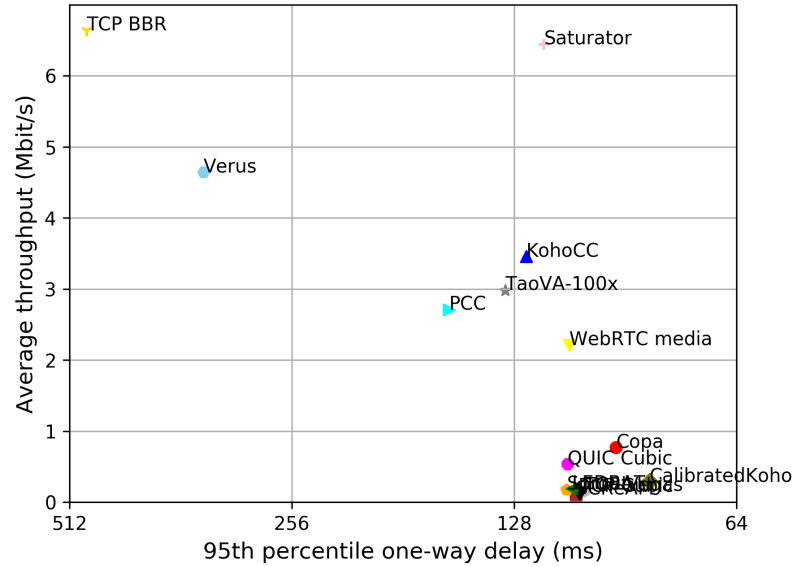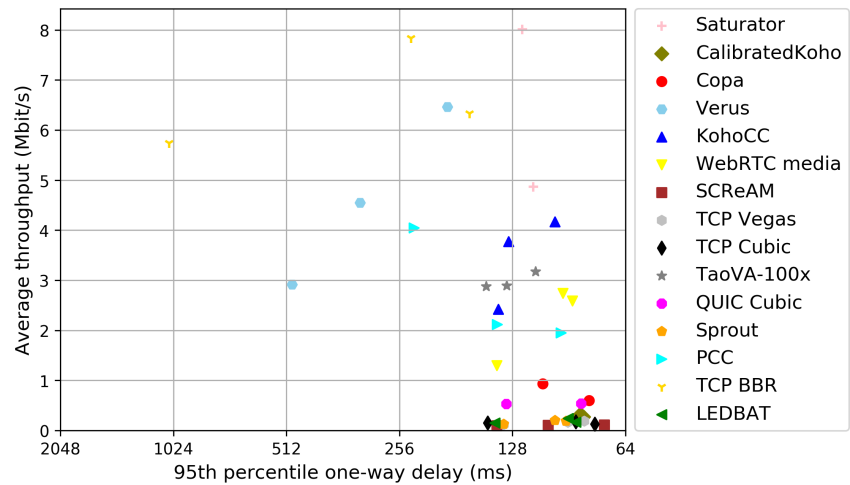**Pantheon Summary** (Generated at Thu, 13 Jul 2017 21:16:01 +0000 with pantheon version `d7b3554d9e52d3442ab19bc1e1c71f4629d4a0ac`)

Repeated the test of 15 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

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

NTP offset measured against ntp.nict.jp and has been applied to correct the timestamps in logs.

```
git branch: master @ d7b3554d9e52d3442ab19bc1e1c71f4629d4a0ac
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ dae96123232f1bcb37725348fa2378691ce26725
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-stimuli @ fc73a85ca16c34366d1888dc8a0d0d88d4ebf2a7
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 AWS Korea Ethernet to China ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)

test from AWS Korea Ethernet to China ppp0, 3 runs of 30s each per scheme

2

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	6.64	485.53	7.62
CalibratedKoho	3	0.29	83.97	2.33
Copa	3	0.77	93.17	1.77
TCP Cubic	3	0.15	104.38	8.36
KohoCC	3	3.46	123.27	2.37
LEDBAT	3	0.19	106.84	8.24
PCC	3	2.71	156.74	2.08
QUIC Cubic	3	0.54	108.47	7.03
Saturator	3	6.44	116.69	2.32
SCReAM	3	0.11	105.61	2.03
Sprout	3	0.18	108.70	2.54
TaoVA-100x	3	2.98	131.55	2.09
TCP Vegas	3	0.16	102.97	7.98
Verus	3	4.65	337.19	6.86
WebRTC media	3	2.21	107.81	7.67

```
Run 1: Statistics of TCP BBR

Start at: Thu, 13 Jul 2017 19:37:51 +0000
End at: Thu, 13 Jul 2017 19:38:21 +0000
Local clock offset: 0.3 ms
Remote clock offset: -0.469 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.74 Mbit/s
95th percentile per-packet one-way delay: 1051.393 ms
Loss rate: 7.23%
-- Flow 1:
Average throughput: 5.74 Mbit/s
95th percentile per-packet one-way delay: 1051.393 ms
Loss rate: 7.23%
```
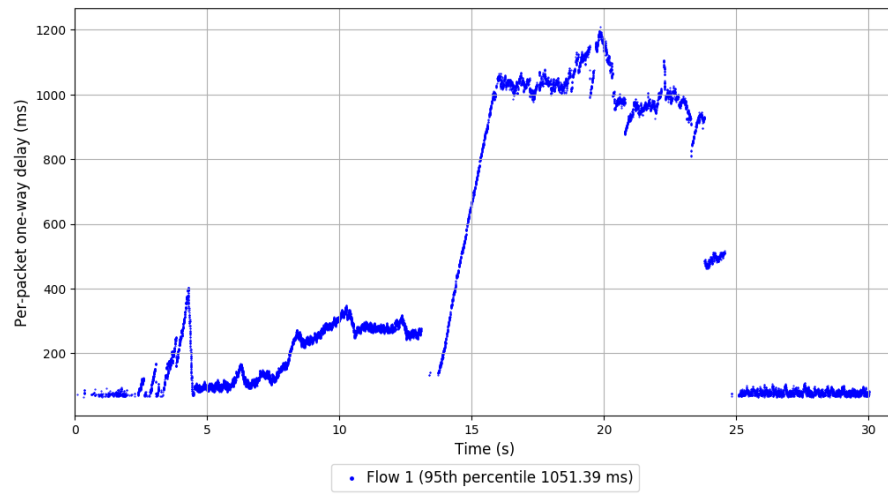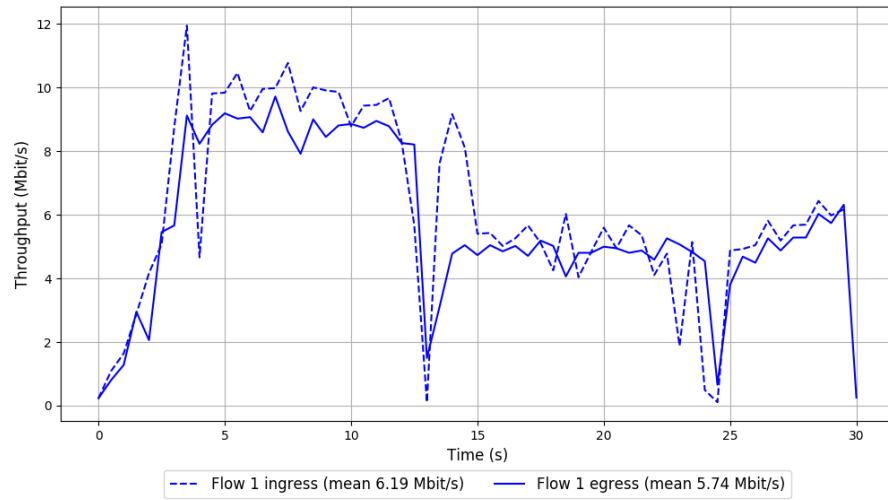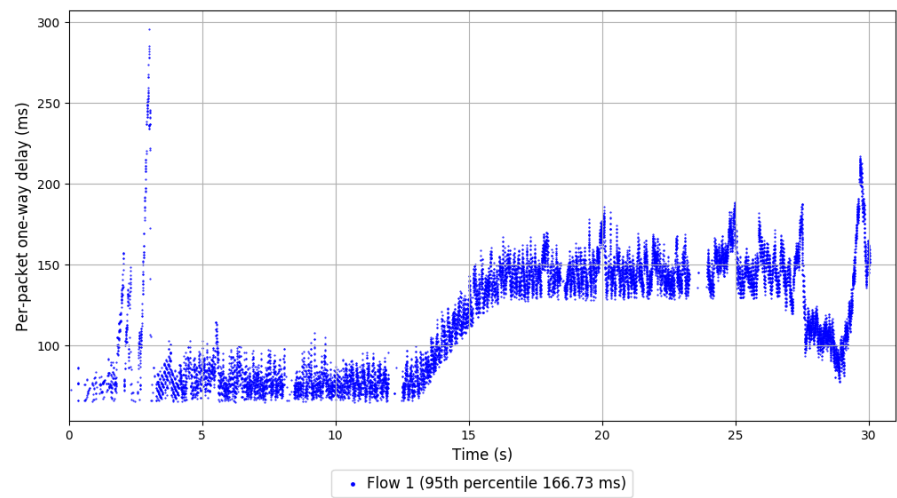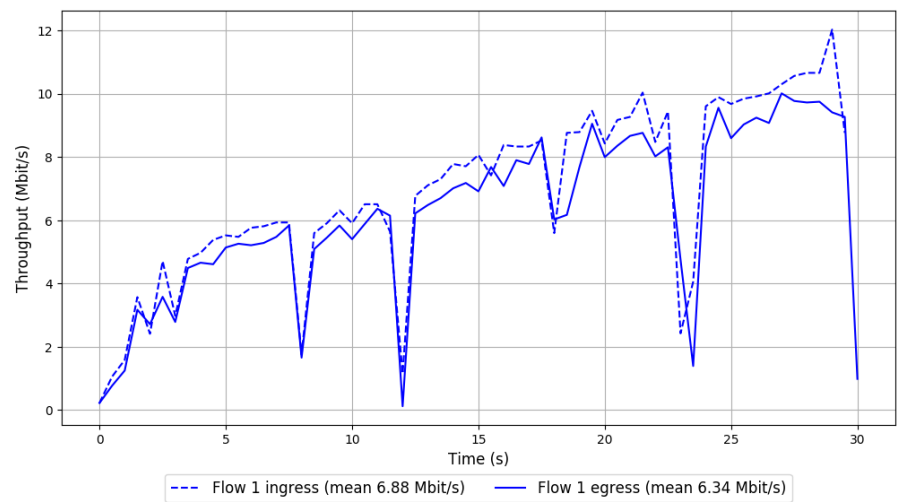
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 6.19 Mbit/s)   Flow 1 egress (mean 5.74 Mbit/s)

Flow 1 (95th percentile 1051.39 ms)

```
Run 2: Statistics of TCP BBR

Start at: Thu, 13 Jul 2017 19:55:17 +0000
End at: Thu, 13 Jul 2017 19:55:48 +0000
Local clock offset: -1.099 ms
Remote clock offset: -0.44 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:31 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.34 Mbit/s
95th percentile per-packet one-way delay: 166.729 ms
Loss rate: 8.00%
-- Flow 1:
Average throughput: 6.34 Mbit/s
95th percentile per-packet one-way delay: 166.729 ms
Loss rate: 8.00%
```

Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: Thu, 13 Jul 2017 20:12:44 +0000
End at: Thu, 13 Jul 2017 20:13:14 +0000
Local clock offset: -1.368 ms
Remote clock offset: -0.397 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 238.463 ms
Loss rate: 7.62%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 238.463 ms
Loss rate: 7.62%
```
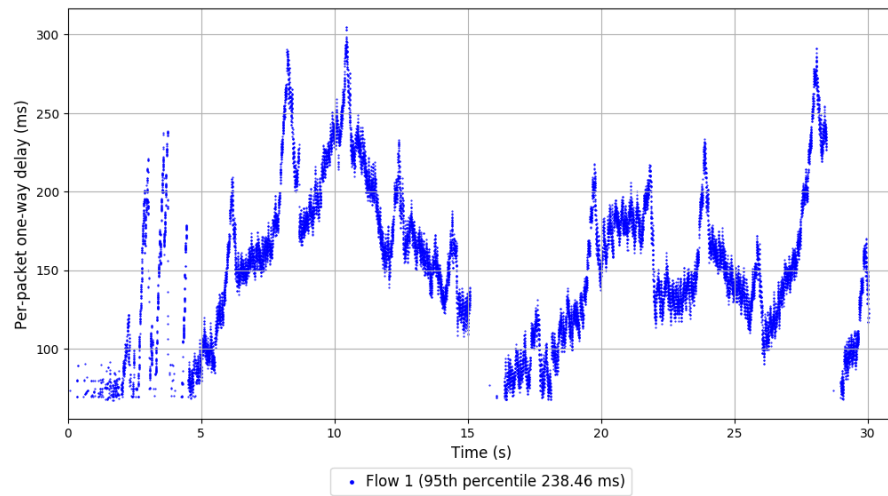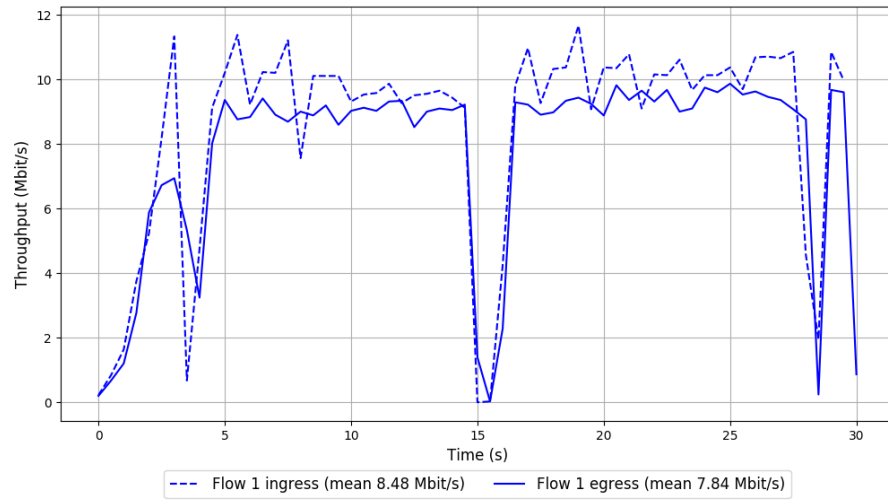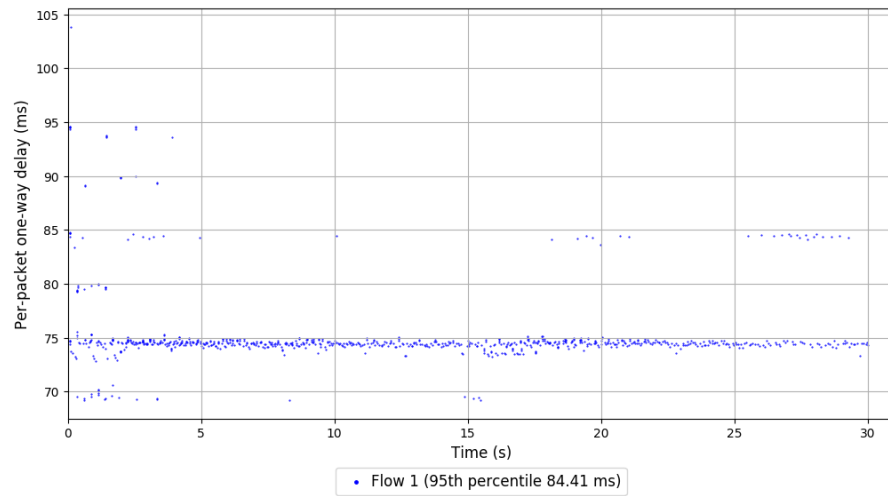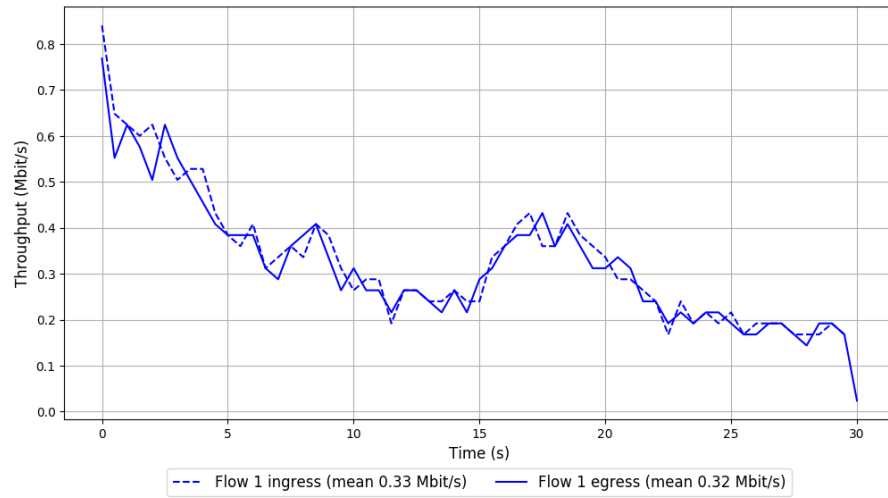
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 8.48 Mbit/s) --- Flow 1 egress (mean 7.84 Mbit/s)

