

Pantheon Report

Generated at 2018-10-09 19:49:05 (UTC).

Data path: AWS Brazil 2 on **ens5** (*local*) → Colombia on **p4p1** (*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 **gps.ntp.br** and have been applied to correct the timestamps in logs.

System info:

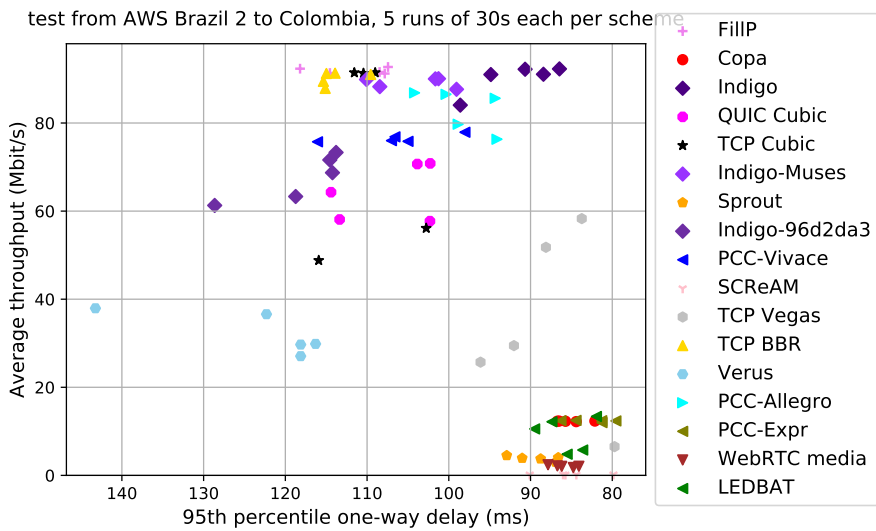
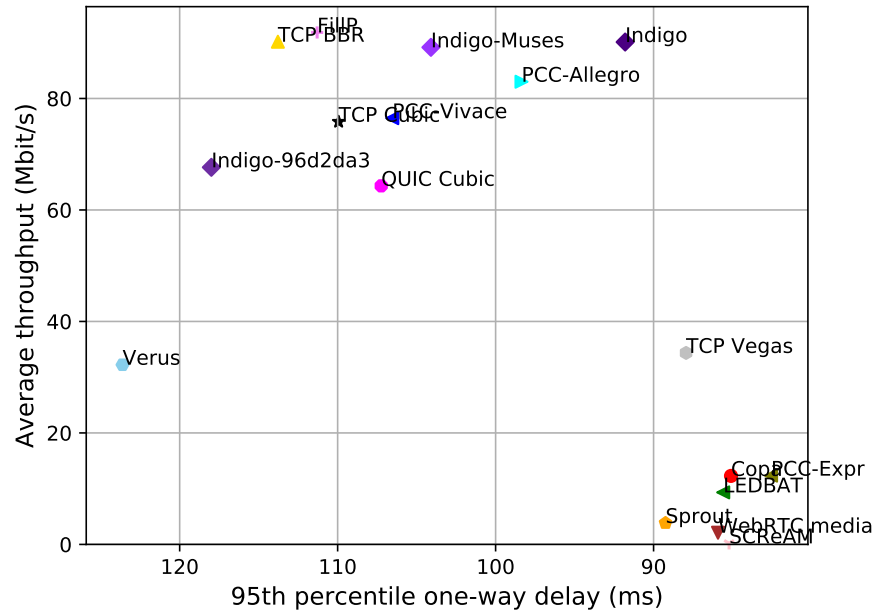
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
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 Brazil 2 to Colombia, 5 runs of 30s each per scheme
(mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	90.18	113.78	3.04
Copa	5	12.29	85.10	71.41
TCP Cubic	5	75.82	109.94	0.47
FillP	5	91.84	111.30	2.96
Indigo	5	90.13	91.80	1.28
Indigo-96d2da3	5	67.65	117.99	50.97
LEDBAT	5	9.34	85.59	0.05
Indigo-Muses	5	89.18	104.10	2.09
PCC-Allegro	5	83.00	98.36	1.82
PCC-Expr	5	12.33	82.56	48.77
QUIC Cubic	5	64.33	107.24	0.47
SCReAM	5	0.19	85.22	0.27
Sprout	5	3.85	89.25	0.12
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	34.36	87.94	1.01
Verus	5	32.23	123.62	29.70
PCC-Vivace	5	76.47	106.54	0.12
WebRTC media	5	2.10	85.92	0.27

Run 1: Statistics of TCP BBR

Start at: 2018-10-09 18:12:17

End at: 2018-10-09 18:12:47

Local clock offset: -0.786 ms

Remote clock offset: 1.818 ms

Below is generated by plot.py at 2018-10-09 19:42:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.46 Mbit/s

95th percentile per-packet one-way delay: 115.345 ms

Loss rate: 3.01%

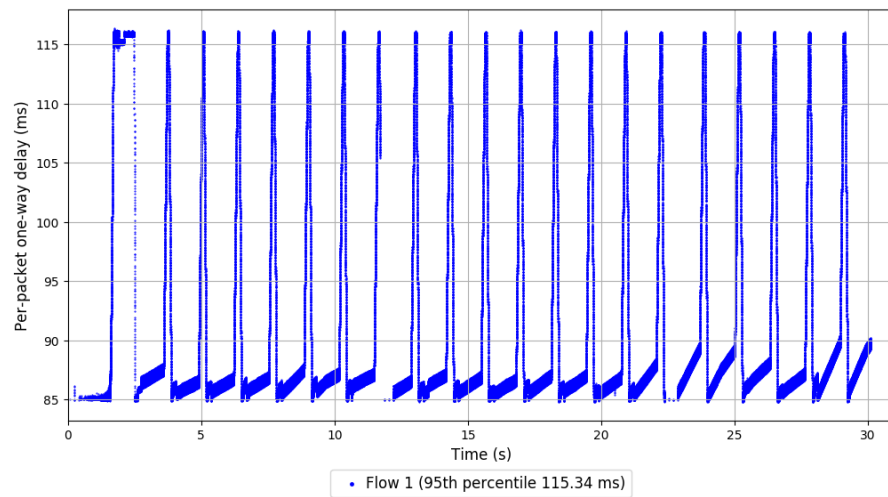
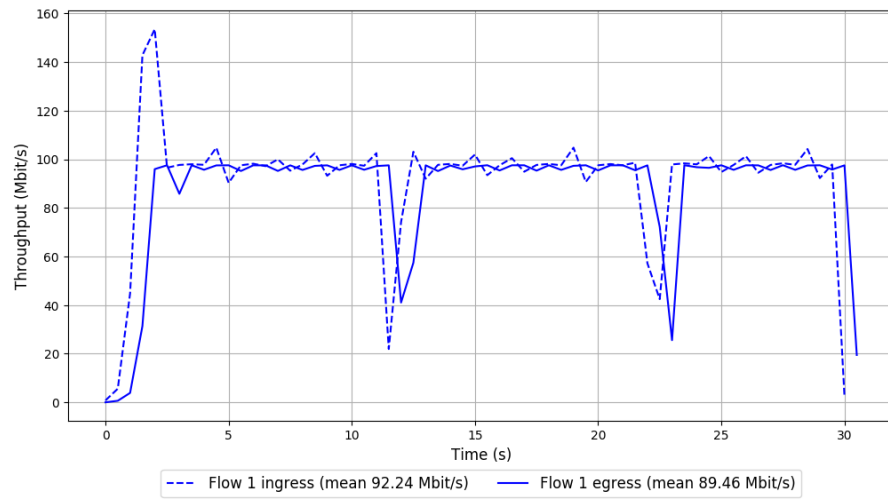
-- Flow 1:

Average throughput: 89.46 Mbit/s

95th percentile per-packet one-way delay: 115.345 ms

Loss rate: 3.01%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-10-09 18:33:15

End at: 2018-10-09 18:33:45

Local clock offset: -0.693 ms

Remote clock offset: 0.06 ms

Below is generated by plot.py at 2018-10-09 19:42:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.03 Mbit/s

95th percentile per-packet one-way delay: 109.554 ms

Loss rate: 3.02%

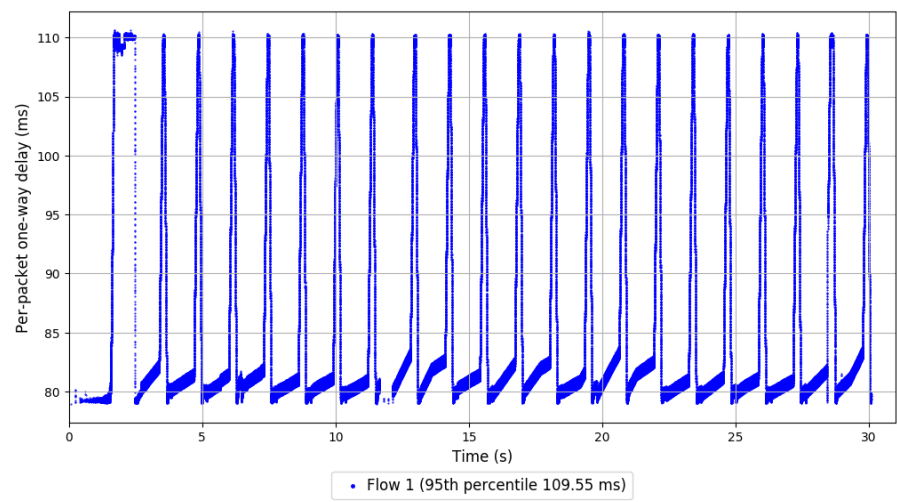
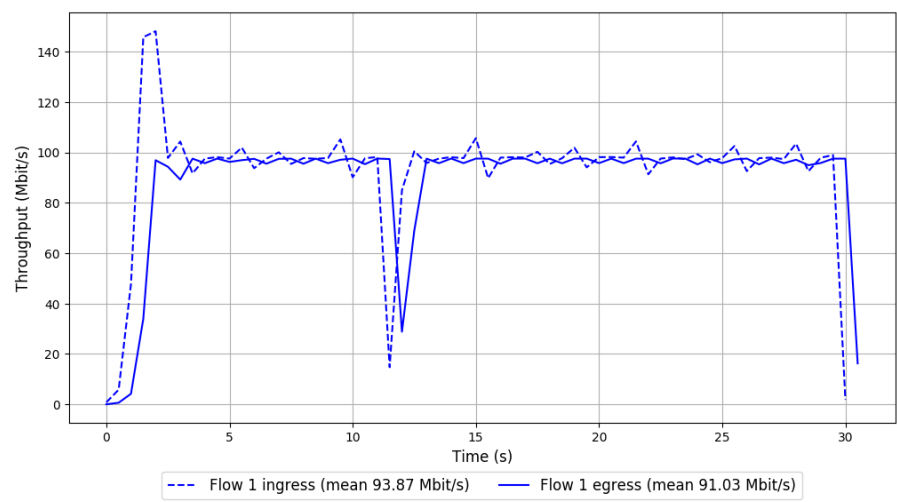
-- Flow 1:

Average throughput: 91.03 Mbit/s

95th percentile per-packet one-way delay: 109.554 ms

Loss rate: 3.02%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-10-09 18:54:25

End at: 2018-10-09 18:54:55

Local clock offset: 0.366 ms

Remote clock offset: 6.06 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.25 Mbit/s

95th percentile per-packet one-way delay: 114.975 ms

Loss rate: 2.28%

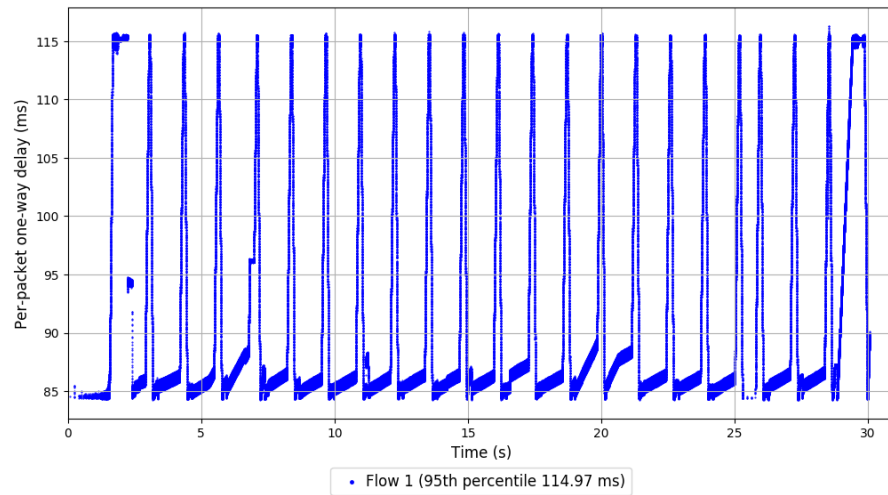
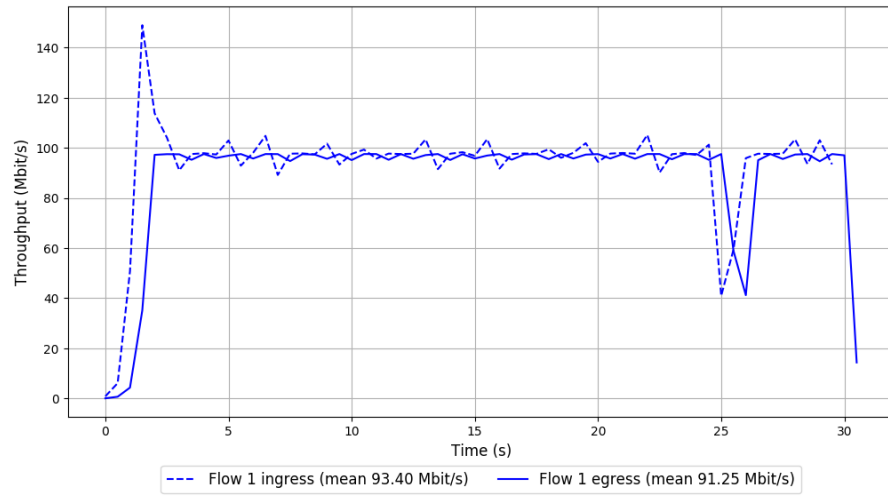
-- Flow 1:

Average throughput: 91.25 Mbit/s

95th percentile per-packet one-way delay: 114.975 ms

Loss rate: 2.28%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-10-09 19:15:25

End at: 2018-10-09 19:15:55

Local clock offset: -0.251 ms

Remote clock offset: 3.076 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.32 Mbit/s

95th percentile per-packet one-way delay: 113.914 ms

Loss rate: 3.01%

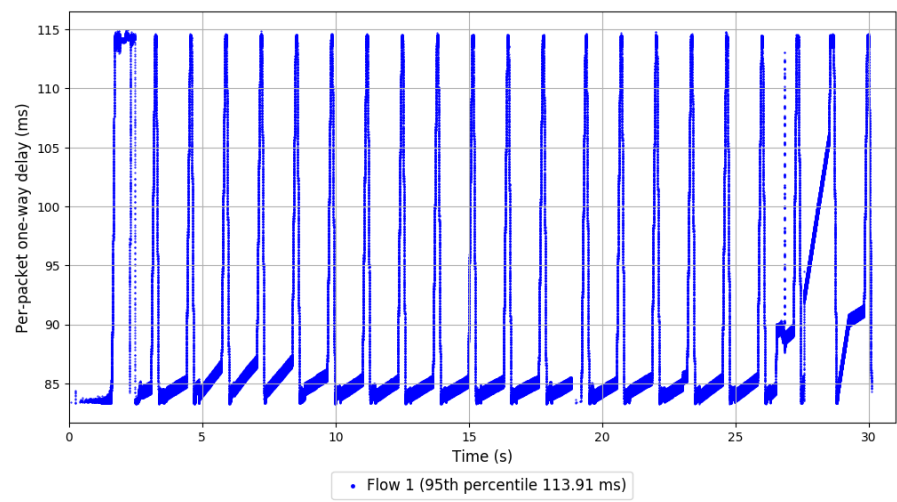
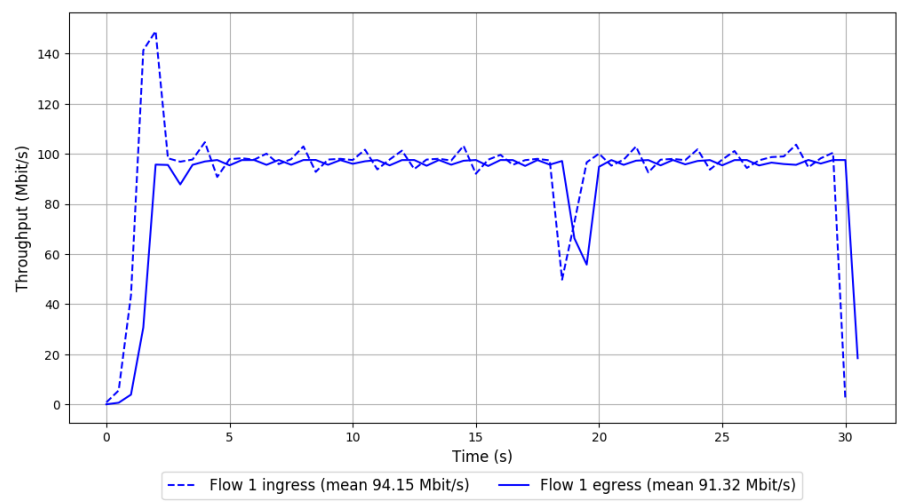
-- Flow 1:

Average throughput: 91.32 Mbit/s

95th percentile per-packet one-way delay: 113.914 ms

Loss rate: 3.01%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-10-09 19:36:43

End at: 2018-10-09 19:37:13

Local clock offset: -0.976 ms

Remote clock offset: 7.304 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.86 Mbit/s

95th percentile per-packet one-way delay: 115.123 ms

Loss rate: 3.88%

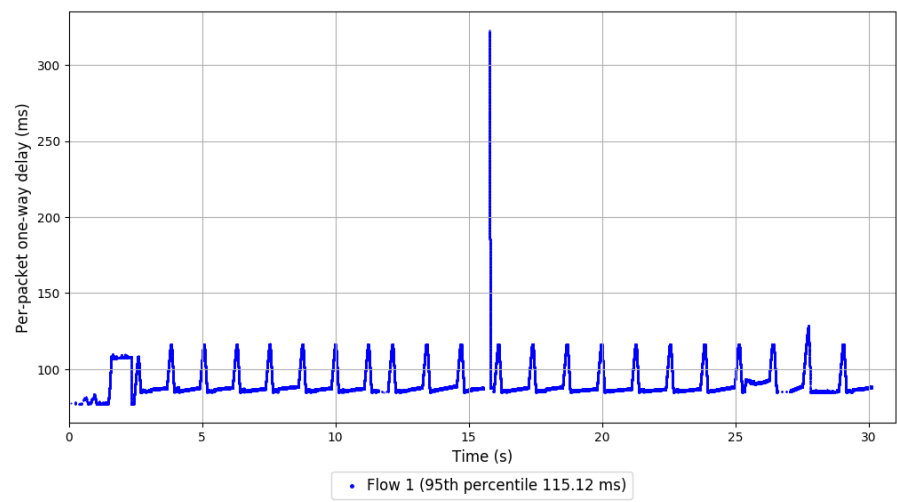
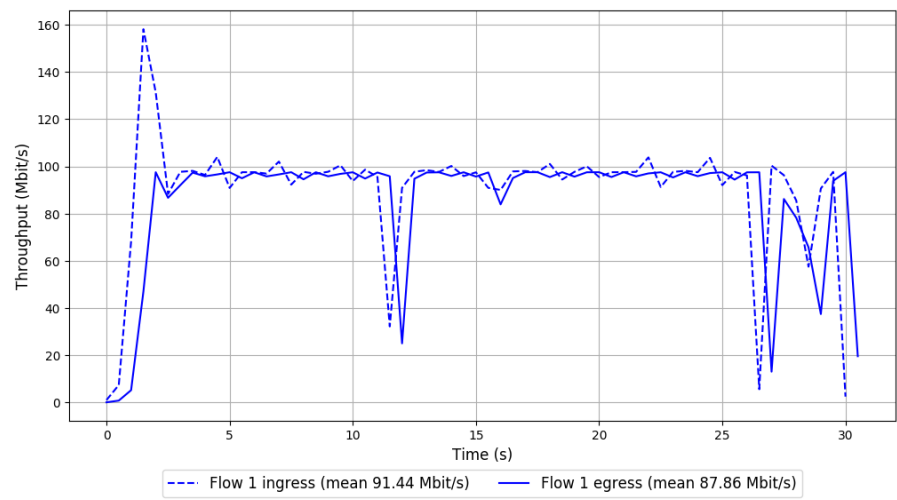
-- Flow 1:

Average throughput: 87.86 Mbit/s

95th percentile per-packet one-way delay: 115.123 ms

Loss rate: 3.88%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-10-09 18:07:31

End at: 2018-10-09 18:08:01

Local clock offset: -1.363 ms

Remote clock offset: 1.655 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.33 Mbit/s

95th percentile per-packet one-way delay: 86.509 ms

Loss rate: 76.60%

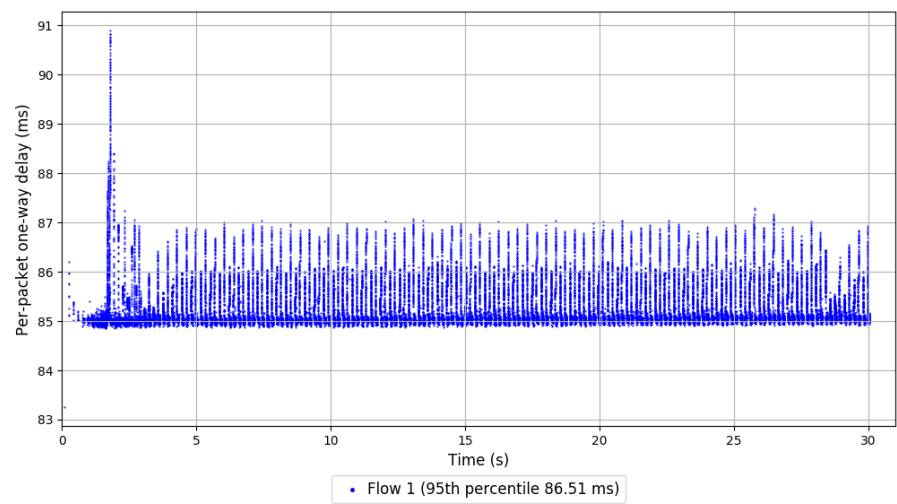
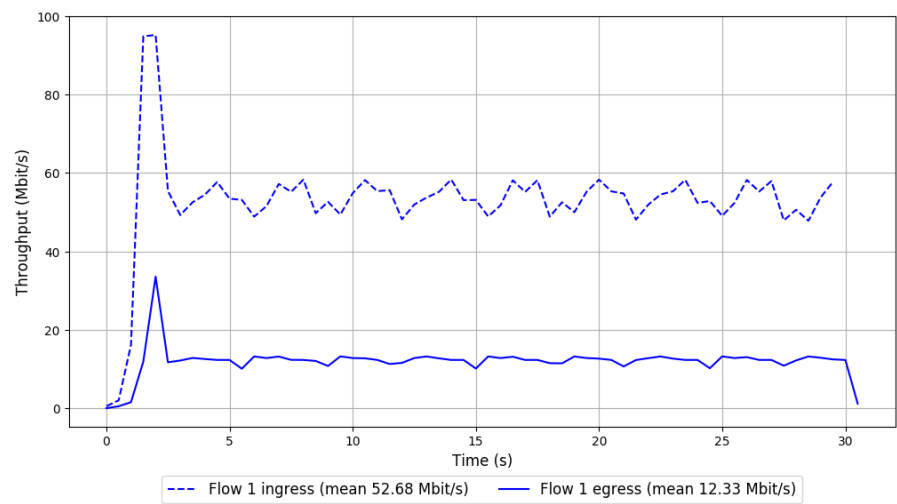
-- Flow 1:

Average throughput: 12.33 Mbit/s

95th percentile per-packet one-way delay: 86.509 ms

Loss rate: 76.60%

Run 1: Report of Copa — Data Link

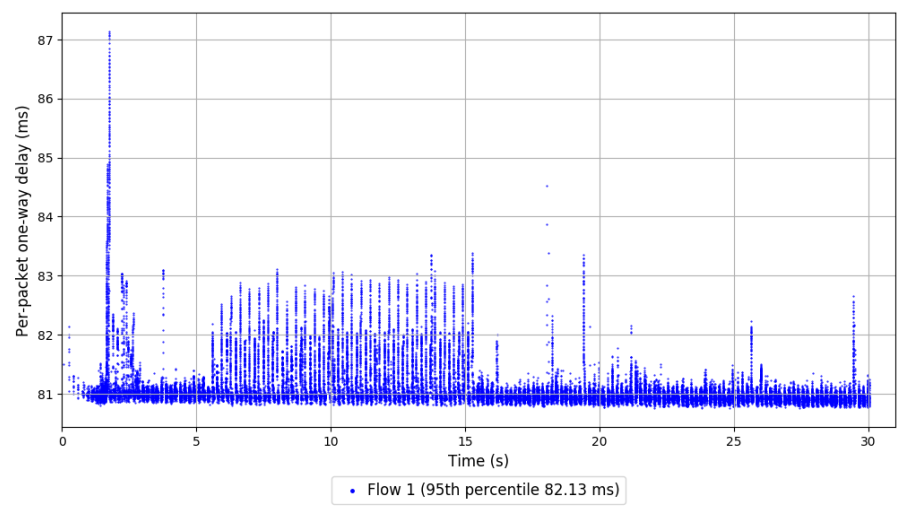
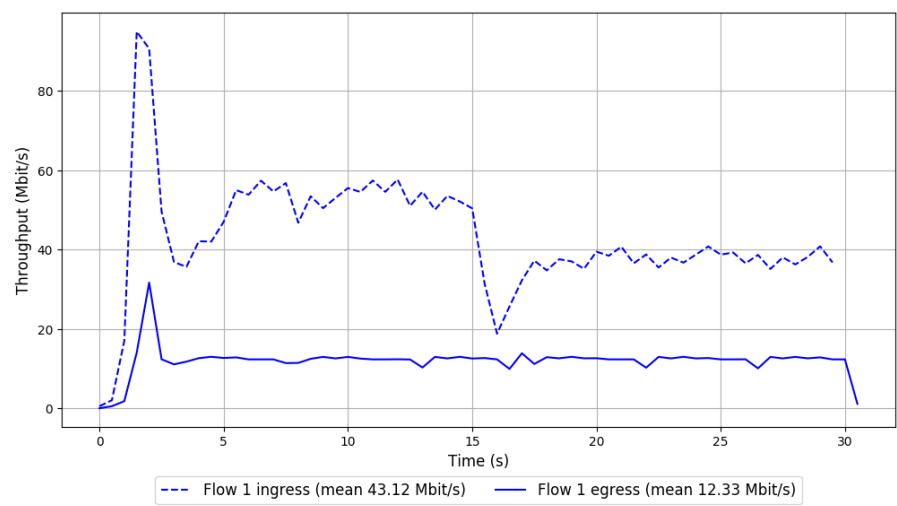


Run 2: Statistics of Copa

Start at: 2018-10-09 18:28:38
End at: 2018-10-09 18:29:08
Local clock offset: -0.707 ms
Remote clock offset: -0.282 ms

Below is generated by plot.py at 2018-10-09 19:42:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.33 Mbit/s
95th percentile per-packet one-way delay: 82.127 ms
Loss rate: 71.39%
-- Flow 1:
Average throughput: 12.33 Mbit/s
95th percentile per-packet one-way delay: 82.127 ms
Loss rate: 71.39%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-10-09 18:49:47

End at: 2018-10-09 18:50:17

Local clock offset: 0.06 ms

Remote clock offset: 6.976 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 86.729 ms

Loss rate: 72.19%

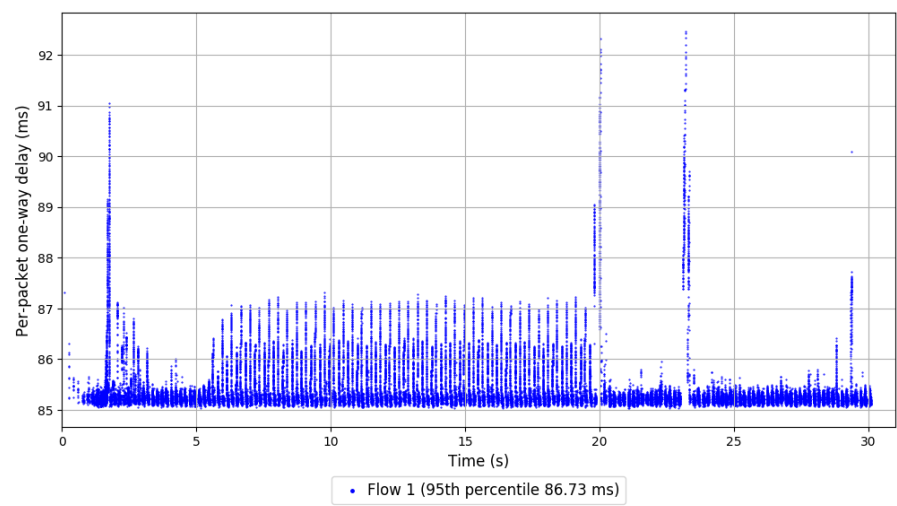
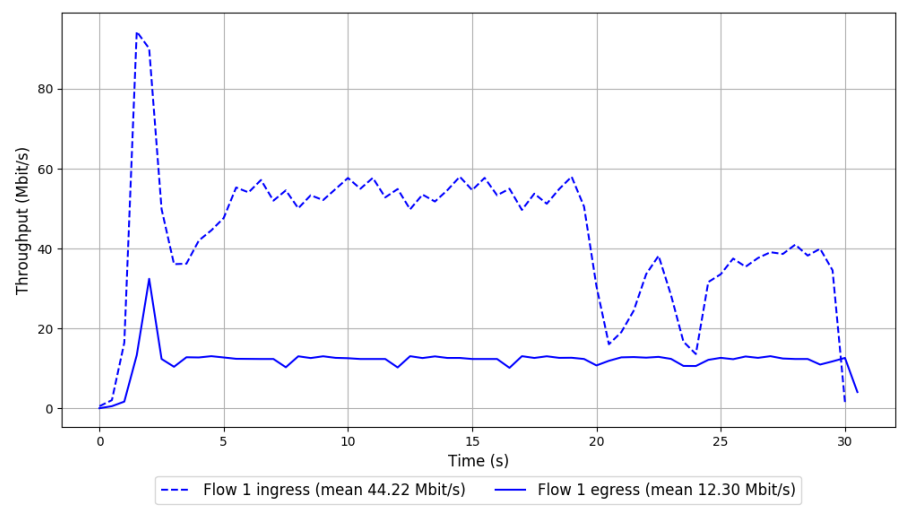
-- Flow 1:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 86.729 ms

Loss rate: 72.19%

Run 3: Report of Copa — Data Link

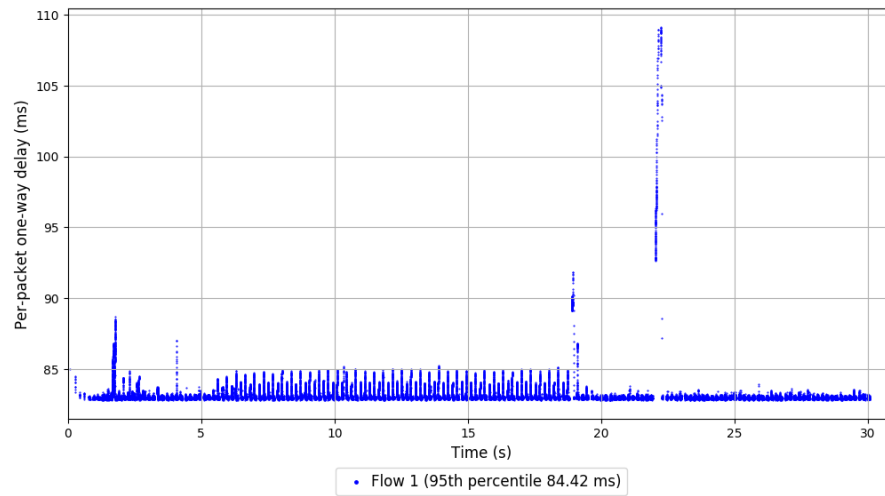
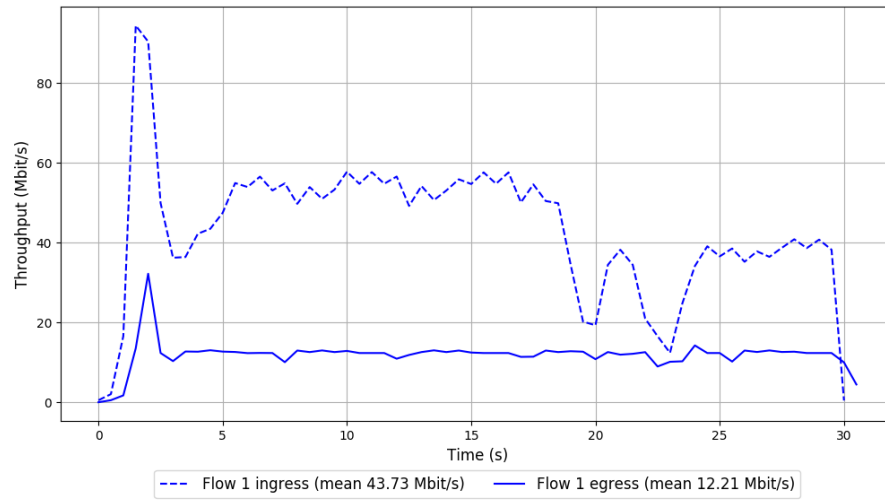


Run 4: Statistics of Copa

Start at: 2018-10-09 19:10:48
End at: 2018-10-09 19:11:18
Local clock offset: -0.289 ms
Remote clock offset: 5.622 ms

Below is generated by plot.py at 2018-10-09 19:42:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.21 Mbit/s
95th percentile per-packet one-way delay: 84.416 ms
Loss rate: 72.09%
-- Flow 1:
Average throughput: 12.21 Mbit/s
95th percentile per-packet one-way delay: 84.416 ms
Loss rate: 72.09%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-09 19:32:00

End at: 2018-10-09 19:32:30

Local clock offset: -0.723 ms

Remote clock offset: 8.097 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.29 Mbit/s

95th percentile per-packet one-way delay: 85.714 ms

Loss rate: 64.79%

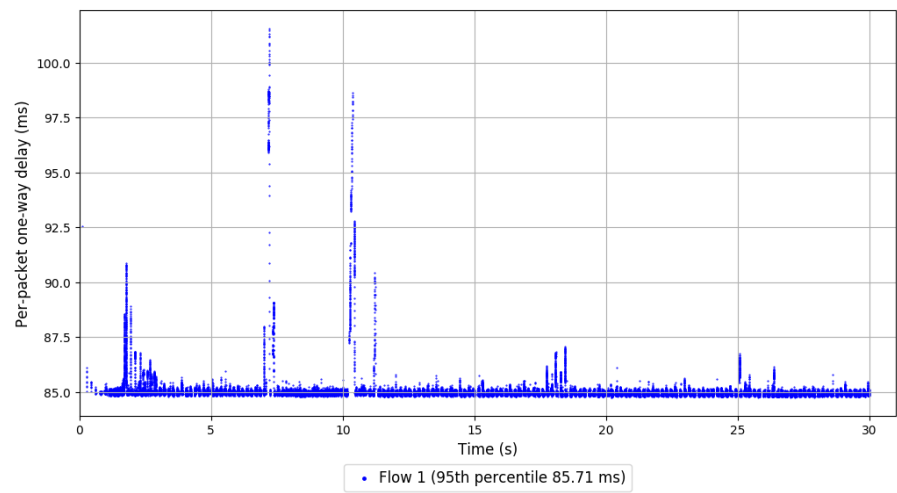
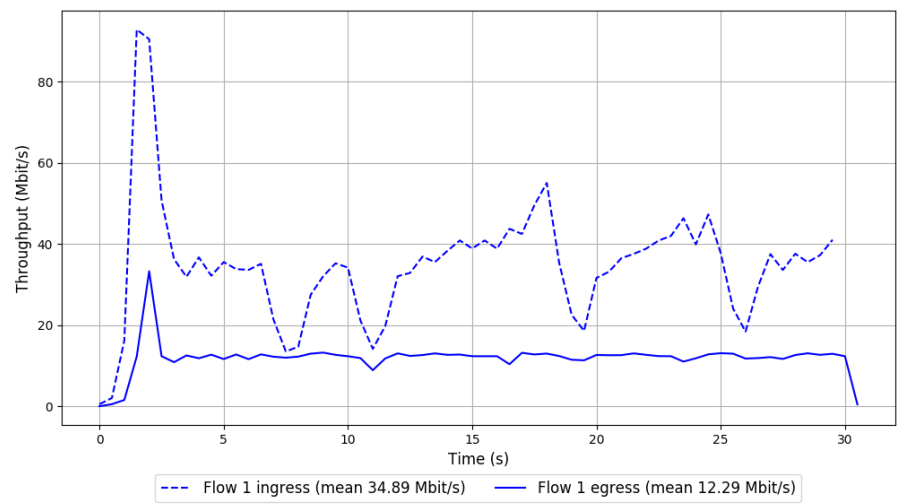
-- Flow 1:

Average throughput: 12.29 Mbit/s

95th percentile per-packet one-way delay: 85.714 ms

Loss rate: 64.79%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-09 17:57:01

End at: 2018-10-09 17:57:31

Local clock offset: -0.68 ms

Remote clock offset: 2.635 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.12 Mbit/s

95th percentile per-packet one-way delay: 102.762 ms

Loss rate: 0.92%

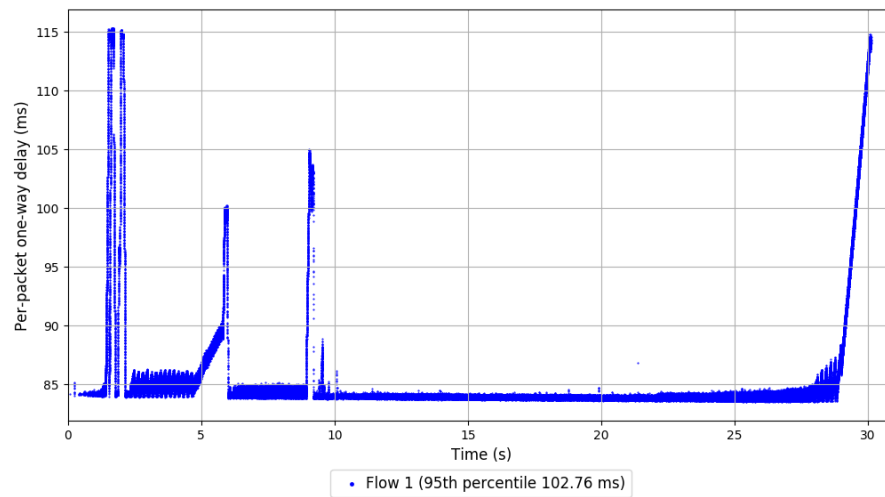
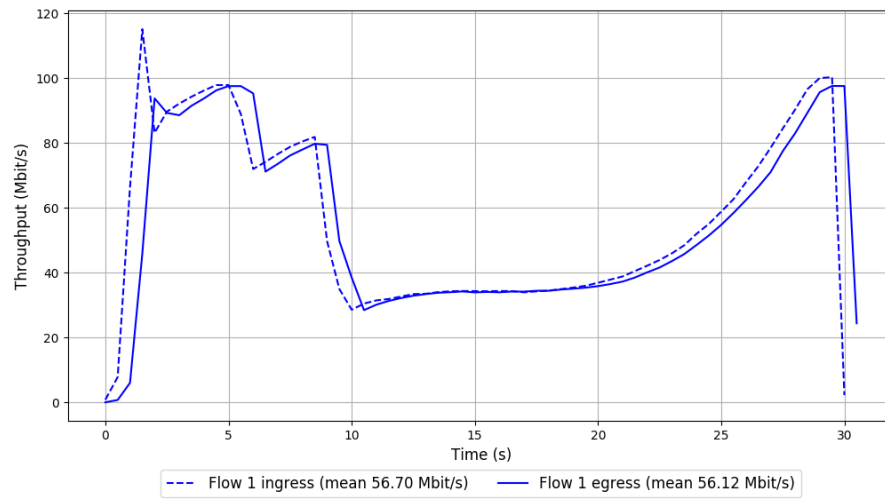
-- Flow 1:

Average throughput: 56.12 Mbit/s

95th percentile per-packet one-way delay: 102.762 ms

Loss rate: 0.92%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-10-09 18:18:10

End at: 2018-10-09 18:18:40

Local clock offset: -0.954 ms

Remote clock offset: -1.39 ms

Below is generated by plot.py at 2018-10-09 19:42:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.81 Mbit/s

95th percentile per-packet one-way delay: 115.918 ms

Loss rate: 0.11%

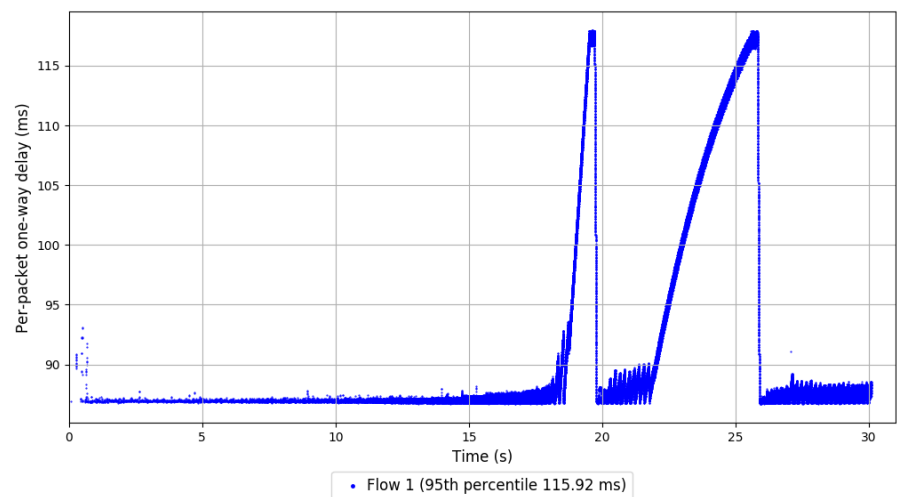
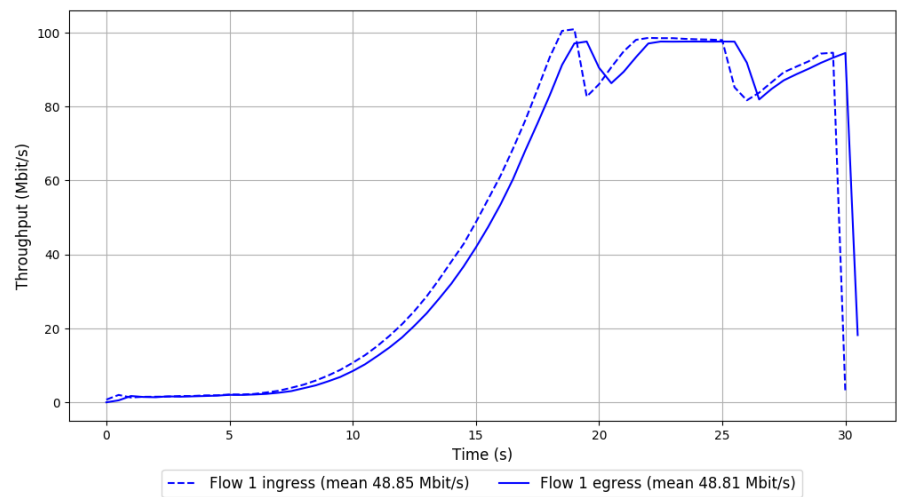
-- Flow 1:

Average throughput: 48.81 Mbit/s

95th percentile per-packet one-way delay: 115.918 ms

Loss rate: 0.11%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-10-09 18:39:16

End at: 2018-10-09 18:39:46

Local clock offset: -0.513 ms

Remote clock offset: 0.413 ms

Below is generated by plot.py at 2018-10-09 19:43:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.29 Mbit/s

95th percentile per-packet one-way delay: 110.441 ms

Loss rate: 0.44%

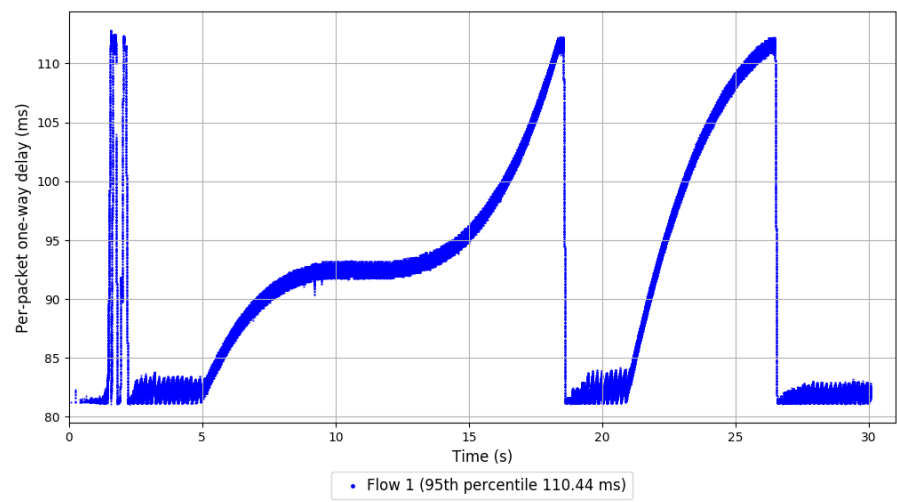
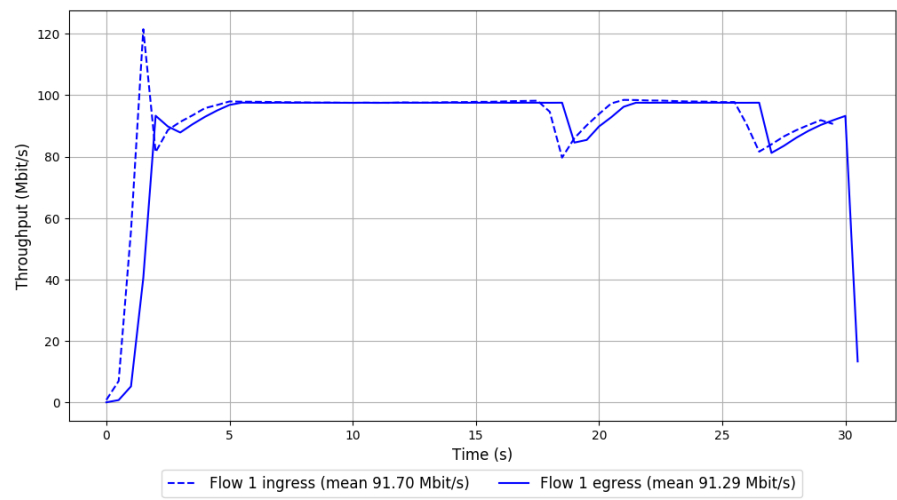
-- Flow 1:

Average throughput: 91.29 Mbit/s

95th percentile per-packet one-way delay: 110.441 ms

Loss rate: 0.44%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-10-09 19:00:19

End at: 2018-10-09 19:00:49

Local clock offset: -0.117 ms

Remote clock offset: 1.508 ms

Below is generated by plot.py at 2018-10-09 19:43:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.44 Mbit/s

95th percentile per-packet one-way delay: 109.007 ms

Loss rate: 0.44%

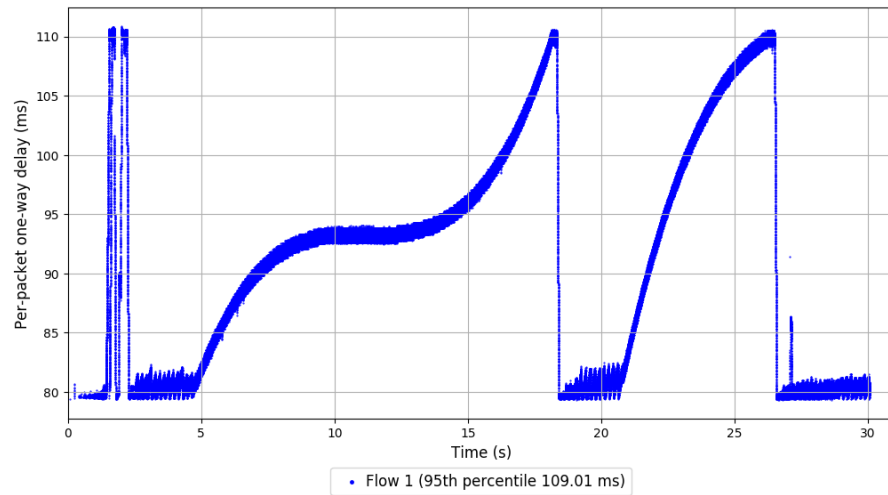
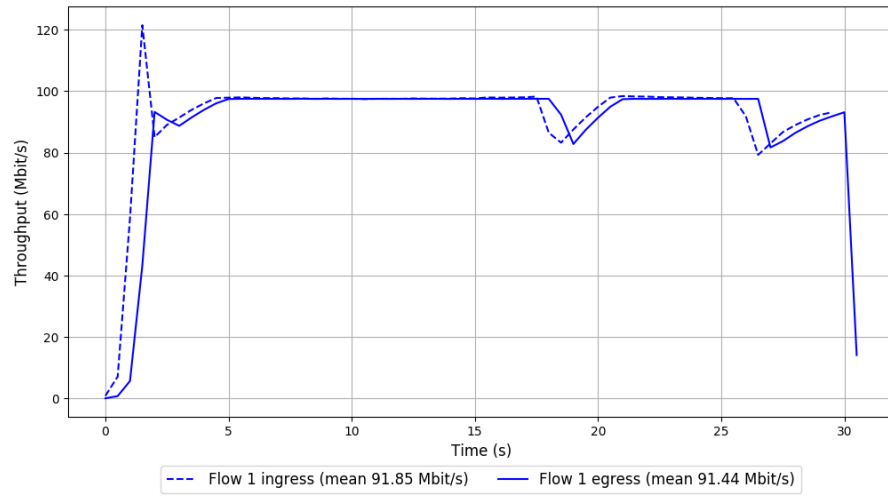
-- Flow 1:

Average throughput: 91.44 Mbit/s

95th percentile per-packet one-way delay: 109.007 ms

Loss rate: 0.44%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-10-09 19:21:19

End at: 2018-10-09 19:21:49

Local clock offset: 0.009 ms

Remote clock offset: 3.135 ms

Below is generated by plot.py at 2018-10-09 19:44:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.43 Mbit/s

95th percentile per-packet one-way delay: 111.558 ms

Loss rate: 0.44%

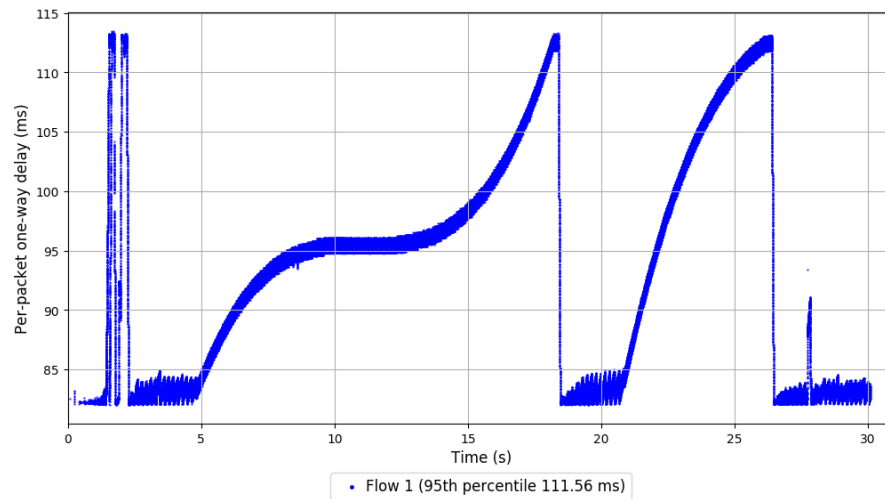
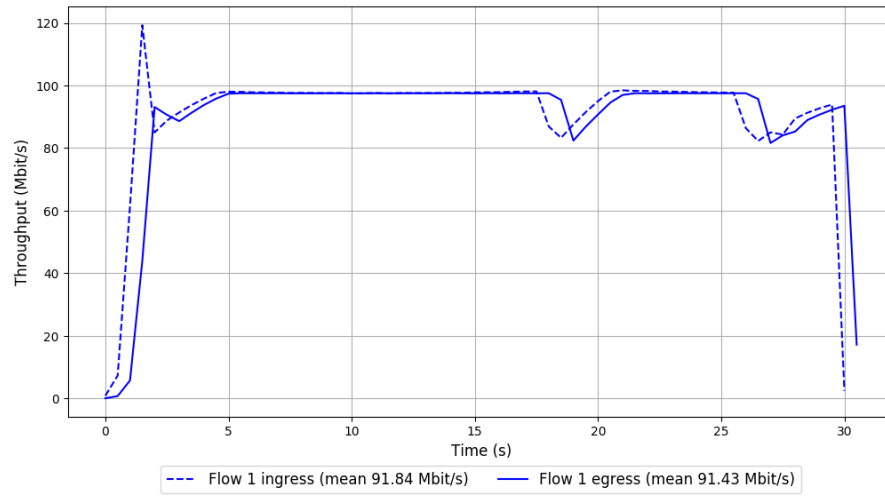
-- Flow 1:

Average throughput: 91.43 Mbit/s

95th percentile per-packet one-way delay: 111.558 ms

Loss rate: 0.44%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-10-09 17:59:24

End at: 2018-10-09 17:59:54

Local clock offset: -1.585 ms

Remote clock offset: -1.12 ms

Below is generated by plot.py at 2018-10-09 19:44:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.72 Mbit/s

95th percentile per-packet one-way delay: 107.437 ms

Loss rate: 2.09%

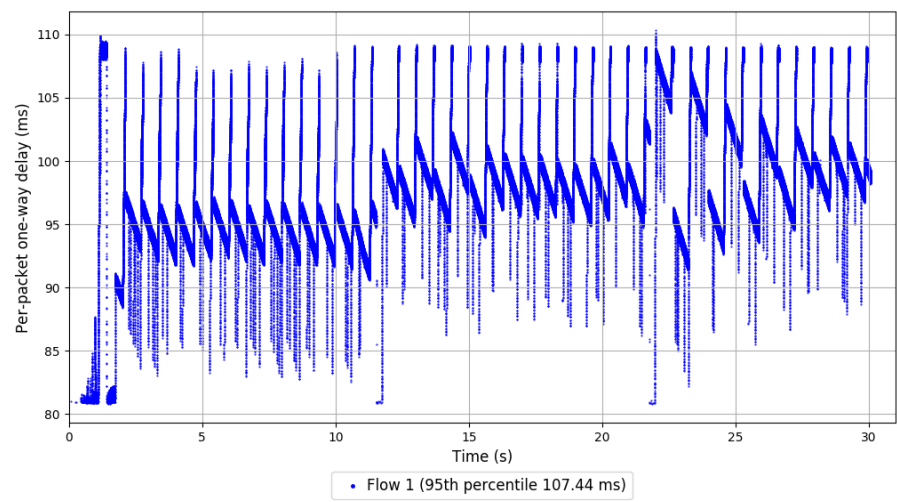
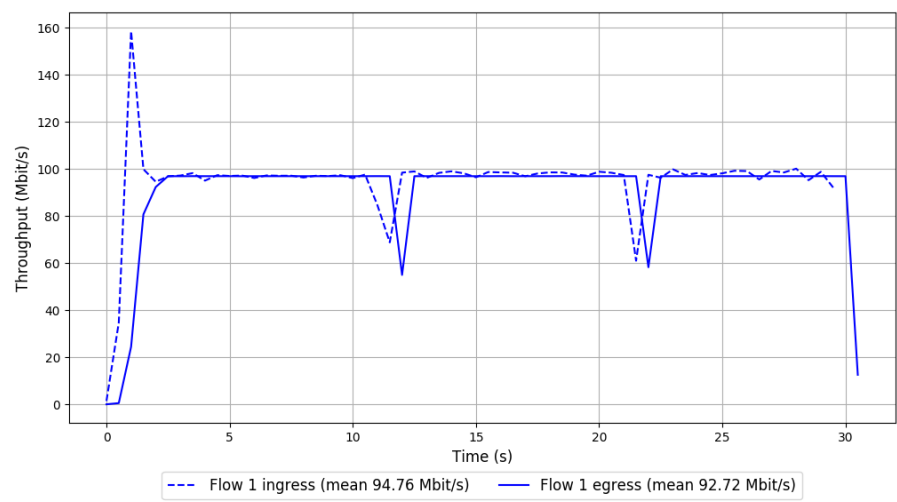
-- Flow 1:

Average throughput: 92.72 Mbit/s

95th percentile per-packet one-way delay: 107.437 ms

Loss rate: 2.09%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-10-09 18:20:32

End at: 2018-10-09 18:21:02

Local clock offset: -0.857 ms

Remote clock offset: 3.622 ms

Below is generated by plot.py at 2018-10-09 19:44:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.34 Mbit/s

95th percentile per-packet one-way delay: 118.200 ms

Loss rate: 2.88%

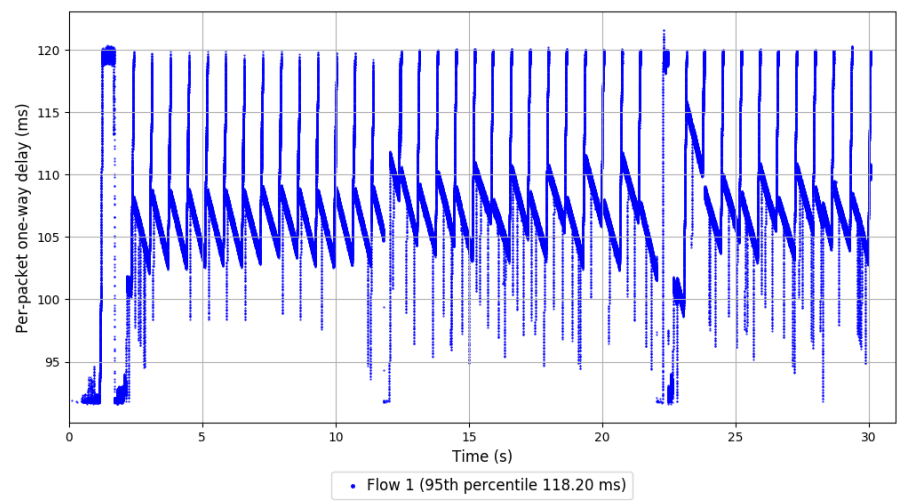
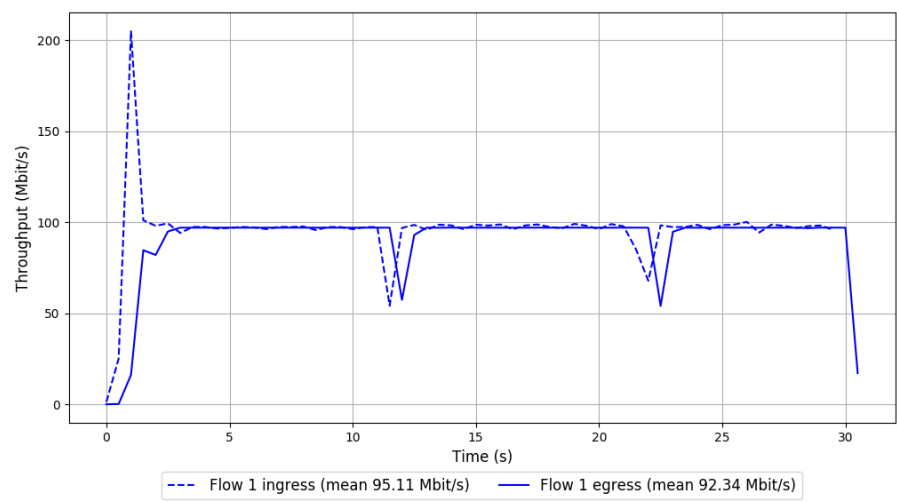
-- Flow 1:

Average throughput: 92.34 Mbit/s

95th percentile per-packet one-way delay: 118.200 ms

Loss rate: 2.88%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-10-09 18:41:41

End at: 2018-10-09 18:42:11

Local clock offset: -0.458 ms

Remote clock offset: 1.719 ms

Below is generated by plot.py at 2018-10-09 19:44:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.23 Mbit/s

95th percentile per-packet one-way delay: 107.837 ms

Loss rate: 3.80%

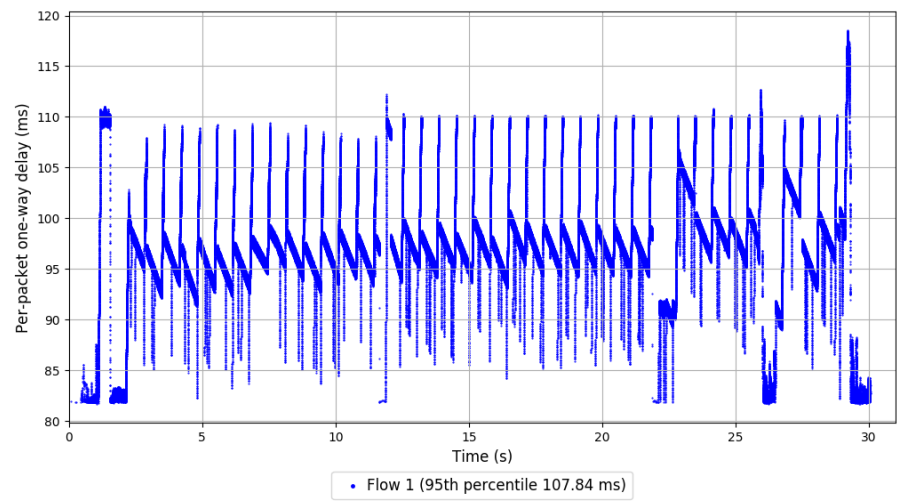
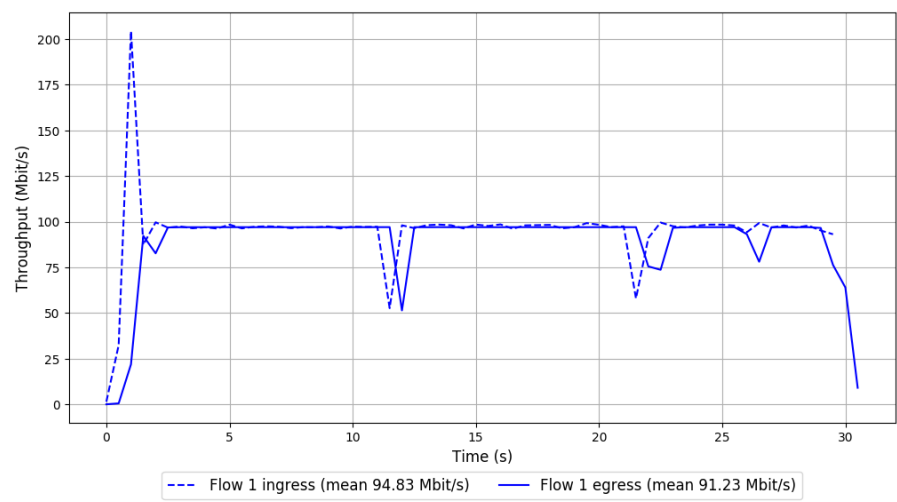
-- Flow 1:

Average throughput: 91.23 Mbit/s

95th percentile per-packet one-way delay: 107.837 ms

Loss rate: 3.80%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-10-09 19:02:44

End at: 2018-10-09 19:03:14

Local clock offset: -0.213 ms

Remote clock offset: 5.403 ms

Below is generated by plot.py at 2018-10-09 19:44:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.35 Mbit/s

95th percentile per-packet one-way delay: 114.547 ms

Loss rate: 2.80%

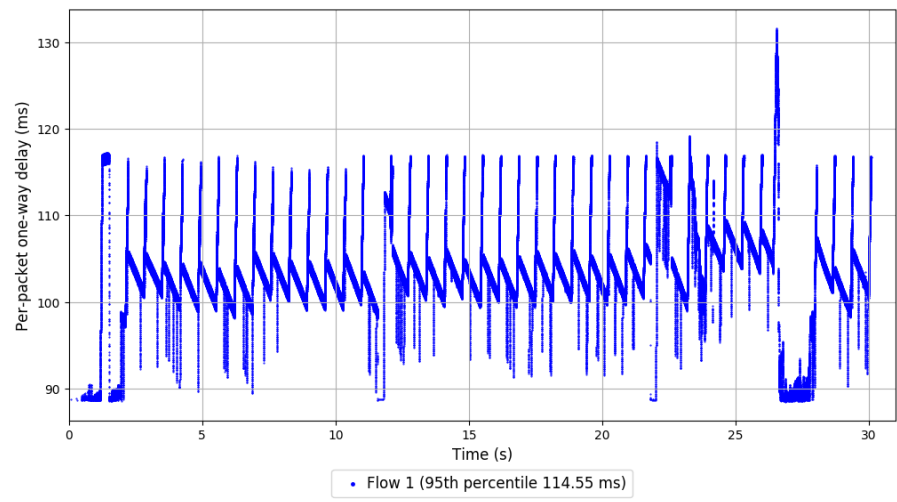
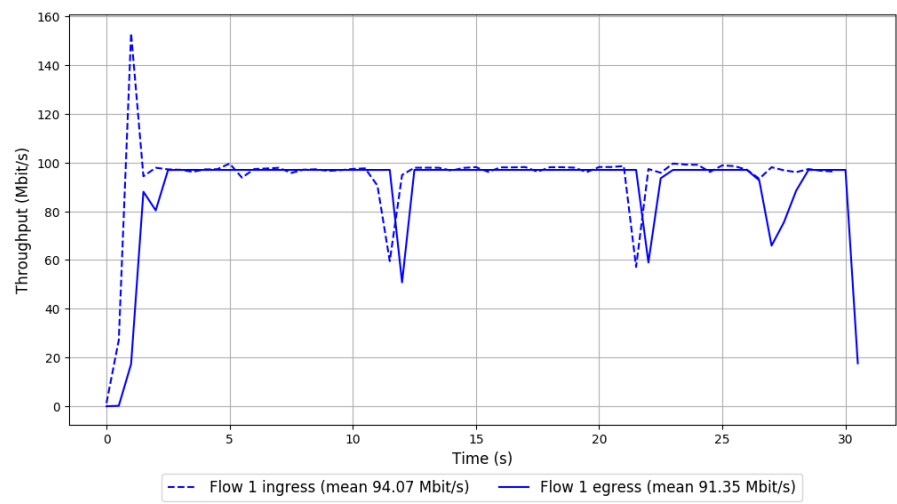
-- Flow 1:

Average throughput: 91.35 Mbit/s

95th percentile per-packet one-way delay: 114.547 ms

Loss rate: 2.80%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-09 19:23:43

End at: 2018-10-09 19:24:14

Local clock offset: 0.032 ms

Remote clock offset: 3.075 ms

Below is generated by plot.py at 2018-10-09 19:44:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.58 Mbit/s

95th percentile per-packet one-way delay: 108.467 ms

Loss rate: 3.21%

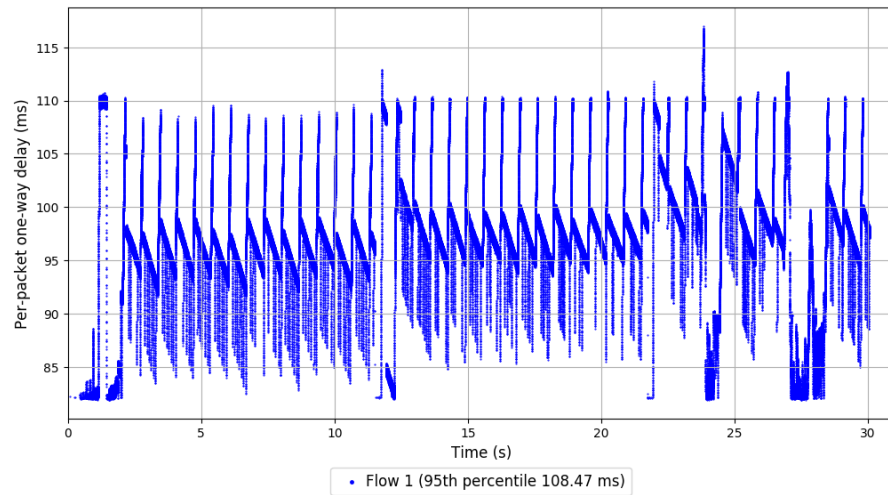
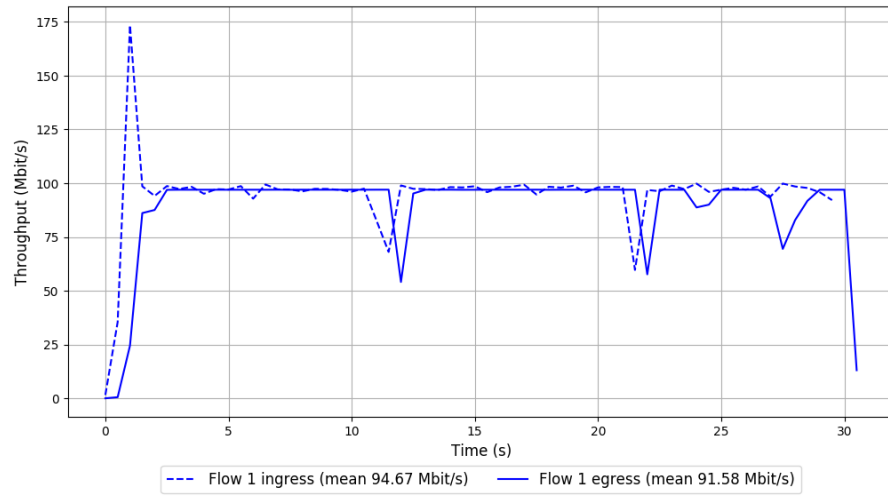
-- Flow 1:

Average throughput: 91.58 Mbit/s

95th percentile per-packet one-way delay: 108.467 ms

Loss rate: 3.21%

Run 5: Report of FillP — Data Link

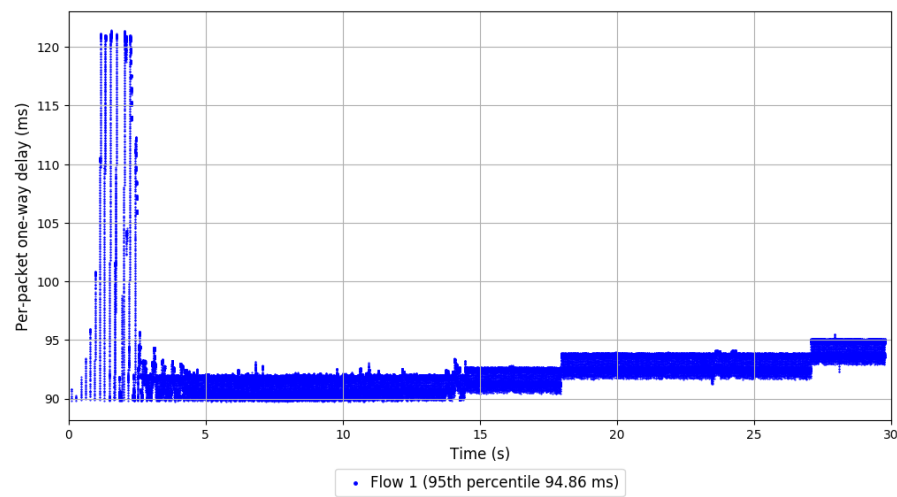
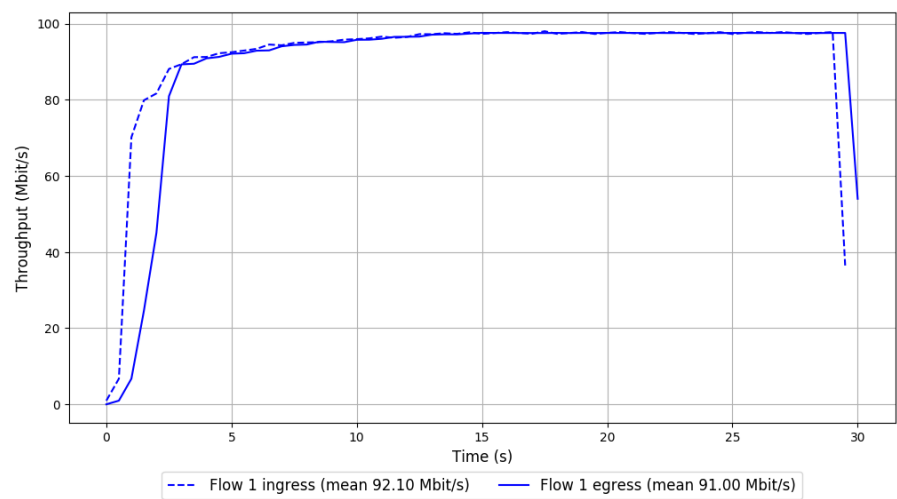



```
Run 1: Statistics of Indigo

Start at: 2018-10-09 18:13:29
End at: 2018-10-09 18:13:59
Local clock offset: -0.868 ms
Remote clock offset: 3.062 ms

# Below is generated by plot.py at 2018-10-09 19:44:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.00 Mbit/s
95th percentile per-packet one-way delay: 94.855 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 91.00 Mbit/s
95th percentile per-packet one-way delay: 94.855 ms
Loss rate: 1.19%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-10-09 18:34:27

End at: 2018-10-09 18:34:57

Local clock offset: -0.733 ms

Remote clock offset: 5.146 ms

Below is generated by plot.py at 2018-10-09 19:44:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.21 Mbit/s

95th percentile per-packet one-way delay: 90.664 ms

Loss rate: 0.76%

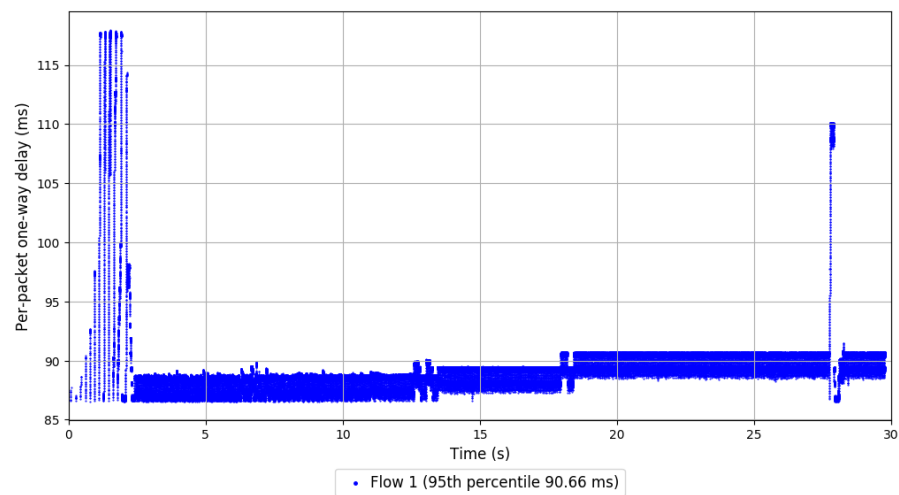
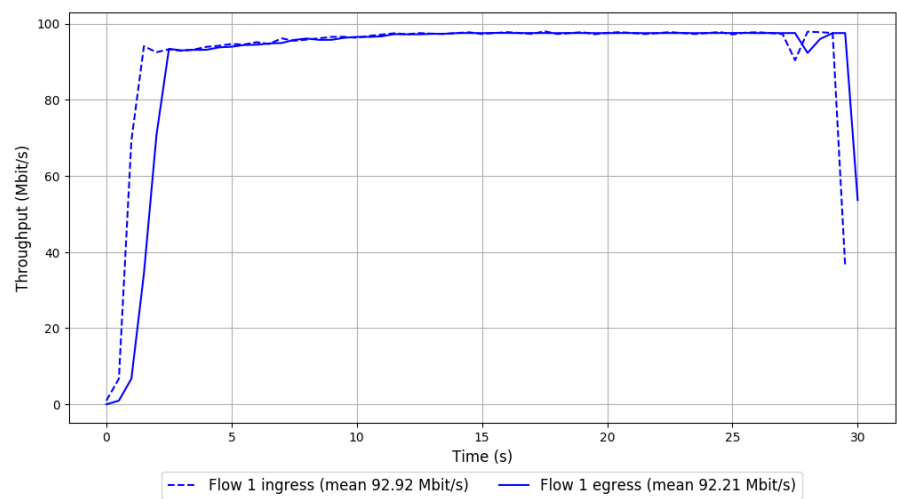
-- Flow 1:

Average throughput: 92.21 Mbit/s

95th percentile per-packet one-way delay: 90.664 ms

Loss rate: 0.76%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-10-09 18:55:37

End at: 2018-10-09 18:56:07

Local clock offset: 0.302 ms

Remote clock offset: 2.377 ms

Below is generated by plot.py at 2018-10-09 19:45:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.29 Mbit/s

95th percentile per-packet one-way delay: 86.462 ms

Loss rate: 0.77%

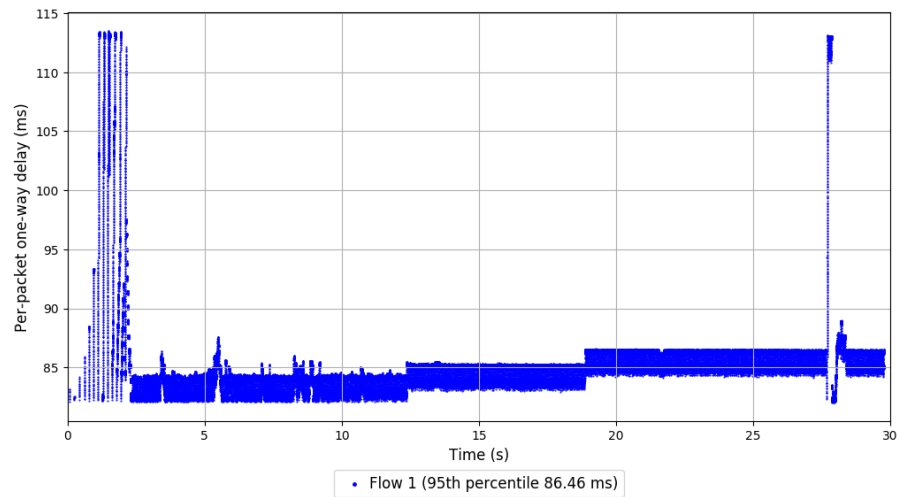
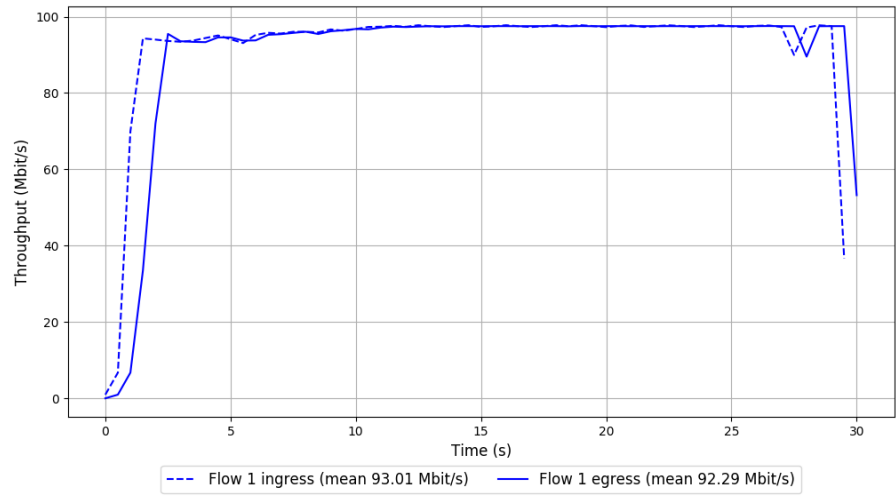
-- Flow 1:

Average throughput: 92.29 Mbit/s

95th percentile per-packet one-way delay: 86.462 ms

Loss rate: 0.77%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-10-09 19:16:38

End at: 2018-10-09 19:17:08

Local clock offset: -0.22 ms

Remote clock offset: 5.744 ms

Below is generated by plot.py at 2018-10-09 19:45:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.07 Mbit/s

95th percentile per-packet one-way delay: 88.421 ms

Loss rate: 1.19%

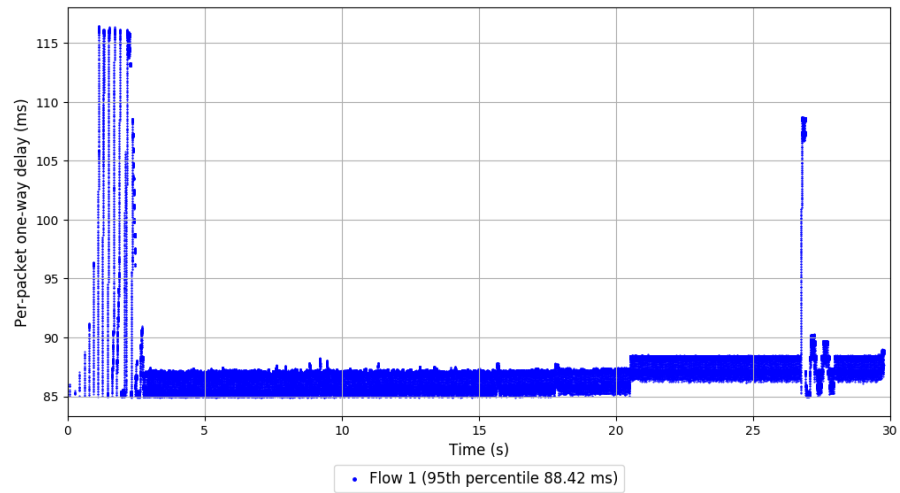
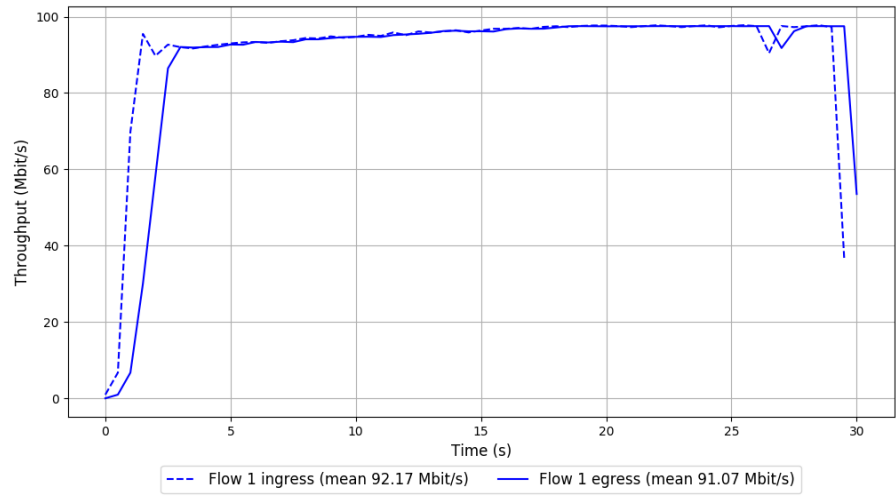
-- Flow 1:

Average throughput: 91.07 Mbit/s

95th percentile per-packet one-way delay: 88.421 ms

Loss rate: 1.19%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-09 19:37:55

End at: 2018-10-09 19:38:25

Local clock offset: -1.069 ms

Remote clock offset: 7.336 ms

Below is generated by plot.py at 2018-10-09 19:45:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.06 Mbit/s

95th percentile per-packet one-way delay: 98.596 ms

Loss rate: 2.49%

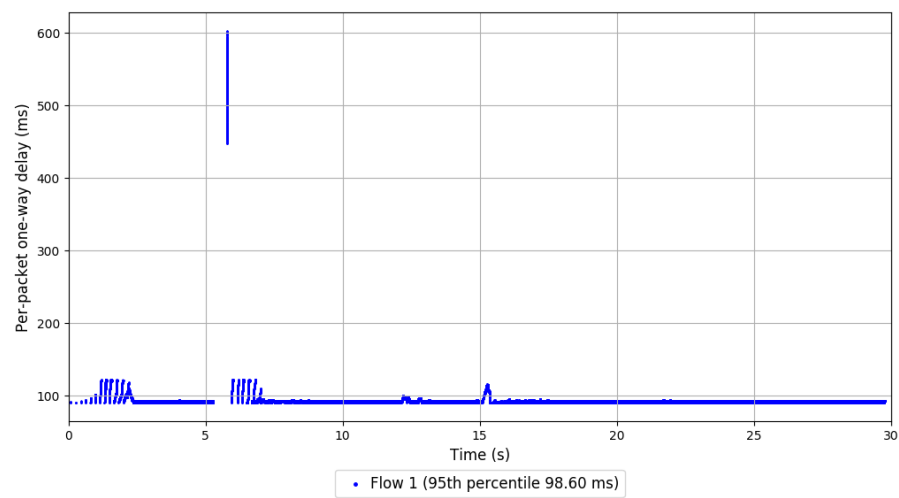
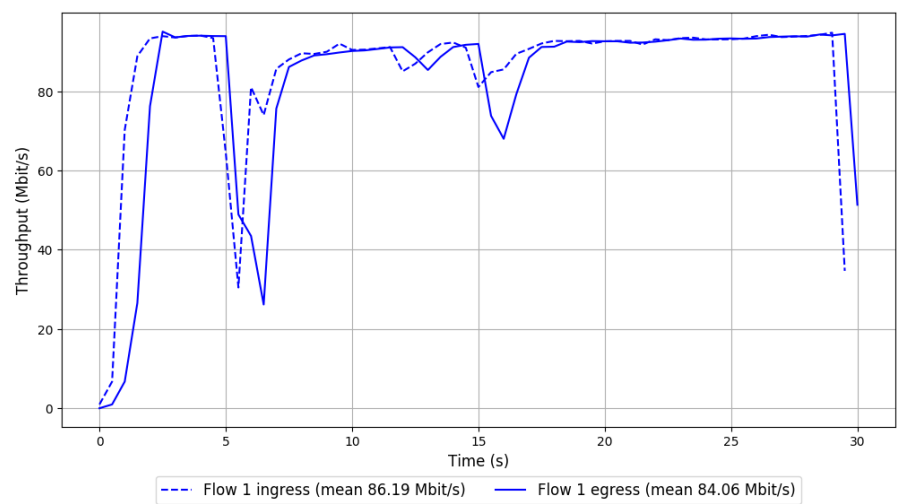
-- Flow 1:

Average throughput: 84.06 Mbit/s

95th percentile per-packet one-way delay: 98.596 ms

Loss rate: 2.49%

Run 5: Report of Indigo — Data Link

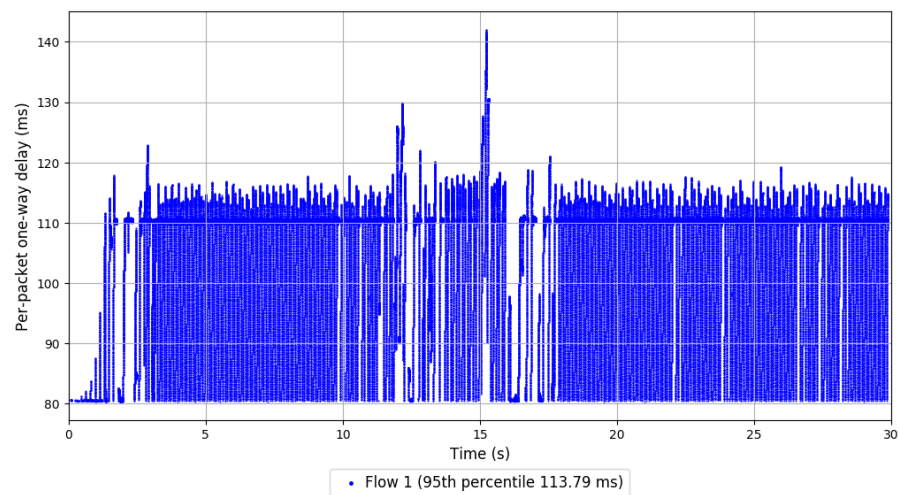
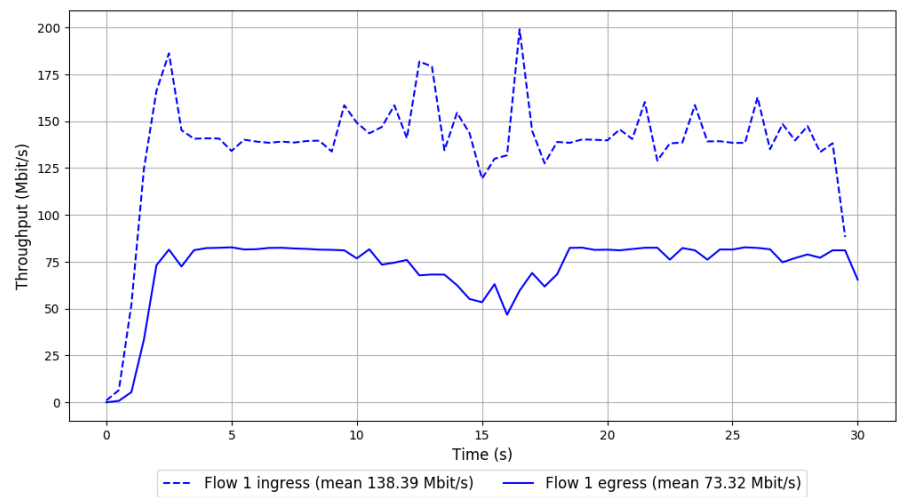


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:09:55
End at: 2018-10-09 18:10:25
Local clock offset: -0.986 ms
Remote clock offset: -0.943 ms

Below is generated by plot.py at 2018-10-09 19:45:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 73.32 Mbit/s
95th percentile per-packet one-way delay: 113.792 ms
Loss rate: 46.97%
-- Flow 1:
Average throughput: 73.32 Mbit/s
95th percentile per-packet one-way delay: 113.792 ms
Loss rate: 46.97%

Run 1: Report of Indigo-96d2da3 — Data Link



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:30:55

End at: 2018-10-09 18:31:25

Local clock offset: -0.791 ms

Remote clock offset: 3.842 ms

Below is generated by plot.py at 2018-10-09 19:45:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.31 Mbit/s

95th percentile per-packet one-way delay: 118.736 ms

Loss rate: 53.75%

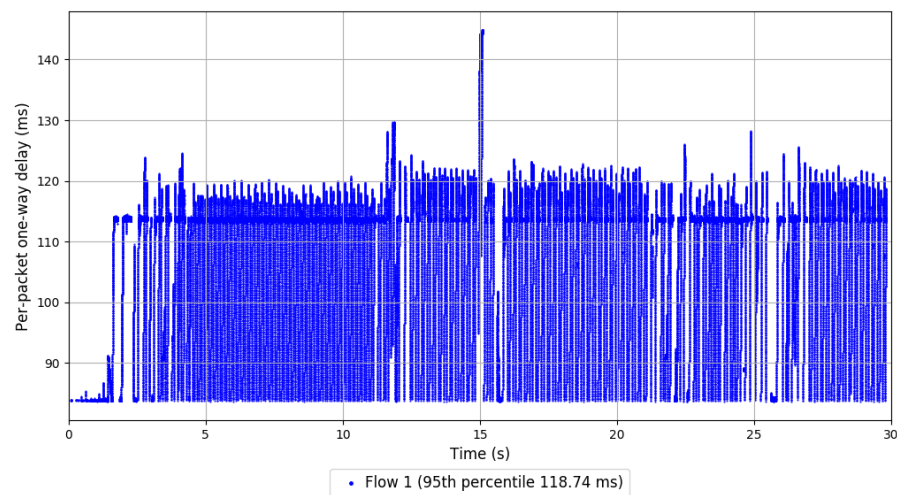
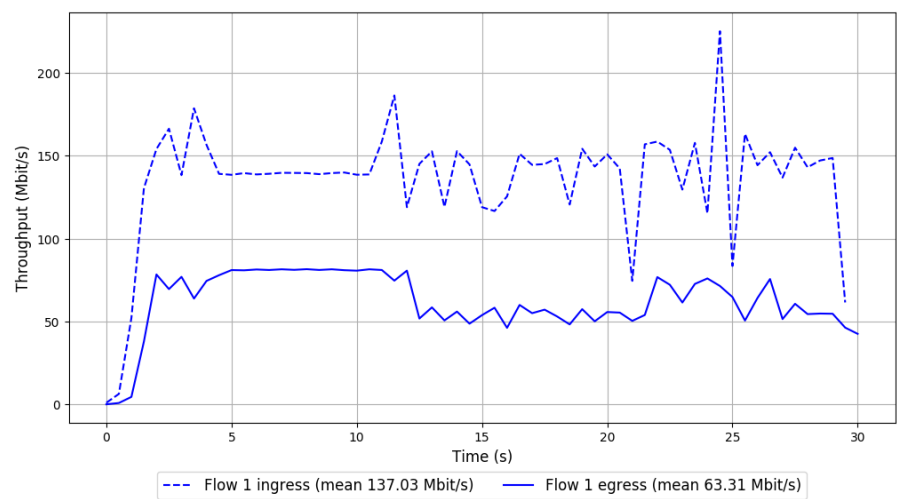
-- Flow 1:

Average throughput: 63.31 Mbit/s

95th percentile per-packet one-way delay: 118.736 ms

Loss rate: 53.75%

Run 2: Report of Indigo-96d2da3 — Data Link



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:52:05

End at: 2018-10-09 18:52:35

Local clock offset: 0.128 ms

Remote clock offset: 1.014 ms

Below is generated by plot.py at 2018-10-09 19:45:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 71.62 Mbit/s

95th percentile per-packet one-way delay: 114.562 ms

Loss rate: 47.00%

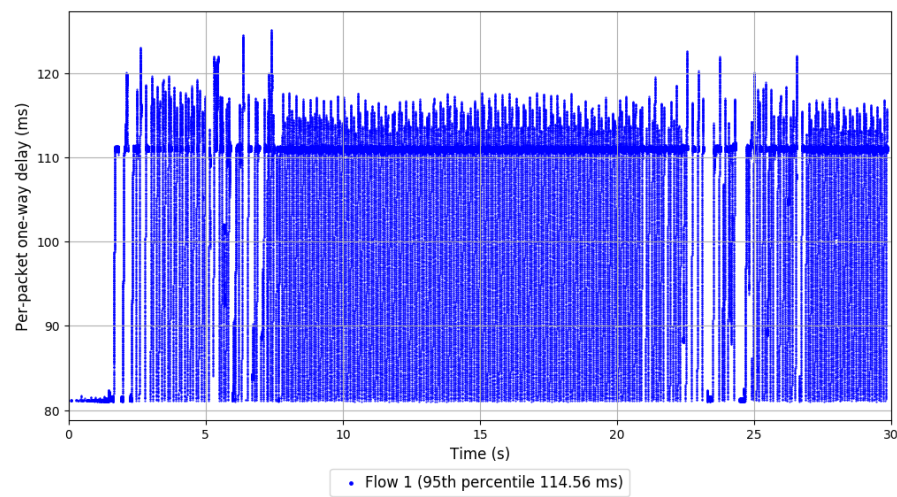
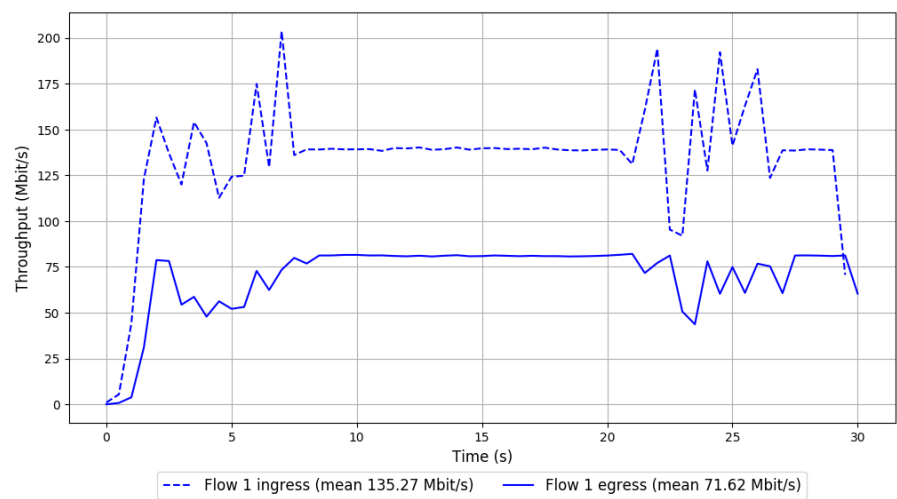
-- Flow 1:

Average throughput: 71.62 Mbit/s

95th percentile per-packet one-way delay: 114.562 ms

Loss rate: 47.00%

Run 3: Report of Indigo-96d2da3 — Data Link



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-09 19:13:06

End at: 2018-10-09 19:13:36

Local clock offset: -0.238 ms

Remote clock offset: 7.925 ms

Below is generated by plot.py at 2018-10-09 19:45:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.29 Mbit/s

95th percentile per-packet one-way delay: 128.646 ms

Loss rate: 56.98%

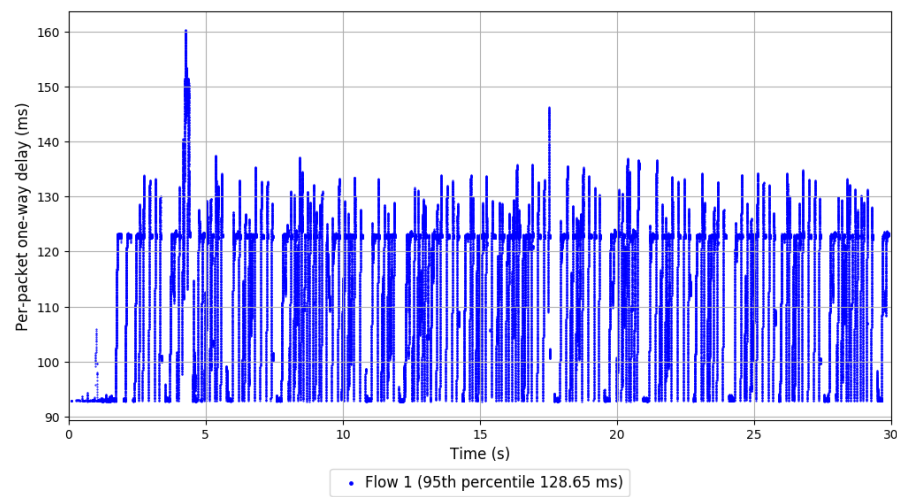
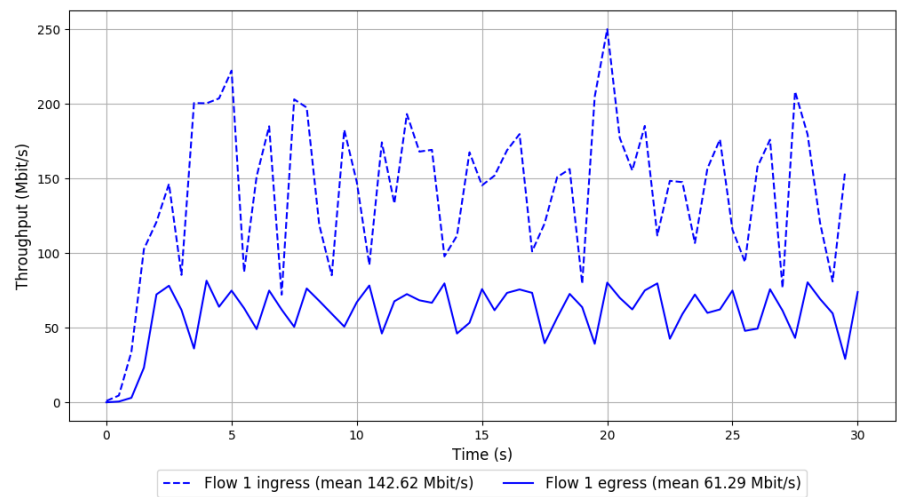
-- Flow 1:

Average throughput: 61.29 Mbit/s

95th percentile per-packet one-way delay: 128.646 ms

Loss rate: 56.98%

Run 4: Report of Indigo-96d2da3 — Data Link



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-09 19:34:18

End at: 2018-10-09 19:34:48

Local clock offset: -0.867 ms

Remote clock offset: 2.303 ms

Below is generated by plot.py at 2018-10-09 19:46:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.72 Mbit/s

95th percentile per-packet one-way delay: 114.235 ms

Loss rate: 50.15%

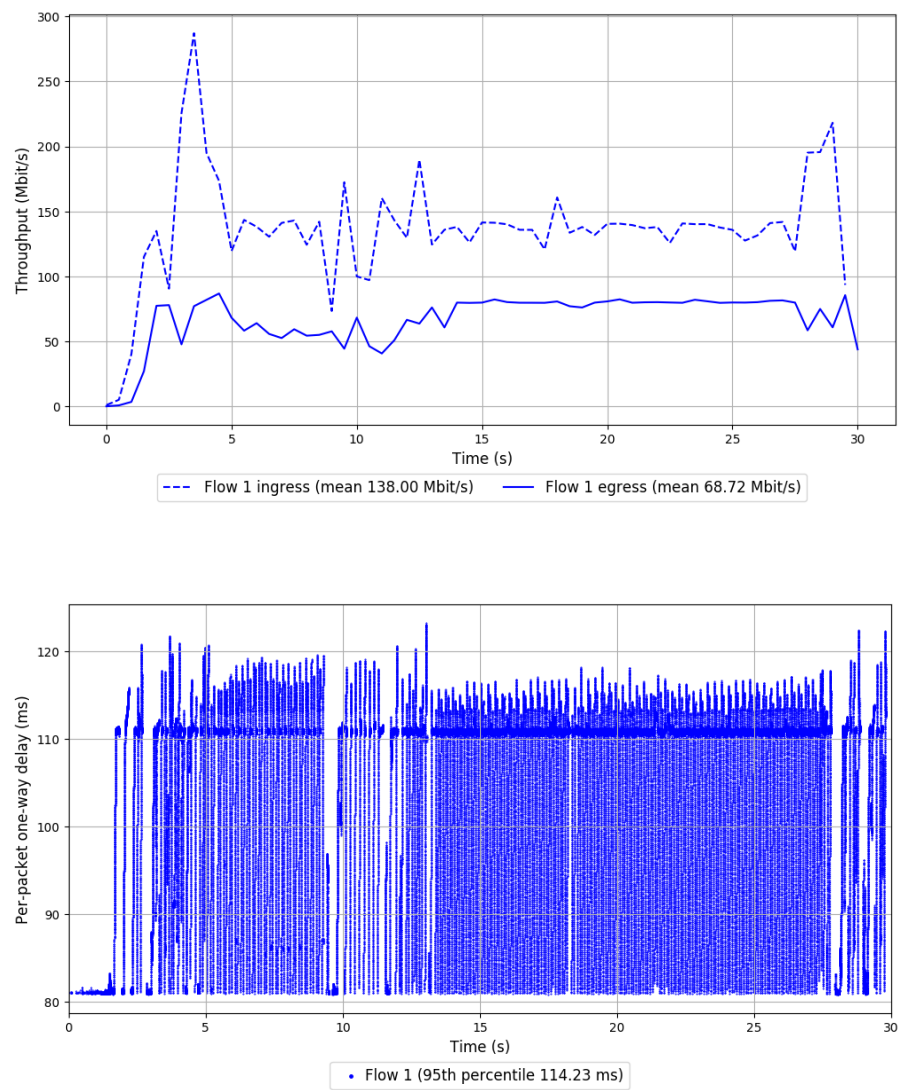
-- Flow 1:

Average throughput: 68.72 Mbit/s

95th percentile per-packet one-way delay: 114.235 ms

Loss rate: 50.15%

Run 5: Report of Indigo-96d2da3 — Data Link

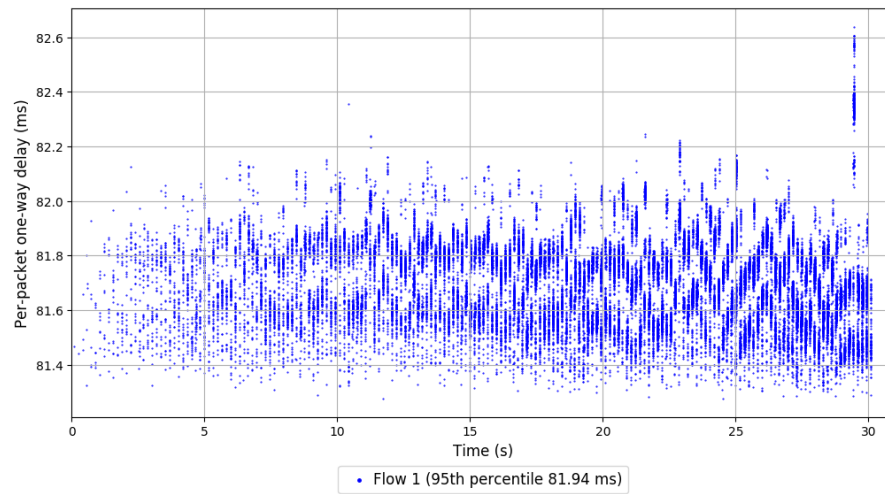
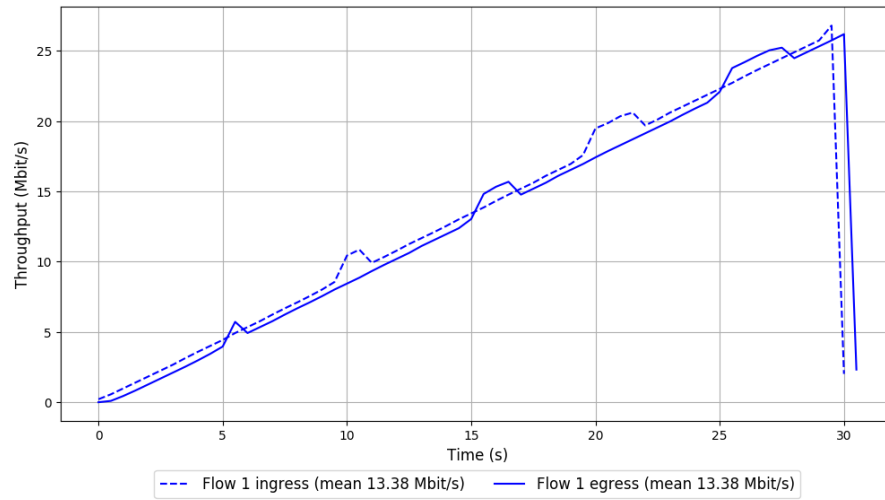


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-09 18:00:35
End at: 2018-10-09 18:01:05
Local clock offset: -2.094 ms
Remote clock offset: -2.195 ms

# Below is generated by plot.py at 2018-10-09 19:46:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 81.941 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 81.941 ms
Loss rate: 0.04%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-10-09 18:21:43

End at: 2018-10-09 18:22:13

Local clock offset: -0.793 ms

Remote clock offset: 2.622 ms

Below is generated by plot.py at 2018-10-09 19:46:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.55 Mbit/s

95th percentile per-packet one-way delay: 89.499 ms

Loss rate: 0.02%

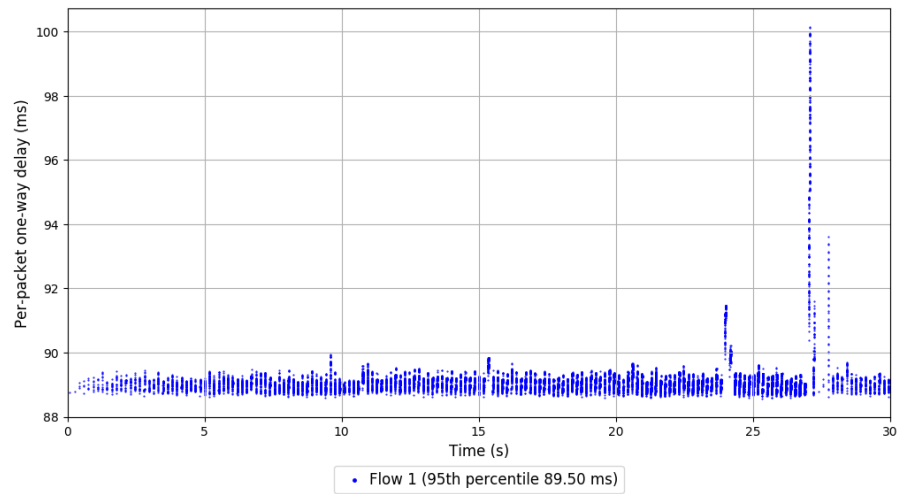
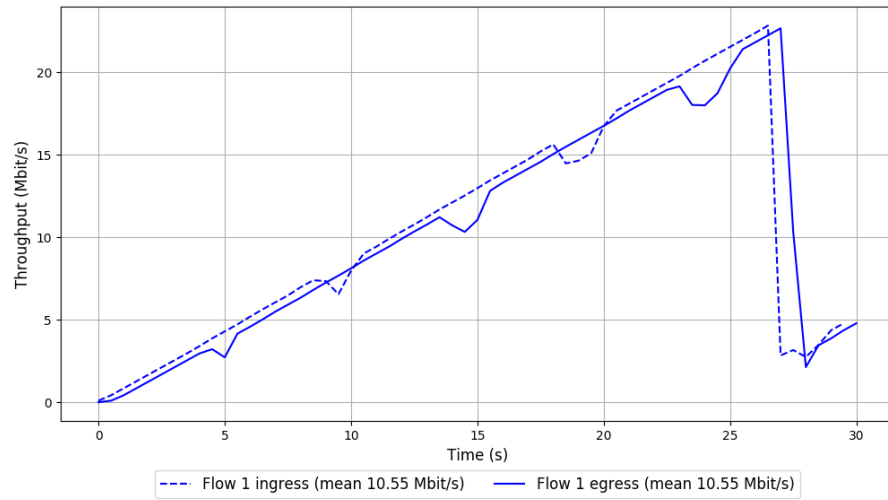
-- Flow 1:

Average throughput: 10.55 Mbit/s

95th percentile per-packet one-way delay: 89.499 ms

Loss rate: 0.02%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-10-09 18:42:53

End at: 2018-10-09 18:43:23

Local clock offset: -0.326 ms

Remote clock offset: 4.483 ms

Below is generated by plot.py at 2018-10-09 19:46:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.81 Mbit/s

95th percentile per-packet one-way delay: 85.524 ms

Loss rate: 0.11%

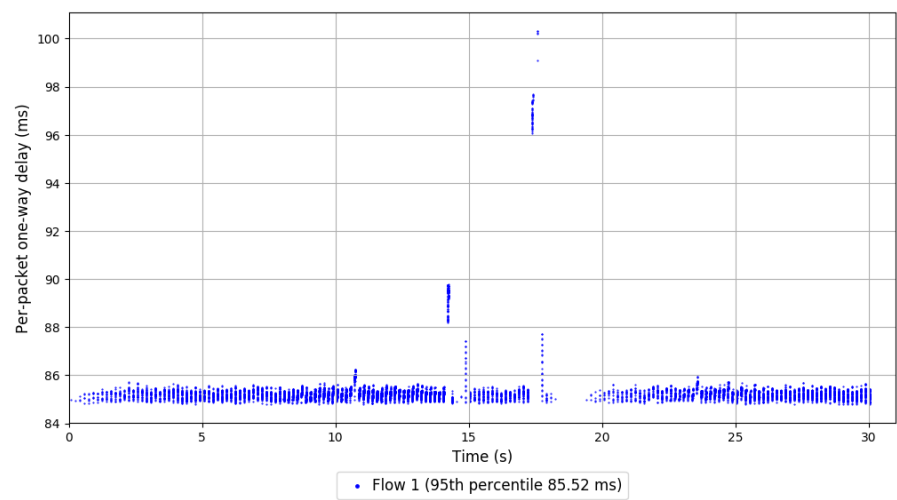
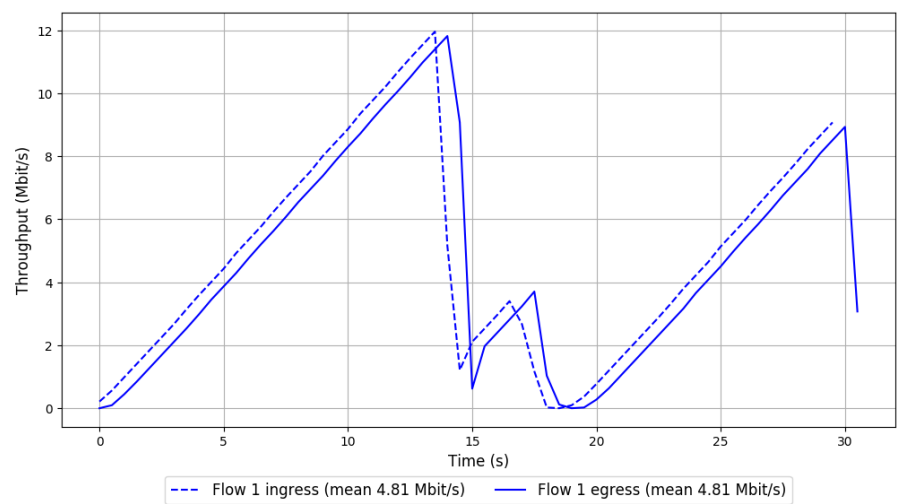
-- Flow 1:

Average throughput: 4.81 Mbit/s

