

Pantheon Report

Generated at 2018-09-07 12:53:49 (UTC).

Data path: AWS California 1 on `ens5` (*local*) → Stanford on `eno1` (*remote*).

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:

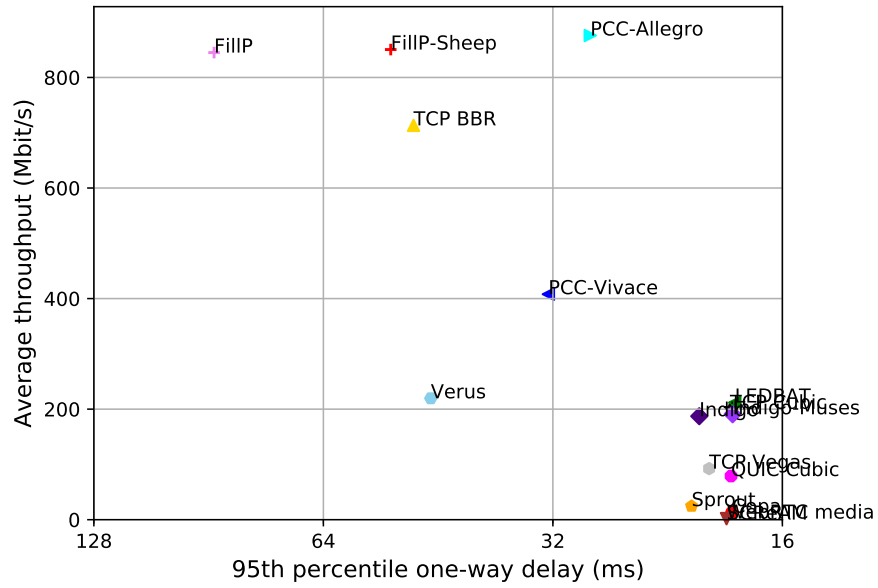
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912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

Git summary:

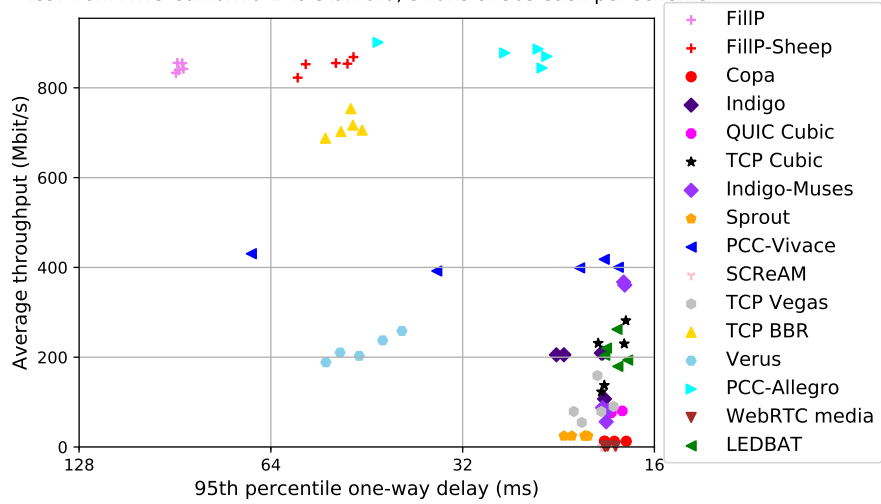
```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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 AWS California 1 to Stanford, 5 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS California 1 to Stanford, 5 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	713.34	48.75	0.52
Copa	4	12.71	18.63	65.11
TCP Cubic	5	200.55	18.75	0.02
FillP	5	845.01	89.03	3.74
FillP-Sheep	5	850.48	52.22	5.07
Indigo	5	187.21	20.57	0.01
LEDBAT	5	211.95	18.48	0.01
Indigo-Muses	5	190.74	18.59	0.01
PCC-Allegro	5	875.88	28.58	0.48
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	5	78.97	18.68	0.01
SCReAM	5	0.22	18.92	0.00
Sprout	5	24.59	21.05	0.06
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	92.38	19.96	0.31
Verus	5	219.61	46.27	19.61
PCC-Vivace	5	407.93	32.44	0.01
WebRTC media	5	1.98	18.94	0.01

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 10:17:23

End at: 2018-09-07 10:17:53

Local clock offset: 0.896 ms

Remote clock offset: 0.085 ms

Below is generated by plot.py at 2018-09-07 12:21:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 687.79 Mbit/s

95th percentile per-packet one-way delay: 52.546 ms

Loss rate: 0.24%

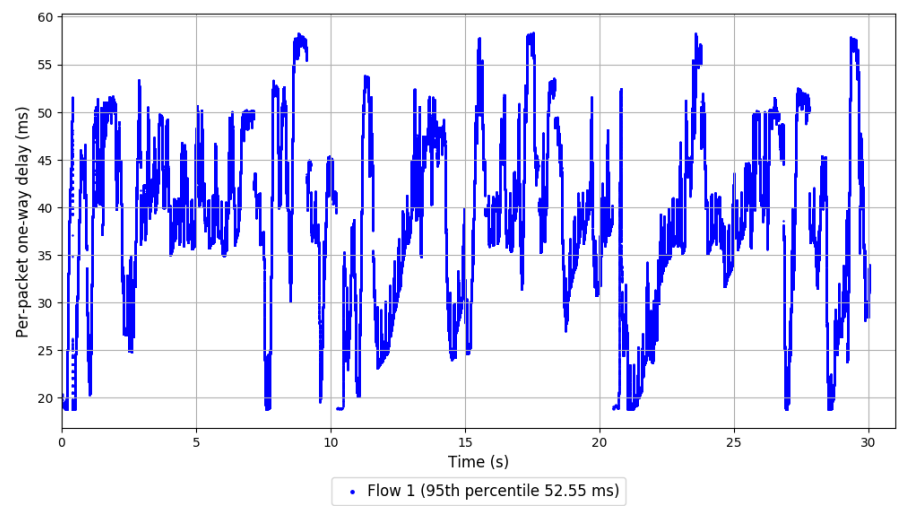
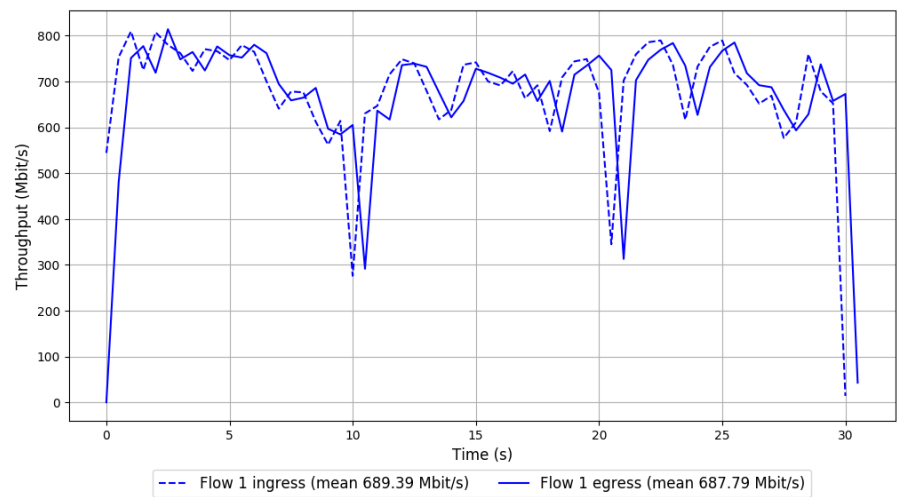
-- Flow 1:

Average throughput: 687.79 Mbit/s

95th percentile per-packet one-way delay: 52.546 ms

Loss rate: 0.24%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-07 10:43:28

End at: 2018-09-07 10:43:58

Local clock offset: 1.38 ms

Remote clock offset: 0.032 ms

Below is generated by plot.py at 2018-09-07 12:21:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 702.59 Mbit/s

95th percentile per-packet one-way delay: 49.679 ms

Loss rate: 0.34%

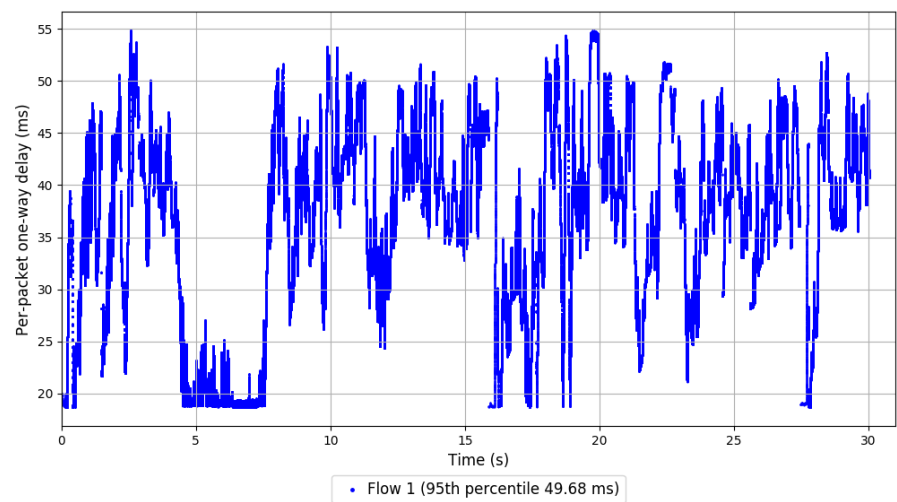
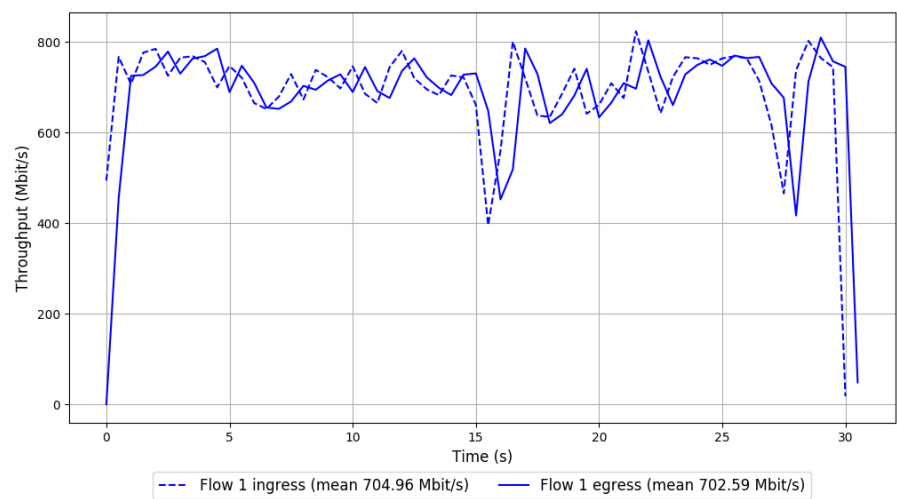
-- Flow 1:

Average throughput: 702.59 Mbit/s

95th percentile per-packet one-way delay: 49.679 ms

Loss rate: 0.34%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

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

End at: 2018-09-07 11:10:01

Local clock offset: 1.134 ms

Remote clock offset: 0.412 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 753.65 Mbit/s

95th percentile per-packet one-way delay: 47.921 ms

Loss rate: 1.27%

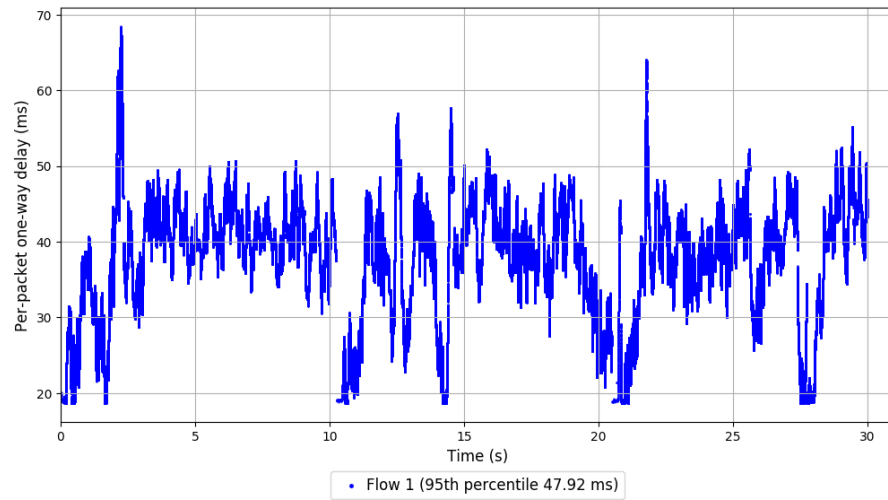
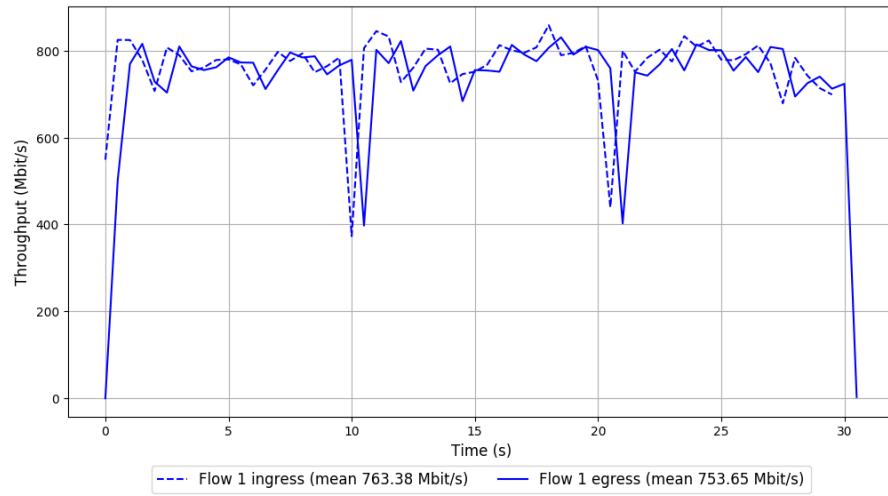
-- Flow 1:

Average throughput: 753.65 Mbit/s

95th percentile per-packet one-way delay: 47.921 ms

Loss rate: 1.27%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-07 11:35:53

End at: 2018-09-07 11:36:23

Local clock offset: 0.008 ms

Remote clock offset: 0.788 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 705.78 Mbit/s

95th percentile per-packet one-way delay: 46.013 ms

Loss rate: 0.34%

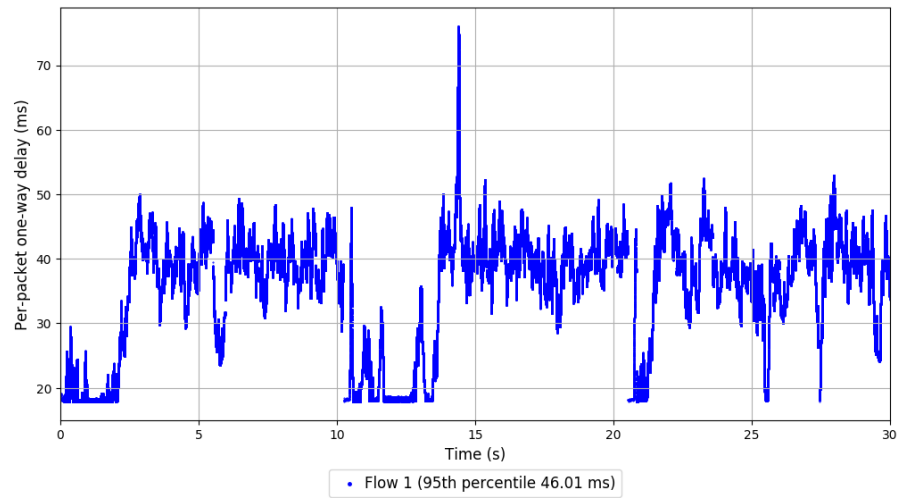
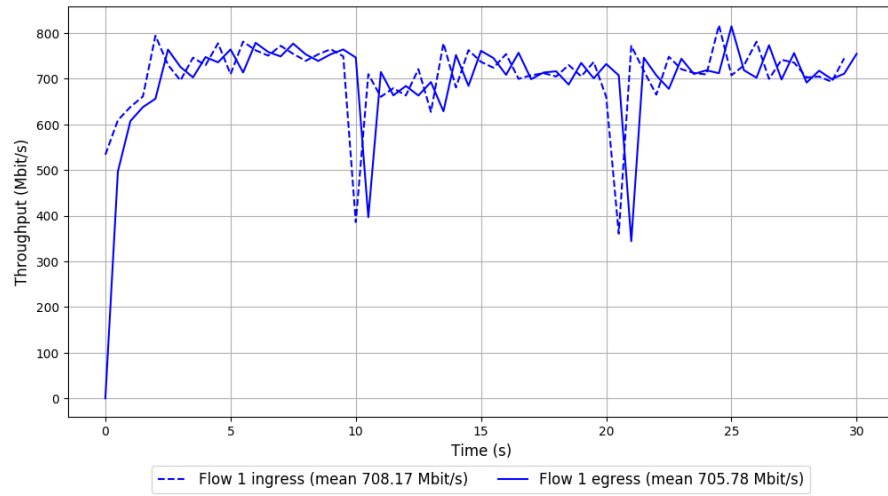
-- Flow 1:

Average throughput: 705.78 Mbit/s

95th percentile per-packet one-way delay: 46.013 ms

Loss rate: 0.34%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-07 12:02:05

End at: 2018-09-07 12:02:35

Local clock offset: -0.458 ms

Remote clock offset: 1.014 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 716.90 Mbit/s

95th percentile per-packet one-way delay: 47.570 ms

Loss rate: 0.43%

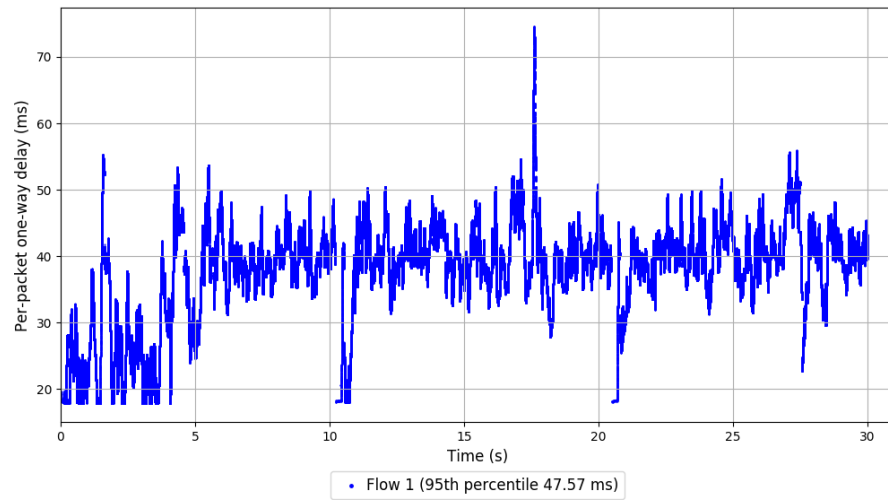
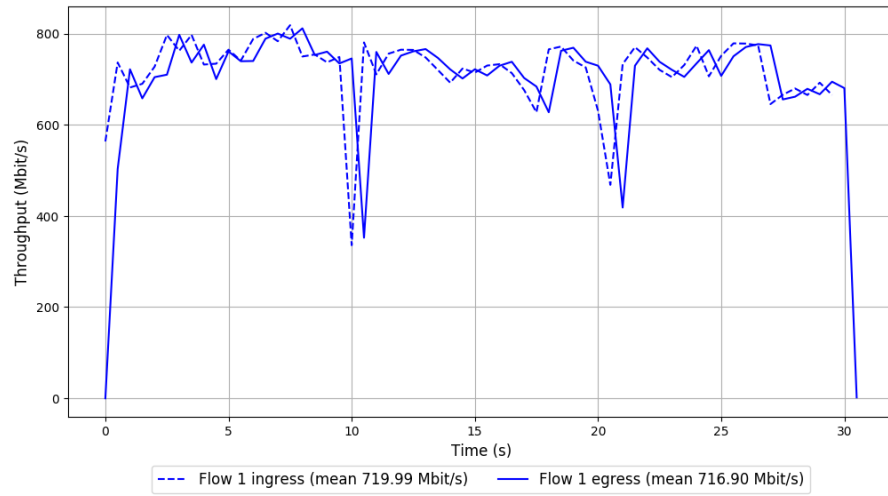
-- Flow 1:

Average throughput: 716.90 Mbit/s

95th percentile per-packet one-way delay: 47.570 ms

Loss rate: 0.43%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

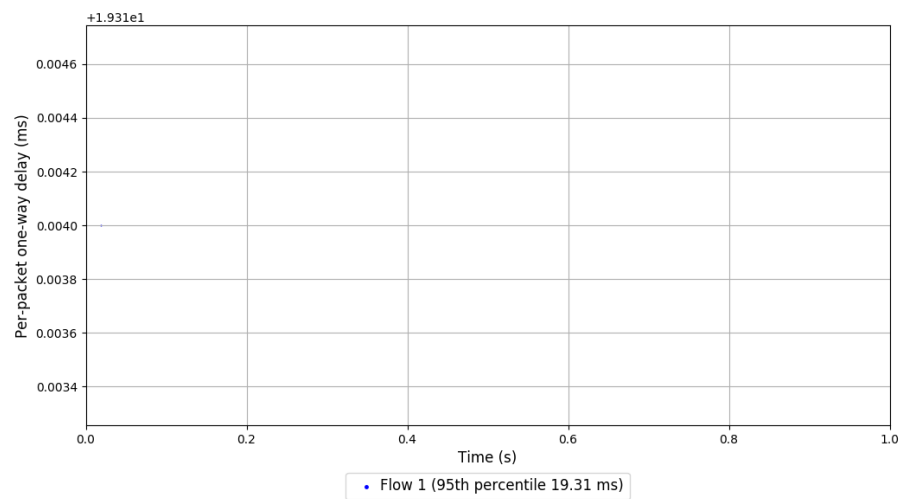
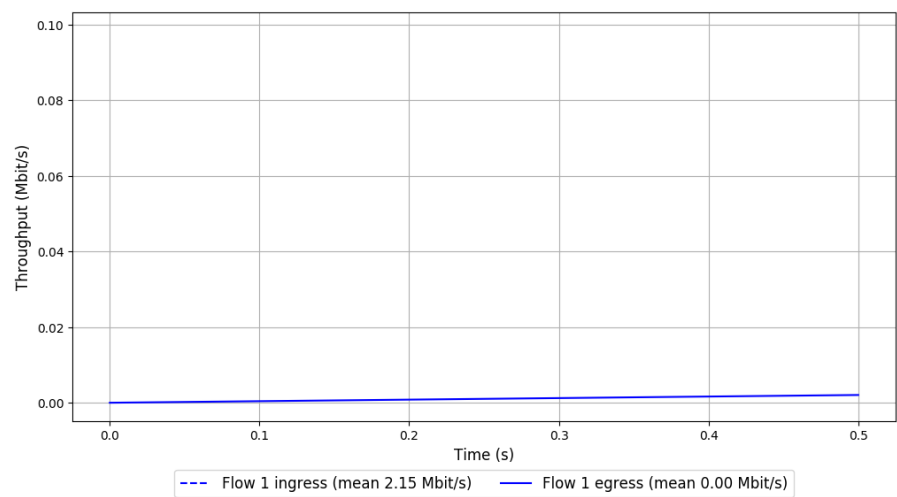
Start at: 2018-09-07 09:58:56

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

Local clock offset: 0.64 ms

Remote clock offset: -0.154 ms

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-09-07 10:24:56

End at: 2018-09-07 10:25:26

Local clock offset: 1.053 ms

Remote clock offset: 0.24 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 19.172 ms

Loss rate: 67.19%

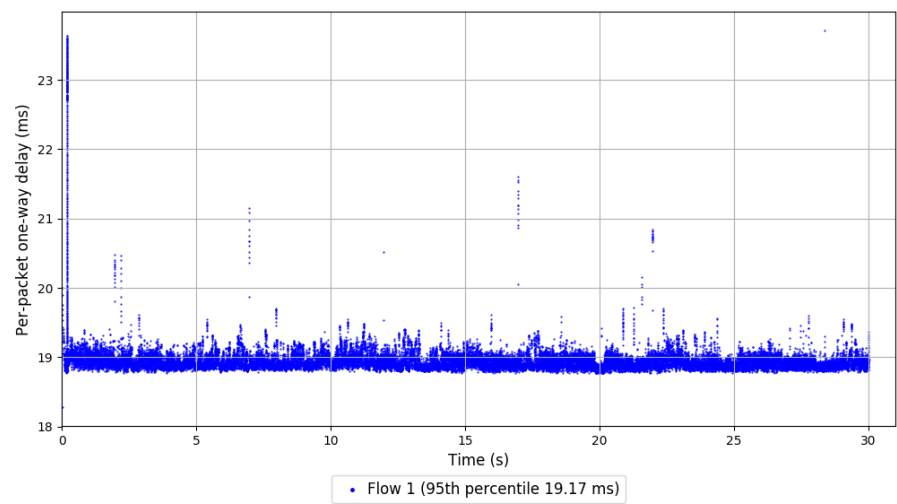
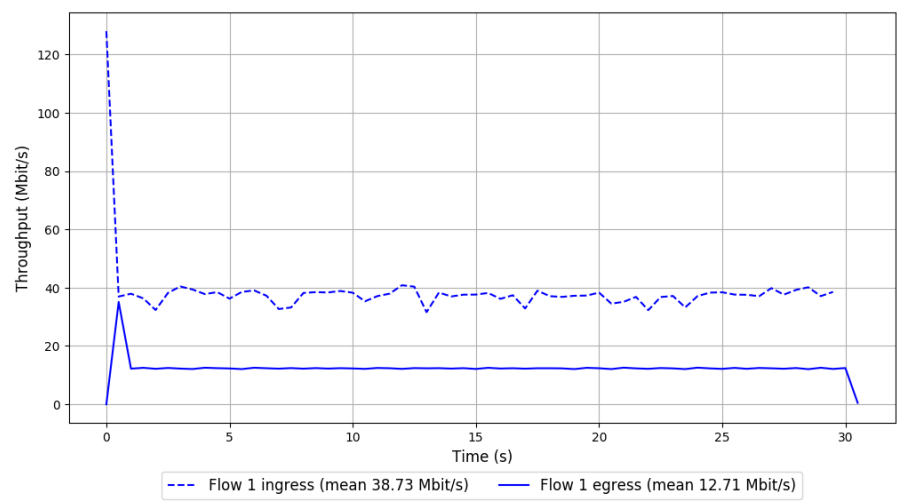
-- Flow 1:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 19.172 ms

Loss rate: 67.19%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-07 10:51:05

End at: 2018-09-07 10:51:35

Local clock offset: 1.309 ms

Remote clock offset: 0.096 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 18.494 ms

Loss rate: 65.40%

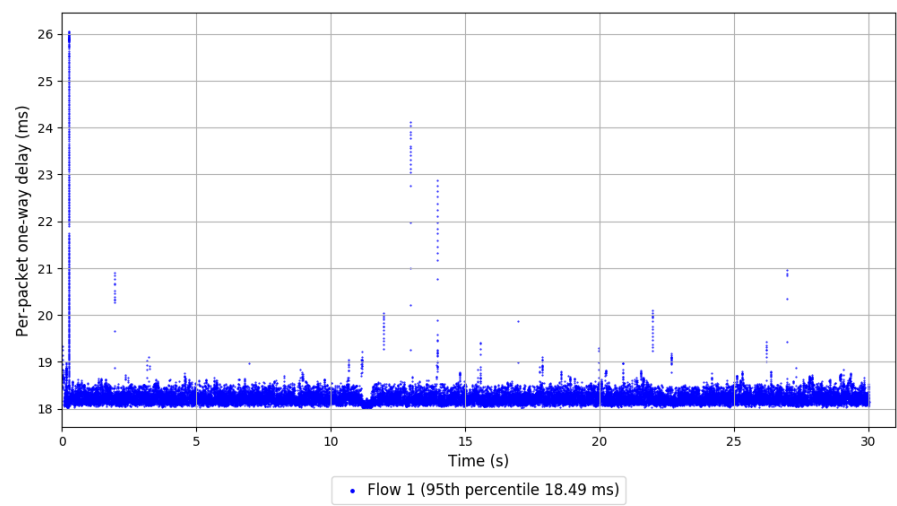
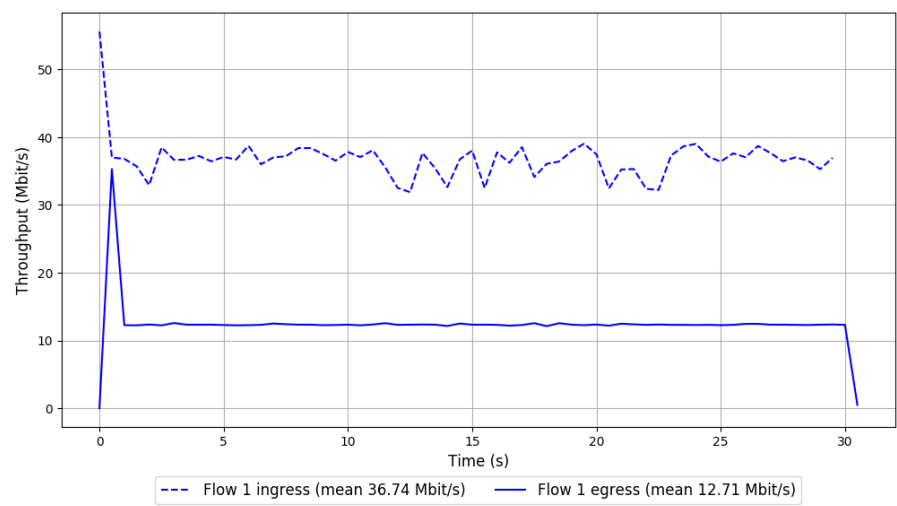
-- Flow 1:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 18.494 ms

Loss rate: 65.40%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-07 11:17:08

End at: 2018-09-07 11:17:38

Local clock offset: 0.952 ms

Remote clock offset: 0.658 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 19.145 ms

Loss rate: 63.91%

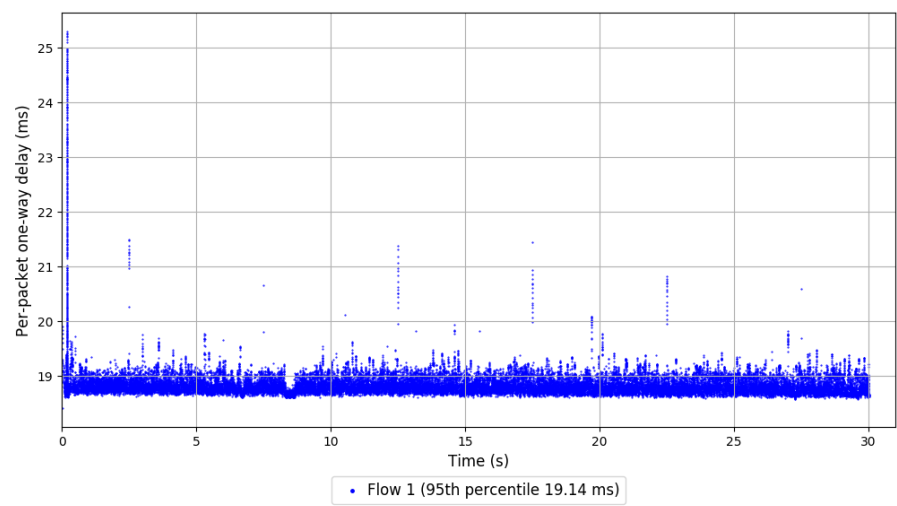
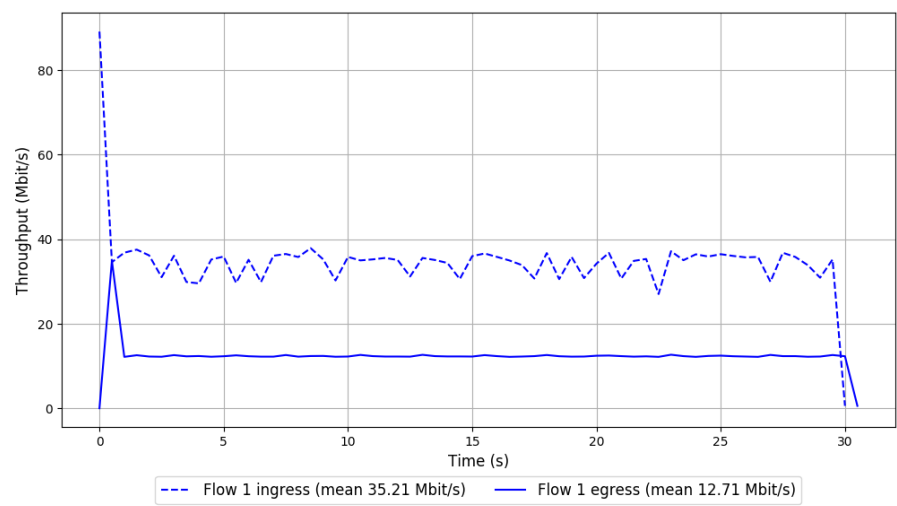
-- Flow 1:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 19.145 ms

Loss rate: 63.91%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-07 11:43:27

End at: 2018-09-07 11:43:57

Local clock offset: -0.139 ms

Remote clock offset: 0.931 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 17.713 ms

Loss rate: 63.92%

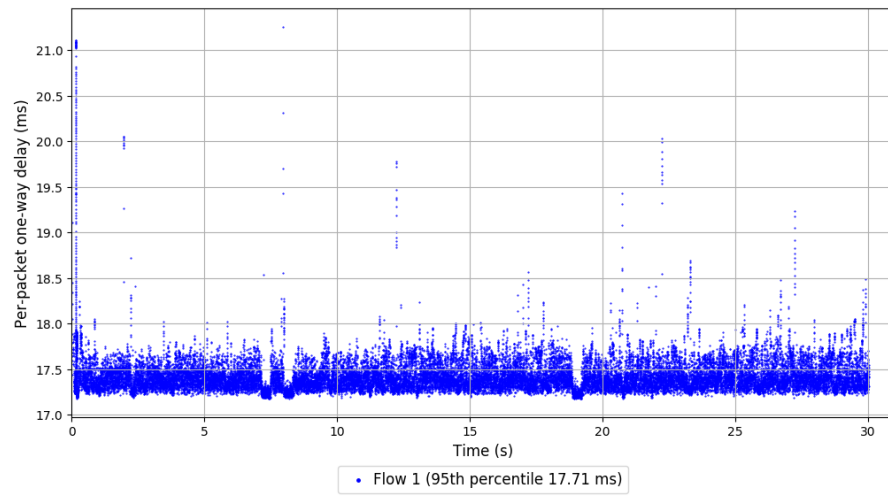
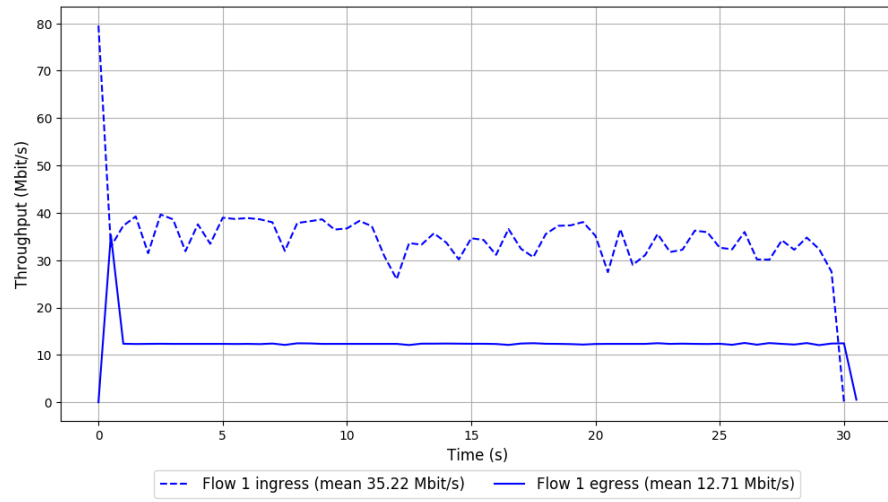
-- Flow 1:

Average throughput: 12.71 Mbit/s

95th percentile per-packet one-way delay: 17.713 ms

Loss rate: 63.92%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 10:14:33

End at: 2018-09-07 10:15:03

Local clock offset: 0.771 ms

Remote clock offset: 0.046 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 137.41 Mbit/s

95th percentile per-packet one-way delay: 19.172 ms

Loss rate: 0.02%

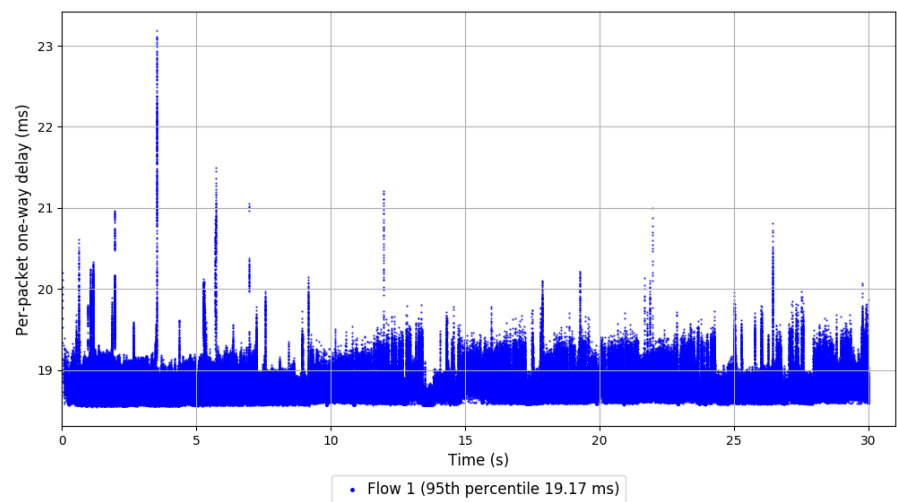
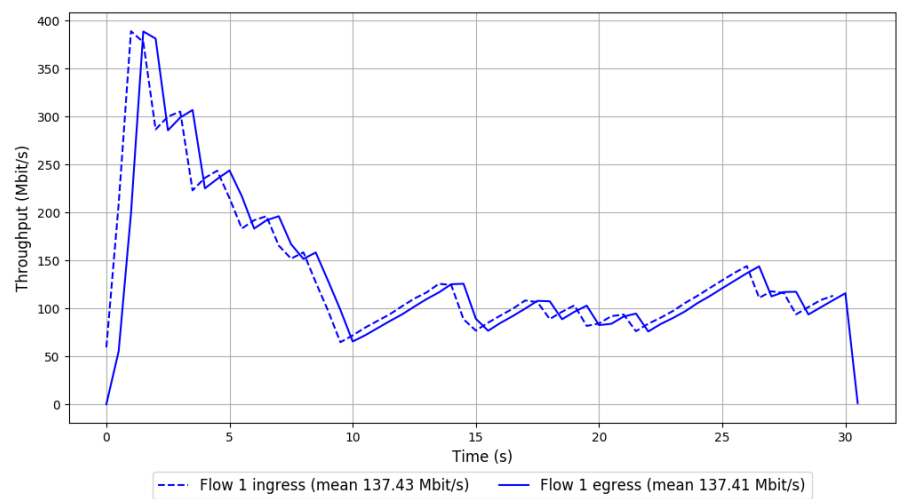
-- Flow 1:

Average throughput: 137.41 Mbit/s

95th percentile per-packet one-way delay: 19.172 ms

Loss rate: 0.02%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 10:40:38

End at: 2018-09-07 10:41:08

Local clock offset: 1.299 ms

Remote clock offset: 0.003 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 122.92 Mbit/s

95th percentile per-packet one-way delay: 19.372 ms

Loss rate: 0.03%

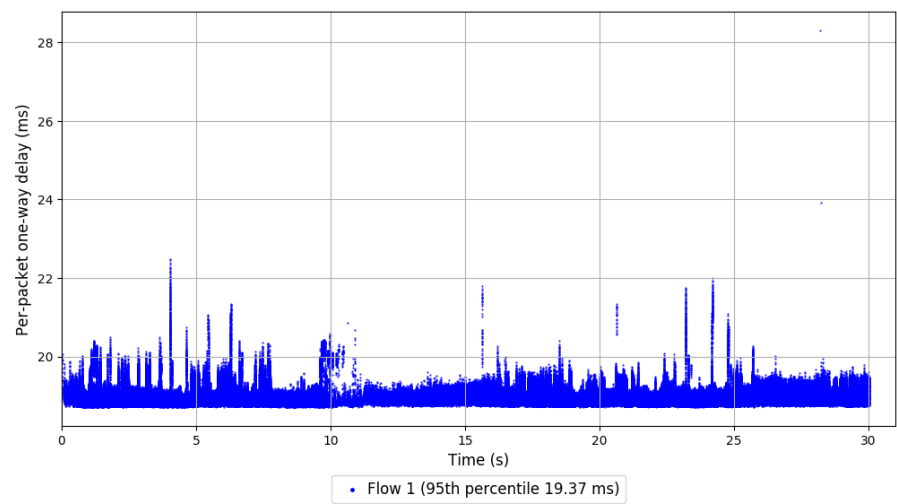
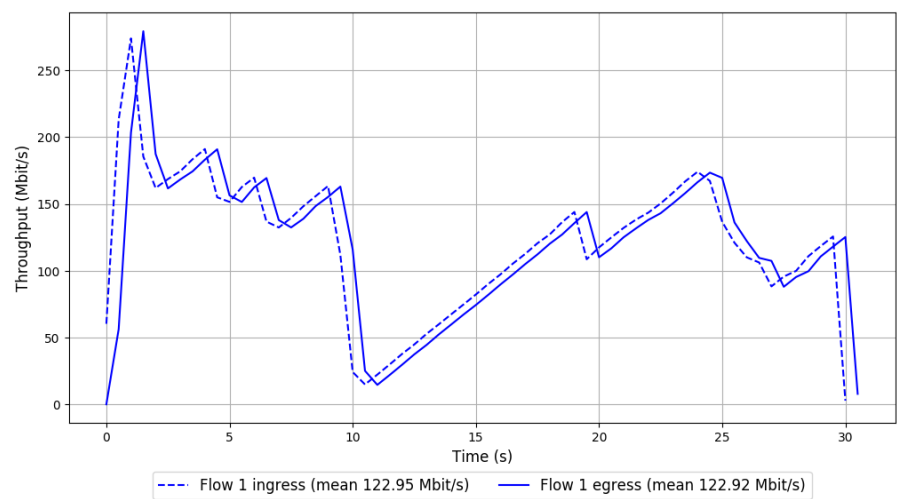
-- Flow 1:

Average throughput: 122.92 Mbit/s

95th percentile per-packet one-way delay: 19.372 ms

Loss rate: 0.03%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 11:06:41

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

Local clock offset: 1.232 ms

Remote clock offset: 0.307 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 281.39 Mbit/s

95th percentile per-packet one-way delay: 17.738 ms

Loss rate: 0.02%

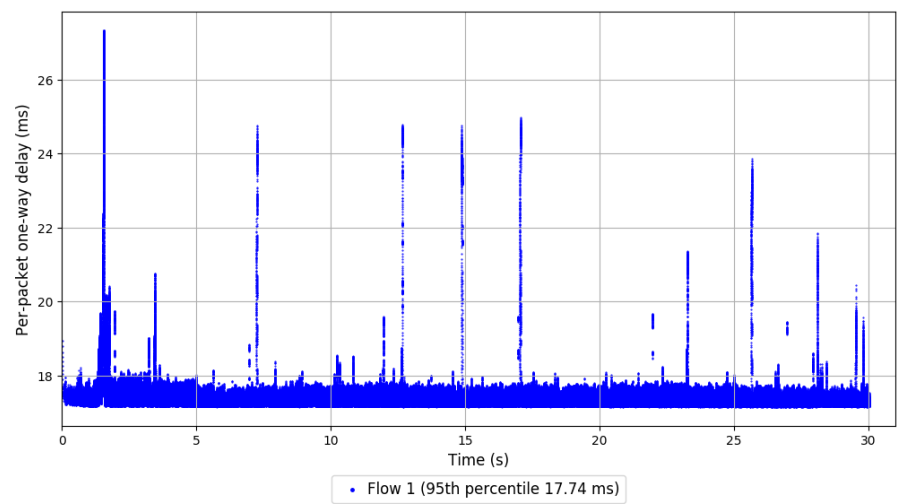