• Flow 1 (95th percentile 238.46 ms)

```
Run 1: Statistics of CalibratedKoho

Start at: Thu, 13 Jul 2017 19:35:32 +0000
End at: Thu, 13 Jul 2017 19:36:02 +0000
Local clock offset: -0.919 ms
Remote clock offset: -0.45 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 84.408 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 84.408 ms
Loss rate: 2.41%
```
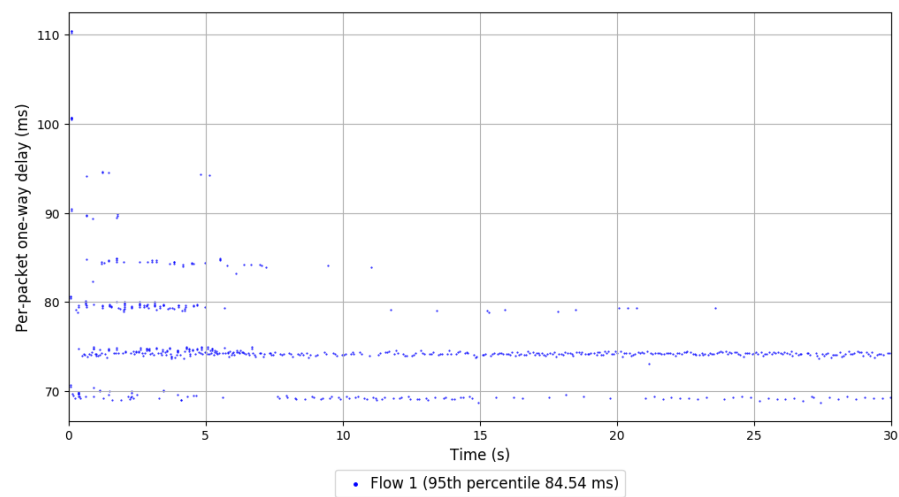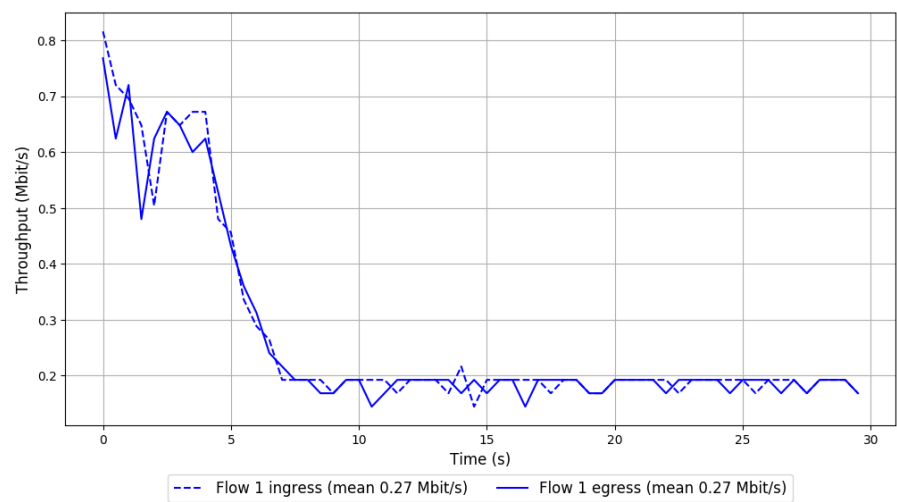
Run 1: Report of CalibratedKoho — Data Link

```
Run 2: Statistics of CalibratedKoho

Start at: Thu, 13 Jul 2017 19:52:59 +0000
End at: Thu, 13 Jul 2017 19:53:29 +0000
Local clock offset: -1.061 ms
Remote clock offset: -0.488 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 84.539 ms
Loss rate: 2.04%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 84.539 ms
Loss rate: 2.04%
```
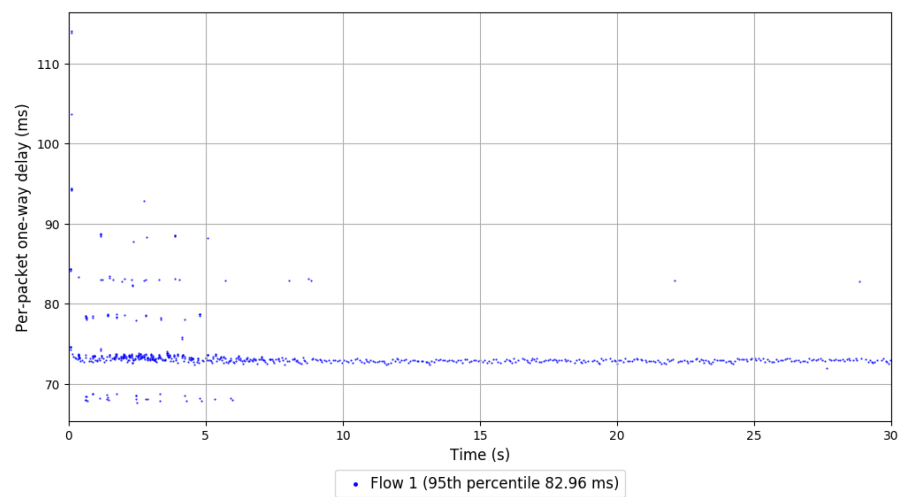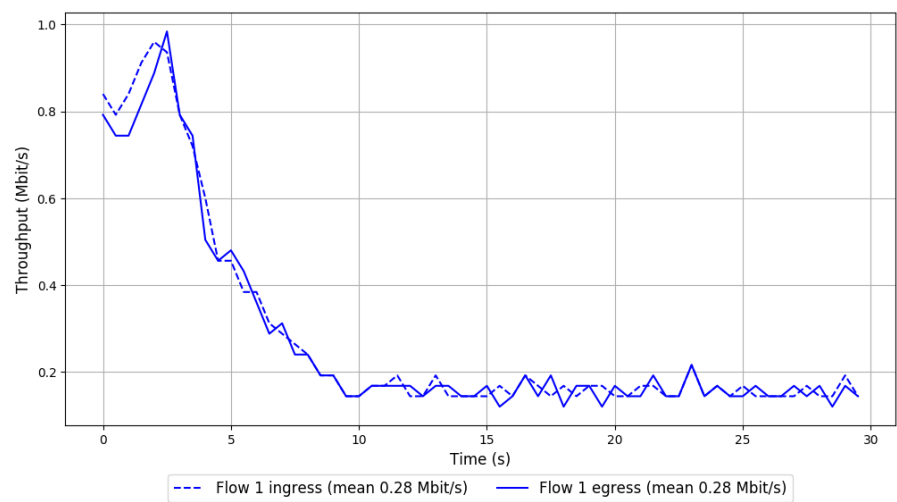
Run 2: Report of CalibratedKoho — Data Link

```
Run 3: Statistics of CalibratedKoho

Start at: Thu, 13 Jul 2017 20:10:25 +0000
End at: Thu, 13 Jul 2017 20:10:55 +0000
Local clock offset: -1.249 ms
Remote clock offset: -0.528 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 82.962 ms
Loss rate: 2.54%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 82.962 ms
Loss rate: 2.54%
```

Run 3: Report of CalibratedKoho — Data Link

Flow 1 ingress (mean 0.28 Mbit/s)   Flow 1 egress (mean 0.28 Mbit/s)

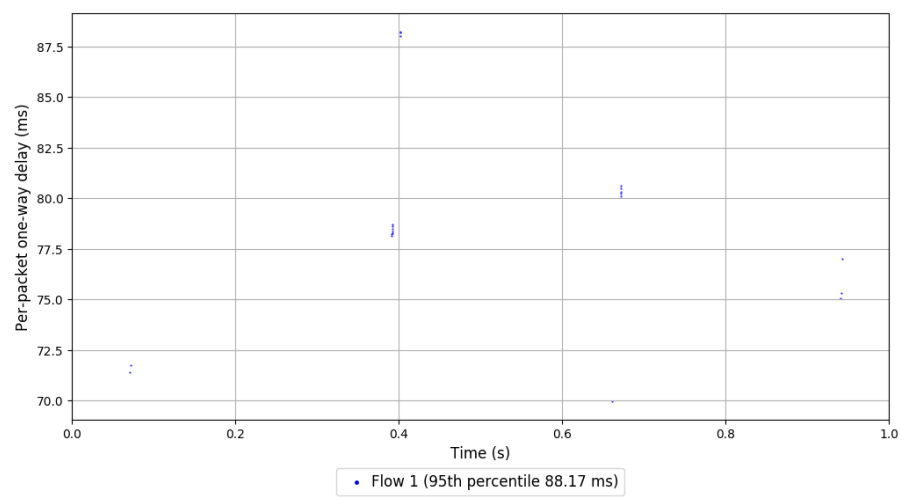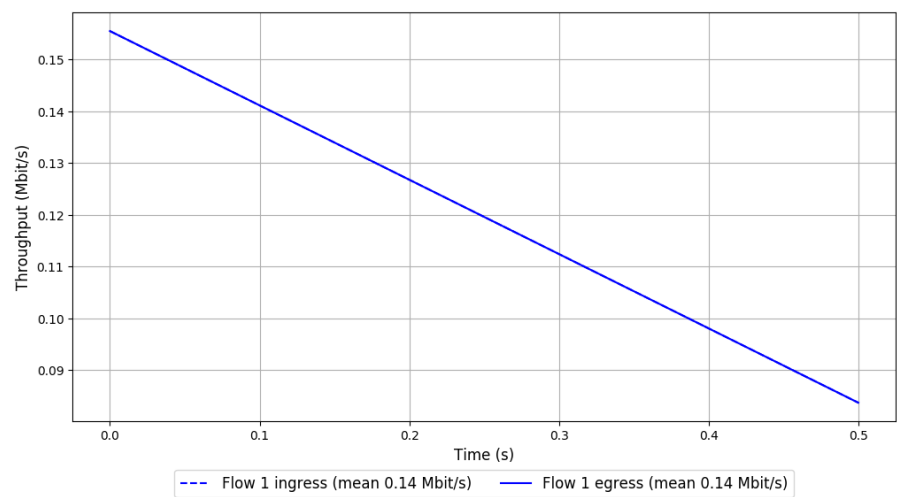Flow 1 (95th percentile 82.96 ms)

```
Run 1: Statistics of Copa

Start at: Thu, 13 Jul 2017 19:43:42 +0000
End at: Thu, 13 Jul 2017 19:44:12 +0000
Local clock offset: -1.062 ms
Remote clock offset: -0.404 ms
```

Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: Thu, 13 Jul 2017 20:01:09 +0000
End at: Thu, 13 Jul 2017 20:01:39 +0000
Local clock offset: -1.197 ms
Remote clock offset: -0.506 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 80.062 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 80.062 ms
Loss rate: 1.87%
```
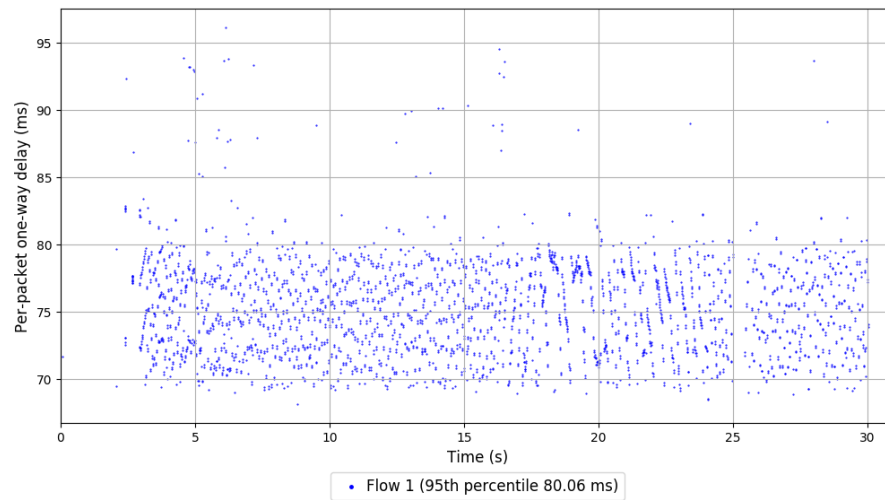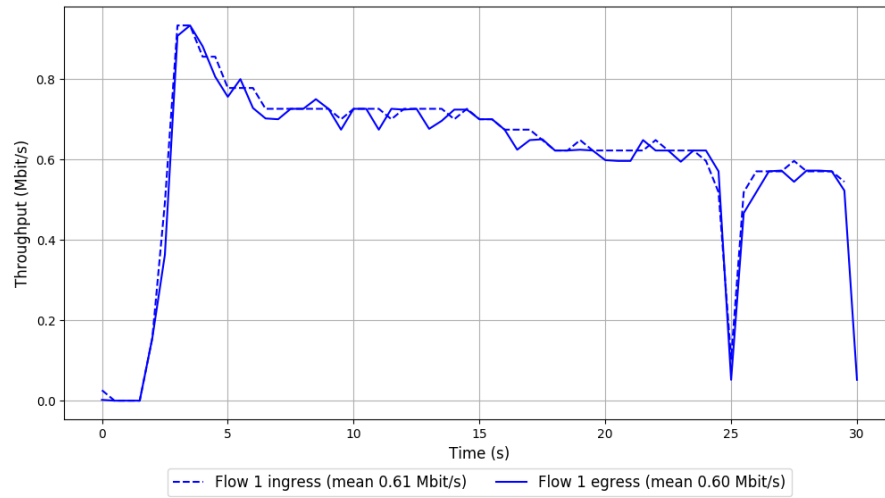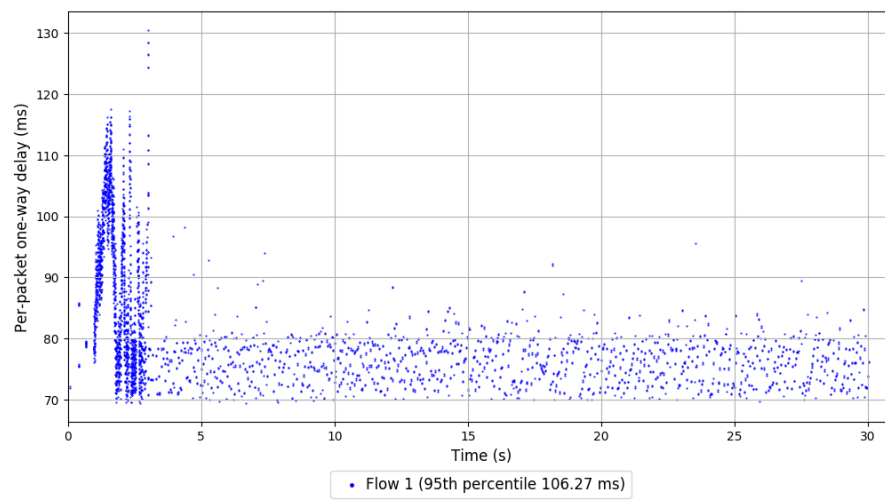
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.61 Mbit/s)   Flow 1 egress (mean 0.60 Mbit/s)

Flow 1 (95th percentile 80.06 ms)

19

```
Run 3: Statistics of Copa

Start at: Thu, 13 Jul 2017 20:18:36 +0000
End at: Thu, 13 Jul 2017 20:19:06 +0000
Local clock offset: -1.338 ms
Remote clock offset: -0.436 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:35 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 106.271 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 106.271 ms
Loss rate: 1.66%
```
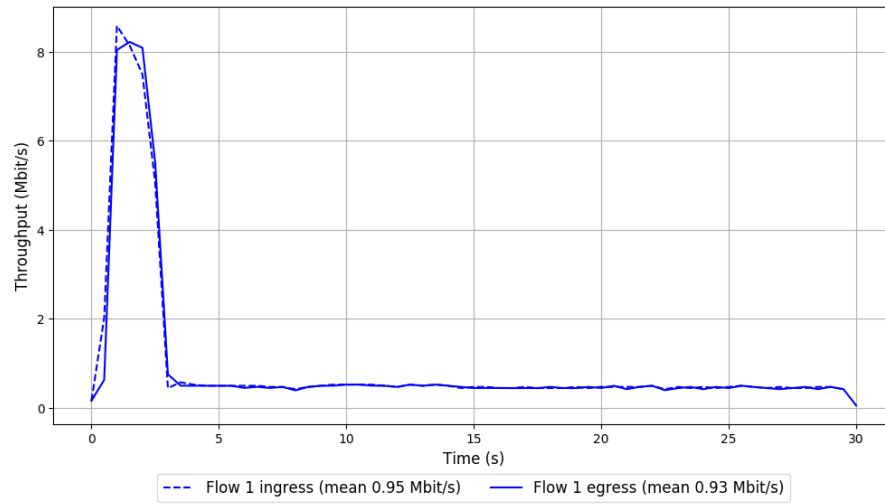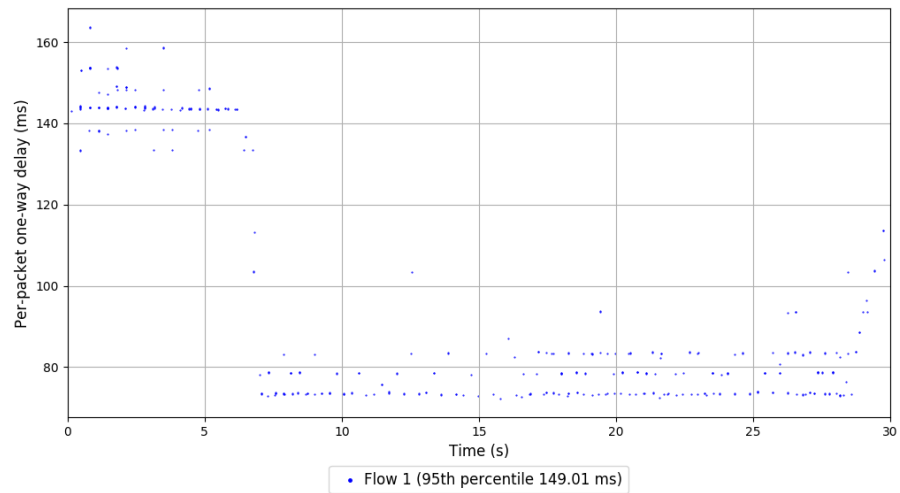
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 0.95 Mbit/s) Flow 1 egress (mean 0.93 Mbit/s)

Flow 1 (95th percentile 106.27 ms)

