Pantheon Report

Generated at 2017-12-11 09:00:27 (UTC).

Data path: Colombia ppp0 (*remote*) →AWS Brazil 2 Ethernet (*local*).

Repeated the test of 14 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

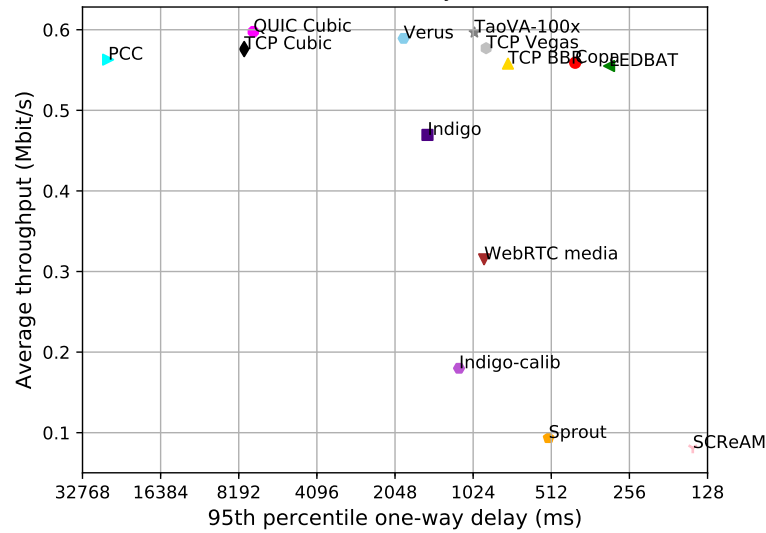Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

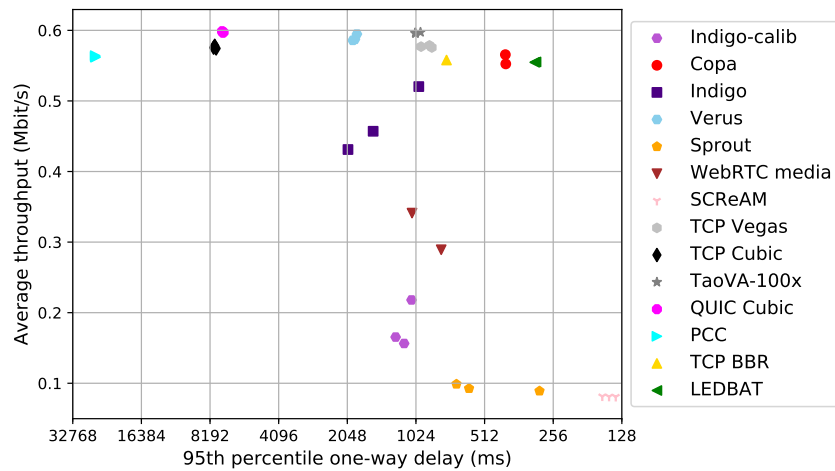NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: indigos @ e3a57ad5ac5cfcaca0e3f983c8dd4cc3509e0262
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ b5b7c38e8391001927dc41c6cfa2627d03dde737
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 Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)

test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme

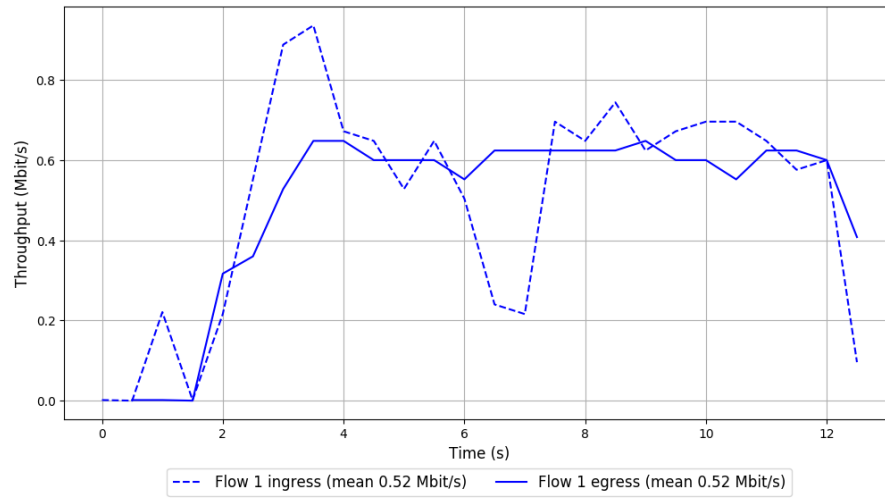| scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	1	0.56	751.94	2.28
TCP Cubic	3	0.58	7806.50	31.20
LEDBAT	2	0.56	306.58	1.31
PCC	3	0.56	26096.69	98.60
QUIC Cubic	3	0.60	7198.63	29.32
SCReAM	3	0.08	145.91	0.66
WebRTC media	2	0.32	929.31	0.97
Sprout	3	0.09	524.39	1.18
TaoVA-100x	3	0.60	1012.76	2.77
TCP Vegas	3	0.58	912.69	1.27
Verus	3	0.59	1897.76	6.16
Copa	2	0.56	414.23	1.05
Indigo	3	0.47	1535.64	14.99
Indigo-calib	3	0.18	1160.55	3.05

```
Run 1: Statistics of TCP BBR

Start at: 2017-12-11 07:26:44
End at: 2017-12-11 07:27:14
Local clock offset: -15.425 ms
Remote clock offset: -5.213 ms
```

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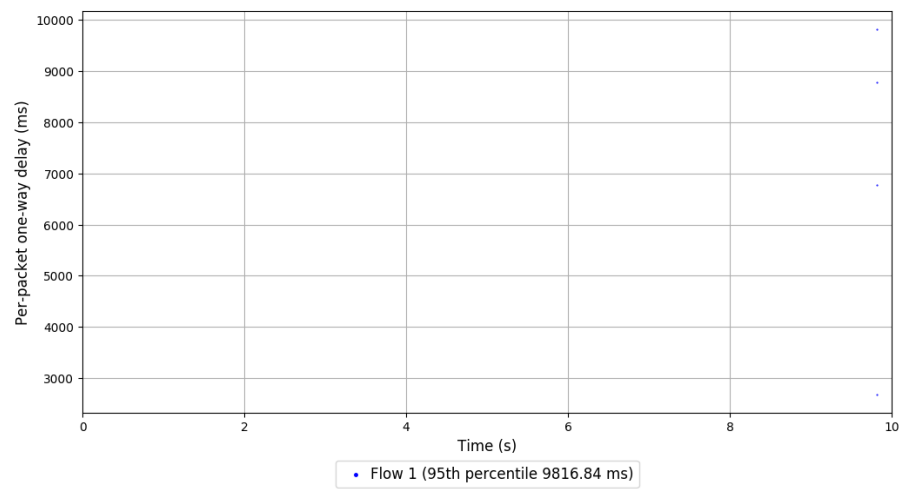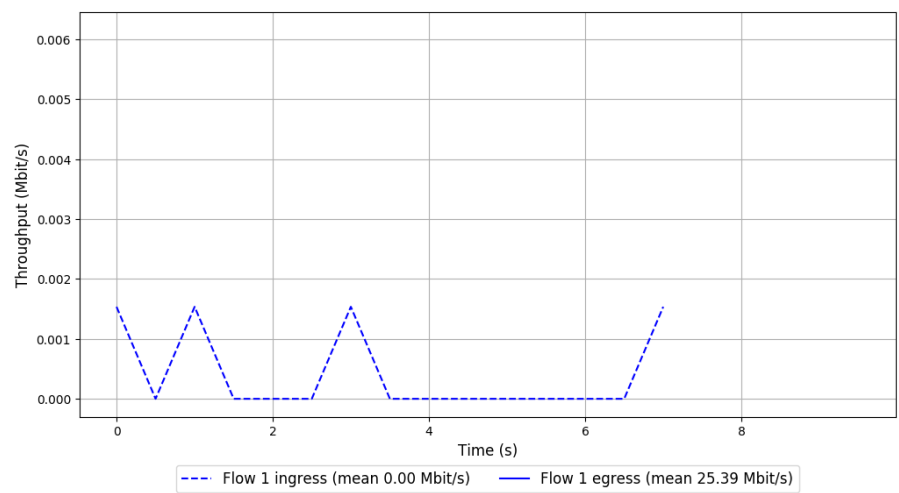
```
Run 2: Statistics of TCP BBR

Start at: 2017-12-11 07:43:08
End at: 2017-12-11 07:43:38
Local clock offset: -6.798 ms
Remote clock offset: 0.664 ms
```
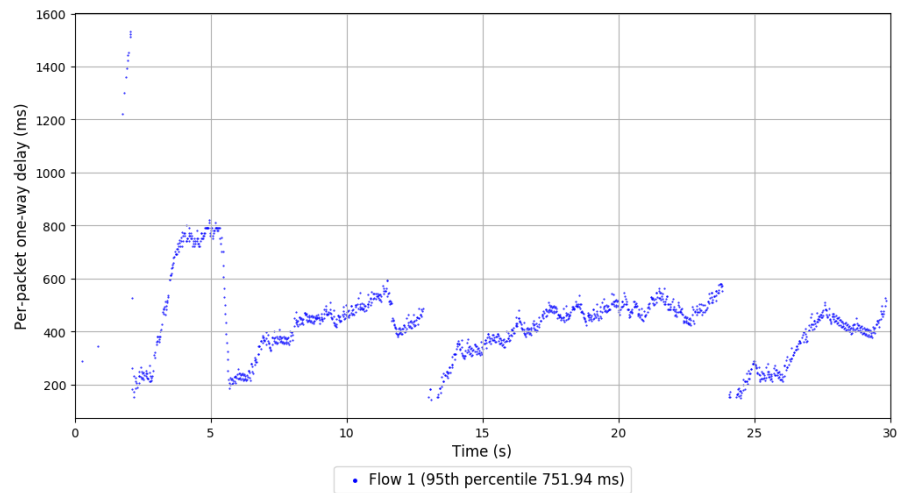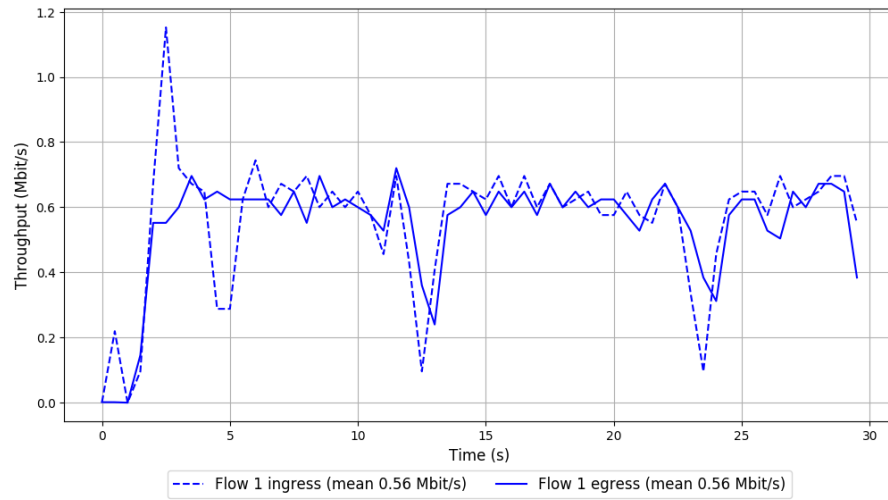
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2017-12-11 08:00:39
End at: 2017-12-11 08:01:09
Local clock offset: -5.821 ms
Remote clock offset: -4.287 ms


# Below is generated by plot.py at 2017-12-11 08:59:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 751.940 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 751.940 ms
Loss rate: 2.28%
```
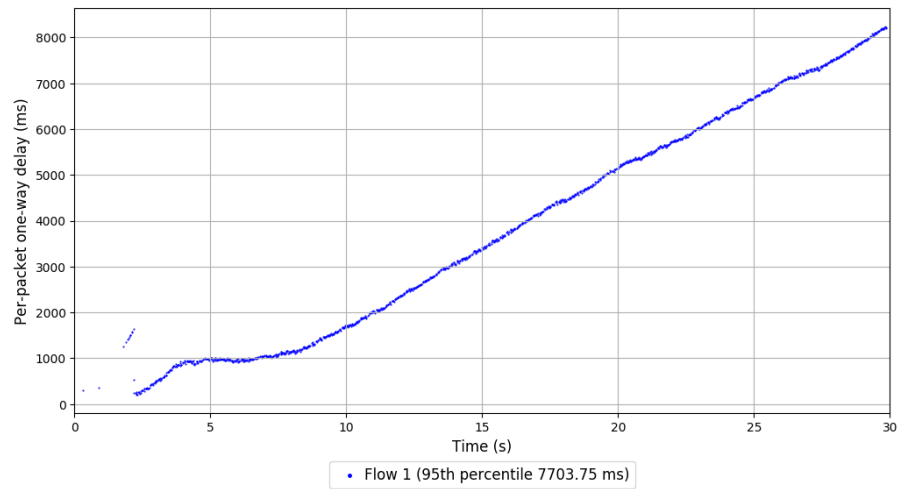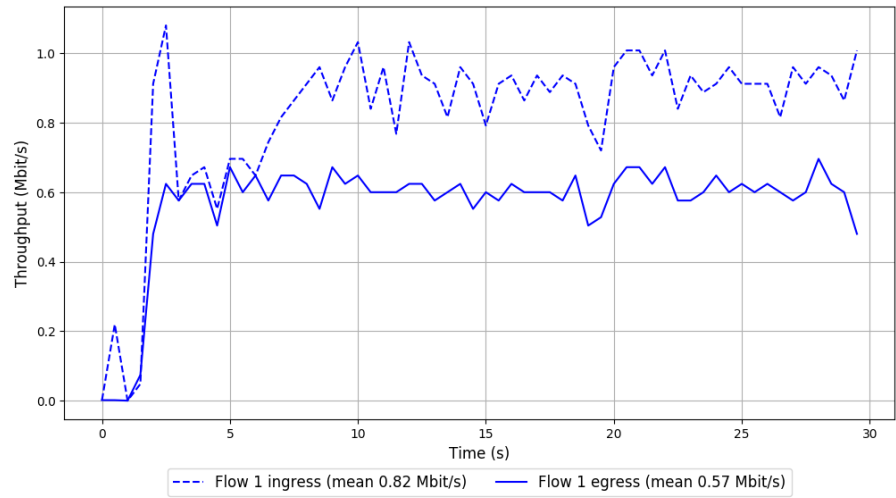
Run 3: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2017-12-11 07:30:14
End at: 2017-12-11 07:30:44
Local clock offset: -19.204 ms
Remote clock offset: 1.261 ms

# Below is generated by plot.py at 2017-12-11 09:00:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7703.746 ms
Loss rate: 31.21%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7703.746 ms
Loss rate: 31.21%
```
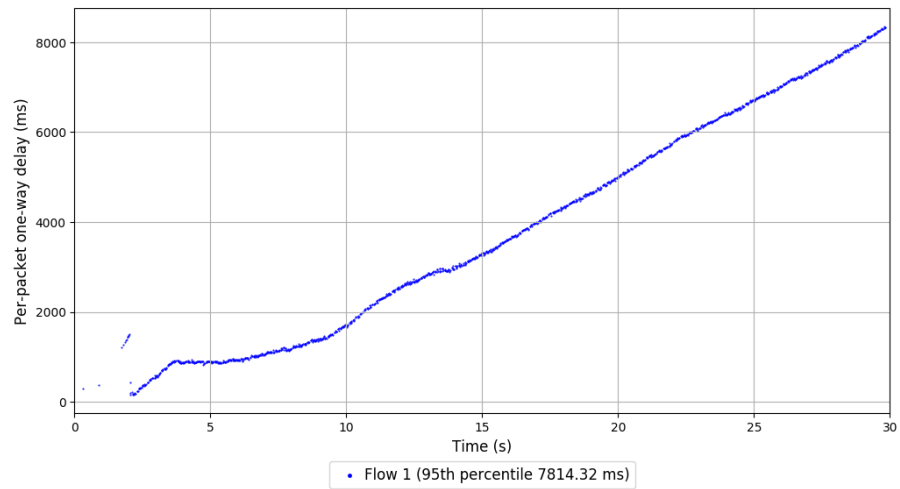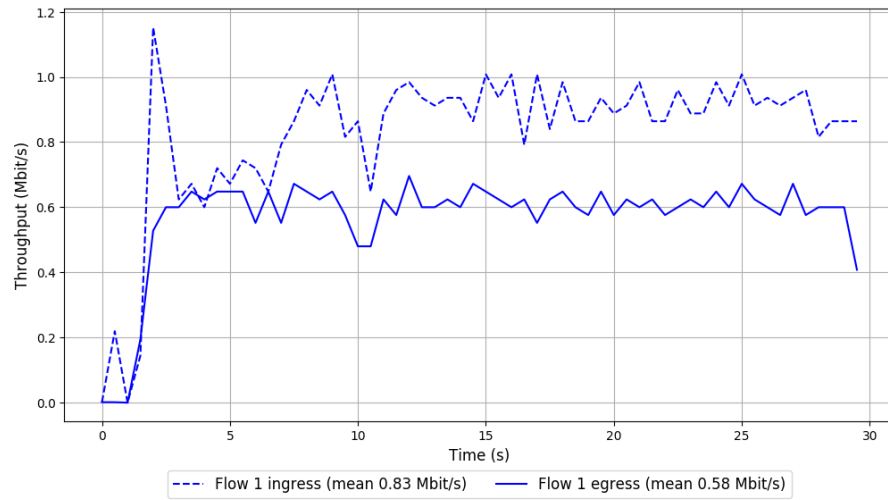
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2017-12-11 07:46:38
End at: 2017-12-11 07:47:08
Local clock offset: -7.201 ms
Remote clock offset: -0.123 ms


