

Pantheon Report

Generated at 2018-12-20 00:32:27 (UTC).

Data path: AWS Brazil 1 on `ens5` (*local*) → Brazil on `p4p1` (*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 `gps.ntp.br` and have been applied to correct the timestamps in logs.

System info:

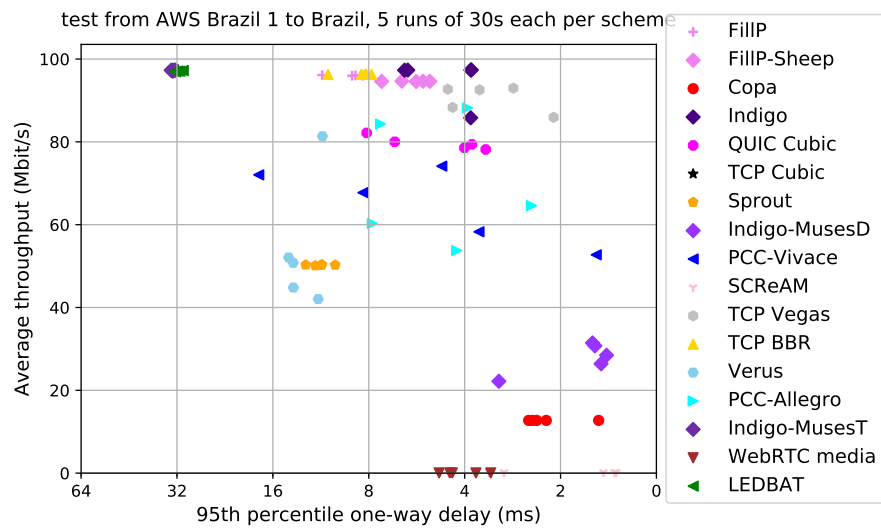
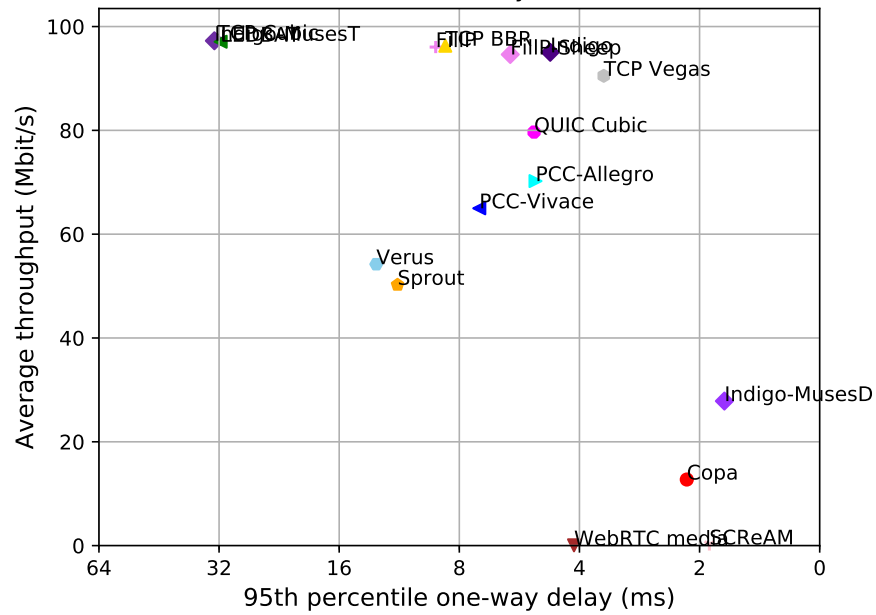
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfc58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from AWS Brazil 1 to Brazil, 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	96.31	8.67	0.00
Copa	5	12.73	2.15	61.82
TCP Cubic	5	97.46	32.31	0.02
FillP	5	96.05	9.17	0.31
FillP-Sheep	5	94.62	5.96	0.08
Indigo	5	95.04	4.73	0.00
Indigo-MusesD	5	27.85	1.59	0.00
Indigo-MusesT	5	97.26	32.88	44.46
LEDBAT	5	97.08	31.72	0.01
PCC-Allegro	5	70.23	5.15	0.00
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	5	79.67	5.20	0.22
SCReAM	5	0.22	1.84	0.00
Sprout	5	50.25	11.43	0.00
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	90.50	3.48	0.00
Verus	5	54.21	12.92	1.30
PCC-Vivace	5	64.98	7.13	0.03
WebRTC media	5	0.05	4.13	0.16

Run 1: Statistics of TCP BBR

Start at: 2018-12-19 22:43:58

End at: 2018-12-19 22:44:28

Local clock offset: -5.144 ms

Remote clock offset: 1.158 ms

Below is generated by plot.py at 2018-12-20 00:24:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.36 Mbit/s

95th percentile per-packet one-way delay: 8.145 ms

Loss rate: 0.00%

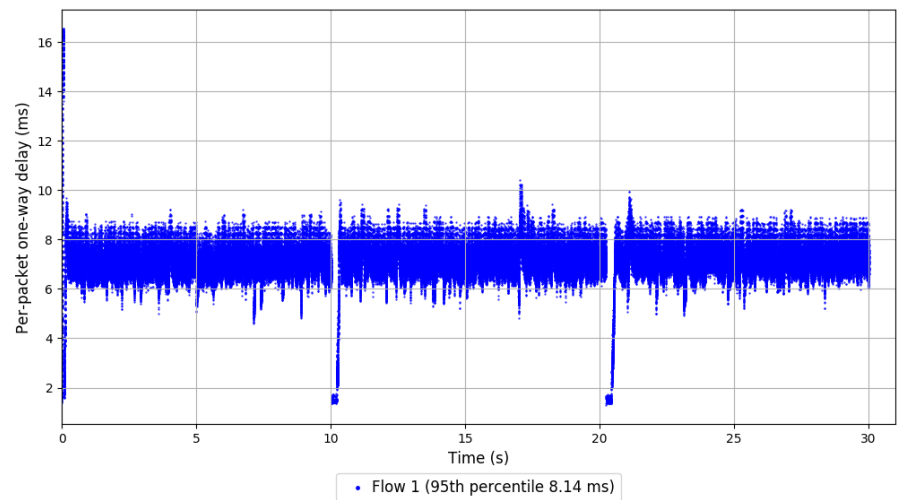
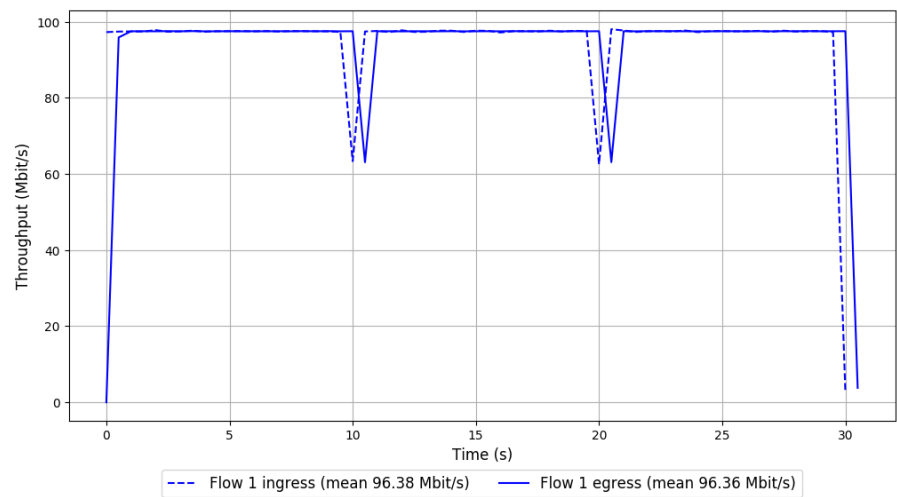
-- Flow 1:

Average throughput: 96.36 Mbit/s

95th percentile per-packet one-way delay: 8.145 ms

Loss rate: 0.00%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-12-19 23:05:07

End at: 2018-12-19 23:05:37

Local clock offset: -6.55 ms

Remote clock offset: 1.071 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.29 Mbit/s

95th percentile per-packet one-way delay: 7.838 ms

Loss rate: 0.00%

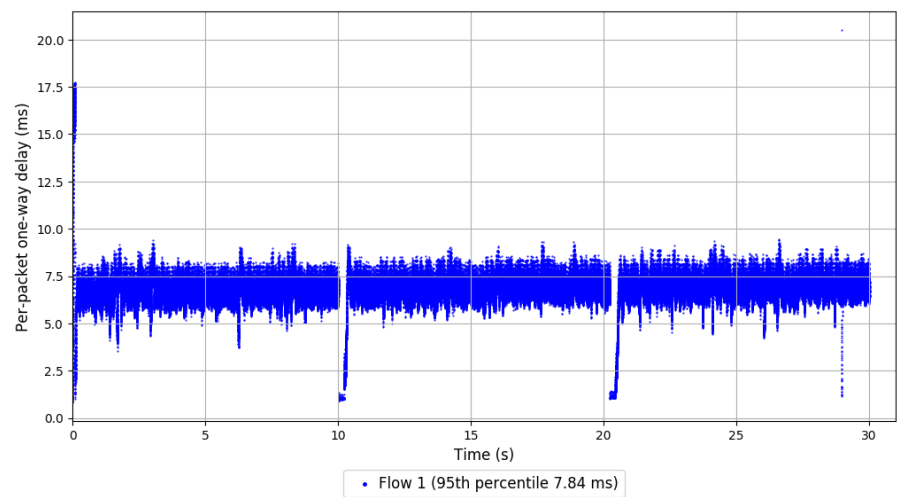
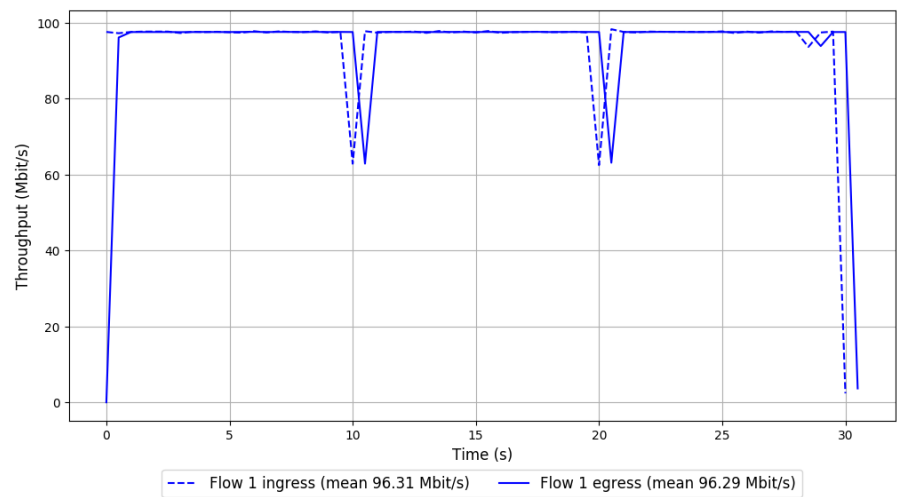
-- Flow 1:

Average throughput: 96.29 Mbit/s

95th percentile per-packet one-way delay: 7.838 ms

Loss rate: 0.00%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-12-19 23:26:15

End at: 2018-12-19 23:26:45

Local clock offset: -2.061 ms

Remote clock offset: 0.904 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.28 Mbit/s

95th percentile per-packet one-way delay: 10.742 ms

Loss rate: 0.01%

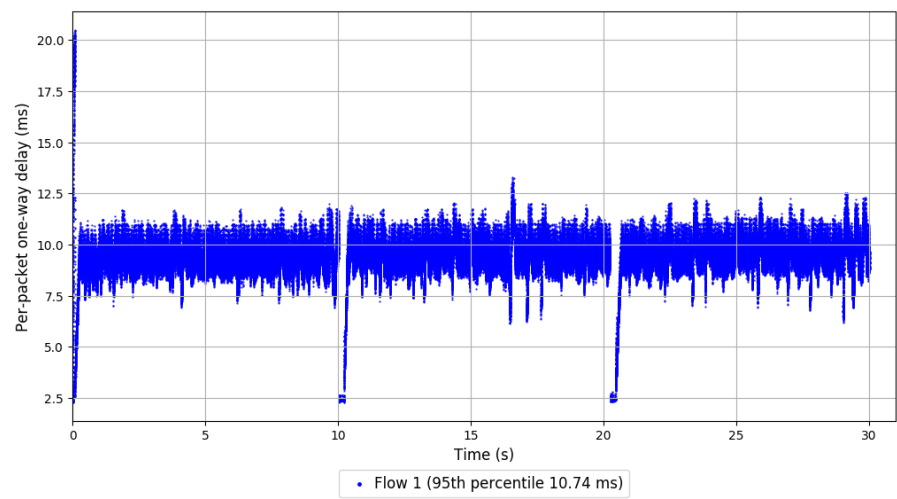
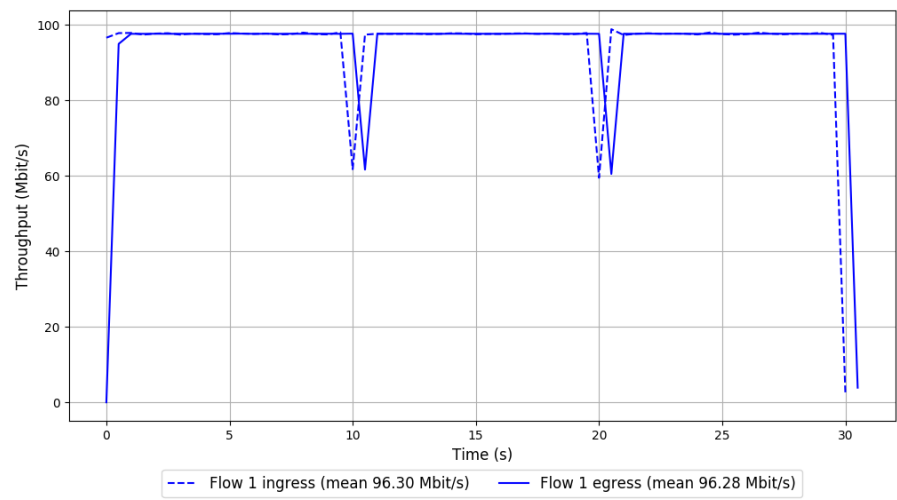
-- Flow 1:

Average throughput: 96.28 Mbit/s

95th percentile per-packet one-way delay: 10.742 ms

Loss rate: 0.01%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-12-19 23:47:24

End at: 2018-12-19 23:47:54

Local clock offset: -2.279 ms

Remote clock offset: 0.763 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.30 Mbit/s

95th percentile per-packet one-way delay: 8.213 ms

Loss rate: 0.00%

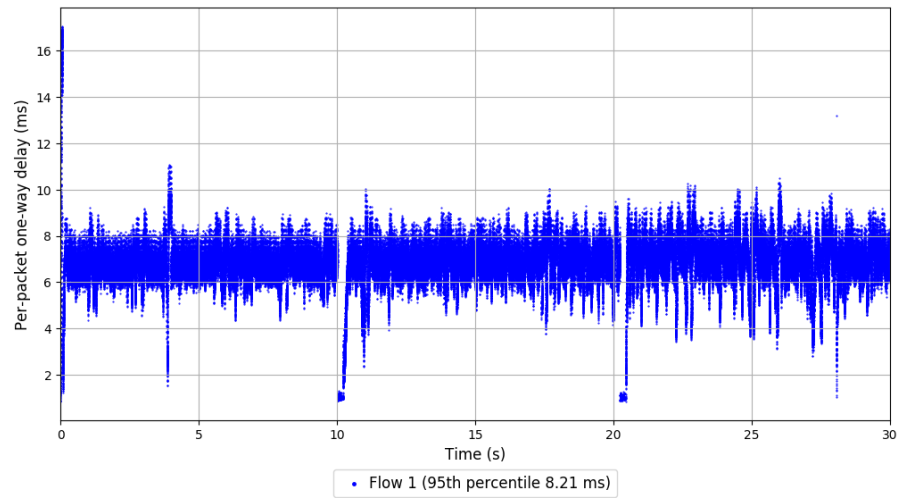
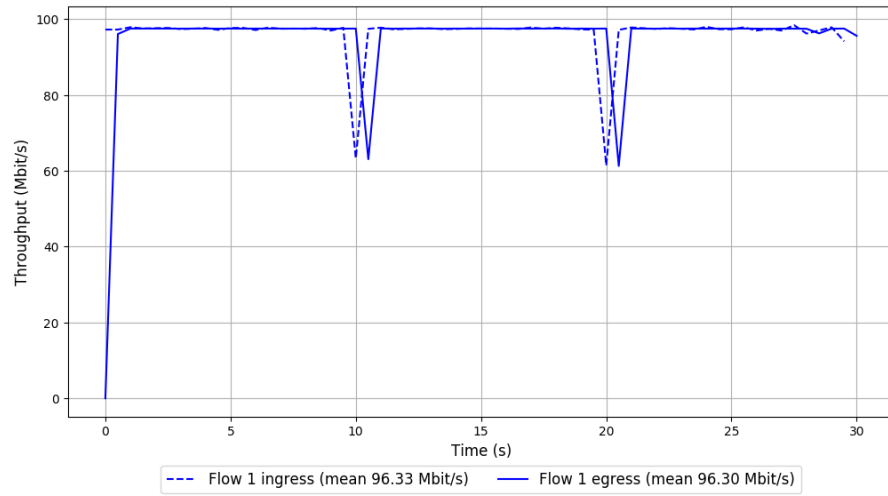
-- Flow 1:

Average throughput: 96.30 Mbit/s

95th percentile per-packet one-way delay: 8.213 ms

Loss rate: 0.00%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-12-20 00:08:34

End at: 2018-12-20 00:09:04

Local clock offset: -4.59 ms

Remote clock offset: 0.26 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.31 Mbit/s

95th percentile per-packet one-way delay: 8.432 ms

Loss rate: 0.00%

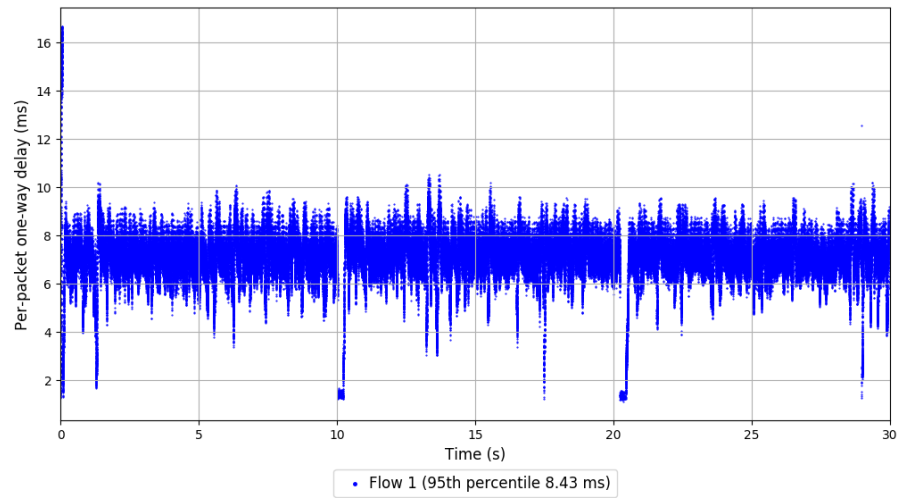
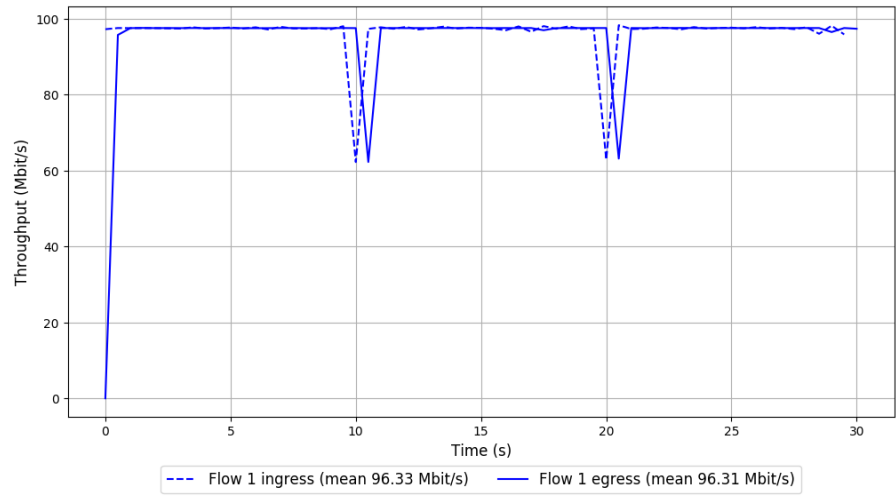
-- Flow 1:

Average throughput: 96.31 Mbit/s

95th percentile per-packet one-way delay: 8.432 ms

Loss rate: 0.00%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-12-19 22:50:39

End at: 2018-12-19 22:51:09

Local clock offset: -5.586 ms

Remote clock offset: 1.115 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.376 ms

Loss rate: 63.17%

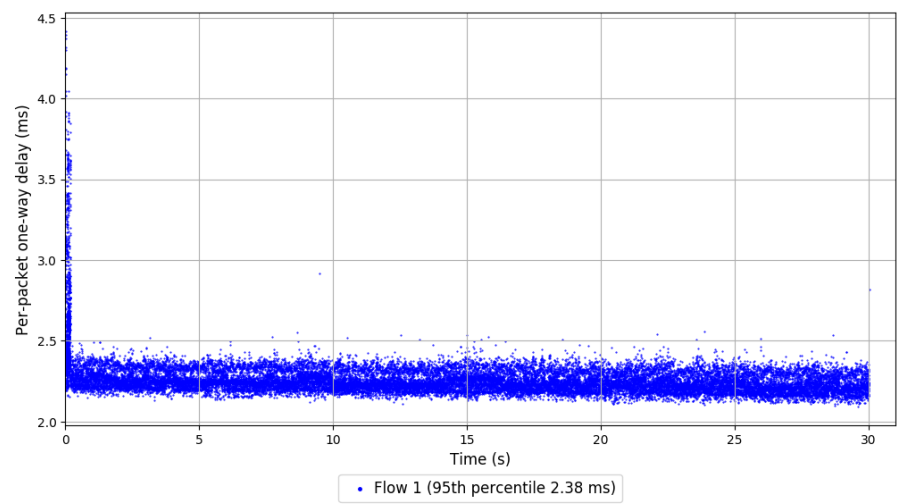
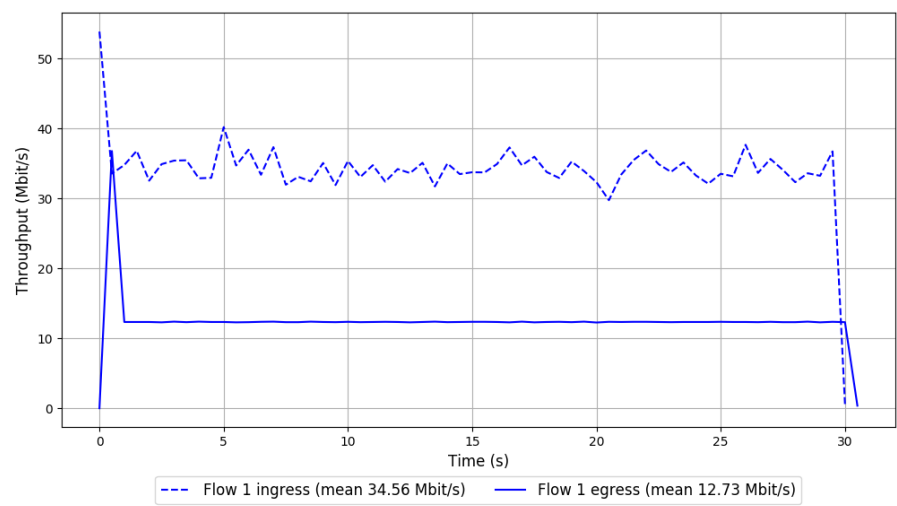
-- Flow 1:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.376 ms

Loss rate: 63.17%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-12-19 23:11:47

End at: 2018-12-19 23:12:17

Local clock offset: -4.194 ms

Remote clock offset: 1.011 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 1.205 ms

Loss rate: 61.72%

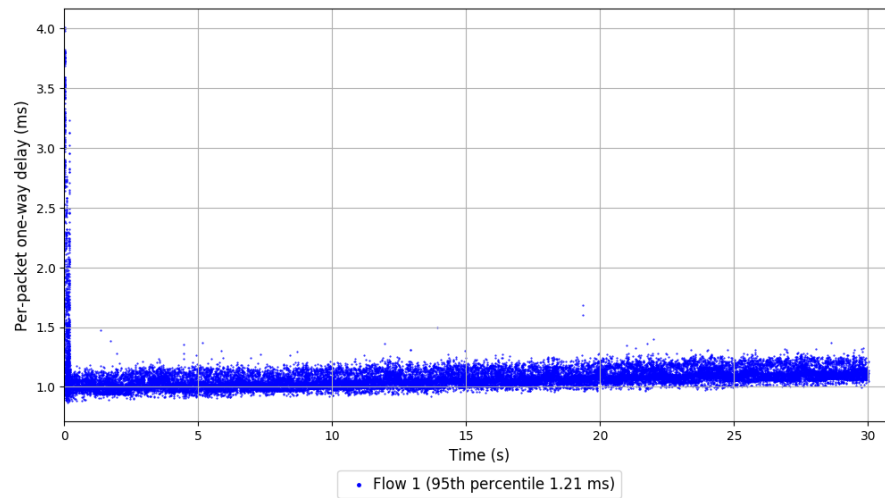
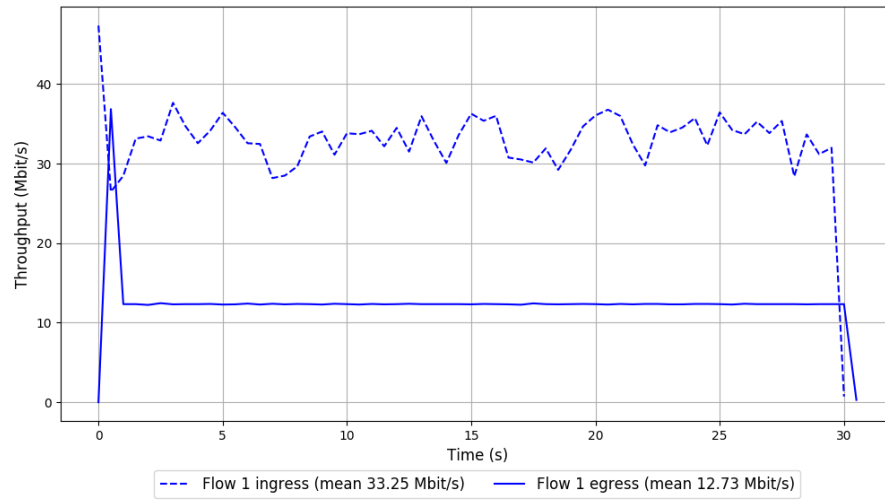
-- Flow 1:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 1.205 ms

Loss rate: 61.72%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-12-19 23:32:55

End at: 2018-12-19 23:33:25

Local clock offset: -1.621 ms

Remote clock offset: 0.819 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.450 ms

Loss rate: 61.69%

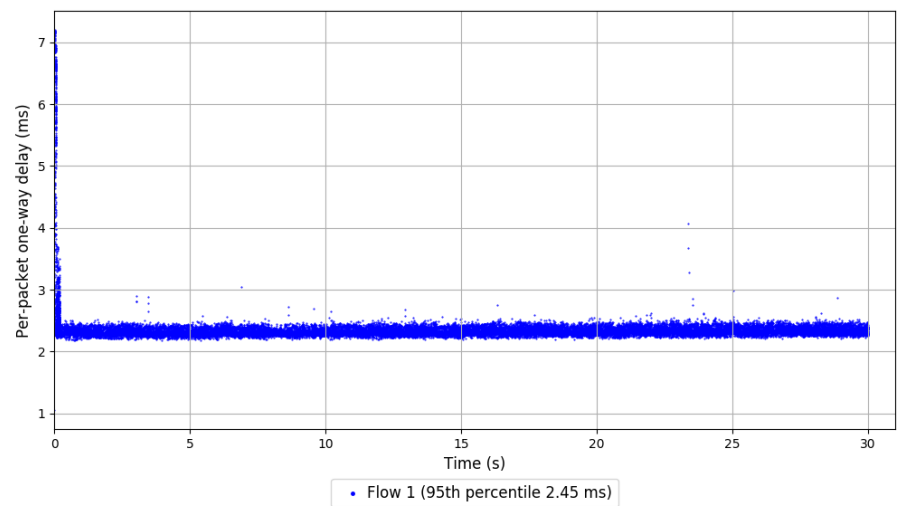
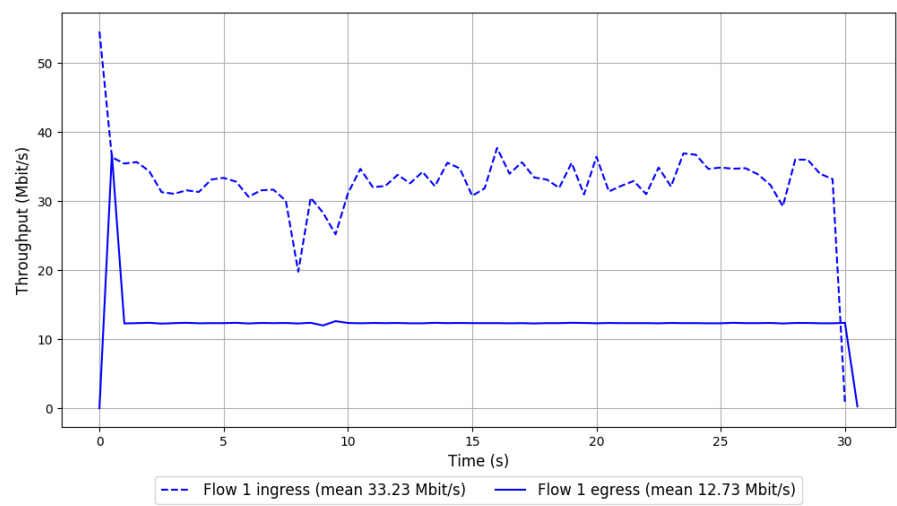
-- Flow 1:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.450 ms

Loss rate: 61.69%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-12-19 23:54:04

End at: 2018-12-19 23:54:34

Local clock offset: -2.421 ms

Remote clock offset: 0.67 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.518 ms

Loss rate: 62.89%

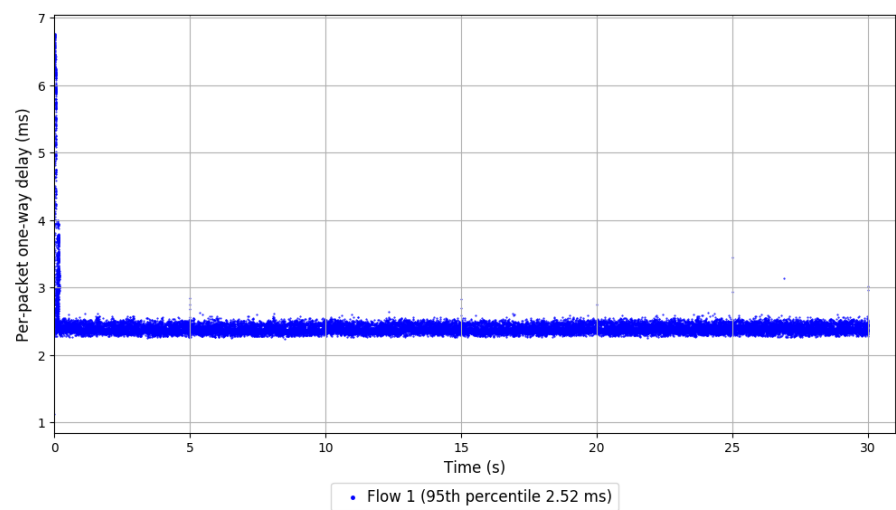
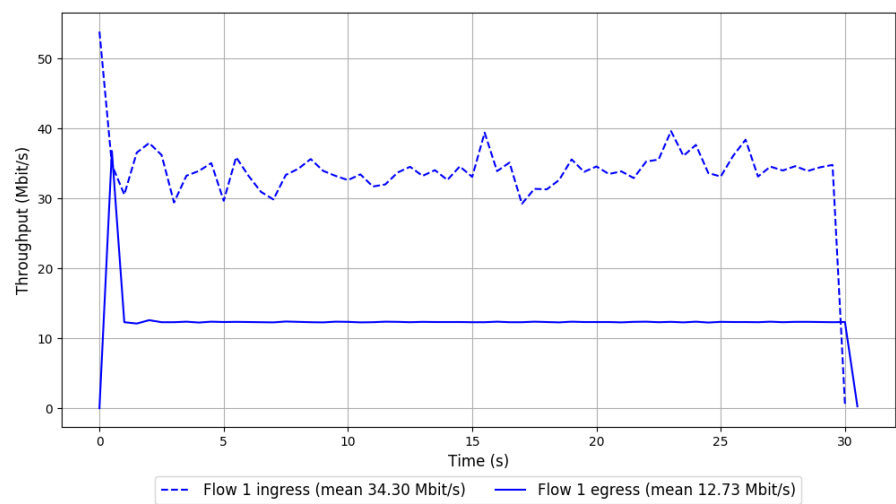
-- Flow 1:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.518 ms

Loss rate: 62.89%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-12-20 00:15:14

End at: 2018-12-20 00:15:44

Local clock offset: -5.936 ms

Remote clock offset: 0.154 ms

Below is generated by plot.py at 2018-12-20 00:24:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.217 ms

Loss rate: 59.63%

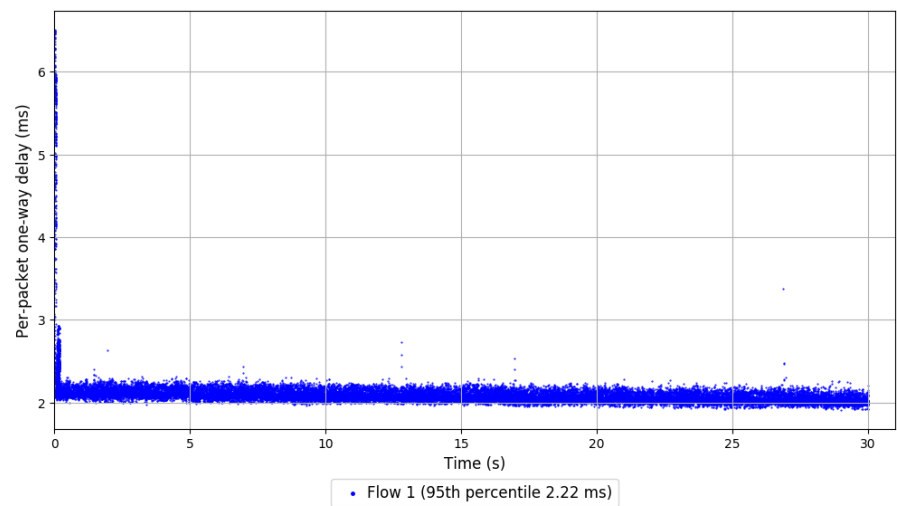
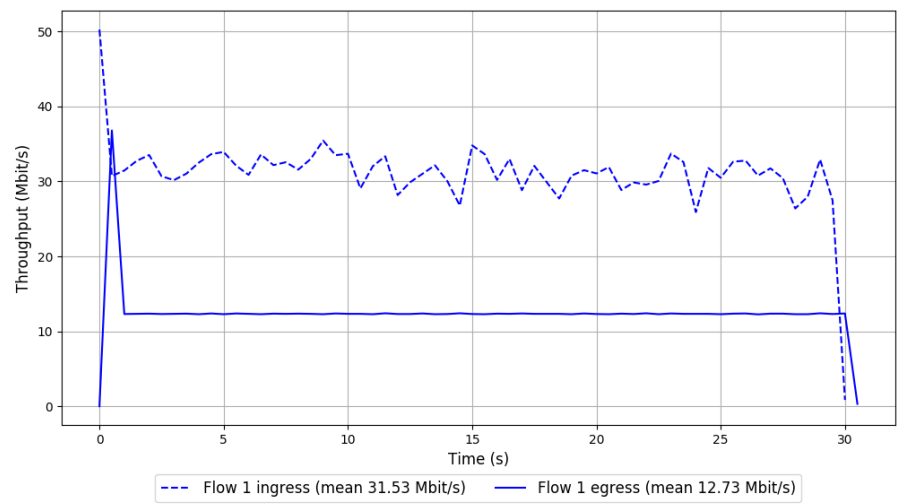
-- Flow 1:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 2.217 ms

Loss rate: 59.63%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-12-19 22:46:13

End at: 2018-12-19 22:46:43

Local clock offset: -4.847 ms

Remote clock offset: 1.263 ms

Below is generated by plot.py at 2018-12-20 00:25:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 32.420 ms

Loss rate: 0.01%

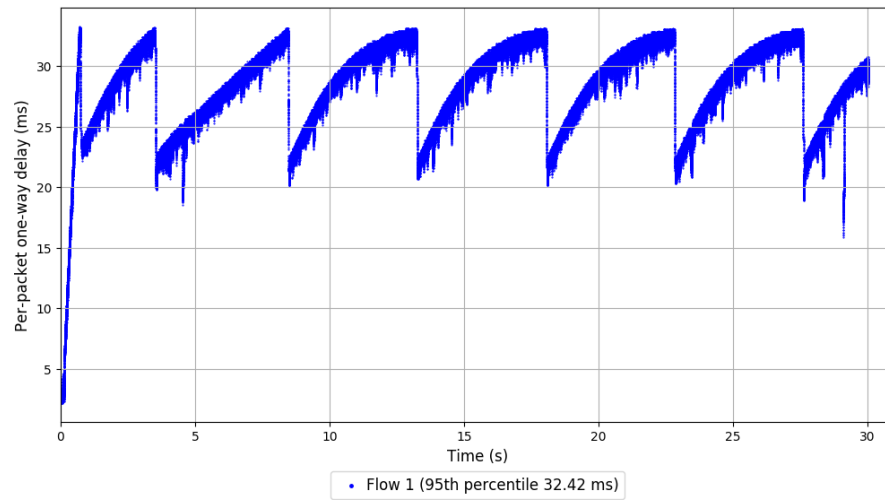
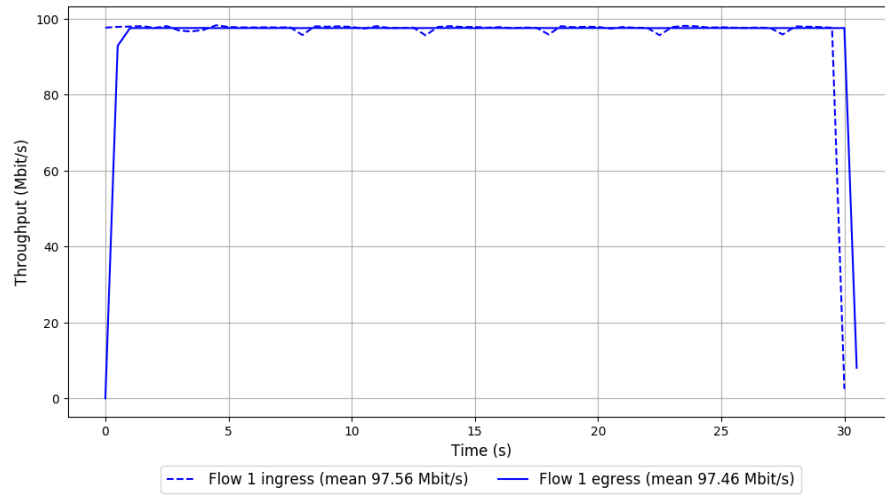
-- Flow 1:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 32.420 ms