```
Run 1: Statistics of TCP Cubic

Start at: Thu, 13 Jul 2017 19:47:10 +0000
End at: Thu, 13 Jul 2017 19:47:40 +0000
Local clock offset: -0.929 ms
Remote clock offset: -0.374 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:35 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 149.010 ms
Loss rate: 7.99%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 149.010 ms
Loss rate: 7.99%
```
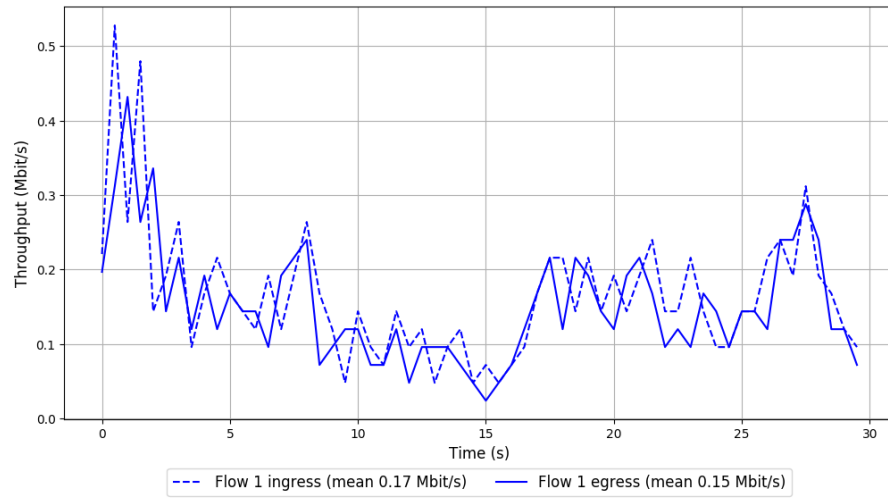
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: Thu, 13 Jul 2017 20:04:37 +0000
End at: Thu, 13 Jul 2017 20:05:07 +0000
Local clock offset: -1.188 ms
Remote clock offset: -0.614 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:36 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 86.851 ms
Loss rate: 8.54%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 86.851 ms
Loss rate: 8.54%
```
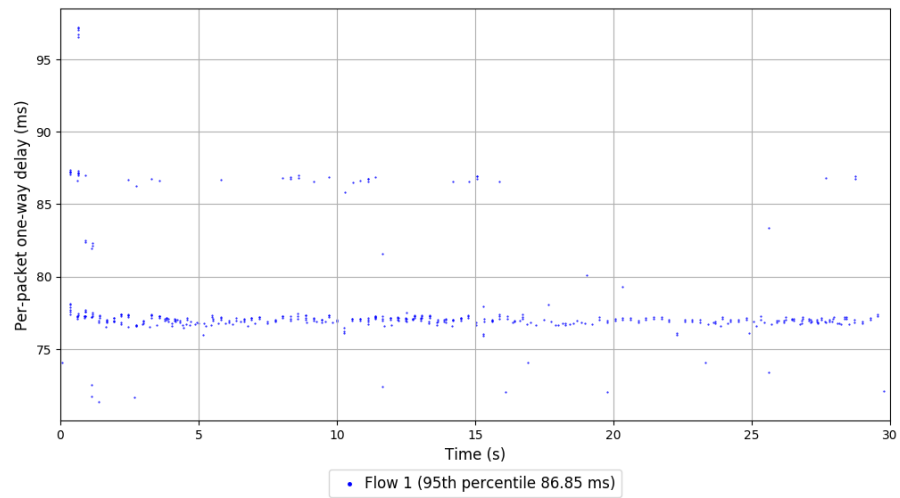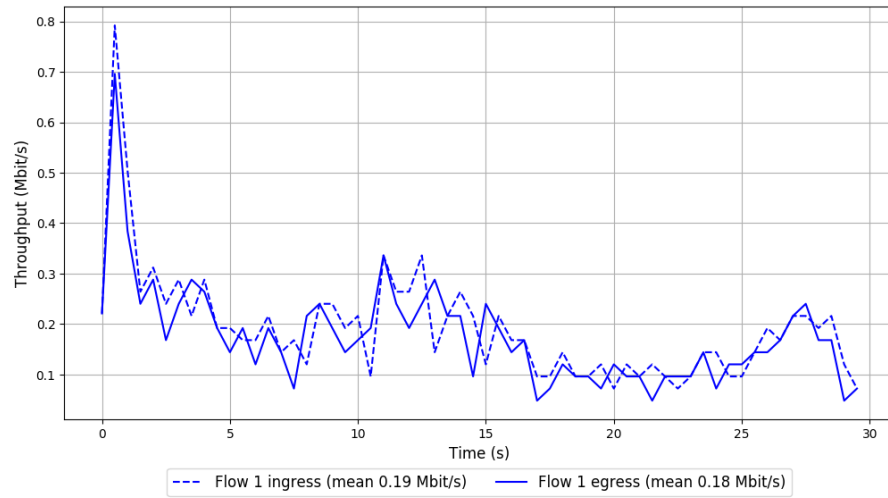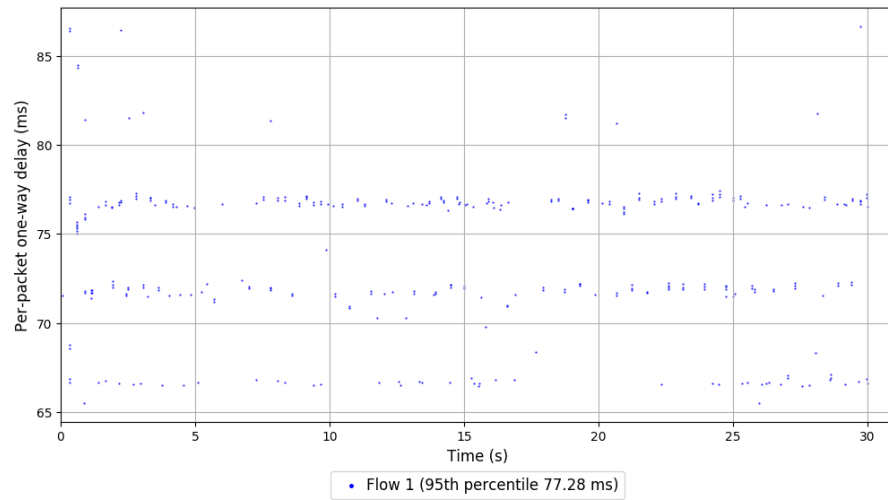
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.19 Mbit/s)   Flow 1 egress (mean 0.18 Mbit/s)

Flow 1 (95th percentile 86.85 ms)

```
Run 3: Statistics of TCP Cubic

Start at: Thu, 13 Jul 2017 20:22:04 +0000
End at: Thu, 13 Jul 2017 20:22:34 +0000
Local clock offset: 0.004 ms
Remote clock offset: -0.422 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:37 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 77.279 ms
Loss rate: 8.54%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 77.279 ms
Loss rate: 8.54%
```
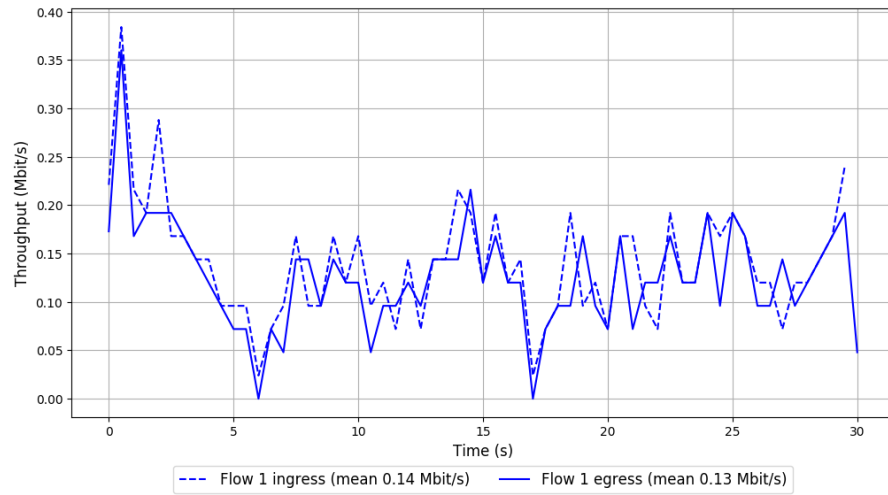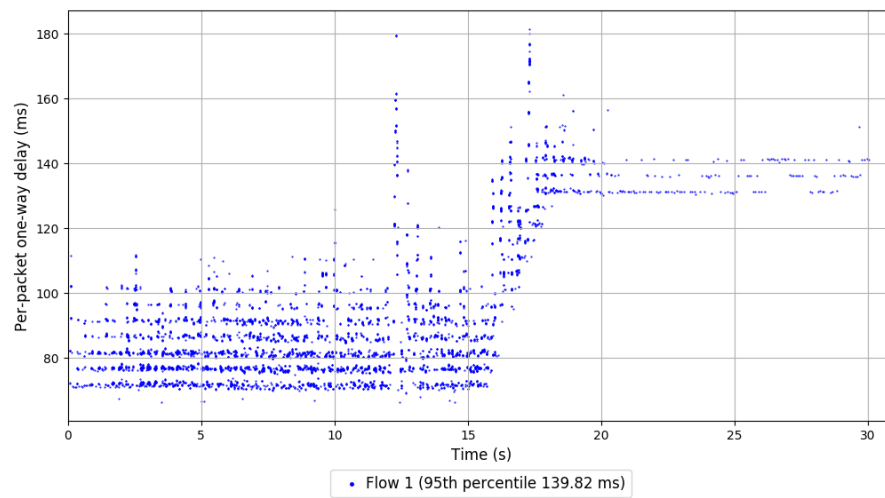
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.14 Mbit/s) --- Flow 1 egress (mean 0.13 Mbit/s)

Flow 1 (95th percentile 77.28 ms)

```
Run 1: Statistics of KohoCC

Start at: Thu, 13 Jul 2017 19:42:32 +0000
End at: Thu, 13 Jul 2017 19:43:02 +0000
Local clock offset: 0.479 ms
Remote clock offset: -0.411 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:37 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 139.818 ms
Loss rate: 2.54%
-- Flow 1:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 139.818 ms
Loss rate: 2.54%
```
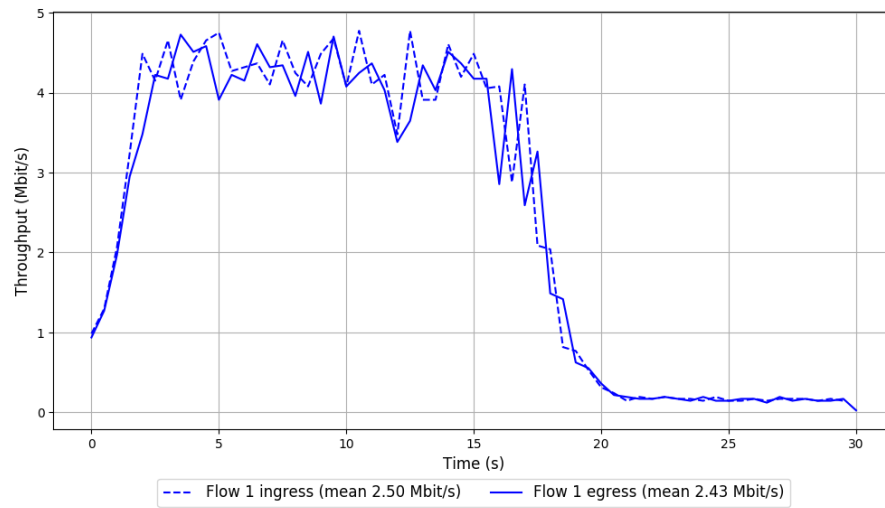
Run 1: Report of KohoCC — Data Link

```
Run 2: Statistics of KohoCC

Start at: Thu, 13 Jul 2017 19:59:58 +0000
End at: Thu, 13 Jul 2017 20:00:28 +0000
Local clock offset: -1.182 ms
Remote clock offset: -0.532 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:38 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 131.259 ms
Loss rate: 2.26%
-- Flow 1:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 131.259 ms
Loss rate: 2.26%
```
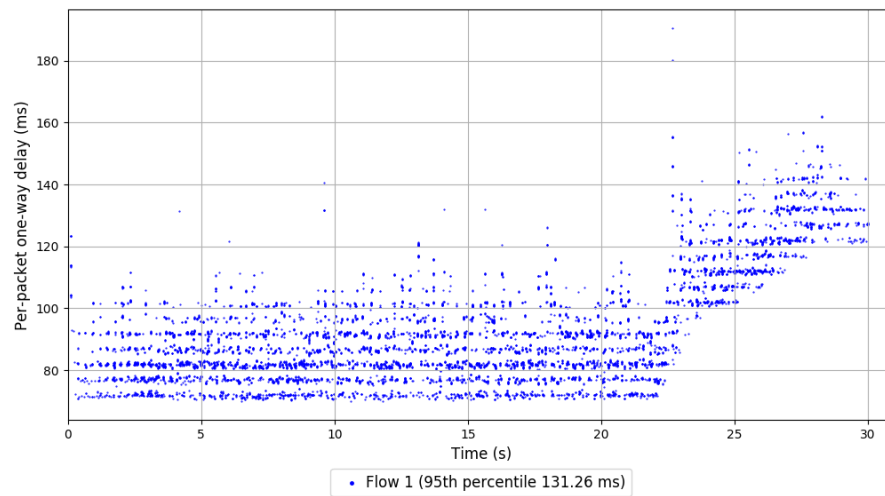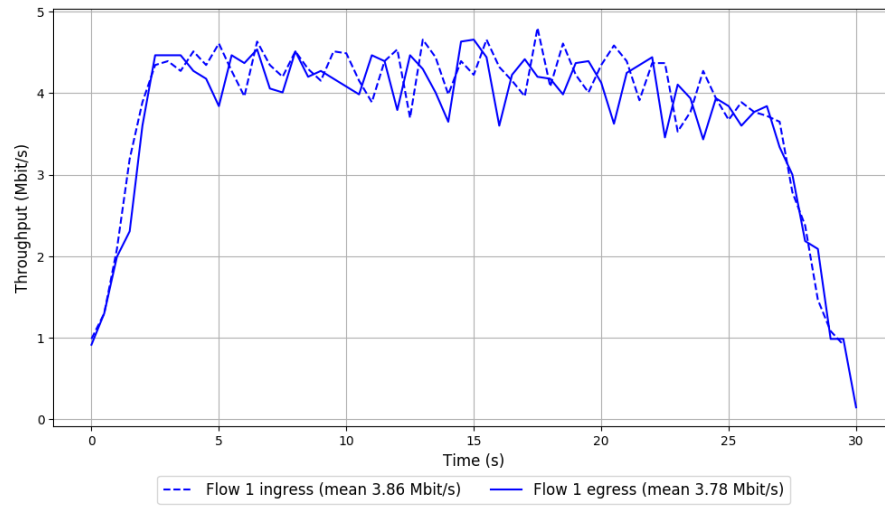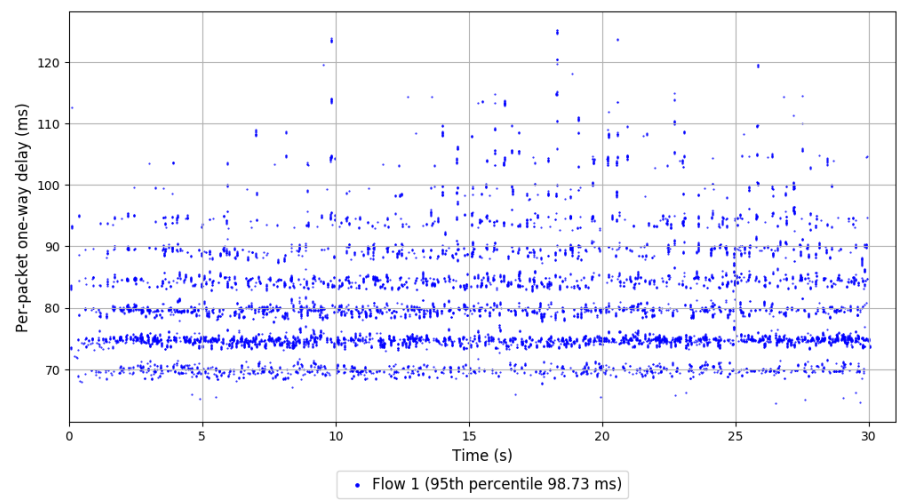
Run 2: Report of KohoCC — Data Link

Flow 1 ingress (mean 3.86 Mbit/s)   Flow 1 egress (mean 3.78 Mbit/s)

Flow 1 (95th percentile 131.26 ms)

```
Run 3: Statistics of KohoCC

Start at: Thu, 13 Jul 2017 20:17:25 +0000
End at: Thu, 13 Jul 2017 20:17:55 +0000
Local clock offset: 0.034 ms
Remote clock offset: -0.422 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:40 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 98.727 ms
Loss rate: 2.32%
-- Flow 1:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 98.727 ms
Loss rate: 2.32%
```
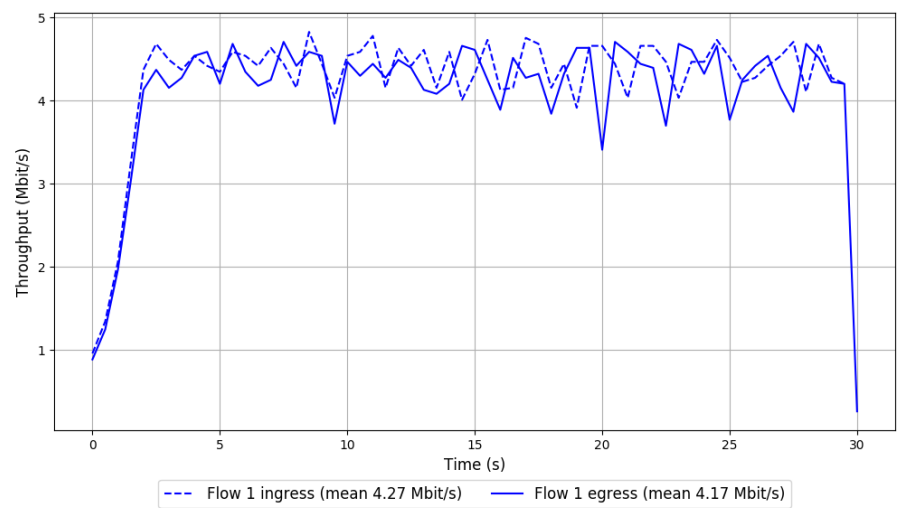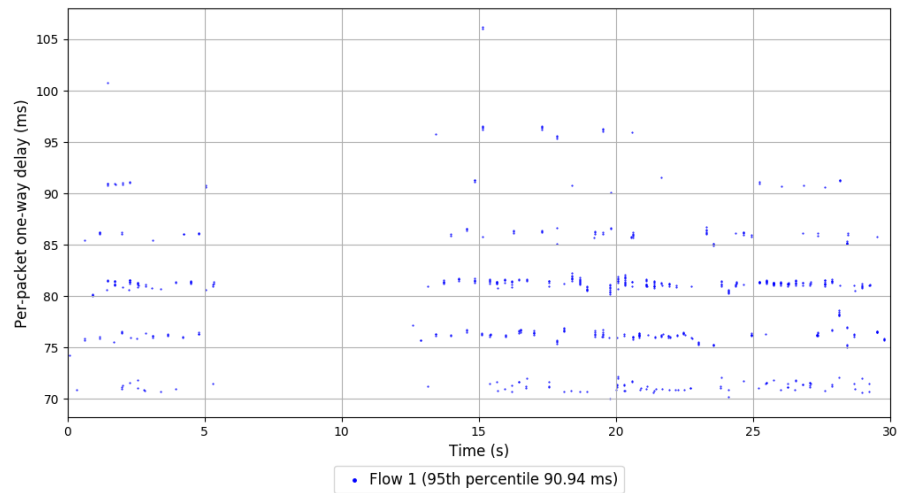
Run 3: Report of KohoCC — Data Link

