

Pantheon Report

Generated at 2018-10-10 14:52:23 (UTC).

Data path: GCE Sydney on **ens4** (*local*) → GCE Tokyo on **ens4** (*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.google.com` and have been applied to correct the timestamps in logs.

System info:

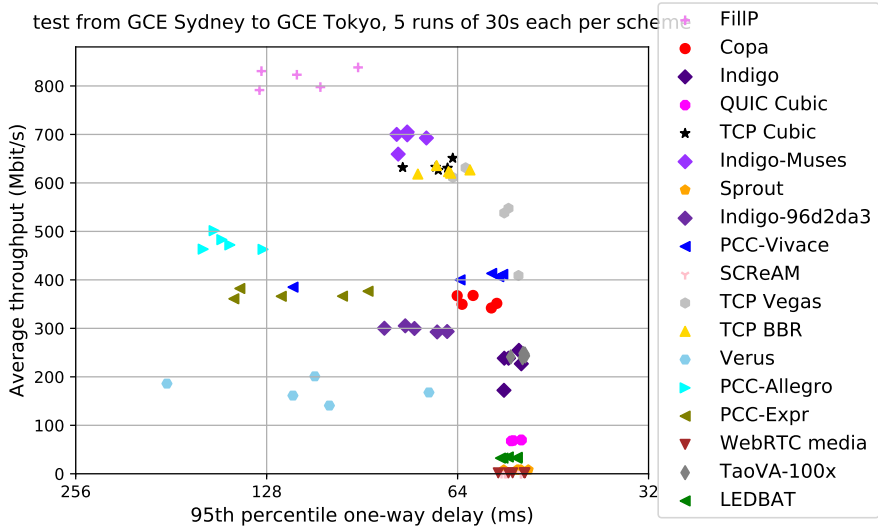
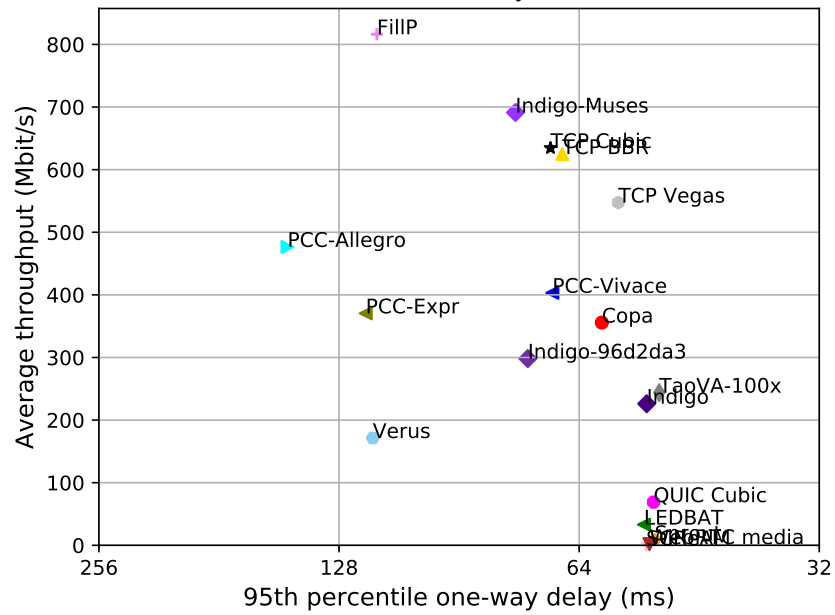
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
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 GCE Sydney to GCE Tokyo, 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	624.91	67.20	0.01
Copa	5	355.67	59.94	0.00
TCP Cubic	5	634.54	69.52	0.01
FillP	5	816.23	114.74	1.11
Indigo	5	226.11	52.67	0.00
Indigo-96d2da3	5	298.26	74.23	0.01
LEDBAT	5	33.08	53.09	0.00
Indigo-Muses	5	691.27	76.92	0.02
PCC-Allegro	5	476.58	148.52	1.29
PCC-Expr	5	370.46	118.50	0.97
QUIC Cubic	4	68.96	51.63	0.00
SCReAM	5	0.21	52.74	0.00
Sprout	5	8.17	51.47	0.00
TaoVA-100x	5	243.78	50.79	0.00
TCP Vegas	5	547.40	57.16	0.00
Verus	5	171.37	116.12	0.52
PCC-Vivace	5	403.25	69.15	0.08
WebRTC media	5	1.95	52.25	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-10-10 11:14:36

End at: 2018-10-10 11:15:06

Local clock offset: 0.128 ms

Remote clock offset: 1.1 ms

Below is generated by plot.py at 2018-10-10 13:42:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 618.33 Mbit/s

95th percentile per-packet one-way delay: 73.940 ms

Loss rate: 0.00%

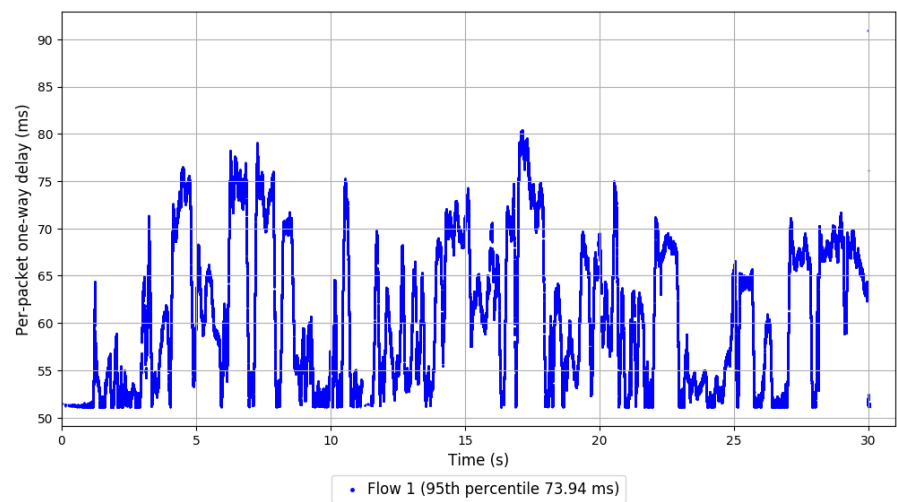
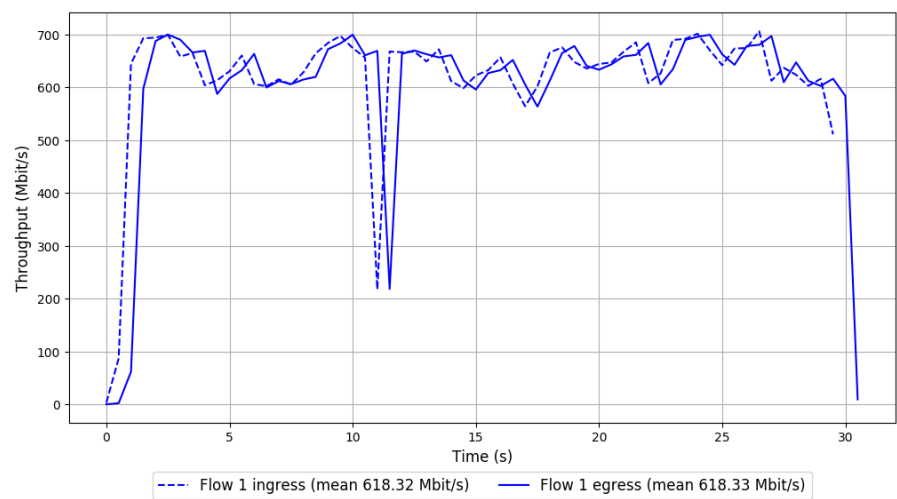
-- Flow 1:

Average throughput: 618.33 Mbit/s

95th percentile per-packet one-way delay: 73.940 ms

Loss rate: 0.00%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-10-10 11:40:15

End at: 2018-10-10 11:40:45

Local clock offset: 0.233 ms

Remote clock offset: 0.37 ms

Below is generated by plot.py at 2018-10-10 13:42:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 623.32 Mbit/s

95th percentile per-packet one-way delay: 66.137 ms

Loss rate: 0.04%

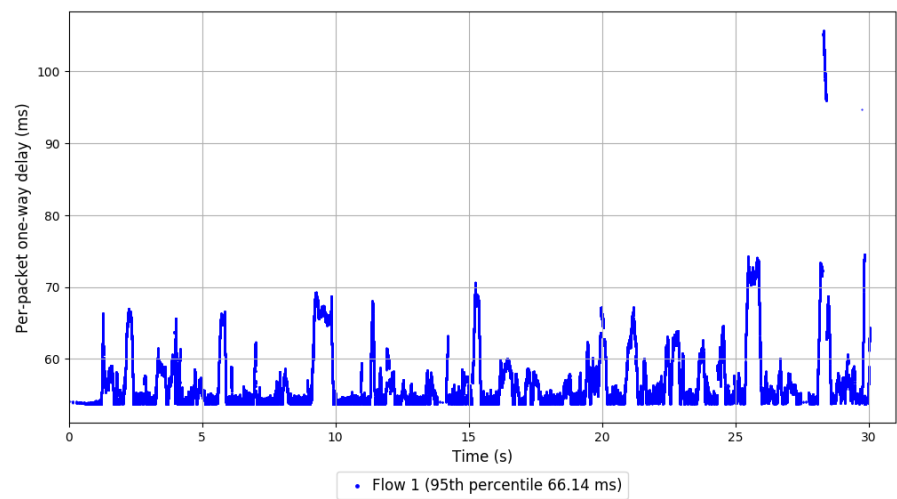
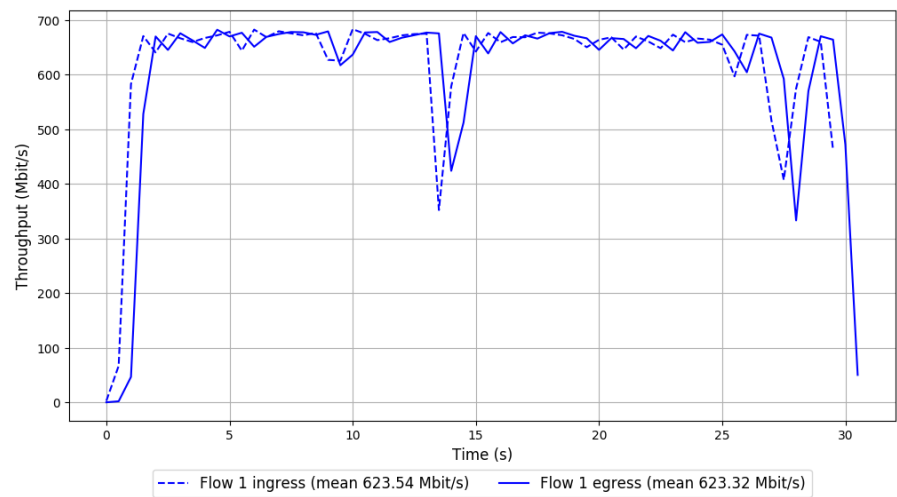
-- Flow 1:

Average throughput: 623.32 Mbit/s

95th percentile per-packet one-way delay: 66.137 ms

Loss rate: 0.04%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-10-10 12:05:54

End at: 2018-10-10 12:06:24

Local clock offset: -0.025 ms

Remote clock offset: 0.9 ms

Below is generated by plot.py at 2018-10-10 13:42:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 635.89 Mbit/s

95th percentile per-packet one-way delay: 69.076 ms

Loss rate: 0.00%

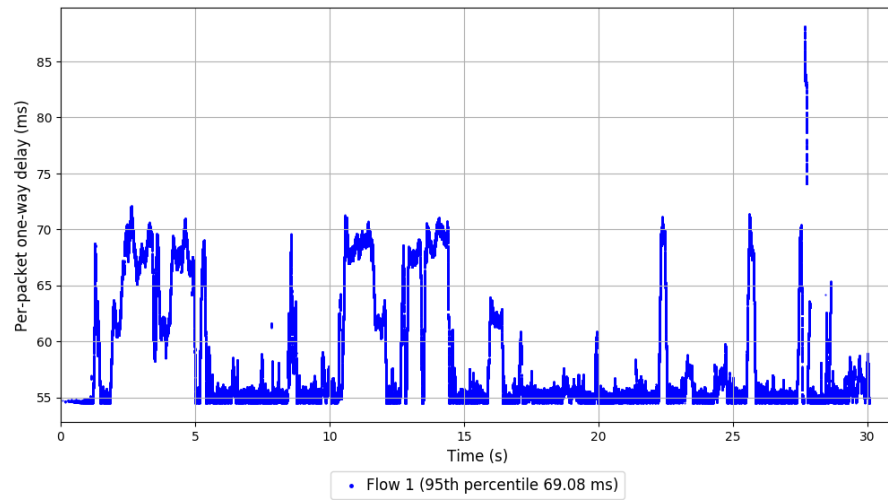
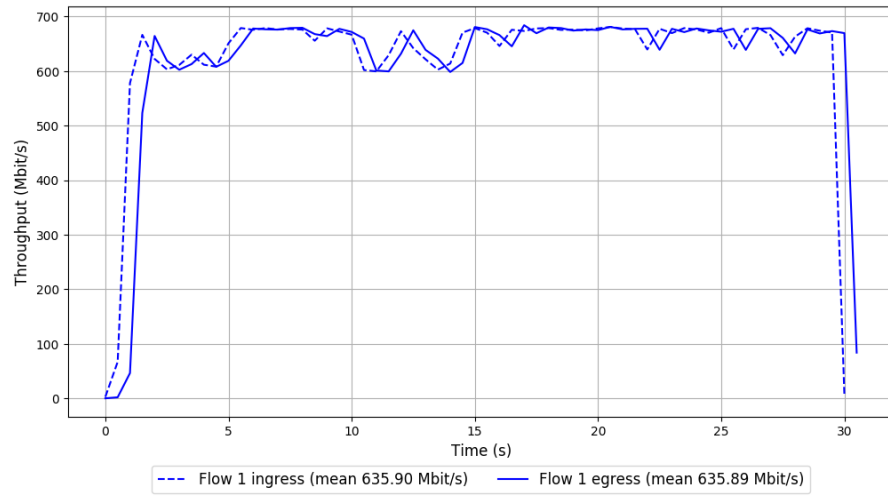
-- Flow 1:

Average throughput: 635.89 Mbit/s

95th percentile per-packet one-way delay: 69.076 ms

Loss rate: 0.00%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-10-10 12:31:44

End at: 2018-10-10 12:32:14

Local clock offset: 0.033 ms

Remote clock offset: -0.51 ms

Below is generated by plot.py at 2018-10-10 13:42:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 626.83 Mbit/s

95th percentile per-packet one-way delay: 61.189 ms

Loss rate: 0.00%

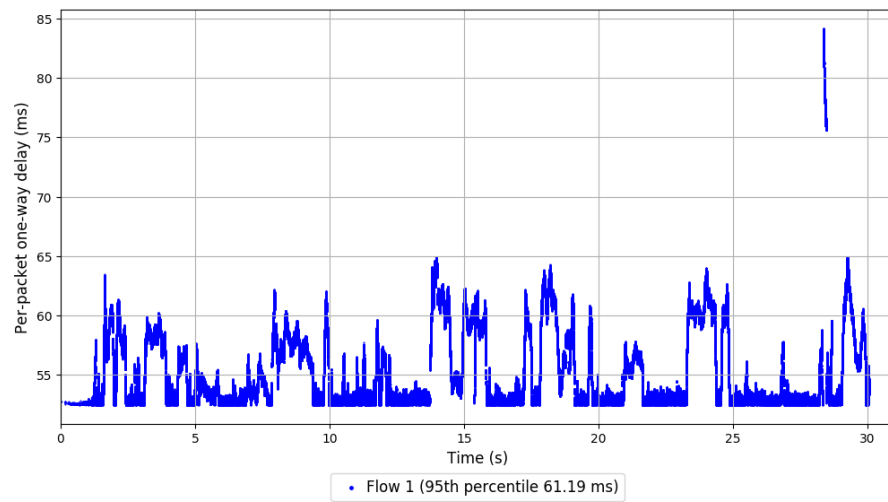
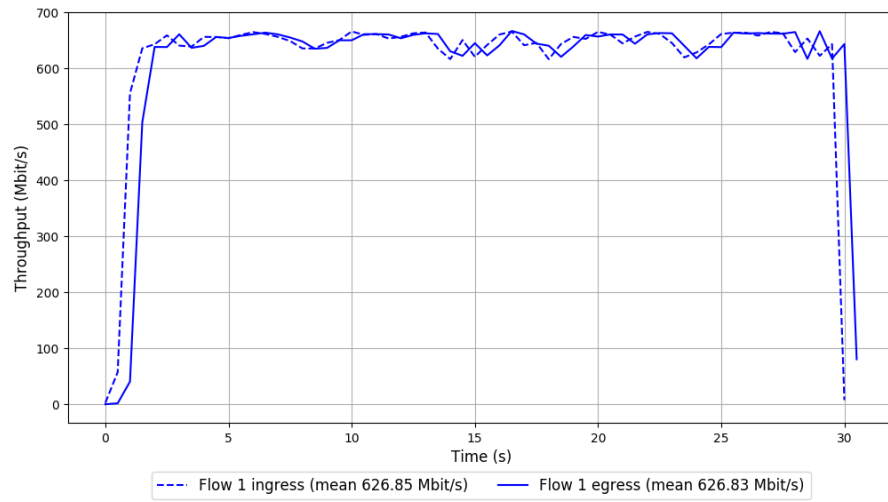
-- Flow 1:

Average throughput: 626.83 Mbit/s

95th percentile per-packet one-way delay: 61.189 ms

Loss rate: 0.00%

Run 4: Report of TCP BBR — Data Link

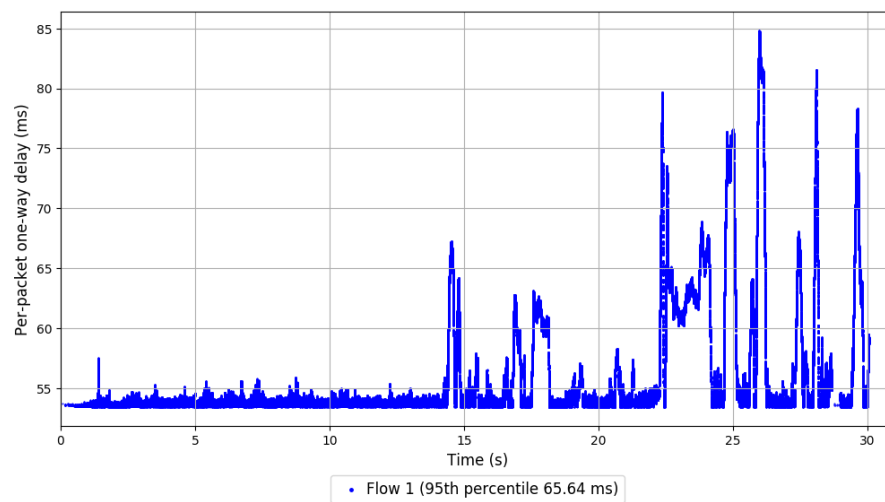
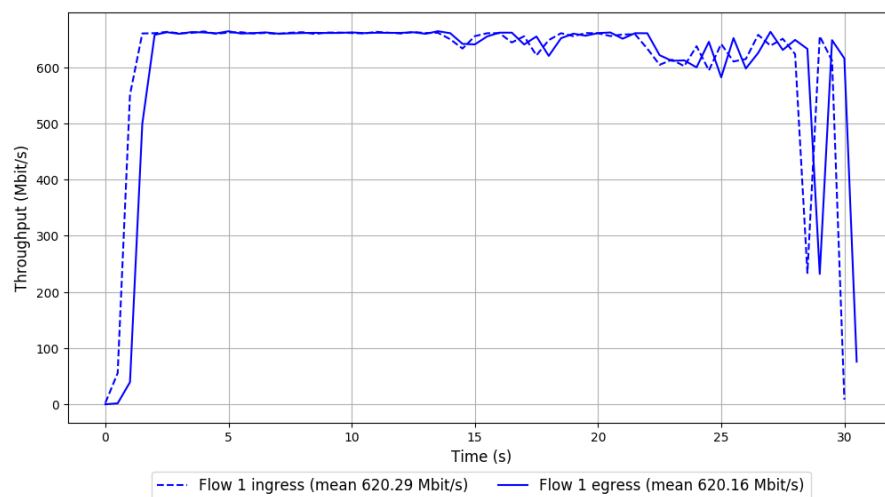


Run 5: Statistics of TCP BBR

Start at: 2018-10-10 12:57:30
End at: 2018-10-10 12:58:00
Local clock offset: -0.172 ms
Remote clock offset: -0.167 ms

Below is generated by plot.py at 2018-10-10 13:42:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 620.16 Mbit/s
95th percentile per-packet one-way delay: 65.645 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 620.16 Mbit/s
95th percentile per-packet one-way delay: 65.645 ms
Loss rate: 0.02%

Run 5: Report of TCP BBR — Data Link

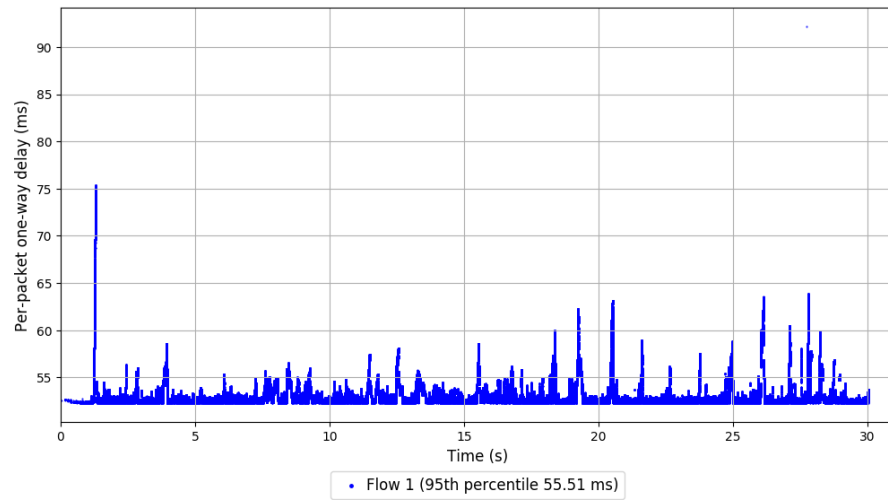
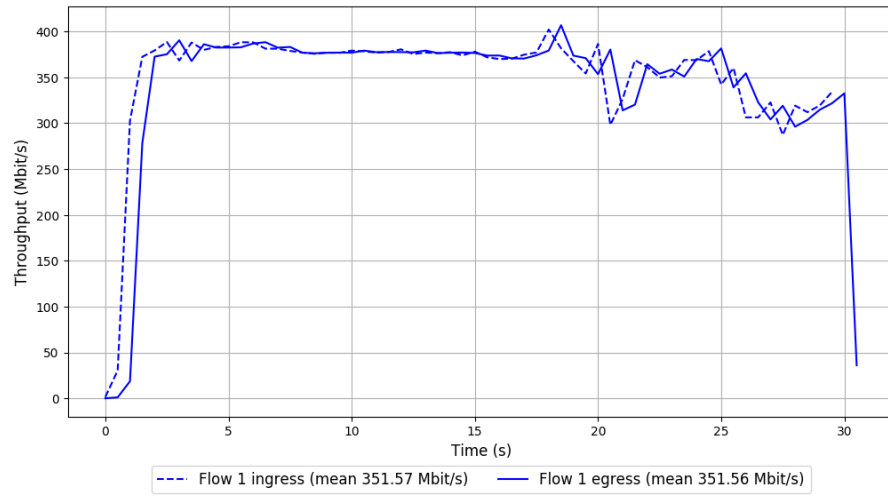


Run 1: Statistics of Copa

Start at: 2018-10-10 11:38:38
End at: 2018-10-10 11:39:08
Local clock offset: -0.141 ms
Remote clock offset: -0.909 ms

Below is generated by plot.py at 2018-10-10 13:43:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 351.56 Mbit/s
95th percentile per-packet one-way delay: 55.514 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 351.56 Mbit/s
95th percentile per-packet one-way delay: 55.514 ms
Loss rate: 0.00%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-10-10 12:04:17

End at: 2018-10-10 12:04:47

Local clock offset: 0.191 ms

Remote clock offset: 1.17 ms

Below is generated by plot.py at 2018-10-10 13:43:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 342.07 Mbit/s

95th percentile per-packet one-way delay: 56.613 ms

Loss rate: 0.00%

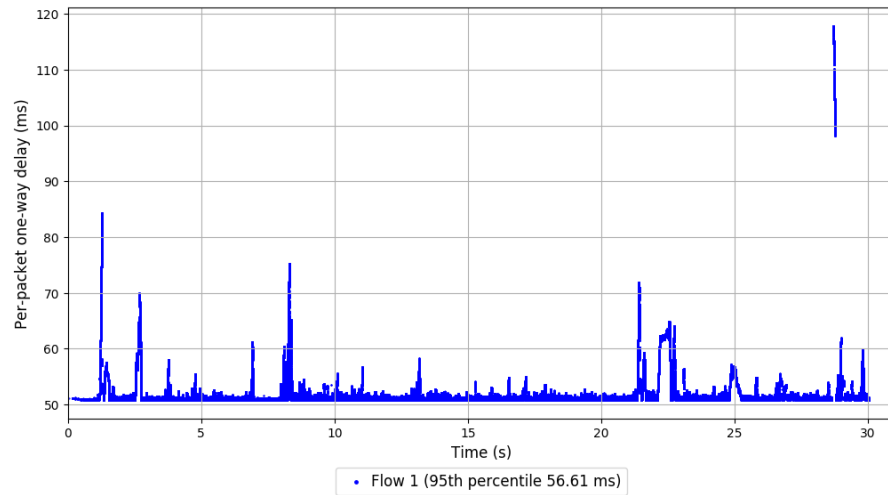
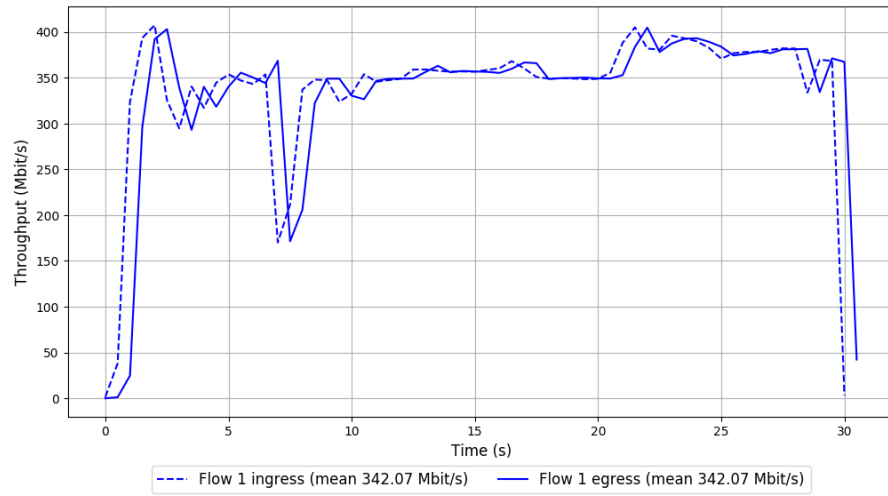
-- Flow 1:

Average throughput: 342.07 Mbit/s

95th percentile per-packet one-way delay: 56.613 ms

Loss rate: 0.00%

Run 2: Report of Copa — Data Link

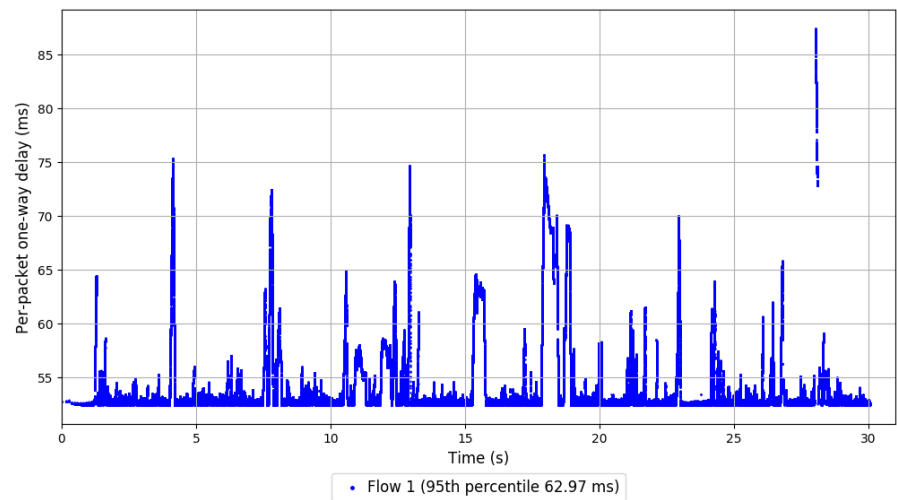
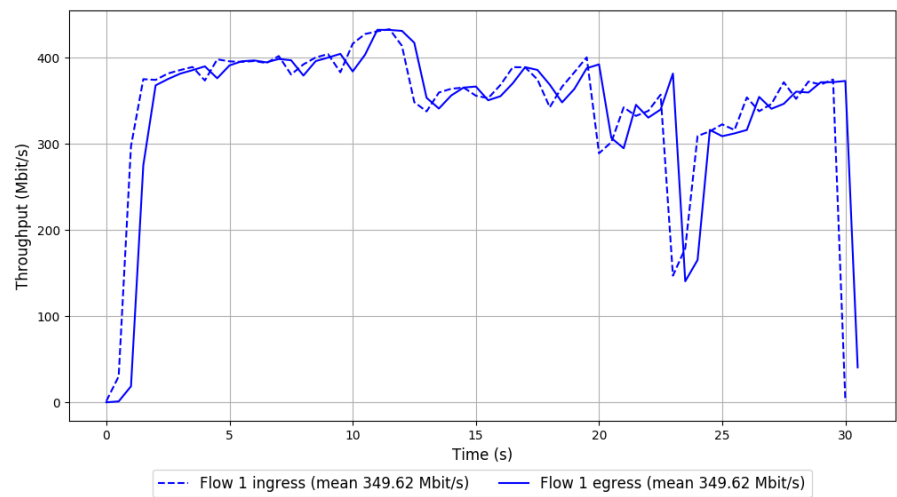


Run 3: Statistics of Copa

Start at: 2018-10-10 12:30:06
End at: 2018-10-10 12:30:36
Local clock offset: 0.058 ms
Remote clock offset: -0.669 ms

Below is generated by plot.py at 2018-10-10 13:43:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 349.62 Mbit/s
95th percentile per-packet one-way delay: 62.971 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 349.62 Mbit/s
95th percentile per-packet one-way delay: 62.971 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-10-10 12:55:51

End at: 2018-10-10 12:56:21

Local clock offset: 0.264 ms

Remote clock offset: -0.04 ms

Below is generated by plot.py at 2018-10-10 13:53:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 367.28 Mbit/s

95th percentile per-packet one-way delay: 64.097 ms

Loss rate: 0.00%

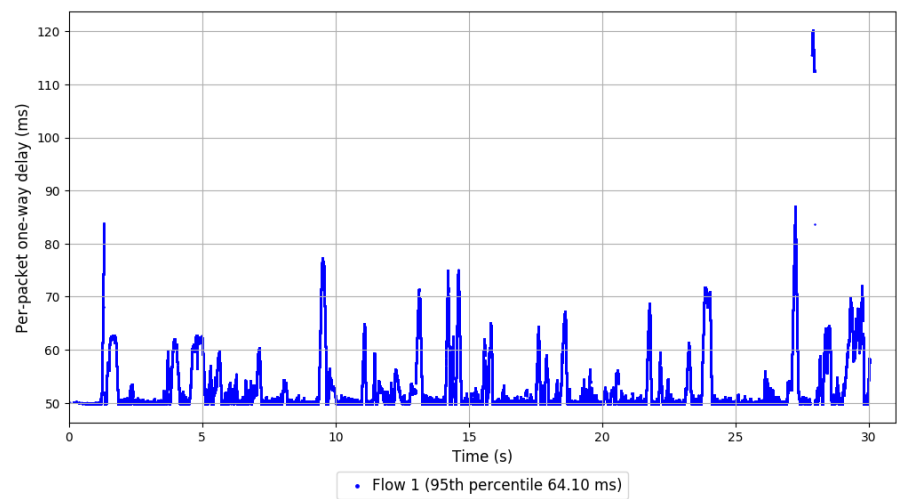
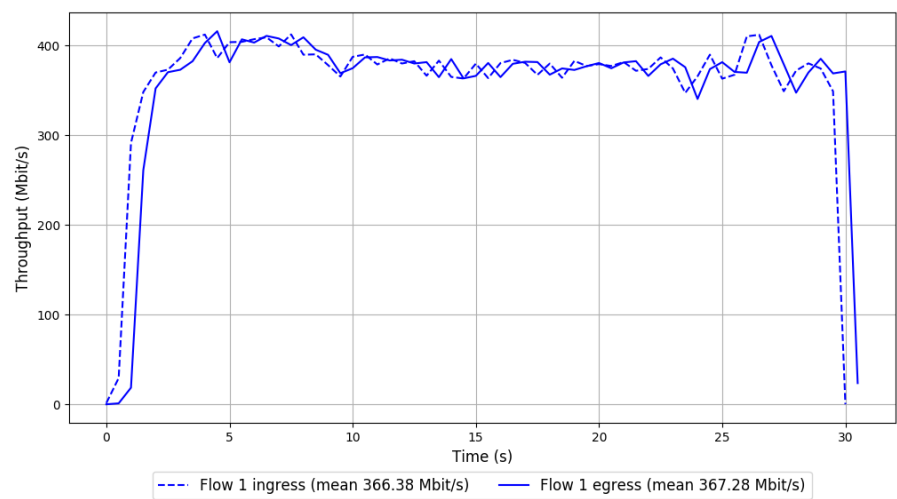
-- Flow 1:

Average throughput: 367.28 Mbit/s

95th percentile per-packet one-way delay: 64.097 ms

Loss rate: 0.00%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-10 13:21:36

End at: 2018-10-10 13:22:06

Local clock offset: 0.026 ms

Remote clock offset: 0.019 ms

Below is generated by plot.py at 2018-10-10 13:53:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 367.82 Mbit/s

95th percentile per-packet one-way delay: 60.507 ms

Loss rate: 0.00%

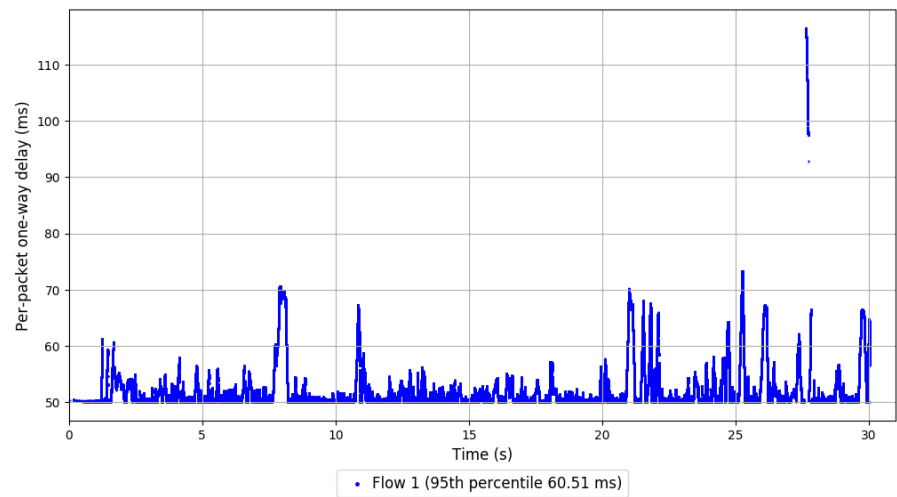
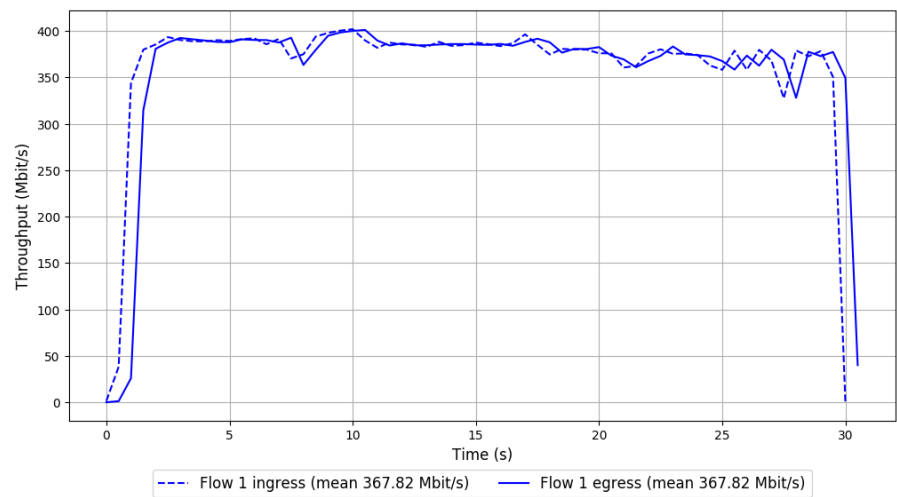
-- Flow 1:

Average throughput: 367.82 Mbit/s

95th percentile per-packet one-way delay: 60.507 ms

Loss rate: 0.00%

Run 5: Report of Copa — Data Link

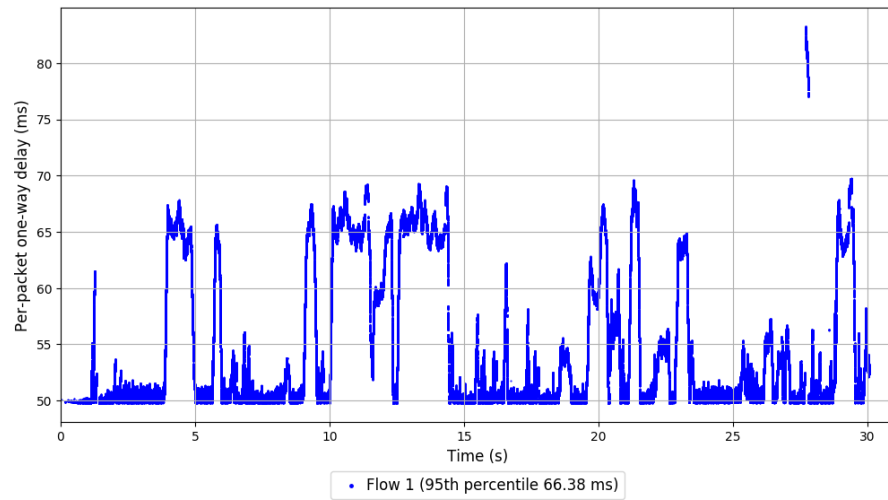
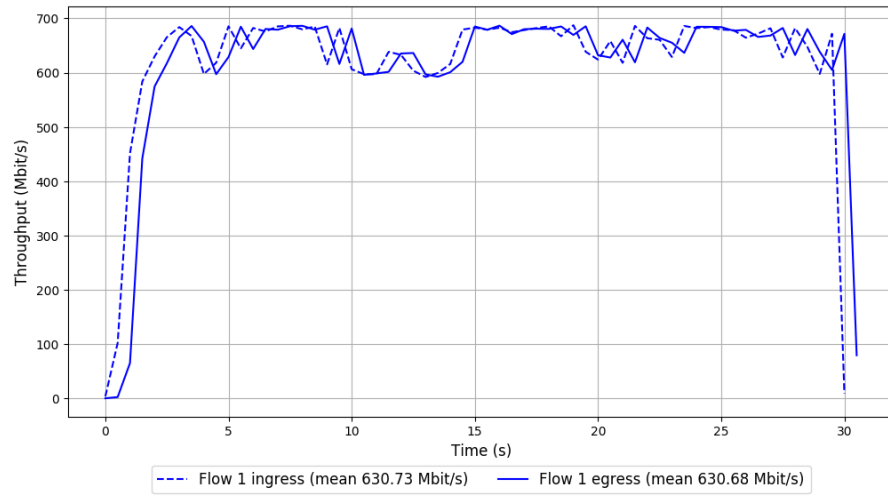


Run 1: Statistics of TCP Cubic

Start at: 2018-10-10 11:37:01
End at: 2018-10-10 11:37:31
Local clock offset: -0.111 ms
Remote clock offset: -0.026 ms

Below is generated by plot.py at 2018-10-10 13:53:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 630.68 Mbit/s
95th percentile per-packet one-way delay: 66.384 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 630.68 Mbit/s
95th percentile per-packet one-way delay: 66.384 ms
Loss rate: 0.00%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-10-10 12:02:40

End at: 2018-10-10 12:03:10

Local clock offset: 0.078 ms

Remote clock offset: 0.065 ms

Below is generated by plot.py at 2018-10-10 13:53:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 632.66 Mbit/s

95th percentile per-packet one-way delay: 69.319 ms

Loss rate: 0.01%

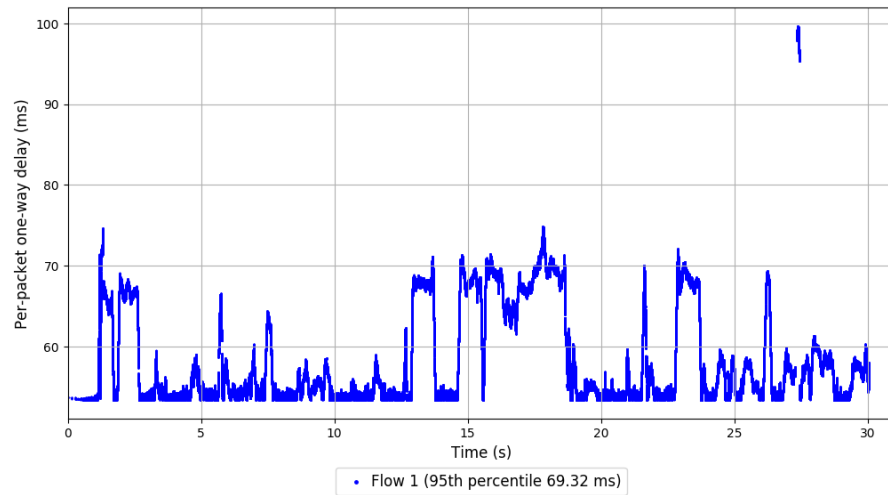
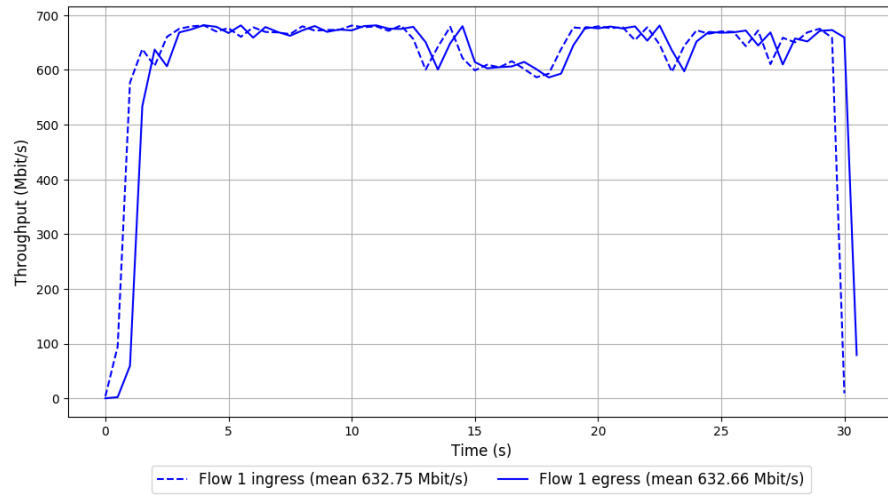
-- Flow 1:

Average throughput: 632.66 Mbit/s

95th percentile per-packet one-way delay: 69.319 ms

Loss rate: 0.01%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-10-10 12:28:27

End at: 2018-10-10 12:28:57

Local clock offset: -0.156 ms

Remote clock offset: 1.324 ms

Below is generated by plot.py at 2018-10-10 13:53:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 651.07 Mbit/s

95th percentile per-packet one-way delay: 65.141 ms

Loss rate: 0.01%

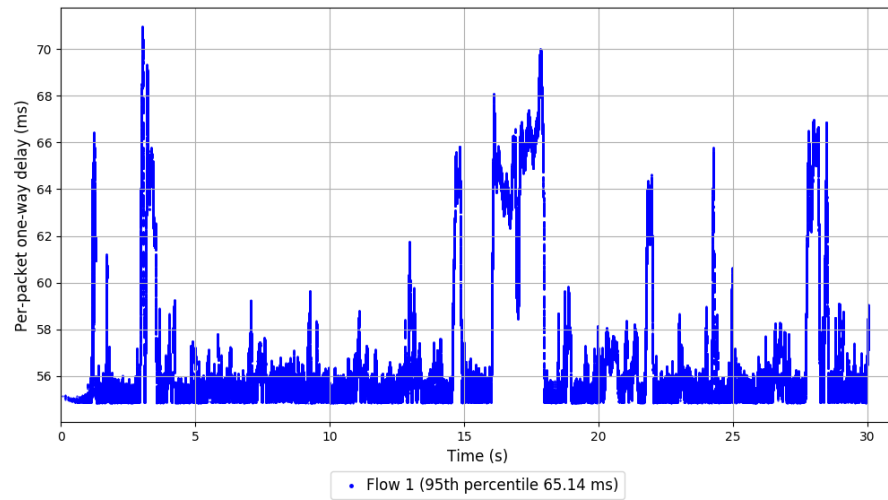
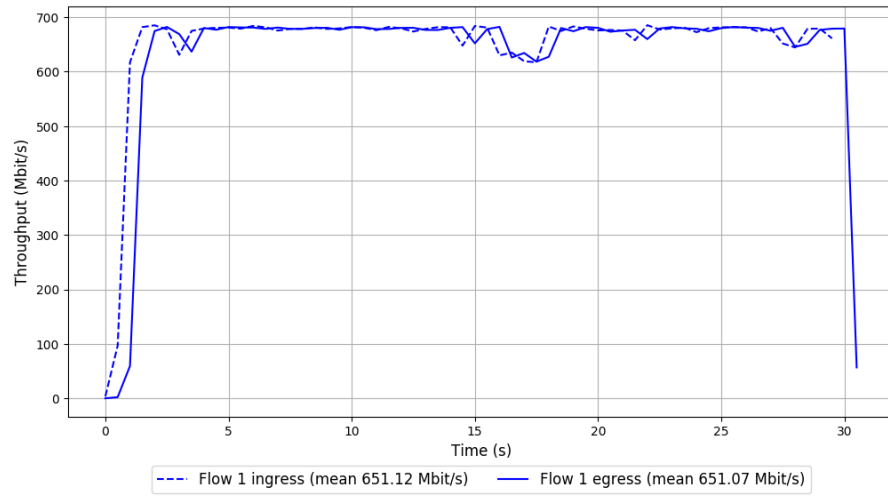
-- Flow 1:

Average throughput: 651.07 Mbit/s

95th percentile per-packet one-way delay: 65.141 ms

Loss rate: 0.01%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-10-10 12:54:14

End at: 2018-10-10 12:54:44

Local clock offset: 0.186 ms

Remote clock offset: 0.046 ms

Below is generated by plot.py at 2018-10-10 13:53:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 626.36 Mbit/s

95th percentile per-packet one-way delay: 68.651 ms

Loss rate: 0.00%

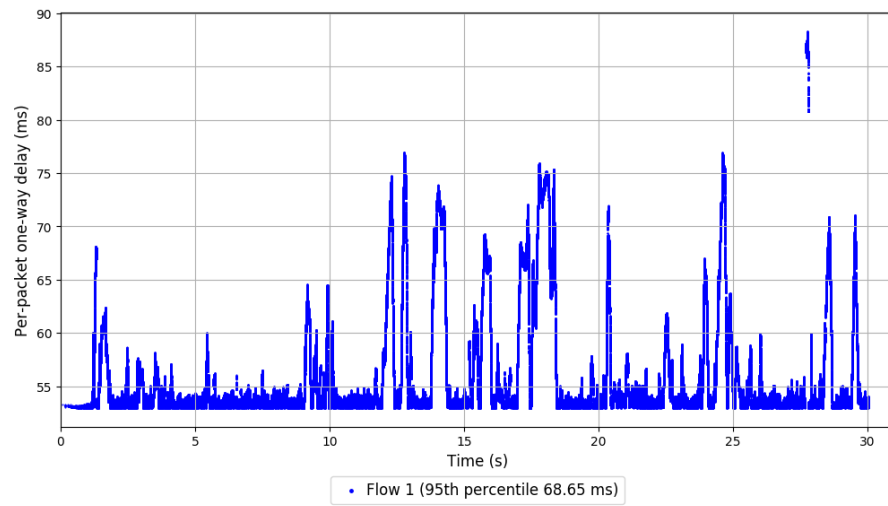
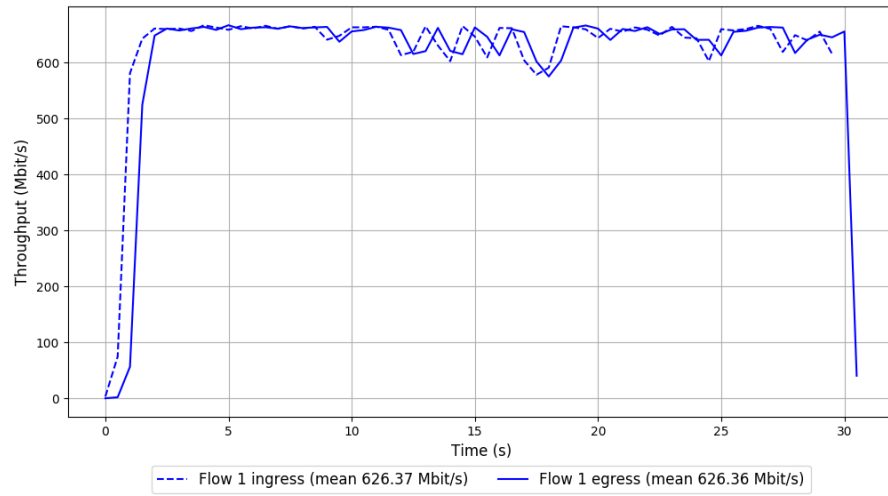
-- Flow 1:

Average throughput: 626.36 Mbit/s

95th percentile per-packet one-way delay: 68.651 ms

Loss rate: 0.00%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-10-10 13:19:59

End at: 2018-10-10 13:20:29

Local clock offset: 0.105 ms

Remote clock offset: 0.563 ms

Below is generated by plot.py at 2018-10-10 13:53:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 631.93 Mbit/s

95th percentile per-packet one-way delay: 78.114 ms

Loss rate: 0.03%

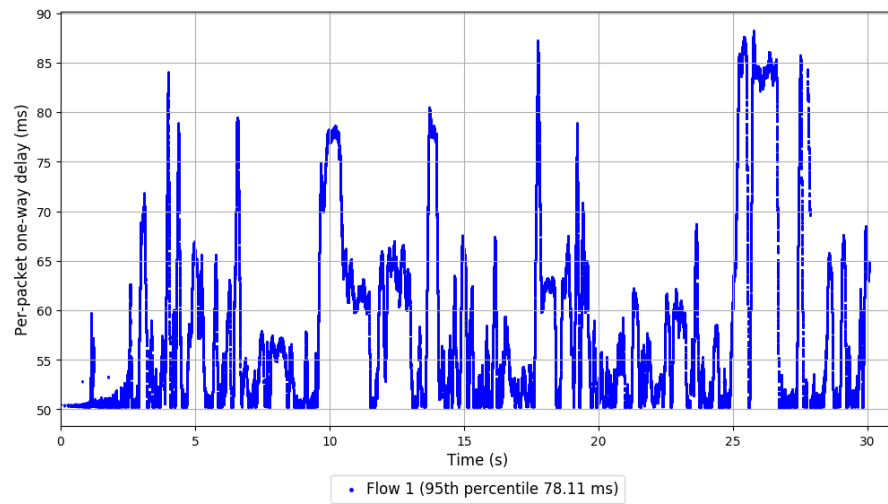
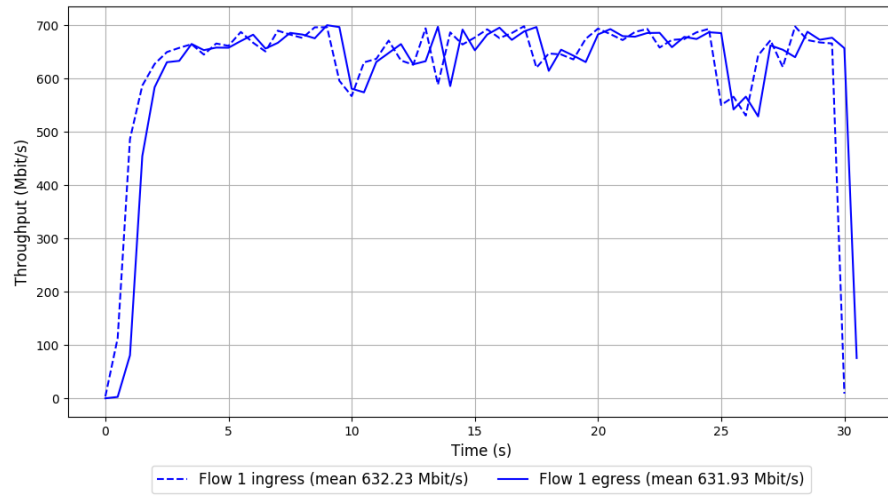
-- Flow 1:

Average throughput: 631.93 Mbit/s

95th percentile per-packet one-way delay: 78.114 ms

Loss rate: 0.03%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-10-10 11:30:52

End at: 2018-10-10 11:31:22

Local clock offset: -0.004 ms

Remote clock offset: -0.45 ms

Below is generated by plot.py at 2018-10-10 13:59:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 838.23 Mbit/s

95th percentile per-packet one-way delay: 91.846 ms

Loss rate: 0.05%

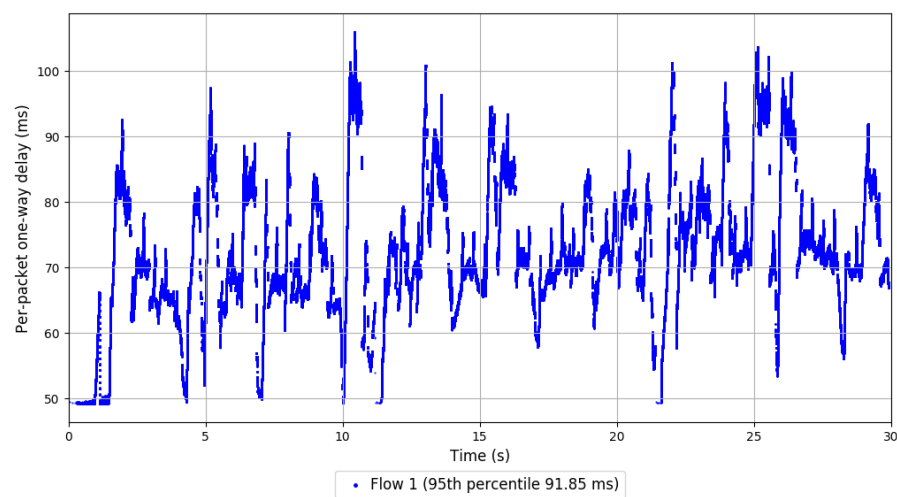
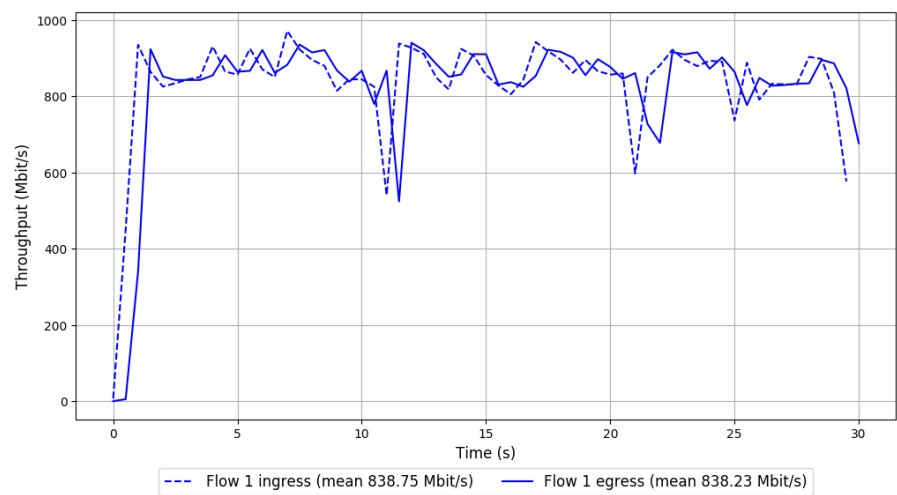
-- Flow 1:

Average throughput: 838.23 Mbit/s

95th percentile per-packet one-way delay: 91.846 ms

Loss rate: 0.05%

Run 1: Report of FillP — Data Link

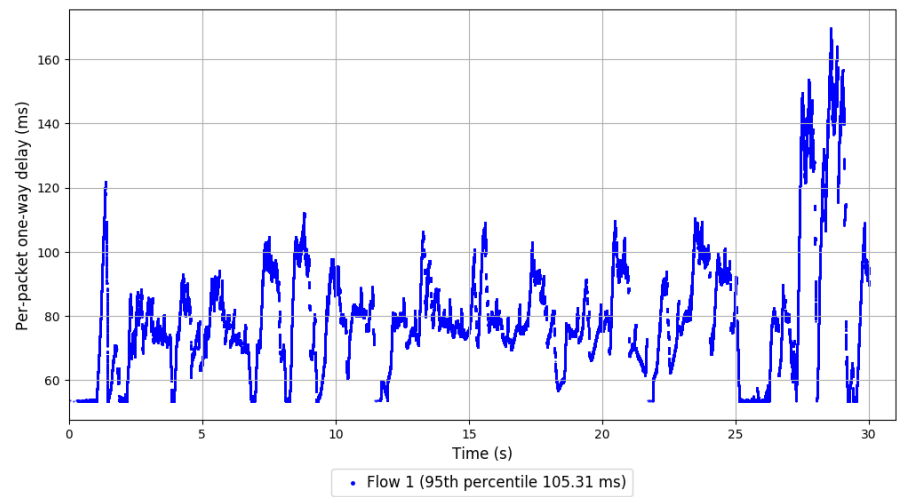
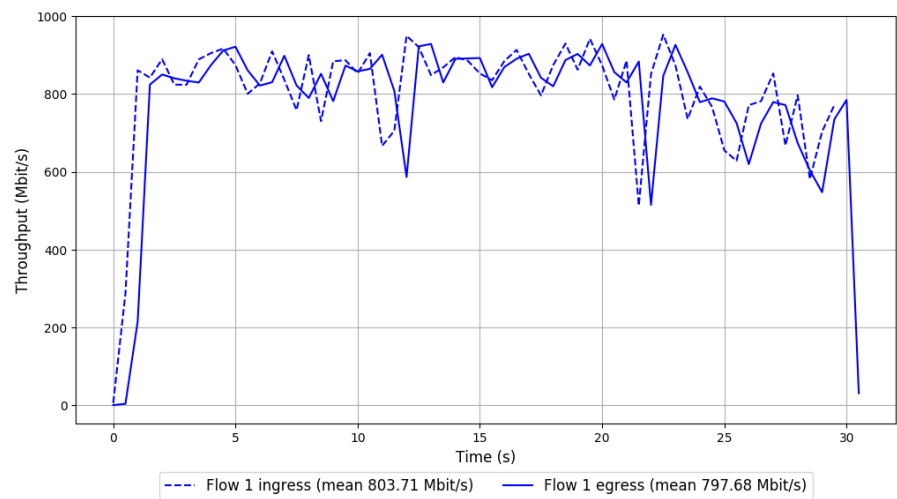


Run 2: Statistics of FillP

Start at: 2018-10-10 11:56:34
End at: 2018-10-10 11:57:04
Local clock offset: -0.12 ms
Remote clock offset: -0.241 ms

Below is generated by plot.py at 2018-10-10 14:08:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 797.68 Mbit/s
95th percentile per-packet one-way delay: 105.315 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 797.68 Mbit/s
95th percentile per-packet one-way delay: 105.315 ms
Loss rate: 0.75%

Run 2: Report of FillP — Data Link

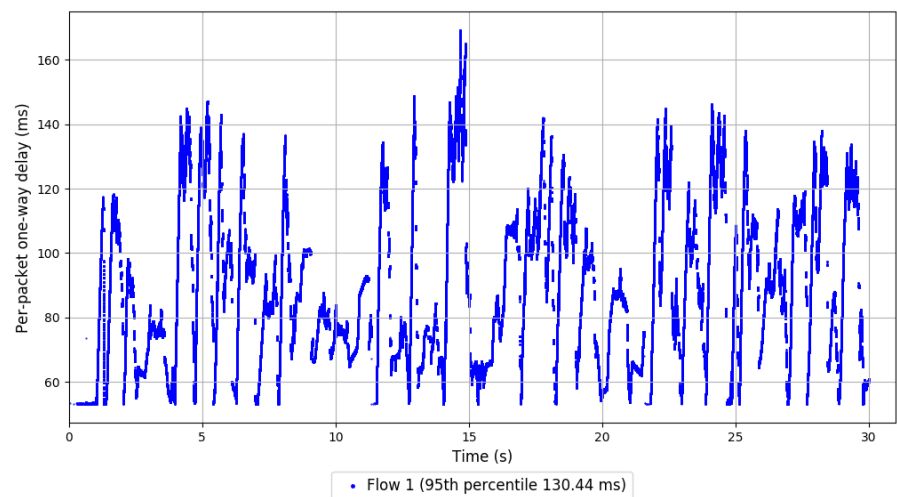
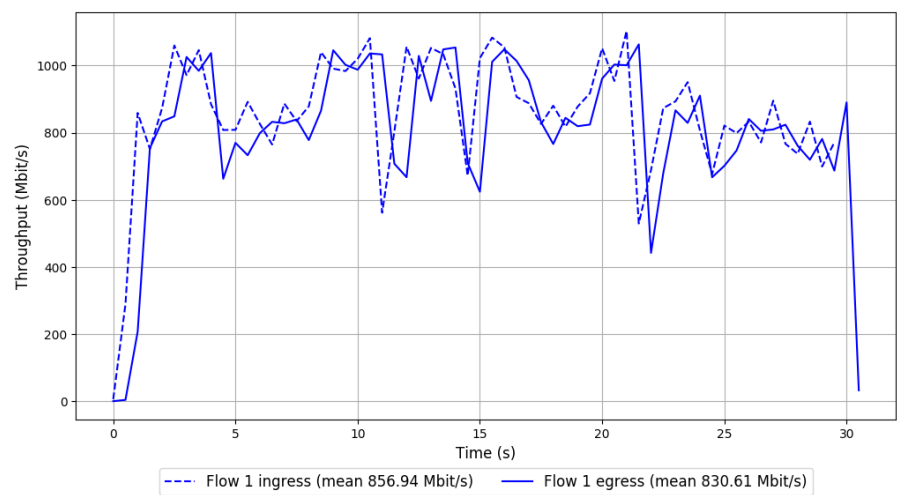


Run 3: Statistics of FillP

Start at: 2018-10-10 12:22:23
End at: 2018-10-10 12:22:53
Local clock offset: 0.061 ms
Remote clock offset: -0.256 ms

Below is generated by plot.py at 2018-10-10 14:09:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 830.61 Mbit/s
95th percentile per-packet one-way delay: 130.438 ms
Loss rate: 3.07%
-- Flow 1:
Average throughput: 830.61 Mbit/s
95th percentile per-packet one-way delay: 130.438 ms
Loss rate: 3.07%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-10-10 12:48:13

End at: 2018-10-10 12:48:43

Local clock offset: 0.034 ms

Remote clock offset: 1.352 ms

Below is generated by plot.py at 2018-10-10 14:09:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 791.50 Mbit/s

95th percentile per-packet one-way delay: 131.373 ms

Loss rate: 0.78%

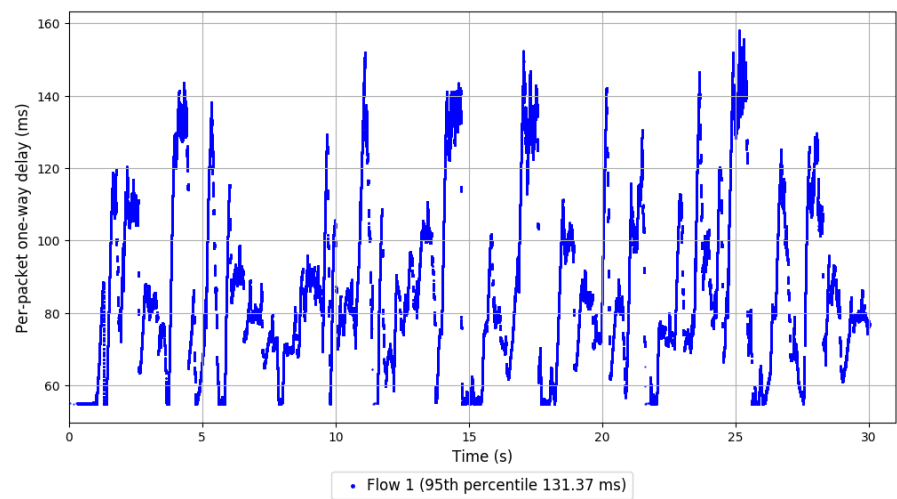
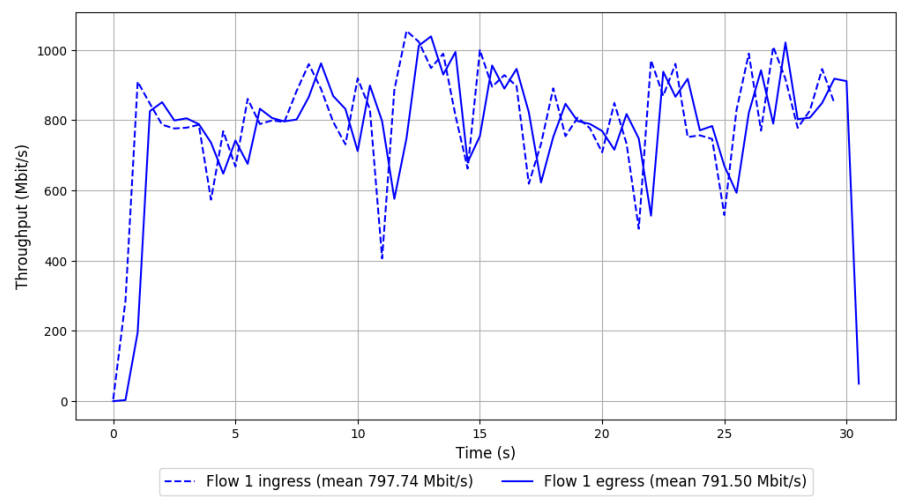
-- Flow 1:

Average throughput: 791.50 Mbit/s

95th percentile per-packet one-way delay: 131.373 ms

Loss rate: 0.78%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-10 13:14:00

End at: 2018-10-10 13:14:30

Local clock offset: -0.073 ms

Remote clock offset: 1.344 ms

Below is generated by plot.py at 2018-10-10 14:09:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 823.14 Mbit/s

95th percentile per-packet one-way delay: 114.704 ms

Loss rate: 0.88%

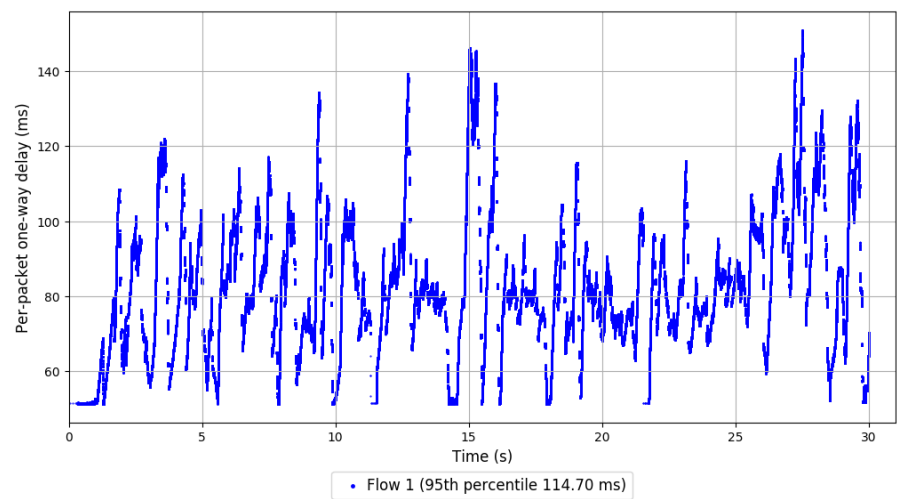
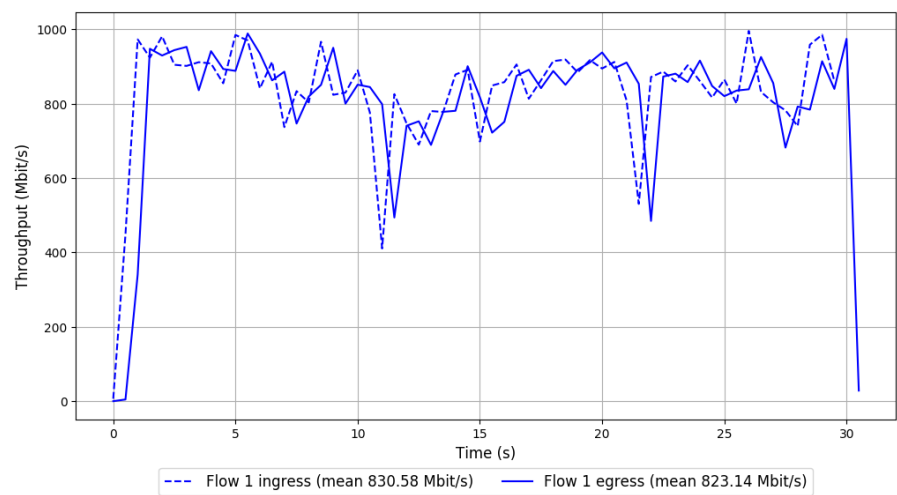
-- Flow 1:

Average throughput: 823.14 Mbit/s

95th percentile per-packet one-way delay: 114.704 ms

Loss rate: 0.88%

Run 5: Report of FillP — Data Link

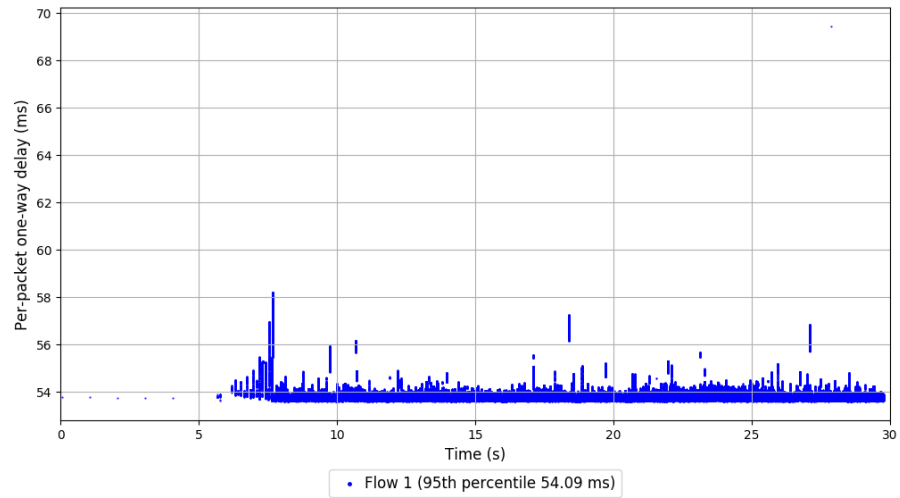
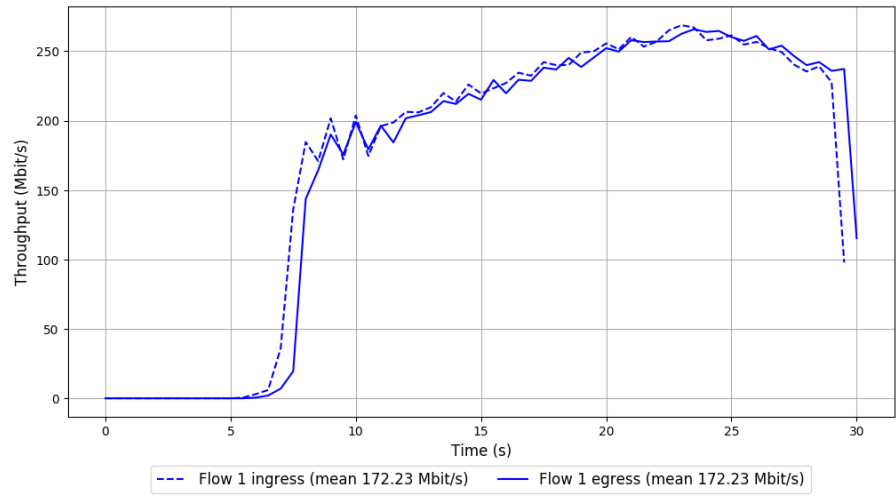


```
Run 1: Statistics of Indigo

Start at: 2018-10-10 11:17:50
End at: 2018-10-10 11:18:20
Local clock offset: -0.251 ms
Remote clock offset: 0.129 ms

# Below is generated by plot.py at 2018-10-10 14:09:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 172.23 Mbit/s
95th percentile per-packet one-way delay: 54.086 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 172.23 Mbit/s
95th percentile per-packet one-way delay: 54.086 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

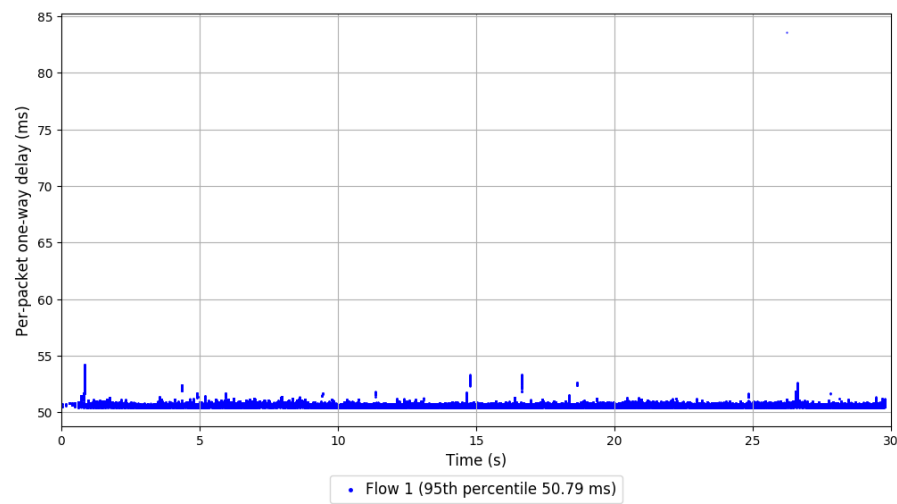
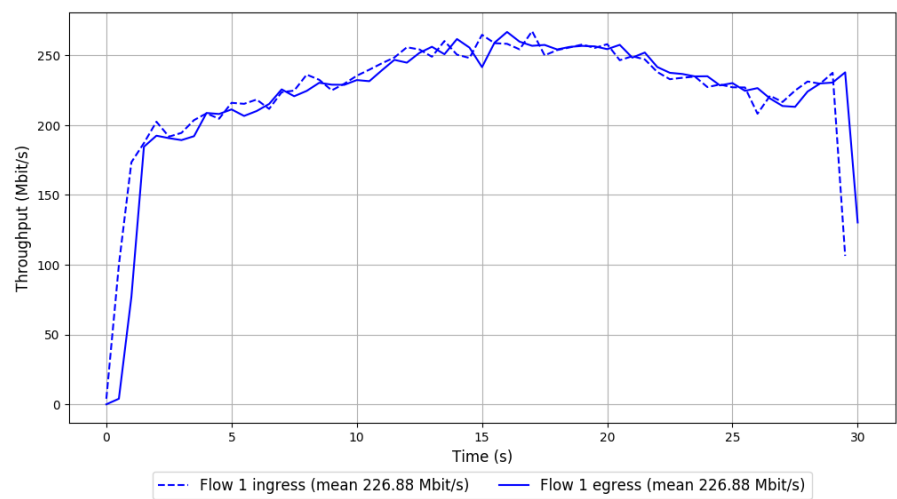


Run 2: Statistics of Indigo

Start at: 2018-10-10 11:43:25
End at: 2018-10-10 11:43:55
Local clock offset: -0.018 ms
Remote clock offset: -0.111 ms

Below is generated by plot.py at 2018-10-10 14:09:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 226.88 Mbit/s
95th percentile per-packet one-way delay: 50.786 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 226.88 Mbit/s
95th percentile per-packet one-way delay: 50.786 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link

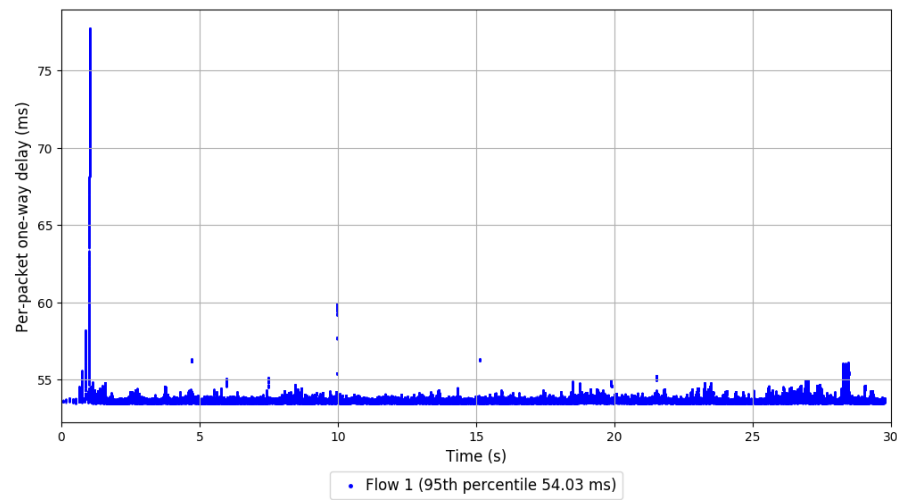
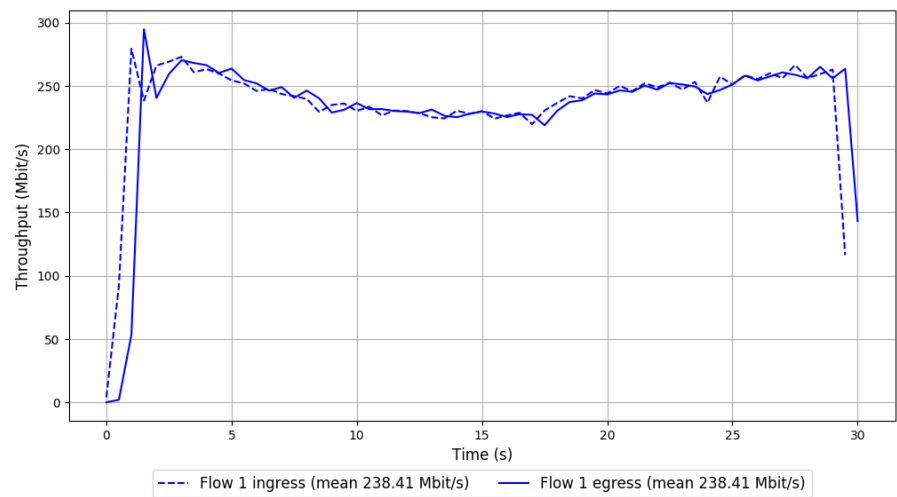


Run 3: Statistics of Indigo

Start at: 2018-10-10 12:09:09
End at: 2018-10-10 12:09:39
Local clock offset: 0.024 ms
Remote clock offset: -0.023 ms

Below is generated by plot.py at 2018-10-10 14:09:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 238.41 Mbit/s
95th percentile per-packet one-way delay: 54.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 238.41 Mbit/s
95th percentile per-packet one-way delay: 54.027 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-10-10 12:34:58

End at: 2018-10-10 12:35:28

Local clock offset: -0.098 ms

Remote clock offset: 0.657 ms

Below is generated by plot.py at 2018-10-10 14:09:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 254.64 Mbit/s

95th percentile per-packet one-way delay: 51.232 ms

Loss rate: 0.00%

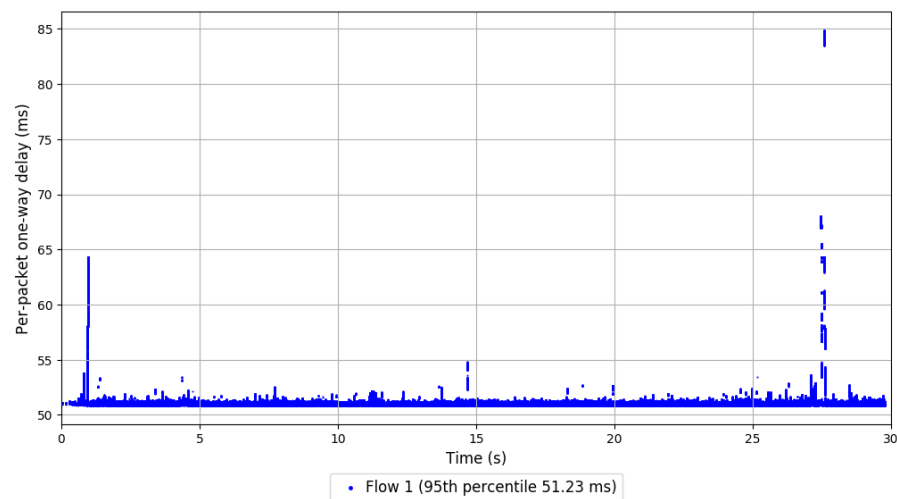
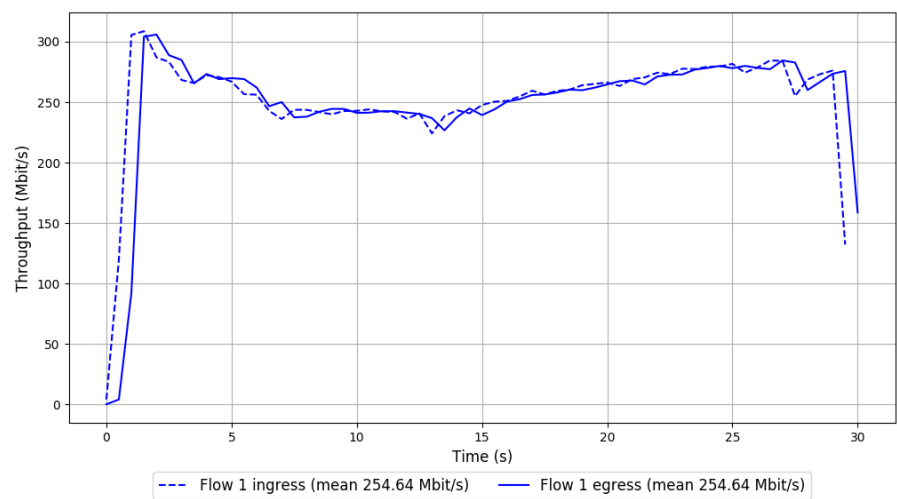
-- Flow 1:

Average throughput: 254.64 Mbit/s

95th percentile per-packet one-way delay: 51.232 ms

Loss rate: 0.00%

Run 4: Report of Indigo — Data Link

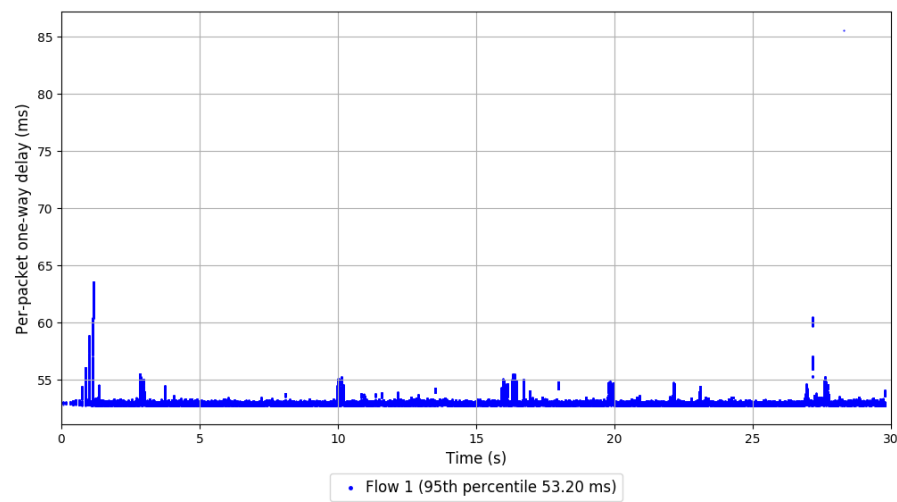
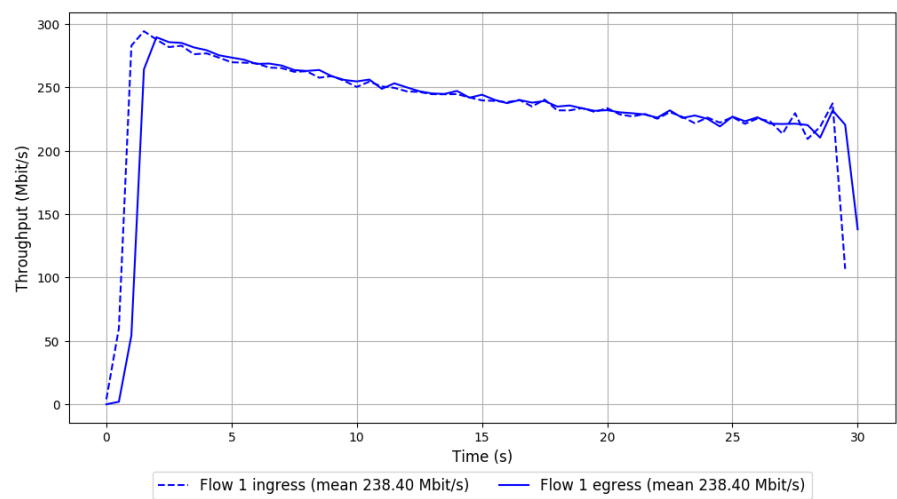


Run 5: Statistics of Indigo

Start at: 2018-10-10 13:00:45
End at: 2018-10-10 13:01:15
Local clock offset: 0.195 ms
Remote clock offset: -0.137 ms

Below is generated by plot.py at 2018-10-10 14:09:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 238.40 Mbit/s
95th percentile per-packet one-way delay: 53.202 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 238.40 Mbit/s
95th percentile per-packet one-way delay: 53.202 ms
Loss rate: 0.00%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-10 11:25:43

End at: 2018-10-10 11:26:13

Local clock offset: -0.132 ms

Remote clock offset: 0.147 ms

Below is generated by plot.py at 2018-10-10 14:09:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 300.20 Mbit/s

95th percentile per-packet one-way delay: 83.485 ms

Loss rate: 0.00%

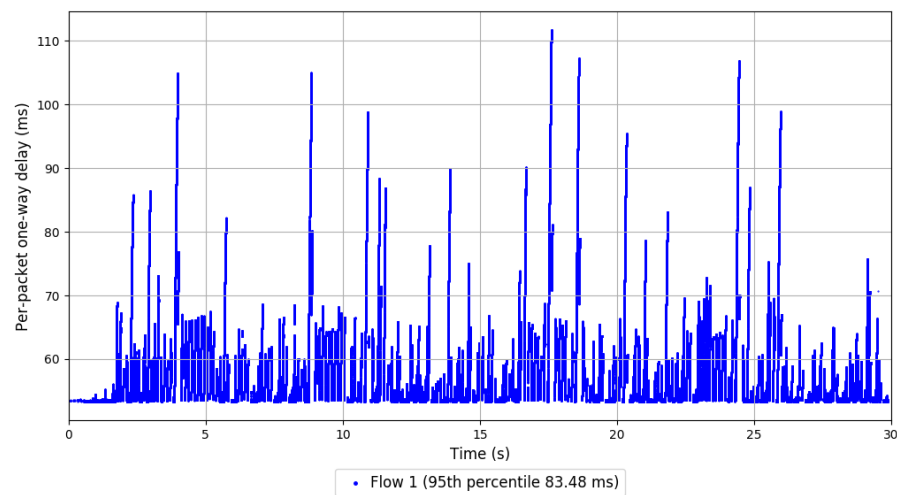
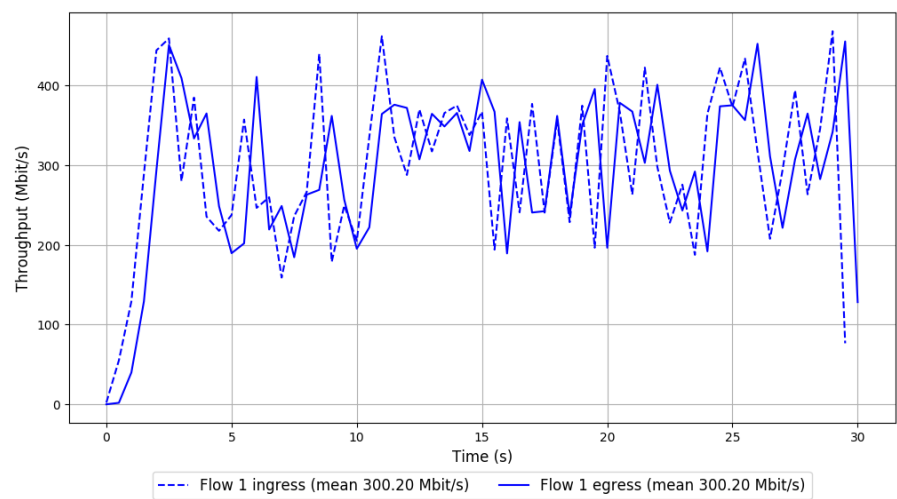
-- Flow 1:

Average throughput: 300.20 Mbit/s

95th percentile per-packet one-way delay: 83.485 ms

Loss rate: 0.00%

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

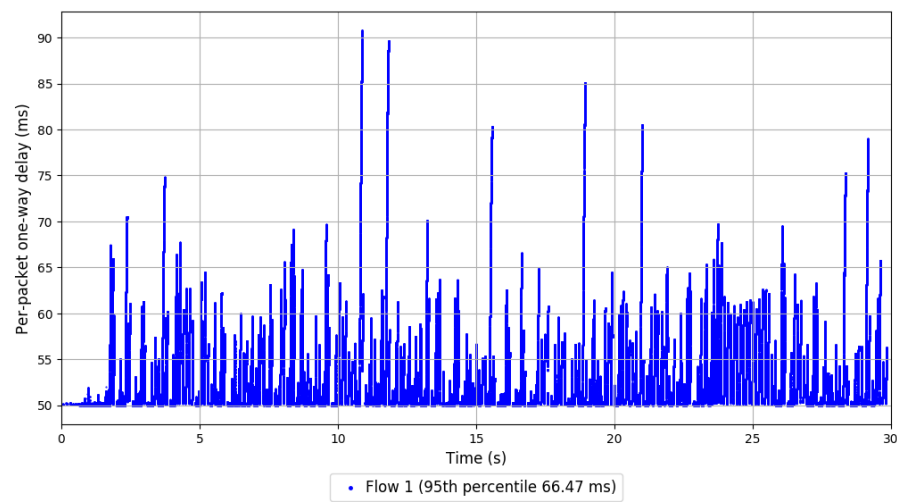
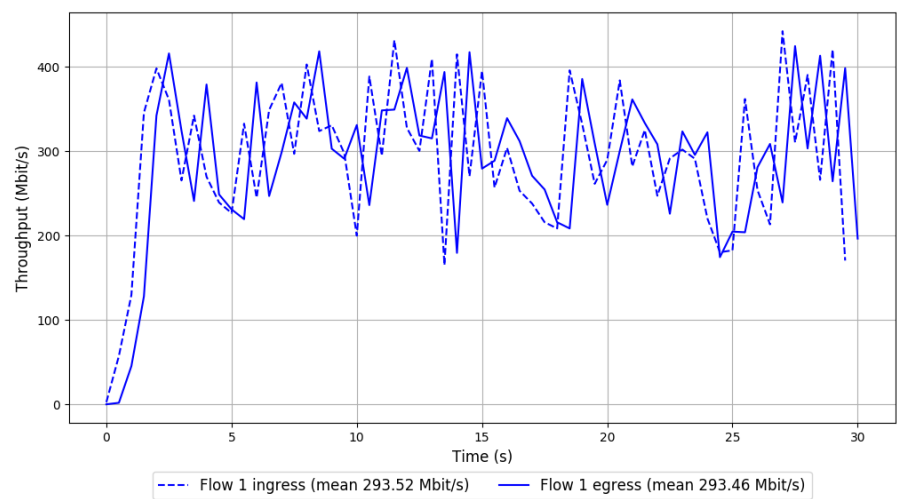


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-10 11:51:22
End at: 2018-10-10 11:51:52
Local clock offset: -0.261 ms
Remote clock offset: -0.629 ms

Below is generated by plot.py at 2018-10-10 14:09:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 293.46 Mbit/s
95th percentile per-packet one-way delay: 66.474 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 293.46 Mbit/s
95th percentile per-packet one-way delay: 66.474 ms
Loss rate: 0.00%

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

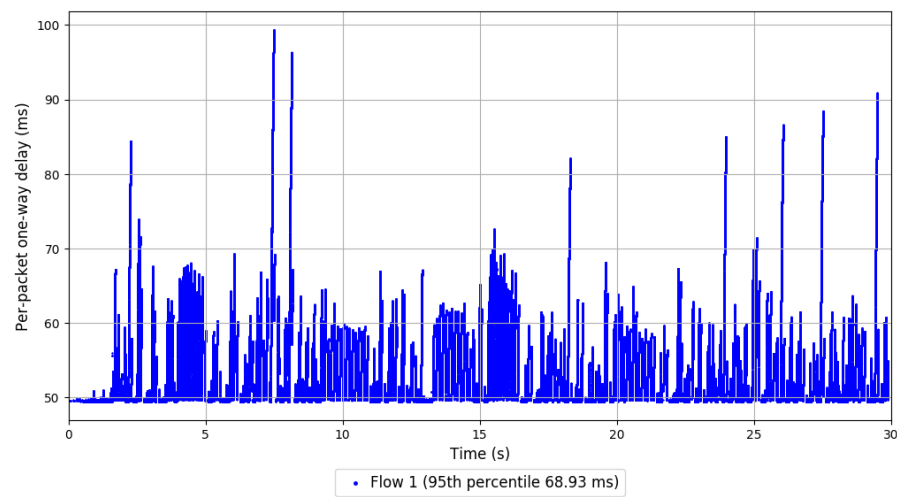
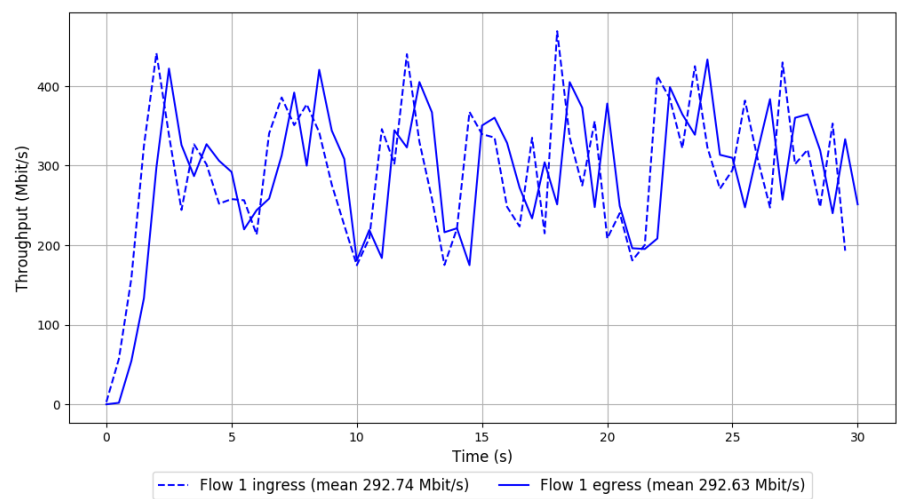


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-10 12:17:09
End at: 2018-10-10 12:17:39
Local clock offset: -0.015 ms
Remote clock offset: -0.695 ms

Below is generated by plot.py at 2018-10-10 14:10:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 292.63 Mbit/s
95th percentile per-packet one-way delay: 68.929 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 292.63 Mbit/s
95th percentile per-packet one-way delay: 68.929 ms
Loss rate: 0.03%

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

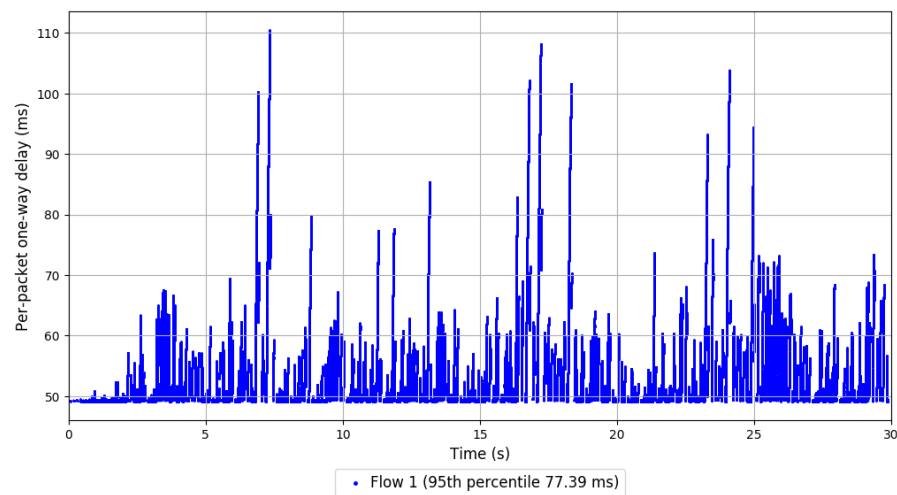
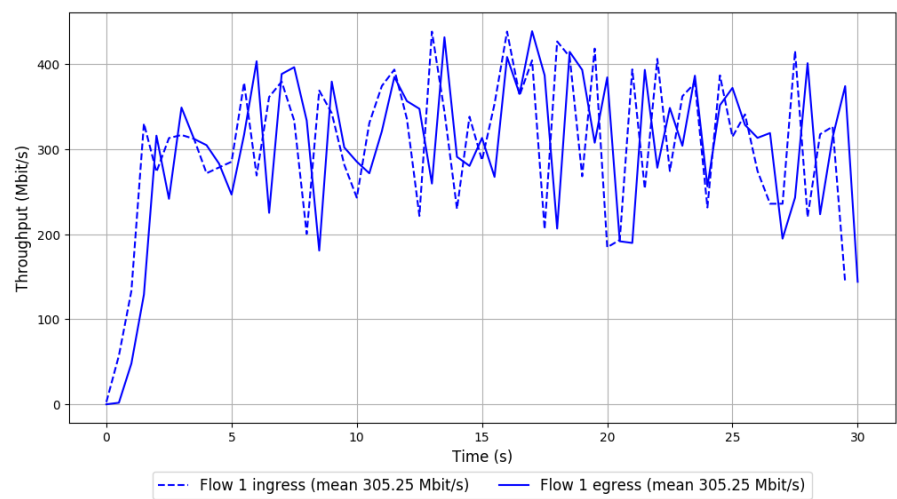


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-10 12:43:00
End at: 2018-10-10 12:43:30
Local clock offset: 0.044 ms
Remote clock offset: -0.628 ms

Below is generated by plot.py at 2018-10-10 14:11:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 305.25 Mbit/s
95th percentile per-packet one-way delay: 77.390 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 305.25 Mbit/s
95th percentile per-packet one-way delay: 77.390 ms
Loss rate: 0.00%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-10 13:08:44

End at: 2018-10-10 13:09:14

Local clock offset: -0.138 ms

Remote clock offset: 0.847 ms

Below is generated by plot.py at 2018-10-10 14:11:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 299.74 Mbit/s

95th percentile per-packet one-way delay: 74.850 ms

Loss rate: 0.00%

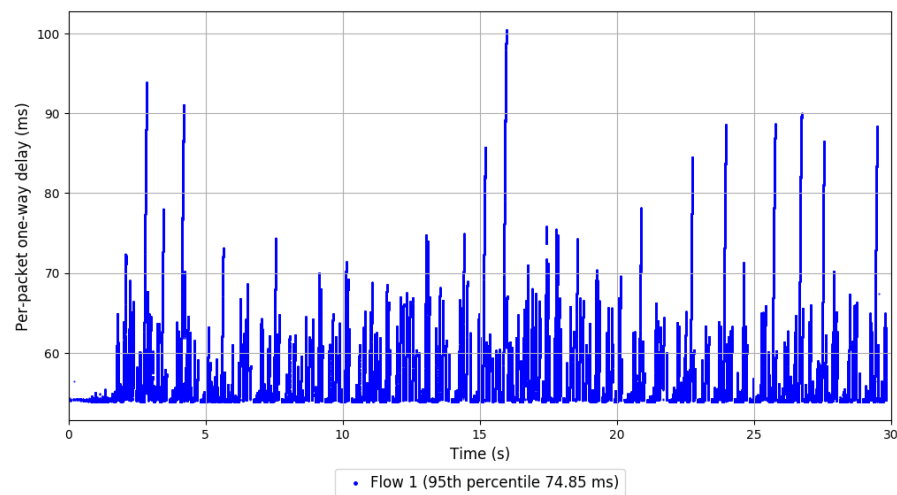
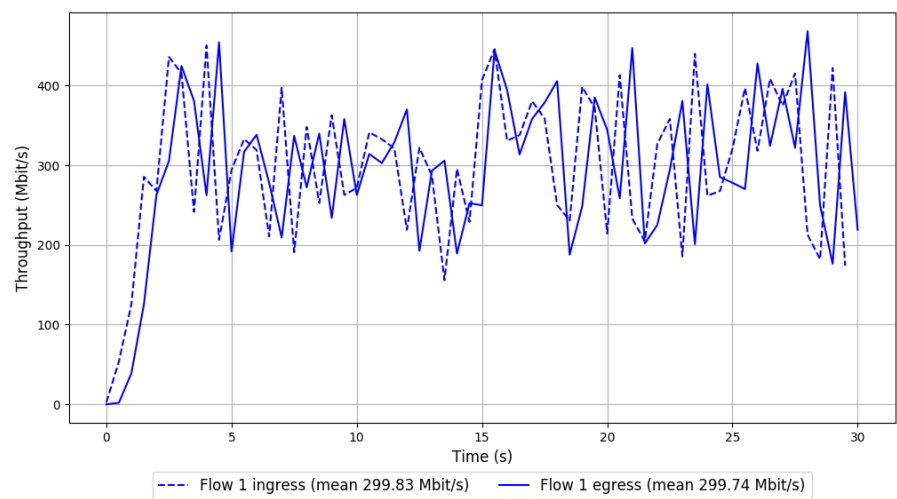
-- Flow 1:

Average throughput: 299.74 Mbit/s

95th percentile per-packet one-way delay: 74.850 ms

Loss rate: 0.00%

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

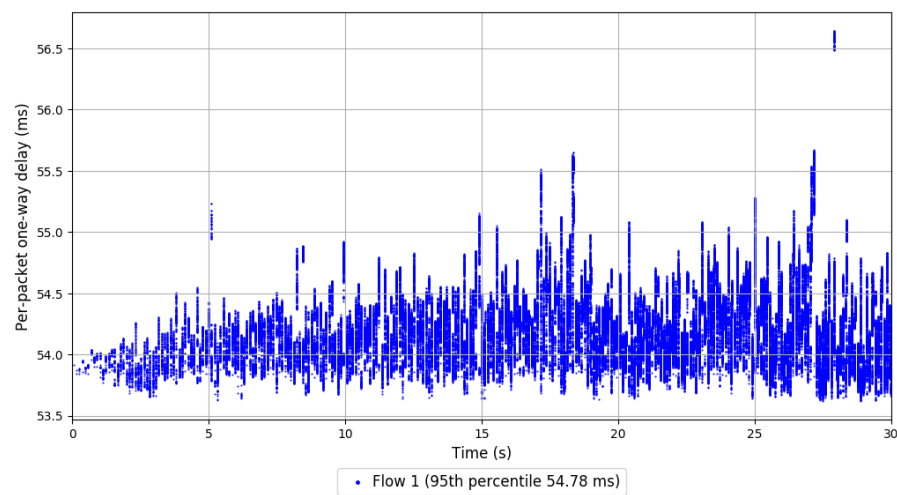
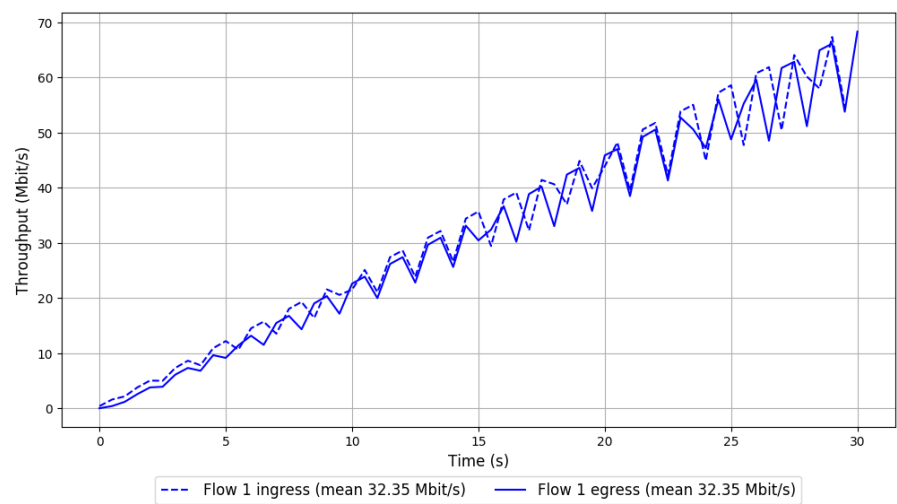


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-10 11:20:40
End at: 2018-10-10 11:21:10
Local clock offset: 0.018 ms
Remote clock offset: 0.288 ms

# Below is generated by plot.py at 2018-10-10 14:11:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.35 Mbit/s
95th percentile per-packet one-way delay: 54.780 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 32.35 Mbit/s
95th percentile per-packet one-way delay: 54.780 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-10-10 11:46:19

End at: 2018-10-10 11:46:49

Local clock offset: 0.032 ms

Remote clock offset: 0.052 ms

Below is generated by plot.py at 2018-10-10 14:11:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 33.96 Mbit/s

95th percentile per-packet one-way delay: 51.537 ms

Loss rate: 0.00%

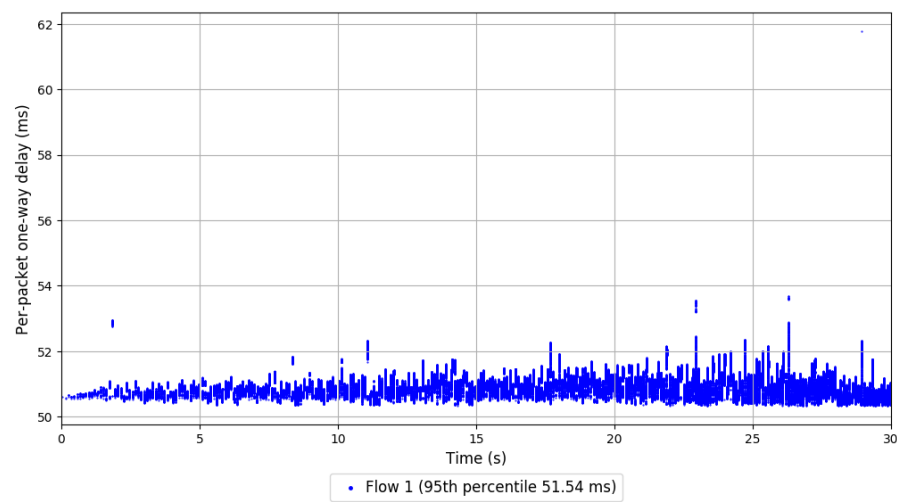
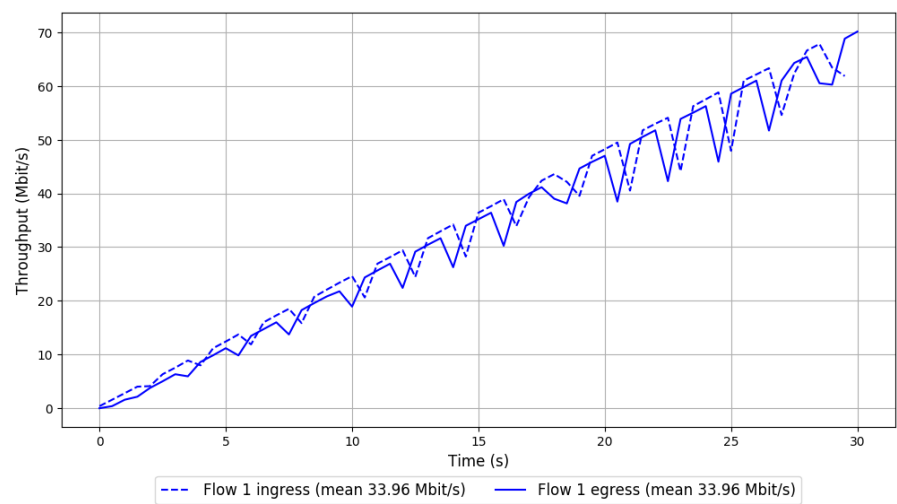
-- Flow 1:

Average throughput: 33.96 Mbit/s

95th percentile per-packet one-way delay: 51.537 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

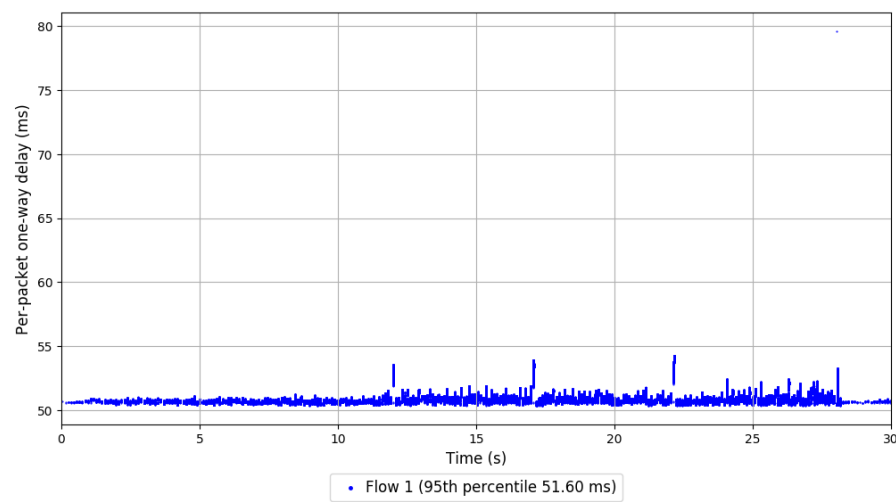
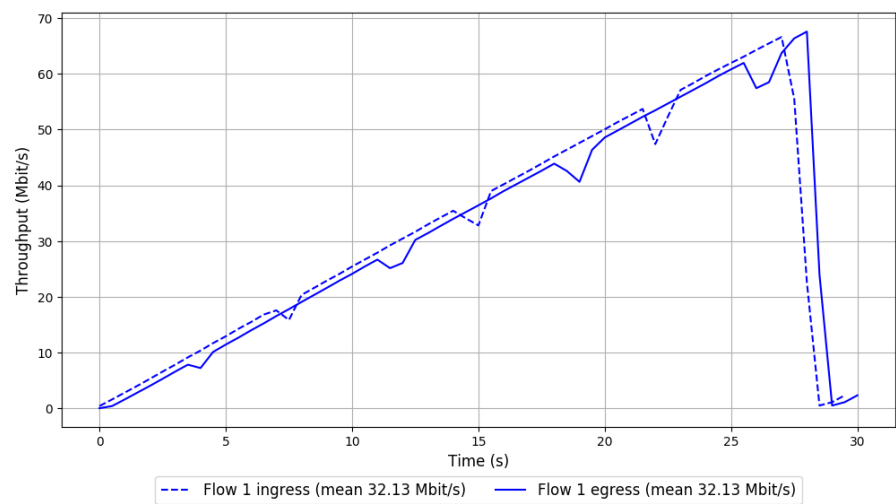


Run 3: Statistics of LEDBAT

Start at: 2018-10-10 12:12:05
End at: 2018-10-10 12:12:35
Local clock offset: -0.2 ms
Remote clock offset: -0.013 ms

Below is generated by plot.py at 2018-10-10 14:11:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 32.13 Mbit/s
