

Pantheon Report

Generated at 2018-08-31 05:26:16 (UTC).

Data path: Mexico on **em1** (*remote*) → AWS California 2 on **ens5** (*local*).

Repeated the test of 4 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against **time.stanford.edu** and have been applied to correct the timestamps in logs.

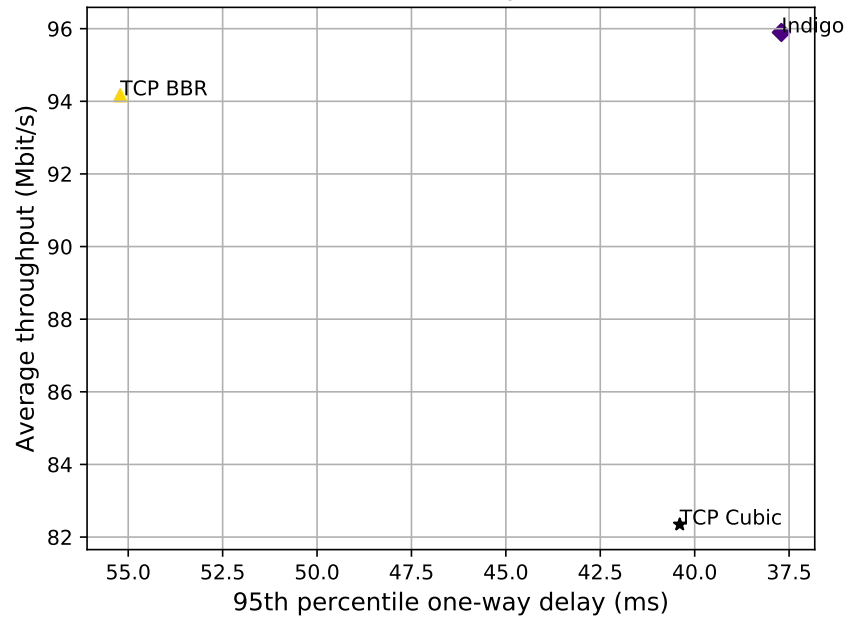
System info:

```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

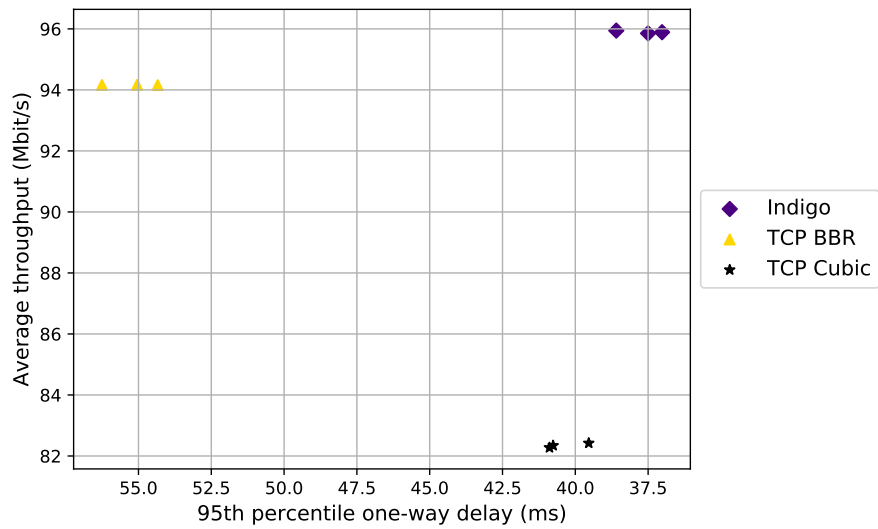
Git summary:

```
branch: muses @ 2de97ca91a065473c29a25fffe63fb137c97a67c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ b59e0d118c50af3579569c462d33045741c85981
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from Mexico to AWS California 2, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Mexico to AWS California 2, 3 runs of 30s each per scheme