Flow 1 ingress (mean 4.27 Mbit/s) — — —   Flow 1 egress (mean 4.17 Mbit/s) ———

· Flow 1 (95th percentile 98.73 ms)

```
Run 1: Statistics of LEDBAT

Start at: Thu, 13 Jul 2017 19:30:51 +0000
End at: Thu, 13 Jul 2017 19:31:21 +0000
Local clock offset: -0.982 ms
Remote clock offset: -0.47 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:40 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 90.935 ms
Loss rate: 5.86%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 90.935 ms
Loss rate: 5.86%
```
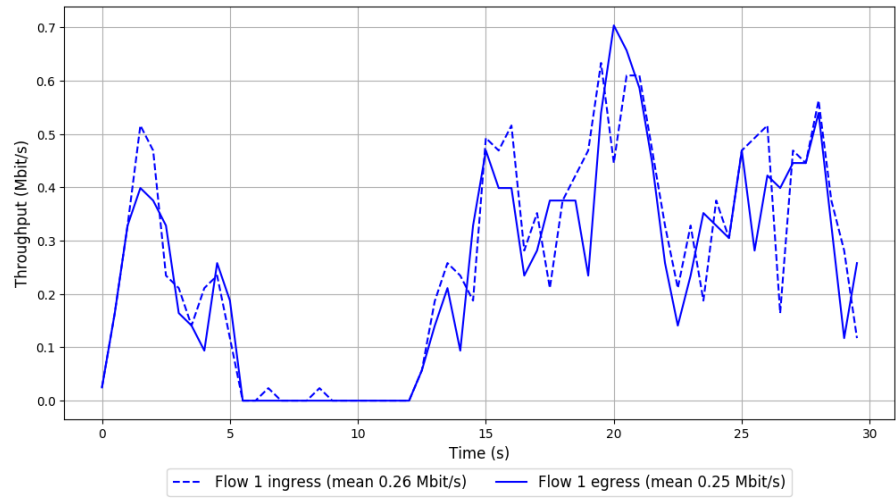
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: Thu, 13 Jul 2017 19:48:19 +0000
End at: Thu, 13 Jul 2017 19:48:49 +0000
Local clock offset: 0.423 ms
Remote clock offset: -0.442 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:40 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 142.731 ms
Loss rate: 8.59%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 142.731 ms
Loss rate: 8.59%
```
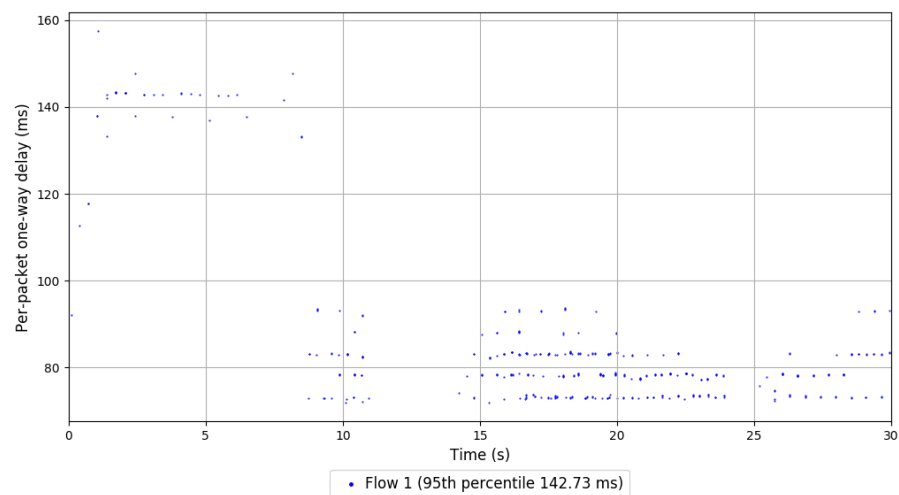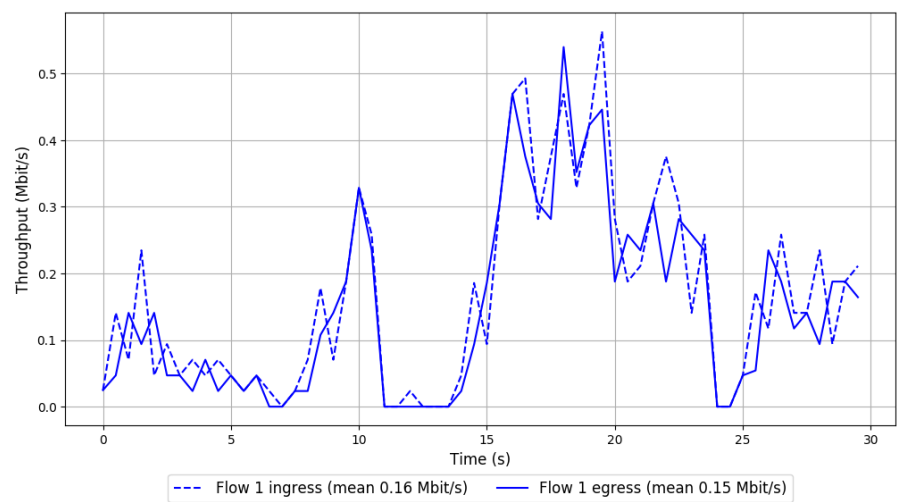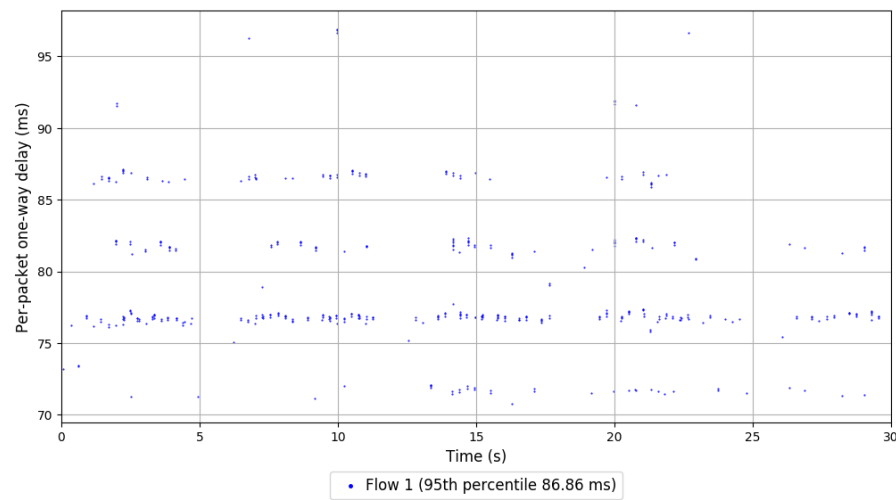
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.16 Mbit/s) --- Flow 1 egress (mean 0.15 Mbit/s)

Flow 1 (95th percentile 142.73 ms)

```
Run 3: Statistics of LEDBAT

Start at: Thu, 13 Jul 2017 20:05:46 +0000
End at: Thu, 13 Jul 2017 20:06:16 +0000
Local clock offset: -1.309 ms
Remote clock offset: -0.559 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 86.865 ms
Loss rate: 10.26%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 86.865 ms
Loss rate: 10.26%
```
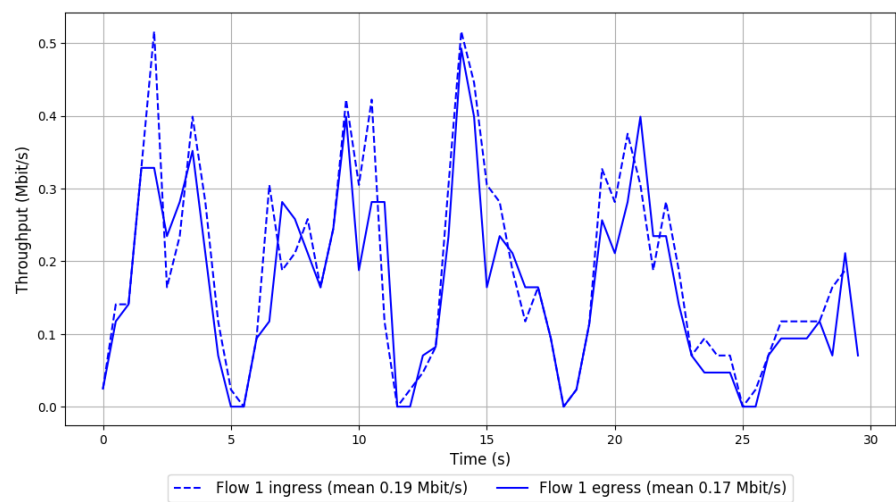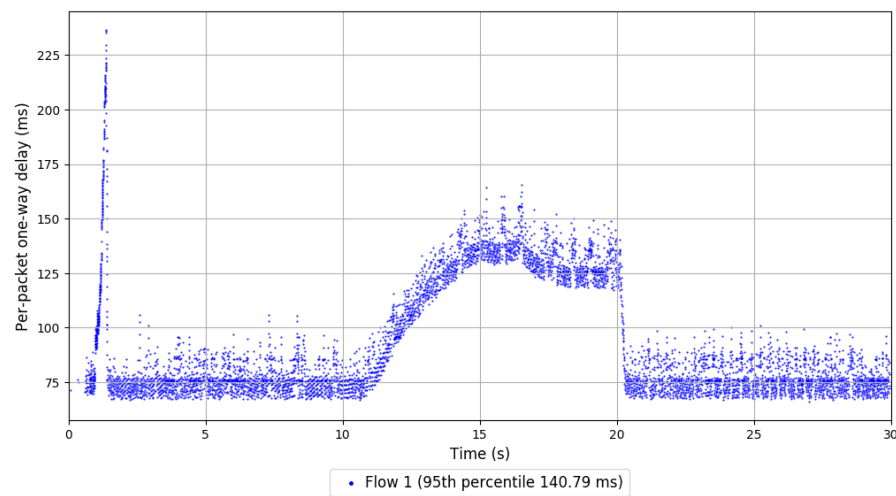
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.19 Mbit/s)   Flow 1 egress (mean 0.17 Mbit/s)

Flow 1 (95th percentile 86.86 ms)

```
Run 1: Statistics of PCC

Start at: Thu, 13 Jul 2017 19:39:02 +0000
End at: Thu, 13 Jul 2017 19:39:32 +0000
Local clock offset: 0.349 ms
Remote clock offset: -0.382 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:42 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 140.795 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 140.795 ms
Loss rate: 2.43%
```
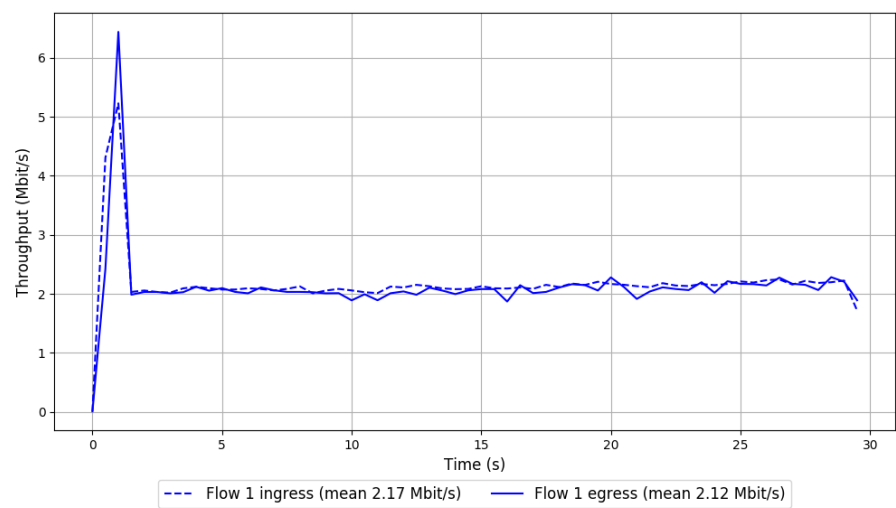
Run 1: Report of PCC — Data Link

```
Run 2: Statistics of PCC

Start at: Thu, 13 Jul 2017 19:56:28 +0000
End at: Thu, 13 Jul 2017 19:56:58 +0000
Local clock offset: 0.157 ms
Remote clock offset: -0.494 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:42 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 234.332 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 234.332 ms
Loss rate: 1.96%
```
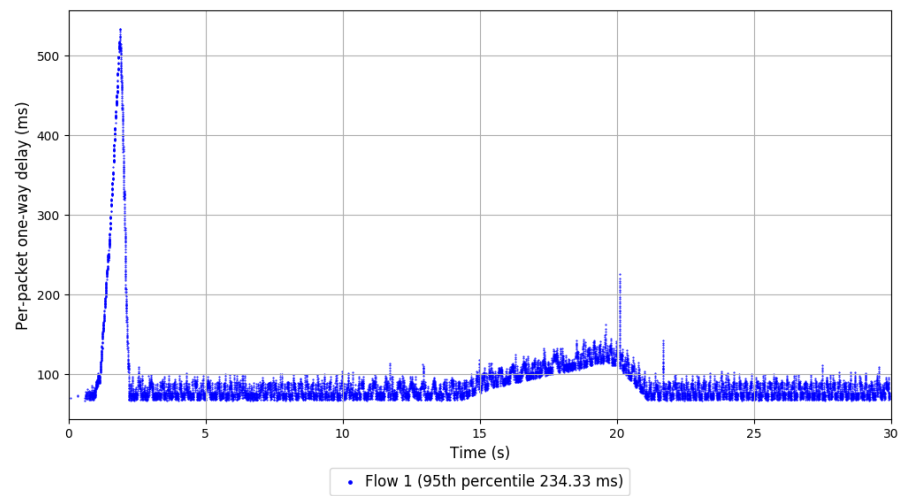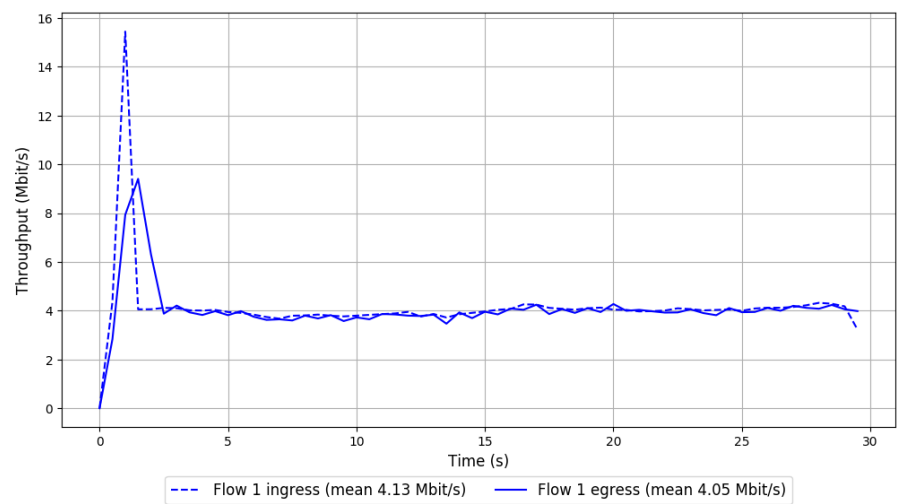
Run 2: Report of PCC — Data Link

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```
Run 3: Statistics of PCC

Start at: Thu, 13 Jul 2017 20:13:55 +0000
End at: Thu, 13 Jul 2017 20:14:25 +0000
Local clock offset: 0.142 ms
Remote clock offset: -0.468 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:43 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 95.093 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 95.093 ms
Loss rate: 1.84%
```
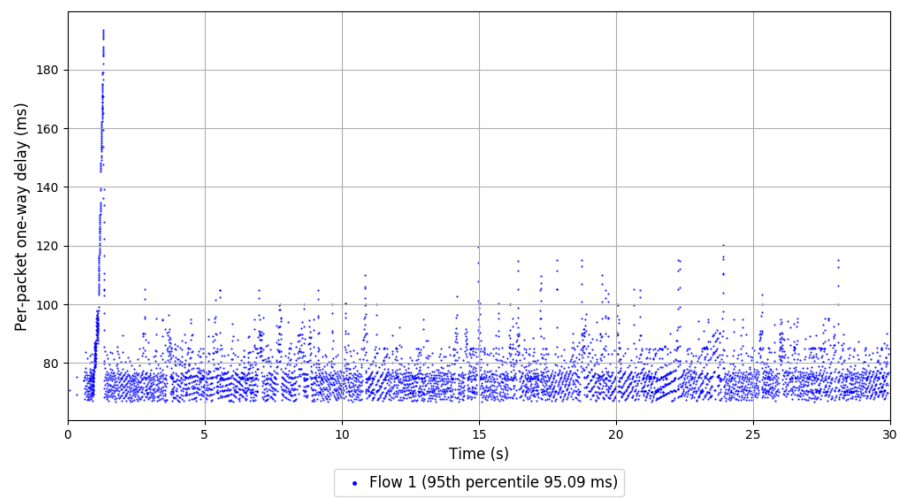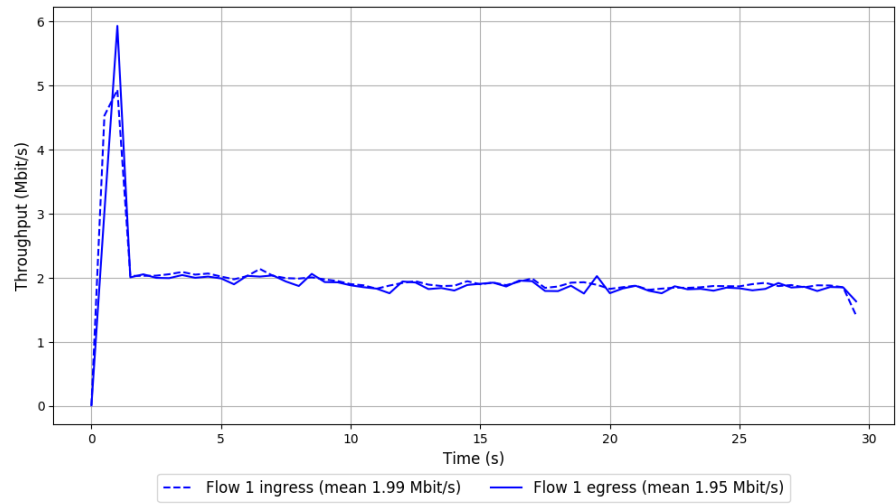
Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 1.99 Mbit/s)   Flow 1 egress (mean 1.95 Mbit/s)

• Flow 1 (95th percentile 95.09 ms)