95th percentile per-packet one-way delay: 51.598 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 32.13 Mbit/s
95th percentile per-packet one-way delay: 51.598 ms
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-10 12:37:55

End at: 2018-10-10 12:38:25

Local clock offset: -0.249 ms

Remote clock offset: 1.468 ms

Below is generated by plot.py at 2018-10-10 14:11:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 34.65 Mbit/s

95th percentile per-packet one-way delay: 53.250 ms

Loss rate: 0.00%

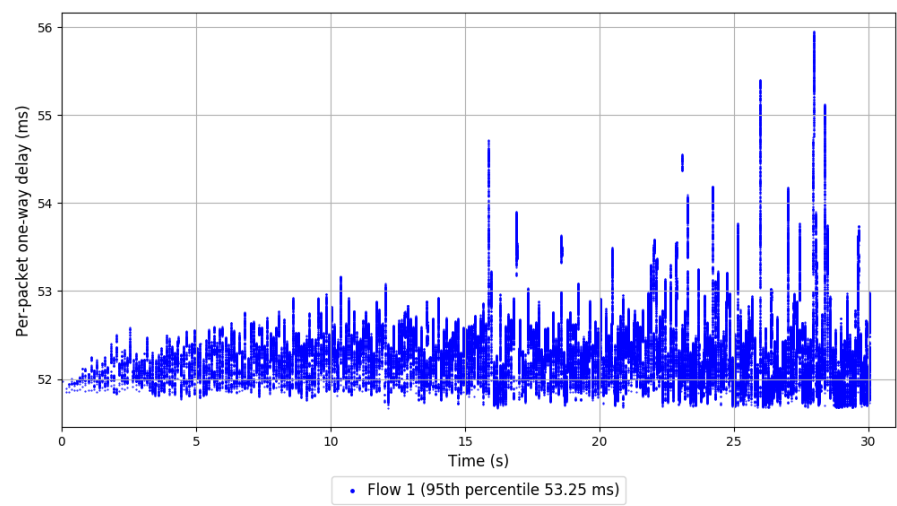
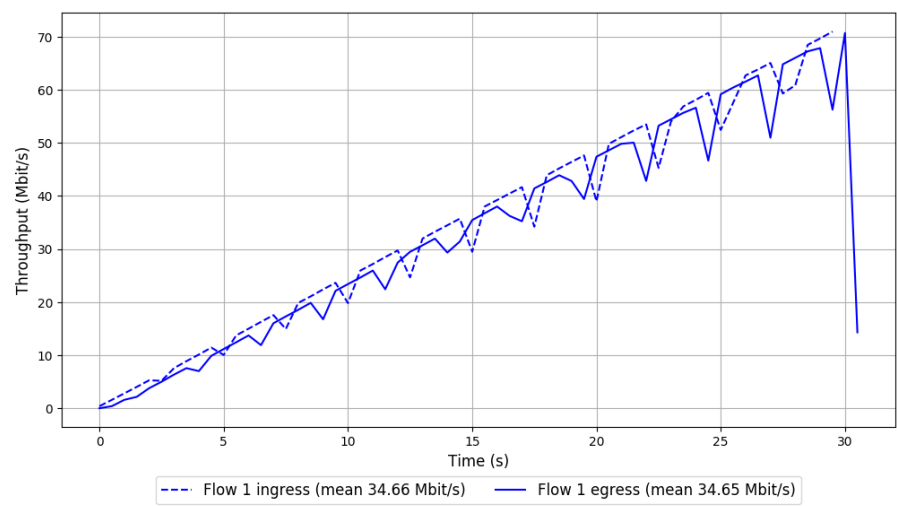
-- Flow 1:

Average throughput: 34.65 Mbit/s

95th percentile per-packet one-way delay: 53.250 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

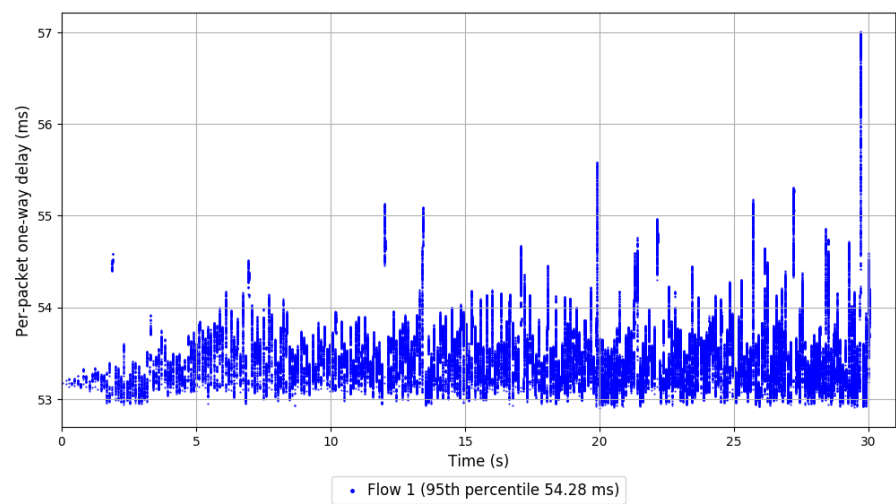
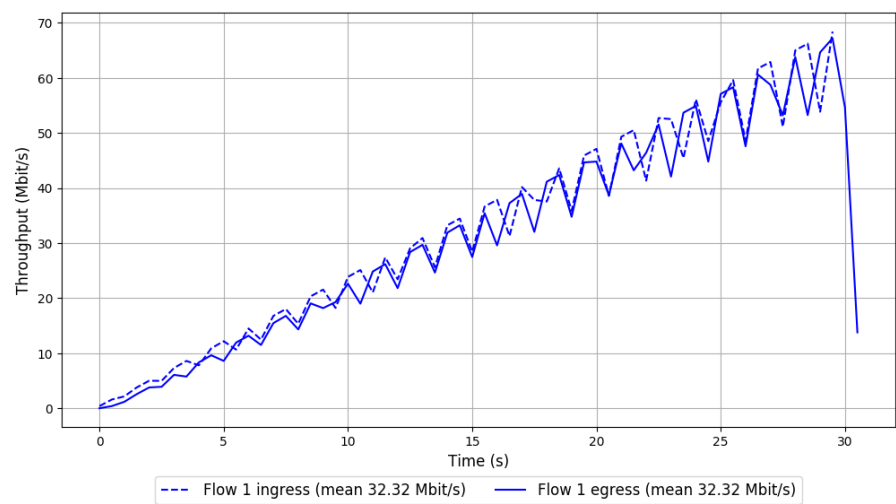


Run 5: Statistics of LEDBAT

Start at: 2018-10-10 13:03:41
End at: 2018-10-10 13:04:11
Local clock offset: -0.12 ms
Remote clock offset: -0.591 ms

Below is generated by plot.py at 2018-10-10 14:11:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: 54.285 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: 54.285 ms
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

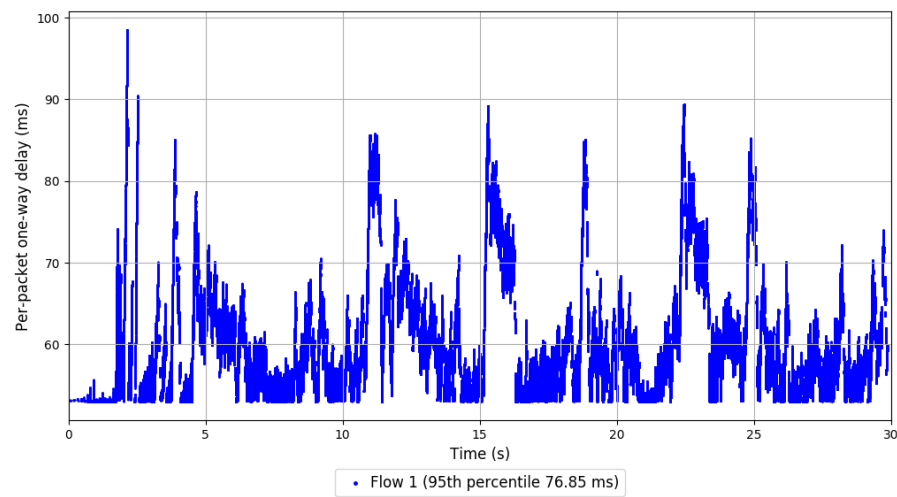
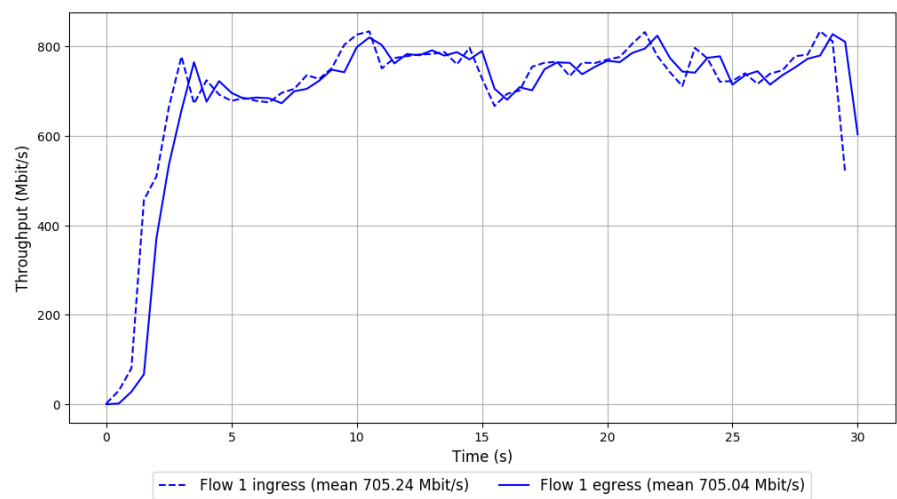


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-10 11:21:49
End at: 2018-10-10 11:22:19
Local clock offset: -0.156 ms
Remote clock offset: -0.493 ms

Below is generated by plot.py at 2018-10-10 14:20:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 705.04 Mbit/s
95th percentile per-packet one-way delay: 76.853 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 705.04 Mbit/s
95th percentile per-packet one-way delay: 76.853 ms
Loss rate: 0.03%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-10-10 11:47:29

End at: 2018-10-10 11:47:59

Local clock offset: -0.056 ms

Remote clock offset: -0.76 ms

Below is generated by plot.py at 2018-10-10 14:20:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 692.68 Mbit/s

95th percentile per-packet one-way delay: 71.673 ms

Loss rate: 0.00%

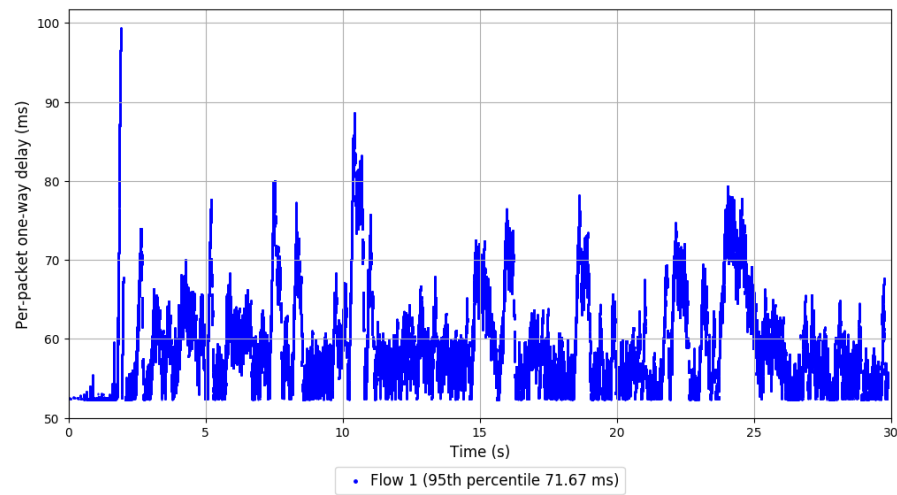
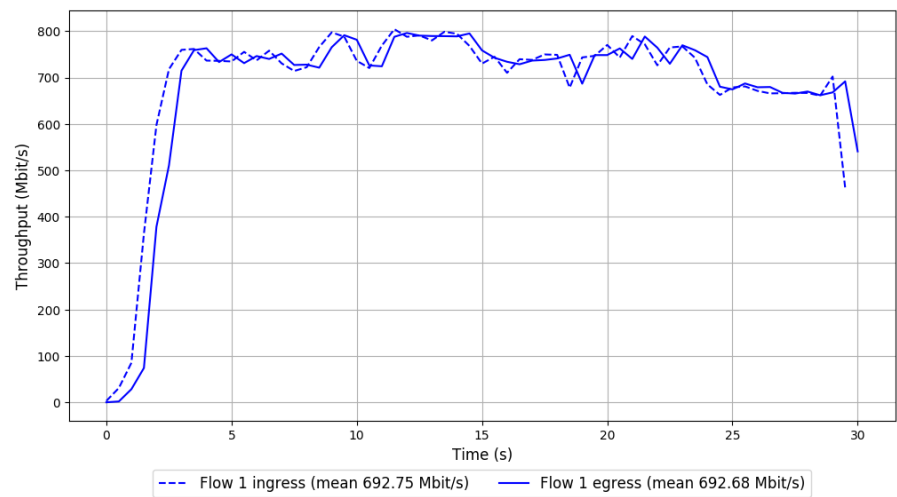
-- Flow 1:

Average throughput: 692.68 Mbit/s

95th percentile per-packet one-way delay: 71.673 ms

Loss rate: 0.00%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-10-10 12:13:15

End at: 2018-10-10 12:13:45

Local clock offset: 0.105 ms

Remote clock offset: -0.84 ms

Below is generated by plot.py at 2018-10-10 14:20:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 699.19 Mbit/s

95th percentile per-packet one-way delay: 76.837 ms

Loss rate: 0.06%

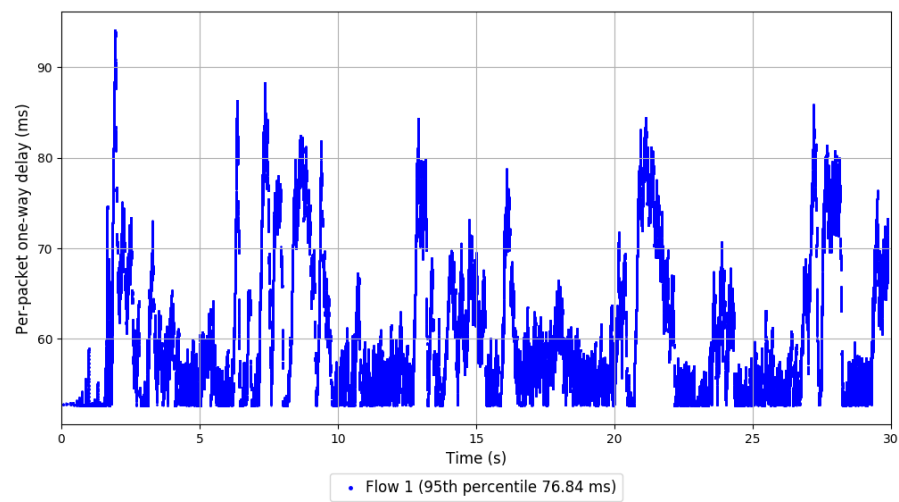
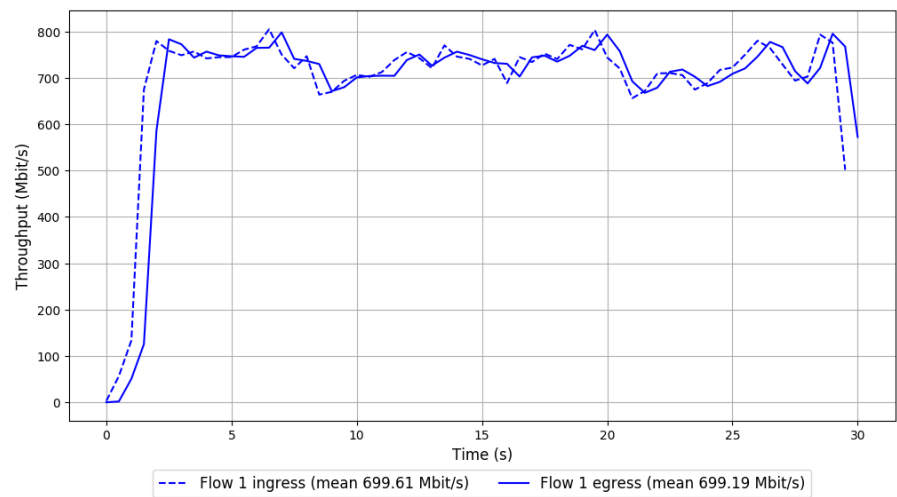
-- Flow 1:

Average throughput: 699.19 Mbit/s

95th percentile per-packet one-way delay: 76.837 ms

Loss rate: 0.06%

Run 3: Report of Indigo-Muses — Data Link

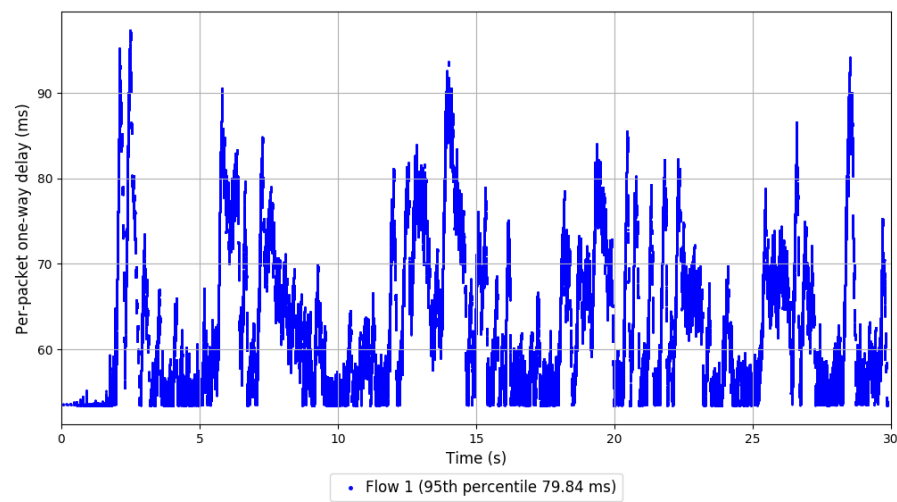
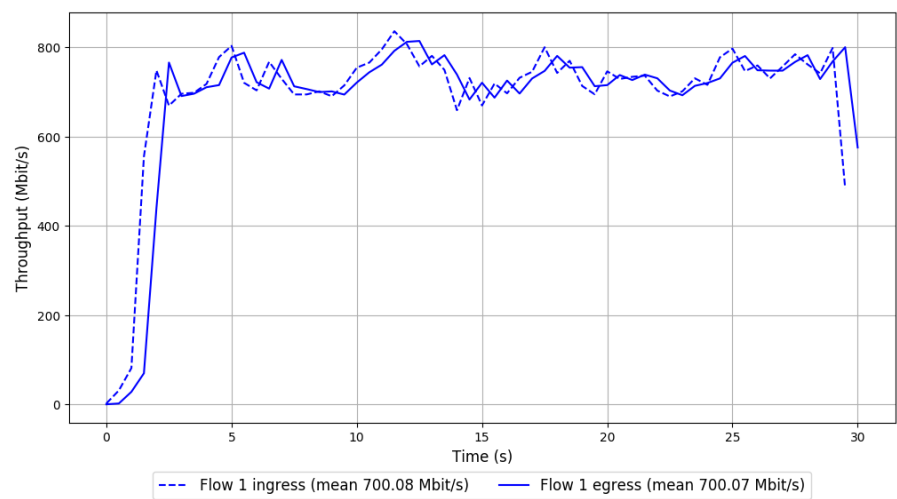


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-10 12:39:05
End at: 2018-10-10 12:39:35
Local clock offset: -0.115 ms
Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-10-10 14:20:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 700.07 Mbit/s
95th percentile per-packet one-way delay: 79.839 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 700.07 Mbit/s
95th percentile per-packet one-way delay: 79.839 ms
Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-10 13:04:51

End at: 2018-10-10 13:05:21

Local clock offset: 0.171 ms

Remote clock offset: 0.382 ms

Below is generated by plot.py at 2018-10-10 14:20:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 659.39 Mbit/s

95th percentile per-packet one-way delay: 79.406 ms

Loss rate: 0.00%

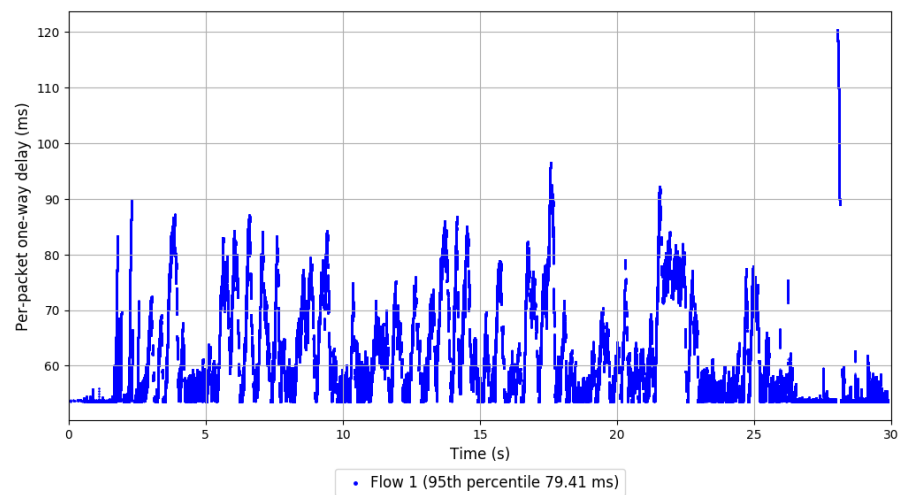
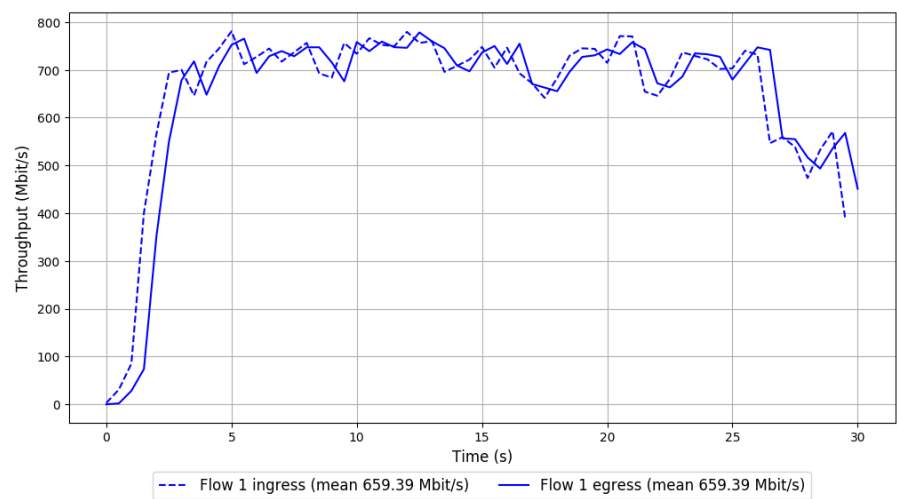
-- Flow 1:

Average throughput: 659.39 Mbit/s

95th percentile per-packet one-way delay: 79.406 ms

Loss rate: 0.00%

Run 5: Report of Indigo-Muses — Data Link

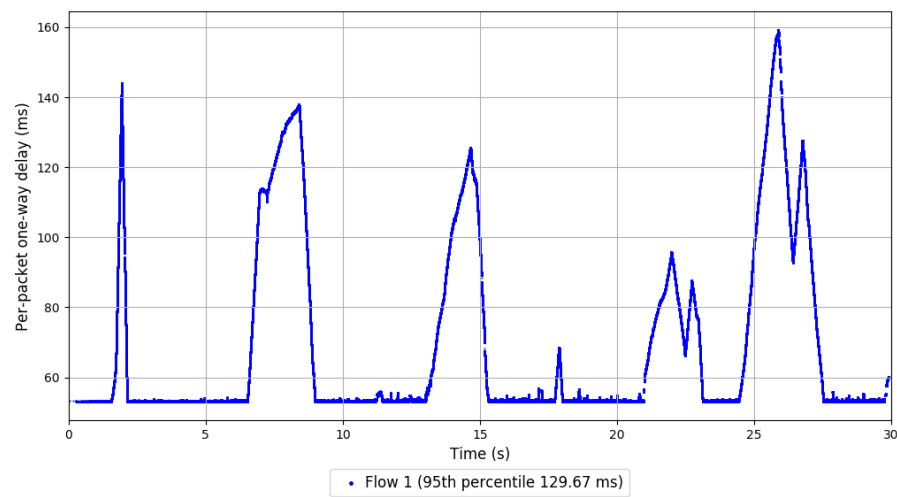
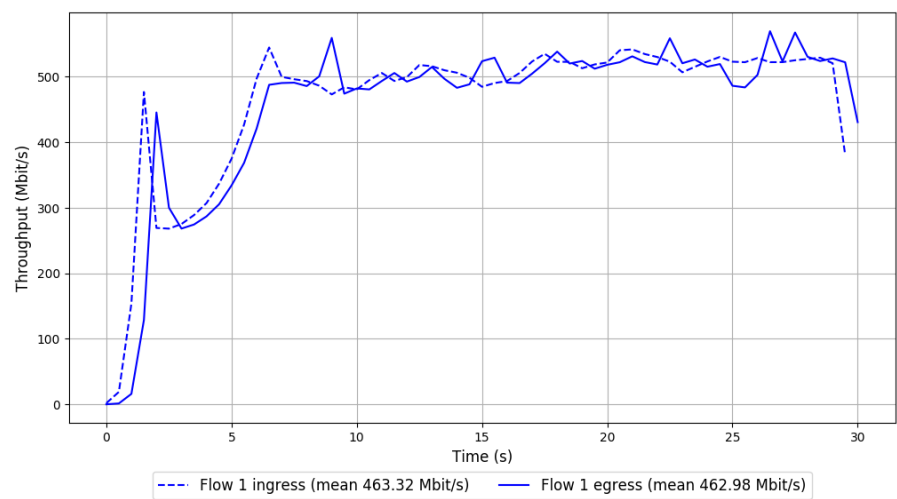


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-10 11:29:17
End at: 2018-10-10 11:29:47
Local clock offset: 0.154 ms
Remote clock offset: 0.075 ms

# Below is generated by plot.py at 2018-10-10 14:24:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 462.98 Mbit/s
95th percentile per-packet one-way delay: 129.673 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 462.98 Mbit/s
95th percentile per-packet one-way delay: 129.673 ms
Loss rate: 0.08%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-10-10 11:54:59

End at: 2018-10-10 11:55:29

Local clock offset: -0.036 ms

Remote clock offset: 0.723 ms

Below is generated by plot.py at 2018-10-10 14:24:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 463.39 Mbit/s

95th percentile per-packet one-way delay: 161.162 ms

Loss rate: 2.32%

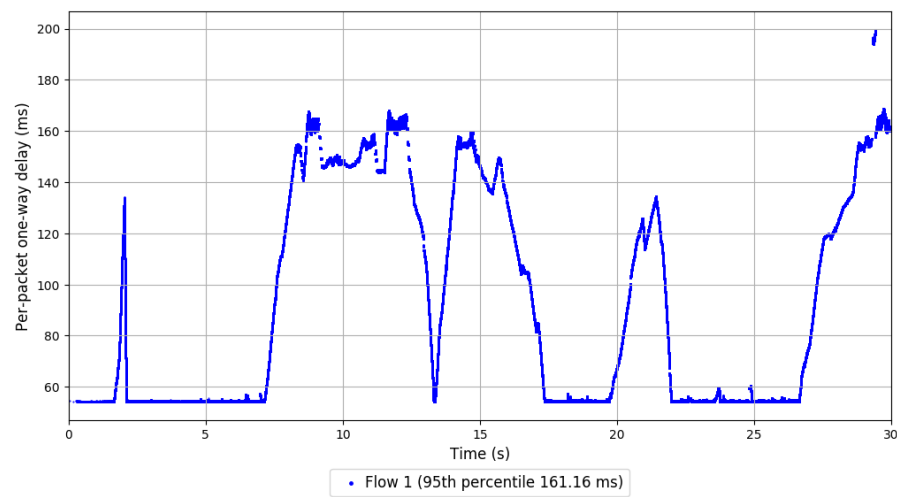
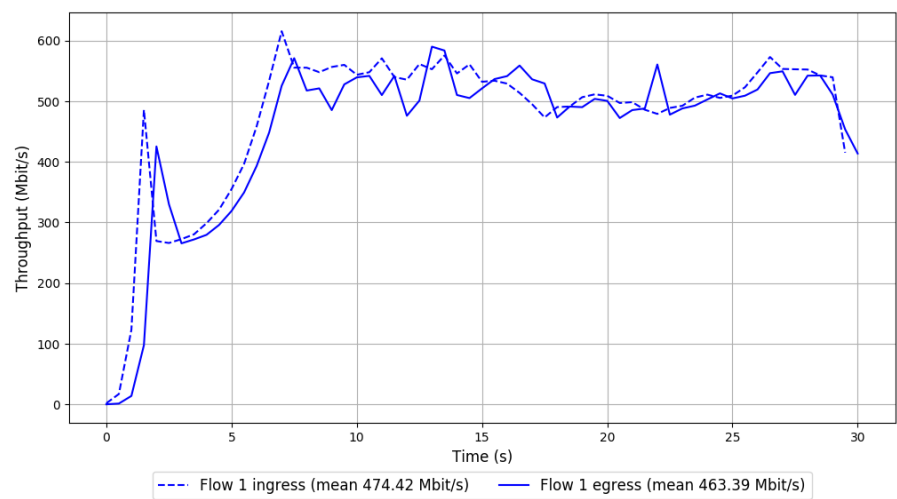
-- Flow 1:

Average throughput: 463.39 Mbit/s

95th percentile per-packet one-way delay: 161.162 ms

Loss rate: 2.32%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-10-10 12:20:46

End at: 2018-10-10 12:21:16

Local clock offset: 0.1 ms

Remote clock offset: 0.301 ms

Below is generated by plot.py at 2018-10-10 14:25:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 482.92 Mbit/s

95th percentile per-packet one-way delay: 150.586 ms

Loss rate: 1.90%

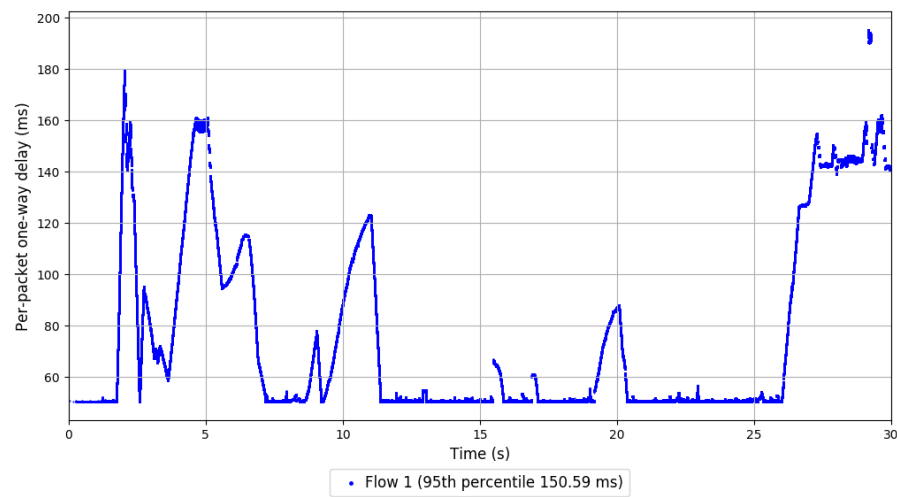
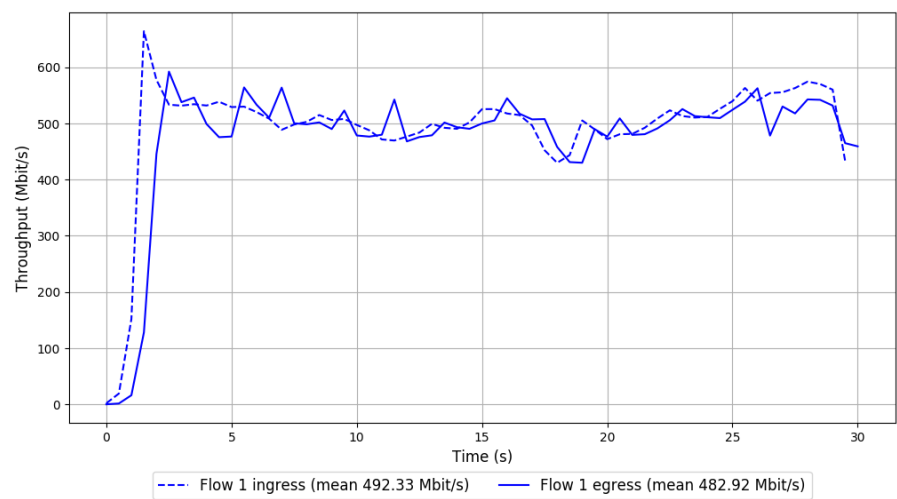
-- Flow 1:

Average throughput: 482.92 Mbit/s

95th percentile per-packet one-way delay: 150.586 ms

Loss rate: 1.90%

Run 3: Report of PCC-Allegro — Data Link

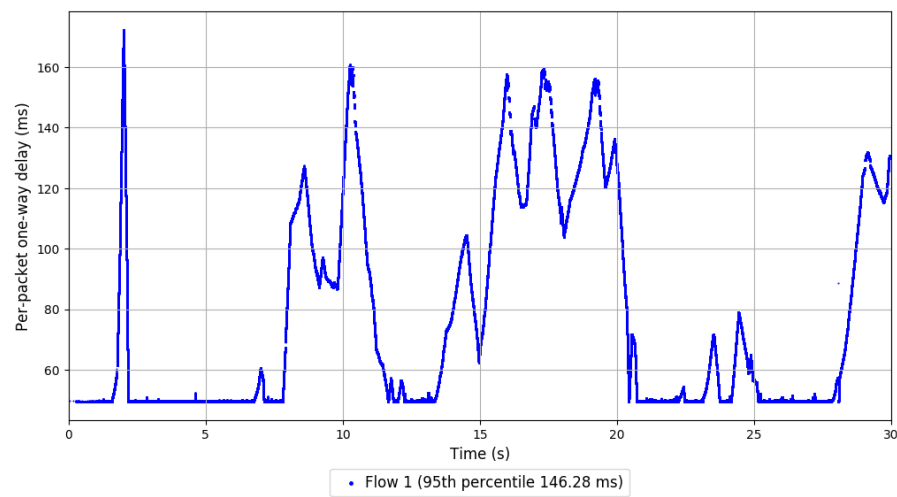
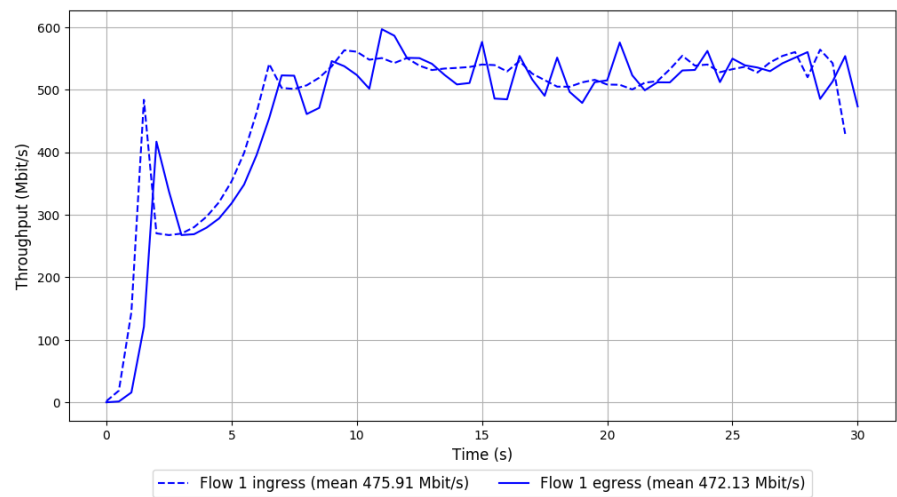


Run 4: Statistics of PCC-Allegro

Start at: 2018-10-10 12:46:37
End at: 2018-10-10 12:47:08
Local clock offset: -0.037 ms
Remote clock offset: -0.578 ms

Below is generated by plot.py at 2018-10-10 14:35:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 472.13 Mbit/s
95th percentile per-packet one-way delay: 146.283 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 472.13 Mbit/s
95th percentile per-packet one-way delay: 146.283 ms
Loss rate: 0.78%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-10-10 13:12:22

End at: 2018-10-10 13:12:52

Local clock offset: 0.039 ms

Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-10-10 14:36:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 501.50 Mbit/s

95th percentile per-packet one-way delay: 154.876 ms

Loss rate: 1.38%

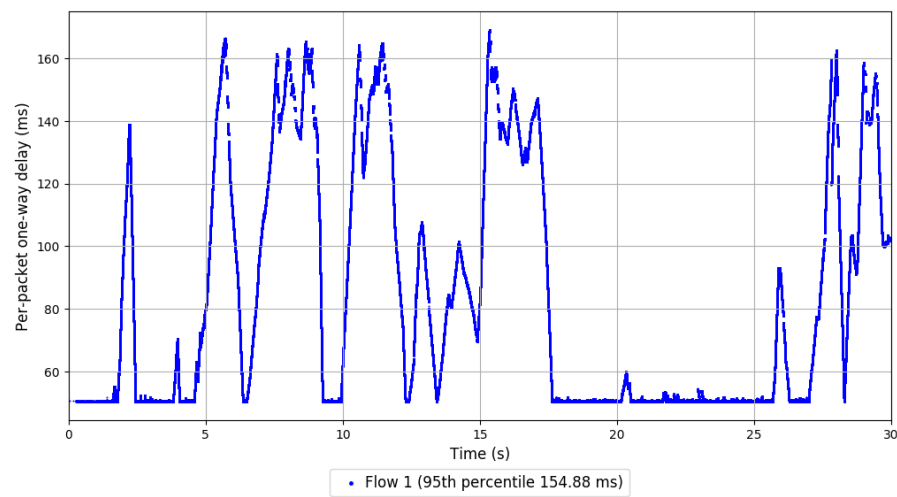
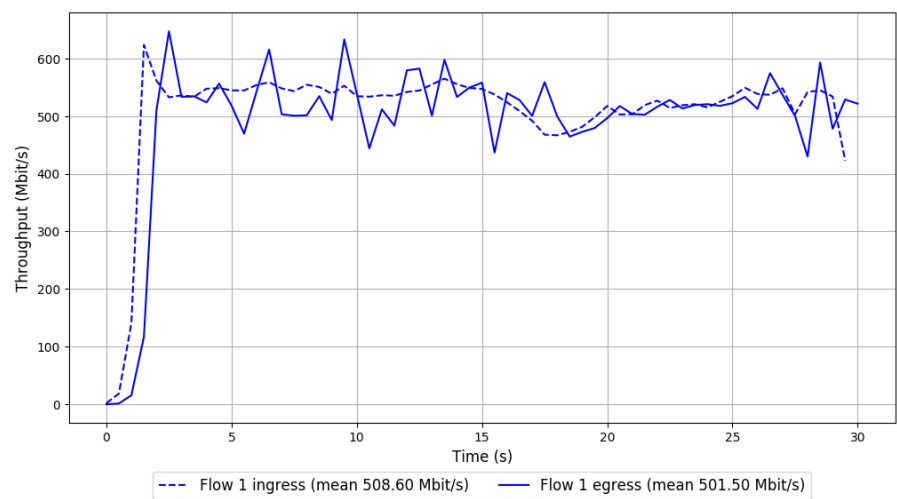
-- Flow 1:

Average throughput: 501.50 Mbit/s

95th percentile per-packet one-way delay: 154.876 ms

Loss rate: 1.38%

Run 5: Report of PCC-Allegro — Data Link

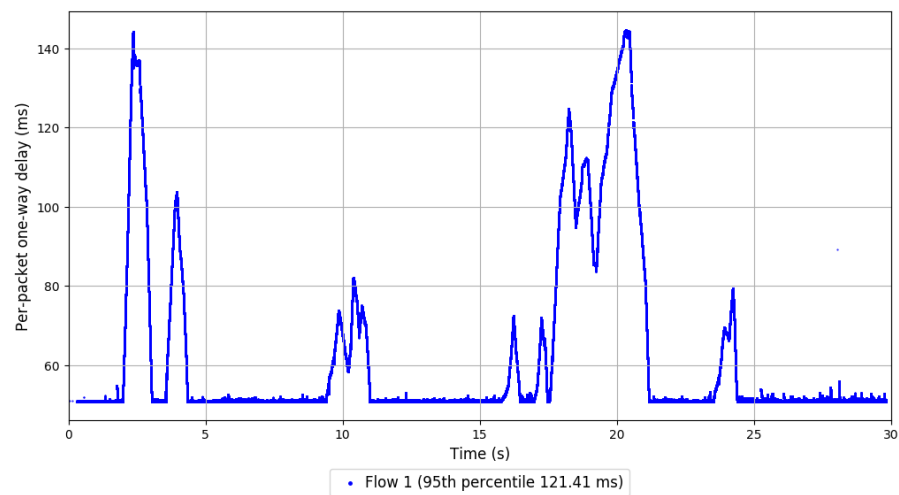
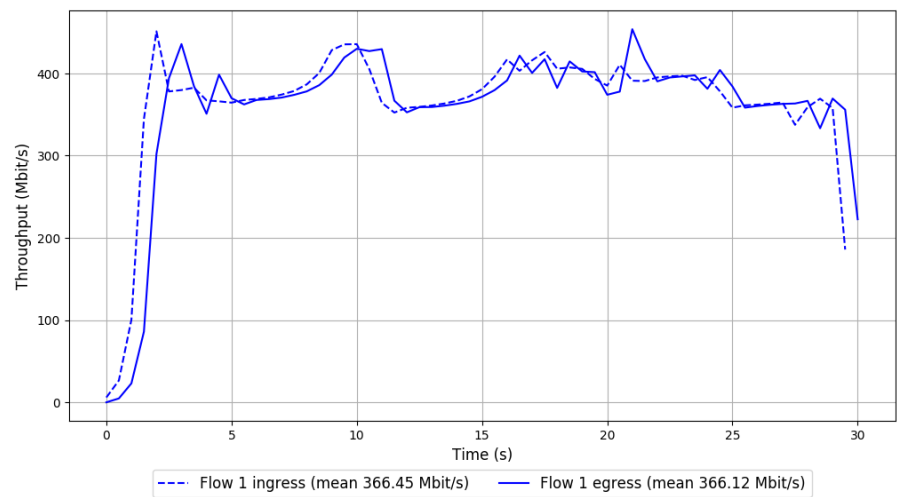


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-10 11:16:11
End at: 2018-10-10 11:16:41
Local clock offset: 0.023 ms
Remote clock offset: 0.349 ms

# Below is generated by plot.py at 2018-10-10 14:36:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 366.12 Mbit/s
95th percentile per-packet one-way delay: 121.405 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 366.12 Mbit/s
95th percentile per-packet one-way delay: 121.405 ms
Loss rate: 0.09%
```