Loss rate: 0.01%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-12-19 23:07:21

End at: 2018-12-19 23:07:51

Local clock offset: -6.407 ms

Remote clock offset: 0.981 ms

Below is generated by plot.py at 2018-12-20 00:25:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 32.128 ms

Loss rate: 0.01%

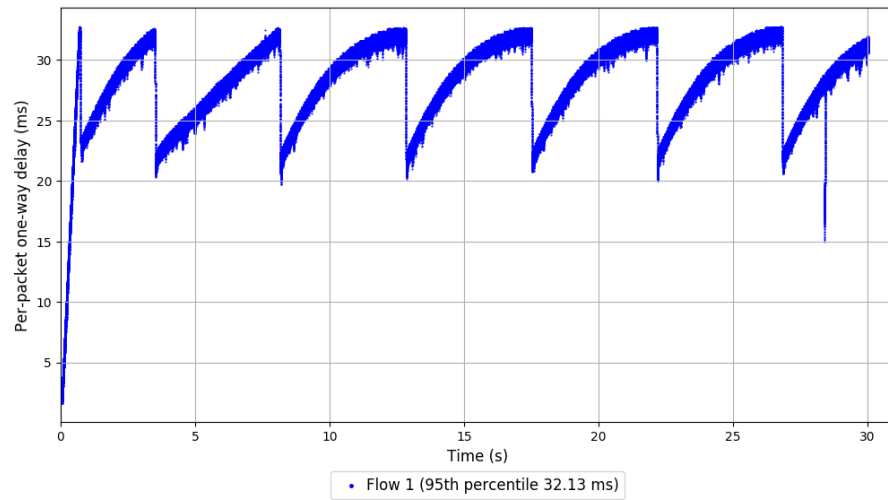
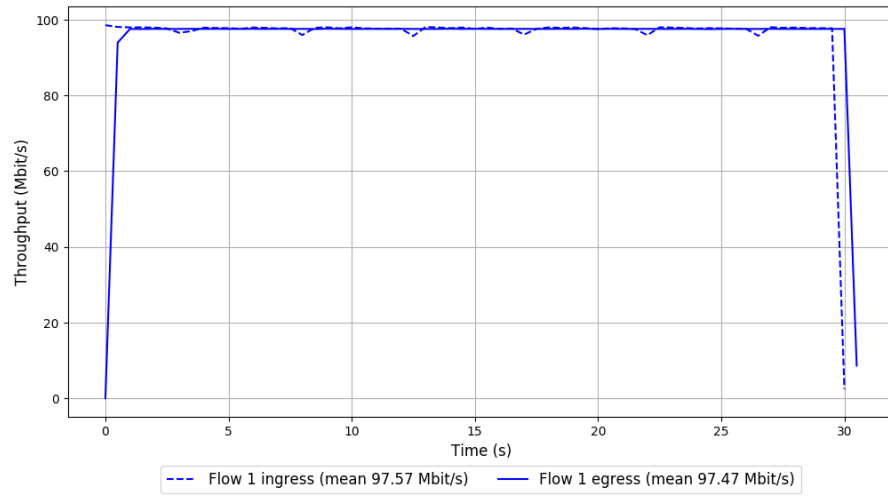
-- Flow 1:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 32.128 ms

Loss rate: 0.01%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-12-19 23:28:29

End at: 2018-12-19 23:28:59

Local clock offset: -2.601 ms

Remote clock offset: 0.865 ms

Below is generated by plot.py at 2018-12-20 00:25:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.45 Mbit/s

95th percentile per-packet one-way delay: 31.813 ms

Loss rate: 0.01%

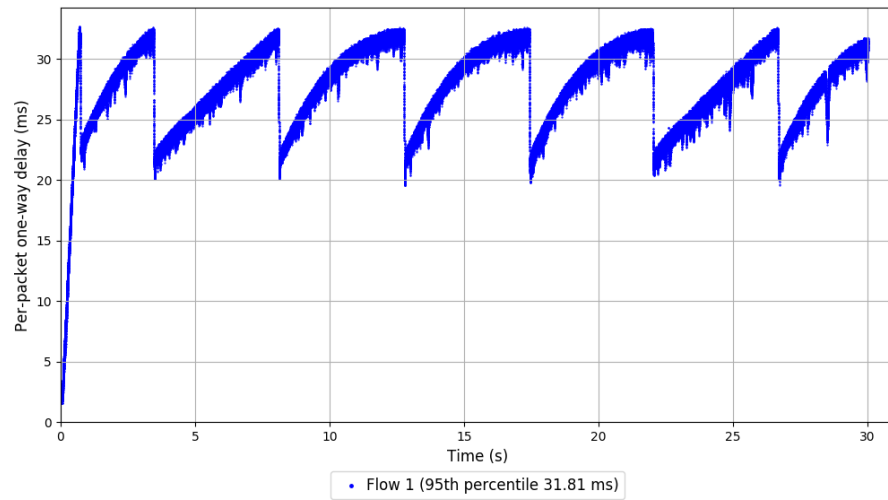
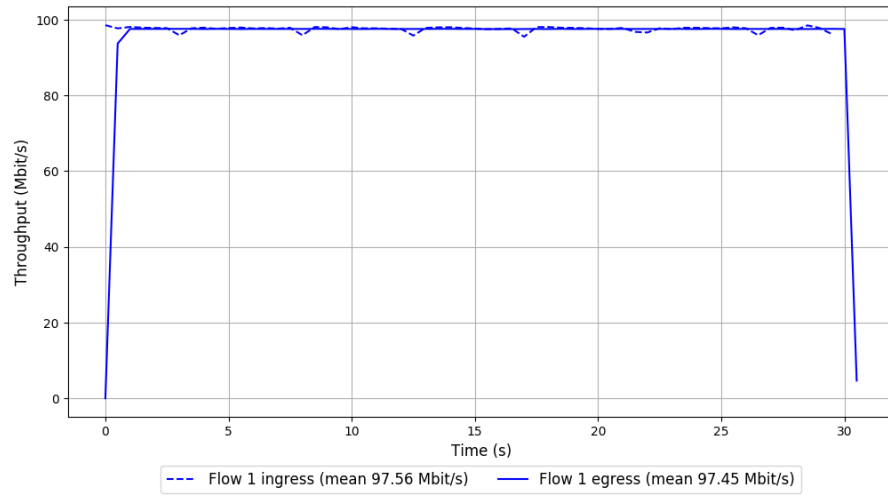
-- Flow 1:

Average throughput: 97.45 Mbit/s

95th percentile per-packet one-way delay: 31.813 ms

Loss rate: 0.01%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-12-19 23:49:38

End at: 2018-12-19 23:50:08

Local clock offset: -3.065 ms

Remote clock offset: 0.725 ms

Below is generated by plot.py at 2018-12-20 00:25:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 33.215 ms

Loss rate: 0.02%

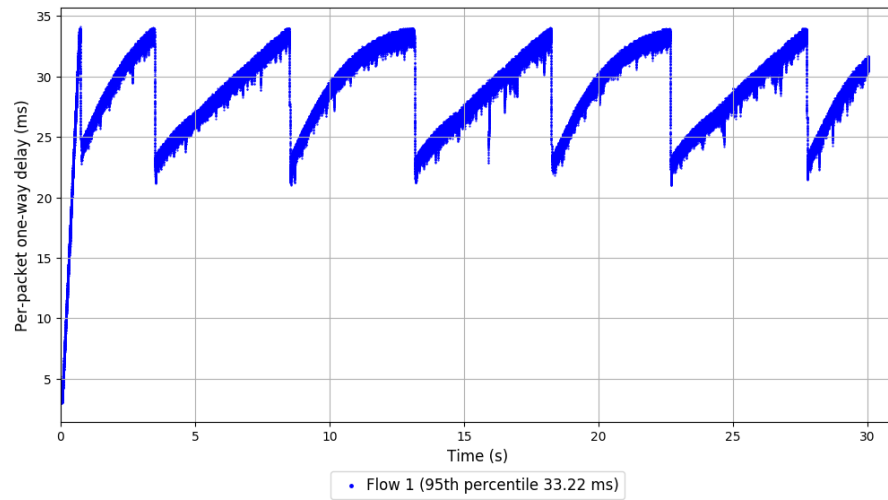
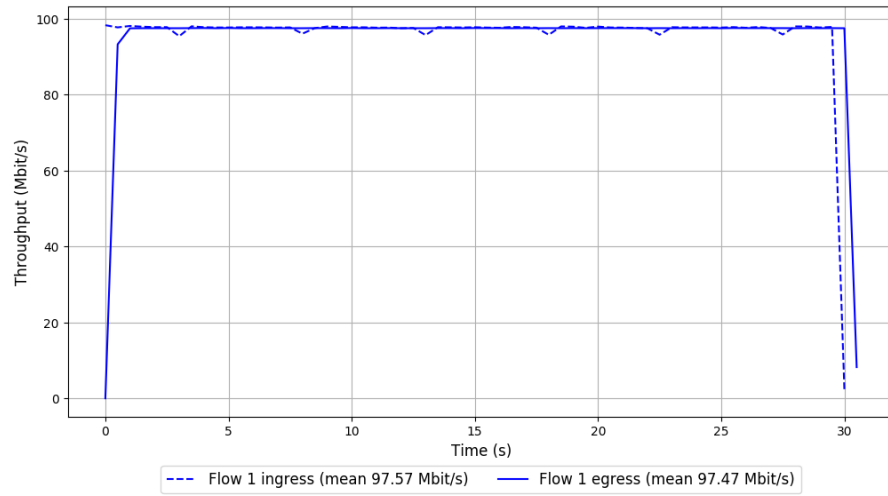
-- Flow 1:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 33.215 ms

Loss rate: 0.02%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 00:10:48

End at: 2018-12-20 00:11:18

Local clock offset: -4.686 ms

Remote clock offset: 0.323 ms

Below is generated by plot.py at 2018-12-20 00:25:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.45 Mbit/s

95th percentile per-packet one-way delay: 31.985 ms

Loss rate: 0.03%

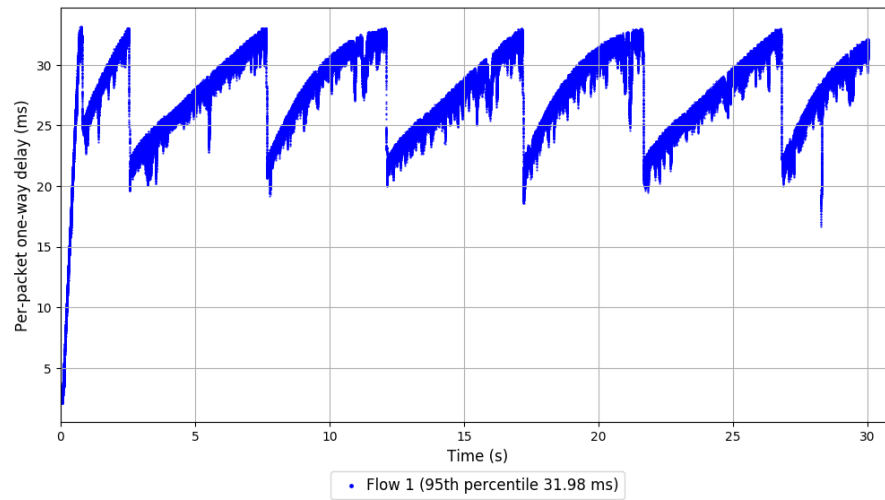
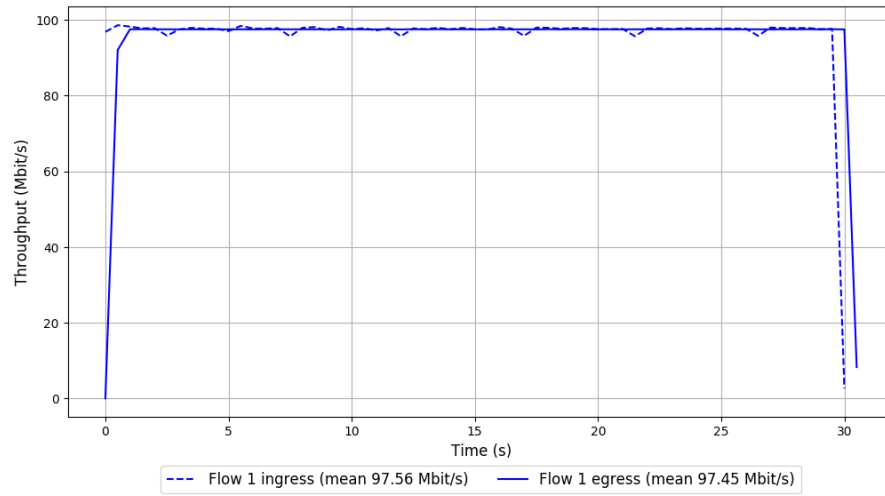
-- Flow 1:

Average throughput: 97.45 Mbit/s

95th percentile per-packet one-way delay: 31.985 ms

Loss rate: 0.03%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-12-19 22:40:33

End at: 2018-12-19 22:41:03

Local clock offset: -4.263 ms

Remote clock offset: 1.26 ms

Below is generated by plot.py at 2018-12-20 00:26:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 8.810 ms

Loss rate: 0.33%

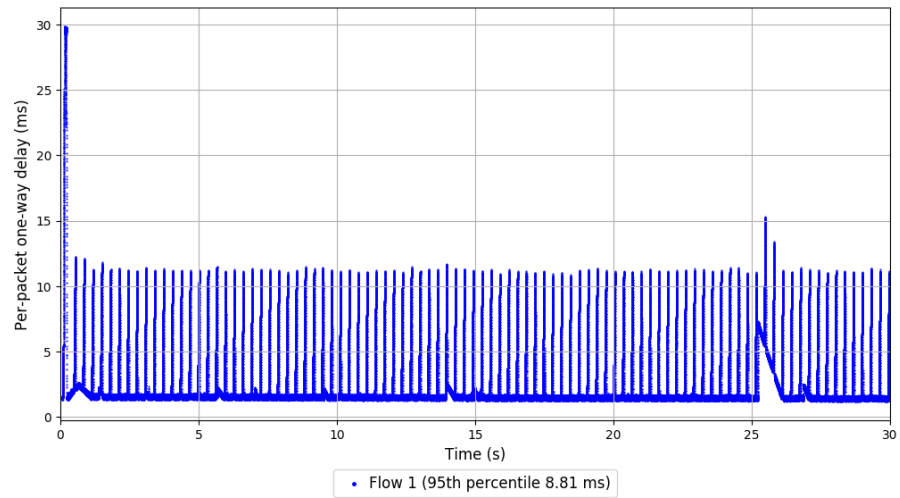
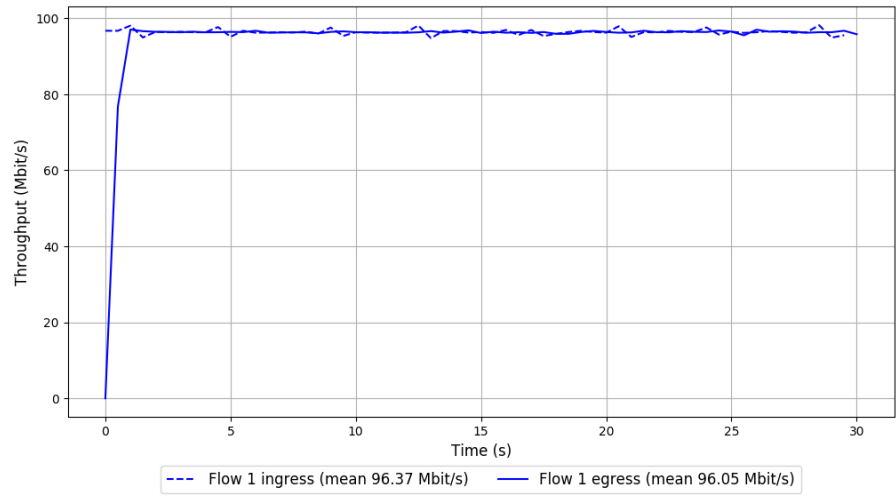
-- Flow 1:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 8.810 ms

Loss rate: 0.33%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-12-19 23:01:42

End at: 2018-12-19 23:02:12

Local clock offset: -6.417 ms

Remote clock offset: 1.139 ms

Below is generated by plot.py at 2018-12-20 00:26:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.08 Mbit/s

95th percentile per-packet one-way delay: 8.458 ms

Loss rate: 0.33%

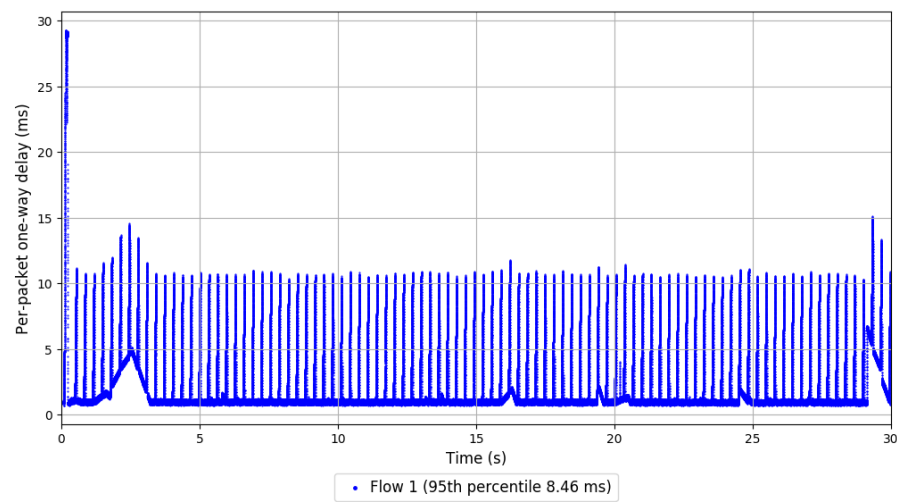
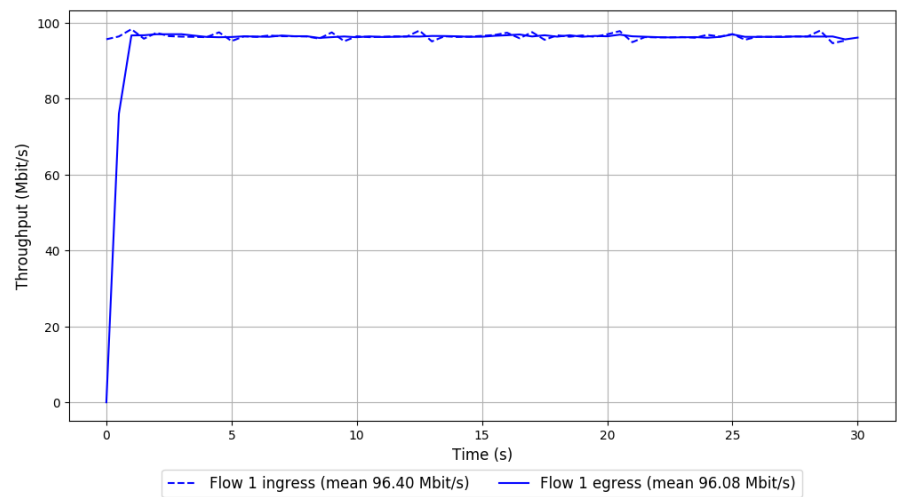
-- Flow 1:

Average throughput: 96.08 Mbit/s

95th percentile per-packet one-way delay: 8.458 ms

Loss rate: 0.33%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-12-19 23:22:50

End at: 2018-12-19 23:23:20

Local clock offset: -2.372 ms

Remote clock offset: 1.013 ms

Below is generated by plot.py at 2018-12-20 00:26:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.00 Mbit/s

95th percentile per-packet one-way delay: 8.342 ms

Loss rate: 0.32%

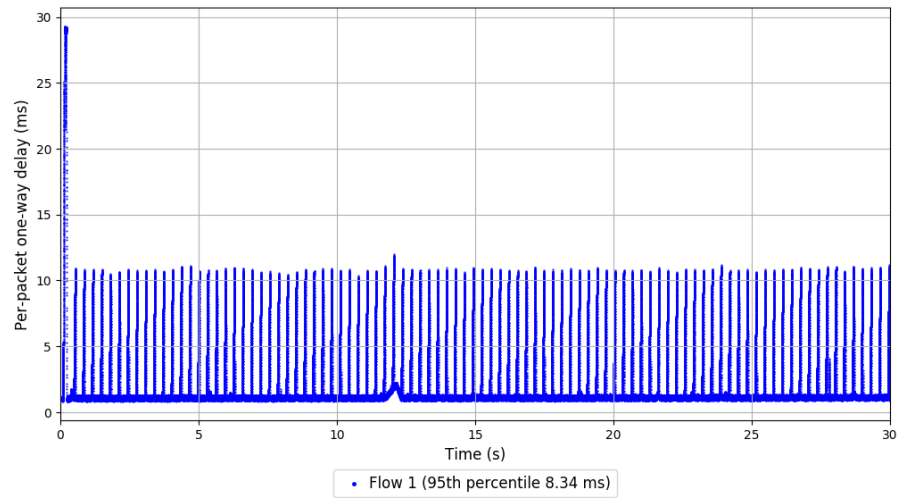
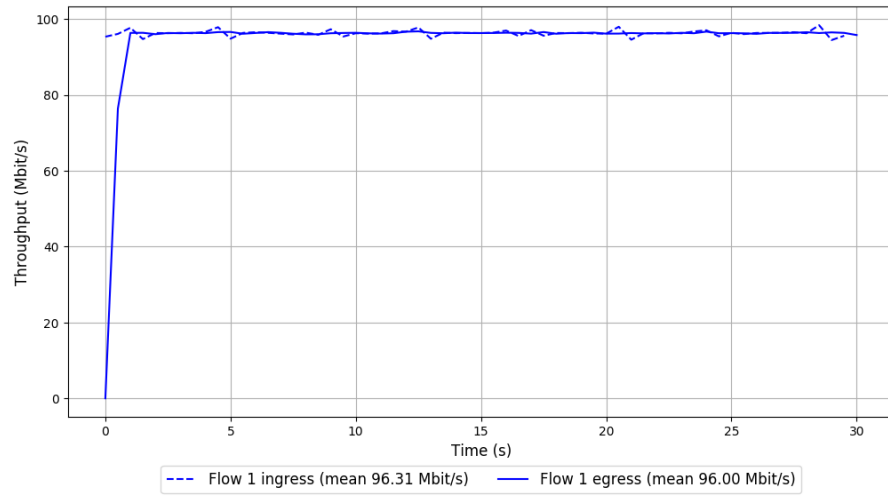
-- Flow 1:

Average throughput: 96.00 Mbit/s

95th percentile per-packet one-way delay: 8.342 ms

Loss rate: 0.32%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-12-19 23:43:59

End at: 2018-12-19 23:44:29

Local clock offset: -2.915 ms

Remote clock offset: 0.777 ms

Below is generated by plot.py at 2018-12-20 00:26:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.13 Mbit/s

95th percentile per-packet one-way delay: 11.206 ms

Loss rate: 0.27%

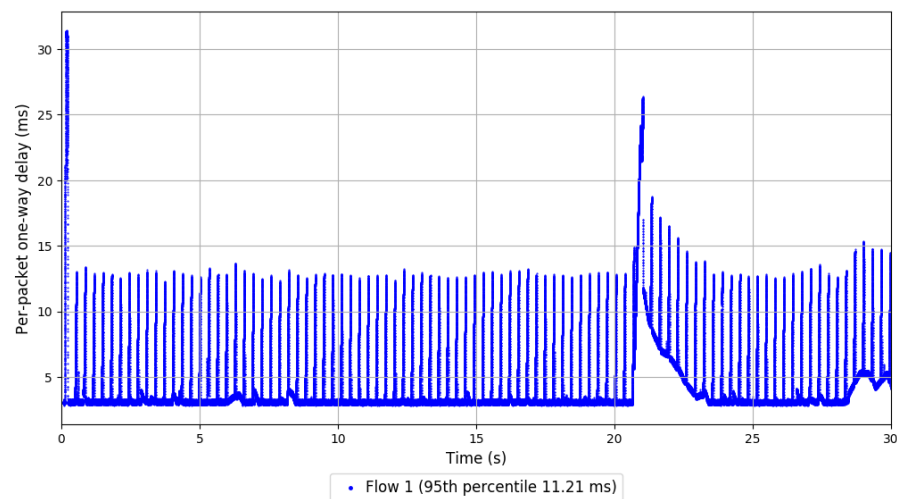
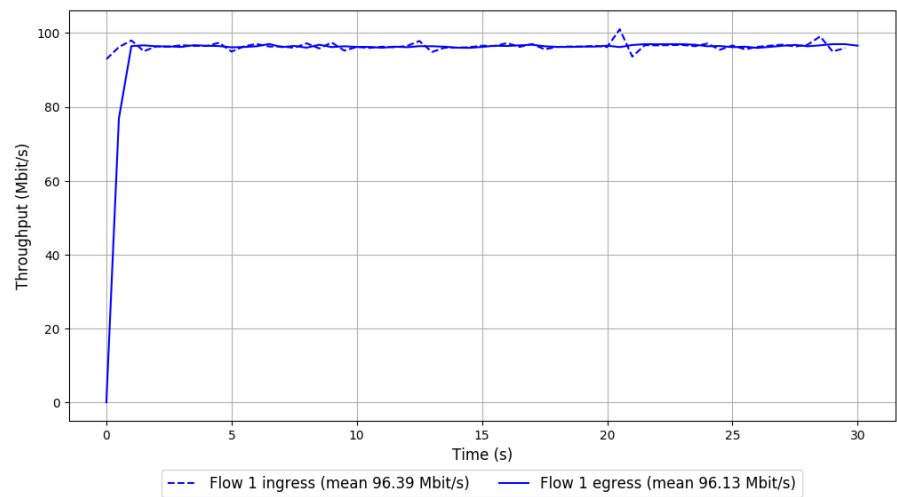
-- Flow 1:

Average throughput: 96.13 Mbit/s

95th percentile per-packet one-way delay: 11.206 ms

Loss rate: 0.27%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-12-20 00:05:09

End at: 2018-12-20 00:05:39

Local clock offset: -3.064 ms

Remote clock offset: 0.487 ms

Below is generated by plot.py at 2018-12-20 00:26:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.97 Mbit/s

95th percentile per-packet one-way delay: 9.026 ms

Loss rate: 0.32%

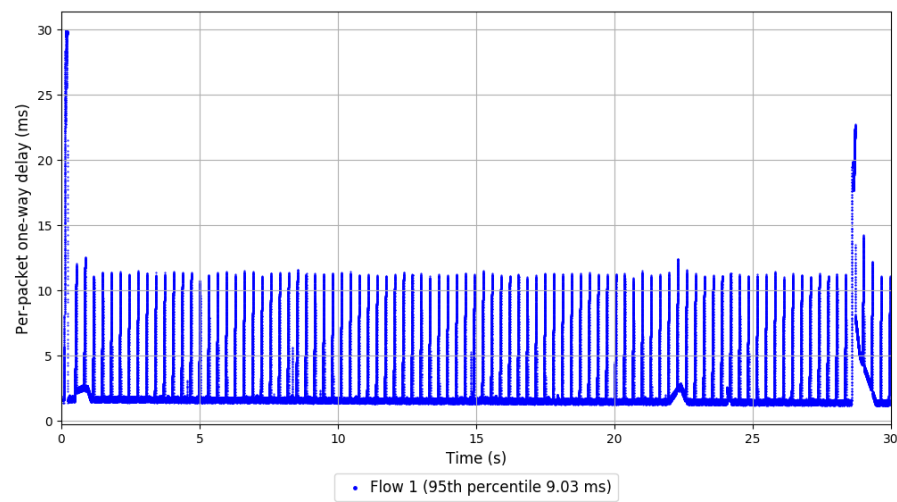
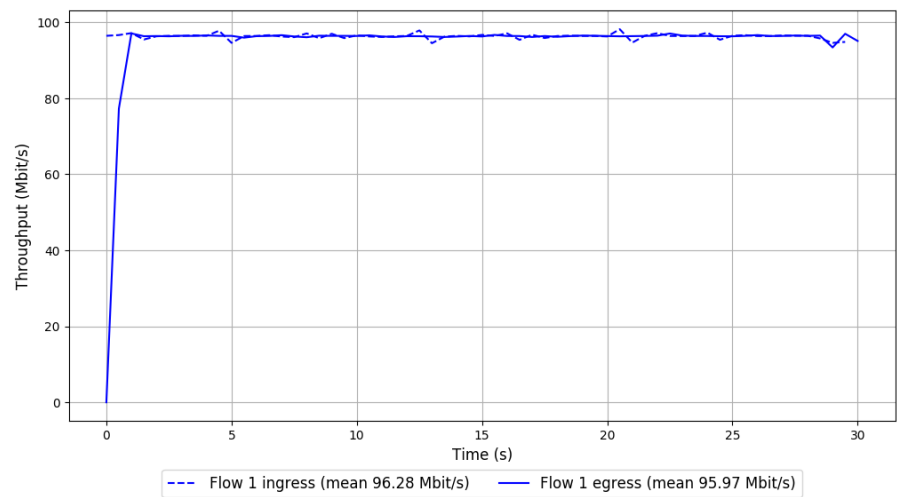
-- Flow 1:

Average throughput: 95.97 Mbit/s

95th percentile per-packet one-way delay: 9.026 ms

Loss rate: 0.32%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-12-19 22:38:22

End at: 2018-12-19 22:38:52

Local clock offset: -3.393 ms

Remote clock offset: 1.286 ms

Below is generated by plot.py at 2018-12-20 00:26:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.62 Mbit/s

95th percentile per-packet one-way delay: 5.146 ms

Loss rate: 0.07%

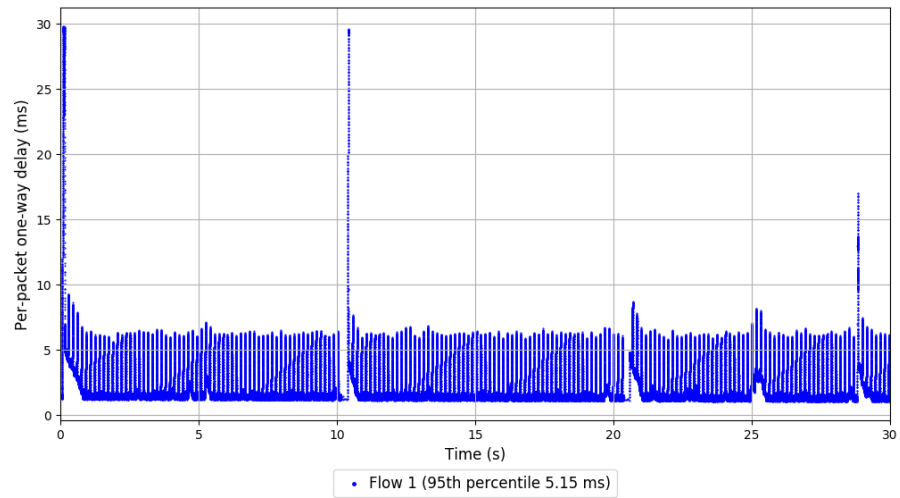
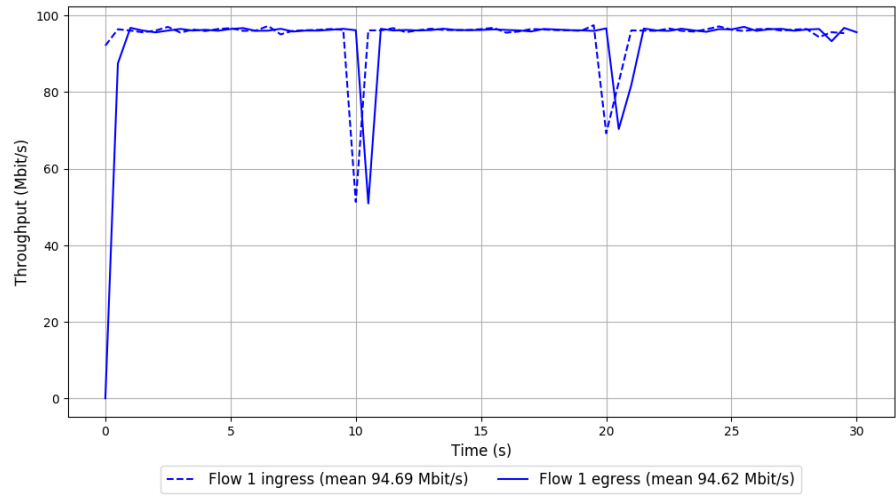
-- Flow 1:

Average throughput: 94.62 Mbit/s

95th percentile per-packet one-way delay: 5.146 ms

Loss rate: 0.07%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-12-19 22:59:31

End at: 2018-12-19 23:00:01

Local clock offset: -7.008 ms

Remote clock offset: 1.144 ms

Below is generated by plot.py at 2018-12-20 00:27:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.60 Mbit/s

95th percentile per-packet one-way delay: 7.288 ms

Loss rate: 0.09%

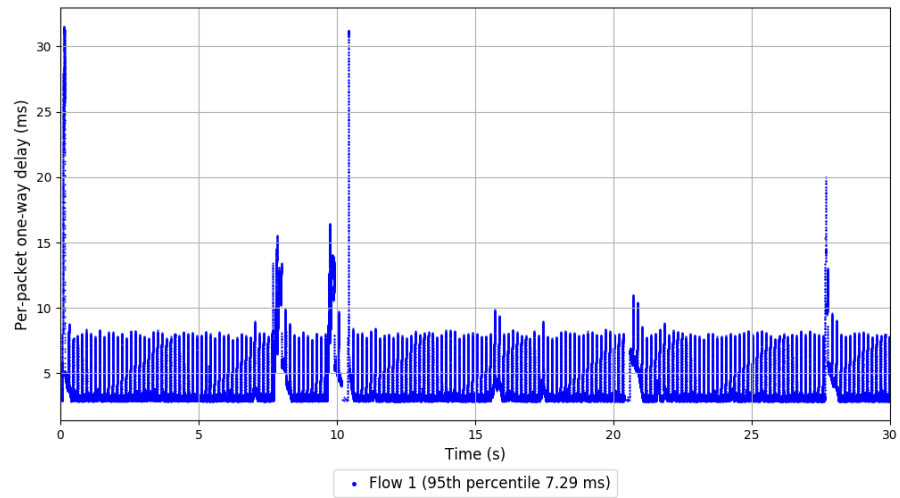
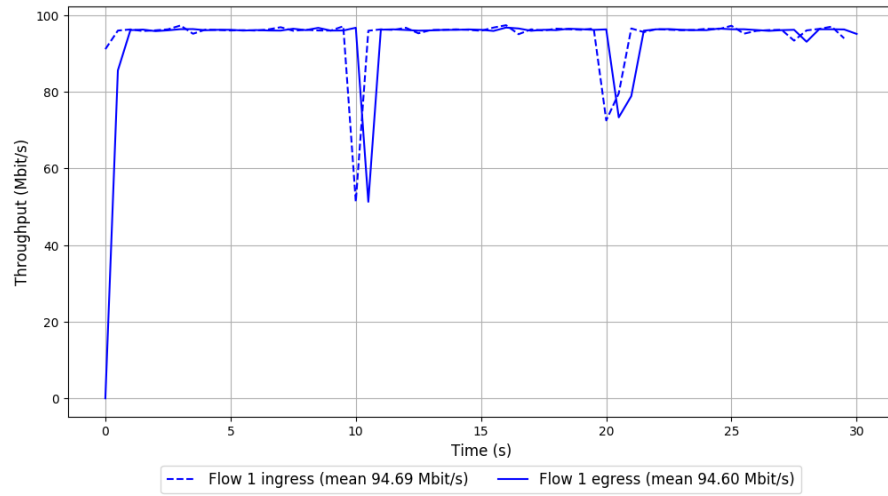
-- Flow 1:

Average throughput: 94.60 Mbit/s

95th percentile per-packet one-way delay: 7.288 ms

Loss rate: 0.09%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-12-19 23:20:39

End at: 2018-12-19 23:21:09

Local clock offset: -2.625 ms

Remote clock offset: 0.908 ms

Below is generated by plot.py at 2018-12-20 00:27:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.64 Mbit/s

95th percentile per-packet one-way delay: 5.402 ms

Loss rate: 0.07%

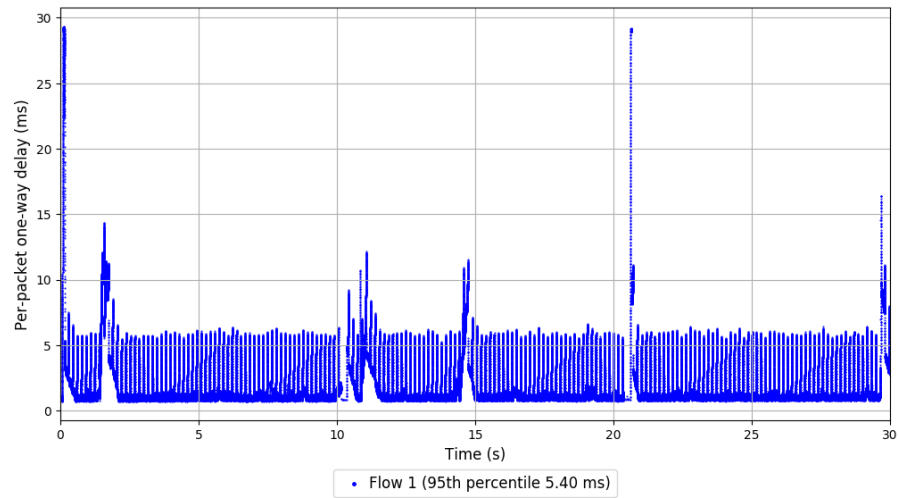
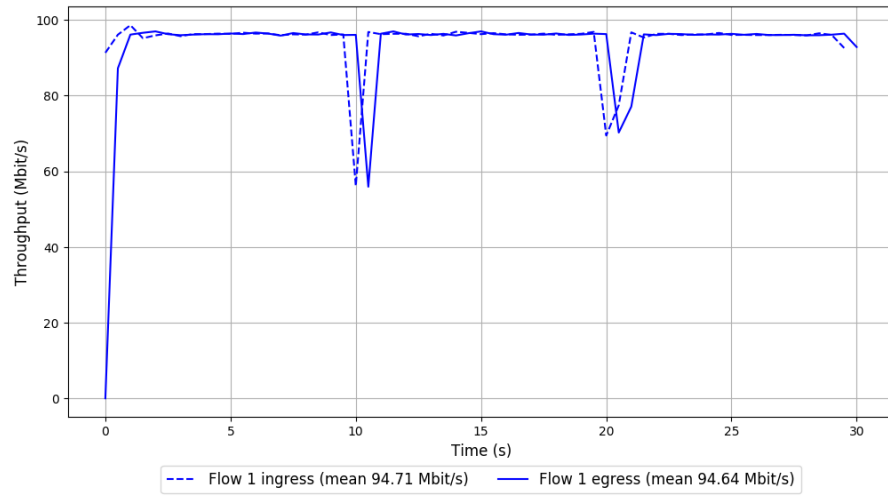
-- Flow 1:

Average throughput: 94.64 Mbit/s

95th percentile per-packet one-way delay: 5.402 ms

Loss rate: 0.07%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-12-19 23:41:48

End at: 2018-12-19 23:42:18

Local clock offset: -2.084 ms

Remote clock offset: 0.809 ms

Below is generated by plot.py at 2018-12-20 00:27:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.67 Mbit/s

95th percentile per-packet one-way delay: 6.298 ms

Loss rate: 0.09%

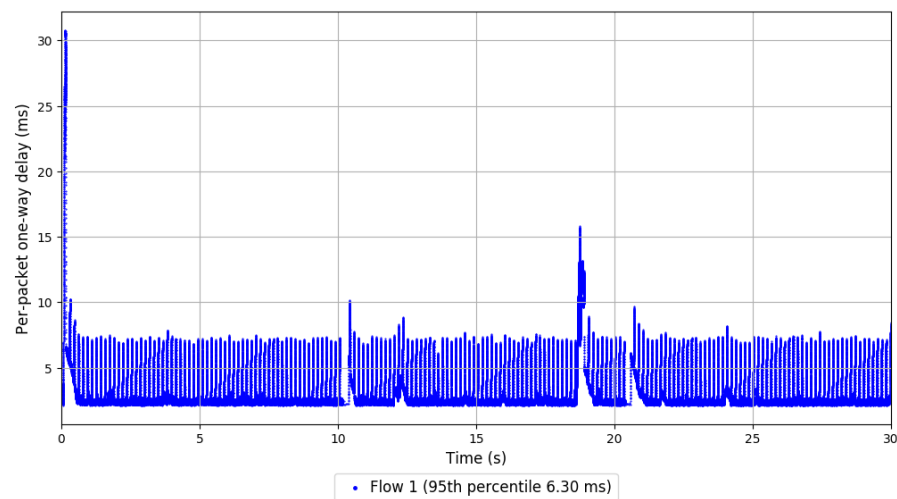
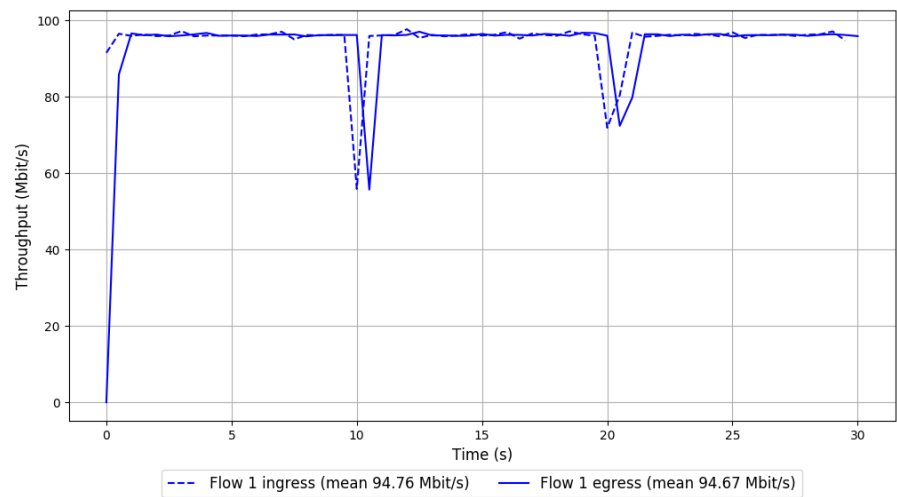
-- Flow 1:

Average throughput: 94.67 Mbit/s

95th percentile per-packet one-way delay: 6.298 ms

Loss rate: 0.09%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 00:02:58

End at: 2018-12-20 00:03:28

Local clock offset: -3.06 ms

Remote clock offset: 0.467 ms

Below is generated by plot.py at 2018-12-20 00:27:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.56 Mbit/s

95th percentile per-packet one-way delay: 5.678 ms

Loss rate: 0.09%

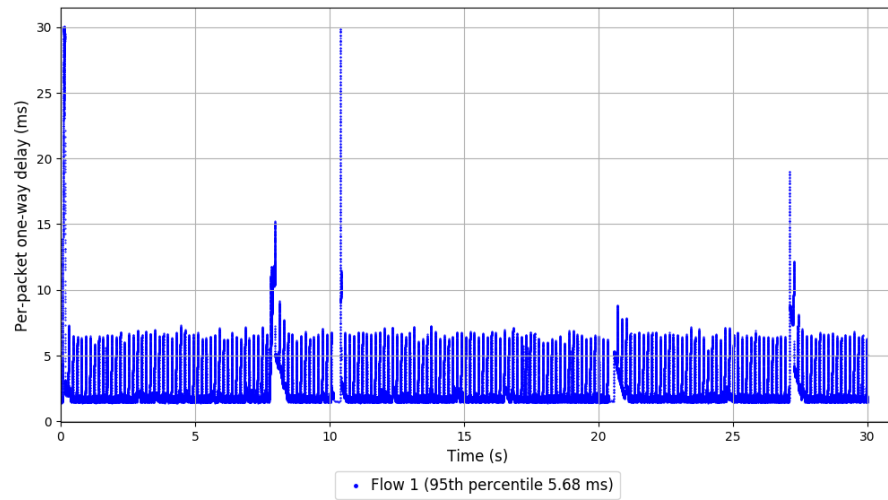
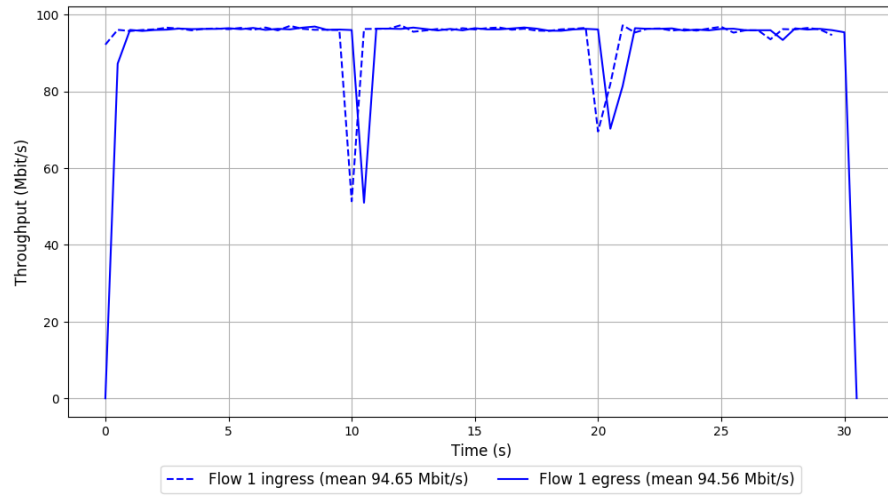
-- Flow 1:

Average throughput: 94.56 Mbit/s

95th percentile per-packet one-way delay: 5.678 ms

Loss rate: 0.09%

Run 5: Report of FillP-Sheep — Data Link

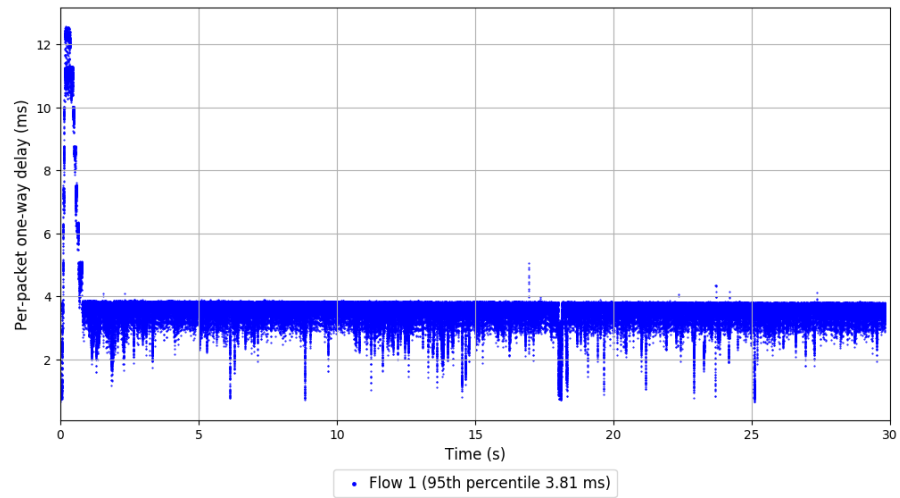
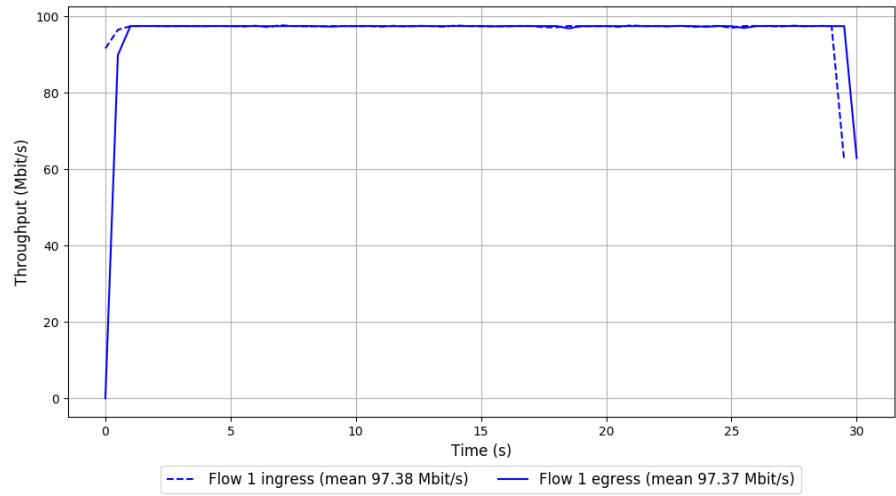


```
Run 1: Statistics of Indigo

Start at: 2018-12-19 22:48:25
End at: 2018-12-19 22:48:55
Local clock offset: -5.193 ms
Remote clock offset: 1.209 ms

# Below is generated by plot.py at 2018-12-20 00:27:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.37 Mbit/s
95th percentile per-packet one-way delay: 3.812 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.37 Mbit/s
95th percentile per-packet one-way delay: 3.812 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-12-19 23:09:33

End at: 2018-12-19 23:10:03

Local clock offset: -5.633 ms

Remote clock offset: 1.045 ms

Below is generated by plot.py at 2018-12-20 00:27:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.31 Mbit/s

95th percentile per-packet one-way delay: 6.176 ms

Loss rate: 0.00%

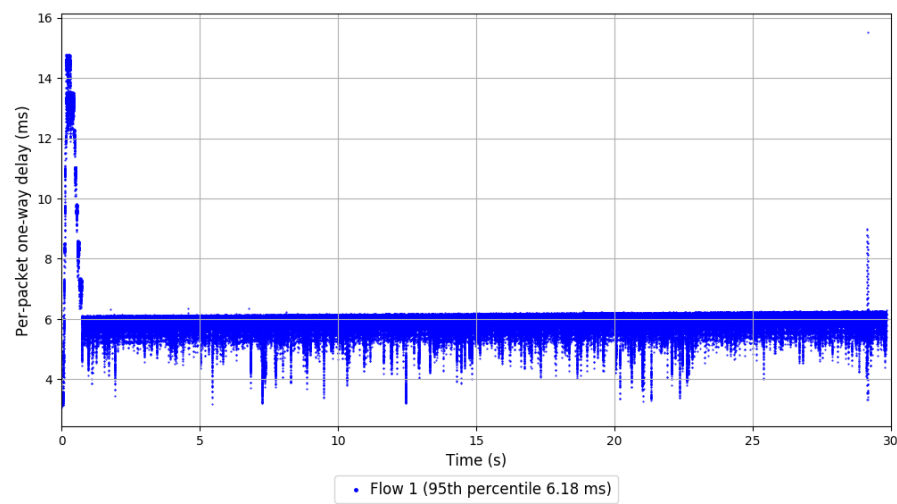
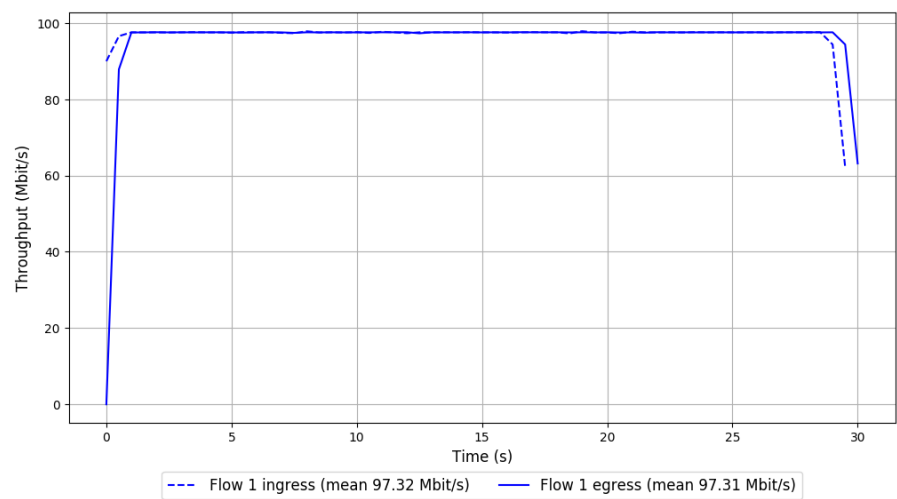
-- Flow 1:

Average throughput: 97.31 Mbit/s

95th percentile per-packet one-way delay: 6.176 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-12-19 23:30:41

End at: 2018-12-19 23:31:11

Local clock offset: -2.545 ms

Remote clock offset: 0.899 ms

Below is generated by plot.py at 2018-12-20 00:27:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 6.034 ms

Loss rate: 0.00%

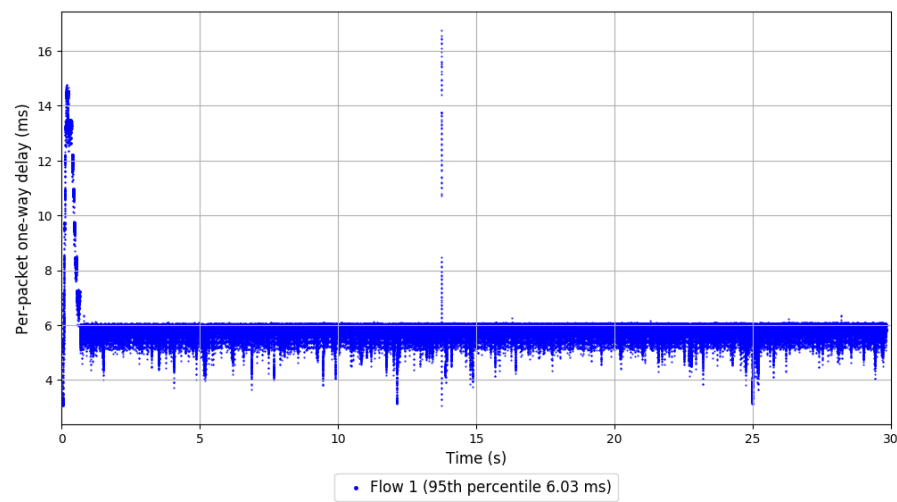
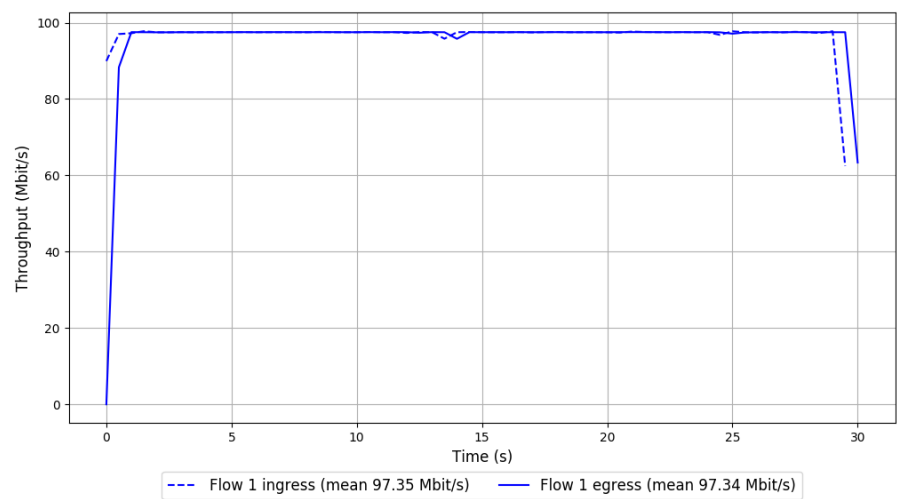
-- Flow 1:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 6.034 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-12-19 23:51:51

End at: 2018-12-19 23:52:21

Local clock offset: -2.356 ms

Remote clock offset: 0.664 ms

Below is generated by plot.py at 2018-12-20 00:27:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.82 Mbit/s

95th percentile per-packet one-way delay: 3.829 ms

Loss rate: 0.01%

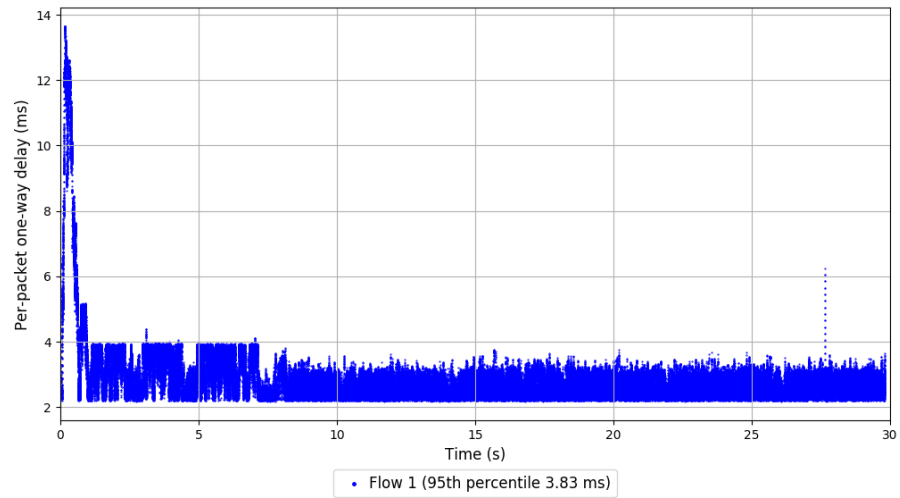
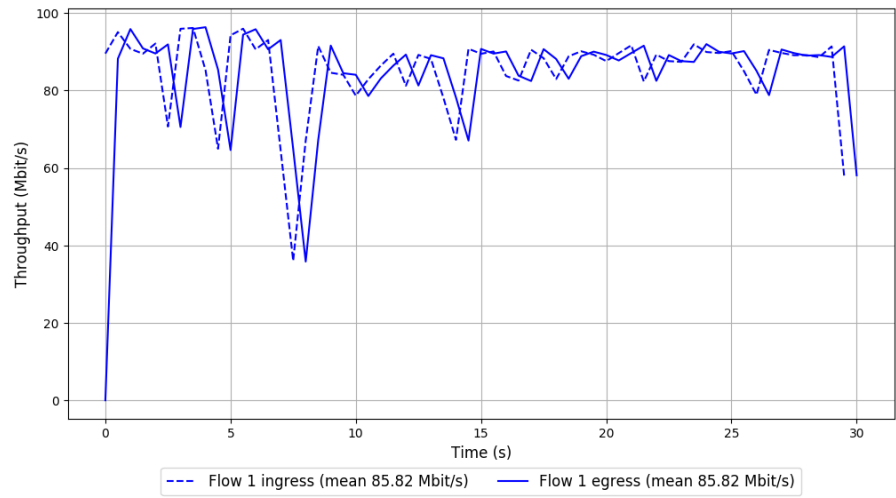
-- Flow 1:

Average throughput: 85.82 Mbit/s

95th percentile per-packet one-way delay: 3.829 ms

Loss rate: 0.01%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-12-20 00:13:00

End at: 2018-12-20 00:13:30

Local clock offset: -5.383 ms

Remote clock offset: 0.351 ms

Below is generated by plot.py at 2018-12-20 00:28:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.35 Mbit/s

95th percentile per-packet one-way delay: 3.824 ms

Loss rate: 0.00%

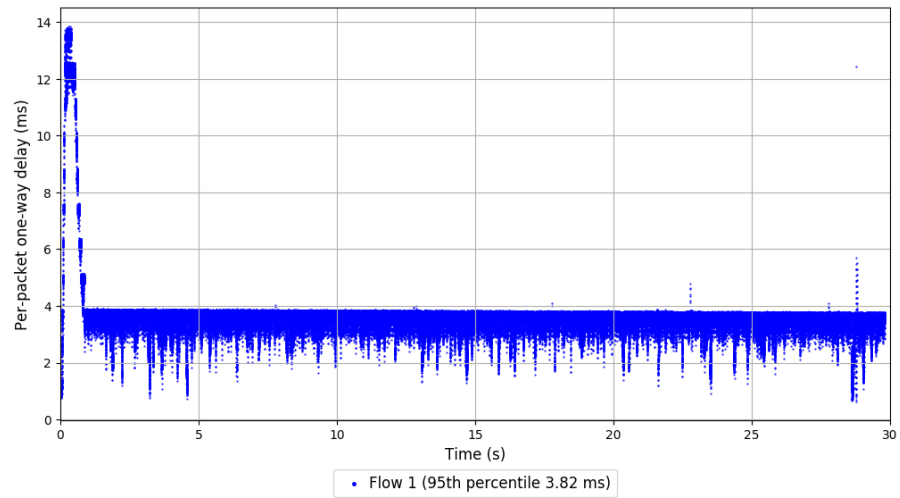
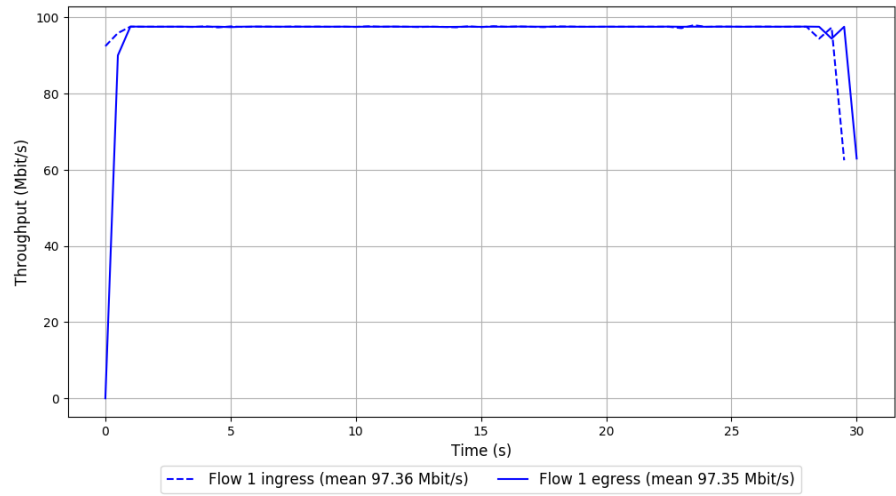
-- Flow 1:

Average throughput: 97.35 Mbit/s

95th percentile per-packet one-way delay: 3.824 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

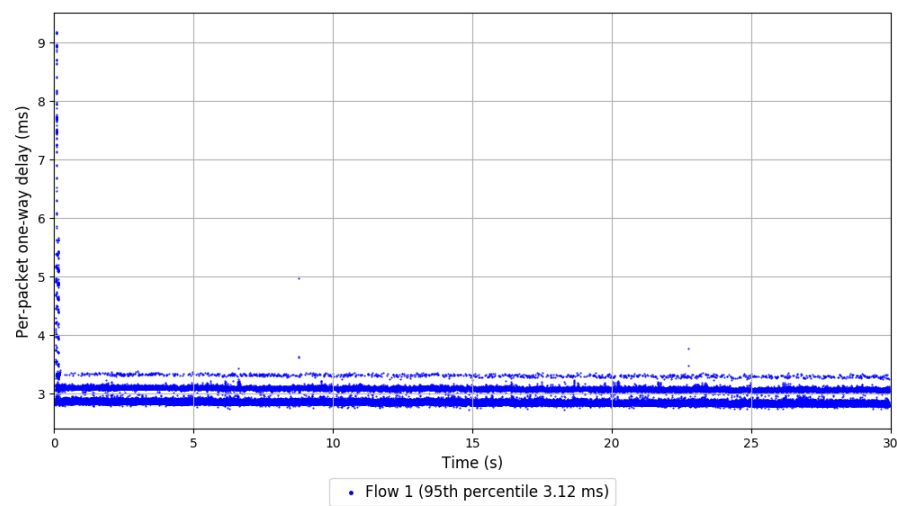
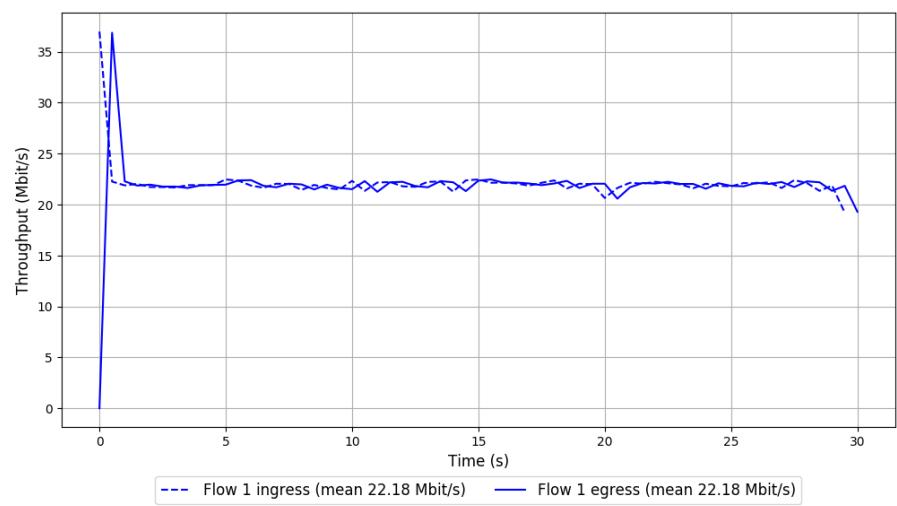


```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-19 22:53:56
End at: 2018-12-19 22:54:26
Local clock offset: -6.571 ms
Remote clock offset: 1.056 ms

# Below is generated by plot.py at 2018-12-20 00:28:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.18 Mbit/s
95th percentile per-packet one-way delay: 3.123 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.18 Mbit/s
95th percentile per-packet one-way delay: 3.123 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-19 23:15:04

End at: 2018-12-19 23:15:34

Local clock offset: -3.402 ms

Remote clock offset: 0.965 ms

Below is generated by plot.py at 2018-12-20 00:28:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.45 Mbit/s

95th percentile per-packet one-way delay: 1.333 ms

Loss rate: 0.01%

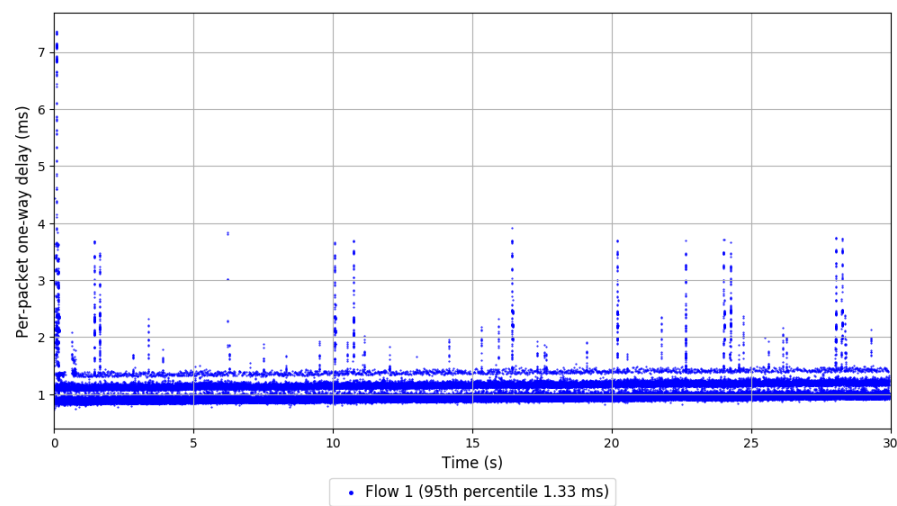
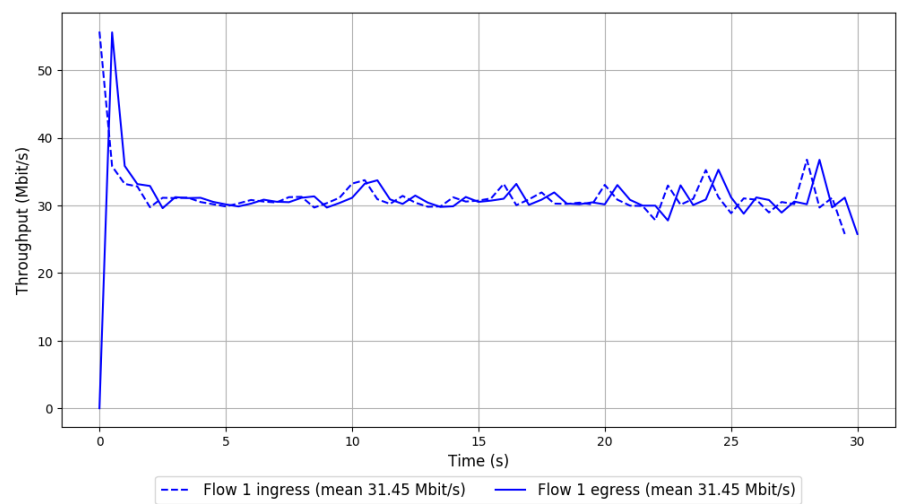
-- Flow 1:

Average throughput: 31.45 Mbit/s

95th percentile per-packet one-way delay: 1.333 ms

Loss rate: 0.01%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-19 23:36:12

End at: 2018-12-19 23:36:42

Local clock offset: -1.591 ms

Remote clock offset: 0.751 ms

Below is generated by plot.py at 2018-12-20 00:28:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.47 Mbit/s

95th percentile per-packet one-way delay: 1.040 ms

Loss rate: 0.00%

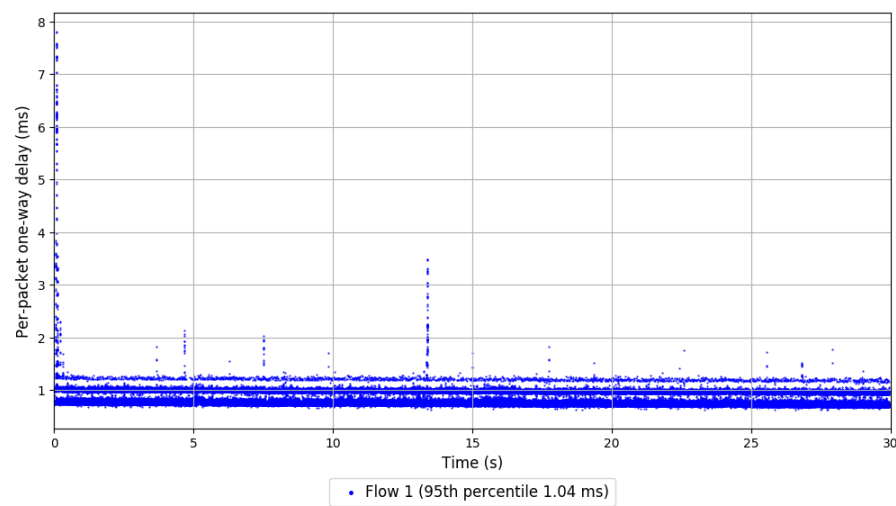
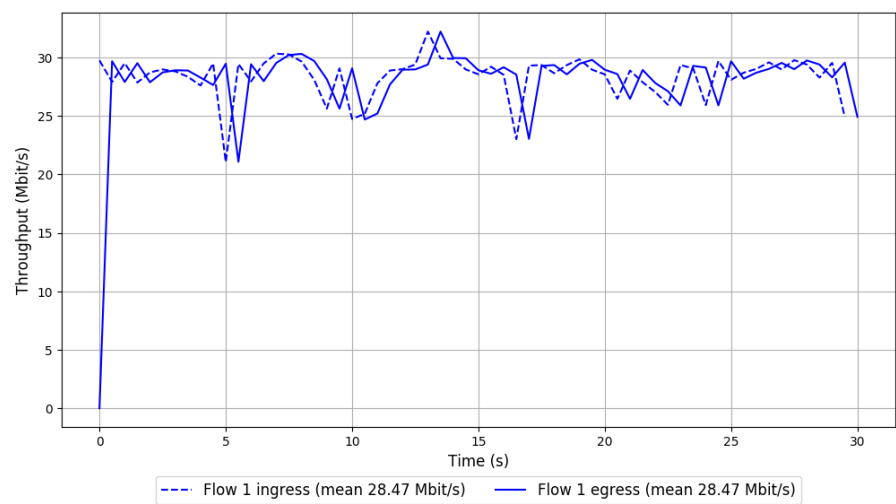
-- Flow 1:

Average throughput: 28.47 Mbit/s

95th percentile per-packet one-way delay: 1.040 ms

Loss rate: 0.00%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-19 23:57:21

End at: 2018-12-19 23:57:51

Local clock offset: -2.374 ms

Remote clock offset: 0.653 ms

Below is generated by plot.py at 2018-12-20 00:28:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.74 Mbit/s

95th percentile per-packet one-way delay: 1.284 ms

Loss rate: 0.00%

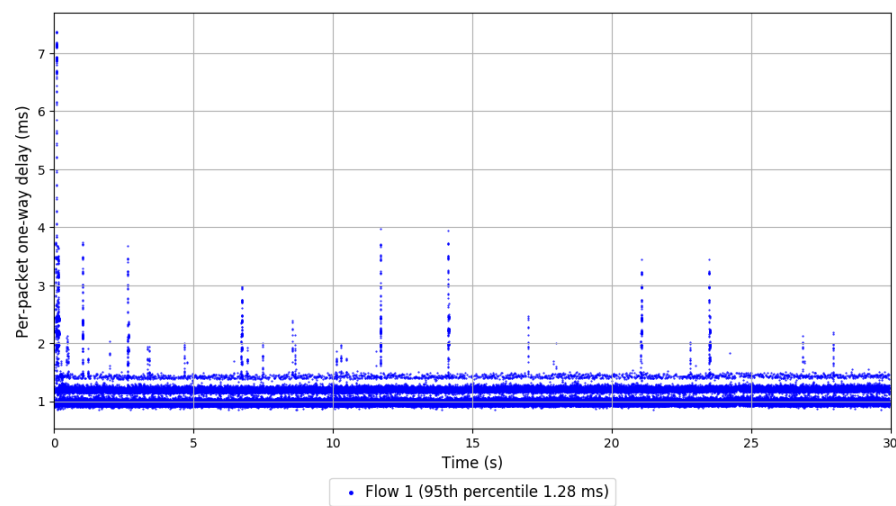
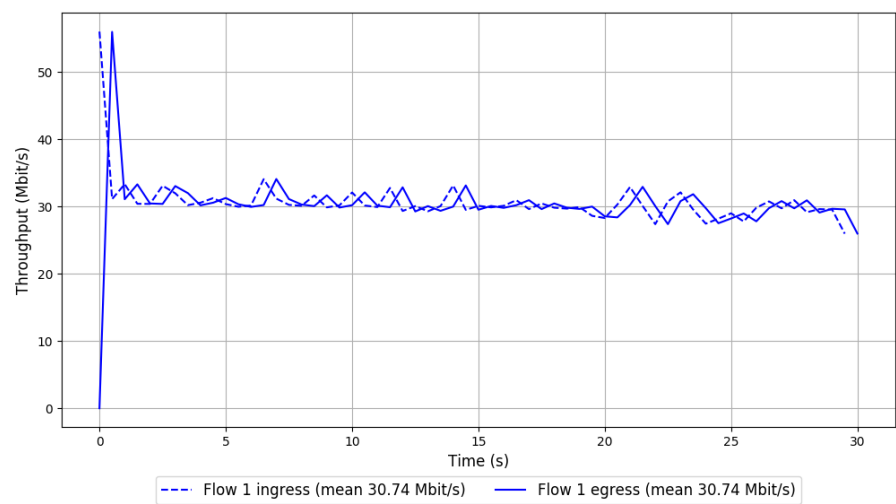
-- Flow 1:

Average throughput: 30.74 Mbit/s

95th percentile per-packet one-way delay: 1.284 ms

Loss rate: 0.00%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 00:18:31

End at: 2018-12-20 00:19:01

Local clock offset: -6.588 ms

Remote clock offset: 0.253 ms

Below is generated by plot.py at 2018-12-20 00:28:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 26.40 Mbit/s