# Below is generated by plot.py at 2017-12-11 09:00:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7814.318 ms
Loss rate: 31.09%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7814.318 ms
Loss rate: 31.09%
```
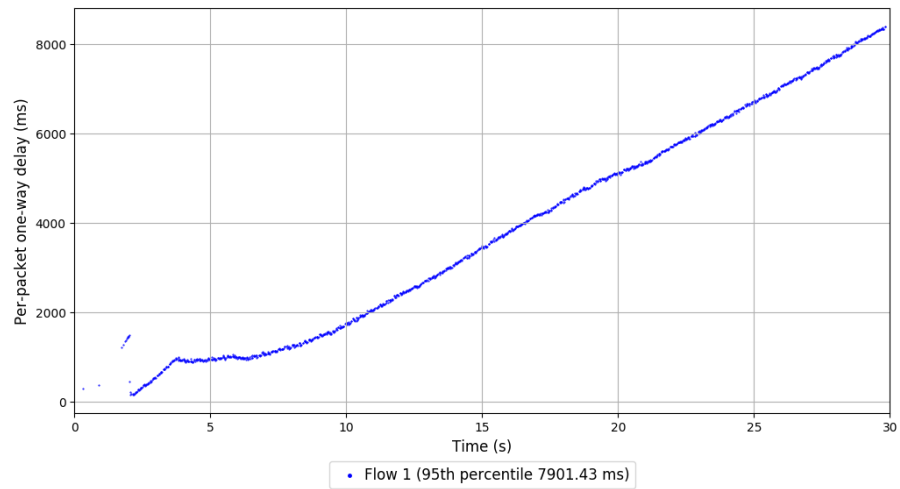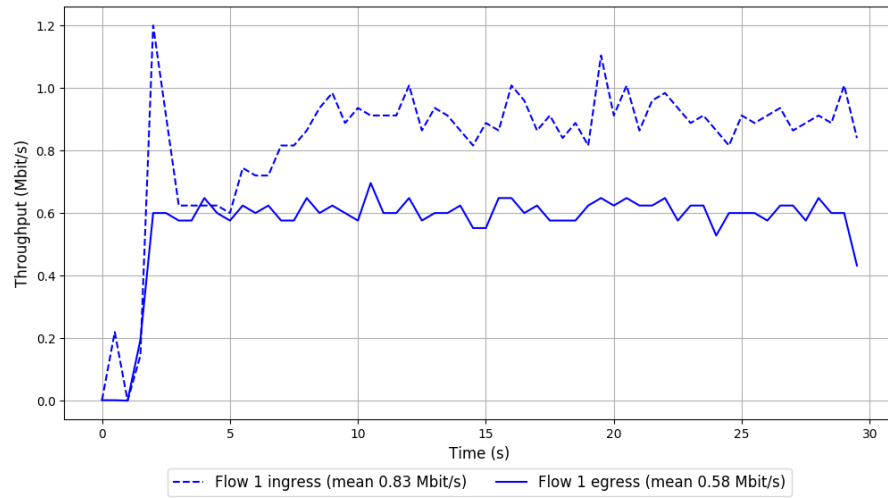
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2017-12-11 08:04:09
End at: 2017-12-11 08:04:39
Local clock offset: -6.118 ms
Remote clock offset: -4.768 ms


# Below is generated by plot.py at 2017-12-11 09:00:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7901.434 ms
Loss rate: 31.29%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7901.434 ms
Loss rate: 31.29%
```
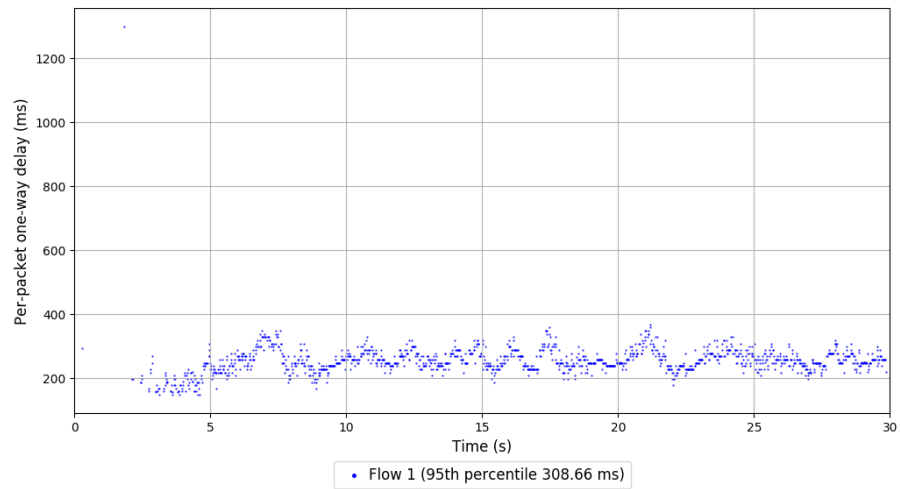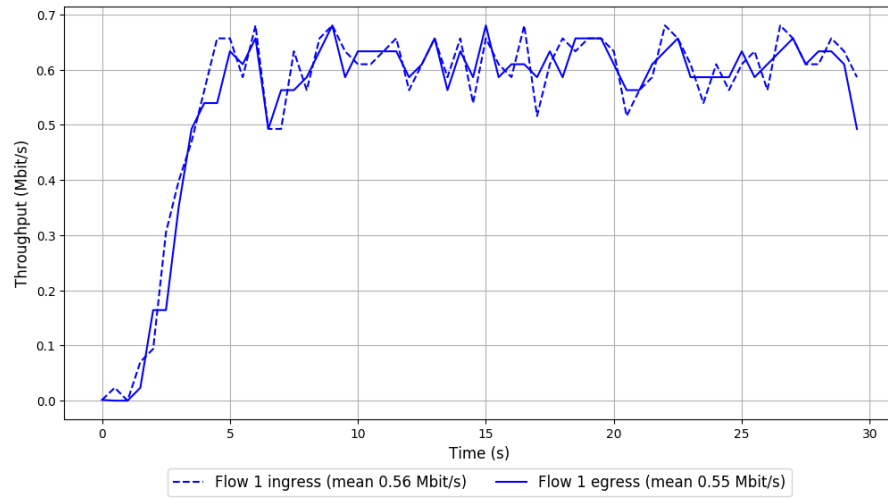
Run 3: Report of TCP Cubic — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2017-12-11 07:29:04
End at: 2017-12-11 07:29:34
Local clock offset: -17.805 ms
Remote clock offset: 0.391 ms

# Below is generated by plot.py at 2017-12-11 09:00:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 308.662 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 308.662 ms
Loss rate: 1.34%
```

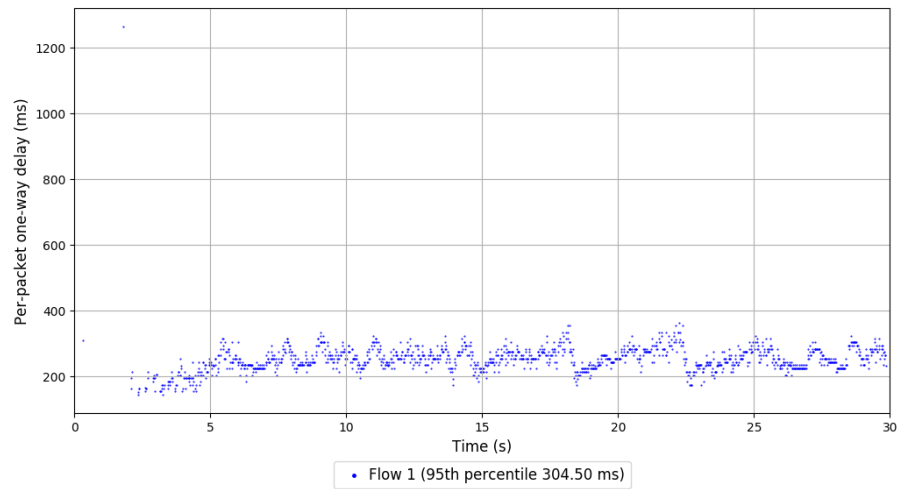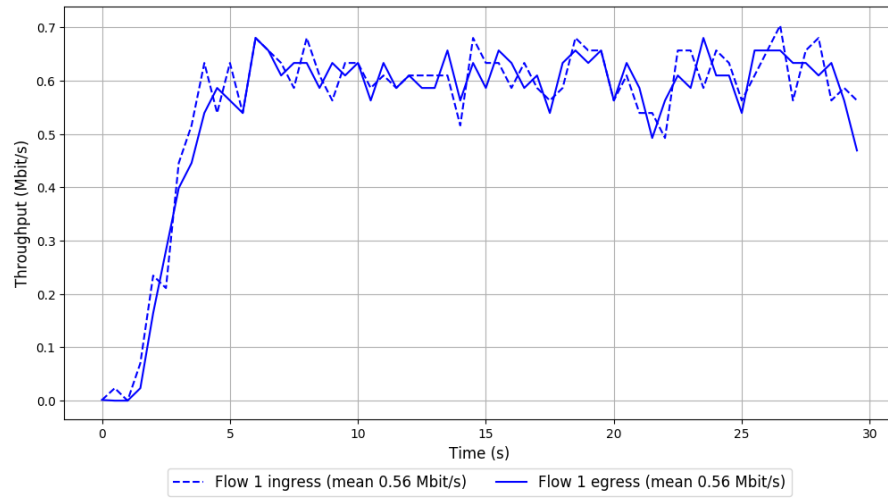Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.56 Mbit/s)   Flow 1 egress (mean 0.55 Mbit/s)

Flow 1 (95th percentile 308.66 ms)

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```
Run 2: Statistics of LEDBAT

Start at: 2017-12-11 07:45:28
End at: 2017-12-11 07:45:58
Local clock offset: -6.93 ms
Remote clock offset: -4.999 ms

# Below is generated by plot.py at 2017-12-11 09:00:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 304.500 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 304.500 ms
Loss rate: 1.27%
```

Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.56 Mbit/s) — Flow 1 egress (mean 0.56 Mbit/s)

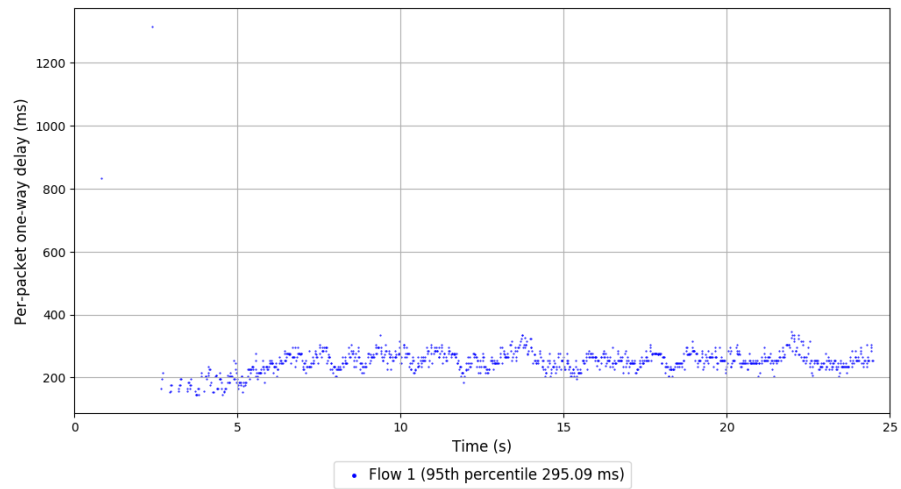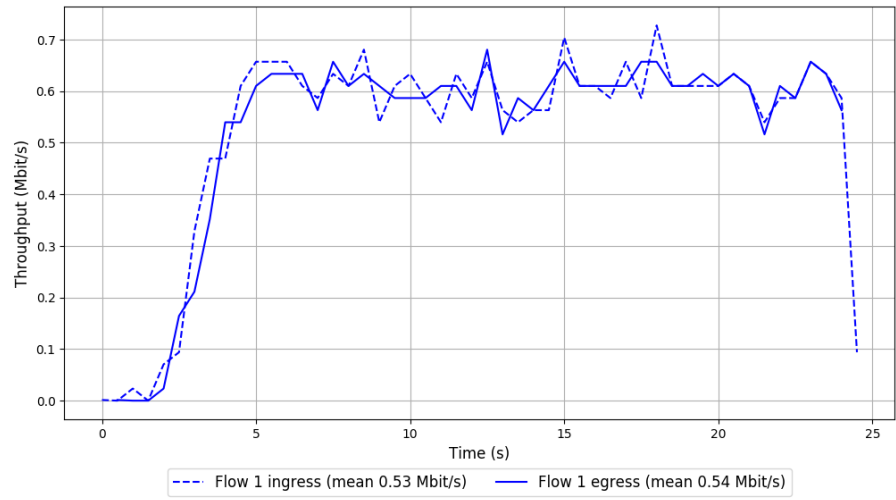Flow 1 (95th percentile 304.50 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2017-12-11 08:02:59
End at: 2017-12-11 08:03:29
Local clock offset: -5.949 ms
Remote clock offset: -3.958 ms
```

Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.53 Mbit/s)   Flow 1 egress (mean 0.54 Mbit/s)
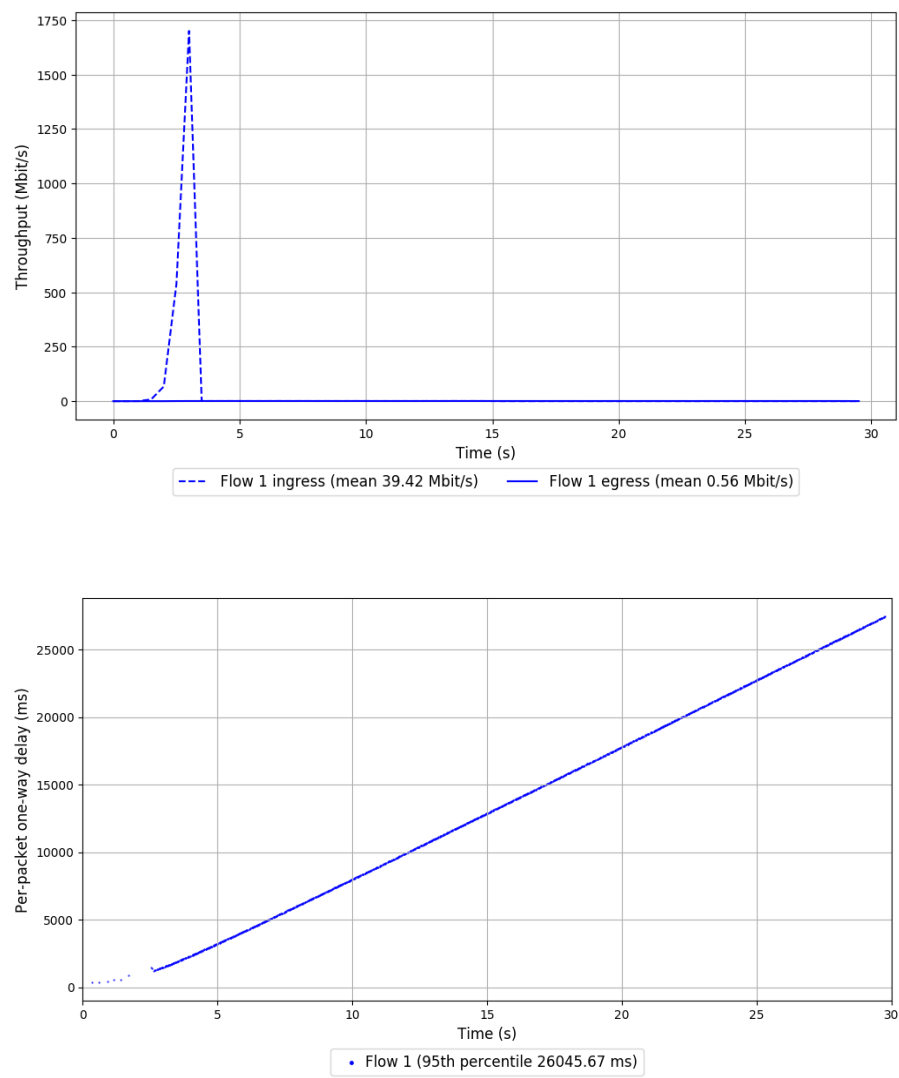

Flow 1 (95th percentile 295.09 ms)

