Pantheon Report

Generated at 2019-02-05 10:50:14 (UTC).

Data path: AWS California 1 on **ens5** (*local*) →Stanford on **eno1** (*remote*).

Repeated the test of 21 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.
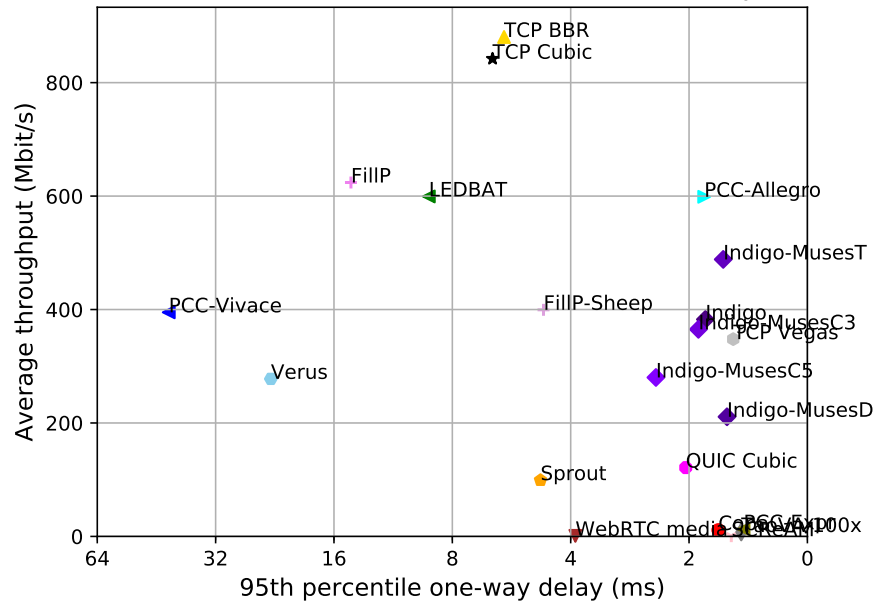
```
System info:
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
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/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
```
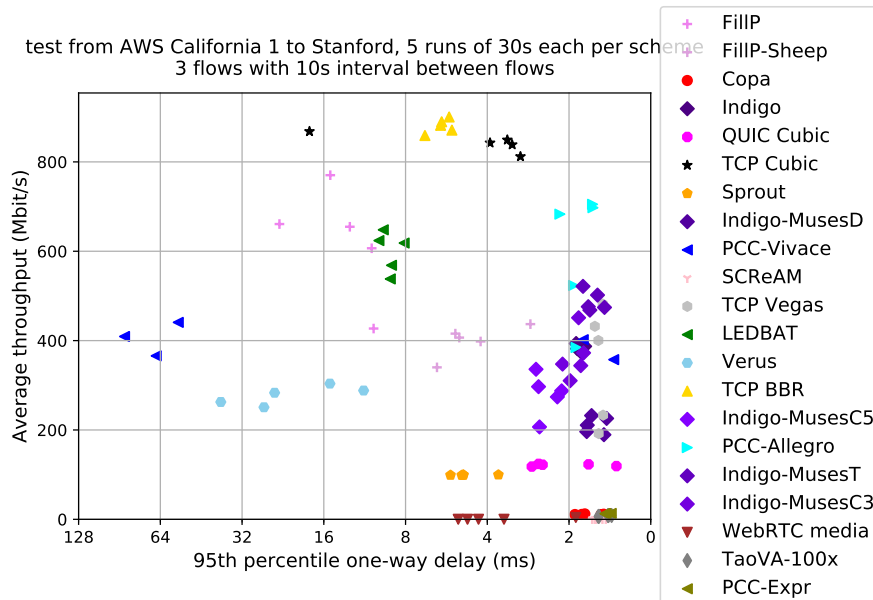
```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

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

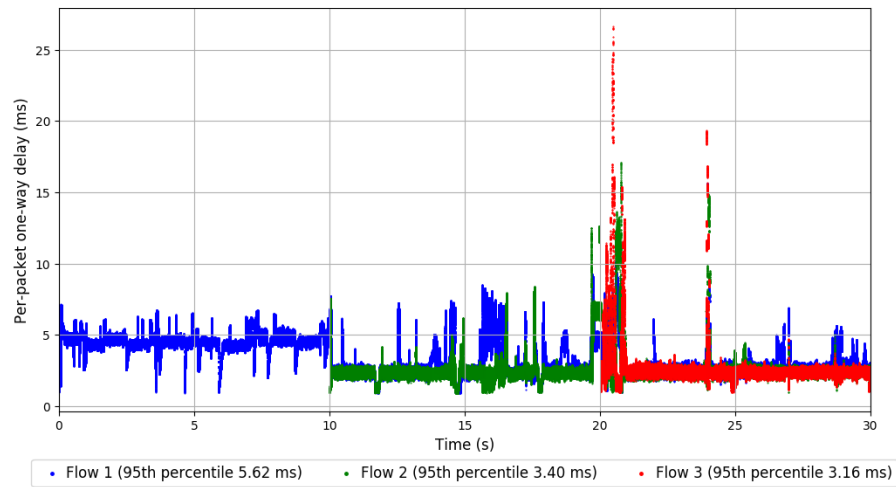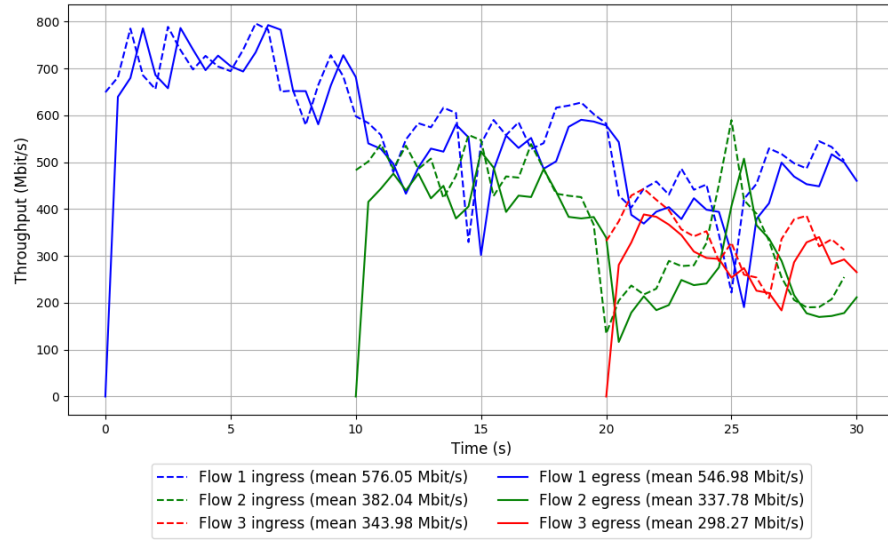| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	506.09	383.08	374.71	5.66	5.82	4.98	4.92	9.94	11.15
Copa	5	6.70	5.50	4.76	1.63	1.36	1.50	49.45	53.69	53.18
TCP Cubic	5	492.98	371.64	305.28	8.57	2.24	2.21	0.11	0.11	0.13
FillP	5	364.70	280.61	218.80	16.56	5.00	5.60	10.49	16.79	18.86
FillP-Sheep	5	329.64	89.52	31.46	5.08	2.14	2.45	3.17	2.58	7.24
Indigo	5	197.17	189.91	183.37	1.54	1.73	2.10	0.02	0.03	0.04
Indigo-MusesC3	5	179.41	190.36	206.34	1.77	1.87	1.91	0.06	0.05	0.08
Indigo-MusesC5	5	101.94	174.10	214.86	1.67	2.76	2.43	0.07	0.13	0.17
Indigo-MusesD	5	119.97	95.39	95.81	1.38	1.23	1.49	0.02	0.01	0.02
Indigo-MusesT	5	278.54	232.16	192.63	1.35	1.45	1.61	0.08	0.07	0.16
LEDBAT	5	356.46	252.91	250.42	9.85	7.24	6.45	0.20	0.32	0.38
PCC-Allegro	5	439.05	188.95	103.36	1.64	1.61	1.53	0.13	0.14	0.16
PCC-Expr	5	7.62	6.03	5.08	1.09	1.06	1.03	76.38	77.15	76.42
QUIC Cubic	5	63.49	62.65	49.24	1.12	1.68	4.90	0.00	0.01	0.01
SCReAM	5	0.21	0.22	0.22	1.29	1.28	1.27	0.04	0.00	0.00
Sprout	5	49.78	49.75	49.39	4.75	4.86	4.53	0.17	0.19	0.28
TaoVA-100x	5	0.00	8.27	7.00	1.25	1.13	1.04	95.92	60.06	84.16
TCP Vegas	5	135.85	143.46	349.93	1.70	1.31	1.21	0.03	0.03	0.02
Verus	5	156.55	120.97	123.47	15.37	26.70	43.20	2.96	5.30	5.62
PCC-Vivace	5	207.79	193.90	176.70	10.70	35.53	32.71	0.07	0.20	0.35
WebRTC media	5	0.46	0.32	0.16	3.31	3.87	3.47	0.00	0.01	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-05 07:23:11
End at: 2019-02-05 07:23:41
Local clock offset: 1.195 ms
Remote clock offset: -0.111 ms


# Below is generated by plot.py at 2019-02-05 10:08:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.14 Mbit/s
95th percentile per-packet one-way delay: 5.400 ms
Loss rate: 7.80%
-- Flow 1:
Average throughput: 546.98 Mbit/s
95th percentile per-packet one-way delay: 5.622 ms
Loss rate: 5.04%
-- Flow 2:
Average throughput: 337.78 Mbit/s
95th percentile per-packet one-way delay: 3.395 ms
Loss rate: 11.58%
-- Flow 3:
Average throughput: 298.27 Mbit/s
95th percentile per-packet one-way delay: 3.156 ms
Loss rate: 13.28%
```
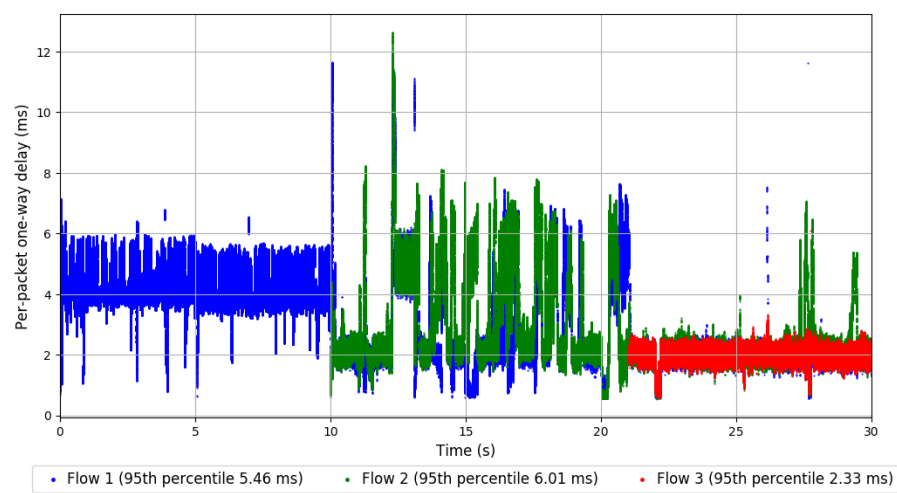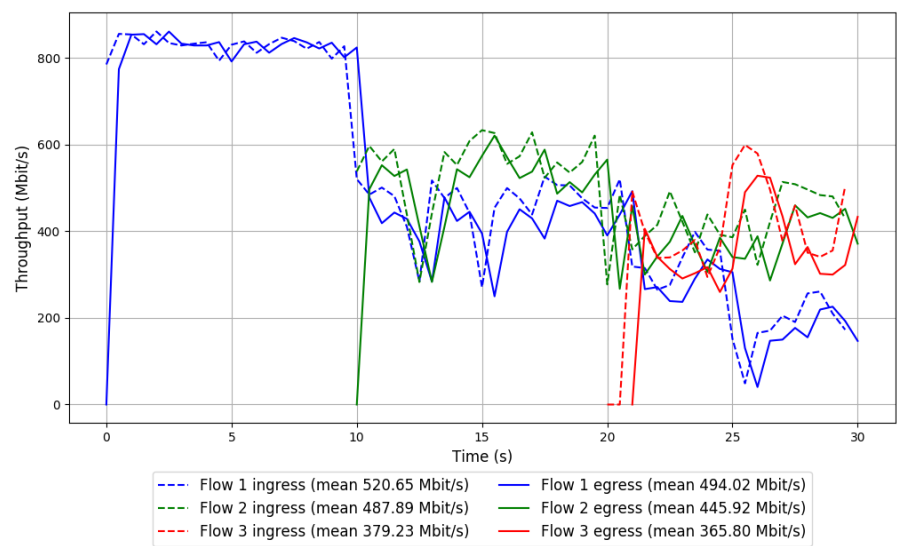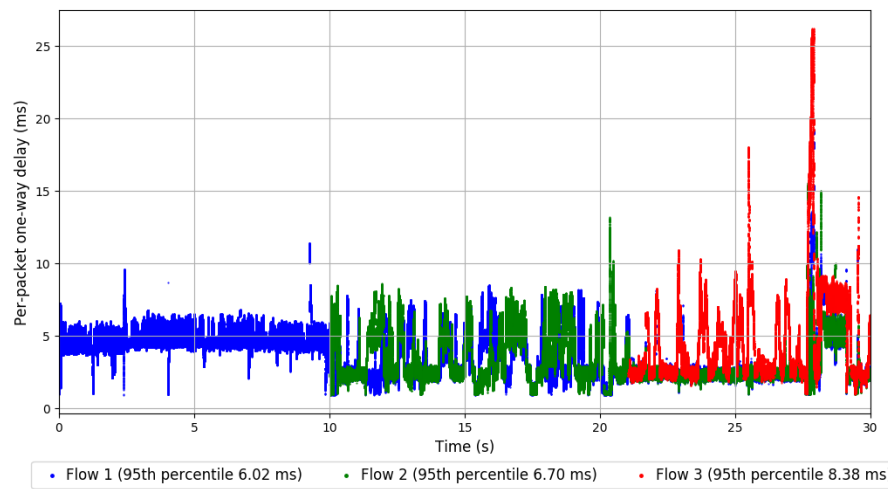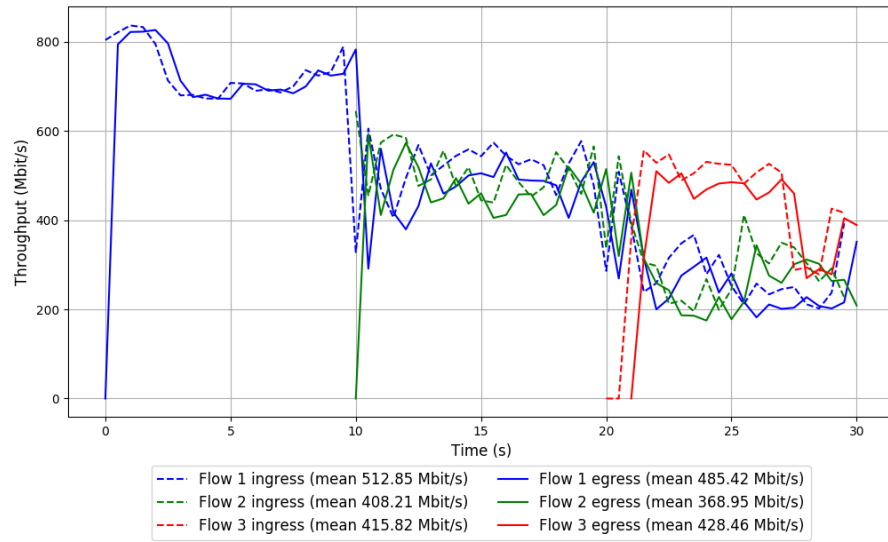
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-02-05 07:53:18
End at: 2019-02-05 07:53:48
Local clock offset: 1.138 ms
Remote clock offset: 0.327 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 900.56 Mbit/s
95th percentile per-packet one-way delay: 5.527 ms
Loss rate: 7.35%
-- Flow 1:
Average throughput: 494.02 Mbit/s
95th percentile per-packet one-way delay: 5.460 ms
Loss rate: 5.11%
-- Flow 2:
Average throughput: 445.92 Mbit/s
95th percentile per-packet one-way delay: 6.012 ms
Loss rate: 8.60%
-- Flow 3:
Average throughput: 365.80 Mbit/s
95th percentile per-packet one-way delay: 2.326 ms
Loss rate: 13.35%
```

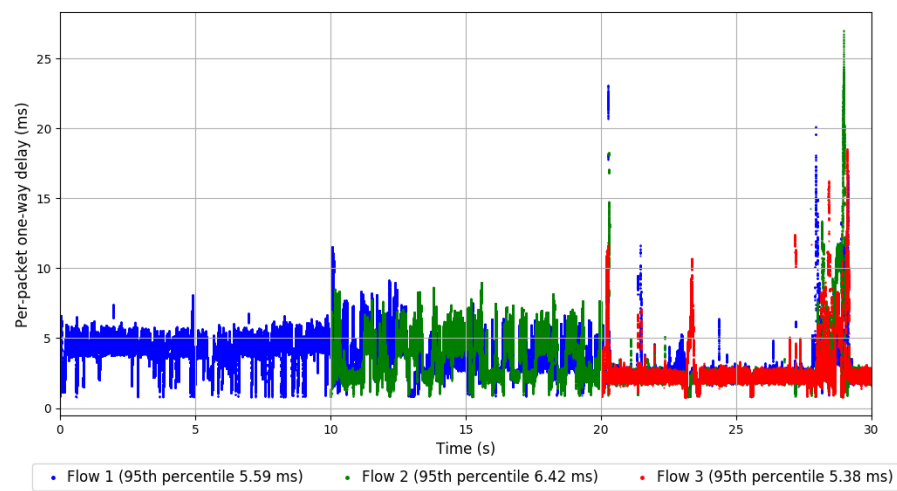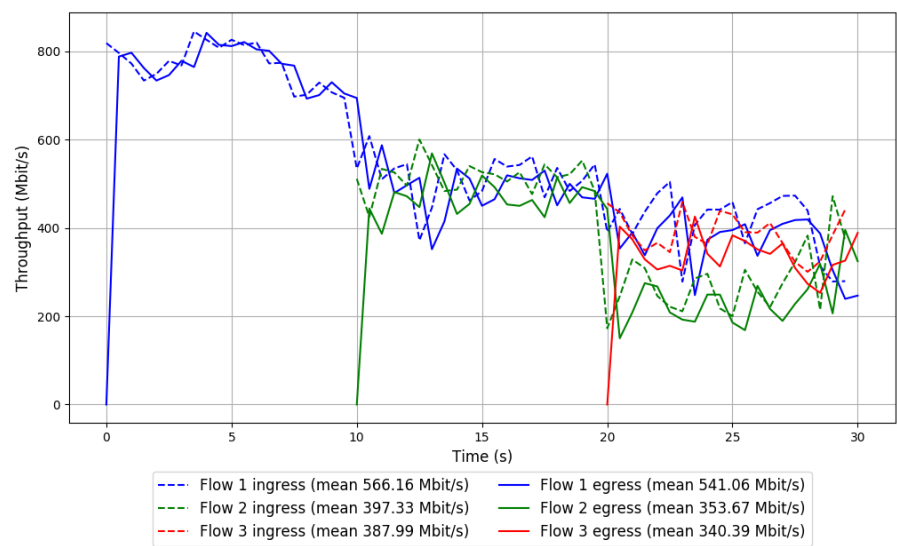Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-02-05 08:23:33
End at: 2019-02-05 08:24:03
Local clock offset: 0.151 ms
Remote clock offset: -2.917 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 859.06 Mbit/s
95th percentile per-packet one-way delay: 6.787 ms
Loss rate: 6.92%
-- Flow 1:
Average throughput: 485.42 Mbit/s
95th percentile per-packet one-way delay: 6.017 ms
Loss rate: 5.34%
-- Flow 2:
Average throughput: 368.95 Mbit/s
95th percentile per-packet one-way delay: 6.697 ms
Loss rate: 9.61%
-- Flow 3:
Average throughput: 428.46 Mbit/s
95th percentile per-packet one-way delay: 8.375 ms
Loss rate: 7.49%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 512.85 Mbit/s) --- Flow 1 egress (mean 485.42 Mbit/s)
Flow 2 ingress (mean 408.21 Mbit/s) --- Flow 2 egress (mean 368.95 Mbit/s)
Flow 3 ingress (mean 415.82 Mbit/s) --- Flow 3 egress (mean 428.46 Mbit/s)

Flow 1 (95th percentile 6.02 ms)   Flow 2 (95th percentile 6.70 ms)   Flow 3 (95th percentile 8.38 ms)
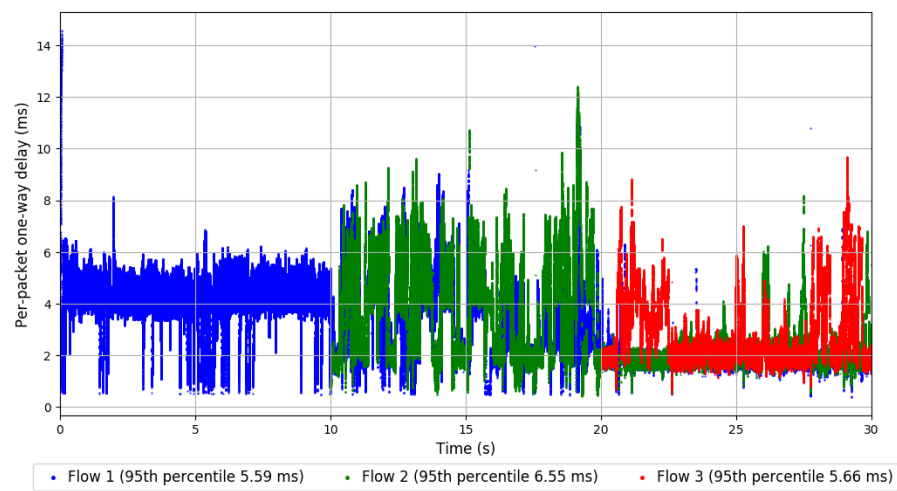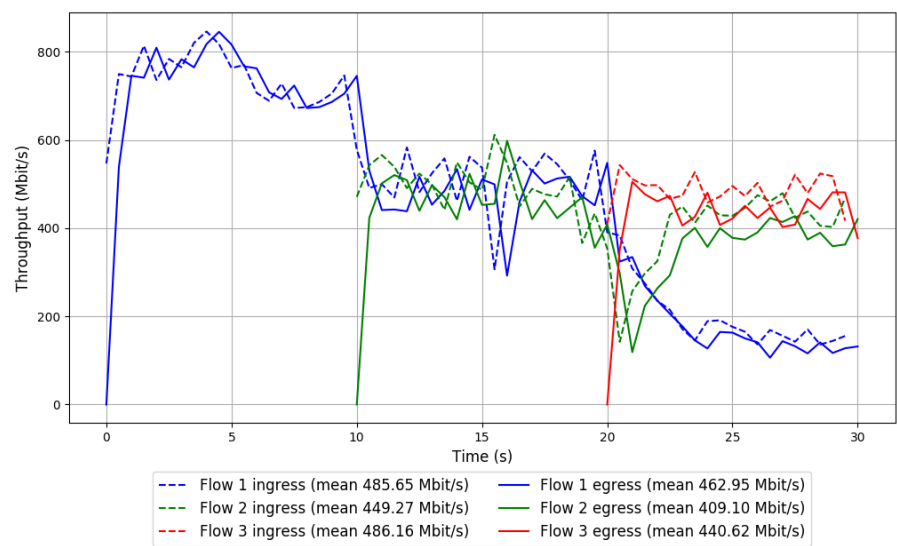
10

```
Run 4: Statistics of TCP BBR

Start at: 2019-02-05 08:53:32
End at: 2019-02-05 08:54:02
Local clock offset: 1.979 ms
Remote clock offset: -3.381 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 889.84 Mbit/s
95th percentile per-packet one-way delay: 5.891 ms
Loss rate: 7.29%
-- Flow 1:
Average throughput: 541.06 Mbit/s
95th percentile per-packet one-way delay: 5.587 ms
Loss rate: 4.43%
-- Flow 2:
Average throughput: 353.67 Mbit/s
95th percentile per-packet one-way delay: 6.422 ms
Loss rate: 10.99%
-- Flow 3:
Average throughput: 340.39 Mbit/s
95th percentile per-packet one-way delay: 5.382 ms
Loss rate: 12.27%
```
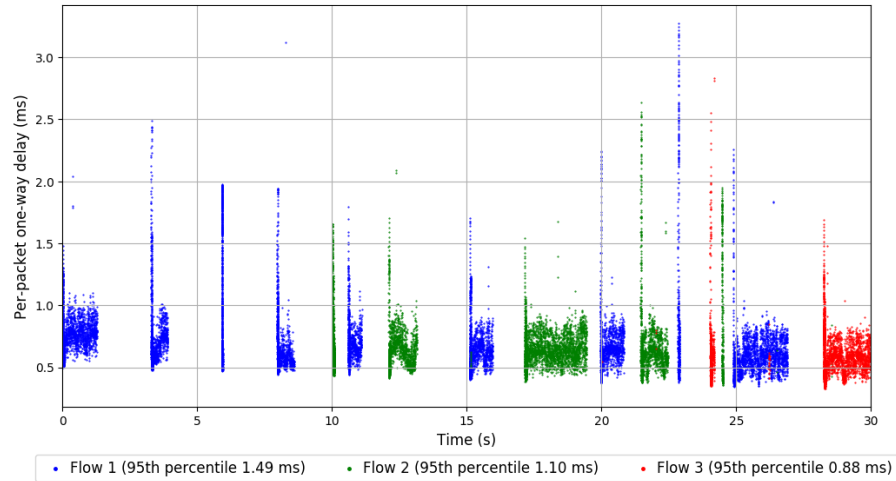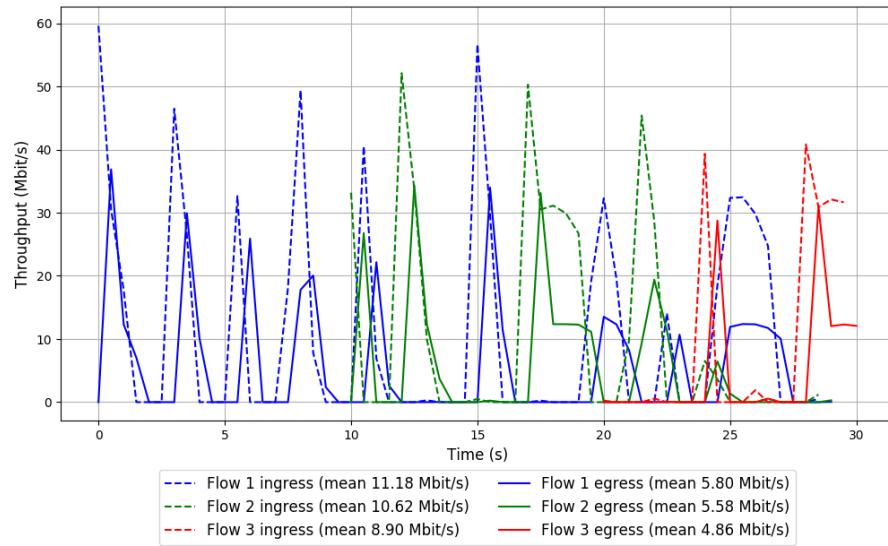
Run 4: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 566.16 Mbit/s) —— Flow 1 egress (mean 541.06 Mbit/s)
- - - Flow 2 ingress (mean 397.33 Mbit/s) —— Flow 2 egress (mean 353.67 Mbit/s)
- - - Flow 3 ingress (mean 387.99 Mbit/s) —— Flow 3 egress (mean 340.39 Mbit/s)

• Flow 1 (95th percentile 5.59 ms)   • Flow 2 (95th percentile 6.42 ms)   • Flow 3 (95th percentile 5.38 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-02-05 09:23:42
End at: 2019-02-05 09:24:12
Local clock offset: 0.993 ms
Remote clock offset: -1.011 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.96 Mbit/s
95th percentile per-packet one-way delay: 5.943 ms
Loss rate: 6.82%
-- Flow 1:
Average throughput: 462.95 Mbit/s
95th percentile per-packet one-way delay: 5.592 ms
Loss rate: 4.67%
-- Flow 2:
Average throughput: 409.10 Mbit/s
95th percentile per-packet one-way delay: 6.554 ms
Loss rate: 8.92%
-- Flow 3:
Average throughput: 440.62 Mbit/s
95th percentile per-packet one-way delay: 5.657 ms
Loss rate: 9.36%
```
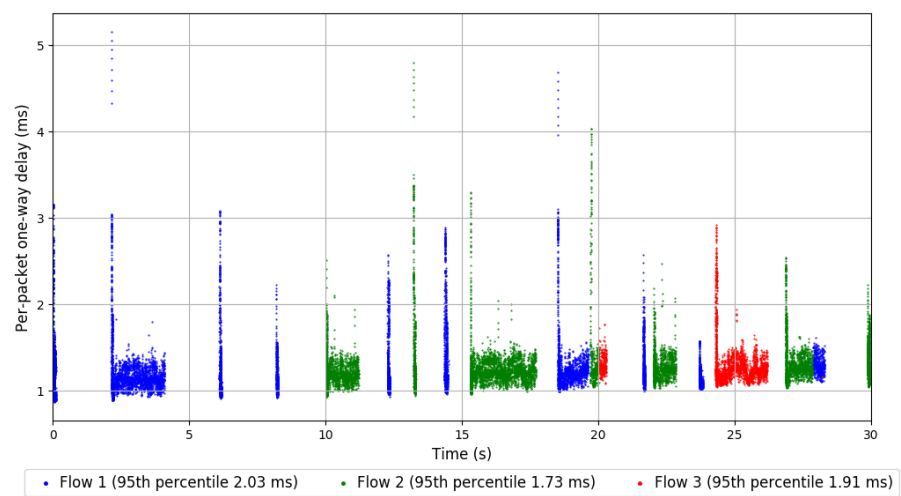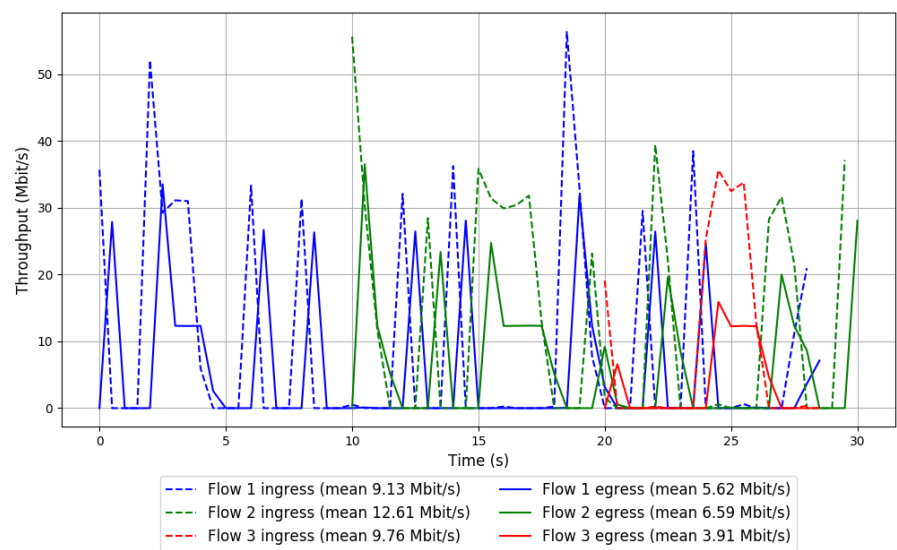
Run 5: Report of TCP BBR — Data Link

- - - - Flow 1 ingress (mean 485.65 Mbit/s) —— Flow 1 egress (mean 462.95 Mbit/s)
- - - - Flow 2 ingress (mean 449.27 Mbit/s) —— Flow 2 egress (mean 409.10 Mbit/s)
- - - - Flow 3 ingress (mean 486.16 Mbit/s) —— Flow 3 egress (mean 440.62 Mbit/s)

- Flow 1 (95th percentile 5.59 ms)   - Flow 2 (95th percentile 6.55 ms)   - Flow 3 (95th percentile 5.66 ms)
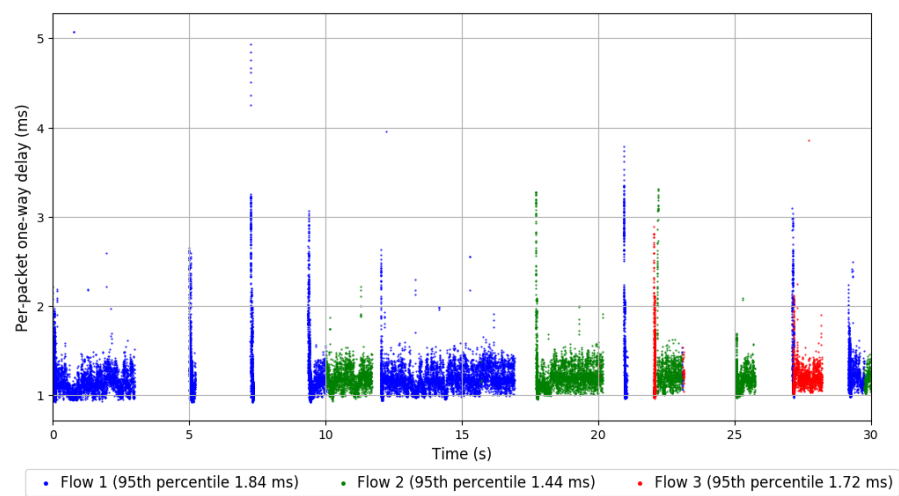
14

```
Run 1: Statistics of Copa

Start at: 2019-02-05 07:46:25
End at: 2019-02-05 07:46:55
Local clock offset: 3.173 ms
Remote clock offset: 0.308 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.66 Mbit/s
95th percentile per-packet one-way delay: 1.218 ms
Loss rate: 47.49%
-- Flow 1:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 1.489 ms
Loss rate: 48.06%
-- Flow 2:
Average throughput: 5.58 Mbit/s
95th percentile per-packet one-way delay: 1.096 ms
Loss rate: 47.47%
-- Flow 3:
Average throughput: 4.86 Mbit/s
95th percentile per-packet one-way delay: 0.879 ms
Loss rate: 45.44%
```
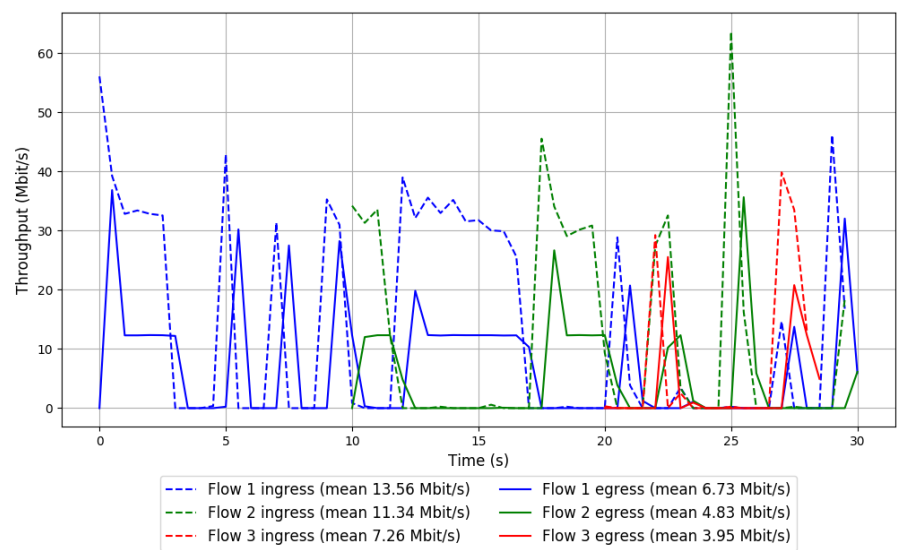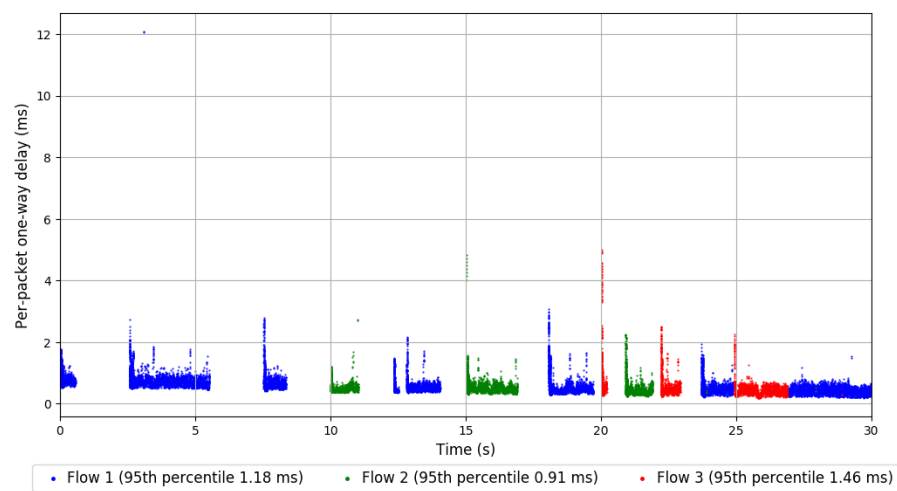
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-02-05 08:16:37
End at: 2019-02-05 08:17:07
Local clock offset: -0.765 ms
Remote clock offset: -2.026 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.76 Mbit/s
95th percentile per-packet one-way delay: 1.855 ms
Loss rate: 45.32%
-- Flow 1:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 2.029 ms
Loss rate: 38.50%
-- Flow 2:
Average throughput: 6.59 Mbit/s
95th percentile per-packet one-way delay: 1.729 ms
Loss rate: 47.70%
-- Flow 3:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 1.908 ms
Loss rate: 59.90%
```
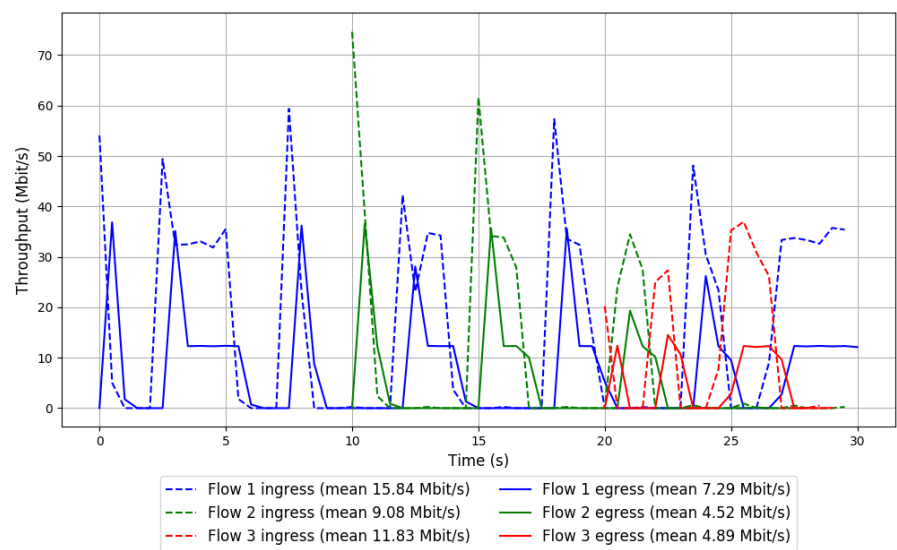
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-02-05 08:46:36
End at: 2019-02-05 08:47:06
Local clock offset: 0.838 ms
Remote clock offset: -3.498 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.97 Mbit/s
95th percentile per-packet one-way delay: 1.688 ms
Loss rate: 52.26%
-- Flow 1:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 1.840 ms
Loss rate: 50.34%
-- Flow 2:
Average throughput: 4.83 Mbit/s
95th percentile per-packet one-way delay: 1.441 ms
Loss rate: 57.44%
-- Flow 3:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 1.715 ms
Loss rate: 45.61%
```
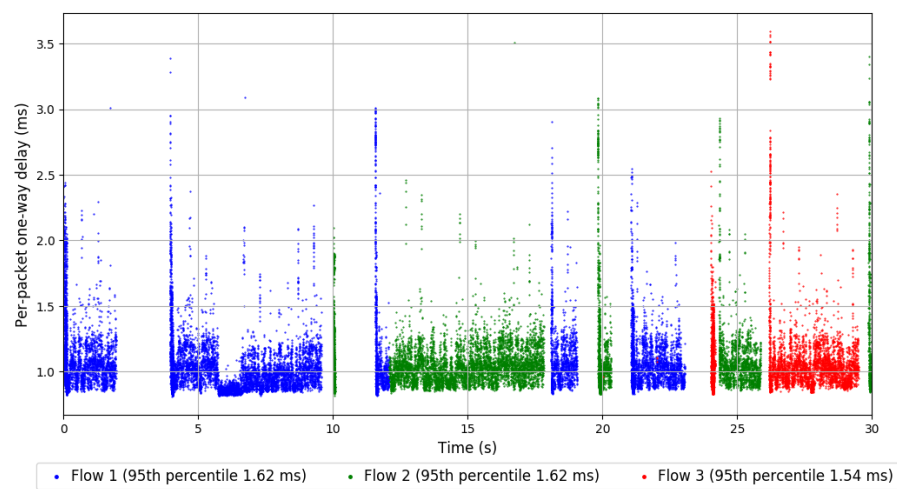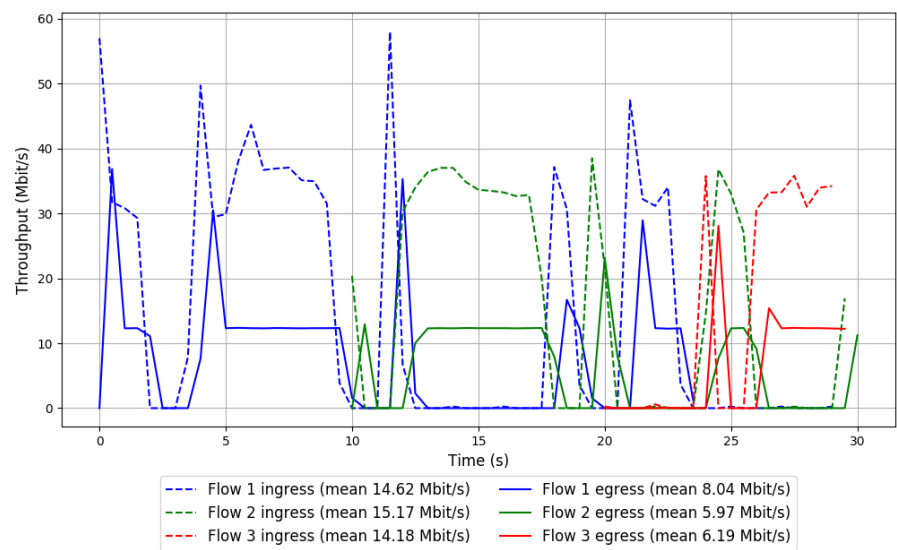
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-02-05 09:16:48
End at: 2019-02-05 09:17:18
Local clock offset: 2.947 ms
Remote clock offset: -2.807 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.44 Mbit/s
95th percentile per-packet one-way delay: 1.152 ms
Loss rate: 54.91%
-- Flow 1:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 1.177 ms
Loss rate: 53.98%
-- Flow 2:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 0.908 ms
Loss rate: 55.21%
-- Flow 3:
Average throughput: 4.89 Mbit/s
95th percentile per-packet one-way delay: 1.462 ms
Loss rate: 58.65%
```
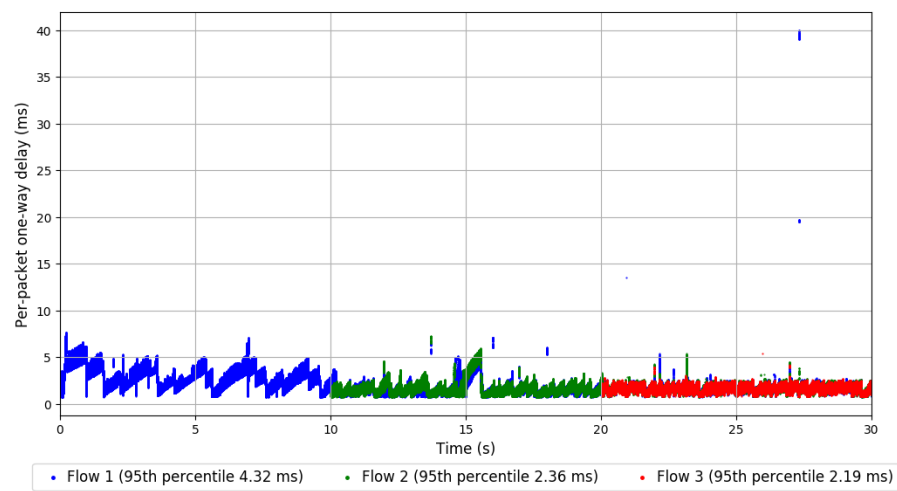
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-02-05 09:46:54
End at: 2019-02-05 09:47:24
Local clock offset: -0.947 ms
Remote clock offset: 1.562 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 1.613 ms
Loss rate: 57.85%
-- Flow 1:
Average throughput: 8.04 Mbit/s
95th percentile per-packet one-way delay: 1.619 ms
Loss rate: 56.35%
-- Flow 2:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 1.625 ms
Loss rate: 60.64%
-- Flow 3:
Average throughput: 6.19 Mbit/s
95th percentile per-packet one-way delay: 1.541 ms
Loss rate: 56.31%
```
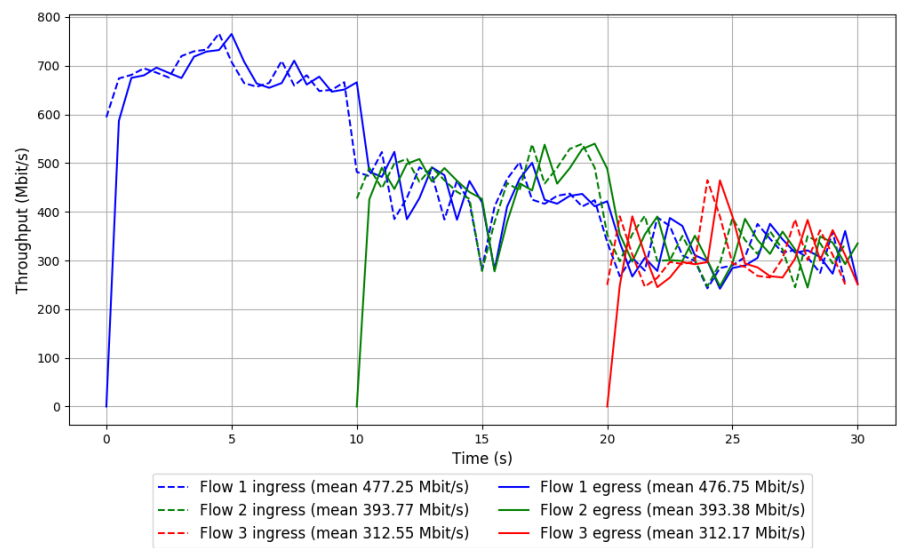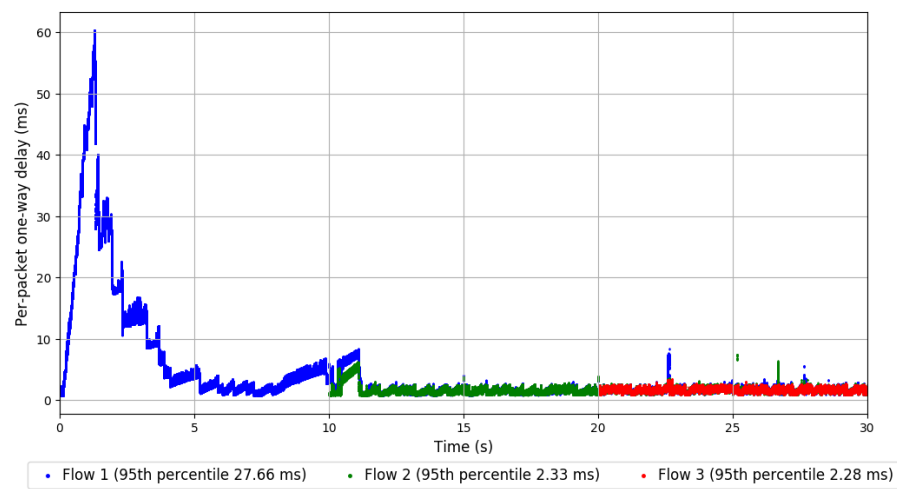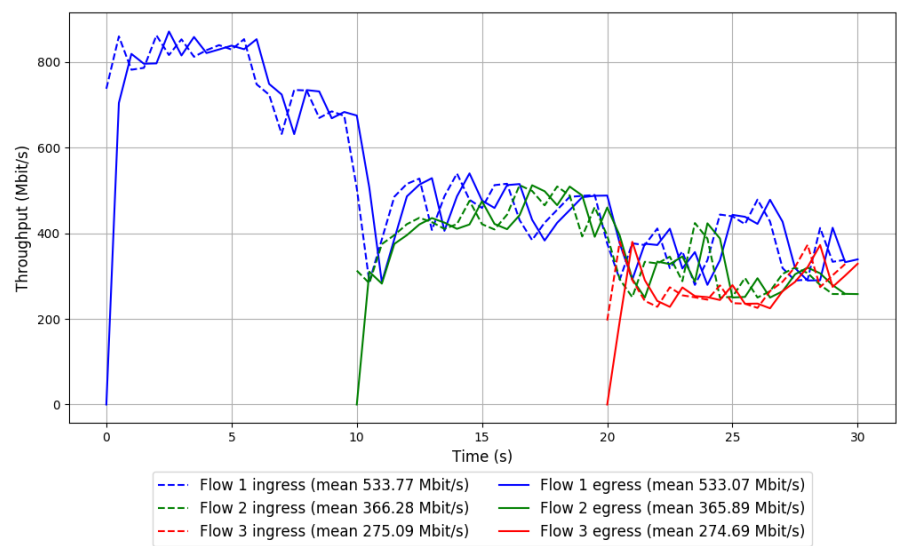
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-05 07:40:46
End at: 2019-02-05 07:41:16
Local clock offset: 2.995 ms
Remote clock offset: 0.204 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 842.62 Mbit/s
95th percentile per-packet one-way delay: 3.908 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 476.75 Mbit/s
95th percentile per-packet one-way delay: 4.324 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 393.38 Mbit/s
95th percentile per-packet one-way delay: 2.362 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 312.17 Mbit/s
95th percentile per-packet one-way delay: 2.185 ms
Loss rate: 0.13%
```

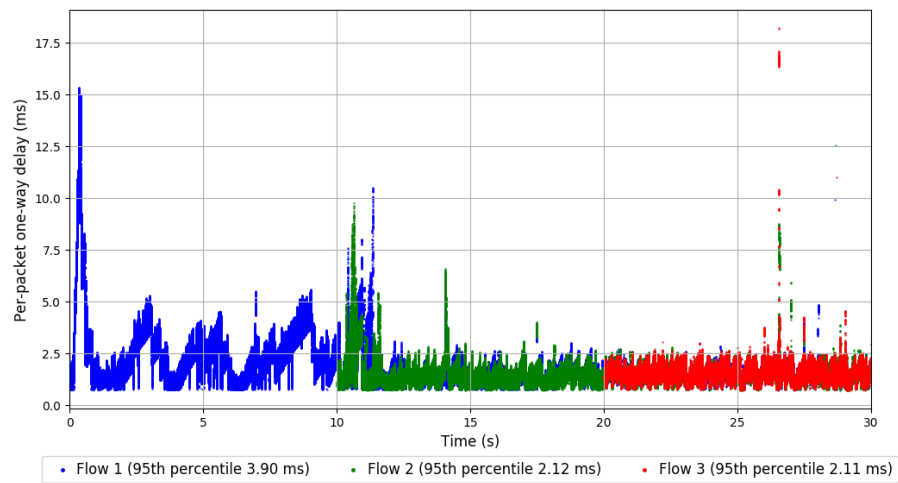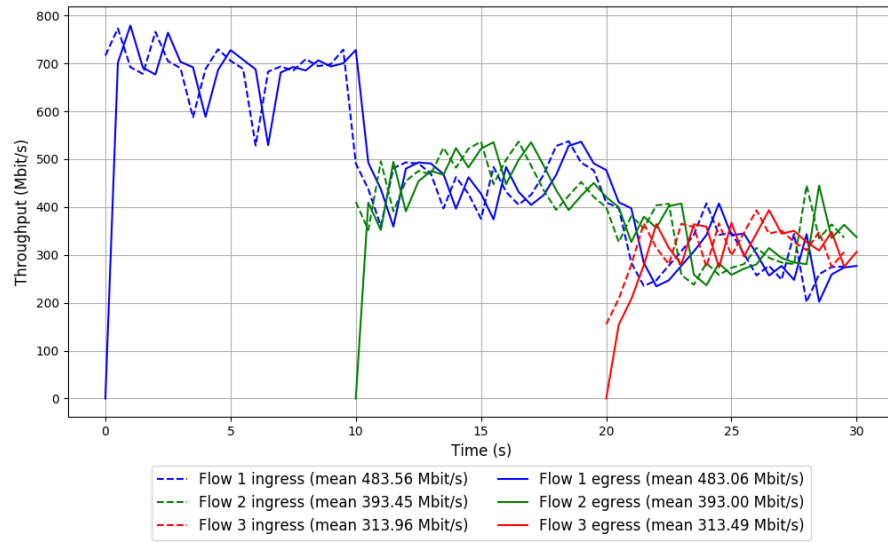Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-05 08:10:50
End at: 2019-02-05 08:11:20
Local clock offset: -0.59 ms
Remote clock offset: -0.674 ms


# Below is generated by plot.py at 2019-02-05 10:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 868.12 Mbit/s
95th percentile per-packet one-way delay: 18.067 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 533.07 Mbit/s
95th percentile per-packet one-way delay: 27.660 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 365.89 Mbit/s
95th percentile per-packet one-way delay: 2.333 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 274.69 Mbit/s
95th percentile per-packet one-way delay: 2.279 ms
Loss rate: 0.14%
```
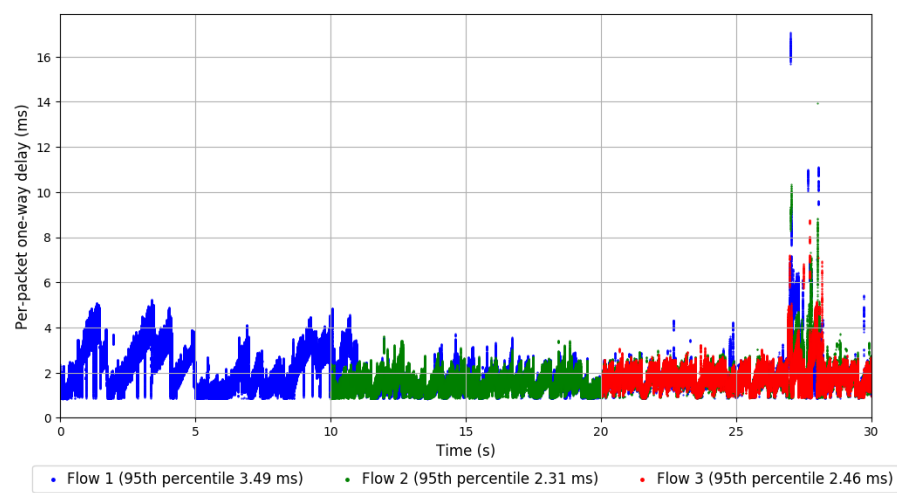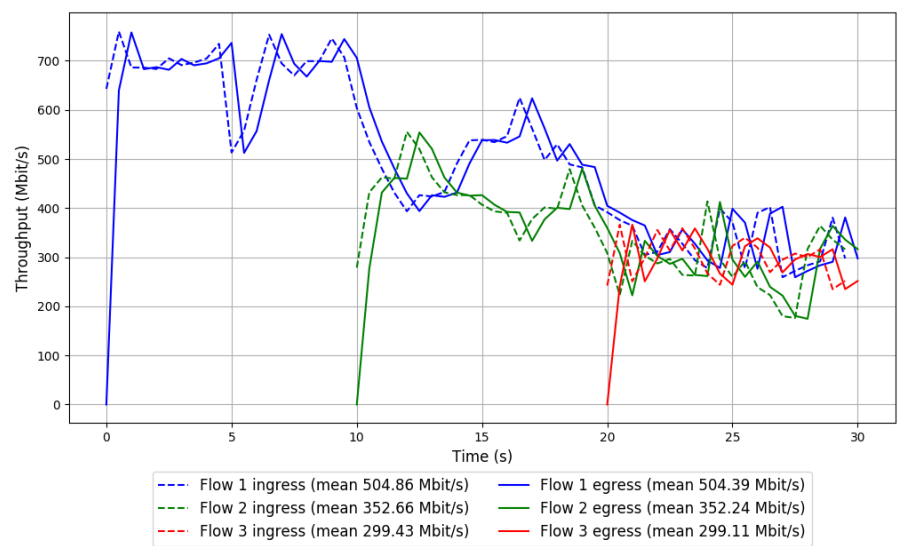
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 533.77 Mbit/s) --- Flow 1 egress (mean 533.07 Mbit/s)
Flow 2 ingress (mean 366.28 Mbit/s) --- Flow 2 egress (mean 365.89 Mbit/s)
Flow 3 ingress (mean 275.09 Mbit/s) --- Flow 3 egress (mean 274.69 Mbit/s)

