

Pantheon Report

Generated at 2018-12-20 07:50:24 (UTC).

Data path: Stanford on **eno1** (*remote*) → AWS California 1 on **ens5** (*local*).

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

System info:

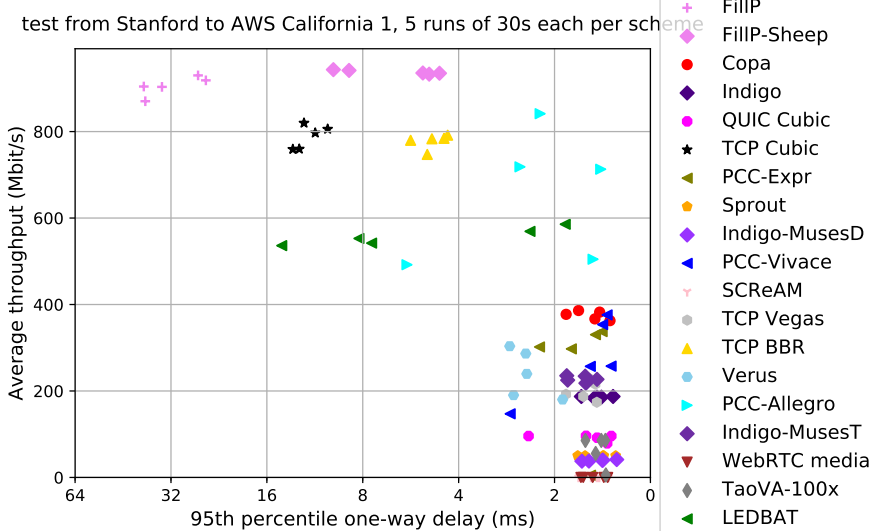
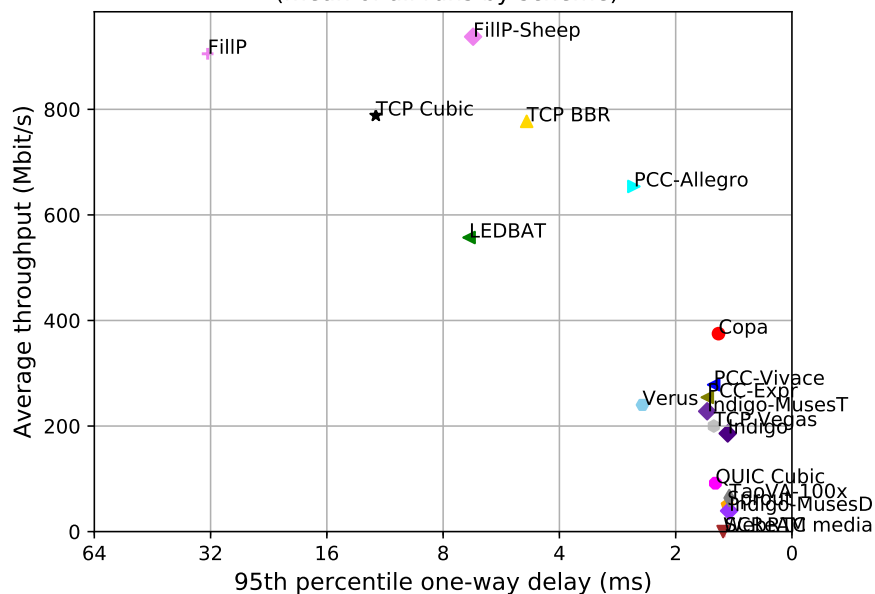
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 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 Stanford to AWS California 1, 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	777.28	4.86	0.02
Copa	5	375.04	1.26	0.01
TCP Cubic	5	788.27	11.95	0.04
FillP	5	905.23	32.56	0.62
FillP-Sheep	5	937.57	6.69	0.01
Indigo	5	185.91	1.11	0.01
Indigo-MusesD	5	39.34	1.08	0.01
Indigo-MusesT	5	227.92	1.46	0.01
LEDBAT	5	557.15	6.85	0.01
PCC-Allegro	5	653.90	2.57	0.01
PCC-Expr	5	254.36	1.46	0.01
QUIC Cubic	5	91.73	1.32	0.01
SCReAM	5	0.22	1.16	0.08
Sprout	5	50.25	1.11	0.01
TaoVA-100x	5	63.64	1.08	0.01
TCP Vegas	5	199.97	1.34	0.00
Verus	5	240.06	2.44	0.01
PCC-Vivace	5	278.25	1.35	0.01
WebRTC media	5	0.05	1.18	0.01

Run 1: Statistics of TCP BBR

Start at: 2018-12-20 04:46:17

End at: 2018-12-20 04:46:48

Local clock offset: 2.695 ms

Remote clock offset: -0.008 ms

Below is generated by plot.py at 2018-12-20 07:06:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 784.38 Mbit/s

95th percentile per-packet one-way delay: 4.446 ms

Loss rate: 0.02%

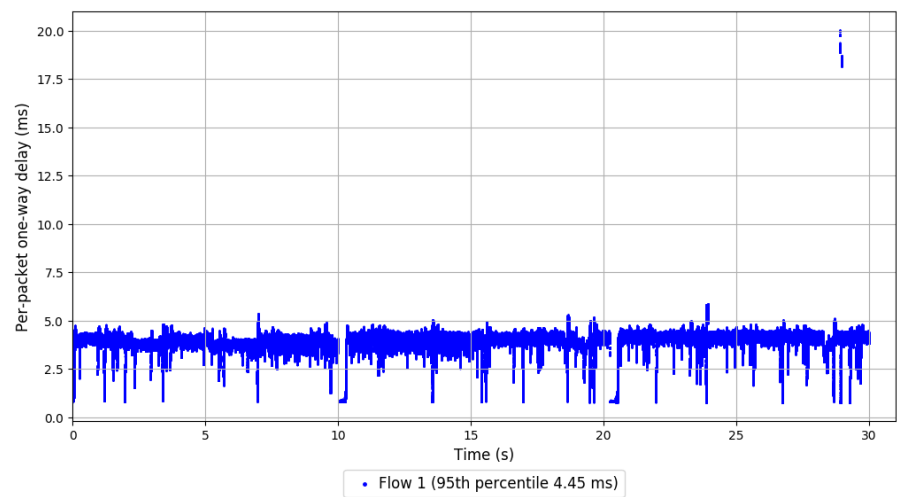
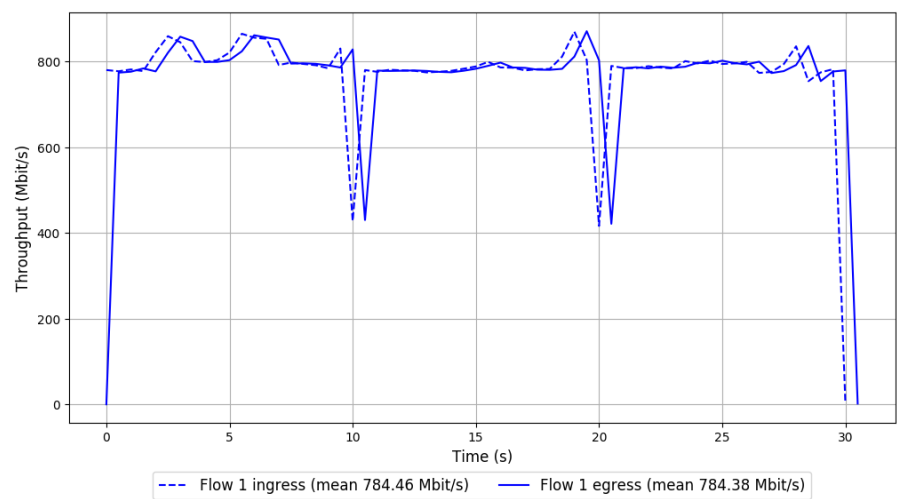
-- Flow 1:

Average throughput: 784.38 Mbit/s

95th percentile per-packet one-way delay: 4.446 ms

Loss rate: 0.02%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-12-20 05:13:12

End at: 2018-12-20 05:13:42

Local clock offset: 1.841 ms

Remote clock offset: 3.943 ms

Below is generated by plot.py at 2018-12-20 07:06:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 747.18 Mbit/s

95th percentile per-packet one-way delay: 5.018 ms

Loss rate: 0.02%

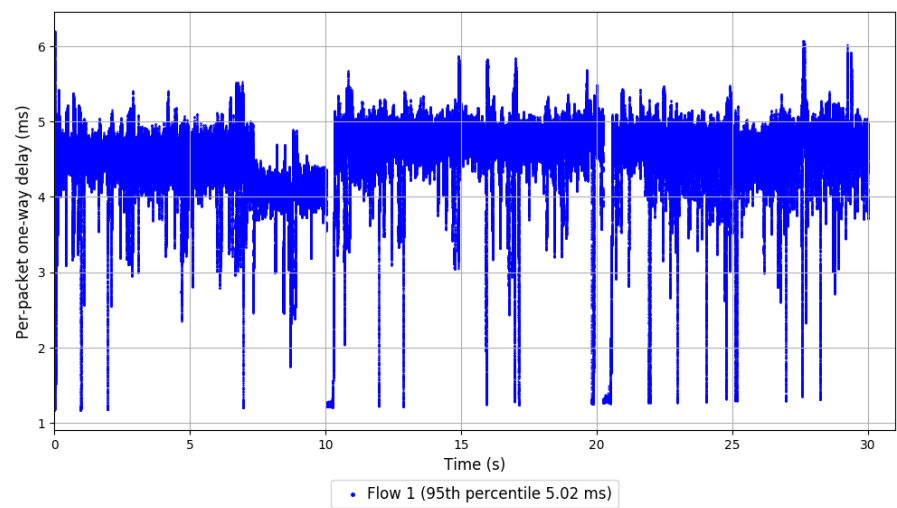
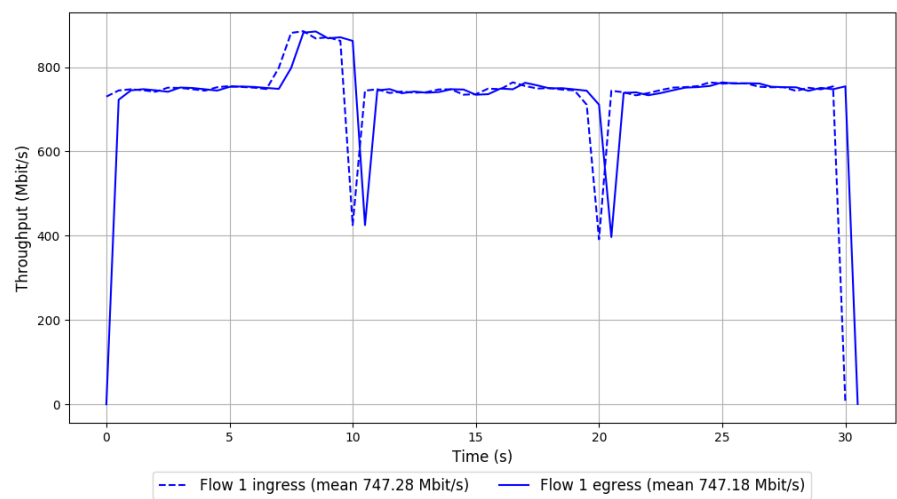
-- Flow 1:

Average throughput: 747.18 Mbit/s

95th percentile per-packet one-way delay: 5.018 ms

Loss rate: 0.02%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-12-20 05:40:11

End at: 2018-12-20 05:40:41

Local clock offset: 1.36 ms

Remote clock offset: 1.247 ms

Below is generated by plot.py at 2018-12-20 07:06:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 791.70 Mbit/s

95th percentile per-packet one-way delay: 4.331 ms

Loss rate: 0.02%

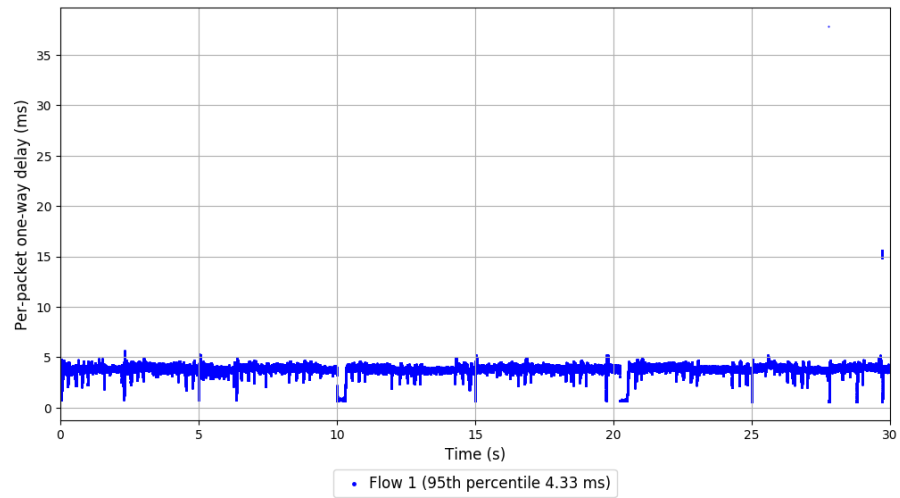
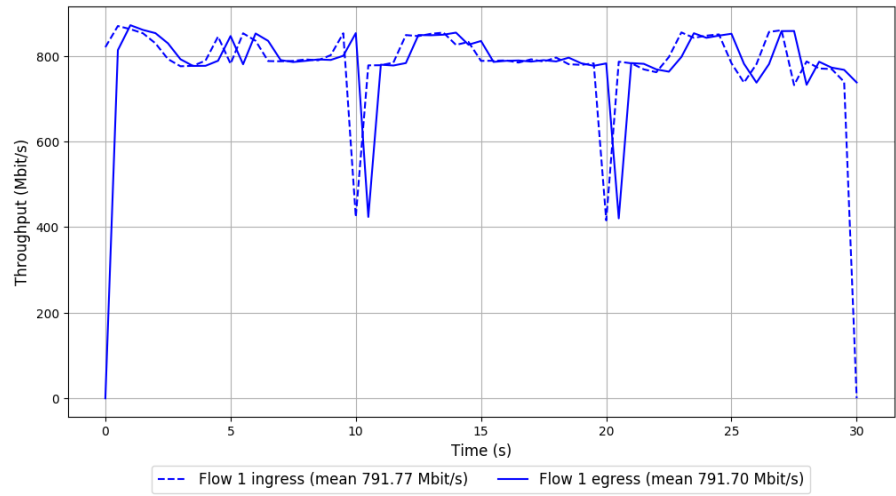
-- Flow 1:

Average throughput: 791.70 Mbit/s

95th percentile per-packet one-way delay: 4.331 ms

Loss rate: 0.02%

Run 3: Report of TCP BBR — Data Link

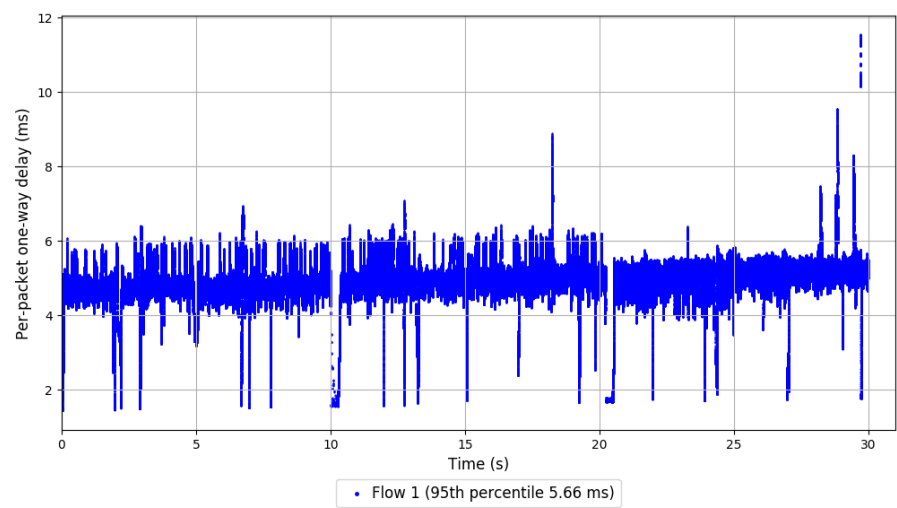
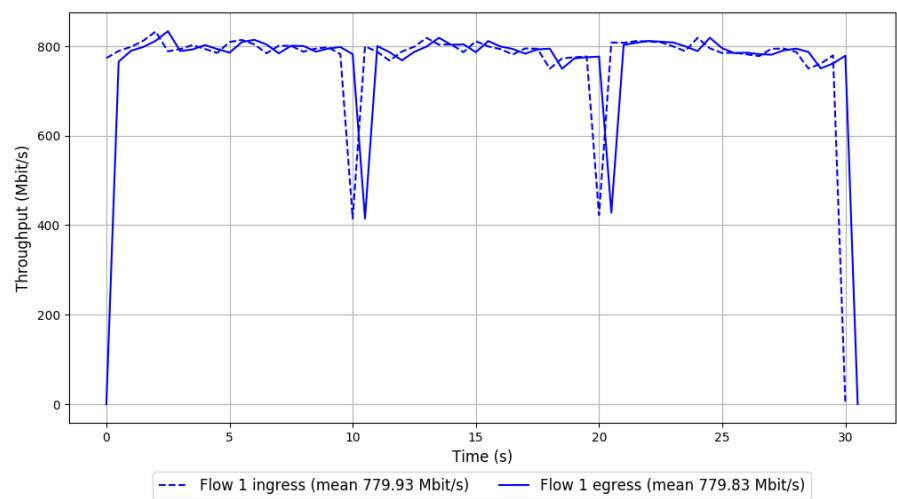