```
Run 1: Statistics of PCC

Start at: 2017-12-11 07:25:32
End at: 2017-12-11 07:26:02
Local clock offset: -14.374 ms
Remote clock offset: -0.474 ms


# Below is generated by plot.py at 2017-12-11 09:00:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26045.673 ms
Loss rate: 98.58%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26045.673 ms
Loss rate: 98.58%
```
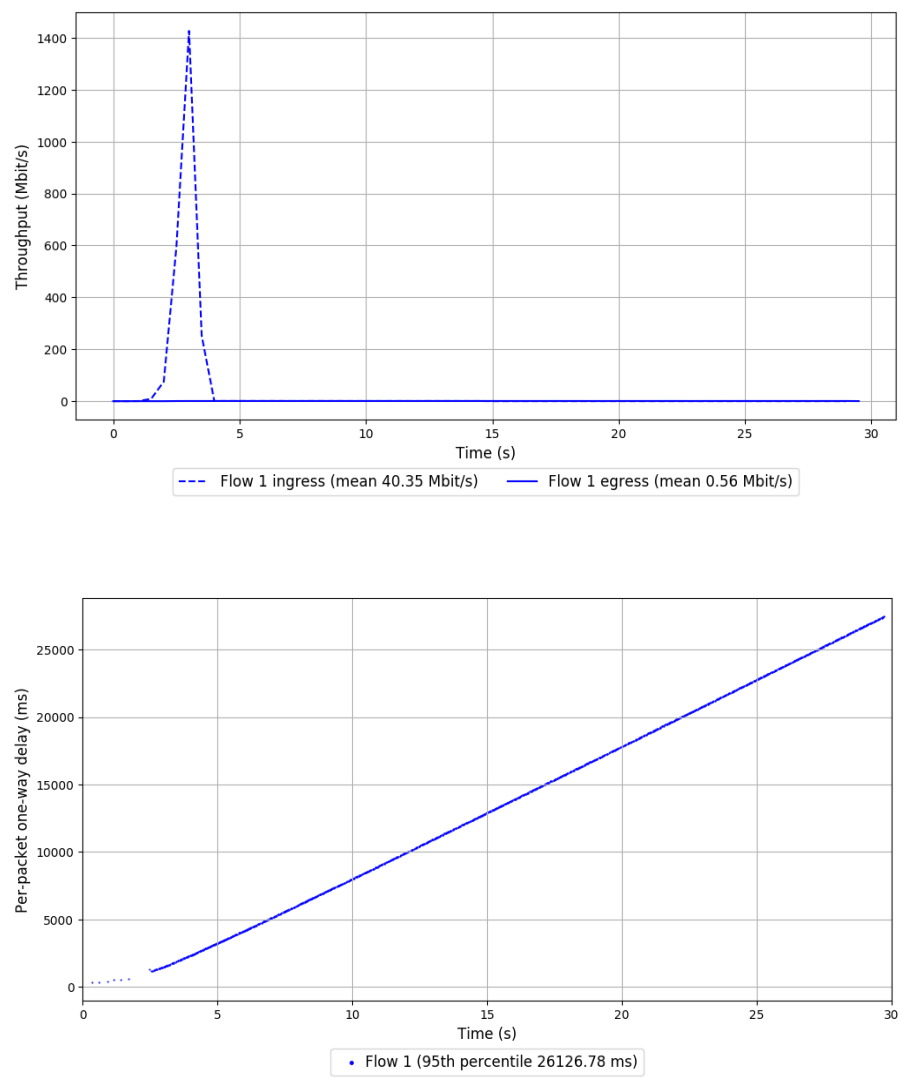
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 39.42 Mbit/s) --- Flow 1 egress (mean 0.56 Mbit/s)

• Flow 1 (95th percentile 26045.67 ms)

```
Run 2: Statistics of PCC

Start at: 2017-12-11 07:41:56
End at: 2017-12-11 07:42:26
Local clock offset: -6.992 ms
Remote clock offset: 0.645 ms

# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26126.781 ms
Loss rate: 98.60%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26126.781 ms
Loss rate: 98.60%
```
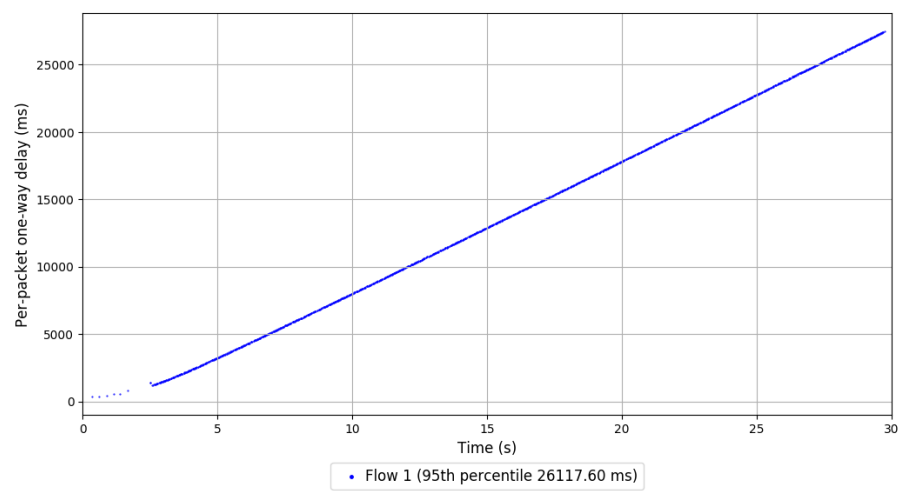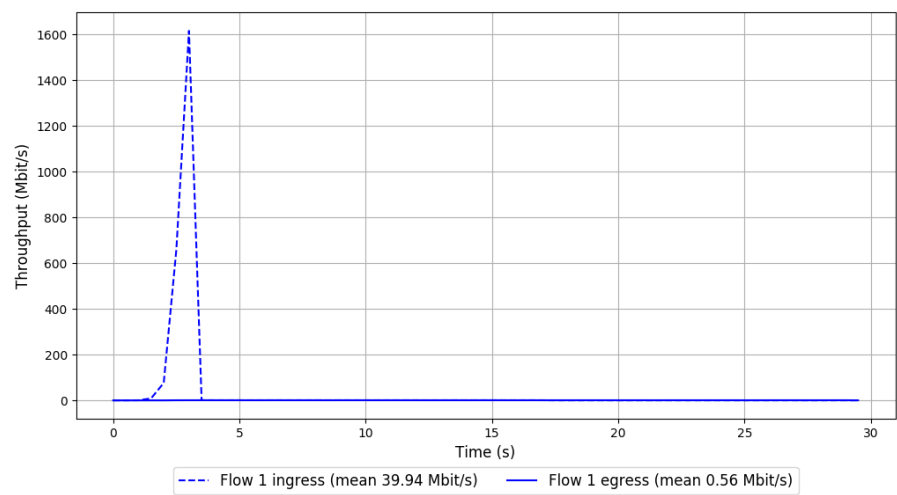
Run 2: Report of PCC — Data Link

Flow 1 ingress (mean 40.35 Mbit/s)   Flow 1 egress (mean 0.56 Mbit/s)

• Flow 1 (95th percentile 26126.78 ms)

```
Run 3: Statistics of PCC

Start at: 2017-12-11 07:59:27
End at: 2017-12-11 07:59:57
Local clock offset: -5.956 ms
Remote clock offset: 1.378 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26117.604 ms
Loss rate: 98.61%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26117.604 ms
Loss rate: 98.61%
```

Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 39.94 Mbit/s) ----   Flow 1 egress (mean 0.56 Mbit/s) ——

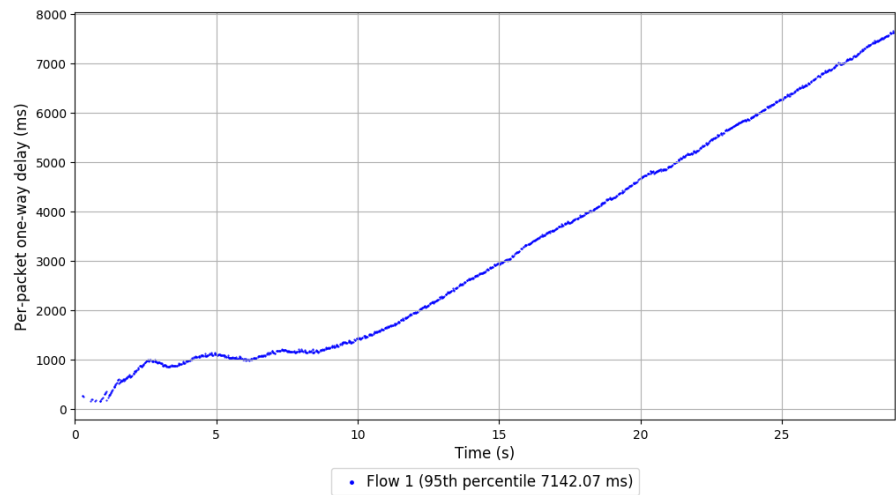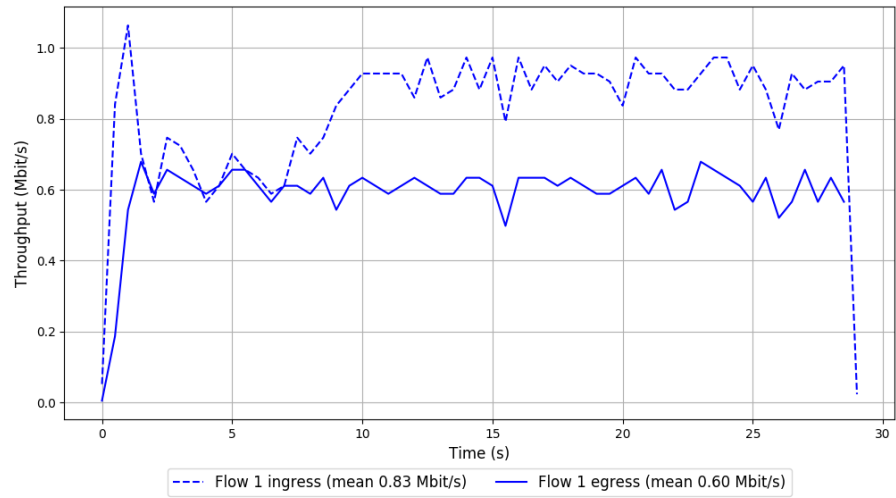• Flow 1 (95th percentile 26117.60 ms)

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```
Run 1: Statistics of QUIC Cubic

Start at: 2017-12-11 07:23:12
End at: 2017-12-11 07:23:42
Local clock offset: -12.097 ms
Remote clock offset: -0.414 ms

# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7142.071 ms
Loss rate: 29.16%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7142.071 ms
Loss rate: 29.16%
```
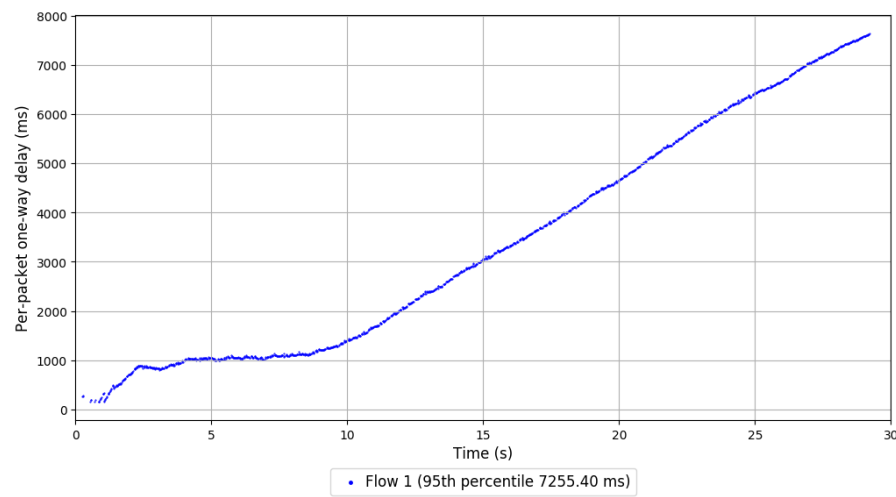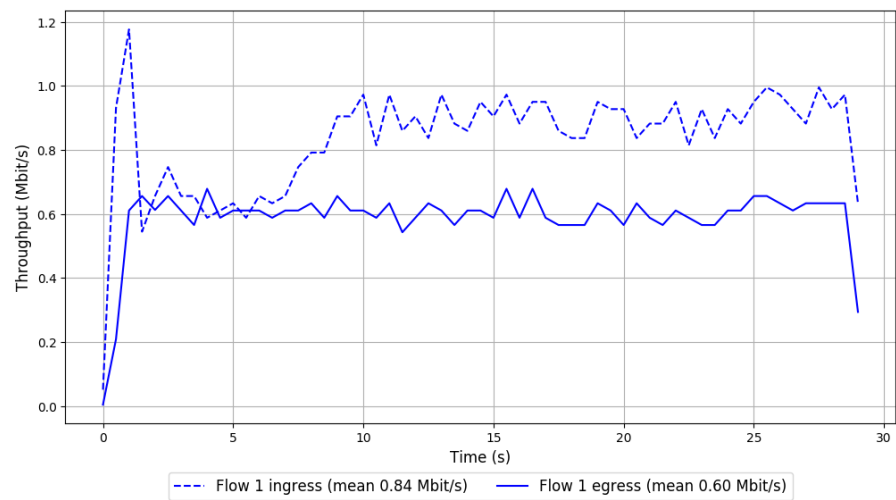
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.83 Mbit/s)   Flow 1 egress (mean 0.60 Mbit/s)

