

Pantheon Report

Generated at 2018-09-07 21:33:09 (UTC).

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

Repeated the test of 18 congestion control schemes 5 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:

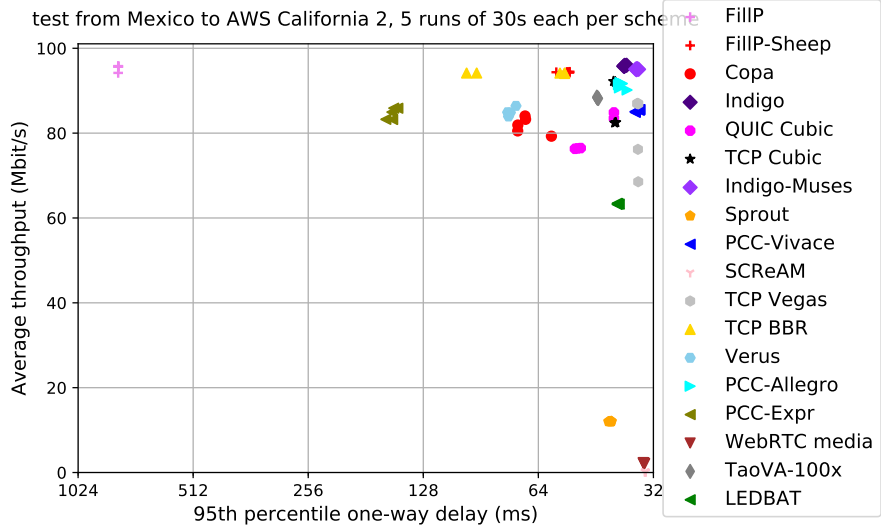
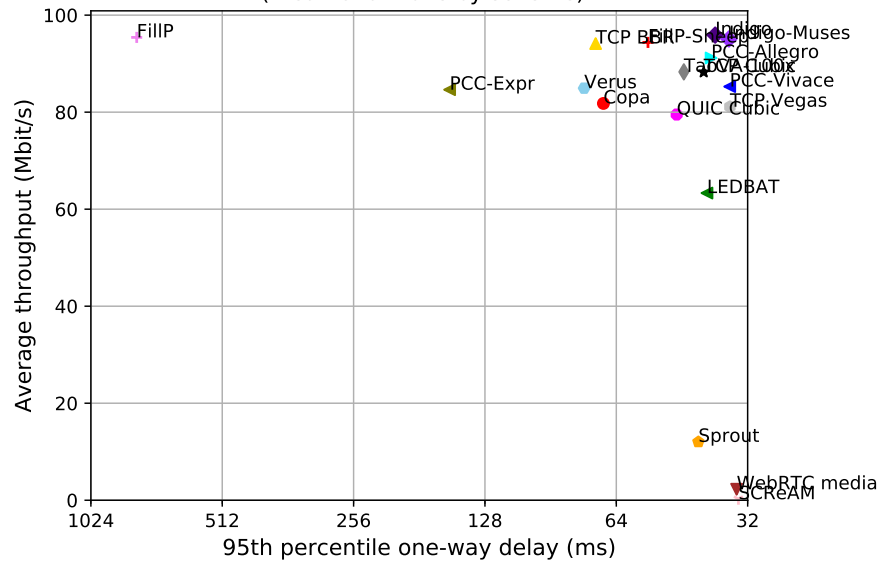
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912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