95th percentile per-packet one-way delay: 85.524 ms

Loss rate: 0.11%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-09 19:03:56

End at: 2018-10-09 19:04:26

Local clock offset: -0.265 ms

Remote clock offset: 5.478 ms

Below is generated by plot.py at 2018-10-09 19:46:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.76 Mbit/s

95th percentile per-packet one-way delay: 83.619 ms

Loss rate: 0.06%

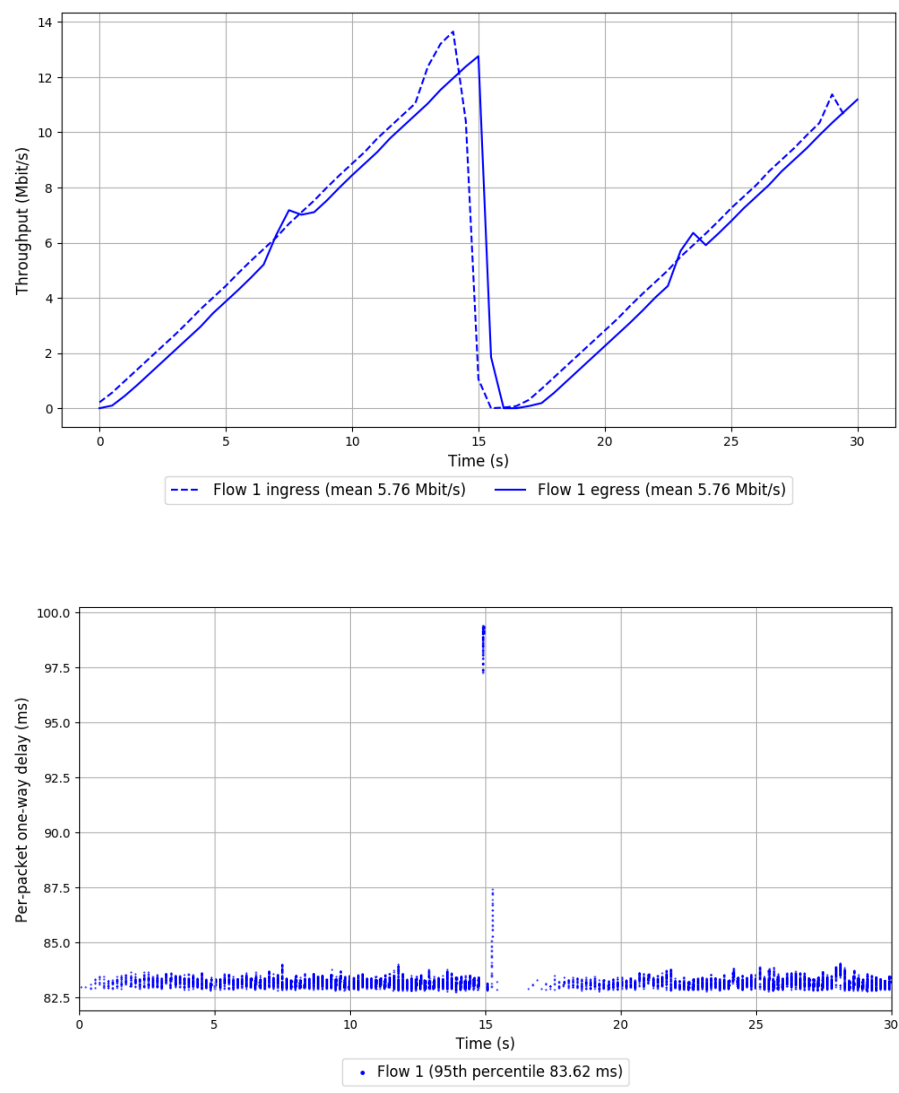
-- Flow 1:

Average throughput: 5.76 Mbit/s

95th percentile per-packet one-way delay: 83.619 ms

Loss rate: 0.06%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-09 19:24:55

End at: 2018-10-09 19:25:25

Local clock offset: 0.142 ms

Remote clock offset: 2.166 ms

Below is generated by plot.py at 2018-10-09 19:46:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.18 Mbit/s

95th percentile per-packet one-way delay: 87.384 ms

Loss rate: 0.01%

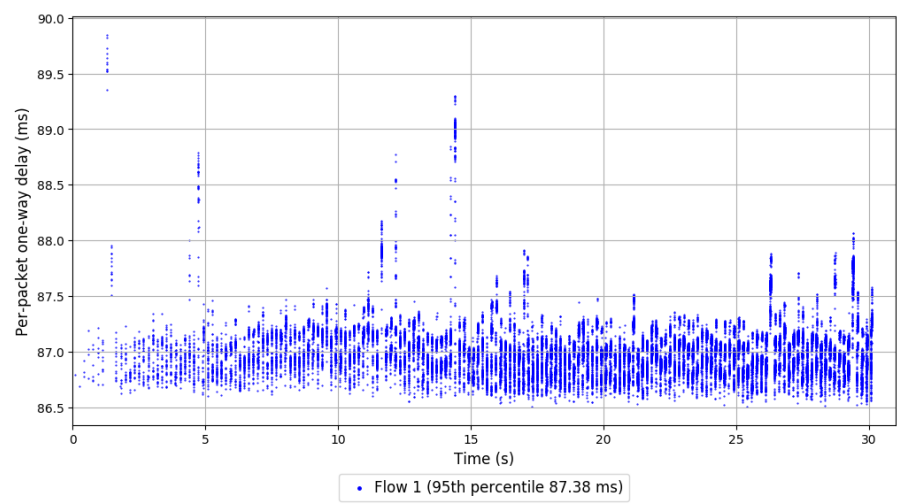
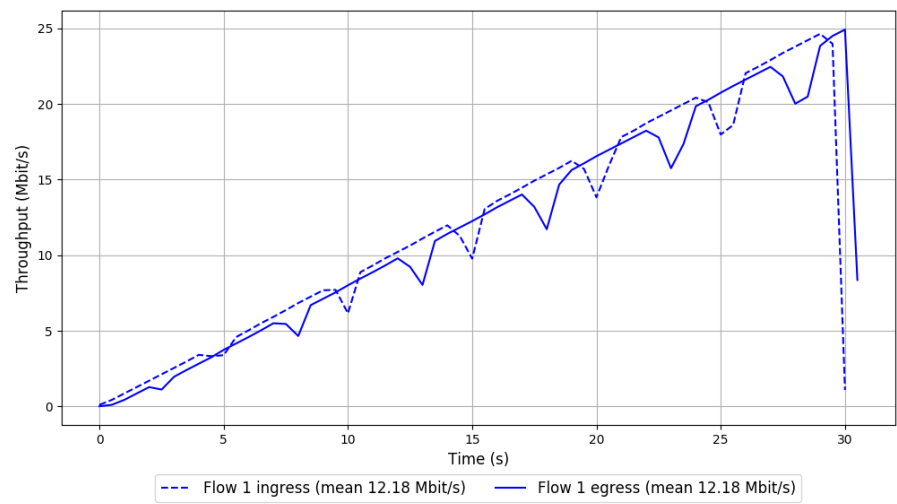
-- Flow 1:

Average throughput: 12.18 Mbit/s

95th percentile per-packet one-way delay: 87.384 ms

Loss rate: 0.01%

Run 5: Report of LEDBAT — Data Link

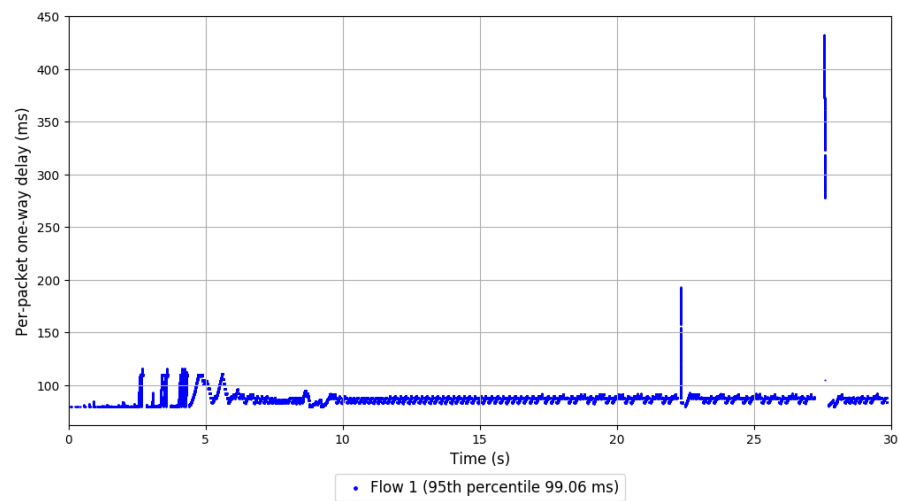
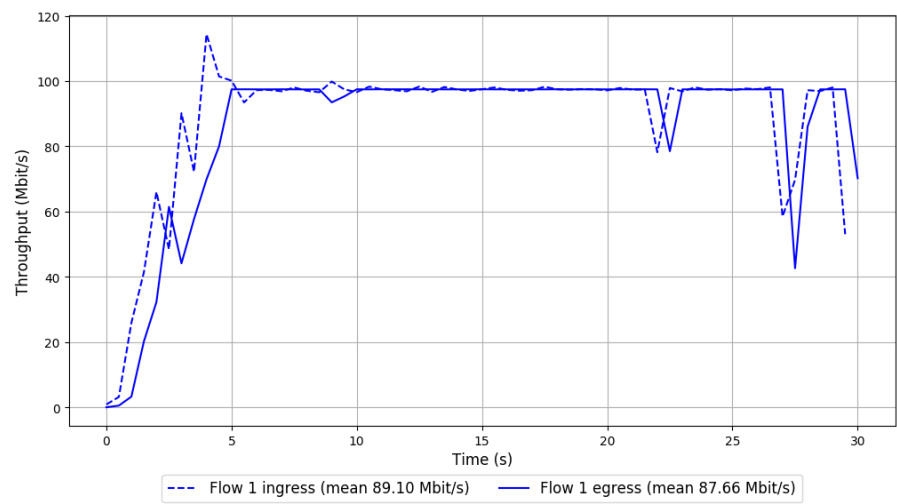


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-09 18:04:02
End at: 2018-10-09 18:04:32
Local clock offset: -1.955 ms
Remote clock offset: -2.188 ms

Below is generated by plot.py at 2018-10-09 19:46:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 87.66 Mbit/s
95th percentile per-packet one-way delay: 99.057 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 87.66 Mbit/s
95th percentile per-packet one-way delay: 99.057 ms
Loss rate: 1.61%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-10-09 18:25:08

End at: 2018-10-09 18:25:38

Local clock offset: -0.553 ms

Remote clock offset: 4.302 ms

Below is generated by plot.py at 2018-10-09 19:46:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.26 Mbit/s

95th percentile per-packet one-way delay: 108.443 ms

Loss rate: 2.03%

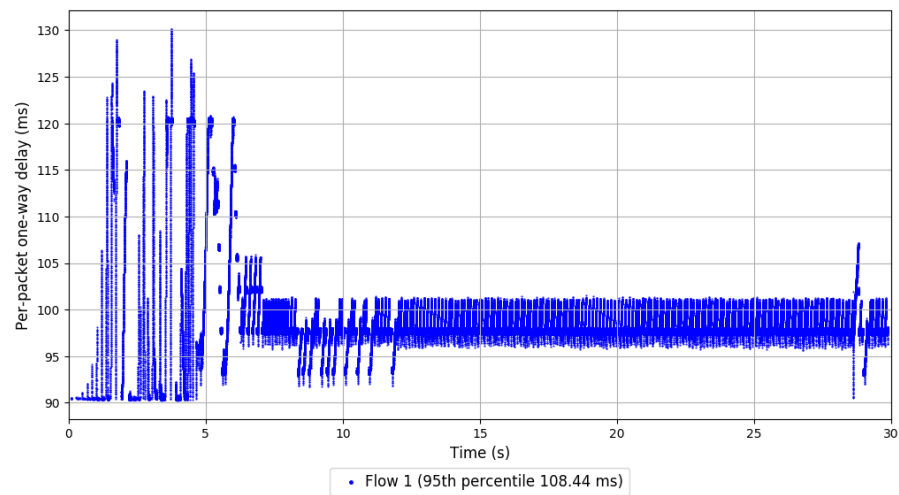
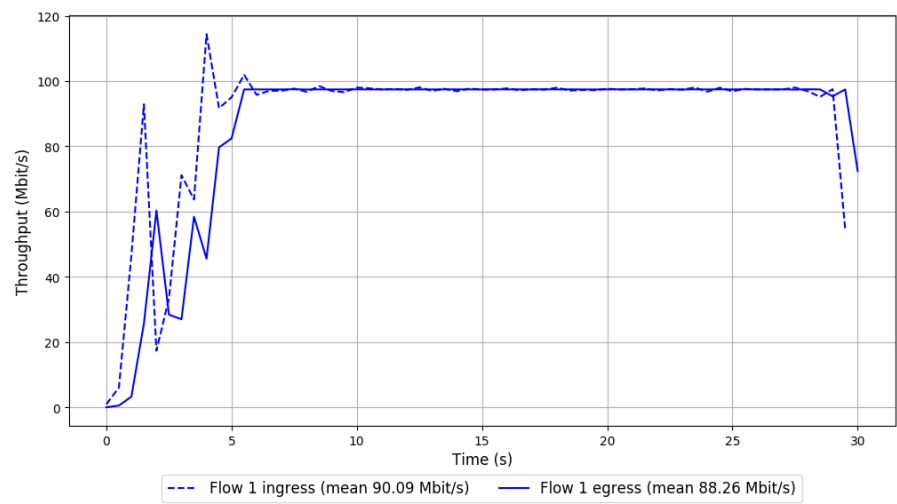
-- Flow 1:

Average throughput: 88.26 Mbit/s

95th percentile per-packet one-way delay: 108.443 ms

Loss rate: 2.03%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-10-09 18:46:17

End at: 2018-10-09 18:46:47

Local clock offset: -0.141 ms

Remote clock offset: 0.92 ms

Below is generated by plot.py at 2018-10-09 19:46:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.06 Mbit/s

95th percentile per-packet one-way delay: 101.259 ms

Loss rate: 2.35%

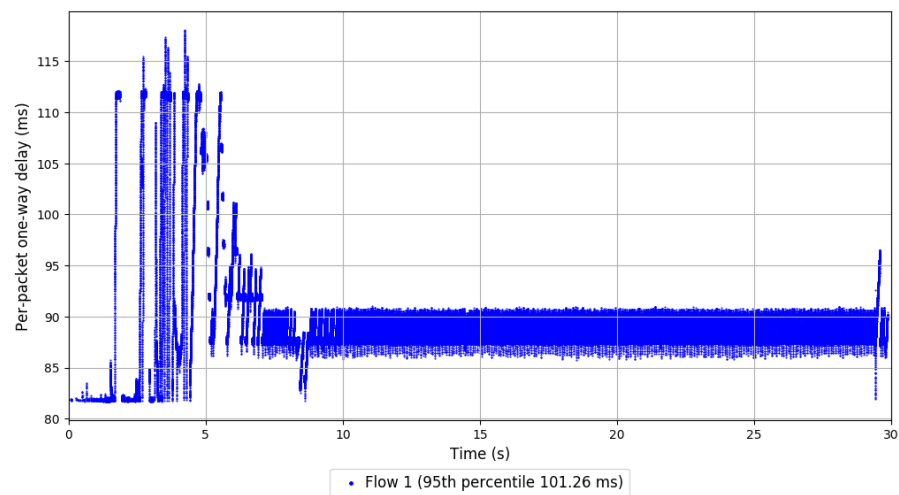
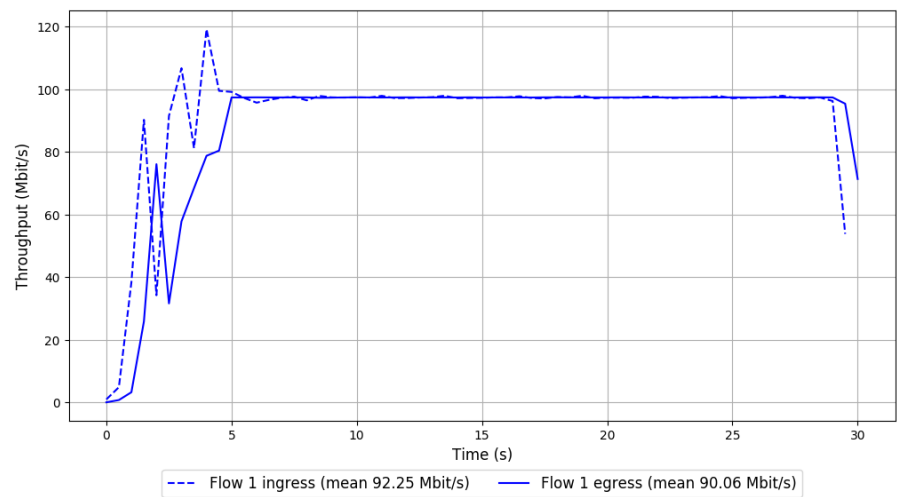
-- Flow 1:

Average throughput: 90.06 Mbit/s

95th percentile per-packet one-way delay: 101.259 ms

Loss rate: 2.35%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

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

End at: 2018-10-09 19:07:49

Local clock offset: -0.358 ms

Remote clock offset: 6.59 ms

Below is generated by plot.py at 2018-10-09 19:46:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.88 Mbit/s

95th percentile per-packet one-way delay: 110.075 ms

Loss rate: 2.10%

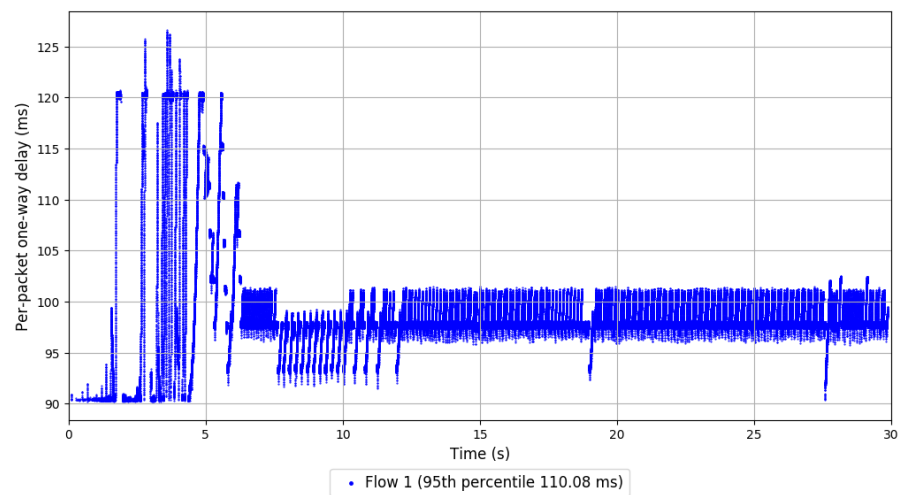
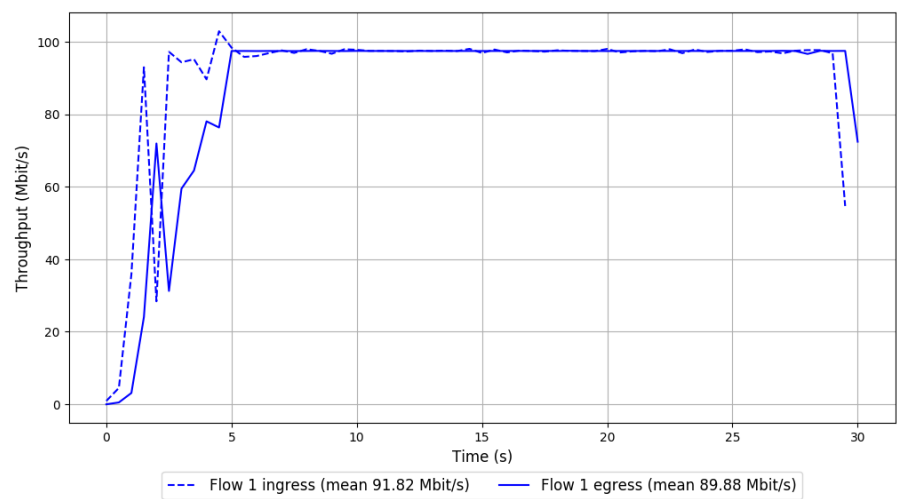
-- Flow 1:

Average throughput: 89.88 Mbit/s

95th percentile per-packet one-way delay: 110.075 ms

Loss rate: 2.10%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-09 19:28:21

End at: 2018-10-09 19:28:51

Local clock offset: -0.354 ms

Remote clock offset: 2.233 ms

Below is generated by plot.py at 2018-10-09 19:46:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.02 Mbit/s

95th percentile per-packet one-way delay: 101.646 ms

Loss rate: 2.37%

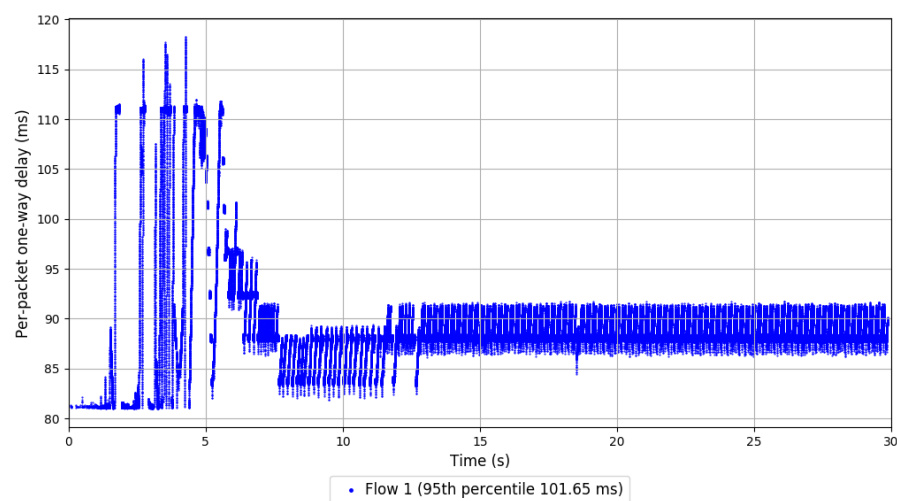
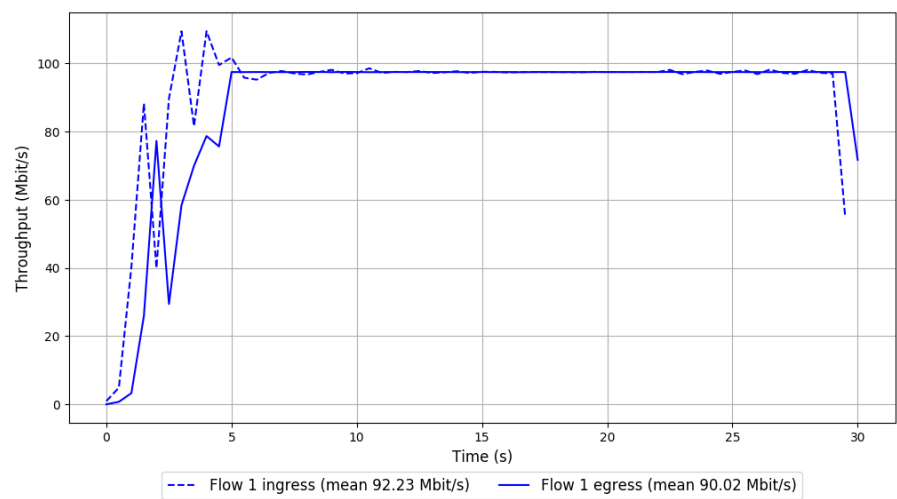
-- Flow 1:

Average throughput: 90.02 Mbit/s

95th percentile per-packet one-way delay: 101.646 ms

Loss rate: 2.37%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-10-09 17:55:50

End at: 2018-10-09 17:56:20

Local clock offset: -1.92 ms

Remote clock offset: -2.261 ms

Below is generated by plot.py at 2018-10-09 19:46:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.51 Mbit/s

95th percentile per-packet one-way delay: 100.336 ms

Loss rate: 2.02%

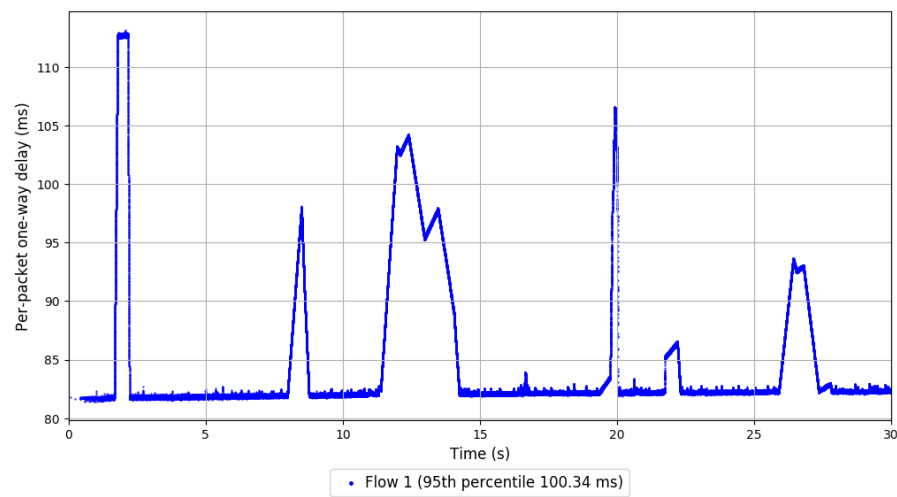
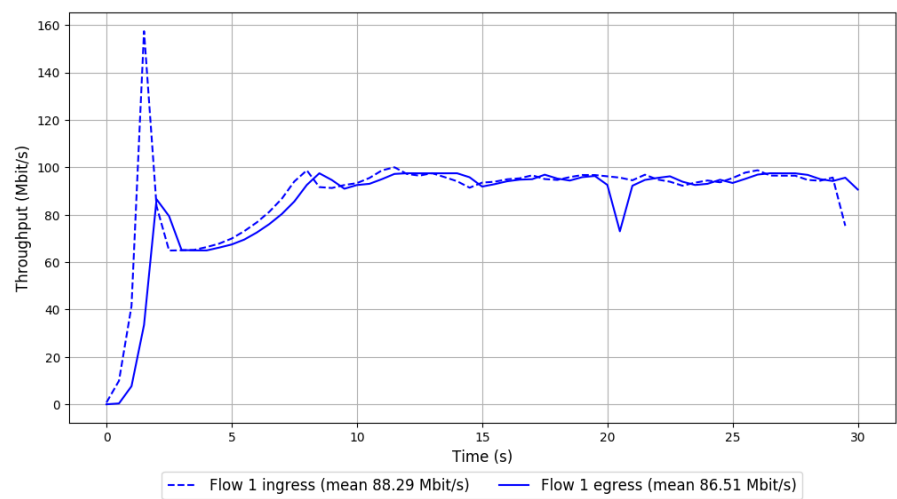
-- Flow 1:

Average throughput: 86.51 Mbit/s

95th percentile per-packet one-way delay: 100.336 ms

Loss rate: 2.02%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-10-09 18:17:00

End at: 2018-10-09 18:17:30

Local clock offset: -1.031 ms

Remote clock offset: 4.372 ms

Below is generated by plot.py at 2018-10-09 19:46:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.61 Mbit/s

95th percentile per-packet one-way delay: 94.322 ms

Loss rate: 2.36%

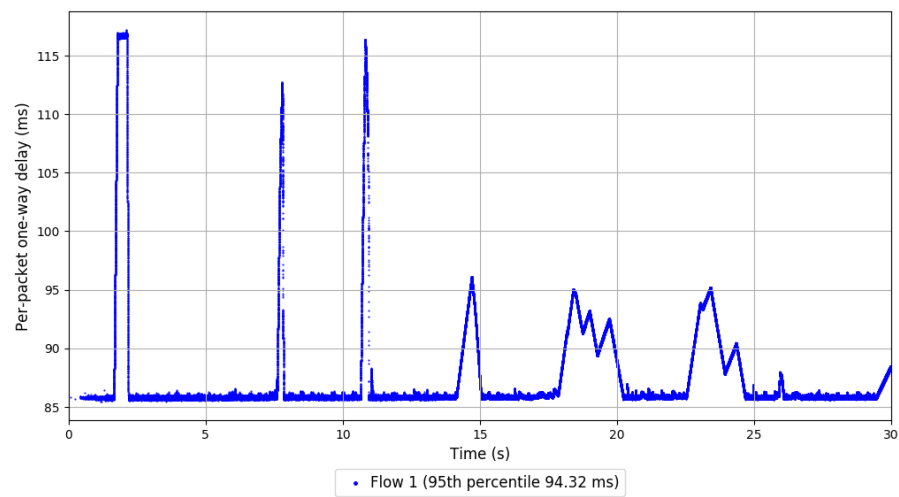
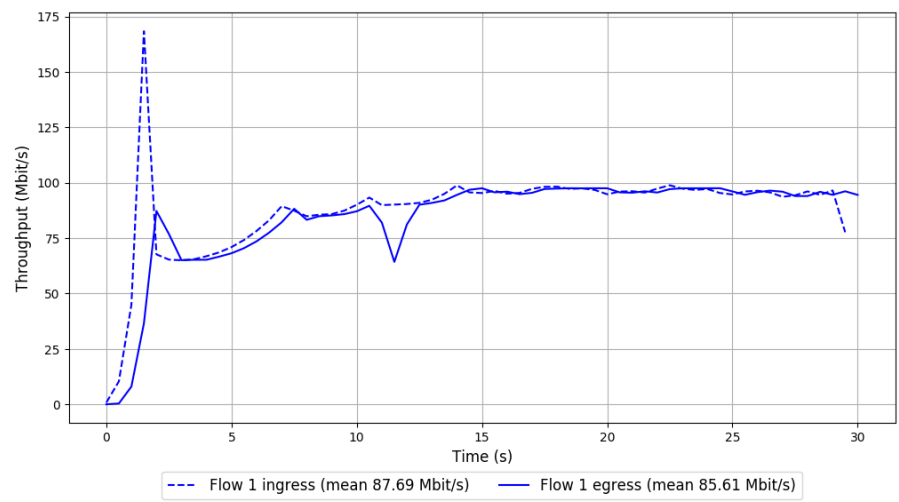
-- Flow 1:

Average throughput: 85.61 Mbit/s

95th percentile per-packet one-way delay: 94.322 ms

Loss rate: 2.36%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-10-09 18:38:03

End at: 2018-10-09 18:38:33

Local clock offset: -0.547 ms

Remote clock offset: 5.219 ms

Below is generated by plot.py at 2018-10-09 19:47:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 79.73 Mbit/s

95th percentile per-packet one-way delay: 98.853 ms

Loss rate: 2.49%

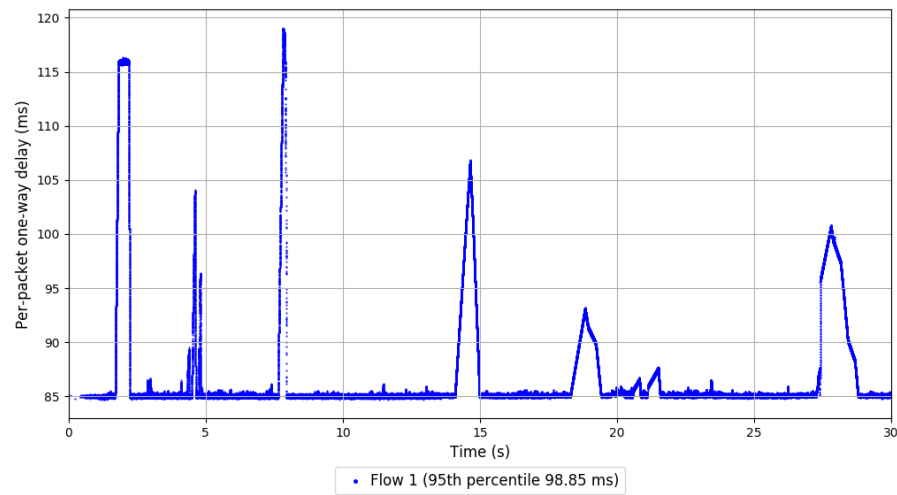
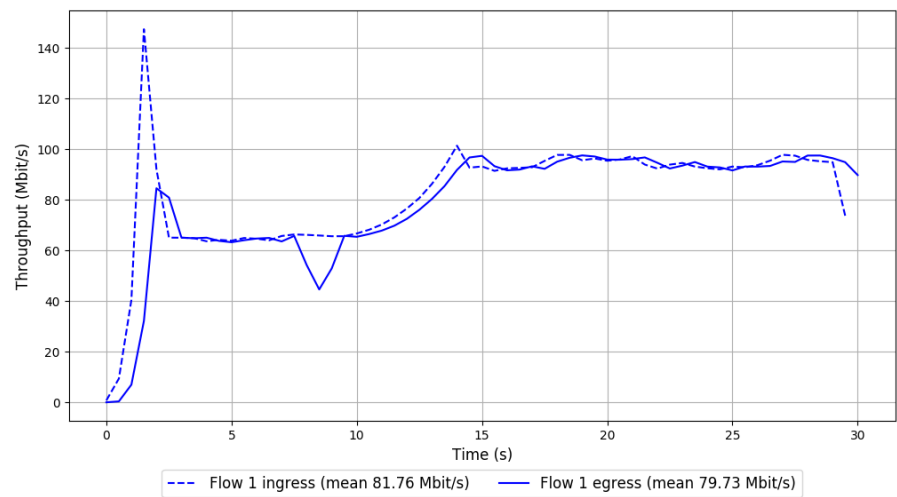
-- Flow 1:

Average throughput: 79.73 Mbit/s

95th percentile per-packet one-way delay: 98.853 ms

Loss rate: 2.49%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-09 18:59:09

End at: 2018-10-09 18:59:39

Local clock offset: -0.034 ms

Remote clock offset: 2.634 ms

Below is generated by plot.py at 2018-10-09 19:47:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.32 Mbit/s

95th percentile per-packet one-way delay: 94.102 ms

Loss rate: 0.58%

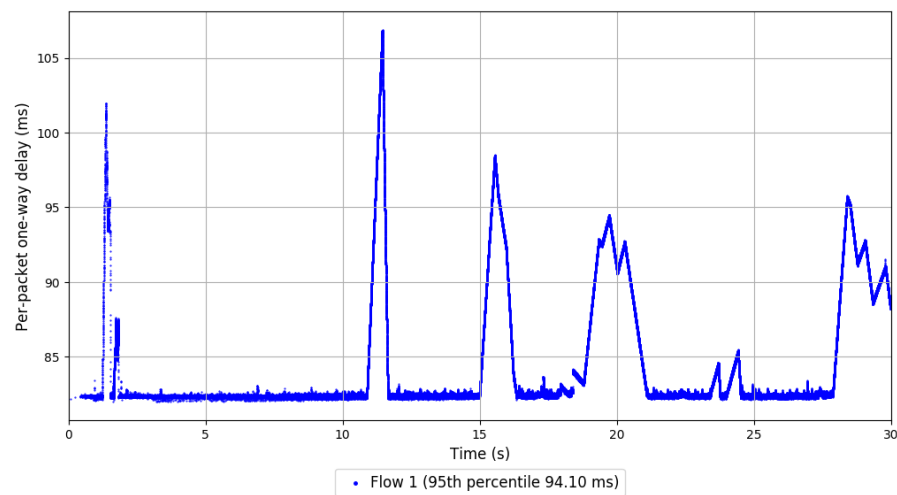
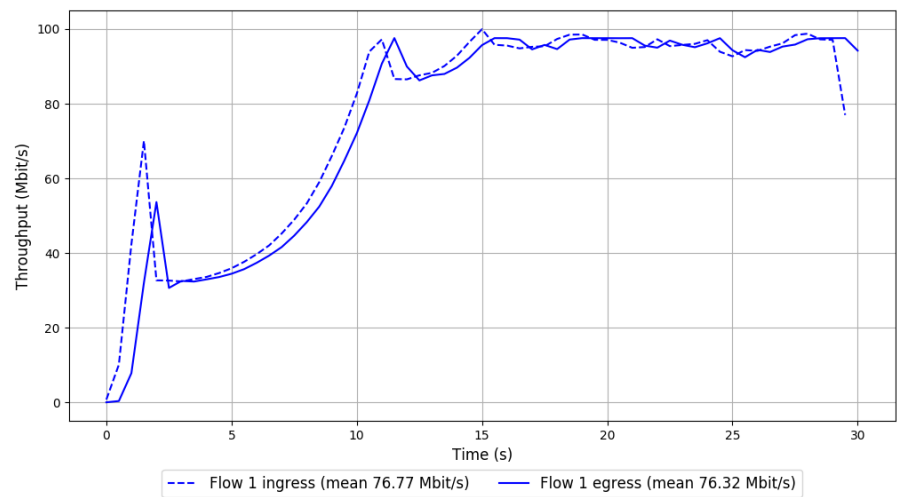
-- Flow 1:

Average throughput: 76.32 Mbit/s

95th percentile per-packet one-way delay: 94.102 ms

Loss rate: 0.58%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-10-09 19:20:08

End at: 2018-10-09 19:20:38

Local clock offset: -0.034 ms

Remote clock offset: 2.014 ms

Below is generated by plot.py at 2018-10-09 19:47:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.85 Mbit/s

95th percentile per-packet one-way delay: 104.186 ms

Loss rate: 1.66%

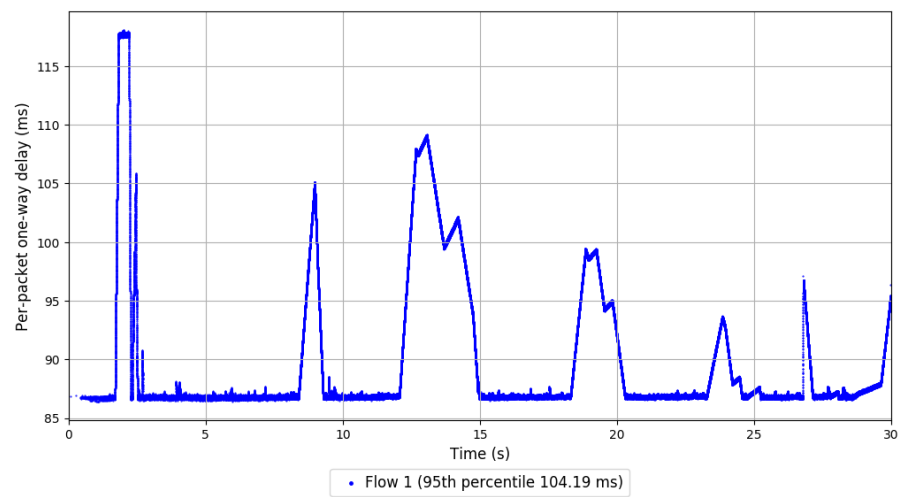
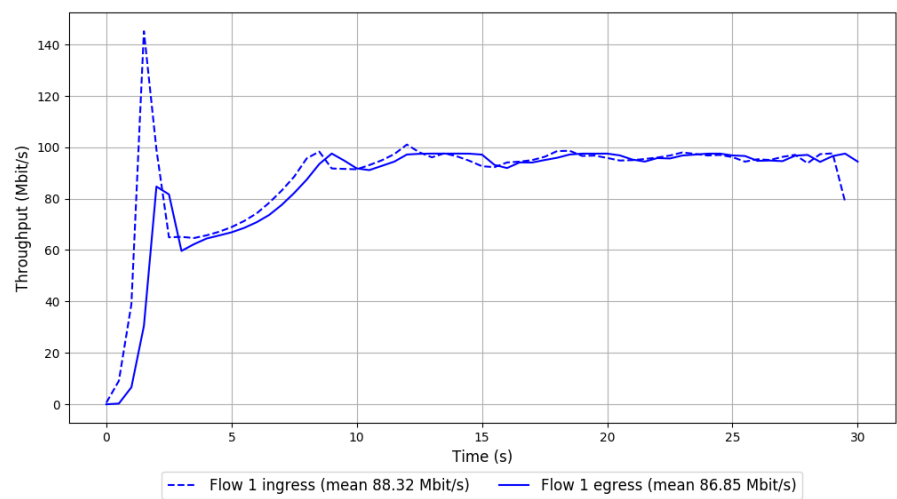
-- Flow 1:

Average throughput: 86.85 Mbit/s

95th percentile per-packet one-way delay: 104.186 ms

Loss rate: 1.66%

Run 5: Report of PCC-Allegro — Data Link

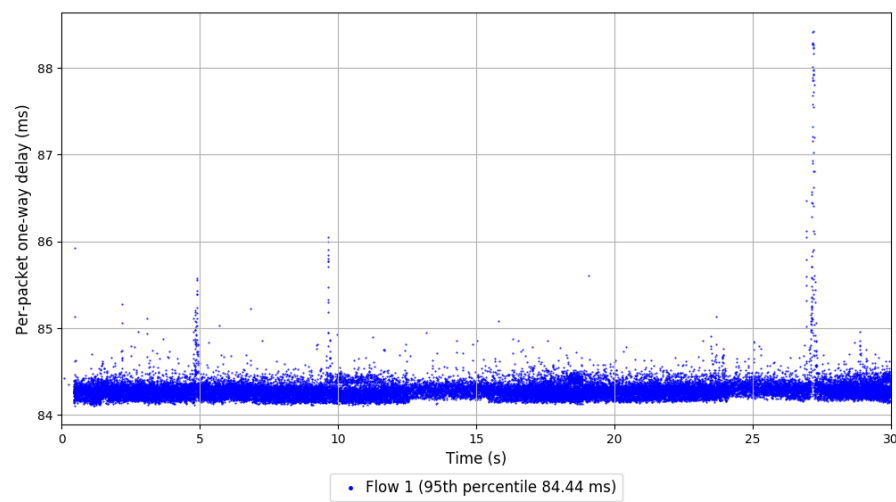
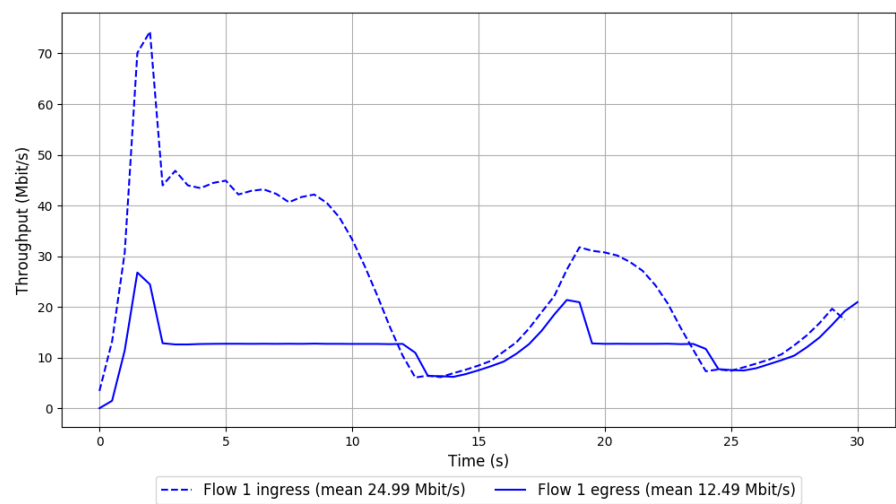


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-09 18:08:40
End at: 2018-10-09 18:09:10
Local clock offset: -1.23 ms
Remote clock offset: 2.806 ms

# Below is generated by plot.py at 2018-10-09 19:47:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.49 Mbit/s
95th percentile per-packet one-way delay: 84.435 ms
Loss rate: 50.01%
-- Flow 1:
Average throughput: 12.49 Mbit/s
95th percentile per-packet one-way delay: 84.435 ms
Loss rate: 50.01%
```