Flow 1 (95th percentile 7142.07 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2017-12-11 07:39:36
End at: 2017-12-11 07:40:06
Local clock offset: -8.897 ms
Remote clock offset: 0.666 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7255.405 ms
Loss rate: 29.46%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7255.405 ms
Loss rate: 29.46%
```
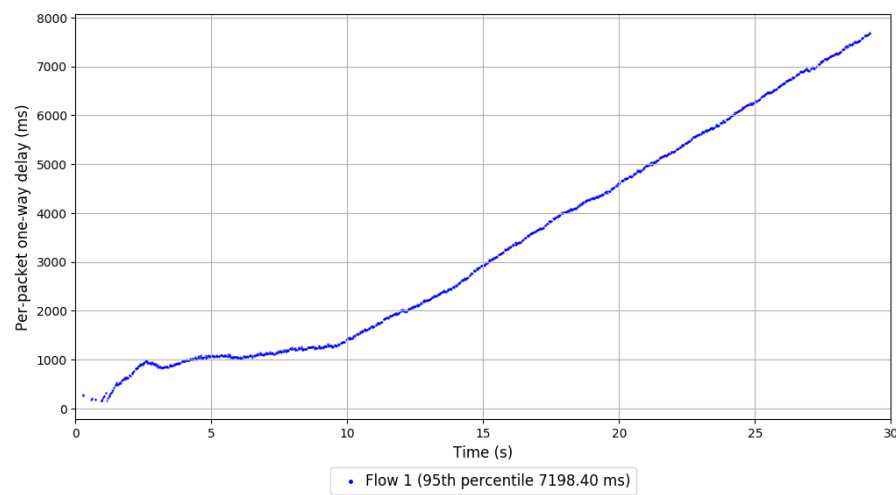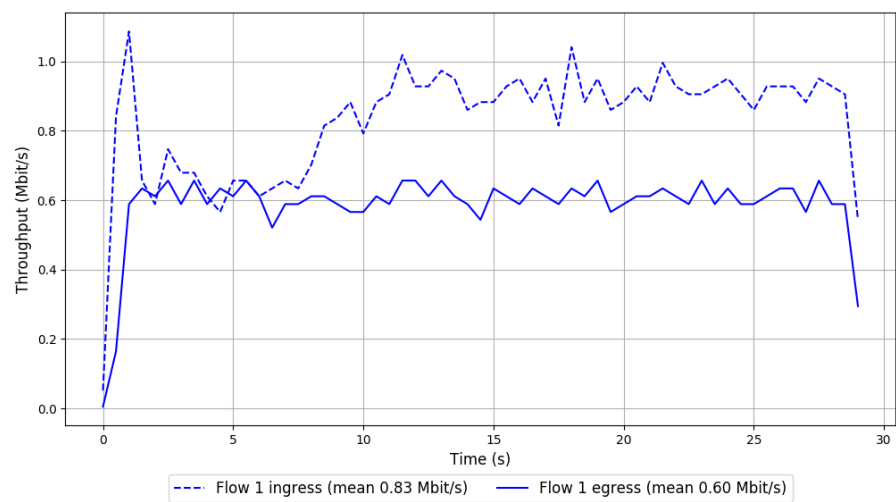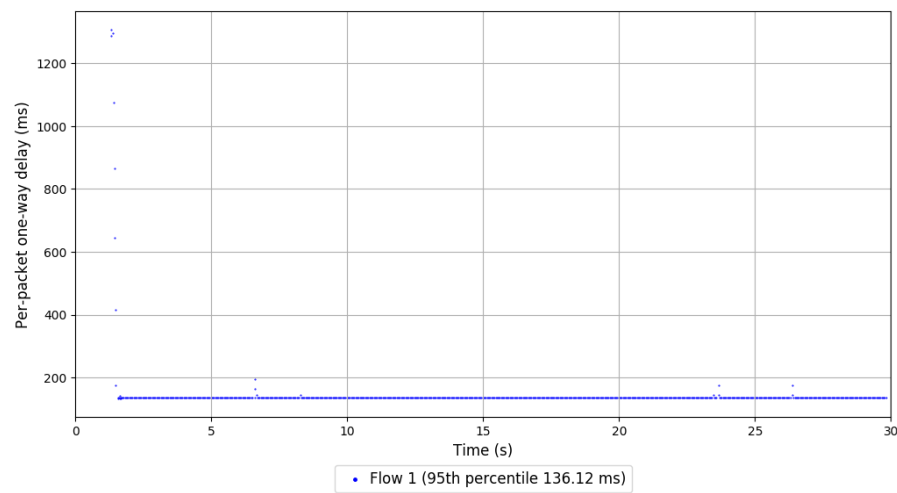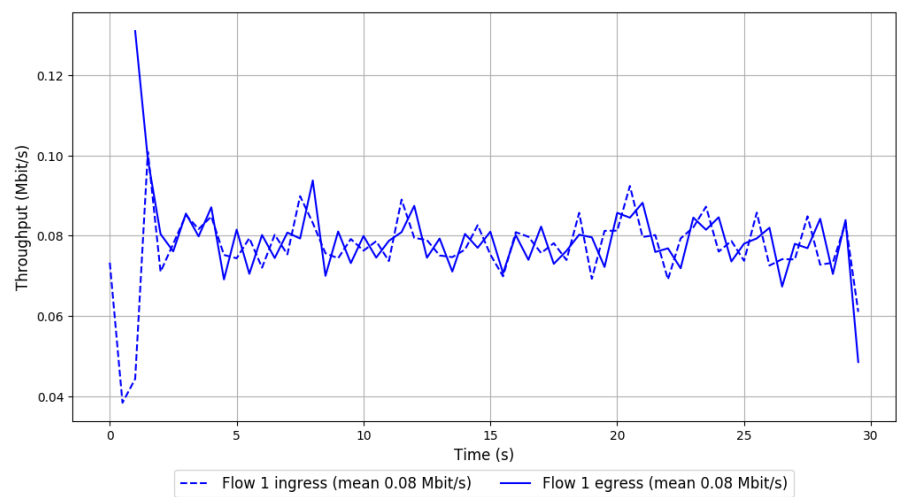
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.84 Mbit/s)   Flow 1 egress (mean 0.60 Mbit/s)

• Flow 1 (95th percentile 7255.40 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2017-12-11 07:57:06
End at: 2017-12-11 07:57:37
Local clock offset: -6.442 ms
Remote clock offset: -4.401 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7198.401 ms
Loss rate: 29.33%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7198.401 ms
Loss rate: 29.33%
```
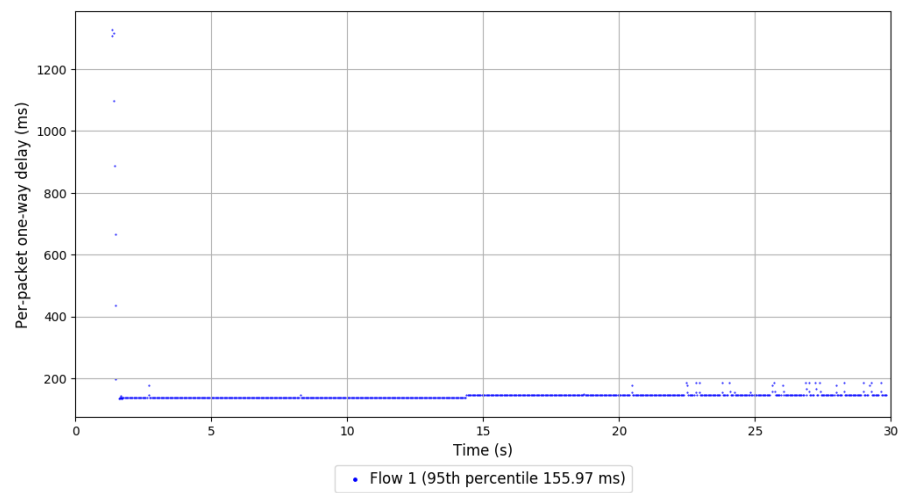
Run 3: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2017-12-11 07:27:54
End at: 2017-12-11 07:28:24
Local clock offset: -16.309 ms
Remote clock offset: 1.278 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.125 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.125 ms
Loss rate: 0.66%
```

Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.08 Mbit/s)   Flow 1 egress (mean 0.08 Mbit/s)

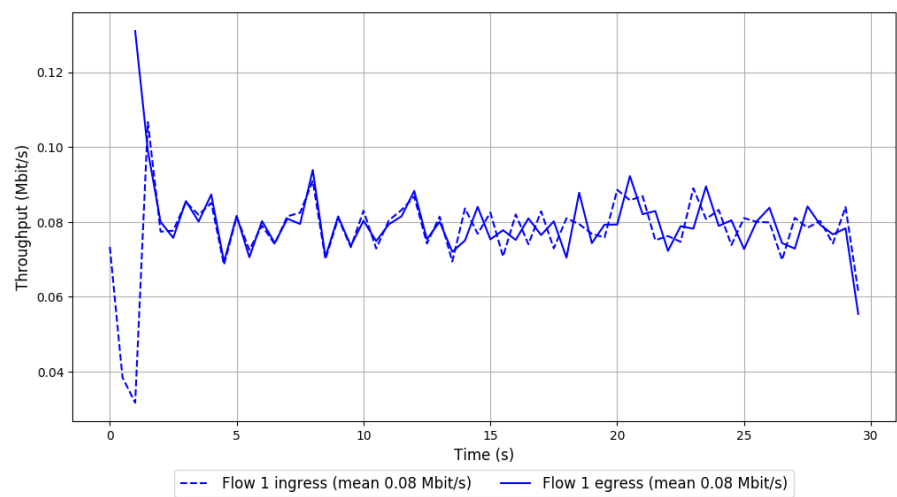Flow 1 (95th percentile 136.12 ms)

```
Run 2: Statistics of SCReAM

Start at: 2017-12-11 07:44:18
End at: 2017-12-11 07:44:48
Local clock offset: -6.708 ms
Remote clock offset: -4.988 ms

# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 155.971 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 155.971 ms
Loss rate: 0.66%
```
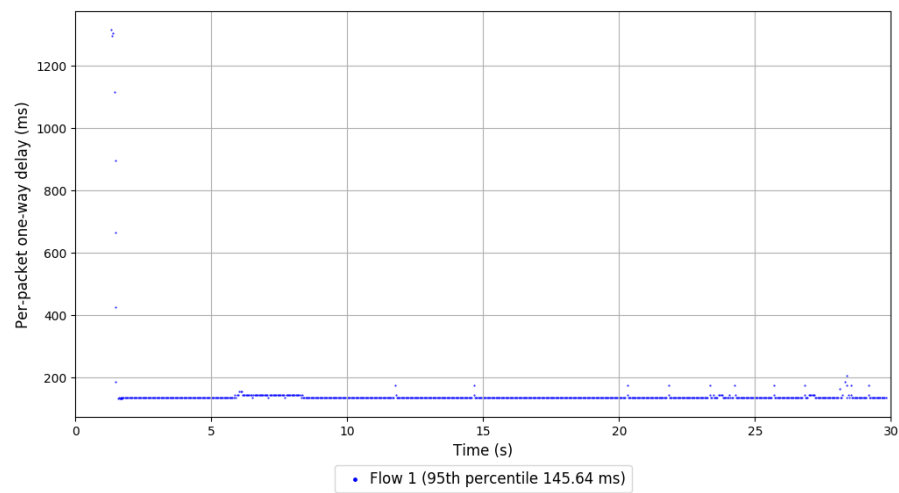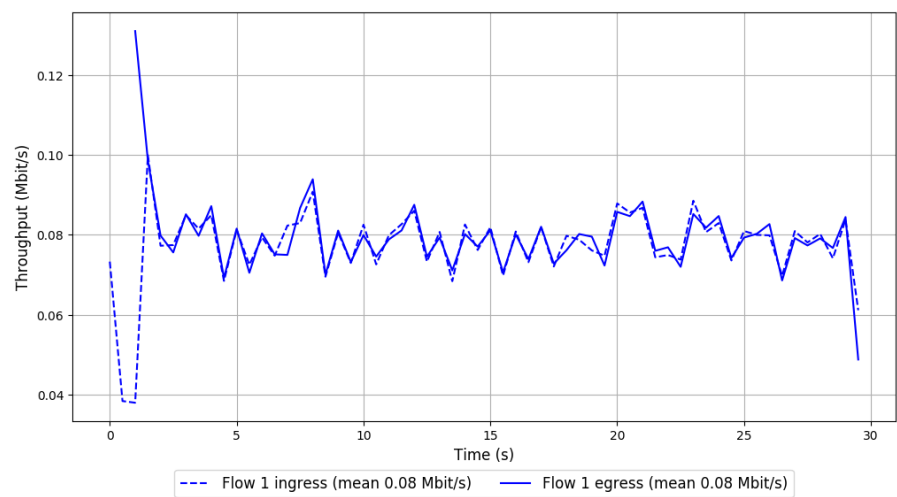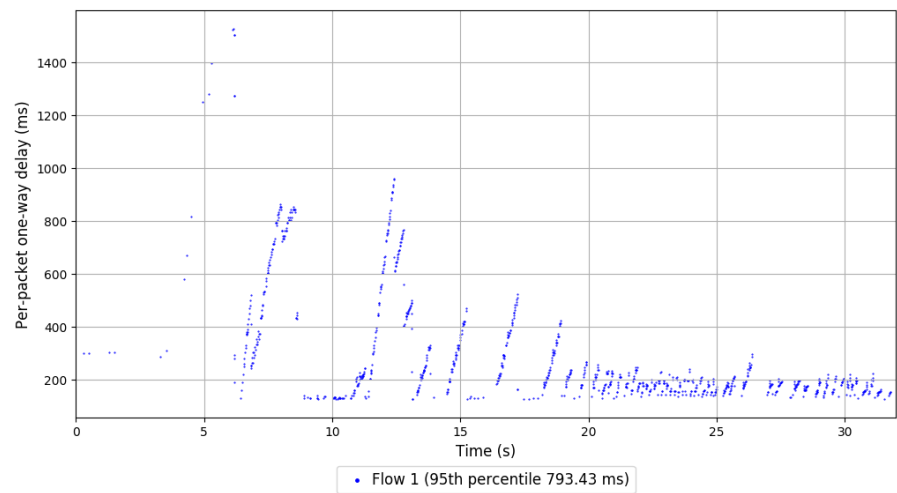
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2017-12-11 08:01:49
End at: 2017-12-11 08:02:19
Local clock offset: -5.856 ms
Remote clock offset: 0.567 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 145.637 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 145.637 ms
Loss rate: 0.66%
```

Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.08 Mbit/s)   Flow 1 egress (mean 0.08 Mbit/s)

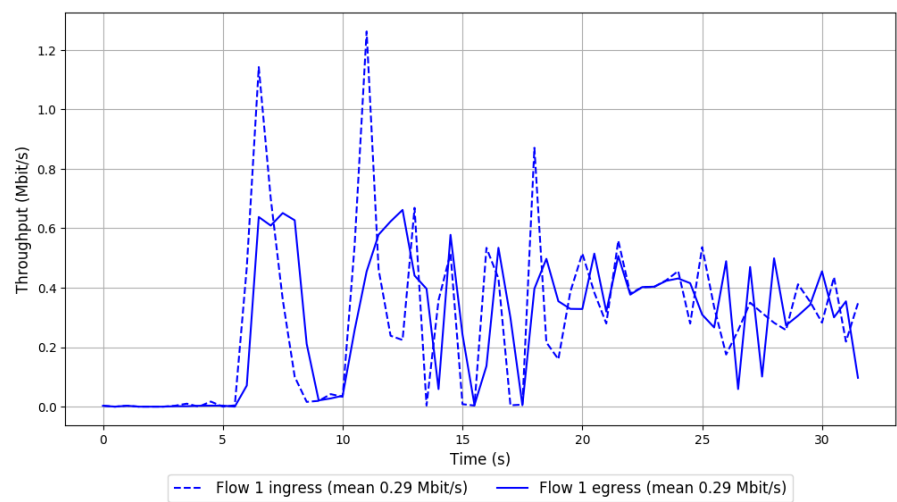Flow 1 (95th percentile 145.64 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2017-12-11 07:20:52
End at: 2017-12-11 07:21:22
Local clock offset: -10.126 ms
Remote clock offset: 0.378 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 793.427 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 793.427 ms
Loss rate: 1.37%
```

Run 1: Report of WebRTC media — Data Link
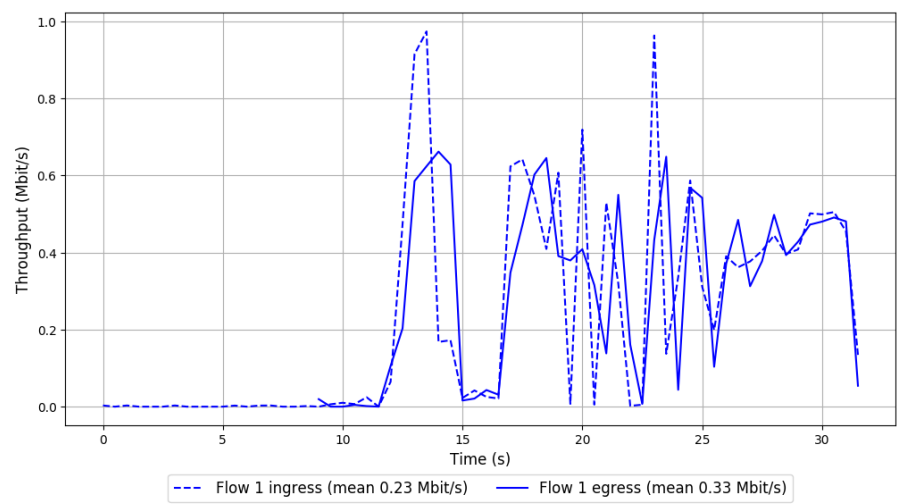
Run 2: Statistics of WebRTC media

Start at: 2017-12-11 07:37:16
End at: 2017-12-11 07:37:46
Local clock offset: -13.018 ms
Remote clock offset: -4.316 ms

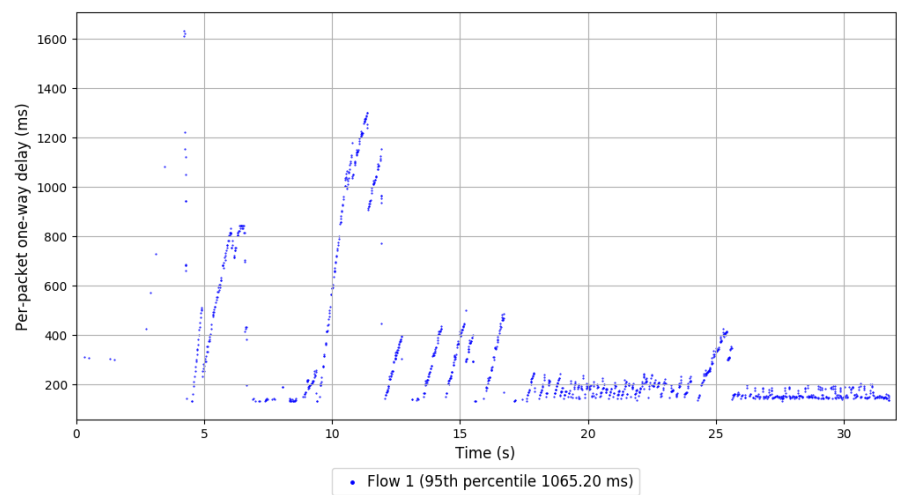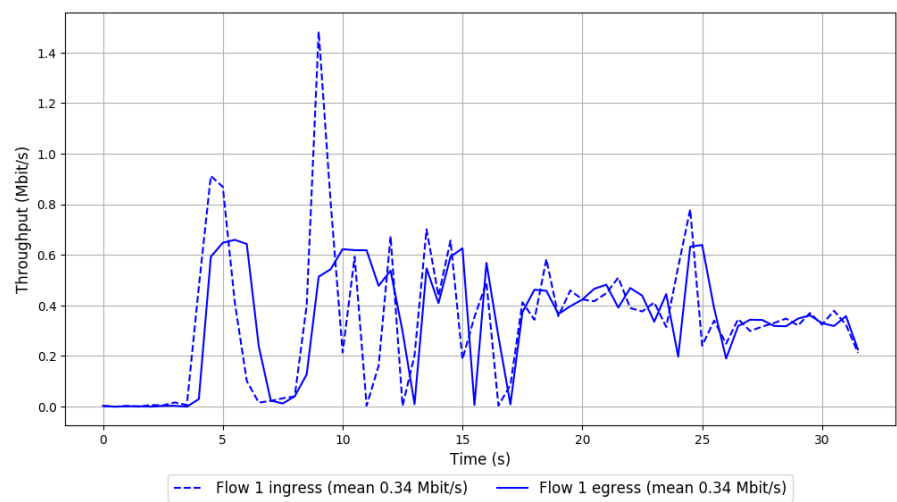Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2017-12-11 07:54:46
End at: 2017-12-11 07:55:16
Local clock offset: -6.209 ms
Remote clock offset: -5.185 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 1065.198 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 1065.198 ms
Loss rate: 0.57%
```