Run 4: Statistics of TCP BBR

Start at: 2018-12-20 06:07:10
End at: 2018-12-20 06:07:40
Local clock offset: 2.849 ms
Remote clock offset: -0.125 ms

Below is generated by plot.py at 2018-12-20 07:06:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 779.83 Mbit/s
95th percentile per-packet one-way delay: 5.660 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 779.83 Mbit/s
95th percentile per-packet one-way delay: 5.660 ms
Loss rate: 0.02%

Run 4: Report of TCP BBR — Data Link

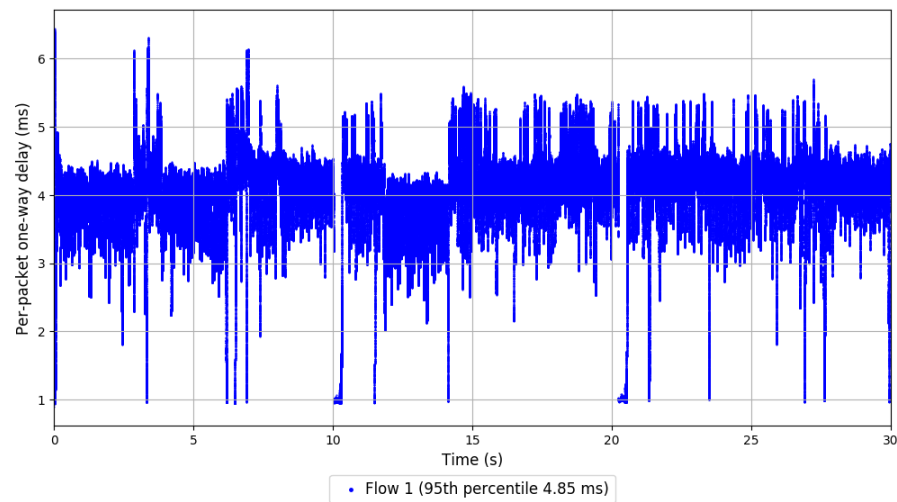
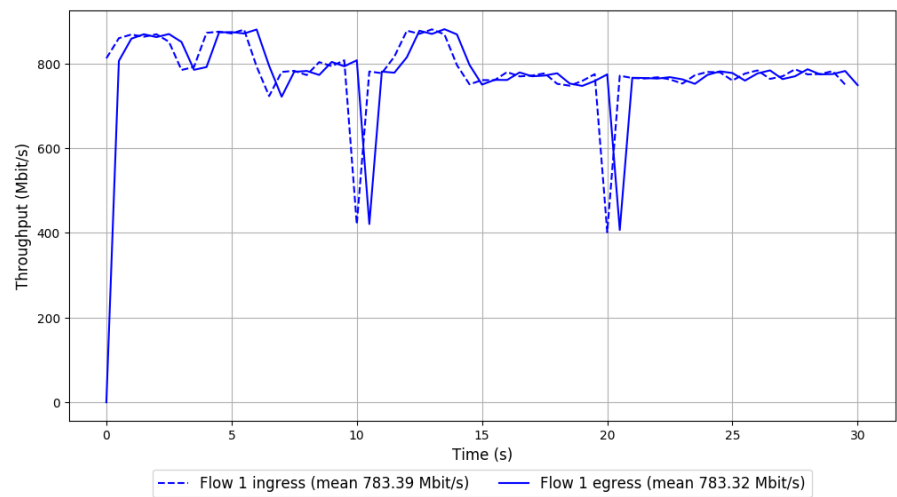


Run 5: Statistics of TCP BBR

Start at: 2018-12-20 06:33:38
End at: 2018-12-20 06:34:08
Local clock offset: -4.206 ms
Remote clock offset: -0.149 ms

Below is generated by plot.py at 2018-12-20 07:06:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 783.32 Mbit/s
95th percentile per-packet one-way delay: 4.853 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 783.32 Mbit/s
95th percentile per-packet one-way delay: 4.853 ms
Loss rate: 0.02%

Run 5: Report of TCP BBR — Data Link

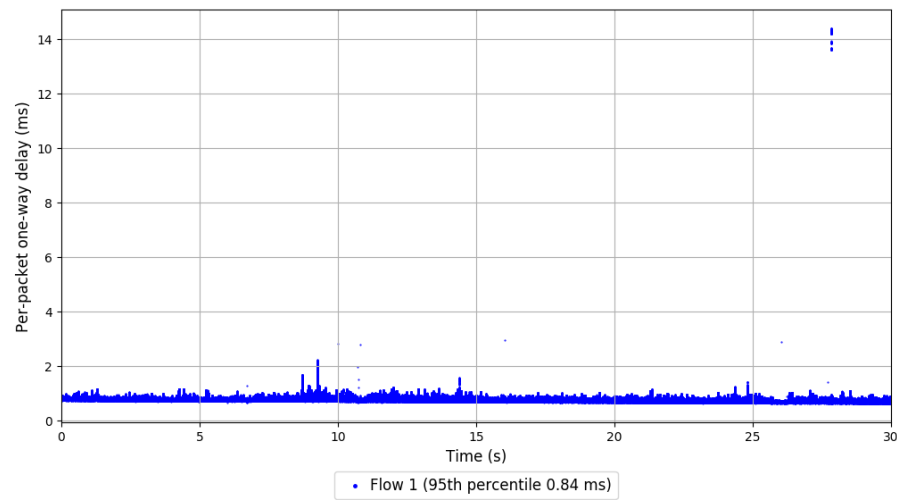
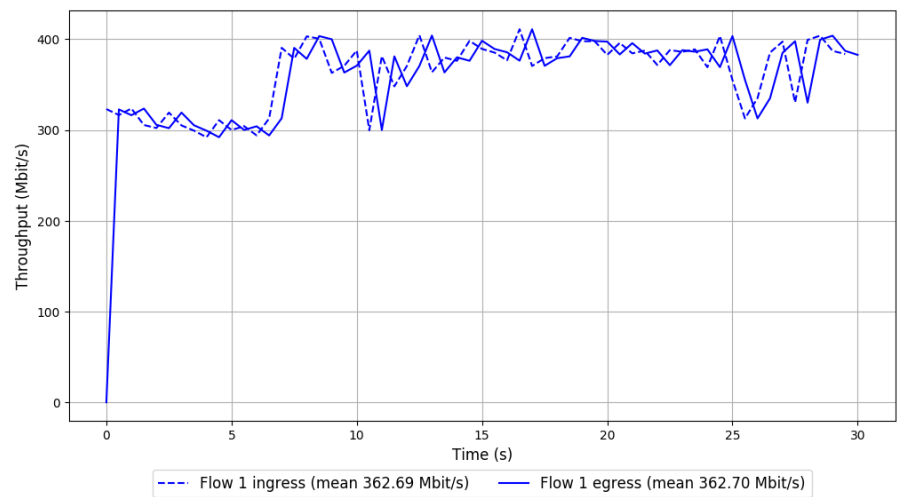


Run 1: Statistics of Copa

Start at: 2018-12-20 04:39:49
End at: 2018-12-20 04:40:19
Local clock offset: 1.408 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-12-20 07:06:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 362.70 Mbit/s
95th percentile per-packet one-way delay: 0.843 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 362.70 Mbit/s
95th percentile per-packet one-way delay: 0.843 ms
Loss rate: 0.01%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-12-20 05:06:36

End at: 2018-12-20 05:07:06

Local clock offset: 3.873 ms

Remote clock offset: 3.154 ms

Below is generated by plot.py at 2018-12-20 07:06:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 377.26 Mbit/s

95th percentile per-packet one-way delay: 1.758 ms

Loss rate: 0.01%

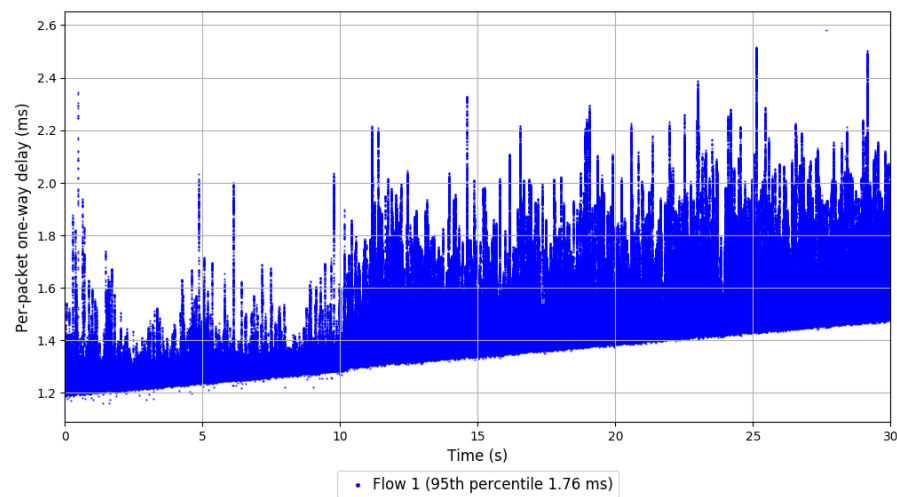
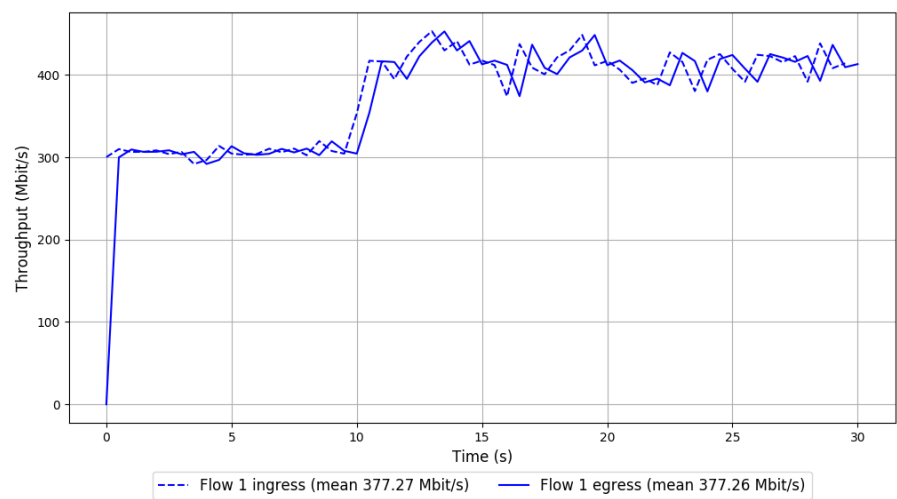
-- Flow 1:

Average throughput: 377.26 Mbit/s

95th percentile per-packet one-way delay: 1.758 ms

Loss rate: 0.01%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-12-20 05:33:36

End at: 2018-12-20 05:34:06

Local clock offset: 0.053 ms

Remote clock offset: 2.778 ms

Below is generated by plot.py at 2018-12-20 07:06:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 382.40 Mbit/s

95th percentile per-packet one-way delay: 1.059 ms

Loss rate: 0.01%

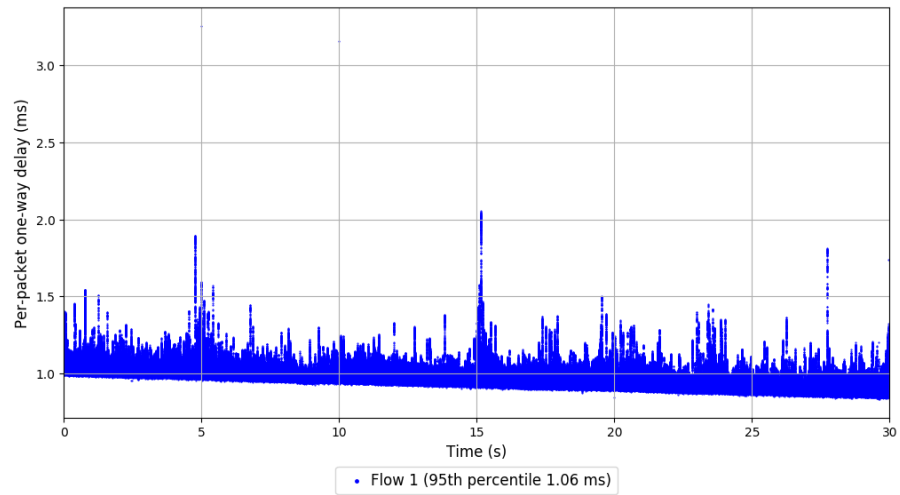
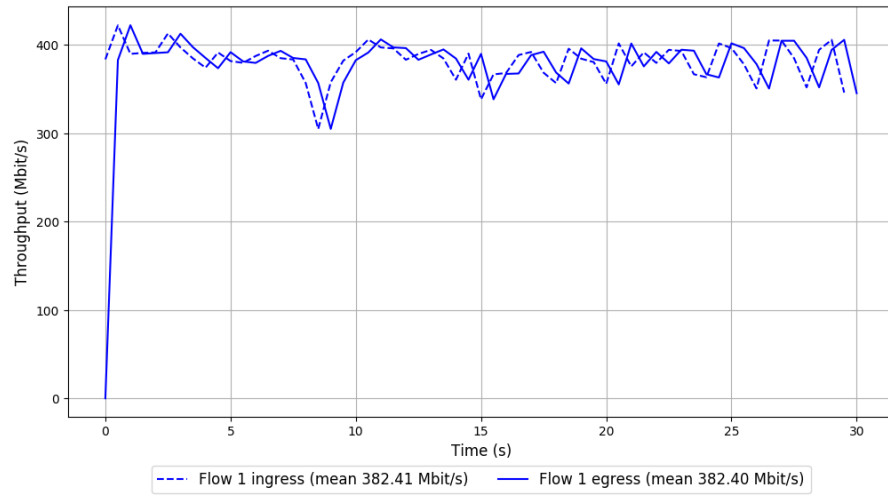
-- Flow 1:

Average throughput: 382.40 Mbit/s

95th percentile per-packet one-way delay: 1.059 ms

Loss rate: 0.01%

Run 3: Report of Copa — Data Link

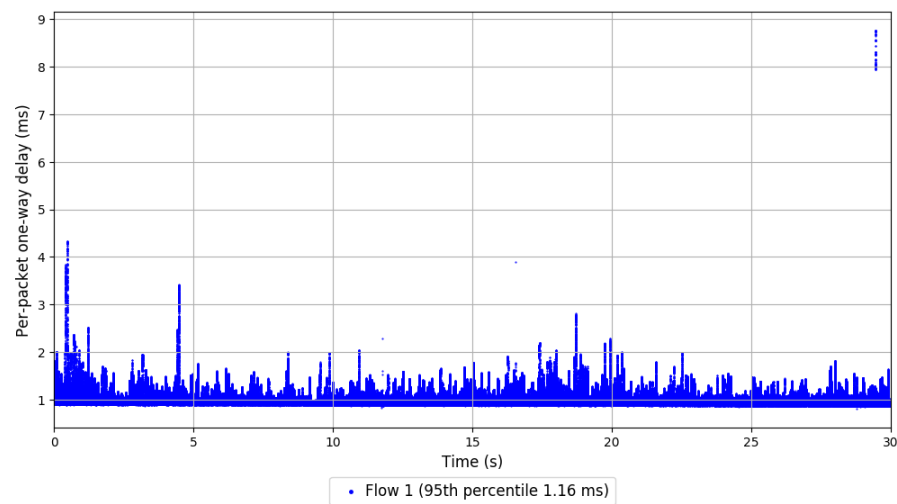
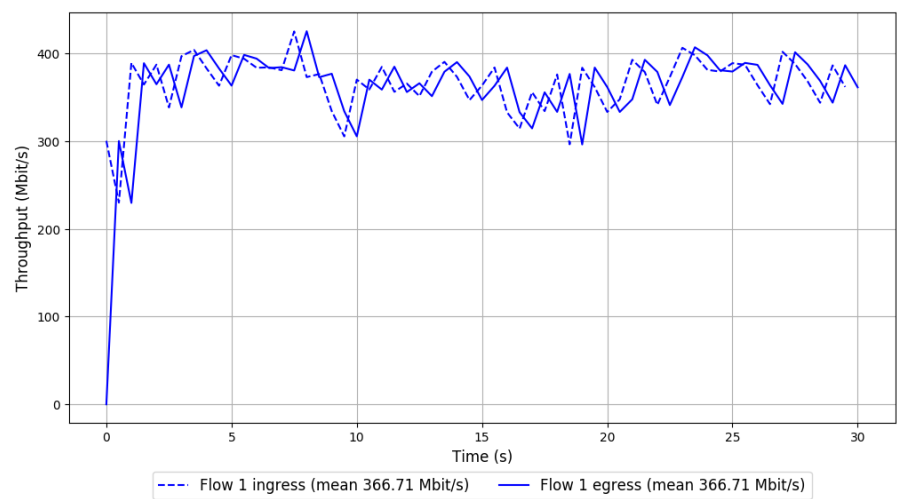


Run 4: Statistics of Copa

Start at: 2018-12-20 06:00:35
End at: 2018-12-20 06:01:05
Local clock offset: 3.687 ms
Remote clock offset: -0.035 ms

Below is generated by plot.py at 2018-12-20 07:13:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 366.71 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 366.71 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.01%

