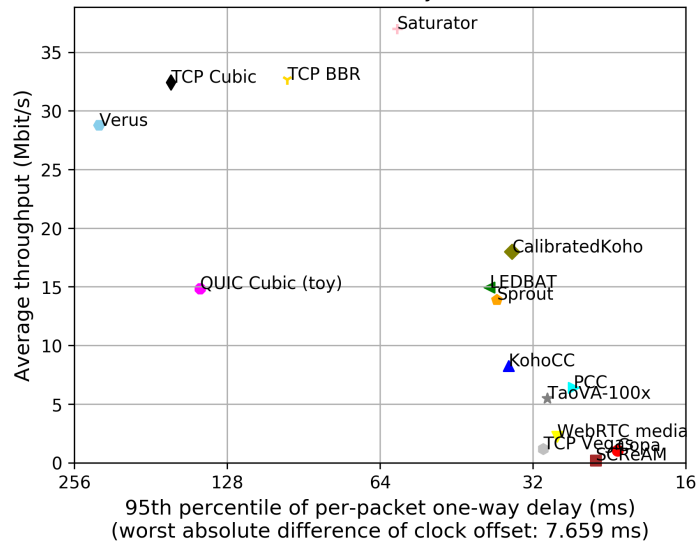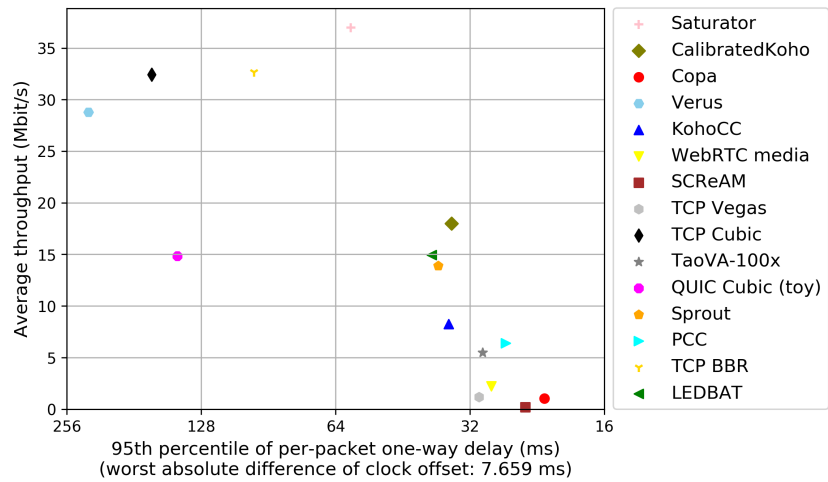**Pantheon Summary** (Generated at Tue, 20 Jun 2017 07:19:31 +0000 with pantheon version `f1f579919e2382b18c1fb18b676e821e7efc0b62`)

Repeated the test of 15 congestion control schemes once.

Each test lasted for 30 seconds running 1 flow.

Data path **from** AWS California 1 Ethernet **to** Stanford ppp0.

NTP offset measured against time.stanford.edu.

```
git branch: master @ f1f579919e2382b18c1fb18b676e821e7efc0b62
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 @ 4893799ab83a43fa2d3236507d168f461e1243ed
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
```
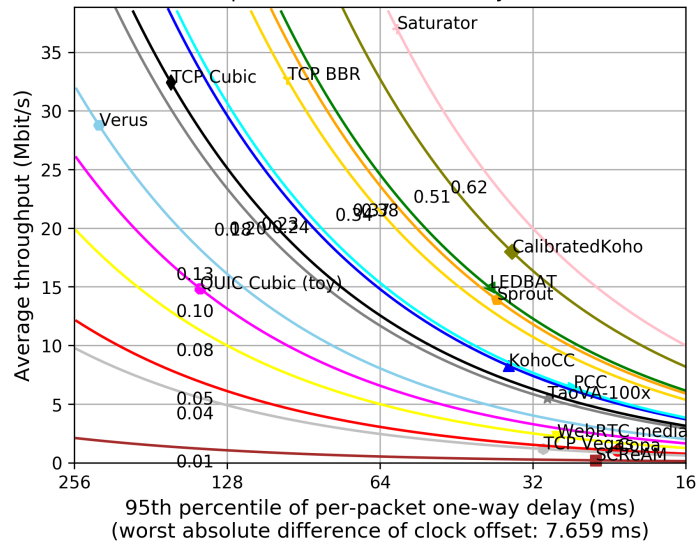
test from AWS California 1 Ethernet to Stanford ppp0, 1 run of 30s each per scheme
mean of all runs by scheme

test from AWS California 1 Ethernet to Stanford ppp0, 1 run of 30s each per scheme