Git summary:

```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
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-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
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/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from Mexico to AWS California 2, 5 runs of 30s each per scheme
(mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	94.14	71.38	0.63
Copa	5	81.80	68.51	0.23
TCP Cubic	5	88.26	40.36	0.23
FillP	5	95.41	804.06	4.01
FillP-Sheep	5	94.38	54.15	0.81
Indigo	5	95.89	37.98	0.23
LEDBAT	5	63.32	39.67	0.20
Indigo-Muses	5	95.08	35.32	0.24
PCC-Allegro	5	91.17	38.80	0.25
PCC-Expr	5	84.63	154.26	0.30
QUIC Cubic	5	79.51	46.54	0.28
SCReAM	5	0.21	33.60	0.23
Sprout	5	12.03	41.50	0.18
TaoVA-100x	5	88.30	44.81	0.24
TCP Vegas	5	81.12	35.14	0.28
Verus	5	84.94	75.84	0.42
PCC-Vivace	5	85.28	35.18	0.24
WebRTC media	5	2.26	33.92	0.24

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 19:24:41

End at: 2018-09-07 19:25:11

Local clock offset: -3.125 ms

Remote clock offset: -0.24 ms

Below is generated by plot.py at 2018-09-07 21:22:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 98.608 ms

Loss rate: 0.74%

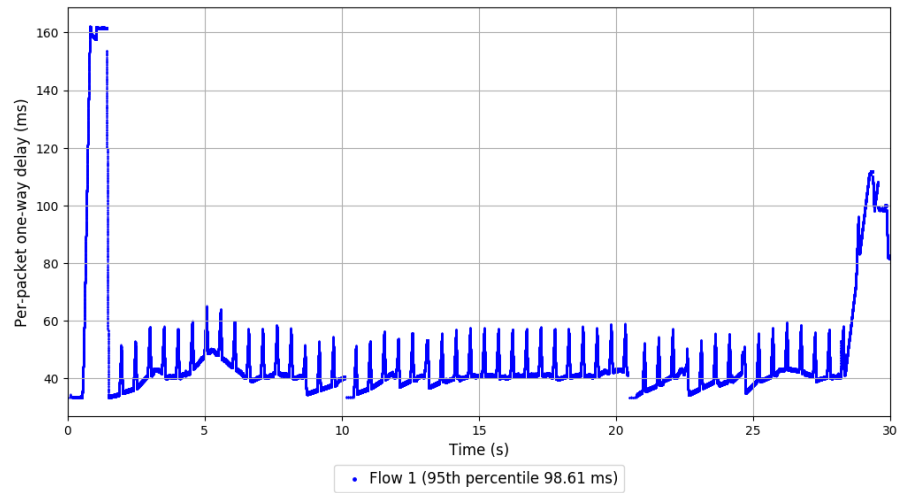
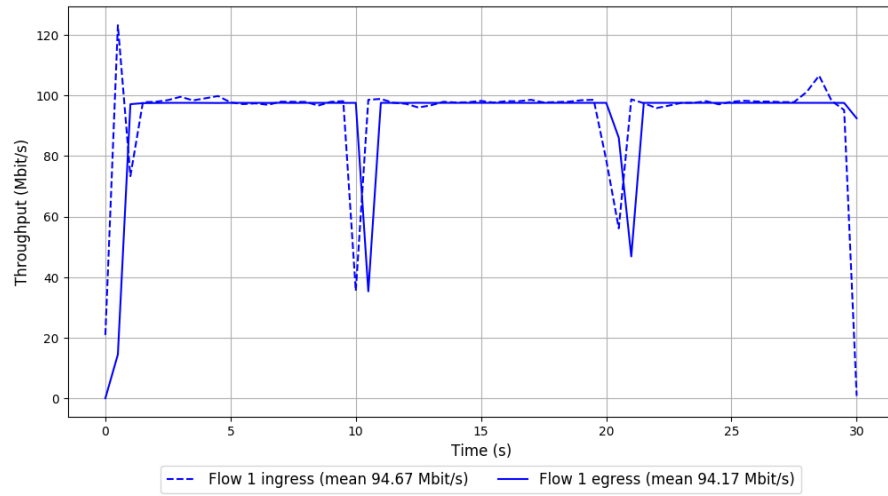
-- Flow 1:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 98.608 ms

Loss rate: 0.74%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-07 19:48:32

End at: 2018-09-07 19:49:02

Local clock offset: -2.663 ms

Remote clock offset: 0.092 ms

Below is generated by plot.py at 2018-09-07 21:22:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 92.804 ms

Loss rate: 0.64%

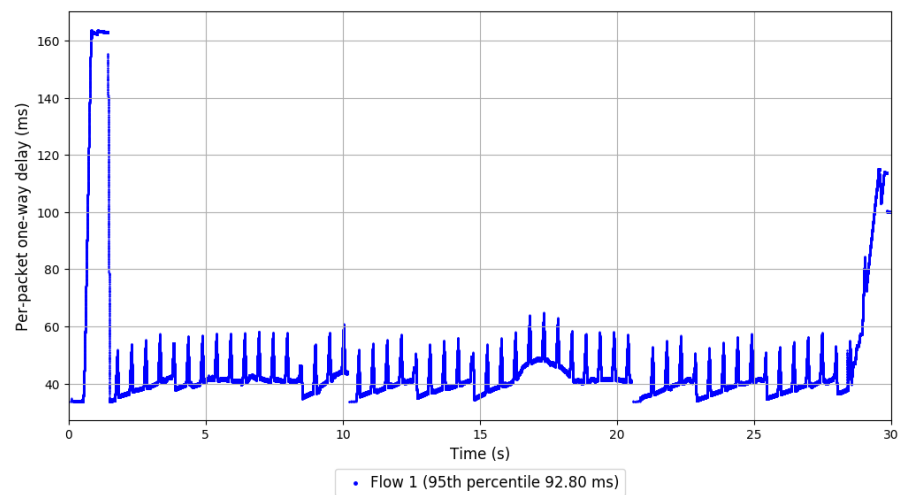
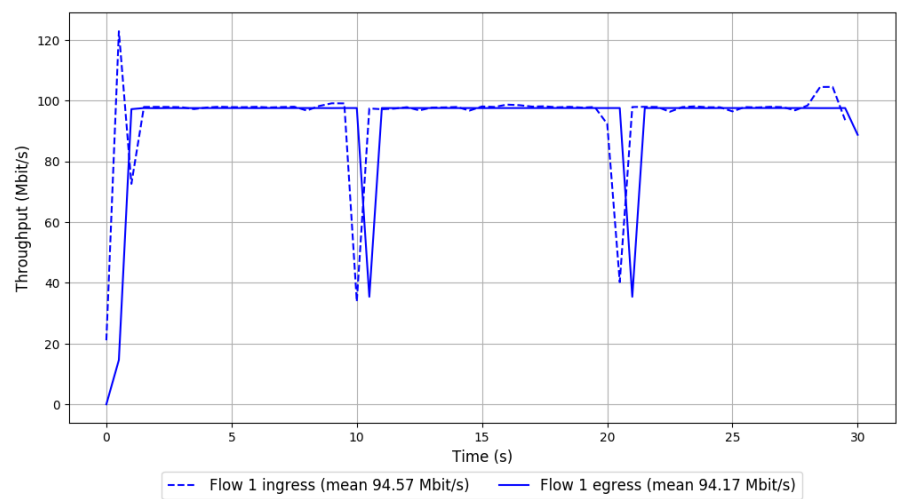
-- Flow 1:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 92.804 ms

Loss rate: 0.64%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-09-07 20:12:26

End at: 2018-09-07 20:12:56

Local clock offset: -2.682 ms

Remote clock offset: 0.766 ms

Below is generated by plot.py at 2018-09-07 21:22:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 54.642 ms

Loss rate: 0.45%

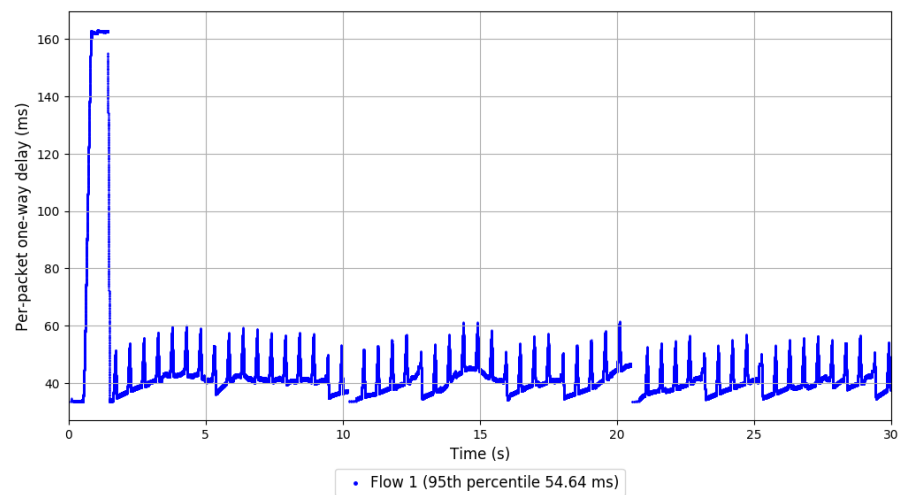
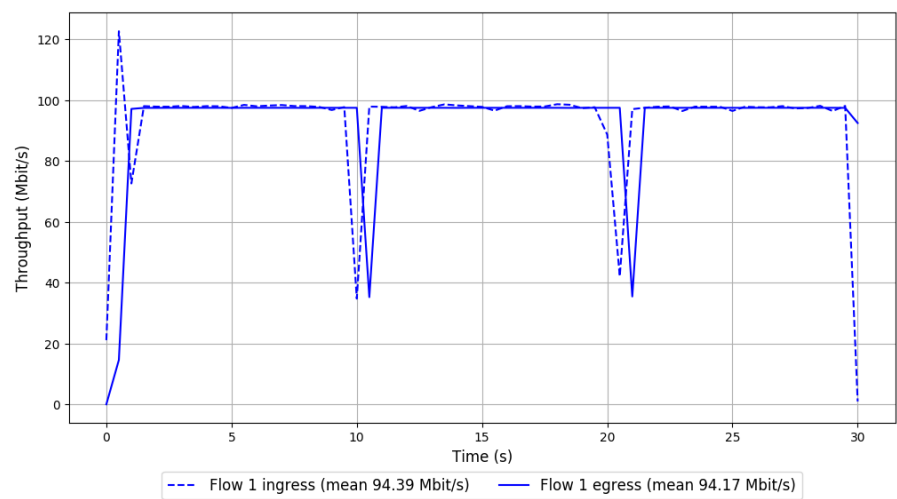
-- Flow 1:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 54.642 ms

Loss rate: 0.45%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-07 20:36:18

End at: 2018-09-07 20:36:48

Local clock offset: 0.387 ms

Remote clock offset: 1.206 ms

Below is generated by plot.py at 2018-09-07 21:22:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.06 Mbit/s

95th percentile per-packet one-way delay: 54.645 ms

Loss rate: 0.59%

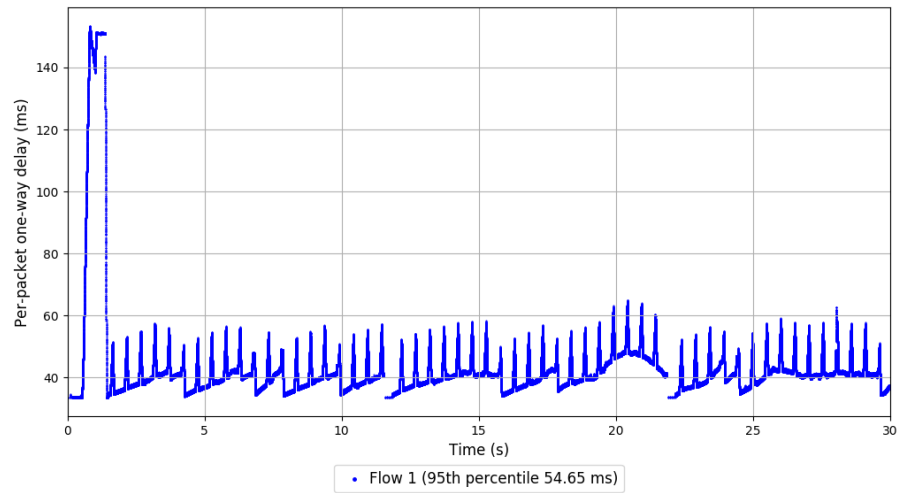
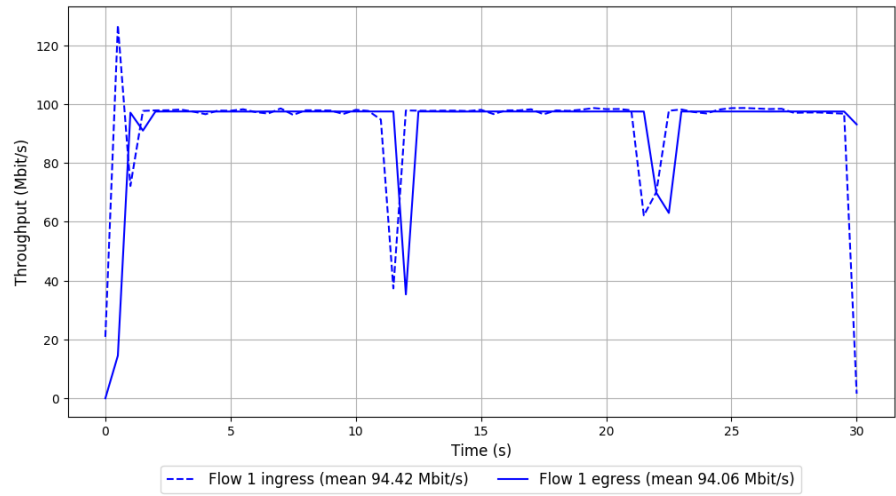
-- Flow 1:

Average throughput: 94.06 Mbit/s

95th percentile per-packet one-way delay: 54.645 ms

Loss rate: 0.59%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-07 21:00:12

End at: 2018-09-07 21:00:42

Local clock offset: 0.27 ms

Remote clock offset: 1.037 ms

Below is generated by plot.py at 2018-09-07 21:22:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.15 Mbit/s

95th percentile per-packet one-way delay: 56.197 ms

Loss rate: 0.75%

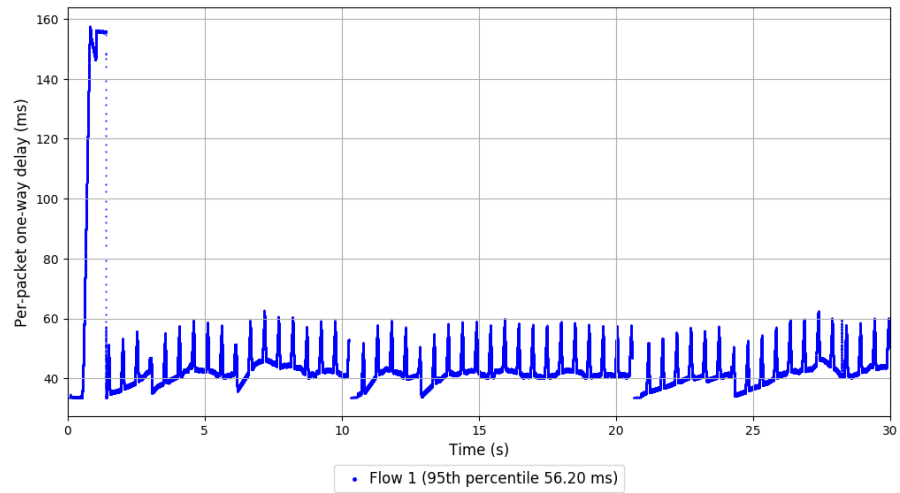
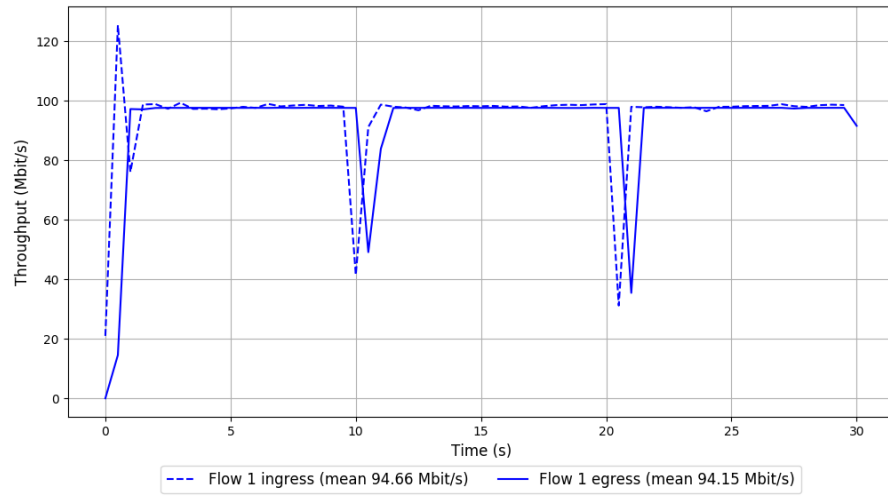
-- Flow 1:

Average throughput: 94.15 Mbit/s

95th percentile per-packet one-way delay: 56.197 ms

Loss rate: 0.75%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-07 19:38:01

End at: 2018-09-07 19:38:31

Local clock offset: -2.758 ms

Remote clock offset: 0.096 ms

Below is generated by plot.py at 2018-09-07 21:23:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.04 Mbit/s

95th percentile per-packet one-way delay: 69.341 ms

Loss rate: 0.26%

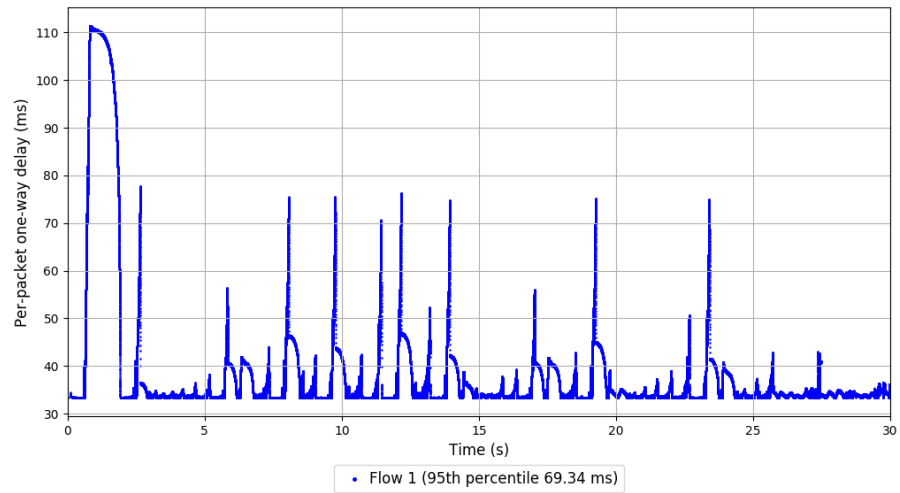
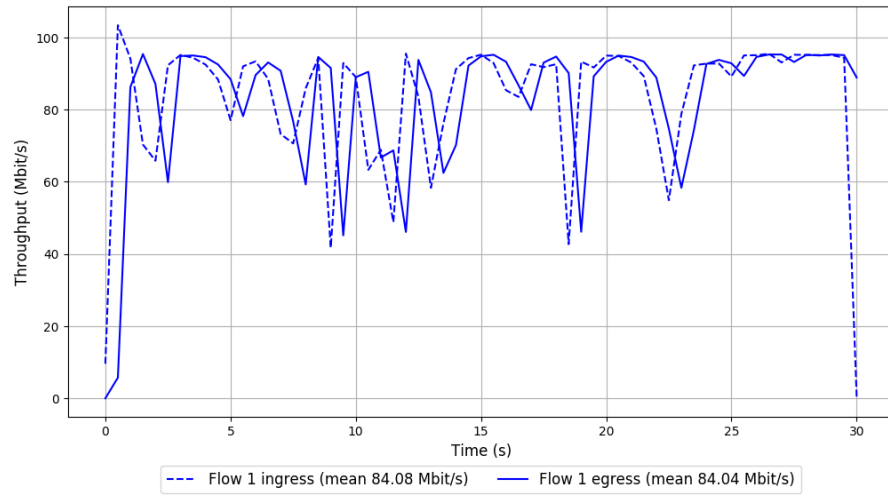
-- Flow 1:

Average throughput: 84.04 Mbit/s

95th percentile per-packet one-way delay: 69.341 ms

Loss rate: 0.26%

Run 1: Report of Copa — Data Link

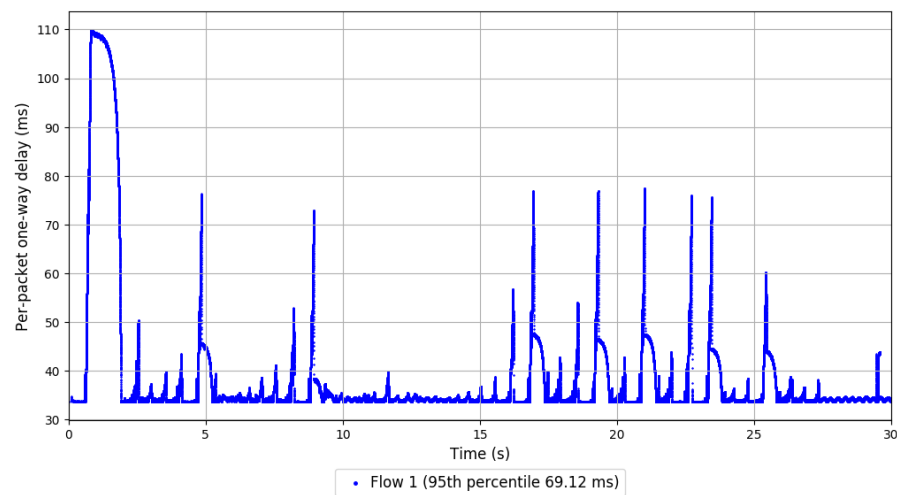
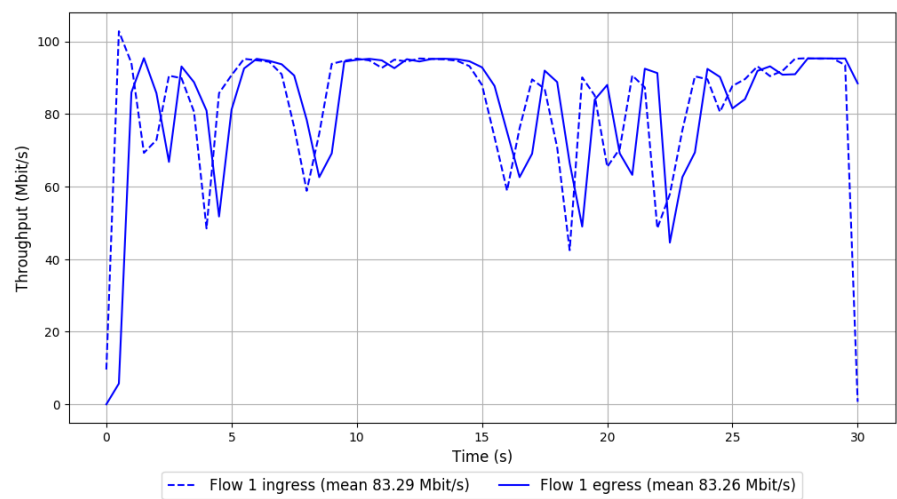


Run 2: Statistics of Copa

Start at: 2018-09-07 20:01:53
End at: 2018-09-07 20:02:23
Local clock offset: -2.726 ms
Remote clock offset: 0.472 ms

Below is generated by plot.py at 2018-09-07 21:23:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 83.26 Mbit/s
95th percentile per-packet one-way delay: 69.123 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 83.26 Mbit/s
95th percentile per-packet one-way delay: 69.123 ms
Loss rate: 0.26%

Run 2: Report of Copa — Data Link

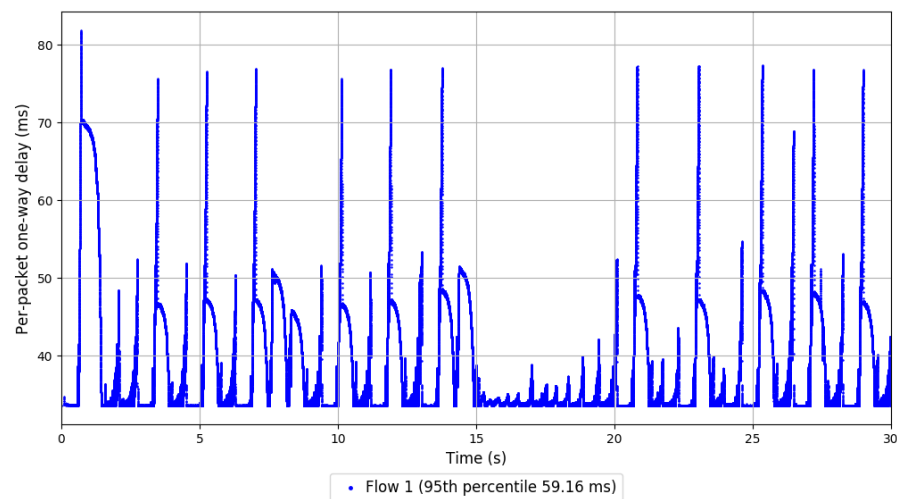
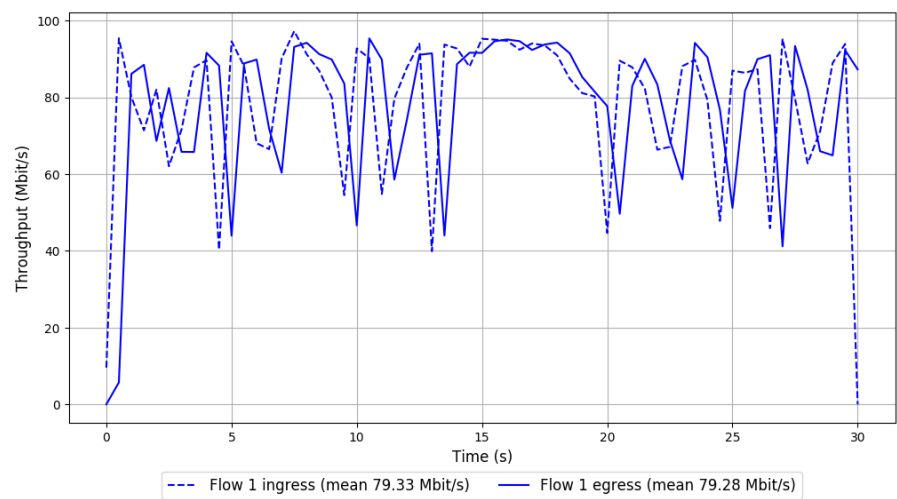


Run 3: Statistics of Copa

Start at: 2018-09-07 20:25:46
End at: 2018-09-07 20:26:16
Local clock offset: -0.604 ms
Remote clock offset: 0.88 ms

Below is generated by plot.py at 2018-09-07 21:23:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 79.28 Mbit/s
95th percentile per-packet one-way delay: 59.161 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 79.28 Mbit/s
95th percentile per-packet one-way delay: 59.161 ms
Loss rate: 0.31%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-07 20:49:41

End at: 2018-09-07 20:50:11

Local clock offset: 0.565 ms

Remote clock offset: 1.171 ms

Below is generated by plot.py at 2018-09-07 21:24:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.91 Mbit/s

95th percentile per-packet one-way delay: 72.427 ms

Loss rate: 0.15%

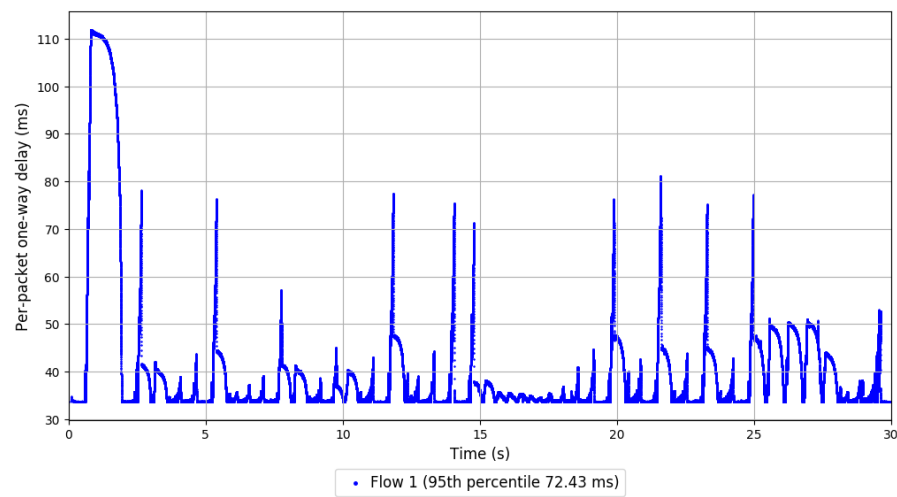
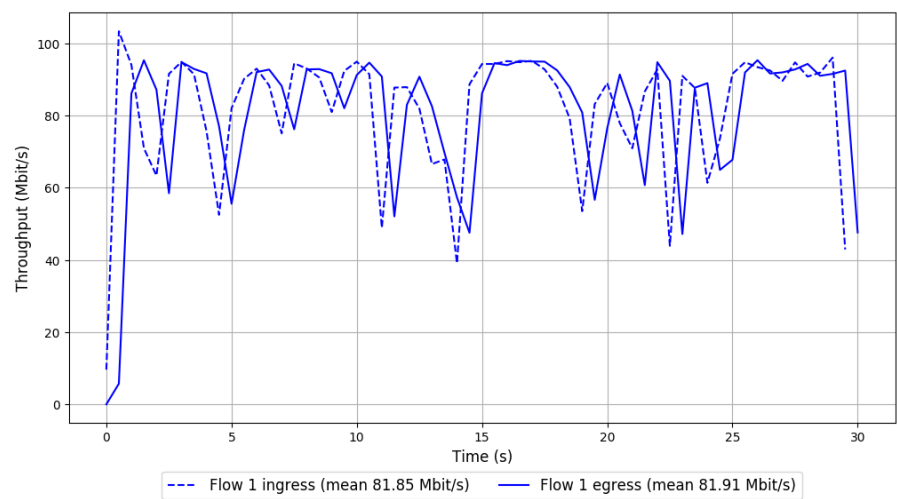
-- Flow 1:

Average throughput: 81.91 Mbit/s

95th percentile per-packet one-way delay: 72.427 ms

Loss rate: 0.15%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-07 21:13:36

End at: 2018-09-07 21:14:06

Local clock offset: 0.493 ms

Remote clock offset: 1.416 ms

Below is generated by plot.py at 2018-09-07 21:24:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.52 Mbit/s

95th percentile per-packet one-way delay: 72.474 ms

Loss rate: 0.16%

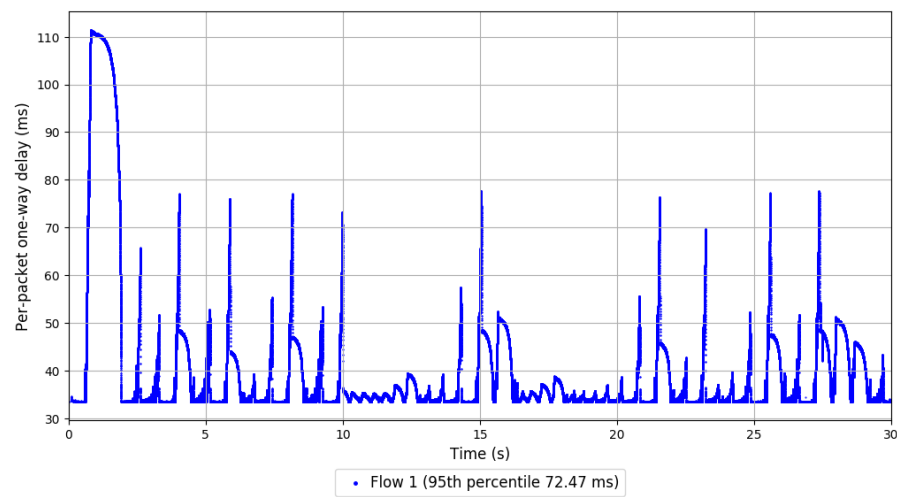
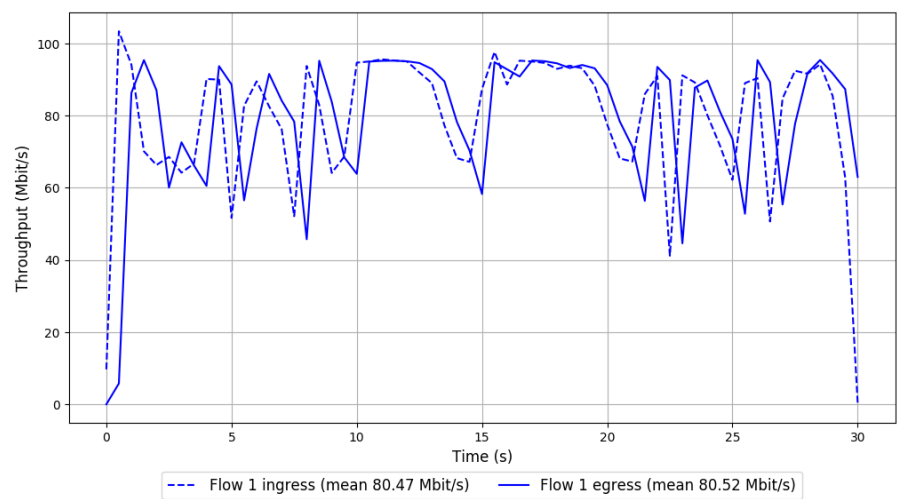
-- Flow 1:

Average throughput: 80.52 Mbit/s

95th percentile per-packet one-way delay: 72.474 ms

Loss rate: 0.16%

Run 5: Report of Copa — Data Link

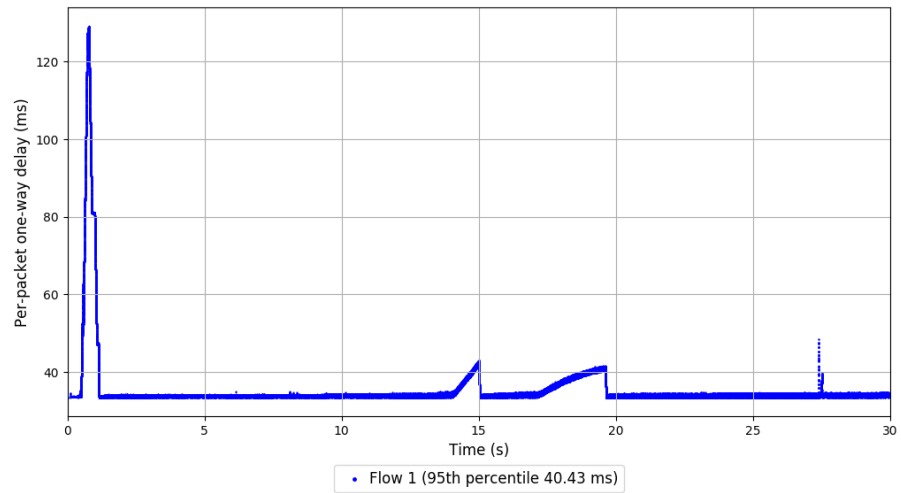
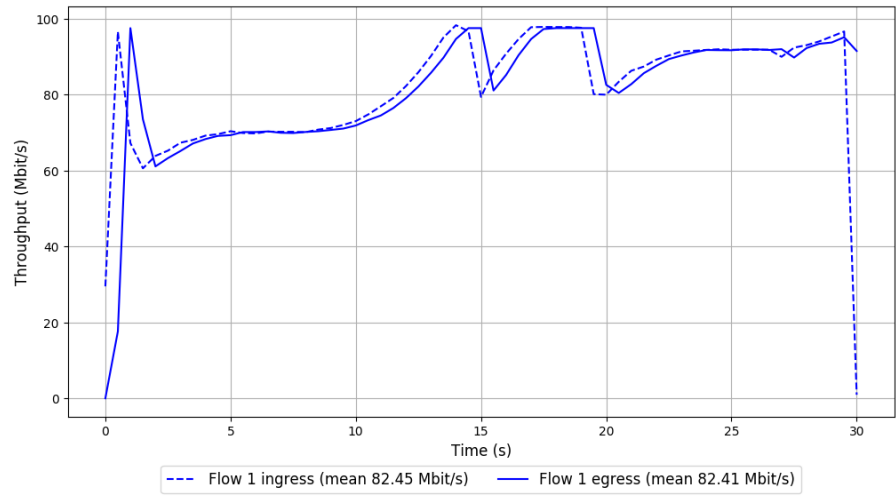


Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 19:31:22
End at: 2018-09-07 19:31:52
Local clock offset: -2.766 ms
Remote clock offset: -0.131 ms

Below is generated by plot.py at 2018-09-07 21:24:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 82.41 Mbit/s
95th percentile per-packet one-way delay: 40.430 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 82.41 Mbit/s
95th percentile per-packet one-way delay: 40.430 ms
Loss rate: 0.26%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 19:55:13

End at: 2018-09-07 19:55:43

Local clock offset: -2.817 ms

Remote clock offset: 0.479 ms

Below is generated by plot.py at 2018-09-07 21:24:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.13 Mbit/s

95th percentile per-packet one-way delay: 40.284 ms

Loss rate: 0.19%

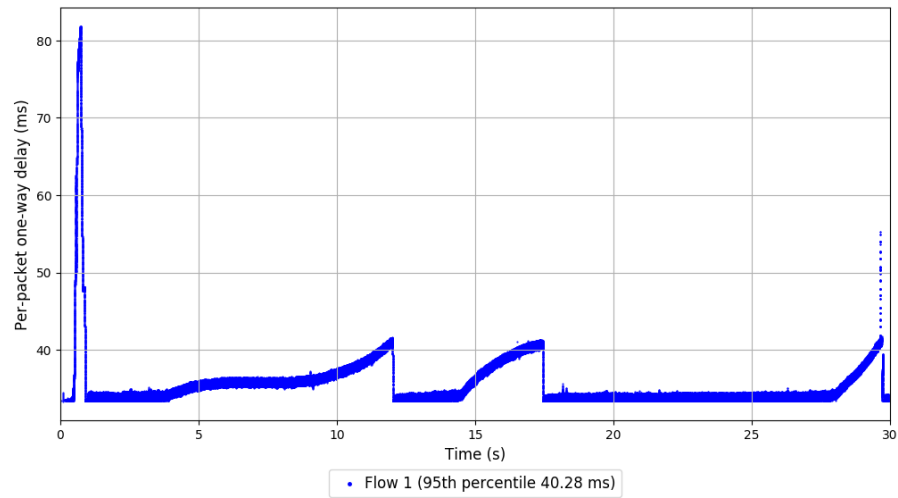
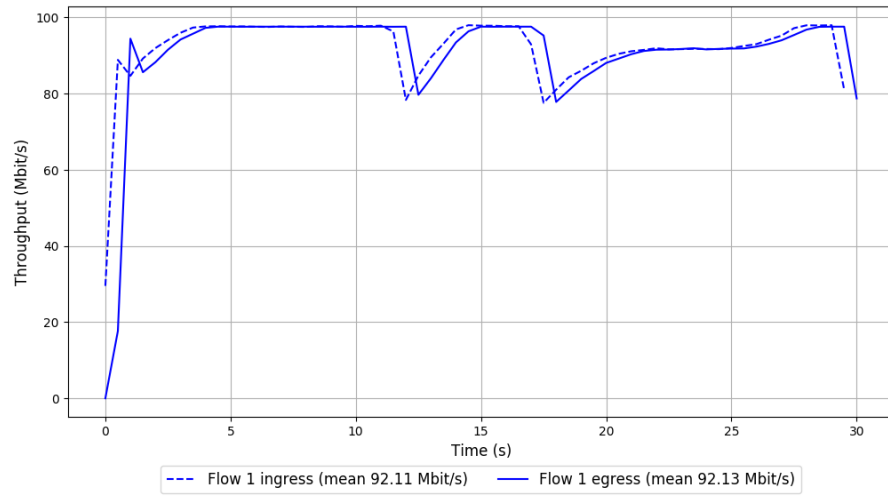
-- Flow 1:

Average throughput: 92.13 Mbit/s

95th percentile per-packet one-way delay: 40.284 ms