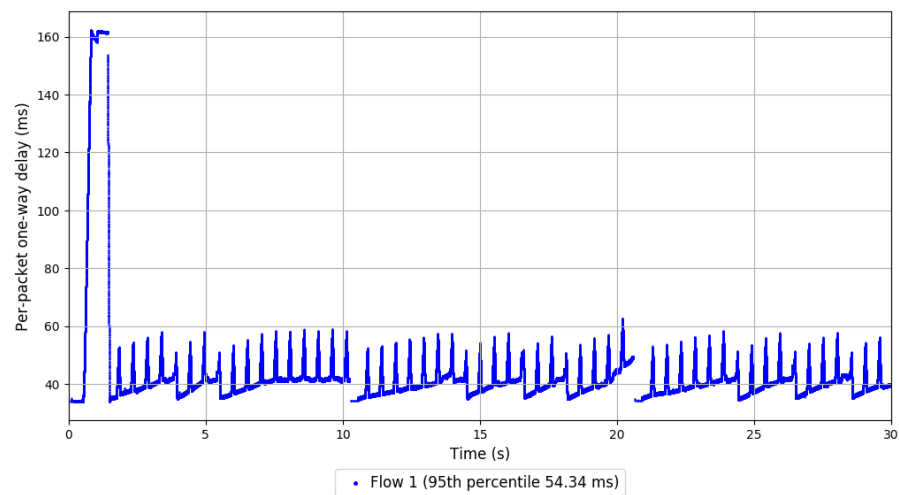
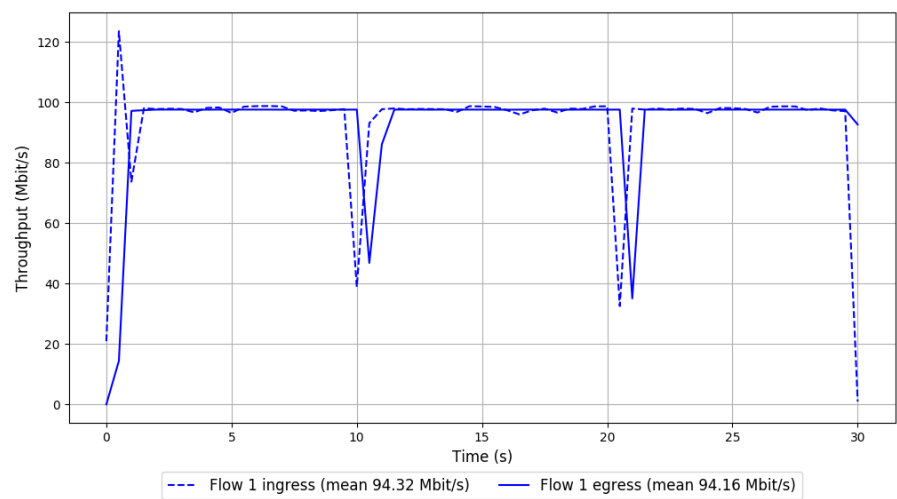
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	94.16	55.21	0.46
TCP Cubic	3	82.34	40.40	0.26
Indigo	3	95.89	37.71	0.23
Muses-25	0	N/A	N/A	N/A

Run 1: Statistics of TCP BBR

Start at: 2018-08-31 05:13:49
End at: 2018-08-31 05:14:19
Local clock offset: -17.54 ms
Remote clock offset: -2.645 ms

Below is generated by plot.py at 2018-08-31 05:26:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 94.16 Mbit/s
95th percentile per-packet one-way delay: 54.341 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 94.16 Mbit/s
95th percentile per-packet one-way delay: 54.341 ms
Loss rate: 0.39%

Run 1: Report of TCP BBR — Data Link

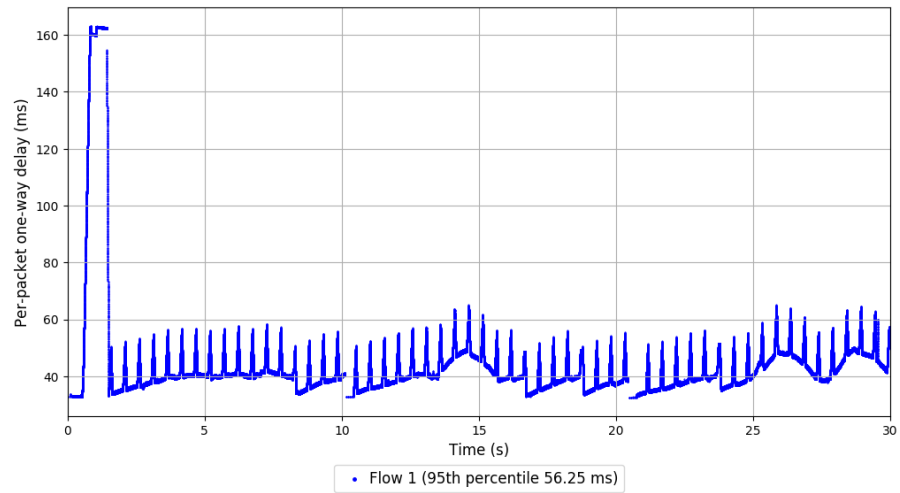
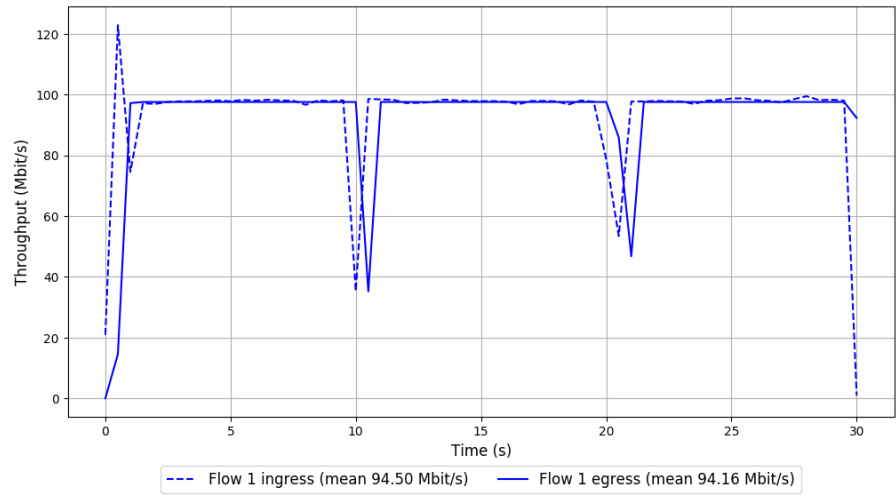