Flow 1 (95th percentile 27.66 ms)   Flow 2 (95th percentile 2.33 ms)   Flow 3 (95th percentile 2.28 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-05 08:40:50
End at: 2019-02-05 08:41:20
Local clock offset: 0.768 ms
Remote clock offset: -3.957 ms


# Below is generated by plot.py at 2019-02-05 10:09:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 849.22 Mbit/s
95th percentile per-packet one-way delay: 3.374 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 483.06 Mbit/s
95th percentile per-packet one-way delay: 3.895 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 393.00 Mbit/s
95th percentile per-packet one-way delay: 2.118 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 313.49 Mbit/s
95th percentile per-packet one-way delay: 2.111 ms
Loss rate: 0.14%
```

Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-05 09:11:03
End at: 2019-02-05 09:11:33
Local clock offset: 3.032 ms
Remote clock offset: -3.255 ms


# Below is generated by plot.py at 2019-02-05 10:17:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 838.51 Mbit/s
95th percentile per-packet one-way delay: 3.239 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 504.39 Mbit/s
95th percentile per-packet one-way delay: 3.494 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 352.24 Mbit/s
95th percentile per-packet one-way delay: 2.306 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 299.11 Mbit/s
95th percentile per-packet one-way delay: 2.462 ms
Loss rate: 0.11%
```
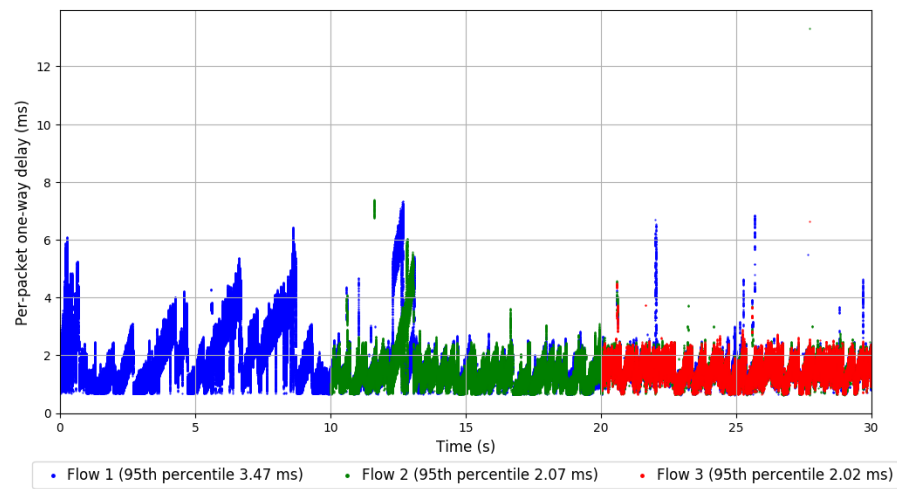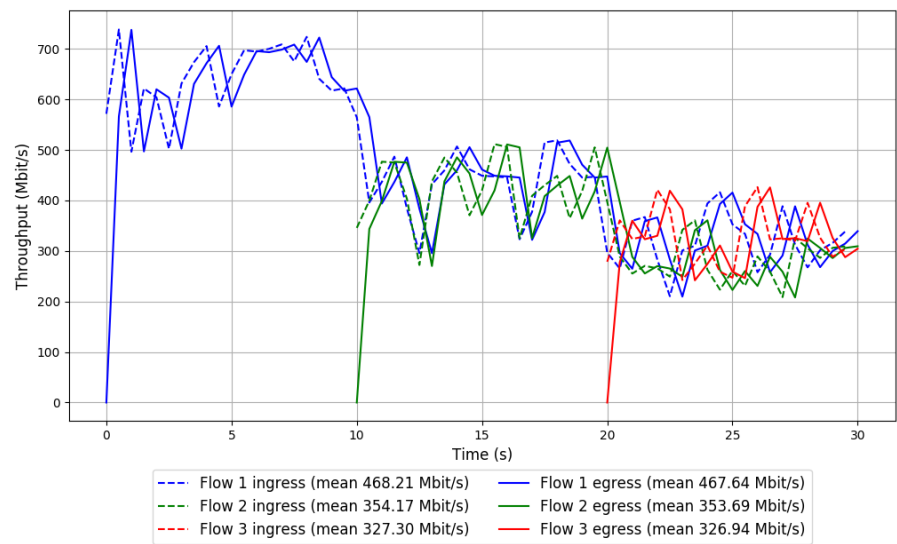
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-05 09:41:18
End at: 2019-02-05 09:41:48
Local clock offset: -0.775 ms
Remote clock offset: 1.163 ms


# Below is generated by plot.py at 2019-02-05 10:17:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 811.92 Mbit/s
95th percentile per-packet one-way delay: 3.019 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 467.64 Mbit/s
95th percentile per-packet one-way delay: 3.469 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 353.69 Mbit/s
95th percentile per-packet one-way delay: 2.073 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 326.94 Mbit/s
95th percentile per-packet one-way delay: 2.017 ms
Loss rate: 0.11%
```
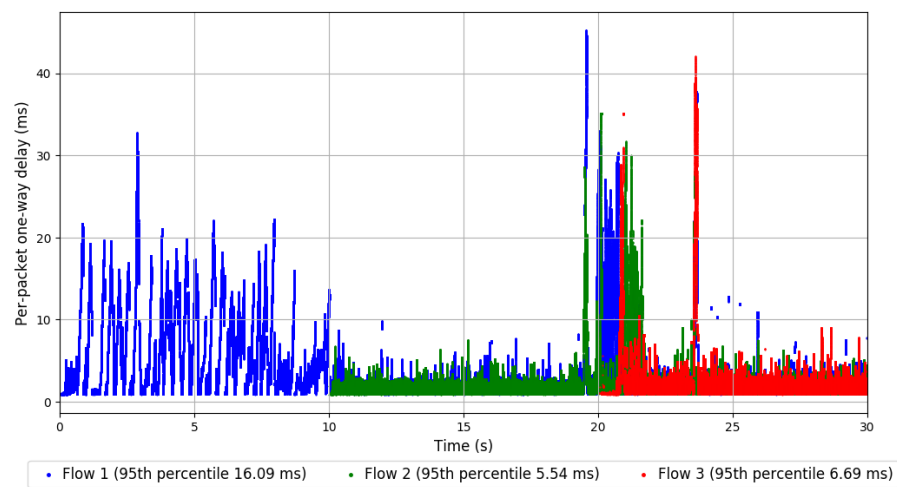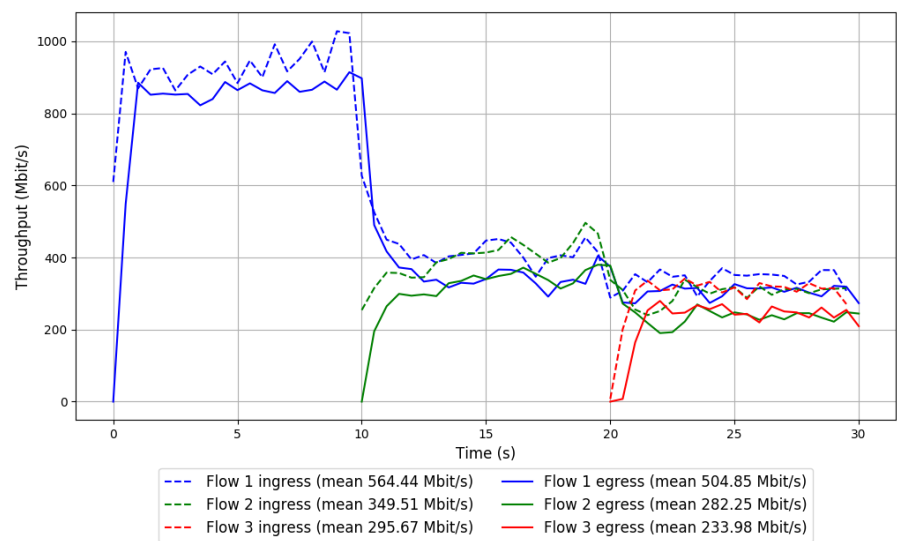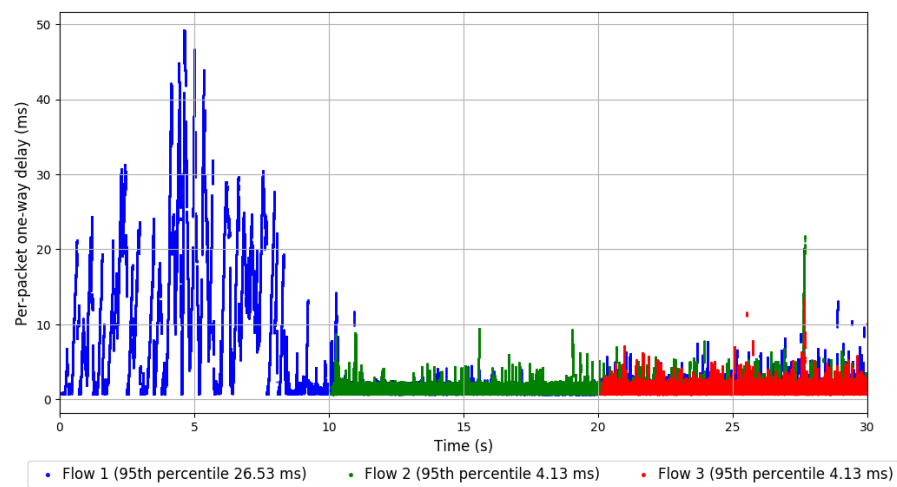
Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 468.21 Mbit/s) —— Flow 1 egress (mean 467.64 Mbit/s)
- - - Flow 2 ingress (mean 354.17 Mbit/s) —— Flow 2 egress (mean 353.69 Mbit/s)
- - - Flow 3 ingress (mean 327.30 Mbit/s) —— Flow 3 egress (mean 326.94 Mbit/s)

• Flow 1 (95th percentile 3.47 ms)   • Flow 2 (95th percentile 2.07 ms)   • Flow 3 (95th percentile 2.02 ms)

```
Run 1: Statistics of FillP

Start at: 2019-02-05 07:30:10
End at: 2019-02-05 07:30:40
Local clock offset: 2.249 ms
Remote clock offset: 0.073 ms

# Below is generated by plot.py at 2019-02-05 10:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 770.27 Mbit/s
95th percentile per-packet one-way delay: 15.144 ms
Loss rate: 13.93%
-- Flow 1:
Average throughput: 504.85 Mbit/s
95th percentile per-packet one-way delay: 16.089 ms
Loss rate: 10.54%
-- Flow 2:
Average throughput: 282.25 Mbit/s
95th percentile per-packet one-way delay: 5.541 ms
Loss rate: 19.25%
-- Flow 3:
Average throughput: 233.98 Mbit/s
95th percentile per-packet one-way delay: 6.686 ms
Loss rate: 20.84%
```
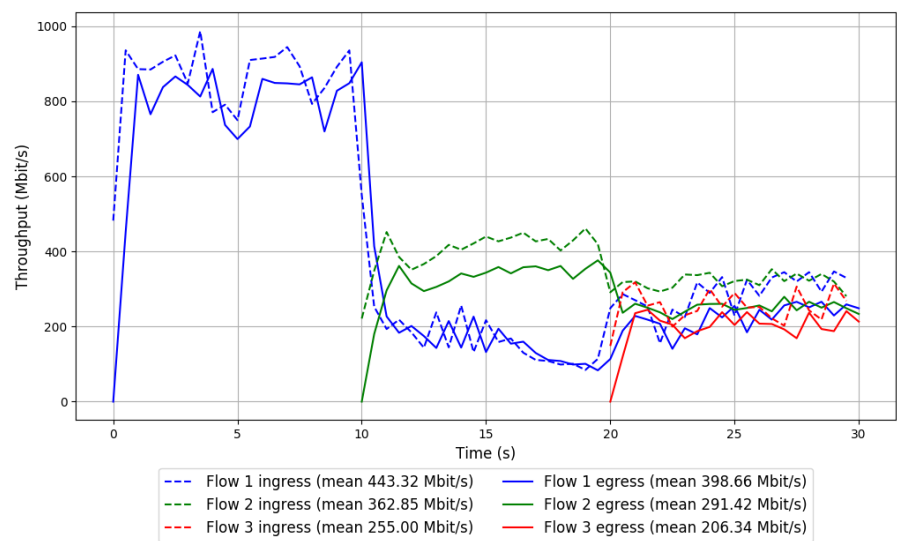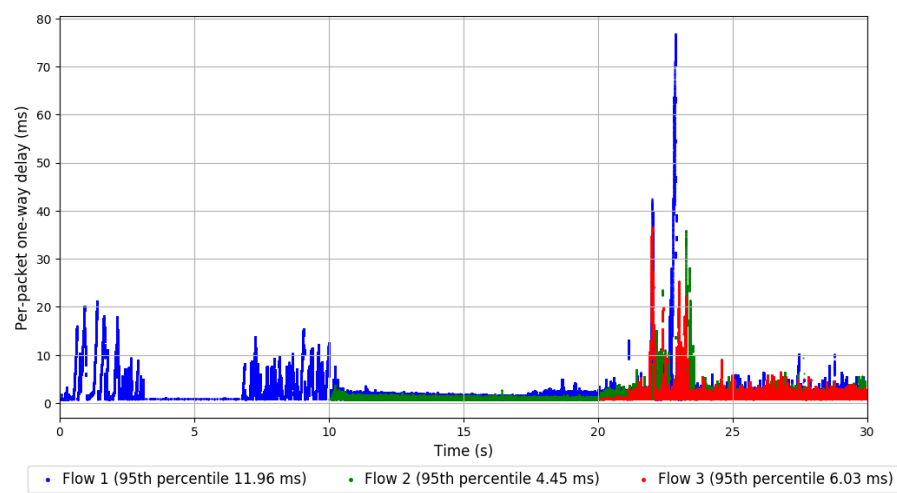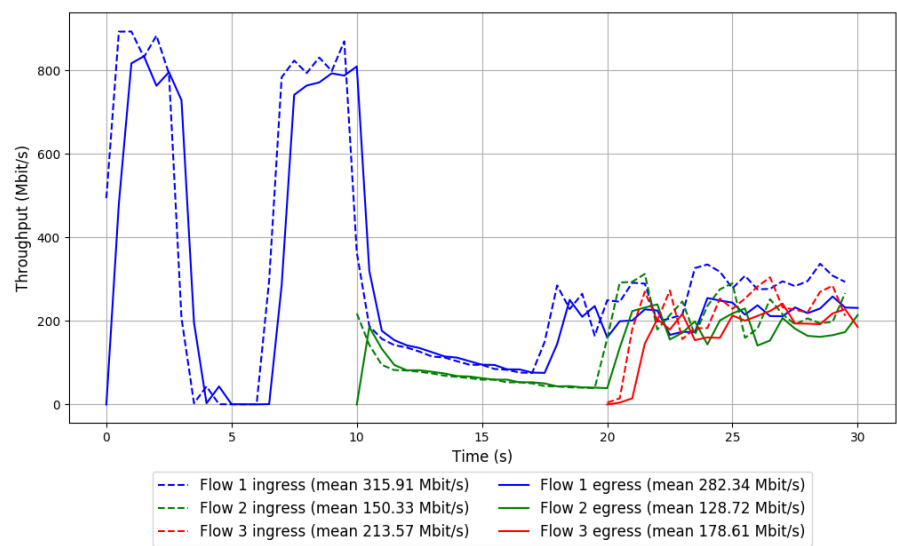
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 564.44 Mbit/s) --- Flow 1 egress (mean 504.85 Mbit/s)
Flow 2 ingress (mean 349.51 Mbit/s) --- Flow 2 egress (mean 282.25 Mbit/s)
Flow 3 ingress (mean 295.67 Mbit/s) --- Flow 3 egress (mean 233.98 Mbit/s)

Flow 1 (95th percentile 16.09 ms) Flow 2 (95th percentile 5.54 ms) Flow 3 (95th percentile 6.69 ms)
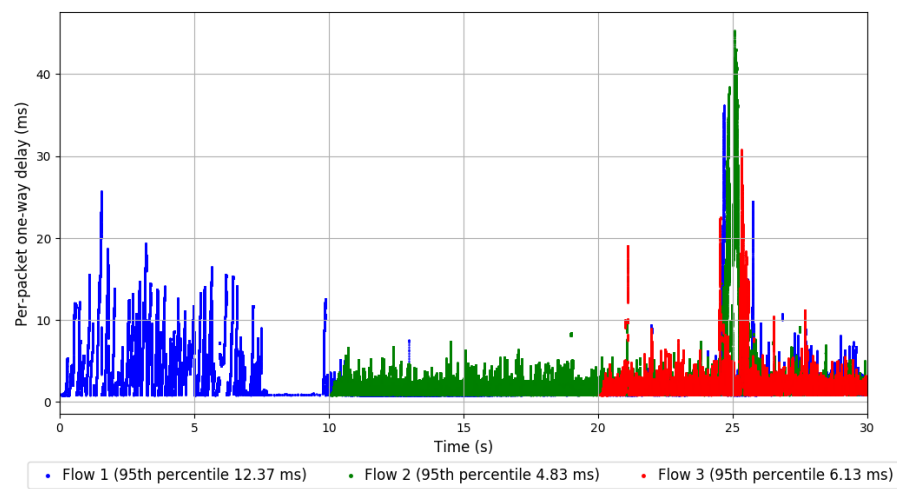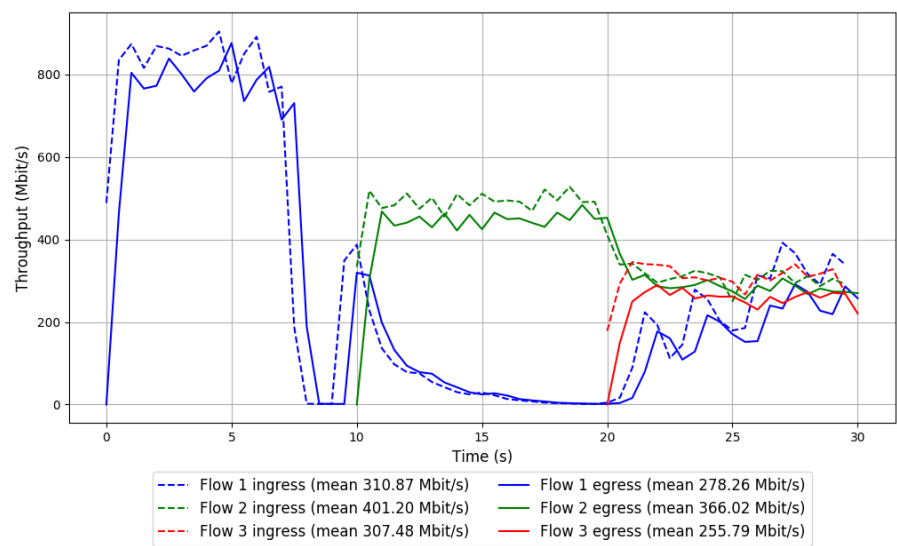
36

```
Run 2: Statistics of FillP

Start at: 2019-02-05 08:00:26
End at: 2019-02-05 08:00:56
Local clock offset: 0.147 ms
Remote clock offset: 0.533 ms


# Below is generated by plot.py at 2019-02-05 10:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 660.87 Mbit/s
95th percentile per-packet one-way delay: 23.310 ms
Loss rate: 14.07%
-- Flow 1:
Average throughput: 398.66 Mbit/s
95th percentile per-packet one-way delay: 26.531 ms
Loss rate: 10.07%
-- Flow 2:
Average throughput: 291.42 Mbit/s
95th percentile per-packet one-way delay: 4.133 ms
Loss rate: 19.69%
-- Flow 3:
Average throughput: 206.34 Mbit/s
95th percentile per-packet one-way delay: 4.135 ms
Loss rate: 19.01%
```

Run 2: Report of FillP — Data Link

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```
Run 3: Statistics of FillP

Start at: 2019-02-05 08:30:38
End at: 2019-02-05 08:31:08
Local clock offset: 0.576 ms
Remote clock offset: -3.444 ms


# Below is generated by plot.py at 2019-02-05 10:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 427.03 Mbit/s
95th percentile per-packet one-way delay: 10.489 ms
Loss rate: 12.23%
-- Flow 1:
Average throughput: 282.34 Mbit/s
95th percentile per-packet one-way delay: 11.955 ms
Loss rate: 10.63%
-- Flow 2:
Average throughput: 128.72 Mbit/s
95th percentile per-packet one-way delay: 4.445 ms
Loss rate: 14.37%
-- Flow 3:
Average throughput: 178.61 Mbit/s
95th percentile per-packet one-way delay: 6.025 ms
Loss rate: 16.36%
```
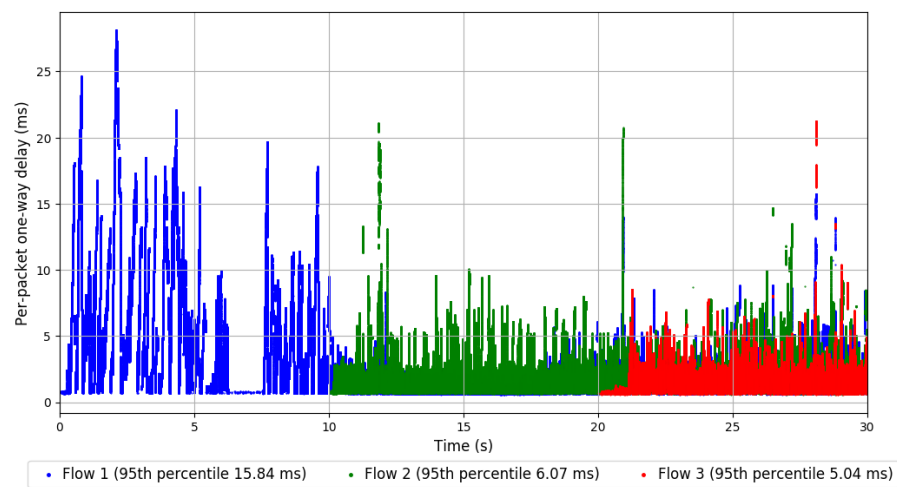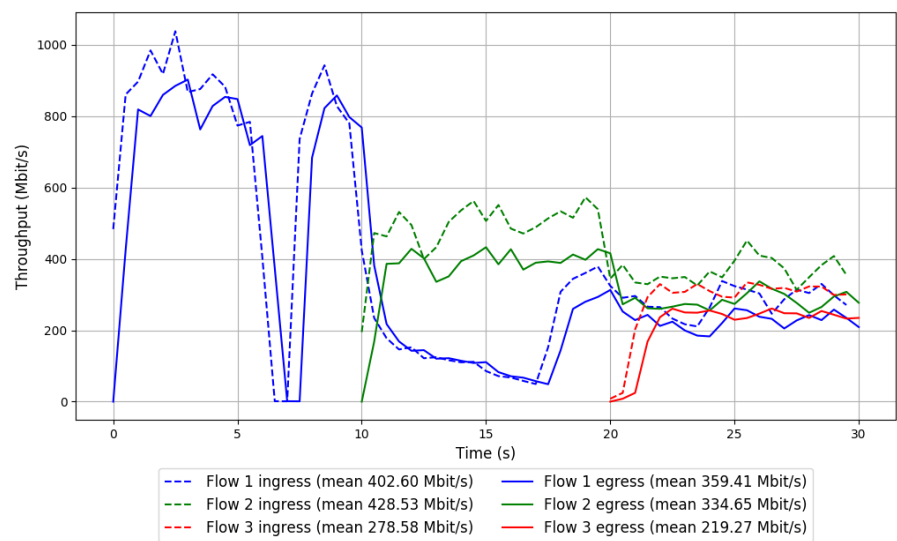
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 315.91 Mbit/s) --- Flow 1 egress (mean 282.34 Mbit/s)
Flow 2 ingress (mean 150.33 Mbit/s) --- Flow 2 egress (mean 128.72 Mbit/s)
Flow 3 ingress (mean 213.57 Mbit/s) --- Flow 3 egress (mean 178.61 Mbit/s)

Flow 1 (95th percentile 11.96 ms)   Flow 2 (95th percentile 4.45 ms)   Flow 3 (95th percentile 6.03 ms)

```
Run 4: Statistics of FillP

Start at: 2019-02-05 09:00:36
End at: 2019-02-05 09:01:06
Local clock offset: 2.577 ms
Remote clock offset: -3.275 ms

# Below is generated by plot.py at 2019-02-05 10:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 606.68 Mbit/s
95th percentile per-packet one-way delay: 10.660 ms
Loss rate: 10.76%
-- Flow 1:
Average throughput: 278.26 Mbit/s
95th percentile per-packet one-way delay: 12.367 ms
Loss rate: 10.49%
-- Flow 2:
Average throughput: 366.02 Mbit/s
95th percentile per-packet one-way delay: 4.828 ms
Loss rate: 8.77%
-- Flow 3:
Average throughput: 255.79 Mbit/s
95th percentile per-packet one-way delay: 6.129 ms
Loss rate: 16.81%
```
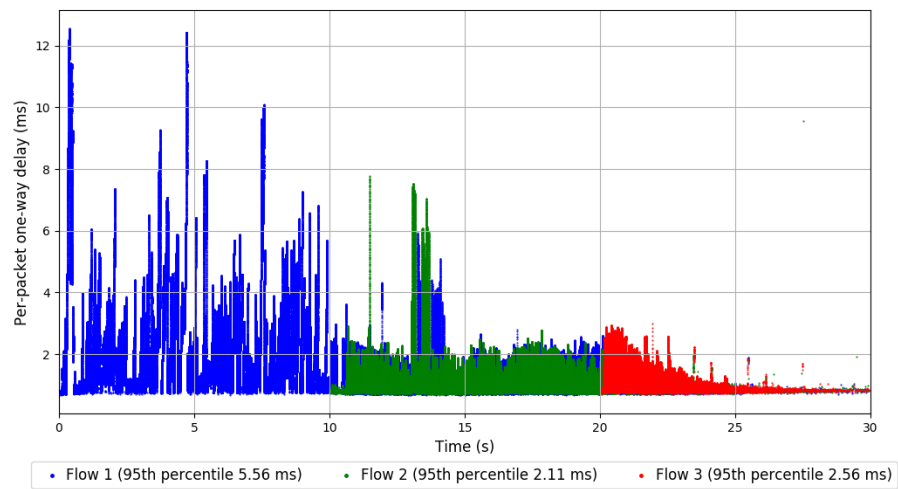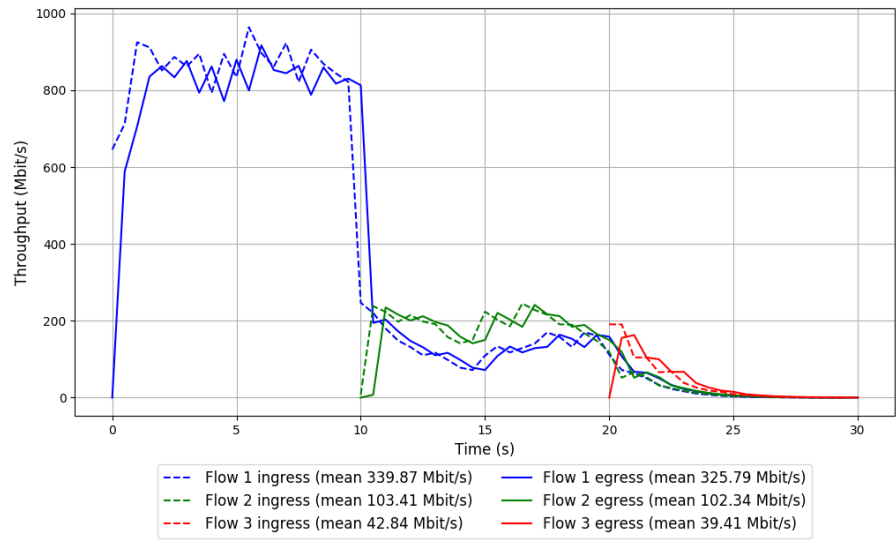
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 310.87 Mbit/s) — Flow 1 egress (mean 278.26 Mbit/s)
Flow 2 ingress (mean 401.20 Mbit/s) — Flow 2 egress (mean 366.02 Mbit/s)
Flow 3 ingress (mean 307.48 Mbit/s) — Flow 3 egress (mean 255.79 Mbit/s)

Flow 1 (95th percentile 12.37 ms)   Flow 2 (95th percentile 4.83 ms)   Flow 3 (95th percentile 6.13 ms)

```
Run 5: Statistics of FillP

Start at: 2019-02-05 09:30:49
End at: 2019-02-05 09:31:19
Local clock offset: -0.044 ms
Remote clock offset: 0.205 ms


# Below is generated by plot.py at 2019-02-05 10:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 654.83 Mbit/s
95th percentile per-packet one-way delay: 12.832 ms
Loss rate: 16.06%
-- Flow 1:
Average throughput: 359.41 Mbit/s
95th percentile per-packet one-way delay: 15.842 ms
Loss rate: 10.72%
-- Flow 2:
Average throughput: 334.65 Mbit/s
95th percentile per-packet one-way delay: 6.067 ms
Loss rate: 21.89%
-- Flow 3:
Average throughput: 219.27 Mbit/s
95th percentile per-packet one-way delay: 5.044 ms
Loss rate: 21.28%
```
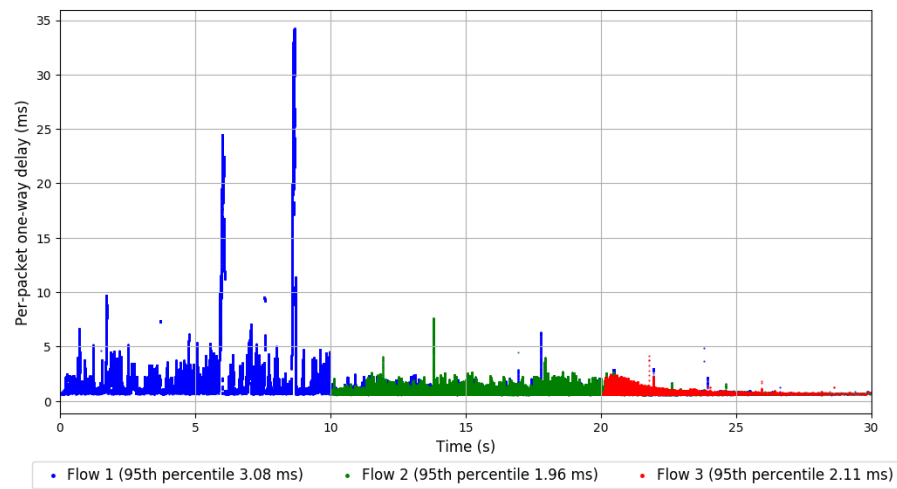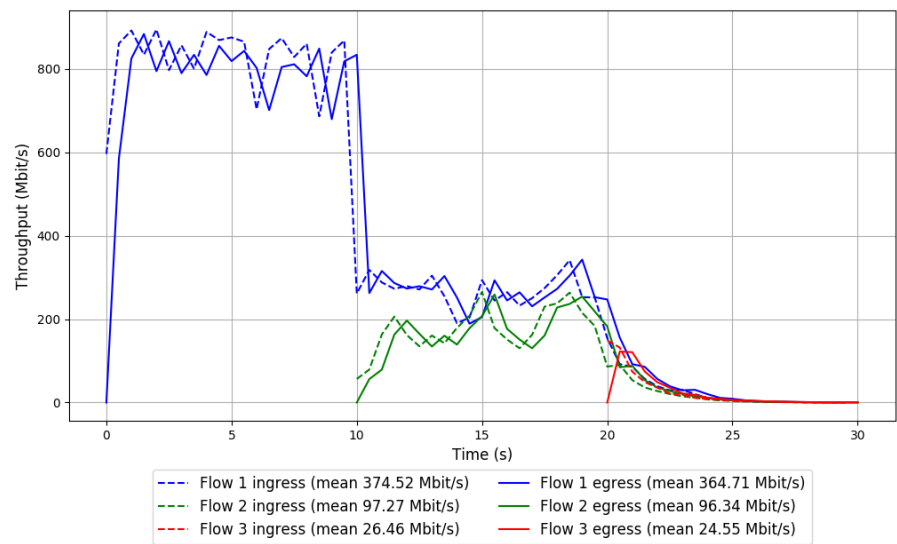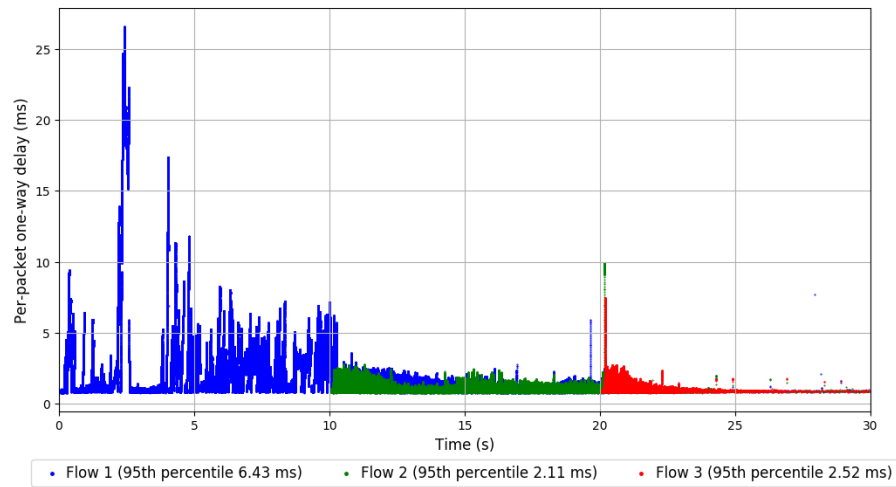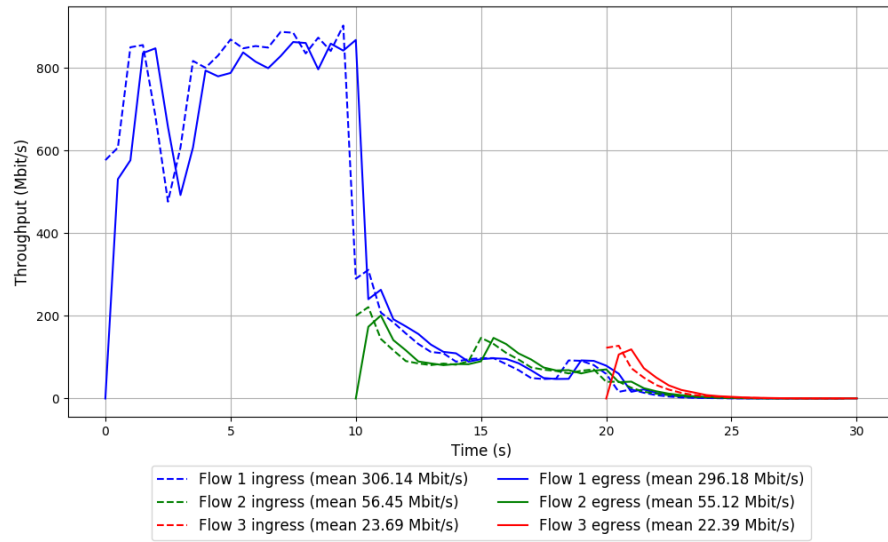
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-05 07:33:17
End at: 2019-02-05 07:33:47
Local clock offset: 2.573 ms
Remote clock offset: 0.043 ms


# Below is generated by plot.py at 2019-02-05 10:19:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 406.71 Mbit/s
95th percentile per-packet one-way delay: 5.072 ms
Loss rate: 3.77%
-- Flow 1:
Average throughput: 325.79 Mbit/s
95th percentile per-packet one-way delay: 5.559 ms
Loss rate: 4.14%
-- Flow 2:
Average throughput: 102.34 Mbit/s
95th percentile per-packet one-way delay: 2.109 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 2.559 ms
Loss rate: 8.00%
```
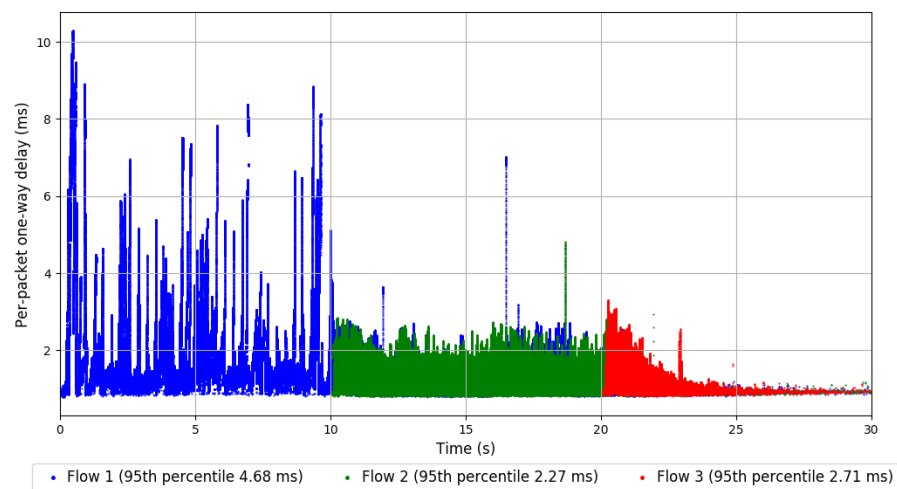
Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 339.87 Mbit/s)   Flow 1 egress (mean 325.79 Mbit/s)
Flow 2 ingress (mean 103.41 Mbit/s)   Flow 2 egress (mean 102.34 Mbit/s)
Flow 3 ingress (mean 42.84 Mbit/s)   Flow 3 egress (mean 39.41 Mbit/s)

Flow 1 (95th percentile 5.56 ms)   Flow 2 (95th percentile 2.11 ms)   Flow 3 (95th percentile 2.56 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-05 08:03:23
End at: 2019-02-05 08:03:53
Local clock offset: -0.109 ms
Remote clock offset: 0.539 ms

# Below is generated by plot.py at 2019-02-05 10:20:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 436.91 Mbit/s
95th percentile per-packet one-way delay: 2.775 ms
Loss rate: 2.47%
-- Flow 1:
Average throughput: 364.71 Mbit/s
95th percentile per-packet one-way delay: 3.083 ms
Loss rate: 2.62%
-- Flow 2:
Average throughput: 96.34 Mbit/s
95th percentile per-packet one-way delay: 1.958 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 24.55 Mbit/s
95th percentile per-packet one-way delay: 2.107 ms
Loss rate: 7.23%
```
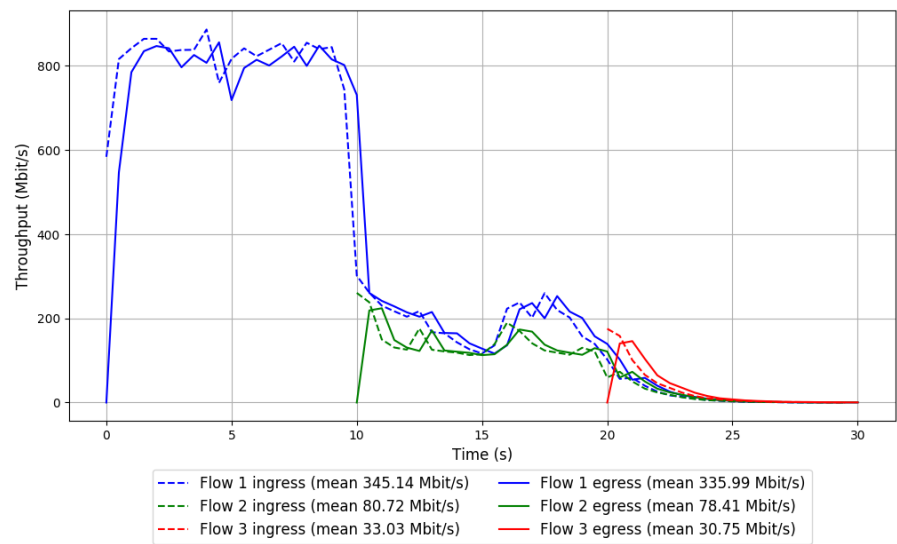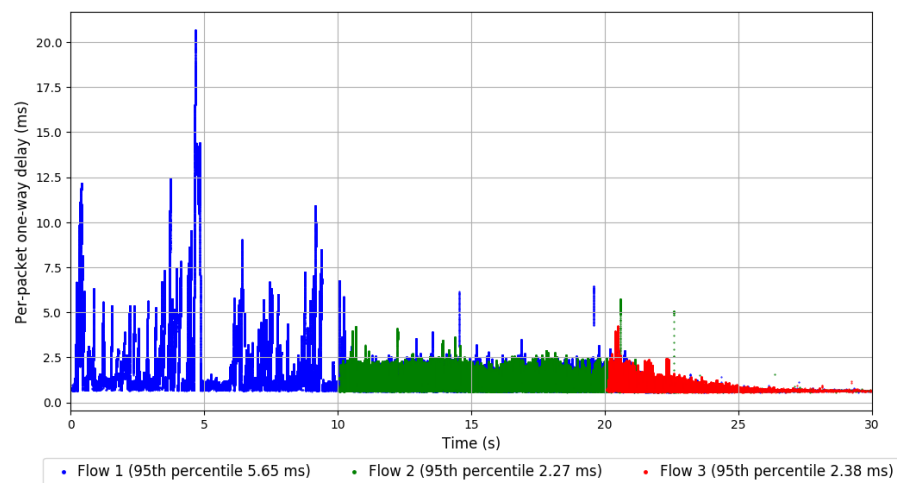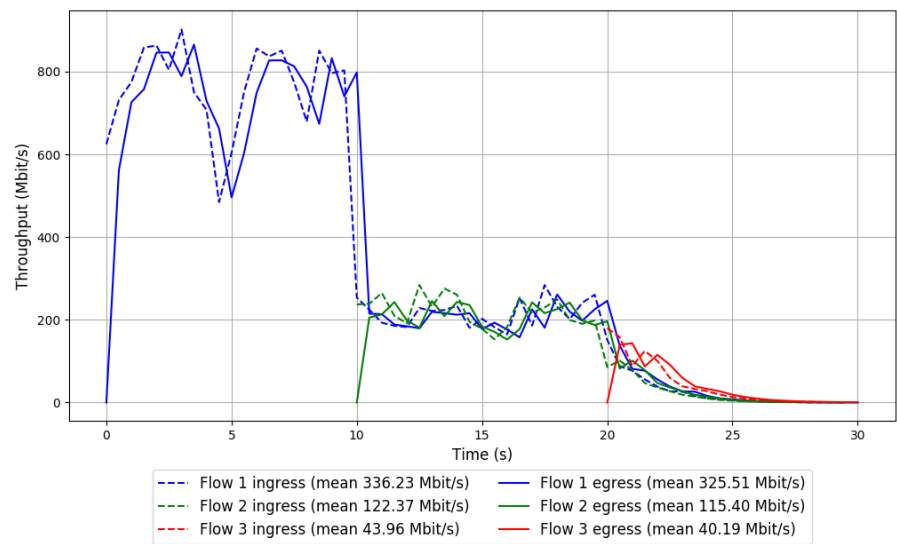
Run 2: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 374.52 Mbit/s) ——— Flow 1 egress (mean 364.71 Mbit/s)
- - - Flow 2 ingress (mean 97.27 Mbit/s) ——— Flow 2 egress (mean 96.34 Mbit/s)
- - - Flow 3 ingress (mean 26.46 Mbit/s) ——— Flow 3 egress (mean 24.55 Mbit/s)