Loss rate: 0.19%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 20:19:07

End at: 2018-09-07 20:19:37

Local clock offset: -1.573 ms

Remote clock offset: 0.912 ms

Below is generated by plot.py at 2018-09-07 21:24:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.02 Mbit/s

95th percentile per-packet one-way delay: 40.236 ms

Loss rate: 0.19%

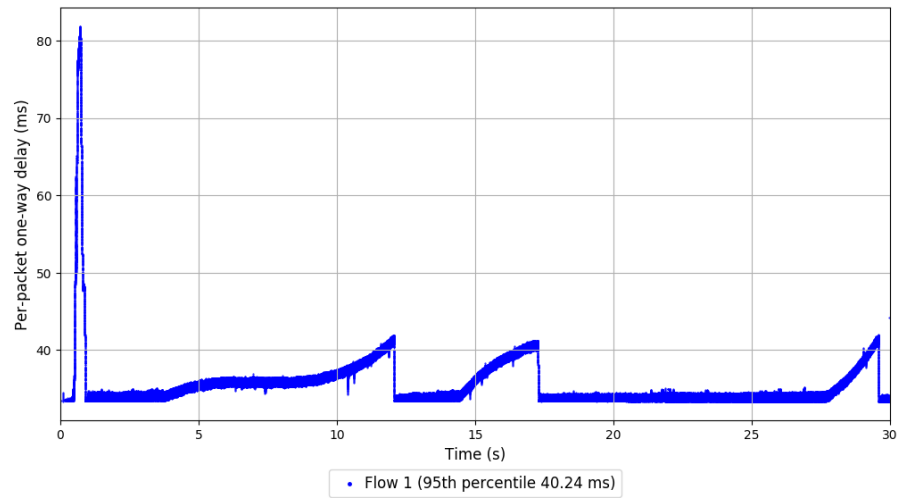
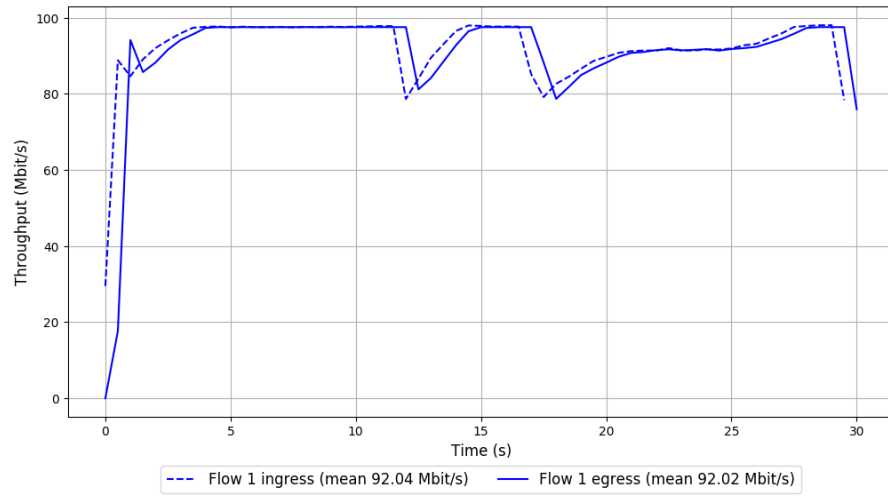
-- Flow 1:

Average throughput: 92.02 Mbit/s

95th percentile per-packet one-way delay: 40.236 ms

Loss rate: 0.19%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 20:43:01

End at: 2018-09-07 20:43:31

Local clock offset: 0.772 ms

Remote clock offset: 1.315 ms

Below is generated by plot.py at 2018-09-07 21:24:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.51 Mbit/s

95th percentile per-packet one-way delay: 40.123 ms

Loss rate: 0.27%

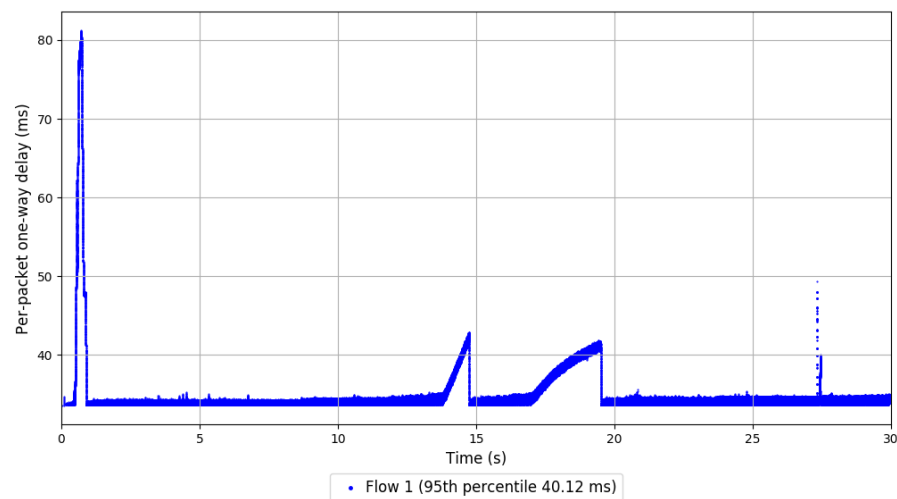
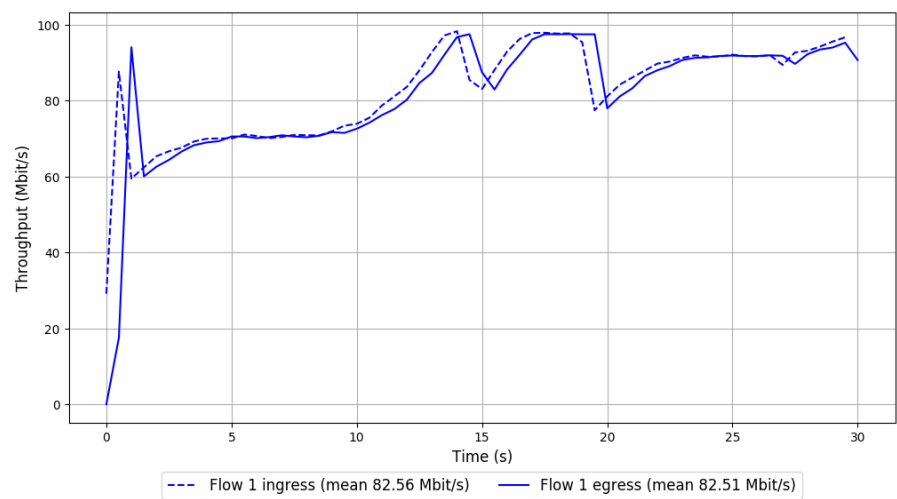
-- Flow 1:

Average throughput: 82.51 Mbit/s

95th percentile per-packet one-way delay: 40.123 ms

Loss rate: 0.27%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 21:06:57

End at: 2018-09-07 21:07:27

Local clock offset: 0.419 ms

Remote clock offset: 1.145 ms

Below is generated by plot.py at 2018-09-07 21:24:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.21 Mbit/s

95th percentile per-packet one-way delay: 40.710 ms

Loss rate: 0.26%

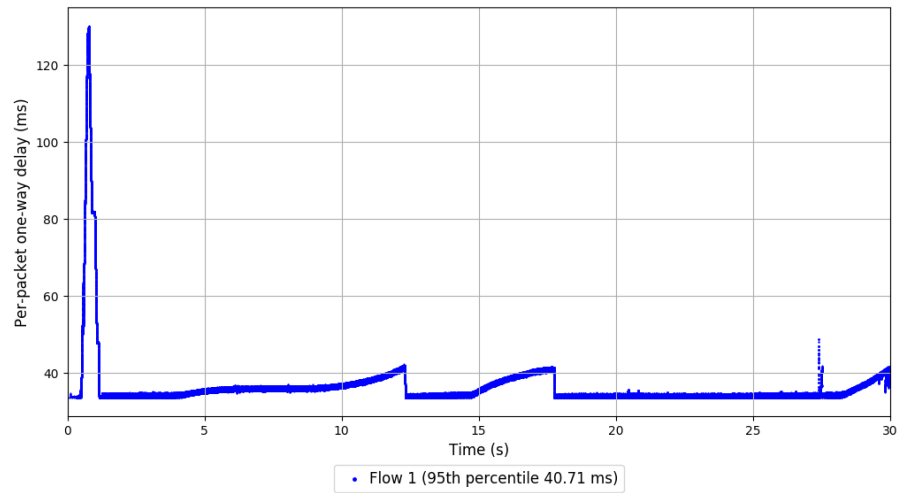
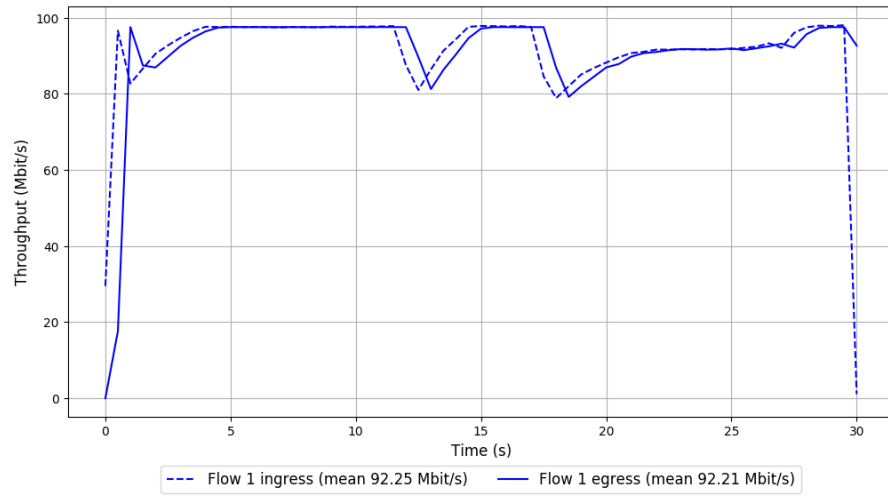
-- Flow 1:

Average throughput: 92.21 Mbit/s

95th percentile per-packet one-way delay: 40.710 ms

Loss rate: 0.26%

Run 5: Report of TCP Cubic — Data Link

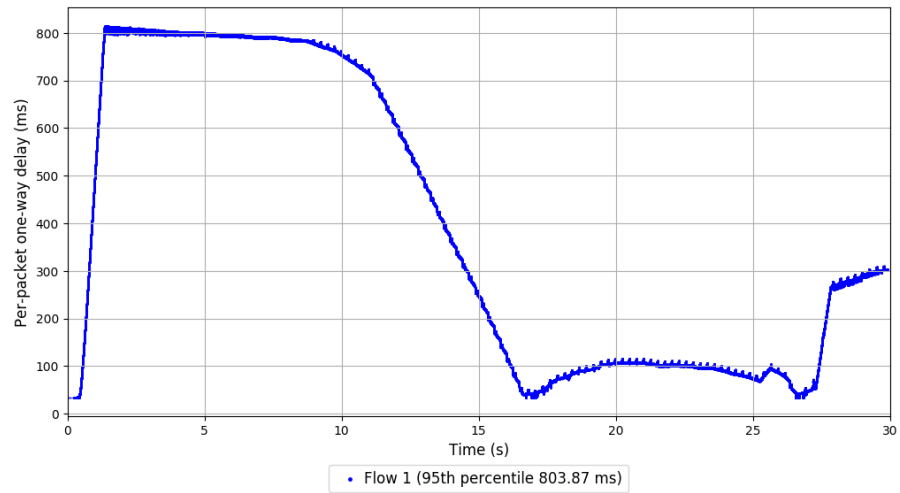
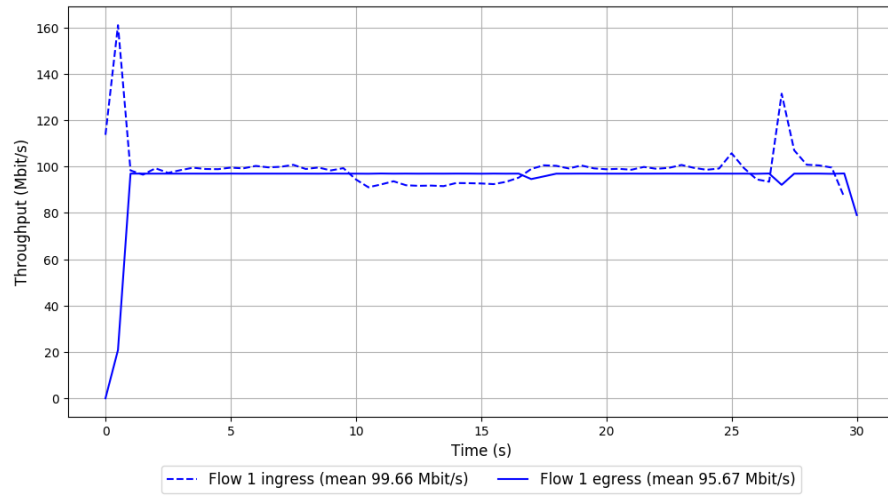


Run 1: Statistics of FillP

Start at: 2018-09-07 19:30:03
End at: 2018-09-07 19:30:33
Local clock offset: -2.888 ms
Remote clock offset: -0.143 ms

Below is generated by plot.py at 2018-09-07 21:24:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.67 Mbit/s
95th percentile per-packet one-way delay: 803.868 ms
Loss rate: 4.21%
-- Flow 1:
Average throughput: 95.67 Mbit/s
95th percentile per-packet one-way delay: 803.868 ms
Loss rate: 4.21%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-07 19:53:54

End at: 2018-09-07 19:54:24

Local clock offset: -2.794 ms

Remote clock offset: 0.411 ms

Below is generated by plot.py at 2018-09-07 21:24:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.80 Mbit/s

95th percentile per-packet one-way delay: 804.221 ms

Loss rate: 4.25%

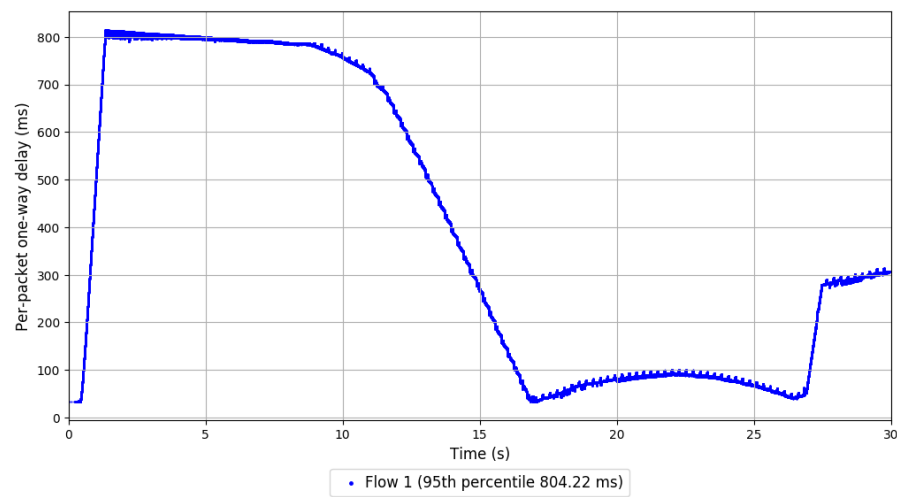
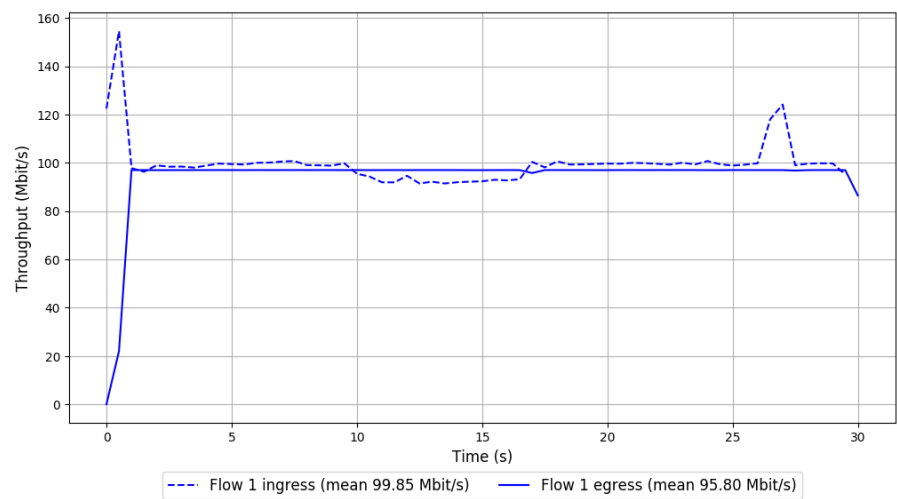
-- Flow 1:

Average throughput: 95.80 Mbit/s

95th percentile per-packet one-way delay: 804.221 ms

Loss rate: 4.25%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-07 20:17:48

End at: 2018-09-07 20:18:18

Local clock offset: -1.995 ms

Remote clock offset: 0.934 ms

Below is generated by plot.py at 2018-09-07 21:24:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.73 Mbit/s

95th percentile per-packet one-way delay: 803.776 ms

Loss rate: 3.84%

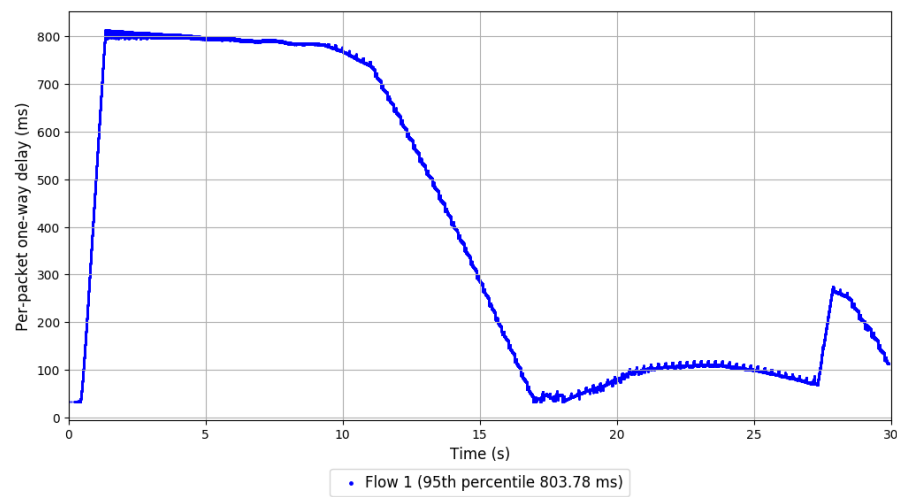
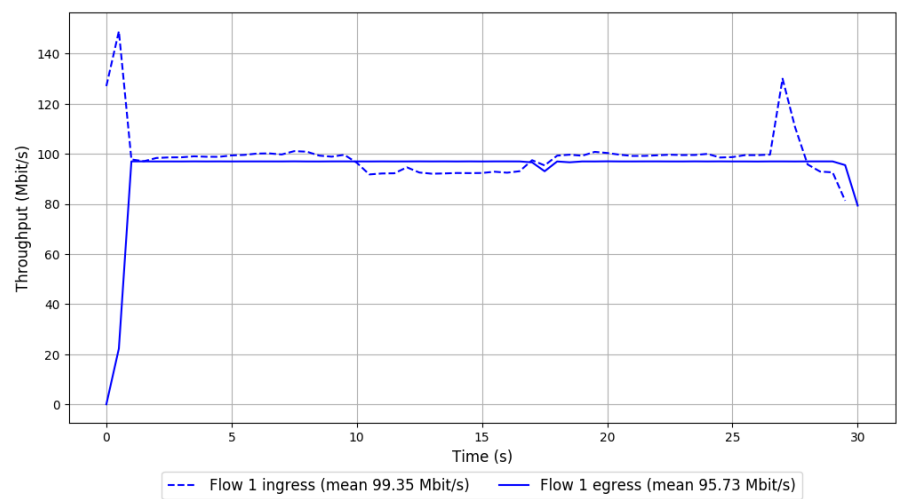
-- Flow 1:

Average throughput: 95.73 Mbit/s

95th percentile per-packet one-way delay: 803.776 ms

Loss rate: 3.84%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-07 20:41:42

End at: 2018-09-07 20:42:12

Local clock offset: 0.695 ms

Remote clock offset: 1.356 ms

Below is generated by plot.py at 2018-09-07 21:24:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.19 Mbit/s

95th percentile per-packet one-way delay: 804.392 ms

Loss rate: 3.45%

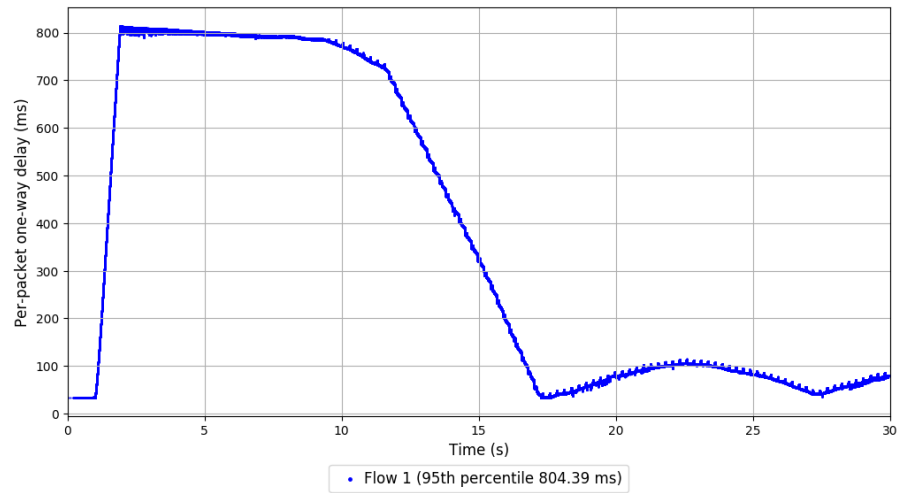
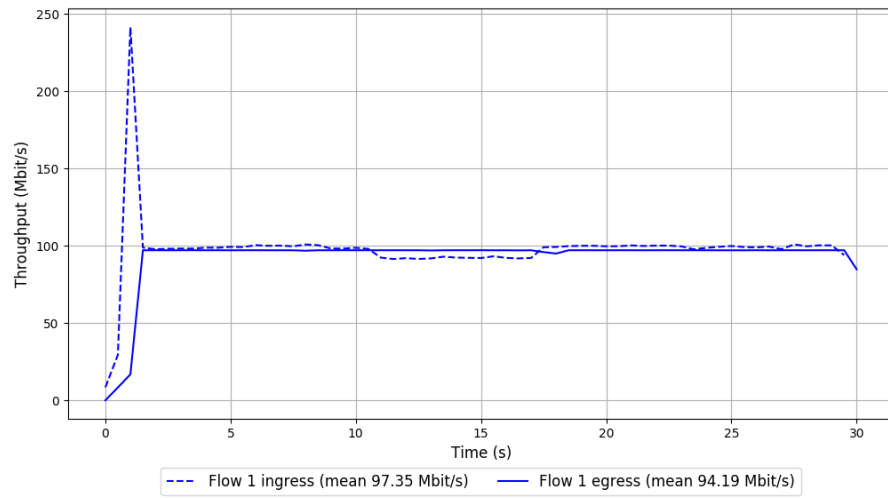
-- Flow 1:

Average throughput: 94.19 Mbit/s

95th percentile per-packet one-way delay: 804.392 ms

Loss rate: 3.45%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-07 21:05:37

End at: 2018-09-07 21:06:07

Local clock offset: 0.31 ms

Remote clock offset: 1.399 ms

Below is generated by plot.py at 2018-09-07 21:25:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.66 Mbit/s

95th percentile per-packet one-way delay: 804.067 ms

Loss rate: 4.30%

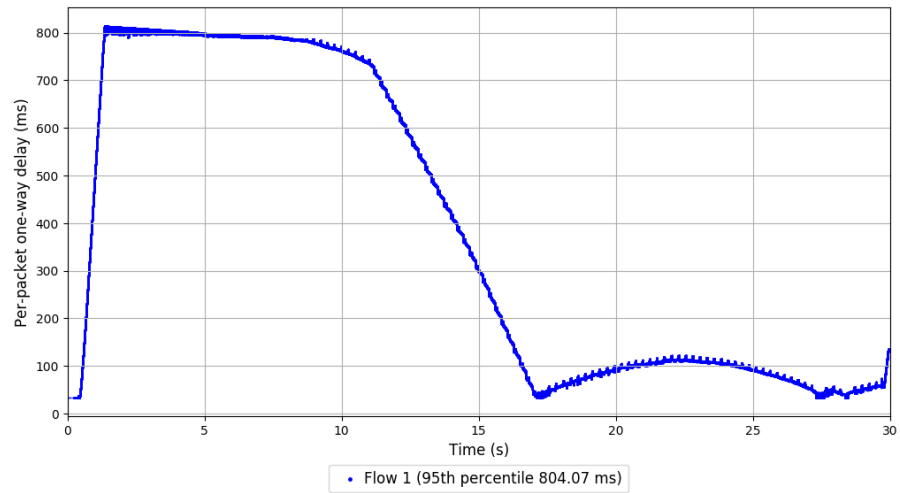
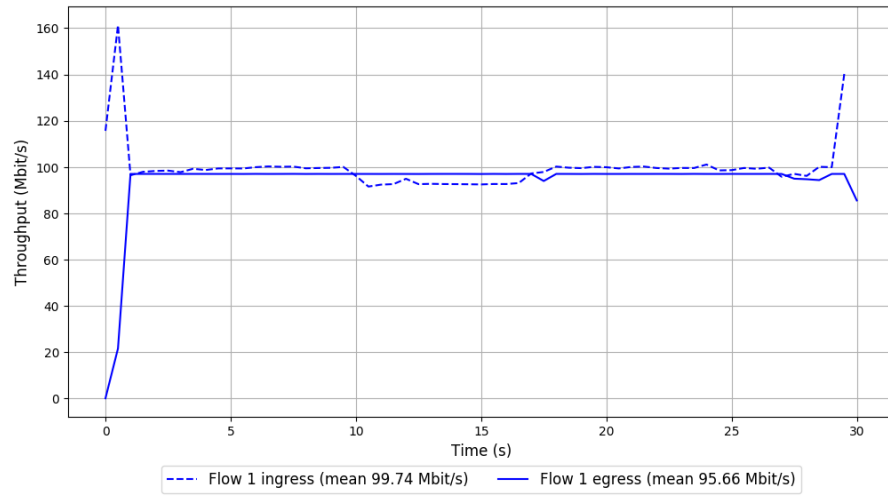
-- Flow 1:

Average throughput: 95.66 Mbit/s

95th percentile per-packet one-way delay: 804.067 ms

Loss rate: 4.30%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 19:35:22

End at: 2018-09-07 19:35:52

Local clock offset: -2.7 ms

Remote clock offset: 0.023 ms

Below is generated by plot.py at 2018-09-07 21:25:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.26 Mbit/s

95th percentile per-packet one-way delay: 53.073 ms

Loss rate: 0.60%

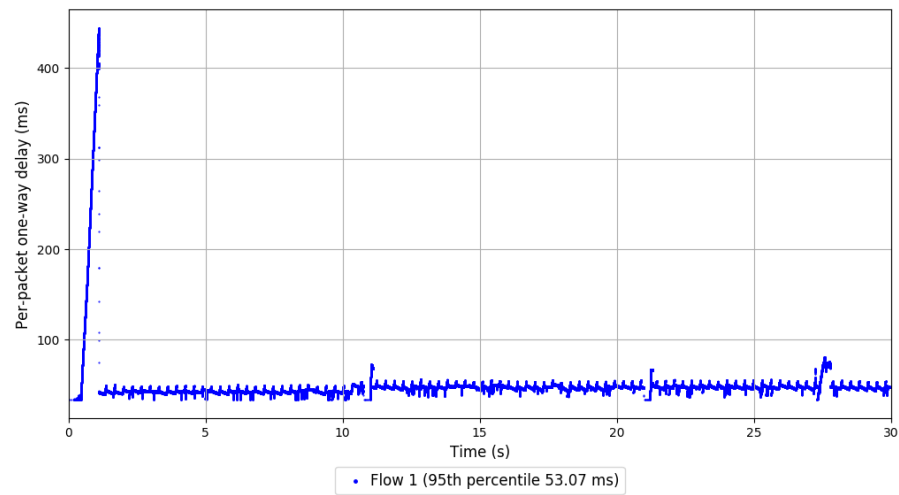
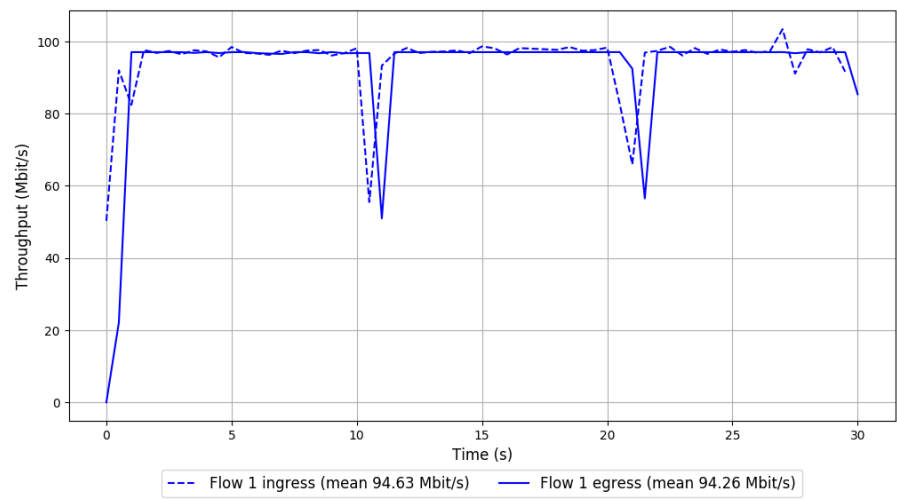
-- Flow 1:

Average throughput: 94.26 Mbit/s

95th percentile per-packet one-way delay: 53.073 ms

Loss rate: 0.60%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 19:59:14

End at: 2018-09-07 19:59:44

Local clock offset: -2.722 ms

Remote clock offset: 0.532 ms

Below is generated by plot.py at 2018-09-07 21:25:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.40 Mbit/s

95th percentile per-packet one-way delay: 53.335 ms

Loss rate: 0.97%

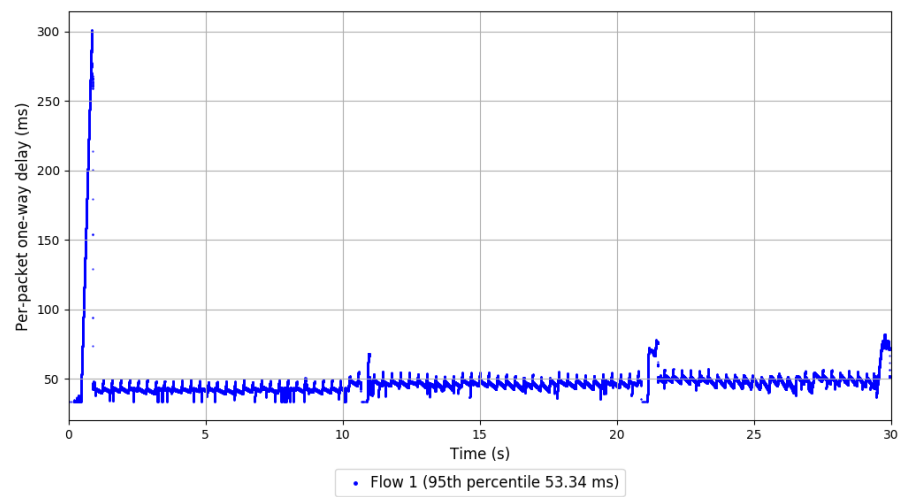
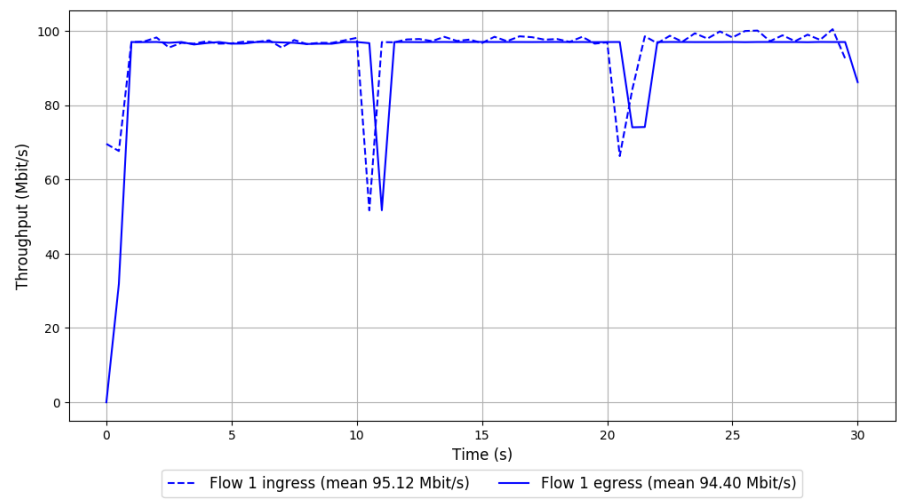
-- Flow 1:

Average throughput: 94.40 Mbit/s

95th percentile per-packet one-way delay: 53.335 ms

Loss rate: 0.97%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 20:23:08

End at: 2018-09-07 20:23:38

Local clock offset: -0.837 ms

Remote clock offset: 1.153 ms

Below is generated by plot.py at 2018-09-07 21:25:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.46 Mbit/s

95th percentile per-packet one-way delay: 53.001 ms

Loss rate: 0.88%

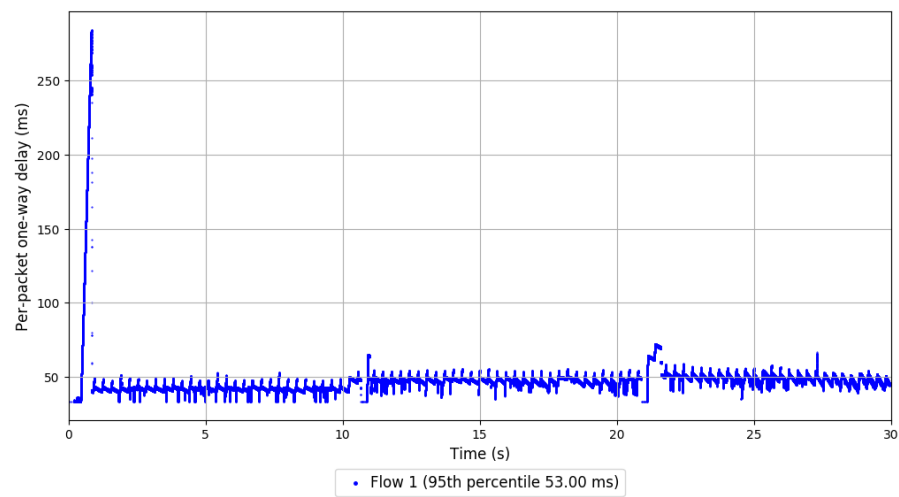
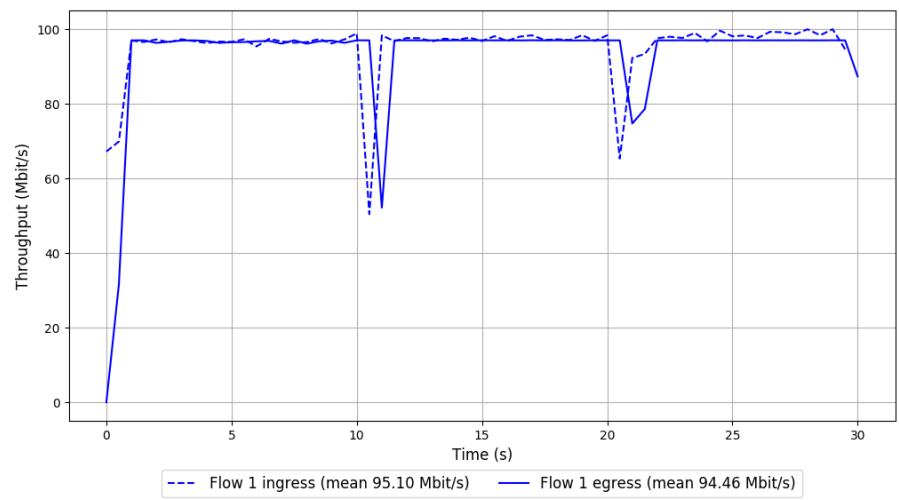
-- Flow 1:

Average throughput: 94.46 Mbit/s

95th percentile per-packet one-way delay: 53.001 ms

Loss rate: 0.88%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 20:47:03

End at: 2018-09-07 20:47:33

Local clock offset: 0.728 ms

Remote clock offset: 1.336 ms

Below is generated by plot.py at 2018-09-07 21:25:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.42 Mbit/s

95th percentile per-packet one-way delay: 53.890 ms

Loss rate: 0.66%

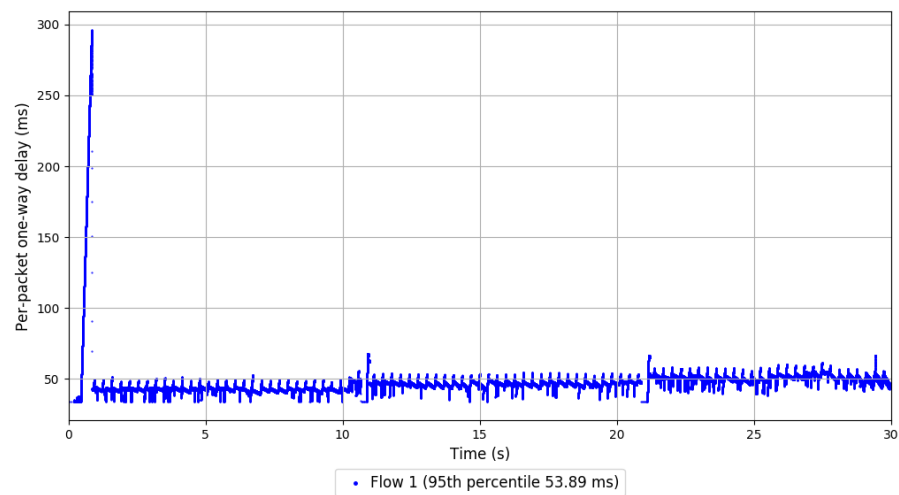
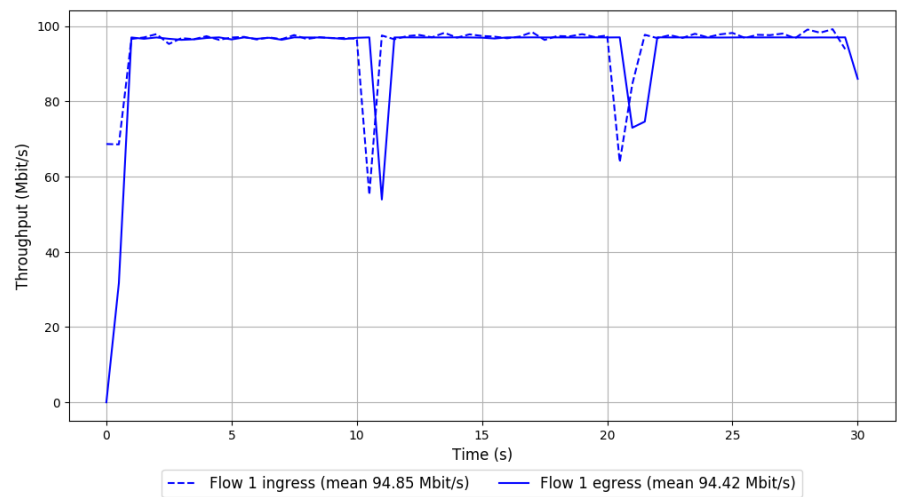
-- Flow 1:

Average throughput: 94.42 Mbit/s

95th percentile per-packet one-way delay: 53.890 ms

Loss rate: 0.66%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 21:10:58

End at: 2018-09-07 21:11:28

Local clock offset: 0.454 ms

Remote clock offset: 1.462 ms

Below is generated by plot.py at 2018-09-07 21:25:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.35 Mbit/s

95th percentile per-packet one-way delay: 57.448 ms

Loss rate: 0.94%

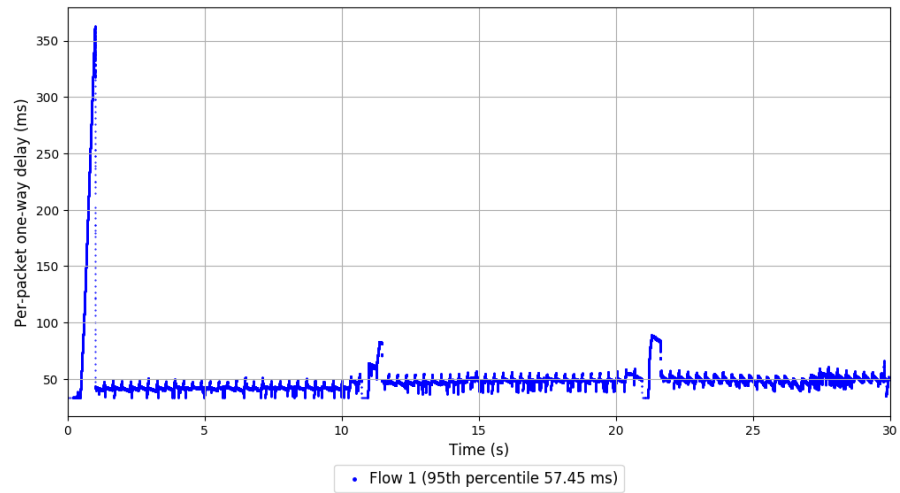
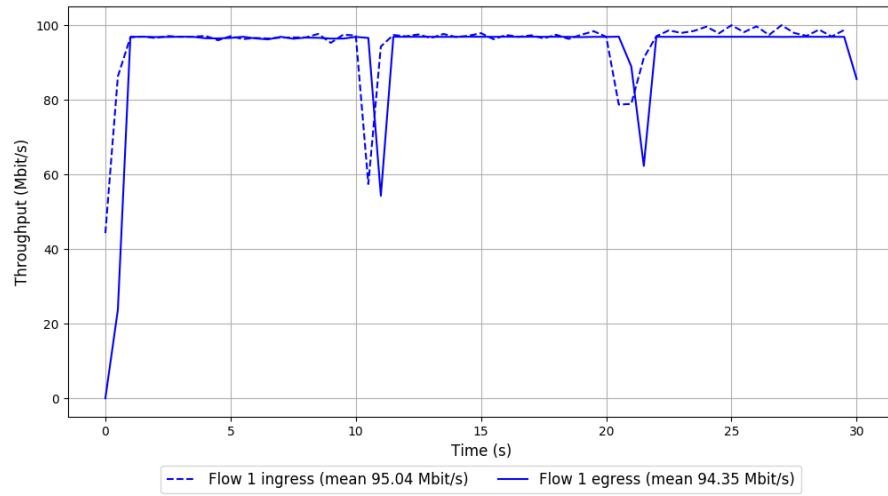
-- Flow 1:

Average throughput: 94.35 Mbit/s

95th percentile per-packet one-way delay: 57.448 ms

Loss rate: 0.94%

Run 5: Report of FillP-Sheep — Data Link

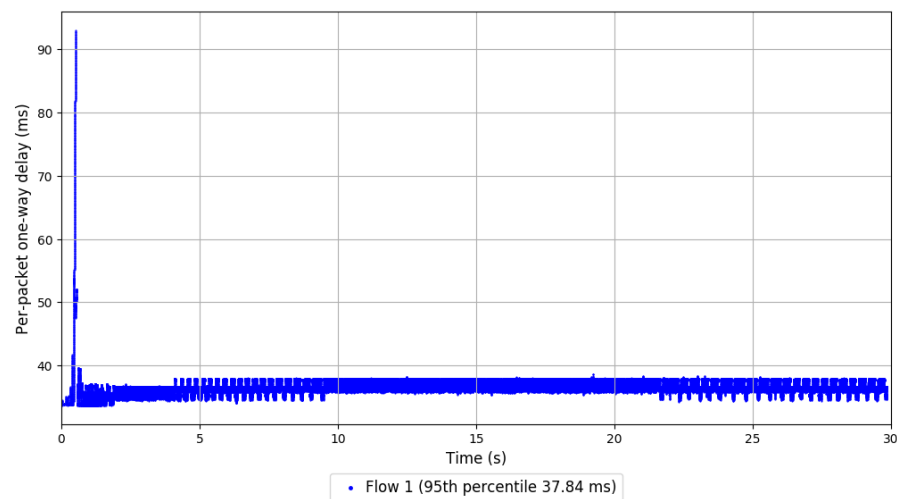
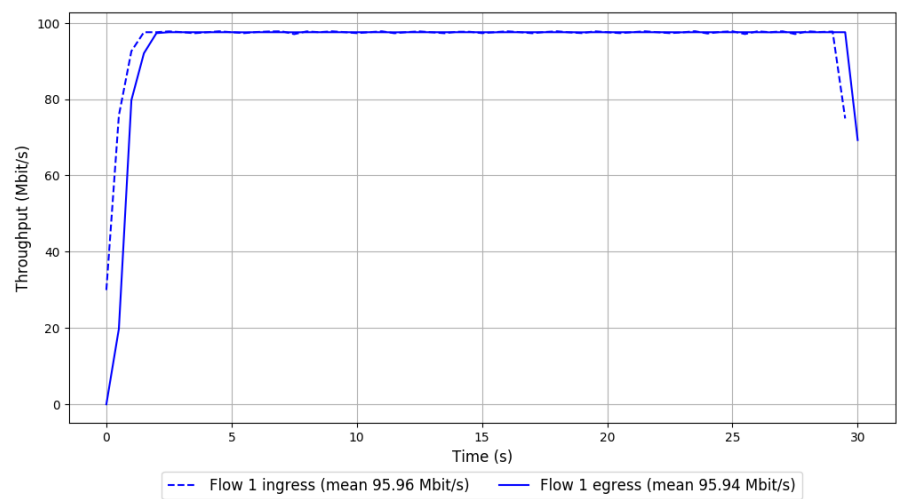