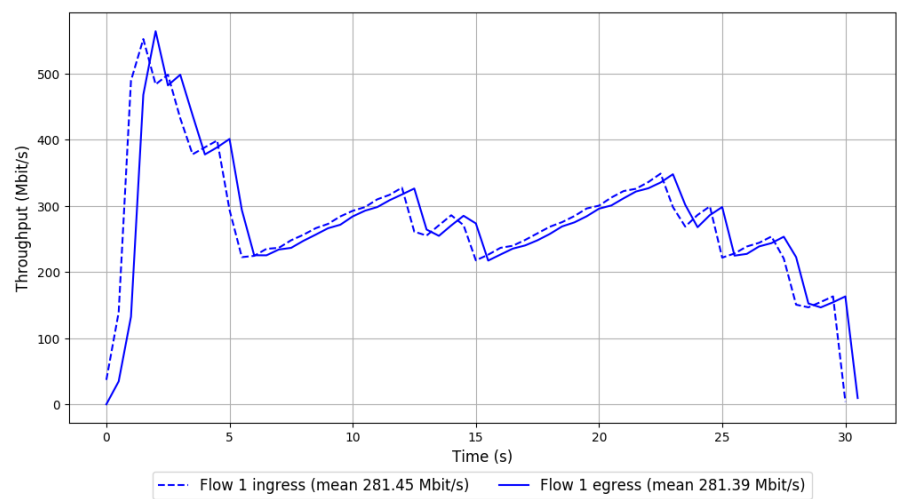
-- Flow 1:

Average throughput: 281.39 Mbit/s

95th percentile per-packet one-way delay: 17.738 ms

Loss rate: 0.02%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 11:32:59

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

Local clock offset: -0.002 ms

Remote clock offset: 0.869 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 229.84 Mbit/s

95th percentile per-packet one-way delay: 17.843 ms

Loss rate: 0.01%

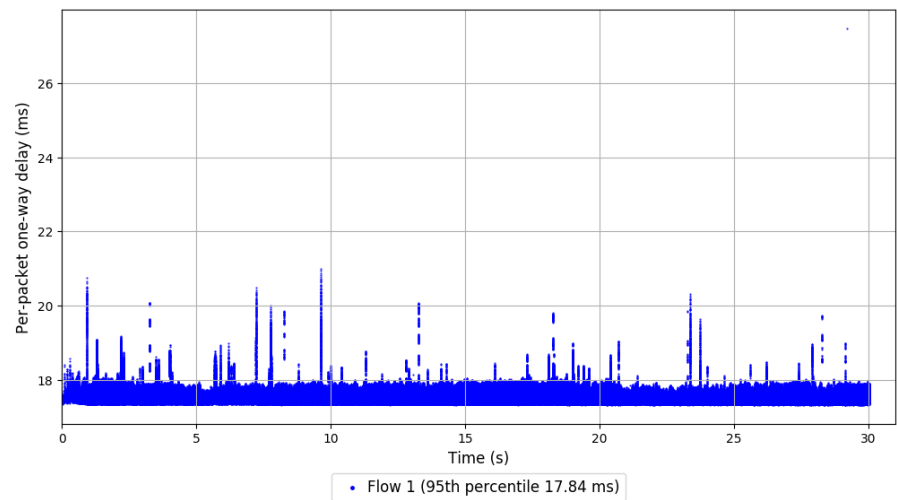
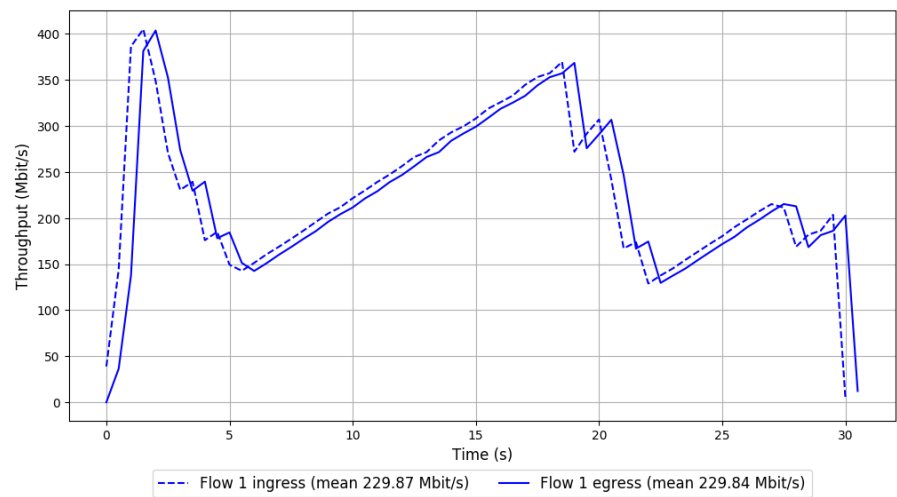
-- Flow 1:

Average throughput: 229.84 Mbit/s

95th percentile per-packet one-way delay: 17.843 ms

Loss rate: 0.01%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 11:59:12

End at: 2018-09-07 11:59:42

Local clock offset: -0.5 ms

Remote clock offset: 1.033 ms

Below is generated by plot.py at 2018-09-07 12:22:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 231.17 Mbit/s

95th percentile per-packet one-way delay: 19.604 ms

Loss rate: 0.01%

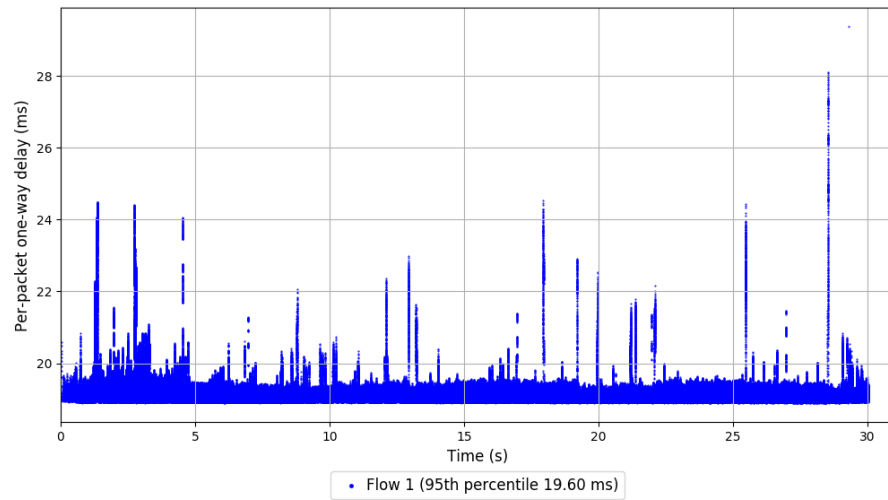
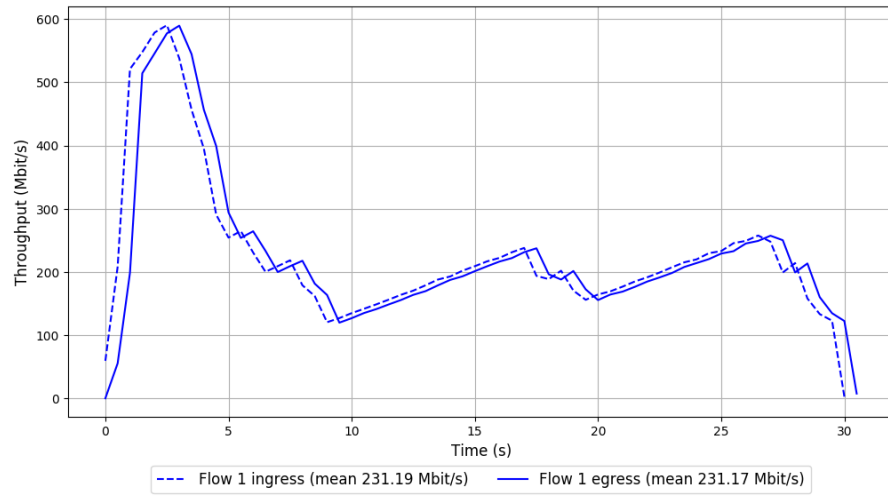
-- Flow 1:

Average throughput: 231.17 Mbit/s

95th percentile per-packet one-way delay: 19.604 ms

Loss rate: 0.01%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

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

End at: 2018-09-07 10:07:39

Local clock offset: 0.682 ms

Remote clock offset: 0.053 ms

Below is generated by plot.py at 2018-09-07 12:28:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 839.35 Mbit/s

95th percentile per-packet one-way delay: 89.304 ms

Loss rate: 3.69%

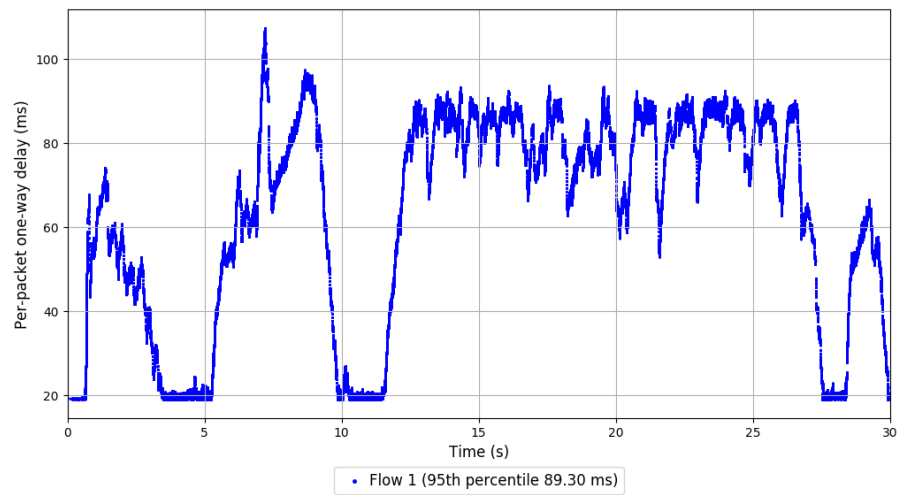
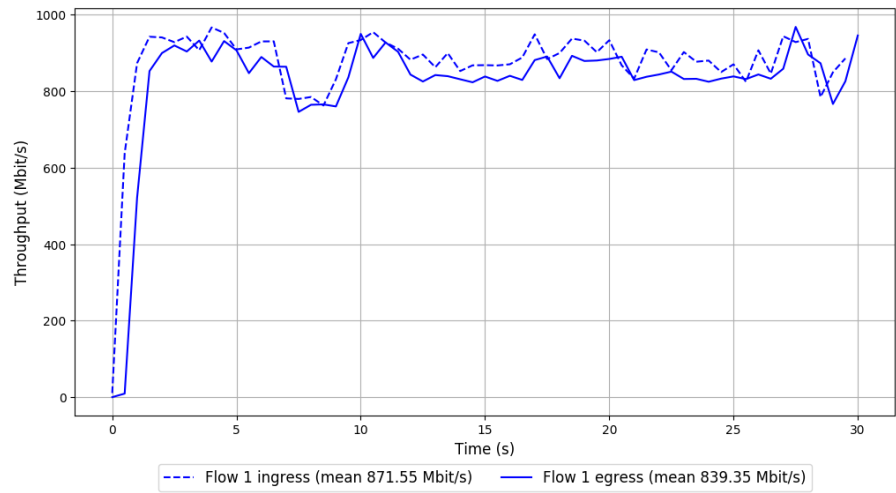
-- Flow 1:

Average throughput: 839.35 Mbit/s

95th percentile per-packet one-way delay: 89.304 ms

Loss rate: 3.69%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-07 10:33:14

End at: 2018-09-07 10:33:44

Local clock offset: 1.32 ms

Remote clock offset: 0.018 ms

Below is generated by plot.py at 2018-09-07 12:29:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 855.45 Mbit/s

95th percentile per-packet one-way delay: 89.744 ms

Loss rate: 3.70%

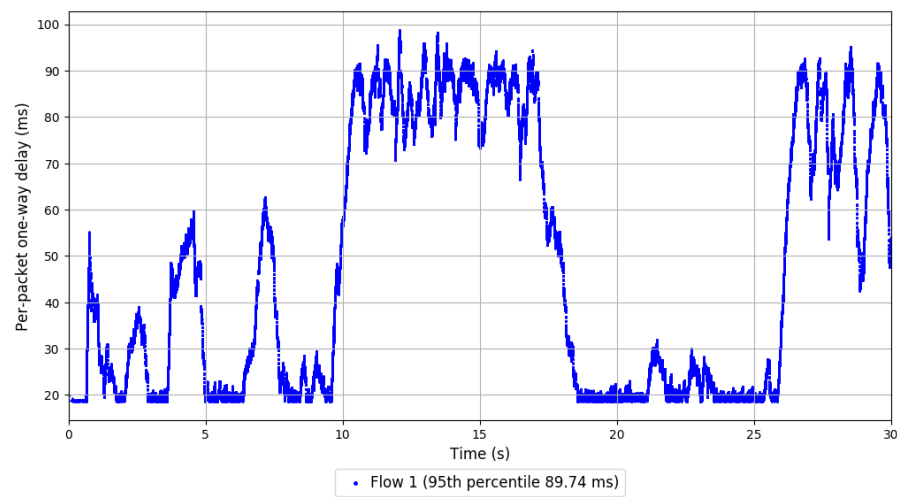
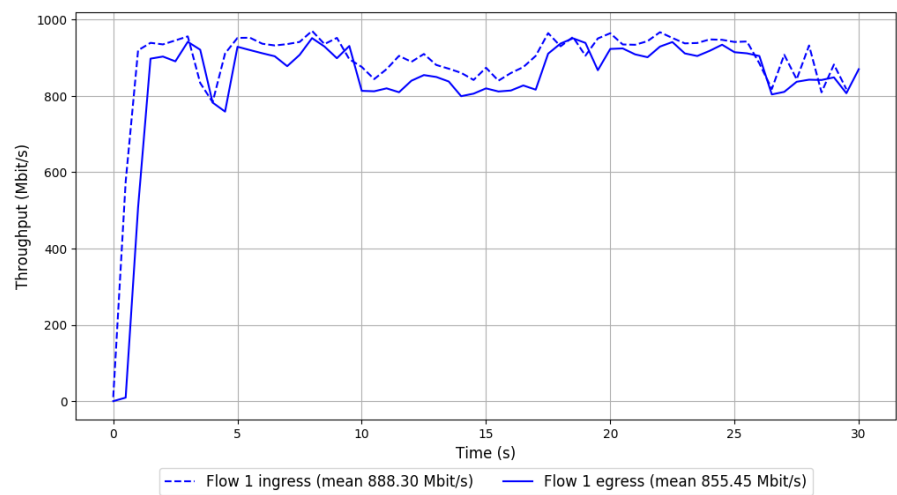
-- Flow 1:

Average throughput: 855.45 Mbit/s

95th percentile per-packet one-way delay: 89.744 ms

Loss rate: 3.70%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-07 10:59:19

End at: 2018-09-07 10:59:49

Local clock offset: 1.277 ms

Remote clock offset: 0.016 ms

Below is generated by plot.py at 2018-09-07 12:29:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 833.20 Mbit/s

95th percentile per-packet one-way delay: 90.189 ms

Loss rate: 3.56%

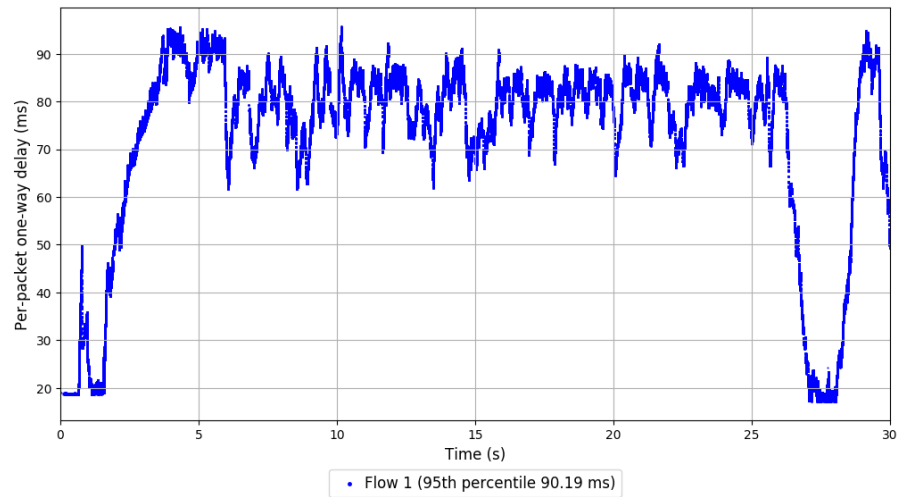
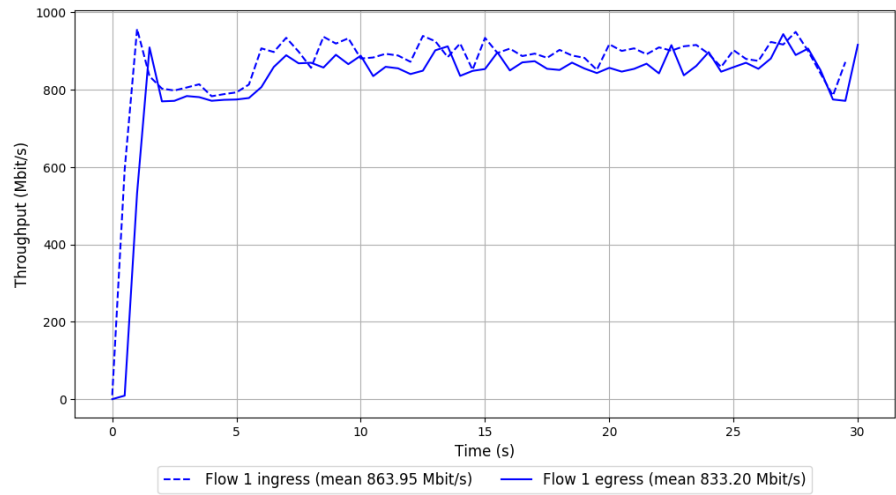
-- Flow 1:

Average throughput: 833.20 Mbit/s

95th percentile per-packet one-way delay: 90.189 ms

Loss rate: 3.56%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-07 11:25:34

End at: 2018-09-07 11:26:04

Local clock offset: 0.353 ms

Remote clock offset: 0.773 ms

Below is generated by plot.py at 2018-09-07 12:33:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 854.94 Mbit/s

95th percentile per-packet one-way delay: 88.148 ms

Loss rate: 4.17%

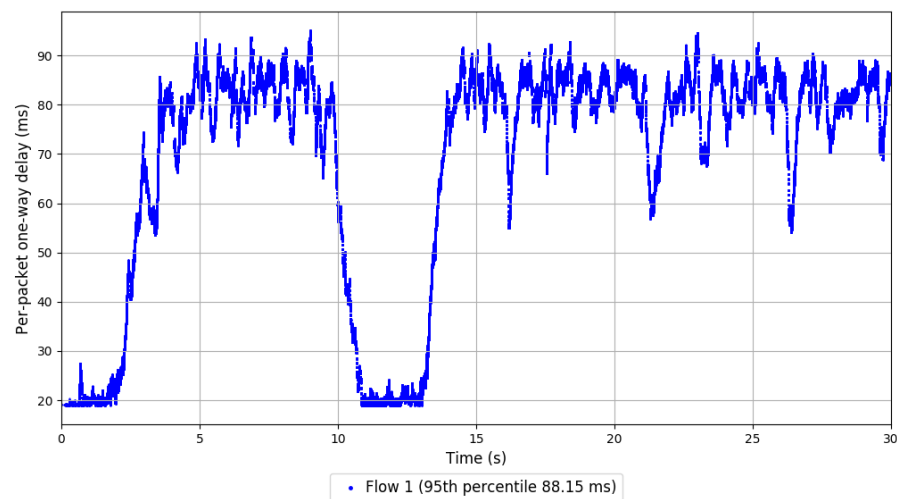
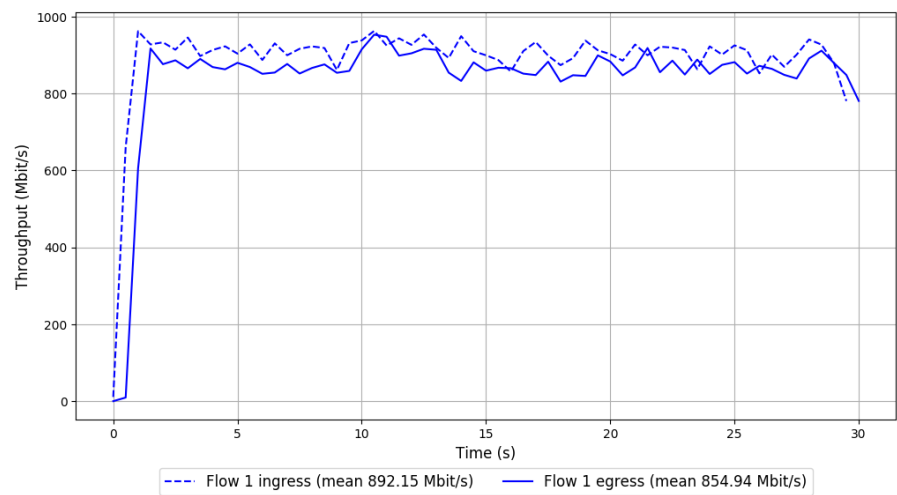
-- Flow 1:

Average throughput: 854.94 Mbit/s

95th percentile per-packet one-way delay: 88.148 ms

Loss rate: 4.17%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-07 11:51:50

End at: 2018-09-07 11:52:20

Local clock offset: -0.273 ms

Remote clock offset: 0.985 ms

Below is generated by plot.py at 2018-09-07 12:33:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 842.12 Mbit/s

95th percentile per-packet one-way delay: 87.780 ms

Loss rate: 3.56%

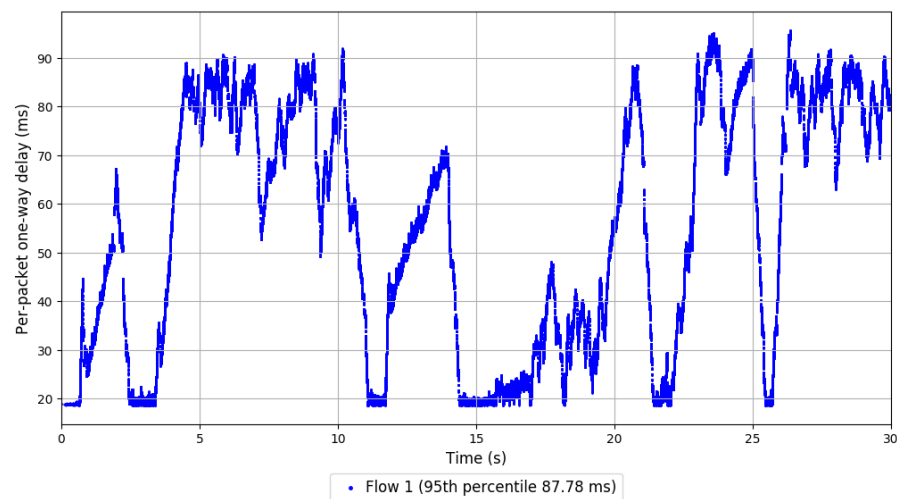
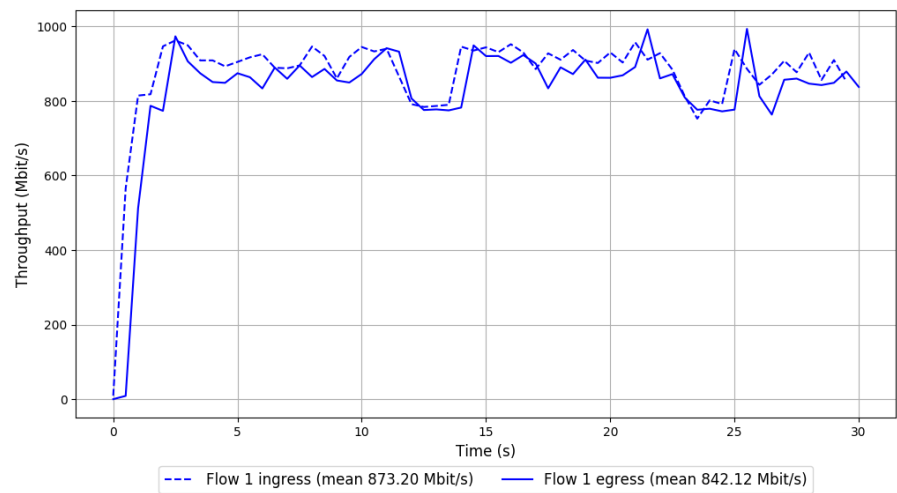
-- Flow 1:

Average throughput: 842.12 Mbit/s

95th percentile per-packet one-way delay: 87.780 ms

Loss rate: 3.56%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 10:12:50

End at: 2018-09-07 10:13:20

Local clock offset: 0.769 ms

Remote clock offset: 0.034 ms

Below is generated by plot.py at 2018-09-07 12:34:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 855.07 Mbit/s

95th percentile per-packet one-way delay: 50.594 ms

Loss rate: 4.83%

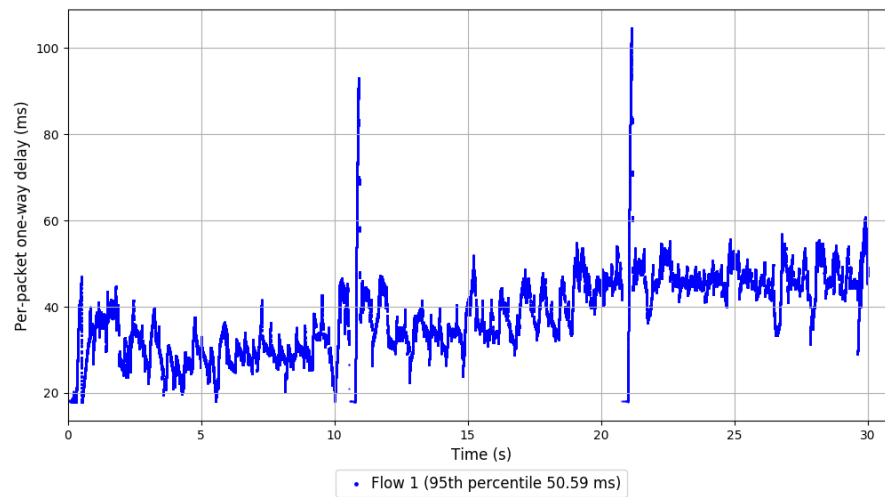
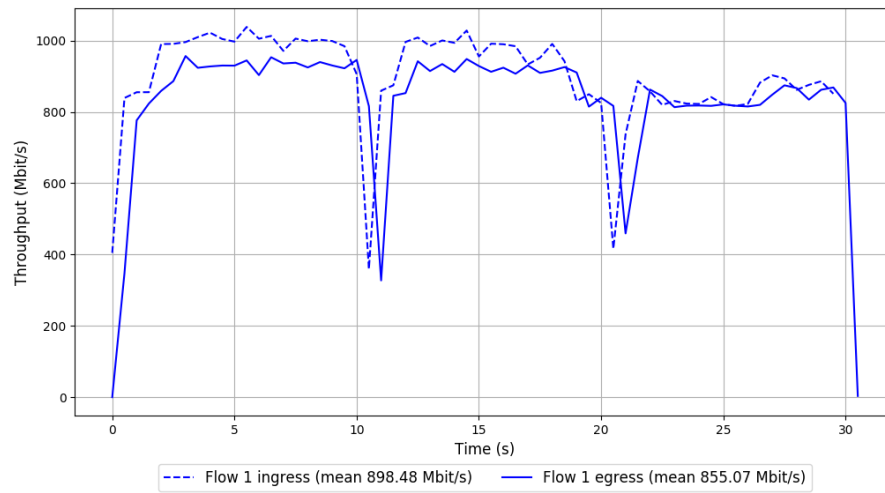
-- Flow 1:

Average throughput: 855.07 Mbit/s

95th percentile per-packet one-way delay: 50.594 ms

Loss rate: 4.83%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 10:38:55

End at: 2018-09-07 10:39:25

Local clock offset: 1.283 ms

Remote clock offset: 0.017 ms

Below is generated by plot.py at 2018-09-07 12:34:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 852.55 Mbit/s

95th percentile per-packet one-way delay: 56.420 ms

Loss rate: 5.13%

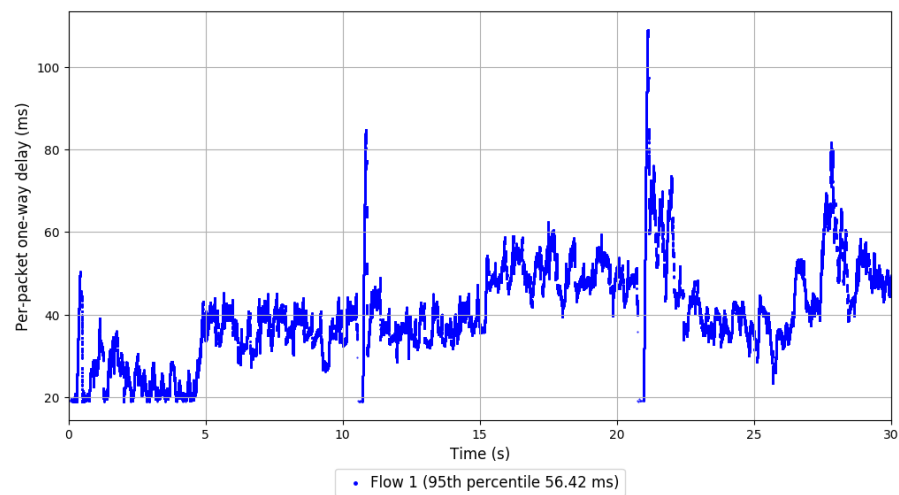
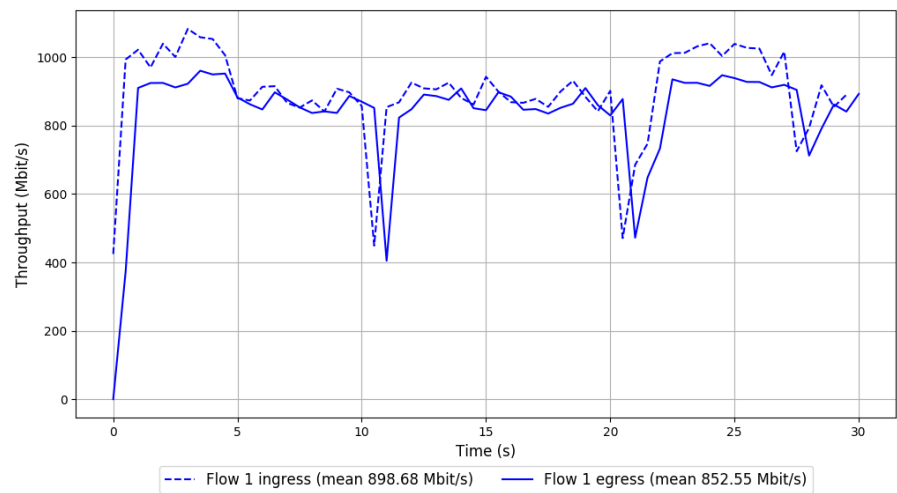
-- Flow 1:

Average throughput: 852.55 Mbit/s

95th percentile per-packet one-way delay: 56.420 ms

Loss rate: 5.13%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 11:04:58

End at: 2018-09-07 11:05:28

Local clock offset: 1.15 ms

Remote clock offset: 0.338 ms

Below is generated by plot.py at 2018-09-07 12:34:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 853.64 Mbit/s

95th percentile per-packet one-way delay: 48.518 ms

Loss rate: 5.81%

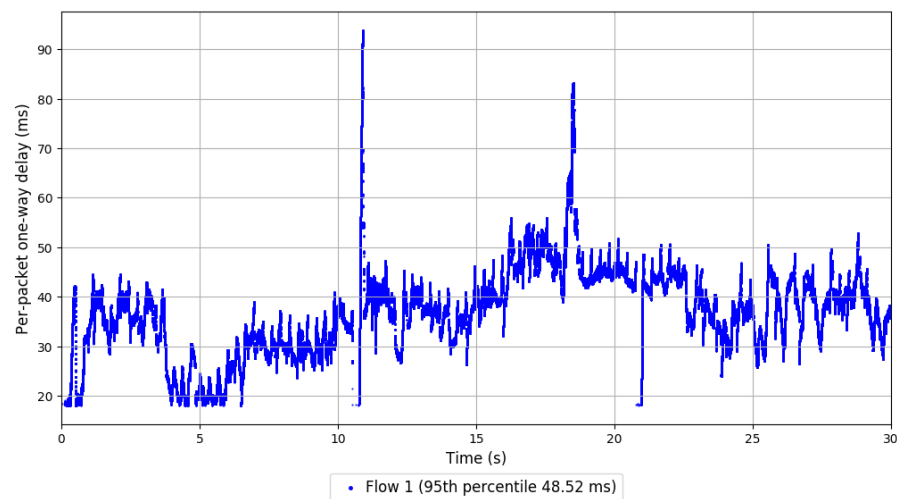
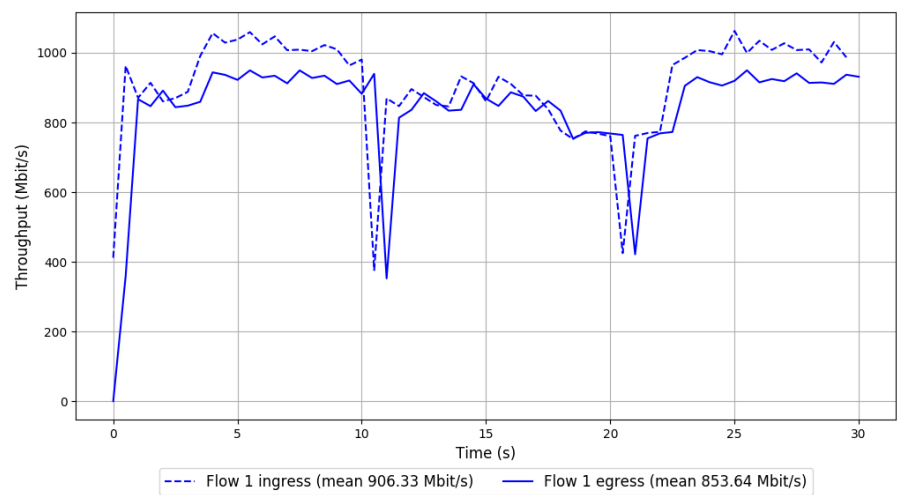
-- Flow 1:

Average throughput: 853.64 Mbit/s

95th percentile per-packet one-way delay: 48.518 ms

Loss rate: 5.81%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 11:31:15

End at: 2018-09-07 11:31:45

Local clock offset: 0.147 ms

Remote clock offset: 0.775 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 868.59 Mbit/s

95th percentile per-packet one-way delay: 47.484 ms

Loss rate: 5.90%

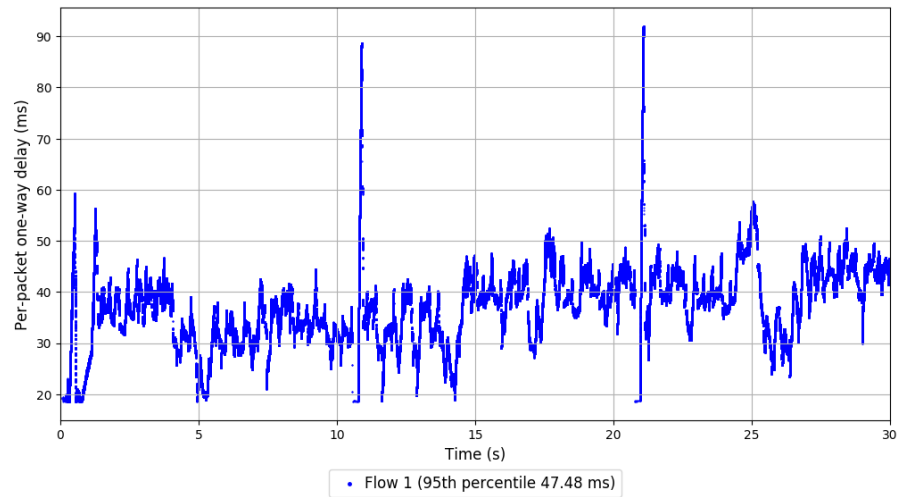
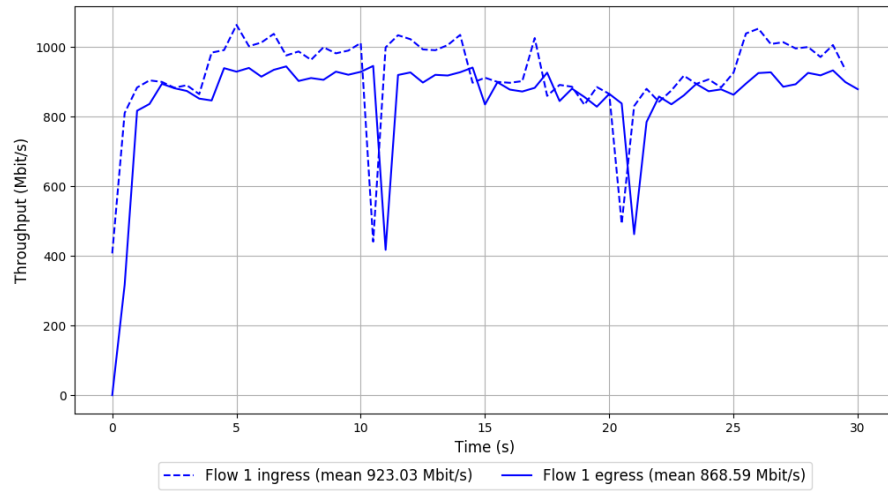
-- Flow 1:

Average throughput: 868.59 Mbit/s

95th percentile per-packet one-way delay: 47.484 ms

Loss rate: 5.90%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 11:57:30

End at: 2018-09-07 11:58:00

Local clock offset: -0.476 ms

Remote clock offset: 1.04 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 822.55 Mbit/s

95th percentile per-packet one-way delay: 58.084 ms

Loss rate: 3.69%

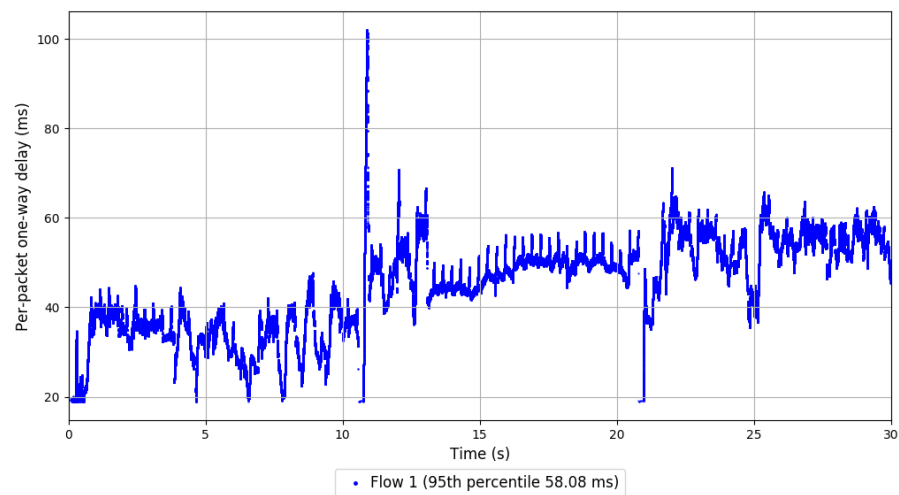
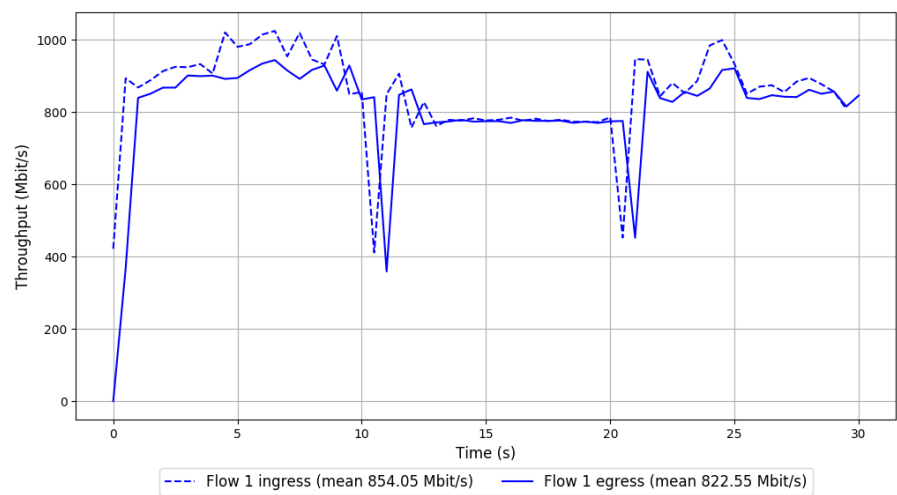
-- Flow 1:

Average throughput: 822.55 Mbit/s

95th percentile per-packet one-way delay: 58.084 ms

Loss rate: 3.69%

Run 5: Report of FillP-Sheep — Data Link

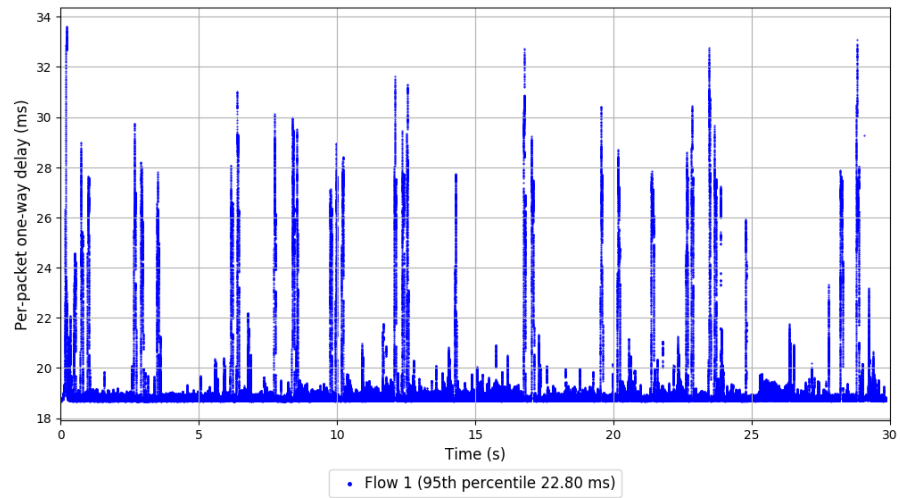
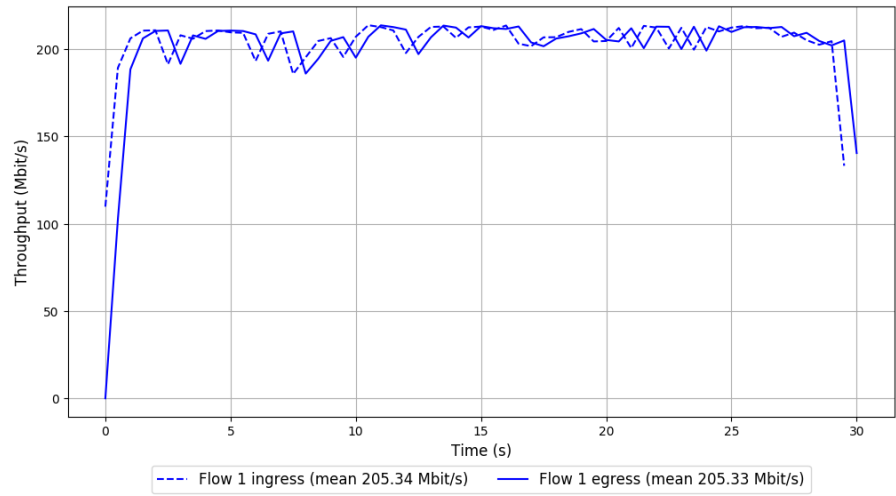