Run 1: Report of PCC-Expr — Data Link

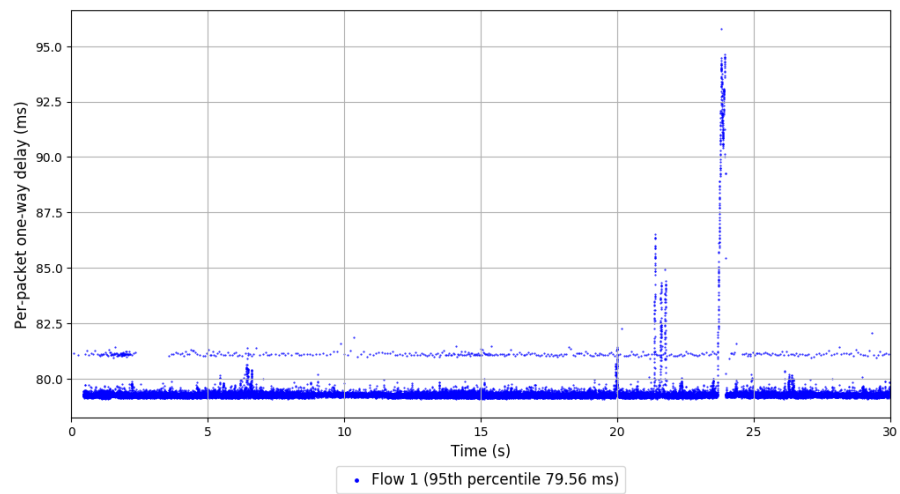
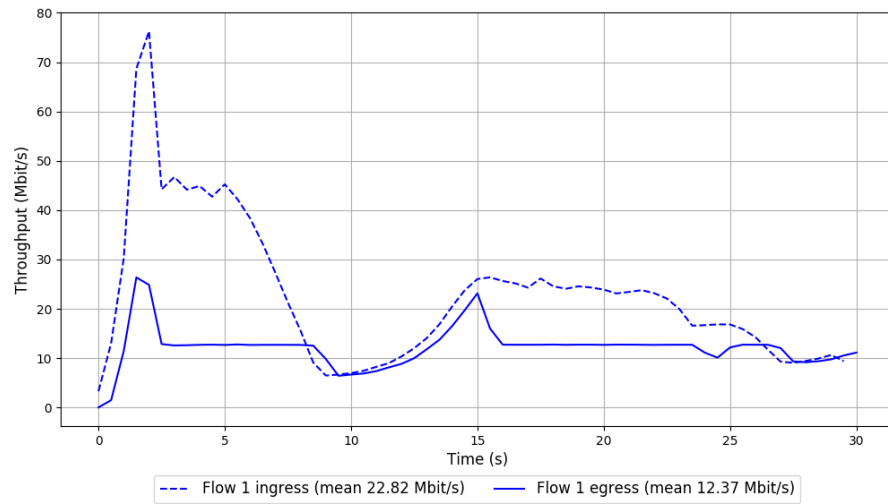


Run 2: Statistics of PCC-Expr

Start at: 2018-10-09 18:29:47
End at: 2018-10-09 18:30:17
Local clock offset: -0.723 ms
Remote clock offset: -0.023 ms

Below is generated by plot.py at 2018-10-09 19:47:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.37 Mbit/s
95th percentile per-packet one-way delay: 79.559 ms
Loss rate: 45.81%
-- Flow 1:
Average throughput: 12.37 Mbit/s
95th percentile per-packet one-way delay: 79.559 ms
Loss rate: 45.81%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-10-09 18:50:56

End at: 2018-10-09 18:51:26

Local clock offset: 0.118 ms

Remote clock offset: 0.985 ms

Below is generated by plot.py at 2018-10-09 19:47:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.98 Mbit/s

95th percentile per-packet one-way delay: 81.259 ms

Loss rate: 54.56%

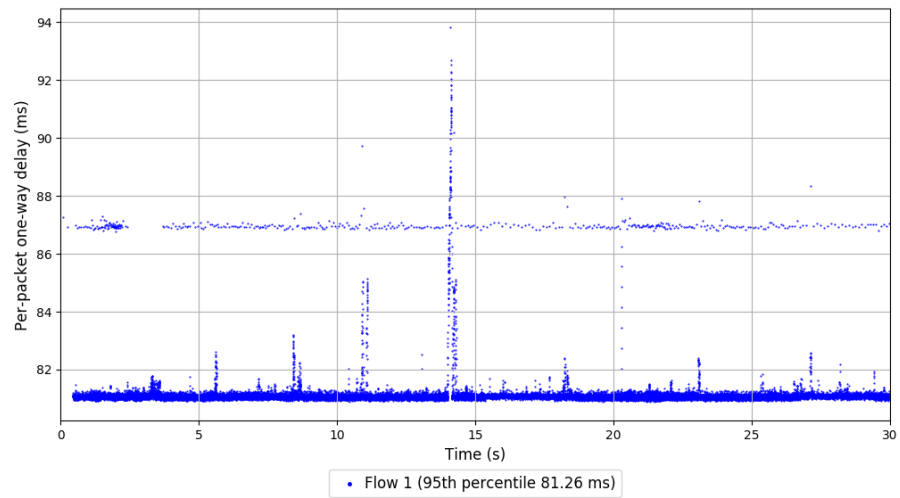
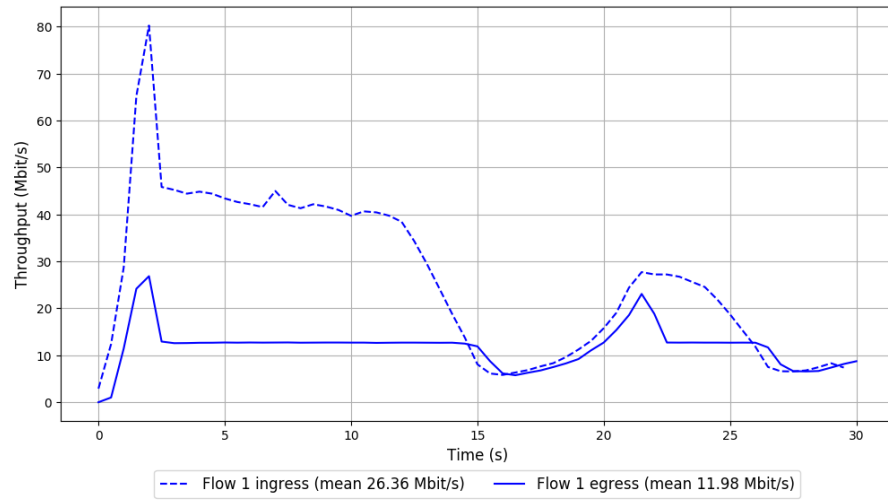
-- Flow 1:

Average throughput: 11.98 Mbit/s

95th percentile per-packet one-way delay: 81.259 ms

Loss rate: 54.56%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-10-09 19:11:57

End at: 2018-10-09 19:12:27

Local clock offset: -0.266 ms

Remote clock offset: 6.906 ms

Below is generated by plot.py at 2018-10-09 19:47:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.42 Mbit/s

95th percentile per-packet one-way delay: 86.280 ms

Loss rate: 60.58%

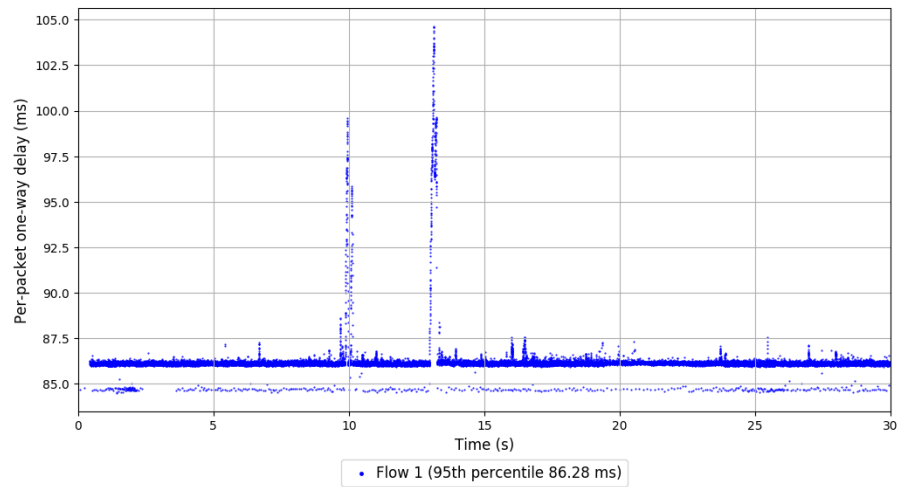
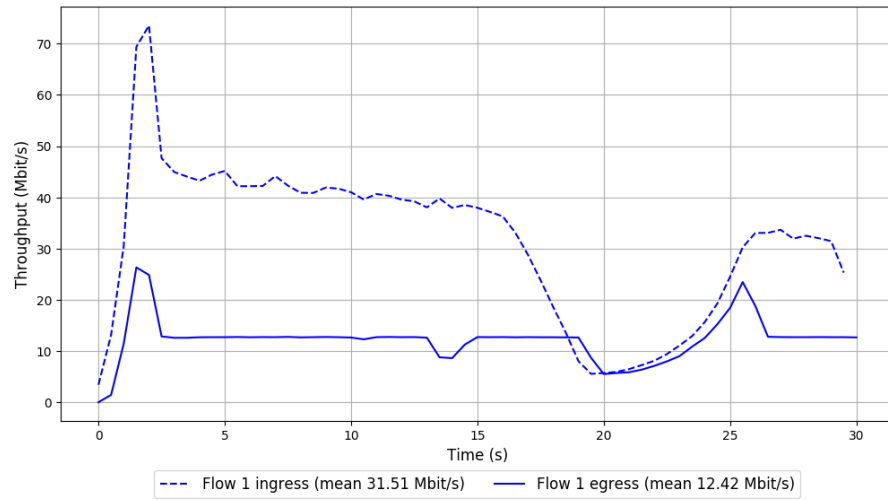
-- Flow 1:

Average throughput: 12.42 Mbit/s

95th percentile per-packet one-way delay: 86.280 ms

Loss rate: 60.58%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-09 19:33:09

End at: 2018-10-09 19:33:39

Local clock offset: -0.848 ms

Remote clock offset: 2.264 ms

Below is generated by plot.py at 2018-10-09 19:47:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.41 Mbit/s

95th percentile per-packet one-way delay: 81.291 ms

Loss rate: 32.91%

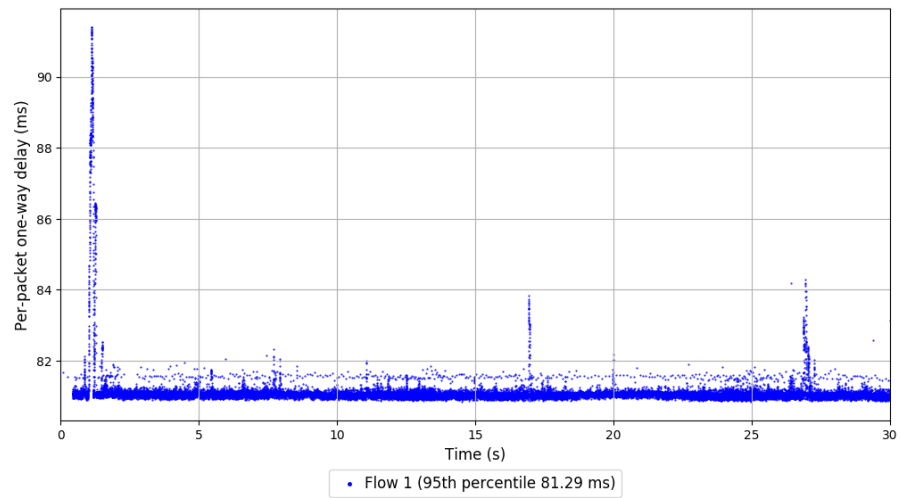
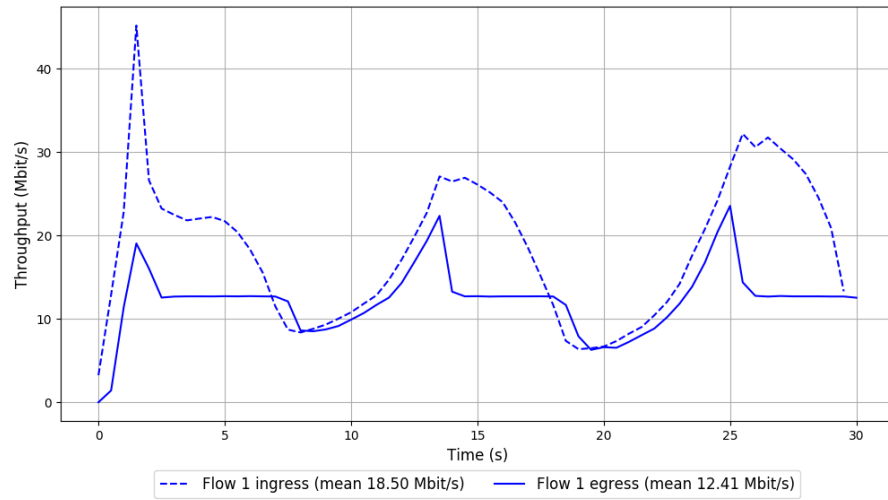
-- Flow 1:

Average throughput: 12.41 Mbit/s

95th percentile per-packet one-way delay: 81.291 ms

Loss rate: 32.91%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-10-09 18:06:21

End at: 2018-10-09 18:06:51

Local clock offset: -1.575 ms

Remote clock offset: 3.738 ms

Below is generated by plot.py at 2018-10-09 19:47:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.10 Mbit/s

95th percentile per-packet one-way delay: 113.358 ms

Loss rate: 0.56%

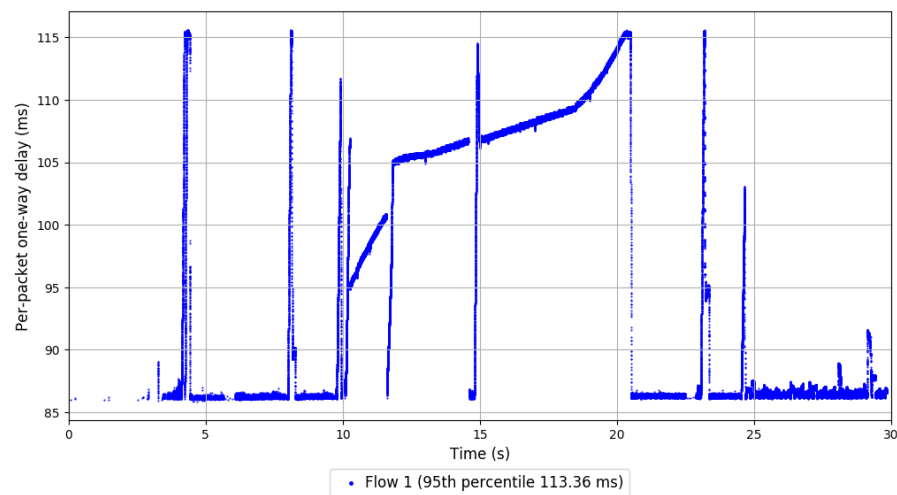
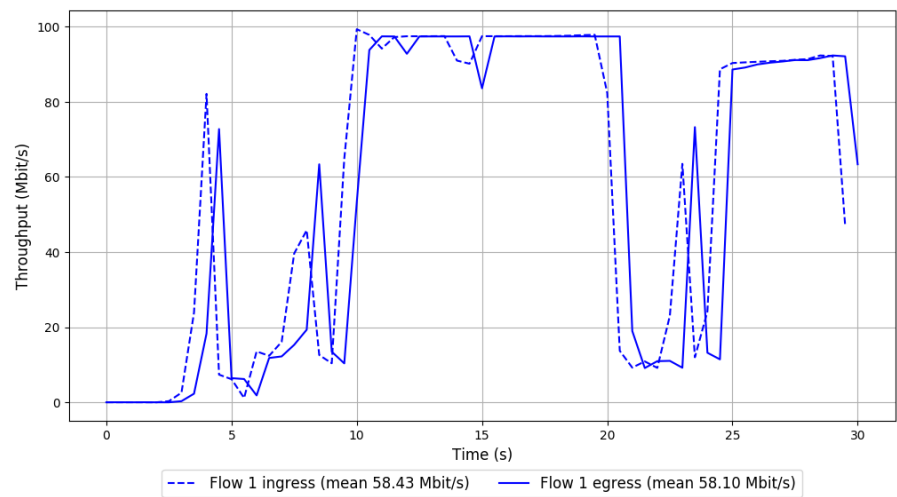
-- Flow 1:

Average throughput: 58.10 Mbit/s

95th percentile per-packet one-way delay: 113.358 ms

Loss rate: 0.56%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-09 18:27:27

End at: 2018-10-09 18:27:57

Local clock offset: -0.741 ms

Remote clock offset: -0.332 ms

Below is generated by plot.py at 2018-10-09 19:47:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 70.69 Mbit/s

95th percentile per-packet one-way delay: 103.856 ms

Loss rate: 0.42%

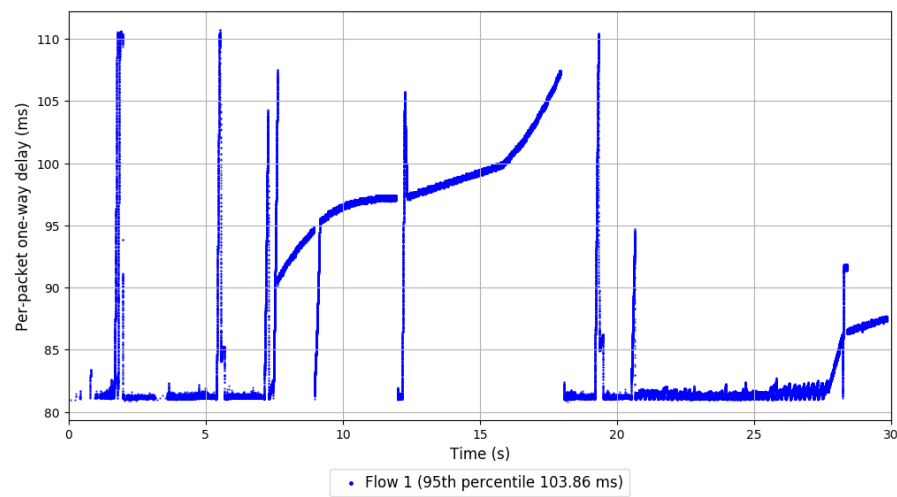
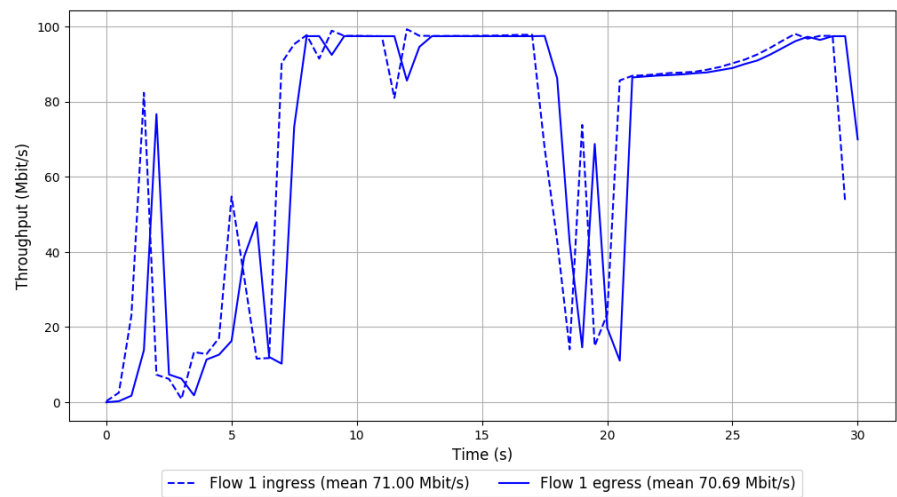
-- Flow 1:

Average throughput: 70.69 Mbit/s

95th percentile per-packet one-way delay: 103.856 ms

Loss rate: 0.42%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-10-09 18:48:36

End at: 2018-10-09 18:49:06

Local clock offset: -0.004 ms

Remote clock offset: 0.991 ms

Below is generated by plot.py at 2018-10-09 19:47:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 70.83 Mbit/s

95th percentile per-packet one-way delay: 102.275 ms

Loss rate: 0.36%

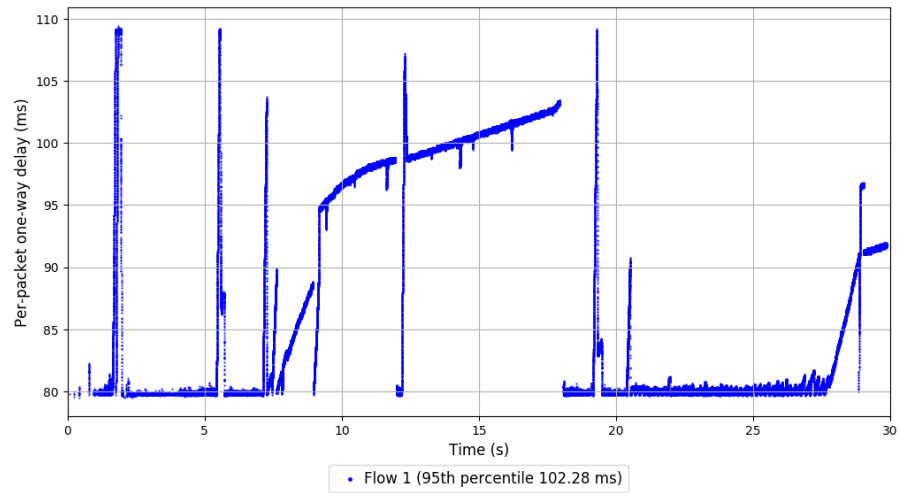
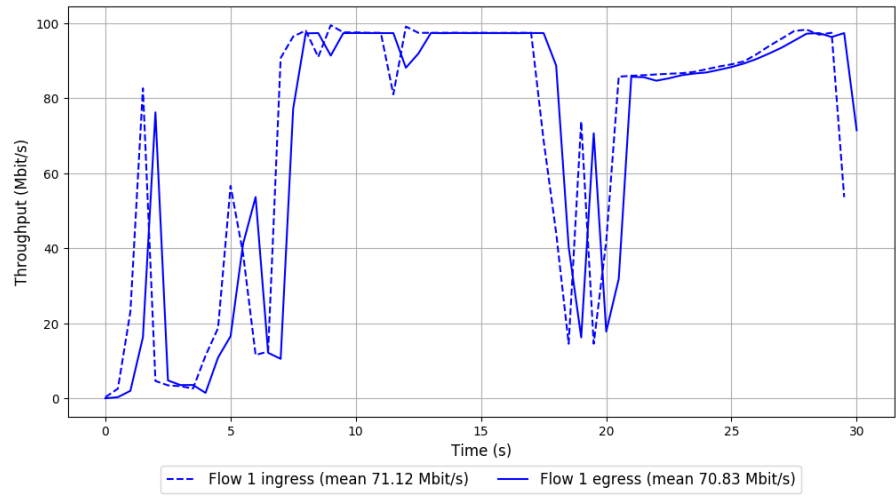
-- Flow 1:

Average throughput: 70.83 Mbit/s

95th percentile per-packet one-way delay: 102.275 ms

Loss rate: 0.36%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-10-09 19:09:37

End at: 2018-10-09 19:10:08

Local clock offset: -0.365 ms

Remote clock offset: 7.82 ms

Below is generated by plot.py at 2018-10-09 19:47:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 57.72 Mbit/s

95th percentile per-packet one-way delay: 102.307 ms

Loss rate: 0.50%

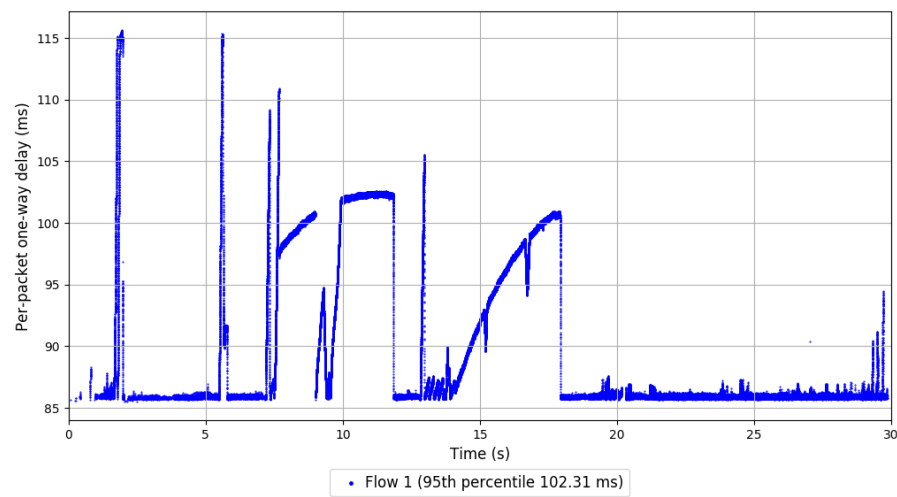
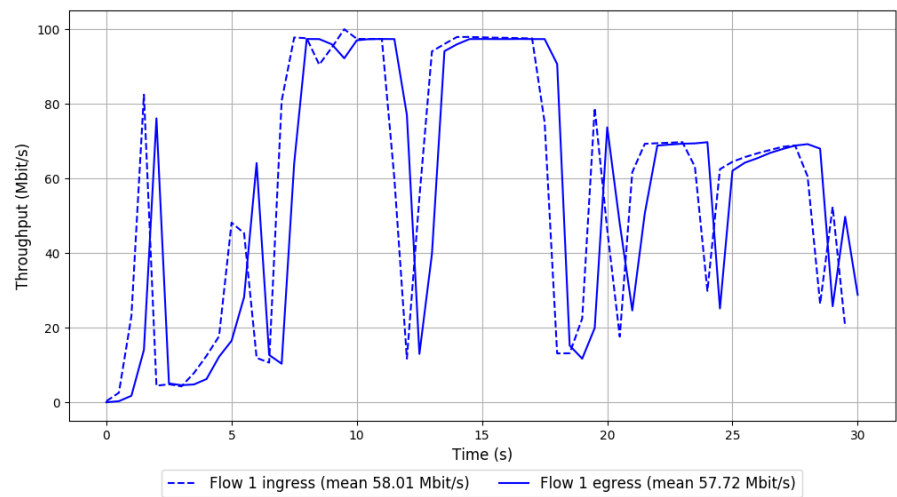
-- Flow 1:

Average throughput: 57.72 Mbit/s

95th percentile per-packet one-way delay: 102.307 ms

Loss rate: 0.50%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-09 19:30:40

End at: 2018-10-09 19:31:10

Local clock offset: -0.675 ms

Remote clock offset: 8.269 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.29 Mbit/s

95th percentile per-packet one-way delay: 114.410 ms

Loss rate: 0.50%

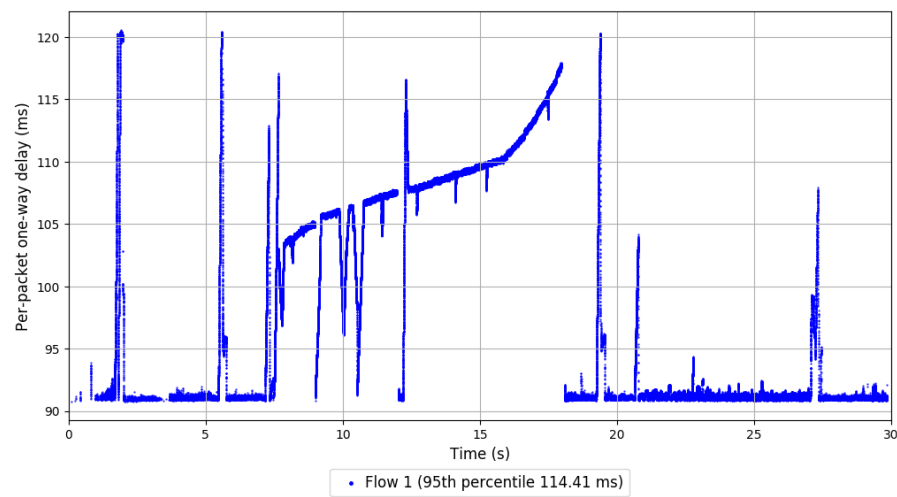
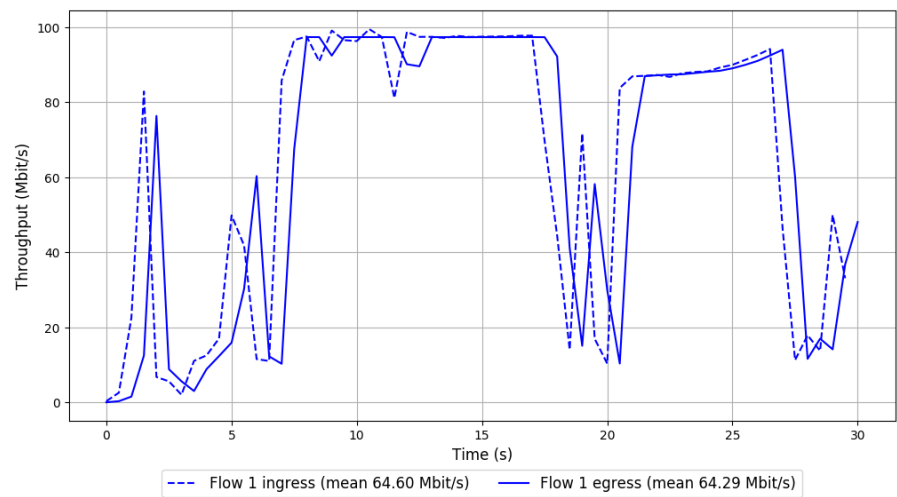
-- Flow 1:

Average throughput: 64.29 Mbit/s

95th percentile per-packet one-way delay: 114.410 ms

Loss rate: 0.50%

Run 5: Report of QUIC Cubic — Data Link

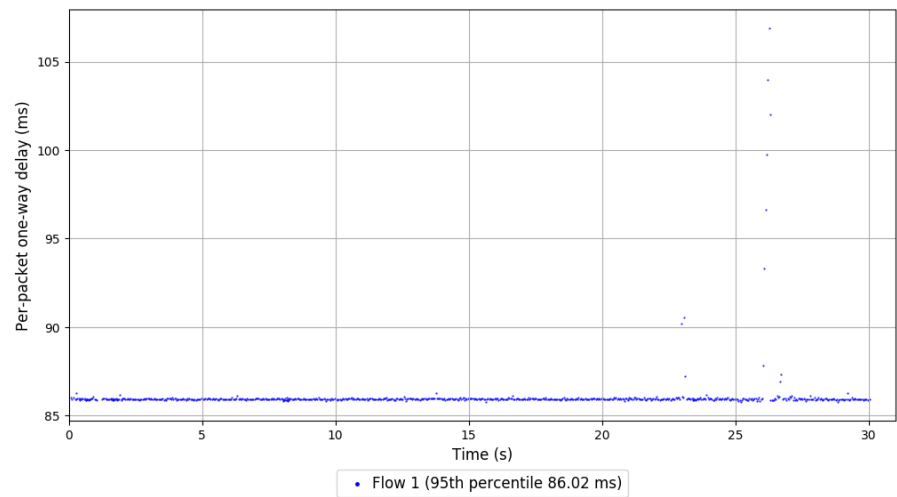
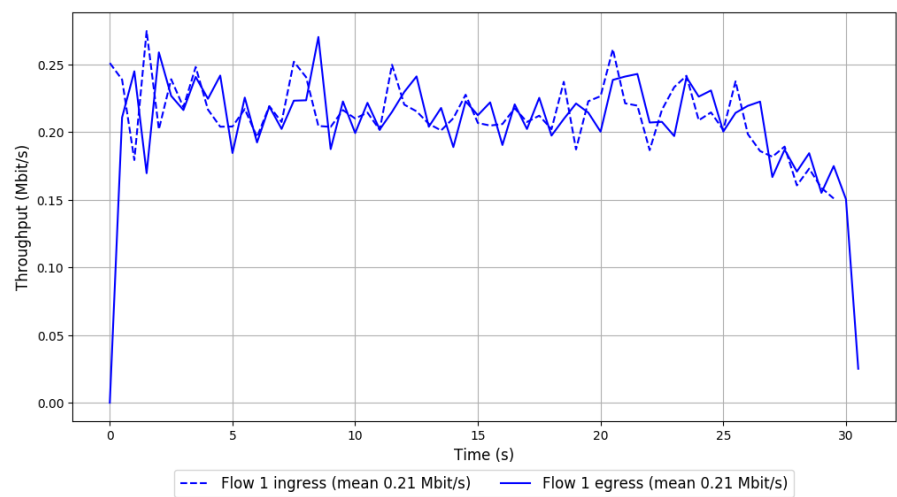


```
Run 1: Statistics of SCReAM

Start at: 2018-10-09 18:01:44
End at: 2018-10-09 18:02:14
Local clock offset: -2.181 ms
Remote clock offset: 2.696 ms

# Below is generated by plot.py at 2018-10-09 19:47:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 86.021 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 86.021 ms
Loss rate: 0.12%
```

Run 1: Report of SReAM — Data Link

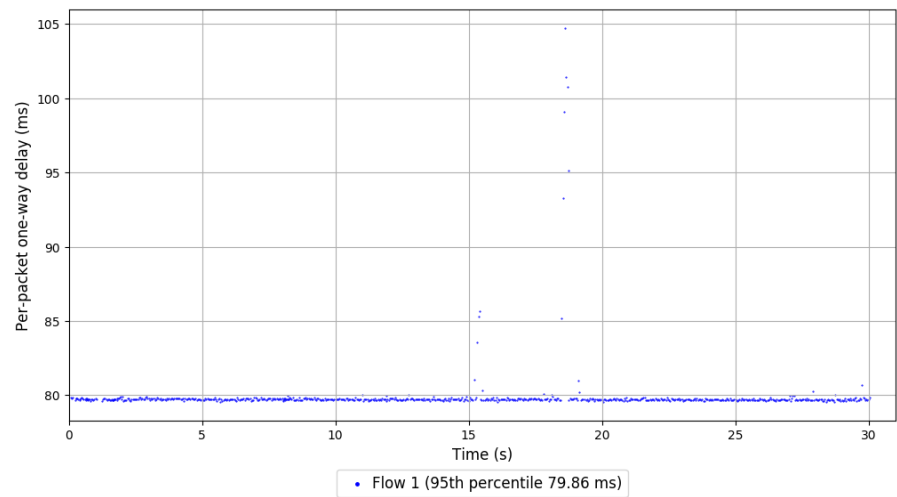
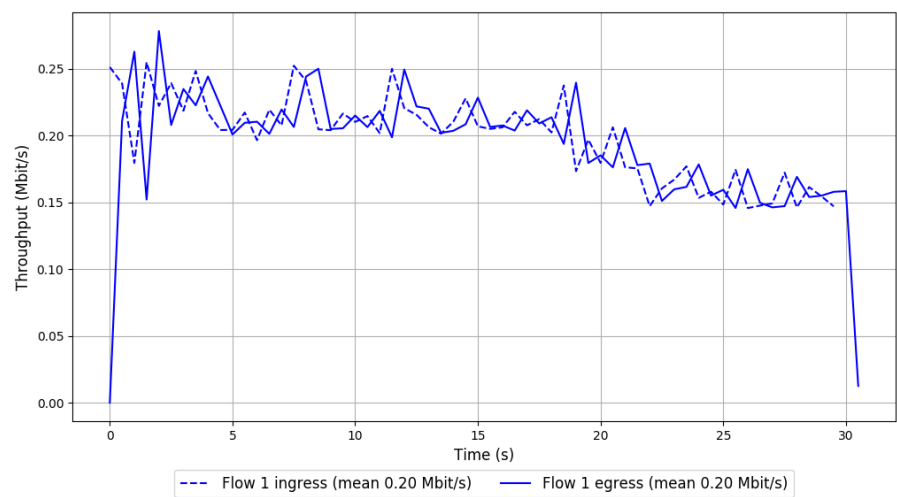


Run 2: Statistics of SCReAM

Start at: 2018-10-09 18:22:52
End at: 2018-10-09 18:23:22
Local clock offset: -0.719 ms
Remote clock offset: -0.979 ms

Below is generated by plot.py at 2018-10-09 19:47:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 79.855 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 79.855 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-10-09 18:44:01

End at: 2018-10-09 18:44:31

Local clock offset: -0.275 ms

Remote clock offset: 5.589 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 84.397 ms

Loss rate: 0.16%

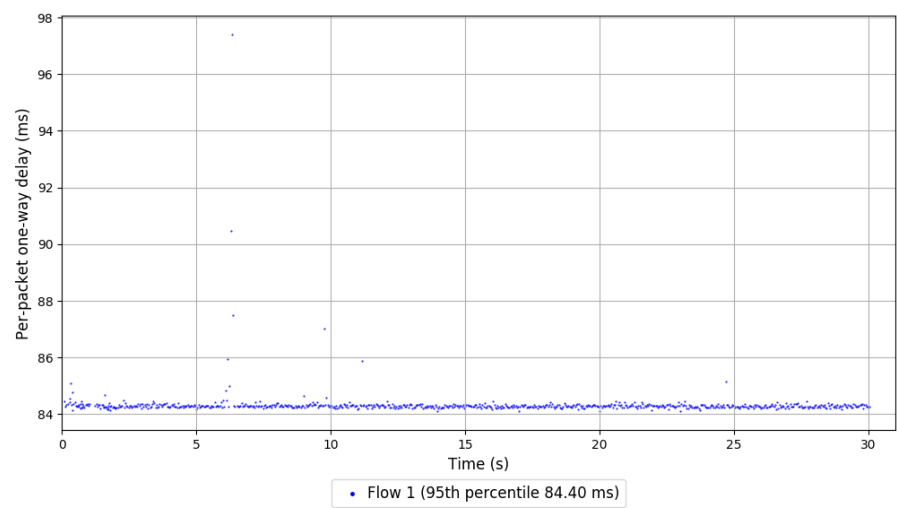
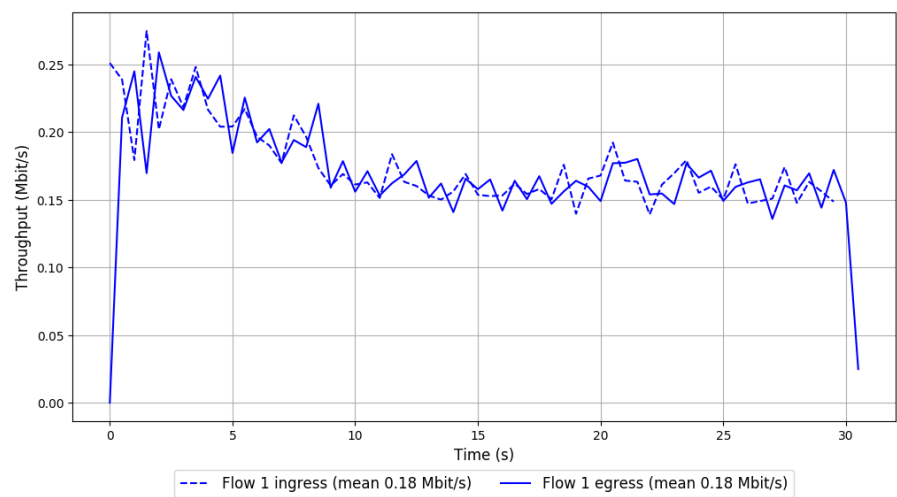
-- Flow 1:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 84.397 ms

Loss rate: 0.16%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-10-09 19:05:04

End at: 2018-10-09 19:05:34

Local clock offset: -0.355 ms

Remote clock offset: 6.7 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 90.093 ms

Loss rate: 0.46%

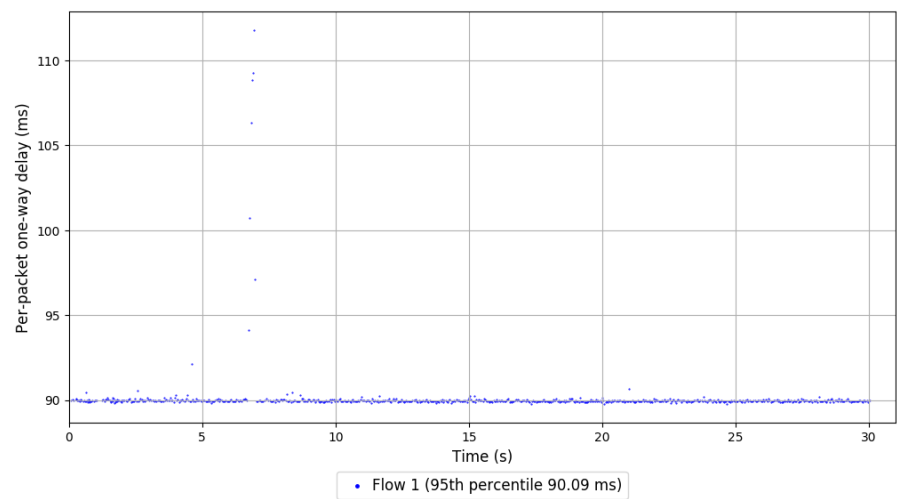
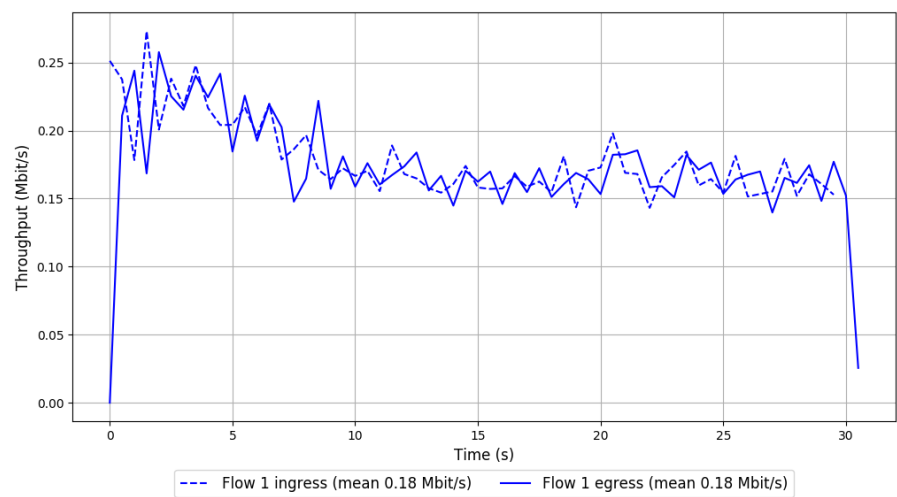
-- Flow 1:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 90.093 ms

Loss rate: 0.46%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-10-09 19:26:03

End at: 2018-10-09 19:26:33

Local clock offset: -0.047 ms

Remote clock offset: 8.18 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 85.734 ms

Loss rate: 0.49%

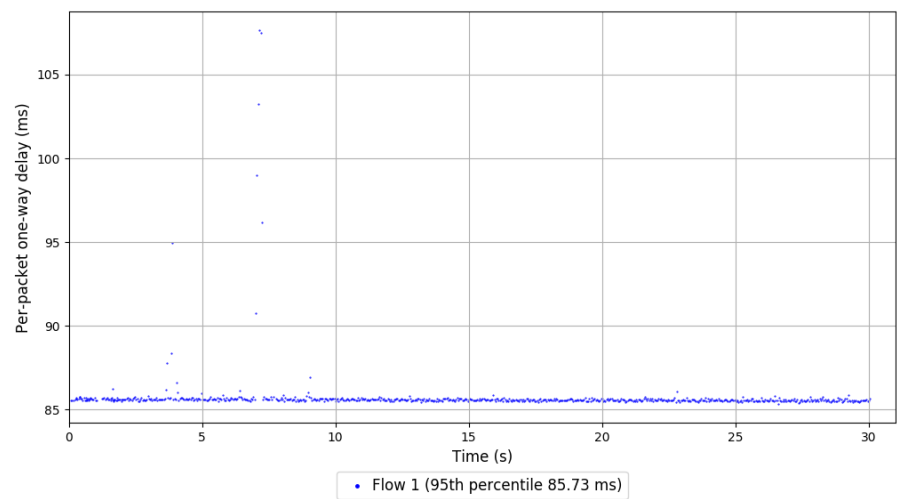
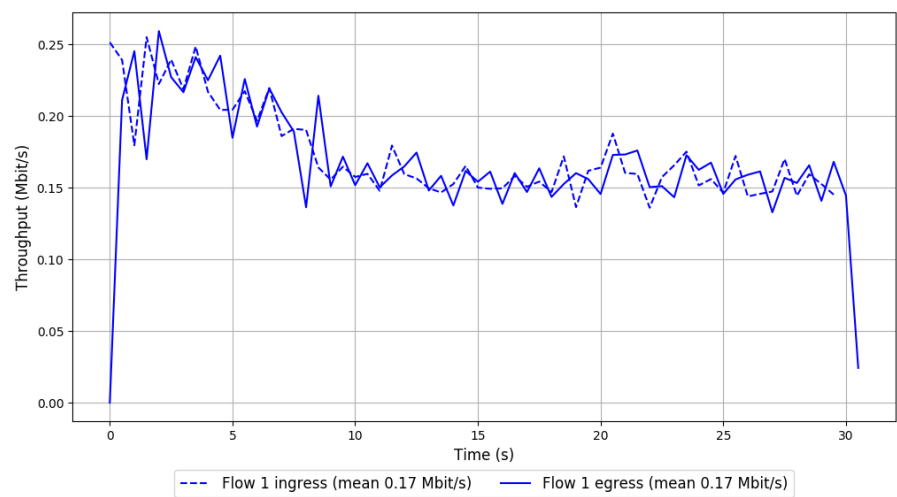
-- Flow 1:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 85.734 ms

Loss rate: 0.49%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-10-09 18:11:09

End at: 2018-10-09 18:11:39

Local clock offset: -0.856 ms

Remote clock offset: 1.478 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.91 Mbit/s

95th percentile per-packet one-way delay: 91.021 ms

Loss rate: 0.13%

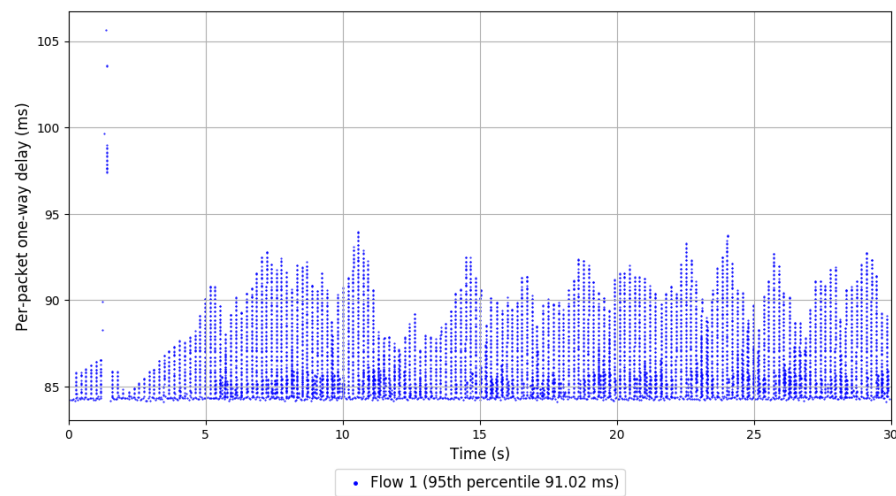
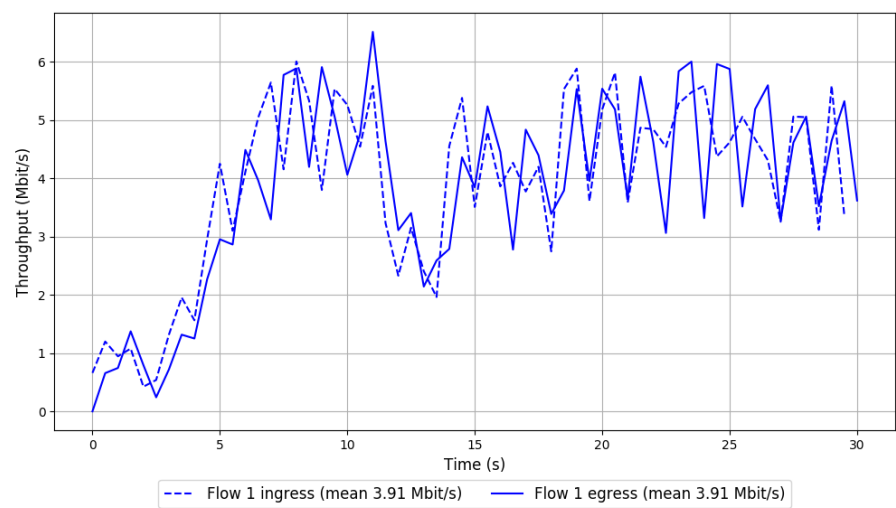
-- Flow 1:

Average throughput: 3.91 Mbit/s

95th percentile per-packet one-way delay: 91.021 ms

Loss rate: 0.13%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-10-09 18:32:07

End at: 2018-10-09 18:32:37

Local clock offset: -0.701 ms

Remote clock offset: 0.014 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.04 Mbit/s

95th percentile per-packet one-way delay: 86.607 ms

Loss rate: 0.49%

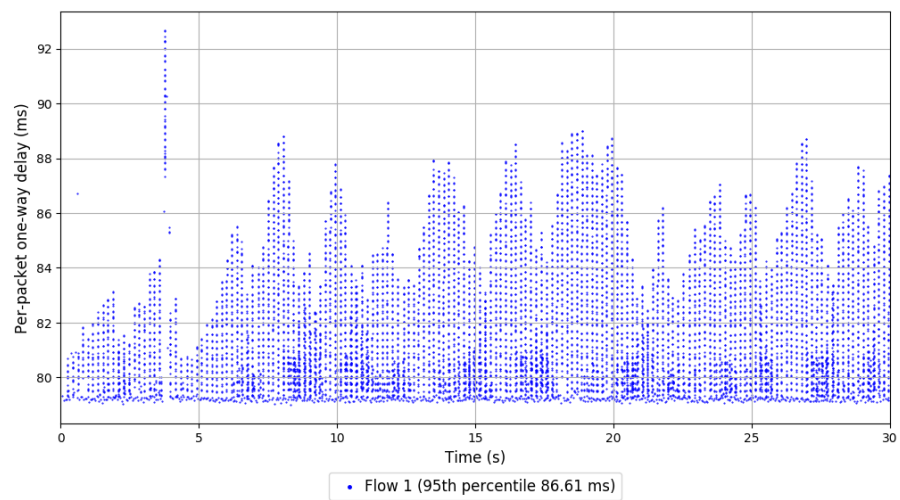
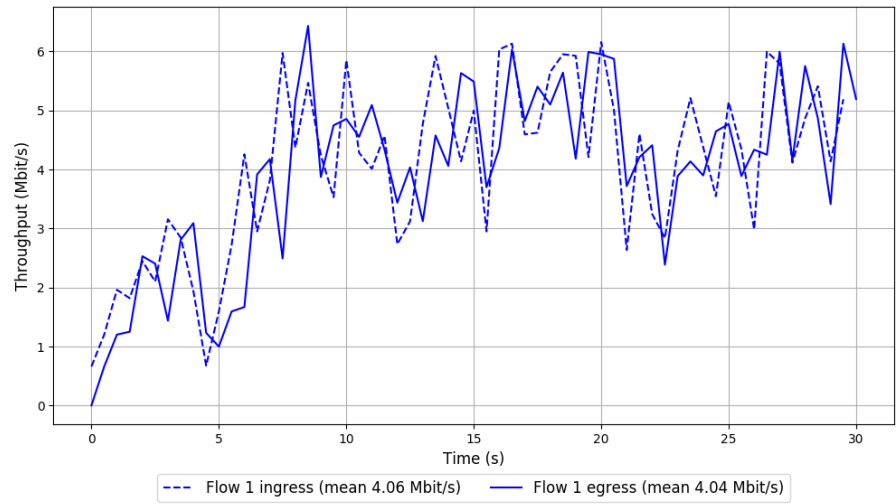
-- Flow 1:

Average throughput: 4.04 Mbit/s

95th percentile per-packet one-way delay: 86.607 ms

Loss rate: 0.49%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-10-09 18:53:17

End at: 2018-10-09 18:53:47

Local clock offset: 0.242 ms

Remote clock offset: 2.387 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.76 Mbit/s

95th percentile per-packet one-way delay: 88.762 ms

Loss rate: 0.00%

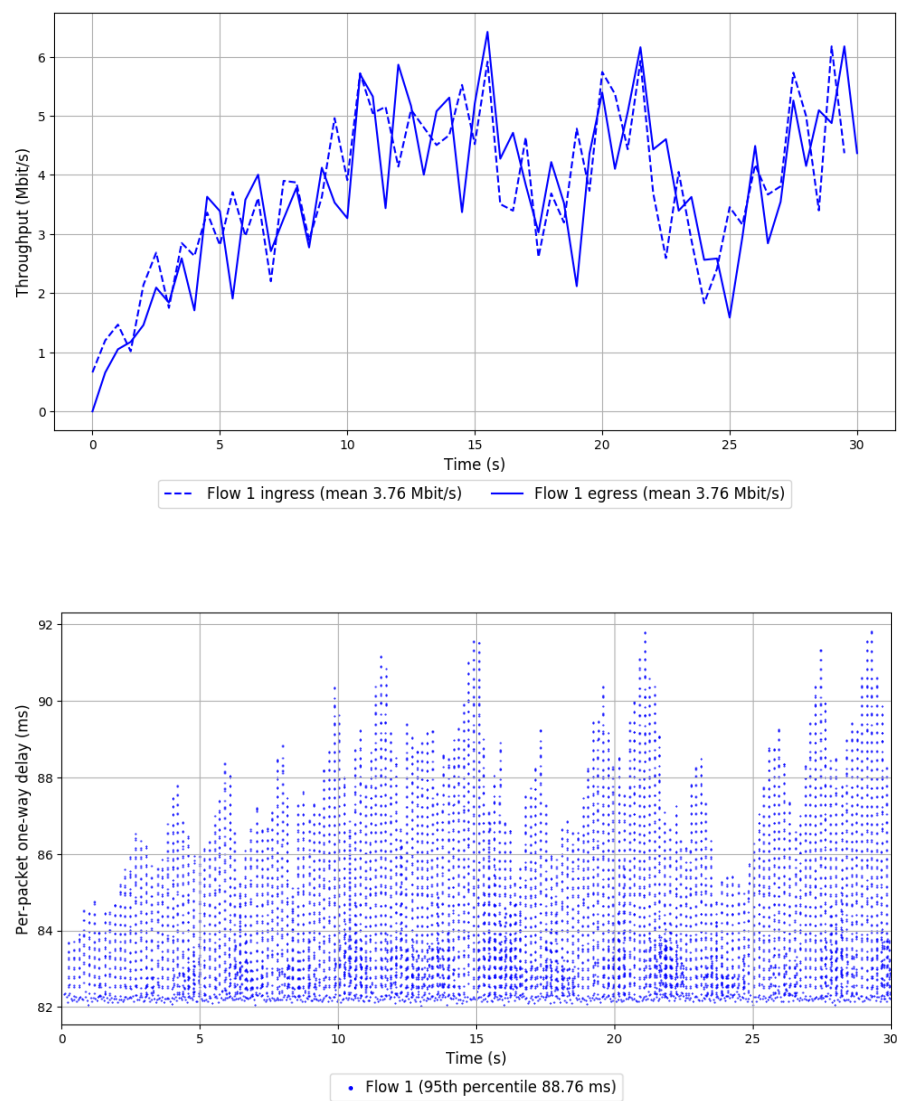
-- Flow 1:

Average throughput: 3.76 Mbit/s

95th percentile per-packet one-way delay: 88.762 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

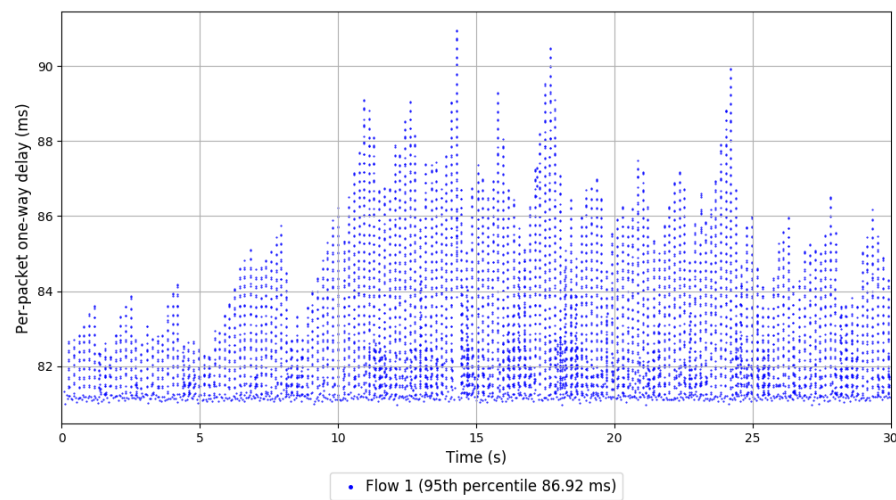
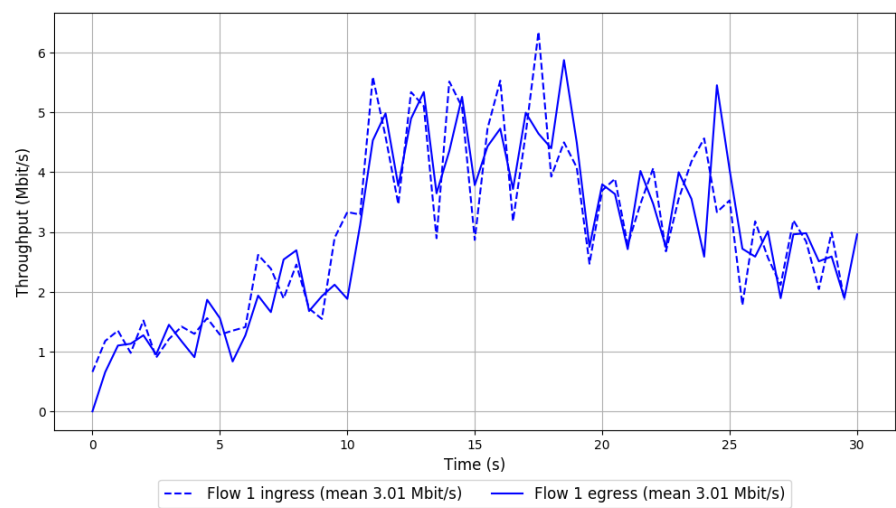


Run 4: Statistics of Sprout

Start at: 2018-10-09 19:14:18
End at: 2018-10-09 19:14:48
Local clock offset: -0.269 ms
Remote clock offset: 1.919 ms

Below is generated by plot.py at 2018-10-09 19:47:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-10-09 19:35:35

End at: 2018-10-09 19:36:05

Local clock offset: -0.932 ms

Remote clock offset: 8.228 ms

Below is generated by plot.py at 2018-10-09 19:47:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.52 Mbit/s

95th percentile per-packet one-way delay: 92.914 ms

Loss rate: 0.00%

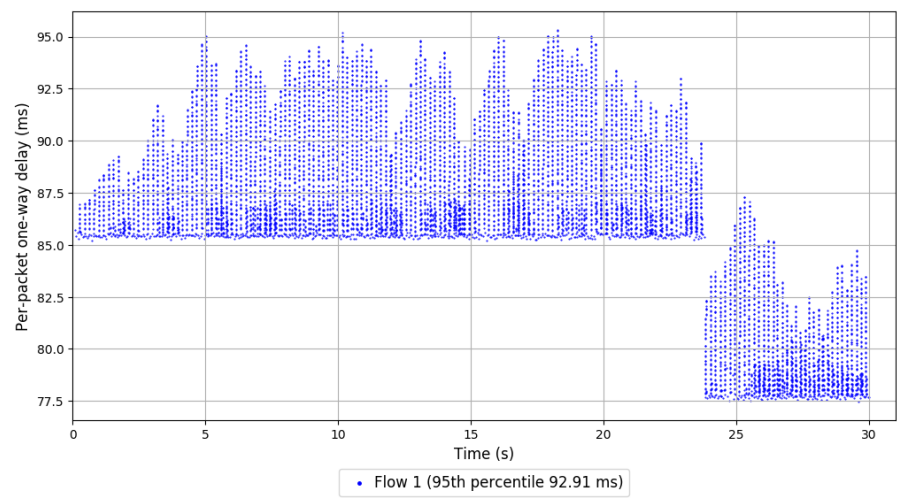
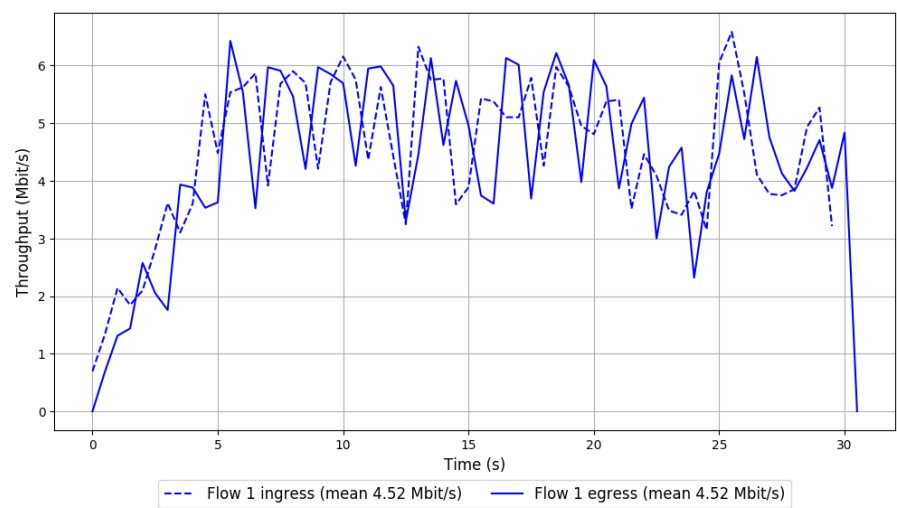
-- Flow 1:

Average throughput: 4.52 Mbit/s

95th percentile per-packet one-way delay: 92.914 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

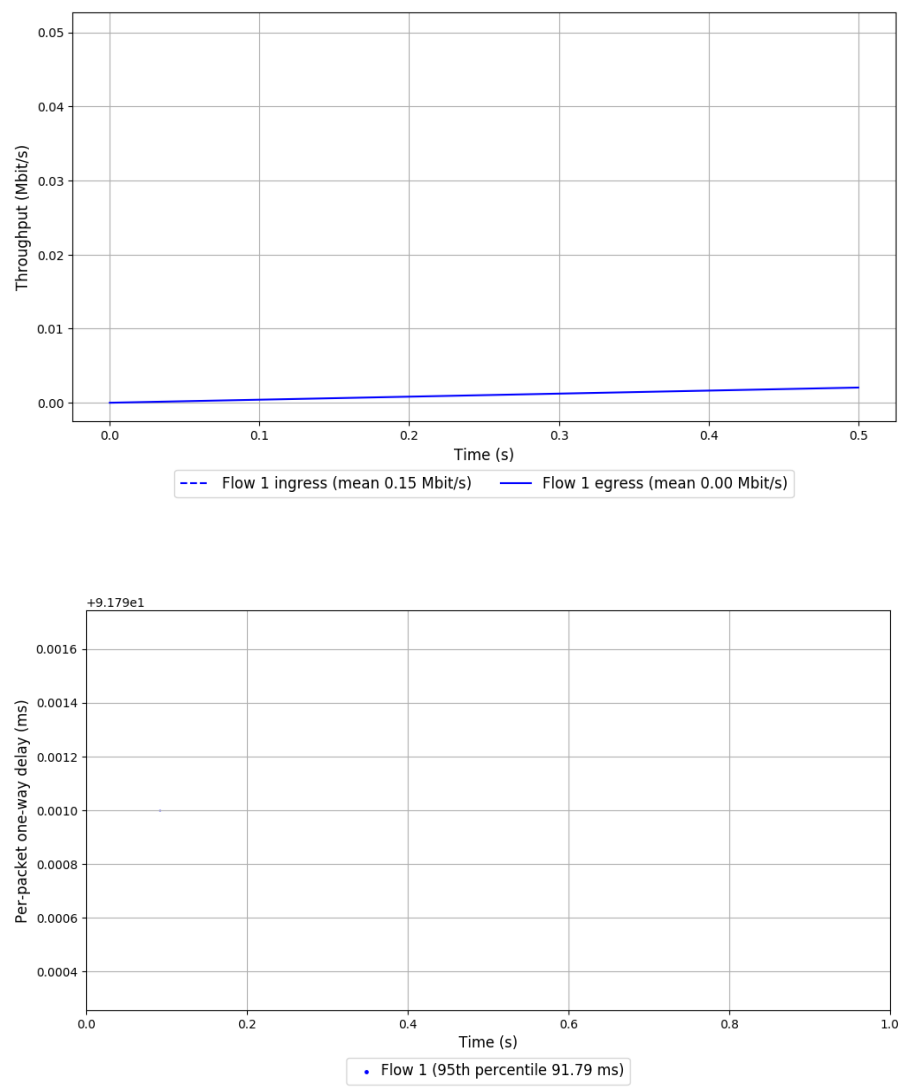
Start at: 2018-10-09 18:05:13

End at: 2018-10-09 18:05:43

Local clock offset: -1.731 ms

Remote clock offset: 2.625 ms

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



Run 2: Statistics of TaoVA-100x

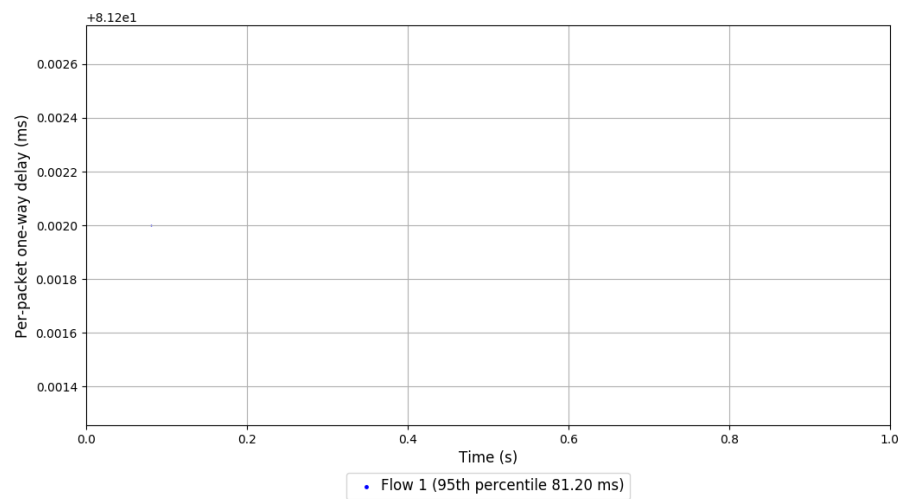
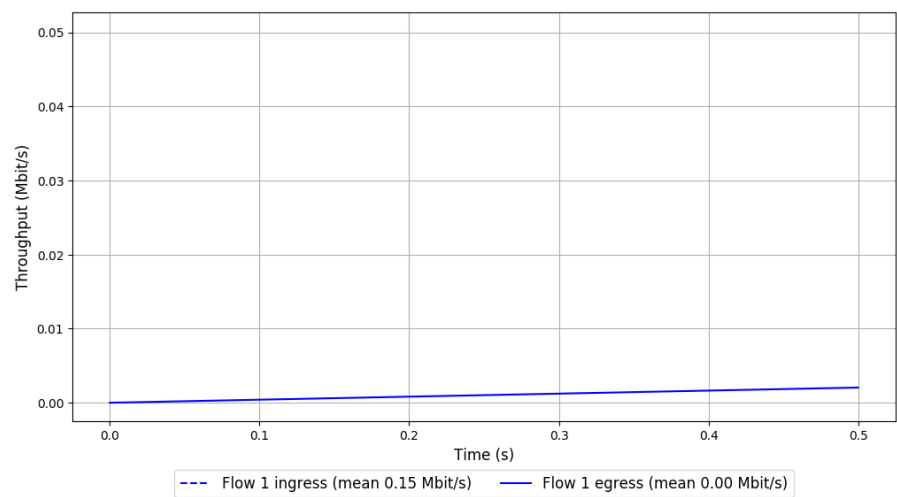
Start at: 2018-10-09 18:26:20