```
Run 1: Statistics of Indigo

Start at: 2018-09-07 19:32:41
End at: 2018-09-07 19:33:11
Local clock offset: -2.71 ms
Remote clock offset: -0.274 ms

# Below is generated by plot.py at 2018-09-07 21:25:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 37.841 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 37.841 ms
Loss rate: 0.23%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-07 19:56:32

End at: 2018-09-07 19:57:02

Local clock offset: -2.727 ms

Remote clock offset: 0.545 ms

Below is generated by plot.py at 2018-09-07 21:25:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.71 Mbit/s

95th percentile per-packet one-way delay: 38.138 ms

Loss rate: 0.23%

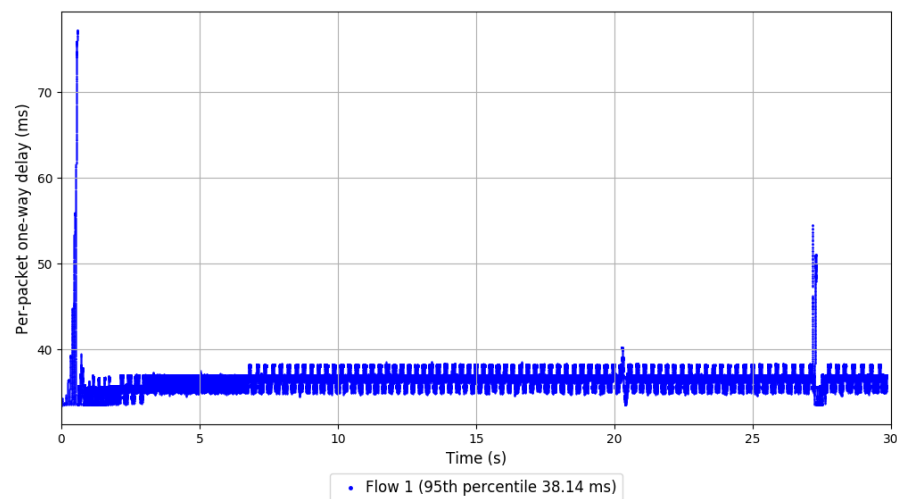
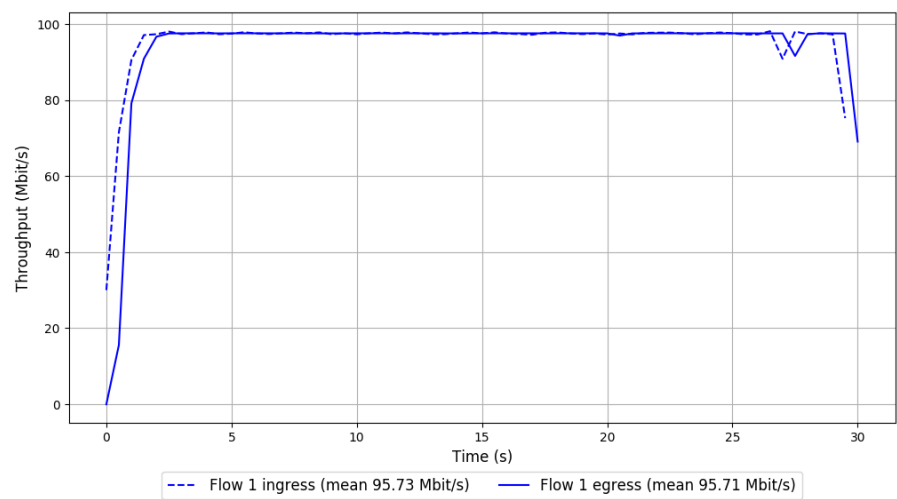
-- Flow 1:

Average throughput: 95.71 Mbit/s

95th percentile per-packet one-way delay: 38.138 ms

Loss rate: 0.23%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-07 20:20:26

End at: 2018-09-07 20:20:56

Local clock offset: -1.294 ms

Remote clock offset: 0.964 ms

Below is generated by plot.py at 2018-09-07 21:26:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.01 Mbit/s

95th percentile per-packet one-way delay: 37.600 ms

Loss rate: 0.23%

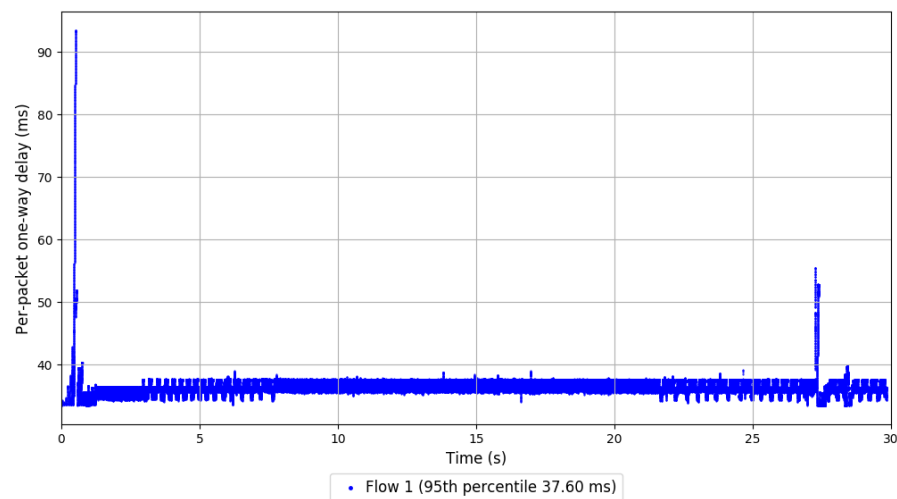
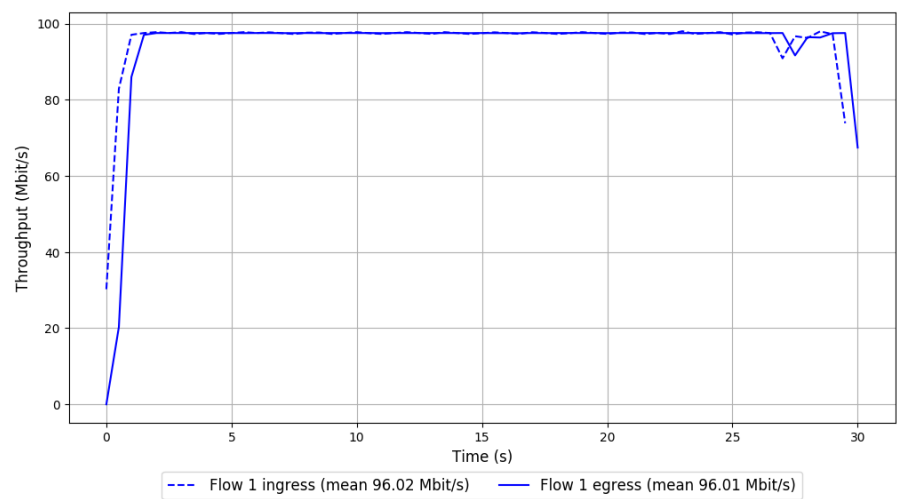
-- Flow 1:

Average throughput: 96.01 Mbit/s

95th percentile per-packet one-way delay: 37.600 ms

Loss rate: 0.23%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-07 20:44:21

End at: 2018-09-07 20:44:51

Local clock offset: 0.75 ms

Remote clock offset: 1.179 ms

Below is generated by plot.py at 2018-09-07 21:26:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.79 Mbit/s

95th percentile per-packet one-way delay: 38.278 ms

Loss rate: 0.23%

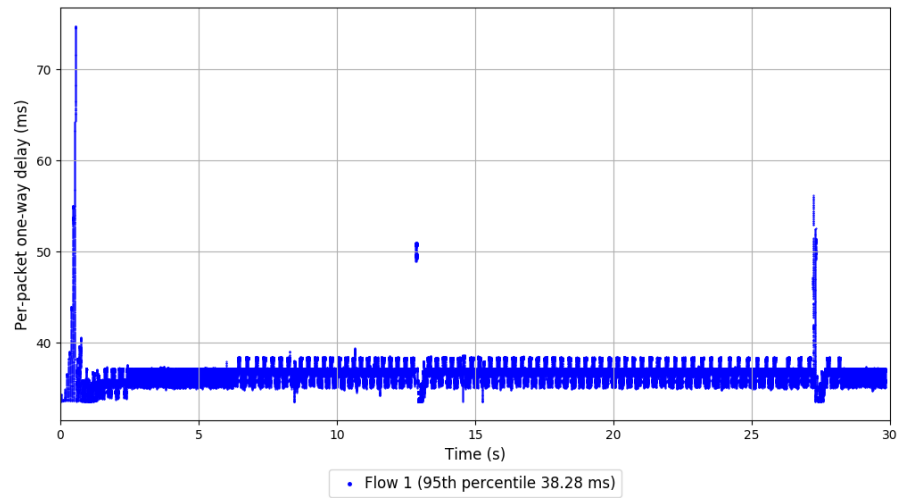
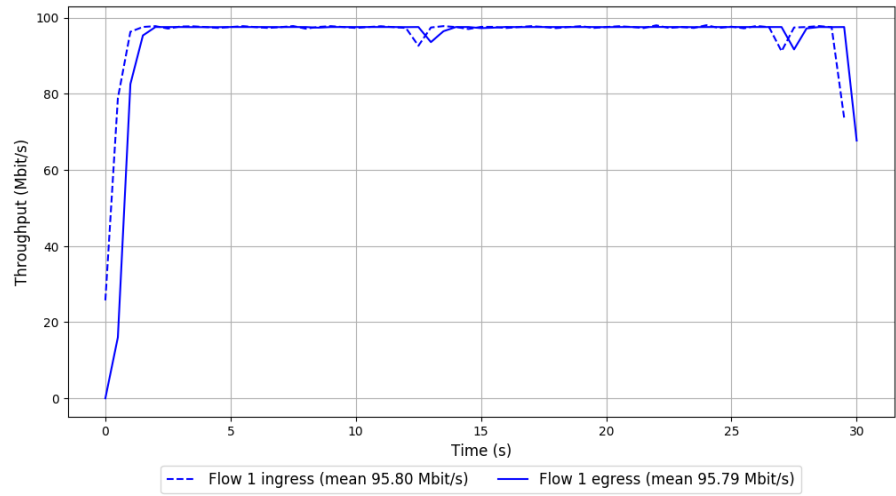
-- Flow 1:

Average throughput: 95.79 Mbit/s

95th percentile per-packet one-way delay: 38.278 ms

Loss rate: 0.23%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-07 21:08:16

End at: 2018-09-07 21:08:46

Local clock offset: 0.398 ms

Remote clock offset: 1.333 ms

Below is generated by plot.py at 2018-09-07 21:26:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.98 Mbit/s

95th percentile per-packet one-way delay: 38.068 ms

Loss rate: 0.22%

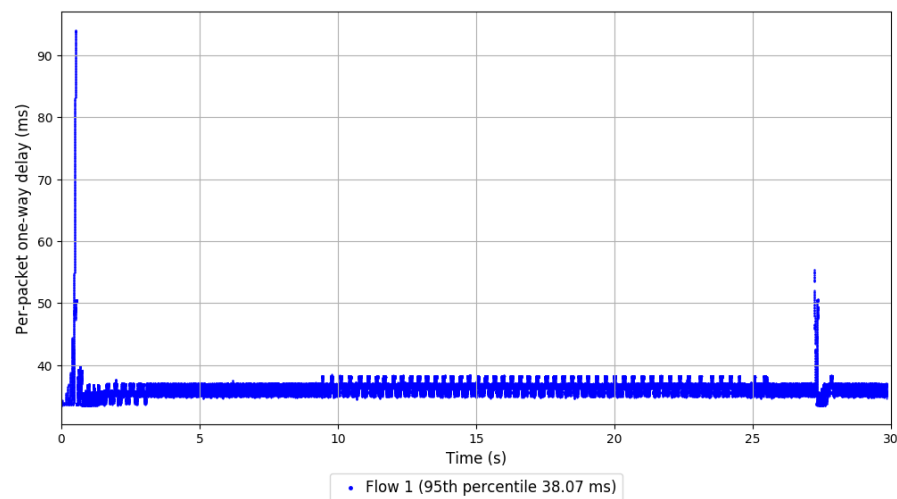
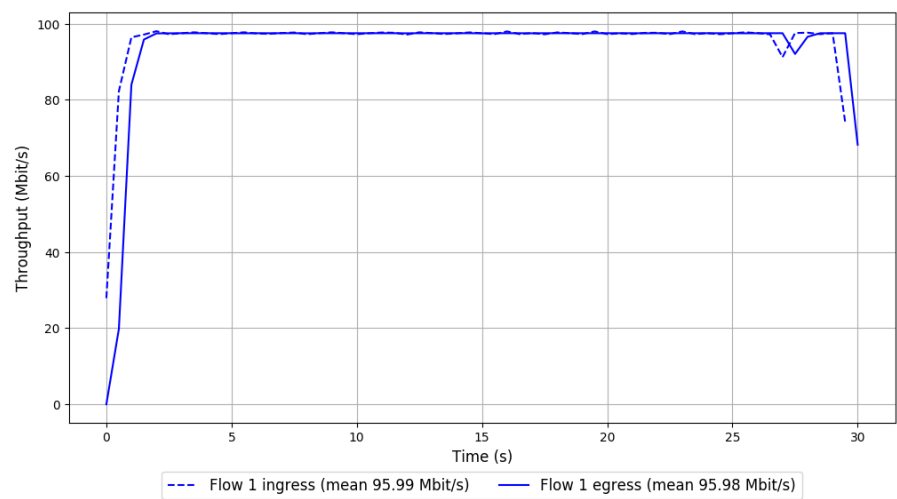
-- Flow 1:

Average throughput: 95.98 Mbit/s

95th percentile per-packet one-way delay: 38.068 ms

Loss rate: 0.22%

Run 5: Report of Indigo — Data Link

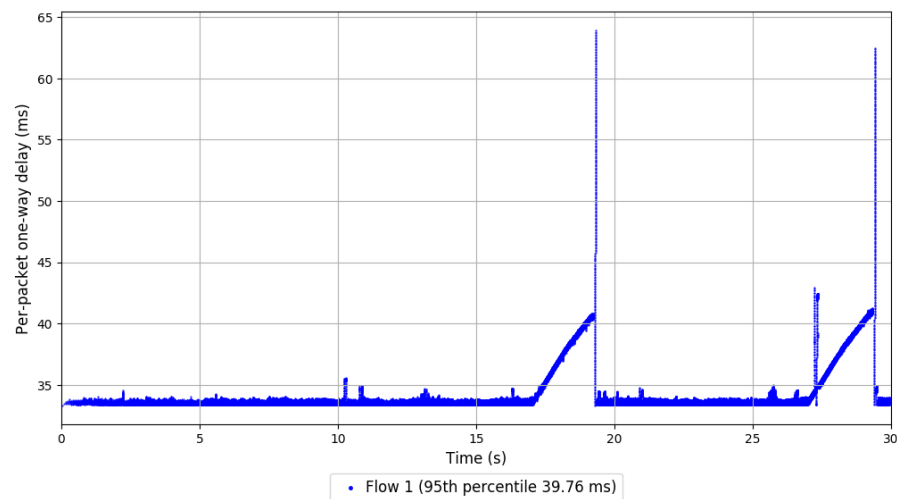
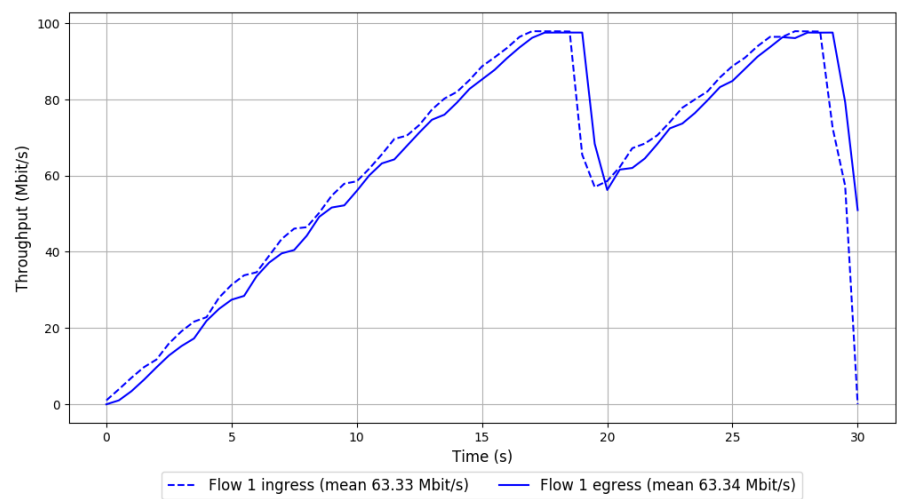


Run 1: Statistics of LEDBAT

Start at: 2018-09-07 19:27:21
End at: 2018-09-07 19:27:51
Local clock offset: -2.88 ms
Remote clock offset: -0.043 ms

Below is generated by plot.py at 2018-09-07 21:26:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 63.34 Mbit/s
95th percentile per-packet one-way delay: 39.756 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 63.34 Mbit/s
95th percentile per-packet one-way delay: 39.756 ms
Loss rate: 0.20%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-07 19:51:12

End at: 2018-09-07 19:51:42

Local clock offset: -2.682 ms

Remote clock offset: 0.332 ms

Below is generated by plot.py at 2018-09-07 21:26:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.20 Mbit/s

95th percentile per-packet one-way delay: 39.831 ms

Loss rate: 0.20%

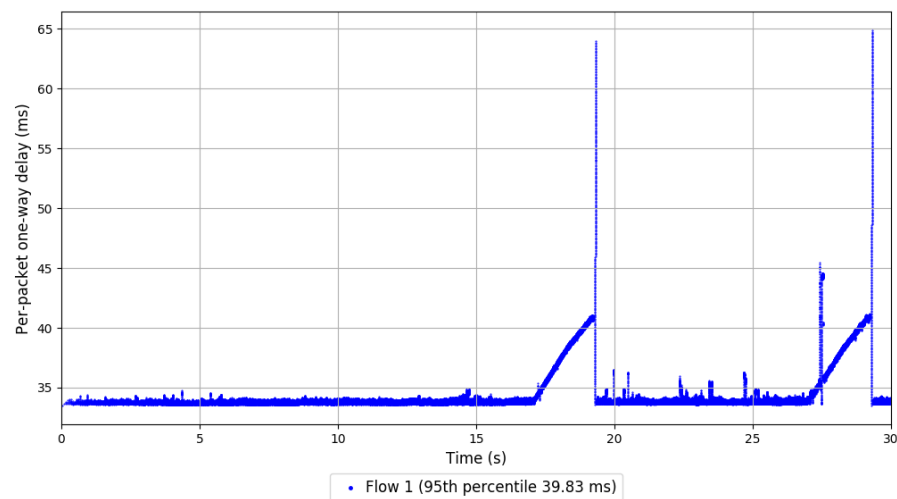
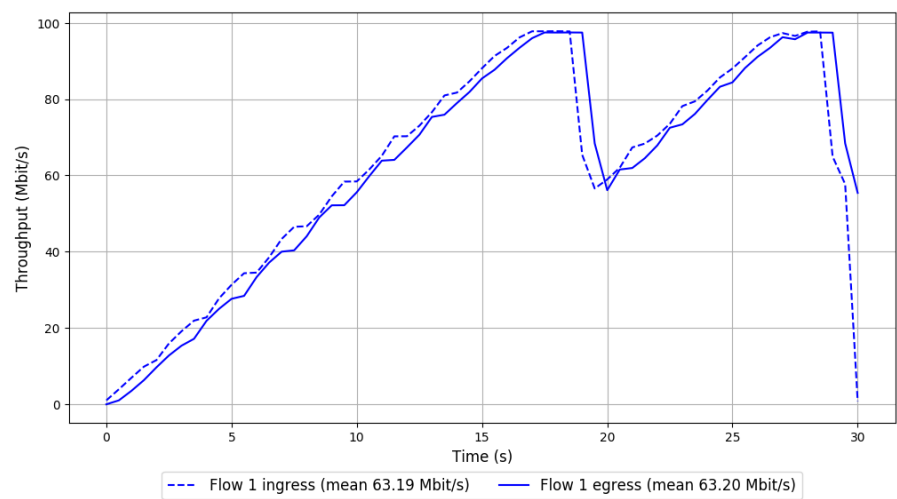
-- Flow 1:

Average throughput: 63.20 Mbit/s

95th percentile per-packet one-way delay: 39.831 ms

Loss rate: 0.20%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-07 20:15:06

End at: 2018-09-07 20:15:36

Local clock offset: -2.789 ms

Remote clock offset: 0.864 ms

Below is generated by plot.py at 2018-09-07 21:26:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.26 Mbit/s

95th percentile per-packet one-way delay: 39.328 ms

Loss rate: 0.20%

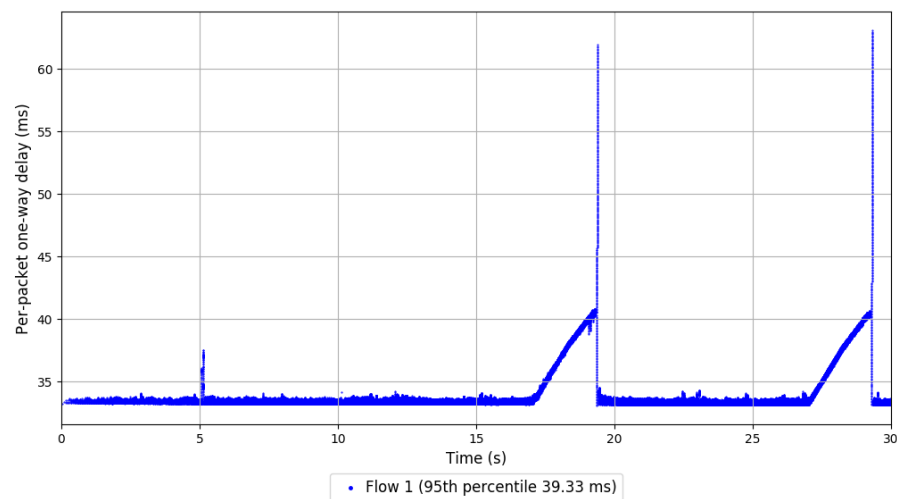
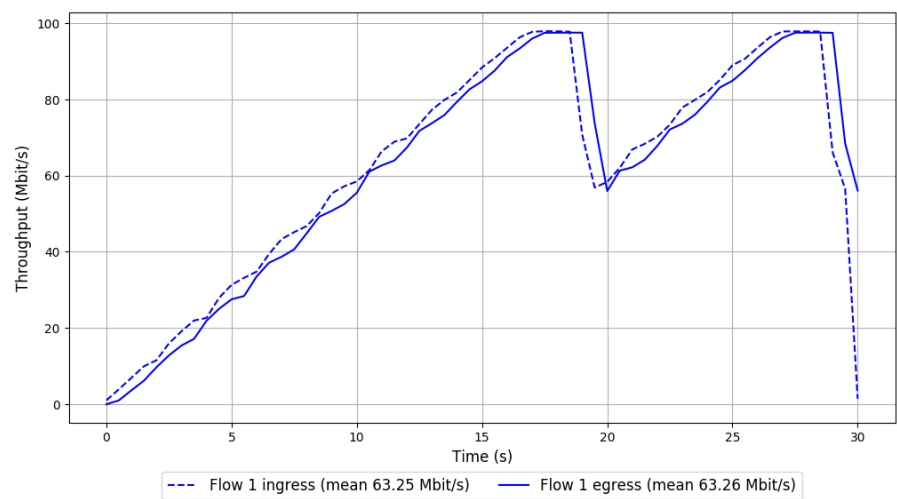
-- Flow 1:

Average throughput: 63.26 Mbit/s

95th percentile per-packet one-way delay: 39.328 ms

Loss rate: 0.20%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-07 20:38:59

End at: 2018-09-07 20:39:29

Local clock offset: 0.444 ms

Remote clock offset: 1.279 ms

Below is generated by plot.py at 2018-09-07 21:26:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.45 Mbit/s

95th percentile per-packet one-way delay: 39.813 ms

Loss rate: 0.19%

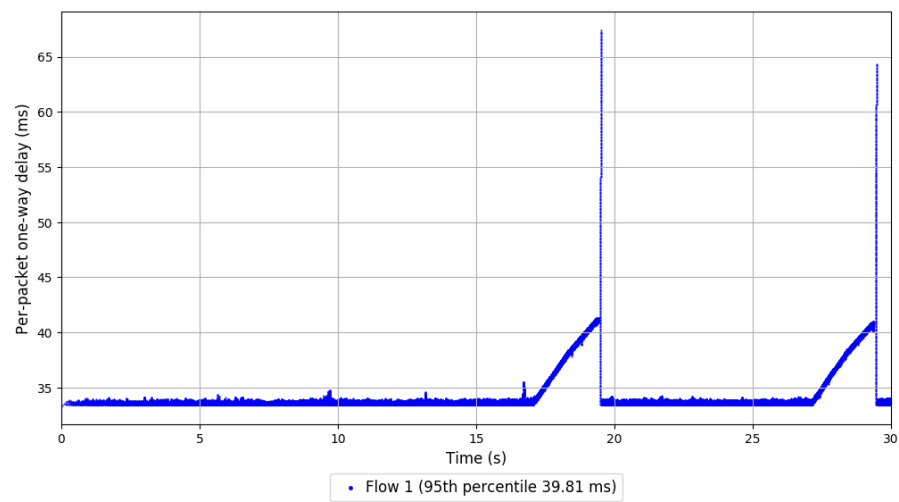
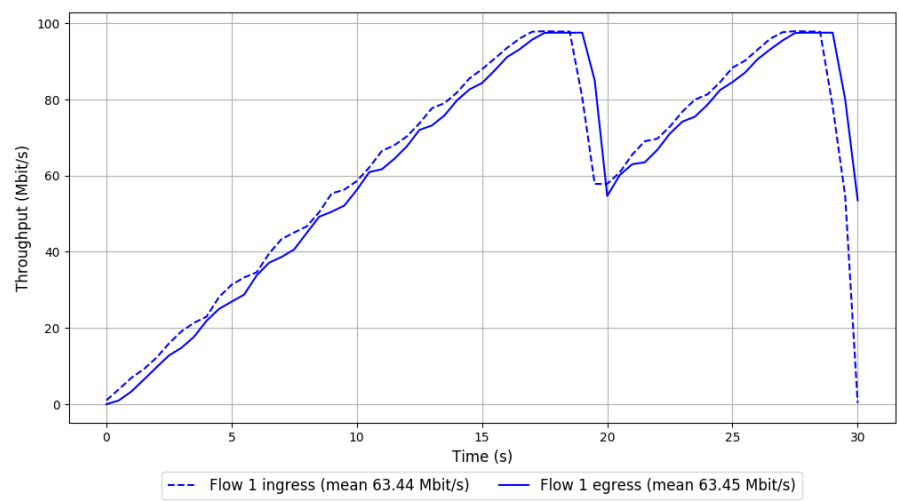
-- Flow 1:

Average throughput: 63.45 Mbit/s

95th percentile per-packet one-way delay: 39.813 ms

Loss rate: 0.19%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-07 21:02:54

End at: 2018-09-07 21:03:24

Local clock offset: 0.29 ms

Remote clock offset: 1.341 ms

Below is generated by plot.py at 2018-09-07 21:26:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.36 Mbit/s

95th percentile per-packet one-way delay: 39.635 ms

Loss rate: 0.20%

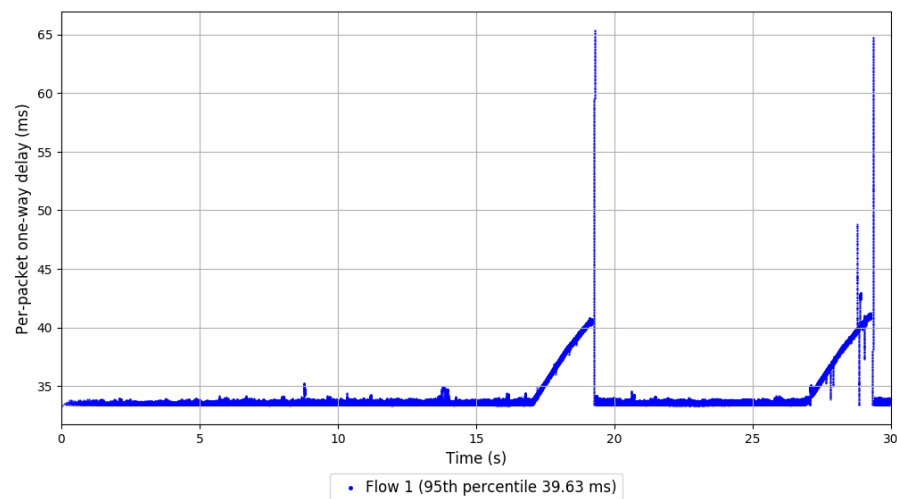
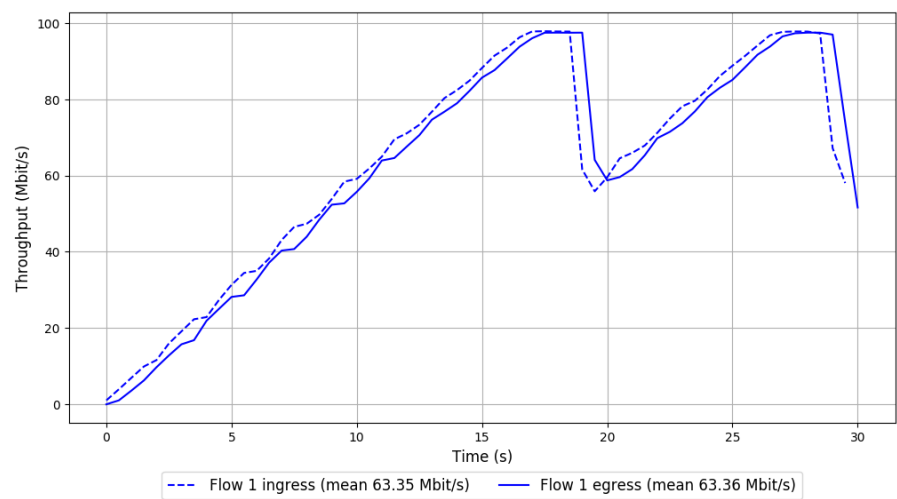
-- Flow 1:

Average throughput: 63.36 Mbit/s

95th percentile per-packet one-way delay: 39.635 ms

Loss rate: 0.20%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 19:26:02

End at: 2018-09-07 19:26:32

Local clock offset: -3.046 ms

Remote clock offset: -0.166 ms

Below is generated by plot.py at 2018-09-07 21:27:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.16 Mbit/s

95th percentile per-packet one-way delay: 35.234 ms

Loss rate: 0.23%

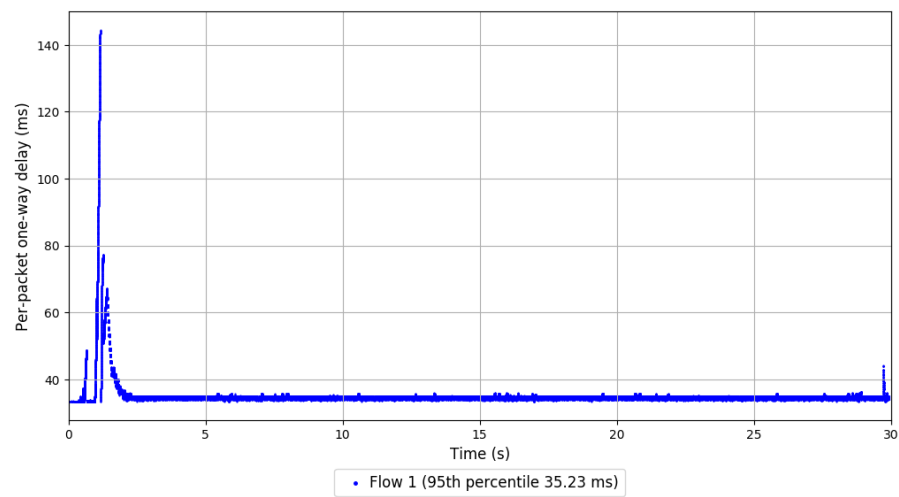
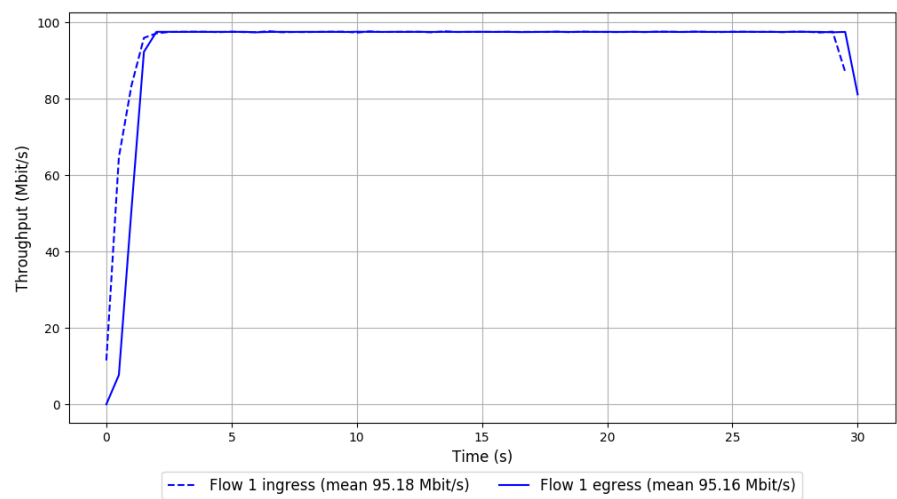
-- Flow 1:

Average throughput: 95.16 Mbit/s

95th percentile per-packet one-way delay: 35.234 ms

Loss rate: 0.23%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 19:49:52

End at: 2018-09-07 19:50:22

Local clock offset: -2.668 ms

Remote clock offset: 0.378 ms

Below is generated by plot.py at 2018-09-07 21:27:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.08 Mbit/s

95th percentile per-packet one-way delay: 35.610 ms

Loss rate: 0.23%

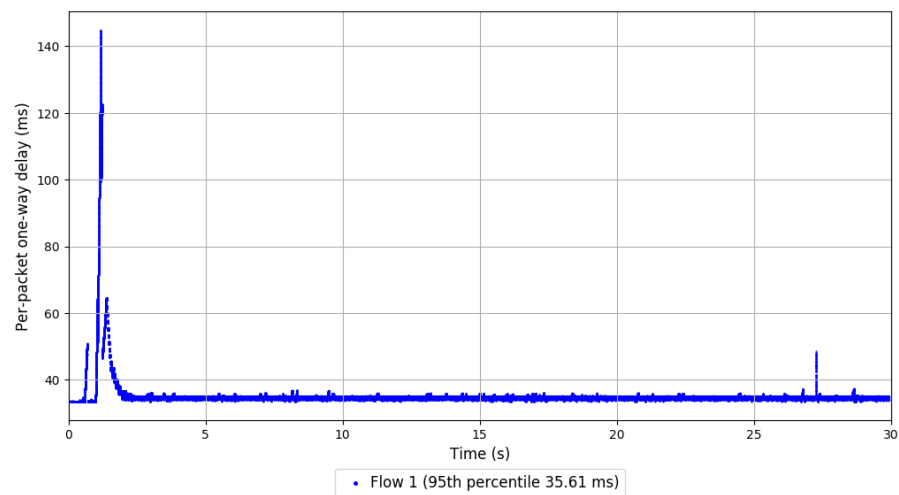
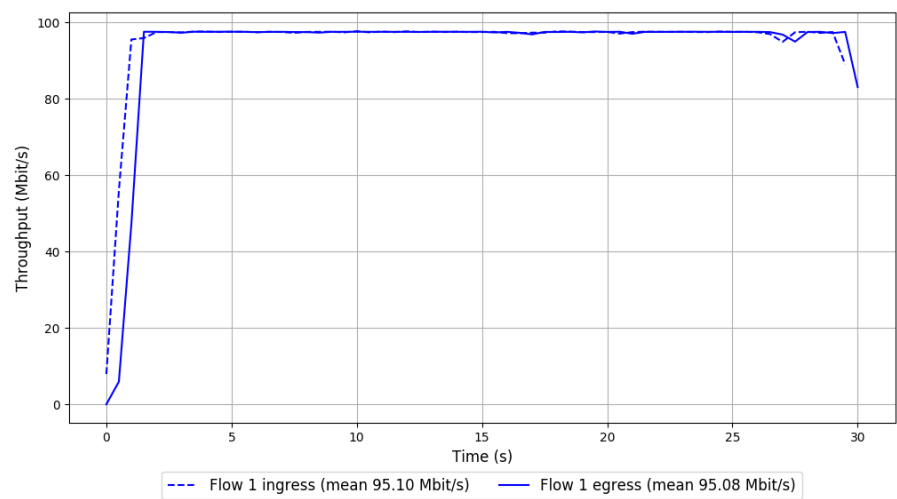
-- Flow 1:

Average throughput: 95.08 Mbit/s

95th percentile per-packet one-way delay: 35.610 ms

Loss rate: 0.23%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 20:13:47

End at: 2018-09-07 20:14:17

Local clock offset: -2.809 ms

Remote clock offset: 0.807 ms

Below is generated by plot.py at 2018-09-07 21:27:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.95 Mbit/s

95th percentile per-packet one-way delay: 35.410 ms

Loss rate: 0.23%

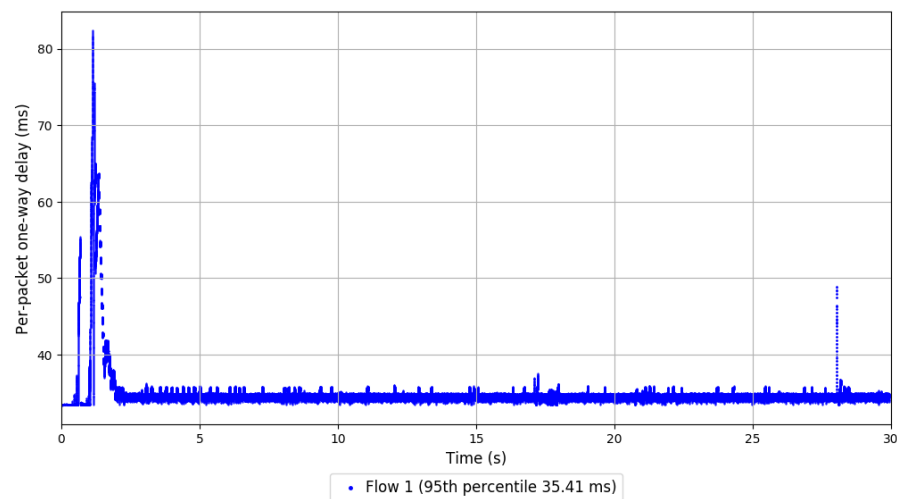
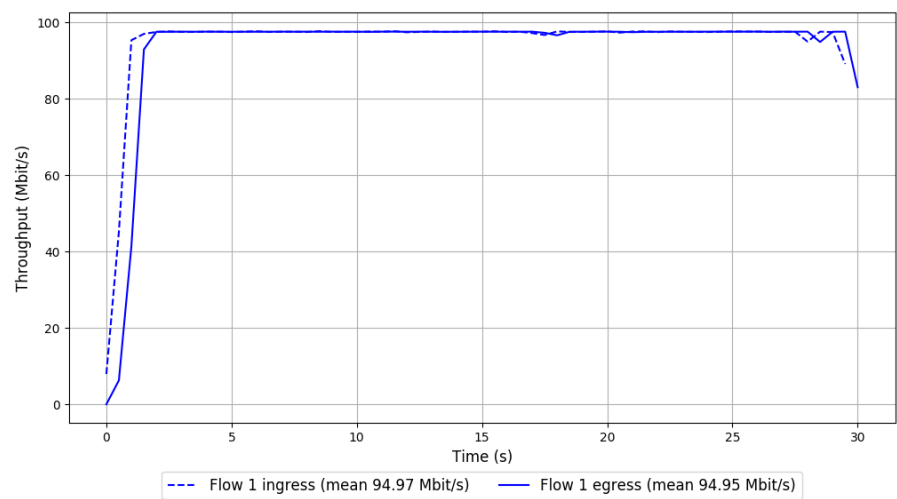
-- Flow 1:

Average throughput: 94.95 Mbit/s

95th percentile per-packet one-way delay: 35.410 ms

Loss rate: 0.23%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 20:37:39

End at: 2018-09-07 20:38:09

Local clock offset: 0.356 ms

Remote clock offset: 1.204 ms

Below is generated by plot.py at 2018-09-07 21:27:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.04 Mbit/s

95th percentile per-packet one-way delay: 34.992 ms

Loss rate: 0.23%

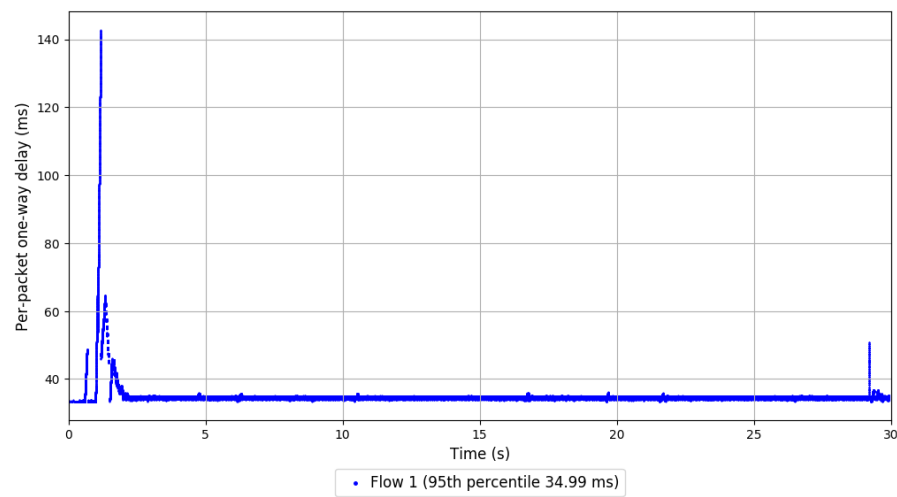
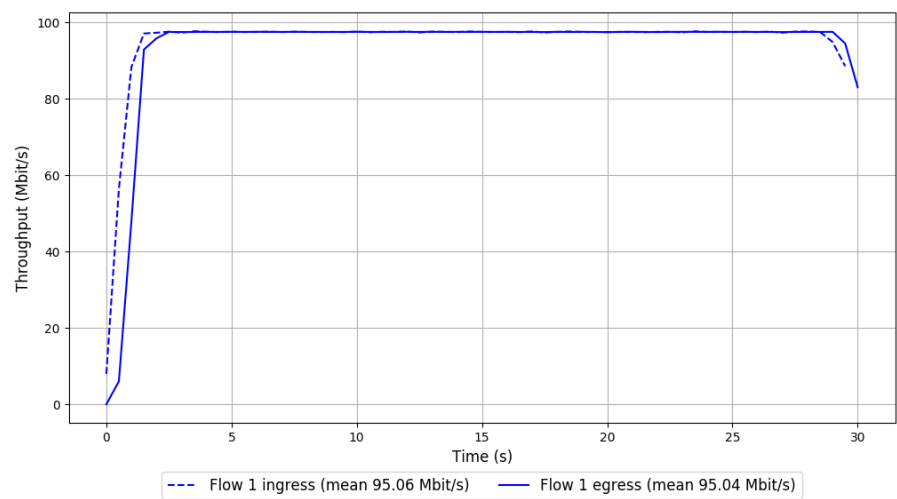
-- Flow 1:

Average throughput: 95.04 Mbit/s

95th percentile per-packet one-way delay: 34.992 ms

Loss rate: 0.23%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 21:01:34

End at: 2018-09-07 21:02:04

Local clock offset: 0.37 ms

Remote clock offset: 1.233 ms

Below is generated by plot.py at 2018-09-07 21:27:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.18 Mbit/s

95th percentile per-packet one-way delay: 35.376 ms

Loss rate: 0.30%

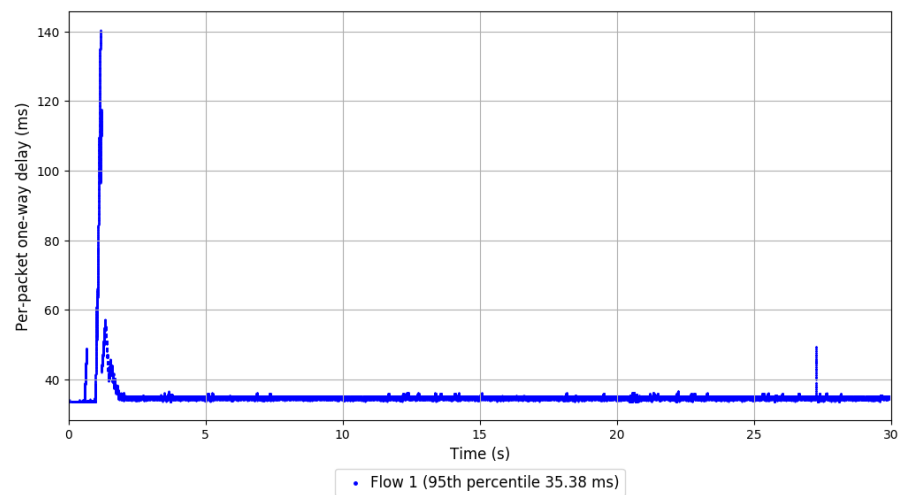
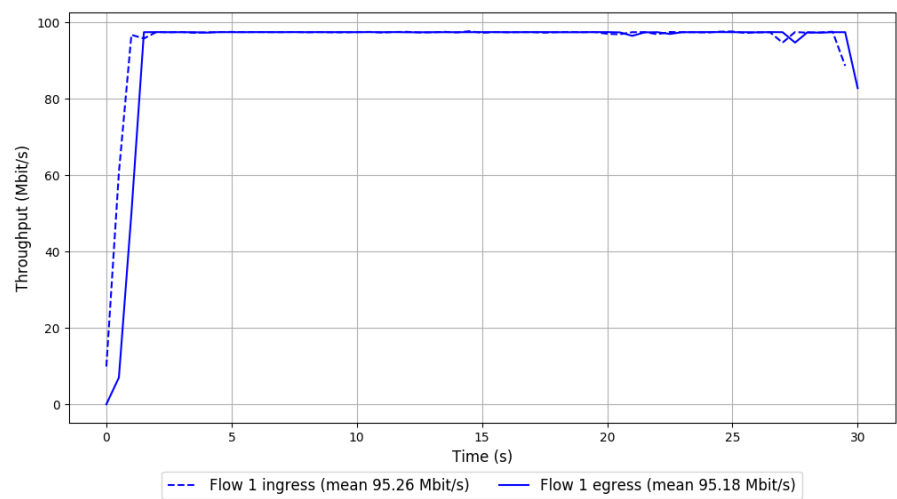
-- Flow 1:

Average throughput: 95.18 Mbit/s

95th percentile per-packet one-way delay: 35.376 ms

Loss rate: 0.30%

Run 5: Report of Indigo-Muses — Data Link

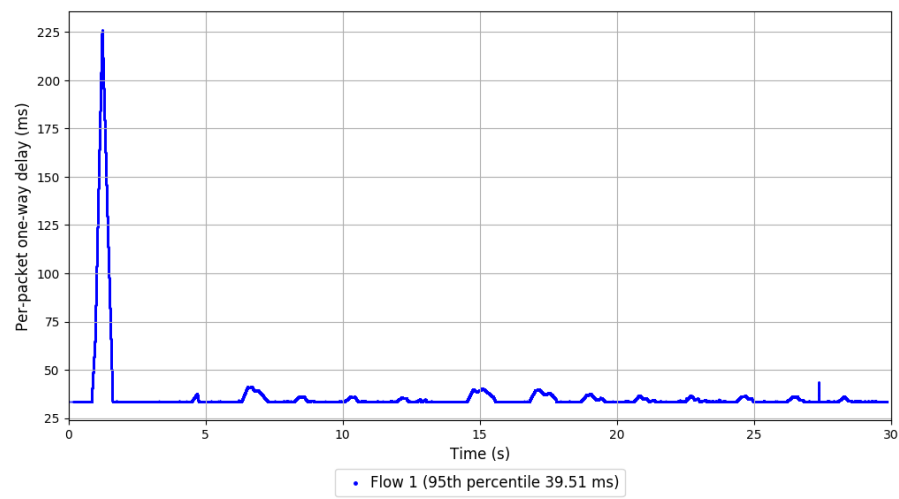
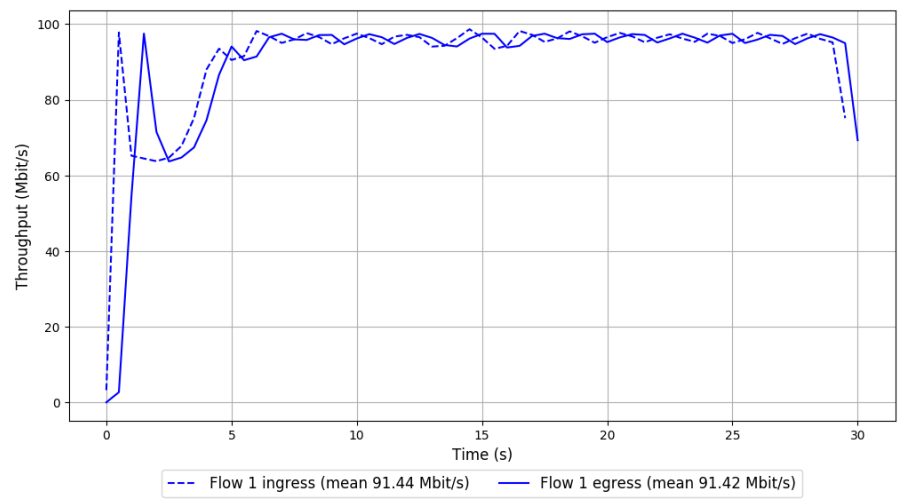


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 19:22:07
End at: 2018-09-07 19:22:37
Local clock offset: -3.196 ms
Remote clock offset: -0.455 ms

# Below is generated by plot.py at 2018-09-07 21:27:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.42 Mbit/s
95th percentile per-packet one-way delay: 39.508 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 91.42 Mbit/s
95th percentile per-packet one-way delay: 39.508 ms
Loss rate: 0.23%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 19:45:57

End at: 2018-09-07 19:46:27

Local clock offset: -2.616 ms

Remote clock offset: 0.245 ms

Below is generated by plot.py at 2018-09-07 21:27:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.17 Mbit/s

95th percentile per-packet one-way delay: 37.498 ms

Loss rate: 0.28%

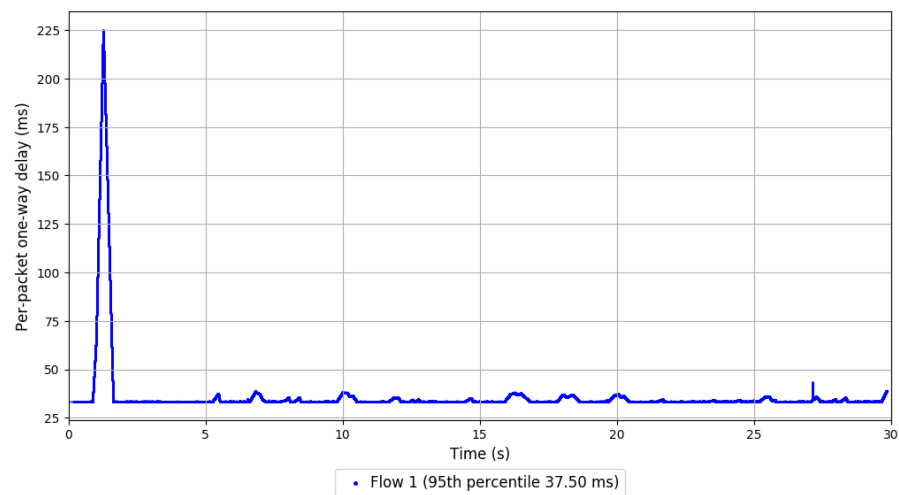
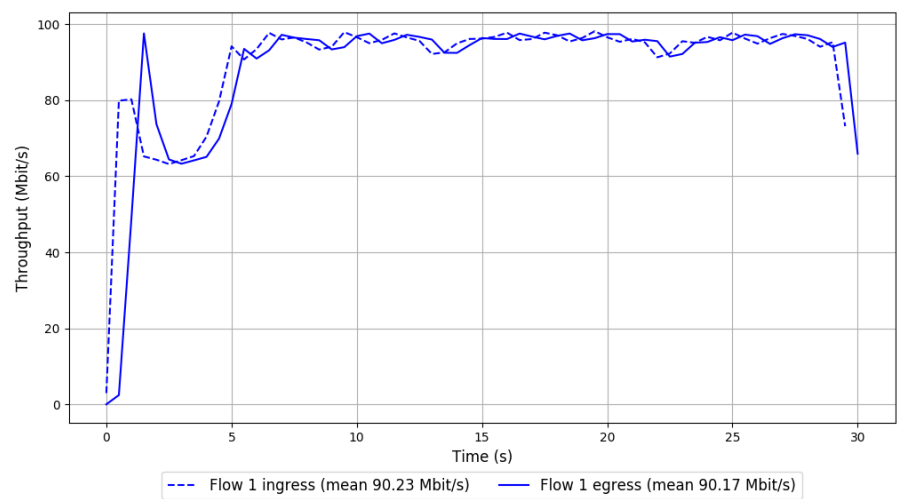
-- Flow 1:

Average throughput: 90.17 Mbit/s

95th percentile per-packet one-way delay: 37.498 ms

Loss rate: 0.28%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 20:09:52

End at: 2018-09-07 20:10:22

Local clock offset: -2.698 ms

Remote clock offset: 0.722 ms

Below is generated by plot.py at 2018-09-07 21:27:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.68 Mbit/s

95th percentile per-packet one-way delay: 38.569 ms

Loss rate: 0.28%

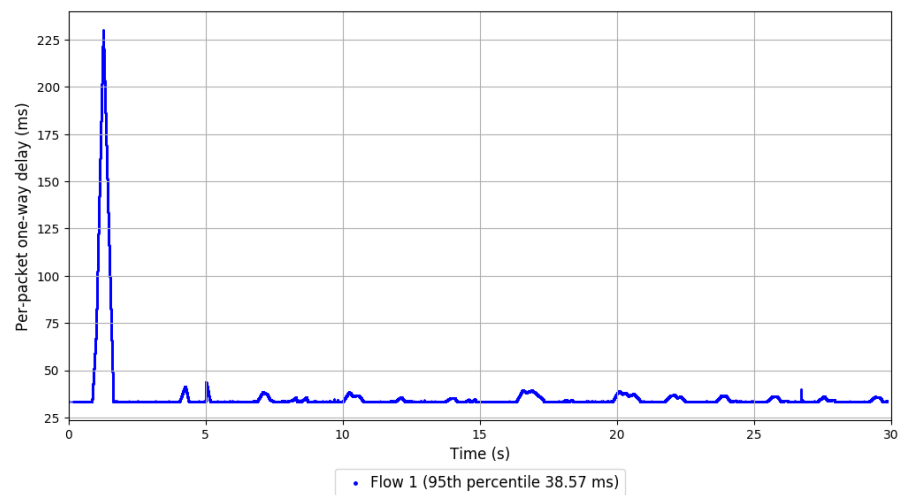
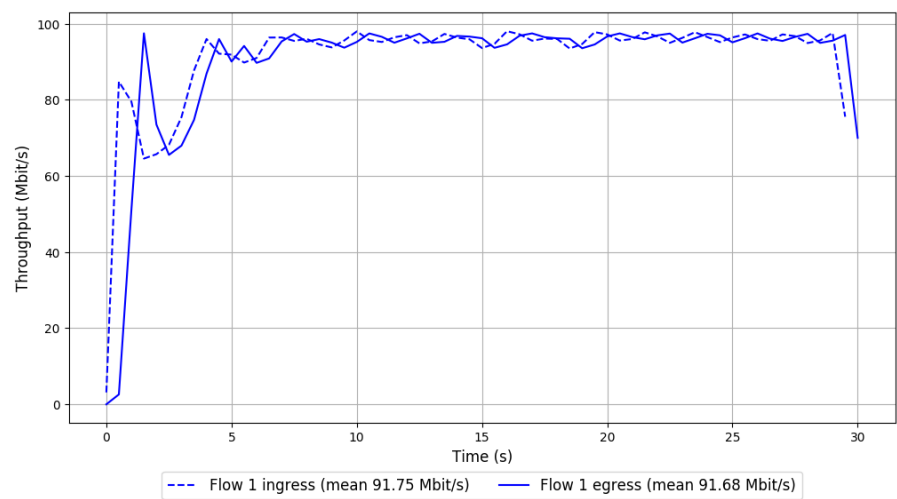
-- Flow 1:

Average throughput: 91.68 Mbit/s

95th percentile per-packet one-way delay: 38.569 ms

Loss rate: 0.28%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 20:33:43

End at: 2018-09-07 20:34:13

Local clock offset: 0.114 ms

Remote clock offset: 1.008 ms

Below is generated by plot.py at 2018-09-07 21:28:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.91 Mbit/s

95th percentile per-packet one-way delay: 39.157 ms

Loss rate: 0.23%

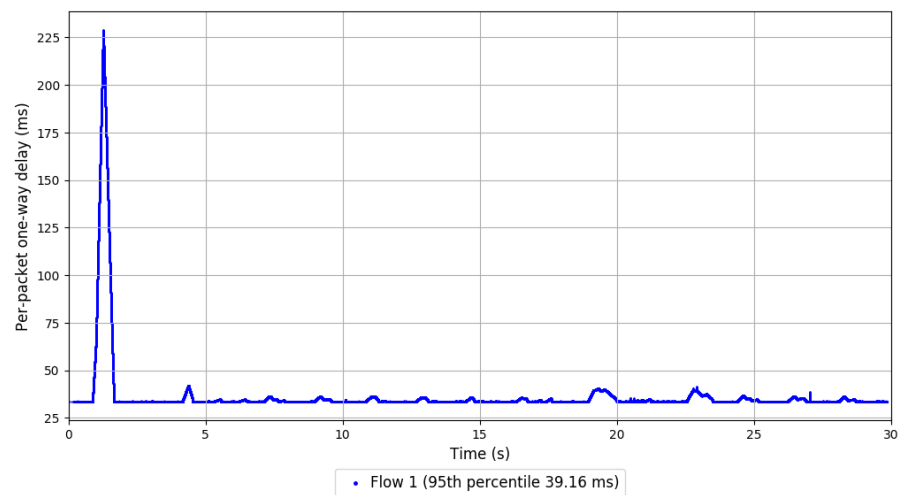
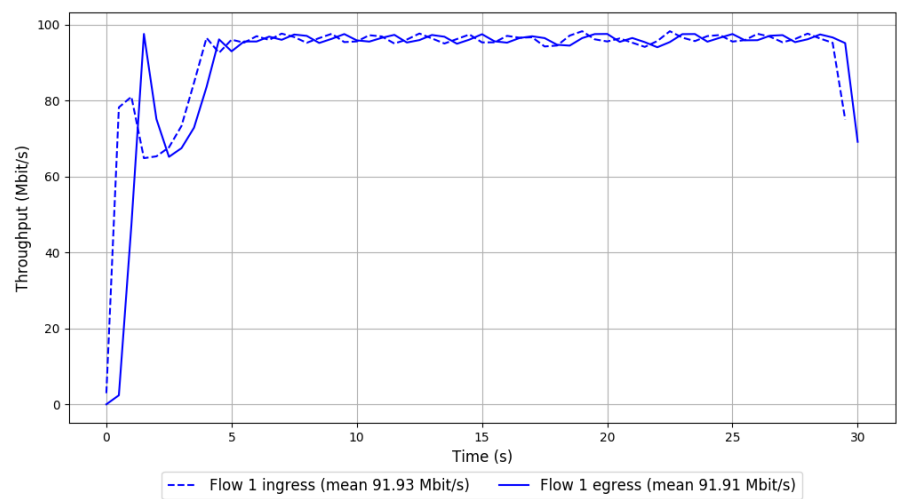
-- Flow 1:

Average throughput: 91.91 Mbit/s

95th percentile per-packet one-way delay: 39.157 ms

Loss rate: 0.23%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 20:57:37

End at: 2018-09-07 20:58:07

Local clock offset: 0.29 ms

Remote clock offset: 1.254 ms

Below is generated by plot.py at 2018-09-07 21:28:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.67 Mbit/s

95th percentile per-packet one-way delay: 39.272 ms

Loss rate: 0.23%

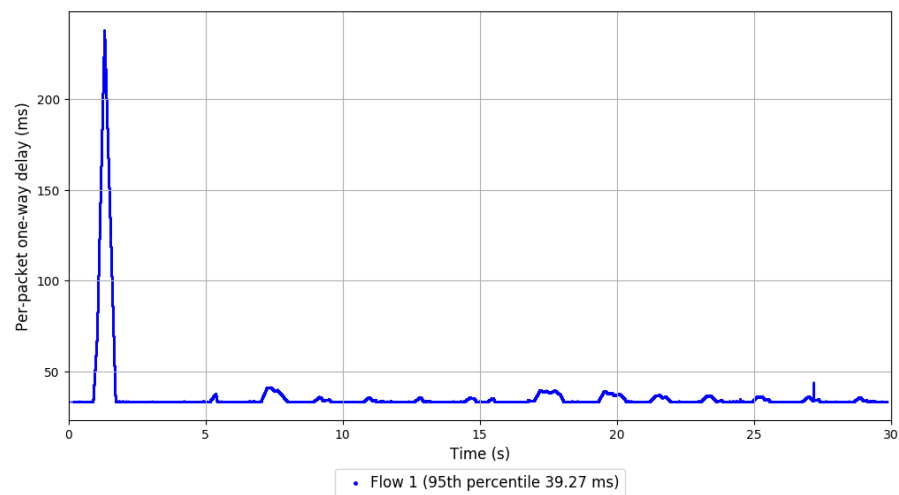
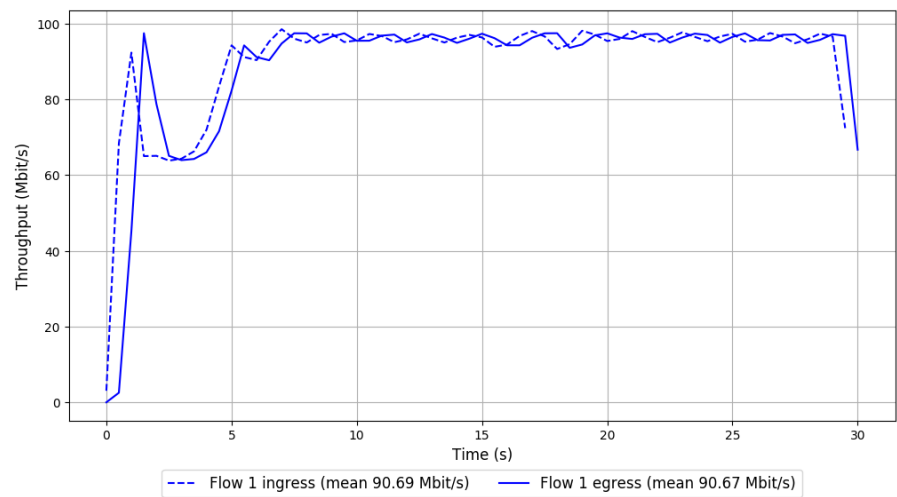
-- Flow 1:

Average throughput: 90.67 Mbit/s

95th percentile per-packet one-way delay: 39.272 ms

Loss rate: 0.23%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 19:20:45

End at: 2018-09-07 19:21:15

Local clock offset: -3.32 ms

Remote clock offset: -0.509 ms

Below is generated by plot.py at 2018-09-07 21:29:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.21 Mbit/s

95th percentile per-packet one-way delay: 153.953 ms

Loss rate: 0.33%

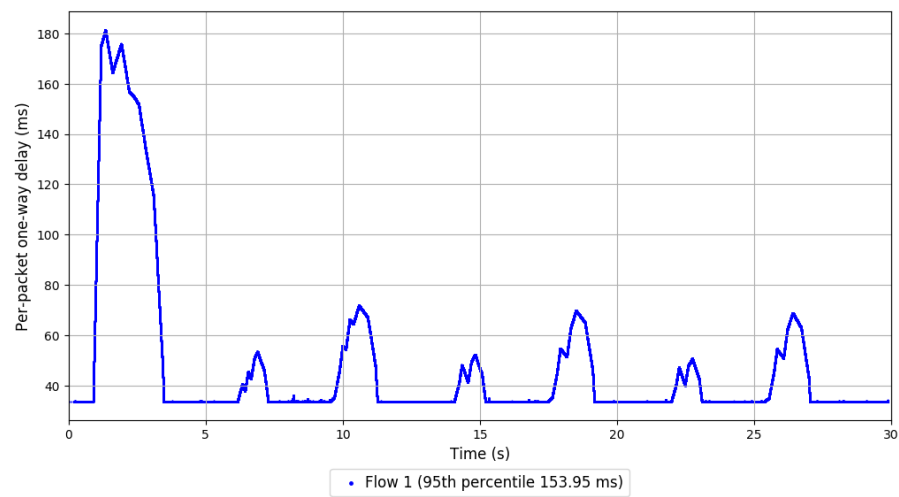
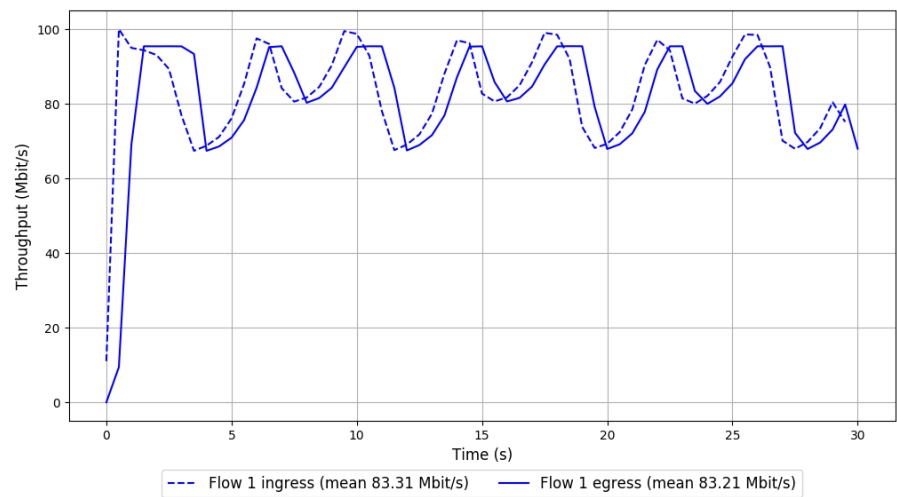
-- Flow 1:

Average throughput: 83.21 Mbit/s

95th percentile per-packet one-way delay: 153.953 ms

Loss rate: 0.33%

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 19:44:35

End at: 2018-09-07 19:45:05

Local clock offset: -2.61 ms

Remote clock offset: 0.213 ms

Below is generated by plot.py at 2018-09-07 21:29:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.95 Mbit/s

95th percentile per-packet one-way delay: 154.722 ms

Loss rate: 0.26%

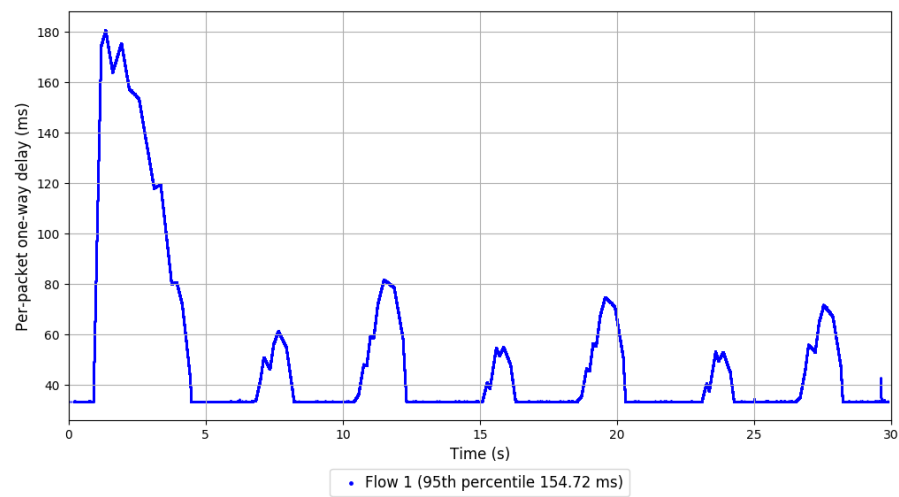
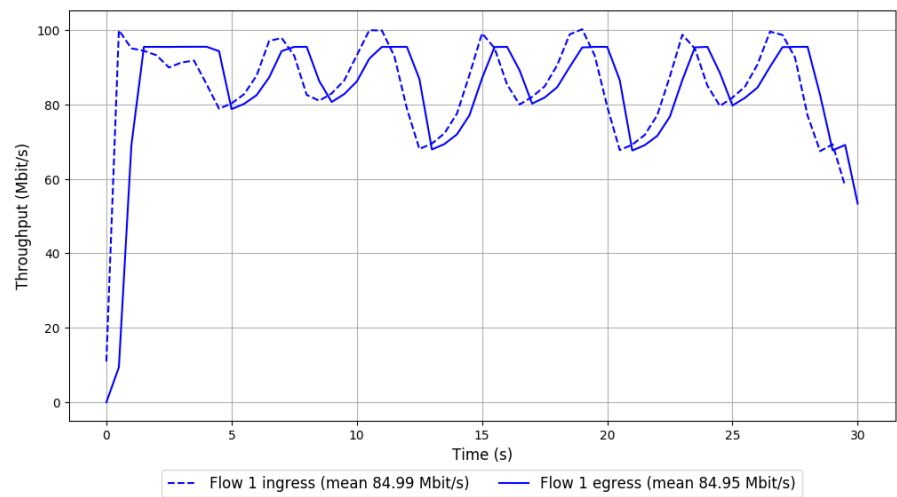
-- Flow 1:

Average throughput: 84.95 Mbit/s

95th percentile per-packet one-way delay: 154.722 ms

Loss rate: 0.26%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 20:08:30

End at: 2018-09-07 20:09:00

Local clock offset: -2.7 ms

Remote clock offset: 0.725 ms

Below is generated by plot.py at 2018-09-07 21:29:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.89 Mbit/s

95th percentile per-packet one-way delay: 152.979 ms

Loss rate: 0.29%

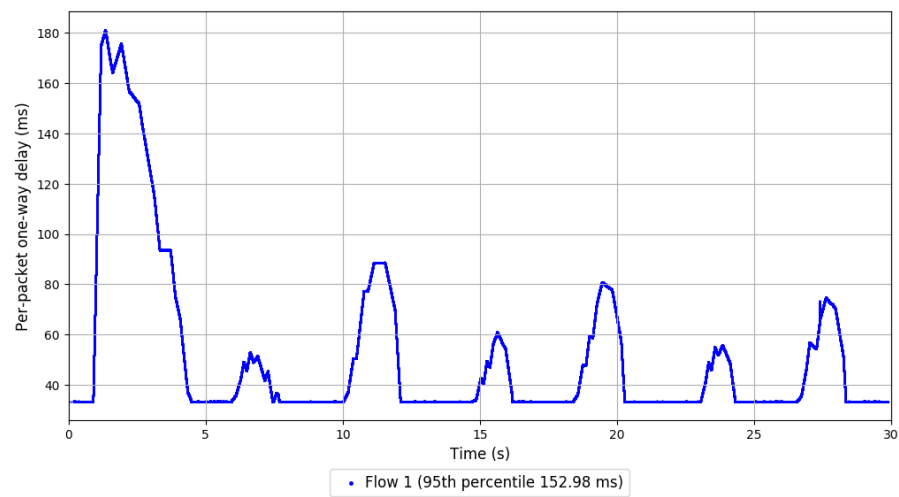
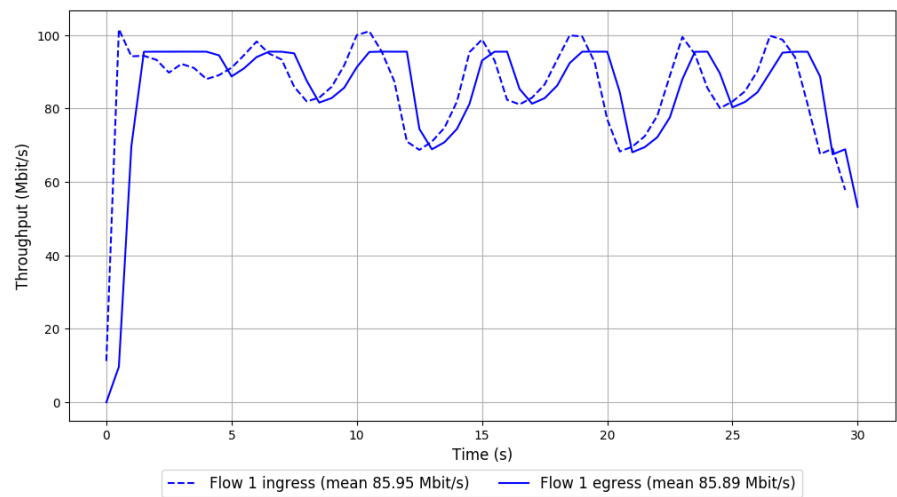
-- Flow 1:

Average throughput: 85.89 Mbit/s

95th percentile per-packet one-way delay: 152.979 ms

Loss rate: 0.29%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 20:32:21

End at: 2018-09-07 20:32:51

Local clock offset: 0.003 ms

Remote clock offset: 1.208 ms

Below is generated by plot.py at 2018-09-07 21:29:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.86 Mbit/s

95th percentile per-packet one-way delay: 149.219 ms

Loss rate: 0.28%

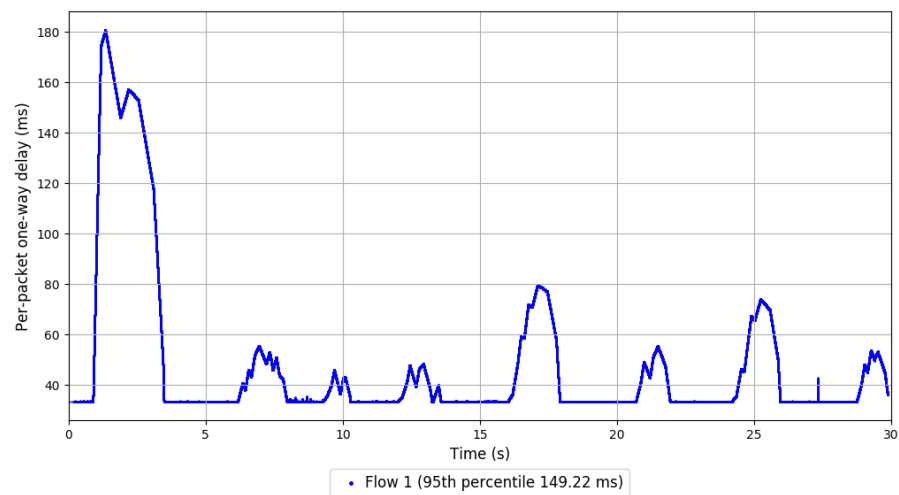
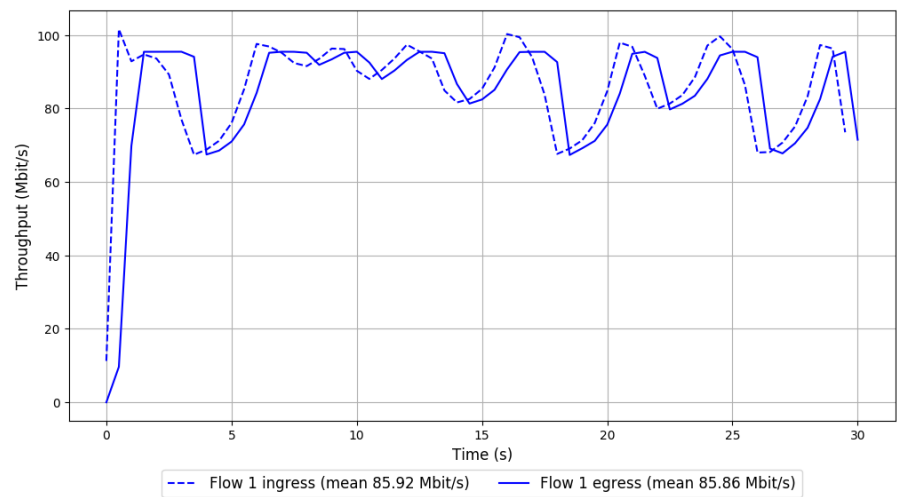
-- Flow 1:

Average throughput: 85.86 Mbit/s

95th percentile per-packet one-way delay: 149.219 ms

Loss rate: 0.28%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 20:56:15

End at: 2018-09-07 20:56:45

Local clock offset: 0.29 ms

Remote clock offset: 1.233 ms

Below is generated by plot.py at 2018-09-07 21:29:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.24 Mbit/s

95th percentile per-packet one-way delay: 160.436 ms

Loss rate: 0.32%

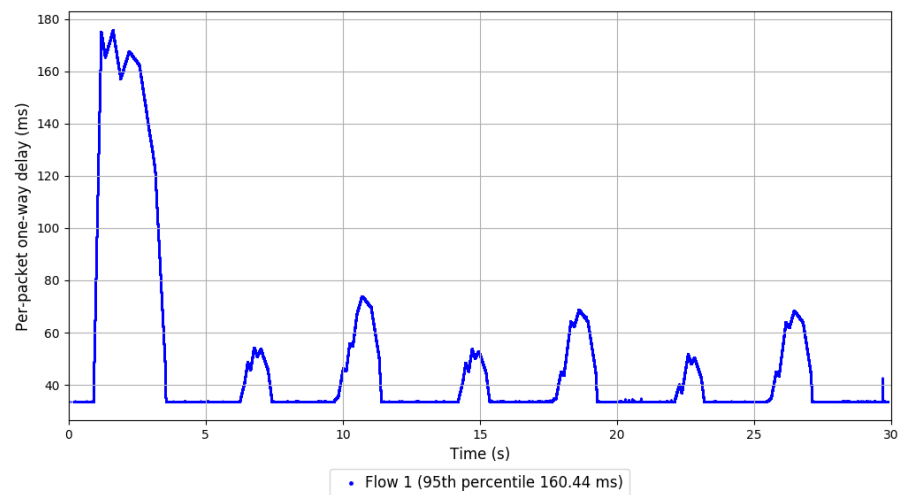
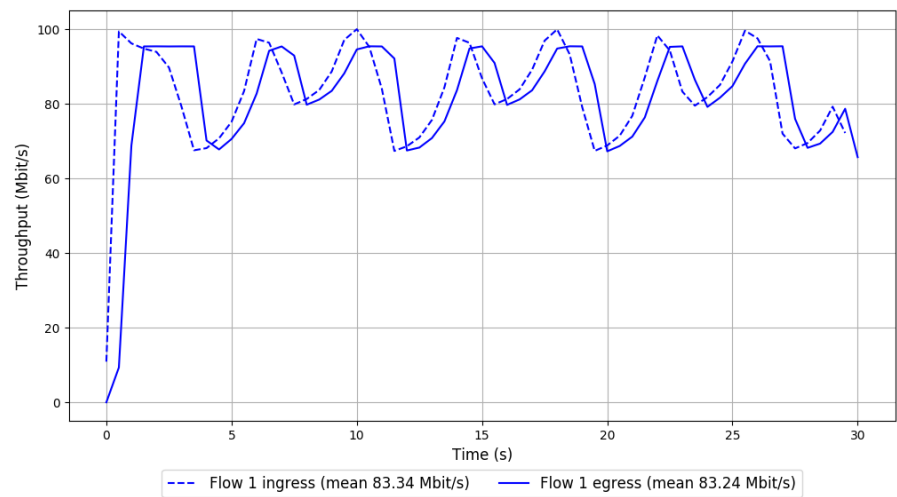
-- Flow 1:

Average throughput: 83.24 Mbit/s

95th percentile per-packet one-way delay: 160.436 ms

Loss rate: 0.32%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 19:39:23

End at: 2018-09-07 19:39:53

Local clock offset: -2.657 ms

Remote clock offset: 0.143 ms

Below is generated by plot.py at 2018-09-07 21:29:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.88 Mbit/s

95th percentile per-packet one-way delay: 40.590 ms

Loss rate: 0.25%

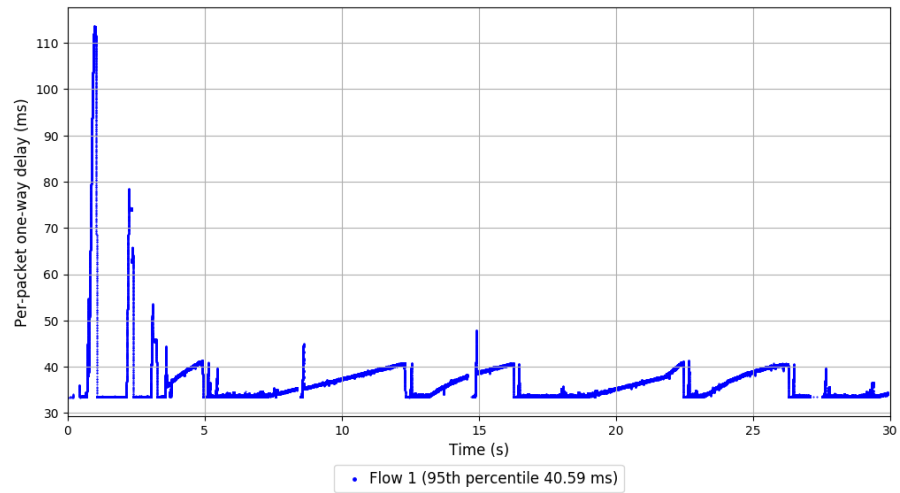
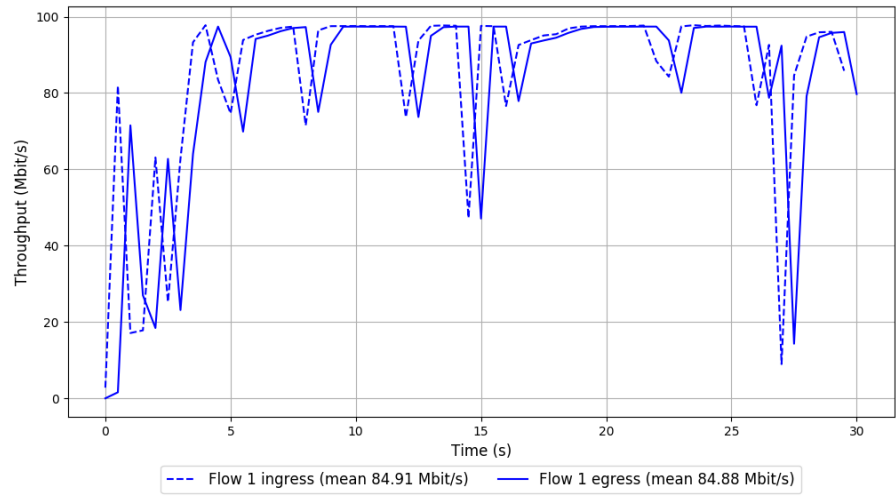
-- Flow 1:

Average throughput: 84.88 Mbit/s

95th percentile per-packet one-way delay: 40.590 ms

Loss rate: 0.25%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 20:03:17

End at: 2018-09-07 20:03:47

Local clock offset: -2.737 ms

Remote clock offset: 0.675 ms

Below is generated by plot.py at 2018-09-07 21:29:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.40 Mbit/s

95th percentile per-packet one-way delay: 50.563 ms

Loss rate: 0.30%

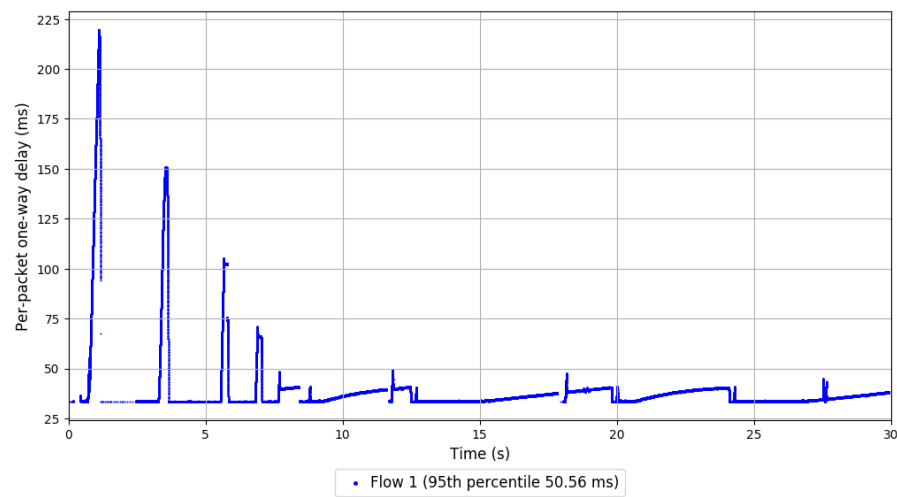
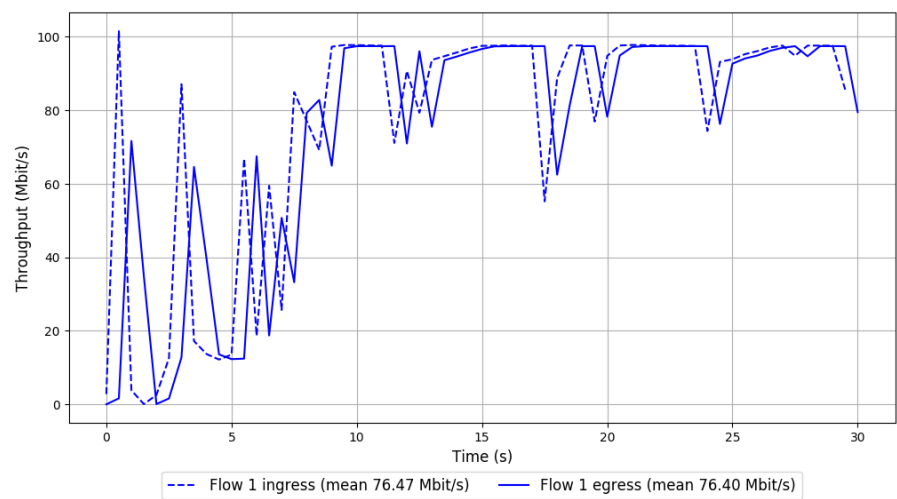
-- Flow 1:

Average throughput: 76.40 Mbit/s

95th percentile per-packet one-way delay: 50.563 ms

Loss rate: 0.30%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 20:27:08

End at: 2018-09-07 20:27:38

Local clock offset: -0.457 ms

Remote clock offset: 1.235 ms

Below is generated by plot.py at 2018-09-07 21:29:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.47 Mbit/s

95th percentile per-packet one-way delay: 49.588 ms

Loss rate: 0.27%

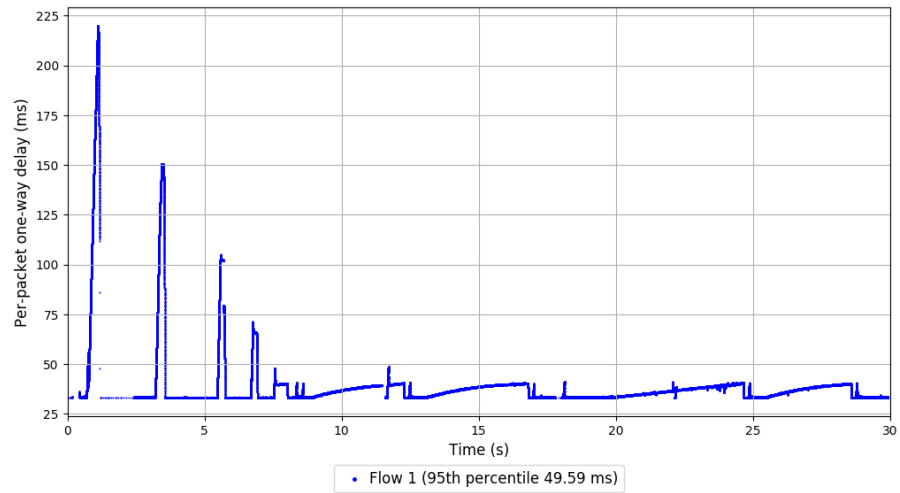
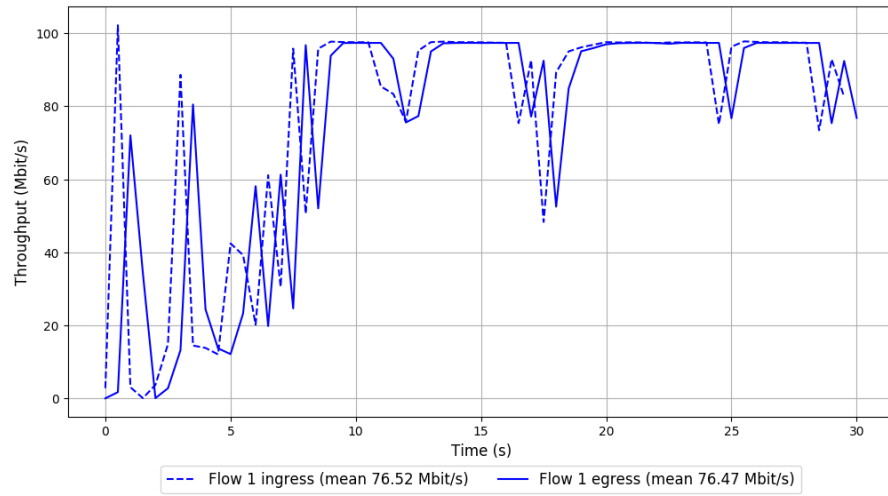
-- Flow 1:

Average throughput: 76.47 Mbit/s

95th percentile per-packet one-way delay: 49.588 ms

Loss rate: 0.27%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 20:51:03

End at: 2018-09-07 20:51:33

Local clock offset: 0.41 ms

Remote clock offset: 1.241 ms

Below is generated by plot.py at 2018-09-07 21:30:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.31 Mbit/s

95th percentile per-packet one-way delay: 51.336 ms

Loss rate: 0.32%

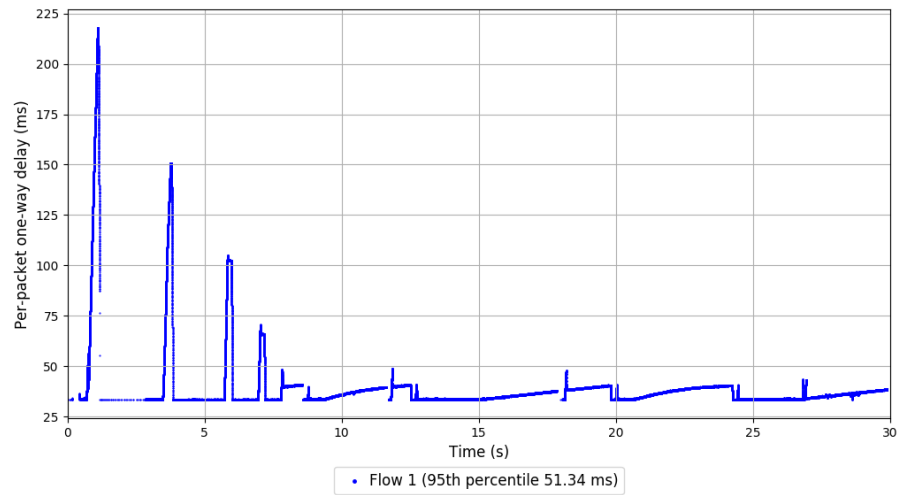
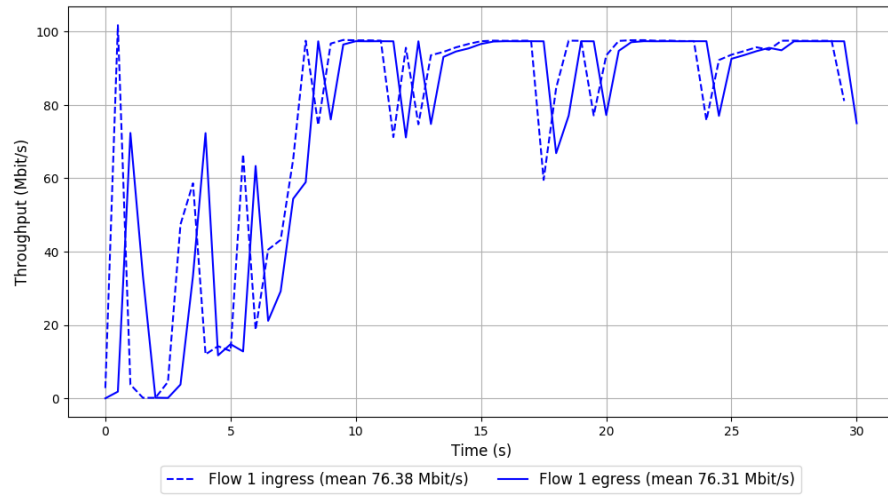
-- Flow 1:

Average throughput: 76.31 Mbit/s

95th percentile per-packet one-way delay: 51.336 ms

Loss rate: 0.32%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 21:14:58

End at: 2018-09-07 21:15:28

Local clock offset: 0.422 ms

Remote clock offset: 1.398 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.49 Mbit/s

95th percentile per-packet one-way delay: 40.600 ms

Loss rate: 0.26%

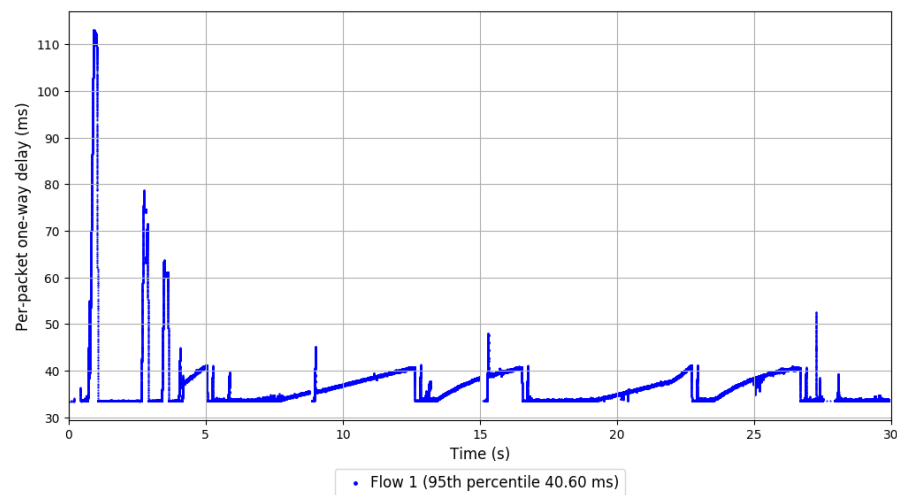
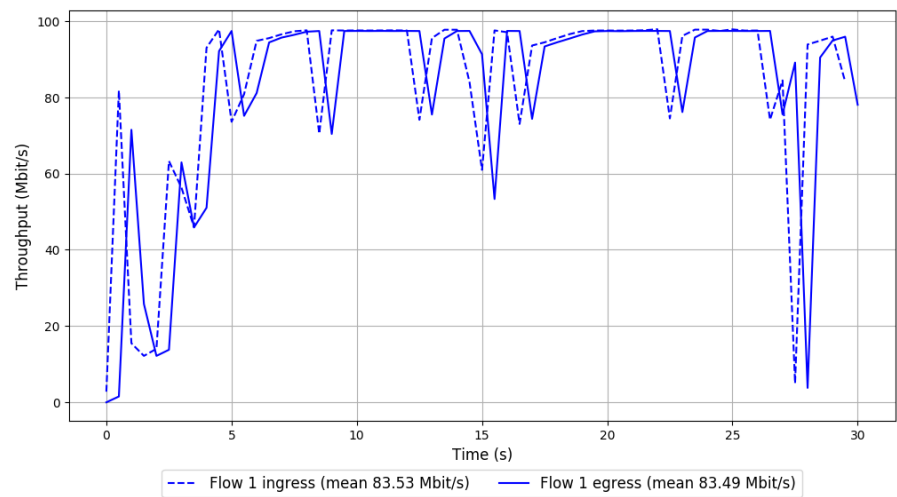
-- Flow 1:

Average throughput: 83.49 Mbit/s

95th percentile per-packet one-way delay: 40.600 ms

Loss rate: 0.26%

Run 5: Report of QUIC Cubic — Data Link

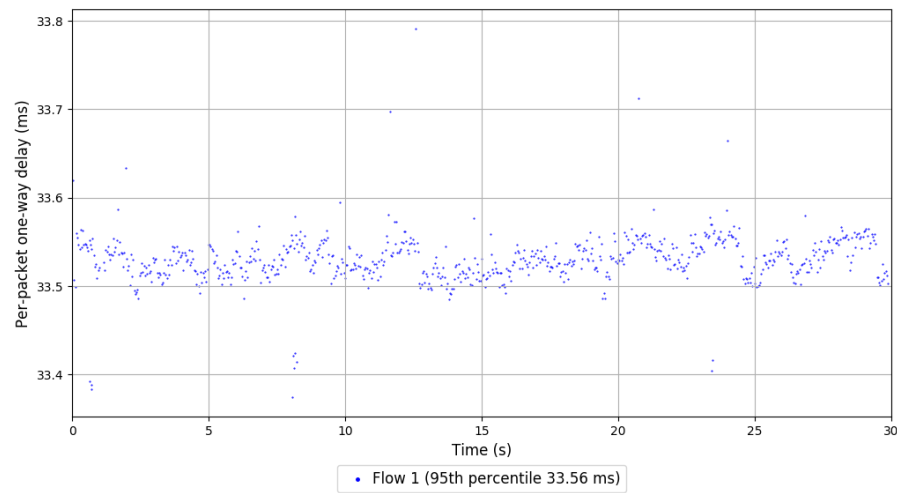
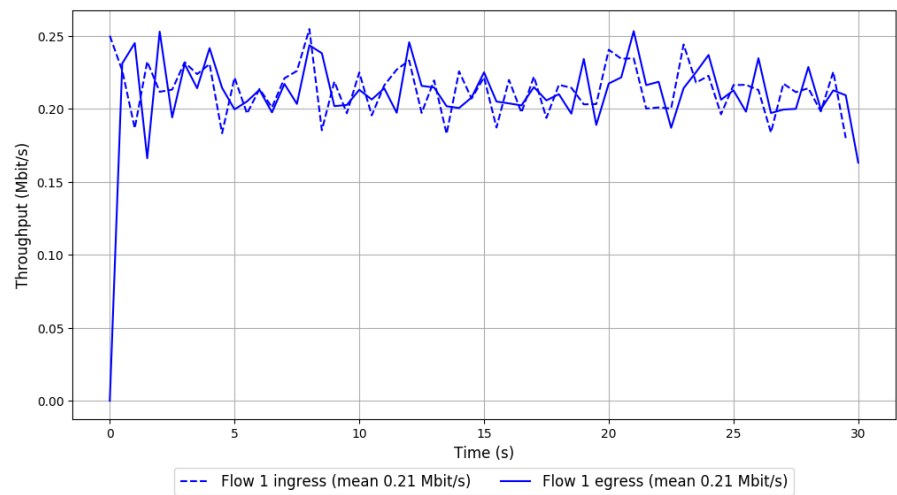


```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 19:43:19
End at: 2018-09-07 19:43:49
Local clock offset: -2.603 ms
Remote clock offset: 0.207 ms

# Below is generated by plot.py at 2018-09-07 21:30:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.562 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.562 ms
Loss rate: 0.26%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-07 20:07:14

End at: 2018-09-07 20:07:44

Local clock offset: -2.727 ms

Remote clock offset: 0.749 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.503 ms

Loss rate: 0.26%

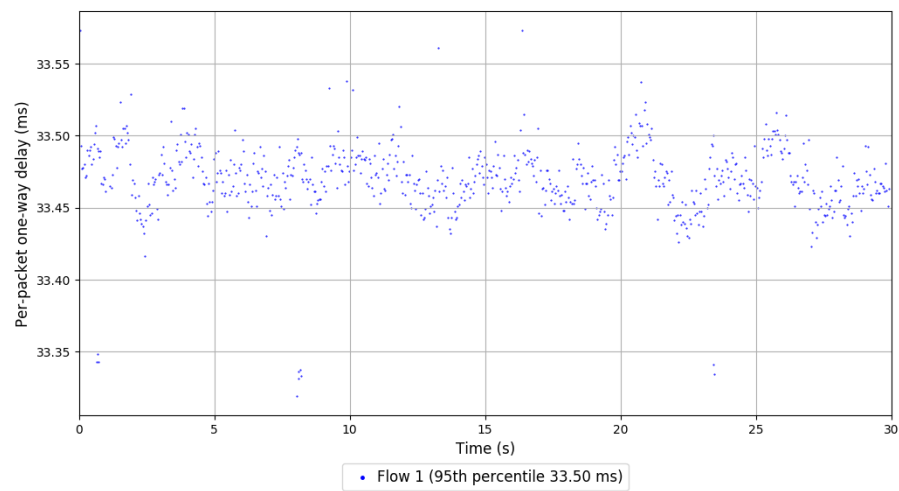
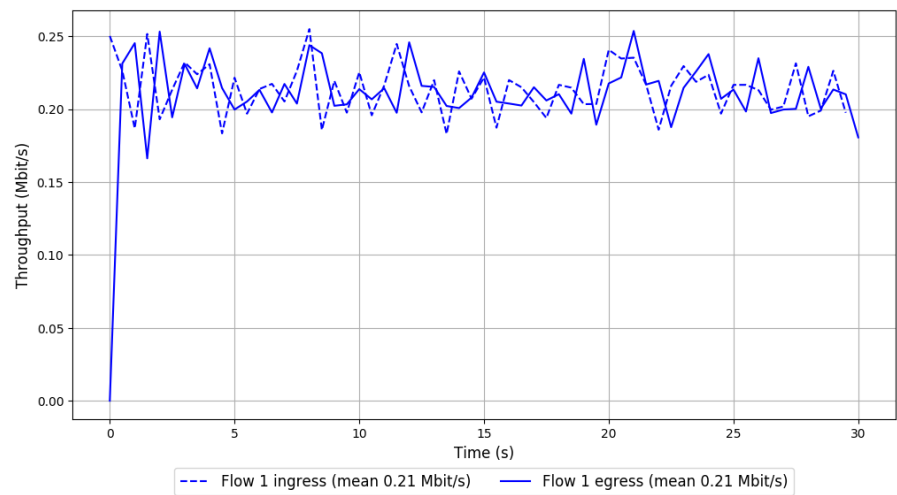
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.503 ms

Loss rate: 0.26%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-07 20:31:05

End at: 2018-09-07 20:31:35

Local clock offset: -0.005 ms

Remote clock offset: 1.023 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.674 ms

Loss rate: 0.26%

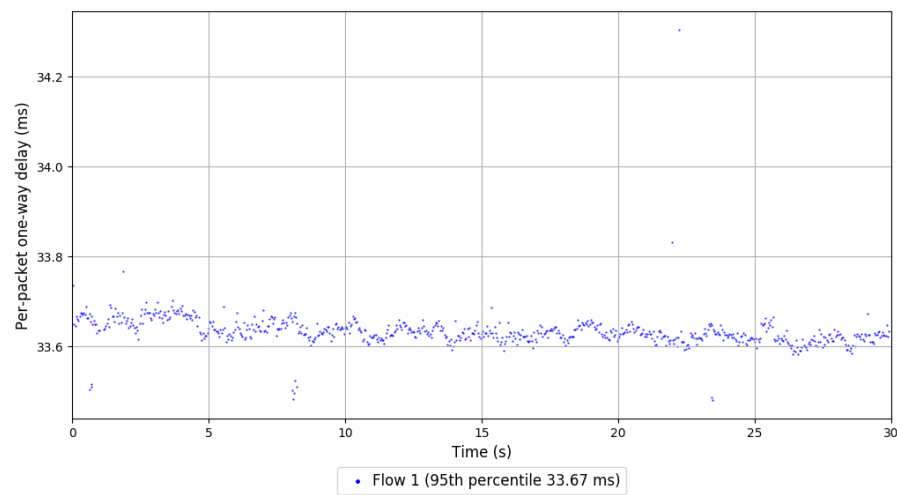
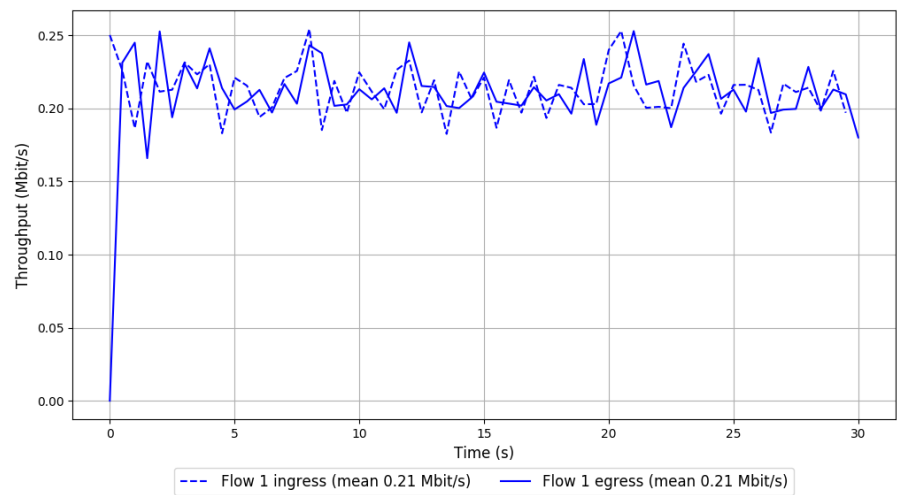
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.674 ms

Loss rate: 0.26%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-07 20:54:59

End at: 2018-09-07 20:55:29

Local clock offset: 0.412 ms

Remote clock offset: 1.264 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.578 ms

Loss rate: 0.13%

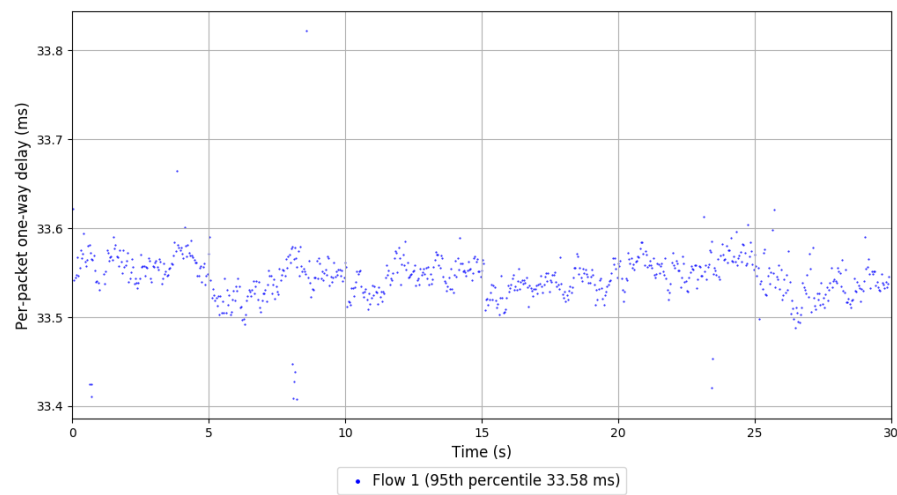
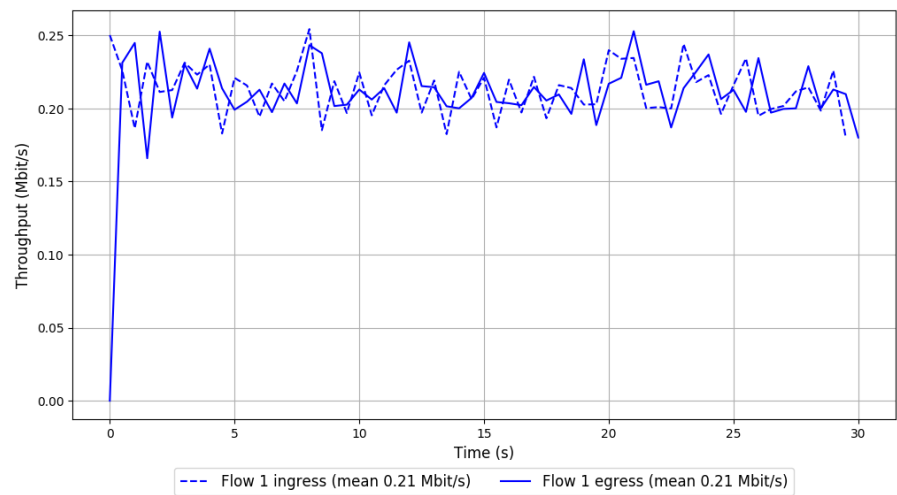
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.578 ms

Loss rate: 0.13%

Run 4: Report of SCReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-07 21:18:55

End at: 2018-09-07 21:19:25

Local clock offset: 0.272 ms

Remote clock offset: 1.369 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.676 ms

Loss rate: 0.26%

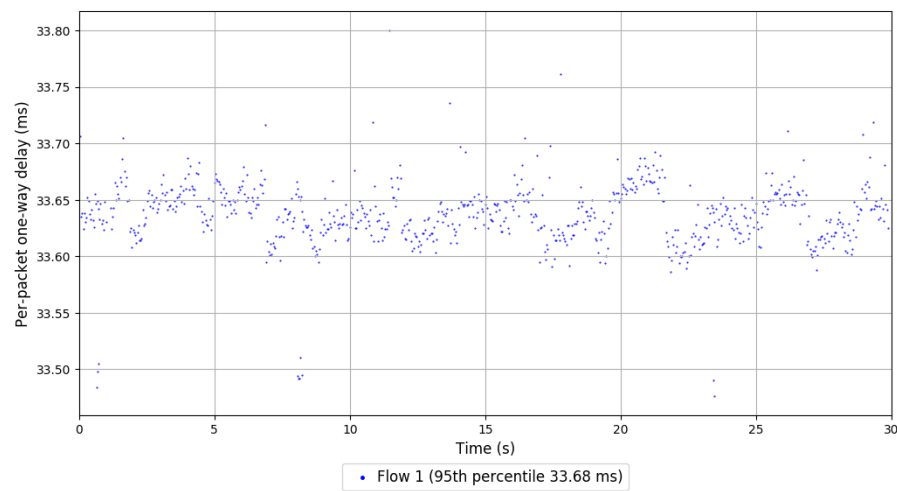
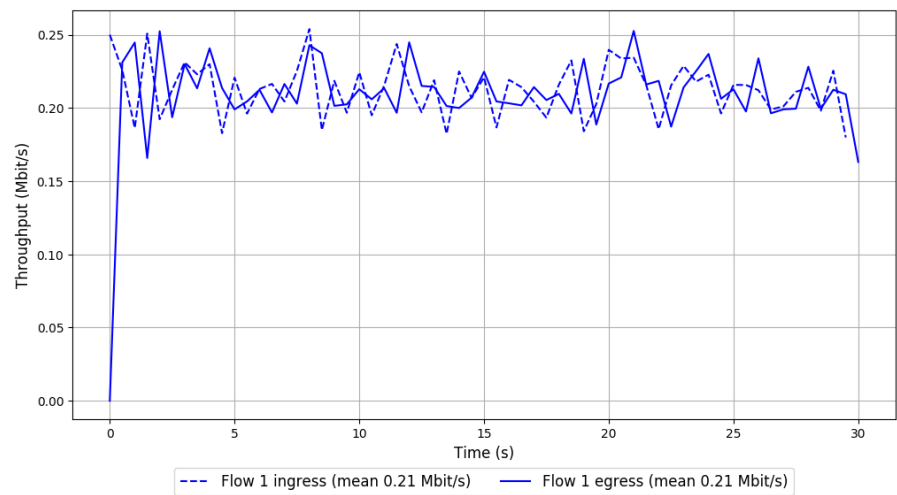
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.676 ms

Loss rate: 0.26%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-07 19:40:42

End at: 2018-09-07 19:41:13

Local clock offset: -2.65 ms

Remote clock offset: 0.089 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.05 Mbit/s

95th percentile per-packet one-way delay: 41.212 ms

Loss rate: 0.11%

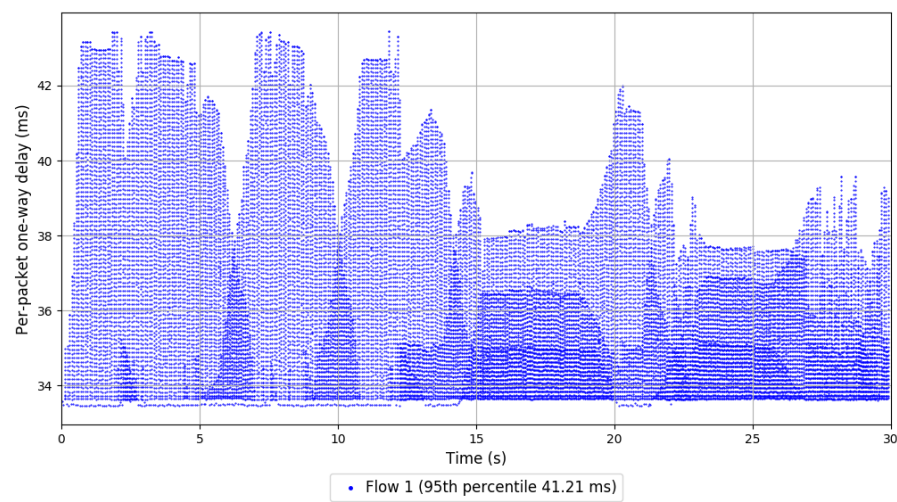
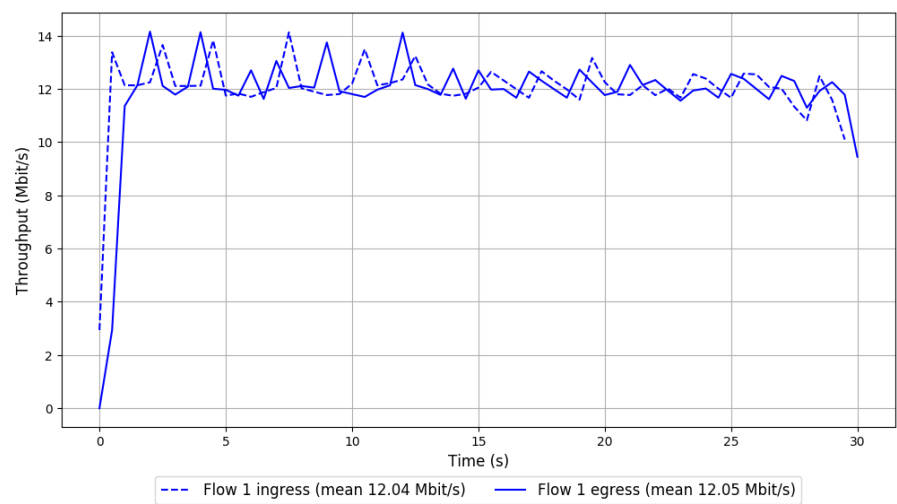
-- Flow 1:

Average throughput: 12.05 Mbit/s

95th percentile per-packet one-way delay: 41.212 ms

Loss rate: 0.11%

Run 1: Report of Sprout — Data Link

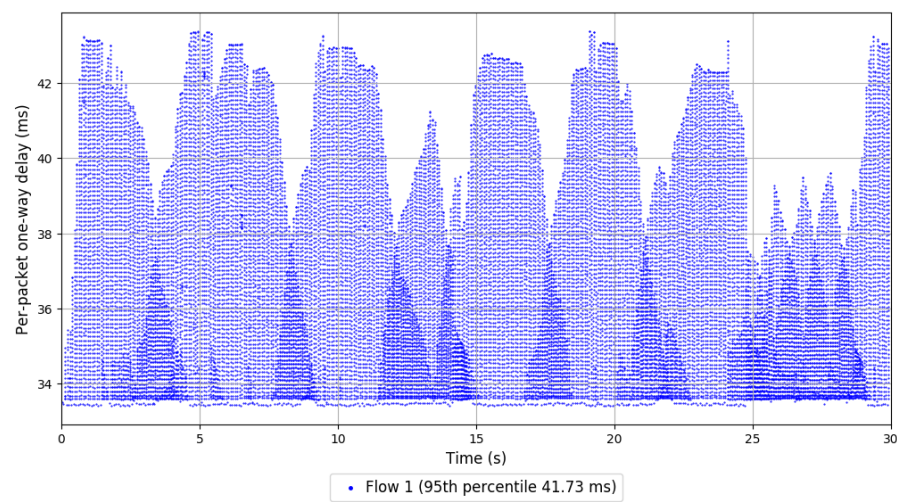
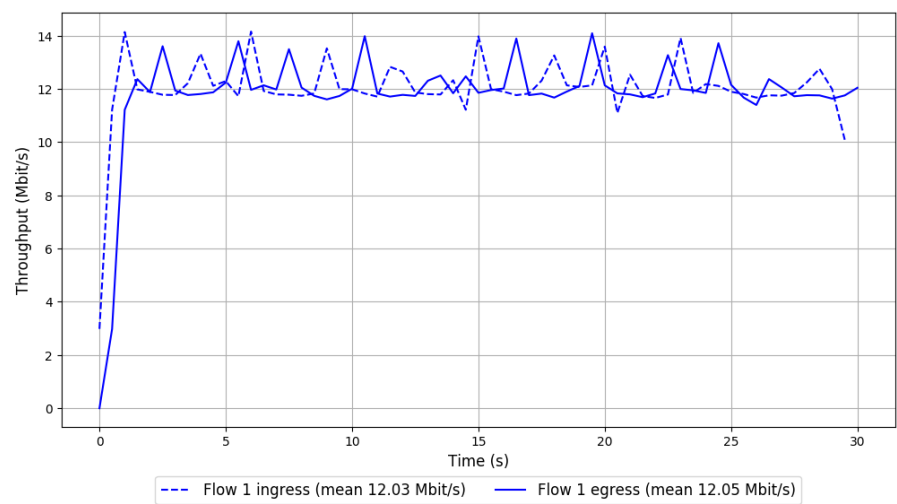


Run 2: Statistics of Sprout

Start at: 2018-09-07 20:04:37
End at: 2018-09-07 20:05:07
Local clock offset: -2.728 ms
Remote clock offset: 0.648 ms

Below is generated by plot.py at 2018-09-07 21:30:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.05 Mbit/s
95th percentile per-packet one-way delay: 41.727 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.05 Mbit/s
95th percentile per-packet one-way delay: 41.727 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

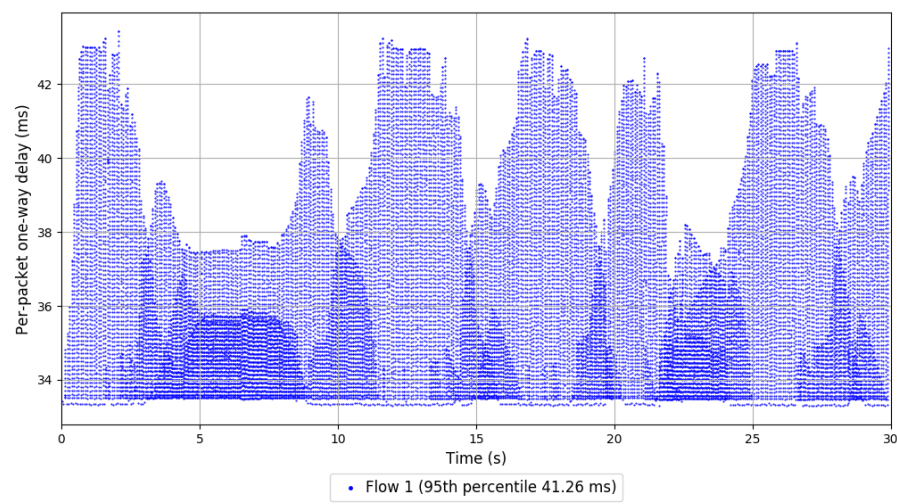
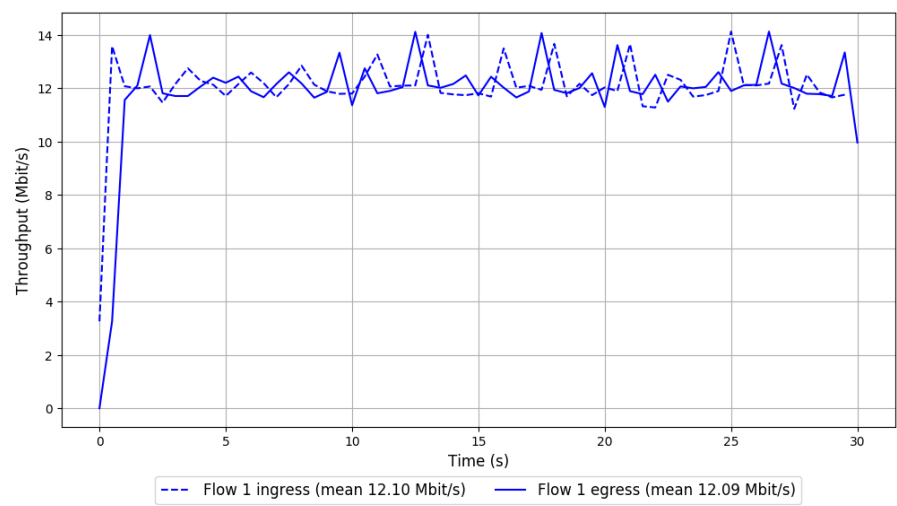


Run 3: Statistics of Sprout

Start at: 2018-09-07 20:28:28
End at: 2018-09-07 20:28:58
Local clock offset: -0.257 ms
Remote clock offset: 1.131 ms

Below is generated by plot.py at 2018-09-07 21:30:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.09 Mbit/s
95th percentile per-packet one-way delay: 41.257 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 12.09 Mbit/s
95th percentile per-packet one-way delay: 41.257 ms
Loss rate: 0.28%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-09-07 20:52:22

End at: 2018-09-07 20:52:52

Local clock offset: 0.471 ms

Remote clock offset: 1.072 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.02 Mbit/s

95th percentile per-packet one-way delay: 41.932 ms

Loss rate: 0.28%

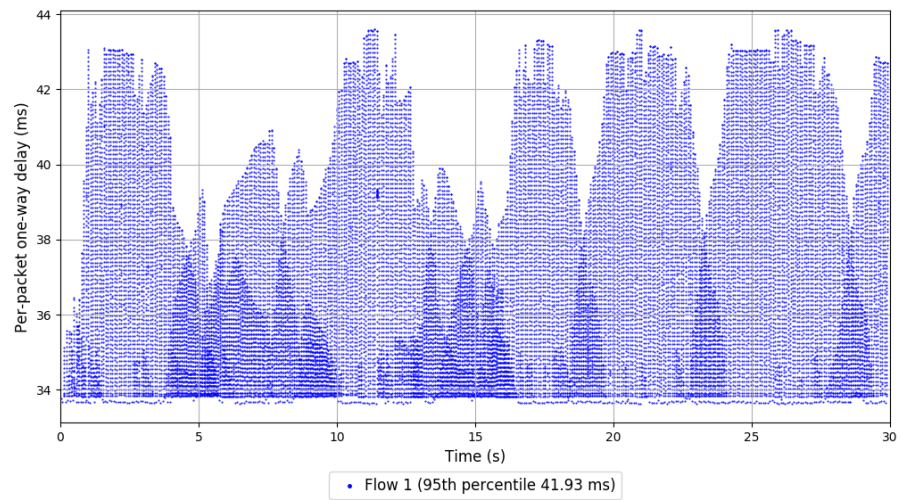
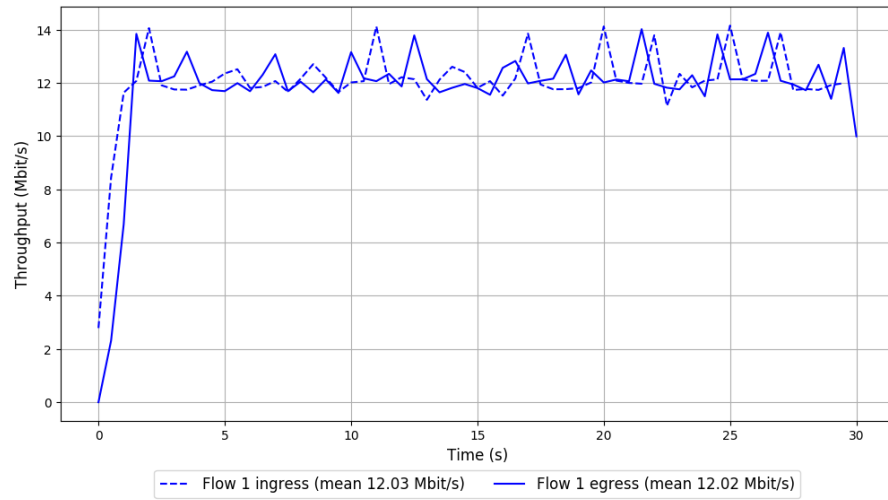
-- Flow 1:

Average throughput: 12.02 Mbit/s

95th percentile per-packet one-way delay: 41.932 ms

Loss rate: 0.28%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-09-07 21:16:18

End at: 2018-09-07 21:16:48

Local clock offset: 0.322 ms

Remote clock offset: 1.208 ms

Below is generated by plot.py at 2018-09-07 21:30:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.95 Mbit/s

95th percentile per-packet one-way delay: 41.389 ms

Loss rate: 0.23%

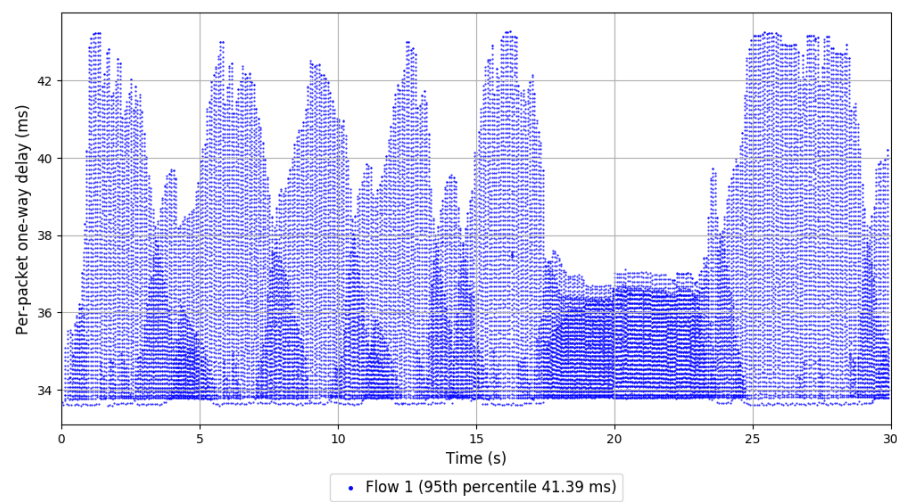
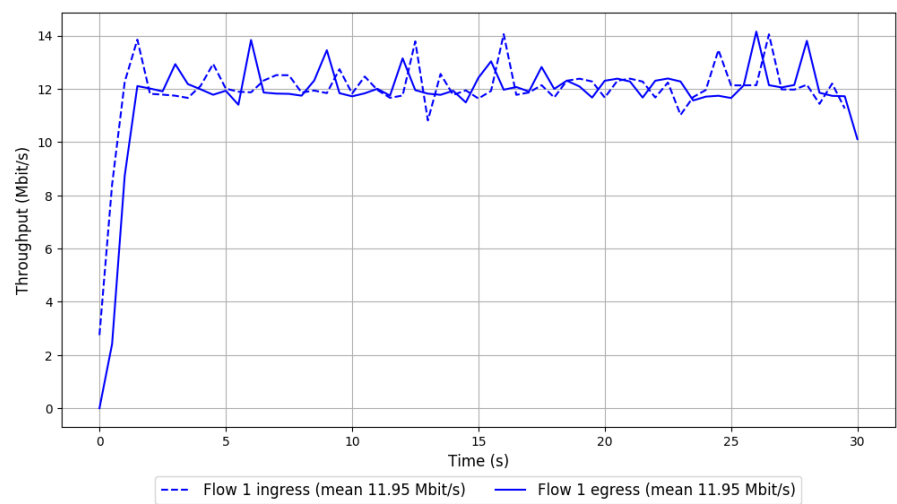
-- Flow 1:

Average throughput: 11.95 Mbit/s

95th percentile per-packet one-way delay: 41.389 ms

Loss rate: 0.23%

Run 5: Report of Sprout — Data Link

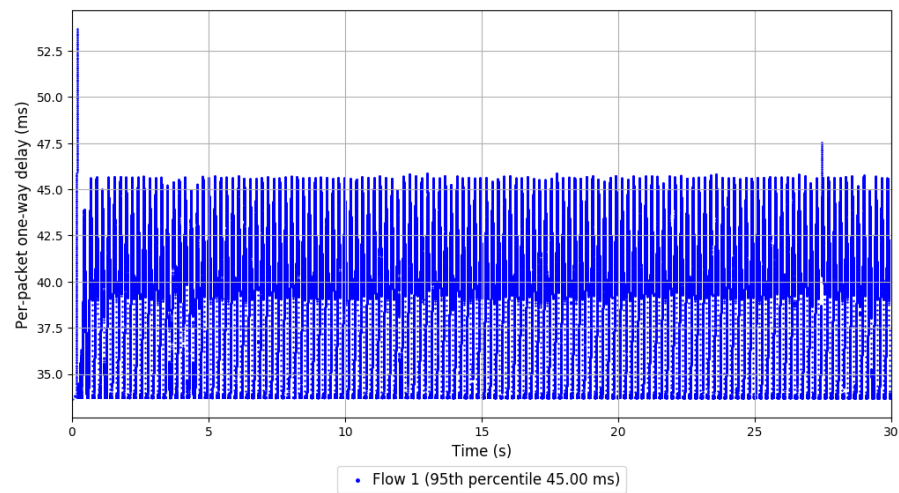
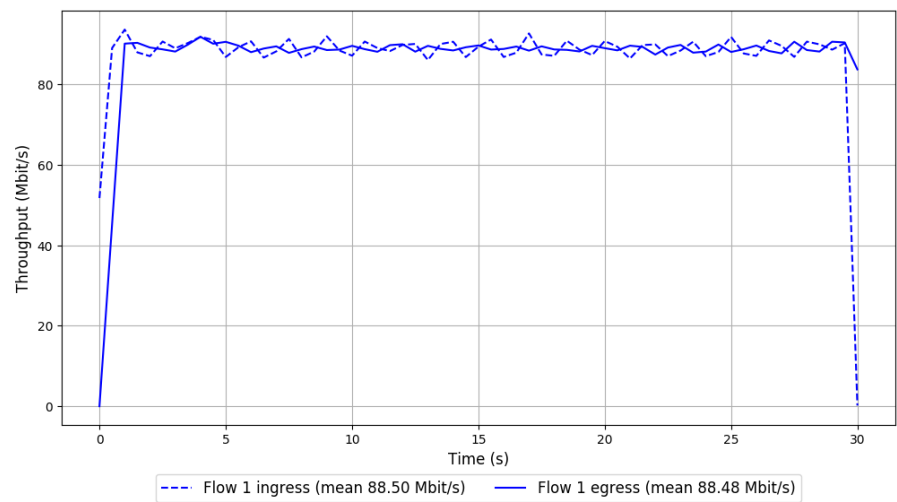


Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 19:28:40
End at: 2018-09-07 19:29:10
Local clock offset: -2.832 ms
Remote clock offset: -0.352 ms

Below is generated by plot.py at 2018-09-07 21:31:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 88.48 Mbit/s
95th percentile per-packet one-way delay: 45.000 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 88.48 Mbit/s
95th percentile per-packet one-way delay: 45.000 ms
Loss rate: 0.24%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 19:52:31

End at: 2018-09-07 19:53:01

Local clock offset: -2.7 ms

Remote clock offset: 0.38 ms

Below is generated by plot.py at 2018-09-07 21:31:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.29 Mbit/s

95th percentile per-packet one-way delay: 44.872 ms

Loss rate: 0.26%

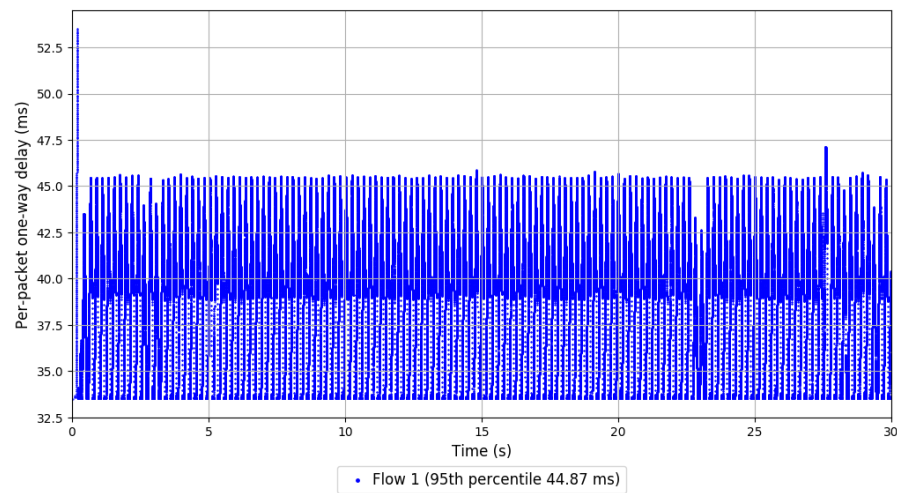
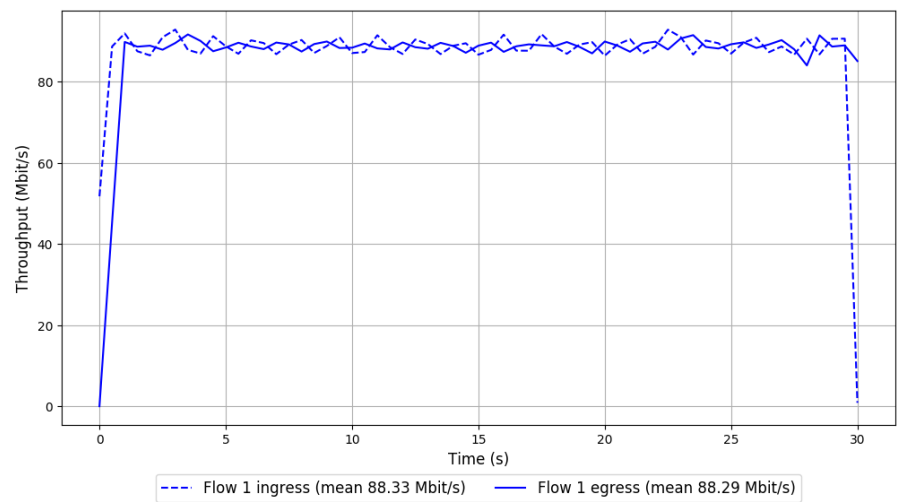
-- Flow 1:

Average throughput: 88.29 Mbit/s

95th percentile per-packet one-way delay: 44.872 ms

Loss rate: 0.26%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 20:16:25

End at: 2018-09-07 20:16:55

Local clock offset: -2.292 ms

Remote clock offset: 0.93 ms

Below is generated by plot.py at 2018-09-07 21:31:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.17 Mbit/s

95th percentile per-packet one-way delay: 44.600 ms

Loss rate: 0.27%

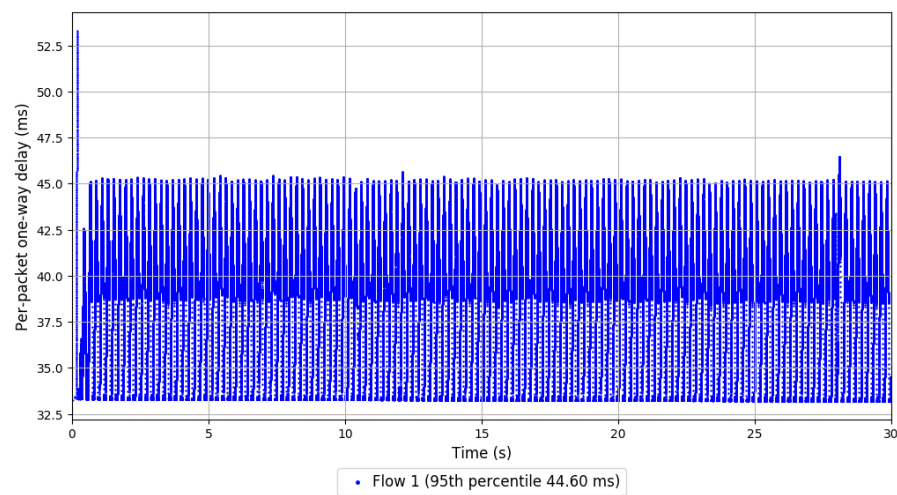
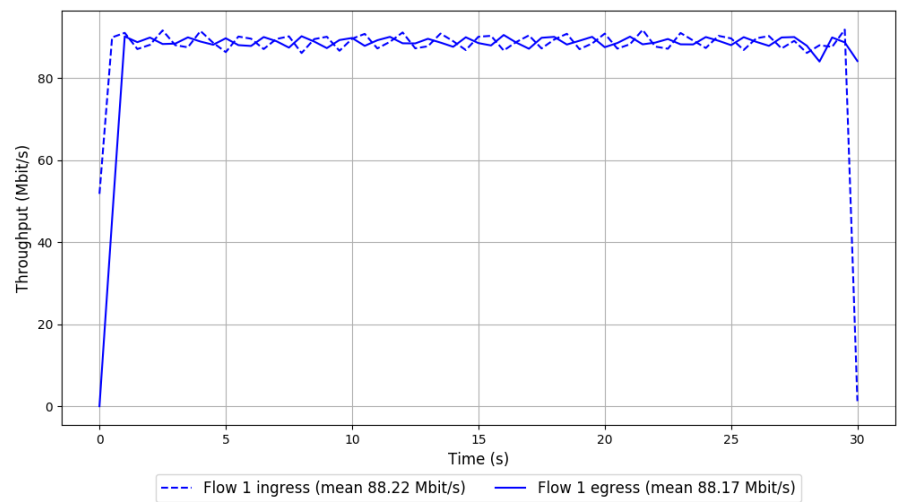
-- Flow 1:

Average throughput: 88.17 Mbit/s

95th percentile per-packet one-way delay: 44.600 ms

Loss rate: 0.27%

Run 3: Report of TaoVA-100x — Data Link



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-07 20:40:19

End at: 2018-09-07 20:40:49

Local clock offset: 0.61 ms

Remote clock offset: 1.324 ms

Below is generated by plot.py at 2018-09-07 21:31:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.29 Mbit/s

95th percentile per-packet one-way delay: 44.837 ms

Loss rate: 0.21%

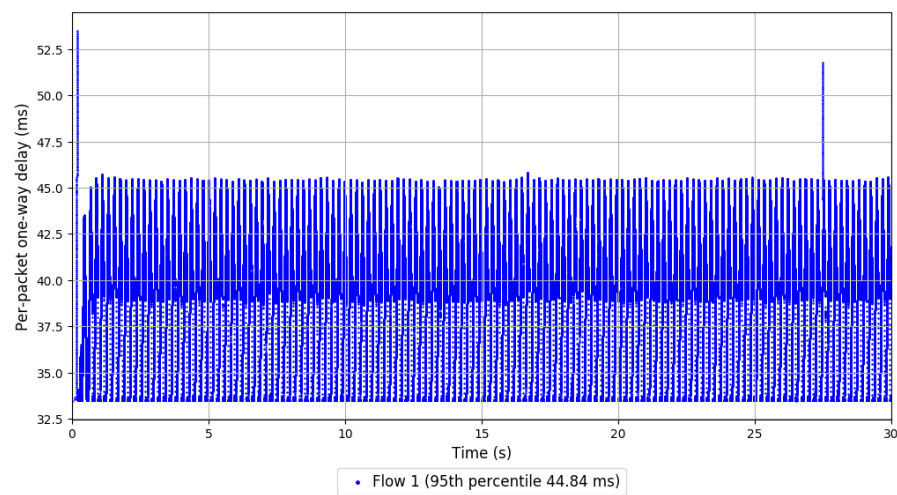
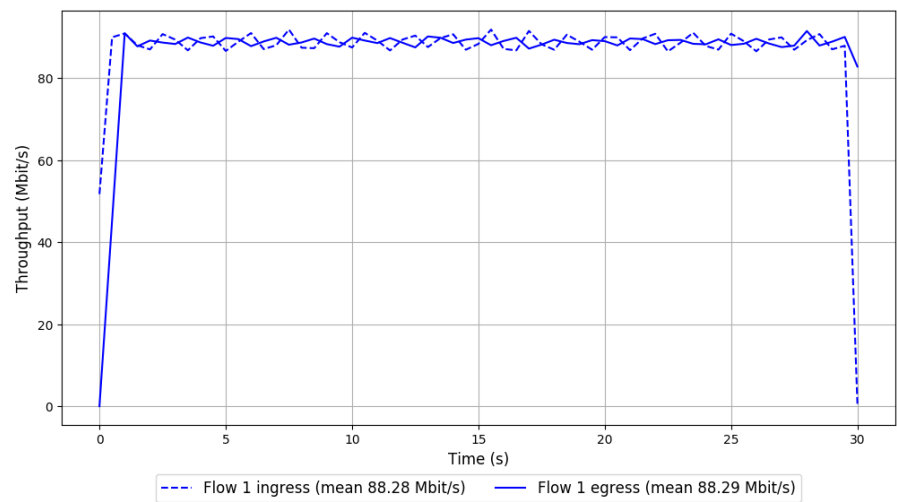
-- Flow 1:

Average throughput: 88.29 Mbit/s

95th percentile per-packet one-way delay: 44.837 ms

Loss rate: 0.21%

Run 4: Report of TaoVA-100x — Data Link



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 21:04:14

End at: 2018-09-07 21:04:44

Local clock offset: 0.396 ms

Remote clock offset: 1.394 ms

Below is generated by plot.py at 2018-09-07 21:31:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.28 Mbit/s

95th percentile per-packet one-way delay: 44.748 ms

Loss rate: 0.20%

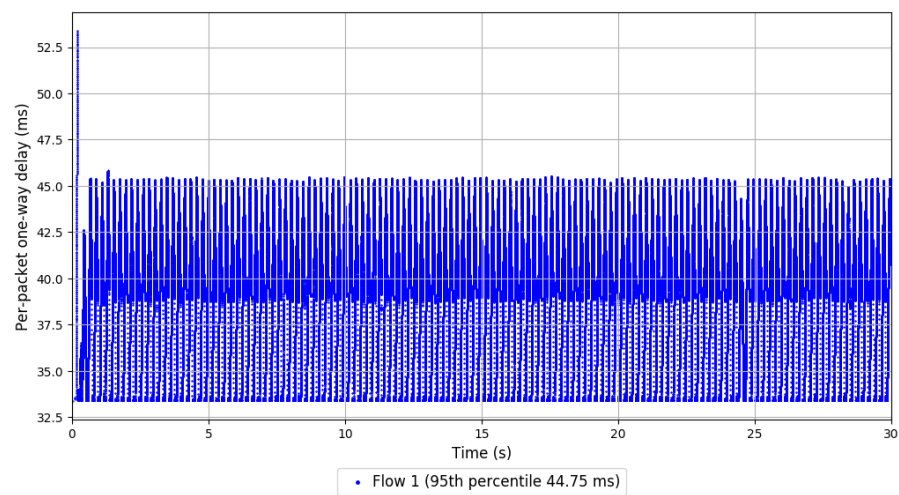
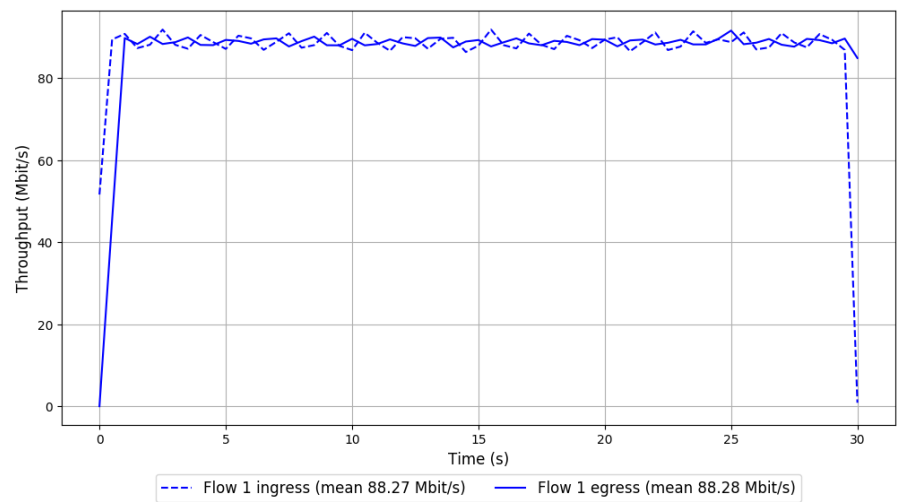
-- Flow 1:

Average throughput: 88.28 Mbit/s

95th percentile per-packet one-way delay: 44.748 ms

Loss rate: 0.20%

Run 5: Report of TaoVA-100x — Data Link

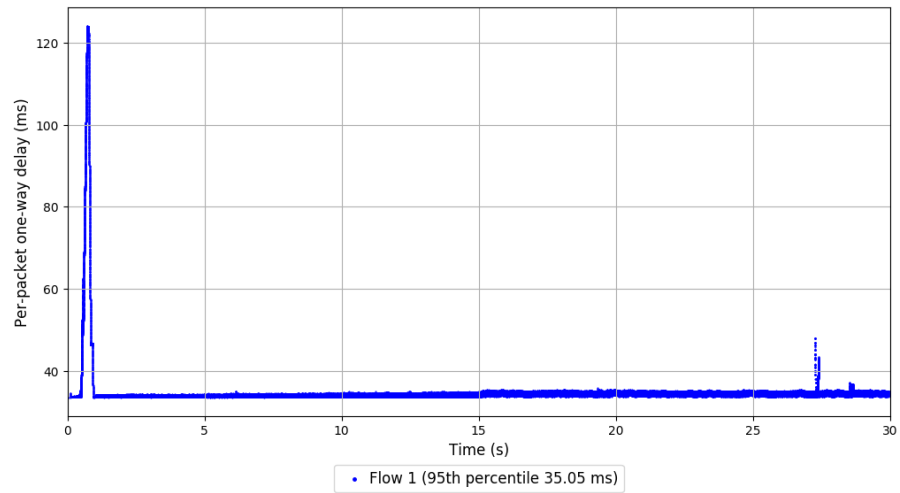
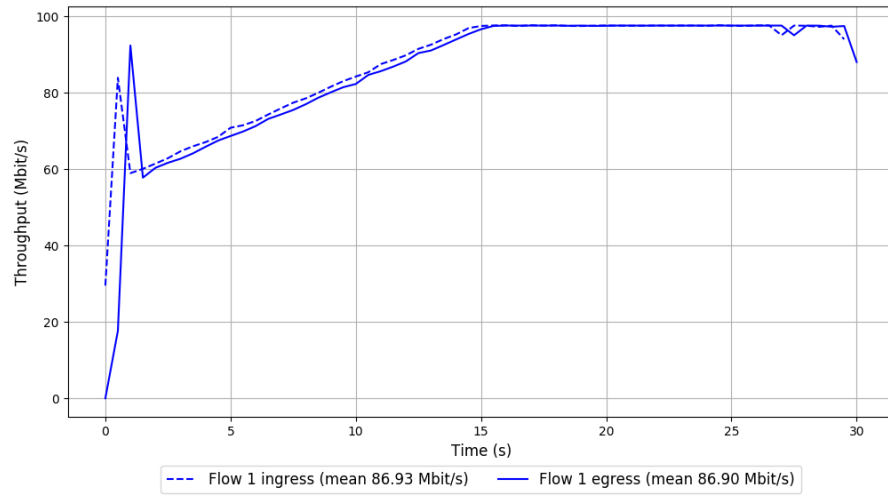


Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 19:36:41
End at: 2018-09-07 19:37:11
Local clock offset: -2.692 ms
Remote clock offset: -0.004 ms

Below is generated by plot.py at 2018-09-07 21:31:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 86.90 Mbit/s
95th percentile per-packet one-way delay: 35.048 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 86.90 Mbit/s
95th percentile per-packet one-way delay: 35.048 ms
Loss rate: 0.25%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 20:00:34

End at: 2018-09-07 20:01:04

Local clock offset: -2.738 ms

Remote clock offset: 0.377 ms

Below is generated by plot.py at 2018-09-07 21:31:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.95 Mbit/s

95th percentile per-packet one-way delay: 35.292 ms

Loss rate: 0.25%

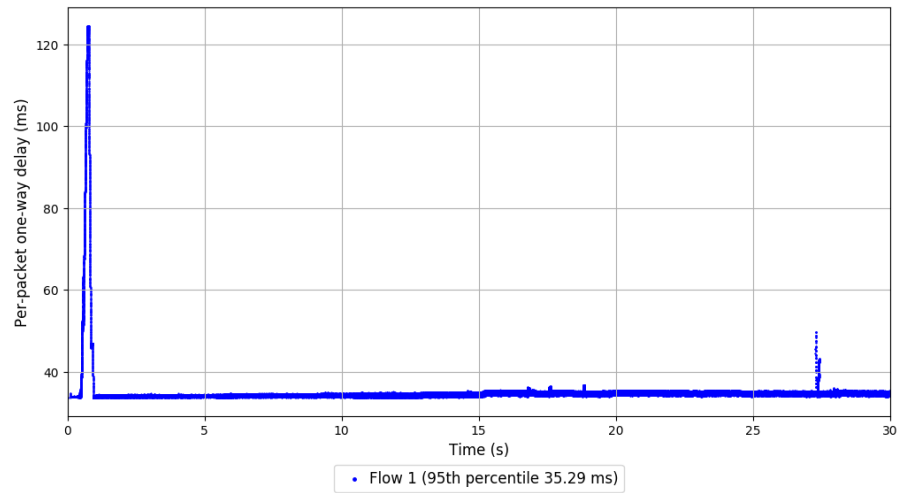
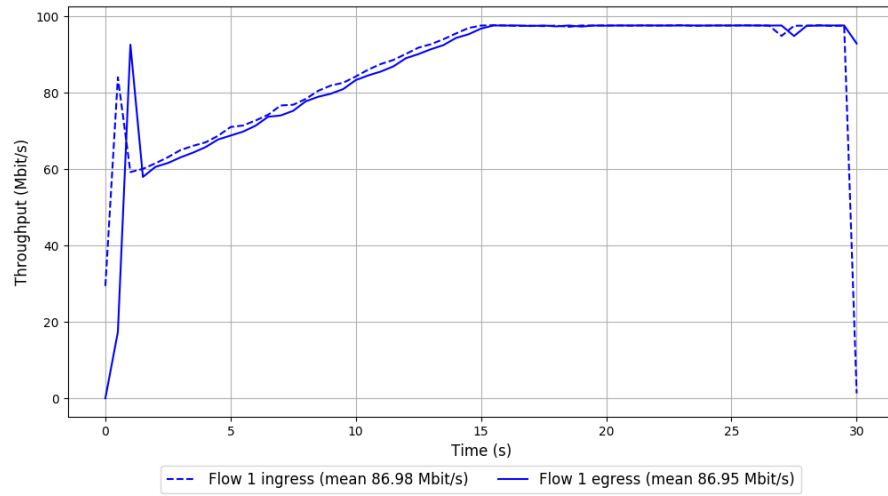
-- Flow 1:

Average throughput: 86.95 Mbit/s

95th percentile per-packet one-way delay: 35.292 ms

Loss rate: 0.25%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 20:24:27

End at: 2018-09-07 20:24:57

Local clock offset: -0.677 ms

Remote clock offset: 0.847 ms

Below is generated by plot.py at 2018-09-07 21:31:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.18 Mbit/s

95th percentile per-packet one-way delay: 35.128 ms

Loss rate: 0.33%