- Flow 1 (95th percentile 3.08 ms)   - Flow 2 (95th percentile 1.96 ms)   - Flow 3 (95th percentile 2.11 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-05 08:33:28
End at: 2019-02-05 08:33:58
Local clock offset: 0.667 ms
Remote clock offset: -3.572 ms


# Below is generated by plot.py at 2019-02-05 10:20:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 340.11 Mbit/s
95th percentile per-packet one-way delay: 6.128 ms
Loss rate: 3.21%
-- Flow 1:
Average throughput: 296.18 Mbit/s
95th percentile per-packet one-way delay: 6.426 ms
Loss rate: 3.25%
-- Flow 2:
Average throughput: 55.12 Mbit/s
95th percentile per-packet one-way delay: 2.106 ms
Loss rate: 2.36%
-- Flow 3:
Average throughput: 22.39 Mbit/s
95th percentile per-packet one-way delay: 2.520 ms
Loss rate: 5.48%
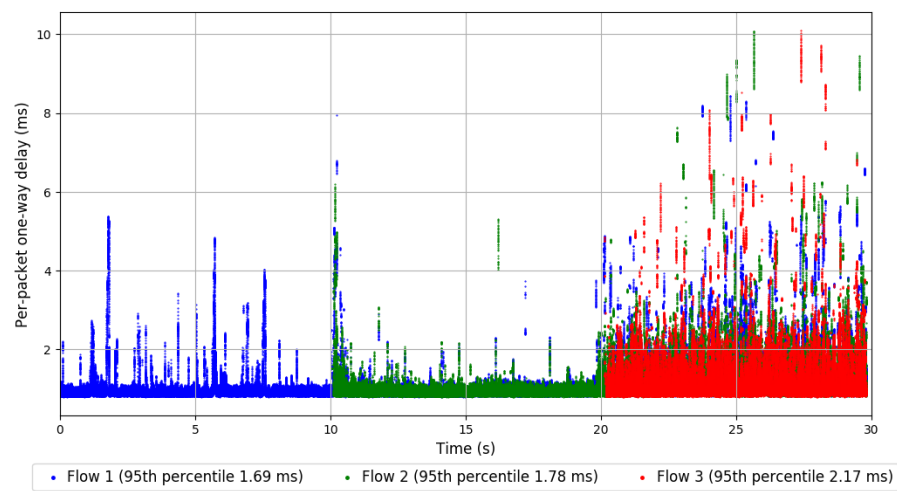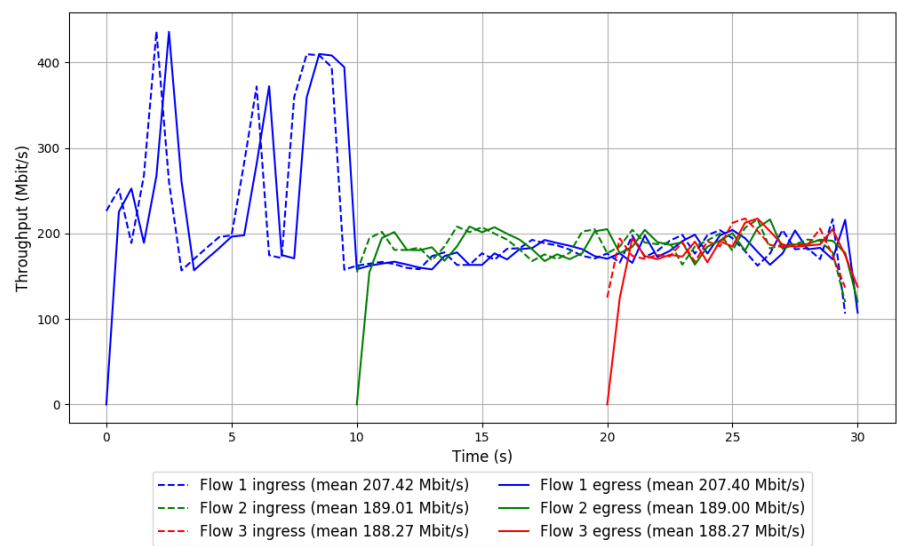```
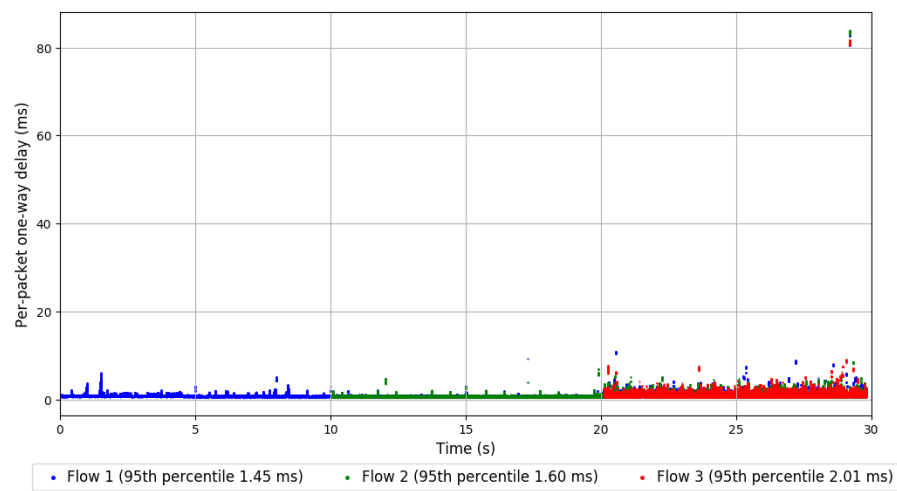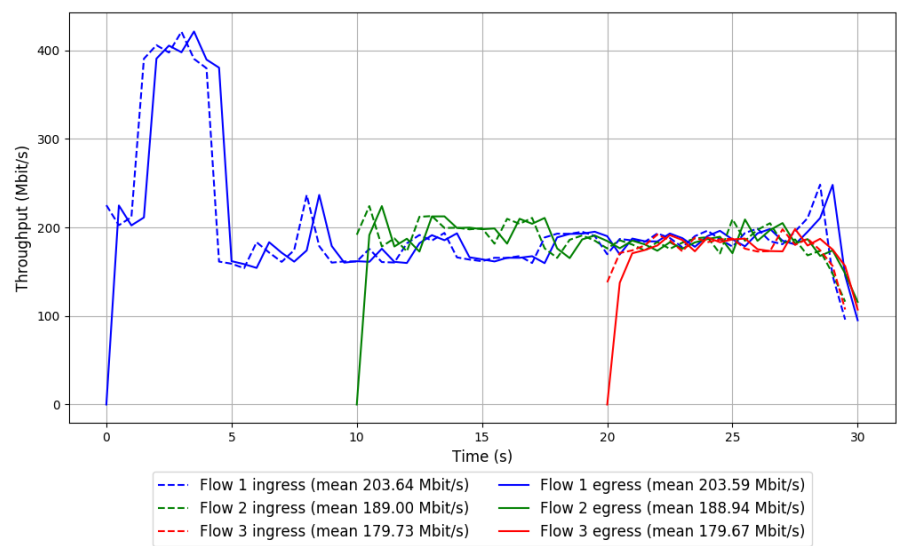
Run 3: Report of FillP-Sheep — Data Link



Flow 1 ingress (mean 306.14 Mbit/s) --- Flow 1 egress (mean 296.18 Mbit/s)
Flow 2 ingress (mean 56.45 Mbit/s) --- Flow 2 egress (mean 55.12 Mbit/s)
Flow 3 ingress (mean 23.69 Mbit/s) --- Flow 3 egress (mean 22.39 Mbit/s)



Flow 1 (95th percentile 6.43 ms) • Flow 2 (95th percentile 2.11 ms) • Flow 3 (95th percentile 2.52 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-05 09:03:37
End at: 2019-02-05 09:04:07
Local clock offset: 2.738 ms
Remote clock offset: -3.22 ms

Below is generated by plot.py at 2019-02-05 10:22:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 398.10 Mbit/s
95th percentile per-packet one-way delay: 4.233 ms
Loss rate: 2.79%
-- Flow 1:
Average throughput: 335.99 Mbit/s
95th percentile per-packet one-way delay: 4.677 ms
Loss rate: 2.65%
-- Flow 2:
Average throughput: 78.41 Mbit/s
95th percentile per-packet one-way delay: 2.275 ms
Loss rate: 2.86%
-- Flow 3:
Average throughput: 30.75 Mbit/s
95th percentile per-packet one-way delay: 2.712 ms
Loss rate: 6.90%
```
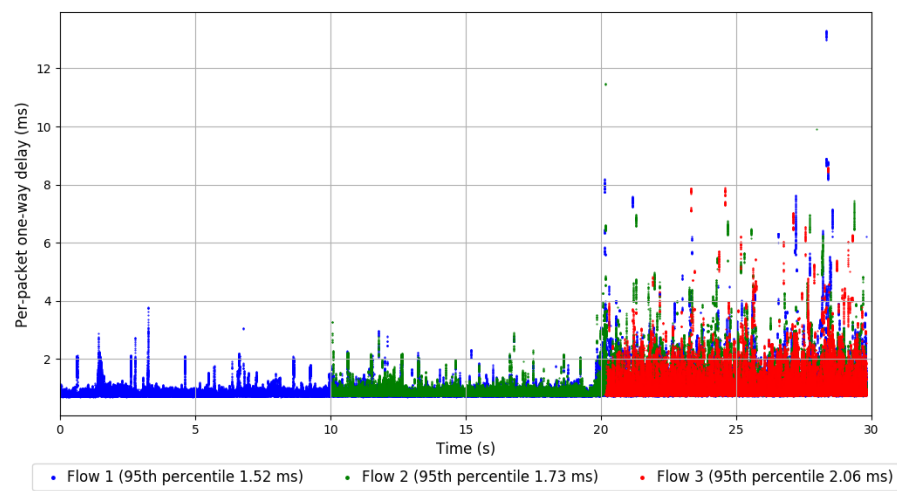
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-05 09:33:56
End at: 2019-02-05 09:34:26
Local clock offset: -0.321 ms
Remote clock offset: 0.514 ms

Below is generated by plot.py at 2019-02-05 10:23:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 415.63 Mbit/s
95th percentile per-packet one-way delay: 5.244 ms
Loss rate: 3.84%
-- Flow 1:
Average throughput: 325.51 Mbit/s
95th percentile per-packet one-way delay: 5.649 ms
Loss rate: 3.19%
-- Flow 2:
Average throughput: 115.40 Mbit/s
95th percentile per-packet one-way delay: 2.272 ms
Loss rate: 5.69%
-- Flow 3:
Average throughput: 40.19 Mbit/s
95th percentile per-packet one-way delay: 2.376 ms
Loss rate: 8.57%
```
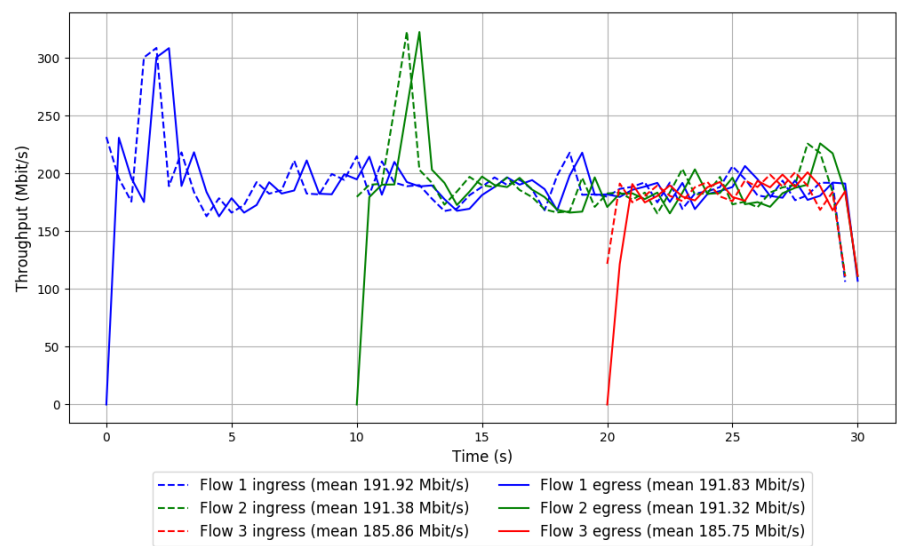
Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2019-02-05 07:36:21
End at: 2019-02-05 07:36:51
Local clock offset: 2.756 ms
Remote clock offset: 0.125 ms

Below is generated by plot.py at 2019-02-05 10:23:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 393.49 Mbit/s
95th percentile per-packet one-way delay: 1.826 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 207.40 Mbit/s
95th percentile per-packet one-way delay: 1.689 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 189.00 Mbit/s
95th percentile per-packet one-way delay: 1.781 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 188.27 Mbit/s
95th percentile per-packet one-way delay: 2.165 ms
Loss rate: 0.01%
```
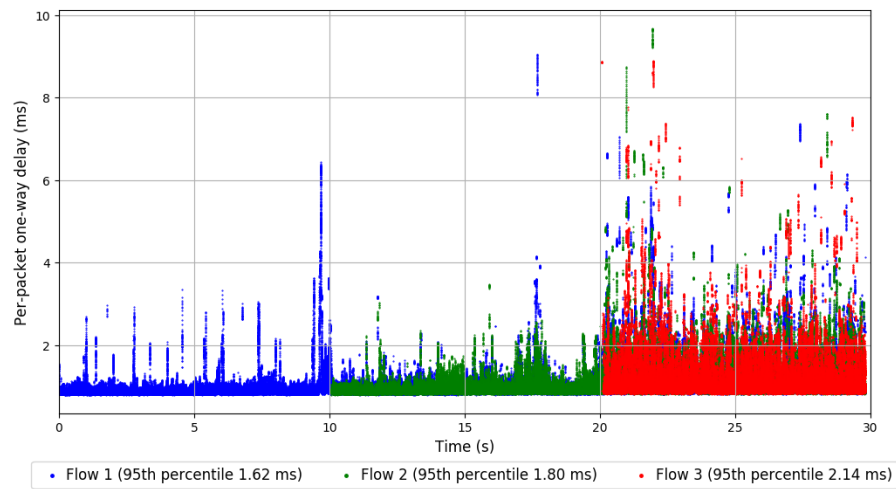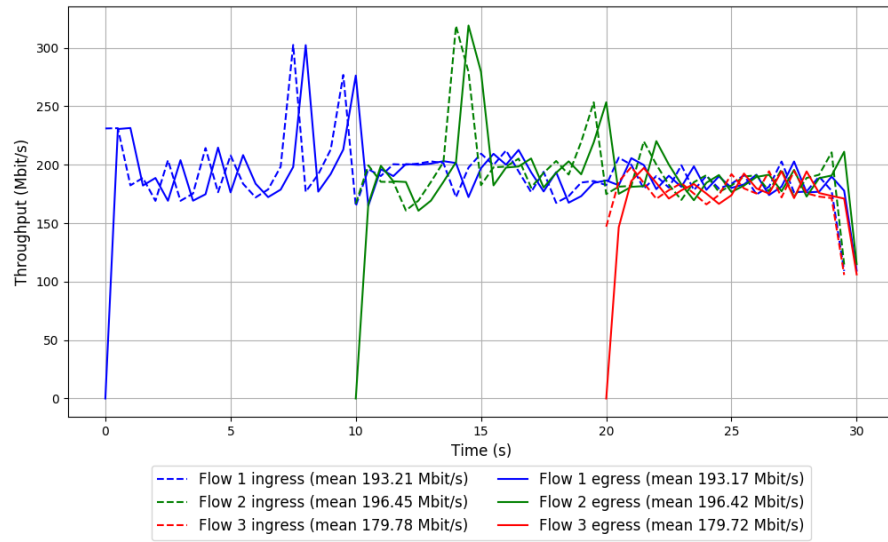
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-05 08:06:31
End at: 2019-02-05 08:07:01
Local clock offset: -0.345 ms
Remote clock offset: 0.61 ms

Below is generated by plot.py at 2019-02-05 10:23:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 387.21 Mbit/s
95th percentile per-packet one-way delay: 1.618 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 203.59 Mbit/s
95th percentile per-packet one-way delay: 1.453 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 188.94 Mbit/s
95th percentile per-packet one-way delay: 1.605 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 179.67 Mbit/s
95th percentile per-packet one-way delay: 2.012 ms
Loss rate: 0.04%
```
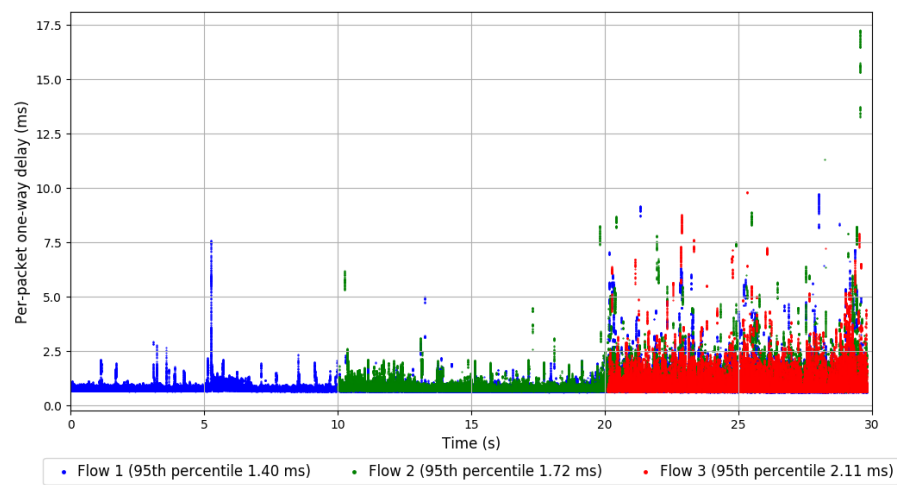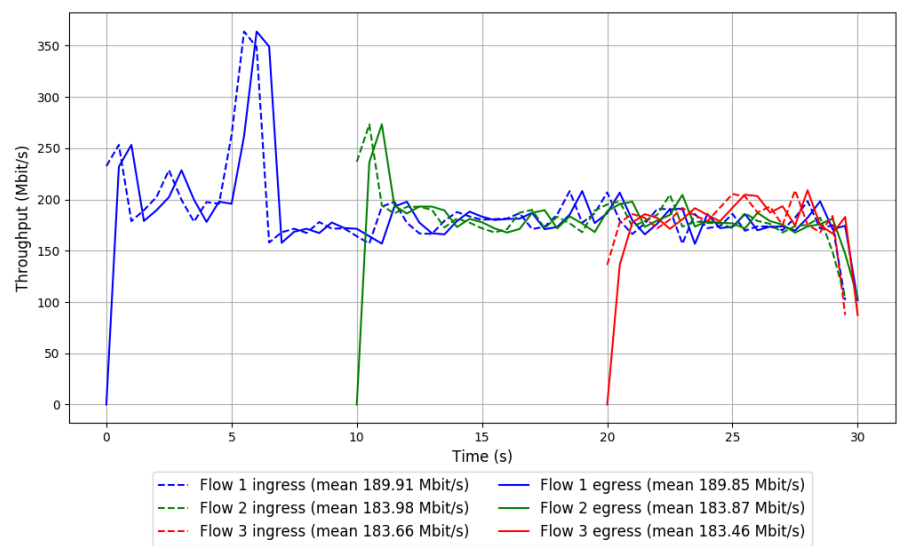
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-02-05 08:36:30
End at: 2019-02-05 08:37:00
Local clock offset: 0.723 ms
Remote clock offset: -3.815 ms

Below is generated by plot.py at 2019-02-05 10:23:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 378.64 Mbit/s
95th percentile per-packet one-way delay: 1.706 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 191.83 Mbit/s
95th percentile per-packet one-way delay: 1.517 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 191.32 Mbit/s
95th percentile per-packet one-way delay: 1.730 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 185.75 Mbit/s
95th percentile per-packet one-way delay: 2.061 ms
Loss rate: 0.04%
```
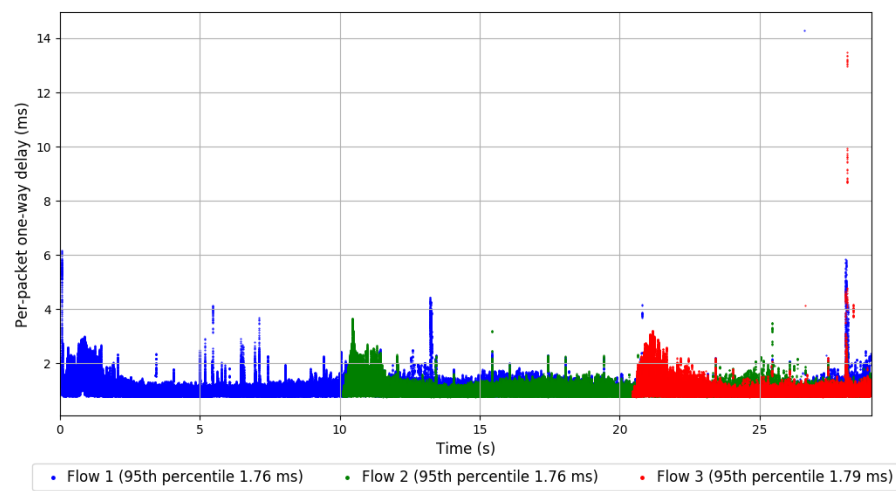
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-02-05 09:06:43
End at: 2019-02-05 09:07:13
Local clock offset: 2.87 ms
Remote clock offset: -3.276 ms

Below is generated by plot.py at 2019-02-05 10:23:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 381.90 Mbit/s
95th percentile per-packet one-way delay: 1.795 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 193.17 Mbit/s
95th percentile per-packet one-way delay: 1.625 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 196.42 Mbit/s
95th percentile per-packet one-way delay: 1.796 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 179.72 Mbit/s
95th percentile per-packet one-way delay: 2.141 ms
Loss rate: 0.02%
```
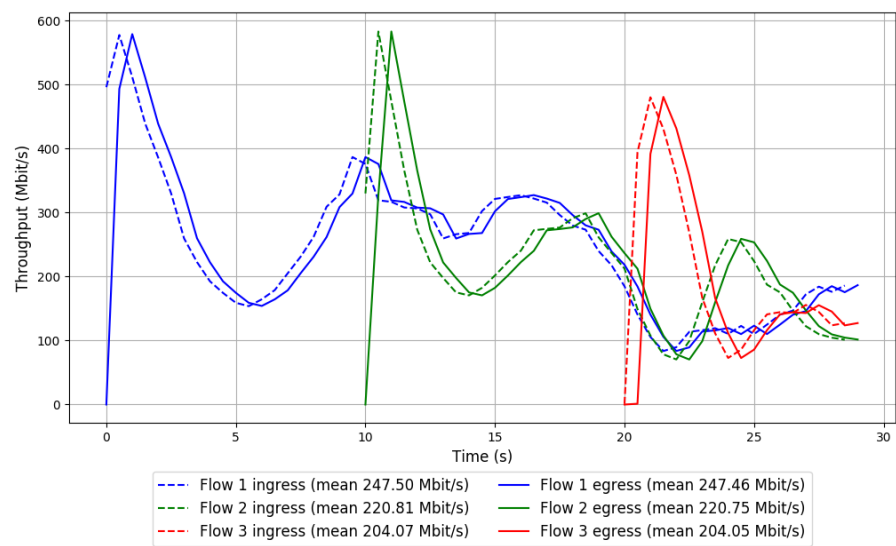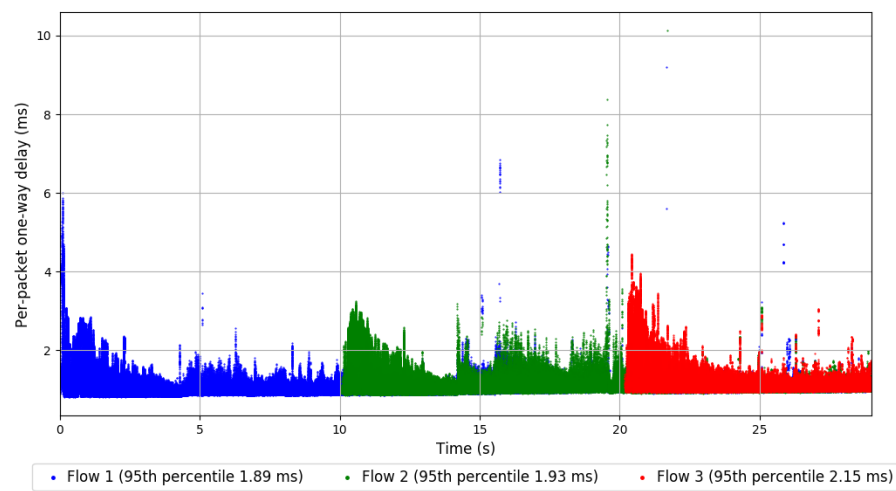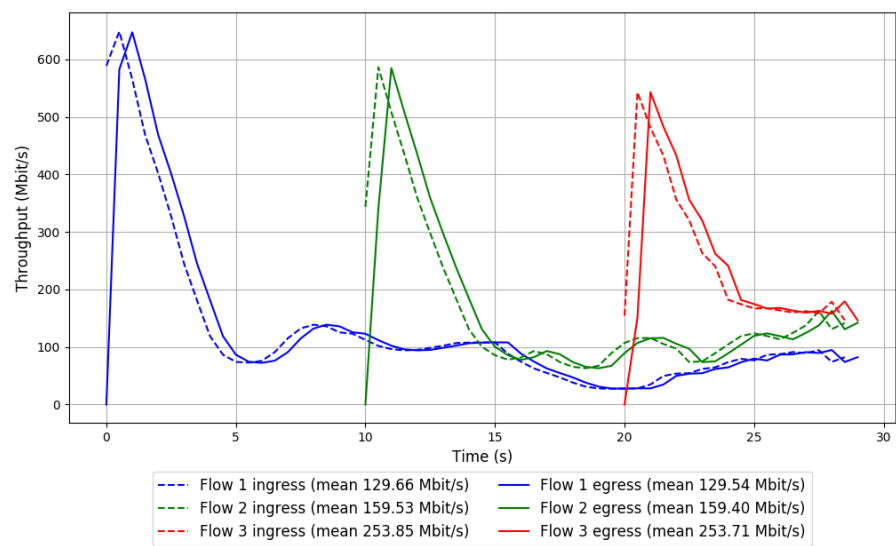
Run 4: Report of Indigo — Data Link



- - - Flow 1 ingress (mean 193.21 Mbit/s) —— Flow 1 egress (mean 193.17 Mbit/s)
- - - Flow 2 ingress (mean 196.45 Mbit/s) —— Flow 2 egress (mean 196.42 Mbit/s)
- - - Flow 3 ingress (mean 179.78 Mbit/s) —— Flow 3 egress (mean 179.72 Mbit/s)



• Flow 1 (95th percentile 1.62 ms)    • Flow 2 (95th percentile 1.80 ms)    • Flow 3 (95th percentile 2.14 ms)

```
Run 5: Statistics of Indigo

Start at: 2019-02-05 09:37:01
End at: 2019-02-05 09:37:31
Local clock offset: -0.532 ms
Remote clock offset: 0.827 ms

Below is generated by plot.py at 2019-02-05 10:23:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 371.70 Mbit/s
95th percentile per-packet one-way delay: 1.674 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 189.85 Mbit/s
95th percentile per-packet one-way delay: 1.402 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 183.87 Mbit/s
95th percentile per-packet one-way delay: 1.716 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 183.46 Mbit/s
95th percentile per-packet one-way delay: 2.107 ms
Loss rate: 0.10%
```
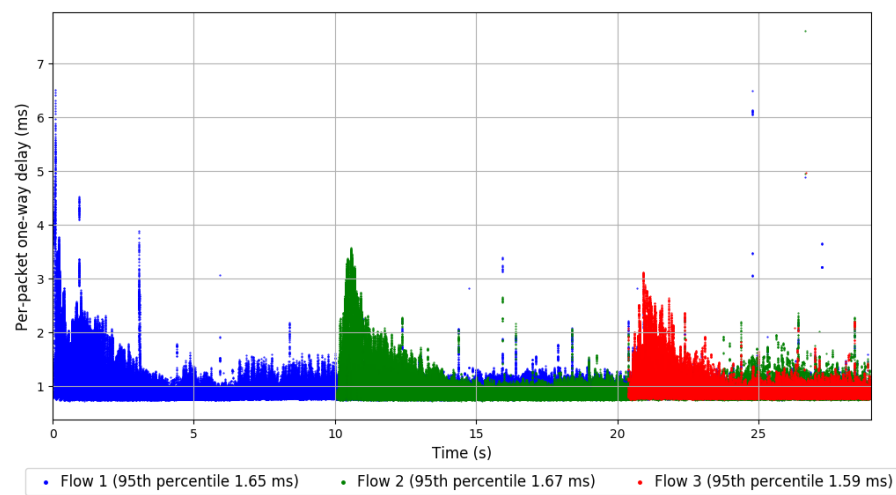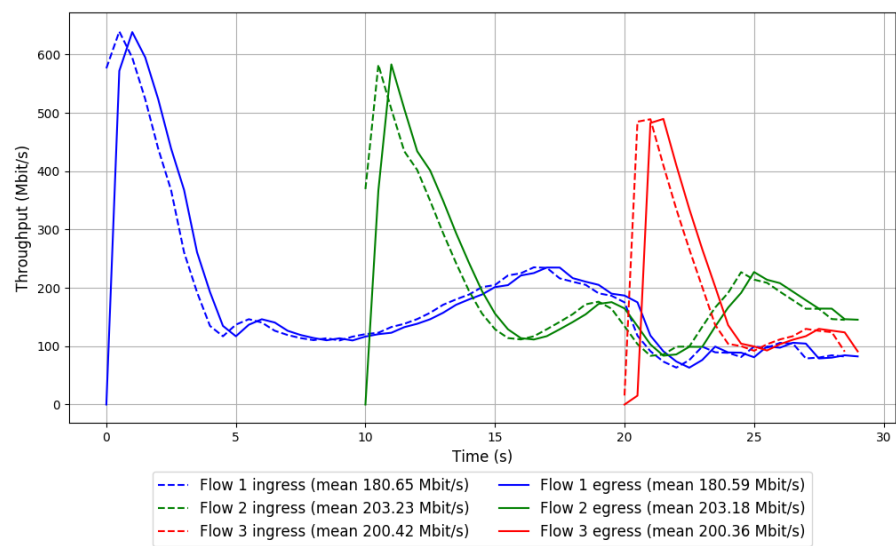
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-05 07:39:17
End at: 2019-02-05 07:39:47
Local clock offset: 2.925 ms
Remote clock offset: 0.193 ms

Below is generated by plot.py at 2019-02-05 10:25:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 451.12 Mbit/s
95th percentile per-packet one-way delay: 1.766 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 247.46 Mbit/s
95th percentile per-packet one-way delay: 1.758 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 220.75 Mbit/s
95th percentile per-packet one-way delay: 1.765 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 204.05 Mbit/s
95th percentile per-packet one-way delay: 1.786 ms
Loss rate: 0.01%
```
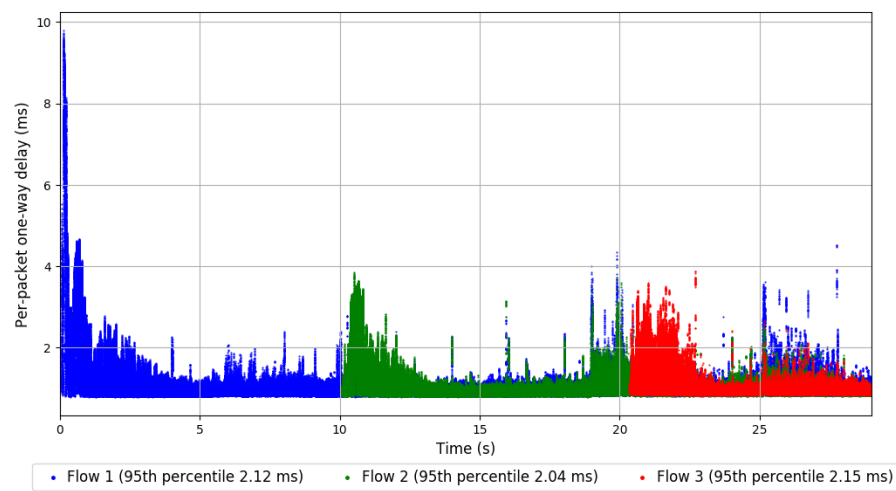
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-05 08:09:26
End at: 2019-02-05 08:09:56
Local clock offset: -0.55 ms
Remote clock offset: -0.248 ms

Below is generated by plot.py at 2019-02-05 10:25:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 310.29 Mbit/s
95th percentile per-packet one-way delay: 1.972 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 129.54 Mbit/s
95th percentile per-packet one-way delay: 1.887 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 159.40 Mbit/s
95th percentile per-packet one-way delay: 1.933 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 253.71 Mbit/s
95th percentile per-packet one-way delay: 2.148 ms
Loss rate: 0.05%
```
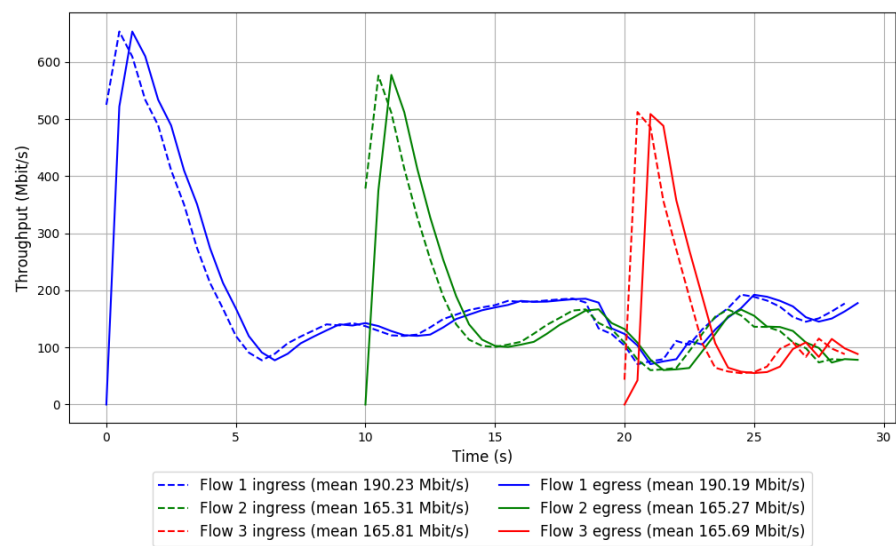
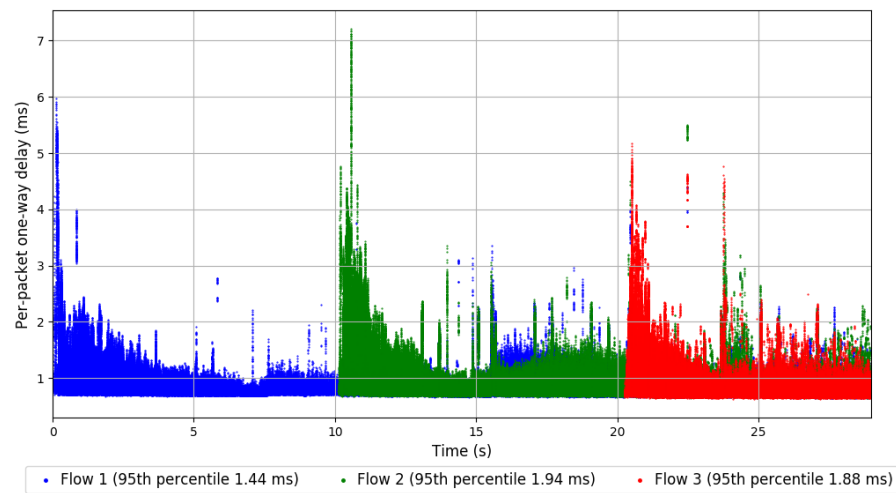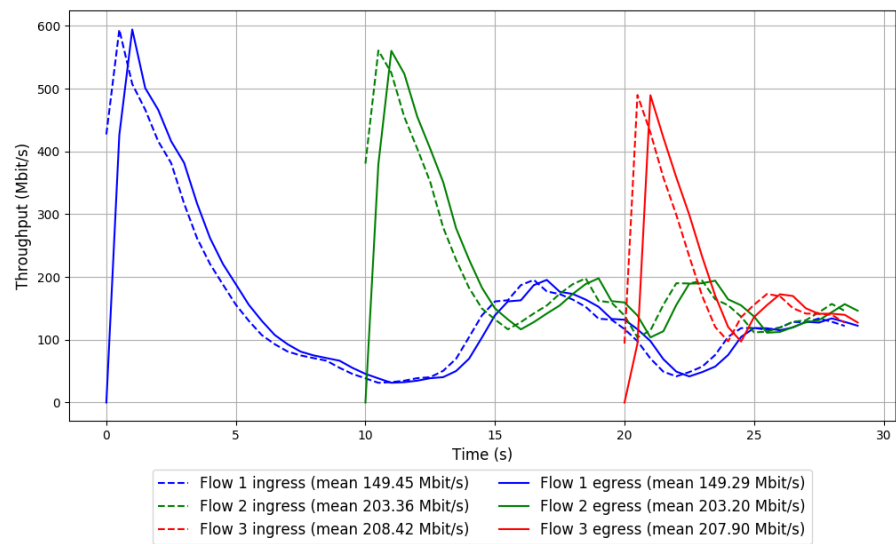Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-05 08:39:24
End at: 2019-02-05 08:39:54
Local clock offset: 0.769 ms
Remote clock offset: -3.888 ms


# Below is generated by plot.py at 2019-02-05 10:26:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 372.55 Mbit/s
95th percentile per-packet one-way delay: 1.644 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 180.59 Mbit/s
95th percentile per-packet one-way delay: 1.650 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 203.18 Mbit/s
95th percentile per-packet one-way delay: 1.671 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 200.36 Mbit/s
95th percentile per-packet one-way delay: 1.590 ms
Loss rate: 0.03%
```

Run 3: Report of Indigo-MusesC3 — Data Link

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```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-05 09:09:38
End at: 2019-02-05 09:10:08
Local clock offset: 2.983 ms
Remote clock offset: -3.31 ms


# Below is generated by plot.py at 2019-02-05 10:26:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 347.44 Mbit/s
95th percentile per-packet one-way delay: 2.113 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 190.19 Mbit/s
95th percentile per-packet one-way delay: 2.116 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 165.27 Mbit/s
95th percentile per-packet one-way delay: 2.043 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 165.69 Mbit/s
95th percentile per-packet one-way delay: 2.153 ms
Loss rate: 0.07%
```
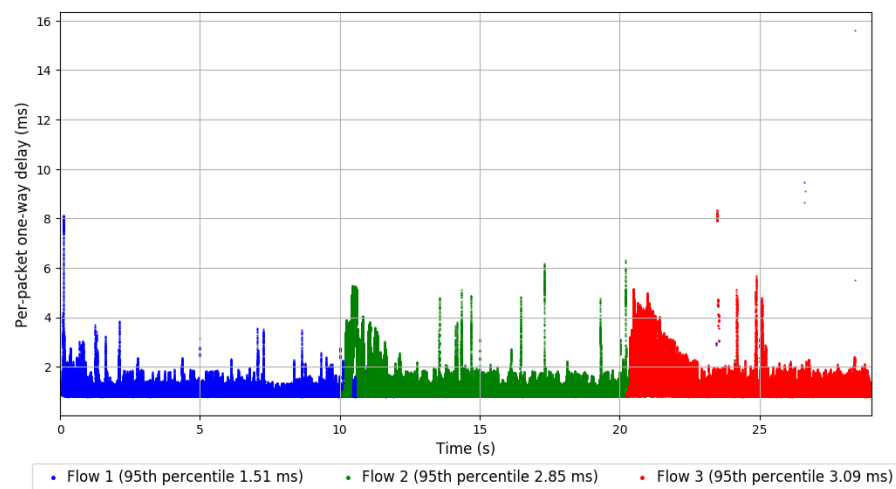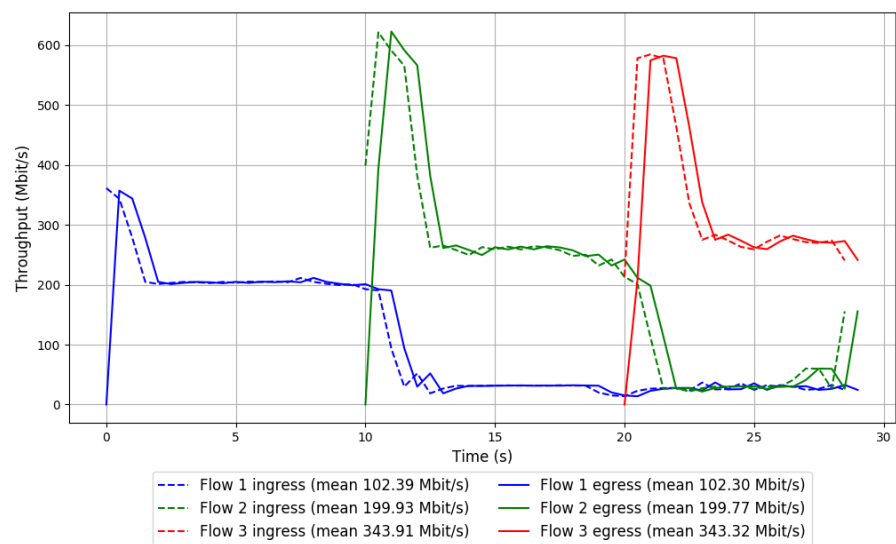
Run 4: Report of Indigo-MusesC3 — Data Link

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```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-05 09:39:53
End at: 2019-02-05 09:40:23
Local clock offset: -0.69 ms
Remote clock offset: 1.087 ms