95th percentile per-packet one-way delay: 1.154 ms

Loss rate: 0.00%

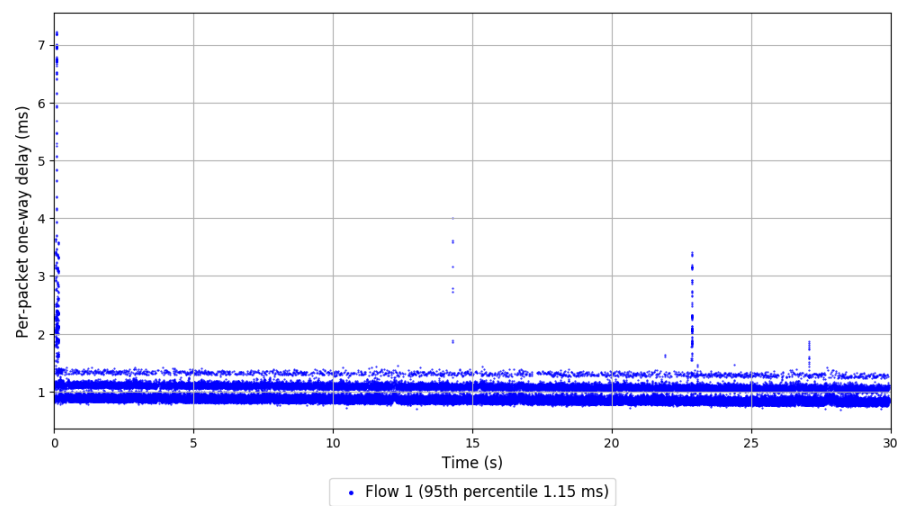
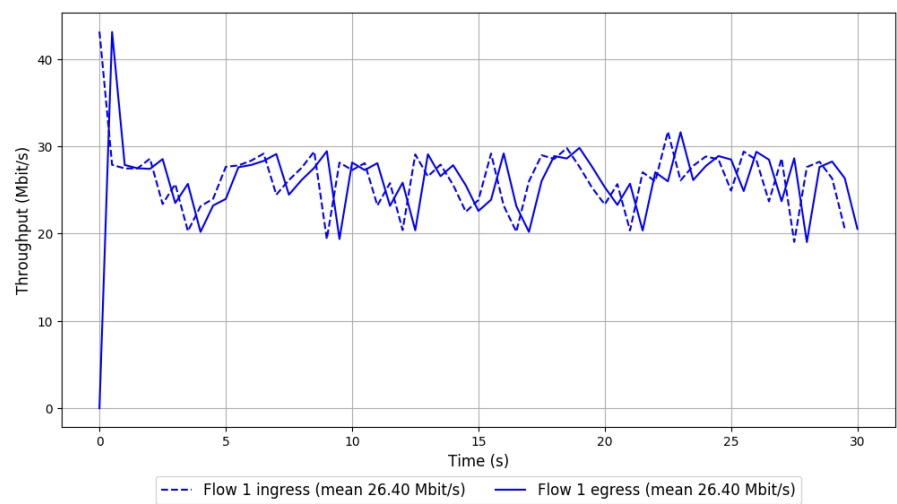
-- Flow 1:

Average throughput: 26.40 Mbit/s

95th percentile per-packet one-way delay: 1.154 ms

Loss rate: 0.00%

Run 5: Report of Indigo-MusesD — Data Link



Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-19 22:56:09

End at: 2018-12-19 22:56:39

Local clock offset: -6.058 ms

Remote clock offset: 1.179 ms

Below is generated by plot.py at 2018-12-20 00:28:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.31 Mbit/s

95th percentile per-packet one-way delay: 32.454 ms

Loss rate: 44.36%

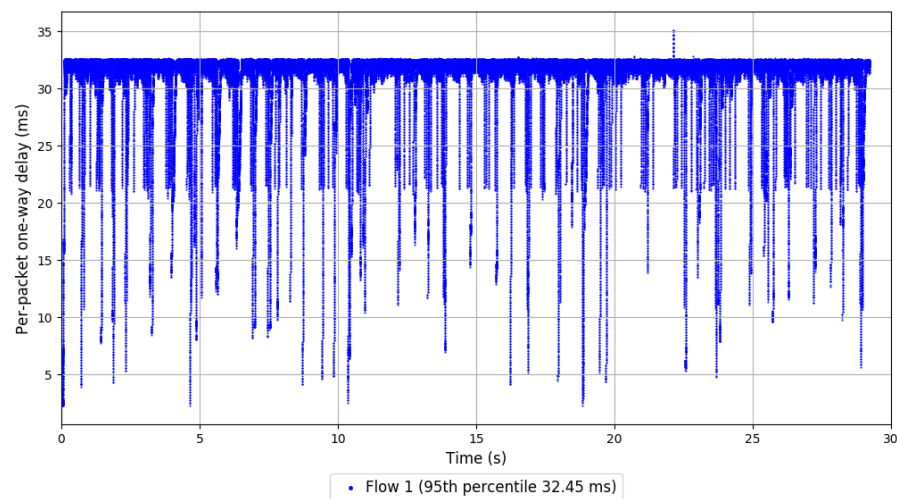
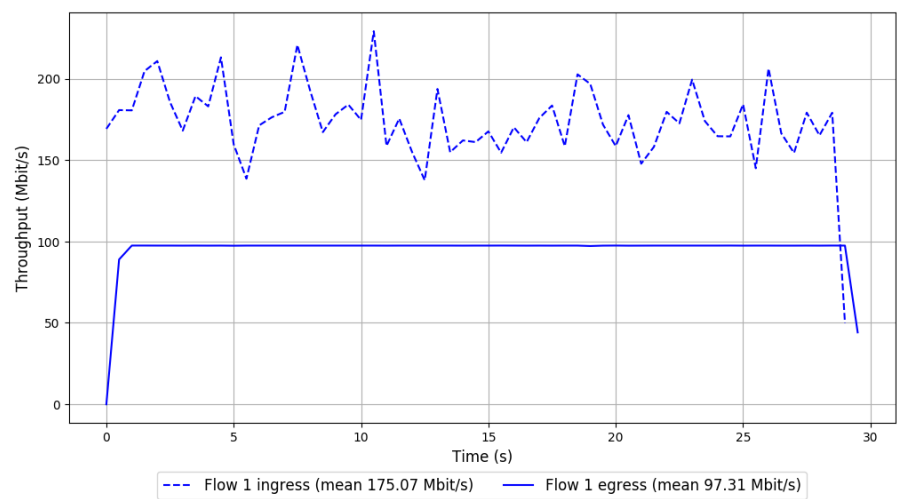
-- Flow 1:

Average throughput: 97.31 Mbit/s

95th percentile per-packet one-way delay: 32.454 ms

Loss rate: 44.36%

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-19 23:17:17

End at: 2018-12-19 23:17:47

Local clock offset: -3.818 ms

Remote clock offset: 1.066 ms

Below is generated by plot.py at 2018-12-20 00:28:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.30 Mbit/s

95th percentile per-packet one-way delay: 33.375 ms

Loss rate: 43.81%

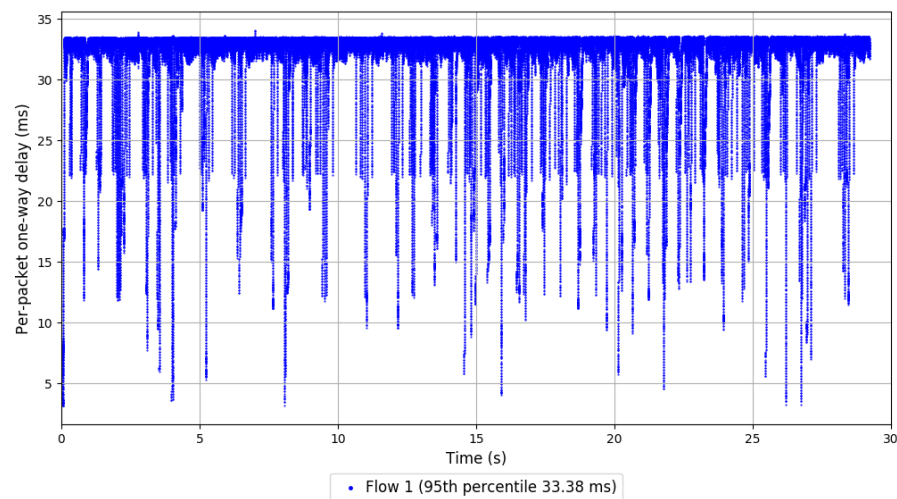
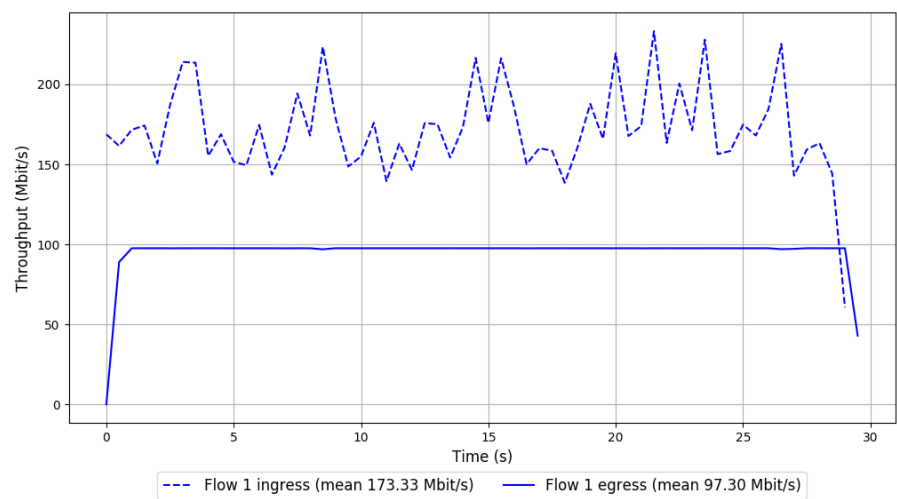
-- Flow 1:

Average throughput: 97.30 Mbit/s

95th percentile per-packet one-way delay: 33.375 ms

Loss rate: 43.81%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-19 23:38:26

End at: 2018-12-19 23:38:56

Local clock offset: -2.54 ms

Remote clock offset: 0.702 ms

Below is generated by plot.py at 2018-12-20 00:28:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.05 Mbit/s

95th percentile per-packet one-way delay: 33.018 ms

Loss rate: 46.86%

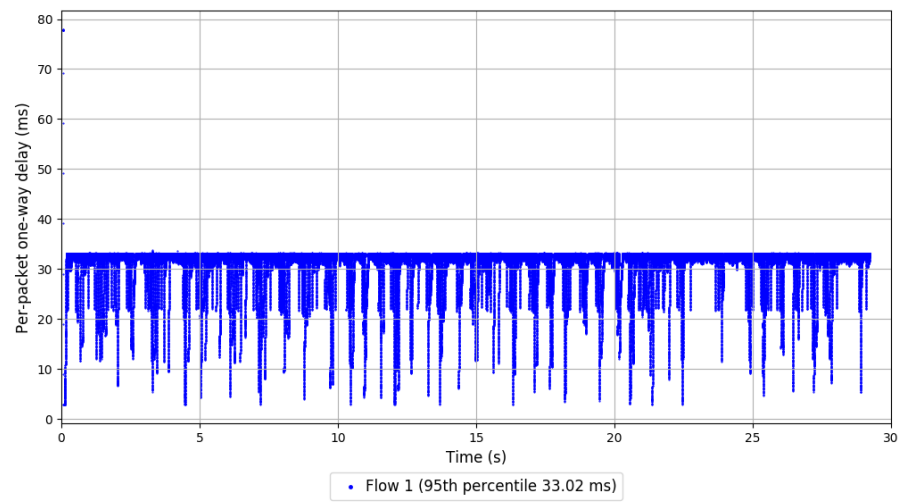
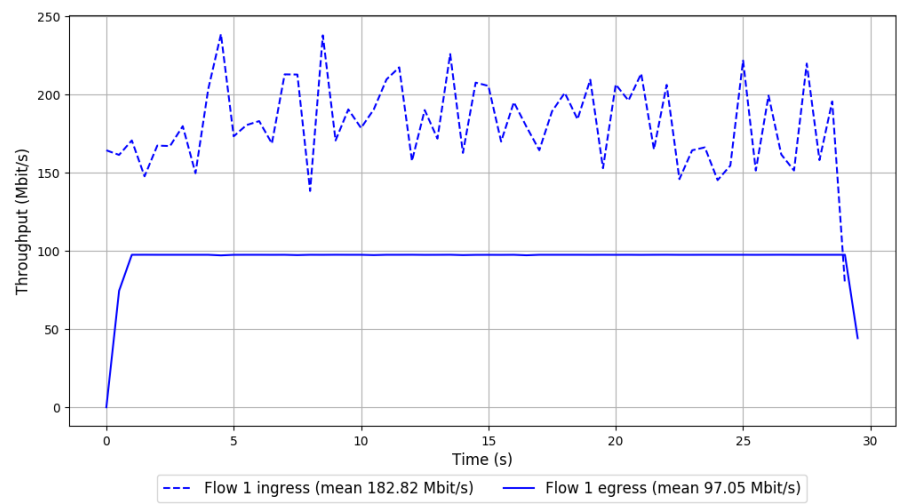
-- Flow 1:

Average throughput: 97.05 Mbit/s

95th percentile per-packet one-way delay: 33.018 ms

Loss rate: 46.86%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-19 23:59:34

End at: 2018-12-20 00:00:04

Local clock offset: -2.355 ms

Remote clock offset: 0.585 ms

Below is generated by plot.py at 2018-12-20 00:28:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.32 Mbit/s

95th percentile per-packet one-way delay: 32.496 ms

Loss rate: 44.31%

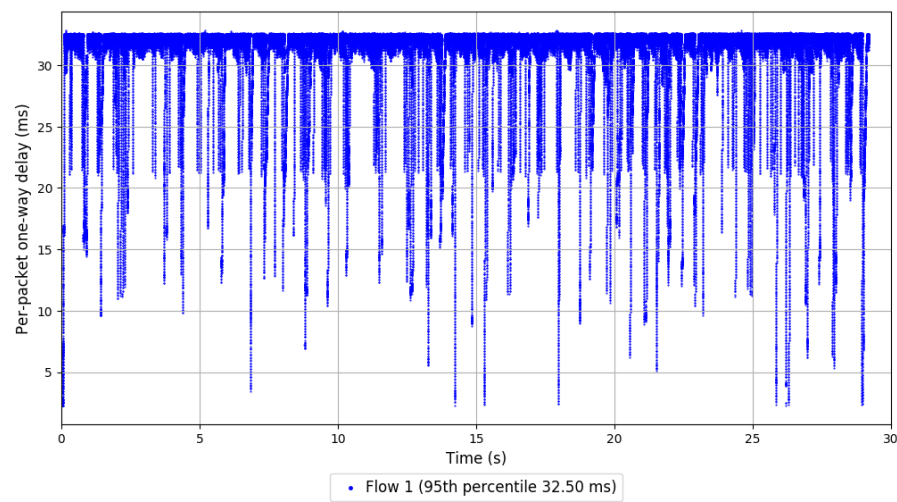
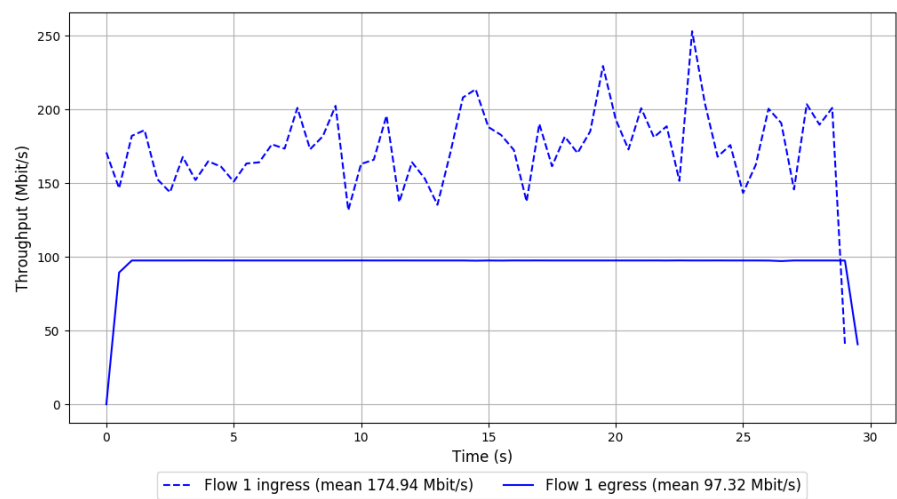
-- Flow 1:

Average throughput: 97.32 Mbit/s

95th percentile per-packet one-way delay: 32.496 ms

Loss rate: 44.31%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 00:20:45

End at: 2018-12-20 00:21:15

Local clock offset: -7.667 ms

Remote clock offset: 0.114 ms

Below is generated by plot.py at 2018-12-20 00:29:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.32 Mbit/s

95th percentile per-packet one-way delay: 33.044 ms

Loss rate: 42.94%

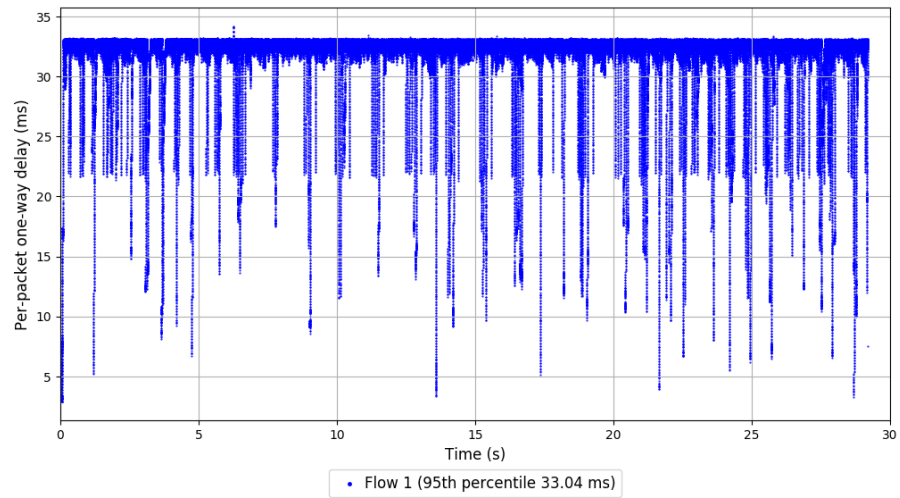
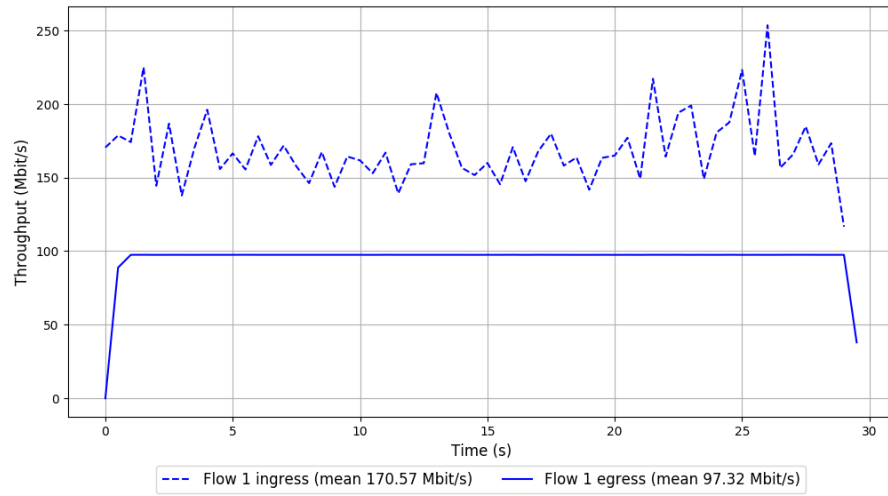
-- Flow 1:

Average throughput: 97.32 Mbit/s

95th percentile per-packet one-way delay: 33.044 ms

Loss rate: 42.94%

Run 5: Report of Indigo-MusesT — Data Link

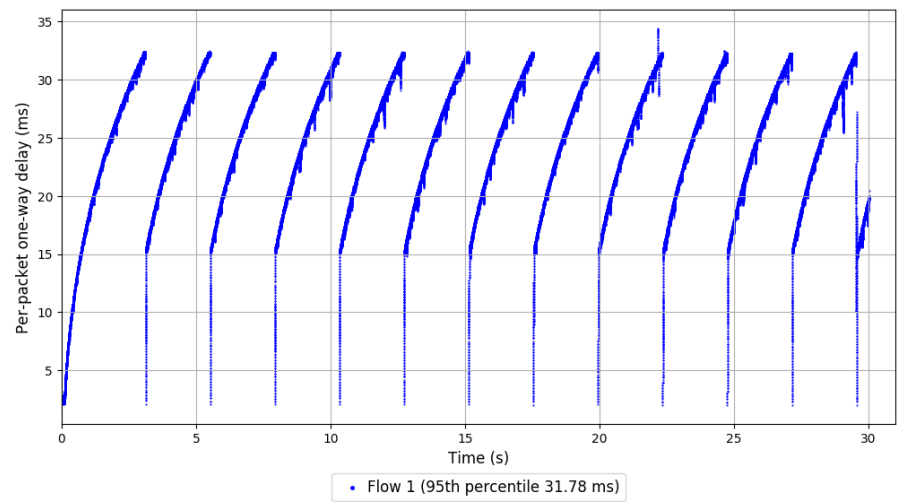
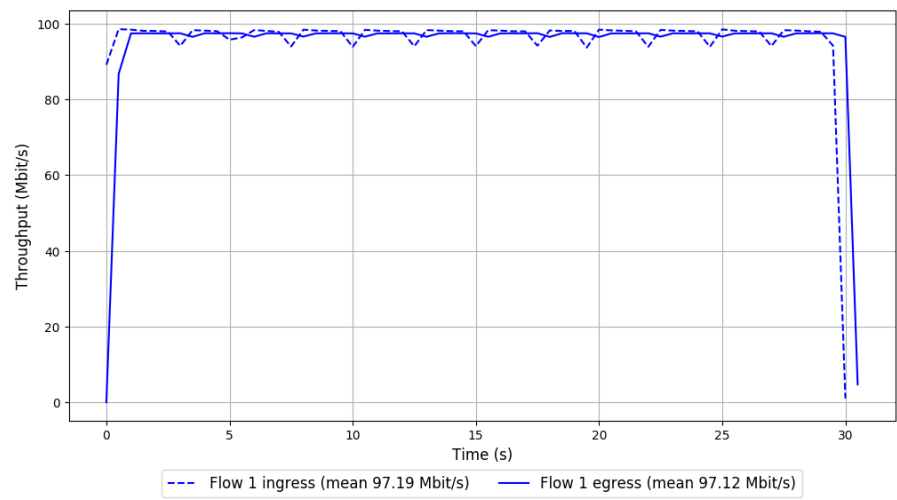



```
Run 1: Statistics of LEDBAT

Start at: 2018-12-19 22:41:41
End at: 2018-12-19 22:42:11
Local clock offset: -3.854 ms
Remote clock offset: 1.257 ms

# Below is generated by plot.py at 2018-12-20 00:29:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.12 Mbit/s
95th percentile per-packet one-way delay: 31.779 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.12 Mbit/s
95th percentile per-packet one-way delay: 31.779 ms
Loss rate: 0.01%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-12-19 23:02:50

End at: 2018-12-19 23:03:20

Local clock offset: -7.173 ms

Remote clock offset: 1.125 ms

Below is generated by plot.py at 2018-12-20 00:29:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.05 Mbit/s

95th percentile per-packet one-way delay: 32.625 ms

Loss rate: 0.01%

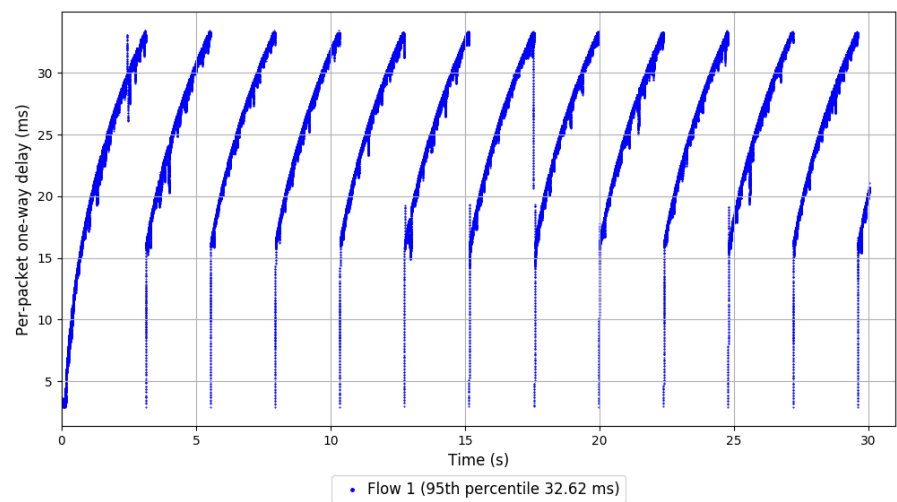
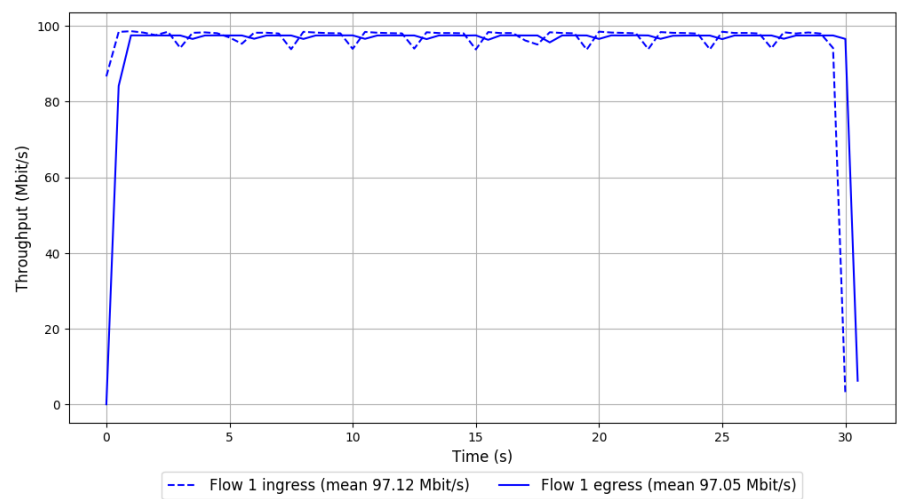
-- Flow 1:

Average throughput: 97.05 Mbit/s

95th percentile per-packet one-way delay: 32.625 ms

Loss rate: 0.01%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-12-19 23:23:58

End at: 2018-12-19 23:24:28

Local clock offset: -2.216 ms

Remote clock offset: 0.979 ms

Below is generated by plot.py at 2018-12-20 00:29:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.23 Mbit/s

95th percentile per-packet one-way delay: 30.591 ms

Loss rate: 0.01%

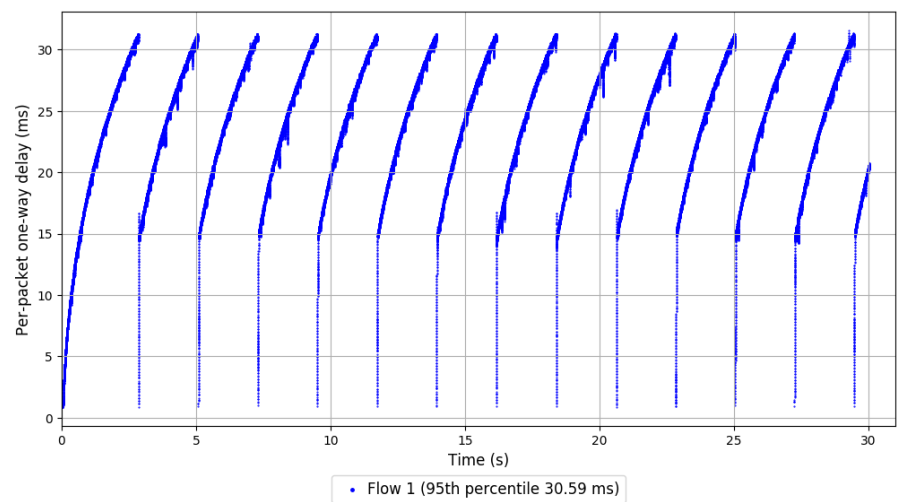
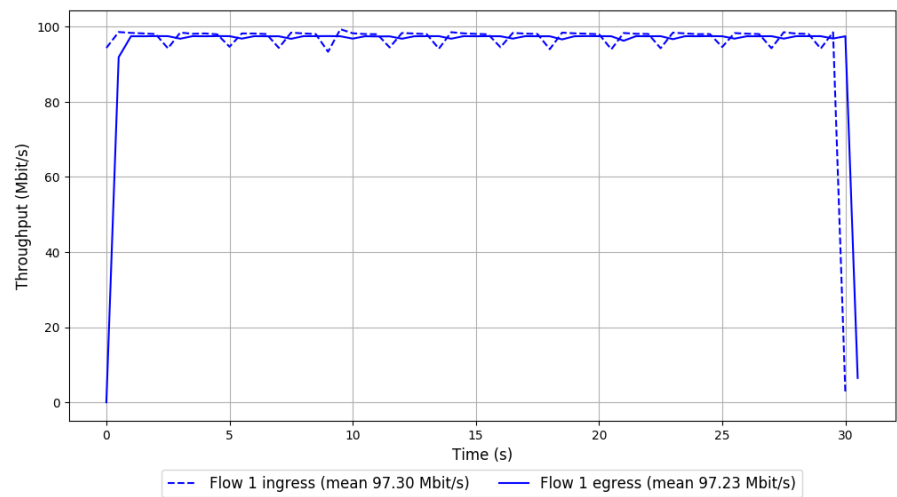
-- Flow 1:

Average throughput: 97.23 Mbit/s

95th percentile per-packet one-way delay: 30.591 ms

Loss rate: 0.01%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-12-19 23:45:07

End at: 2018-12-19 23:45:37

Local clock offset: -2.95 ms

Remote clock offset: 0.706 ms

Below is generated by plot.py at 2018-12-20 00:29:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.93 Mbit/s

95th percentile per-packet one-way delay: 32.261 ms

Loss rate: 0.02%

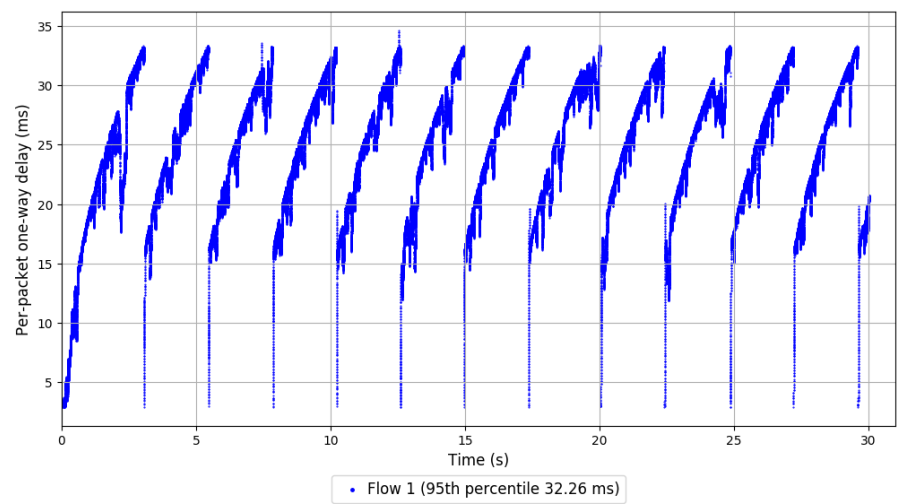
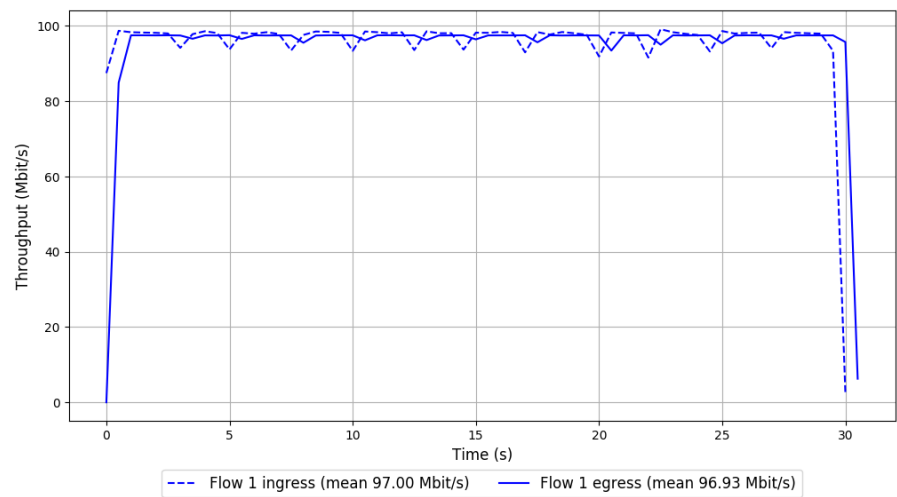
-- Flow 1:

Average throughput: 96.93 Mbit/s

95th percentile per-packet one-way delay: 32.261 ms

Loss rate: 0.02%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-12-20 00:06:17

End at: 2018-12-20 00:06:47

Local clock offset: -2.746 ms

Remote clock offset: 0.365 ms

Below is generated by plot.py at 2018-12-20 00:29:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.05 Mbit/s

95th percentile per-packet one-way delay: 31.322 ms

Loss rate: 0.01%

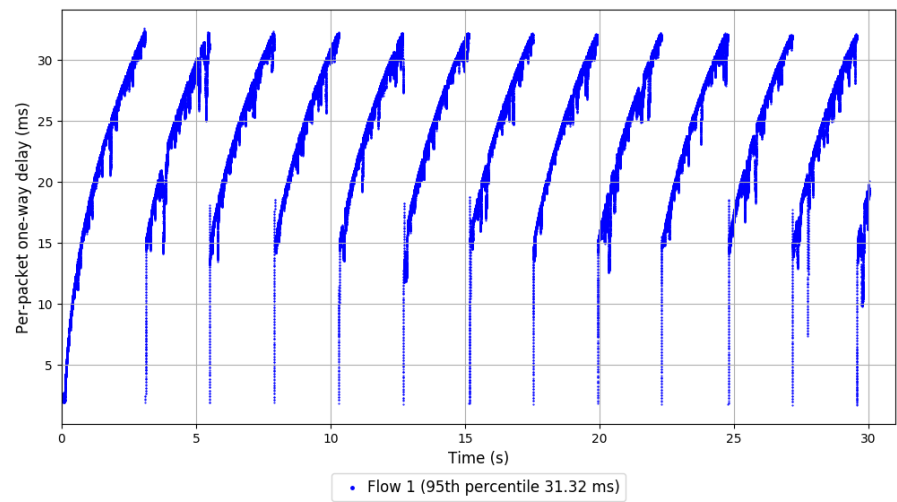
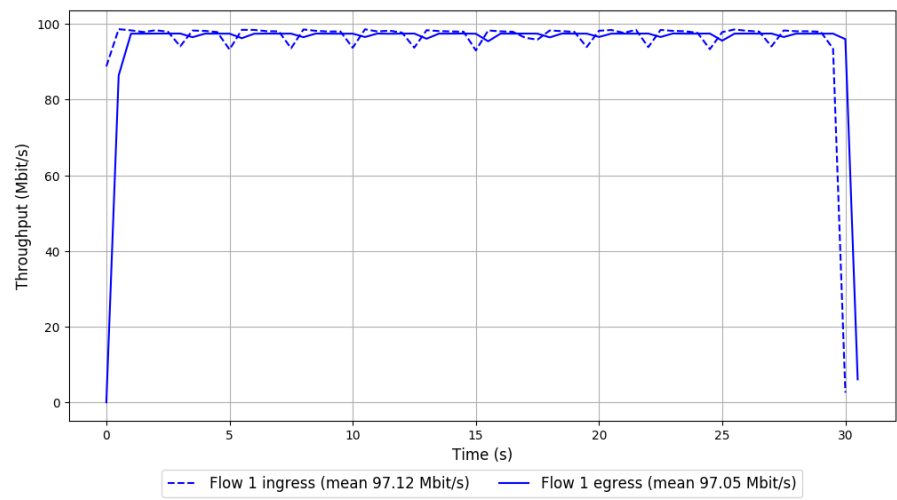
-- Flow 1:

Average throughput: 97.05 Mbit/s

95th percentile per-packet one-way delay: 31.322 ms

Loss rate: 0.01%

Run 5: Report of LEDBAT — Data Link

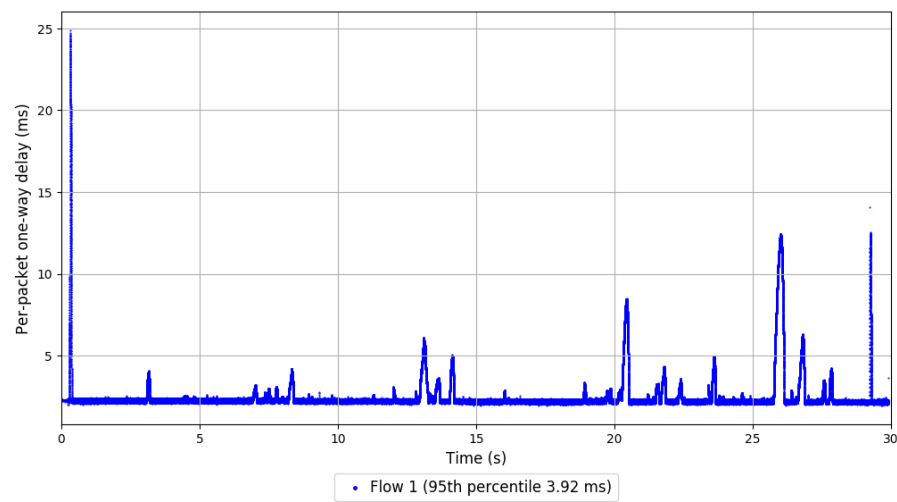
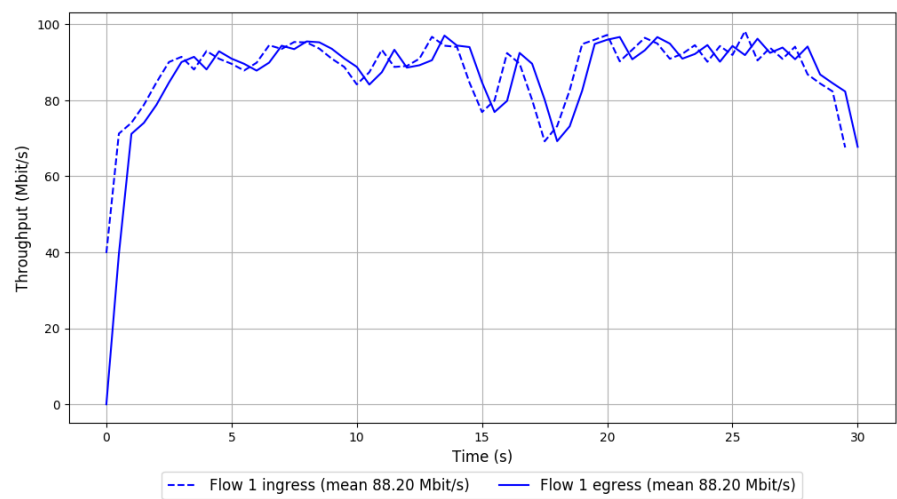


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-19 22:45:06
End at: 2018-12-19 22:45:36
Local clock offset: -4.719 ms
Remote clock offset: 1.194 ms

# Below is generated by plot.py at 2018-12-20 00:29:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.20 Mbit/s
95th percentile per-packet one-way delay: 3.921 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 88.20 Mbit/s
95th percentile per-packet one-way delay: 3.921 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-12-19 23:06:15

End at: 2018-12-19 23:06:45

Local clock offset: -7.006 ms

Remote clock offset: 1.126 ms

Below is generated by plot.py at 2018-12-20 00:29:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 53.75 Mbit/s

95th percentile per-packet one-way delay: 4.238 ms

Loss rate: 0.00%

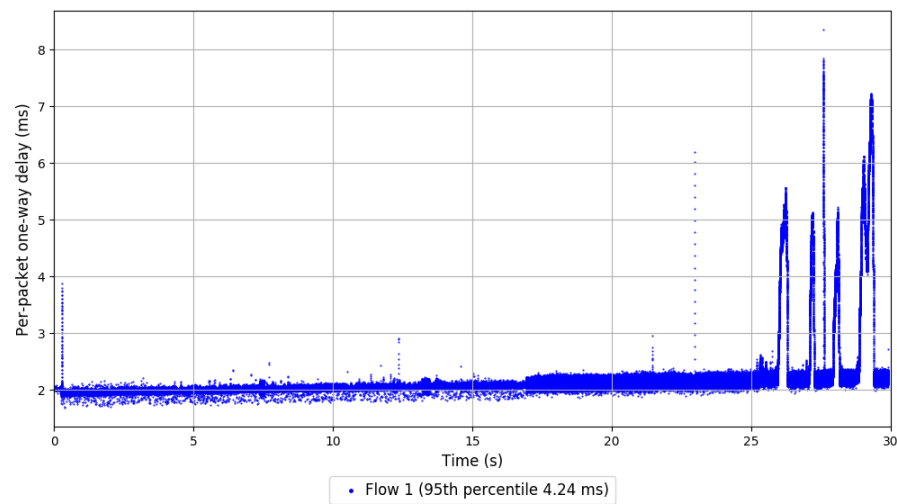
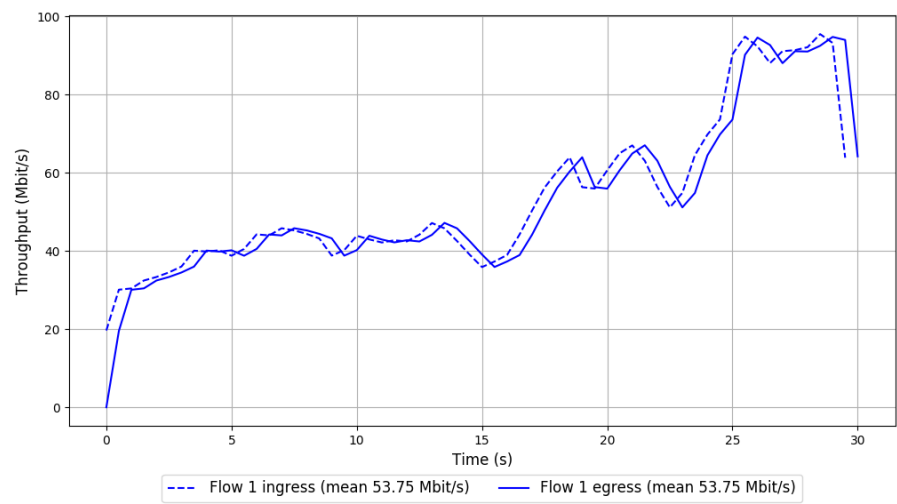
-- Flow 1:

Average throughput: 53.75 Mbit/s

95th percentile per-packet one-way delay: 4.238 ms

Loss rate: 0.00%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-19 23:27:23

End at: 2018-12-19 23:27:53

Local clock offset: -1.945 ms

Remote clock offset: 0.894 ms

Below is generated by plot.py at 2018-12-20 00:29:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.60 Mbit/s

95th percentile per-packet one-way delay: 2.467 ms

Loss rate: 0.00%

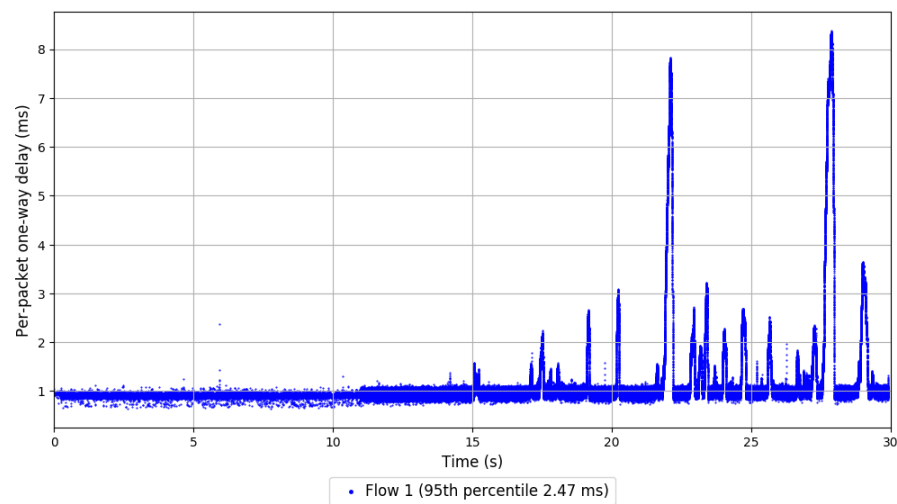
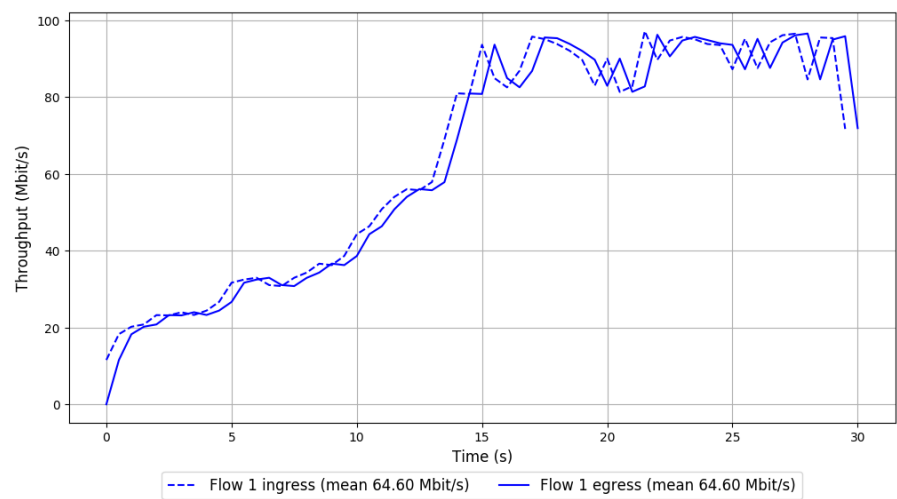
-- Flow 1:

Average throughput: 64.60 Mbit/s

95th percentile per-packet one-way delay: 2.467 ms

Loss rate: 0.00%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-12-19 23:48:32

End at: 2018-12-19 23:49:02

Local clock offset: -2.305 ms

Remote clock offset: 0.647 ms

Below is generated by plot.py at 2018-12-20 00:30:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.32 Mbit/s

95th percentile per-packet one-way delay: 7.346 ms

Loss rate: 0.00%

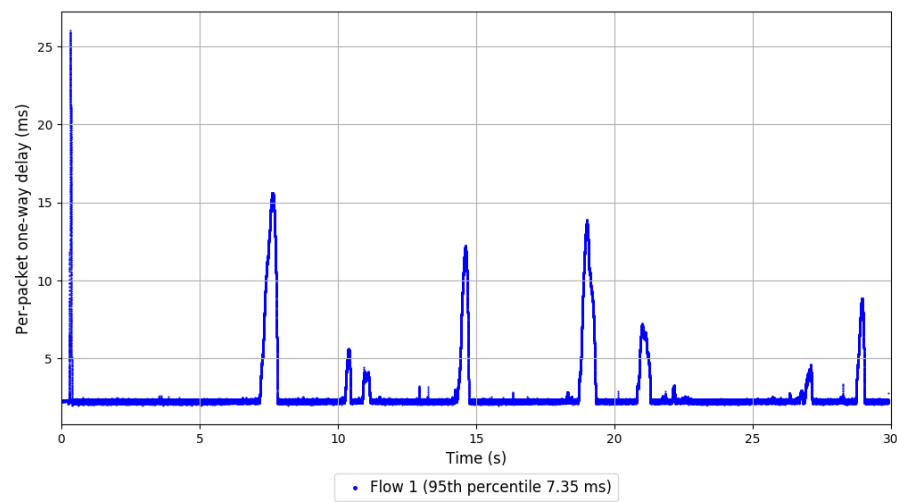
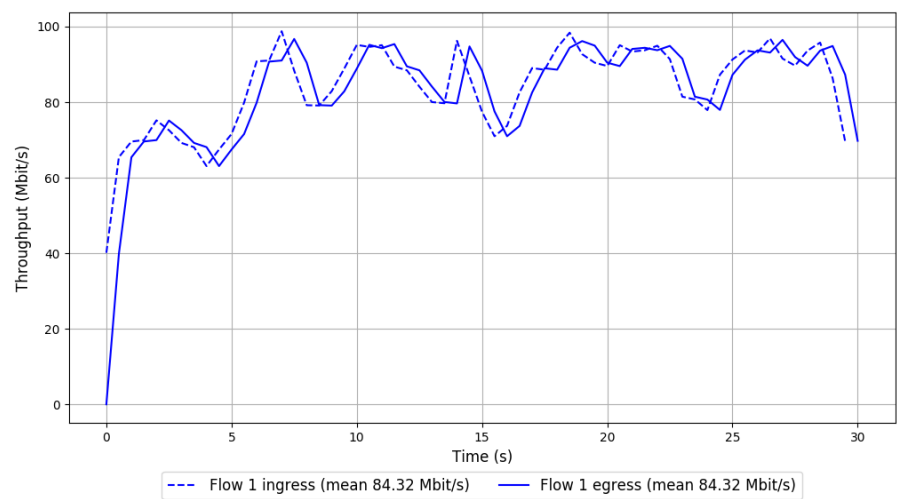
-- Flow 1:

Average throughput: 84.32 Mbit/s

95th percentile per-packet one-way delay: 7.346 ms

Loss rate: 0.00%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 00:09:42

End at: 2018-12-20 00:10:12

Local clock offset: -5.105 ms

Remote clock offset: 0.339 ms

Below is generated by plot.py at 2018-12-20 00:30:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 60.28 Mbit/s

95th percentile per-packet one-way delay: 7.796 ms

Loss rate: 0.01%

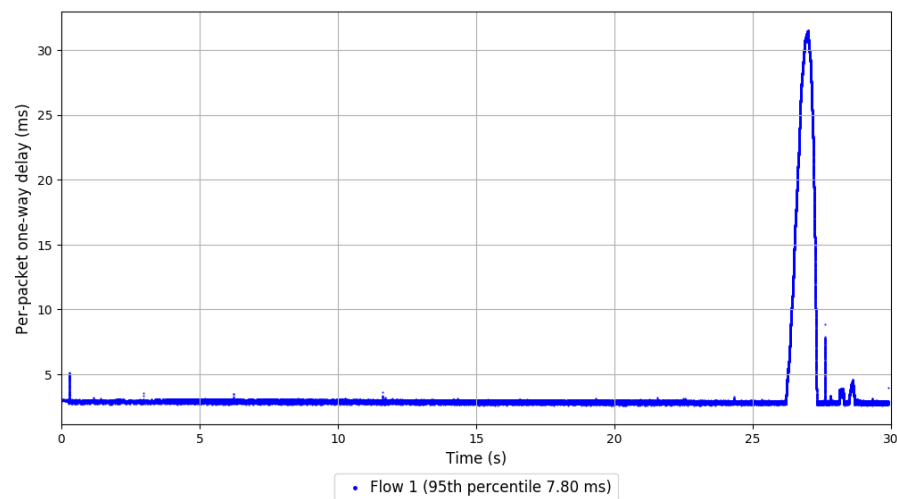
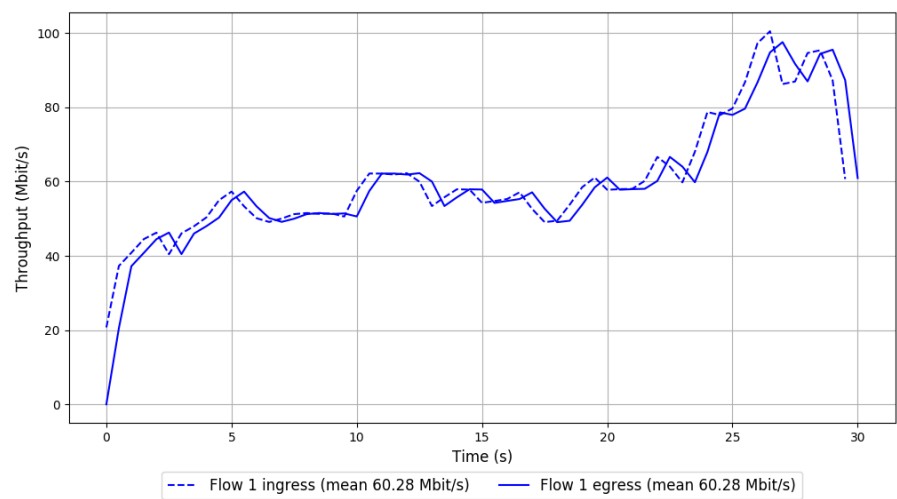
-- Flow 1:

Average throughput: 60.28 Mbit/s

95th percentile per-packet one-way delay: 7.796 ms

Loss rate: 0.01%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

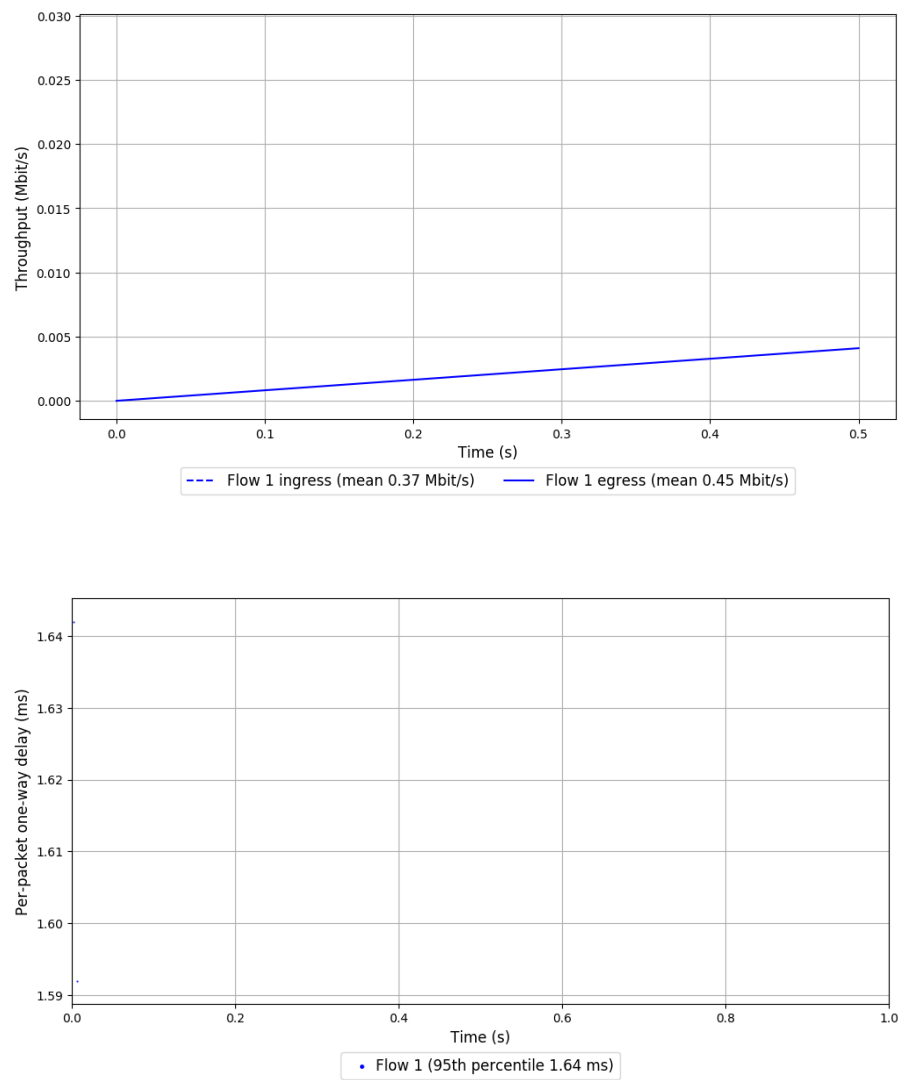
Start at: 2018-12-19 22:49:34

End at: 2018-12-19 22:50:04

Local clock offset: -6.132 ms

Remote clock offset: 1.186 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

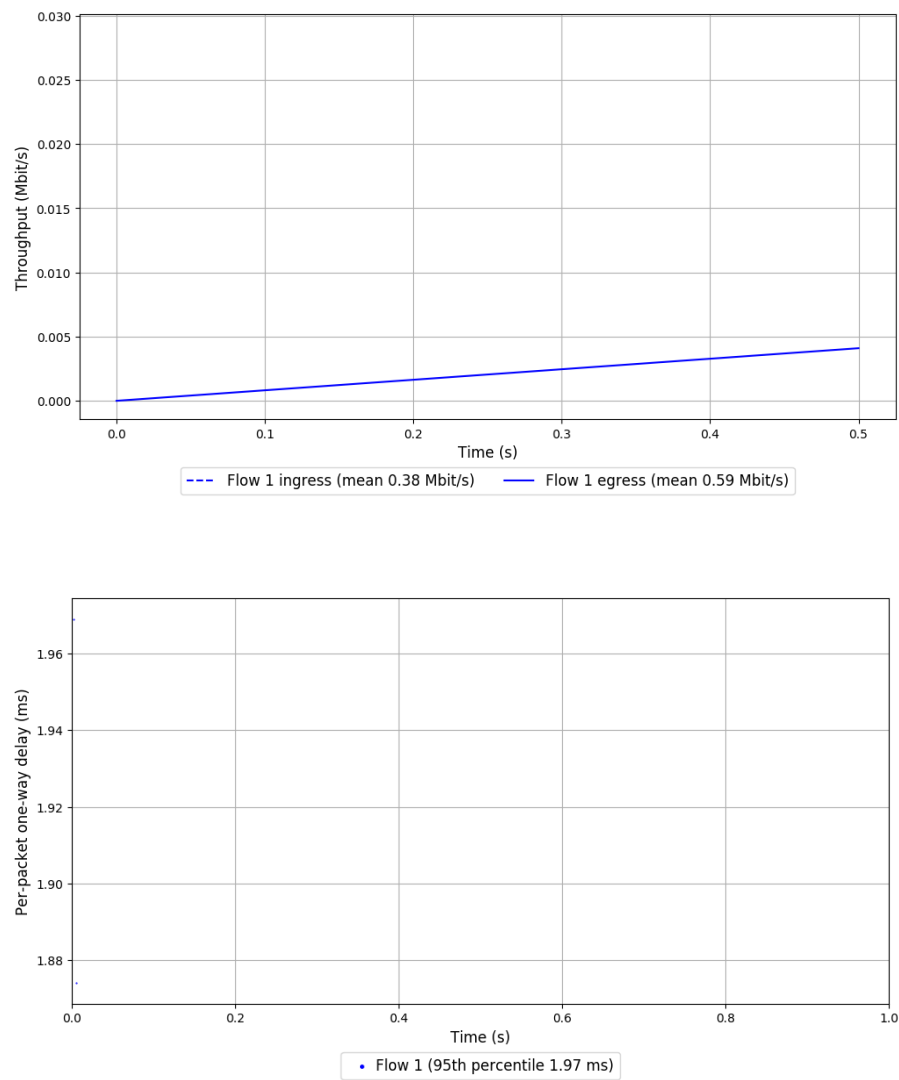
Start at: 2018-12-19 23:10:43

End at: 2018-12-19 23:11:13

Local clock offset: -5.193 ms

Remote clock offset: 1.118 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

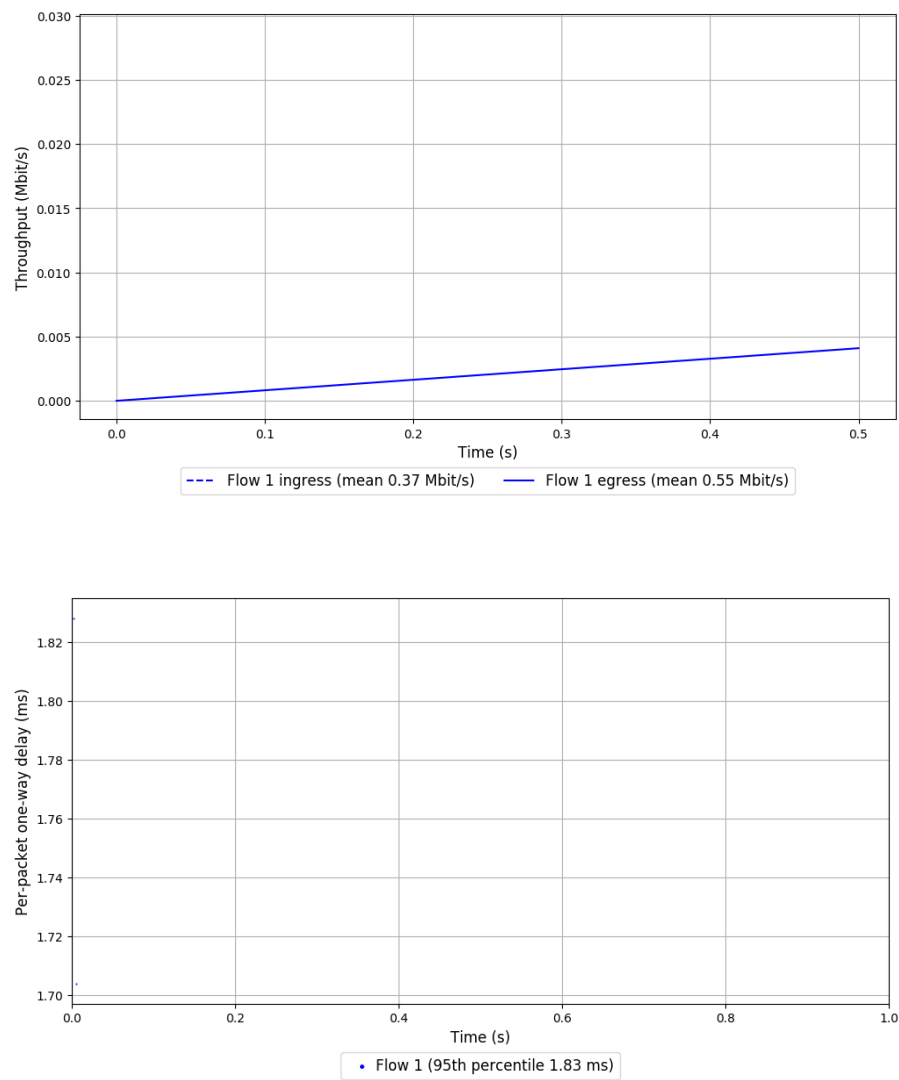
Start at: 2018-12-19 23:31:51

End at: 2018-12-19 23:32:21

Local clock offset: -2.407 ms

Remote clock offset: 0.922 ms

