit/s)
Flow 2 ingress (mean 58.03 Mbit/s)   Flow 2 egress (mean 57.89 Mbit/s)
Flow 3 ingress (mean 30.00 Mbit/s)   Flow 3 egress (mean 29.12 Mbit/s)

Flow 1 (95th percentile 85.82 ms)   Flow 2 (95th percentile 85.88 ms)   Flow 3 (95th percentile 85.87 ms)

```
Run 1: Statistics of SCReAM

Start at: 2019-11-24 03:23:21
End at: 2019-11-24 03:23:51
Local clock offset: -0.028 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 85.941 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.951 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.900 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.944 ms
Loss rate: 1.85%
```

Run 1: Report of SCReAM — Data Link
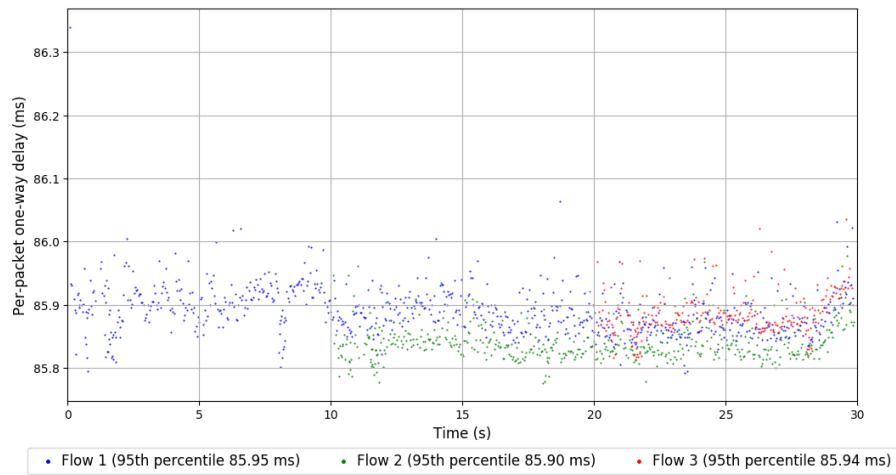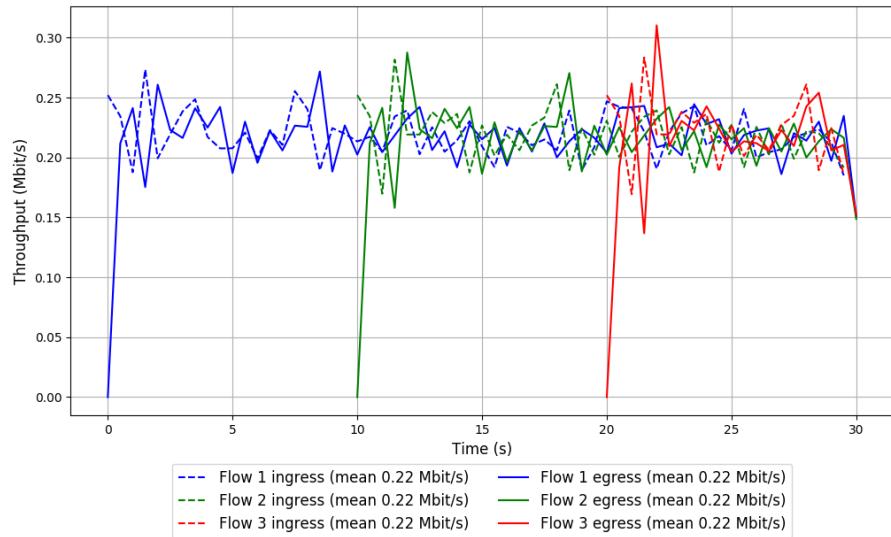
```
Run 2: Statistics of SCReAM

Start at: 2019-11-24 04:05:22
End at: 2019-11-24 04:05:52
Local clock offset: -0.059 ms
Remote clock offset: -0.068 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 85.905 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.921 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.891 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.849 ms
Loss rate: 1.85%
```

Run 2: Report of SCReAM — Data Link
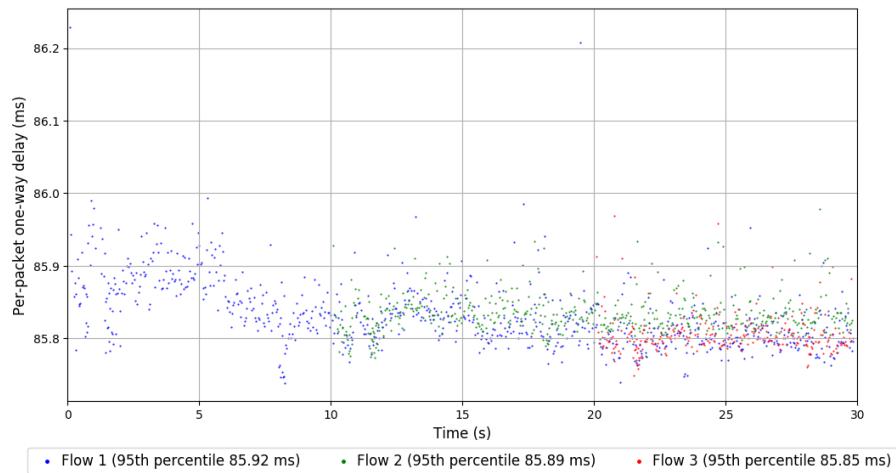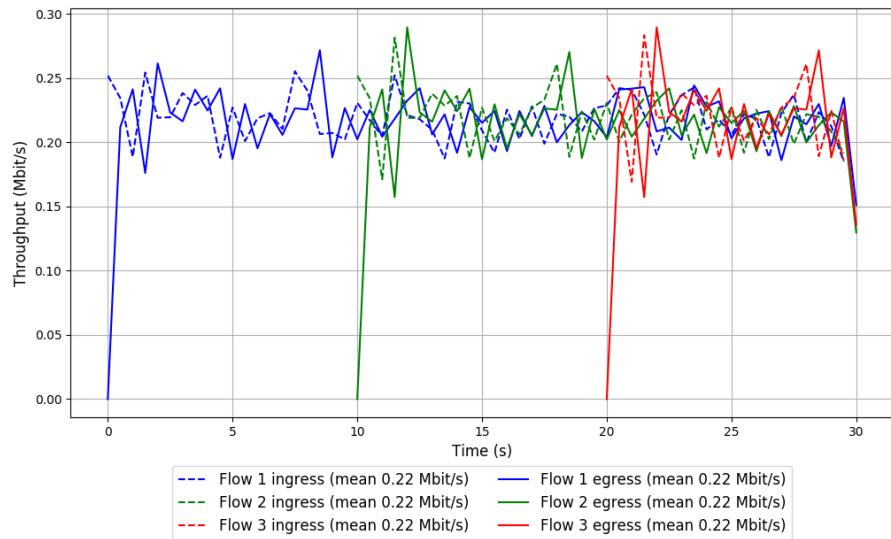
```
Run 3: Statistics of SCReAM

Start at: 2019-11-24 04:47:26
End at: 2019-11-24 04:47:56
Local clock offset: 0.005 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.045 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.064 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.995 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.967 ms
Loss rate: 1.85%
```

Run 3: Report of SCReAM — Data Link
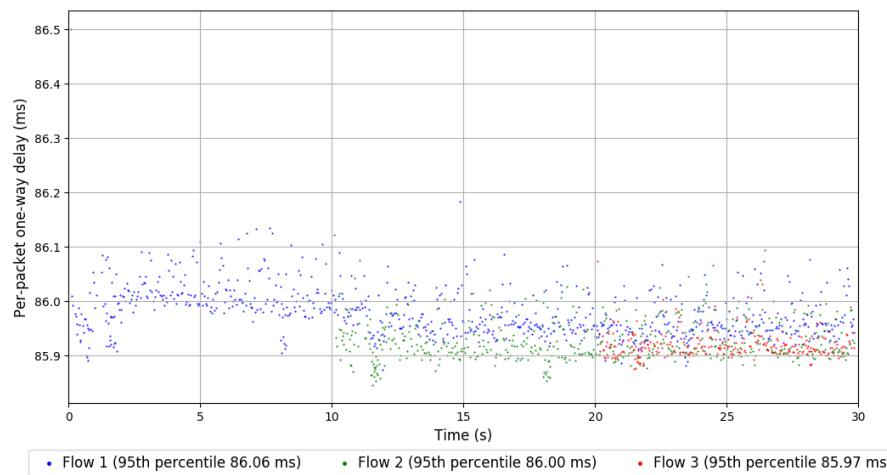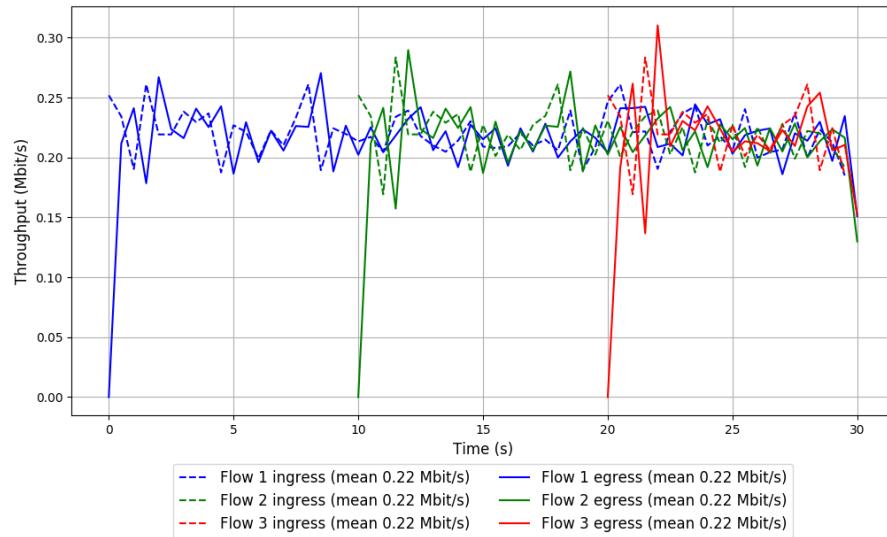
```
Run 4: Statistics of SCReAM

Start at: 2019-11-24 05:29:27
End at: 2019-11-24 05:29:57
Local clock offset: -0.042 ms
Remote clock offset: -0.214 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 85.964 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.974 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.911 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.931 ms
Loss rate: 1.46%
```

Run 4: Report of SCReAM — Data Link
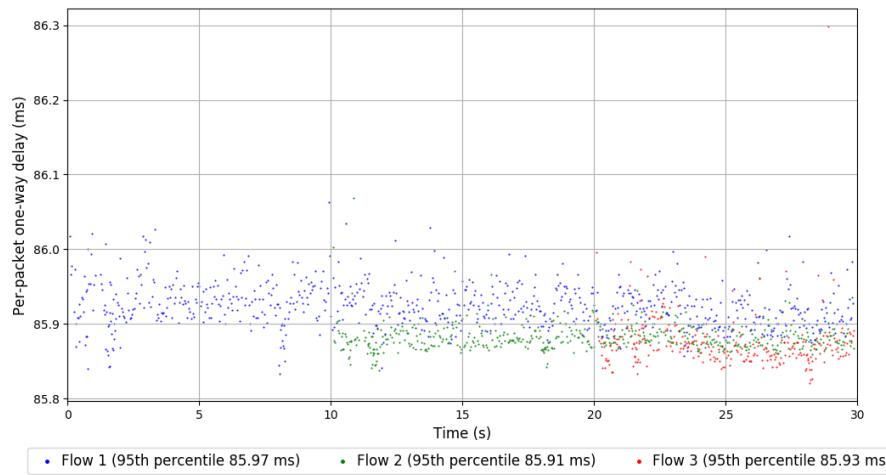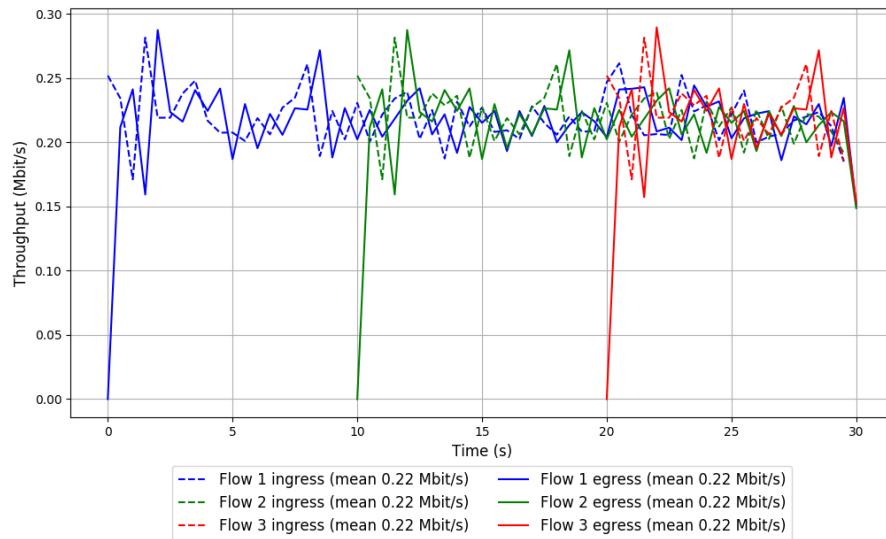
```
Run 5: Statistics of SCReAM

Start at: 2019-11-24 06:11:34
End at: 2019-11-24 06:12:04
Local clock offset: 0.011 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 85.992 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.008 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.952 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.999 ms
Loss rate: 1.85%
```

