

Pantheon Report

Generated at 2018-09-11 09:07:02 (UTC).

Data path: Brazil on **p4p1** (*remote*) → AWS Brazil 1 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 **gps.ntp.br** and have been applied to correct the timestamps in logs.

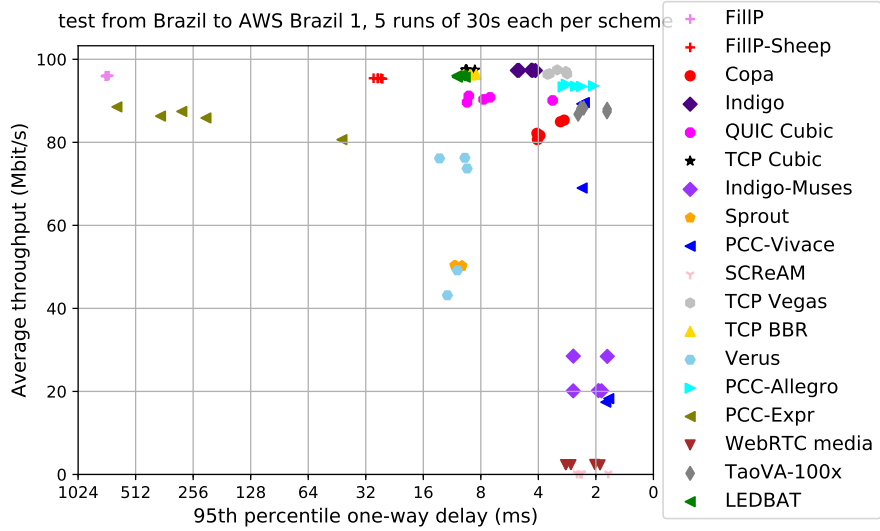
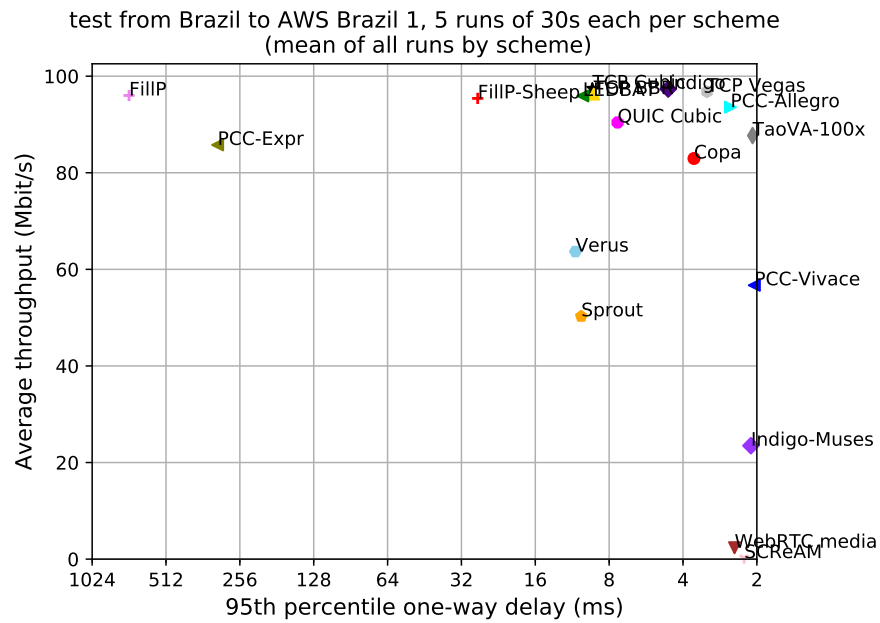
System info:

```
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 = 184101 245469 368202
```