45

```
Run 1: Statistics of QUIC Cubic

Start at: Thu, 13 Jul 2017 19:40:12 +0000
End at: Thu, 13 Jul 2017 19:40:42 +0000
Local clock offset: -0.86 ms
Remote clock offset: -0.409 ms
```
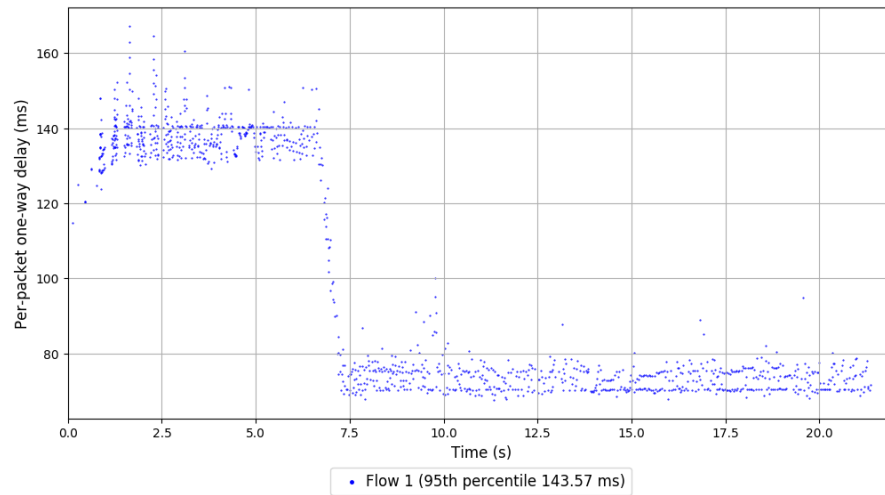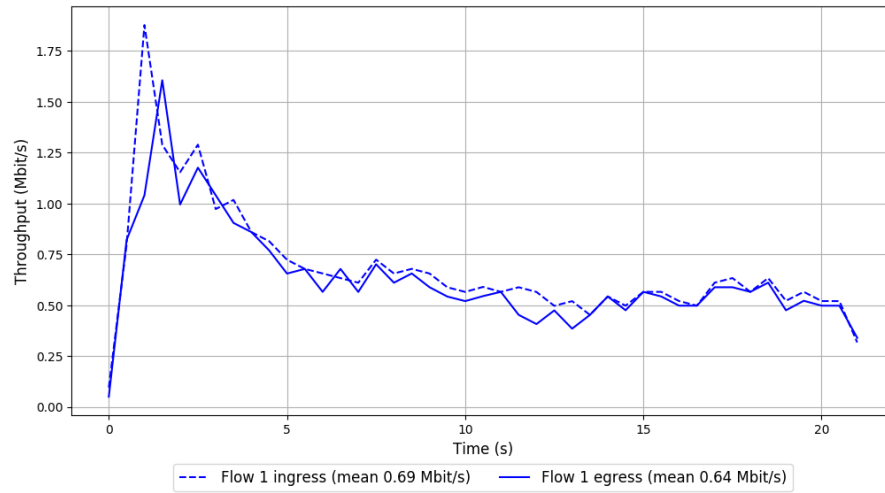
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.69 Mbit/s)   Flow 1 egress (mean 0.64 Mbit/s)

Flow 1 (95th percentile 143.57 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: Thu, 13 Jul 2017 19:57:39 +0000
End at: Thu, 13 Jul 2017 19:58:09 +0000
Local clock offset: 0.104 ms
Remote clock offset: -0.418 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 132.860 ms
Loss rate: 7.38%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 132.860 ms
Loss rate: 7.38%
```
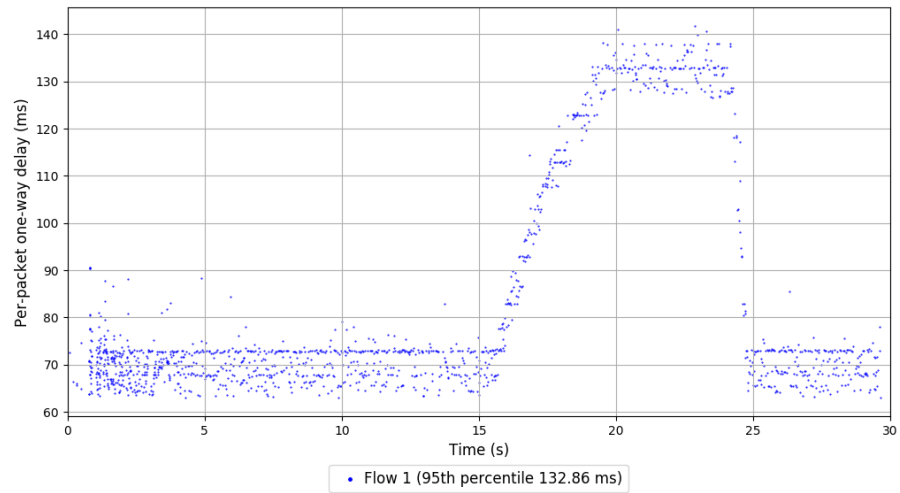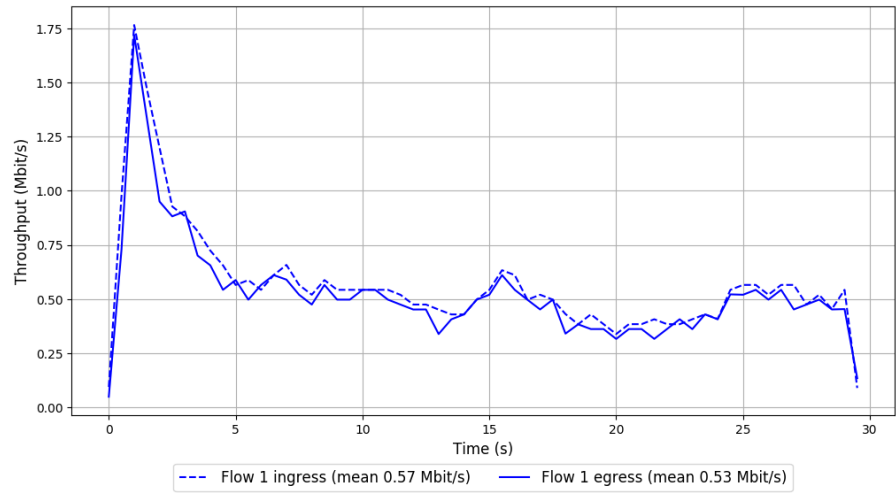
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.57 Mbit/s) --- Flow 1 egress (mean 0.53 Mbit/s)

• Flow 1 (95th percentile 132.86 ms)

49

```
Run 3: Statistics of QUIC Cubic

Start at: Thu, 13 Jul 2017 20:15:05 +0000
End at: Thu, 13 Jul 2017 20:15:35 +0000
Local clock offset: 0.004 ms
Remote clock offset: -0.493 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 84.088 ms
Loss rate: 6.68%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 84.088 ms
Loss rate: 6.68%
```
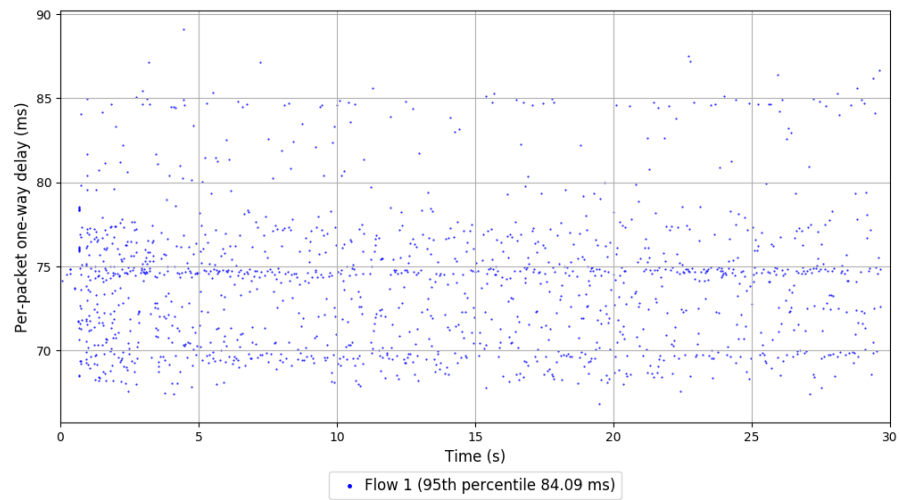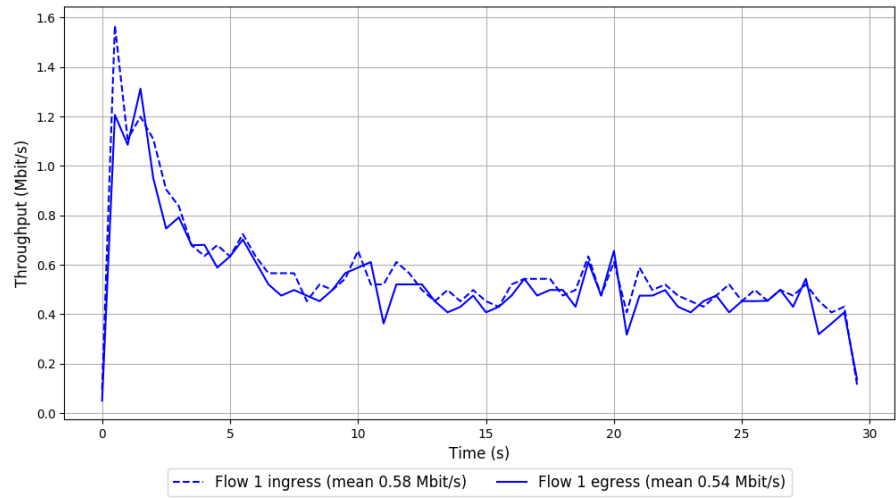
Run 3: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of Saturator

Start at: Thu, 13 Jul 2017 19:41:21 +0000
End at: Thu, 13 Jul 2017 19:41:51 +0000
Local clock offset: -0.936 ms
Remote clock offset: -0.395 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:46 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.87 Mbit/s
95th percentile per-packet one-way delay: 112.821 ms
Loss rate: 2.31%
-- Flow 1:
Average throughput: 4.87 Mbit/s
95th percentile per-packet one-way delay: 112.821 ms
Loss rate: 2.31%
```
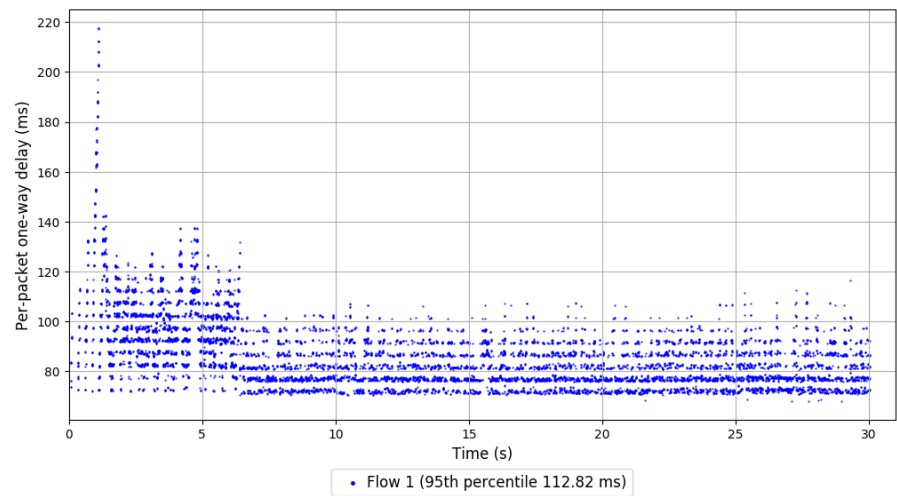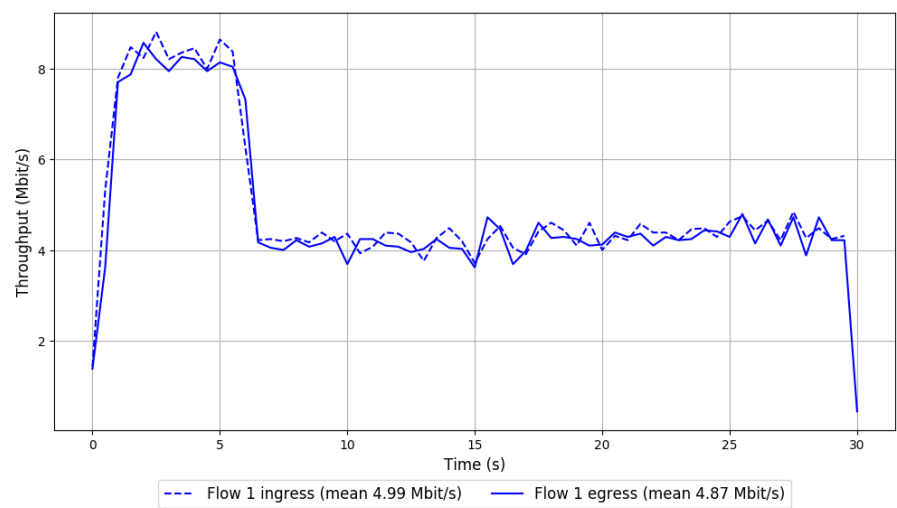
Run 1: Report of Saturator — Data Link

Flow 1 ingress (mean 4.99 Mbit/s) — — — Flow 1 egress (mean 4.87 Mbit/s) ———

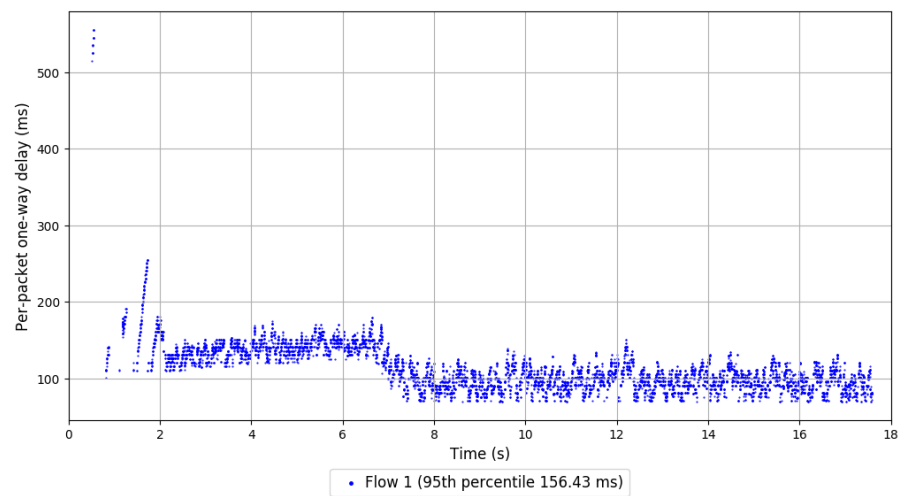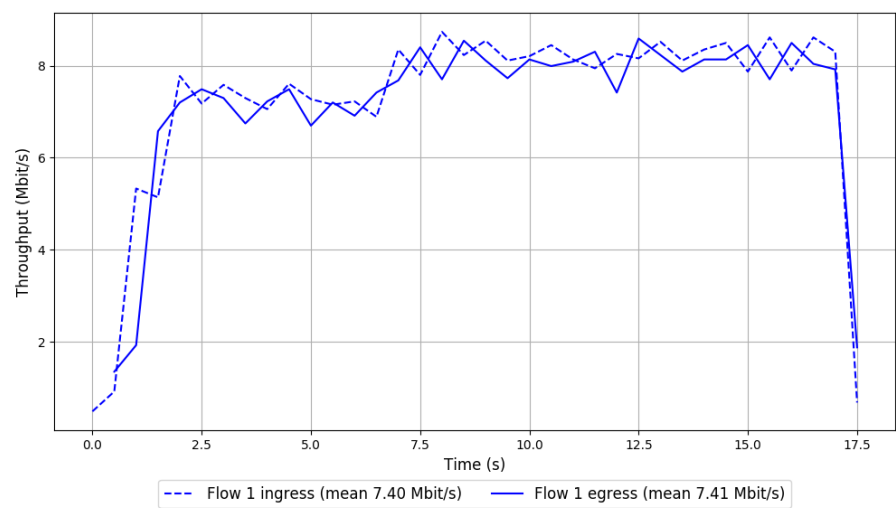• Flow 1 (95th percentile 112.82 ms)

Run 2: Statistics of Saturator

Start at: Thu, 13 Jul 2017 19:58:48 +0000
End at: Thu, 13 Jul 2017 19:59:18 +0000
Local clock offset: 0.249 ms
Remote clock offset: -0.527 ms

Run 2: Report of Saturator — Data Link

```
Run 3: Statistics of Saturator

Start at: Thu, 13 Jul 2017 20:16:15 +0000
End at: Thu, 13 Jul 2017 20:16:45 +0000
Local clock offset: -1.221 ms
Remote clock offset: -0.451 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 120.550 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 120.550 ms
Loss rate: 2.33%
```
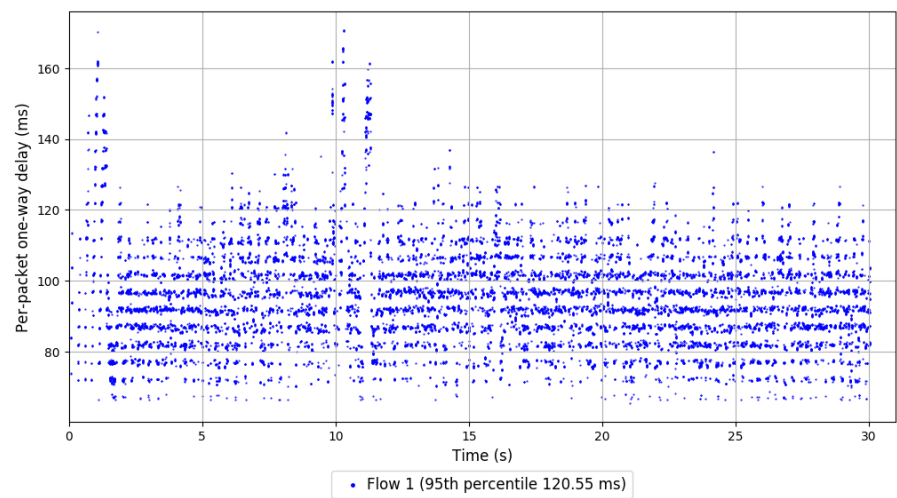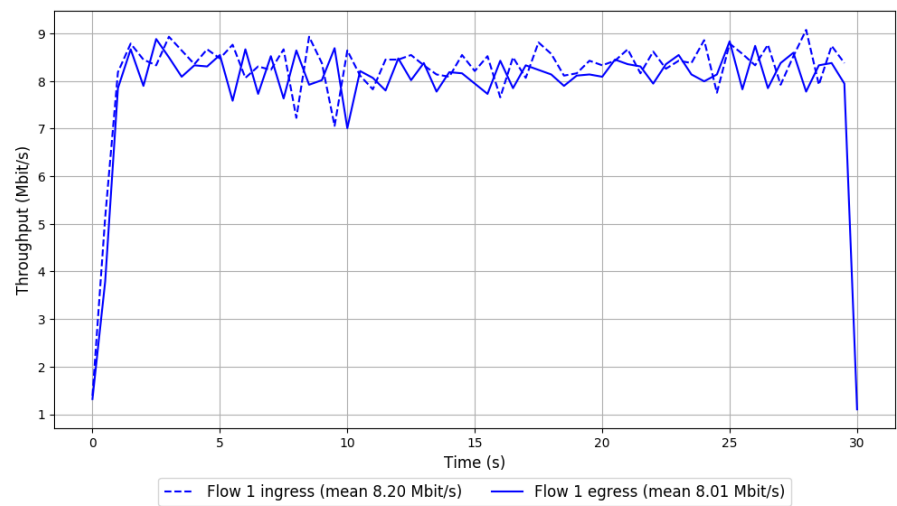
Run 3: Report of Saturator — Data Link

Flow 1 ingress (mean 8.20 Mbit/s)   Flow 1 egress (mean 8.01 Mbit/s)