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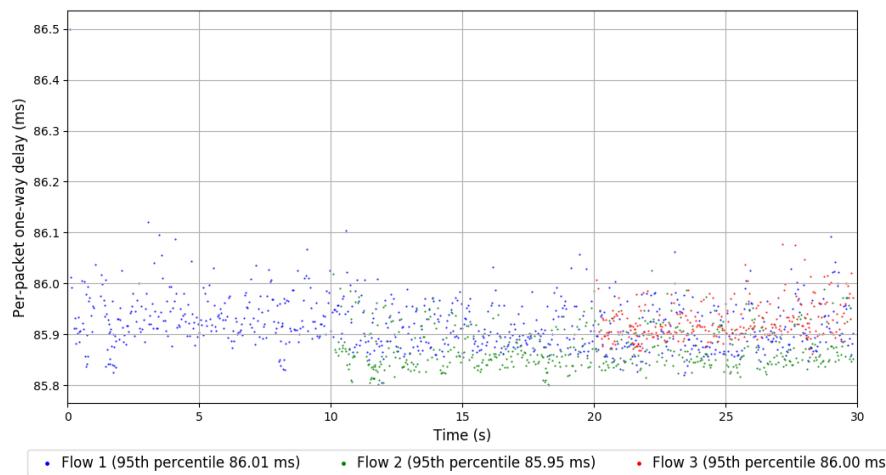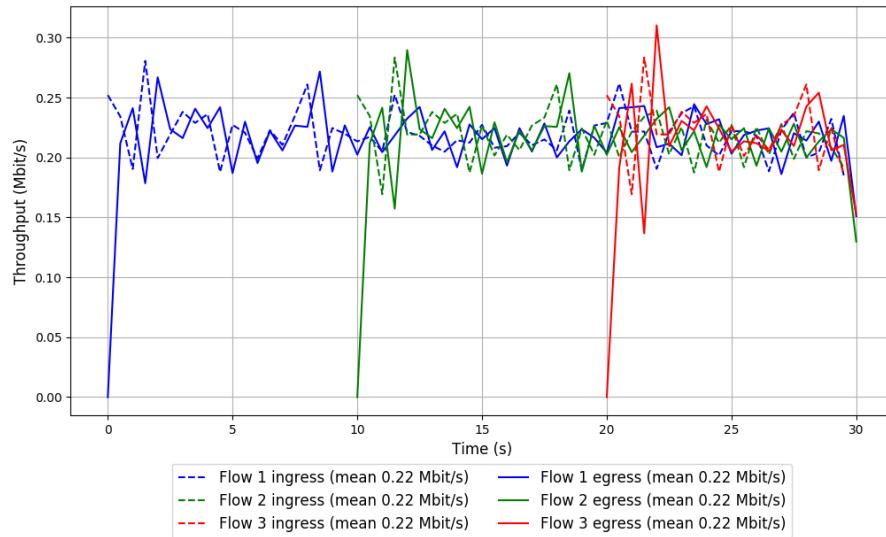
```
Run 1: Statistics of Sprout

Start at: 2019-11-24 03:38:10
End at: 2019-11-24 03:38:40
Local clock offset: -0.02 ms
Remote clock offset: 0.046 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.94 Mbit/s
95th percentile per-packet one-way delay: 86.465 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 4.77 Mbit/s
95th percentile per-packet one-way delay: 86.481 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 4.36 Mbit/s
95th percentile per-packet one-way delay: 86.403 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 86.567 ms
Loss rate: 0.01%
```

Run 1: Report of Sprout — Data Link
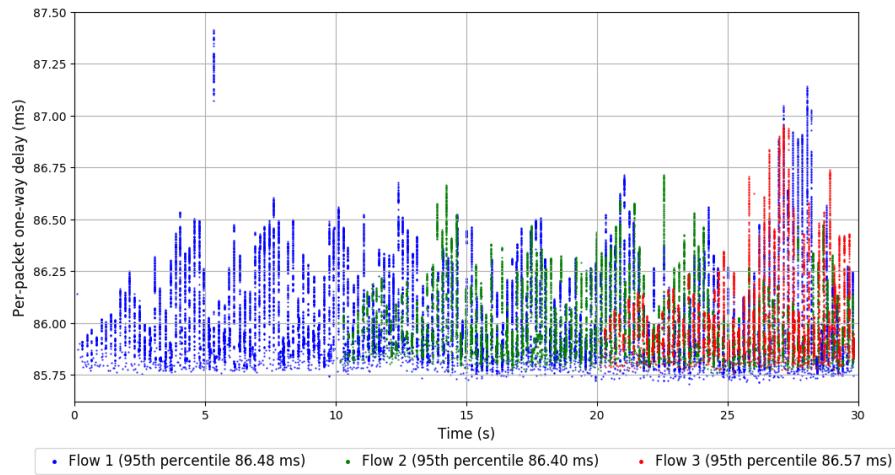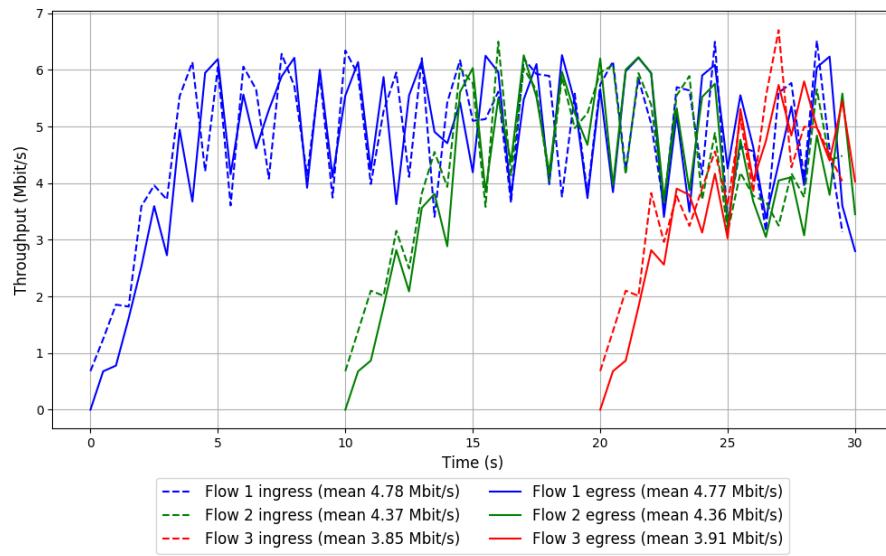
```
Run 2: Statistics of Sprout

Start at: 2019-11-24 04:20:16
End at: 2019-11-24 04:20:46
Local clock offset: -0.012 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.75 Mbit/s
95th percentile per-packet one-way delay: 86.536 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 4.46 Mbit/s
95th percentile per-packet one-way delay: 86.641 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 86.400 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 86.486 ms
Loss rate: 2.39%
```

Run 2: Report of Sprout — Data Link
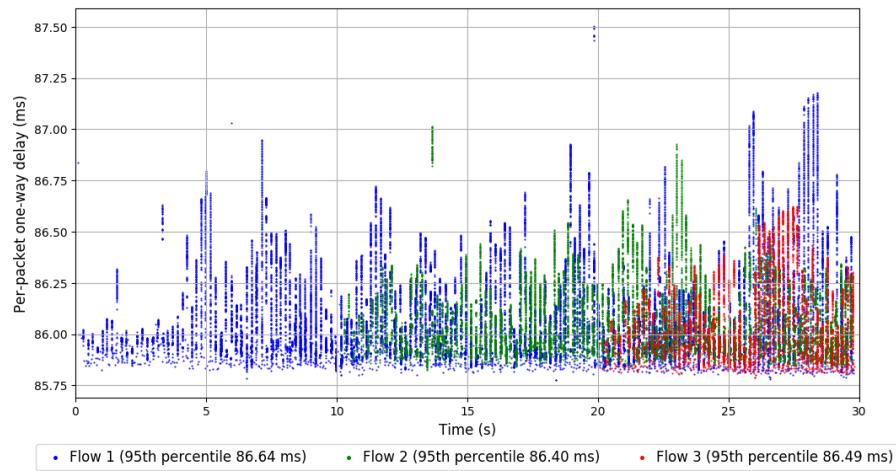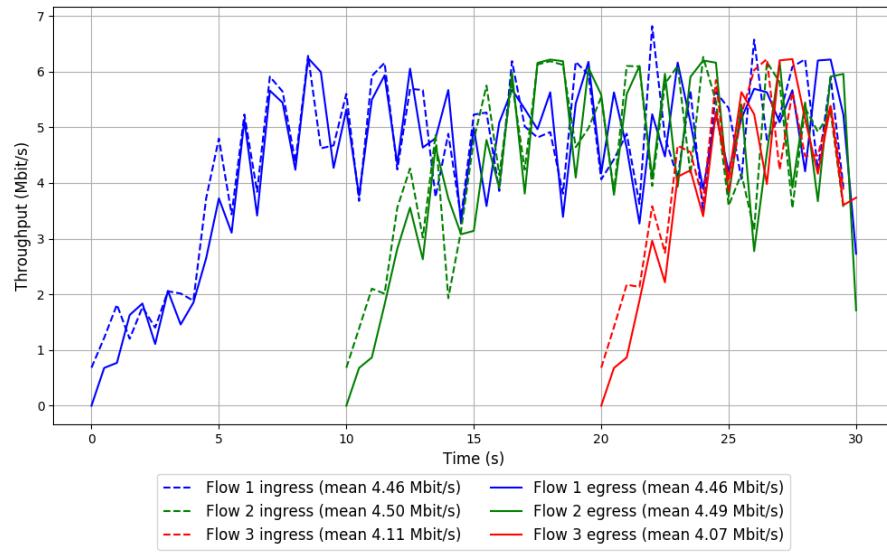
```
Run 3: Statistics of Sprout

Start at: 2019-11-24 05:02:13
End at: 2019-11-24 05:02:43
Local clock offset: -0.03 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 86.658 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 4.58 Mbit/s
95th percentile per-packet one-way delay: 86.736 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 86.542 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 86.881 ms
Loss rate: 3.10%
```

Run 3: Report of Sprout — Data Link
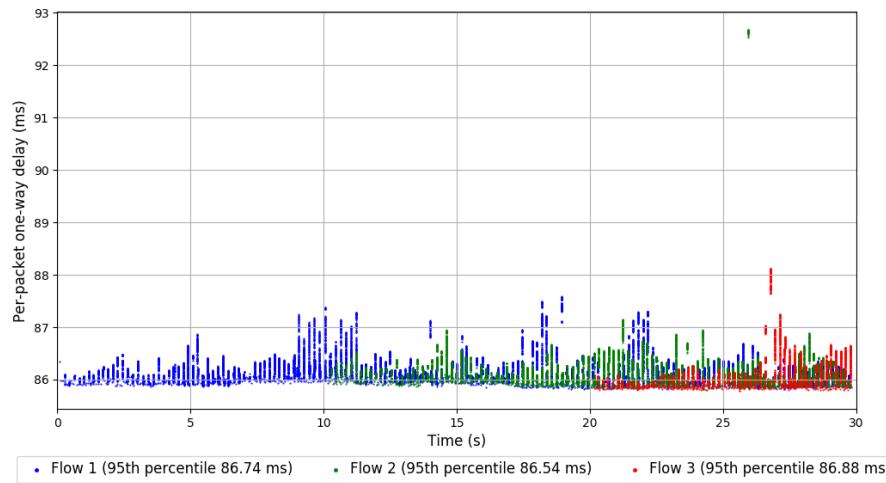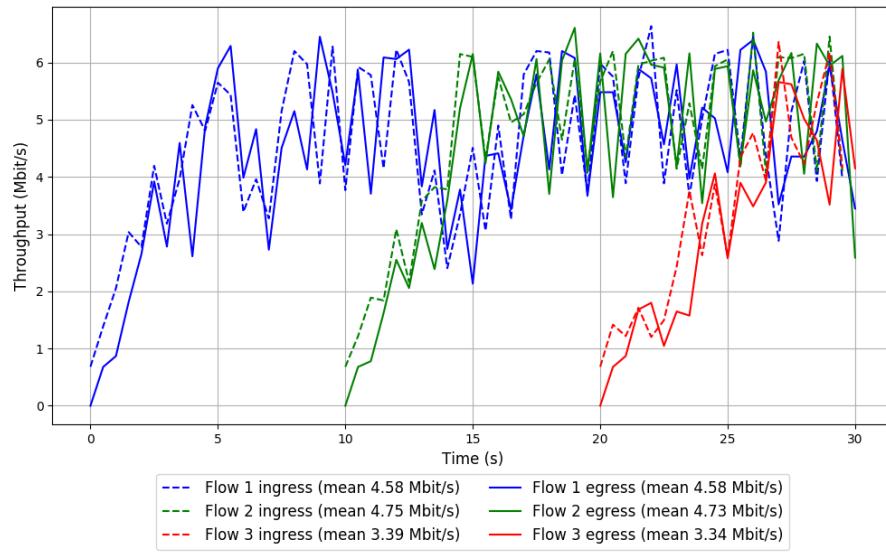
```
Run 4: Statistics of Sprout

Start at: 2019-11-24 05:43:51
End at: 2019-11-24 05:44:21
Local clock offset: -0.012 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.62 Mbit/s
95th percentile per-packet one-way delay: 86.482 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: 86.487 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 4.42 Mbit/s
95th percentile per-packet one-way delay: 86.513 ms
Loss rate: 1.06%
-- Flow 3:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 86.424 ms
Loss rate: 0.90%
```

Run 4: Report of Sprout — Data Link
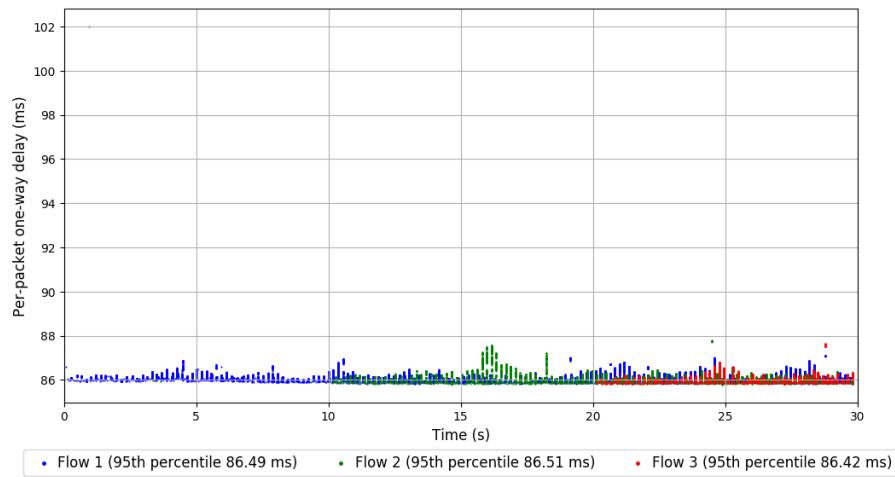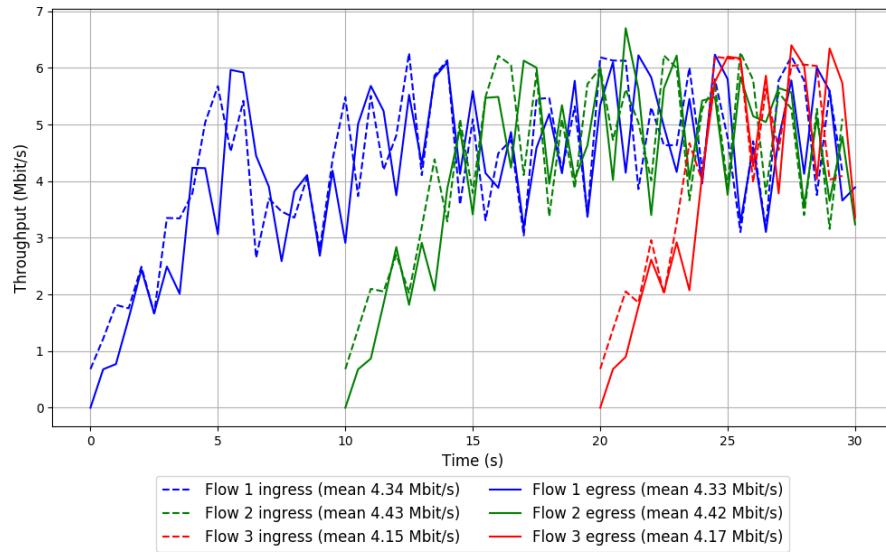
```
Run 5: Statistics of Sprout

Start at: 2019-11-24 06:26:04
End at: 2019-11-24 06:26:34
Local clock offset: 0.345 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2019-11-24 09:29:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 86.930 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 4.65 Mbit/s
95th percentile per-packet one-way delay: 86.965 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 86.918 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 4.36 Mbit/s
95th percentile per-packet one-way delay: 86.784 ms
Loss rate: 2.36%
```