```
Run 1: Statistics of Indigo

Start at: 2018-09-07 10:15:55
End at: 2018-09-07 10:16:25
Local clock offset: 0.785 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2018-09-07 12:42:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 205.33 Mbit/s
95th percentile per-packet one-way delay: 22.803 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 205.33 Mbit/s
95th percentile per-packet one-way delay: 22.803 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo — Data Link

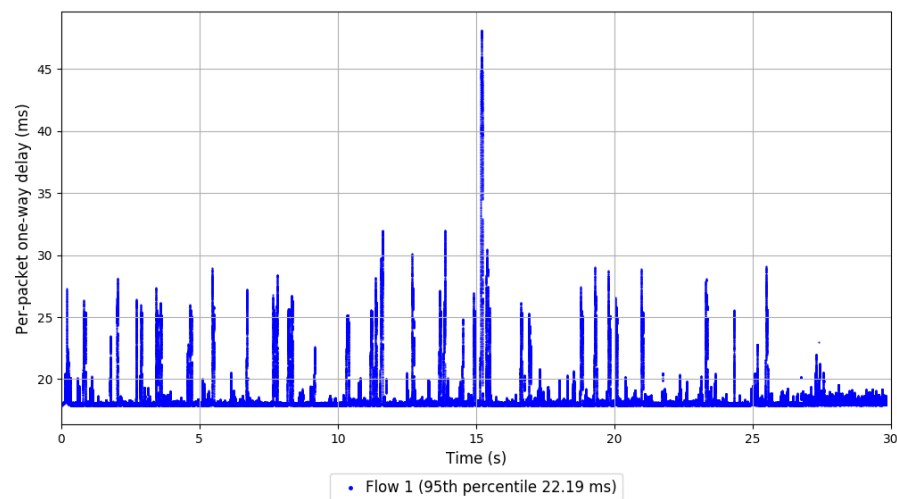
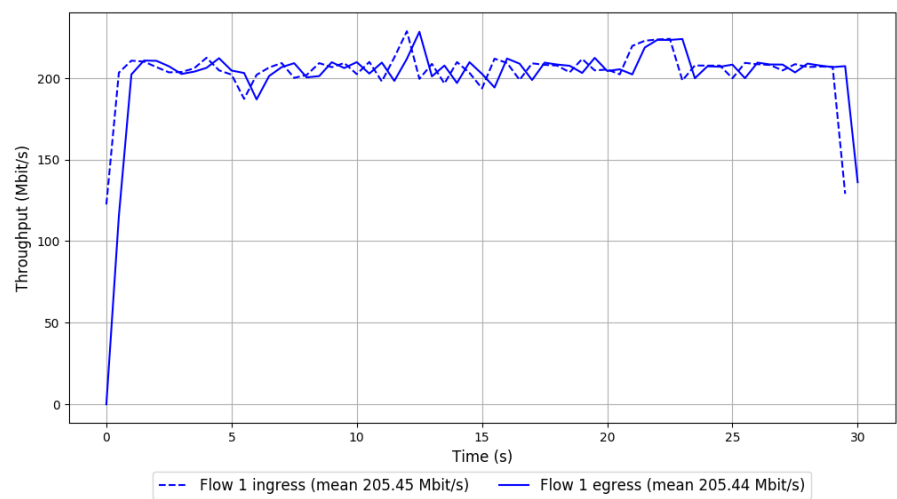


Run 2: Statistics of Indigo

Start at: 2018-09-07 10:42:00
End at: 2018-09-07 10:42:30
Local clock offset: 1.397 ms
Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-09-07 12:42:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 205.44 Mbit/s
95th percentile per-packet one-way delay: 22.193 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 205.44 Mbit/s
95th percentile per-packet one-way delay: 22.193 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

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

End at: 2018-09-07 11:08:38

Local clock offset: 1.133 ms

Remote clock offset: 0.297 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 107.04 Mbit/s

95th percentile per-packet one-way delay: 19.161 ms

Loss rate: 0.00%

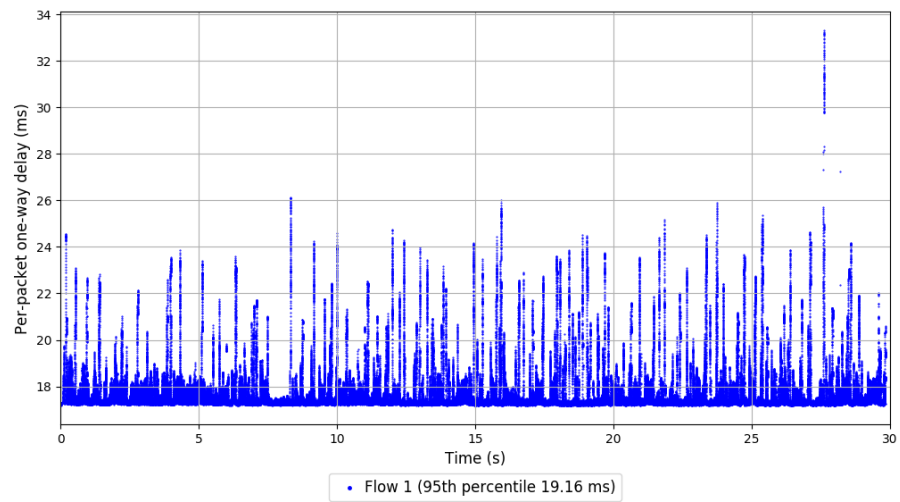
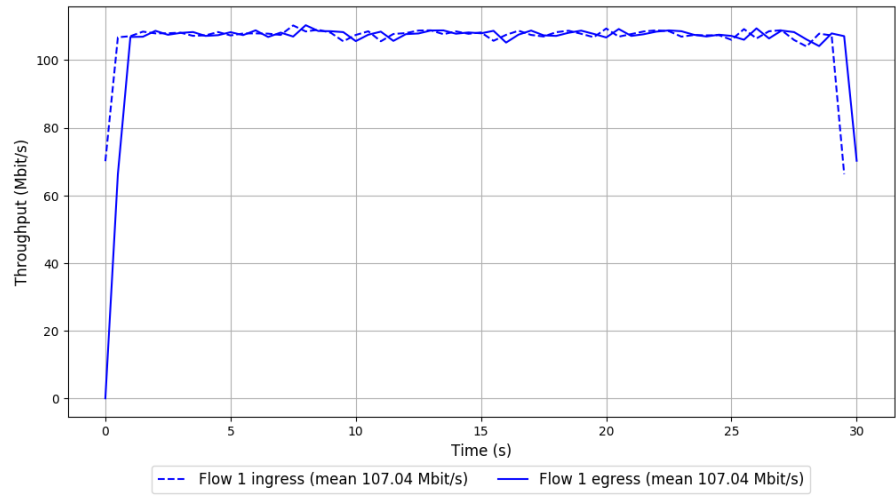
-- Flow 1:

Average throughput: 107.04 Mbit/s

95th percentile per-packet one-way delay: 19.161 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-07 11:34:25

End at: 2018-09-07 11:34:55

Local clock offset: -0.039 ms

Remote clock offset: 0.781 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 209.06 Mbit/s

95th percentile per-packet one-way delay: 19.290 ms

Loss rate: 0.01%

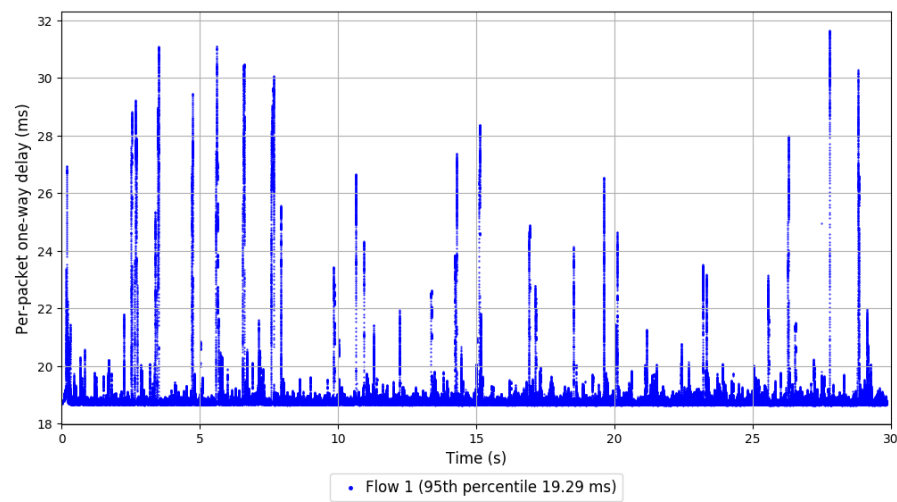
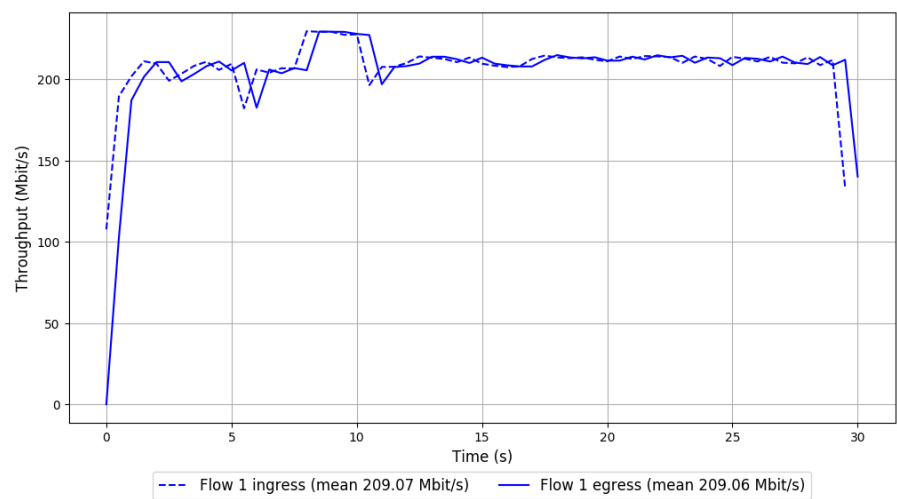
-- Flow 1:

Average throughput: 209.06 Mbit/s

95th percentile per-packet one-way delay: 19.290 ms

Loss rate: 0.01%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-07 12:00:38

End at: 2018-09-07 12:01:08

Local clock offset: -0.412 ms

Remote clock offset: 1.001 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 209.16 Mbit/s

95th percentile per-packet one-way delay: 19.387 ms

Loss rate: 0.01%

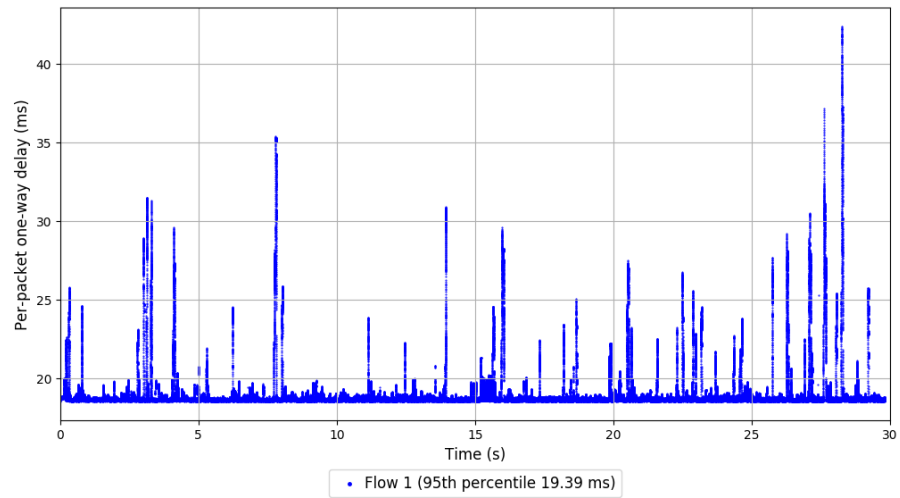
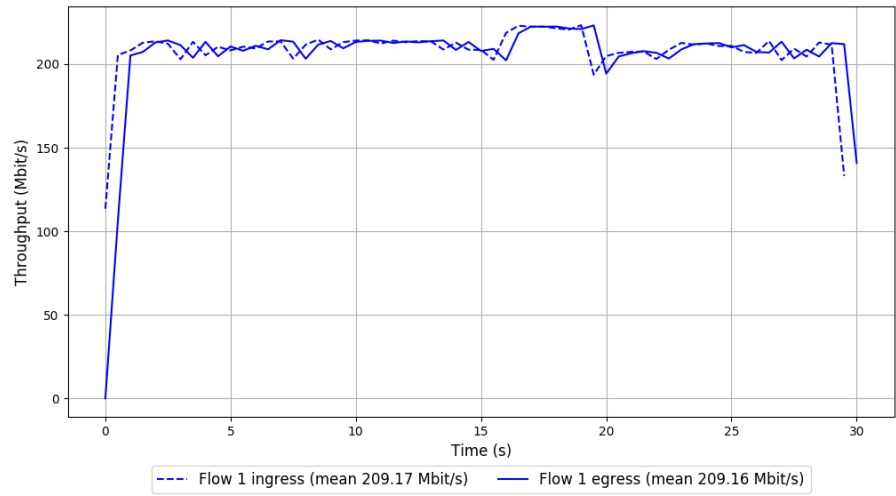
-- Flow 1:

Average throughput: 209.16 Mbit/s

95th percentile per-packet one-way delay: 19.387 ms

Loss rate: 0.01%

Run 5: Report of Indigo — Data Link

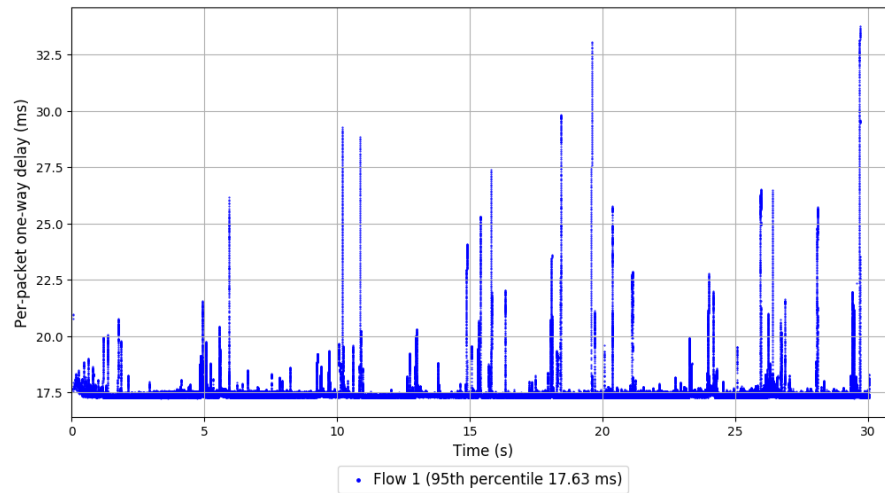
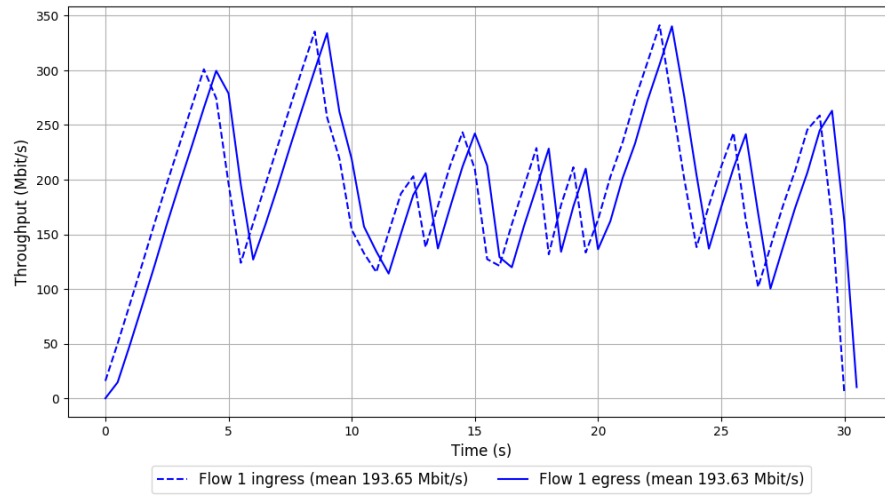


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 10:20:44
End at: 2018-09-07 10:21:14
Local clock offset: 0.939 ms
Remote clock offset: 0.135 ms