Flow 1 (95th percentile 120.55 ms)

```
Run 1: Statistics of SCReAM

Start at: Thu, 13 Jul 2017 19:36:42 +0000
End at: Thu, 13 Jul 2017 19:37:12 +0000
Local clock offset: -0.909 ms
Remote clock offset: -0.48 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 102.927 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 102.927 ms
Loss rate: 2.05%
```
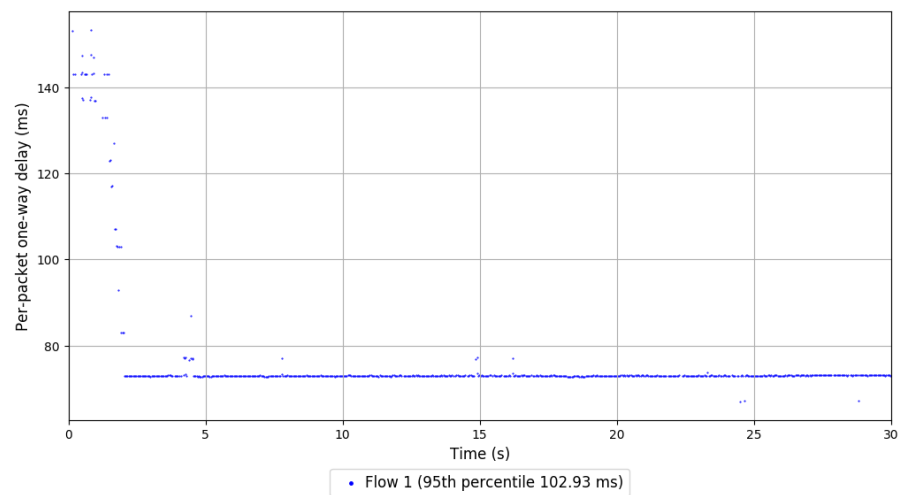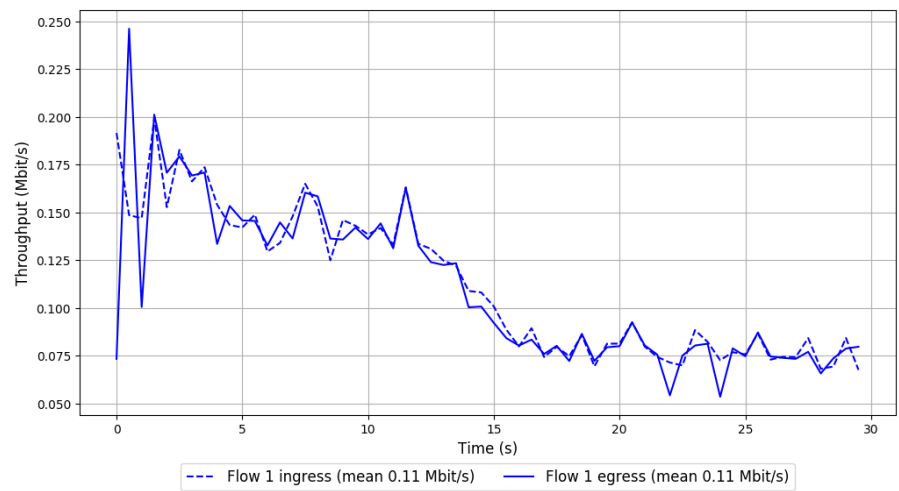
Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.11 Mbit/s) —— Flow 1 egress (mean 0.11 Mbit/s)

• Flow 1 (95th percentile 102.93 ms)

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```
Run 2: Statistics of SCReAM

Start at: Thu, 13 Jul 2017 19:54:08 +0000
End at: Thu, 13 Jul 2017 19:54:38 +0000
Local clock offset: -1.074 ms
Remote clock offset: -0.507 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 141.026 ms
Loss rate: 2.53%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 141.026 ms
Loss rate: 2.53%
```
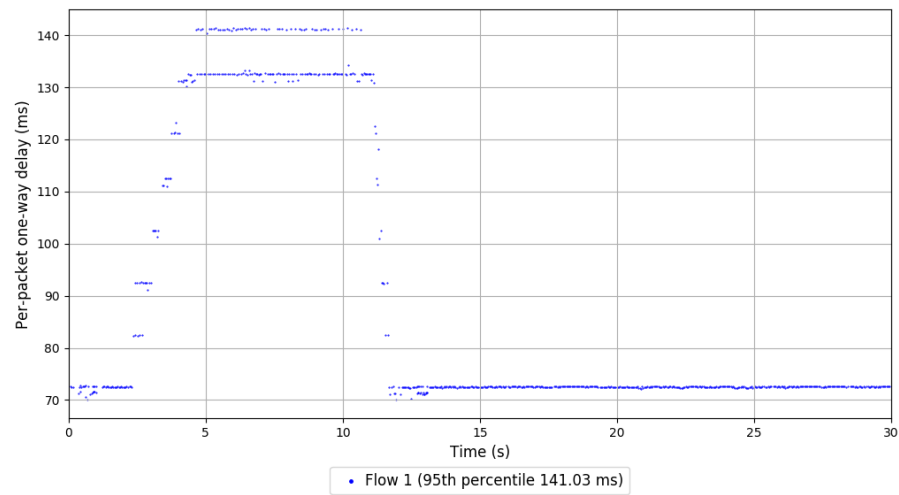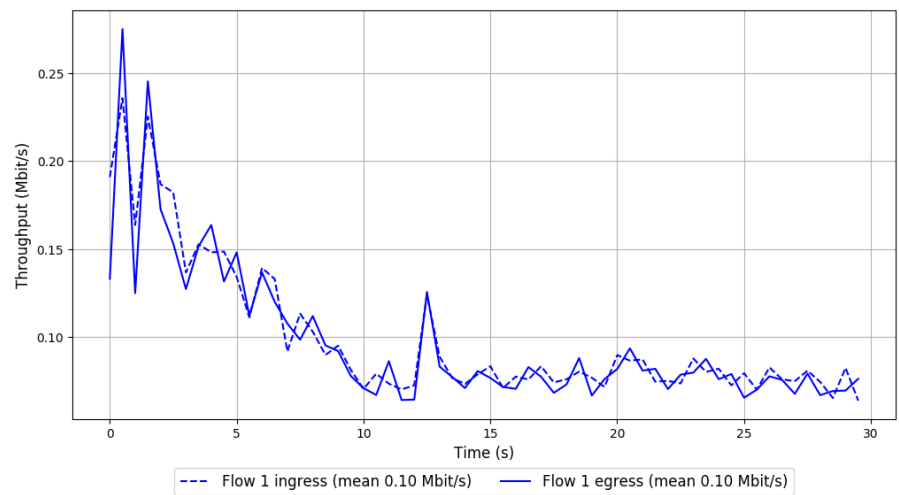
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: Thu, 13 Jul 2017 20:11:35 +0000
End at: Thu, 13 Jul 2017 20:12:05 +0000
Local clock offset: -1.194 ms
Remote clock offset: -0.45 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 72.871 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 72.871 ms
Loss rate: 1.50%
```
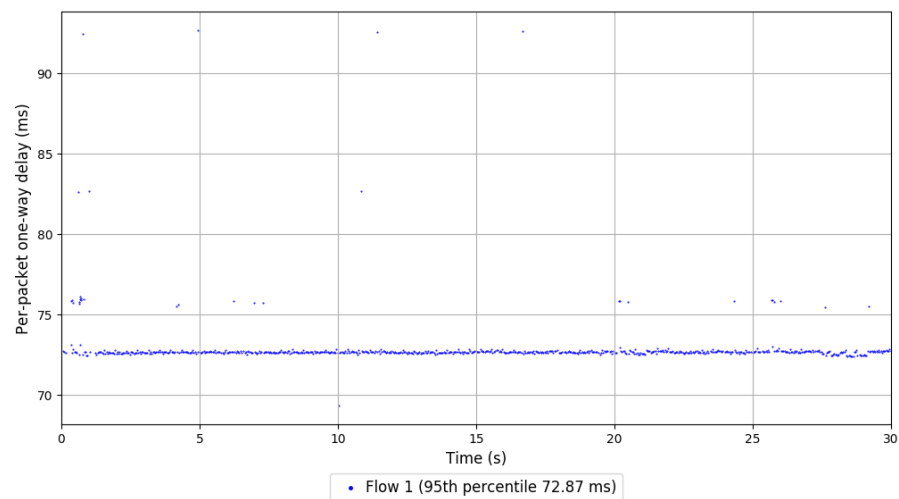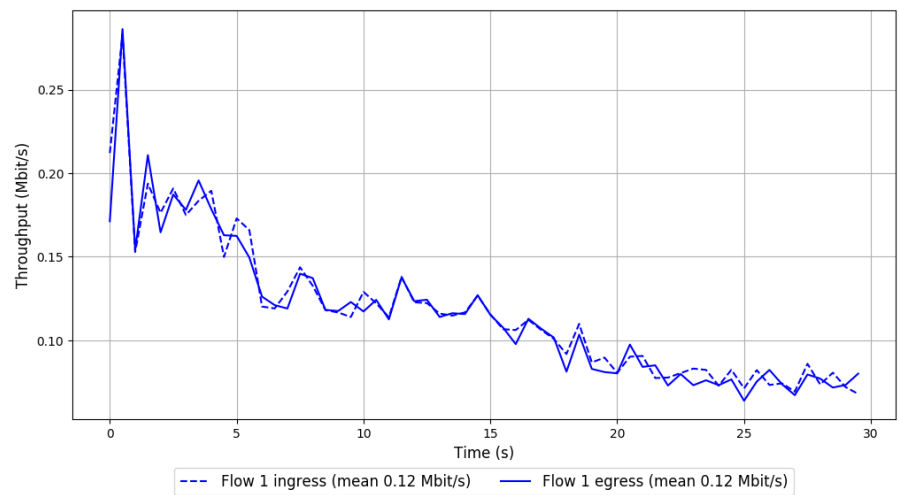
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.12 Mbit/s)   Flow 1 egress (mean 0.12 Mbit/s)

Flow 1 (95th percentile 72.87 ms)

```
Run 1: Statistics of Sprout

Start at: Thu, 13 Jul 2017 19:44:51 +0000
End at: Thu, 13 Jul 2017 19:45:21 +0000
Local clock offset: 0.251 ms
Remote clock offset: -0.426 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 135.082 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 135.082 ms
Loss rate: 2.41%
```
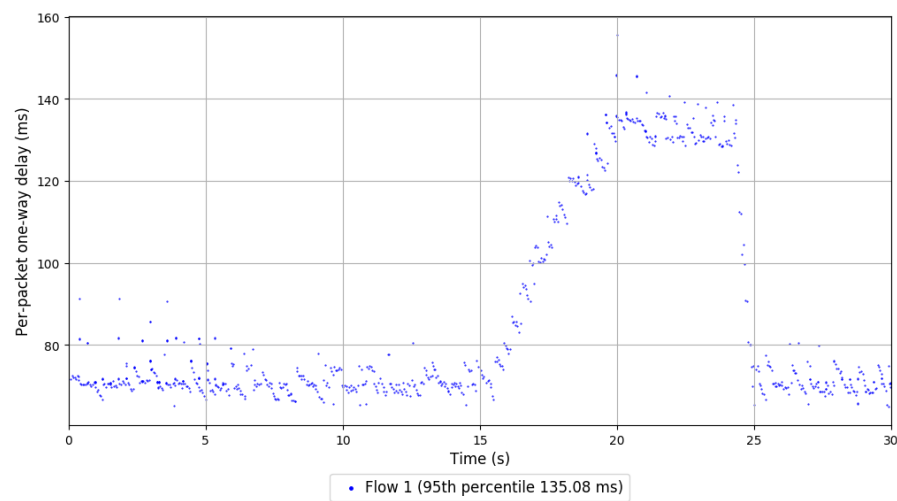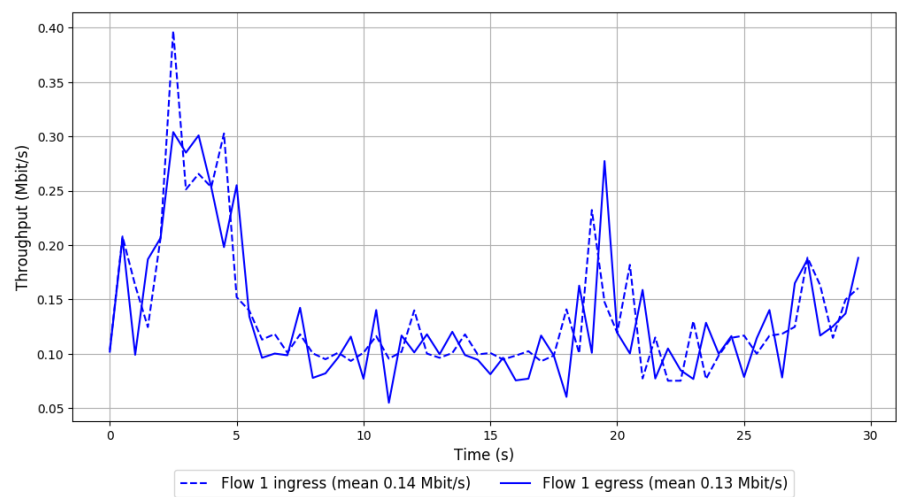
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: Thu, 13 Jul 2017 20:02:18 +0000
End at: Thu, 13 Jul 2017 20:02:48 +0000
Local clock offset: -1.184 ms
Remote clock offset: -0.583 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:50 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 98.682 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 98.682 ms
Loss rate: 2.63%
```
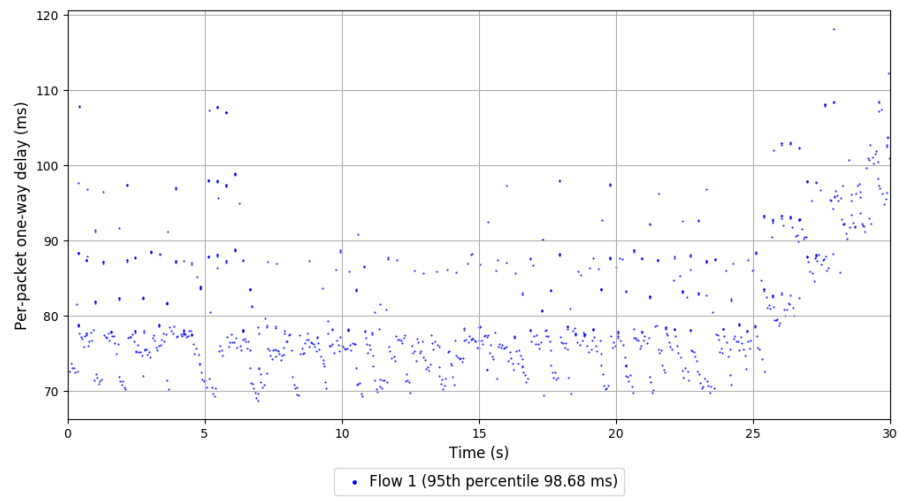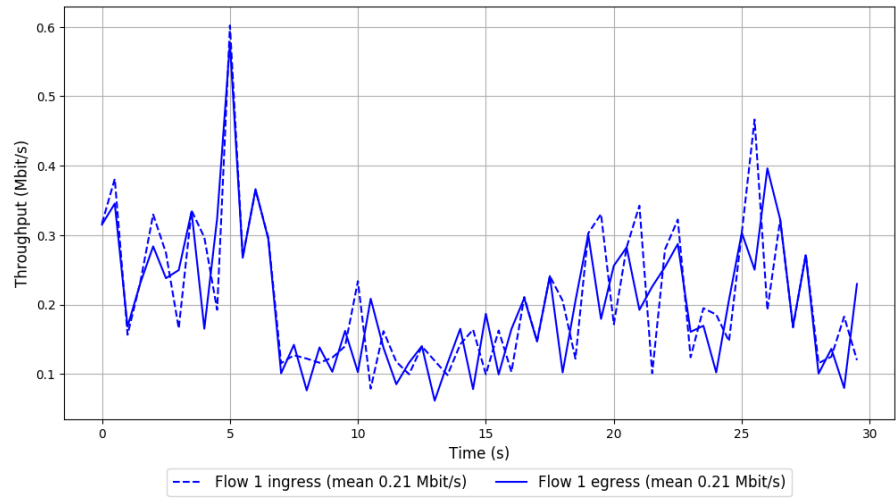
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: Thu, 13 Jul 2017 20:19:45 +0000
End at: Thu, 13 Jul 2017 20:20:15 +0000
Local clock offset: -1.477 ms
Remote clock offset: -0.344 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:50 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 92.351 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 92.351 ms
Loss rate: 2.59%
```
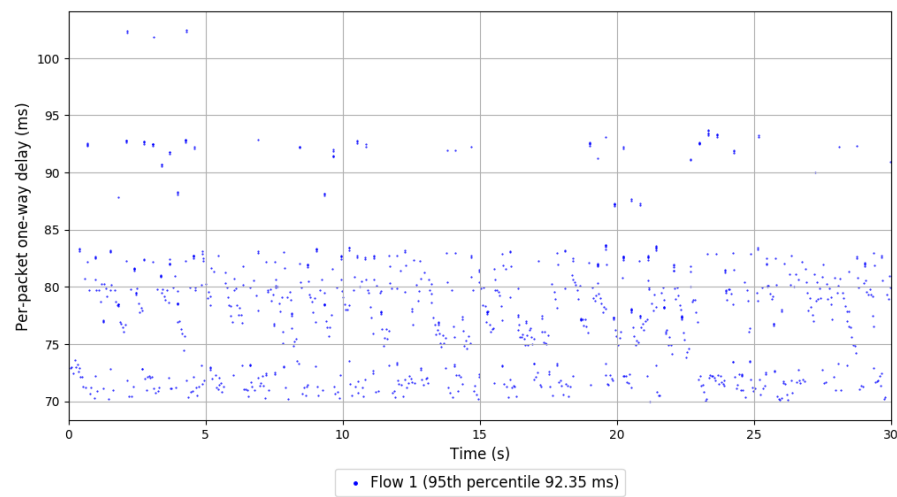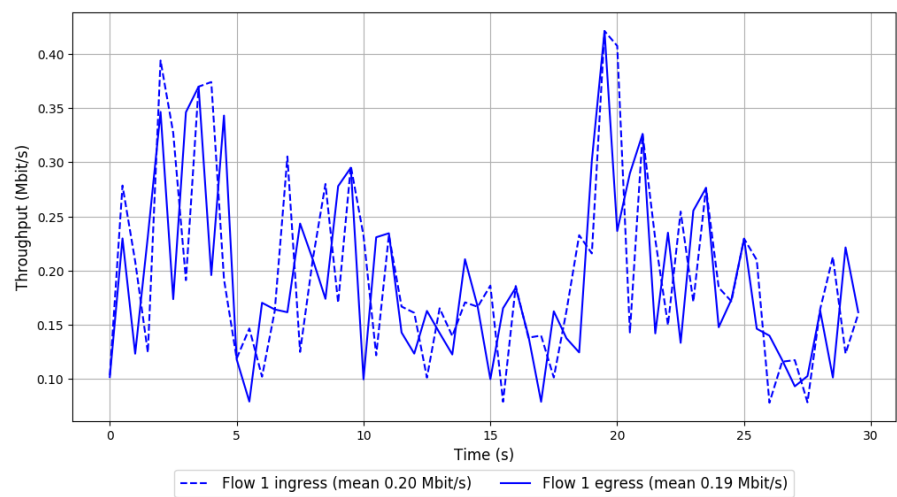
Run 3: Report of Sprout — Data Link