Run 5: Report of Sprout — Data Link

194
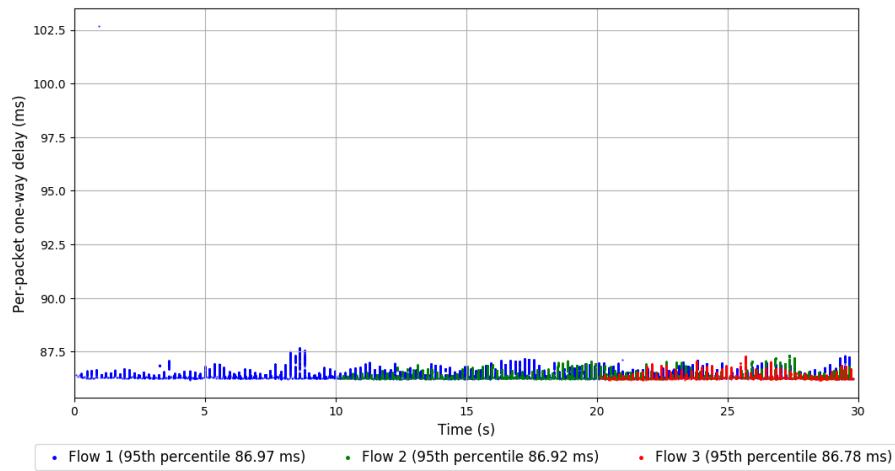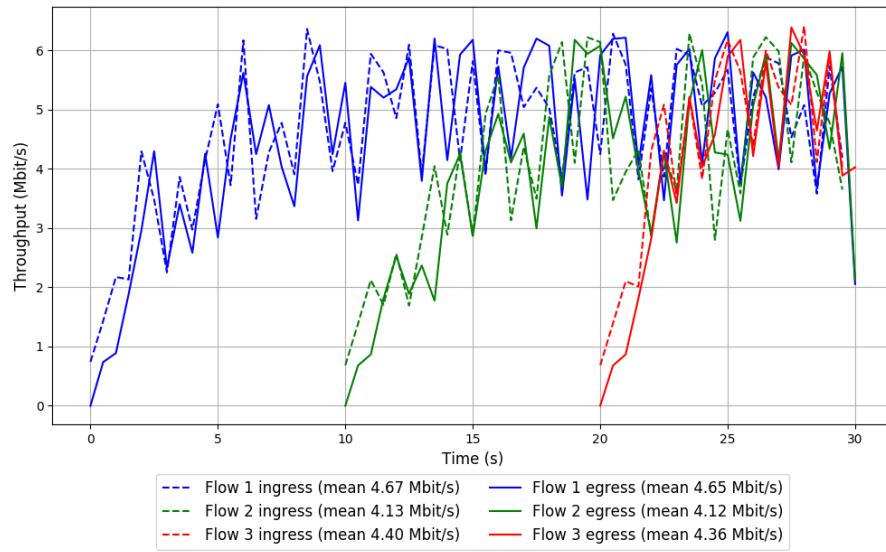
```
Run 1: Statistics of TaoVA-100x

Start at: 2019-11-24 03:40:47
End at: 2019-11-24 03:41:17
Local clock offset: -0.025 ms
Remote clock offset: 0.038 ms

# Below is generated by plot.py at 2019-11-24 09:33:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 441.20 Mbit/s
95th percentile per-packet one-way delay: 87.616 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 232.51 Mbit/s
95th percentile per-packet one-way delay: 87.576 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 220.79 Mbit/s
95th percentile per-packet one-way delay: 86.515 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 188.78 Mbit/s
95th percentile per-packet one-way delay: 89.801 ms
Loss rate: 1.53%
```

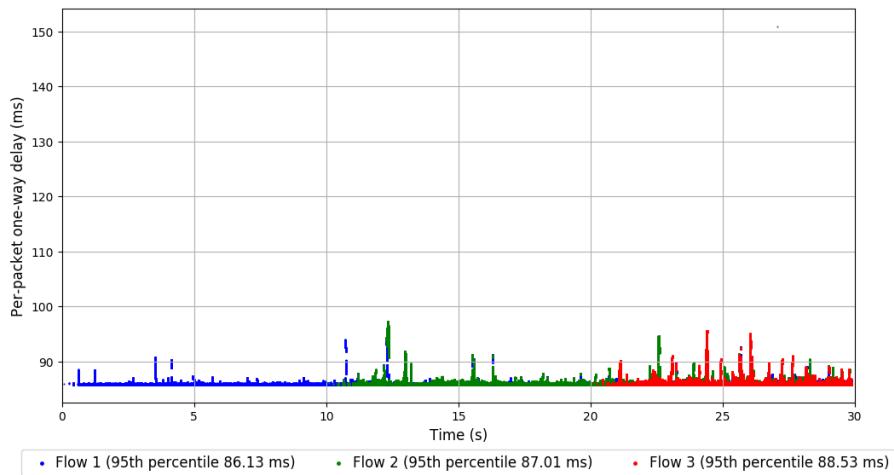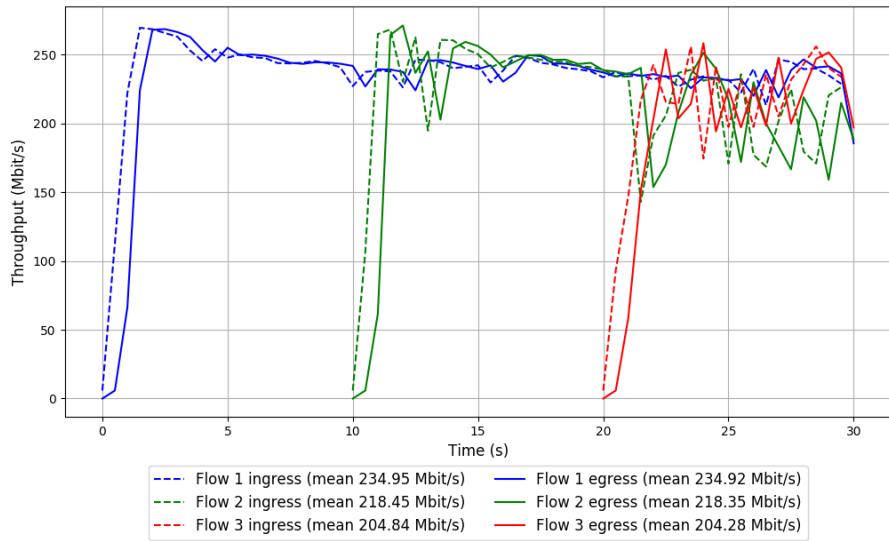Run 1: Report of TaoVA-100x — Data Link
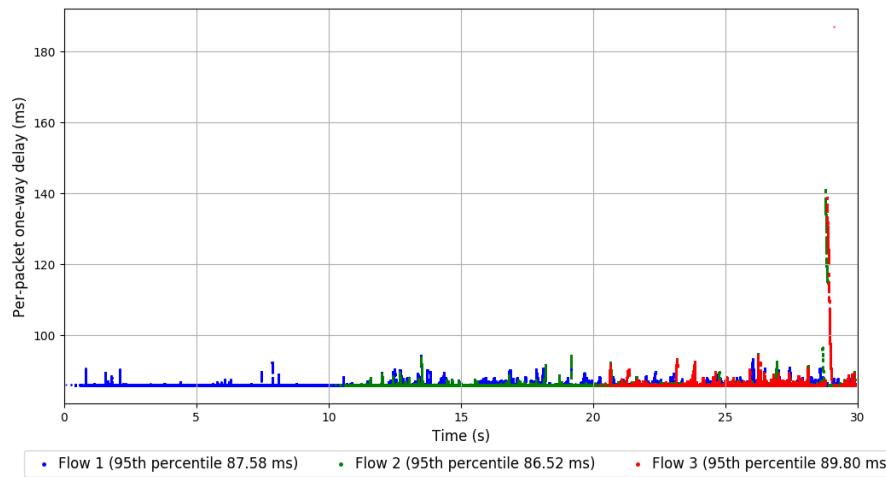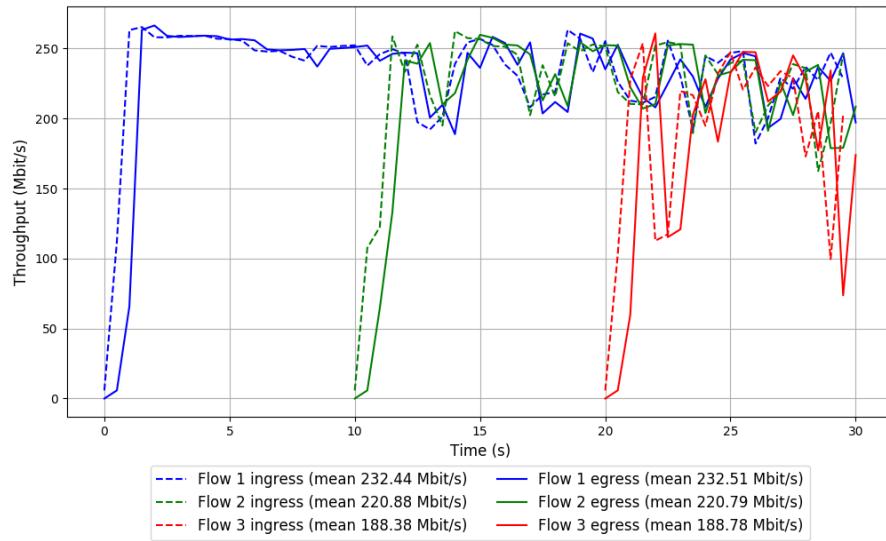
```
Run 2: Statistics of TaoVA-100x

Start at: 2019-11-24 04:22:53
End at: 2019-11-24 04:23:23
Local clock offset: -0.004 ms
Remote clock offset: -0.12 ms


# Below is generated by plot.py at 2019-11-24 09:34:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 447.00 Mbit/s
95th percentile per-packet one-way delay: 86.708 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 234.92 Mbit/s
95th percentile per-packet one-way delay: 86.131 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 218.35 Mbit/s
95th percentile per-packet one-way delay: 87.012 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 204.28 Mbit/s
95th percentile per-packet one-way delay: 88.533 ms
Loss rate: 2.00%
```
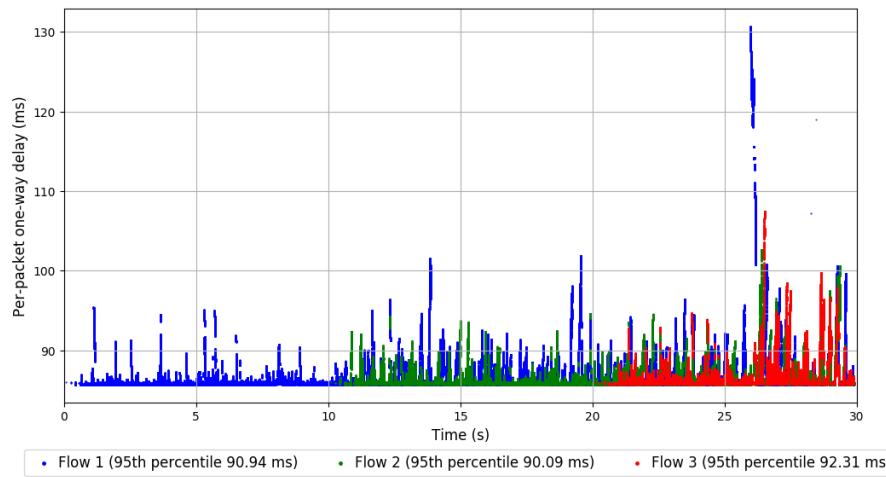
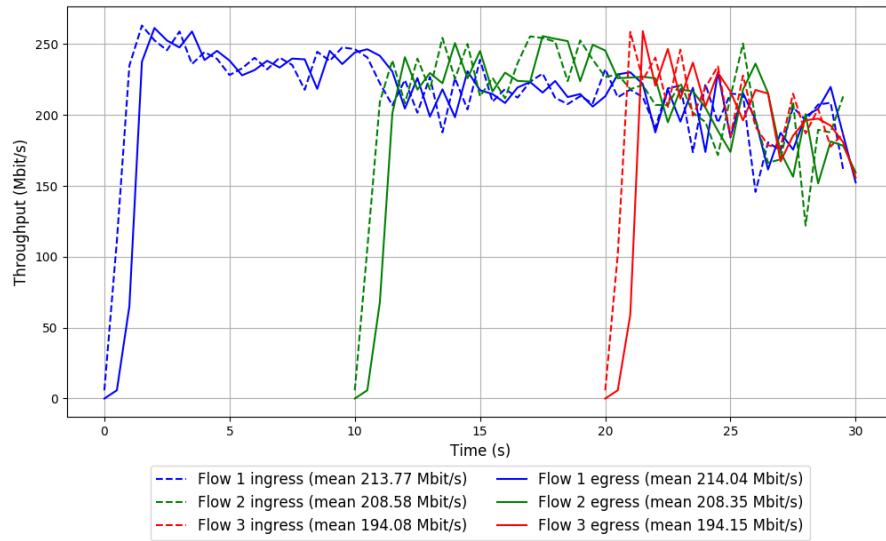Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-11-24 05:04:50
End at: 2019-11-24 05:05:20
Local clock offset: -0.068 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2019-11-24 09:34:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 416.07 Mbit/s
95th percentile per-packet one-way delay: 90.955 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 214.04 Mbit/s
95th percentile per-packet one-way delay: 90.935 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 208.35 Mbit/s
95th percentile per-packet one-way delay: 90.086 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 194.15 Mbit/s
95th percentile per-packet one-way delay: 92.307 ms
Loss rate: 1.83%
```

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

Flow 1 ingress (mean 213.77 Mbit/s)   Flow 1 egress (mean 214.04 Mbit/s)
Flow 2 ingress (mean 208.58 Mbit/s)   Flow 2 egress (mean 208.35 Mbit/s)
Flow 3 ingress (mean 194.08 Mbit/s)   Flow 3 egress (mean 194.15 Mbit/s)

Flow 1 (95th percentile 90.94 ms)   Flow 2 (95th percentile 90.09 ms)   Flow 3 (95th percentile 92.31 ms)

200

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

Start at: 2019-11-24 05:46:27
End at: 2019-11-24 05:46:57
Local clock offset: -0.045 ms
Remote clock offset: -0.084 ms


# Below is generated by plot.py at 2019-11-24 09:34:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 423.15 Mbit/s
95th percentile per-packet one-way delay: 87.107 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 223.65 Mbit/s
95th percentile per-packet one-way delay: 86.497 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 199.21 Mbit/s
95th percentile per-packet one-way delay: 87.919 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 204.71 Mbit/s
95th percentile per-packet one-way delay: 87.819 ms
Loss rate: 1.64%
```