test from AWS California 1 Ethernet to Stanford ppp0, 1 run of 30s each per scheme
mean power scores of all runs by scheme

```
Run 1: Statistics of TCP BBR

Start at: Tue, 20 Jun 2017 06:54:19 +0000
End at: Tue, 20 Jun 2017 06:54:49 +0000
Local clock offset: 4.585 ms
Remote clock offset: -2.931 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.66 Mbit/s
95th percentile per-packet one-way delay: 97.487 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 32.66 Mbit/s
95th percentile per-packet one-way delay: 97.487 ms
Loss rate: 0.10%
```
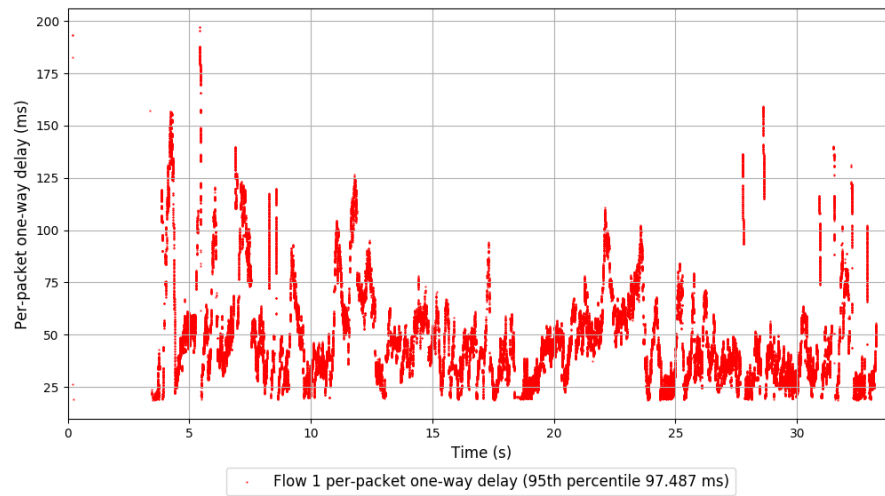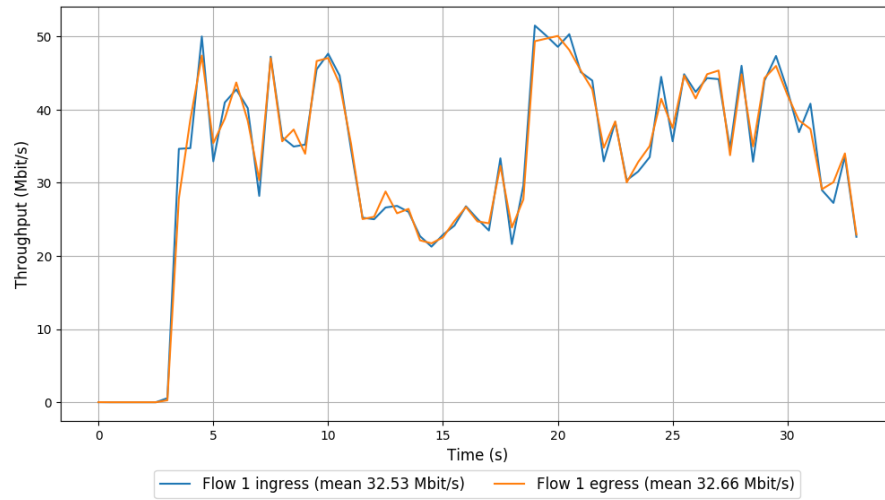
Run 1: Report of TCP BBR — Data Link

```
Run 1: Statistics of CalibratedKoho

Start at: Tue, 20 Jun 2017 06:59:04 +0000
End at: Tue, 20 Jun 2017 06:59:34 +0000
Local clock offset: 4.628 ms
Remote clock offset: -2.697 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 17.98 Mbit/s
95th percentile per-packet one-way delay: 35.184 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 17.98 Mbit/s
95th percentile per-packet one-way delay: 35.184 ms
Loss rate: 0.00%
```
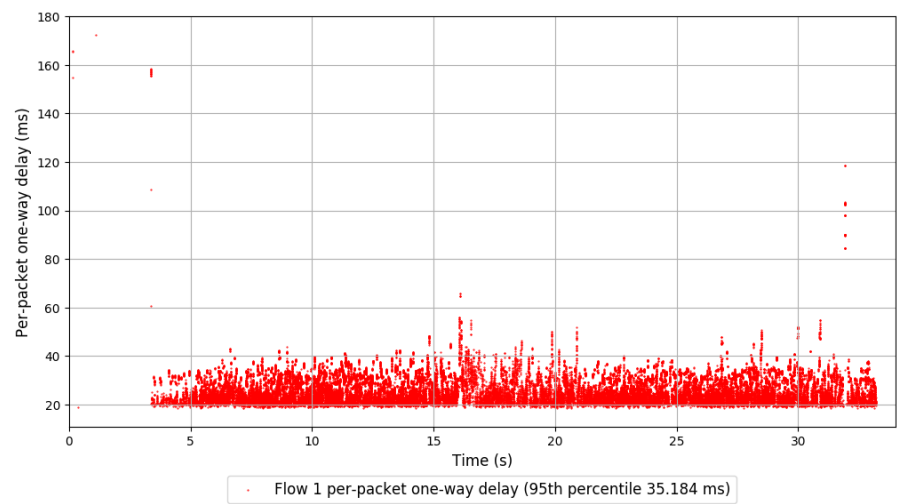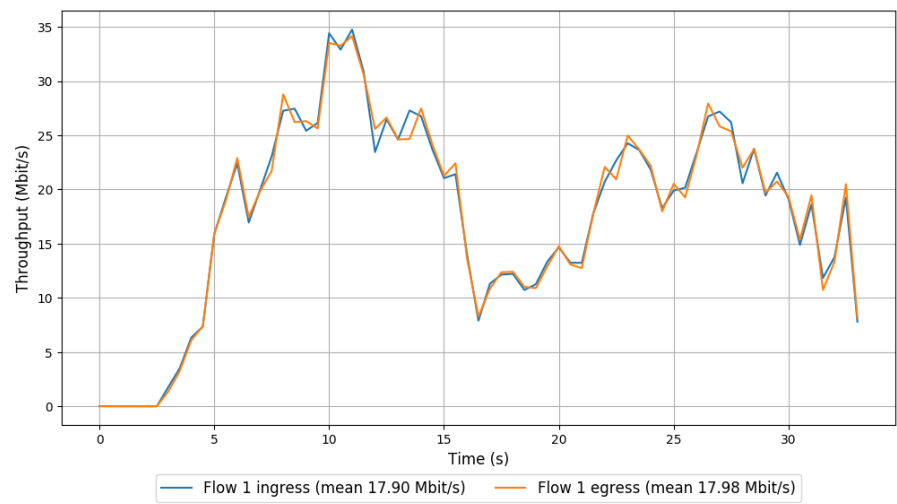
Run 1: Report of CalibratedKoho — Data Link

