Pantheon Report

Generated at 2017-09-22 15:20:21 (UTC).

Data path: China ppp0 (*remote*) →AWS Korea Ethernet (*local*).

Repeated the test of 14 congestion control schemes 3 times.

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

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: indigos @ 46c7c812d4acb71eea4f5fb0b03b3657cea3062f
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fabb936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from China ppp0 to AWS Korea Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
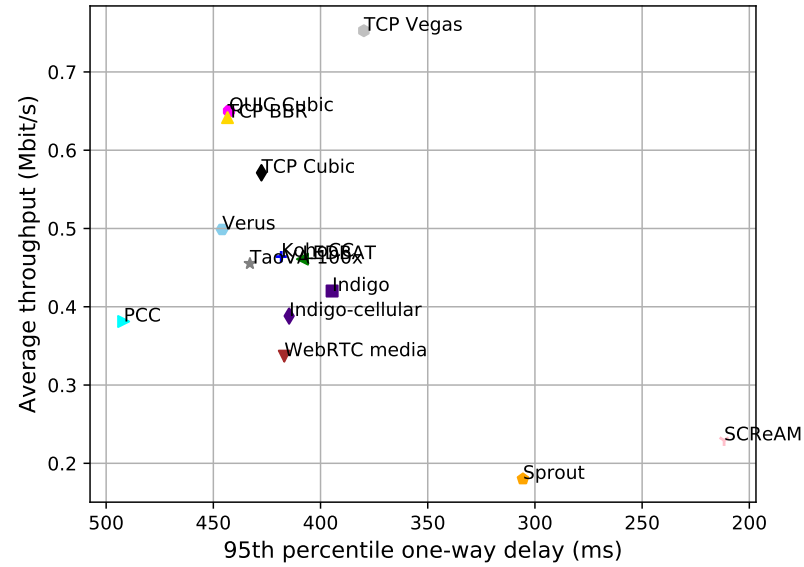
test from China ppp0 to AWS Korea Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows

2
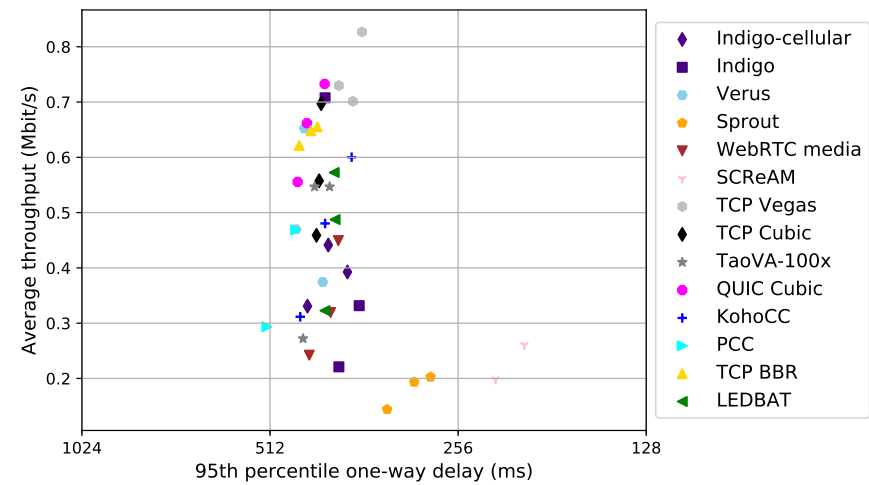
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	0.46	0.16	0.24	443.16	434.54	440.88	28.48	47.46	35.08
TCP Cubic	3	0.30	0.30	0.16	428.64	421.61	429.63	7.33	10.02	28.63
LEDBAT	3	0.27	0.21	0.17	406.77	414.11	393.83	1.41	3.20	6.02
PCC	2	0.23	0.20	0.00	315.52	479.39	435.82	76.45	95.78	88.11
QUIC Cubic	3	0.36	0.33	0.26	444.13	444.42	441.83	18.04	25.17	31.92
SCReAM	2	0.10	0.14	0.14	212.22	207.51	216.62	1.60	1.20	2.73
WebRTC media	3	0.16	0.14	0.04	409.72	421.43	414.35	15.29	24.02	26.50
Sprout	3	0.09	0.10	0.09	295.17	307.78	310.31	5.65	5.70	10.08
TaoVA-100x	3	0.31	0.16	0.21	433.20	432.63	430.98	66.85	75.47	73.95
TCP Vegas	3	0.36	0.44	0.32	371.91	387.26	372.57	2.65	2.87	6.62
Verus	3	0.36	0.22	0.02	446.15	444.99	430.22	32.33	53.34	34.37
Indigo	3	0.23	0.18	0.25	394.25	391.24	373.28	13.96	23.42	20.91
Indigo-cellular	3	0.21	0.20	0.20	419.83	398.82	407.14	13.50	14.42	35.05
KohoCC	3	0.24	0.24	0.22	418.89	408.02	428.22	11.43	15.77	37.39

```
Run 1: Statistics of TCP BBR

Start at: 2017-09-22 13:35:41
End at: 2017-09-22 13:36:11
Local clock offset: 15.04 ms
Remote clock offset: -45.283 ms


# Below is generated by plot.py at 2017-09-22 15:19:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 459.611 ms
Loss rate: 27.09%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 459.611 ms
Loss rate: 26.78%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 428.766 ms
Loss rate: 76.56%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 458.539 ms
Loss rate: 29.20%
```

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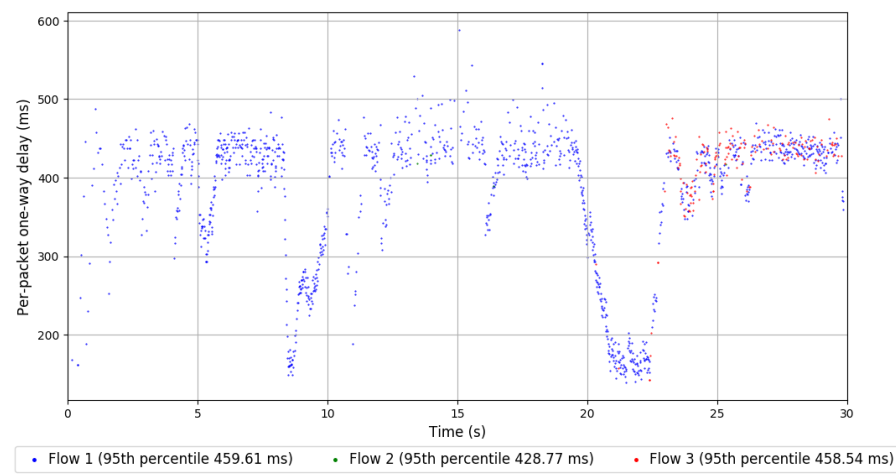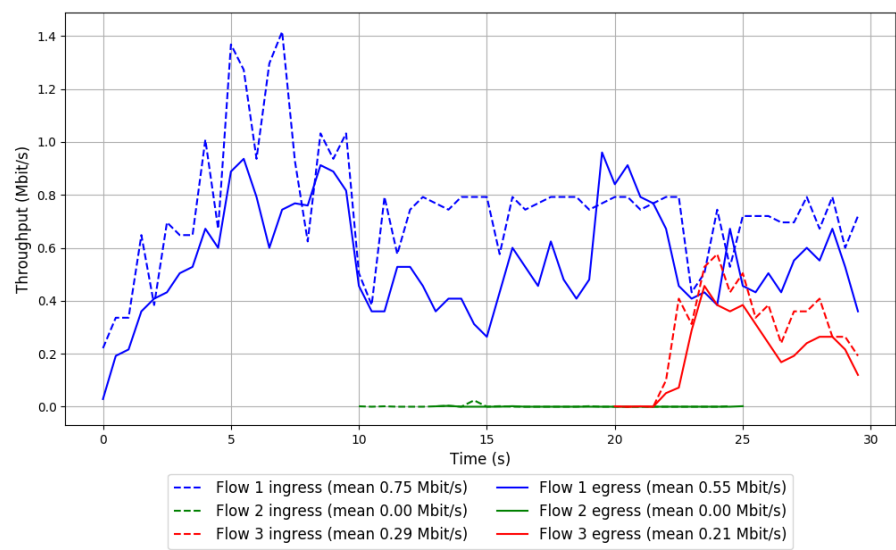
```
Run 2: Statistics of TCP BBR

Start at: 2017-09-22 13:55:13
End at: 2017-09-22 13:55:43
Local clock offset: -2.514 ms
Remote clock offset: -45.052 ms


# Below is generated by plot.py at 2017-09-22 15:19:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 440.484 ms
Loss rate: 26.87%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 439.592 ms
Loss rate: 22.37%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 440.646 ms
Loss rate: 31.00%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 440.694 ms
Loss rate: 40.27%
```

Run 2: Report of TCP BBR — Data Link
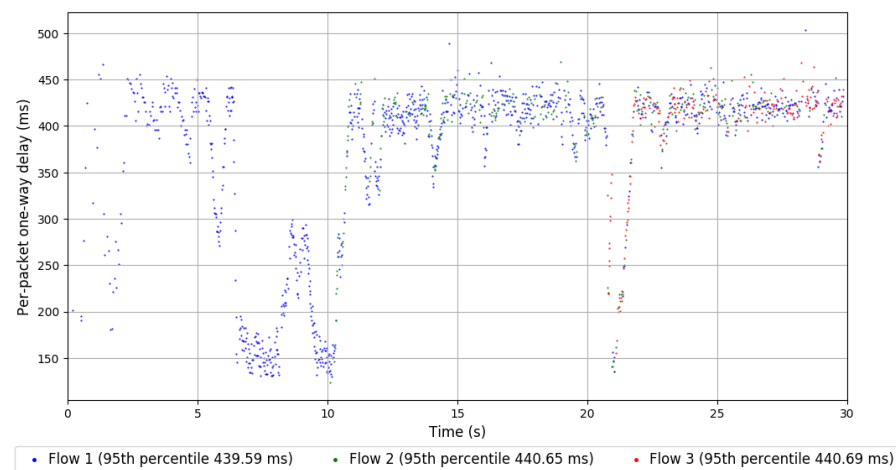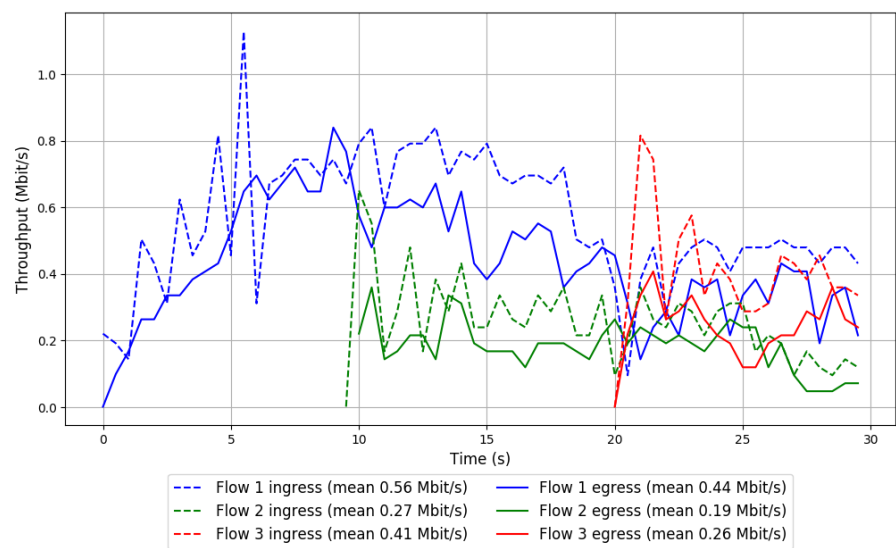
```
Run 3: Statistics of TCP BBR

Start at: 2017-09-22 14:14:03
End at: 2017-09-22 14:14:33
Local clock offset: -2.236 ms
Remote clock offset: -32.593 ms


# Below is generated by plot.py at 2017-09-22 15:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 430.087 ms
Loss rate: 35.82%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 430.277 ms
Loss rate: 36.29%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 434.199 ms
Loss rate: 34.83%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 423.415 ms
Loss rate: 35.76%
```

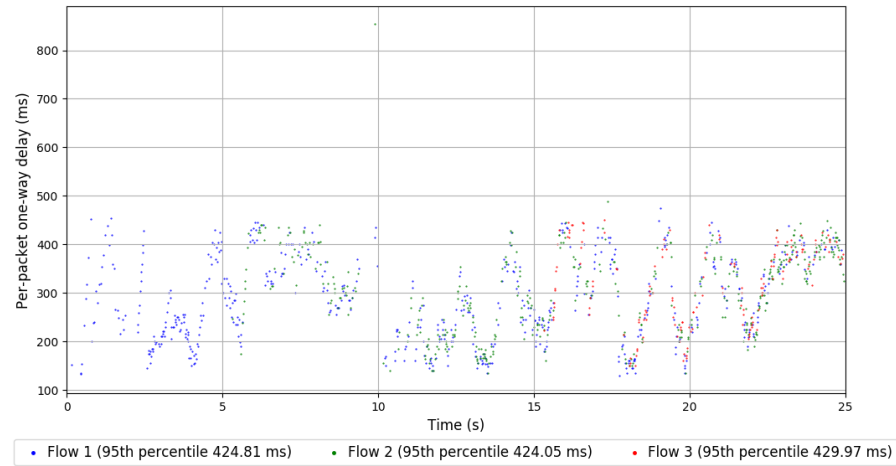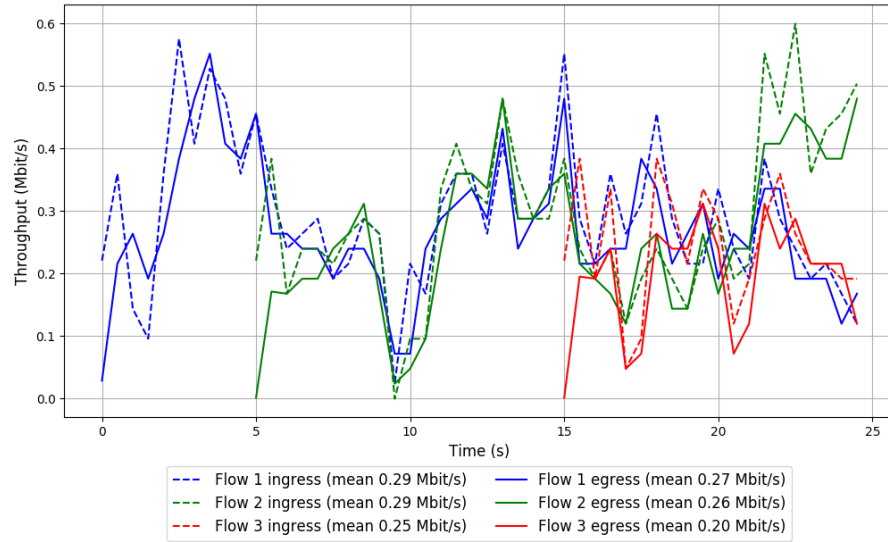Run 3: Report of TCP BBR — Data Link
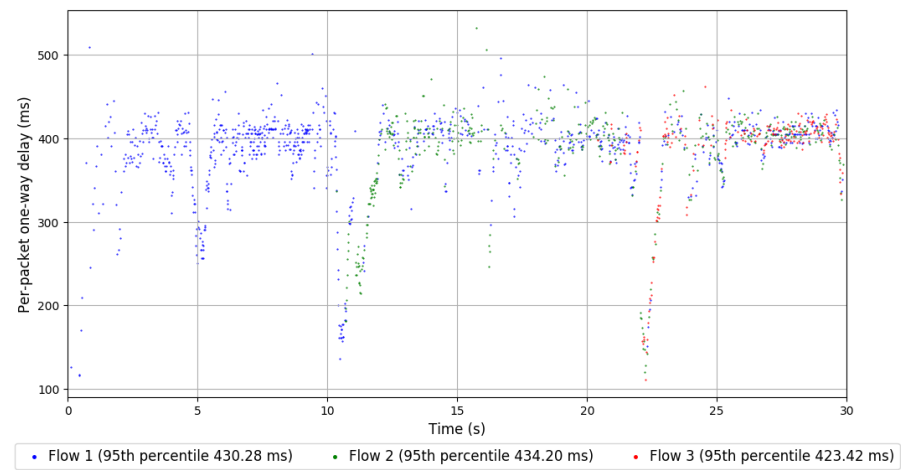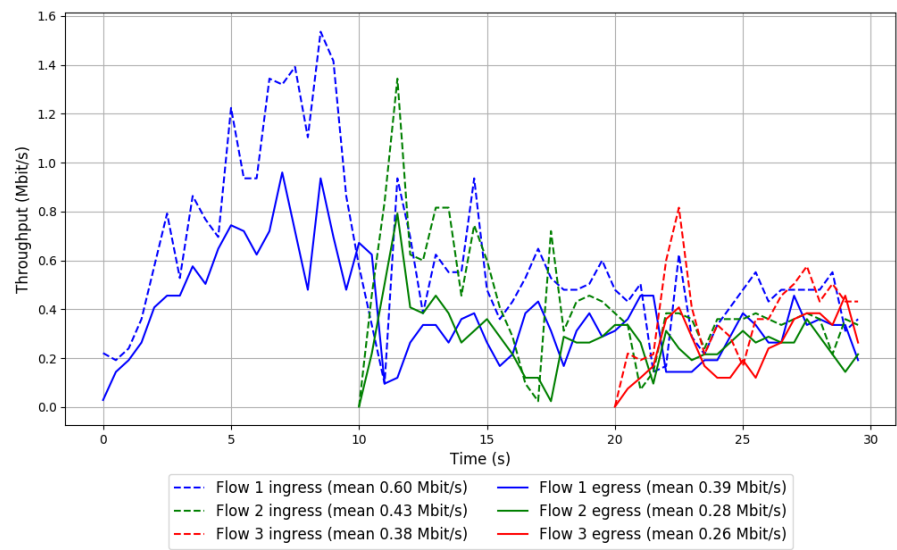
```
Run 1: Statistics of TCP Cubic

Start at: 2017-09-22 13:38:15
End at: 2017-09-22 13:38:45
Local clock offset: -2.567 ms
Remote clock offset: -44.508 ms


# Below is generated by plot.py at 2017-09-22 15:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 427.202 ms
Loss rate: 10.91%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 424.814 ms
Loss rate: 7.70%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 424.046 ms
Loss rate: 10.83%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 429.970 ms
Loss rate: 20.77%
```

Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.29 Mbit/s) --- Flow 1 egress (mean 0.27 Mbit/s)
Flow 2 ingress (mean 0.29 Mbit/s) --- Flow 2 egress (mean 0.26 Mbit/s)
Flow 3 ingress (mean 0.25 Mbit/s) --- Flow 3 egress (mean 0.20 Mbit/s)