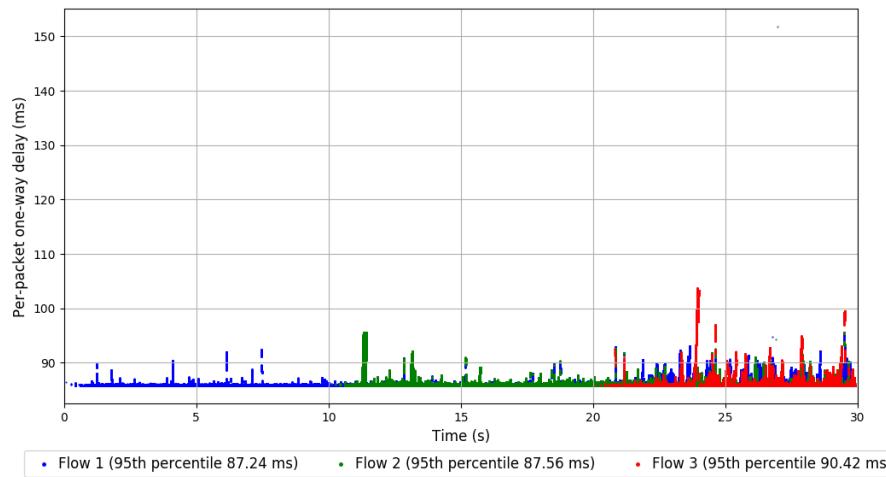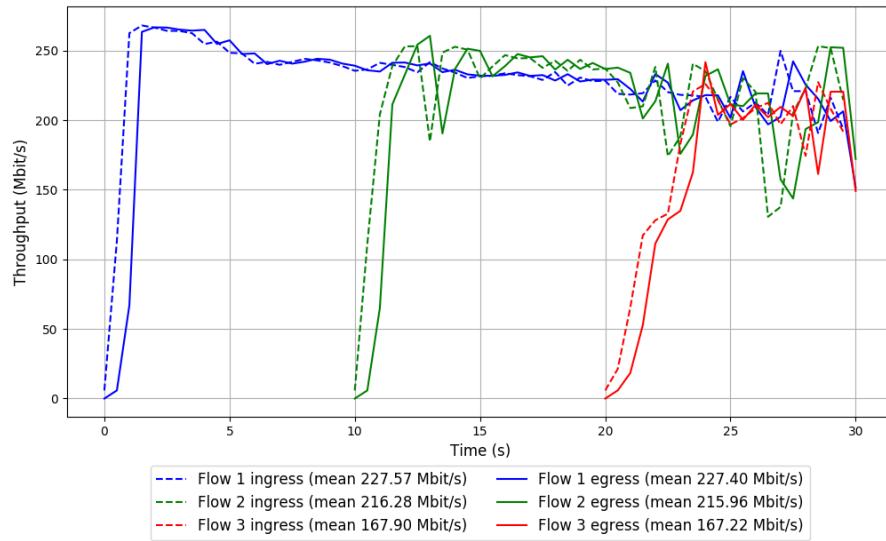# Run 4: Report of TaoVA-100x — Data Link

202
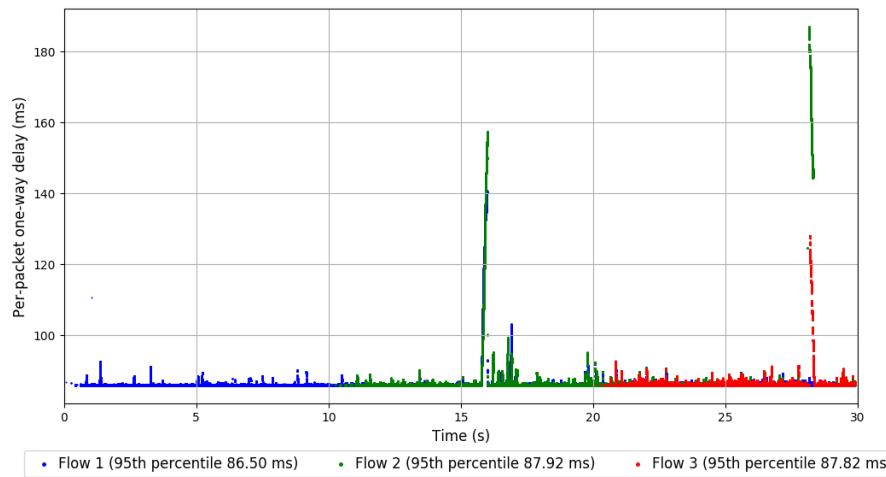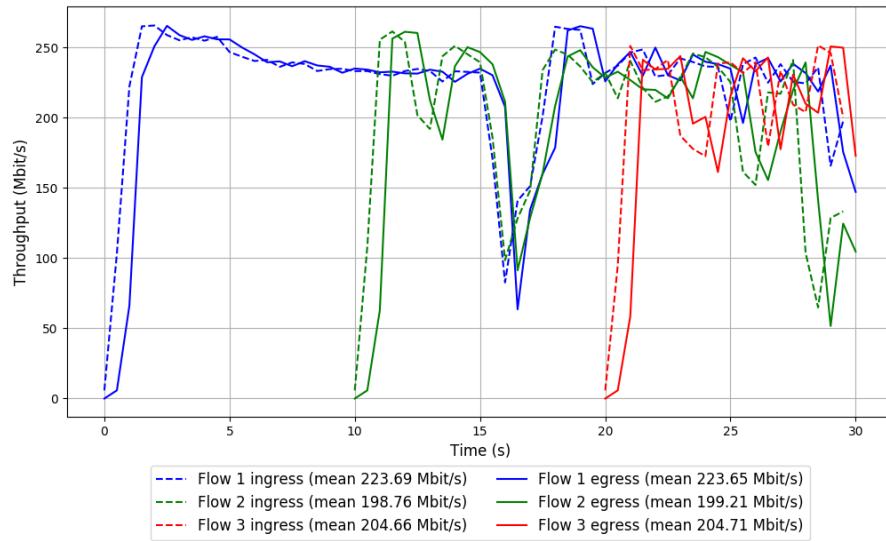
```
Run 5: Statistics of TaoVA-100x

Start at: 2019-11-24 06:28:41
End at: 2019-11-24 06:29:11
Local clock offset: 0.013 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2019-11-24 09:34:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.80 Mbit/s
95th percentile per-packet one-way delay: 87.882 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 227.40 Mbit/s
95th percentile per-packet one-way delay: 87.239 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 215.96 Mbit/s
95th percentile per-packet one-way delay: 87.560 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 167.22 Mbit/s
95th percentile per-packet one-way delay: 90.415 ms
Loss rate: 2.13%
```

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

Flow 1 ingress (mean 227.57 Mbit/s) --- Flow 1 egress (mean 227.40 Mbit/s)
Flow 2 ingress (mean 216.28 Mbit/s) --- Flow 2 egress (mean 215.96 Mbit/s)
Flow 3 ingress (mean 167.90 Mbit/s) --- Flow 3 egress (mean 167.22 Mbit/s)

Flow 1 (95th percentile 87.24 ms)   Flow 2 (95th percentile 87.56 ms)   Flow 3 (95th percentile 90.42 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2019-11-24 03:32:49
End at: 2019-11-24 03:33:20
Local clock offset: -0.0 ms
Remote clock offset: 0.01 ms


# Below is generated by plot.py at 2019-11-24 09:35:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 686.05 Mbit/s
95th percentile per-packet one-way delay: 127.120 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 362.20 Mbit/s
95th percentile per-packet one-way delay: 87.857 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 296.82 Mbit/s
95th percentile per-packet one-way delay: 86.467 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 385.67 Mbit/s
95th percentile per-packet one-way delay: 175.260 ms
Loss rate: 2.60%
```

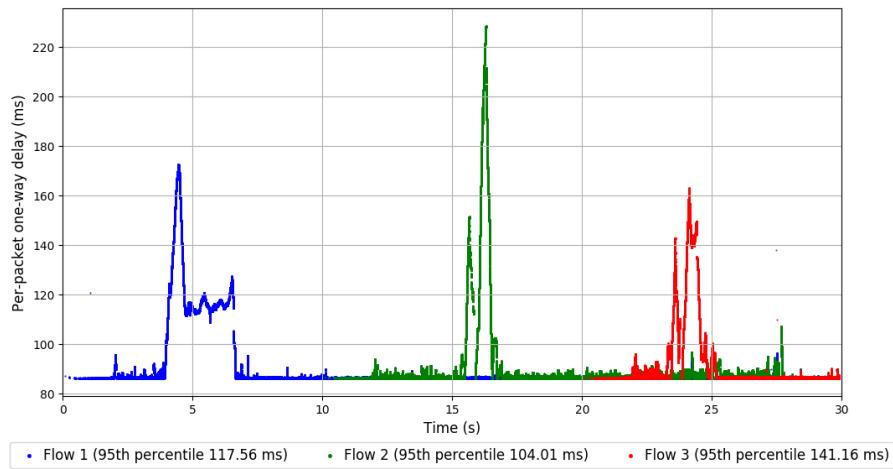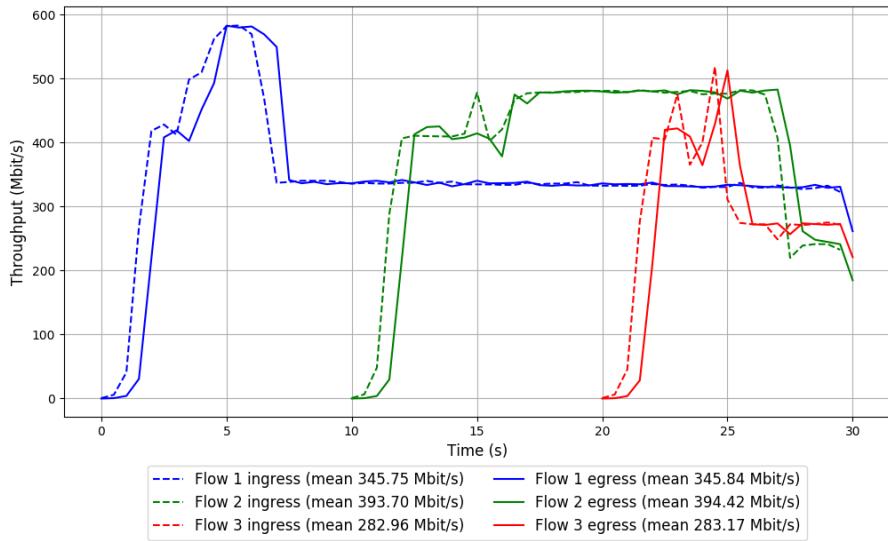Run 1: Report of TCP Vegas — Data Link
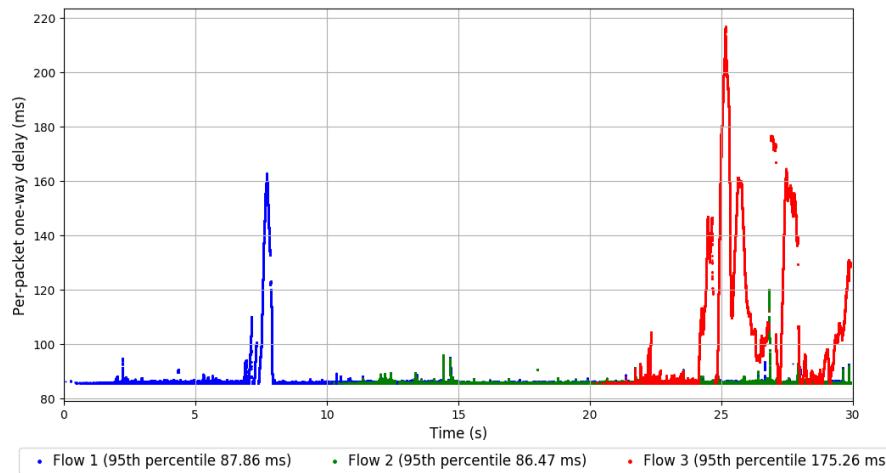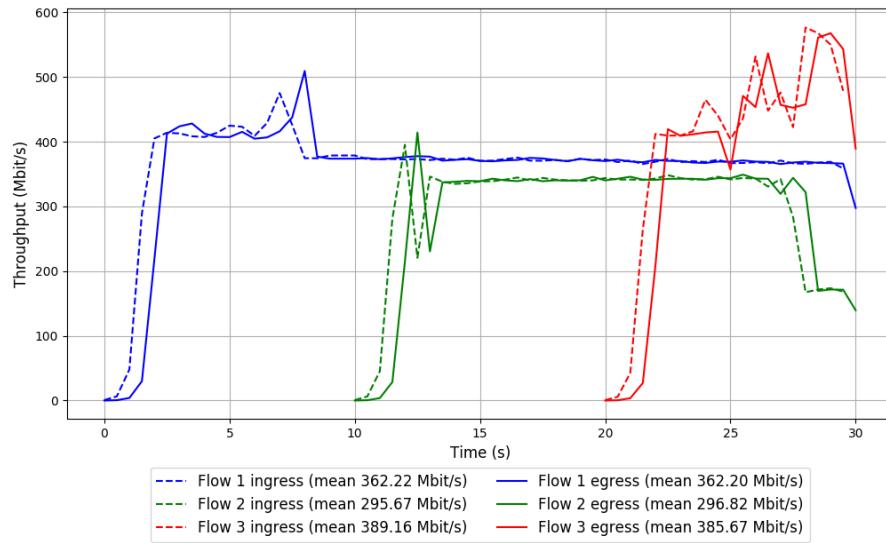
```
Run 2: Statistics of TCP Vegas