End at: 2018-10-09 18:26:50

Local clock offset: -0.622 ms

Remote clock offset: -0.536 ms

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



Run 3: Statistics of TaoVA-100x

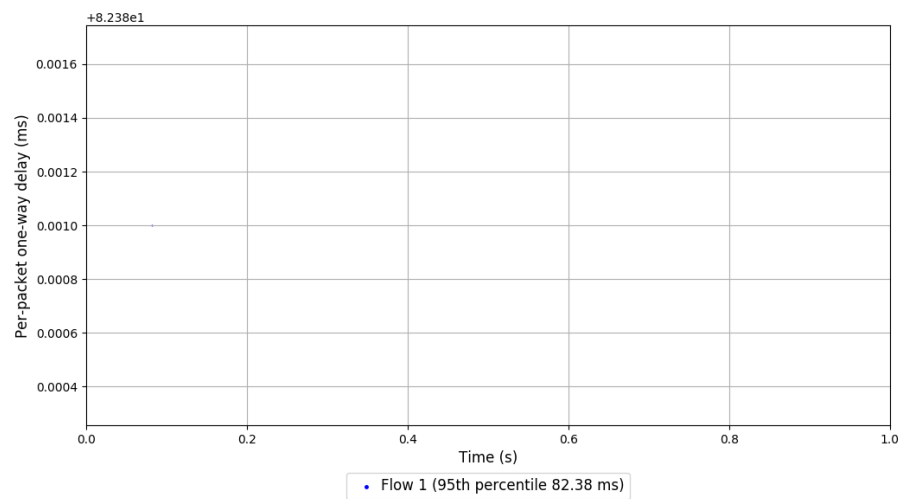
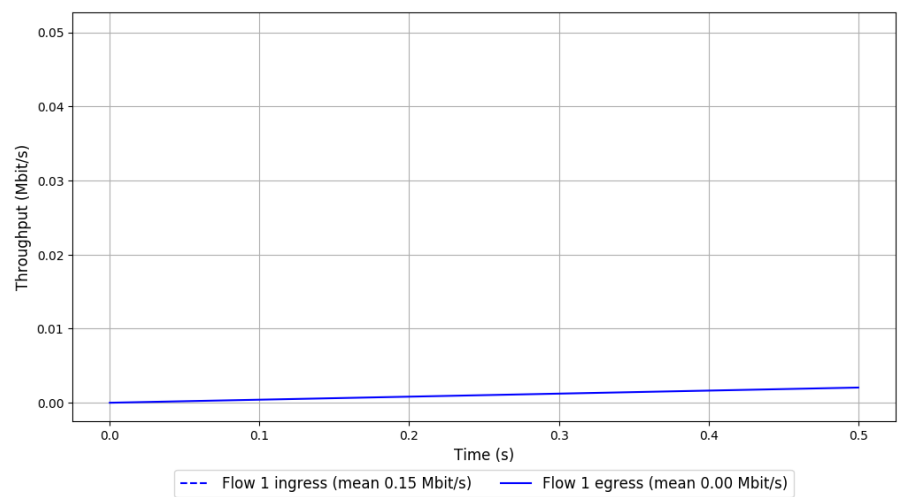
Start at: 2018-10-09 18:47:29

End at: 2018-10-09 18:47:59

Local clock offset: -0.069 ms

Remote clock offset: 2.02 ms

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



Run 4: Statistics of TaoVA-100x

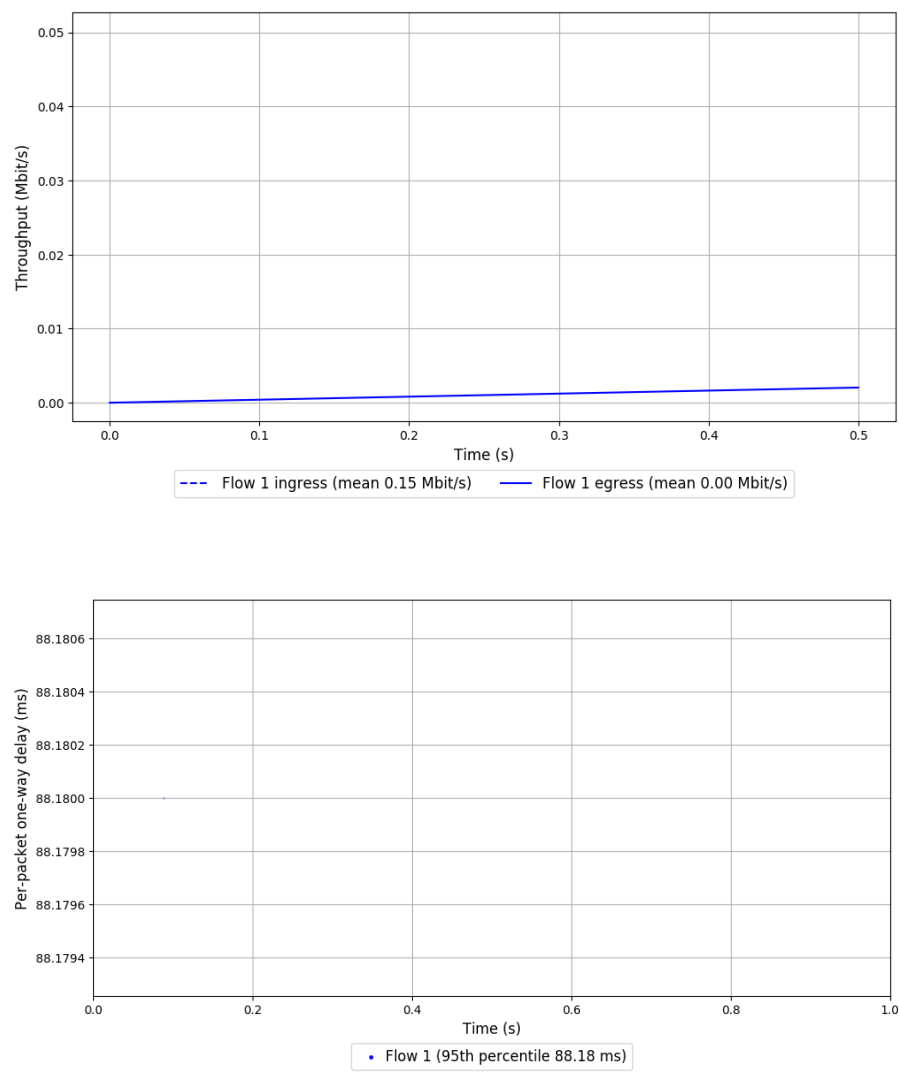
Start at: 2018-10-09 19:08:30

End at: 2018-10-09 19:09:00

Local clock offset: -0.297 ms

Remote clock offset: 3.032 ms

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



Run 5: Statistics of TaoVA-100x

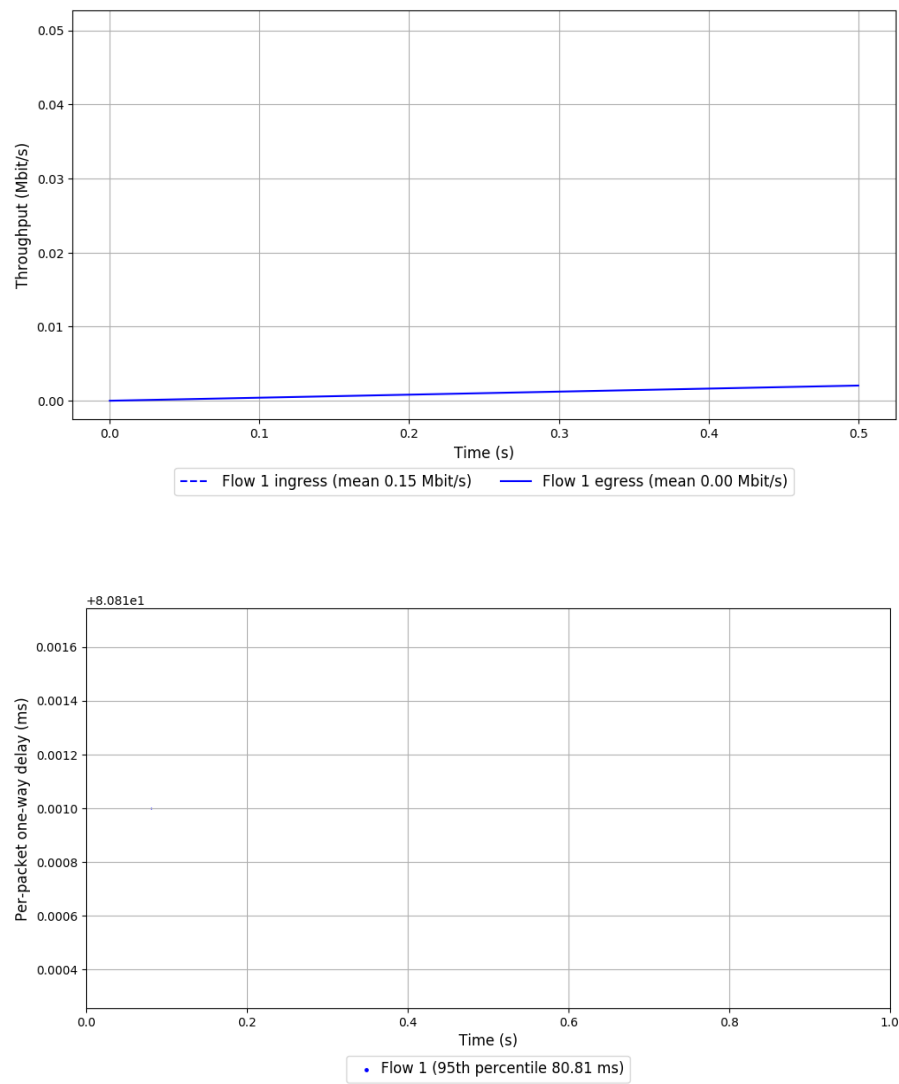
Start at: 2018-10-09 19:29:33

End at: 2018-10-09 19:30:03

Local clock offset: -0.507 ms

Remote clock offset: 3.327 ms

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



Run 1: Statistics of TCP Vegas

Start at: 2018-10-09 18:02:51

End at: 2018-10-09 18:03:21

Local clock offset: -2.158 ms

Remote clock offset: 1.688 ms

Below is generated by plot.py at 2018-10-09 19:48:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 51.78 Mbit/s

95th percentile per-packet one-way delay: 88.117 ms

Loss rate: 0.82%

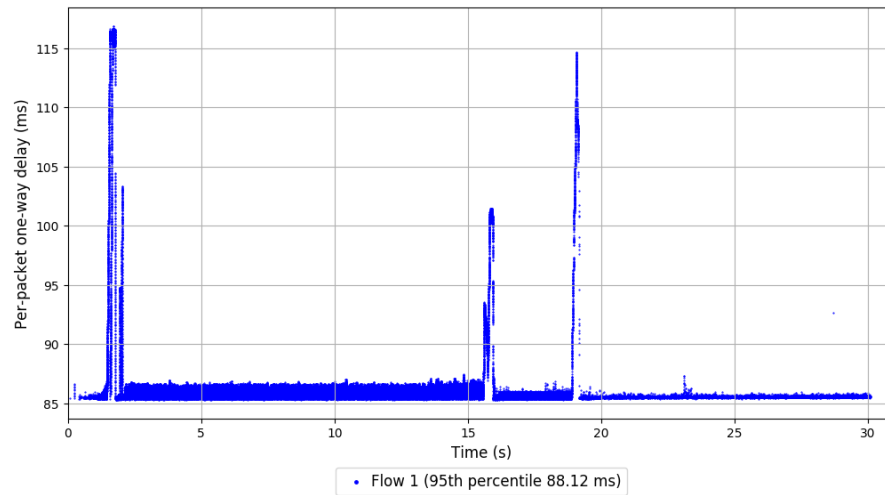
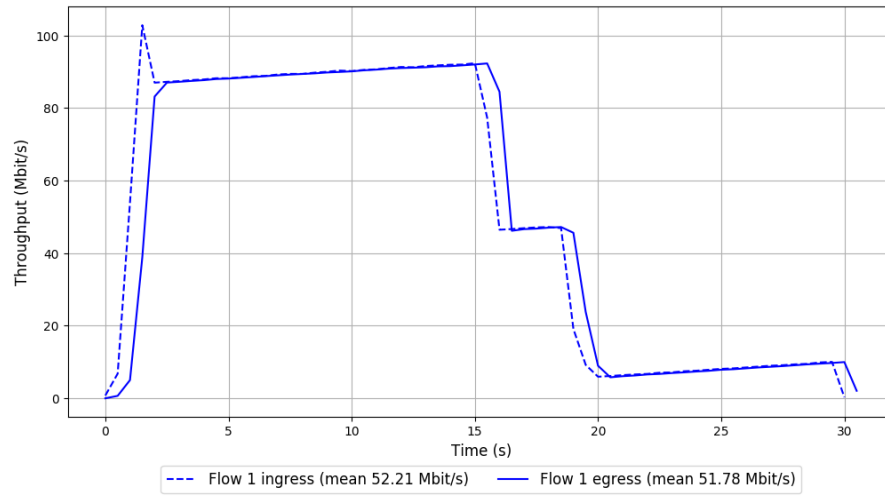
-- Flow 1:

Average throughput: 51.78 Mbit/s

95th percentile per-packet one-way delay: 88.117 ms

Loss rate: 0.82%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-10-09 18:23:59

End at: 2018-10-09 18:24:29

Local clock offset: -0.62 ms

Remote clock offset: 5.215 ms

Below is generated by plot.py at 2018-10-09 19:48:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 29.46 Mbit/s

95th percentile per-packet one-way delay: 92.030 ms

Loss rate: 1.39%

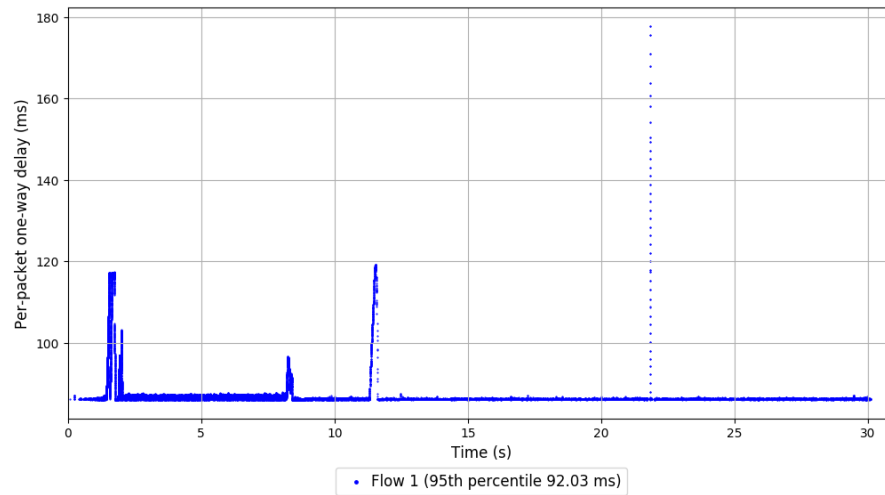
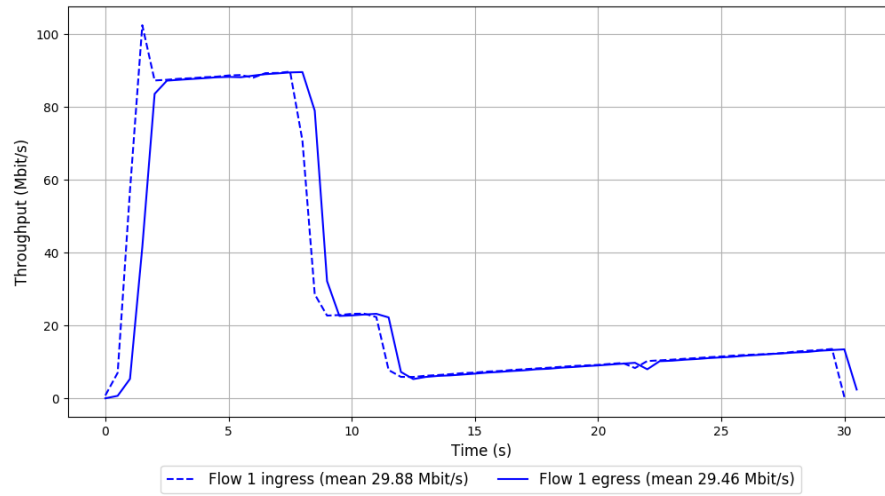
-- Flow 1:

Average throughput: 29.46 Mbit/s

95th percentile per-packet one-way delay: 92.030 ms

Loss rate: 1.39%

Run 2: Report of TCP Vegas — Data Link

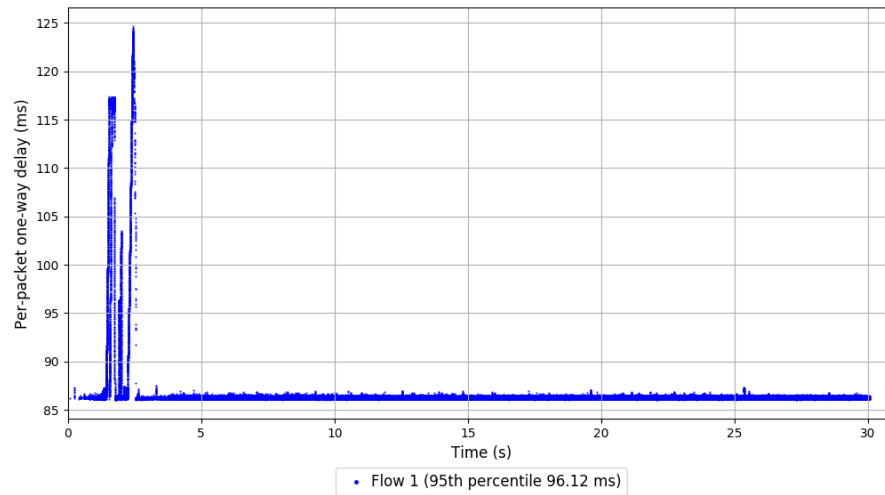
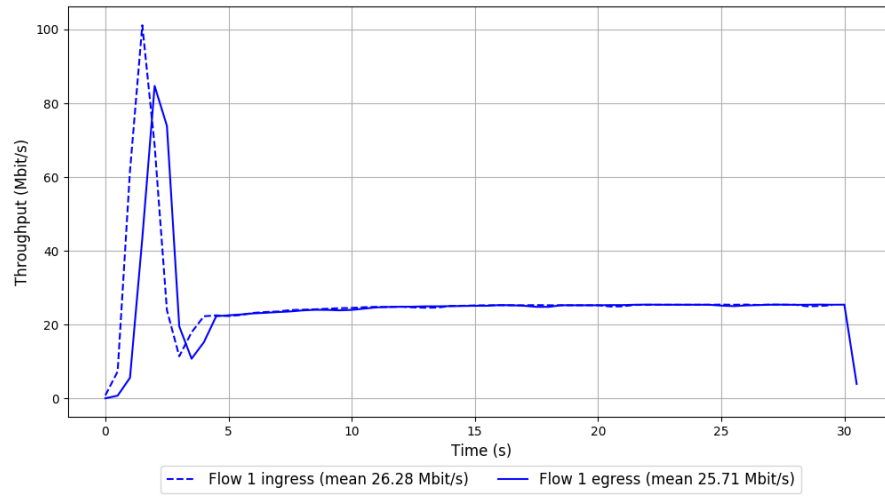


Run 3: Statistics of TCP Vegas

Start at: 2018-10-09 18:45:08
End at: 2018-10-09 18:45:38
Local clock offset: -0.277 ms
Remote clock offset: 5.694 ms

Below is generated by plot.py at 2018-10-09 19:48:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 25.71 Mbit/s
95th percentile per-packet one-way delay: 96.117 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 25.71 Mbit/s
95th percentile per-packet one-way delay: 96.117 ms
Loss rate: 2.19%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-10-09 19:06:11

End at: 2018-10-09 19:06:41

Local clock offset: -0.308 ms

Remote clock offset: 1.86 ms

Below is generated by plot.py at 2018-10-09 19:48:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.53 Mbit/s

95th percentile per-packet one-way delay: 79.718 ms

Loss rate: 0.04%

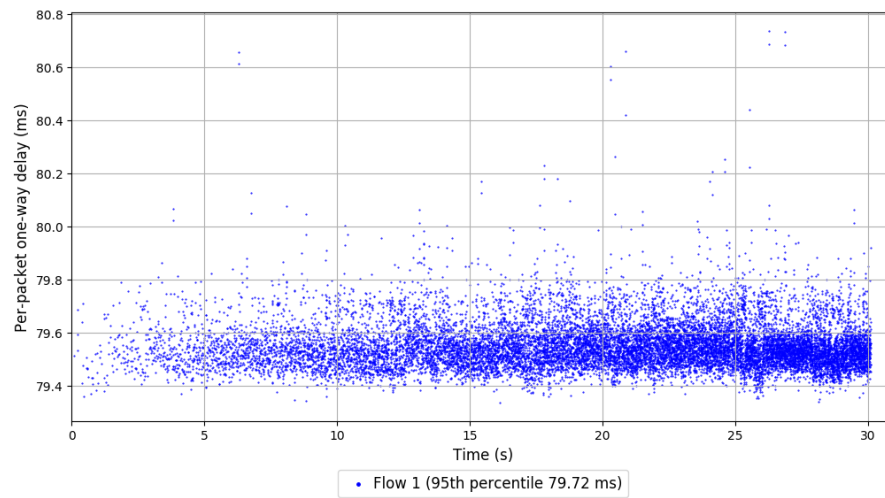
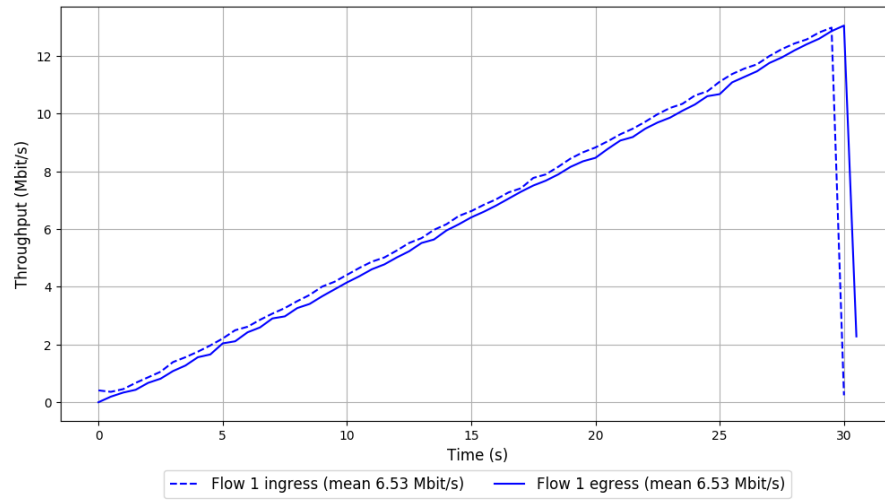
-- Flow 1:

Average throughput: 6.53 Mbit/s

95th percentile per-packet one-way delay: 79.718 ms

Loss rate: 0.04%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-09 19:27:11

End at: 2018-10-09 19:27:41

Local clock offset: -0.276 ms

Remote clock offset: 3.35 ms

Below is generated by plot.py at 2018-10-09 19:48:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.30 Mbit/s

95th percentile per-packet one-way delay: 83.731 ms

Loss rate: 0.63%

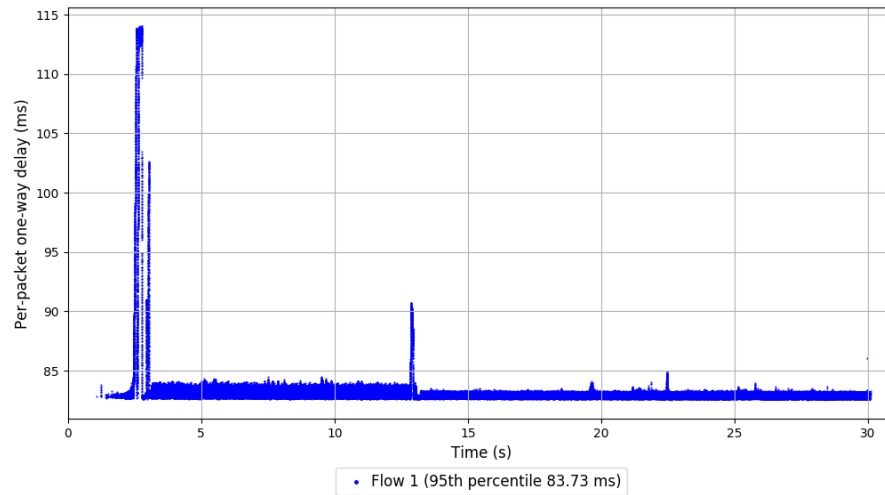
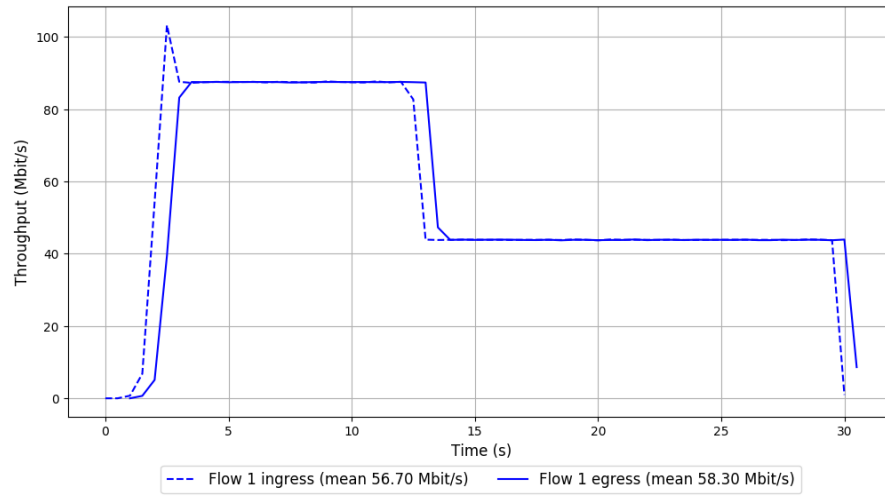
-- Flow 1:

Average throughput: 58.30 Mbit/s

95th percentile per-packet one-way delay: 83.731 ms

Loss rate: 0.63%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-10-09 18:14:42

End at: 2018-10-09 18:15:12

Local clock offset: -1.003 ms

Remote clock offset: 4.238 ms

Below is generated by plot.py at 2018-10-09 19:48:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 29.70 Mbit/s

95th percentile per-packet one-way delay: 118.121 ms

Loss rate: 21.36%

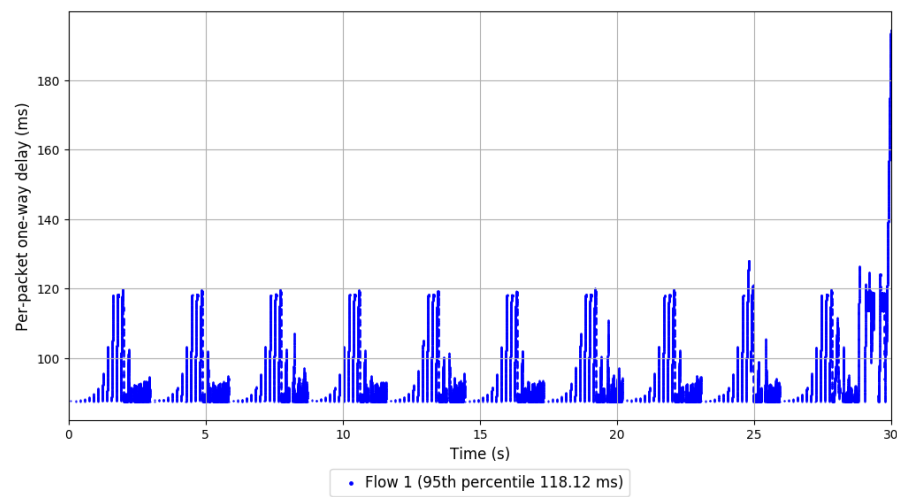
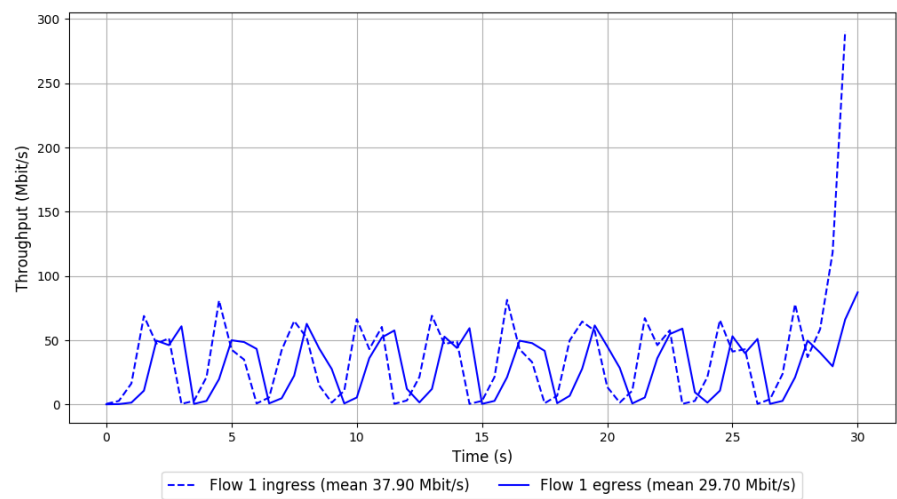
-- Flow 1:

Average throughput: 29.70 Mbit/s

95th percentile per-packet one-way delay: 118.121 ms

Loss rate: 21.36%

Run 1: Report of Verus — Data Link

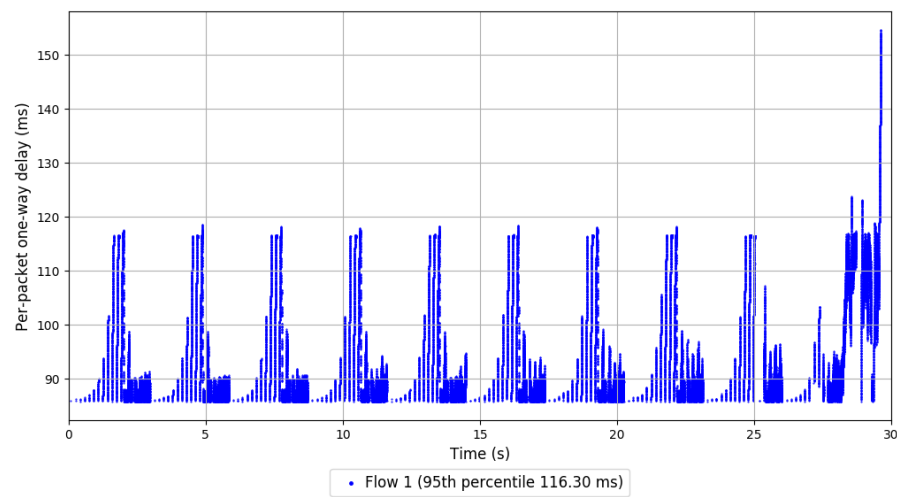
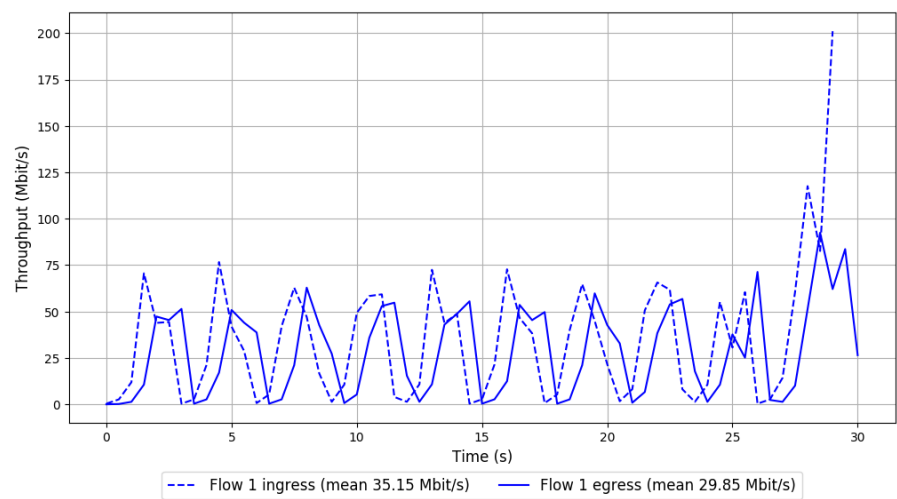


Run 2: Statistics of Verus

Start at: 2018-10-09 18:35:40
End at: 2018-10-09 18:36:10
Local clock offset: -0.619 ms
Remote clock offset: 5.016 ms

Below is generated by plot.py at 2018-10-09 19:48:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 29.85 Mbit/s
95th percentile per-packet one-way delay: 116.298 ms
Loss rate: 14.86%
-- Flow 1:
Average throughput: 29.85 Mbit/s
95th percentile per-packet one-way delay: 116.298 ms
Loss rate: 14.86%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-10-09 18:56:51

End at: 2018-10-09 18:57:21

Local clock offset: 0.159 ms

Remote clock offset: 6.316 ms

Below is generated by plot.py at 2018-10-09 19:48:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.94 Mbit/s

95th percentile per-packet one-way delay: 143.237 ms

Loss rate: 55.89%

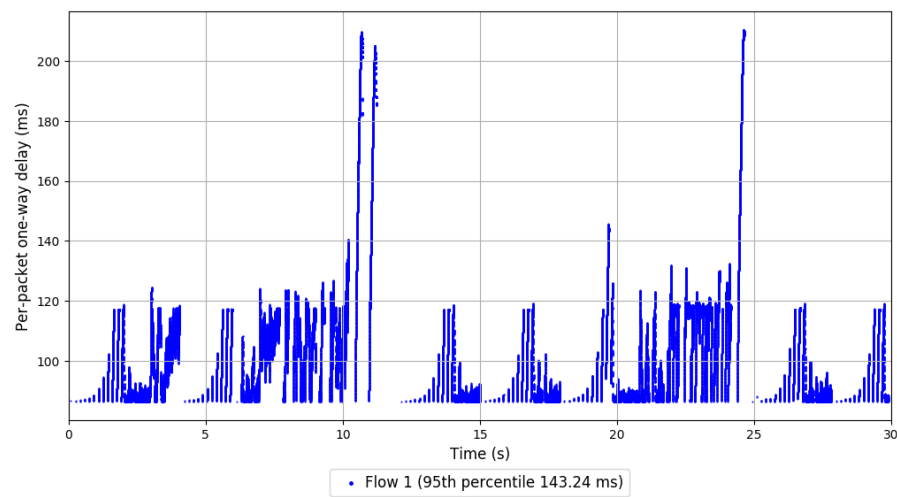
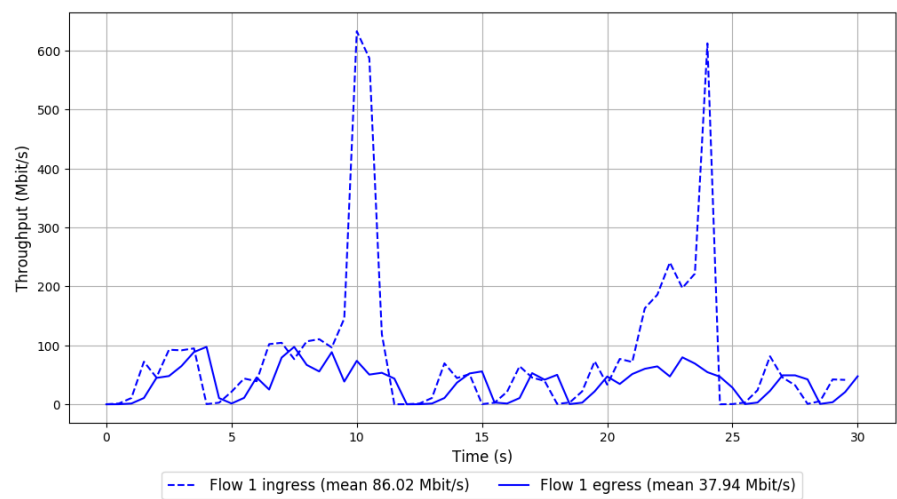
-- Flow 1:

Average throughput: 37.94 Mbit/s

95th percentile per-packet one-way delay: 143.237 ms

Loss rate: 55.89%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-10-09 19:17:51

End at: 2018-10-09 19:18:21

Local clock offset: -0.103 ms

Remote clock offset: 8.085 ms

Below is generated by plot.py at 2018-10-09 19:48:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 27.07 Mbit/s

95th percentile per-packet one-way delay: 118.123 ms

Loss rate: 10.19%

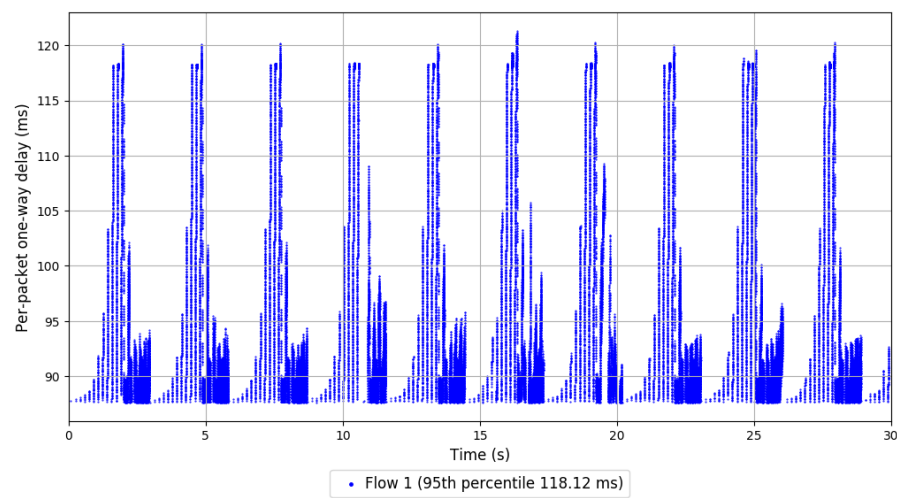
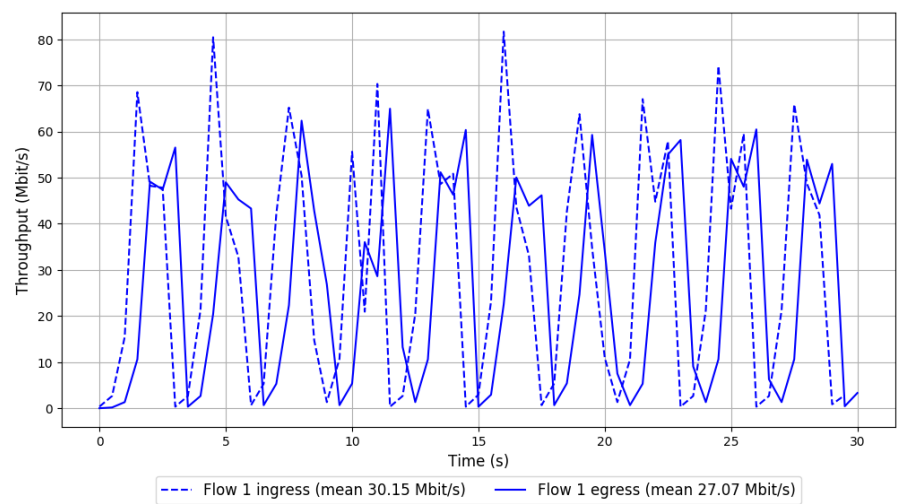
-- Flow 1:

Average throughput: 27.07 Mbit/s

95th percentile per-packet one-way delay: 118.123 ms

Loss rate: 10.19%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-09 19:39:08

End at: 2018-10-09 19:39:38

Local clock offset: -1.094 ms

Remote clock offset: 7.15 ms

Below is generated by plot.py at 2018-10-09 19:48:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.59 Mbit/s

95th percentile per-packet one-way delay: 122.307 ms

Loss rate: 46.21%

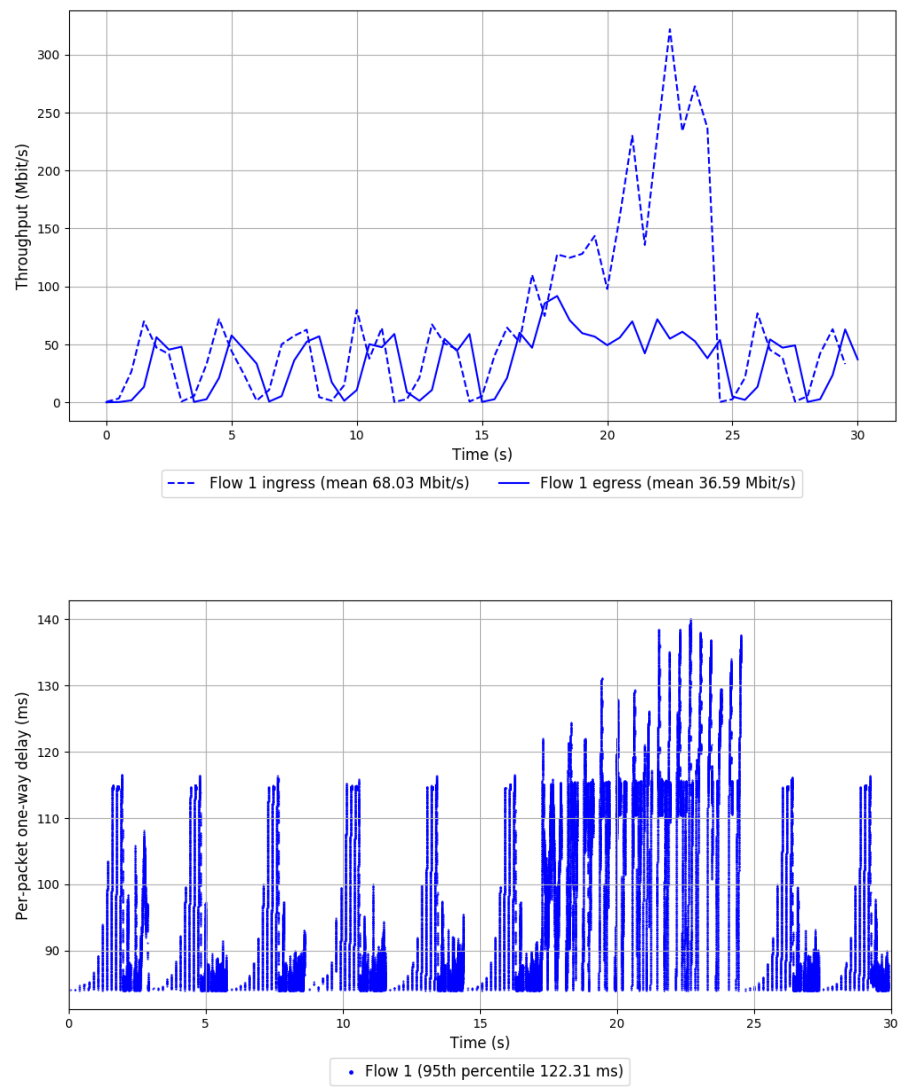
-- Flow 1:

Average throughput: 36.59 Mbit/s

95th percentile per-packet one-way delay: 122.307 ms

Loss rate: 46.21%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-09 17:58:12

End at: 2018-10-09 17:58:42

Local clock offset: -1.612 ms

Remote clock offset: -2.1 ms

Below is generated by plot.py at 2018-10-09 19:48:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 75.84 Mbit/s

95th percentile per-packet one-way delay: 104.995 ms

Loss rate: 0.14%

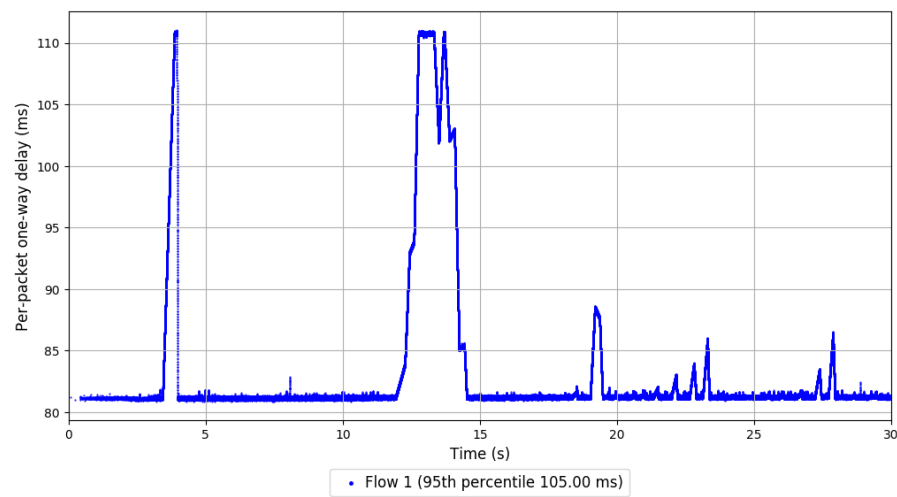
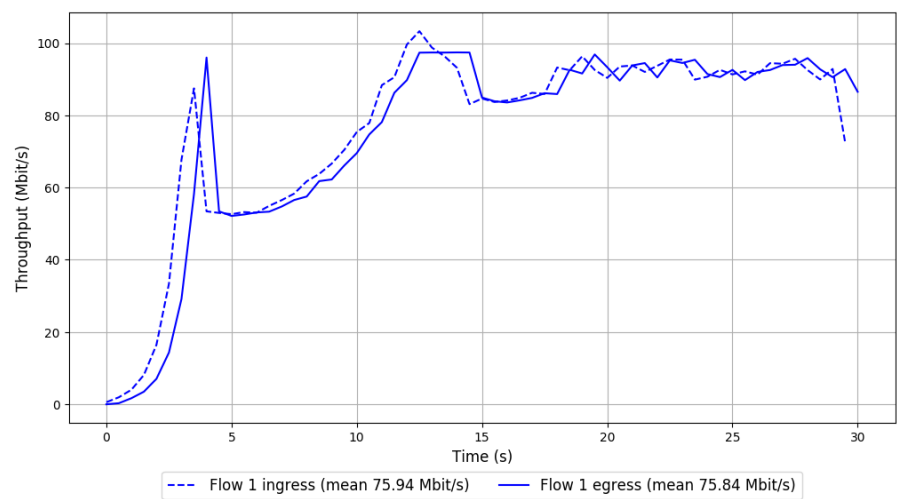
-- Flow 1:

Average throughput: 75.84 Mbit/s

95th percentile per-packet one-way delay: 104.995 ms

Loss rate: 0.14%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-10-09 18:19:20

End at: 2018-10-09 18:19:50

Local clock offset: -0.909 ms

Remote clock offset: 3.51 ms

Below is generated by plot.py at 2018-10-09 19:49:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 75.73 Mbit/s

95th percentile per-packet one-way delay: 116.068 ms

Loss rate: 0.13%

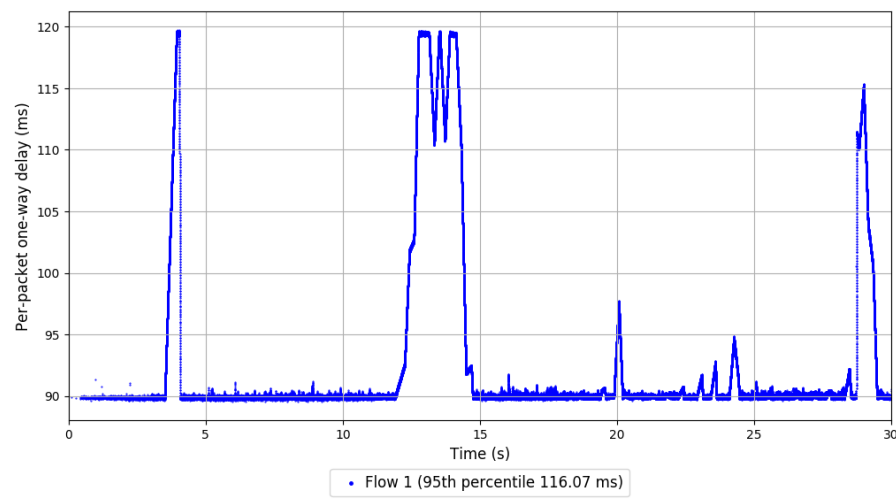
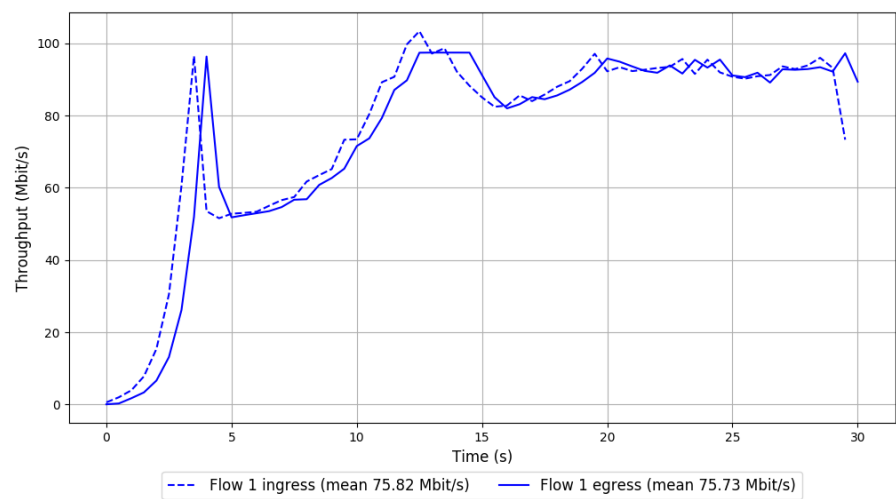
-- Flow 1:

Average throughput: 75.73 Mbit/s

95th percentile per-packet one-way delay: 116.068 ms

Loss rate: 0.13%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-10-09 18:40:29

End at: 2018-10-09 18:40:59

Local clock offset: -0.442 ms

Remote clock offset: 0.423 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.00 Mbit/s

95th percentile per-packet one-way delay: 107.019 ms

Loss rate: 0.14%

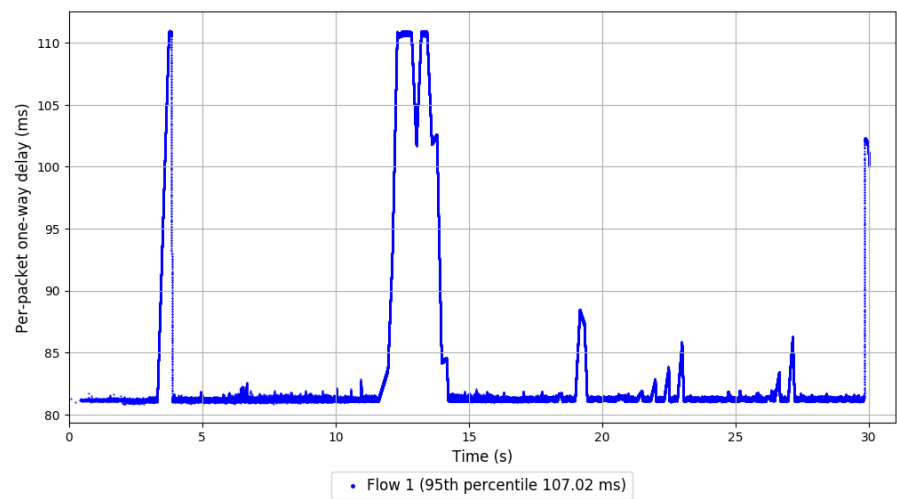
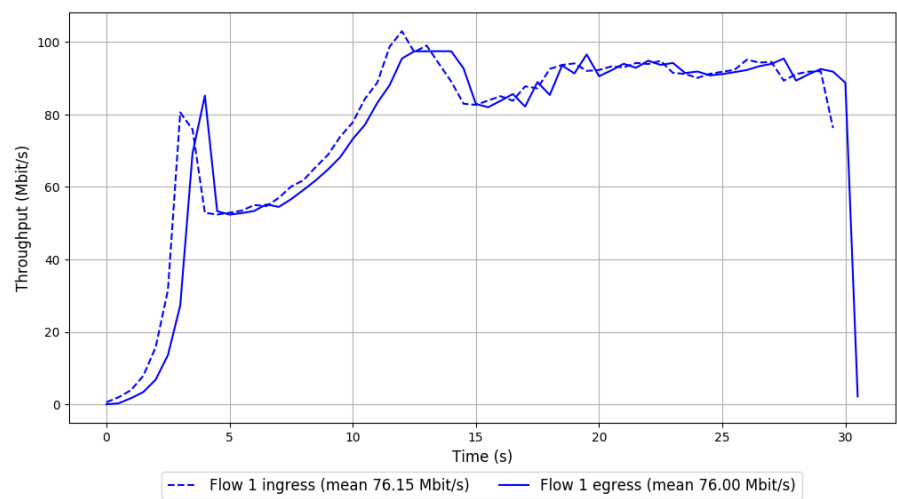
-- Flow 1:

Average throughput: 76.00 Mbit/s

95th percentile per-packet one-way delay: 107.019 ms

Loss rate: 0.14%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-10-09 19:01:31

End at: 2018-10-09 19:02:01

Local clock offset: -0.244 ms

Remote clock offset: 1.565 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.86 Mbit/s

95th percentile per-packet one-way delay: 106.592 ms

Loss rate: 0.14%

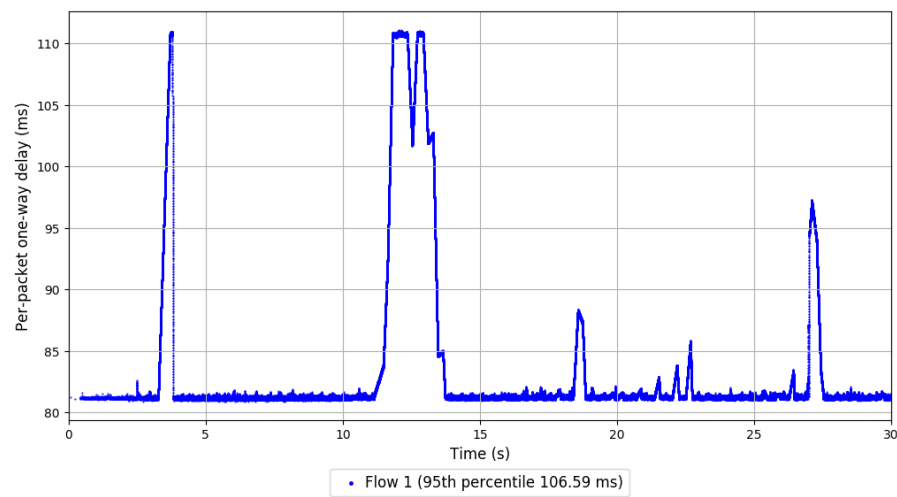
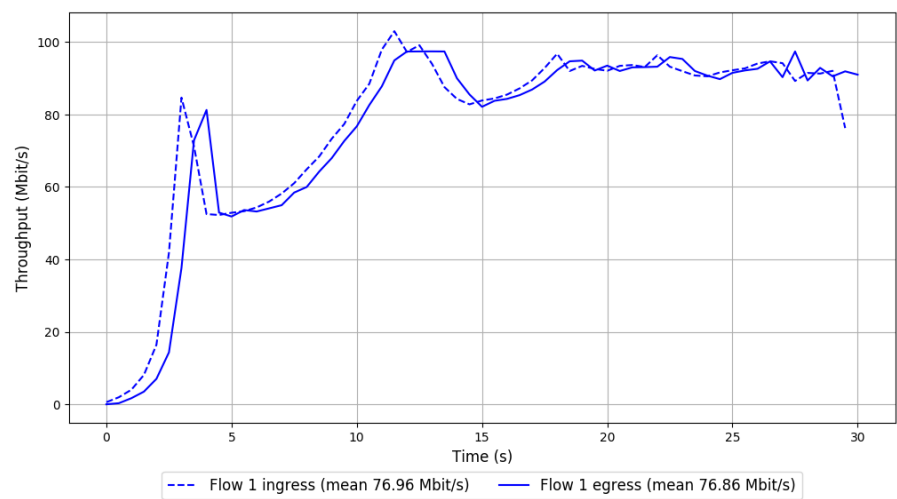
-- Flow 1:

Average throughput: 76.86 Mbit/s

95th percentile per-packet one-way delay: 106.592 ms

Loss rate: 0.14%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-10-09 19:22:31

End at: 2018-10-09 19:23:01

Local clock offset: 0.002 ms

Remote clock offset: 6.909 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 77.90 Mbit/s

95th percentile per-packet one-way delay: 98.030 ms

Loss rate: 0.04%

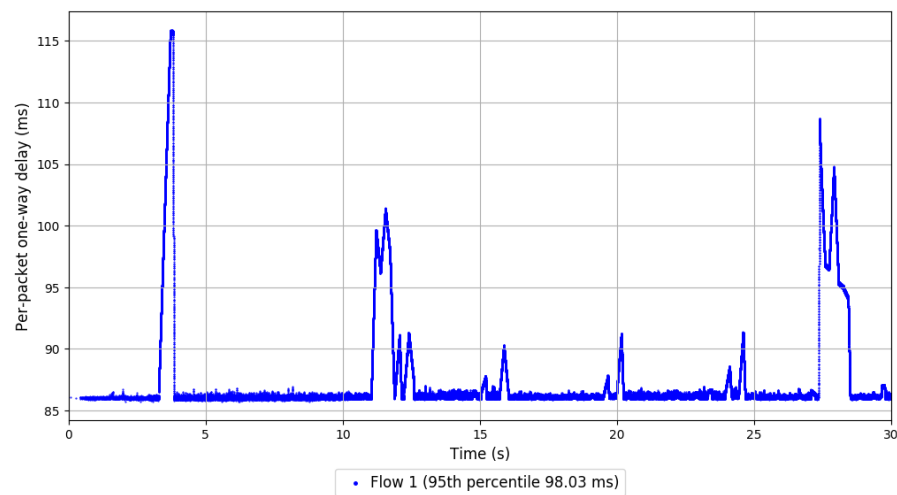
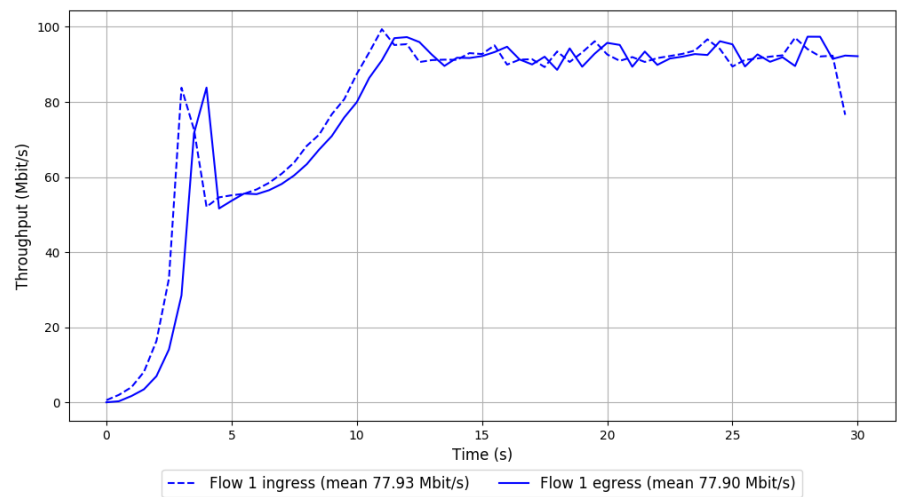
-- Flow 1:

Average throughput: 77.90 Mbit/s

95th percentile per-packet one-way delay: 98.030 ms

Loss rate: 0.04%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-10-09 18:15:52

End at: 2018-10-09 18:16:22

Local clock offset: -0.992 ms

Remote clock offset: 2.17 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 84.085 ms

Loss rate: 0.28%

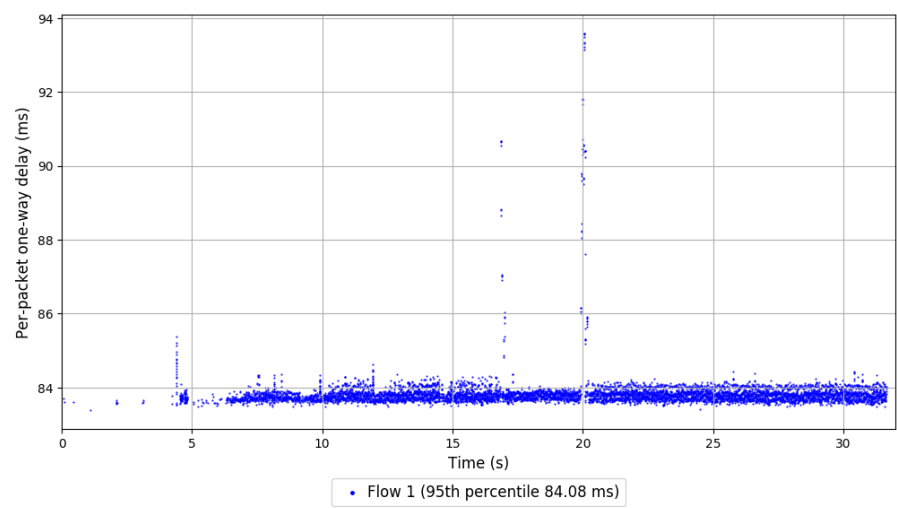
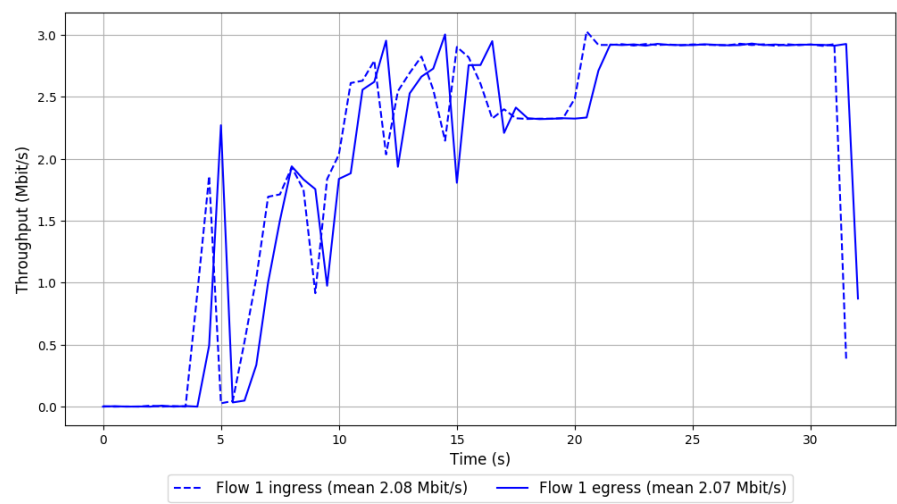
-- Flow 1:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 84.085 ms

Loss rate: 0.28%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-10-09 18:36:55

End at: 2018-10-09 18:37:25

Local clock offset: -0.591 ms

Remote clock offset: 6.428 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.41 Mbit/s

95th percentile per-packet one-way delay: 87.857 ms

Loss rate: 0.95%

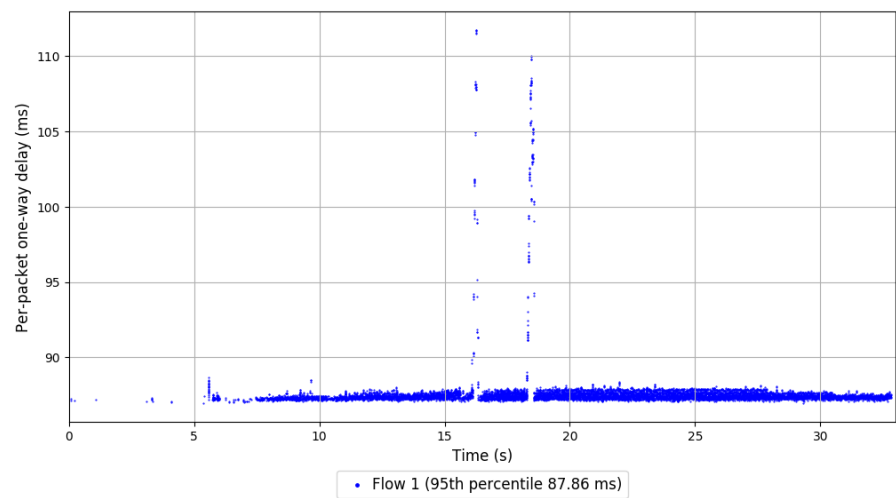
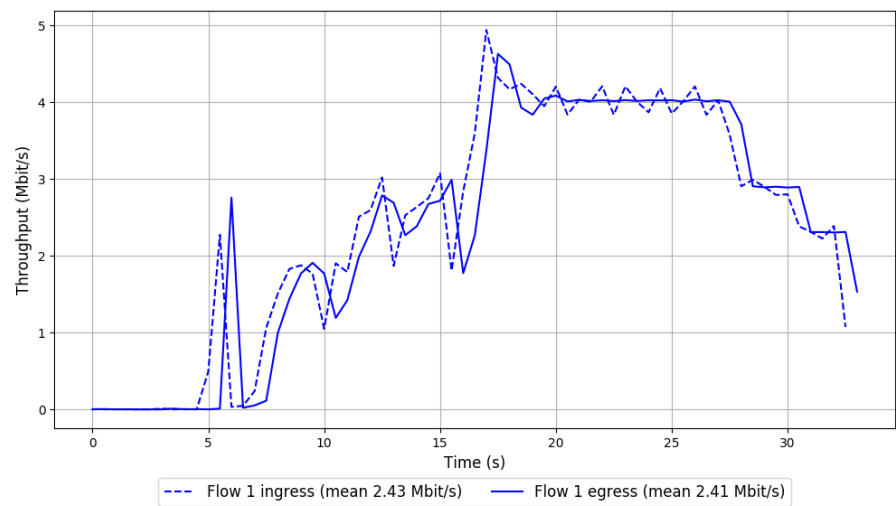
-- Flow 1:

Average throughput: 2.41 Mbit/s

95th percentile per-packet one-way delay: 87.857 ms

Loss rate: 0.95%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-10-09 18:58:01

End at: 2018-10-09 18:58:31

Local clock offset: 0.066 ms

Remote clock offset: 7.408 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 86.187 ms

Loss rate: 0.10%

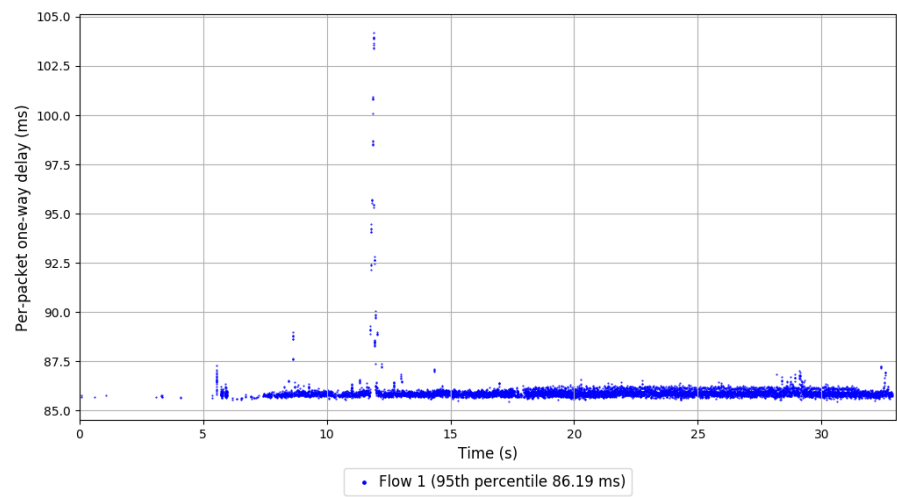
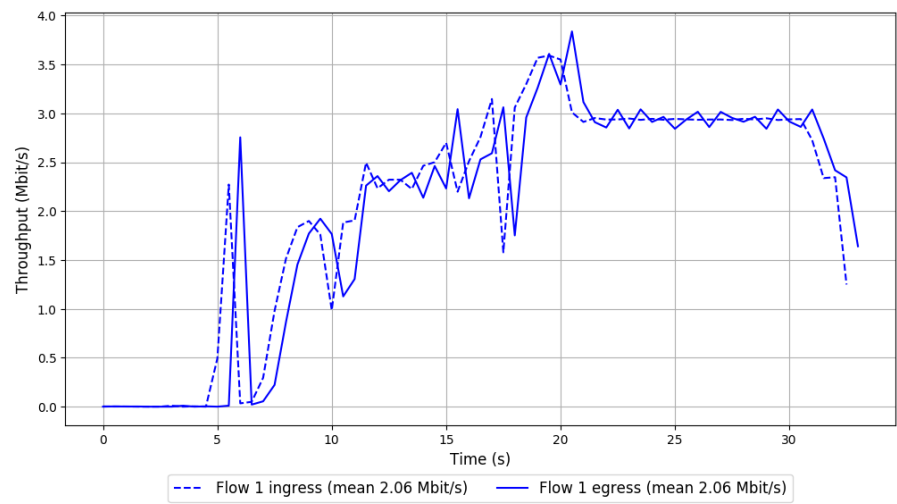
-- Flow 1:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 86.187 ms

Loss rate: 0.10%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-10-09 19:19:00

End at: 2018-10-09 19:19:30

Local clock offset: -0.129 ms

Remote clock offset: 6.924 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 86.714 ms

Loss rate: 0.01%

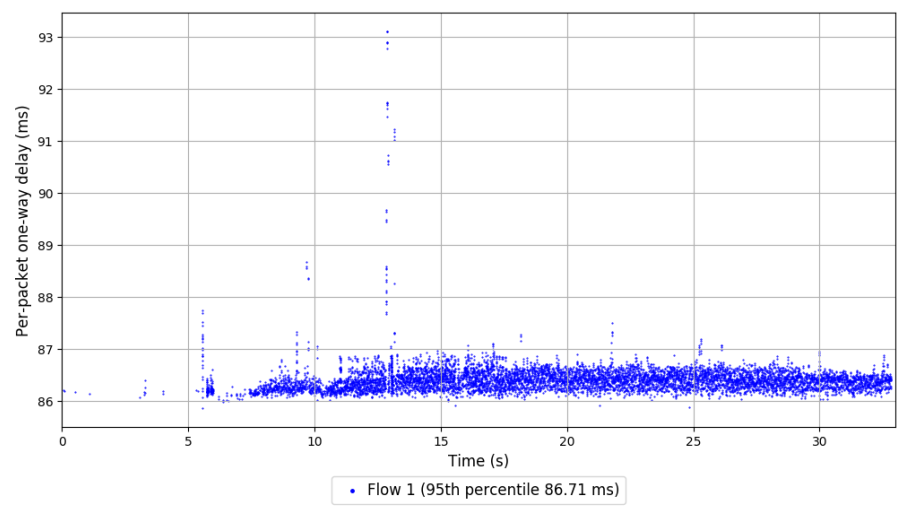
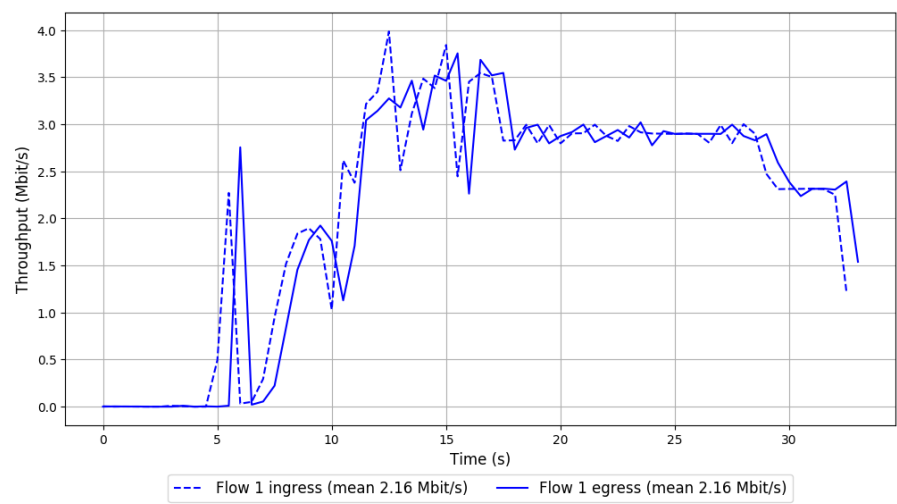
-- Flow 1:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 86.714 ms

Loss rate: 0.01%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-09 19:40:18

End at: 2018-10-09 19:40:48

Local clock offset: -1.067 ms

Remote clock offset: 7.364 ms

Below is generated by plot.py at 2018-10-09 19:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.79 Mbit/s

95th percentile per-packet one-way delay: 84.766 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.79 Mbit/s

95th percentile per-packet one-way delay: 84.766 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