Run 2: Statistics of TCP BBR

Start at: 2018-08-31 05:19:01
End at: 2018-08-31 05:19:31
Local clock offset: -15.395 ms
Remote clock offset: -2.63 ms

Below is generated by plot.py at 2018-08-31 05:26:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 94.16 Mbit/s
95th percentile per-packet one-way delay: 56.254 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 94.16 Mbit/s
95th percentile per-packet one-way delay: 56.254 ms
Loss rate: 0.56%

Run 2: Report of TCP BBR — Data Link

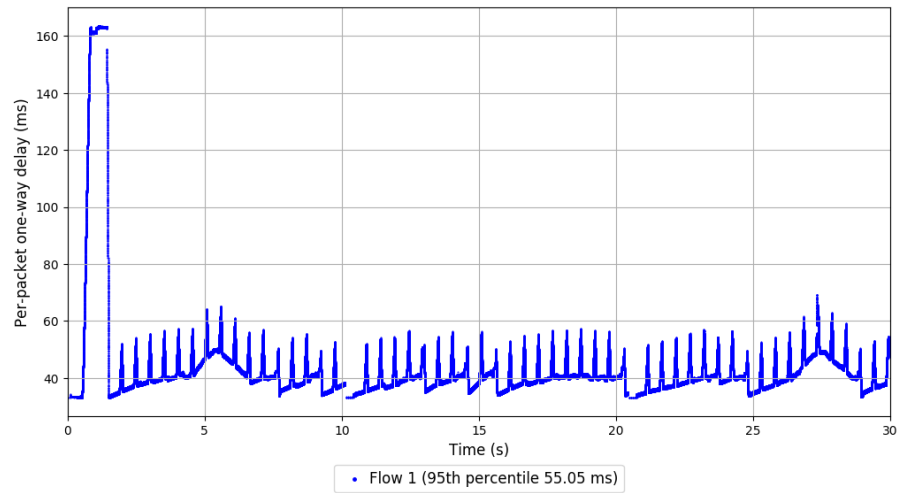
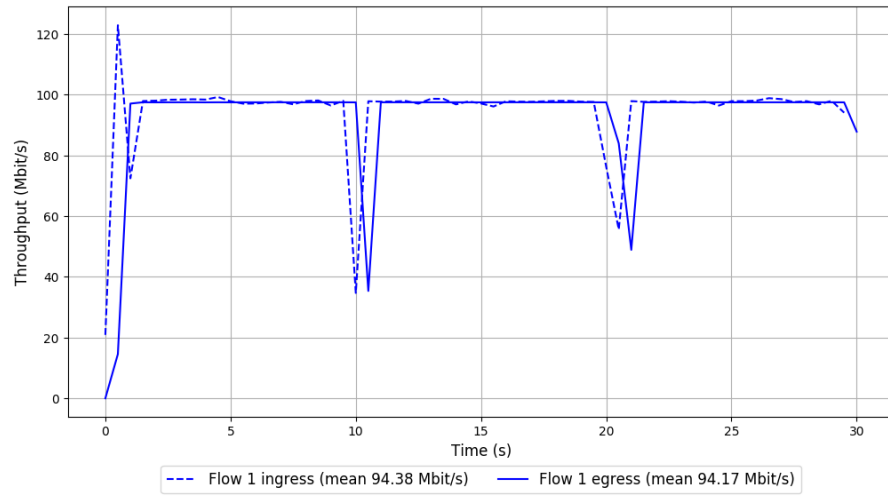


Run 3: Statistics of TCP BBR

Start at: 2018-08-31 05:24:13
End at: 2018-08-31 05:24:43
Local clock offset: -10.481 ms
Remote clock offset: -2.666 ms

Below is generated by plot.py at 2018-08-31 05:26:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 55.046 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 55.046 ms
Loss rate: 0.44%