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

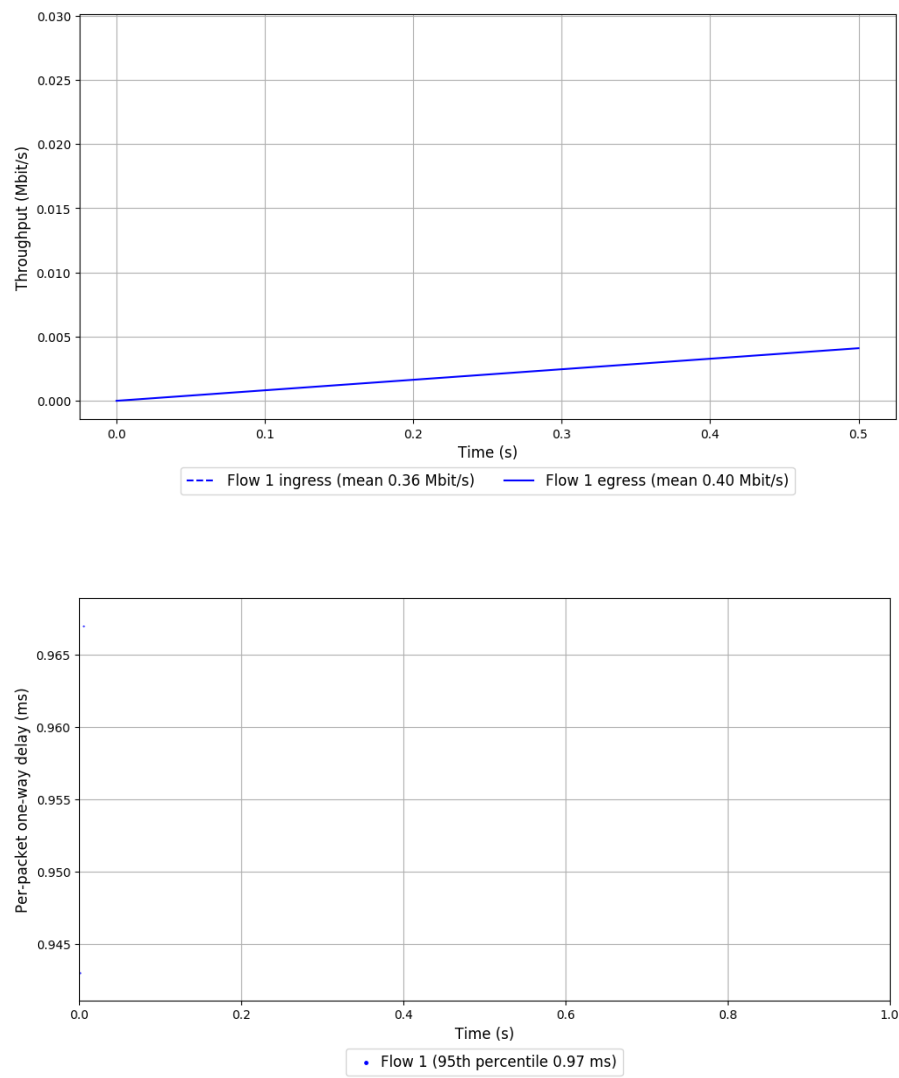
Start at: 2018-12-19 23:53:00

End at: 2018-12-19 23:53:30

Local clock offset: -2.431 ms

Remote clock offset: 0.632 ms

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

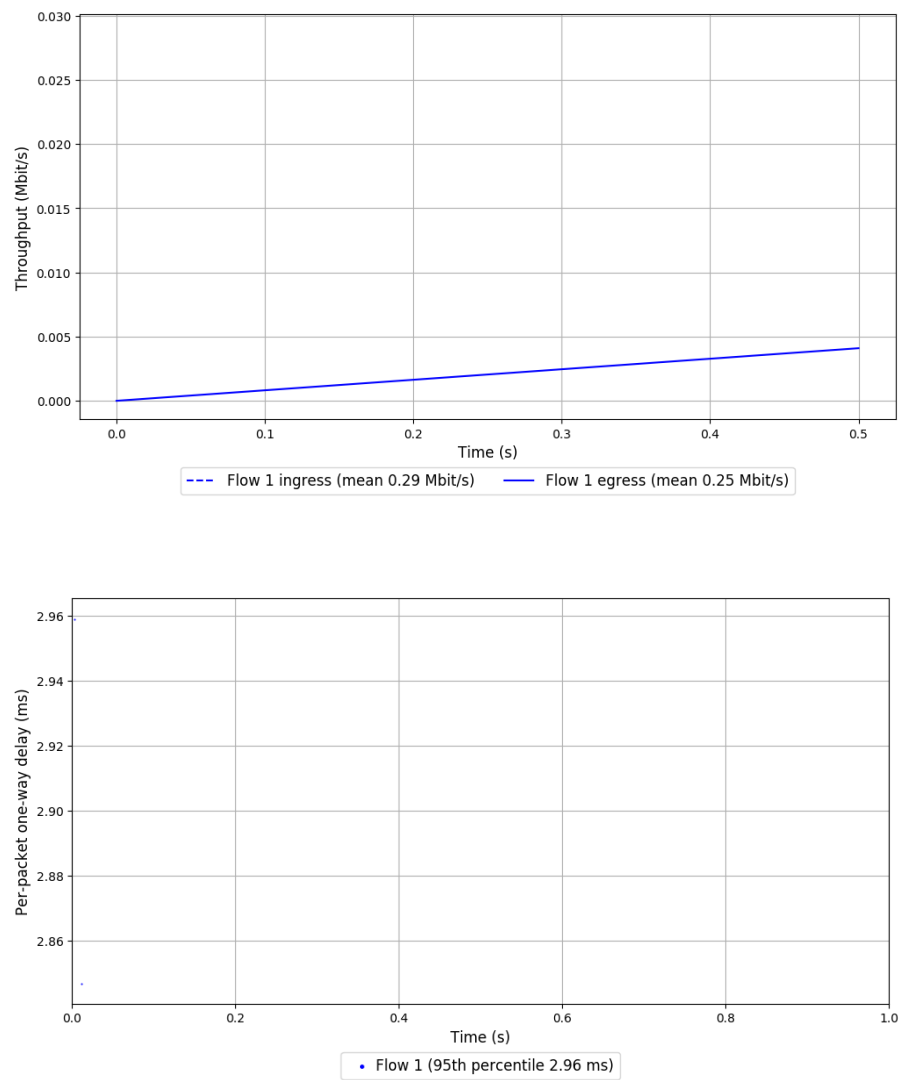
Start at: 2018-12-20 00:14:10

End at: 2018-12-20 00:14:40

Local clock offset: -6.406 ms

Remote clock offset: 0.182 ms

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-12-19 22:42:50

End at: 2018-12-19 22:43:20

Local clock offset: -4.878 ms

Remote clock offset: 1.319 ms

Below is generated by plot.py at 2018-12-20 00:30:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.17 Mbit/s

95th percentile per-packet one-way delay: 8.122 ms

Loss rate: 0.32%

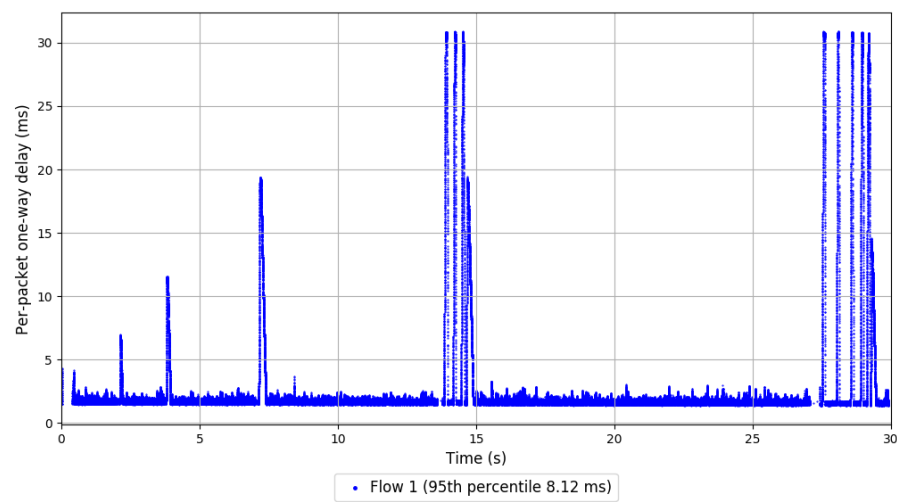
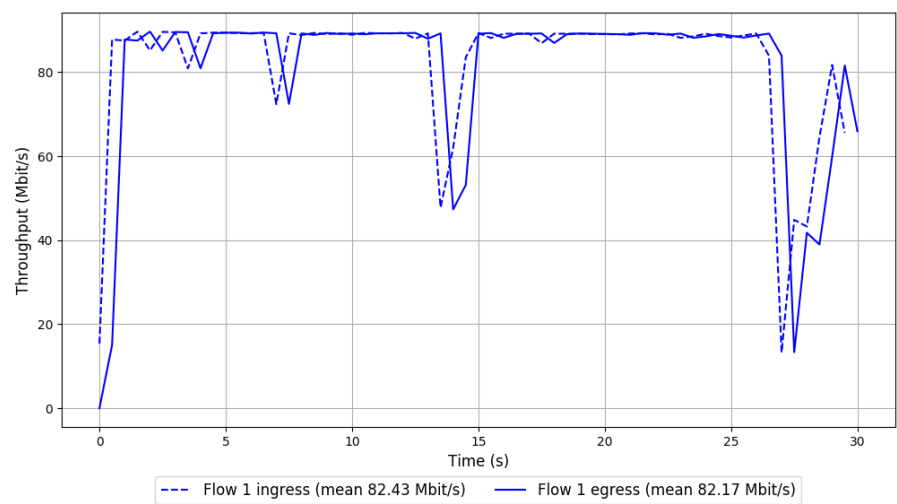
-- Flow 1:

Average throughput: 82.17 Mbit/s

95th percentile per-packet one-way delay: 8.122 ms

Loss rate: 0.32%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-12-19 23:03:59

End at: 2018-12-19 23:04:29

Local clock offset: -7.299 ms

Remote clock offset: 1.011 ms

Below is generated by plot.py at 2018-12-20 00:30:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.02 Mbit/s

95th percentile per-packet one-way delay: 6.629 ms

Loss rate: 0.14%

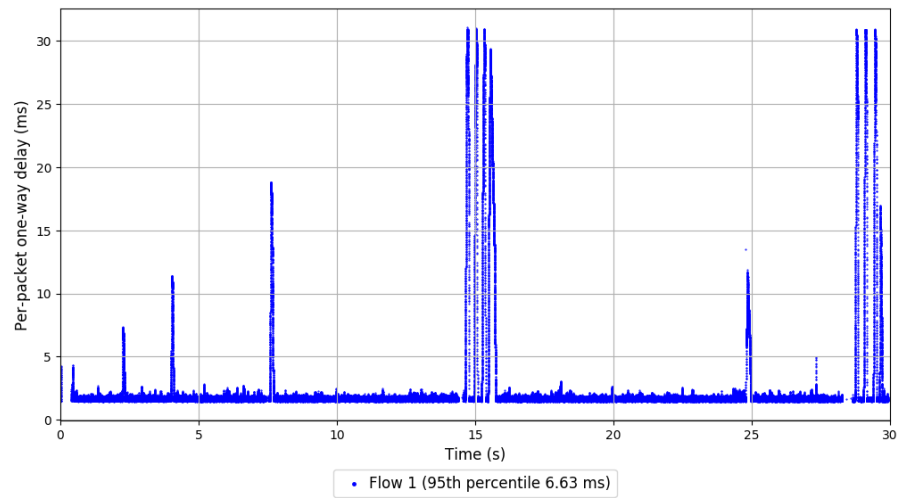
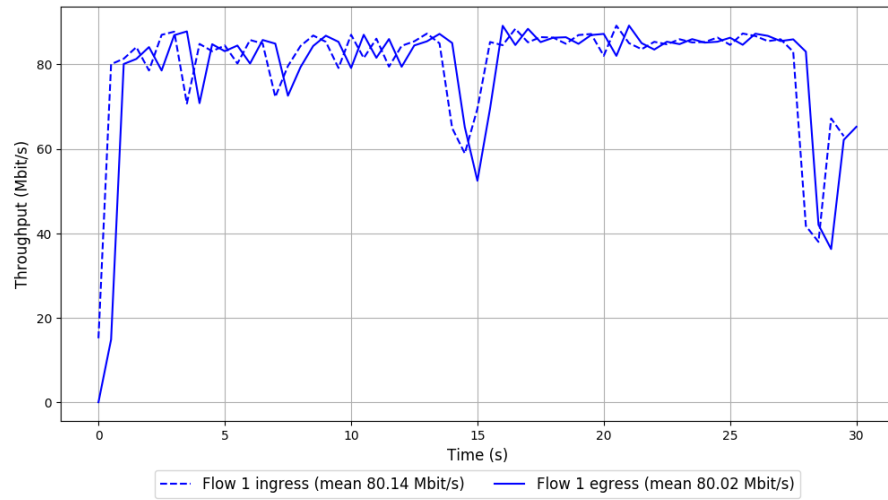
-- Flow 1:

Average throughput: 80.02 Mbit/s

95th percentile per-packet one-way delay: 6.629 ms

Loss rate: 0.14%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-19 23:25:07

End at: 2018-12-19 23:25:37

Local clock offset: -2.124 ms

Remote clock offset: 0.91 ms

Below is generated by plot.py at 2018-12-20 00:30:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 79.40 Mbit/s

95th percentile per-packet one-way delay: 3.795 ms

Loss rate: 0.23%

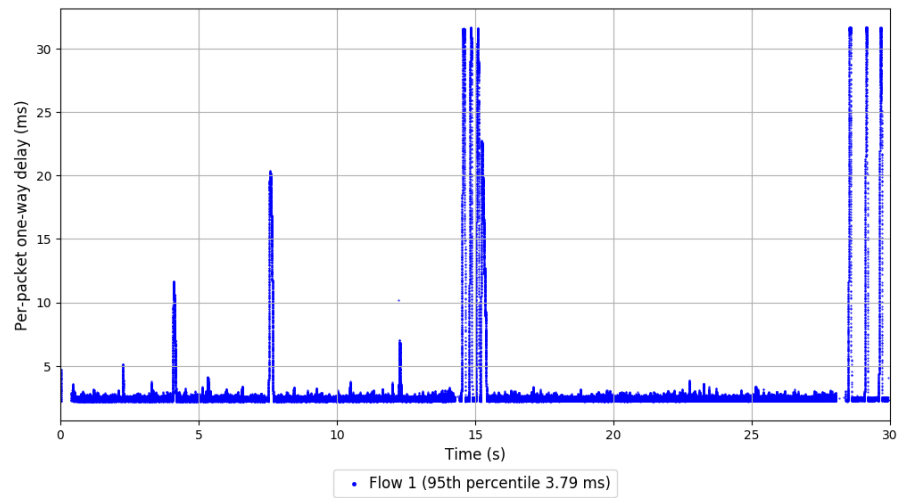
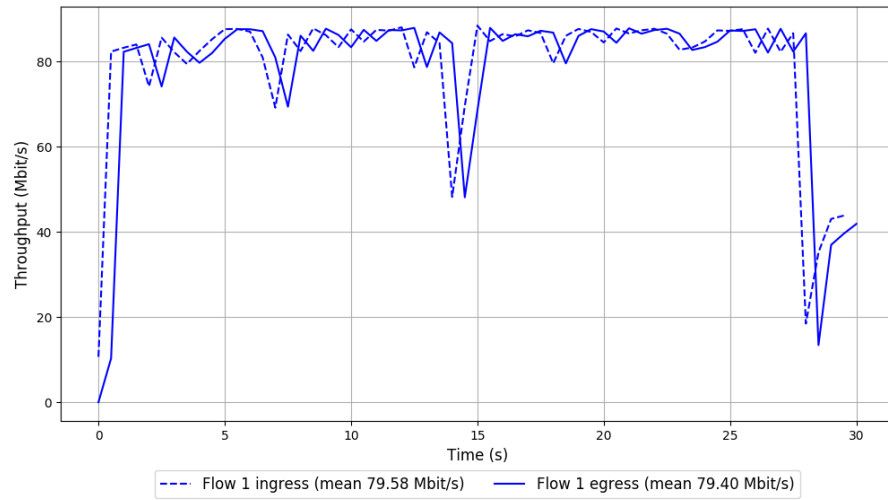
-- Flow 1:

Average throughput: 79.40 Mbit/s

95th percentile per-packet one-way delay: 3.795 ms

Loss rate: 0.23%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-12-19 23:46:16

End at: 2018-12-19 23:46:46

Local clock offset: -2.268 ms

Remote clock offset: 0.681 ms

Below is generated by plot.py at 2018-12-20 00:30:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.17 Mbit/s

95th percentile per-packet one-way delay: 3.435 ms

Loss rate: 0.27%

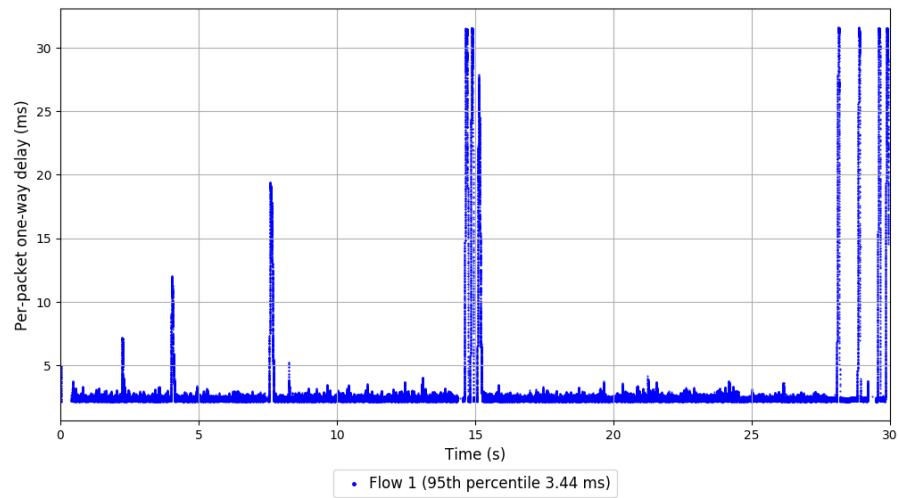
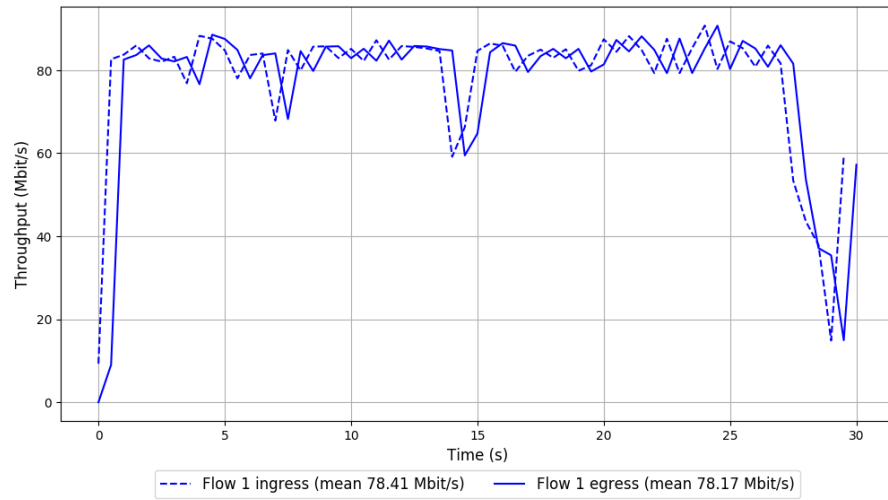
-- Flow 1:

Average throughput: 78.17 Mbit/s

95th percentile per-packet one-way delay: 3.435 ms

Loss rate: 0.27%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 00:07:26

End at: 2018-12-20 00:07:56

Local clock offset: -4.137 ms

Remote clock offset: 0.443 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.58 Mbit/s

95th percentile per-packet one-way delay: 4.006 ms

Loss rate: 0.16%

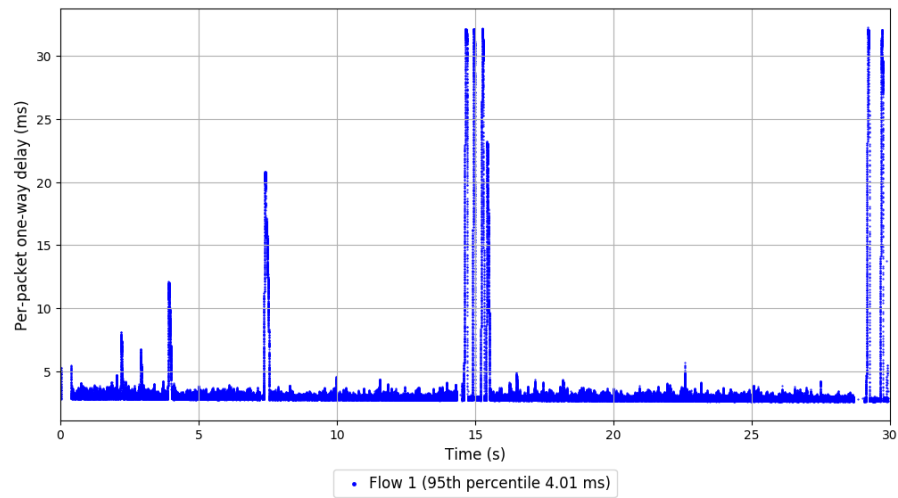
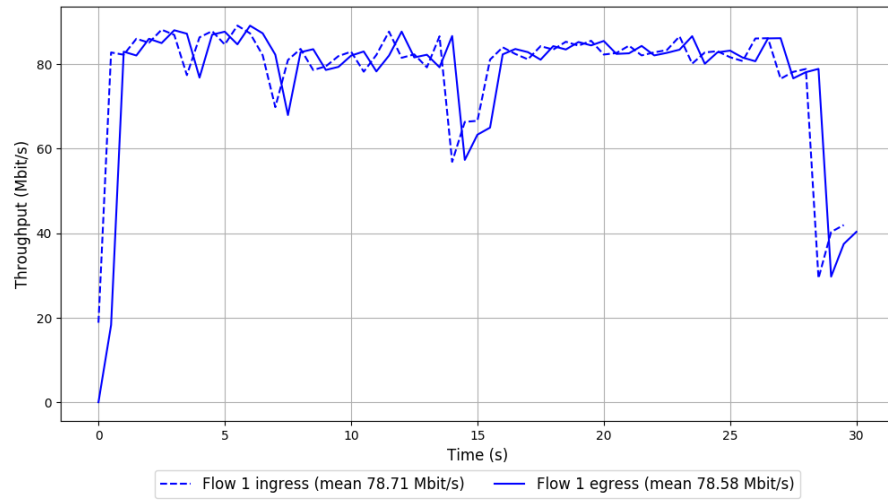
-- Flow 1:

Average throughput: 78.58 Mbit/s

95th percentile per-packet one-way delay: 4.006 ms

Loss rate: 0.16%

Run 5: Report of QUIC Cubic — Data Link



Run 1: Statistics of SCReAM

Start at: 2018-12-19 22:47:21

End at: 2018-12-19 22:47:51

Local clock offset: -5.833 ms

Remote clock offset: 1.177 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 3.010 ms

Loss rate: 0.00%

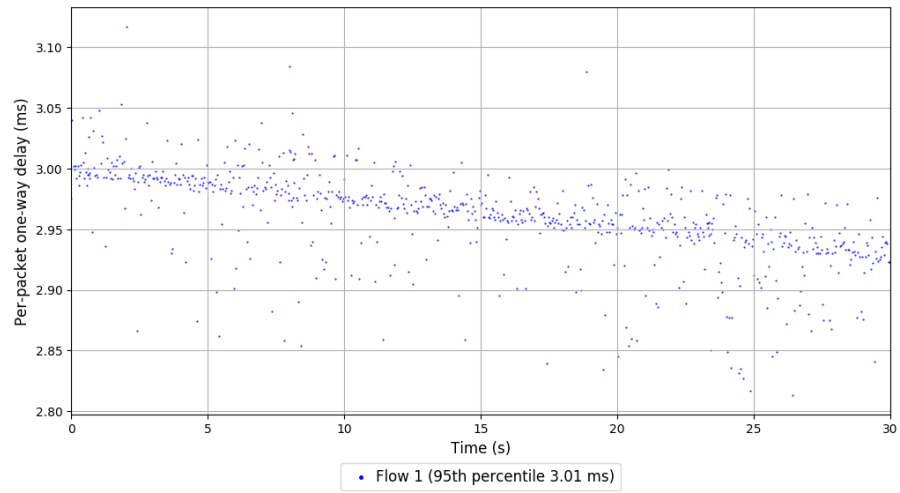
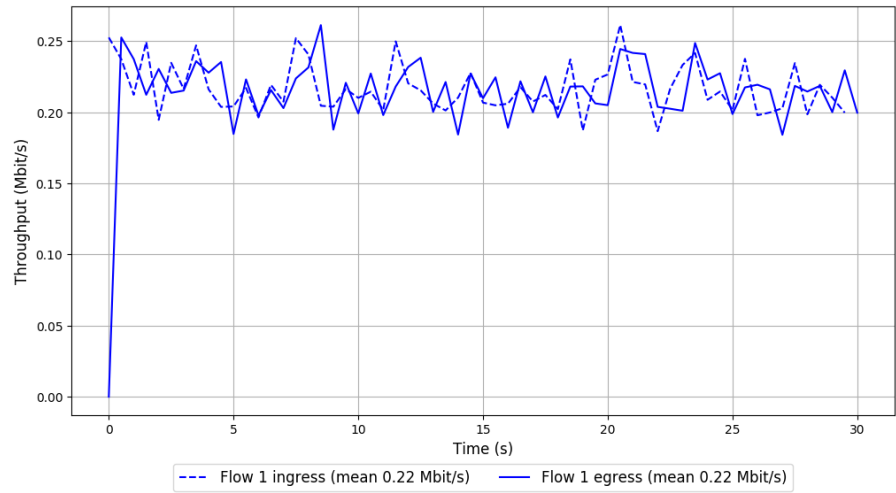
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 3.010 ms

Loss rate: 0.00%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-12-19 23:08:29

End at: 2018-12-19 23:08:59

Local clock offset: -6.014 ms

Remote clock offset: 0.988 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 3.355 ms

Loss rate: 0.00%

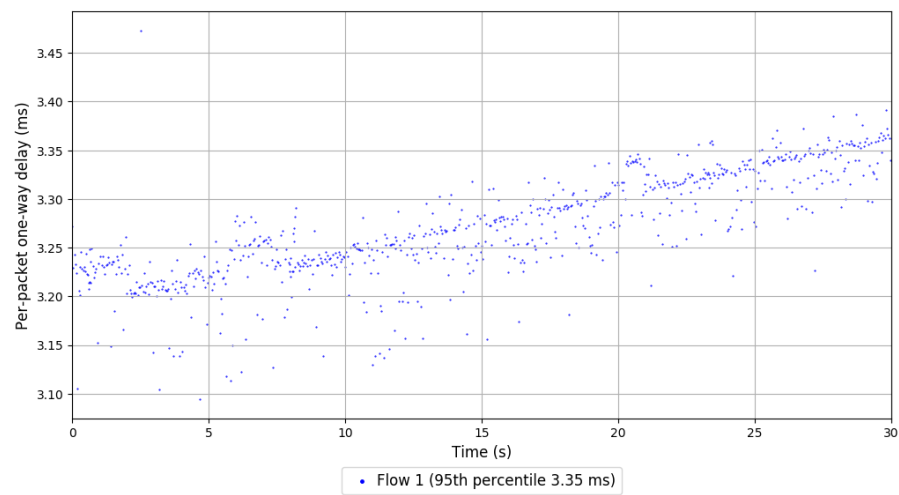
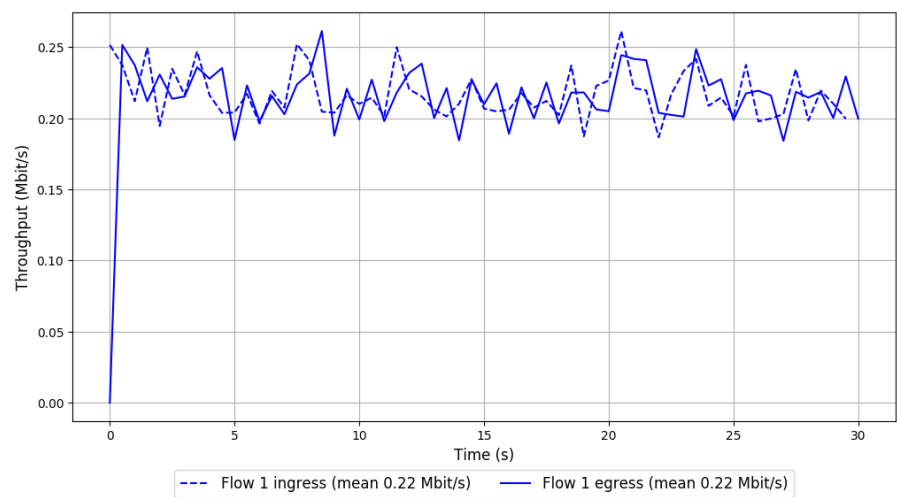
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 3.355 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-12-19 23:29:37

End at: 2018-12-19 23:30:07

Local clock offset: -1.868 ms

Remote clock offset: 0.883 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.106 ms

Loss rate: 0.00%

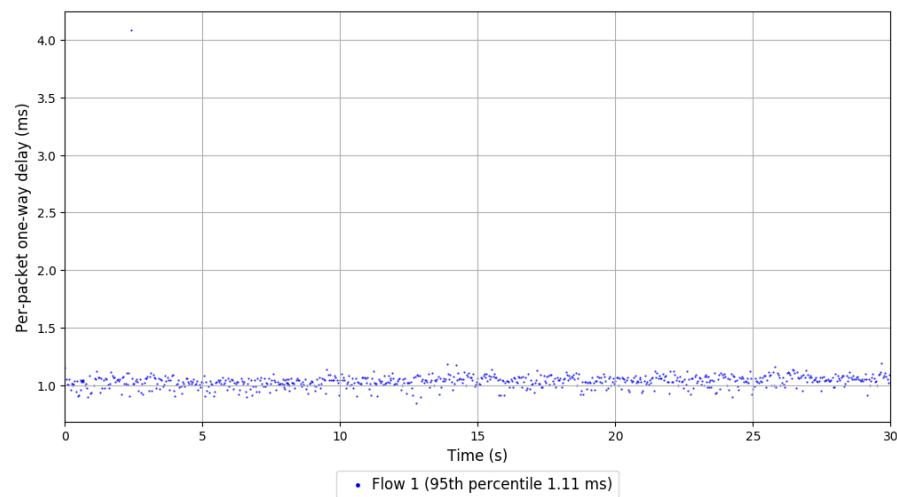
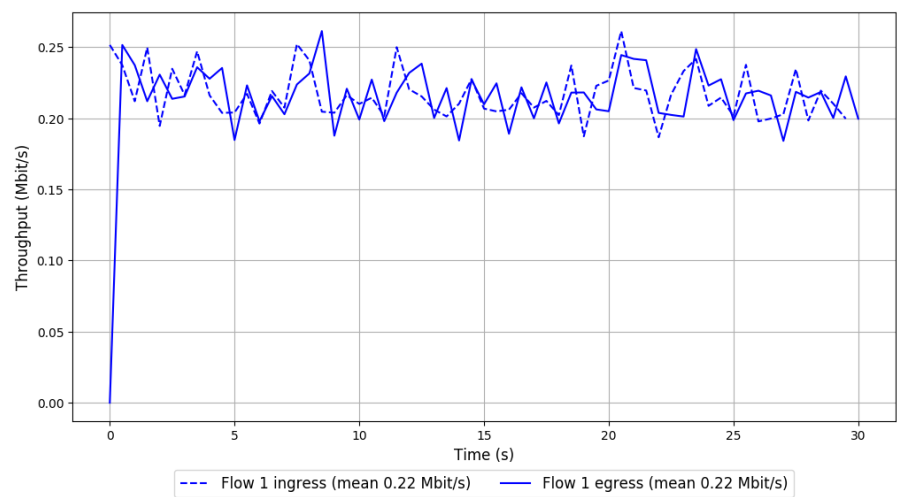
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.106 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-12-19 23:50:47

End at: 2018-12-19 23:51:17

Local clock offset: -2.337 ms

Remote clock offset: 0.584 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.873 ms

Loss rate: 0.00%

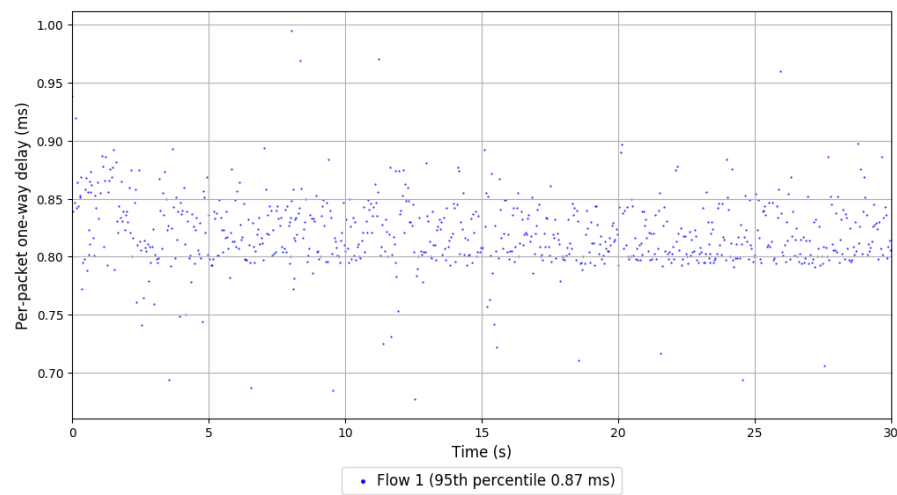
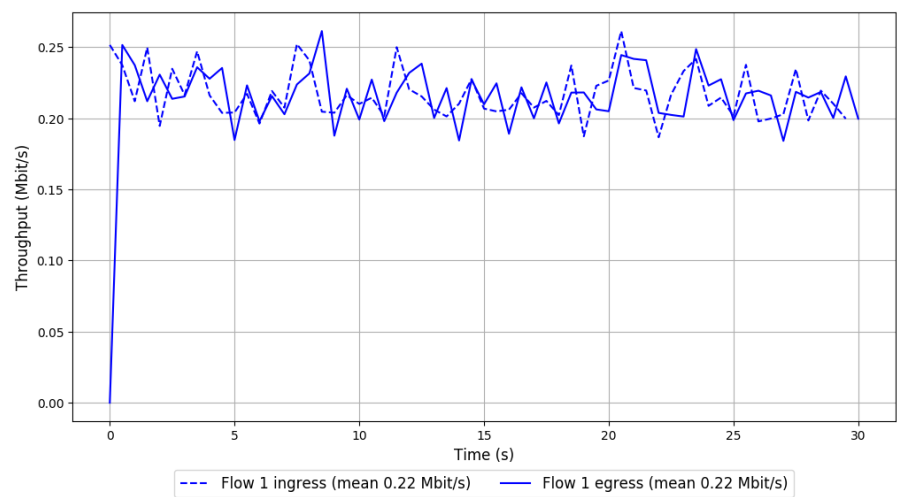
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.873 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-12-20 00:11:56

End at: 2018-12-20 00:12:26

Local clock offset: -5.113 ms

Remote clock offset: 0.303 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.839 ms

Loss rate: 0.00%

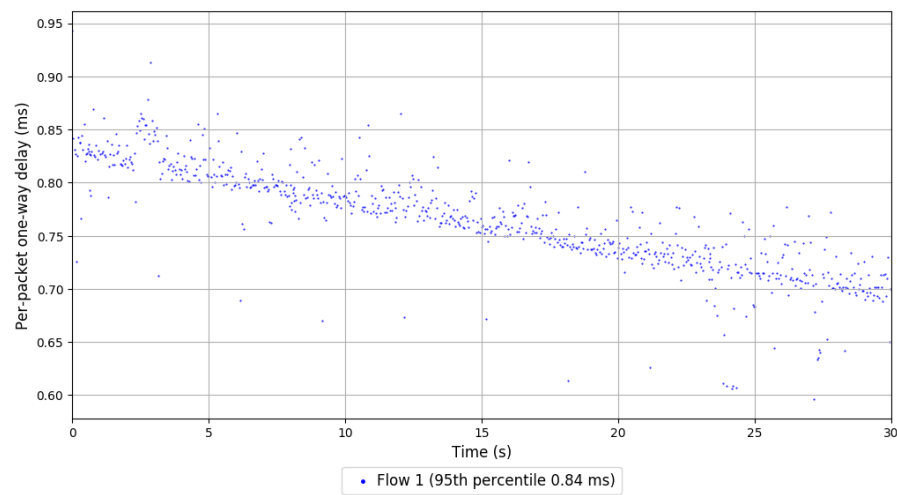
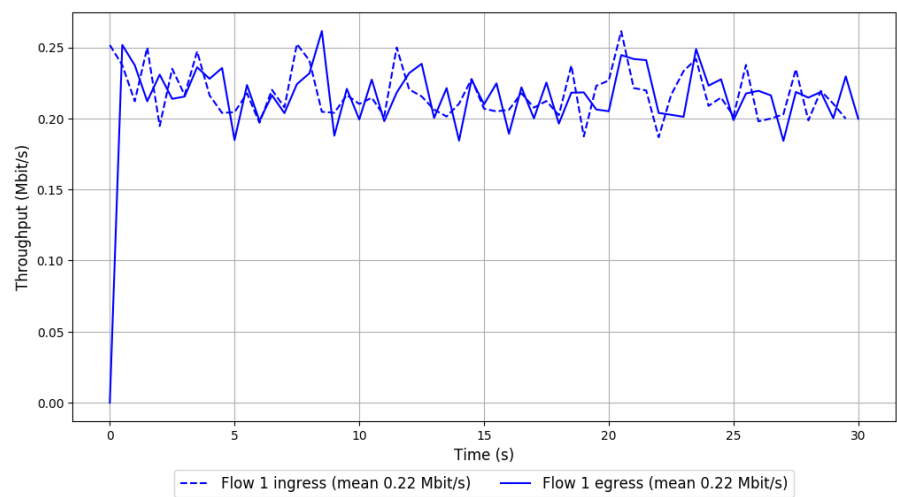
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.839 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-12-19 22:57:18

End at: 2018-12-19 22:57:48

Local clock offset: -6.198 ms

Remote clock offset: 1.174 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.27 Mbit/s

95th percentile per-packet one-way delay: 10.197 ms

Loss rate: 0.00%

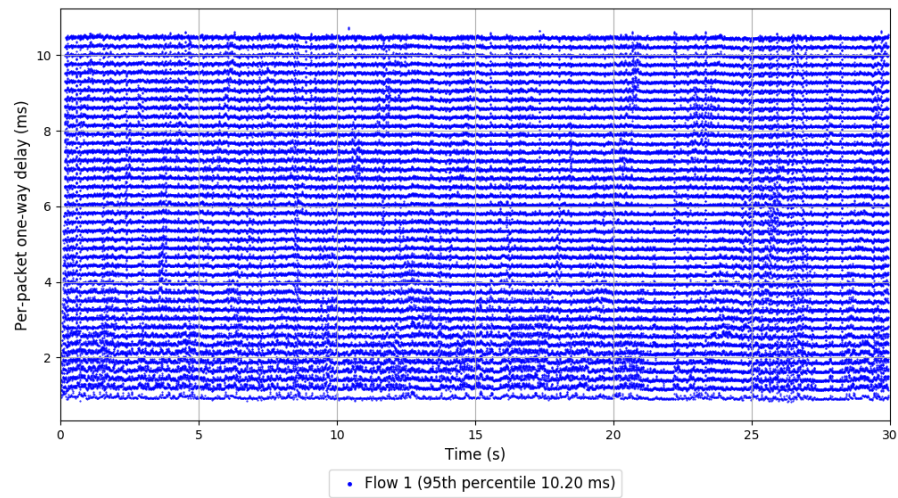
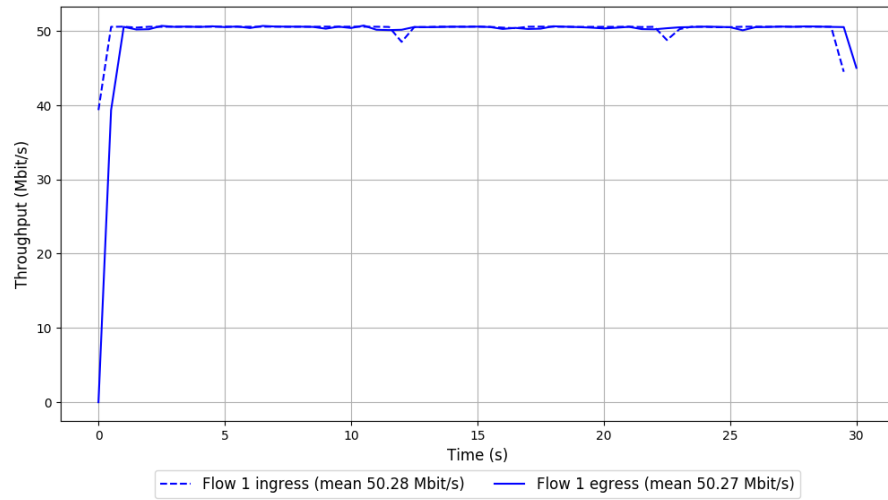
-- Flow 1:

Average throughput: 50.27 Mbit/s

95th percentile per-packet one-way delay: 10.197 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-12-19 23:18:26

End at: 2018-12-19 23:18:56

Local clock offset: -3.582 ms

Remote clock offset: 1.057 ms

Below is generated by plot.py at 2018-12-20 00:30:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.34 Mbit/s

95th percentile per-packet one-way delay: 11.218 ms

Loss rate: 0.00%

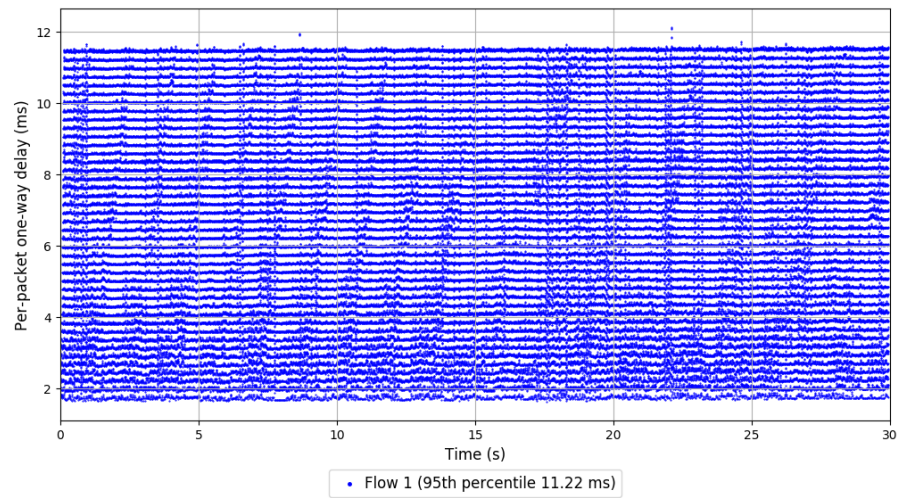
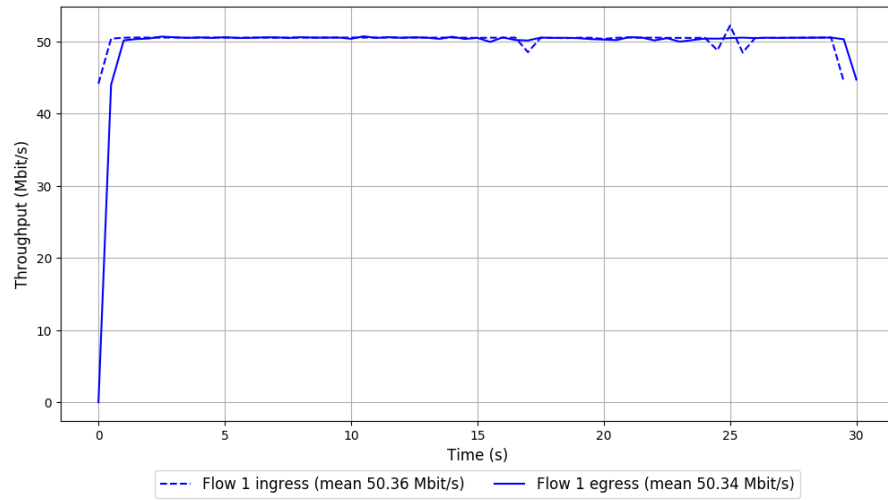
-- Flow 1:

Average throughput: 50.34 Mbit/s

95th percentile per-packet one-way delay: 11.218 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

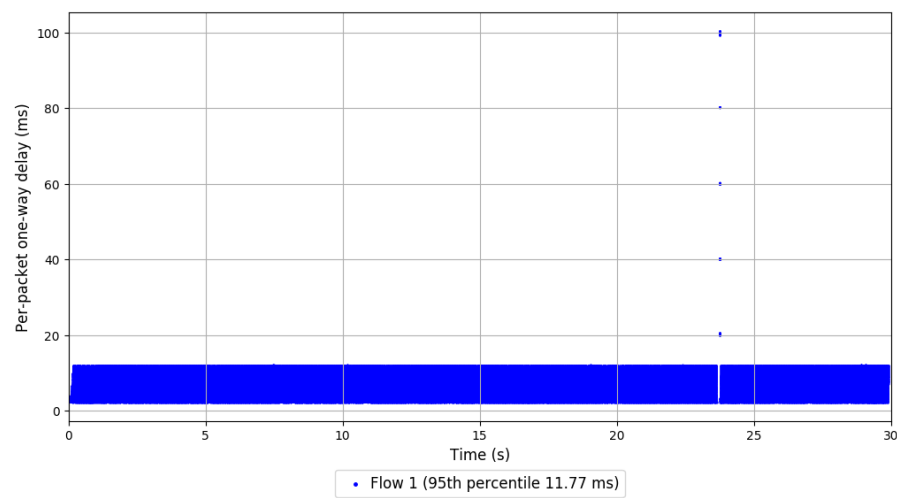
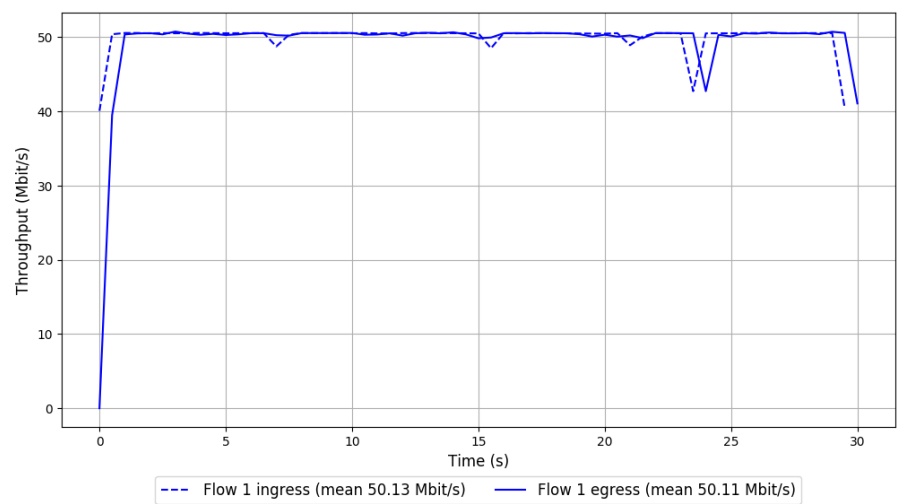


Run 3: Statistics of Sprout

Start at: 2018-12-19 23:39:35