Run 3: Report of WebRTC media — Data Link

Flow 1 ingress (mean 0.34 Mbit/s)   Flow 1 egress (mean 0.34 Mbit/s)
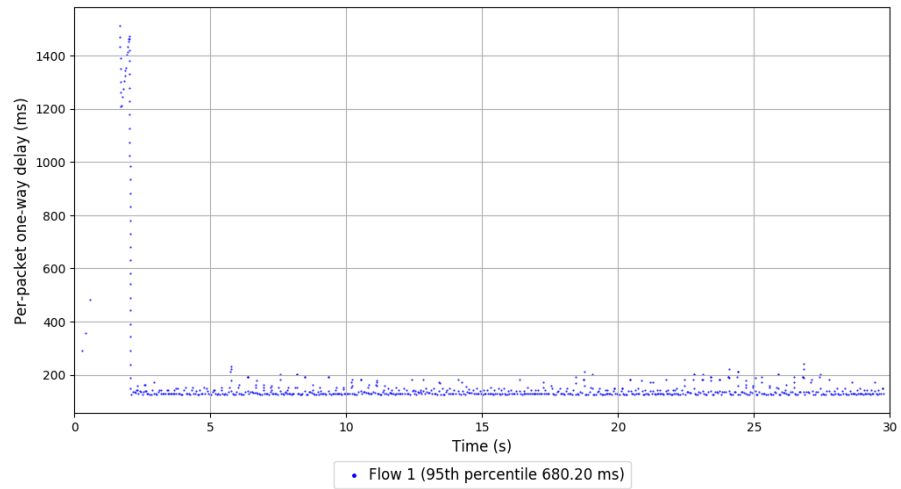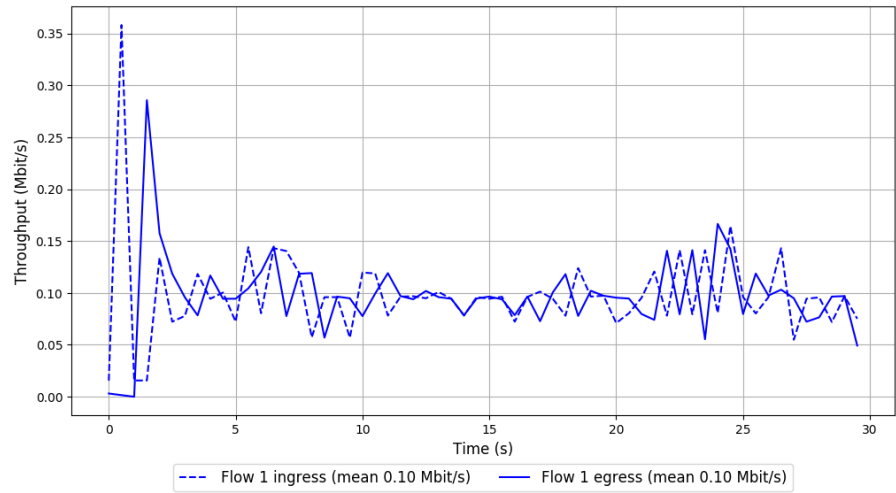

Flow 1 (95th percentile 1065.20 ms)

```
Run 1: Statistics of Sprout

Start at: 2017-12-11 07:32:35
End at: 2017-12-11 07:33:05
Local clock offset: -19.384 ms
Remote clock offset: 0.515 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 680.195 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 680.195 ms
Loss rate: 1.18%
```

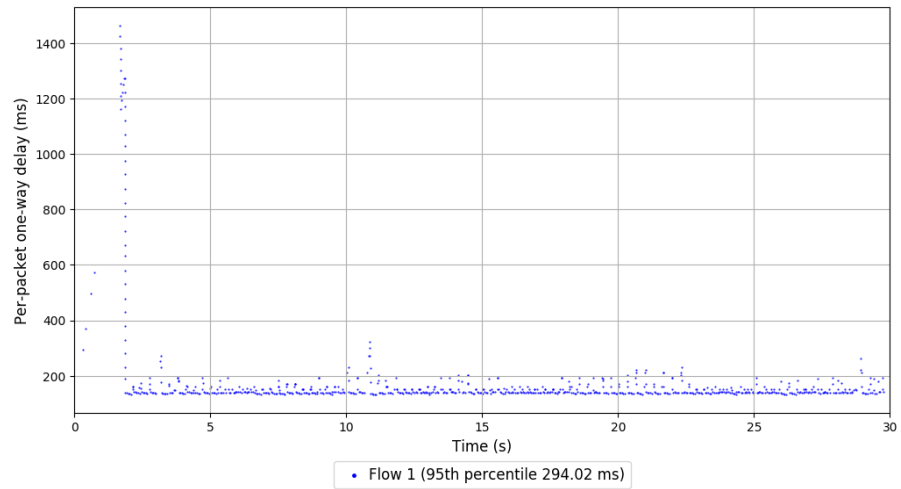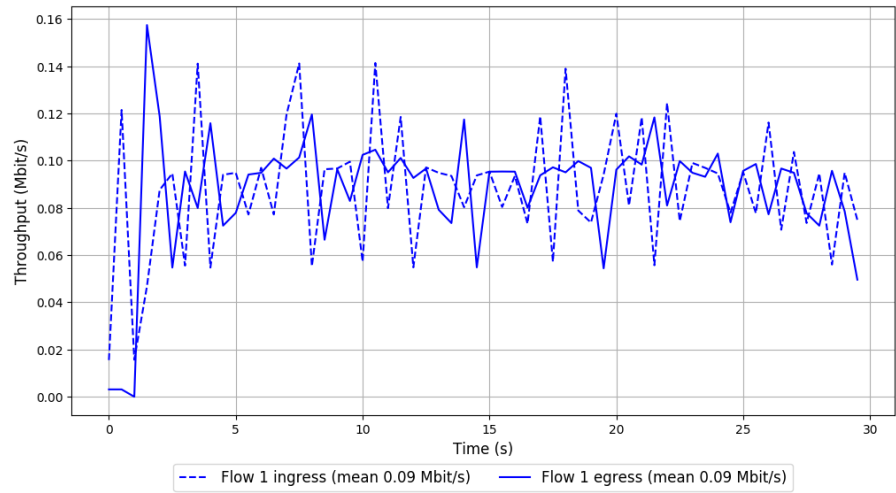Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2017-12-11 07:48:59
End at: 2017-12-11 07:49:29
Local clock offset: -7.614 ms
Remote clock offset: -4.035 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 294.022 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 294.022 ms
Loss rate: 0.88%
```

Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2017-12-11 08:06:29
End at: 2017-12-11 08:06:59
Local clock offset: -5.533 ms
Remote clock offset: 0.567 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 598.952 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 598.952 ms
Loss rate: 1.47%
```
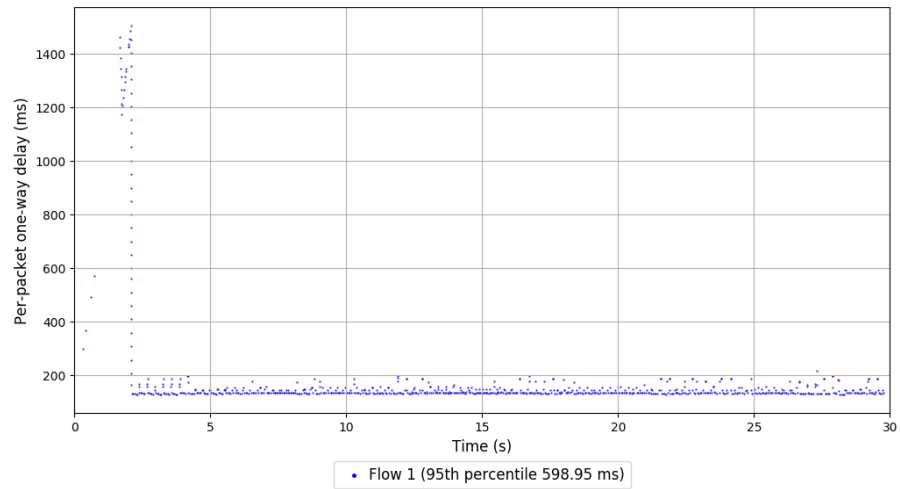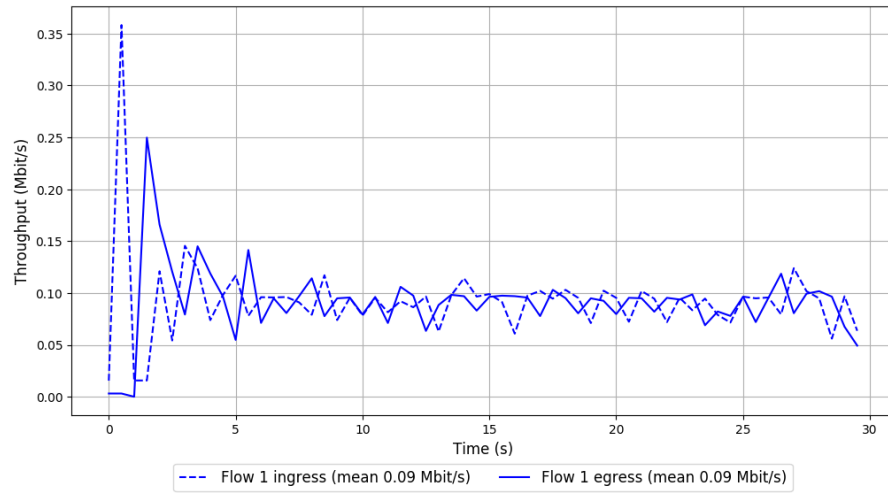
Run 3: Report of Sprout — Data Link

Flow 1 ingress (mean 0.09 Mbit/s)   Flow 1 egress (mean 0.09 Mbit/s)

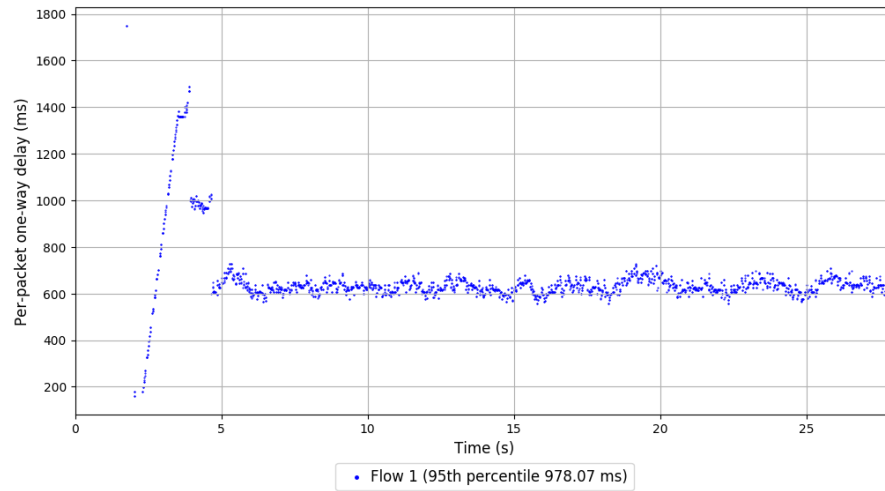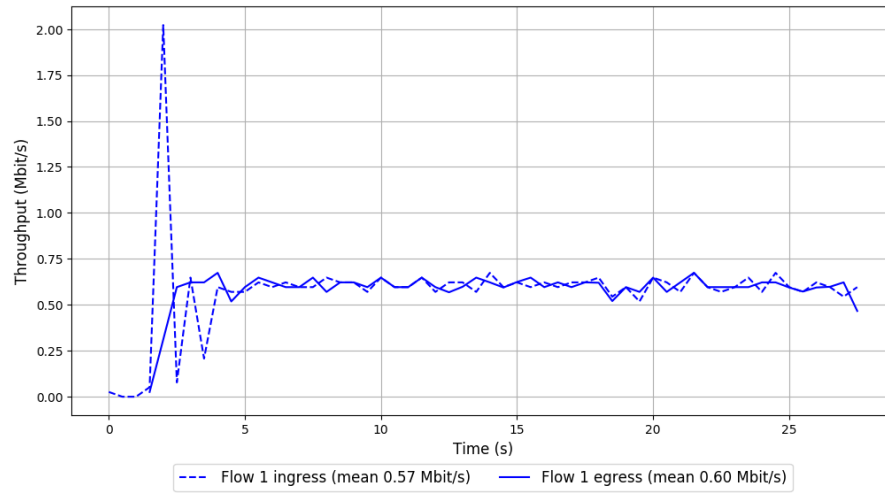Flow 1 (95th percentile 598.95 ms)