# Below is generated by plot.py at 2019-02-05 10:26:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 343.99 Mbit/s
95th percentile per-packet one-way delay: 1.713 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 149.29 Mbit/s
95th percentile per-packet one-way delay: 1.444 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 203.20 Mbit/s
95th percentile per-packet one-way delay: 1.944 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 207.90 Mbit/s
95th percentile per-packet one-way delay: 1.877 ms
Loss rate: 0.25%
```
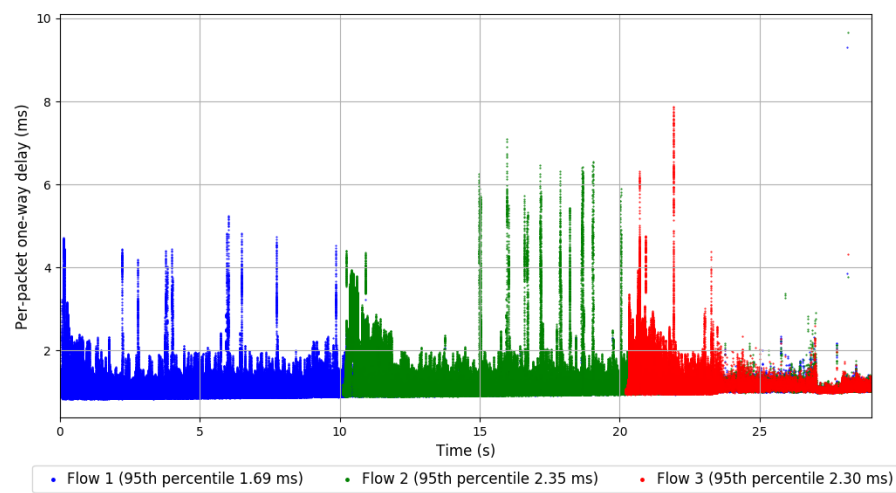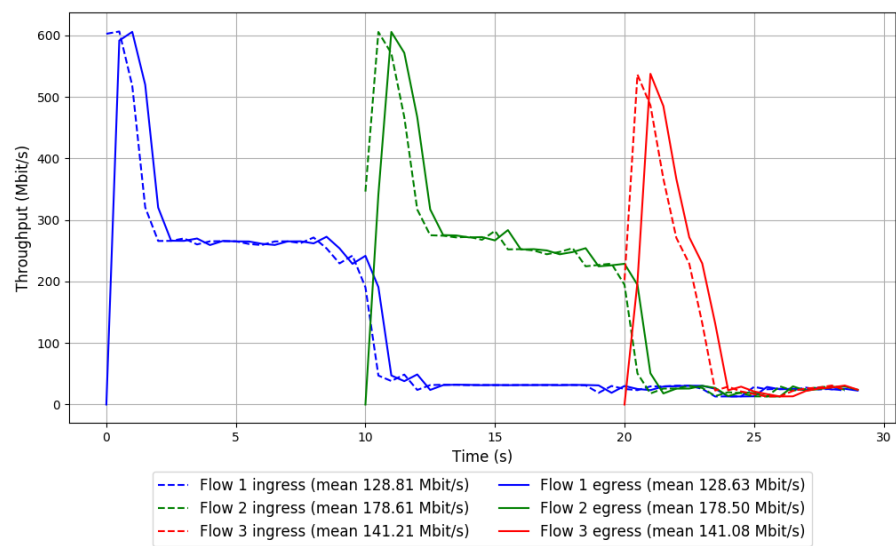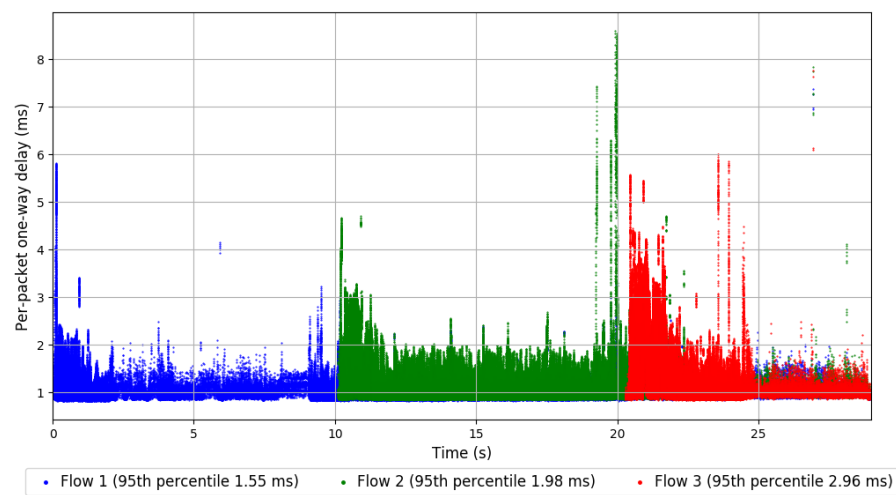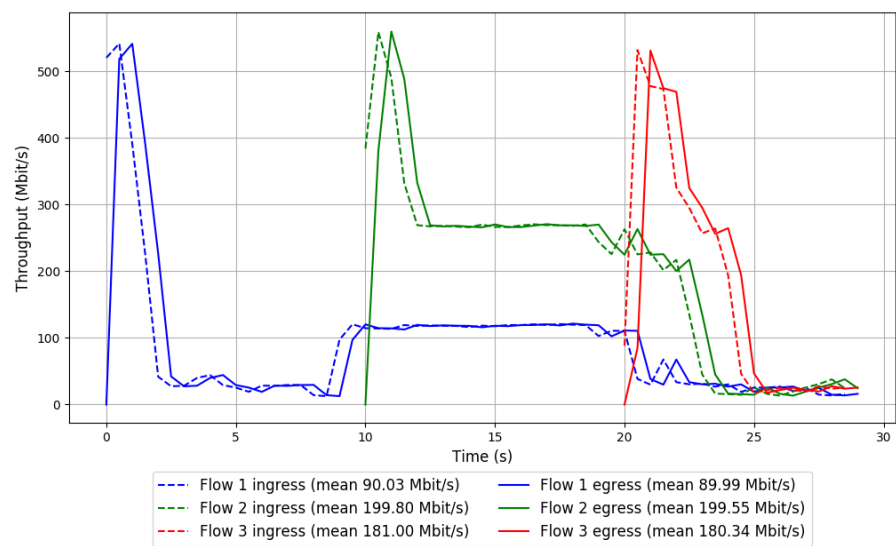
Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-05 07:37:52
End at: 2019-02-05 07:38:22
Local clock offset: 2.849 ms
Remote clock offset: 0.167 ms

# Below is generated by plot.py at 2019-02-05 10:26:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 335.87 Mbit/s
95th percentile per-packet one-way delay: 2.646 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 102.30 Mbit/s
95th percentile per-packet one-way delay: 1.509 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 199.77 Mbit/s
95th percentile per-packet one-way delay: 2.847 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 343.32 Mbit/s
95th percentile per-packet one-way delay: 3.086 ms
Loss rate: 0.17%
```

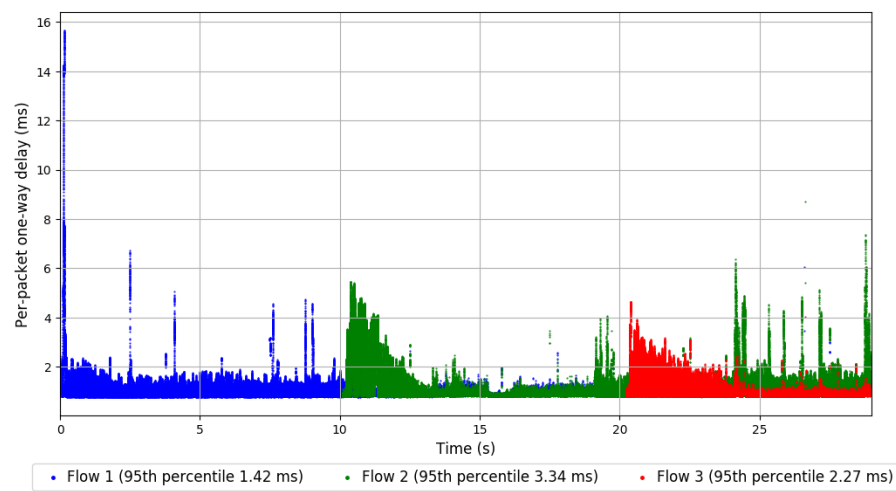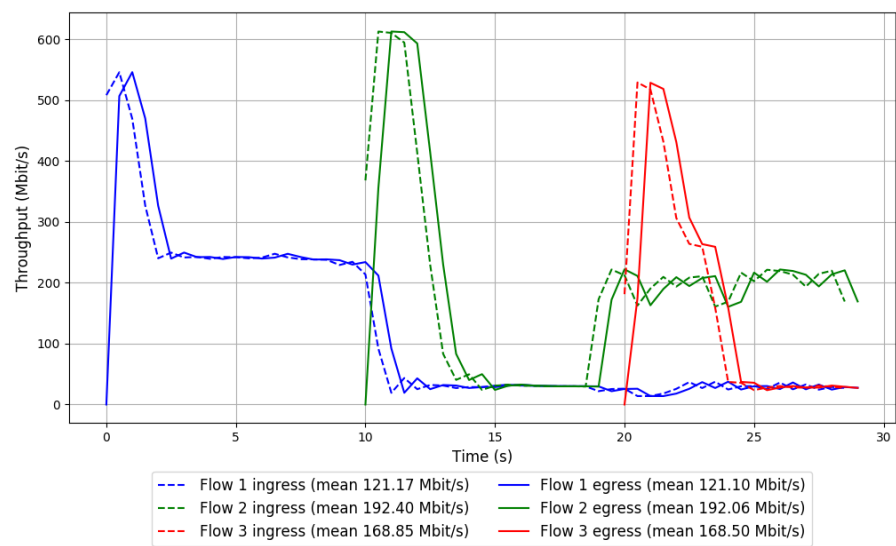Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-05 08:08:02
End at: 2019-02-05 08:08:32
Local clock offset: -0.438 ms
Remote clock offset: 0.325 ms


# Below is generated by plot.py at 2019-02-05 10:26:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 287.57 Mbit/s
95th percentile per-packet one-way delay: 2.129 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 128.63 Mbit/s
95th percentile per-packet one-way delay: 1.692 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 178.50 Mbit/s
95th percentile per-packet one-way delay: 2.351 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 141.08 Mbit/s
95th percentile per-packet one-way delay: 2.302 ms
Loss rate: 0.09%
```

Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-05 08:38:00
End at: 2019-02-05 08:38:30
Local clock offset: 0.744 ms
Remote clock offset: -3.742 ms


# Below is generated by plot.py at 2019-02-05 10:26:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 273.97 Mbit/s
95th percentile per-packet one-way delay: 2.208 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 89.99 Mbit/s
95th percentile per-packet one-way delay: 1.547 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 199.55 Mbit/s
95th percentile per-packet one-way delay: 1.978 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 180.34 Mbit/s
95th percentile per-packet one-way delay: 2.961 ms
Loss rate: 0.37%
```
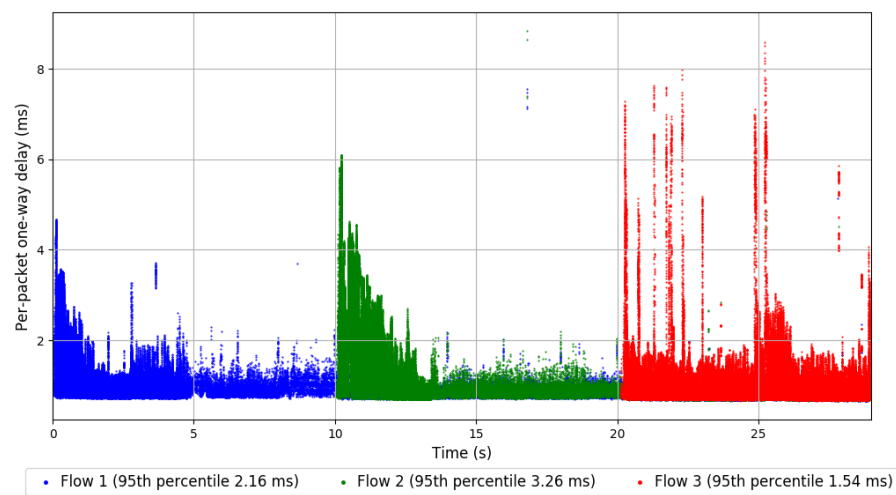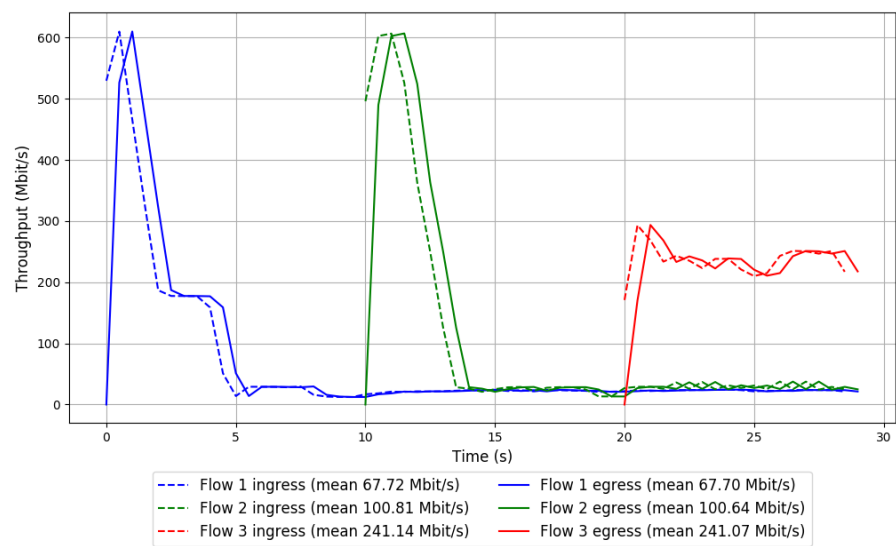
Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-05 09:08:14
End at: 2019-02-05 09:08:44
Local clock offset: 2.946 ms
Remote clock offset: -3.298 ms


# Below is generated by plot.py at 2019-02-05 10:28:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 296.89 Mbit/s
95th percentile per-packet one-way delay: 2.590 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 121.10 Mbit/s
95th percentile per-packet one-way delay: 1.422 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 192.06 Mbit/s
95th percentile per-packet one-way delay: 3.343 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 168.50 Mbit/s
95th percentile per-packet one-way delay: 2.275 ms
Loss rate: 0.21%
```
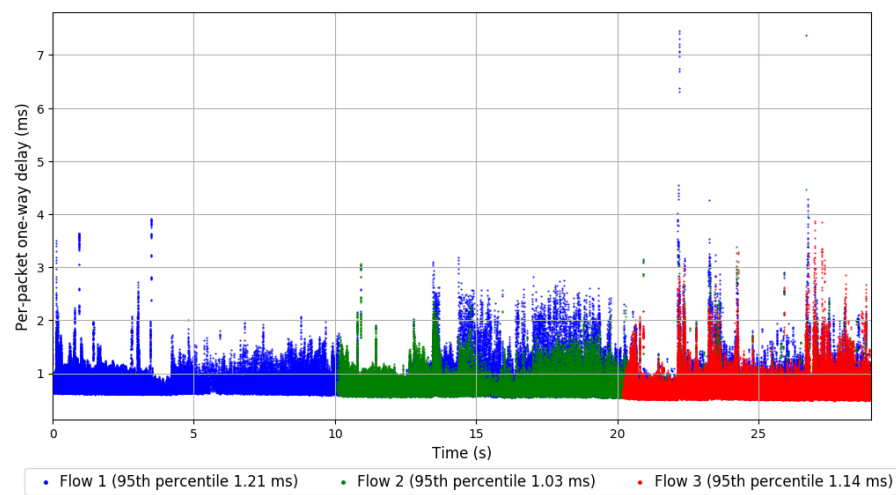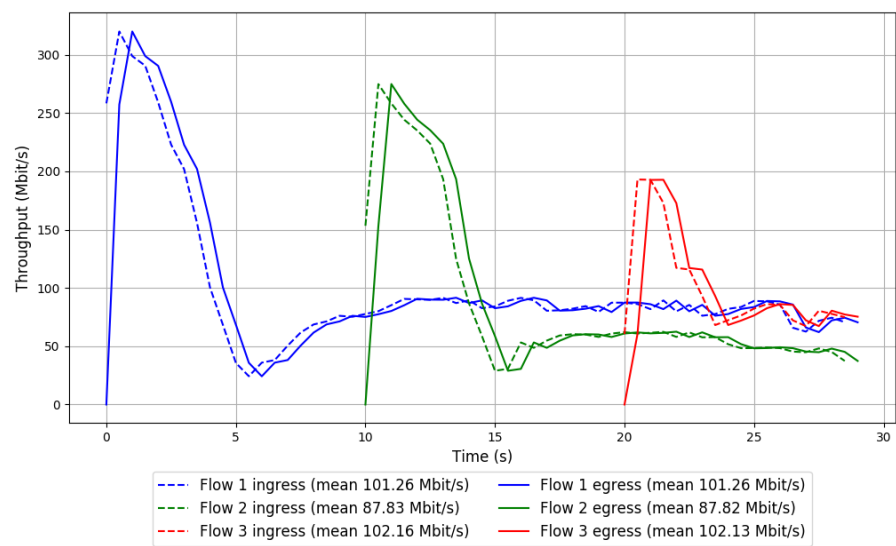
Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-05 09:38:32
End at: 2019-02-05 09:39:02
Local clock offset: -0.63 ms
Remote clock offset: 0.992 ms


# Below is generated by plot.py at 2019-02-05 10:28:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 206.81 Mbit/s
95th percentile per-packet one-way delay: 2.569 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 67.70 Mbit/s
95th percentile per-packet one-way delay: 2.161 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 100.64 Mbit/s
95th percentile per-packet one-way delay: 3.258 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 241.07 Mbit/s
95th percentile per-packet one-way delay: 1.545 ms
Loss rate: 0.02%
```

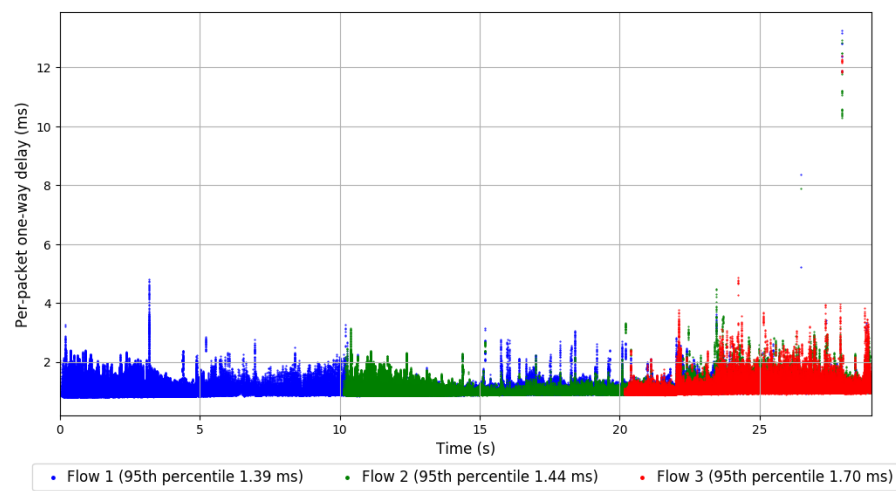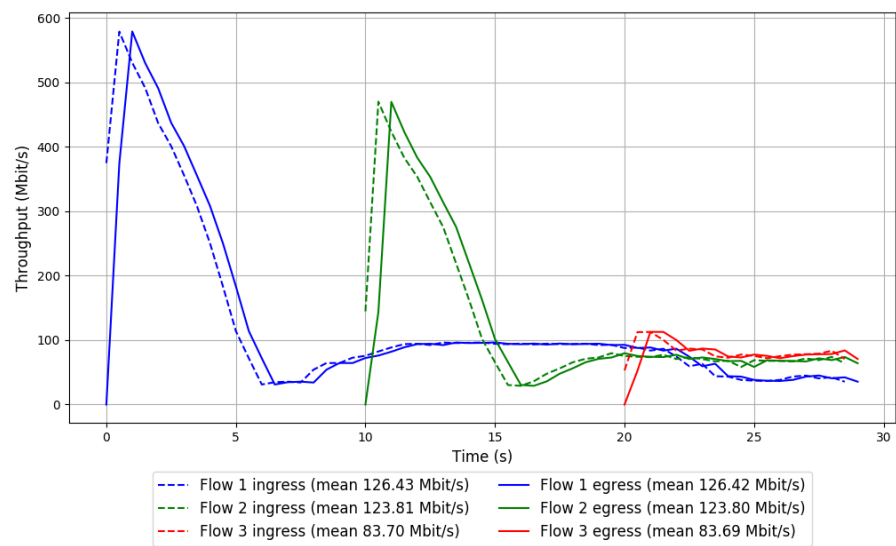Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-05 07:48:56
End at: 2019-02-05 07:49:26
Local clock offset: 2.197 ms
Remote clock offset: 0.319 ms


# Below is generated by plot.py at 2019-02-05 10:28:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 189.39 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 101.26 Mbit/s
95th percentile per-packet one-way delay: 1.205 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 87.82 Mbit/s
95th percentile per-packet one-way delay: 1.029 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 102.13 Mbit/s
95th percentile per-packet one-way delay: 1.136 ms
Loss rate: 0.03%
```
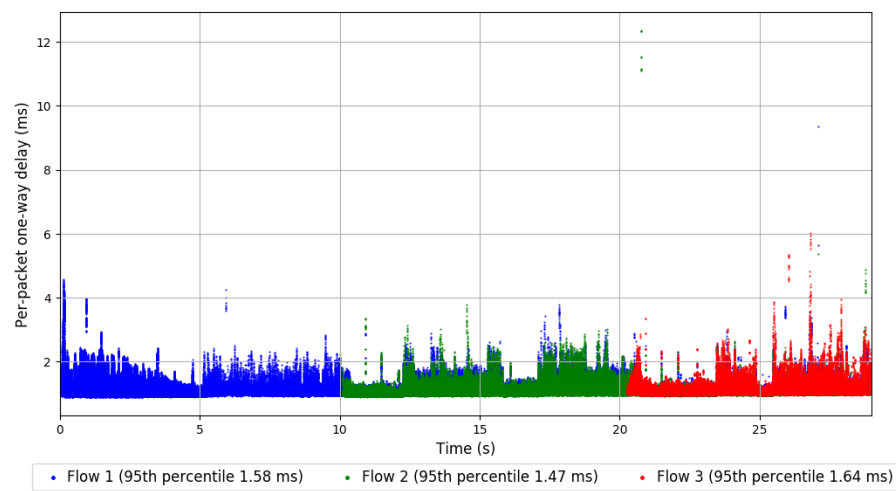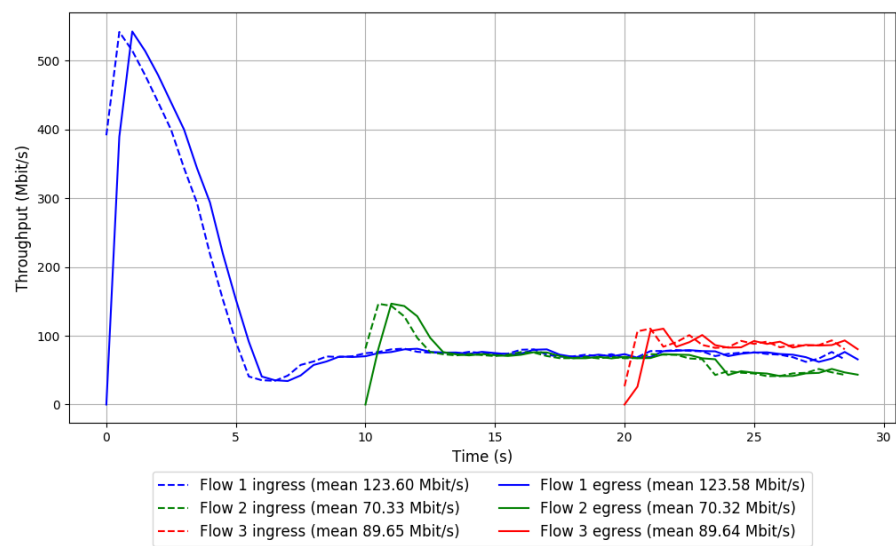
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-05 08:19:08
End at: 2019-02-05 08:19:38
Local clock offset: -0.319 ms
Remote clock offset: -2.486 ms


# Below is generated by plot.py at 2019-02-05 10:28:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 232.24 Mbit/s
95th percentile per-packet one-way delay: 1.448 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 126.42 Mbit/s
95th percentile per-packet one-way delay: 1.392 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 123.80 Mbit/s
95th percentile per-packet one-way delay: 1.442 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 83.69 Mbit/s
95th percentile per-packet one-way delay: 1.695 ms
Loss rate: 0.02%
```

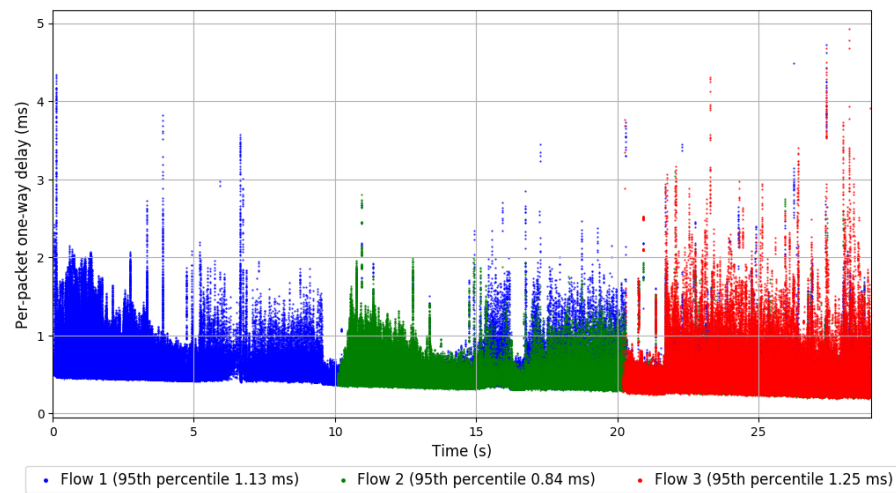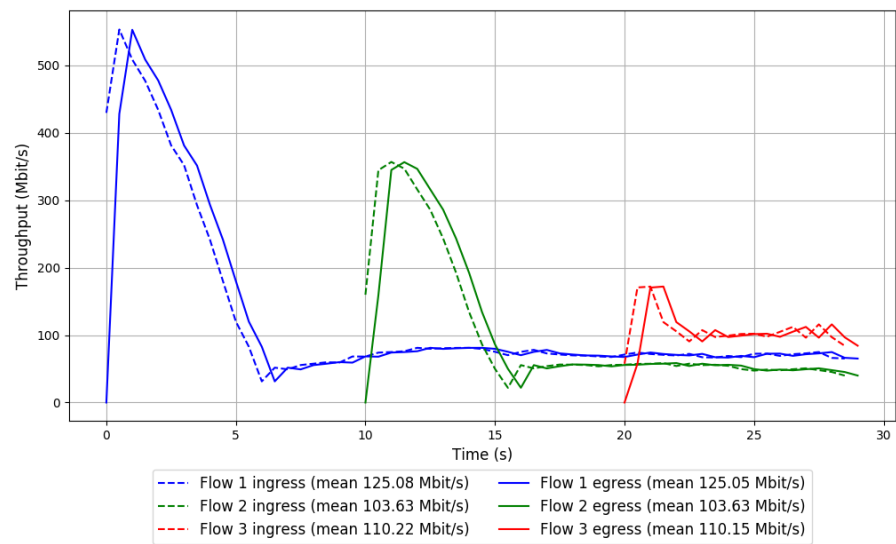Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-05 08:49:07
End at: 2019-02-05 08:49:37
Local clock offset: 1.372 ms
Remote clock offset: -3.375 ms


# Below is generated by plot.py at 2019-02-05 10:28:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 196.33 Mbit/s
95th percentile per-packet one-way delay: 1.567 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 123.58 Mbit/s
95th percentile per-packet one-way delay: 1.580 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 70.32 Mbit/s
95th percentile per-packet one-way delay: 1.471 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 89.64 Mbit/s
95th percentile per-packet one-way delay: 1.640 ms
Loss rate: 0.01%
```

Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-05 09:19:20
End at: 2019-02-05 09:19:50
Local clock offset: 2.051 ms
Remote clock offset: -2.065 ms


# Below is generated by plot.py at 2019-02-05 10:29:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 225.84 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 125.05 Mbit/s
95th percentile per-packet one-way delay: 1.131 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 103.63 Mbit/s
95th percentile per-packet one-way delay: 0.842 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 110.15 Mbit/s
95th percentile per-packet one-way delay: 1.251 ms
Loss rate: 0.02%
```
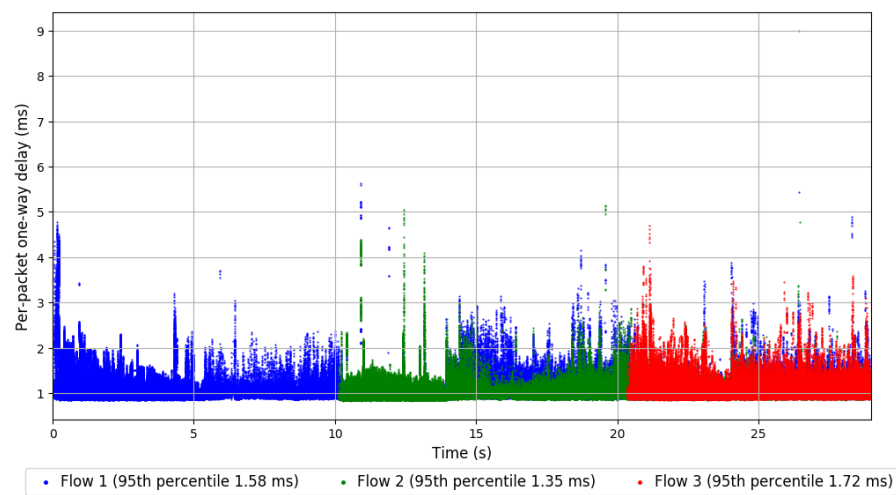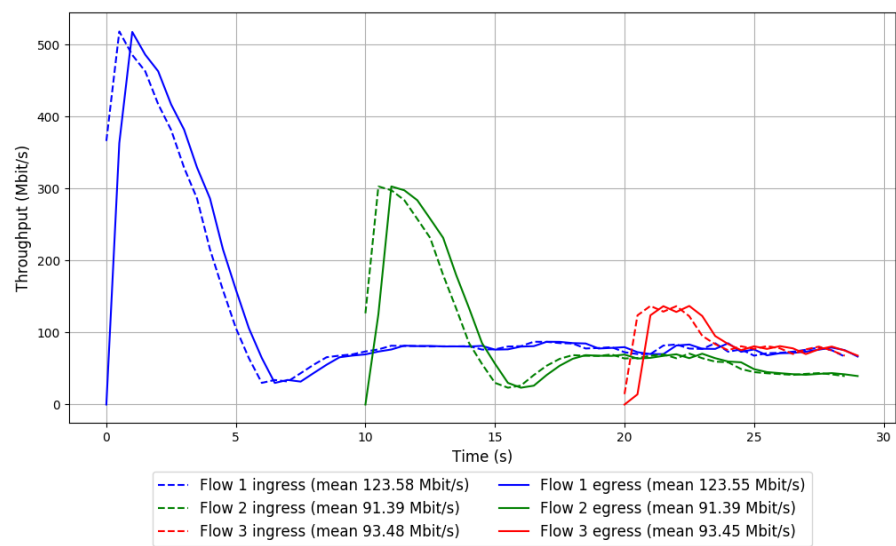
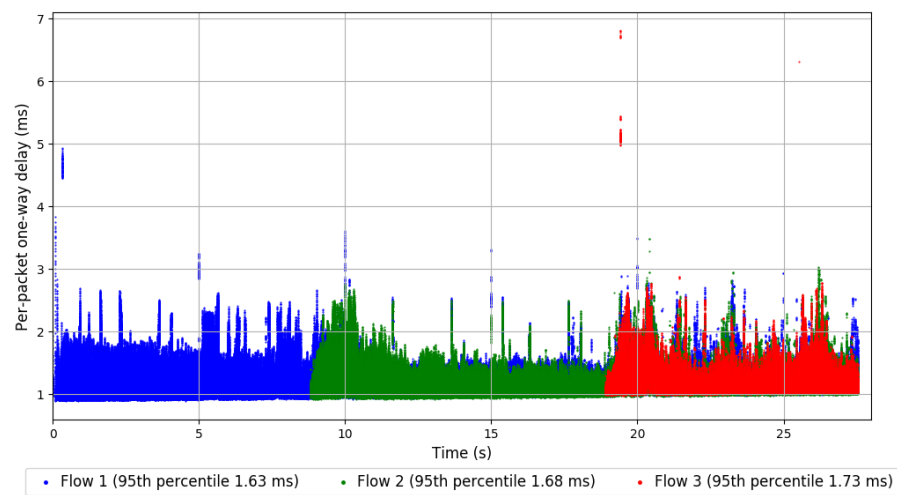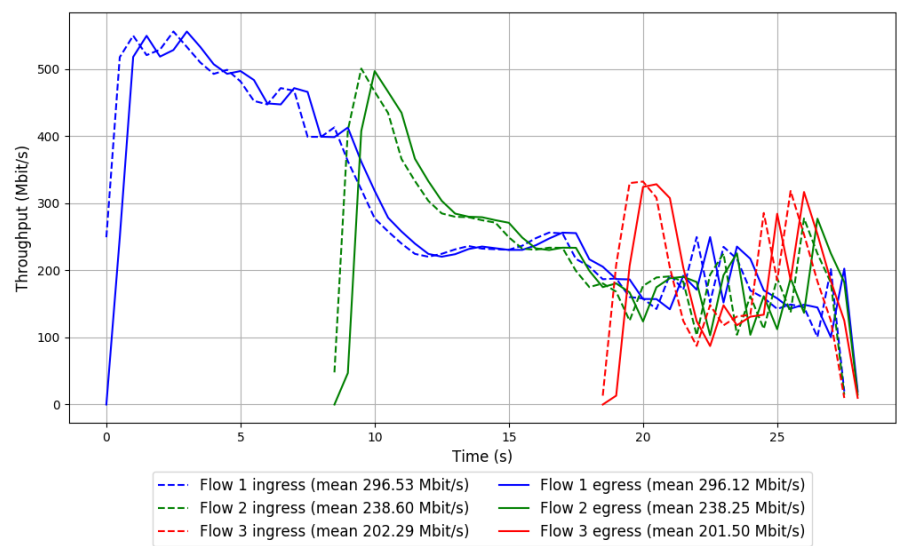Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-05 09:49:26
End at: 2019-02-05 09:49:56
Local clock offset: -0.75 ms
Remote clock offset: 1.76 ms


# Below is generated by plot.py at 2019-02-05 10:29:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 210.71 Mbit/s
95th percentile per-packet one-way delay: 1.553 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 123.55 Mbit/s
95th percentile per-packet one-way delay: 1.583 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 91.39 Mbit/s
95th percentile per-packet one-way delay: 1.353 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 93.45 Mbit/s
95th percentile per-packet one-way delay: 1.718 ms
Loss rate: 0.02%
```

Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-05 07:21:40
End at: 2019-02-05 07:22:10
Local clock offset: 0.834 ms
Remote clock offset: -0.113 ms


# Below is generated by plot.py at 2019-02-05 10:32:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.44 Mbit/s
95th percentile per-packet one-way delay: 1.658 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 296.12 Mbit/s
95th percentile per-packet one-way delay: 1.629 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 238.25 Mbit/s
95th percentile per-packet one-way delay: 1.678 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 201.50 Mbit/s
95th percentile per-packet one-way delay: 1.726 ms
Loss rate: 0.39%
```
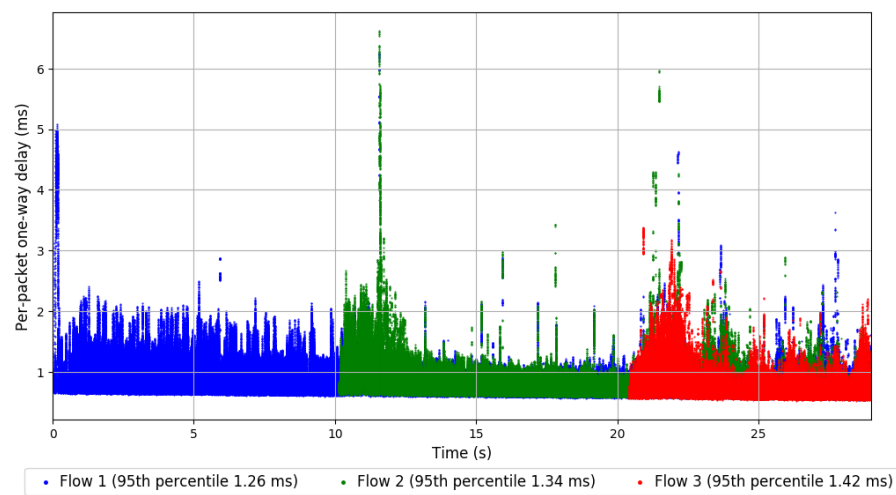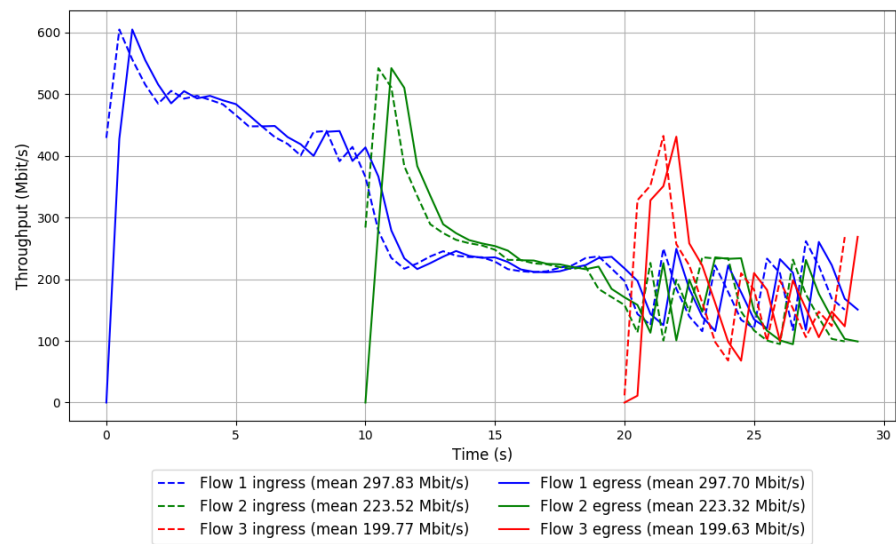
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-05 07:51:48
End at: 2019-02-05 07:52:18
Local clock offset: 1.497 ms
Remote clock offset: 0.384 ms


# Below is generated by plot.py at 2019-02-05 10:33:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.91 Mbit/s
95th percentile per-packet one-way delay: 1.303 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 297.70 Mbit/s
95th percentile per-packet one-way delay: 1.257 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 223.32 Mbit/s
95th percentile per-packet one-way delay: 1.340 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 199.63 Mbit/s
95th percentile per-packet one-way delay: 1.418 ms
Loss rate: 0.07%
```
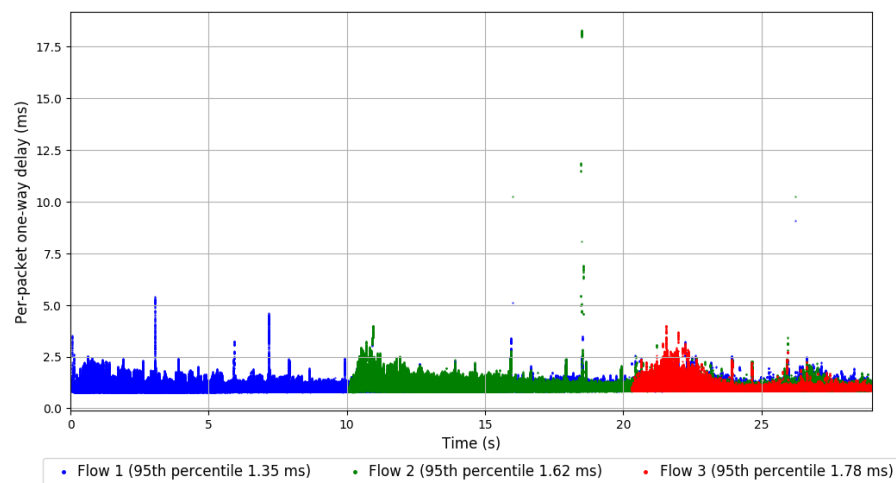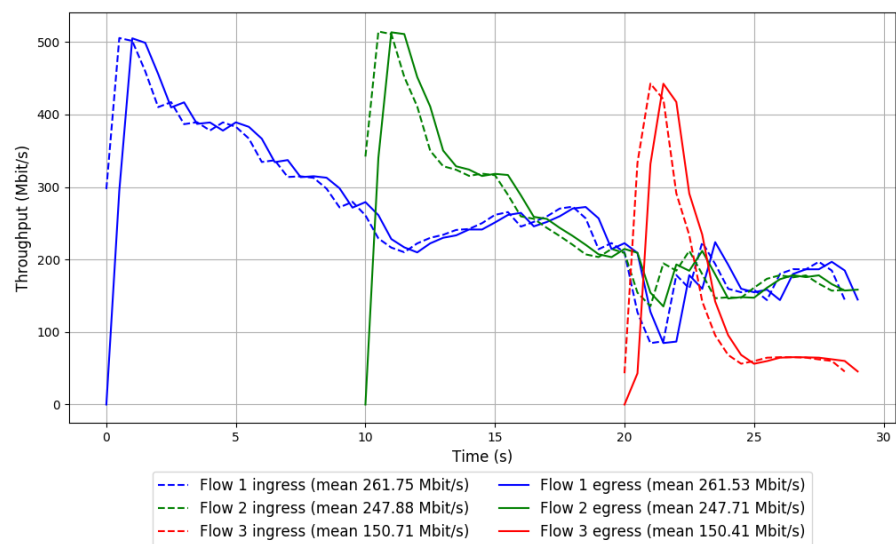
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-05 08:22:03
End at: 2019-02-05 08:22:33
Local clock offset: 0.043 ms
Remote clock offset: -2.83 ms


# Below is generated by plot.py at 2019-02-05 10:33:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.19 Mbit/s
95th percentile per-packet one-way delay: 1.490 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 261.53 Mbit/s
95th percentile per-packet one-way delay: 1.351 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 247.71 Mbit/s
95th percentile per-packet one-way delay: 1.618 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 150.41 Mbit/s
95th percentile per-packet one-way delay: 1.777 ms
Loss rate: 0.20%
```

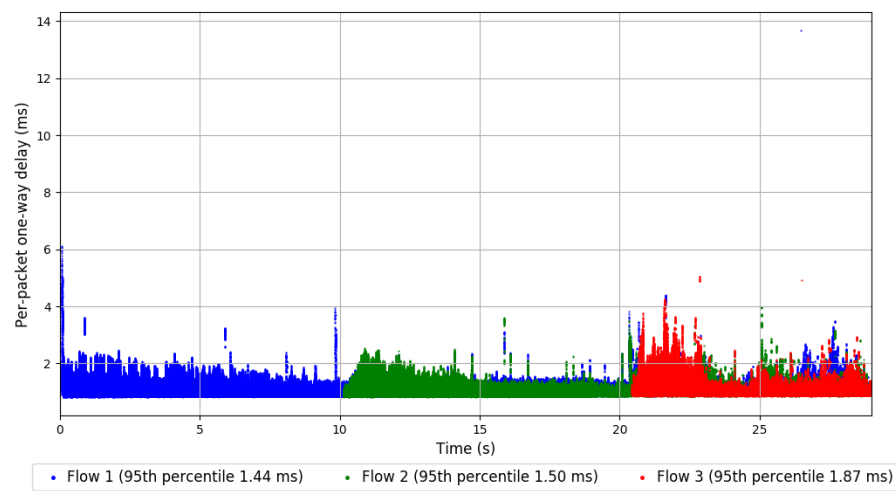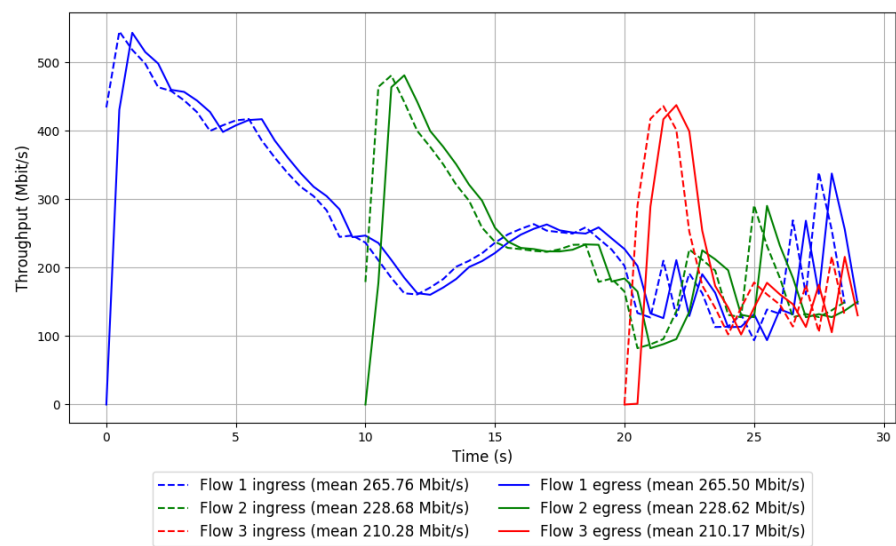Run 3: Report of Indigo-MusesT — Data Link

100

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-05 08:52:03
End at: 2019-02-05 08:52:33
Local clock offset: 1.812 ms
Remote clock offset: -3.355 ms


# Below is generated by plot.py at 2019-02-05 10:33:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 475.96 Mbit/s
95th percentile per-packet one-way delay: 1.529 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 265.50 Mbit/s
95th percentile per-packet one-way delay: 1.436 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 228.62 Mbit/s
95th percentile per-packet one-way delay: 1.496 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 210.17 Mbit/s
95th percentile per-packet one-way delay: 1.872 ms
Loss rate: 0.05%
```

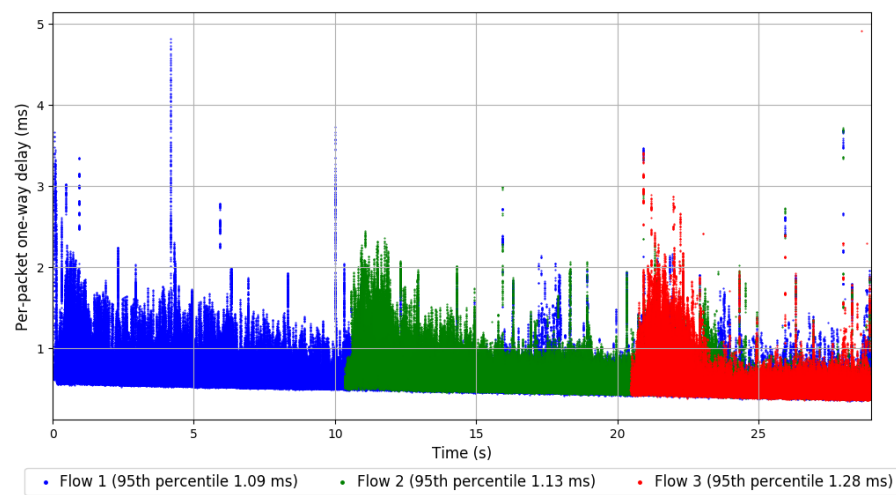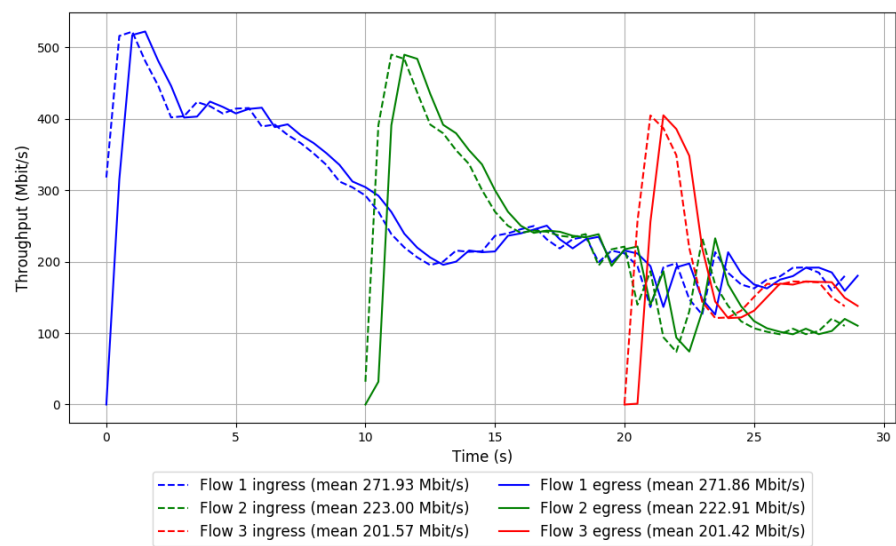Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-05 09:22:12
End at: 2019-02-05 09:22:42
Local clock offset: 1.339 ms
Remote clock offset: -1.228 ms


# Below is generated by plot.py at 2019-02-05 10:33:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 474.27 Mbit/s
95th percentile per-packet one-way delay: 1.132 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 271.86 Mbit/s
95th percentile per-packet one-way delay: 1.092 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 222.91 Mbit/s
95th percentile per-packet one-way delay: 1.133 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 201.42 Mbit/s
95th percentile per-packet one-way delay: 1.277 ms
Loss rate: 0.07%
```

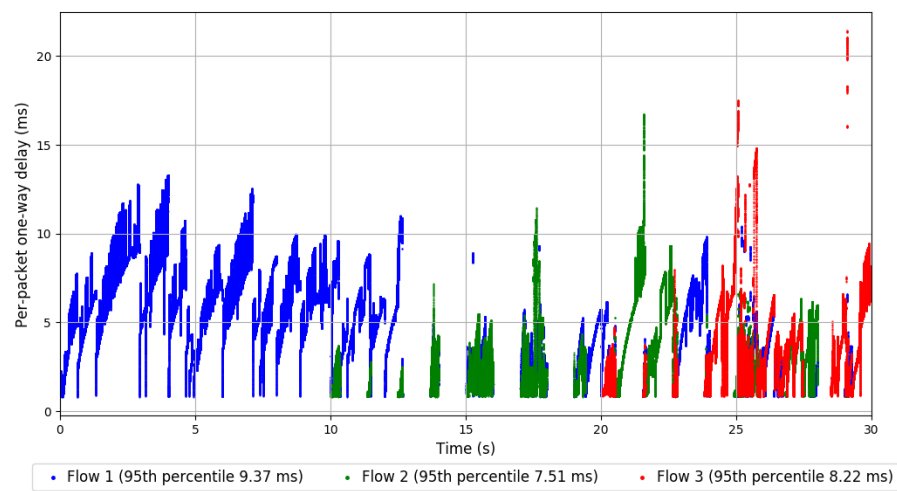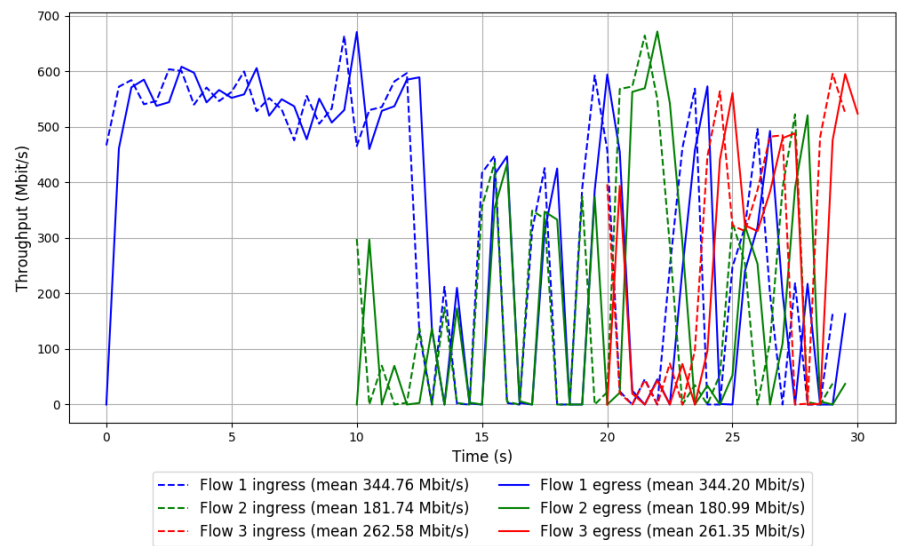# Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-02-05 07:34:43
End at: 2019-02-05 07:35:13
Local clock offset: 2.676 ms
Remote clock offset: 0.114 ms