Start at: 2019-11-24 04:14:59
End at: 2019-11-24 04:15:29
Local clock offset: 0.318 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2019-11-24 09:41:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 701.02 Mbit/s
95th percentile per-packet one-way delay: 118.373 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 345.84 Mbit/s
95th percentile per-packet one-way delay: 117.557 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 394.42 Mbit/s
95th percentile per-packet one-way delay: 104.013 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 283.17 Mbit/s
95th percentile per-packet one-way delay: 141.162 ms
Loss rate: 1.65%
```

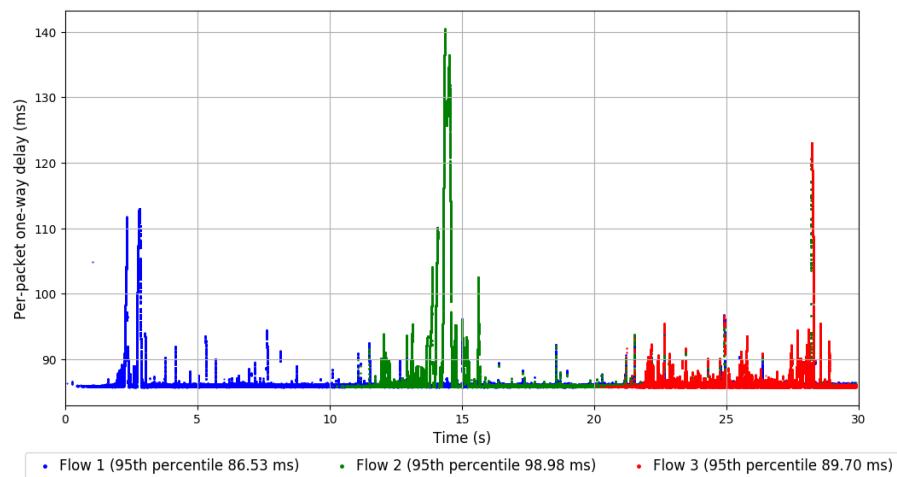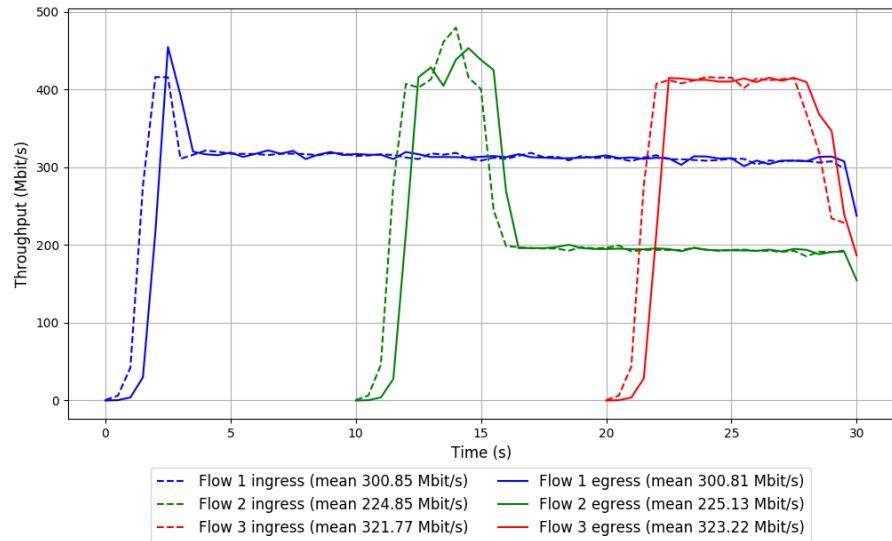# Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 345.75 Mbit/s)   Flow 1 egress (mean 345.84 Mbit/s)
Flow 2 ingress (mean 393.70 Mbit/s)   Flow 2 egress (mean 394.42 Mbit/s)
Flow 3 ingress (mean 282.96 Mbit/s)   Flow 3 egress (mean 283.17 Mbit/s)

Flow 1 (95th percentile 117.56 ms)   Flow 2 (95th percentile 104.01 ms)   Flow 3 (95th percentile 141.16 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2019-11-24 04:57:08
End at: 2019-11-24 04:57:38
Local clock offset: -0.011 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2019-11-24 09:41:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 556.58 Mbit/s
95th percentile per-packet one-way delay: 90.058 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 300.81 Mbit/s
95th percentile per-packet one-way delay: 86.525 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 225.13 Mbit/s
95th percentile per-packet one-way delay: 98.978 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 323.22 Mbit/s
95th percentile per-packet one-way delay: 89.696 ms
Loss rate: 1.29%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 300.85 Mbit/s)   Flow 1 egress (mean 300.81 Mbit/s)
Flow 2 ingress (mean 224.85 Mbit/s)   Flow 2 egress (mean 225.13 Mbit/s)
Flow 3 ingress (mean 321.77 Mbit/s)   Flow 3 egress (mean 323.22 Mbit/s)

Flow 1 (95th percentile 86.53 ms)   Flow 2 (95th percentile 98.98 ms)   Flow 3 (95th percentile 89.70 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2019-11-24 05:38:38
End at: 2019-11-24 05:39:08
Local clock offset: -0.057 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2019-11-24 09:44:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 646.29 Mbit/s
95th percentile per-packet one-way delay: 114.713 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 330.62 Mbit/s
95th percentile per-packet one-way delay: 115.086 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 315.48 Mbit/s
95th percentile per-packet one-way delay: 95.606 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 322.75 Mbit/s
95th percentile per-packet one-way delay: 133.893 ms
Loss rate: 1.45%
```

Run 4: Report of TCP Vegas — Data Link
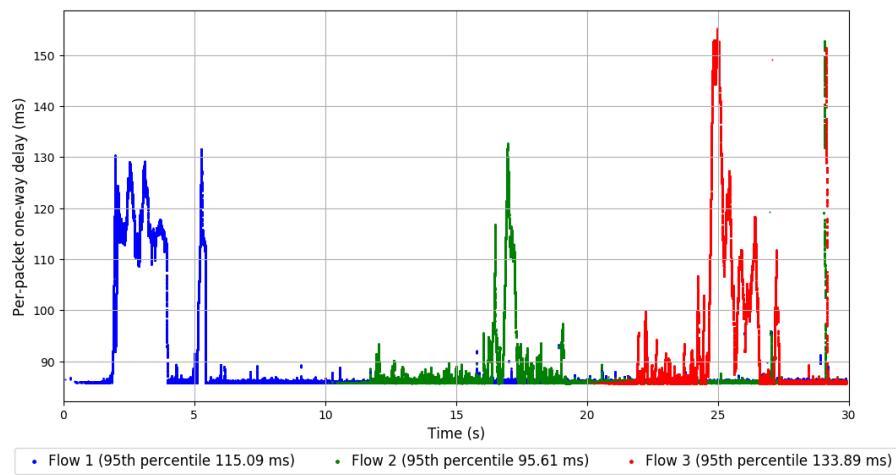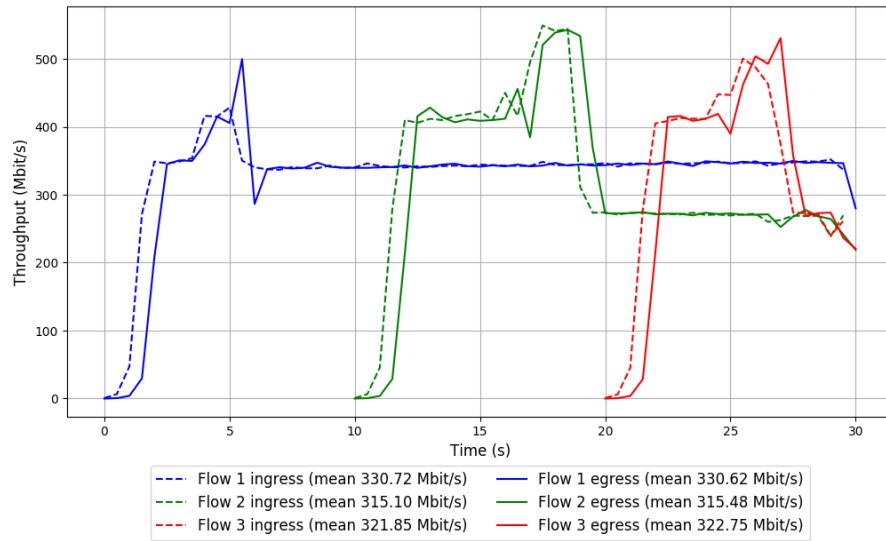
```
Run 5: Statistics of TCP Vegas

Start at: 2019-11-24 06:20:54
End at: 2019-11-24 06:21:24
Local clock offset: -0.059 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2019-11-24 09:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 646.06 Mbit/s
95th percentile per-packet one-way delay: 89.436 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 322.69 Mbit/s
95th percentile per-packet one-way delay: 90.819 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 344.05 Mbit/s
95th percentile per-packet one-way delay: 86.894 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 288.97 Mbit/s
95th percentile per-packet one-way delay: 93.402 ms
Loss rate: 2.01%
```

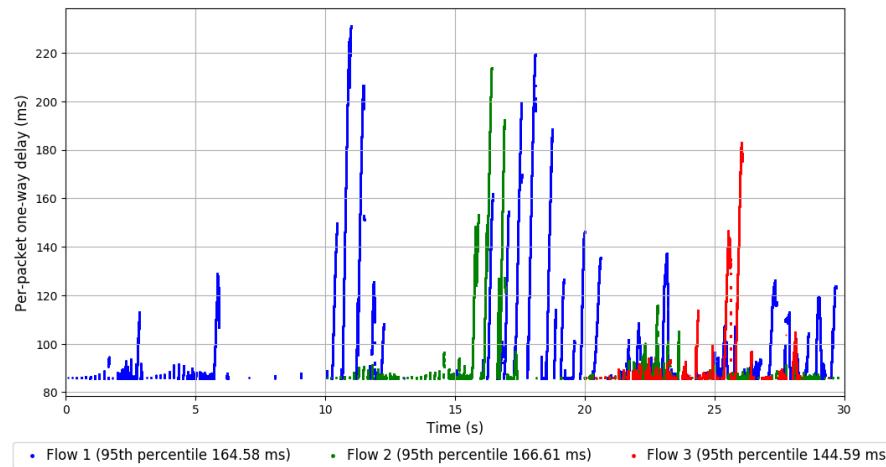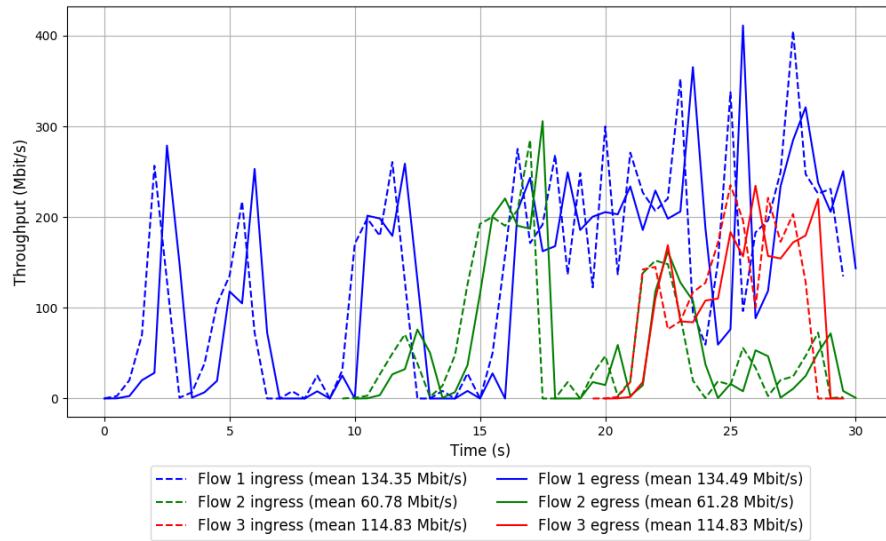Run 5: Report of TCP Vegas — Data Link
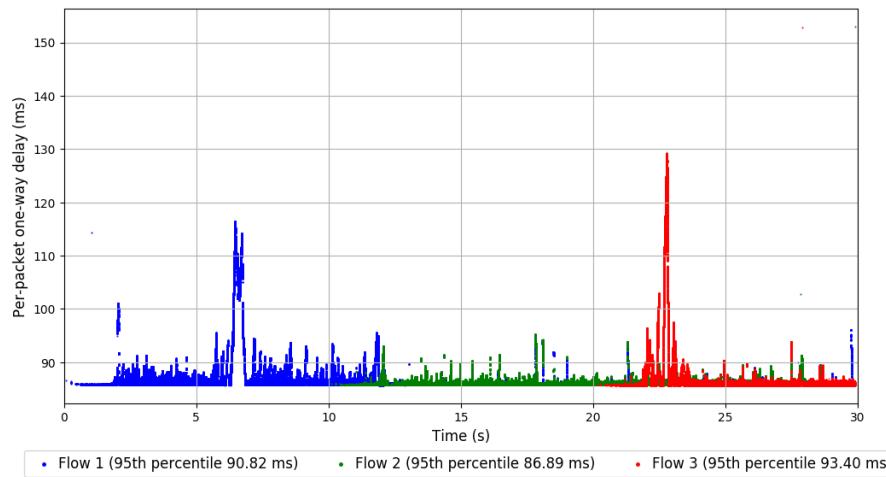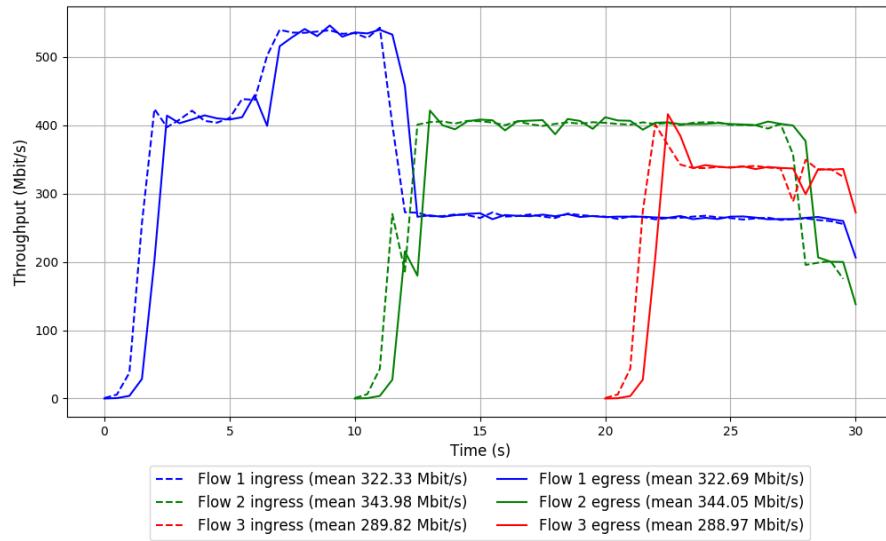
```
Run 1: Statistics of Verus

Start at: 2019-11-24 03:36:36
End at: 2019-11-24 03:37:06
Local clock offset: 0.021 ms
Remote clock offset: 0.027 ms


# Below is generated by plot.py at 2019-11-24 09:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 211.01 Mbit/s
95th percentile per-packet one-way delay: 162.180 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 134.49 Mbit/s
95th percentile per-packet one-way delay: 164.583 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 61.28 Mbit/s
95th percentile per-packet one-way delay: 166.609 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 114.83 Mbit/s
95th percentile per-packet one-way delay: 144.587 ms
Loss rate: 0.00%
```

Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 134.35 Mbit/s)   Flow 1 egress (mean 134.49 Mbit/s)
Flow 2 ingress (mean 60.78 Mbit/s)   Flow 2 egress (mean 61.28 Mbit/s)
Flow 3 ingress (mean 114.83 Mbit/s)   Flow 3 egress (mean 114.83 Mbit/s)

Flow 1 (95th percentile 164.58 ms)   Flow 2 (95th percentile 166.61 ms)   Flow 3 (95th percentile 144.59 ms)

216

```
Run 2: Statistics of Verus

Start at: 2019-11-24 04:18:47
End at: 2019-11-24 04:19:17
Local clock offset: -0.021 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-11-24 09:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 144.26 Mbit/s
95th percentile per-packet one-way delay: 136.791 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 86.43 Mbit/s
95th percentile per-packet one-way delay: 138.515 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 57.69 Mbit/s
95th percentile per-packet one-way delay: 103.909 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 64.43 Mbit/s
95th percentile per-packet one-way delay: 151.159 ms
Loss rate: 0.00%
```