Flow 1 (95th percentile 424.81 ms)   Flow 2 (95th percentile 424.05 ms)   Flow 3 (95th percentile 429.97 ms)
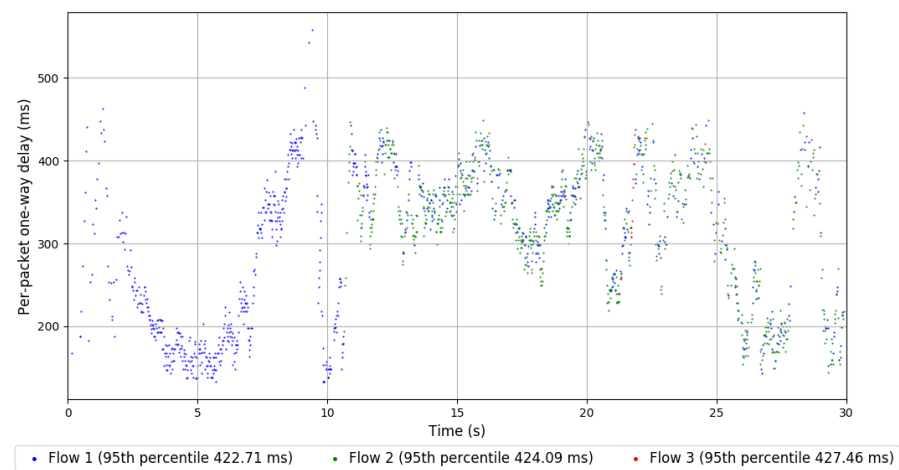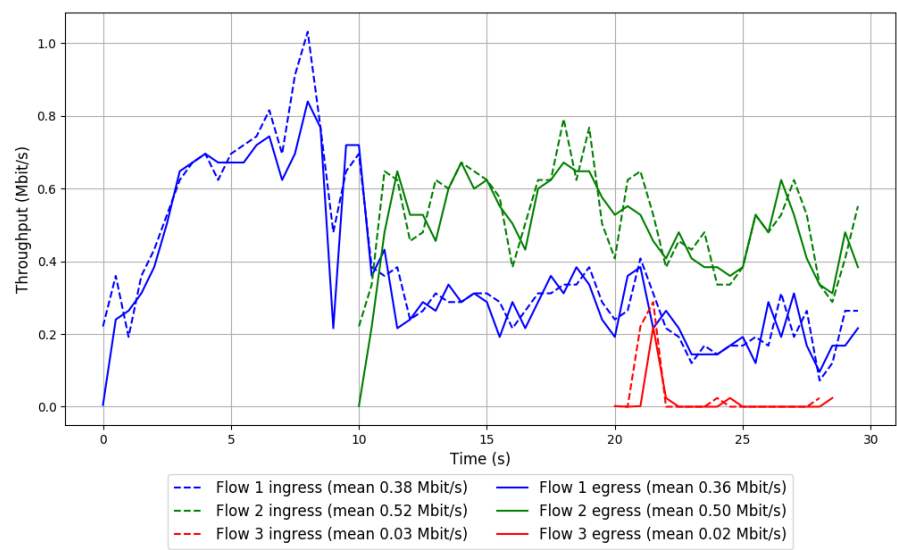
11

```
Run 2: Statistics of TCP Cubic

Start at: 2017-09-22 13:57:52
End at: 2017-09-22 13:58:22
Local clock offset: -2.607 ms
Remote clock offset: -49.574 ms


# Below is generated by plot.py at 2017-09-22 15:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 424.031 ms
Loss rate: 6.30%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 422.710 ms
Loss rate: 6.35%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 424.088 ms
Loss rate: 5.12%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 427.464 ms
Loss rate: 47.27%
```

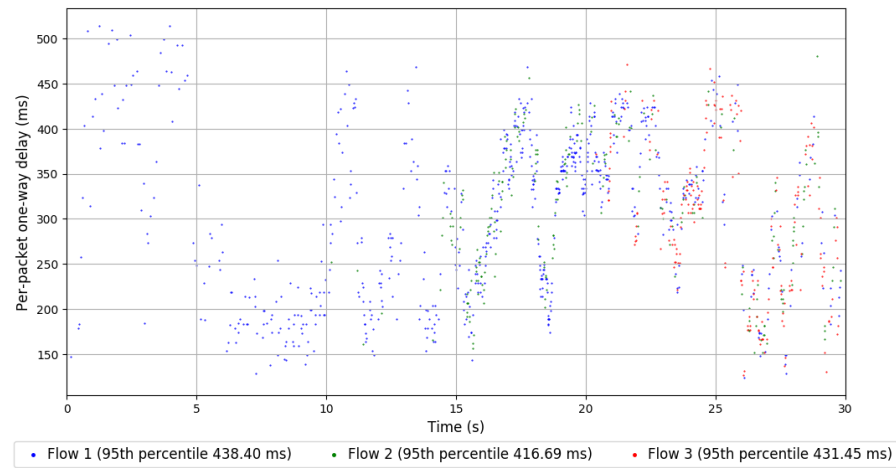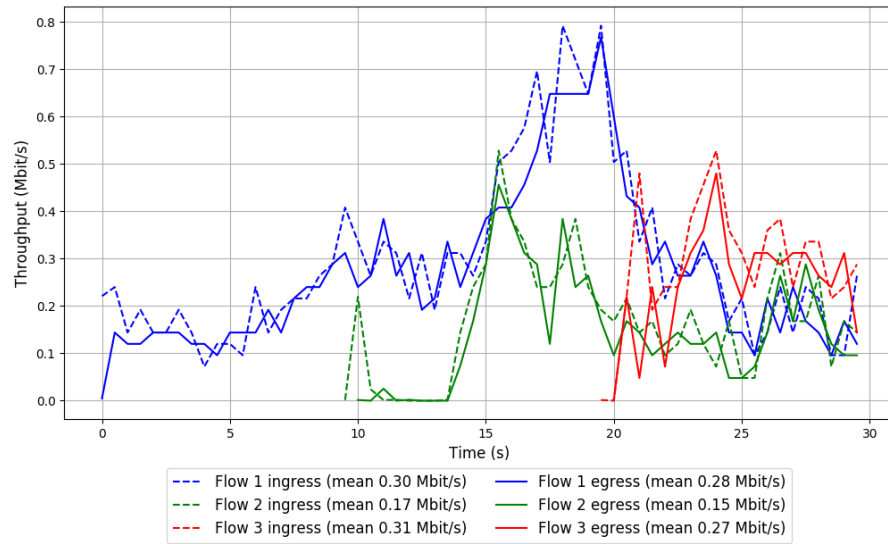Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2017-09-22 14:16:40
End at: 2017-09-22 14:17:10
Local clock offset: -2.306 ms
Remote clock offset: -44.32 ms


# Below is generated by plot.py at 2017-09-22 15:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 431.455 ms
Loss rate: 11.27%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 438.396 ms
Loss rate: 7.95%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 416.685 ms
Loss rate: 14.11%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 431.455 ms
Loss rate: 17.84%
```

Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 0.30 Mbit/s)   —— Flow 1 egress (mean 0.28 Mbit/s)
- - - Flow 2 ingress (mean 0.17 Mbit/s)   —— Flow 2 egress (mean 0.15 Mbit/s)
- - - Flow 3 ingress (mean 0.31 Mbit/s)   —— Flow 3 egress (mean 0.27 Mbit/s)

· Flow 1 (95th percentile 438.40 ms)   · Flow 2 (95th percentile 416.69 ms)   · Flow 3 (95th percentile 431.45 ms)
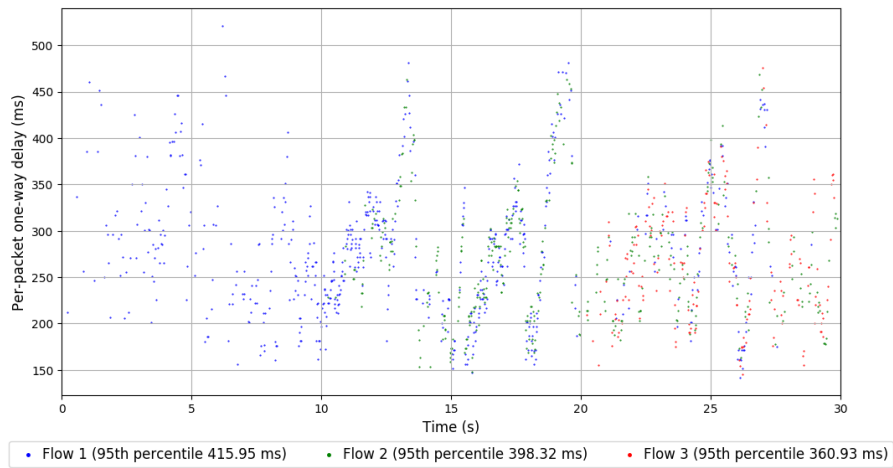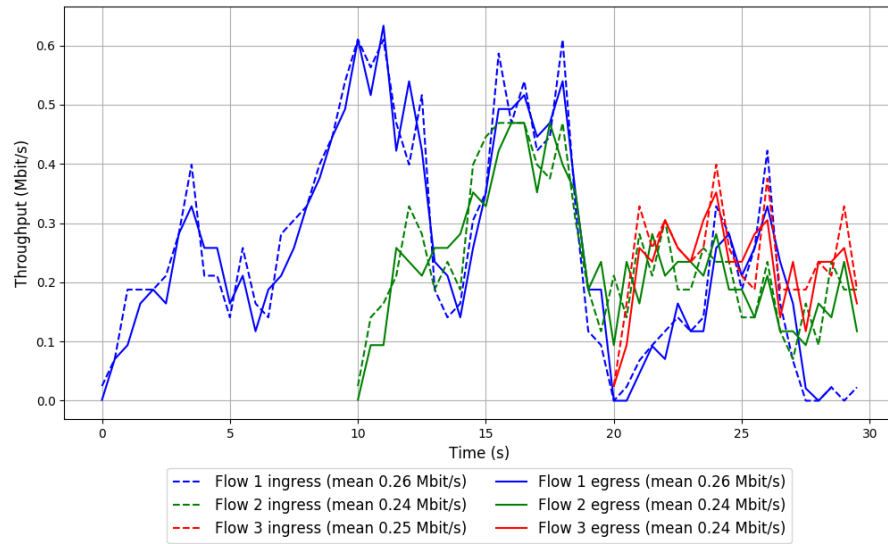
15

```
Run 1: Statistics of LEDBAT

Start at: 2017-09-22 13:29:06
End at: 2017-09-22 13:29:36
Local clock offset: 16.029 ms
Remote clock offset: -44.443 ms

# Below is generated by plot.py at 2017-09-22 15:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 402.889 ms
Loss rate: 3.14%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 415.952 ms
Loss rate: 2.29%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 398.324 ms
Loss rate: 3.15%
-- Flow 3:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 360.929 ms
Loss rate: 5.88%
```
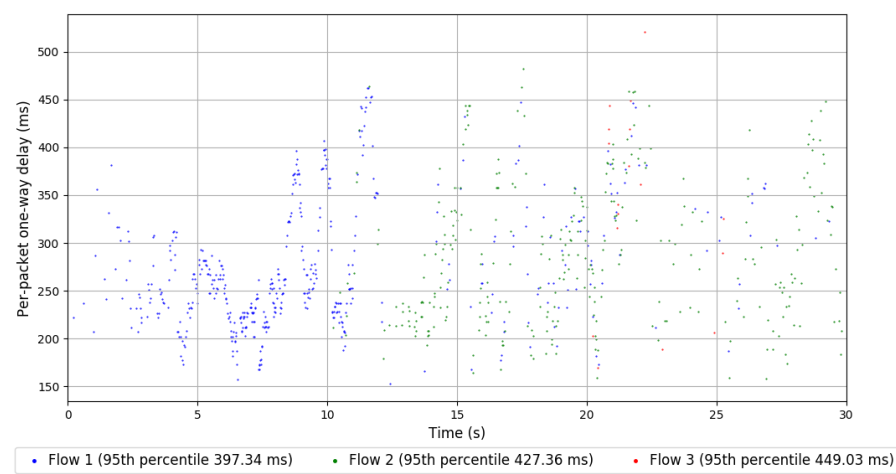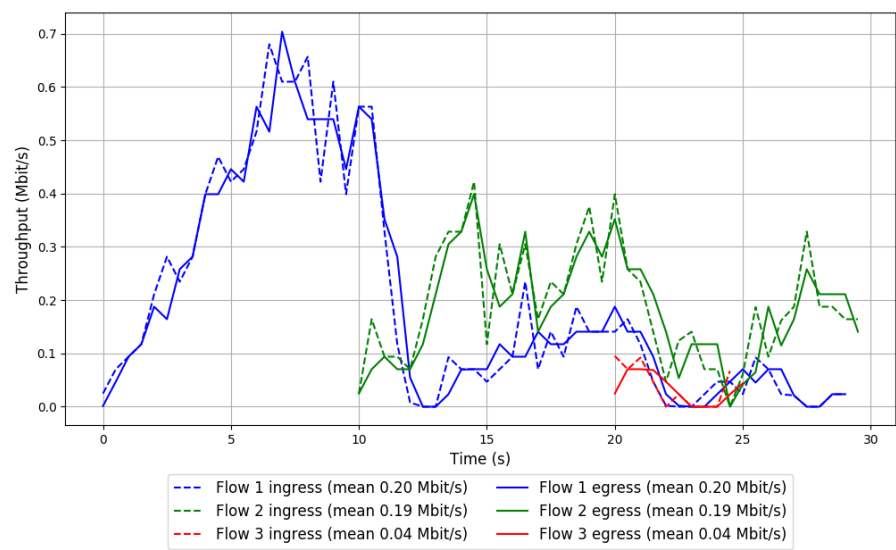
Run 1: Report of LEDBAT — Data Link

- Flow 1 ingress (mean 0.26 Mbit/s)
- Flow 1 egress (mean 0.26 Mbit/s)
- Flow 2 ingress (mean 0.24 Mbit/s)
- Flow 2 egress (mean 0.24 Mbit/s)
- Flow 3 ingress (mean 0.25 Mbit/s)
- Flow 3 egress (mean 0.24 Mbit/s)

- Flow 1 (95th percentile 415.95 ms)
- Flow 2 (95th percentile 398.32 ms)
- Flow 3 (95th percentile 360.93 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2017-09-22 13:48:22
End at: 2017-09-22 13:48:52
Local clock offset: 17.629 ms
Remote clock offset: -39.209 ms

# Below is generated by plot.py at 2017-09-22 15:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 418.234 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 397.337 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 427.359 ms
Loss rate: 3.99%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 449.027 ms
Loss rate: 5.93%
```
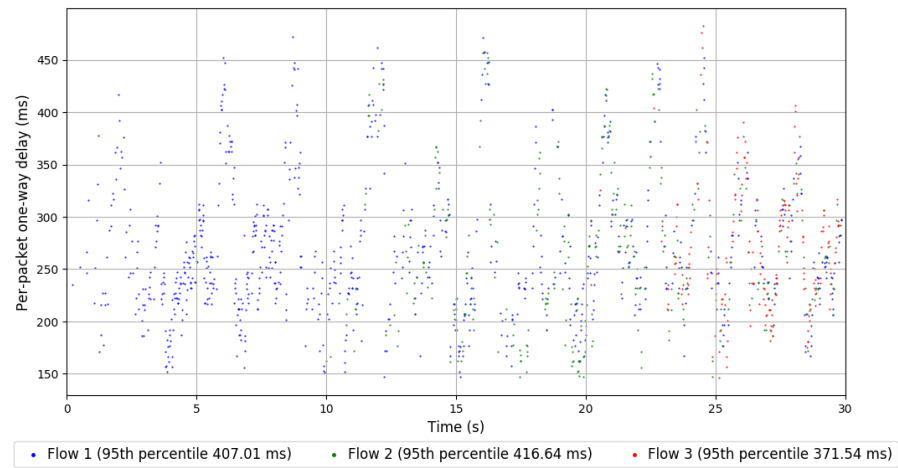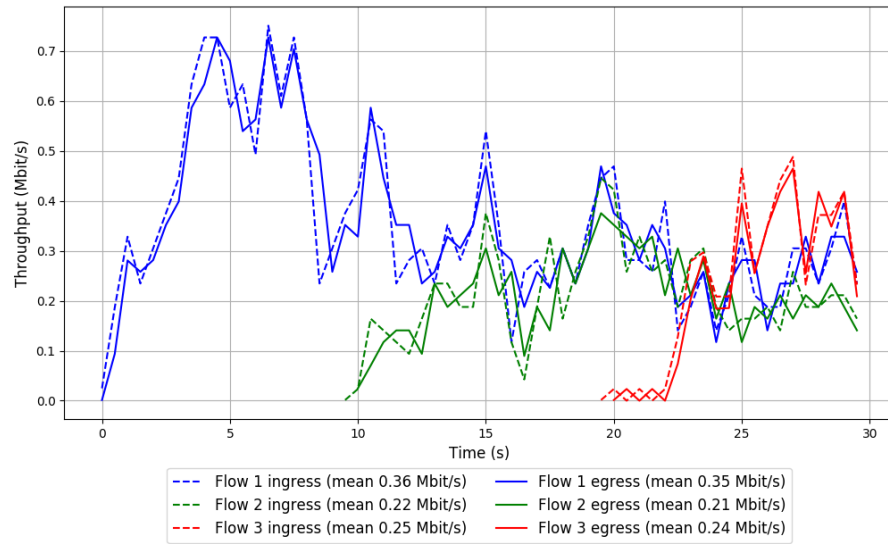
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.20 Mbit/s) --- Flow 1 egress (mean 0.20 Mbit/s)
Flow 2 ingress (mean 0.19 Mbit/s) --- Flow 2 egress (mean 0.19 Mbit/s)
Flow 3 ingress (mean 0.04 Mbit/s) --- Flow 3 egress (mean 0.04 Mbit/s)

Flow 1 (95th percentile 397.34 ms) • Flow 2 (95th percentile 427.36 ms) • Flow 3 (95th percentile 449.03 ms)