Run 3: Report of TCP BBR — Data Link

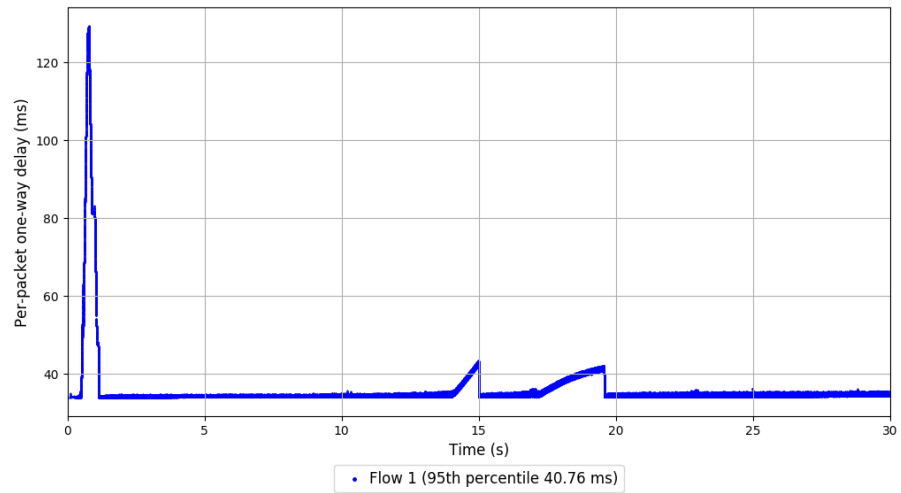
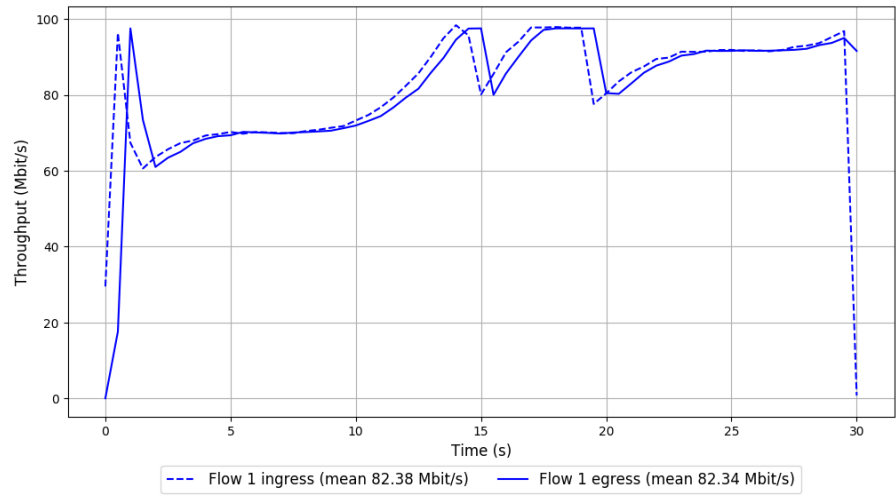


Run 1: Statistics of TCP Cubic

Start at: 2018-08-31 05:09:56
End at: 2018-08-31 05:10:26
Local clock offset: -15.29 ms
Remote clock offset: -2.741 ms

Below is generated by plot.py at 2018-08-31 05:26:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 82.34 Mbit/s
95th percentile per-packet one-way delay: 40.761 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 82.34 Mbit/s
95th percentile per-packet one-way delay: 40.761 ms
Loss rate: 0.26%

Run 1: Report of TCP Cubic — Data Link

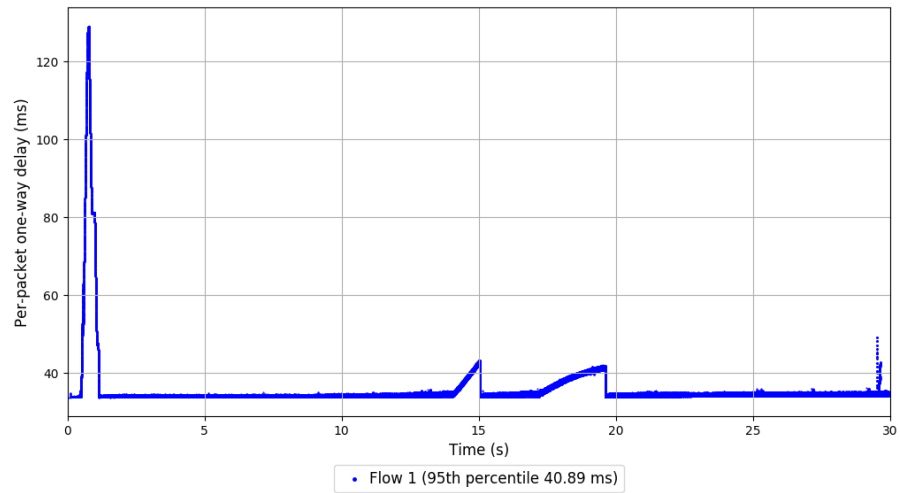
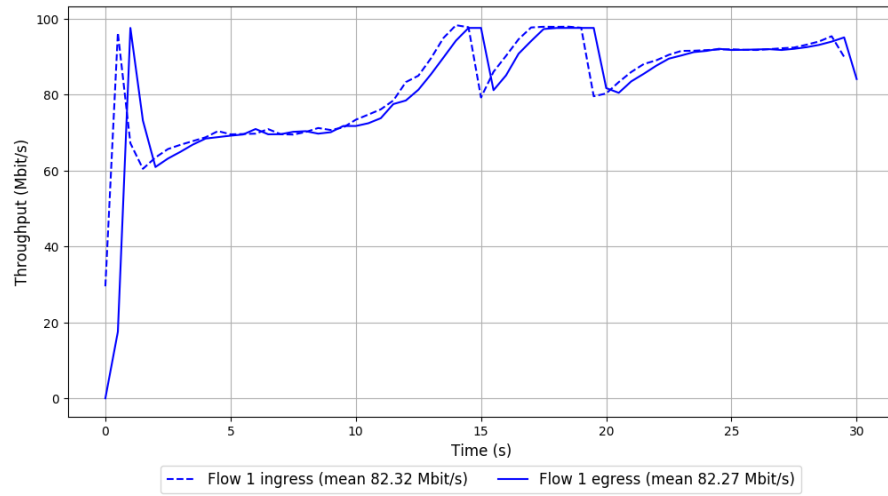