Run 2: Report of Verus — Data Link
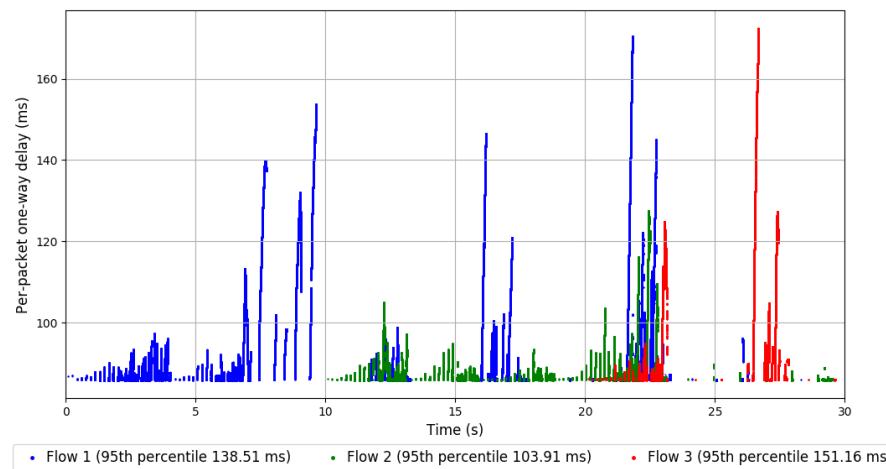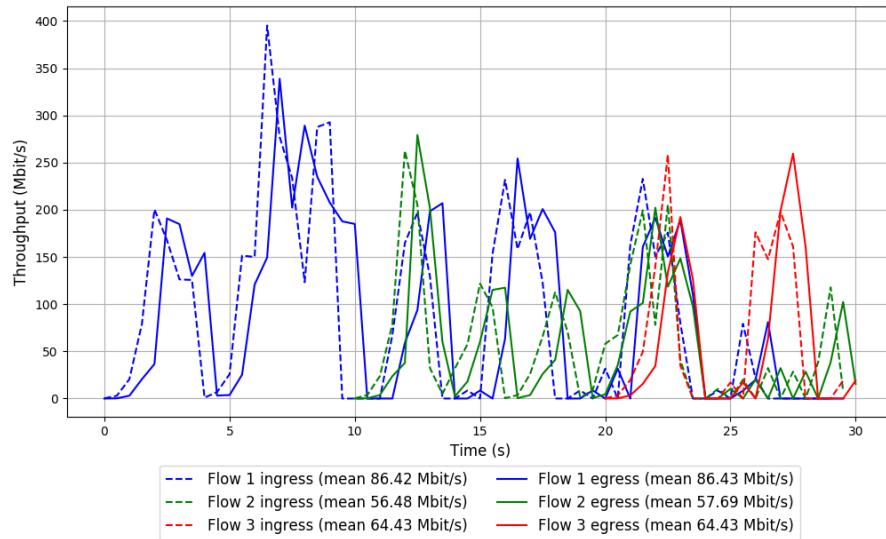
```
Run 3: Statistics of Verus

Start at: 2019-11-24 05:00:46
End at: 2019-11-24 05:01:16
Local clock offset: -0.022 ms
Remote clock offset: -0.088 ms


# Below is generated by plot.py at 2019-11-24 09:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.97 Mbit/s
95th percentile per-packet one-way delay: 174.334 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 83.95 Mbit/s
95th percentile per-packet one-way delay: 177.169 ms
Loss rate: 1.74%
-- Flow 2:
Average throughput: 36.55 Mbit/s
95th percentile per-packet one-way delay: 182.816 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 58.74 Mbit/s
95th percentile per-packet one-way delay: 93.271 ms
Loss rate: 0.29%
```
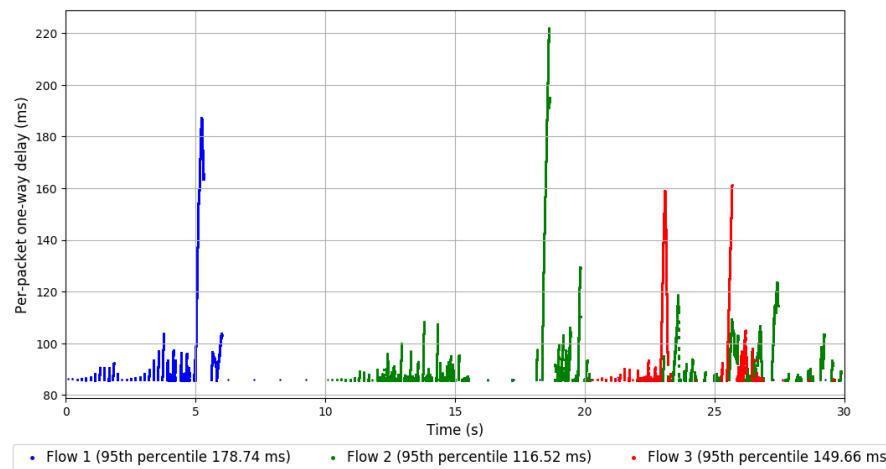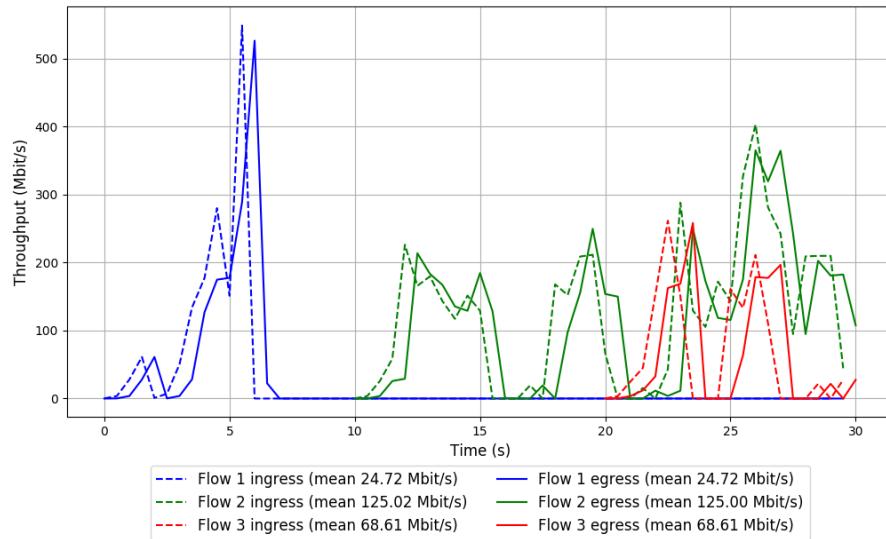
Run 3: Report of Verus — Data Link
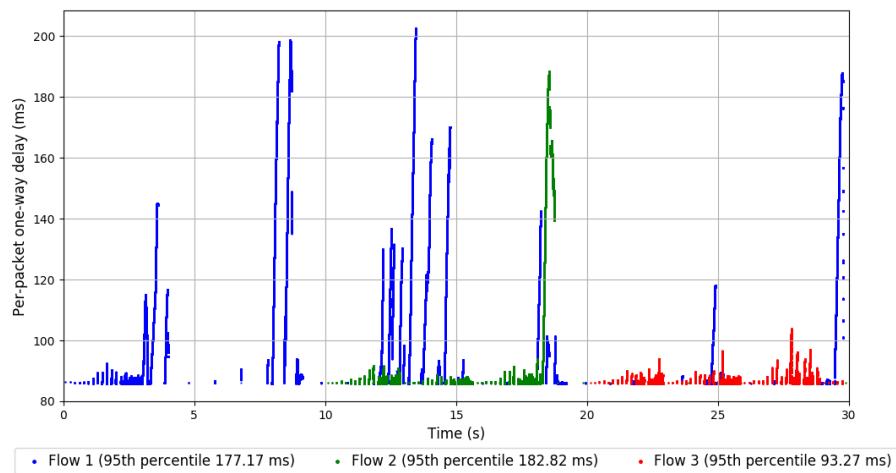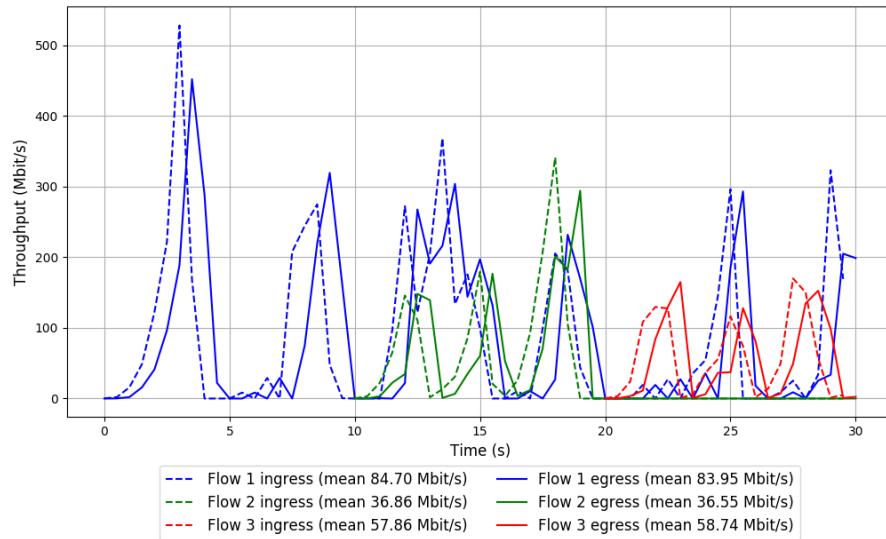
```
Run 4: Statistics of Verus

Start at: 2019-11-24 05:42:24
End at: 2019-11-24 05:42:54
Local clock offset: -0.023 ms
Remote clock offset: -0.071 ms


# Below is generated by plot.py at 2019-11-24 09:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.11 Mbit/s
95th percentile per-packet one-way delay: 149.881 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.72 Mbit/s
95th percentile per-packet one-way delay: 178.741 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 125.00 Mbit/s
95th percentile per-packet one-way delay: 116.521 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 68.61 Mbit/s
95th percentile per-packet one-way delay: 149.665 ms
Loss rate: 0.00%
```

Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 24.72 Mbit/s) --- Flow 1 egress (mean 24.72 Mbit/s)
Flow 2 ingress (mean 125.02 Mbit/s) --- Flow 2 egress (mean 125.00 Mbit/s)
Flow 3 ingress (mean 68.61 Mbit/s) --- Flow 3 egress (mean 68.61 Mbit/s)

Flow 1 (95th percentile 178.74 ms) · Flow 2 (95th percentile 116.52 ms) · Flow 3 (95th percentile 149.66 ms)

```
Run 5: Statistics of Verus

Start at: 2019-11-24 06:24:38
End at: 2019-11-24 06:25:08
Local clock offset: 0.314 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2019-11-24 09:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 114.09 Mbit/s
95th percentile per-packet one-way delay: 134.907 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 39.95 Mbit/s
95th percentile per-packet one-way delay: 112.979 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 86.89 Mbit/s
95th percentile per-packet one-way delay: 144.814 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.67 Mbit/s
95th percentile per-packet one-way delay: 90.098 ms
Loss rate: 0.42%
```

Run 5: Report of Verus — Data Link
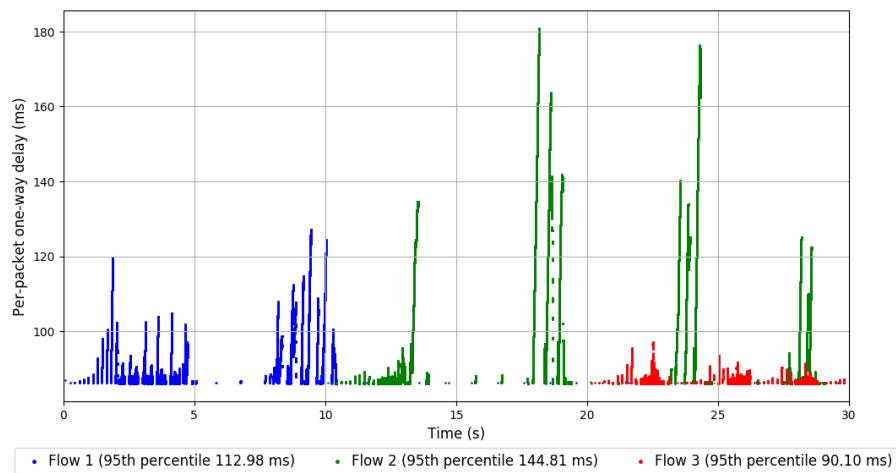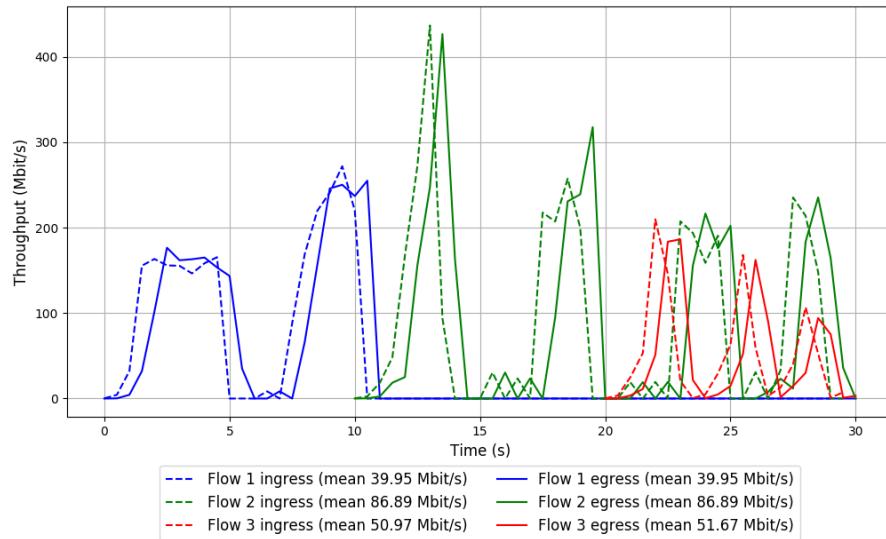
```
Run 1: Statistics of PCC-Vivace

Start at: 2019-11-24 03:48:35
End at: 2019-11-24 03:49:05
Local clock offset: 0.008 ms
Remote clock offset: 0.046 ms


# Below is generated by plot.py at 2019-11-24 09:46:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 456.42 Mbit/s
95th percentile per-packet one-way delay: 96.017 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 295.53 Mbit/s
95th percentile per-packet one-way delay: 100.284 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 202.84 Mbit/s
95th percentile per-packet one-way delay: 90.598 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 80.97 Mbit/s
95th percentile per-packet one-way delay: 86.491 ms
Loss rate: 2.64%
```

