

Pantheon Report

Generated at 2018-12-02 02:22:25 (UTC).

Data path: AWS Korea on `ens5` (*local*) → China 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 `ntp.nict.jp` and have been applied to correct the timestamps in logs.

System info:

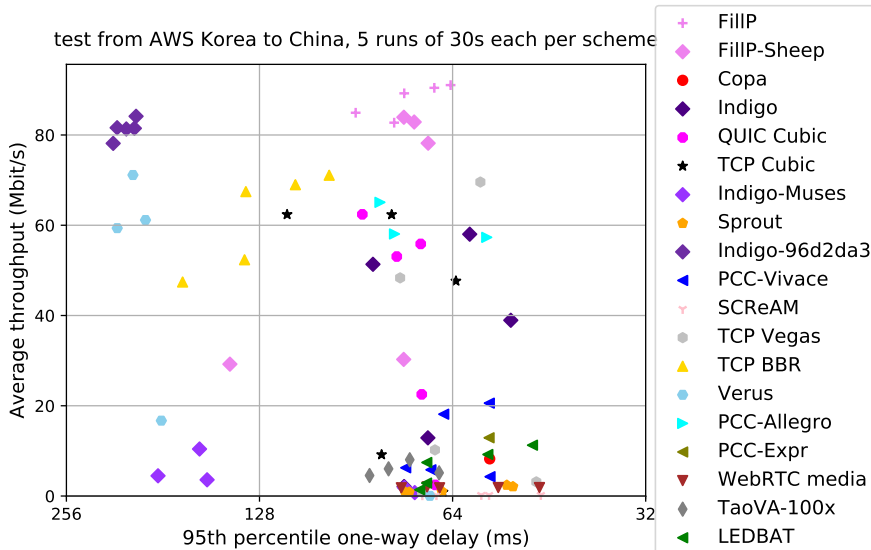
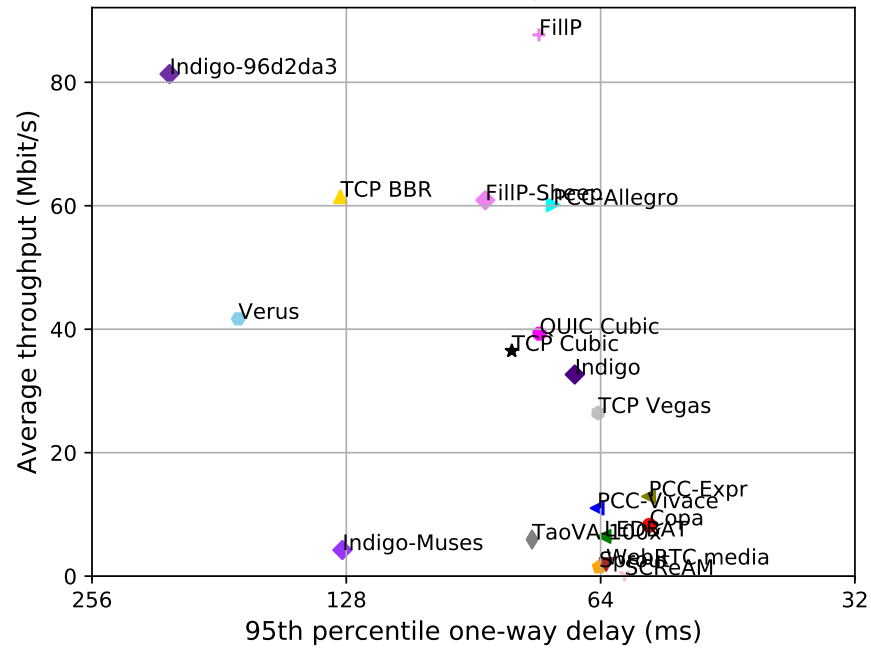
```
Linux 4.15.0-1027-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
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 Korea to China, 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	61.46	130.07	13.72
Copa	1	8.24	56.02	5.92
TCP Cubic	5	36.49	81.53	1.17
FillP	5	87.68	75.70	0.90
FillP-Sheep	5	60.90	87.64	1.76
Indigo	5	32.66	68.68	0.79
Indigo-96d2da3	5	81.34	207.24	29.02
LEDBAT	5	6.43	63.39	0.19
Indigo-Muses	5	4.23	129.38	3.10
PCC-Allegro	3	60.16	72.83	2.97
PCC-Expr	1	12.91	56.15	16.46
QUIC Cubic	5	39.27	75.61	0.29
SCReAM	5	0.20	59.93	0.03
Sprout	5	1.46	64.28	0.03
TaoVA-100x	4	5.94	77.14	6.86
TCP Vegas	5	26.43	64.44	0.06
Verus	5	41.68	171.83	6.26
PCC-Vivace	5	11.01	64.62	0.17
WebRTC media	5	1.88	63.06	0.12

Run 1: Statistics of TCP BBR

Start at: 2018-12-02 00:33:00

End at: 2018-12-02 00:33:30

Local clock offset: 1.313 ms

Remote clock offset: 4.17 ms

Below is generated by plot.py at 2018-12-02 02:17:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.42 Mbit/s

95th percentile per-packet one-way delay: 168.689 ms

Loss rate: 23.90%

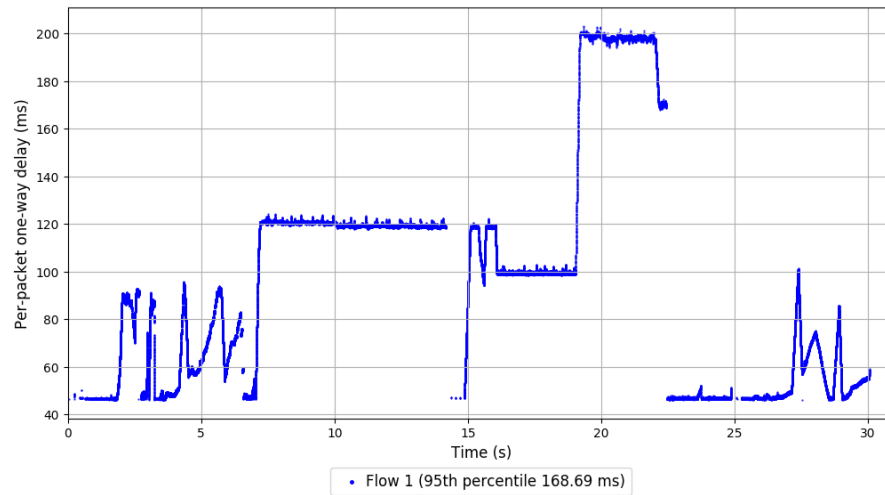
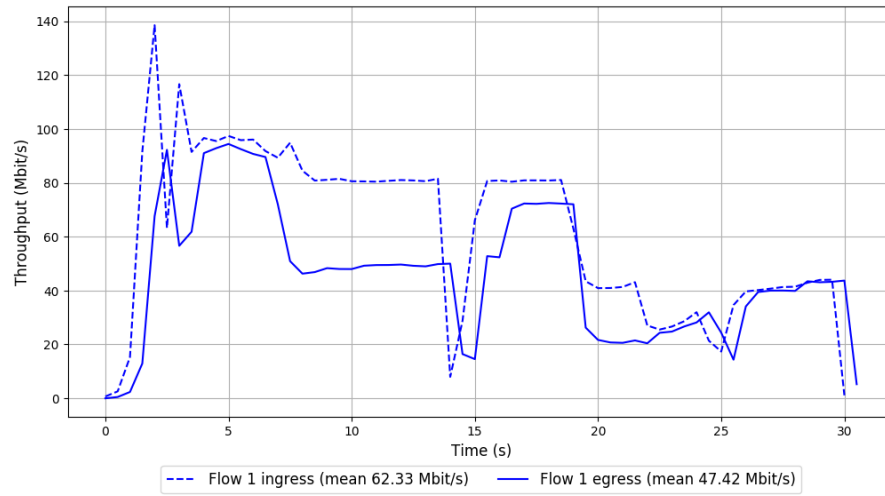
-- Flow 1:

Average throughput: 47.42 Mbit/s

95th percentile per-packet one-way delay: 168.689 ms

Loss rate: 23.90%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-12-02 00:56:30

End at: 2018-12-02 00:57:00

Local clock offset: 0.228 ms

Remote clock offset: 8.099 ms

Below is generated by plot.py at 2018-12-02 02:18:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 71.09 Mbit/s

95th percentile per-packet one-way delay: 99.662 ms

Loss rate: 8.08%

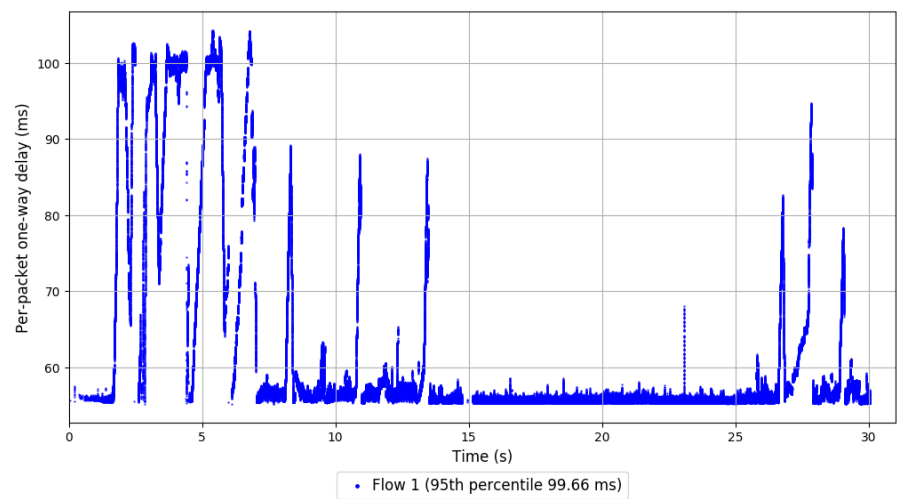
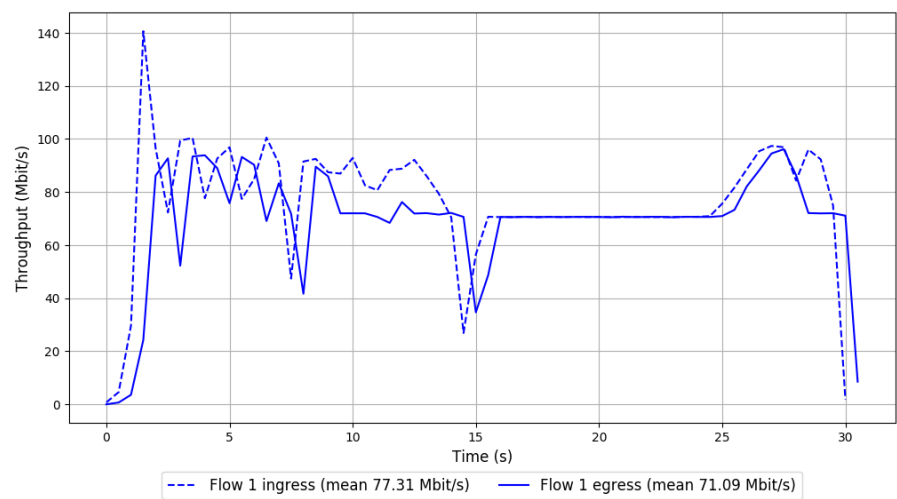
-- Flow 1:

Average throughput: 71.09 Mbit/s

95th percentile per-packet one-way delay: 99.662 ms

Loss rate: 8.08%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-12-02 01:19:59

End at: 2018-12-02 01:20:29

Local clock offset: -1.448 ms

Remote clock offset: 4.609 ms

Below is generated by plot.py at 2018-12-02 02:18:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 52.35 Mbit/s

95th percentile per-packet one-way delay: 135.061 ms

Loss rate: 7.99%

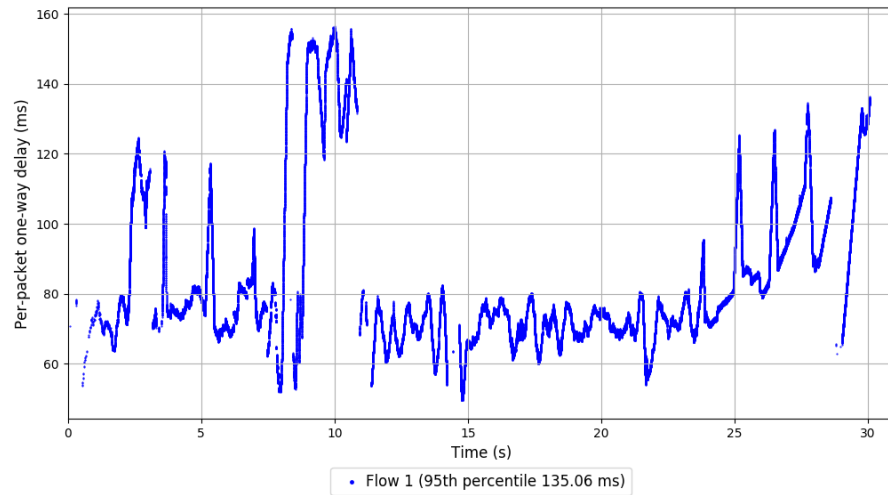
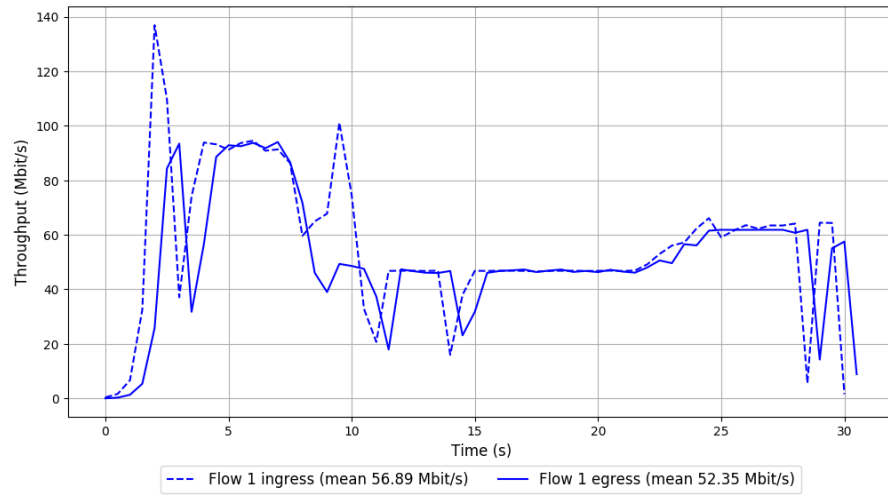
-- Flow 1:

Average throughput: 52.35 Mbit/s

95th percentile per-packet one-way delay: 135.061 ms

Loss rate: 7.99%

Run 3: Report of TCP BBR — Data Link

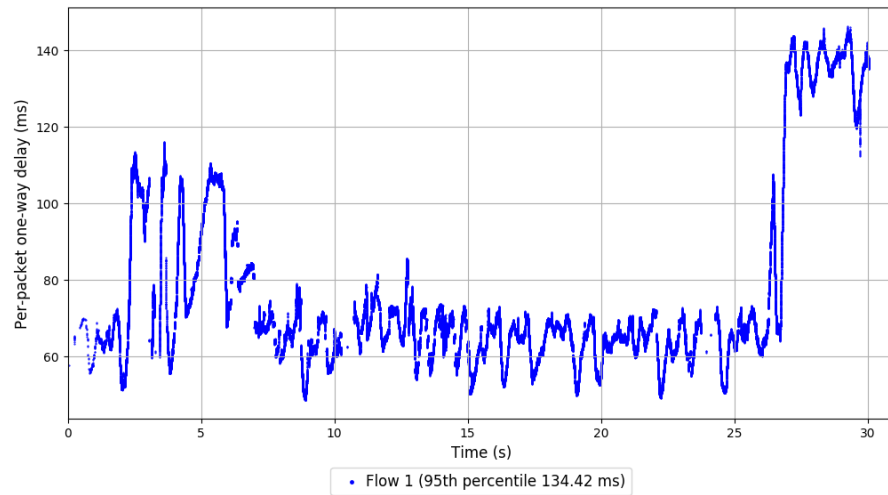
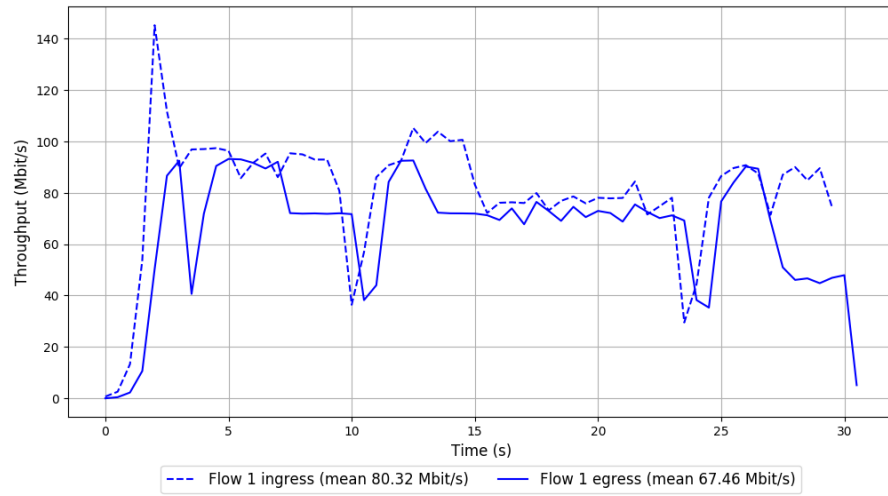


Run 4: Statistics of TCP BBR

Start at: 2018-12-02 01:43:40
End at: 2018-12-02 01:44:10
Local clock offset: -0.508 ms
Remote clock offset: 18.717 ms

Below is generated by plot.py at 2018-12-02 02:18:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 134.420 ms
Loss rate: 15.79%
-- Flow 1:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 134.420 ms
Loss rate: 15.79%

Run 4: Report of TCP BBR — Data Link

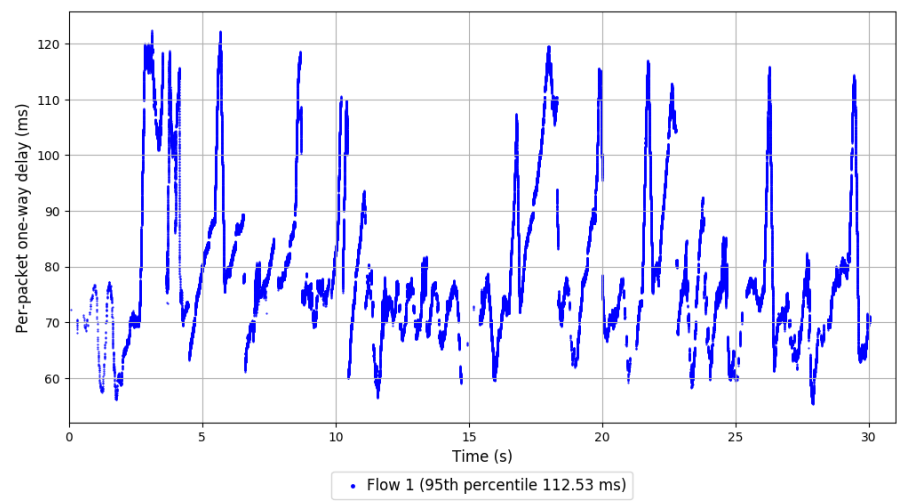
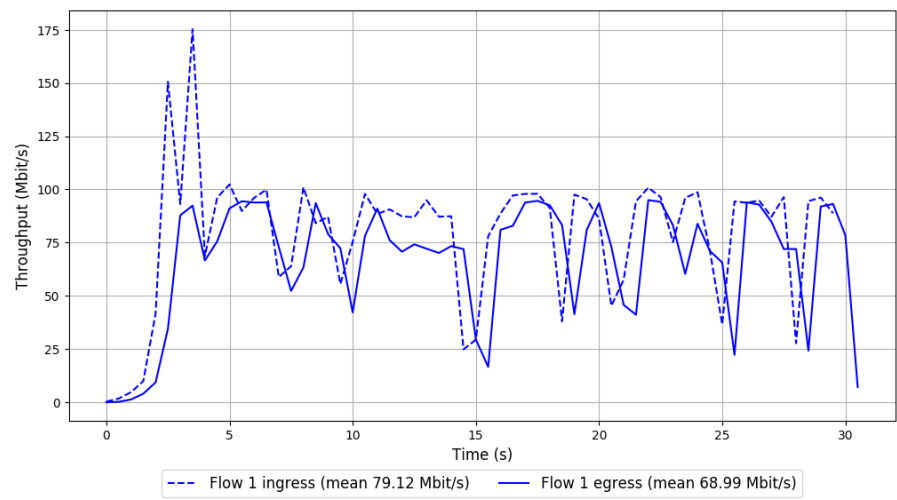


Run 5: Statistics of TCP BBR

Start at: 2018-12-02 02:06:56
End at: 2018-12-02 02:07:26
Local clock offset: -2.949 ms
Remote clock offset: 32.735 ms

Below is generated by plot.py at 2018-12-02 02:18:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 68.99 Mbit/s
95th percentile per-packet one-way delay: 112.527 ms
Loss rate: 12.86%
-- Flow 1:
Average throughput: 68.99 Mbit/s
95th percentile per-packet one-way delay: 112.527 ms
Loss rate: 12.86%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-12-02 00:22:03

End at: 2018-12-02 00:22:33

Local clock offset: -3.526 ms

Remote clock offset: 0.531 ms

Below is generated by plot.py at 2018-12-02 02:18:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.24 Mbit/s

95th percentile per-packet one-way delay: 56.020 ms

Loss rate: 5.92%

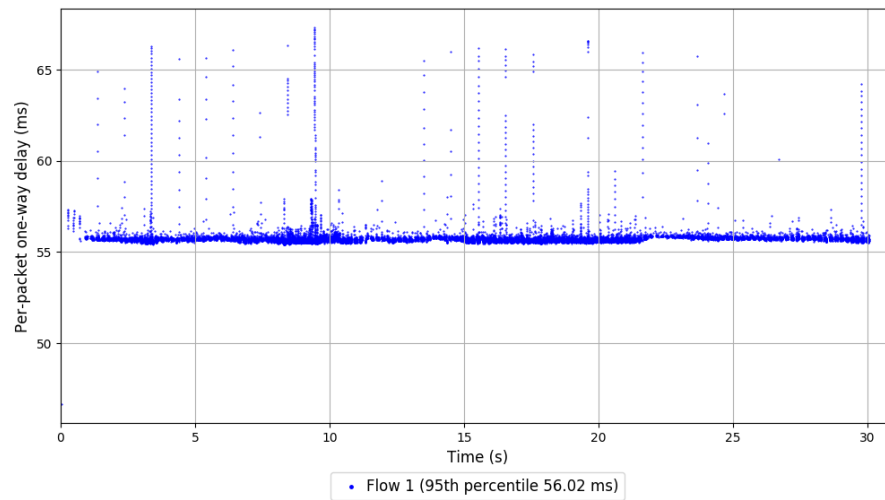
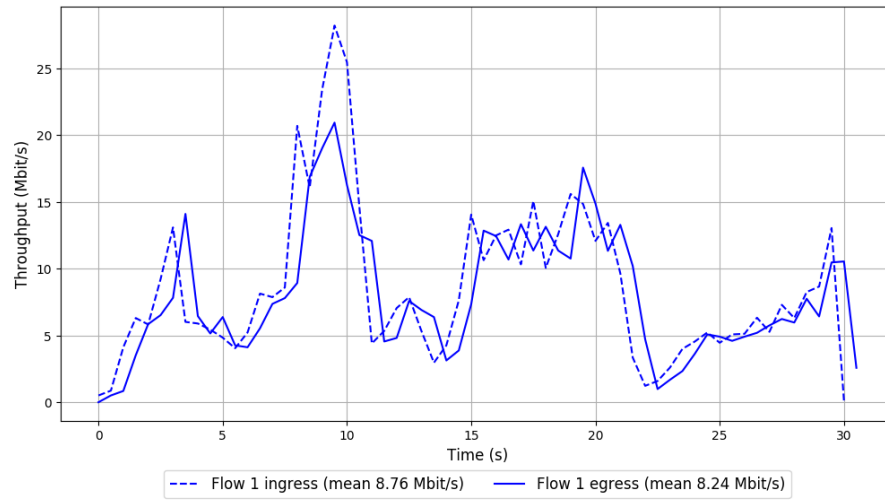
-- Flow 1:

Average throughput: 8.24 Mbit/s

95th percentile per-packet one-way delay: 56.020 ms

Loss rate: 5.92%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

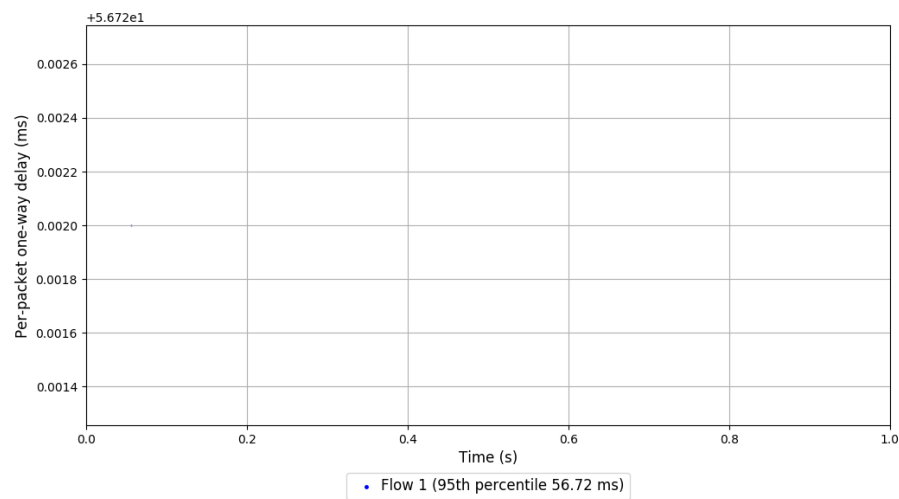
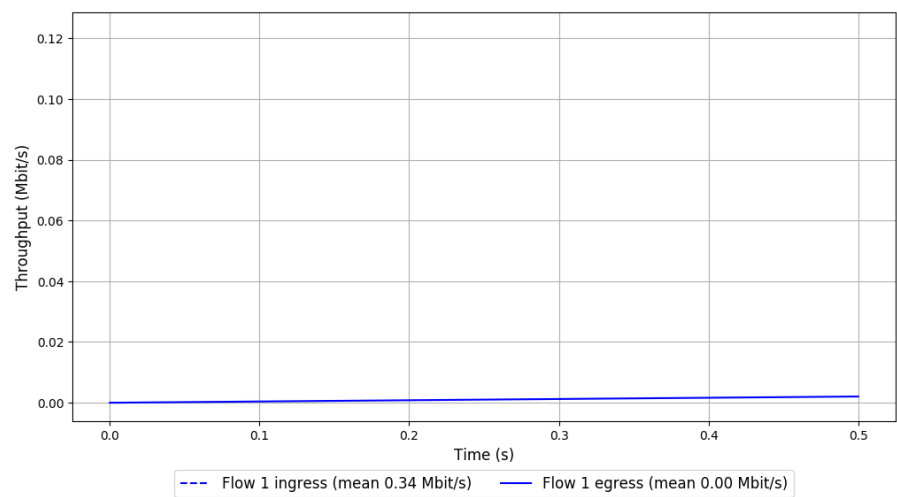
Start at: 2018-12-02 00:45:26

End at: 2018-12-02 00:45:56

Local clock offset: 3.693 ms

Remote clock offset: 7.0 ms

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

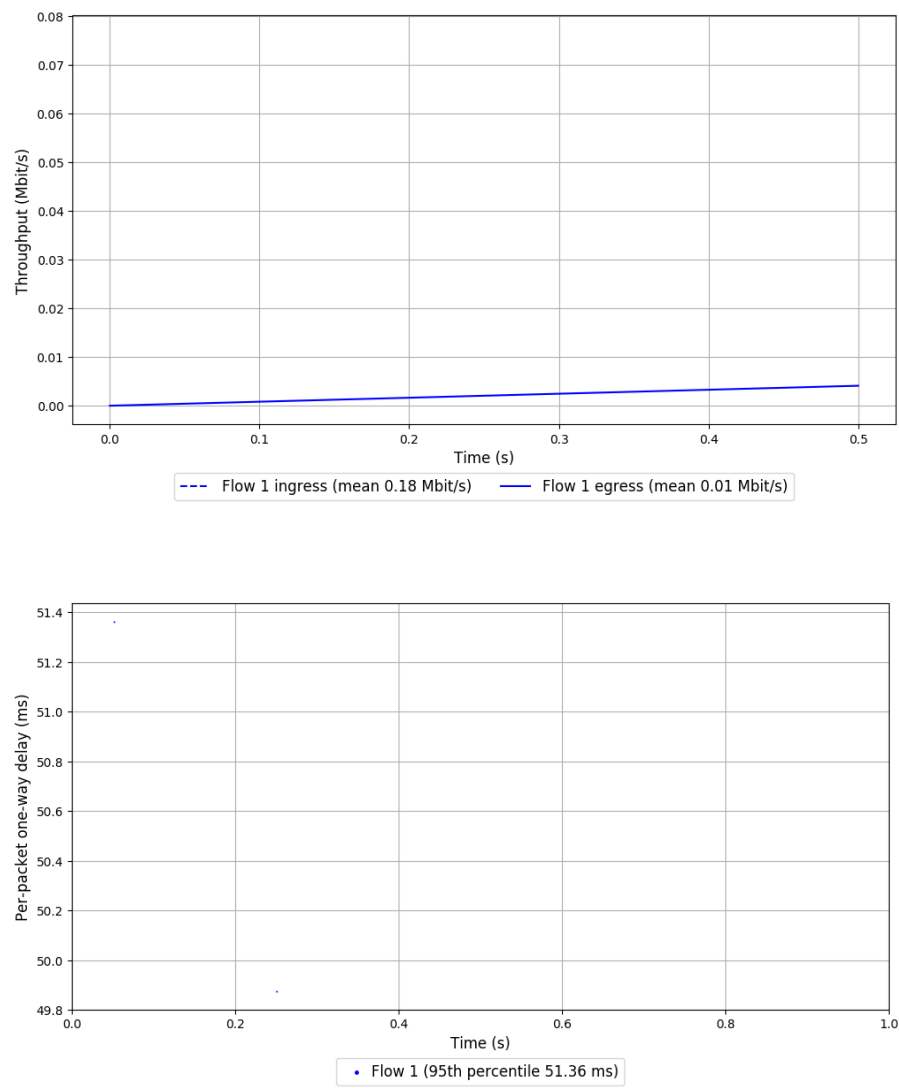
Start at: 2018-12-02 01:08:56

End at: 2018-12-02 01:09:26

Local clock offset: -1.449 ms

Remote clock offset: 9.491 ms

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

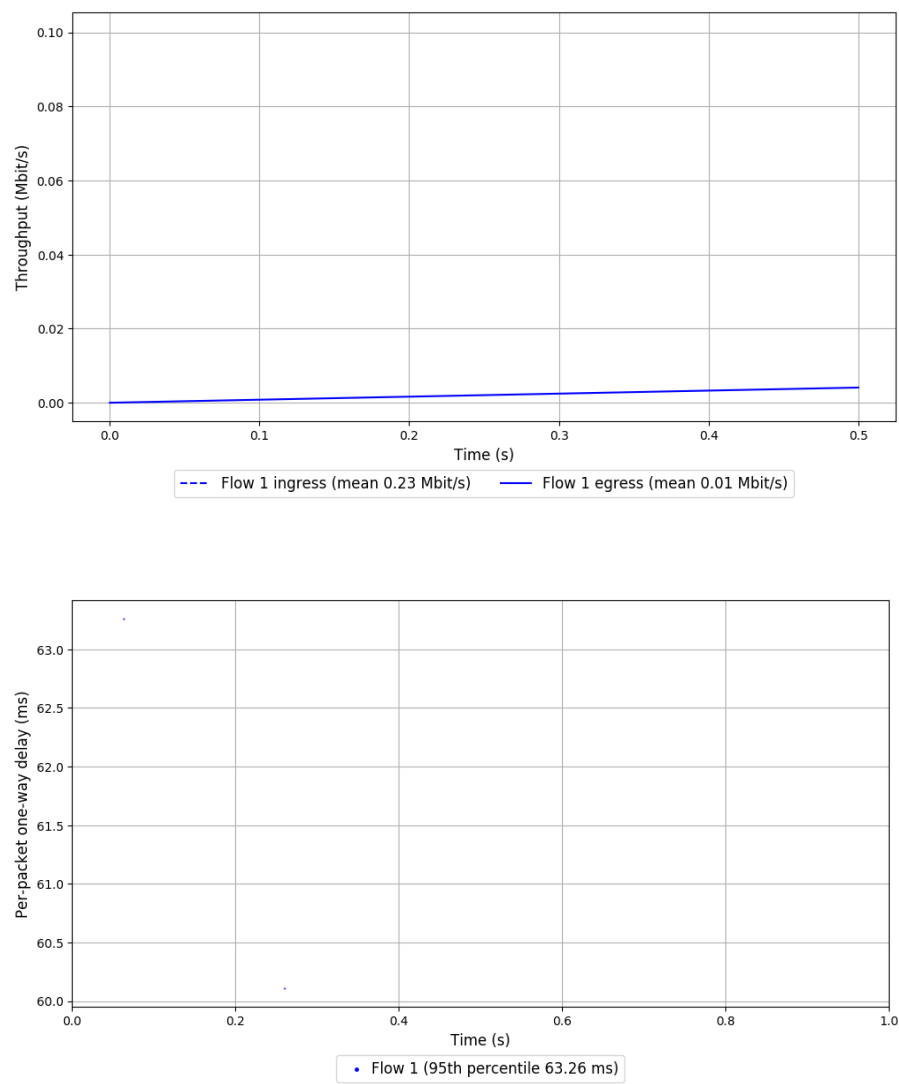
Start at: 2018-12-02 01:32:31

End at: 2018-12-02 01:33:01

Local clock offset: -0.766 ms

Remote clock offset: 19.104 ms

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

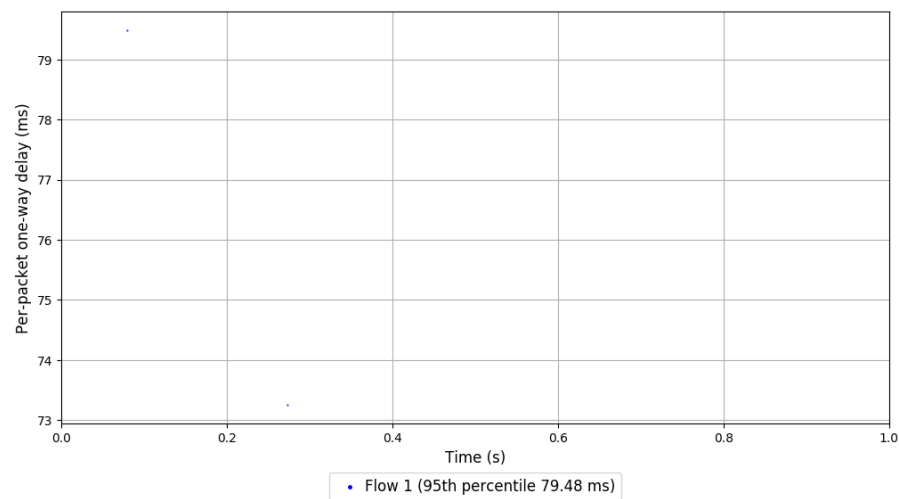
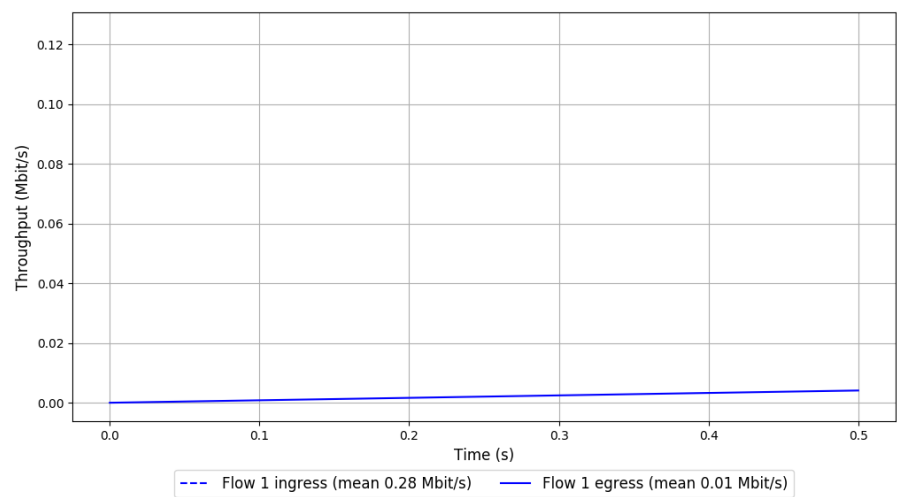
Start at: 2018-12-02 01:55:53

End at: 2018-12-02 01:56:23

Local clock offset: -1.945 ms

Remote clock offset: 28.455 ms

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-12-02 00:40:25

End at: 2018-12-02 00:40:55

Local clock offset: 2.967 ms

Remote clock offset: 6.446 ms

Below is generated by plot.py at 2018-12-02 02:18:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.65 Mbit/s

95th percentile per-packet one-way delay: 63.242 ms

Loss rate: 0.50%

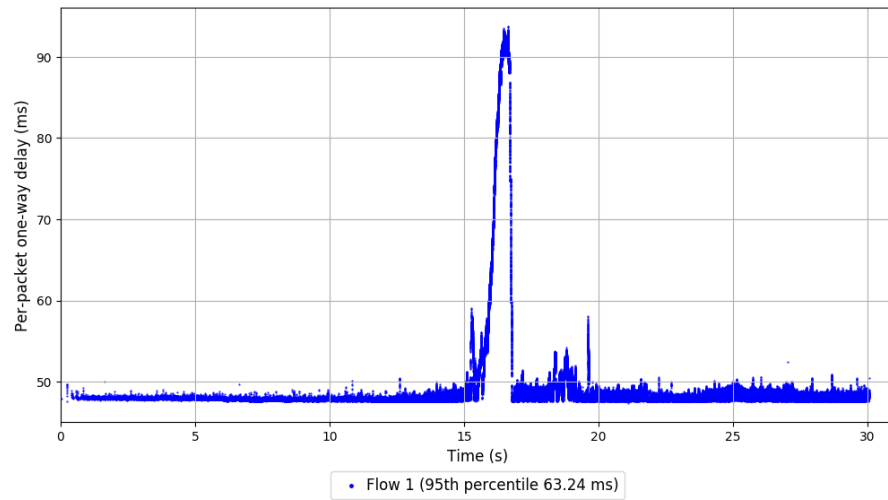
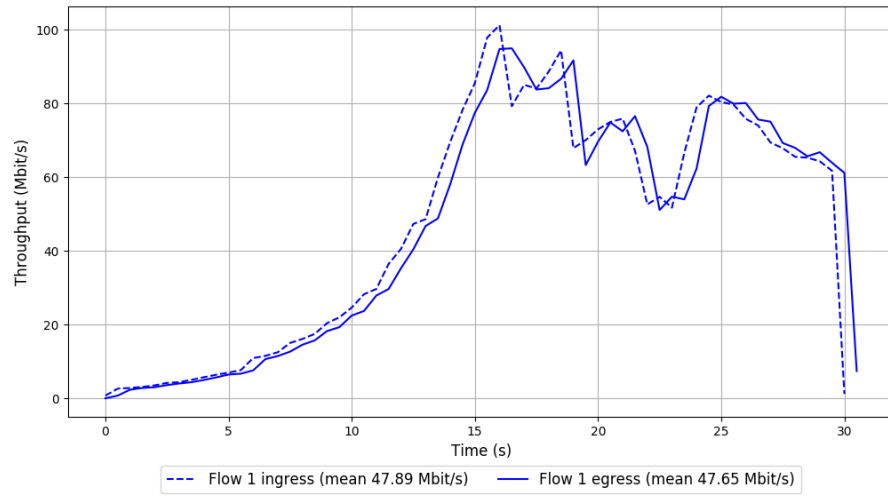
-- Flow 1:

Average throughput: 47.65 Mbit/s

95th percentile per-packet one-way delay: 63.242 ms

Loss rate: 0.50%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-12-02 01:03:56

End at: 2018-12-02 01:04:26

Local clock offset: -1.171 ms

Remote clock offset: 8.598 ms

Below is generated by plot.py at 2018-12-02 02:18:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 62.38 Mbit/s

95th percentile per-packet one-way delay: 115.926 ms

Loss rate: 2.73%

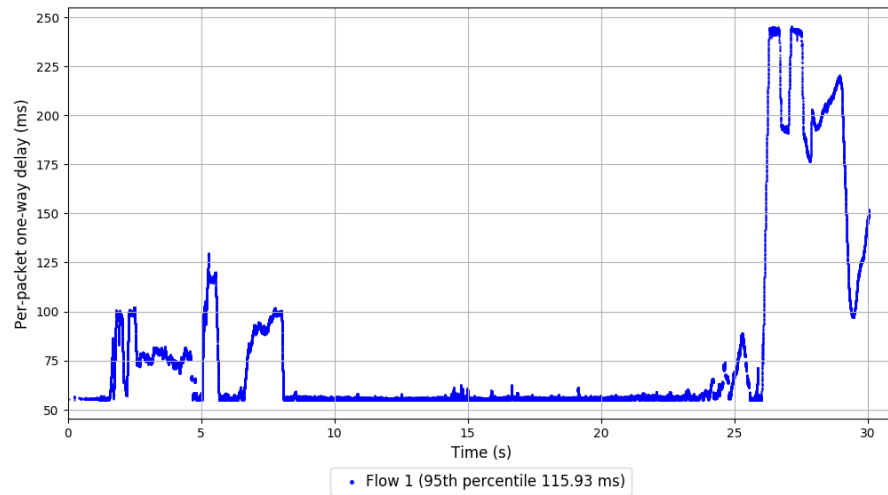
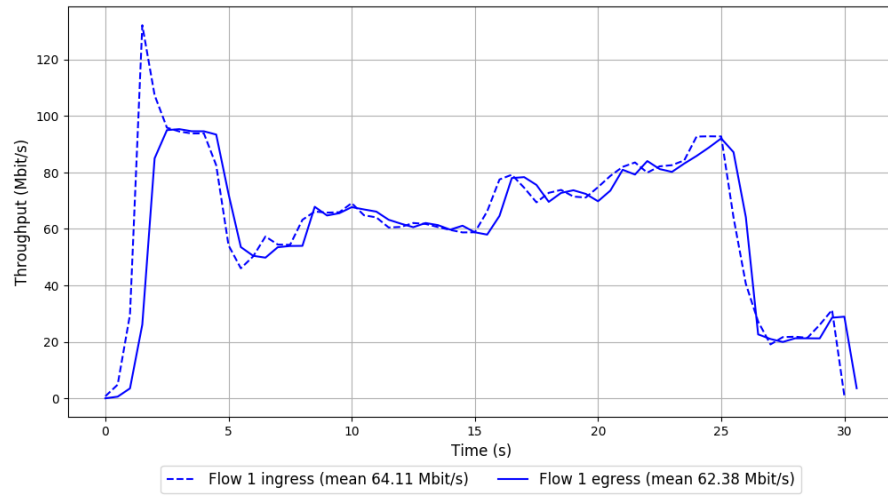
-- Flow 1:

Average throughput: 62.38 Mbit/s

95th percentile per-packet one-way delay: 115.926 ms

Loss rate: 2.73%

Run 2: Report of TCP Cubic — Data Link

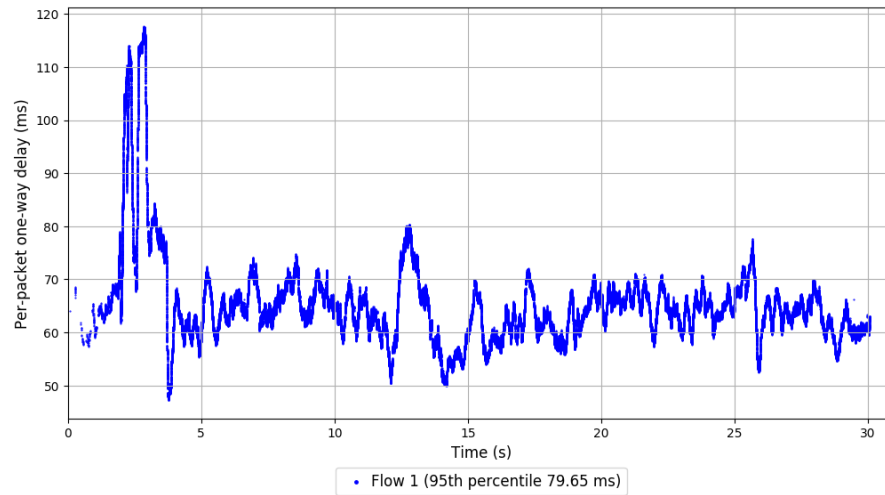
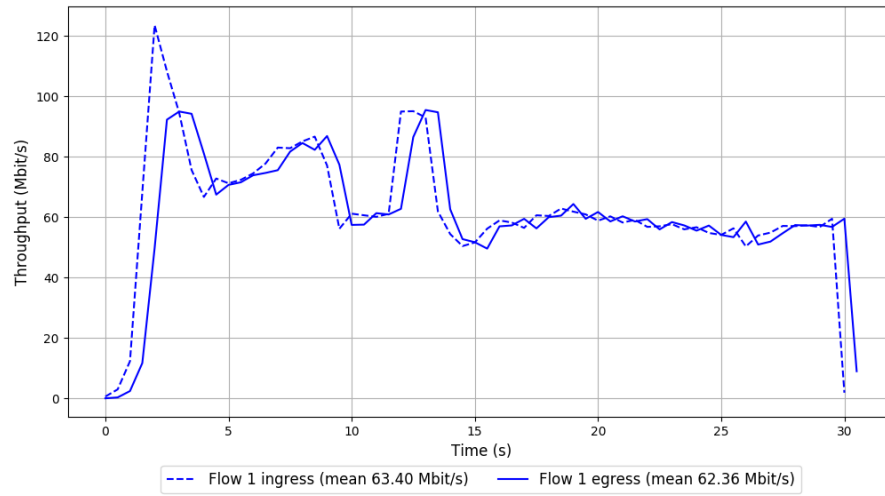


Run 3: Statistics of TCP Cubic

Start at: 2018-12-02 01:27:29
End at: 2018-12-02 01:27:59
Local clock offset: -1.034 ms
Remote clock offset: 11.174 ms

Below is generated by plot.py at 2018-12-02 02:18:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 62.36 Mbit/s
95th percentile per-packet one-way delay: 79.649 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 62.36 Mbit/s
95th percentile per-packet one-way delay: 79.649 ms
Loss rate: 1.65%

Run 3: Report of TCP Cubic — Data Link

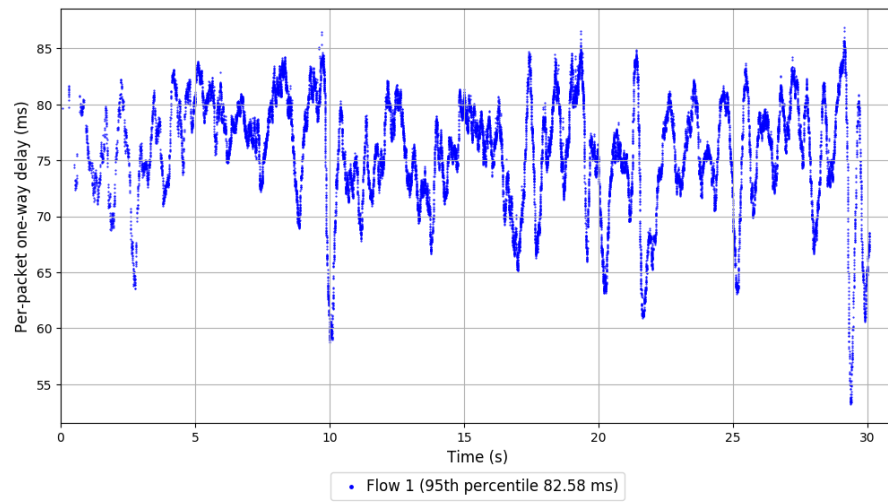
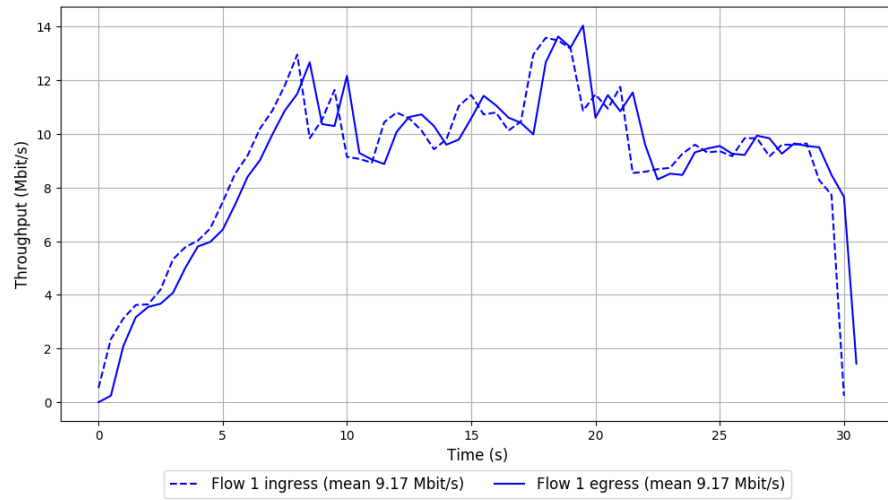


Run 4: Statistics of TCP Cubic

Start at: 2018-12-02 01:51:10
End at: 2018-12-02 01:51:40
Local clock offset: -1.115 ms
Remote clock offset: 26.859 ms

Below is generated by plot.py at 2018-12-02 02:18:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.17 Mbit/s
95th percentile per-packet one-way delay: 82.580 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 9.17 Mbit/s
95th percentile per-packet one-way delay: 82.580 ms
Loss rate: 0.07%

Run 4: Report of TCP Cubic — Data Link

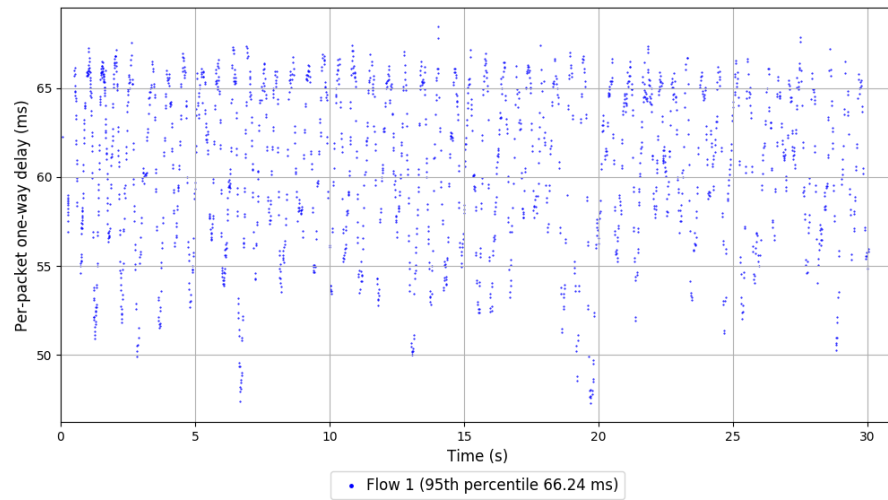
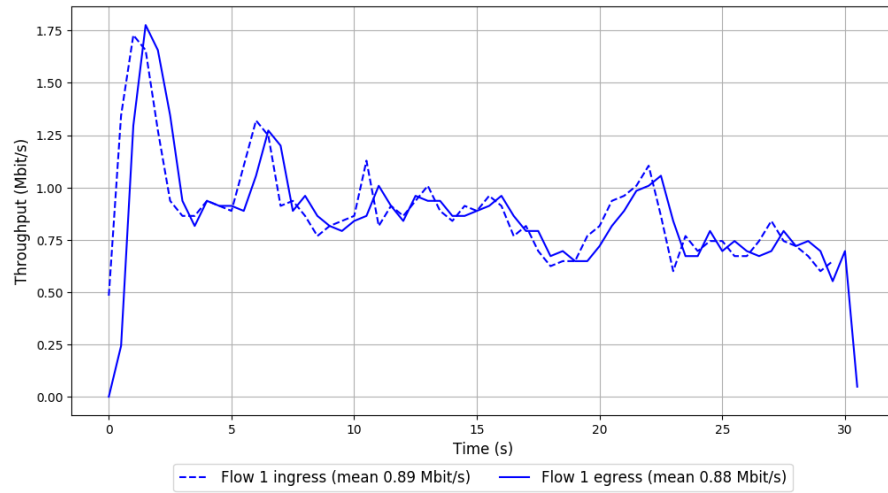


Run 5: Statistics of TCP Cubic

Start at: 2018-12-02 02:14:42
End at: 2018-12-02 02:15:12
Local clock offset: -3.166 ms
Remote clock offset: 40.274 ms

Below is generated by plot.py at 2018-12-02 02:18:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 66.237 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 66.237 ms
Loss rate: 0.90%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-12-02 00:35:29

End at: 2018-12-02 00:35:59

Local clock offset: 1.894 ms

Remote clock offset: 4.525 ms

Below is generated by plot.py at 2018-12-02 02:19:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.06 Mbit/s

95th percentile per-packet one-way delay: 64.461 ms

Loss rate: 1.26%

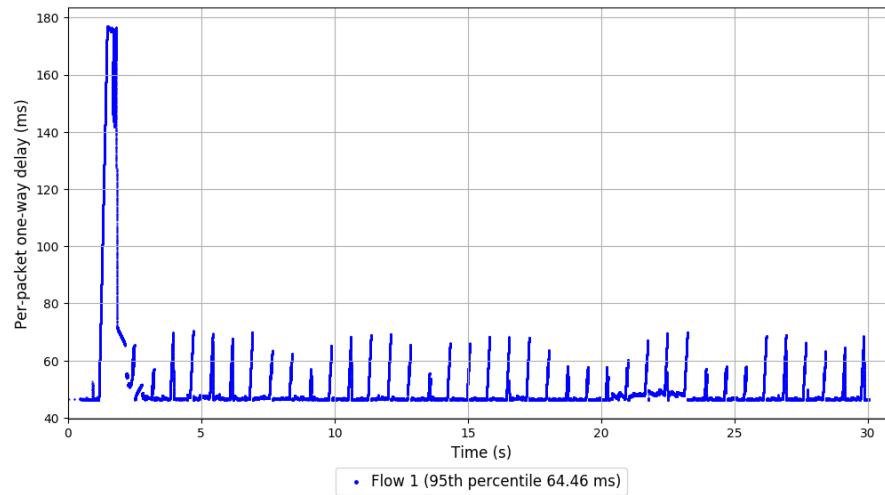
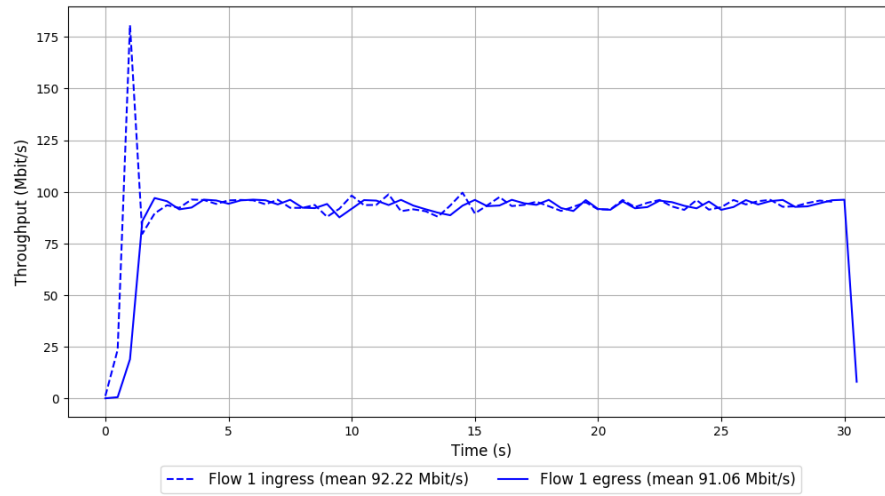
-- Flow 1:

Average throughput: 91.06 Mbit/s

95th percentile per-packet one-way delay: 64.461 ms

Loss rate: 1.26%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-12-02 00:58:59

End at: 2018-12-02 00:59:29

Local clock offset: -0.392 ms

Remote clock offset: 8.73 ms

Below is generated by plot.py at 2018-12-02 02:19:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.45 Mbit/s

95th percentile per-packet one-way delay: 68.339 ms

Loss rate: 1.32%

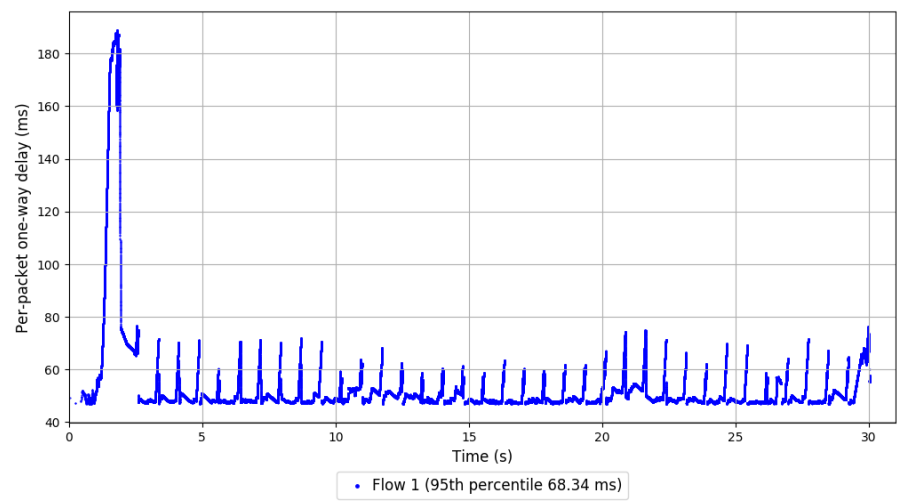
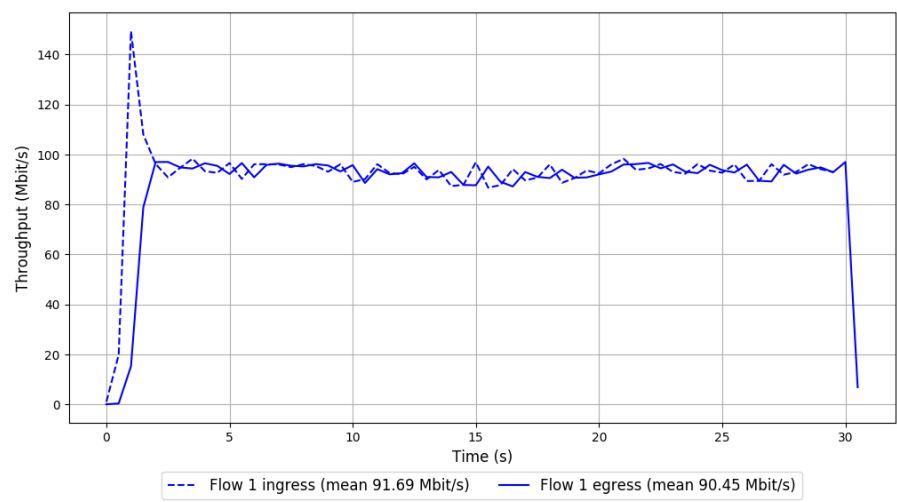
-- Flow 1:

Average throughput: 90.45 Mbit/s

95th percentile per-packet one-way delay: 68.339 ms

Loss rate: 1.32%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-12-02 01:22:36

End at: 2018-12-02 01:23:06

Local clock offset: -1.433 ms

Remote clock offset: 3.846 ms

Below is generated by plot.py at 2018-12-02 02:19:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.23 Mbit/s

95th percentile per-packet one-way delay: 76.134 ms

Loss rate: 1.40%

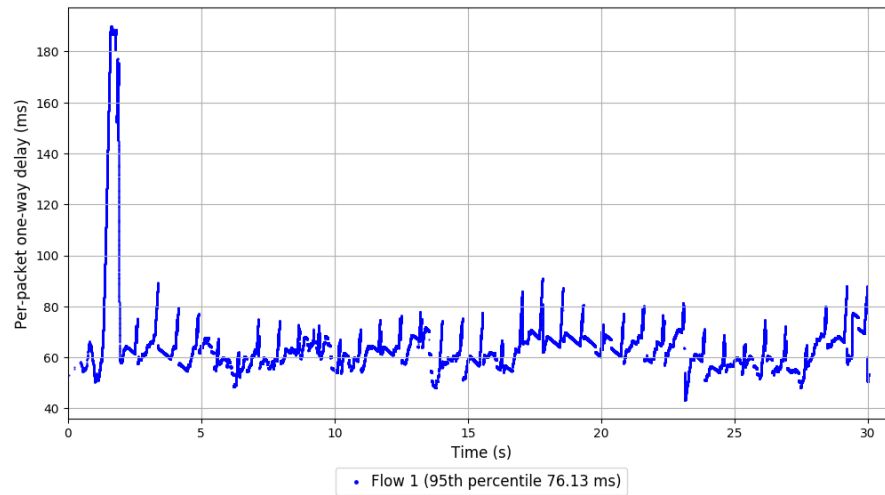
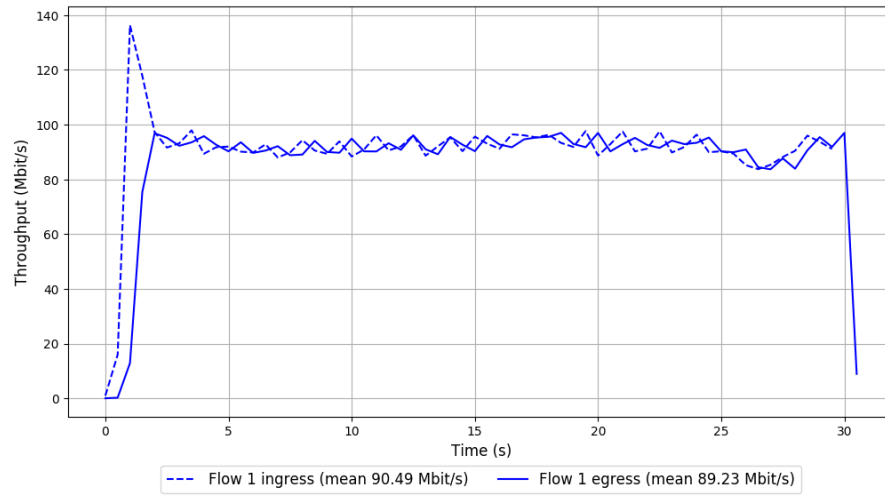
-- Flow 1:

Average throughput: 89.23 Mbit/s

95th percentile per-packet one-way delay: 76.134 ms

Loss rate: 1.40%

Run 3: Report of FillP — Data Link

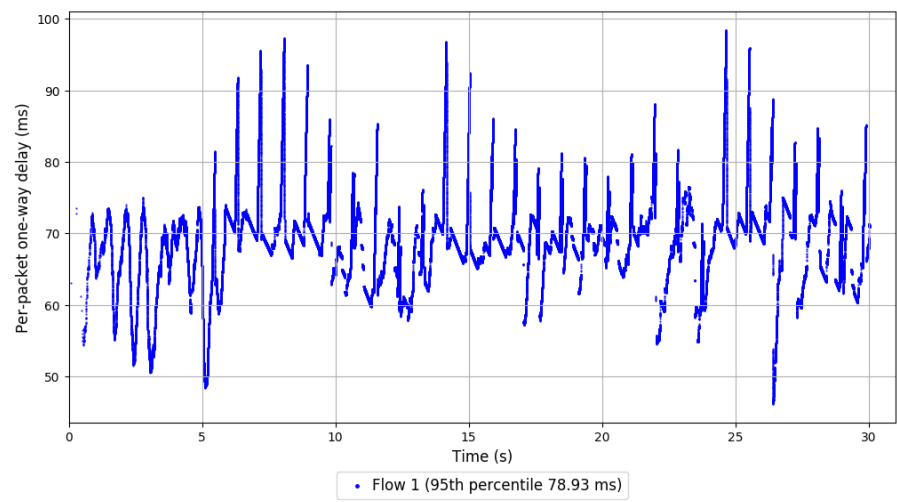
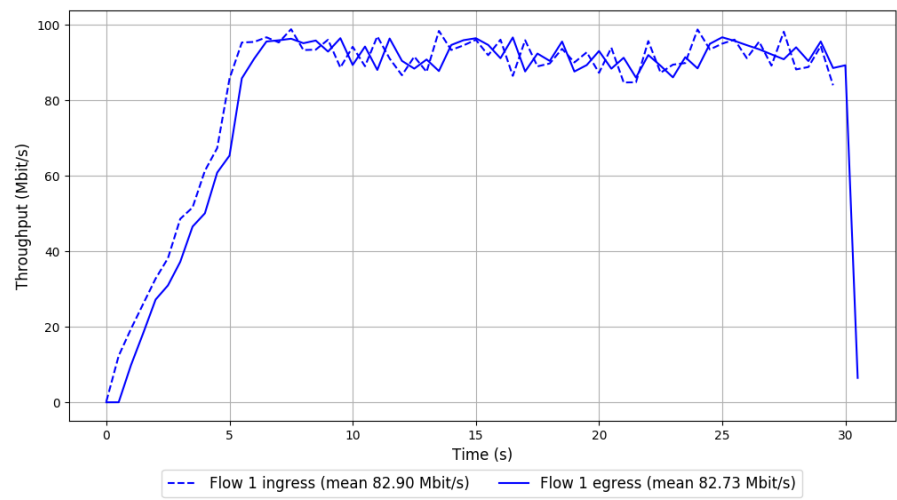


Run 4: Statistics of FillP

Start at: 2018-12-02 01:46:16
End at: 2018-12-02 01:46:46
Local clock offset: -0.606 ms
Remote clock offset: 22.899 ms

Below is generated by plot.py at 2018-12-02 02:19:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 82.73 Mbit/s
95th percentile per-packet one-way delay: 78.930 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 82.73 Mbit/s
95th percentile per-packet one-way delay: 78.930 ms
Loss rate: 0.19%

Run 4: Report of FillP — Data Link

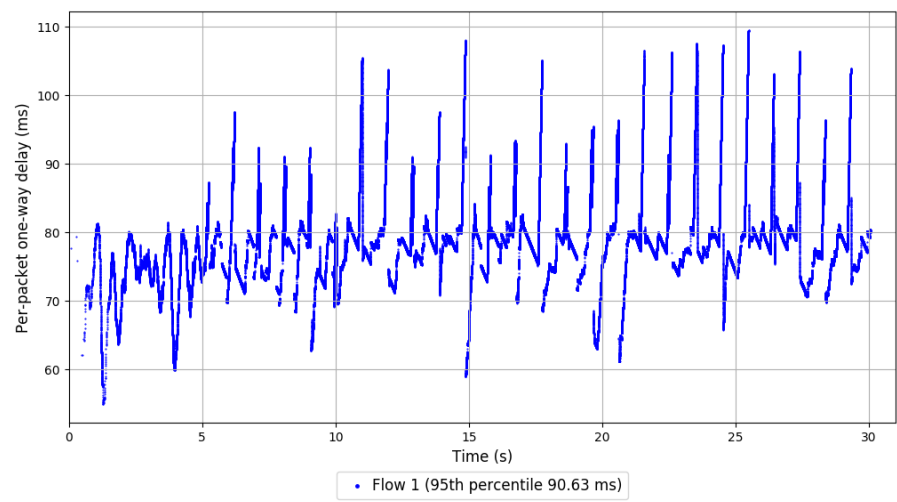
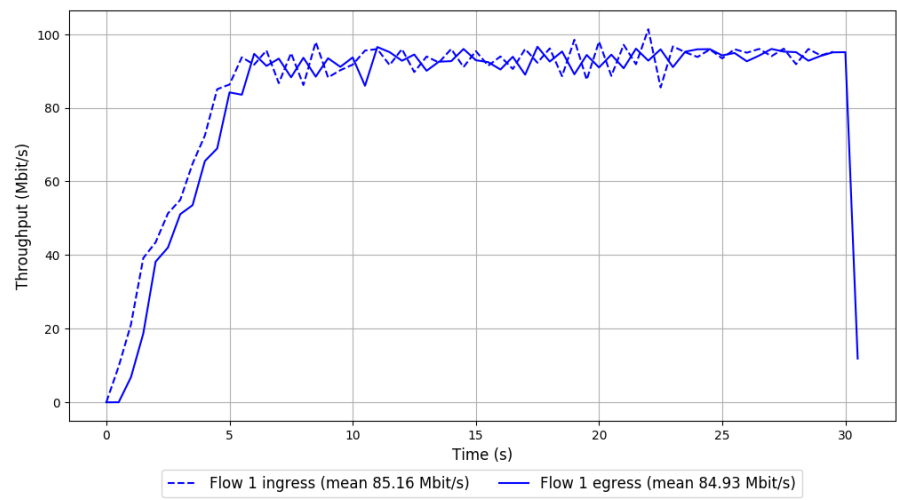


Run 5: Statistics of FillP

Start at: 2018-12-02 02:09:50
End at: 2018-12-02 02:10:20
Local clock offset: -2.926 ms
Remote clock offset: 41.227 ms

Below is generated by plot.py at 2018-12-02 02:19:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 84.93 Mbit/s
95th percentile per-packet one-way delay: 90.631 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 84.93 Mbit/s
95th percentile per-packet one-way delay: 90.631 ms
Loss rate: 0.31%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-12-02 00:34:16

End at: 2018-12-02 00:34:46

Local clock offset: 1.513 ms

Remote clock offset: 4.457 ms

Below is generated by plot.py at 2018-12-02 02:19:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.27 Mbit/s

95th percentile per-packet one-way delay: 76.281 ms

Loss rate: 2.78%

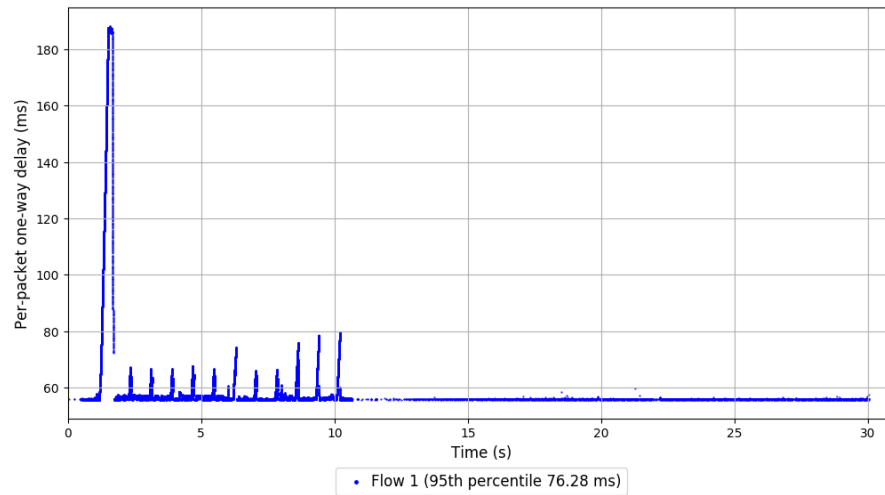
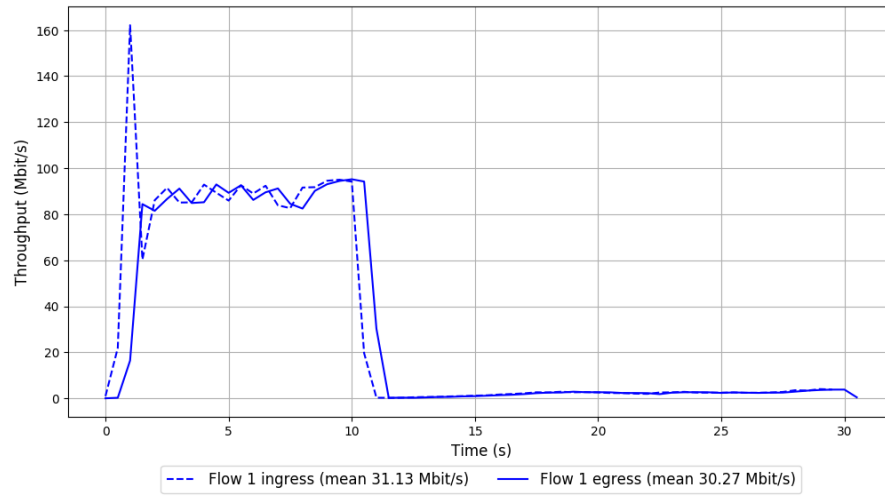
-- Flow 1:

Average throughput: 30.27 Mbit/s

95th percentile per-packet one-way delay: 76.281 ms

Loss rate: 2.78%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-12-02 00:57:47

End at: 2018-12-02 00:58:17

Local clock offset: -0.315 ms

Remote clock offset: 7.939 ms

Below is generated by plot.py at 2018-12-02 02:19:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 29.22 Mbit/s

95th percentile per-packet one-way delay: 142.347 ms

Loss rate: 4.10%

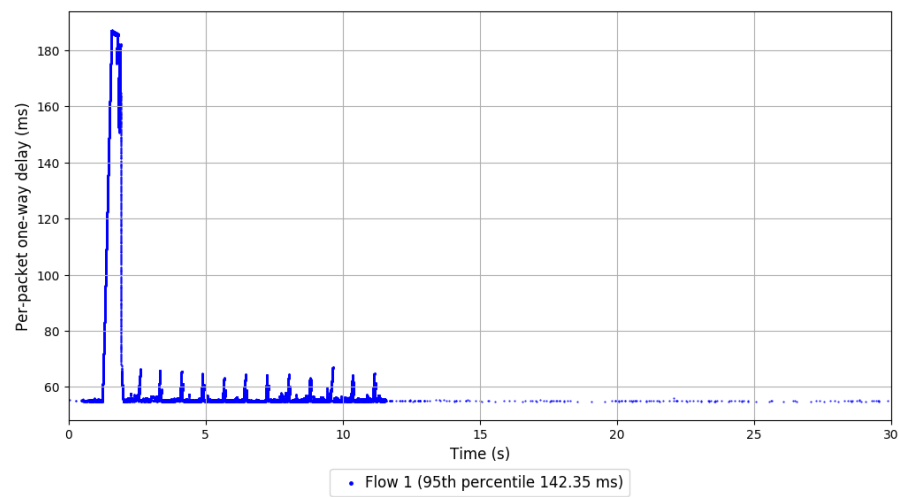
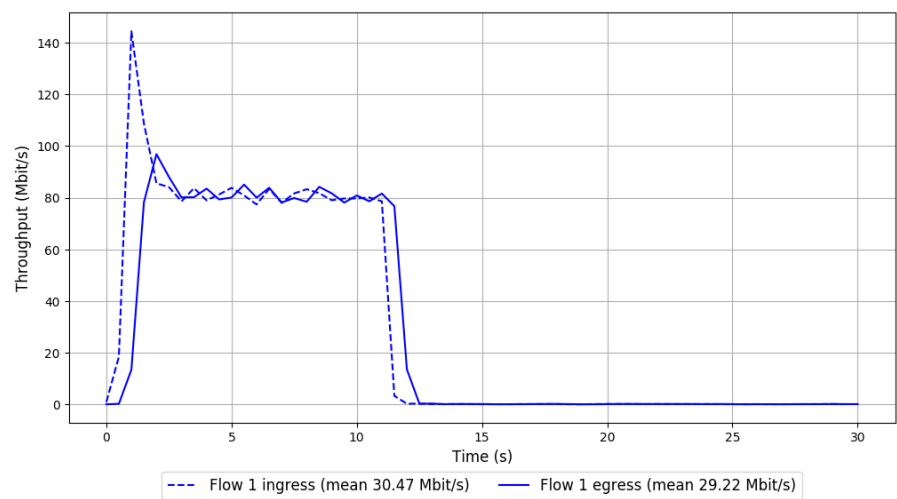
-- Flow 1:

Average throughput: 29.22 Mbit/s

95th percentile per-packet one-way delay: 142.347 ms

Loss rate: 4.10%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-12-02 01:21:18

End at: 2018-12-02 01:21:48

Local clock offset: -1.353 ms

Remote clock offset: 7.348 ms

Below is generated by plot.py at 2018-12-02 02:19:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.88 Mbit/s

95th percentile per-packet one-way delay: 73.460 ms

Loss rate: 0.02%

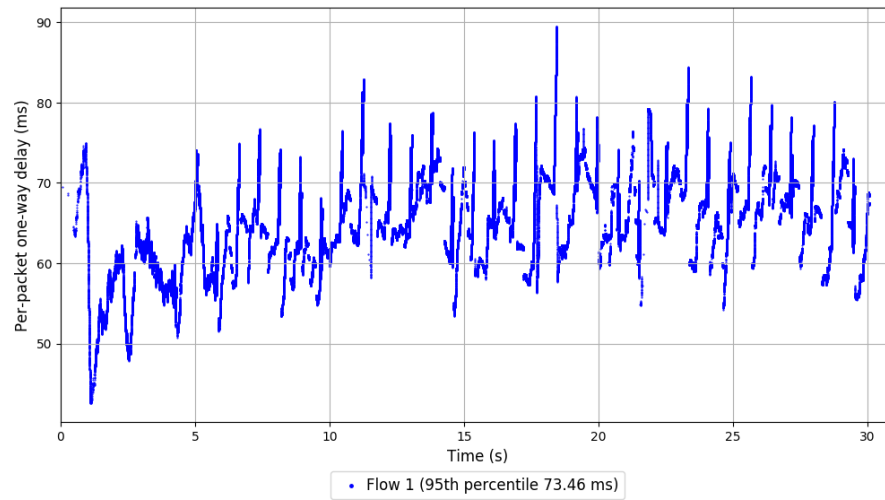
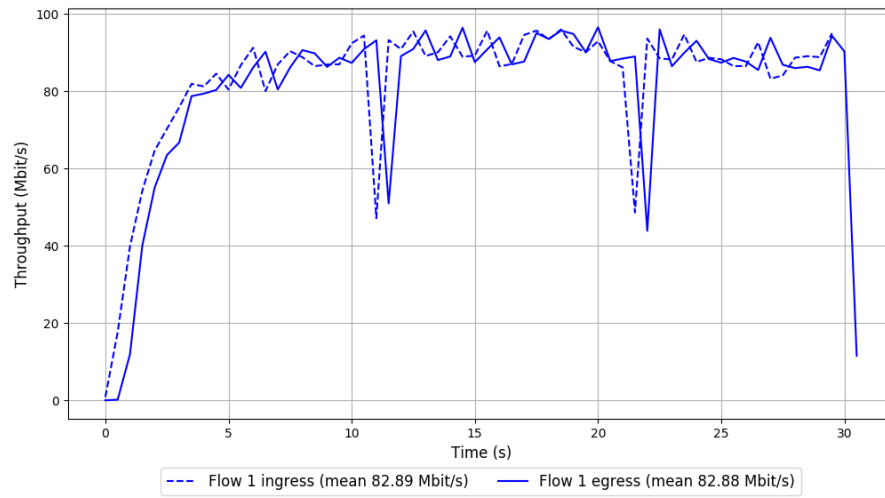
-- Flow 1:

Average throughput: 82.88 Mbit/s

95th percentile per-packet one-way delay: 73.460 ms

Loss rate: 0.02%

Run 3: Report of FillP-Sheep — Data Link

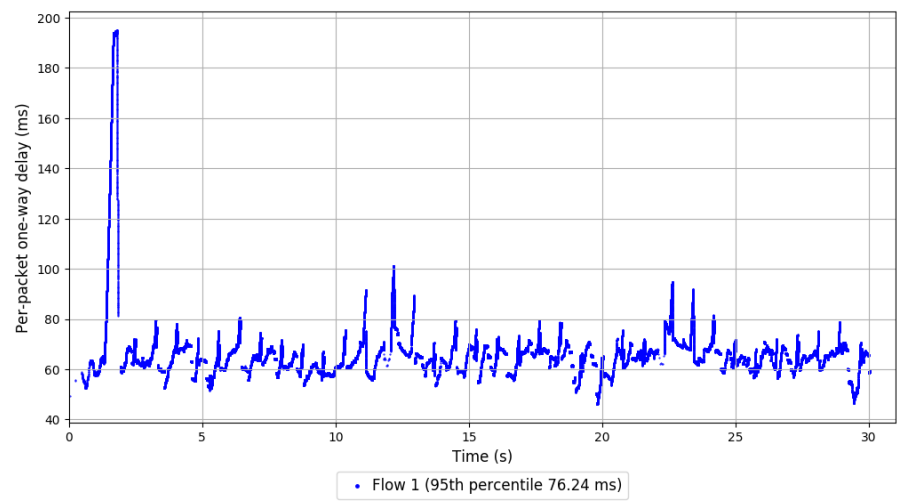
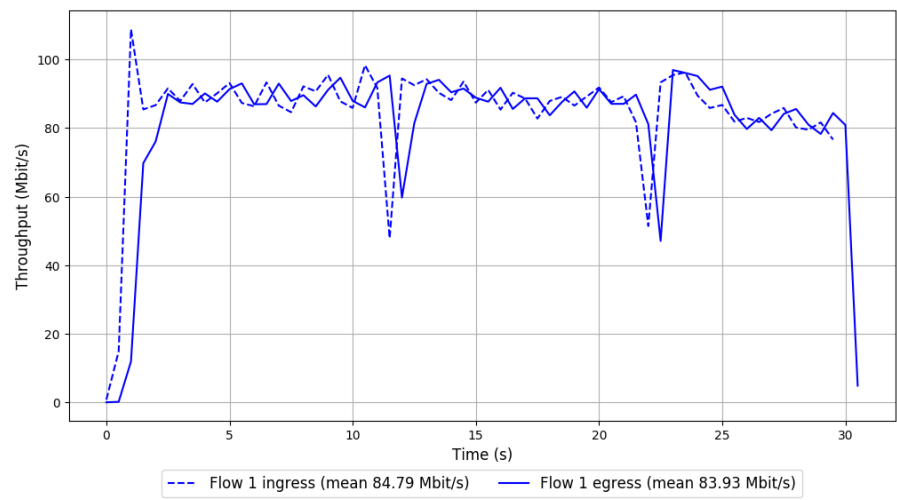


Run 4: Statistics of FillP-Sheep

Start at: 2018-12-02 01:44:59
End at: 2018-12-02 01:45:29
Local clock offset: -0.668 ms
Remote clock offset: 18.563 ms

Below is generated by plot.py at 2018-12-02 02:19:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 83.93 Mbit/s
95th percentile per-packet one-way delay: 76.237 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 83.93 Mbit/s
95th percentile per-packet one-way delay: 76.237 ms
Loss rate: 0.98%

Run 4: Report of FillP-Sheep — Data Link

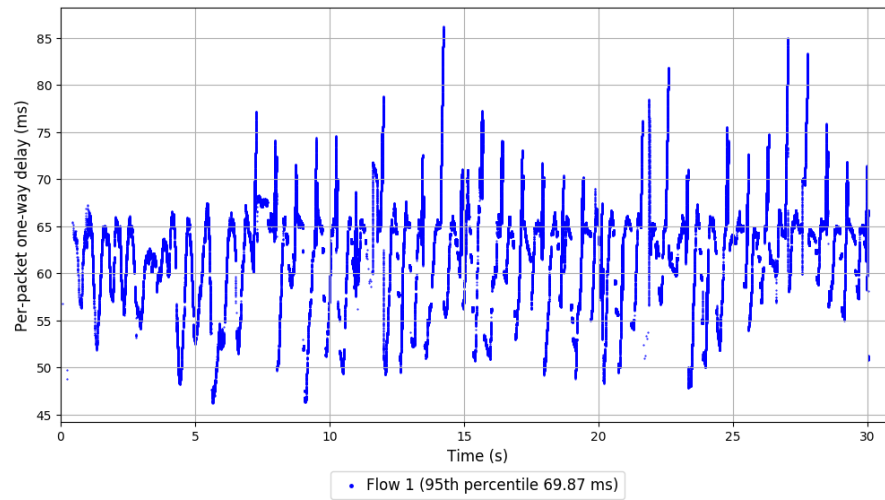
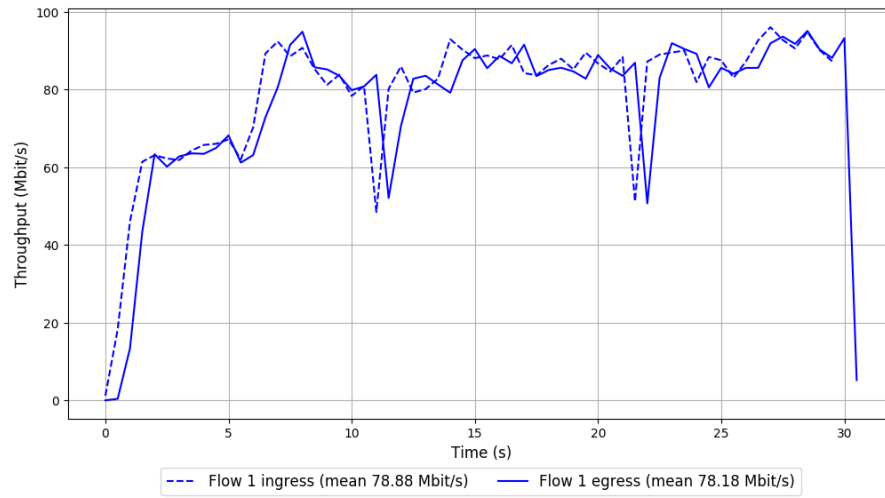


Run 5: Statistics of FillP-Sheep

Start at: 2018-12-02 02:08:31
End at: 2018-12-02 02:09:01
Local clock offset: -2.893 ms
Remote clock offset: 33.902 ms

Below is generated by plot.py at 2018-12-02 02:19:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 78.18 Mbit/s
95th percentile per-packet one-way delay: 69.868 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 78.18 Mbit/s
95th percentile per-packet one-way delay: 69.868 ms
Loss rate: 0.91%

Run 5: Report of FillP-Sheep — Data Link

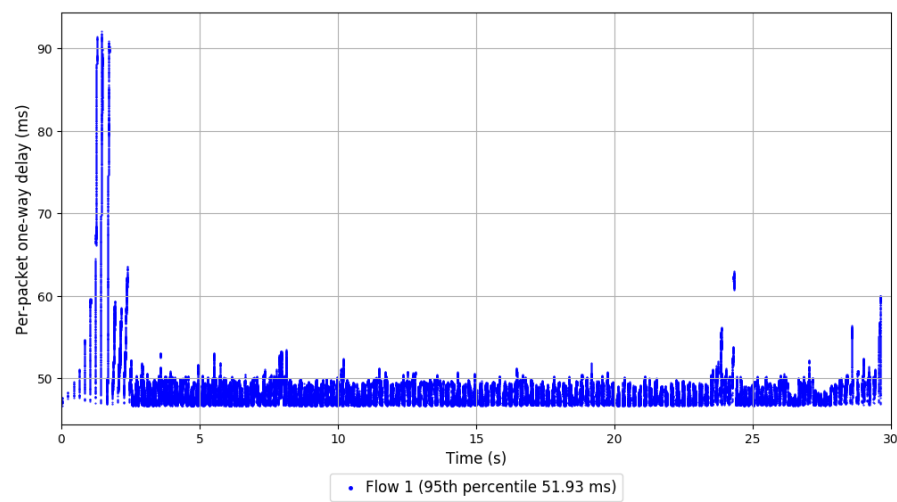
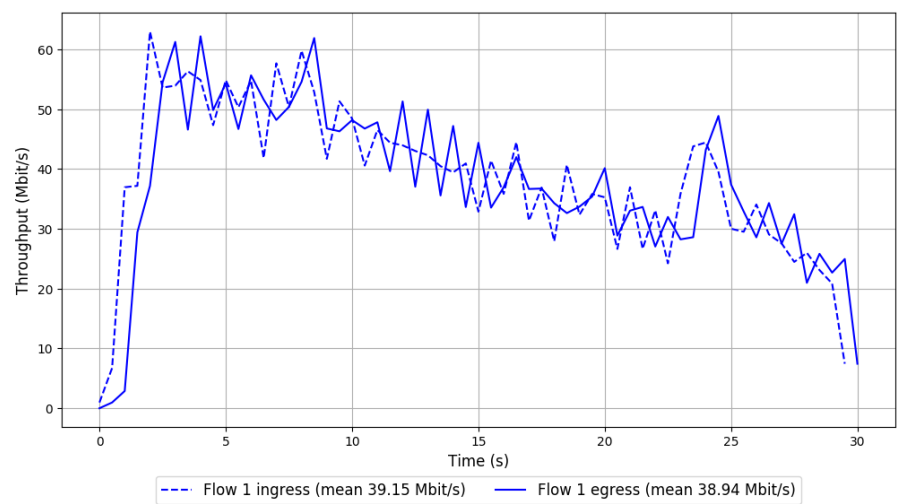


