

Pantheon Report

Generated at 2018-12-11 00:26:44 (UTC).

Data path: AWS India 2 on `ens5` (*local*) → Stanford on `eno1` (*remote*).

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

System info:

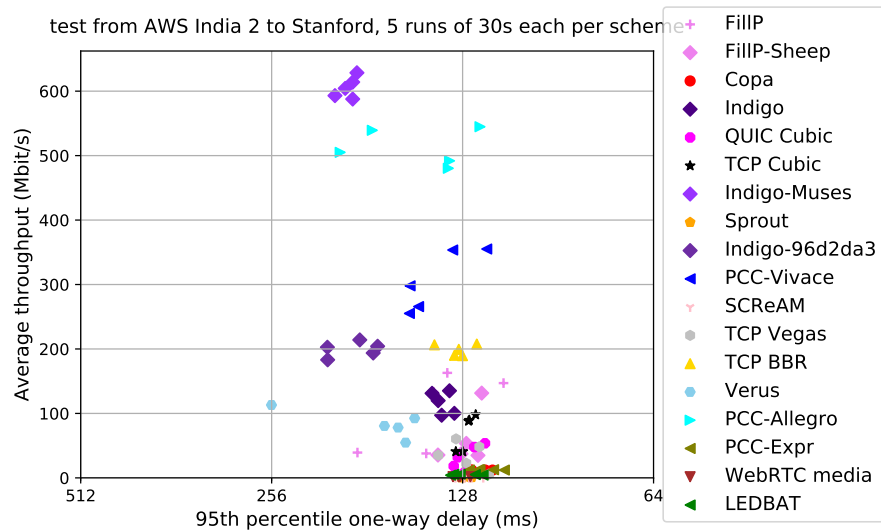
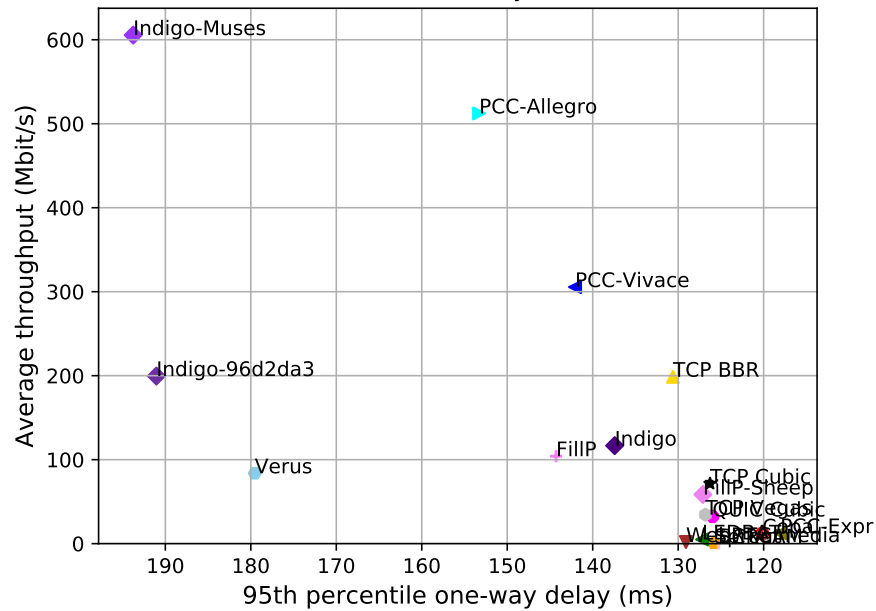
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ c6268d7c473682290bfe9901ef81a6b6a1e51d3c
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
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 AWS India 2 to Stanford, 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	198.69	130.61	0.12
Copa	4	12.07	120.15	67.83
TCP Cubic	5	71.46	126.27	0.03
FillP	5	104.11	144.29	2.25
FillP-Sheep	5	58.53	127.10	3.06
Indigo	5	116.70	137.43	0.06
Indigo-96d2da3	5	199.57	191.05	10.81
LEDBAT	5	4.96	127.21	0.01
Indigo-Muses	5	605.54	193.76	1.73
PCC-Allegro	5	512.26	153.29	2.98
PCC-Expr	5	12.48	118.06	30.74
QUIC Cubic	5	32.32	125.99	0.02
SCReAM	5	0.21	125.26	0.00
Sprout	5	0.67	125.79	0.08
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	34.49	126.81	0.08
Verus	5	83.78	179.54	8.94
PCC-Vivace	5	305.50	142.07	0.37
WebRTC media	5	1.89	129.09	0.01

Run 1: Statistics of TCP BBR

Start at: 2018-12-10 22:01:06

End at: 2018-12-10 22:01:36

Local clock offset: -9.239 ms

Remote clock offset: 2.697 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 207.64 Mbit/s

95th percentile per-packet one-way delay: 121.584 ms

Loss rate: 0.06%

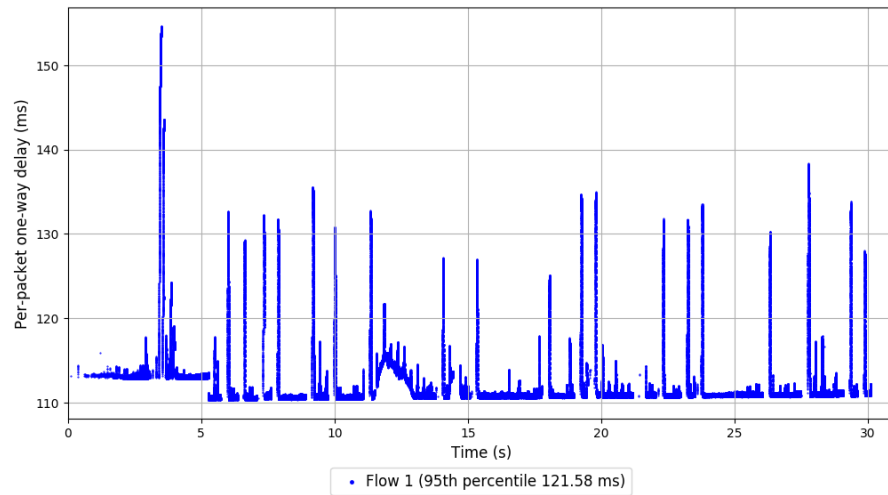
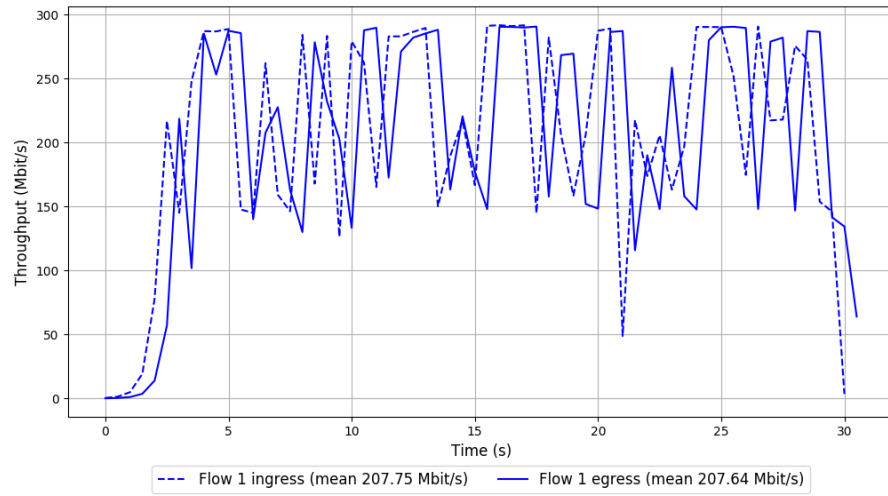
-- Flow 1:

Average throughput: 207.64 Mbit/s

95th percentile per-packet one-way delay: 121.584 ms

Loss rate: 0.06%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-12-10 22:27:46

End at: 2018-12-10 22:28:16

Local clock offset: -9.205 ms

Remote clock offset: 4.24 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 199.44 Mbit/s

95th percentile per-packet one-way delay: 129.792 ms

Loss rate: 0.14%

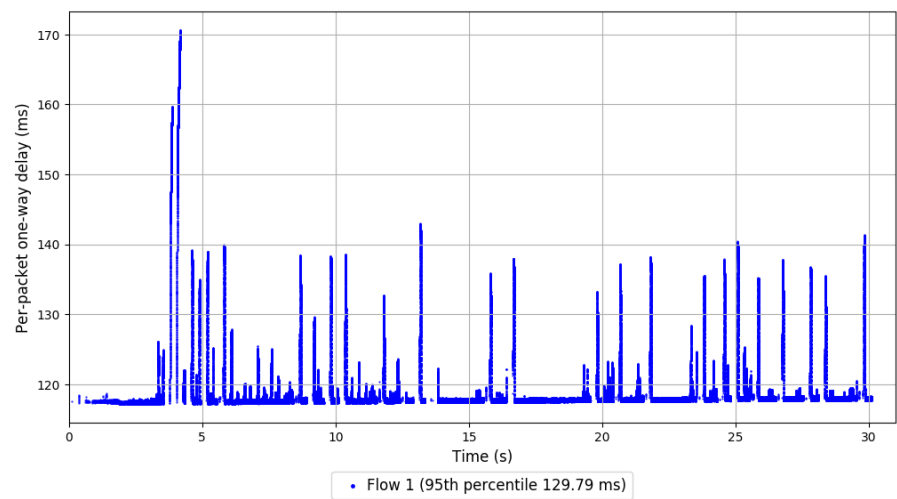
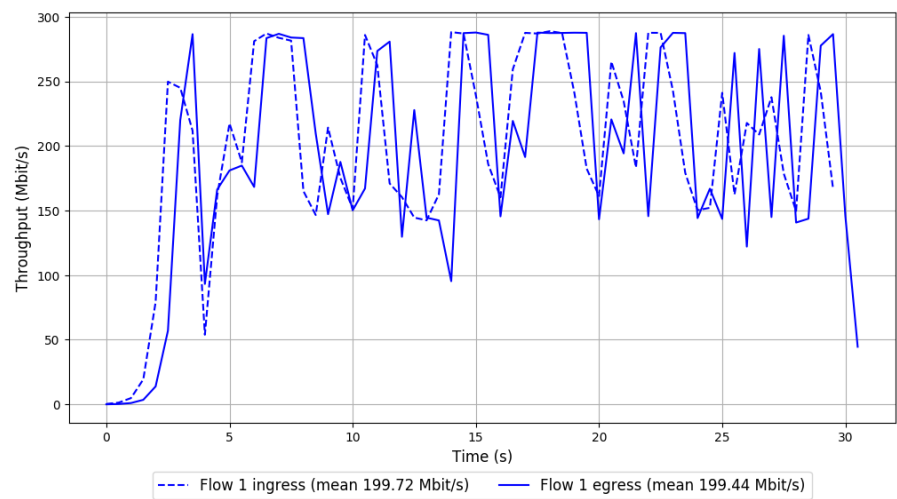
-- Flow 1:

Average throughput: 199.44 Mbit/s

95th percentile per-packet one-way delay: 129.792 ms

Loss rate: 0.14%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-12-10 22:54:34

End at: 2018-12-10 22:55:04

Local clock offset: -3.524 ms

Remote clock offset: 3.704 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 190.23 Mbit/s

95th percentile per-packet one-way delay: 131.822 ms

Loss rate: 0.09%

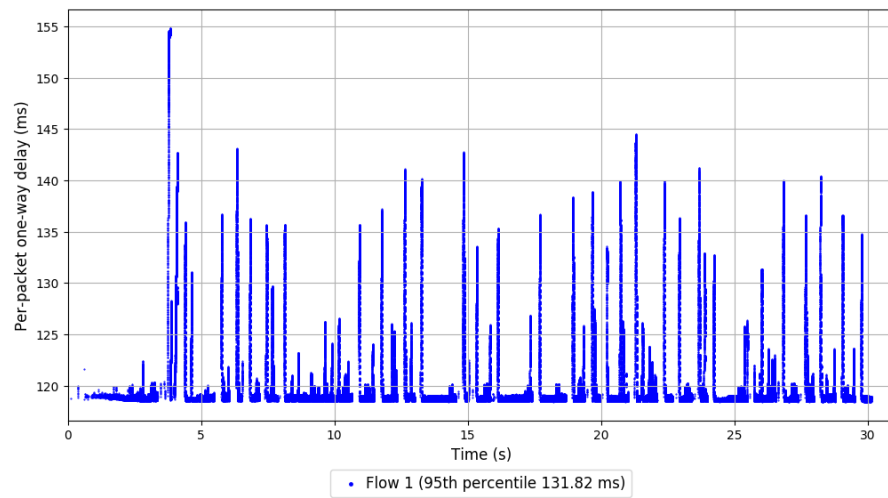
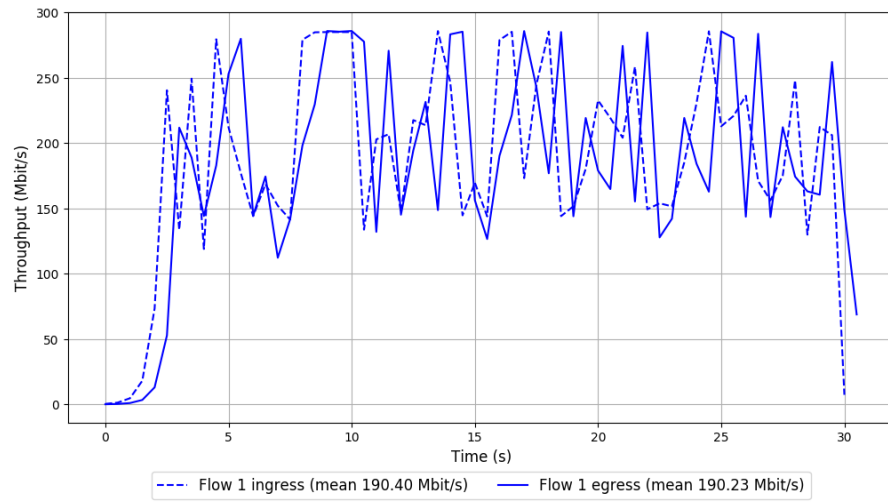
-- Flow 1:

Average throughput: 190.23 Mbit/s

95th percentile per-packet one-way delay: 131.822 ms

Loss rate: 0.09%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-12-10 23:21:11

End at: 2018-12-10 23:21:41

Local clock offset: -15.12 ms

Remote clock offset: 0.076 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 206.47 Mbit/s

95th percentile per-packet one-way delay: 141.769 ms

Loss rate: 0.14%

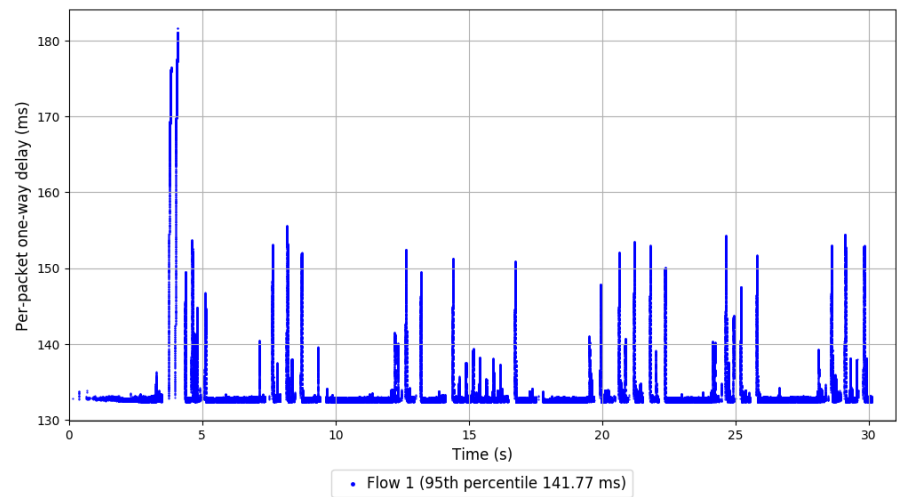
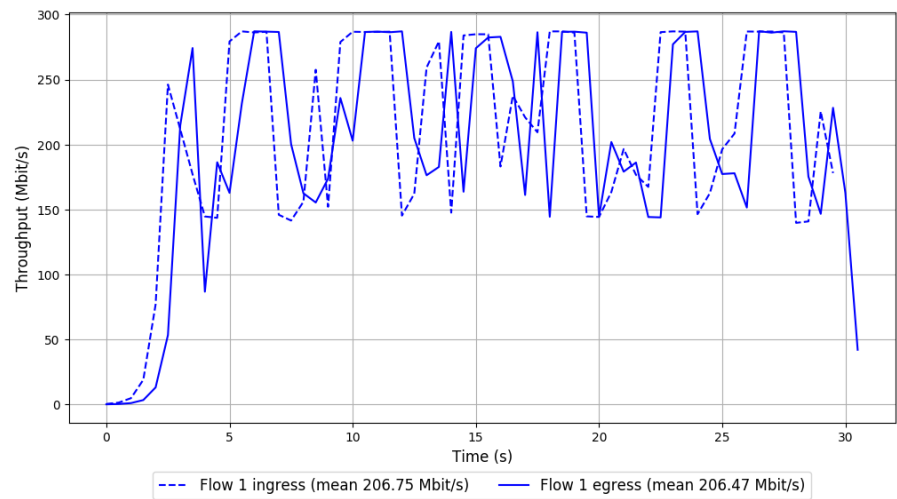
-- Flow 1:

Average throughput: 206.47 Mbit/s

95th percentile per-packet one-way delay: 141.769 ms

Loss rate: 0.14%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-12-10 23:47:53

End at: 2018-12-10 23:48:23

Local clock offset: 6.034 ms

Remote clock offset: 2.758 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 189.66 Mbit/s

95th percentile per-packet one-way delay: 128.067 ms

Loss rate: 0.15%

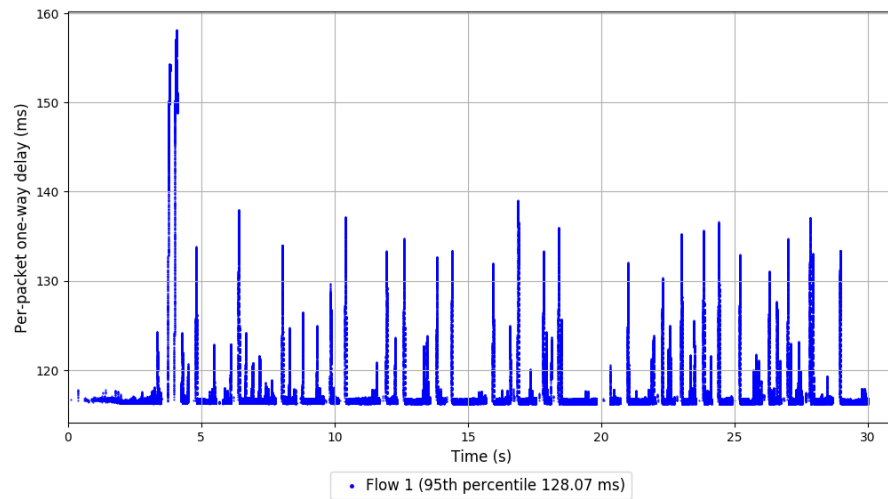
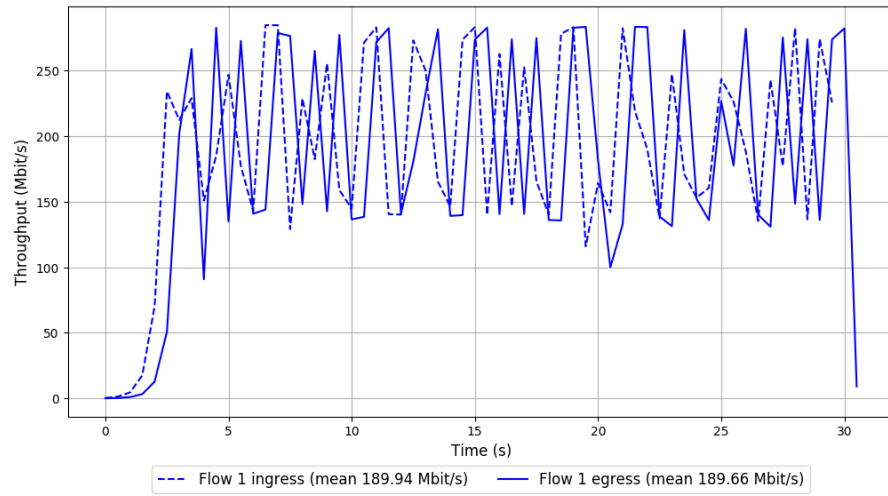
-- Flow 1:

Average throughput: 189.66 Mbit/s

95th percentile per-packet one-way delay: 128.067 ms

Loss rate: 0.15%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

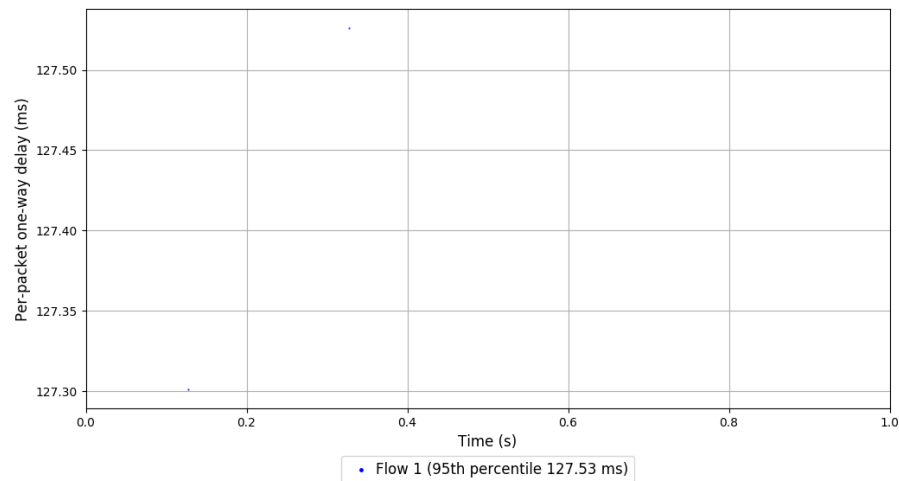
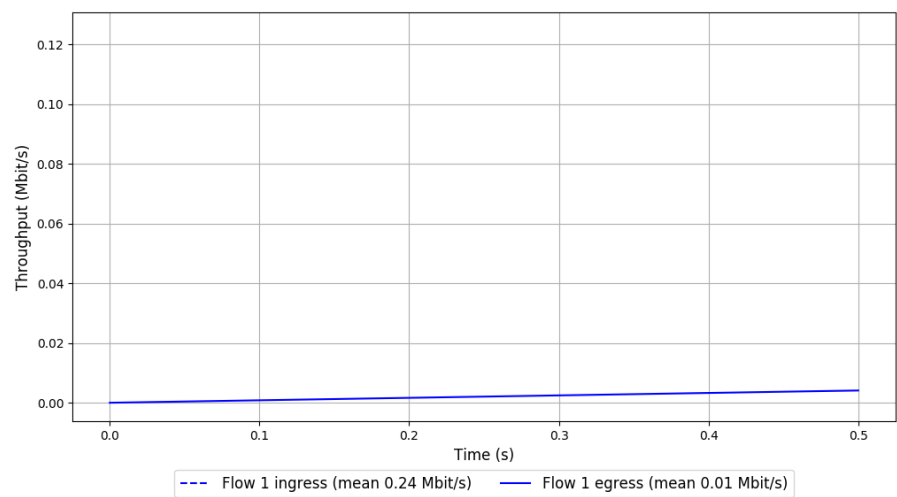
Start at: 2018-12-10 21:54:26

End at: 2018-12-10 21:54:56

Local clock offset: -18.702 ms

Remote clock offset: 1.491 ms

Run 1: Report of Copa — Data Link

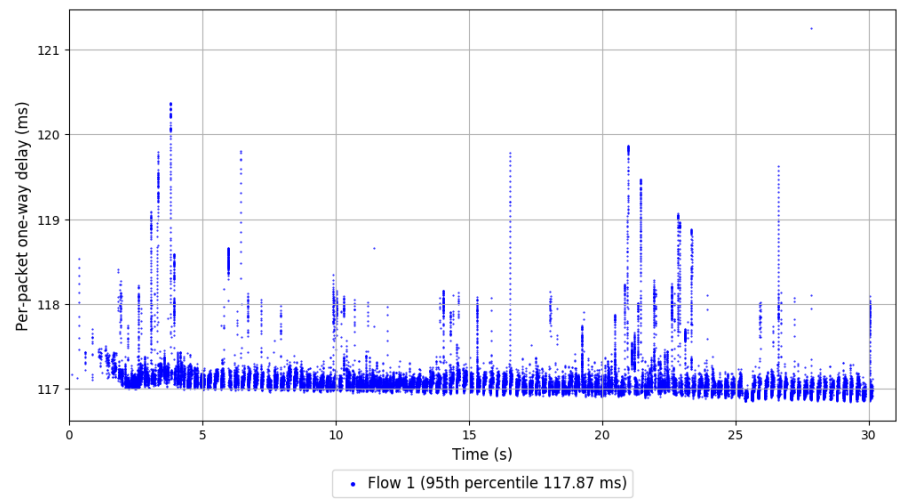
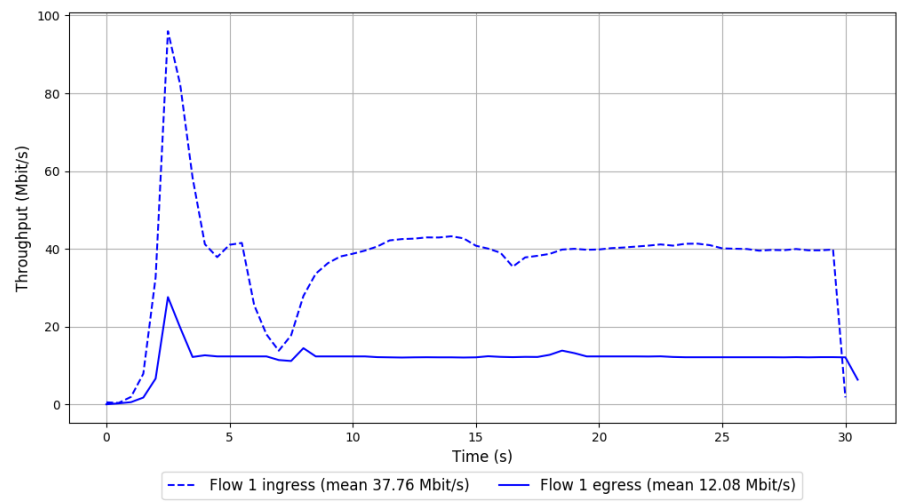


Run 2: Statistics of Copa

Start at: 2018-12-10 22:21:03
End at: 2018-12-10 22:21:33
Local clock offset: -10.925 ms
Remote clock offset: 4.585 ms

Below is generated by plot.py at 2018-12-11 00:11:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 117.866 ms
Loss rate: 68.01%
-- Flow 1:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 117.866 ms
Loss rate: 68.01%

Run 2: Report of Copa — Data Link

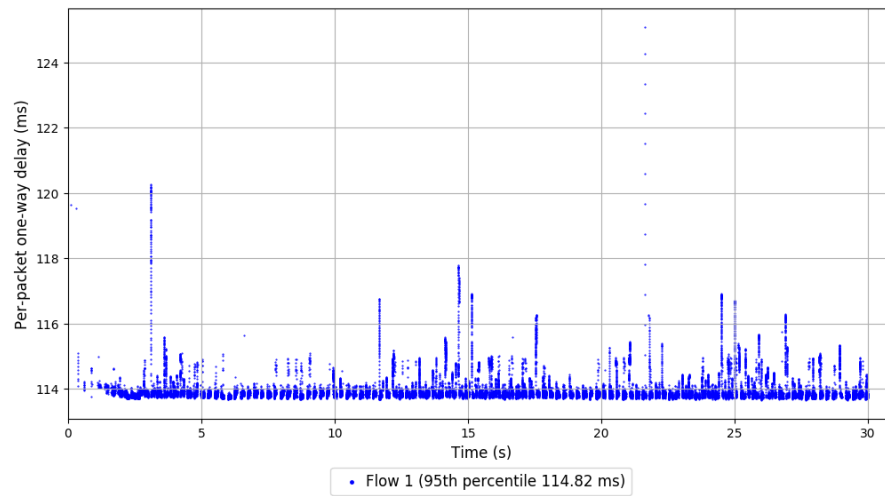
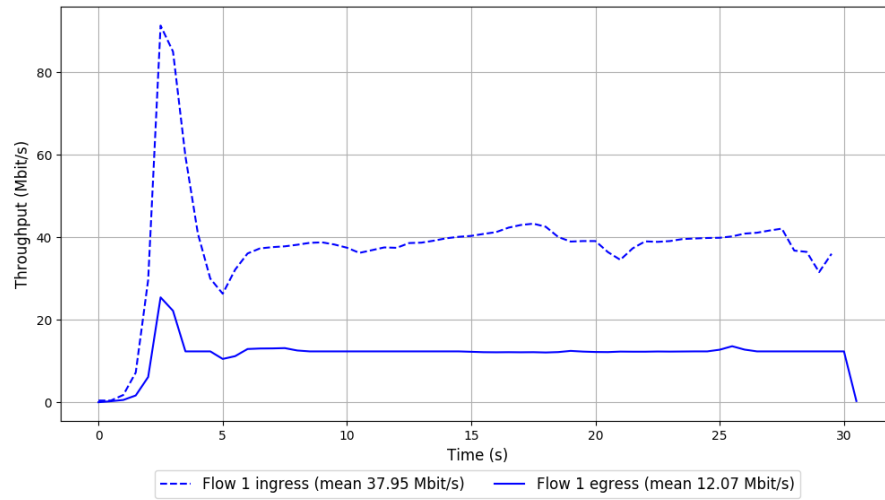


Run 3: Statistics of Copa

Start at: 2018-12-10 22:47:53
End at: 2018-12-10 22:48:23
Local clock offset: -2.585 ms
Remote clock offset: 3.456 ms

Below is generated by plot.py at 2018-12-11 00:11:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.07 Mbit/s
95th percentile per-packet one-way delay: 114.819 ms
Loss rate: 68.20%
-- Flow 1:
Average throughput: 12.07 Mbit/s
95th percentile per-packet one-way delay: 114.819 ms
Loss rate: 68.20%

Run 3: Report of Copa — Data Link

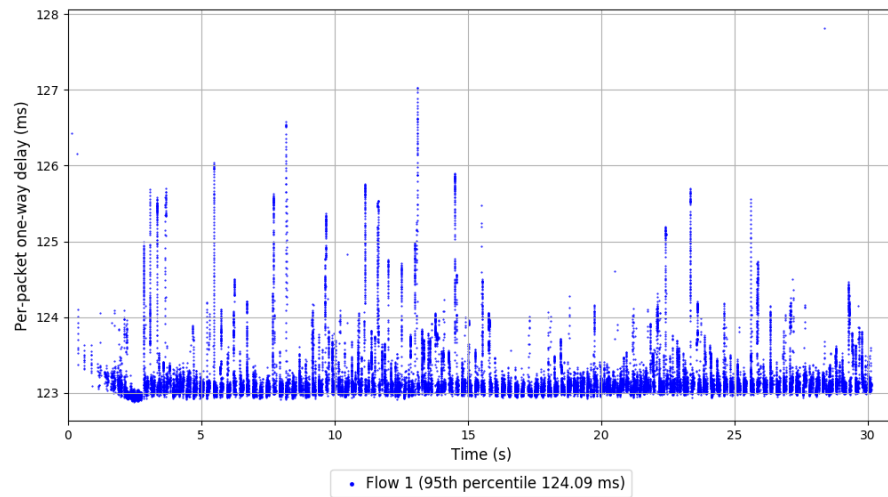
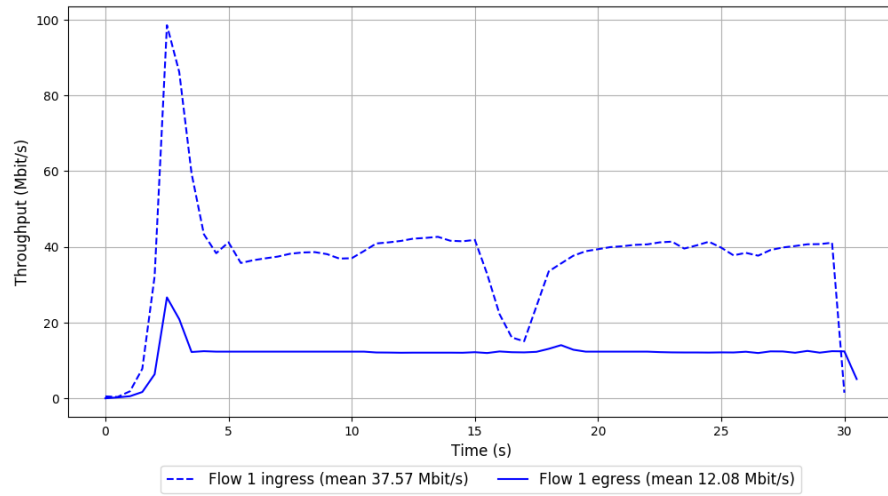


Run 4: Statistics of Copa

Start at: 2018-12-10 23:14:26
End at: 2018-12-10 23:14:56
Local clock offset: -8.506 ms
Remote clock offset: 0.555 ms

Below is generated by plot.py at 2018-12-11 00:11:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 124.095 ms
Loss rate: 67.85%
-- Flow 1:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 124.095 ms
Loss rate: 67.85%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-12-10 23:41:12

End at: 2018-12-10 23:41:42

Local clock offset: -5.614 ms

Remote clock offset: 2.049 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.07 Mbit/s

95th percentile per-packet one-way delay: 123.802 ms

Loss rate: 67.24%

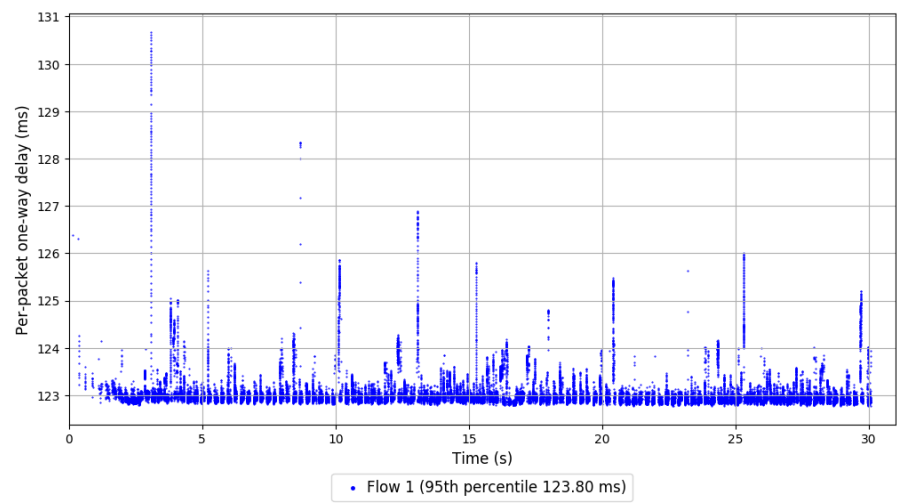
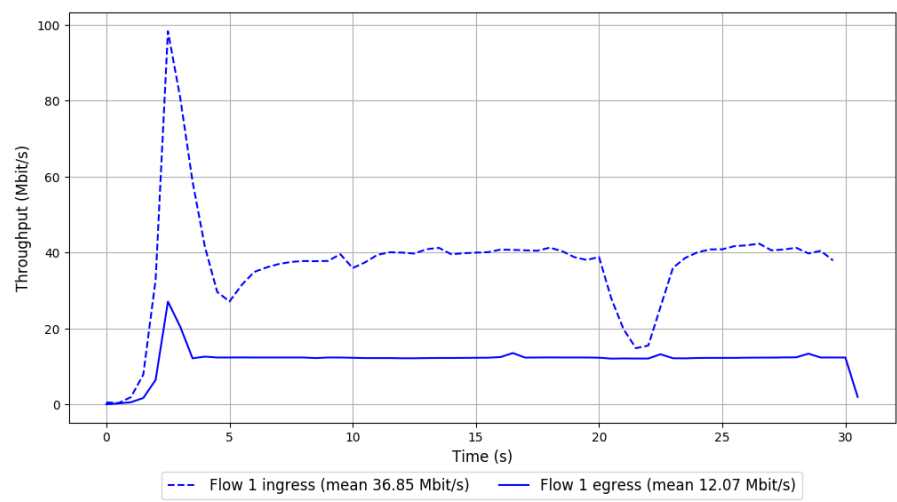
-- Flow 1:

Average throughput: 12.07 Mbit/s

95th percentile per-packet one-way delay: 123.802 ms

Loss rate: 67.24%

Run 5: Report of Copa — Data Link

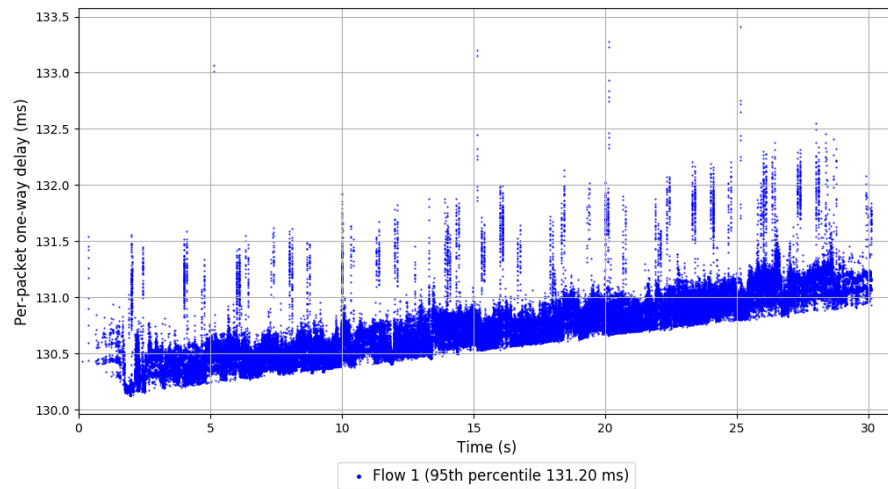
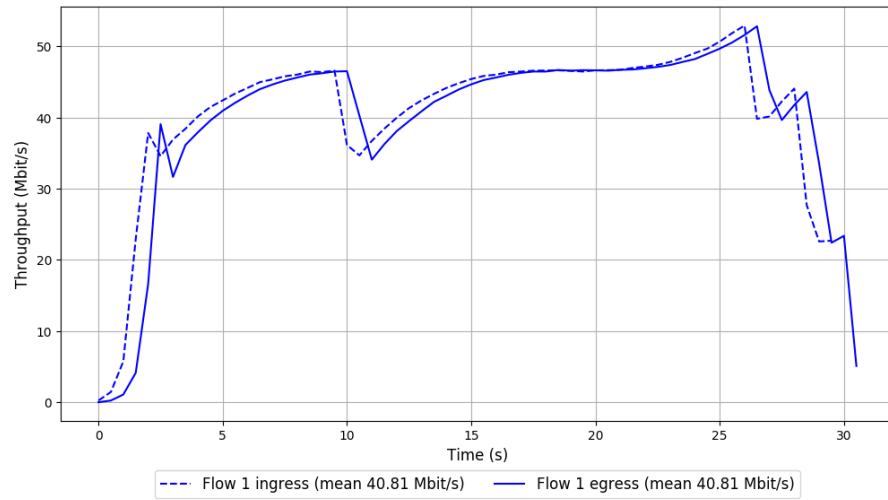