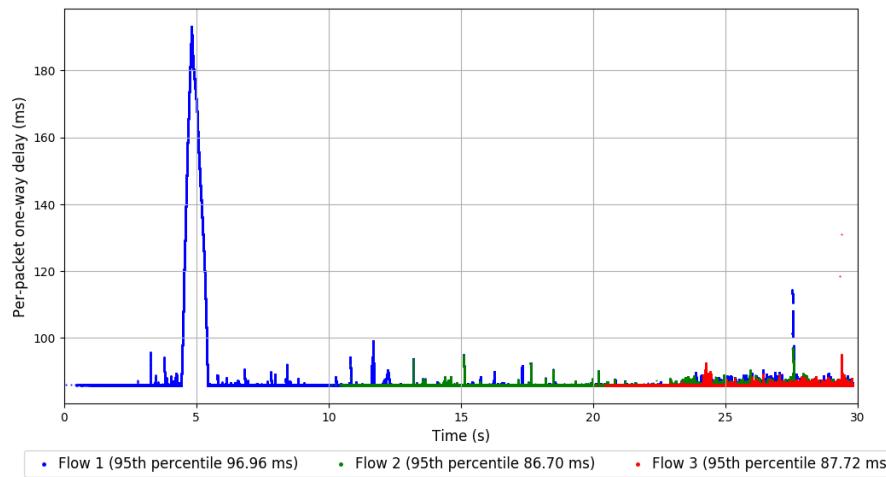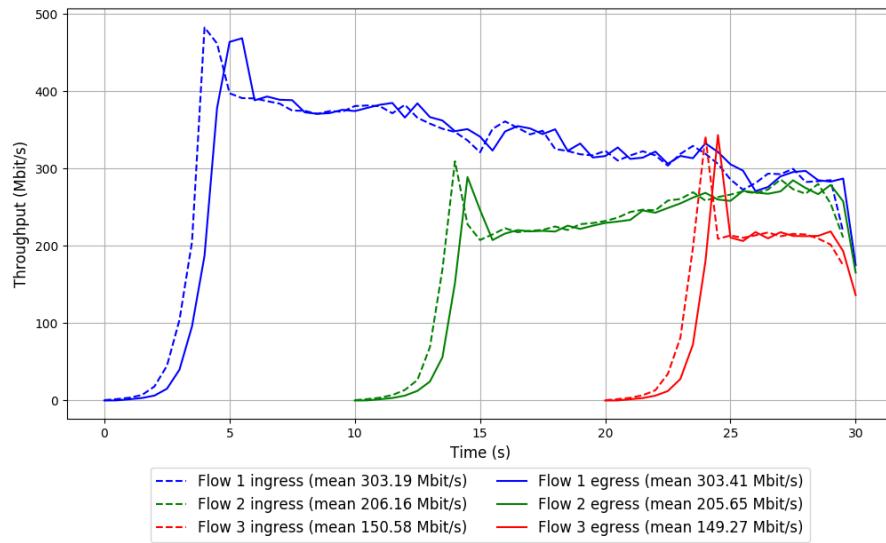Run 1: Report of PCC-Vivace — Data Link
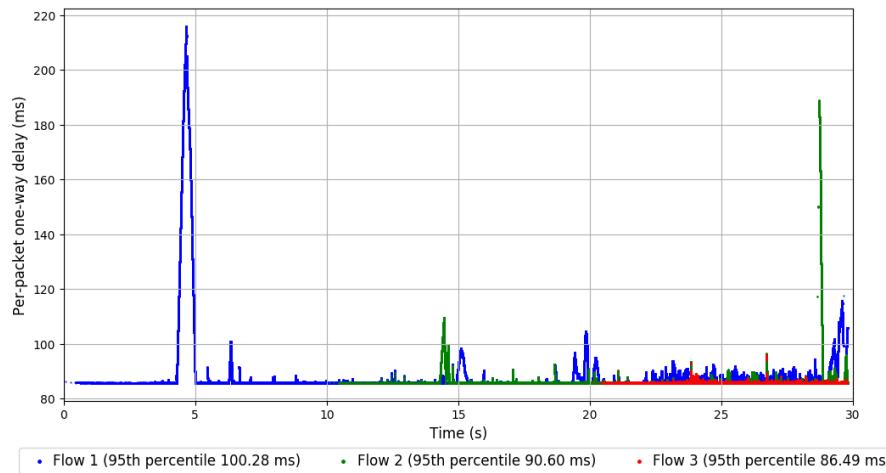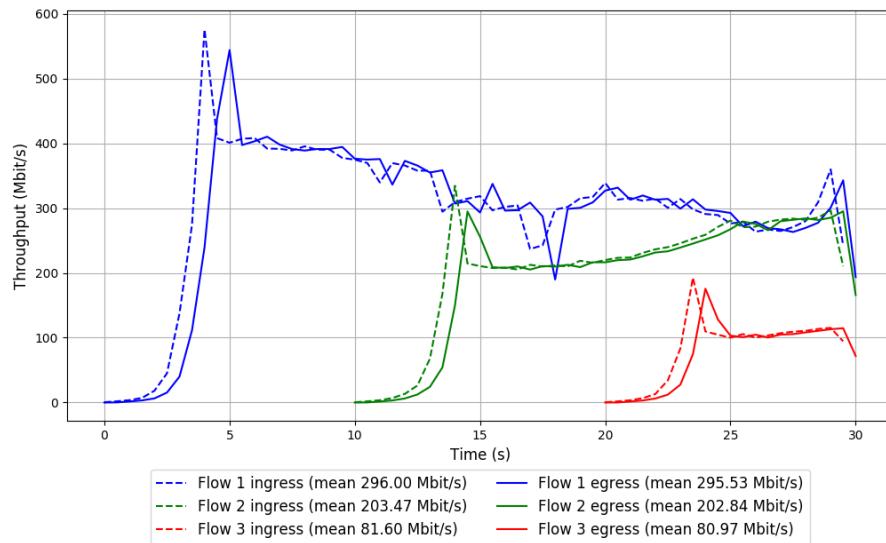
```
Run 2: Statistics of PCC-Vivace

Start at: 2019-11-24 04:30:47
End at: 2019-11-24 04:31:17
Local clock offset: -0.014 ms
Remote clock offset: -0.091 ms


# Below is generated by plot.py at 2019-11-24 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 488.53 Mbit/s
95th percentile per-packet one-way delay: 88.434 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 303.41 Mbit/s
95th percentile per-packet one-way delay: 96.963 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 205.65 Mbit/s
95th percentile per-packet one-way delay: 86.699 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 149.27 Mbit/s
95th percentile per-packet one-way delay: 87.724 ms
Loss rate: 2.61%
```

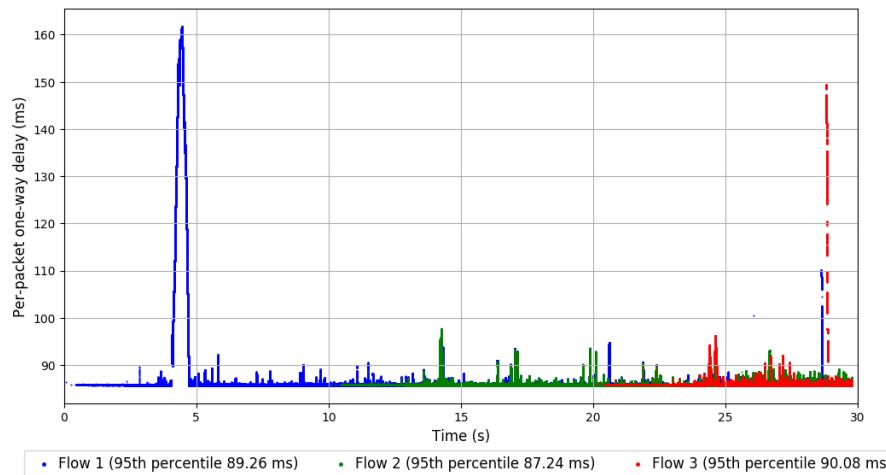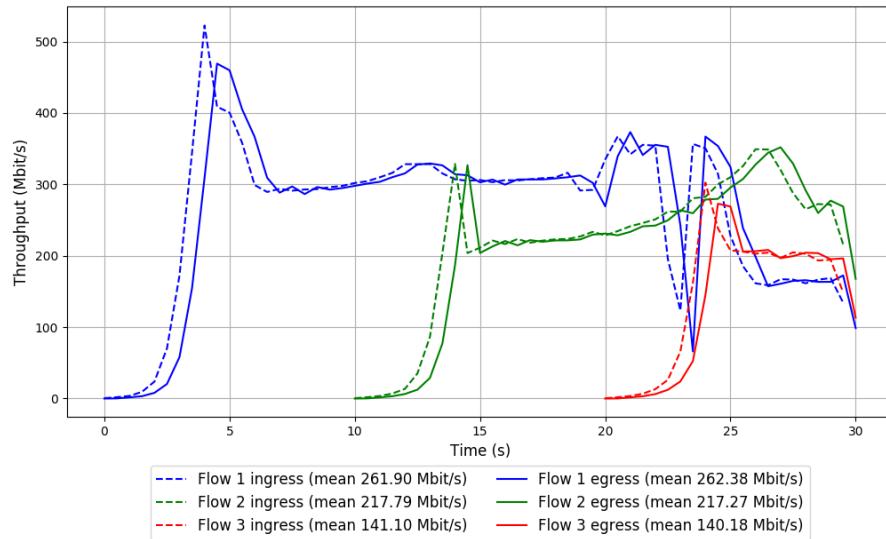# Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-11-24 05:12:33
End at: 2019-11-24 05:13:03
Local clock offset: -0.087 ms
Remote clock offset: -0.166 ms


# Below is generated by plot.py at 2019-11-24 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.17 Mbit/s
95th percentile per-packet one-way delay: 87.839 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 262.38 Mbit/s
95th percentile per-packet one-way delay: 89.262 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 217.27 Mbit/s
95th percentile per-packet one-way delay: 87.239 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 140.18 Mbit/s
95th percentile per-packet one-way delay: 90.081 ms
Loss rate: 2.39%
```

Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 261.90 Mbit/s) —— Flow 1 egress (mean 262.38 Mbit/s)
Flow 2 ingress (mean 217.79 Mbit/s) —— Flow 2 egress (mean 217.27 Mbit/s)
Flow 3 ingress (mean 141.10 Mbit/s) —— Flow 3 egress (mean 140.18 Mbit/s)

Flow 1 (95th percentile 89.26 ms)   Flow 2 (95th percentile 87.24 ms)   Flow 3 (95th percentile 90.08 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-11-24 05:54:11
End at: 2019-11-24 05:54:41
Local clock offset: -0.028 ms
Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2019-11-24 09:47:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 517.15 Mbit/s
95th percentile per-packet one-way delay: 98.408 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 295.31 Mbit/s
95th percentile per-packet one-way delay: 88.812 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 263.25 Mbit/s
95th percentile per-packet one-way delay: 119.464 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 144.89 Mbit/s
95th percentile per-packet one-way delay: 111.959 ms
Loss rate: 2.30%
```

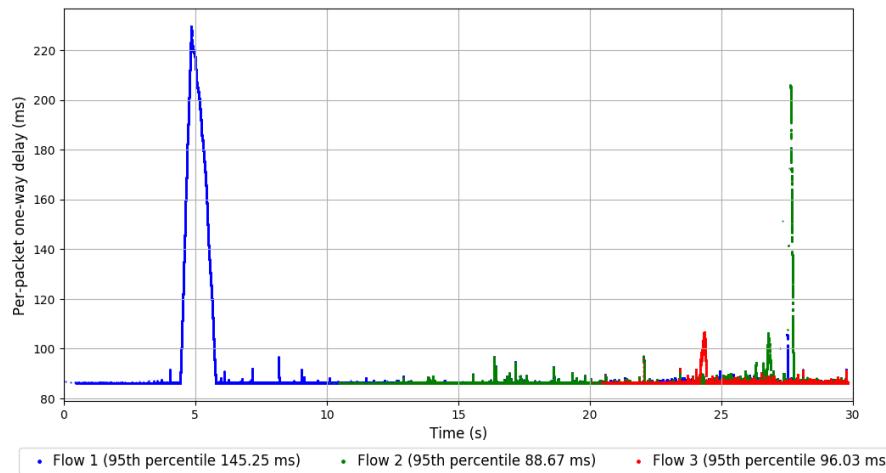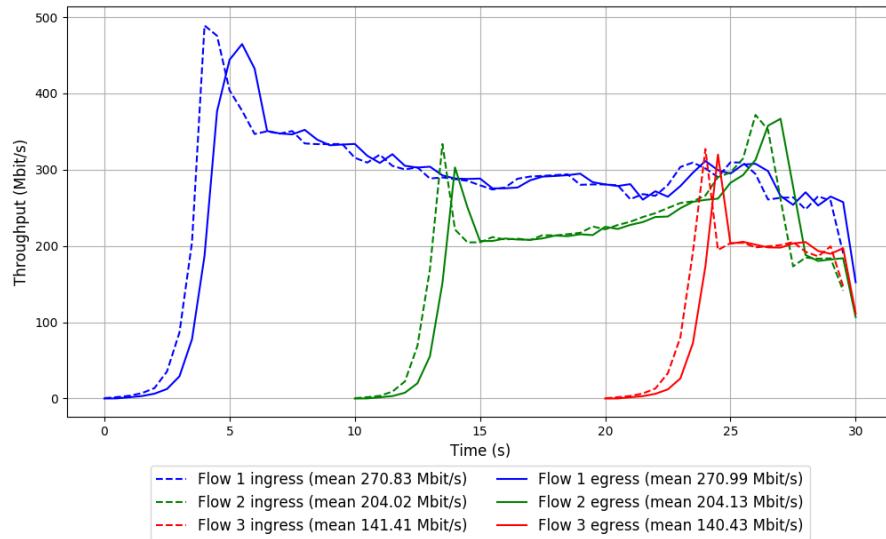Run 4: Report of PCC-Vivace — Data Link
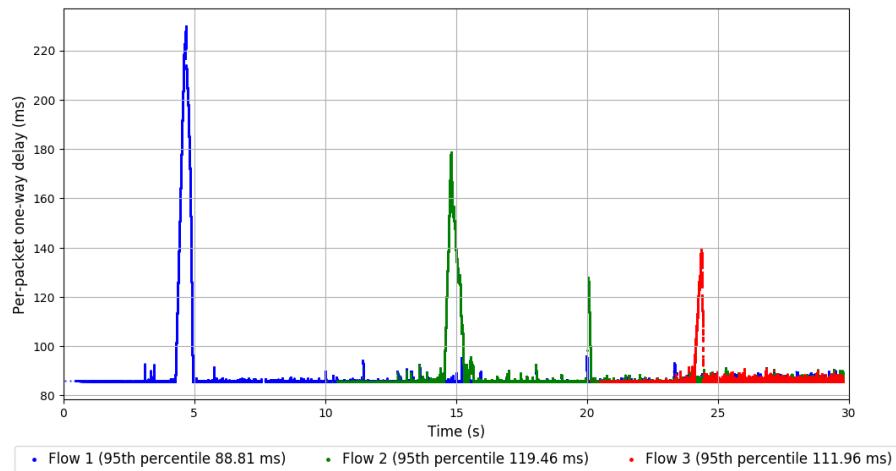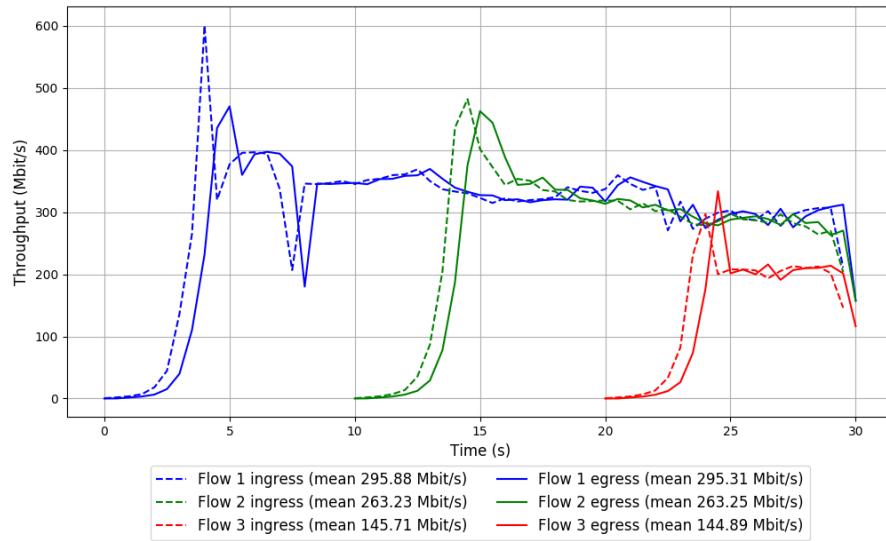
```
Run 5: Statistics of PCC-Vivace

Start at: 2019-11-24 06:36:26
End at: 2019-11-24 06:36:56
Local clock offset: 0.322 ms
Remote clock offset: -0.12 ms


# Below is generated by plot.py at 2019-11-24 09:47:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.15 Mbit/s
95th percentile per-packet one-way delay: 100.304 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 270.99 Mbit/s
95th percentile per-packet one-way delay: 145.249 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 204.13 Mbit/s
95th percentile per-packet one-way delay: 88.669 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 140.43 Mbit/s
95th percentile per-packet one-way delay: 96.030 ms
Loss rate: 2.43%
```