```
Run 1: Statistics of Indigo

Start at: 2018-12-02 00:29:20
End at: 2018-12-02 00:29:50
Local clock offset: 0.051 ms
Remote clock offset: 3.43 ms

# Below is generated by plot.py at 2018-12-02 02:19:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 51.934 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 51.934 ms
Loss rate: 0.49%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-12-02 00:52:46

End at: 2018-12-02 00:53:16

Local clock offset: 1.271 ms

Remote clock offset: 7.712 ms

Below is generated by plot.py at 2018-12-02 02:19:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.01 Mbit/s

95th percentile per-packet one-way delay: 60.183 ms

Loss rate: 2.45%

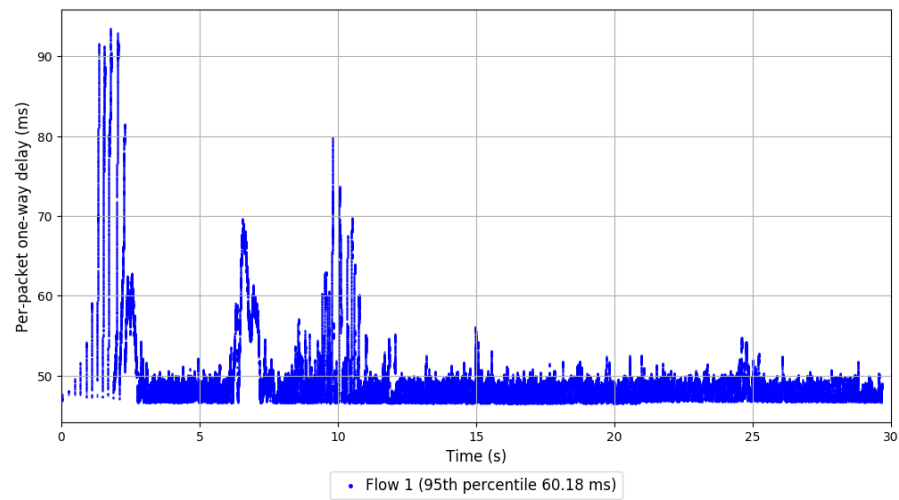
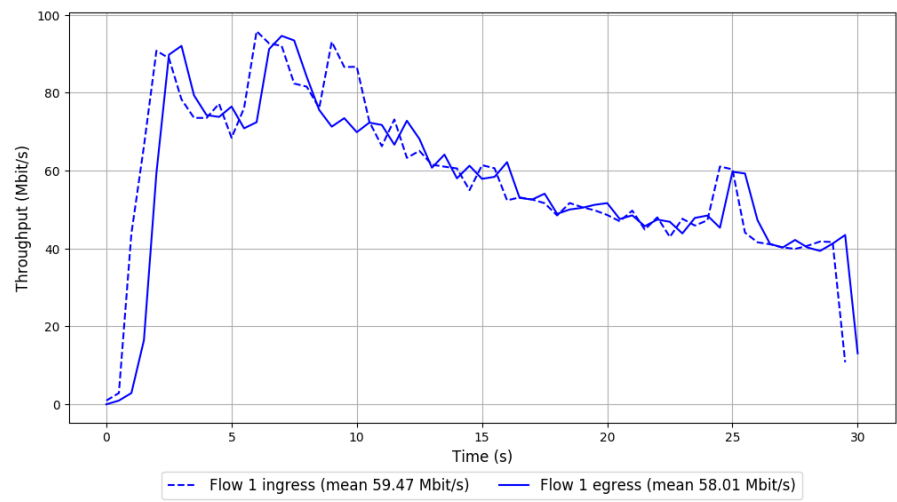
-- Flow 1:

Average throughput: 58.01 Mbit/s

95th percentile per-packet one-way delay: 60.183 ms

Loss rate: 2.45%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-12-02 01:16:20

End at: 2018-12-02 01:16:50

Local clock offset: -1.498 ms

Remote clock offset: 2.574 ms

Below is generated by plot.py at 2018-12-02 02:19:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.89 Mbit/s

95th percentile per-packet one-way delay: 69.934 ms

Loss rate: 0.03%

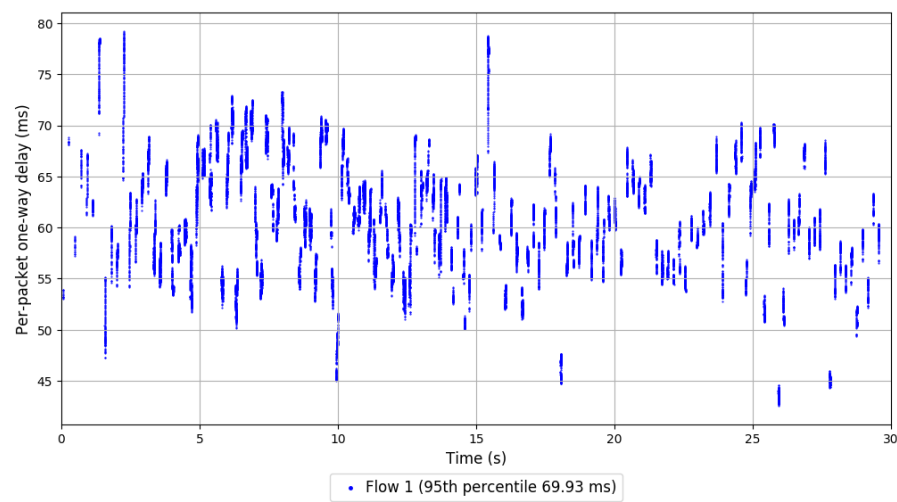
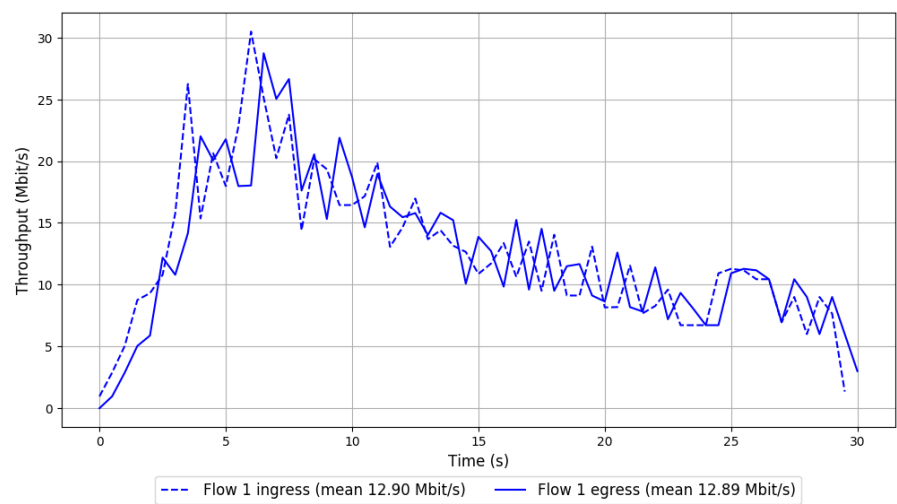
-- Flow 1:

Average throughput: 12.89 Mbit/s

95th percentile per-packet one-way delay: 69.934 ms

Loss rate: 0.03%

Run 3: Report of Indigo — Data Link

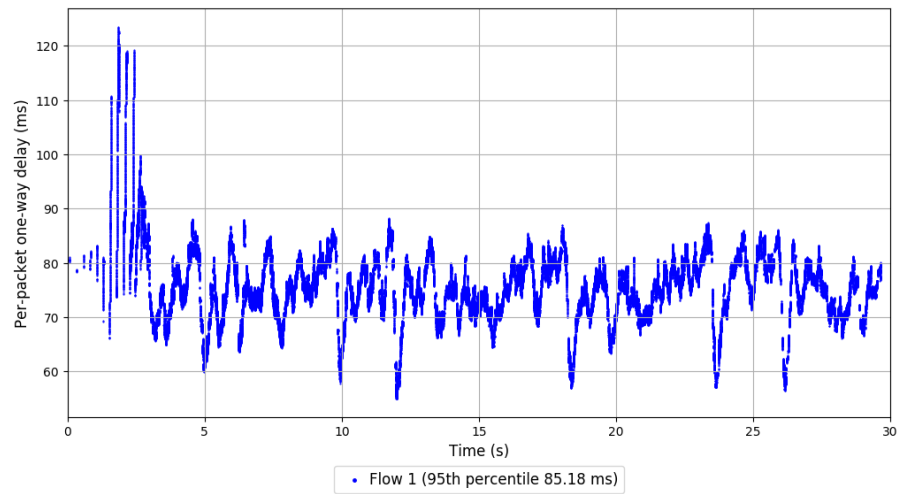
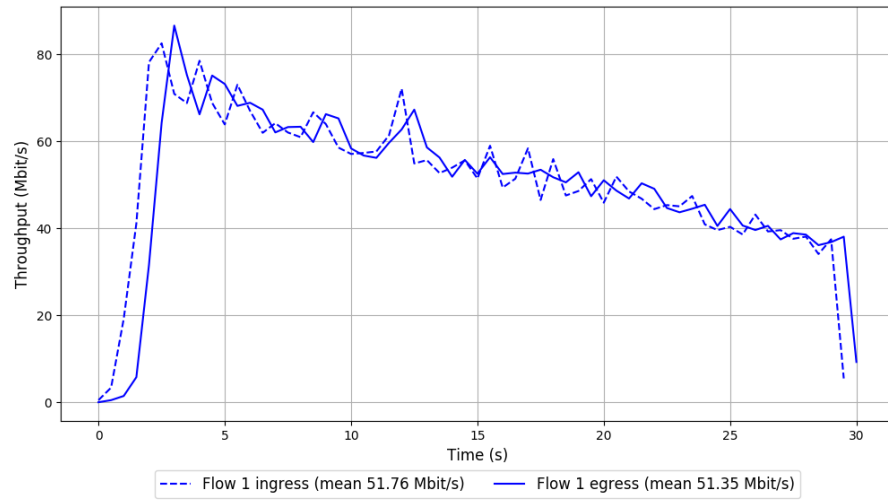


Run 4: Statistics of Indigo

Start at: 2018-12-02 01:39:53
End at: 2018-12-02 01:40:23
Local clock offset: -0.532 ms
Remote clock offset: 21.296 ms

Below is generated by plot.py at 2018-12-02 02:19:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 51.35 Mbit/s
95th percentile per-packet one-way delay: 85.178 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 51.35 Mbit/s
95th percentile per-packet one-way delay: 85.178 ms
Loss rate: 0.84%

Run 4: Report of Indigo — Data Link

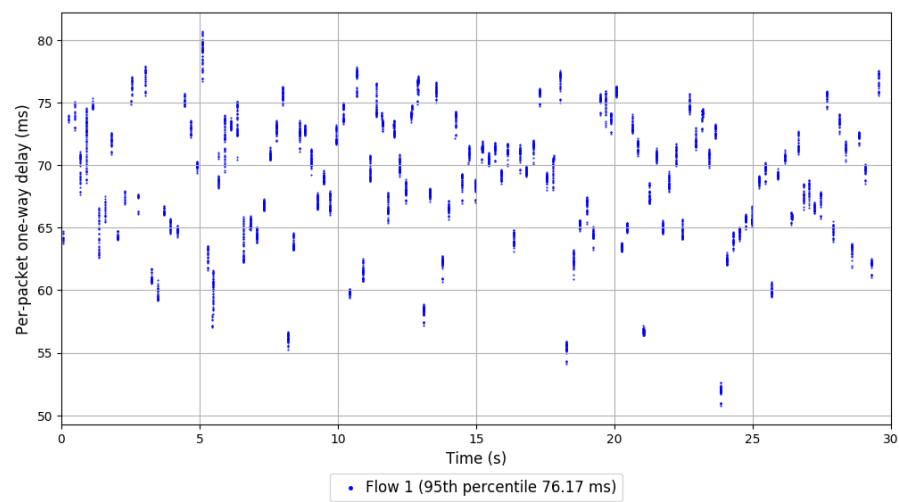
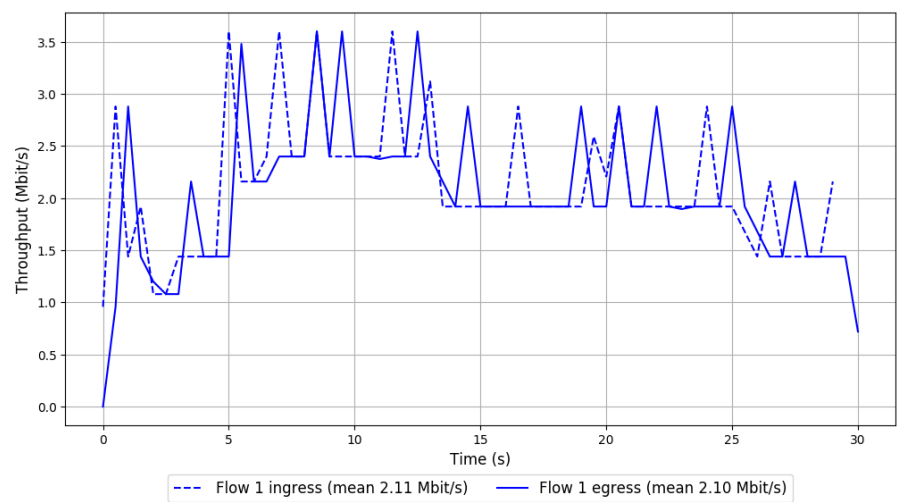


Run 5: Statistics of Indigo

Start at: 2018-12-02 02:03:20
End at: 2018-12-02 02:03:50
Local clock offset: -2.692 ms
Remote clock offset: 27.051 ms

Below is generated by plot.py at 2018-12-02 02:19:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 76.167 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 76.167 ms
Loss rate: 0.14%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-12-02 00:23:17

End at: 2018-12-02 00:23:47

Local clock offset: -2.831 ms

Remote clock offset: 1.775 ms

Below is generated by plot.py at 2018-12-02 02:20:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.48 Mbit/s

95th percentile per-packet one-way delay: 200.570 ms

Loss rate: 32.73%

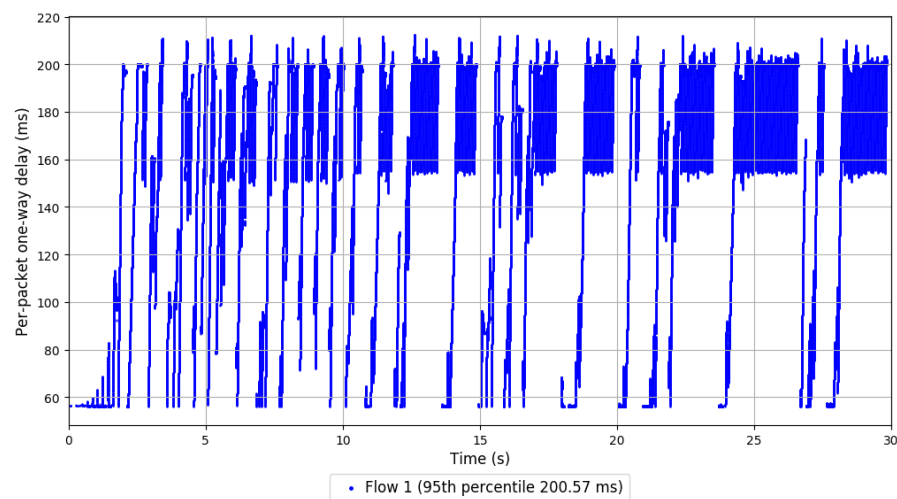
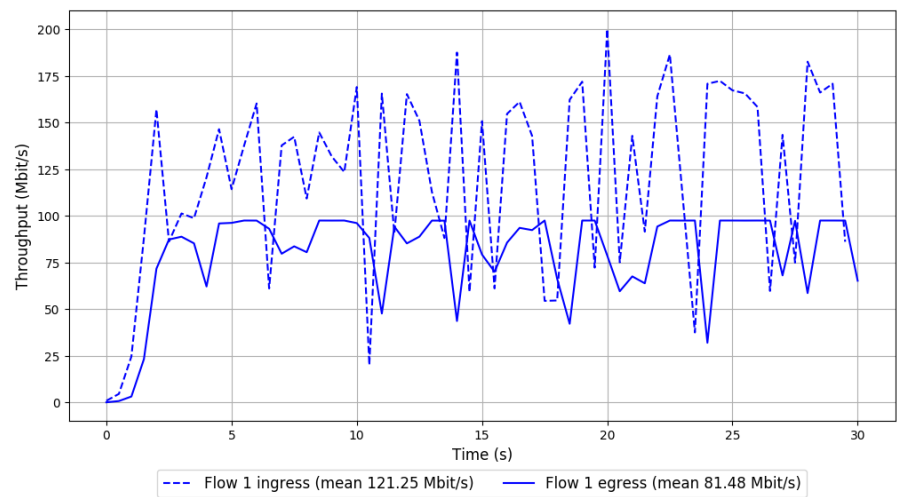
-- Flow 1:

Average throughput: 81.48 Mbit/s

95th percentile per-packet one-way delay: 200.570 ms

Loss rate: 32.73%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-12-02 00:46:36

End at: 2018-12-02 00:47:06

Local clock offset: 4.041 ms

Remote clock offset: 6.911 ms

Below is generated by plot.py at 2018-12-02 02:20:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.14 Mbit/s

95th percentile per-packet one-way delay: 199.350 ms

Loss rate: 26.90%

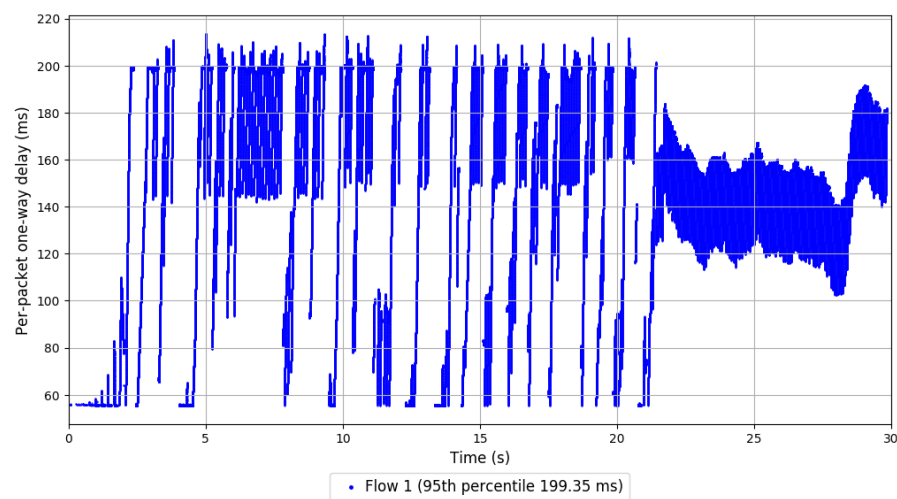
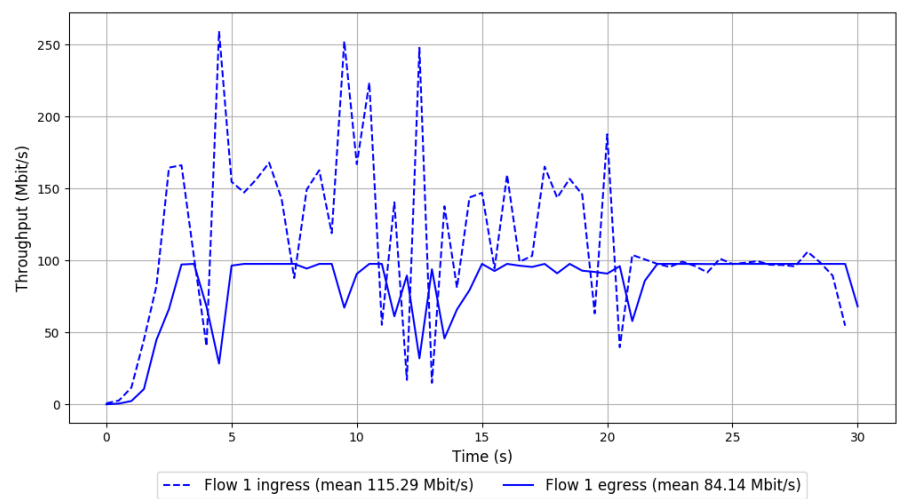
-- Flow 1:

Average throughput: 84.14 Mbit/s

95th percentile per-packet one-way delay: 199.350 ms

Loss rate: 26.90%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-12-02 01:10:06

End at: 2018-12-02 01:10:36

Local clock offset: -1.632 ms

Remote clock offset: 8.134 ms

Below is generated by plot.py at 2018-12-02 02:20:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.14 Mbit/s

95th percentile per-packet one-way delay: 216.428 ms

Loss rate: 33.70%

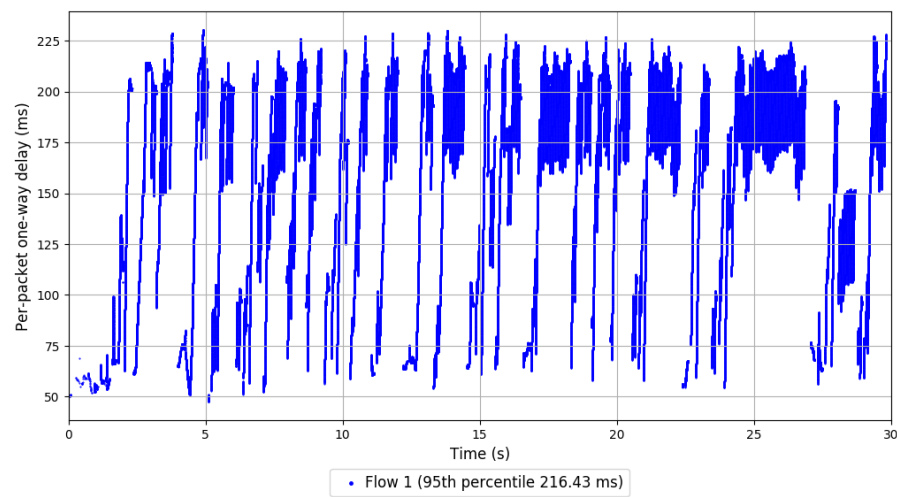
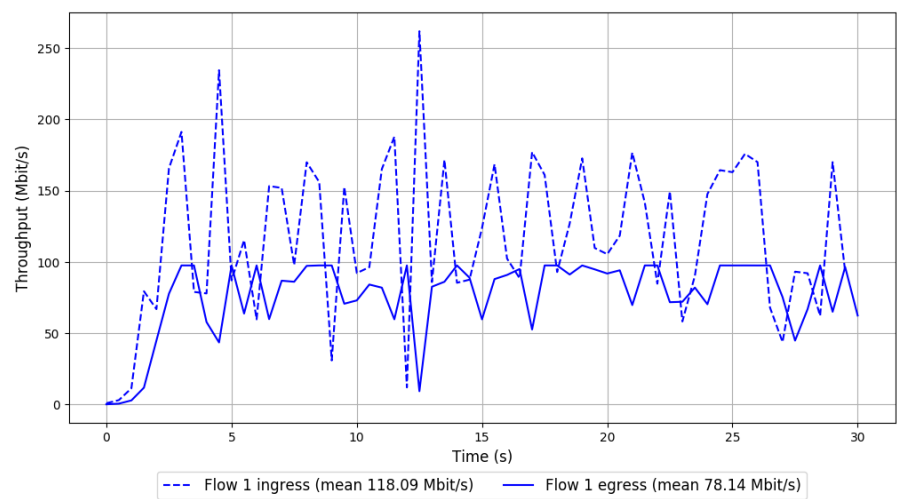
-- Flow 1:

Average throughput: 78.14 Mbit/s

95th percentile per-packet one-way delay: 216.428 ms

Loss rate: 33.70%

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

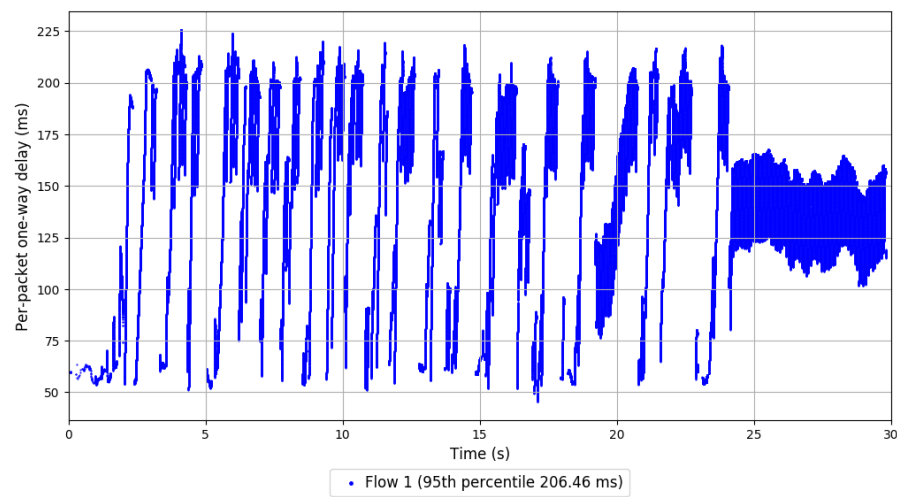
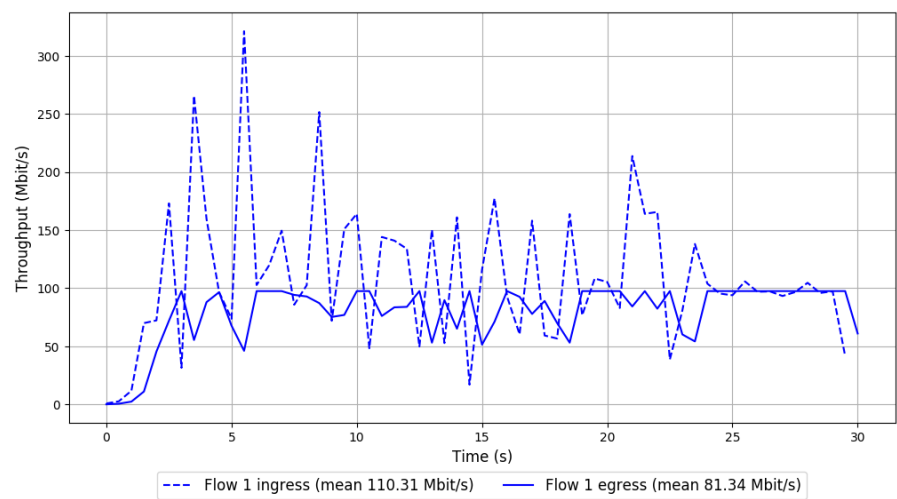


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-12-02 01:33:41
End at: 2018-12-02 01:34:11
Local clock offset: -1.0 ms
Remote clock offset: 10.674 ms

Below is generated by plot.py at 2018-12-02 02:20:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 81.34 Mbit/s
95th percentile per-packet one-way delay: 206.456 ms
Loss rate: 26.14%
-- Flow 1:
Average throughput: 81.34 Mbit/s
95th percentile per-packet one-way delay: 206.456 ms
Loss rate: 26.14%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-12-02 01:57:03