19

```
Run 3: Statistics of LEDBAT

Start at: 2017-09-22 14:07:24
End at: 2017-09-22 14:07:54
Local clock offset: 17.614 ms
Remote clock offset: -46.68 ms


# Below is generated by plot.py at 2017-09-22 15:19:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 404.211 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 407.007 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 416.640 ms
Loss rate: 2.45%
-- Flow 3:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 371.544 ms
Loss rate: 6.26%
```
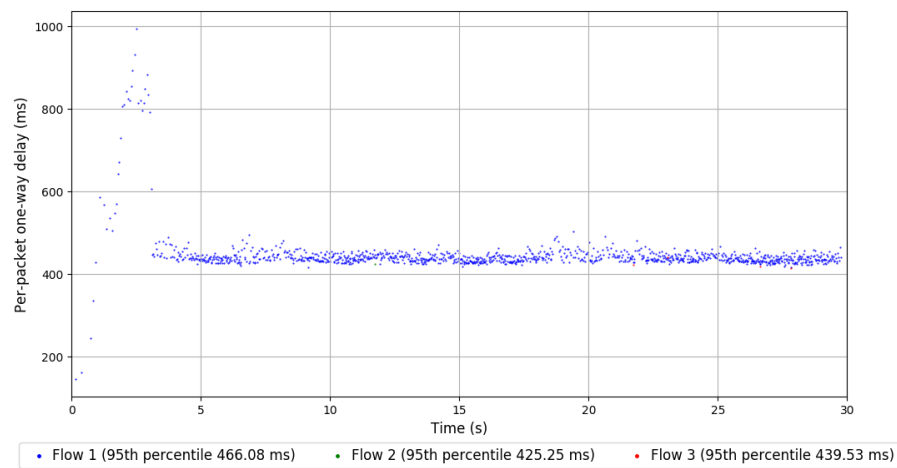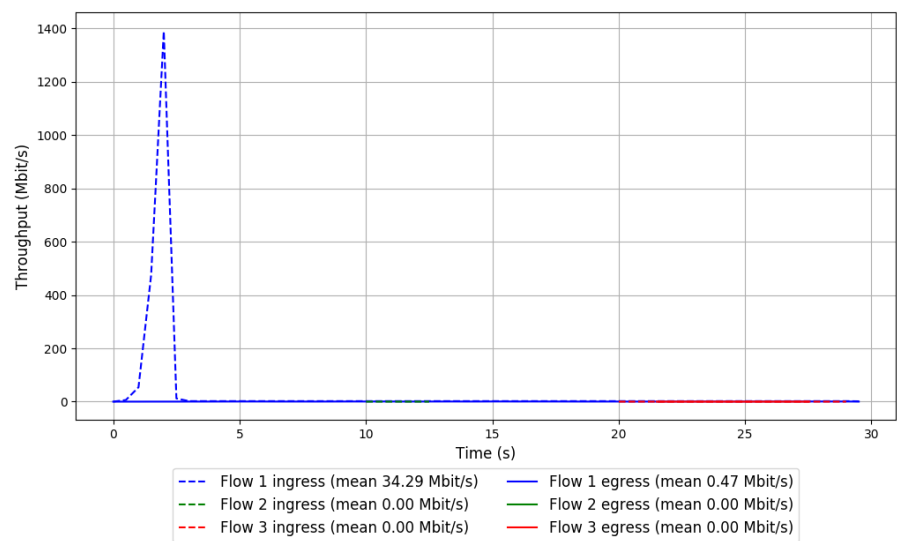
Run 3: Report of LEDBAT — Data Link

- - - - Flow 1 ingress (mean 0.36 Mbit/s) —— Flow 1 egress (mean 0.35 Mbit/s)
- - - - Flow 2 ingress (mean 0.22 Mbit/s) —— Flow 2 egress (mean 0.21 Mbit/s)
- - - - Flow 3 ingress (mean 0.25 Mbit/s) —— Flow 3 egress (mean 0.24 Mbit/s)

- Flow 1 (95th percentile 407.01 ms) • Flow 2 (95th percentile 416.64 ms) • Flow 3 (95th percentile 371.54 ms)

21

```
Run 1: Statistics of PCC

Start at: 2017-09-22 13:42:26
End at: 2017-09-22 13:42:56
Local clock offset: 16.604 ms
Remote clock offset: -29.89 ms

# Below is generated by plot.py at 2017-09-22 15:20:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 465.804 ms
Loss rate: 98.64%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 466.076 ms
Loss rate: 98.64%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 425.254 ms
Loss rate: 92.31%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 439.530 ms
Loss rate: 83.79%
```
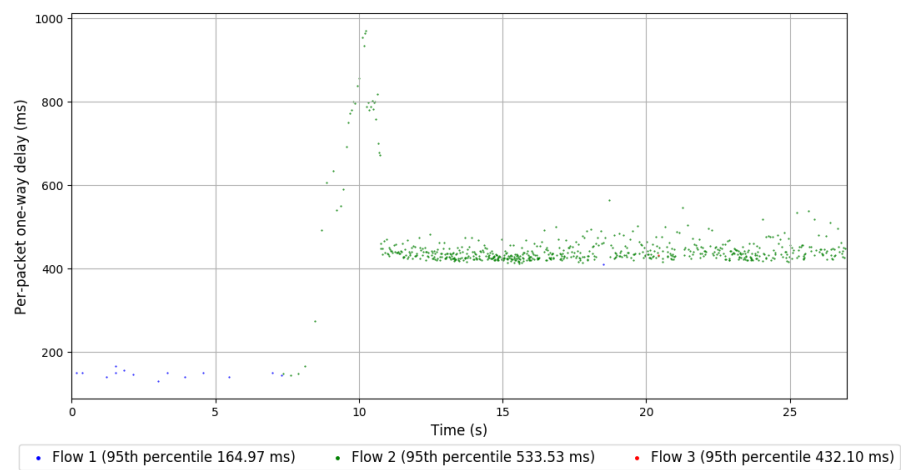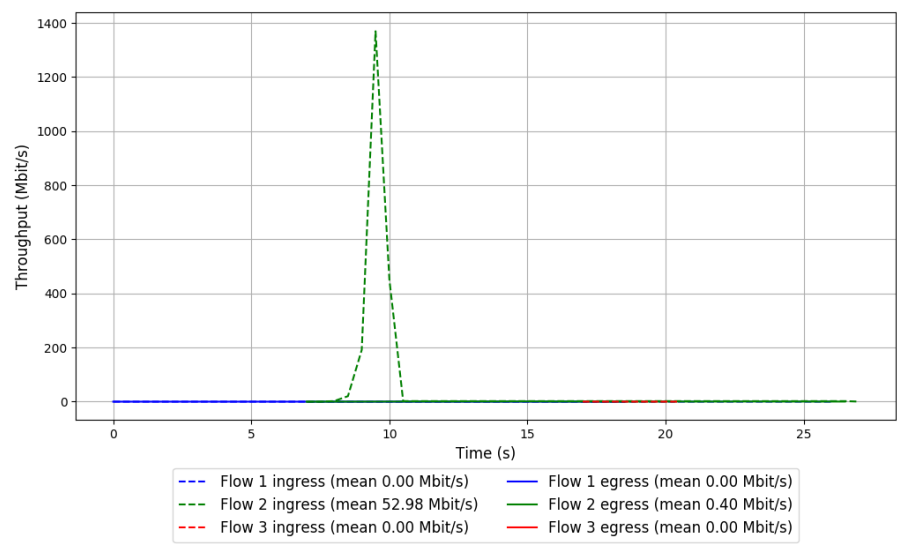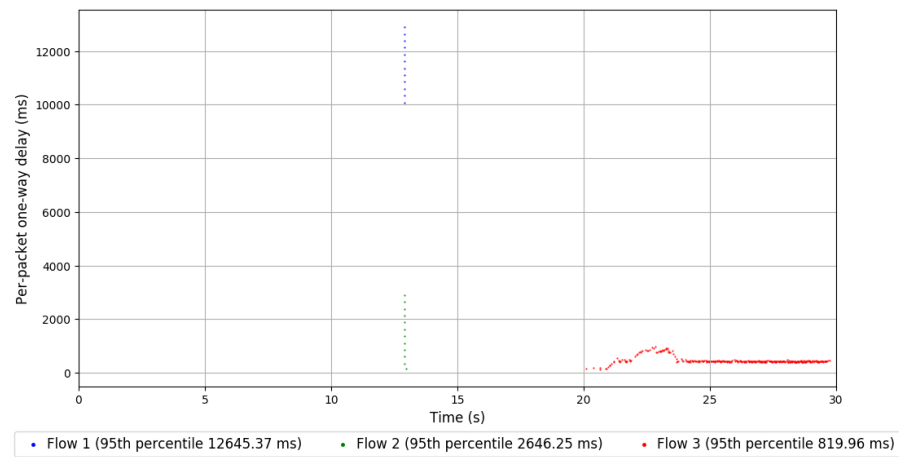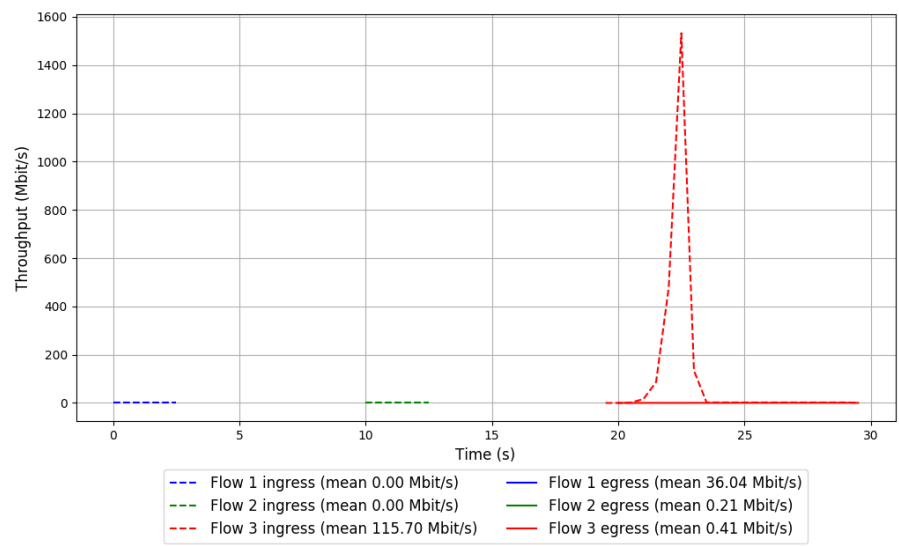
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 34.29 Mbit/s) — — — Flow 1 egress (mean 0.47 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) — — — Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) — — — Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 466.08 ms)   • Flow 2 (95th percentile 425.25 ms)   • Flow 3 (95th percentile 439.53 ms)
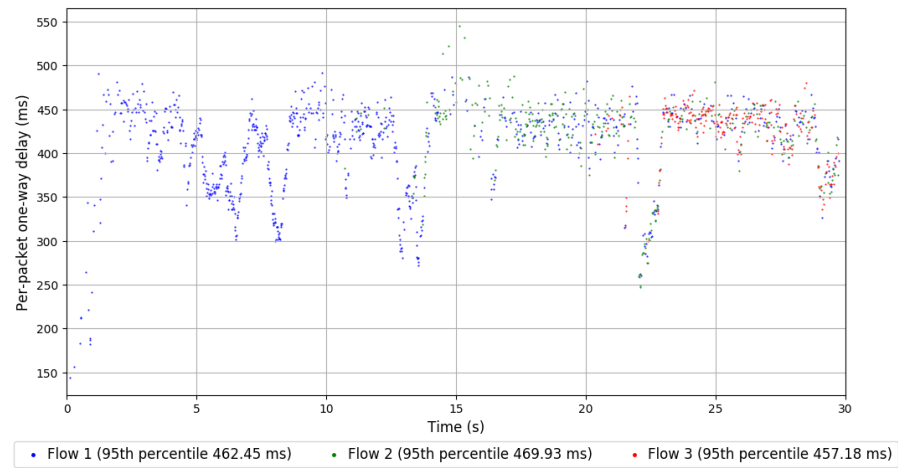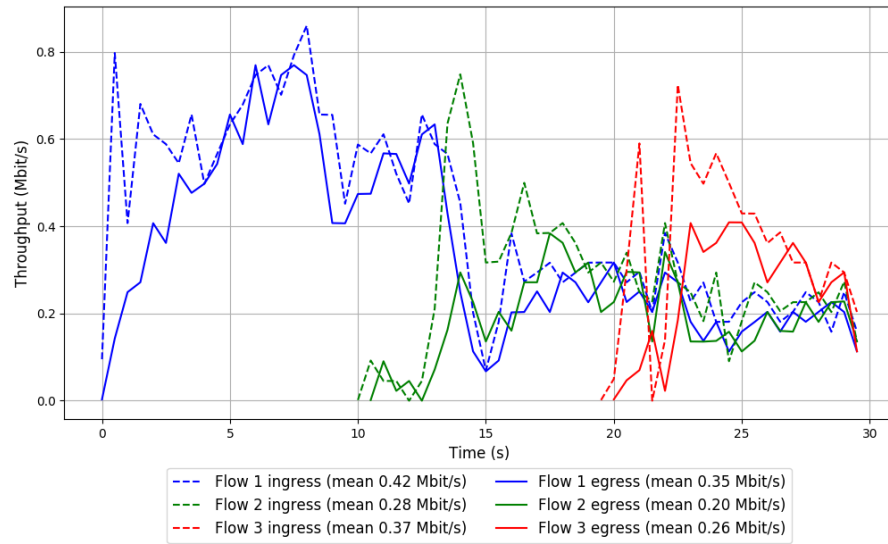
23

```
Run 2: Statistics of PCC

Start at: 2017-09-22 14:01:50
End at: 2017-09-22 14:02:20
Local clock offset: -1.396 ms
Remote clock offset: -46.645 ms


# Below is generated by plot.py at 2017-09-22 15:20:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 517.848 ms
Loss rate: 99.25%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 164.972 ms
Loss rate: 54.26%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 533.533 ms
Loss rate: 99.25%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 432.101 ms
Loss rate: 92.43%
```

Run 2: Report of PCC — Data Link

- - - Flow 1 ingress (mean 0.00 Mbit/s)   —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 52.98 Mbit/s)   —— Flow 2 egress (mean 0.40 Mbit/s)
- - - Flow 3 ingress (mean 0.00 Mbit/s)   —— Flow 3 egress (mean 0.00 Mbit/s)

- Flow 1 (95th percentile 164.97 ms)   • Flow 2 (95th percentile 533.53 ms)   • Flow 3 (95th percentile 432.10 ms)

```
Run 3: Statistics of PCC

Start at: 2017-09-22 14:20:29
End at: 2017-09-22 14:20:59
Local clock offset: -1.015 ms
Remote clock offset: -31.294 ms
```

Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 0.00 Mbit/s)   Flow 1 egress (mean 36.04 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s)   Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 115.70 Mbit/s)   Flow 3 egress (mean 0.41 Mbit/s)

Flow 1 (95th percentile 12645.37 ms)   Flow 2 (95th percentile 2646.25 ms)   Flow 3 (95th percentile 819.96 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2017-09-22 13:33:06
End at: 2017-09-22 13:33:36
Local clock offset: 17.794 ms
Remote clock offset: -43.517 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 462.453 ms
Loss rate: 23.84%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 462.453 ms
Loss rate: 18.23%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 469.934 ms
Loss rate: 31.88%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 457.183 ms
Loss rate: 31.22%
```

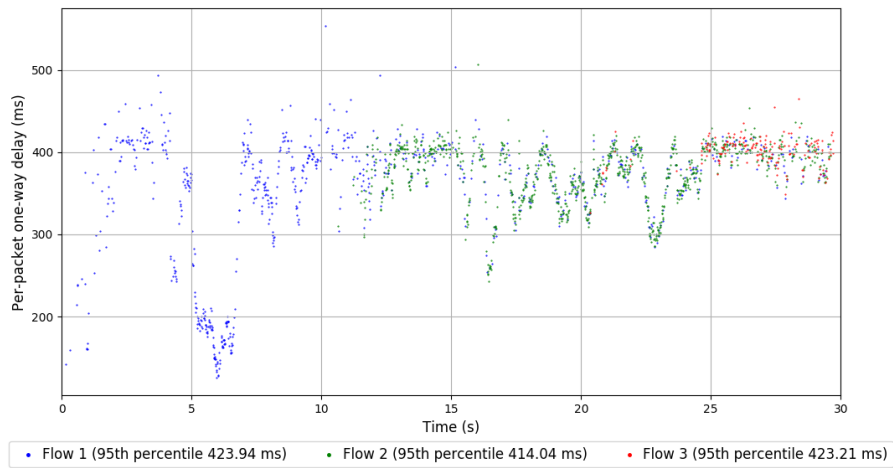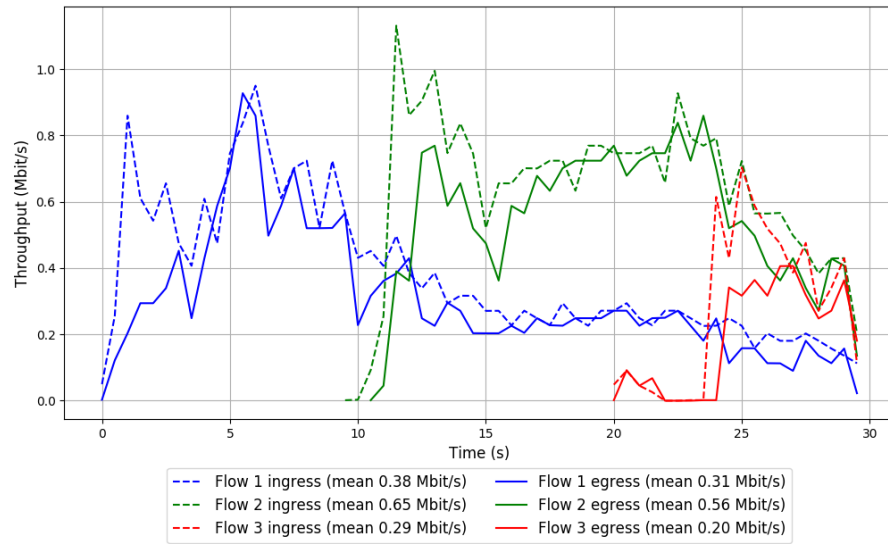Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.42 Mbit/s)   Flow 1 egress (mean 0.35 Mbit/s)
Flow 2 ingress (mean 0.28 Mbit/s)   Flow 2 egress (mean 0.20 Mbit/s)
Flow 3 ingress (mean 0.37 Mbit/s)   Flow 3 egress (mean 0.26 Mbit/s)

Flow 1 (95th percentile 462.45 ms)   Flow 2 (95th percentile 469.93 ms)   Flow 3 (95th percentile 457.18 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2017-09-22 13:52:21
End at: 2017-09-22 13:52:51
Local clock offset: 15.035 ms
Remote clock offset: -41.064 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 446.962 ms
Loss rate: 21.17%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 446.009 ms
Loss rate: 15.80%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 449.294 ms
Loss rate: 26.59%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 445.101 ms
Loss rate: 31.88%
```