Run 1: Statistics of TCP Cubic

Start at: 2018-12-10 21:58:27
End at: 2018-12-10 21:58:57
Local clock offset: -26.989 ms
Remote clock offset: 2.296 ms

Below is generated by plot.py at 2018-12-11 00:11:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 40.81 Mbit/s
95th percentile per-packet one-way delay: 131.197 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 40.81 Mbit/s
95th percentile per-packet one-way delay: 131.197 ms
Loss rate: 0.01%

Run 1: Report of TCP Cubic — Data Link

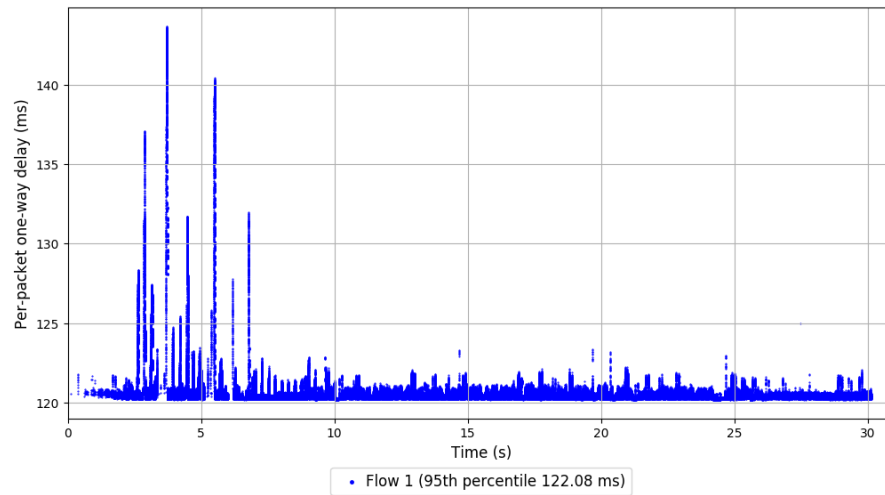
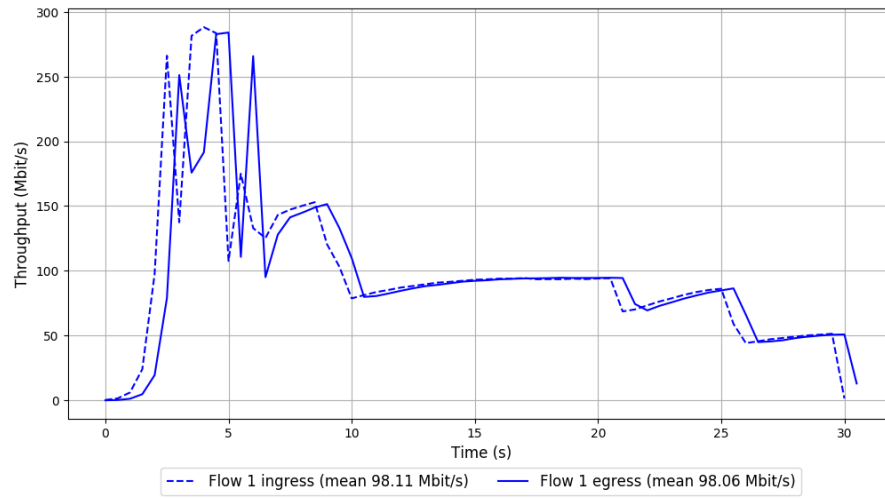


Run 2: Statistics of TCP Cubic

Start at: 2018-12-10 22:25:04
End at: 2018-12-10 22:25:34
Local clock offset: -12.607 ms
Remote clock offset: 4.674 ms

Below is generated by plot.py at 2018-12-11 00:11:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 98.06 Mbit/s
95th percentile per-packet one-way delay: 122.078 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 98.06 Mbit/s
95th percentile per-packet one-way delay: 122.078 ms
Loss rate: 0.05%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-12-10 22:51:53

End at: 2018-12-10 22:52:23

Local clock offset: -9.925 ms

Remote clock offset: 3.573 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.50 Mbit/s

95th percentile per-packet one-way delay: 124.911 ms

Loss rate: 0.03%

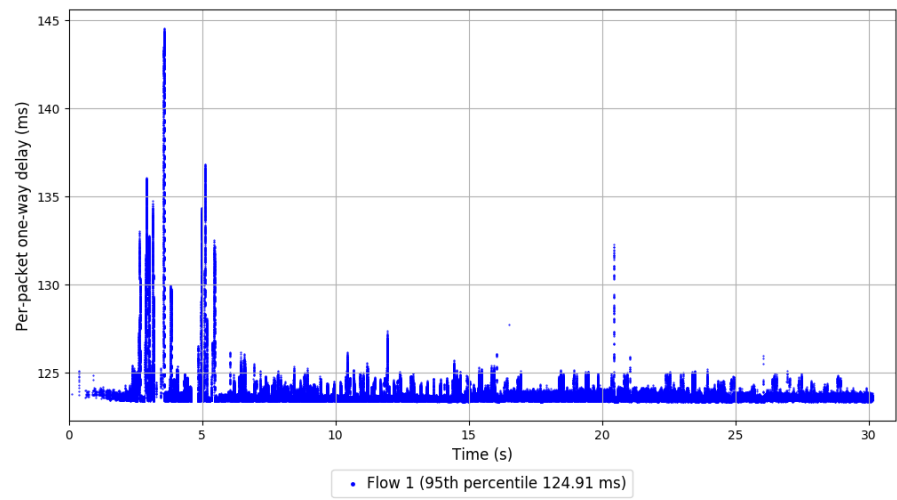
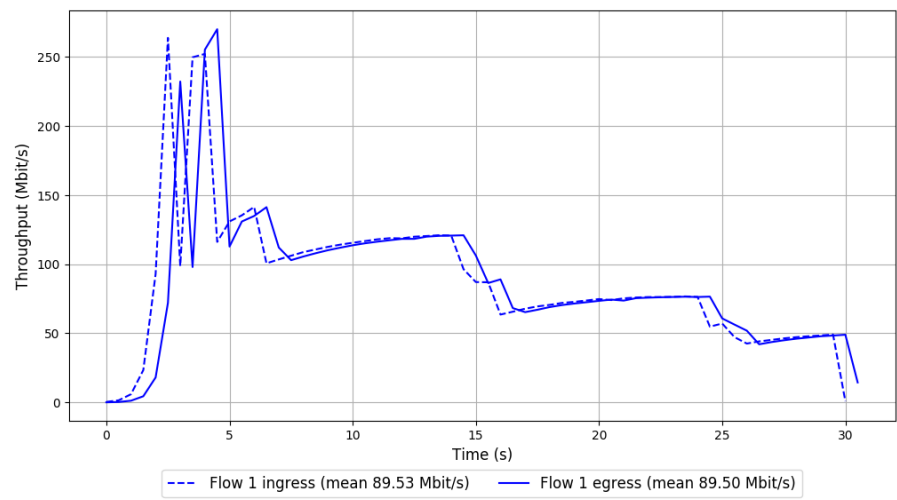
-- Flow 1:

Average throughput: 89.50 Mbit/s

95th percentile per-packet one-way delay: 124.911 ms

Loss rate: 0.03%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-12-10 23:18:30

End at: 2018-12-10 23:19:00

Local clock offset: 0.584 ms

Remote clock offset: 0.264 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.16 Mbit/s

95th percentile per-packet one-way delay: 125.287 ms

Loss rate: 0.04%

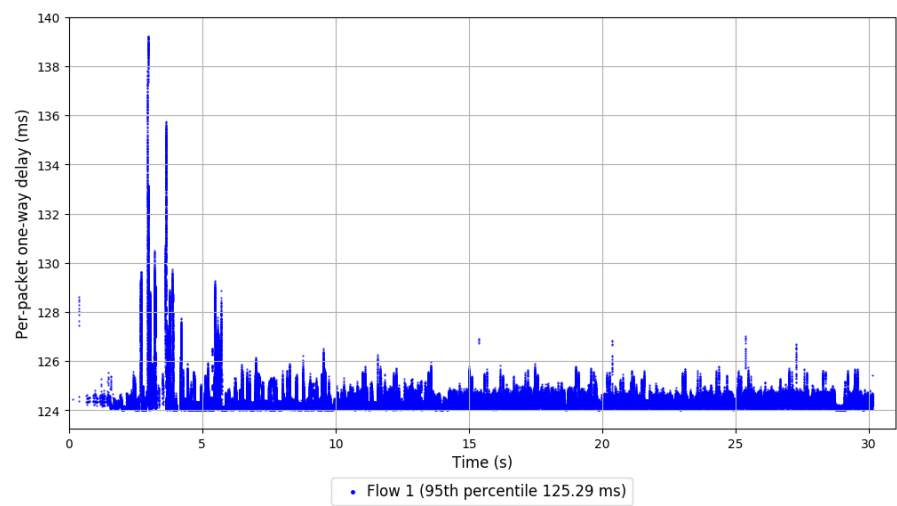
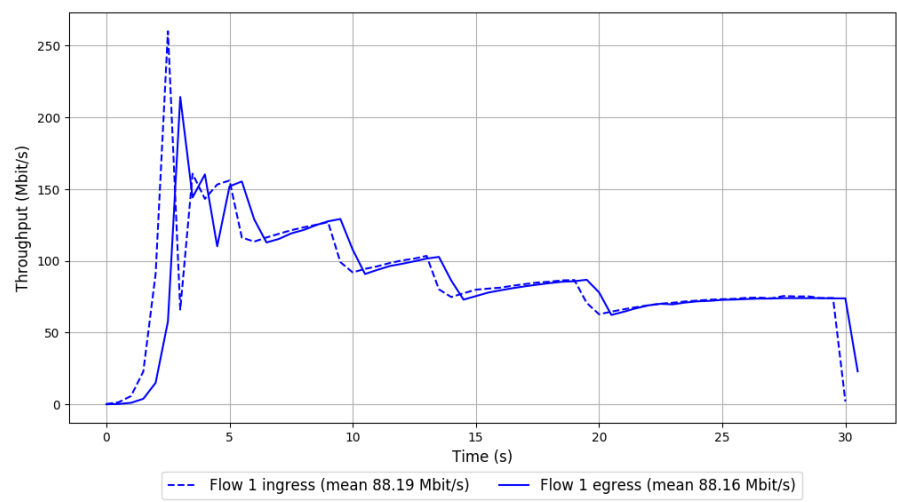
-- Flow 1:

Average throughput: 88.16 Mbit/s

95th percentile per-packet one-way delay: 125.287 ms

Loss rate: 0.04%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-12-10 23:45:14

End at: 2018-12-10 23:45:44

Local clock offset: -4.382 ms

Remote clock offset: 2.515 ms

Below is generated by plot.py at 2018-12-11 00:11:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.79 Mbit/s

95th percentile per-packet one-way delay: 127.895 ms

Loss rate: 0.04%

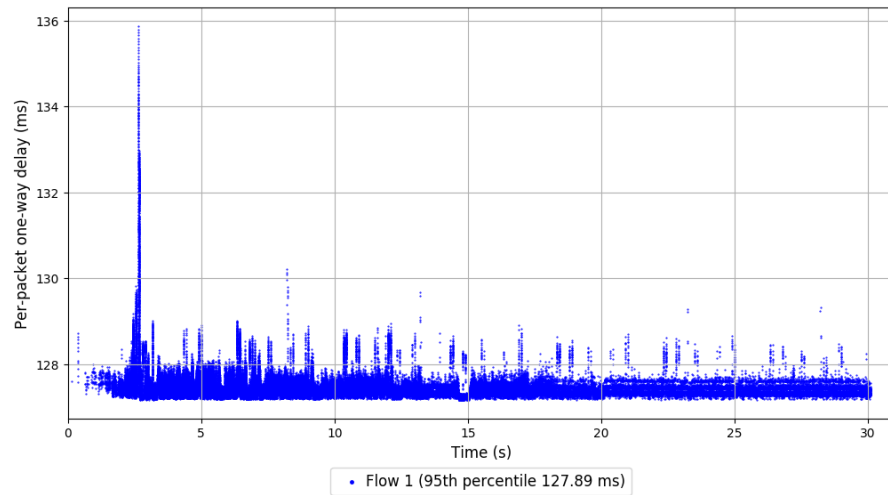
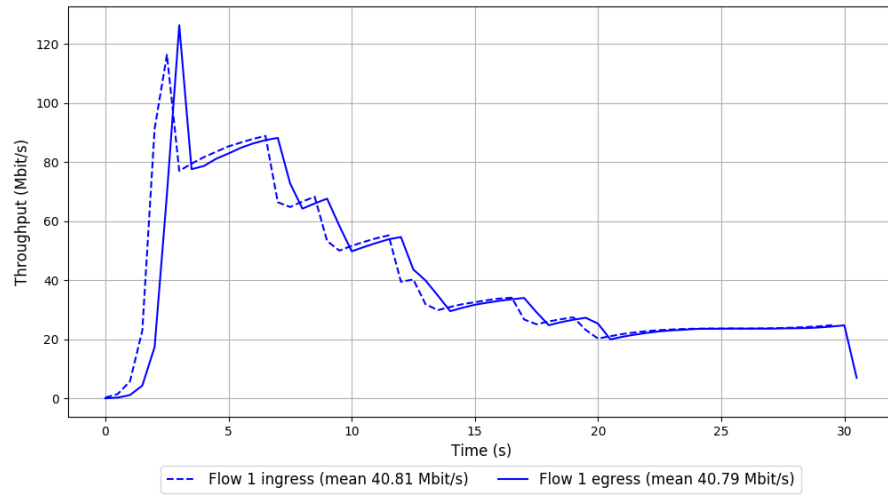
-- Flow 1:

Average throughput: 40.79 Mbit/s

95th percentile per-packet one-way delay: 127.895 ms

Loss rate: 0.04%

Run 5: Report of TCP Cubic — Data Link

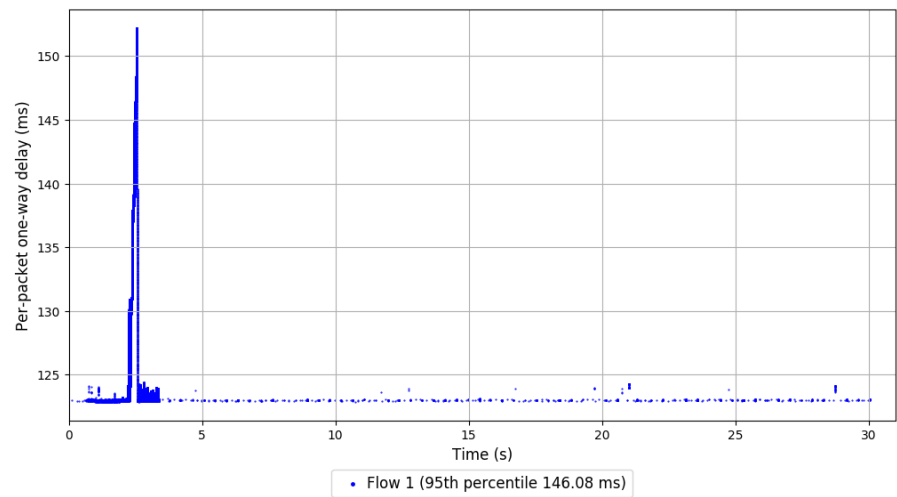
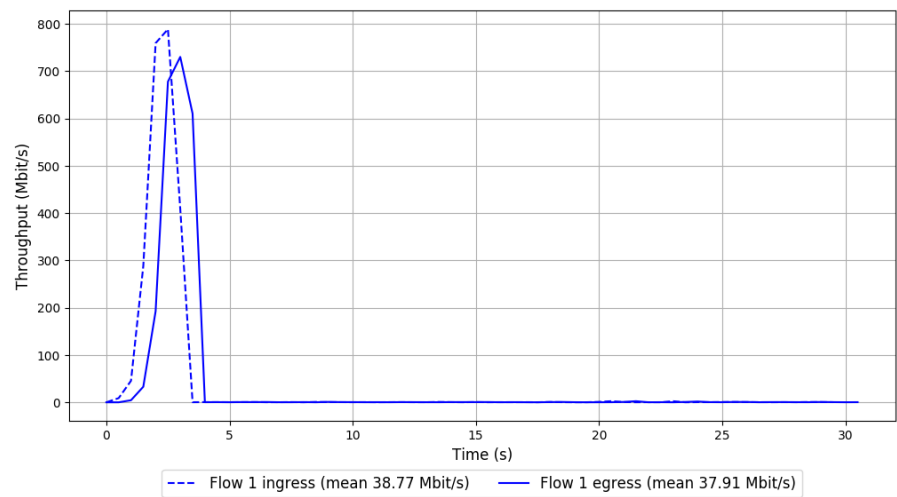


Run 1: Statistics of FillP

Start at: 2018-12-10 22:10:01
End at: 2018-12-10 22:10:31
Local clock offset: -16.438 ms
Remote clock offset: 3.648 ms

Below is generated by plot.py at 2018-12-11 00:11:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 37.91 Mbit/s
95th percentile per-packet one-way delay: 146.080 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 37.91 Mbit/s
95th percentile per-packet one-way delay: 146.080 ms
Loss rate: 2.23%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-12-10 22:36:45

End at: 2018-12-10 22:37:15

Local clock offset: -9.879 ms

Remote clock offset: 3.464 ms

Below is generated by plot.py at 2018-12-11 00:12:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 133.40 Mbit/s

95th percentile per-packet one-way delay: 142.220 ms

Loss rate: 1.97%

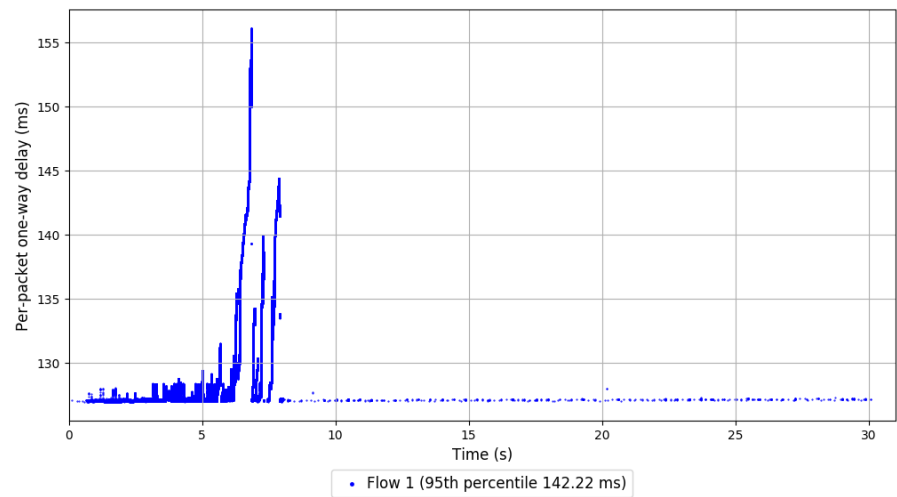
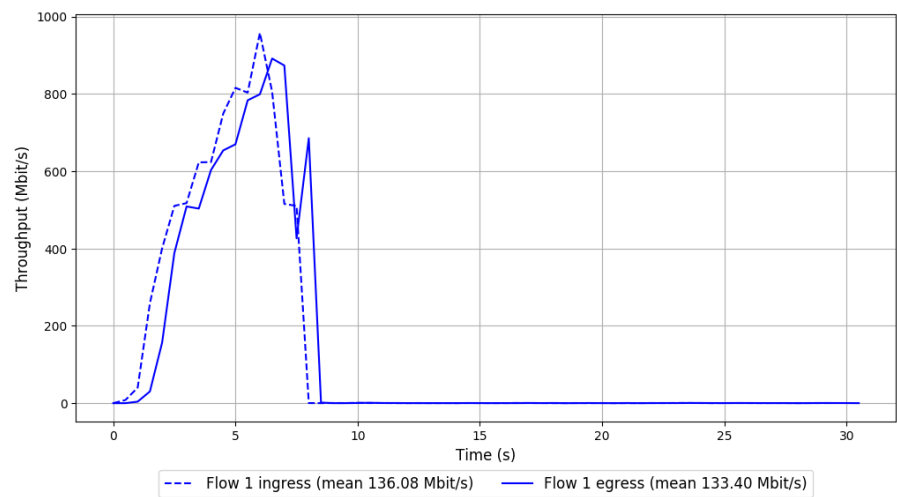
-- Flow 1:

Average throughput: 133.40 Mbit/s

95th percentile per-packet one-way delay: 142.220 ms

Loss rate: 1.97%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-12-10 23:03:26

End at: 2018-12-10 23:03:56

Local clock offset: -2.244 ms

Remote clock offset: 2.046 ms

Below is generated by plot.py at 2018-12-11 00:12:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.28 Mbit/s

95th percentile per-packet one-way delay: 187.494 ms

Loss rate: 3.58%

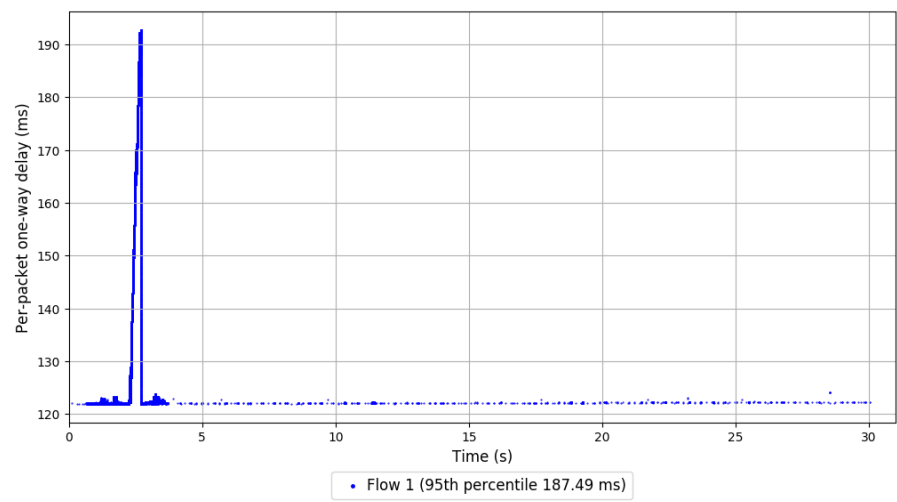
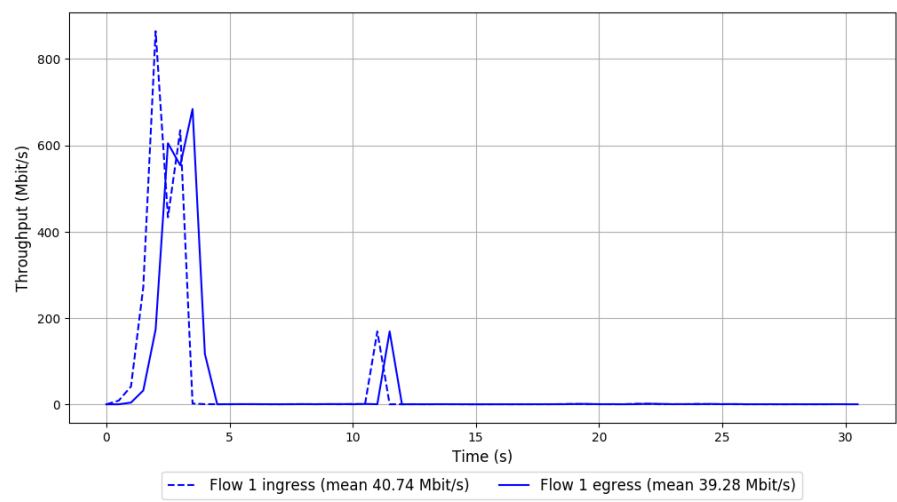
-- Flow 1:

Average throughput: 39.28 Mbit/s

95th percentile per-packet one-way delay: 187.494 ms

Loss rate: 3.58%

Run 3: Report of FillP — Data Link

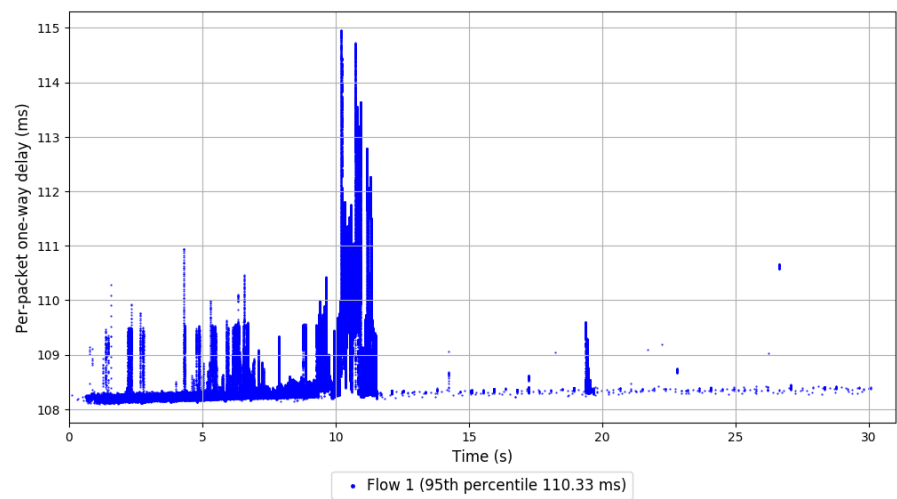
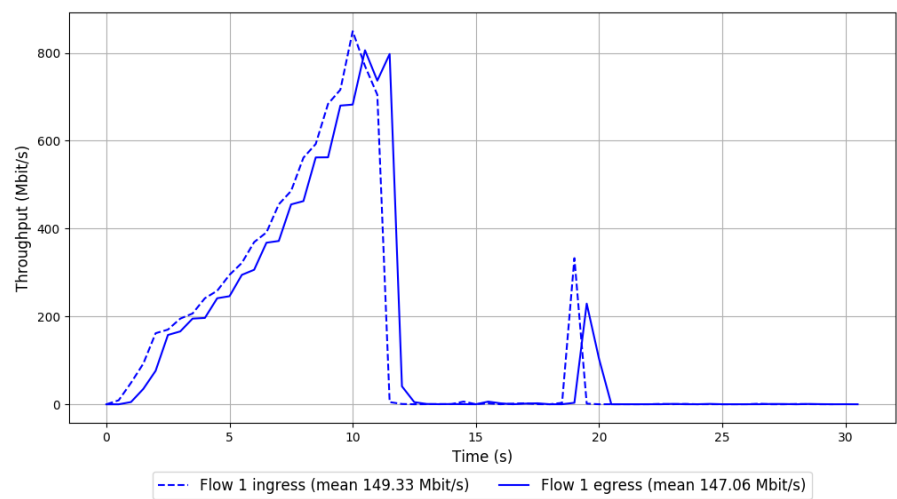


Run 4: Statistics of FillP

Start at: 2018-12-10 23:30:09
End at: 2018-12-10 23:30:39
Local clock offset: 7.121 ms
Remote clock offset: -0.219 ms

Below is generated by plot.py at 2018-12-11 00:13:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 147.06 Mbit/s
95th percentile per-packet one-way delay: 110.331 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 147.06 Mbit/s
95th percentile per-packet one-way delay: 110.331 ms
Loss rate: 1.52%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-12-10 23:56:46

End at: 2018-12-10 23:57:16

Local clock offset: -4.902 ms

Remote clock offset: 3.439 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 162.92 Mbit/s

95th percentile per-packet one-way delay: 135.313 ms

Loss rate: 1.97%

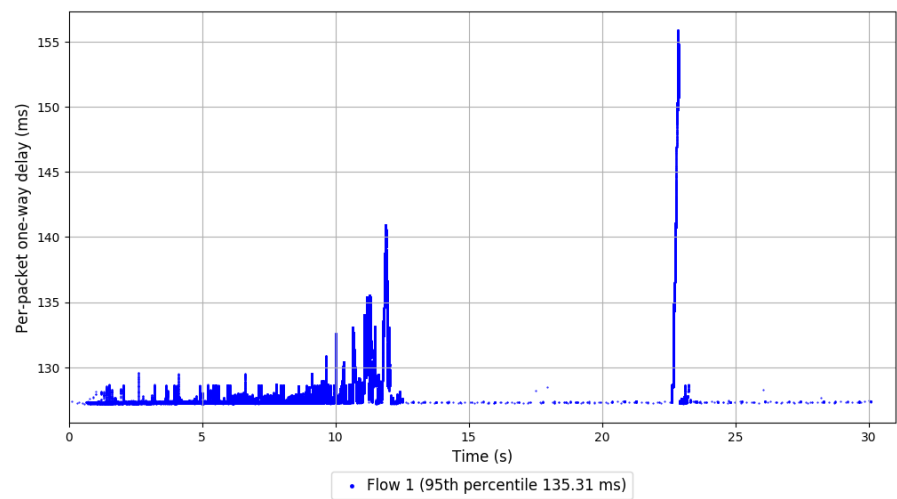
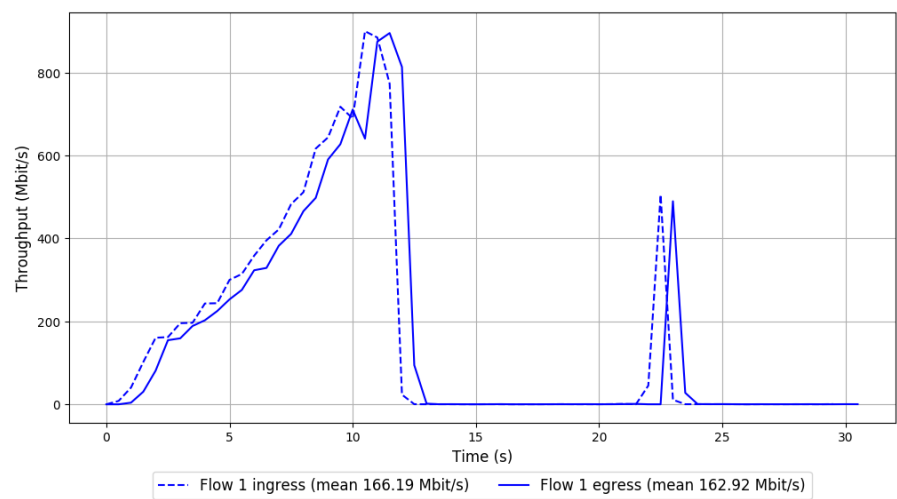
-- Flow 1:

Average throughput: 162.92 Mbit/s

95th percentile per-packet one-way delay: 135.313 ms

Loss rate: 1.97%

Run 5: Report of FillP — Data Link

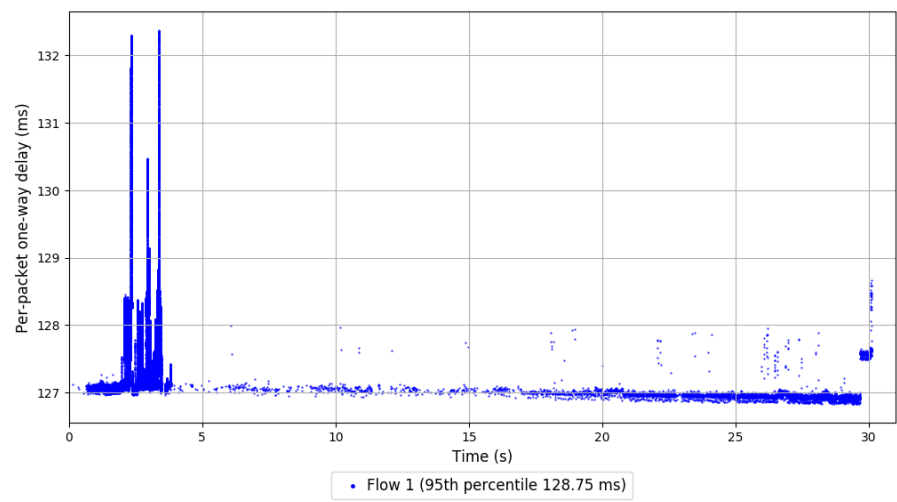
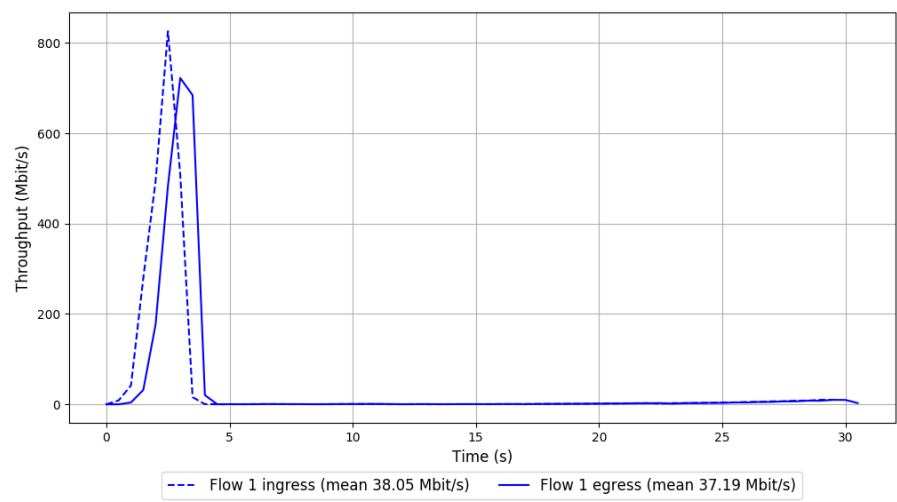


Run 1: Statistics of FillP-Sheep

Start at: 2018-12-10 22:19:43
End at: 2018-12-10 22:20:13
Local clock offset: -16.507 ms
Remote clock offset: 4.589 ms

Below is generated by plot.py at 2018-12-11 00:13:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 37.19 Mbit/s
95th percentile per-packet one-way delay: 128.745 ms
Loss rate: 2.26%
-- Flow 1:
Average throughput: 37.19 Mbit/s
95th percentile per-packet one-way delay: 128.745 ms
Loss rate: 2.26%

Run 1: Report of FillP-Sheep — Data Link

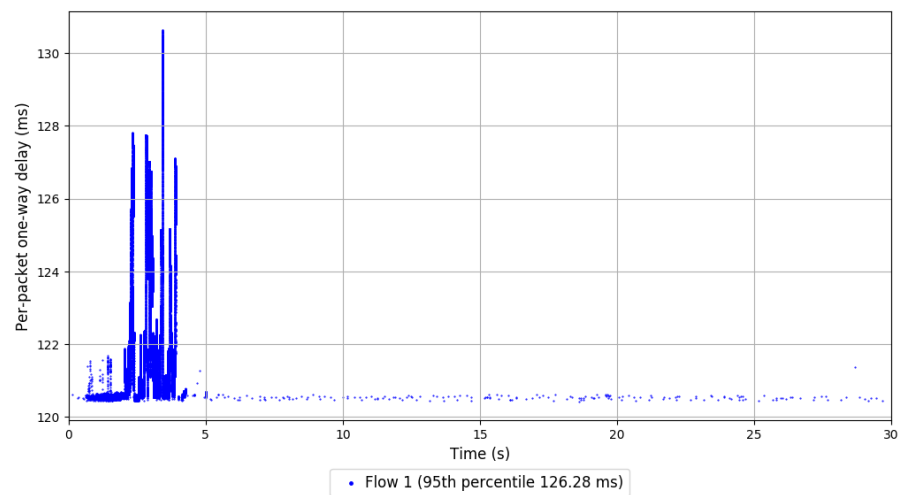
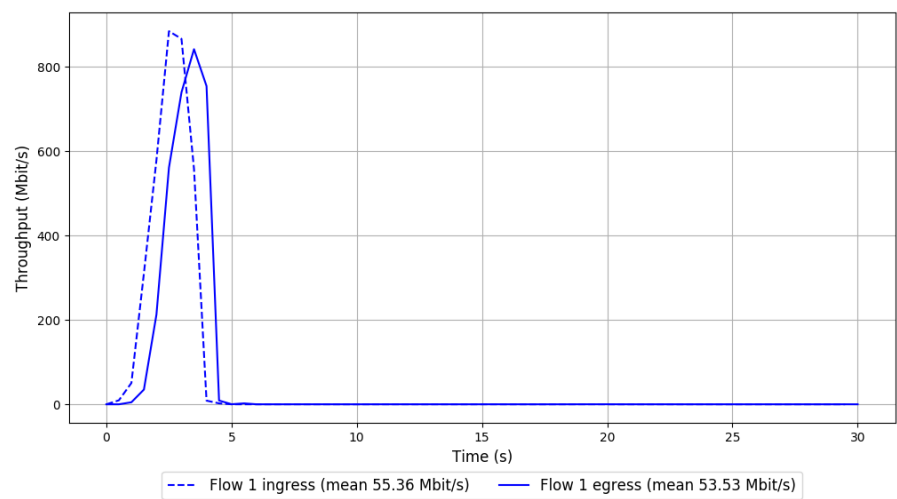


Run 2: Statistics of FillP-Sheep

Start at: 2018-12-10 22:46:32
End at: 2018-12-10 22:47:02
Local clock offset: -9.535 ms
Remote clock offset: 3.502 ms

Below is generated by plot.py at 2018-12-11 00:13:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 53.53 Mbit/s
95th percentile per-packet one-way delay: 126.279 ms
Loss rate: 3.31%
-- Flow 1:
Average throughput: 53.53 Mbit/s
95th percentile per-packet one-way delay: 126.279 ms
Loss rate: 3.31%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-12-10 23:13:06

End at: 2018-12-10 23:13:36

Local clock offset: 0.485 ms

Remote clock offset: 0.596 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 34.91 Mbit/s