Flow 1 ingress (mean 17.90 Mbit/s) — Flow 1 egress (mean 17.98 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 35.184 ms)

```
Run 1: Statistics of Copa

Start at: Tue, 20 Jun 2017 06:47:16 +0000
End at: Tue, 20 Jun 2017 06:47:46 +0000
Local clock offset: 4.647 ms
Remote clock offset: -2.845 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 21.809 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 21.809 ms
Loss rate: 0.00%
```
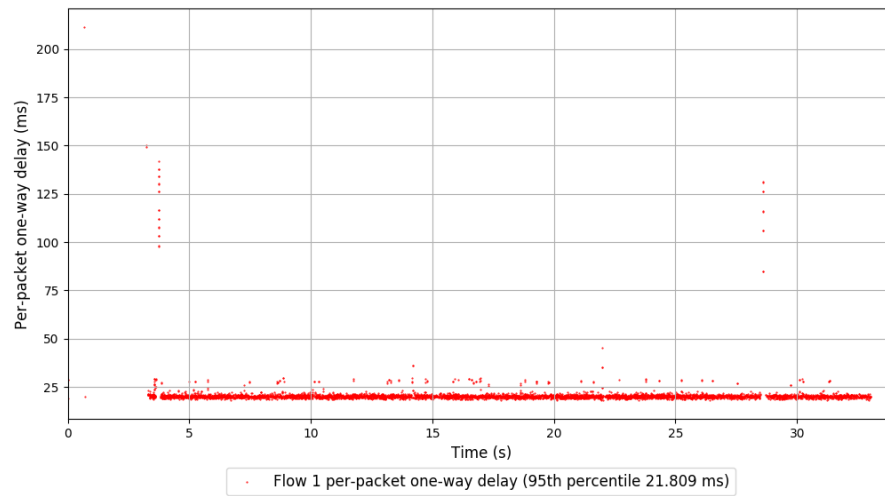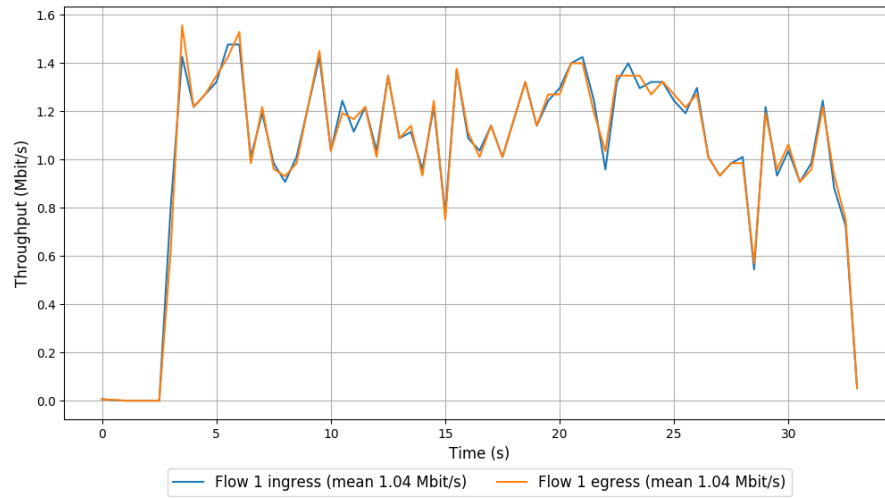
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 1.04 Mbit/s) Flow 1 egress (mean 1.04 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 21.809 ms)

```
Run 1: Statistics of TCP Cubic

Start at: Tue, 20 Jun 2017 07:00:15 +0000
End at: Tue, 20 Jun 2017 07:00:45 +0000
Local clock offset: 4.734 ms
Remote clock offset: -2.759 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:15 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.44 Mbit/s
95th percentile per-packet one-way delay: 165.389 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 32.44 Mbit/s
95th percentile per-packet one-way delay: 165.389 ms
Loss rate: 0.37%
```
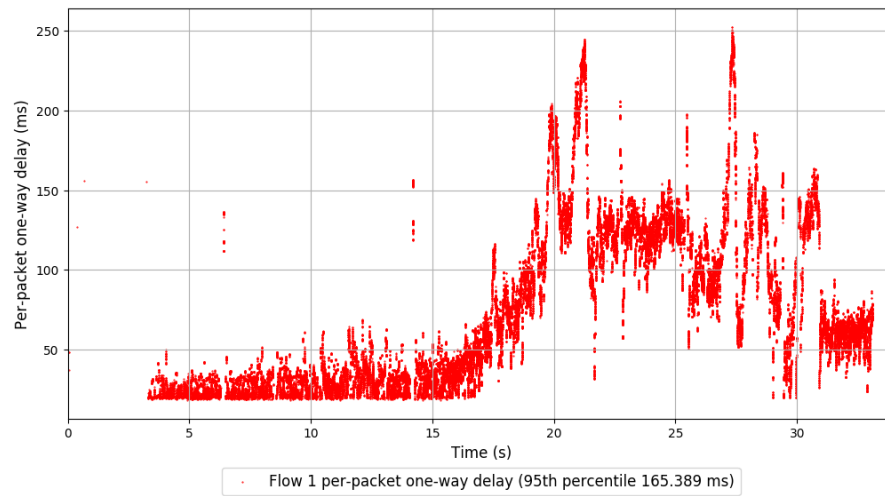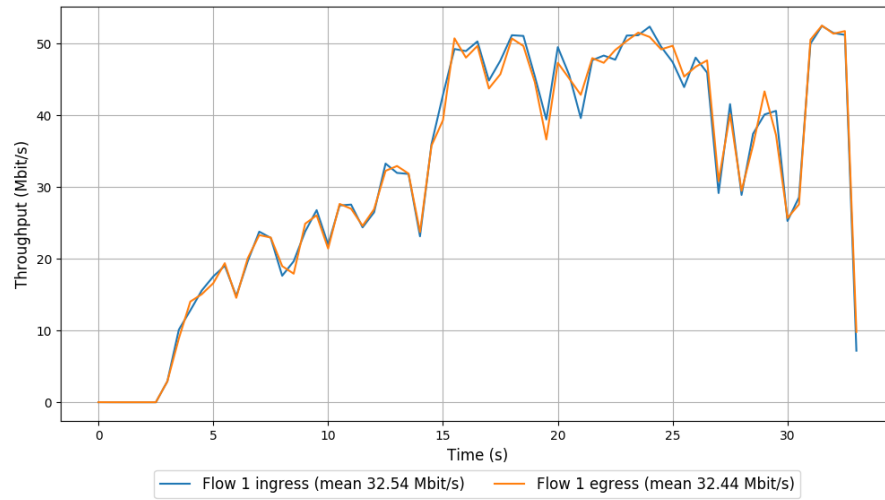
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 32.54 Mbit/s)   Flow 1 egress (mean 32.44 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 165.389 ms)

```
Run 1: Statistics of KohoCC

Start at: Tue, 20 Jun 2017 06:49:37 +0000
End at: Tue, 20 Jun 2017 06:50:07 +0000
Local clock offset: 4.666 ms
Remote clock offset: -2.863 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:15 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.27 Mbit/s
95th percentile per-packet one-way delay: 35.757 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.27 Mbit/s
95th percentile per-packet one-way delay: 35.757 ms
Loss rate: 0.00%
```
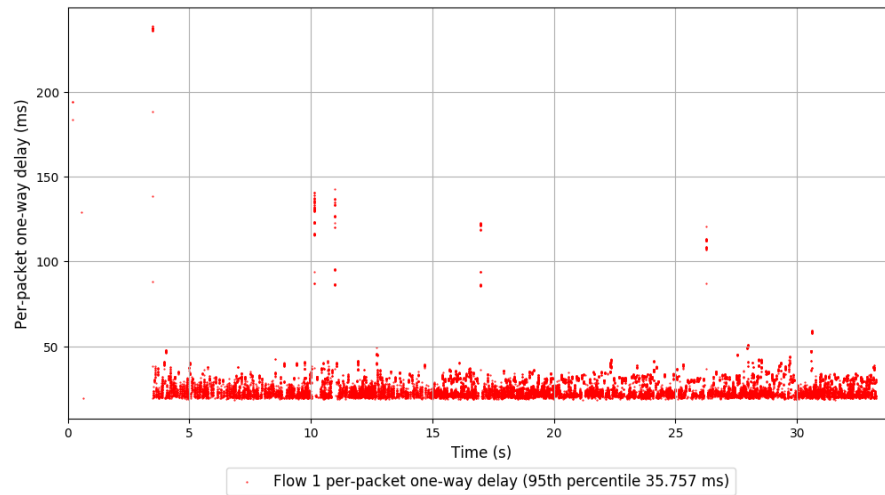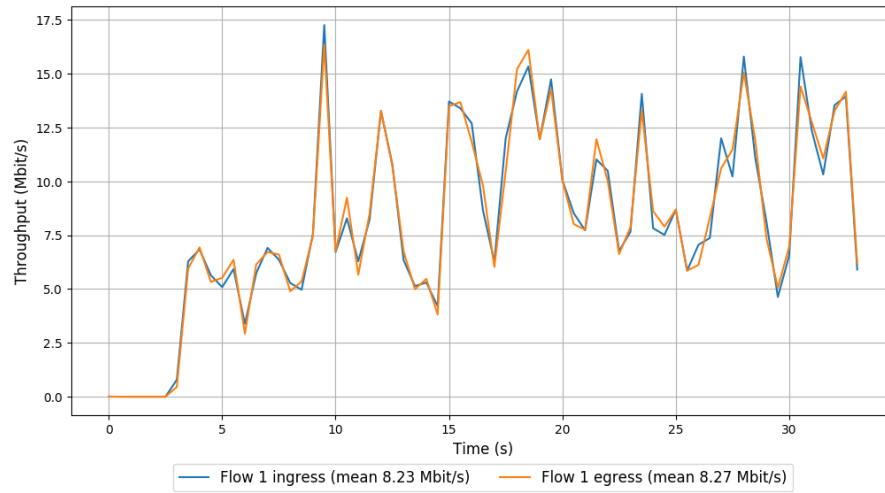
Run 1: Report of KohoCC — Data Link