# Below is generated by plot.py at 2019-02-05 10:34:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.03 Mbit/s
95th percentile per-packet one-way delay: 9.108 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 344.20 Mbit/s
95th percentile per-packet one-way delay: 9.374 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 180.99 Mbit/s
95th percentile per-packet one-way delay: 7.514 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 261.35 Mbit/s
95th percentile per-packet one-way delay: 8.222 ms
Loss rate: 0.46%
```

Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-05 08:04:49
End at: 2019-02-05 08:05:19
Local clock offset: -0.215 ms
Remote clock offset: 0.679 ms


# Below is generated by plot.py at 2019-02-05 10:36:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 647.96 Mbit/s
95th percentile per-packet one-way delay: 9.666 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 412.72 Mbit/s
95th percentile per-packet one-way delay: 10.330 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 213.58 Mbit/s
95th percentile per-packet one-way delay: 7.573 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 295.02 Mbit/s
95th percentile per-packet one-way delay: 7.956 ms
Loss rate: 0.34%
```
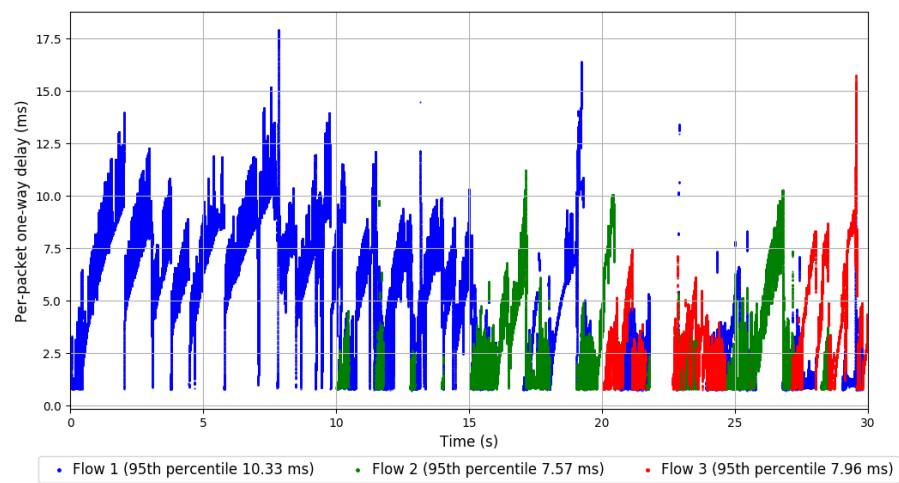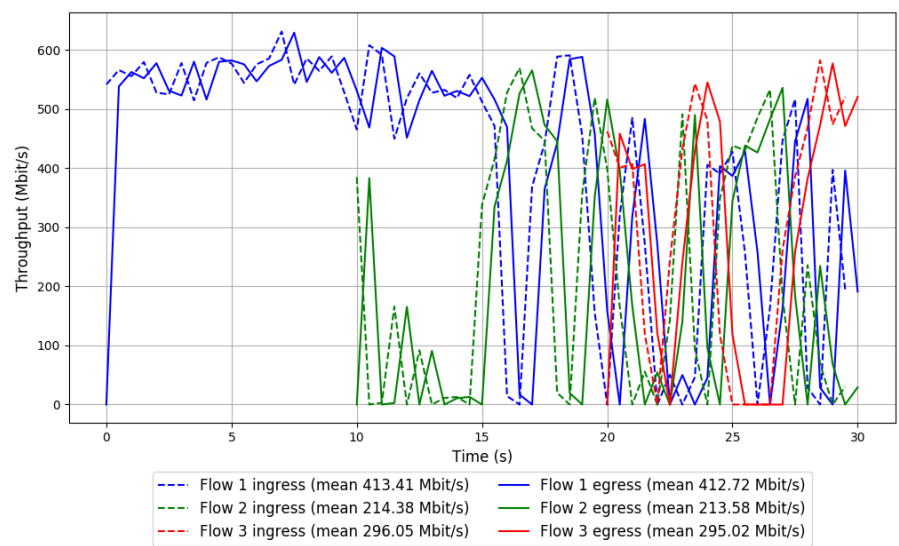
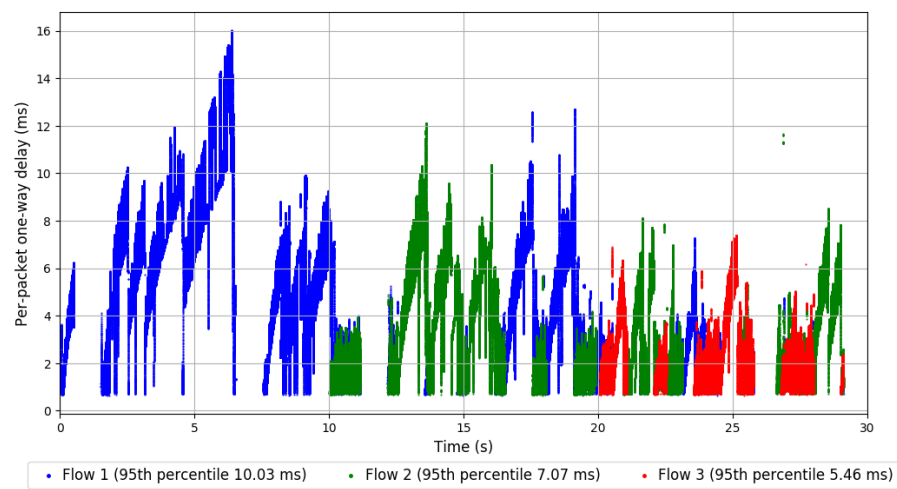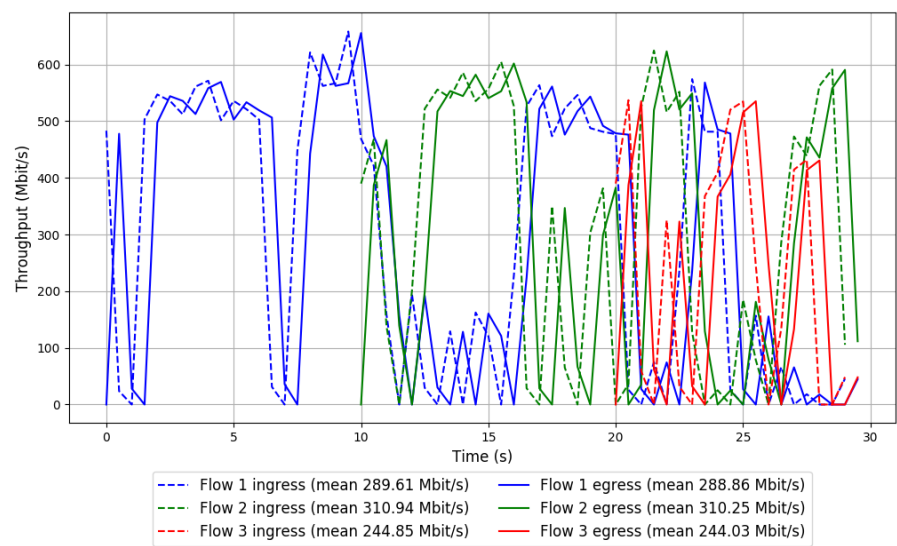Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-02-05 08:34:52
End at: 2019-02-05 08:35:22
Local clock offset: 0.71 ms
Remote clock offset: -3.777 ms


# Below is generated by plot.py at 2019-02-05 10:36:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 568.56 Mbit/s
95th percentile per-packet one-way delay: 9.014 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 288.86 Mbit/s
95th percentile per-packet one-way delay: 10.028 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 310.25 Mbit/s
95th percentile per-packet one-way delay: 7.071 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 244.03 Mbit/s
95th percentile per-packet one-way delay: 5.457 ms
Loss rate: 0.32%
```
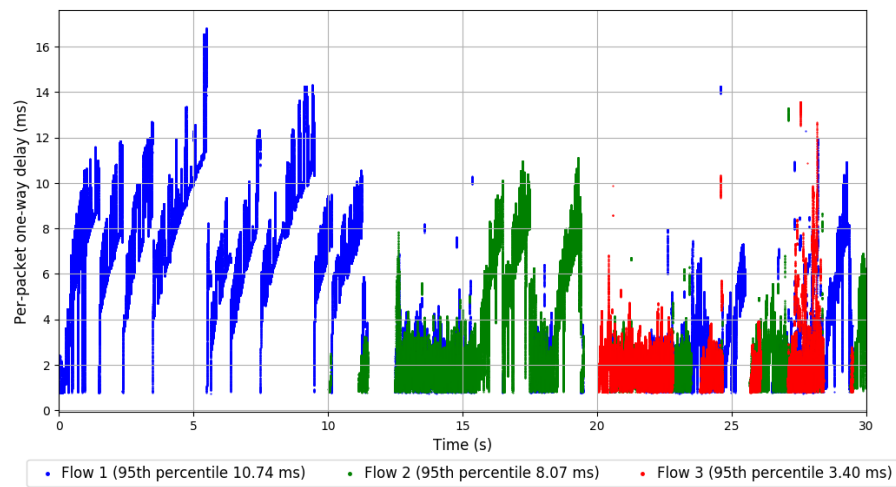
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 289.61 Mbit/s) --- Flow 1 egress (mean 288.86 Mbit/s)
Flow 2 ingress (mean 310.94 Mbit/s) --- Flow 2 egress (mean 310.25 Mbit/s)
Flow 3 ingress (mean 244.85 Mbit/s) --- Flow 3 egress (mean 244.03 Mbit/s)

Flow 1 (95th percentile 10.03 ms) • Flow 2 (95th percentile 7.07 ms) • Flow 3 (95th percentile 5.46 ms)
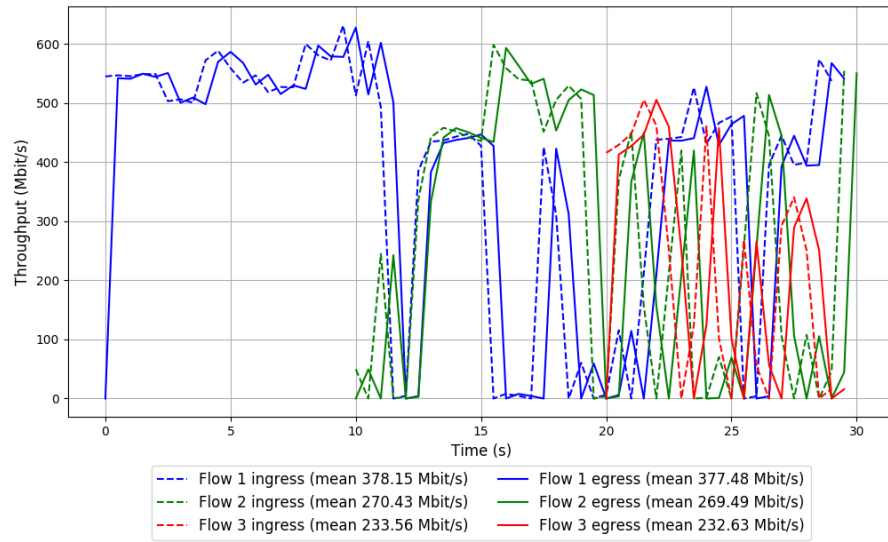
```
Run 4: Statistics of LEDBAT

Start at: 2019-02-05 09:05:03
End at: 2019-02-05 09:05:33
Local clock offset: 2.803 ms
Remote clock offset: -3.302 ms


# Below is generated by plot.py at 2019-02-05 10:39:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 623.88 Mbit/s
95th percentile per-packet one-way delay: 10.029 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 377.48 Mbit/s
95th percentile per-packet one-way delay: 10.737 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 269.49 Mbit/s
95th percentile per-packet one-way delay: 8.069 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 232.63 Mbit/s
95th percentile per-packet one-way delay: 3.403 ms
Loss rate: 0.40%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-05 09:35:22
End at: 2019-02-05 09:35:52
Local clock offset: -0.427 ms
Remote clock offset: 0.688 ms


# Below is generated by plot.py at 2019-02-05 10:40:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 618.35 Mbit/s
95th percentile per-packet one-way delay: 8.098 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 359.06 Mbit/s
95th percentile per-packet one-way delay: 8.756 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 290.22 Mbit/s
95th percentile per-packet one-way delay: 5.969 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 219.08 Mbit/s
95th percentile per-packet one-way delay: 7.187 ms
Loss rate: 0.36%
```
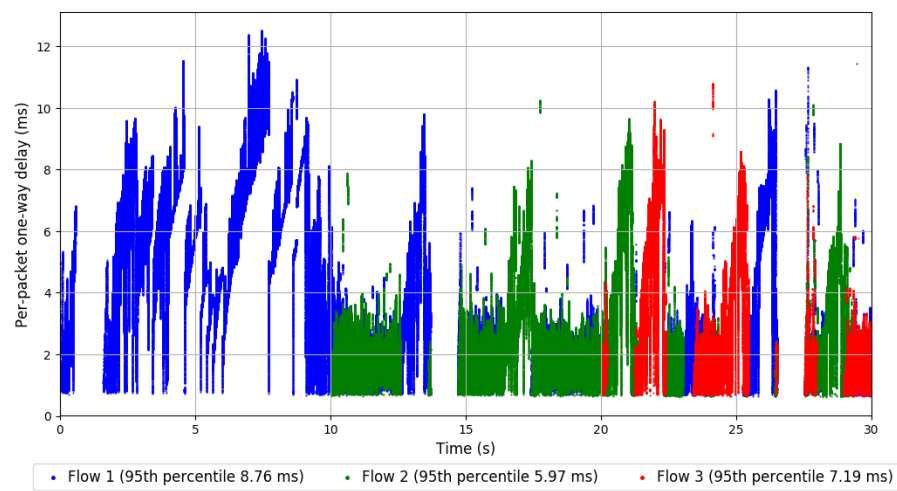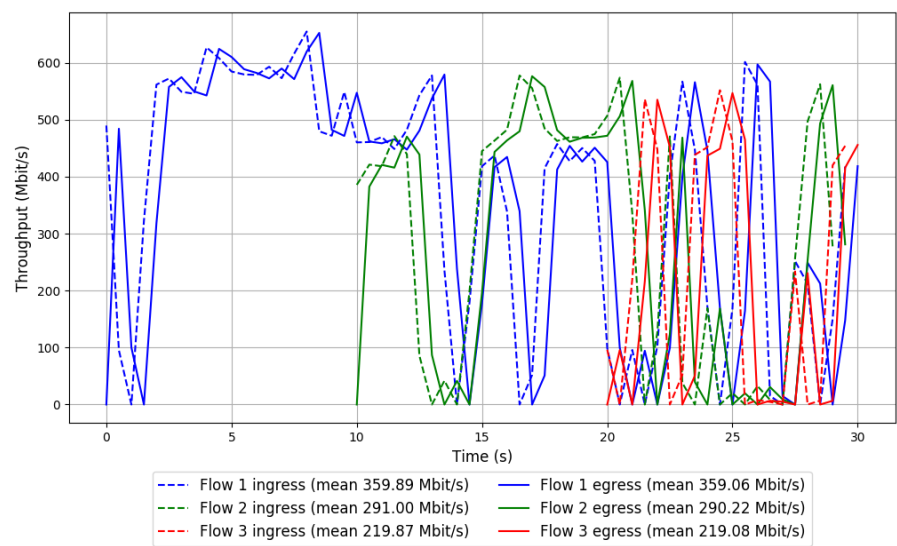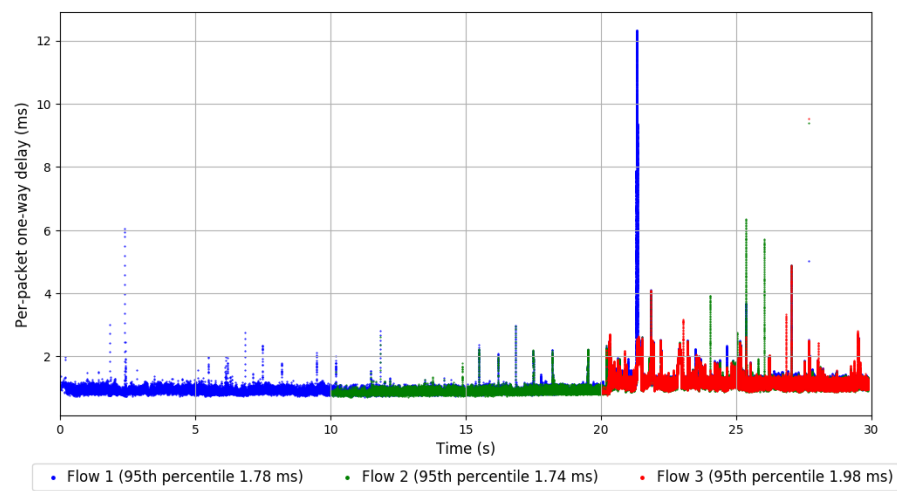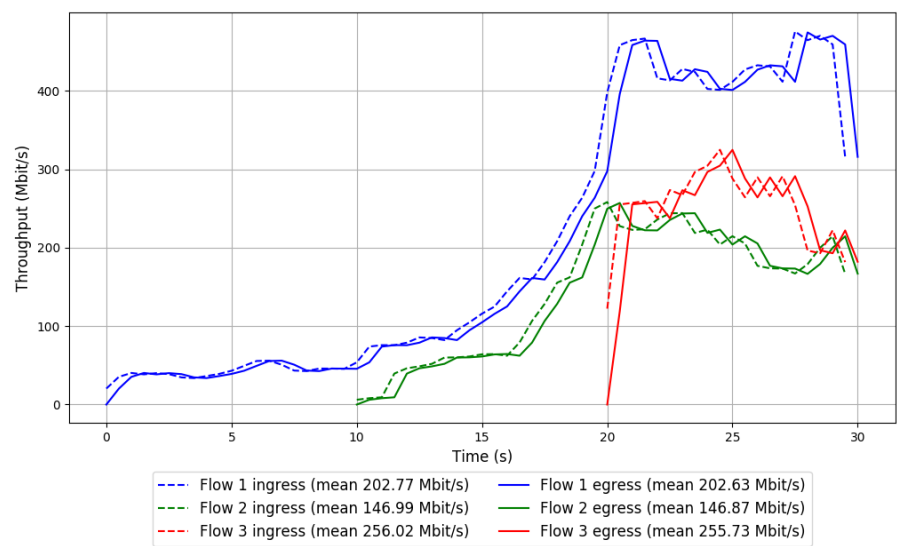
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-05 07:28:47
End at: 2019-02-05 07:29:17
Local clock offset: 2.113 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2019-02-05 10:40:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 384.64 Mbit/s
95th percentile per-packet one-way delay: 1.828 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 202.63 Mbit/s
95th percentile per-packet one-way delay: 1.782 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 146.87 Mbit/s
95th percentile per-packet one-way delay: 1.740 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 255.73 Mbit/s
95th percentile per-packet one-way delay: 1.984 ms
Loss rate: 0.12%
```

Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-05 07:58:55
End at: 2019-02-05 07:59:25
Local clock offset: 0.319 ms
Remote clock offset: 0.472 ms


# Below is generated by plot.py at 2019-02-05 10:41:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 697.47 Mbit/s
95th percentile per-packet one-way delay: 1.414 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 580.31 Mbit/s
95th percentile per-packet one-way delay: 1.470 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 127.57 Mbit/s
95th percentile per-packet one-way delay: 1.088 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 98.57 Mbit/s
95th percentile per-packet one-way delay: 1.085 ms
Loss rate: 0.07%
```
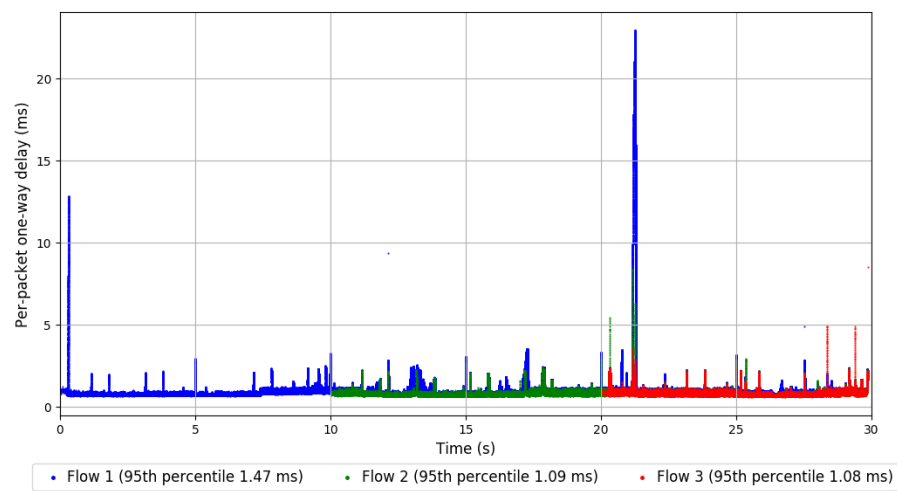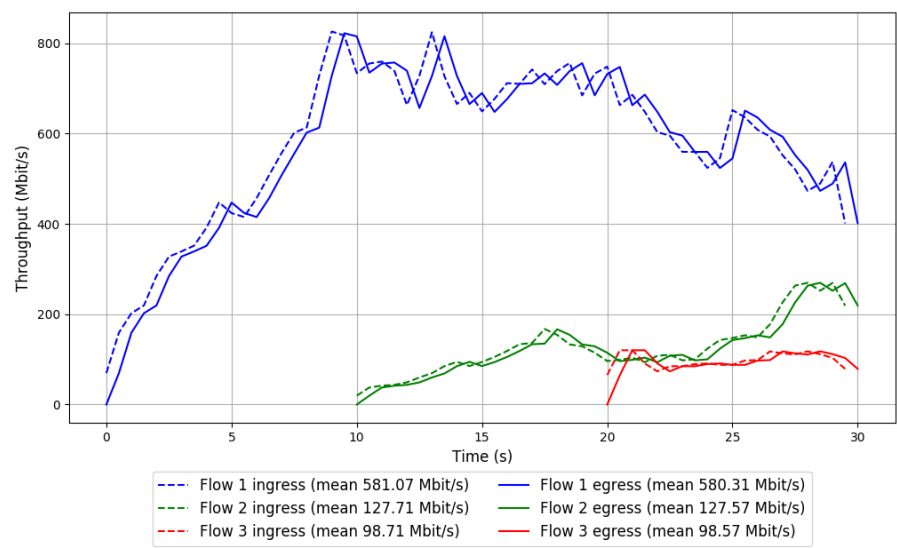
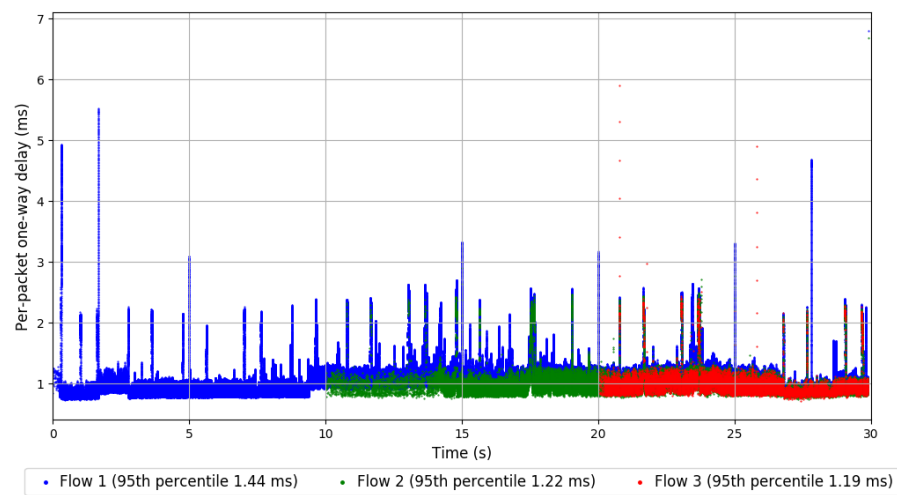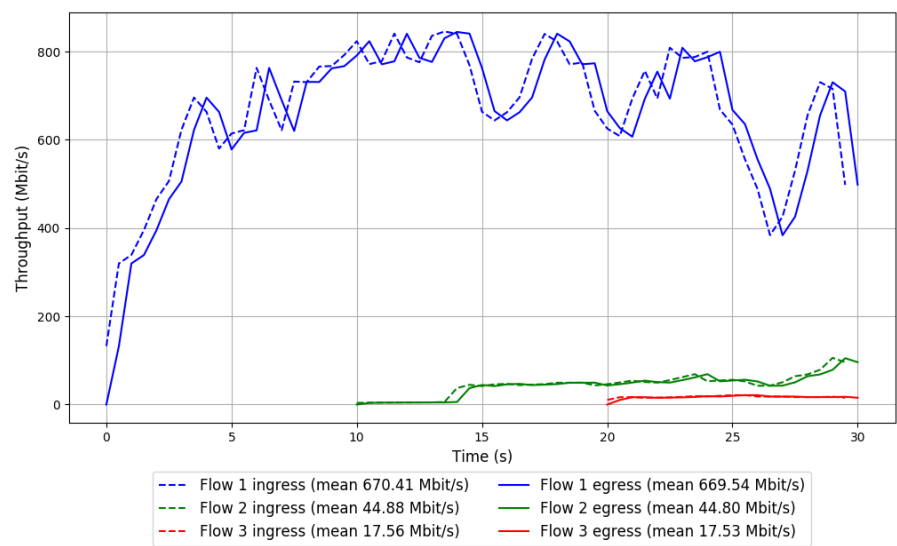Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-05 08:29:07
End at: 2019-02-05 08:29:37
Local clock offset: 0.532 ms
Remote clock offset: -3.409 ms

# Below is generated by plot.py at 2019-02-05 10:41:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 705.12 Mbit/s
95th percentile per-packet one-way delay: 1.424 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 669.54 Mbit/s
95th percentile per-packet one-way delay: 1.435 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 44.80 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 17.53 Mbit/s
95th percentile per-packet one-way delay: 1.190 ms
Loss rate: 0.13%
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 670.41 Mbit/s) Flow 1 egress (mean 669.54 Mbit/s)
Flow 2 ingress (mean 44.88 Mbit/s) Flow 2 egress (mean 44.80 Mbit/s)
Flow 3 ingress (mean 17.56 Mbit/s) Flow 3 egress (mean 17.53 Mbit/s)

Flow 1 (95th percentile 1.44 ms) Flow 2 (95th percentile 1.22 ms) Flow 3 (95th percentile 1.19 ms)
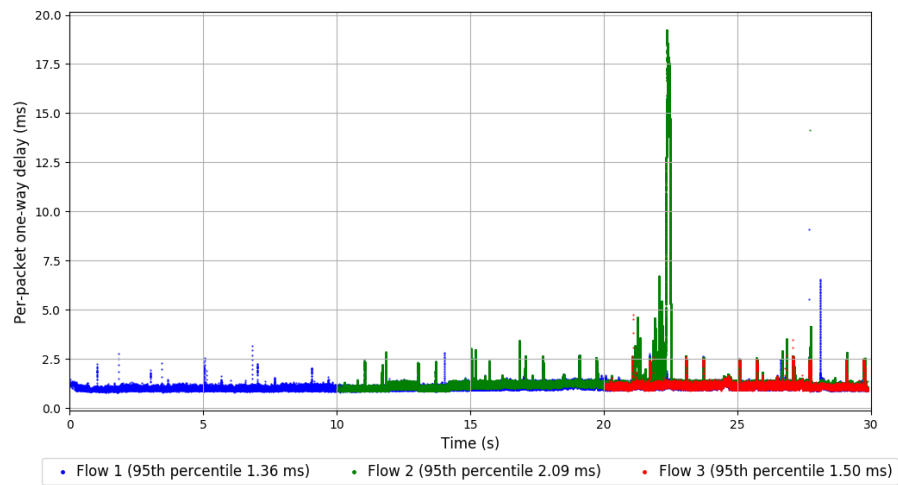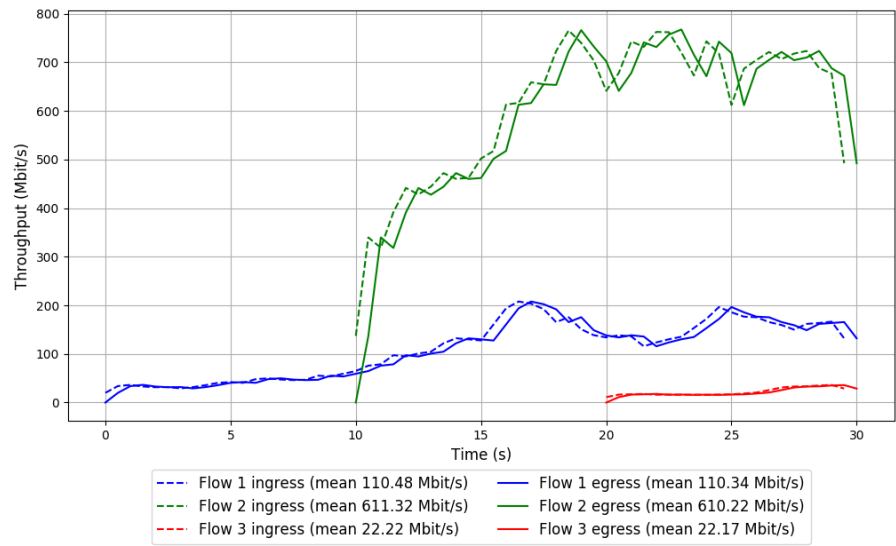
```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-05 08:59:09
End at: 2019-02-05 08:59:39
Local clock offset: 2.486 ms
Remote clock offset: -3.226 ms


# Below is generated by plot.py at 2019-02-05 10:41:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 523.42 Mbit/s
95th percentile per-packet one-way delay: 1.889 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 110.34 Mbit/s
95th percentile per-packet one-way delay: 1.359 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 610.22 Mbit/s
95th percentile per-packet one-way delay: 2.087 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 22.17 Mbit/s
95th percentile per-packet one-way delay: 1.498 ms
Loss rate: 0.21%
```

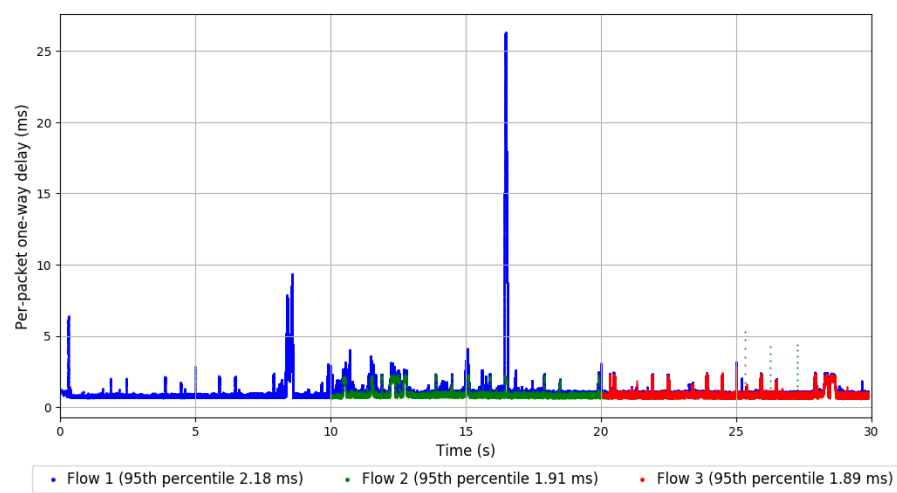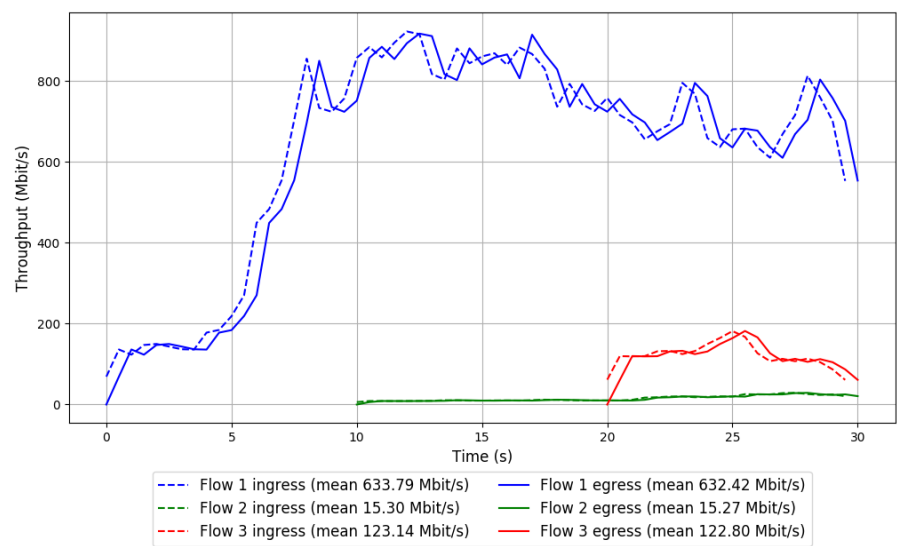Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-05 09:29:18
End at: 2019-02-05 09:29:48
Local clock offset: 0.116 ms
Remote clock offset: -0.003 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 683.05 Mbit/s
95th percentile per-packet one-way delay: 2.161 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 632.42 Mbit/s
95th percentile per-packet one-way delay: 2.177 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 15.27 Mbit/s
95th percentile per-packet one-way delay: 1.912 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 122.80 Mbit/s
95th percentile per-packet one-way delay: 1.890 ms
Loss rate: 0.28%
```

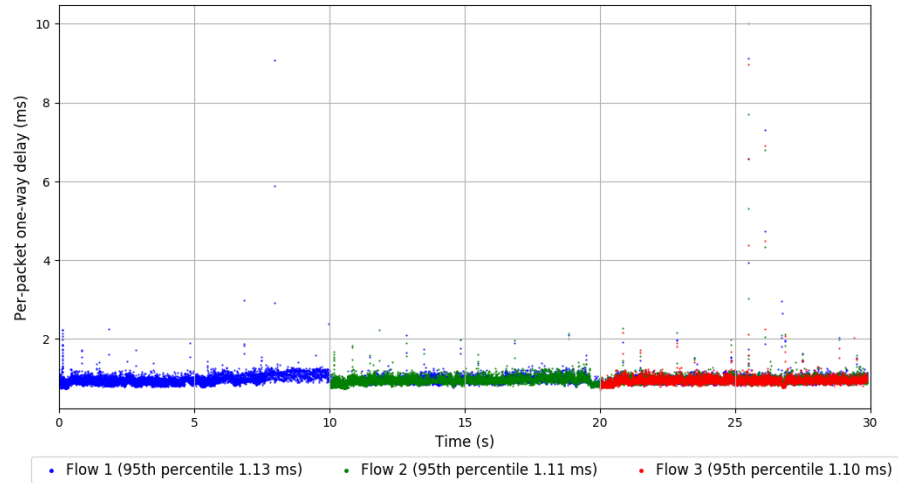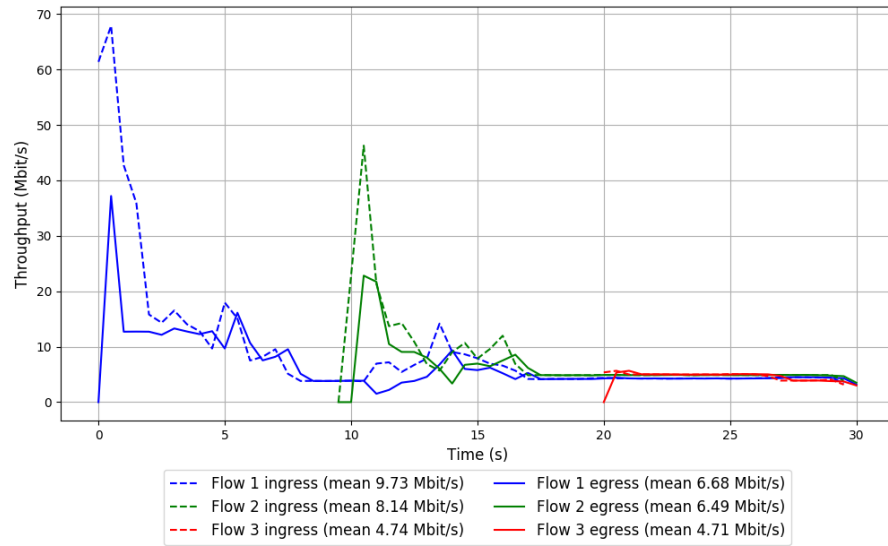## Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-05 07:45:11
End at: 2019-02-05 07:45:41
Local clock offset: 3.134 ms
Remote clock offset: 0.244 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.56 Mbit/s
95th percentile per-packet one-way delay: 1.121 ms
Loss rate: 24.85%
-- Flow 1:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 1.134 ms
Loss rate: 31.29%
-- Flow 2:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 1.108 ms
Loss rate: 20.27%
-- Flow 3:
Average throughput: 4.71 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.68%
```
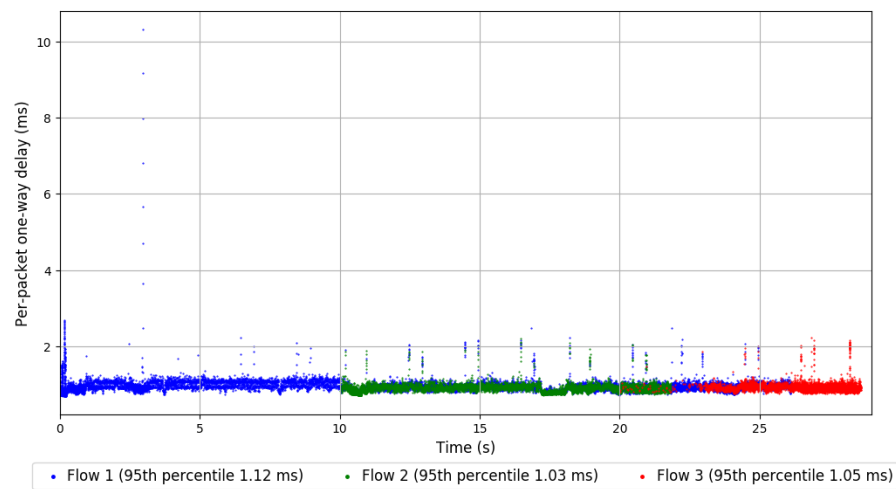
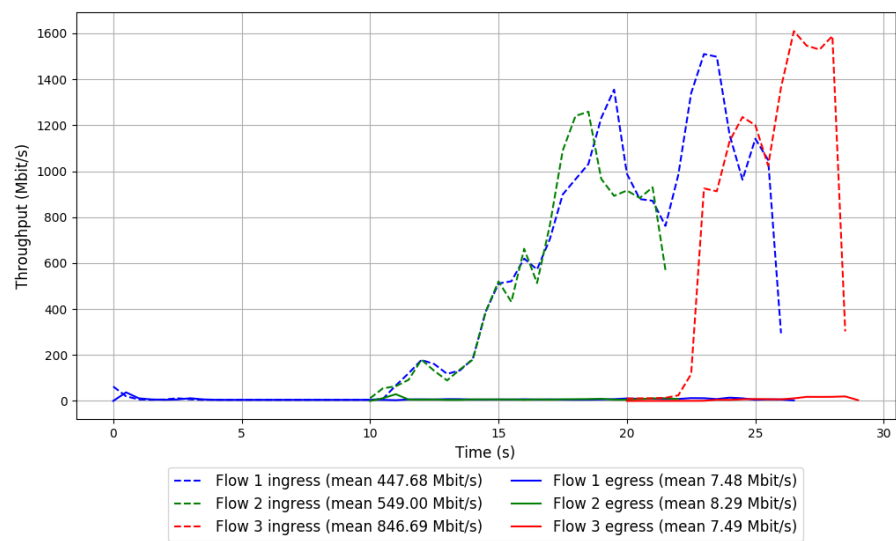## Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-05 08:15:13
End at: 2019-02-05 08:15:43
Local clock offset: -0.807 ms
Remote clock offset: -1.833 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 98.59%
-- Flow 1:
Average throughput: 7.48 Mbit/s
95th percentile per-packet one-way delay: 1.123 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 1.032 ms
Loss rate: 98.49%
-- Flow 3:
Average throughput: 7.49 Mbit/s
95th percentile per-packet one-way delay: 1.053 ms
Loss rate: 99.11%
```

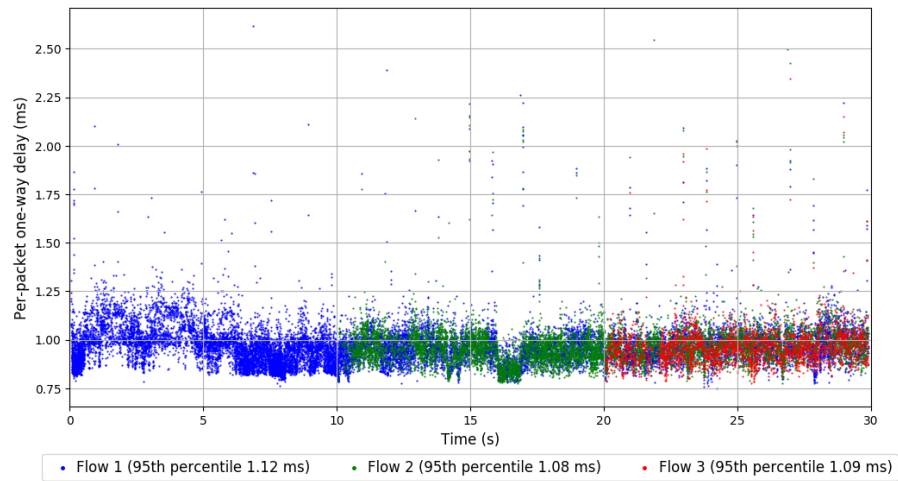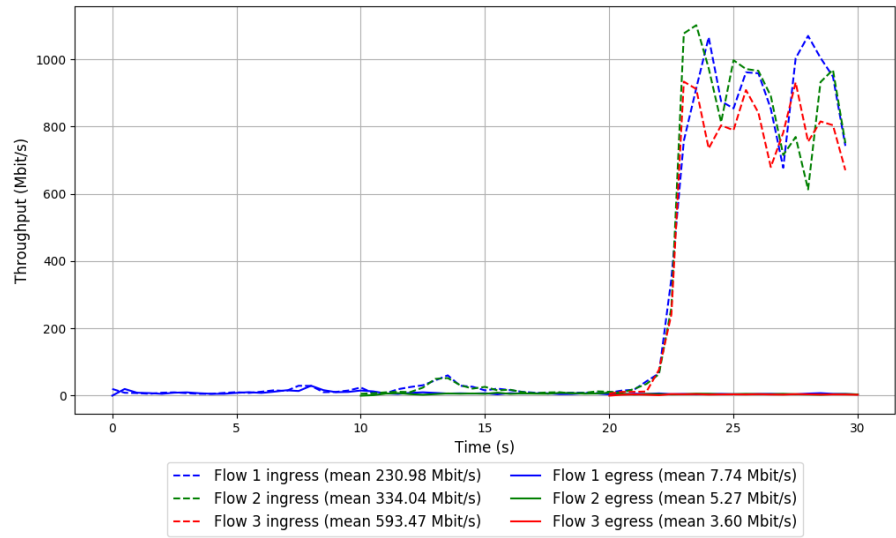Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-05 08:45:14
End at: 2019-02-05 08:45:44
Local clock offset: 0.784 ms
Remote clock offset: -3.554 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 1.107 ms
Loss rate: 98.08%
-- Flow 1:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 1.124 ms
Loss rate: 96.65%
-- Flow 2:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 98.42%
-- Flow 3:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 99.39%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 230.98 Mbit/s)   Flow 1 egress (mean 7.74 Mbit/s)
Flow 2 ingress (mean 334.04 Mbit/s)   Flow 2 egress (mean 5.27 Mbit/s)
Flow 3 ingress (mean 593.47 Mbit/s)   Flow 3 egress (mean 3.60 Mbit/s)

Flow 1 (95th percentile 1.12 ms)   Flow 2 (95th percentile 1.08 ms)   Flow 3 (95th percentile 1.09 ms)
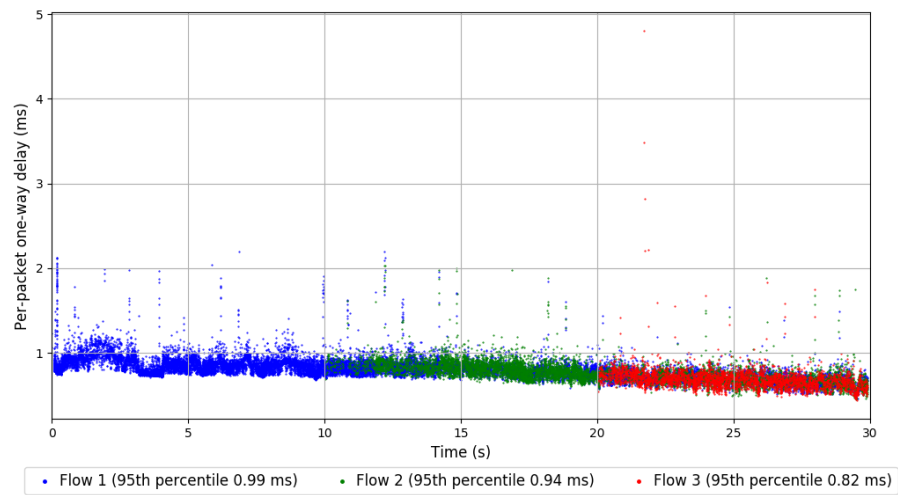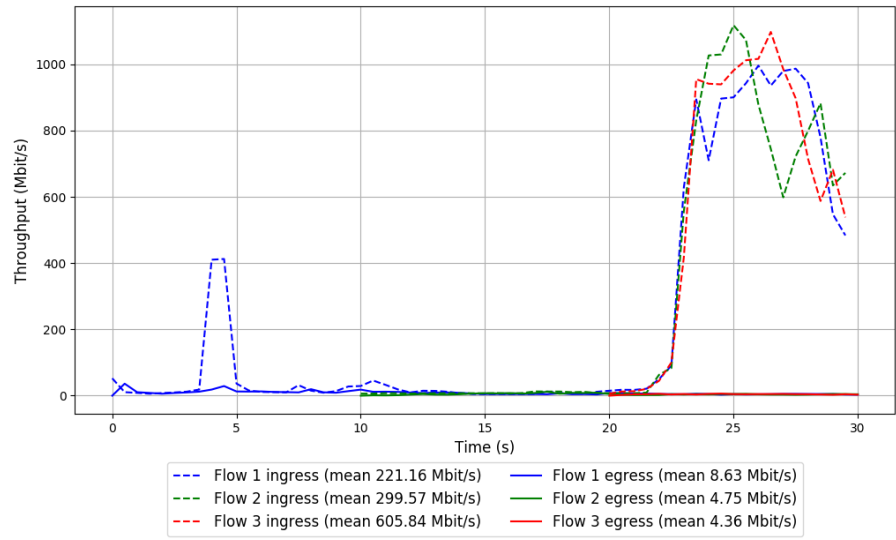
```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-05 09:15:27
End at: 2019-02-05 09:15:57
Local clock offset: 3.175 ms
Remote clock offset: -3.346 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.22 Mbit/s
95th percentile per-packet one-way delay: 0.968 ms
Loss rate: 97.87%
-- Flow 1:
Average throughput: 8.63 Mbit/s
95th percentile per-packet one-way delay: 0.989 ms
Loss rate: 96.10%
-- Flow 2:
Average throughput: 4.75 Mbit/s
95th percentile per-packet one-way delay: 0.935 ms
Loss rate: 98.42%
-- Flow 3:
Average throughput: 4.36 Mbit/s
95th percentile per-packet one-way delay: 0.818 ms
Loss rate: 99.28%
```

Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-05 09:45:39
End at: 2019-02-05 09:46:09
Local clock offset: -0.967 ms
Remote clock offset: 1.545 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.88 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 68.79%
-- Flow 1:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 1.100 ms
Loss rate: 59.54%
-- Flow 2:
Average throughput: 5.34 Mbit/s
95th percentile per-packet one-way delay: 1.122 ms
Loss rate: 70.15%
-- Flow 3:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 83.65%
```
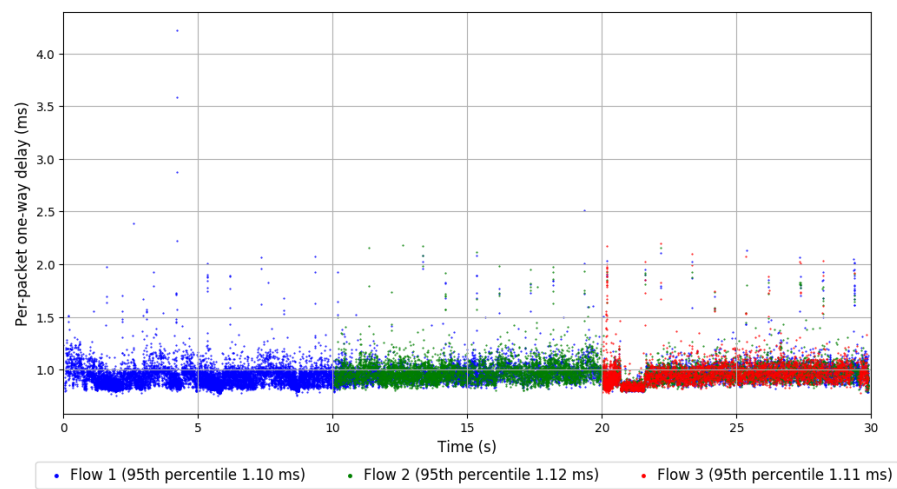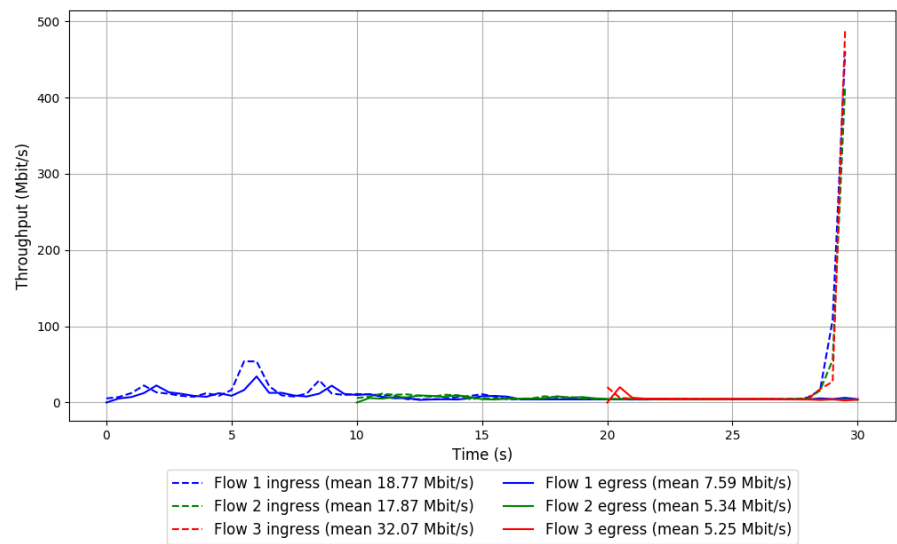
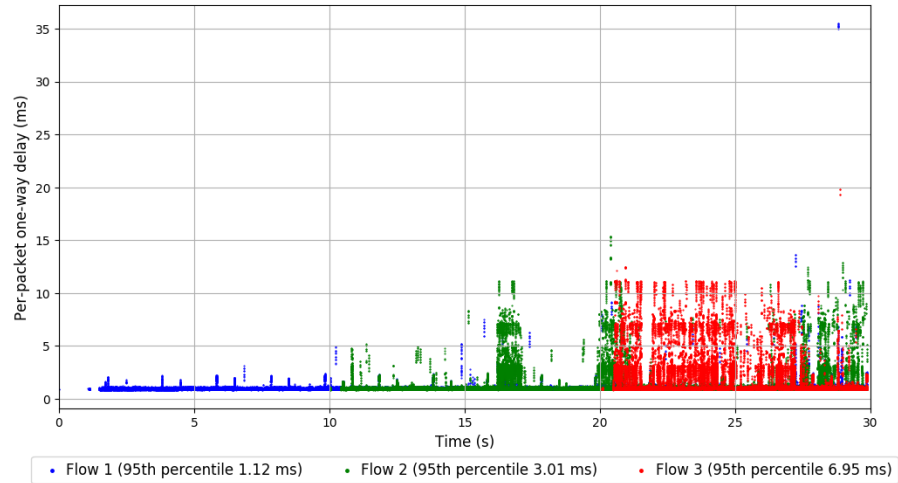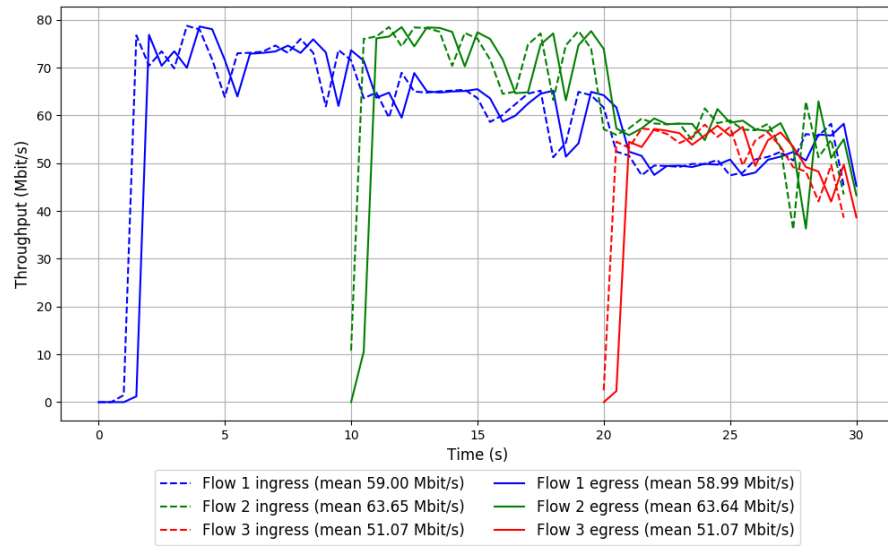Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-05 07:26:15
End at: 2019-02-05 07:26:45
Local clock offset: 1.763 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 118.08 Mbit/s
95th percentile per-packet one-way delay: 2.742 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 58.99 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 63.64 Mbit/s
95th percentile per-packet one-way delay: 3.011 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 51.07 Mbit/s
95th percentile per-packet one-way delay: 6.950 ms
Loss rate: 0.01%
```

Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 59.00 Mbit/s) -----   Flow 1 egress (mean 58.99 Mbit/s) ——
Flow 2 ingress (mean 63.65 Mbit/s) -----   Flow 2 egress (mean 63.64 Mbit/s) ——
Flow 3 ingress (mean 51.07 Mbit/s) -----   Flow 3 egress (mean 51.07 Mbit/s) ——

• Flow 1 (95th percentile 1.12 ms)   • Flow 2 (95th percentile 3.01 ms)   • Flow 3 (95th percentile 6.95 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-05 07:56:23
End at: 2019-02-05 07:56:53
Local clock offset: 0.651 ms
Remote clock offset: 0.42 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 124.09 Mbit/s
95th percentile per-packet one-way delay: 2.588 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 63.42 Mbit/s
95th percentile per-packet one-way delay: 0.797 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 63.15 Mbit/s
95th percentile per-packet one-way delay: 2.356 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 57.00 Mbit/s
95th percentile per-packet one-way delay: 6.402 ms
Loss rate: 0.02%
```
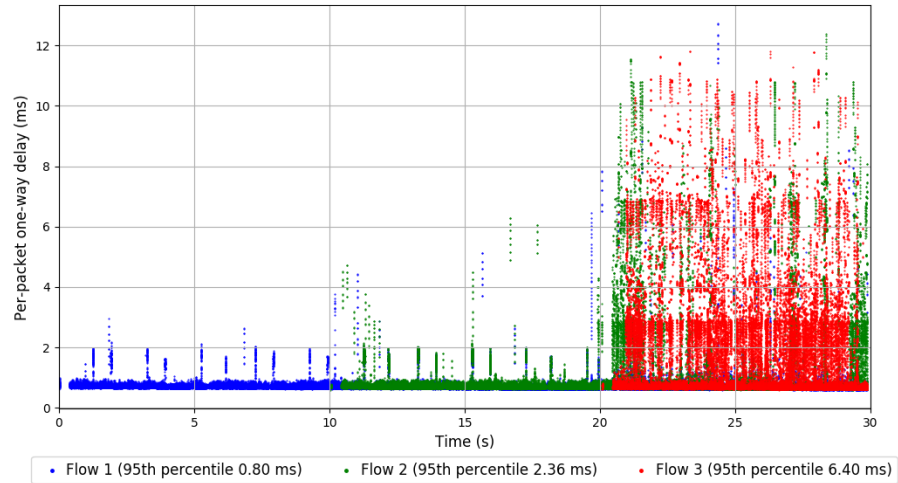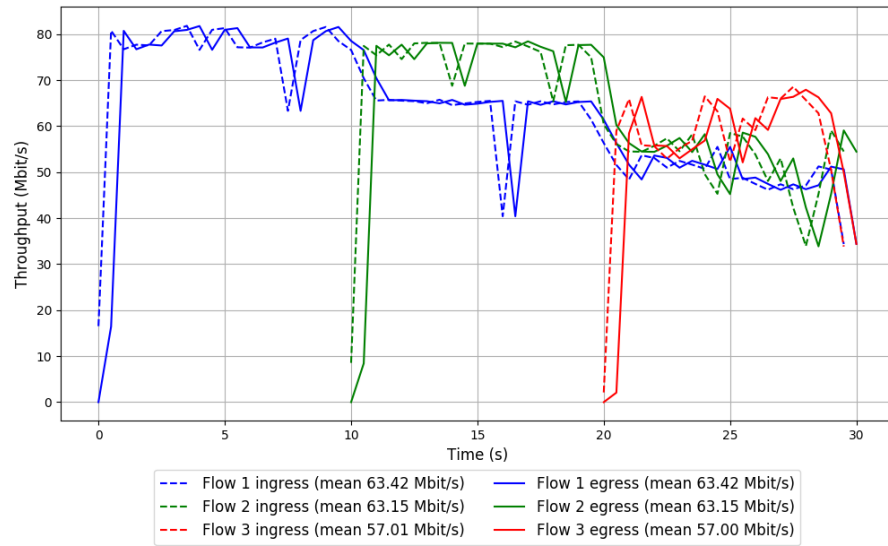
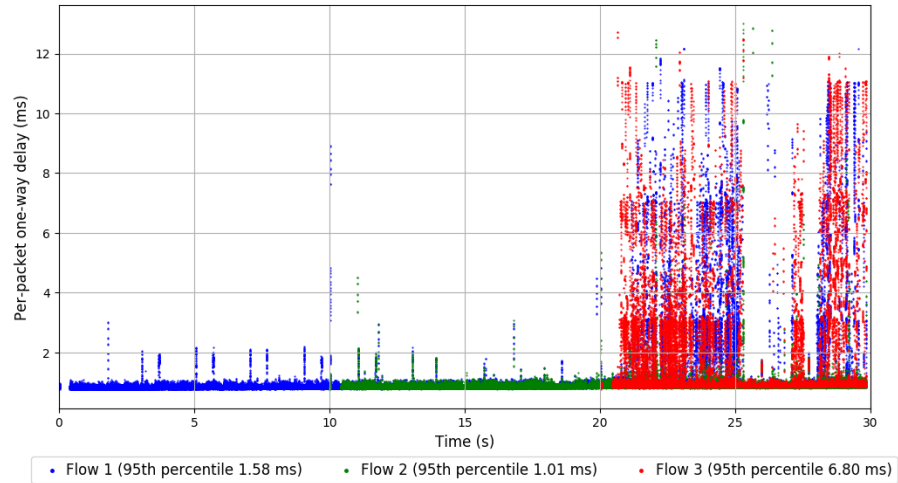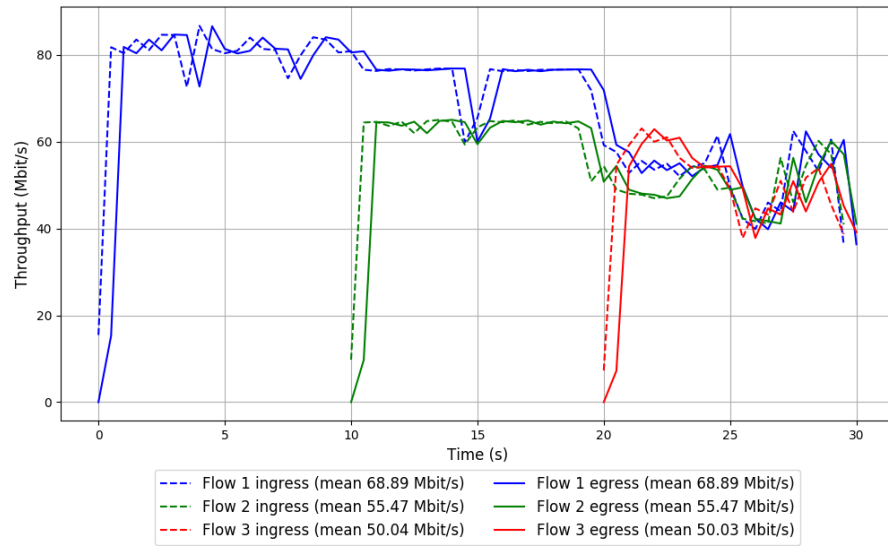Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-05 08:26:35
End at: 2019-02-05 08:27:05
Local clock offset: 0.41 ms
Remote clock offset: -3.206 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 122.24 Mbit/s
95th percentile per-packet one-way delay: 2.503 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 68.89 Mbit/s
95th percentile per-packet one-way delay: 1.580 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 55.47 Mbit/s
95th percentile per-packet one-way delay: 1.010 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 50.03 Mbit/s
95th percentile per-packet one-way delay: 6.800 ms
Loss rate: 0.02%
```

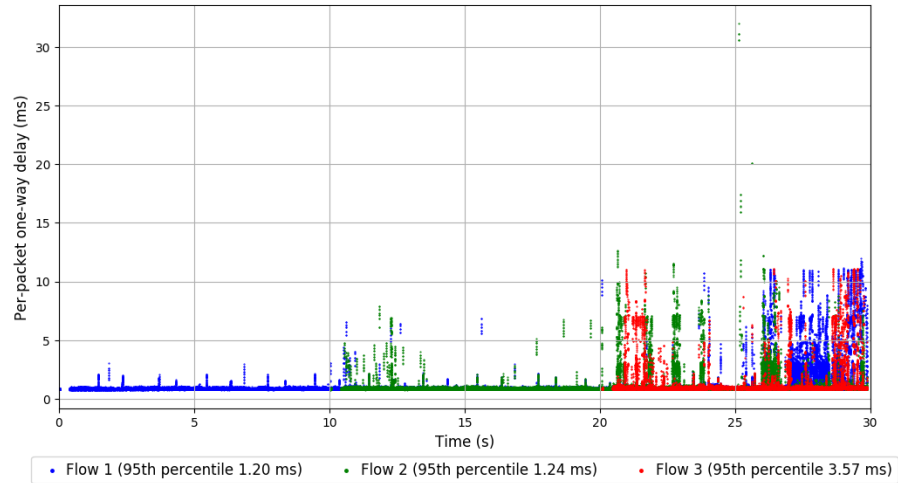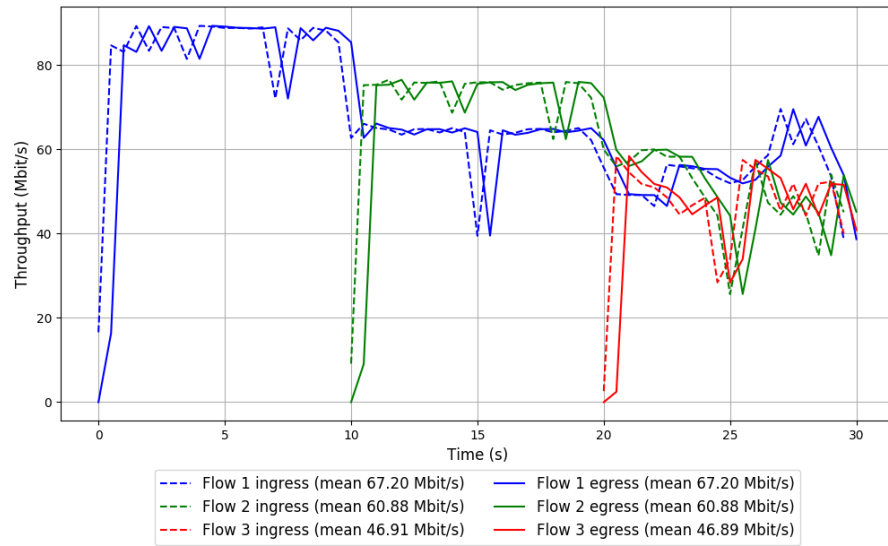Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-05 08:56:36
End at: 2019-02-05 08:57:06
Local clock offset: 2.278 ms
Remote clock offset: -3.317 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 123.05 Mbit/s
95th percentile per-packet one-way delay: 1.522 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.20 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.88 Mbit/s
95th percentile per-packet one-way delay: 1.239 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 46.89 Mbit/s
95th percentile per-packet one-way delay: 3.573 ms
Loss rate: 0.01%
```

Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 67.20 Mbit/s) --- Flow 1 egress (mean 67.20 Mbit/s) ——
Flow 2 ingress (mean 60.88 Mbit/s) --- Flow 2 egress (mean 60.88 Mbit/s) ——
Flow 3 ingress (mean 46.91 Mbit/s) --- Flow 3 egress (mean 46.89 Mbit/s) ——

• Flow 1 (95th percentile 1.20 ms)   • Flow 2 (95th percentile 1.24 ms)   • Flow 3 (95th percentile 3.57 ms)
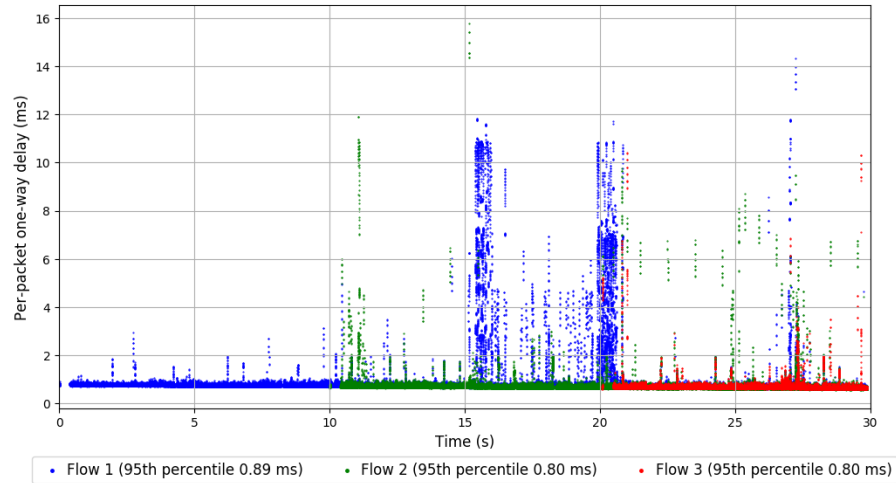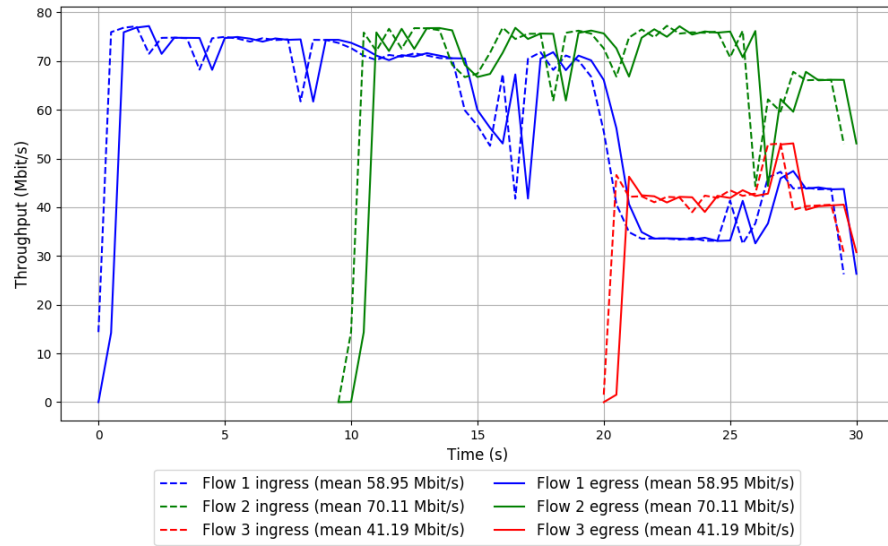
```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-05 09:26:46
End at: 2019-02-05 09:27:16
Local clock offset: 0.451 ms
Remote clock offset: -0.324 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 119.12 Mbit/s
95th percentile per-packet one-way delay: 0.840 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.95 Mbit/s
95th percentile per-packet one-way delay: 0.894 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 70.11 Mbit/s
95th percentile per-packet one-way delay: 0.796 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 41.19 Mbit/s
95th percentile per-packet one-way delay: 0.799 ms
Loss rate: 0.00%
```
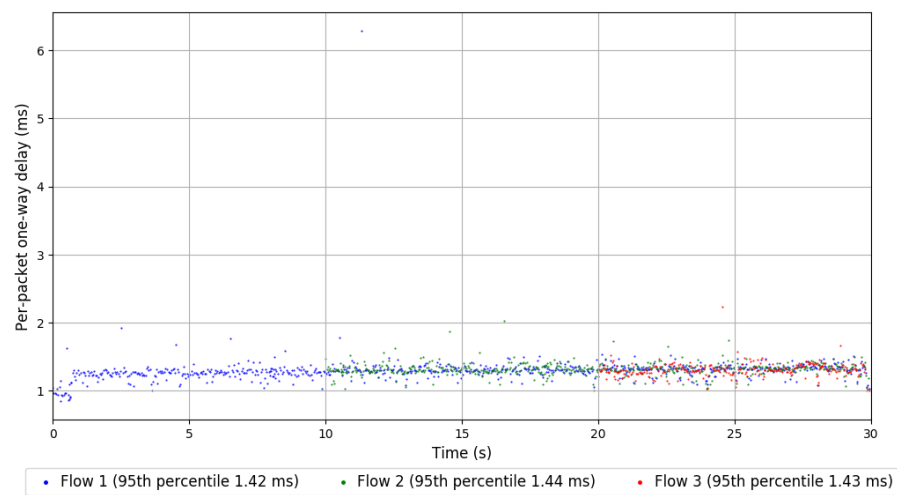
Run 5: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 58.95 Mbit/s) —— Flow 1 egress (mean 58.95 Mbit/s)
- - - Flow 2 ingress (mean 70.11 Mbit/s) —— Flow 2 egress (mean 70.11 Mbit/s)
- - - Flow 3 ingress (mean 41.19 Mbit/s) —— Flow 3 egress (mean 41.19 Mbit/s)

• Flow 1 (95th percentile 0.89 ms)   • Flow 2 (95th percentile 0.80 ms)   • Flow 3 (95th percentile 0.80 ms)
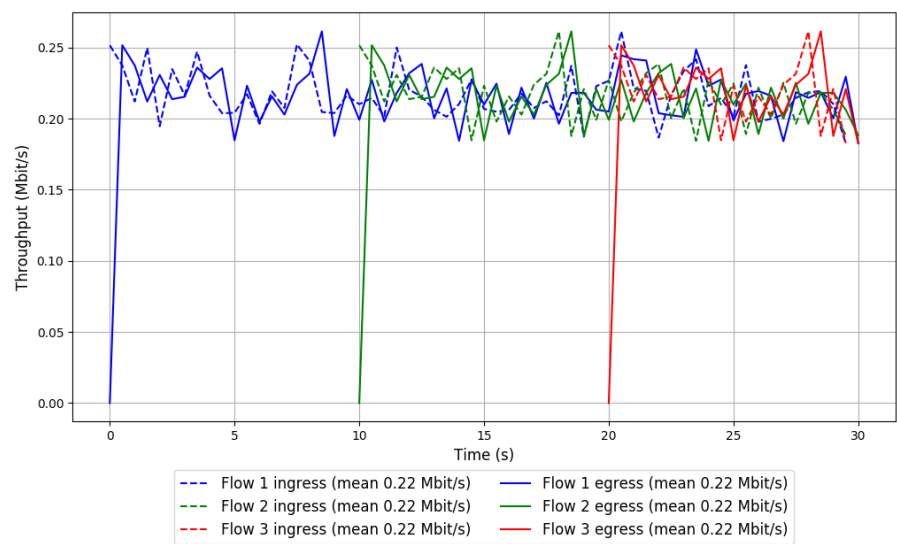
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```
Run 1: Statistics of SCReAM

Start at: 2019-02-05 07:25:00
End at: 2019-02-05 07:25:31
Local clock offset: 1.54 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.434 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.423 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.443 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.431 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

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```
Run 2: Statistics of SCReAM

Start at: 2019-02-05 07:55:09
End at: 2019-02-05 07:55:39
Local clock offset: 0.855 ms
Remote clock offset: 0.468 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.183 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.177 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.143 ms
Loss rate: 0.00%
```
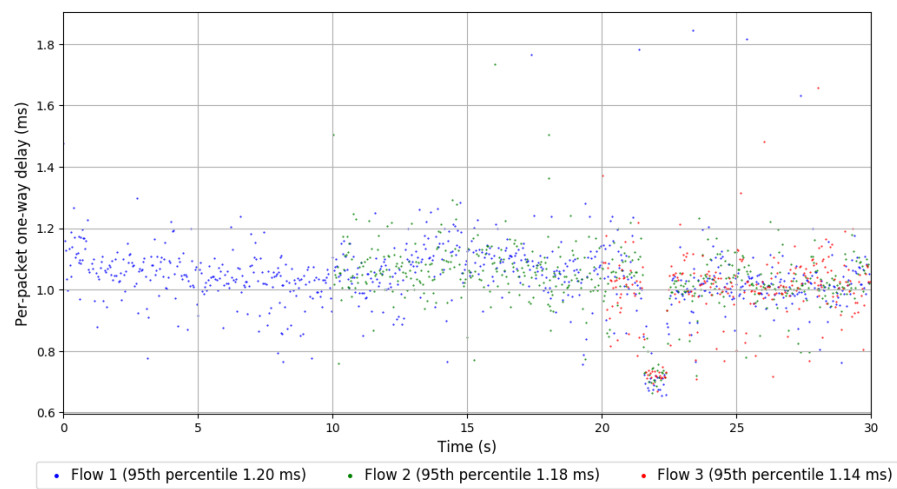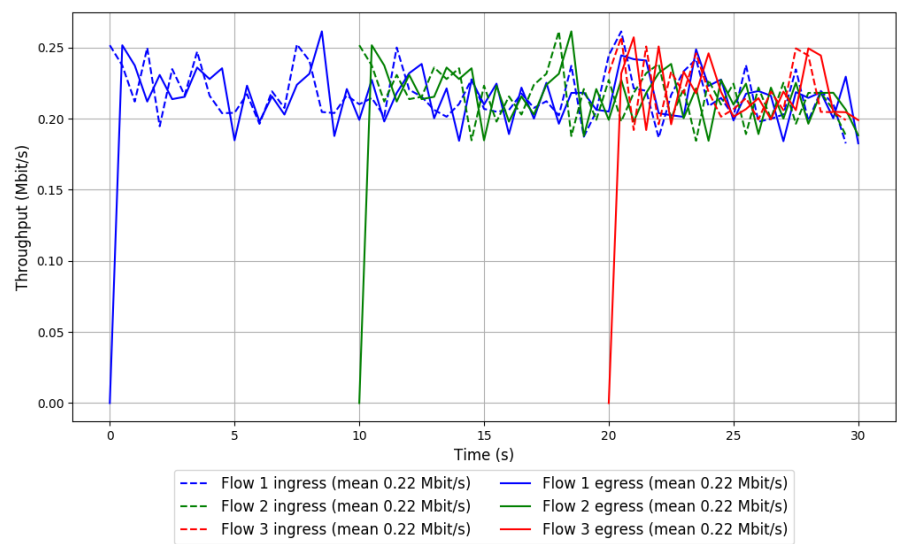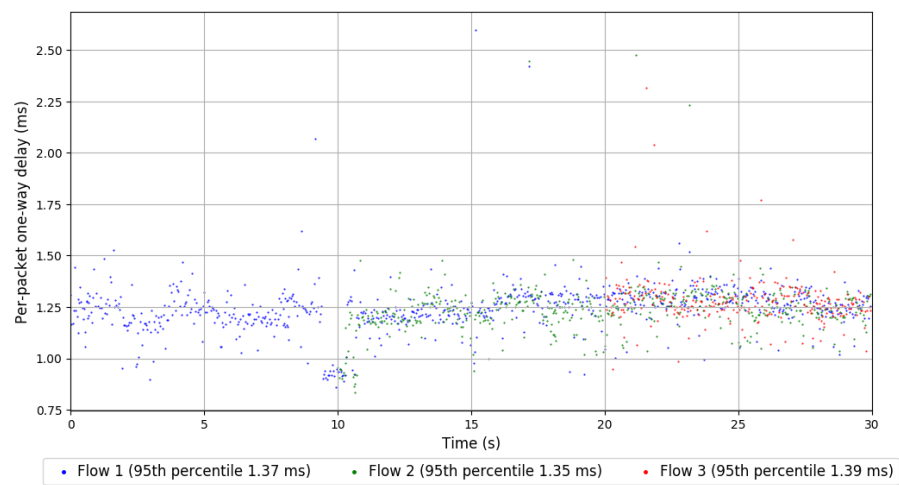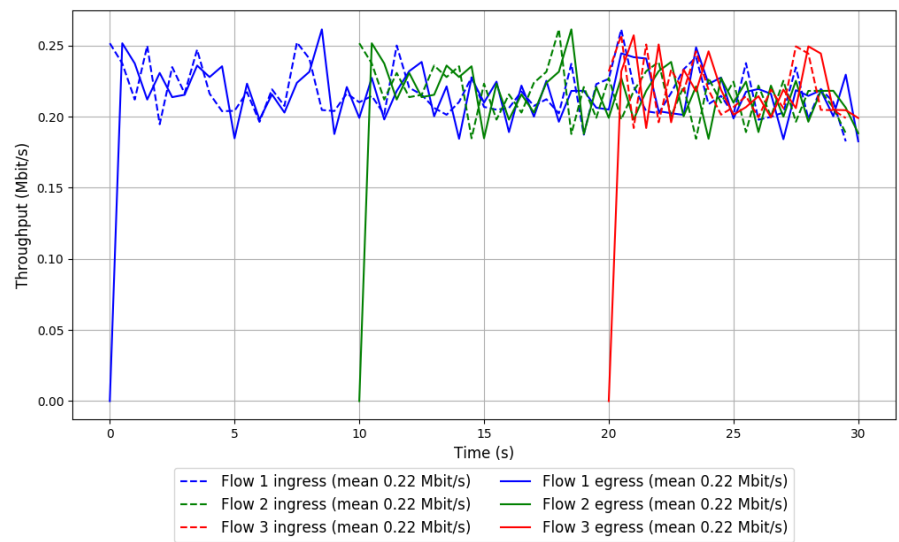
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-02-05 08:25:21
End at: 2019-02-05 08:25:51
Local clock offset: 0.349 ms
Remote clock offset: -3.043 ms

# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.370 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.374 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.347 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.385 ms
Loss rate: 0.00%
```
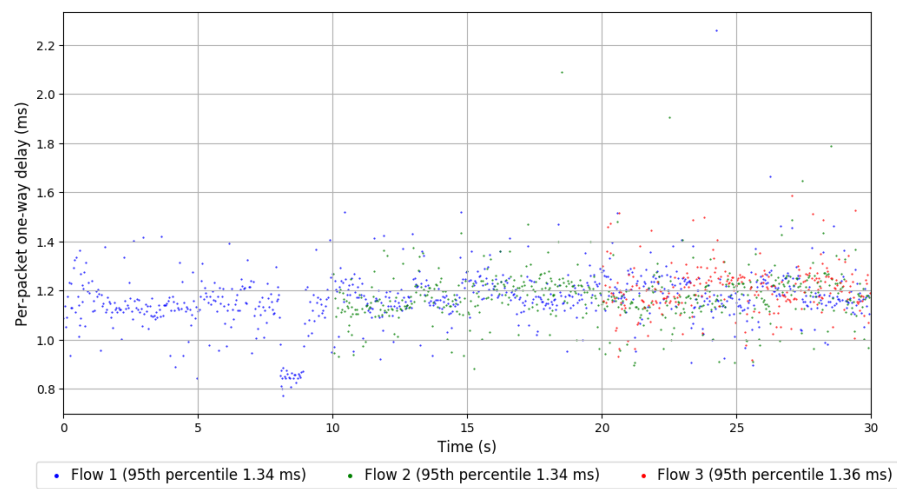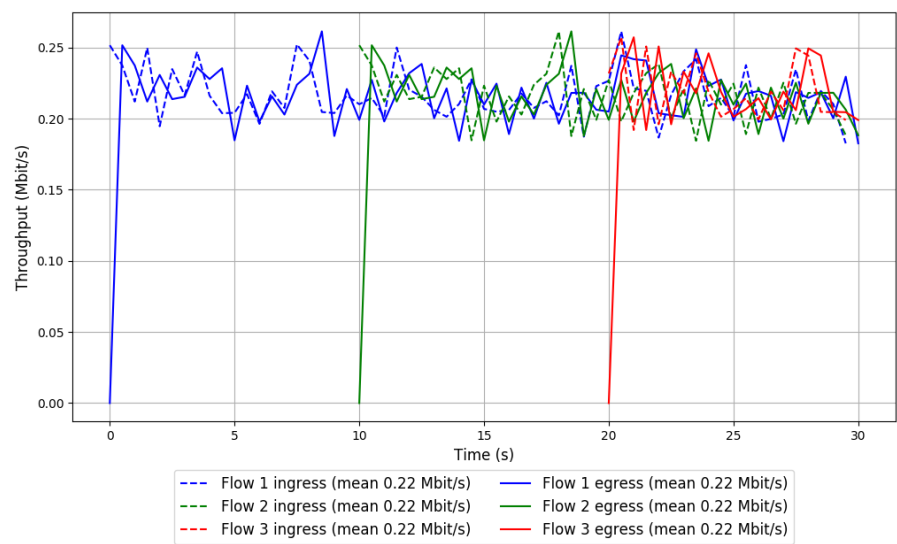
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-02-05 08:55:22
End at: 2019-02-05 08:55:52
Local clock offset: 2.181 ms
Remote clock offset: -3.327 ms

# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.343 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.337 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.339 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.360 ms
Loss rate: 0.00%
```
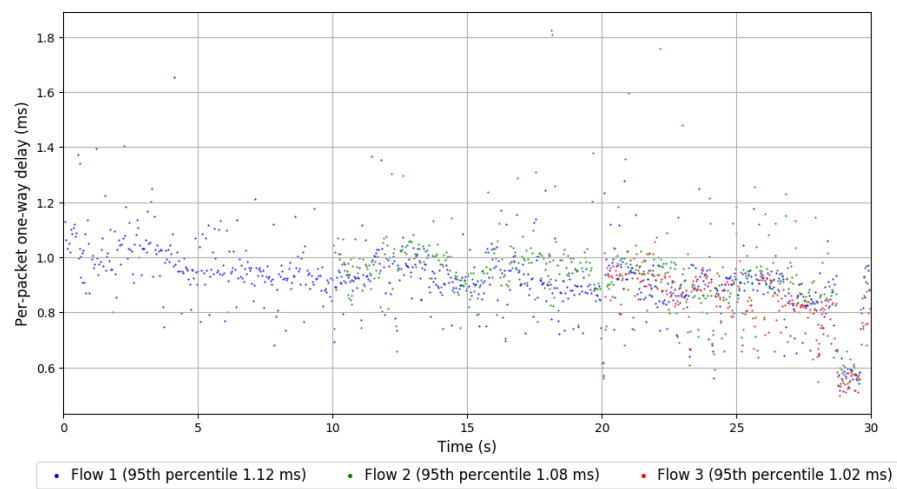
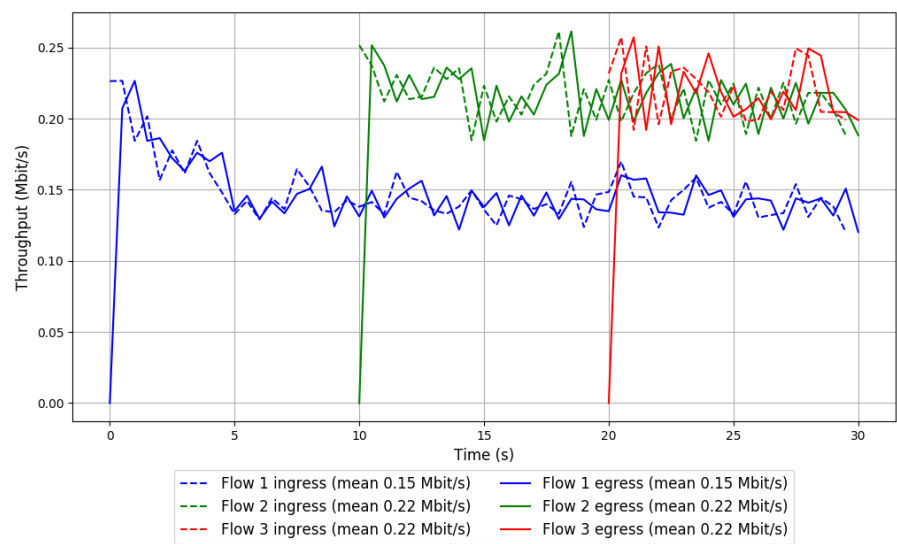# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-02-05 09:25:31
End at: 2019-02-05 09:26:01
Local clock offset: 0.659 ms
Remote clock offset: -0.571 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 1.100 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 1.120 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.082 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.022 ms
Loss rate: 0.00%
```

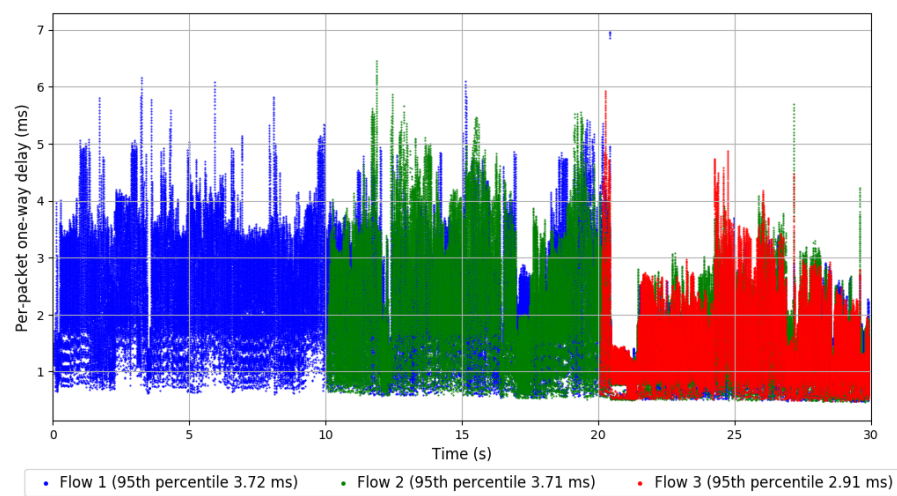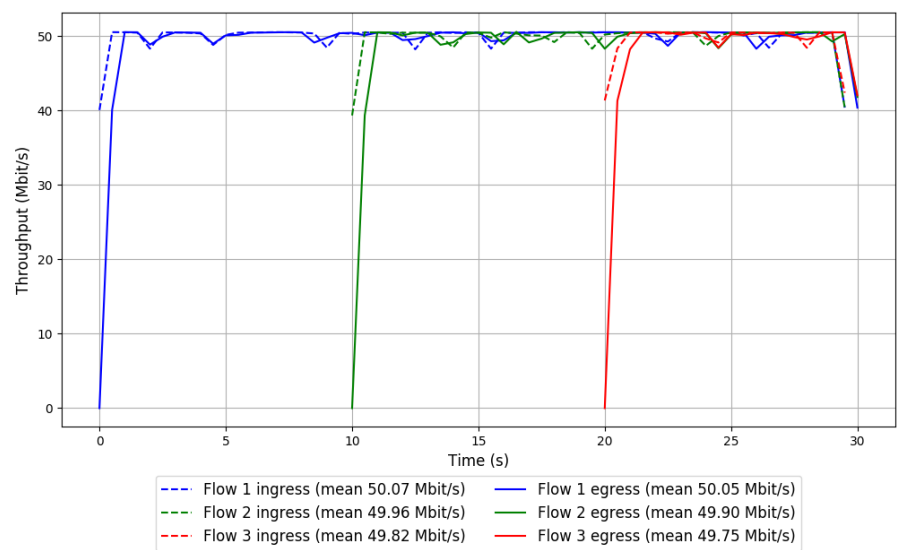# Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2019-02-05 07:47:40
End at: 2019-02-05 07:48:10
Local clock offset: 2.639 ms
Remote clock offset: 0.346 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.70 Mbit/s
95th percentile per-packet one-way delay: 3.640 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 50.05 Mbit/s
95th percentile per-packet one-way delay: 3.721 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 49.90 Mbit/s
95th percentile per-packet one-way delay: 3.706 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 2.909 ms
Loss rate: 0.13%
```
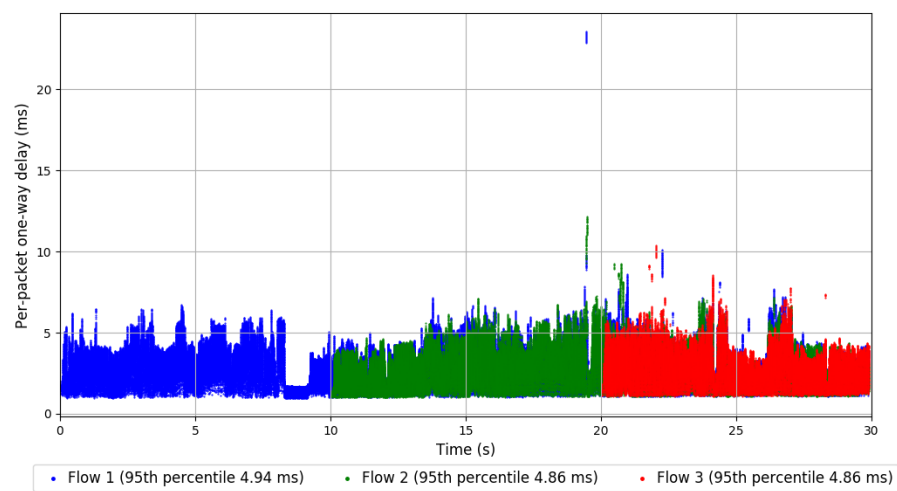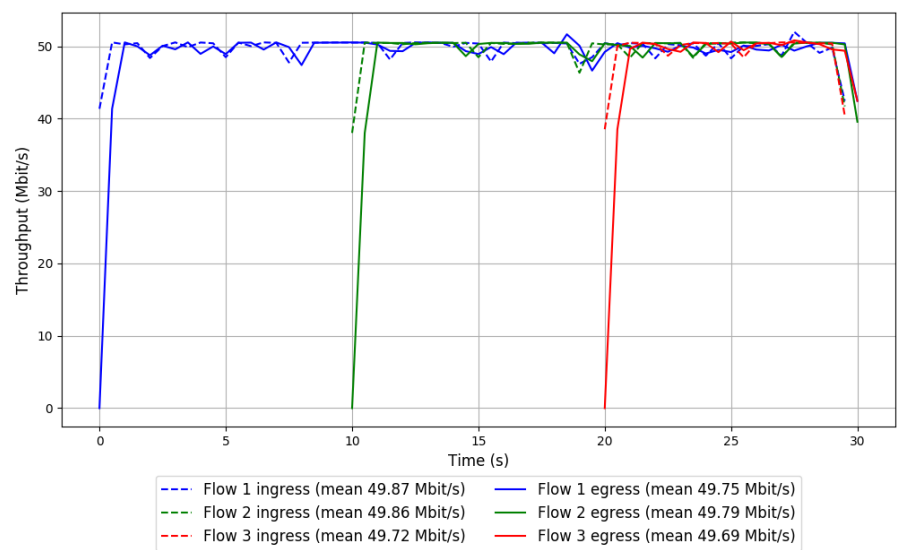
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-05 08:17:52
End at: 2019-02-05 08:18:22
Local clock offset: -0.542 ms
Remote clock offset: -2.223 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.29 Mbit/s
95th percentile per-packet one-way delay: 4.902 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 4.940 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 49.79 Mbit/s
95th percentile per-packet one-way delay: 4.861 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 49.69 Mbit/s
95th percentile per-packet one-way delay: 4.860 ms
Loss rate: 0.04%
```
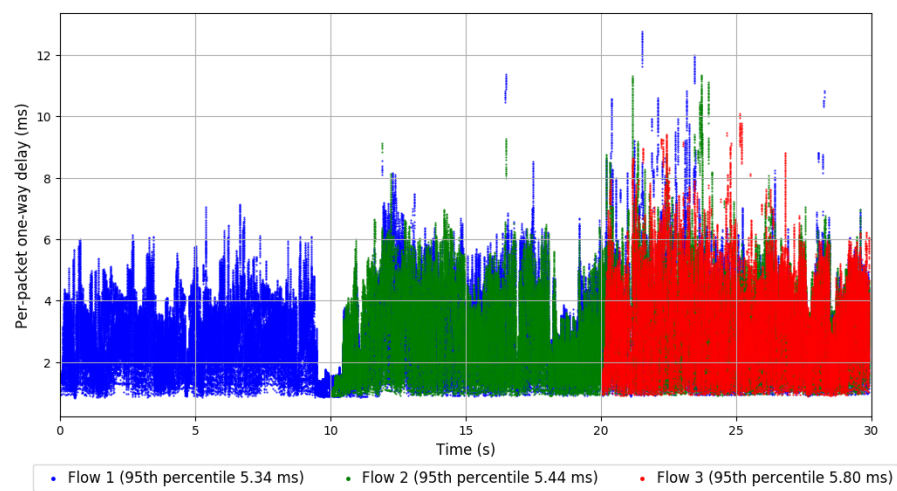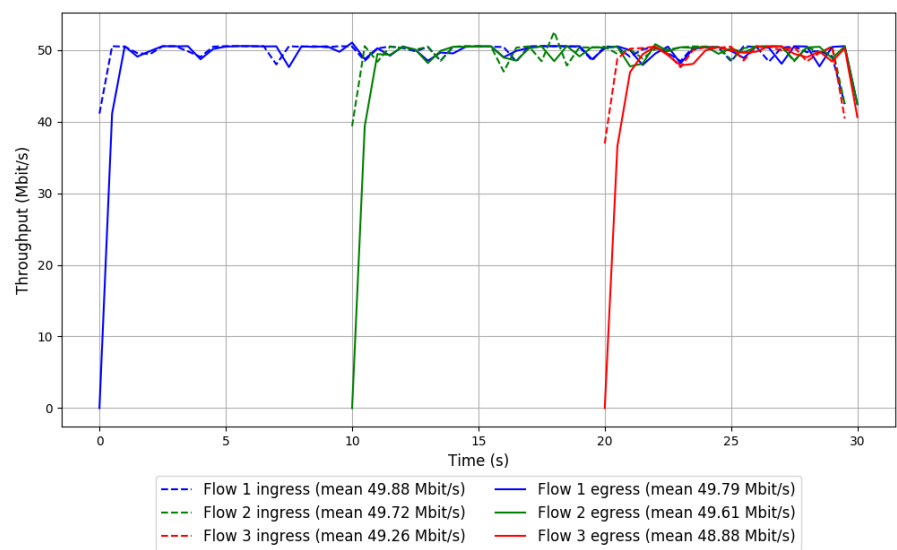
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-02-05 08:47:51
End at: 2019-02-05 08:48:21
Local clock offset: 1.147 ms
Remote clock offset: -3.485 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.94 Mbit/s
95th percentile per-packet one-way delay: 5.464 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 49.79 Mbit/s
95th percentile per-packet one-way delay: 5.339 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 49.61 Mbit/s
95th percentile per-packet one-way delay: 5.444 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 48.88 Mbit/s
95th percentile per-packet one-way delay: 5.805 ms
Loss rate: 0.72%
```
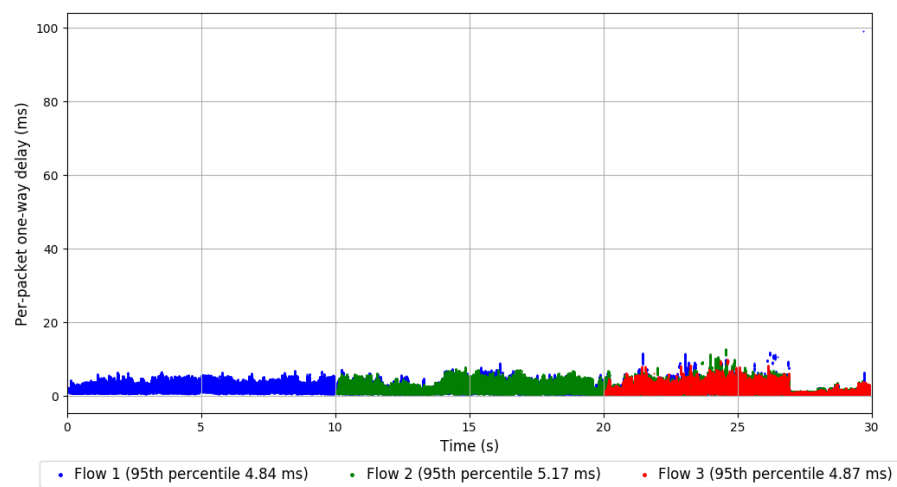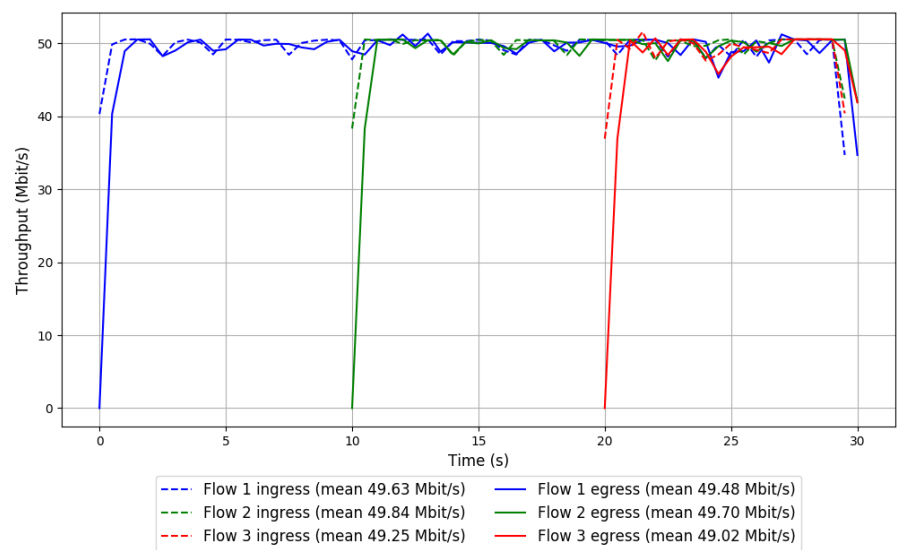
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-05 09:18:03
End at: 2019-02-05 09:18:33
Local clock offset: 2.473 ms
Remote clock offset: -2.363 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.73 Mbit/s
95th percentile per-packet one-way delay: 4.966 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 49.48 Mbit/s
95th percentile per-packet one-way delay: 4.843 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 49.70 Mbit/s
95th percentile per-packet one-way delay: 5.173 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 49.02 Mbit/s
95th percentile per-packet one-way delay: 4.872 ms
Loss rate: 0.44%
```

Run 4: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 49.63 Mbit/s) —— Flow 1 egress (mean 49.48 Mbit/s)
- - - Flow 2 ingress (mean 49.84 Mbit/s) —— Flow 2 egress (mean 49.70 Mbit/s)
- - - Flow 3 ingress (mean 49.25 Mbit/s) —— Flow 3 egress (mean 49.02 Mbit/s)

- Flow 1 (95th percentile 4.84 ms)   - Flow 2 (95th percentile 5.17 ms)   - Flow 3 (95th percentile 4.87 ms)
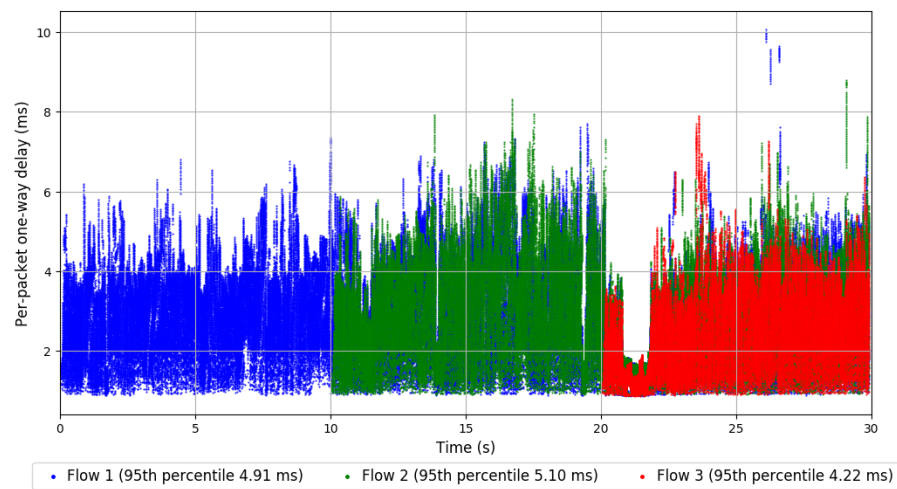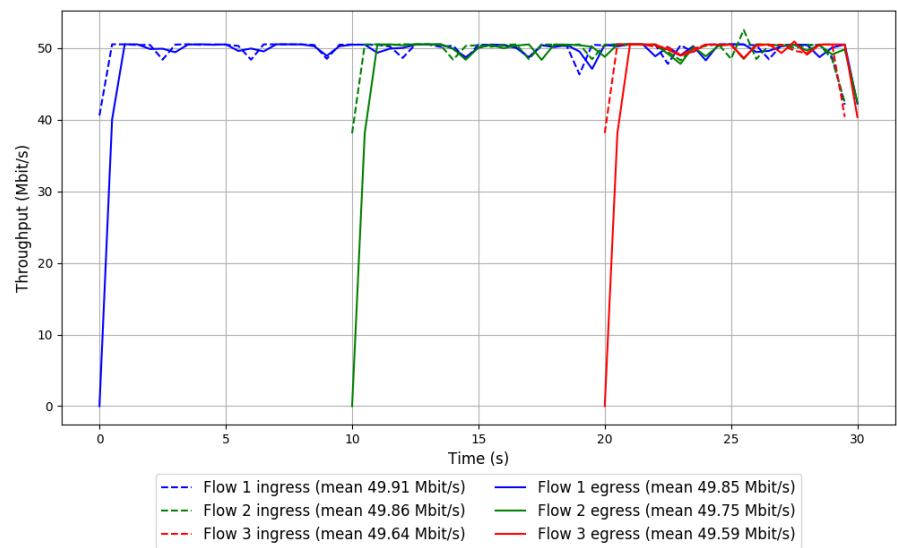
```
Run 5: Statistics of Sprout