Git summary:

```
branch: muses @ f30bceca2aec2ef14a3cf71e25642f4a30905a03
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
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



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	96.29	9.24	0.09
Copa	5	82.95	3.61	0.01
TCP Cubic	5	97.44	9.37	0.05
FillP	5	96.00	724.16	3.41
FillP-Sheep	5	95.40	27.47	1.28
Indigo	5	97.33	4.60	0.02
LEDBAT	5	95.91	10.24	0.08
Indigo-Muses	5	23.49	2.11	0.01
PCC-Allegro	5	93.58	2.56	0.01
PCC-Expr	5	85.76	315.46	0.95
QUIC Cubic	5	90.42	7.39	0.02
SCReAM	5	0.22	2.25	0.03
Sprout	5	50.28	10.40	0.03
TaoVA-100x	5	87.70	2.08	0.01
TCP Vegas	5	96.78	3.19	0.01
Verus	5	63.69	10.98	0.02
PCC-Vivace	5	56.70	2.05	0.01
WebRTC media	5	2.36	2.47	0.03

Run 1: Statistics of TCP BBR

Start at: 2018-09-11 07:23:16

End at: 2018-09-11 07:23:46

Local clock offset: 0.921 ms

Remote clock offset: 0.063 ms

Below is generated by plot.py at 2018-09-11 08:55:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.26 Mbit/s

95th percentile per-packet one-way delay: 9.007 ms

Loss rate: 0.12%

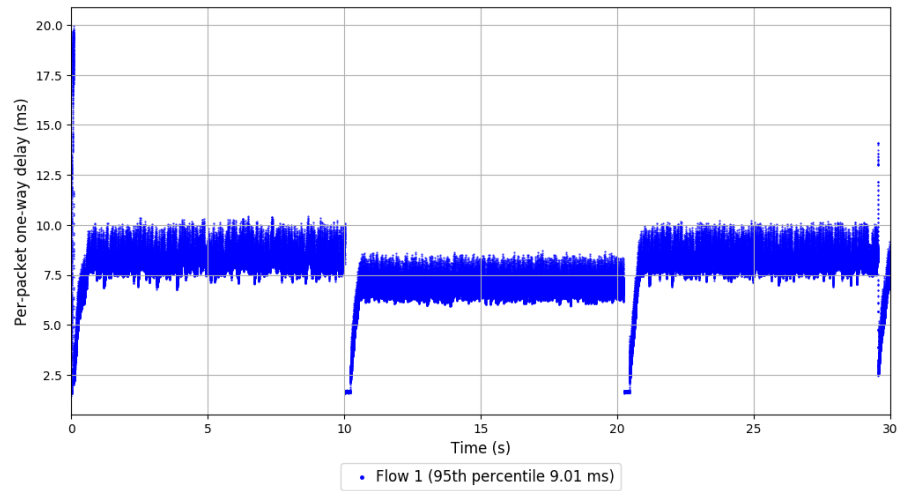
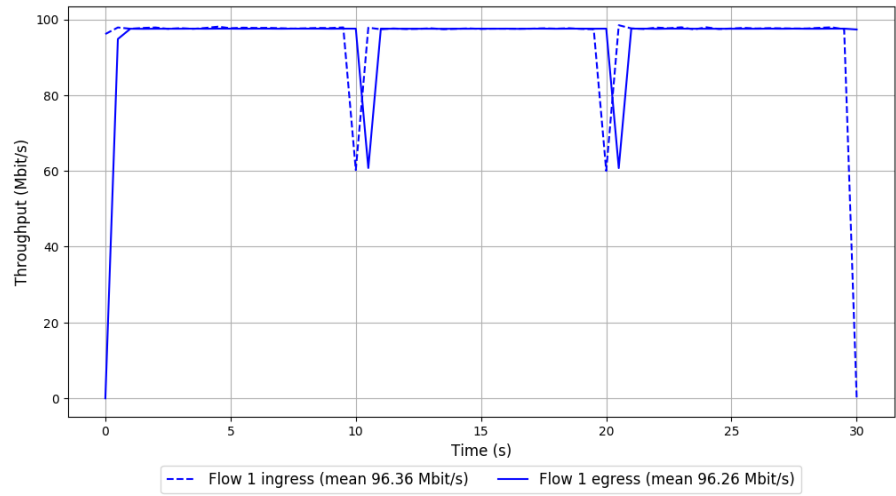
-- Flow 1:

Average throughput: 96.26 Mbit/s

95th percentile per-packet one-way delay: 9.007 ms

Loss rate: 0.12%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-11 07:43:37

End at: 2018-09-11 07:44:07

Local clock offset: 3.448 ms

Remote clock offset: 0.193 ms

Below is generated by plot.py at 2018-09-11 08:55:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.25 Mbit/s

95th percentile per-packet one-way delay: 9.780 ms

Loss rate: 0.10%

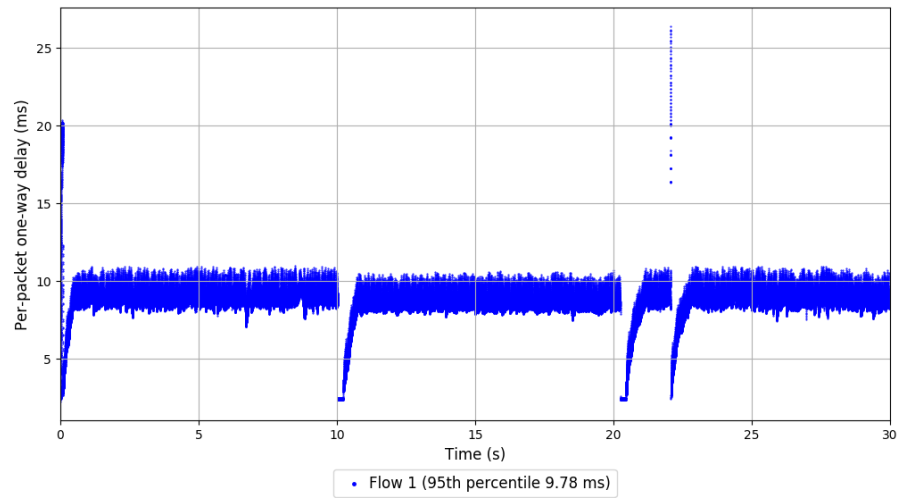
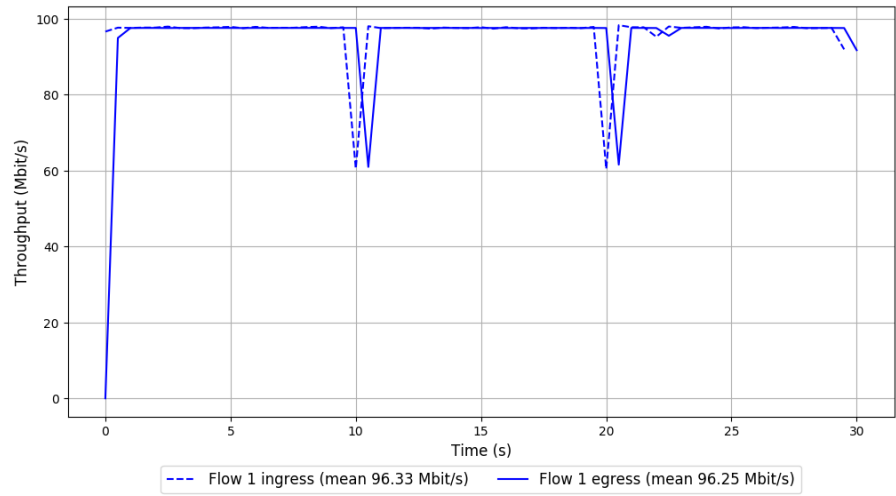
-- Flow 1:

Average throughput: 96.25 Mbit/s

95th percentile per-packet one-way delay: 9.780 ms

Loss rate: 0.10%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-09-11 08:03:54

End at: 2018-09-11 08:04:24

Local clock offset: 3.458 ms

Remote clock offset: 0.437 ms

Below is generated by plot.py at 2018-09-11 08:55:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.27 Mbit/s

95th percentile per-packet one-way delay: 9.853 ms

Loss rate: 0.10%

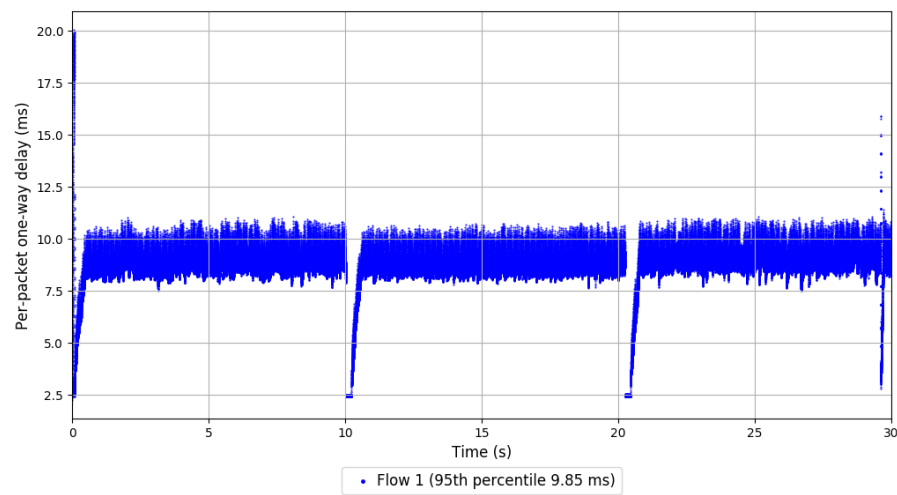
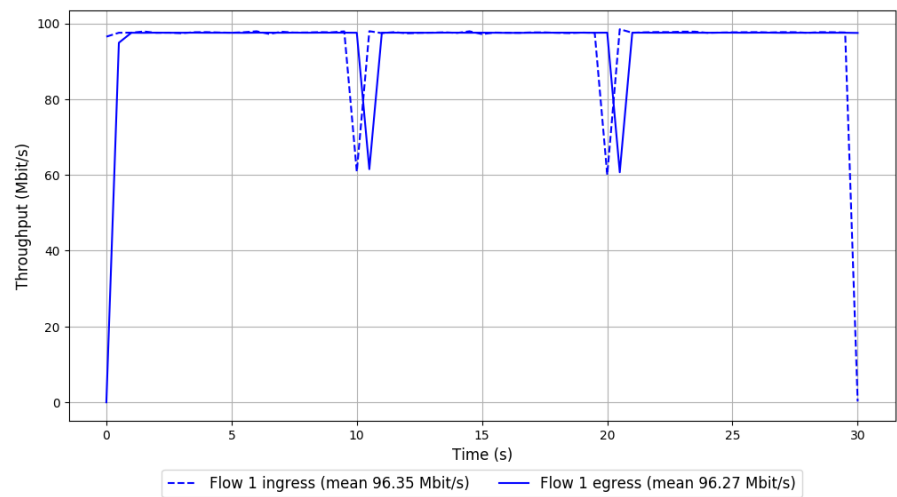
-- Flow 1:

Average throughput: 96.27 Mbit/s

95th percentile per-packet one-way delay: 9.853 ms

Loss rate: 0.10%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-11 08:24:15

End at: 2018-09-11 08:24:45

Local clock offset: 2.188 ms

Remote clock offset: 0.491 ms

Below is generated by plot.py at 2018-09-11 08:55:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.30 Mbit/s

95th percentile per-packet one-way delay: 9.129 ms

Loss rate: 0.12%

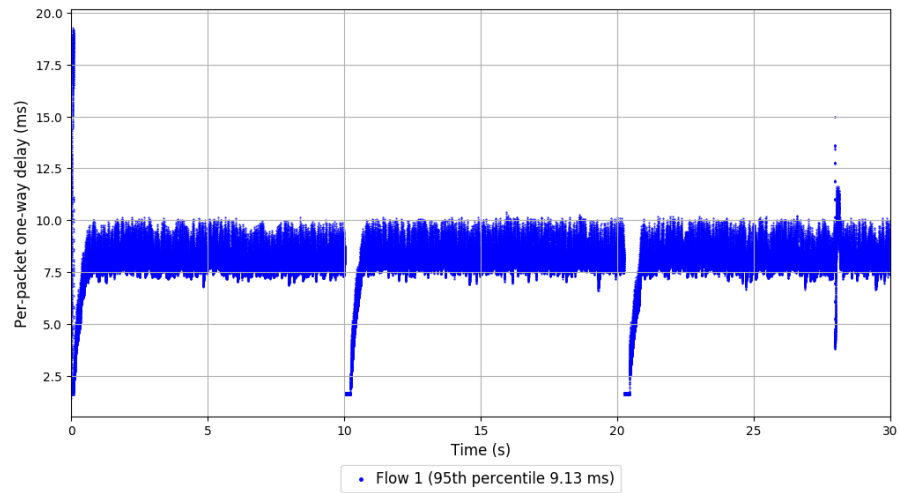
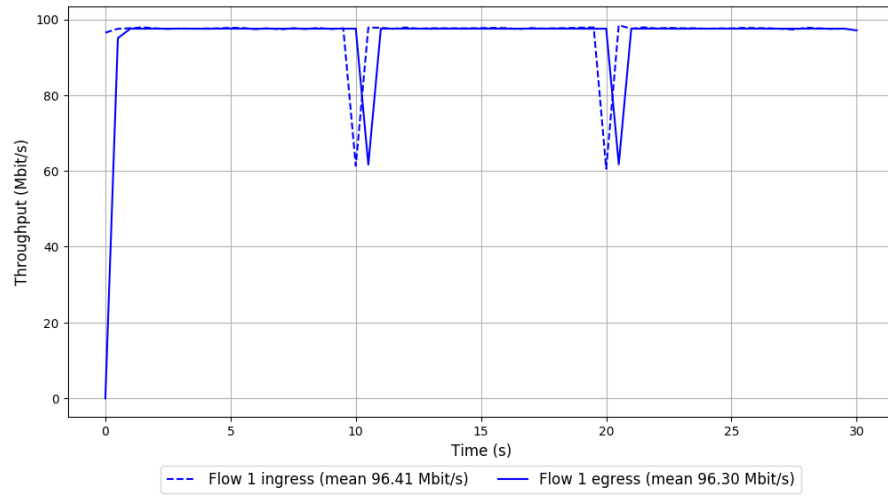
-- Flow 1:

Average throughput: 96.30 Mbit/s

95th percentile per-packet one-way delay: 9.129 ms

Loss rate: 0.12%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-11 08:44:32

End at: 2018-09-11 08:45:02

Local clock offset: 7.466 ms

Remote clock offset: 0.551 ms

Below is generated by plot.py at 2018-09-11 08:55:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.35 Mbit/s

95th percentile per-packet one-way delay: 8.453 ms

Loss rate: 0.03%

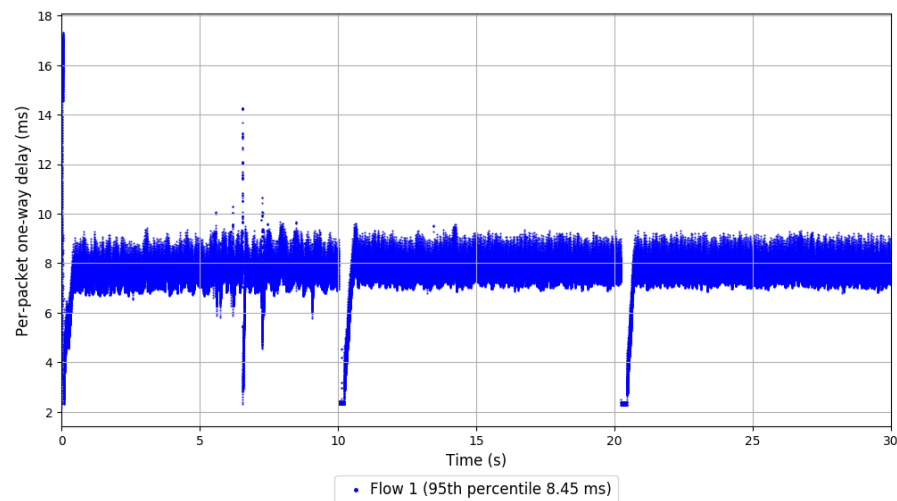
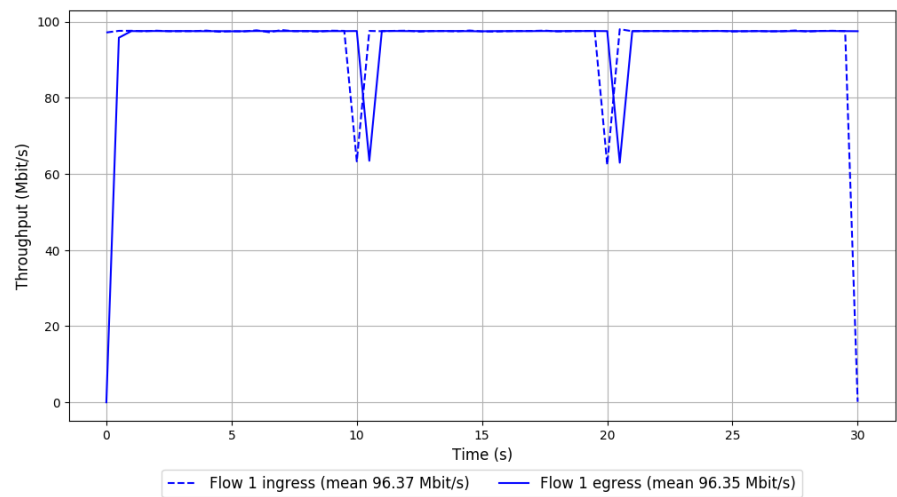
-- Flow 1:

Average throughput: 96.35 Mbit/s

95th percentile per-packet one-way delay: 8.453 ms

Loss rate: 0.03%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-11 07:13:09

End at: 2018-09-11 07:13:39

Local clock offset: 1.209 ms

Remote clock offset: 0.015 ms

Below is generated by plot.py at 2018-09-11 08:56:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.34 Mbit/s

95th percentile per-packet one-way delay: 2.933 ms

Loss rate: 0.01%

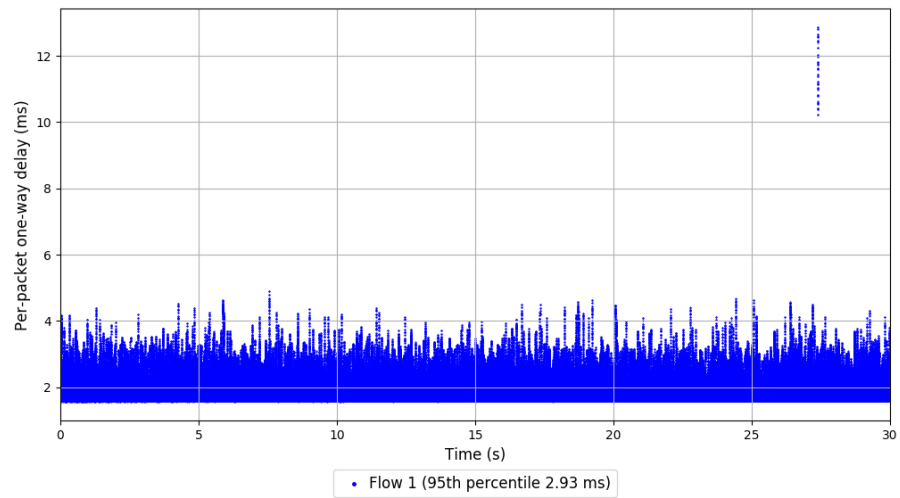
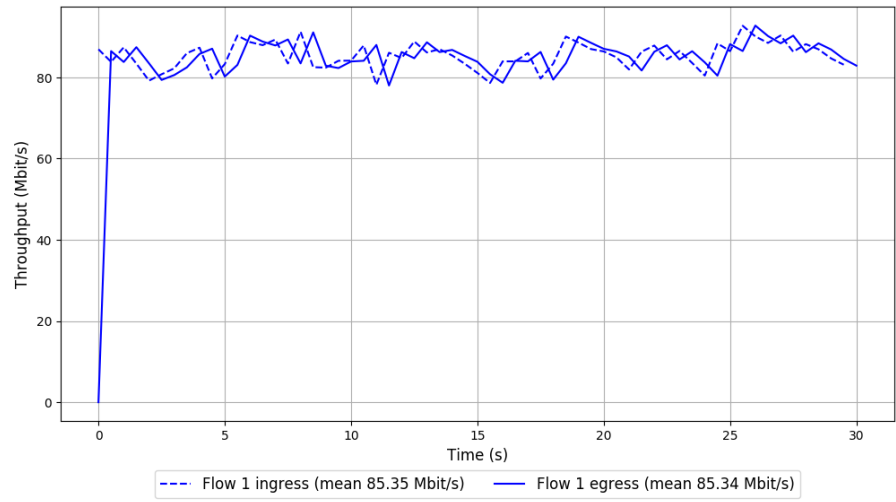
-- Flow 1:

Average throughput: 85.34 Mbit/s

95th percentile per-packet one-way delay: 2.933 ms

Loss rate: 0.01%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-09-11 07:33:29

End at: 2018-09-11 07:33:59

Local clock offset: 2.502 ms

Remote clock offset: 0.111 ms

Below is generated by plot.py at 2018-09-11 08:56:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.66 Mbit/s

95th percentile per-packet one-way delay: 3.928 ms

Loss rate: 0.01%

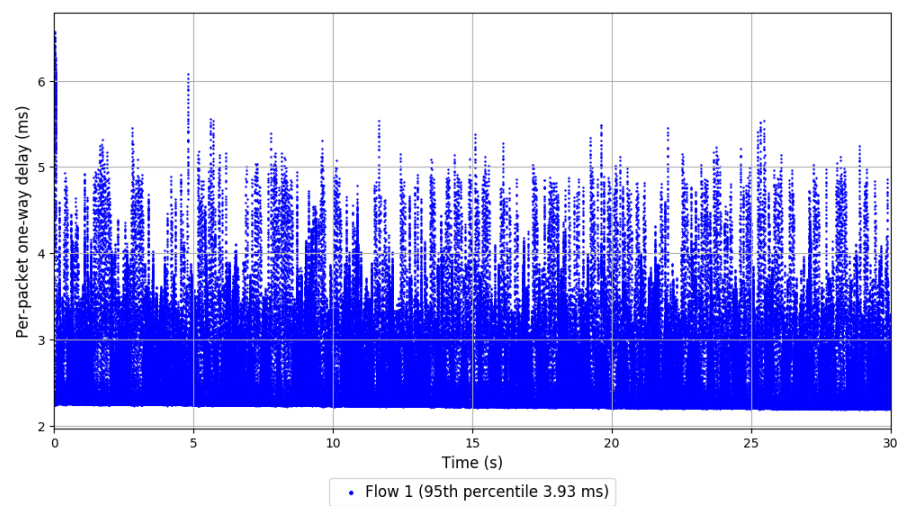
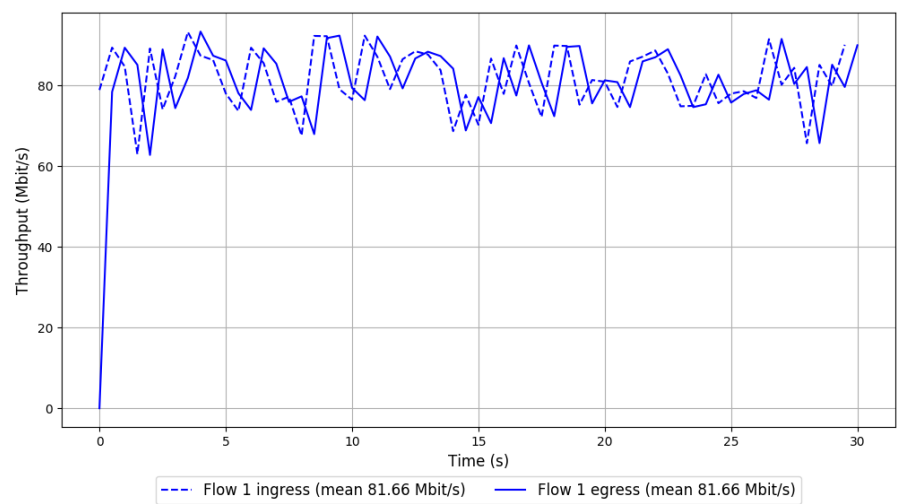
-- Flow 1:

Average throughput: 81.66 Mbit/s

95th percentile per-packet one-way delay: 3.928 ms

Loss rate: 0.01%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-11 07:53:47

End at: 2018-09-11 07:54:17

Local clock offset: 3.786 ms

Remote clock offset: 0.318 ms

Below is generated by plot.py at 2018-09-11 08:56:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.17 Mbit/s

95th percentile per-packet one-way delay: 4.070 ms

Loss rate: 0.01%

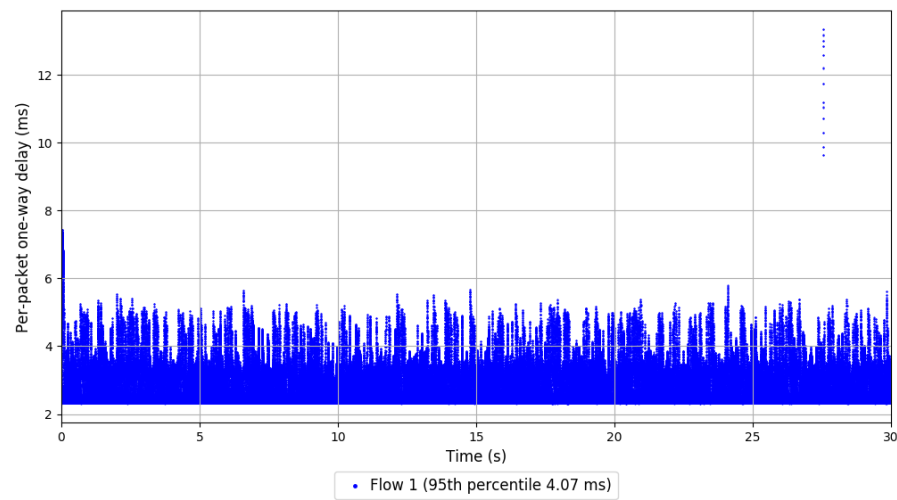
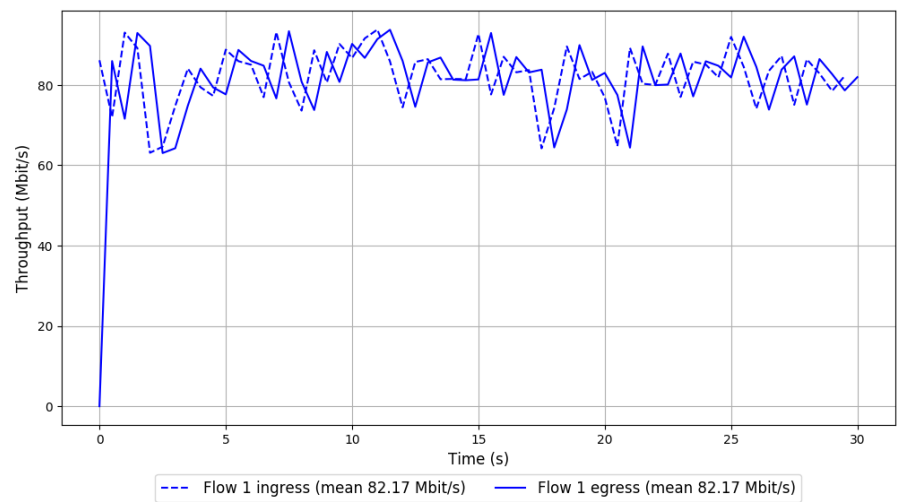
-- Flow 1:

Average throughput: 82.17 Mbit/s

95th percentile per-packet one-way delay: 4.070 ms

Loss rate: 0.01%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-11 08:14:07

End at: 2018-09-11 08:14:37

Local clock offset: 2.354 ms

Remote clock offset: 0.401 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.95 Mbit/s

95th percentile per-packet one-way delay: 3.065 ms

Loss rate: 0.01%

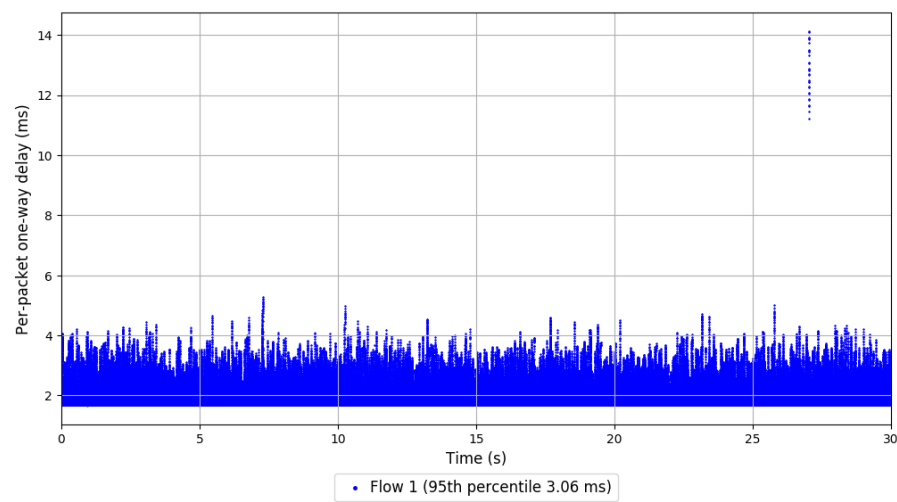
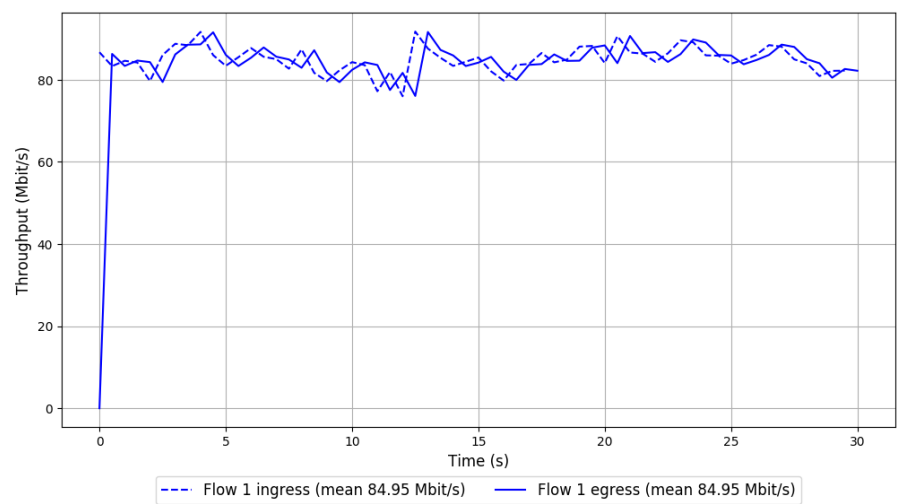
-- Flow 1:

Average throughput: 84.95 Mbit/s

95th percentile per-packet one-way delay: 3.065 ms

Loss rate: 0.01%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-11 08:34:24

End at: 2018-09-11 08:34:54

Local clock offset: 5.472 ms

Remote clock offset: 0.409 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.64 Mbit/s

95th percentile per-packet one-way delay: 4.046 ms

Loss rate: 0.02%

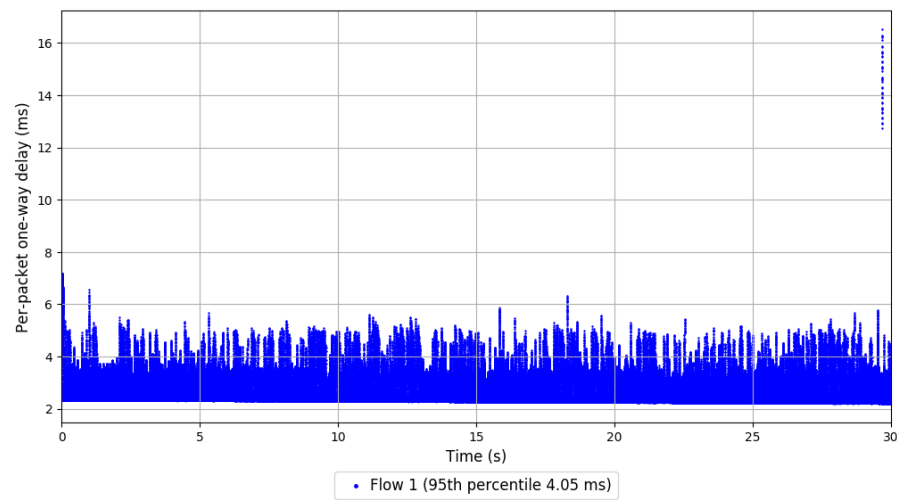
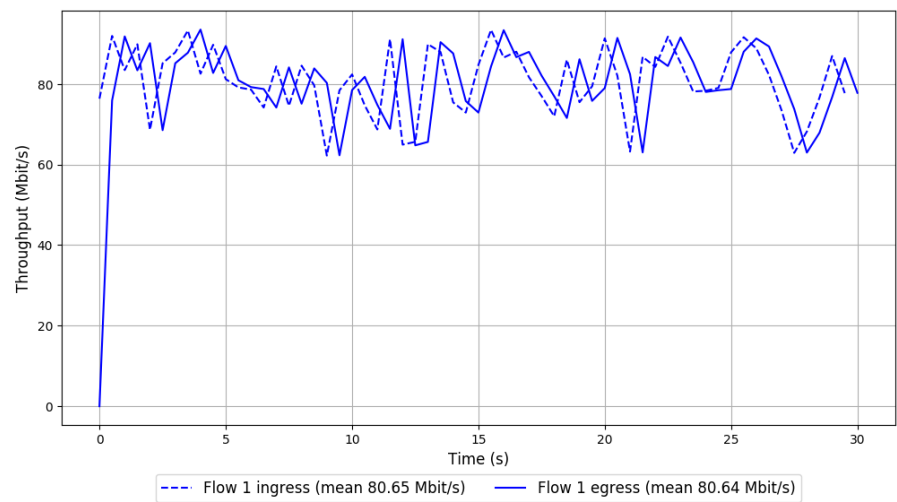
-- Flow 1:

Average throughput: 80.64 Mbit/s

95th percentile per-packet one-way delay: 4.046 ms

Loss rate: 0.02%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-11 07:31:12

End at: 2018-09-11 07:31:42

Local clock offset: 2.202 ms

Remote clock offset: 0.118 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.48 Mbit/s

95th percentile per-packet one-way delay: 9.489 ms

Loss rate: 0.05%

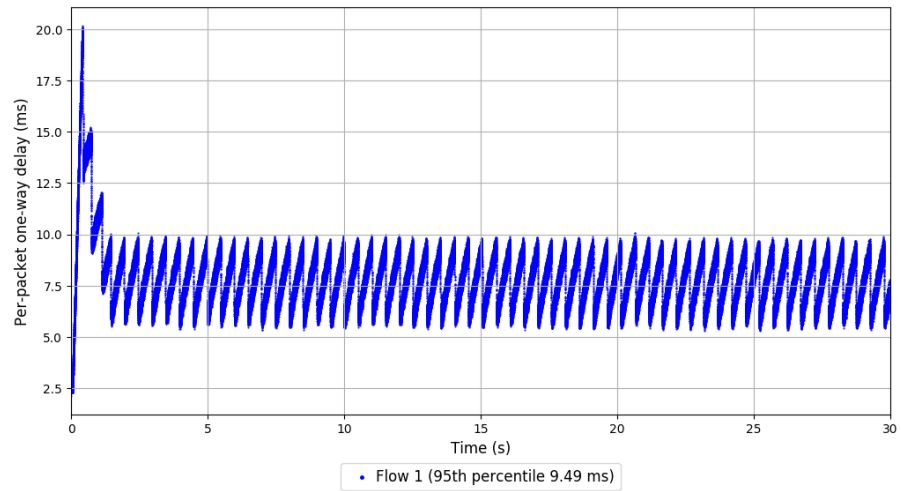
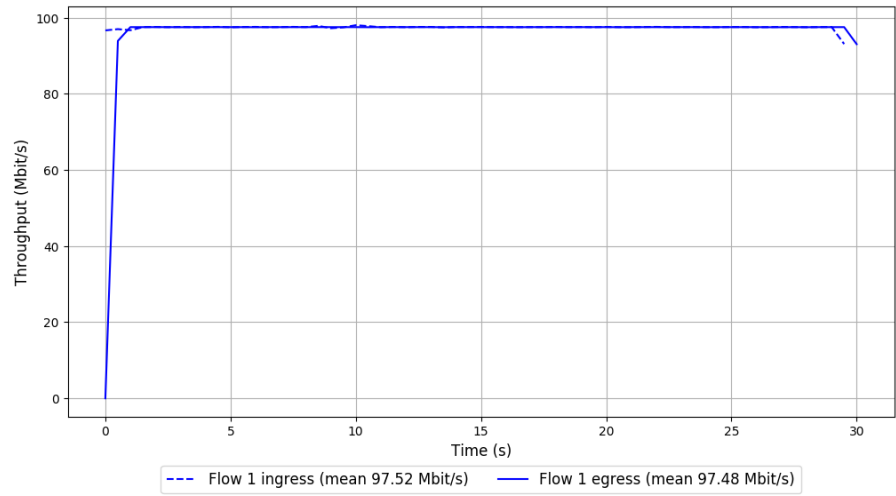
-- Flow 1:

Average throughput: 97.48 Mbit/s

95th percentile per-packet one-way delay: 9.489 ms

Loss rate: 0.05%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-11 07:51:30

End at: 2018-09-11 07:52:00

Local clock offset: 3.769 ms

Remote clock offset: 0.324 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 9.613 ms

Loss rate: 0.06%

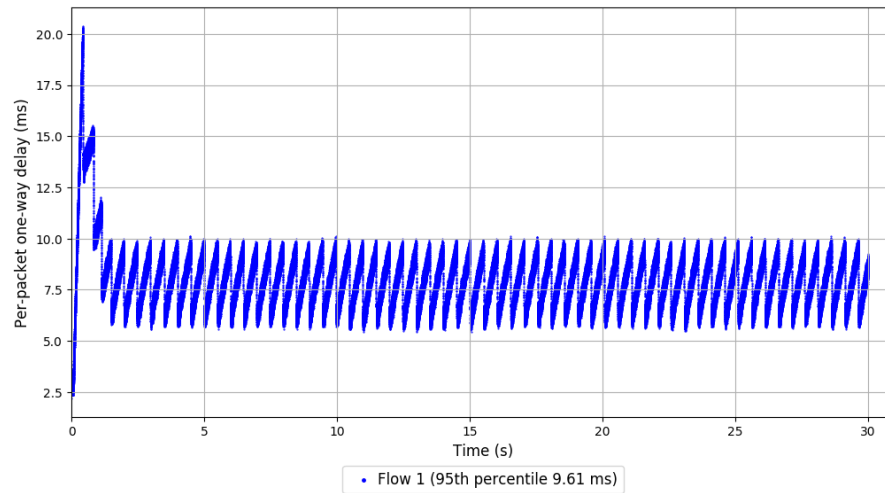
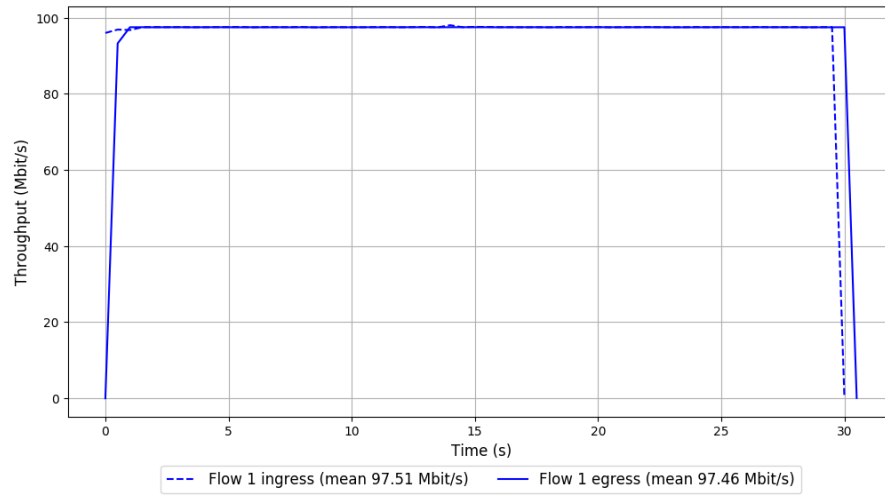
-- Flow 1:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 9.613 ms

Loss rate: 0.06%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-11 08:11:49

End at: 2018-09-11 08:12:19

Local clock offset: 3.173 ms

Remote clock offset: 0.451 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.37 Mbit/s

95th percentile per-packet one-way delay: 9.577 ms

Loss rate: 0.05%

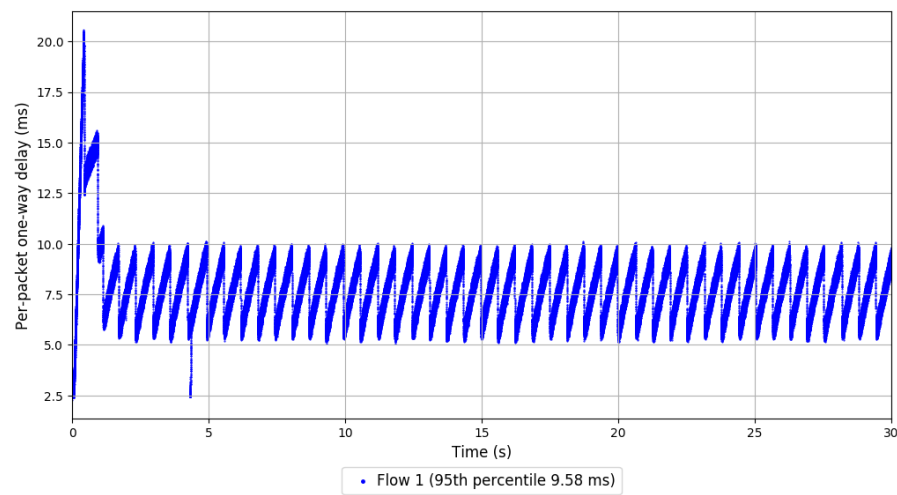
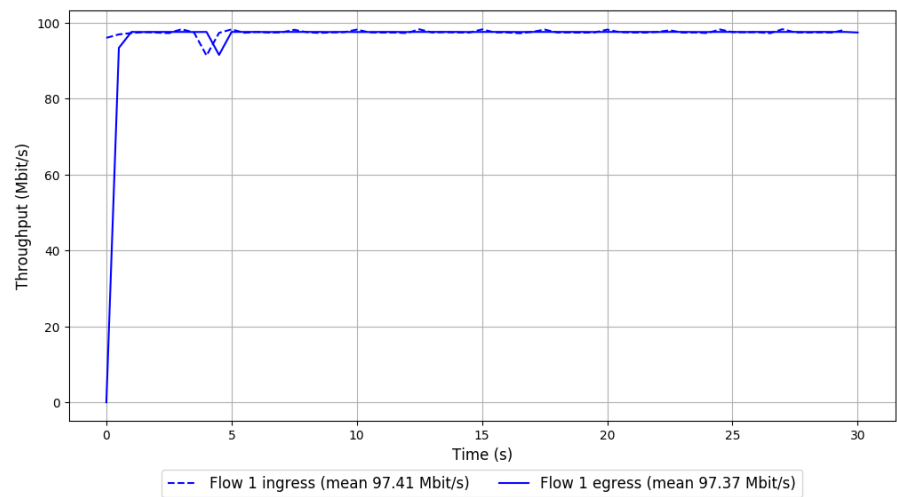
-- Flow 1:

Average throughput: 97.37 Mbit/s

95th percentile per-packet one-way delay: 9.577 ms

Loss rate: 0.05%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-11 08:32:07