# Below is generated by plot.py at 2018-09-07 12:42:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 193.63 Mbit/s
95th percentile per-packet one-way delay: 17.626 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 193.63 Mbit/s
95th percentile per-packet one-way delay: 17.626 ms
Loss rate: 0.01%
```

Run 1: Report of LEDBAT — Data Link

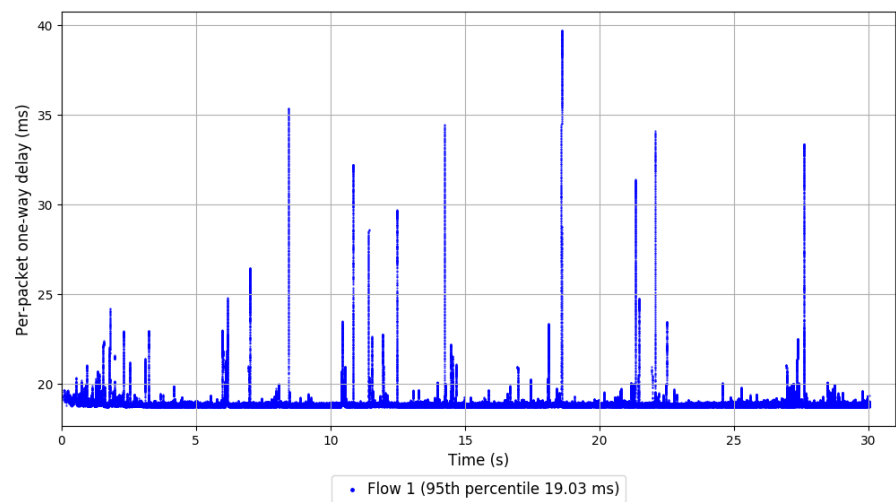
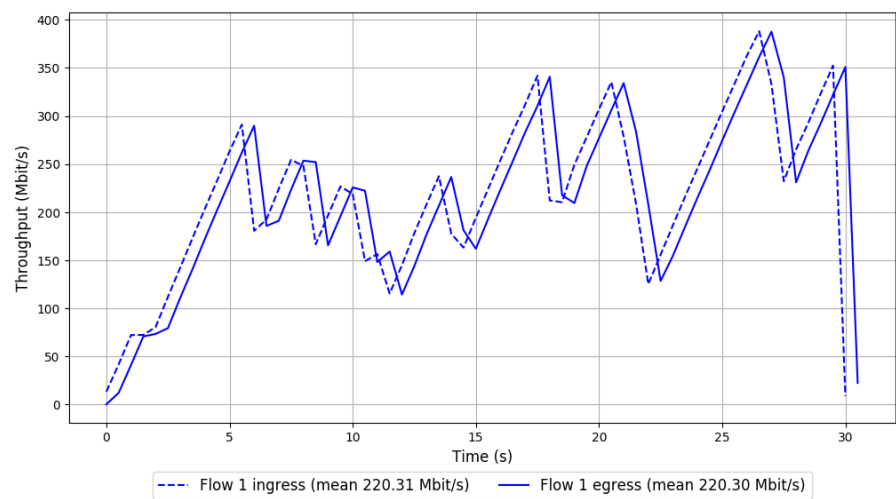


Run 2: Statistics of LEDBAT

Start at: 2018-09-07 10:46:50
End at: 2018-09-07 10:47:20
Local clock offset: 1.376 ms
Remote clock offset: -0.062 ms

Below is generated by plot.py at 2018-09-07 12:42:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 220.30 Mbit/s
95th percentile per-packet one-way delay: 19.031 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.30 Mbit/s
95th percentile per-packet one-way delay: 19.031 ms
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-07 11:12:55

End at: 2018-09-07 11:13:25

Local clock offset: 1.216 ms

Remote clock offset: 0.588 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 204.29 Mbit/s

95th percentile per-packet one-way delay: 19.146 ms

Loss rate: 0.01%

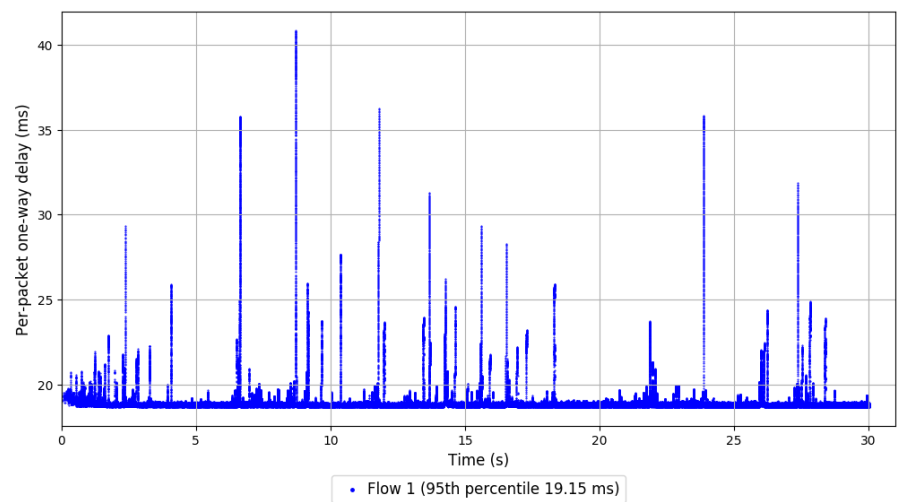
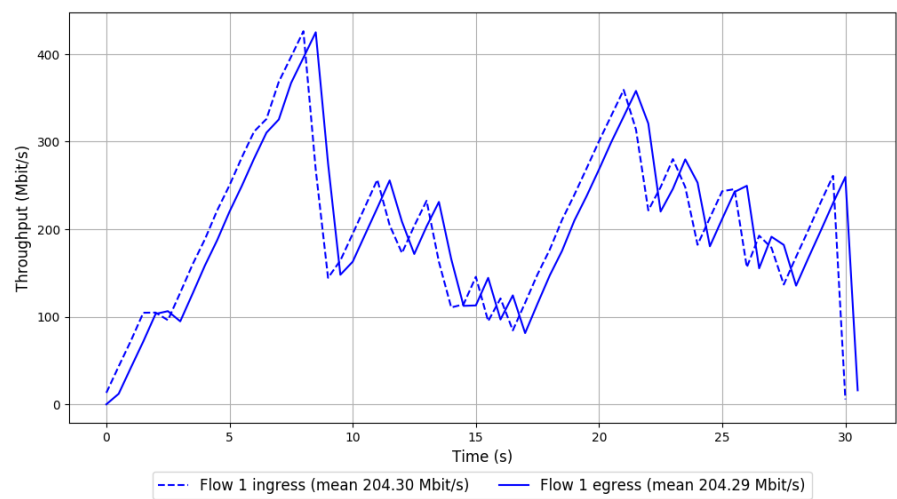
-- Flow 1:

Average throughput: 204.29 Mbit/s

95th percentile per-packet one-way delay: 19.146 ms

Loss rate: 0.01%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-07 11:39:15

End at: 2018-09-07 11:39:45

Local clock offset: -0.068 ms

Remote clock offset: 0.867 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 179.52 Mbit/s

95th percentile per-packet one-way delay: 18.262 ms

Loss rate: 0.01%

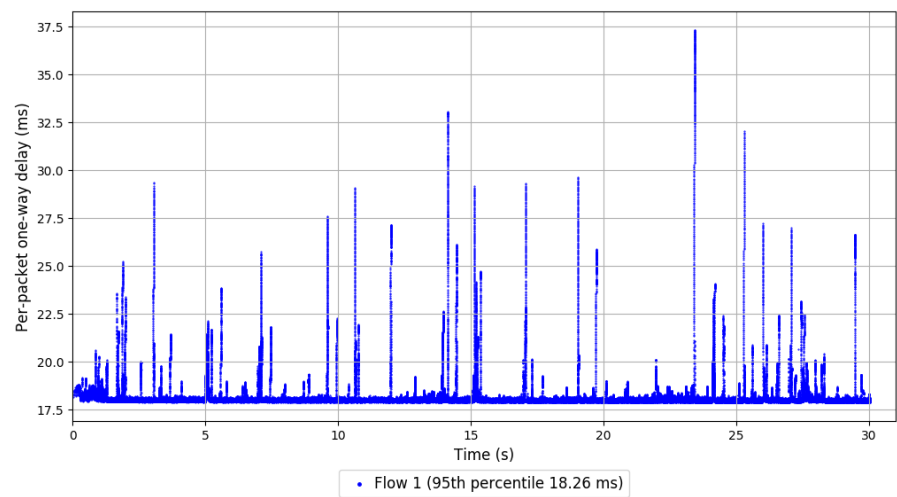
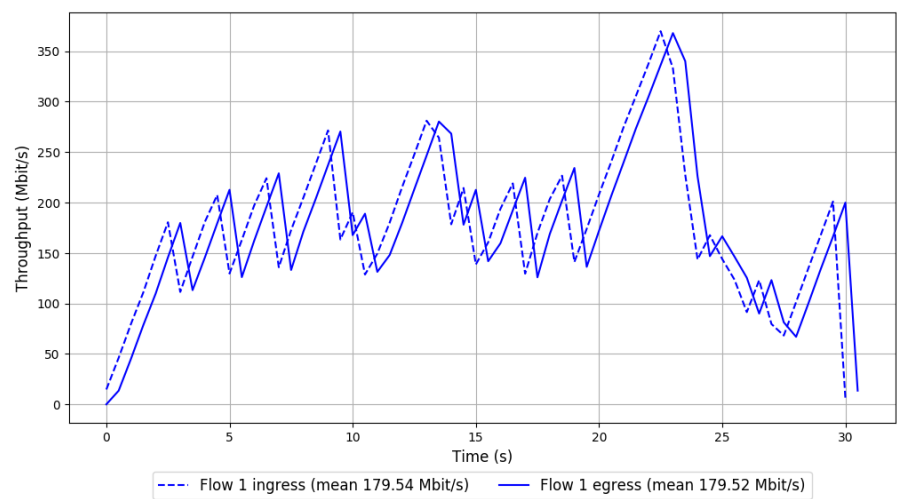
-- Flow 1:

Average throughput: 179.52 Mbit/s

95th percentile per-packet one-way delay: 18.262 ms

Loss rate: 0.01%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-07 12:05:27

End at: 2018-09-07 12:05:57

Local clock offset: -0.502 ms

Remote clock offset: 1.126 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 262.02 Mbit/s

95th percentile per-packet one-way delay: 18.320 ms

Loss rate: 0.01%

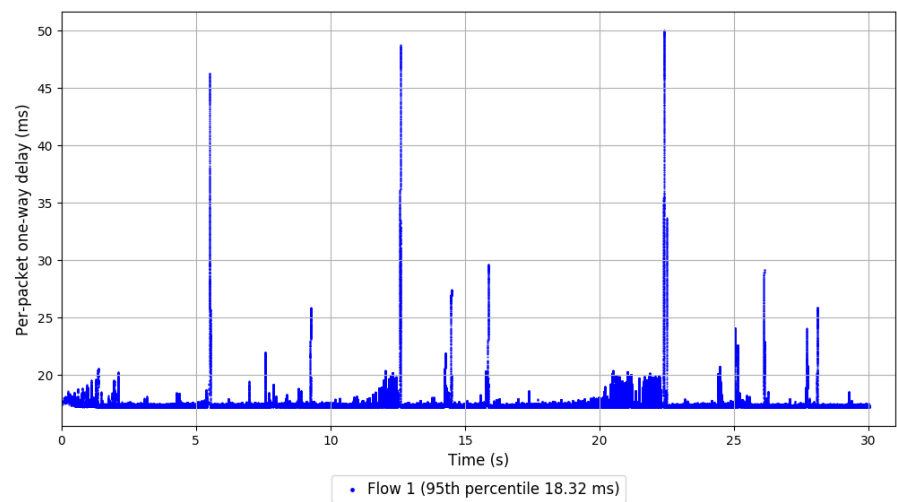
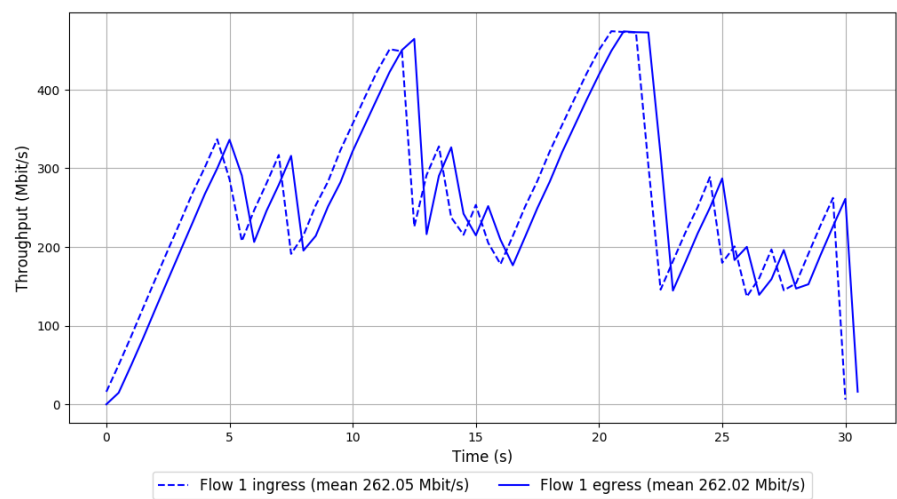
-- Flow 1:

Average throughput: 262.02 Mbit/s

95th percentile per-packet one-way delay: 18.320 ms

Loss rate: 0.01%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 10:05:49

End at: 2018-09-07 10:06:19

Local clock offset: 0.789 ms

Remote clock offset: -0.06 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.13 Mbit/s

95th percentile per-packet one-way delay: 19.048 ms

Loss rate: 0.00%

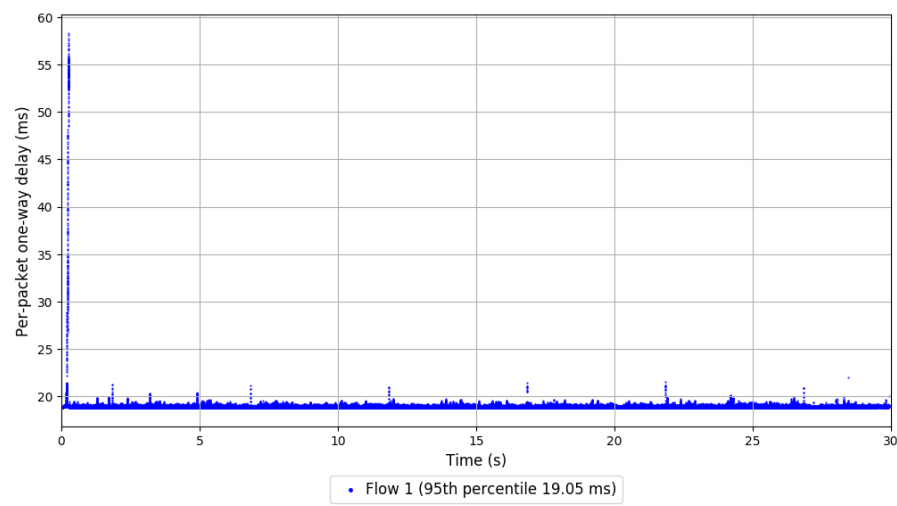
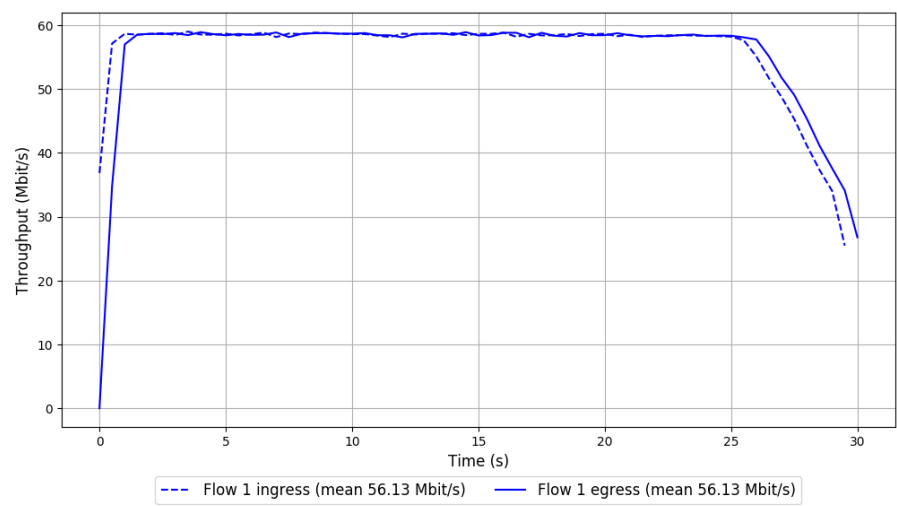
-- Flow 1:

Average throughput: 56.13 Mbit/s

95th percentile per-packet one-way delay: 19.048 ms

Loss rate: 0.00%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 10:31:53

End at: 2018-09-07 10:32:23

Local clock offset: 1.289 ms

Remote clock offset: 0.11 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.53 Mbit/s

95th percentile per-packet one-way delay: 19.302 ms

Loss rate: 0.01%

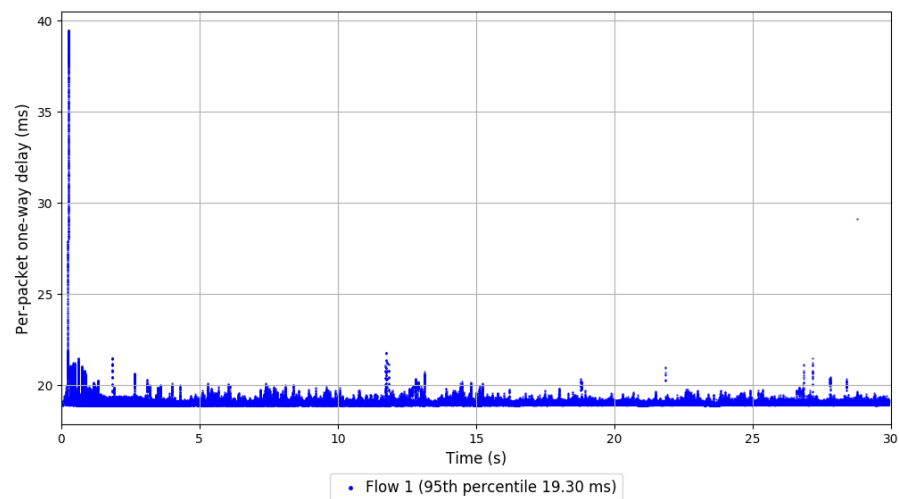
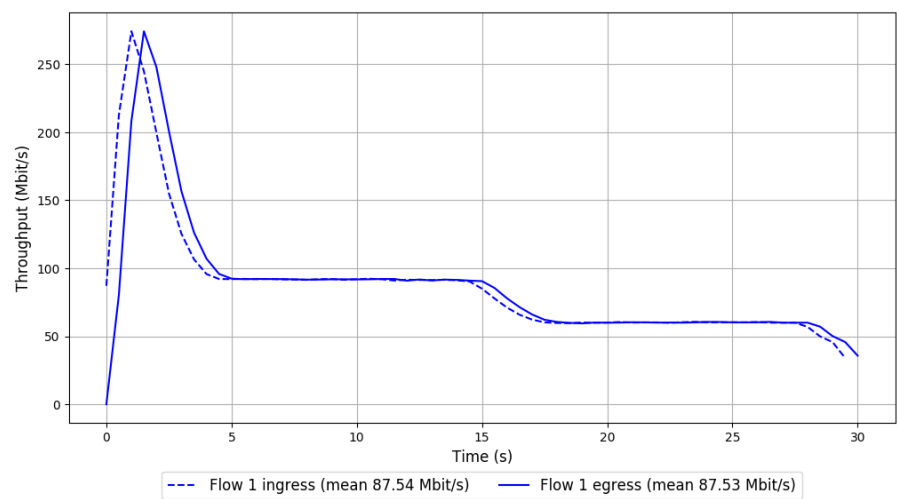
-- Flow 1:

Average throughput: 87.53 Mbit/s

95th percentile per-packet one-way delay: 19.302 ms

Loss rate: 0.01%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 10:57:58

End at: 2018-09-07 10:58:28

Local clock offset: 1.285 ms

Remote clock offset: 0.012 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.01 Mbit/s

95th percentile per-packet one-way delay: 18.922 ms

Loss rate: 0.01%

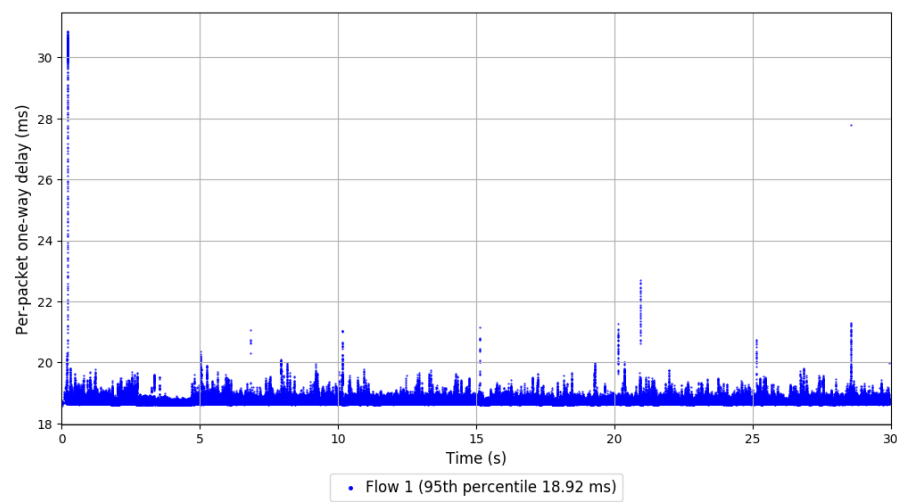
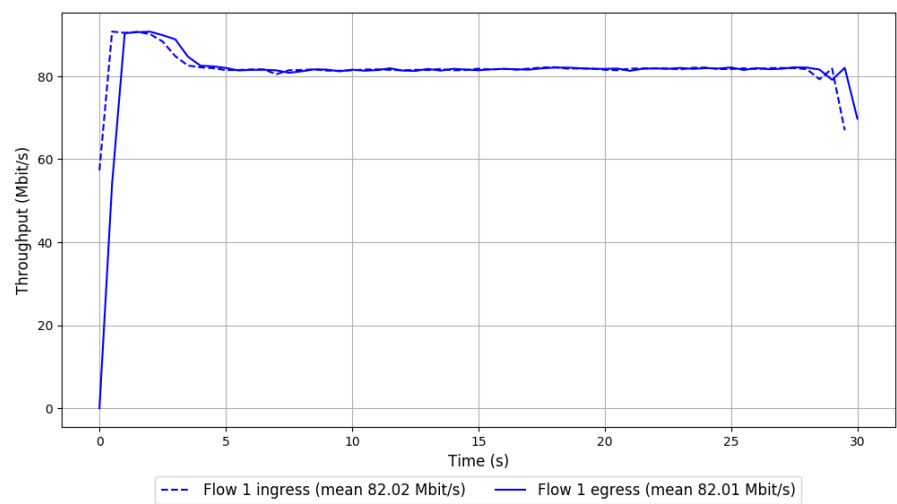
-- Flow 1:

Average throughput: 82.01 Mbit/s

95th percentile per-packet one-way delay: 18.922 ms

Loss rate: 0.01%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 11:24:03

End at: 2018-09-07 11:24:33

Local clock offset: 0.334 ms

Remote clock offset: 0.643 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 367.38 Mbit/s

95th percentile per-packet one-way delay: 17.885 ms

Loss rate: 0.01%

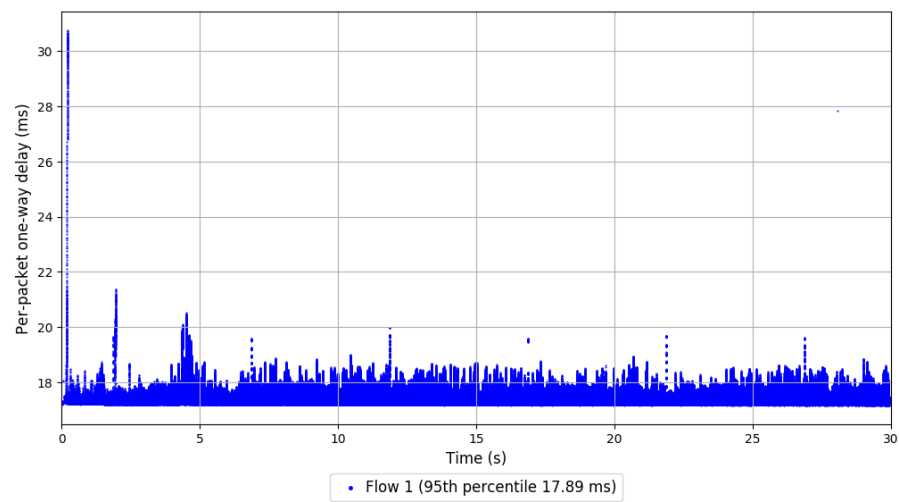
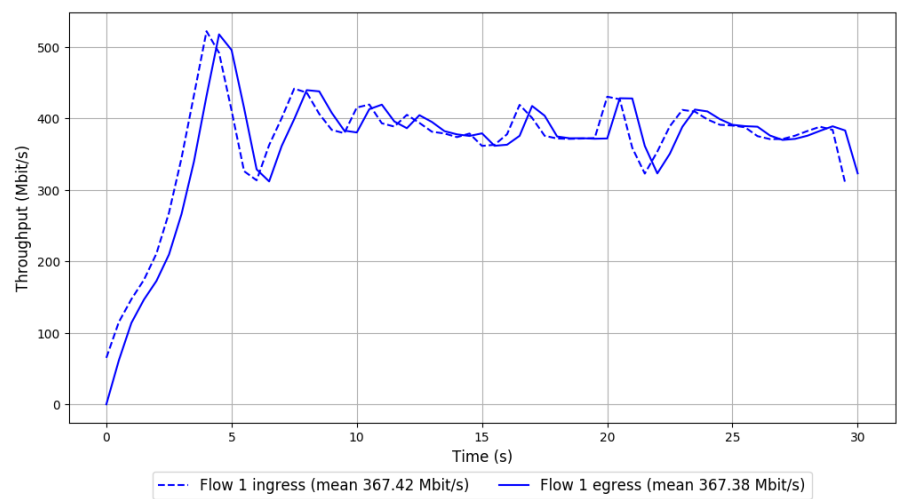
-- Flow 1:

Average throughput: 367.38 Mbit/s

95th percentile per-packet one-way delay: 17.885 ms

Loss rate: 0.01%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

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

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

Local clock offset: -0.257 ms

Remote clock offset: 0.926 ms

Below is generated by plot.py at 2018-09-07 12:42:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 360.64 Mbit/s

95th percentile per-packet one-way delay: 17.811 ms

Loss rate: 0.01%

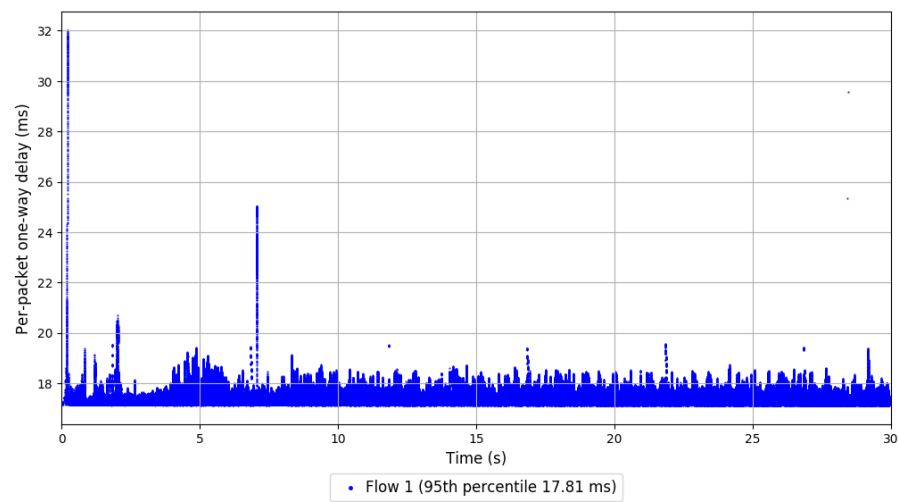
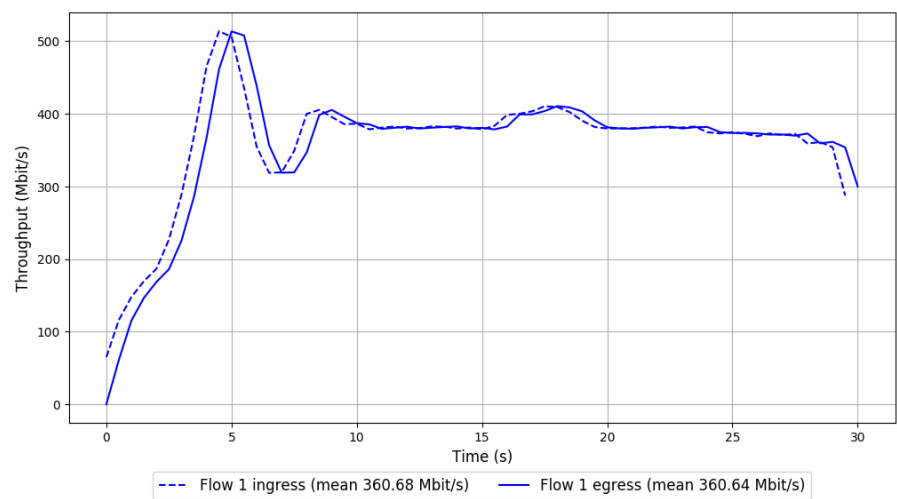
-- Flow 1:

Average throughput: 360.64 Mbit/s

95th percentile per-packet one-way delay: 17.811 ms

Loss rate: 0.01%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 10:19:04

End at: 2018-09-07 10:19:34

Local clock offset: 0.956 ms

Remote clock offset: 0.092 ms

Below is generated by plot.py at 2018-09-07 12:48:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 877.79 Mbit/s

95th percentile per-packet one-way delay: 27.484 ms

Loss rate: 0.43%

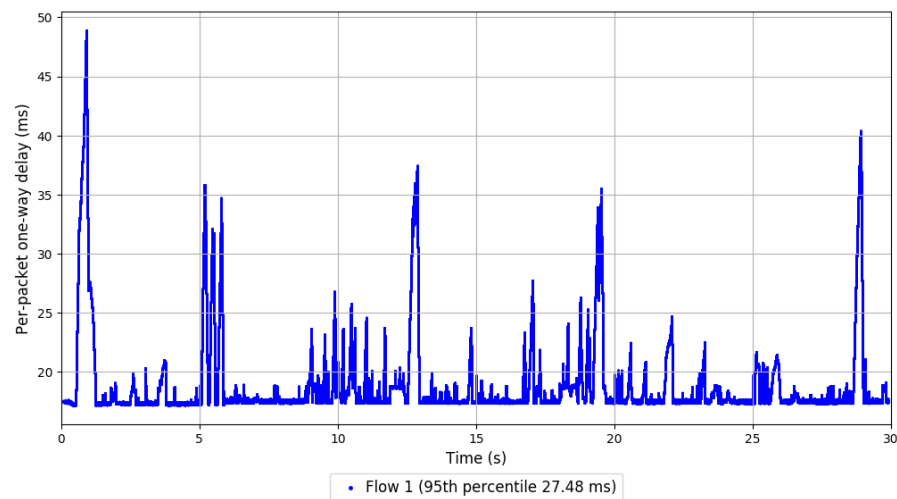
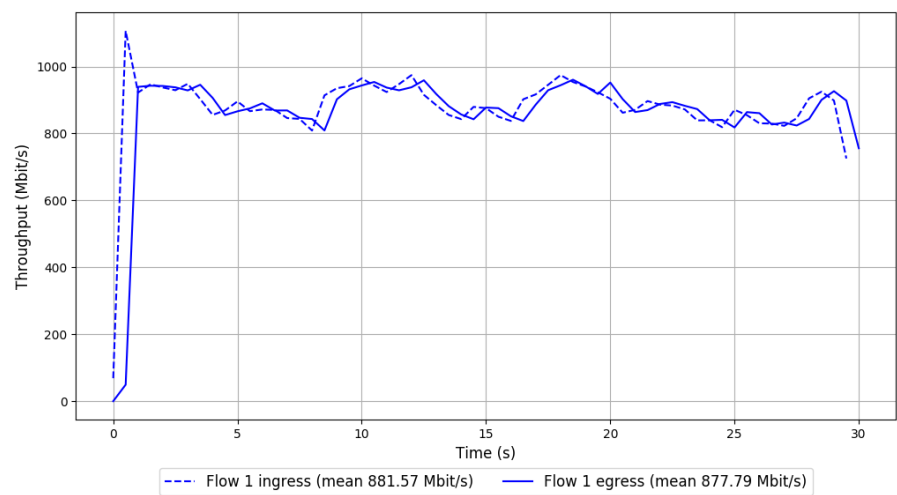
-- Flow 1:

Average throughput: 877.79 Mbit/s

95th percentile per-packet one-way delay: 27.484 ms

Loss rate: 0.43%

Run 1: Report of PCC-Allegro — Data Link

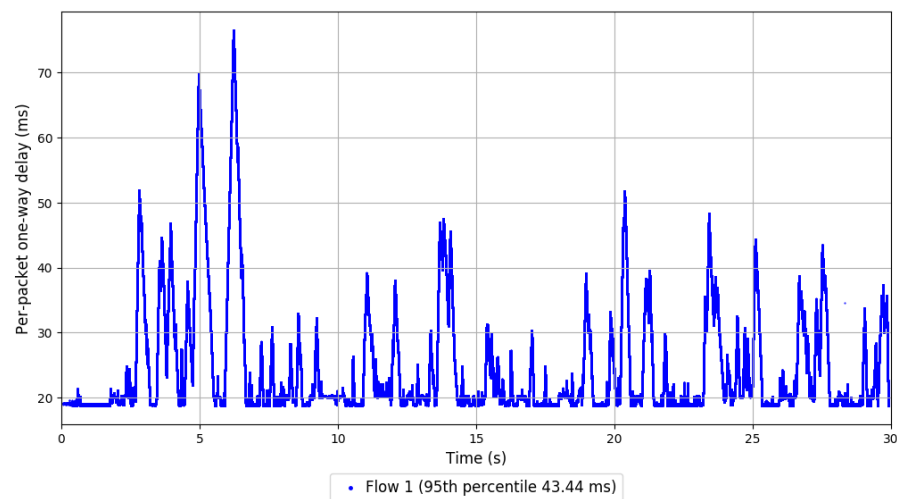
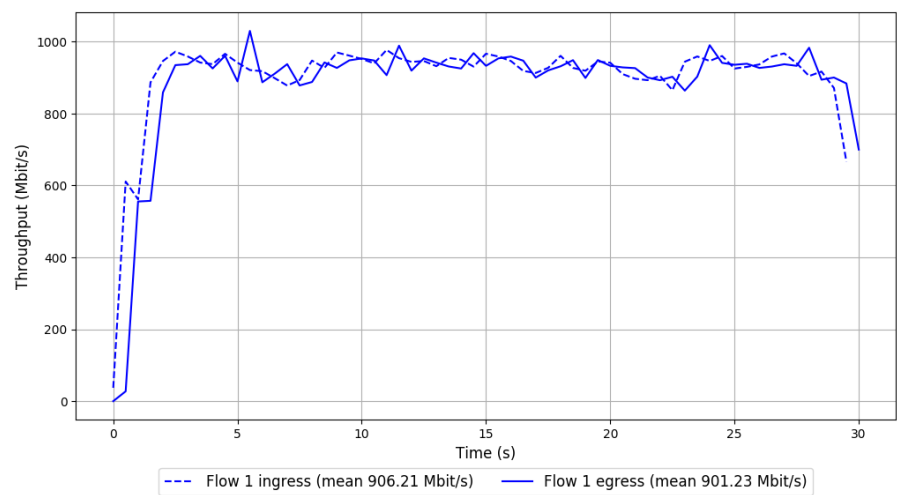


Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 10:45:10
End at: 2018-09-07 10:45:40
Local clock offset: 1.413 ms
Remote clock offset: -0.052 ms

Below is generated by plot.py at 2018-09-07 12:48:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 901.23 Mbit/s
95th percentile per-packet one-way delay: 43.442 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 901.23 Mbit/s
95th percentile per-packet one-way delay: 43.442 ms
Loss rate: 0.55%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

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

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

Local clock offset: 1.224 ms

Remote clock offset: 0.447 ms

Below is generated by plot.py at 2018-09-07 12:48:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 844.16 Mbit/s

95th percentile per-packet one-way delay: 24.020 ms

Loss rate: 0.50%

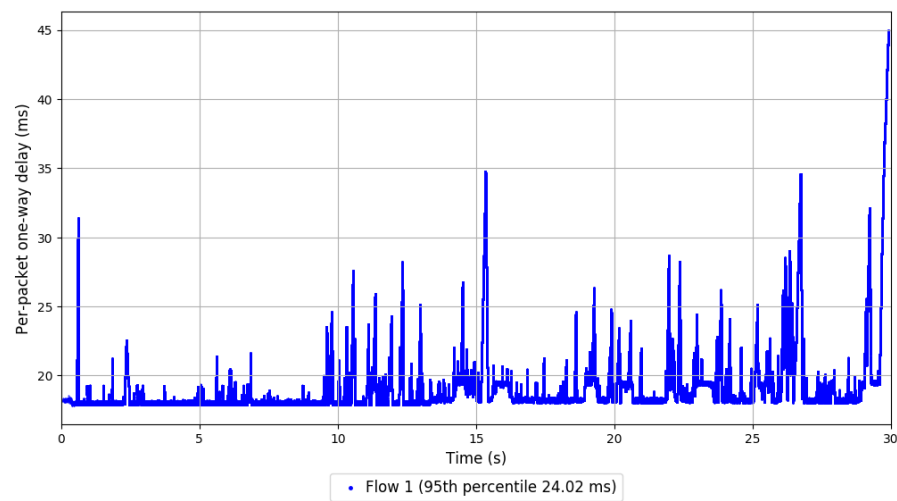
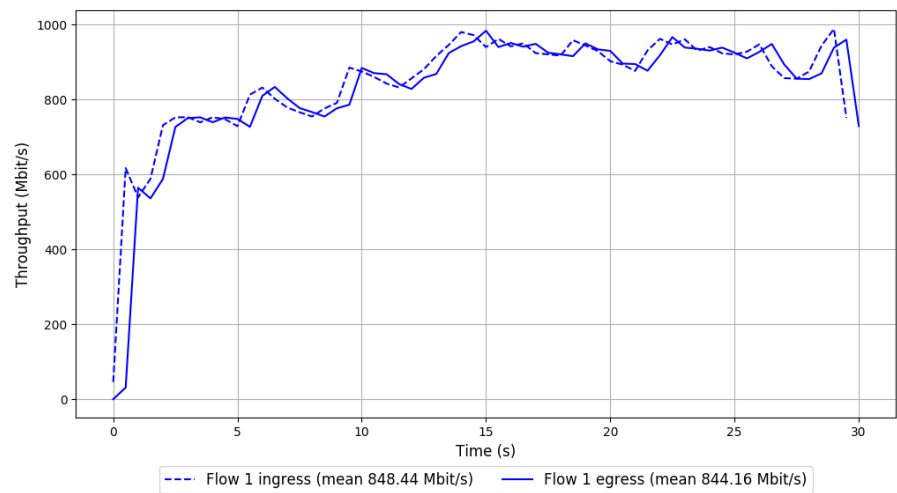
-- Flow 1:

Average throughput: 844.16 Mbit/s

95th percentile per-packet one-way delay: 24.020 ms

Loss rate: 0.50%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 11:37:36

End at: 2018-09-07 11:38:06

Local clock offset: -0.052 ms

Remote clock offset: 0.908 ms

Below is generated by plot.py at 2018-09-07 12:50:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 869.97 Mbit/s

95th percentile per-packet one-way delay: 23.609 ms

Loss rate: 0.51%

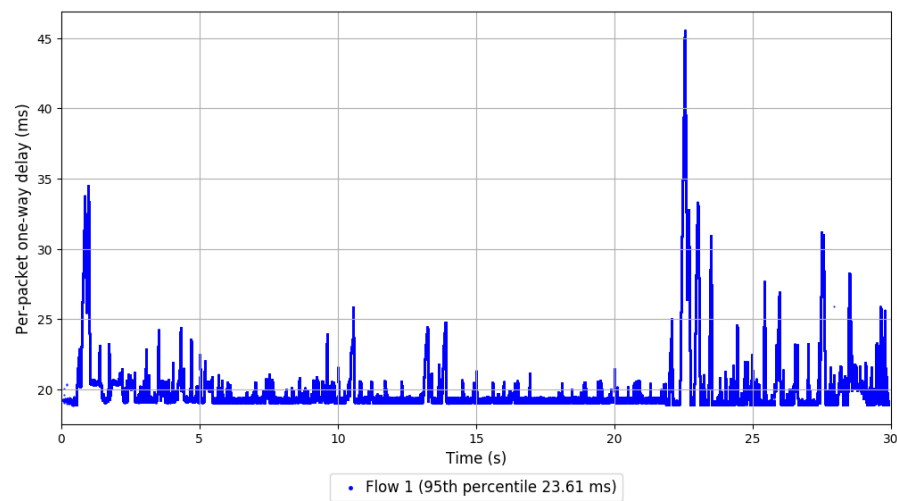
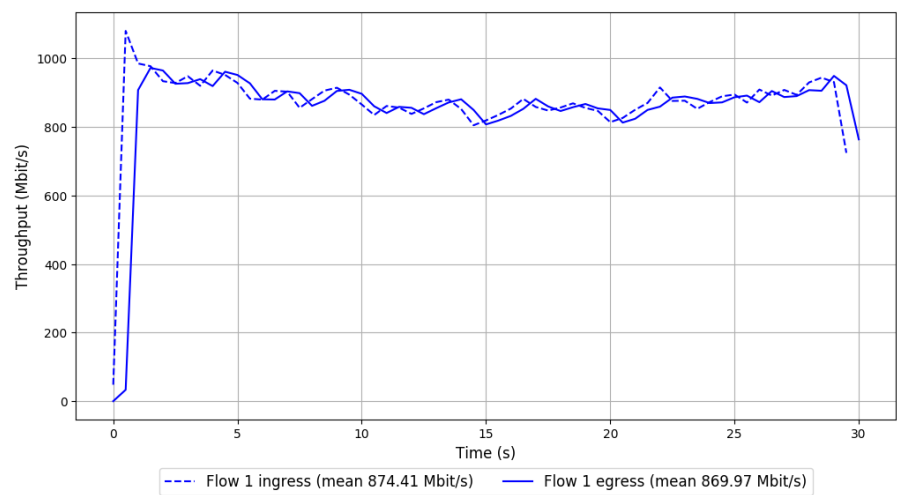
-- Flow 1:

Average throughput: 869.97 Mbit/s

95th percentile per-packet one-way delay: 23.609 ms

Loss rate: 0.51%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 12:03:48

End at: 2018-09-07 12:04:18

Local clock offset: -0.584 ms

Remote clock offset: 1.028 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 886.27 Mbit/s

95th percentile per-packet one-way delay: 24.355 ms

Loss rate: 0.43%

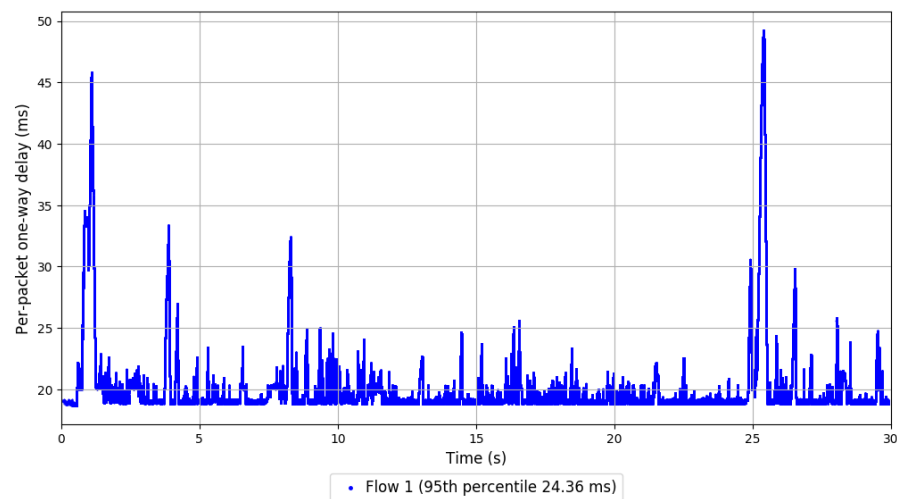
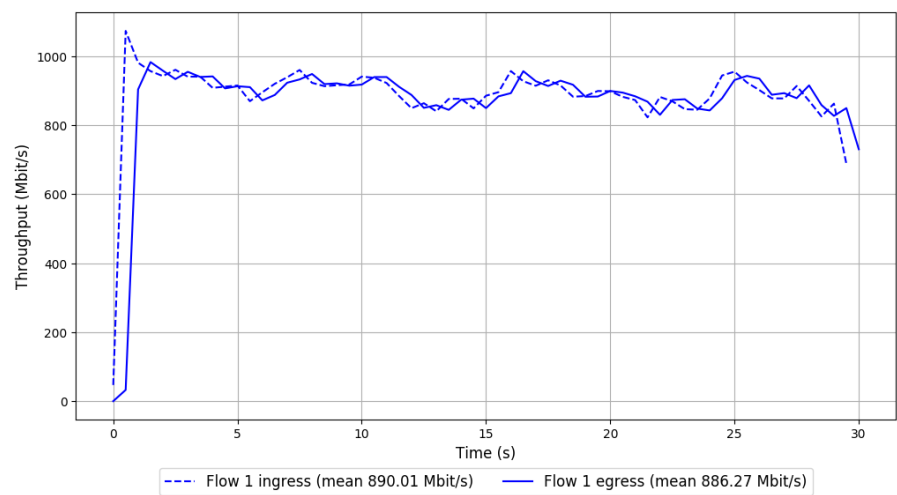
-- Flow 1:

Average throughput: 886.27 Mbit/s

95th percentile per-packet one-way delay: 24.355 ms

Loss rate: 0.43%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

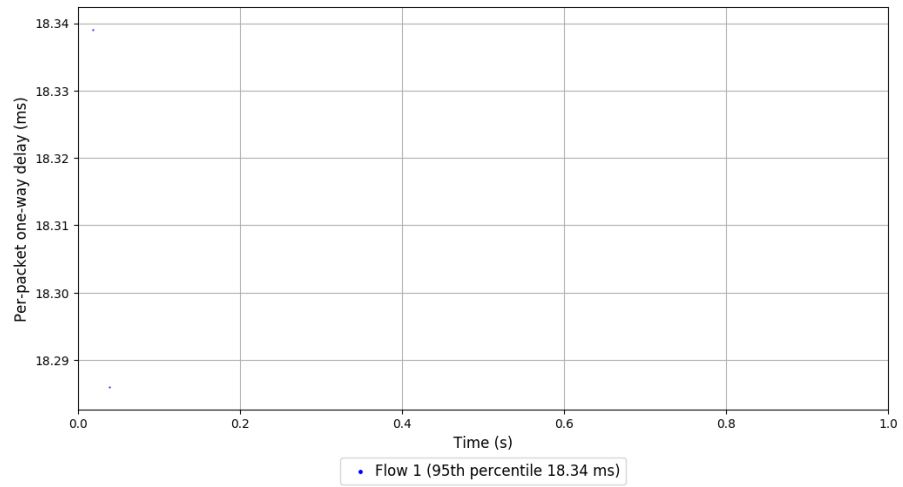
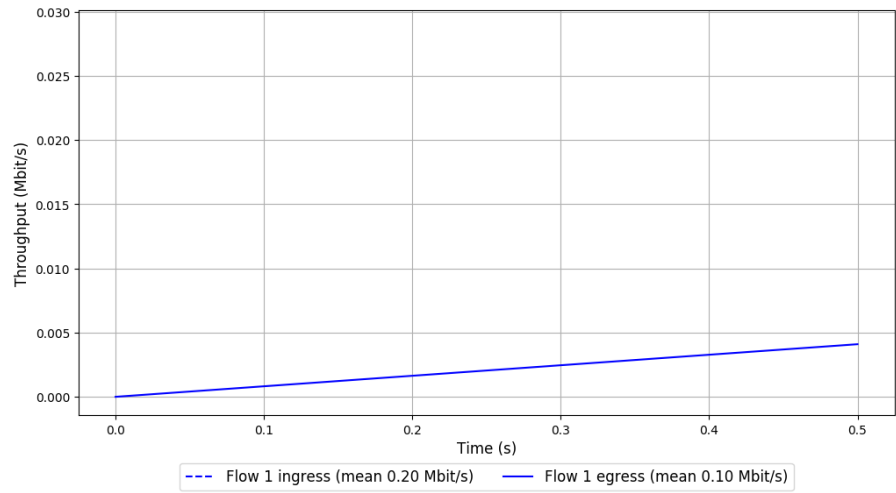
Start at: 2018-09-07 10:23:38

End at: 2018-09-07 10:24:08

Local clock offset: 1.045 ms

Remote clock offset: 0.147 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

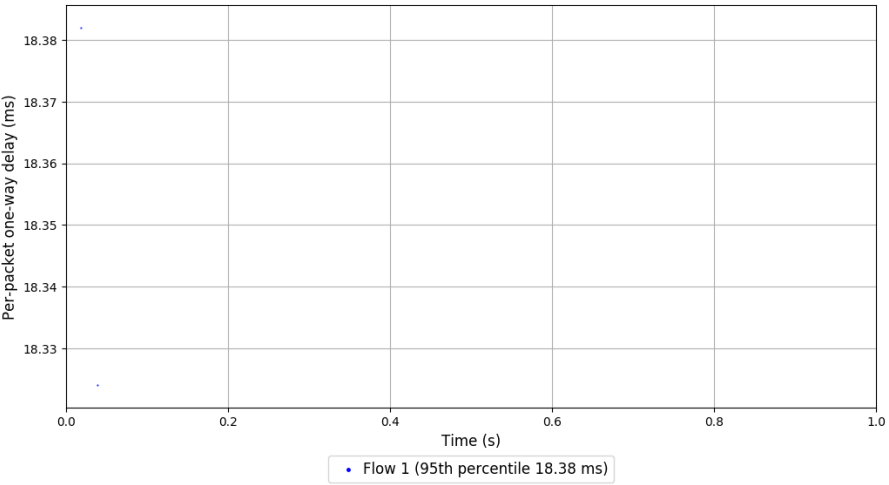
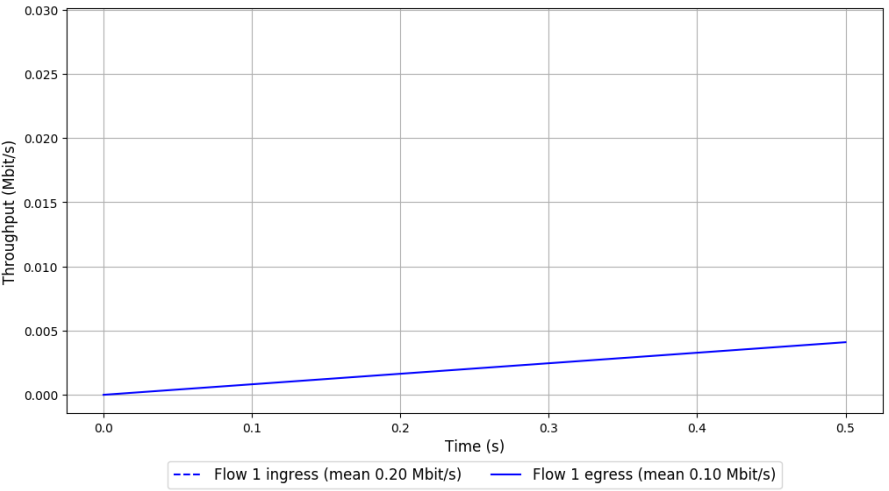
Start at: 2018-09-07 10:49:47

End at: 2018-09-07 10:50:17

Local clock offset: 1.333 ms

Remote clock offset: 0.05 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

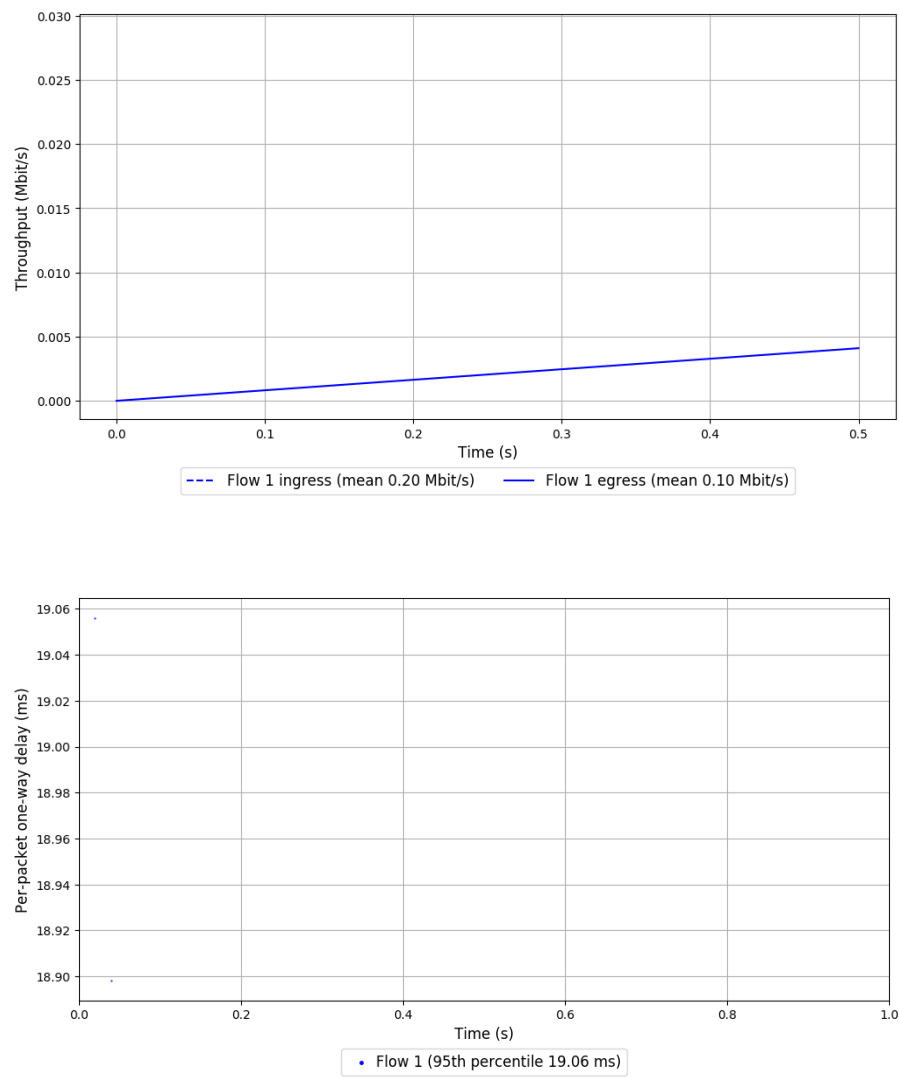
Start at: 2018-09-07 11:15:50

End at: 2018-09-07 11:16:20

Local clock offset: 1.043 ms

Remote clock offset: 0.653 ms

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

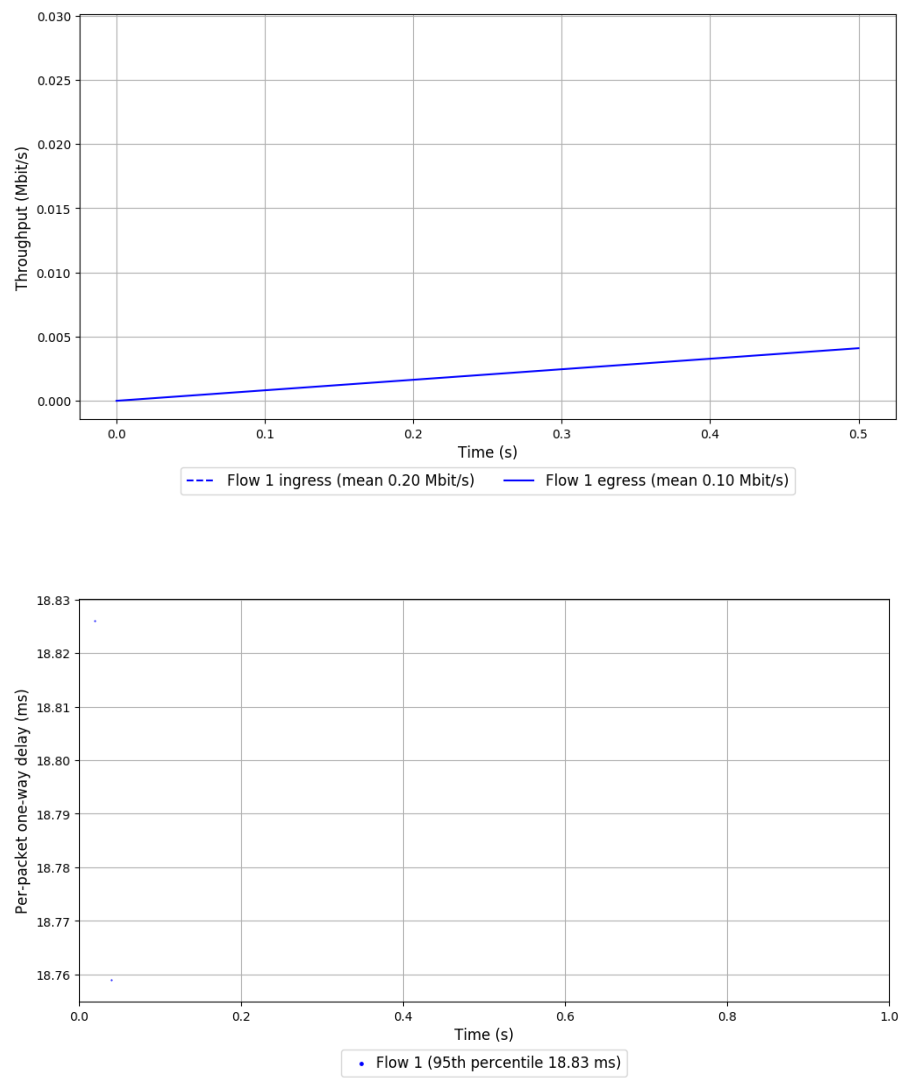
Start at: 2018-09-07 11:42:09

End at: 2018-09-07 11:42:39

Local clock offset: -0.111 ms

Remote clock offset: 0.862 ms

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

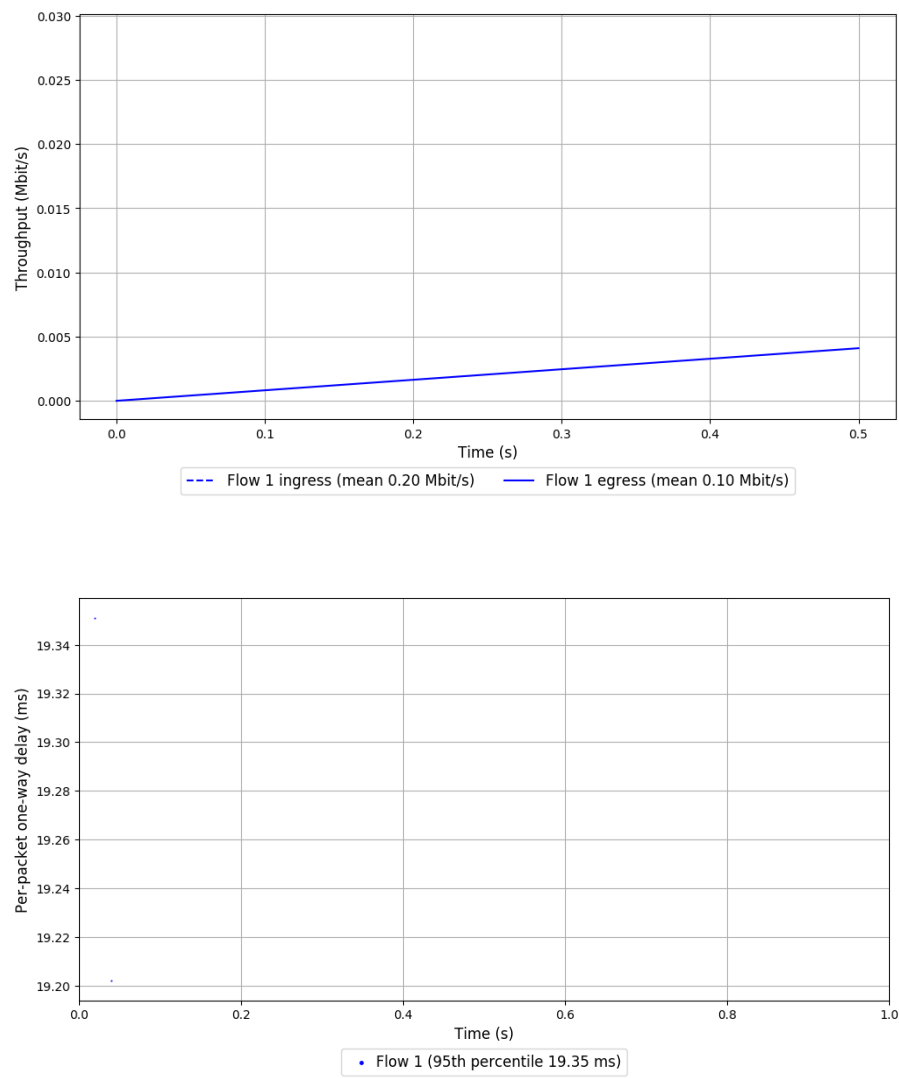
Start at: 2018-09-07 12:08:27

End at: 2018-09-07 12:08:57

Local clock offset: -0.62 ms

Remote clock offset: 1.122 ms

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

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

End at: 2018-09-07 10:10:40

Local clock offset: 0.768 ms

Remote clock offset: -0.014 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.21 Mbit/s

95th percentile per-packet one-way delay: 18.690 ms

Loss rate: 0.00%

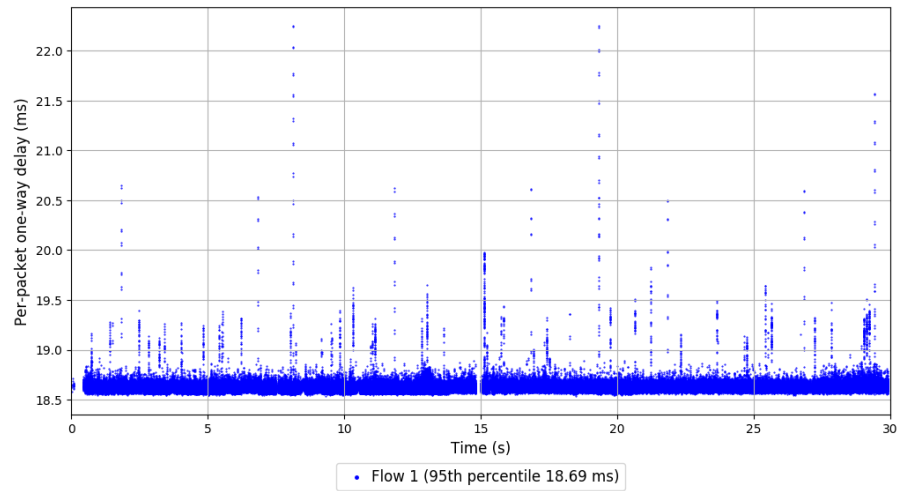
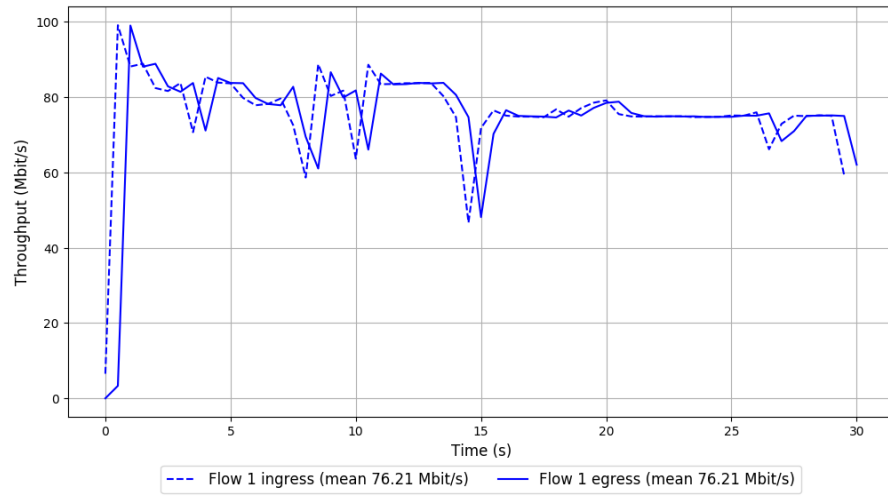
-- Flow 1:

Average throughput: 76.21 Mbit/s

95th percentile per-packet one-way delay: 18.690 ms

Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 10:36:15

End at: 2018-09-07 10:36:45

Local clock offset: 1.264 ms

Remote clock offset: 0.017 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.25 Mbit/s

95th percentile per-packet one-way delay: 19.068 ms

Loss rate: 0.01%

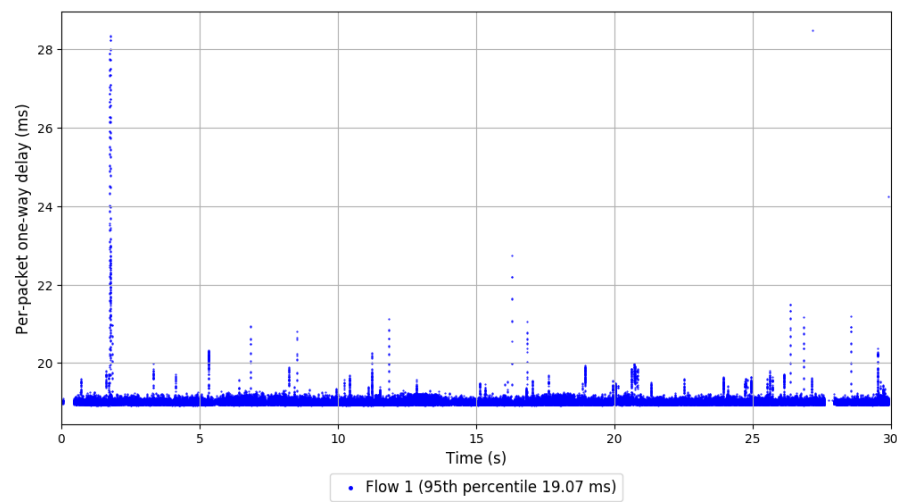
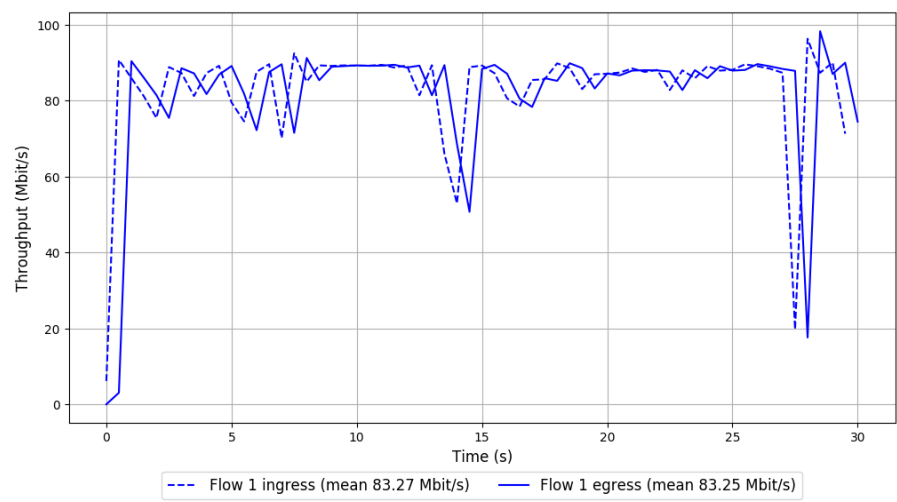
-- Flow 1:

Average throughput: 83.25 Mbit/s

95th percentile per-packet one-way delay: 19.068 ms

Loss rate: 0.01%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 11:02:18

End at: 2018-09-07 11:02:48

Local clock offset: 1.262 ms

Remote clock offset: 0.064 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.42 Mbit/s

95th percentile per-packet one-way delay: 17.970 ms

Loss rate: 0.01%

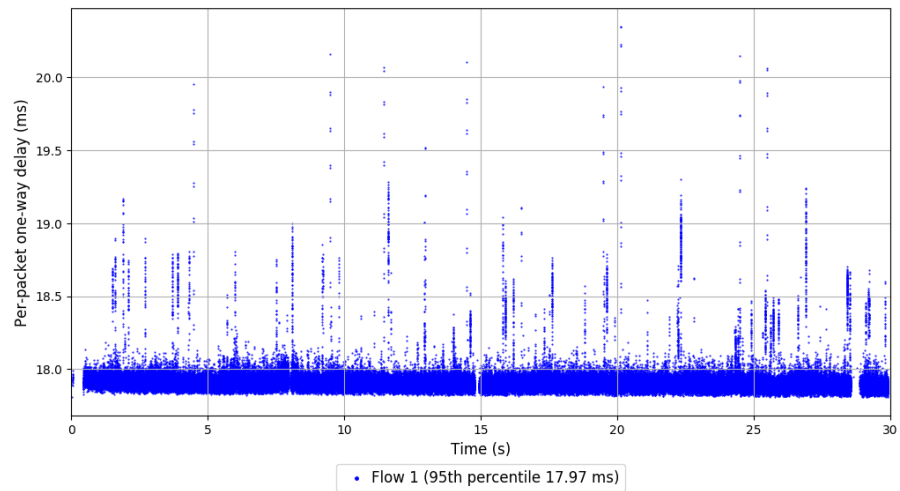
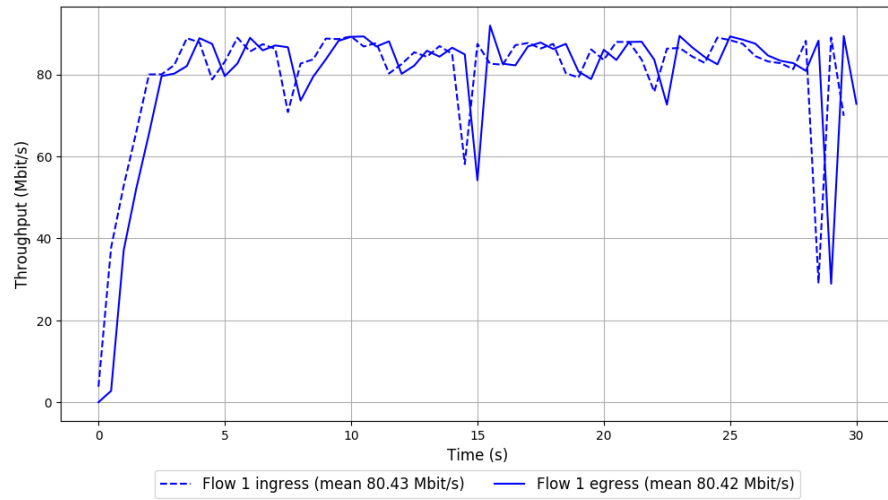
-- Flow 1:

Average throughput: 80.42 Mbit/s

95th percentile per-packet one-way delay: 17.970 ms

Loss rate: 0.01%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 11:28:35

End at: 2018-09-07 11:29:05

Local clock offset: 0.231 ms

Remote clock offset: 0.715 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 79.27 Mbit/s

95th percentile per-packet one-way delay: 18.919 ms

Loss rate: 0.00%

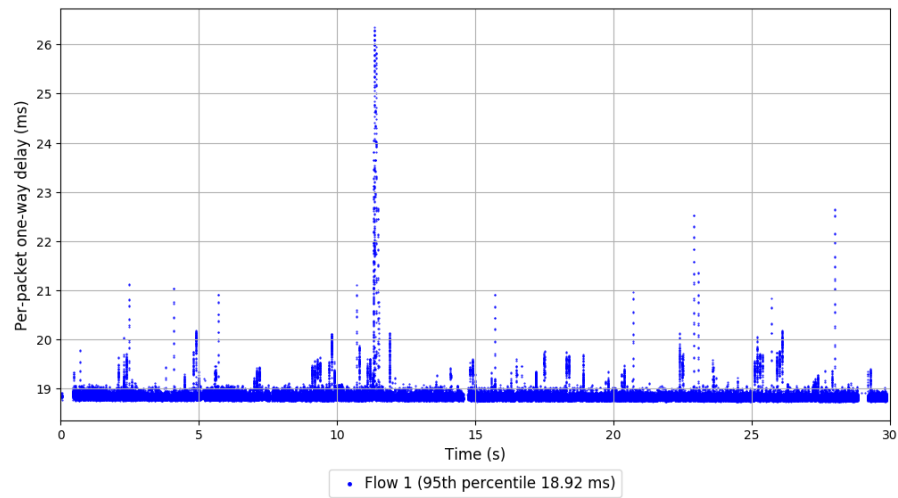
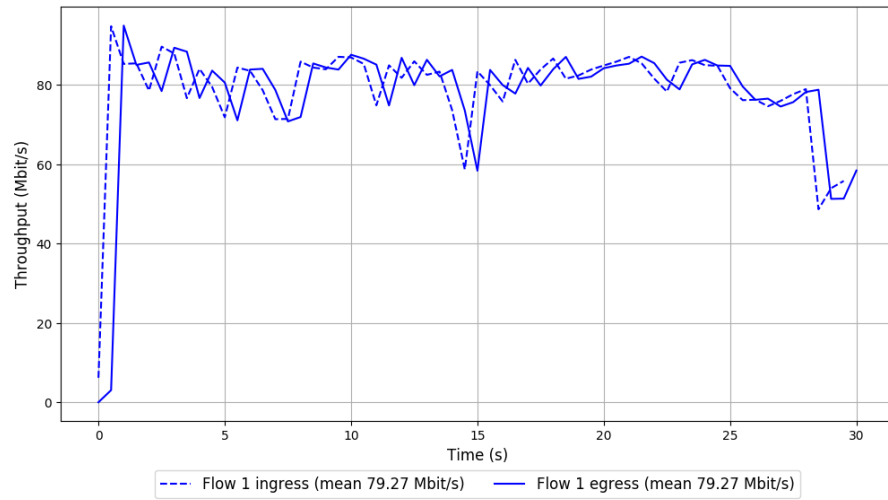
-- Flow 1:

Average throughput: 79.27 Mbit/s

95th percentile per-packet one-way delay: 18.919 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 11:54:50

End at: 2018-09-07 11:55:20

Local clock offset: -0.32 ms

Remote clock offset: 1.04 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 75.69 Mbit/s

95th percentile per-packet one-way delay: 18.770 ms

Loss rate: 0.01%

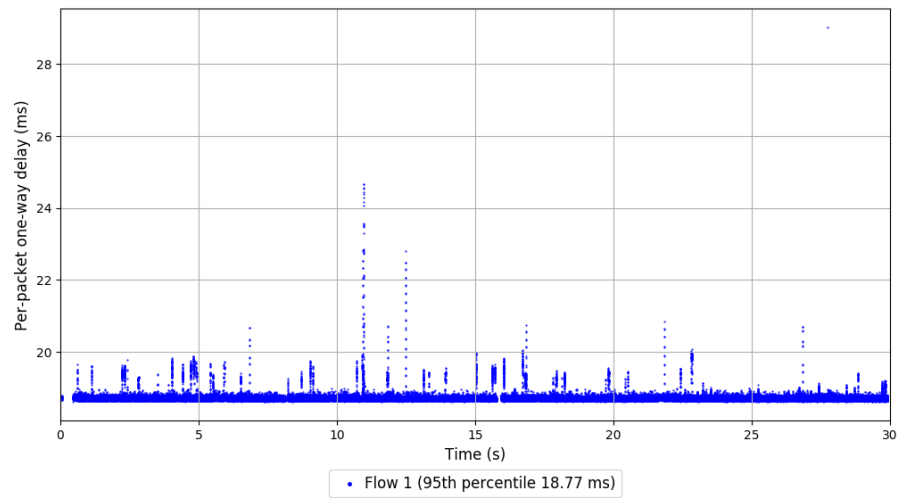
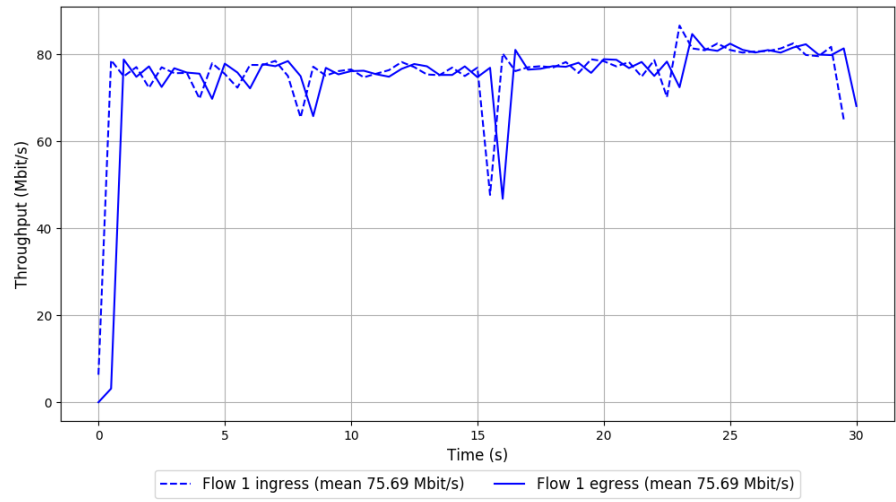
-- Flow 1:

Average throughput: 75.69 Mbit/s

95th percentile per-packet one-way delay: 18.770 ms

Loss rate: 0.01%

Run 5: Report of QUIC Cubic — Data Link

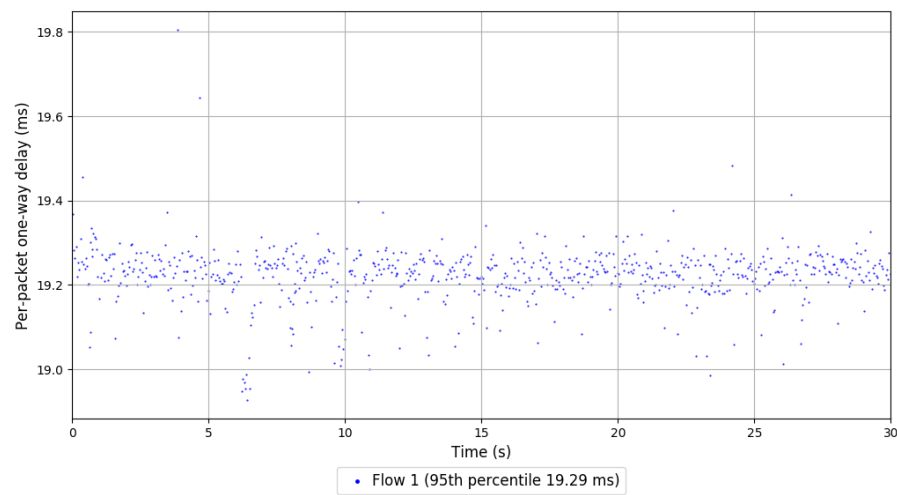
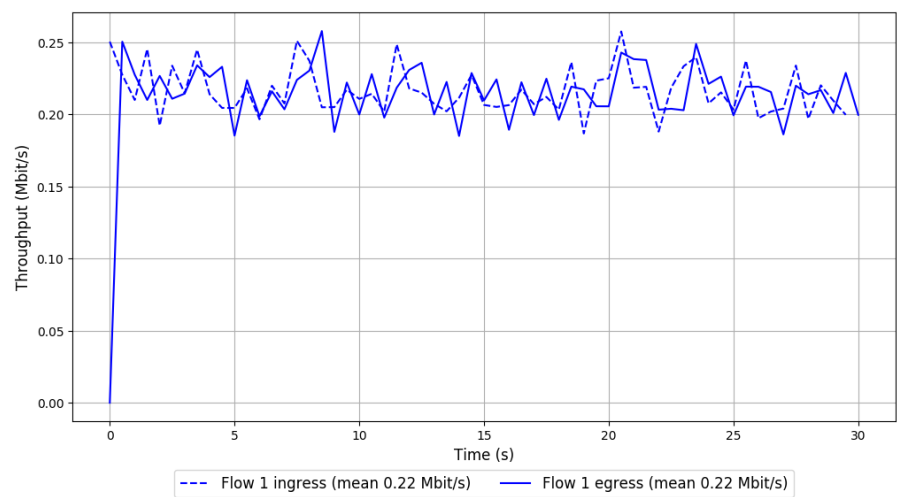