End at: 2018-12-02 01:57:33

Local clock offset: -2.11 ms

Remote clock offset: 27.168 ms

Below is generated by plot.py at 2018-12-02 02:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.61 Mbit/s

95th percentile per-packet one-way delay: 213.378 ms

Loss rate: 25.63%

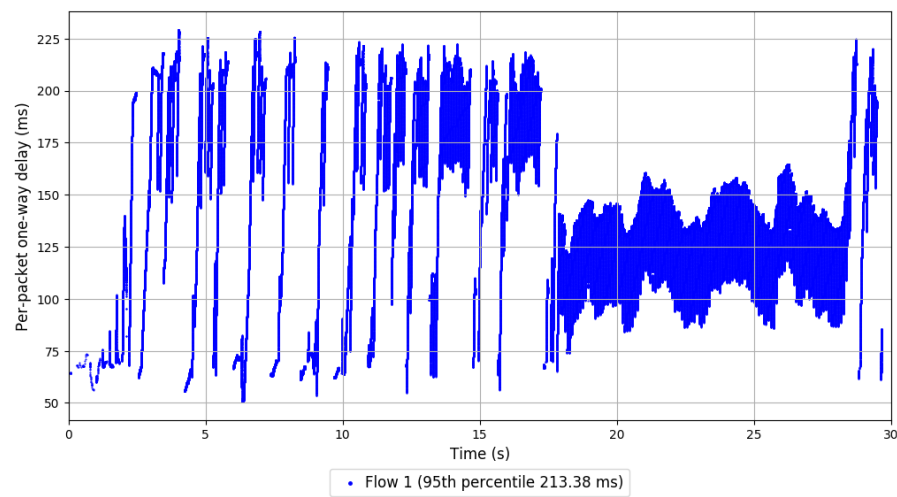
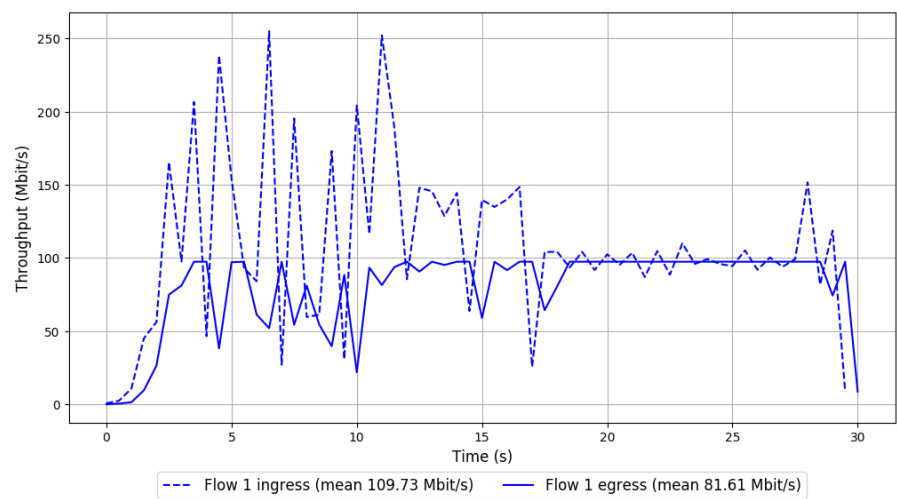
-- Flow 1:

Average throughput: 81.61 Mbit/s

95th percentile per-packet one-way delay: 213.378 ms

Loss rate: 25.63%

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

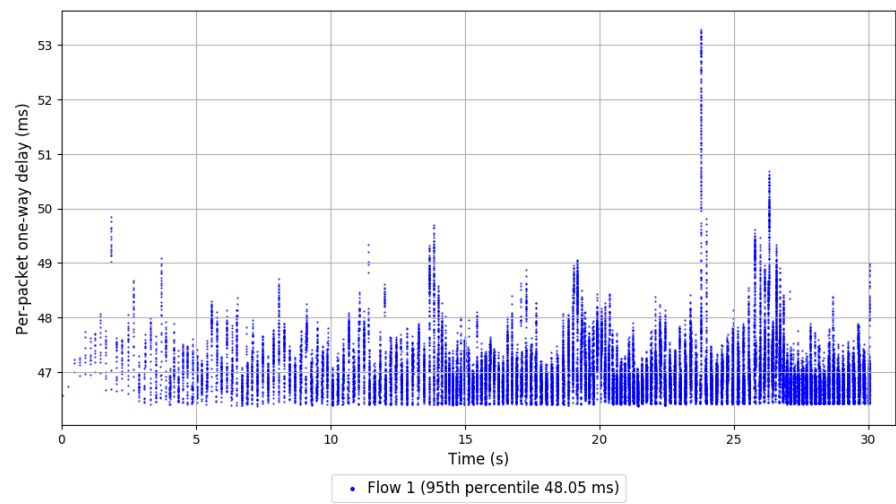
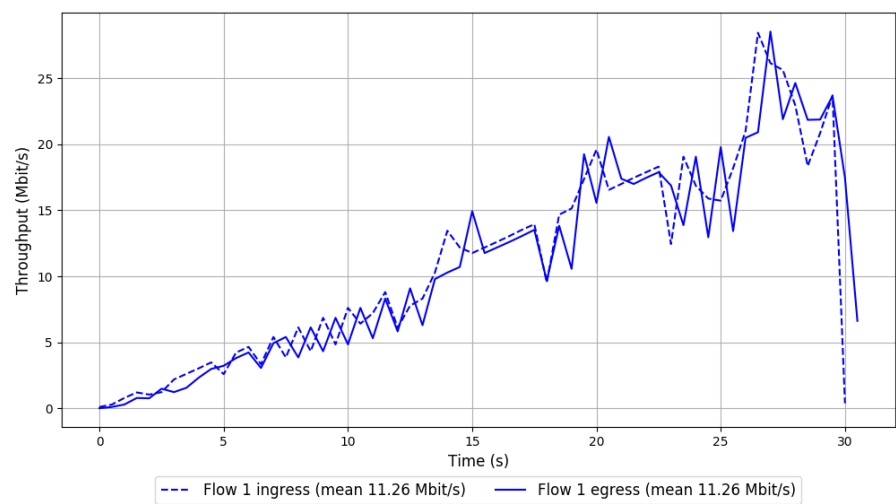


```
Run 1: Statistics of LEDBAT

Start at: 2018-12-02 00:30:36
End at: 2018-12-02 00:31:06
Local clock offset: 0.383 ms
Remote clock offset: 3.898 ms

# Below is generated by plot.py at 2018-12-02 02:20:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.26 Mbit/s
95th percentile per-packet one-way delay: 48.050 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.26 Mbit/s
95th percentile per-packet one-way delay: 48.050 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-12-02 00:54:07

End at: 2018-12-02 00:54:37

Local clock offset: 1.079 ms

Remote clock offset: 7.519 ms

Below is generated by plot.py at 2018-12-02 02:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.21 Mbit/s

95th percentile per-packet one-way delay: 56.400 ms

Loss rate: 0.00%

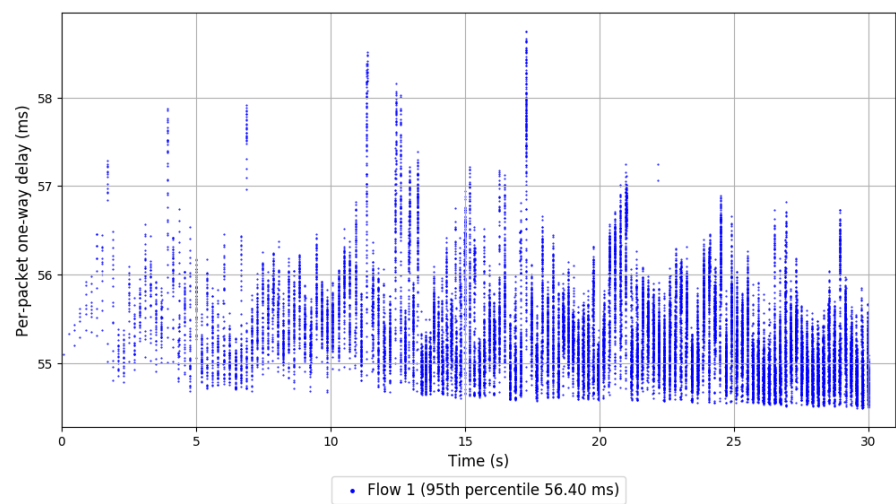
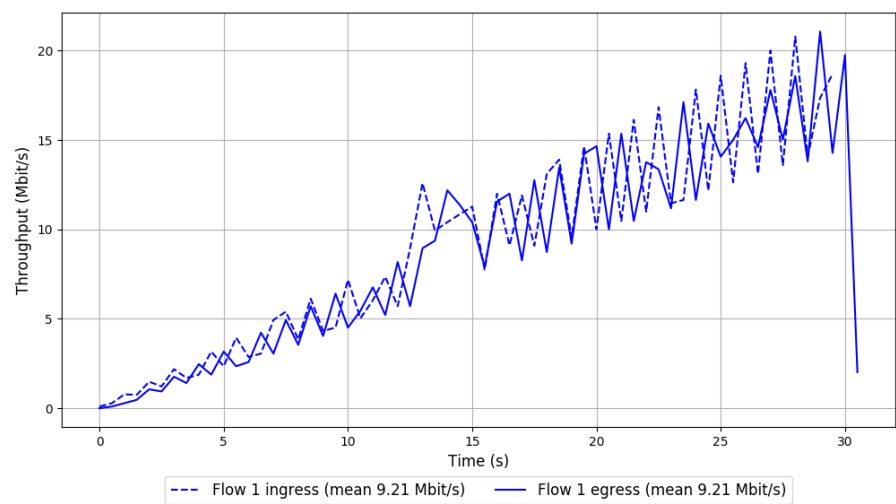
-- Flow 1:

Average throughput: 9.21 Mbit/s

95th percentile per-packet one-way delay: 56.400 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-12-02 01:17:34

End at: 2018-12-02 01:18:04

Local clock offset: -1.587 ms

Remote clock offset: 5.739 ms

Below is generated by plot.py at 2018-12-02 02:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.43 Mbit/s

95th percentile per-packet one-way delay: 70.217 ms

Loss rate: 0.00%

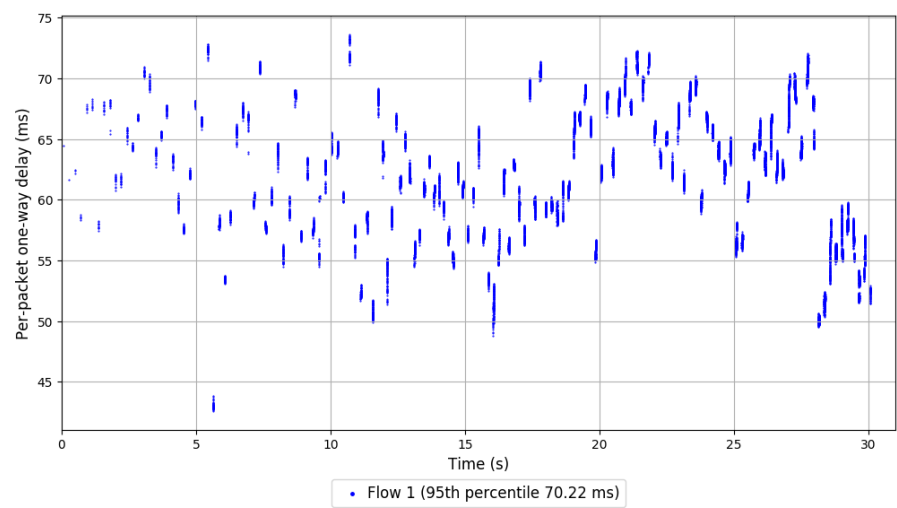
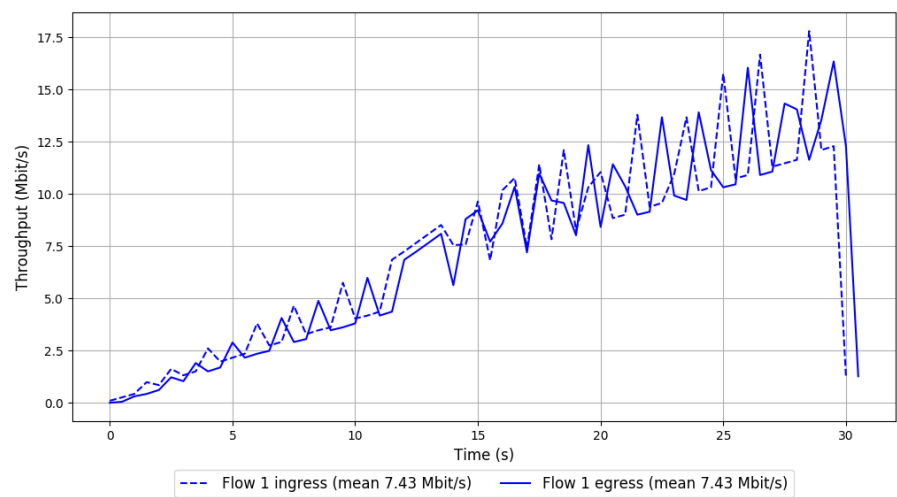
-- Flow 1:

Average throughput: 7.43 Mbit/s

95th percentile per-packet one-way delay: 70.217 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link

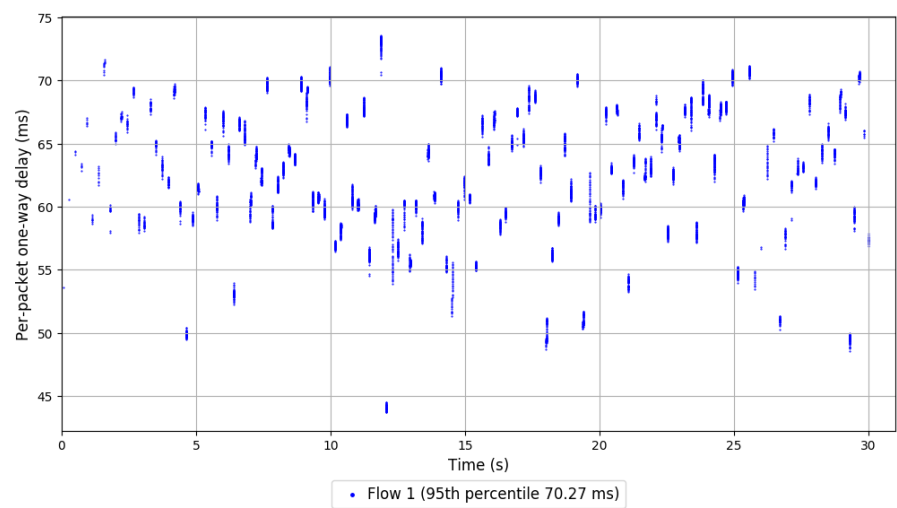
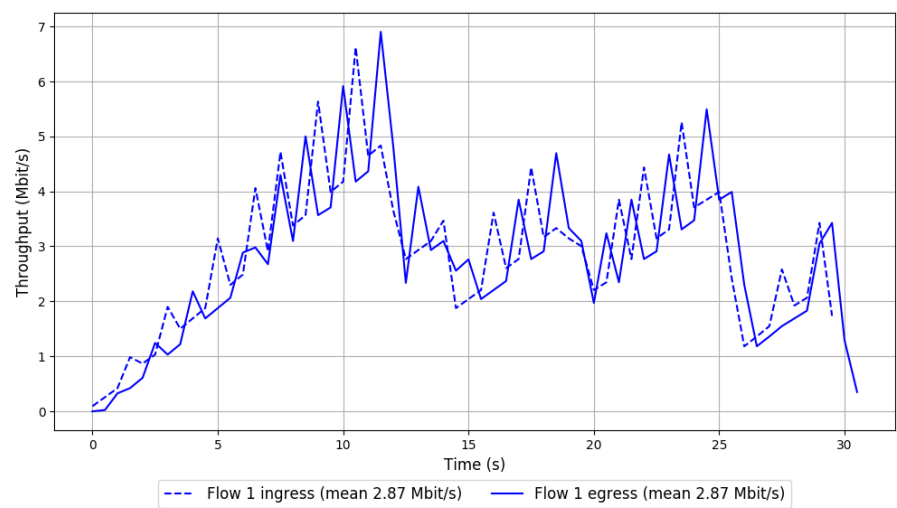


Run 4: Statistics of LEDBAT

Start at: 2018-12-02 01:41:18
End at: 2018-12-02 01:41:48
Local clock offset: -0.547 ms
Remote clock offset: 17.343 ms

Below is generated by plot.py at 2018-12-02 02:20:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 70.270 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 70.270 ms
Loss rate: 0.18%

Run 4: Report of LEDBAT — Data Link

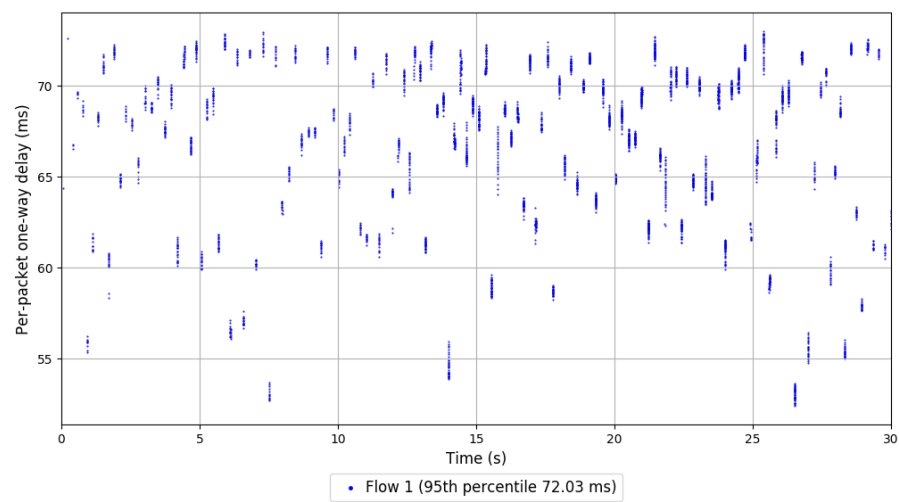
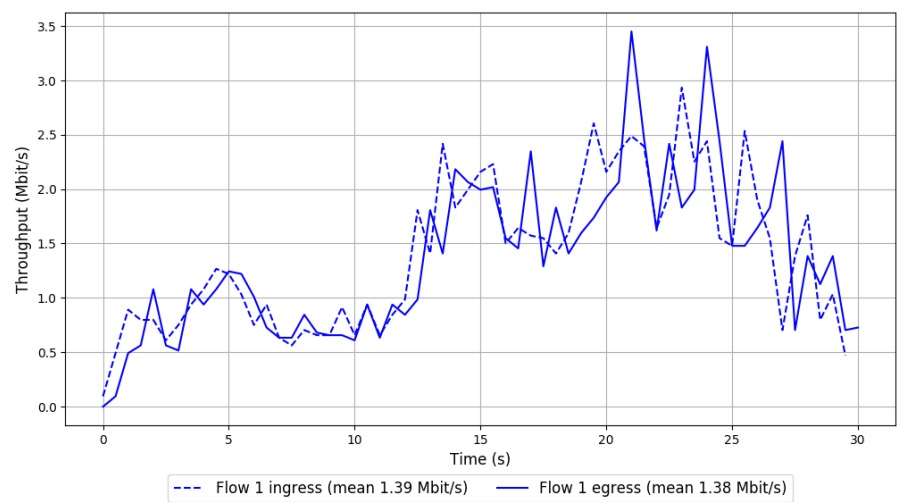


Run 5: Statistics of LEDBAT

Start at: 2018-12-02 02:04:32
End at: 2018-12-02 02:05:02
Local clock offset: -2.782 ms
Remote clock offset: 33.657 ms

Below is generated by plot.py at 2018-12-02 02:20:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 72.026 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 72.026 ms
Loss rate: 0.79%

Run 5: Report of LEDBAT — Data Link

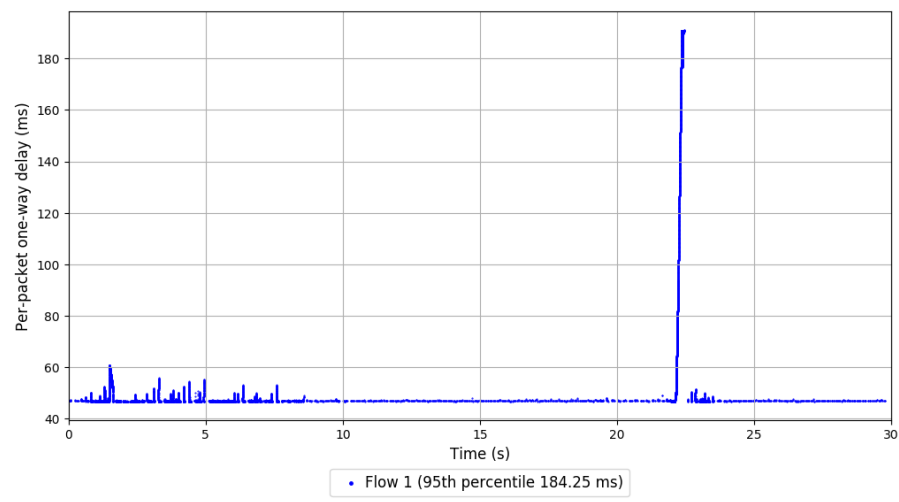
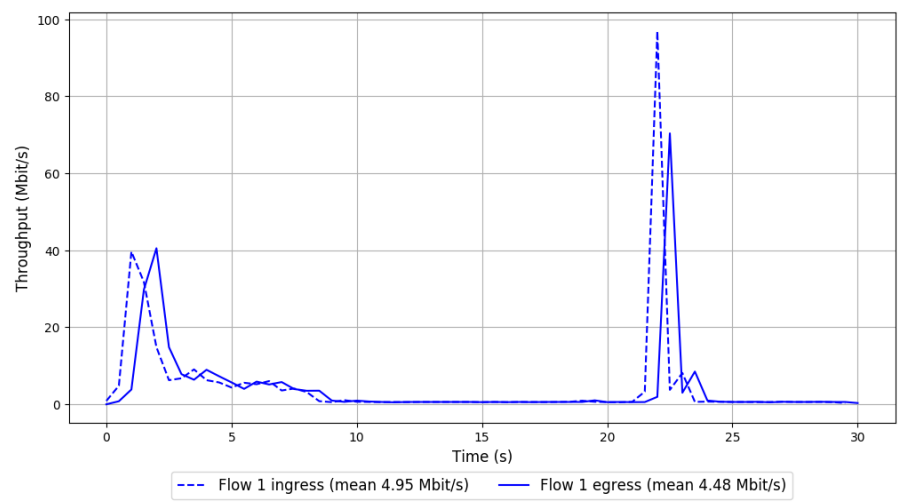



```
Run 1: Statistics of Indigo-Muses

Start at: 2018-12-02 00:39:13
End at: 2018-12-02 00:39:43
Local clock offset: 2.549 ms
Remote clock offset: 5.515 ms