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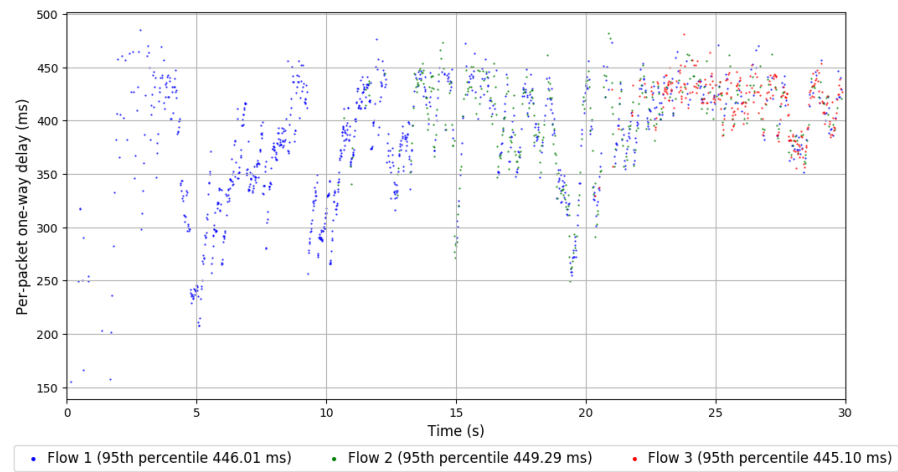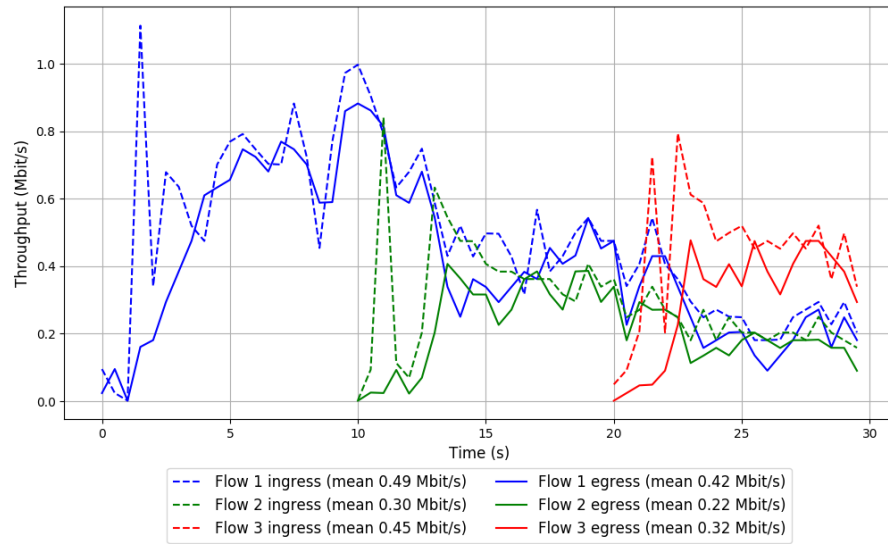
```
Run 3: Statistics of QUIC Cubic

Start at: 2017-09-22 14:11:29
End at: 2017-09-22 14:11:59
Local clock offset: -2.236 ms
Remote clock offset: -31.796 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 418.689 ms
Loss rate: 19.93%
-- Flow 1:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 423.936 ms
Loss rate: 20.09%
-- Flow 2:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 414.036 ms
Loss rate: 17.04%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 423.208 ms
Loss rate: 32.67%
```

Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.38 Mbit/s)　　Flow 1 egress (mean 0.31 Mbit/s)
Flow 2 ingress (mean 0.65 Mbit/s)　　Flow 2 egress (mean 0.56 Mbit/s)
Flow 3 ingress (mean 0.29 Mbit/s)　　Flow 3 egress (mean 0.20 Mbit/s)

Flow 1 (95th percentile 423.94 ms)　　Flow 2 (95th percentile 414.04 ms)　　Flow 3 (95th percentile 423.21 ms)
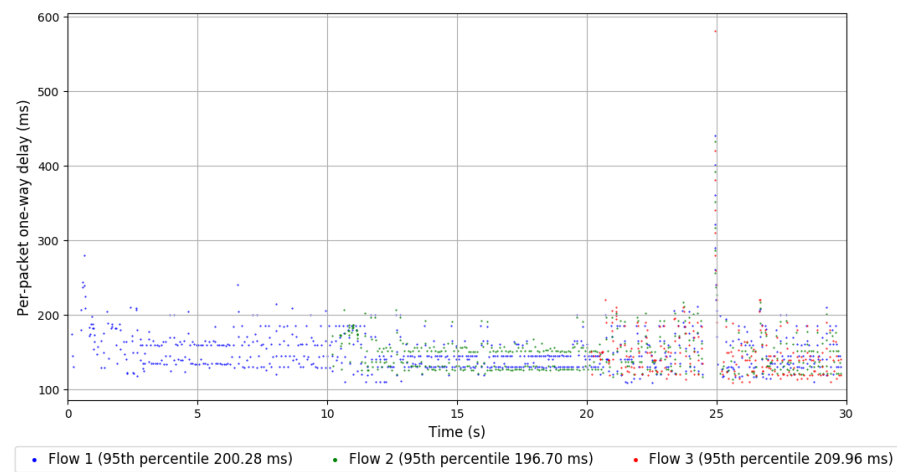
```
Run 1: Statistics of SCReAM

Start at: 2017-09-22 13:36:58
End at: 2017-09-22 13:37:28
Local clock offset: -2.631 ms
Remote clock offset: -47.338 ms

# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 222.990 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 224.171 ms
Loss rate: 2.32%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 218.316 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 223.285 ms
Loss rate: 2.53%
```

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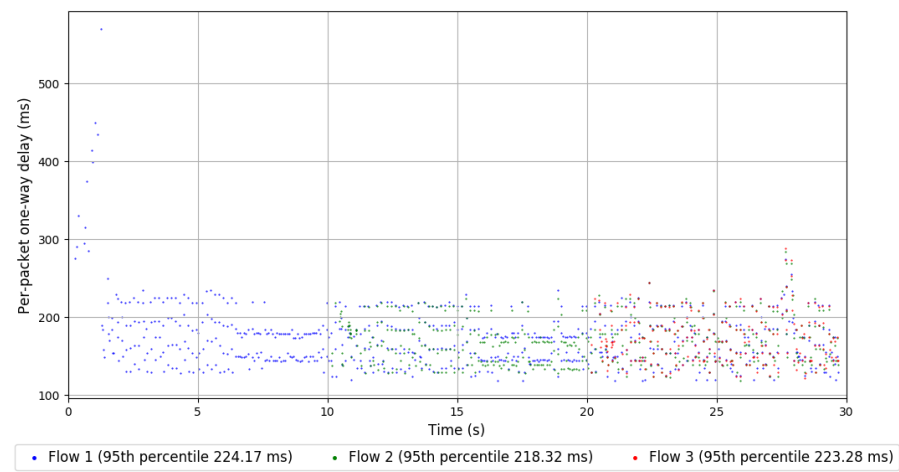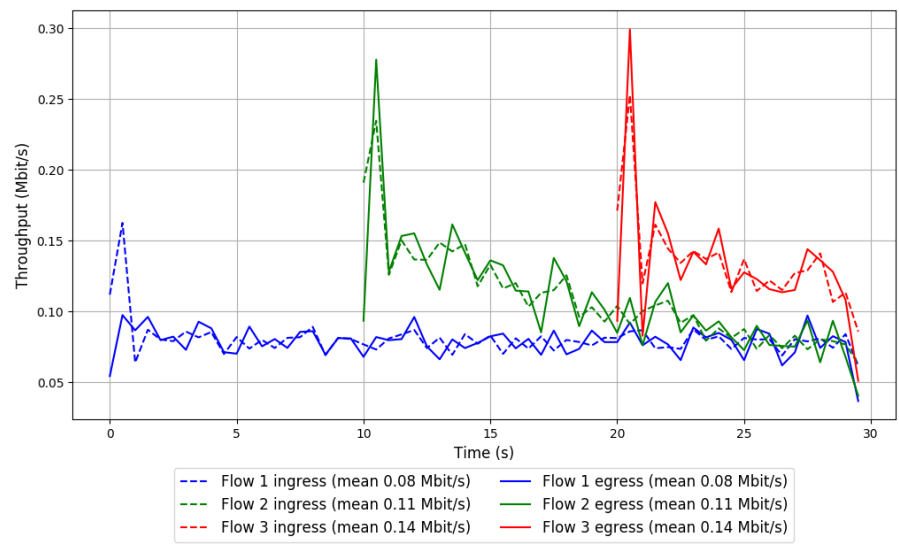
```
Run 2: Statistics of SCReAM

Start at: 2017-09-22 13:56:35
End at: 2017-09-22 13:57:05
Local clock offset: -2.535 ms
Remote clock offset: -46.002 ms
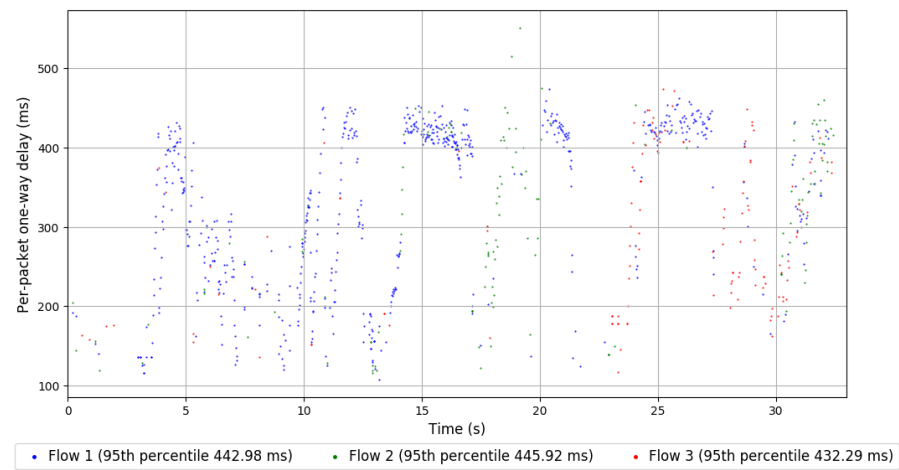```

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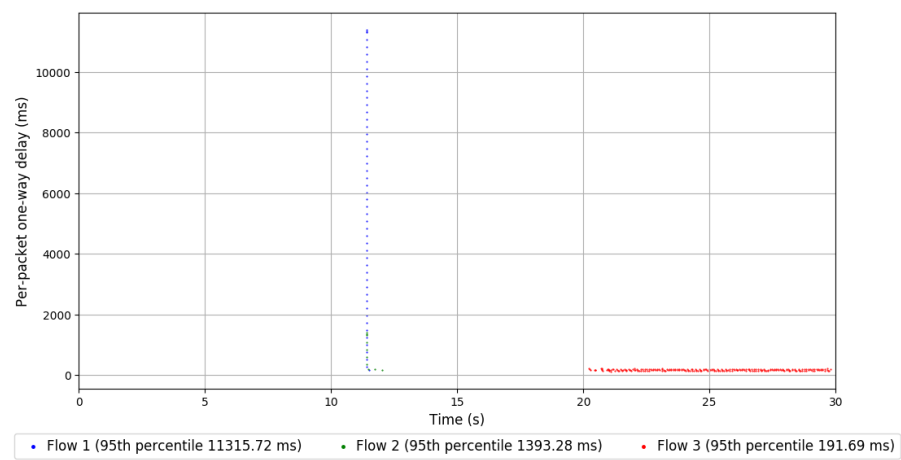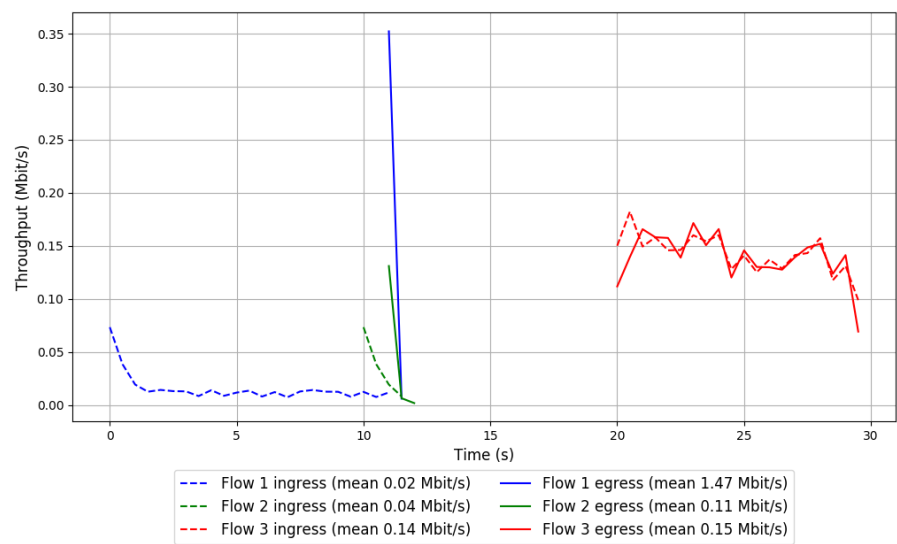
```
Run 3: Statistics of SCReAM

Start at: 2017-09-22 14:15:20
End at: 2017-09-22 14:15:50
Local clock offset: -2.27 ms
Remote clock offset: -40.483 ms

Below is generated by plot.py at 2017-09-22 15:20:20
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 200.552 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 200.276 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 196.701 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 209.956 ms
Loss rate: 2.93%
```
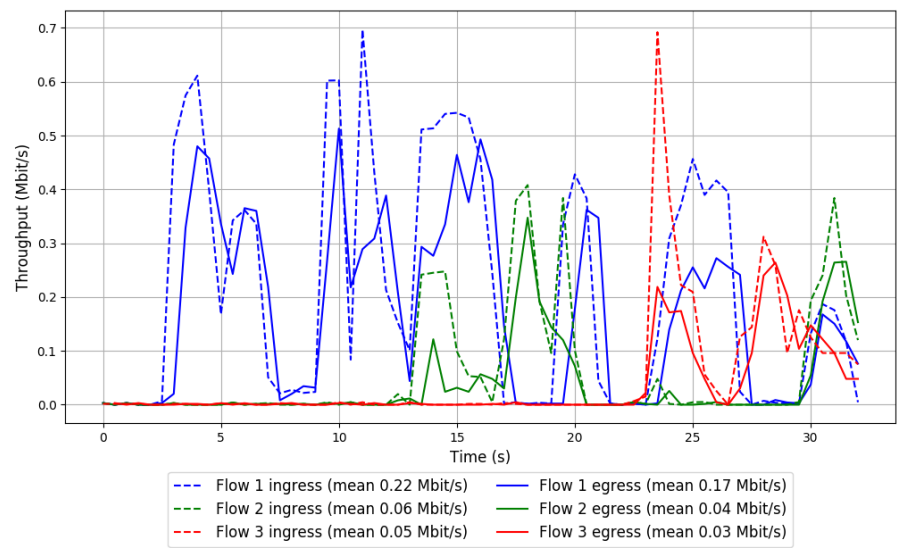
Run 3: Report of SCReAM — Data Link
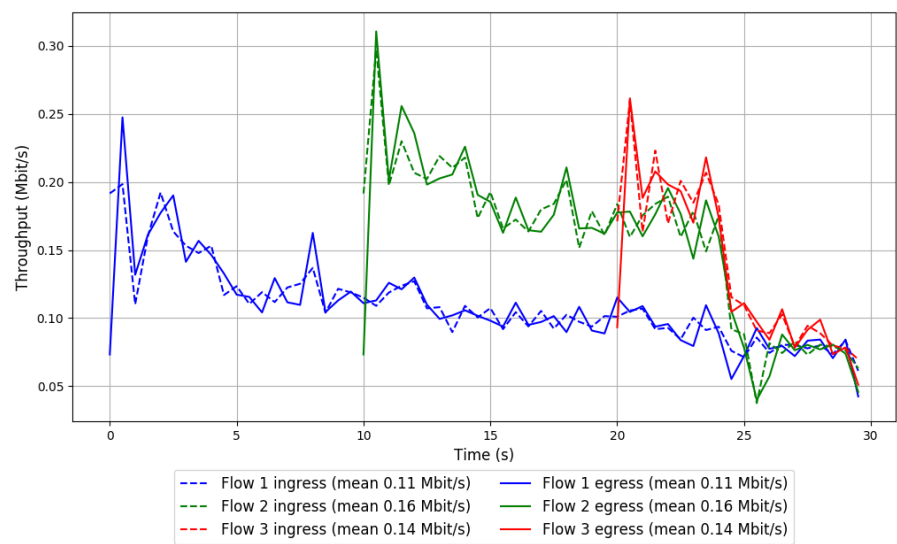
```
Run 1: Statistics of WebRTC media

Start at: 2017-09-22 13:45:33
End at: 2017-09-22 13:46:03
Local clock offset: -2.829 ms
Remote clock offset: -39.934 ms

# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 443.026 ms
Loss rate: 26.10%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 442.976 ms
Loss rate: 21.24%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 445.922 ms
Loss rate: 37.50%
-- Flow 3:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 432.294 ms
Loss rate: 33.37%
```

Run 1: Report of WebRTC media — Data Link

Flow 1 ingress (mean 0.22 Mbit/s) Flow 1 egress (mean 0.17 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s) Flow 2 egress (mean 0.04 Mbit/s)
Flow 3 ingress (mean 0.05 Mbit/s) Flow 3 egress (mean 0.03 Mbit/s)

Flow 1 (95th percentile 442.98 ms) Flow 2 (95th percentile 445.92 ms) Flow 3 (95th percentile 432.29 ms)

```
Run 2: Statistics of WebRTC media

Start at: 2017-09-22 14:04:43
End at: 2017-09-22 14:05:13
Local clock offset: -2.472 ms
Remote clock offset: -33.783 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 409.634 ms
Loss rate: 12.58%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 395.355 ms
Loss rate: 8.98%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 409.634 ms
Loss rate: 10.35%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 414.743 ms
Loss rate: 21.56%
```

Run 2: Report of WebRTC media — Data Link
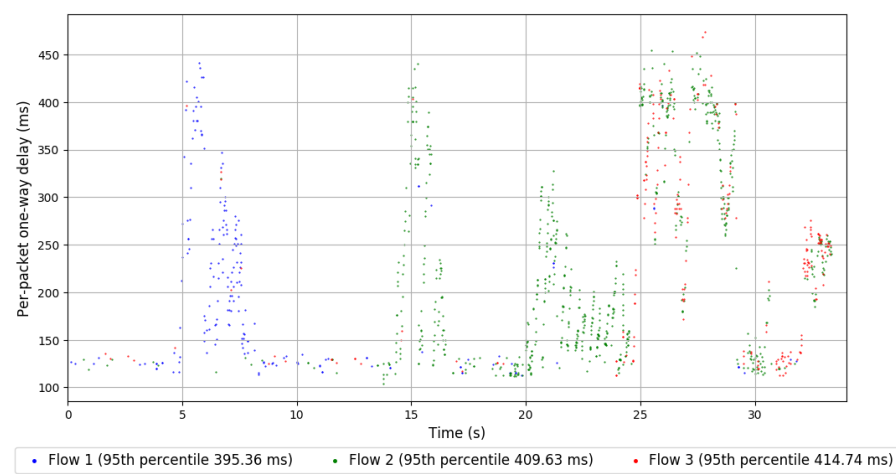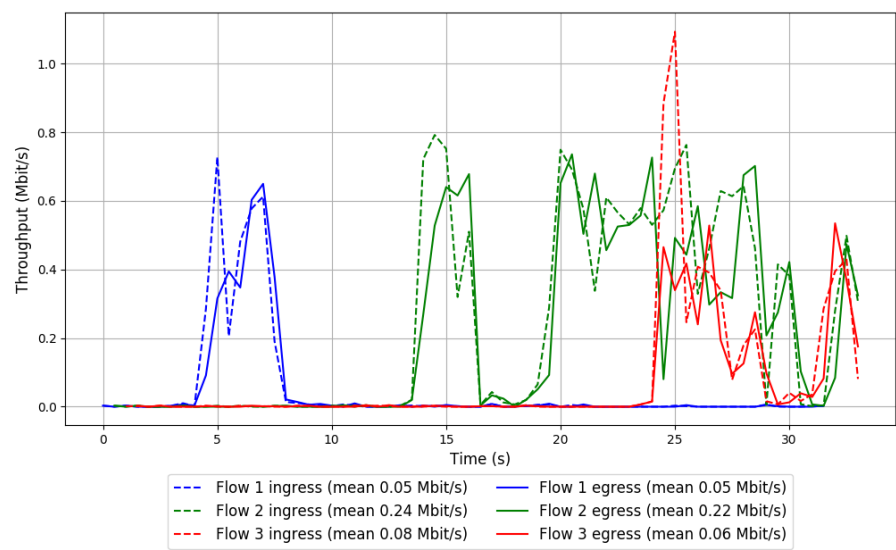
```
Run 3: Statistics of WebRTC media