End at: 2018-09-11 08:32:37

Local clock offset: 3.966 ms

Remote clock offset: 0.464 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.43 Mbit/s

95th percentile per-packet one-way delay: 8.597 ms

Loss rate: 0.04%

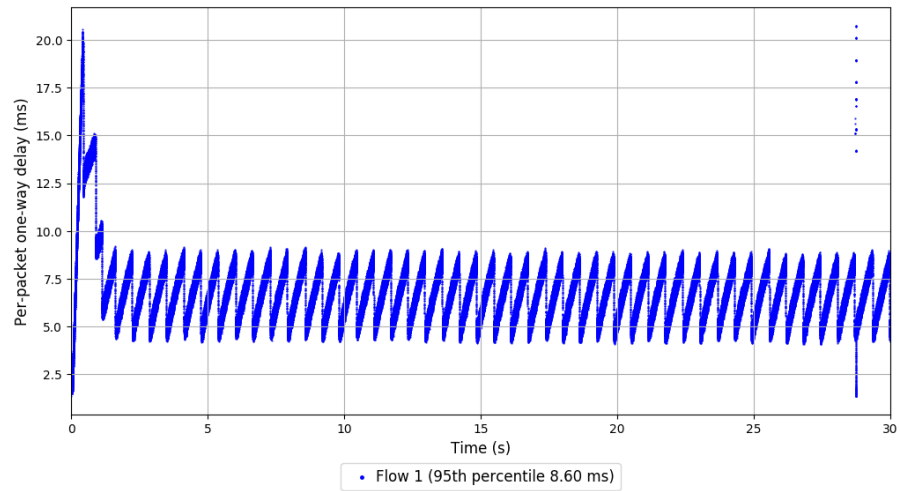
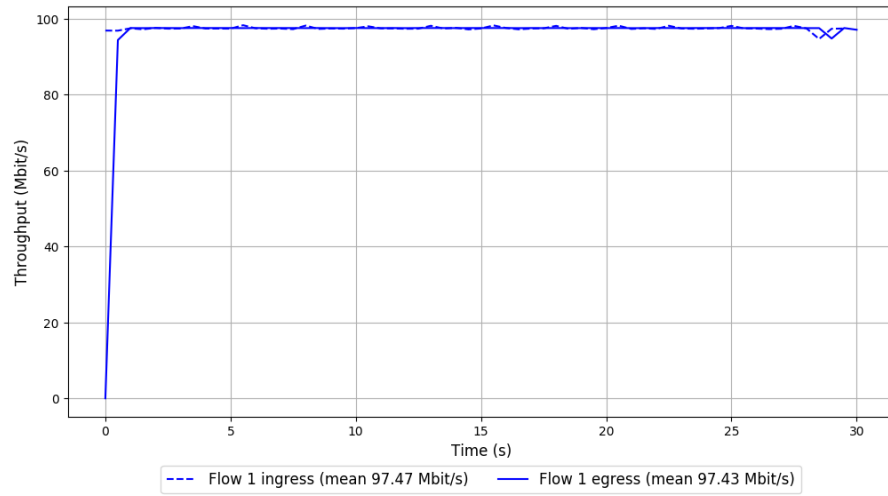
-- Flow 1:

Average throughput: 97.43 Mbit/s

95th percentile per-packet one-way delay: 8.597 ms

Loss rate: 0.04%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-11 08:52:28

End at: 2018-09-11 08:52:58

Local clock offset: 8.337 ms

Remote clock offset: 0.603 ms

Below is generated by plot.py at 2018-09-11 08:57:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 9.552 ms

Loss rate: 0.05%

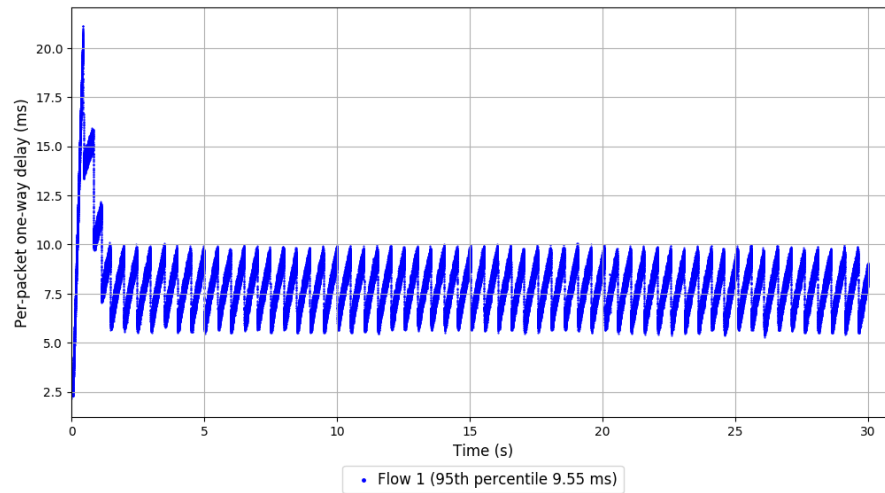
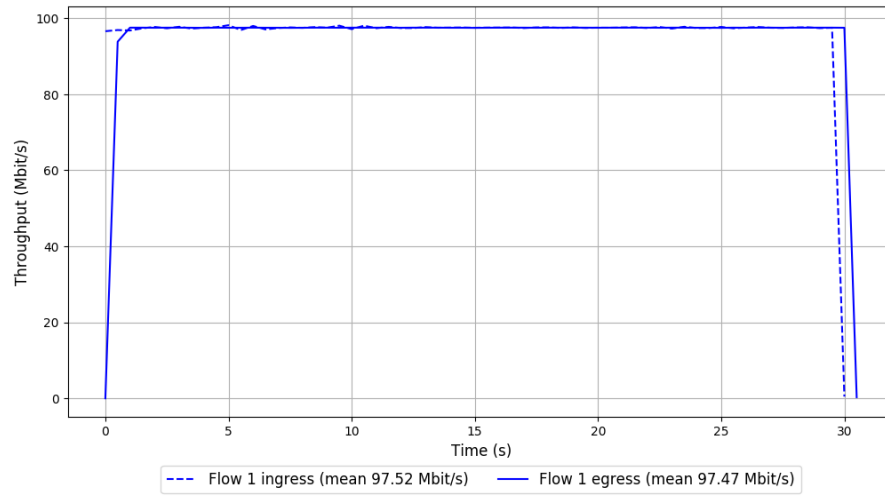
-- Flow 1:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 9.552 ms

Loss rate: 0.05%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-11 07:19:53

End at: 2018-09-11 07:20:23

Local clock offset: 1.717 ms

Remote clock offset: 0.047 ms

Below is generated by plot.py at 2018-09-11 08:58:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.02 Mbit/s

95th percentile per-packet one-way delay: 722.956 ms

Loss rate: 3.12%

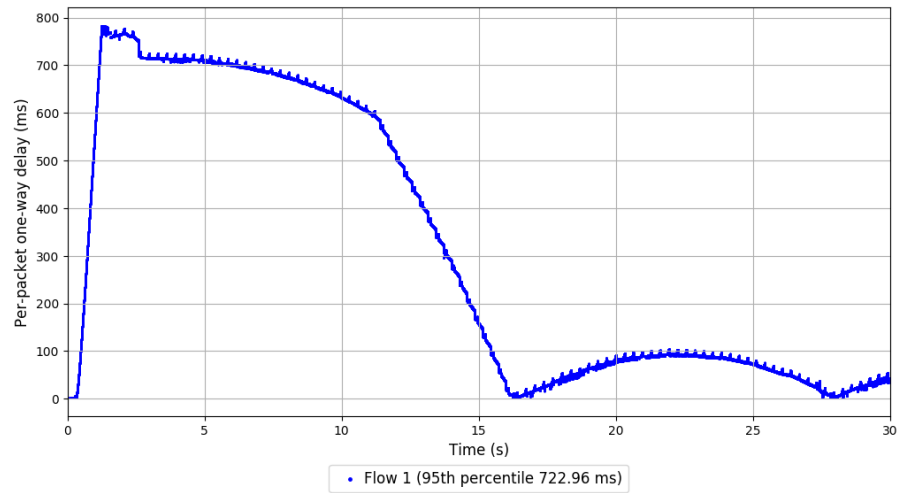
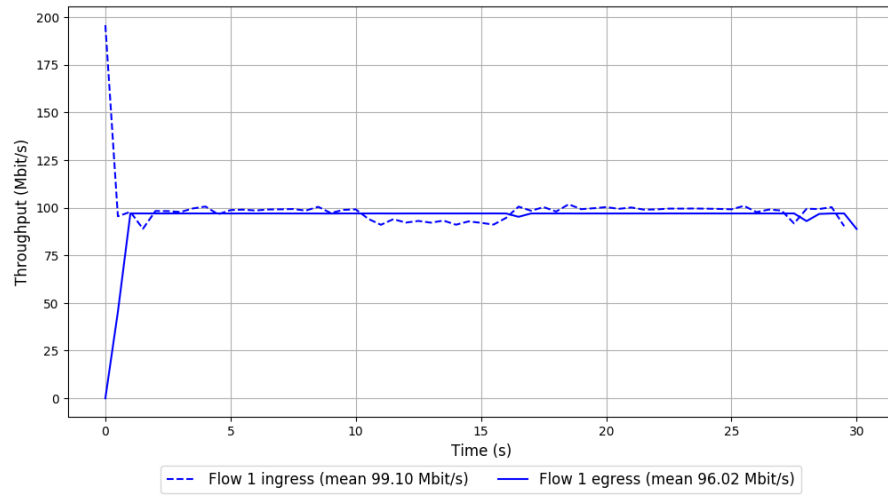
-- Flow 1:

Average throughput: 96.02 Mbit/s

95th percentile per-packet one-way delay: 722.956 ms

Loss rate: 3.12%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-11 07:40:14

End at: 2018-09-11 07:40:44

Local clock offset: 2.415 ms

Remote clock offset: 0.146 ms

Below is generated by plot.py at 2018-09-11 08:58:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.00 Mbit/s

95th percentile per-packet one-way delay: 725.068 ms

Loss rate: 3.09%

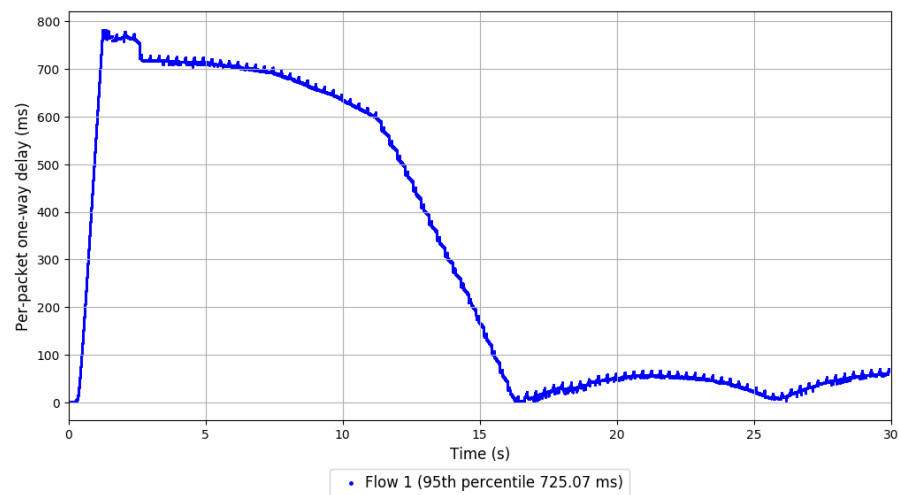
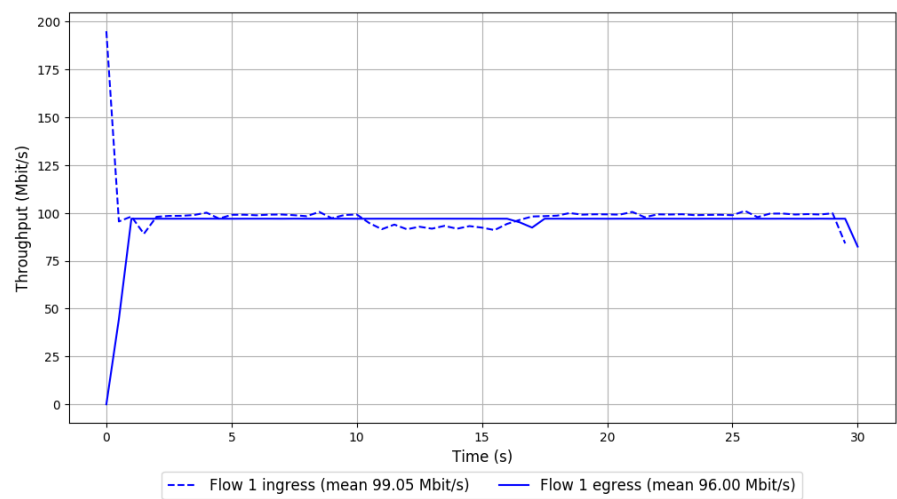
-- Flow 1:

Average throughput: 96.00 Mbit/s

95th percentile per-packet one-way delay: 725.068 ms

Loss rate: 3.09%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-11 08:00:31

End at: 2018-09-11 08:01:01

Local clock offset: 3.683 ms

Remote clock offset: 0.442 ms

Below is generated by plot.py at 2018-09-11 08:58:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 708.891 ms

Loss rate: 4.44%

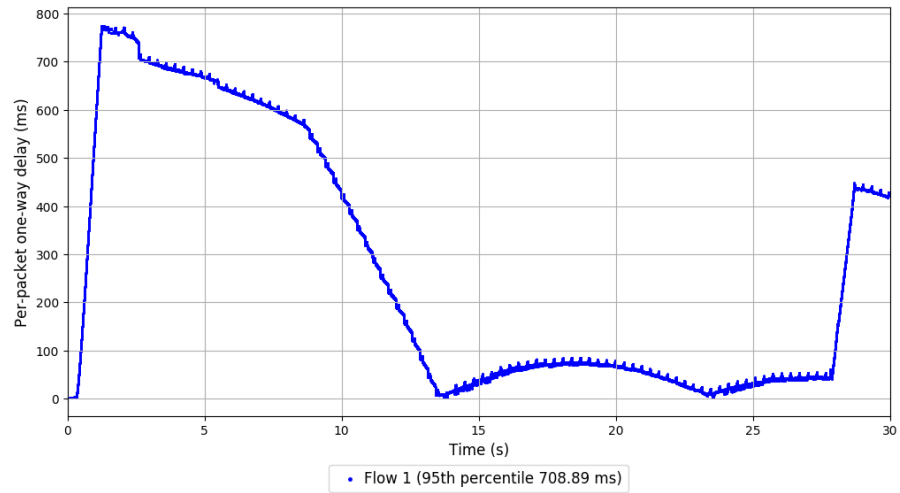
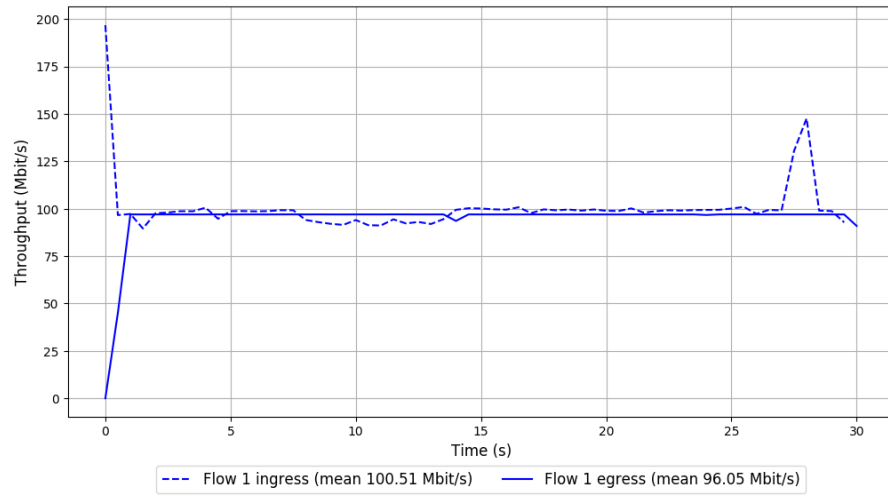
-- Flow 1:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 708.891 ms

Loss rate: 4.44%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-11 08:20:52

End at: 2018-09-11 08:21:22

Local clock offset: 2.974 ms

Remote clock offset: 0.544 ms

Below is generated by plot.py at 2018-09-11 08:58:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.92 Mbit/s

95th percentile per-packet one-way delay: 735.369 ms

Loss rate: 3.27%

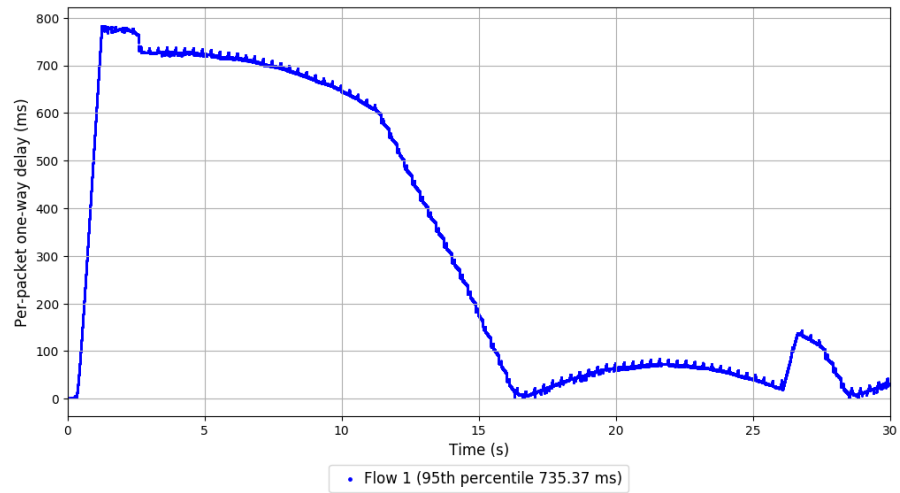
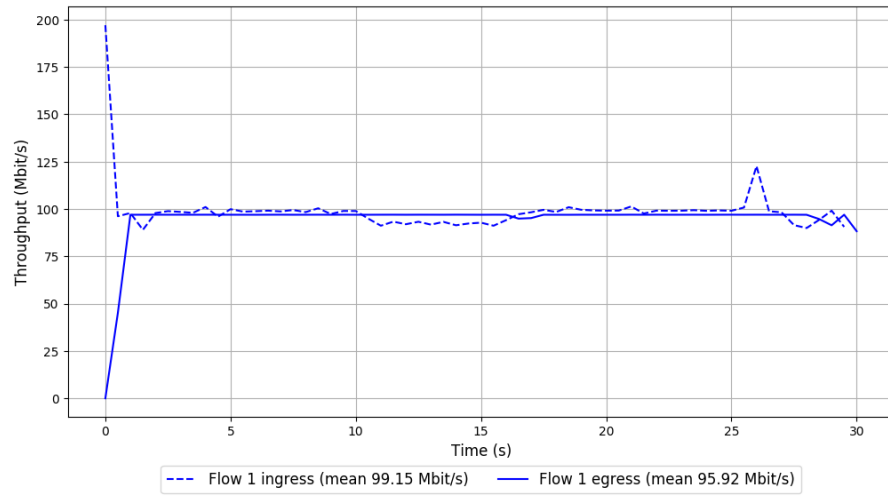
-- Flow 1:

Average throughput: 95.92 Mbit/s

95th percentile per-packet one-way delay: 735.369 ms

Loss rate: 3.27%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-11 08:41:10

End at: 2018-09-11 08:41:40

Local clock offset: 6.999 ms

Remote clock offset: 0.491 ms

Below is generated by plot.py at 2018-09-11 08:59:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.02 Mbit/s

95th percentile per-packet one-way delay: 728.516 ms

Loss rate: 3.14%

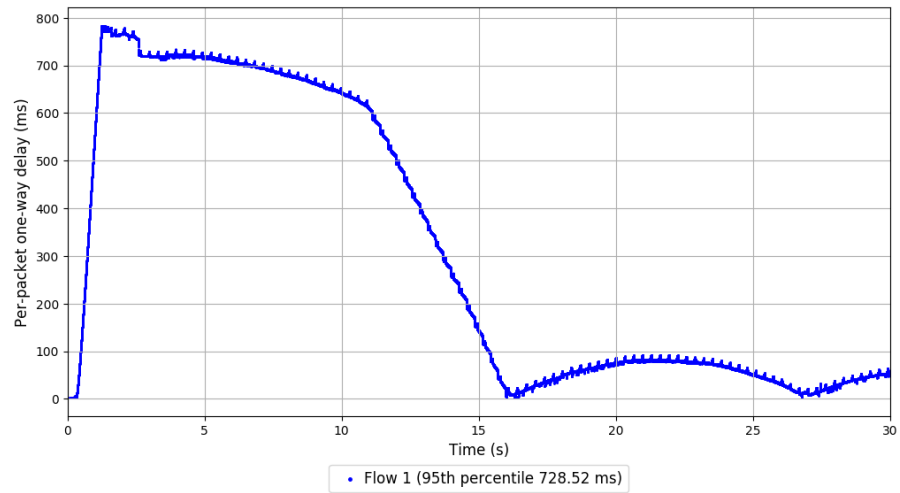
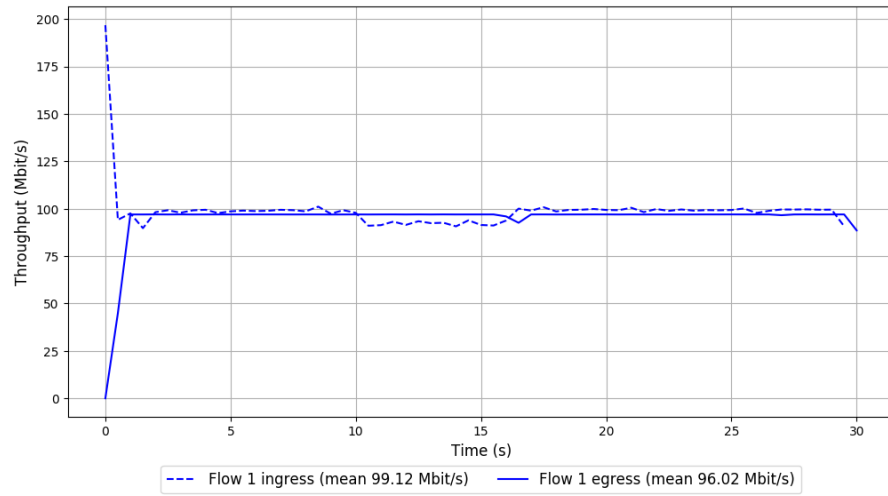
-- Flow 1:

Average throughput: 96.02 Mbit/s

95th percentile per-packet one-way delay: 728.516 ms

Loss rate: 3.14%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-11 07:27:50

End at: 2018-09-11 07:28:20

Local clock offset: 0.742 ms

Remote clock offset: -0.041 ms

Below is generated by plot.py at 2018-09-11 08:59:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.44 Mbit/s

95th percentile per-packet one-way delay: 29.126 ms

Loss rate: 1.18%

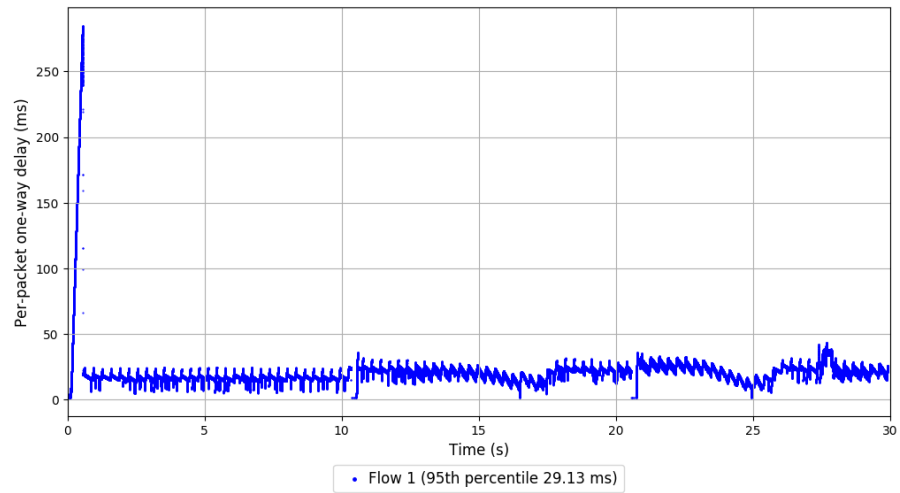
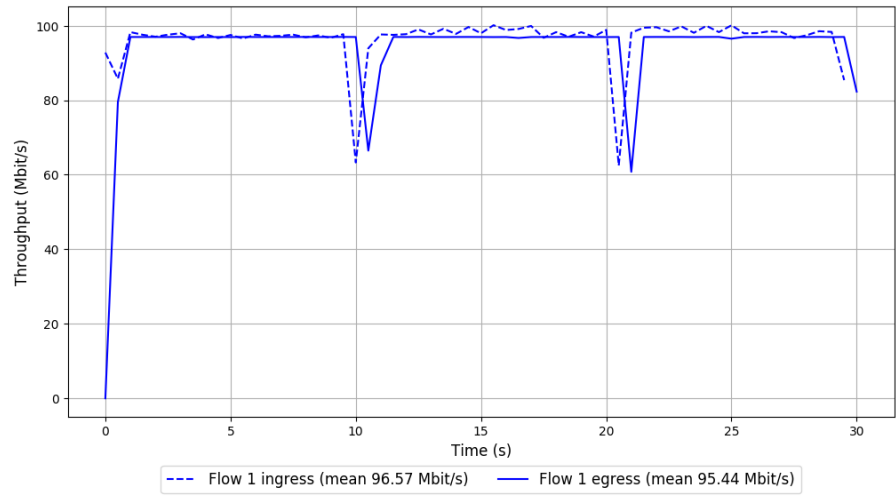
-- Flow 1:

Average throughput: 95.44 Mbit/s

95th percentile per-packet one-way delay: 29.126 ms

Loss rate: 1.18%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-11 07:48:07

End at: 2018-09-11 07:48:37

Local clock offset: 2.81 ms

Remote clock offset: 0.283 ms

Below is generated by plot.py at 2018-09-11 08:59:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.44 Mbit/s

95th percentile per-packet one-way delay: 27.674 ms

Loss rate: 1.40%

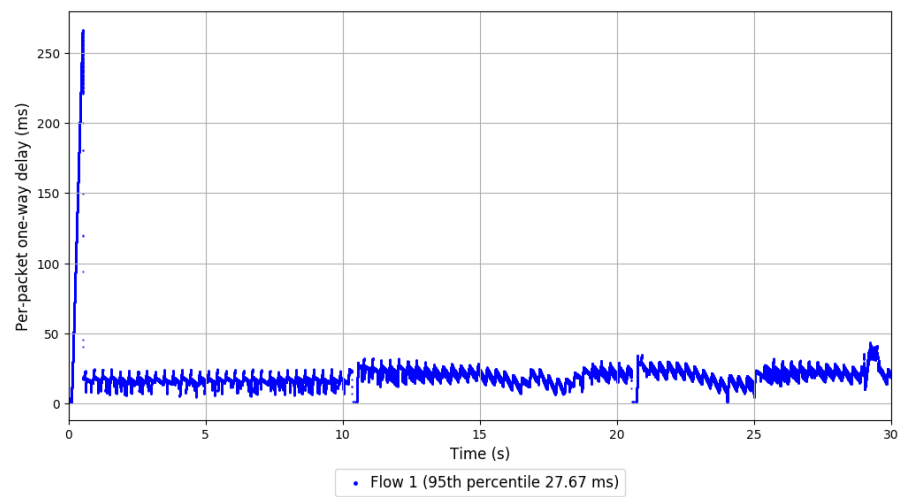
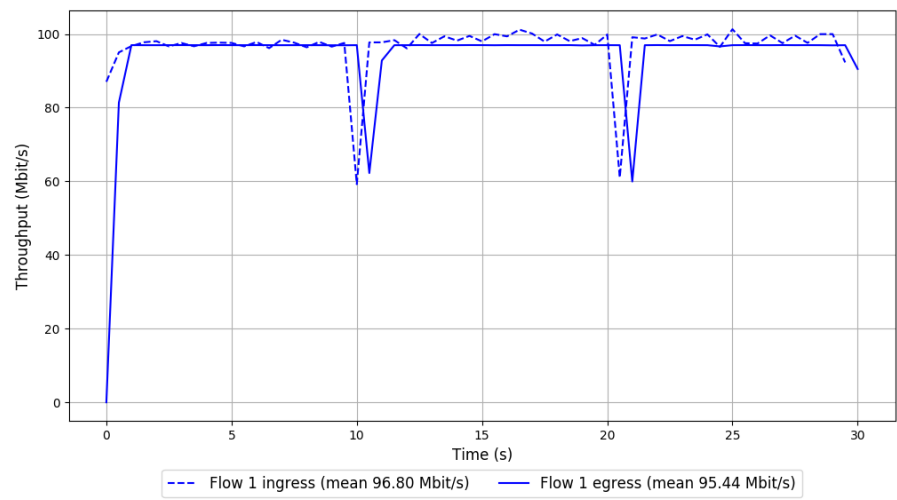
-- Flow 1:

Average throughput: 95.44 Mbit/s

95th percentile per-packet one-way delay: 27.674 ms

Loss rate: 1.40%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-11 08:08:27

End at: 2018-09-11 08:08:57

Local clock offset: 3.248 ms

Remote clock offset: 0.396 ms

Below is generated by plot.py at 2018-09-11 08:59:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.38 Mbit/s

95th percentile per-packet one-way delay: 27.693 ms

Loss rate: 1.16%

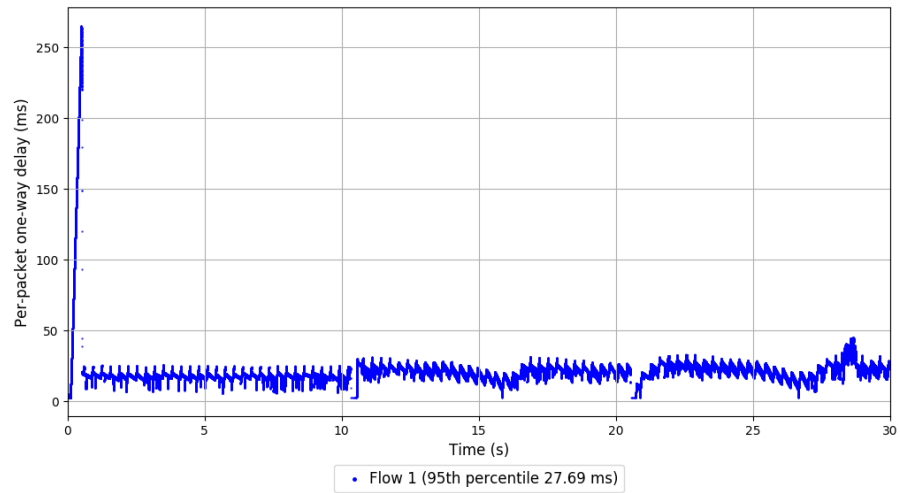
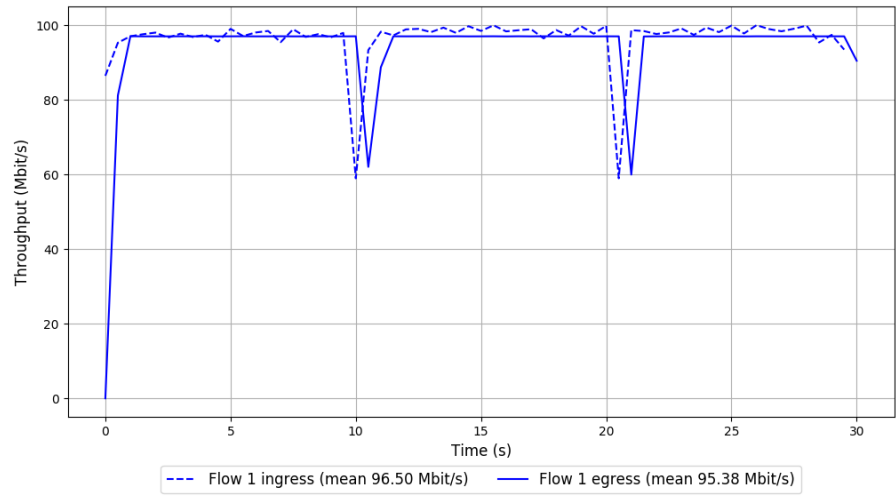
-- Flow 1:

Average throughput: 95.38 Mbit/s

95th percentile per-packet one-way delay: 27.693 ms

Loss rate: 1.16%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-11 08:28:45

End at: 2018-09-11 08:29:15

Local clock offset: 2.479 ms

Remote clock offset: 0.53 ms

Below is generated by plot.py at 2018-09-11 08:59:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.42 Mbit/s

95th percentile per-packet one-way delay: 26.666 ms

Loss rate: 1.30%

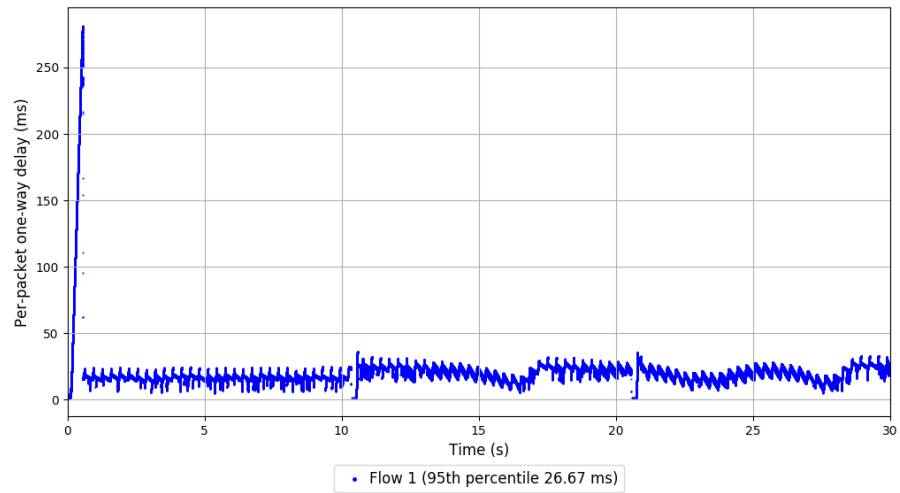
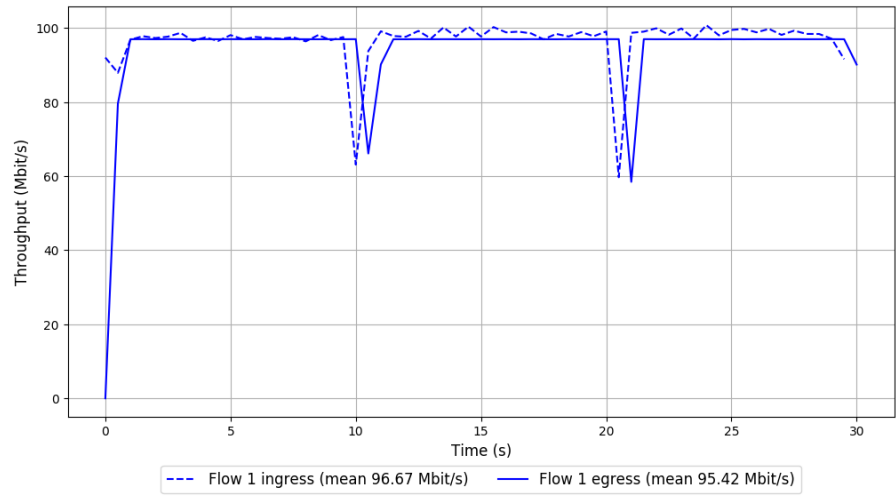
-- Flow 1:

Average throughput: 95.42 Mbit/s

95th percentile per-packet one-way delay: 26.666 ms

Loss rate: 1.30%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-11 08:49:06

End at: 2018-09-11 08:49:36

Local clock offset: 7.234 ms

Remote clock offset: 0.516 ms

Below is generated by plot.py at 2018-09-11 08:59:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.30 Mbit/s

95th percentile per-packet one-way delay: 26.175 ms

Loss rate: 1.35%

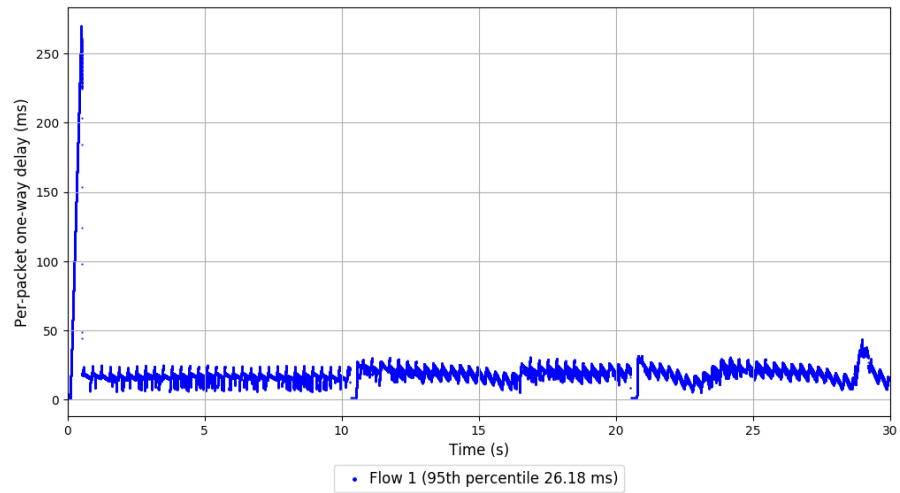
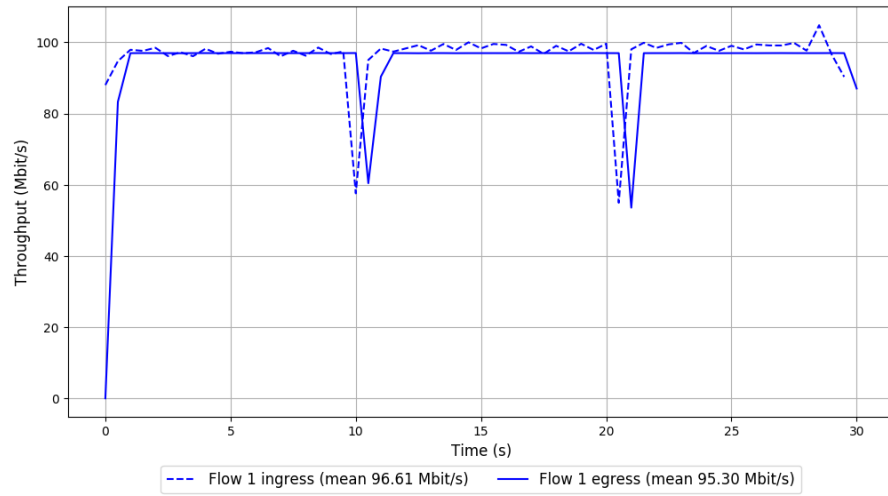
-- Flow 1:

Average throughput: 95.30 Mbit/s

95th percentile per-packet one-way delay: 26.175 ms

Loss rate: 1.35%

Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2018-09-11 07:12:00

End at: 2018-09-11 07:12:30

Local clock offset: 1.259 ms

Remote clock offset: -0.035 ms

Below is generated by plot.py at 2018-09-11 08:59:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.38 Mbit/s

95th percentile per-packet one-way delay: 4.352 ms

Loss rate: 0.02%

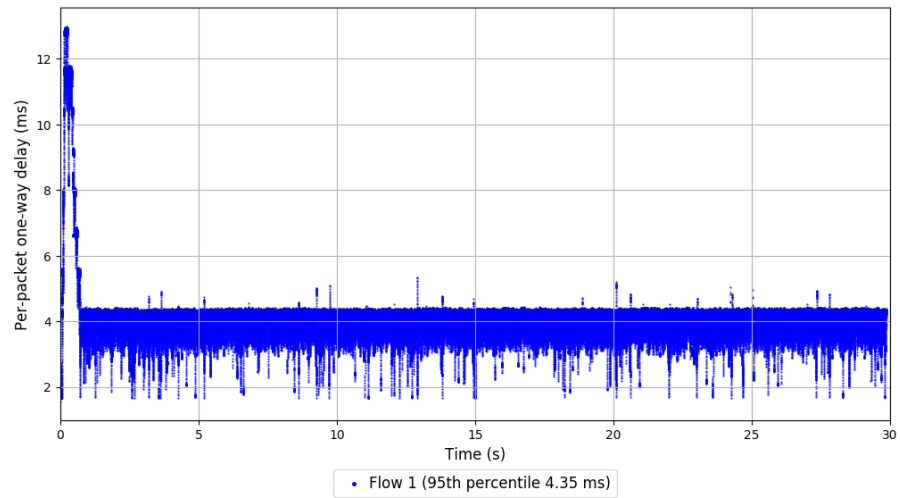
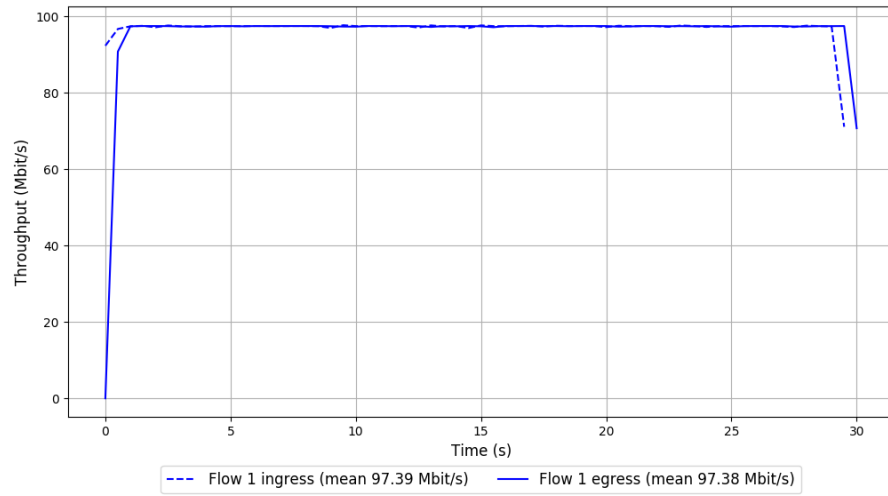
-- Flow 1:

Average throughput: 97.38 Mbit/s

95th percentile per-packet one-way delay: 4.352 ms

Loss rate: 0.02%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-11 07:32:20

End at: 2018-09-11 07:32:50

Local clock offset: 1.525 ms

Remote clock offset: 0.064 ms

Below is generated by plot.py at 2018-09-11 08:59:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.29 Mbit/s

95th percentile per-packet one-way delay: 4.145 ms

Loss rate: 0.01%

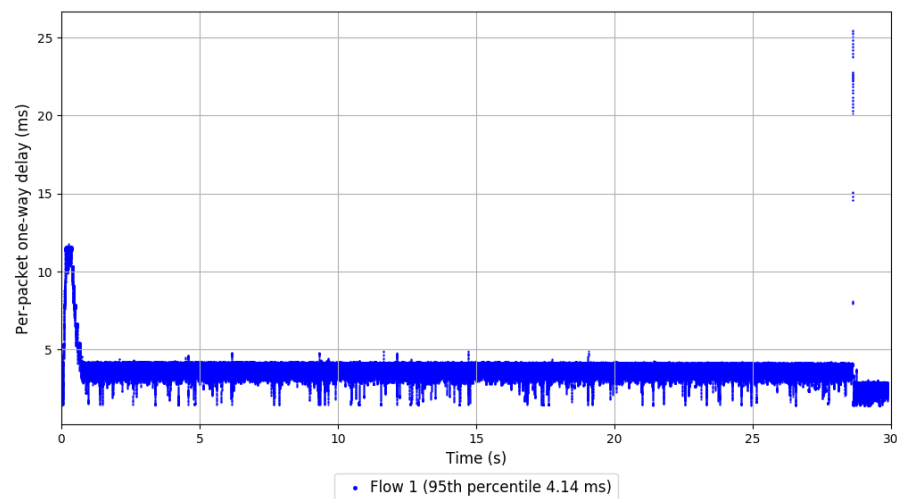
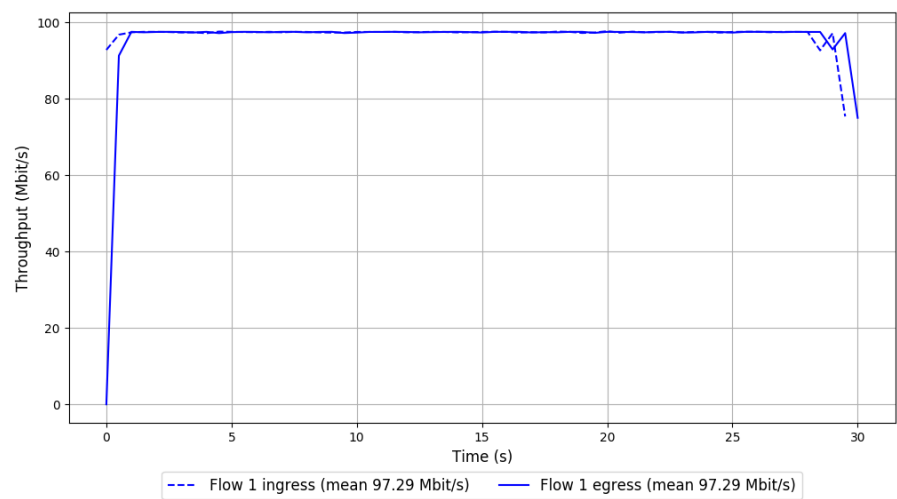
-- Flow 1:

Average throughput: 97.29 Mbit/s

95th percentile per-packet one-way delay: 4.145 ms

Loss rate: 0.01%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-11 07:52:38

End at: 2018-09-11 07:53:08

Local clock offset: 3.022 ms