Flow 1 ingress (mean 8.23 Mbit/s)   Flow 1 egress (mean 8.27 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 35.757 ms)

```
Run 1: Statistics of LEDBAT

Start at: Tue, 20 Jun 2017 06:57:53 +0000
End at: Tue, 20 Jun 2017 06:58:23 +0000
Local clock offset: 4.699 ms
Remote clock offset: -2.826 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:15 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.95 Mbit/s
95th percentile per-packet one-way delay: 38.969 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 14.95 Mbit/s
95th percentile per-packet one-way delay: 38.969 ms
Loss rate: 0.00%
```
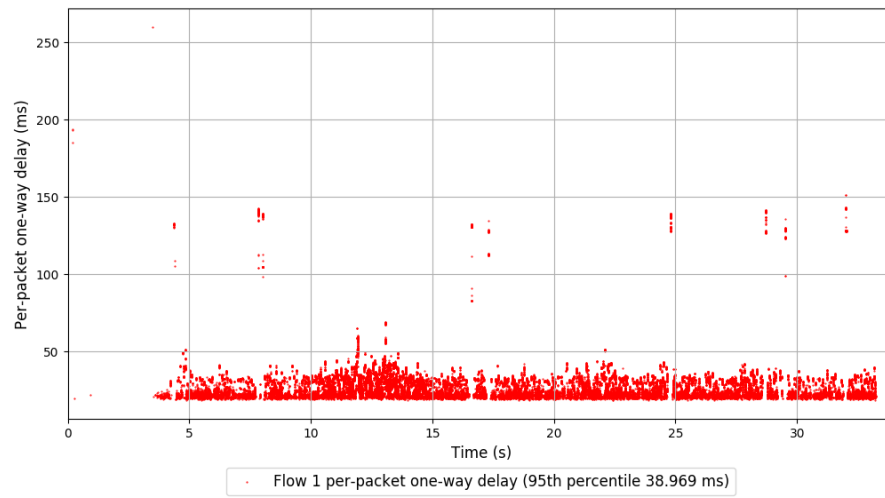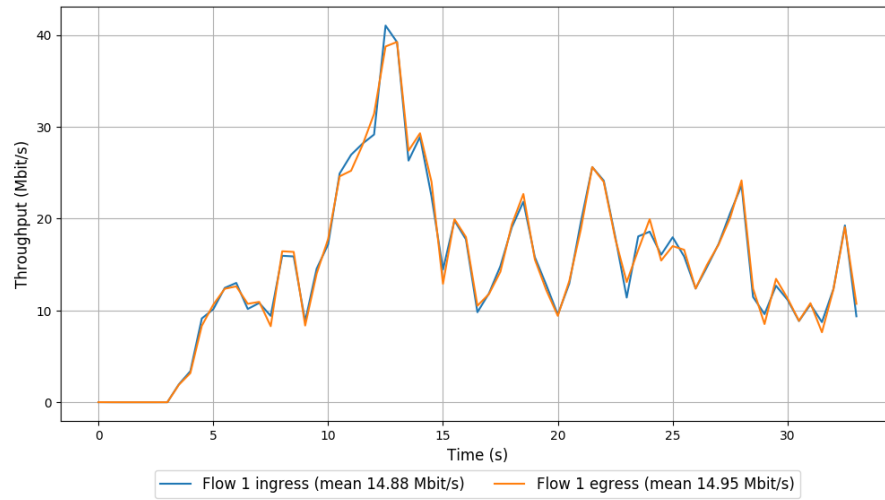
Run 1: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC

Start at: Tue, 20 Jun 2017 06:50:47 +0000
End at: Tue, 20 Jun 2017 06:51:17 +0000
Local clock offset: 4.653 ms
Remote clock offset: -2.986 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.38 Mbit/s
95th percentile per-packet one-way delay: 26.634 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.38 Mbit/s
95th percentile per-packet one-way delay: 26.634 ms
Loss rate: 0.00%
```
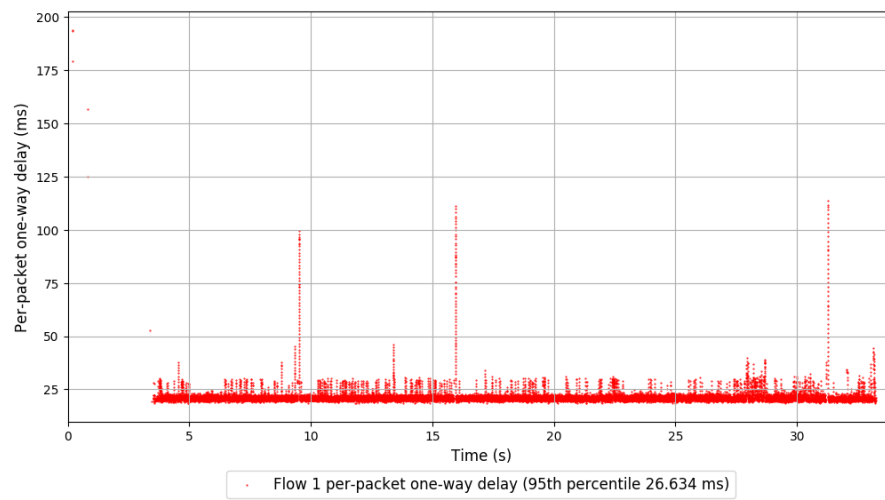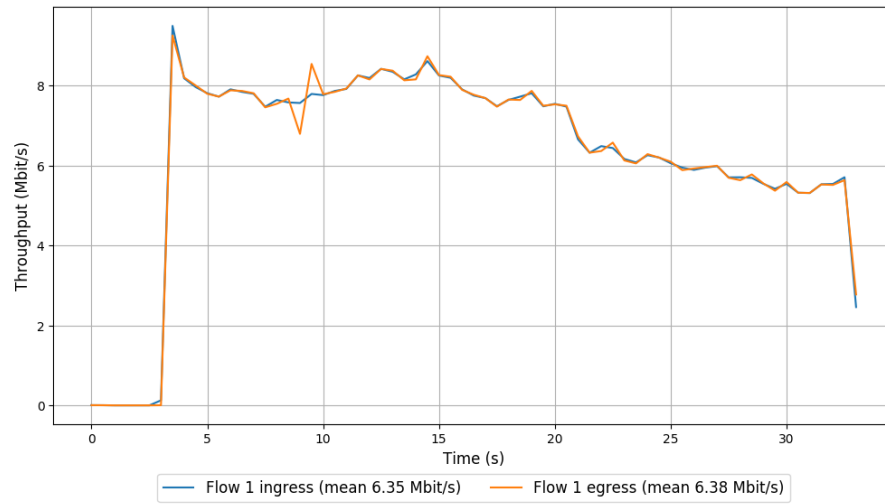
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 6.35 Mbit/s)   Flow 1 egress (mean 6.38 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 26.634 ms)

```
Run 1: Statistics of QUIC Cubic (toy)

Start at: Tue, 20 Jun 2017 06:43:45 +0000
End at: Tue, 20 Jun 2017 06:44:15 +0000
Local clock offset: 4.544 ms
Remote clock offset: -2.821 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:18 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.83 Mbit/s
95th percentile per-packet one-way delay: 144.680 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 14.83 Mbit/s
95th percentile per-packet one-way delay: 144.680 ms
Loss rate: 0.00%
```
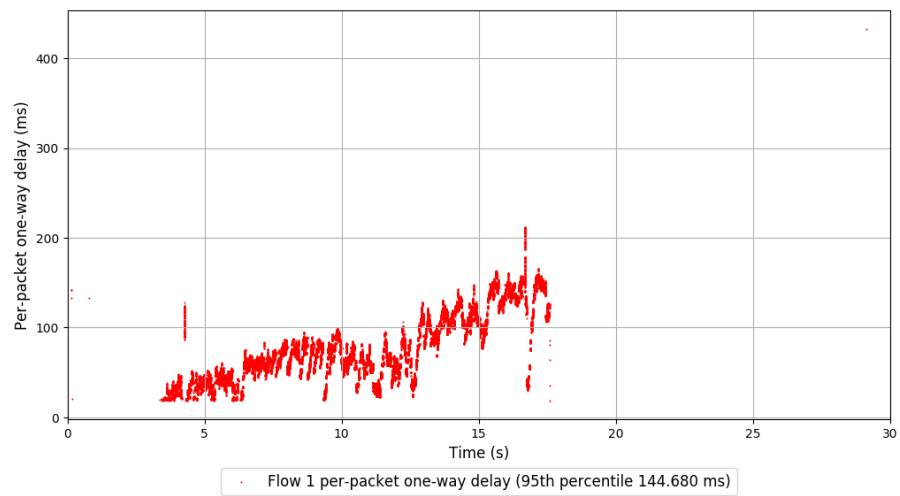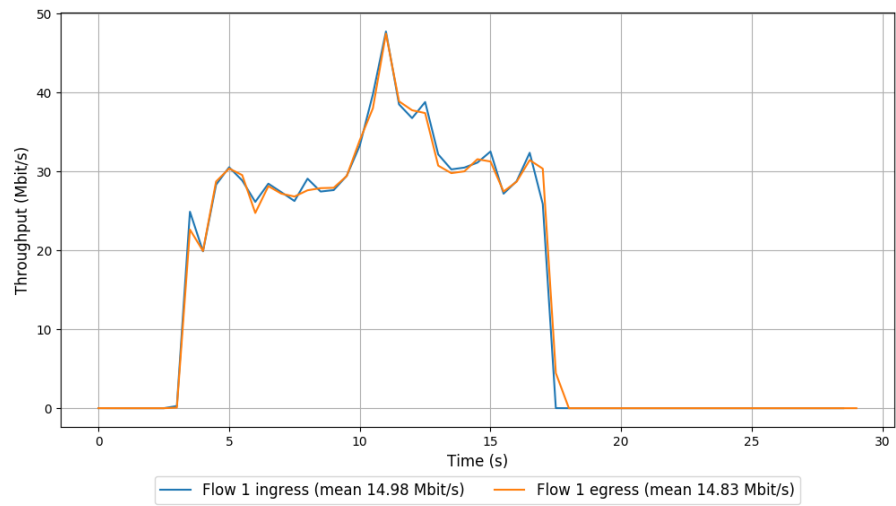
Run 1: Report of QUIC Cubic (toy) — Data Link

Flow 1 ingress (mean 14.98 Mbit/s) —— Flow 1 egress (mean 14.83 Mbit/s)

· Flow 1 per-packet one-way delay (95th percentile 144.680 ms)