Start at: 2019-02-05 09:48:09
End at: 2019-02-05 09:48:39
Local clock offset: -0.843 ms
Remote clock offset: 1.687 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.33 Mbit/s
95th percentile per-packet one-way delay: 4.898 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 49.85 Mbit/s
95th percentile per-packet one-way delay: 4.912 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 5.101 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 49.59 Mbit/s
95th percentile per-packet one-way delay: 4.224 ms
Loss rate: 0.05%
```

Run 5: Report of Sprout — Data Link

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

Start at: 2019-02-05 07:42:28
End at: 2019-02-05 07:42:58
Local clock offset: 3.037 ms
Remote clock offset: 0.275 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 1.267 ms
Loss rate: 57.26%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.193 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 3.79 Mbit/s
95th percentile per-packet one-way delay: 1.306 ms
Loss rate: 31.09%
-- Flow 3:
Average throughput: 12.69 Mbit/s
95th percentile per-packet one-way delay: 1.165 ms
Loss rate: 65.17%
```
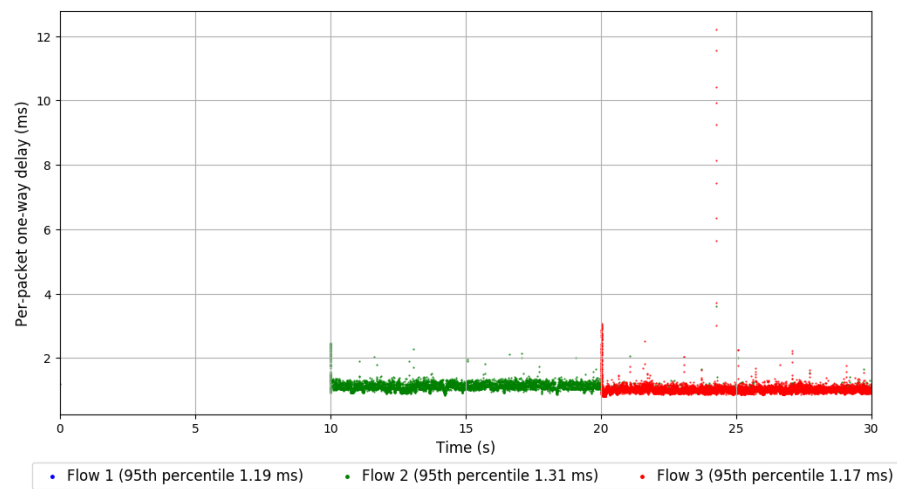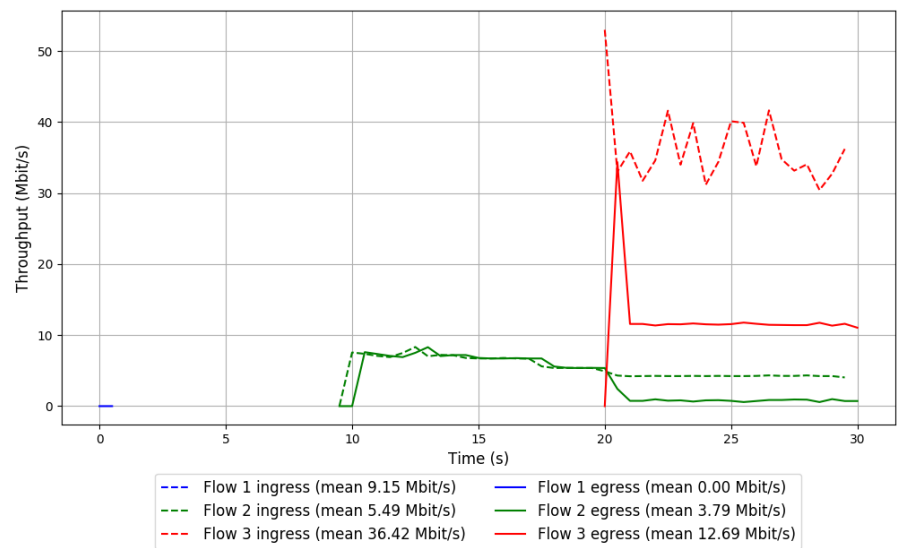
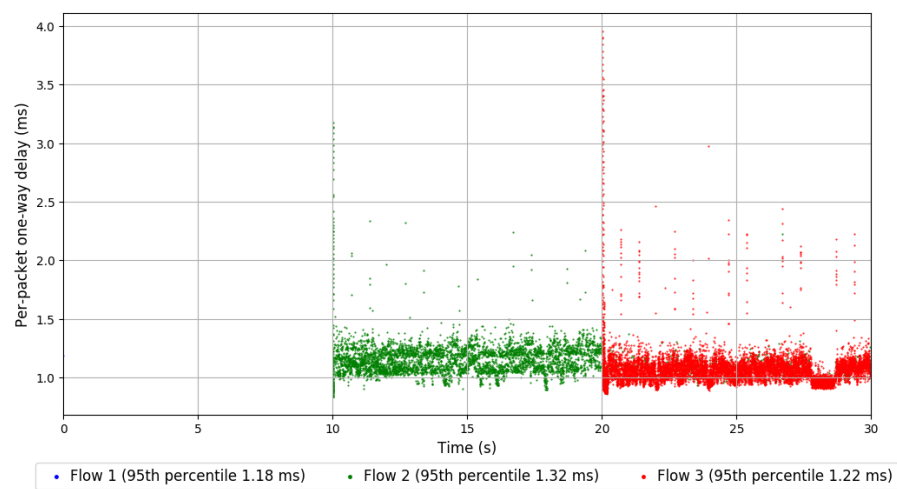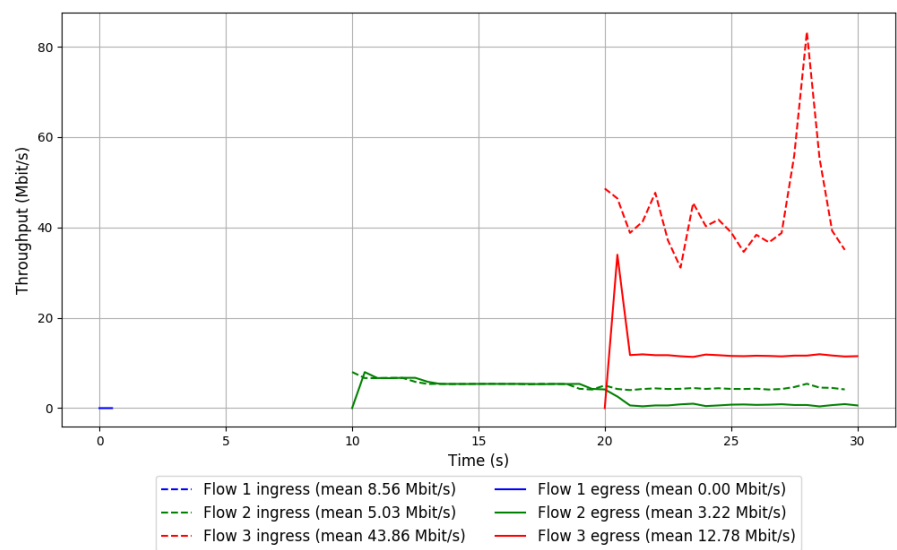Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-05 08:12:33
End at: 2019-02-05 08:13:03
Local clock offset: -0.677 ms
Remote clock offset: -1.128 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 1.283 ms
Loss rate: 64.34%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.182 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 3.22 Mbit/s
95th percentile per-packet one-way delay: 1.320 ms
Loss rate: 35.97%
-- Flow 3:
Average throughput: 12.78 Mbit/s
95th percentile per-packet one-way delay: 1.215 ms
Loss rate: 70.86%
```

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

- - - Flow 1 ingress (mean 8.56 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 5.03 Mbit/s) —— Flow 2 egress (mean 3.22 Mbit/s)
- - - Flow 3 ingress (mean 43.86 Mbit/s) —— Flow 3 egress (mean 12.78 Mbit/s)

• Flow 1 (95th percentile 1.18 ms)   • Flow 2 (95th percentile 1.32 ms)   • Flow 3 (95th percentile 1.22 ms)
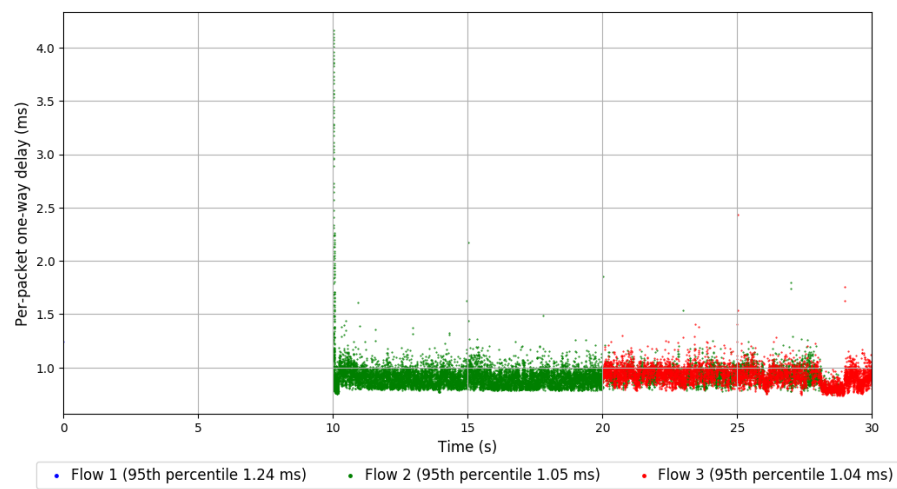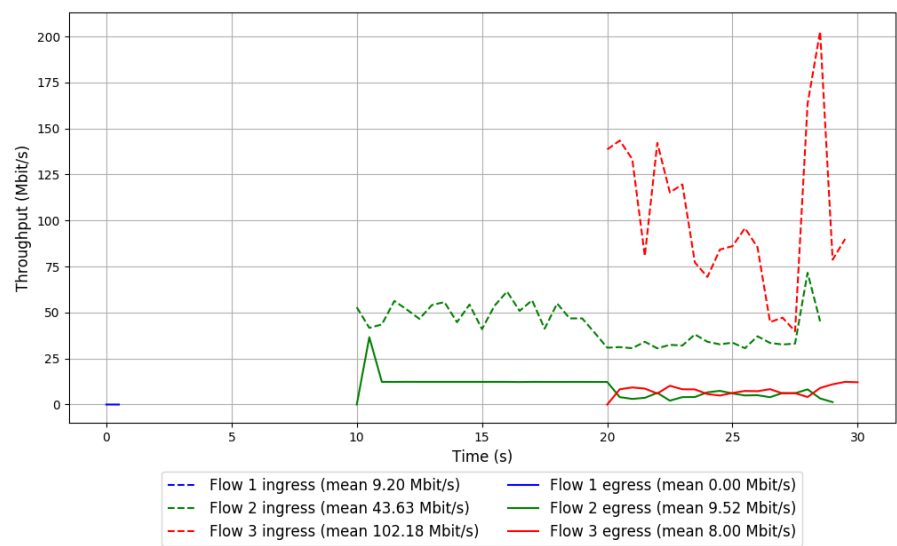
```
Run 3: Statistics of TaoVA-100x

Start at: 2019-02-05 08:42:32
End at: 2019-02-05 08:43:02
Local clock offset: 0.775 ms
Remote clock offset: -3.783 ms

# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.61 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 85.94%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.240 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.52 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 78.19%
-- Flow 3:
Average throughput: 8.00 Mbit/s
95th percentile per-packet one-way delay: 1.045 ms
Loss rate: 92.17%
```

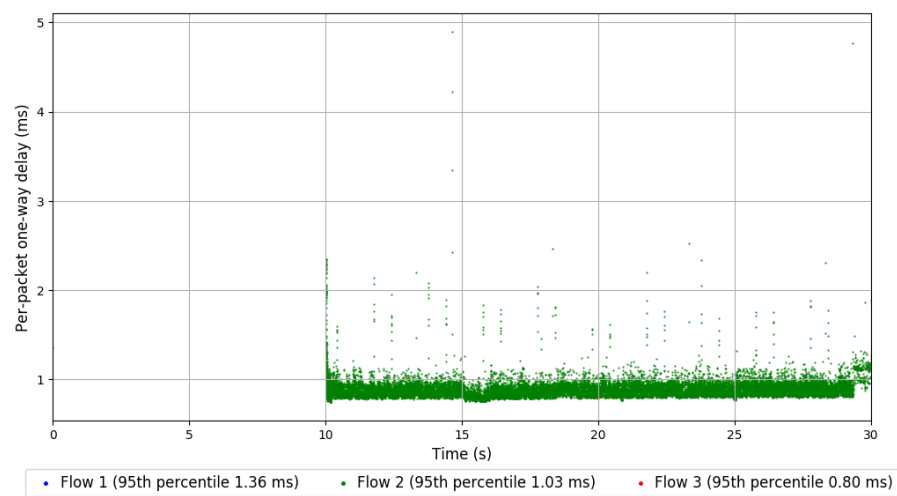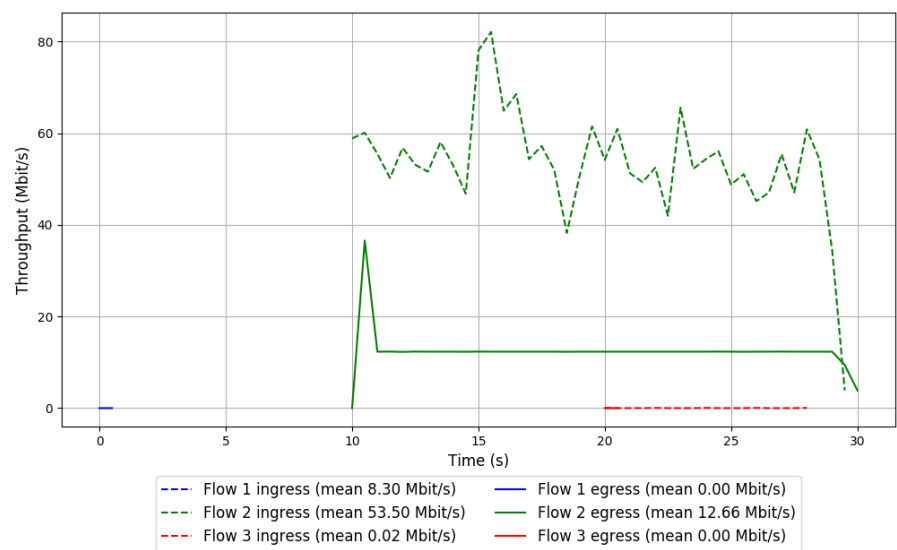Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-05 09:12:45
End at: 2019-02-05 09:13:15
Local clock offset: 3.091 ms
Remote clock offset: -3.394 ms

# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.43 Mbit/s
95th percentile per-packet one-way delay: 1.035 ms
Loss rate: 76.34%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.364 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 12.66 Mbit/s
95th percentile per-packet one-way delay: 1.035 ms
Loss rate: 76.34%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 0.798 ms
Loss rate: 99.16%
```

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

- - - Flow 1 ingress (mean 8.30 Mbit/s)   —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 53.50 Mbit/s)   —— Flow 2 egress (mean 12.66 Mbit/s)
- - - Flow 3 ingress (mean 0.02 Mbit/s)   —— Flow 3 egress (mean 0.00 Mbit/s)

· Flow 1 (95th percentile 1.36 ms)   · Flow 2 (95th percentile 1.03 ms)   · Flow 3 (95th percentile 0.80 ms)

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

Start at: 2019-02-05 09:42:59
End at: 2019-02-05 09:43:29
Local clock offset: -0.84 ms
Remote clock offset: 1.345 ms


# Below is generated by plot.py at 2019-02-05 10:43:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.62 Mbit/s
95th percentile per-packet one-way delay: 0.958 ms
Loss rate: 81.19%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.262 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 12.18 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 78.73%
-- Flow 3:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 0.994 ms
Loss rate: 93.44%
```
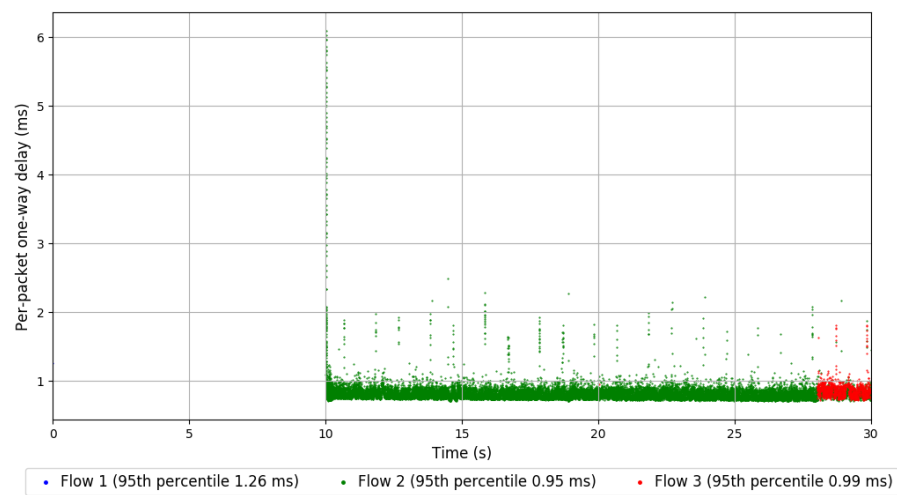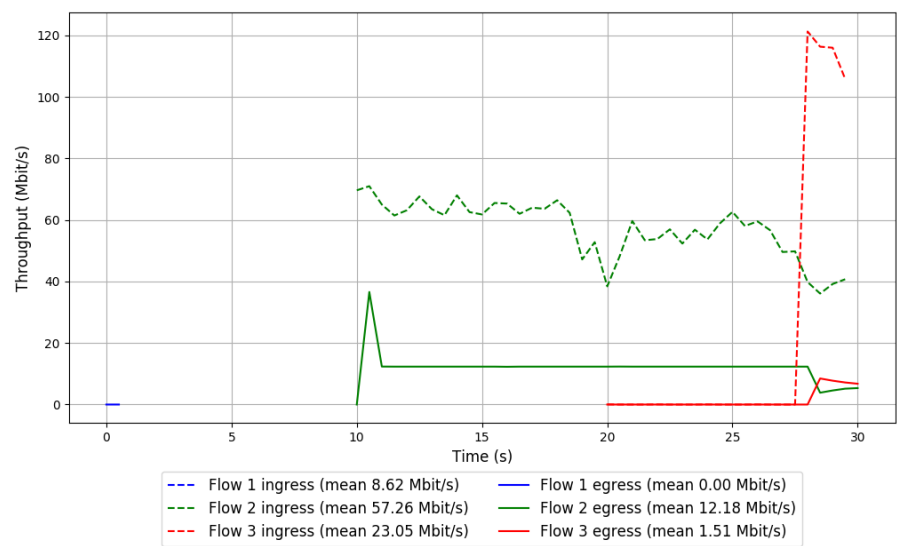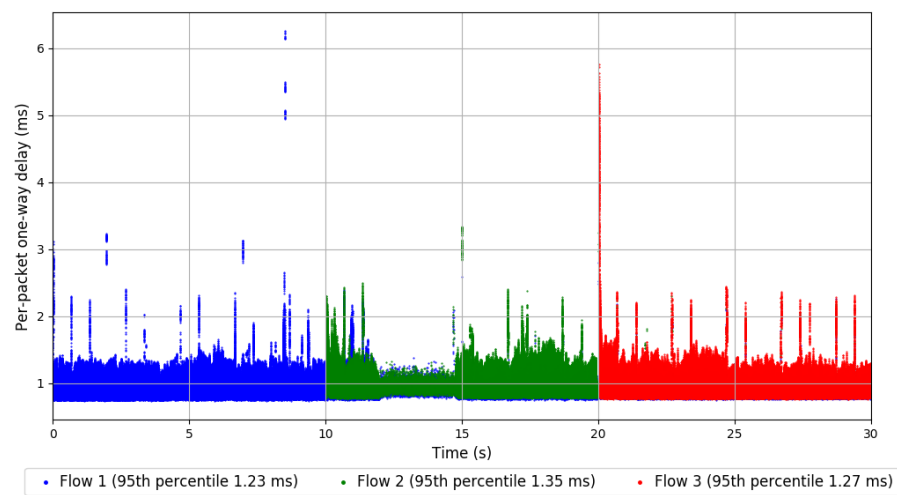
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 8.62 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 57.26 Mbit/s) --- Flow 2 egress (mean 12.18 Mbit/s)
Flow 3 ingress (mean 23.05 Mbit/s) --- Flow 3 egress (mean 1.51 Mbit/s)

Flow 1 (95th percentile 1.26 ms)   Flow 2 (95th percentile 0.95 ms)   Flow 3 (95th percentile 0.99 ms)
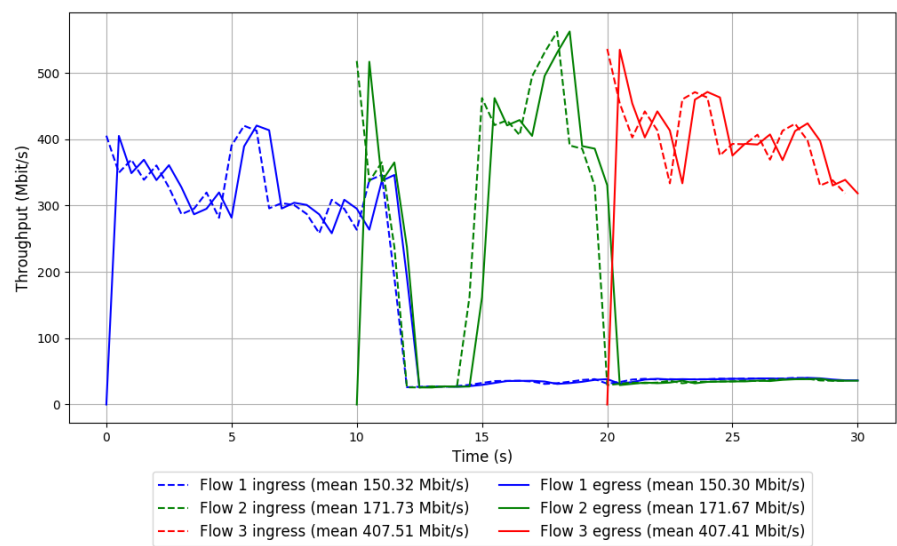
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```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-05 07:31:50
End at: 2019-02-05 07:32:20
Local clock offset: 2.425 ms
Remote clock offset: -0.006 ms


# Below is generated by plot.py at 2019-02-05 10:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 400.27 Mbit/s
95th percentile per-packet one-way delay: 1.282 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 150.30 Mbit/s
95th percentile per-packet one-way delay: 1.234 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 171.67 Mbit/s
95th percentile per-packet one-way delay: 1.349 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 407.41 Mbit/s
95th percentile per-packet one-way delay: 1.268 ms
Loss rate: 0.02%
```
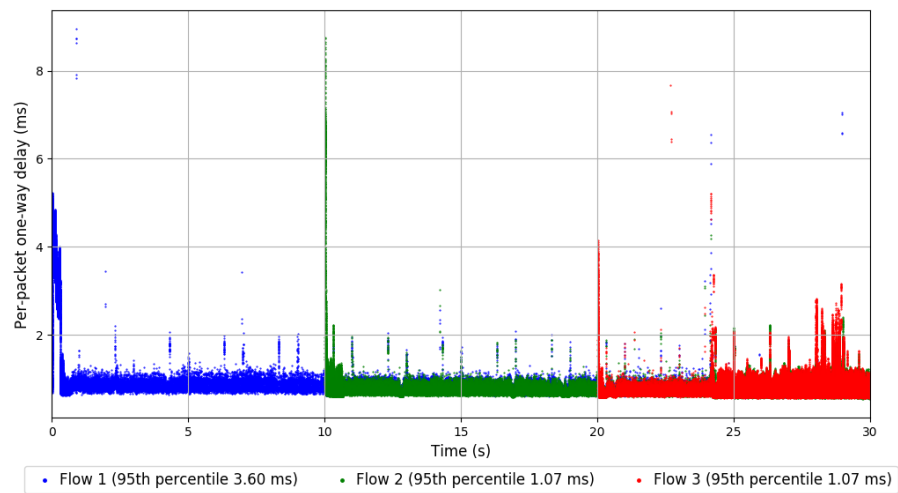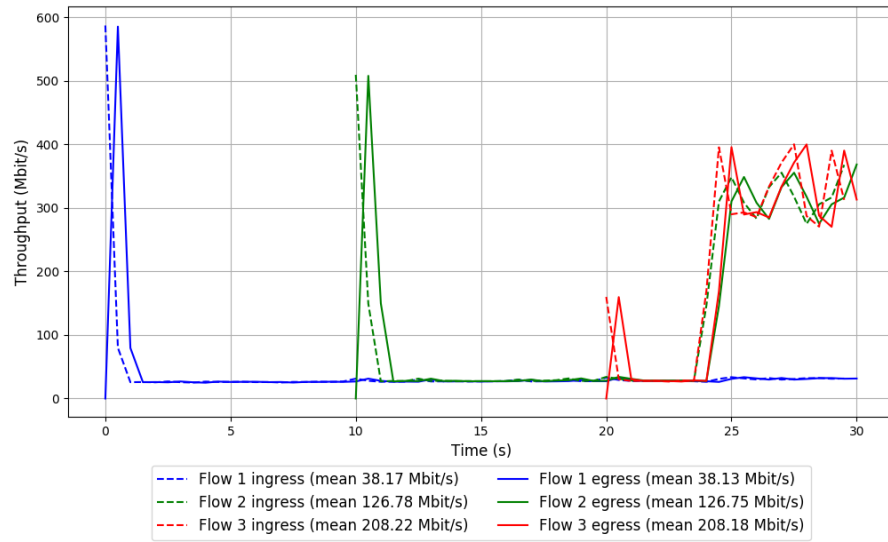
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 150.32 Mbit/s) --- Flow 1 egress (mean 150.30 Mbit/s)
Flow 2 ingress (mean 171.73 Mbit/s) --- Flow 2 egress (mean 171.67 Mbit/s)
Flow 3 ingress (mean 407.51 Mbit/s) --- Flow 3 egress (mean 407.41 Mbit/s)

Flow 1 (95th percentile 1.23 ms) • Flow 2 (95th percentile 1.35 ms) • Flow 3 (95th percentile 1.27 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-05 08:02:02
End at: 2019-02-05 08:02:32
Local clock offset: 0.018 ms
Remote clock offset: 0.48 ms


# Below is generated by plot.py at 2019-02-05 10:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 191.86 Mbit/s
95th percentile per-packet one-way delay: 1.274 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 38.13 Mbit/s
95th percentile per-packet one-way delay: 3.601 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 126.75 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 208.18 Mbit/s
95th percentile per-packet one-way delay: 1.073 ms
Loss rate: 0.02%
```

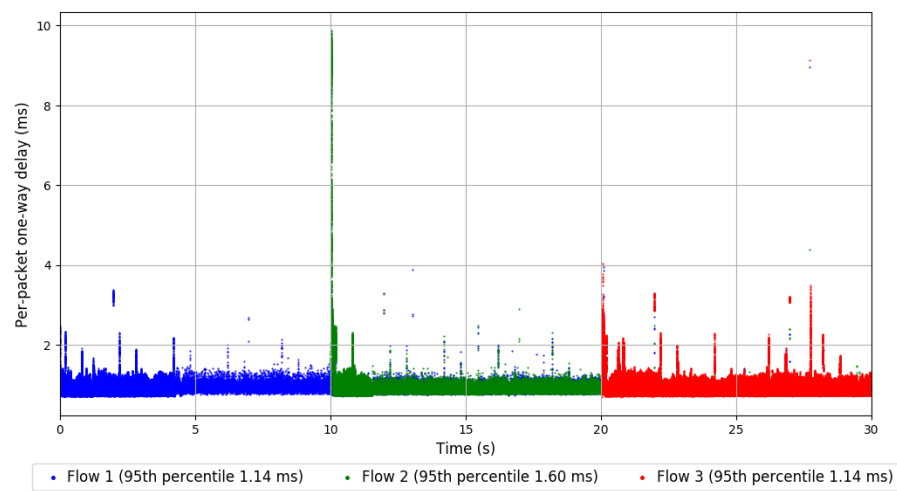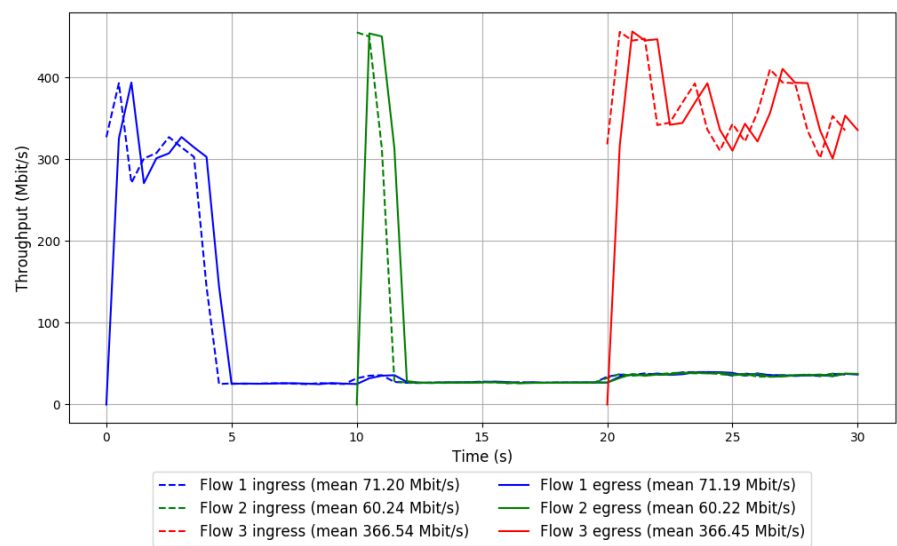Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-05 08:32:06
End at: 2019-02-05 08:32:36
Local clock offset: 0.648 ms
Remote clock offset: -3.613 ms


# Below is generated by plot.py at 2019-02-05 10:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 233.15 Mbit/s
95th percentile per-packet one-way delay: 1.166 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 71.19 Mbit/s
95th percentile per-packet one-way delay: 1.143 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 60.22 Mbit/s
95th percentile per-packet one-way delay: 1.596 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 366.45 Mbit/s
95th percentile per-packet one-way delay: 1.144 ms
Loss rate: 0.02%
```
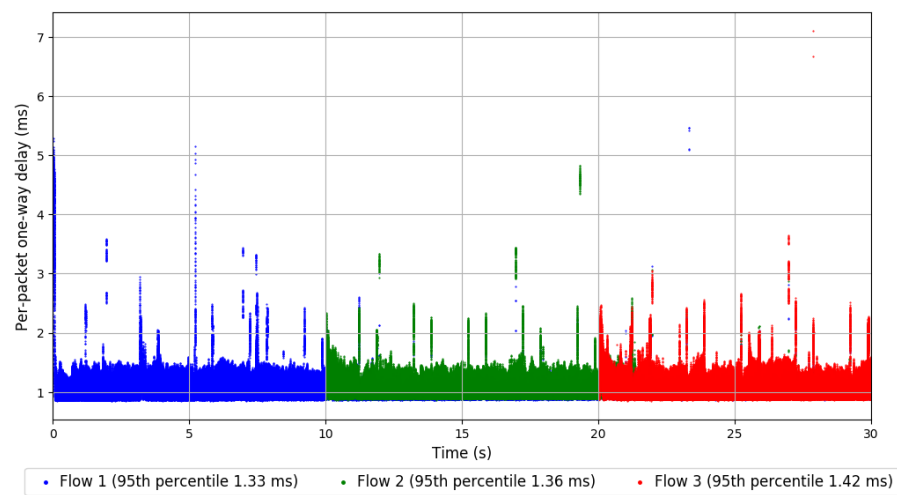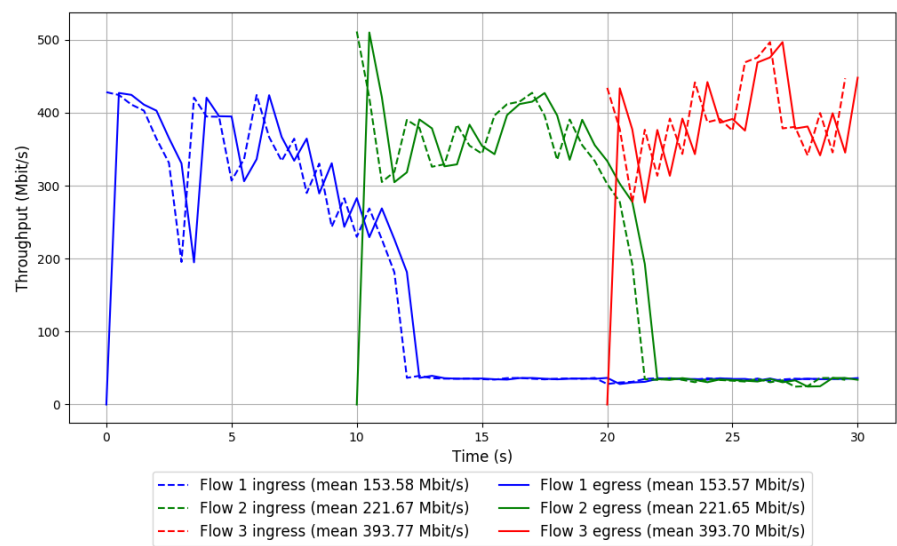
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 71.20 Mbit/s) Flow 1 egress (mean 71.19 Mbit/s)
Flow 2 ingress (mean 60.24 Mbit/s) Flow 2 egress (mean 60.22 Mbit/s)
Flow 3 ingress (mean 366.54 Mbit/s) Flow 3 egress (mean 366.45 Mbit/s)

Flow 1 (95th percentile 1.14 ms) Flow 2 (95th percentile 1.60 ms) Flow 3 (95th percentile 1.14 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-05 09:02:09
End at: 2019-02-05 09:02:39
Local clock offset: 2.679 ms
Remote clock offset: -3.206 ms


# Below is generated by plot.py at 2019-02-05 10:47:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 432.03 Mbit/s
95th percentile per-packet one-way delay: 1.368 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 153.57 Mbit/s
95th percentile per-packet one-way delay: 1.335 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 221.65 Mbit/s
95th percentile per-packet one-way delay: 1.362 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 393.70 Mbit/s
95th percentile per-packet one-way delay: 1.415 ms
Loss rate: 0.02%
```
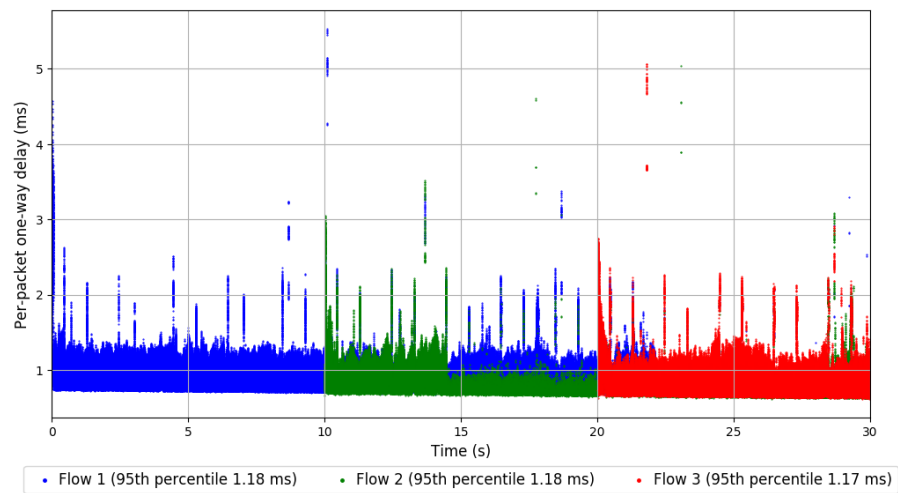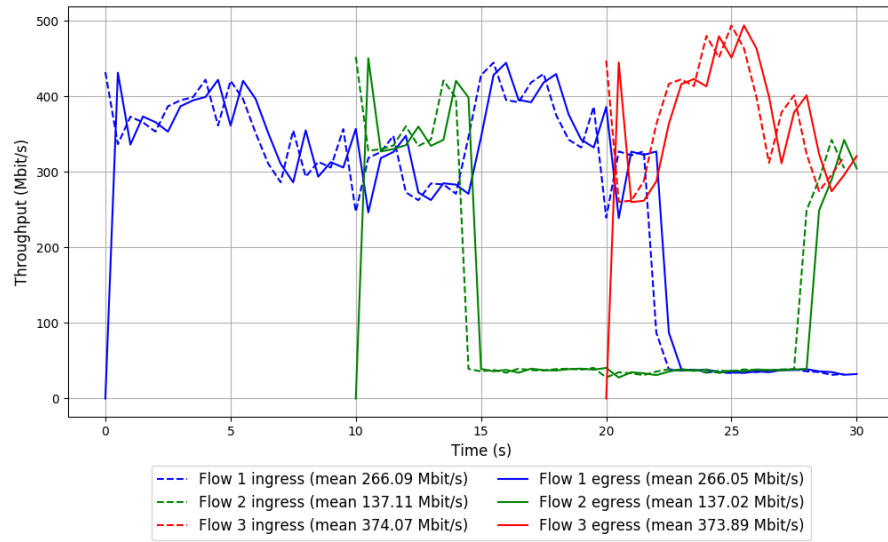
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-05 09:32:26
End at: 2019-02-05 09:32:56
Local clock offset: -0.2 ms
Remote clock offset: 0.383 ms


# Below is generated by plot.py at 2019-02-05 10:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.81 Mbit/s
95th percentile per-packet one-way delay: 1.177 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 266.05 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 137.02 Mbit/s
95th percentile per-packet one-way delay: 1.175 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 373.89 Mbit/s
95th percentile per-packet one-way delay: 1.172 ms
Loss rate: 0.04%
```
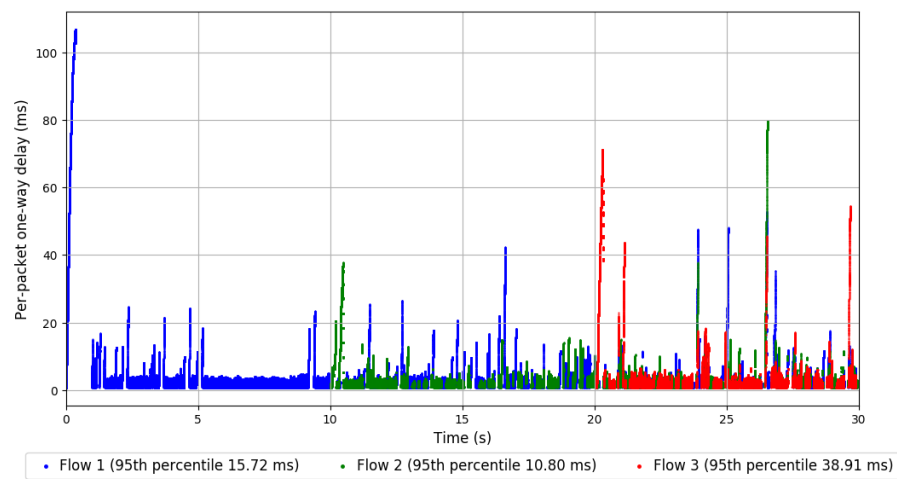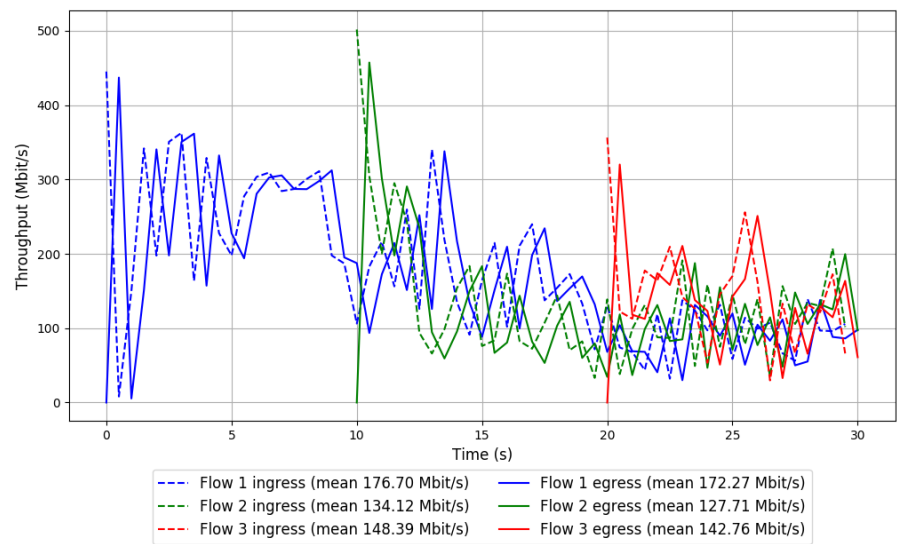
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 266.09 Mbit/s)   Flow 1 egress (mean 266.05 Mbit/s)
Flow 2 ingress (mean 137.11 Mbit/s)   Flow 2 egress (mean 137.02 Mbit/s)
Flow 3 ingress (mean 374.07 Mbit/s)   Flow 3 egress (mean 373.89 Mbit/s)