```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 10:03:10
End at: 2018-09-07 10:03:40
Local clock offset: 0.762 ms
Remote clock offset: -0.019 ms

# Below is generated by plot.py at 2018-09-07 12:52:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.293 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.293 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-07 10:29:10

End at: 2018-09-07 10:29:41

Local clock offset: 1.183 ms

Remote clock offset: 0.194 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 18.516 ms

Loss rate: 0.00%

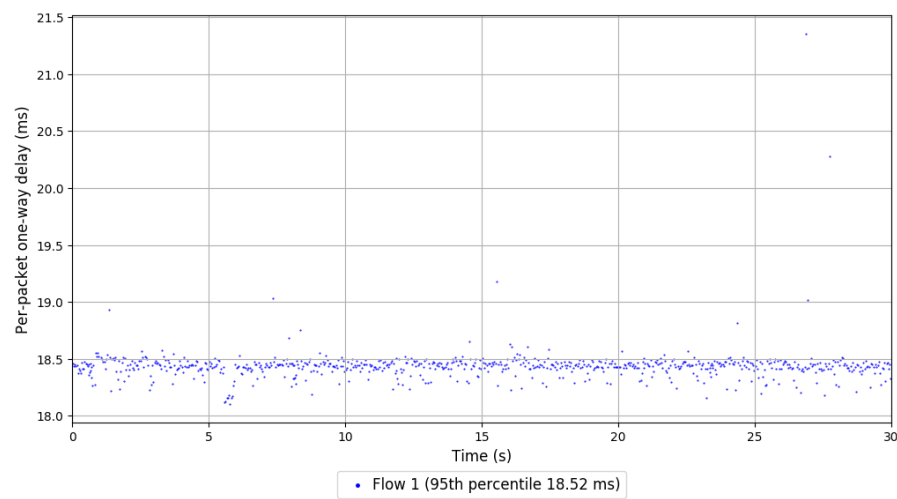
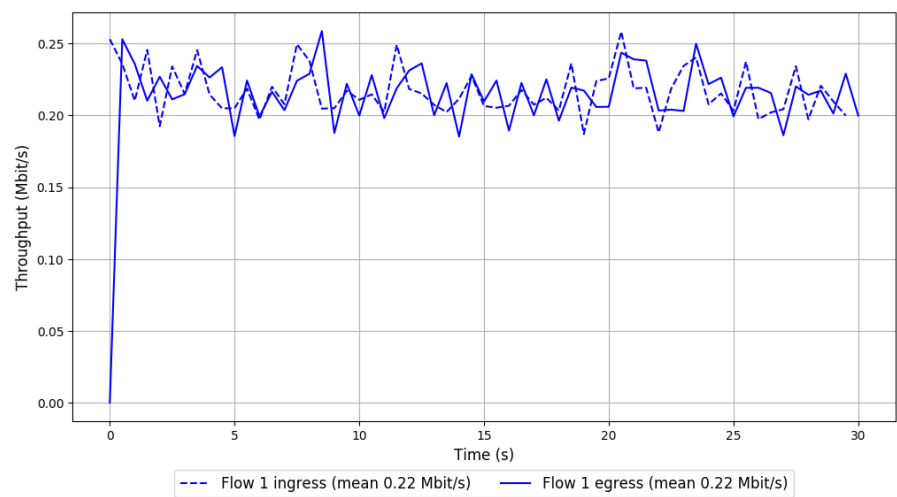
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 18.516 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-07 10:55:20

End at: 2018-09-07 10:55:50

Local clock offset: 1.292 ms

Remote clock offset: 0.081 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 19.379 ms

Loss rate: 0.00%

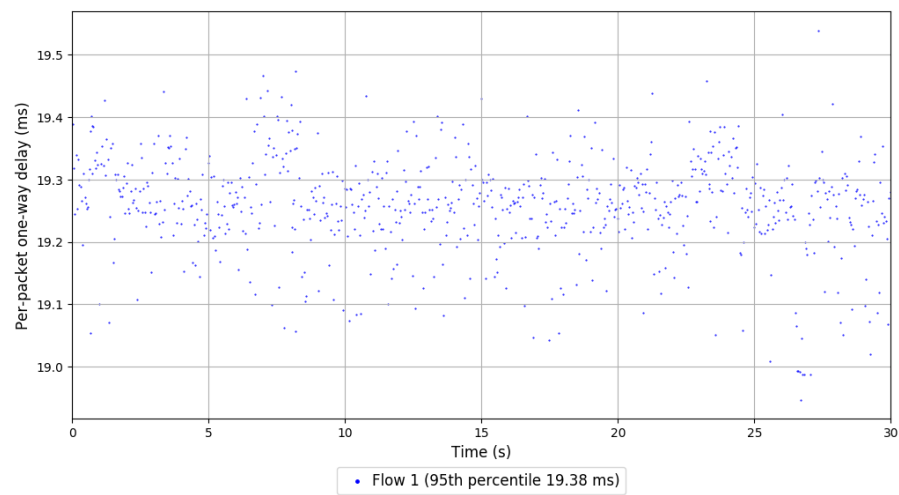
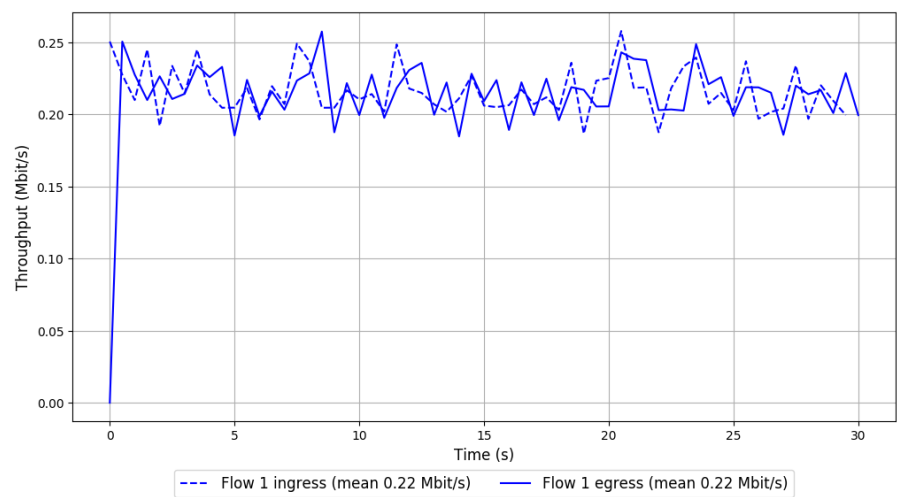
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 19.379 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-07 11:21:23

End at: 2018-09-07 11:21:53

Local clock offset: 0.523 ms

Remote clock offset: 0.604 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 18.374 ms

Loss rate: 0.00%

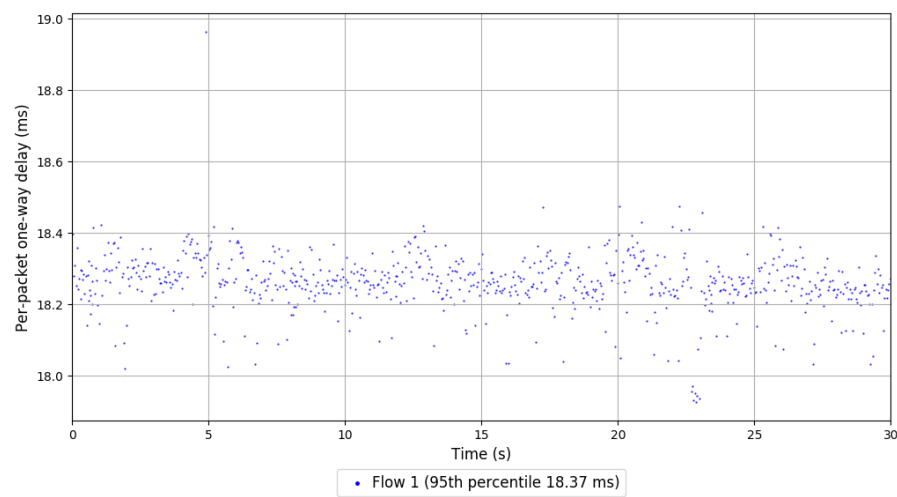
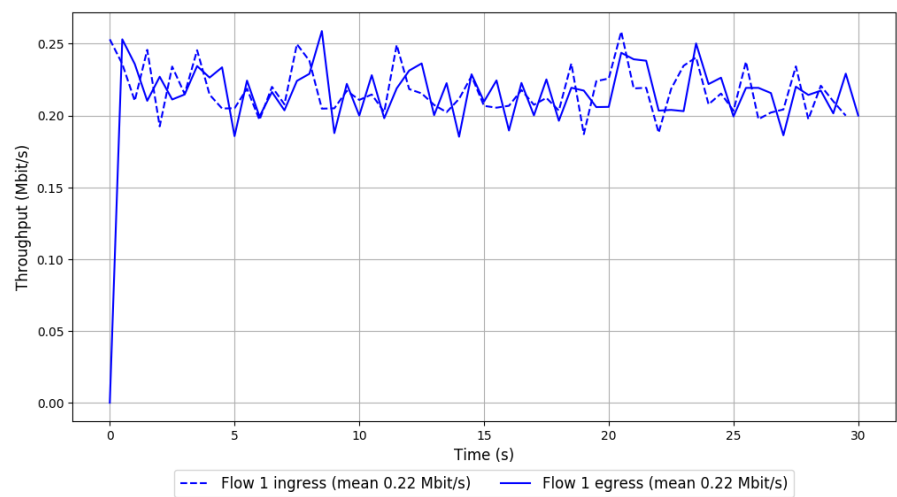
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 18.374 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-07 11:47:42

End at: 2018-09-07 11:48:12

Local clock offset: -0.222 ms

Remote clock offset: 0.901 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 19.057 ms

Loss rate: 0.00%

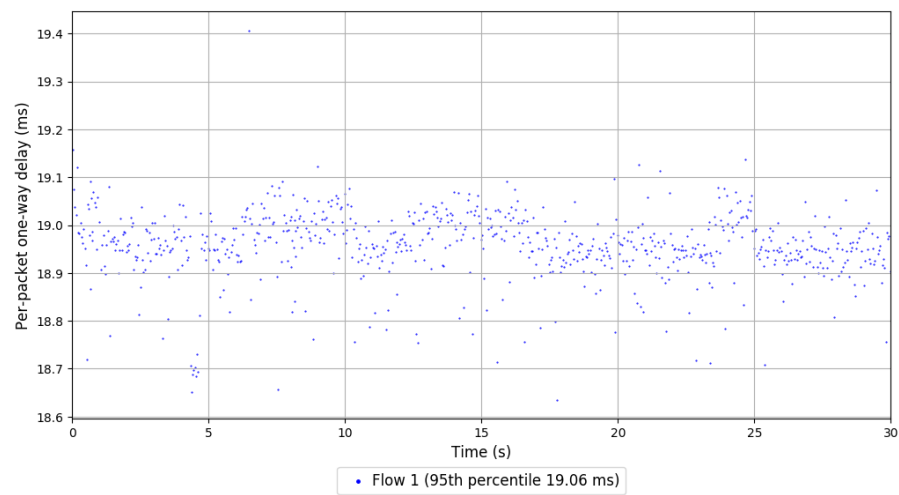
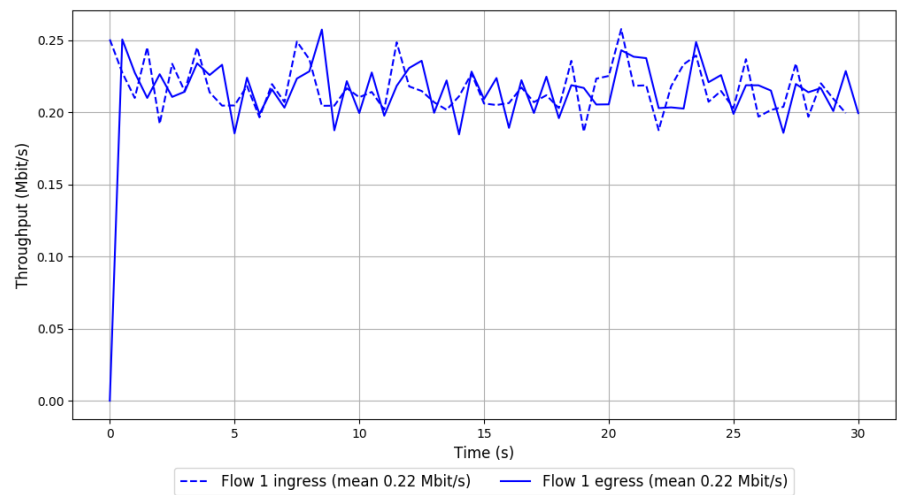
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 19.057 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

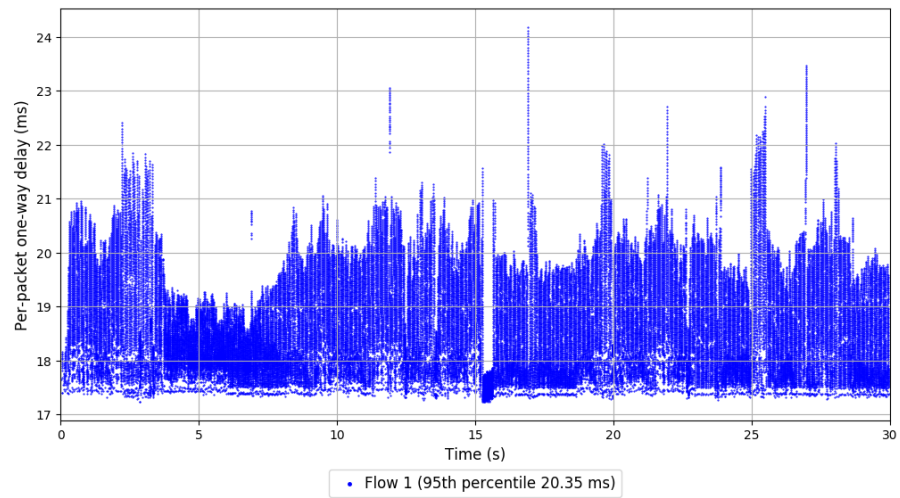
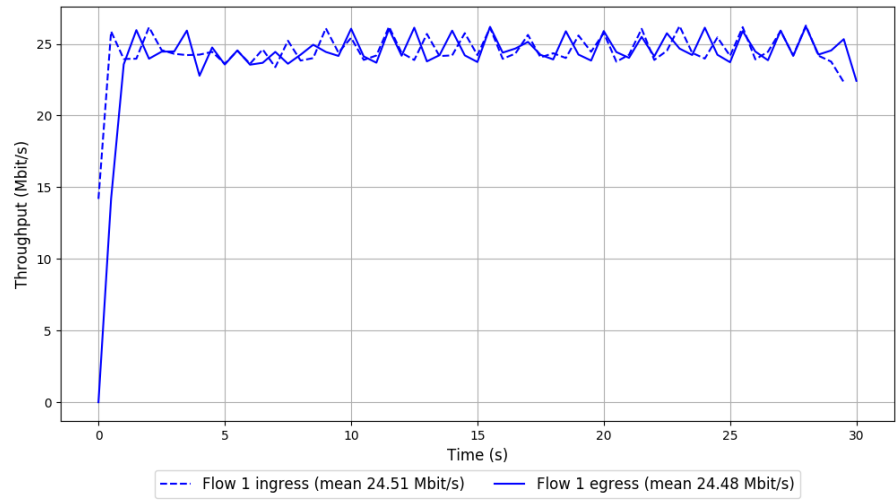


Run 1: Statistics of Sprout

Start at: 2018-09-07 10:11:31
End at: 2018-09-07 10:12:01
Local clock offset: 0.675 ms
Remote clock offset: -0.003 ms

Below is generated by plot.py at 2018-09-07 12:52:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.48 Mbit/s
95th percentile per-packet one-way delay: 20.346 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 24.48 Mbit/s
95th percentile per-packet one-way delay: 20.346 ms
Loss rate: 0.11%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-09-07 10:37:36

End at: 2018-09-07 10:38:06

Local clock offset: 1.286 ms

Remote clock offset: 0.037 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.67 Mbit/s

95th percentile per-packet one-way delay: 20.577 ms

Loss rate: 0.01%

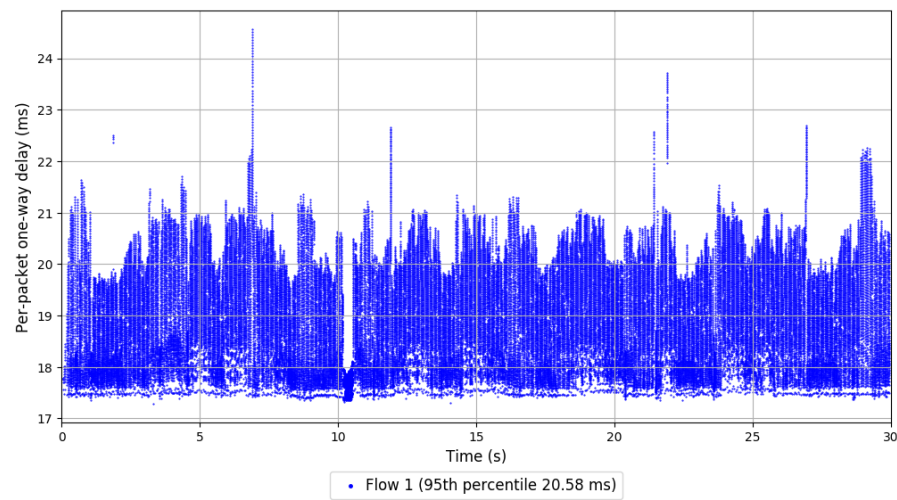
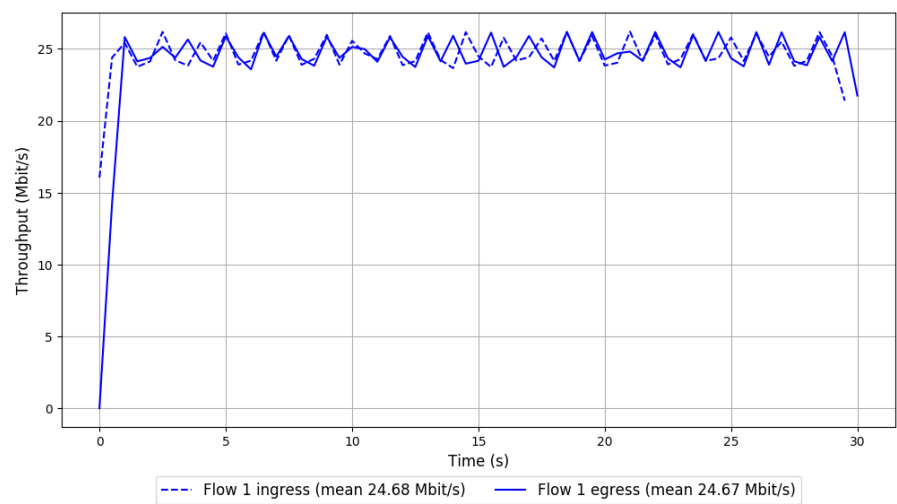
-- Flow 1:

Average throughput: 24.67 Mbit/s

95th percentile per-packet one-way delay: 20.577 ms

Loss rate: 0.01%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-09-07 11:03:39

End at: 2018-09-07 11:04:09

Local clock offset: 1.256 ms

Remote clock offset: 0.108 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.58 Mbit/s

95th percentile per-packet one-way delay: 20.571 ms

Loss rate: 0.07%

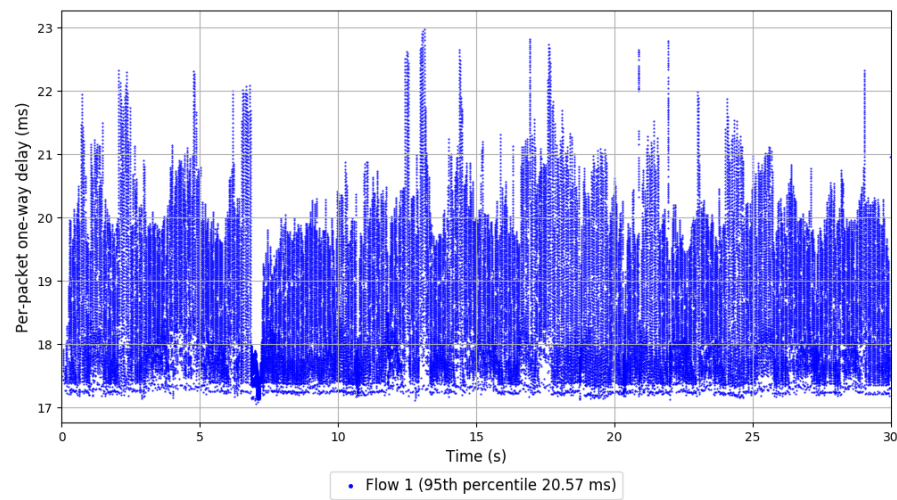
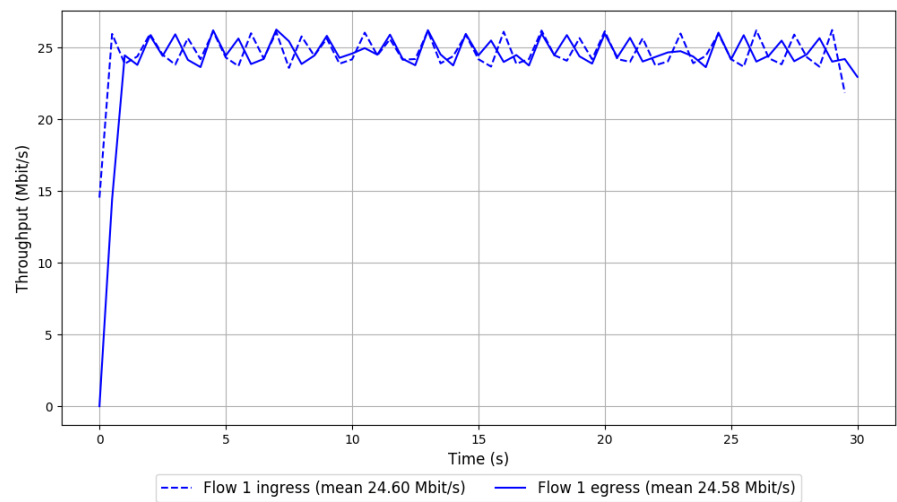
-- Flow 1:

Average throughput: 24.58 Mbit/s

95th percentile per-packet one-way delay: 20.571 ms

Loss rate: 0.07%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-09-07 11:29:56

End at: 2018-09-07 11:30:26

Local clock offset: 0.189 ms

Remote clock offset: 0.793 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.64 Mbit/s

95th percentile per-packet one-way delay: 21.571 ms

Loss rate: 0.02%

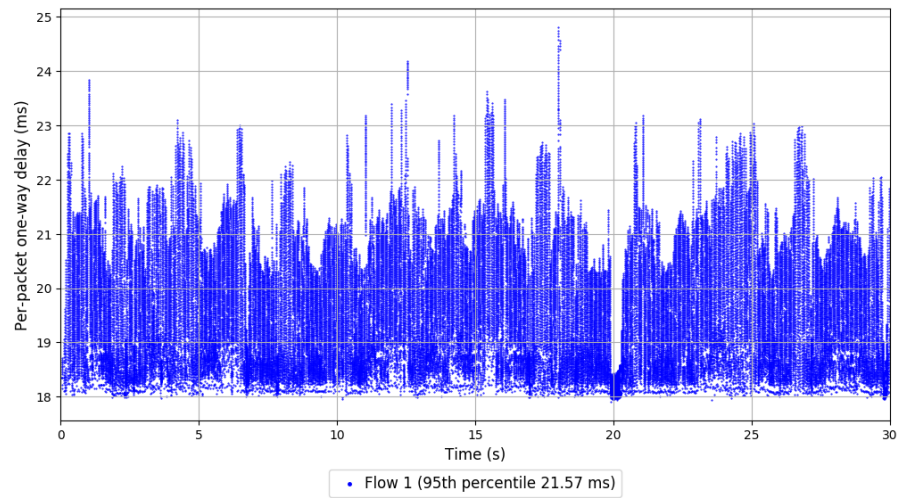
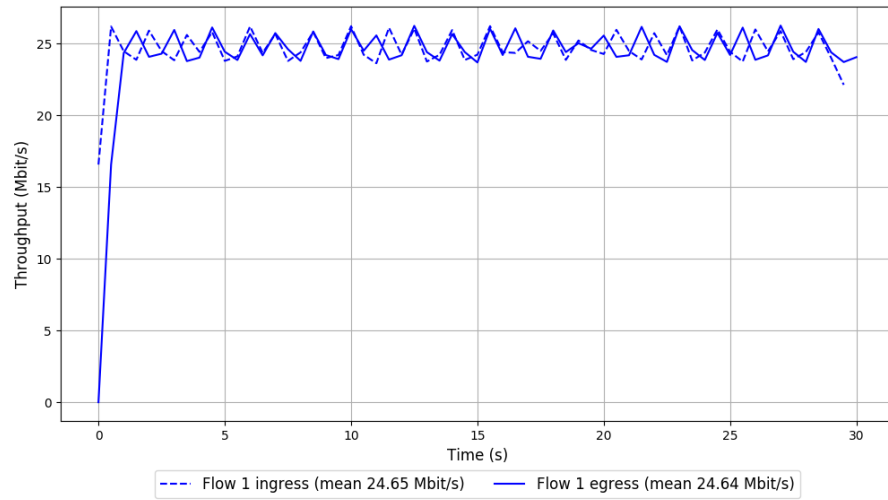
-- Flow 1:

Average throughput: 24.64 Mbit/s

95th percentile per-packet one-way delay: 21.571 ms

Loss rate: 0.02%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

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

End at: 2018-09-07 11:56:41

Local clock offset: -0.441 ms

Remote clock offset: 0.941 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.56 Mbit/s

95th percentile per-packet one-way delay: 22.187 ms

Loss rate: 0.08%

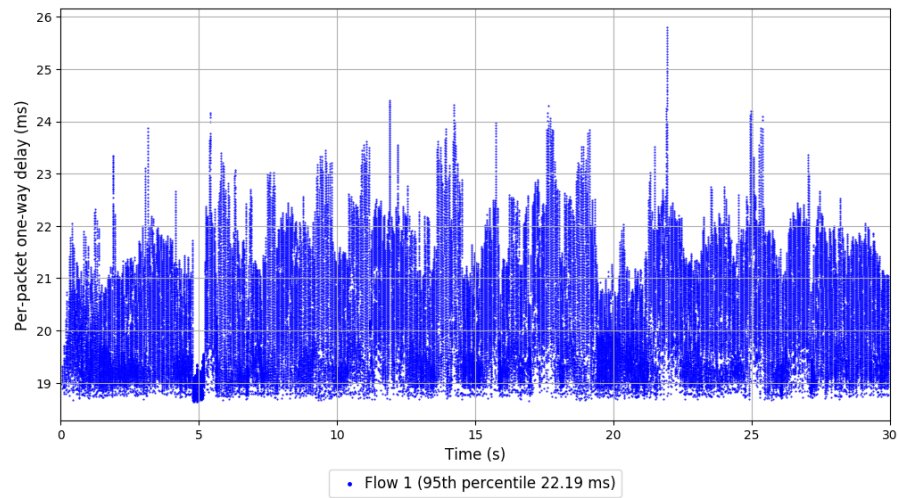
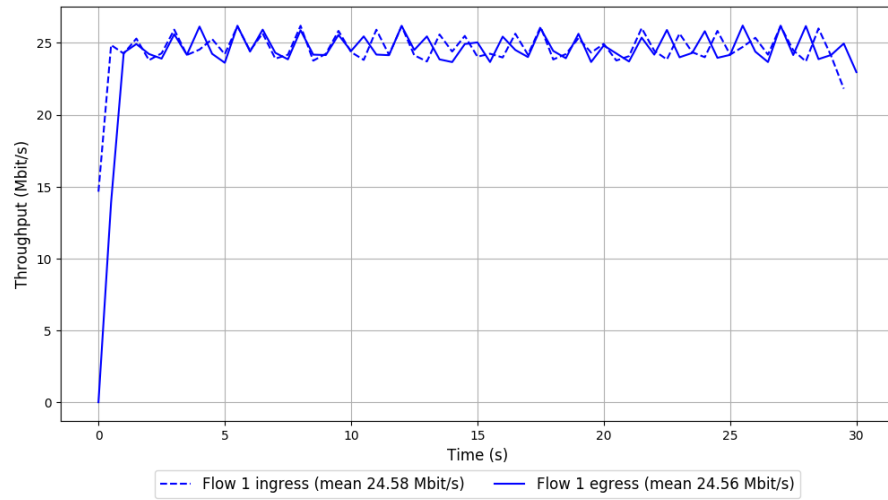
-- Flow 1:

Average throughput: 24.56 Mbit/s

95th percentile per-packet one-way delay: 22.187 ms

Loss rate: 0.08%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

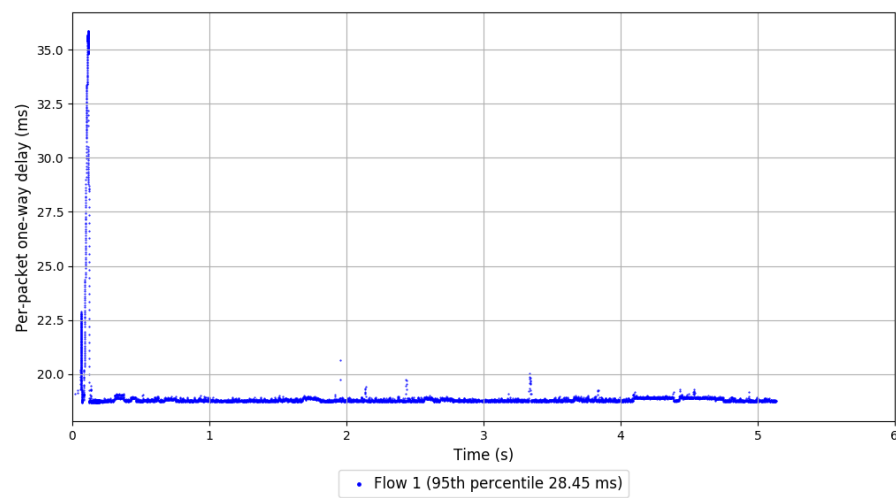
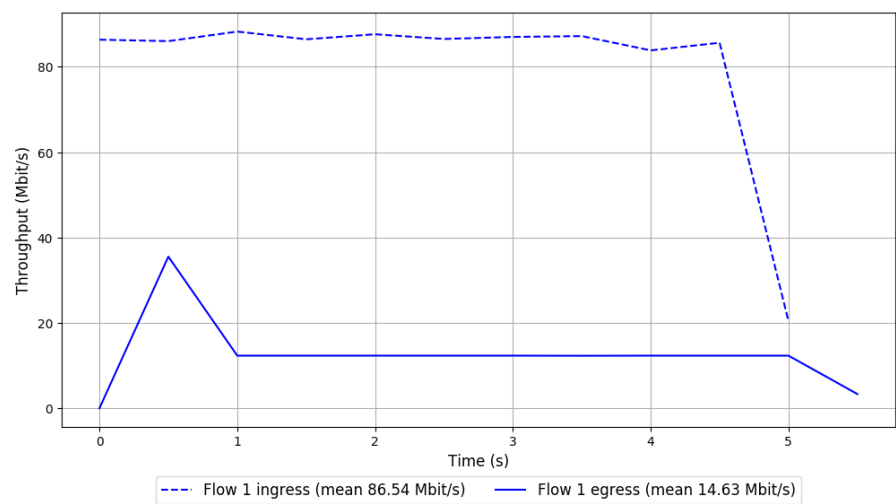
Start at: 2018-09-07 10:08:51