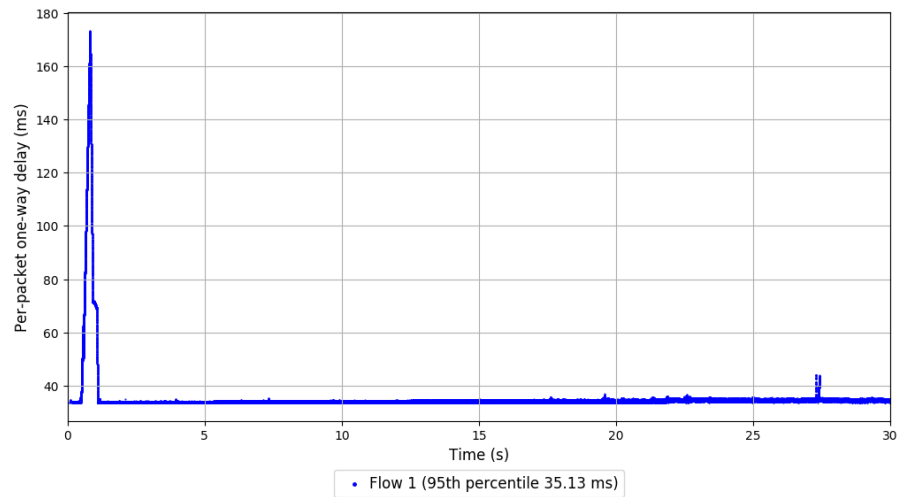
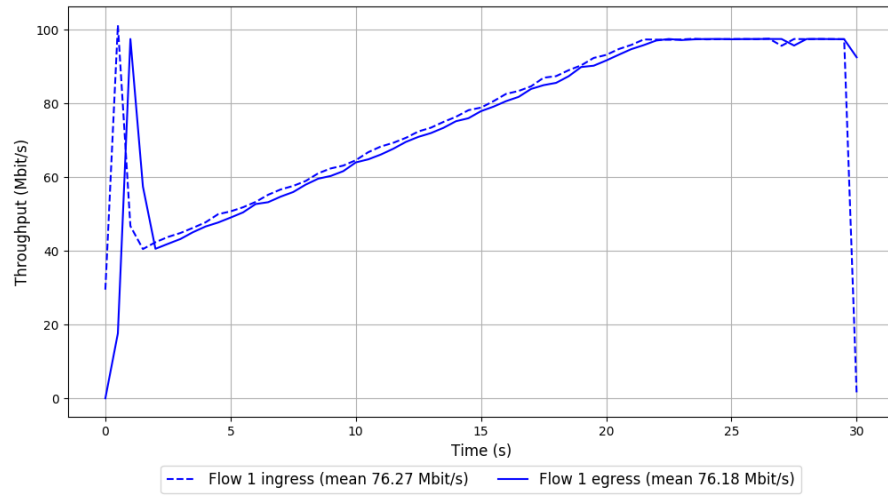
-- Flow 1:

Average throughput: 76.18 Mbit/s

95th percentile per-packet one-way delay: 35.128 ms

Loss rate: 0.33%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 20:48:22

End at: 2018-09-07 20:48:52

Local clock offset: 0.646 ms

Remote clock offset: 1.189 ms

Below is generated by plot.py at 2018-09-07 21:31:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.54 Mbit/s

95th percentile per-packet one-way delay: 35.070 ms

Loss rate: 0.34%

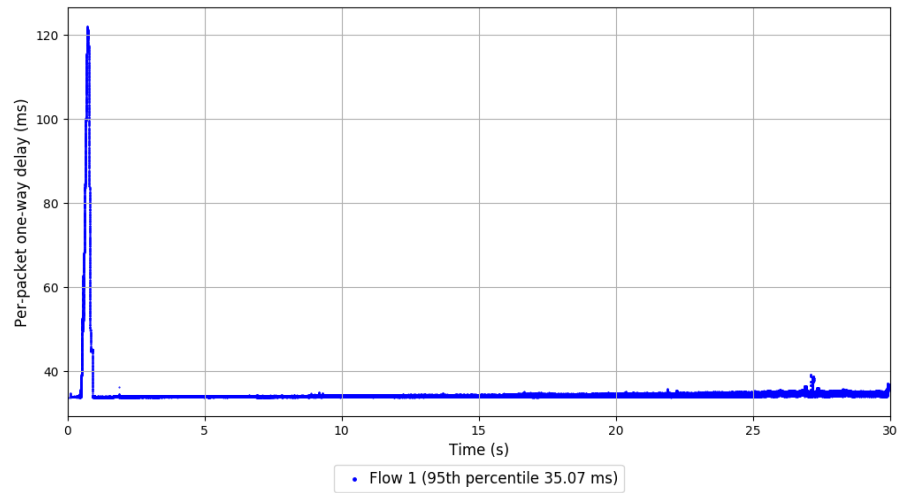
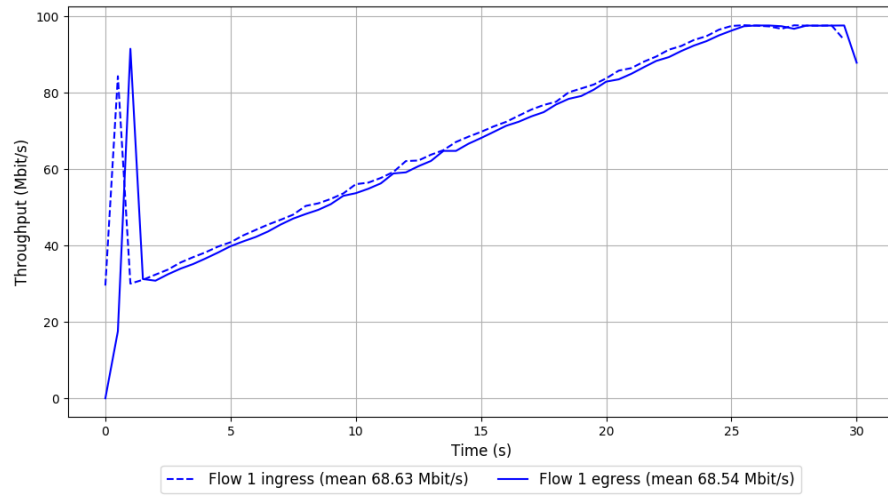
-- Flow 1:

Average throughput: 68.54 Mbit/s

95th percentile per-packet one-way delay: 35.070 ms

Loss rate: 0.34%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 21:12:17

End at: 2018-09-07 21:12:47

Local clock offset: 0.481 ms

Remote clock offset: 1.175 ms

Below is generated by plot.py at 2018-09-07 21:32:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.02 Mbit/s

95th percentile per-packet one-way delay: 35.180 ms

Loss rate: 0.25%

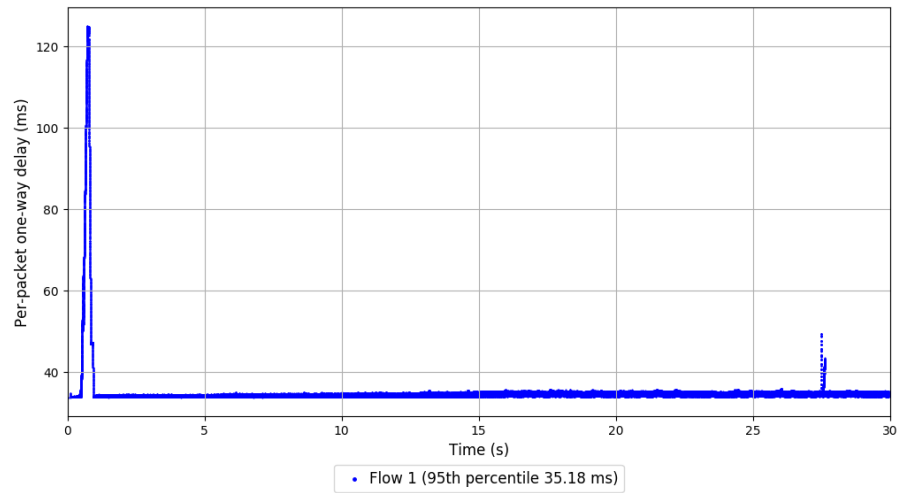
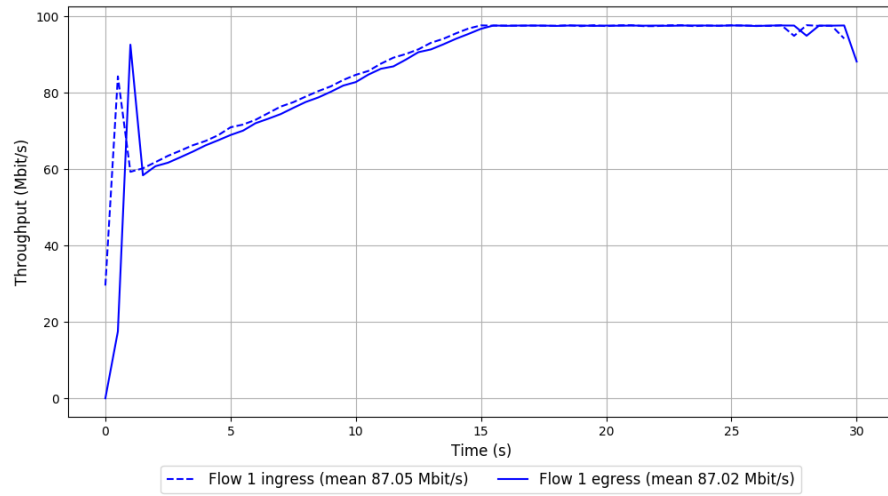
-- Flow 1:

Average throughput: 87.02 Mbit/s

95th percentile per-packet one-way delay: 35.180 ms

Loss rate: 0.25%

Run 5: Report of TCP Vegas — Data Link

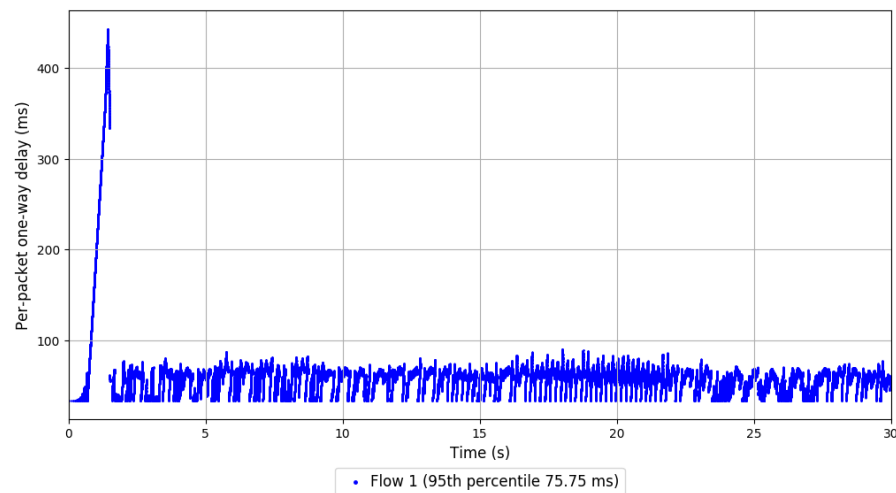
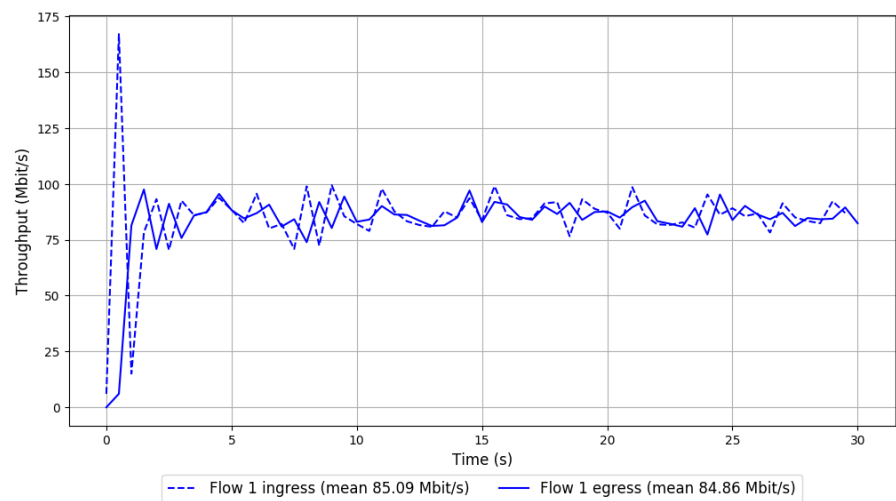


Run 1: Statistics of Verus

Start at: 2018-09-07 19:34:02
End at: 2018-09-07 19:34:32
Local clock offset: -2.811 ms
Remote clock offset: -0.112 ms

Below is generated by plot.py at 2018-09-07 21:32:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 84.86 Mbit/s
95th percentile per-packet one-way delay: 75.748 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 84.86 Mbit/s
95th percentile per-packet one-way delay: 75.748 ms
Loss rate: 0.47%

Run 1: Report of Verus — Data Link

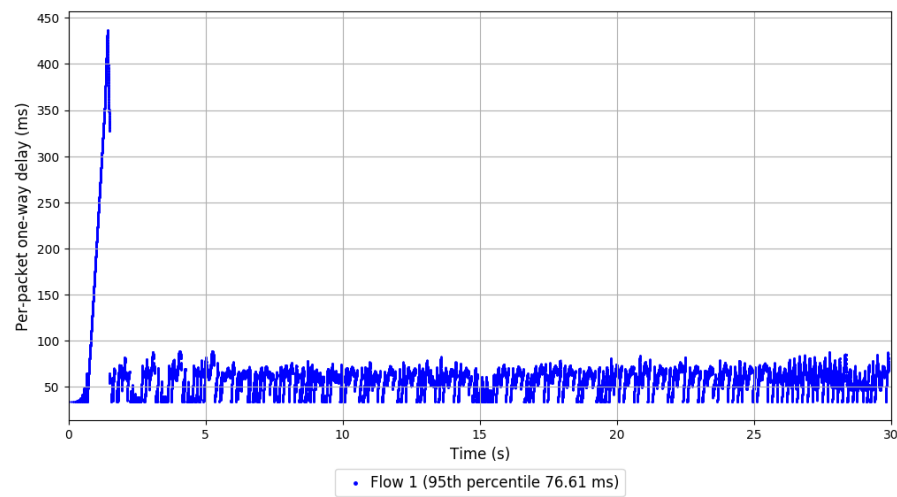
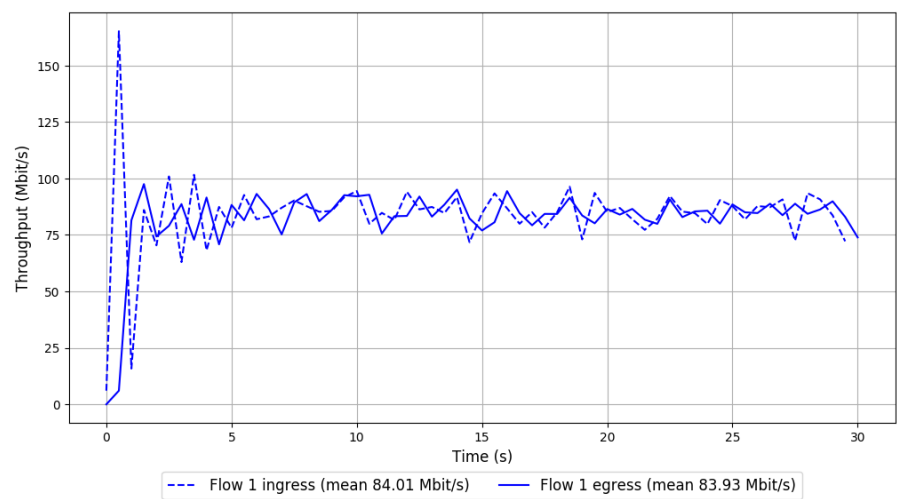


Run 2: Statistics of Verus

Start at: 2018-09-07 19:57:53
End at: 2018-09-07 19:58:23
Local clock offset: -2.726 ms
Remote clock offset: 0.481 ms

Below is generated by plot.py at 2018-09-07 21:32:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 83.93 Mbit/s
95th percentile per-packet one-way delay: 76.608 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 83.93 Mbit/s
95th percentile per-packet one-way delay: 76.608 ms
Loss rate: 0.35%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-07 20:21:48

End at: 2018-09-07 20:22:18

Local clock offset: -1.181 ms

Remote clock offset: 1.023 ms

Below is generated by plot.py at 2018-09-07 21:32:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.92 Mbit/s

95th percentile per-packet one-way delay: 77.016 ms

Loss rate: 0.51%

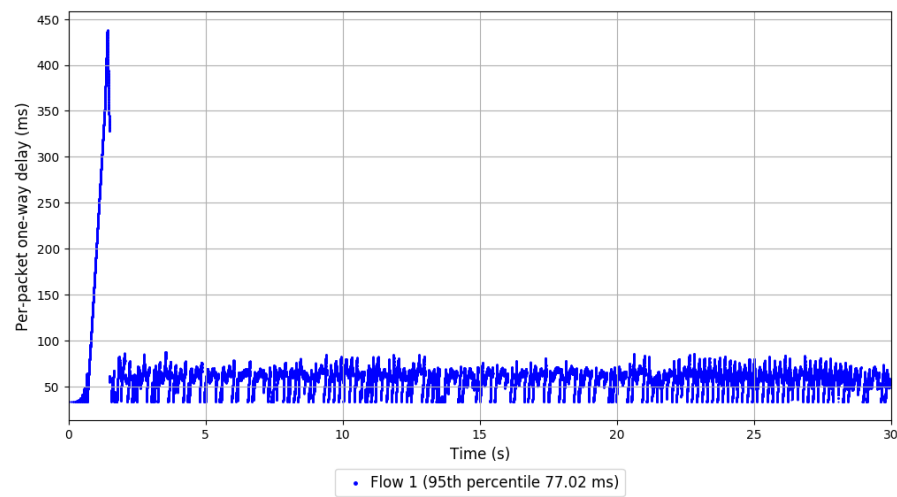
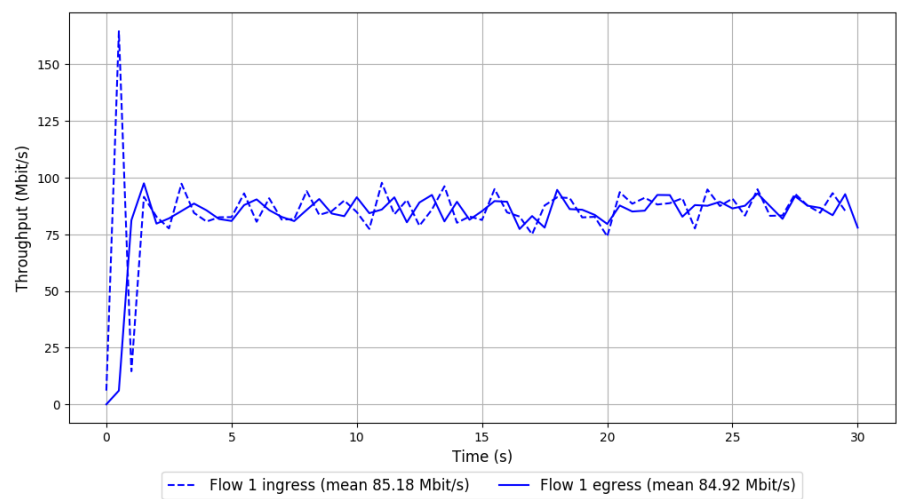
-- Flow 1:

Average throughput: 84.92 Mbit/s

95th percentile per-packet one-way delay: 77.016 ms

Loss rate: 0.51%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-07 20:45:42

End at: 2018-09-07 20:46:12

Local clock offset: 0.84 ms

Remote clock offset: 1.328 ms

Below is generated by plot.py at 2018-09-07 21:32:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.42 Mbit/s

95th percentile per-packet one-way delay: 73.229 ms

Loss rate: 0.47%

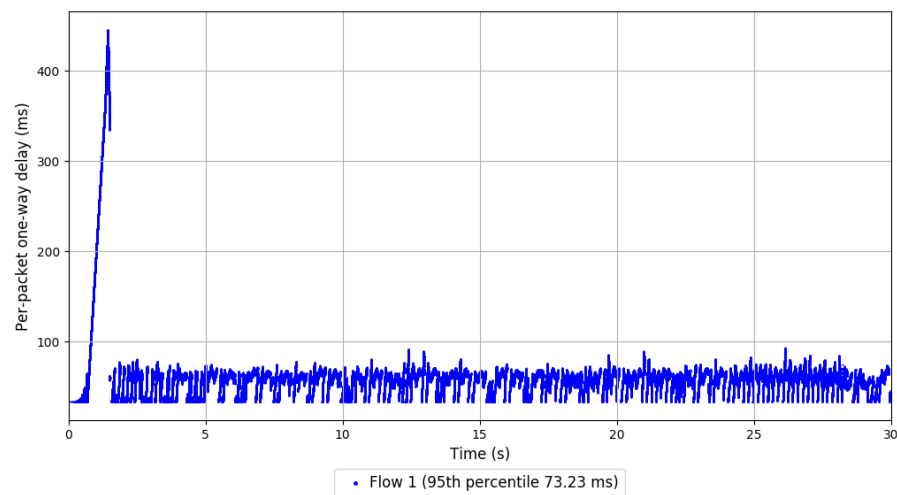
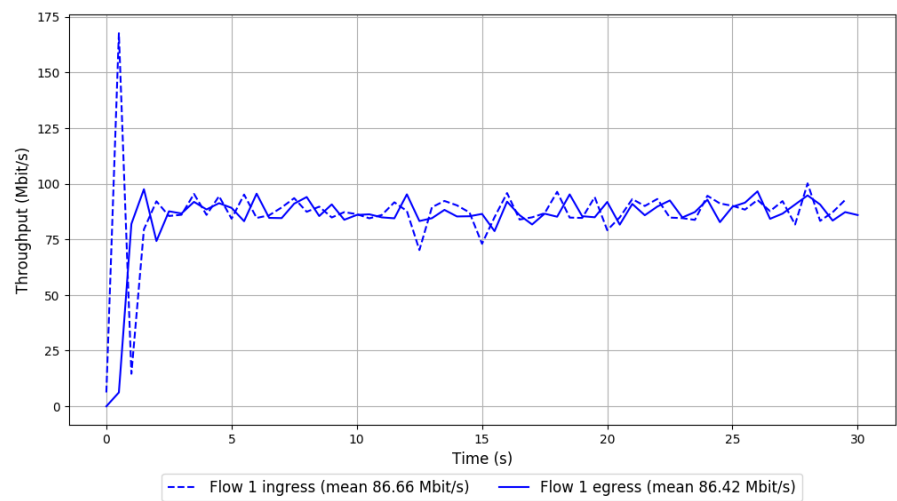
-- Flow 1:

Average throughput: 86.42 Mbit/s

95th percentile per-packet one-way delay: 73.229 ms

Loss rate: 0.47%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-07 21:09:38

End at: 2018-09-07 21:10:08

Local clock offset: 0.441 ms

Remote clock offset: 1.18 ms

Below is generated by plot.py at 2018-09-07 21:32:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.59 Mbit/s

95th percentile per-packet one-way delay: 76.575 ms

Loss rate: 0.32%

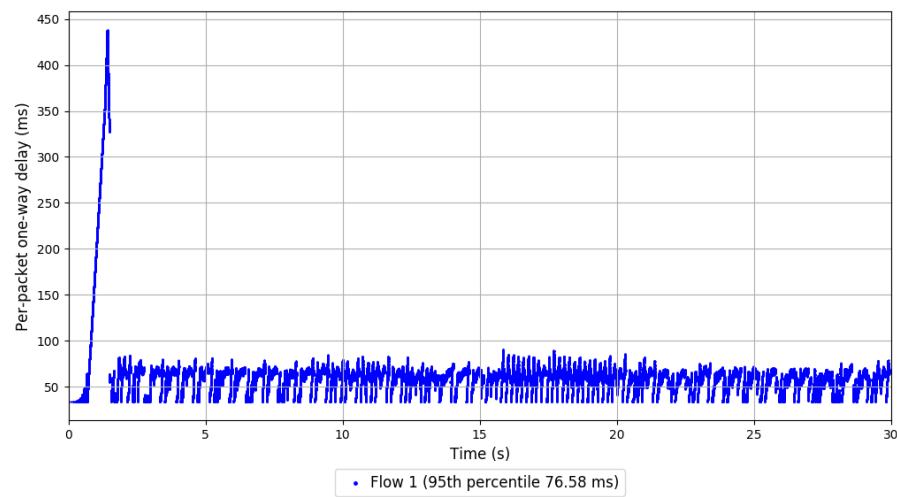
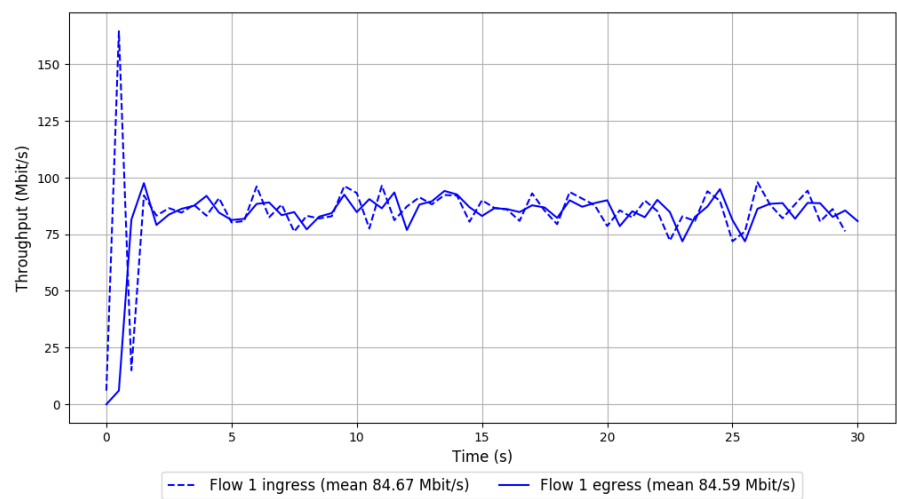
-- Flow 1:

Average throughput: 84.59 Mbit/s

95th percentile per-packet one-way delay: 76.575 ms

Loss rate: 0.32%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 19:41:59

End at: 2018-09-07 19:42:29

Local clock offset: -2.717 ms

Remote clock offset: 0.111 ms

Below is generated by plot.py at 2018-09-07 21:32:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.56 Mbit/s

95th percentile per-packet one-way delay: 34.701 ms

Loss rate: 0.23%

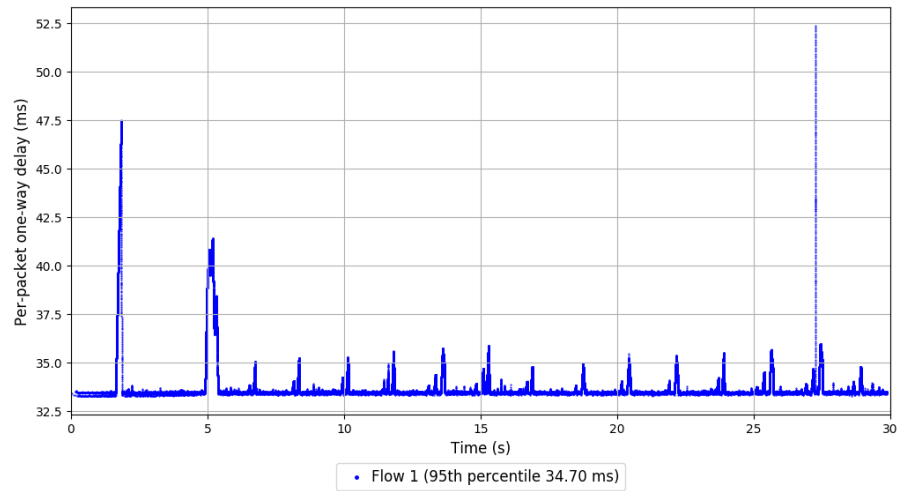
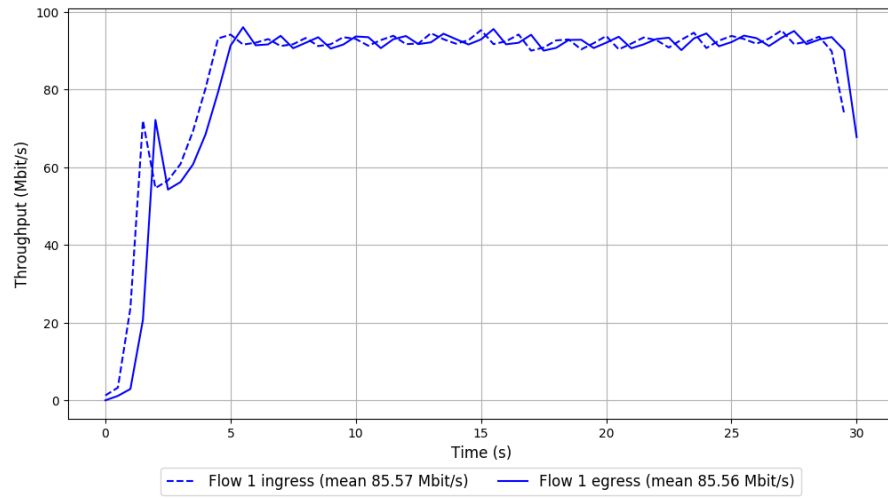
-- Flow 1:

Average throughput: 85.56 Mbit/s

95th percentile per-packet one-way delay: 34.701 ms

Loss rate: 0.23%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 20:05:53

End at: 2018-09-07 20:06:23

Local clock offset: -2.726 ms

Remote clock offset: 0.667 ms

Below is generated by plot.py at 2018-09-07 21:32:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.41 Mbit/s

95th percentile per-packet one-way delay: 34.791 ms

Loss rate: 0.25%

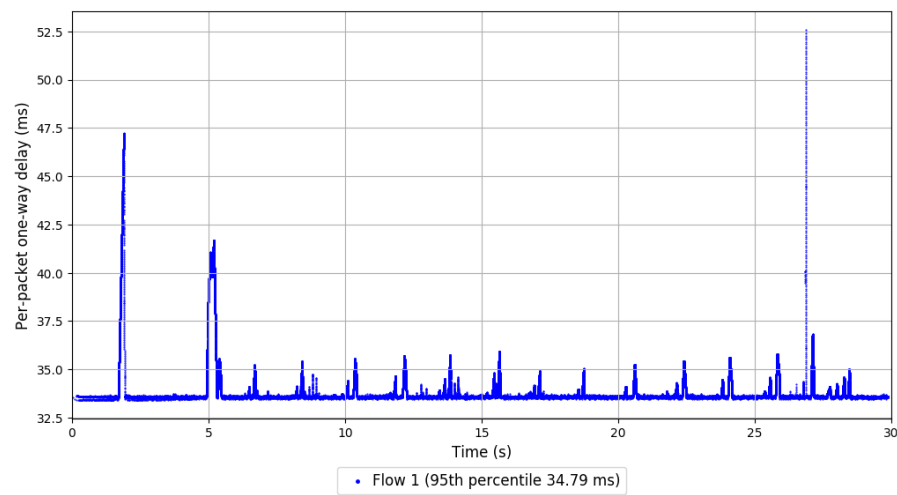
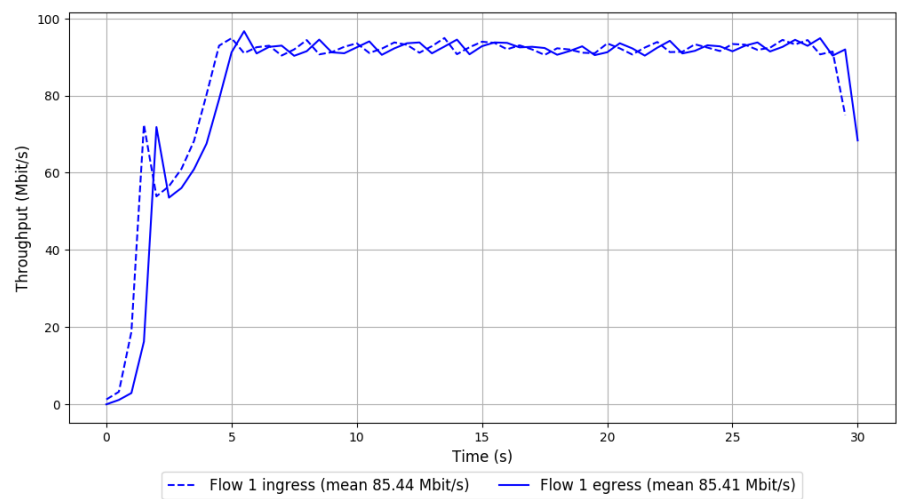
-- Flow 1:

Average throughput: 85.41 Mbit/s

95th percentile per-packet one-way delay: 34.791 ms

Loss rate: 0.25%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 20:29:44

End at: 2018-09-07 20:30:14

Local clock offset: -0.113 ms

Remote clock offset: 1.136 ms

Below is generated by plot.py at 2018-09-07 21:33:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.05 Mbit/s

95th percentile per-packet one-way delay: 35.775 ms

Loss rate: 0.25%

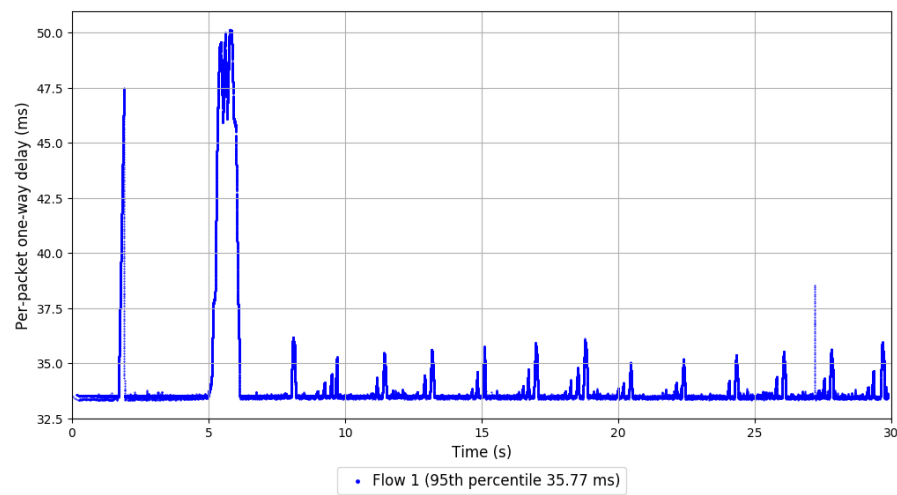
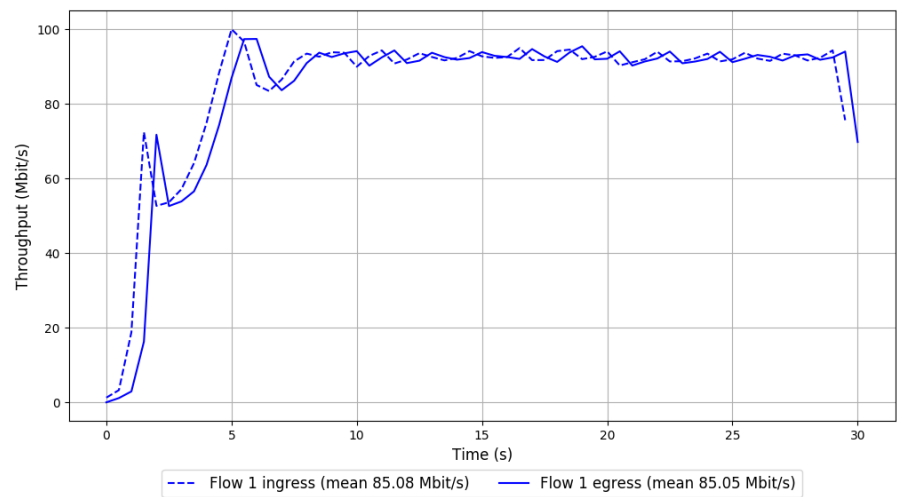
-- Flow 1:

Average throughput: 85.05 Mbit/s

95th percentile per-packet one-way delay: 35.775 ms

Loss rate: 0.25%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 20:53:38

End at: 2018-09-07 20:54:08

Local clock offset: 0.417 ms

Remote clock offset: 1.347 ms

Below is generated by plot.py at 2018-09-07 21:33:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.90 Mbit/s

95th percentile per-packet one-way delay: 35.683 ms

Loss rate: 0.25%

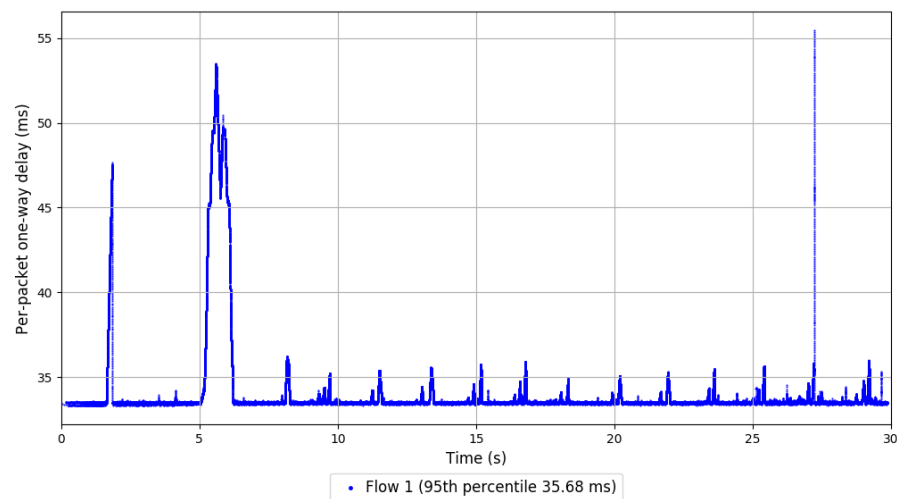
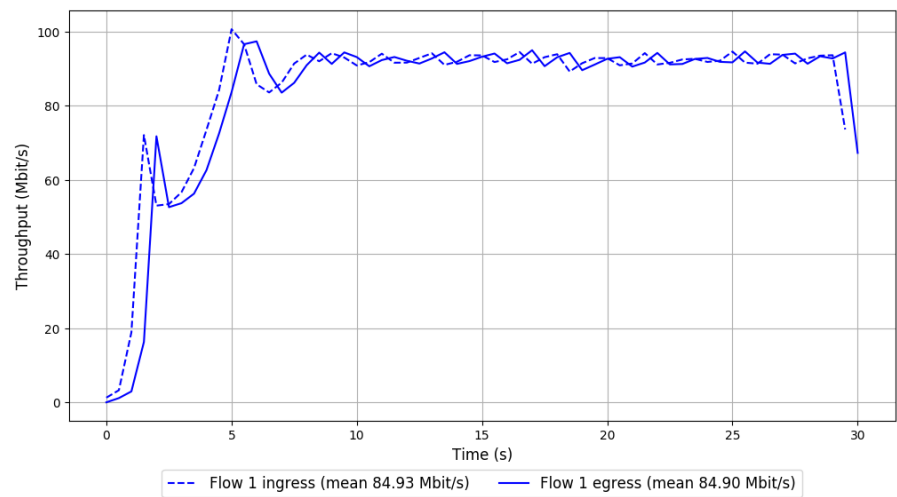
-- Flow 1:

Average throughput: 84.90 Mbit/s

95th percentile per-packet one-way delay: 35.683 ms

Loss rate: 0.25%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 21:17:34

End at: 2018-09-07 21:18:04

Local clock offset: 0.264 ms

Remote clock offset: 1.32 ms

Below is generated by plot.py at 2018-09-07 21:33:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.46 Mbit/s

95th percentile per-packet one-way delay: 34.972 ms

Loss rate: 0.22%

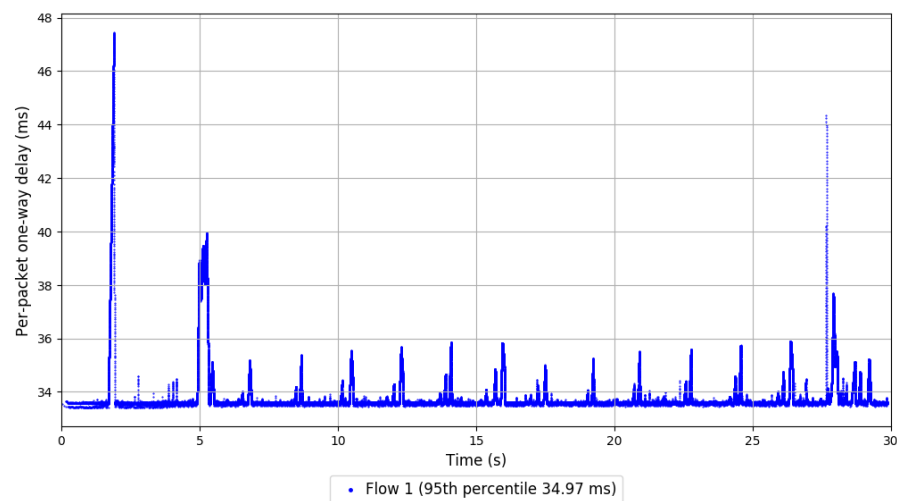
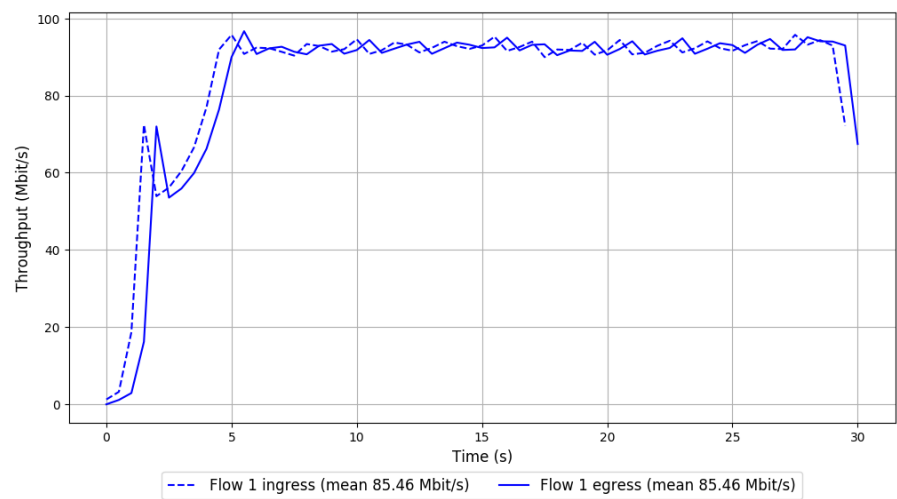
-- Flow 1:

Average throughput: 85.46 Mbit/s

95th percentile per-packet one-way delay: 34.972 ms

Loss rate: 0.22%

Run 5: Report of PCC-Vivace — Data Link

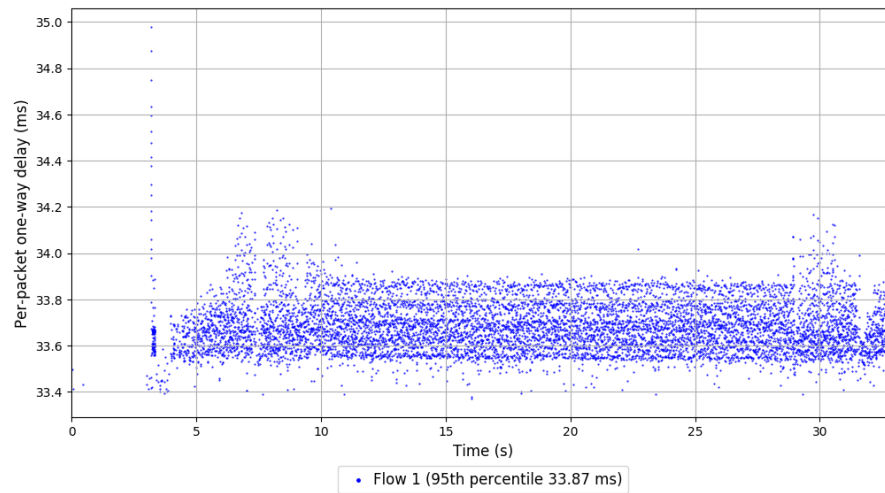
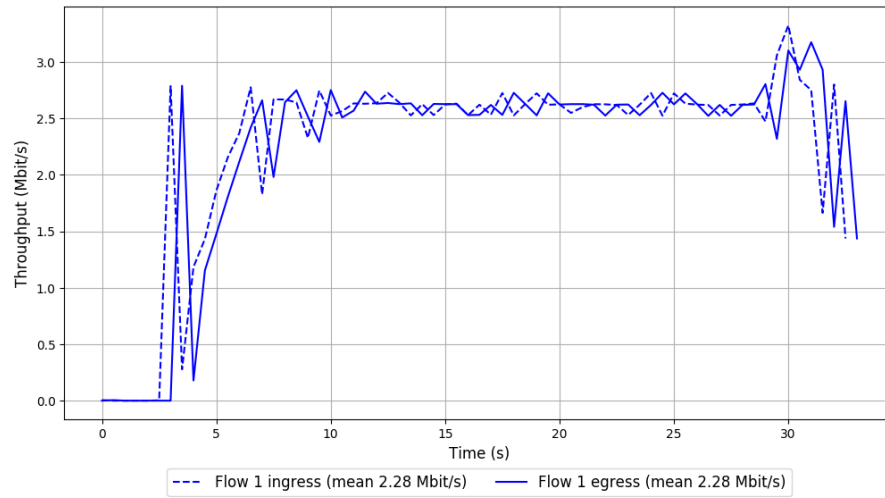


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-07 19:23:25
End at: 2018-09-07 19:23:55
Local clock offset: -3.122 ms
Remote clock offset: -0.245 ms

# Below is generated by plot.py at 2018-09-07 21:33:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 33.869 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 33.869 ms
Loss rate: 0.20%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-07 19:47:16

End at: 2018-09-07 19:47:46

Local clock offset: -2.731 ms

Remote clock offset: 0.312 ms

Below is generated by plot.py at 2018-09-07 21:33:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.12 Mbit/s

95th percentile per-packet one-way delay: 33.730 ms

Loss rate: 0.22%

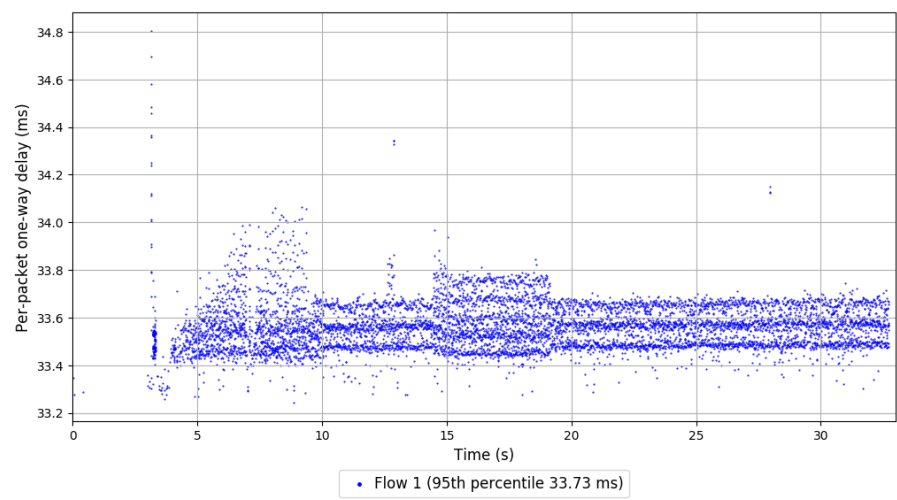
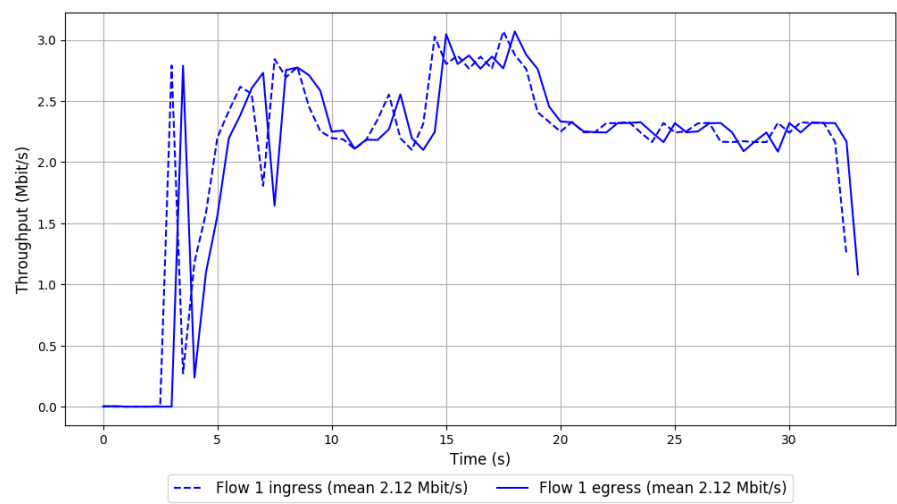
-- Flow 1:

Average throughput: 2.12 Mbit/s

95th percentile per-packet one-way delay: 33.730 ms

Loss rate: 0.22%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-07 20:11:11

End at: 2018-09-07 20:11:41

Local clock offset: -2.694 ms

Remote clock offset: 0.676 ms

Below is generated by plot.py at 2018-09-07 21:33:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 34.021 ms

Loss rate: 0.26%

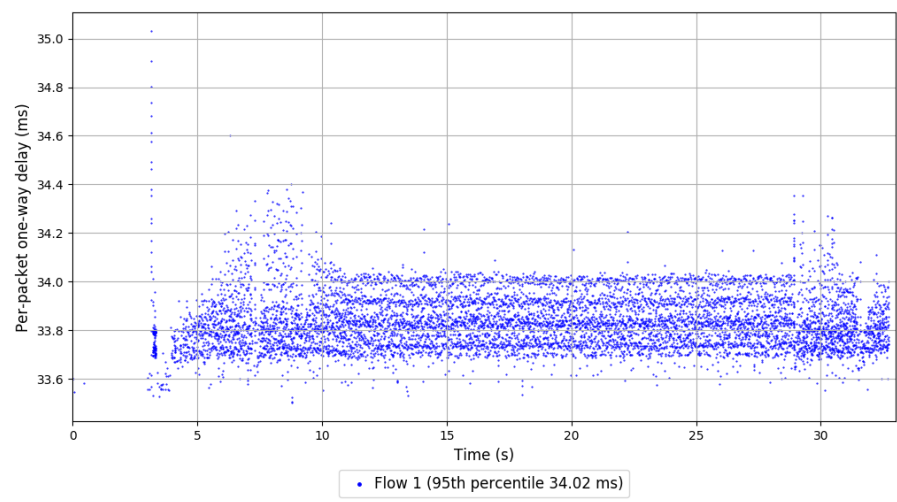
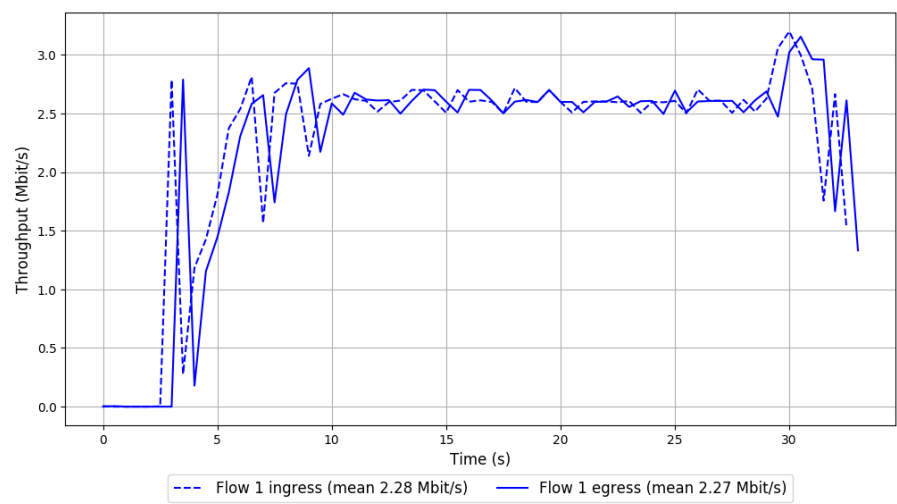
-- Flow 1:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 34.021 ms

Loss rate: 0.26%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-07 20:35:02

End at: 2018-09-07 20:35:32

Local clock offset: 0.278 ms

Remote clock offset: 1.059 ms

Below is generated by plot.py at 2018-09-07 21:33:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 34.004 ms

Loss rate: 0.25%

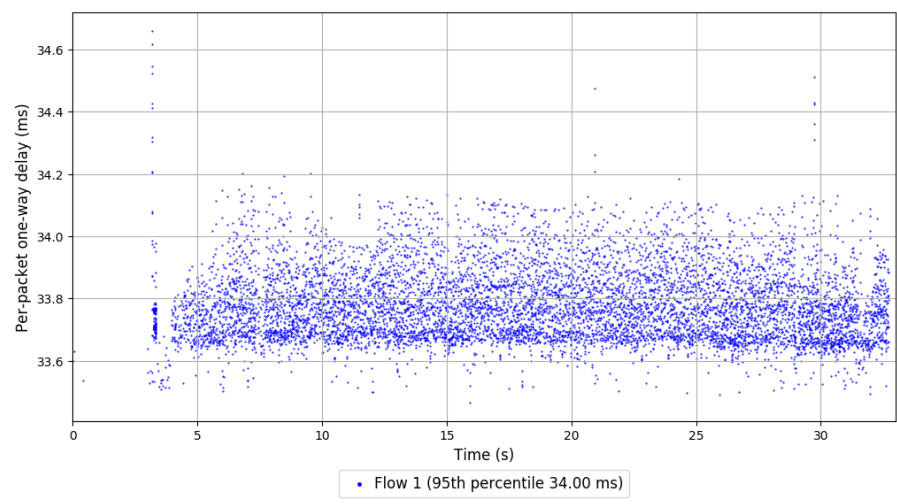
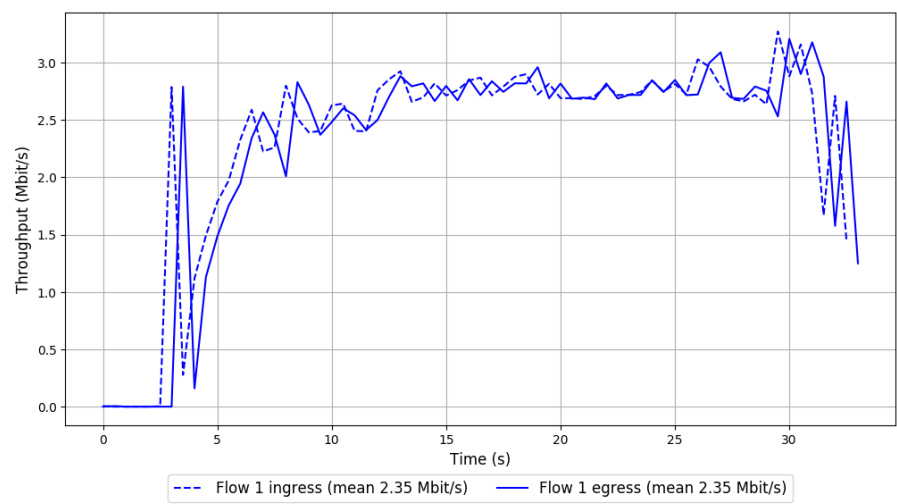
-- Flow 1:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 34.004 ms

Loss rate: 0.25%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-07 20:58:56

End at: 2018-09-07 20:59:26

Local clock offset: 0.366 ms

Remote clock offset: 1.221 ms

Below is generated by plot.py at 2018-09-07 21:33:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 33.982 ms

Loss rate: 0.26%

-- Flow 1:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 33.982 ms

Loss rate: 0.26%

Run 5: Report of WebRTC media — Data Link