Run 1: Report of PCC-Expr — Data Link

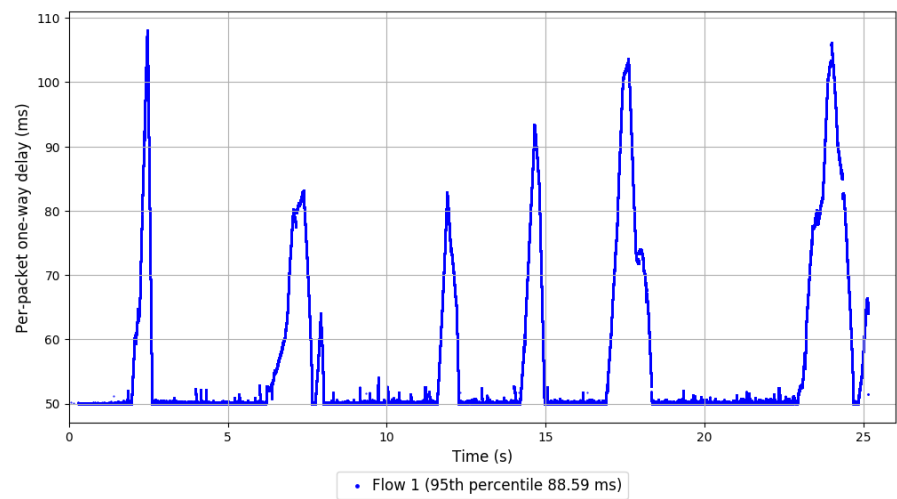
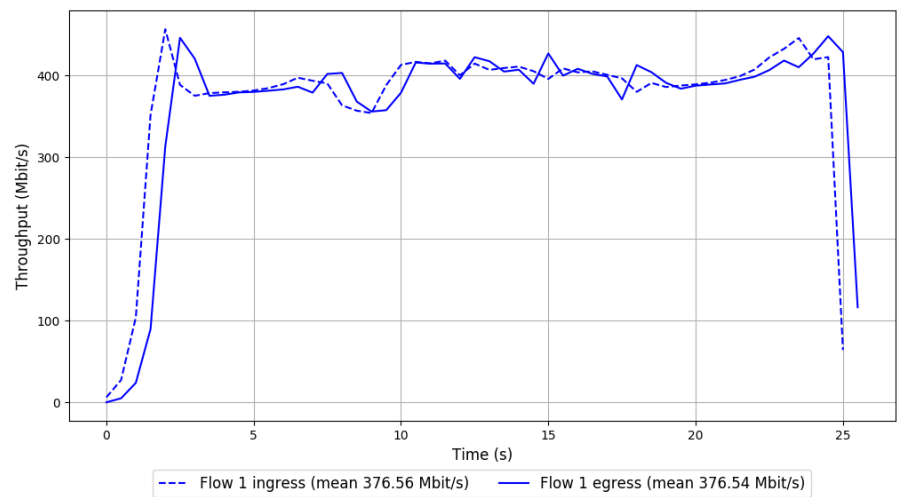


Run 2: Statistics of PCC-Expr

Start at: 2018-10-10 11:41:50
End at: 2018-10-10 11:42:21
Local clock offset: -0.127 ms
Remote clock offset: -0.176 ms

Below is generated by plot.py at 2018-10-10 14:36:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 376.54 Mbit/s
95th percentile per-packet one-way delay: 88.592 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 376.54 Mbit/s
95th percentile per-packet one-way delay: 88.592 ms
Loss rate: 0.00%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-10-10 12:07:31

End at: 2018-10-10 12:08:01

Local clock offset: -0.011 ms

Remote clock offset: 1.318 ms

Below is generated by plot.py at 2018-10-10 14:36:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 366.41 Mbit/s

95th percentile per-packet one-way delay: 97.208 ms

Loss rate: 0.09%

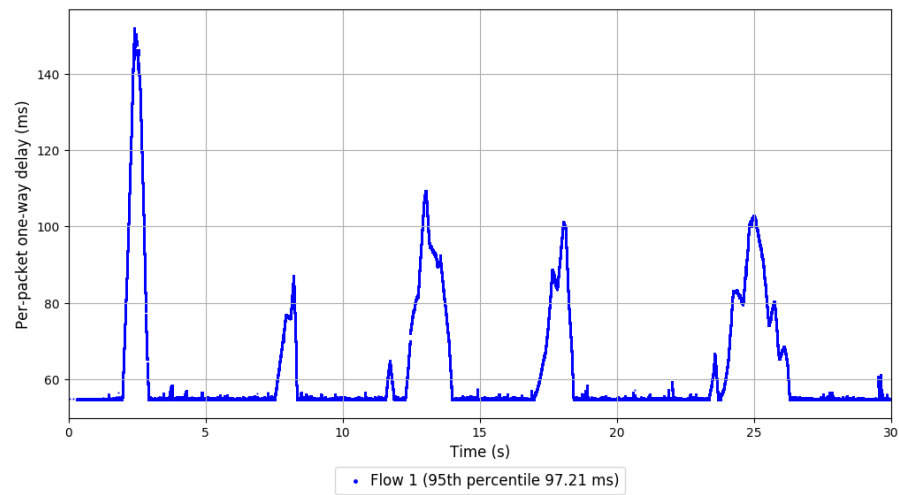
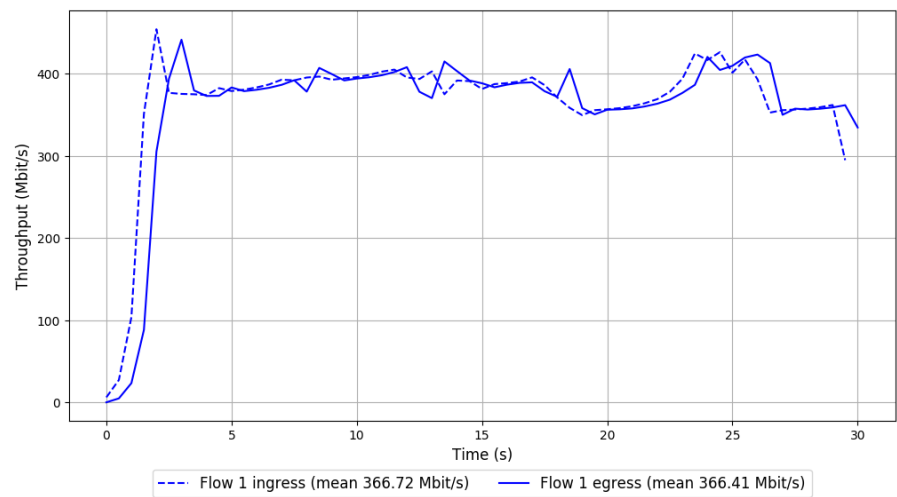
-- Flow 1:

Average throughput: 366.41 Mbit/s

95th percentile per-packet one-way delay: 97.208 ms

Loss rate: 0.09%

Run 3: Report of PCC-Expr — Data Link

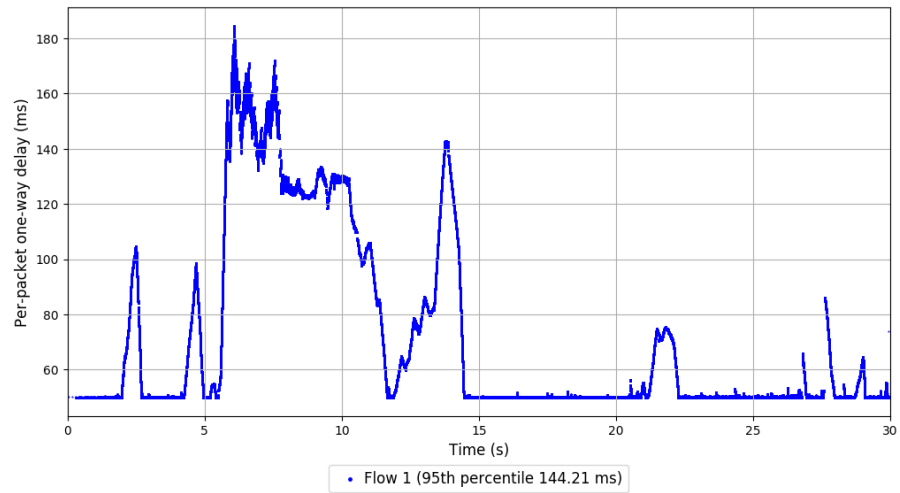
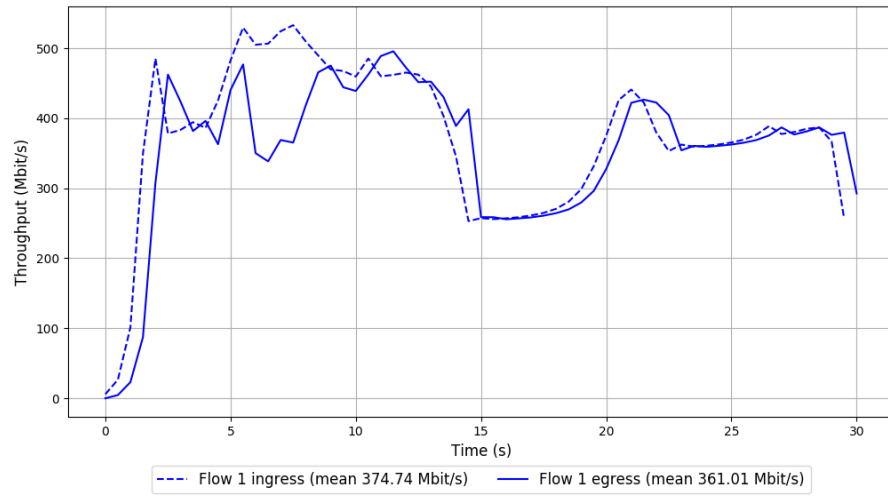


Run 4: Statistics of PCC-Expr

Start at: 2018-10-10 12:33:20
End at: 2018-10-10 12:33:50
Local clock offset: -0.055 ms
Remote clock offset: -0.159 ms

Below is generated by plot.py at 2018-10-10 14:36:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 361.01 Mbit/s
95th percentile per-packet one-way delay: 144.205 ms
Loss rate: 3.66%
-- Flow 1:
Average throughput: 361.01 Mbit/s
95th percentile per-packet one-way delay: 144.205 ms
Loss rate: 3.66%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-10 12:59:06

End at: 2018-10-10 12:59:36

Local clock offset: 0.015 ms

Remote clock offset: 0.815 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 382.22 Mbit/s

95th percentile per-packet one-way delay: 141.106 ms

Loss rate: 1.00%

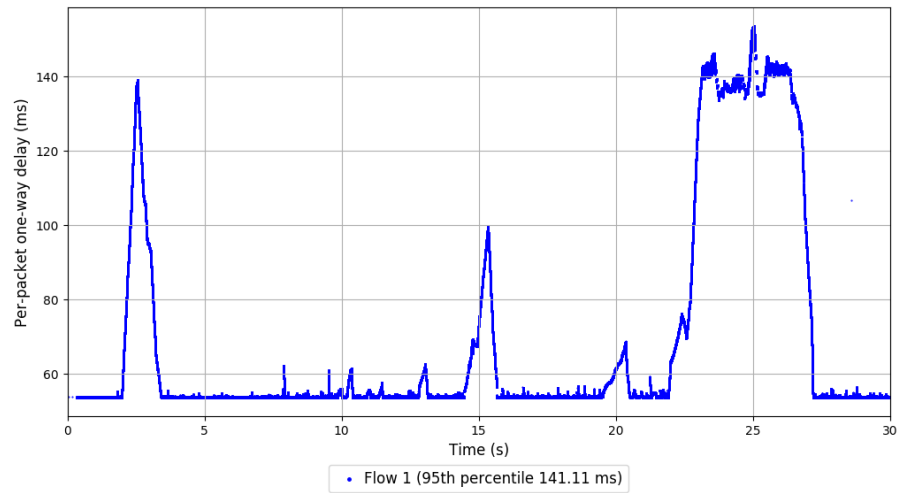
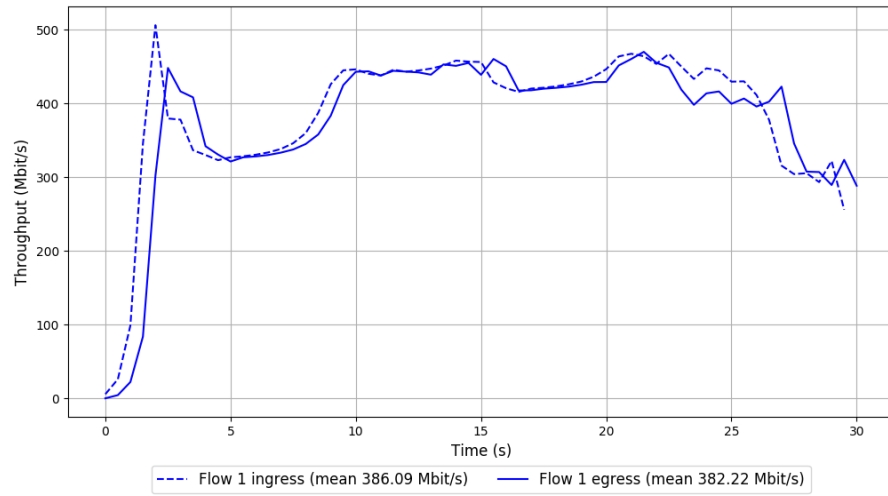
-- Flow 1:

Average throughput: 382.22 Mbit/s

95th percentile per-packet one-way delay: 141.106 ms

Loss rate: 1.00%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

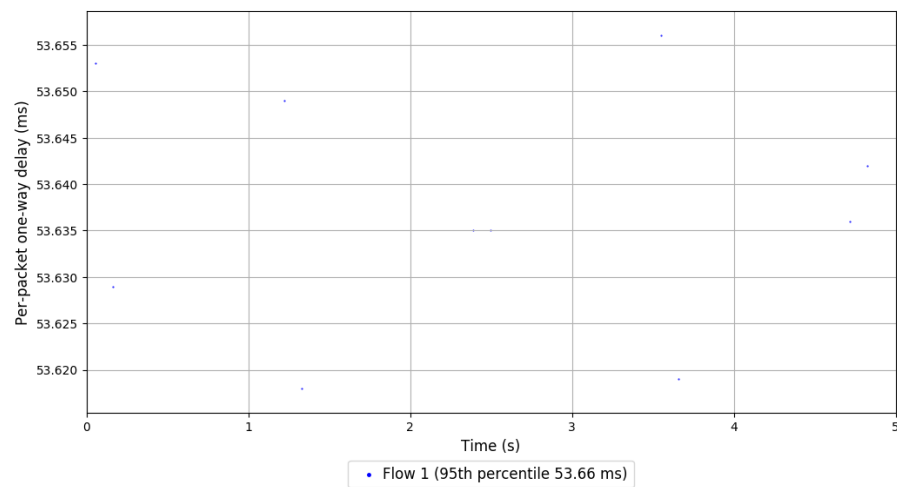
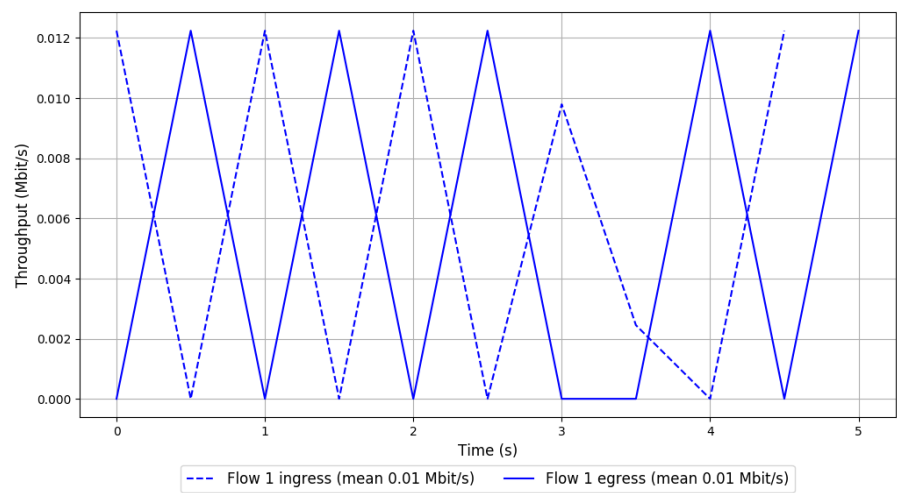
Start at: 2018-10-10 11:28:10

End at: 2018-10-10 11:28:40

Local clock offset: 0.007 ms

Remote clock offset: 0.296 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-10 11:53:48

End at: 2018-10-10 11:54:18

Local clock offset: -0.235 ms

Remote clock offset: 0.335 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.94 Mbit/s

95th percentile per-packet one-way delay: 50.813 ms

Loss rate: 0.00%

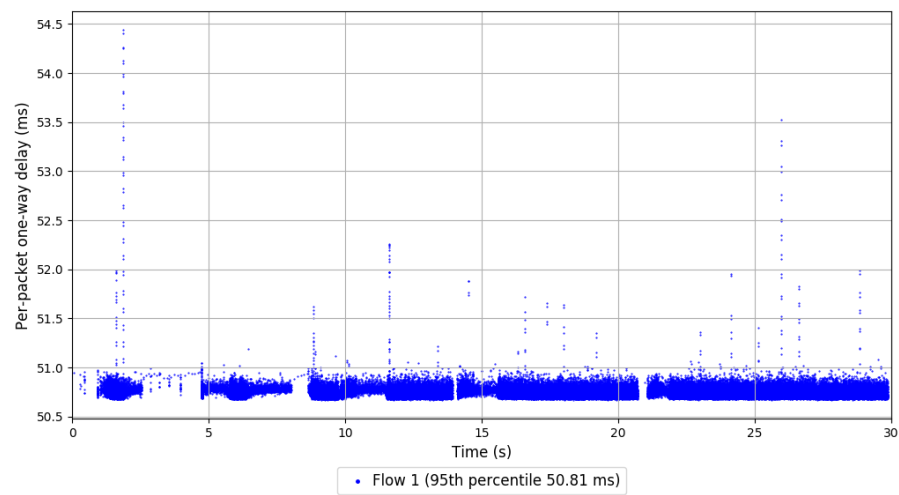
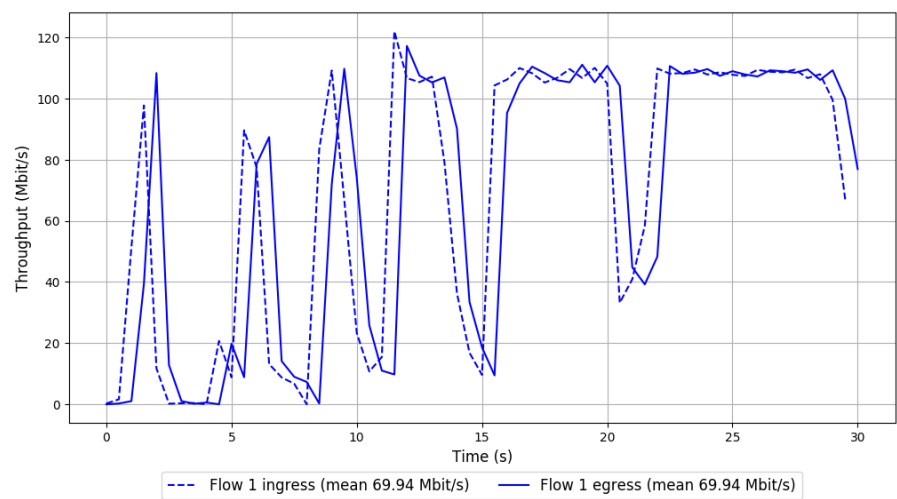
-- Flow 1:

Average throughput: 69.94 Mbit/s

95th percentile per-packet one-way delay: 50.813 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-10-10 12:19:36

End at: 2018-10-10 12:20:06

Local clock offset: -0.024 ms

Remote clock offset: -1.281 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.63 Mbit/s

95th percentile per-packet one-way delay: 52.272 ms

Loss rate: 0.00%

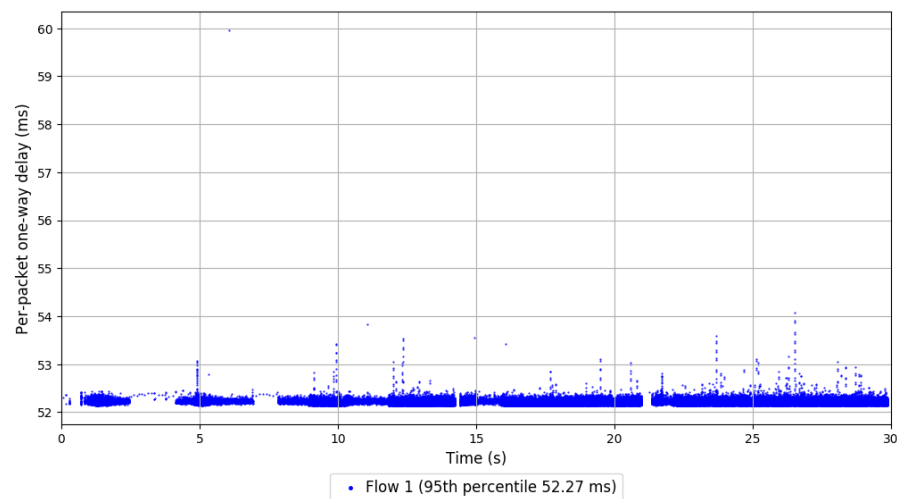
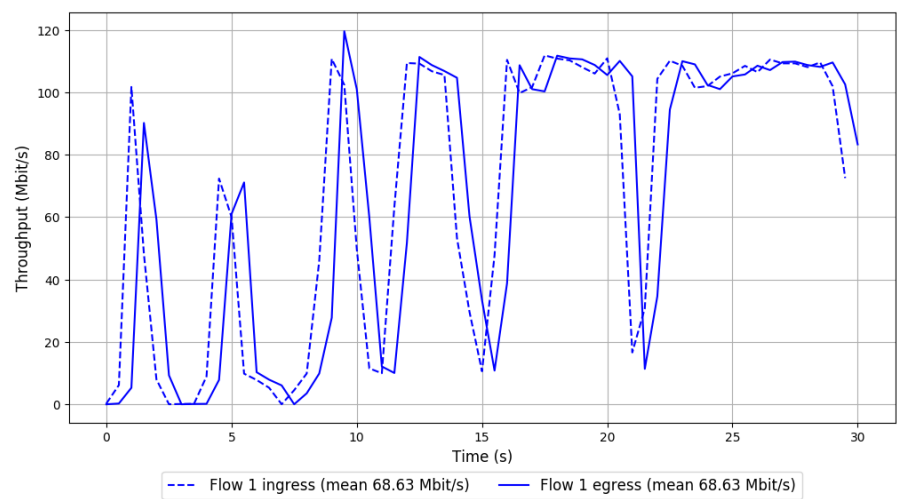
-- Flow 1:

Average throughput: 68.63 Mbit/s

95th percentile per-packet one-way delay: 52.272 ms

Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-10-10 12:45:27

End at: 2018-10-10 12:45:57

Local clock offset: -0.064 ms

Remote clock offset: 0.639 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.57 Mbit/s

95th percentile per-packet one-way delay: 50.756 ms

Loss rate: 0.00%

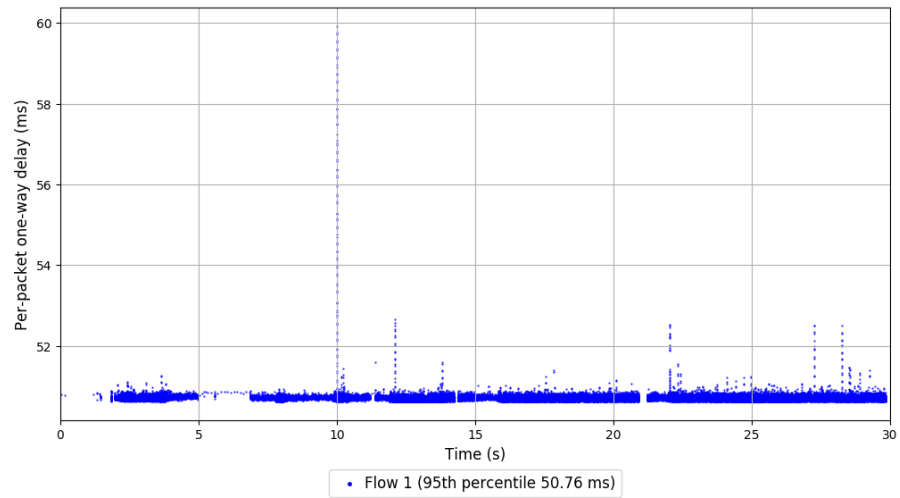
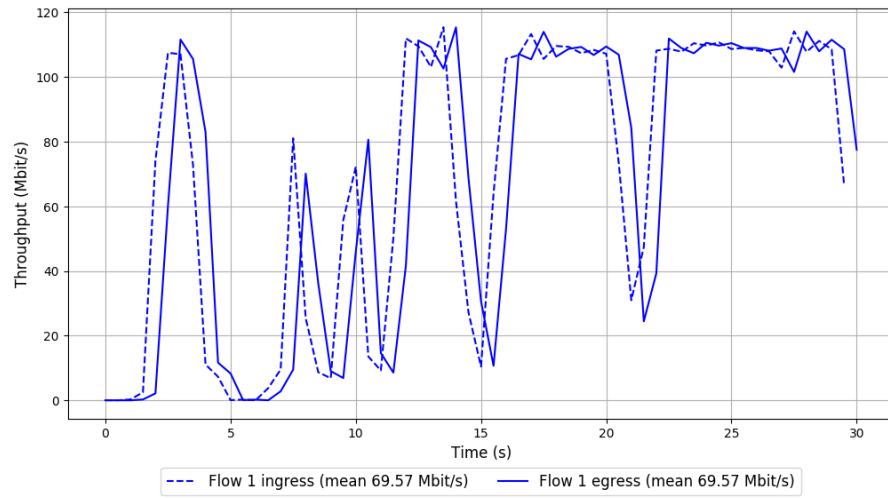
-- Flow 1:

Average throughput: 69.57 Mbit/s

95th percentile per-packet one-way delay: 50.756 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-10 13:11:11

End at: 2018-10-10 13:11:41

Local clock offset: -0.02 ms

Remote clock offset: -0.92 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 67.69 Mbit/s

95th percentile per-packet one-way delay: 52.685 ms

Loss rate: 0.00%

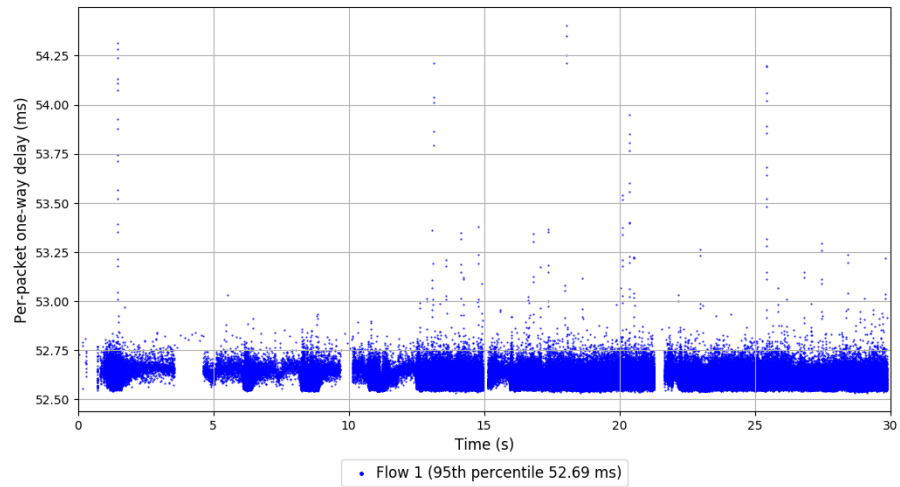
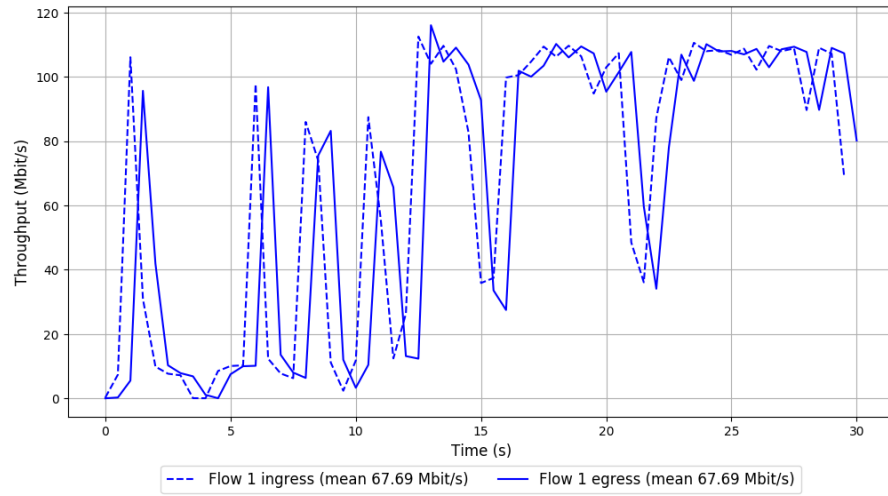
-- Flow 1:

Average throughput: 67.69 Mbit/s

95th percentile per-packet one-way delay: 52.685 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

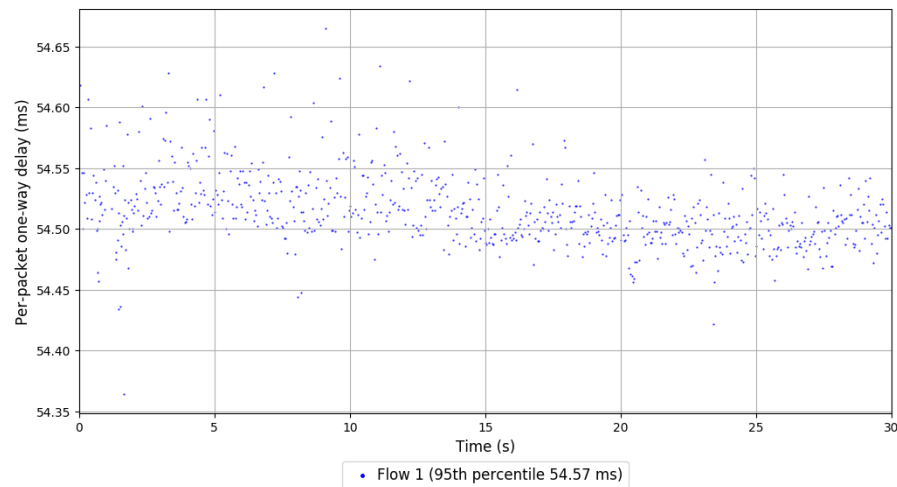
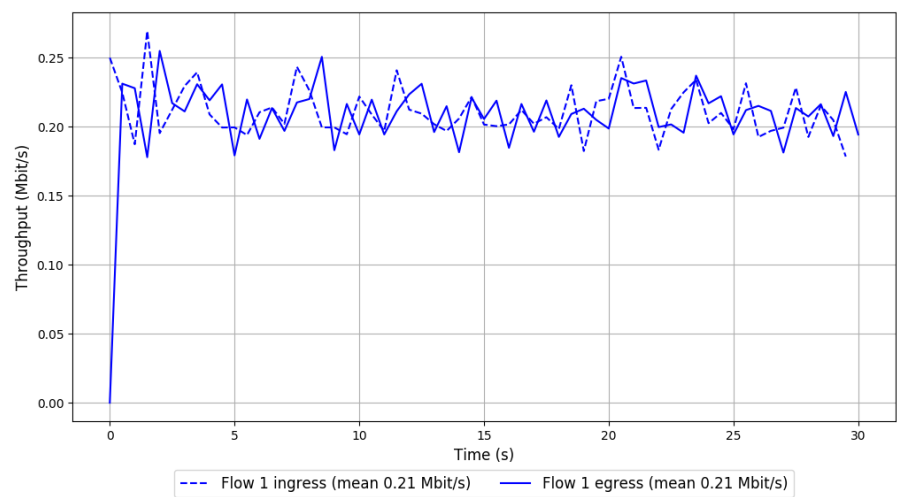


```
Run 1: Statistics of SCReAM

Start at: 2018-10-10 11:27:04
End at: 2018-10-10 11:27:34
Local clock offset: 0.01 ms
Remote clock offset: 1.312 ms

# Below is generated by plot.py at 2018-10-10 14:36:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.568 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.568 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-10-10 11:52:42

End at: 2018-10-10 11:53:12

Local clock offset: -0.075 ms

Remote clock offset: 0.036 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.566 ms

Loss rate: 0.00%

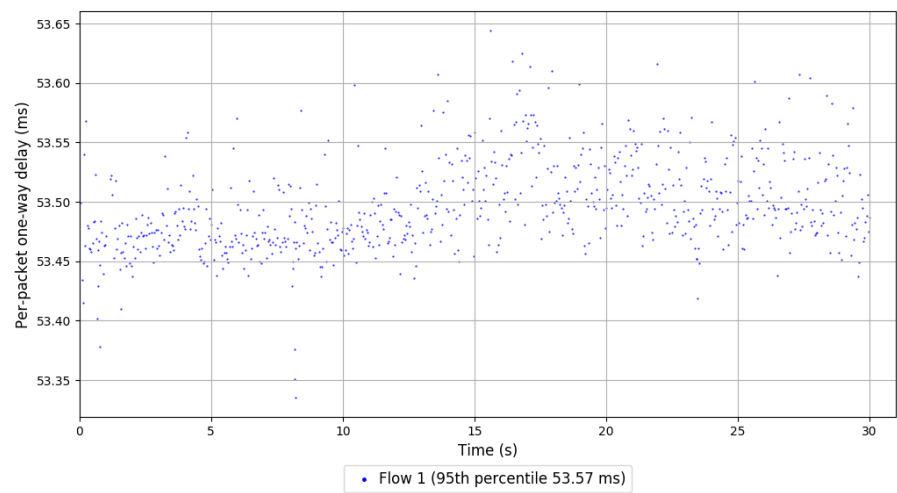
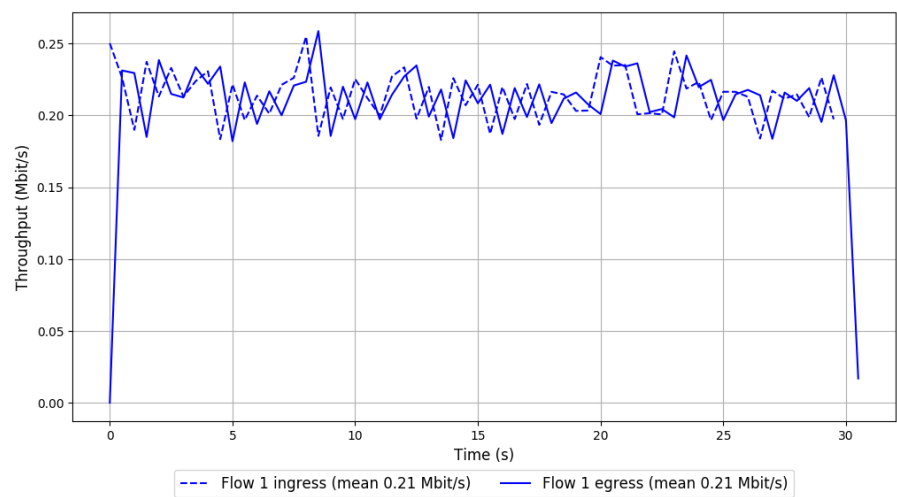
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.566 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-10-10 12:18:30

End at: 2018-10-10 12:19:00

Local clock offset: 0.062 ms

Remote clock offset: 0.471 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 50.813 ms

Loss rate: 0.00%

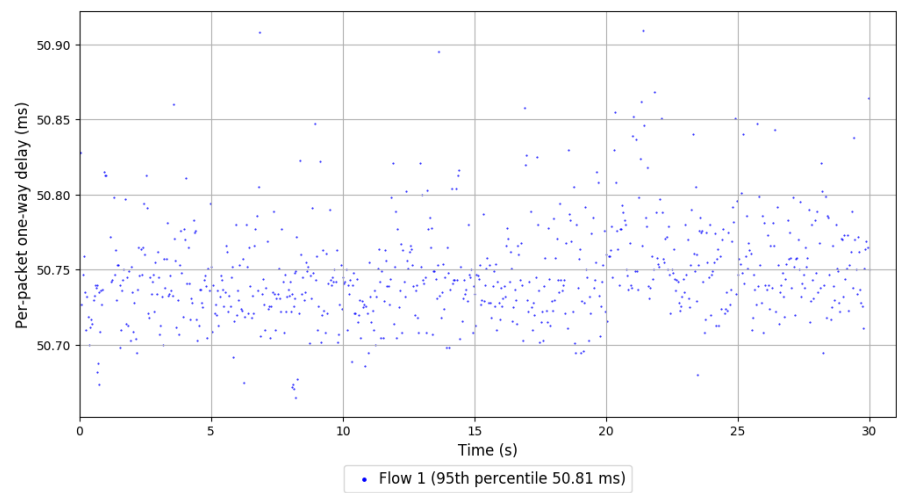
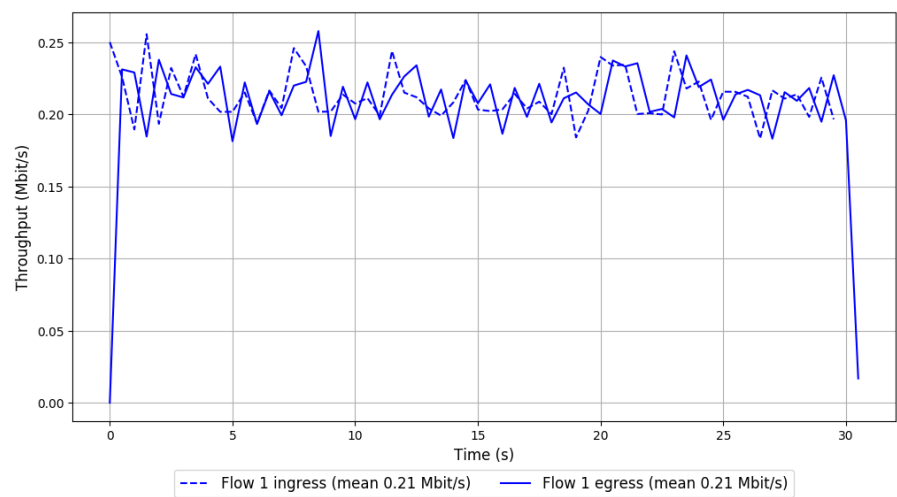
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 50.813 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-10-10 12:44:21

End at: 2018-10-10 12:44:51

Local clock offset: 0.019 ms

Remote clock offset: 0.274 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.911 ms

Loss rate: 0.00%

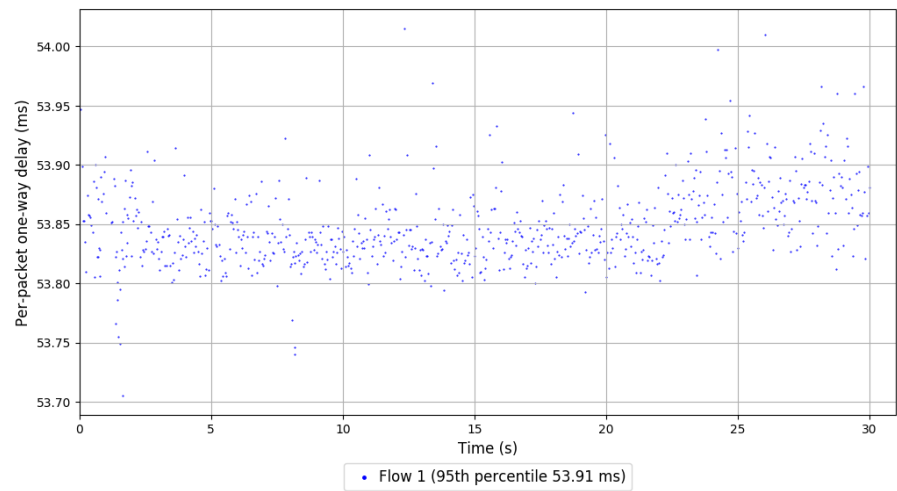
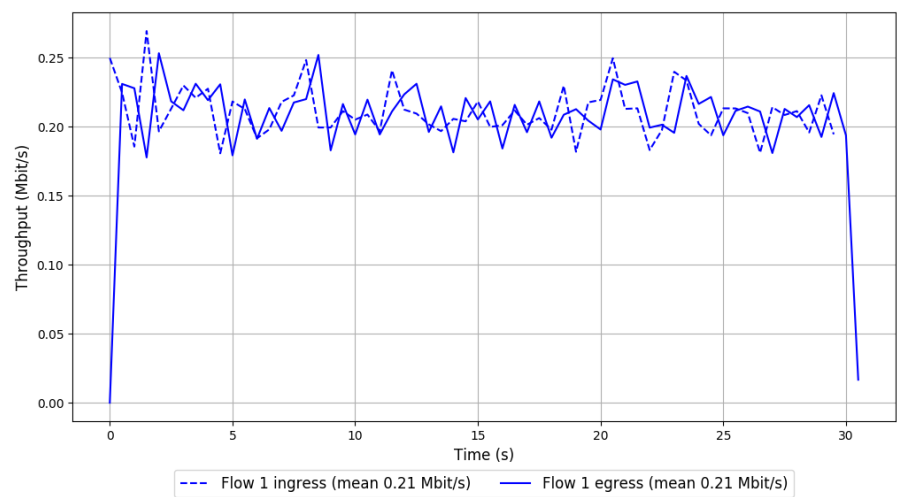
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.911 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

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

End at: 2018-10-10 13:10:35

Local clock offset: -0.136 ms

Remote clock offset: 0.083 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 50.859 ms

Loss rate: 0.00%

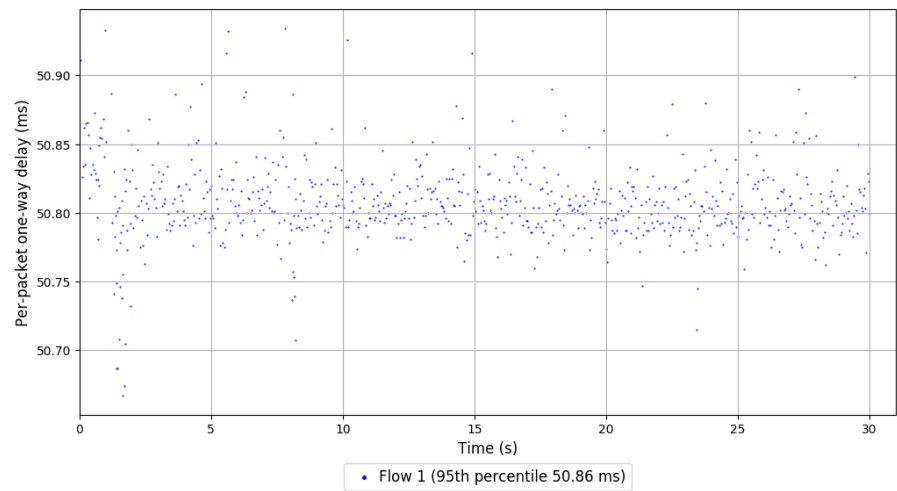
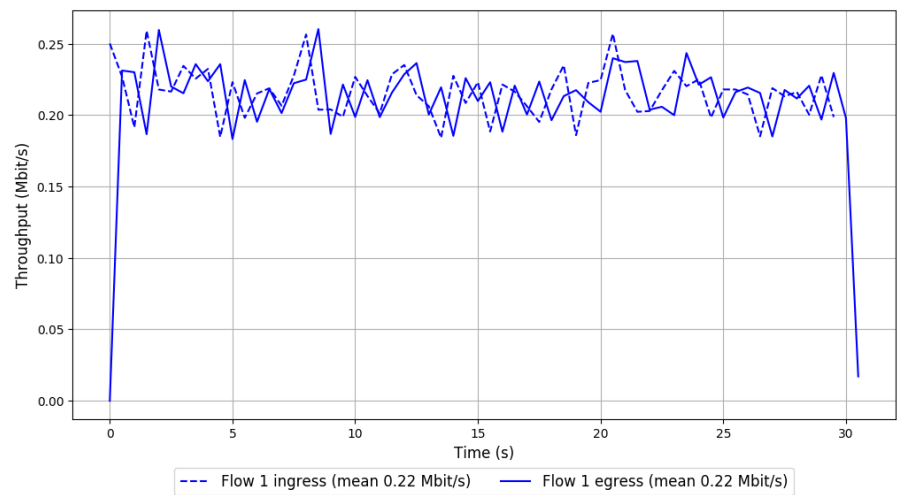
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 50.859 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

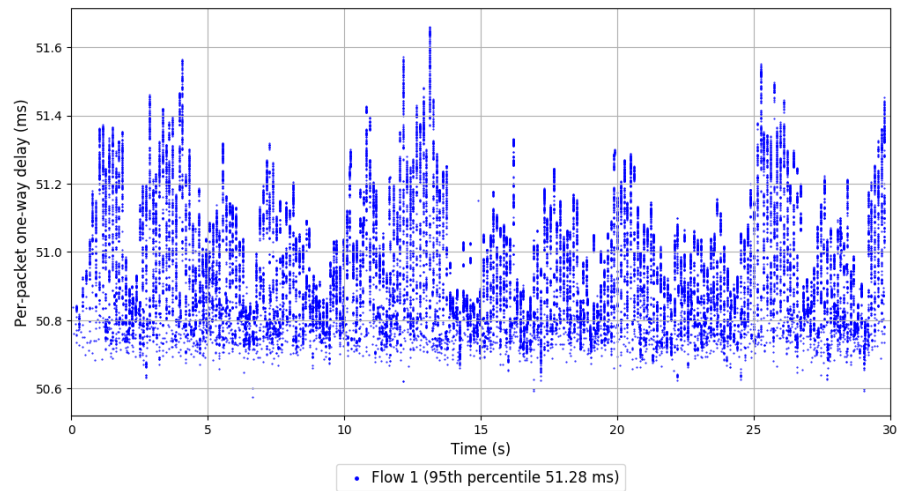
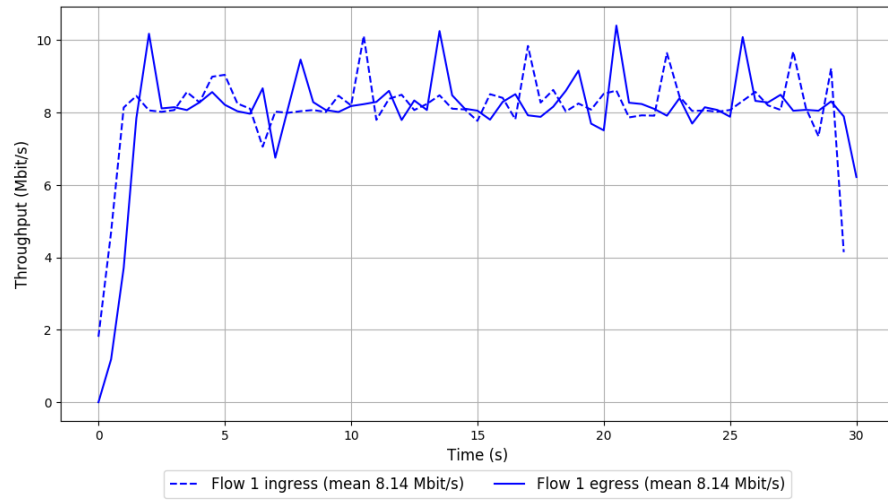


Run 1: Statistics of Sprout

Start at: 2018-10-10 11:23:29
End at: 2018-10-10 11:23:59
Local clock offset: -0.105 ms
Remote clock offset: -0.019 ms

Below is generated by plot.py at 2018-10-10 14:36:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 51.285 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 51.285 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-10-10 11:49:08

End at: 2018-10-10 11:49:38

Local clock offset: 0.087 ms

Remote clock offset: 0.084 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.26 Mbit/s

95th percentile per-packet one-way delay: 50.857 ms

Loss rate: 0.00%

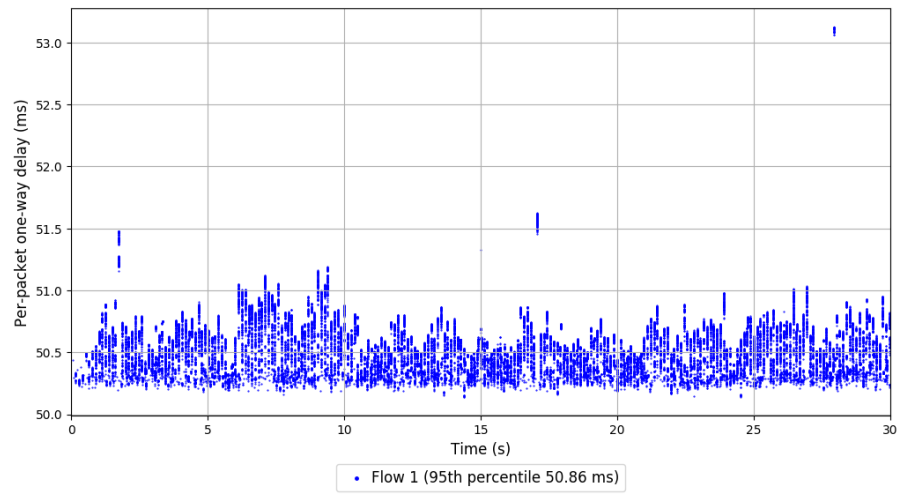
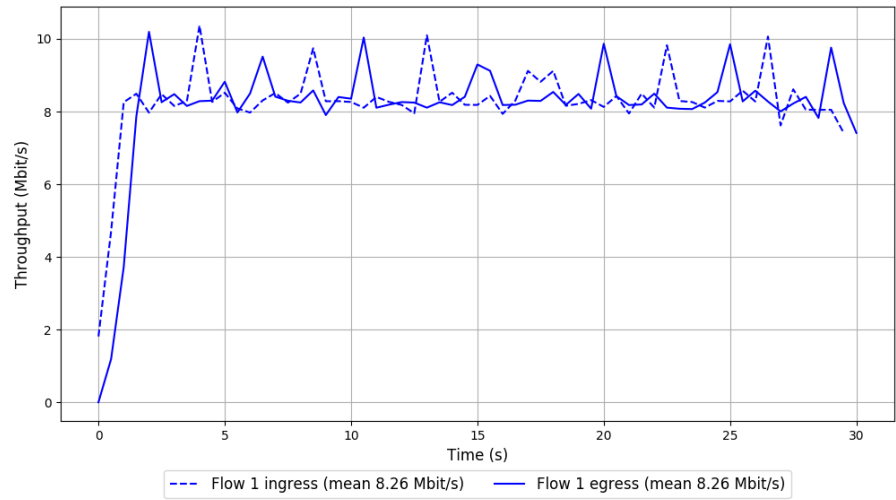
-- Flow 1:

Average throughput: 8.26 Mbit/s

95th percentile per-packet one-way delay: 50.857 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

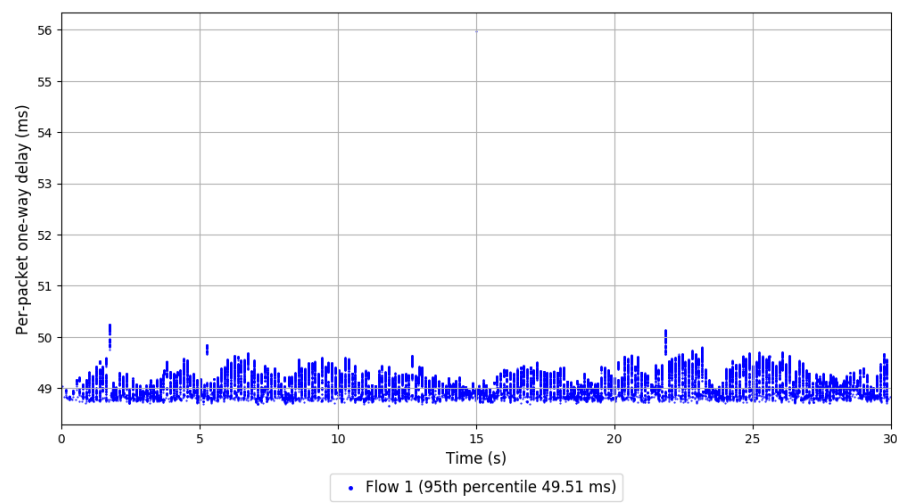
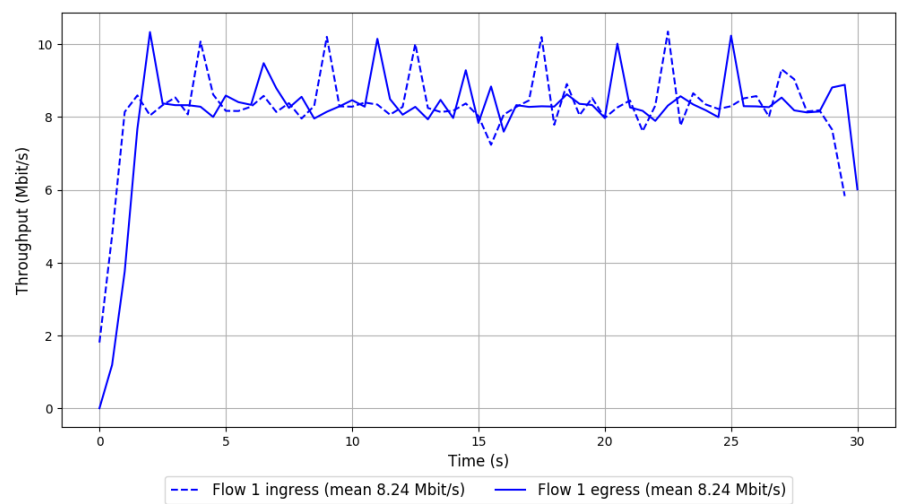


Run 3: Statistics of Sprout

Start at: 2018-10-10 12:14:55
End at: 2018-10-10 12:15:25
Local clock offset: 0.098 ms
Remote clock offset: -1.249 ms

Below is generated by plot.py at 2018-10-10 14:36:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.24 Mbit/s
95th percentile per-packet one-way delay: 49.512 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.24 Mbit/s
95th percentile per-packet one-way delay: 49.512 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-10-10 12:40:46

End at: 2018-10-10 12:41:16

Local clock offset: -0.063 ms

Remote clock offset: 0.146 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.06 Mbit/s

95th percentile per-packet one-way delay: 54.130 ms

Loss rate: 0.00%

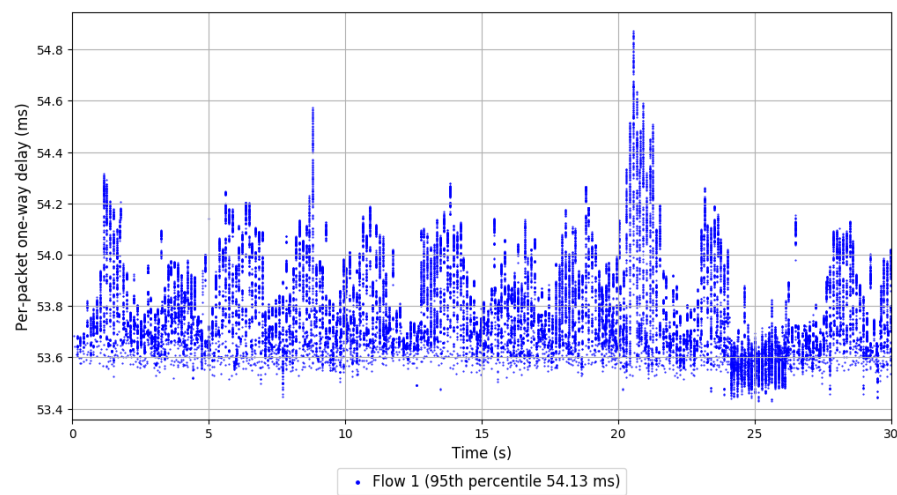
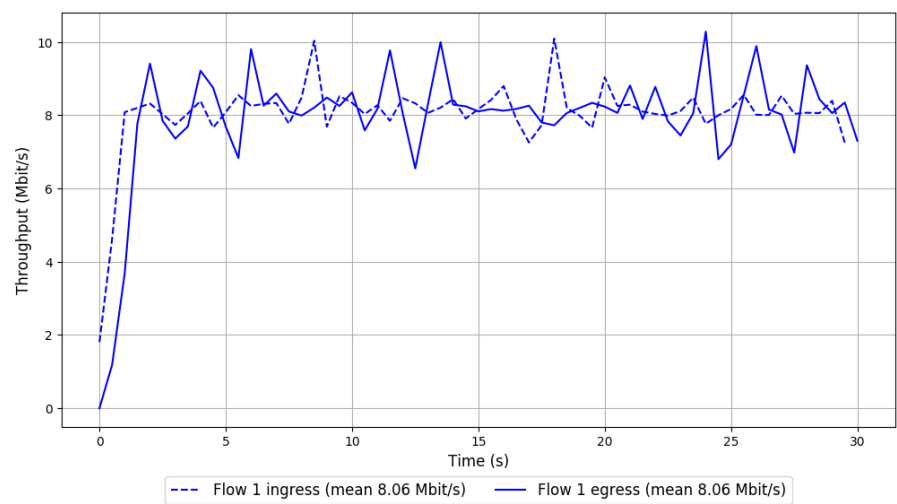
-- Flow 1:

Average throughput: 8.06 Mbit/s

95th percentile per-packet one-way delay: 54.130 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-10-10 13:06:30

End at: 2018-10-10 13:07:00

Local clock offset: 0.007 ms

Remote clock offset: 0.33 ms

Below is generated by plot.py at 2018-10-10 14:36:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.17 Mbit/s

95th percentile per-packet one-way delay: 51.581 ms

Loss rate: 0.00%

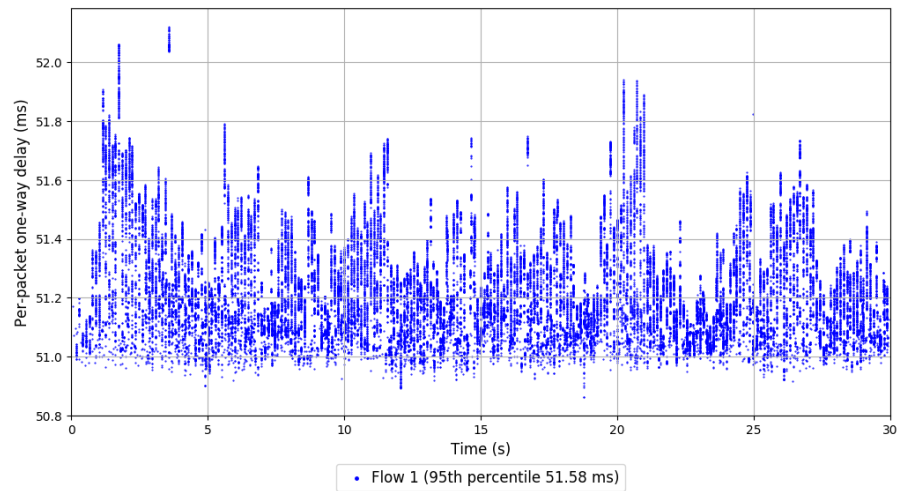
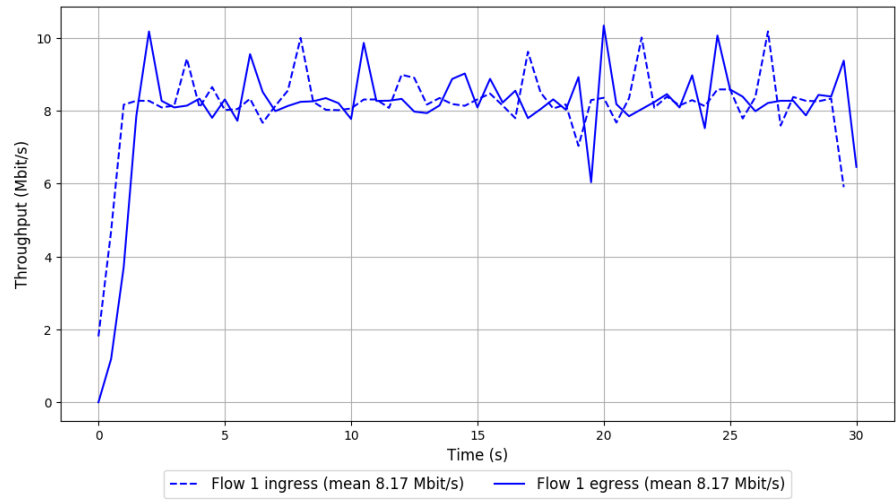
-- Flow 1:

Average throughput: 8.17 Mbit/s

95th percentile per-packet one-way delay: 51.581 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

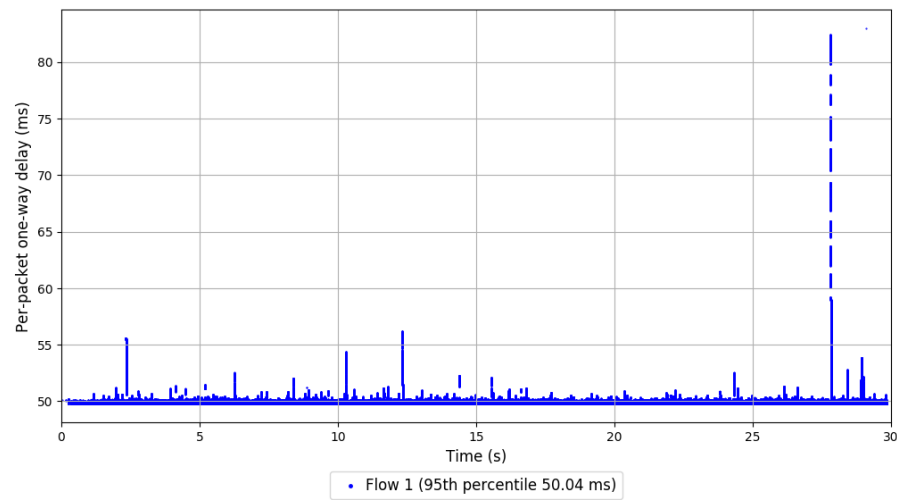
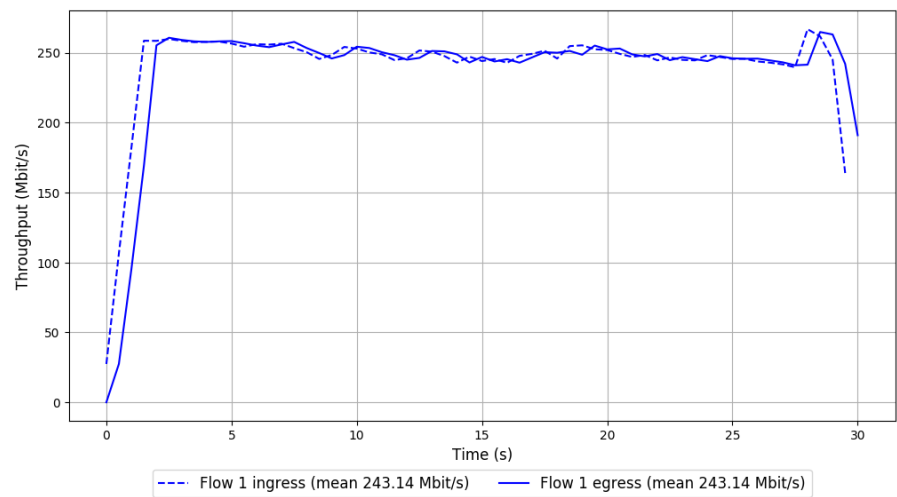


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-10 11:19:11
End at: 2018-10-10 11:19:41
Local clock offset: 0.018 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2018-10-10 14:39:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 243.14 Mbit/s
95th percentile per-packet one-way delay: 50.043 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 243.14 Mbit/s
95th percentile per-packet one-way delay: 50.043 ms
Loss rate: 0.00%
```

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

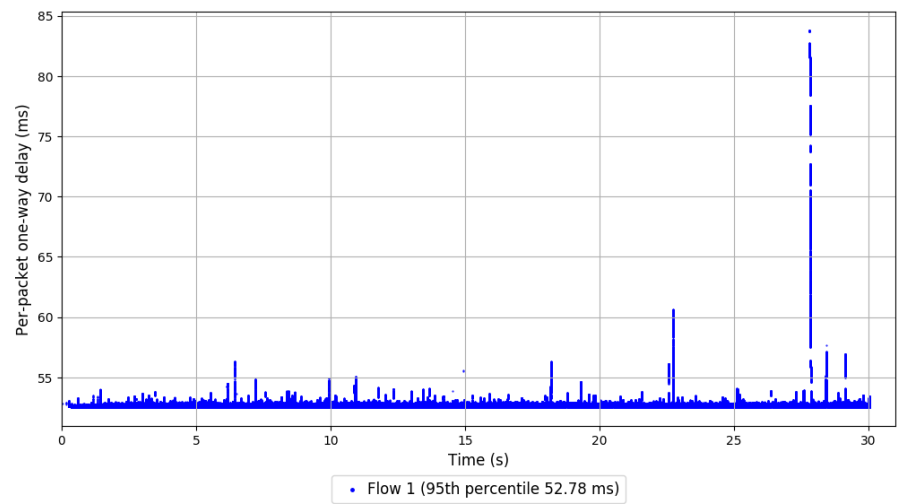
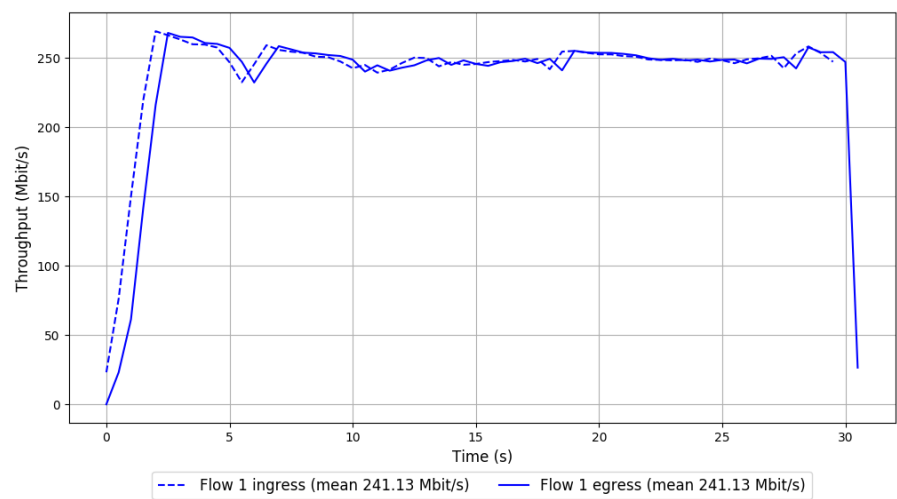