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

Start at: Thu, 13 Jul 2017 19:34:22 +0000
End at: Thu, 13 Jul 2017 19:34:52 +0000
Local clock offset: 0.476 ms
Remote clock offset: -0.428 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:52 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 132.736 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 132.736 ms
Loss rate: 2.29%
```
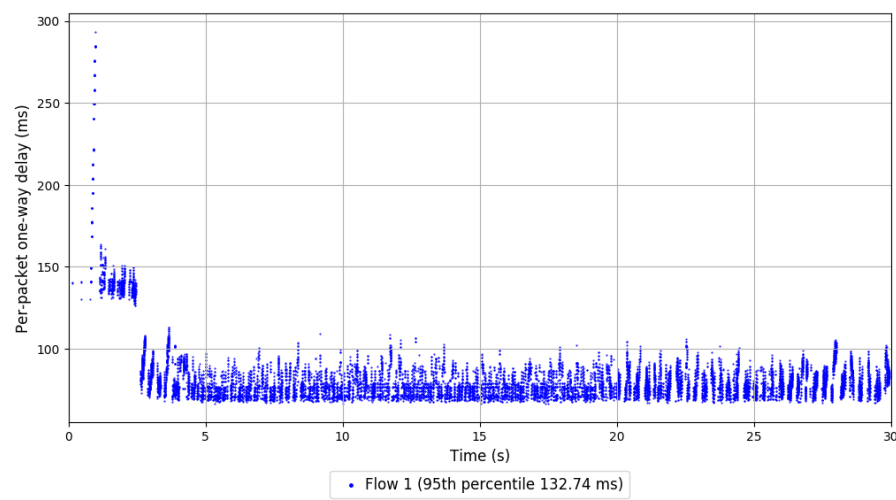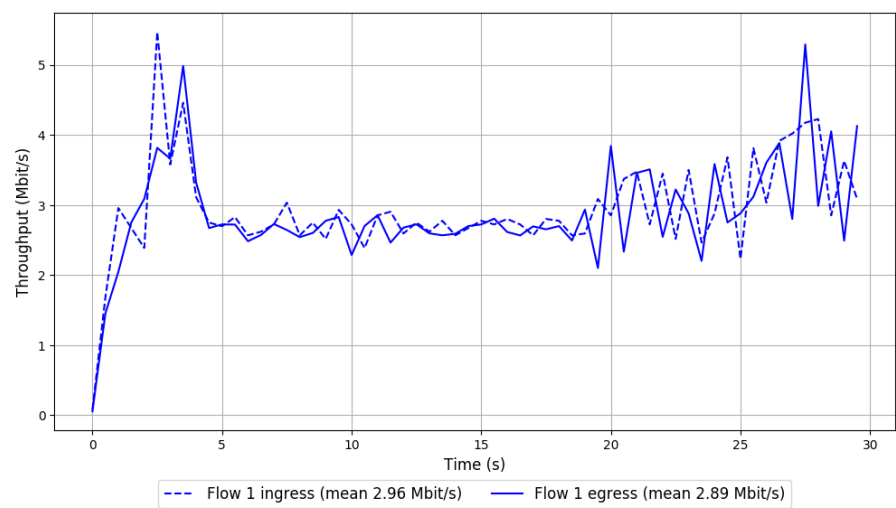
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 2.96 Mbit/s) — — — Flow 1 egress (mean 2.89 Mbit/s)

• Flow 1 (95th percentile 132.74 ms)

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

Start at: Thu, 13 Jul 2017 19:51:48 +0000
End at: Thu, 13 Jul 2017 19:52:18 +0000
Local clock offset: -1.056 ms
Remote clock offset: -0.489 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:52 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 150.622 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 150.622 ms
Loss rate: 2.02%
```
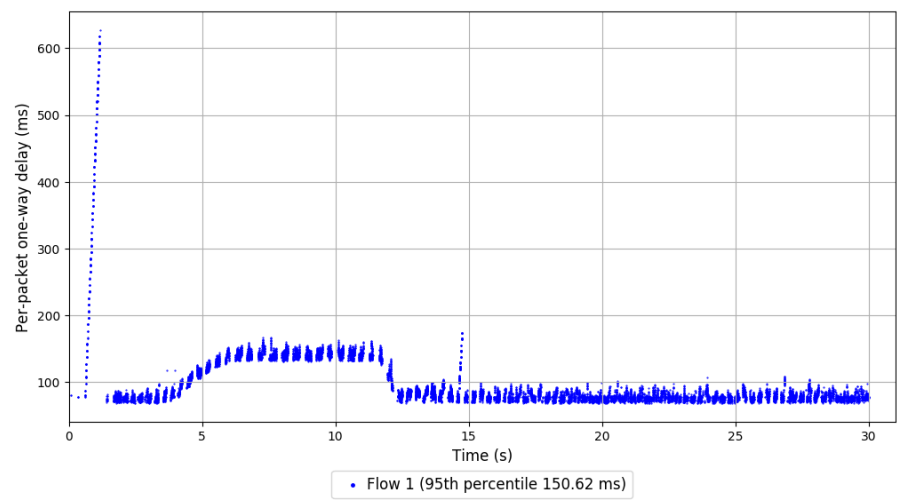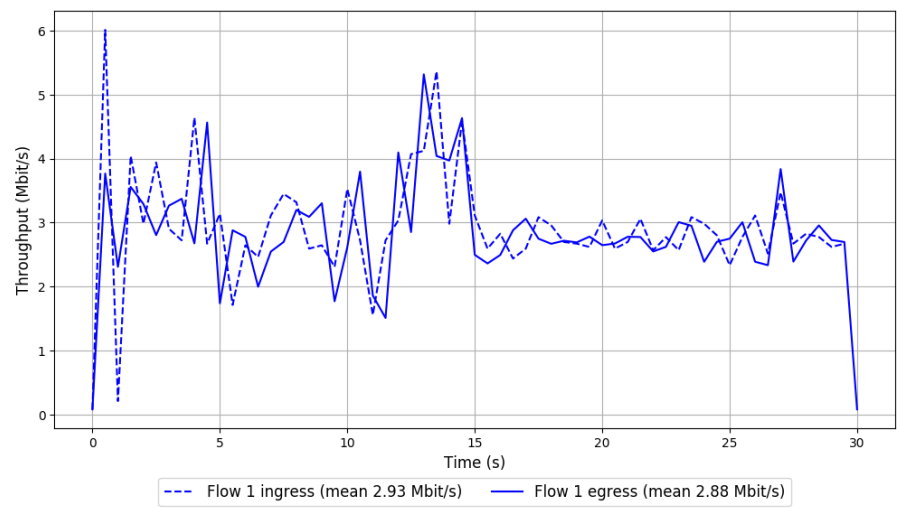
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 2.93 Mbit/s)   Flow 1 egress (mean 2.88 Mbit/s)

Flow 1 (95th percentile 150.62 ms)

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

Start at: Thu, 13 Jul 2017 20:09:15 +0000
End at: Thu, 13 Jul 2017 20:09:45 +0000
Local clock offset: -1.217 ms
Remote clock offset: -0.563 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:54 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 111.294 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 111.294 ms
Loss rate: 1.95%
```
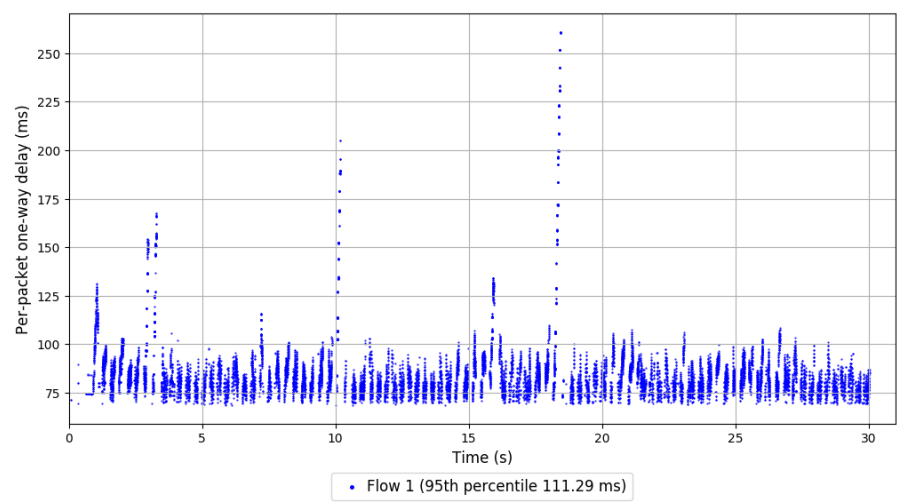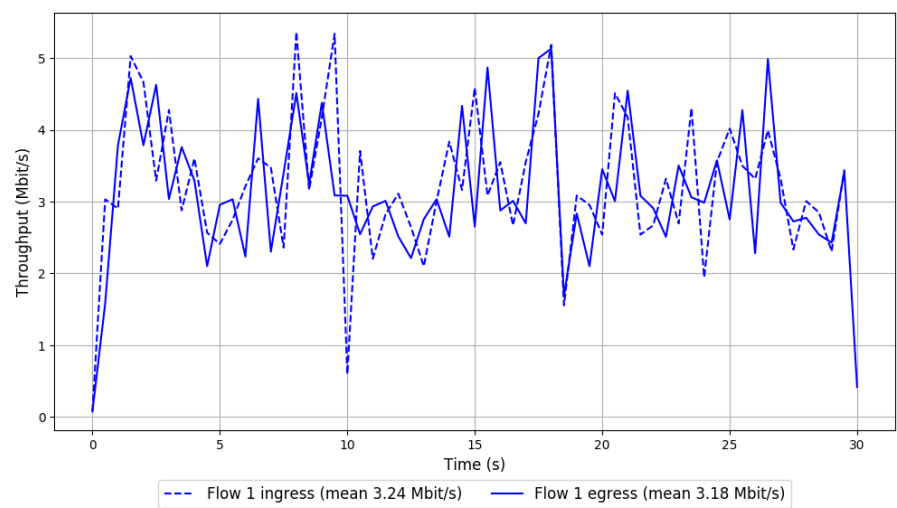
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 3.24 Mbit/s)   Flow 1 egress (mean 3.18 Mbit/s)

Flow 1 (95th percentile 111.29 ms)

```
Run 1: Statistics of TCP Vegas

Start at: Thu, 13 Jul 2017 19:46:00 +0000
End at: Thu, 13 Jul 2017 19:46:30 +0000
Local clock offset: -1.098 ms
Remote clock offset: -0.4 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:54 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 135.317 ms
Loss rate: 9.93%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 135.317 ms
Loss rate: 9.93%
```
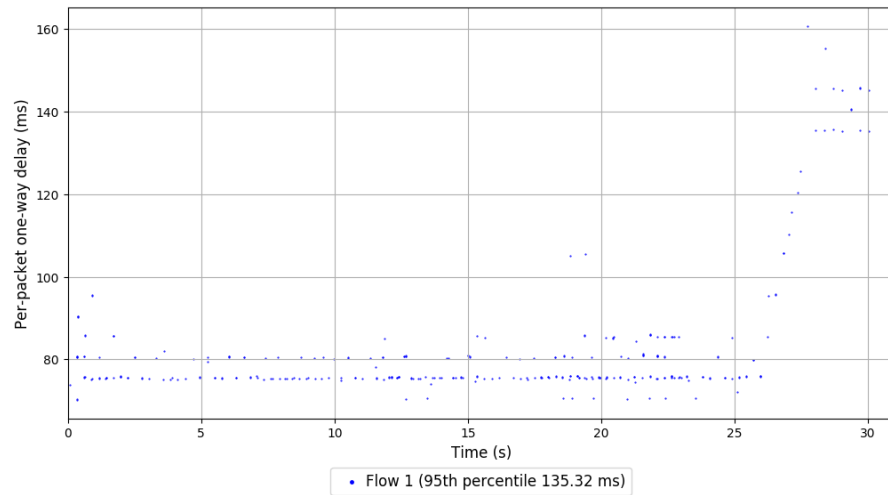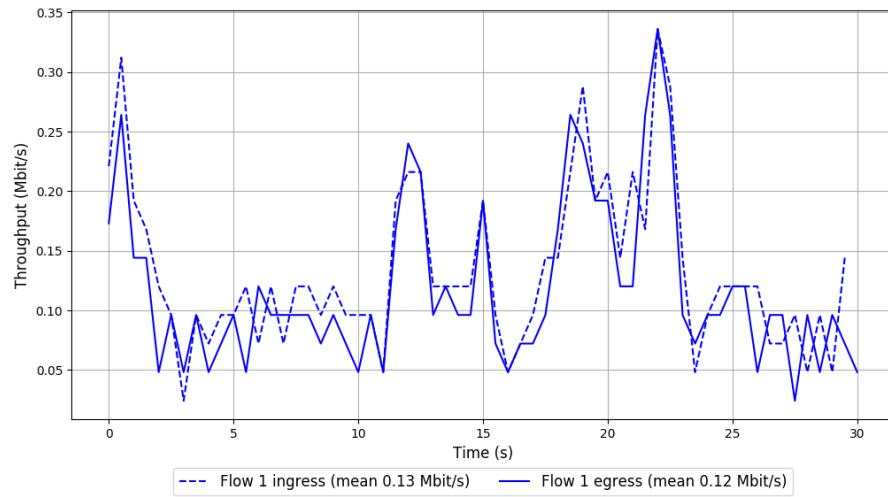
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: Thu, 13 Jul 2017 20:03:28 +0000
End at: Thu, 13 Jul 2017 20:03:58 +0000
Local clock offset: -1.277 ms
Remote clock offset: -0.533 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:54 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 91.110 ms
Loss rate: 8.67%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 91.110 ms
Loss rate: 8.67%
```
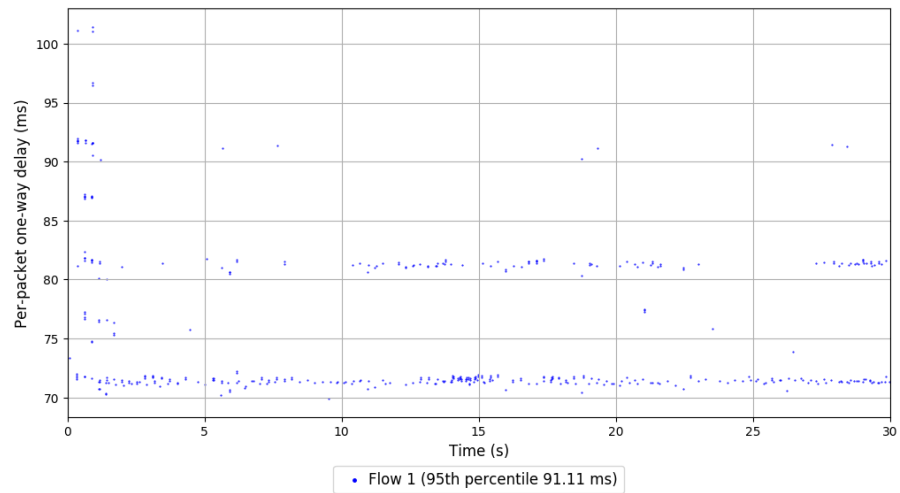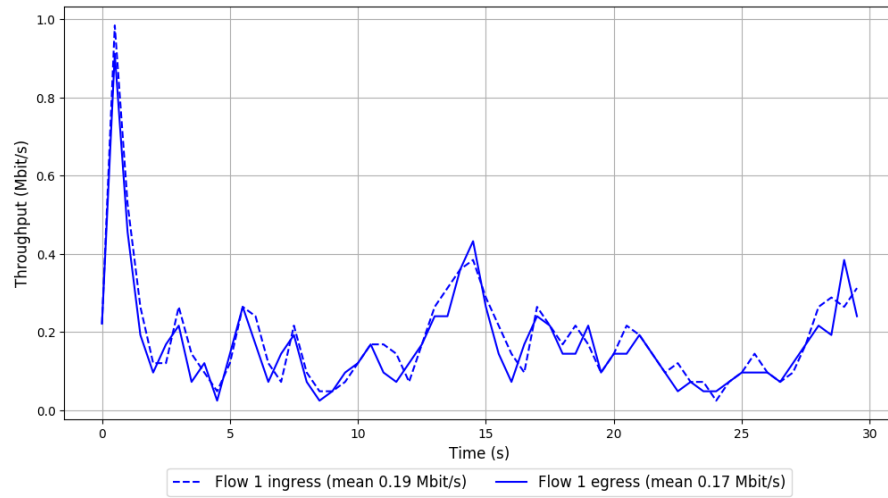
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: Thu, 13 Jul 2017 20:20:55 +0000
End at: Thu, 13 Jul 2017 20:21:25 +0000
Local clock offset: -1.363 ms
Remote clock offset: -0.34 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:54 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 82.482 ms
Loss rate: 5.35%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 82.482 ms
Loss rate: 5.35%
```
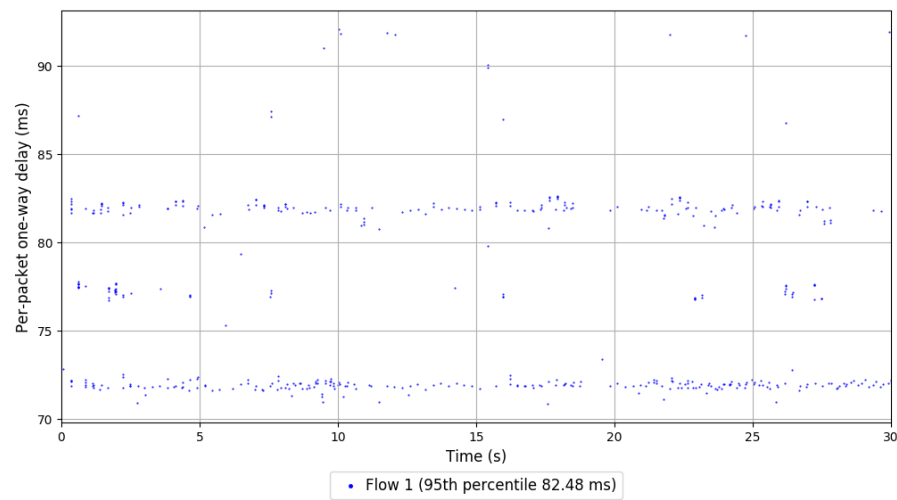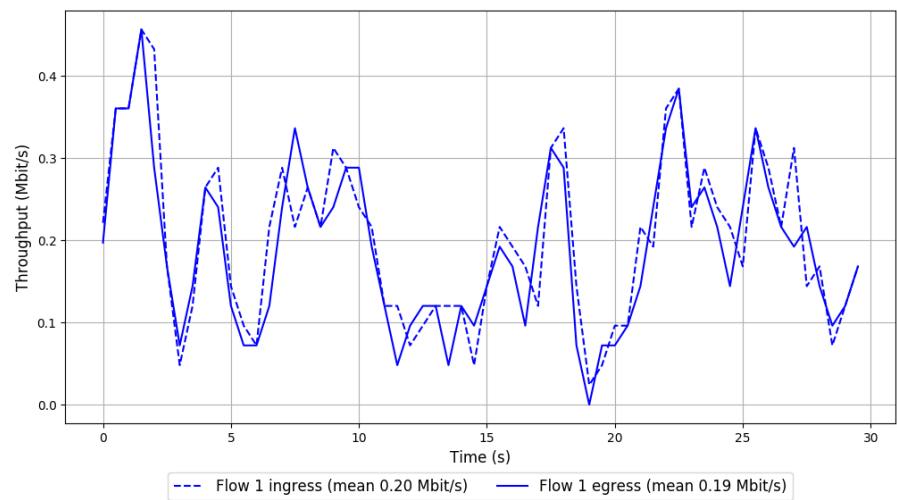
Run 3: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: Thu, 13 Jul 2017 19:33:11 +0000
End at: Thu, 13 Jul 2017 19:33:41 +0000
Local clock offset: -0.831 ms
Remote clock offset: -0.47 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:56 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 190.806 ms
Loss rate: 6.42%
-- Flow 1:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 190.806 ms
Loss rate: 6.42%
```
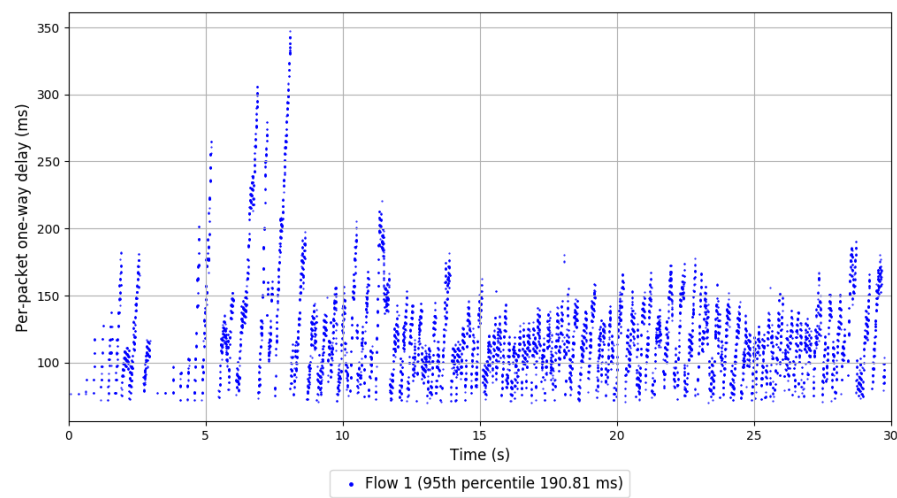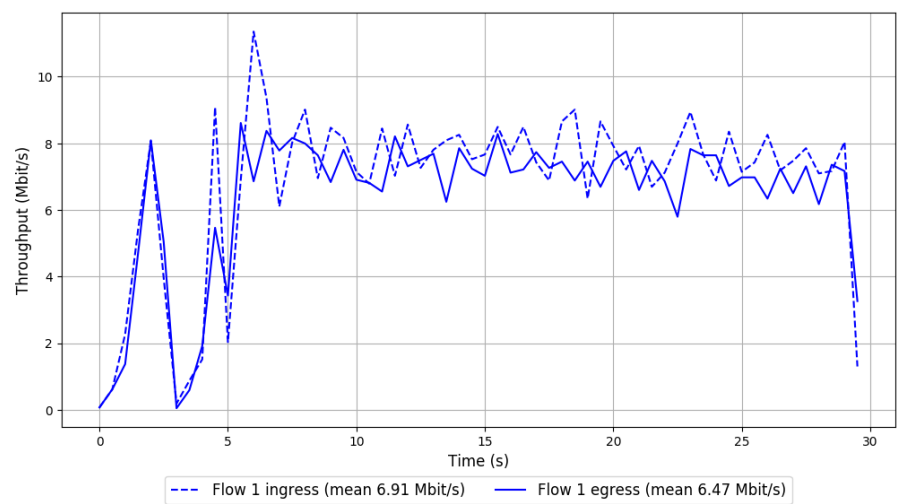
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 6.91 Mbit/s)   Flow 1 egress (mean 6.47 Mbit/s)