# Below is generated by plot.py at 2018-12-02 02:20:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 184.245 ms
Loss rate: 9.50%
-- Flow 1:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 184.245 ms
Loss rate: 9.50%
```

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-12-02 01:02:44

End at: 2018-12-02 01:03:14

Local clock offset: -1.246 ms

Remote clock offset: 8.437 ms

Below is generated by plot.py at 2018-12-02 02:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.42 Mbit/s

95th percentile per-packet one-way delay: 158.744 ms

Loss rate: 4.06%

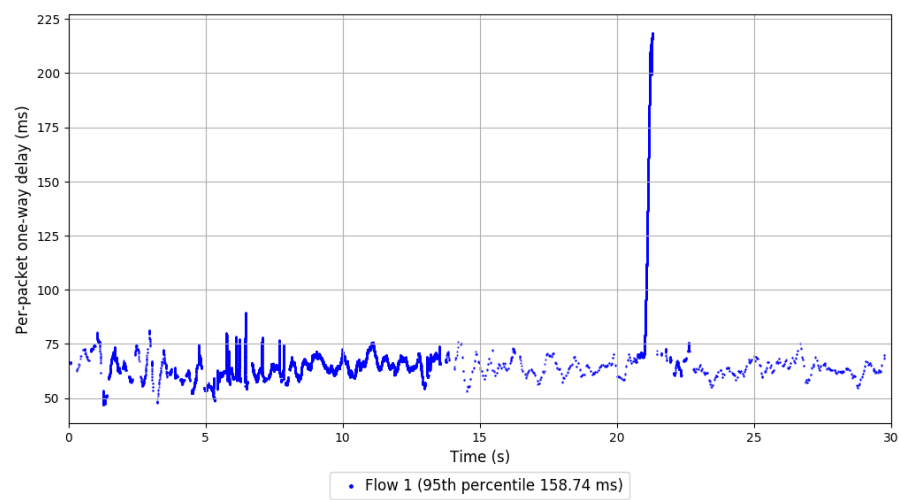
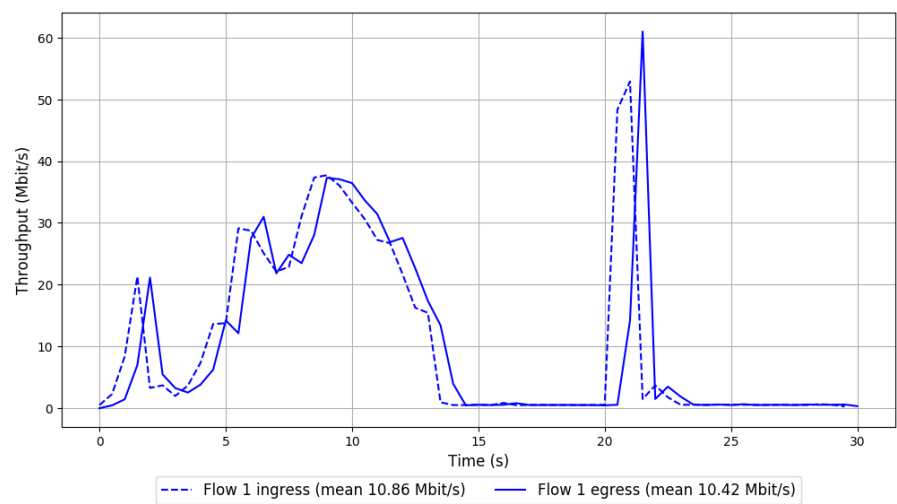
-- Flow 1:

Average throughput: 10.42 Mbit/s

95th percentile per-packet one-way delay: 158.744 ms

Loss rate: 4.06%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-12-02 01:26:19

End at: 2018-12-02 01:26:49

Local clock offset: -1.202 ms

Remote clock offset: 4.638 ms

Below is generated by plot.py at 2018-12-02 02:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.76 Mbit/s

95th percentile per-packet one-way delay: 73.316 ms

Loss rate: 0.00%

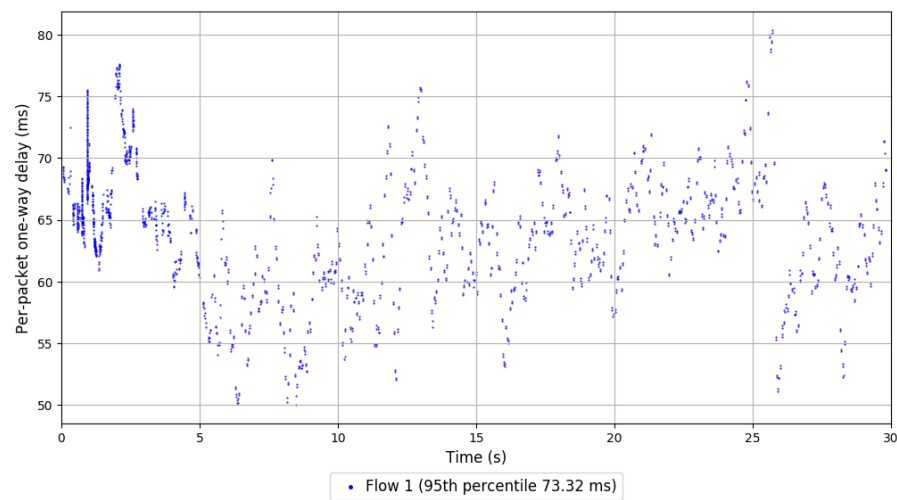
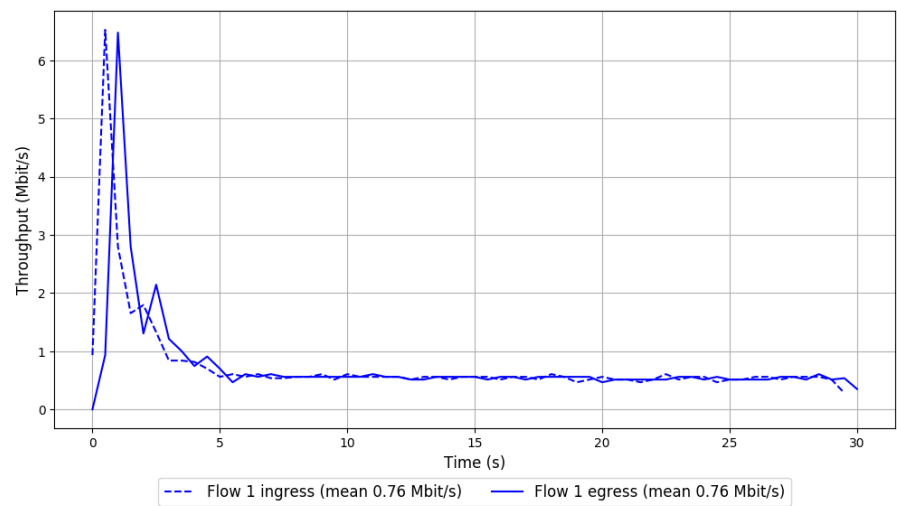
-- Flow 1:

Average throughput: 0.76 Mbit/s

95th percentile per-packet one-way delay: 73.316 ms

Loss rate: 0.00%

Run 3: Report of Indigo-Muses — Data Link

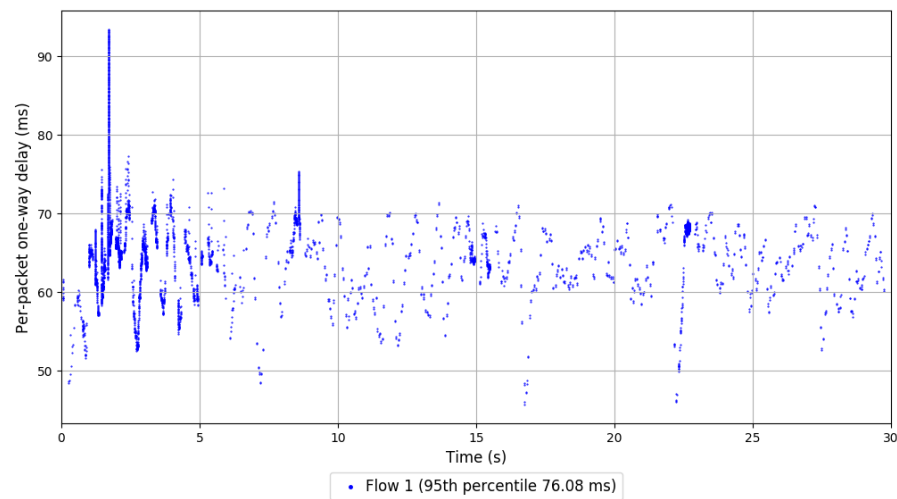
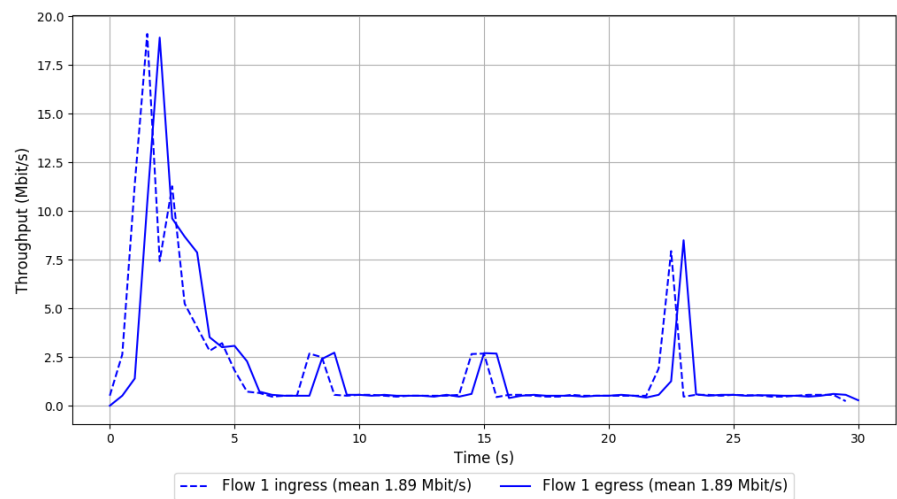


Run 4: Statistics of Indigo-Muses

Start at: 2018-12-02 01:49:59
End at: 2018-12-02 01:50:30
Local clock offset: -0.797 ms
Remote clock offset: 22.289 ms

Below is generated by plot.py at 2018-12-02 02:20:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 76.084 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 76.084 ms
Loss rate: 0.15%

Run 4: Report of Indigo-Muses — Data Link

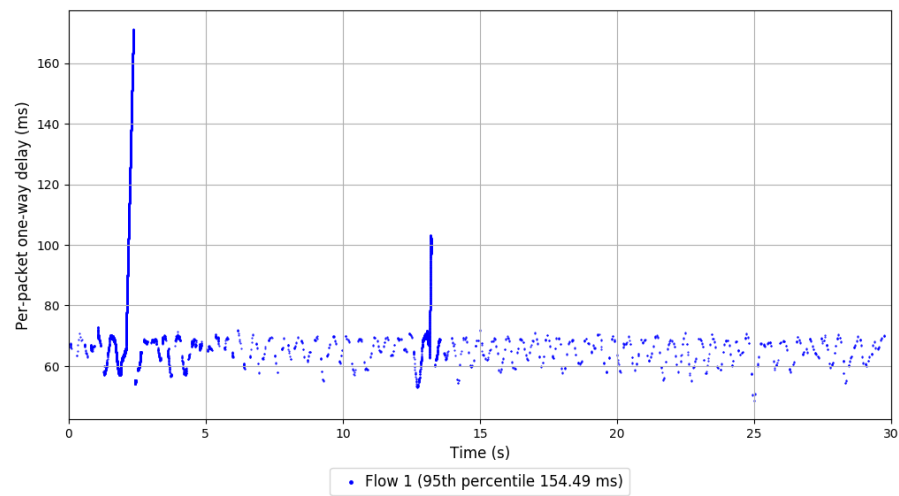
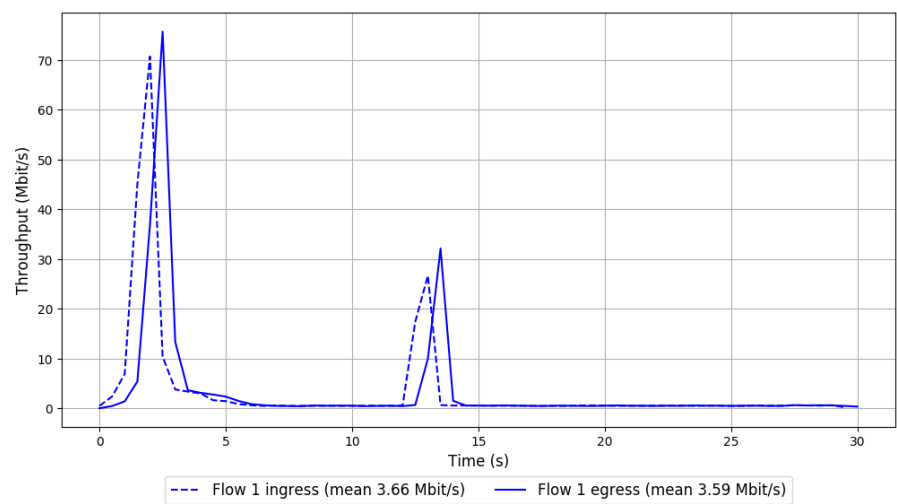


Run 5: Statistics of Indigo-Muses

Start at: 2018-12-02 02:13:31
End at: 2018-12-02 02:14:01
Local clock offset: -3.109 ms
Remote clock offset: 42.895 ms

Below is generated by plot.py at 2018-12-02 02:20:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 154.488 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 154.488 ms
Loss rate: 1.78%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-12-02 00:28:06

End at: 2018-12-02 00:28:36

Local clock offset: -0.471 ms

Remote clock offset: 3.11 ms

Below is generated by plot.py at 2018-12-02 02:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 57.32 Mbit/s

95th percentile per-packet one-way delay: 56.604 ms

Loss rate: 2.30%

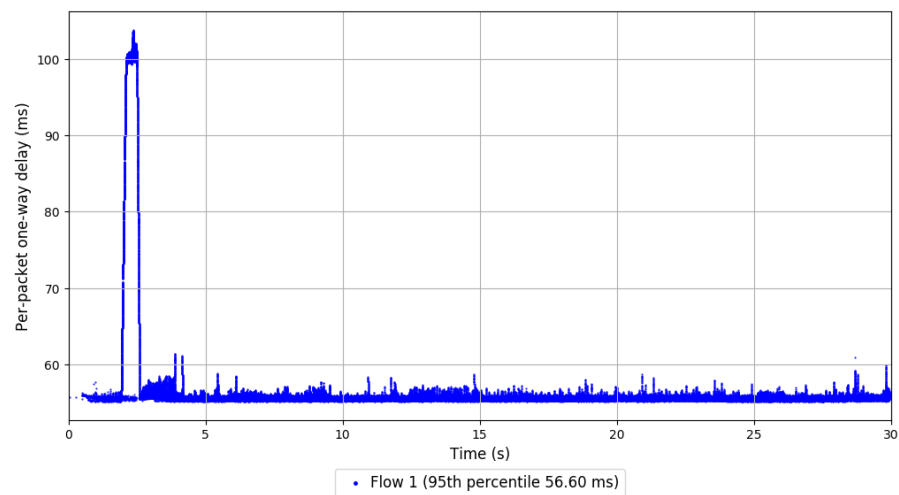
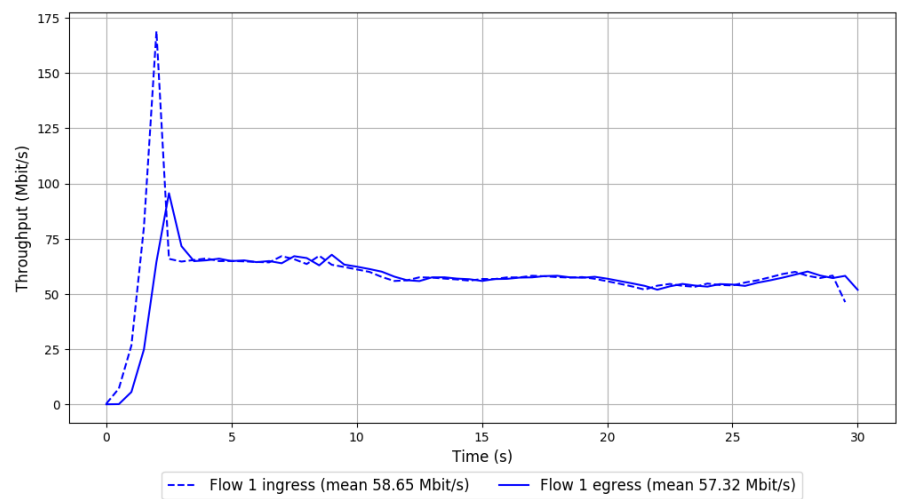
-- Flow 1:

Average throughput: 57.32 Mbit/s

95th percentile per-packet one-way delay: 56.604 ms

Loss rate: 2.30%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

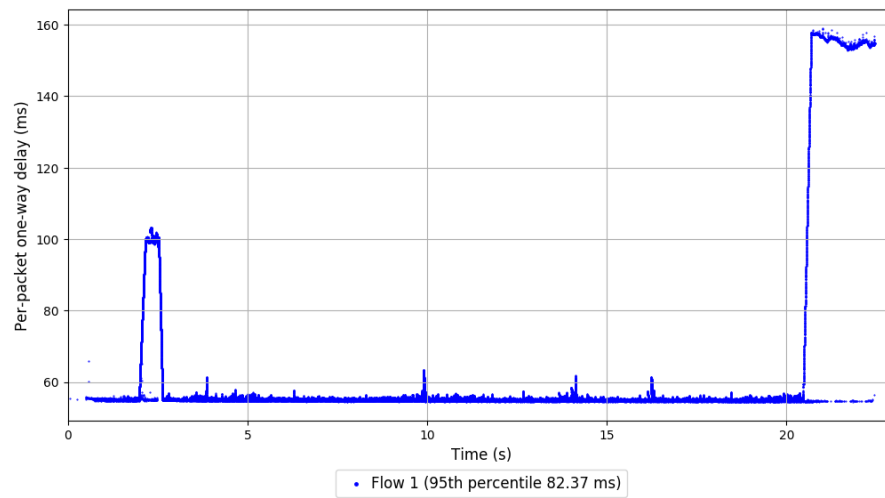
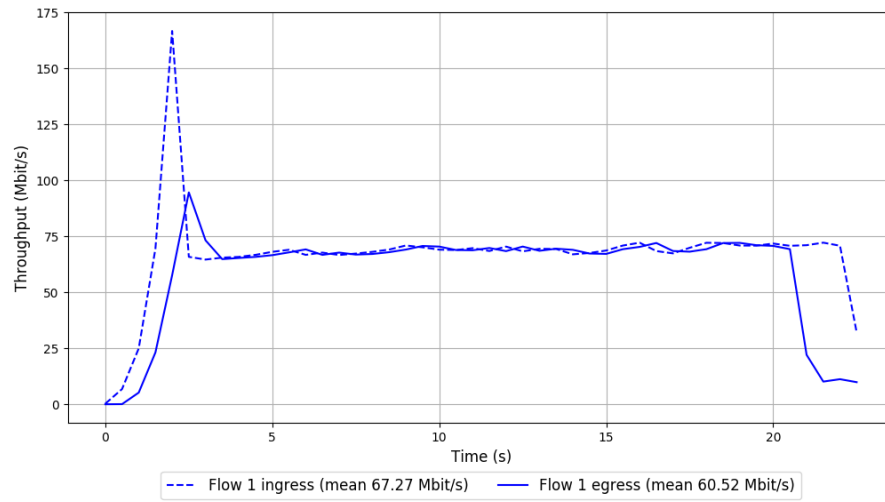
Start at: 2018-12-02 00:51:31

End at: 2018-12-02 00:52:01

Local clock offset: 2.097 ms

Remote clock offset: 7.026 ms

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

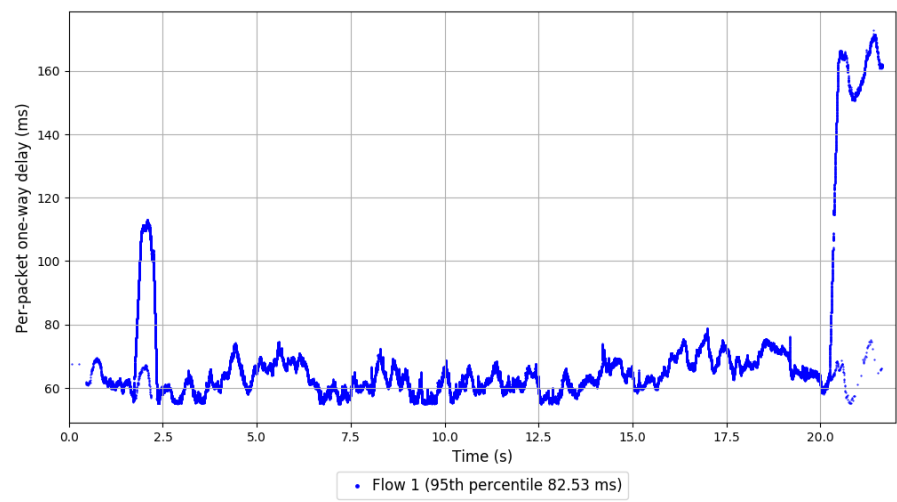
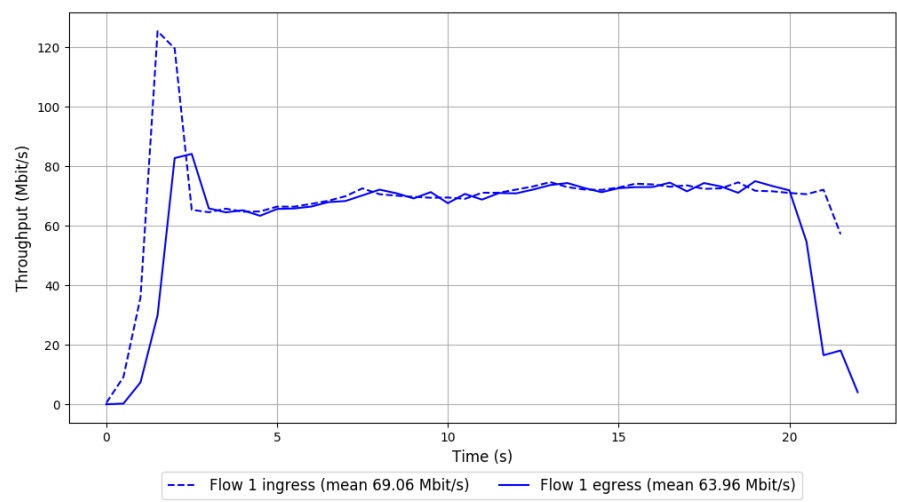
Start at: 2018-12-02 01:15:01

End at: 2018-12-02 01:15:31

Local clock offset: -1.634 ms

Remote clock offset: 9.818 ms

Run 3: Report of PCC-Allegro — Data Link

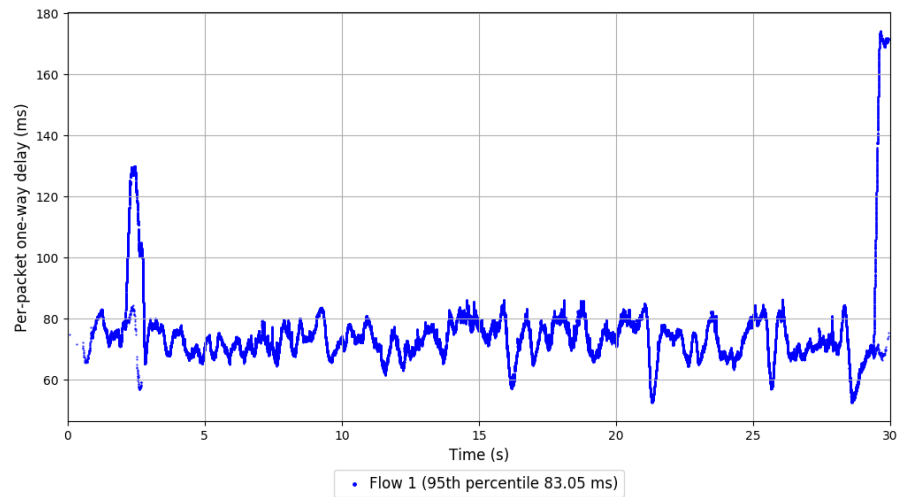
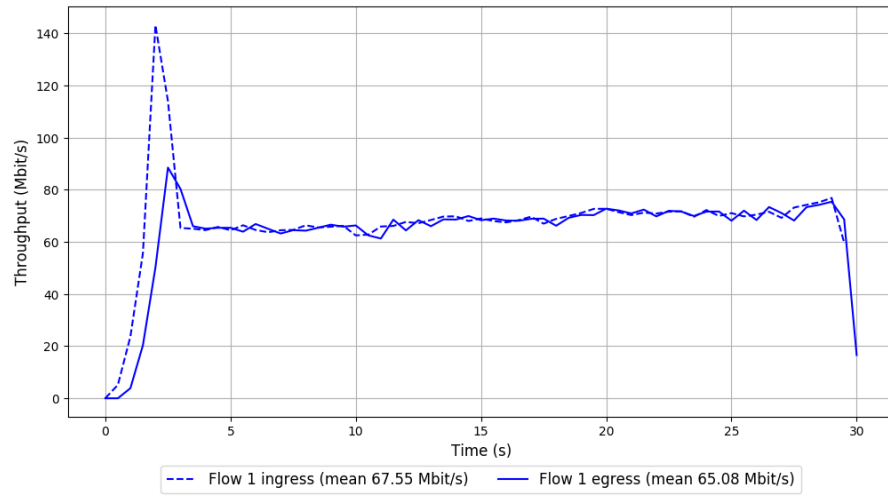


Run 4: Statistics of PCC-Allegro

Start at: 2018-12-02 01:38:37
End at: 2018-12-02 01:39:07
Local clock offset: -0.774 ms
Remote clock offset: 20.595 ms

Below is generated by plot.py at 2018-12-02 02:21:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 65.08 Mbit/s
95th percentile per-packet one-way delay: 83.054 ms
Loss rate: 3.73%
-- Flow 1:
Average throughput: 65.08 Mbit/s
95th percentile per-packet one-way delay: 83.054 ms
Loss rate: 3.73%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

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

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

Local clock offset: -2.586 ms

Remote clock offset: 26.739 ms

Below is generated by plot.py at 2018-12-02 02:21:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.07 Mbit/s

95th percentile per-packet one-way delay: 78.835 ms

Loss rate: 2.89%

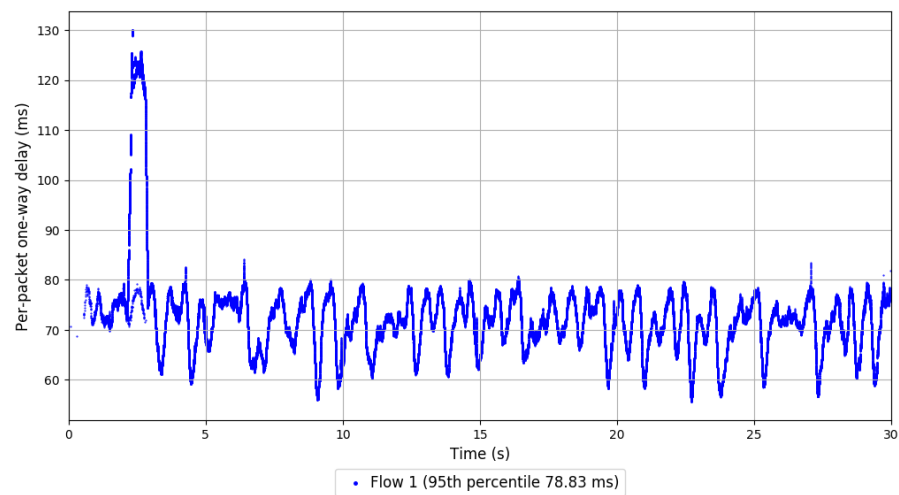
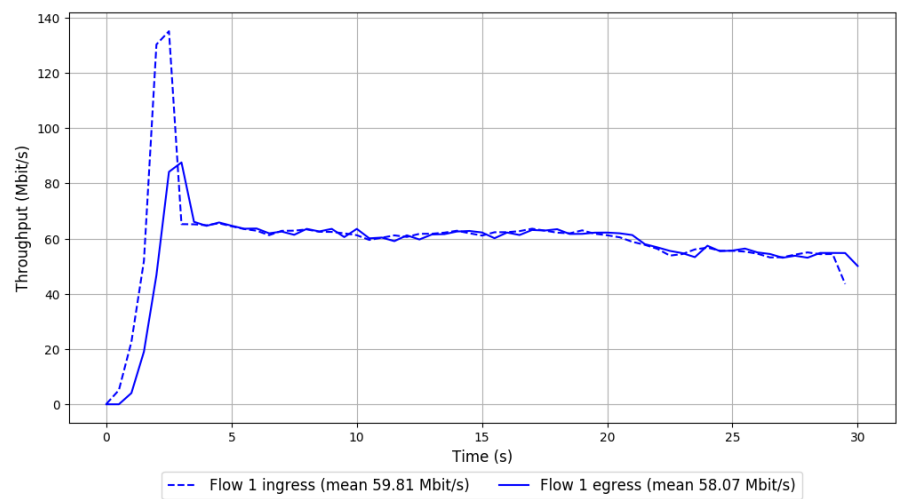
-- Flow 1:

Average throughput: 58.07 Mbit/s

95th percentile per-packet one-way delay: 78.835 ms

Loss rate: 2.89%

Run 5: Report of PCC-Allegro — Data Link

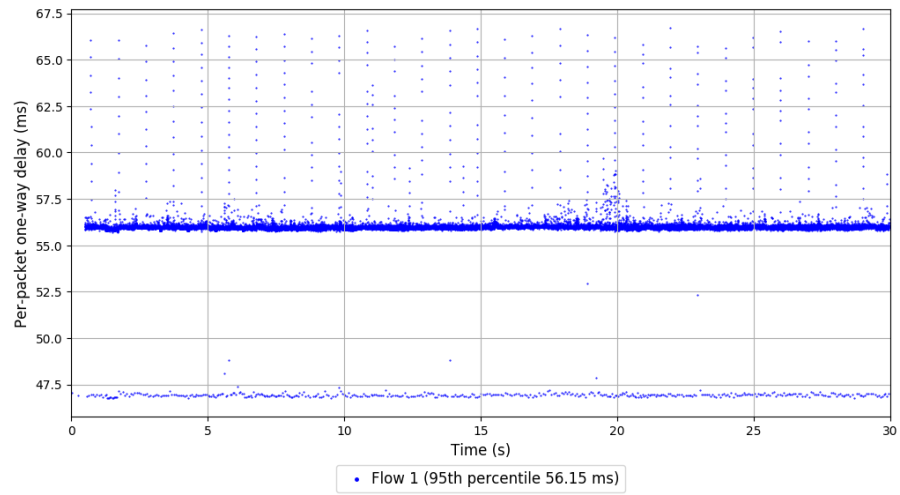
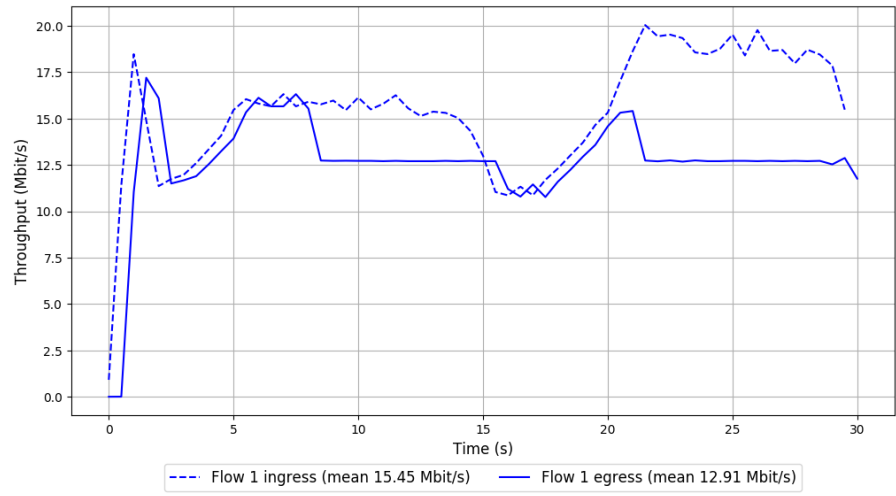


```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-02 00:31:47
End at: 2018-12-02 00:32:17
Local clock offset: 0.623 ms
Remote clock offset: 3.776 ms

# Below is generated by plot.py at 2018-12-02 02:21:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.91 Mbit/s
95th percentile per-packet one-way delay: 56.153 ms
Loss rate: 16.46%
-- Flow 1:
Average throughput: 12.91 Mbit/s
95th percentile per-packet one-way delay: 56.153 ms
Loss rate: 16.46%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

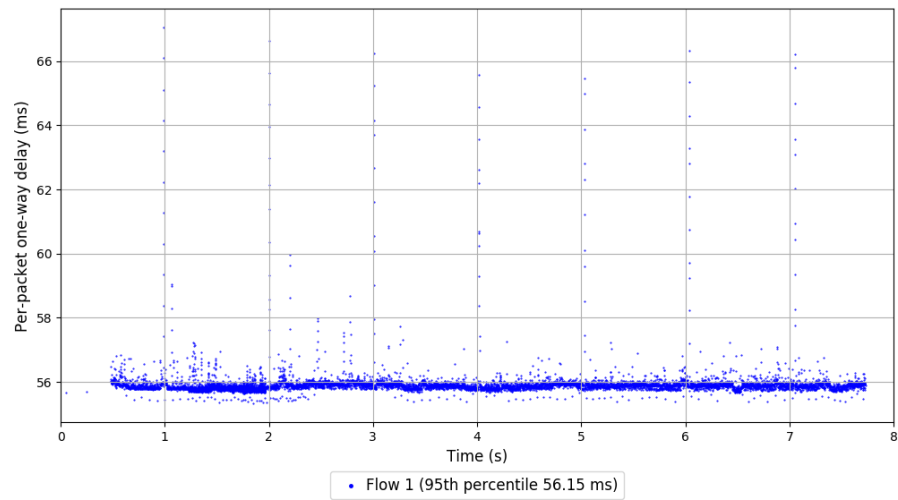
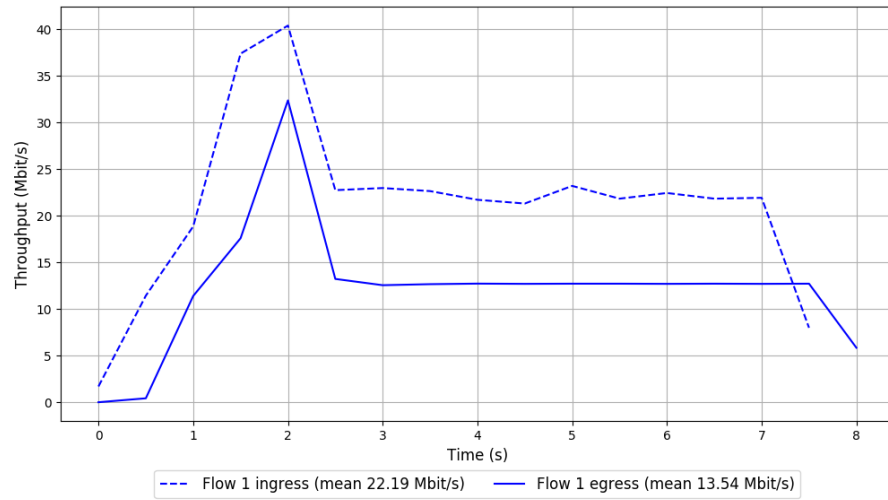
Start at: 2018-12-02 00:55:19

End at: 2018-12-02 00:55:49

Local clock offset: 0.33 ms

Remote clock offset: 7.858 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

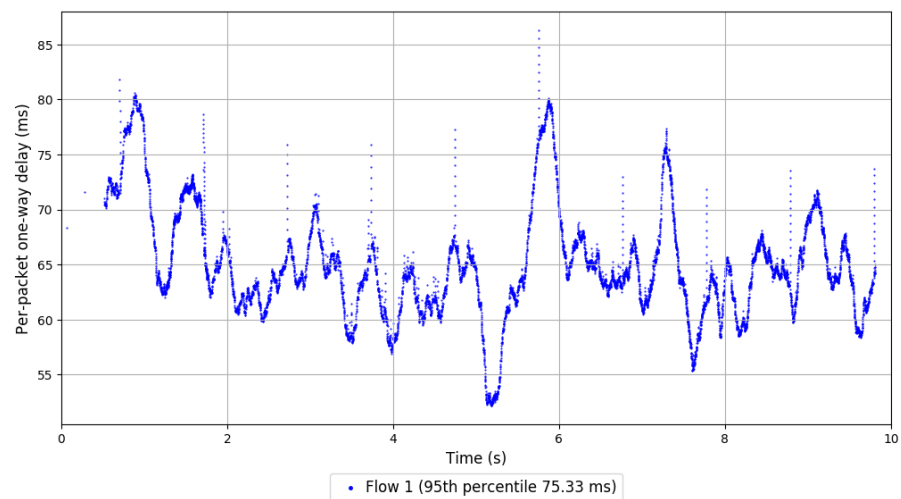
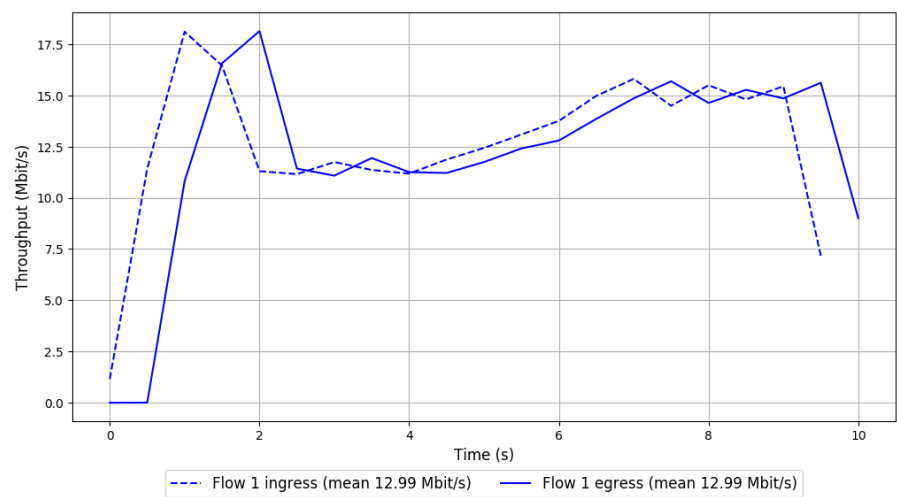
Start at: 2018-12-02 01:18:47

End at: 2018-12-02 01:19:17

Local clock offset: -1.604 ms

Remote clock offset: 4.554 ms

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

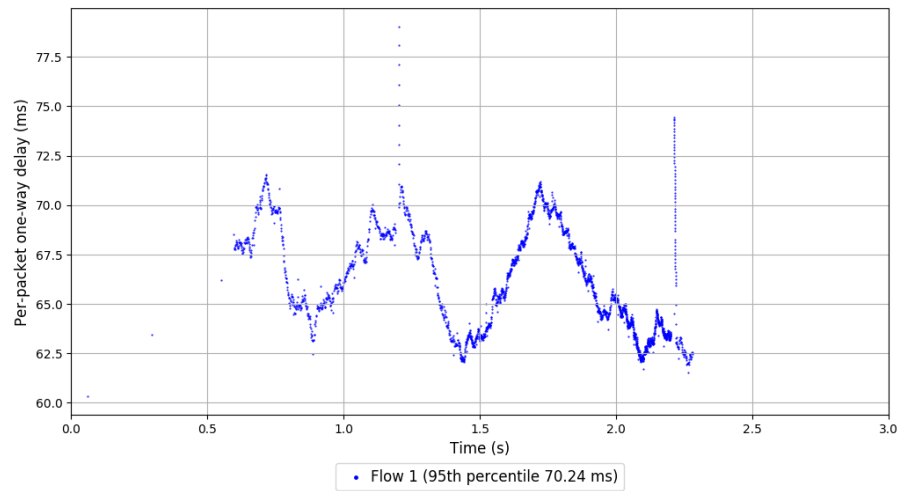
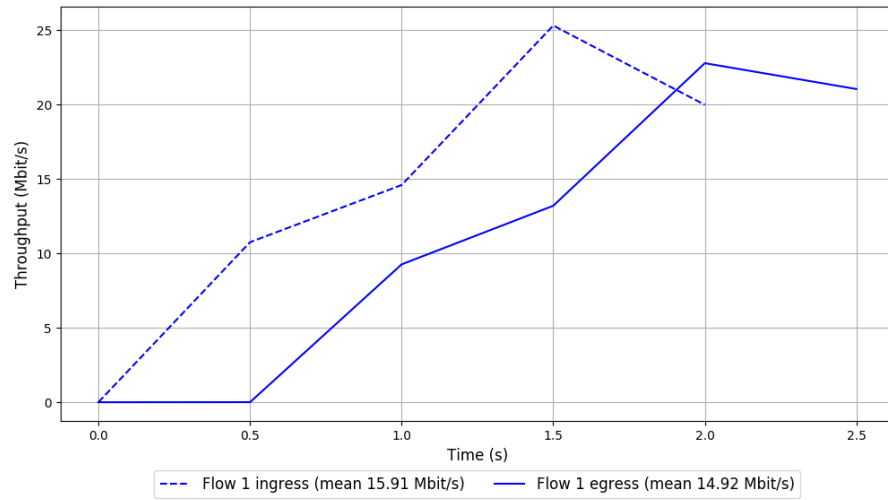
Start at: 2018-12-02 01:42:29

End at: 2018-12-02 01:42:59

Local clock offset: -0.574 ms

Remote clock offset: 13.241 ms

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

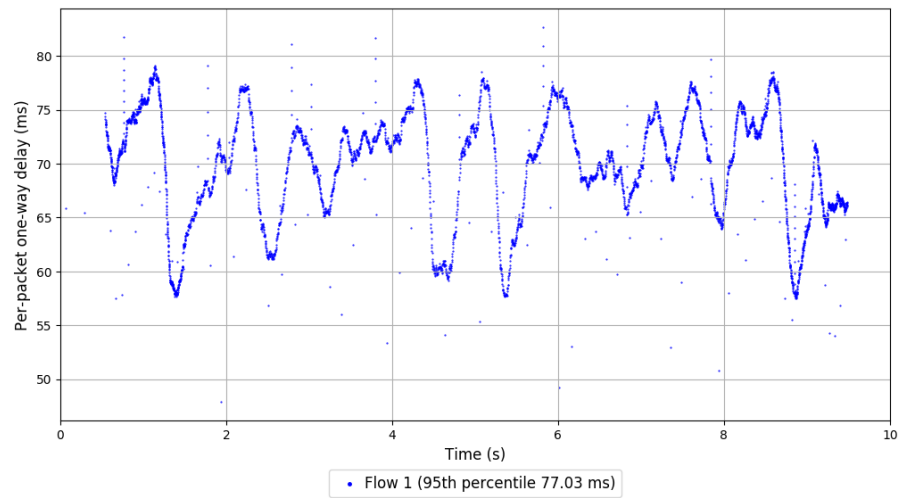
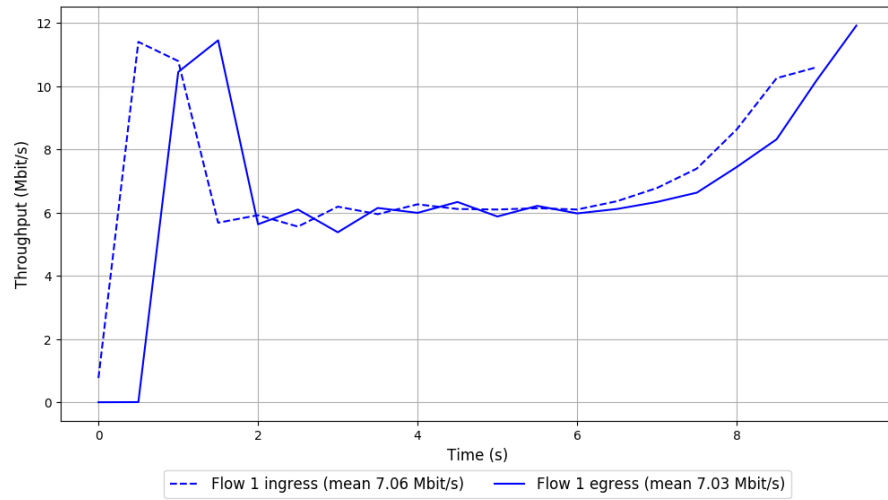
Start at: 2018-12-02 02:05:44

End at: 2018-12-02 02:06:14

Local clock offset: -2.838 ms

Remote clock offset: 32.732 ms

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-12-02 00:37:56

End at: 2018-12-02 00:38:26

Local clock offset: 2.36 ms

Remote clock offset: 5.352 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 62.42 Mbit/s

95th percentile per-packet one-way delay: 88.488 ms

Loss rate: 0.00%

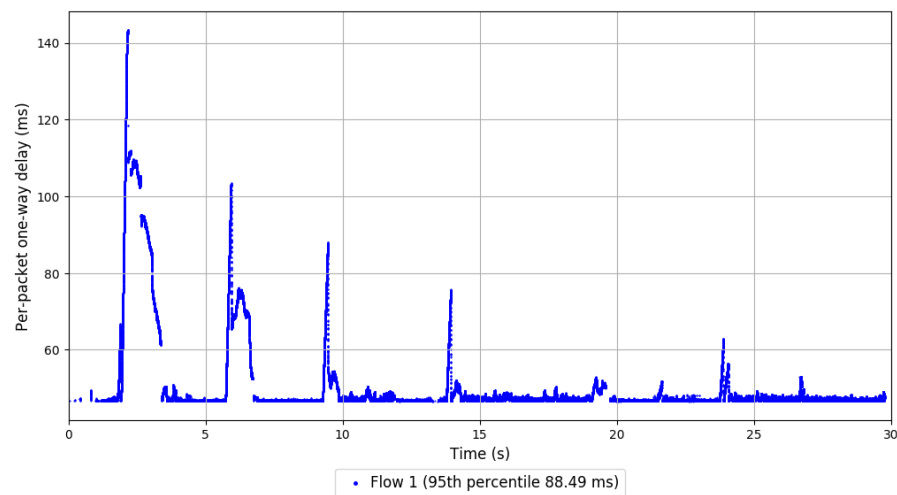
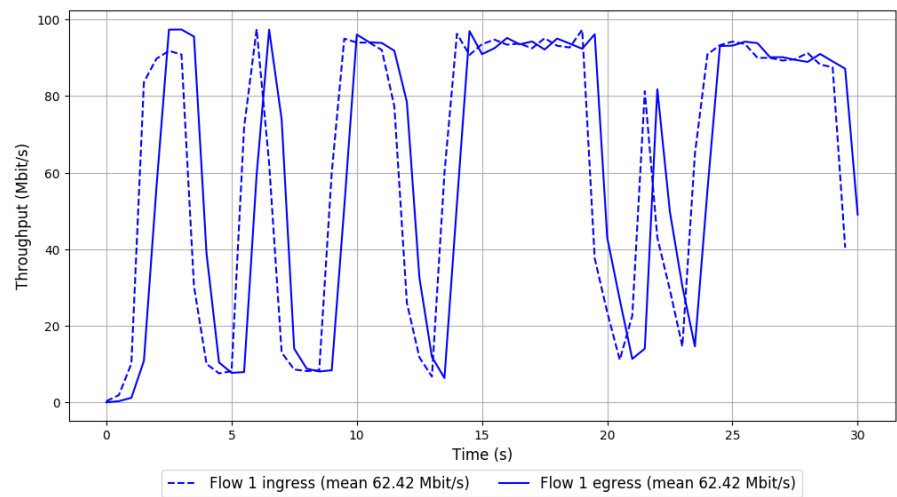
-- Flow 1:

Average throughput: 62.42 Mbit/s

95th percentile per-packet one-way delay: 88.488 ms

Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-12-02 01:01:27

End at: 2018-12-02 01:01:57

Local clock offset: -0.794 ms

Remote clock offset: 8.261 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 55.86 Mbit/s

95th percentile per-packet one-way delay: 71.758 ms

Loss rate: 0.03%

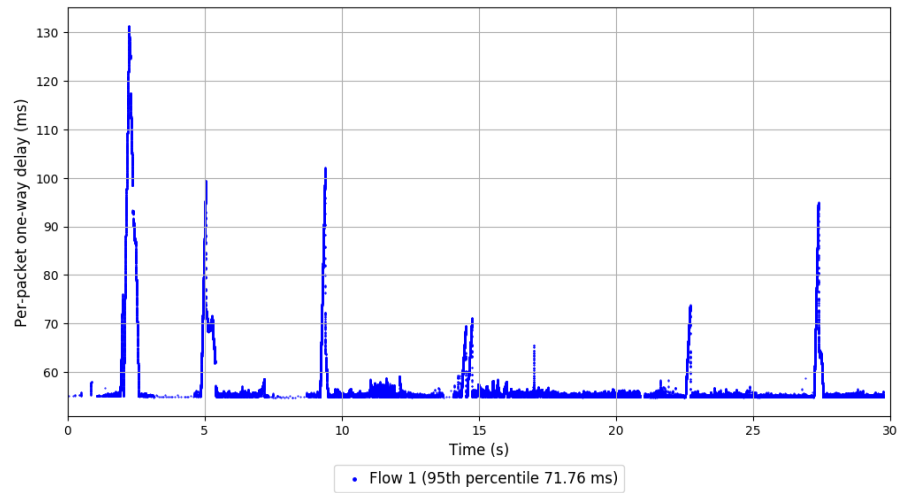
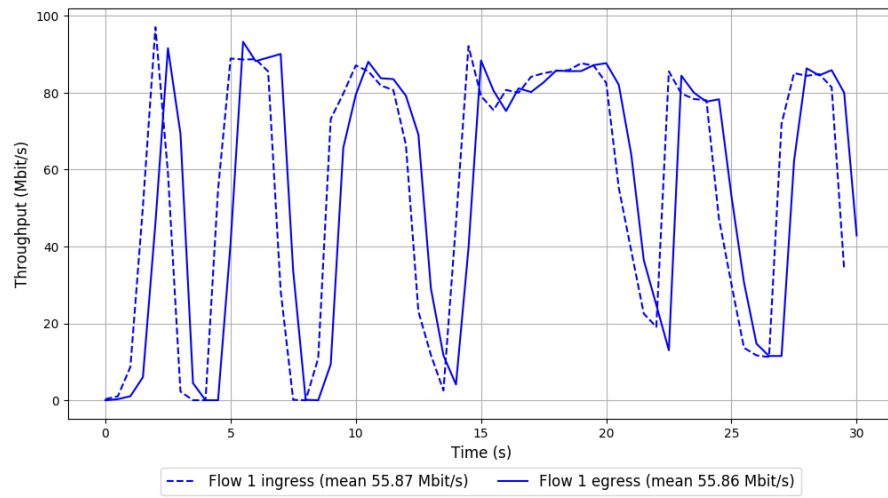
-- Flow 1:

Average throughput: 55.86 Mbit/s

95th percentile per-packet one-way delay: 71.758 ms

Loss rate: 0.03%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-02 01:25:03

End at: 2018-12-02 01:25:33

Local clock offset: -1.188 ms

Remote clock offset: 5.041 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 53.07 Mbit/s

95th percentile per-packet one-way delay: 78.201 ms

Loss rate: 0.06%

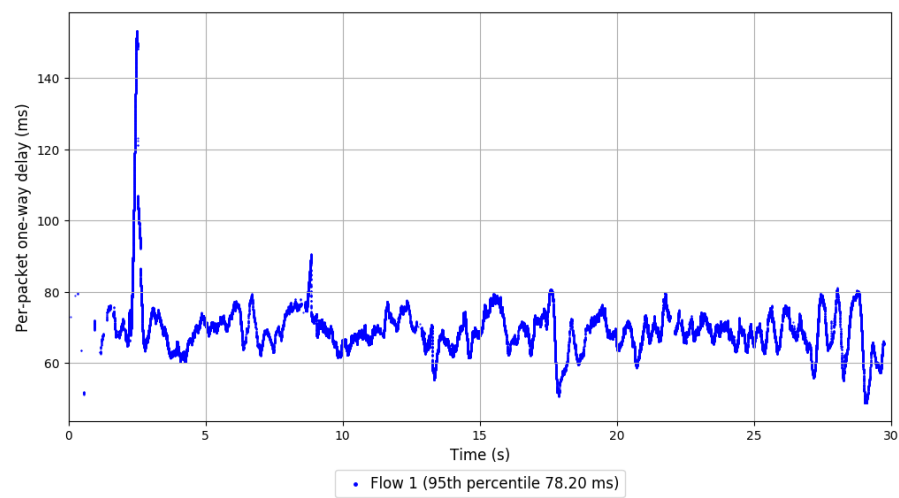
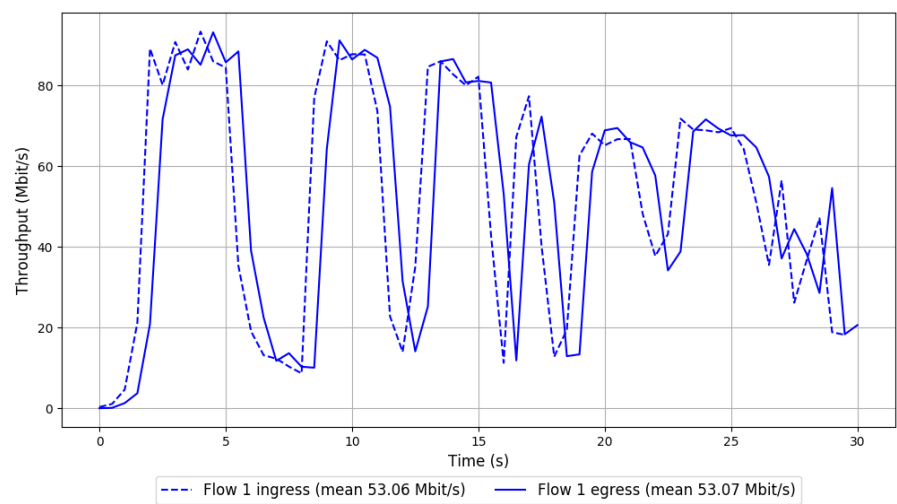
-- Flow 1:

Average throughput: 53.07 Mbit/s

95th percentile per-packet one-way delay: 78.201 ms

Loss rate: 0.06%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-12-02 01:48:46

End at: 2018-12-02 01:49:16

Local clock offset: -0.379 ms

Remote clock offset: 23.885 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 22.53 Mbit/s

95th percentile per-packet one-way delay: 71.495 ms

Loss rate: 0.20%

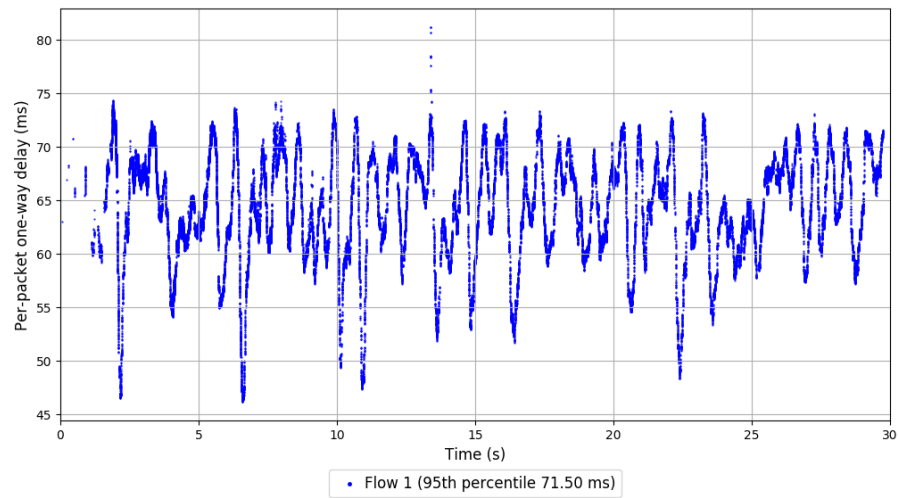
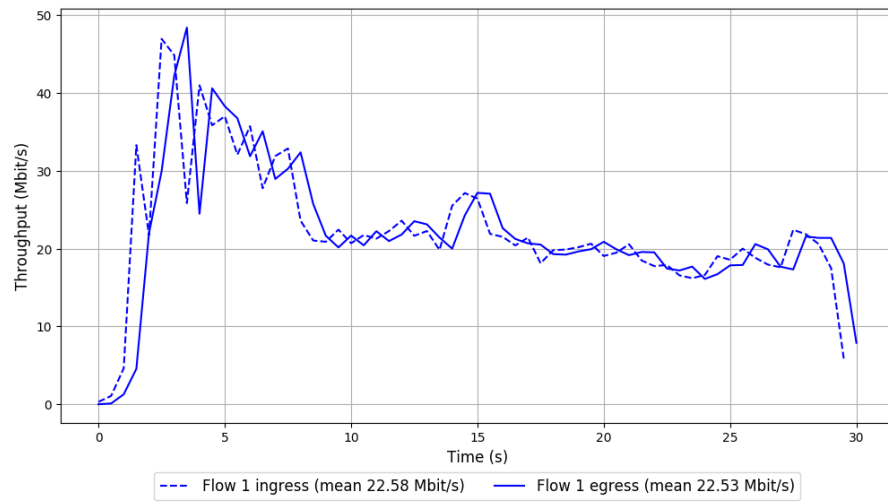
-- Flow 1:

Average throughput: 22.53 Mbit/s

95th percentile per-packet one-way delay: 71.495 ms

Loss rate: 0.20%

Run 4: Report of QUIC Cubic — Data Link

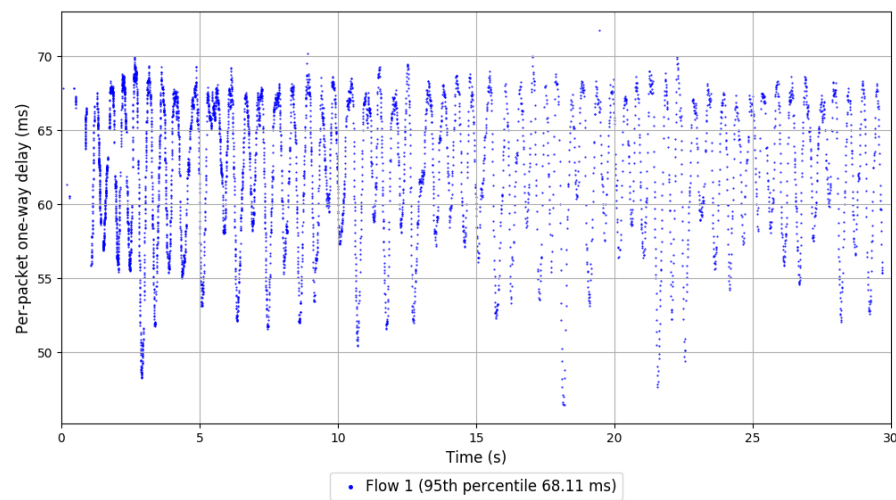
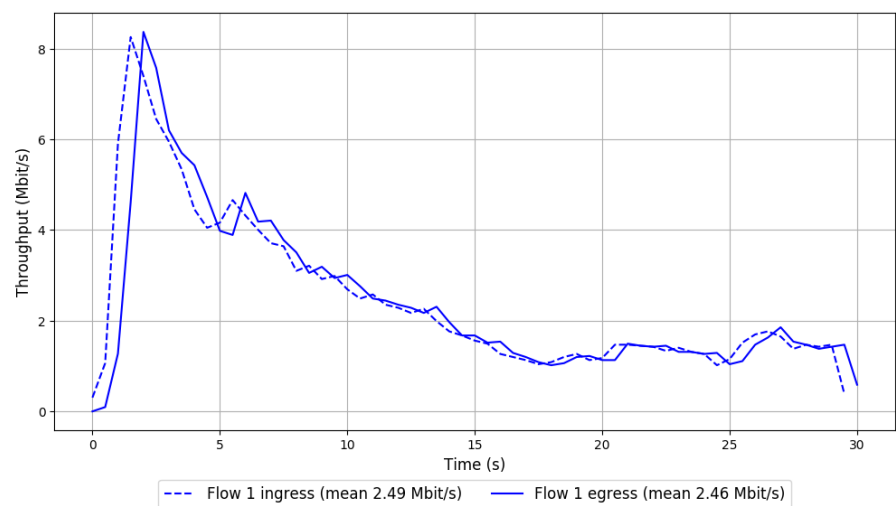


Run 5: Statistics of QUIC Cubic

Start at: 2018-12-02 02:12:19
End at: 2018-12-02 02:12:49
Local clock offset: -2.988 ms
Remote clock offset: 40.644 ms

Below is generated by plot.py at 2018-12-02 02:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 68.111 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 68.111 ms
Loss rate: 1.16%