Run 4: Report of Copa — Data Link

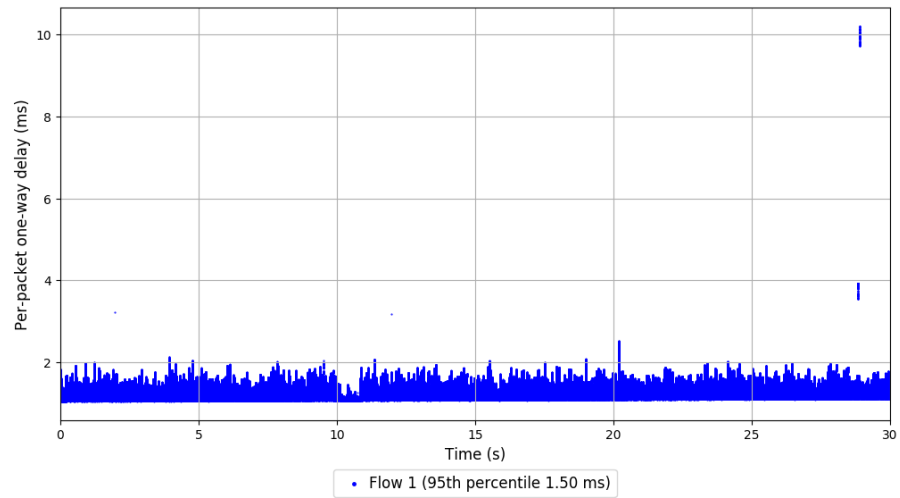
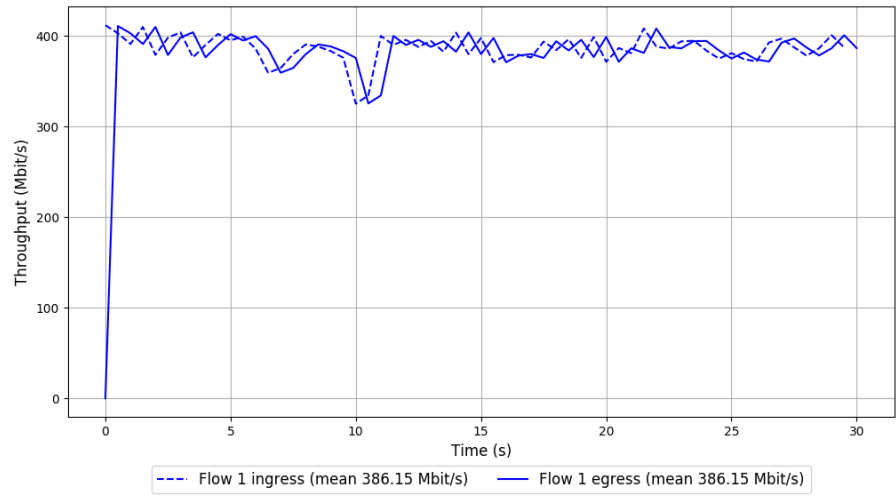


Run 5: Statistics of Copa

Start at: 2018-12-20 06:27:04
End at: 2018-12-20 06:27:34
Local clock offset: -3.501 ms
Remote clock offset: -0.208 ms

Below is generated by plot.py at 2018-12-20 07:13:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 386.15 Mbit/s
95th percentile per-packet one-way delay: 1.499 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 386.15 Mbit/s
95th percentile per-packet one-way delay: 1.499 ms
Loss rate: 0.01%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-12-20 04:50:49

End at: 2018-12-20 04:51:19

Local clock offset: 3.237 ms

Remote clock offset: -0.01 ms

Below is generated by plot.py at 2018-12-20 07:13:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 759.10 Mbit/s

95th percentile per-packet one-way delay: 13.264 ms

Loss rate: 0.03%

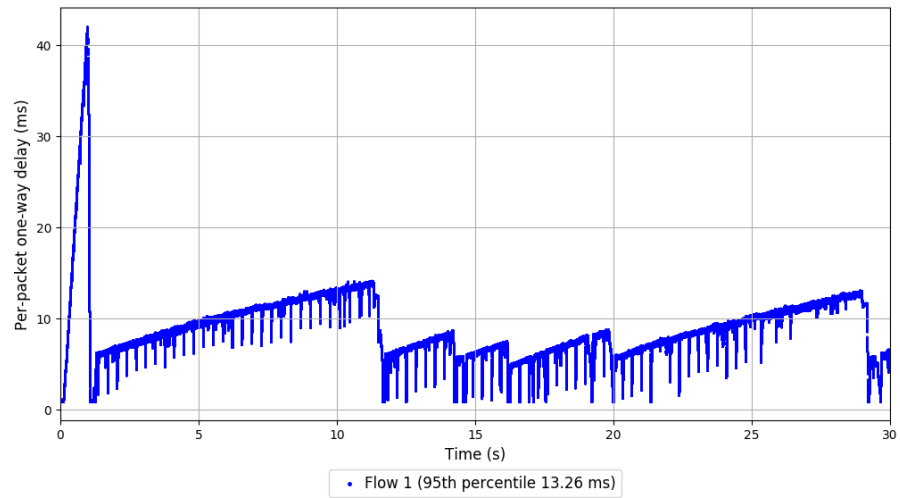
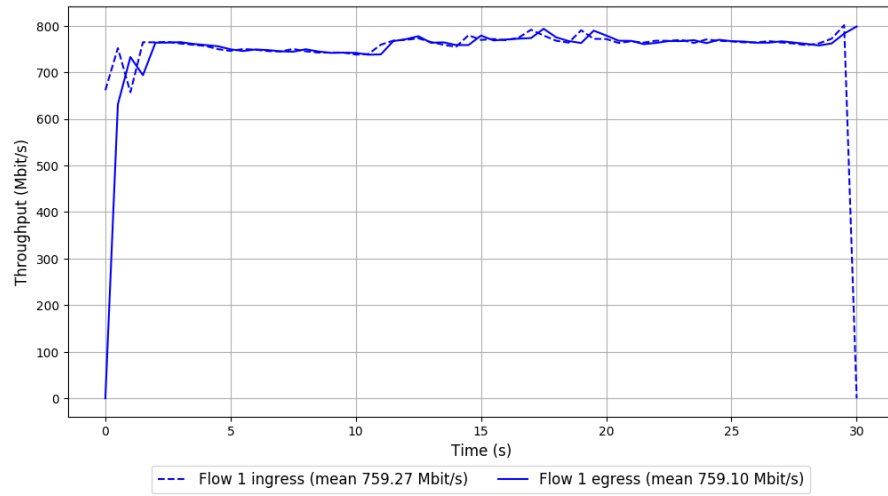
-- Flow 1:

Average throughput: 759.10 Mbit/s

95th percentile per-packet one-way delay: 13.264 ms

Loss rate: 0.03%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-12-20 05:17:45

End at: 2018-12-20 05:18:15

Local clock offset: 1.099 ms

Remote clock offset: 4.441 ms

Below is generated by plot.py at 2018-12-20 07:13:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 759.70 Mbit/s

95th percentile per-packet one-way delay: 12.659 ms

Loss rate: 0.05%

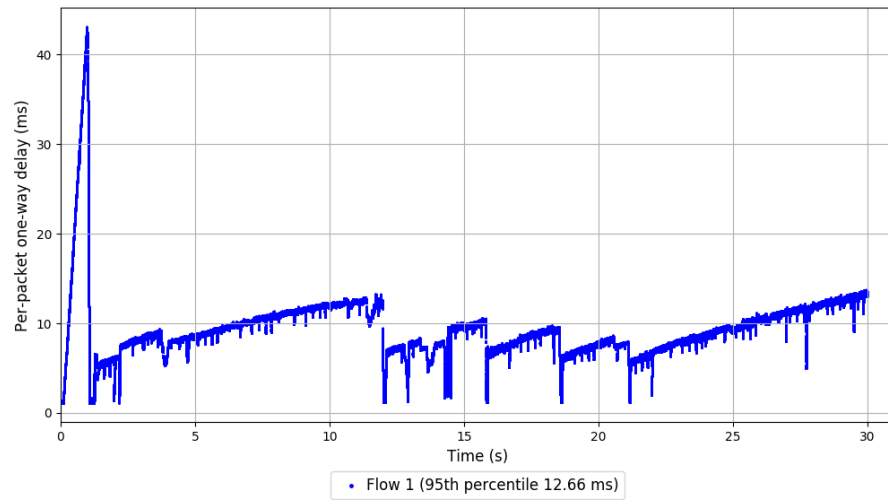
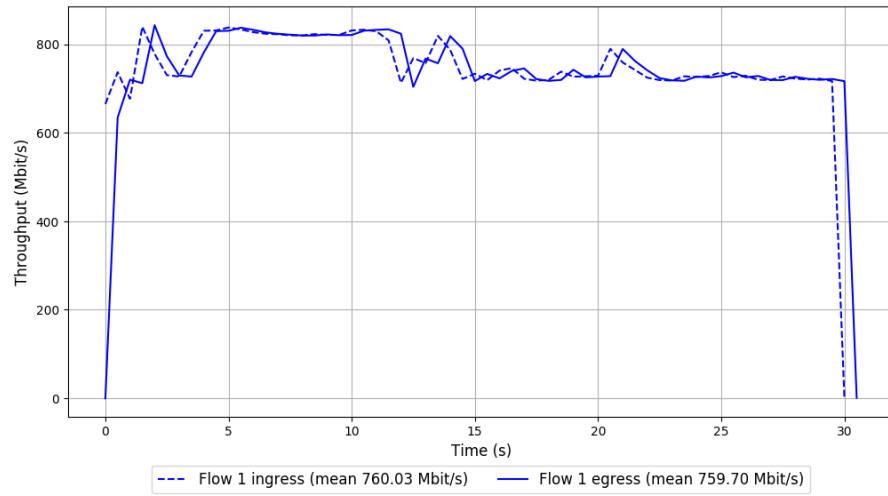
-- Flow 1:

Average throughput: 759.70 Mbit/s

95th percentile per-packet one-way delay: 12.659 ms

Loss rate: 0.05%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-12-20 05:44:43

End at: 2018-12-20 05:45:13

Local clock offset: 2.303 ms

Remote clock offset: 0.725 ms

Below is generated by plot.py at 2018-12-20 07:14:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 796.96 Mbit/s

95th percentile per-packet one-way delay: 11.278 ms

Loss rate: 0.03%

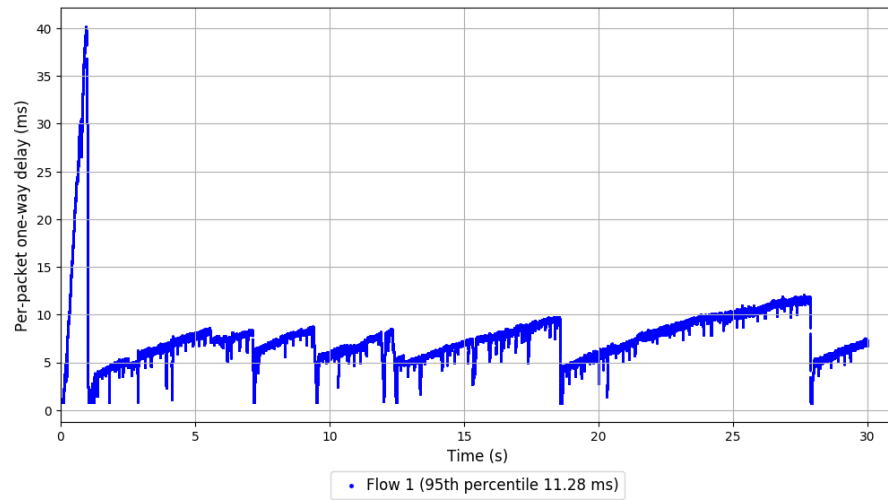
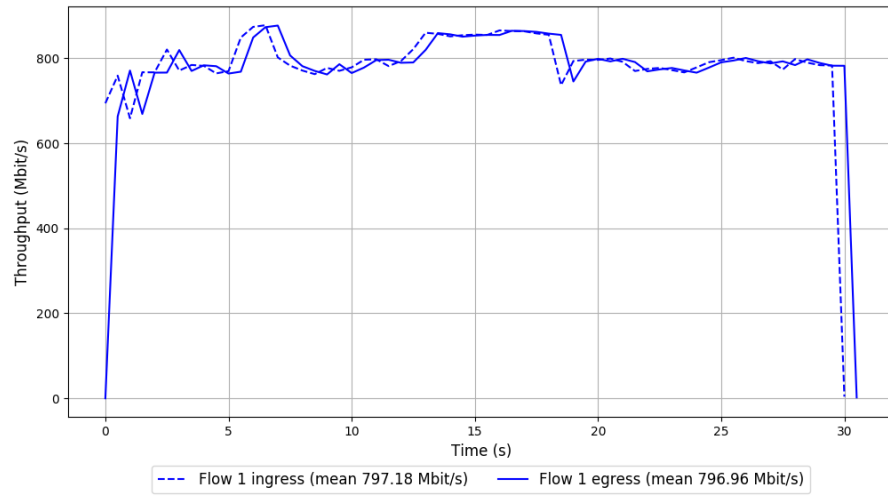
-- Flow 1:

Average throughput: 796.96 Mbit/s

95th percentile per-packet one-way delay: 11.278 ms

Loss rate: 0.03%

Run 3: Report of TCP Cubic — Data Link

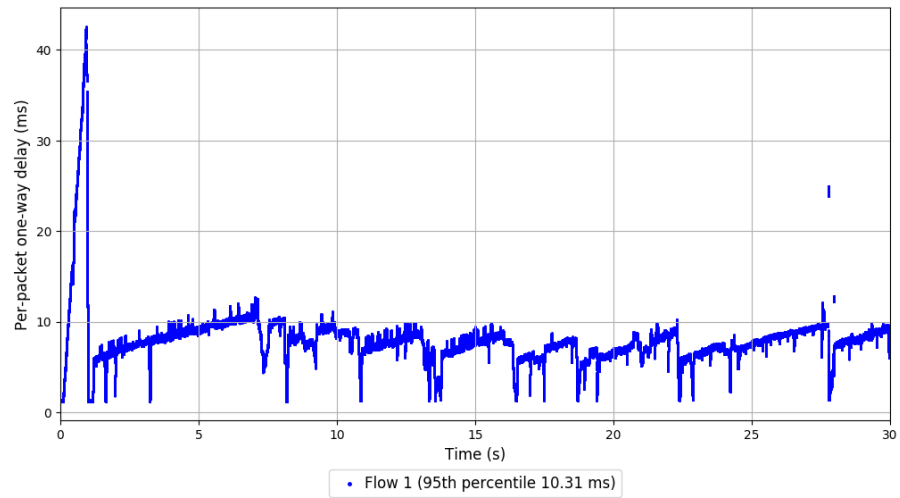
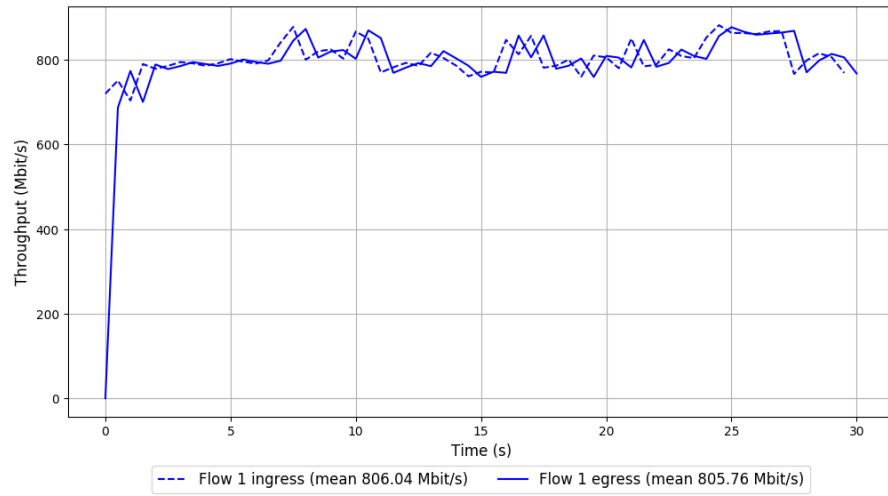


Run 4: Statistics of TCP Cubic

Start at: 2018-12-20 06:11:31
End at: 2018-12-20 06:12:01
Local clock offset: 0.255 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-12-20 07:14:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 805.76 Mbit/s
95th percentile per-packet one-way delay: 10.312 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 805.76 Mbit/s
95th percentile per-packet one-way delay: 10.312 ms
Loss rate: 0.04%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 06:38:15

End at: 2018-12-20 06:38:45

Local clock offset: -2.233 ms

Remote clock offset: 0.348 ms

Below is generated by plot.py at 2018-12-20 07:15:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 819.83 Mbit/s