Remote clock offset: 0.32 ms

Below is generated by plot.py at 2018-09-11 09:00:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 4.285 ms

Loss rate: 0.02%

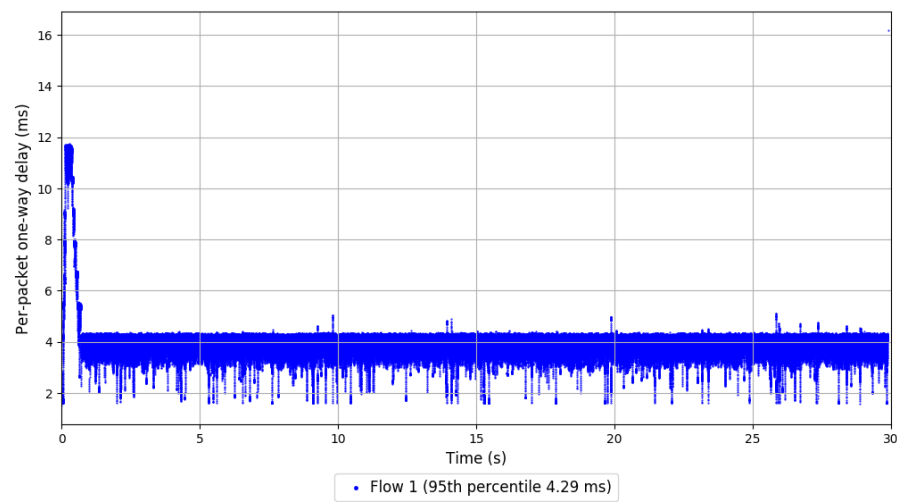
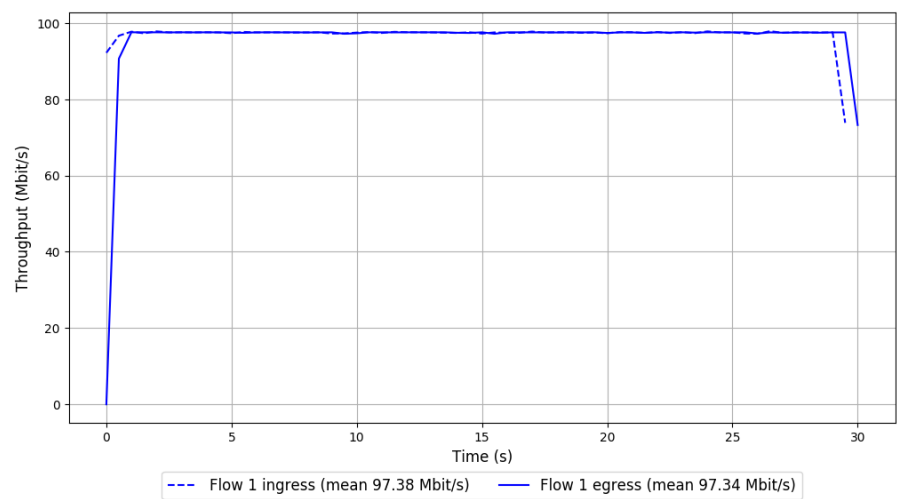
-- Flow 1:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 4.285 ms

Loss rate: 0.02%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-11 08:12:57

End at: 2018-09-11 08:13:28

Local clock offset: 3.149 ms

Remote clock offset: 0.521 ms

Below is generated by plot.py at 2018-09-11 09:00:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 5.048 ms

Loss rate: 0.01%

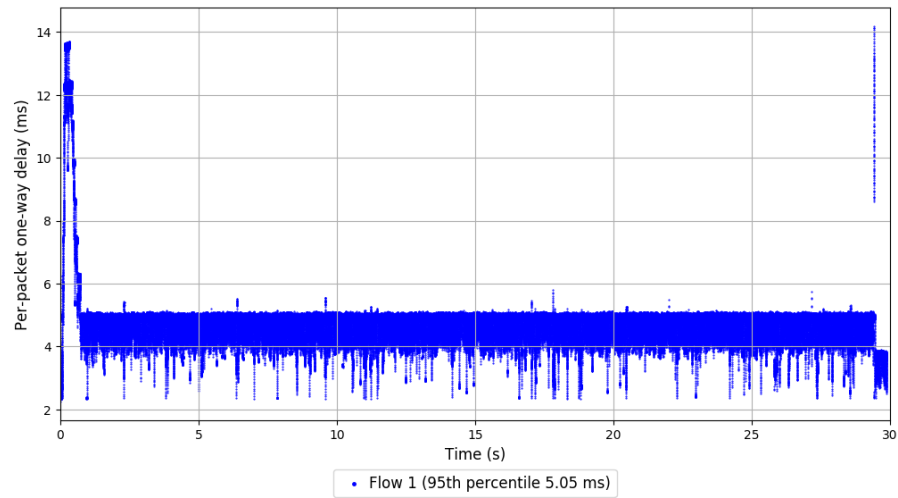
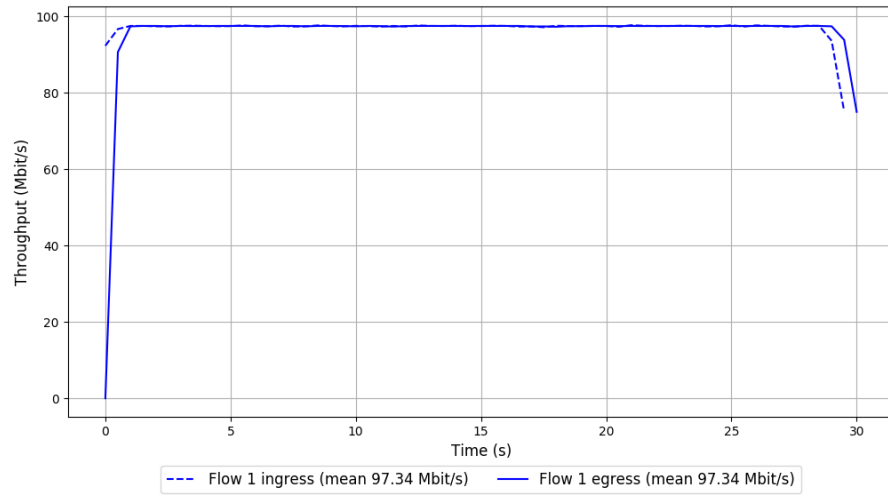
-- Flow 1:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 5.048 ms

Loss rate: 0.01%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-11 08:33:15

End at: 2018-09-11 08:33:45

Local clock offset: 5.134 ms

Remote clock offset: 0.497 ms

Below is generated by plot.py at 2018-09-11 09:00:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.32 Mbit/s

95th percentile per-packet one-way delay: 5.152 ms

Loss rate: 0.02%

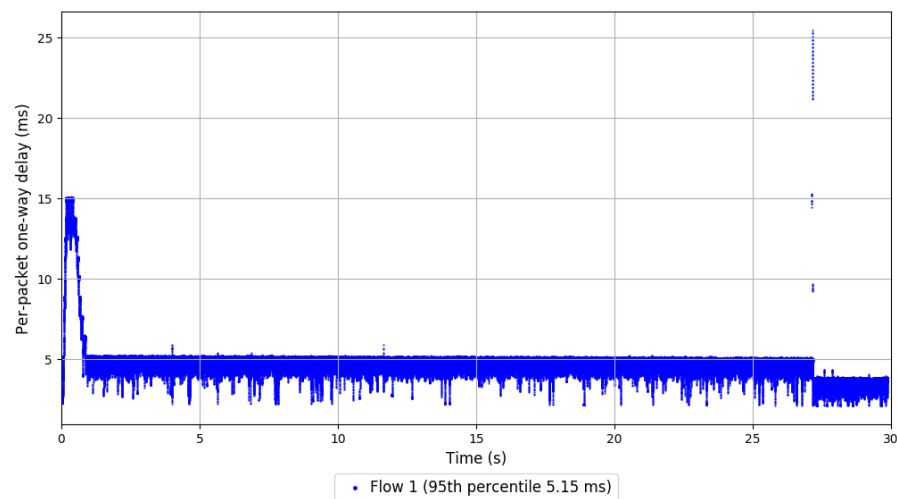
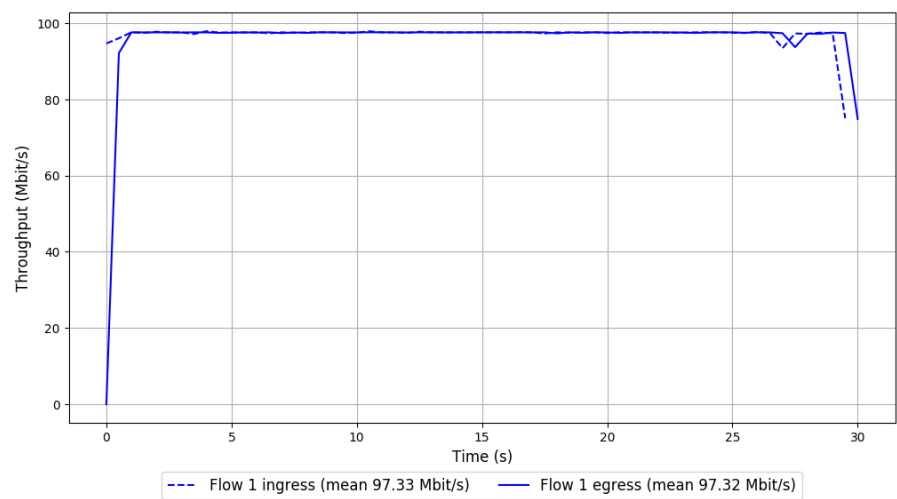
-- Flow 1:

Average throughput: 97.32 Mbit/s

95th percentile per-packet one-way delay: 5.152 ms

Loss rate: 0.02%

Run 5: Report of Indigo — Data Link

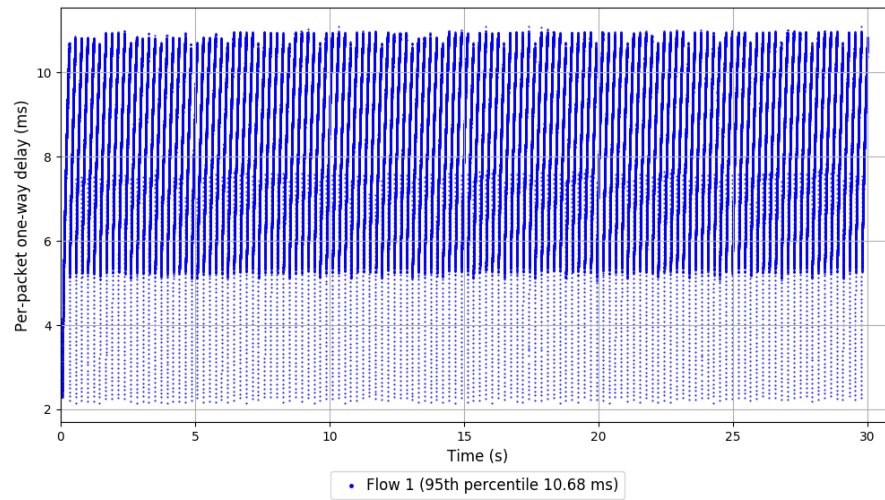
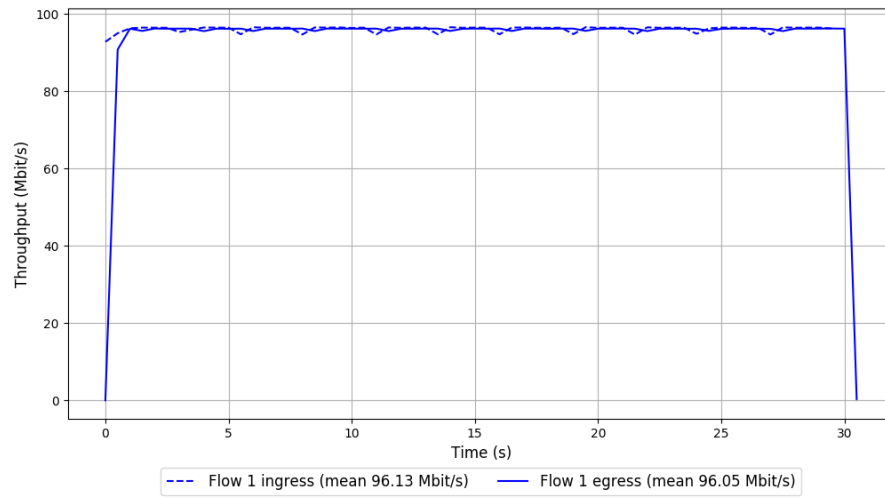


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-11 07:18:44
End at: 2018-09-11 07:19:14
Local clock offset: 1.738 ms
Remote clock offset: 0.048 ms

# Below is generated by plot.py at 2018-09-11 09:00:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.05 Mbit/s
95th percentile per-packet one-way delay: 10.680 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 96.05 Mbit/s
95th percentile per-packet one-way delay: 10.680 ms
Loss rate: 0.08%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-11 07:39:05

End at: 2018-09-11 07:39:35

Local clock offset: 2.395 ms

Remote clock offset: 0.142 ms

Below is generated by plot.py at 2018-09-11 09:00:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 10.038 ms

Loss rate: 0.07%

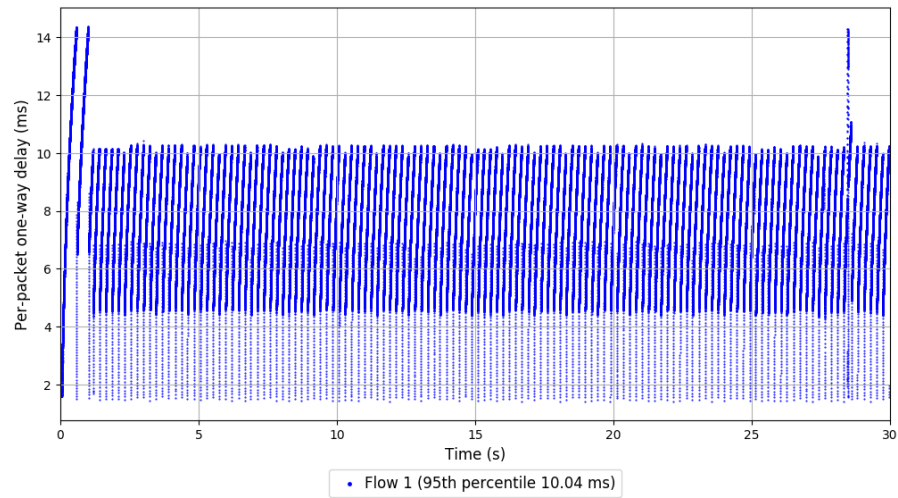
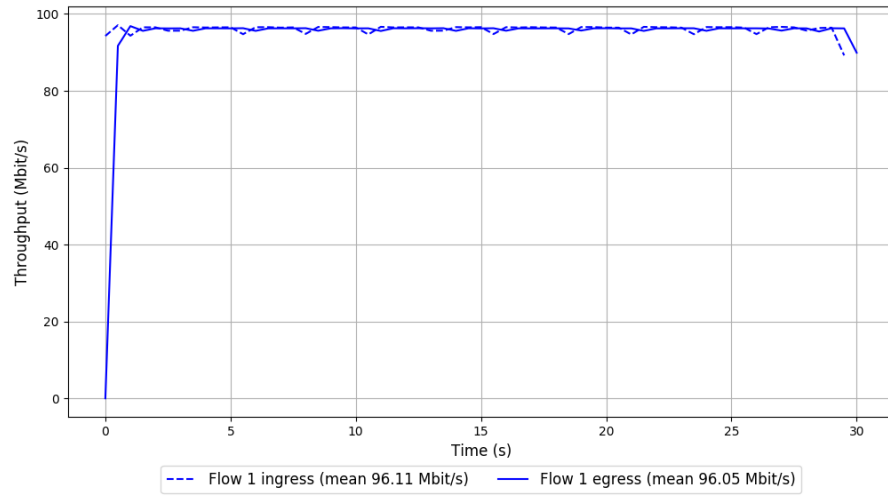
-- Flow 1:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 10.038 ms

Loss rate: 0.07%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-11 07:59:22

End at: 2018-09-11 07:59:52

Local clock offset: 3.034 ms

Remote clock offset: 0.326 ms

Below is generated by plot.py at 2018-09-11 09:00:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.06 Mbit/s

95th percentile per-packet one-way delay: 10.216 ms

Loss rate: 0.09%

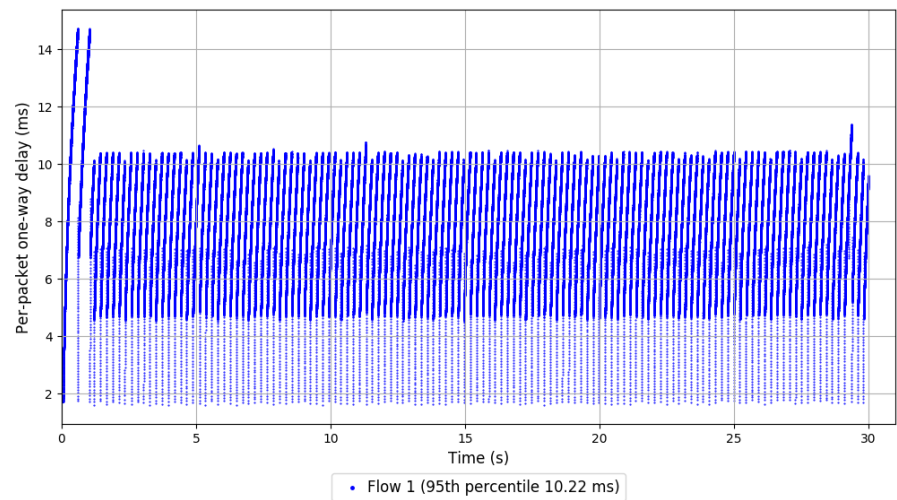
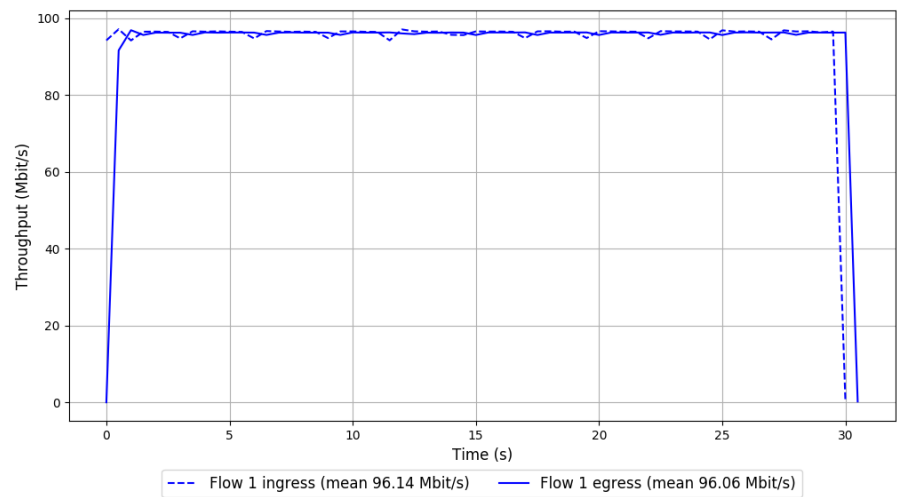
-- Flow 1:

Average throughput: 96.06 Mbit/s

95th percentile per-packet one-way delay: 10.216 ms

Loss rate: 0.09%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-11 08:19:43

End at: 2018-09-11 08:20:13

Local clock offset: 3.04 ms

Remote clock offset: 0.466 ms

Below is generated by plot.py at 2018-09-11 09:00:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.70 Mbit/s

95th percentile per-packet one-way delay: 10.619 ms

Loss rate: 0.08%

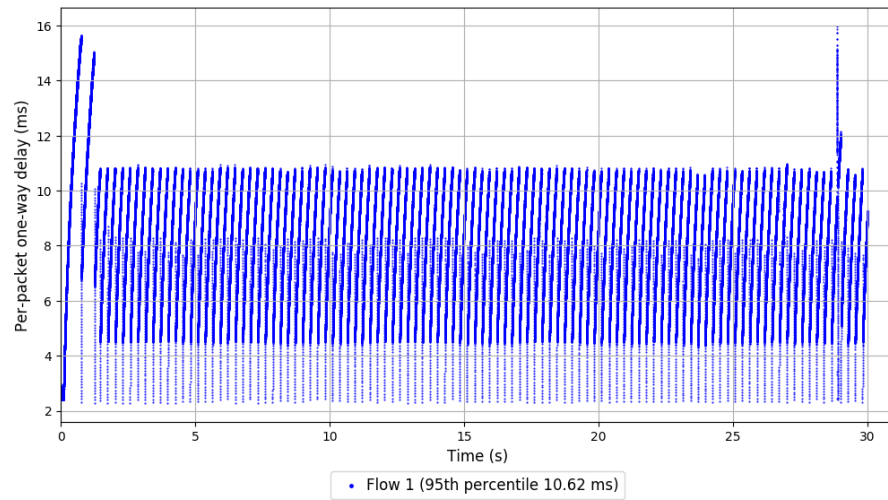
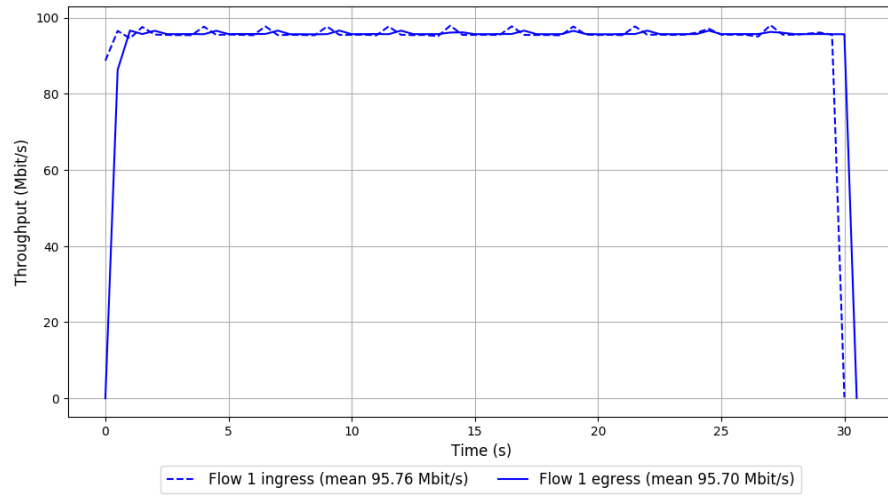
-- Flow 1:

Average throughput: 95.70 Mbit/s

95th percentile per-packet one-way delay: 10.619 ms

Loss rate: 0.08%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-11 08:40:00

End at: 2018-09-11 08:40:30

Local clock offset: 6.03 ms

Remote clock offset: 0.585 ms

Below is generated by plot.py at 2018-09-11 09:01:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.69 Mbit/s

95th percentile per-packet one-way delay: 9.664 ms

Loss rate: 0.08%

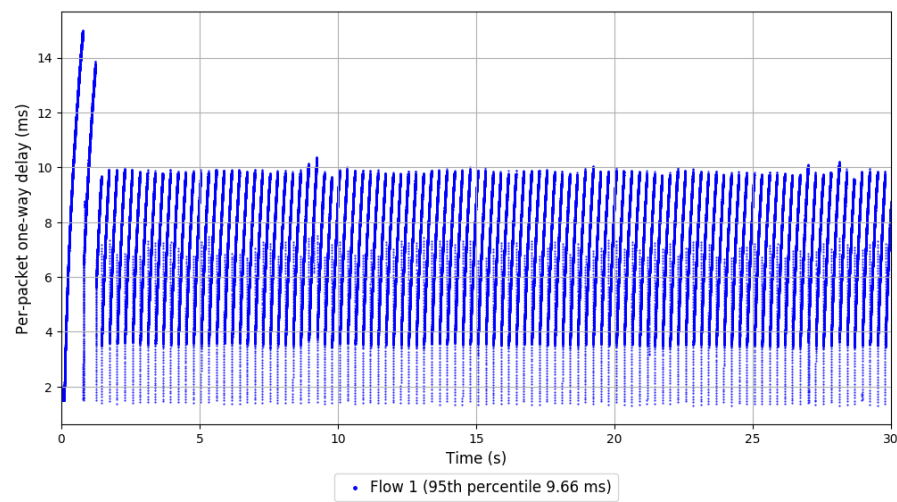
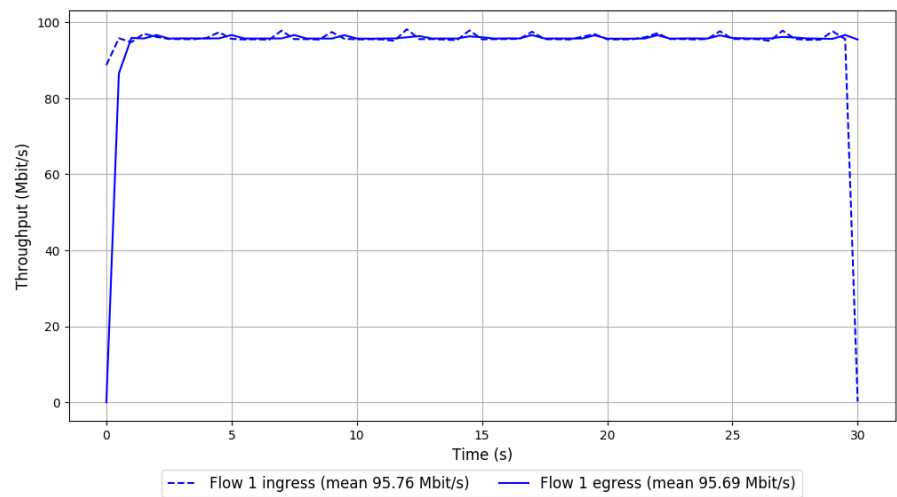
-- Flow 1:

Average throughput: 95.69 Mbit/s

95th percentile per-packet one-way delay: 9.664 ms

Loss rate: 0.08%

Run 5: Report of LEDBAT — Data Link

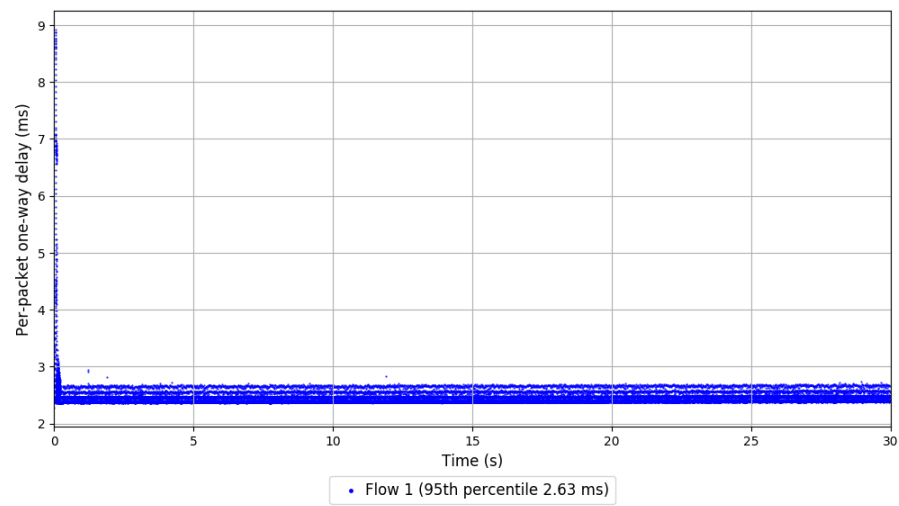
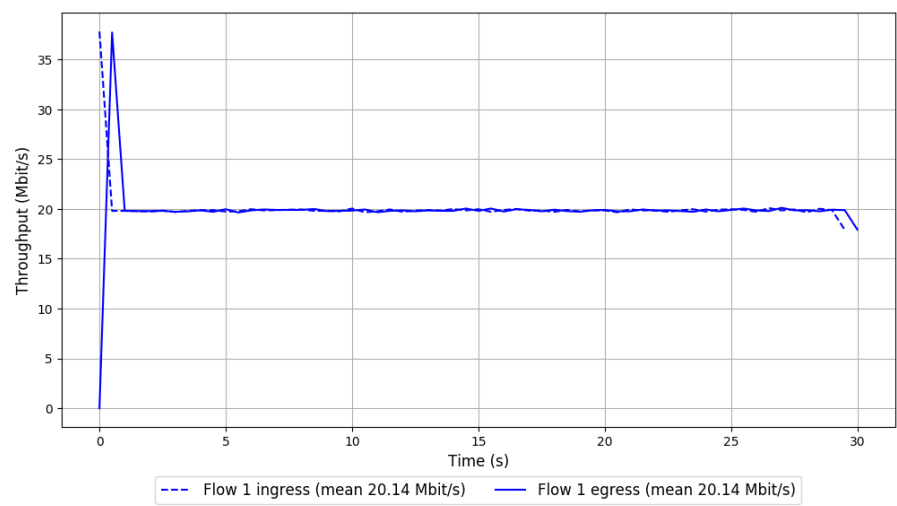


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-11 07:15:27
End at: 2018-09-11 07:15:57
Local clock offset: 1.926 ms
Remote clock offset: 0.036 ms

# Below is generated by plot.py at 2018-09-11 09:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 20.14 Mbit/s
95th percentile per-packet one-way delay: 2.628 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 20.14 Mbit/s
95th percentile per-packet one-way delay: 2.628 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-11 07:35:48

End at: 2018-09-11 07:36:18

Local clock offset: 2.094 ms

Remote clock offset: 0.112 ms

Below is generated by plot.py at 2018-09-11 09:01:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 20.15 Mbit/s

95th percentile per-packet one-way delay: 1.805 ms

Loss rate: 0.02%

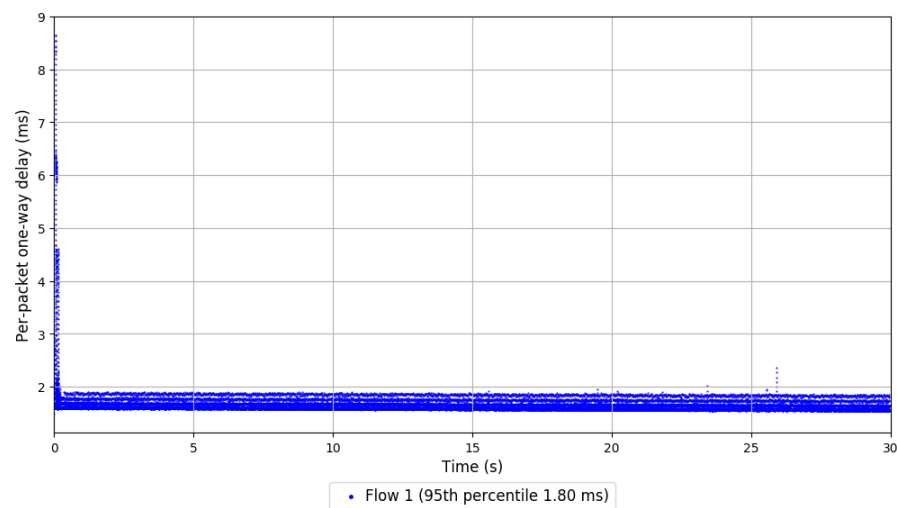
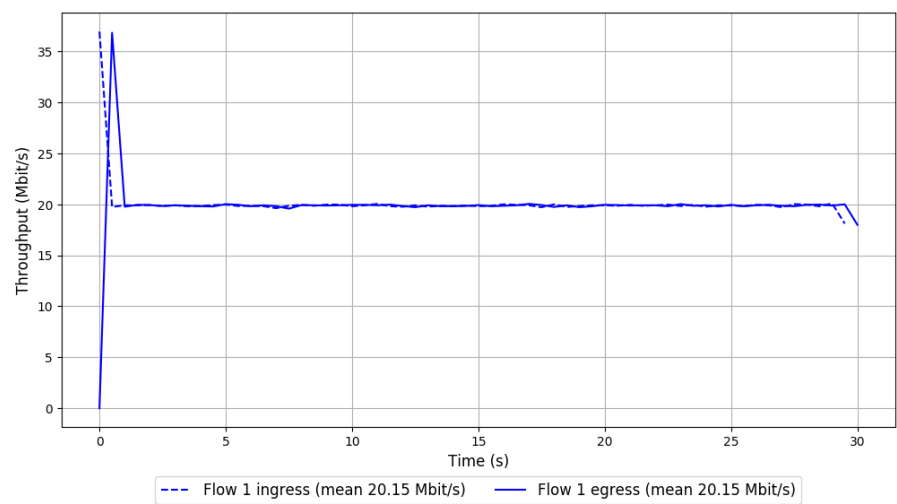
-- Flow 1:

Average throughput: 20.15 Mbit/s

95th percentile per-packet one-way delay: 1.805 ms

Loss rate: 0.02%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-11 07:56:04

End at: 2018-09-11 07:56:34

Local clock offset: 3.864 ms

Remote clock offset: 0.288 ms

Below is generated by plot.py at 2018-09-11 09:01:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.50 Mbit/s

95th percentile per-packet one-way delay: 2.626 ms

Loss rate: 0.01%

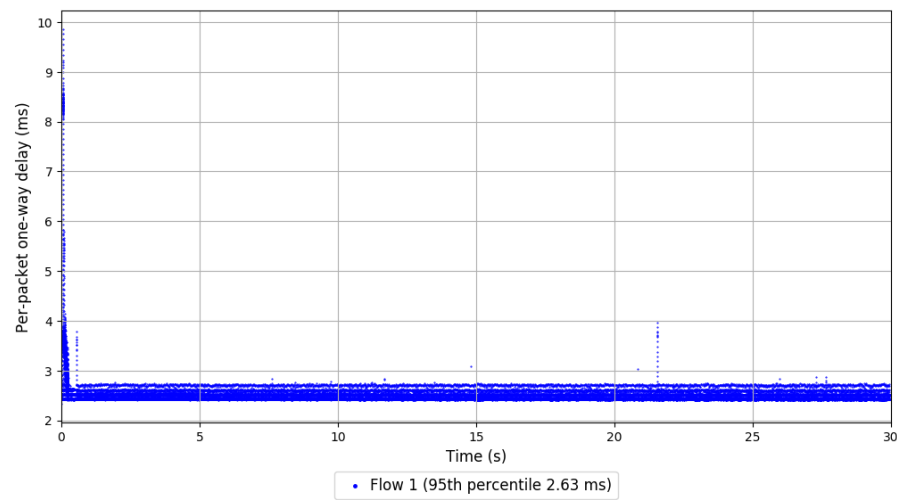
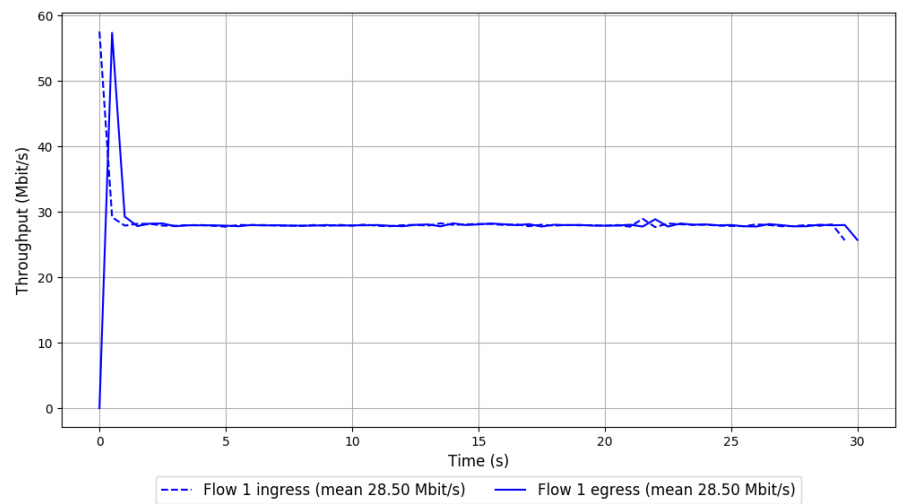
-- Flow 1:

Average throughput: 28.50 Mbit/s

95th percentile per-packet one-way delay: 2.626 ms

Loss rate: 0.01%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-11 08:16:26

End at: 2018-09-11 08:16:56

Local clock offset: 2.326 ms

Remote clock offset: 0.465 ms

Below is generated by plot.py at 2018-09-11 09:01:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 20.20 Mbit/s

95th percentile per-packet one-way delay: 1.912 ms

Loss rate: 0.00%

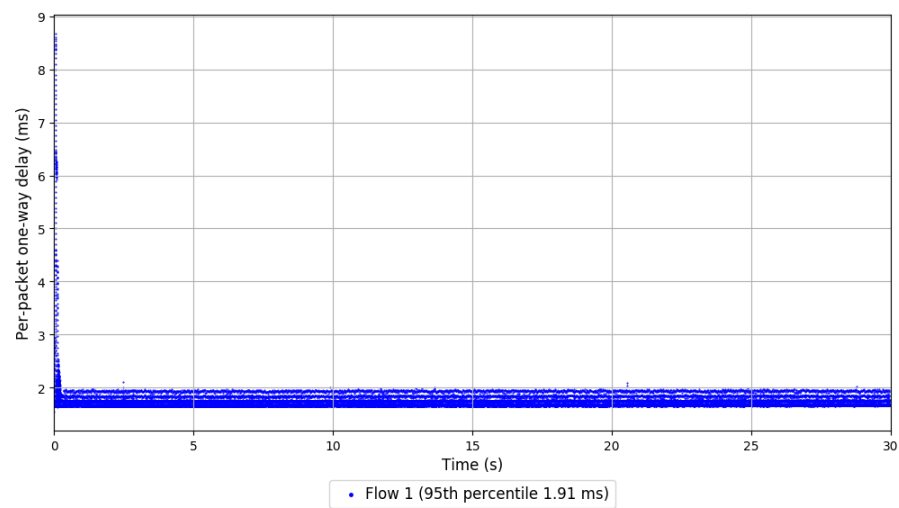
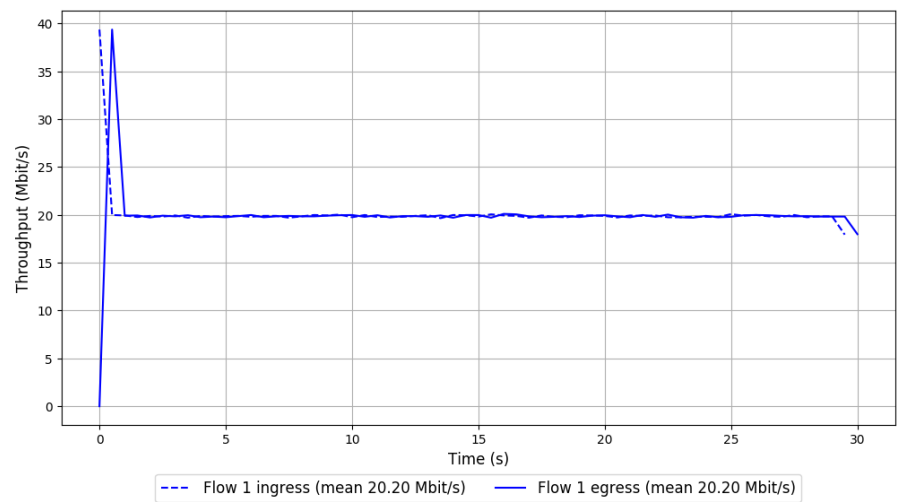
-- Flow 1:

Average throughput: 20.20 Mbit/s

95th percentile per-packet one-way delay: 1.912 ms

Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-11 08:36:43

End at: 2018-09-11 08:37:13

Local clock offset: 5.287 ms

Remote clock offset: 0.574 ms

Below is generated by plot.py at 2018-09-11 09:01:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.44 Mbit/s

95th percentile per-packet one-way delay: 1.604 ms

Loss rate: 0.01%

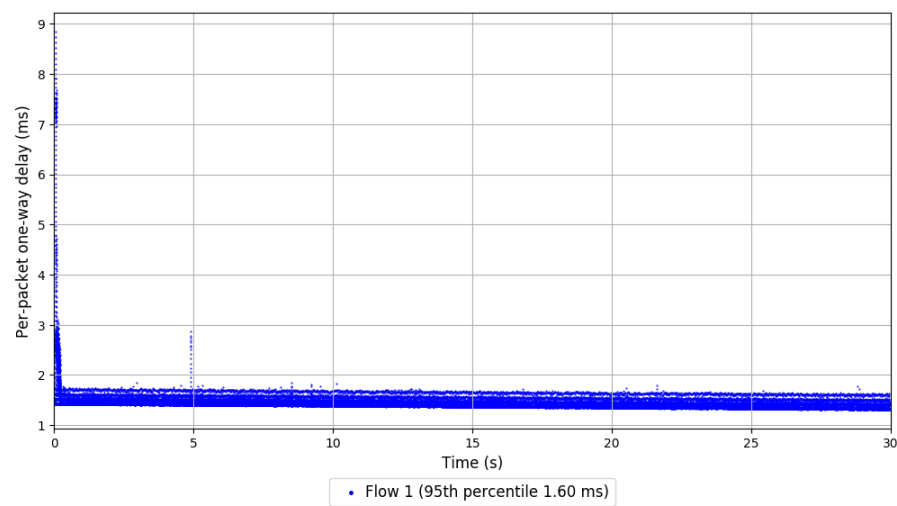
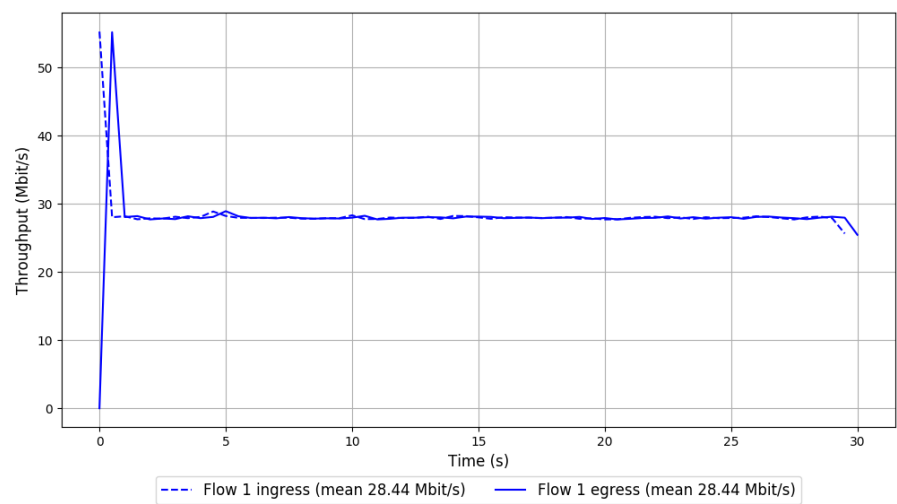
-- Flow 1:

Average throughput: 28.44 Mbit/s

95th percentile per-packet one-way delay: 1.604 ms

Loss rate: 0.01%

Run 5: Report of Indigo-Muses — Data Link

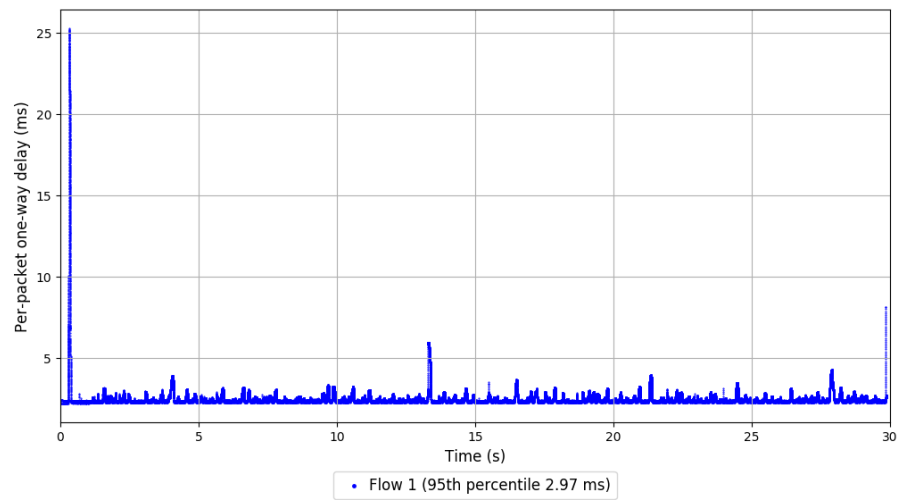
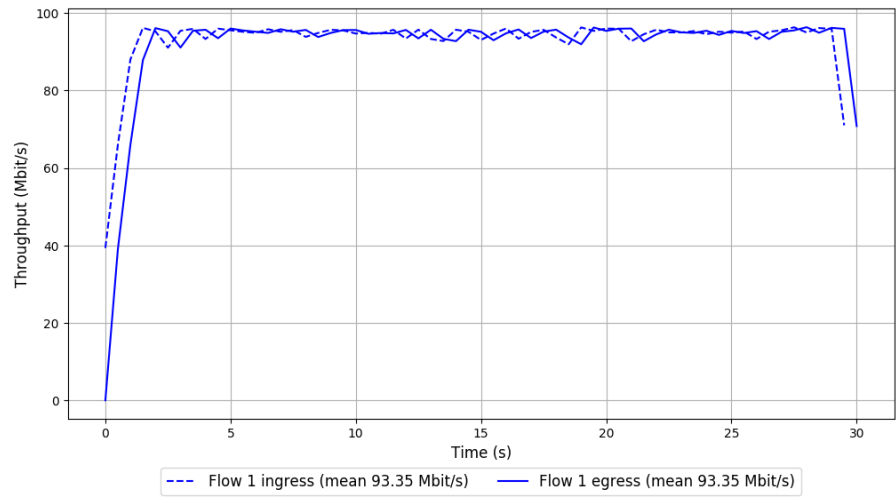


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-11 07:22:09
End at: 2018-09-11 07:22:39
Local clock offset: 1.708 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2018-09-11 09:01:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.35 Mbit/s
95th percentile per-packet one-way delay: 2.968 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 93.35 Mbit/s
95th percentile per-packet one-way delay: 2.968 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-11 07:42:30

End at: 2018-09-11 07:43:00

Local clock offset: 3.396 ms

Remote clock offset: 0.233 ms