```
Run 1: Statistics of Saturator

Start at: Tue, 20 Jun 2017 06:53:07 +0000
End at: Tue, 20 Jun 2017 06:53:37 +0000
Local clock offset: 4.589 ms
Remote clock offset: -2.963 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:24 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.98 Mbit/s
95th percentile per-packet one-way delay: 59.256 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 36.98 Mbit/s
95th percentile per-packet one-way delay: 59.256 ms
Loss rate: 0.06%
```
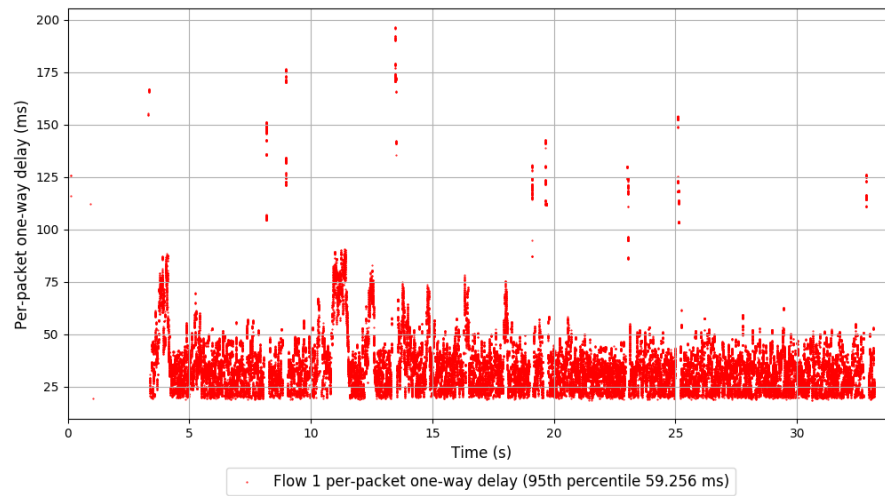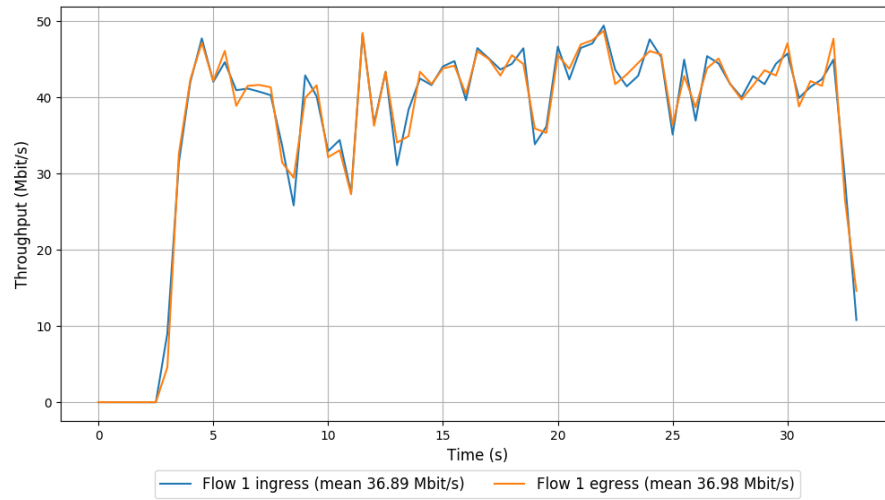
Run 1: Report of Saturator — Data Link

Flow 1 ingress (mean 36.89 Mbit/s) ——— Flow 1 egress (mean 36.98 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 59.256 ms)

```
Run 1: Statistics of SCReAM

Start at: Tue, 20 Jun 2017 06:46:06 +0000
End at: Tue, 20 Jun 2017 06:46:36 +0000
Local clock offset: 4.662 ms
Remote clock offset: -2.931 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:24 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 24.086 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 24.086 ms
Loss rate: 0.00%
```
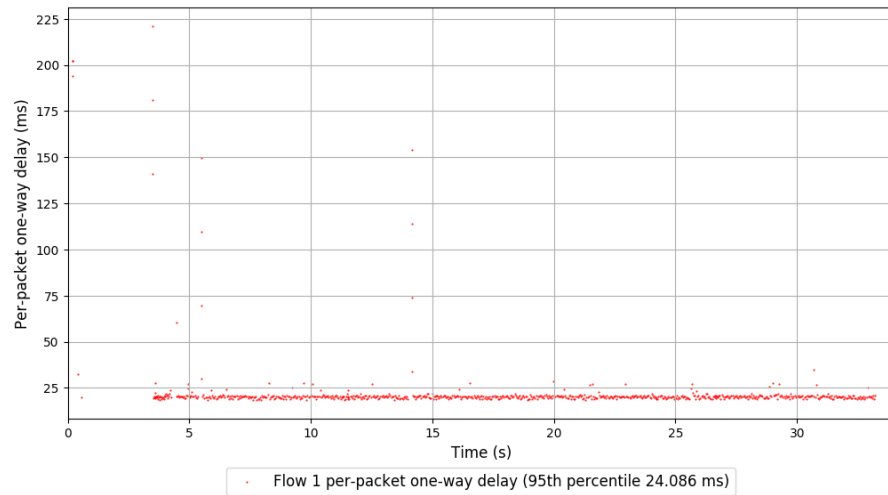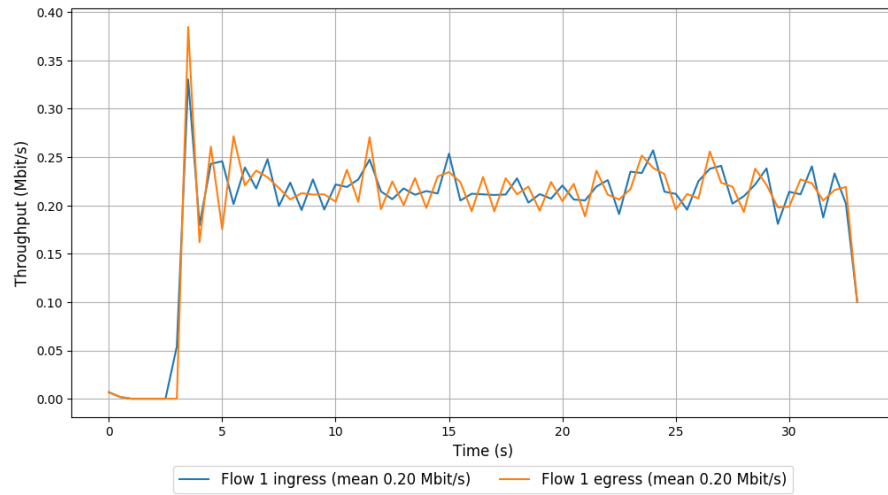
Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.20 Mbit/s) — Flow 1 egress (mean 0.20 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 24.086 ms)