Start at: 2017-09-22 14:23:07
End at: 2017-09-22 14:23:37
Local clock offset: -2.305 ms
Remote clock offset: -9.483 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 398.049 ms
Loss rate: 19.54%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 390.830 ms
Loss rate: 15.64%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 408.741 ms
Loss rate: 24.21%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 396.018 ms
Loss rate: 24.56%
```

Run 3: Report of WebRTC media — Data Link
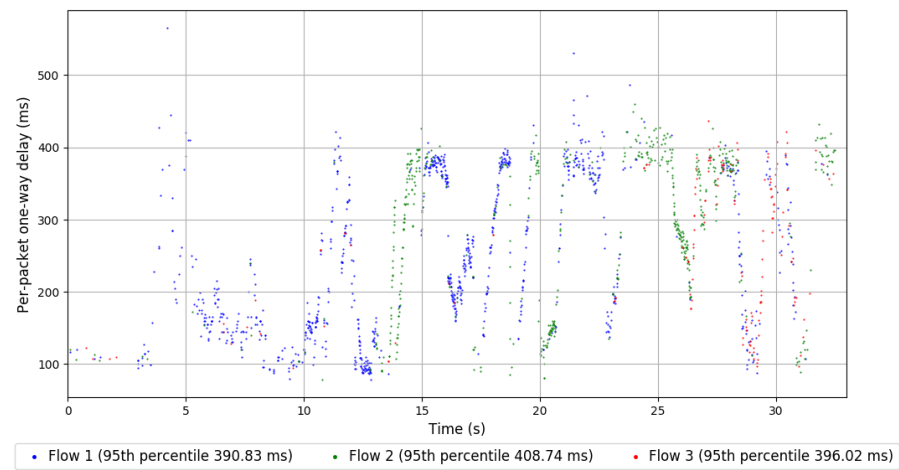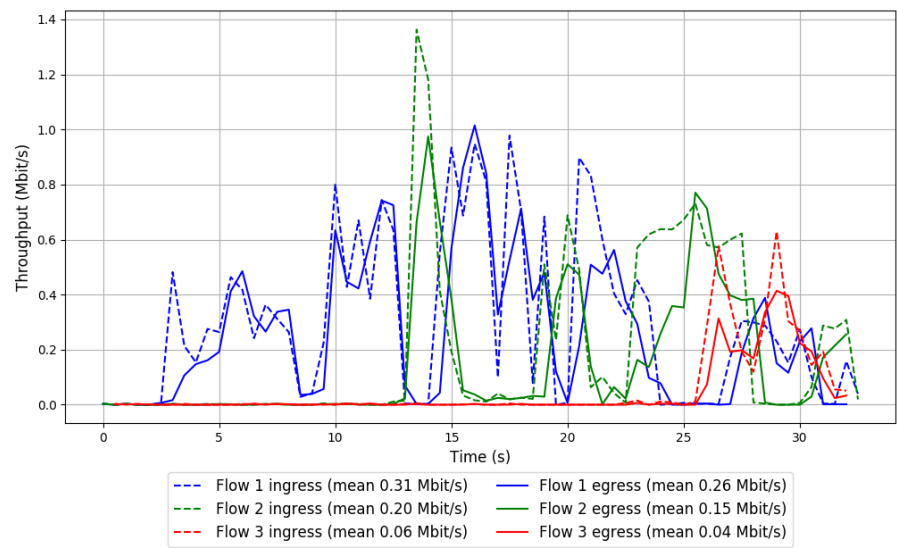
```
Run 1: Statistics of Sprout

Start at: 2017-09-22 13:41:09
End at: 2017-09-22 13:41:39
Local clock offset: 17.229 ms
Remote clock offset: -28.521 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 283.296 ms
Loss rate: 5.62%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 275.444 ms
Loss rate: 6.56%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 270.198 ms
Loss rate: 3.81%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 300.369 ms
Loss rate: 7.88%
```

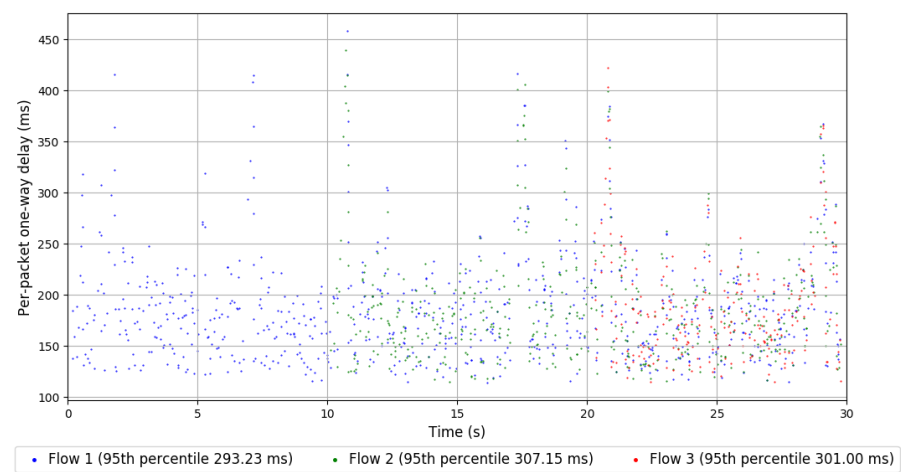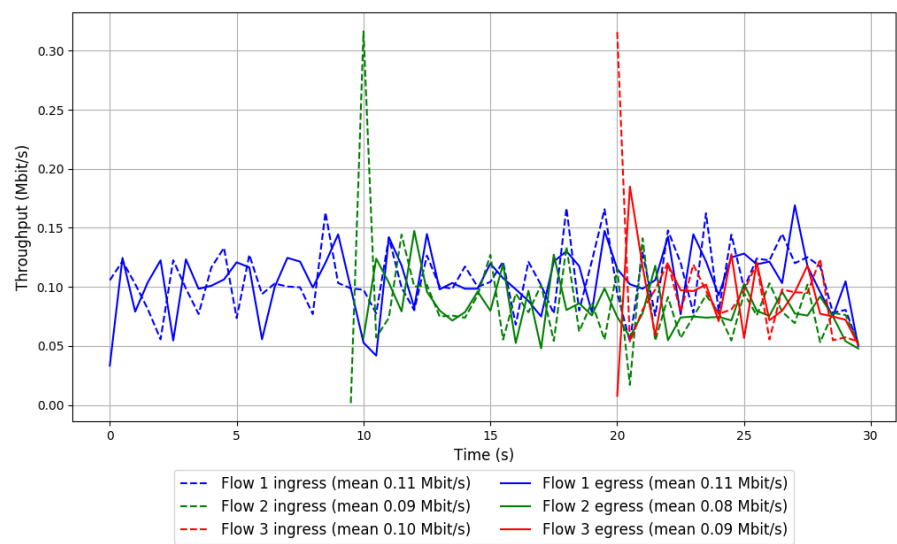Run 1: Report of Sprout — Data Link
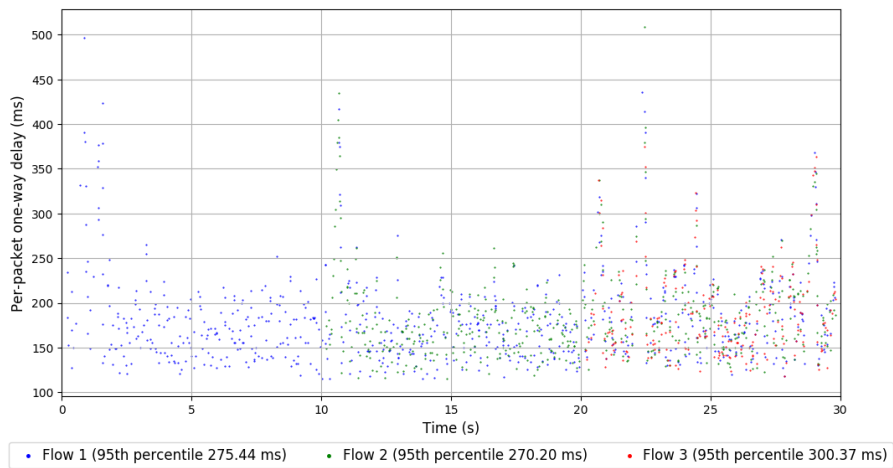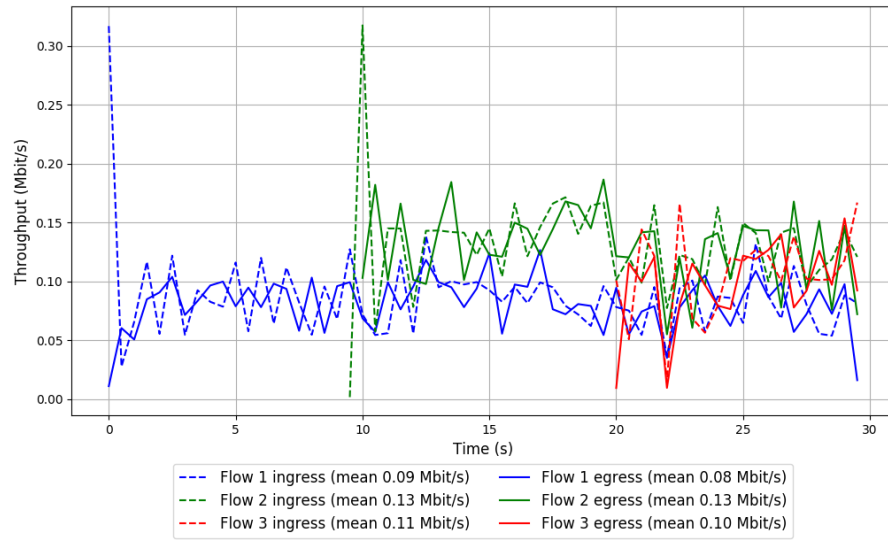
```
Run 2: Statistics of Sprout

Start at: 2017-09-22 14:00:29
End at: 2017-09-22 14:00:59
Local clock offset: -2.601 ms
Remote clock offset: -44.868 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 300.958 ms
Loss rate: 3.51%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 293.228 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 307.151 ms
Loss rate: 5.62%
-- Flow 3:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 301.003 ms
Loss rate: 8.64%
```

Run 2: Report of Sprout — Data Link

Flow 1 ingress (mean 0.11 Mbit/s)   Flow 1 egress (mean 0.11 Mbit/s)
Flow 2 ingress (mean 0.09 Mbit/s)   Flow 2 egress (mean 0.08 Mbit/s)
Flow 3 ingress (mean 0.10 Mbit/s)   Flow 3 egress (mean 0.09 Mbit/s)

Flow 1 (95th percentile 293.23 ms)   Flow 2 (95th percentile 307.15 ms)   Flow 3 (95th percentile 301.00 ms)

49

```
Run 3: Statistics of Sprout

Start at: 2017-09-22 14:19:12
End at: 2017-09-22 14:19:42
Local clock offset: 17.275 ms
Remote clock offset: -23.208 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 332.532 ms
Loss rate: 9.68%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 316.841 ms
Loss rate: 9.63%
-- Flow 2:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 345.989 ms
Loss rate: 7.66%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 329.557 ms
Loss rate: 13.72%
```

Run 3: Report of Sprout — Data Link
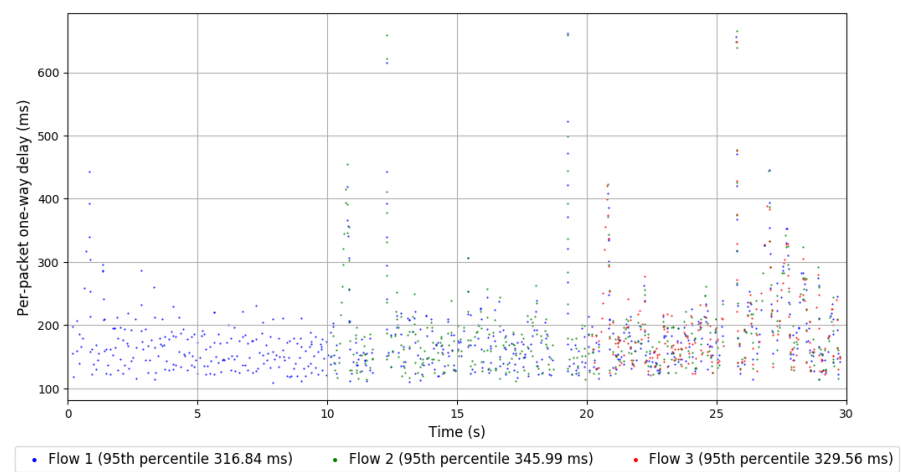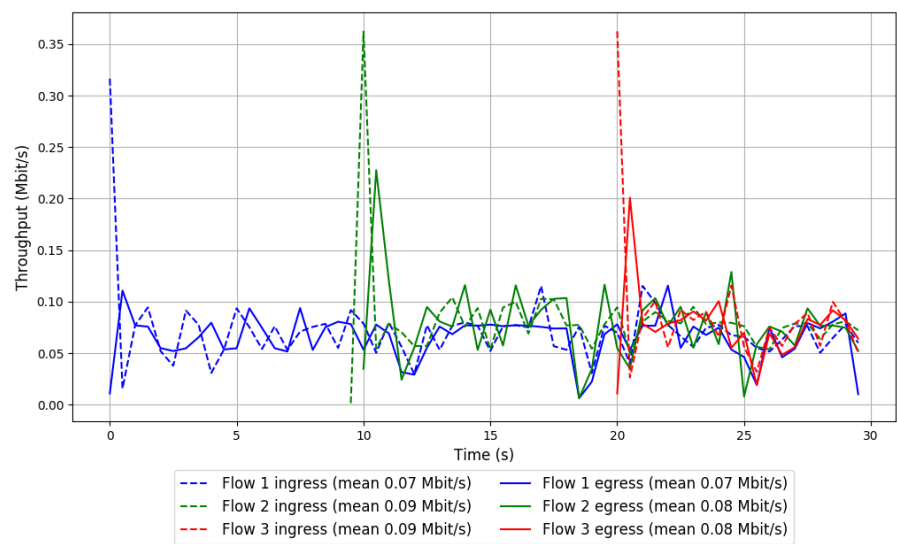
```
Run 1: Statistics of TaoVA-100x

Start at: 2017-09-22 13:31:47
End at: 2017-09-22 13:32:17
Local clock offset: -2.562 ms
Remote clock offset: -44.135 ms

# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 434.452 ms
Loss rate: 66.05%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 433.150 ms
Loss rate: 51.08%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 436.243 ms
Loss rate: 77.34%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 445.869 ms
Loss rate: 94.91%
```

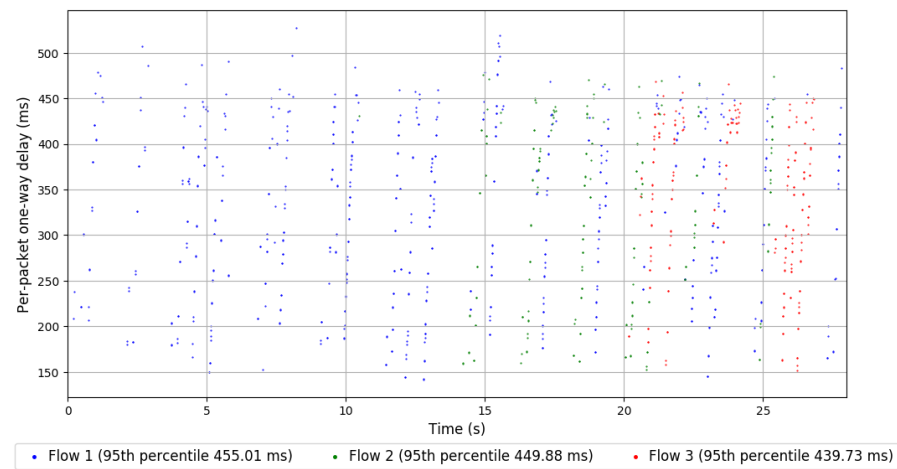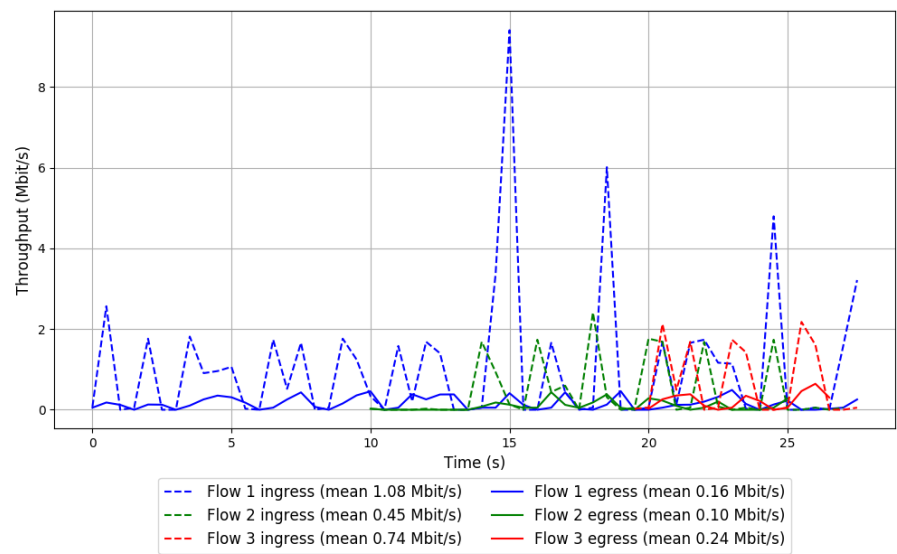Run 1: Report of TaoVA-100x — Data Link
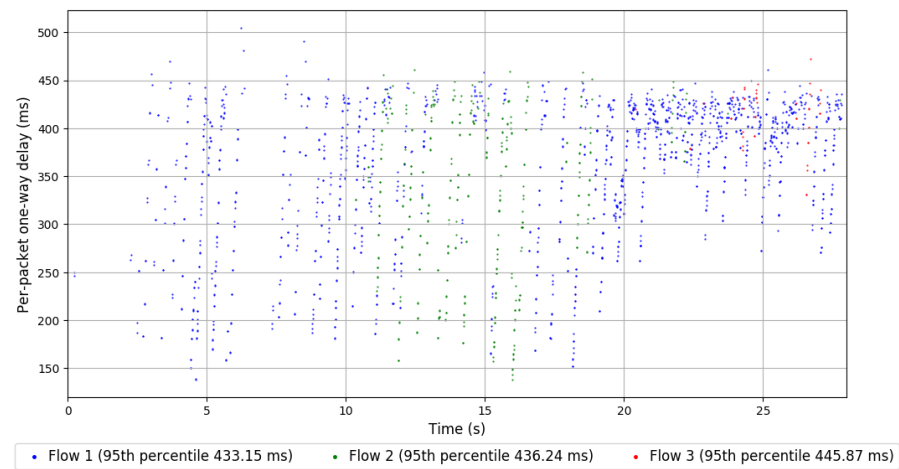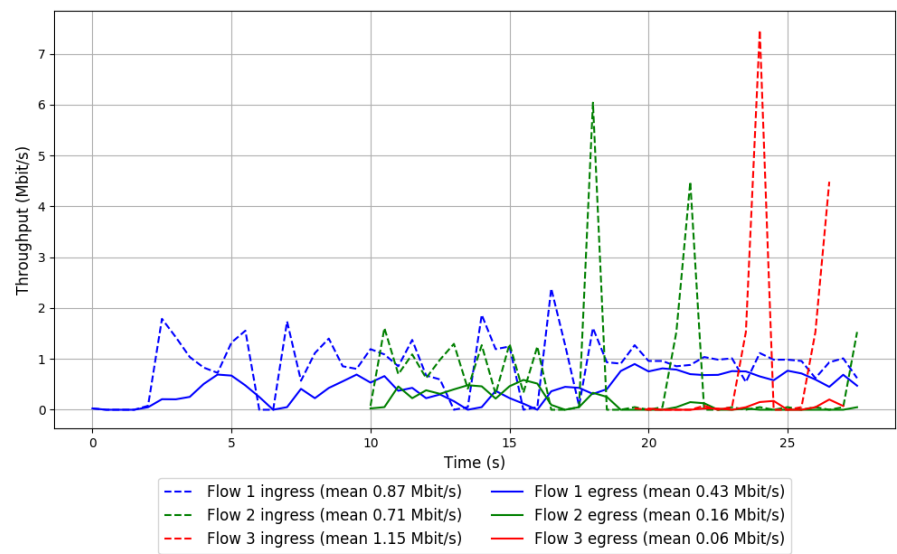
```
Run 2: Statistics of TaoVA-100x