95th percentile per-packet one-way delay: 121.064 ms

Loss rate: 2.22%

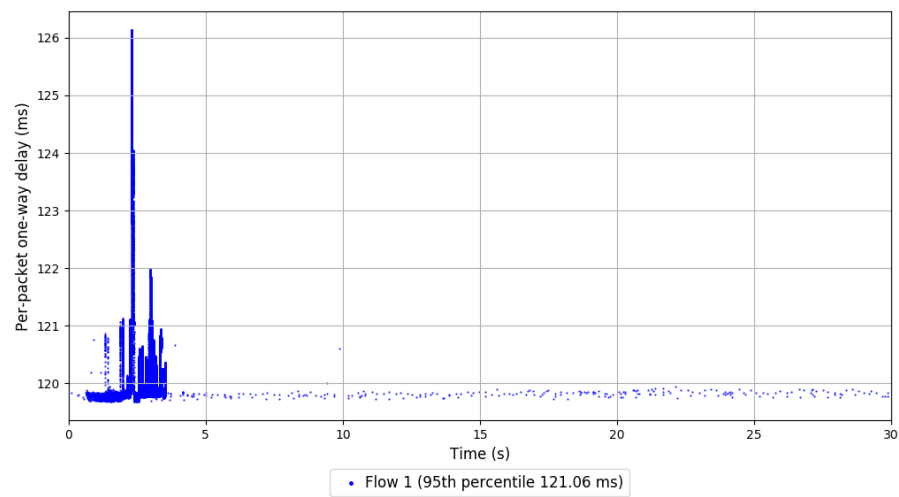
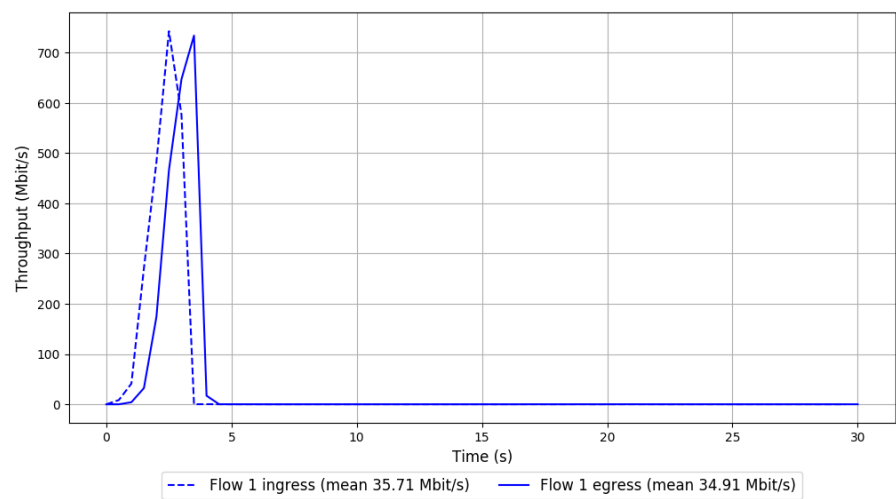
-- Flow 1:

Average throughput: 34.91 Mbit/s

95th percentile per-packet one-way delay: 121.064 ms

Loss rate: 2.22%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-12-10 23:39:52

End at: 2018-12-10 23:40:22

Local clock offset: -7.112 ms

Remote clock offset: 1.817 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 35.46 Mbit/s

95th percentile per-packet one-way delay: 139.985 ms

Loss rate: 5.36%

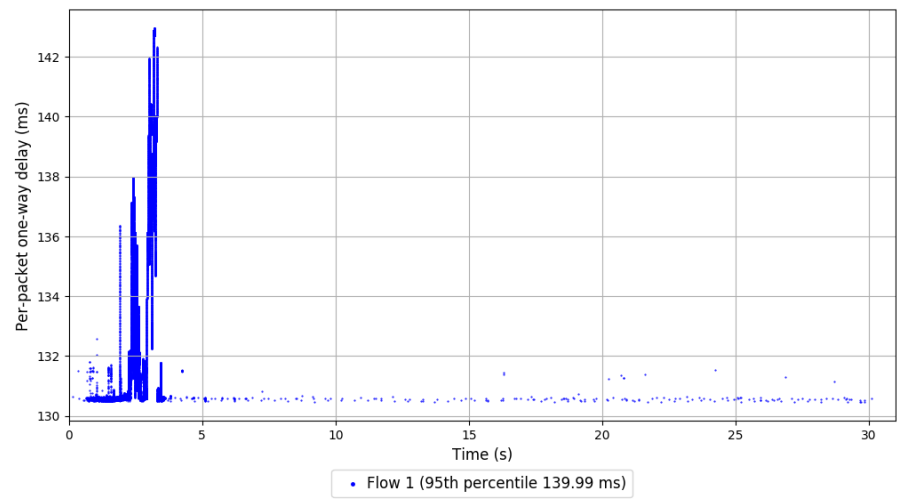
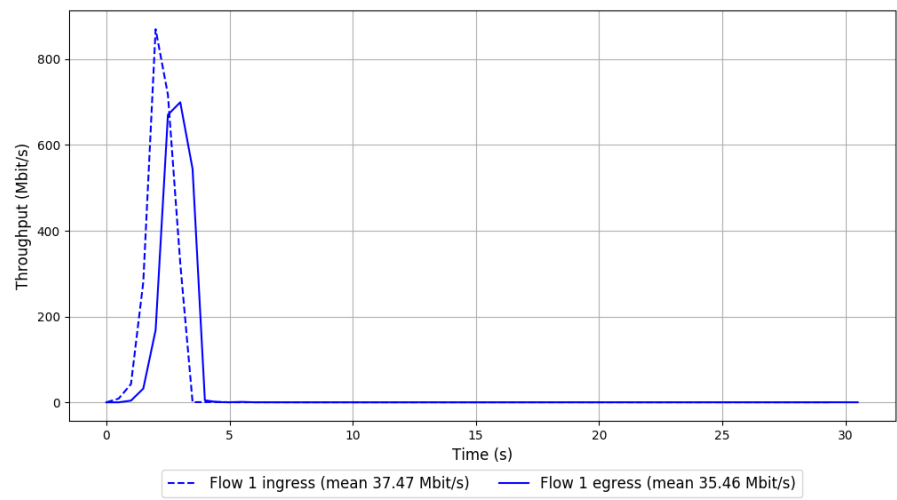
-- Flow 1:

Average throughput: 35.46 Mbit/s

95th percentile per-packet one-way delay: 139.985 ms

Loss rate: 5.36%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-12-11 00:06:26

End at: 2018-12-11 00:06:56

Local clock offset: 8.352 ms

Remote clock offset: 3.838 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 131.54 Mbit/s

95th percentile per-packet one-way delay: 119.432 ms

Loss rate: 2.14%

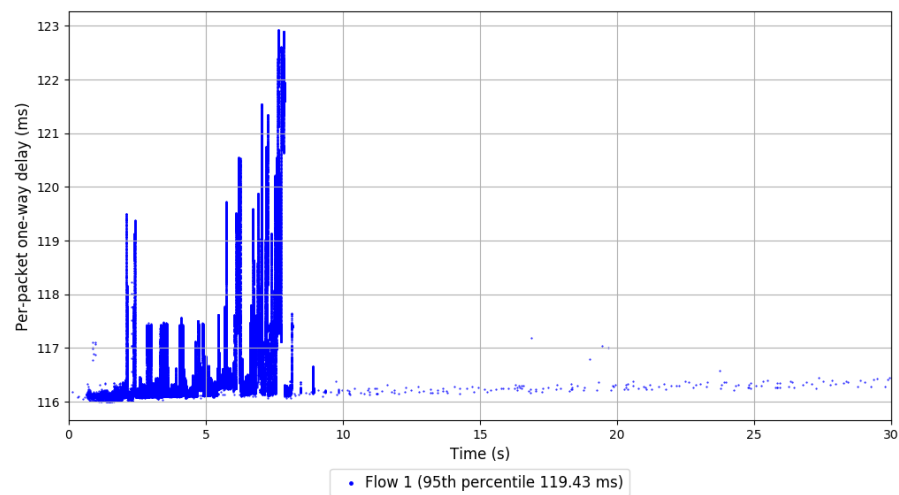
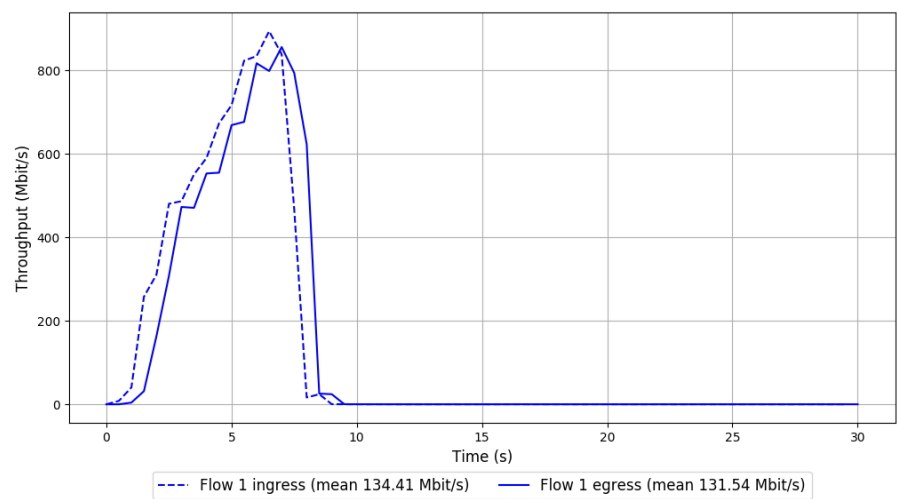
-- Flow 1:

Average throughput: 131.54 Mbit/s

95th percentile per-packet one-way delay: 119.432 ms

Loss rate: 2.14%

Run 5: Report of FillP-Sheep — Data Link

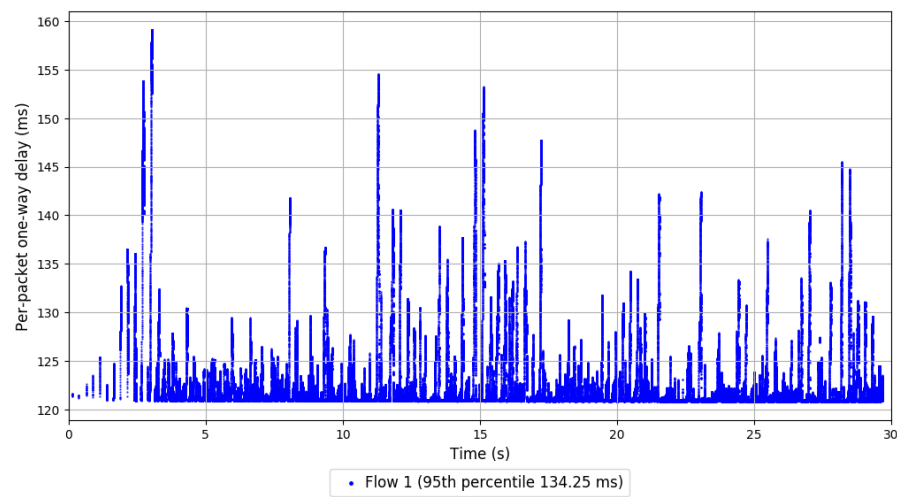
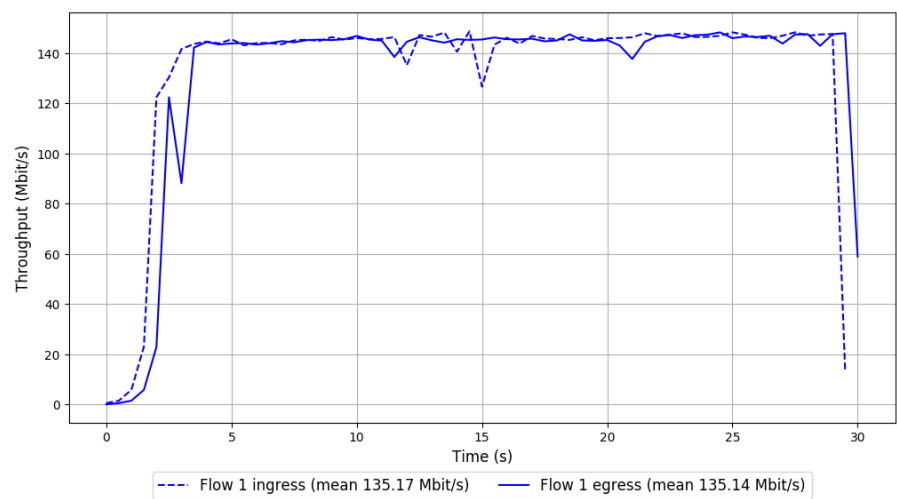


```
Run 1: Statistics of Indigo

Start at: 2018-12-10 22:16:57
End at: 2018-12-10 22:17:27
Local clock offset: -11.528 ms
Remote clock offset: 4.257 ms

# Below is generated by plot.py at 2018-12-11 00:13:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 135.14 Mbit/s
95th percentile per-packet one-way delay: 134.253 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 135.14 Mbit/s
95th percentile per-packet one-way delay: 134.253 ms
Loss rate: 0.02%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-12-10 22:43:46

End at: 2018-12-10 22:44:16

Local clock offset: -9.175 ms

Remote clock offset: 3.416 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 131.20 Mbit/s

95th percentile per-packet one-way delay: 143.007 ms

Loss rate: 0.03%

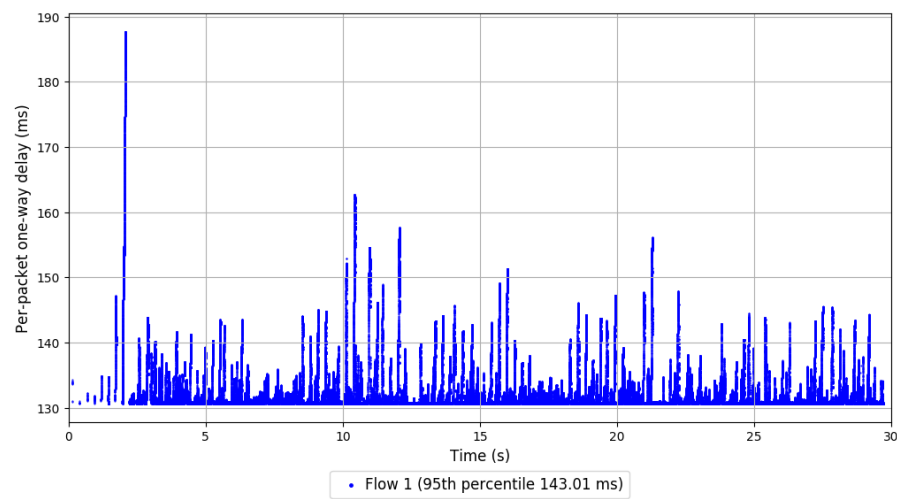
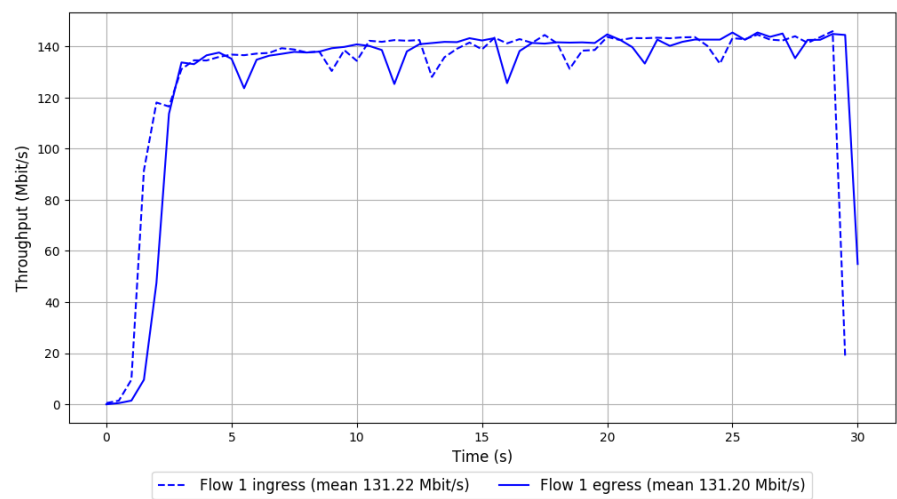
-- Flow 1:

Average throughput: 131.20 Mbit/s

95th percentile per-packet one-way delay: 143.007 ms

Loss rate: 0.03%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-12-10 23:10:22

End at: 2018-12-10 23:10:52

Local clock offset: -7.095 ms

Remote clock offset: 0.927 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.20 Mbit/s

95th percentile per-packet one-way delay: 138.121 ms

Loss rate: 0.06%

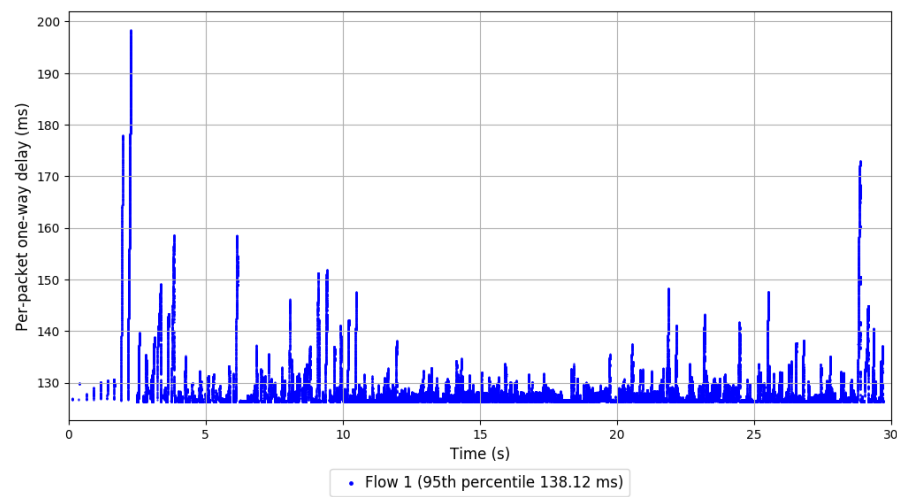
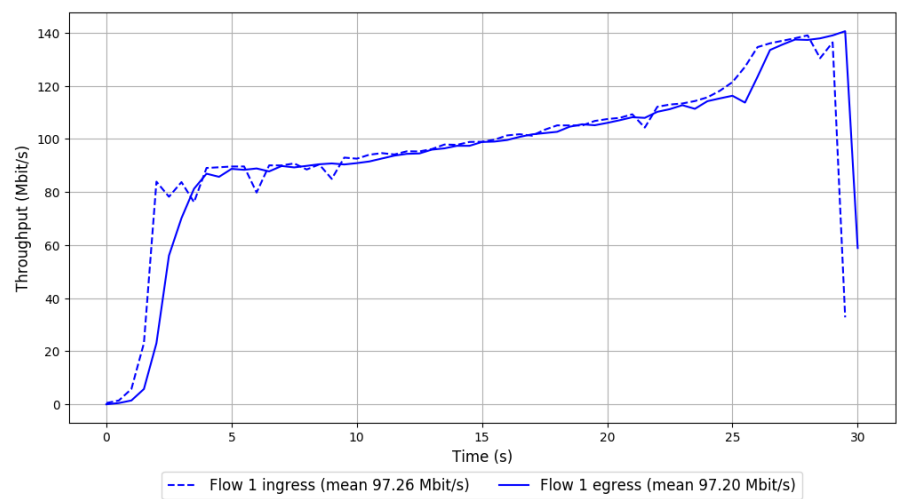
-- Flow 1:

Average throughput: 97.20 Mbit/s

95th percentile per-packet one-way delay: 138.121 ms

Loss rate: 0.06%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-12-10 23:37:07

End at: 2018-12-10 23:37:37

Local clock offset: -6.132 ms

Remote clock offset: 1.216 ms

Below is generated by plot.py at 2018-12-11 00:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 119.84 Mbit/s

95th percentile per-packet one-way delay: 139.876 ms

Loss rate: 0.04%

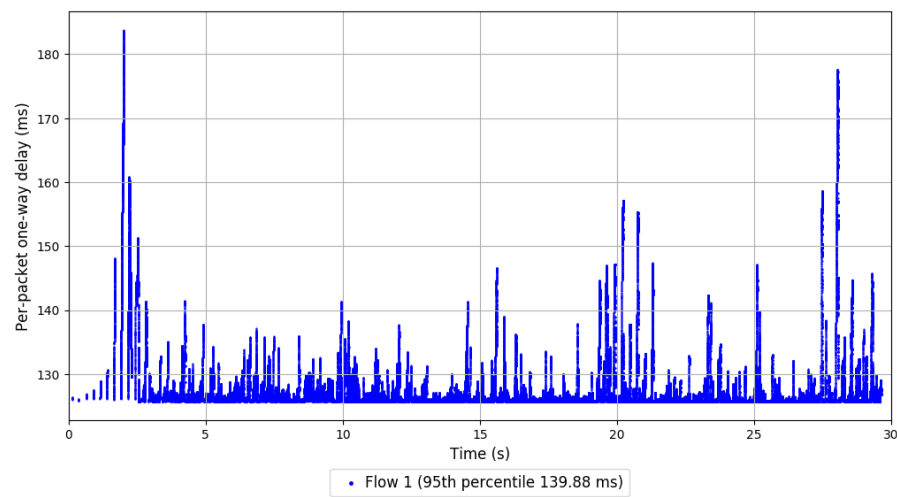
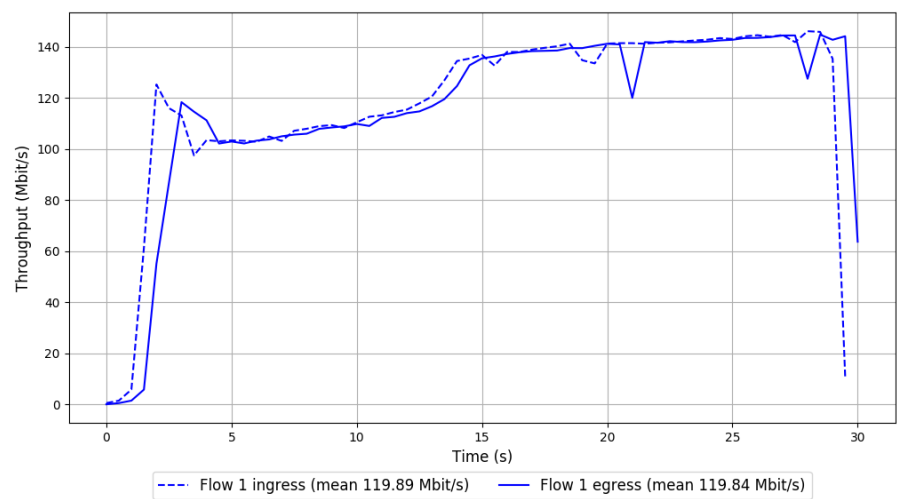
-- Flow 1:

Average throughput: 119.84 Mbit/s

95th percentile per-packet one-way delay: 139.876 ms

Loss rate: 0.04%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-12-11 00:03:43

End at: 2018-12-11 00:04:13

Local clock offset: -5.083 ms

Remote clock offset: 3.73 ms

Below is generated by plot.py at 2018-12-11 00:14:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 100.14 Mbit/s

95th percentile per-packet one-way delay: 131.894 ms

Loss rate: 0.13%

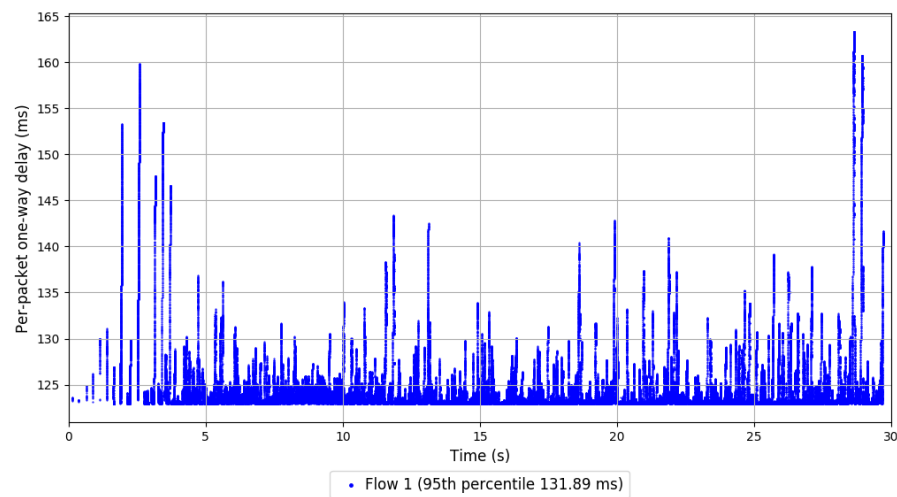
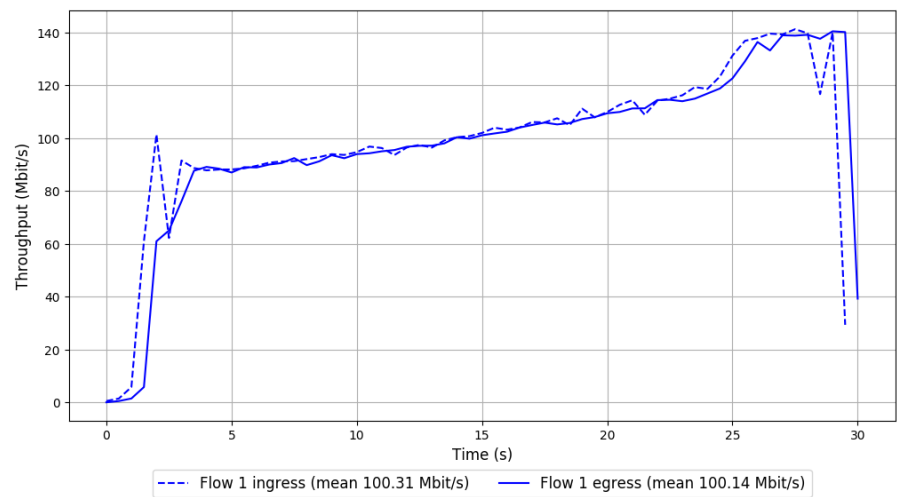
-- Flow 1:

Average throughput: 100.14 Mbit/s

95th percentile per-packet one-way delay: 131.894 ms

Loss rate: 0.13%

Run 5: Report of Indigo — Data Link

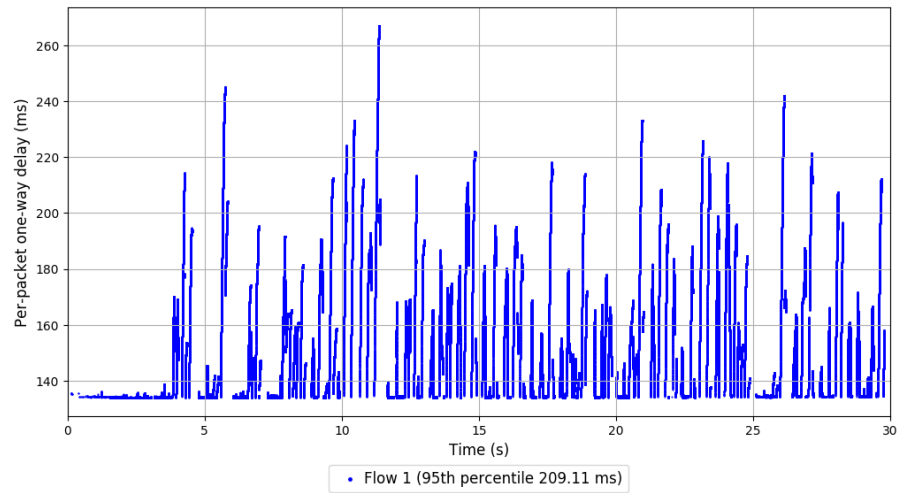
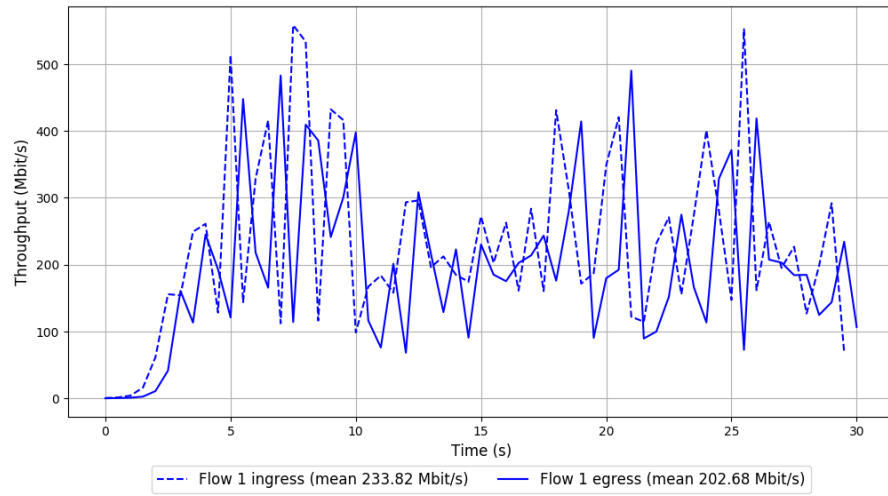


```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-12-10 22:05:29
End at: 2018-12-10 22:06:00
Local clock offset: -16.484 ms
Remote clock offset: 3.215 ms

# Below is generated by plot.py at 2018-12-11 00:15:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 202.68 Mbit/s
95th percentile per-packet one-way delay: 209.111 ms
Loss rate: 13.25%
-- Flow 1:
Average throughput: 202.68 Mbit/s
95th percentile per-packet one-way delay: 209.111 ms
Loss rate: 13.25%
```

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-12-10 22:32:12

End at: 2018-12-10 22:32:42

Local clock offset: -7.325 ms

Remote clock offset: 3.726 ms

Below is generated by plot.py at 2018-12-11 00:15:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 204.23 Mbit/s

95th percentile per-packet one-way delay: 174.255 ms

Loss rate: 10.93%

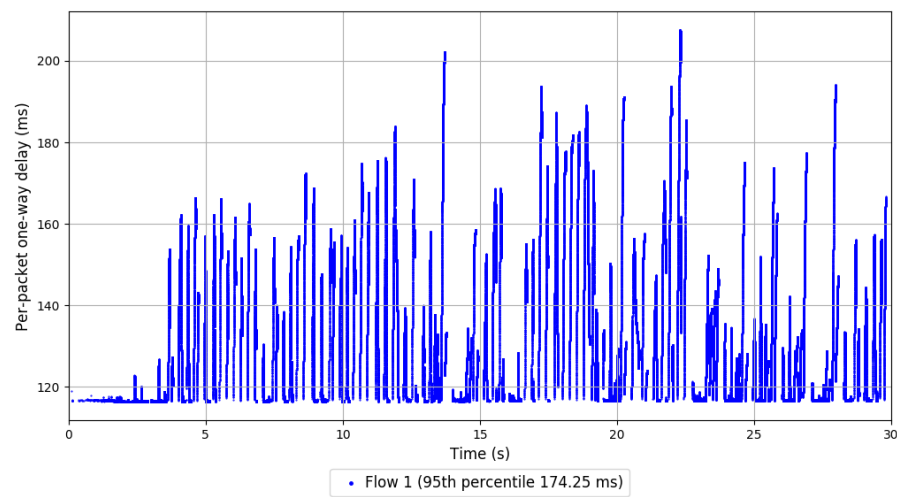
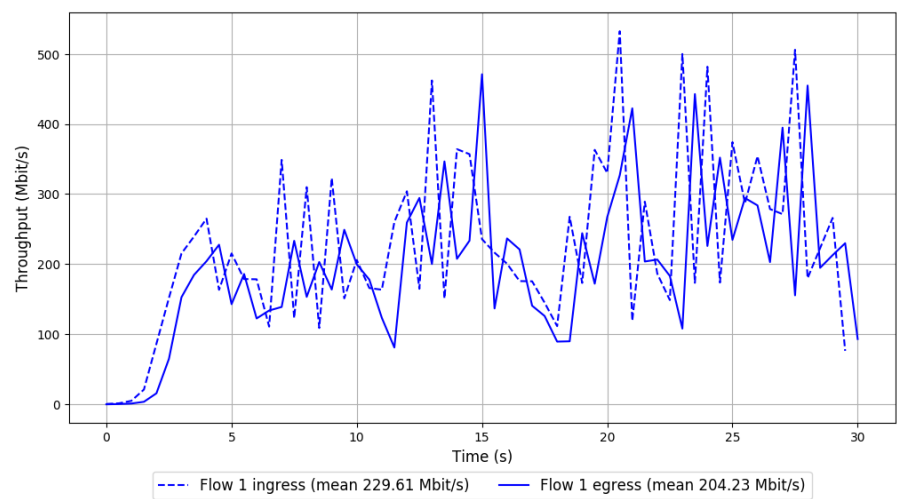
-- Flow 1:

Average throughput: 204.23 Mbit/s

95th percentile per-packet one-way delay: 174.255 ms

Loss rate: 10.93%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-12-10 22:58:54

End at: 2018-12-10 22:59:24

Local clock offset: 1.492 ms

Remote clock offset: 3.618 ms

Below is generated by plot.py at 2018-12-11 00:15:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 193.74 Mbit/s

95th percentile per-packet one-way delay: 177.068 ms

Loss rate: 15.74%

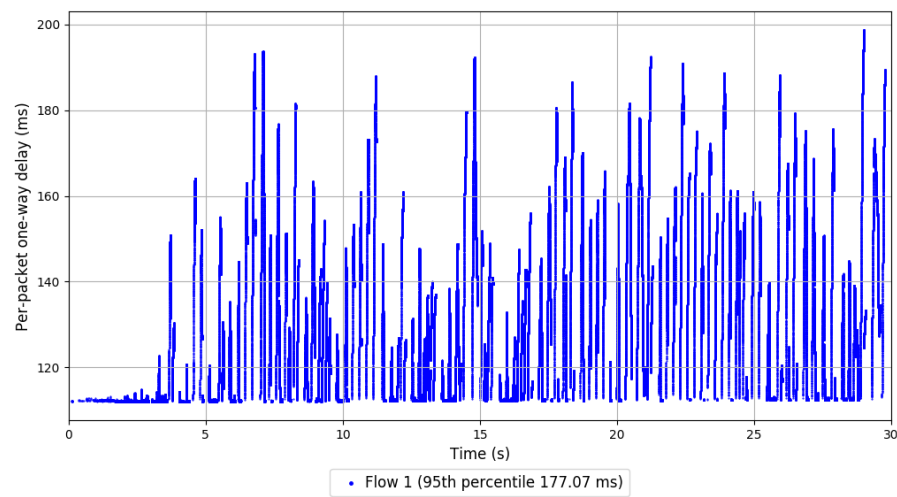
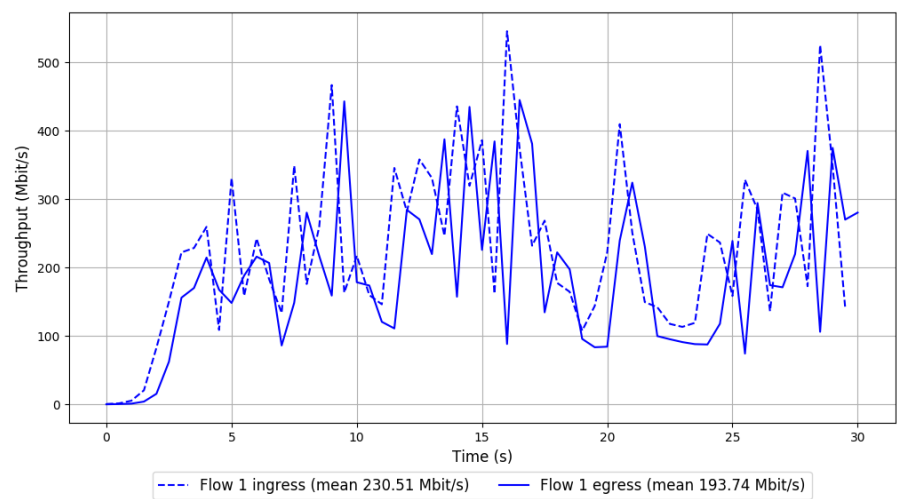
-- Flow 1:

Average throughput: 193.74 Mbit/s

95th percentile per-packet one-way delay: 177.068 ms

Loss rate: 15.74%

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

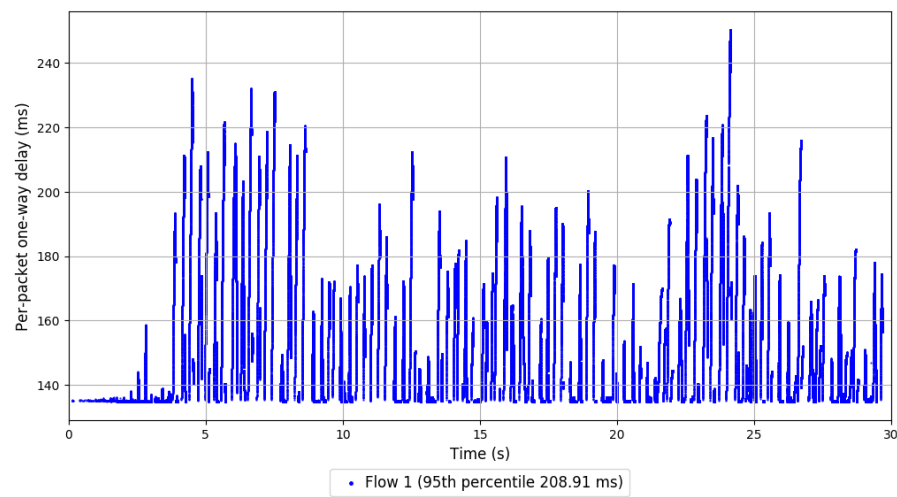
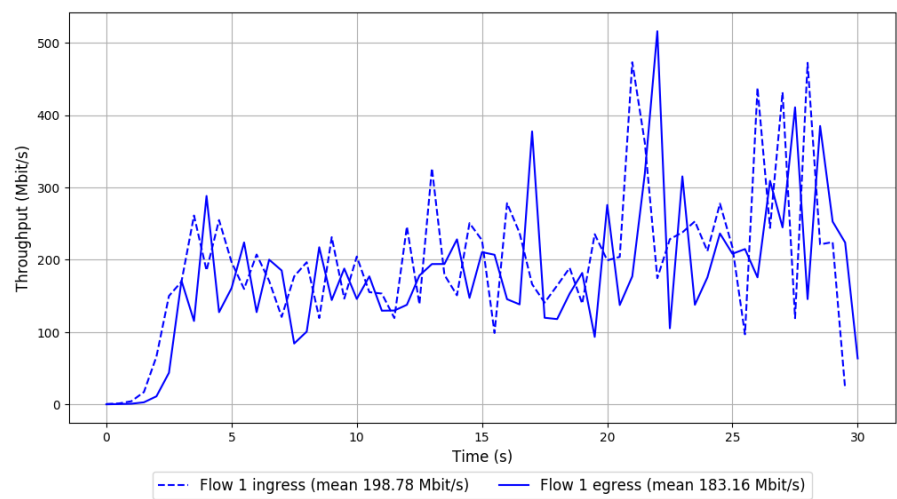


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-12-10 23:25:37
End at: 2018-12-10 23:26:07
Local clock offset: -12.637 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-12-11 00:15:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 183.16 Mbit/s
95th percentile per-packet one-way delay: 208.915 ms
Loss rate: 7.79%
-- Flow 1:
Average throughput: 183.16 Mbit/s
95th percentile per-packet one-way delay: 208.915 ms
Loss rate: 7.79%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-12-10 23:52:13

End at: 2018-12-10 23:52:43

Local clock offset: -5.13 ms

Remote clock offset: 3.096 ms

Below is generated by plot.py at 2018-12-11 00:15:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 214.05 Mbit/s

95th percentile per-packet one-way delay: 185.914 ms

Loss rate: 6.32%

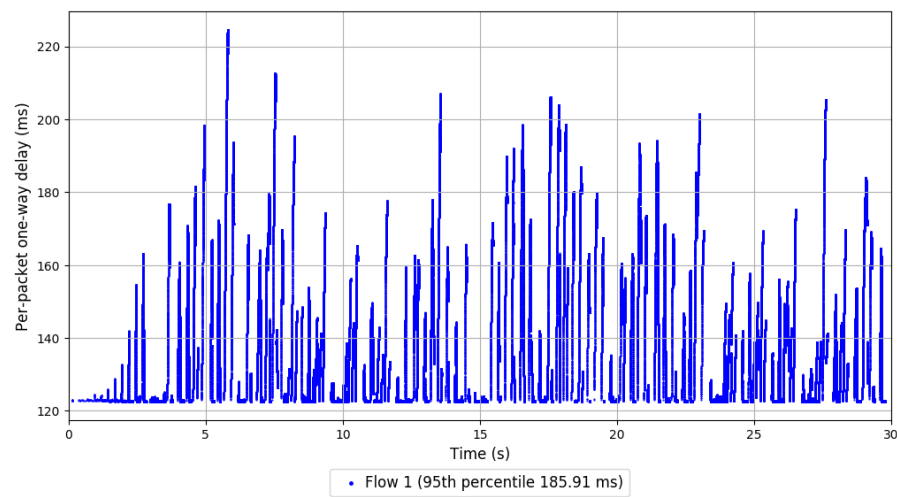
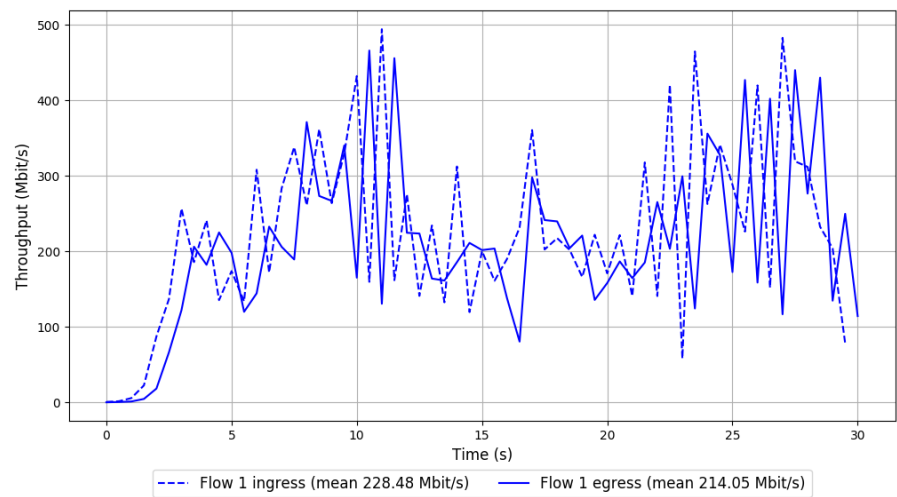
-- Flow 1:

Average throughput: 214.05 Mbit/s

95th percentile per-packet one-way delay: 185.914 ms

Loss rate: 6.32%

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

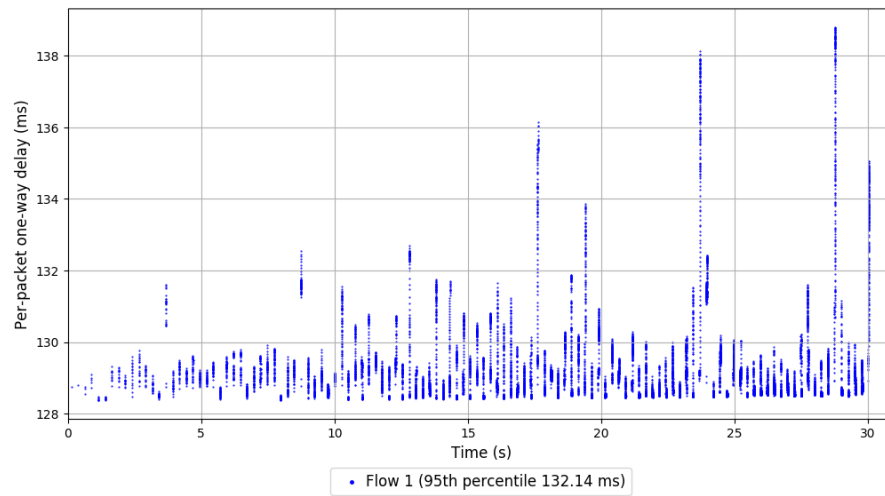
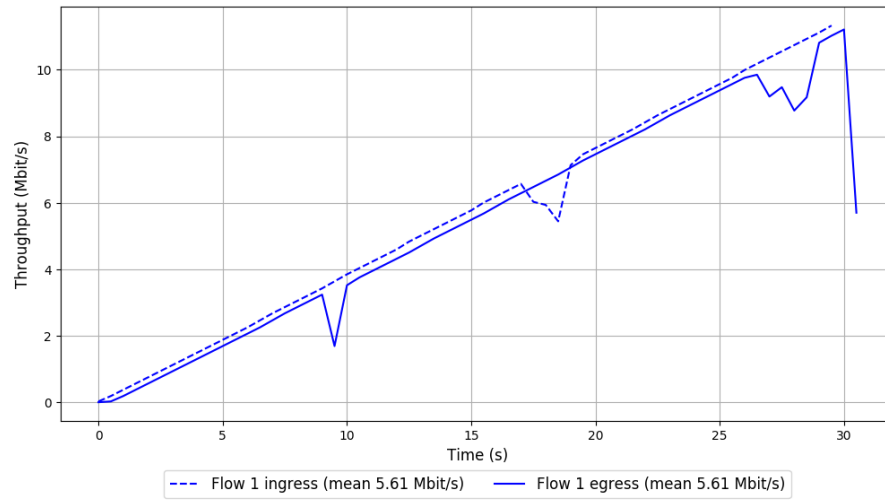