Flow 1 (95th percentile 1.18 ms)   Flow 2 (95th percentile 1.18 ms)   Flow 3 (95th percentile 1.17 ms)

```
Run 1: Statistics of Verus

Start at: 2019-02-05 07:43:43
End at: 2019-02-05 07:44:13
Local clock offset: 3.08 ms
Remote clock offset: 0.295 ms

# Below is generated by plot.py at 2019-02-05 10:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 303.77 Mbit/s
95th percentile per-packet one-way delay: 15.191 ms
Loss rate: 3.34%
-- Flow 1:
Average throughput: 172.27 Mbit/s
95th percentile per-packet one-way delay: 15.720 ms
Loss rate: 2.49%
-- Flow 2:
Average throughput: 127.71 Mbit/s
95th percentile per-packet one-way delay: 10.801 ms
Loss rate: 4.77%
-- Flow 3:
Average throughput: 142.76 Mbit/s
95th percentile per-packet one-way delay: 38.908 ms
Loss rate: 3.79%
```
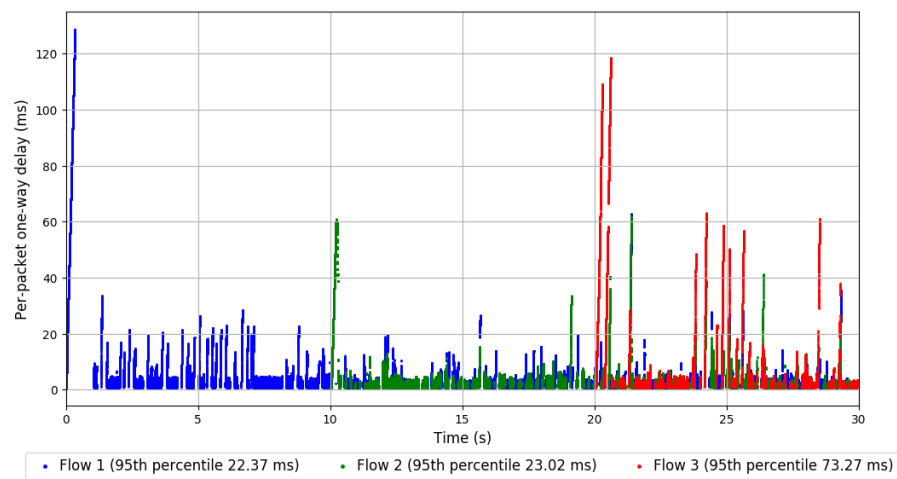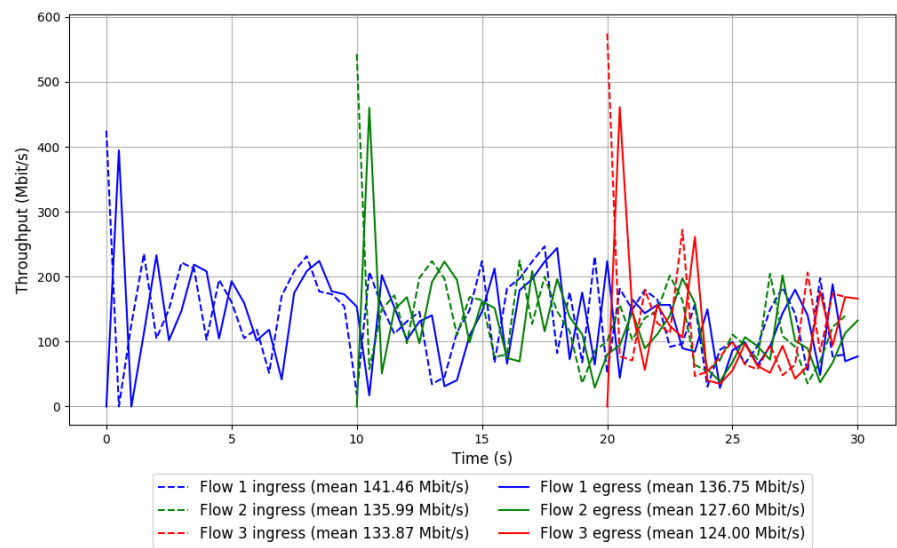
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-02-05 08:13:47
End at: 2019-02-05 08:14:17
Local clock offset: -0.739 ms
Remote clock offset: -1.456 ms


# Below is generated by plot.py at 2019-02-05 10:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 262.63 Mbit/s
95th percentile per-packet one-way delay: 38.321 ms
Loss rate: 4.91%
-- Flow 1:
Average throughput: 136.75 Mbit/s
95th percentile per-packet one-way delay: 22.373 ms
Loss rate: 3.33%
-- Flow 2:
Average throughput: 127.60 Mbit/s
95th percentile per-packet one-way delay: 23.024 ms
Loss rate: 6.16%
-- Flow 3:
Average throughput: 124.00 Mbit/s
95th percentile per-packet one-way delay: 73.274 ms
Loss rate: 7.36%
```

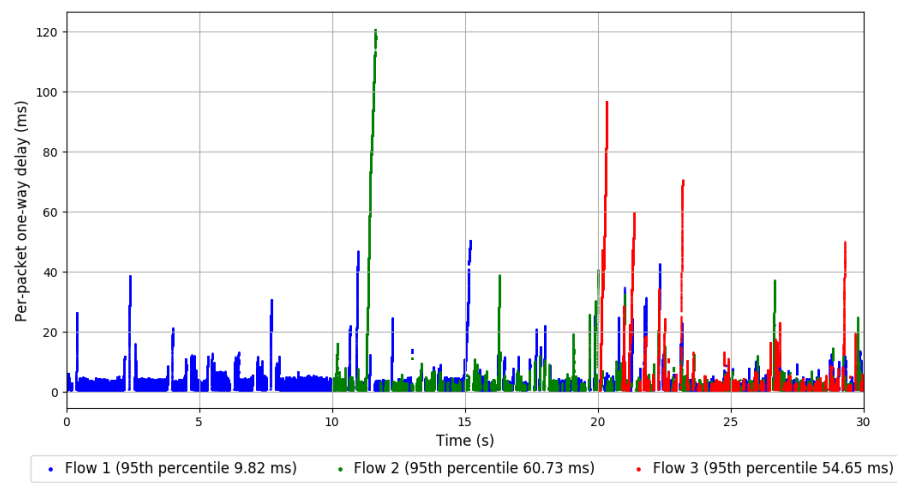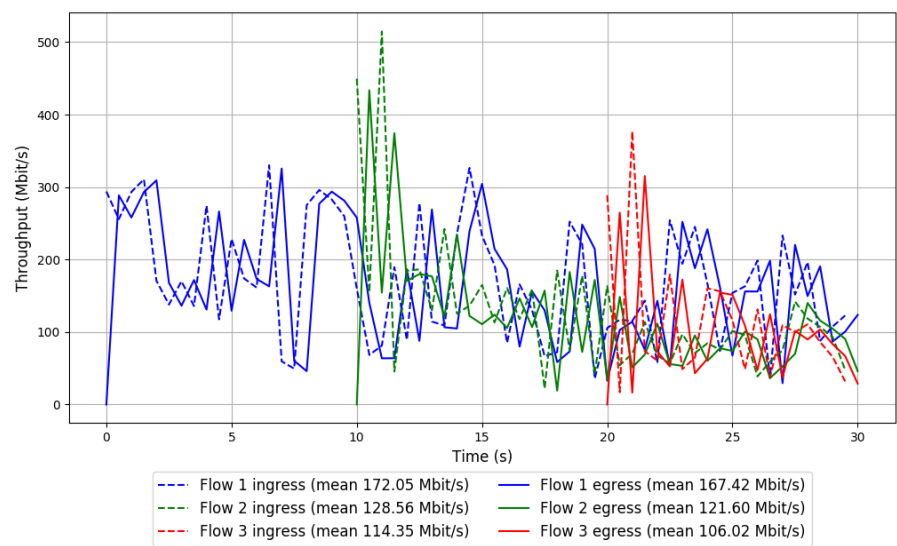Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-02-05 08:43:47
End at: 2019-02-05 08:44:17
Local clock offset: 0.784 ms
Remote clock offset: -3.715 ms


# Below is generated by plot.py at 2019-02-05 10:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 283.28 Mbit/s
95th percentile per-packet one-way delay: 24.285 ms
Loss rate: 4.07%
-- Flow 1:
Average throughput: 167.42 Mbit/s
95th percentile per-packet one-way delay: 9.816 ms
Loss rate: 2.69%
-- Flow 2:
Average throughput: 121.60 Mbit/s
95th percentile per-packet one-way delay: 60.730 ms
Loss rate: 5.41%
-- Flow 3:
Average throughput: 106.02 Mbit/s
95th percentile per-packet one-way delay: 54.646 ms
Loss rate: 7.29%
```

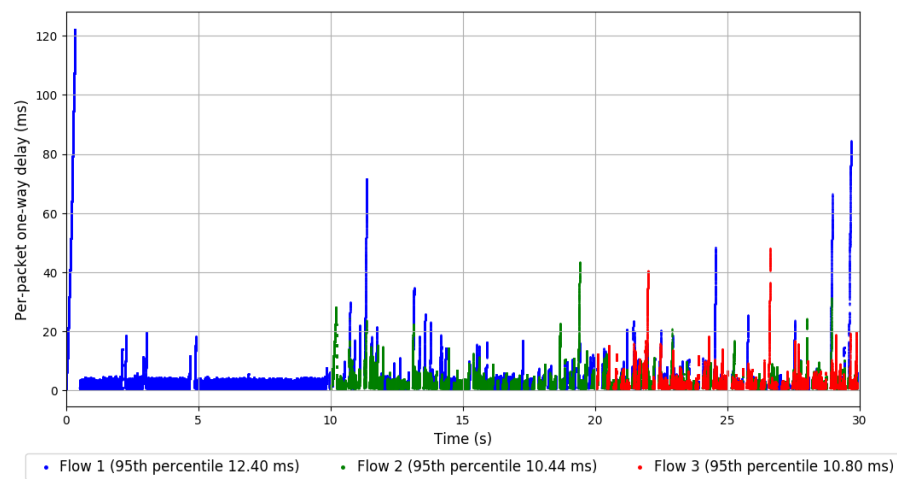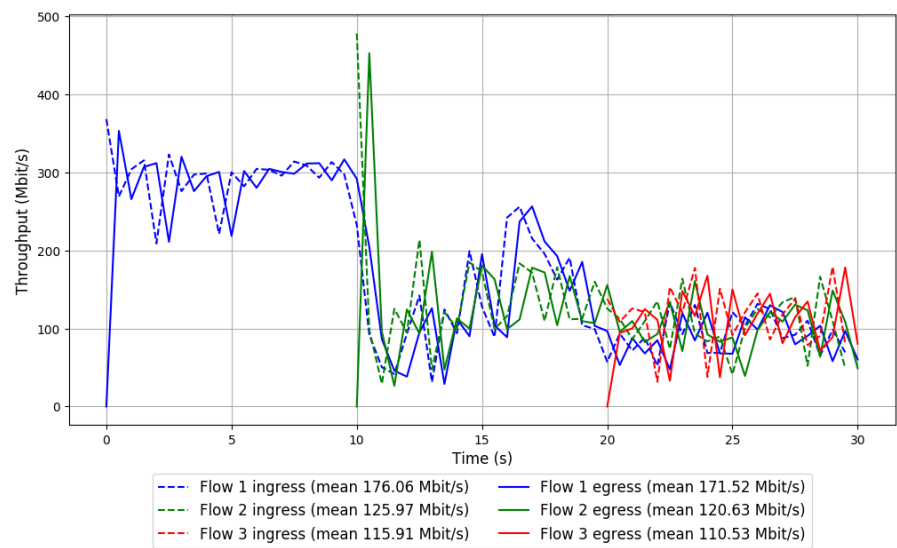Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-02-05 09:14:00
End at: 2019-02-05 09:14:30
Local clock offset: 3.118 ms
Remote clock offset: -3.397 ms


# Below is generated by plot.py at 2019-02-05 10:47:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.26 Mbit/s
95th percentile per-packet one-way delay: 11.414 ms
Loss rate: 3.31%
-- Flow 1:
Average throughput: 171.52 Mbit/s
95th percentile per-packet one-way delay: 12.399 ms
Loss rate: 2.58%
-- Flow 2:
Average throughput: 120.63 Mbit/s
95th percentile per-packet one-way delay: 10.441 ms
Loss rate: 4.23%
-- Flow 3:
Average throughput: 110.53 Mbit/s
95th percentile per-packet one-way delay: 10.797 ms
Loss rate: 4.63%
```

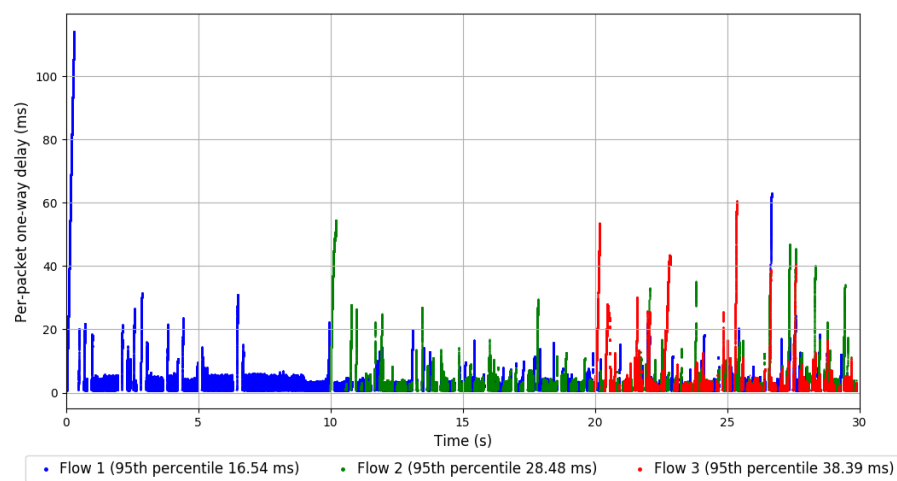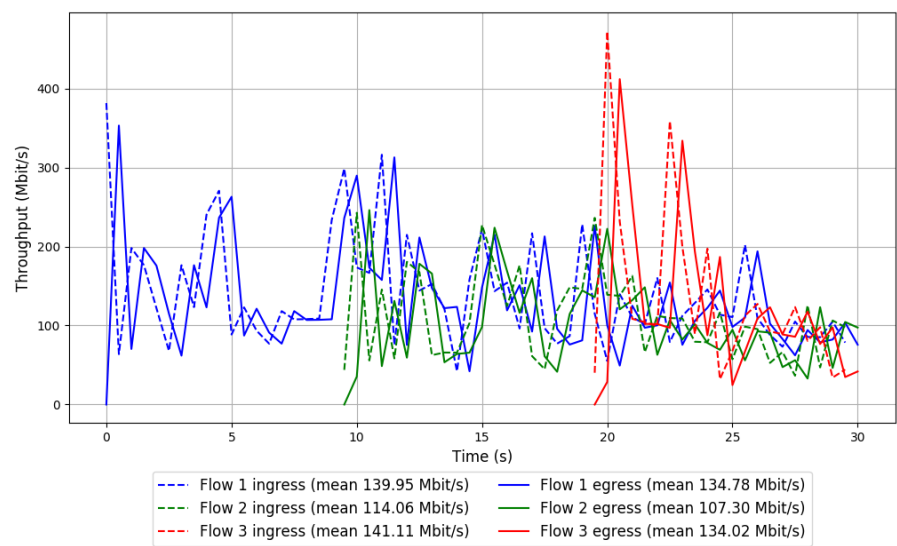Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-02-05 09:44:14
End at: 2019-02-05 09:44:44
Local clock offset: -0.914 ms
Remote clock offset: 1.461 ms


# Below is generated by plot.py at 2019-02-05 10:48:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 250.82 Mbit/s
95th percentile per-packet one-way delay: 26.576 ms
Loss rate: 4.57%
-- Flow 1:
Average throughput: 134.78 Mbit/s
95th percentile per-packet one-way delay: 16.542 ms
Loss rate: 3.69%
-- Flow 2:
Average throughput: 107.30 Mbit/s
95th percentile per-packet one-way delay: 28.480 ms
Loss rate: 5.92%
-- Flow 3:
Average throughput: 134.02 Mbit/s
95th percentile per-packet one-way delay: 38.393 ms
Loss rate: 5.01%
```

Run 5: Report of Verus — Data Link

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```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-05 07:50:16
End at: 2019-02-05 07:50:46
Local clock offset: 1.879 ms
Remote clock offset: 0.32 ms


# Below is generated by plot.py at 2019-02-05 10:49:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 365.88 Mbit/s
95th percentile per-packet one-way delay: 66.302 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 169.56 Mbit/s
95th percentile per-packet one-way delay: 1.516 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 204.23 Mbit/s
95th percentile per-packet one-way delay: 105.007 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 183.16 Mbit/s
95th percentile per-packet one-way delay: 39.979 ms
Loss rate: 0.86%
```
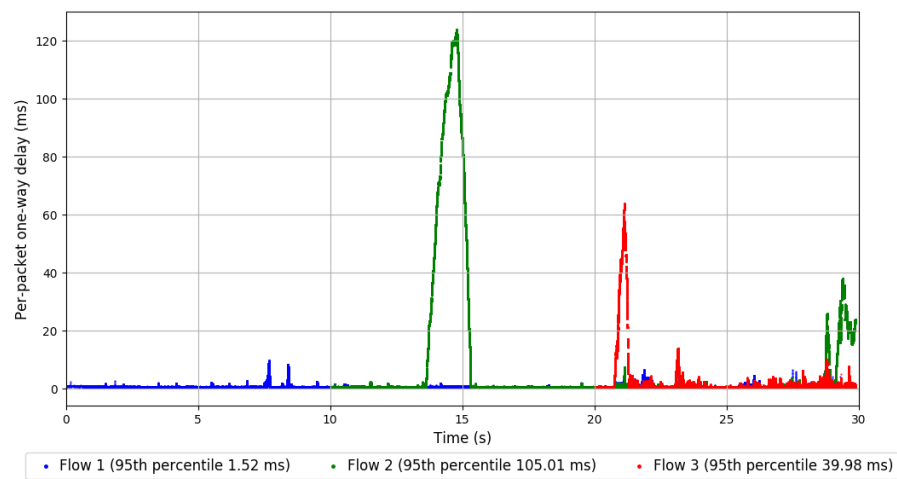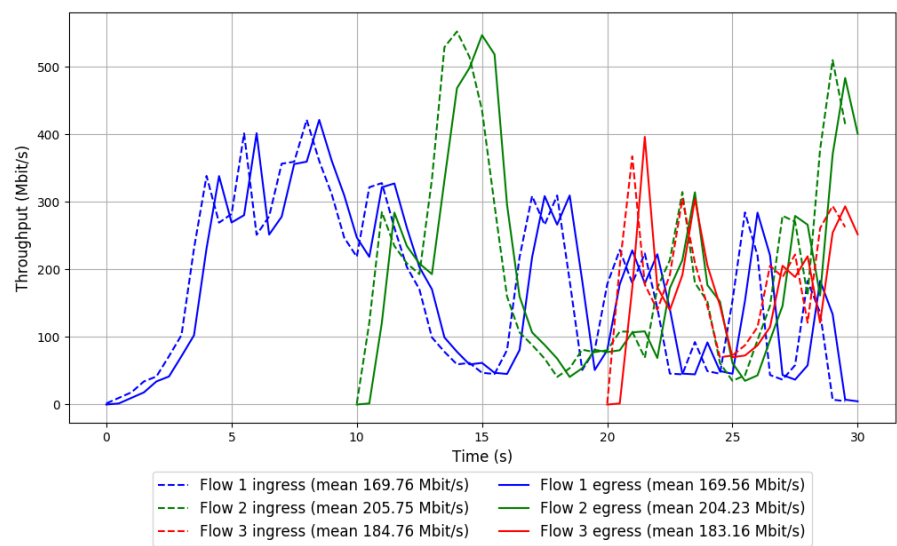
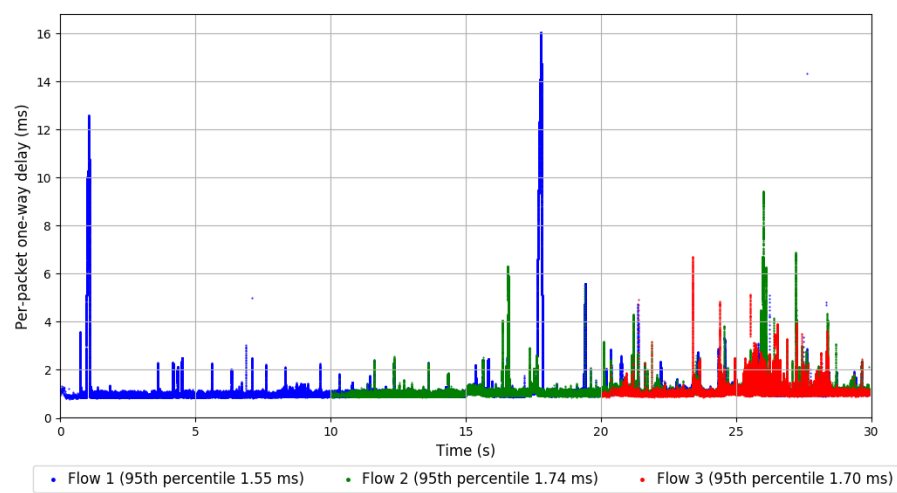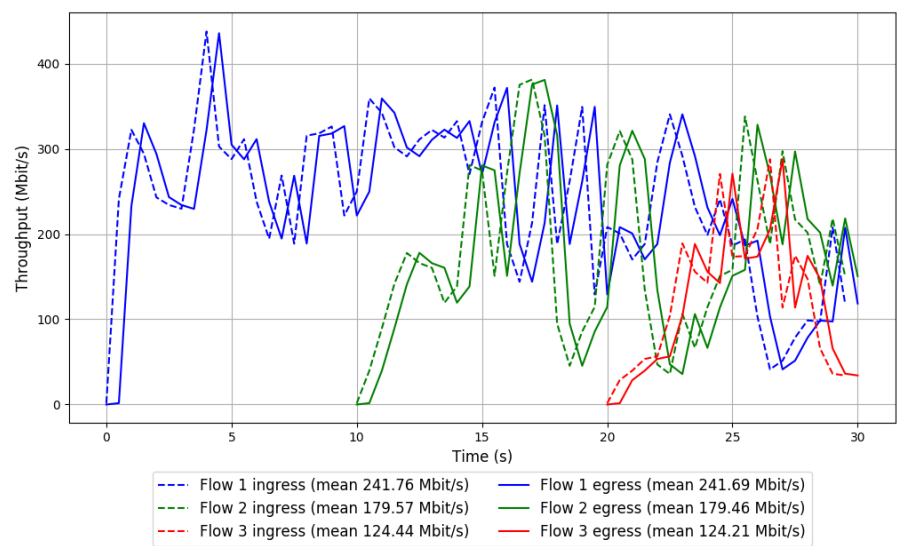Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-05 08:20:30
End at: 2019-02-05 08:21:00
Local clock offset: -0.155 ms
Remote clock offset: -2.617 ms


# Below is generated by plot.py at 2019-02-05 10:49:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.06 Mbit/s
95th percentile per-packet one-way delay: 1.653 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 241.69 Mbit/s
95th percentile per-packet one-way delay: 1.548 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 179.46 Mbit/s
95th percentile per-packet one-way delay: 1.738 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 124.21 Mbit/s
95th percentile per-packet one-way delay: 1.704 ms
Loss rate: 0.18%
```

Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-05 08:50:28
End at: 2019-02-05 08:50:58
Local clock offset: 1.599 ms
Remote clock offset: -3.34 ms

# Below is generated by plot.py at 2019-02-05 10:50:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 440.82 Mbit/s
95th percentile per-packet one-way delay: 54.988 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 242.60 Mbit/s
95th percentile per-packet one-way delay: 33.932 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 208.52 Mbit/s
95th percentile per-packet one-way delay: 68.435 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 180.36 Mbit/s
95th percentile per-packet one-way delay: 2.784 ms
Loss rate: 0.46%
```
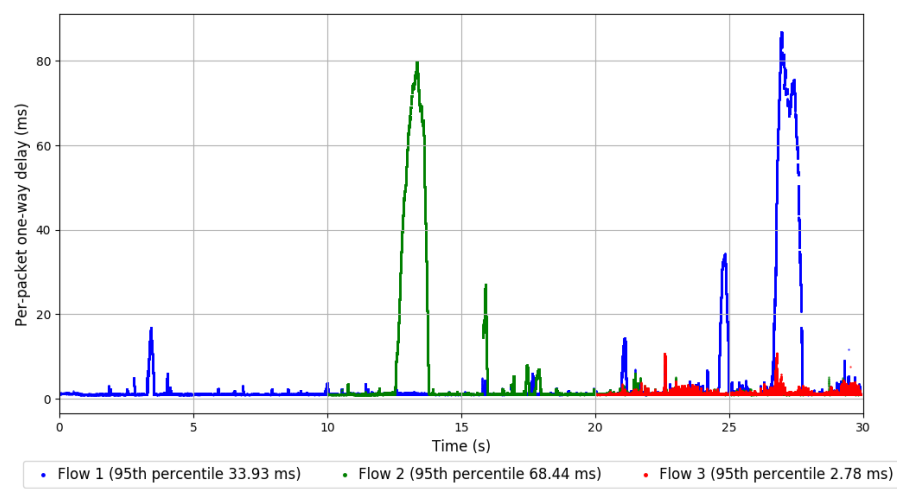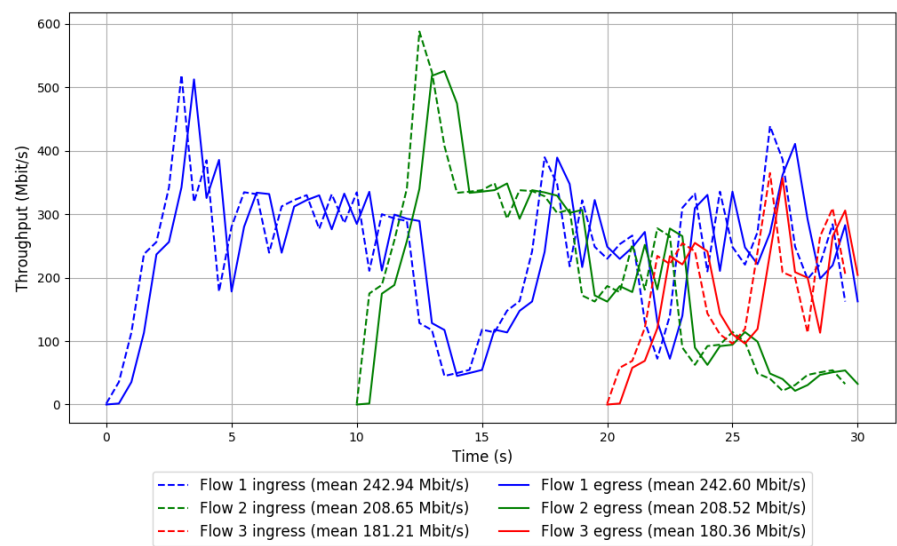
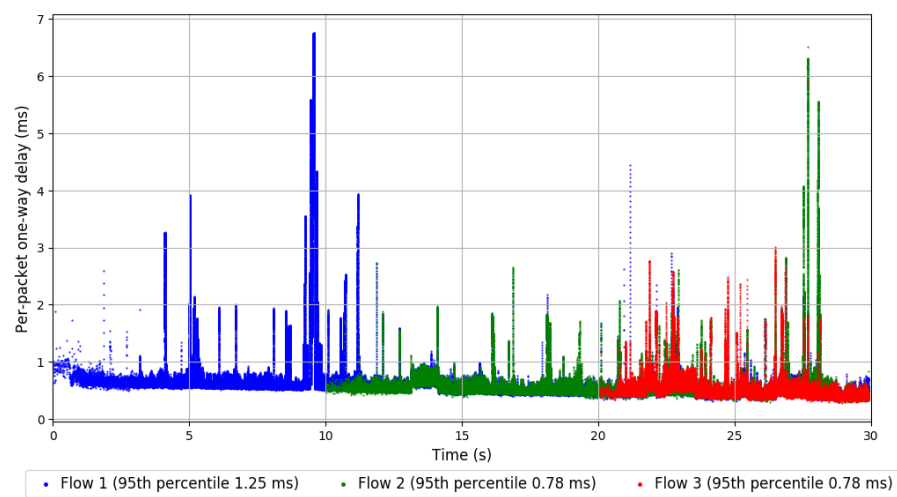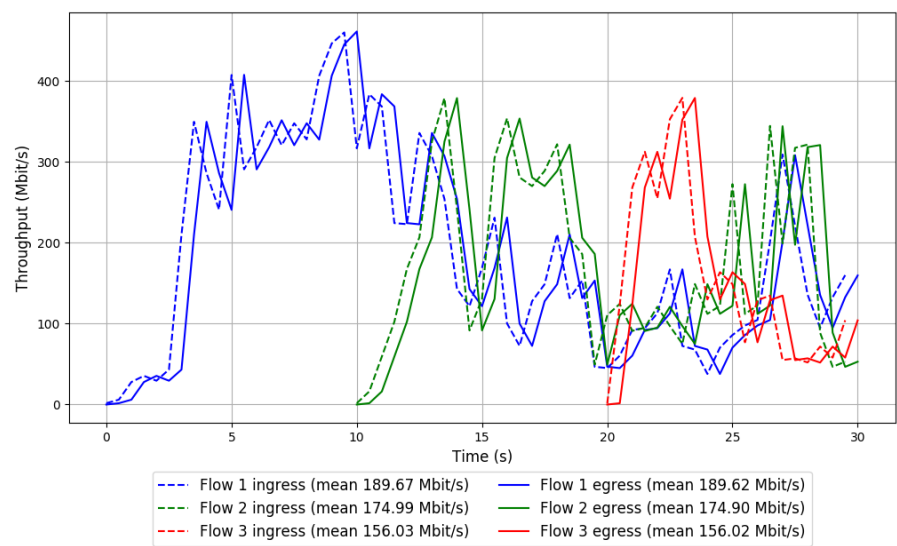Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-05 09:20:41
End at: 2019-02-05 09:21:11
Local clock offset: 1.633 ms
Remote clock offset: -1.649 ms


# Below is generated by plot.py at 2019-02-05 10:50:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 357.44 Mbit/s
95th percentile per-packet one-way delay: 0.907 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 189.62 Mbit/s
95th percentile per-packet one-way delay: 1.251 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 174.90 Mbit/s
95th percentile per-packet one-way delay: 0.781 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 156.02 Mbit/s
95th percentile per-packet one-way delay: 0.776 ms
Loss rate: 0.04%
```

Run 4: Report of PCC-Vivace — Data Link

- - - - Flow 1 ingress (mean 189.67 Mbit/s) ——— Flow 1 egress (mean 189.62 Mbit/s)
- - - - Flow 2 ingress (mean 174.99 Mbit/s) ——— Flow 2 egress (mean 174.90 Mbit/s)
- - - - Flow 3 ingress (mean 156.03 Mbit/s) ——— Flow 3 egress (mean 156.02 Mbit/s)

- Flow 1 (95th percentile 1.25 ms)   - Flow 2 (95th percentile 0.78 ms)   - Flow 3 (95th percentile 0.78 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-05 09:50:47
End at: 2019-02-05 09:51:17
Local clock offset: -0.651 ms
Remote clock offset: 1.797 ms


# Below is generated by plot.py at 2019-02-05 10:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 409.24 Mbit/s
95th percentile per-packet one-way delay: 86.716 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 195.48 Mbit/s
95th percentile per-packet one-way delay: 15.271 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 202.41 Mbit/s
95th percentile per-packet one-way delay: 1.669 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 239.75 Mbit/s
95th percentile per-packet one-way delay: 118.309 ms
Loss rate: 0.20%
```
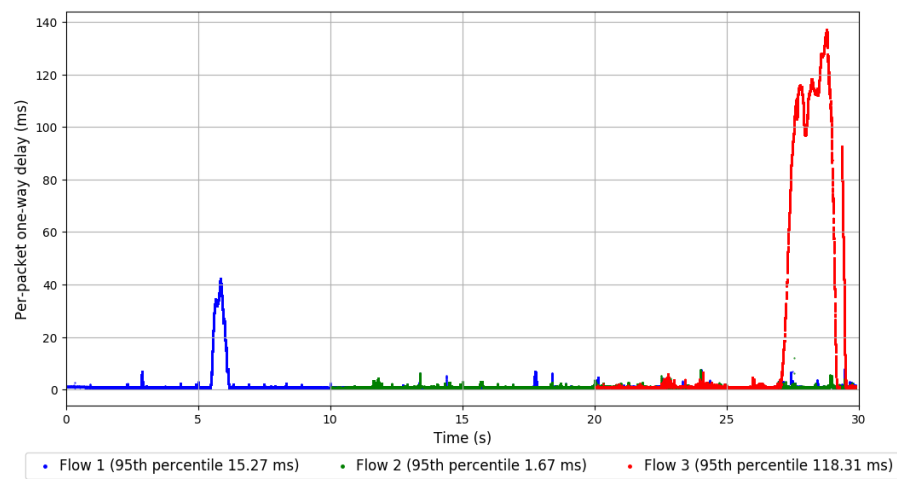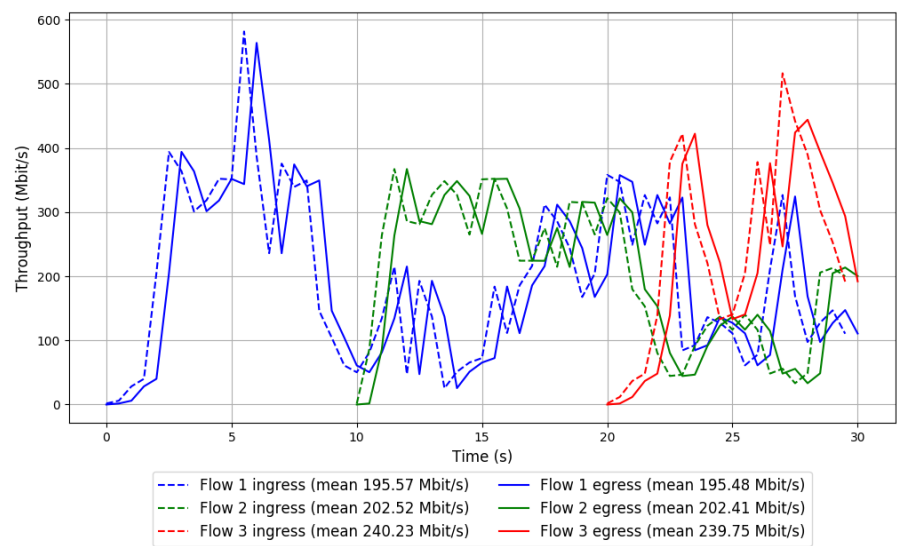
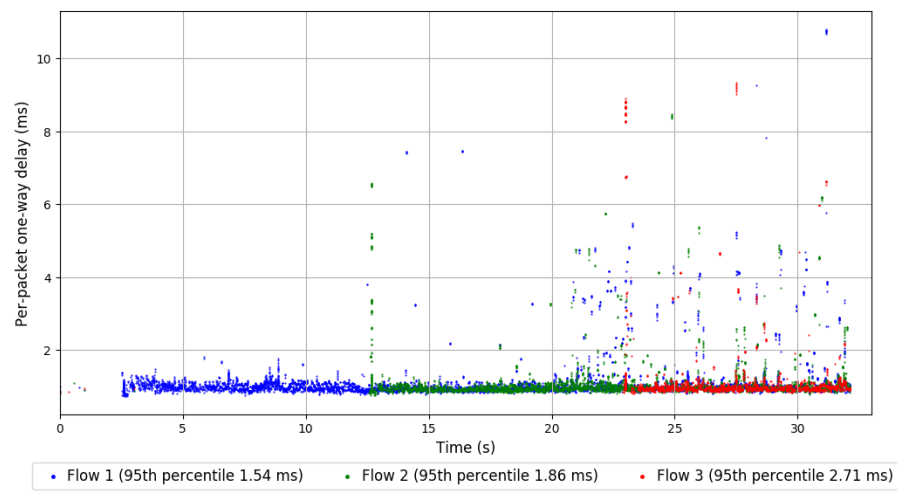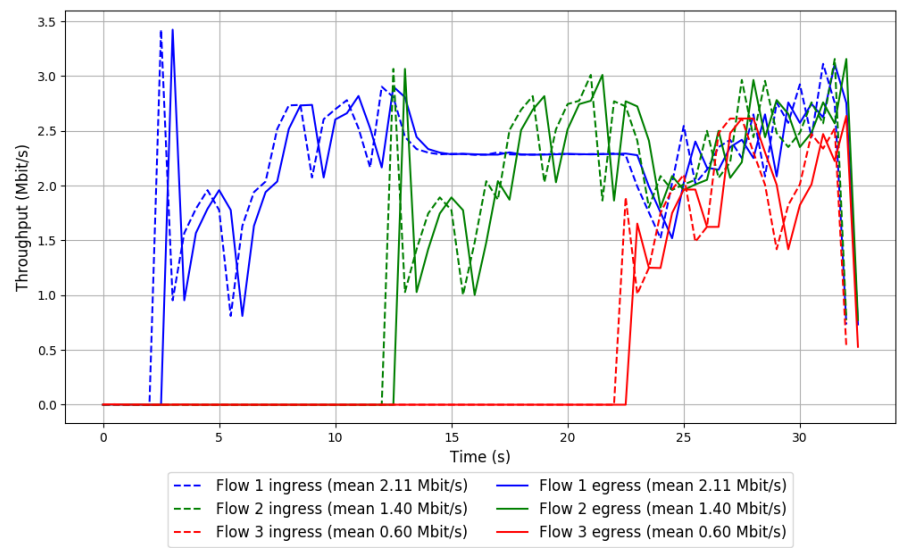# Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-02-05 07:27:33
End at: 2019-02-05 07:28:03
Local clock offset: 1.948 ms
Remote clock offset: -0.098 ms


# Below is generated by plot.py at 2019-02-05 10:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 1.834 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 1.542 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 1.862 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 2.707 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-05 07:57:41
End at: 2019-02-05 07:58:11
Local clock offset: 0.482 ms
Remote clock offset: 0.427 ms


# Below is generated by plot.py at 2019-02-05 10:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 5.116 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.689 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6.403 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 3.847 ms
Loss rate: 0.00%
```
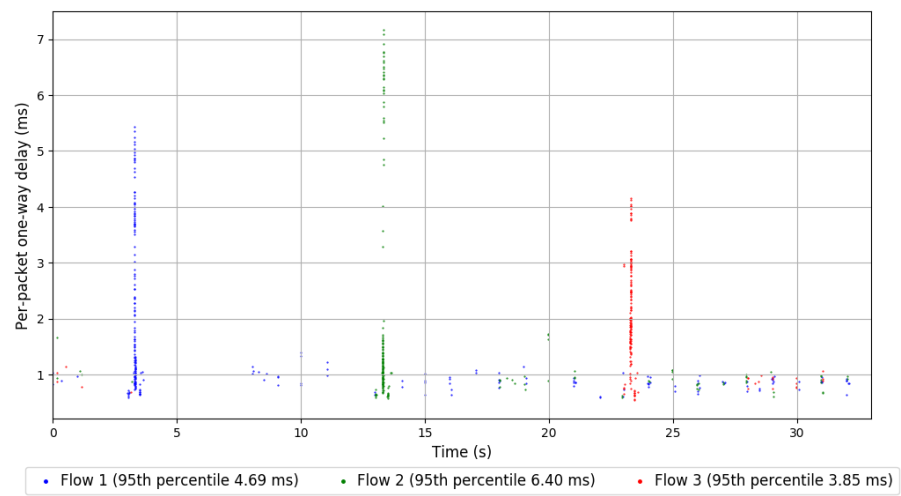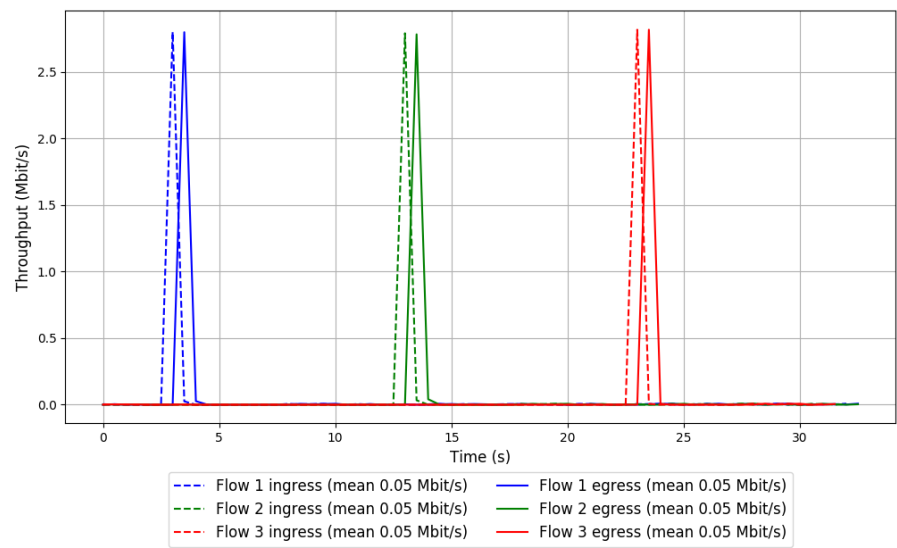
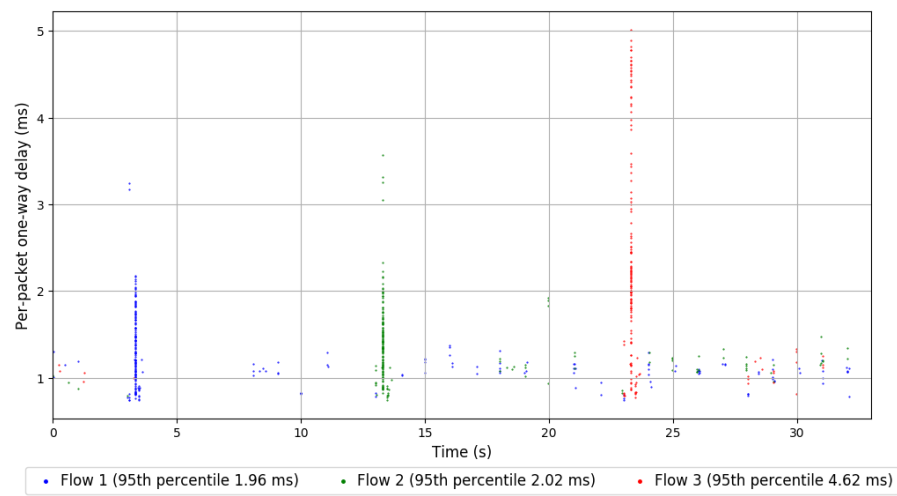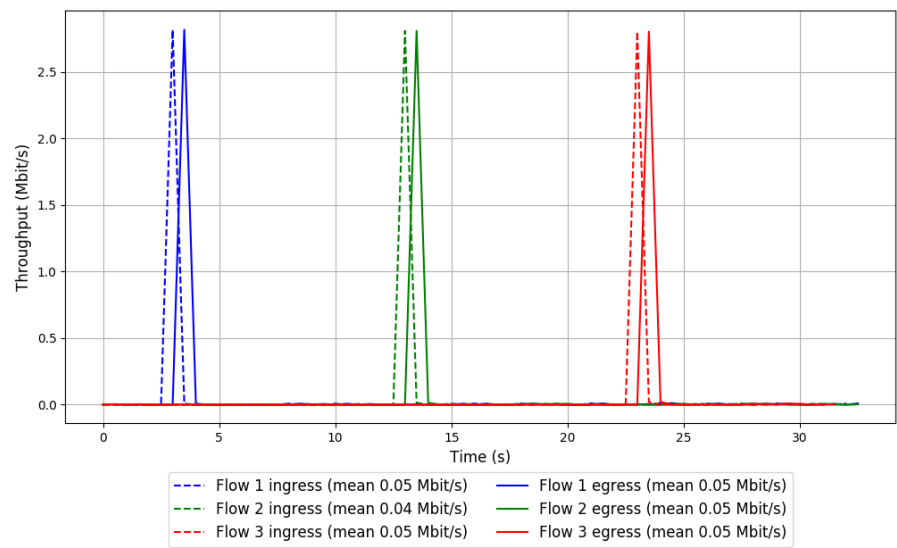Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-02-05 08:27:53
End at: 2019-02-05 08:28:23
Local clock offset: 0.469 ms
Remote clock offset: -3.312 ms


# Below is generated by plot.py at 2019-02-05 10:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 3.471 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.963 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.023 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.622 ms
Loss rate: 0.00%
```

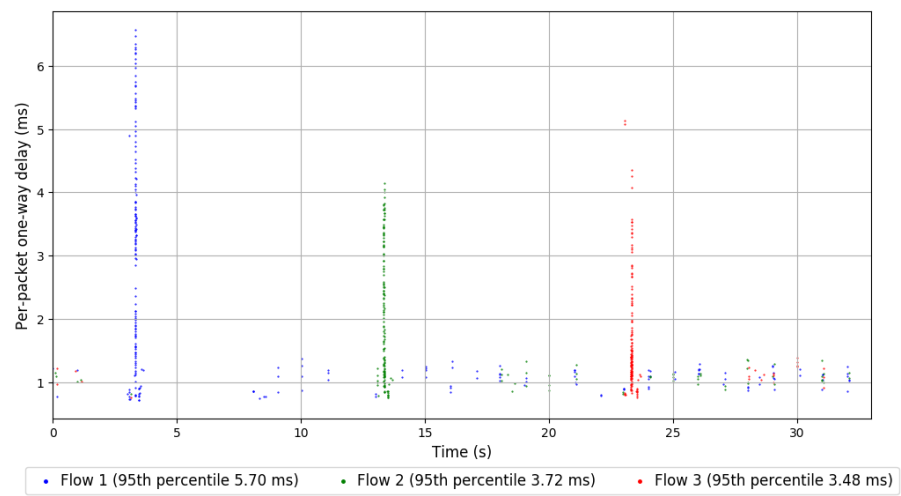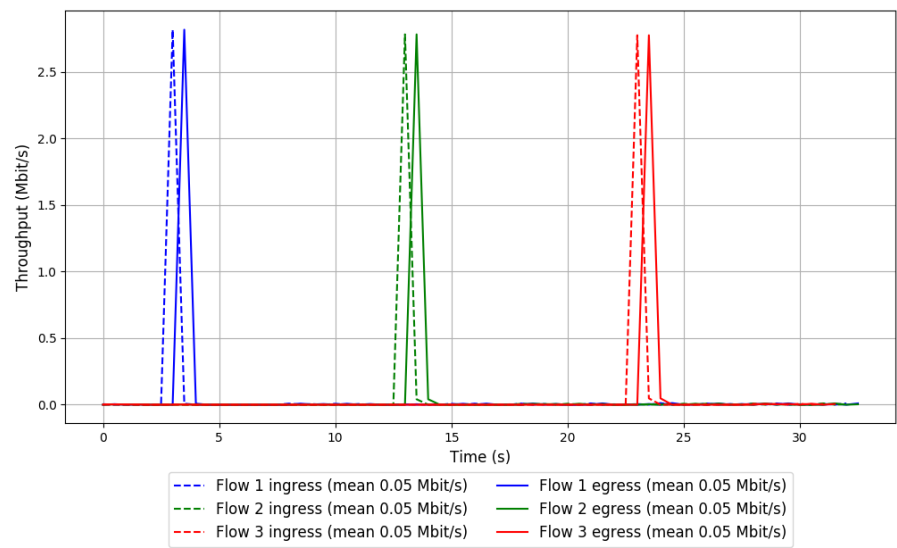Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-02-05 08:57:55
End at: 2019-02-05 08:58:25
Local clock offset: 2.392 ms
Remote clock offset: -3.327 ms


# Below is generated by plot.py at 2019-02-05 10:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 4.731 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.699 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 3.724 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 3.478 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-05 09:28:04
End at: 2019-02-05 09:28:34
Local clock offset: 0.27 ms
Remote clock offset: -0.098 ms


# Below is generated by plot.py at 2019-02-05 10:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 4.309 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.638 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.360 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.679 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link