• Flow 1 (95th percentile 190.81 ms)

```
Run 2: Statistics of Verus

Start at: Thu, 13 Jul 2017 19:50:38 +0000
End at: Thu, 13 Jul 2017 19:51:08 +0000
Local clock offset: 0.416 ms
Remote clock offset: -0.451 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:56 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 326.345 ms
Loss rate: 6.59%
-- Flow 1:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 326.345 ms
Loss rate: 6.59%
```
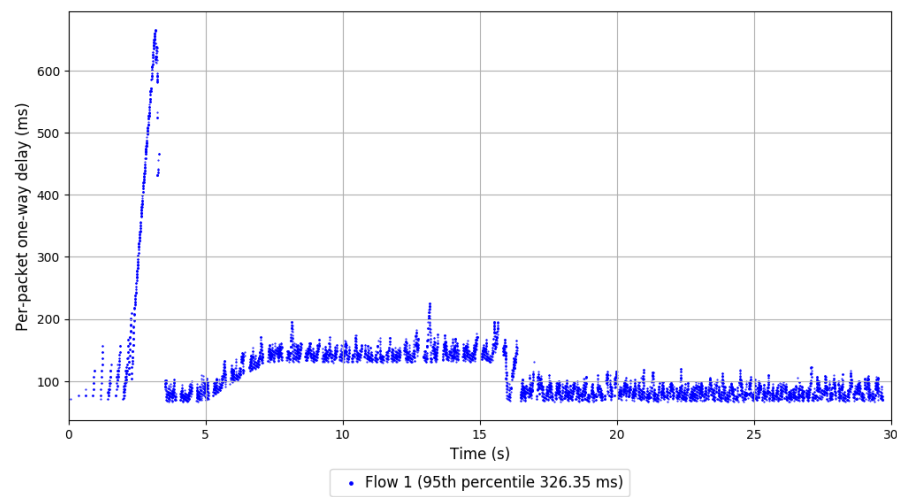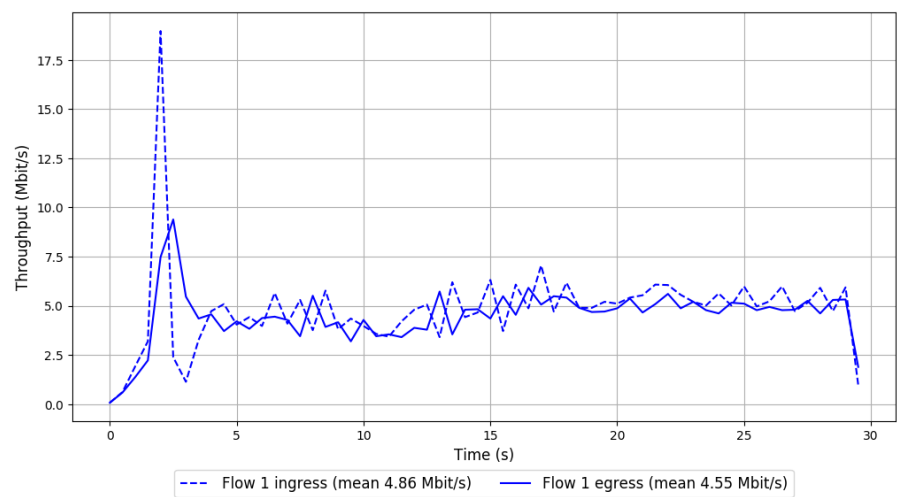
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: Thu, 13 Jul 2017 20:08:05 +0000
End at: Thu, 13 Jul 2017 20:08:35 +0000
Local clock offset: 0.045 ms
Remote clock offset: -0.519 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:57 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.92 Mbit/s
95th percentile per-packet one-way delay: 494.416 ms
Loss rate: 7.57%
-- Flow 1:
Average throughput: 2.92 Mbit/s
95th percentile per-packet one-way delay: 494.416 ms
Loss rate: 7.57%
```
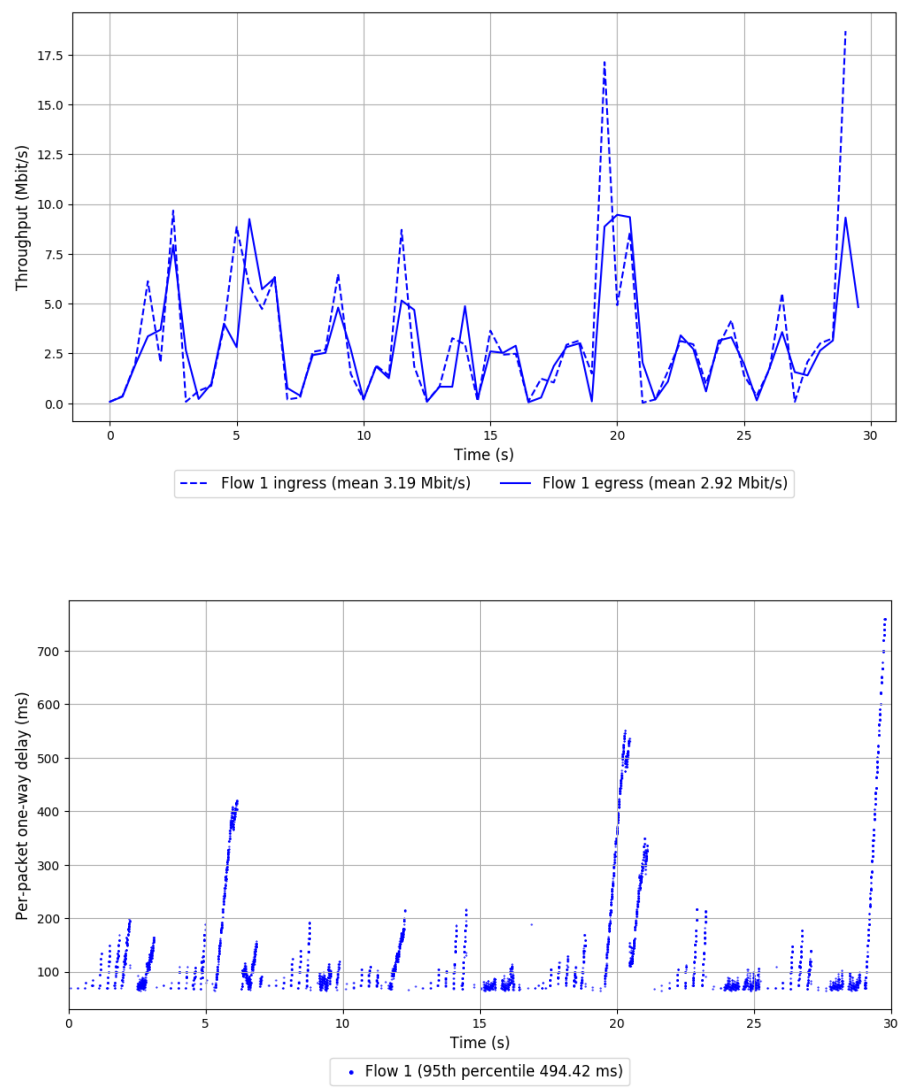
Run 3: Report of Verus — Data Link

```
Run 1: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 19:32:01 +0000
End at: Thu, 13 Jul 2017 19:32:31 +0000
Local clock offset: 0.593 ms
Remote clock offset: -0.454 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:58 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 93.954 ms
Loss rate: 7.65%
-- Flow 1:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 93.954 ms
Loss rate: 7.65%
```
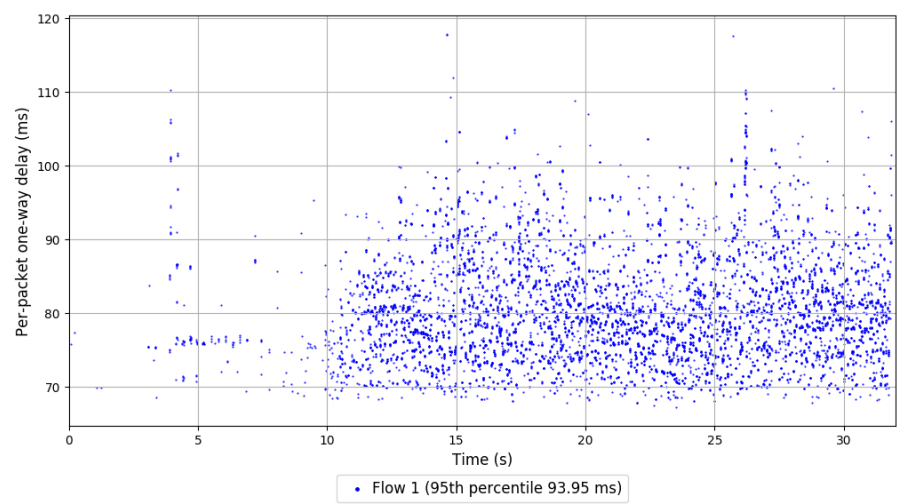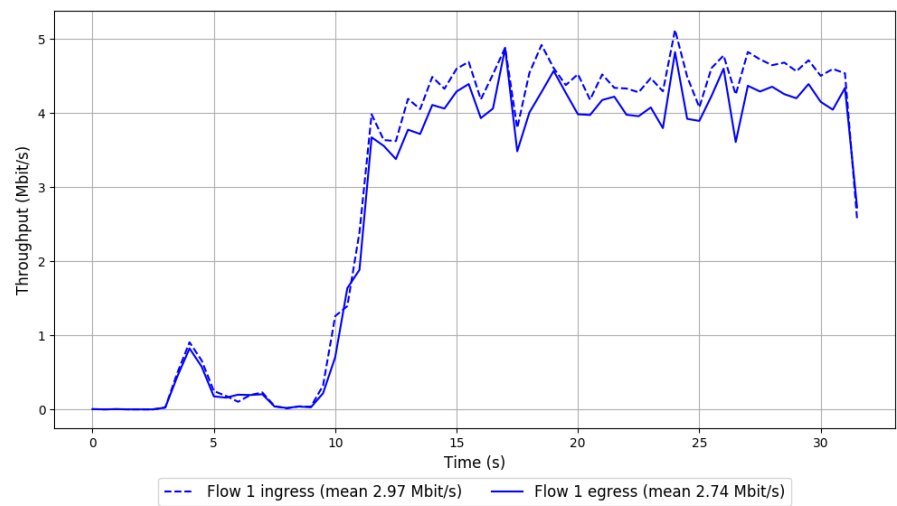
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 19:49:28 +0000
End at: Thu, 13 Jul 2017 19:49:58 +0000
Local clock offset: -1.194 ms
Remote clock offset: -0.42 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:58 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 140.842 ms
Loss rate: 7.71%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 140.842 ms
Loss rate: 7.71%
```
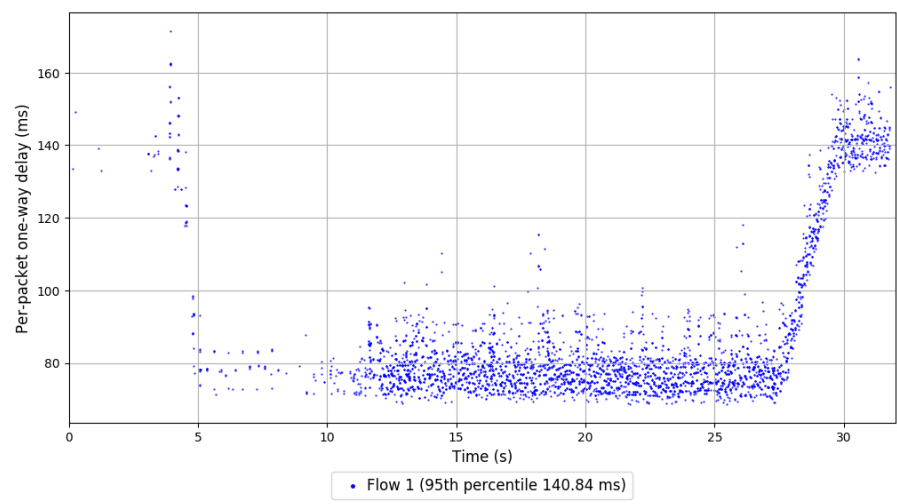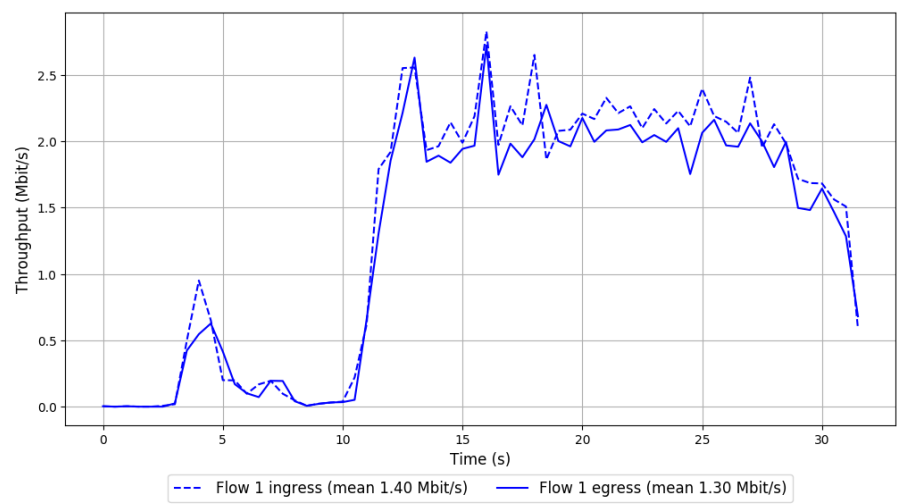
Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.40 Mbit/s)   Flow 1 egress (mean 1.30 Mbit/s)

Flow 1 (95th percentile 140.84 ms)

```
Run 3: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 20:06:55 +0000
End at: Thu, 13 Jul 2017 20:07:25 +0000
Local clock offset: 0.138 ms
Remote clock offset: -0.589 ms


# Below is generated by plot.py at Thu, 13 Jul 2017 21:15:59 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 88.620 ms
Loss rate: 7.66%
-- Flow 1:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 88.620 ms
Loss rate: 7.66%
```

Run 3: Report of WebRTC media — Data Link