Run 2: Statistics of TCP Cubic

Start at: 2018-08-31 05:15:08
End at: 2018-08-31 05:15:38
Local clock offset: -18.42 ms
Remote clock offset: -2.643 ms

Below is generated by plot.py at 2018-08-31 05:26:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 82.27 Mbit/s
95th percentile per-packet one-way delay: 40.888 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 82.27 Mbit/s
95th percentile per-packet one-way delay: 40.888 ms
Loss rate: 0.26%

Run 2: Report of TCP Cubic — Data Link

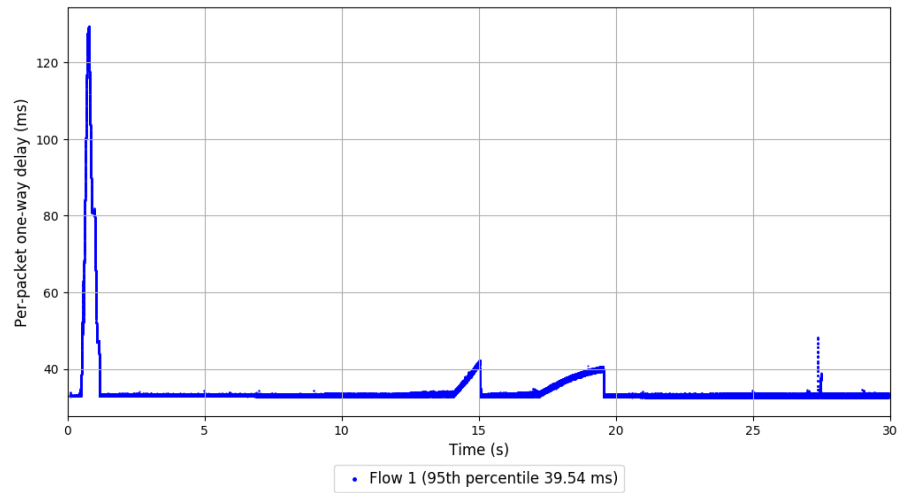
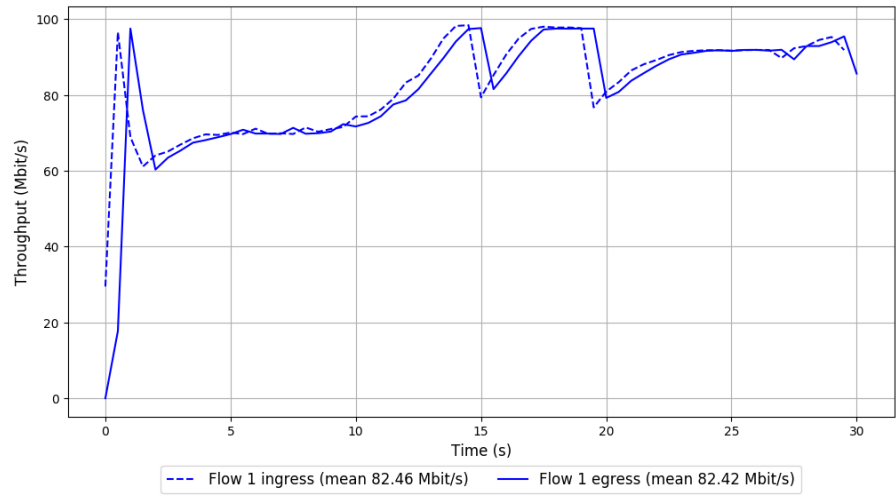


Run 3: Statistics of TCP Cubic

Start at: 2018-08-31 05:20:20
End at: 2018-08-31 05:20:50
Local clock offset: -13.653 ms
Remote clock offset: -2.515 ms

Below is generated by plot.py at 2018-08-31 05:26:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 82.42 Mbit/s
95th percentile per-packet one-way delay: 39.539 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 82.42 Mbit/s
95th percentile per-packet one-way delay: 39.539 ms
Loss rate: 0.26%