End at: 2018-12-19 23:40:05
Local clock offset: -1.978 ms
Remote clock offset: 0.737 ms

Below is generated by plot.py at 2018-12-20 00:30:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 11.767 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 11.767 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

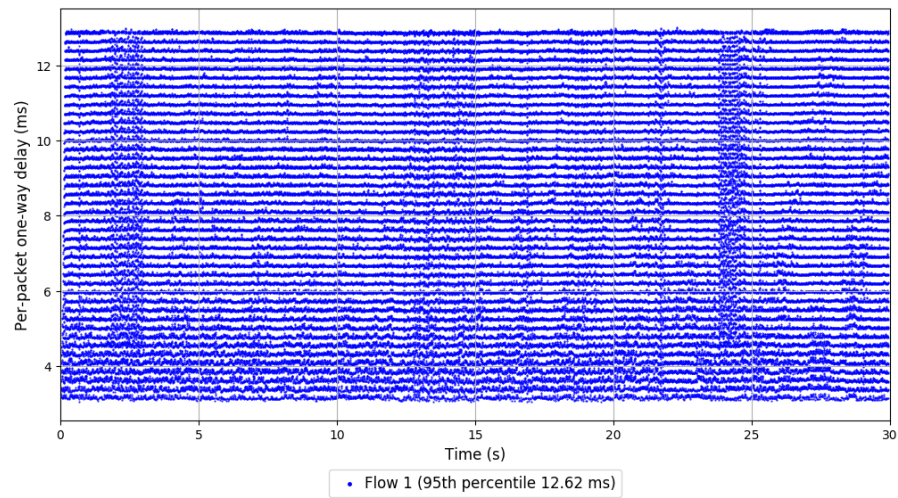
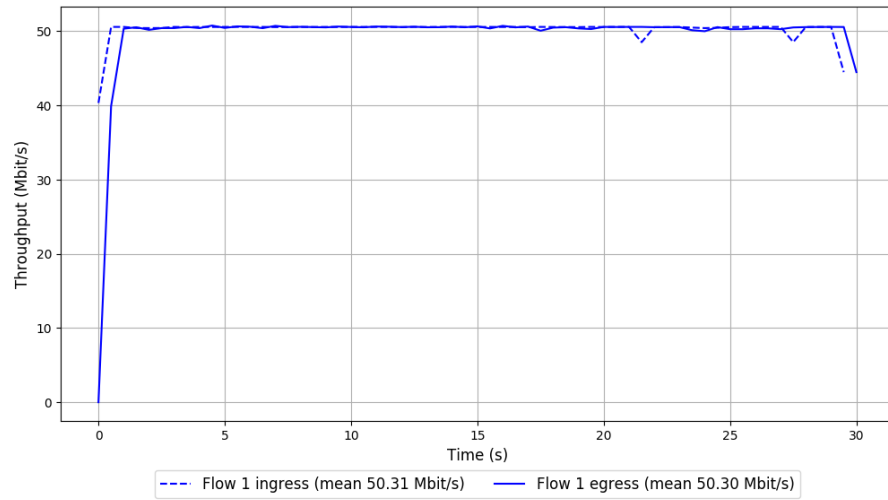


Run 4: Statistics of Sprout

Start at: 2018-12-20 00:00:43
End at: 2018-12-20 00:01:13
Local clock offset: -3.143 ms
Remote clock offset: 0.55 ms

Below is generated by plot.py at 2018-12-20 00:31:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.30 Mbit/s
95th percentile per-packet one-way delay: 12.618 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.30 Mbit/s
95th percentile per-packet one-way delay: 12.618 ms
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-12-20 00:21:54

End at: 2018-12-20 00:22:24

Local clock offset: -7.065 ms

Remote clock offset: 0.087 ms

Below is generated by plot.py at 2018-12-20 00:31:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.21 Mbit/s

95th percentile per-packet one-way delay: 11.331 ms

Loss rate: 0.00%

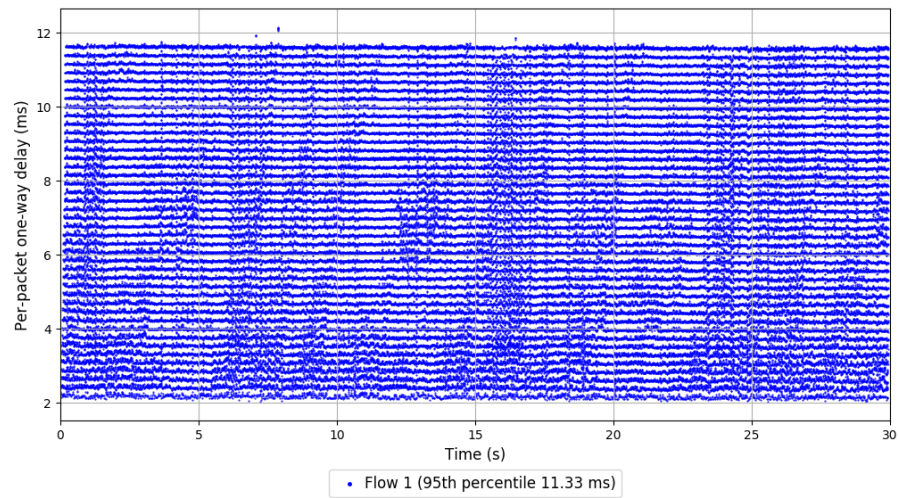
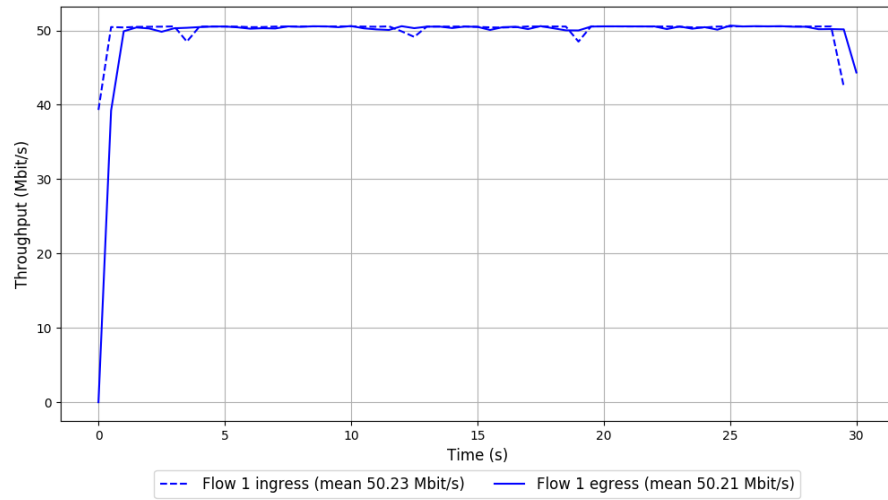
-- Flow 1:

Average throughput: 50.21 Mbit/s

95th percentile per-packet one-way delay: 11.331 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

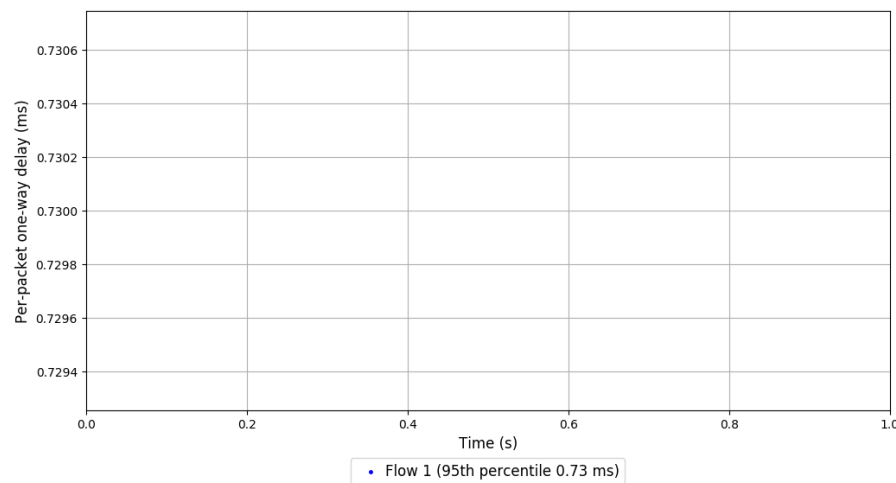
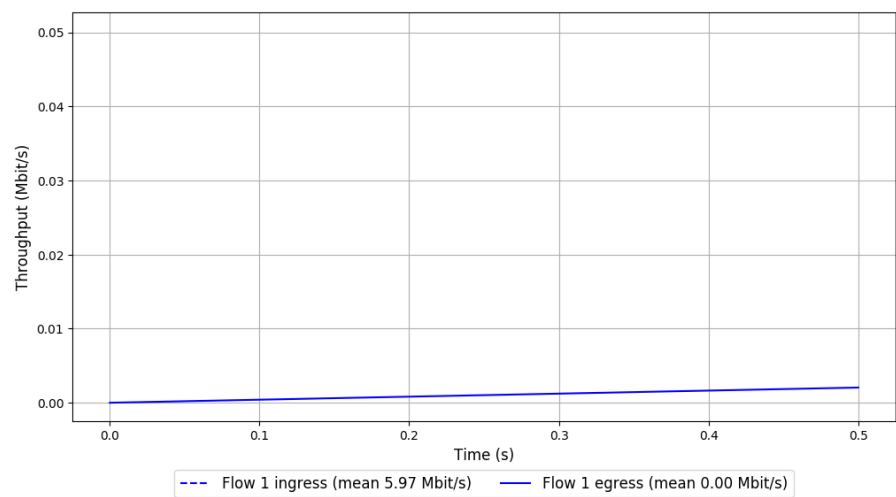
Start at: 2018-12-19 22:39:29

End at: 2018-12-19 22:39:59

Local clock offset: -3.086 ms

Remote clock offset: 1.195 ms

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



Run 2: Statistics of TaoVA-100x

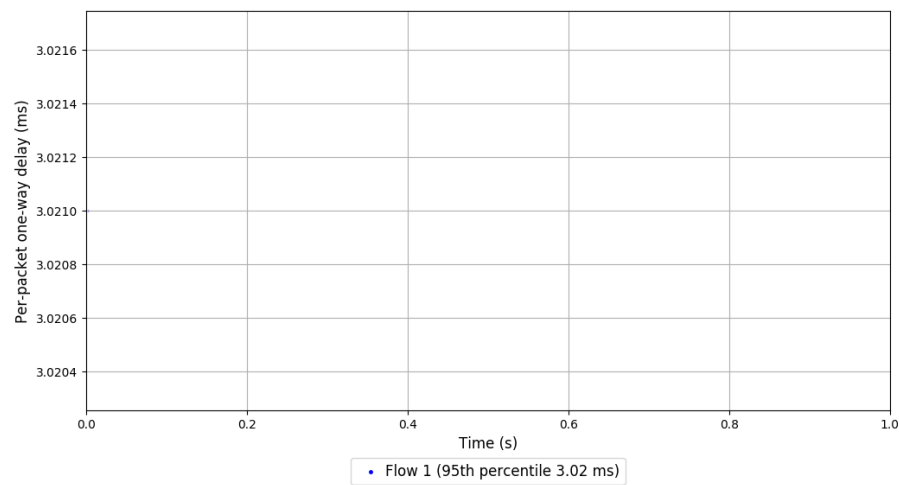
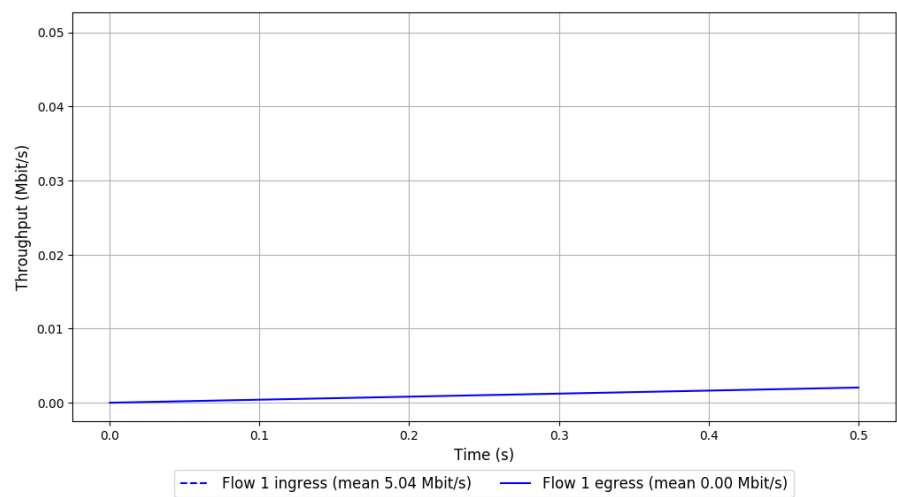
Start at: 2018-12-19 23:00:38

End at: 2018-12-19 23:01:08

Local clock offset: -7.078 ms

Remote clock offset: 0.978 ms

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



Run 3: Statistics of TaoVA-100x

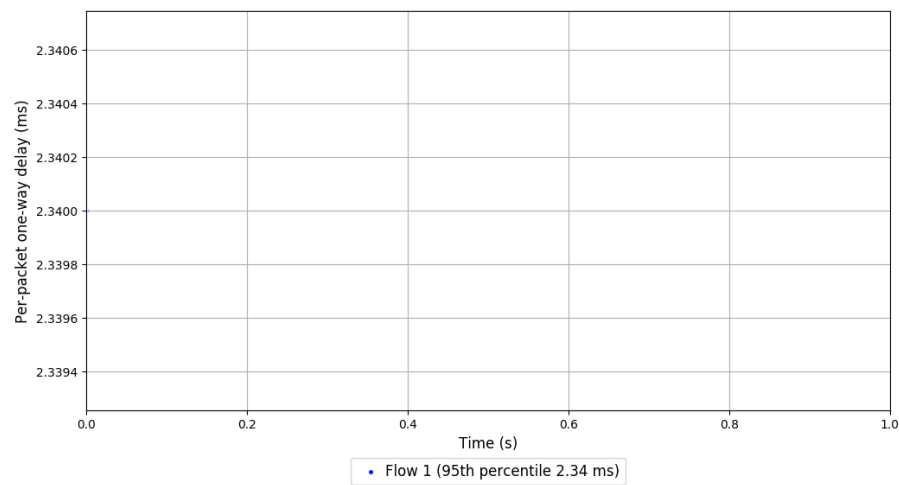
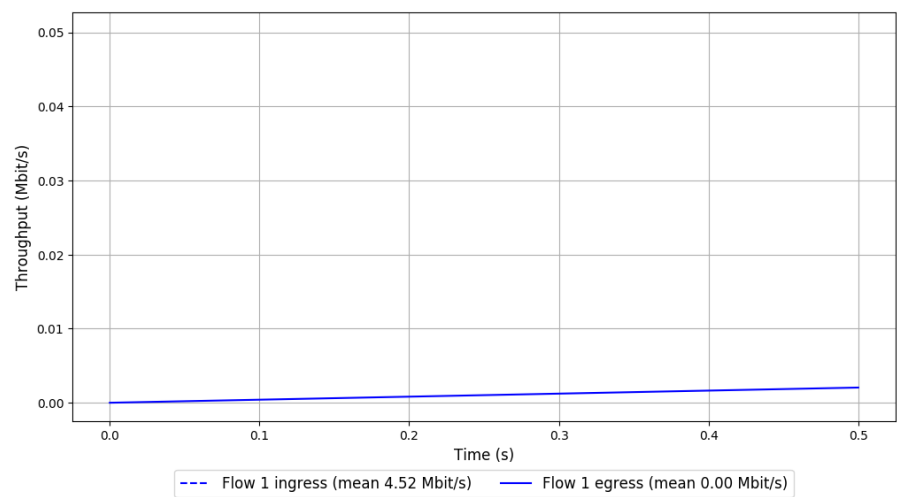
Start at: 2018-12-19 23:21:46

End at: 2018-12-19 23:22:16

Local clock offset: -2.444 ms

Remote clock offset: 0.927 ms

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



Run 4: Statistics of TaoVA-100x

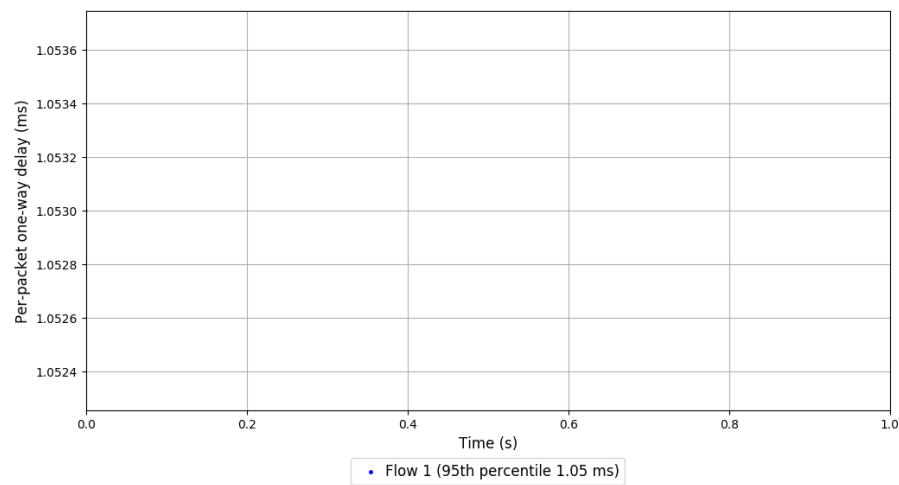
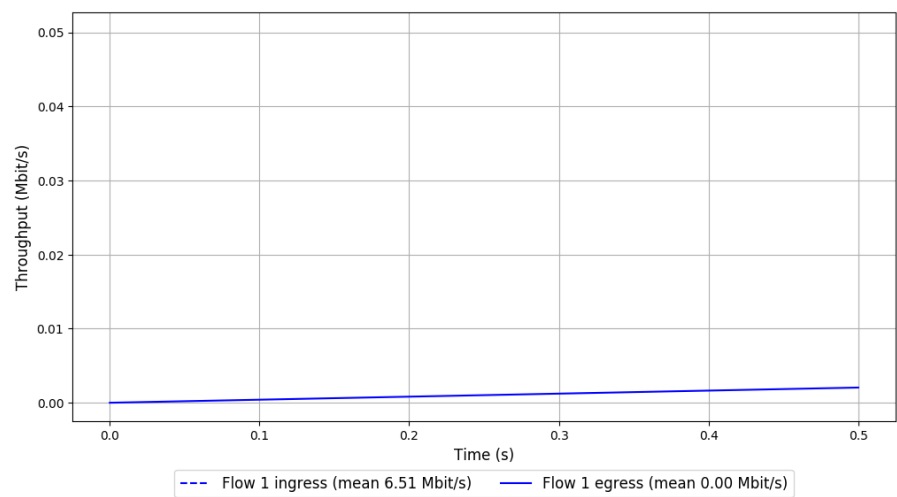
Start at: 2018-12-19 23:42:55

End at: 2018-12-19 23:43:25

Local clock offset: -2.118 ms

Remote clock offset: 0.797 ms

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



Run 5: Statistics of TaoVA-100x

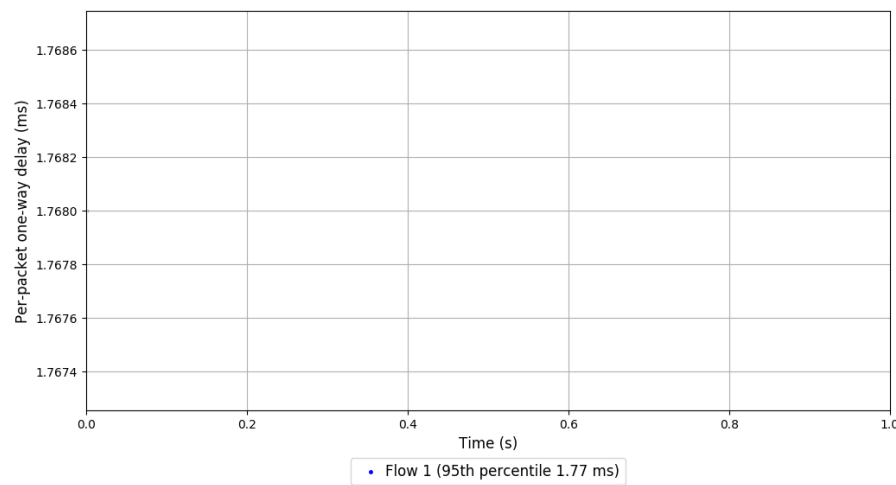
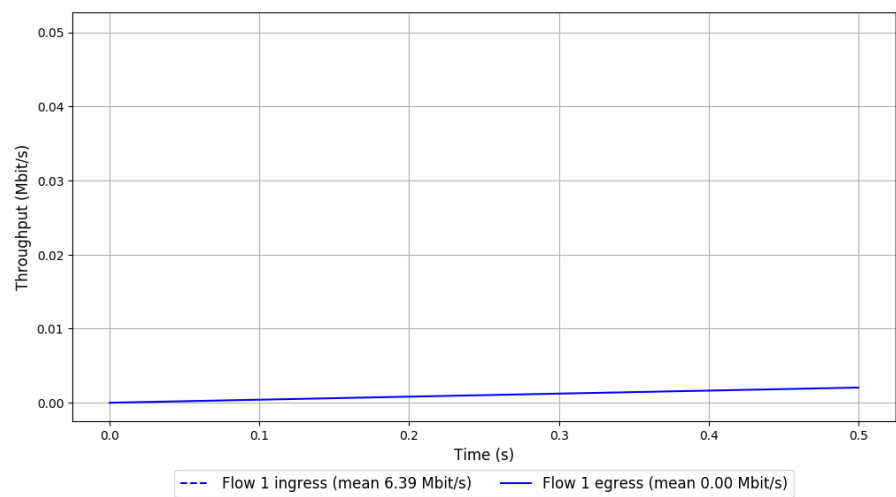
Start at: 2018-12-20 00:04:05

End at: 2018-12-20 00:04:35

Local clock offset: -3.049 ms

Remote clock offset: 0.46 ms

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



Run 1: Statistics of TCP Vegas

Start at: 2018-12-19 22:52:48

End at: 2018-12-19 22:53:18

Local clock offset: -5.748 ms

Remote clock offset: 1.109 ms

Below is generated by plot.py at 2018-12-20 00:31:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.92 Mbit/s

95th percentile per-packet one-way delay: 2.102 ms

Loss rate: 0.00%

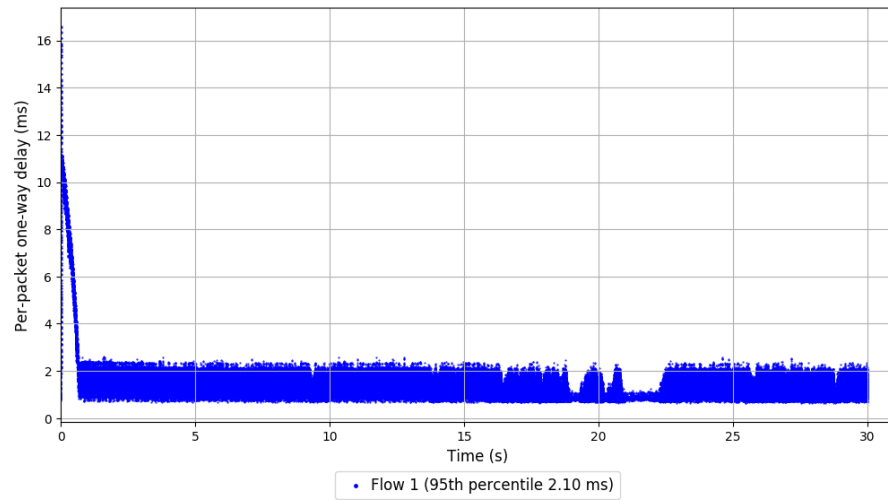
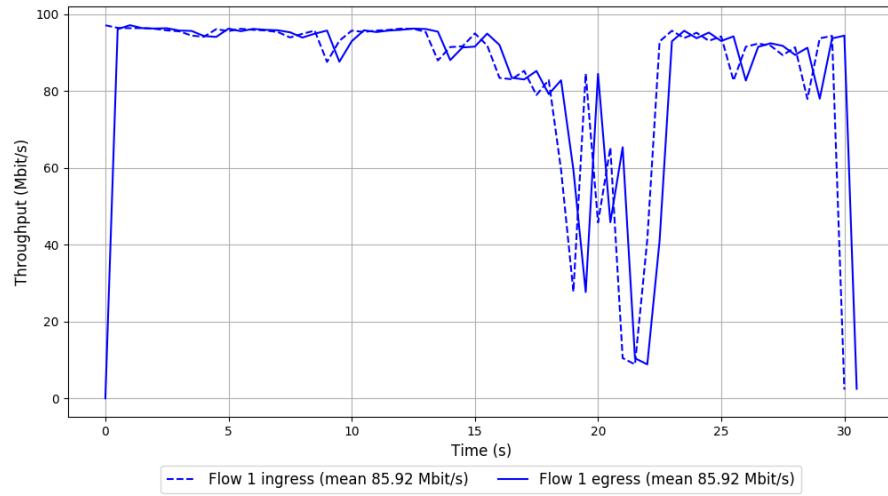
-- Flow 1:

Average throughput: 85.92 Mbit/s

95th percentile per-packet one-way delay: 2.102 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-12-19 23:13:56

End at: 2018-12-19 23:14:26

Local clock offset: -4.384 ms

Remote clock offset: 1.105 ms

Below is generated by plot.py at 2018-12-20 00:31:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.72 Mbit/s

95th percentile per-packet one-way delay: 4.517 ms

Loss rate: 0.00%

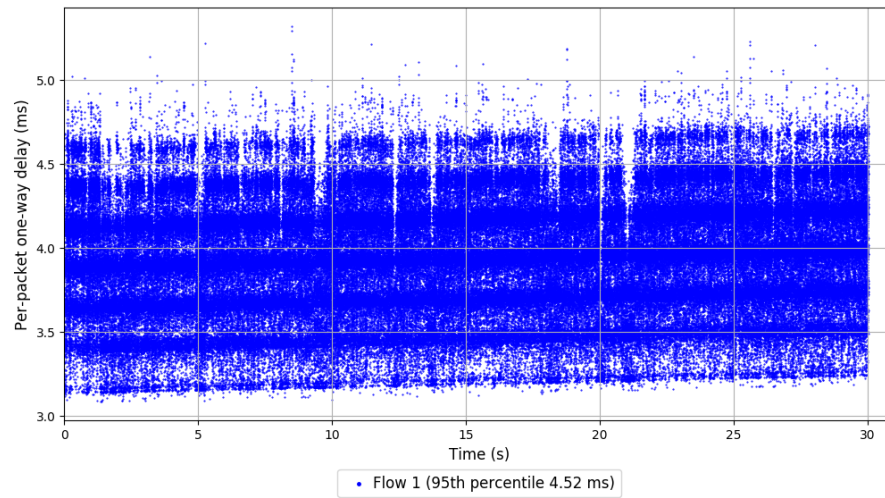
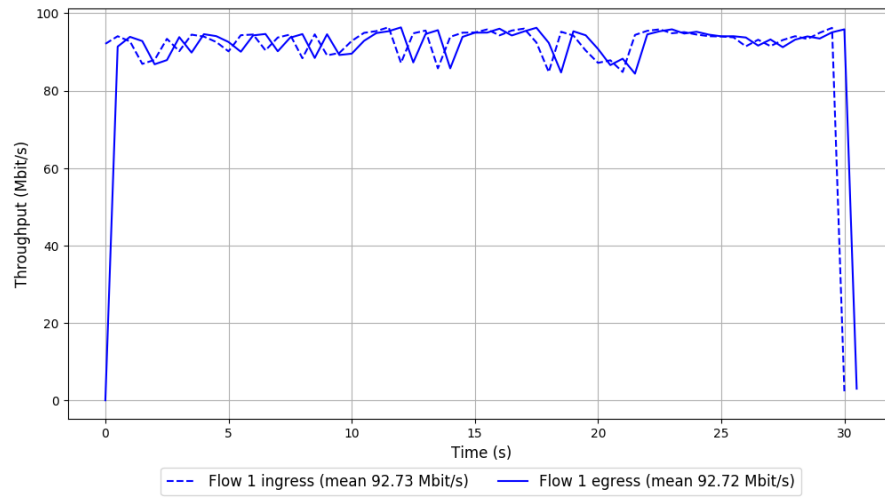
-- Flow 1:

Average throughput: 92.72 Mbit/s

95th percentile per-packet one-way delay: 4.517 ms

Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-12-19 23:35:05

End at: 2018-12-19 23:35:35

Local clock offset: -2.3 ms

Remote clock offset: 0.88 ms

Below is generated by plot.py at 2018-12-20 00:31:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.33 Mbit/s

95th percentile per-packet one-way delay: 4.362 ms

Loss rate: 0.00%

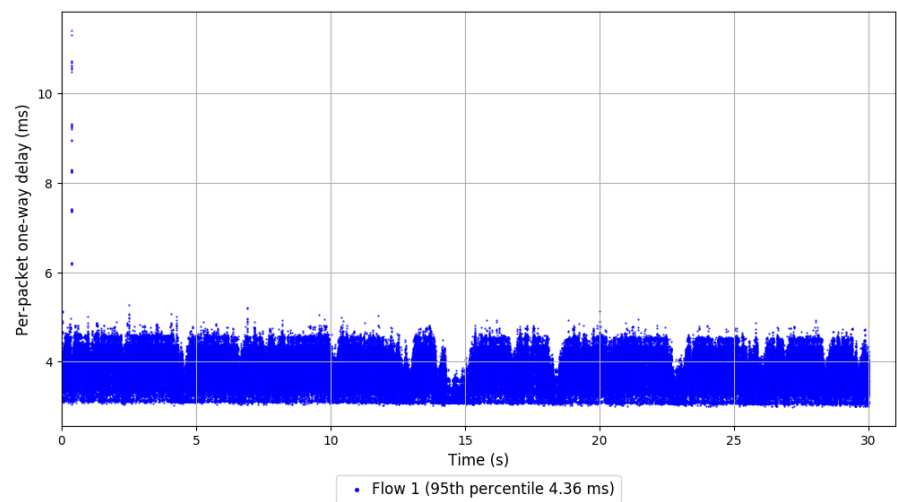
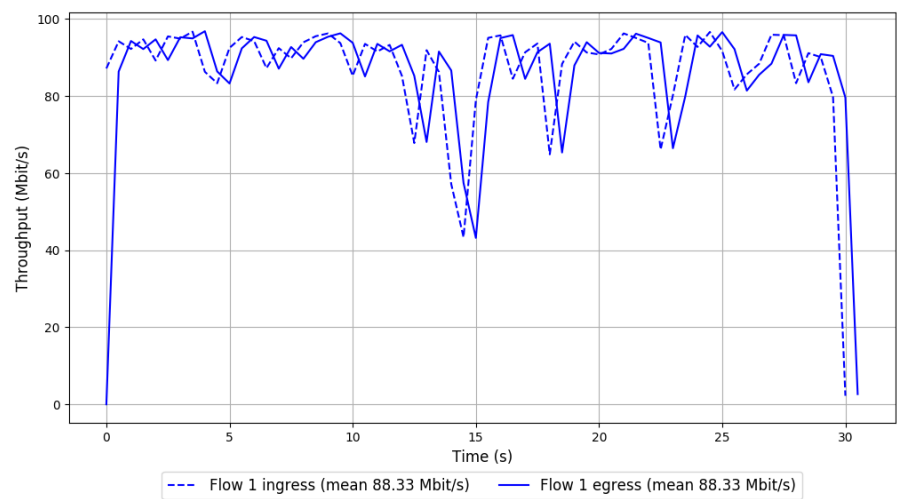
-- Flow 1:

Average throughput: 88.33 Mbit/s

95th percentile per-packet one-way delay: 4.362 ms

Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-12-19 23:56:13

End at: 2018-12-19 23:56:43

Local clock offset: -3.112 ms

Remote clock offset: 0.553 ms

Below is generated by plot.py at 2018-12-20 00:31:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.98 Mbit/s

95th percentile per-packet one-way delay: 2.813 ms

Loss rate: 0.00%

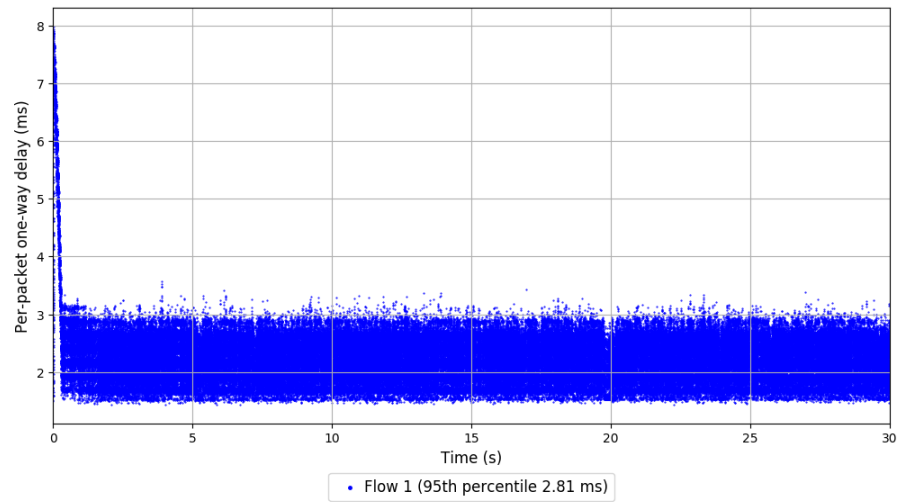
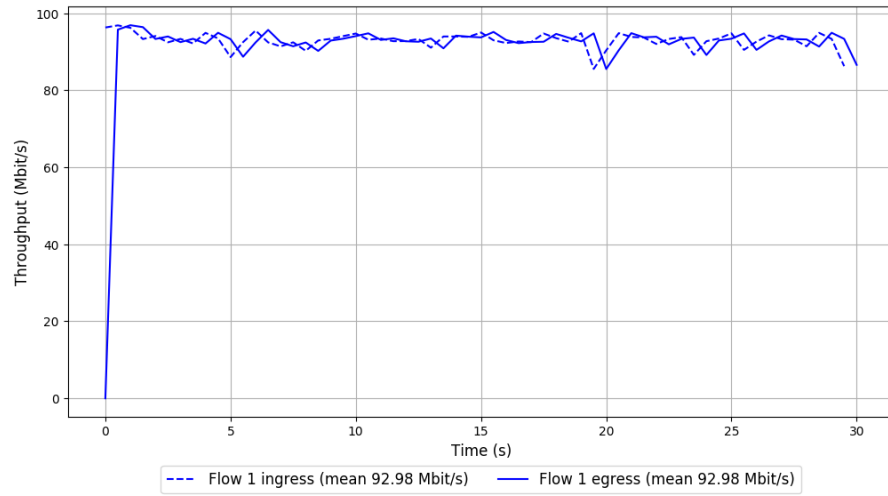
-- Flow 1:

Average throughput: 92.98 Mbit/s

95th percentile per-packet one-way delay: 2.813 ms

Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 00:17:23

End at: 2018-12-20 00:17:53

Local clock offset: -6.34 ms

Remote clock offset: 0.265 ms

Below is generated by plot.py at 2018-12-20 00:31:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.57 Mbit/s

95th percentile per-packet one-way delay: 3.590 ms

Loss rate: 0.00%

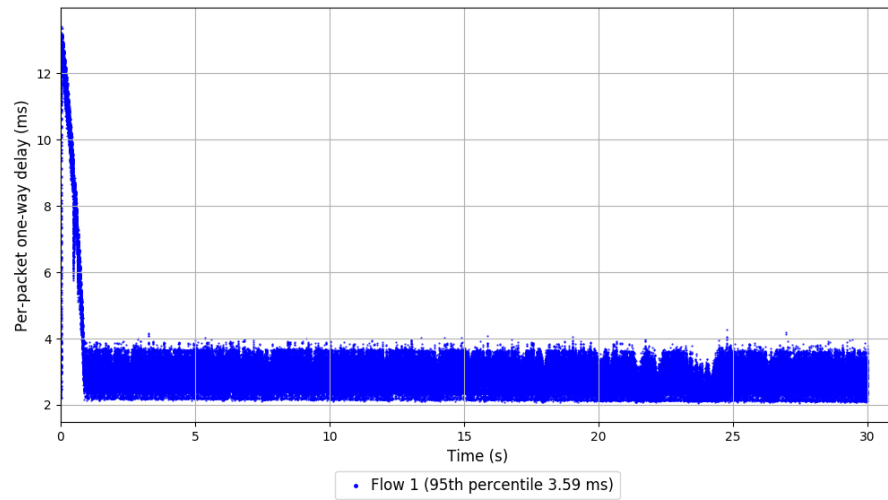
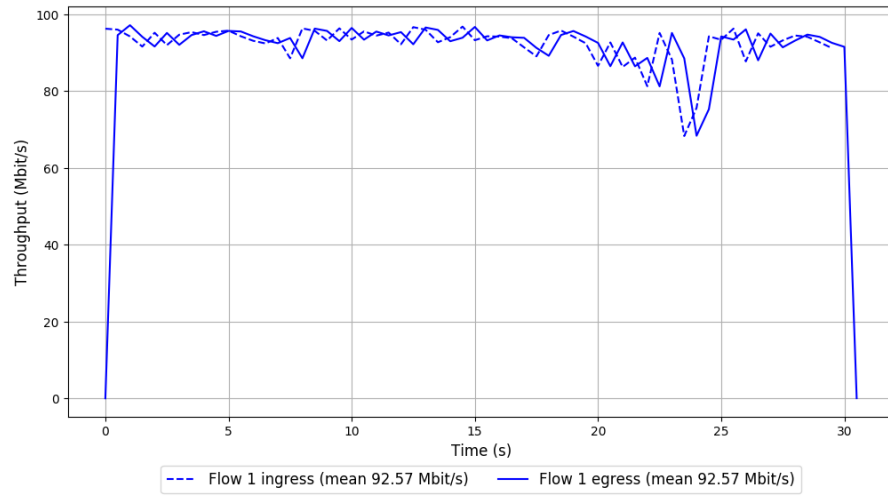
-- Flow 1:

Average throughput: 92.57 Mbit/s

95th percentile per-packet one-way delay: 3.590 ms

Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-12-19 22:37:15

End at: 2018-12-19 22:37:45

Local clock offset: -2.162 ms

Remote clock offset: 1.398 ms

Below is generated by plot.py at 2018-12-20 00:31:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 42.04 Mbit/s

95th percentile per-packet one-way delay: 11.527 ms

Loss rate: 1.56%

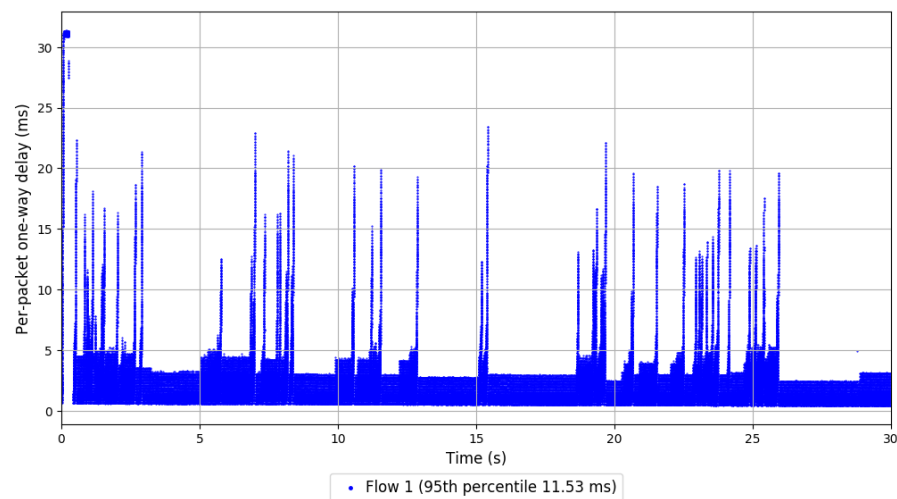
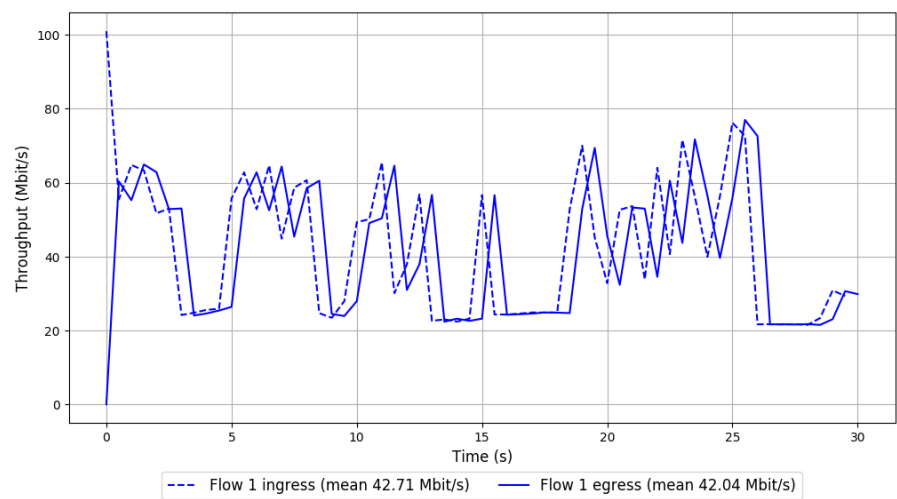
-- Flow 1:

Average throughput: 42.04 Mbit/s

95th percentile per-packet one-way delay: 11.527 ms

Loss rate: 1.56%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-12-19 22:58:24

End at: 2018-12-19 22:58:54

Local clock offset: -6.925 ms

Remote clock offset: 1.06 ms

Below is generated by plot.py at 2018-12-20 00:31:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 44.81 Mbit/s