```
Run 1: Statistics of Sprout

Start at: Tue, 20 Jun 2017 06:48:26 +0000
End at: Tue, 20 Jun 2017 06:48:56 +0000
Local clock offset: 4.65 ms
Remote clock offset: -2.904 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:24 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.91 Mbit/s
95th percentile per-packet one-way delay: 37.726 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.91 Mbit/s
95th percentile per-packet one-way delay: 37.726 ms
Loss rate: 0.00%
```
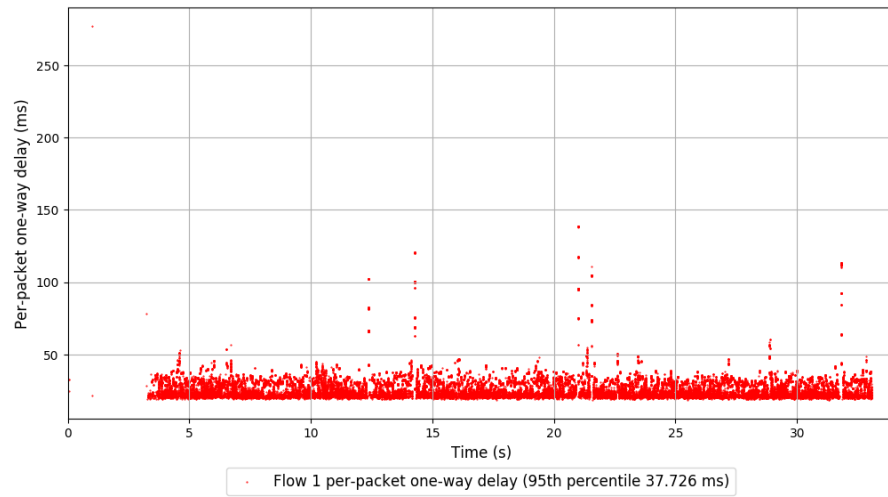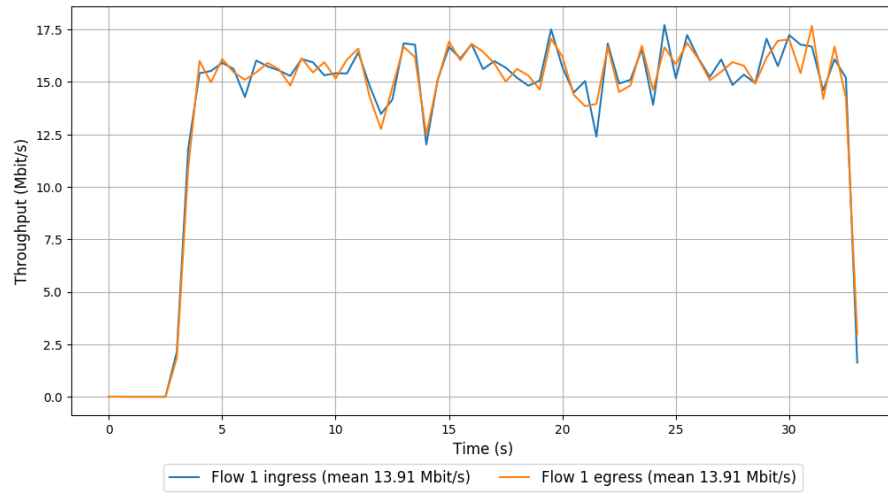
Run 1: Report of Sprout — Data Link

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

Start at: Tue, 20 Jun 2017 06:44:56 +0000
End at: Tue, 20 Jun 2017 06:45:26 +0000
Local clock offset: 4.657 ms
Remote clock offset: -2.903 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:24 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.47 Mbit/s
95th percentile per-packet one-way delay: 29.992 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.47 Mbit/s
95th percentile per-packet one-way delay: 29.992 ms
Loss rate: 0.00%
```
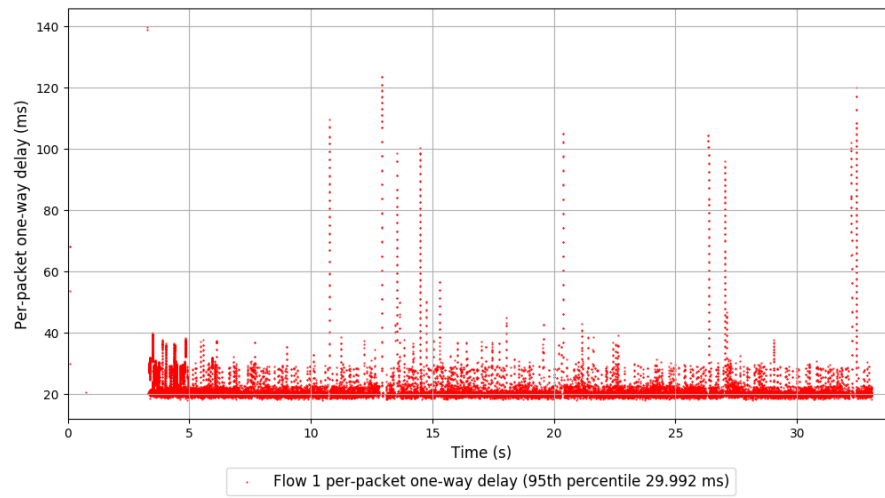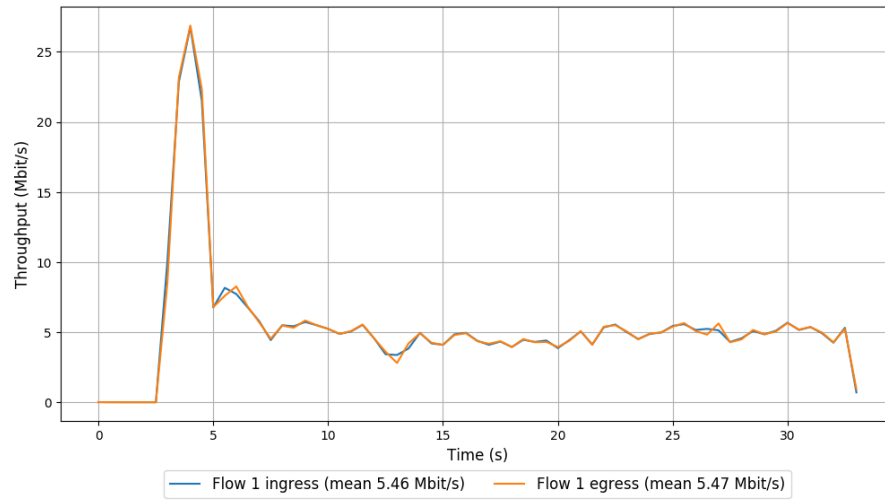
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 5.46 Mbit/s)   Flow 1 egress (mean 5.47 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 29.992 ms)

```
Run 1: Statistics of TCP Vegas

Start at: Tue, 20 Jun 2017 06:56:43 +0000
End at: Tue, 20 Jun 2017 06:57:13 +0000
Local clock offset: 4.726 ms