Run 3: Report of TCP Cubic — Data Link

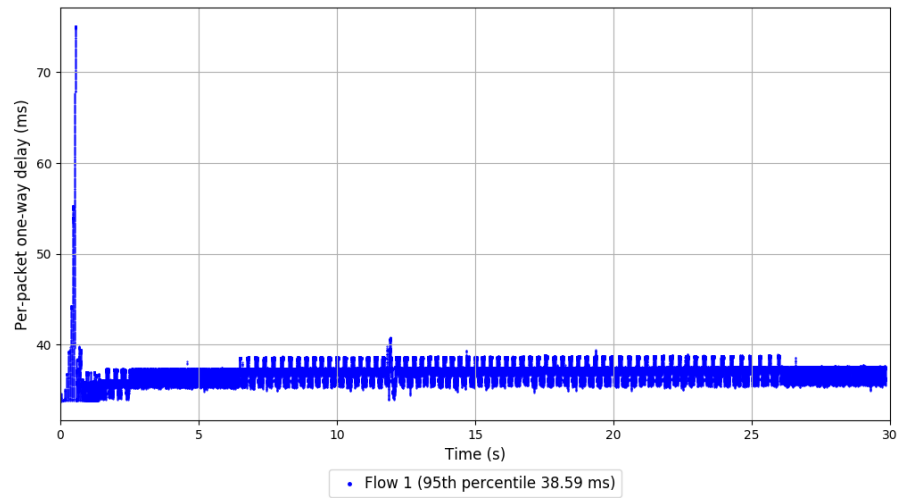
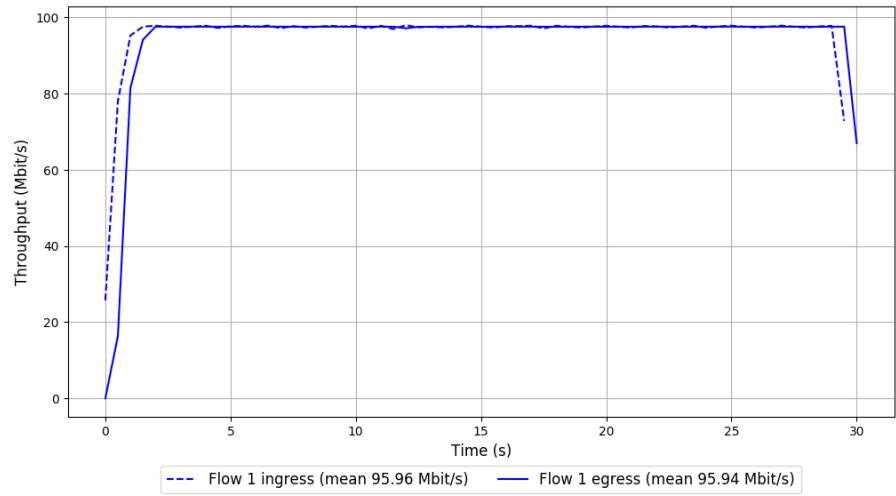


Run 1: Statistics of Indigo

Start at: 2018-08-31 05:11:15
End at: 2018-08-31 05:11:45
Local clock offset: -16.211 ms
Remote clock offset: -2.764 ms

Below is generated by plot.py at 2018-08-31 05:26:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 38.593 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 38.593 ms
Loss rate: 0.23%

Run 1: Report of Indigo — Data Link

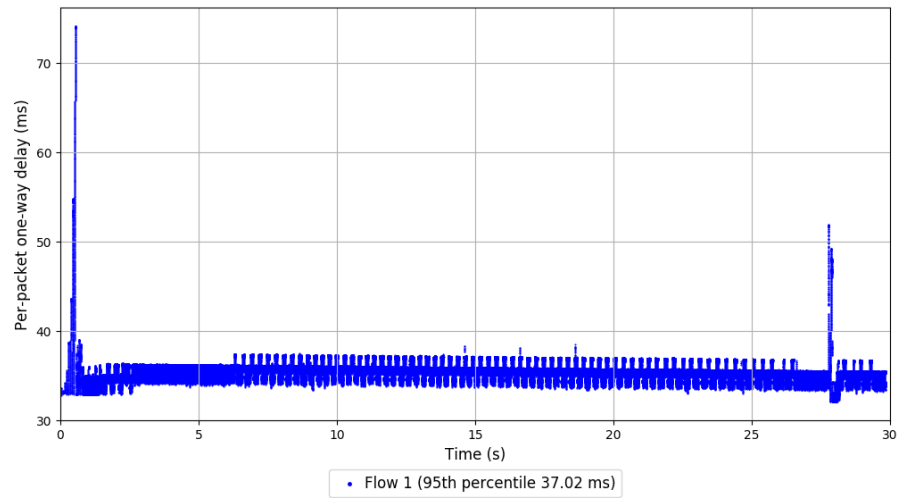
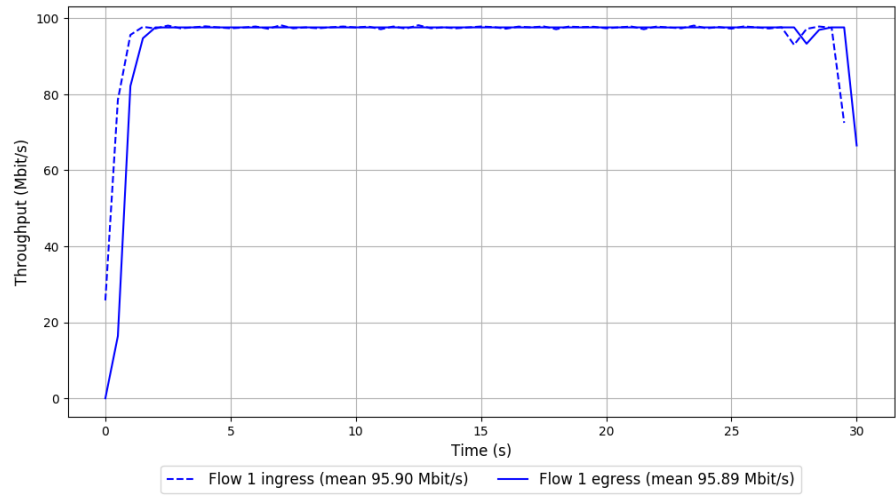


Run 2: Statistics of Indigo

Start at: 2018-08-31 05:16:27
End at: 2018-08-31 05:16:57
Local clock offset: -19.169 ms
Remote clock offset: -2.506 ms