Run 5: Report of QUIC Cubic — Data Link

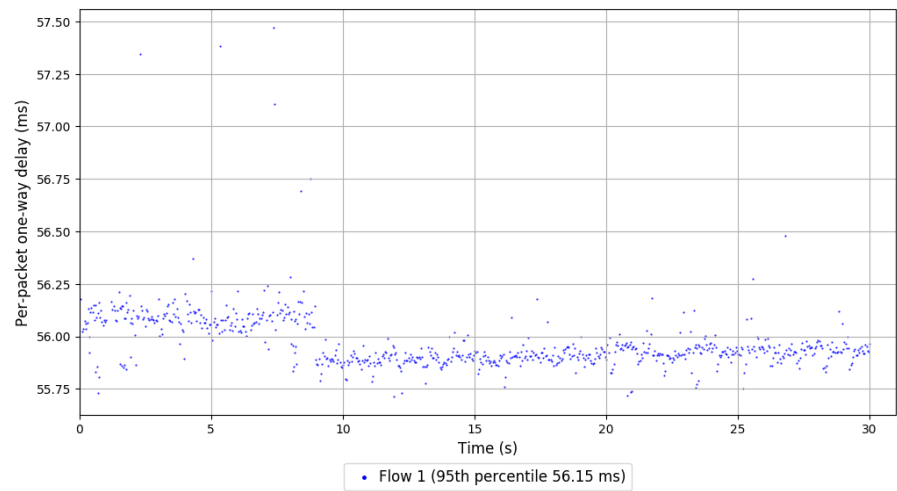
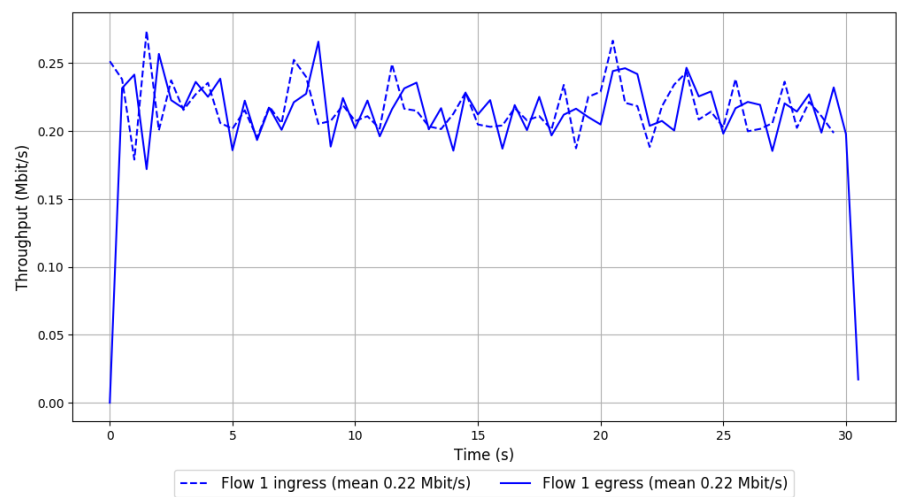



```
Run 1: Statistics of SCReAM

Start at: 2018-12-02 00:19:41
End at: 2018-12-02 00:20:11
Local clock offset: -5.318 ms
Remote clock offset: -0.515 ms

# Below is generated by plot.py at 2018-12-02 02:21:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.147 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.147 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-12-02 00:43:00

End at: 2018-12-02 00:43:30

Local clock offset: 3.585 ms

Remote clock offset: 6.289 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 46.622 ms

Loss rate: 0.00%

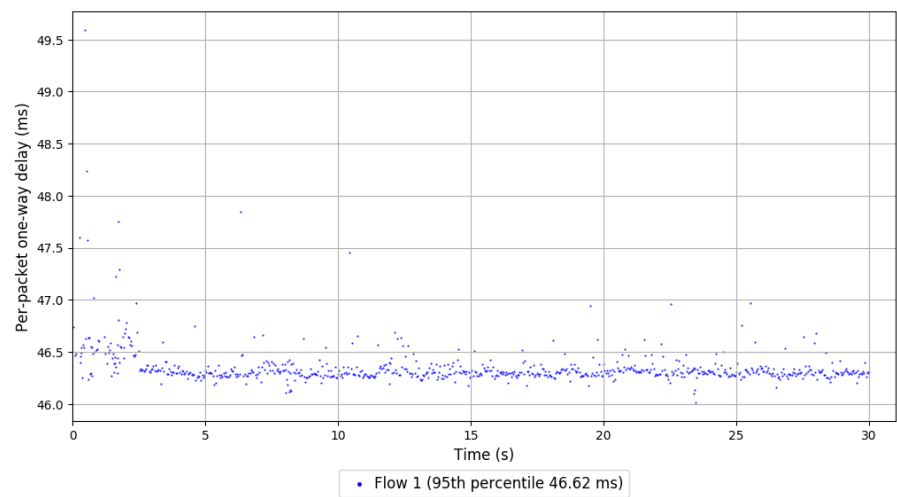
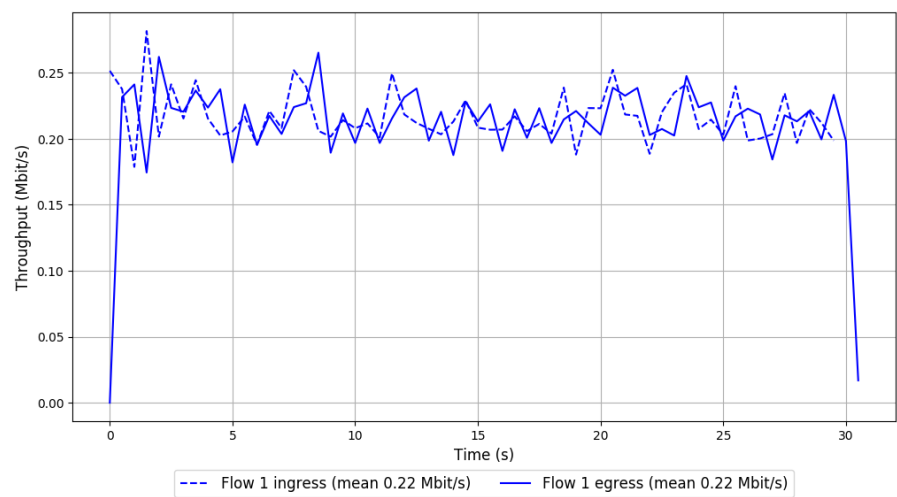
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 46.622 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-12-02 01:06:32

End at: 2018-12-02 01:07:02

Local clock offset: -1.203 ms

Remote clock offset: 9.118 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 57.737 ms

Loss rate: 0.00%

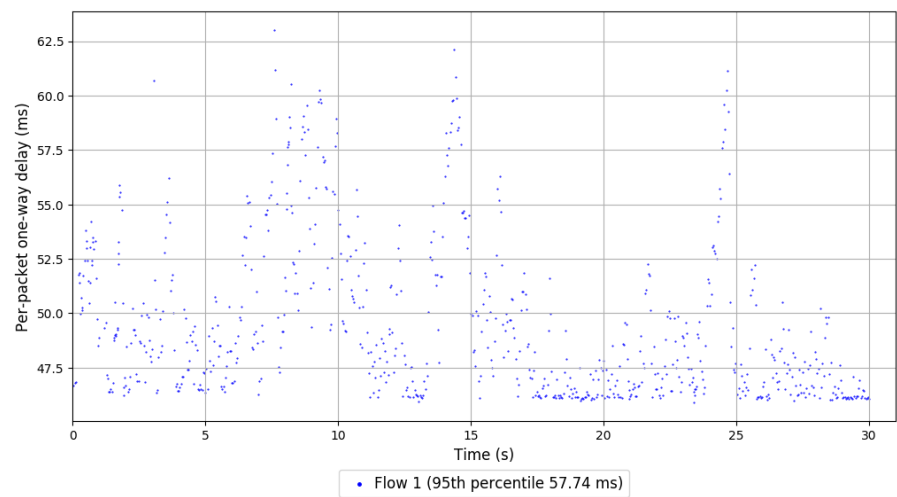
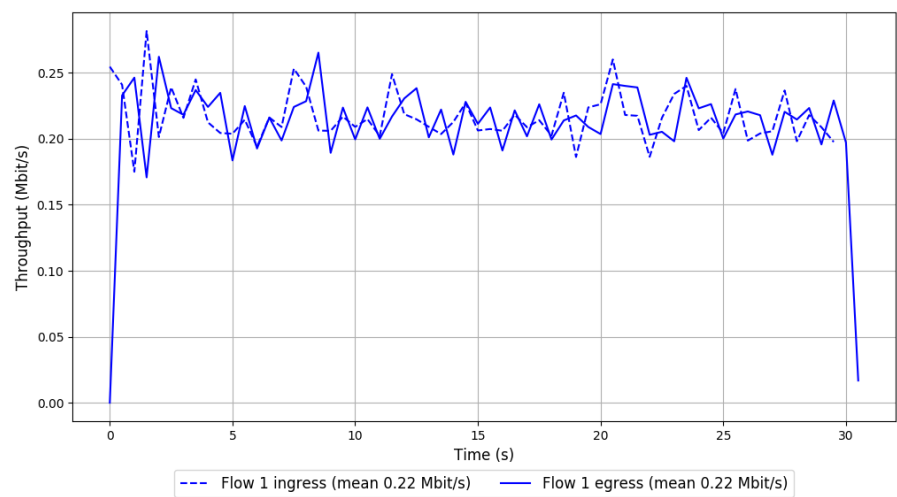
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 57.737 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-12-02 01:30:08

End at: 2018-12-02 01:30:38

Local clock offset: -1.059 ms

Remote clock offset: 9.363 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 67.822 ms

Loss rate: 0.00%

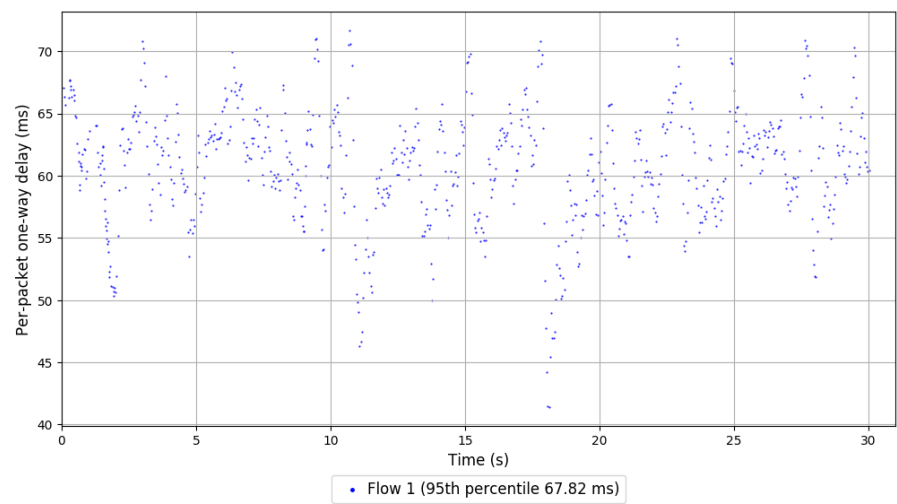
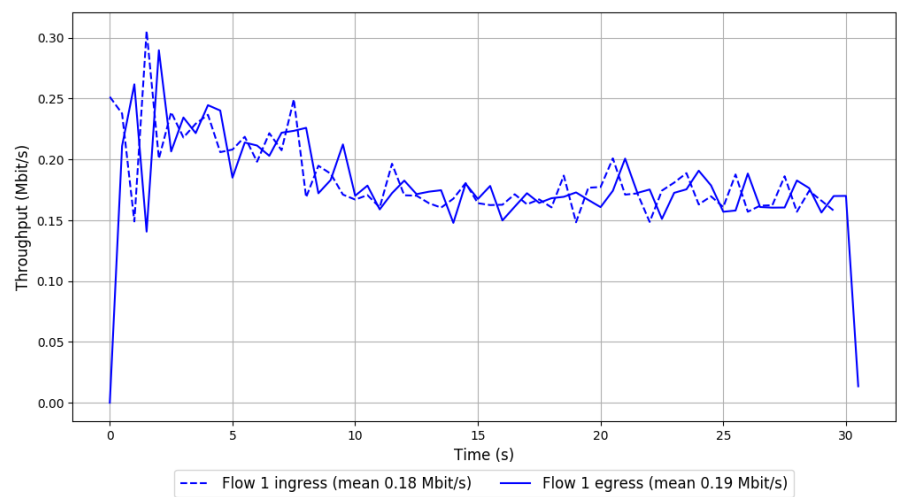
-- Flow 1:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 67.822 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link

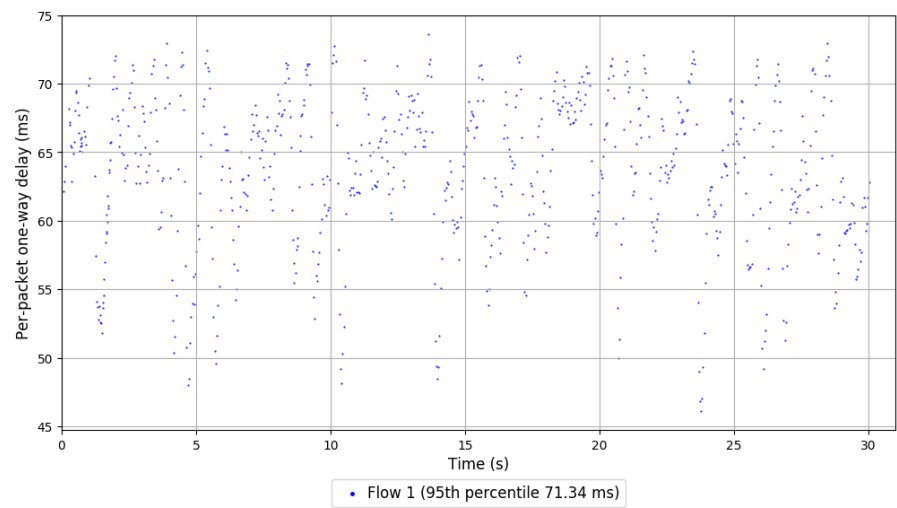
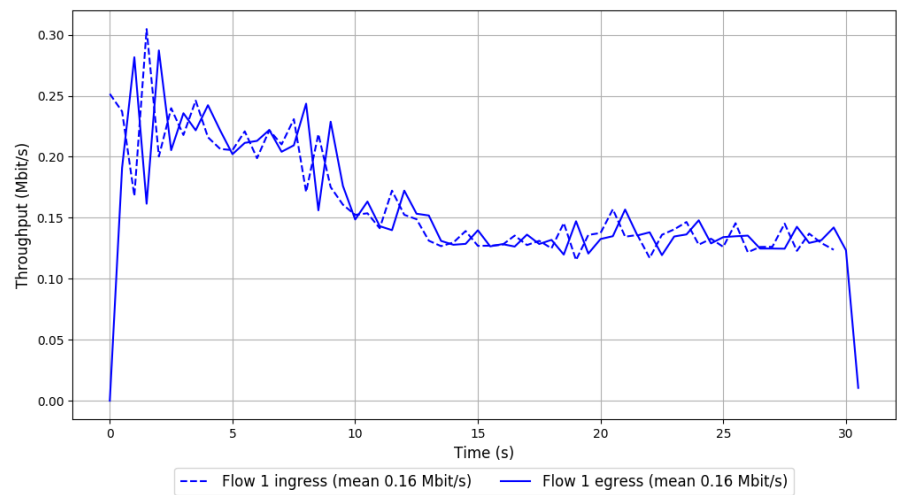


Run 5: Statistics of SCReAM

Start at: 2018-12-02 01:53:32
End at: 2018-12-02 01:54:02
Local clock offset: -1.901 ms
Remote clock offset: 25.042 ms

Below is generated by plot.py at 2018-12-02 02:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 71.339 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 71.339 ms
Loss rate: 0.14%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-12-02 00:24:35

End at: 2018-12-02 00:25:05

Local clock offset: -2.247 ms

Remote clock offset: 2.372 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.42 Mbit/s

95th percentile per-packet one-way delay: 52.680 ms

Loss rate: 0.00%

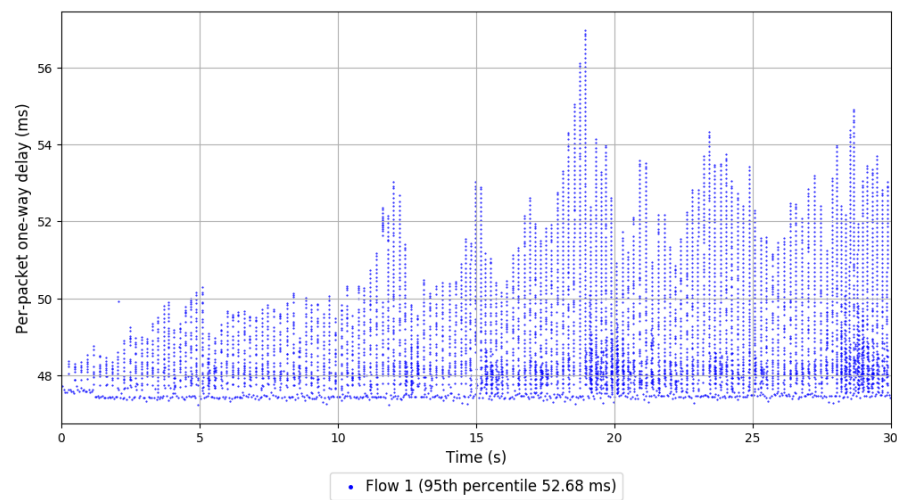
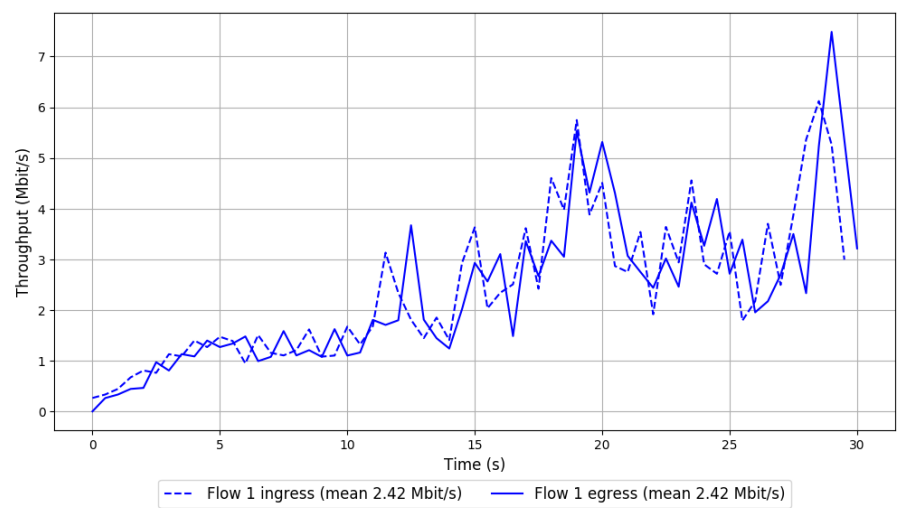
-- Flow 1:

Average throughput: 2.42 Mbit/s

95th percentile per-packet one-way delay: 52.680 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-12-02 00:47:56

End at: 2018-12-02 00:48:26

Local clock offset: 4.225 ms

Remote clock offset: 7.671 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 51.536 ms

Loss rate: 0.00%

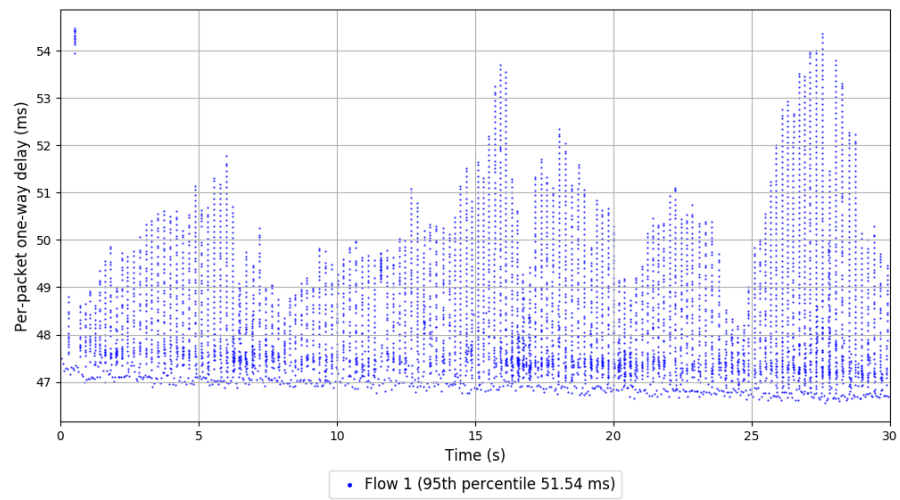
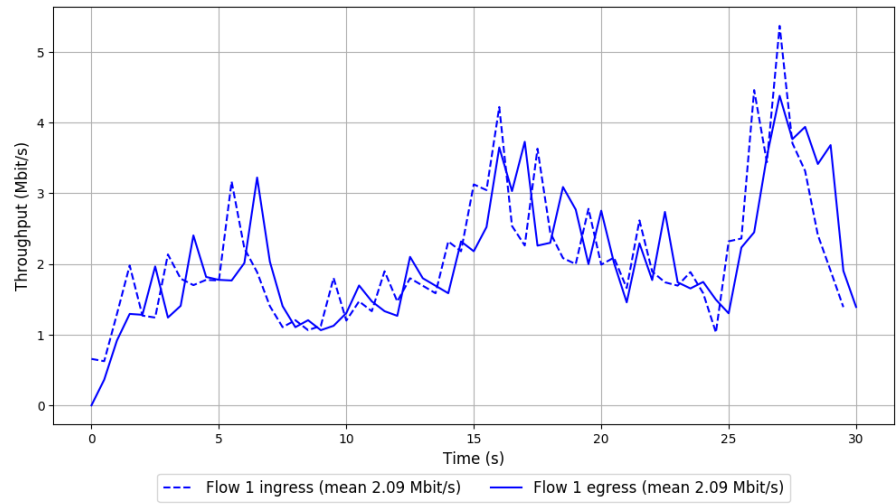
-- Flow 1:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 51.536 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-12-02 01:11:26

End at: 2018-12-02 01:11:56

Local clock offset: -1.593 ms

Remote clock offset: 5.367 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.02 Mbit/s

95th percentile per-packet one-way delay: 66.494 ms

Loss rate: 0.00%

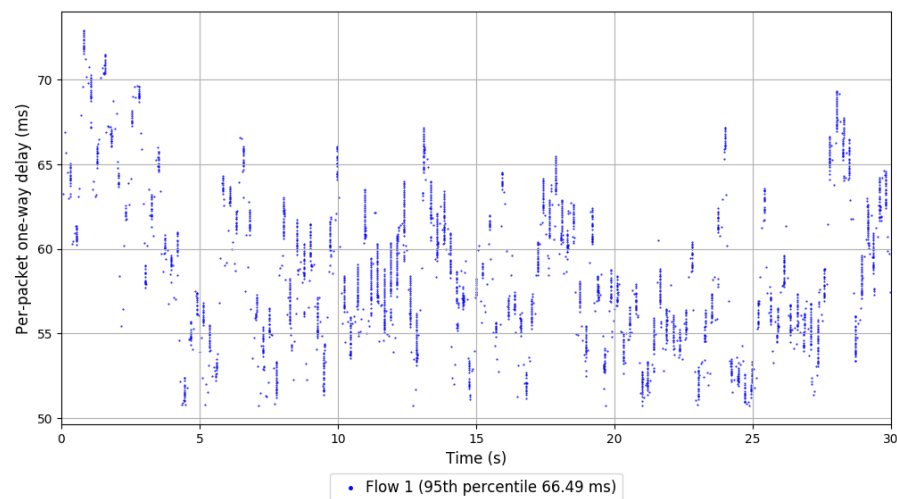
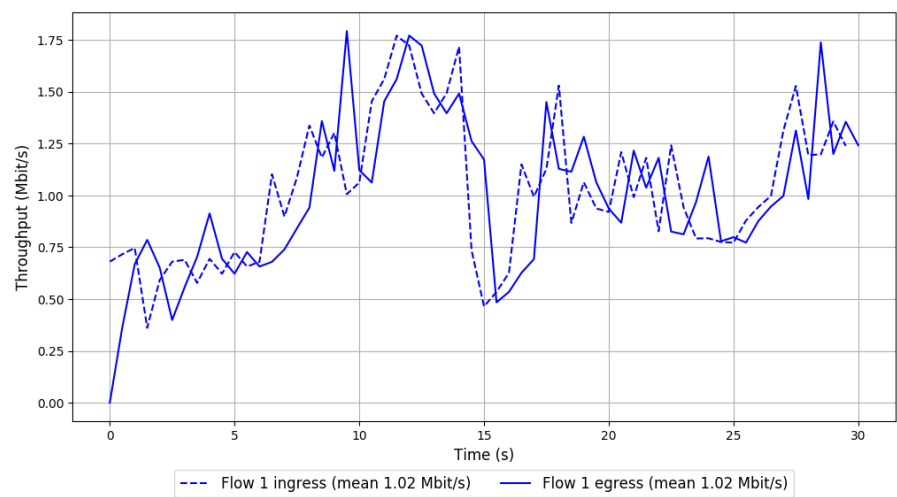
-- Flow 1:

Average throughput: 1.02 Mbit/s

95th percentile per-packet one-way delay: 66.494 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

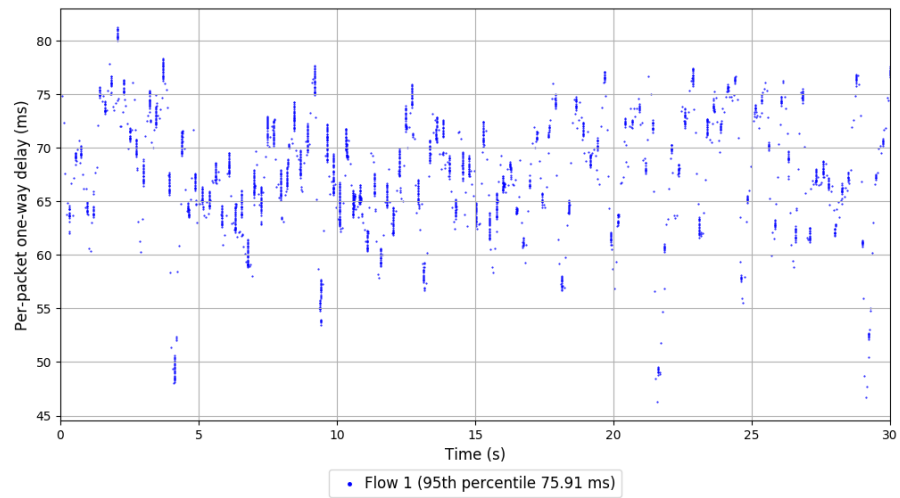
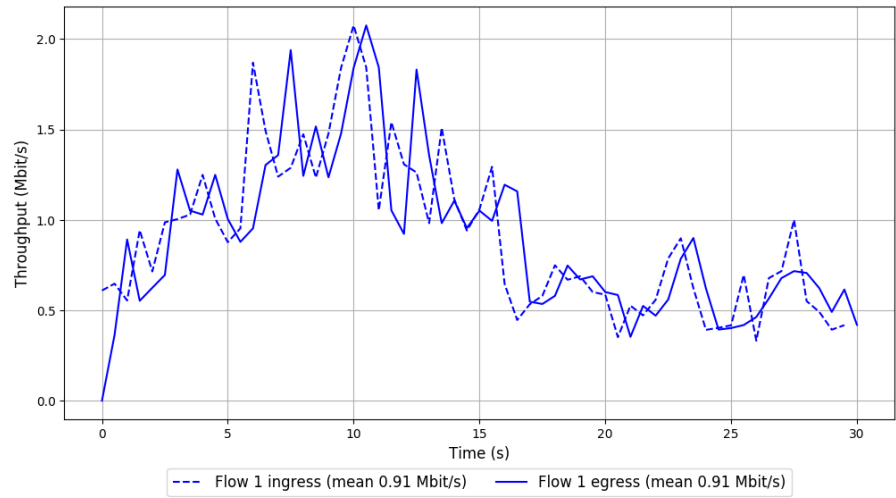


Run 4: Statistics of Sprout

Start at: 2018-12-02 01:35:02
End at: 2018-12-02 01:35:32
Local clock offset: -0.726 ms
Remote clock offset: 11.338 ms

Below is generated by plot.py at 2018-12-02 02:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 75.909 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 75.909 ms
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link

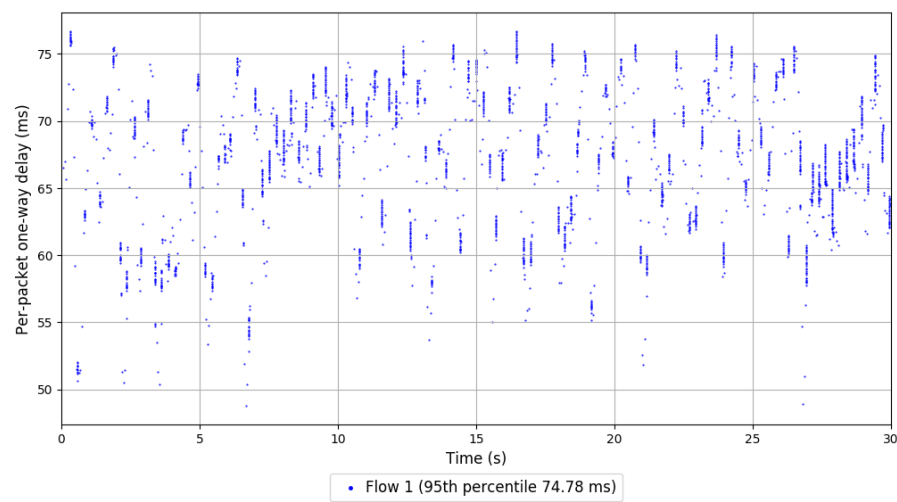
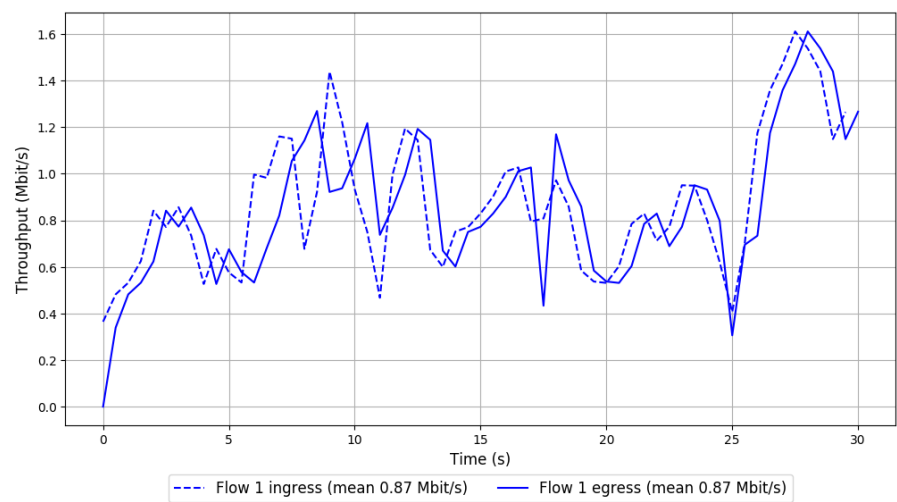


Run 5: Statistics of Sprout

Start at: 2018-12-02 01:58:23
End at: 2018-12-02 01:58:53
Local clock offset: -2.294 ms
Remote clock offset: 20.761 ms

Below is generated by plot.py at 2018-12-02 02:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 74.782 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 74.782 ms
Loss rate: 0.13%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

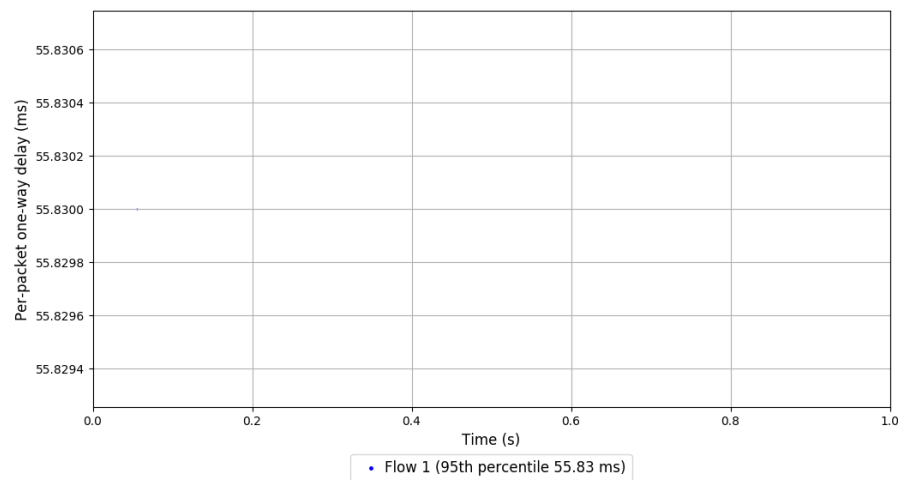
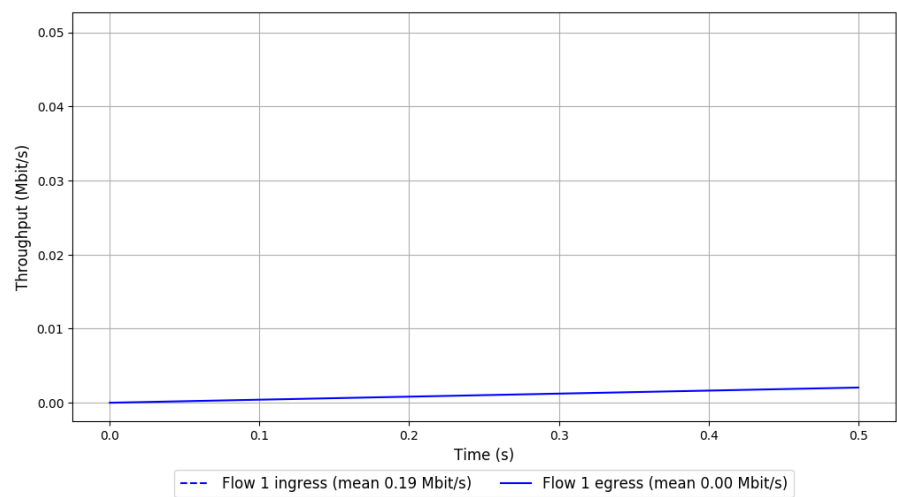
Start at: 2018-12-02 00:26:57

End at: 2018-12-02 00:27:27

Local clock offset: -1.048 ms

Remote clock offset: 2.573 ms

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-12-02 00:50:20

End at: 2018-12-02 00:50:50

Local clock offset: 2.71 ms

Remote clock offset: 7.566 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.14 Mbit/s

95th percentile per-packet one-way delay: 67.171 ms

Loss rate: 4.36%

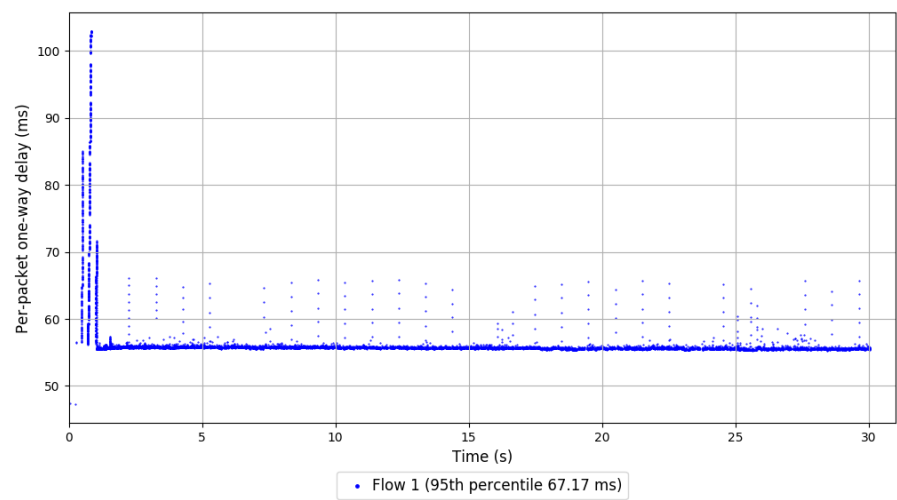
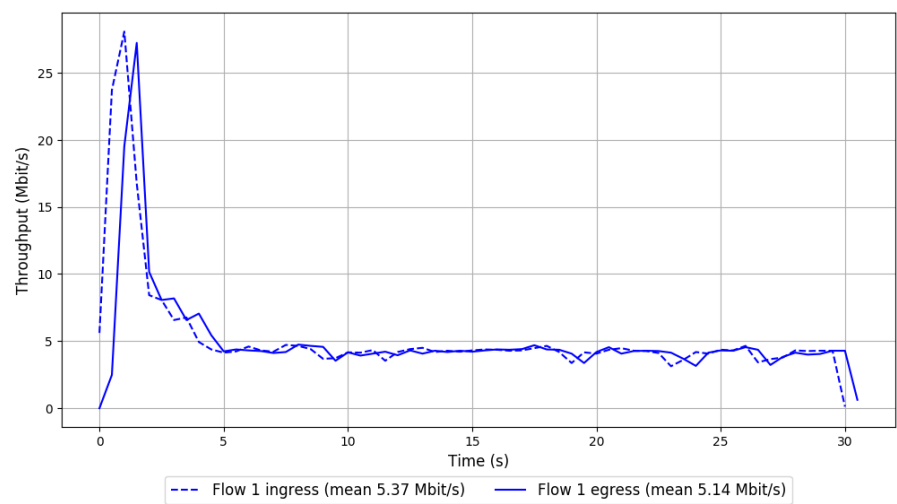
-- Flow 1:

Average throughput: 5.14 Mbit/s

95th percentile per-packet one-way delay: 67.171 ms

Loss rate: 4.36%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-12-02 01:13:49

End at: 2018-12-02 01:14:19

Local clock offset: -1.558 ms

Remote clock offset: 7.503 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.04 Mbit/s

95th percentile per-packet one-way delay: 74.640 ms

Loss rate: 10.50%

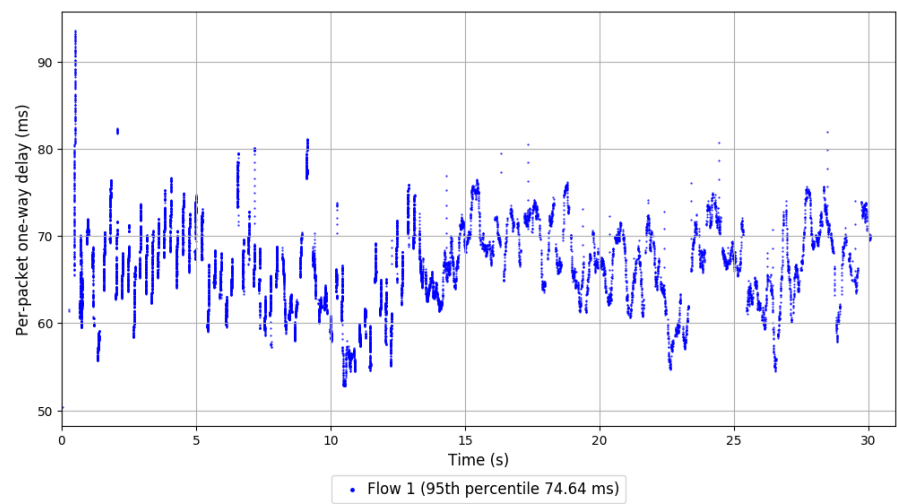
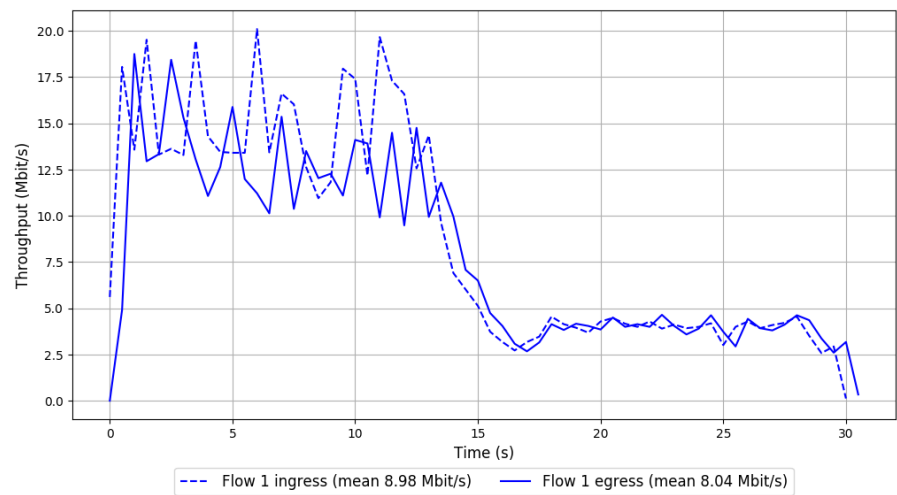
-- Flow 1:

Average throughput: 8.04 Mbit/s

95th percentile per-packet one-way delay: 74.640 ms

Loss rate: 10.50%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-12-02 01:37:25

End at: 2018-12-02 01:37:55

Local clock offset: -0.77 ms

Remote clock offset: 13.164 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.03 Mbit/s

95th percentile per-packet one-way delay: 80.544 ms

Loss rate: 3.61%

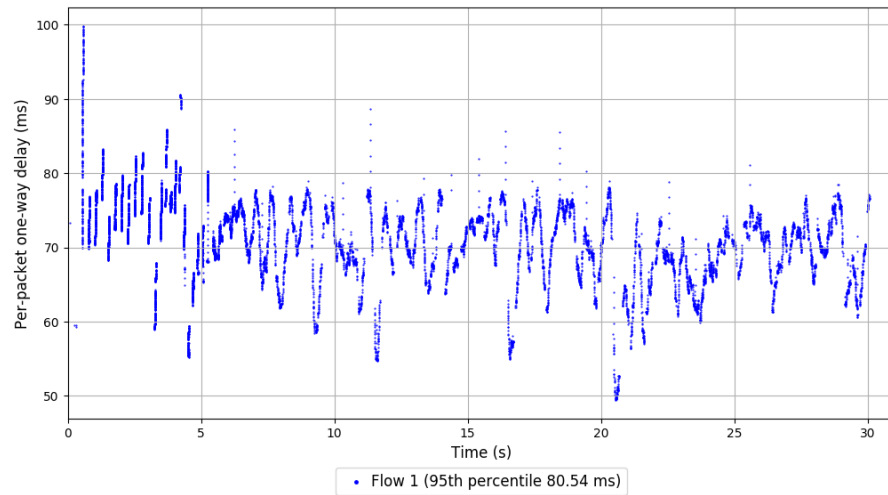
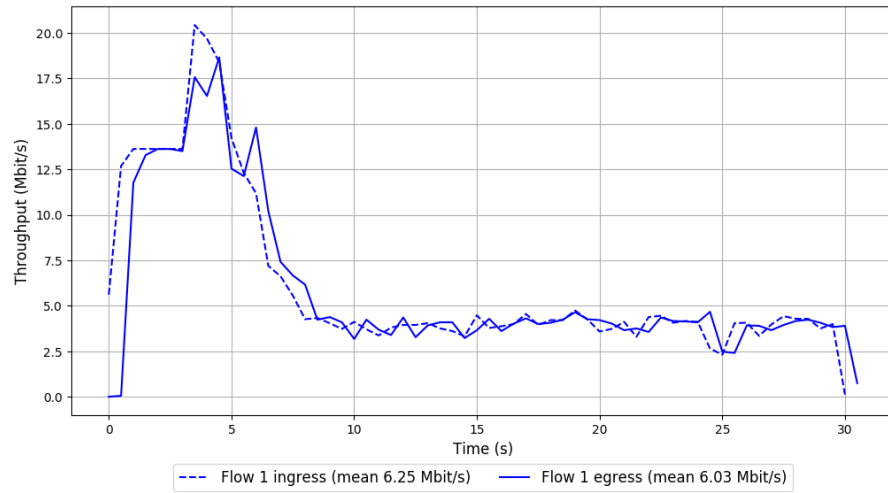
-- Flow 1:

Average throughput: 6.03 Mbit/s

95th percentile per-packet one-way delay: 80.544 ms

Loss rate: 3.61%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-12-02 02:00:53

End at: 2018-12-02 02:01:23

Local clock offset: -2.525 ms

Remote clock offset: 23.503 ms

Below is generated by plot.py at 2018-12-02 02:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.55 Mbit/s

95th percentile per-packet one-way delay: 86.222 ms

Loss rate: 8.97%

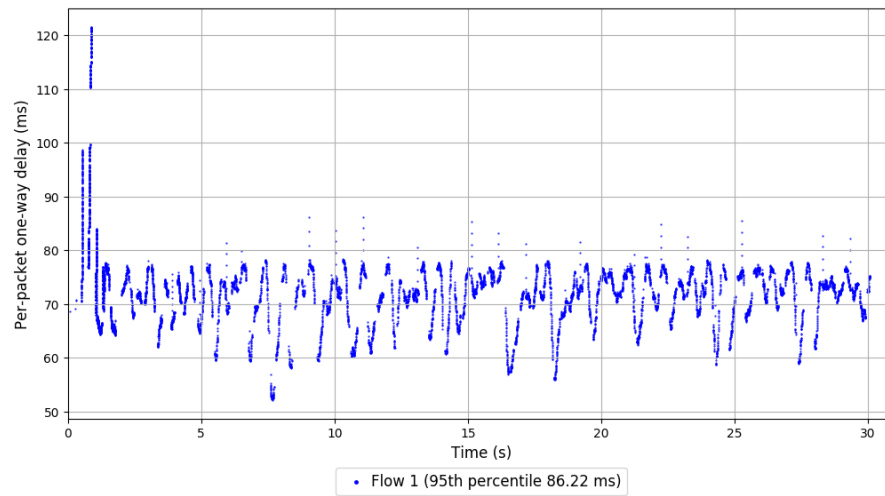
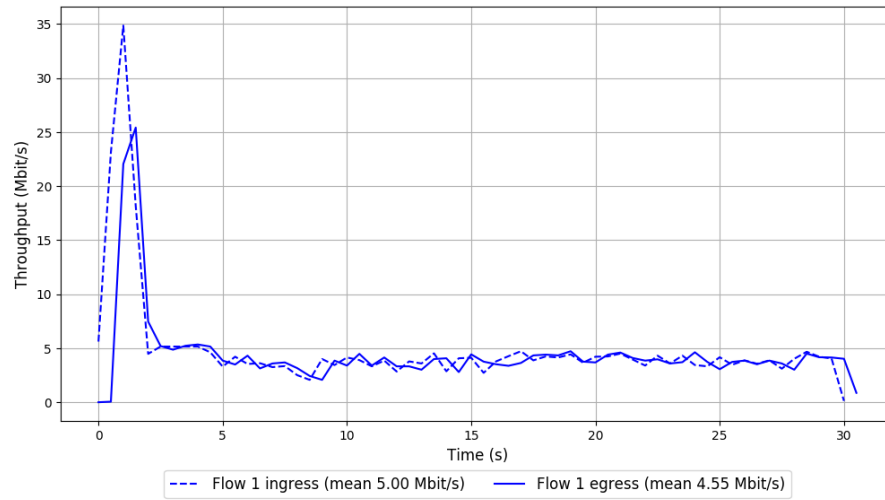
-- Flow 1:

Average throughput: 4.55 Mbit/s

95th percentile per-packet one-way delay: 86.222 ms

Loss rate: 8.97%

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

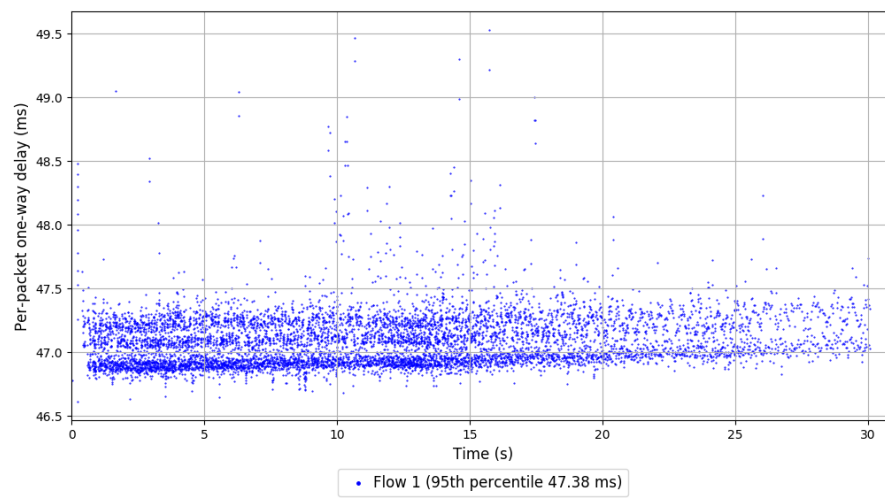
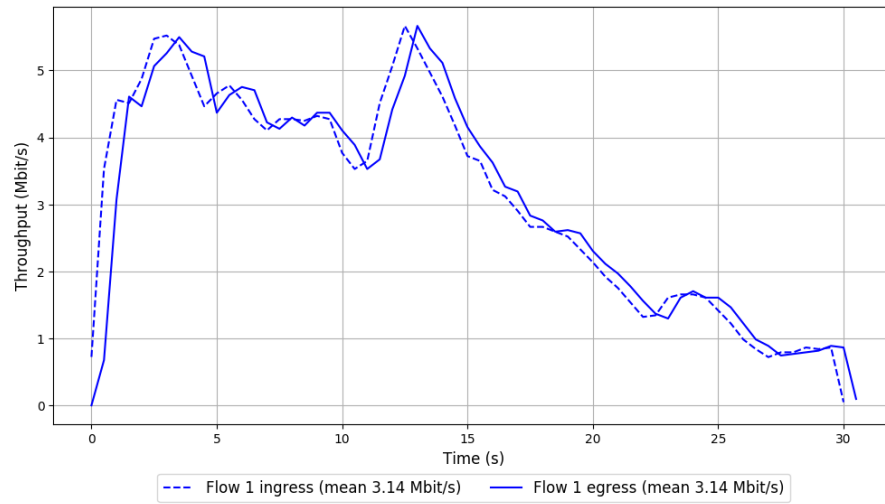


Run 1: Statistics of TCP Vegas

Start at: 2018-12-02 00:20:51
End at: 2018-12-02 00:21:21
Local clock offset: -4.23 ms
Remote clock offset: -0.184 ms

Below is generated by plot.py at 2018-12-02 02:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.14 Mbit/s
95th percentile per-packet one-way delay: 47.385 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.14 Mbit/s
95th percentile per-packet one-way delay: 47.385 ms
Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-12-02 00:44:10