```
Run 1: Statistics of LEDBAT

Start at: 2018-12-10 22:06:57
End at: 2018-12-10 22:07:28
Local clock offset: -16.238 ms
Remote clock offset: 3.312 ms

# Below is generated by plot.py at 2018-12-11 00:15:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.61 Mbit/s
95th percentile per-packet one-way delay: 132.136 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.61 Mbit/s
95th percentile per-packet one-way delay: 132.136 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

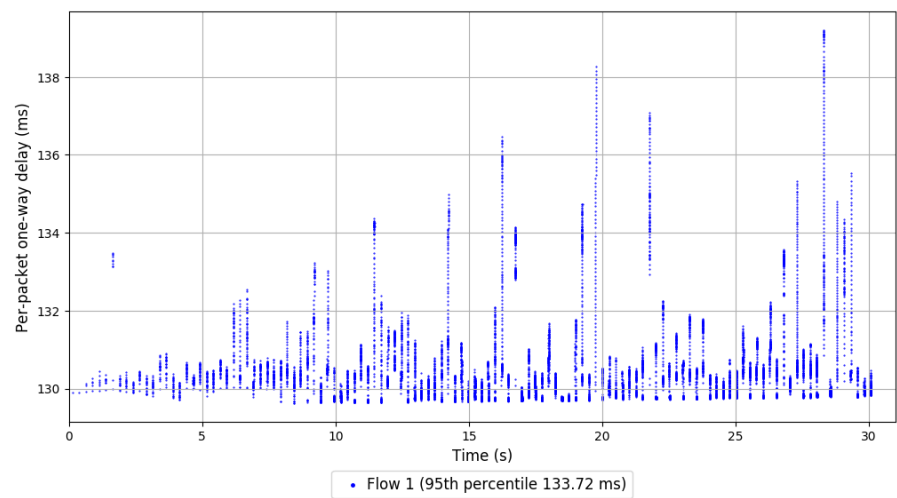
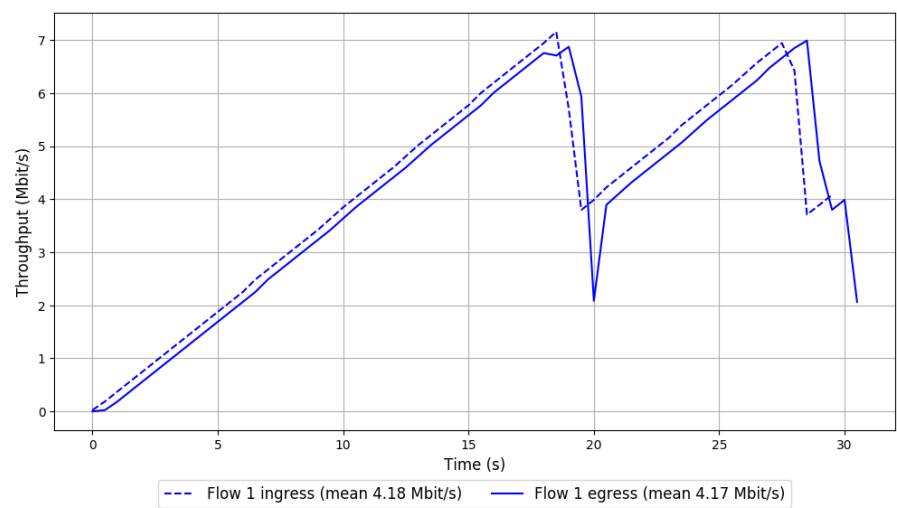


Run 2: Statistics of LEDBAT

Start at: 2018-12-10 22:33:40
End at: 2018-12-10 22:34:10
Local clock offset: -13.338 ms
Remote clock offset: 3.57 ms

Below is generated by plot.py at 2018-12-11 00:15:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 133.720 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 133.720 ms
Loss rate: 0.05%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-12-10 23:00:22

End at: 2018-12-10 23:00:52

Local clock offset: 2.495 ms

Remote clock offset: 2.91 ms

Below is generated by plot.py at 2018-12-11 00:15:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.27 Mbit/s

95th percentile per-packet one-way delay: 118.843 ms

Loss rate: 0.01%

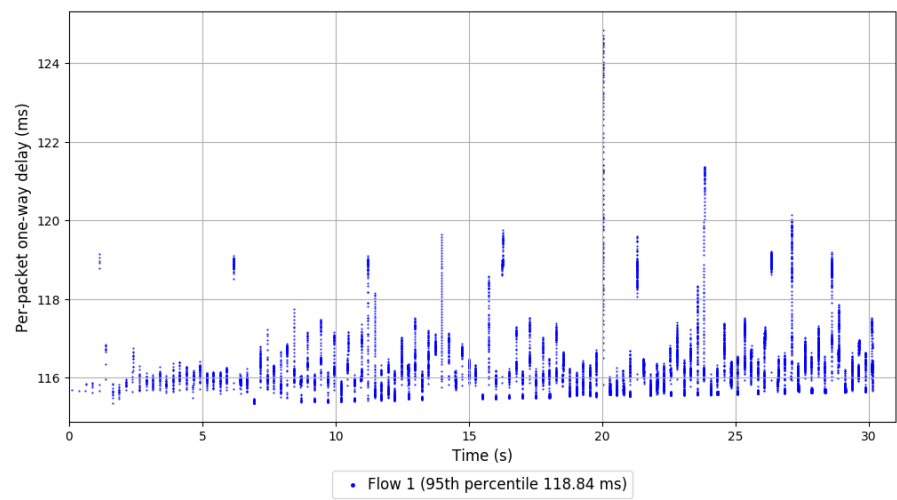
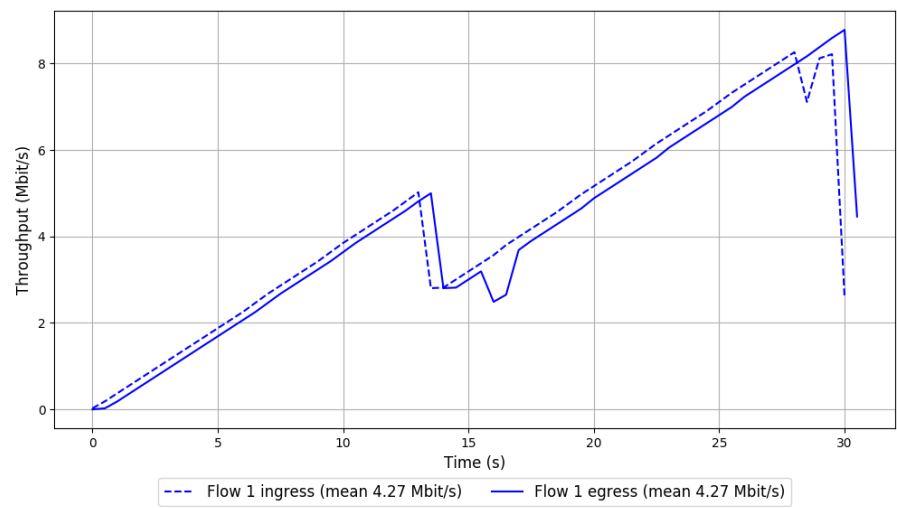
-- Flow 1:

Average throughput: 4.27 Mbit/s

95th percentile per-packet one-way delay: 118.843 ms

Loss rate: 0.01%

Run 3: Report of LEDBAT — Data Link

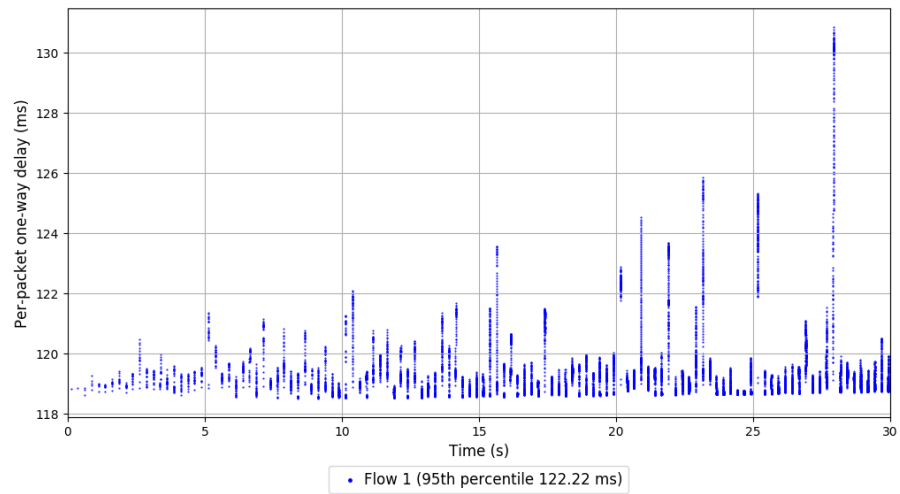
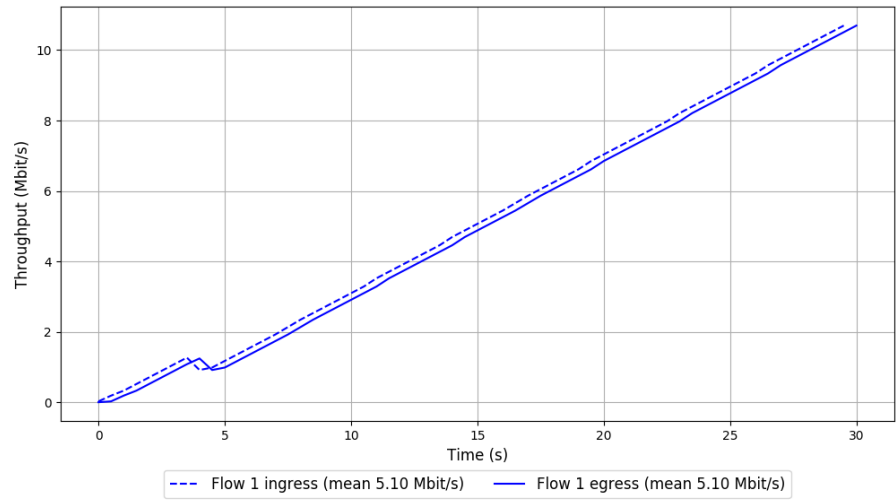


Run 4: Statistics of LEDBAT

Start at: 2018-12-10 23:27:04
End at: 2018-12-10 23:27:34
Local clock offset: 0.158 ms
Remote clock offset: -0.188 ms

Below is generated by plot.py at 2018-12-11 00:15:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 122.224 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 122.224 ms
Loss rate: 0.01%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-12-10 23:53:42

End at: 2018-12-10 23:54:12

Local clock offset: -1.098 ms

Remote clock offset: 3.277 ms

Below is generated by plot.py at 2018-12-11 00:15:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.67 Mbit/s

95th percentile per-packet one-way delay: 129.121 ms

Loss rate: 0.00%

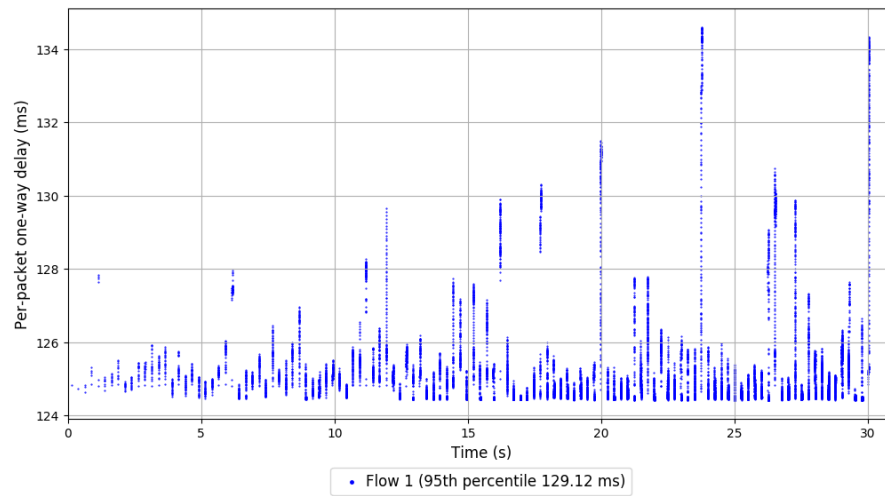
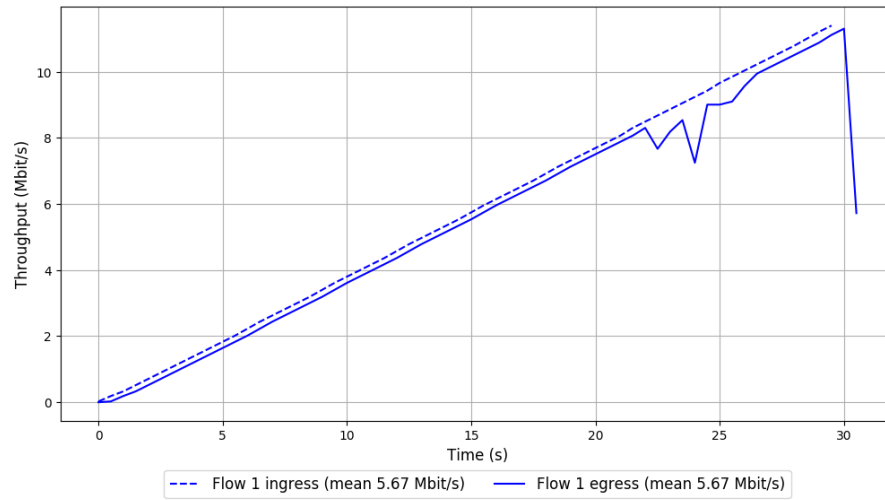
-- Flow 1:

Average throughput: 5.67 Mbit/s

95th percentile per-packet one-way delay: 129.121 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

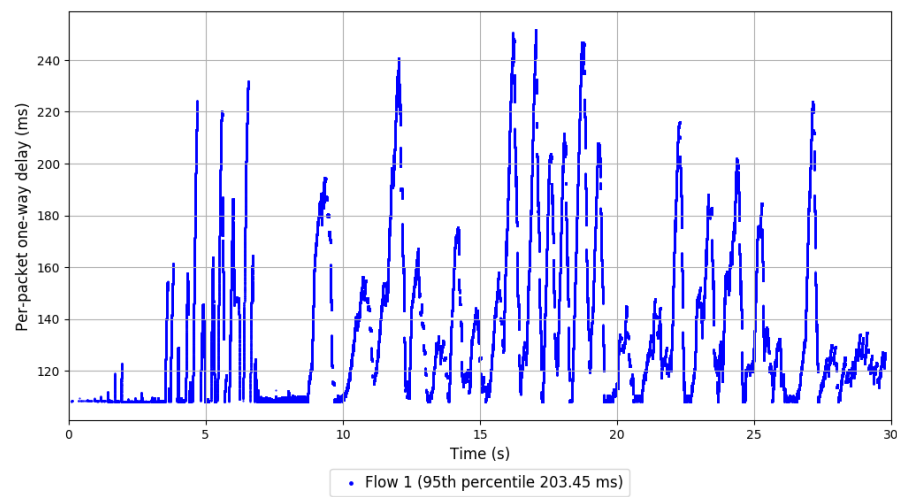
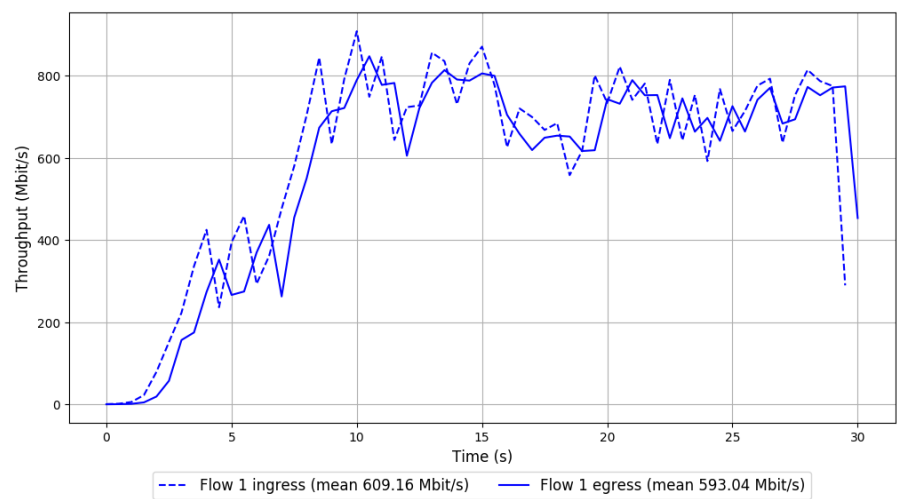



```
Run 1: Statistics of Indigo-Muses

Start at: 2018-12-10 22:08:17
End at: 2018-12-10 22:08:47
Local clock offset: -1.866 ms
Remote clock offset: 3.531 ms

# Below is generated by plot.py at 2018-12-11 00:20:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 593.04 Mbit/s
95th percentile per-packet one-way delay: 203.448 ms
Loss rate: 2.62%
-- Flow 1:
Average throughput: 593.04 Mbit/s
95th percentile per-packet one-way delay: 203.448 ms
Loss rate: 2.62%
```

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-12-10 22:34:59

End at: 2018-12-10 22:35:29

Local clock offset: -3.751 ms

Remote clock offset: 3.605 ms

Below is generated by plot.py at 2018-12-11 00:21:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 628.53 Mbit/s

95th percentile per-packet one-way delay: 187.854 ms

Loss rate: 1.62%

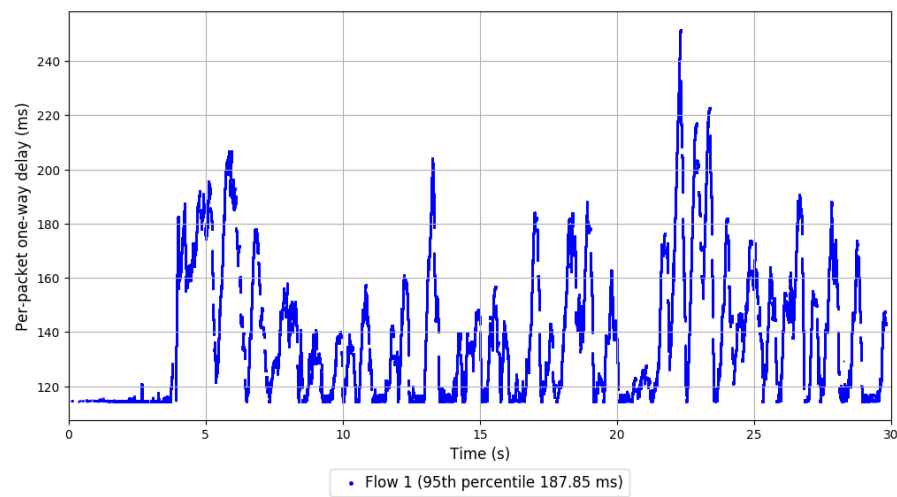
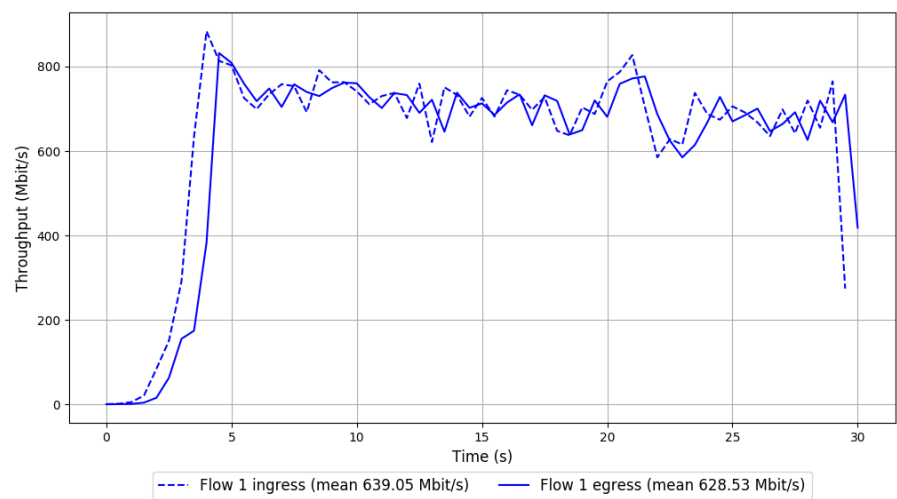
-- Flow 1:

Average throughput: 628.53 Mbit/s

95th percentile per-packet one-way delay: 187.854 ms

Loss rate: 1.62%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-12-10 23:01:41

End at: 2018-12-10 23:02:11

Local clock offset: -8.945 ms

Remote clock offset: 2.652 ms

Below is generated by plot.py at 2018-12-11 00:21:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 614.06 Mbit/s

95th percentile per-packet one-way delay: 190.757 ms

Loss rate: 1.32%

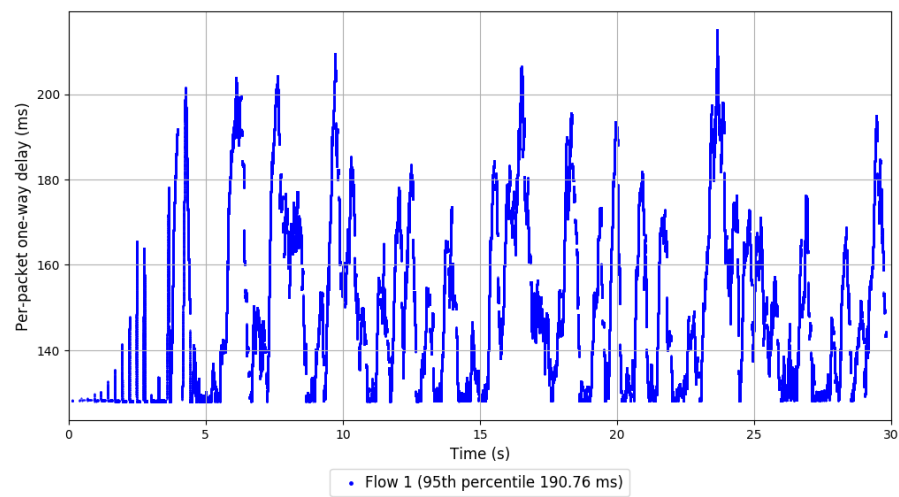
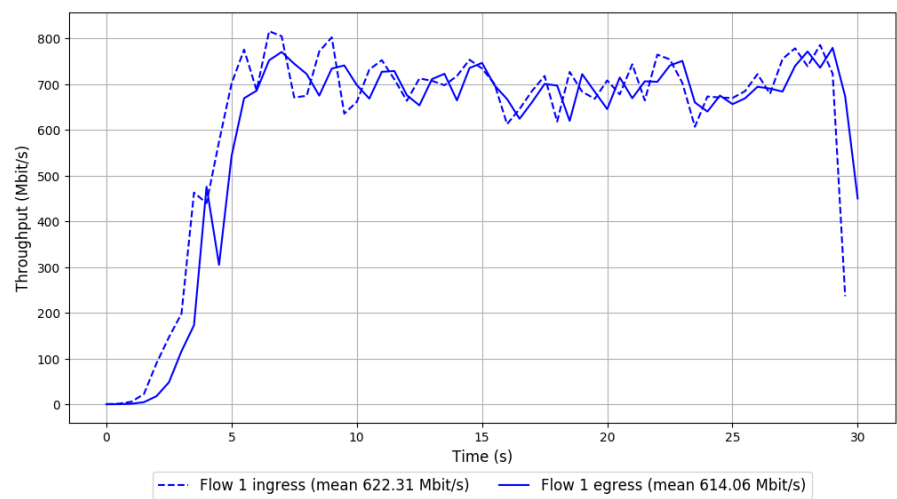
-- Flow 1:

Average throughput: 614.06 Mbit/s

95th percentile per-packet one-way delay: 190.757 ms

Loss rate: 1.32%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-12-10 23:28:23

End at: 2018-12-10 23:28:53

Local clock offset: 0.492 ms

Remote clock offset: -0.16 ms

Below is generated by plot.py at 2018-12-11 00:22:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 587.75 Mbit/s

95th percentile per-packet one-way delay: 190.762 ms

Loss rate: 1.88%

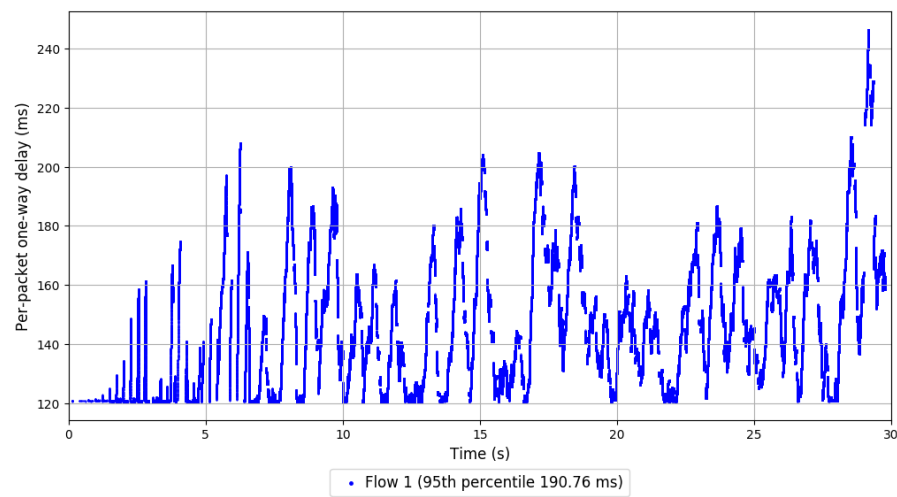
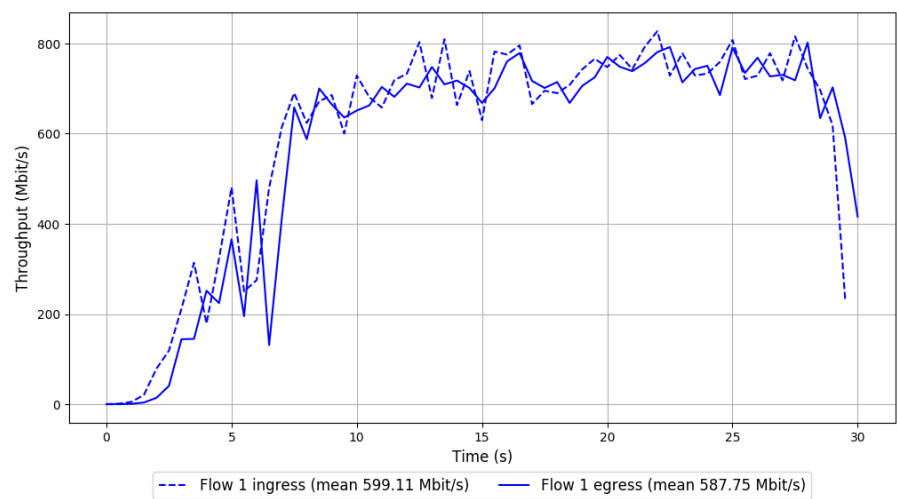
-- Flow 1:

Average throughput: 587.75 Mbit/s

95th percentile per-packet one-way delay: 190.762 ms

Loss rate: 1.88%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-12-10 23:55:01

End at: 2018-12-10 23:55:31

Local clock offset: -3.205 ms

Remote clock offset: 3.363 ms

Below is generated by plot.py at 2018-12-11 00:22:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 604.32 Mbit/s

95th percentile per-packet one-way delay: 195.988 ms

Loss rate: 1.23%

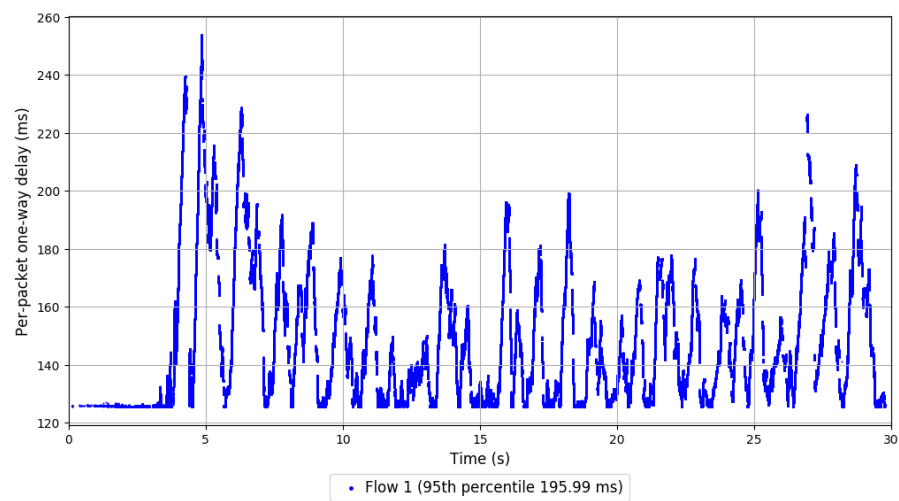
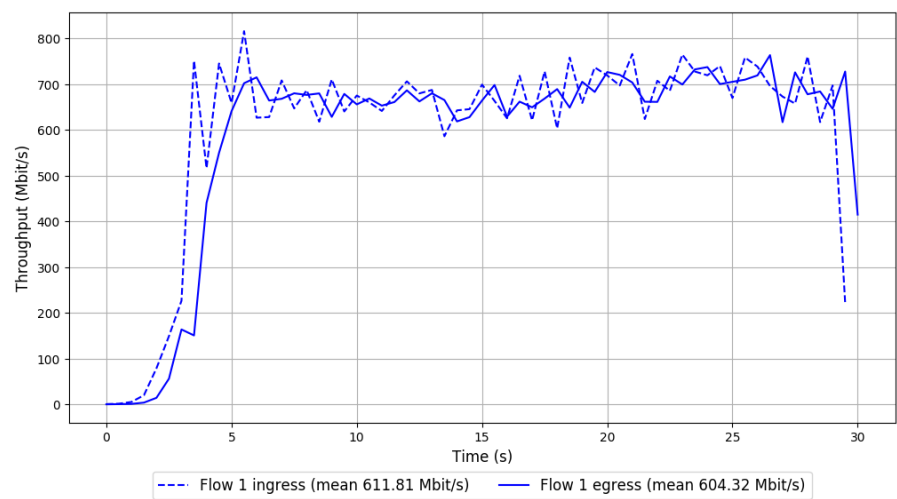
-- Flow 1:

Average throughput: 604.32 Mbit/s

95th percentile per-packet one-way delay: 195.988 ms

Loss rate: 1.23%

Run 5: Report of Indigo-Muses — Data Link

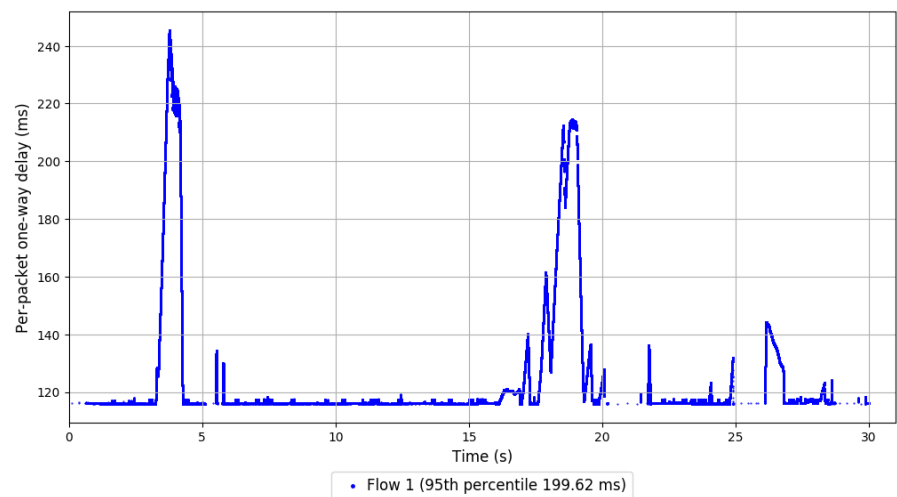
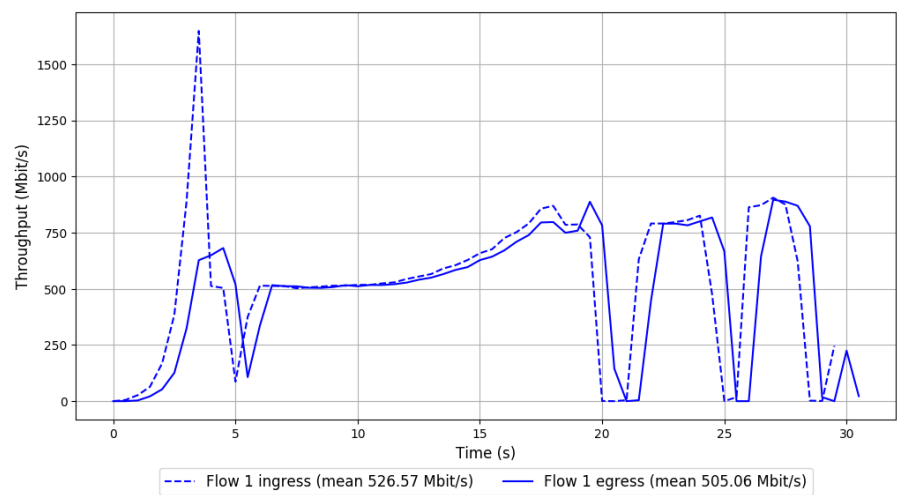