95th percentile per-packet one-way delay: 12.234 ms

Loss rate: 0.03%

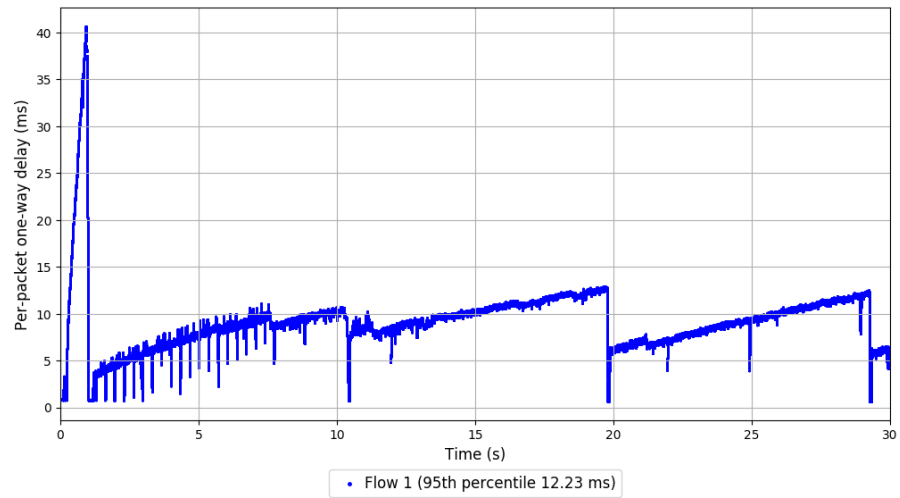
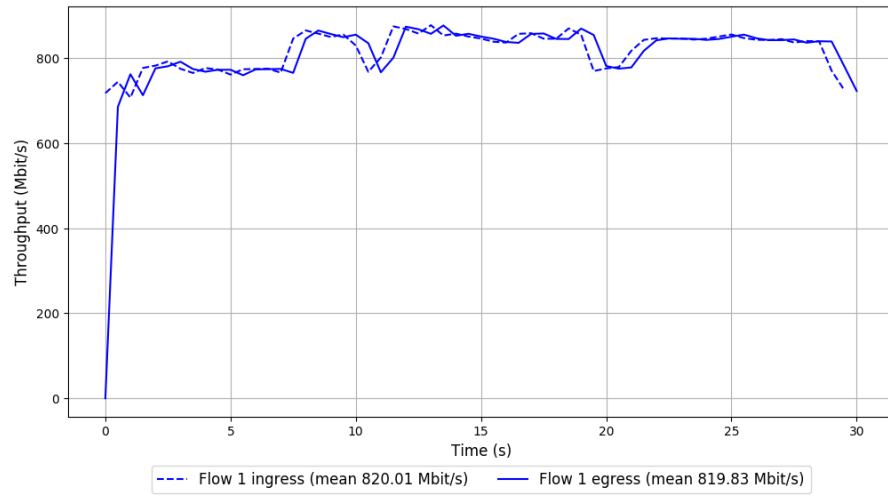
-- Flow 1:

Average throughput: 819.83 Mbit/s

95th percentile per-packet one-way delay: 12.234 ms

Loss rate: 0.03%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-12-20 04:57:50

End at: 2018-12-20 04:58:20

Local clock offset: 3.812 ms

Remote clock offset: 1.239 ms

Below is generated by plot.py at 2018-12-20 07:17:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 870.17 Mbit/s

95th percentile per-packet one-way delay: 38.530 ms

Loss rate: 1.34%

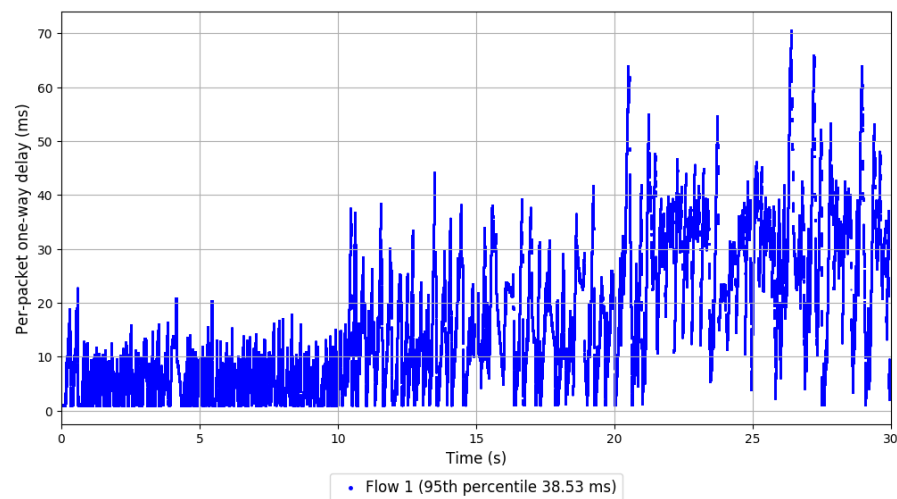
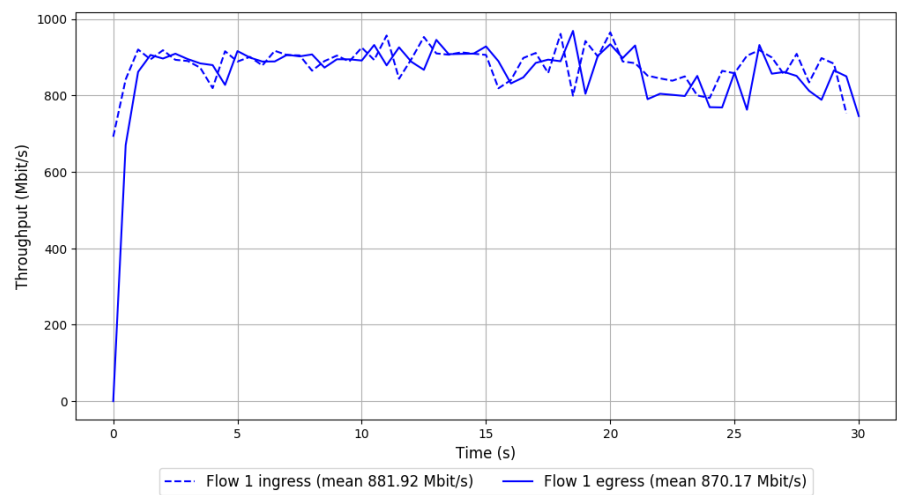
-- Flow 1:

Average throughput: 870.17 Mbit/s

95th percentile per-packet one-way delay: 38.530 ms

Loss rate: 1.34%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-12-20 05:24:47

End at: 2018-12-20 05:25:17

Local clock offset: 0.448 ms

Remote clock offset: 5.093 ms

Below is generated by plot.py at 2018-12-20 07:25:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 903.37 Mbit/s

95th percentile per-packet one-way delay: 34.154 ms

Loss rate: 0.43%

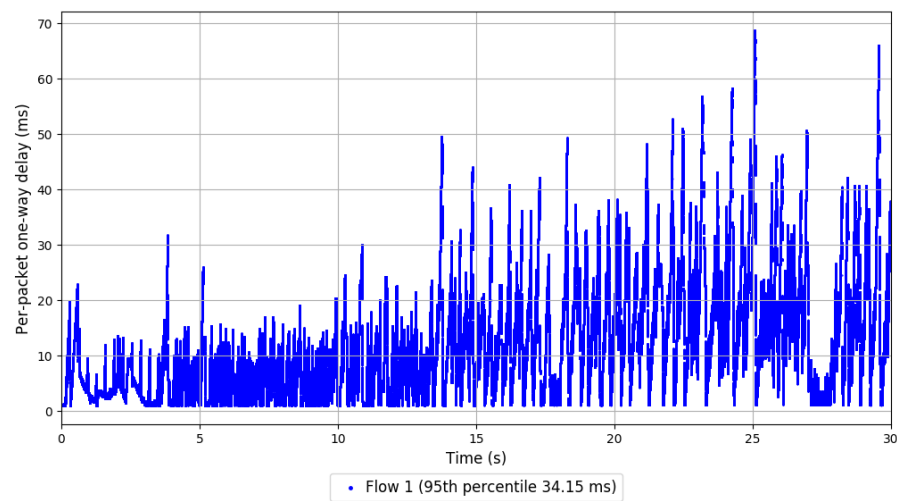
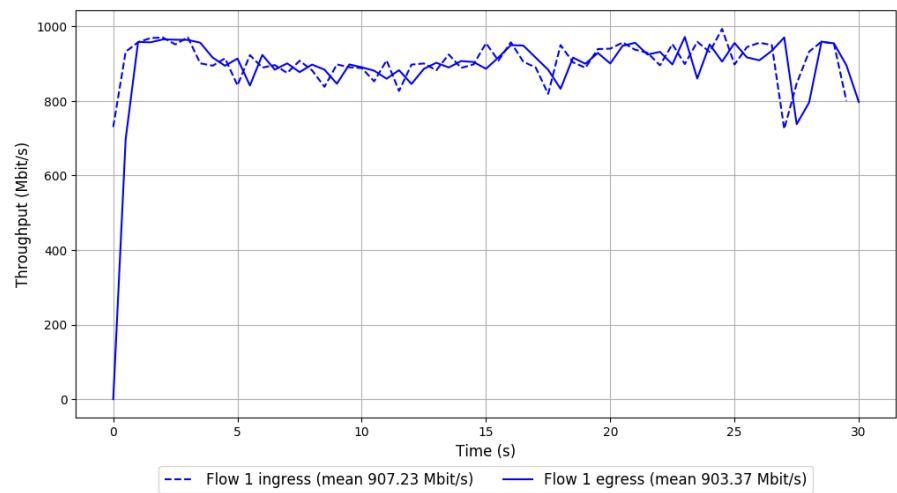
-- Flow 1:

Average throughput: 903.37 Mbit/s

95th percentile per-packet one-way delay: 34.154 ms

Loss rate: 0.43%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-12-20 05:51:46

End at: 2018-12-20 05:52:16

Local clock offset: 3.128 ms

Remote clock offset: 0.162 ms

Below is generated by plot.py at 2018-12-20 07:25:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 904.21 Mbit/s

95th percentile per-packet one-way delay: 38.949 ms

Loss rate: 1.07%

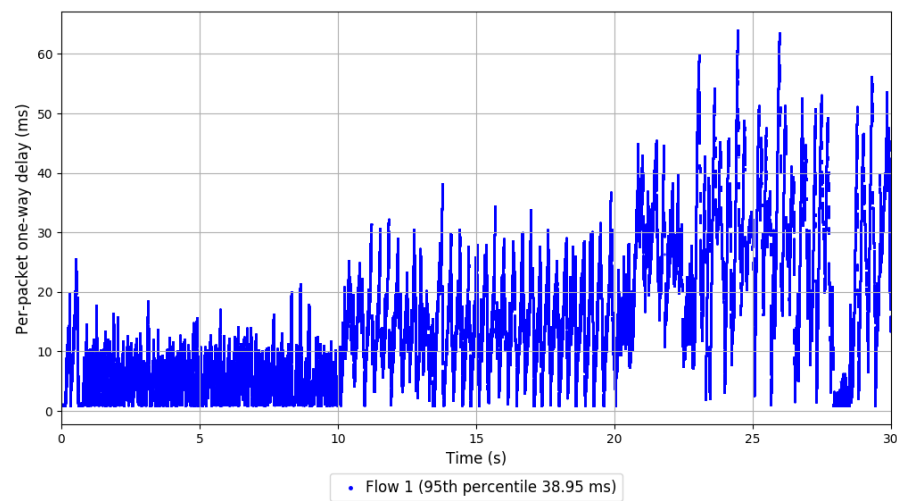
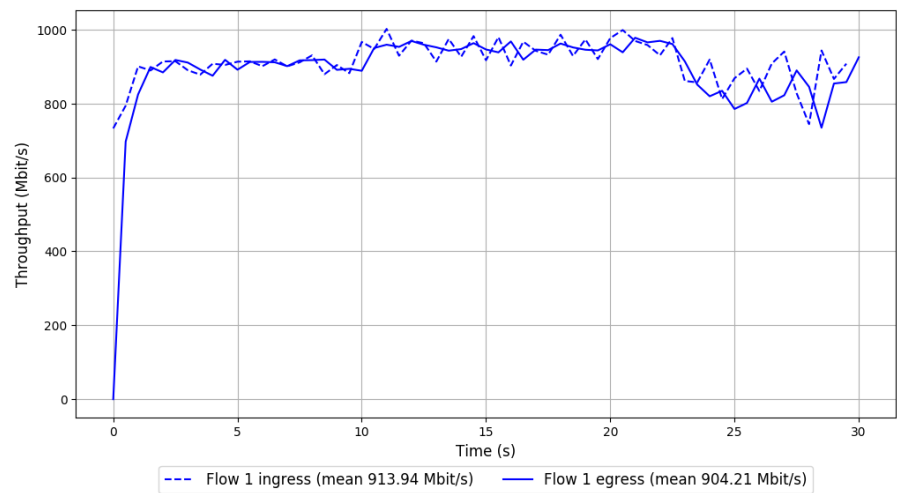
-- Flow 1:

Average throughput: 904.21 Mbit/s

95th percentile per-packet one-way delay: 38.949 ms

Loss rate: 1.07%

Run 3: Report of FillP — Data Link

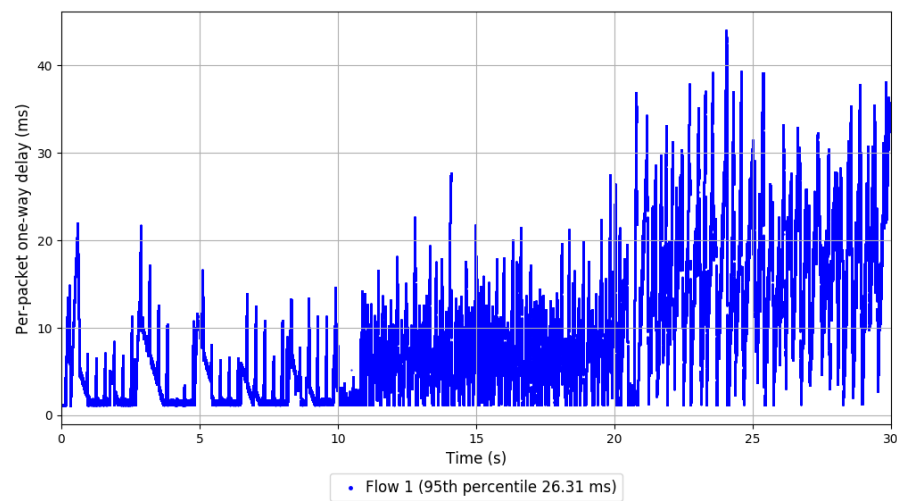
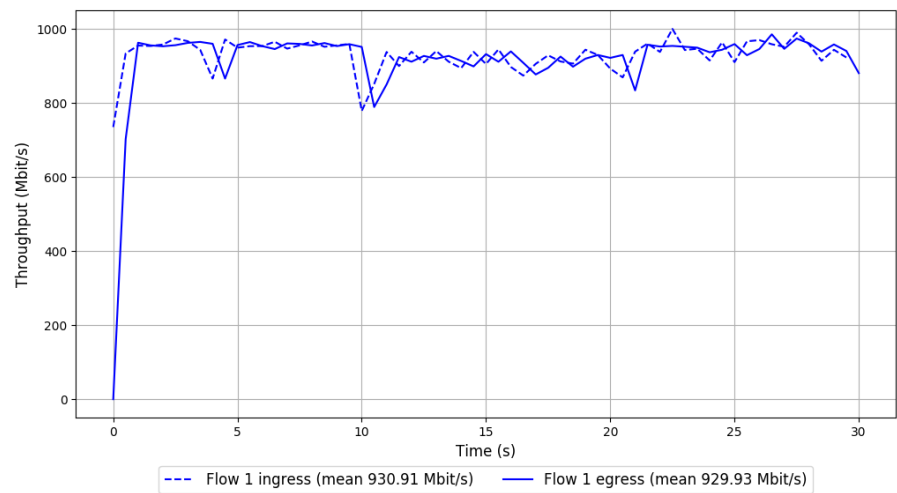


Run 4: Statistics of FillP

Start at: 2018-12-20 06:18:34
End at: 2018-12-20 06:19:04
Local clock offset: -2.002 ms
Remote clock offset: -0.169 ms

Below is generated by plot.py at 2018-12-20 07:25:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 929.93 Mbit/s
95th percentile per-packet one-way delay: 26.310 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 929.93 Mbit/s
95th percentile per-packet one-way delay: 26.310 ms
Loss rate: 0.11%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-12-20 06:45:19

End at: 2018-12-20 06:45:49

Local clock offset: 1.162 ms

Remote clock offset: 2.117 ms

Below is generated by plot.py at 2018-12-20 07:25:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 918.48 Mbit/s