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-10 11:44:51
End at: 2018-10-10 11:45:21
Local clock offset: 0.058 ms
Remote clock offset: -0.576 ms

Below is generated by plot.py at 2018-10-10 14:39:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 241.13 Mbit/s
95th percentile per-packet one-way delay: 52.780 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 241.13 Mbit/s
95th percentile per-packet one-way delay: 52.780 ms
Loss rate: 0.00%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-10-10 12:10:37

End at: 2018-10-10 12:11:07

Local clock offset: -0.015 ms

Remote clock offset: -0.23 ms

Below is generated by plot.py at 2018-10-10 14:39:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 247.16 Mbit/s

95th percentile per-packet one-way delay: 50.130 ms

Loss rate: 0.00%

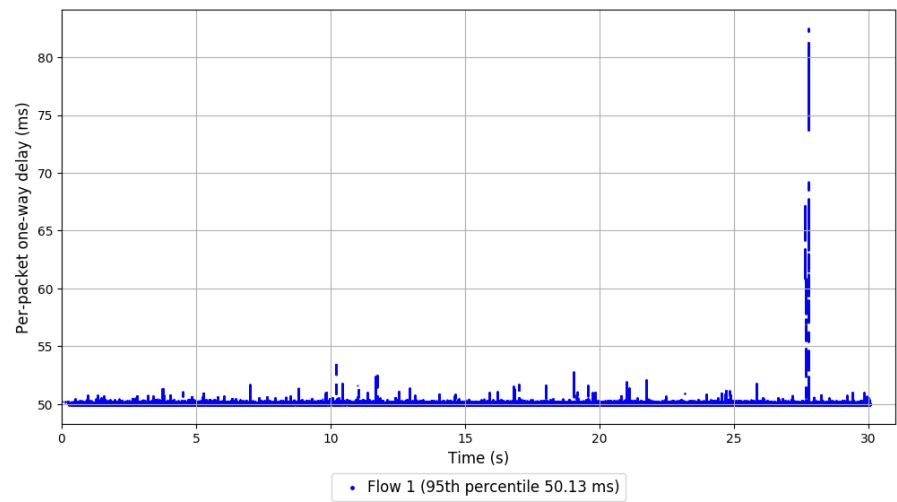
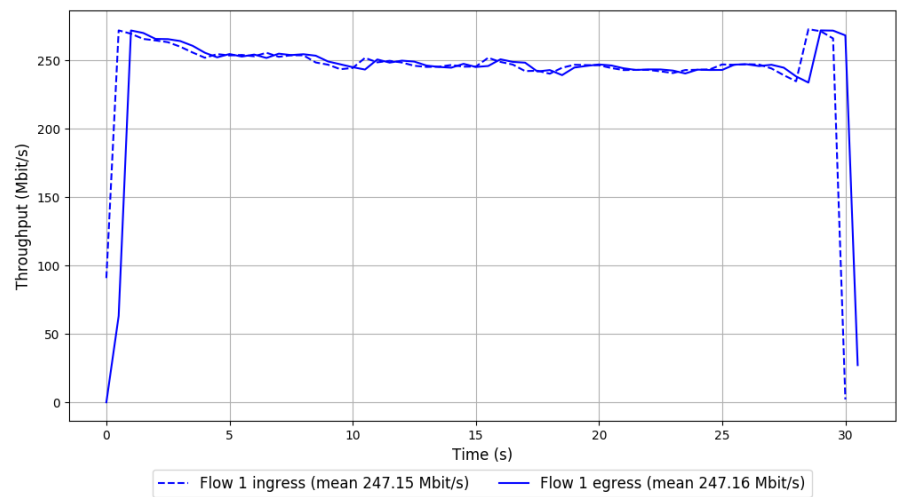
-- Flow 1:

Average throughput: 247.16 Mbit/s

95th percentile per-packet one-way delay: 50.130 ms

Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-10-10 12:36:27

End at: 2018-10-10 12:36:57

Local clock offset: -0.108 ms

Remote clock offset: 0.255 ms

Below is generated by plot.py at 2018-10-10 14:39:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 239.33 Mbit/s

95th percentile per-packet one-way delay: 50.555 ms

Loss rate: 0.00%

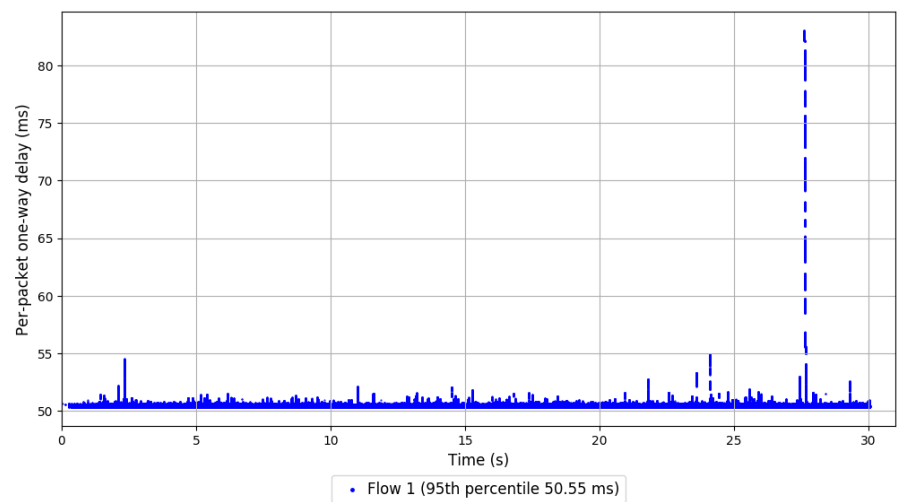
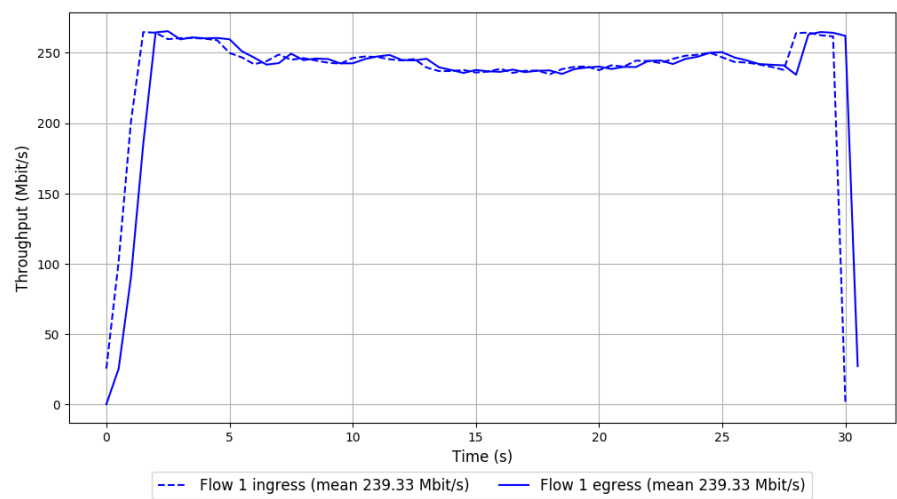
-- Flow 1:

Average throughput: 239.33 Mbit/s

95th percentile per-packet one-way delay: 50.555 ms

Loss rate: 0.00%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-10 13:02:13

End at: 2018-10-10 13:02:43

Local clock offset: -0.087 ms

Remote clock offset: 0.036 ms

Below is generated by plot.py at 2018-10-10 14:42:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 248.14 Mbit/s

95th percentile per-packet one-way delay: 50.455 ms

Loss rate: 0.00%

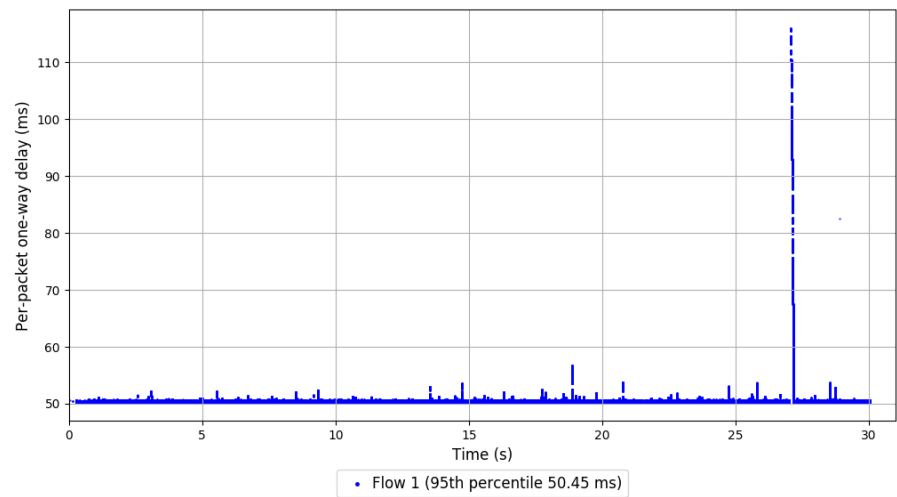
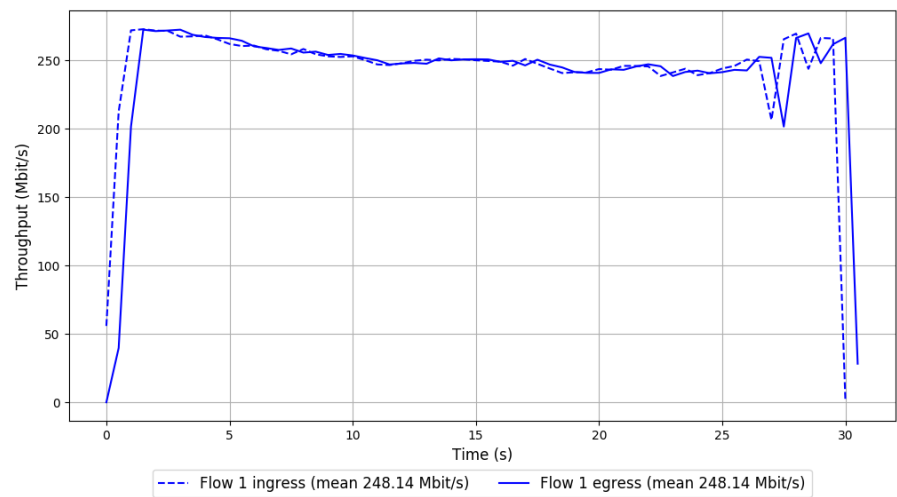
-- Flow 1:

Average throughput: 248.14 Mbit/s

95th percentile per-packet one-way delay: 50.455 ms

Loss rate: 0.00%

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

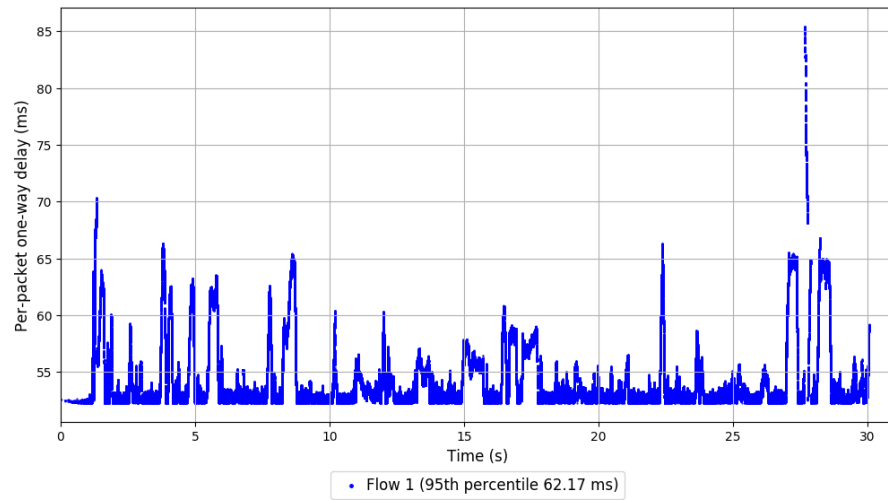
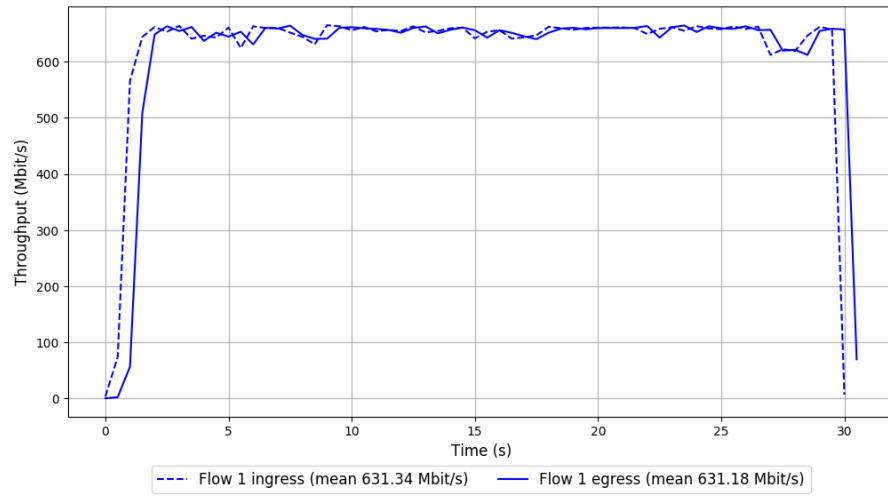


Run 1: Statistics of TCP Vegas

Start at: 2018-10-10 11:34:02
End at: 2018-10-10 11:34:32
Local clock offset: -0.004 ms
Remote clock offset: -0.696 ms

Below is generated by plot.py at 2018-10-10 14:46:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 631.18 Mbit/s
95th percentile per-packet one-way delay: 62.171 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 631.18 Mbit/s
95th percentile per-packet one-way delay: 62.171 ms
Loss rate: 0.02%

Run 1: Report of TCP Vegas — Data Link

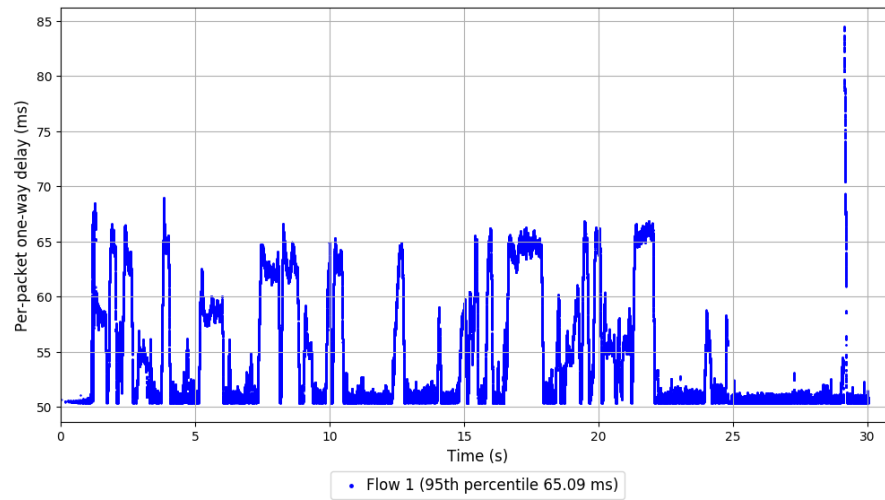
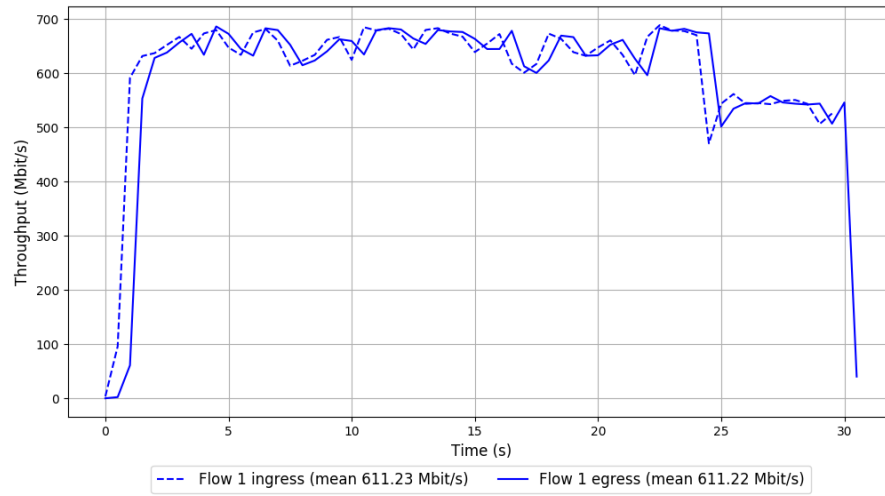


Run 2: Statistics of TCP Vegas

Start at: 2018-10-10 11:59:43
End at: 2018-10-10 12:00:13
Local clock offset: -0.293 ms
Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-10-10 14:47:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 611.22 Mbit/s
95th percentile per-packet one-way delay: 65.087 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 611.22 Mbit/s
95th percentile per-packet one-way delay: 65.087 ms
Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-10-10 12:25:34

End at: 2018-10-10 12:26:04

Local clock offset: 0.043 ms

Remote clock offset: -0.27 ms

Below is generated by plot.py at 2018-10-10 14:47:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 538.05 Mbit/s

95th percentile per-packet one-way delay: 54.029 ms

Loss rate: 0.00%

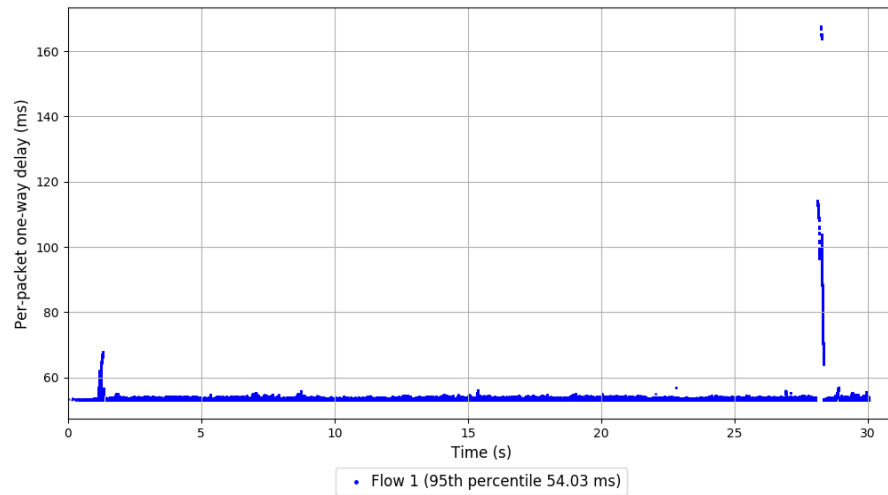
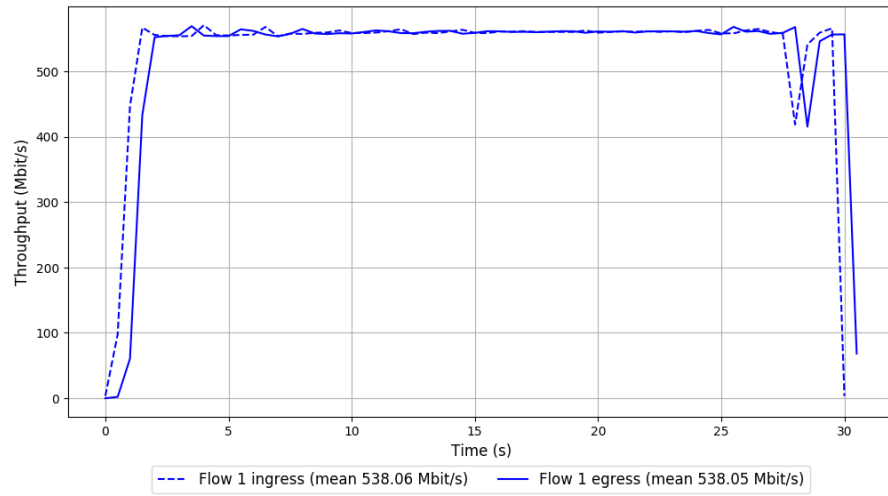
-- Flow 1:

Average throughput: 538.05 Mbit/s

95th percentile per-packet one-way delay: 54.029 ms

Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link

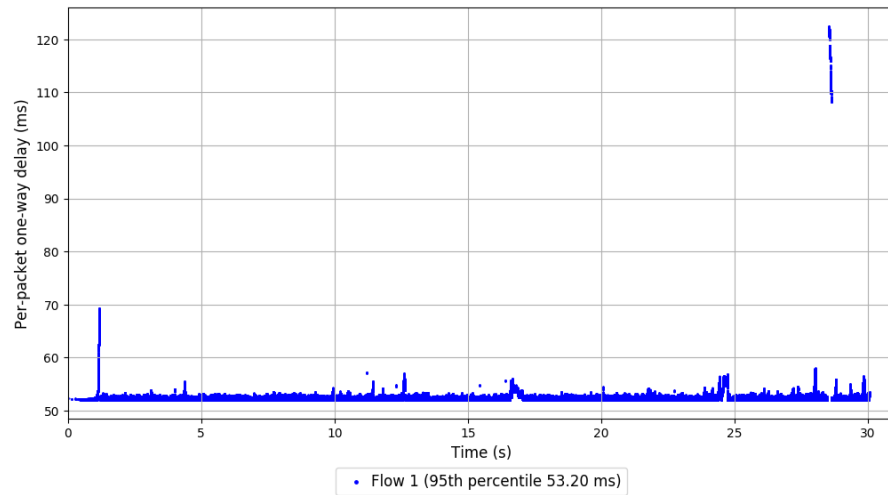
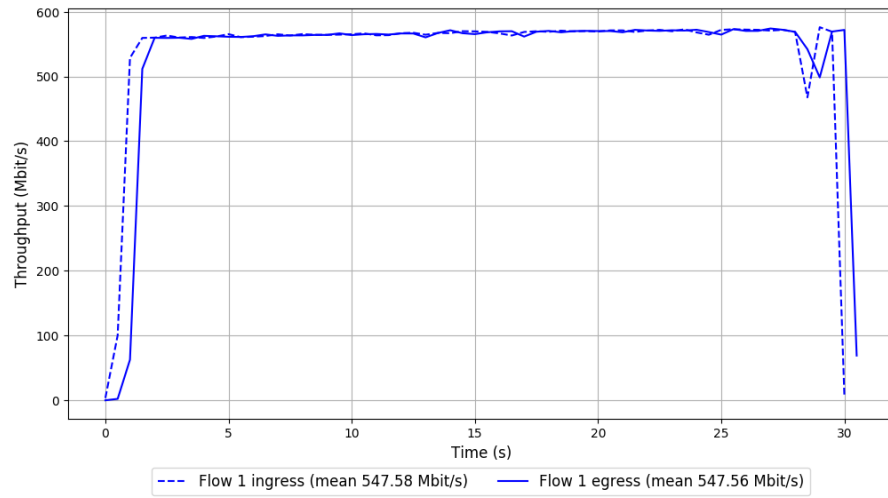


Run 4: Statistics of TCP Vegas

Start at: 2018-10-10 12:51:22
End at: 2018-10-10 12:51:52
Local clock offset: 0.181 ms
Remote clock offset: -0.688 ms

Below is generated by plot.py at 2018-10-10 14:48:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 547.56 Mbit/s
95th percentile per-packet one-way delay: 53.205 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 547.56 Mbit/s
95th percentile per-packet one-way delay: 53.205 ms
Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-10 13:17:09

End at: 2018-10-10 13:17:39

Local clock offset: 0.073 ms

Remote clock offset: 0.057 ms

Below is generated by plot.py at 2018-10-10 14:48:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 409.00 Mbit/s

95th percentile per-packet one-way delay: 51.310 ms

Loss rate: 0.00%

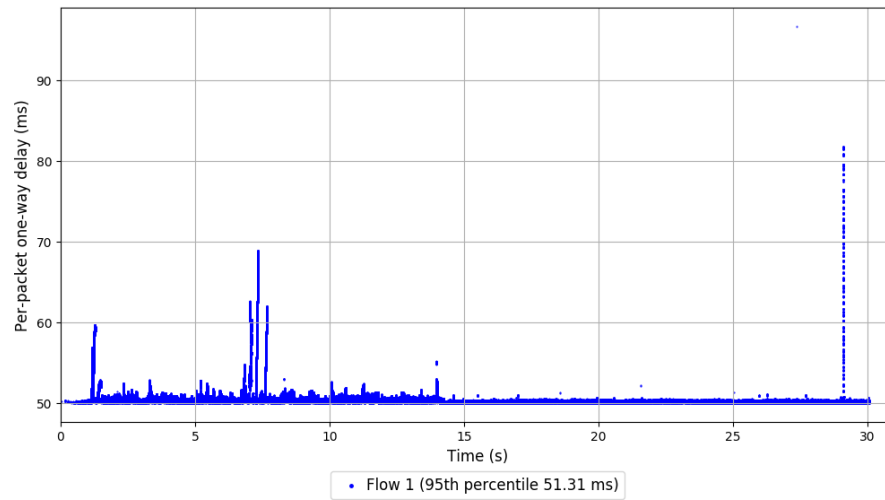
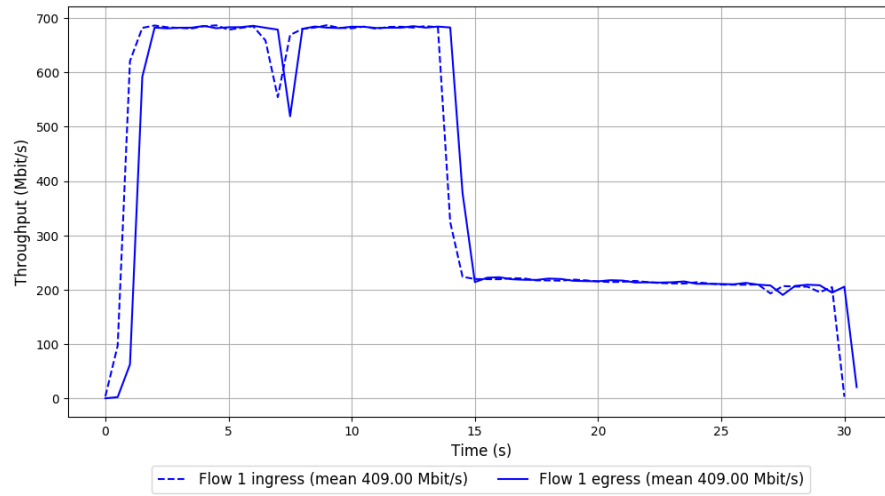
-- Flow 1:

Average throughput: 409.00 Mbit/s

95th percentile per-packet one-way delay: 51.310 ms

Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-10-10 11:35:38

End at: 2018-10-10 11:36:08

Local clock offset: -0.22 ms

Remote clock offset: 1.196 ms

Below is generated by plot.py at 2018-10-10 14:48:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 186.02 Mbit/s

95th percentile per-packet one-way delay: 183.833 ms

Loss rate: 2.40%

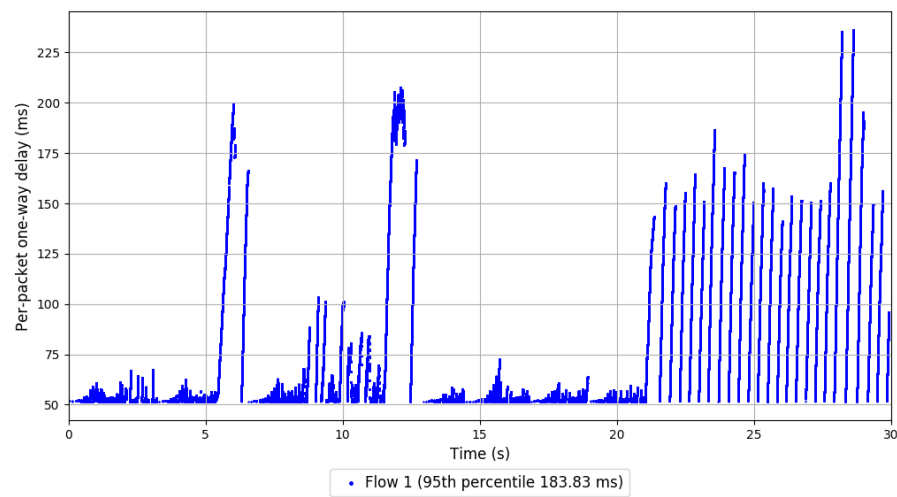
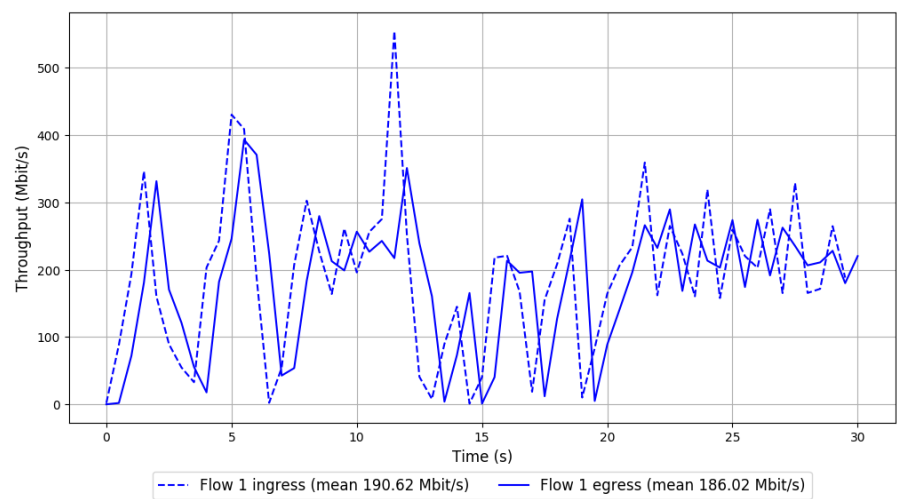
-- Flow 1:

Average throughput: 186.02 Mbit/s

95th percentile per-packet one-way delay: 183.833 ms

Loss rate: 2.40%

Run 1: Report of Verus — Data Link

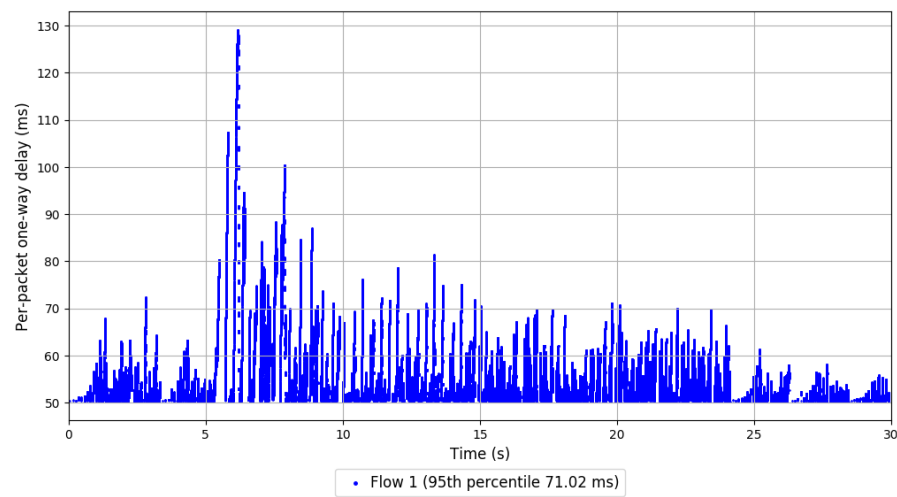
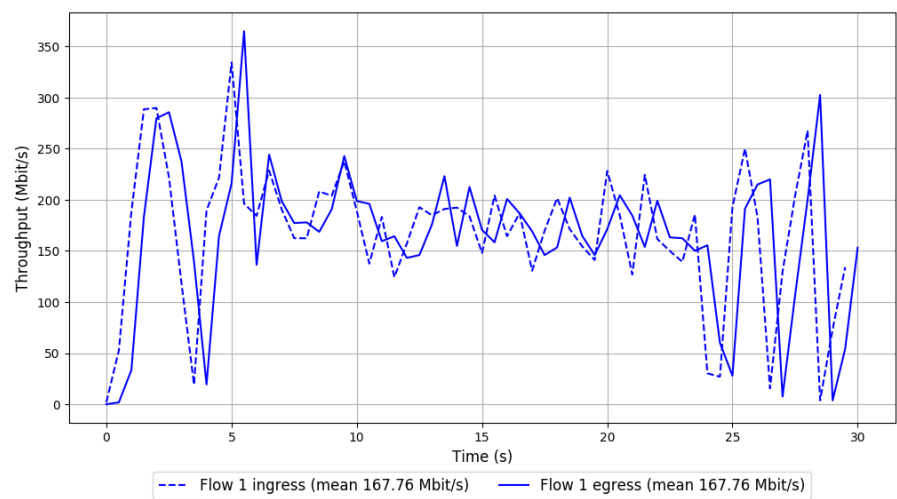


Run 2: Statistics of Verus

Start at: 2018-10-10 12:01:18
End at: 2018-10-10 12:01:48
Local clock offset: -0.09 ms
Remote clock offset: -0.037 ms

Below is generated by plot.py at 2018-10-10 14:48:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 167.76 Mbit/s
95th percentile per-packet one-way delay: 71.016 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 167.76 Mbit/s
95th percentile per-packet one-way delay: 71.016 ms
Loss rate: 0.00%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-10-10 12:27:06

End at: 2018-10-10 12:27:36

Local clock offset: 0.203 ms

Remote clock offset: 0.751 ms

Below is generated by plot.py at 2018-10-10 14:48:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 161.33 Mbit/s

95th percentile per-packet one-way delay: 116.360 ms

Loss rate: 0.00%

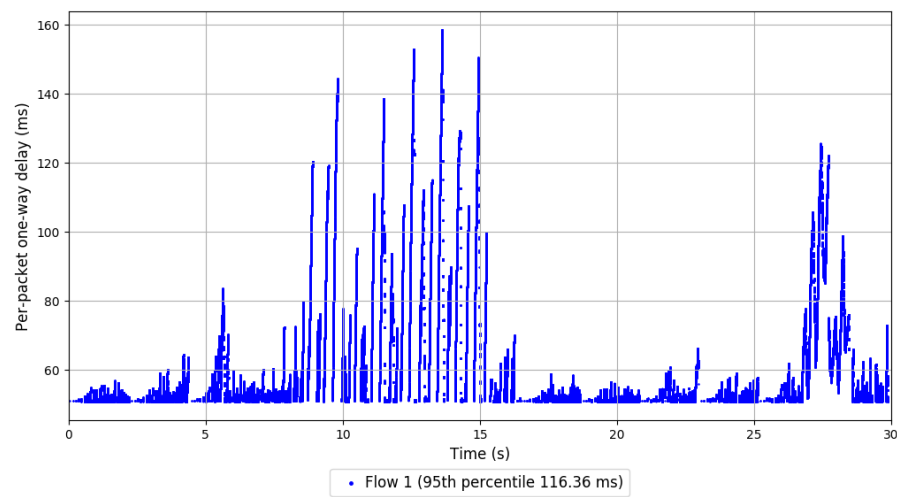
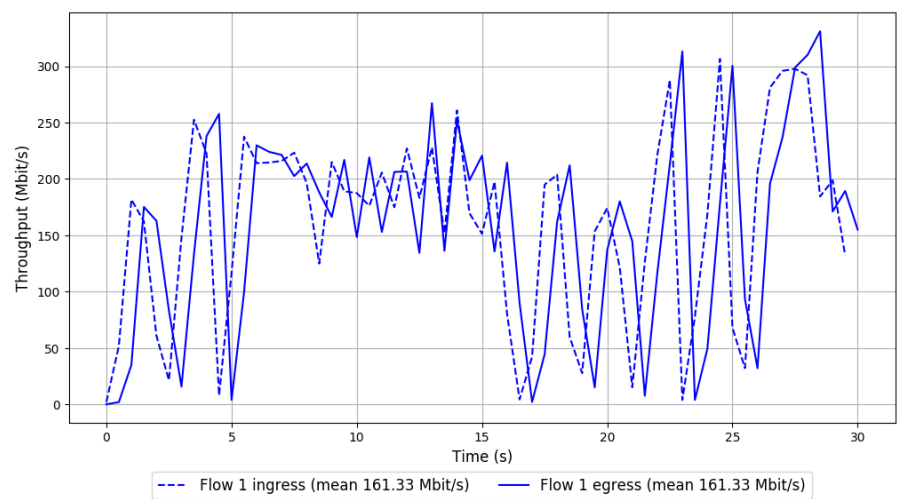
-- Flow 1:

Average throughput: 161.33 Mbit/s

95th percentile per-packet one-way delay: 116.360 ms

Loss rate: 0.00%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-10-10 12:52:55

End at: 2018-10-10 12:53:25

Local clock offset: -0.073 ms

Remote clock offset: 0.019 ms

Below is generated by plot.py at 2018-10-10 14:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 140.73 Mbit/s

95th percentile per-packet one-way delay: 101.926 ms

Loss rate: 0.11%

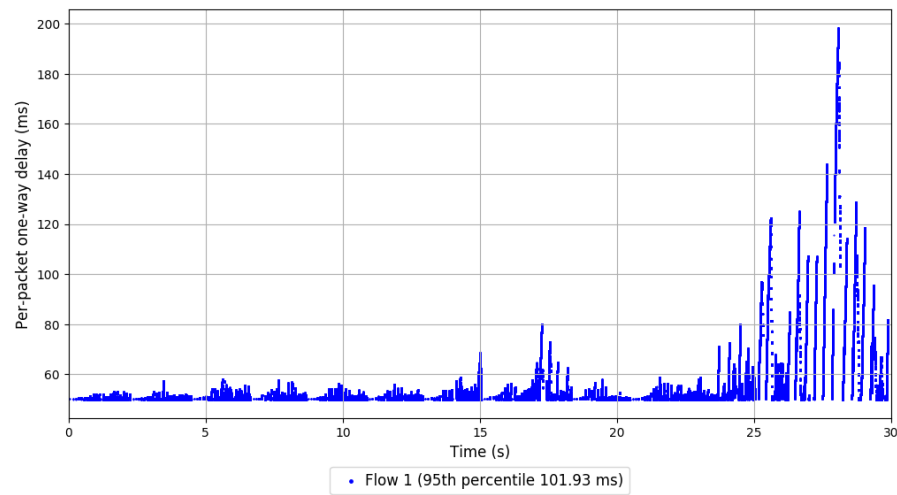
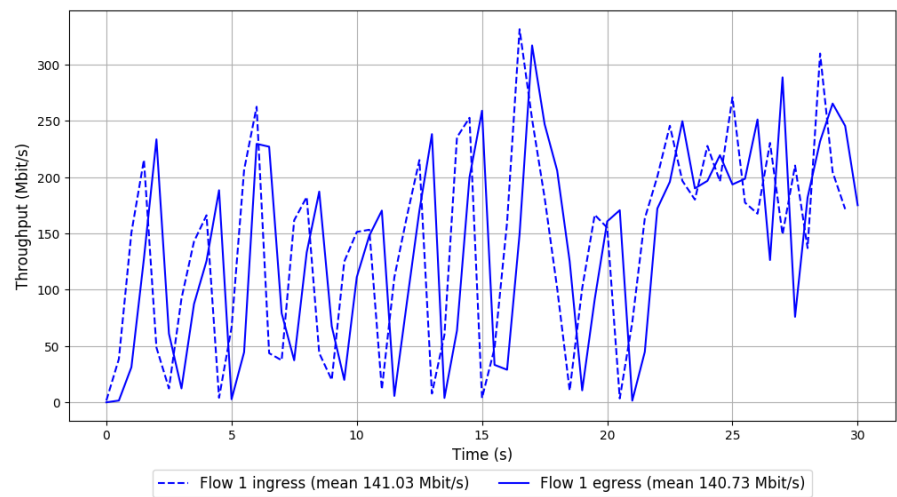
-- Flow 1:

Average throughput: 140.73 Mbit/s

95th percentile per-packet one-way delay: 101.926 ms

Loss rate: 0.11%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-10 13:18:35

End at: 2018-10-10 13:19:05

Local clock offset: 0.032 ms

Remote clock offset: 1.29 ms

Below is generated by plot.py at 2018-10-10 14:51:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 201.02 Mbit/s

95th percentile per-packet one-way delay: 107.469 ms

Loss rate: 0.09%

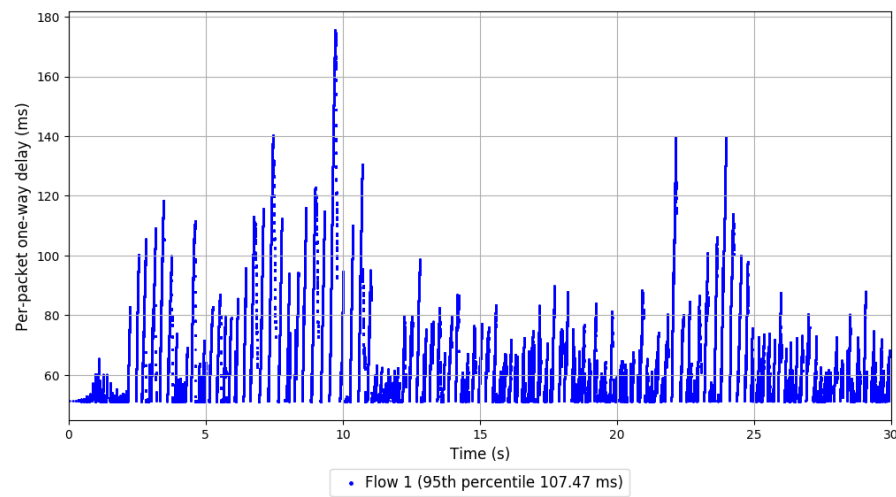
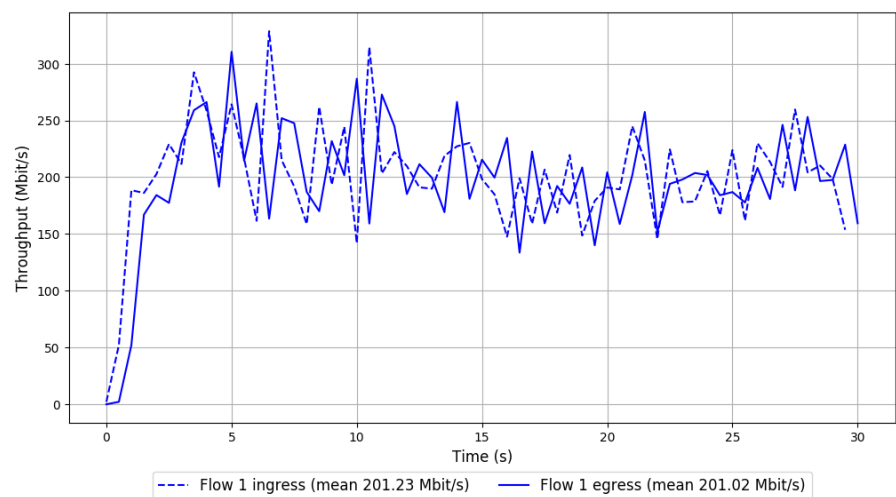
-- Flow 1:

Average throughput: 201.02 Mbit/s

95th percentile per-packet one-way delay: 107.469 ms

Loss rate: 0.09%

Run 5: Report of Verus — Data Link

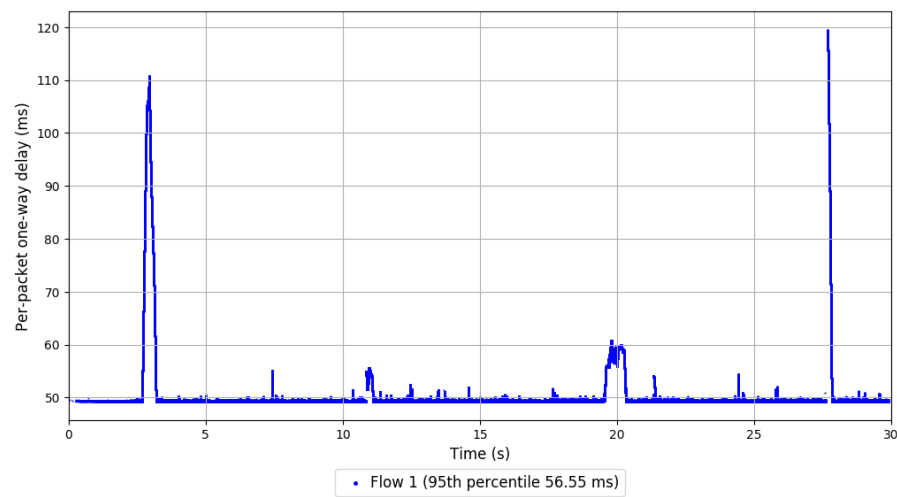
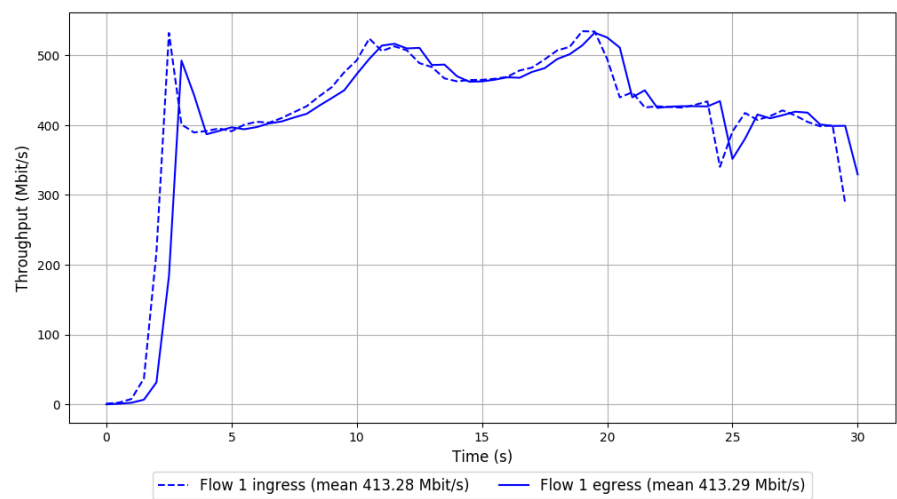


Run 1: Statistics of PCC-Vivace

Start at: 2018-10-10 11:32:29
End at: 2018-10-10 11:32:59
Local clock offset: -0.051 ms
Remote clock offset: -0.562 ms

Below is generated by plot.py at 2018-10-10 14:51:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 413.29 Mbit/s
95th percentile per-packet one-way delay: 56.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 413.29 Mbit/s
95th percentile per-packet one-way delay: 56.555 ms
Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-10-10 11:58:11

End at: 2018-10-10 11:58:41

Local clock offset: -0.009 ms

Remote clock offset: 0.781 ms

Below is generated by plot.py at 2018-10-10 14:51:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 406.65 Mbit/s

95th percentile per-packet one-way delay: 55.111 ms

Loss rate: 0.00%

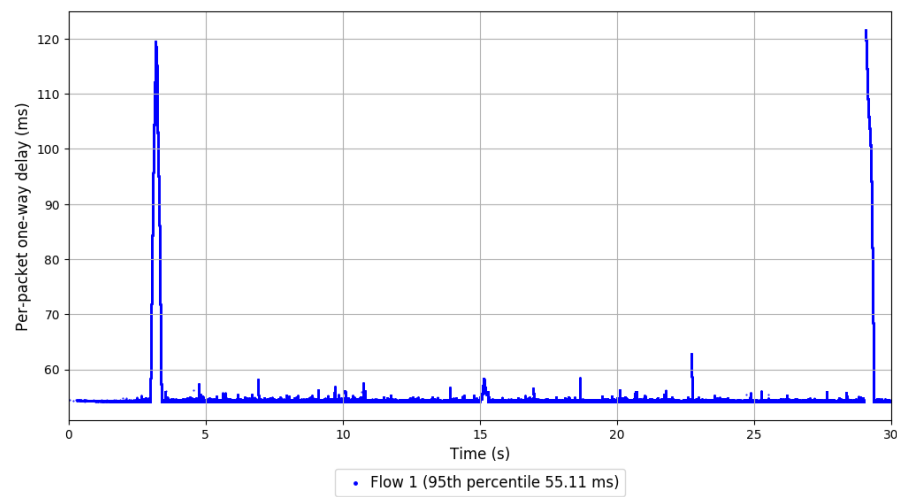
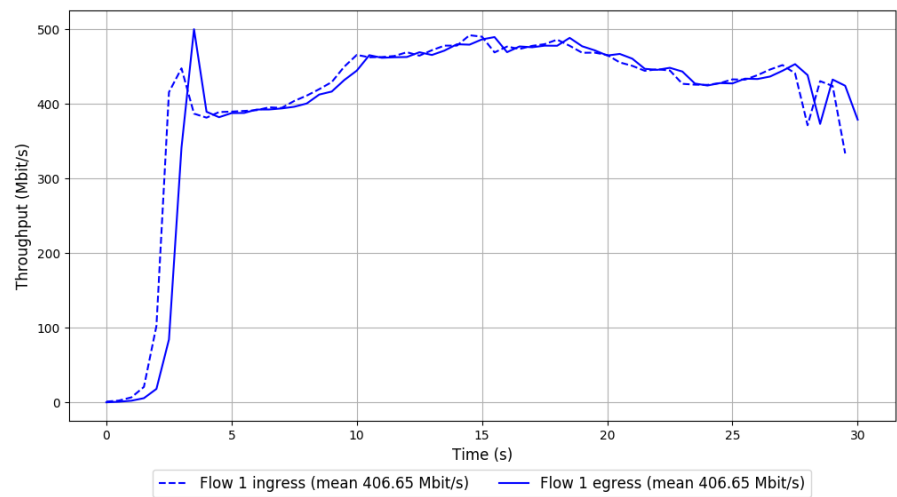
-- Flow 1:

Average throughput: 406.65 Mbit/s

95th percentile per-packet one-way delay: 55.111 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-10-10 12:24:01

End at: 2018-10-10 12:24:31

Local clock offset: -0.017 ms

Remote clock offset: 0.129 ms

Below is generated by plot.py at 2018-10-10 14:52:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 411.32 Mbit/s

95th percentile per-packet one-way delay: 54.326 ms

Loss rate: 0.00%

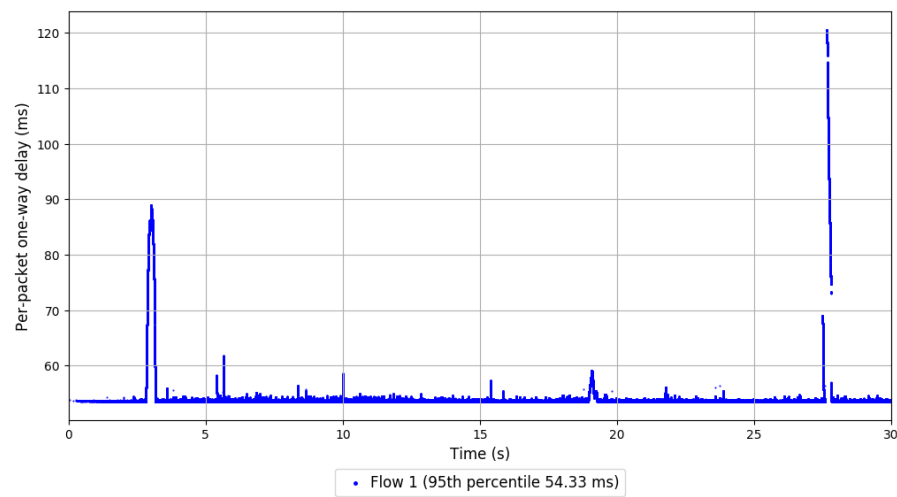
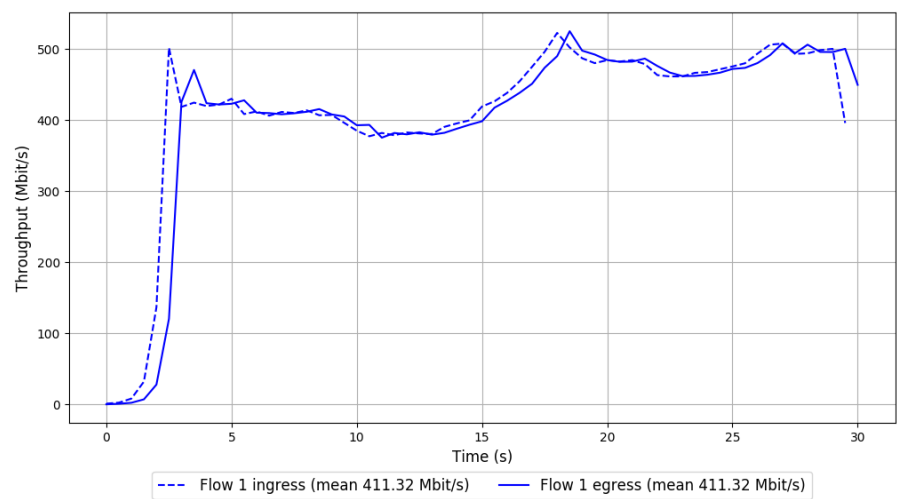
-- Flow 1:

Average throughput: 411.32 Mbit/s

95th percentile per-packet one-way delay: 54.326 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link

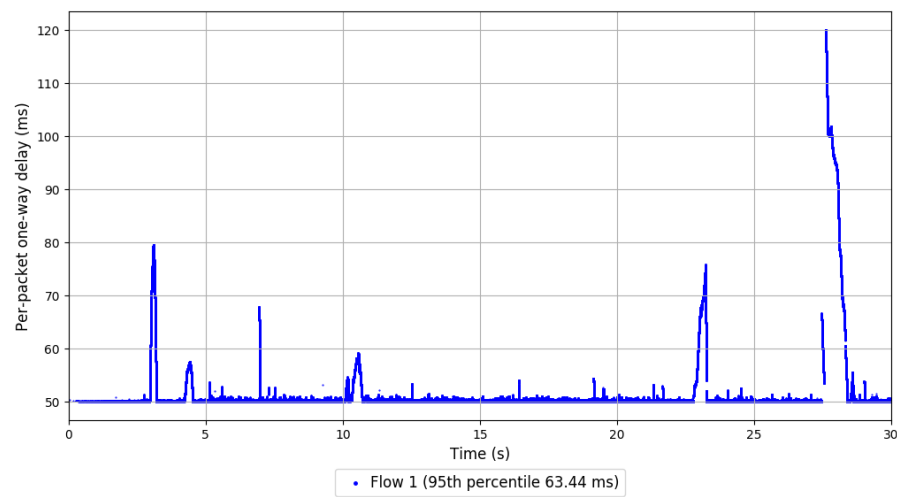
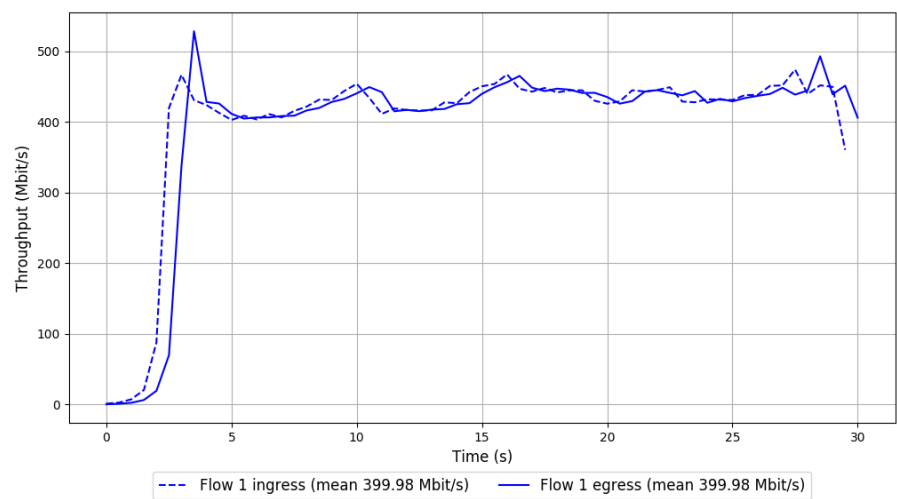


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-10 12:49:49
End at: 2018-10-10 12:50:19
Local clock offset: -0.281 ms
Remote clock offset: -0.265 ms

Below is generated by plot.py at 2018-10-10 14:52:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 399.98 Mbit/s
95th percentile per-packet one-way delay: 63.440 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 399.98 Mbit/s
95th percentile per-packet one-way delay: 63.440 ms
Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link

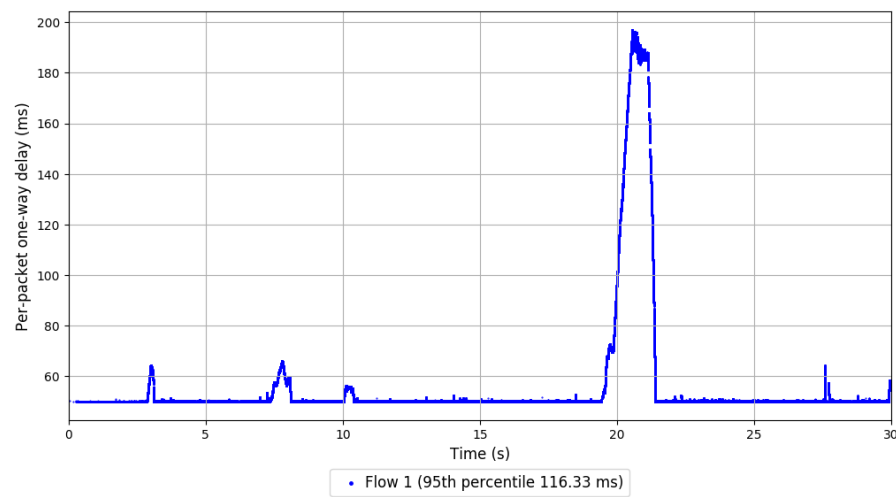
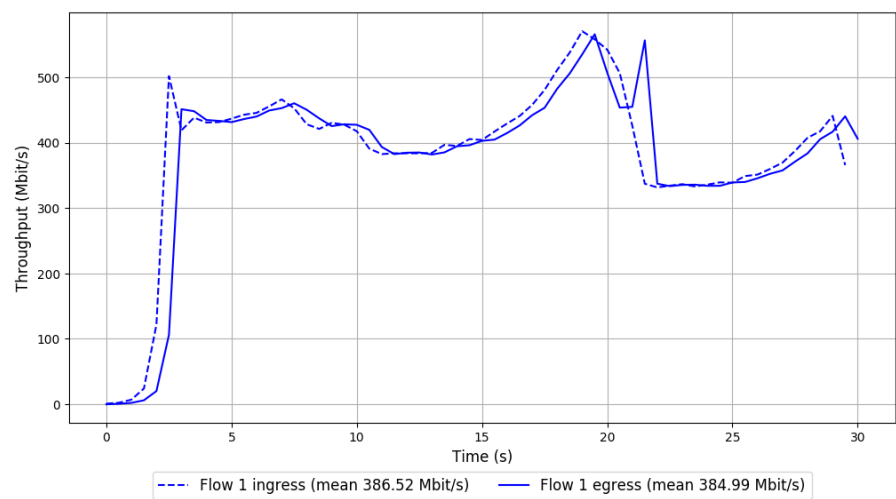


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-10 13:15:38
End at: 2018-10-10 13:16:08
Local clock offset: -0.023 ms
Remote clock offset: -0.054 ms

Below is generated by plot.py at 2018-10-10 14:52:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 384.99 Mbit/s
95th percentile per-packet one-way delay: 116.331 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 384.99 Mbit/s
95th percentile per-packet one-way delay: 116.331 ms
Loss rate: 0.38%

Run 5: Report of PCC-Vivace — Data Link

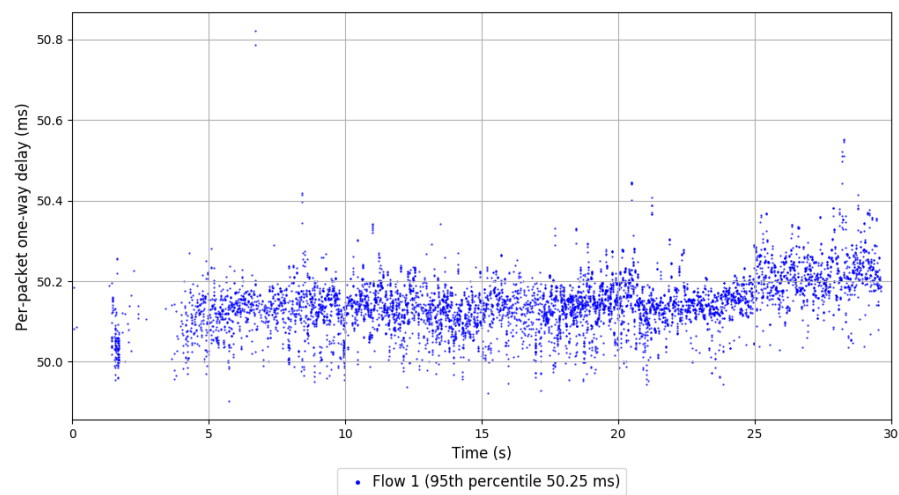
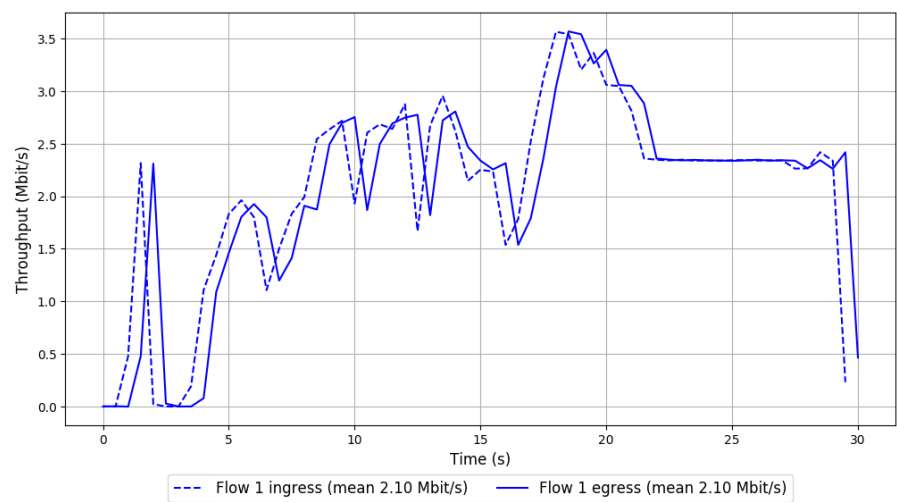


Run 1: Statistics of WebRTC media

Start at: 2018-10-10 11:24:36
End at: 2018-10-10 11:25:06
Local clock offset: -0.122 ms
Remote clock offset: -0.149 ms

Below is generated by plot.py at 2018-10-10 14:52:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 50.254 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 50.254 ms
Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-10-10 11:50:15

End at: 2018-10-10 11:50:45

Local clock offset: -0.135 ms

Remote clock offset: 1.409 ms

Below is generated by plot.py at 2018-10-10 14:52:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 55.214 ms

Loss rate: 0.00%

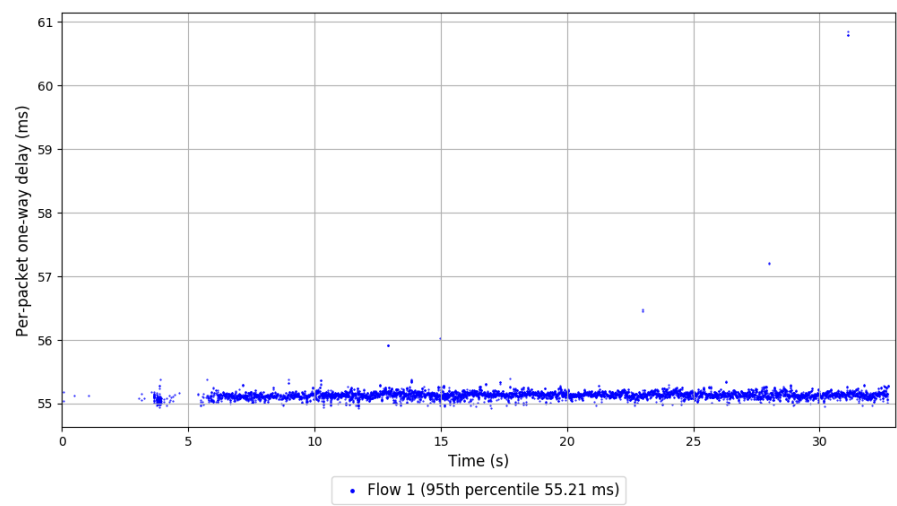
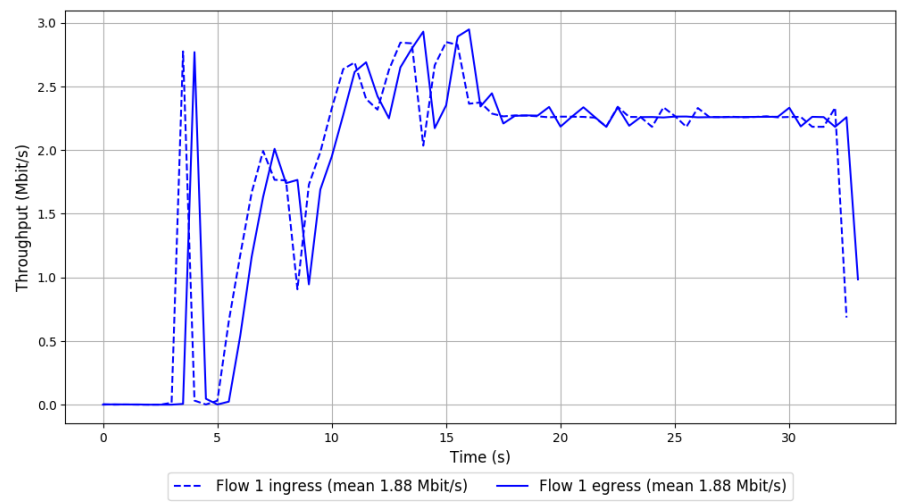
-- Flow 1:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 55.214 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

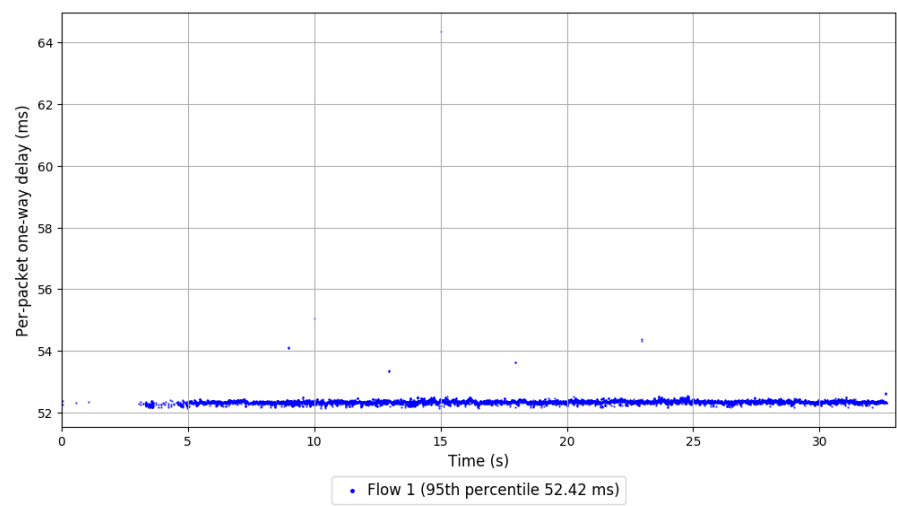
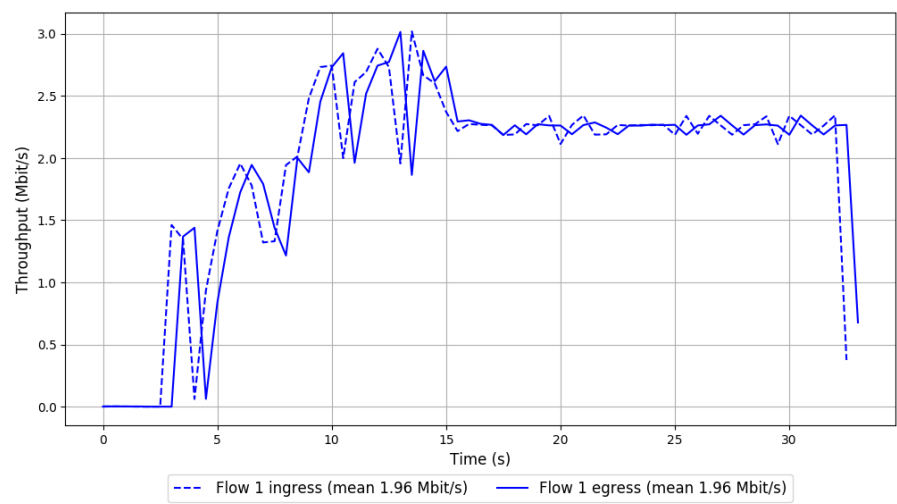


Run 3: Statistics of WebRTC media

Start at: 2018-10-10 12:16:03
End at: 2018-10-10 12:16:33
Local clock offset: 0.009 ms
Remote clock offset: -0.724 ms

Below is generated by plot.py at 2018-10-10 14:52:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 52.417 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 52.417 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

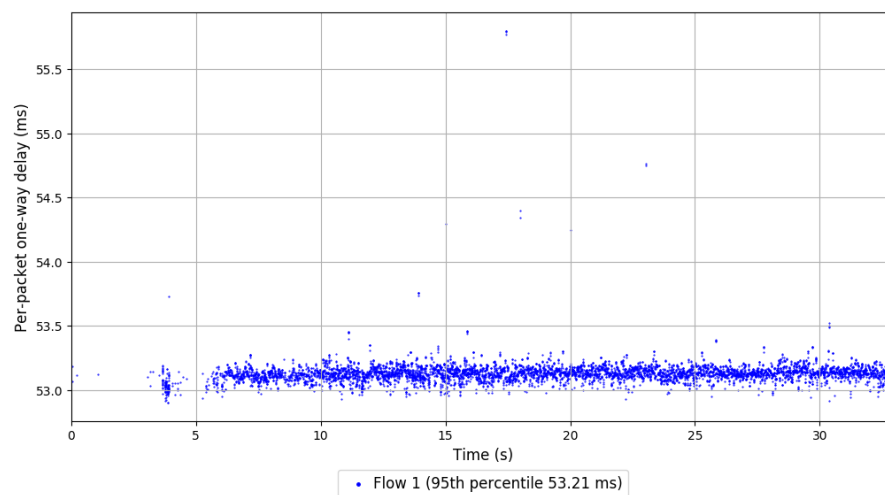
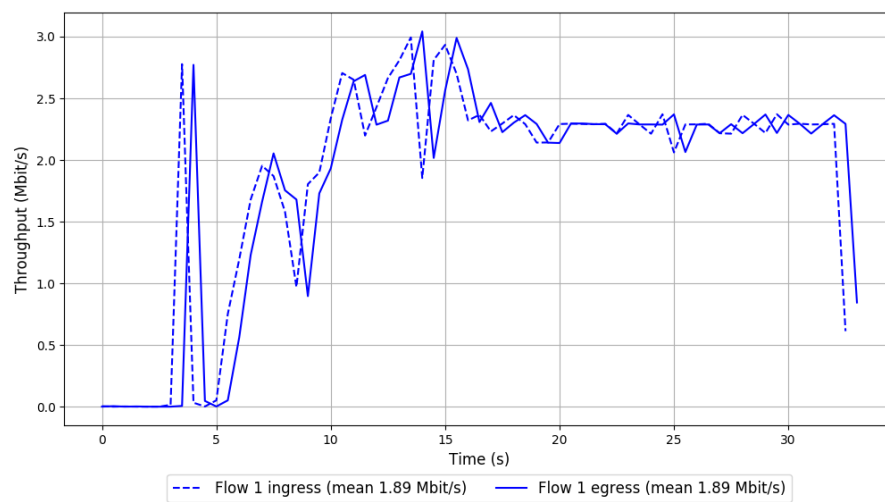


Run 4: Statistics of WebRTC media

Start at: 2018-10-10 12:41:53
End at: 2018-10-10 12:42:23
Local clock offset: -0.2 ms
Remote clock offset: -0.836 ms

Below is generated by plot.py at 2018-10-10 14:52:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 53.214 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 53.214 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-10 13:07:37
End at: 2018-10-10 13:08:07
Local clock offset: -0.109 ms
Remote clock offset: -0.327 ms

Below is generated by plot.py at 2018-10-10 14:52:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 50.133 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 50.133 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