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-10 22:11:22
End at: 2018-12-10 22:11:52
Local clock offset: -2.638 ms
Remote clock offset: 3.763 ms

# Below is generated by plot.py at 2018-12-11 00:22:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 505.06 Mbit/s
95th percentile per-packet one-way delay: 199.616 ms
Loss rate: 4.09%
-- Flow 1:
Average throughput: 505.06 Mbit/s
95th percentile per-packet one-way delay: 199.616 ms
Loss rate: 4.09%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-12-10 22:38:09

End at: 2018-12-10 22:38:39

Local clock offset: -2.946 ms

Remote clock offset: 3.422 ms

Below is generated by plot.py at 2018-12-11 00:22:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 544.82 Mbit/s

95th percentile per-packet one-way delay: 120.159 ms

Loss rate: 2.39%

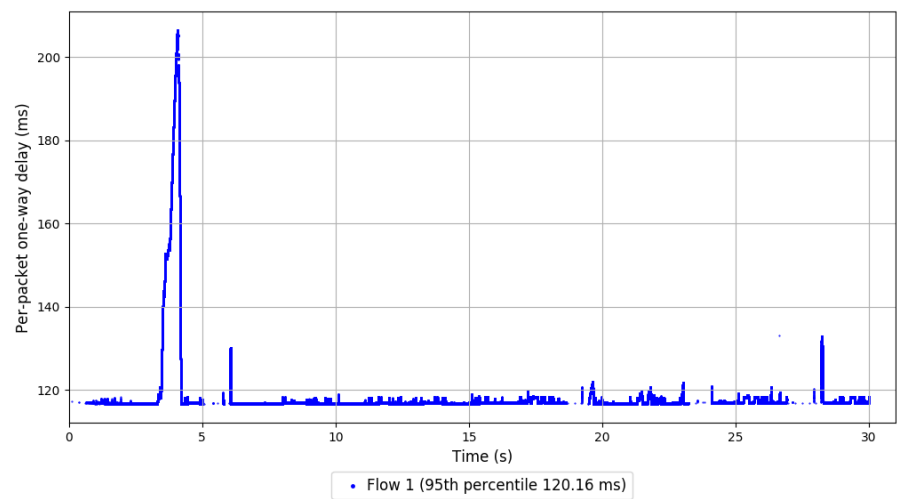
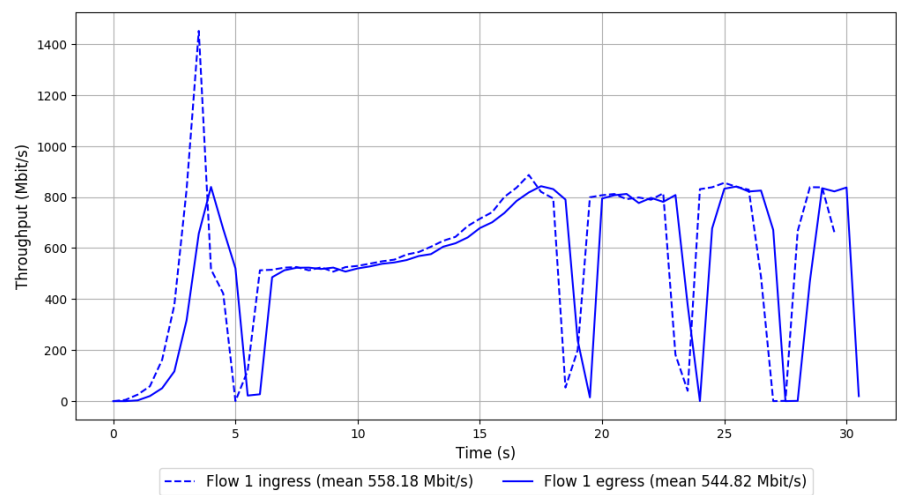
-- Flow 1:

Average throughput: 544.82 Mbit/s

95th percentile per-packet one-way delay: 120.159 ms

Loss rate: 2.39%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-10 23:04:47

End at: 2018-12-10 23:05:17

Local clock offset: -9.777 ms

Remote clock offset: 1.824 ms

Below is generated by plot.py at 2018-12-11 00:22:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 539.25 Mbit/s

95th percentile per-packet one-way delay: 177.658 ms

Loss rate: 4.10%

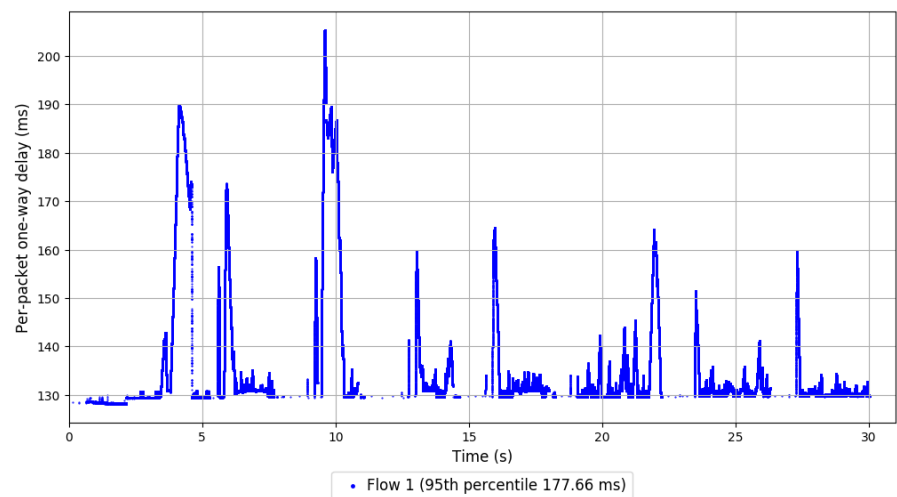
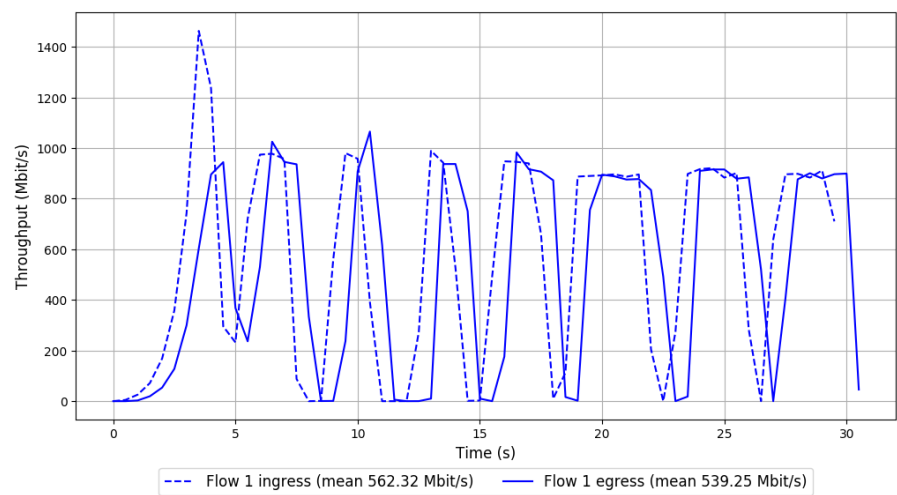
-- Flow 1:

Average throughput: 539.25 Mbit/s

95th percentile per-packet one-way delay: 177.658 ms

Loss rate: 4.10%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-12-10 23:31:33

End at: 2018-12-10 23:32:03

Local clock offset: -7.501 ms

Remote clock offset: -0.204 ms

Below is generated by plot.py at 2018-12-11 00:26:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 491.88 Mbit/s

95th percentile per-packet one-way delay: 134.202 ms

Loss rate: 1.81%

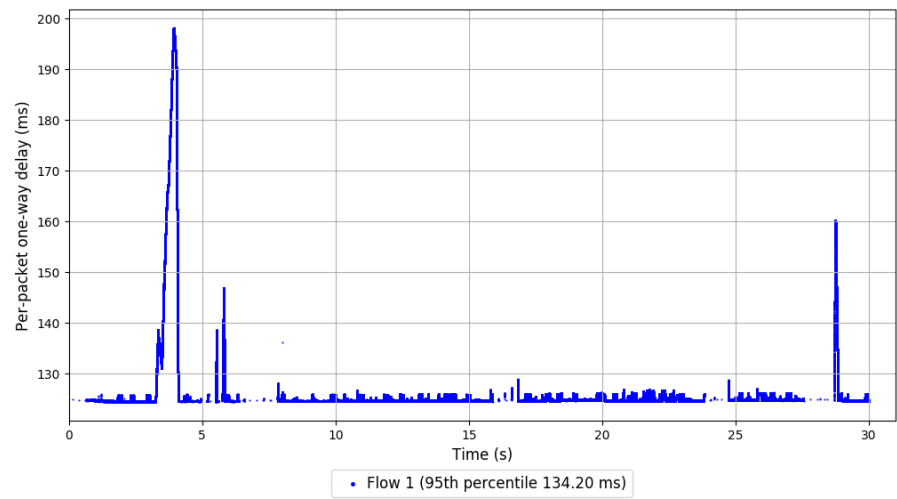
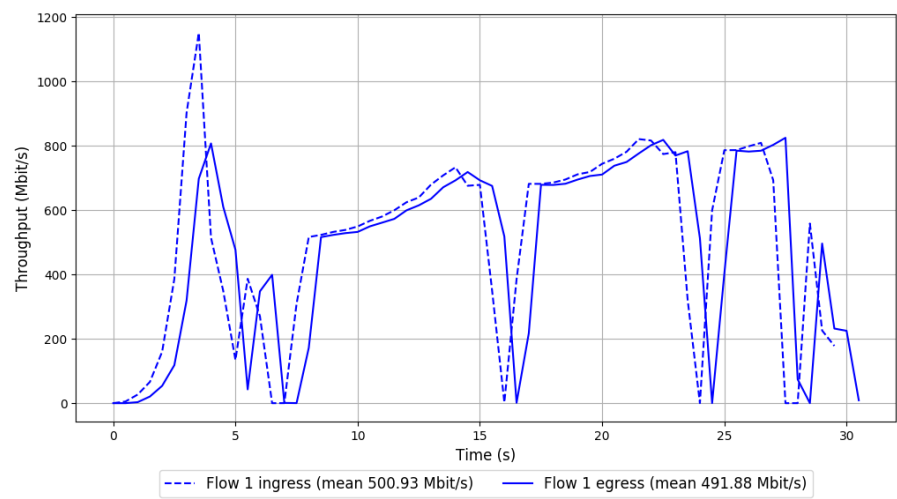
-- Flow 1:

Average throughput: 491.88 Mbit/s

95th percentile per-packet one-way delay: 134.202 ms

Loss rate: 1.81%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-12-10 23:58:11

End at: 2018-12-10 23:58:41

Local clock offset: -0.962 ms

Remote clock offset: 3.428 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 480.31 Mbit/s

95th percentile per-packet one-way delay: 134.808 ms

Loss rate: 2.52%

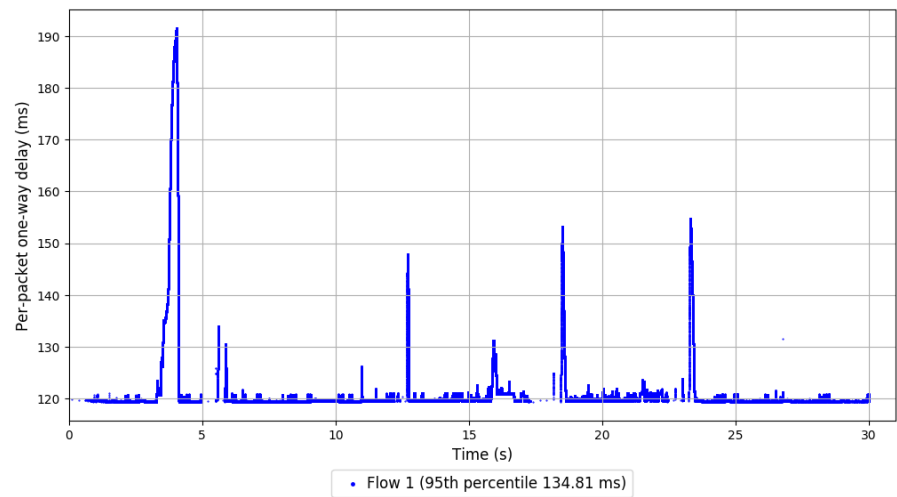
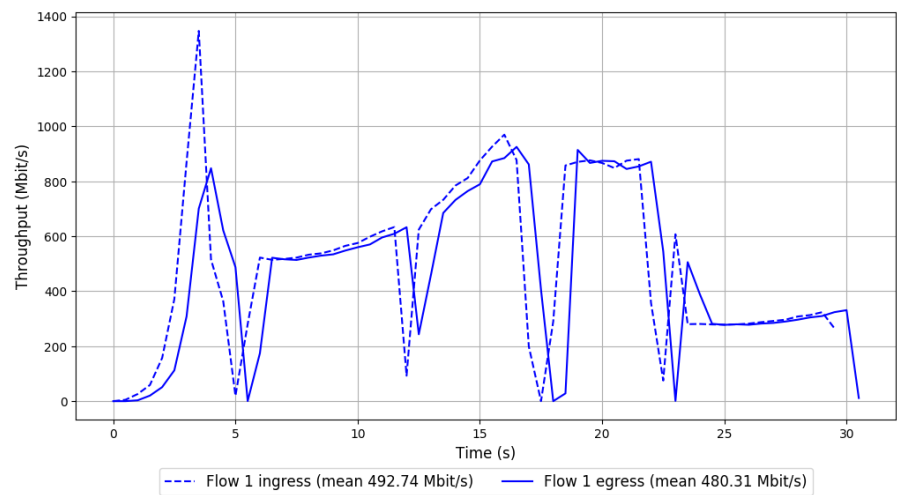
-- Flow 1:

Average throughput: 480.31 Mbit/s

95th percentile per-packet one-way delay: 134.808 ms

Loss rate: 2.52%

Run 5: Report of PCC-Allegro — Data Link

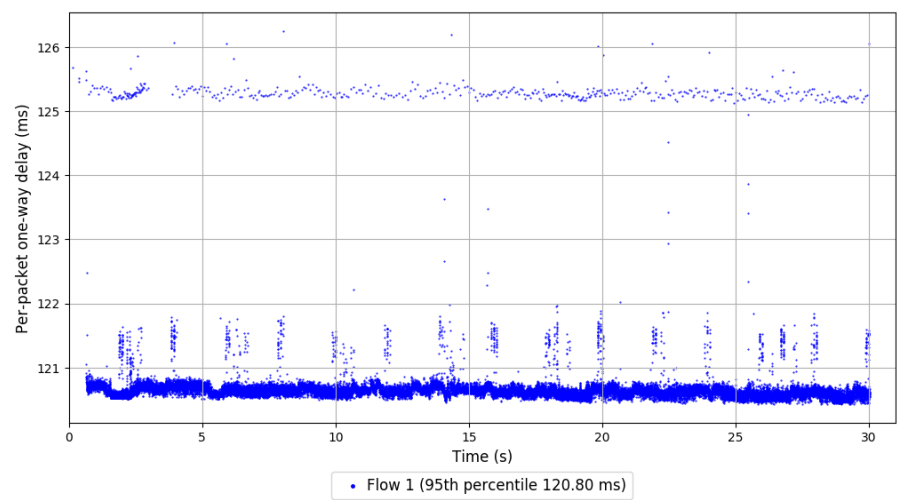
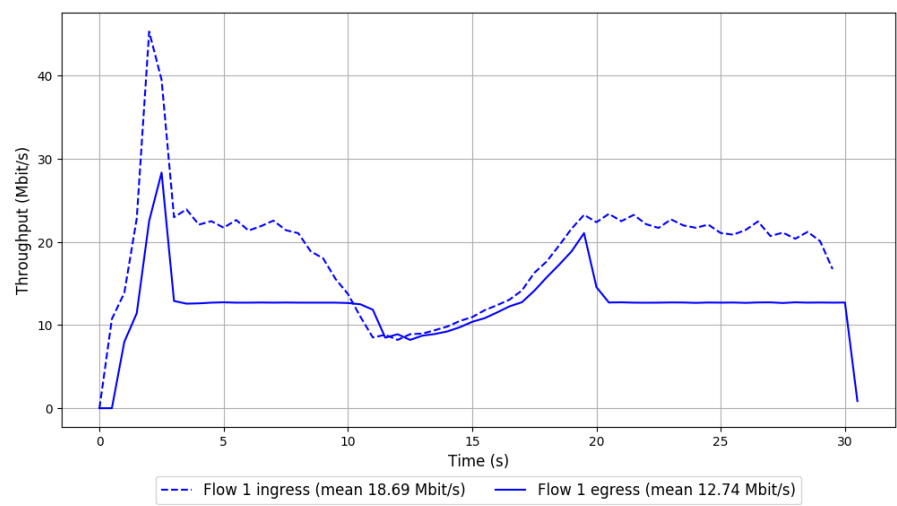


```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-10 22:18:23
End at: 2018-12-10 22:18:53
Local clock offset: -13.827 ms
Remote clock offset: 4.398 ms

# Below is generated by plot.py at 2018-12-11 00:26:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.74 Mbit/s
95th percentile per-packet one-way delay: 120.799 ms
Loss rate: 31.83%
-- Flow 1:
Average throughput: 12.74 Mbit/s
95th percentile per-packet one-way delay: 120.799 ms
Loss rate: 31.83%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-12-10 22:45:12

End at: 2018-12-10 22:45:42

Local clock offset: -2.711 ms

Remote clock offset: 3.491 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.68 Mbit/s

95th percentile per-packet one-way delay: 114.392 ms

Loss rate: 30.84%

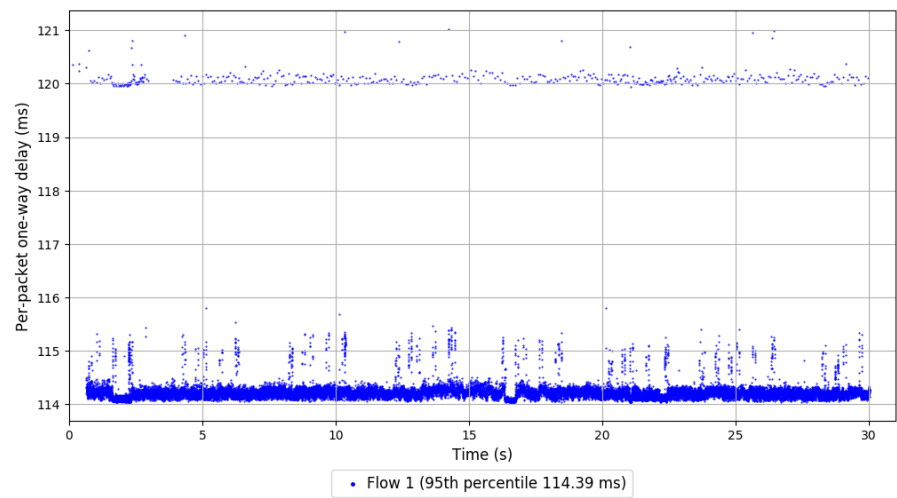
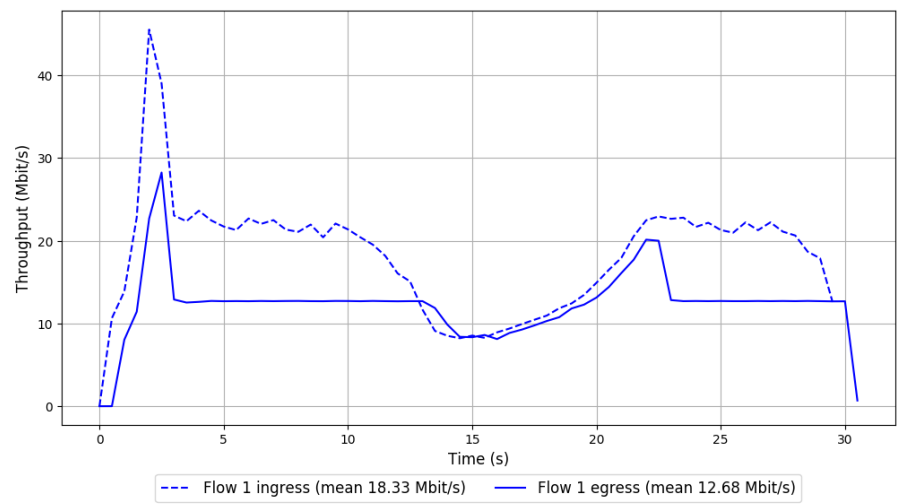
-- Flow 1:

Average throughput: 12.68 Mbit/s

95th percentile per-packet one-way delay: 114.392 ms

Loss rate: 30.84%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-12-10 23:11:46

End at: 2018-12-10 23:12:16

Local clock offset: -5.433 ms

Remote clock offset: 0.768 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.61 Mbit/s

95th percentile per-packet one-way delay: 120.205 ms

Loss rate: 30.79%

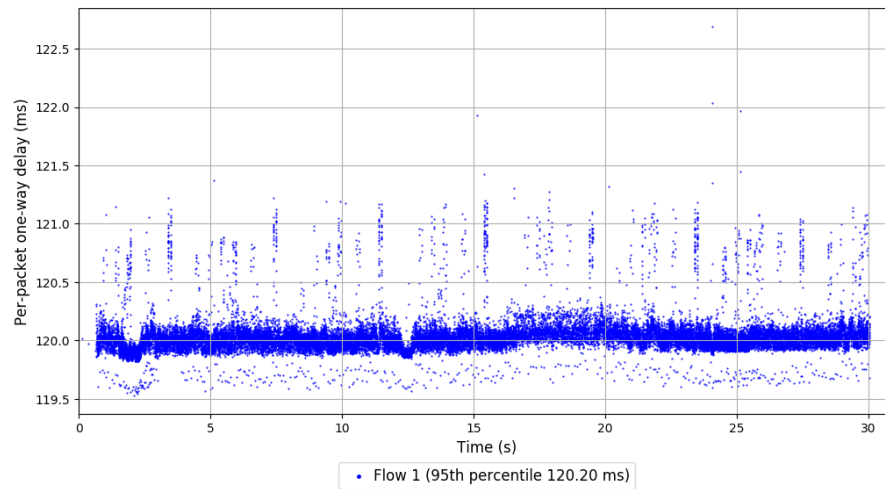
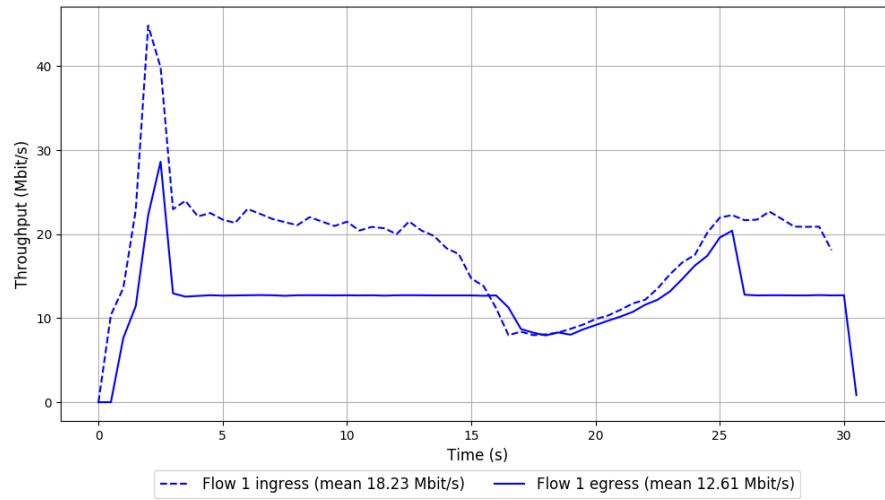
-- Flow 1:

Average throughput: 12.61 Mbit/s

95th percentile per-packet one-way delay: 120.205 ms

Loss rate: 30.79%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-12-10 23:38:32

End at: 2018-12-10 23:39:02

Local clock offset: -7.639 ms

Remote clock offset: 1.504 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.23 Mbit/s

95th percentile per-packet one-way delay: 124.904 ms

Loss rate: 26.46%

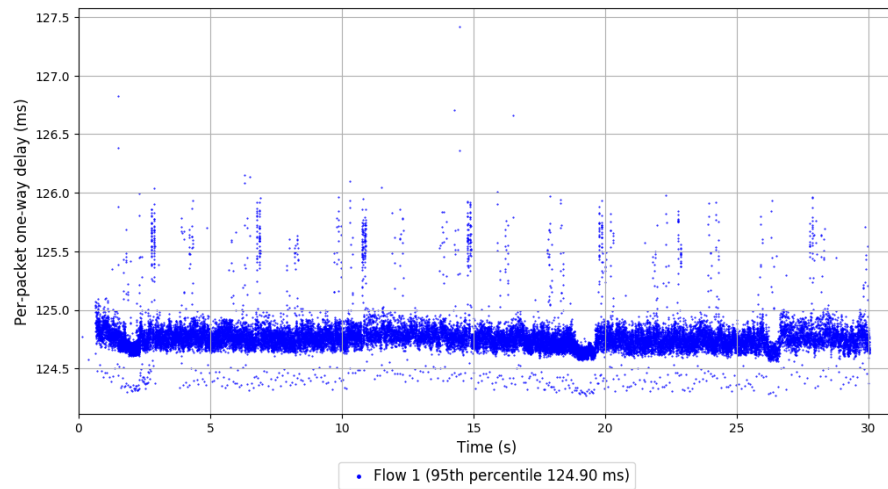
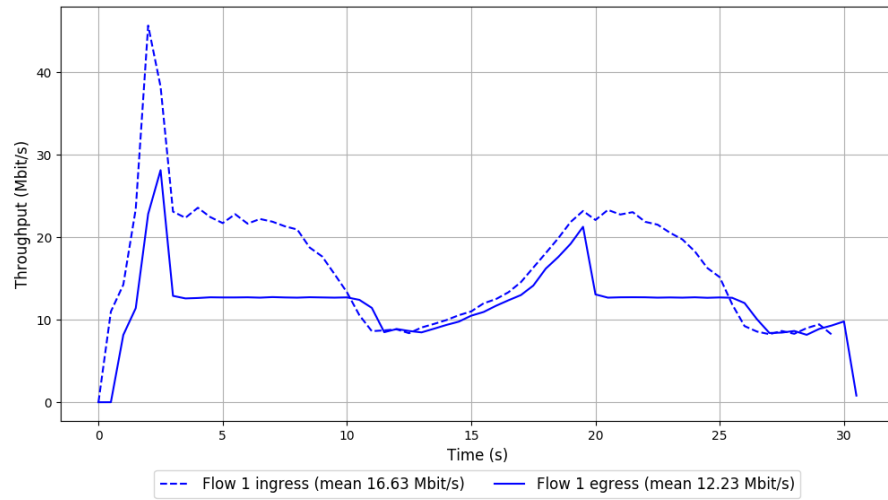
-- Flow 1:

Average throughput: 12.23 Mbit/s

95th percentile per-packet one-way delay: 124.904 ms

Loss rate: 26.46%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-12-11 00:05:07

End at: 2018-12-11 00:05:37

Local clock offset: 8.435 ms

Remote clock offset: 3.847 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.14 Mbit/s

95th percentile per-packet one-way delay: 110.007 ms

Loss rate: 33.79%

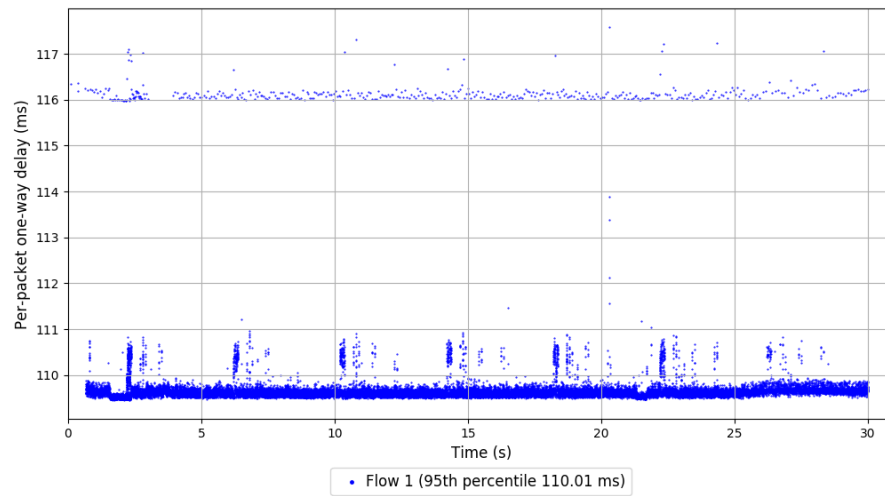
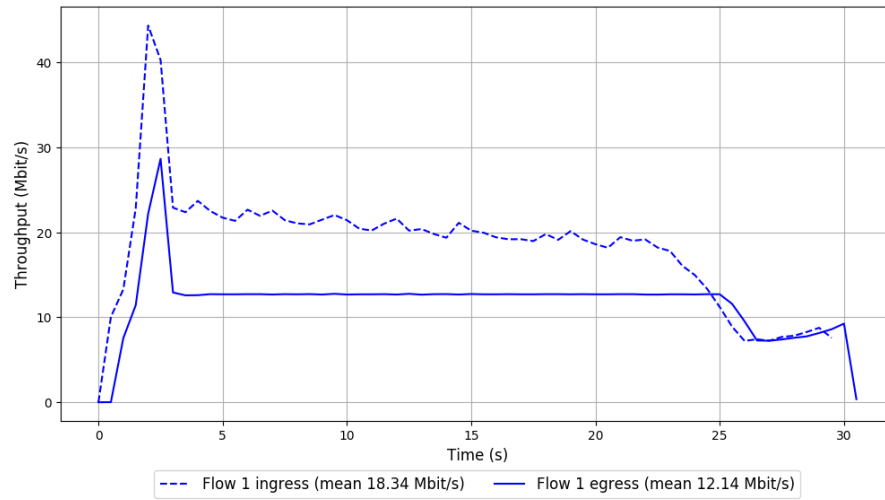
-- Flow 1:

Average throughput: 12.14 Mbit/s

95th percentile per-packet one-way delay: 110.007 ms

Loss rate: 33.79%

Run 5: Report of PCC-Expr — Data Link

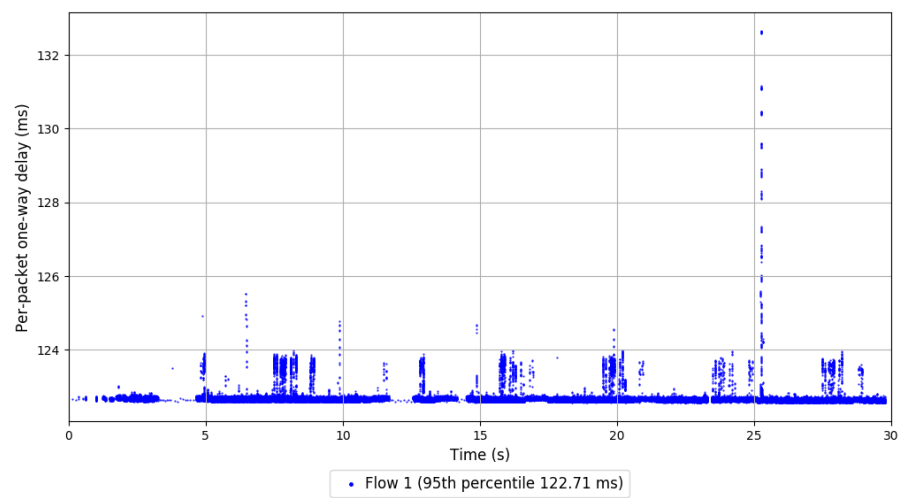
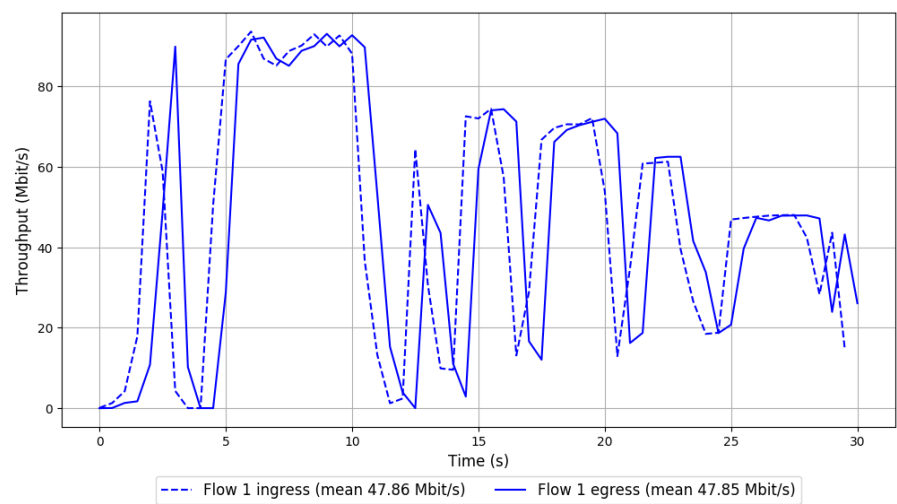


Run 1: Statistics of QUIC Cubic

Start at: 2018-12-10 22:12:57
End at: 2018-12-10 22:13:27
Local clock offset: -16.015 ms
Remote clock offset: 3.917 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 47.85 Mbit/s
95th percentile per-packet one-way delay: 122.707 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 47.85 Mbit/s
95th percentile per-packet one-way delay: 122.707 ms
Loss rate: 0.01%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-12-10 22:39:51

End at: 2018-12-10 22:40:21

Local clock offset: -11.63 ms

Remote clock offset: 3.382 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.89 Mbit/s

95th percentile per-packet one-way delay: 126.772 ms

Loss rate: 0.02%

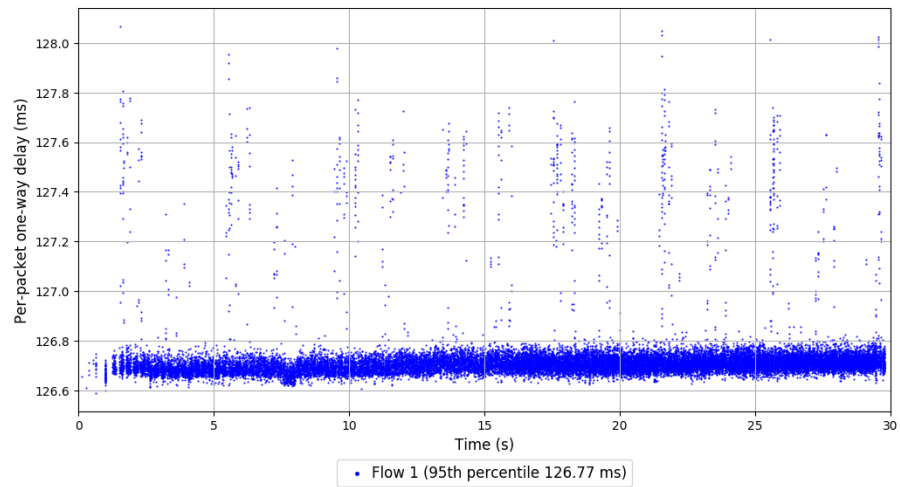
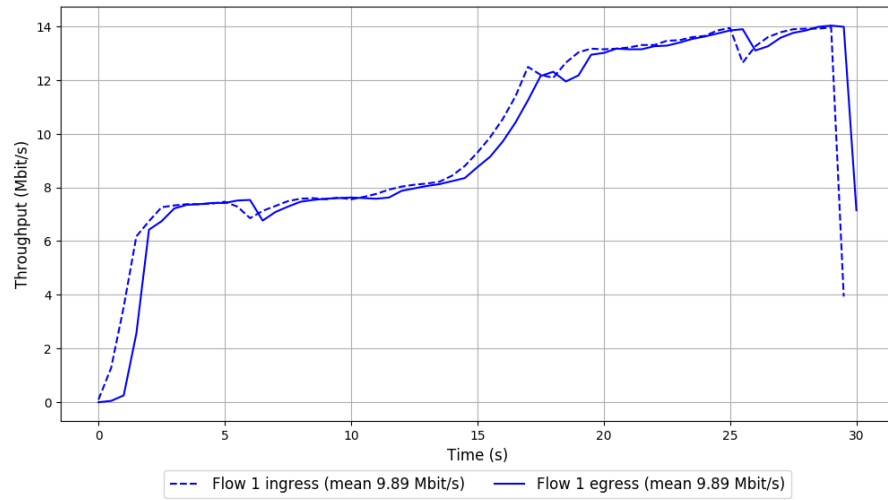
-- Flow 1:

Average throughput: 9.89 Mbit/s

95th percentile per-packet one-way delay: 126.772 ms

Loss rate: 0.02%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-10 23:06:23

End at: 2018-12-10 23:06:53

Local clock offset: -9.531 ms

Remote clock offset: 1.546 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.88 Mbit/s

95th percentile per-packet one-way delay: 130.256 ms

Loss rate: 0.01%

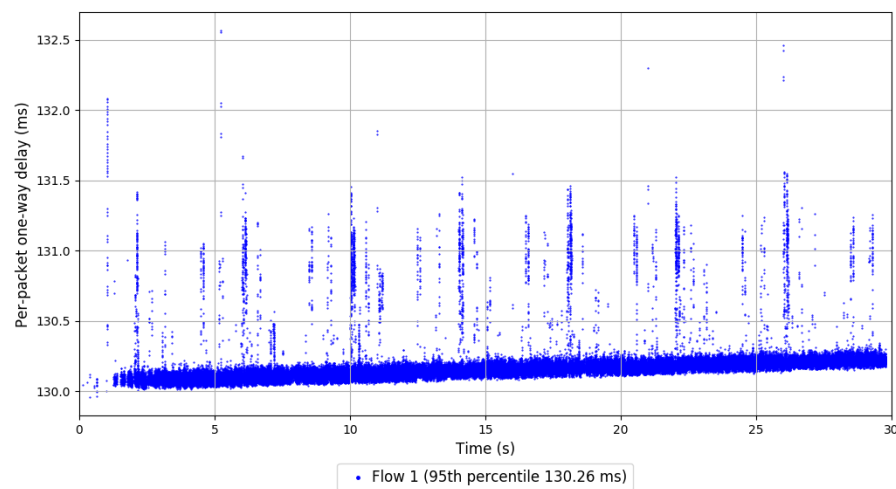
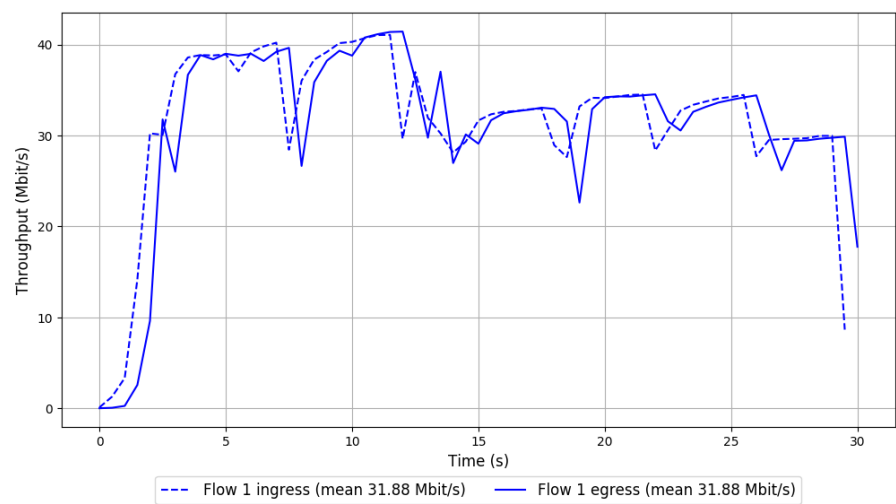
-- Flow 1:

Average throughput: 31.88 Mbit/s

95th percentile per-packet one-way delay: 130.256 ms

Loss rate: 0.01%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-12-10 23:33:07

End at: 2018-12-10 23:33:37

Local clock offset: 2.118 ms

Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 53.67 Mbit/s

95th percentile per-packet one-way delay: 118.015 ms

Loss rate: 0.01%

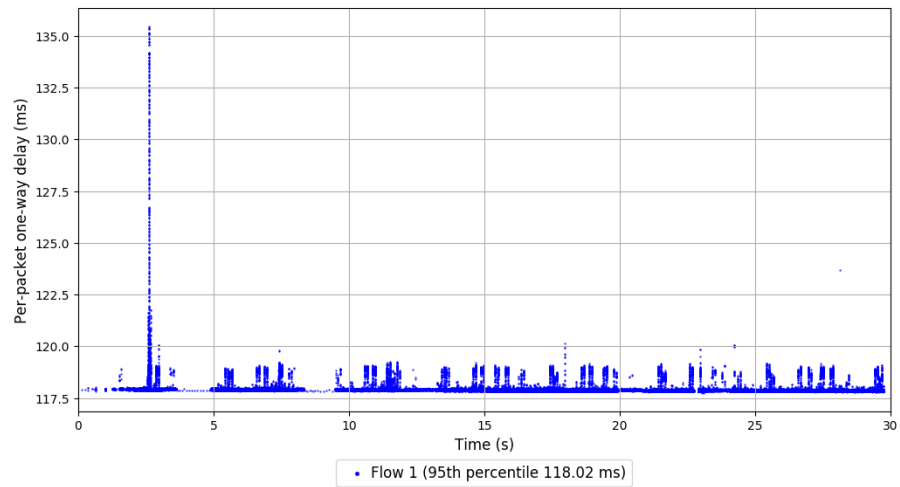
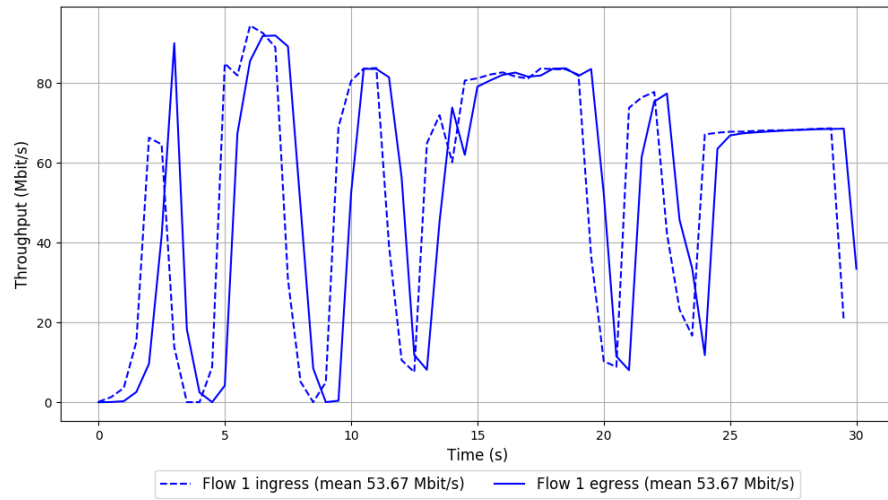
-- Flow 1:

Average throughput: 53.67 Mbit/s

95th percentile per-packet one-way delay: 118.015 ms

Loss rate: 0.01%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-12-10 23:59:45

End at: 2018-12-11 00:00:15

Local clock offset: -8.463 ms

Remote clock offset: 3.521 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.30 Mbit/s

95th percentile per-packet one-way delay: 132.202 ms

Loss rate: 0.04%

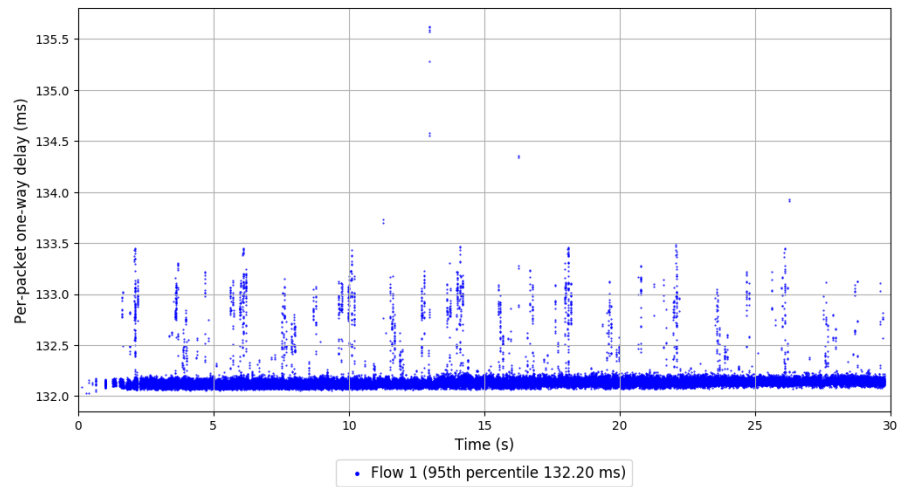
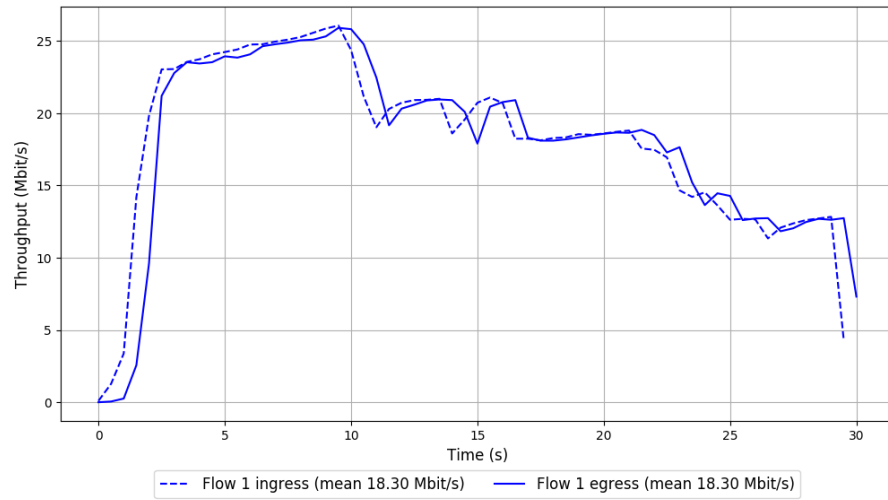
-- Flow 1:

Average throughput: 18.30 Mbit/s

95th percentile per-packet one-way delay: 132.202 ms

Loss rate: 0.04%

Run 5: Report of QUIC Cubic — Data Link

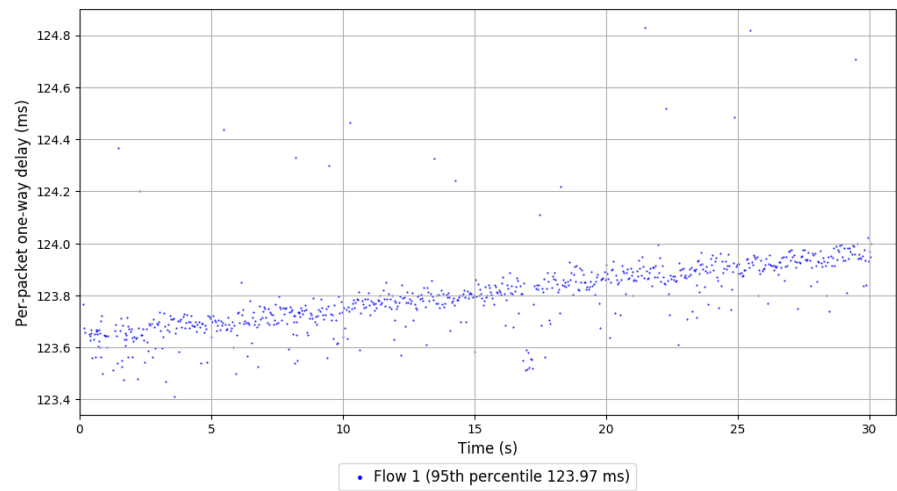
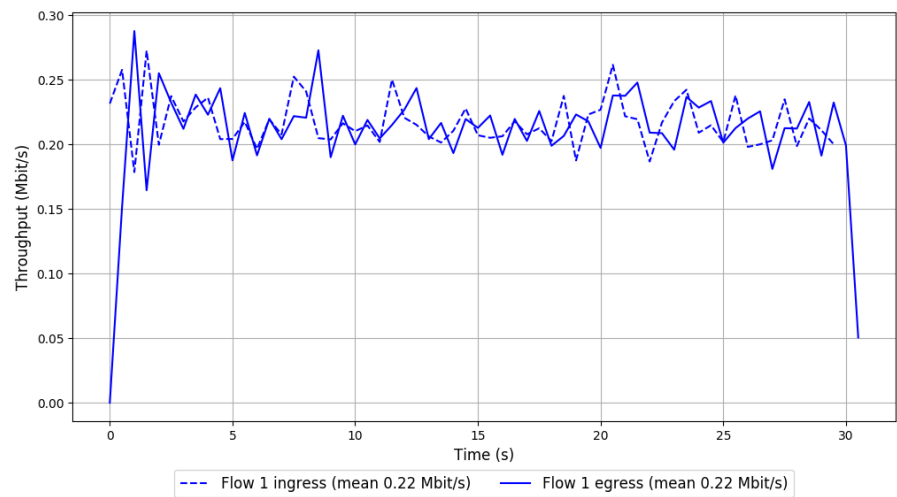


Run 1: Statistics of SCReAM

Start at: 2018-12-10 22:04:12
End at: 2018-12-10 22:04:42
Local clock offset: -16.113 ms
Remote clock offset: 3.028 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 123.967 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 123.967 ms
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-12-10 22:30:54

End at: 2018-12-10 22:31:24

Local clock offset: -9.593 ms

Remote clock offset: 3.843 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 118.756 ms

Loss rate: 0.00%

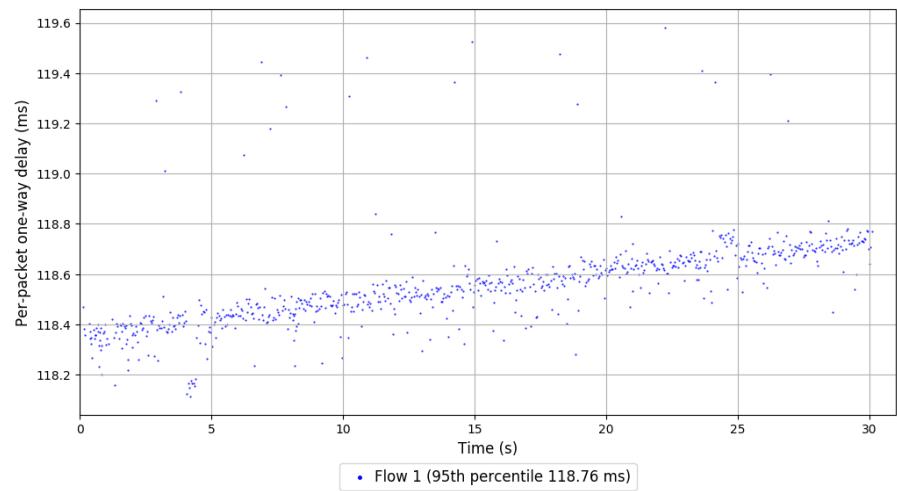
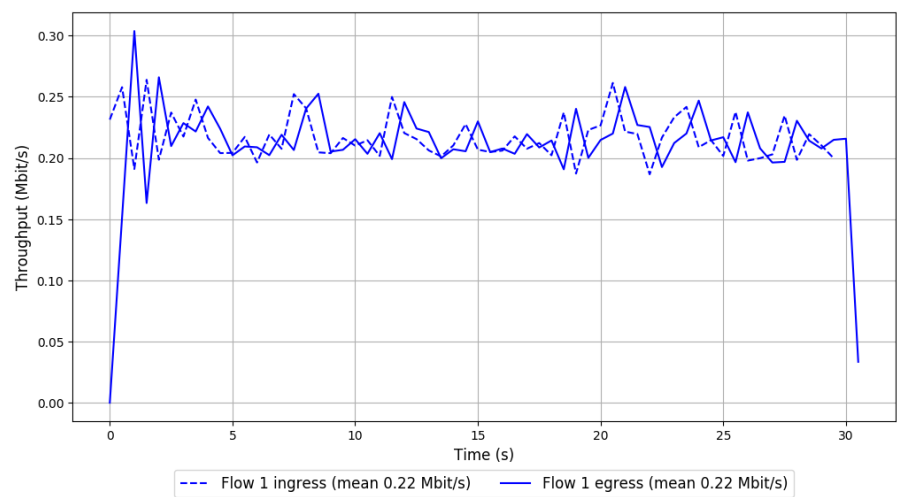
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 118.756 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

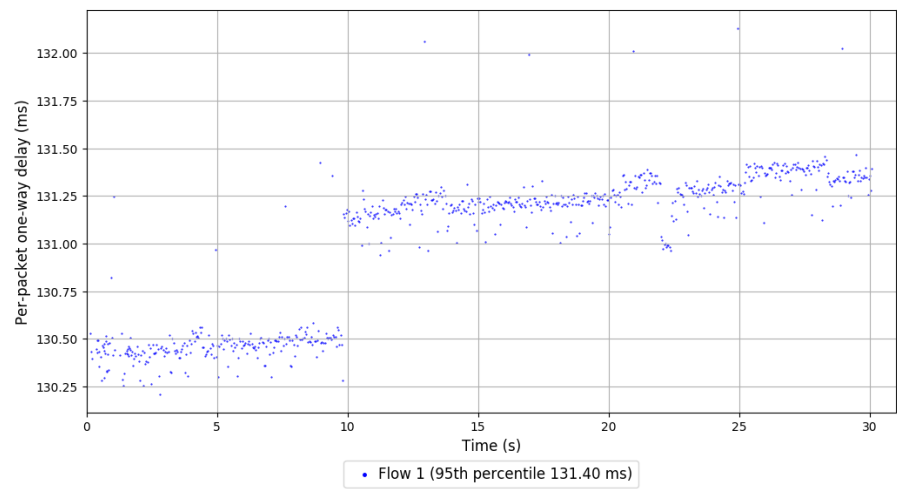
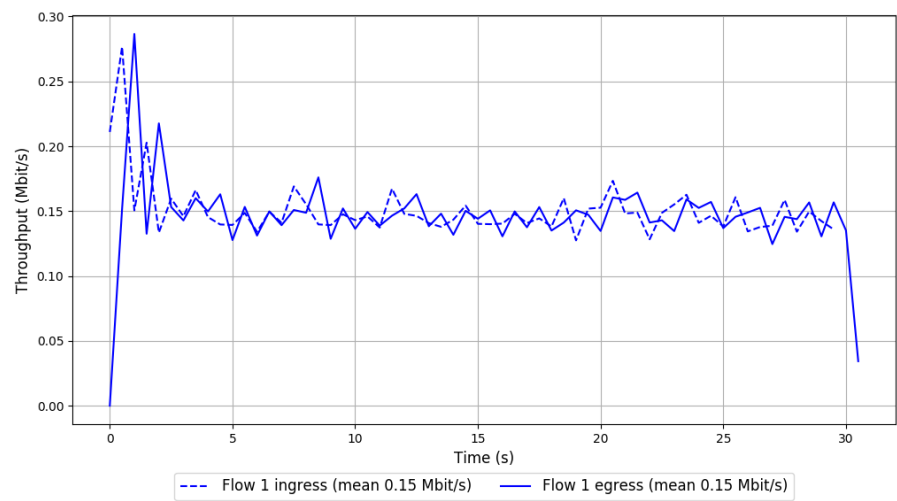


Run 3: Statistics of SCReAM

Start at: 2018-12-10 22:57:36
End at: 2018-12-10 22:58:07
Local clock offset: -13.221 ms
Remote clock offset: 3.729 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 131.400 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 131.400 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

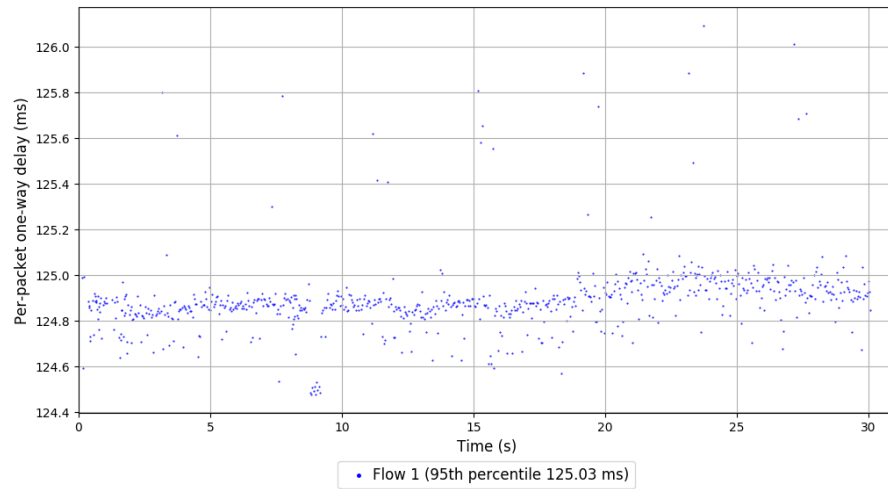
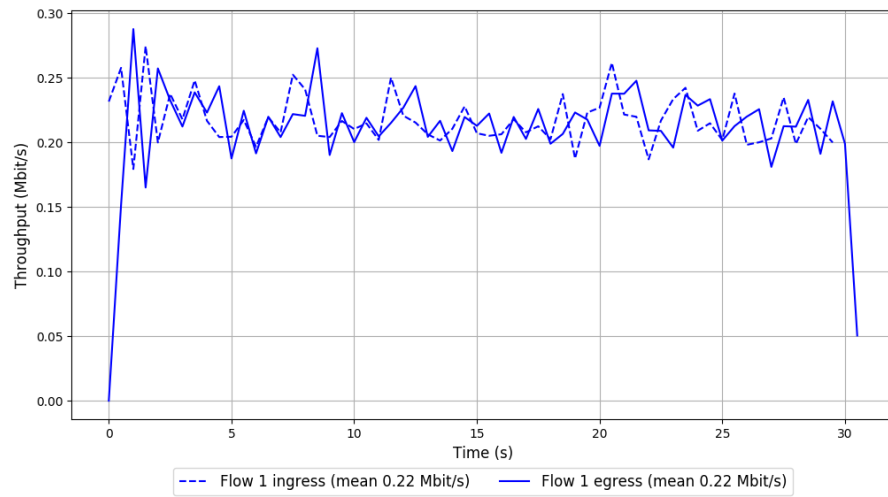


Run 4: Statistics of SCReAM

Start at: 2018-12-10 23:24:20
End at: 2018-12-10 23:24:50
Local clock offset: -7.861 ms
Remote clock offset: -0.094 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 125.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 125.027 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-12-10 23:50:56

End at: 2018-12-10 23:51:26

Local clock offset: -3.541 ms

Remote clock offset: 3.019 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 127.137 ms

Loss rate: 0.00%

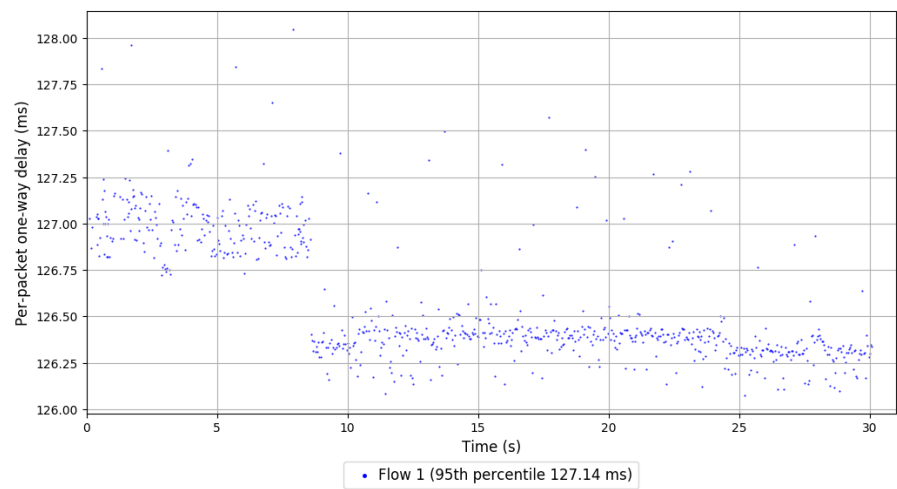
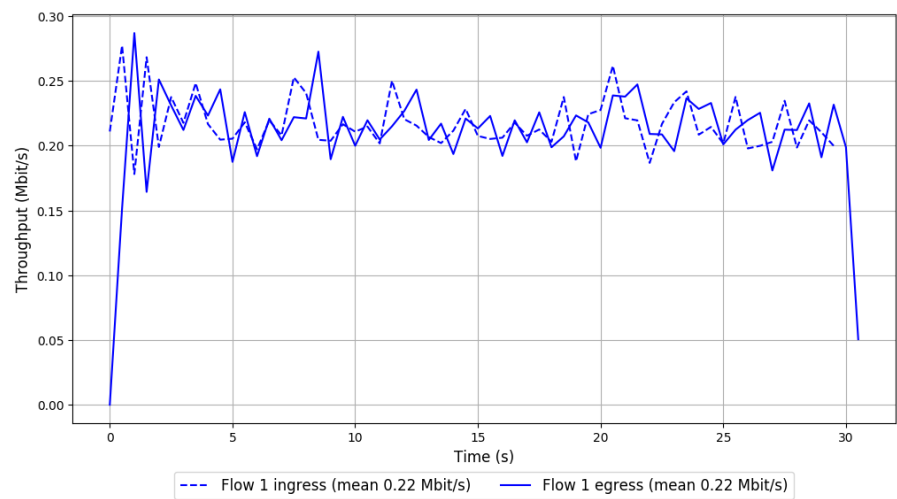
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 127.137 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

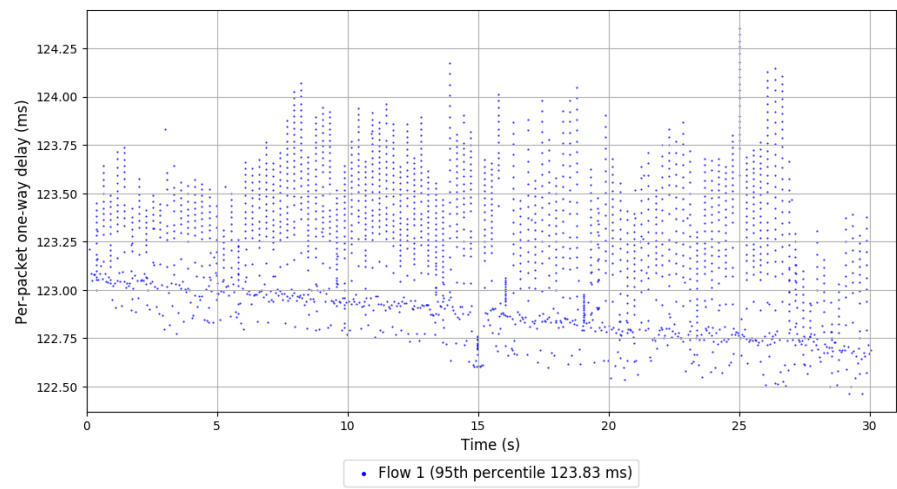
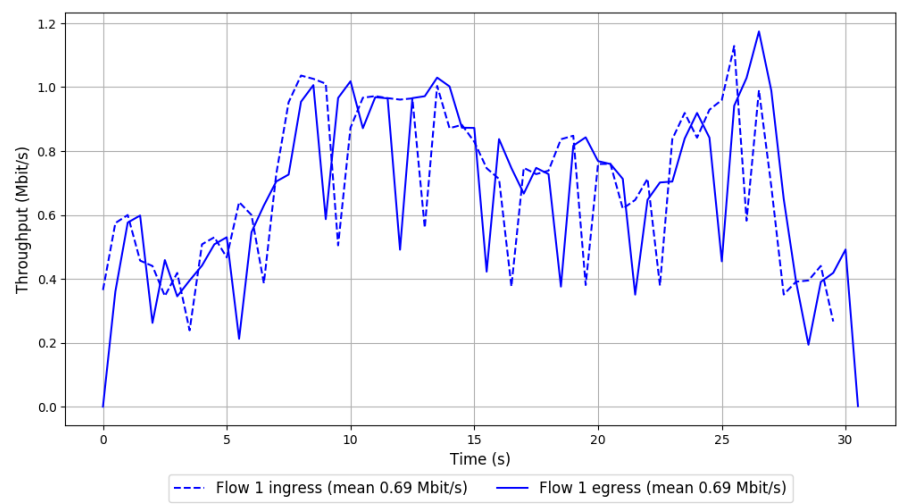


Run 1: Statistics of Sprout

Start at: 2018-12-10 21:55:44
End at: 2018-12-10 21:56:14
Local clock offset: -26.933 ms
Remote clock offset: 1.723 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 123.830 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 123.830 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

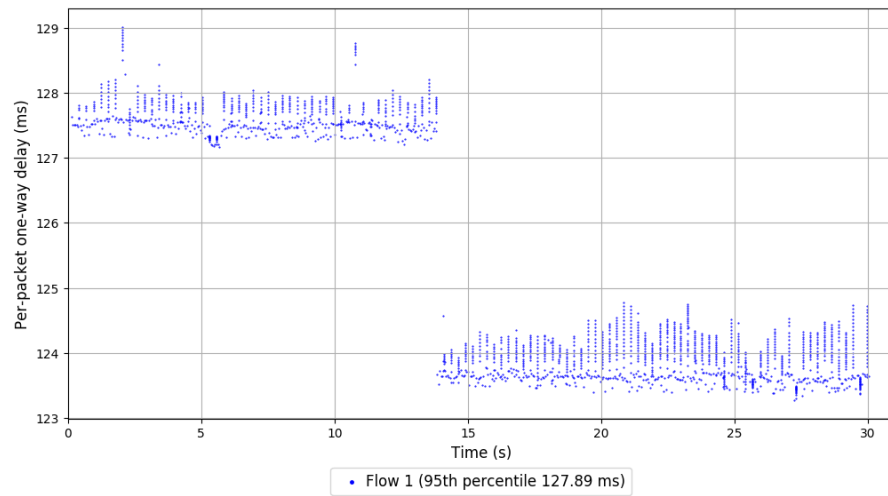
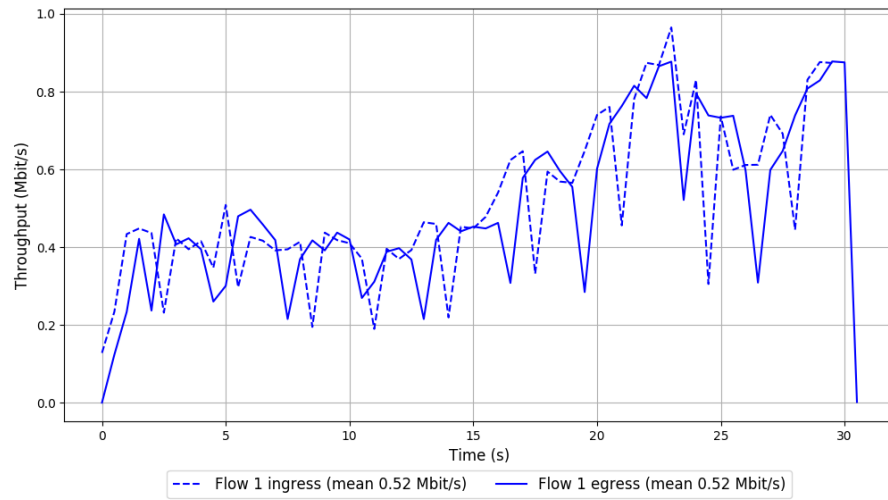


Run 2: Statistics of Sprout

Start at: 2018-12-10 22:22:23
End at: 2018-12-10 22:22:53
Local clock offset: -15.433 ms
Remote clock offset: 4.729 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 127.895 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 127.895 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-12-10 22:49:13

End at: 2018-12-10 22:49:43

Local clock offset: -12.1 ms

Remote clock offset: 3.63 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 124.368 ms

Loss rate: 0.00%

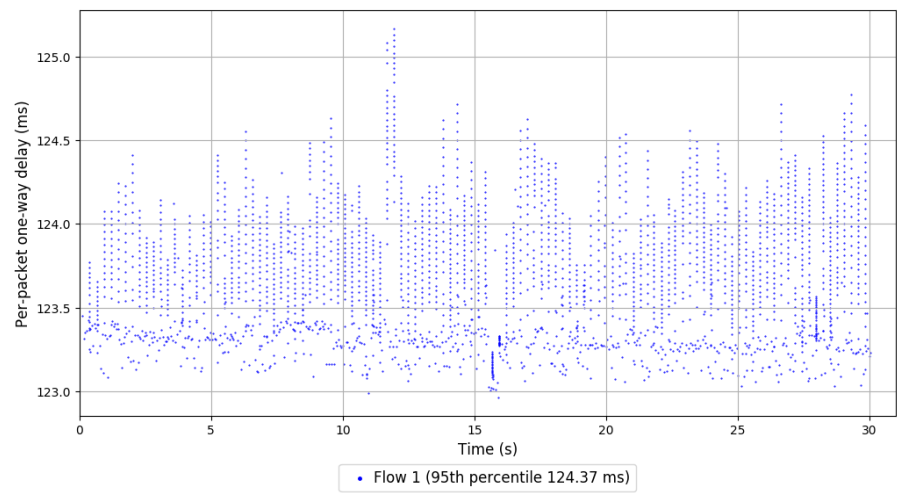
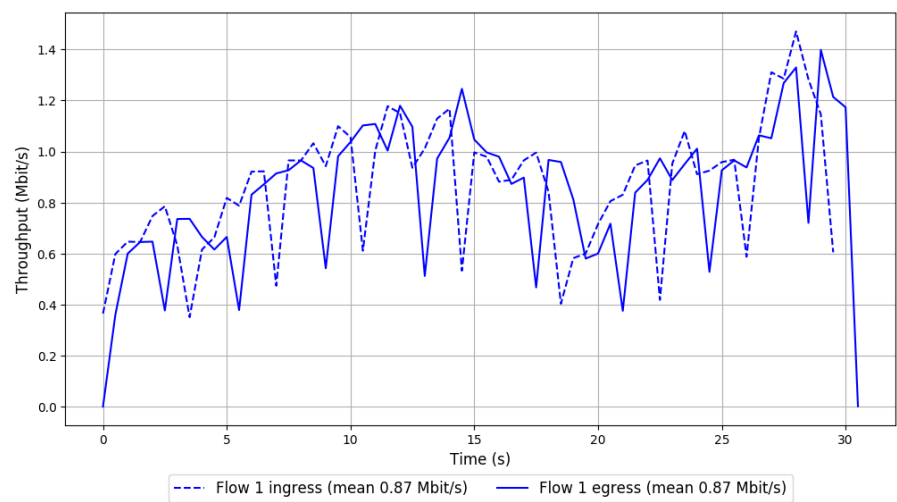
-- Flow 1:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 124.368 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-12-10 23:15:46

End at: 2018-12-10 23:16:16

Local clock offset: -8.502 ms

Remote clock offset: 0.472 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.42 Mbit/s

95th percentile per-packet one-way delay: 128.679 ms

Loss rate: 0.00%

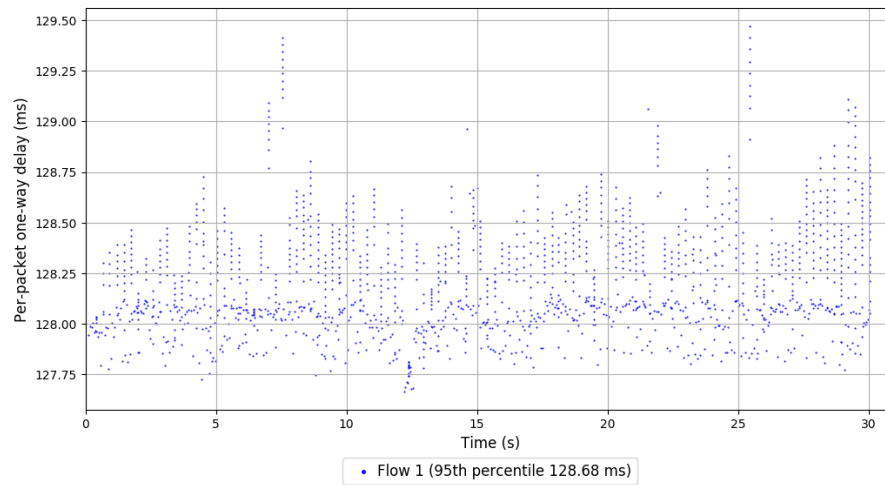
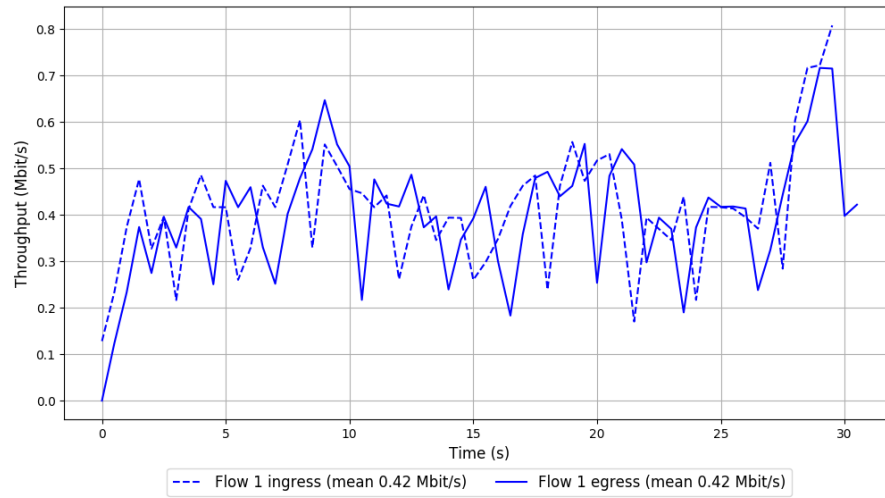
-- Flow 1:

Average throughput: 0.42 Mbit/s

95th percentile per-packet one-way delay: 128.679 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-12-10 23:42:32

End at: 2018-12-10 23:43:02

Local clock offset: -5.816 ms

Remote clock offset: 2.19 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.84 Mbit/s

95th percentile per-packet one-way delay: 124.165 ms

Loss rate: 0.41%

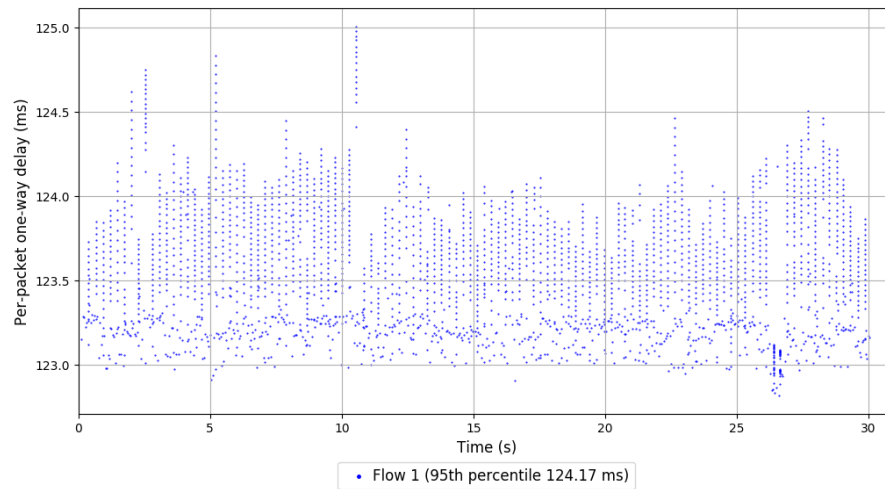
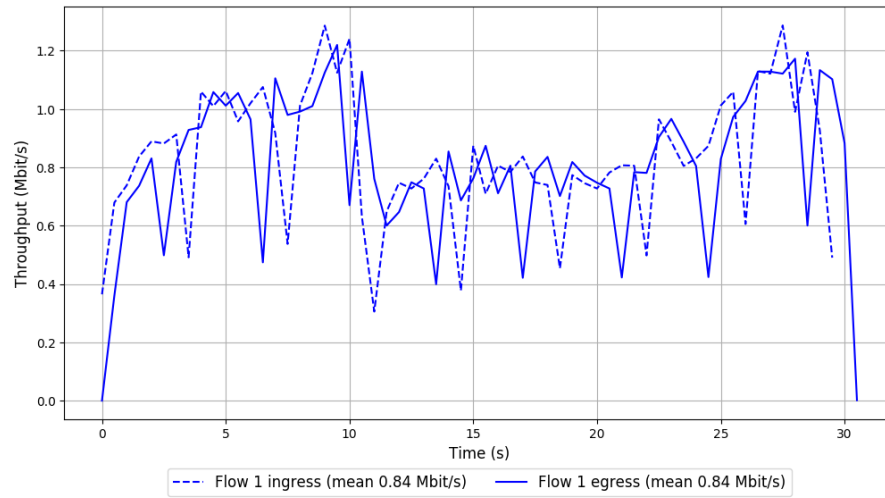
-- Flow 1:

Average throughput: 0.84 Mbit/s

95th percentile per-packet one-way delay: 124.165 ms

Loss rate: 0.41%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

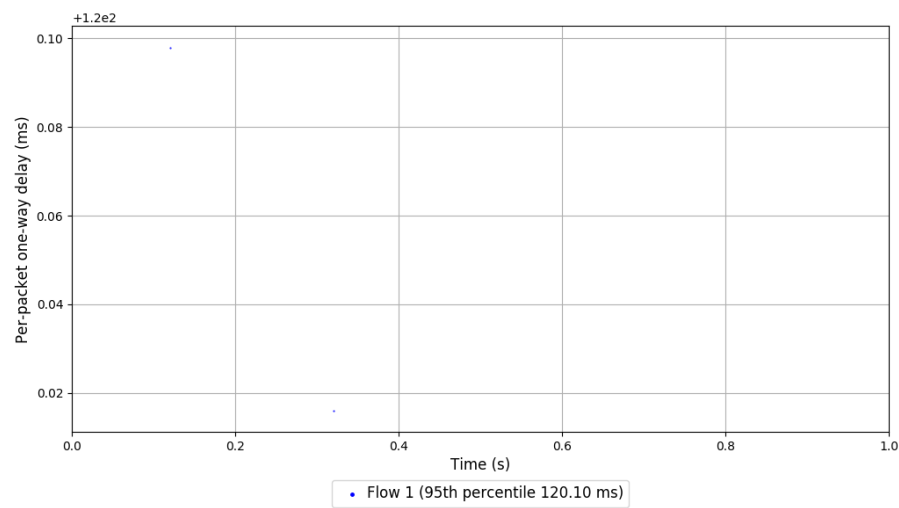