95th percentile per-packet one-way delay: 24.869 ms

Loss rate: 0.13%

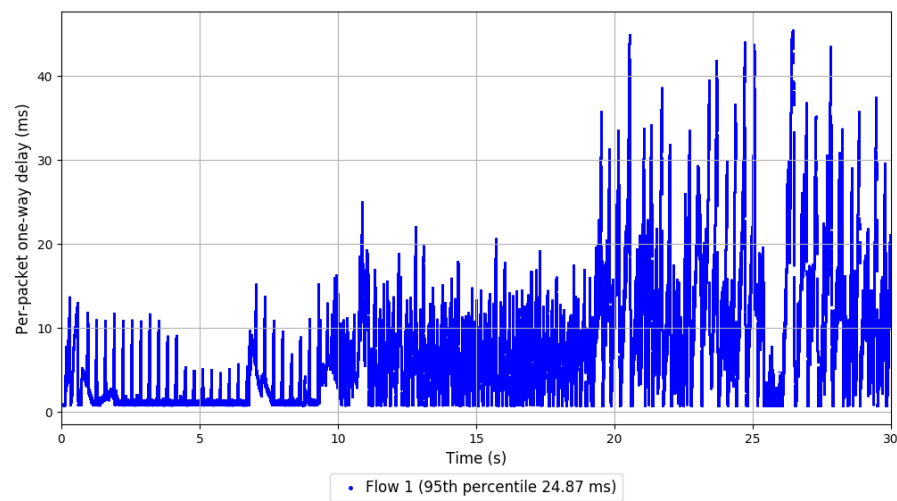
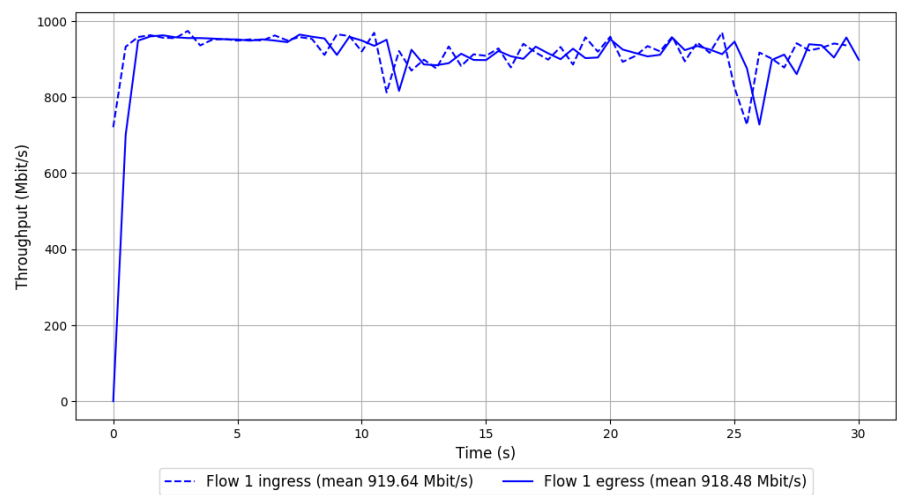
-- Flow 1:

Average throughput: 918.48 Mbit/s

95th percentile per-packet one-way delay: 24.869 ms

Loss rate: 0.13%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-12-20 04:54:54

End at: 2018-12-20 04:55:24

Local clock offset: 3.583 ms

Remote clock offset: 0.321 ms

Below is generated by plot.py at 2018-12-20 07:26:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 932.76 Mbit/s

95th percentile per-packet one-way delay: 4.949 ms

Loss rate: 0.01%

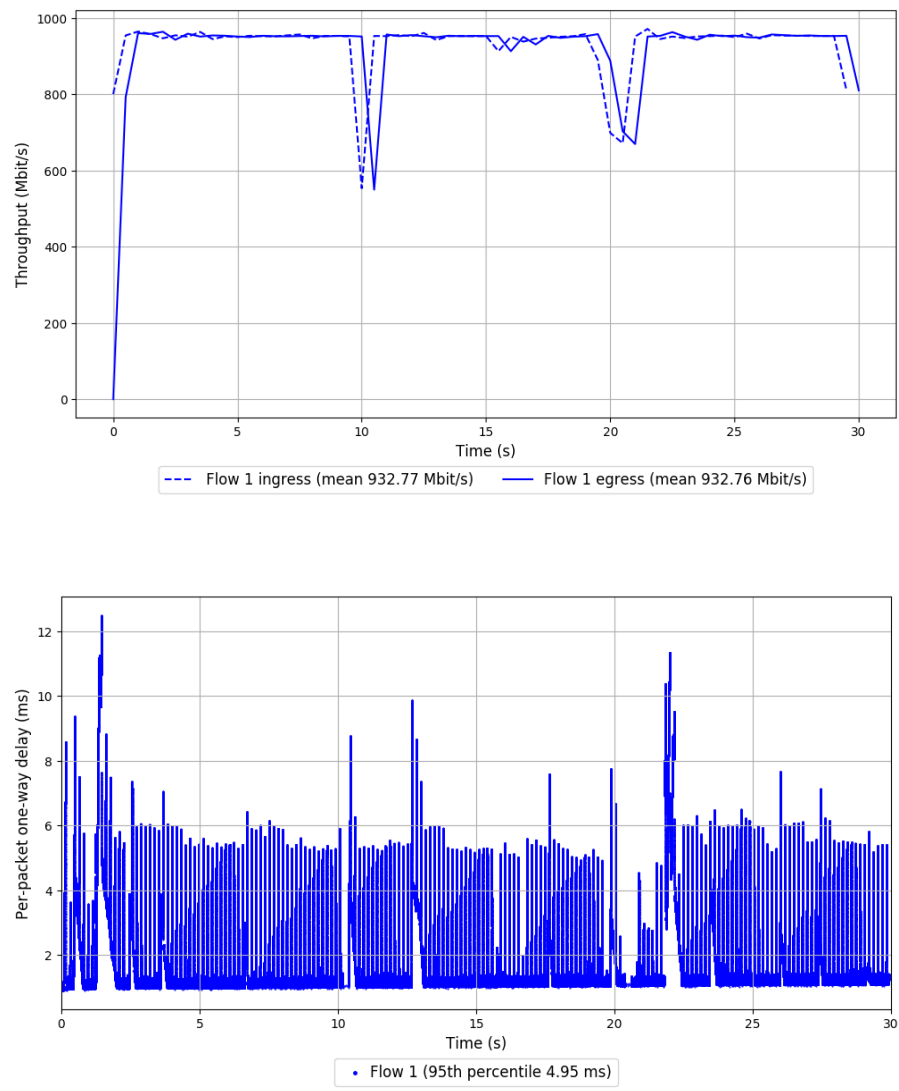
-- Flow 1:

Average throughput: 932.76 Mbit/s

95th percentile per-packet one-way delay: 4.949 ms

Loss rate: 0.01%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-12-20 05:21:50

End at: 2018-12-20 05:22:20

Local clock offset: 0.661 ms

Remote clock offset: 4.807 ms

Below is generated by plot.py at 2018-12-20 07:26:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 943.23 Mbit/s

95th percentile per-packet one-way delay: 9.893 ms

Loss rate: 0.01%

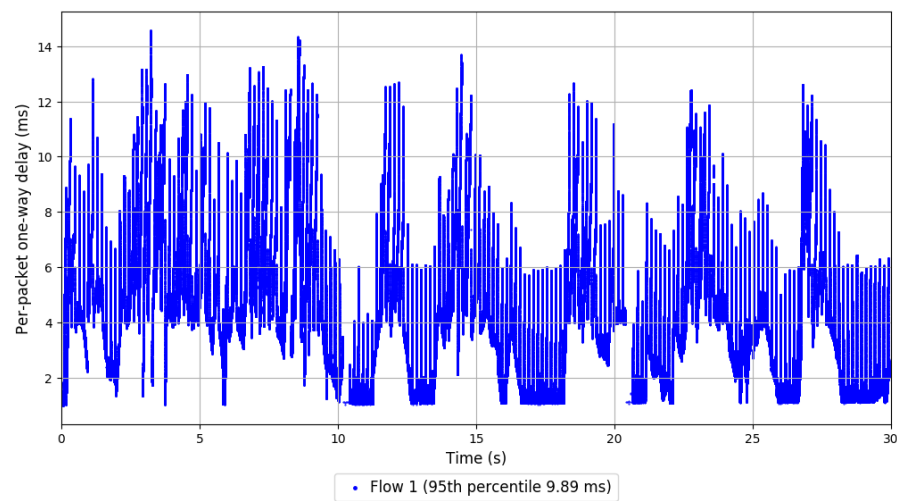
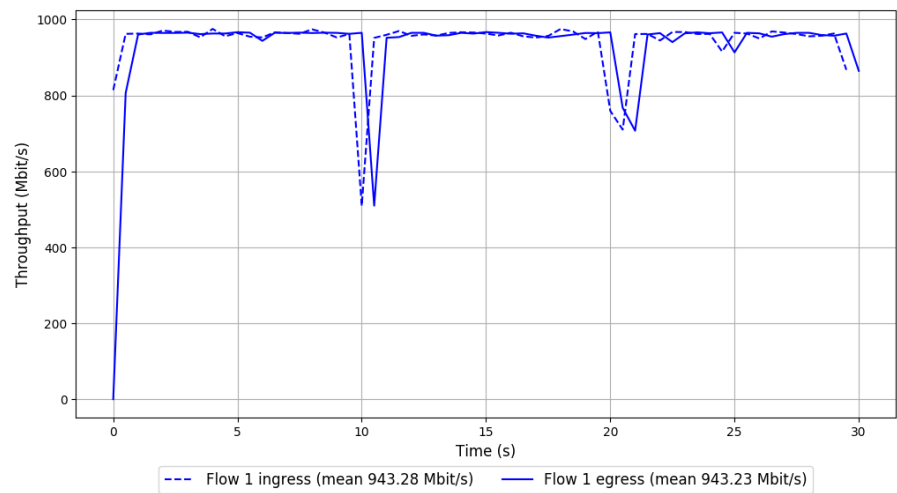
-- Flow 1:

Average throughput: 943.23 Mbit/s

95th percentile per-packet one-way delay: 9.893 ms

Loss rate: 0.01%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-12-20 05:48:49

End at: 2018-12-20 05:49:19

Local clock offset: 2.804 ms

Remote clock offset: 0.335 ms

Below is generated by plot.py at 2018-12-20 07:27:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 941.46 Mbit/s

95th percentile per-packet one-way delay: 8.834 ms

Loss rate: 0.01%

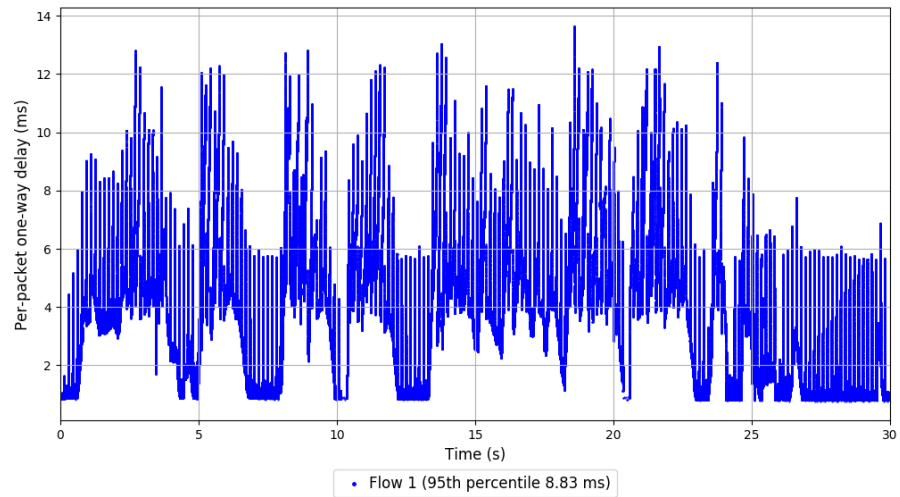
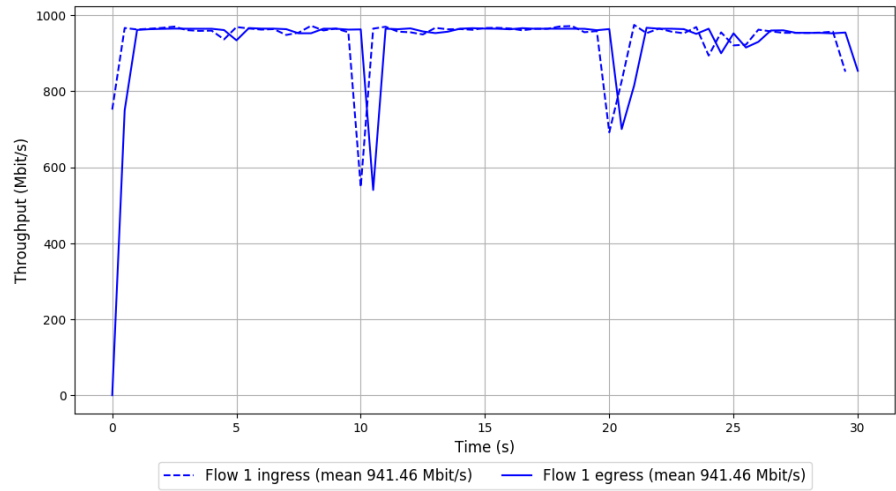
-- Flow 1:

Average throughput: 941.46 Mbit/s

95th percentile per-packet one-way delay: 8.834 ms

Loss rate: 0.01%

Run 3: Report of FillP-Sheep — Data Link

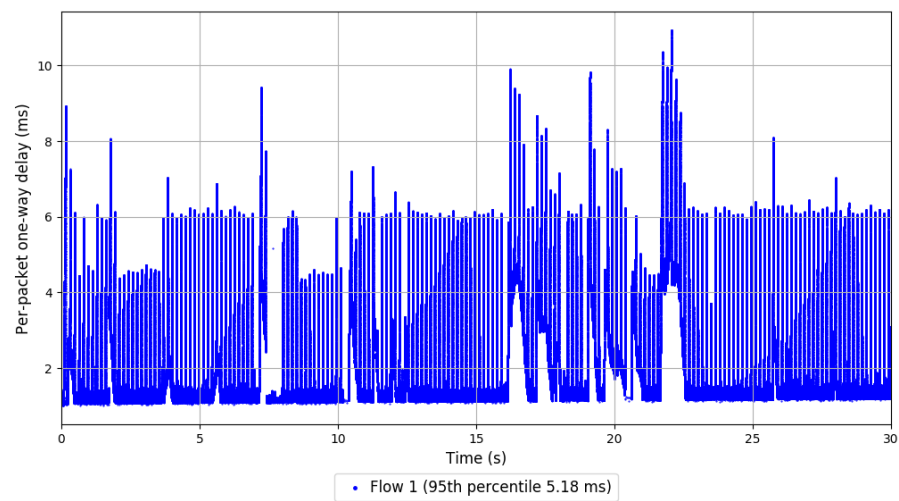
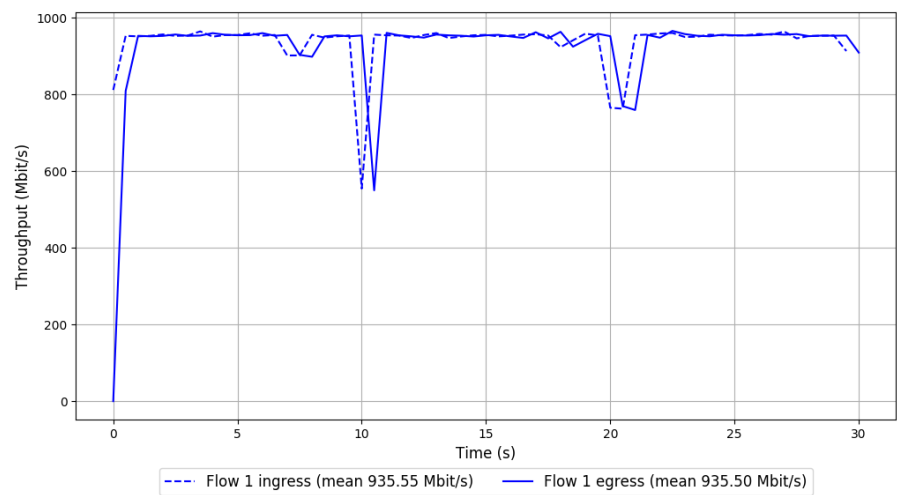


Run 4: Statistics of FillP-Sheep

Start at: 2018-12-20 06:15:37
End at: 2018-12-20 06:16:07
Local clock offset: -1.205 ms
Remote clock offset: -0.054 ms

Below is generated by plot.py at 2018-12-20 07:31:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 935.50 Mbit/s
95th percentile per-packet one-way delay: 5.181 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 935.50 Mbit/s
95th percentile per-packet one-way delay: 5.181 ms
Loss rate: 0.01%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 06:42:22

End at: 2018-12-20 06:42:52

Local clock offset: 0.046 ms

Remote clock offset: 1.557 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 934.90 Mbit/s

95th percentile per-packet one-way delay: 4.594 ms

Loss rate: 0.01%

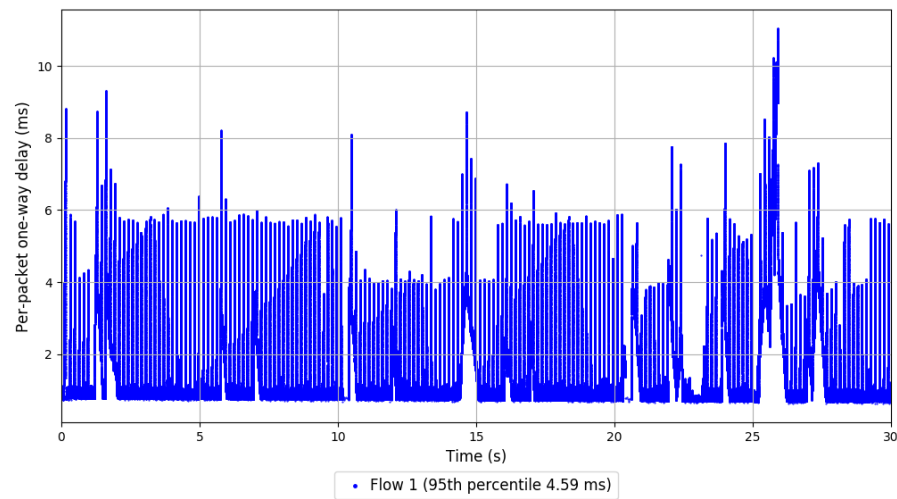
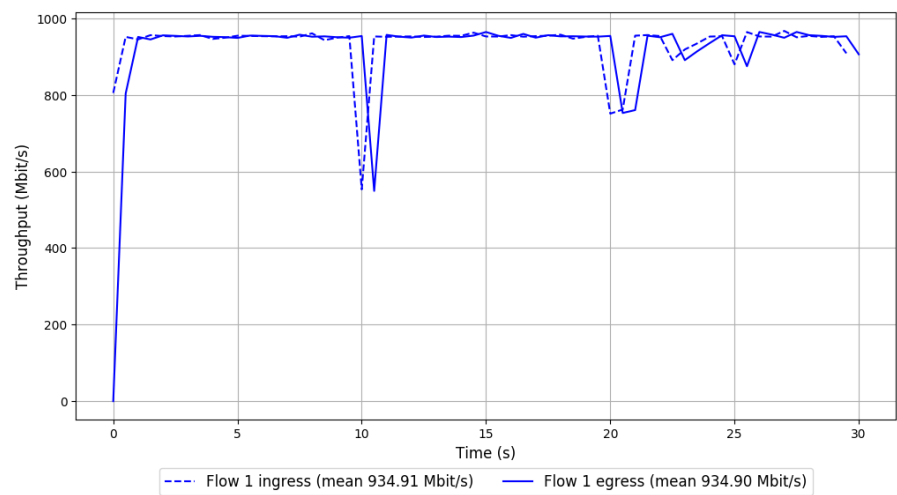
-- Flow 1:

Average throughput: 934.90 Mbit/s

95th percentile per-packet one-way delay: 4.594 ms

Loss rate: 0.01%

Run 5: Report of FillP-Sheep — Data Link

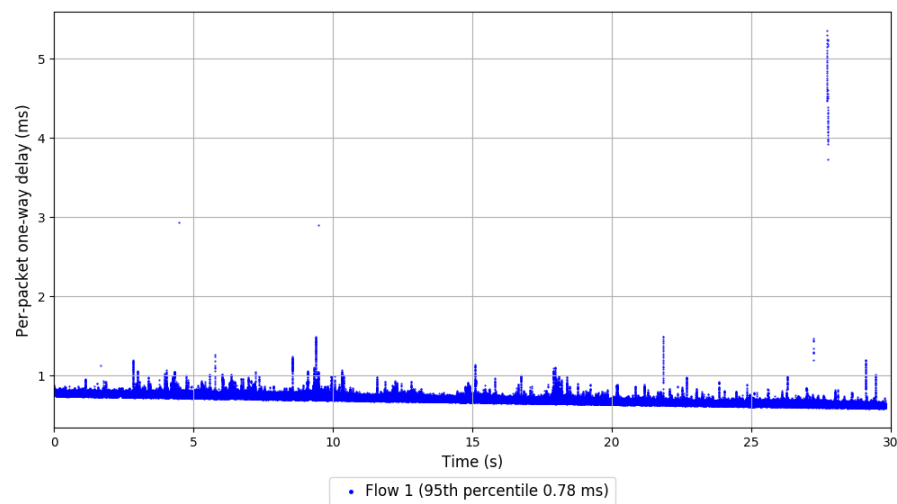
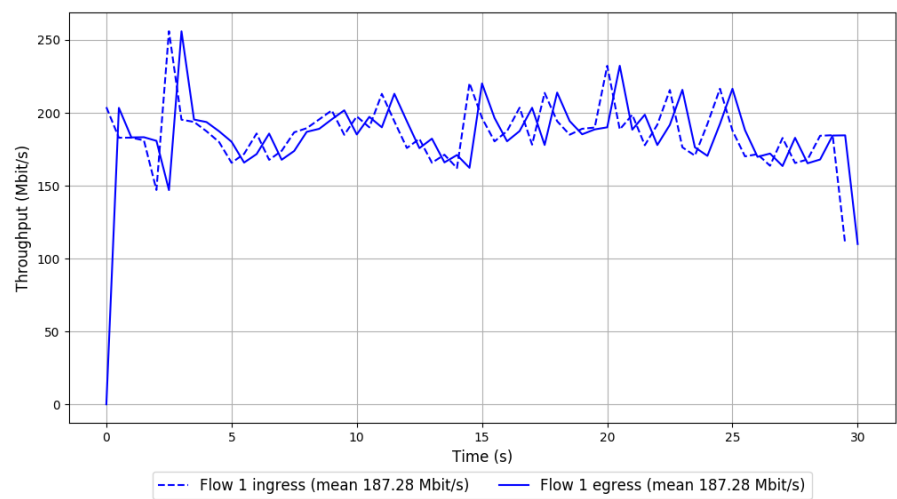


```
Run 1: Statistics of Indigo

Start at: 2018-12-20 04:37:07
End at: 2018-12-20 04:37:38
Local clock offset: 0.592 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2018-12-20 07:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.28 Mbit/s
95th percentile per-packet one-way delay: 0.779 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 187.28 Mbit/s
95th percentile per-packet one-way delay: 0.779 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-12-20 05:03:55

End at: 2018-12-20 05:04:25

Local clock offset: 4.176 ms

Remote clock offset: 2.63 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 185.61 Mbit/s

95th percentile per-packet one-way delay: 1.114 ms

Loss rate: 0.00%

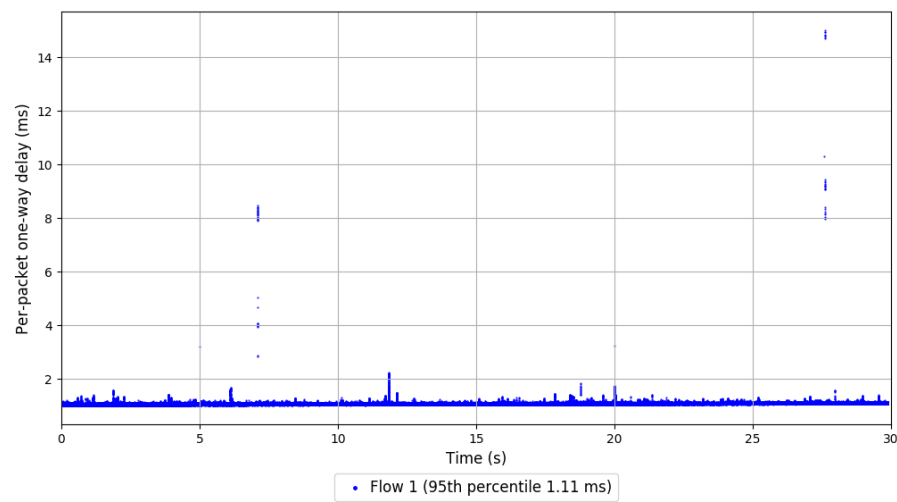
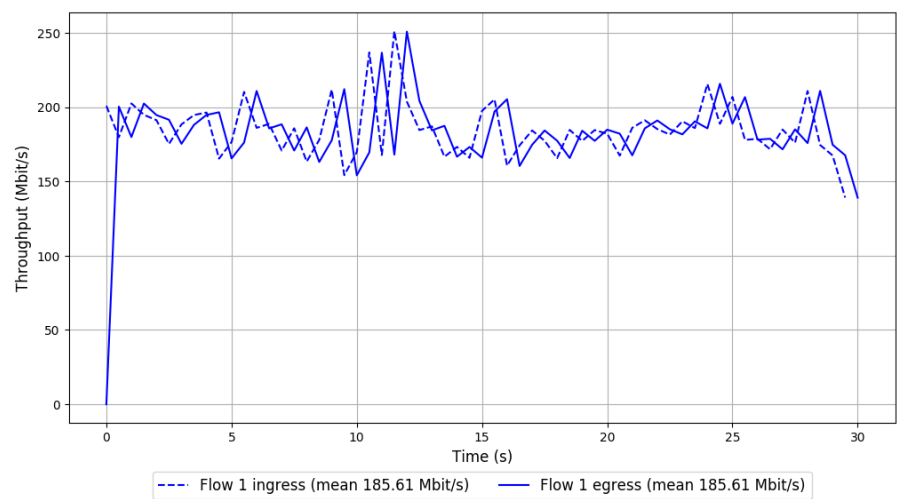
-- Flow 1:

Average throughput: 185.61 Mbit/s

95th percentile per-packet one-way delay: 1.114 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-12-20 05:30:50

End at: 2018-12-20 05:31:20

Local clock offset: 0.145 ms

Remote clock offset: 3.915 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 187.24 Mbit/s

95th percentile per-packet one-way delay: 1.441 ms

Loss rate: 0.01%

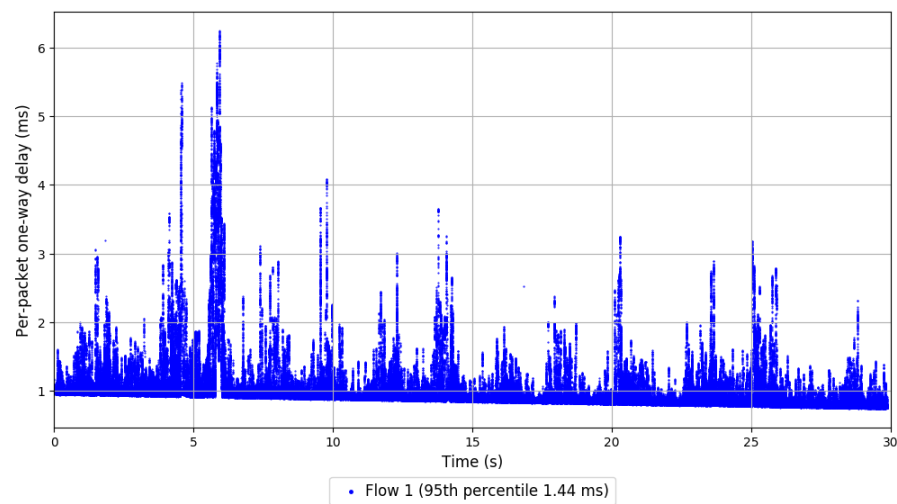
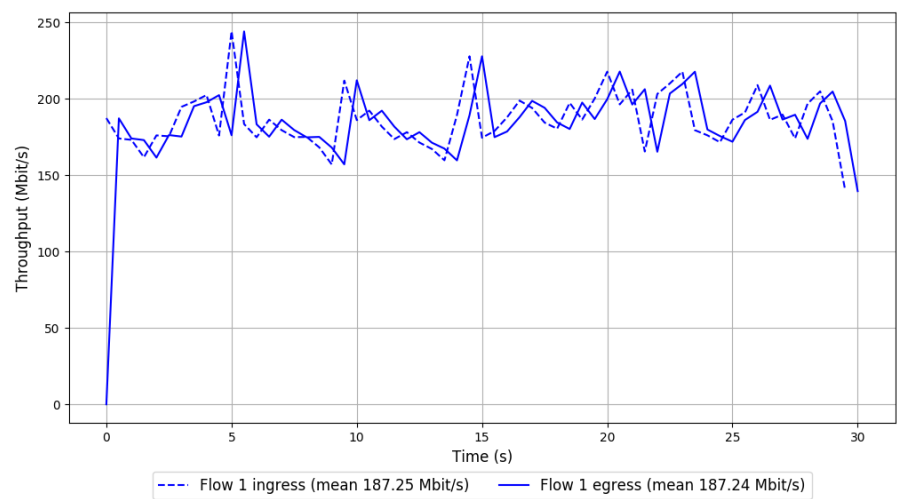
-- Flow 1:

Average throughput: 187.24 Mbit/s

95th percentile per-packet one-way delay: 1.441 ms

Loss rate: 0.01%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-12-20 05:57:48

End at: 2018-12-20 05:58:19

Local clock offset: 3.551 ms

Remote clock offset: -0.009 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 185.70 Mbit/s

95th percentile per-packet one-way delay: 1.022 ms

Loss rate: 0.01%

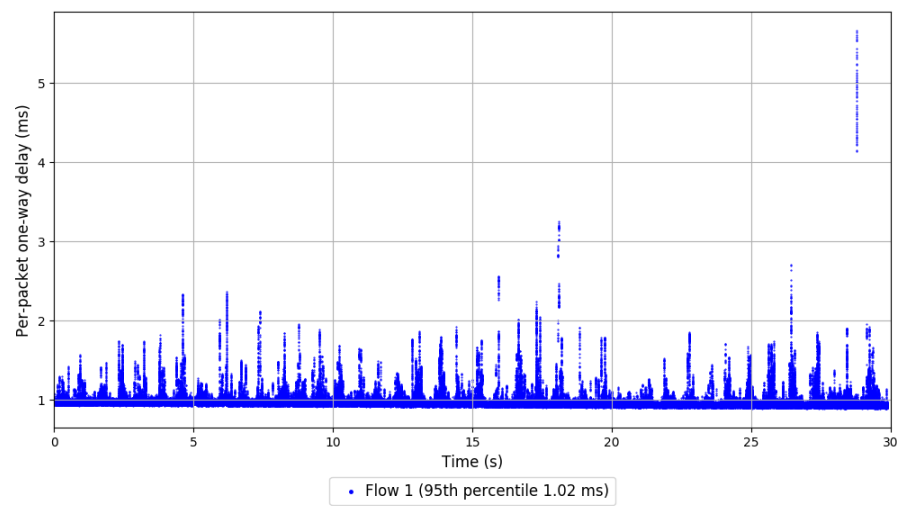
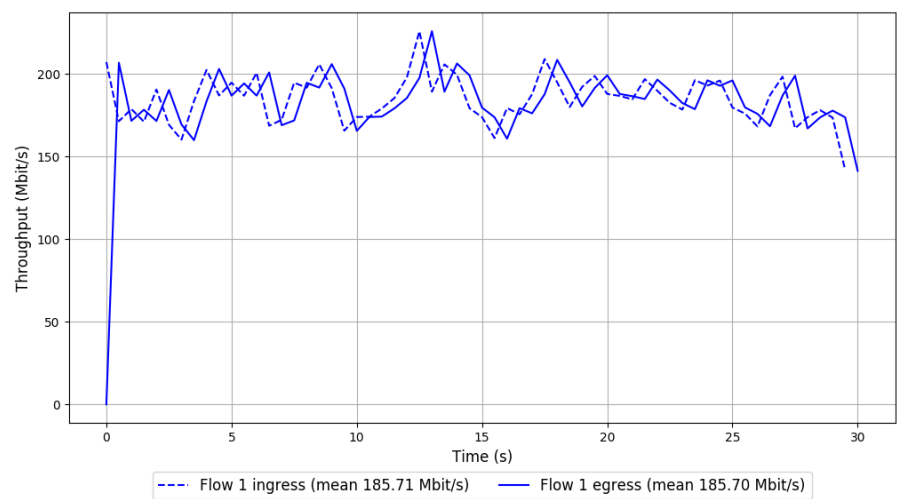
-- Flow 1:

Average throughput: 185.70 Mbit/s

95th percentile per-packet one-way delay: 1.022 ms

Loss rate: 0.01%

Run 4: Report of Indigo — Data Link

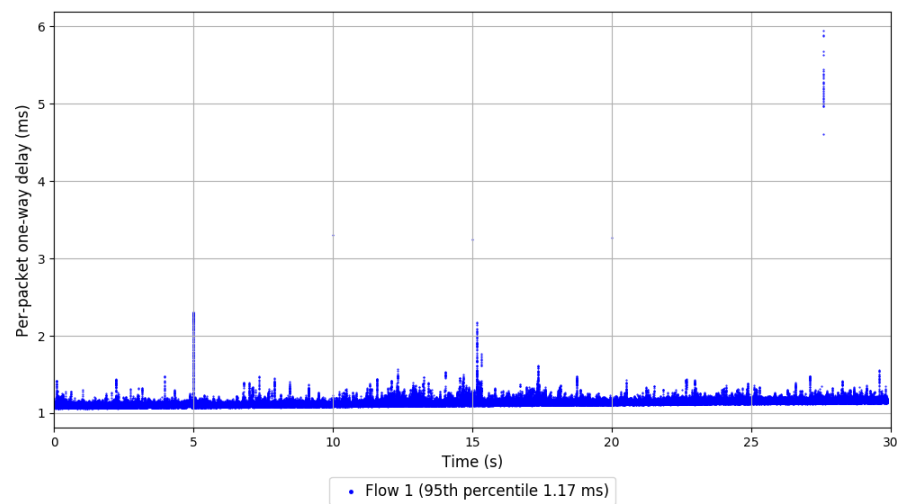
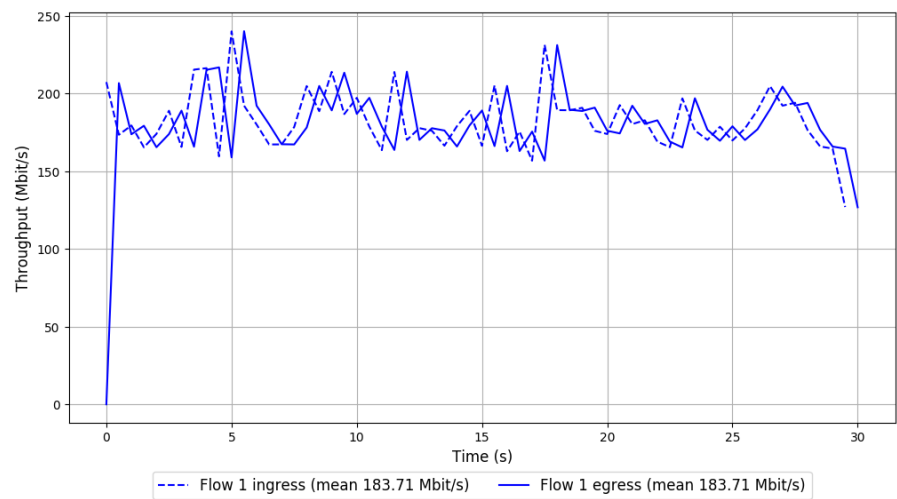


Run 5: Statistics of Indigo

Start at: 2018-12-20 06:24:20
End at: 2018-12-20 06:24:50
Local clock offset: -3.114 ms
Remote clock offset: -0.192 ms

Below is generated by plot.py at 2018-12-20 07:37:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 183.71 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 183.71 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.01%

Run 5: Report of Indigo — Data Link

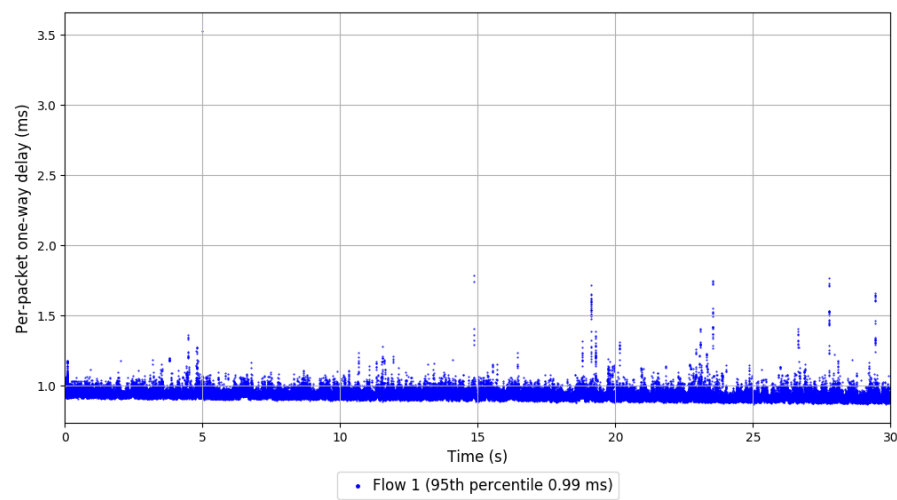
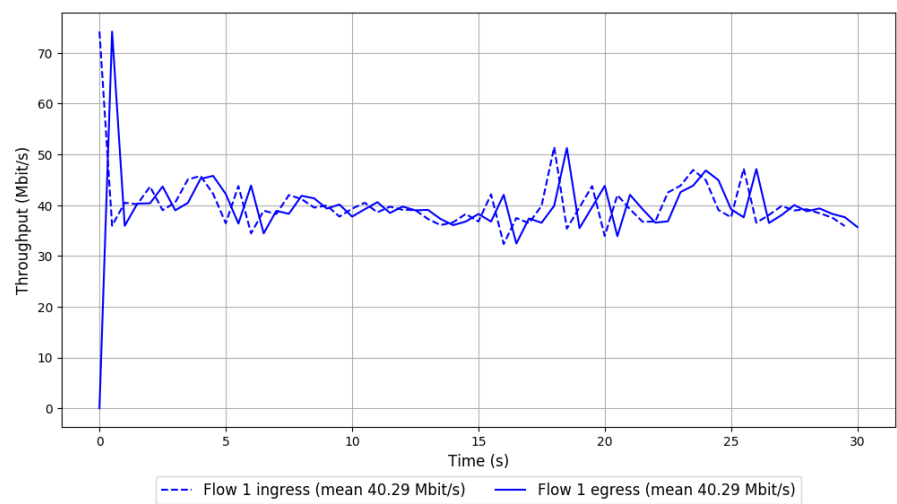