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

Start at: 2017-12-11 07:34:55
End at: 2017-12-11 07:35:25
Local clock offset: -16.416 ms
Remote clock offset: -5.112 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 978.072 ms
Loss rate: 2.75%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 978.072 ms
Loss rate: 2.75%
```

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

Flow 1 ingress (mean 0.57 Mbit/s) --- Flow 1 egress (mean 0.60 Mbit/s)

Flow 1 (95th percentile 978.07 ms)

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

Start at: 2017-12-11 07:52:25
End at: 2017-12-11 07:52:55
Local clock offset: -5.273 ms
Remote clock offset: 0.424 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1029.069 ms
Loss rate: 2.90%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1029.069 ms
Loss rate: 2.90%
```
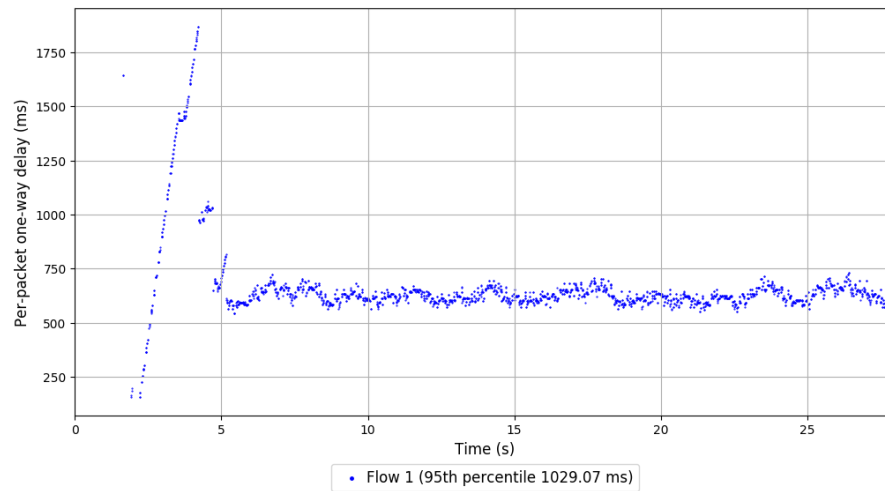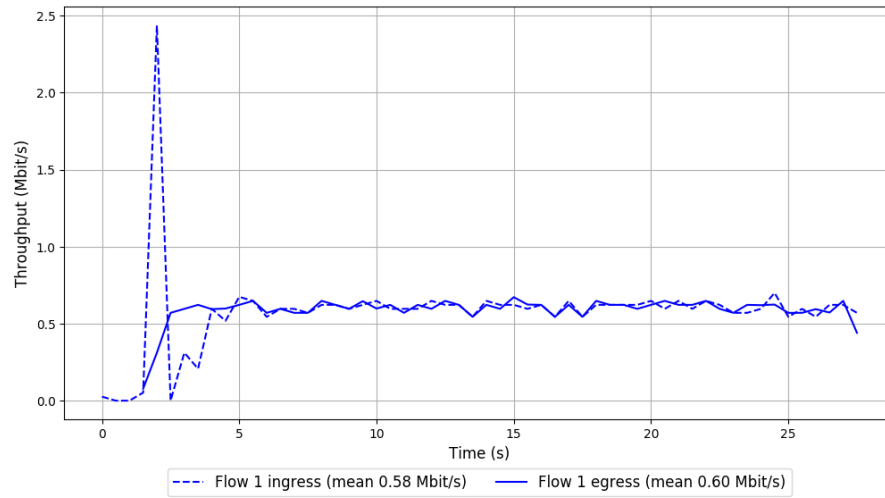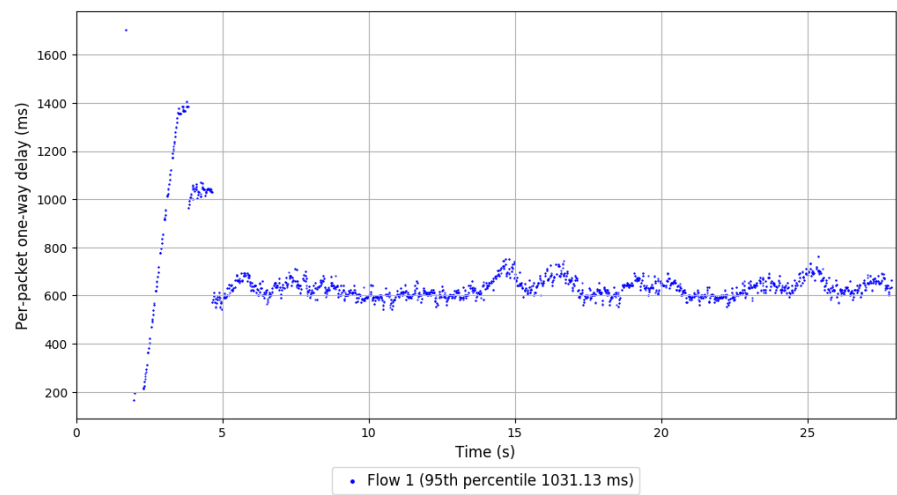
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.58 Mbit/s)   Flow 1 egress (mean 0.60 Mbit/s)

Flow 1 (95th percentile 1029.07 ms)

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

Start at: 2017-12-11 08:08:50
End at: 2017-12-11 08:09:20
Local clock offset: -6.318 ms
Remote clock offset: 0.547 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1031.129 ms
Loss rate: 2.67%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1031.129 ms
Loss rate: 2.67%
```
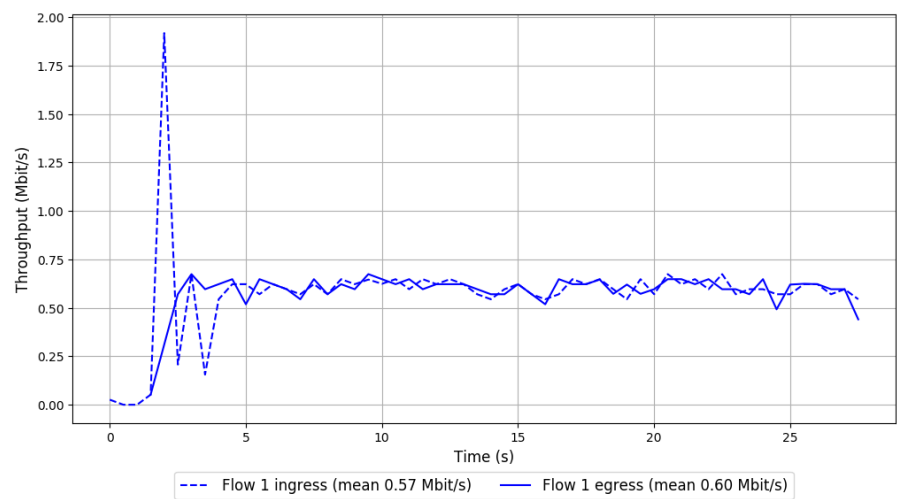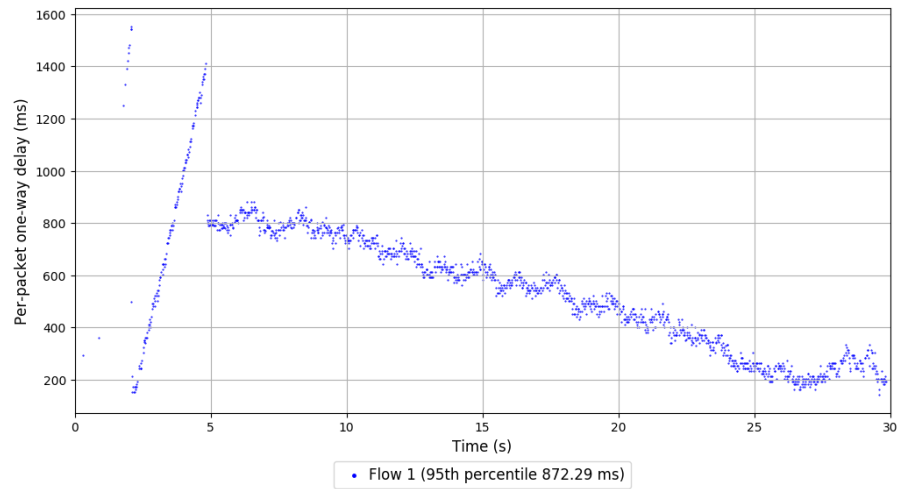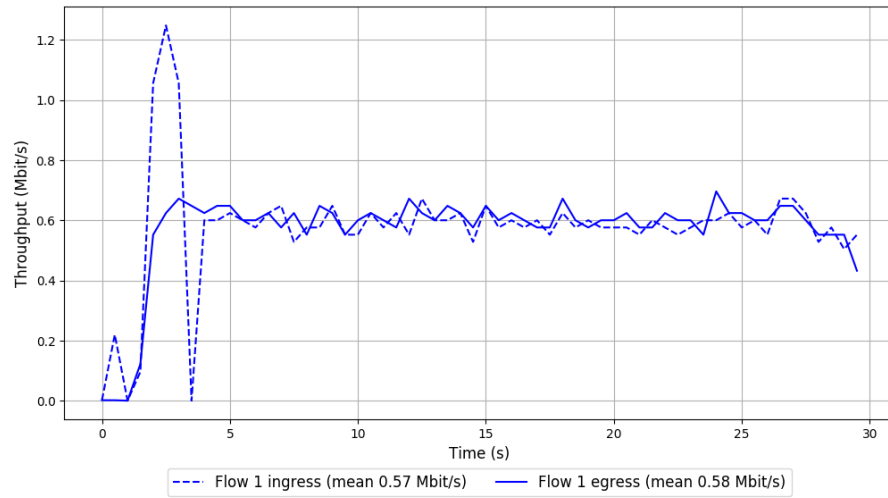
Run 3: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2017-12-11 07:22:02
End at: 2017-12-11 07:22:32
Local clock offset: -11.094 ms
Remote clock offset: 1.23 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 872.290 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 872.290 ms
Loss rate: 1.05%
```
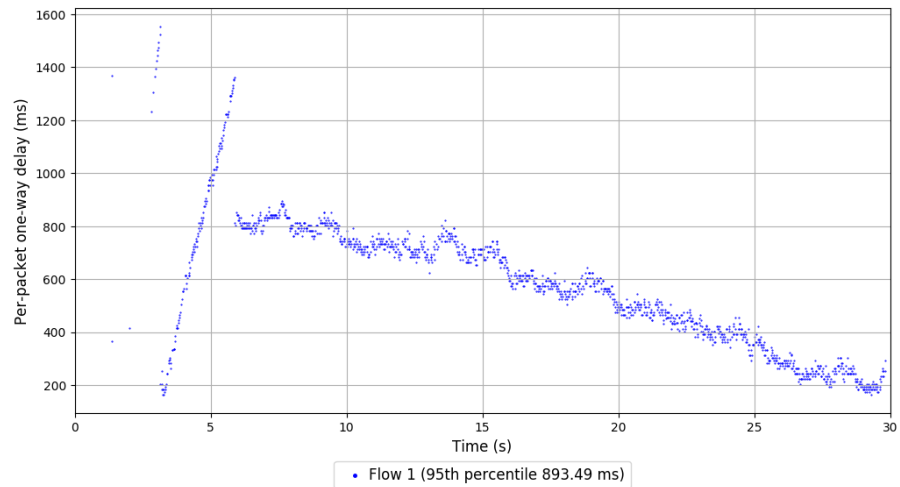
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 0.57 Mbit/s)   Flow 1 egress (mean 0.58 Mbit/s)

Flow 1 (95th percentile 872.29 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2017-12-11 07:38:26
End at: 2017-12-11 07:38:56
Local clock offset: -10.51 ms
Remote clock offset: 0.653 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 893.488 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 893.488 ms
Loss rate: 1.44%
```
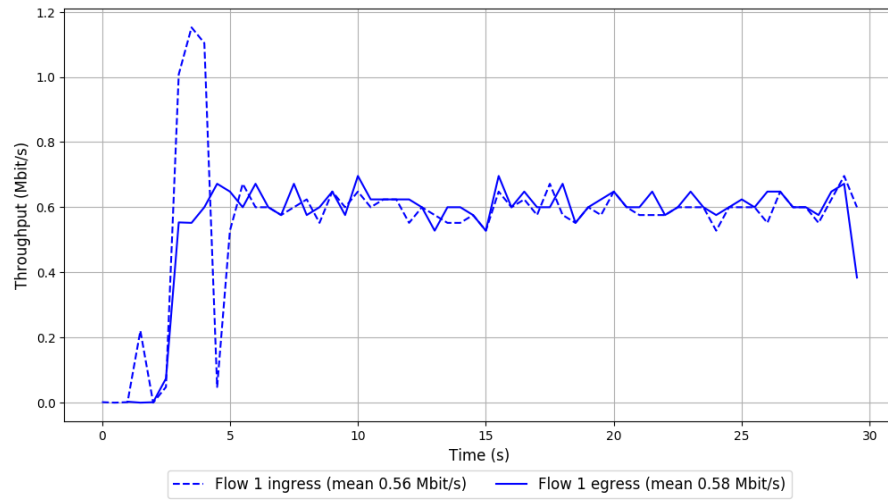
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 0.56 Mbit/s) --- Flow 1 egress (mean 0.58 Mbit/s)

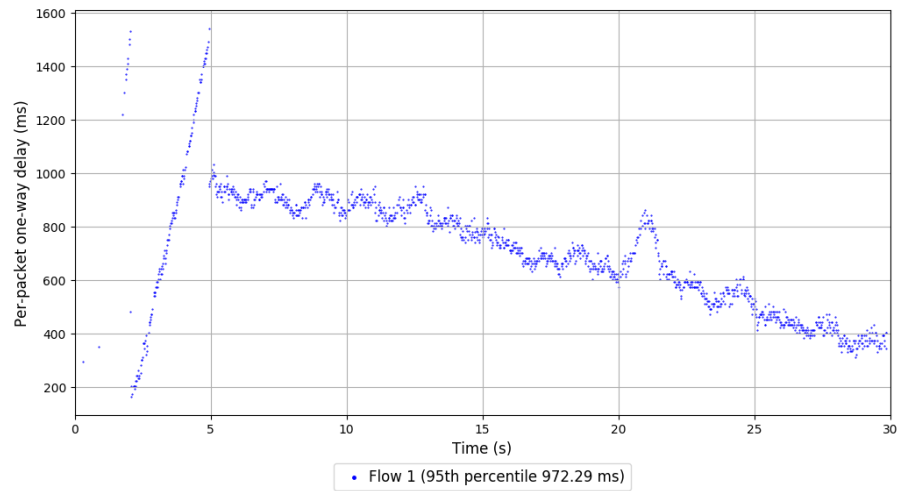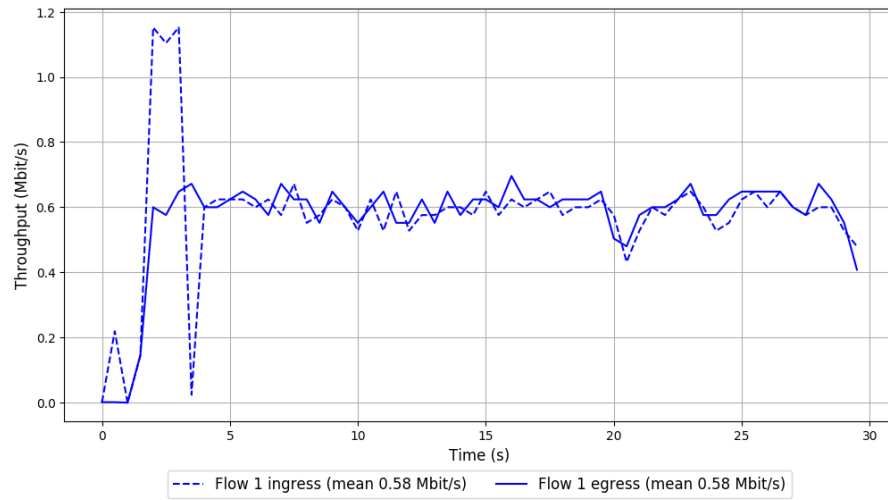Flow 1 (95th percentile 893.49 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2017-12-11 07:55:56
End at: 2017-12-11 07:56:26
Local clock offset: -6.291 ms
Remote clock offset: -5.261 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 972.293 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 972.293 ms
Loss rate: 1.32%
```
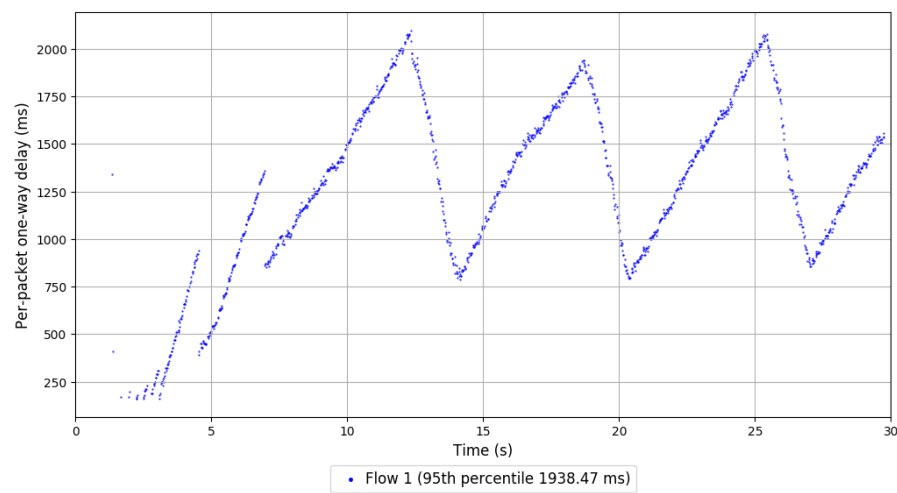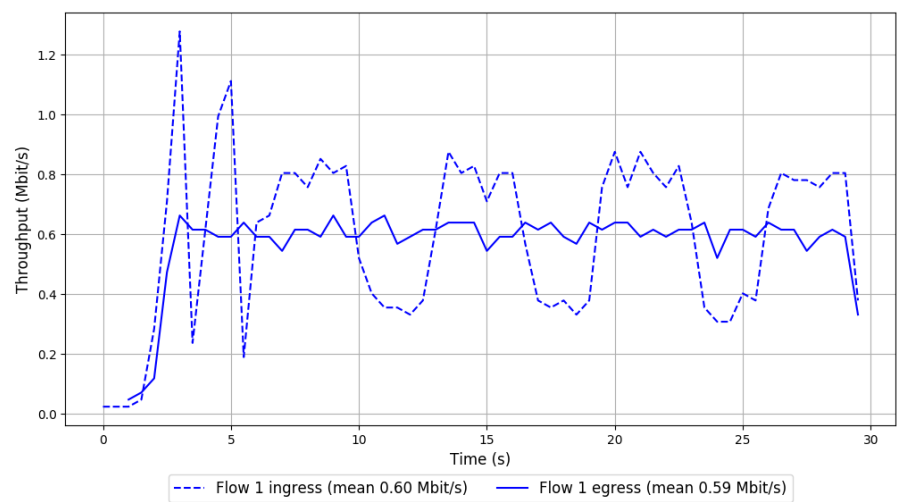
Run 3: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2017-12-11 07:36:06
End at: 2017-12-11 07:36:36
Local clock offset: -15.886 ms
Remote clock offset: -4.315 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1938.471 ms
Loss rate: 6.76%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1938.471 ms
Loss rate: 6.76%
```

Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 0.60 Mbit/s)   Flow 1 egress (mean 0.59 Mbit/s)

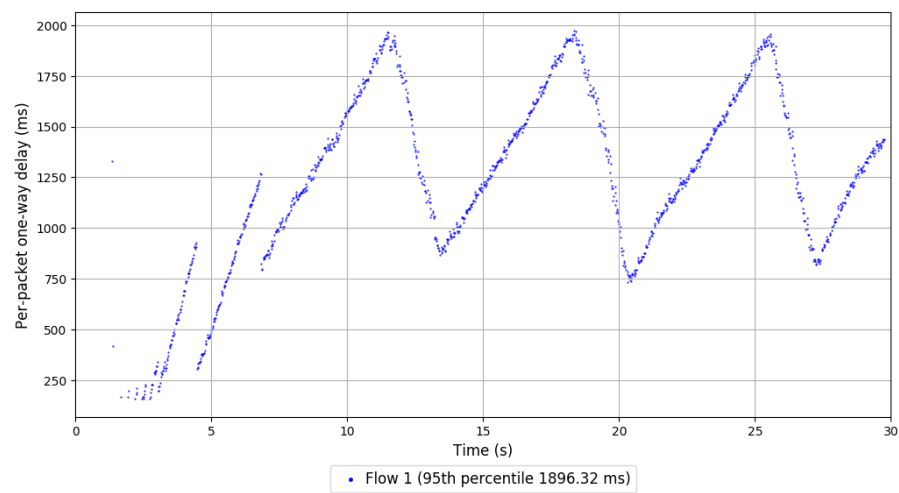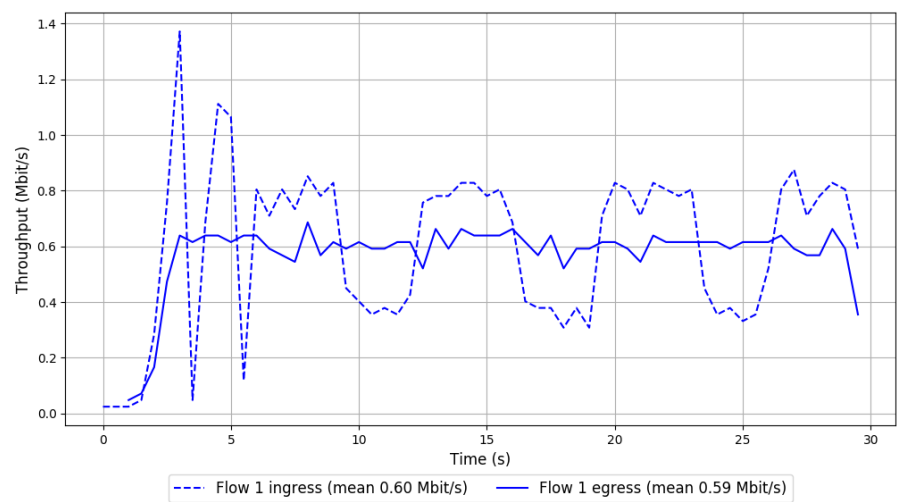Flow 1 (95th percentile 1938.47 ms)