End at: 2018-12-02 00:44:40

Local clock offset: 3.564 ms

Remote clock offset: 6.944 ms

Below is generated by plot.py at 2018-12-02 02:22:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.57 Mbit/s

95th percentile per-packet one-way delay: 57.925 ms

Loss rate: 0.03%

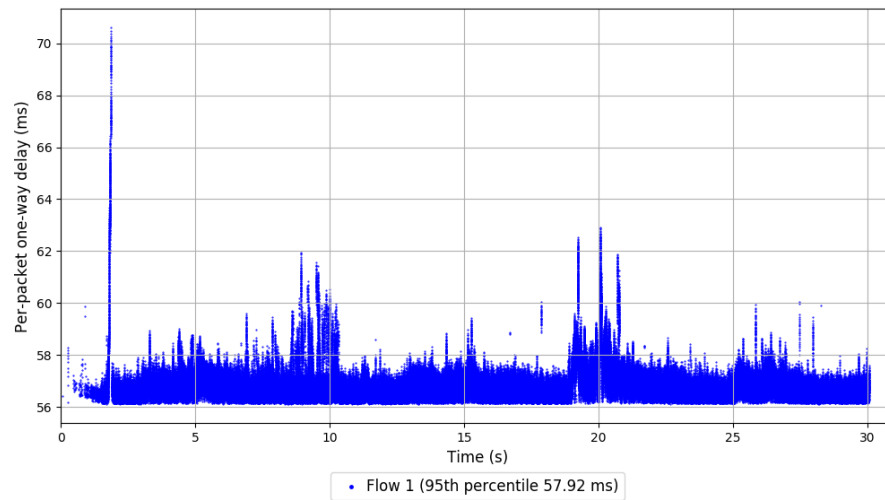
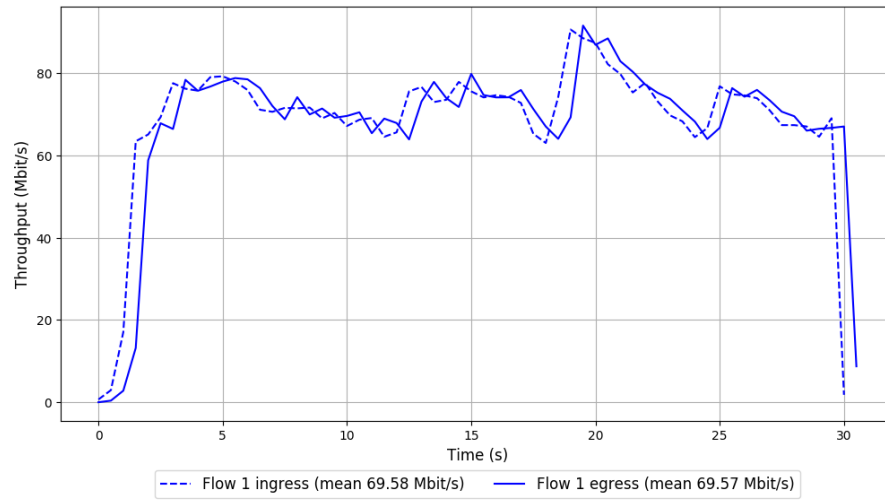
-- Flow 1:

Average throughput: 69.57 Mbit/s

95th percentile per-packet one-way delay: 57.925 ms

Loss rate: 0.03%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-12-02 01:07:42

End at: 2018-12-02 01:08:12

Local clock offset: -1.479 ms

Remote clock offset: 9.145 ms

Below is generated by plot.py at 2018-12-02 02:22:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.34 Mbit/s

95th percentile per-packet one-way delay: 77.265 ms

Loss rate: 0.05%

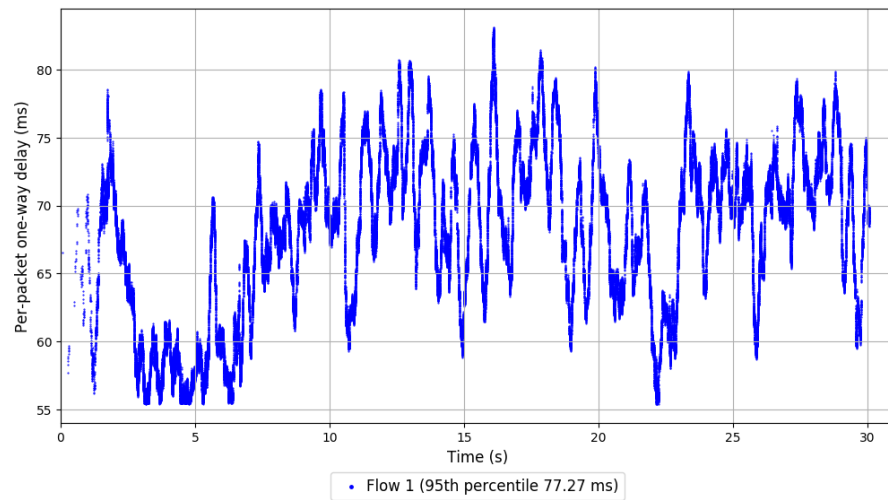
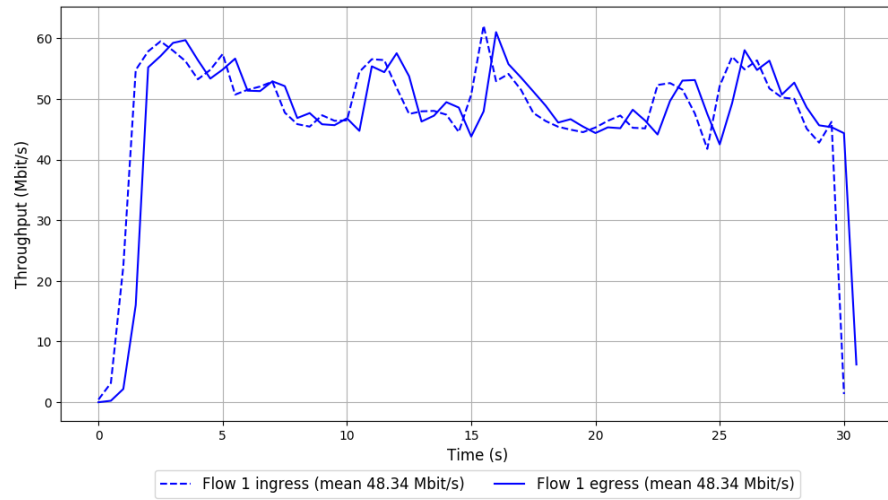
-- Flow 1:

Average throughput: 48.34 Mbit/s

95th percentile per-packet one-way delay: 77.265 ms

Loss rate: 0.05%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-12-02 01:31:18

End at: 2018-12-02 01:31:48

Local clock offset: -1.036 ms

Remote clock offset: 9.582 ms

Below is generated by plot.py at 2018-12-02 02:22:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.22 Mbit/s

95th percentile per-packet one-way delay: 68.187 ms

Loss rate: 0.02%

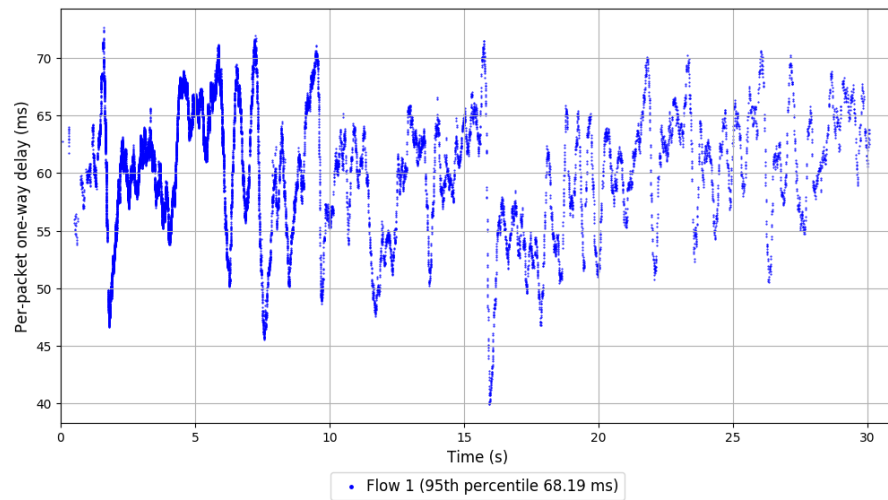
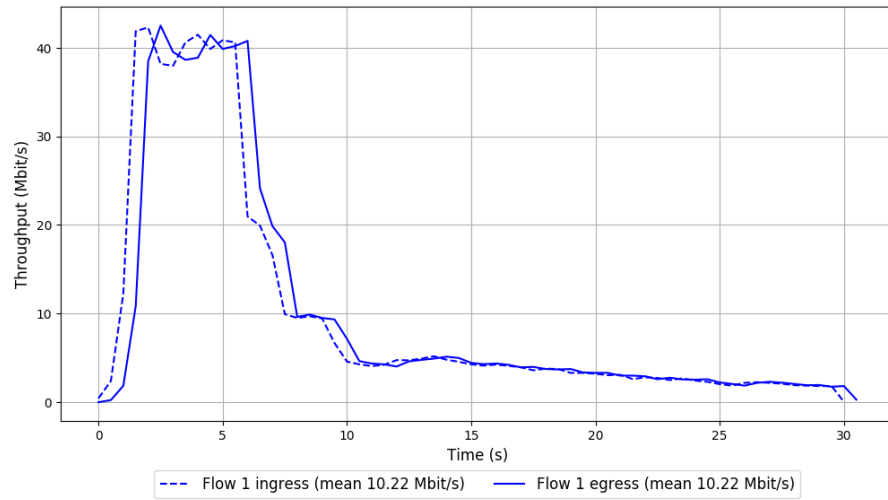
-- Flow 1:

Average throughput: 10.22 Mbit/s

95th percentile per-packet one-way delay: 68.187 ms

Loss rate: 0.02%

Run 4: Report of TCP Vegas — Data Link

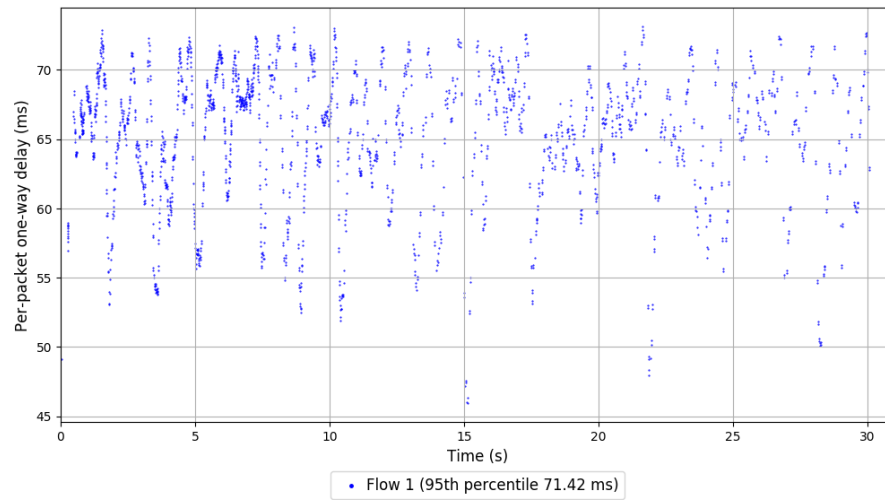
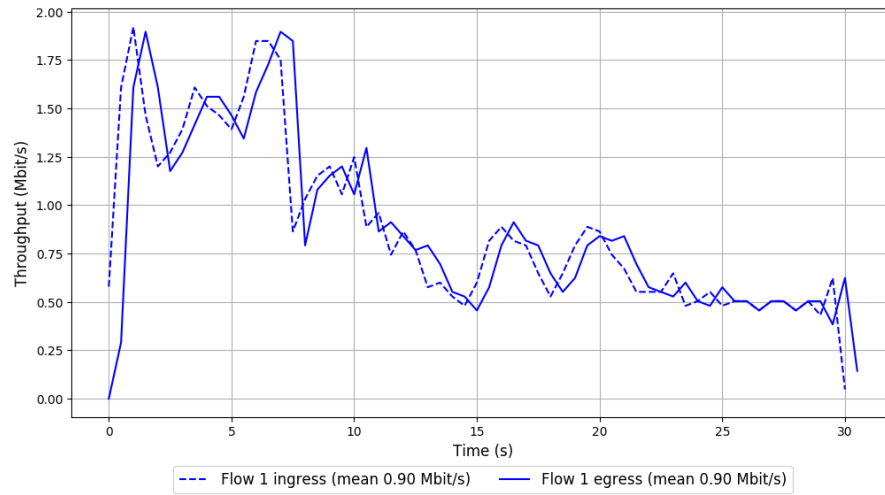


Run 5: Statistics of TCP Vegas

Start at: 2018-12-02 01:54:43
End at: 2018-12-02 01:55:13
Local clock offset: -1.925 ms
Remote clock offset: 24.672 ms

Below is generated by plot.py at 2018-12-02 02:22:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 71.419 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 71.419 ms
Loss rate: 0.18%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-12-02 00:41:40

End at: 2018-12-02 00:42:10

Local clock offset: 3.045 ms

Remote clock offset: 5.748 ms

Below is generated by plot.py at 2018-12-02 02:22:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.16 Mbit/s

95th percentile per-packet one-way delay: 192.714 ms

Loss rate: 10.38%

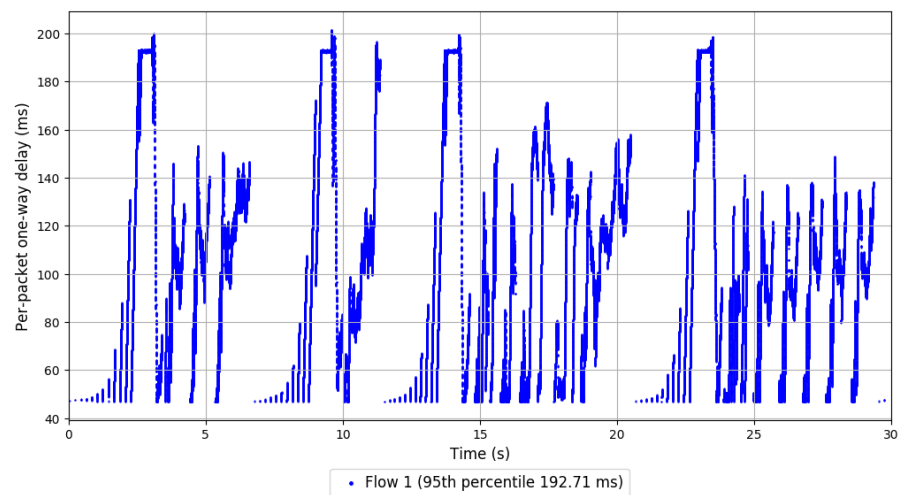
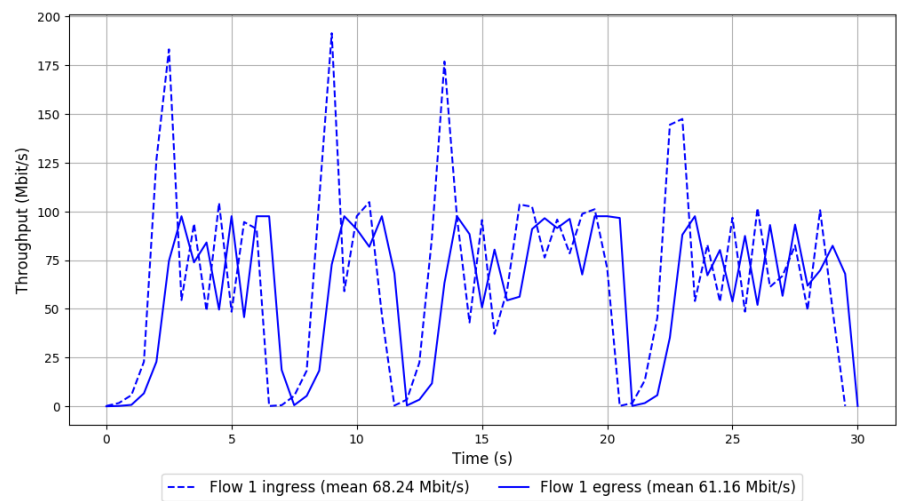
-- Flow 1:

Average throughput: 61.16 Mbit/s

95th percentile per-packet one-way delay: 192.714 ms

Loss rate: 10.38%

Run 1: Report of Verus — Data Link

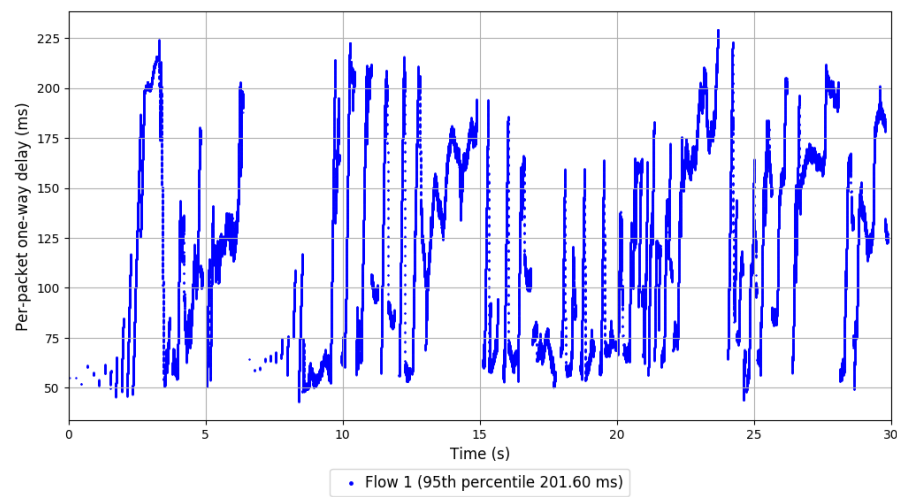
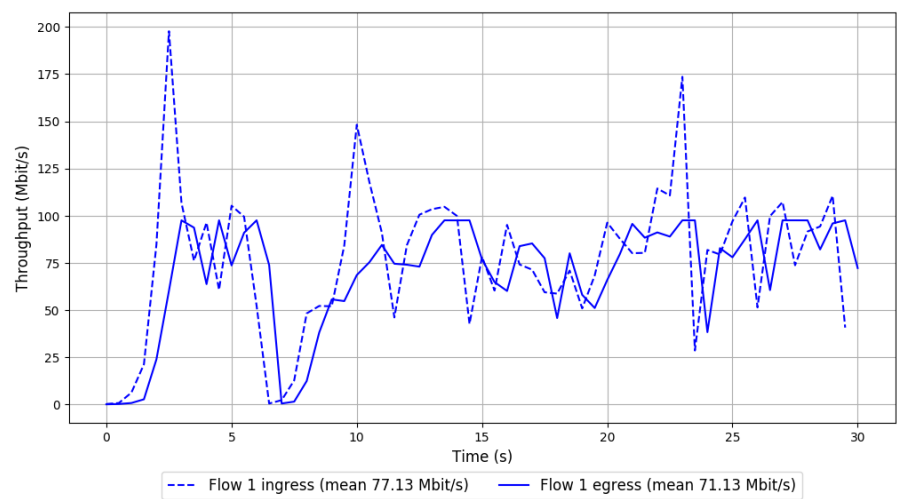


Run 2: Statistics of Verus

Start at: 2018-12-02 01:05:13
End at: 2018-12-02 01:05:43
Local clock offset: -1.261 ms
Remote clock offset: 5.649 ms

Below is generated by plot.py at 2018-12-02 02:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 71.13 Mbit/s
95th percentile per-packet one-way delay: 201.597 ms
Loss rate: 7.64%
-- Flow 1:
Average throughput: 71.13 Mbit/s
95th percentile per-packet one-way delay: 201.597 ms
Loss rate: 7.64%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-12-02 01:28:47

End at: 2018-12-02 01:29:17

Local clock offset: -1.258 ms

Remote clock offset: 5.562 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 59.36 Mbit/s

95th percentile per-packet one-way delay: 213.312 ms

Loss rate: 10.81%

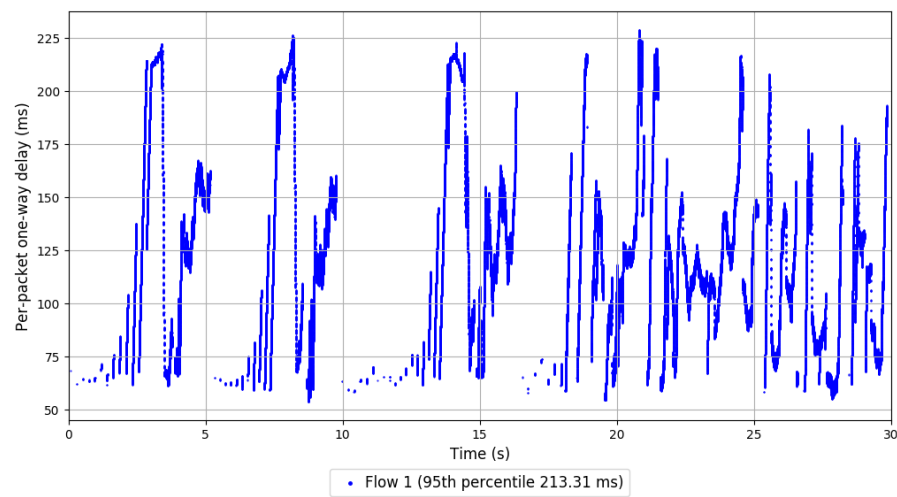
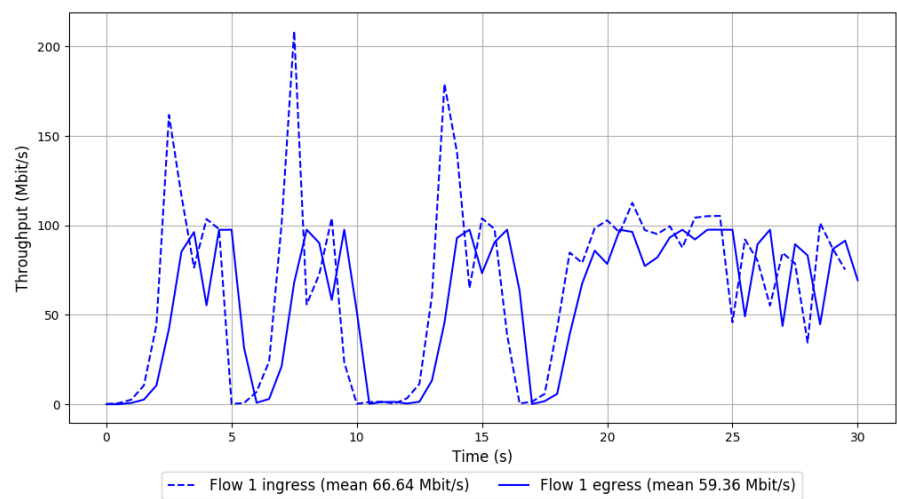
-- Flow 1:

Average throughput: 59.36 Mbit/s

95th percentile per-packet one-way delay: 213.312 ms

Loss rate: 10.81%

Run 3: Report of Verus — Data Link

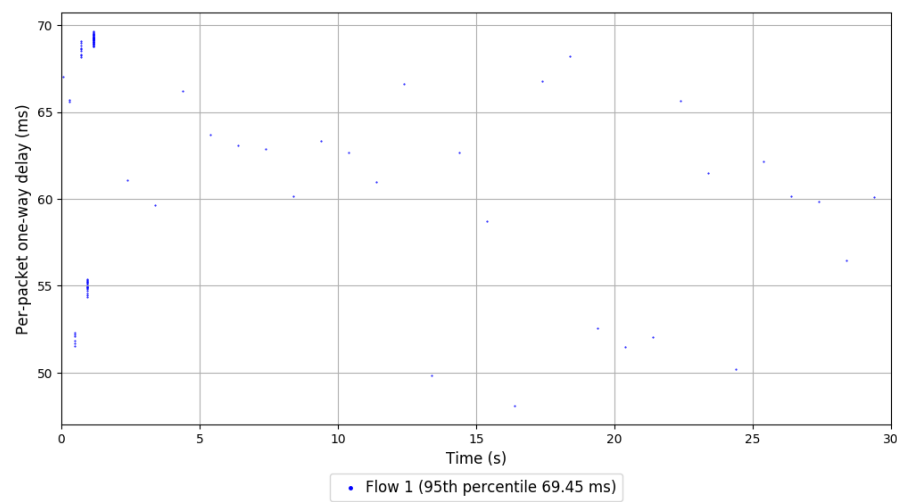
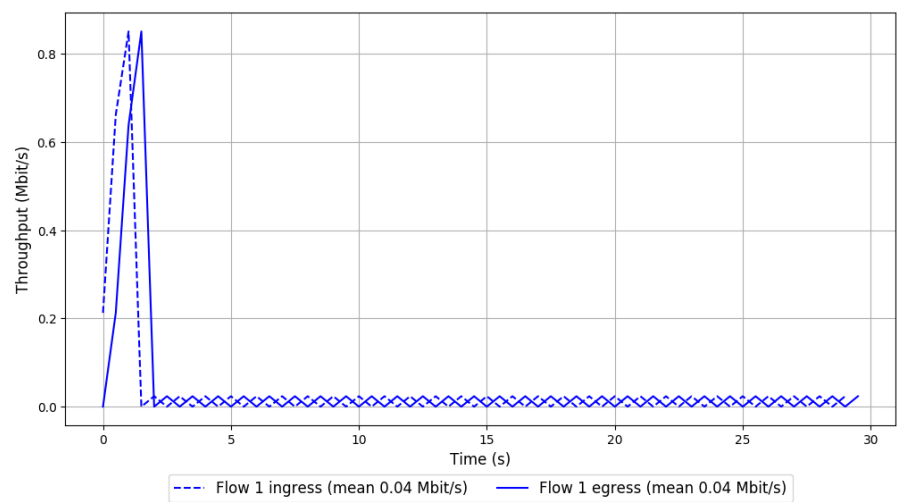


Run 4: Statistics of Verus

Start at: 2018-12-02 01:52:22
End at: 2018-12-02 01:52:52
Local clock offset: -1.565 ms
Remote clock offset: 20.128 ms

Below is generated by plot.py at 2018-12-02 02:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 69.446 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 69.446 ms
Loss rate: 0.99%

Run 4: Report of Verus — Data Link

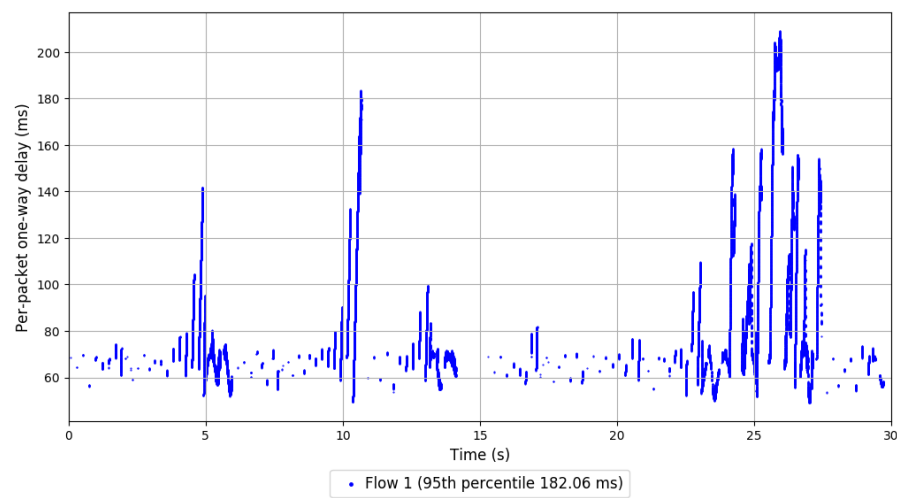
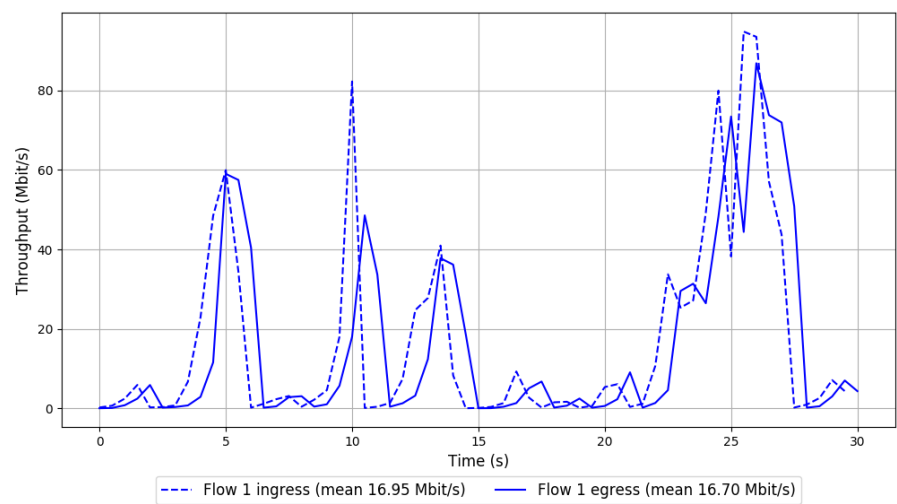


Run 5: Statistics of Verus

Start at: 2018-12-02 02:15:53
End at: 2018-12-02 02:16:23
Local clock offset: -3.132 ms
Remote clock offset: 44.709 ms

Below is generated by plot.py at 2018-12-02 02:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 16.70 Mbit/s
95th percentile per-packet one-way delay: 182.065 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 16.70 Mbit/s
95th percentile per-packet one-way delay: 182.065 ms
Loss rate: 1.48%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-12-02 00:25:45

End at: 2018-12-02 00:26:15

Local clock offset: -1.539 ms

Remote clock offset: 2.31 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.28 Mbit/s

95th percentile per-packet one-way delay: 55.962 ms

Loss rate: 0.03%

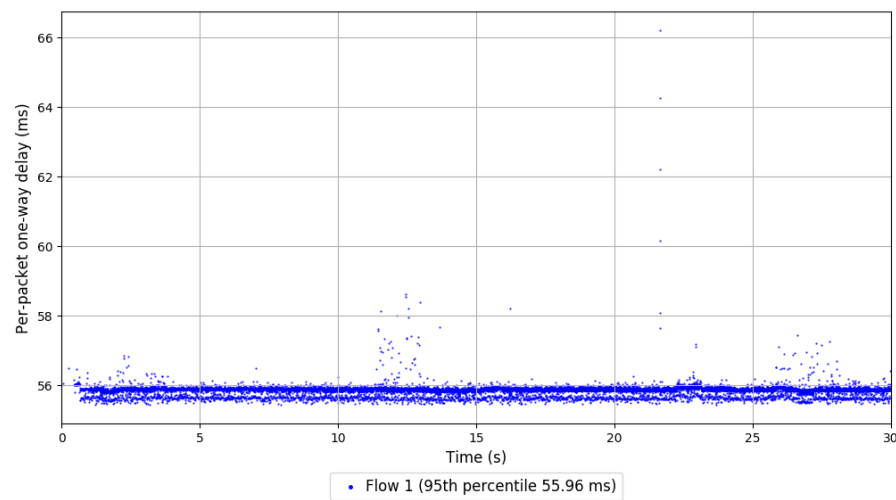
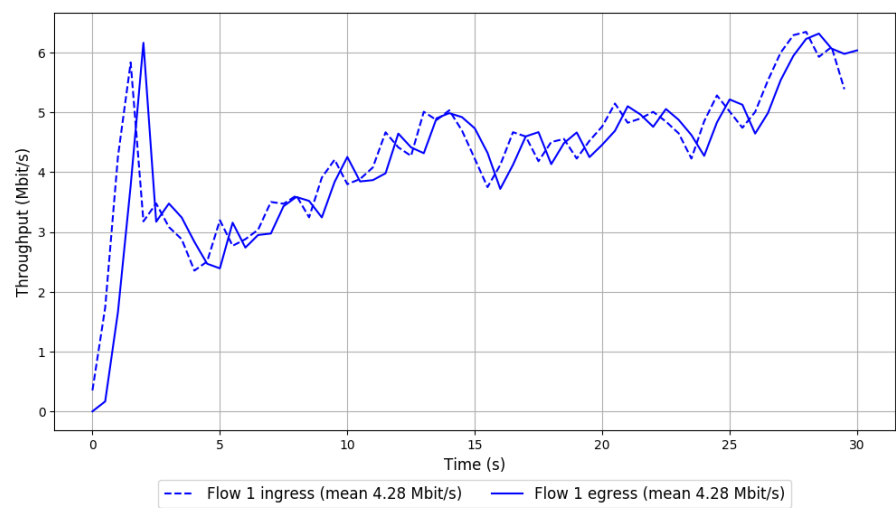
-- Flow 1:

Average throughput: 4.28 Mbit/s

95th percentile per-packet one-way delay: 55.962 ms

Loss rate: 0.03%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-12-02 00:49:06

End at: 2018-12-02 00:49:37

Local clock offset: 3.672 ms

Remote clock offset: 7.92 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 20.58 Mbit/s

95th percentile per-packet one-way delay: 56.109 ms

Loss rate: 0.04%

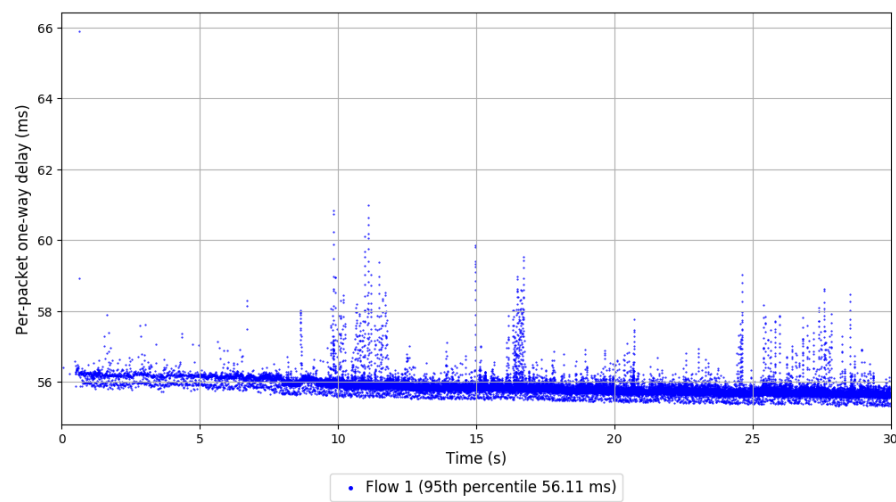
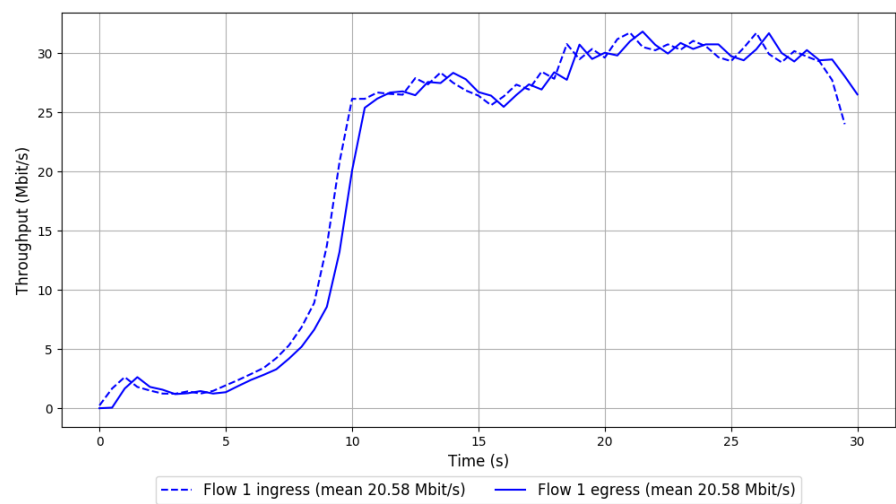
-- Flow 1:

Average throughput: 20.58 Mbit/s

95th percentile per-packet one-way delay: 56.109 ms

Loss rate: 0.04%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-12-02 01:12:37

End at: 2018-12-02 01:13:07

Local clock offset: -1.613 ms

Remote clock offset: 2.01 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.13 Mbit/s

95th percentile per-packet one-way delay: 66.079 ms

Loss rate: 0.03%

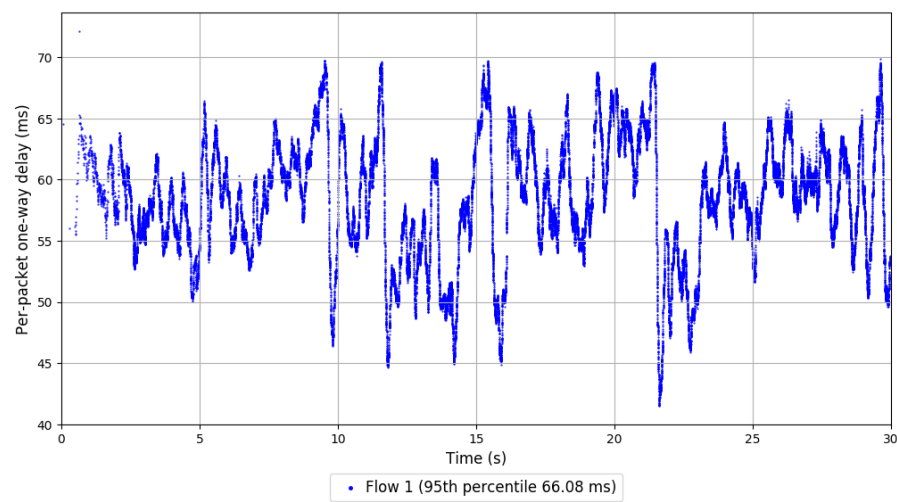
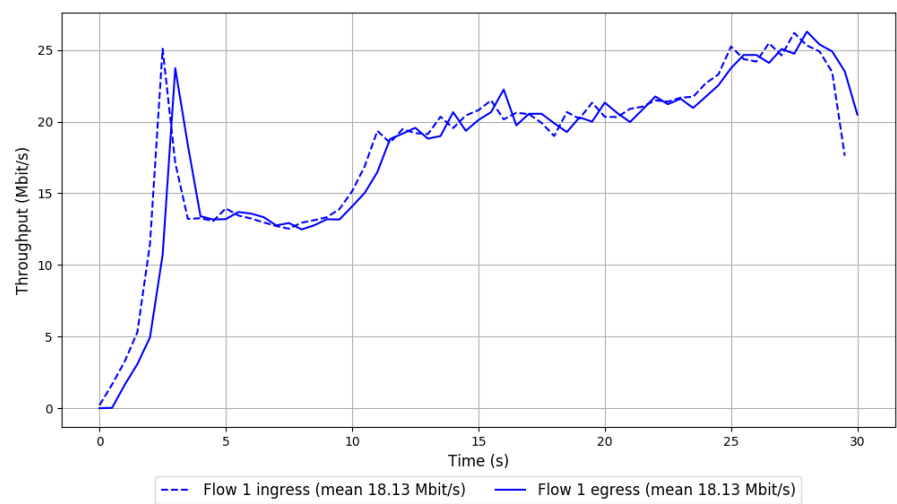
-- Flow 1:

Average throughput: 18.13 Mbit/s

95th percentile per-packet one-way delay: 66.079 ms

Loss rate: 0.03%

Run 3: Report of PCC-Vivace — Data Link

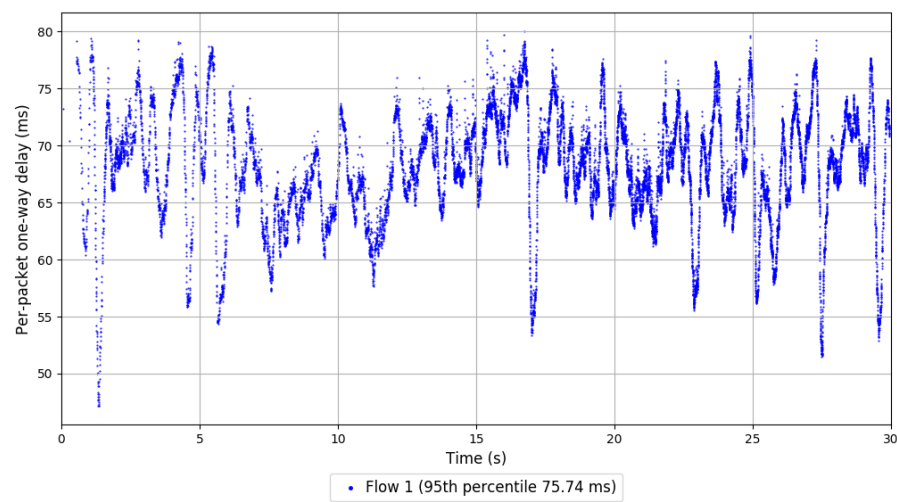
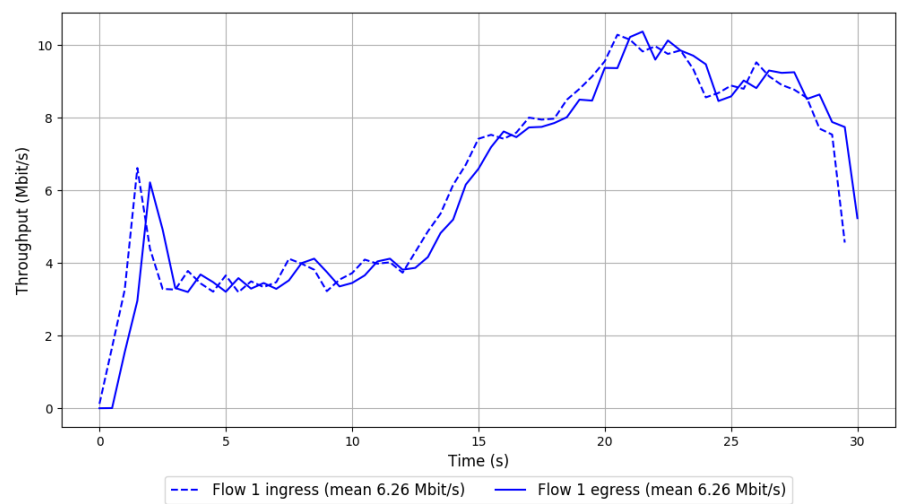


Run 4: Statistics of PCC-Vivace

Start at: 2018-12-02 01:36:13
End at: 2018-12-02 01:36:43
Local clock offset: -0.93 ms
Remote clock offset: 12.941 ms

Below is generated by plot.py at 2018-12-02 02:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 75.739 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 75.739 ms
Loss rate: 0.09%

Run 4: Report of PCC-Vivace — Data Link

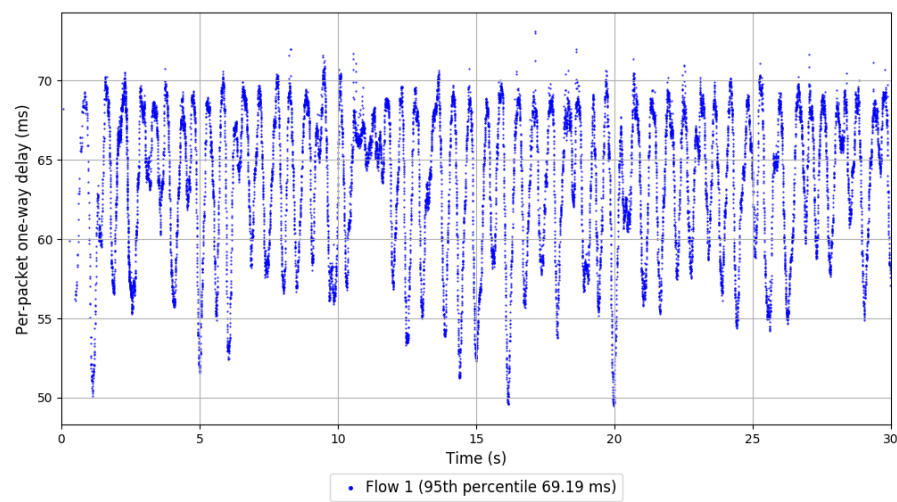
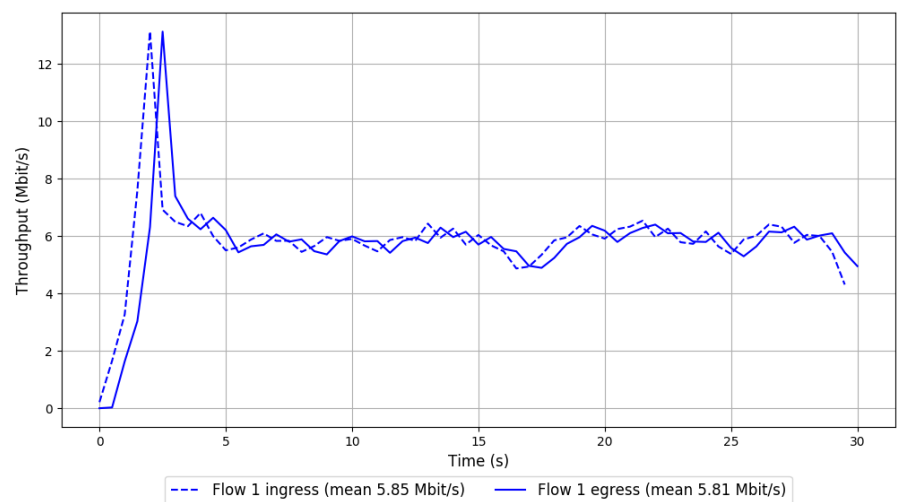


Run 5: Statistics of PCC-Vivace

Start at: 2018-12-02 01:59:36
End at: 2018-12-02 02:00:06
Local clock offset: -2.413 ms
Remote clock offset: 24.024 ms

Below is generated by plot.py at 2018-12-02 02:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 69.187 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 69.187 ms
Loss rate: 0.68%

Run 5: Report of PCC-Vivace — Data Link

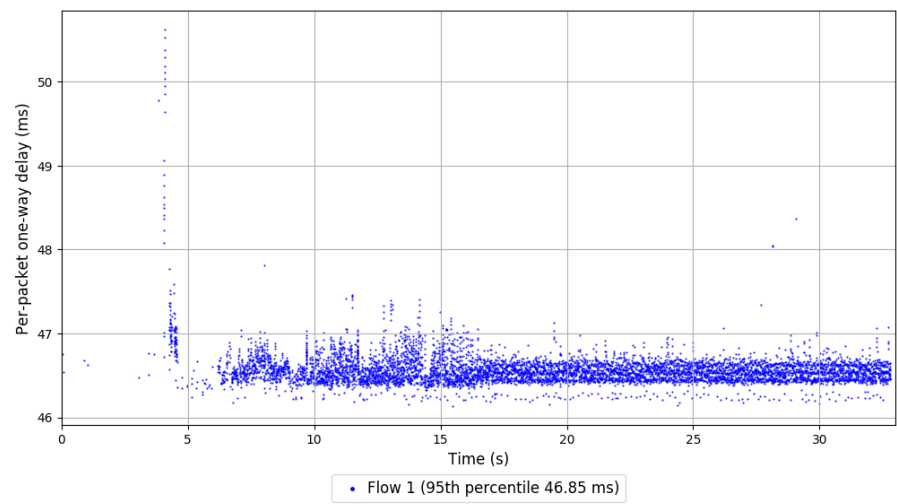
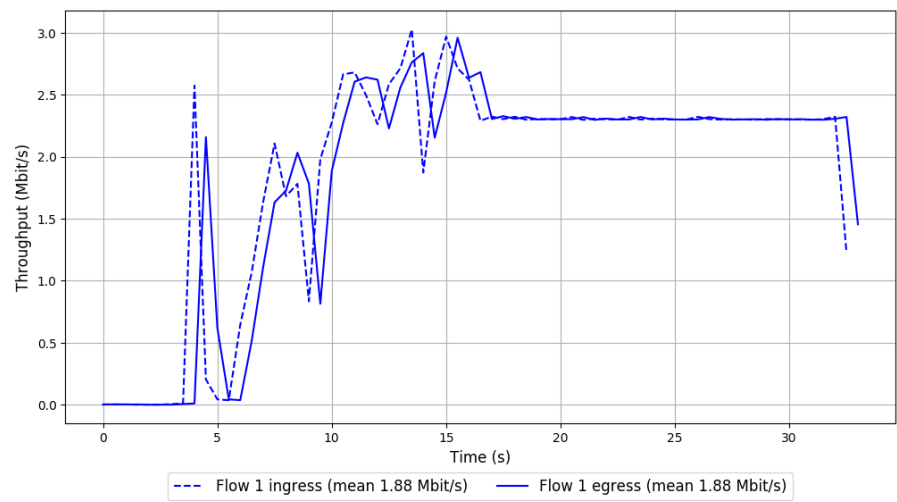