Below is generated by plot.py at 2018-08-31 05:26:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.89 Mbit/s
95th percentile per-packet one-way delay: 37.021 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 95.89 Mbit/s
95th percentile per-packet one-way delay: 37.021 ms
Loss rate: 0.22%

Run 2: Report of Indigo — Data Link

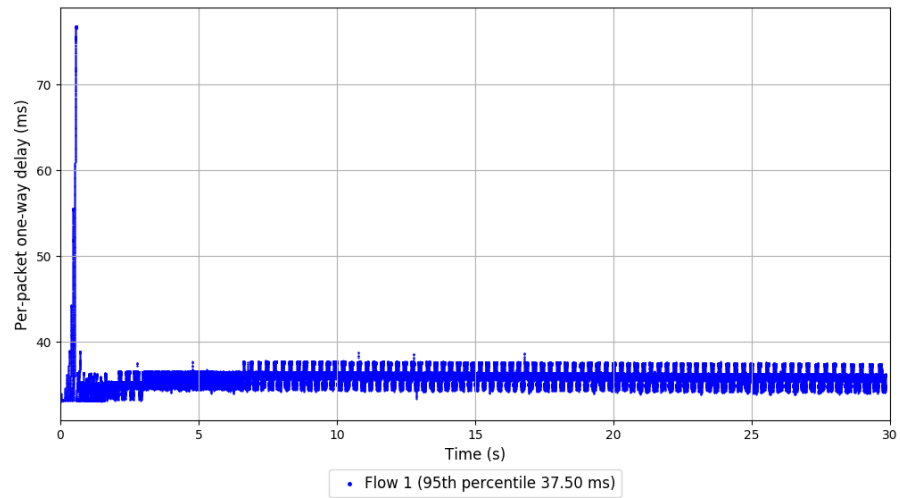
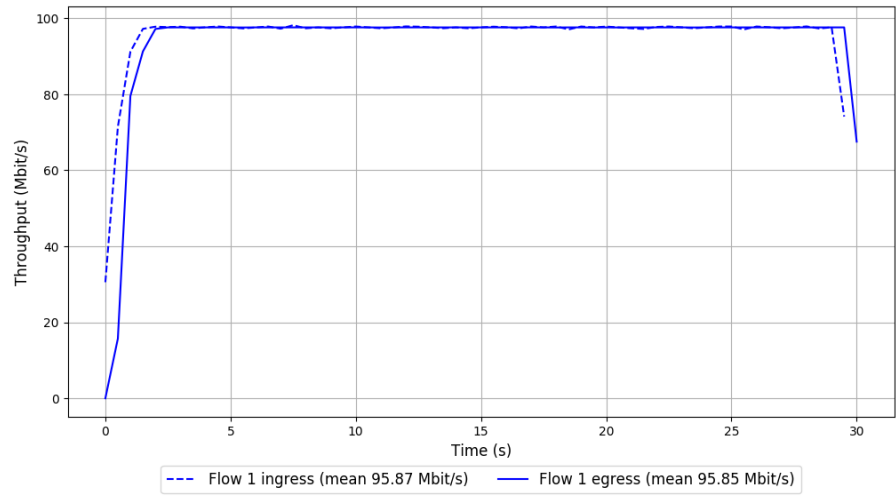


Run 3: Statistics of Indigo

Start at: 2018-08-31 05:21:38
End at: 2018-08-31 05:22:09
Local clock offset: -12.497 ms
Remote clock offset: -2.711 ms

Below is generated by plot.py at 2018-08-31 05:26:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 37.501 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 37.501 ms
Loss rate: 0.23%