Remote clock offset: -2.783 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:25 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 30.531 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 30.531 ms
Loss rate: 0.00%
```
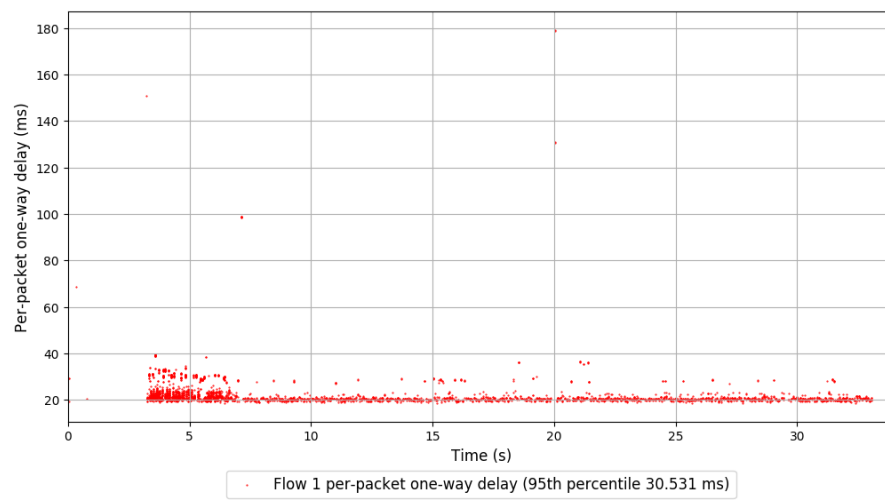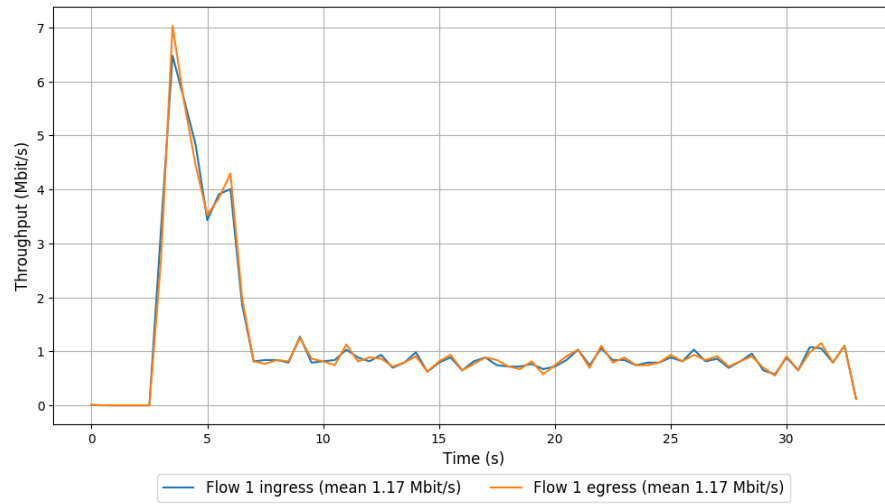
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 1.17 Mbit/s)   Flow 1 egress (mean 1.17 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 30.531 ms)

```
Run 1: Statistics of Verus

Start at: Tue, 20 Jun 2017 06:55:31 +0000
End at: Tue, 20 Jun 2017 06:56:01 +0000
Local clock offset: 4.59 ms
Remote clock offset: -2.888 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.77 Mbit/s
95th percentile per-packet one-way delay: 228.928 ms
Loss rate: 12.00%
-- Flow 1:
Average throughput: 28.77 Mbit/s
95th percentile per-packet one-way delay: 228.928 ms
Loss rate: 12.00%
```
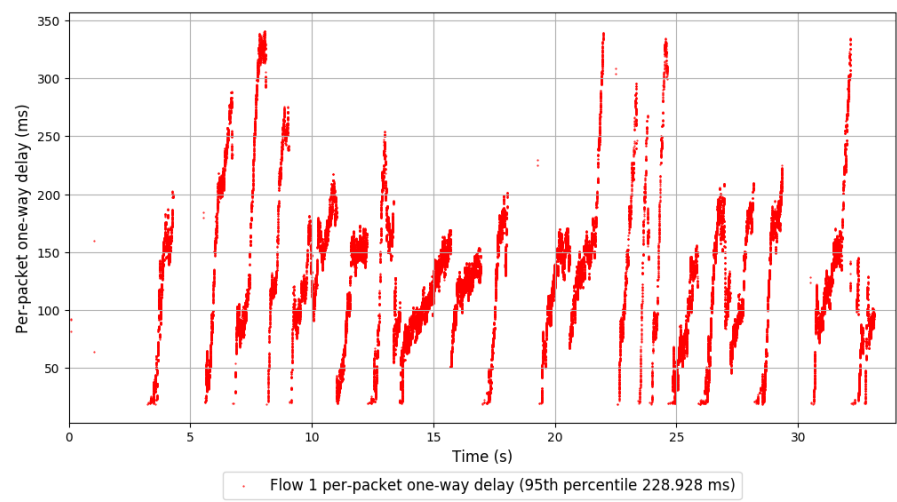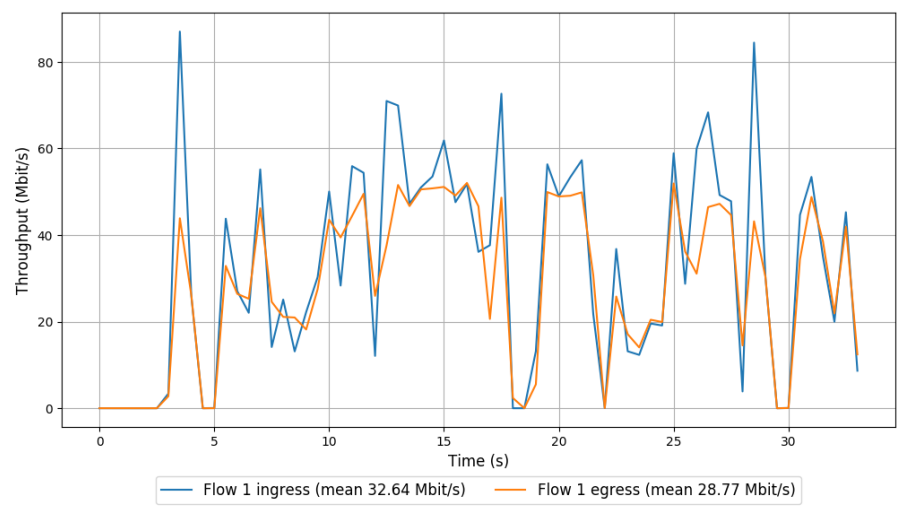
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 32.64 Mbit/s) — Flow 1 egress (mean 28.77 Mbit/s)

Flow 1 per-packet one-way delay (95th percentile 228.928 ms)

```
Run 1: Statistics of WebRTC media

Start at: Tue, 20 Jun 2017 06:51:57 +0000
End at: Tue, 20 Jun 2017 06:52:27 +0000
Local clock offset: 4.667 ms
Remote clock offset: -2.992 ms


# Below is generated by plot.py at Tue, 20 Jun 2017 07:19:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 28.703 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 28.703 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link