Start at: 2017-09-22 13:51:01
End at: 2017-09-22 13:51:31
Local clock offset: -2.653 ms
Remote clock offset: -46.719 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 453.322 ms
Loss rate: 82.65%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 455.007 ms
Loss rate: 85.06%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 449.883 ms
Loss rate: 81.18%
-- Flow 3:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 439.731 ms
Loss rate: 72.13%
```

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

Flow 1 ingress (mean 1.08 Mbit/s)   Flow 1 egress (mean 0.16 Mbit/s)
Flow 2 ingress (mean 0.45 Mbit/s)   Flow 2 egress (mean 0.10 Mbit/s)
Flow 3 ingress (mean 0.74 Mbit/s)   Flow 3 egress (mean 0.24 Mbit/s)

Flow 1 (95th percentile 455.01 ms)   Flow 2 (95th percentile 449.88 ms)   Flow 3 (95th percentile 439.73 ms)
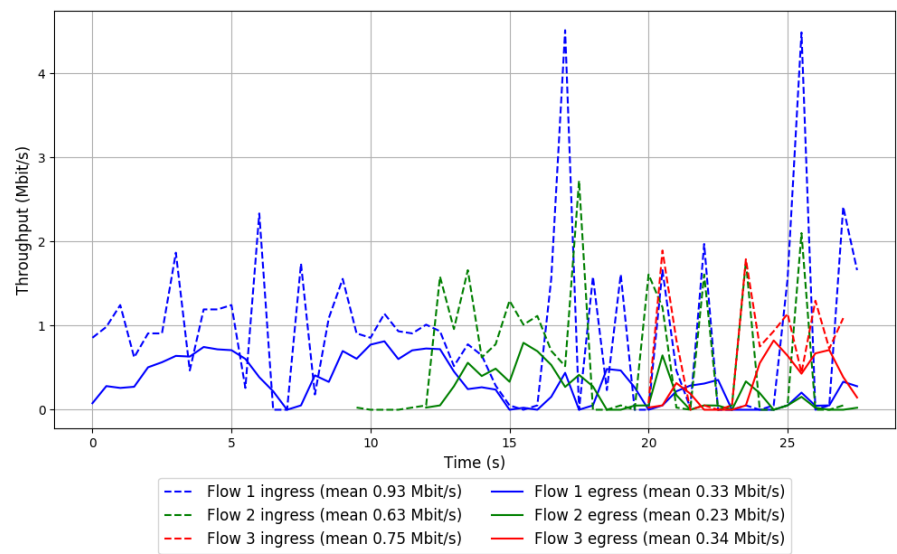
55

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

Start at: 2017-09-22 14:10:13
End at: 2017-09-22 14:10:43
Local clock offset: 17.91 ms
Remote clock offset: -1.724 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 411.059 ms
Loss rate: 64.04%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 411.453 ms
Loss rate: 64.42%
-- Flow 2:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 411.755 ms
Loss rate: 67.88%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 407.342 ms
Loss rate: 54.81%
```

# Run 3: Report of TaoVA-100x — Data Link
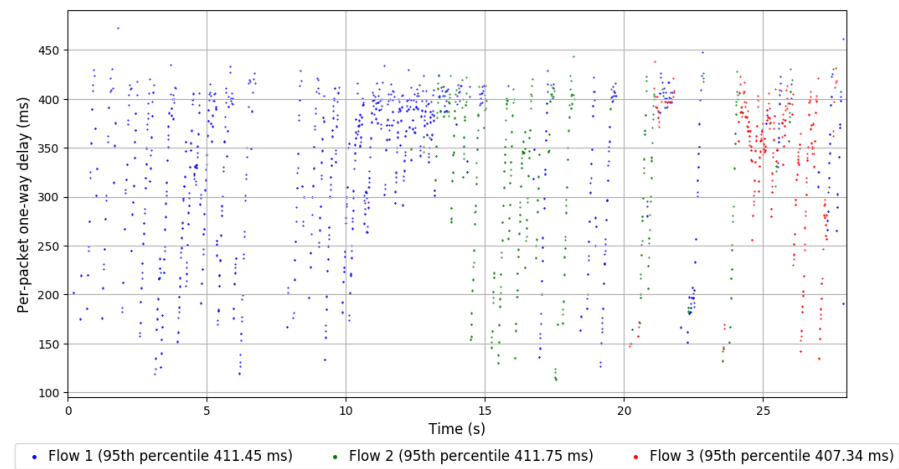
```
Run 1: Statistics of TCP Vegas

Start at: 2017-09-22 13:34:23
End at: 2017-09-22 13:34:53
Local clock offset: -2.522 ms
Remote clock offset: -44.047 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 377.272 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 368.234 ms
Loss rate: 3.09%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 387.140 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 374.269 ms
Loss rate: 7.33%
```

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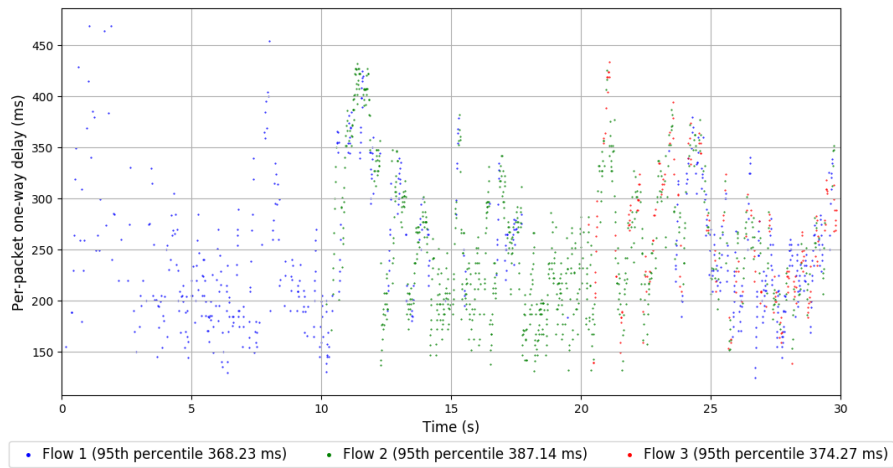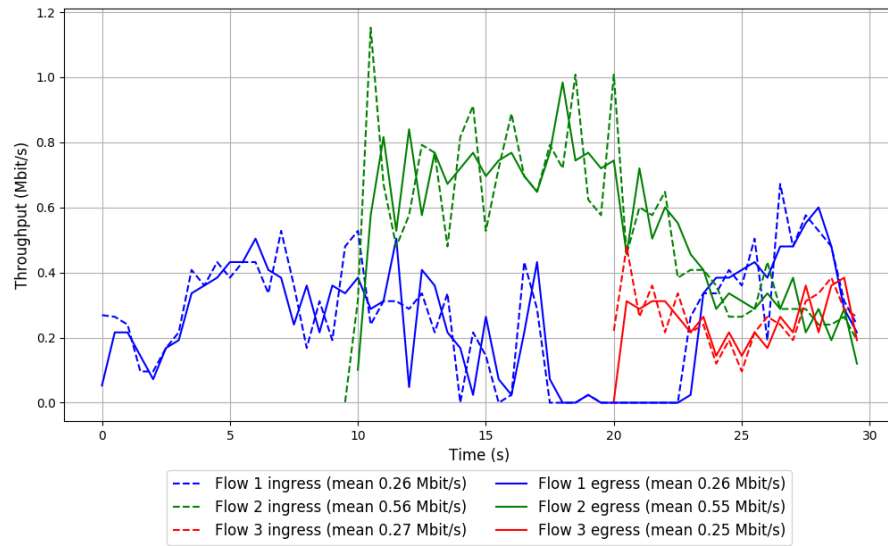
```
Run 2: Statistics of TCP Vegas

Start at: 2017-09-22 13:53:43
End at: 2017-09-22 13:54:13
Local clock offset: -1.385 ms
Remote clock offset: -45.201 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 397.297 ms
Loss rate: 3.90%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 382.685 ms
Loss rate: 2.81%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 405.411 ms
Loss rate: 3.79%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 403.864 ms
Loss rate: 7.33%
```

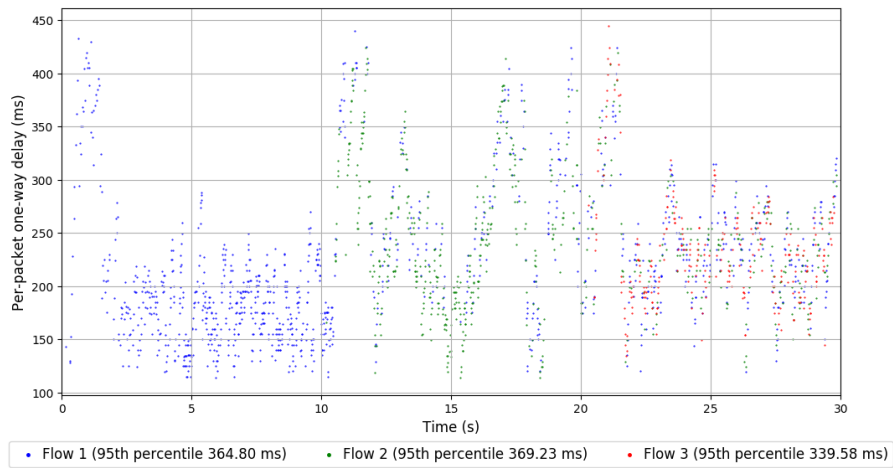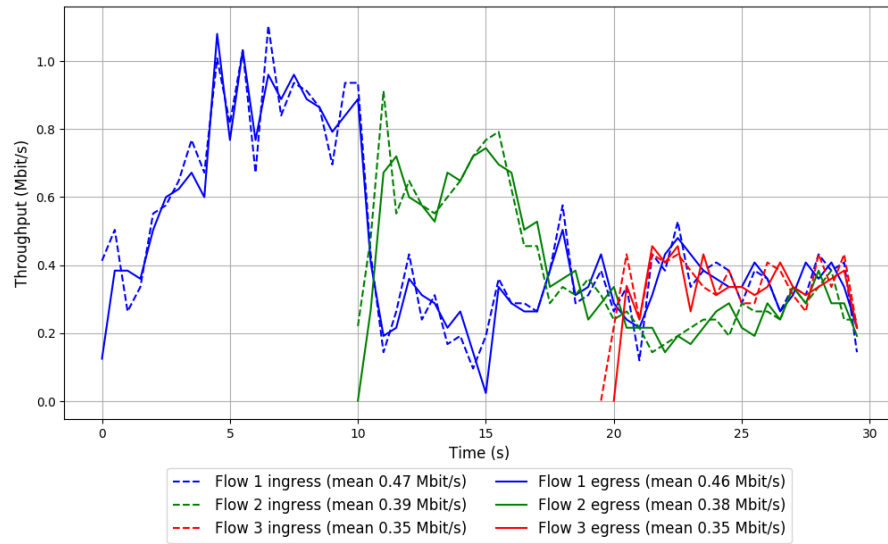Run 2: Report of TCP Vegas — Data Link
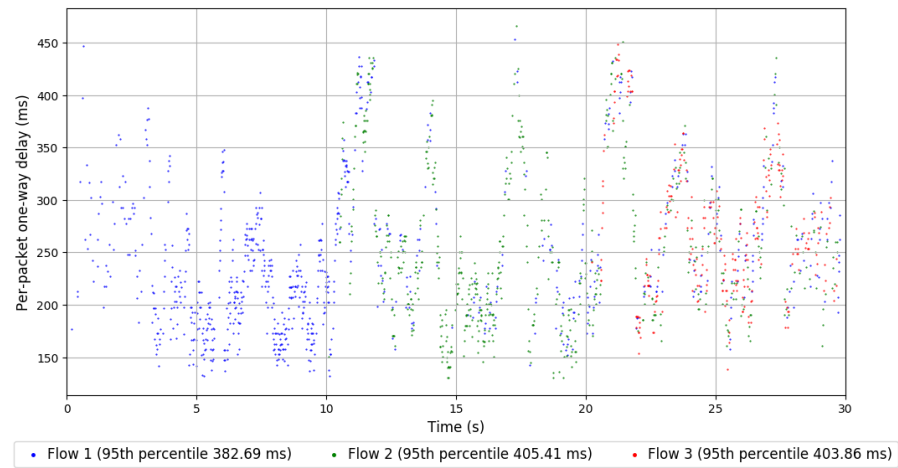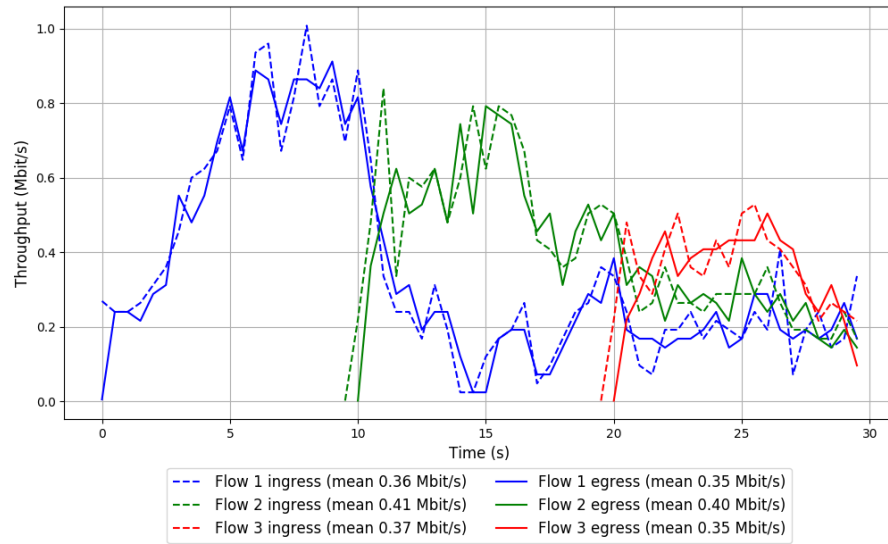
```
Run 3: Statistics of TCP Vegas

Start at: 2017-09-22 14:12:47
End at: 2017-09-22 14:13:17
Local clock offset: -2.45 ms
Remote clock offset: -36.152 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 364.803 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 364.803 ms
Loss rate: 2.06%
-- Flow 2:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 369.234 ms
Loss rate: 3.08%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 339.584 ms
Loss rate: 5.21%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 0.47 Mbit/s)   Flow 1 egress (mean 0.46 Mbit/s)
Flow 2 ingress (mean 0.39 Mbit/s)   Flow 2 egress (mean 0.38 Mbit/s)
Flow 3 ingress (mean 0.35 Mbit/s)   Flow 3 egress (mean 0.35 Mbit/s)

Flow 1 (95th percentile 364.80 ms)   Flow 2 (95th percentile 369.23 ms)   Flow 3 (95th percentile 339.58 ms)
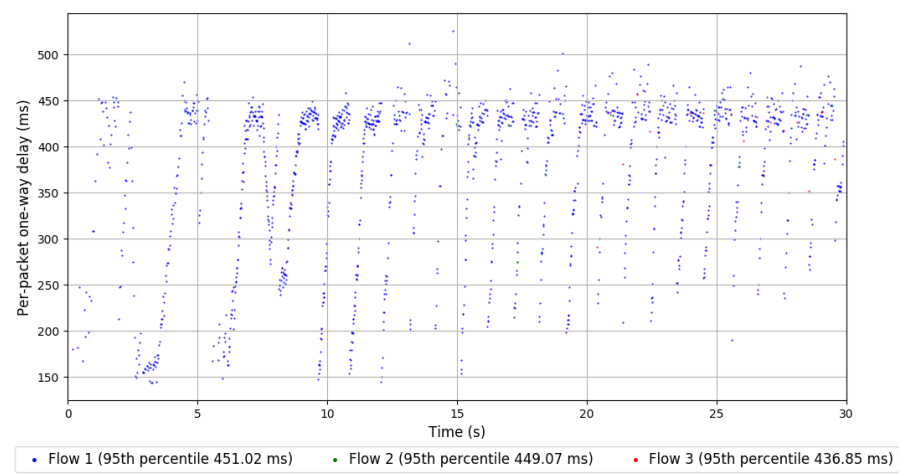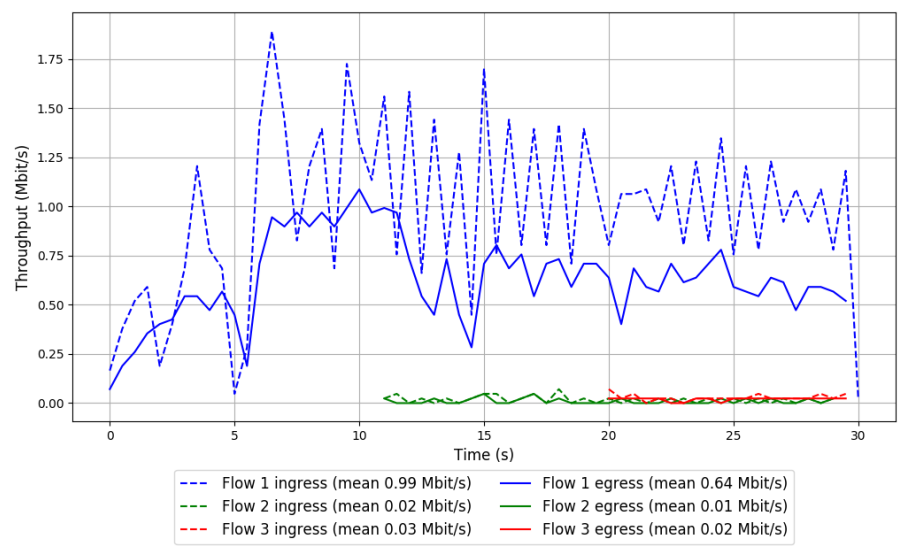
```
Run 1: Statistics of Verus