Run 3: Report of Indigo — Data Link



Run 1: Statistics of Muses-25

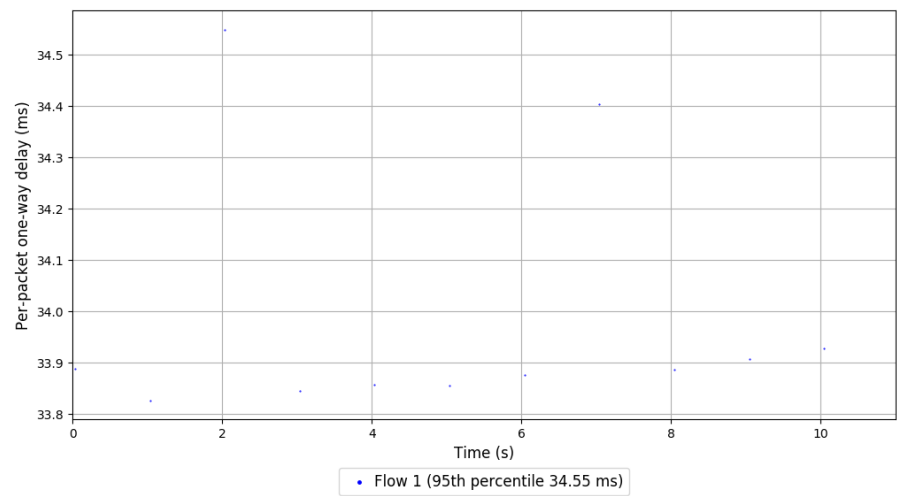
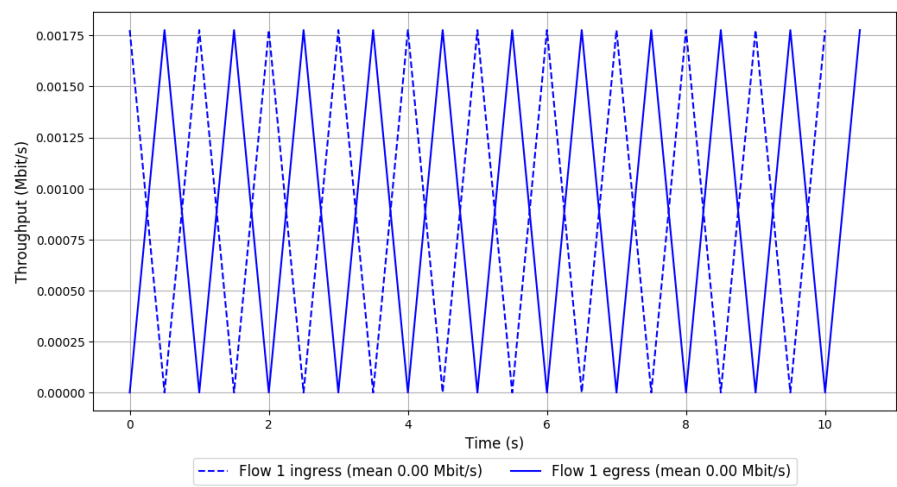
Start at: 2018-08-31 05:12:35

End at: 2018-08-31 05:13:05

Local clock offset: -16.794 ms

Remote clock offset: -2.714 ms

Run 1: Report of Muses-25 — Data Link



Run 2: Statistics of Muses-25

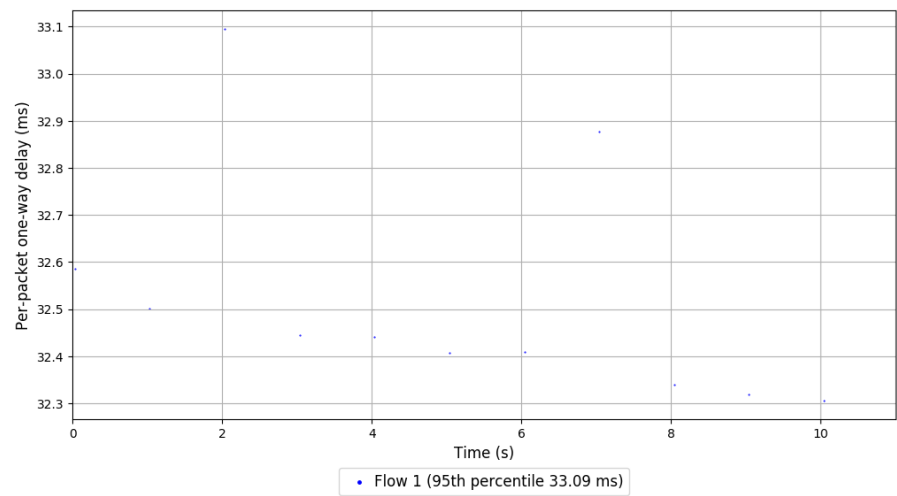
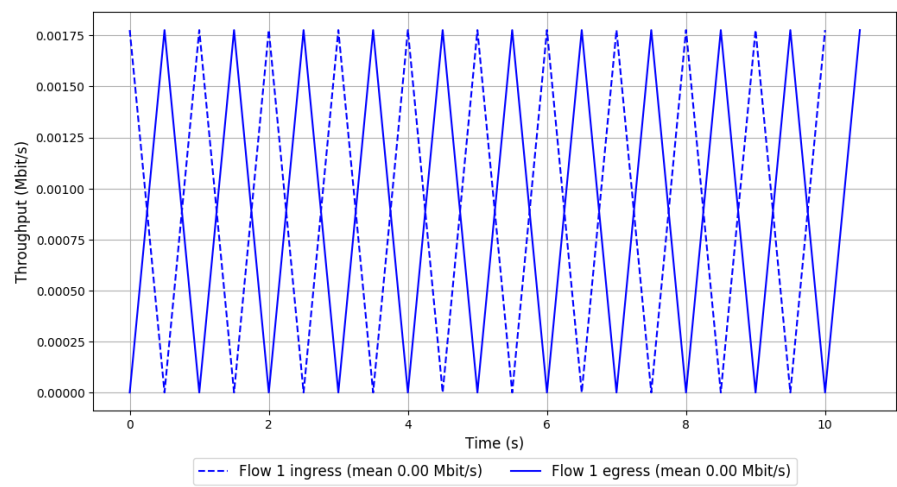
Start at: 2018-08-31 05:17:46

End at: 2018-08-31 05:18:16

Local clock offset: -17.279 ms

Remote clock offset: -2.636 ms

Run 2: Report of Muses-25 — Data Link



Run 3: Statistics of Muses-25

Start at: 2018-08-31 05:22:58

End at: 2018-08-31 05:23:28

Local clock offset: -11.25 ms

Remote clock offset: -2.859 ms

Run 3: Report of Muses-25 — Data Link