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

Local clock offset: 0.681 ms

Remote clock offset: -0.016 ms

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



Run 2: Statistics of TaoVA-100x

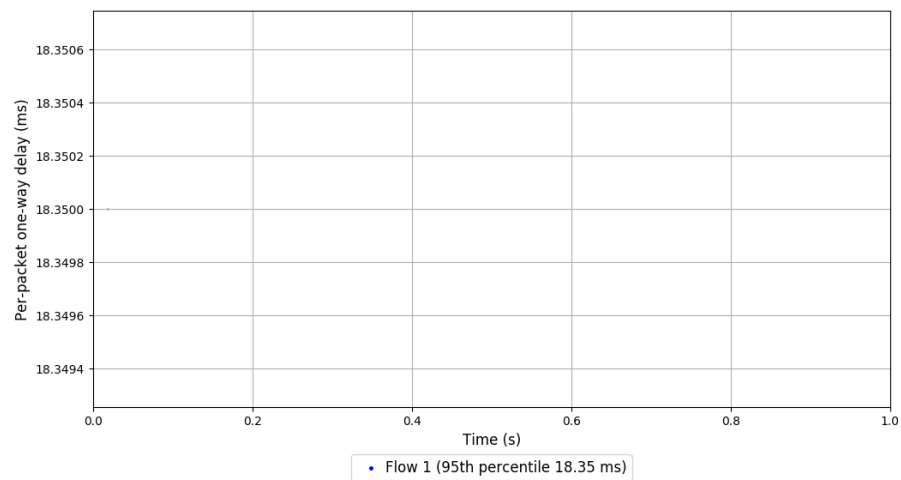
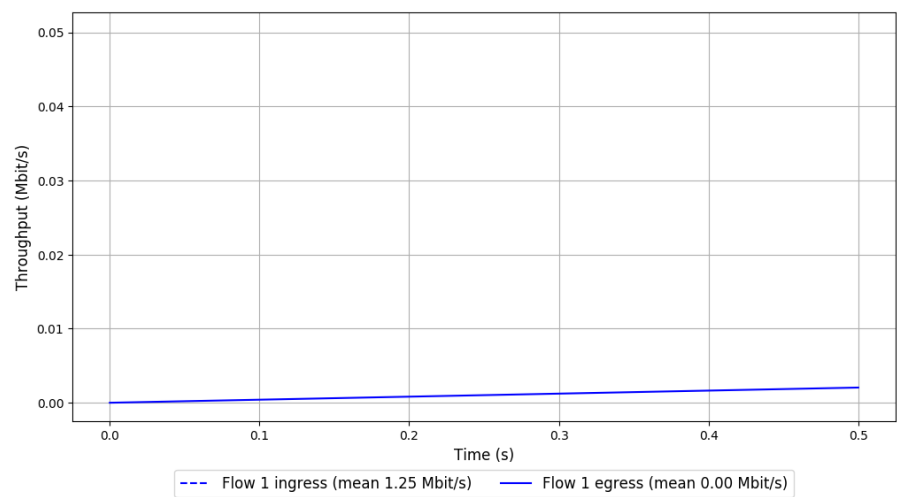
Start at: 2018-09-07 10:34:56

End at: 2018-09-07 10:35:26

Local clock offset: 1.365 ms

Remote clock offset: 0.053 ms

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



Run 3: Statistics of TaoVA-100x

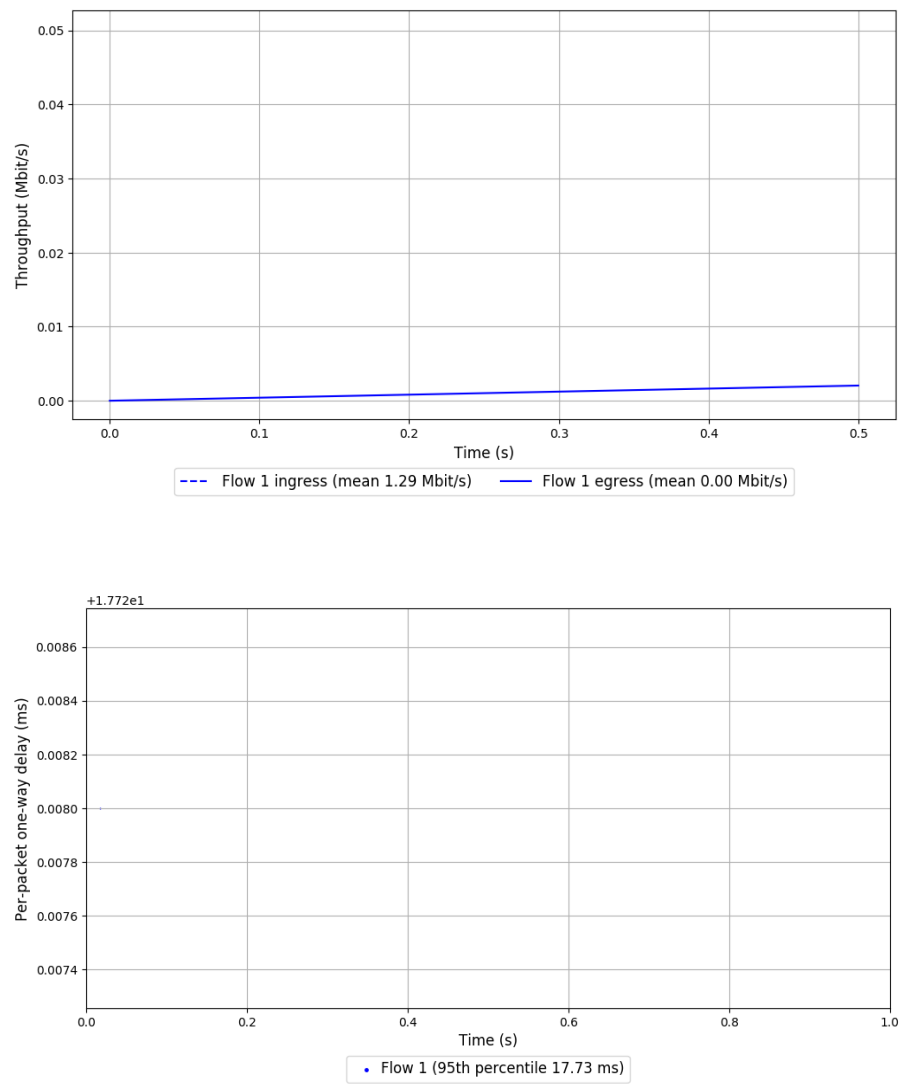
Start at: 2018-09-07 11:01:00

End at: 2018-09-07 11:01:30

Local clock offset: 1.175 ms

Remote clock offset: 0.078 ms

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



Run 4: Statistics of TaoVA-100x

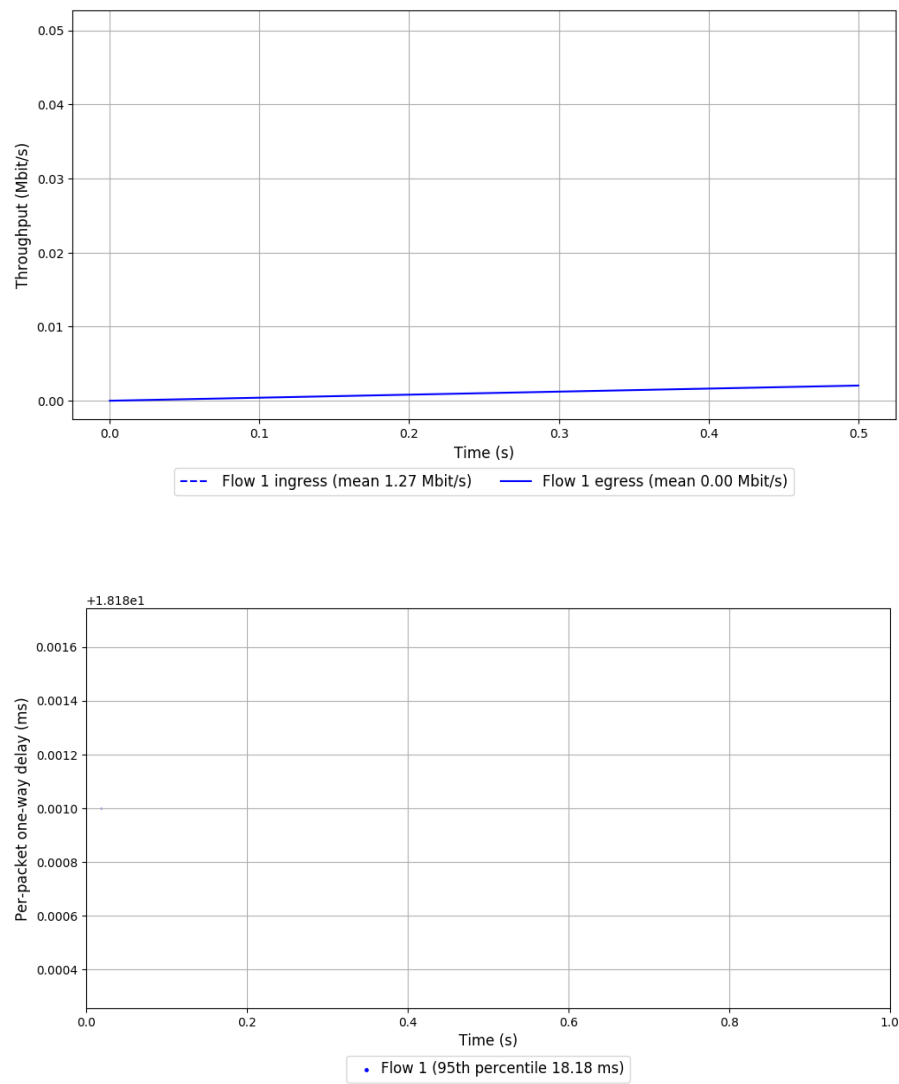
Start at: 2018-09-07 11:27:16

End at: 2018-09-07 11:27:46

Local clock offset: 0.263 ms

Remote clock offset: 0.704 ms

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



Run 5: Statistics of TaoVA-100x

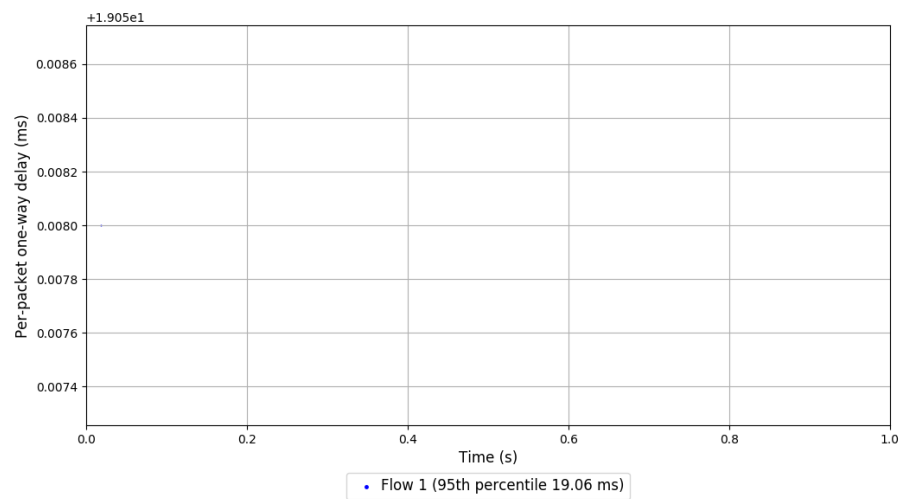
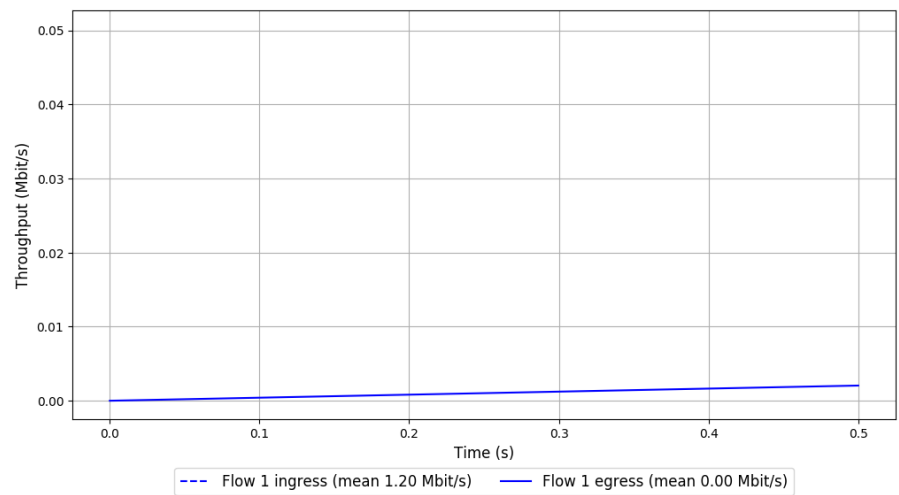
Start at: 2018-09-07 11:53:32

End at: 2018-09-07 11:54:02

Local clock offset: -0.323 ms

Remote clock offset: 0.933 ms

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



Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 10:04:28

End at: 2018-09-07 10:04:58

Local clock offset: 0.69 ms

Remote clock offset: 0.017 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 79.08 Mbit/s

95th percentile per-packet one-way delay: 21.418 ms

Loss rate: 0.53%

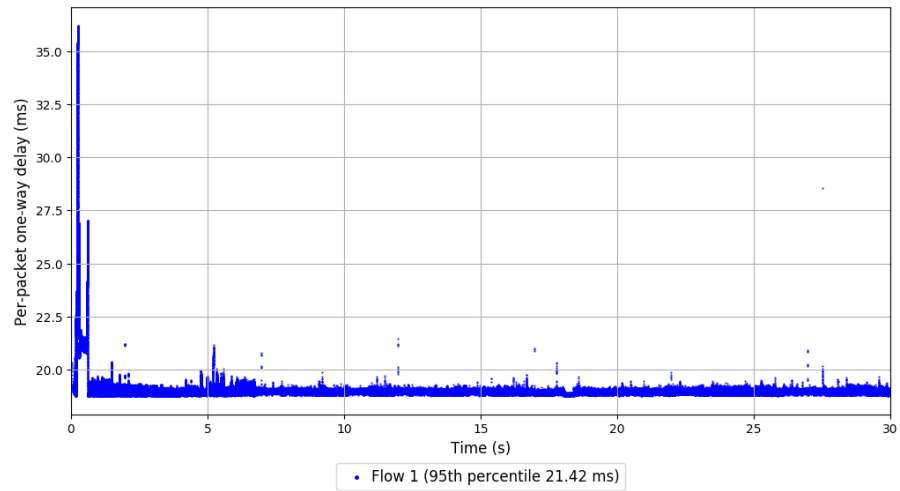
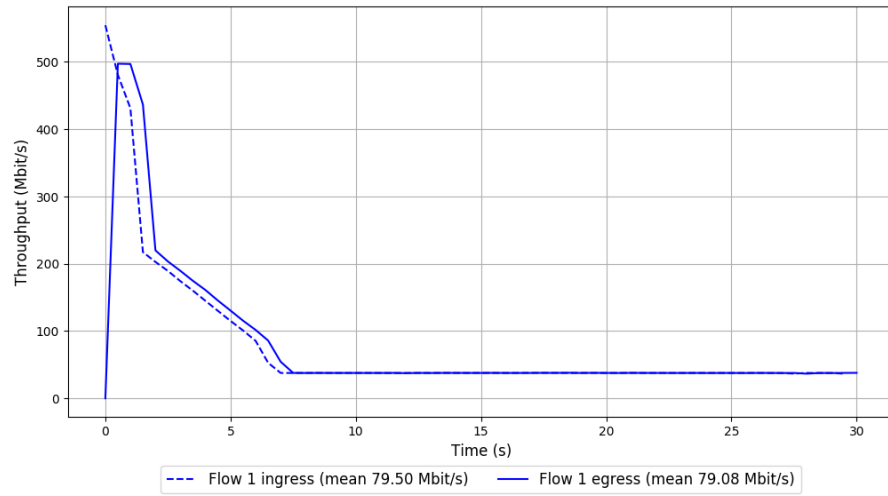
-- Flow 1:

Average throughput: 79.08 Mbit/s

95th percentile per-packet one-way delay: 21.418 ms

Loss rate: 0.53%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 10:30:29

End at: 2018-09-07 10:30:59

Local clock offset: 1.18 ms

Remote clock offset: 0.074 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 158.96 Mbit/s

95th percentile per-packet one-way delay: 19.660 ms

Loss rate: 0.26%

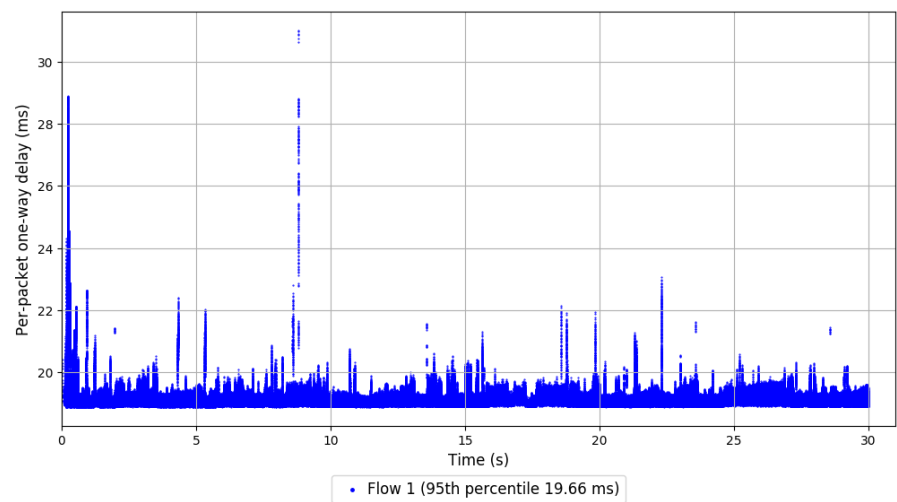
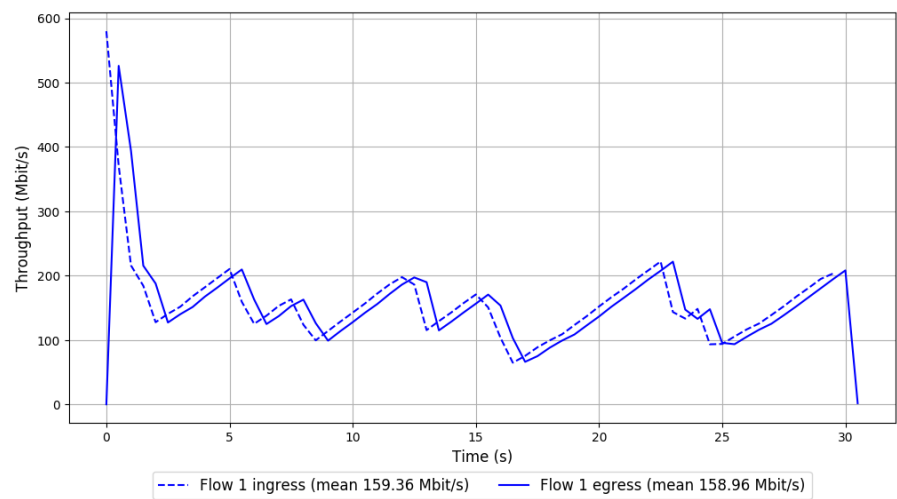
-- Flow 1:

Average throughput: 158.96 Mbit/s

95th percentile per-packet one-way delay: 19.660 ms

Loss rate: 0.26%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 10:56:38

End at: 2018-09-07 10:57:08

Local clock offset: 1.201 ms

Remote clock offset: -0.01 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.97 Mbit/s

95th percentile per-packet one-way delay: 19.386 ms

Loss rate: 0.01%

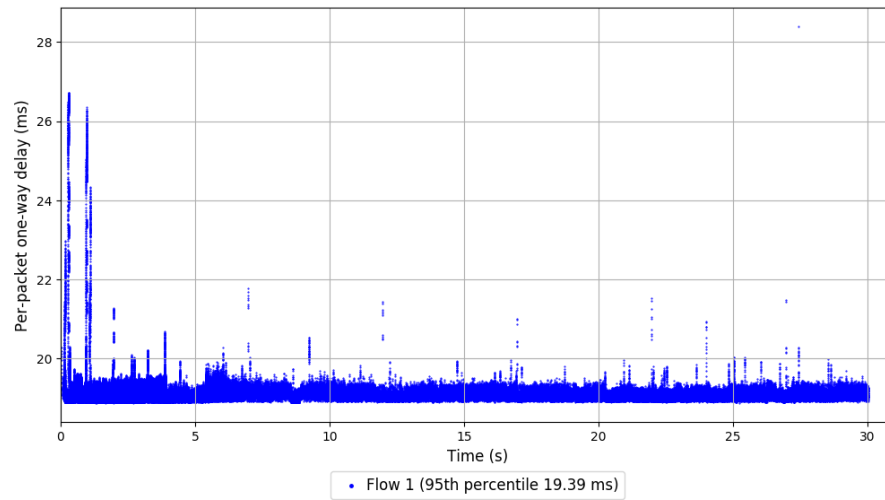
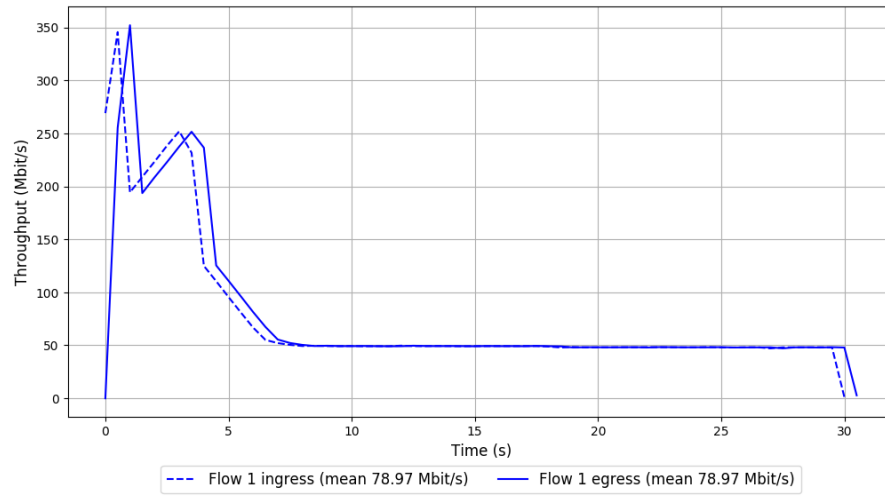
-- Flow 1:

Average throughput: 78.97 Mbit/s

95th percentile per-packet one-way delay: 19.386 ms

Loss rate: 0.01%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 11:22:42

End at: 2018-09-07 11:23:12

Local clock offset: 0.507 ms

Remote clock offset: 0.611 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.23 Mbit/s

95th percentile per-packet one-way delay: 18.547 ms

Loss rate: 0.33%

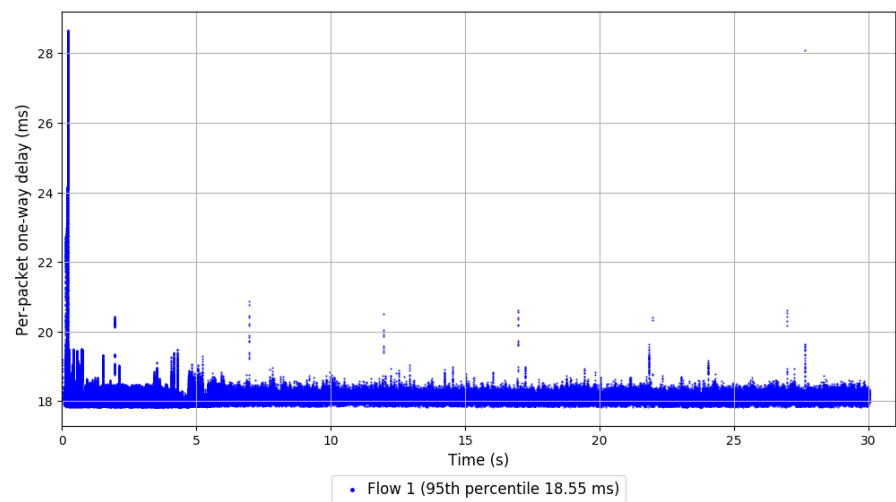
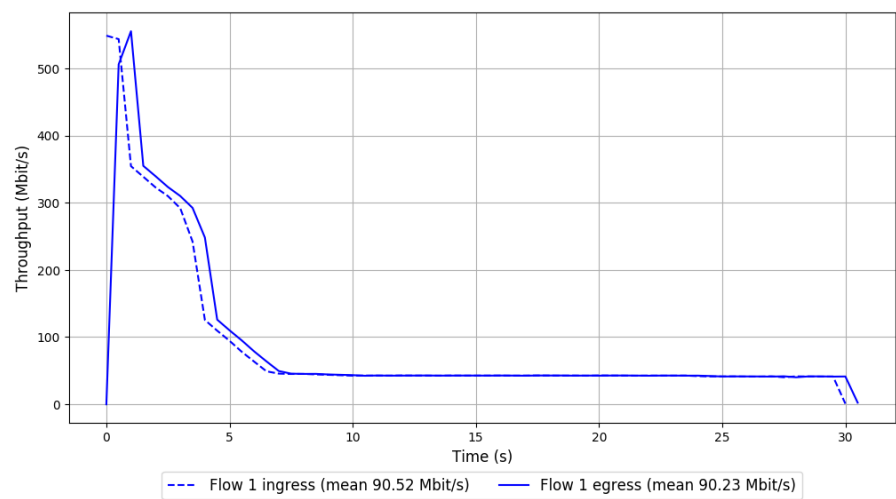
-- Flow 1:

Average throughput: 90.23 Mbit/s

95th percentile per-packet one-way delay: 18.547 ms

Loss rate: 0.33%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 11:49:00

End at: 2018-09-07 11:49:30

Local clock offset: -0.25 ms

Remote clock offset: 0.99 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 54.64 Mbit/s

95th percentile per-packet one-way delay: 20.802 ms

Loss rate: 0.43%

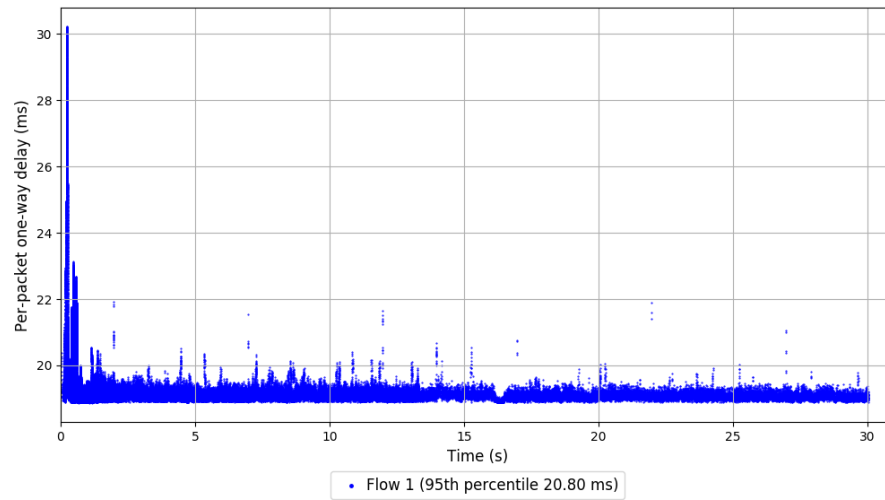
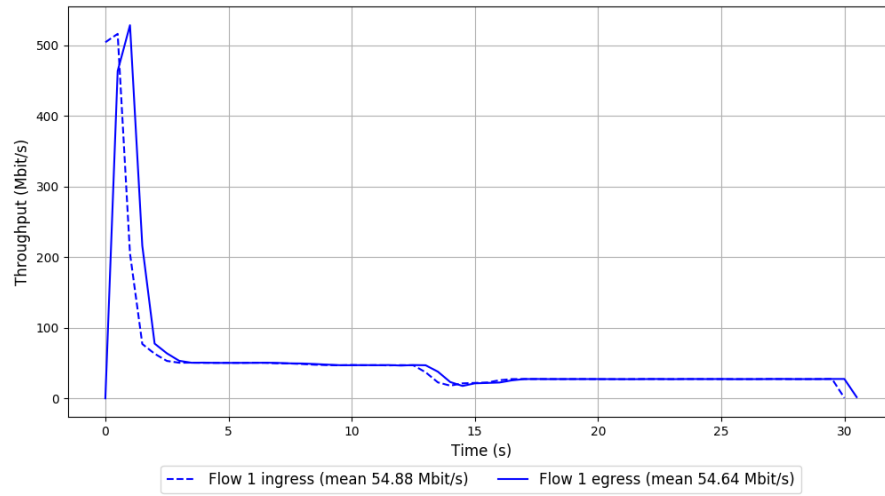
-- Flow 1:

Average throughput: 54.64 Mbit/s

95th percentile per-packet one-way delay: 20.802 ms

Loss rate: 0.43%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-07 10:22:11

End at: 2018-09-07 10:22:41

Local clock offset: 1.066 ms

Remote clock offset: 0.138 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 188.62 Mbit/s

95th percentile per-packet one-way delay: 52.452 ms

Loss rate: 19.49%

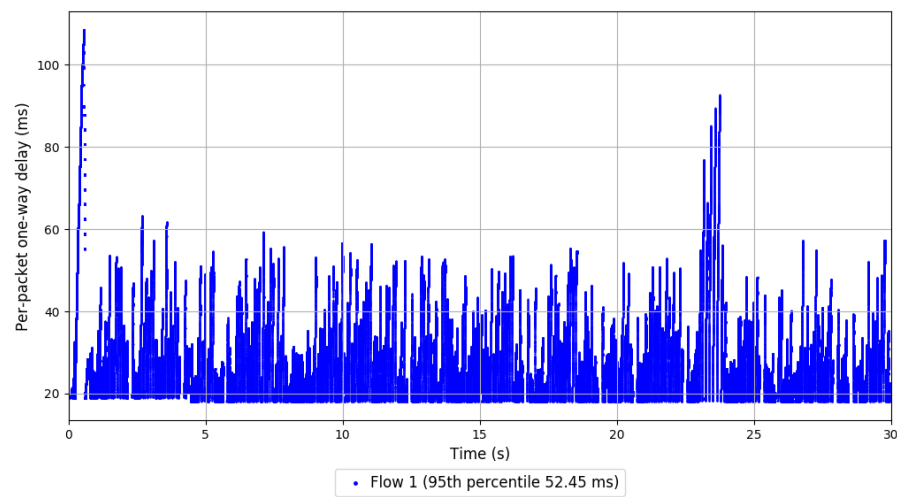
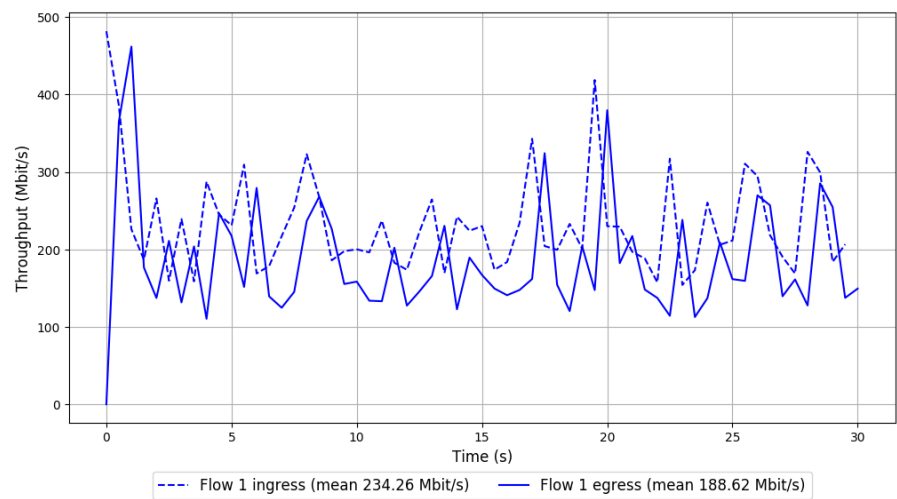
-- Flow 1:

Average throughput: 188.62 Mbit/s

95th percentile per-packet one-way delay: 52.452 ms

Loss rate: 19.49%

Run 1: Report of Verus — Data Link

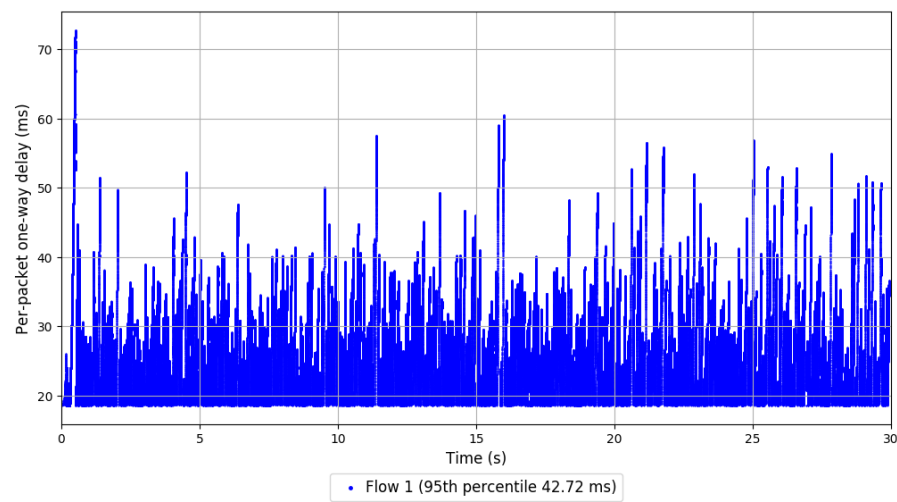
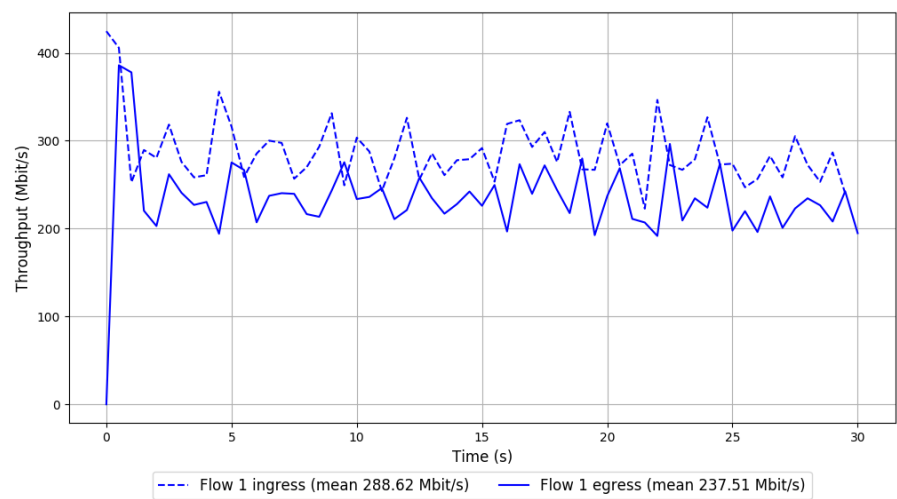


Run 2: Statistics of Verus

Start at: 2018-09-07 10:48:18
End at: 2018-09-07 10:48:48
Local clock offset: 1.333 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-09-07 12:52:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 237.51 Mbit/s
95th percentile per-packet one-way delay: 42.719 ms
Loss rate: 17.66%
-- Flow 1:
Average throughput: 237.51 Mbit/s
95th percentile per-packet one-way delay: 42.719 ms
Loss rate: 17.66%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-07 11:14:22

End at: 2018-09-07 11:14:52

Local clock offset: 1.187 ms

Remote clock offset: 0.557 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 210.49 Mbit/s

95th percentile per-packet one-way delay: 49.833 ms

Loss rate: 22.08%

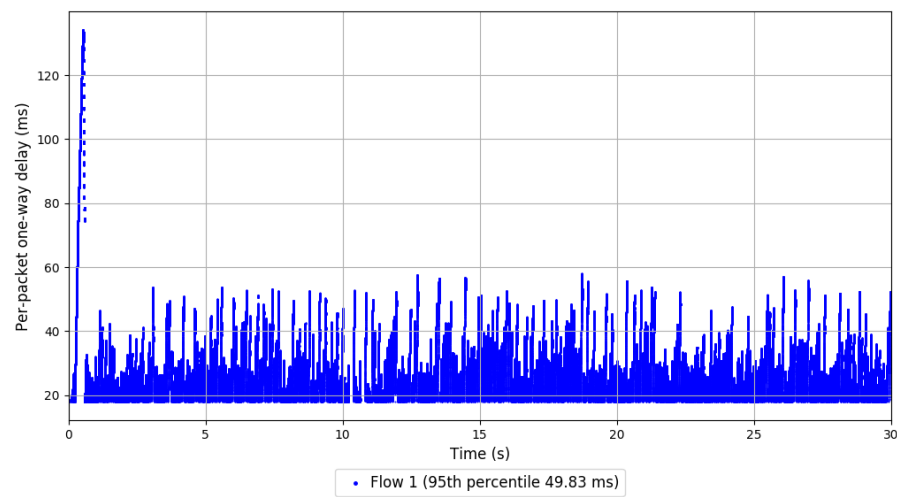
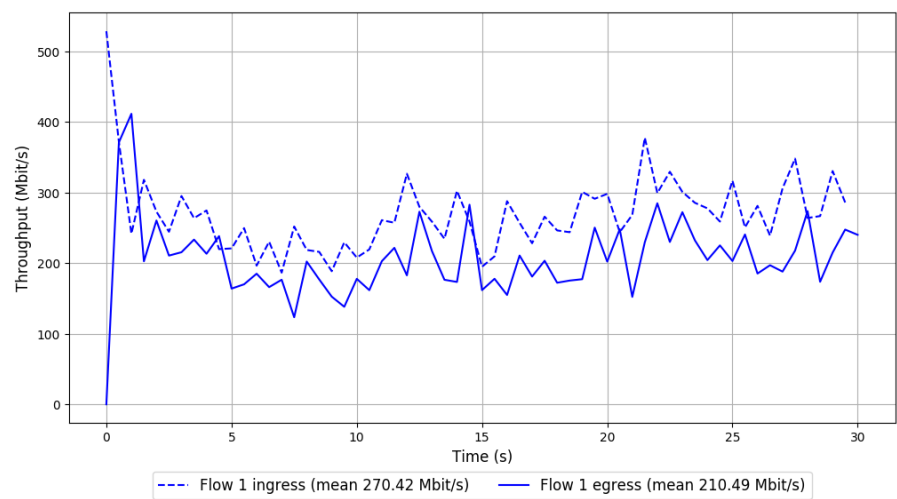
-- Flow 1:

Average throughput: 210.49 Mbit/s

95th percentile per-packet one-way delay: 49.833 ms

Loss rate: 22.08%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-07 11:40:41

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

Local clock offset: -0.182 ms

Remote clock offset: 0.924 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 202.94 Mbit/s

95th percentile per-packet one-way delay: 46.502 ms

Loss rate: 22.51%

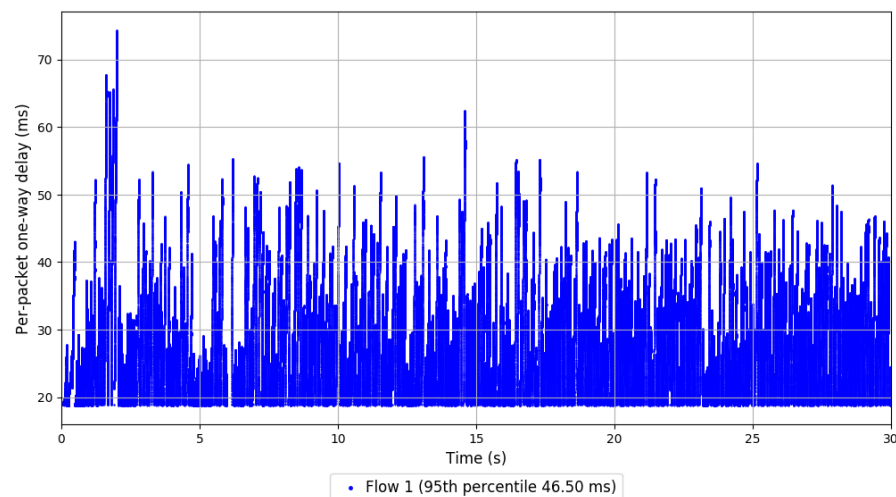
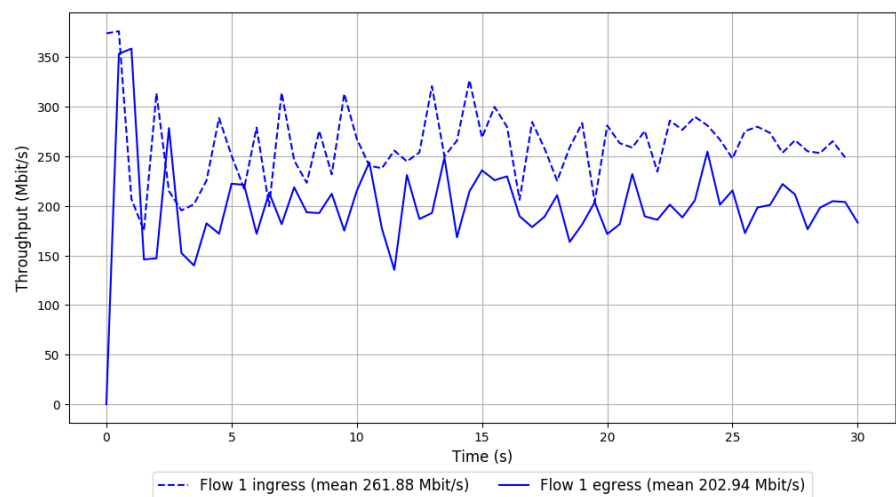
-- Flow 1:

Average throughput: 202.94 Mbit/s

95th percentile per-packet one-way delay: 46.502 ms

Loss rate: 22.51%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-07 12:06:57

End at: 2018-09-07 12:07:27

Local clock offset: -0.503 ms

Remote clock offset: 1.083 ms

Below is generated by plot.py at 2018-09-07 12:52:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 258.47 Mbit/s

95th percentile per-packet one-way delay: 39.852 ms

Loss rate: 16.31%

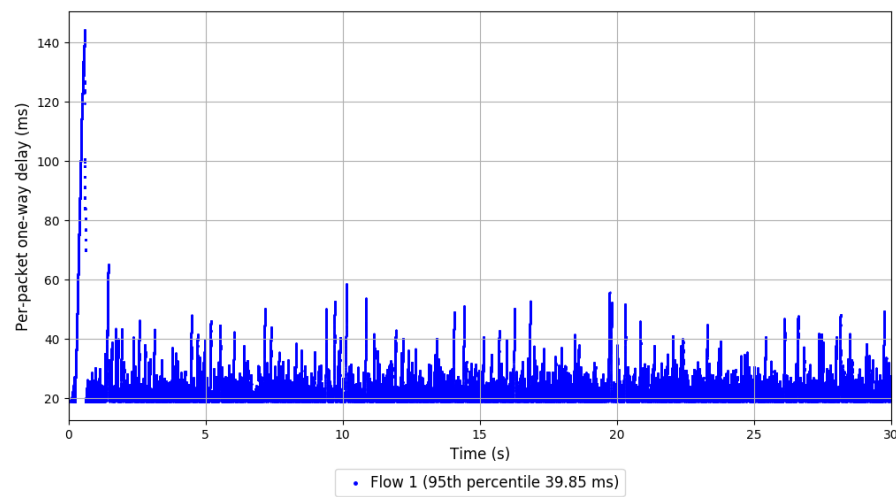
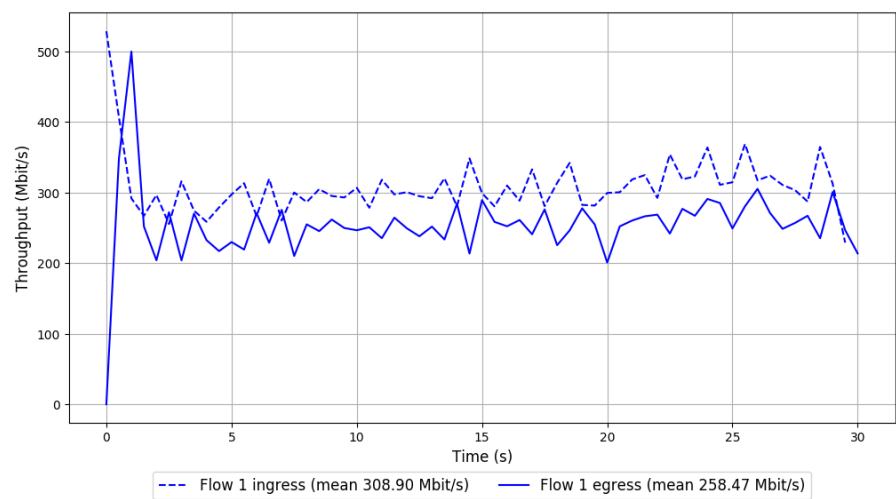
-- Flow 1:

Average throughput: 258.47 Mbit/s

95th percentile per-packet one-way delay: 39.852 ms

Loss rate: 16.31%

Run 5: Report of Verus — Data Link

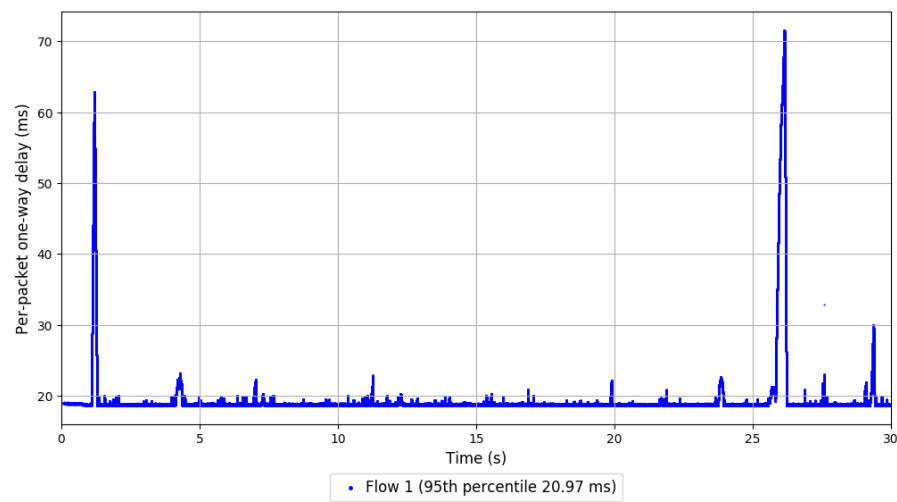
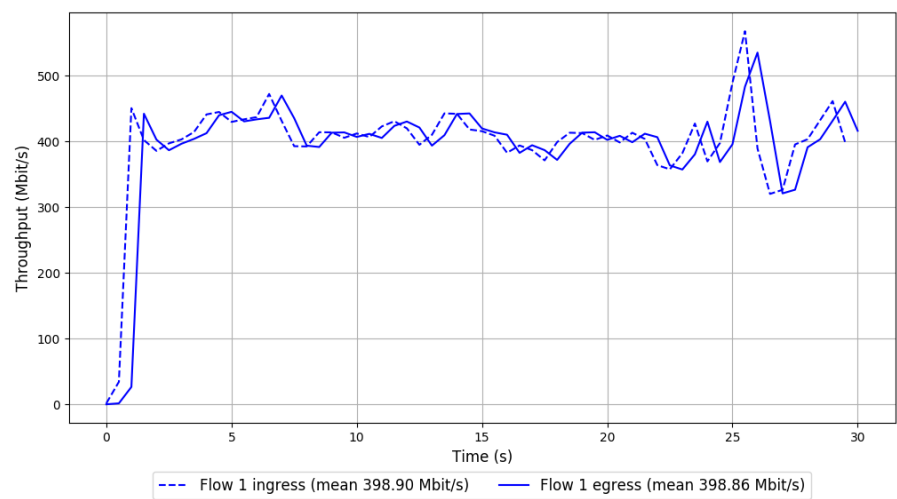


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 10:00:15
End at: 2018-09-07 10:00:45
Local clock offset: 0.663 ms
Remote clock offset: -0.172 ms

Below is generated by plot.py at 2018-09-07 12:53:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 398.86 Mbit/s
95th percentile per-packet one-way delay: 20.967 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 398.86 Mbit/s
95th percentile per-packet one-way delay: 20.967 ms
Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 10:26:16

End at: 2018-09-07 10:26:46

Local clock offset: 1.111 ms

Remote clock offset: 0.222 ms

Below is generated by plot.py at 2018-09-07 12:53:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 391.99 Mbit/s

95th percentile per-packet one-way delay: 35.139 ms

Loss rate: 0.01%

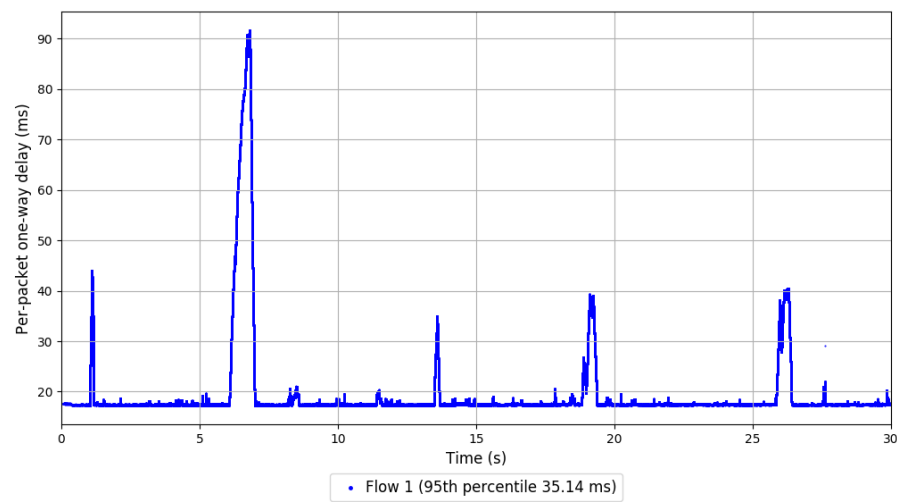
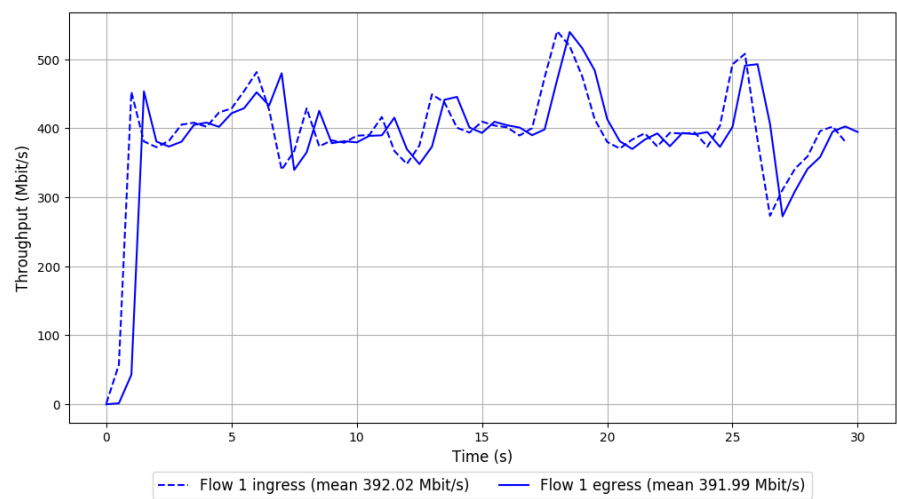
-- Flow 1:

Average throughput: 391.99 Mbit/s

95th percentile per-packet one-way delay: 35.139 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 10:52:24

End at: 2018-09-07 10:52:54

Local clock offset: 1.321 ms

Remote clock offset: -0.019 ms

Below is generated by plot.py at 2018-09-07 12:53:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 430.53 Mbit/s

95th percentile per-packet one-way delay: 68.682 ms

Loss rate: 0.01%

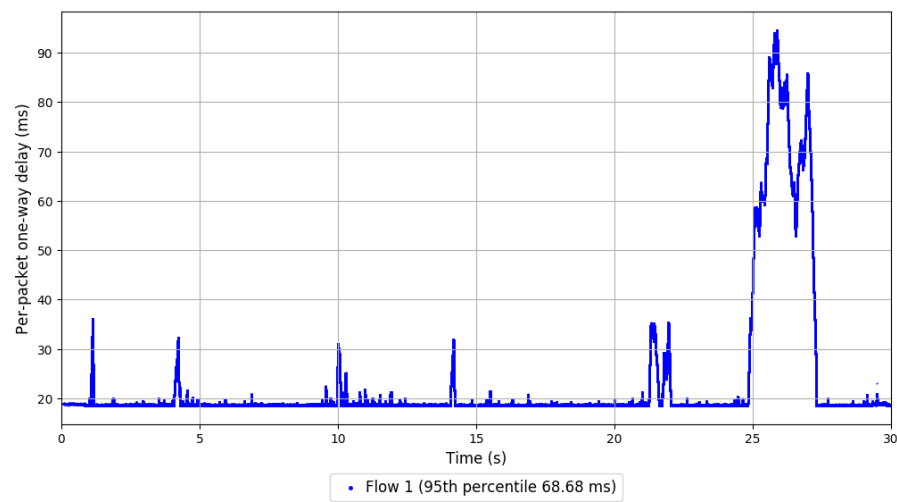
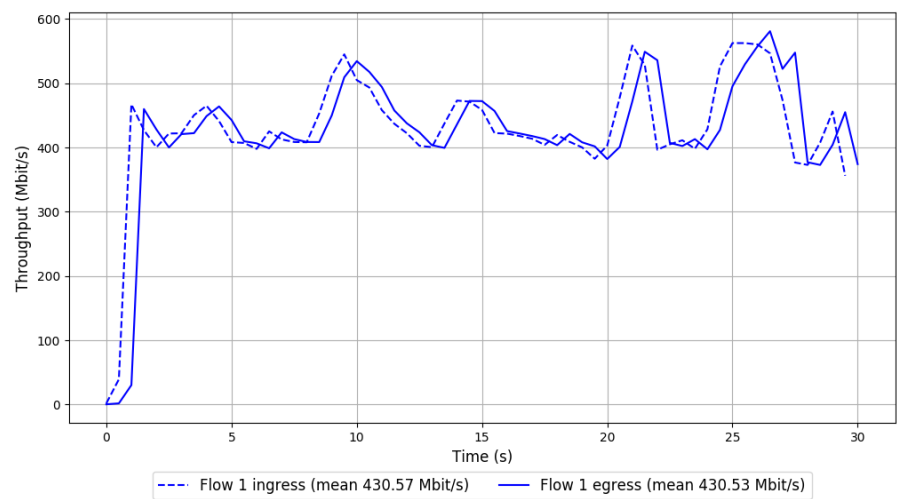
-- Flow 1:

Average throughput: 430.53 Mbit/s

95th percentile per-packet one-way delay: 68.682 ms

Loss rate: 0.01%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 11:18:27

End at: 2018-09-07 11:18:57

Local clock offset: 0.747 ms

Remote clock offset: 0.678 ms

Below is generated by plot.py at 2018-09-07 12:53:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 418.01 Mbit/s

95th percentile per-packet one-way delay: 19.184 ms

Loss rate: 0.01%

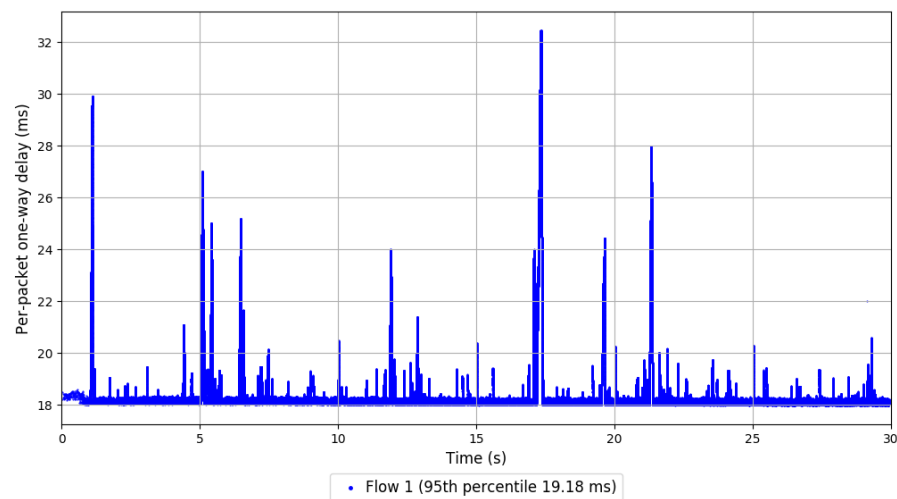
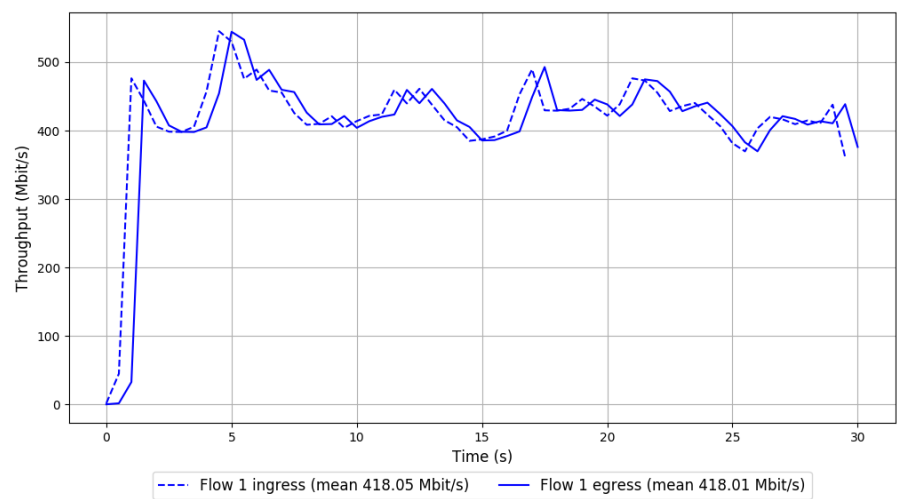
-- Flow 1:

Average throughput: 418.01 Mbit/s

95th percentile per-packet one-way delay: 19.184 ms

Loss rate: 0.01%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 11:44:46

End at: 2018-09-07 11:45:17

Local clock offset: -0.151 ms

Remote clock offset: 0.884 ms

Below is generated by plot.py at 2018-09-07 12:53:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 400.27 Mbit/s

95th percentile per-packet one-way delay: 18.234 ms

Loss rate: 0.01%

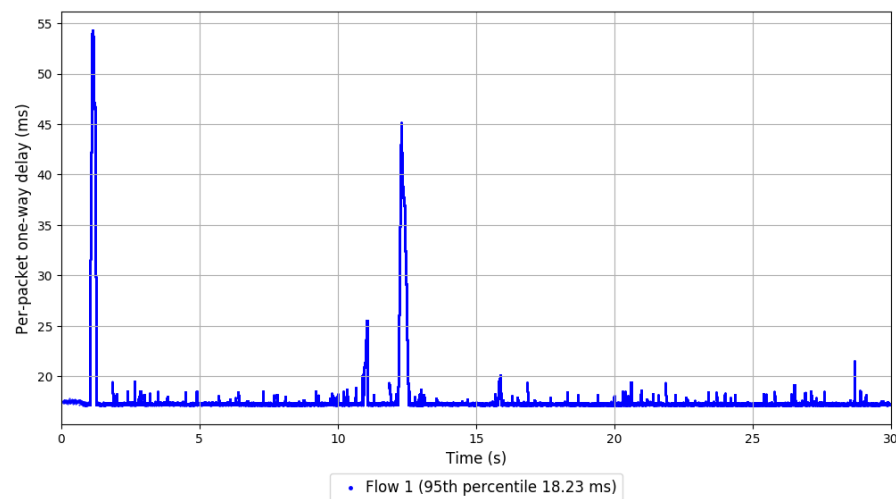
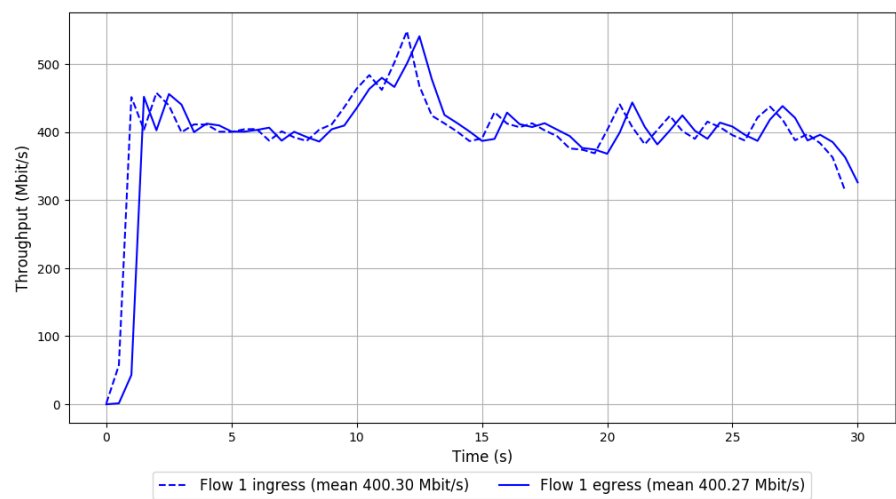
-- Flow 1:

Average throughput: 400.27 Mbit/s

95th percentile per-packet one-way delay: 18.234 ms

Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link

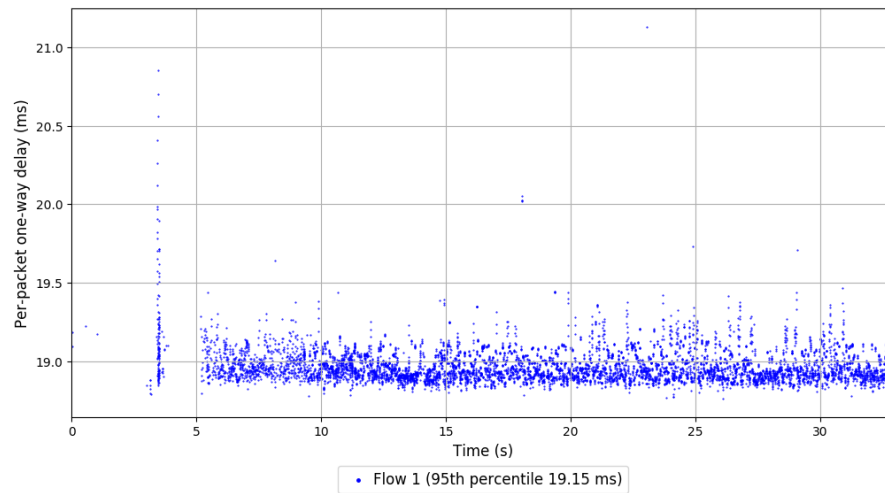
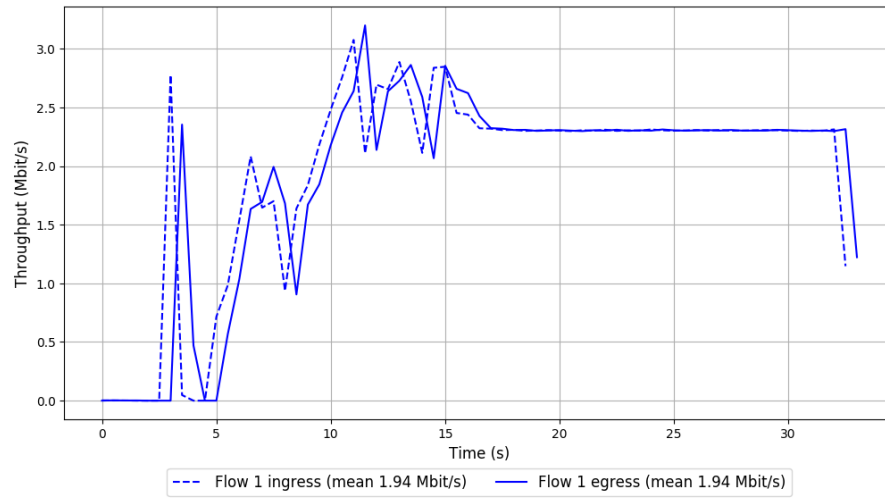


Run 1: Statistics of WebRTC media

Start at: 2018-09-07 10:01:52
End at: 2018-09-07 10:02:22
Local clock offset: 0.748 ms
Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-09-07 12:53:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 19.150 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 19.150 ms
Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-07 10:27:52

End at: 2018-09-07 10:28:22

Local clock offset: 1.142 ms

Remote clock offset: 0.13 ms

Below is generated by plot.py at 2018-09-07 12:53:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 19.099 ms

Loss rate: 0.00%

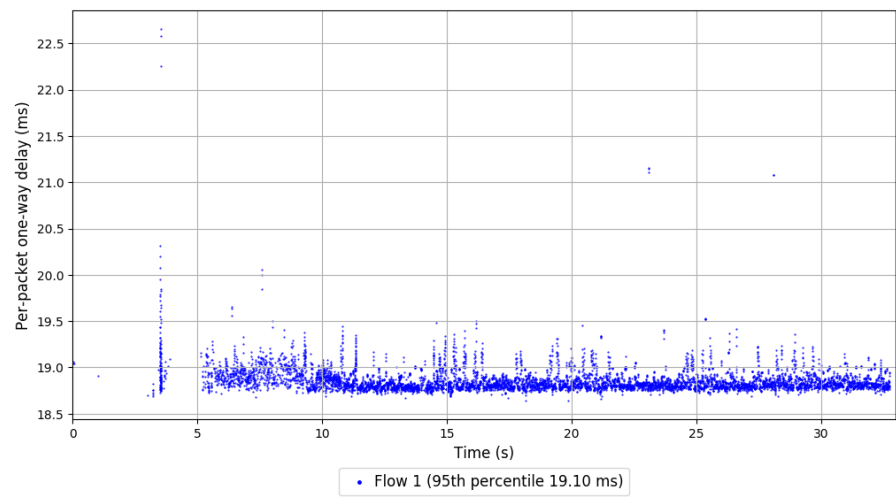
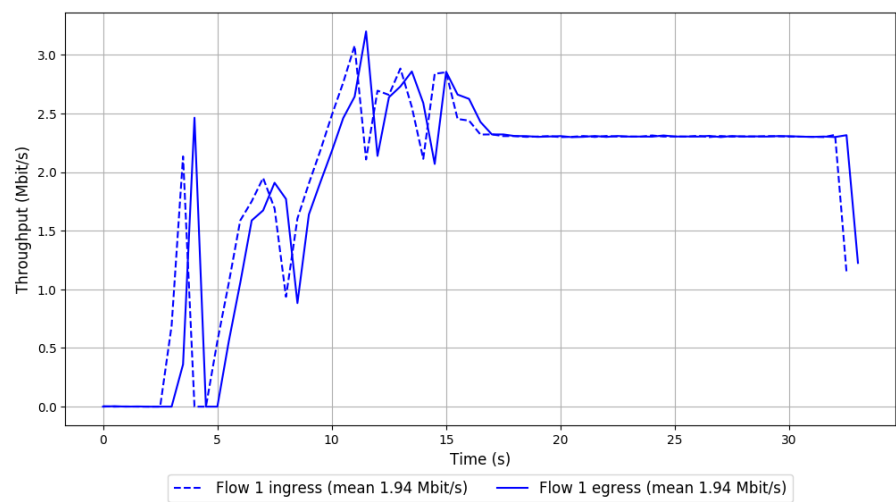
-- Flow 1:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 19.099 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-07 10:54:01

End at: 2018-09-07 10:54:31

Local clock offset: 1.19 ms

Remote clock offset: 0.023 ms

Below is generated by plot.py at 2018-09-07 12:53:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 18.413 ms

Loss rate: 0.00%

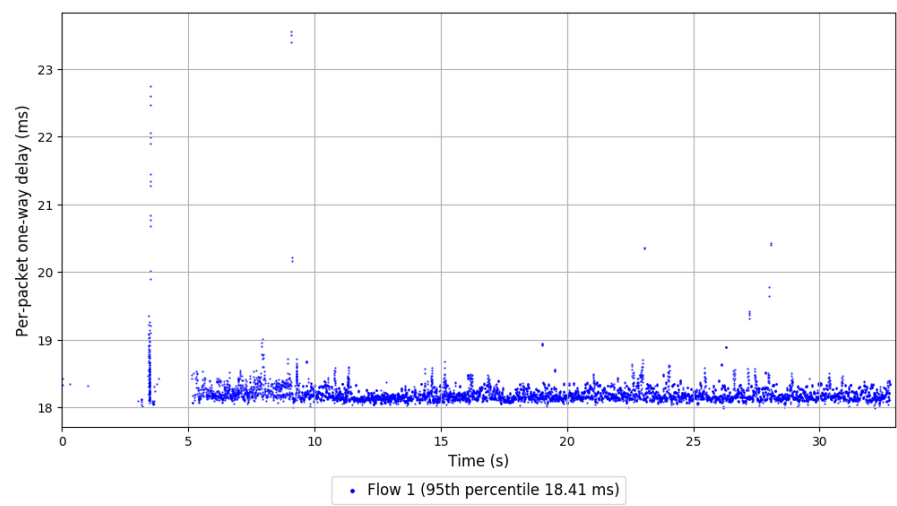
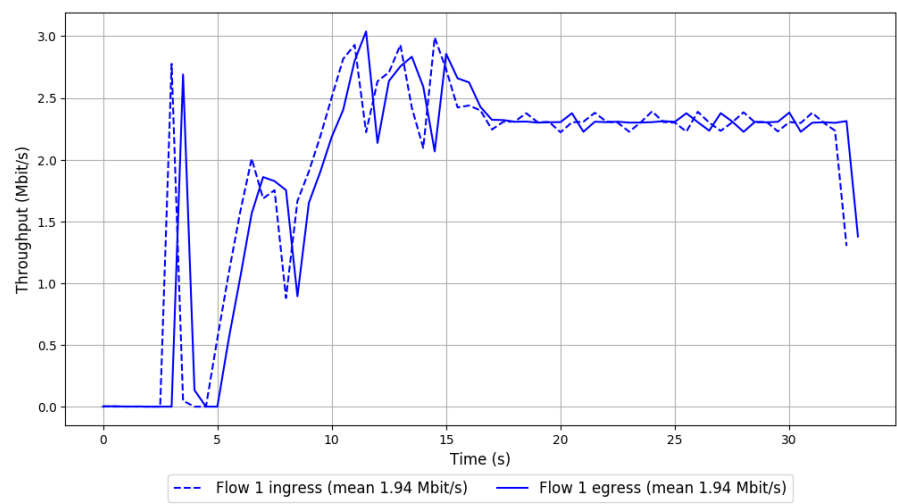
-- Flow 1:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 18.413 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-07 11:20:05

End at: 2018-09-07 11:20:35

Local clock offset: 0.706 ms

Remote clock offset: 0.63 ms

Below is generated by plot.py at 2018-09-07 12:53:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 19.103 ms

Loss rate: 0.00%

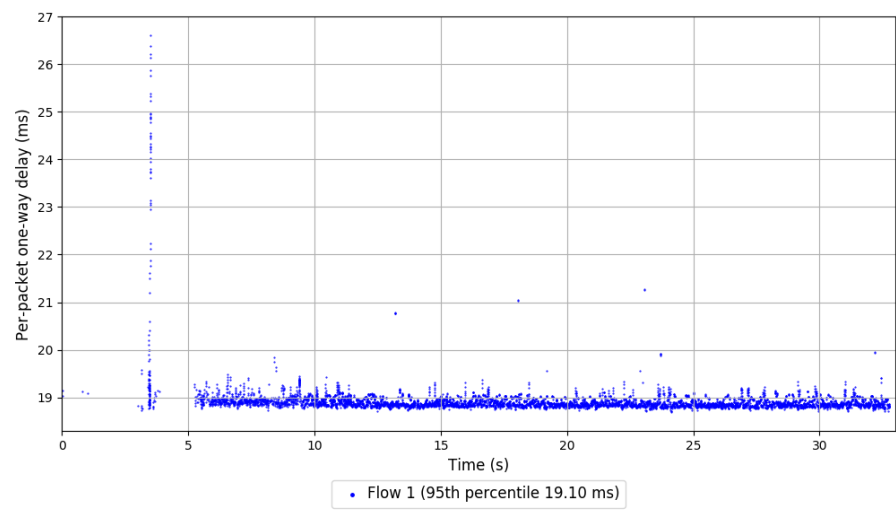
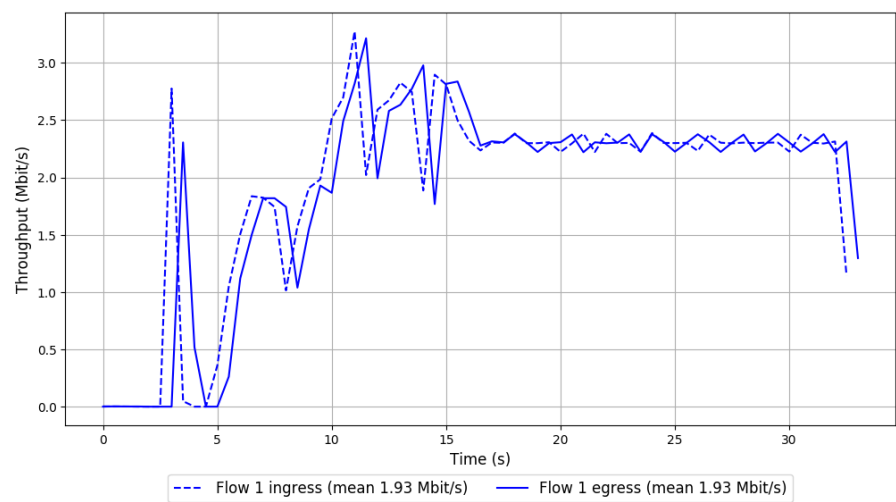
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 19.103 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

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

End at: 2018-09-07 11:46:53

Local clock offset: -0.188 ms

Remote clock offset: 0.901 ms

Below is generated by plot.py at 2018-09-07 12:53:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 18.942 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 18.942 ms

Loss rate: 0.03%

Run 5: Report of WebRTC media — Data Link