```
Run 1: Statistics of WebRTC media

Start at: 2018-12-02 00:36:46
End at: 2018-12-02 00:37:16
Local clock offset: 2.074 ms
Remote clock offset: 5.037 ms

# Below is generated by plot.py at 2018-12-02 02:22:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 46.853 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 46.853 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-12-02 01:00:17

End at: 2018-12-02 01:00:47

Local clock offset: -0.653 ms

Remote clock offset: 8.621 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 54.323 ms

Loss rate: 0.00%

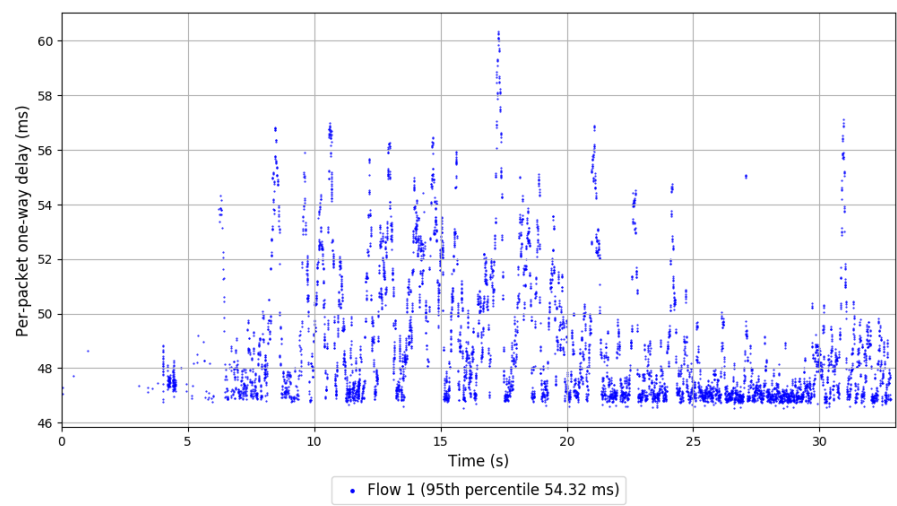
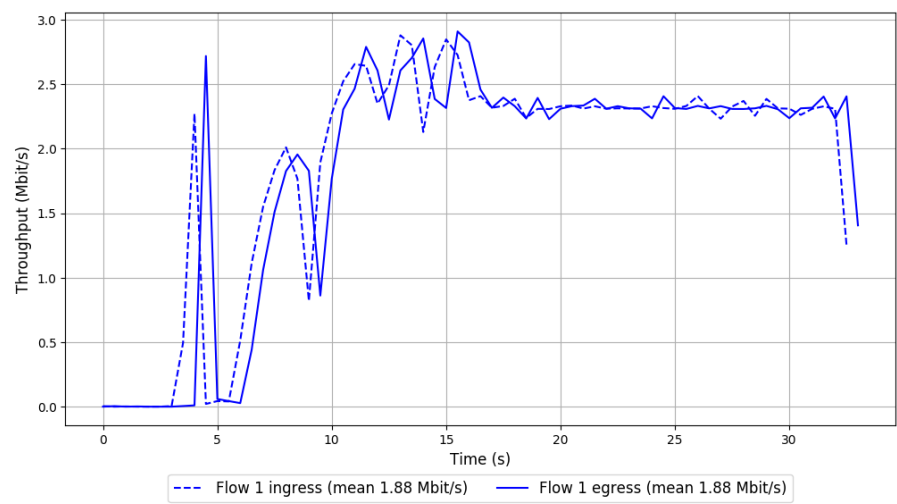
-- Flow 1:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 54.323 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-12-02 01:23:52

End at: 2018-12-02 01:24:22

Local clock offset: -1.433 ms

Remote clock offset: 4.846 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 67.052 ms

Loss rate: 0.00%

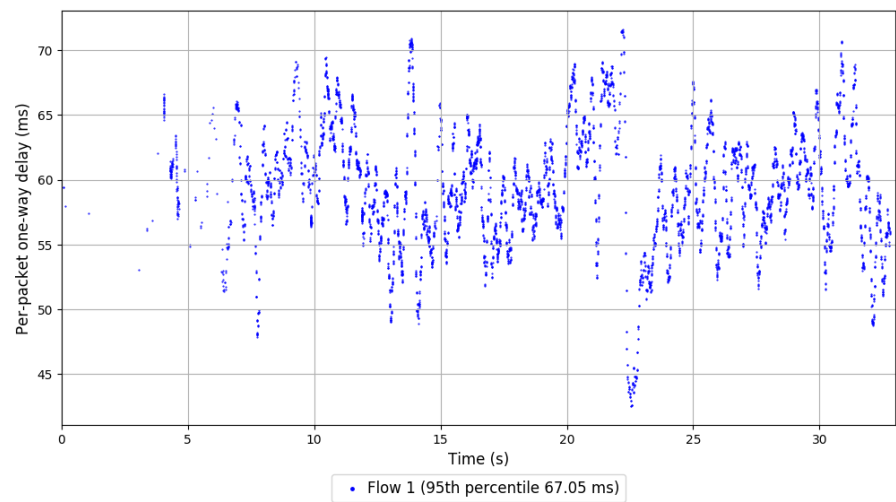
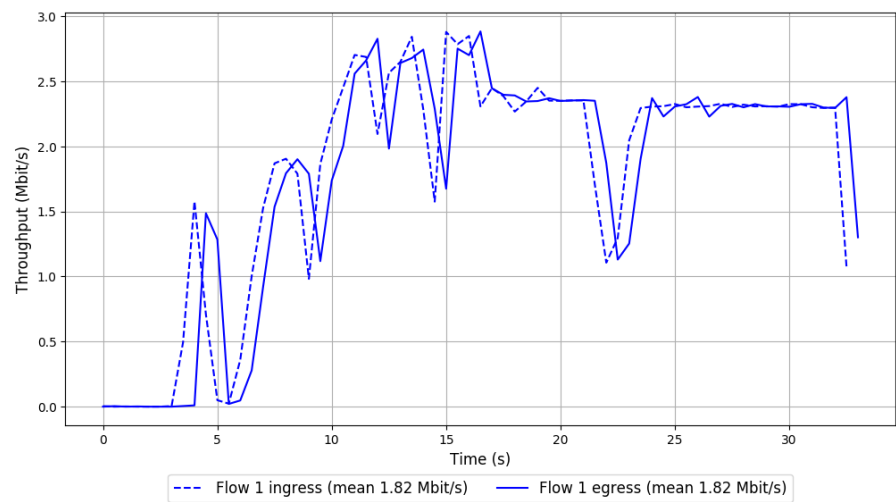
-- Flow 1:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 67.052 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

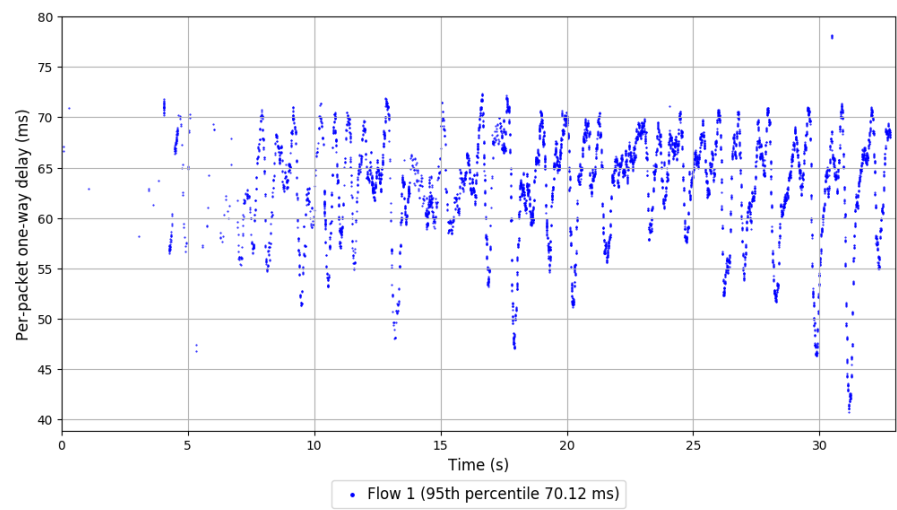
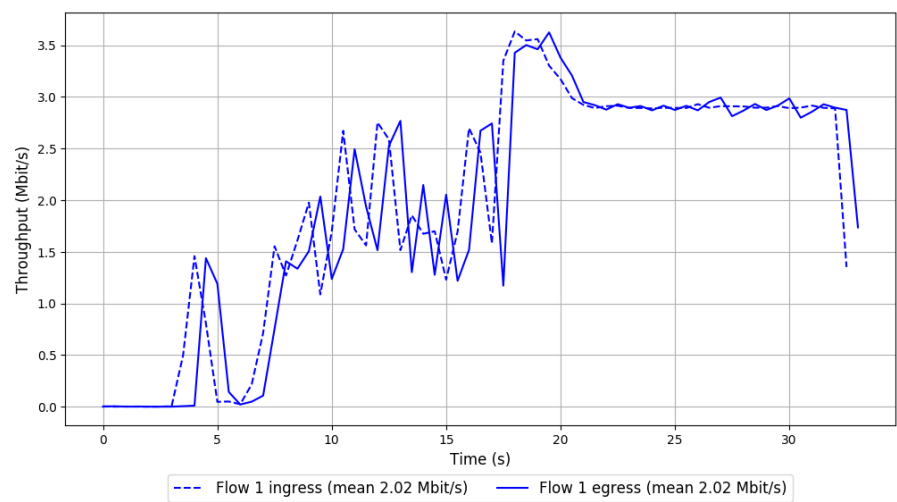


Run 4: Statistics of WebRTC media

Start at: 2018-12-02 01:47:35
End at: 2018-12-02 01:48:05
Local clock offset: -0.576 ms
Remote clock offset: 20.545 ms

Below is generated by plot.py at 2018-12-02 02:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 70.124 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 70.124 ms
Loss rate: 0.22%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-12-02 02:11:08

End at: 2018-12-02 02:11:38

Local clock offset: -2.863 ms

Remote clock offset: 39.81 ms

Below is generated by plot.py at 2018-12-02 02:22:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 76.932 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 76.932 ms

Loss rate: 0.37%

Run 5: Report of WebRTC media — Data Link