95th percentile per-packet one-way delay: 13.796 ms

Loss rate: 1.49%

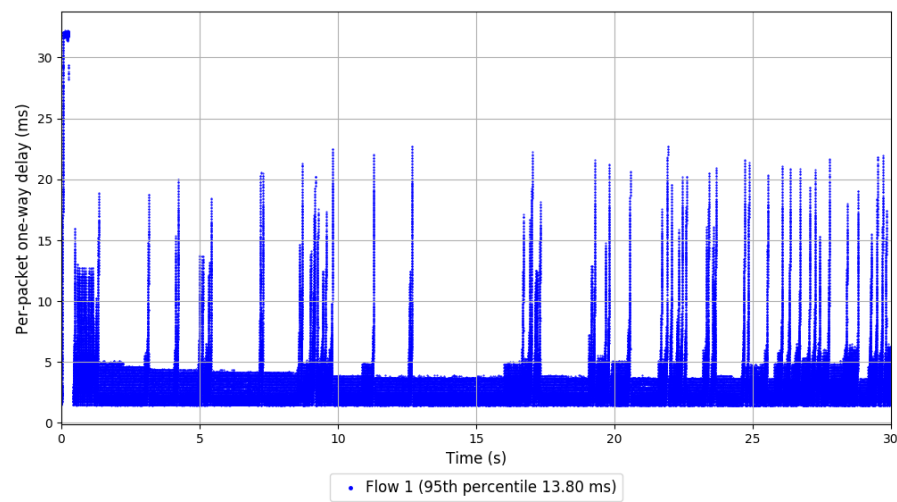
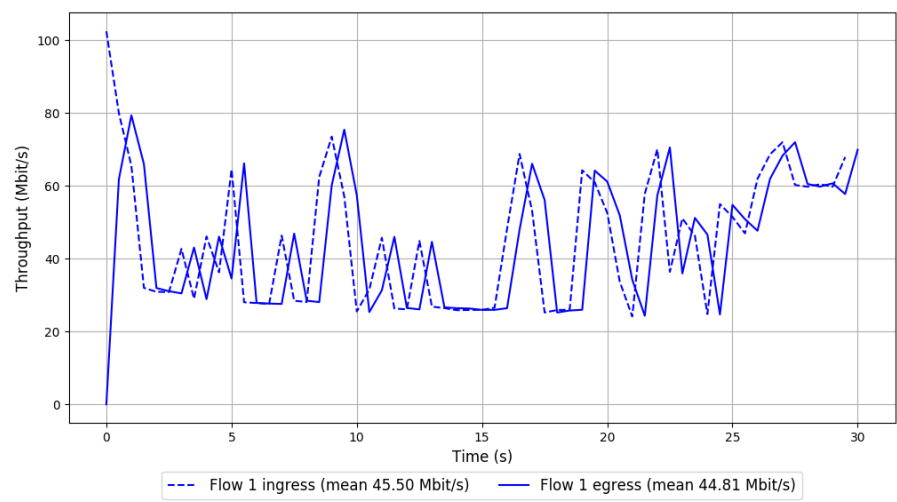
-- Flow 1:

Average throughput: 44.81 Mbit/s

95th percentile per-packet one-way delay: 13.796 ms

Loss rate: 1.49%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-12-19 23:19:32

End at: 2018-12-19 23:20:02

Local clock offset: -2.713 ms

Remote clock offset: 0.929 ms

Below is generated by plot.py at 2018-12-20 00:31:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 52.08 Mbit/s

95th percentile per-packet one-way delay: 14.280 ms

Loss rate: 1.28%

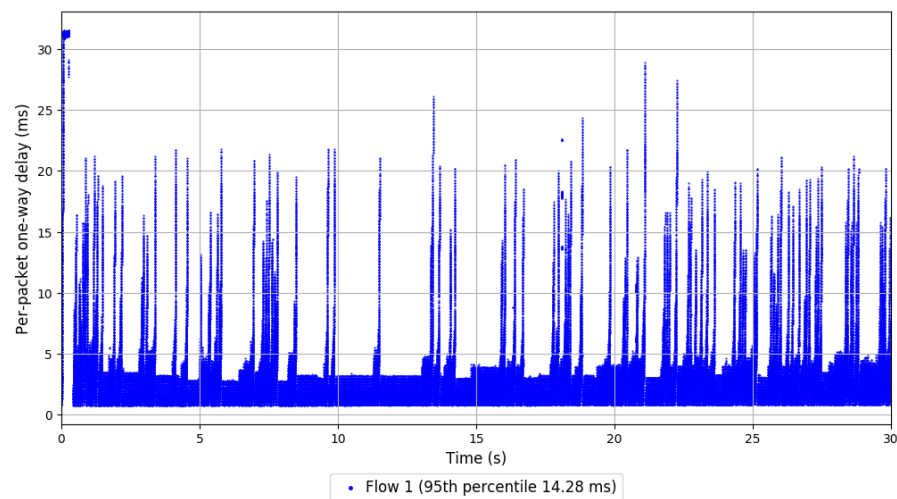
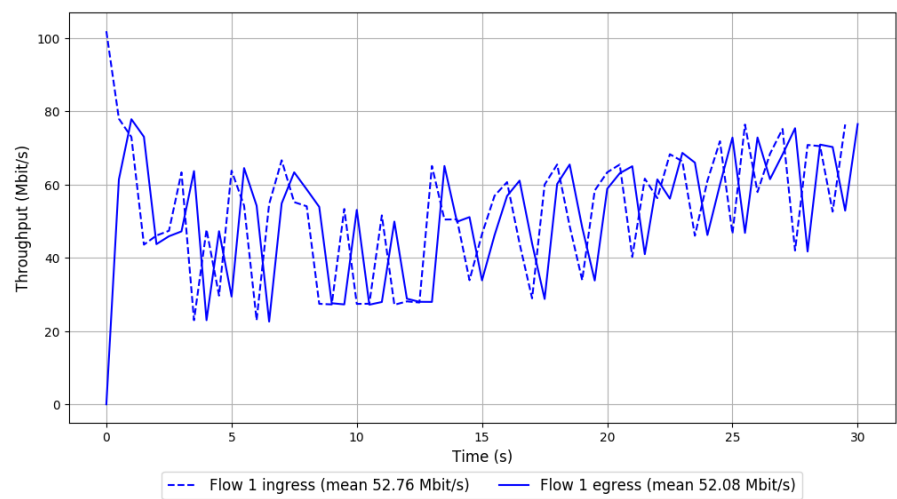
-- Flow 1:

Average throughput: 52.08 Mbit/s

95th percentile per-packet one-way delay: 14.280 ms

Loss rate: 1.28%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-12-19 23:40:41

End at: 2018-12-19 23:41:11

Local clock offset: -2.788 ms

Remote clock offset: 0.688 ms

Below is generated by plot.py at 2018-12-20 00:31:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.78 Mbit/s

95th percentile per-packet one-way delay: 13.808 ms

Loss rate: 1.32%

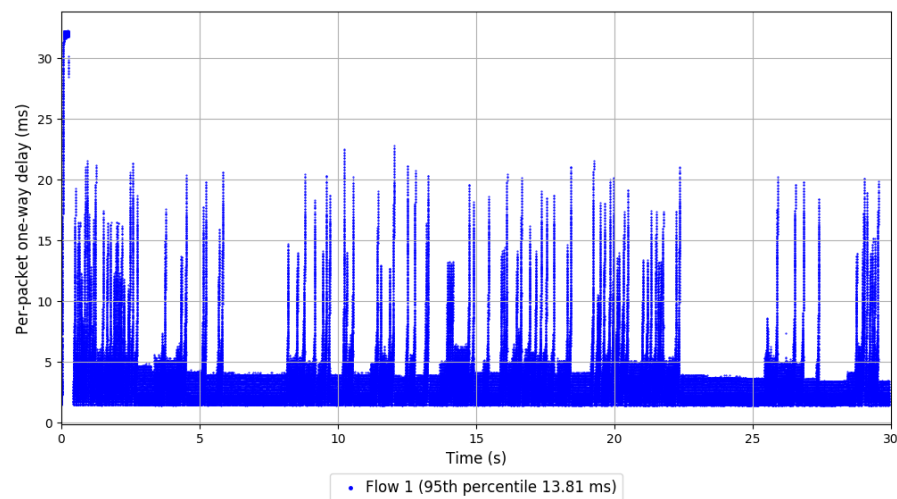
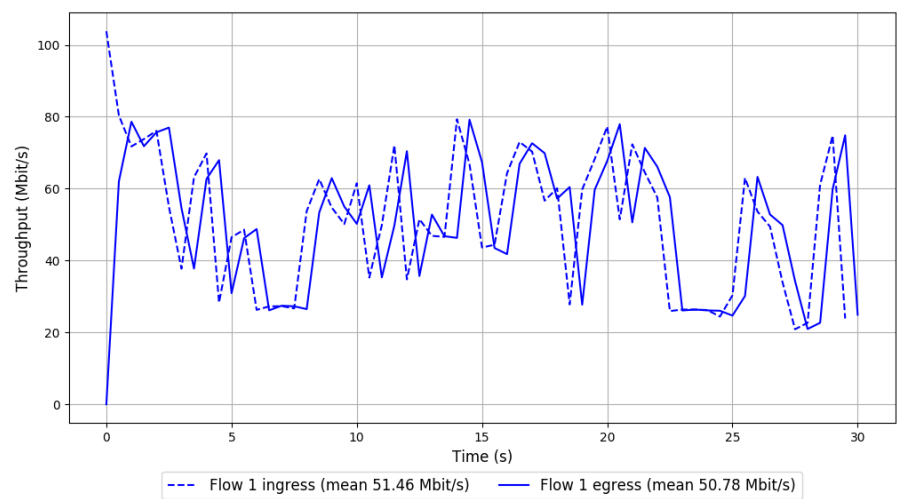
-- Flow 1:

Average throughput: 50.78 Mbit/s

95th percentile per-packet one-way delay: 13.808 ms

Loss rate: 1.32%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-12-20 00:01:49

End at: 2018-12-20 00:02:19

Local clock offset: -2.395 ms

Remote clock offset: 0.446 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.36 Mbit/s

95th percentile per-packet one-way delay: 11.181 ms

Loss rate: 0.83%

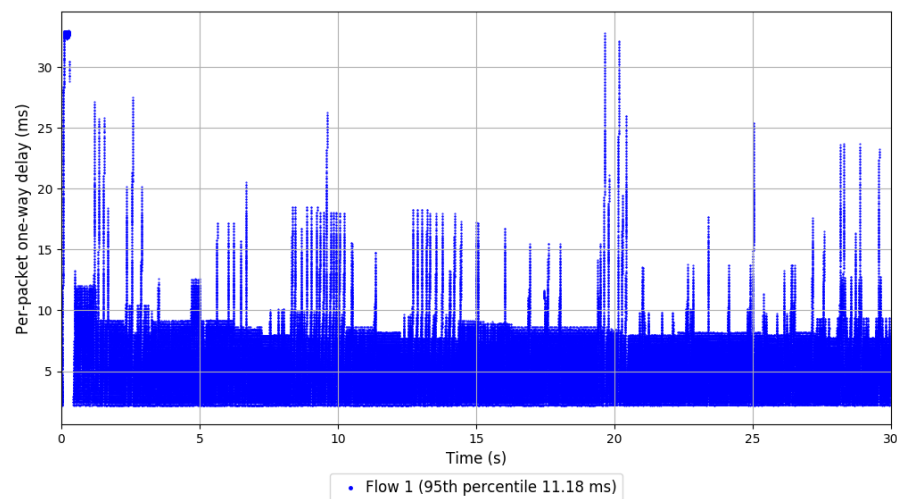
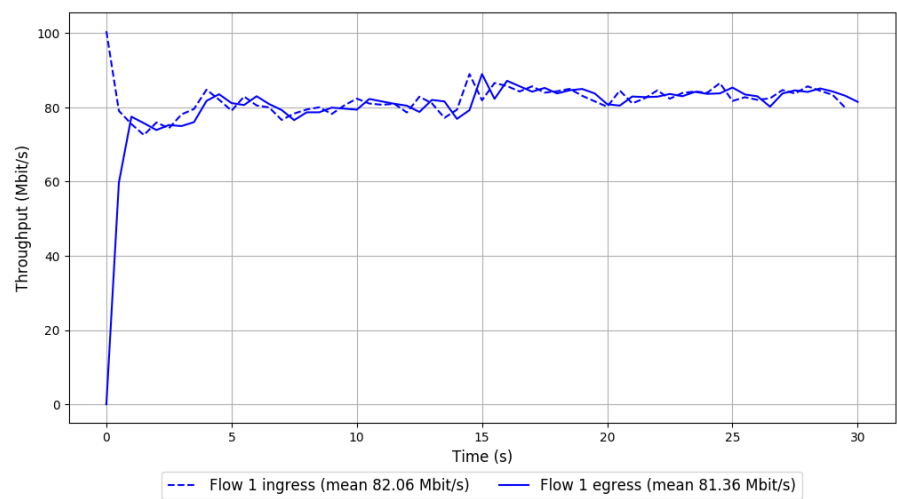
-- Flow 1:

Average throughput: 81.36 Mbit/s

95th percentile per-packet one-way delay: 11.181 ms

Loss rate: 0.83%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-12-19 22:55:01

End at: 2018-12-19 22:55:31

Local clock offset: -6.745 ms

Remote clock offset: 1.11 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 74.14 Mbit/s

95th percentile per-packet one-way delay: 4.720 ms

Loss rate: 0.00%

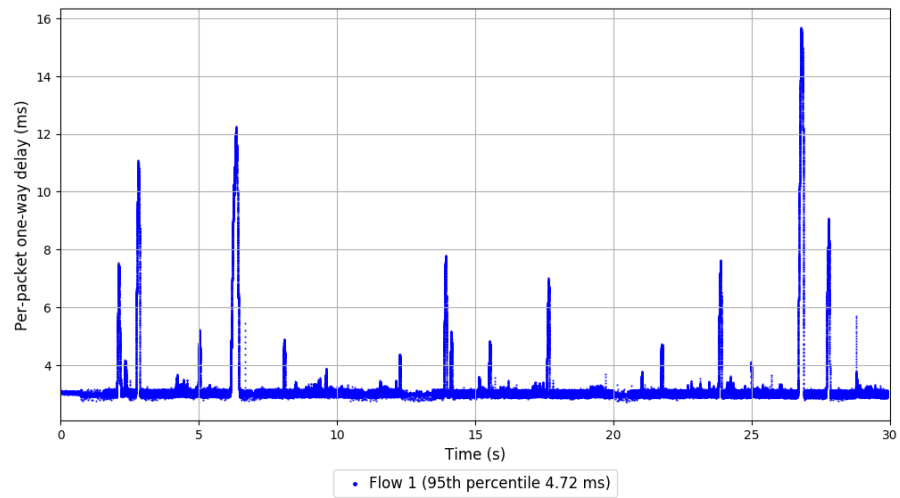
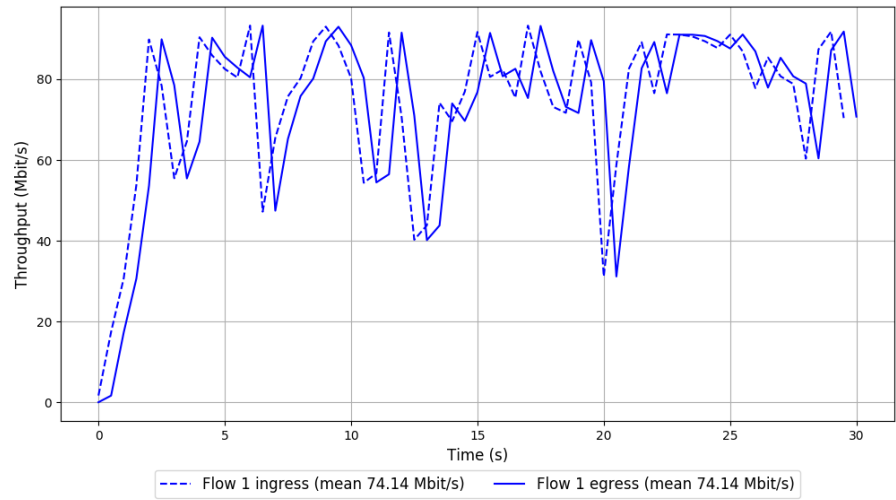
-- Flow 1:

Average throughput: 74.14 Mbit/s

95th percentile per-packet one-way delay: 4.720 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-12-19 23:16:10

End at: 2018-12-19 23:16:40

Local clock offset: -3.204 ms

Remote clock offset: 1.079 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 52.72 Mbit/s

95th percentile per-packet one-way delay: 1.256 ms

Loss rate: 0.00%

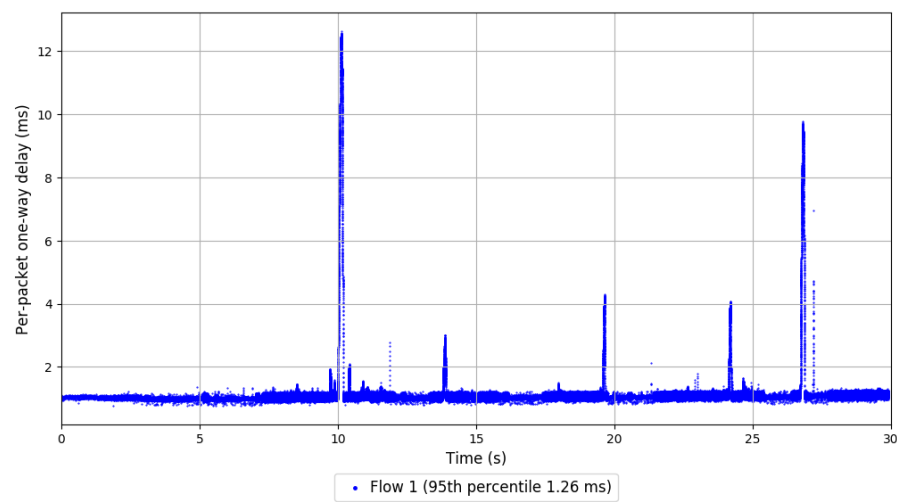
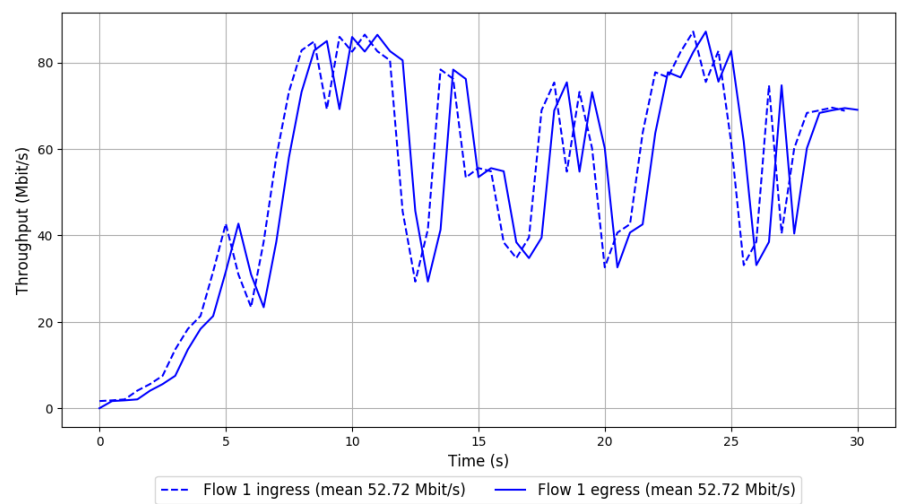
-- Flow 1:

Average throughput: 52.72 Mbit/s

95th percentile per-packet one-way delay: 1.256 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-12-19 23:37:18

End at: 2018-12-19 23:37:48

Local clock offset: -1.717 ms

Remote clock offset: 0.795 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.03 Mbit/s

95th percentile per-packet one-way delay: 17.724 ms

Loss rate: 0.15%

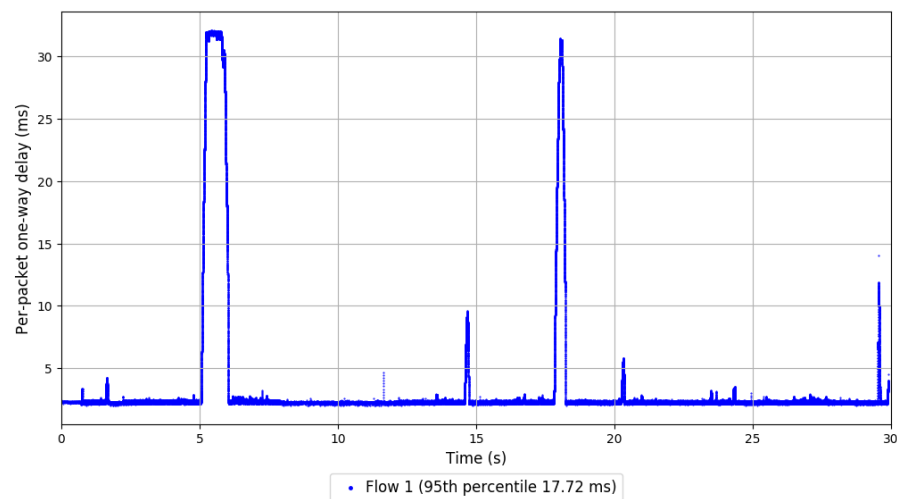
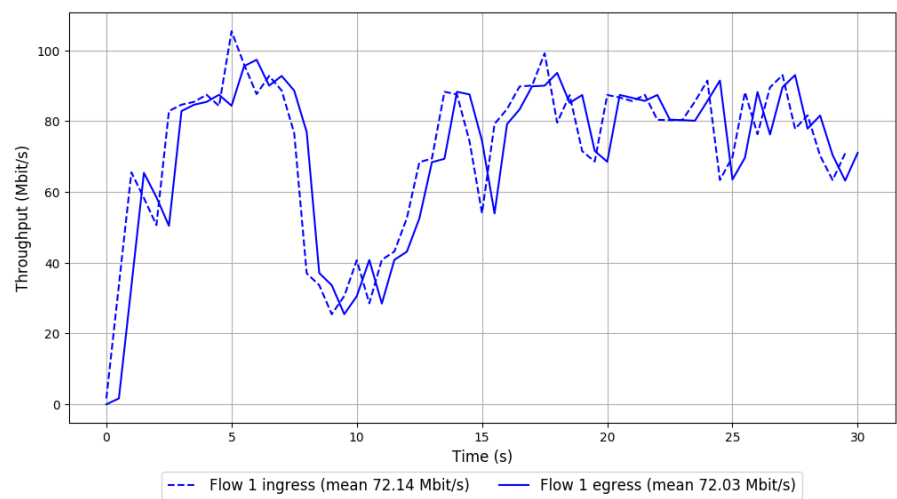
-- Flow 1:

Average throughput: 72.03 Mbit/s

95th percentile per-packet one-way delay: 17.724 ms

Loss rate: 0.15%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-12-19 23:58:27

End at: 2018-12-19 23:58:57

Local clock offset: -2.887 ms

Remote clock offset: 0.619 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.28 Mbit/s

95th percentile per-packet one-way delay: 3.607 ms

Loss rate: 0.00%

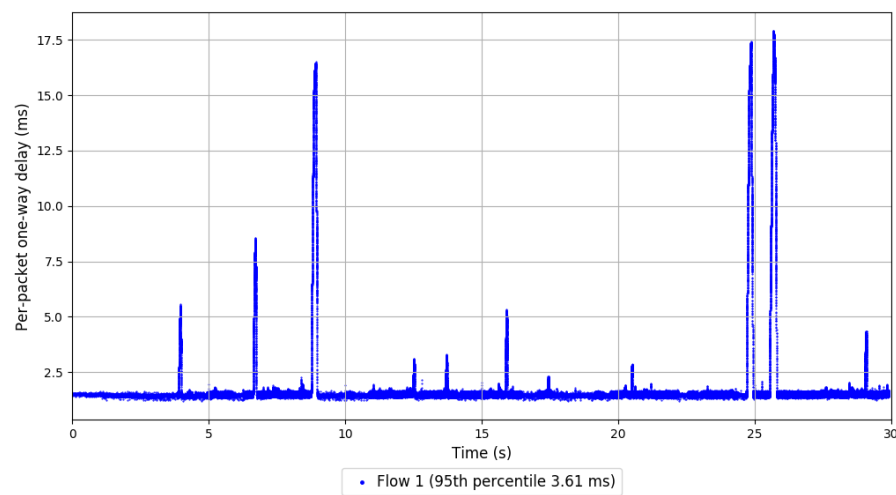
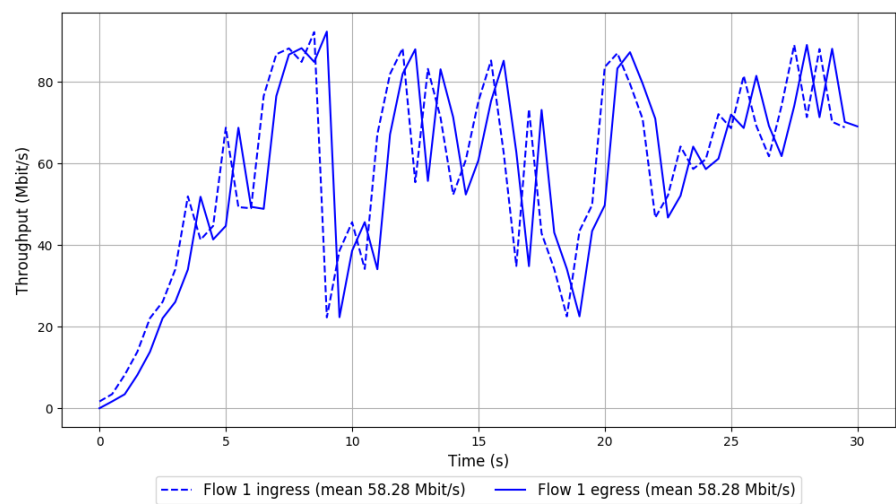
-- Flow 1:

Average throughput: 58.28 Mbit/s

95th percentile per-packet one-way delay: 3.607 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 00:19:37

End at: 2018-12-20 00:20:07

Local clock offset: -7.451 ms

Remote clock offset: 0.134 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 67.74 Mbit/s

95th percentile per-packet one-way delay: 8.343 ms

Loss rate: 0.01%

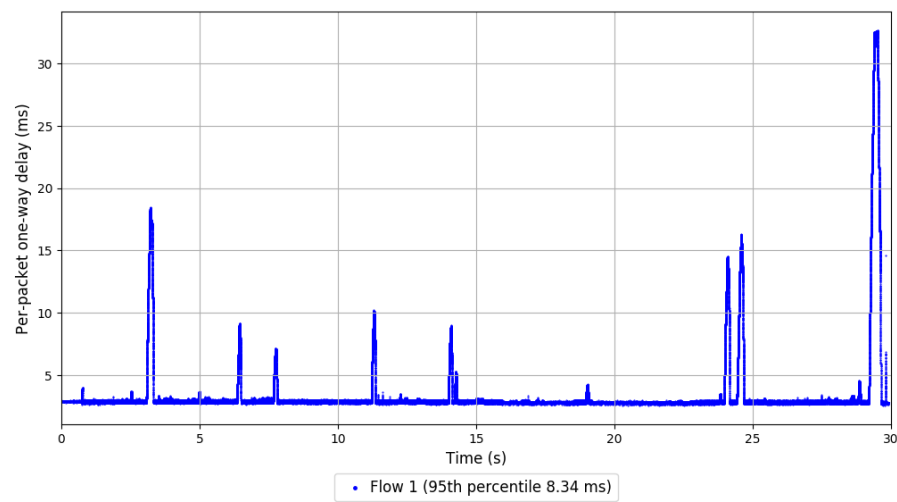
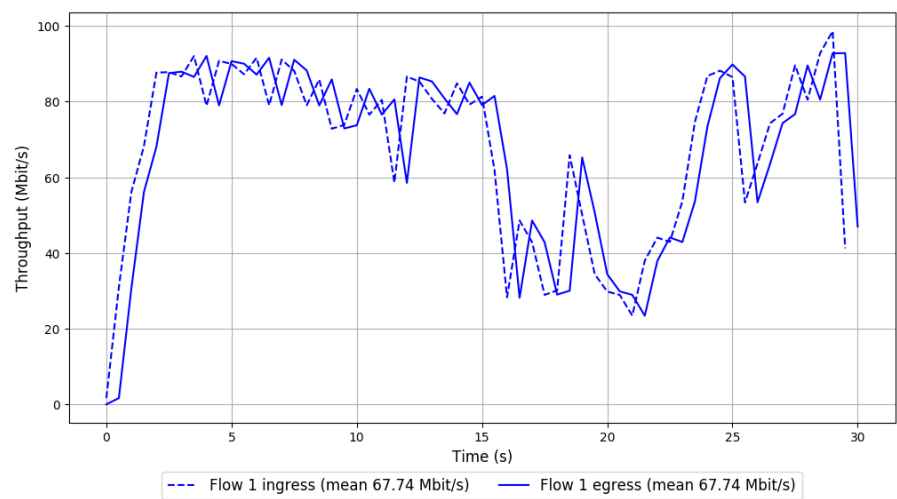
-- Flow 1:

Average throughput: 67.74 Mbit/s

95th percentile per-packet one-way delay: 8.343 ms

Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-12-19 22:51:44

End at: 2018-12-19 22:52:14

Local clock offset: -5.631 ms

Remote clock offset: 1.061 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 3.313 ms

Loss rate: 0.00%

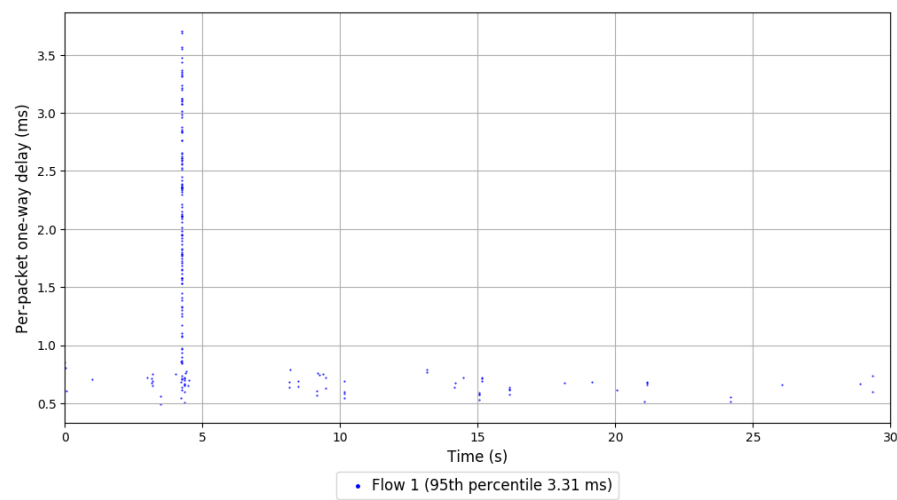
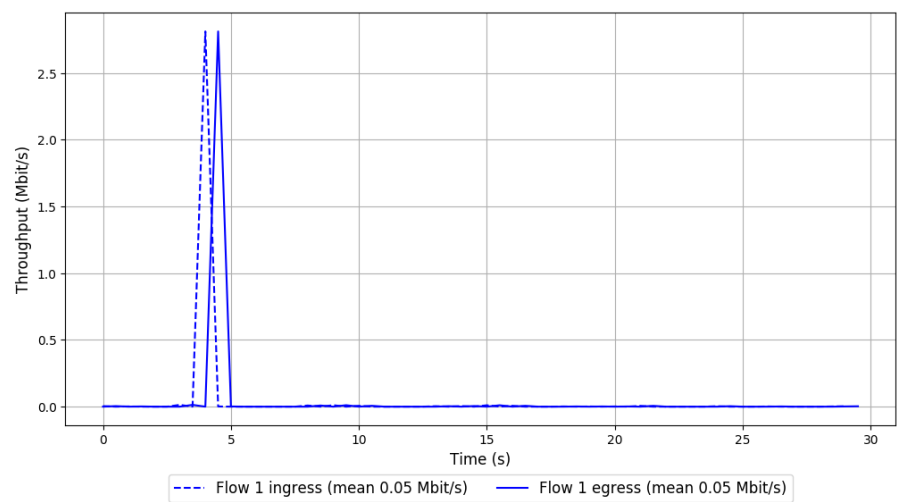
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 3.313 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

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

End at: 2018-12-19 23:13:22

Local clock offset: -4.595 ms

Remote clock offset: 1.051 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 4.373 ms

Loss rate: 0.82%

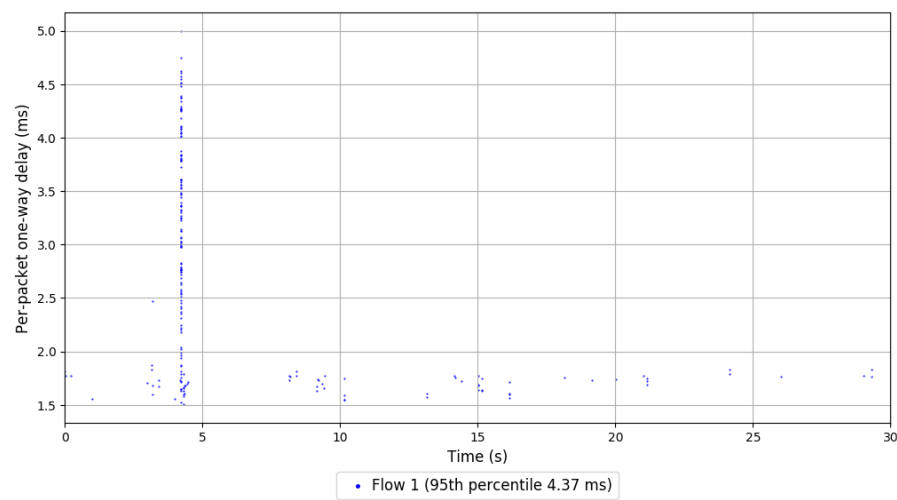
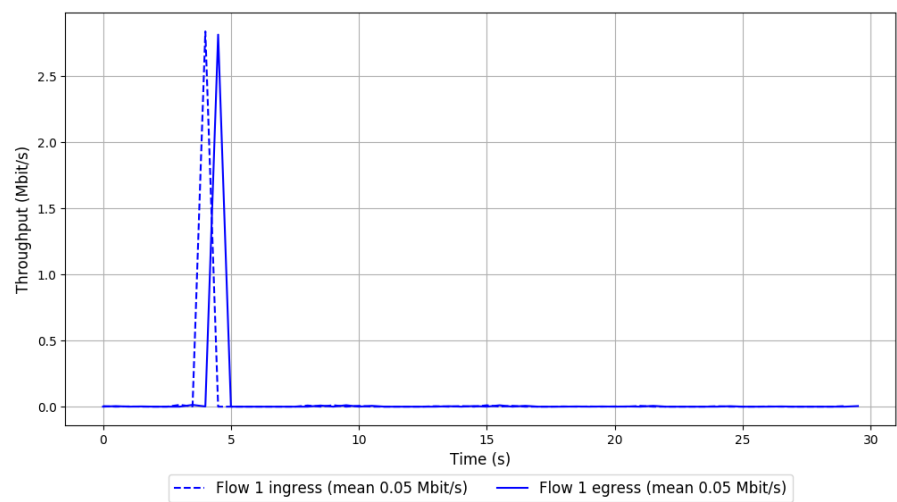
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 4.373 ms

Loss rate: 0.82%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-12-19 23:34:00

End at: 2018-12-19 23:34:30

Local clock offset: -1.648 ms

Remote clock offset: 0.817 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 3.687 ms

Loss rate: 0.00%

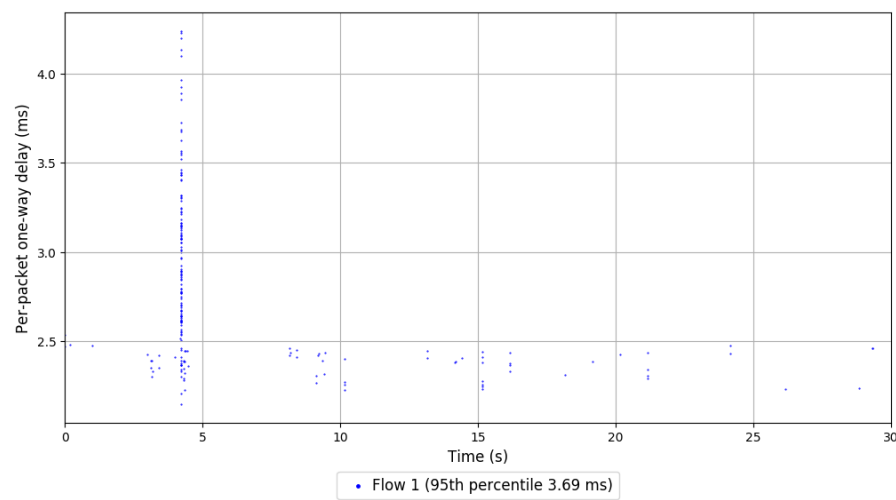
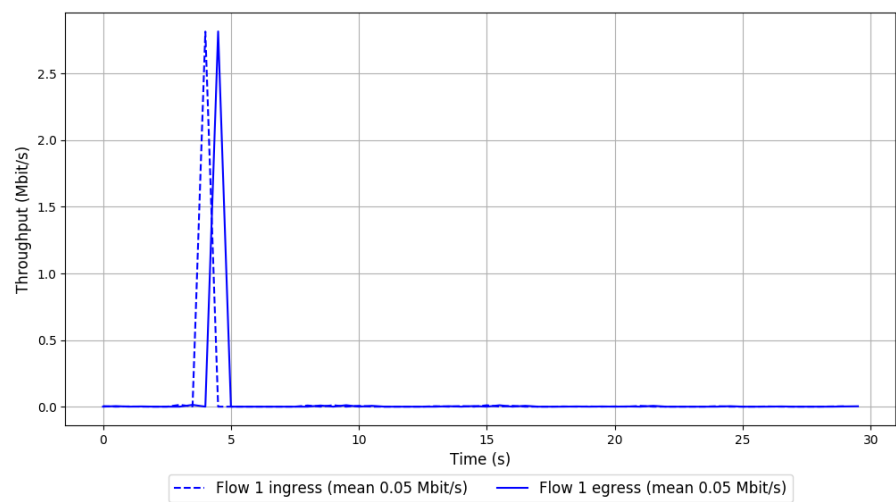
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 3.687 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-12-19 23:55:09

End at: 2018-12-19 23:55:39

Local clock offset: -3.188 ms

Remote clock offset: 0.586 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 4.454 ms

Loss rate: 0.00%

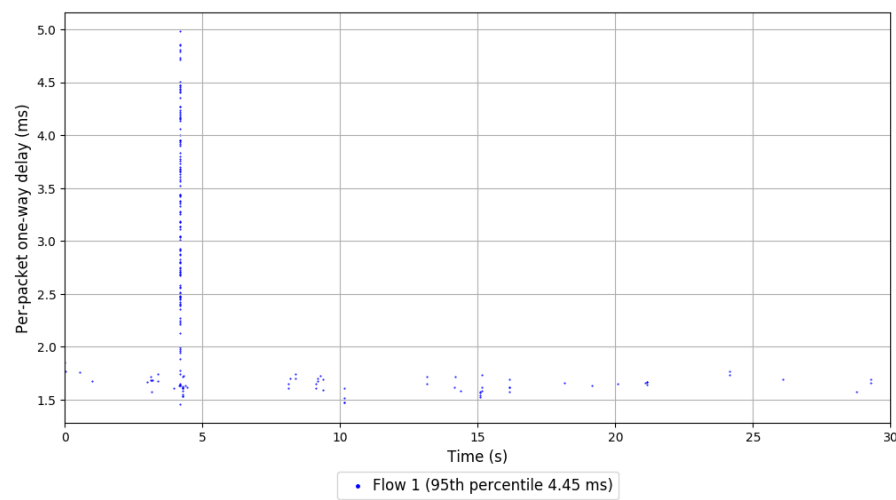
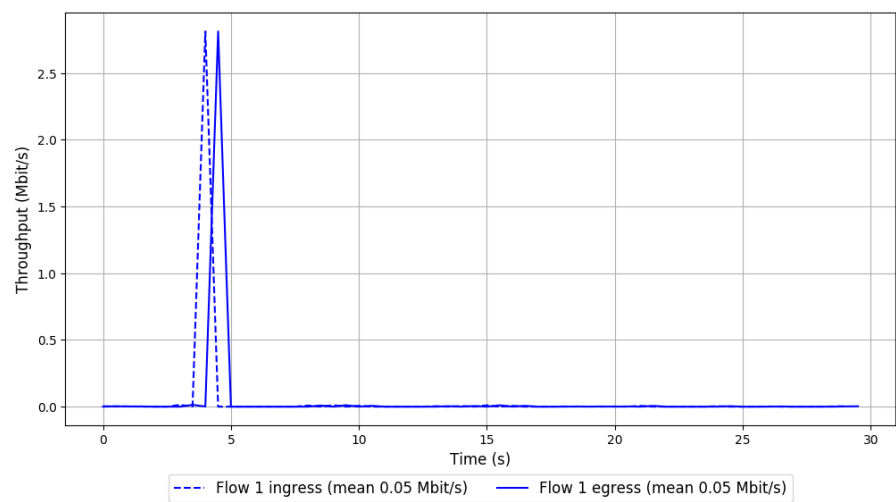
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 4.454 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-12-20 00:16:19

End at: 2018-12-20 00:16:49

Local clock offset: -6.161 ms

Remote clock offset: 0.29 ms

Below is generated by plot.py at 2018-12-20 00:32:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 4.810 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 4.810 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