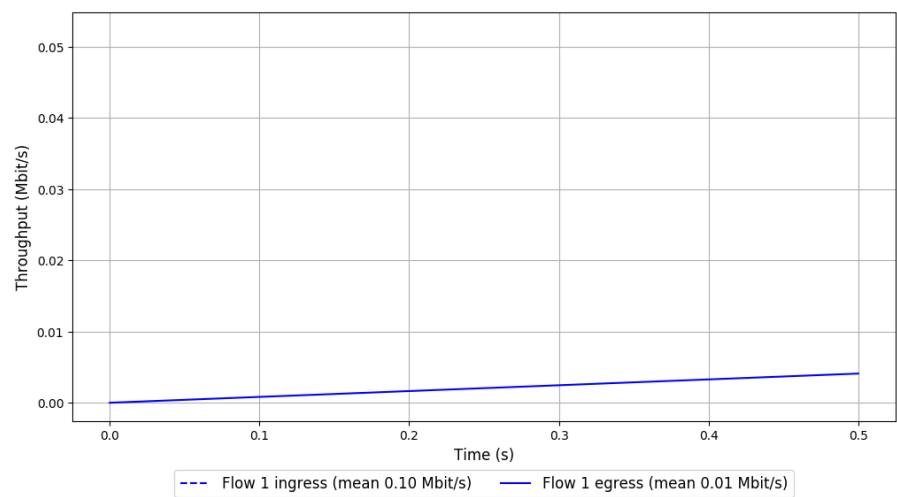
Start at: 2018-12-10 22:14:18

End at: 2018-12-10 22:14:48

Local clock offset: -6.684 ms

Remote clock offset: 4.008 ms

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



Run 2: Statistics of TaoVA-100x

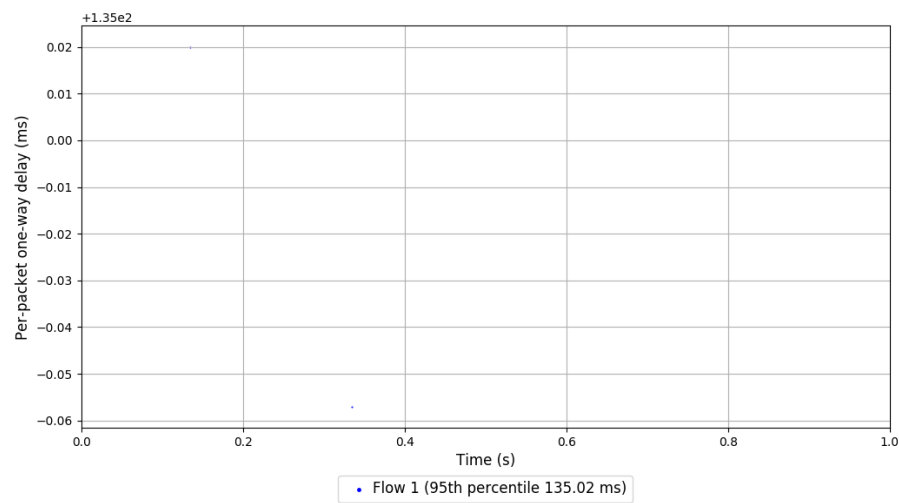
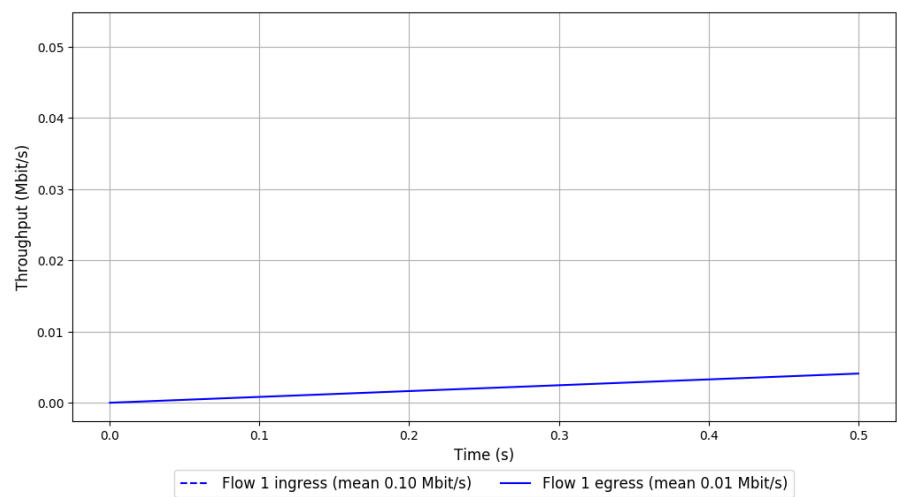
Start at: 2018-12-10 22:41:10

End at: 2018-12-10 22:41:40

Local clock offset: -18.197 ms

Remote clock offset: 3.427 ms

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



Run 3: Statistics of TaoVA-100x

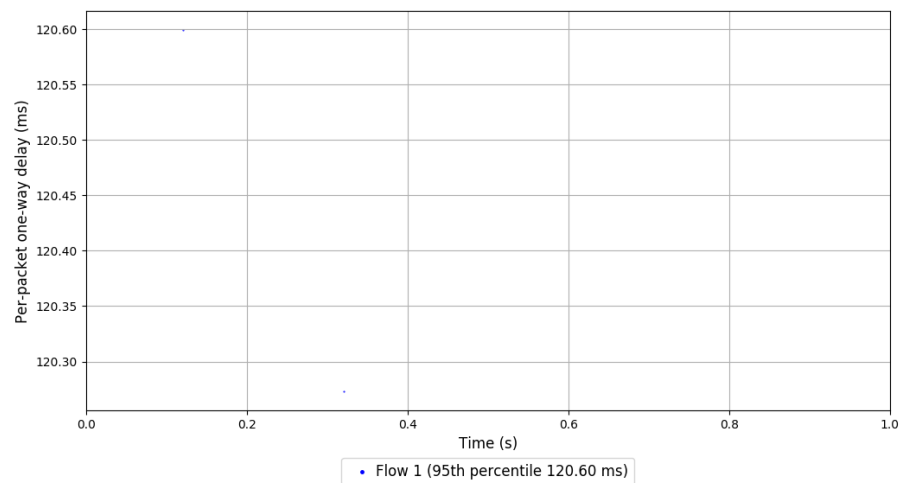
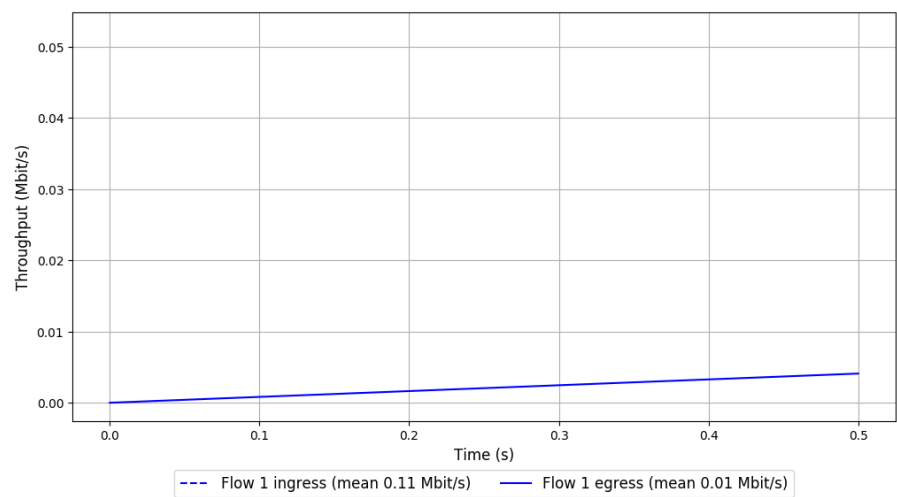
Start at: 2018-12-10 23:07:44

End at: 2018-12-10 23:08:14

Local clock offset: -4.861 ms

Remote clock offset: 1.31 ms

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



Run 4: Statistics of TaoVA-100x

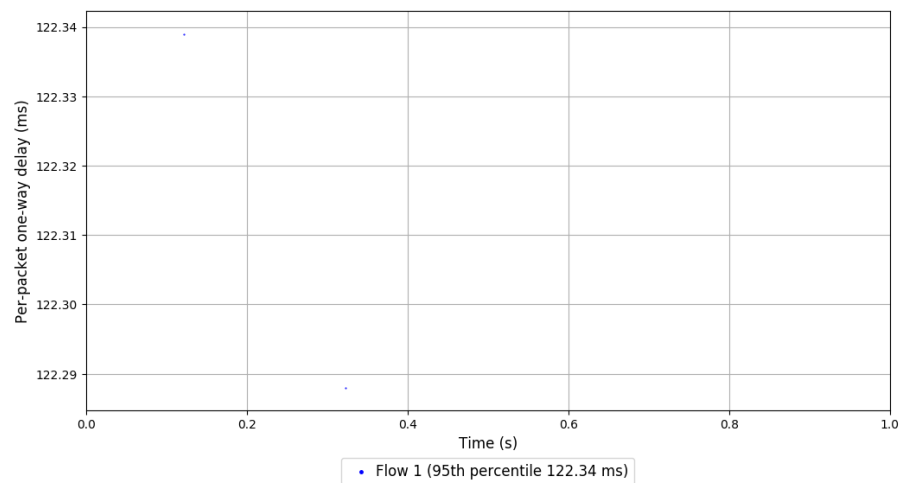
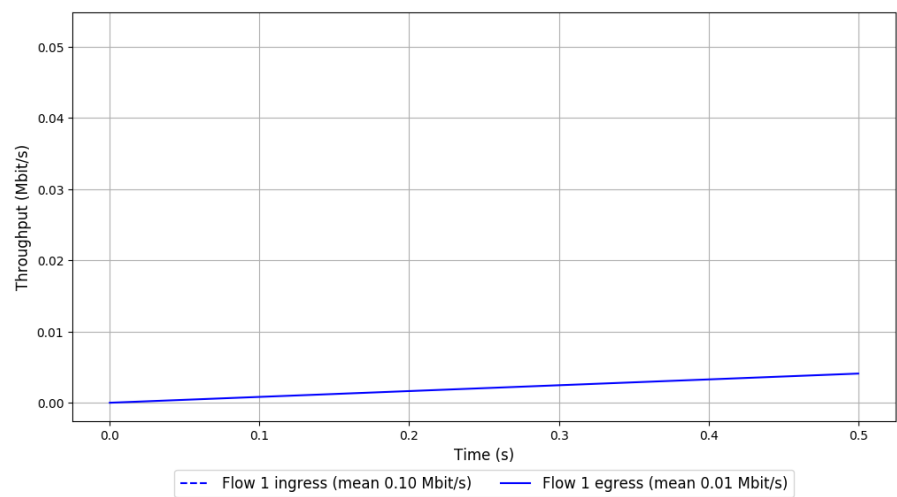
Start at: 2018-12-10 23:34:28

End at: 2018-12-10 23:34:58

Local clock offset: -1.92 ms

Remote clock offset: 0.34 ms

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



Run 5: Statistics of TaoVA-100x

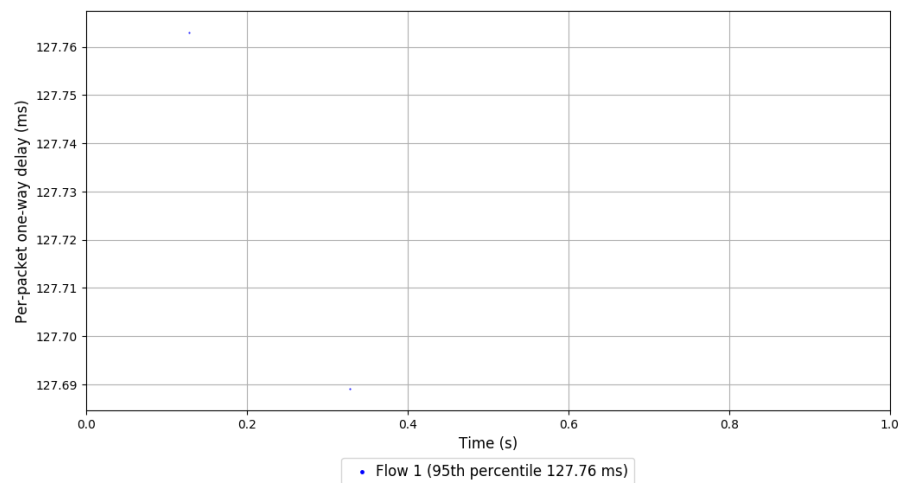
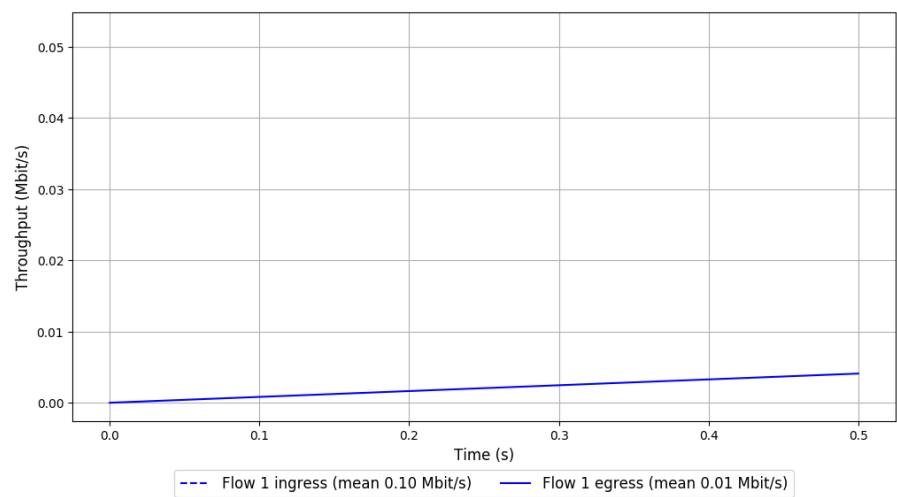
Start at: 2018-12-11 00:01:05

End at: 2018-12-11 00:01:35

Local clock offset: -4.074 ms

Remote clock offset: 3.595 ms

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

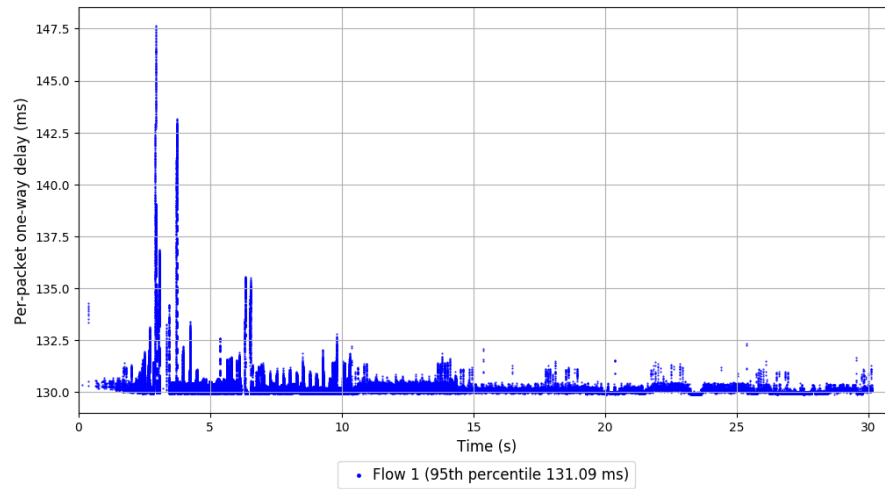
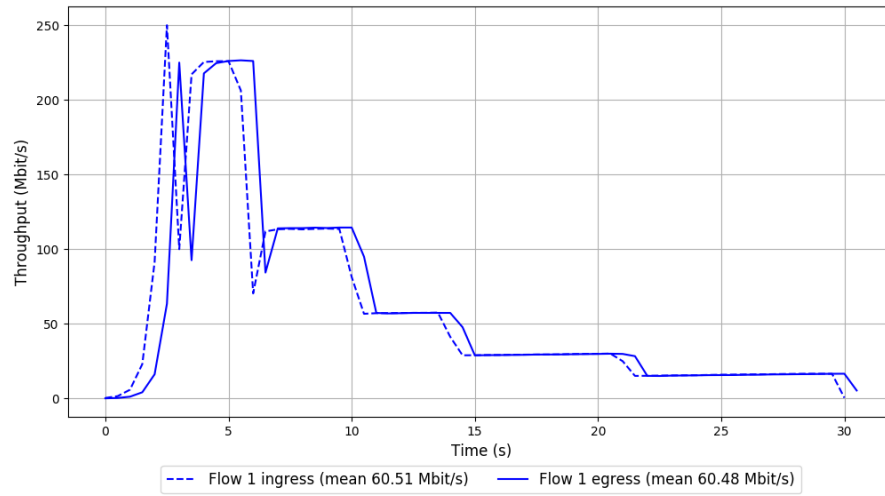


Run 1: Statistics of TCP Vegas

Start at: 2018-12-10 22:15:35
End at: 2018-12-10 22:16:05
Local clock offset: -15.924 ms
Remote clock offset: 4.21 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 60.48 Mbit/s
95th percentile per-packet one-way delay: 131.086 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 60.48 Mbit/s
95th percentile per-packet one-way delay: 131.086 ms
Loss rate: 0.04%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-12-10 22:42:27

End at: 2018-12-10 22:42:57

Local clock offset: 1.994 ms

Remote clock offset: 3.444 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.81 Mbit/s

95th percentile per-packet one-way delay: 116.296 ms

Loss rate: 0.01%

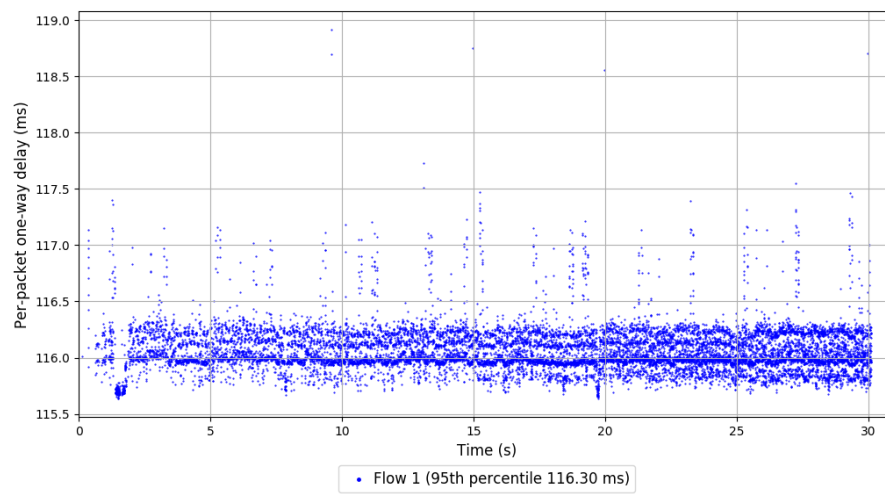
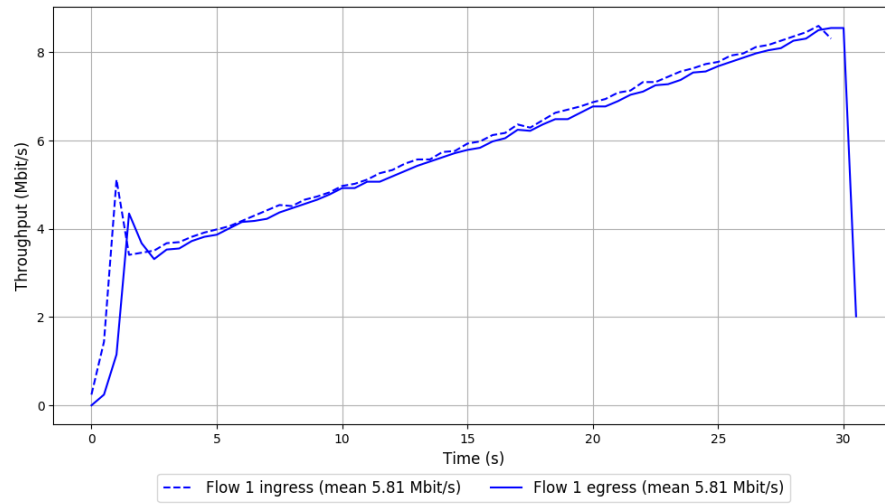
-- Flow 1:

Average throughput: 5.81 Mbit/s

95th percentile per-packet one-way delay: 116.296 ms

Loss rate: 0.01%

Run 2: Report of TCP Vegas — Data Link

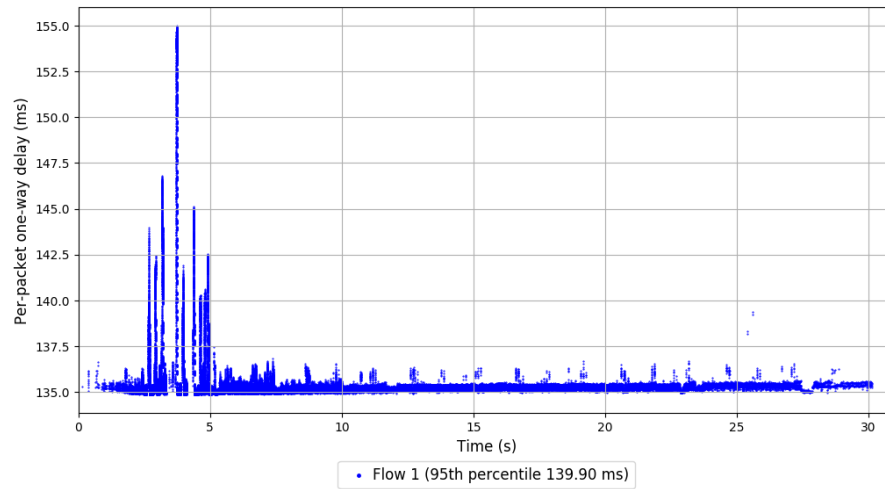
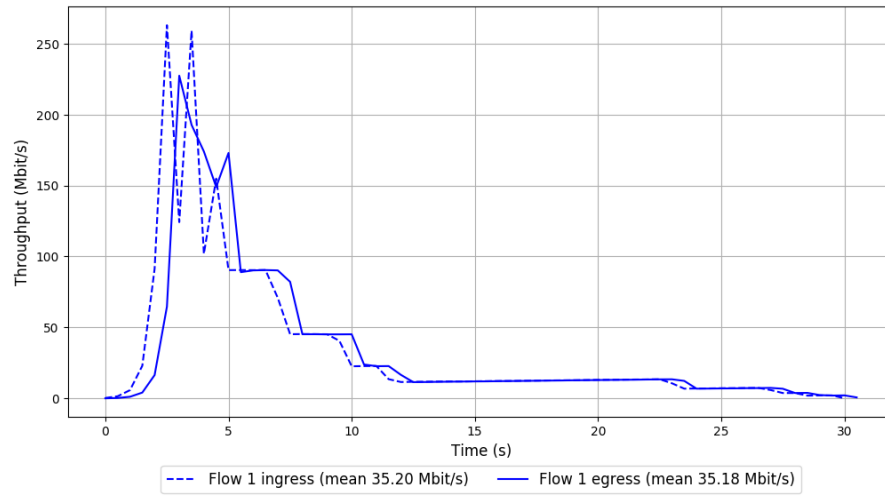


Run 3: Statistics of TCP Vegas

Start at: 2018-12-10 23:09:01
End at: 2018-12-10 23:09:31
Local clock offset: -14.161 ms
Remote clock offset: 1.055 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 35.18 Mbit/s
95th percentile per-packet one-way delay: 139.897 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 35.18 Mbit/s
95th percentile per-packet one-way delay: 139.897 ms
Loss rate: 0.07%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-12-10 23:35:46

End at: 2018-12-10 23:36:16

Local clock offset: 2.642 ms

Remote clock offset: 0.799 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.24 Mbit/s

95th percentile per-packet one-way delay: 120.453 ms

Loss rate: 0.02%

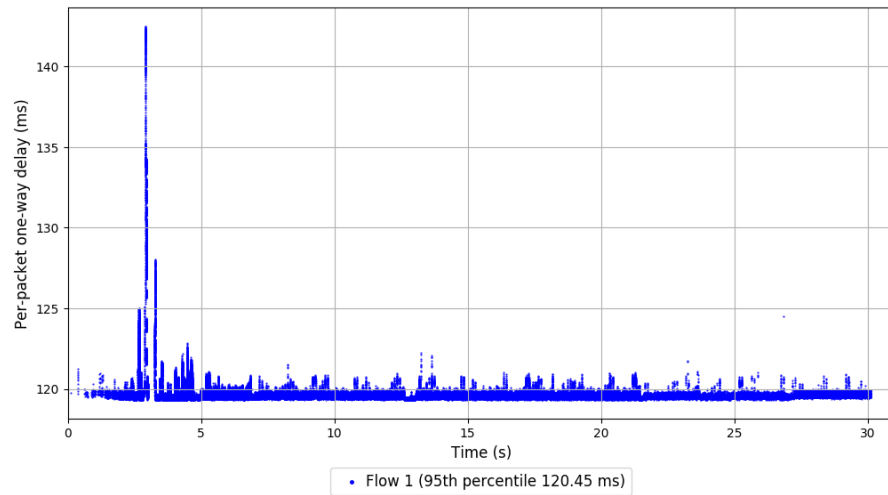
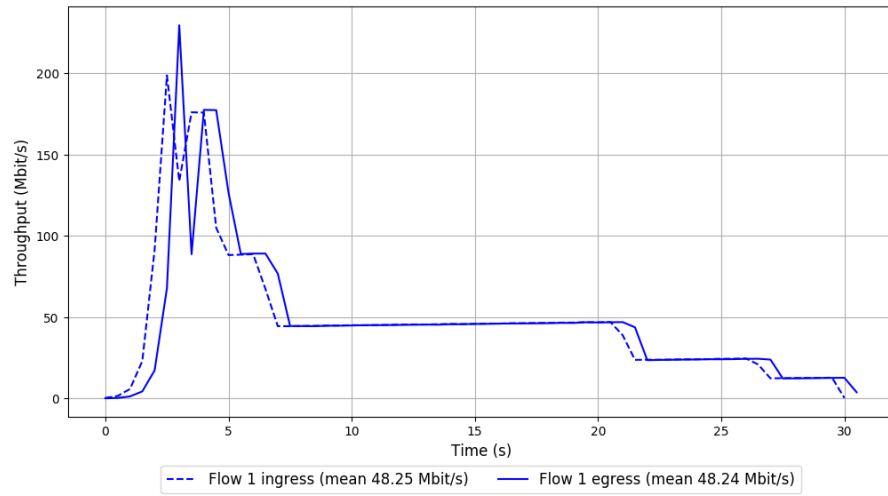
-- Flow 1:

Average throughput: 48.24 Mbit/s

95th percentile per-packet one-way delay: 120.453 ms

Loss rate: 0.02%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-12-11 00:02:23

End at: 2018-12-11 00:02:53

Local clock offset: -3.967 ms

Remote clock offset: 3.669 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 22.74 Mbit/s

95th percentile per-packet one-way delay: 126.323 ms

Loss rate: 0.24%

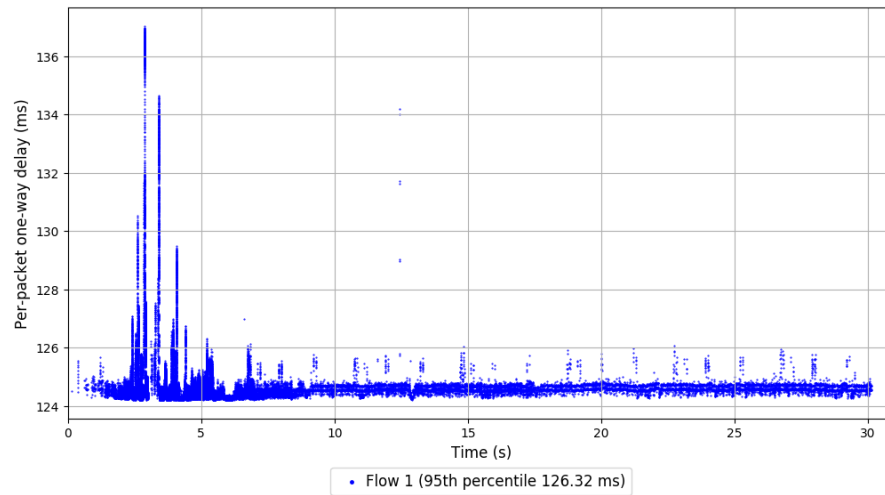
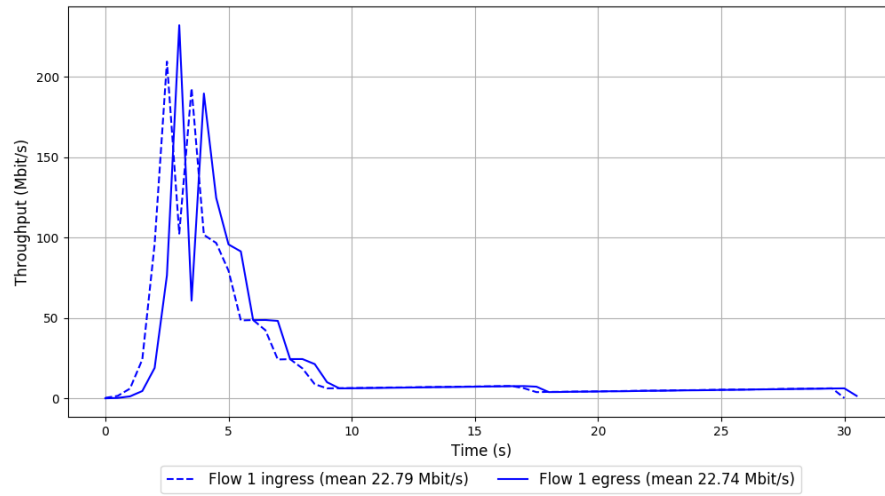
-- Flow 1:

Average throughput: 22.74 Mbit/s

95th percentile per-packet one-way delay: 126.323 ms

Loss rate: 0.24%

Run 5: Report of TCP Vegas — Data Link

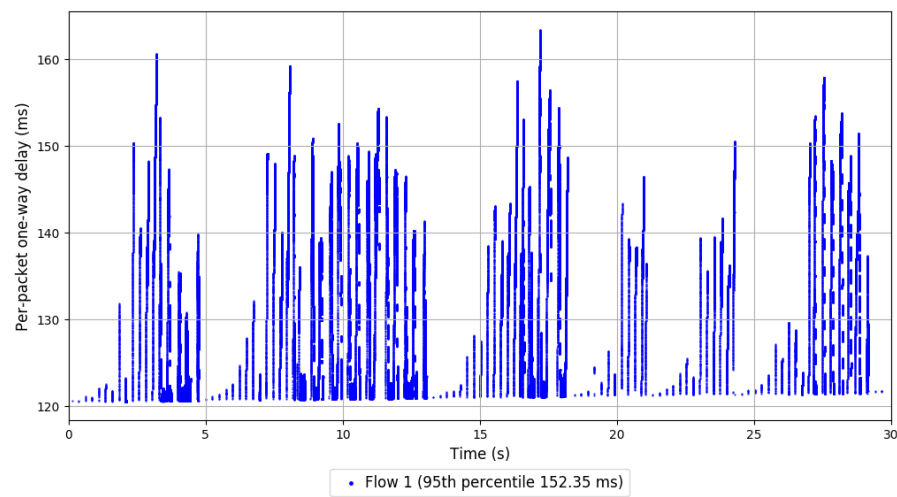
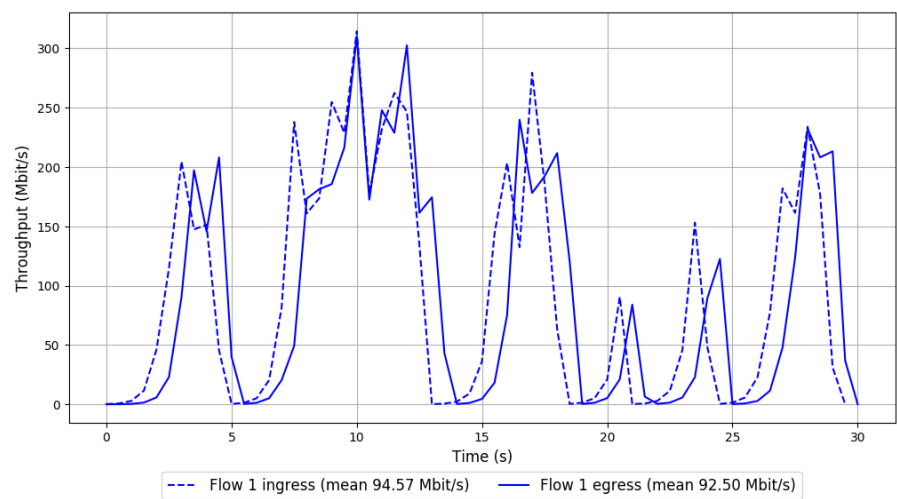


Run 1: Statistics of Verus

Start at: 2018-12-10 21:57:02
End at: 2018-12-10 21:57:32
Local clock offset: -27.144 ms
Remote clock offset: 2.003 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 92.50 Mbit/s
95th percentile per-packet one-way delay: 152.346 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 92.50 Mbit/s
95th percentile per-packet one-way delay: 152.346 ms
Loss rate: 2.18%

Run 1: Report of Verus — Data Link

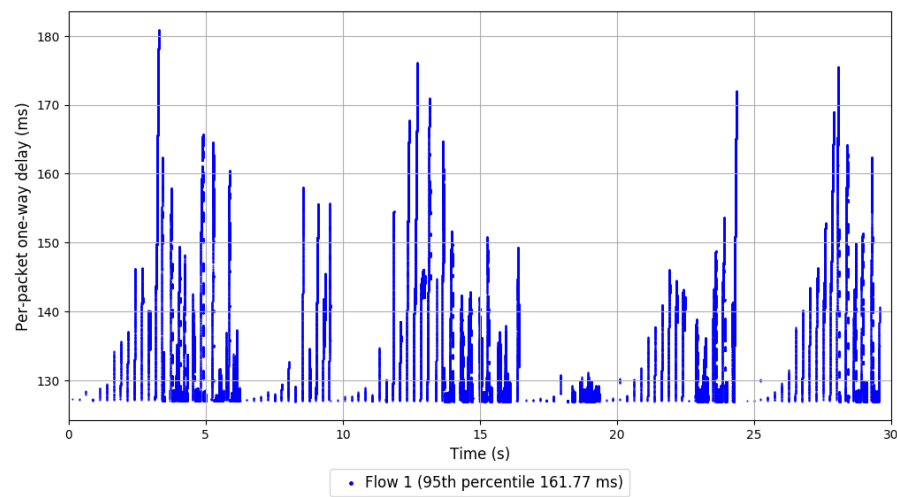
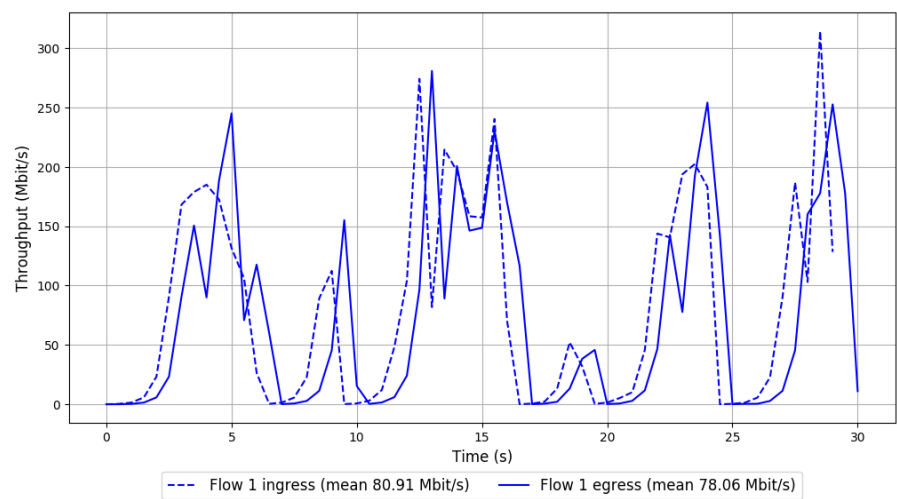


Run 2: Statistics of Verus

Start at: 2018-12-10 22:23:41
End at: 2018-12-10 22:24:11
Local clock offset: -14.691 ms
Remote clock offset: 4.835 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 78.06 Mbit/s
95th percentile per-packet one-way delay: 161.772 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 78.06 Mbit/s
95th percentile per-packet one-way delay: 161.772 ms
Loss rate: 3.49%

Run 2: Report of Verus — Data Link

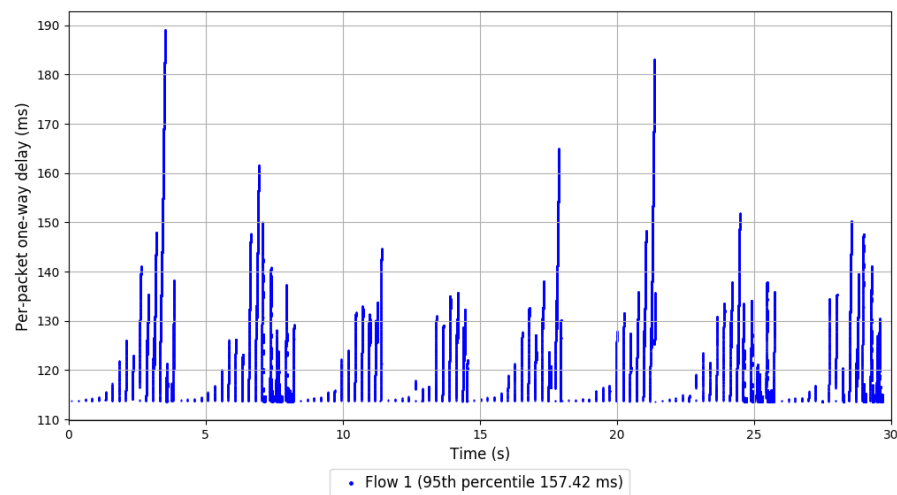
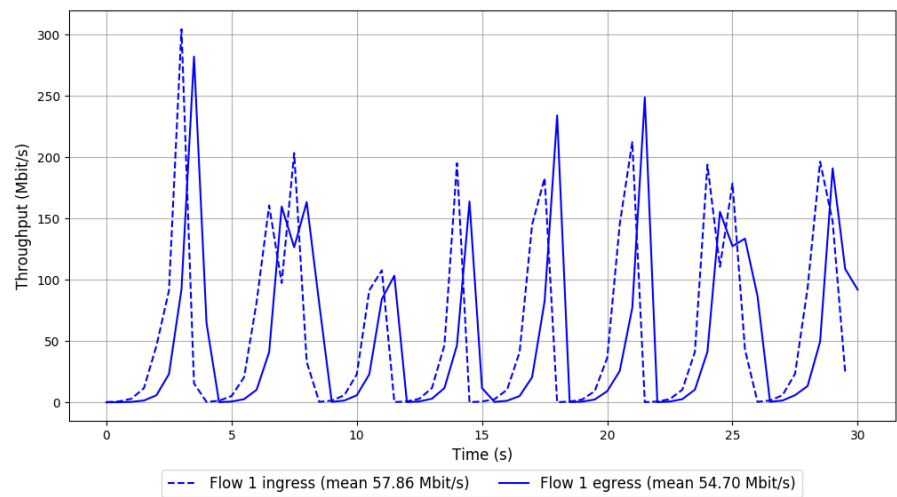


Run 3: Statistics of Verus

Start at: 2018-12-10 22:50:31
End at: 2018-12-10 22:51:01
Local clock offset: -2.974 ms
Remote clock offset: 3.532 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 157.418 ms
Loss rate: 5.46%
-- Flow 1:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 157.418 ms
Loss rate: 5.46%

Run 3: Report of Verus — Data Link

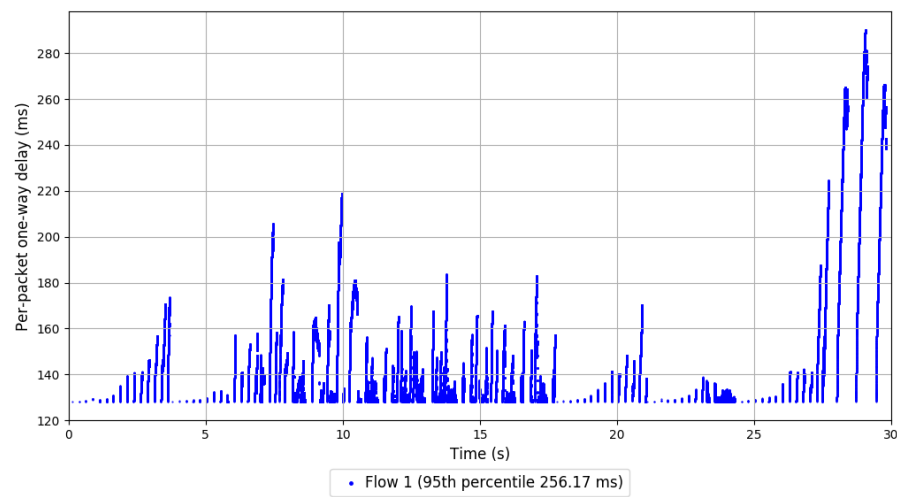
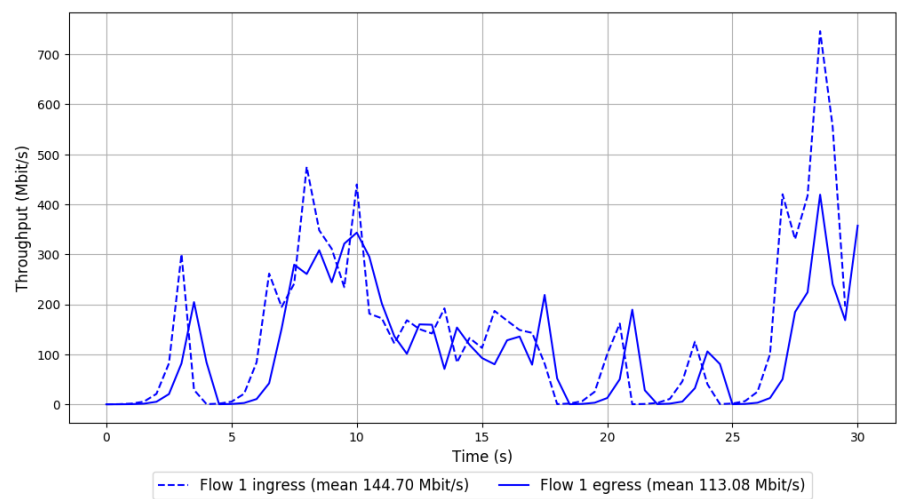


Run 4: Statistics of Verus

Start at: 2018-12-10 23:17:04
End at: 2018-12-10 23:17:34
Local clock offset: -8.462 ms
Remote clock offset: 0.333 ms

Below is generated by plot.py at 2018-12-11 00:26:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 113.08 Mbit/s
95th percentile per-packet one-way delay: 256.165 ms
Loss rate: 21.56%
-- Flow 1:
Average throughput: 113.08 Mbit/s
95th percentile per-packet one-way delay: 256.165 ms
Loss rate: 21.56%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-12-10 23:43:50

End at: 2018-12-10 23:44:20

Local clock offset: -4.753 ms

Remote clock offset: 2.451 ms

Below is generated by plot.py at 2018-12-11 00:26:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.57 Mbit/s

95th percentile per-packet one-way delay: 170.005 ms

Loss rate: 12.02%

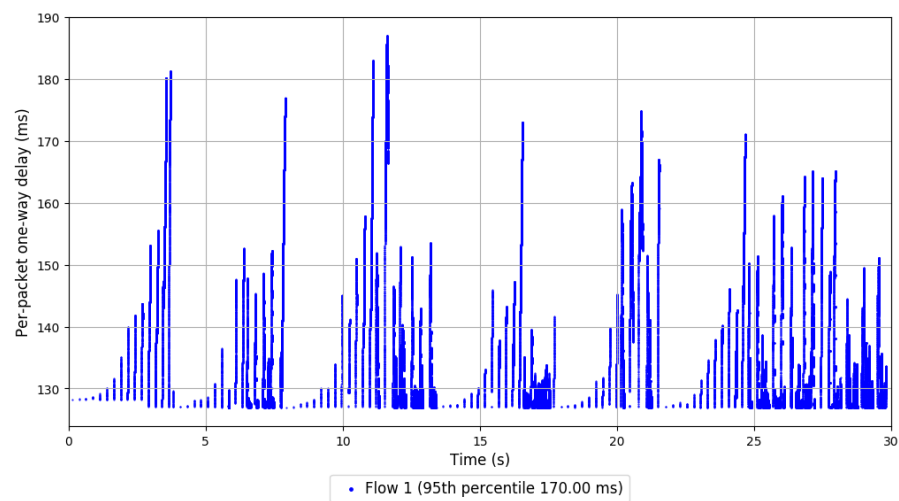
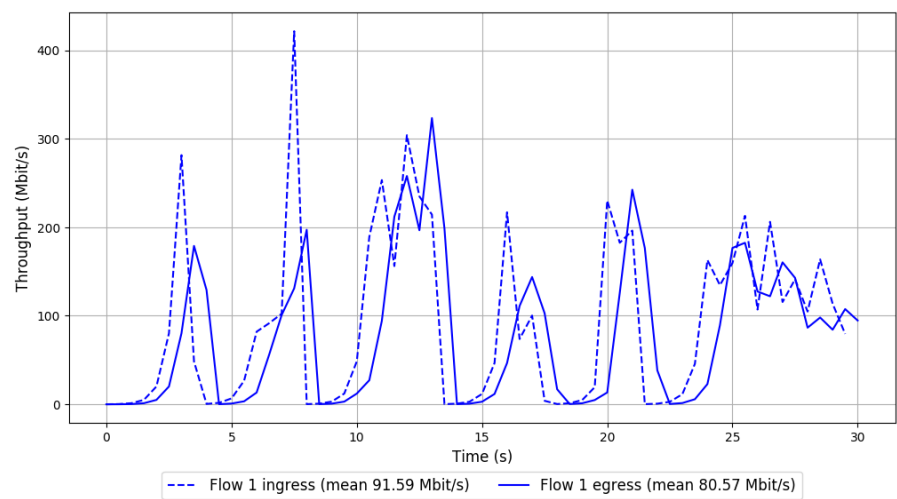
-- Flow 1:

Average throughput: 80.57 Mbit/s

95th percentile per-packet one-way delay: 170.005 ms

Loss rate: 12.02%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-12-10 22:02:35

End at: 2018-12-10 22:03:05

Local clock offset: -7.461 ms

Remote clock offset: 2.8 ms

Below is generated by plot.py at 2018-12-11 00:26:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 297.95 Mbit/s

95th percentile per-packet one-way delay: 154.899 ms

Loss rate: 0.59%

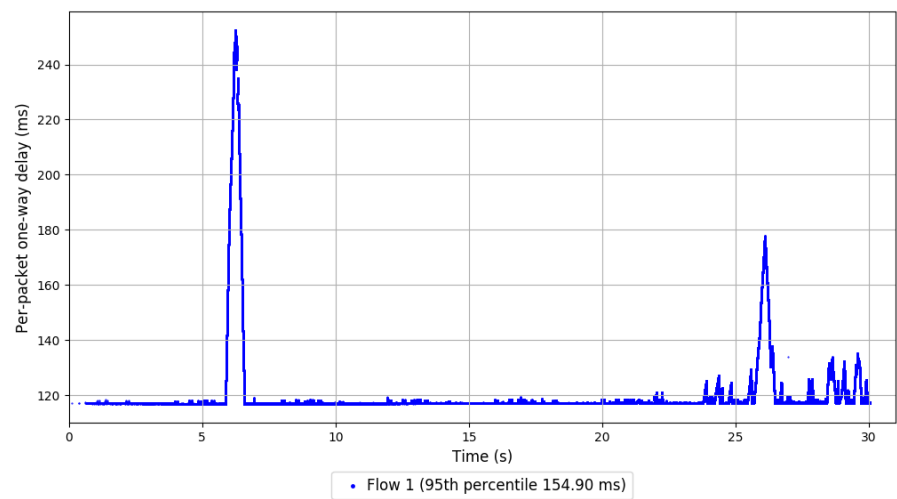
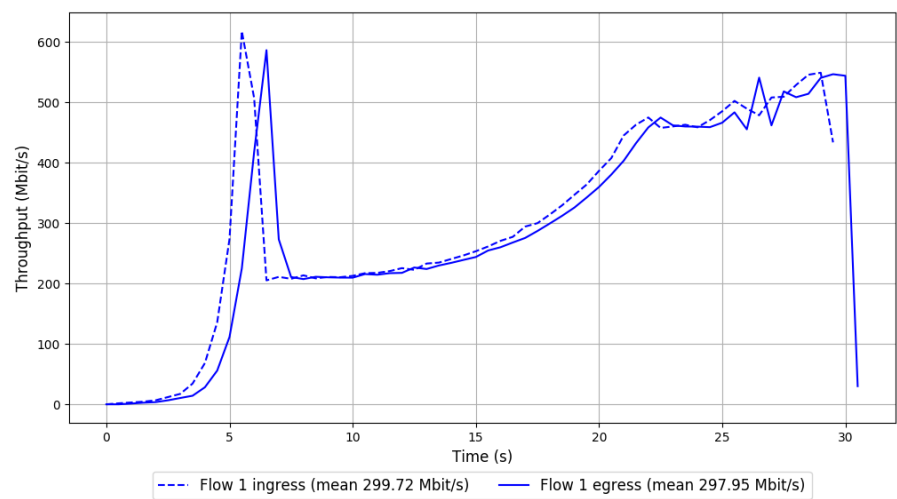
-- Flow 1:

Average throughput: 297.95 Mbit/s

95th percentile per-packet one-way delay: 154.899 ms

Loss rate: 0.59%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-12-10 22:29:14

End at: 2018-12-10 22:29:44

Local clock offset: -7.323 ms

Remote clock offset: 3.976 ms

Below is generated by plot.py at 2018-12-11 00:26:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 355.08 Mbit/s

95th percentile per-packet one-way delay: 117.274 ms

Loss rate: 0.04%

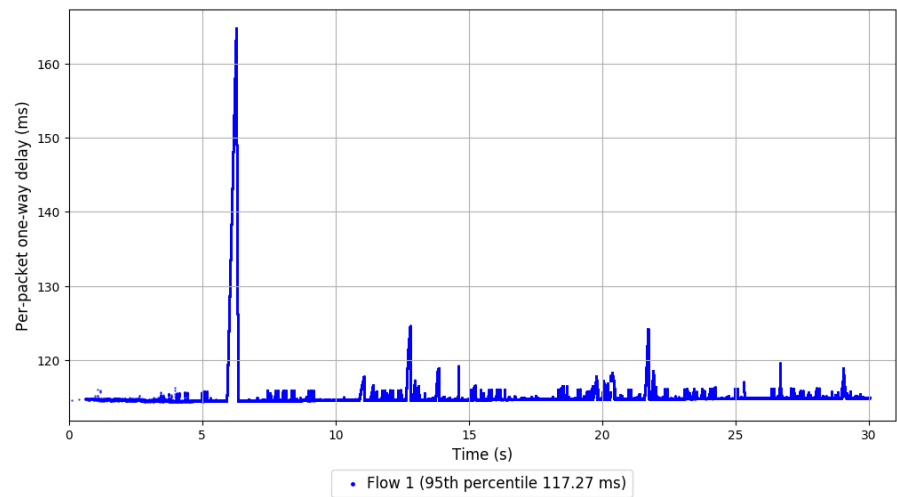
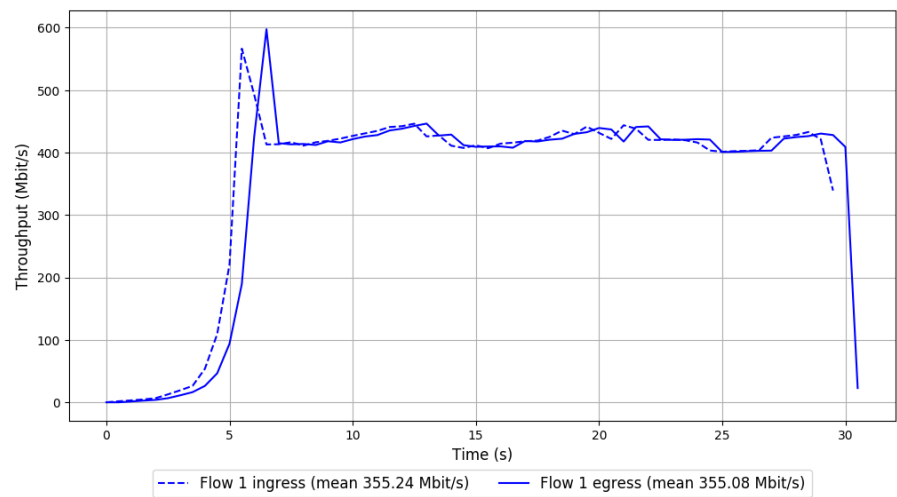
-- Flow 1:

Average throughput: 355.08 Mbit/s

95th percentile per-packet one-way delay: 117.274 ms

Loss rate: 0.04%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-12-10 22:56:02

End at: 2018-12-10 22:56:32

Local clock offset: -8.907 ms

Remote clock offset: 3.667 ms

Below is generated by plot.py at 2018-12-11 00:26:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 255.14 Mbit/s

95th percentile per-packet one-way delay: 155.279 ms

Loss rate: 0.46%

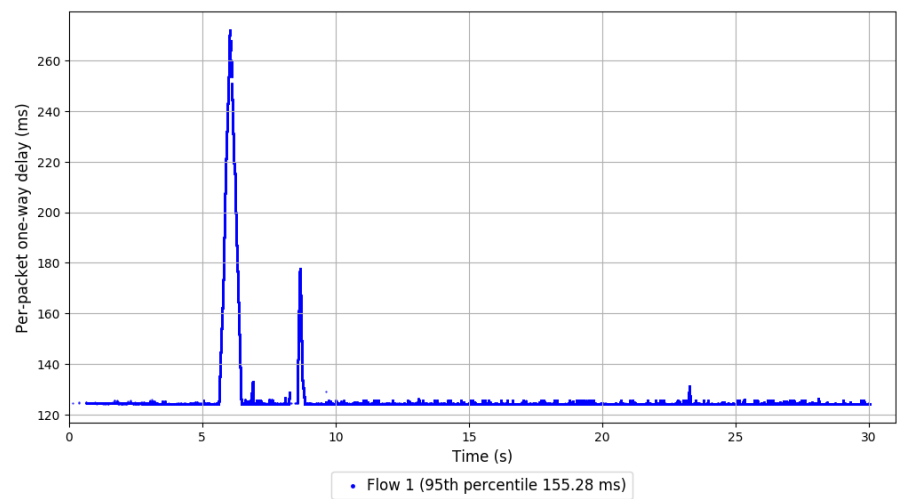
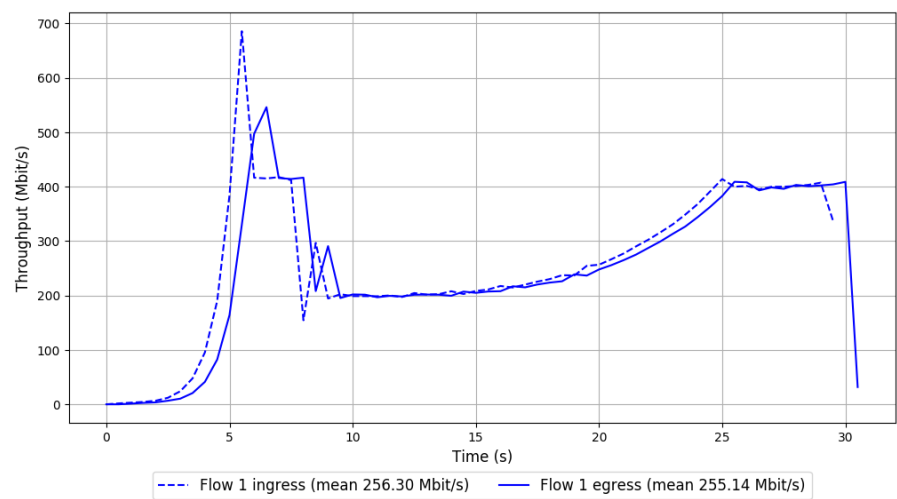
-- Flow 1:

Average throughput: 255.14 Mbit/s

95th percentile per-packet one-way delay: 155.279 ms

Loss rate: 0.46%

Run 3: Report of PCC-Vivace — Data Link

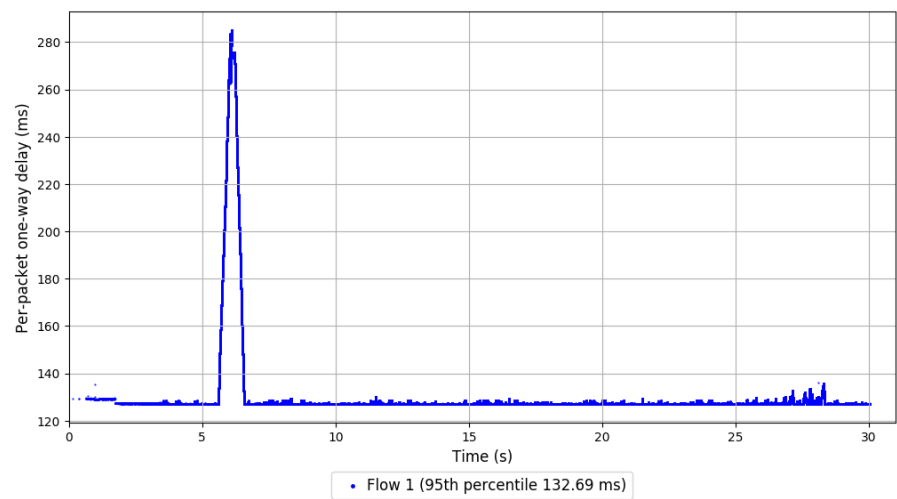
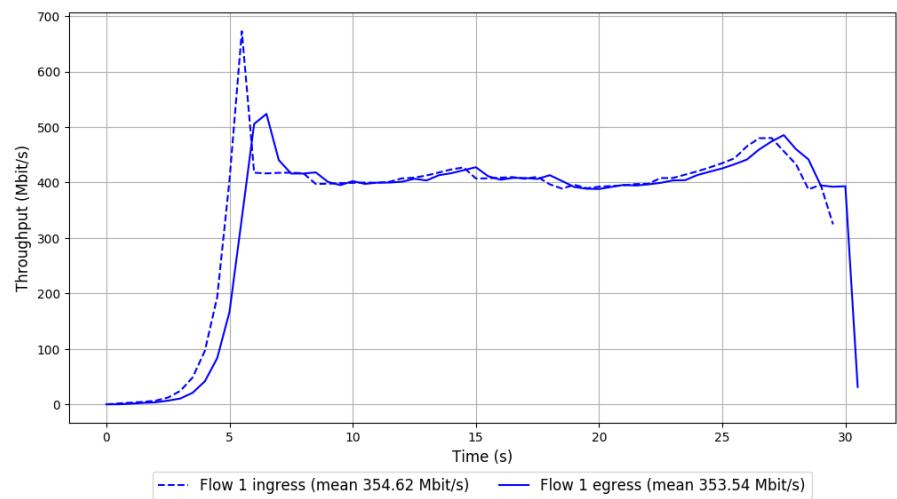


Run 4: Statistics of PCC-Vivace

Start at: 2018-12-10 23:22:39
End at: 2018-12-10 23:23:09
Local clock offset: -8.807 ms
Remote clock offset: -0.038 ms

Below is generated by plot.py at 2018-12-11 00:26:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 353.54 Mbit/s
95th percentile per-packet one-way delay: 132.693 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 353.54 Mbit/s
95th percentile per-packet one-way delay: 132.693 ms
Loss rate: 0.31%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-12-10 23:49:21

End at: 2018-12-10 23:49:51

Local clock offset: 3.463 ms

Remote clock offset: 2.873 ms

Below is generated by plot.py at 2018-12-11 00:26:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 265.77 Mbit/s

95th percentile per-packet one-way delay: 150.187 ms

Loss rate: 0.47%

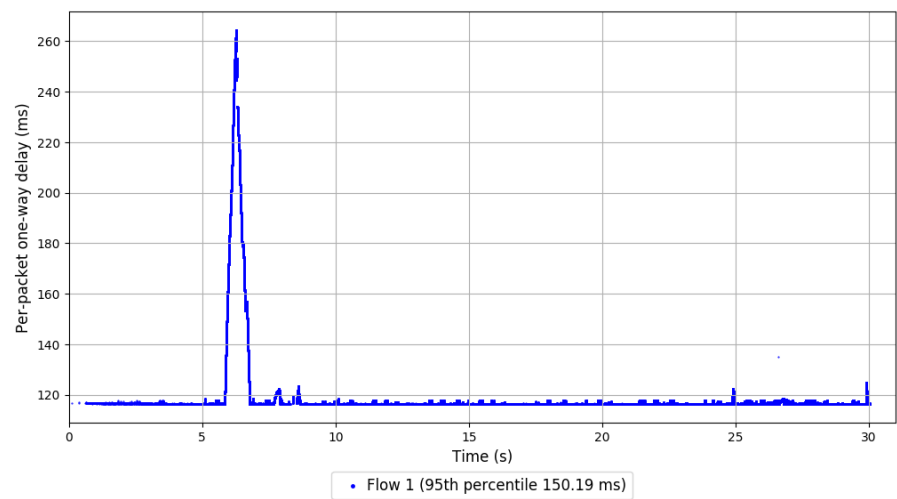
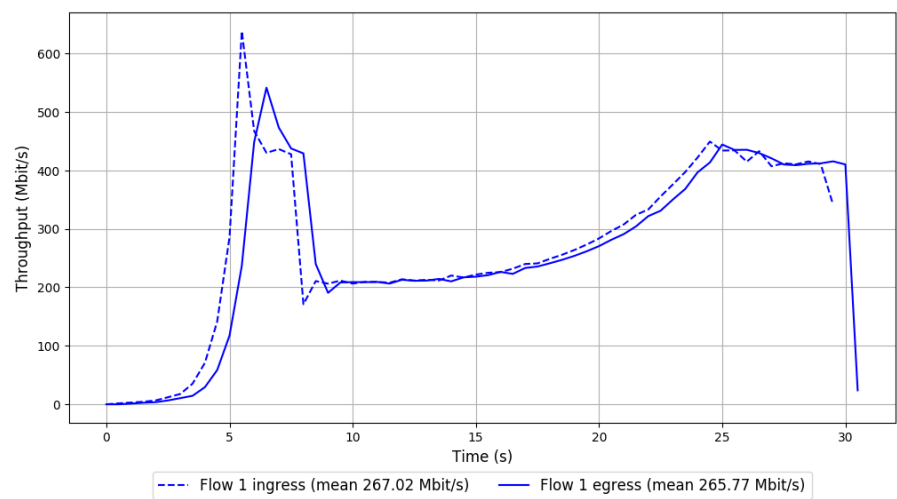
-- Flow 1:

Average throughput: 265.77 Mbit/s

95th percentile per-packet one-way delay: 150.187 ms

Loss rate: 0.47%

Run 5: Report of PCC-Vivace — Data Link

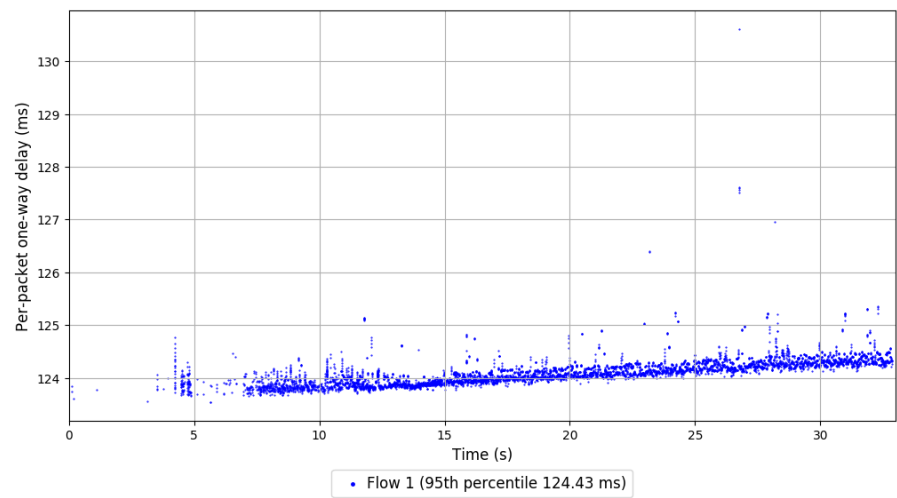
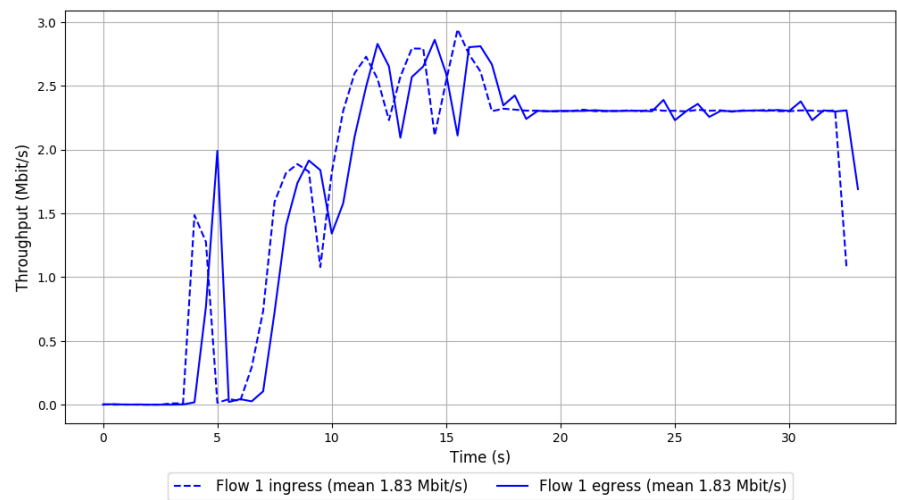