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

Flow 1 ingress (mean 270.83 Mbit/s) — Flow 1 egress (mean 270.99 Mbit/s)
Flow 2 ingress (mean 204.02 Mbit/s) — Flow 2 egress (mean 204.13 Mbit/s)
Flow 3 ingress (mean 141.41 Mbit/s) — Flow 3 egress (mean 140.43 Mbit/s)

Flow 1 (95th percentile 145.25 ms) • Flow 2 (95th percentile 88.67 ms) • Flow 3 (95th percentile 96.03 ms)
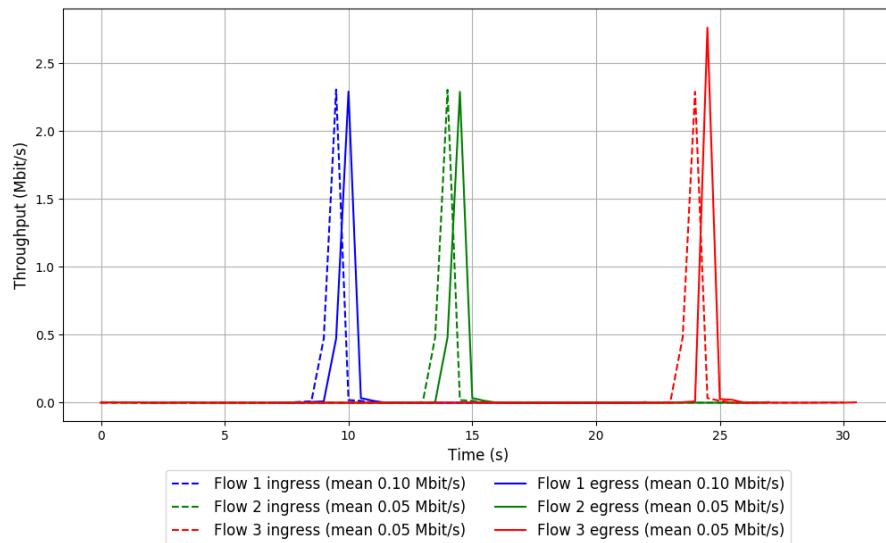
```
Run 1: Statistics of WebRTC media

Start at: 2019-11-24 03:28:17
End at: 2019-11-24 03:28:47
Local clock offset: -0.011 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2019-11-24 09:47:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 85.994 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 86.000 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.949 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.996 ms
Loss rate: 0.00%
```
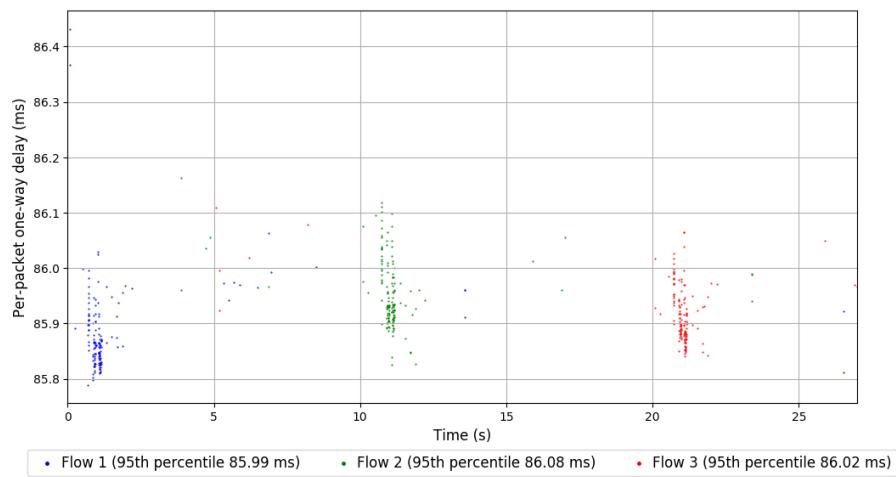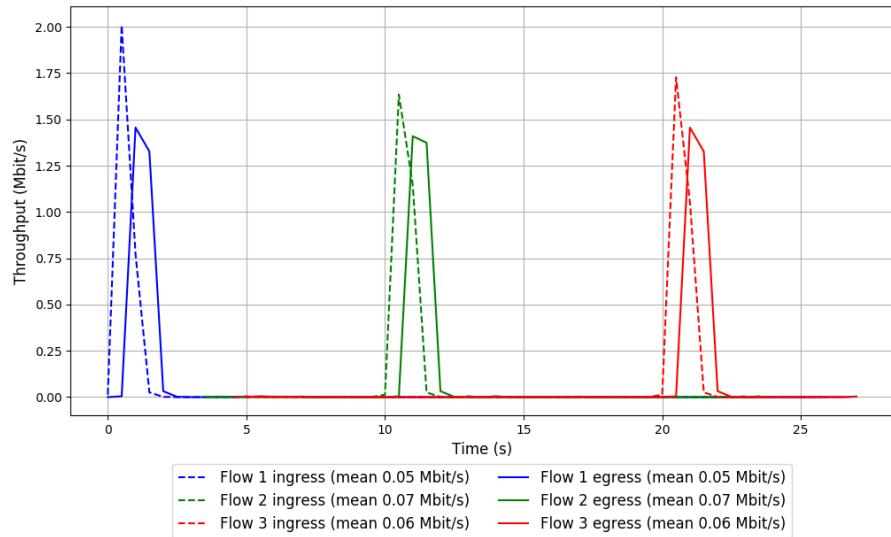
Run 1: Report of WebRTC media — Data Link
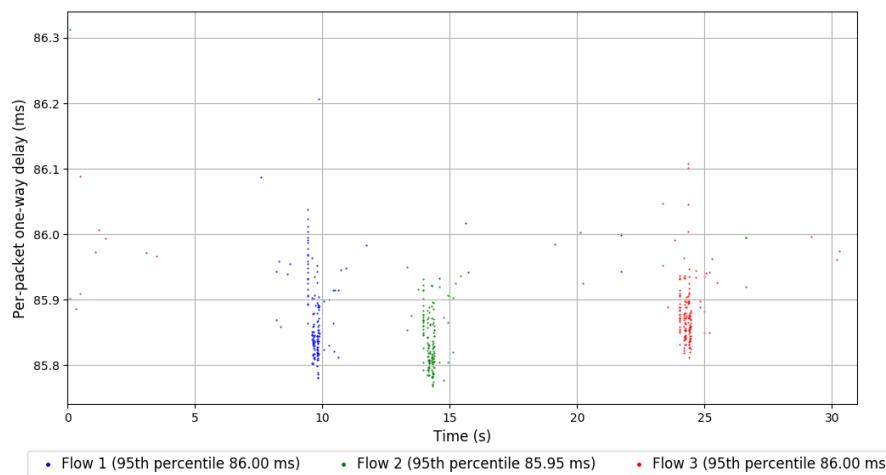
```
Run 2: Statistics of WebRTC media

Start at: 2019-11-24 04:10:28
End at: 2019-11-24 04:10:58
Local clock offset: -0.01 ms
Remote clock offset: -0.084 ms


# Below is generated by plot.py at 2019-11-24 09:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 86.049 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.992 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 86.076 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 86.018 ms
Loss rate: 0.00%
```
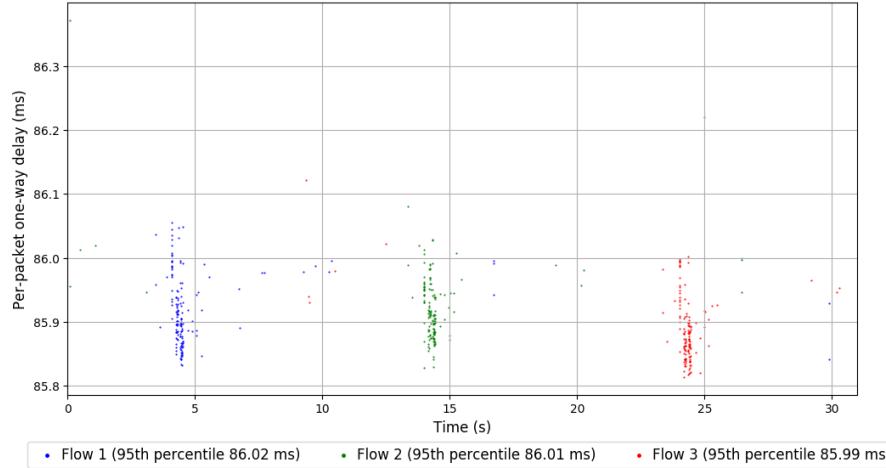
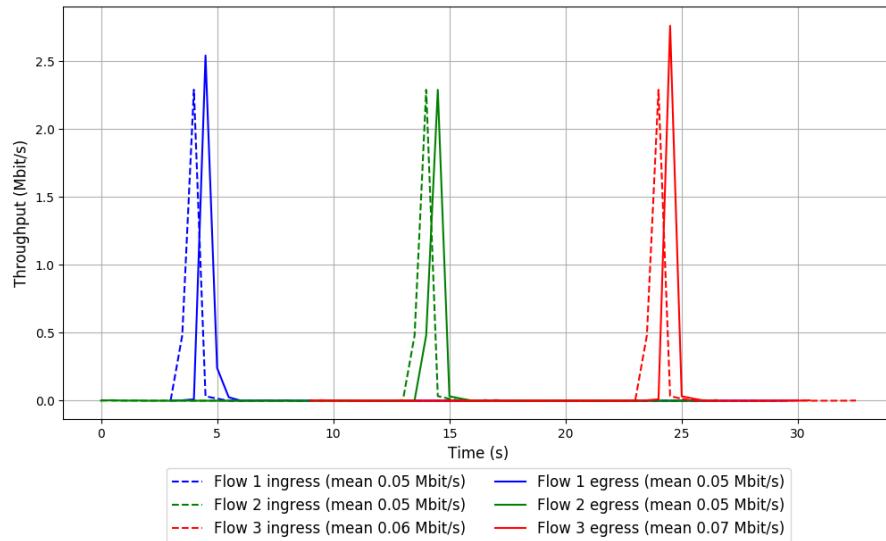Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-11-24 04:52:33
End at: 2019-11-24 04:53:03
Local clock offset: 0.016 ms
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2019-11-24 09:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 86.006 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.019 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.013 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 85.994 ms
Loss rate: 0.05%
```

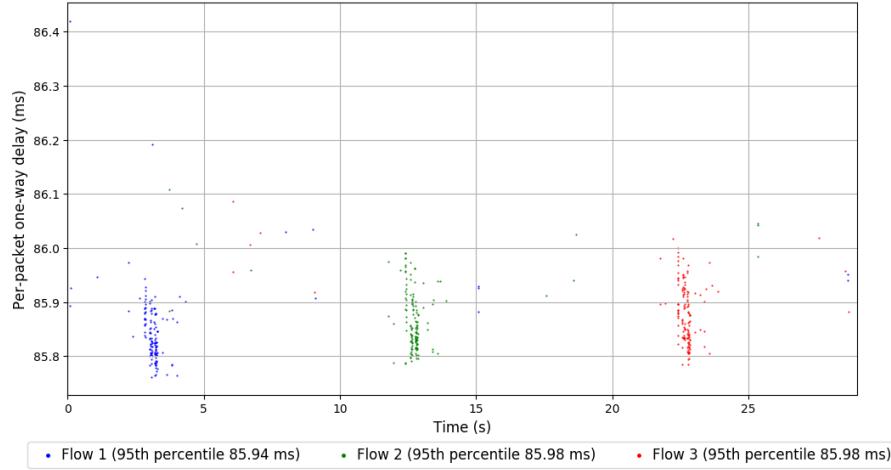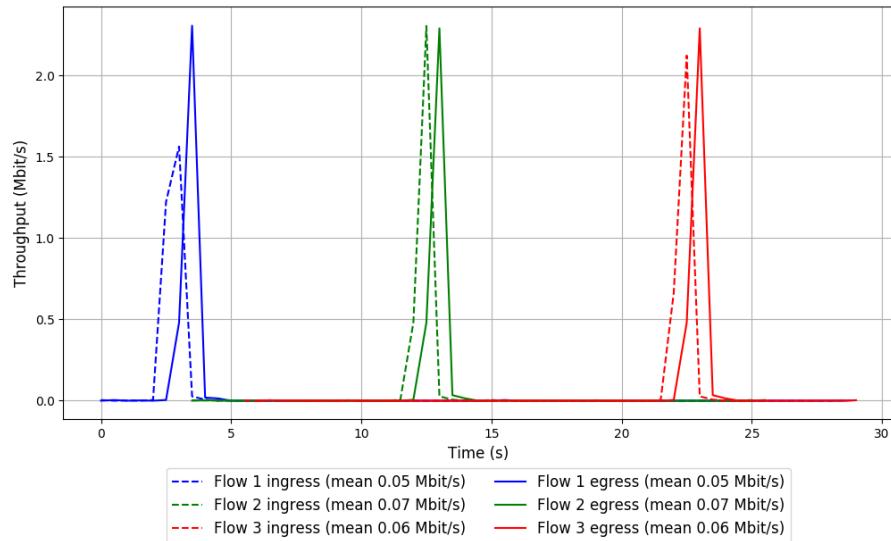Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-11-24 05:34:22
End at: 2019-11-24 05:34:52
Local clock offset: -0.056 ms
Remote clock offset: -0.18 ms


# Below is generated by plot.py at 2019-11-24 09:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 85.982 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.941 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 85.984 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 85.985 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-11-24 06:16:22
End at: 2019-11-24 06:16:52
Local clock offset: -0.03 ms
Remote clock offset: -0.071 ms


# Below is generated by plot.py at 2019-11-24 09:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 85.982 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.973 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.000 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 85.940 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link