Below is generated by plot.py at 2018-09-11 09:01:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.99 Mbit/s

95th percentile per-packet one-way delay: 2.858 ms

Loss rate: 0.01%

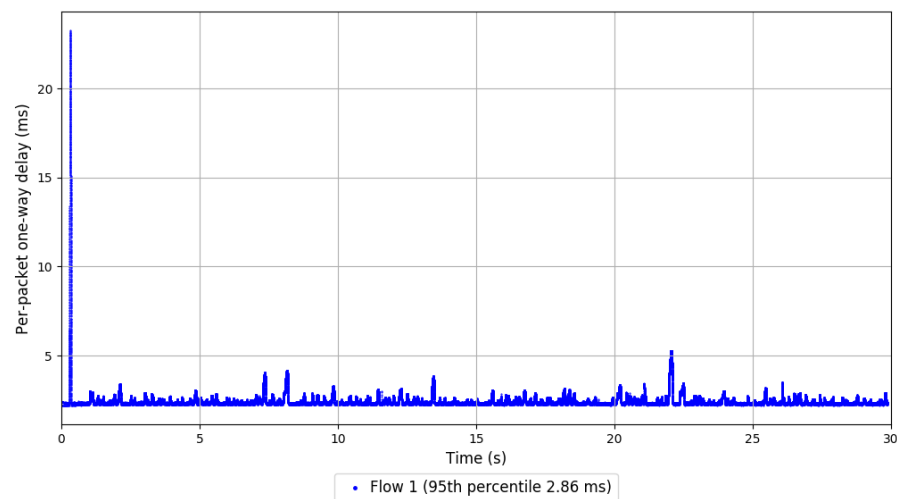
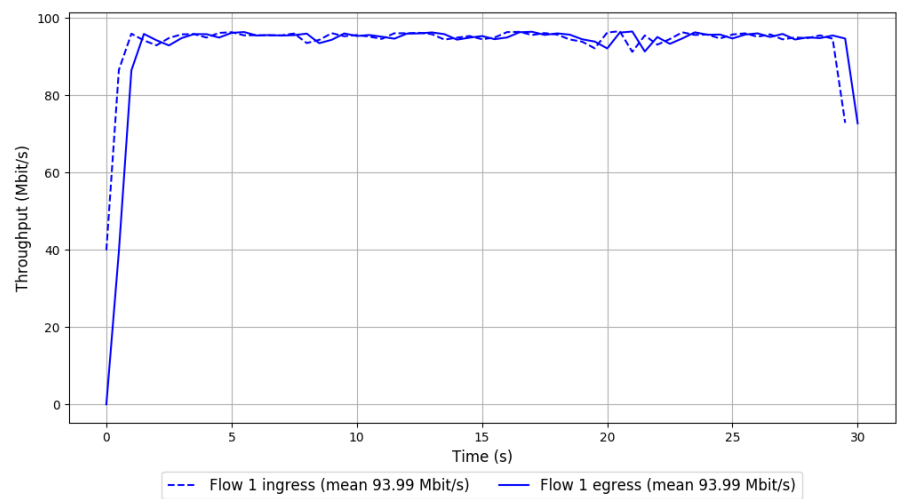
-- Flow 1:

Average throughput: 93.99 Mbit/s

95th percentile per-packet one-way delay: 2.858 ms

Loss rate: 0.01%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-11 08:02:47

End at: 2018-09-11 08:03:17

Local clock offset: 2.763 ms

Remote clock offset: 0.428 ms

Below is generated by plot.py at 2018-09-11 09:01:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.50 Mbit/s

95th percentile per-packet one-way delay: 2.552 ms

Loss rate: 0.01%

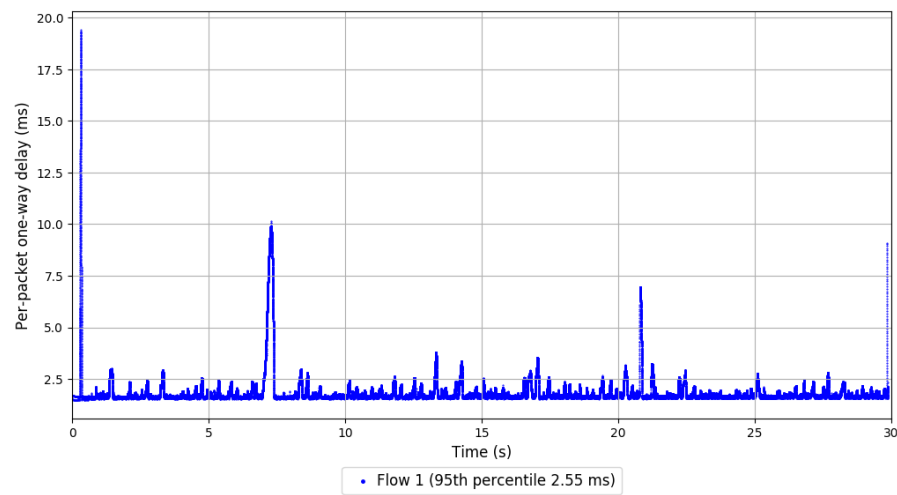
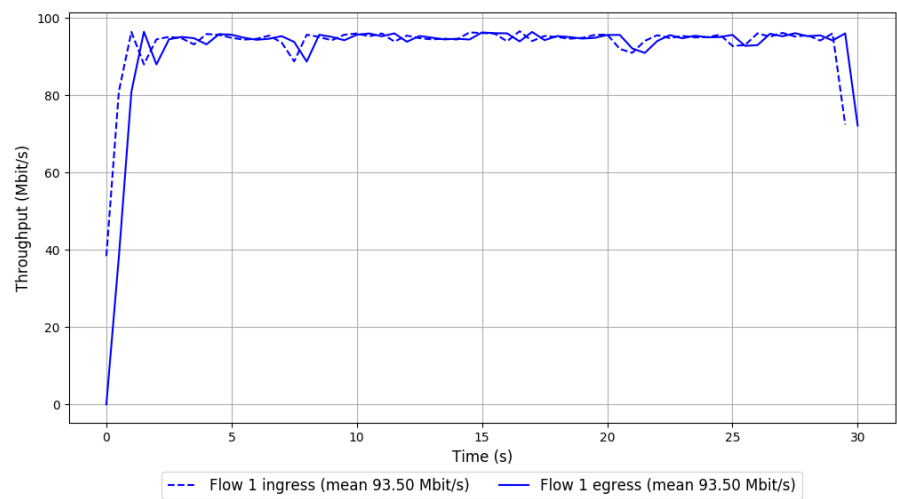
-- Flow 1:

Average throughput: 93.50 Mbit/s

95th percentile per-packet one-way delay: 2.552 ms

Loss rate: 0.01%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-11 08:23:08

End at: 2018-09-11 08:23:38

Local clock offset: 2.253 ms

Remote clock offset: 0.553 ms

Below is generated by plot.py at 2018-09-11 09:01:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.45 Mbit/s

95th percentile per-packet one-way delay: 2.376 ms

Loss rate: 0.01%

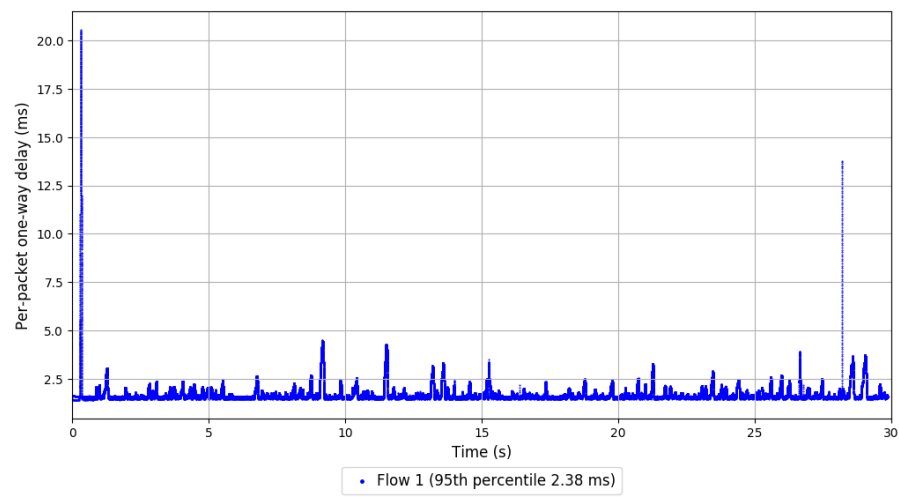
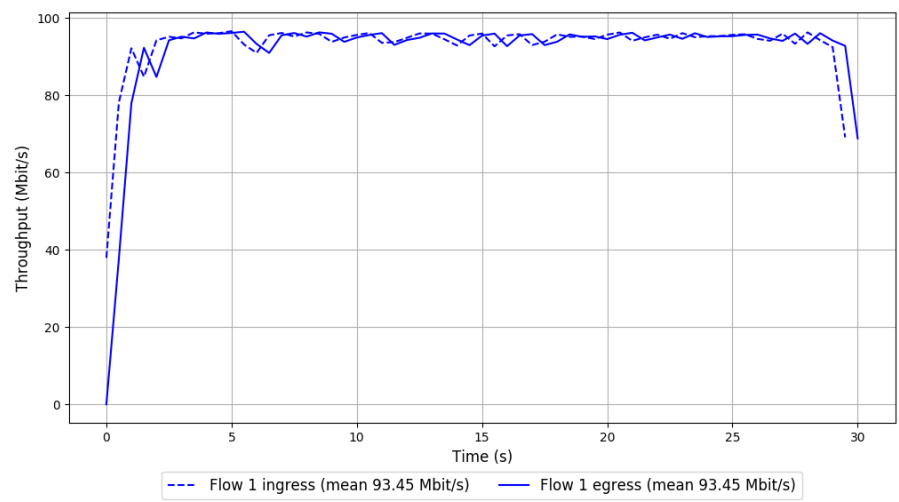
-- Flow 1:

Average throughput: 93.45 Mbit/s

95th percentile per-packet one-way delay: 2.376 ms

Loss rate: 0.01%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-11 08:43:25

End at: 2018-09-11 08:43:55

Local clock offset: 6.566 ms

Remote clock offset: 0.545 ms

Below is generated by plot.py at 2018-09-11 09:01:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.60 Mbit/s

95th percentile per-packet one-way delay: 2.055 ms

Loss rate: 0.01%

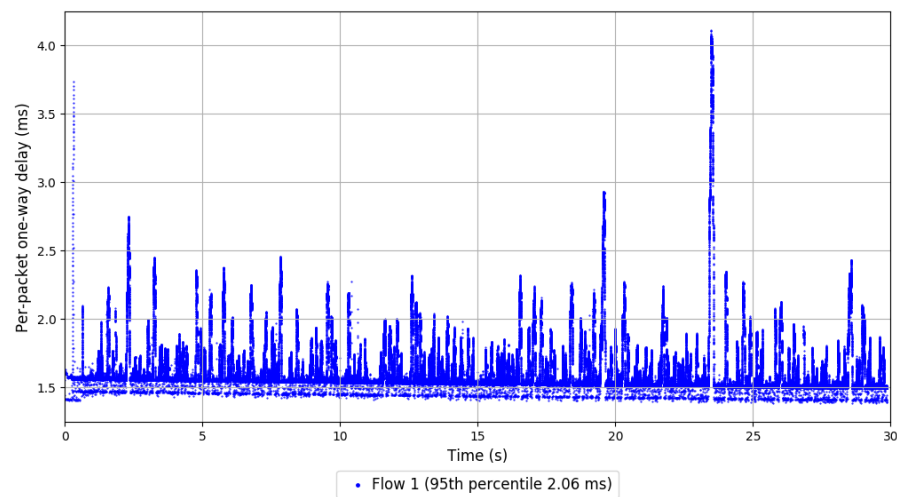
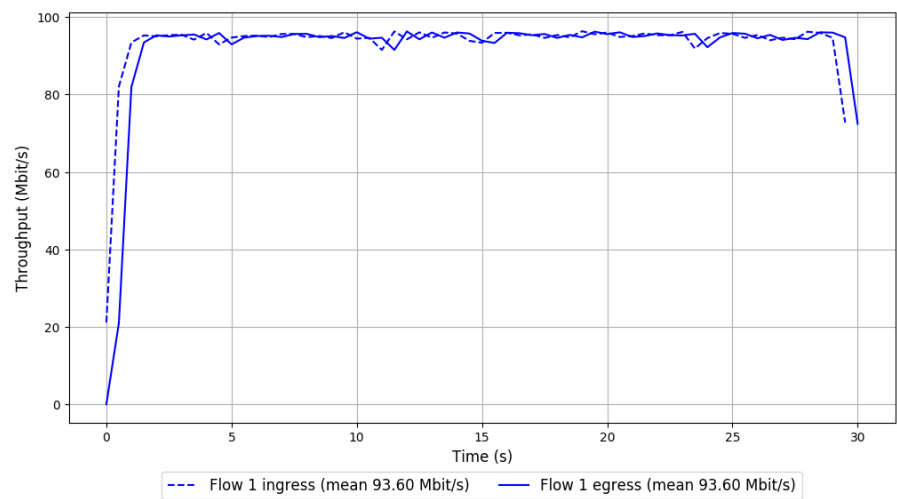
-- Flow 1:

Average throughput: 93.60 Mbit/s

95th percentile per-packet one-way delay: 2.055 ms

Loss rate: 0.01%

Run 5: Report of PCC-Allegro — Data Link

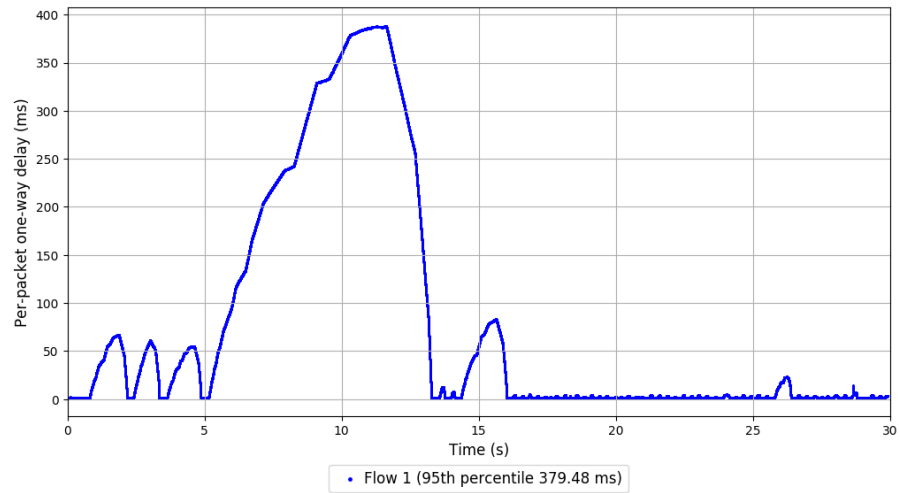
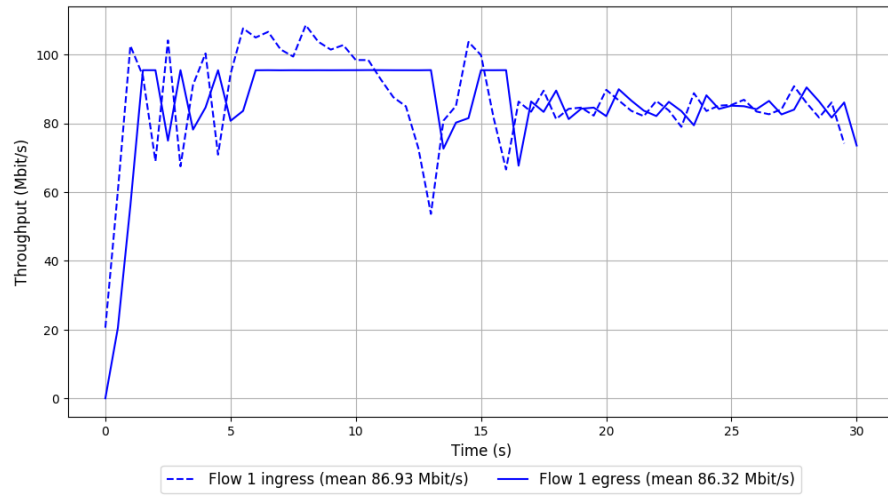


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-11 07:30:02
End at: 2018-09-11 07:30:32
Local clock offset: 1.195 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-09-11 09:02:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.32 Mbit/s
95th percentile per-packet one-way delay: 379.480 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 86.32 Mbit/s
95th percentile per-packet one-way delay: 379.480 ms
Loss rate: 0.72%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-11 07:50:19

End at: 2018-09-11 07:50:49

Local clock offset: 2.896 ms

Remote clock offset: 0.256 ms

Below is generated by plot.py at 2018-09-11 09:02:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.44 Mbit/s

95th percentile per-packet one-way delay: 293.702 ms

Loss rate: 0.72%

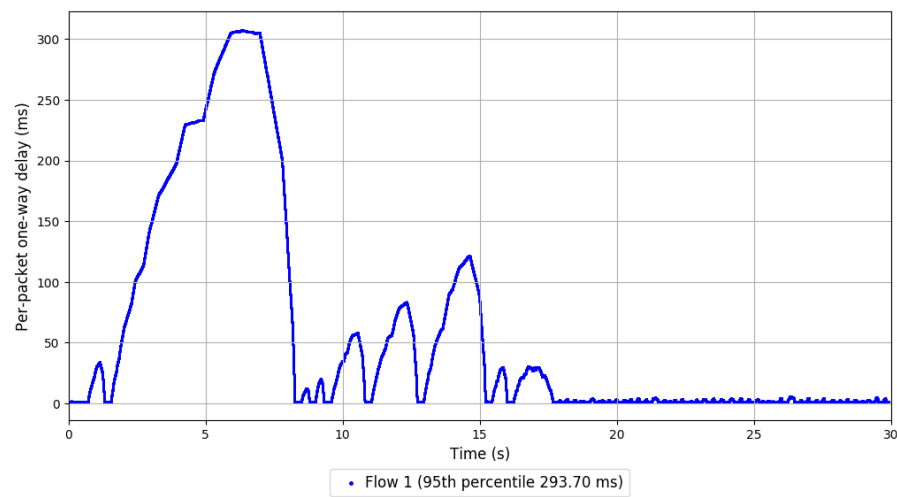
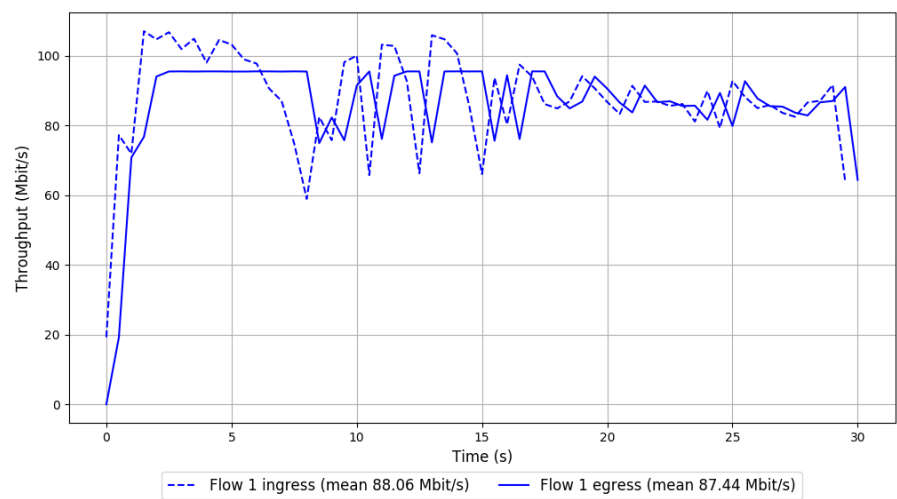
-- Flow 1:

Average throughput: 87.44 Mbit/s

95th percentile per-packet one-way delay: 293.702 ms

Loss rate: 0.72%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-11 08:10:39

End at: 2018-09-11 08:11:09

Local clock offset: 3.214 ms

Remote clock offset: 0.519 ms

Below is generated by plot.py at 2018-09-11 09:03:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.53 Mbit/s

95th percentile per-packet one-way delay: 641.865 ms

Loss rate: 2.98%

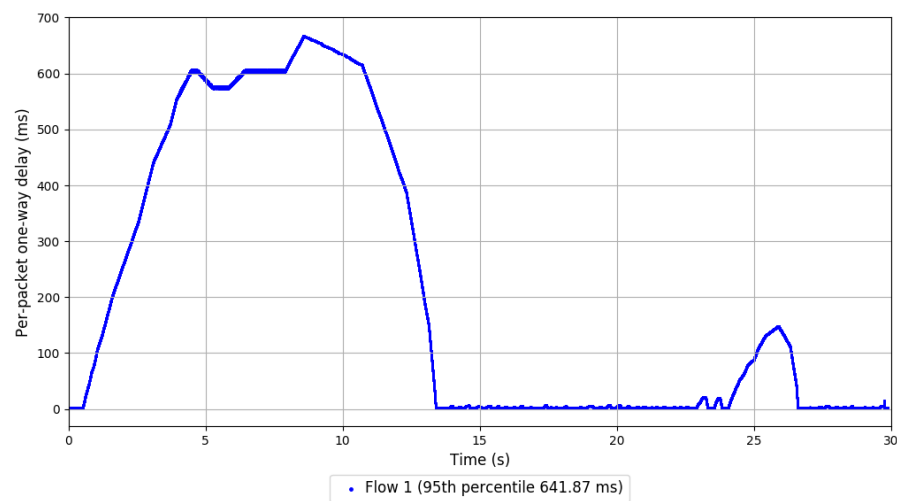
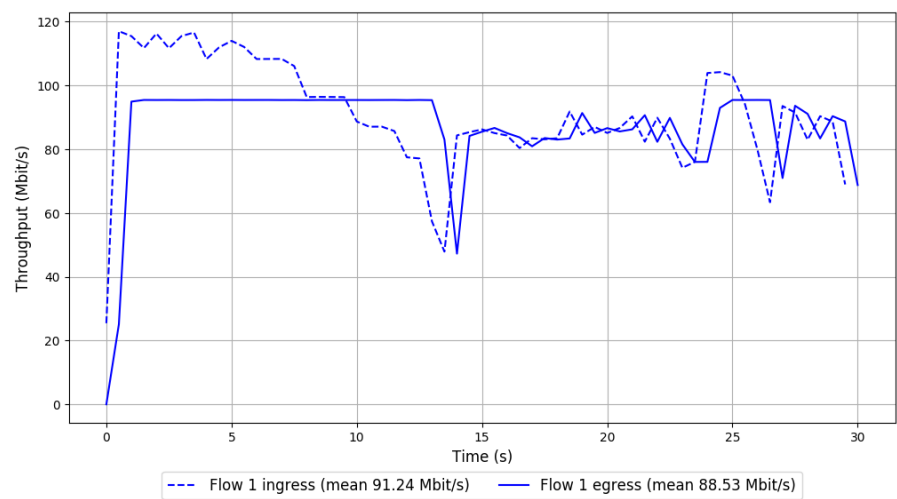
-- Flow 1:

Average throughput: 88.53 Mbit/s

95th percentile per-packet one-way delay: 641.865 ms

Loss rate: 2.98%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-11 08:30:57

End at: 2018-09-11 08:31:27

Local clock offset: 3.569 ms

Remote clock offset: 0.548 ms

Below is generated by plot.py at 2018-09-11 09:03:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.64 Mbit/s

95th percentile per-packet one-way delay: 42.663 ms

Loss rate: 0.06%

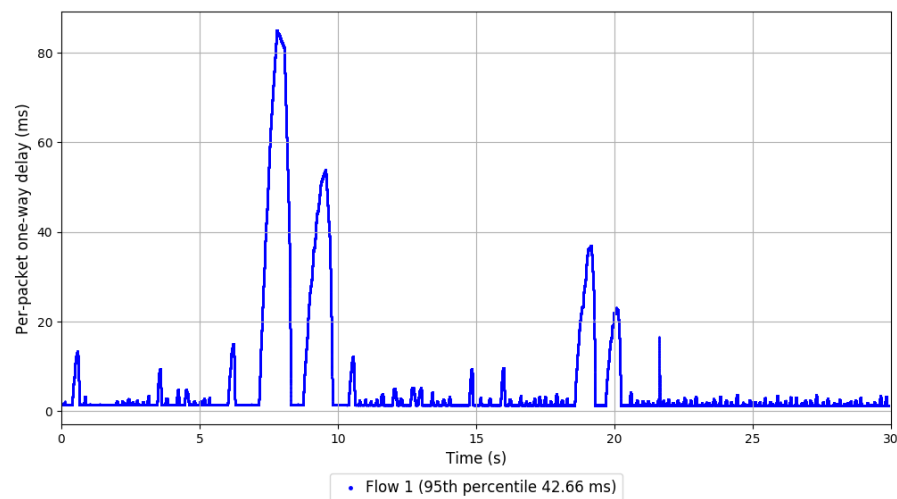
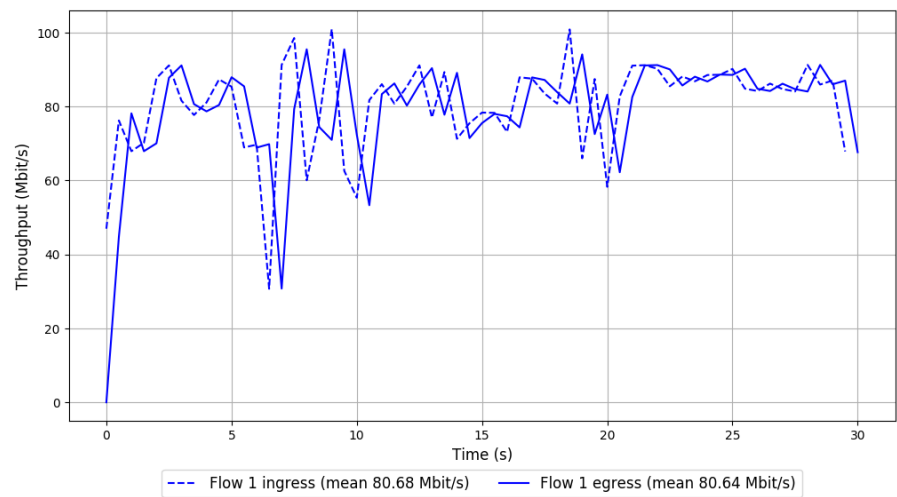
-- Flow 1:

Average throughput: 80.64 Mbit/s

95th percentile per-packet one-way delay: 42.663 ms

Loss rate: 0.06%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-11 08:51:18

End at: 2018-09-11 08:51:48

Local clock offset: 8.231 ms

Remote clock offset: 0.484 ms

Below is generated by plot.py at 2018-09-11 09:03:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.87 Mbit/s

95th percentile per-packet one-way delay: 219.569 ms

Loss rate: 0.27%

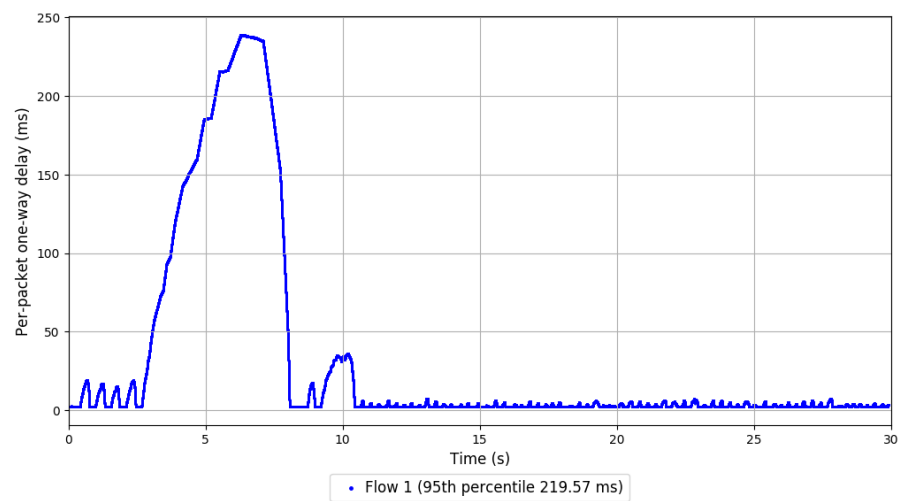
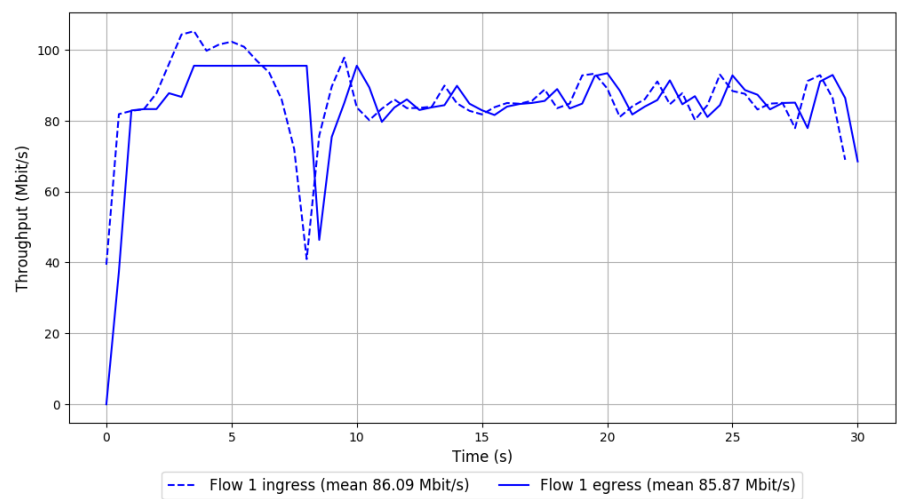
-- Flow 1:

Average throughput: 85.87 Mbit/s

95th percentile per-packet one-way delay: 219.569 ms

Loss rate: 0.27%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-11 07:21:01

End at: 2018-09-11 07:21:31

Local clock offset: 0.903 ms

Remote clock offset: -0.019 ms

Below is generated by plot.py at 2018-09-11 09:03:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.34 Mbit/s

95th percentile per-packet one-way delay: 7.743 ms

Loss rate: 0.02%

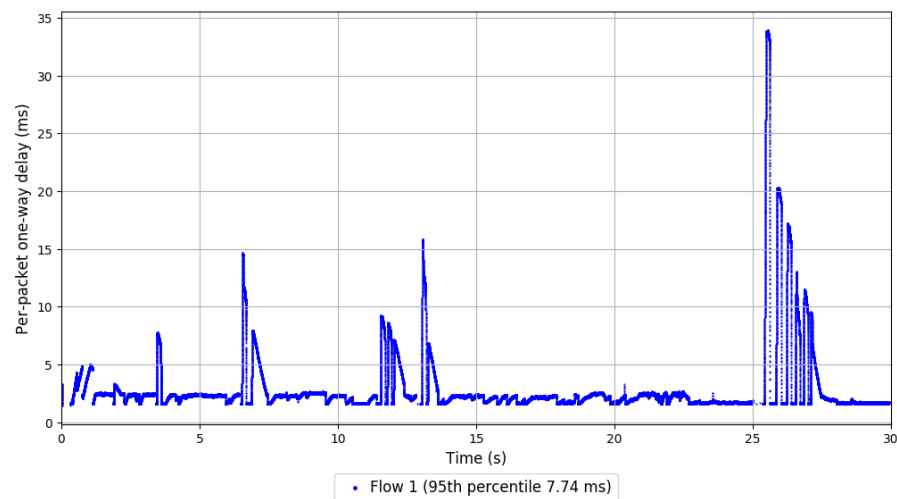
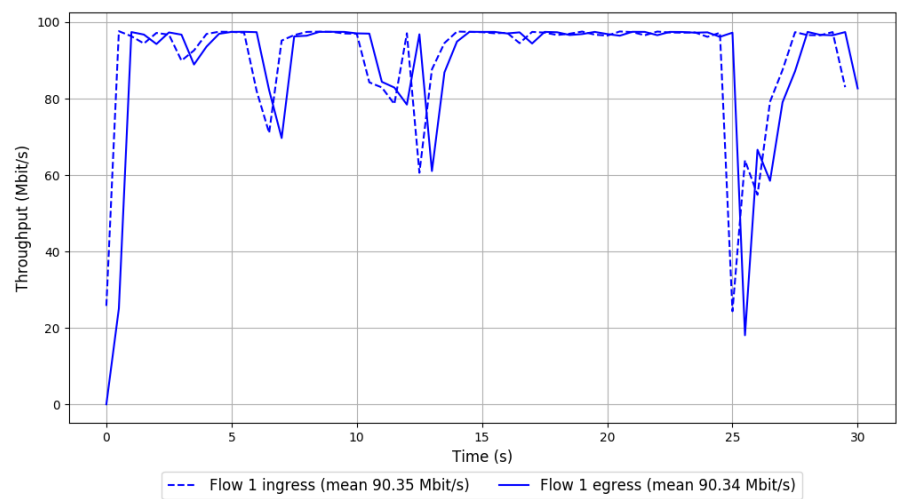
-- Flow 1:

Average throughput: 90.34 Mbit/s

95th percentile per-packet one-way delay: 7.743 ms

Loss rate: 0.02%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-11 07:41:22

End at: 2018-09-11 07:41:52

Local clock offset: 2.499 ms

Remote clock offset: 0.168 ms

Below is generated by plot.py at 2018-09-11 09:03:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.19 Mbit/s

95th percentile per-packet one-way delay: 9.252 ms

Loss rate: 0.02%

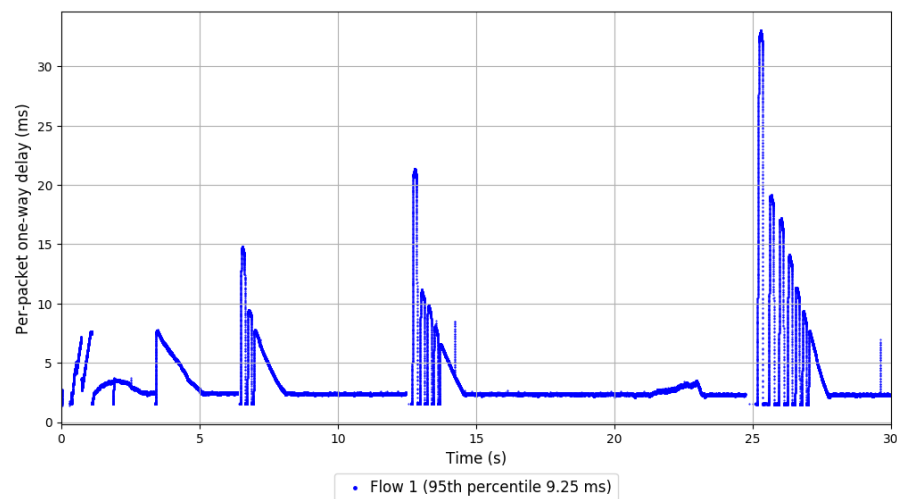
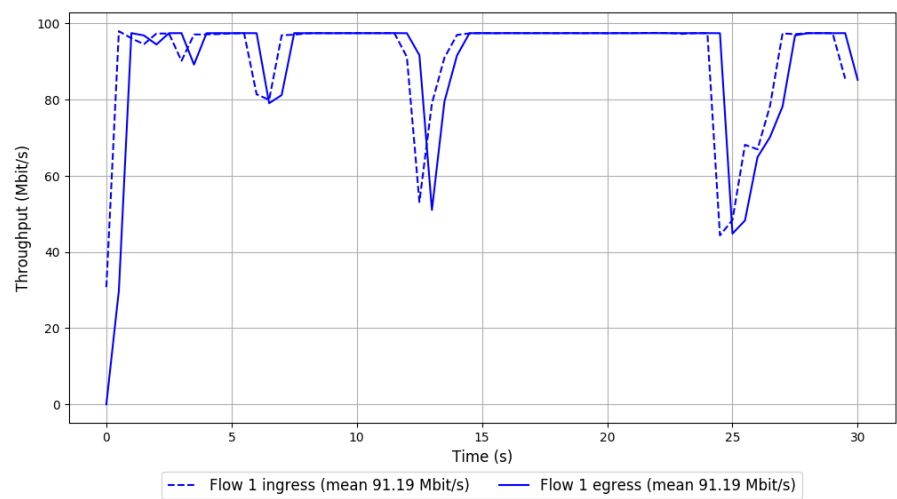
-- Flow 1:

Average throughput: 91.19 Mbit/s

95th percentile per-packet one-way delay: 9.252 ms

Loss rate: 0.02%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-11 08:01:39

End at: 2018-09-11 08:02:09

Local clock offset: 3.601 ms

Remote clock offset: 0.328 ms

Below is generated by plot.py at 2018-09-11 09:03:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.63 Mbit/s

95th percentile per-packet one-way delay: 9.447 ms

Loss rate: 0.02%

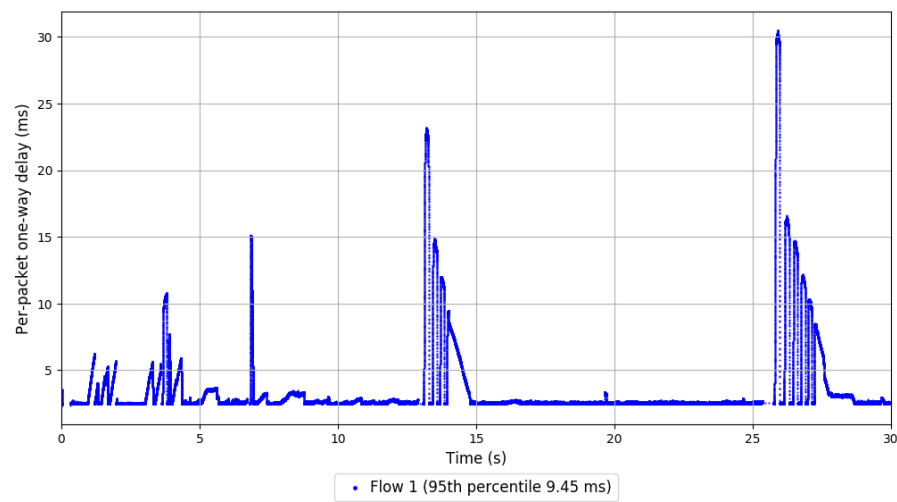
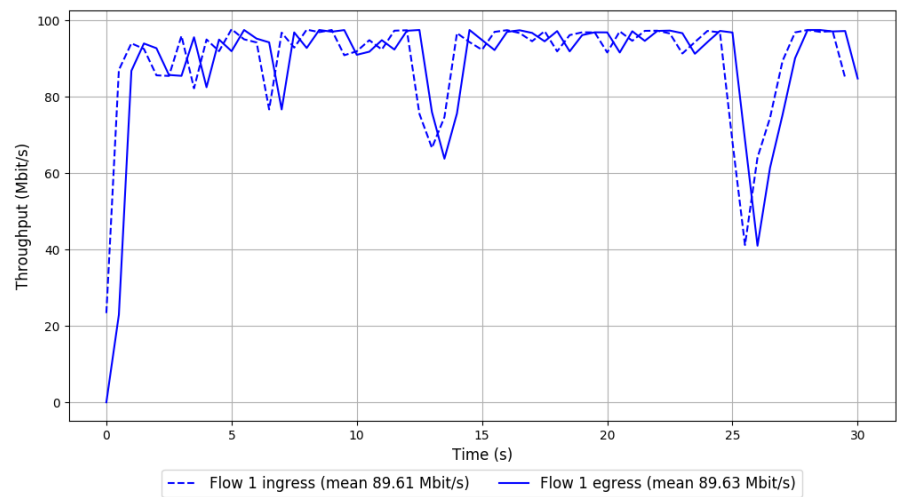
-- Flow 1:

Average throughput: 89.63 Mbit/s

95th percentile per-packet one-way delay: 9.447 ms

Loss rate: 0.02%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-11 08:22:00

End at: 2018-09-11 08:22:30

Local clock offset: 2.257 ms

Remote clock offset: 0.551 ms

Below is generated by plot.py at 2018-09-11 09:04:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.83 Mbit/s

95th percentile per-packet one-way delay: 7.158 ms

Loss rate: 0.02%

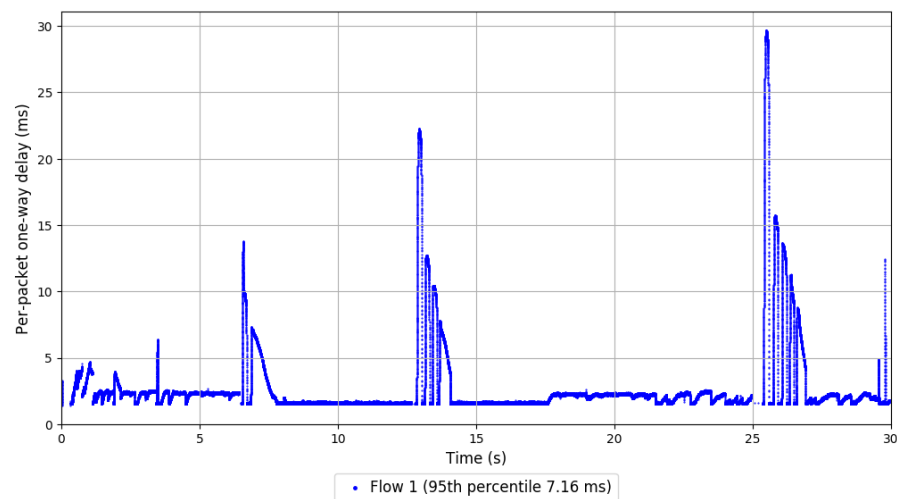
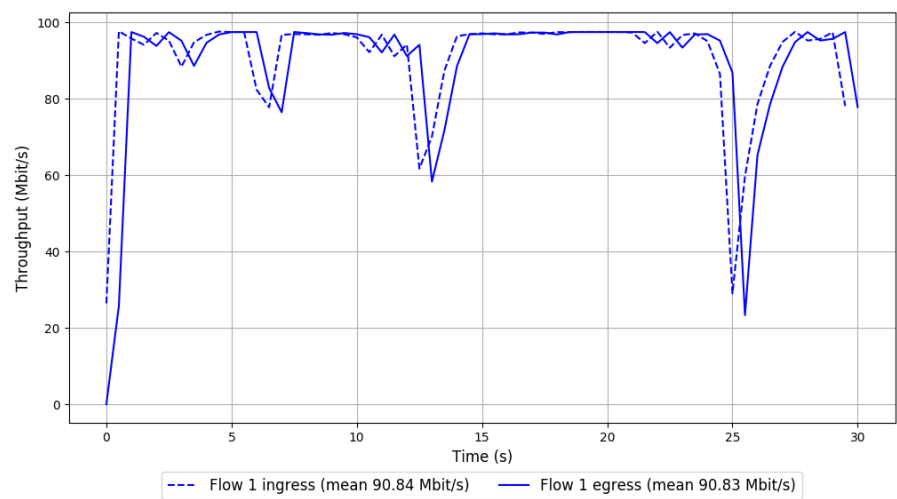
-- Flow 1:

Average throughput: 90.83 Mbit/s

95th percentile per-packet one-way delay: 7.158 ms

Loss rate: 0.02%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-11 08:42:17

End at: 2018-09-11 08:42:47

Local clock offset: 7.151 ms

Remote clock offset: 0.522 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.09 Mbit/s

95th percentile per-packet one-way delay: 3.368 ms

Loss rate: 0.01%

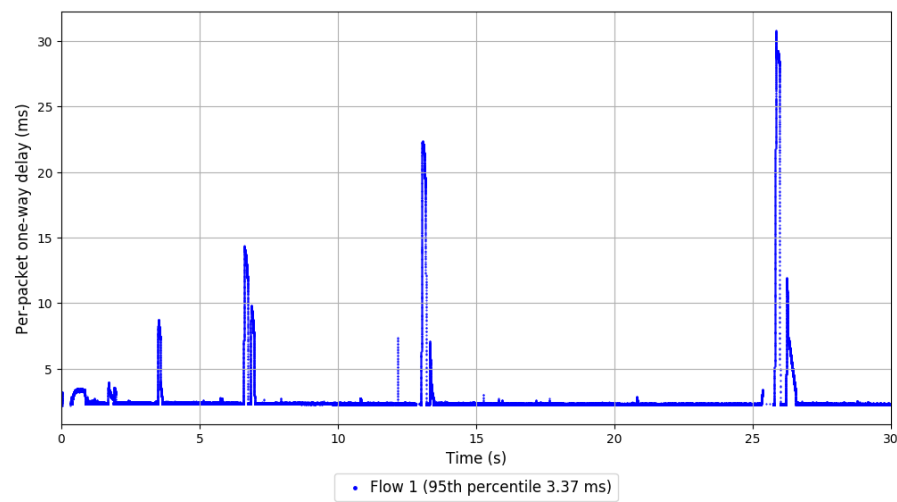
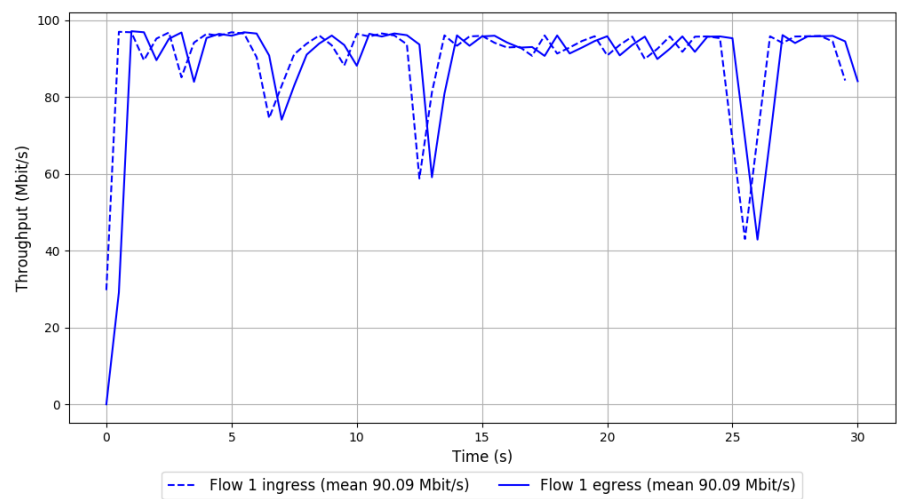
-- Flow 1:

Average throughput: 90.09 Mbit/s

95th percentile per-packet one-way delay: 3.368 ms

Loss rate: 0.01%

Run 5: Report of QUIC Cubic — Data Link

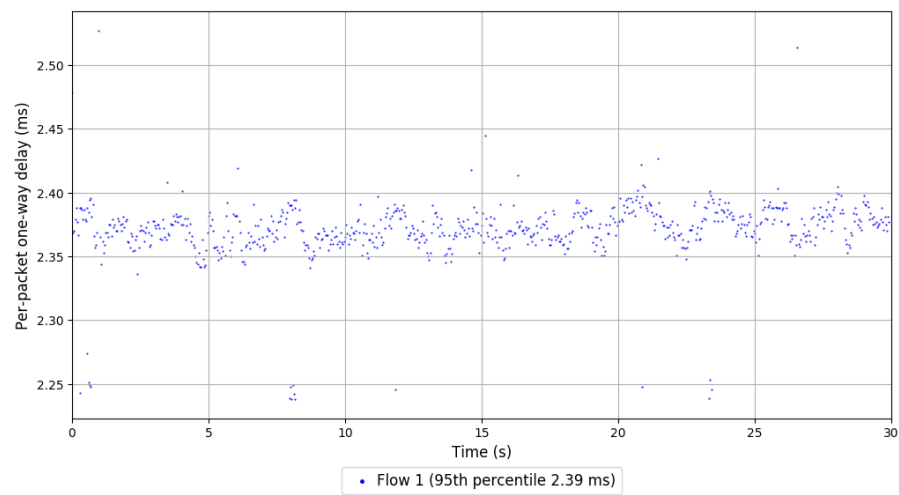
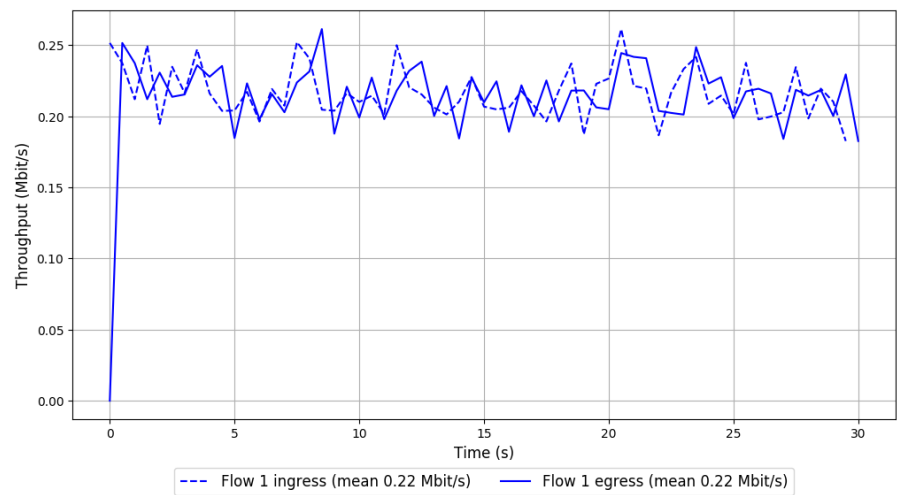