```
Run 1: Statistics of WebRTC media

Start at: 2018-12-10 21:59:48
End at: 2018-12-10 22:00:18
Local clock offset: -19.63 ms
Remote clock offset: 2.43 ms

# Below is generated by plot.py at 2018-12-11 00:26:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 124.434 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 124.434 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

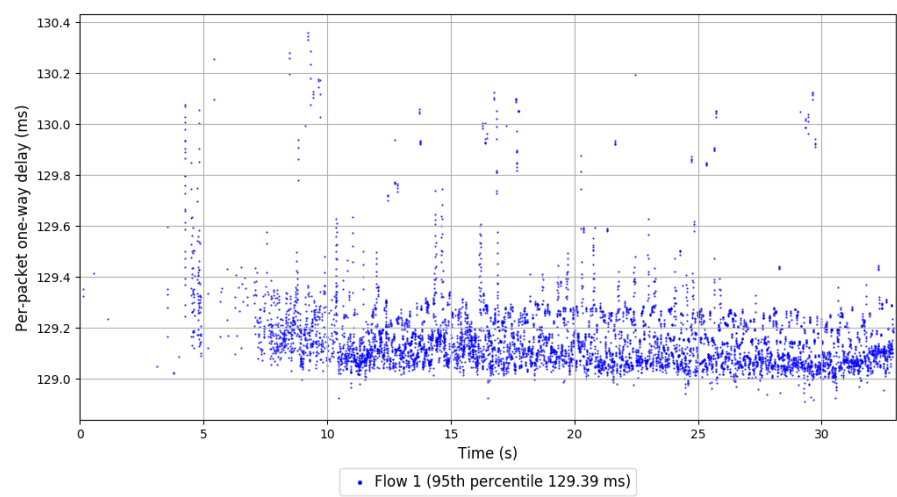
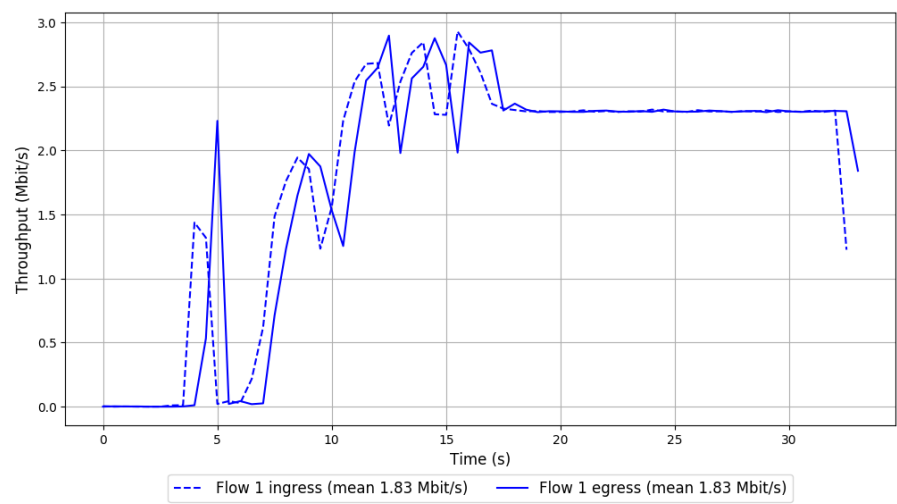


Run 2: Statistics of WebRTC media

Start at: 2018-12-10 22:26:28
End at: 2018-12-10 22:26:58
Local clock offset: -18.097 ms
Remote clock offset: 4.316 ms

Below is generated by plot.py at 2018-12-11 00:26:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 129.394 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 129.394 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

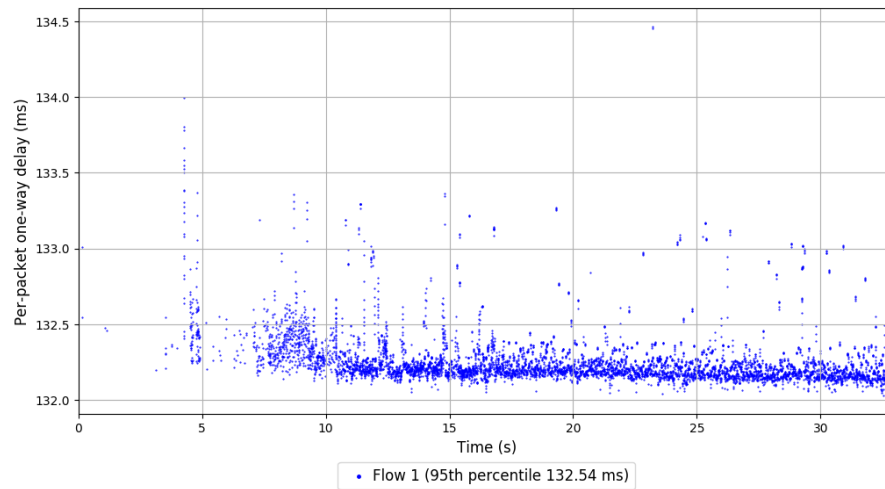
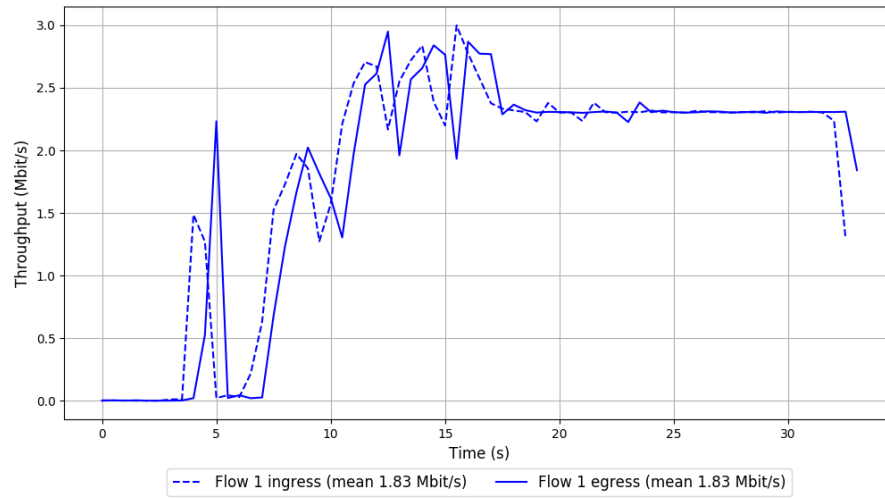


Run 3: Statistics of WebRTC media

Start at: 2018-12-10 22:53:16
End at: 2018-12-10 22:53:46
Local clock offset: -16.652 ms
Remote clock offset: 3.586 ms

Below is generated by plot.py at 2018-12-11 00:26:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 132.545 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 132.545 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-12-10 23:19:52

End at: 2018-12-10 23:20:22

Local clock offset: -8.617 ms

Remote clock offset: 0.157 ms

Below is generated by plot.py at 2018-12-11 00:26:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 129.868 ms

Loss rate: 0.03%

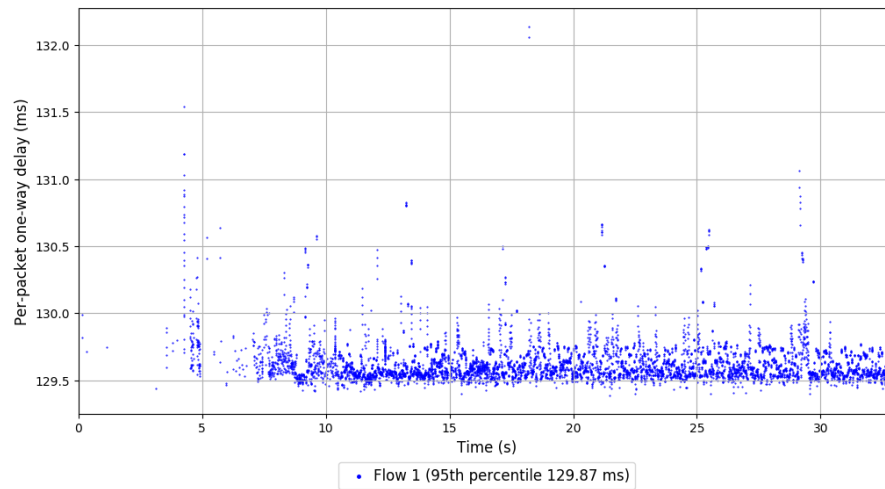
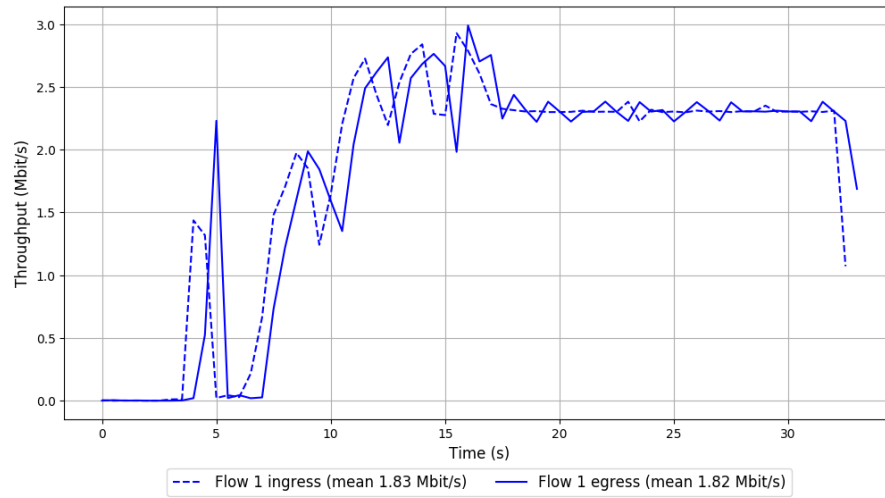
-- Flow 1:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 129.868 ms

Loss rate: 0.03%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-12-10 23:46:35

End at: 2018-12-10 23:47:05

Local clock offset: -5.541 ms

Remote clock offset: 2.675 ms

Below is generated by plot.py at 2018-12-11 00:26:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 129.219 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 129.219 ms

Loss rate: 0.04%

Run 5: Report of WebRTC media — Data Link