Start at: 2017-09-22 13:30:28
End at: 2017-09-22 13:30:58
Local clock offset: 16.25 ms
Remote clock offset: -37.786 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 451.023 ms
Loss rate: 36.02%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 451.023 ms
Loss rate: 36.03%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 449.075 ms
Loss rate: 40.74%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 436.850 ms
Loss rate: 29.17%
```

Run 1: Report of Verus — Data Link

- Flow 1 ingress (mean 0.99 Mbit/s)
- Flow 1 egress (mean 0.64 Mbit/s)
- Flow 2 ingress (mean 0.02 Mbit/s)
- Flow 2 egress (mean 0.01 Mbit/s)
- Flow 3 ingress (mean 0.03 Mbit/s)
- Flow 3 egress (mean 0.02 Mbit/s)

- Flow 1 (95th percentile 451.02 ms)
- Flow 2 (95th percentile 449.07 ms)
- Flow 3 (95th percentile 436.85 ms)

```
Run 2: Statistics of Verus

Start at: 2017-09-22 13:49:42
End at: 2017-09-22 13:50:12
Local clock offset: -2.483 ms
Remote clock offset: -20.094 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 421.487 ms
Loss rate: 45.51%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 421.165 ms
Loss rate: 30.05%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 423.063 ms
Loss rate: 62.10%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 412.762 ms
Loss rate: 22.22%
```

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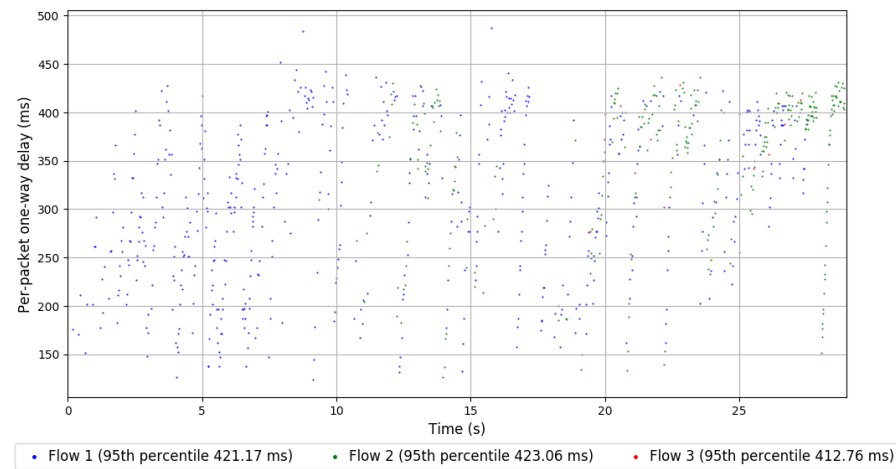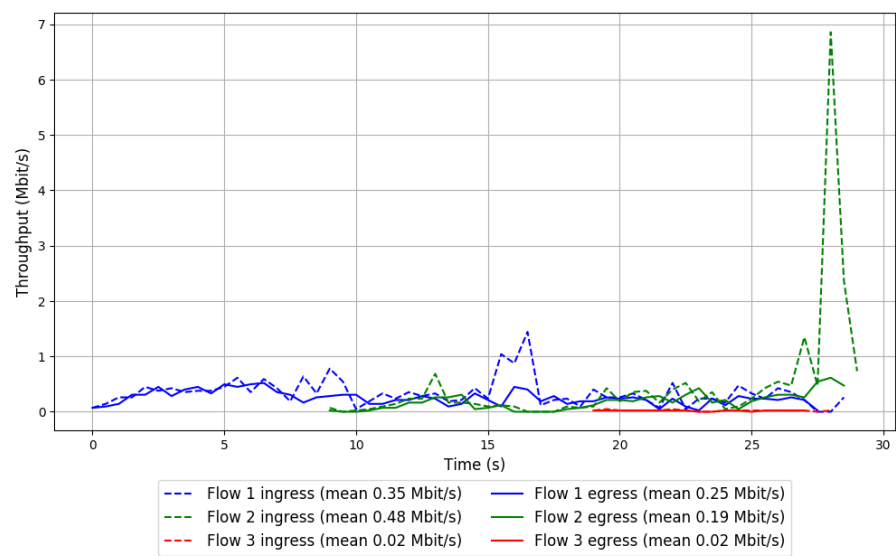
```
Run 3: Statistics of Verus

Start at: 2017-09-22 14:08:51
End at: 2017-09-22 14:09:21
Local clock offset: 19.243 ms
Remote clock offset: -43.255 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 465.203 ms
Loss rate: 50.32%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 466.258 ms
Loss rate: 30.92%
-- Flow 2:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 462.823 ms
Loss rate: 57.18%
-- Flow 3:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 441.039 ms
Loss rate: 51.72%
```

Run 3: Report of Verus — Data Link
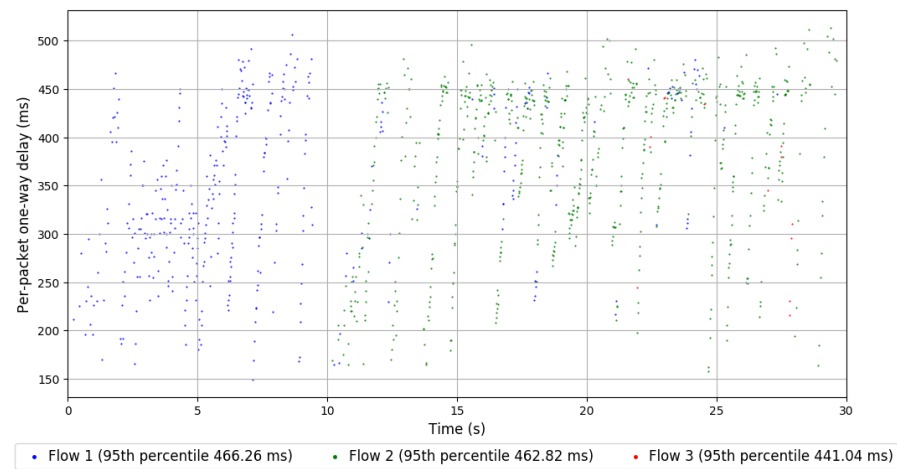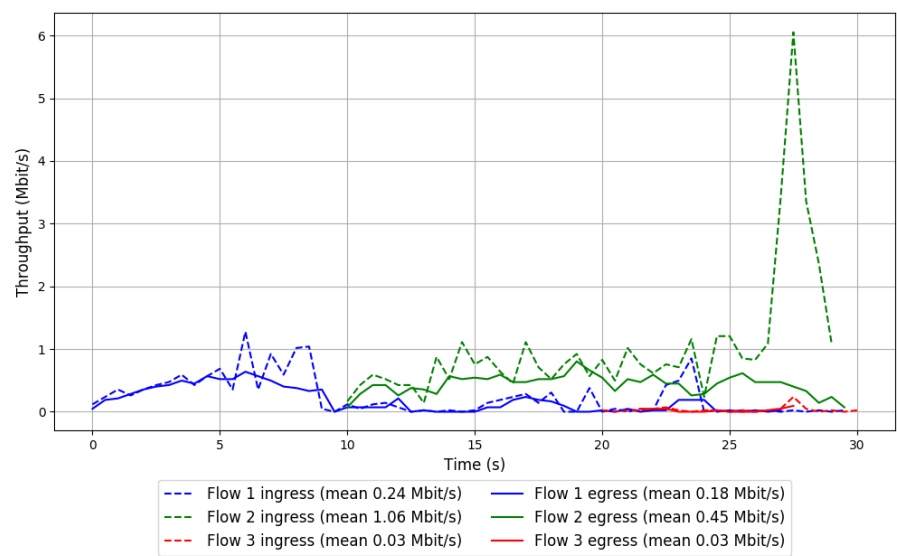
```
Run 1: Statistics of Indigo

Start at: 2017-09-22 13:46:56
End at: 2017-09-22 13:47:26
Local clock offset: -2.493 ms
Remote clock offset: -39.054 ms

# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 397.261 ms
Loss rate: 14.89%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 398.476 ms
Loss rate: 14.14%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 391.415 ms
Loss rate: 12.63%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 387.370 ms
Loss rate: 19.57%
```
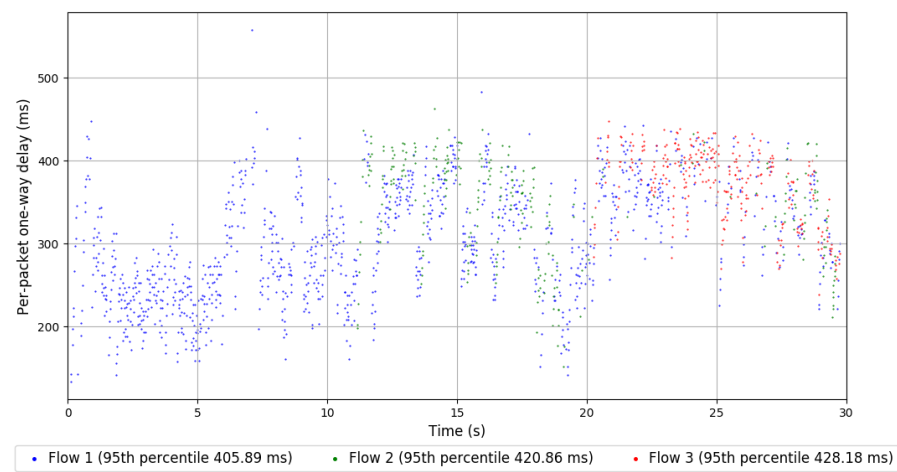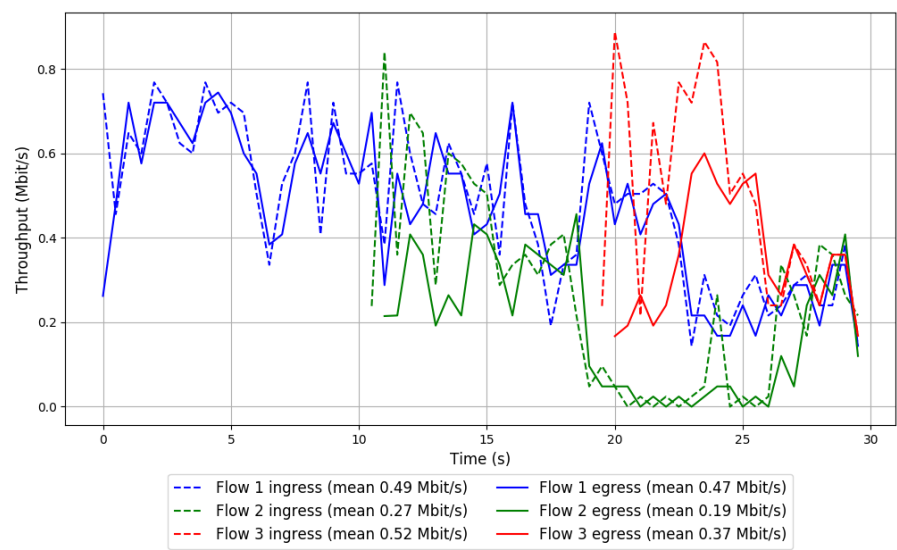
Run 1: Report of Indigo — Data Link
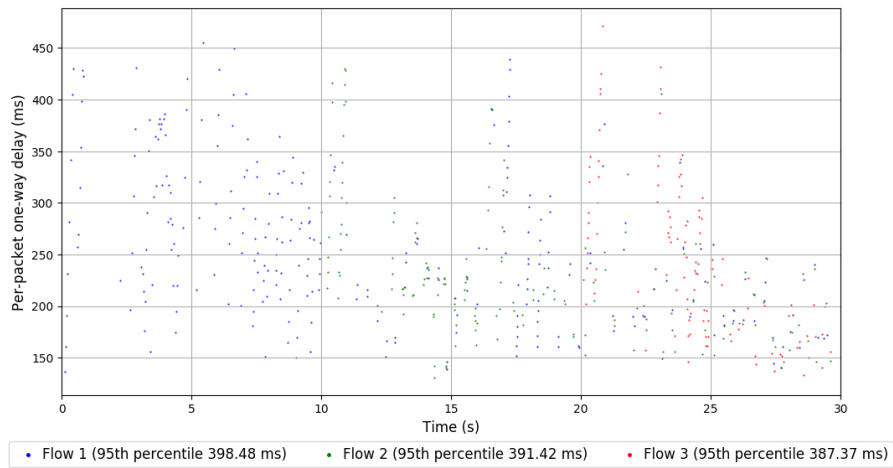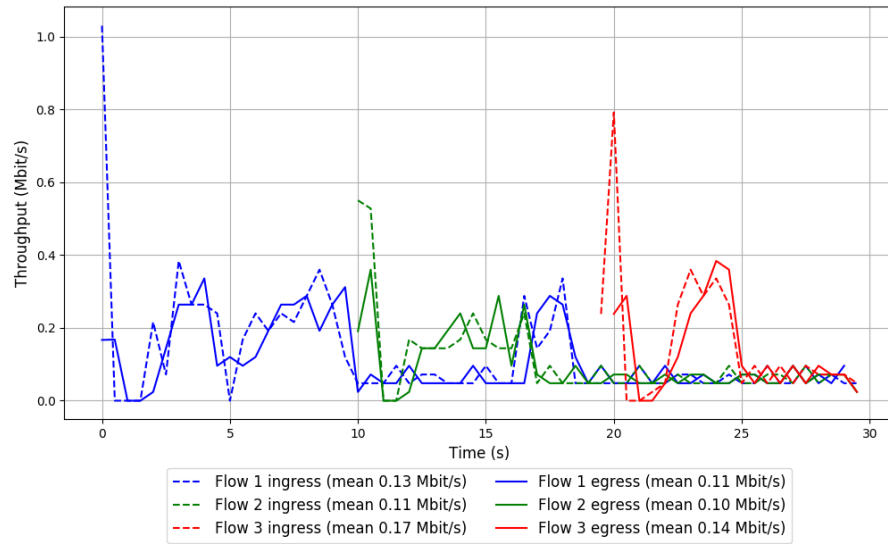
```
Run 2: Statistics of Indigo

Start at: 2017-09-22 14:06:05
End at: 2017-09-22 14:06:35
Local clock offset: -1.249 ms
Remote clock offset: -41.161 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 417.956 ms
Loss rate: 15.32%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 405.890 ms
Loss rate: 4.30%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 420.855 ms
Loss rate: 30.83%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 428.175 ms
Loss rate: 31.15%
```

Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 0.49 Mbit/s)   Flow 1 egress (mean 0.47 Mbit/s)
Flow 2 ingress (mean 0.27 Mbit/s)   Flow 2 egress (mean 0.19 Mbit/s)
Flow 3 ingress (mean 0.52 Mbit/s)   Flow 3 egress (mean 0.37 Mbit/s)

Flow 1 (95th percentile 405.89 ms)   Flow 2 (95th percentile 420.86 ms)   Flow 3 (95th percentile 428.18 ms)
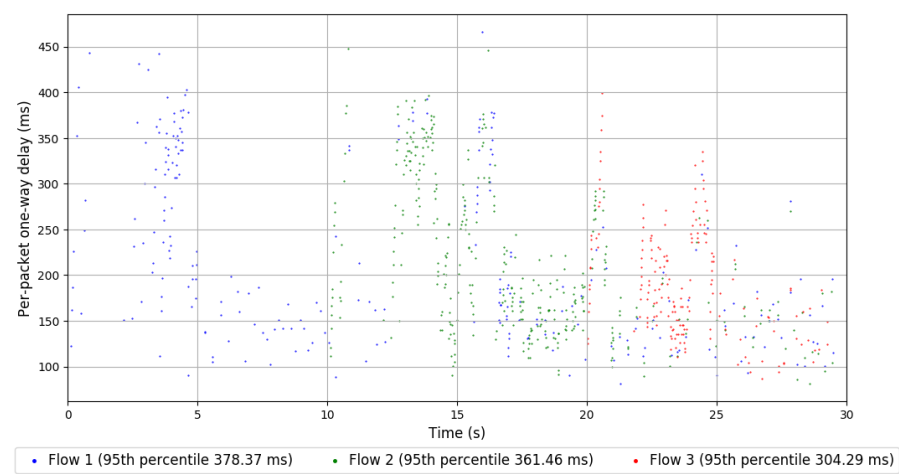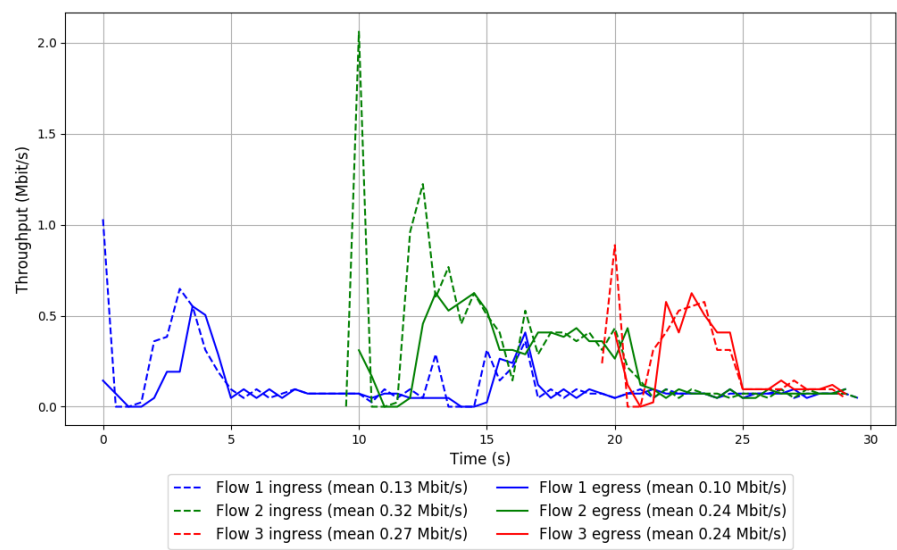
```
Run 3: Statistics of Indigo