```
Run 1: Statistics of SCReAM

Start at: 2018-09-11 07:17:40
End at: 2018-09-11 07:18:10
Local clock offset: 1.853 ms
Remote clock offset: 0.038 ms

# Below is generated by plot.py at 2018-09-11 09:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.394 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.394 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

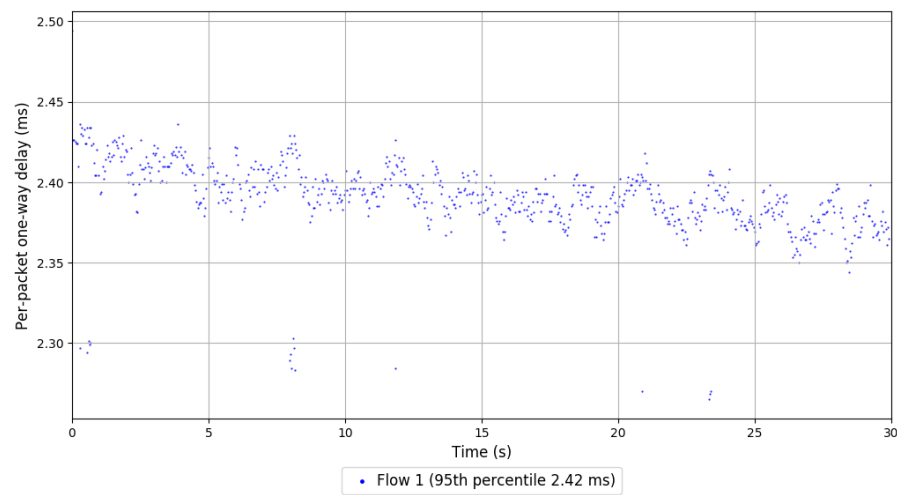
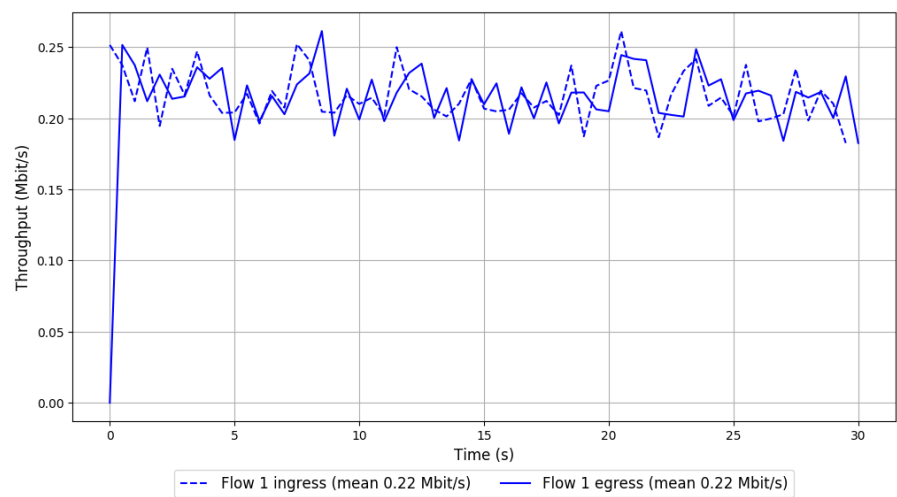


```
Run 2: Statistics of SCReAM

Start at: 2018-09-11 07:38:01
End at: 2018-09-11 07:38:31
Local clock offset: 3.049 ms
Remote clock offset: 0.05 ms

# Below is generated by plot.py at 2018-09-11 09:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.421 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.421 ms
Loss rate: 0.00%
```

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-11 07:58:17

End at: 2018-09-11 07:58:47

Local clock offset: 3.902 ms

Remote clock offset: 0.342 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.512 ms

Loss rate: 0.00%

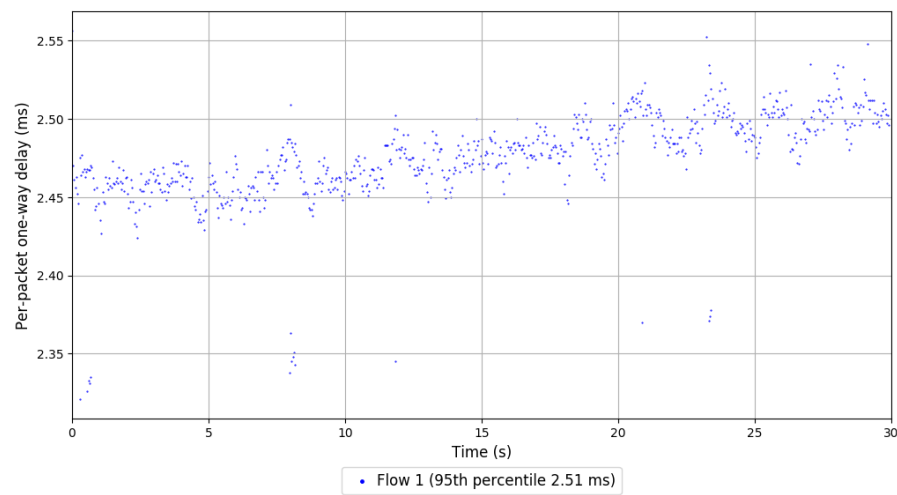
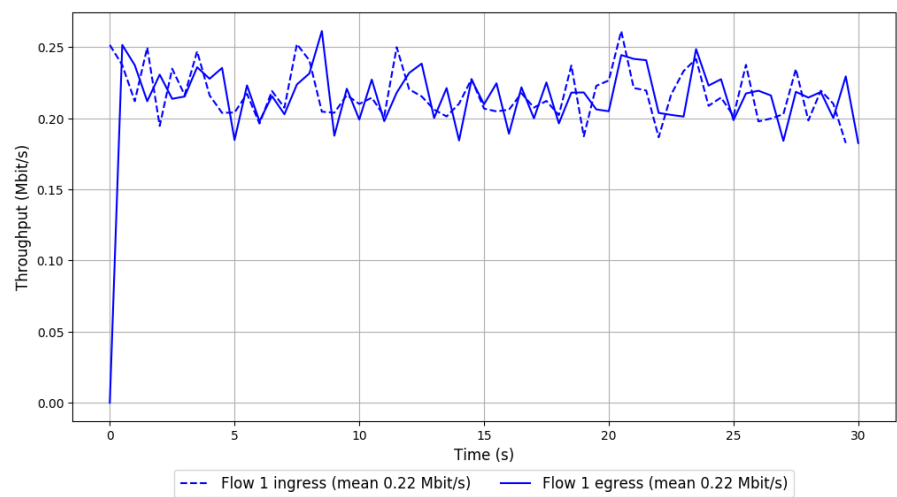
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.512 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-11 08:18:39

End at: 2018-09-11 08:19:09

Local clock offset: 2.223 ms

Remote clock offset: 0.483 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.571 ms

Loss rate: 0.13%

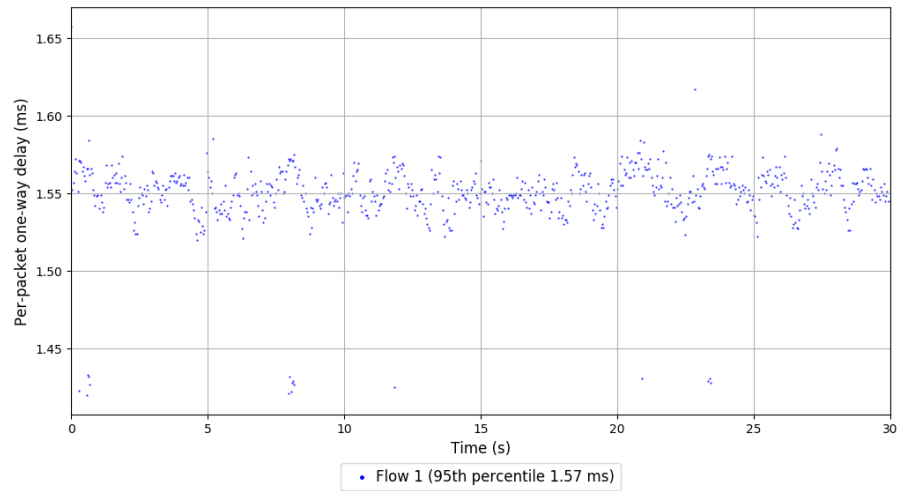
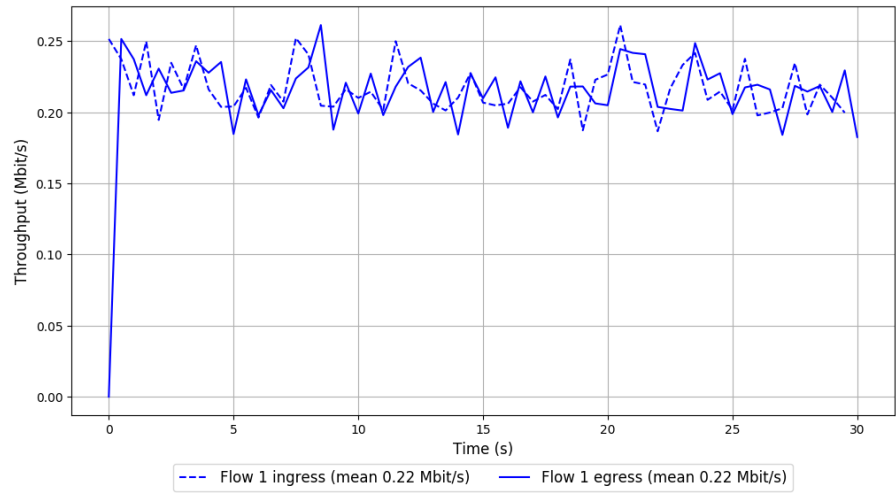
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.571 ms

Loss rate: 0.13%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-11 08:38:56

End at: 2018-09-11 08:39:26

Local clock offset: 6.606 ms

Remote clock offset: 0.488 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.368 ms

Loss rate: 0.00%

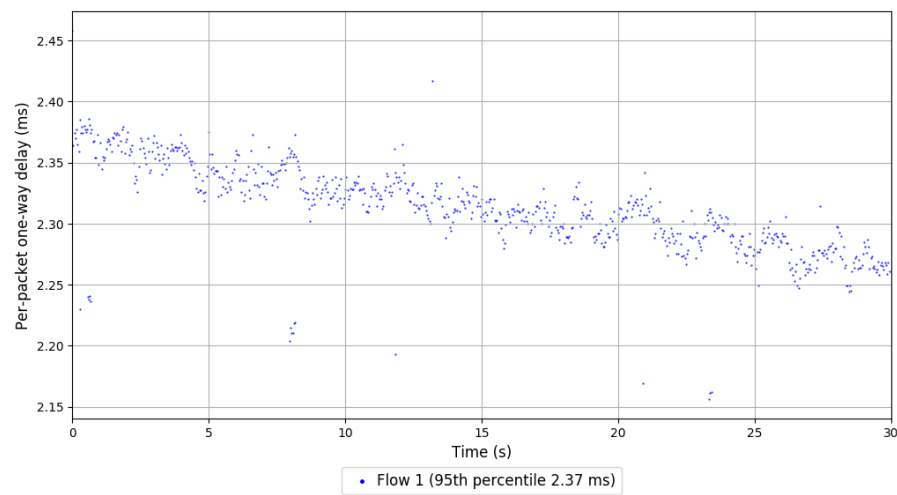
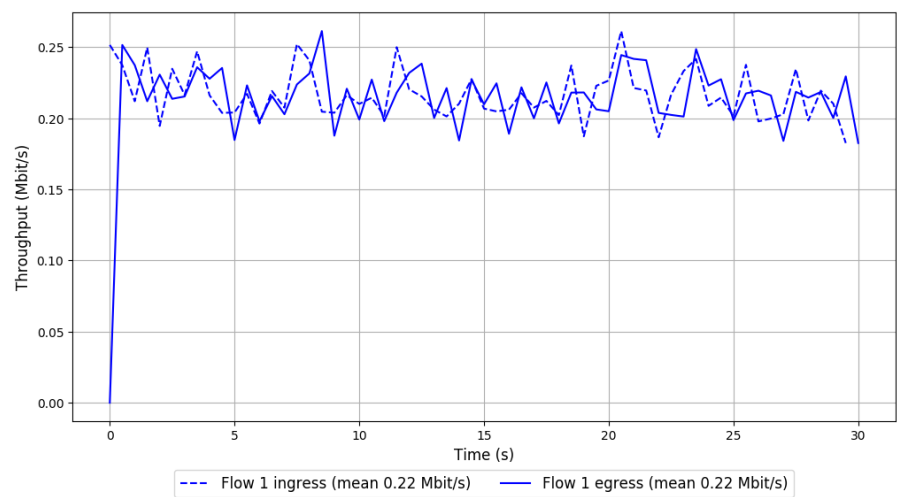
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.368 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-11 07:26:44

End at: 2018-09-11 07:27:14

Local clock offset: 1.587 ms

Remote clock offset: -0.031 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.38 Mbit/s

95th percentile per-packet one-way delay: 10.958 ms

Loss rate: 0.07%

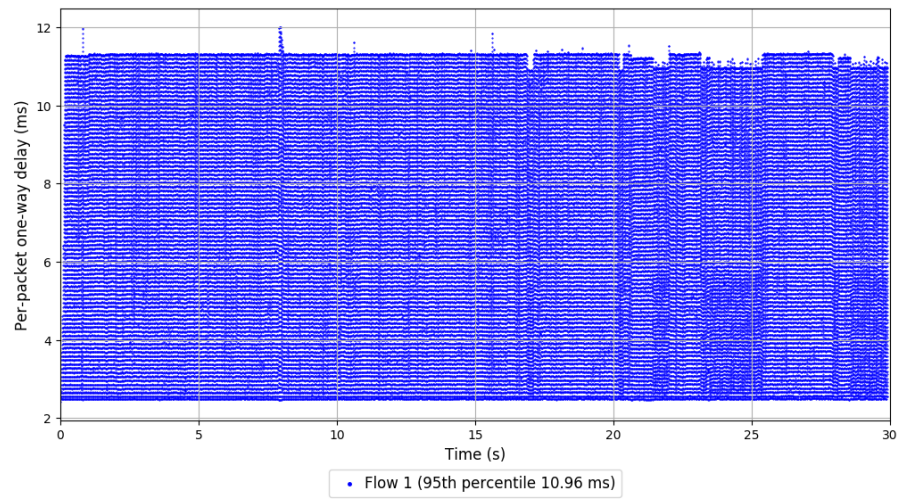
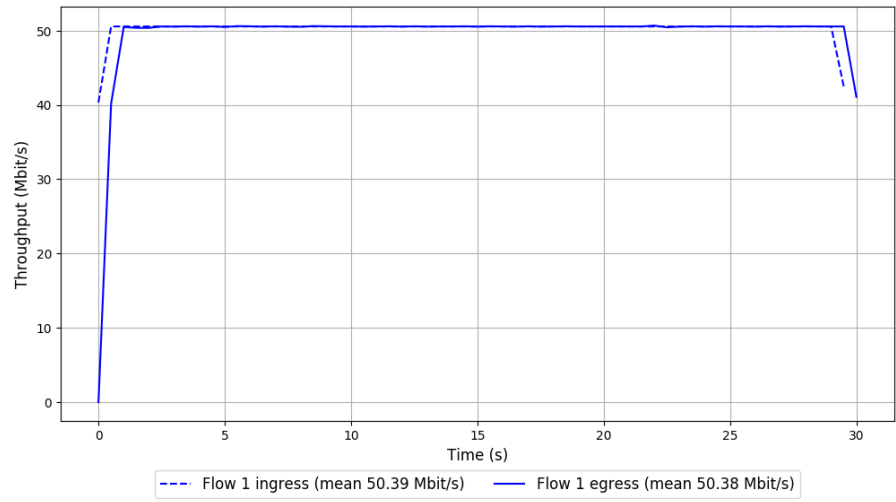
-- Flow 1:

Average throughput: 50.38 Mbit/s

95th percentile per-packet one-way delay: 10.958 ms

Loss rate: 0.07%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-09-11 07:47:01

End at: 2018-09-11 07:47:31

Local clock offset: 2.825 ms

Remote clock offset: 0.269 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.23 Mbit/s

95th percentile per-packet one-way delay: 10.061 ms

Loss rate: 0.00%

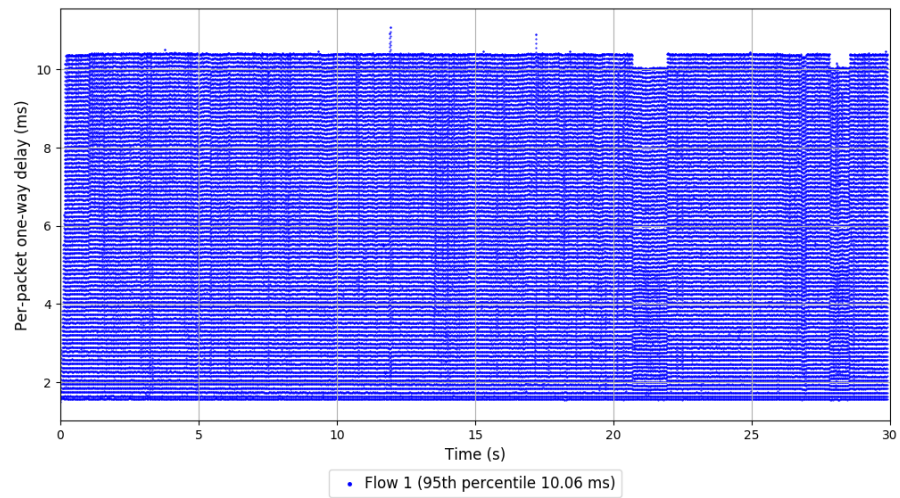
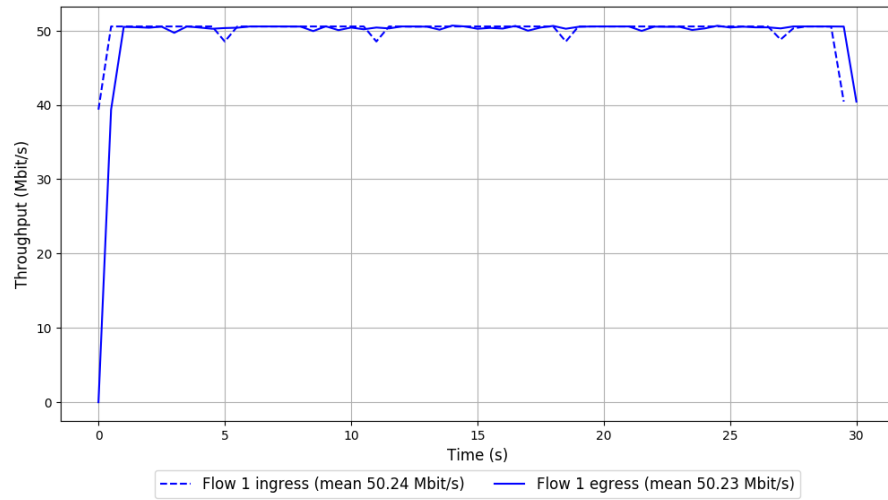
-- Flow 1:

Average throughput: 50.23 Mbit/s

95th percentile per-packet one-way delay: 10.061 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-09-11 08:07:21

End at: 2018-09-11 08:07:51

Local clock offset: 2.465 ms

Remote clock offset: 0.499 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.26 Mbit/s

95th percentile per-packet one-way delay: 10.061 ms

Loss rate: 0.04%

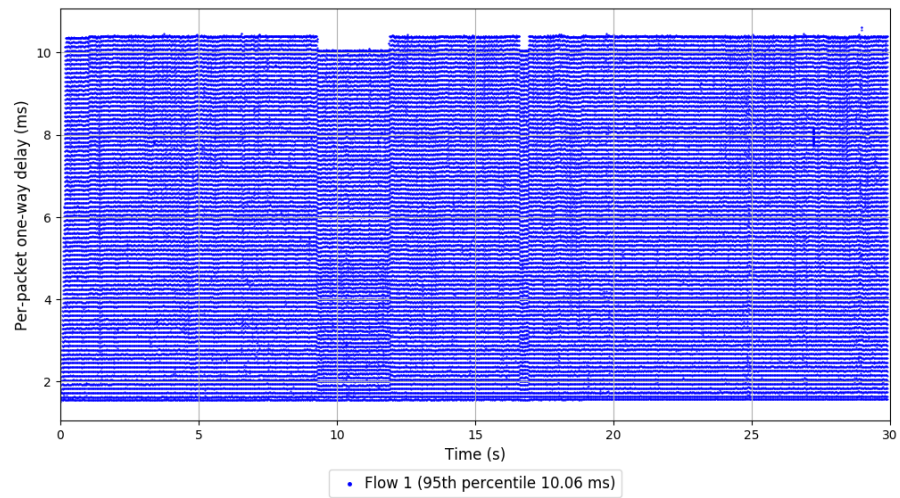
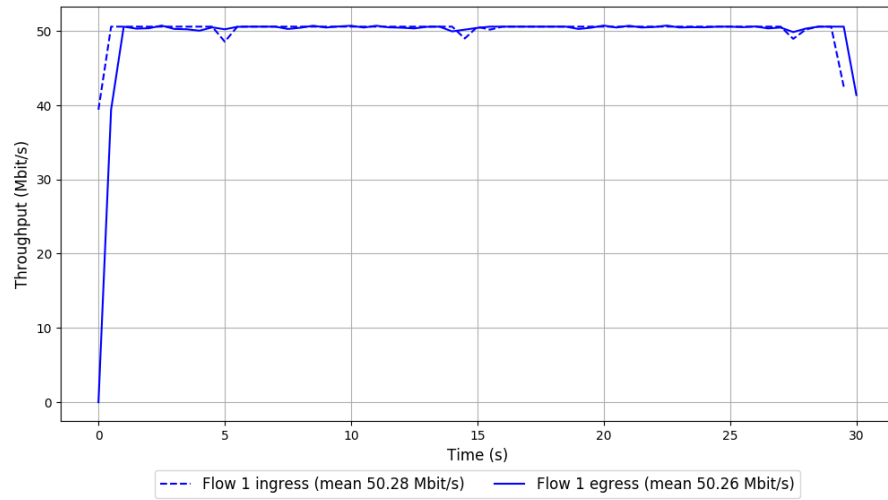
-- Flow 1:

Average throughput: 50.26 Mbit/s

95th percentile per-packet one-way delay: 10.061 ms

Loss rate: 0.04%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-09-11 08:27:39

End at: 2018-09-11 08:28:09

Local clock offset: 2.241 ms

Remote clock offset: 0.556 ms

Below is generated by plot.py at 2018-09-11 09:04:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.22 Mbit/s

95th percentile per-packet one-way delay: 10.044 ms

Loss rate: 0.04%

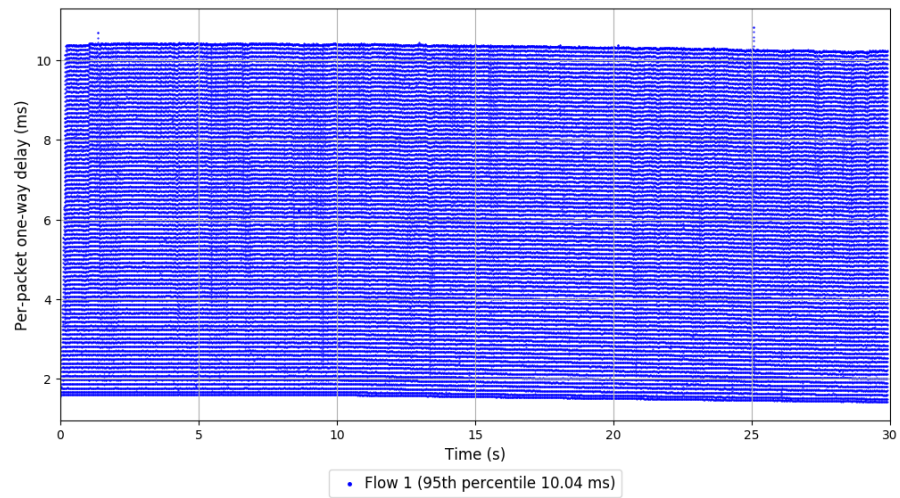
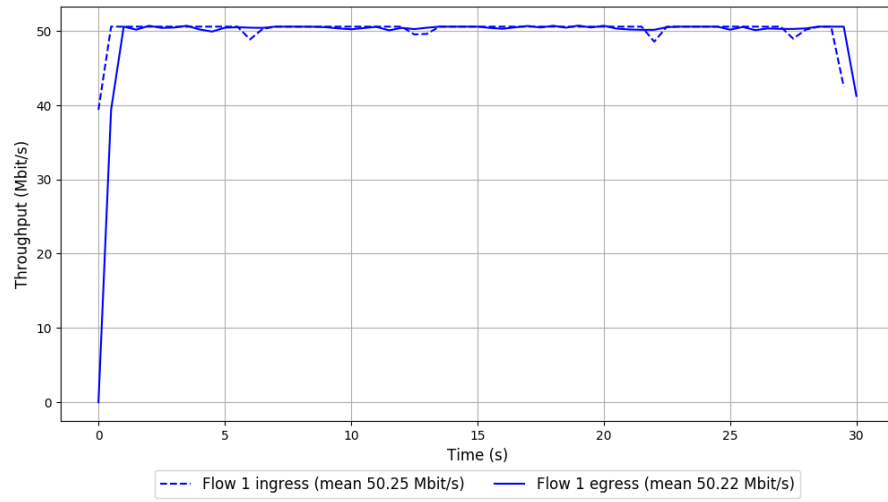
-- Flow 1:

Average throughput: 50.22 Mbit/s

95th percentile per-packet one-way delay: 10.044 ms

Loss rate: 0.04%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-09-11 08:48:00

End at: 2018-09-11 08:48:31

Local clock offset: 7.899 ms

Remote clock offset: 0.505 ms

Below is generated by plot.py at 2018-09-11 09:04:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.30 Mbit/s

95th percentile per-packet one-way delay: 10.854 ms

Loss rate: 0.00%

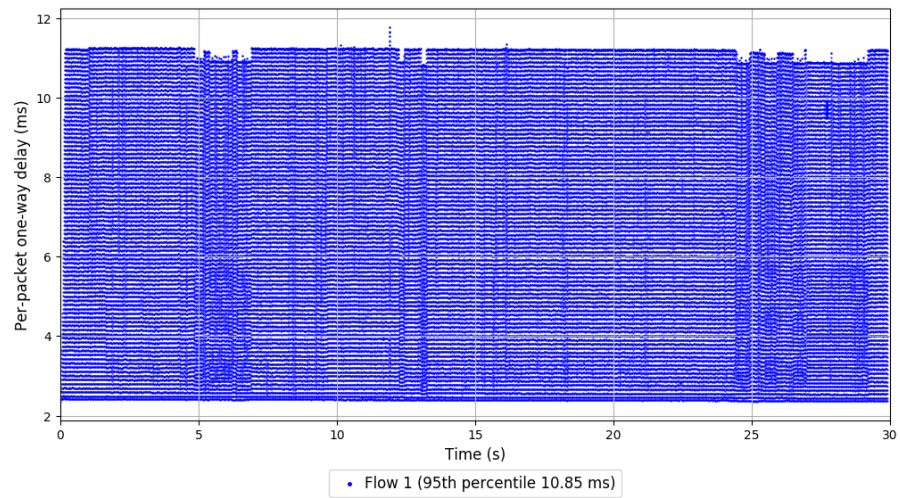
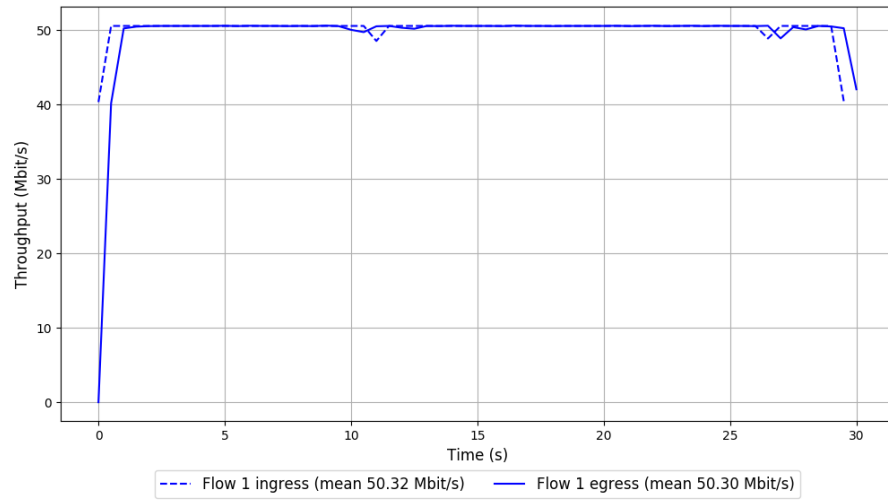
-- Flow 1:

Average throughput: 50.30 Mbit/s

95th percentile per-packet one-way delay: 10.854 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

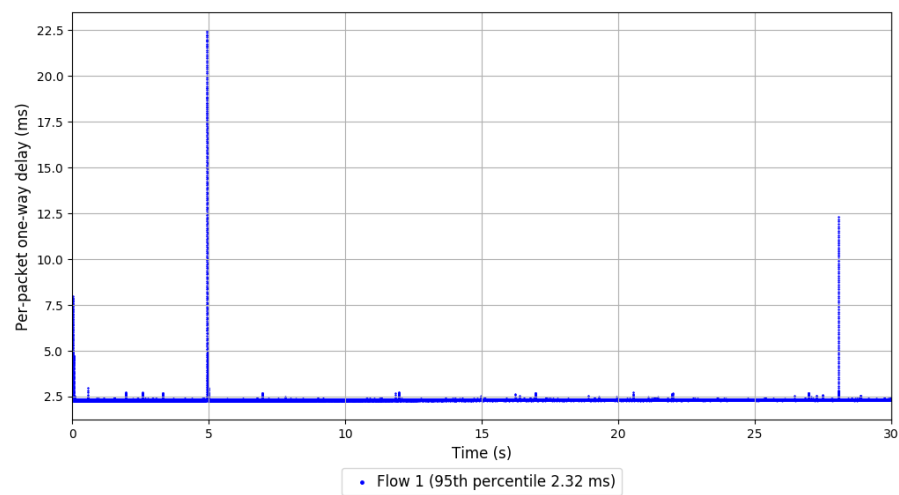
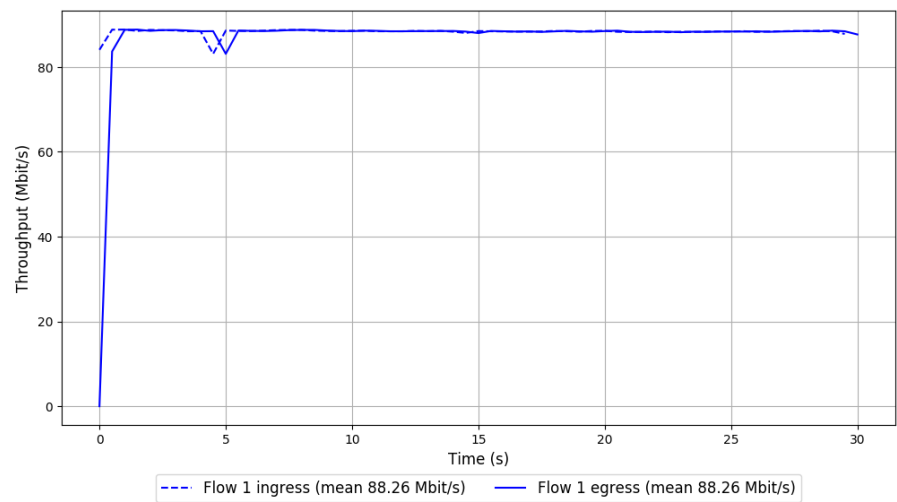


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-11 07:24:24
End at: 2018-09-11 07:24:54
Local clock offset: 1.586 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2018-09-11 09:05:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 2.319 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 2.319 ms
Loss rate: 0.01%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-11 07:44:45

End at: 2018-09-11 07:45:15

Local clock offset: 2.728 ms

Remote clock offset: 0.195 ms

Below is generated by plot.py at 2018-09-11 09:05:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.36 Mbit/s

95th percentile per-packet one-way delay: 1.614 ms

Loss rate: 0.01%

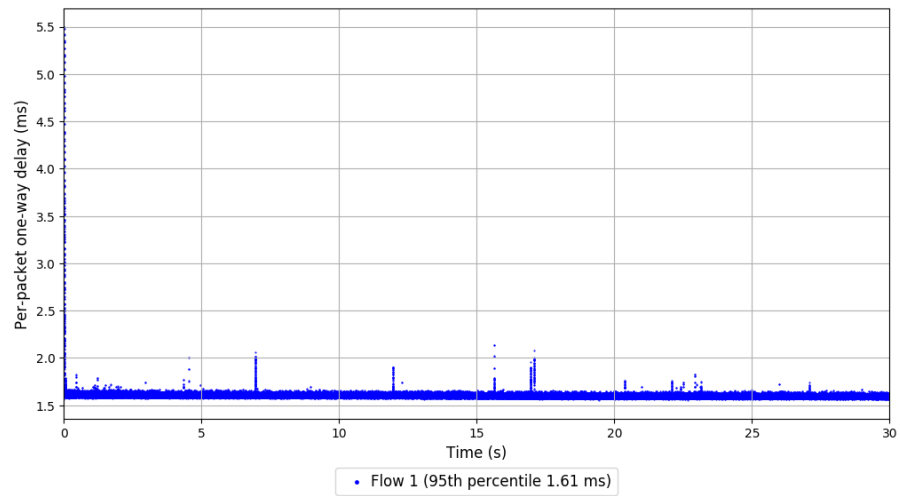
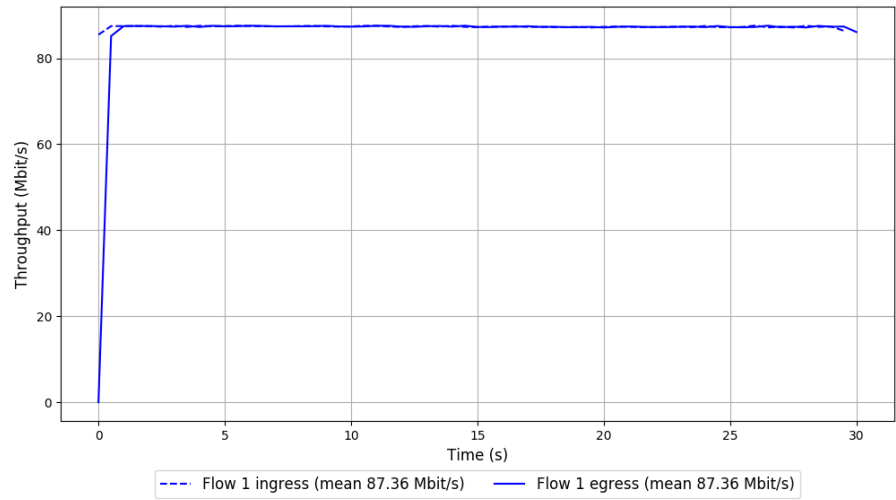
-- Flow 1:

Average throughput: 87.36 Mbit/s

95th percentile per-packet one-way delay: 1.614 ms

Loss rate: 0.01%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-11 08:05:02

End at: 2018-09-11 08:05:32

Local clock offset: 2.594 ms

Remote clock offset: 0.482 ms

Below is generated by plot.py at 2018-09-11 09:05:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.96 Mbit/s

95th percentile per-packet one-way delay: 1.608 ms

Loss rate: 0.01%

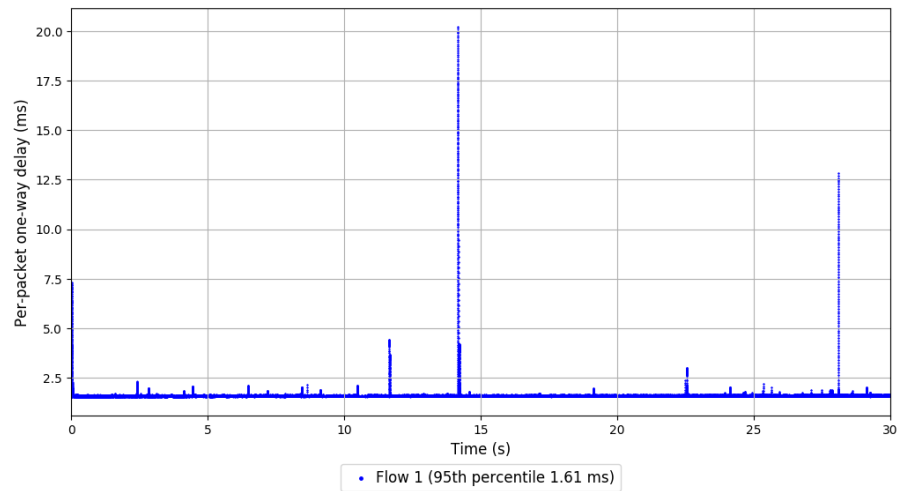
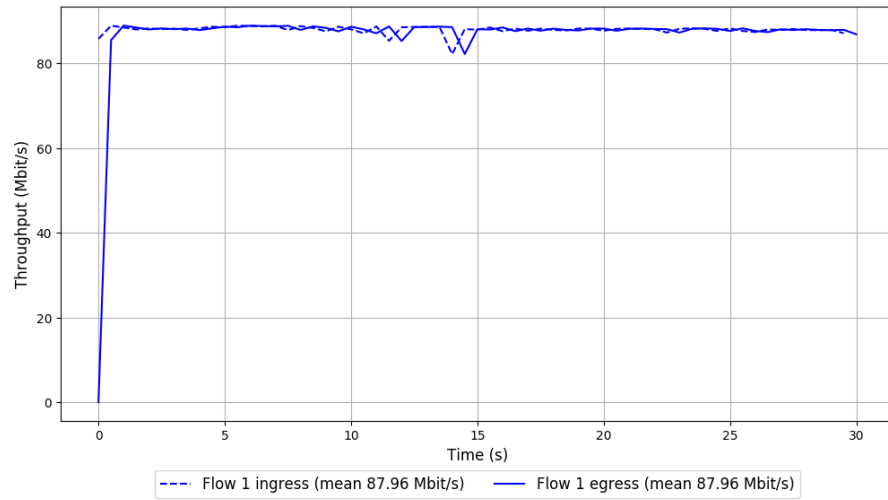
-- Flow 1:

Average throughput: 87.96 Mbit/s

95th percentile per-packet one-way delay: 1.608 ms

Loss rate: 0.01%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-11 08:25:23

End at: 2018-09-11 08:25:53

Local clock offset: 3.021 ms

Remote clock offset: 0.442 ms

Below is generated by plot.py at 2018-09-11 09:05:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.77 Mbit/s

95th percentile per-packet one-way delay: 2.476 ms

Loss rate: 0.01%

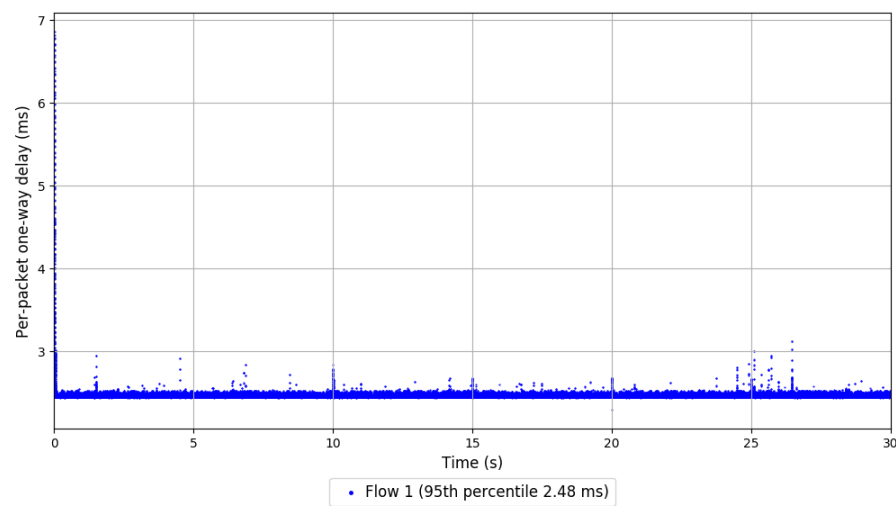
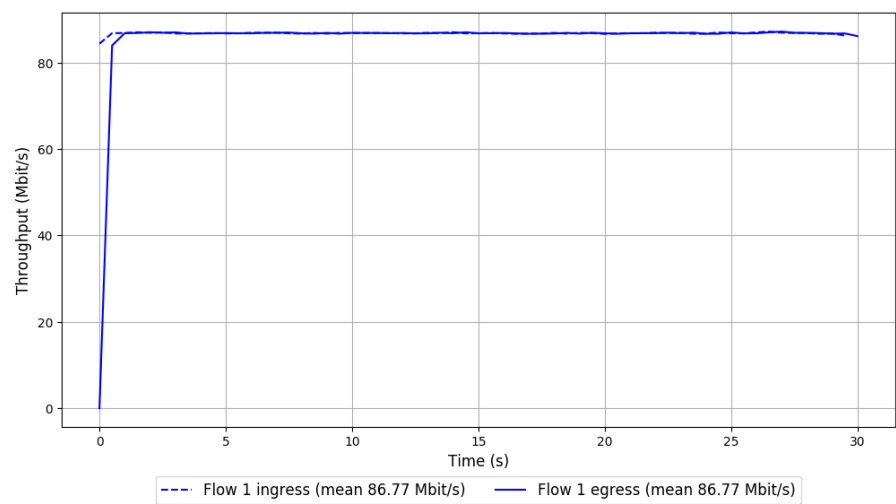
-- Flow 1:

Average throughput: 86.77 Mbit/s

95th percentile per-packet one-way delay: 2.476 ms

Loss rate: 0.01%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-11 08:45:40

End at: 2018-09-11 08:46:11

Local clock offset: 7.625 ms

Remote clock offset: 0.511 ms

Below is generated by plot.py at 2018-09-11 09:05:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.15 Mbit/s

95th percentile per-packet one-way delay: 2.393 ms

Loss rate: 0.01%

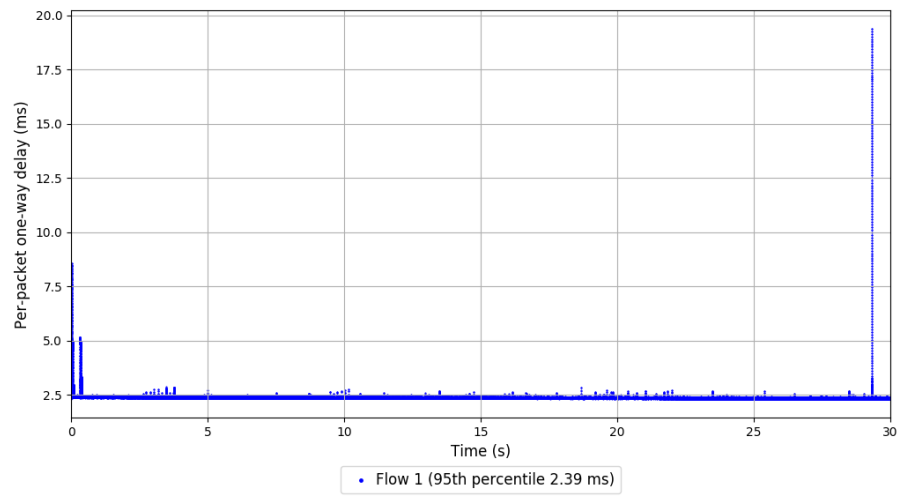
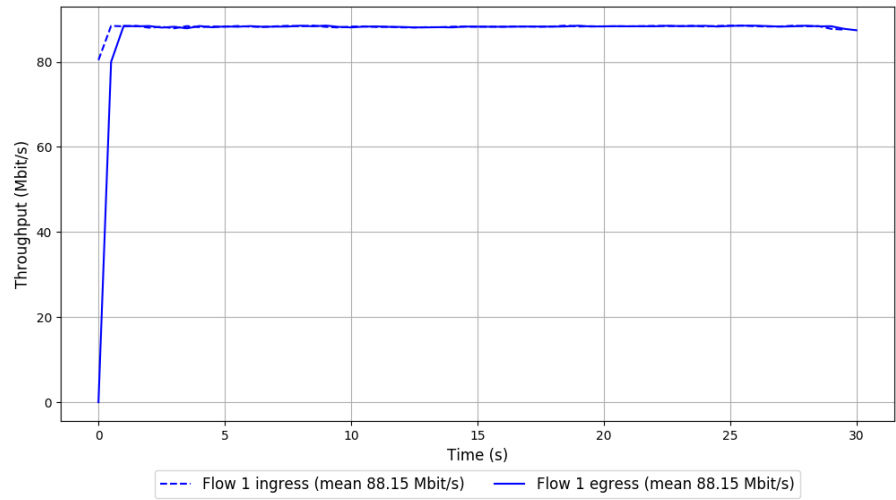
-- Flow 1:

Average throughput: 88.15 Mbit/s

95th percentile per-packet one-way delay: 2.393 ms

Loss rate: 0.01%

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

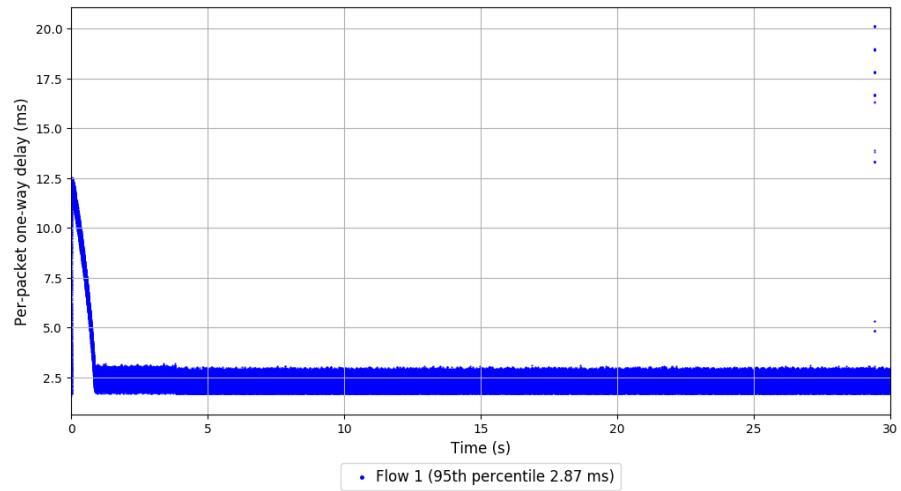
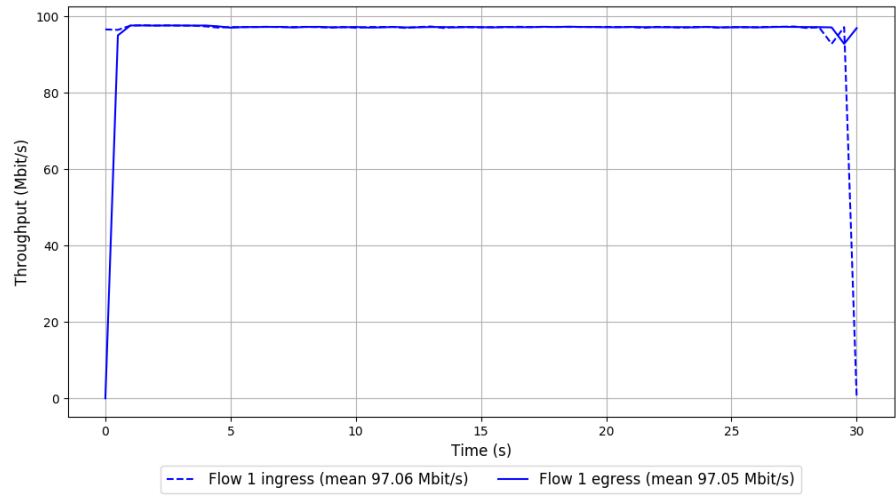


Run 1: Statistics of TCP Vegas

Start at: 2018-09-11 07:16:32
End at: 2018-09-11 07:17:02
Local clock offset: 1.115 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-09-11 09:05:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.05 Mbit/s
95th percentile per-packet one-way delay: 2.869 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.05 Mbit/s
95th percentile per-packet one-way delay: 2.869 ms
Loss rate: 0.01%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-11 07:36:53

End at: 2018-09-11 07:37:23

Local clock offset: 2.957 ms

Remote clock offset: 0.075 ms

Below is generated by plot.py at 2018-09-11 09:05:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.38 Mbit/s

95th percentile per-packet one-way delay: 3.585 ms

Loss rate: 0.01%

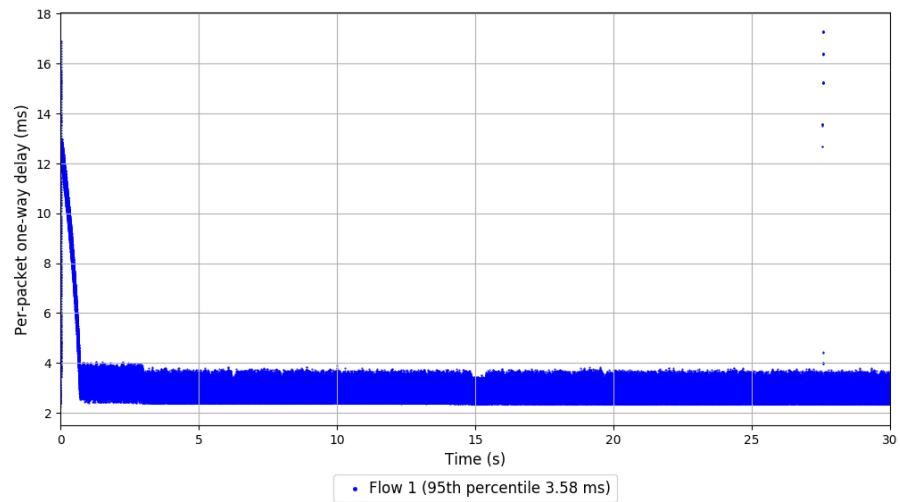
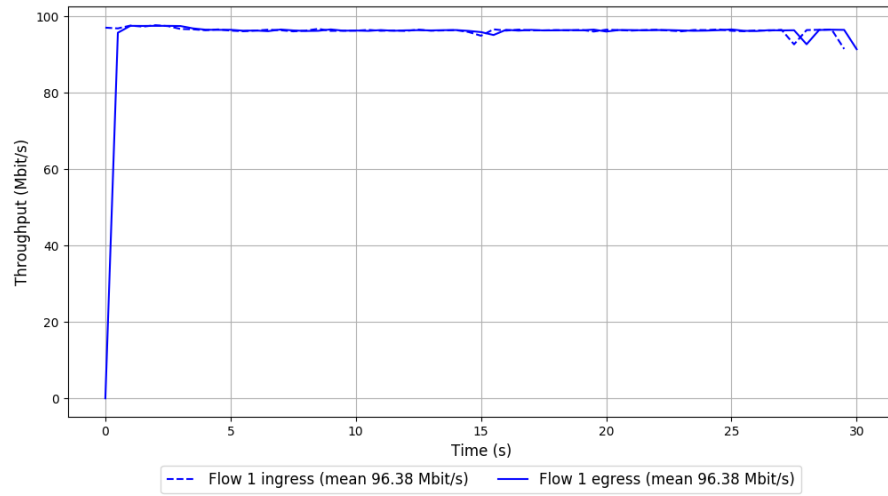
-- Flow 1:

Average throughput: 96.38 Mbit/s

95th percentile per-packet one-way delay: 3.585 ms

Loss rate: 0.01%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-11 07:57:09

End at: 2018-09-11 07:57:39

Local clock offset: 3.134 ms

Remote clock offset: 0.335 ms

Below is generated by plot.py at 2018-09-11 09:05:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.50 Mbit/s

95th percentile per-packet one-way delay: 2.827 ms

Loss rate: 0.01%

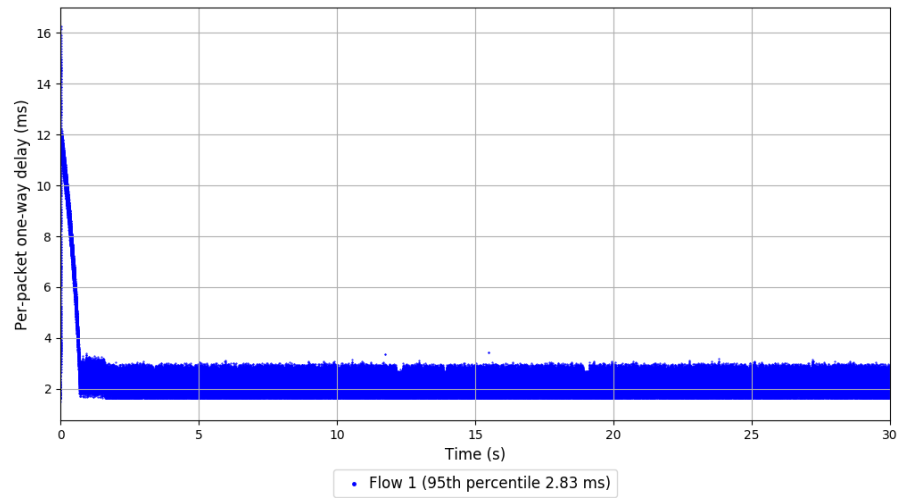
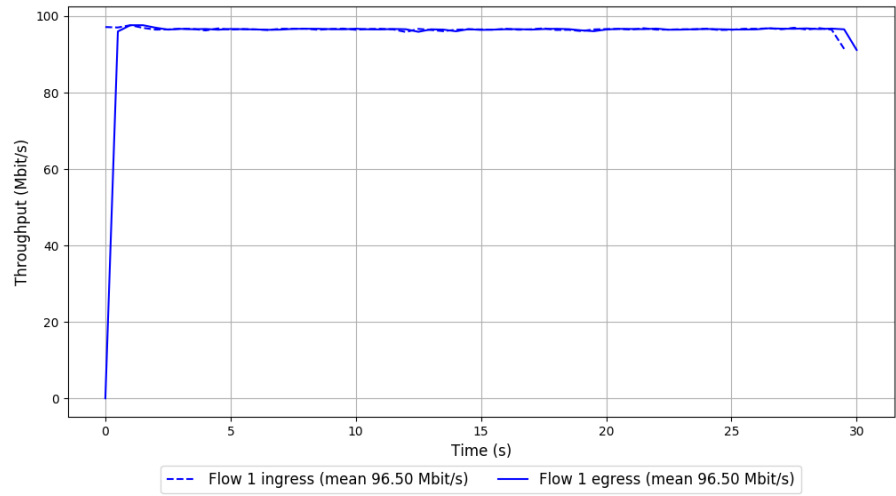
-- Flow 1:

Average throughput: 96.50 Mbit/s

95th percentile per-packet one-way delay: 2.827 ms

Loss rate: 0.01%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-11 08:17:31

End at: 2018-09-11 08:18:01

Local clock offset: 2.329 ms

Remote clock offset: 0.384 ms

Below is generated by plot.py at 2018-09-11 09:06:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.44 Mbit/s

95th percentile per-packet one-way delay: 3.190 ms

Loss rate: 0.02%

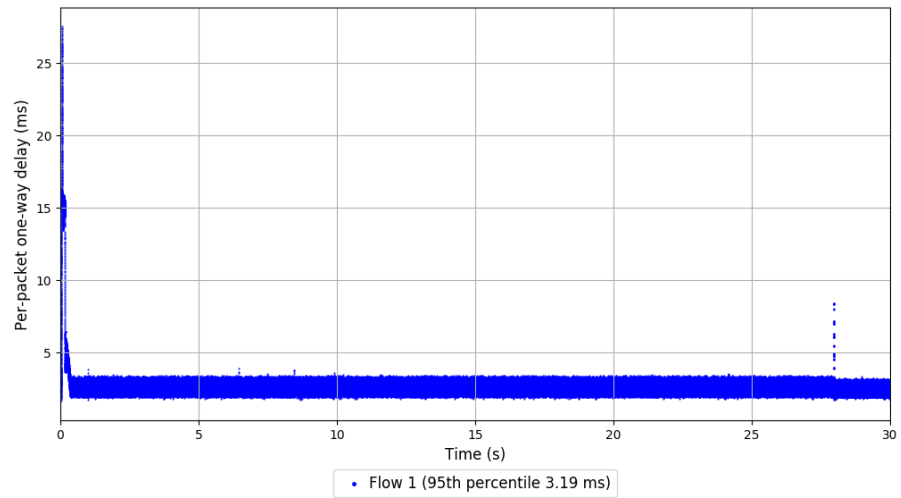
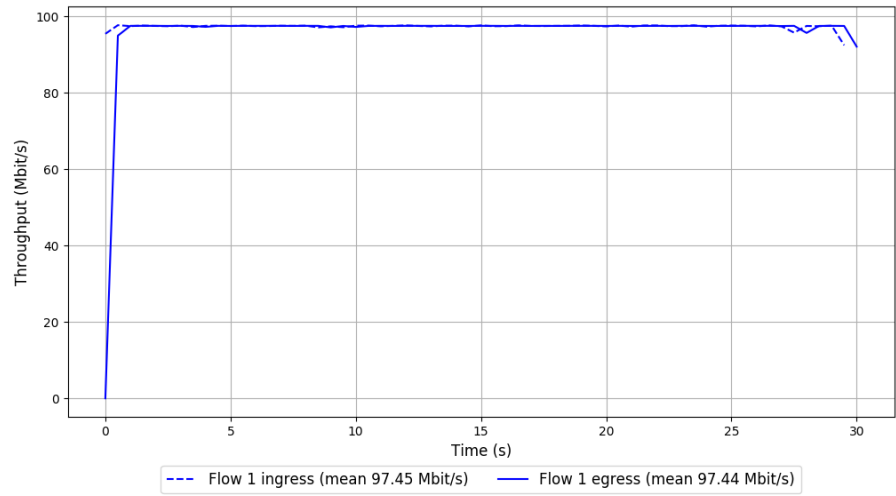
-- Flow 1:

Average throughput: 97.44 Mbit/s

95th percentile per-packet one-way delay: 3.190 ms

Loss rate: 0.02%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-11 08:37:48

End at: 2018-09-11 08:38:18

Local clock offset: 6.342 ms

Remote clock offset: 0.523 ms

Below is generated by plot.py at 2018-09-11 09:06:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 3.493 ms

Loss rate: 0.01%

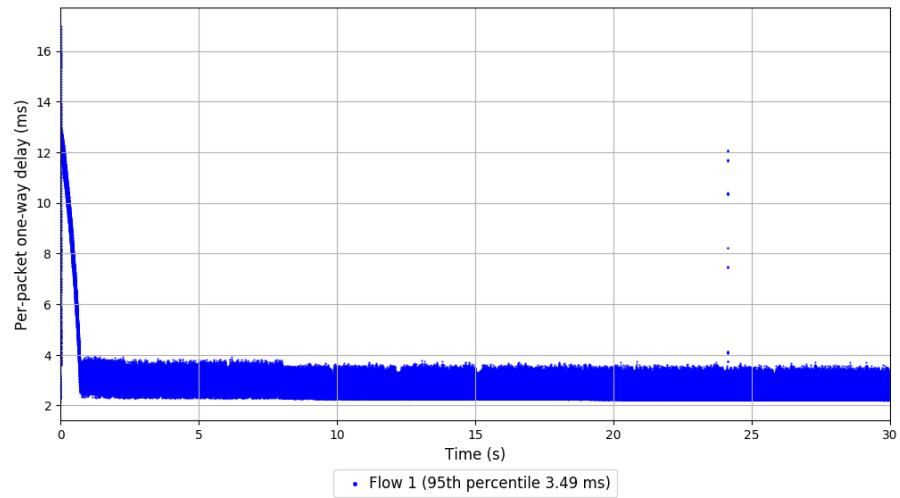
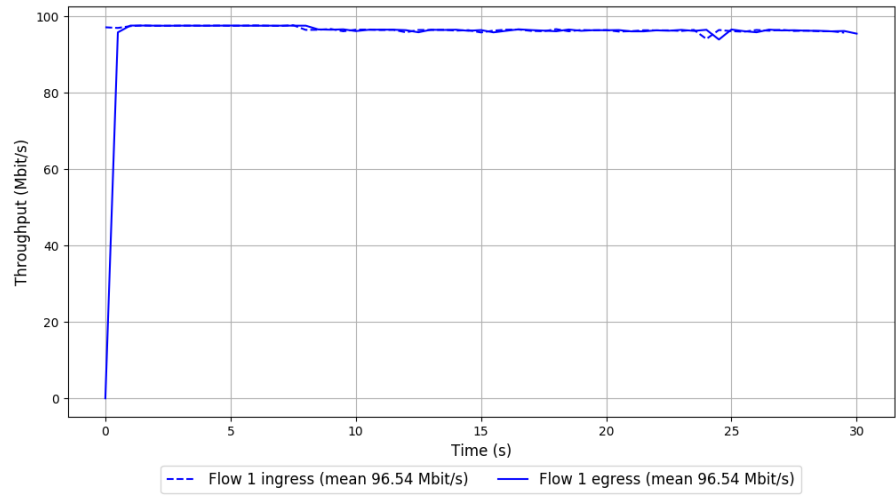
-- Flow 1:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 3.493 ms

Loss rate: 0.01%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-11 07:14:20

End at: 2018-09-11 07:14:50

Local clock offset: 1.12 ms

Remote clock offset: 0.044 ms

Below is generated by plot.py at 2018-09-11 09:06:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 49.17 Mbit/s

95th percentile per-packet one-way delay: 10.617 ms

Loss rate: 0.01%

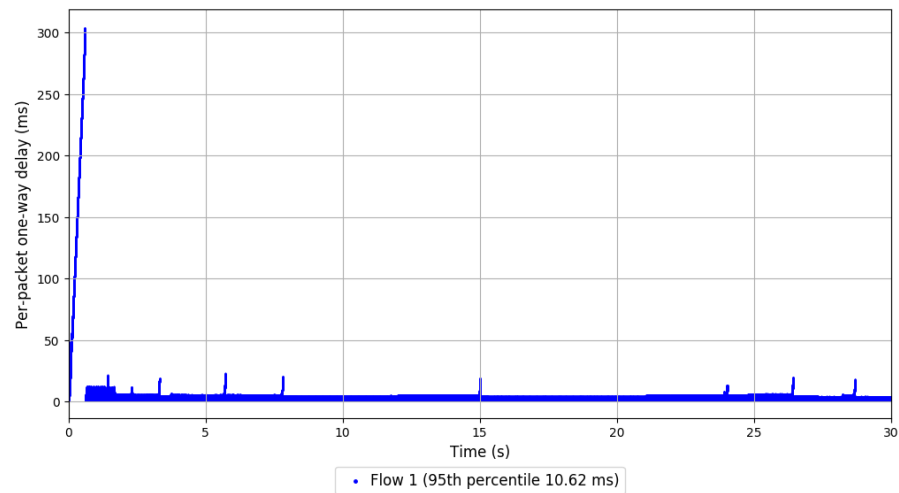
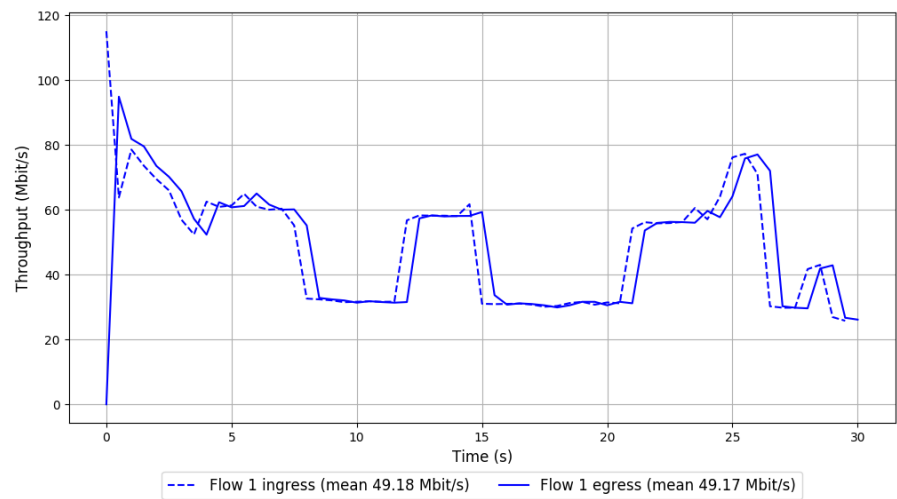
-- Flow 1:

Average throughput: 49.17 Mbit/s

95th percentile per-packet one-way delay: 10.617 ms

Loss rate: 0.01%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-11 07:34:40

End at: 2018-09-11 07:35:10

Local clock offset: 2.632 ms

Remote clock offset: 0.006 ms

Below is generated by plot.py at 2018-09-11 09:06:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 73.70 Mbit/s

95th percentile per-packet one-way delay: 9.437 ms

Loss rate: 0.02%

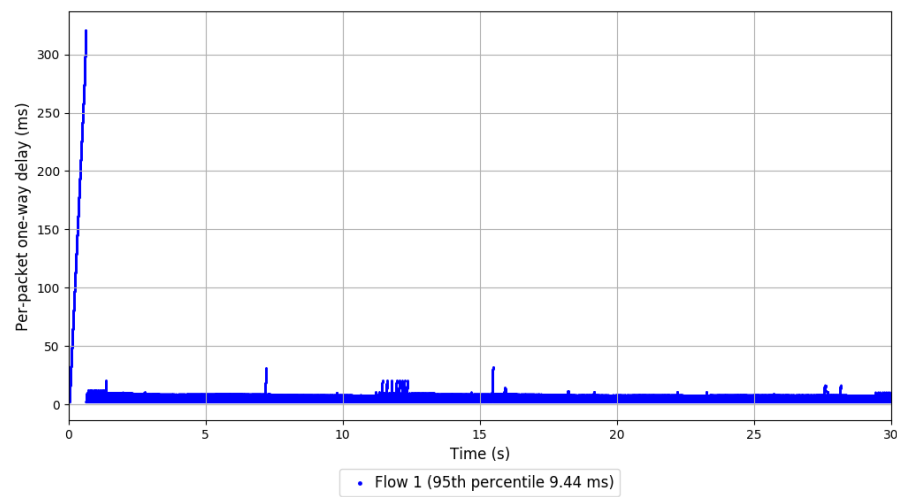
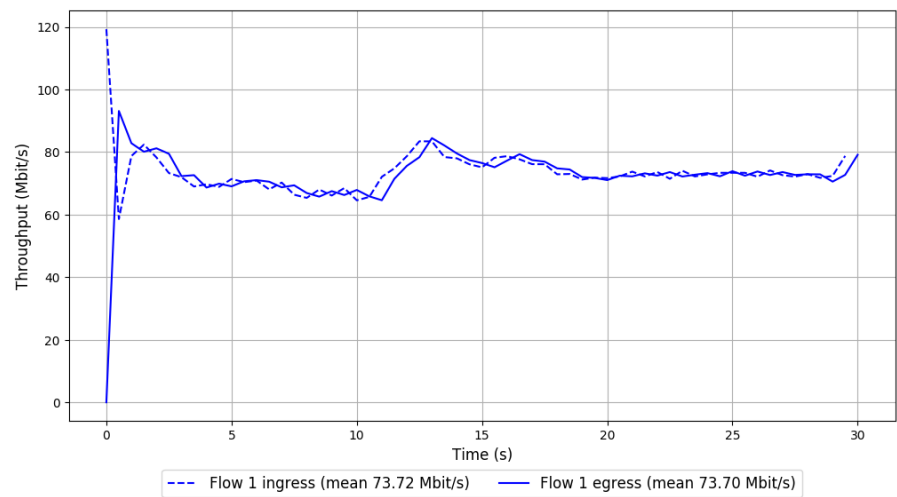
-- Flow 1:

Average throughput: 73.70 Mbit/s

95th percentile per-packet one-way delay: 9.437 ms

Loss rate: 0.02%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-11 07:54:57

End at: 2018-09-11 07:55:27

Local clock offset: 3.834 ms

Remote clock offset: 0.322 ms

Below is generated by plot.py at 2018-09-11 09:06:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 43.16 Mbit/s

95th percentile per-packet one-way delay: 11.974 ms

Loss rate: 0.01%

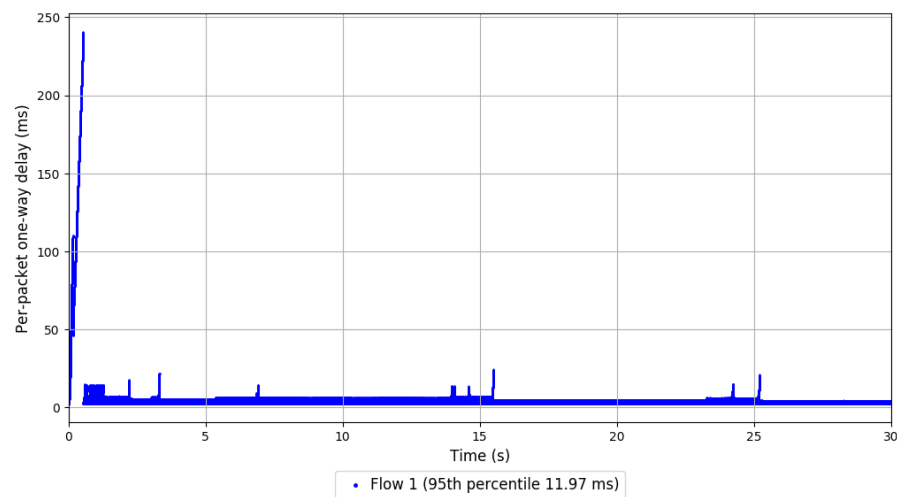
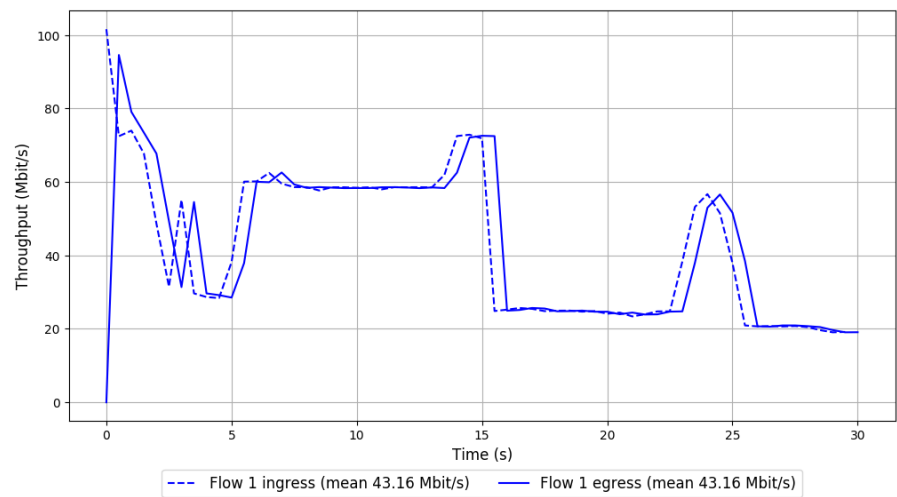
-- Flow 1:

Average throughput: 43.16 Mbit/s

95th percentile per-packet one-way delay: 11.974 ms

Loss rate: 0.01%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-11 08:15:17

End at: 2018-09-11 08:15:47

Local clock offset: 3.12 ms

Remote clock offset: 0.53 ms

Below is generated by plot.py at 2018-09-11 09:06:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.27 Mbit/s

95th percentile per-packet one-way delay: 9.699 ms

Loss rate: 0.02%

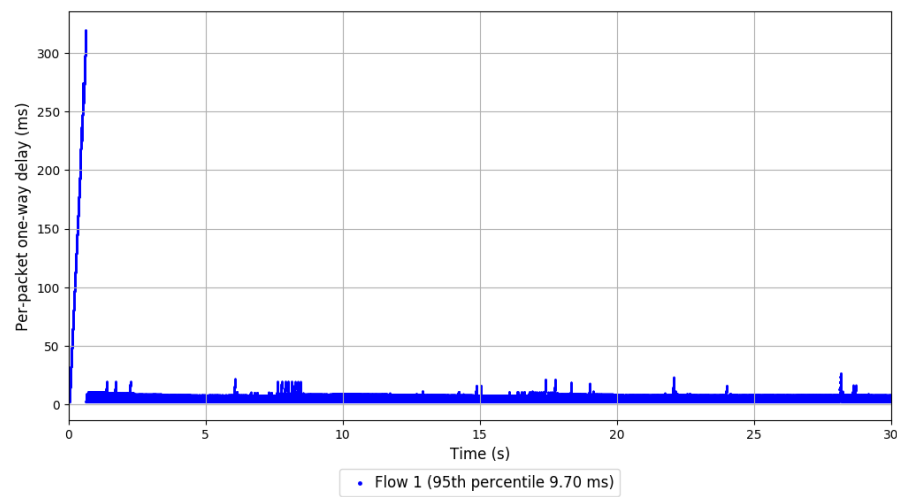
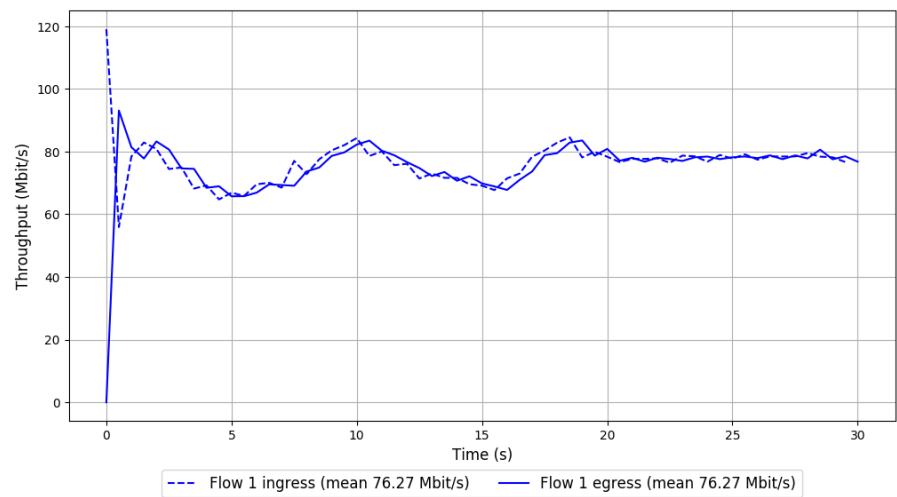
-- Flow 1:

Average throughput: 76.27 Mbit/s

95th percentile per-packet one-way delay: 9.699 ms

Loss rate: 0.02%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-11 08:35:34

End at: 2018-09-11 08:36:04

Local clock offset: 5.012 ms

Remote clock offset: 0.562 ms

Below is generated by plot.py at 2018-09-11 09:06:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.13 Mbit/s

95th percentile per-packet one-way delay: 13.157 ms

Loss rate: 0.03%

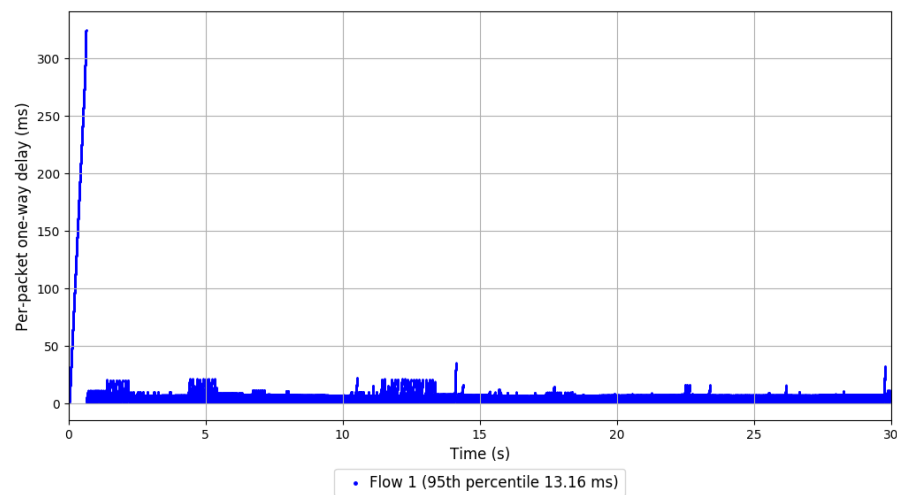
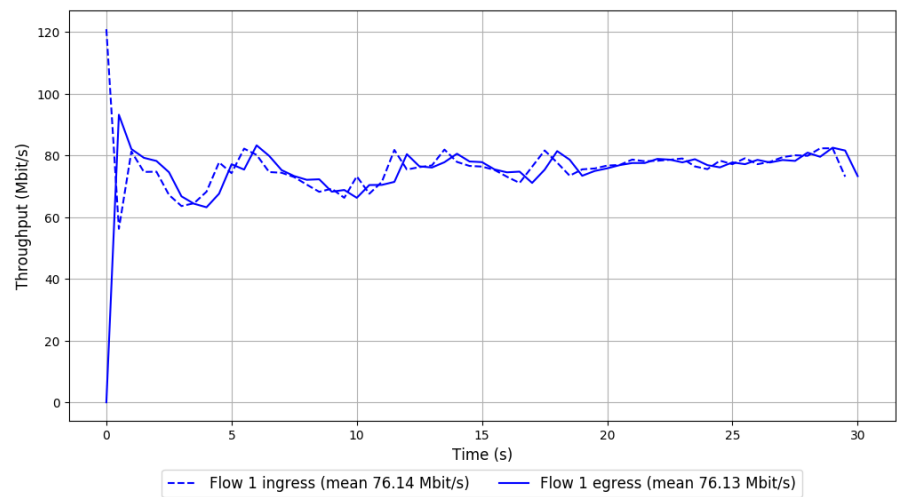
-- Flow 1:

Average throughput: 76.13 Mbit/s

95th percentile per-packet one-way delay: 13.157 ms

Loss rate: 0.03%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-11 07:25:35

End at: 2018-09-11 07:26:05

Local clock offset: 1.533 ms

Remote clock offset: 0.021 ms

Below is generated by plot.py at 2018-09-11 09:06:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.26 Mbit/s

95th percentile per-packet one-way delay: 2.373 ms

Loss rate: 0.01%

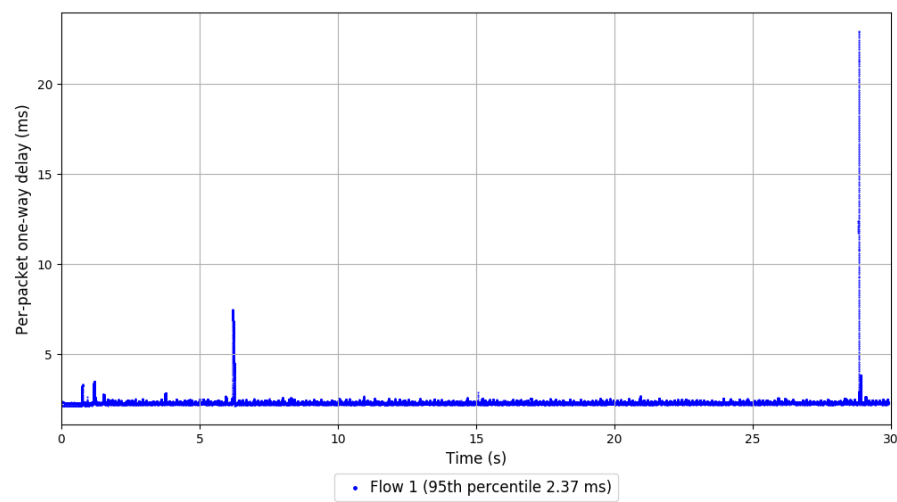
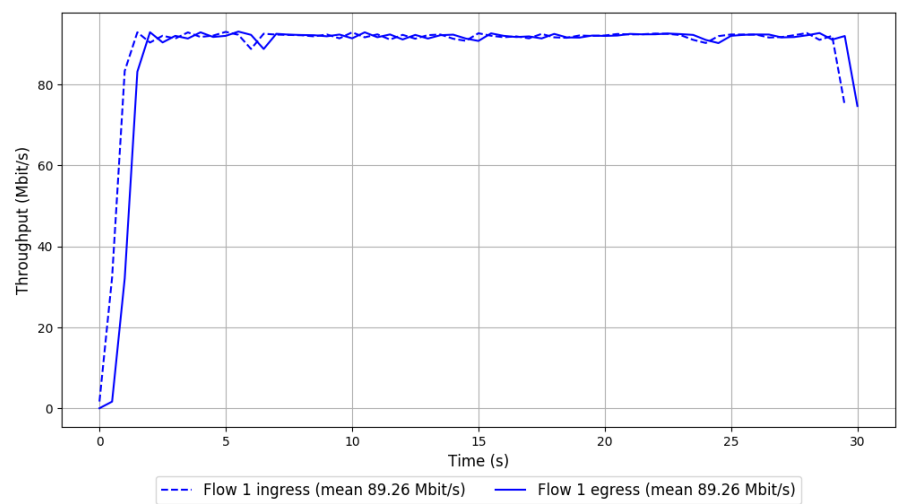
-- Flow 1:

Average throughput: 89.26 Mbit/s

95th percentile per-packet one-way delay: 2.373 ms

Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-11 07:45:56

End at: 2018-09-11 07:46:26

Local clock offset: 2.799 ms

Remote clock offset: 0.265 ms

Below is generated by plot.py at 2018-09-11 09:06:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.26 Mbit/s

95th percentile per-packet one-way delay: 1.553 ms

Loss rate: 0.01%

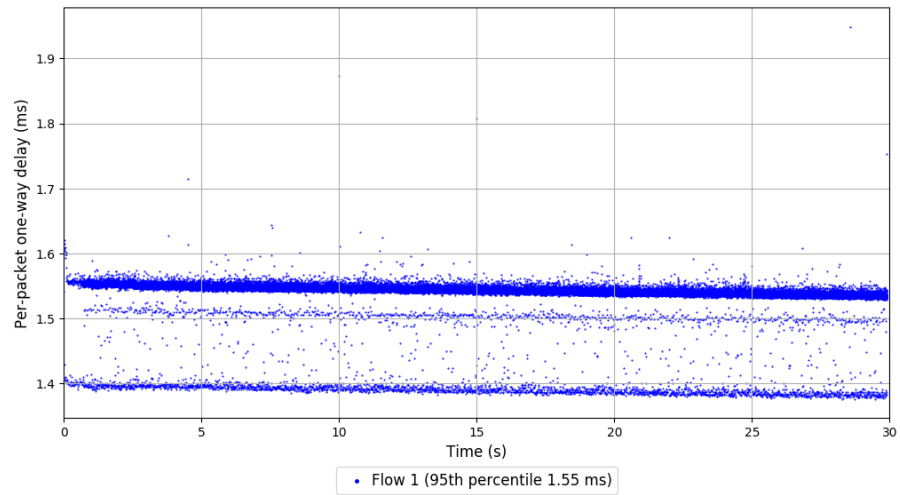
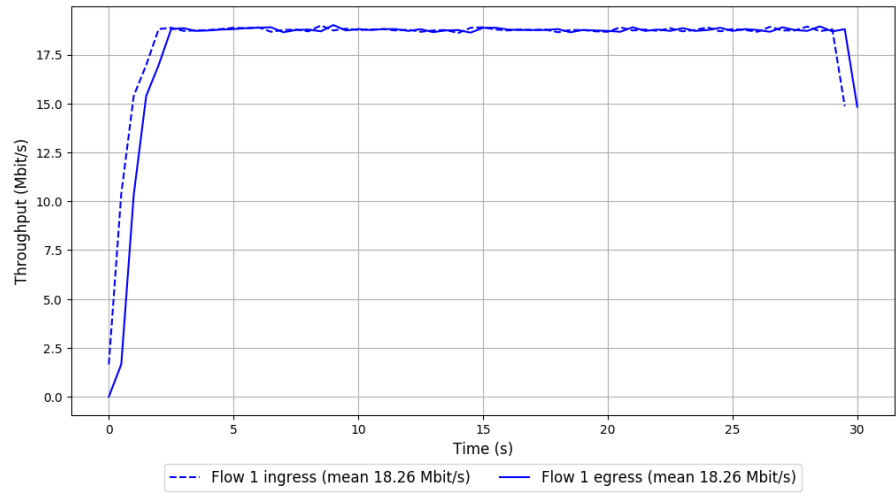
-- Flow 1:

Average throughput: 18.26 Mbit/s

95th percentile per-packet one-way delay: 1.553 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-11 08:06:13

End at: 2018-09-11 08:06:43

Local clock offset: 3.278 ms

Remote clock offset: 0.496 ms

Below is generated by plot.py at 2018-09-11 09:06:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.99 Mbit/s

95th percentile per-packet one-way delay: 2.361 ms

Loss rate: 0.01%

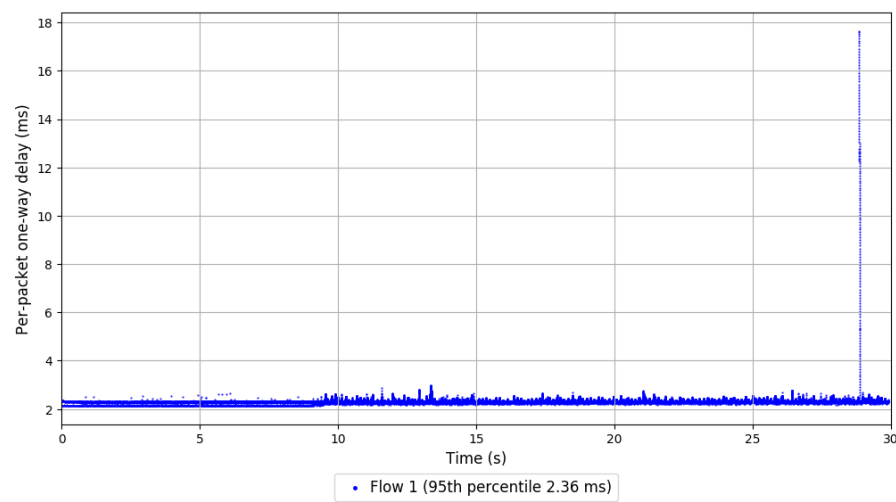
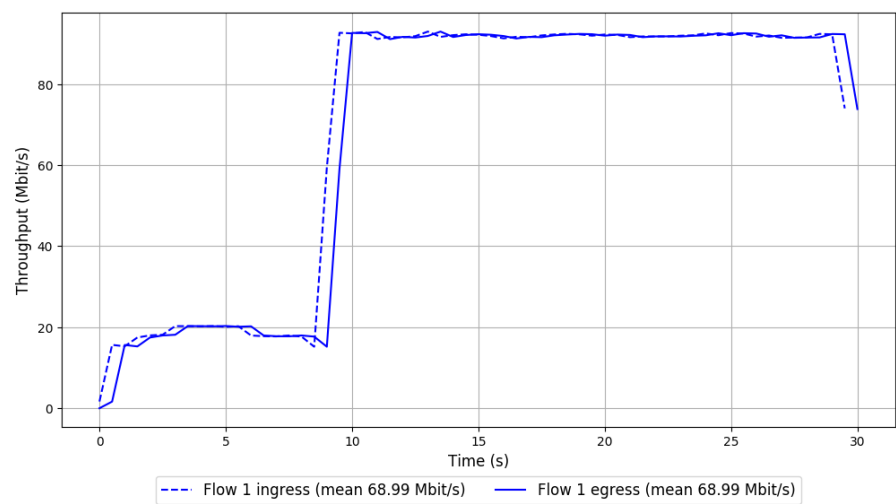
-- Flow 1:

Average throughput: 68.99 Mbit/s

95th percentile per-packet one-way delay: 2.361 ms

Loss rate: 0.01%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-11 08:26:34

End at: 2018-09-11 08:27:04

Local clock offset: 2.236 ms

Remote clock offset: 0.47 ms

Below is generated by plot.py at 2018-09-11 09:06:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 17.42 Mbit/s

95th percentile per-packet one-way delay: 1.656 ms

Loss rate: 0.01%

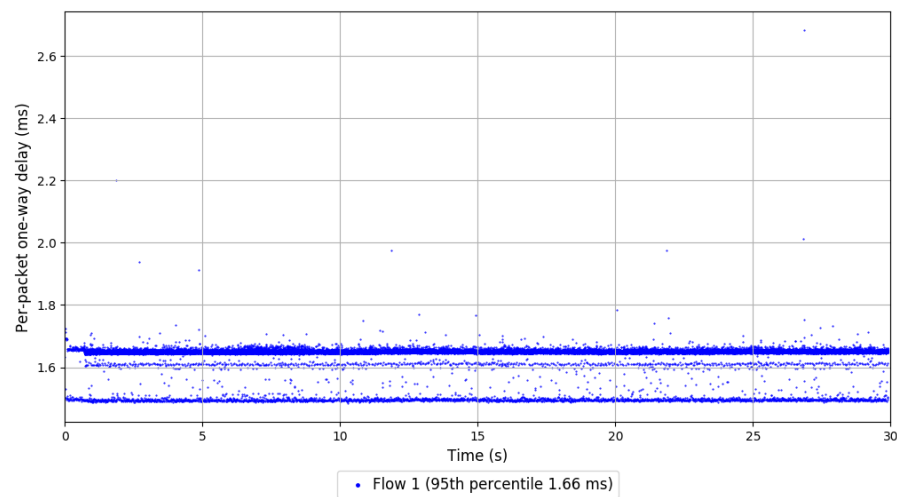
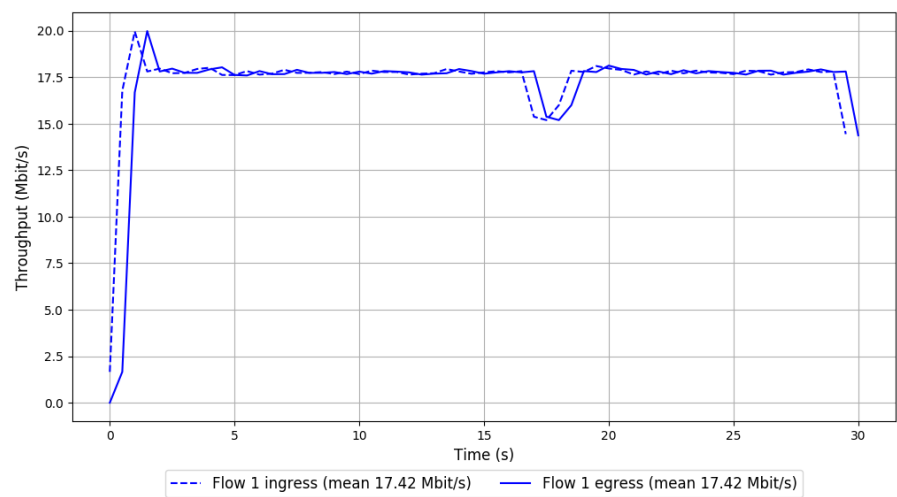
-- Flow 1:

Average throughput: 17.42 Mbit/s

95th percentile per-packet one-way delay: 1.656 ms

Loss rate: 0.01%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-11 08:46:51

End at: 2018-09-11 08:47:21

Local clock offset: 7.757 ms

Remote clock offset: 0.601 ms

Below is generated by plot.py at 2018-09-11 09:07:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.57 Mbit/s

95th percentile per-packet one-way delay: 2.300 ms

Loss rate: 0.01%

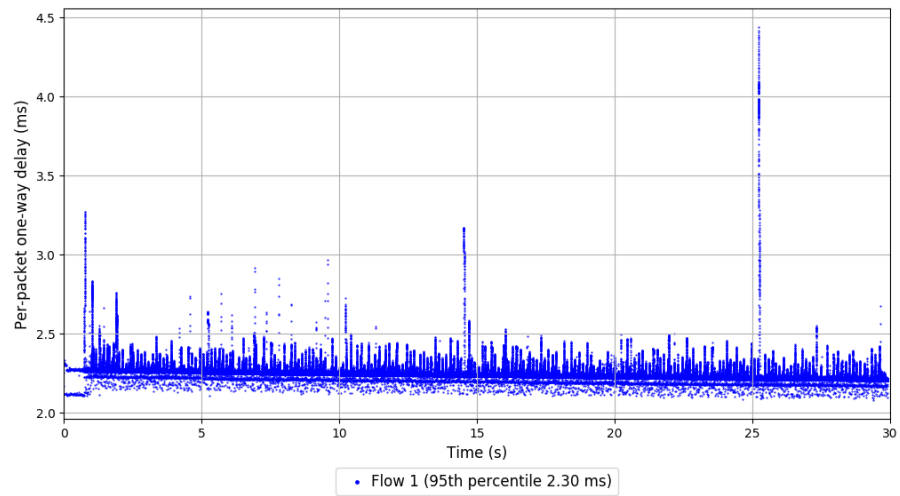
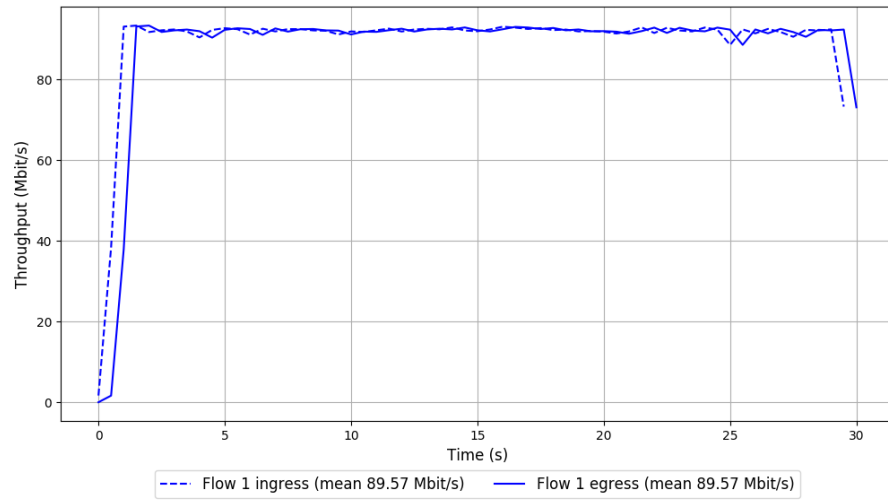
-- Flow 1:

Average throughput: 89.57 Mbit/s

95th percentile per-packet one-way delay: 2.300 ms

Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-11 07:28:57

End at: 2018-09-11 07:29:27

Local clock offset: 0.957 ms

Remote clock offset: 0.093 ms

Below is generated by plot.py at 2018-09-11 09:07:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.32 Mbit/s

95th percentile per-packet one-way delay: 1.855 ms

Loss rate: 0.08%

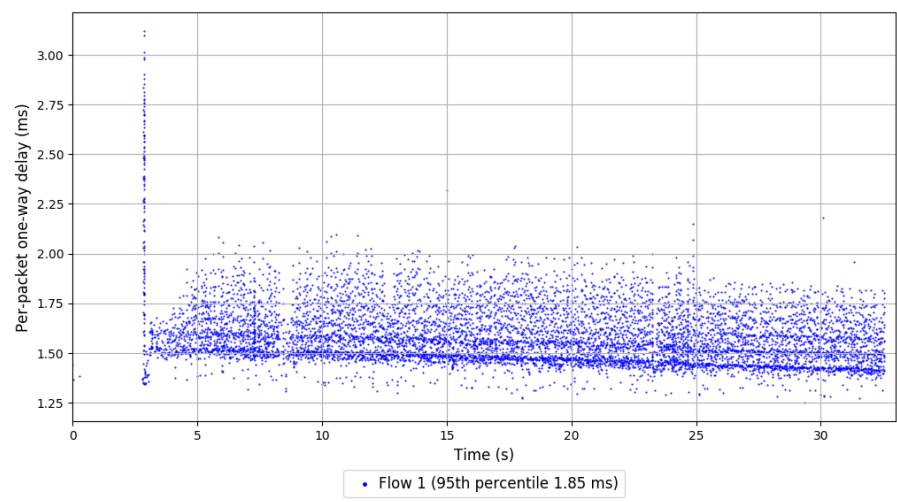
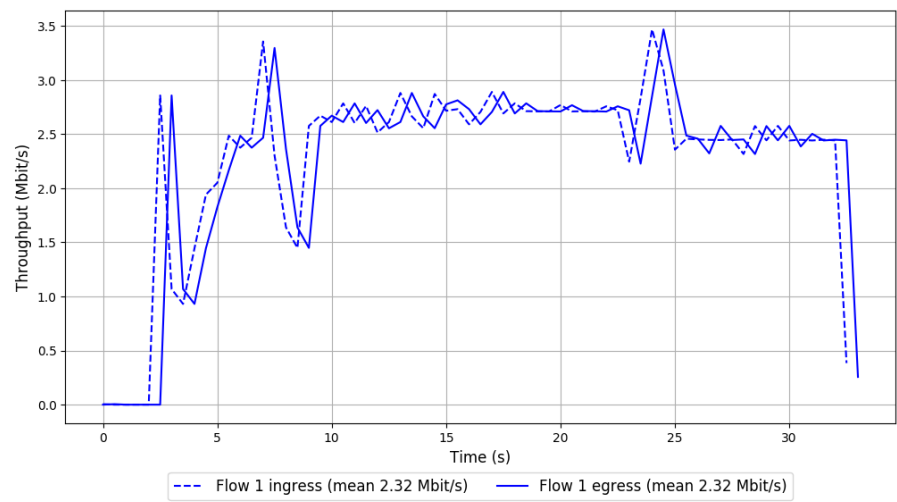
-- Flow 1:

Average throughput: 2.32 Mbit/s

95th percentile per-packet one-way delay: 1.855 ms

Loss rate: 0.08%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-11 07:49:15

End at: 2018-09-11 07:49:45

Local clock offset: 2.936 ms

Remote clock offset: 0.289 ms

Below is generated by plot.py at 2018-09-11 09:07:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.42 Mbit/s

95th percentile per-packet one-way delay: 2.028 ms

Loss rate: 0.00%

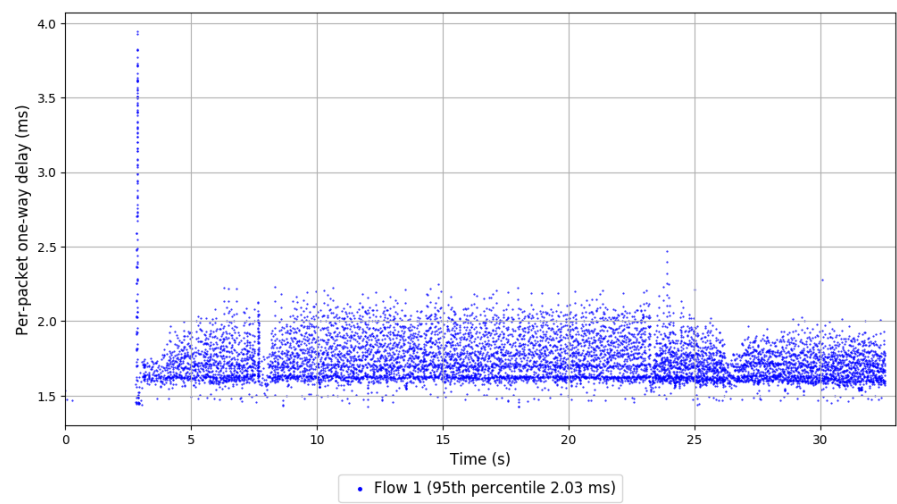
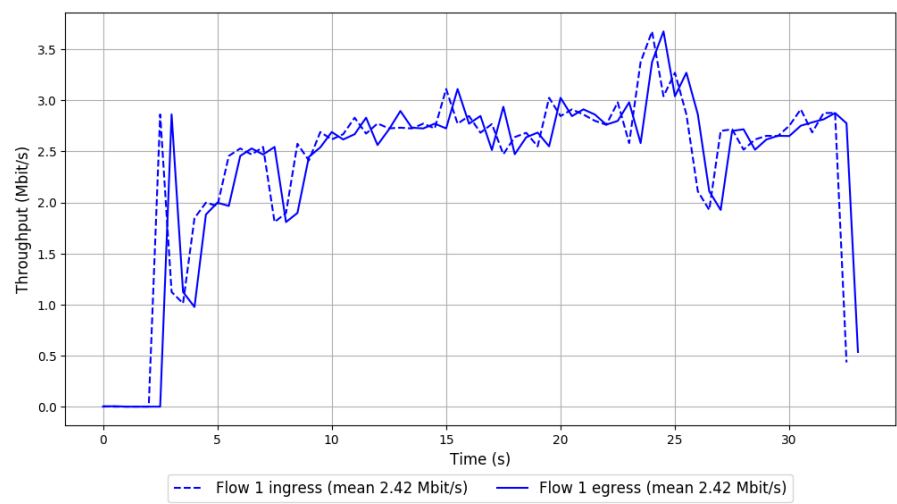
-- Flow 1:

Average throughput: 2.42 Mbit/s

95th percentile per-packet one-way delay: 2.028 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-11 08:09:34

End at: 2018-09-11 08:10:04

Local clock offset: 3.226 ms

Remote clock offset: 0.46 ms

Below is generated by plot.py at 2018-09-11 09:07:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.37 Mbit/s

95th percentile per-packet one-way delay: 2.873 ms

Loss rate: 0.00%

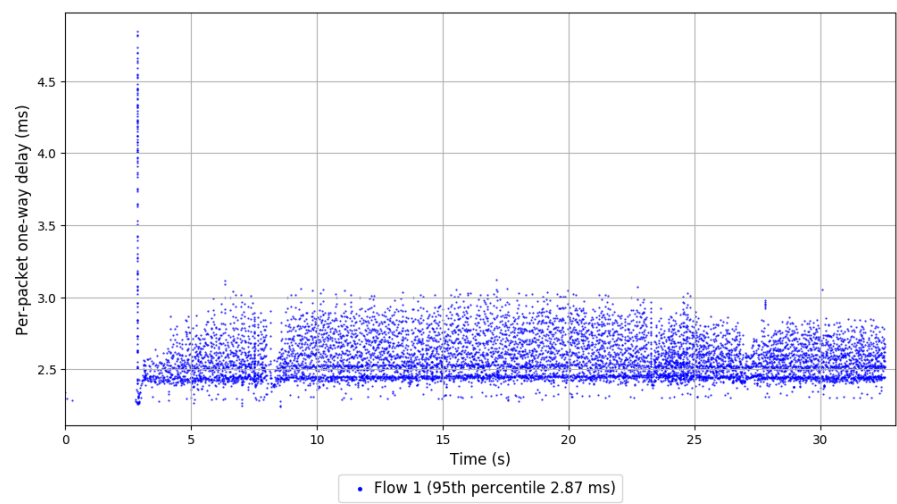
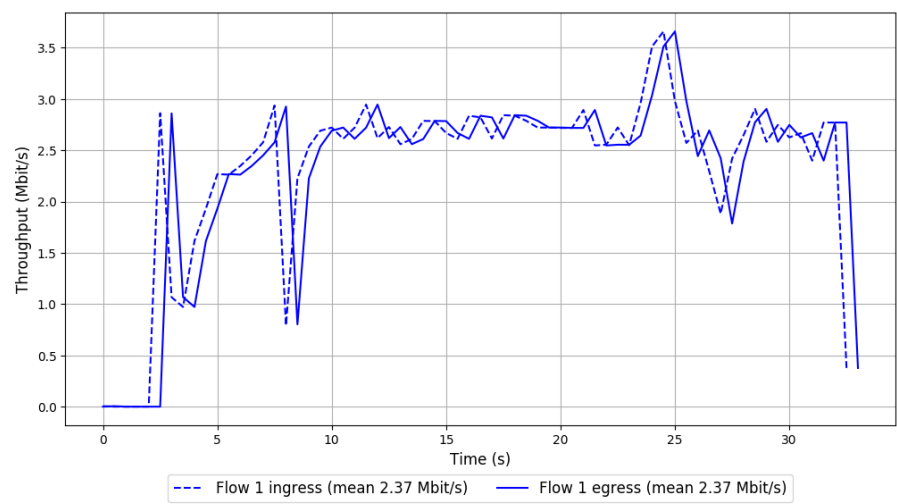
-- Flow 1:

Average throughput: 2.37 Mbit/s

95th percentile per-packet one-way delay: 2.873 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-11 08:29:52

End at: 2018-09-11 08:30:22

Local clock offset: 3.843 ms

Remote clock offset: 0.424 ms

Below is generated by plot.py at 2018-09-11 09:07:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 2.702 ms

Loss rate: 0.07%

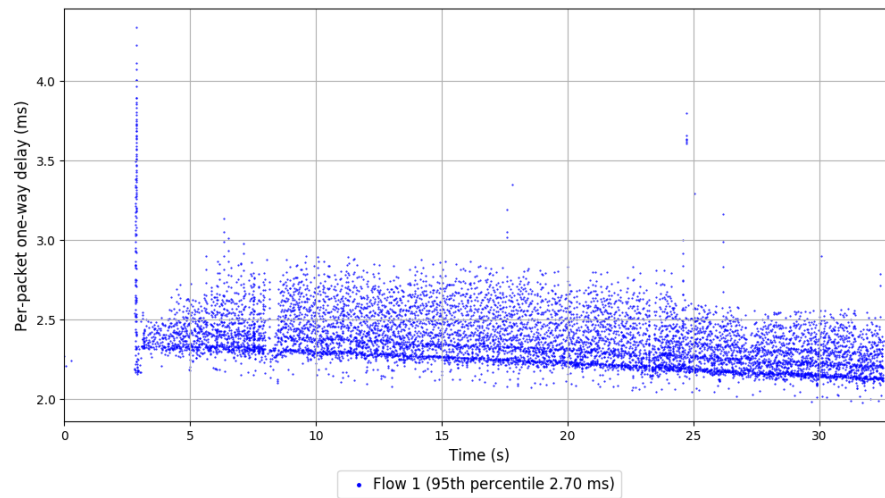
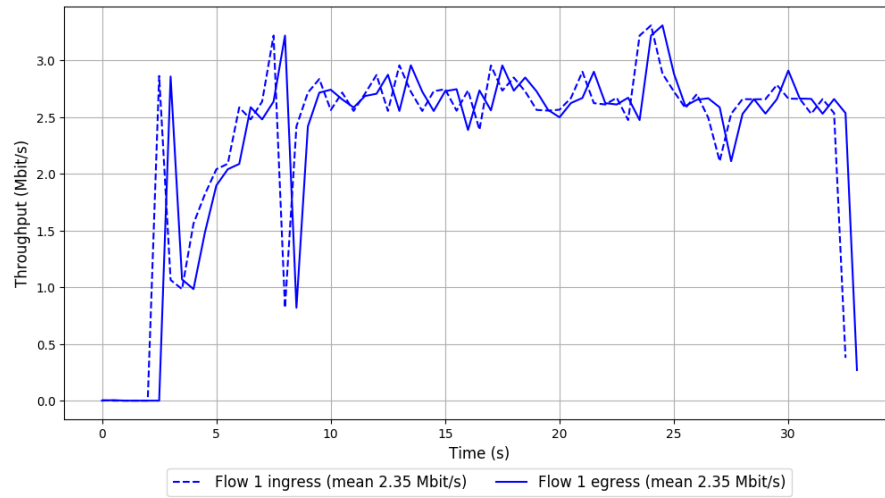
-- Flow 1:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 2.702 ms

Loss rate: 0.07%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-11 08:50:14

End at: 2018-09-11 08:50:44

Local clock offset: 8.122 ms

Remote clock offset: 0.438 ms

Below is generated by plot.py at 2018-09-11 09:07:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 2.874 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 2.874 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