```
Run 2: Statistics of Verus

Start at: 2017-12-11 07:53:36
End at: 2017-12-11 07:54:06
Local clock offset: -5.244 ms
Remote clock offset: -4.369 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1896.324 ms
Loss rate: 6.92%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1896.324 ms
Loss rate: 6.92%
```
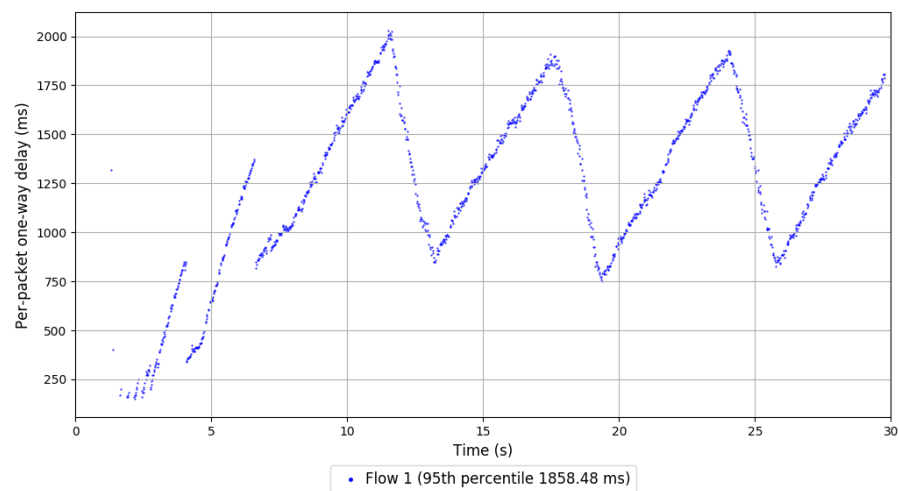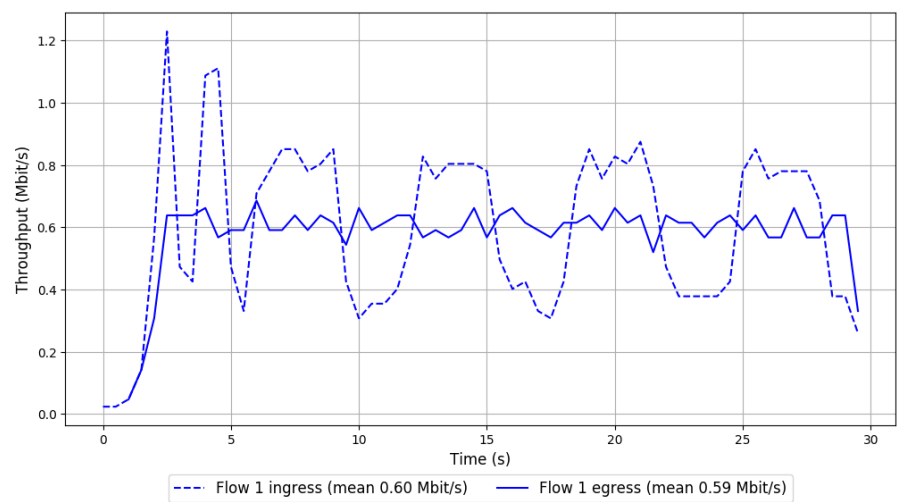
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2017-12-11 08:10:00
End at: 2017-12-11 08:10:30
Local clock offset: -6.516 ms
Remote clock offset: -3.825 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1858.480 ms
Loss rate: 4.79%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1858.480 ms
Loss rate: 4.79%
```

Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 0.60 Mbit/s) --- Flow 1 egress (mean 0.59 Mbit/s)

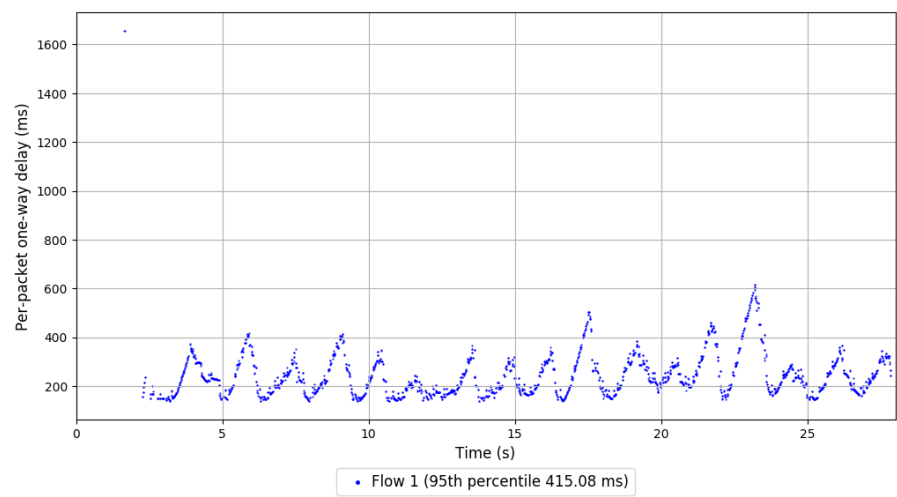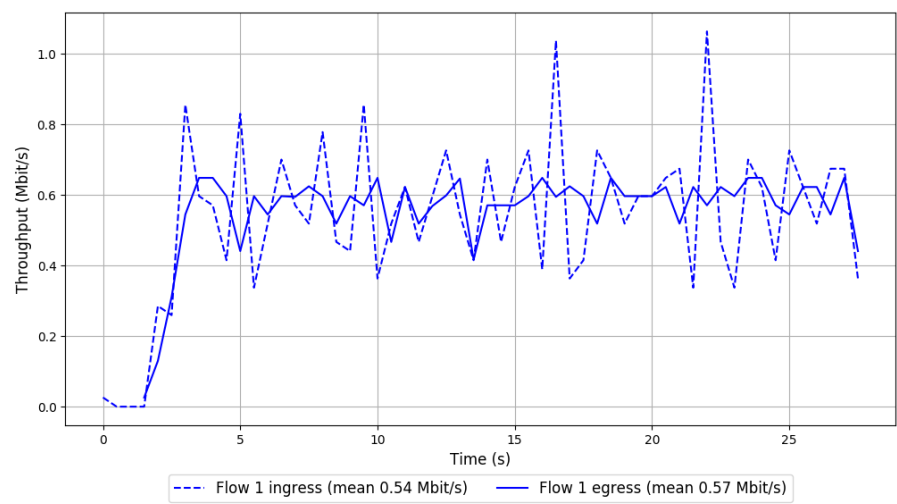Flow 1 (95th percentile 1858.48 ms)

```
Run 1: Statistics of Copa

Start at: 2017-12-11 07:33:45
End at: 2017-12-11 07:34:15
Local clock offset: -17.765 ms
Remote clock offset: 0.55 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 415.079 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 415.079 ms
Loss rate: 0.95%
```

Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2017-12-11 07:50:55
End at: 2017-12-11 07:51:25
Remote clock offset: -4.046 ms

# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 413.380 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 413.380 ms
Loss rate: 1.15%
```
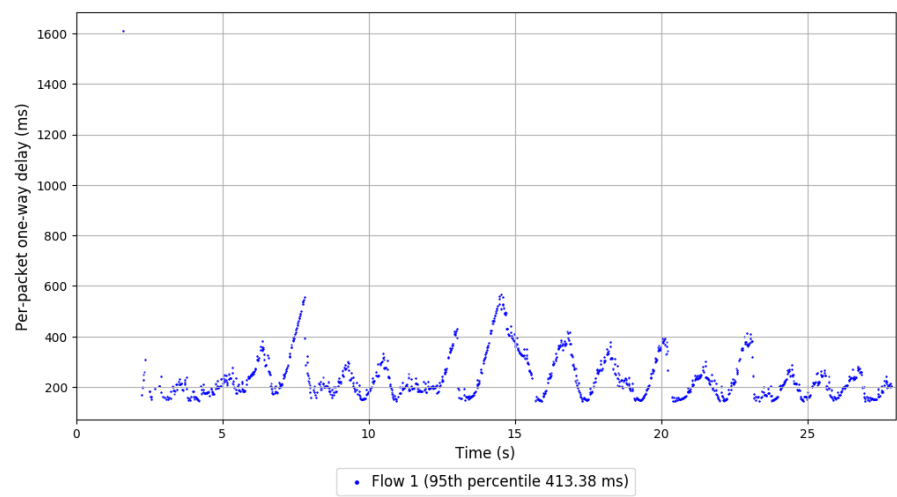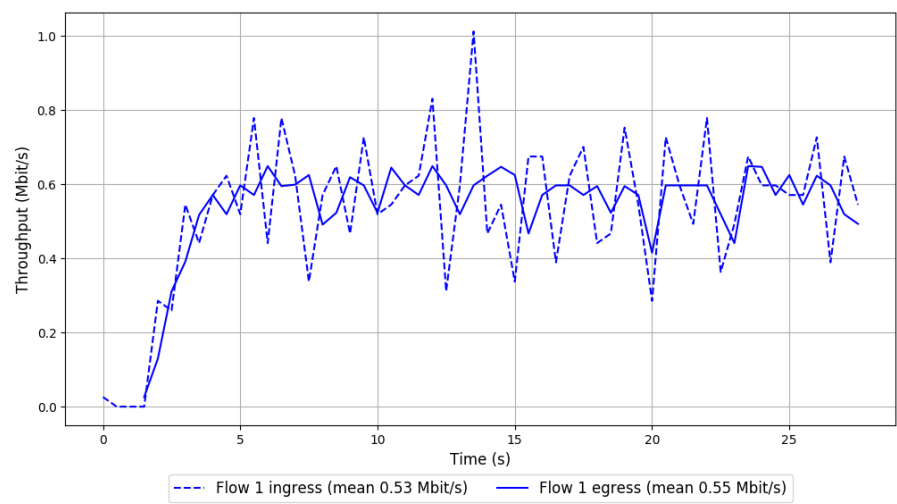
Run 2: Report of Copa — Data Link
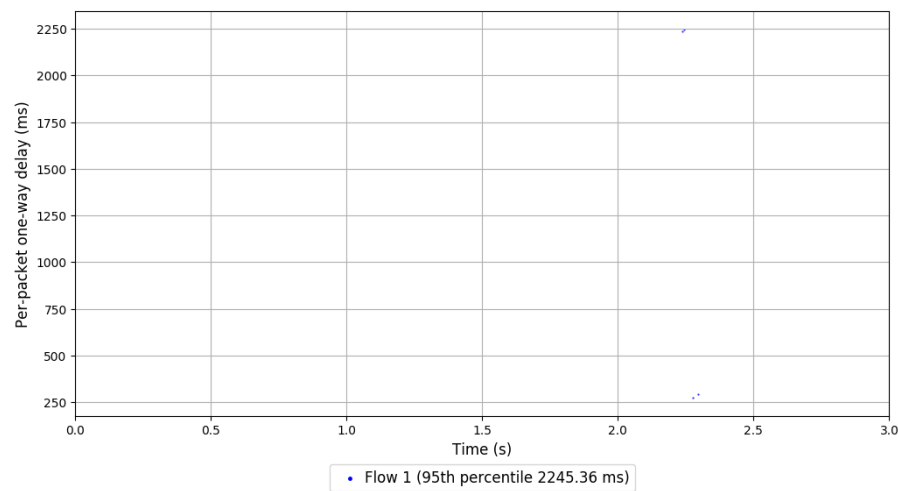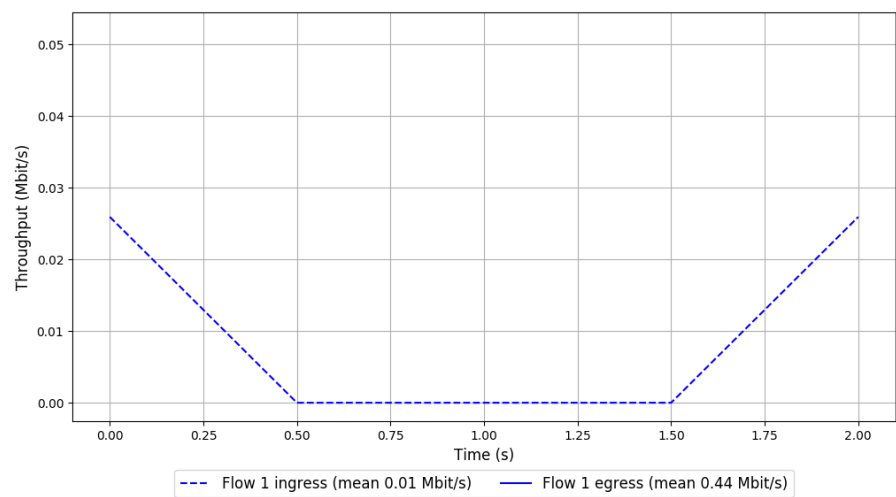
```
Run 3: Statistics of Copa