Start at: 2017-09-22 14:24:21
End at: 2017-09-22 14:24:51
Local clock offset: -0.93 ms
Remote clock offset: -1.423 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 368.589 ms
Loss rate: 22.84%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 378.371 ms
Loss rate: 23.45%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 361.460 ms
Loss rate: 26.79%
-- Flow 3:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 304.286 ms
Loss rate: 12.02%
```

Run 3: Report of Indigo — Data Link

- Flow 1 ingress (mean 0.13 Mbit/s)
- Flow 1 egress (mean 0.10 Mbit/s)
- Flow 2 ingress (mean 0.32 Mbit/s)
- Flow 2 egress (mean 0.24 Mbit/s)
- Flow 3 ingress (mean 0.27 Mbit/s)
- Flow 3 egress (mean 0.24 Mbit/s)

- Flow 1 (95th percentile 378.37 ms)
- Flow 2 (95th percentile 361.46 ms)
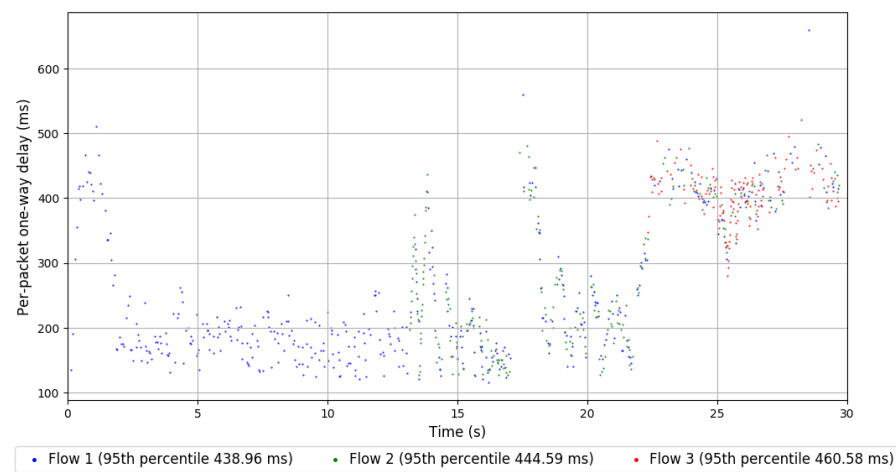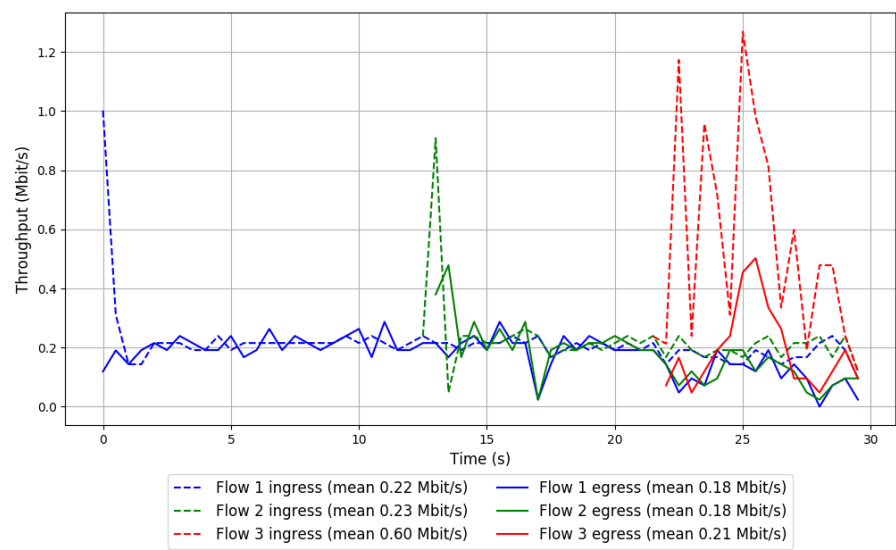- Flow 3 (95th percentile 304.29 ms)

```
Run 1: Statistics of Indigo-cellular

Start at: 2017-09-22 13:39:41
End at: 2017-09-22 13:40:11
Local clock offset: -1.426 ms
Remote clock offset: -36.436 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 445.972 ms
Loss rate: 34.90%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 438.963 ms
Loss rate: 17.34%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 444.587 ms
Loss rate: 24.70%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 460.583 ms
Loss rate: 67.52%
```

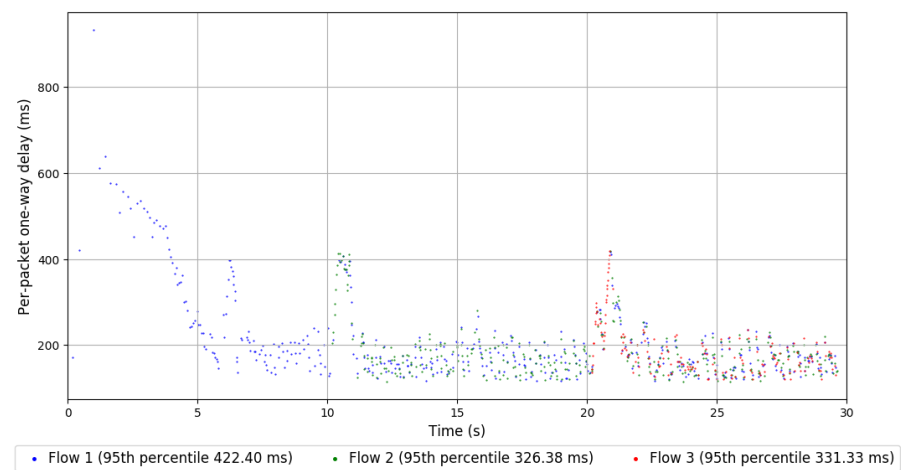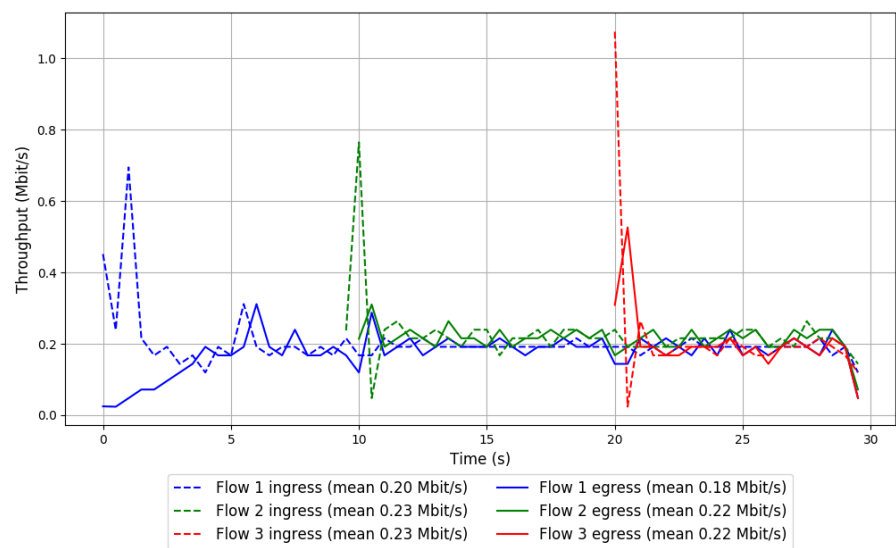Run 1: Report of Indigo-cellular — Data Link

```
Run 2: Statistics of Indigo-cellular

Start at: 2017-09-22 13:59:11
End at: 2017-09-22 13:59:41
Local clock offset: -1.334 ms
Remote clock offset: -36.959 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 384.882 ms
Loss rate: 10.36%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 422.398 ms
Loss rate: 13.58%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 326.381 ms
Loss rate: 6.99%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 331.326 ms
Loss rate: 8.61%
```

Run 2: Report of Indigo-cellular — Data Link

Flow 1 ingress (mean 0.20 Mbit/s)   Flow 1 egress (mean 0.18 Mbit/s)
Flow 2 ingress (mean 0.23 Mbit/s)   Flow 2 egress (mean 0.22 Mbit/s)
Flow 3 ingress (mean 0.23 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 422.40 ms)   Flow 2 (95th percentile 326.38 ms)   Flow 3 (95th percentile 331.33 ms)

```
Run 3: Statistics of Indigo-cellular

Start at: 2017-09-22 14:17:57
End at: 2017-09-22 14:18:27
Local clock offset: 17.635 ms
Remote clock offset: -8.482 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 413.061 ms
Loss rate: 13.11%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 398.118 ms
Loss rate: 9.59%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 425.498 ms
Loss rate: 11.56%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 429.515 ms
Loss rate: 29.03%
```

Run 3: Report of Indigo-cellular — Data Link
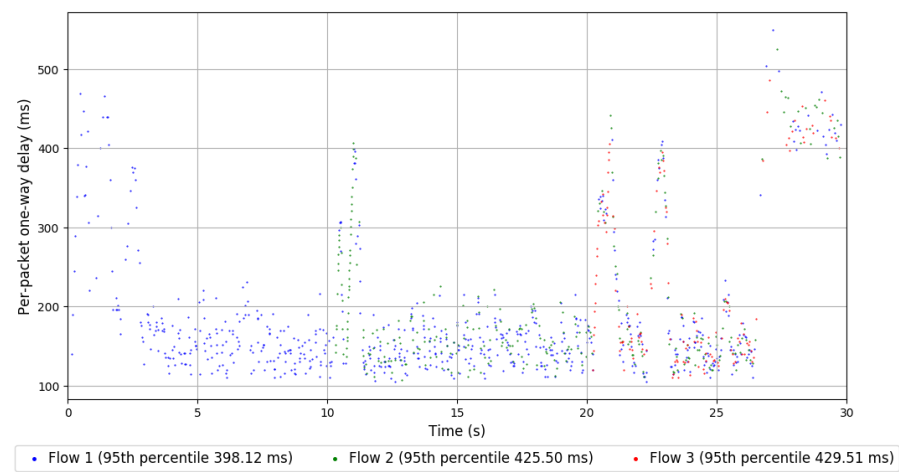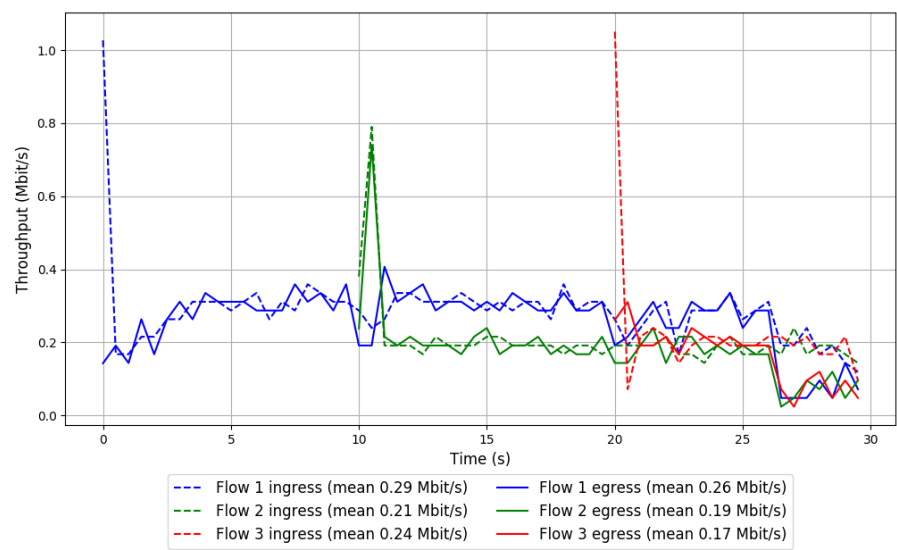
```
Run 1: Statistics of KohoCC

Start at: 2017-09-22 13:43:55
End at: 2017-09-22 13:44:25
Local clock offset: -1.618 ms
Remote clock offset: -42.137 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 458.074 ms
Loss rate: 48.87%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 453.502 ms
Loss rate: 22.24%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 456.449 ms
Loss rate: 35.60%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 464.200 ms
Loss rate: 79.14%
```

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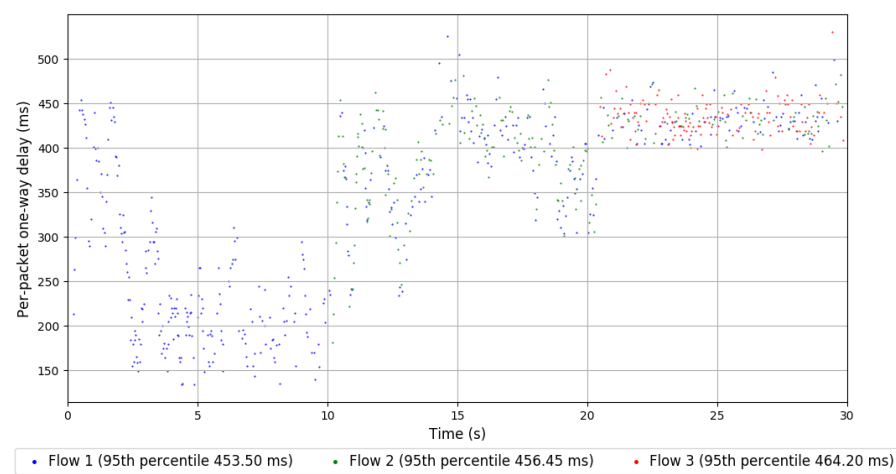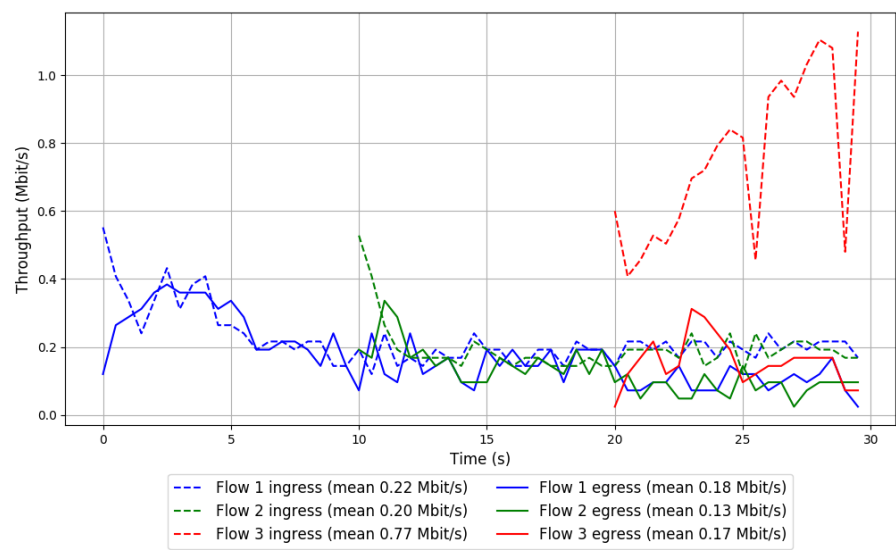
```
Run 2: Statistics of KohoCC

Start at: 2017-09-22 14:03:25
End at: 2017-09-22 14:03:55
Local clock offset: 17.948 ms
Remote clock offset: -31.014 ms


# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 379.004 ms
Loss rate: 3.71%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 388.010 ms
Loss rate: 3.51%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 359.771 ms
Loss rate: 1.84%
-- Flow 3:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 382.880 ms
Loss rate: 8.27%
```

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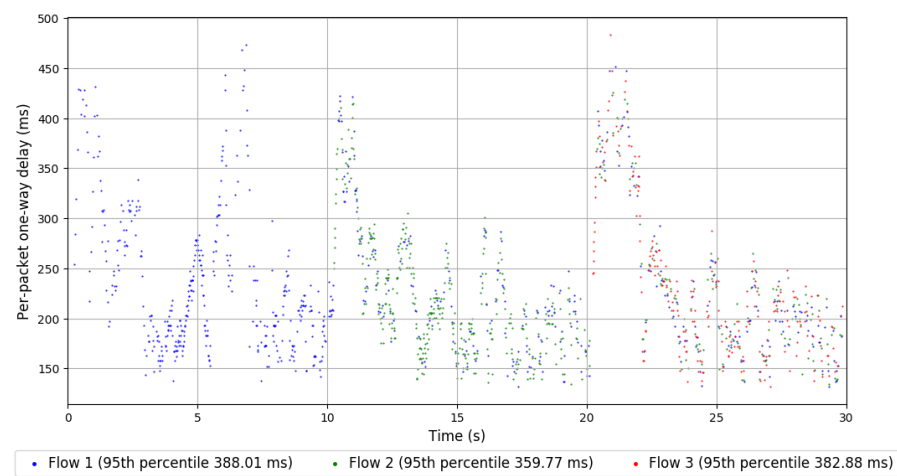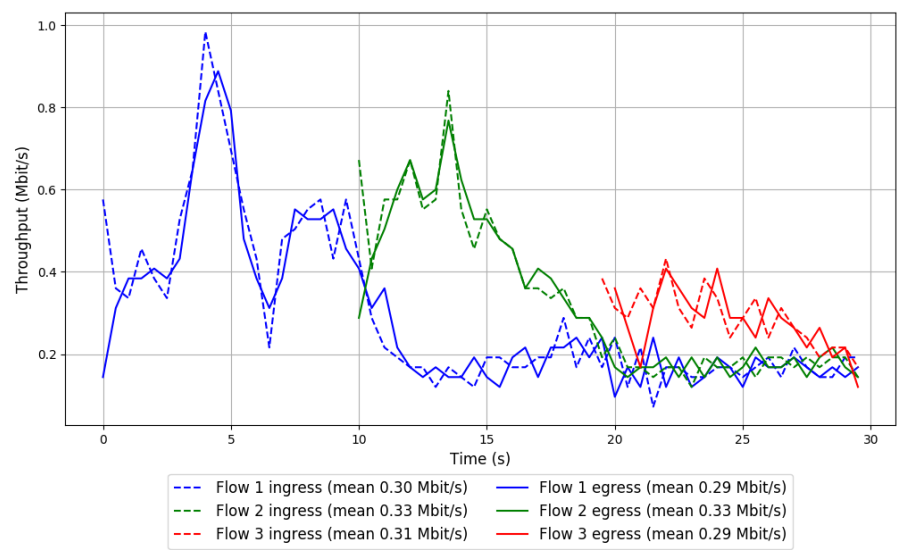
```
Run 3: Statistics of KohoCC

Start at: 2017-09-22 14:21:53
End at: 2017-09-22 14:22:23
Local clock offset: -1.123 ms
Remote clock offset: -23.305 ms

# Below is generated by plot.py at 2017-09-22 15:20:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 417.947 ms
Loss rate: 11.60%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 415.171 ms
Loss rate: 8.53%
-- Flow 2:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 407.851 ms
Loss rate: 9.88%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 437.587 ms
Loss rate: 24.77%
```

Run 3: Report of KohoCC — Data Link

- Flow 1 ingress (mean 0.26 Mbit/s)
- Flow 1 egress (mean 0.24 Mbit/s)
- Flow 2 ingress (mean 0.29 Mbit/s)
- Flow 2 egress (mean 0.27 Mbit/s)
- Flow 3 ingress (mean 0.26 Mbit/s)
- Flow 3 egress (mean 0.20 Mbit/s)

- Flow 1 (95th percentile 415.17 ms)
- Flow 2 (95th percentile 407.85 ms)
- Flow 3 (95th percentile 437.59 ms)