Start at: 2017-12-11 08:07:40
End at: 2017-12-11 08:08:10
Local clock offset: -5.826 ms
Remote clock offset: -0.223 ms
```
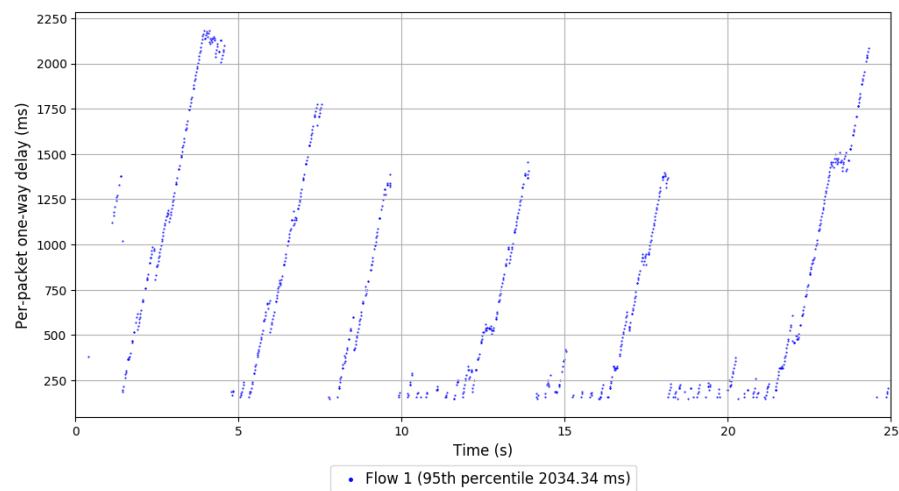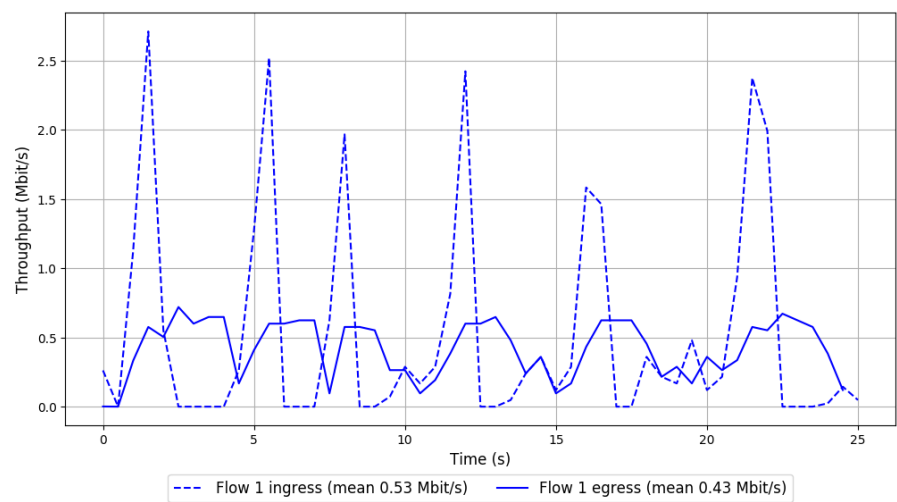
Run 3: Report of Copa — Data Link

```
Run 1: Statistics of Indigo

Start at: 2017-12-11 07:31:24
End at: 2017-12-11 07:31:55
Local clock offset: -20.663 ms
Remote clock offset: -0.332 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 2034.335 ms
Loss rate: 20.35%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 2034.335 ms
Loss rate: 20.35%
```
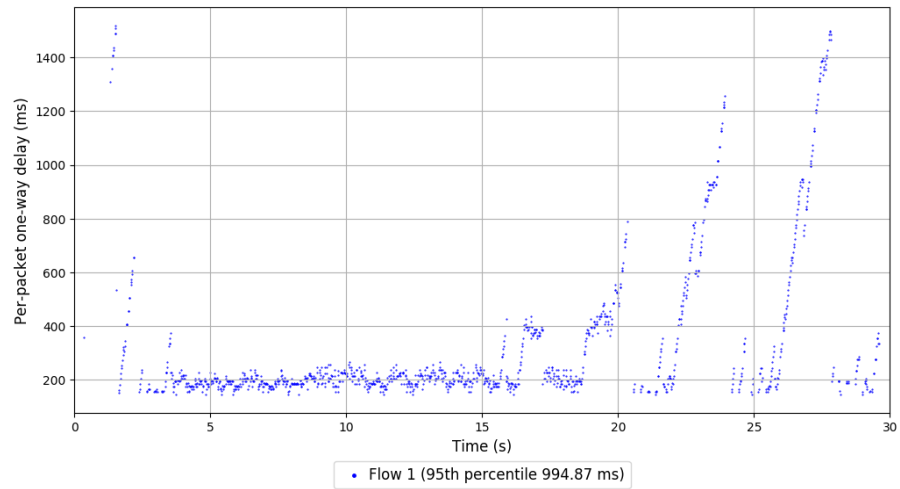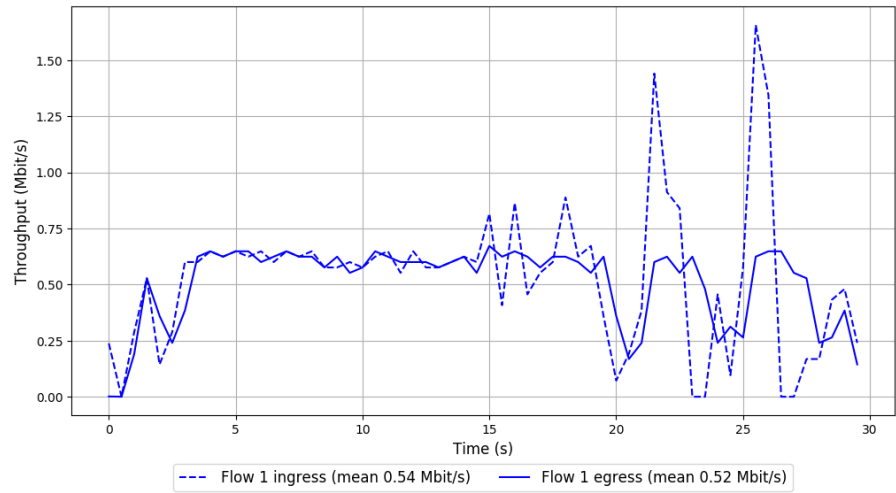
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2017-12-11 07:47:49
End at: 2017-12-11 07:48:19
Local clock offset: -7.64 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 994.869 ms
Loss rate: 4.52%
-- Flow 1:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 994.869 ms
Loss rate: 4.52%
```
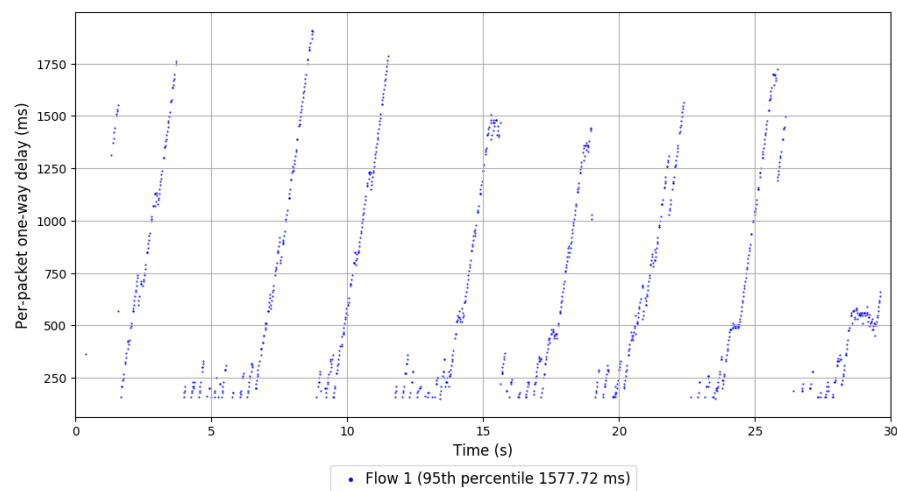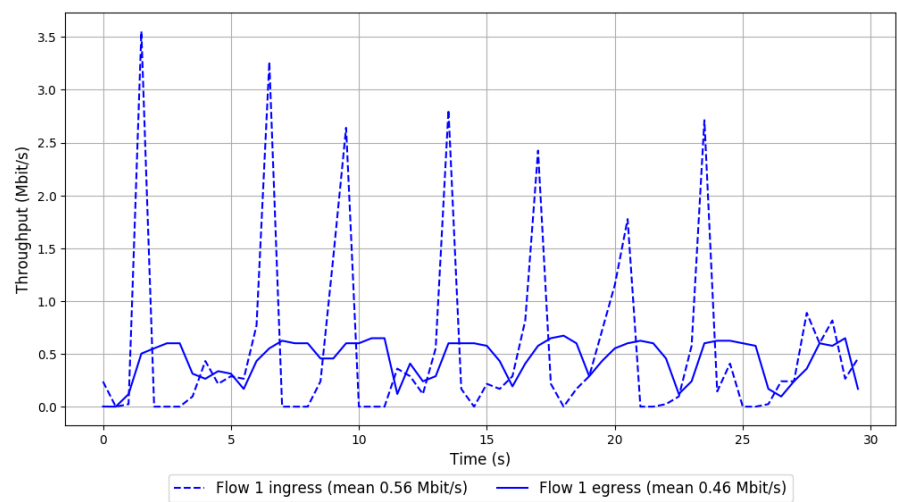
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2017-12-11 08:05:19
End at: 2017-12-11 08:05:49
Local clock offset: -5.334 ms
Remote clock offset: -5.068 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1577.716 ms
Loss rate: 20.09%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1577.716 ms
Loss rate: 20.09%
```
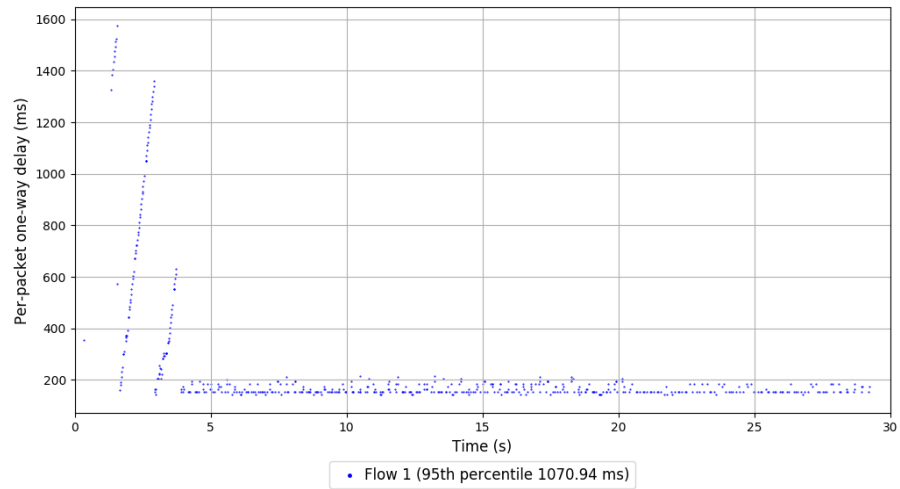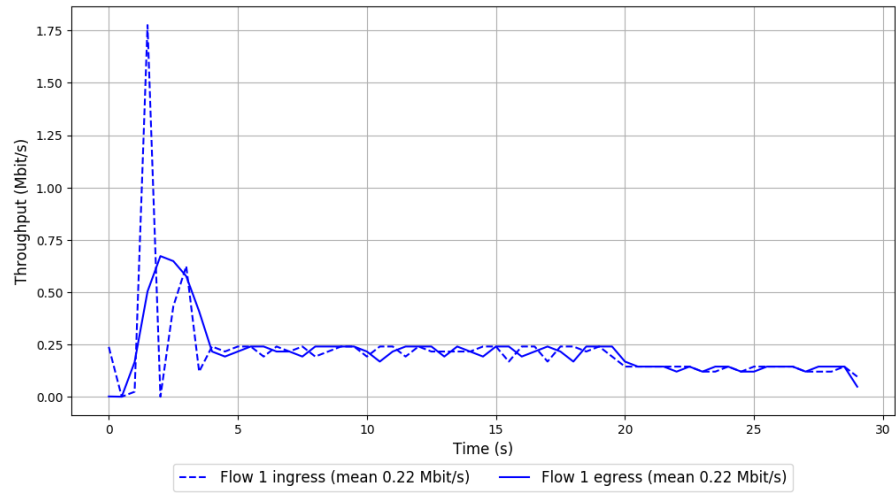
Run 3: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-calib

Start at: 2017-12-11 07:24:22
End at: 2017-12-11 07:24:52
Local clock offset: -13.107 ms
Remote clock offset: -4.449 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1070.938 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1070.938 ms
Loss rate: 2.05%
```

Run 1: Report of Indigo-calib — Data Link

```
Run 2: Statistics of Indigo-calib

Start at: 2017-12-11 07:40:46
End at: 2017-12-11 07:41:17
Local clock offset: -7.646 ms
Remote clock offset: -0.26 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 1257.173 ms
Loss rate: 4.28%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 1257.173 ms
Loss rate: 4.28%
```
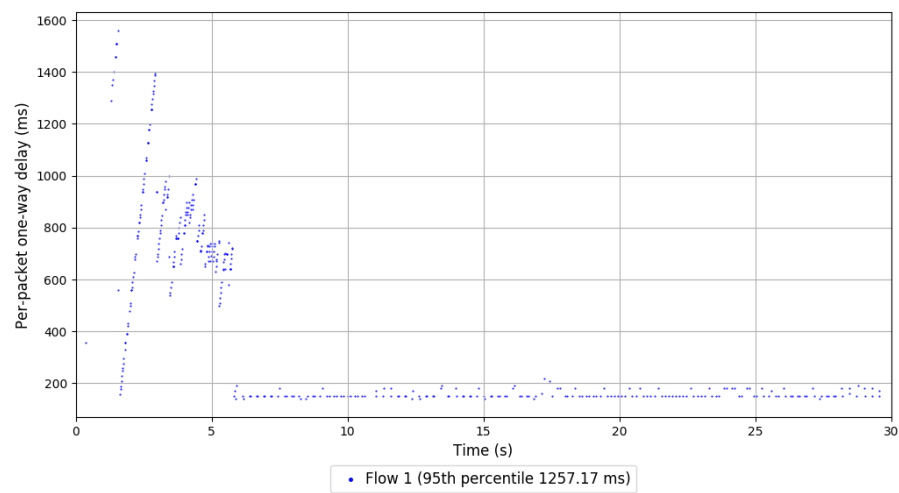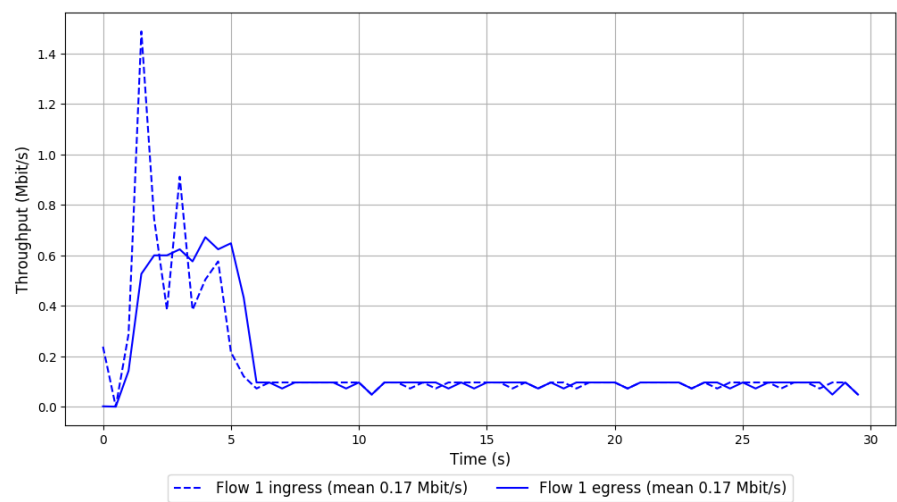
Run 2: Report of Indigo-calib — Data Link

Flow 1 ingress (mean 0.17 Mbit/s) ----   Flow 1 egress (mean 0.17 Mbit/s) ———

Flow 1 (95th percentile 1257.17 ms)

```
Run 3: Statistics of Indigo-calib

Start at: 2017-12-11 07:58:17
End at: 2017-12-11 07:58:47
Local clock offset: -6.323 ms
Remote clock offset: -4.37 ms


# Below is generated by plot.py at 2017-12-11 09:00:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1153.540 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1153.540 ms
Loss rate: 2.81%
```

Run 3: Report of Indigo-calib — Data Link