```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-20 04:52:26
End at: 2018-12-20 04:52:56
Local clock offset: 3.374 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-12-20 07:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.29 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 40.29 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-20 05:19:22

End at: 2018-12-20 05:19:52

Local clock offset: 0.899 ms

Remote clock offset: 4.59 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.89 Mbit/s

95th percentile per-packet one-way delay: 1.283 ms

Loss rate: 0.01%

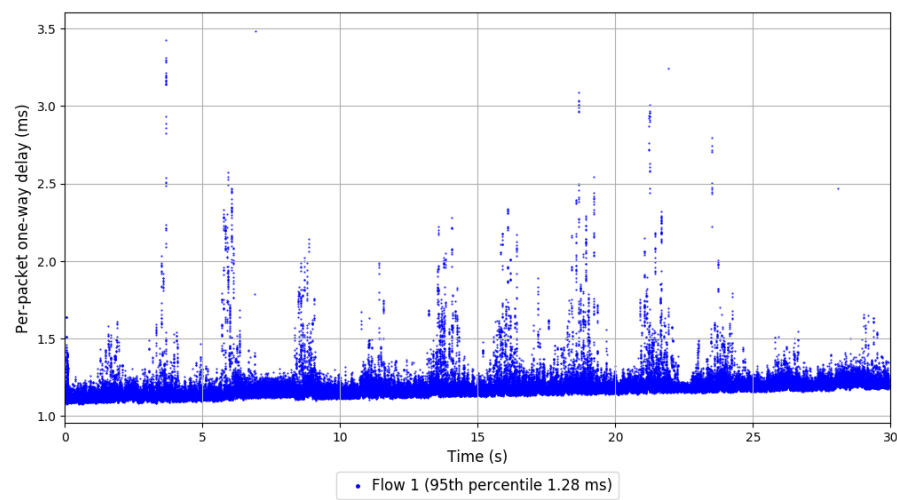
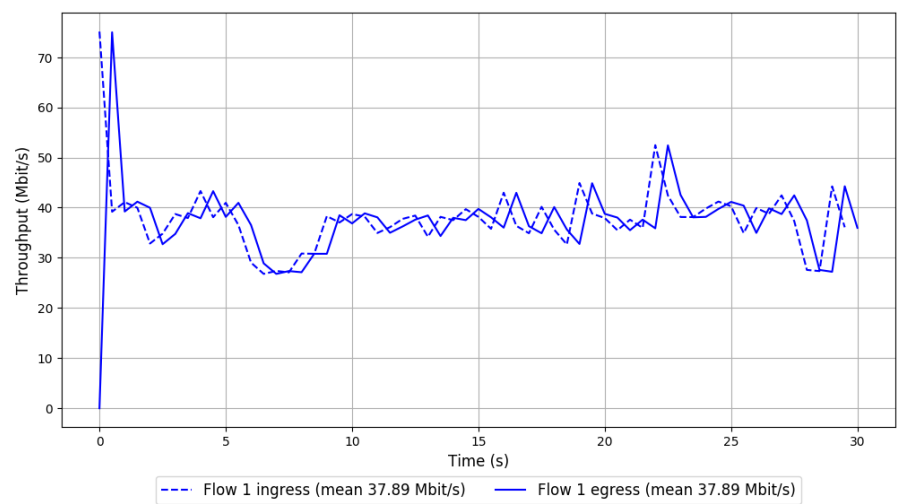
-- Flow 1:

Average throughput: 37.89 Mbit/s

95th percentile per-packet one-way delay: 1.283 ms

Loss rate: 0.01%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-20 05:46:21

End at: 2018-12-20 05:46:51

Local clock offset: 2.52 ms

Remote clock offset: 0.514 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.50 Mbit/s

95th percentile per-packet one-way delay: 1.003 ms

Loss rate: 0.00%

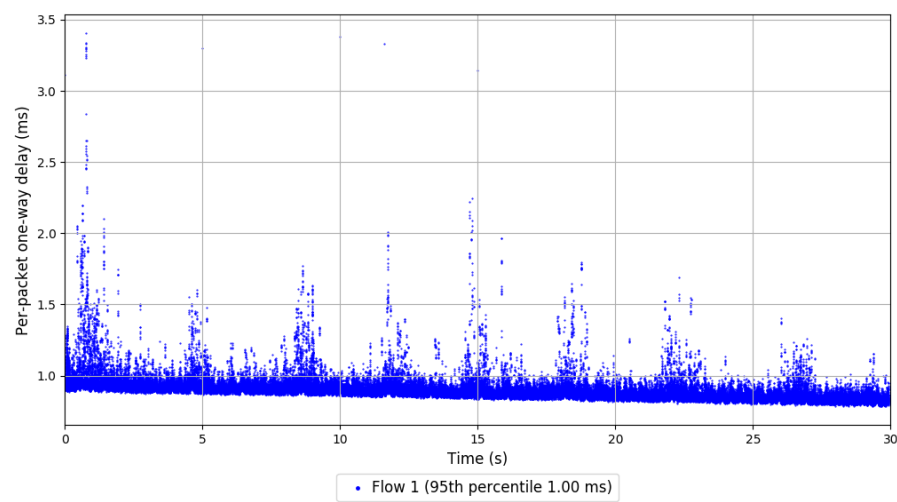
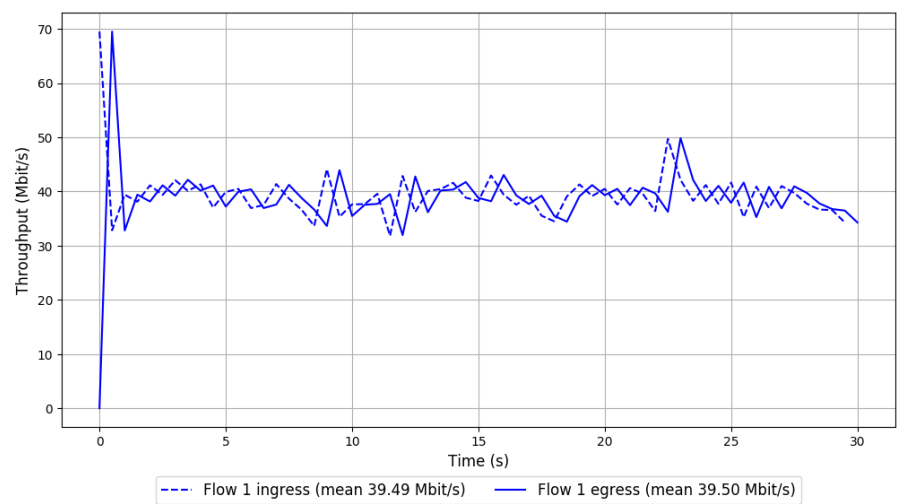
-- Flow 1:

Average throughput: 39.50 Mbit/s

95th percentile per-packet one-way delay: 1.003 ms

Loss rate: 0.00%

Run 3: Report of Indigo-MusesD — Data Link

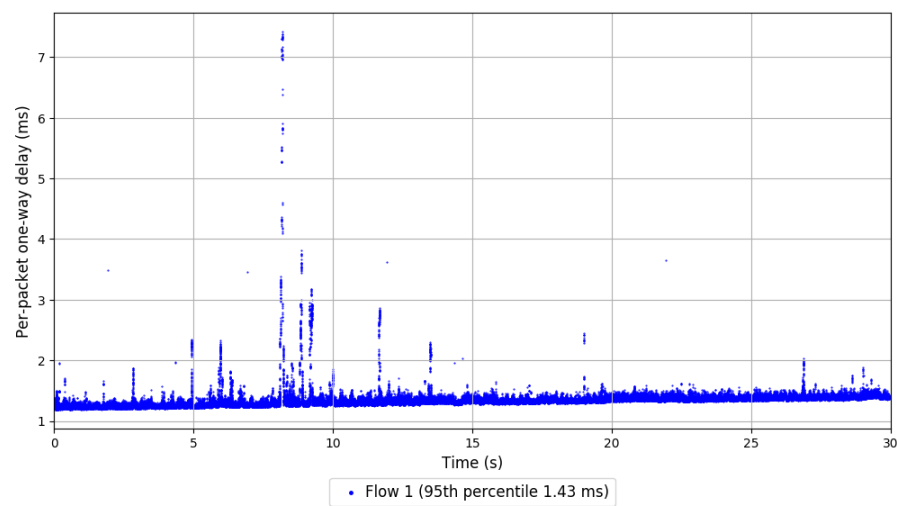
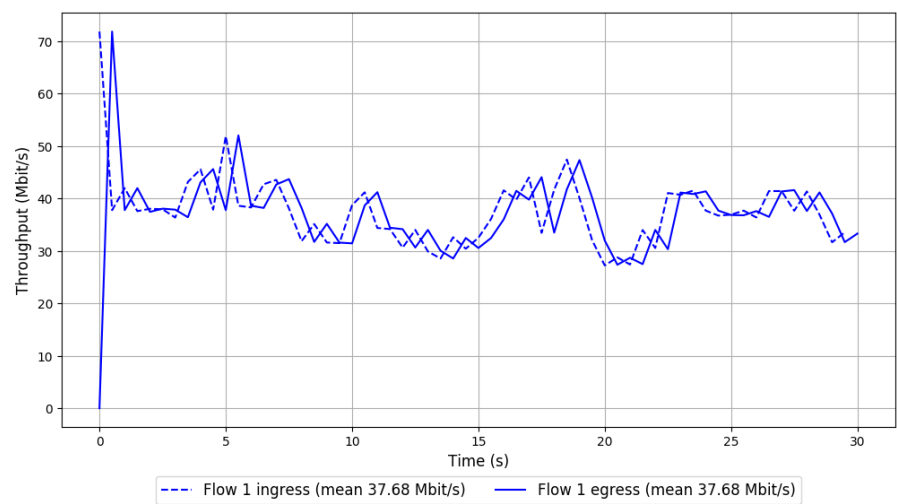


Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-20 06:13:09
End at: 2018-12-20 06:13:39
Local clock offset: -0.313 ms
Remote clock offset: -0.049 ms

Below is generated by plot.py at 2018-12-20 07:37:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 37.68 Mbit/s
95th percentile per-packet one-way delay: 1.429 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 37.68 Mbit/s
95th percentile per-packet one-way delay: 1.429 ms
Loss rate: 0.01%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 06:39:54

End at: 2018-12-20 06:40:24

Local clock offset: -1.338 ms

Remote clock offset: 0.885 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 41.33 Mbit/s

95th percentile per-packet one-way delay: 0.703 ms

Loss rate: 0.01%

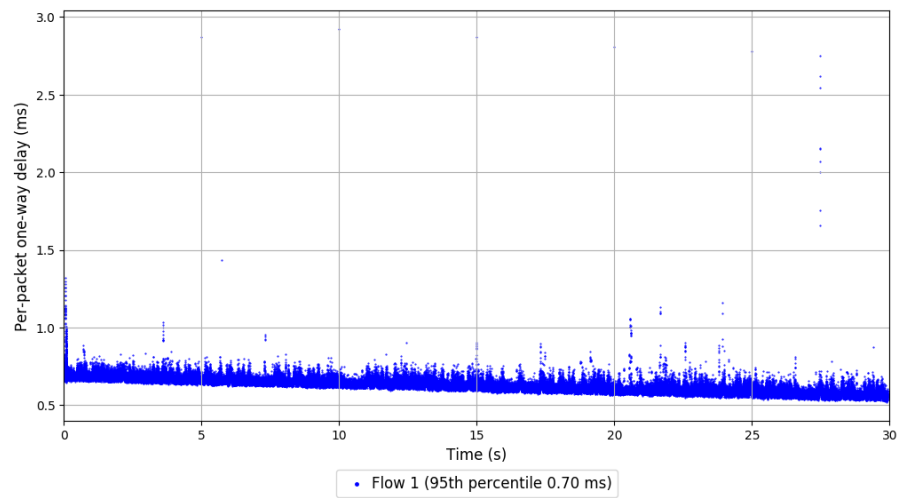
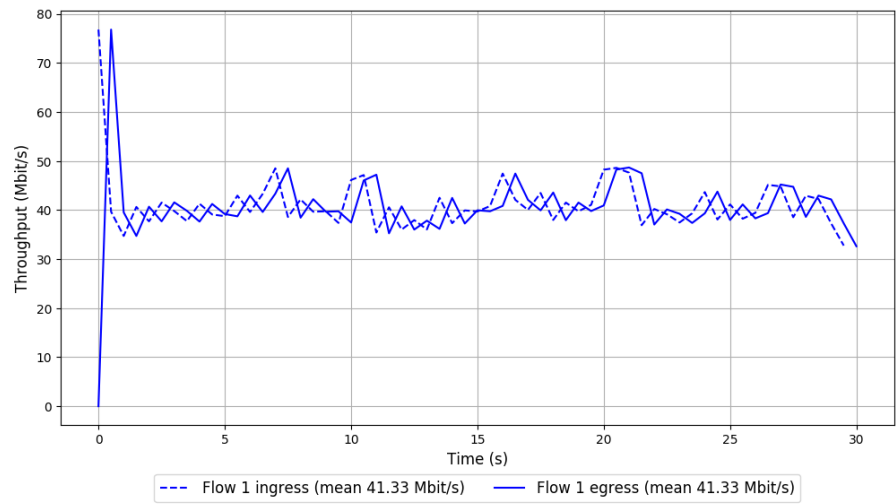
-- Flow 1:

Average throughput: 41.33 Mbit/s

95th percentile per-packet one-way delay: 0.703 ms

Loss rate: 0.01%

Run 5: Report of Indigo-MusesD — Data Link

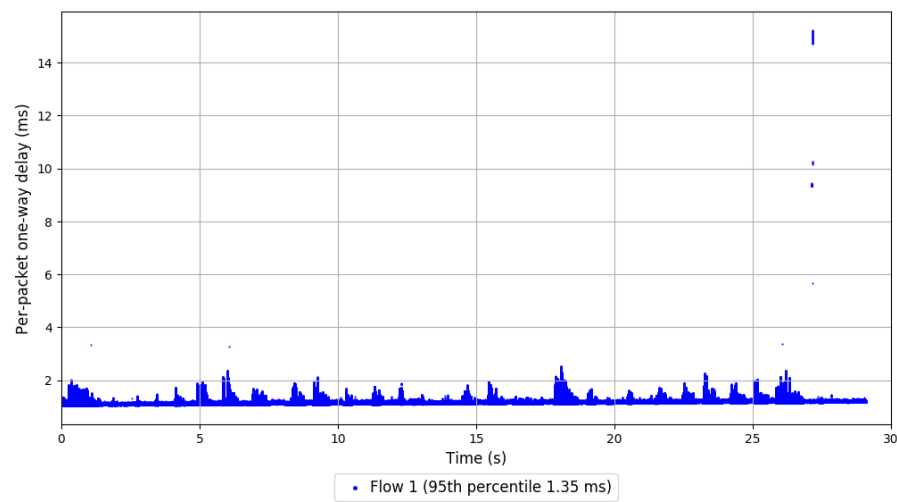
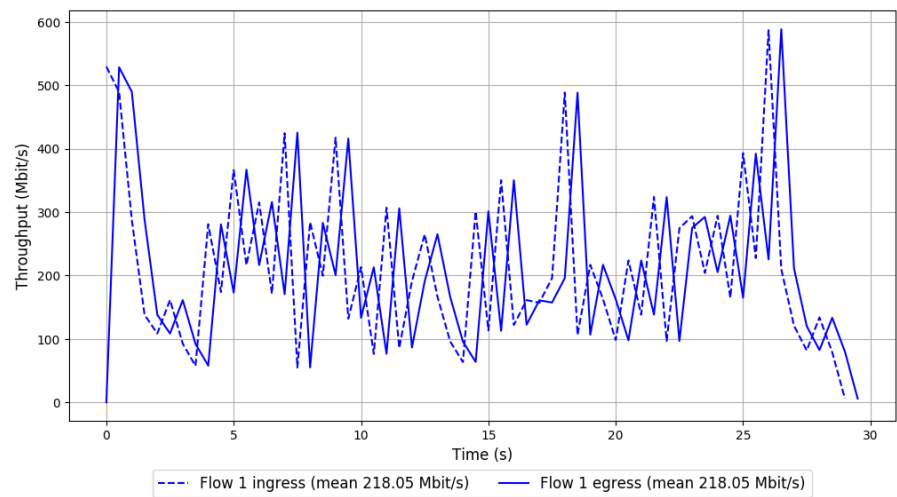


```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-20 04:56:31
End at: 2018-12-20 04:57:01
Local clock offset: 3.722 ms
Remote clock offset: 0.827 ms

# Below is generated by plot.py at 2018-12-20 07:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 218.05 Mbit/s
95th percentile per-packet one-way delay: 1.346 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 218.05 Mbit/s
95th percentile per-packet one-way delay: 1.346 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-20 05:23:27

End at: 2018-12-20 05:23:57

Local clock offset: 0.553 ms

Remote clock offset: 4.939 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 225.06 Mbit/s

95th percentile per-packet one-way delay: 1.726 ms

Loss rate: 0.01%

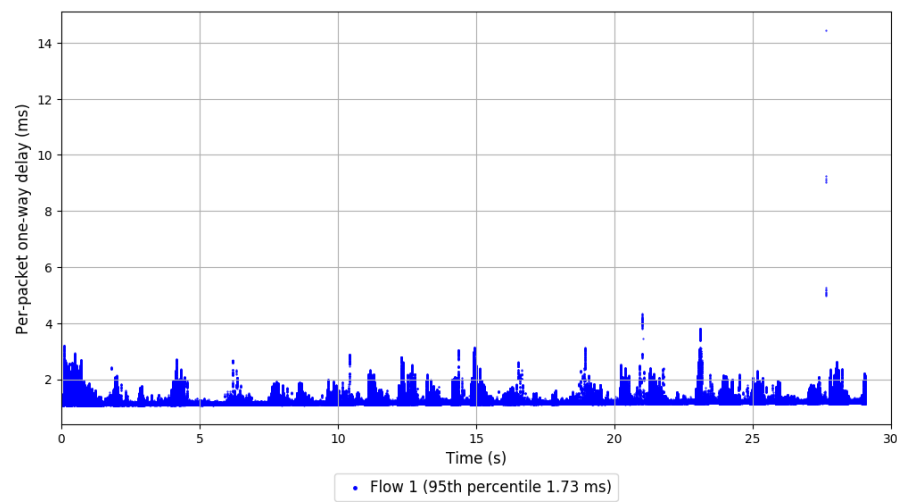
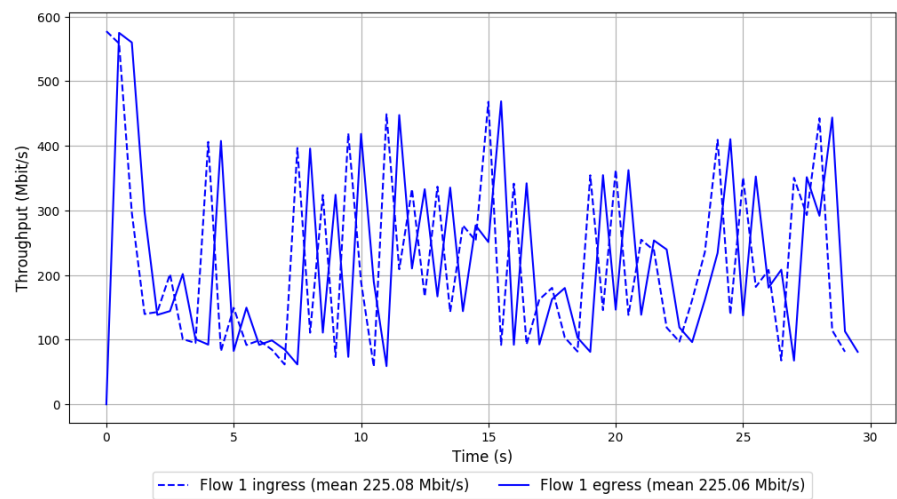
-- Flow 1:

Average throughput: 225.06 Mbit/s

95th percentile per-packet one-way delay: 1.726 ms

Loss rate: 0.01%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-20 05:50:26

End at: 2018-12-20 05:50:56

Local clock offset: 2.999 ms

Remote clock offset: 0.213 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 234.24 Mbit/s

95th percentile per-packet one-way delay: 1.360 ms

Loss rate: 0.00%

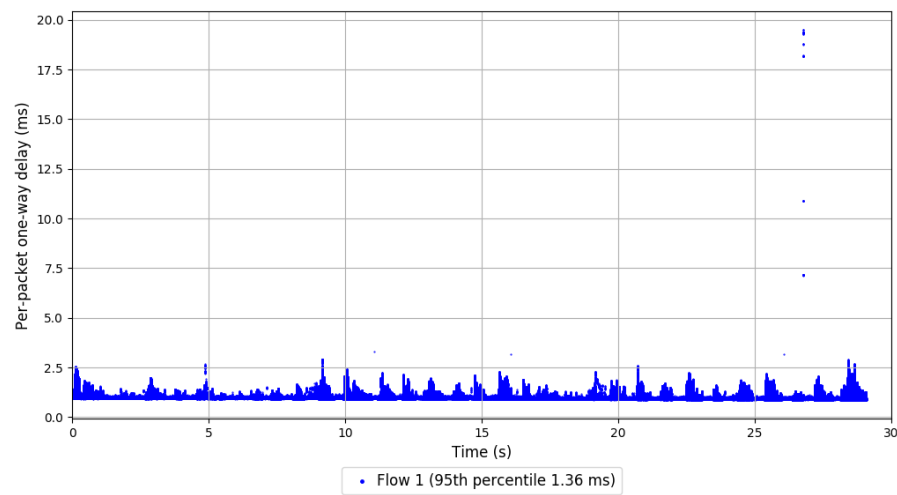
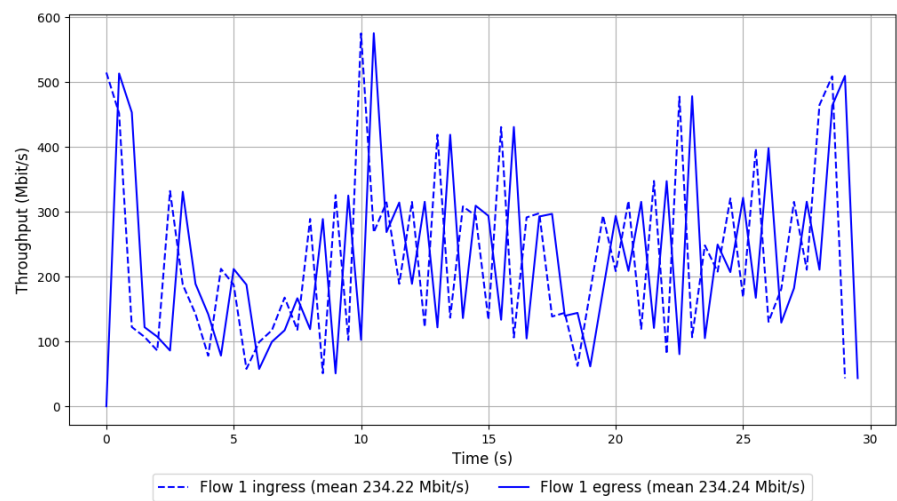
-- Flow 1:

Average throughput: 234.24 Mbit/s

95th percentile per-packet one-way delay: 1.360 ms

Loss rate: 0.00%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-20 06:17:14

End at: 2018-12-20 06:17:44

Local clock offset: -1.646 ms

Remote clock offset: -0.149 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 235.35 Mbit/s

95th percentile per-packet one-way delay: 1.745 ms

Loss rate: 0.02%

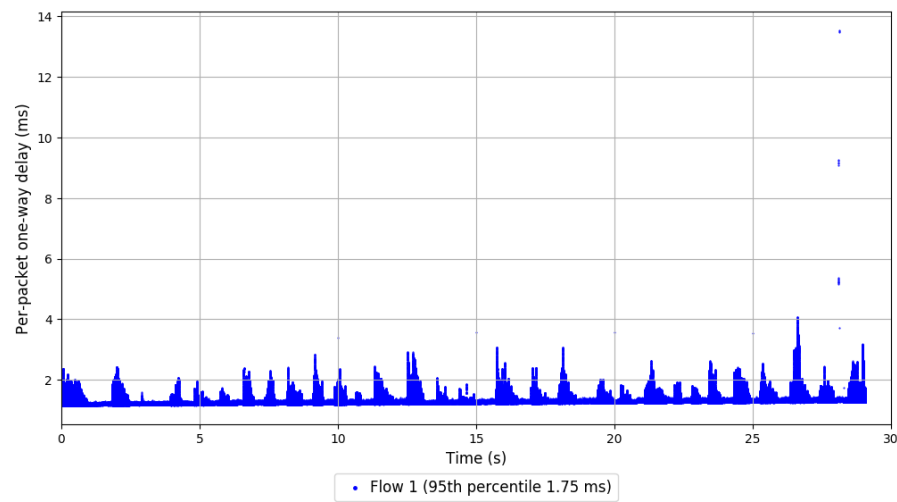
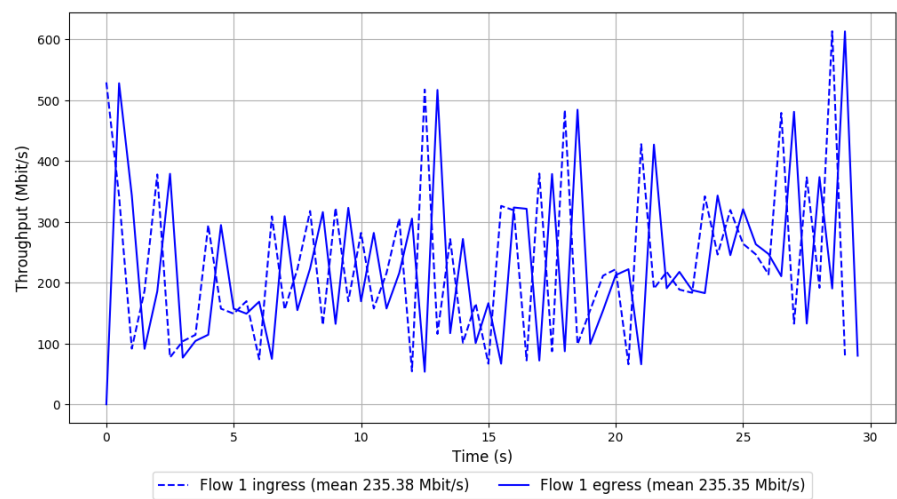
-- Flow 1:

Average throughput: 235.35 Mbit/s

95th percentile per-packet one-way delay: 1.745 ms

Loss rate: 0.02%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 06:43:59

End at: 2018-12-20 06:44:29

Local clock offset: 0.71 ms

Remote clock offset: 1.886 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 226.90 Mbit/s

95th percentile per-packet one-way delay: 1.114 ms

Loss rate: 0.01%

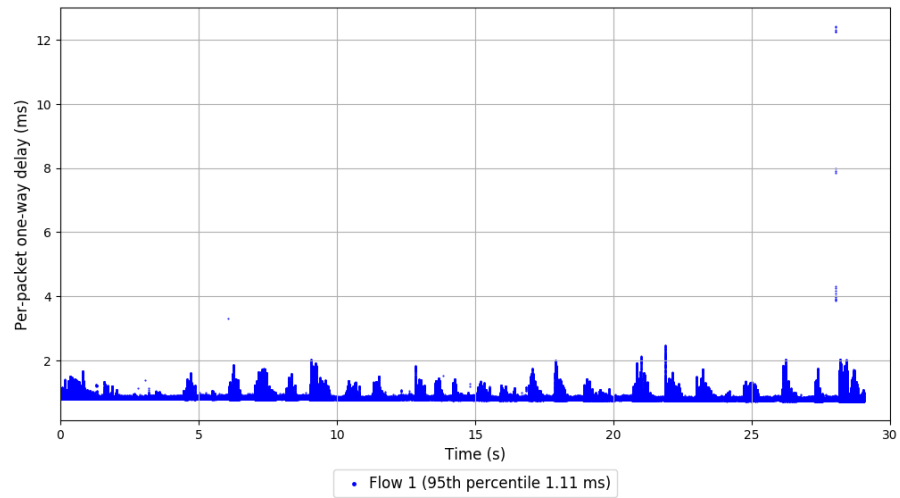
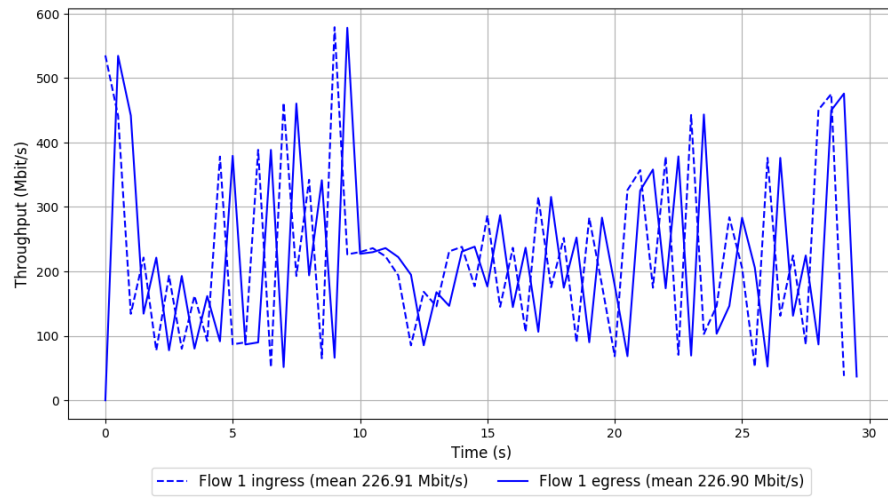
-- Flow 1:

Average throughput: 226.90 Mbit/s

95th percentile per-packet one-way delay: 1.114 ms

Loss rate: 0.01%

Run 5: Report of Indigo-MusesT — Data Link

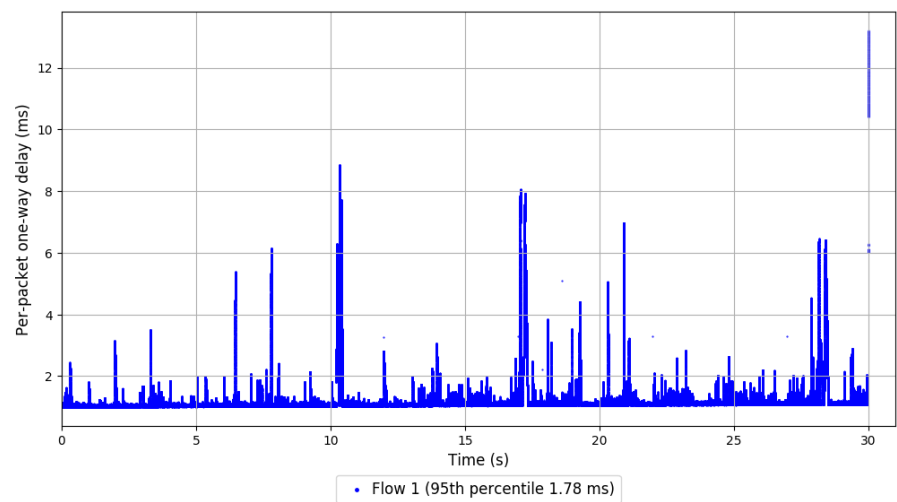
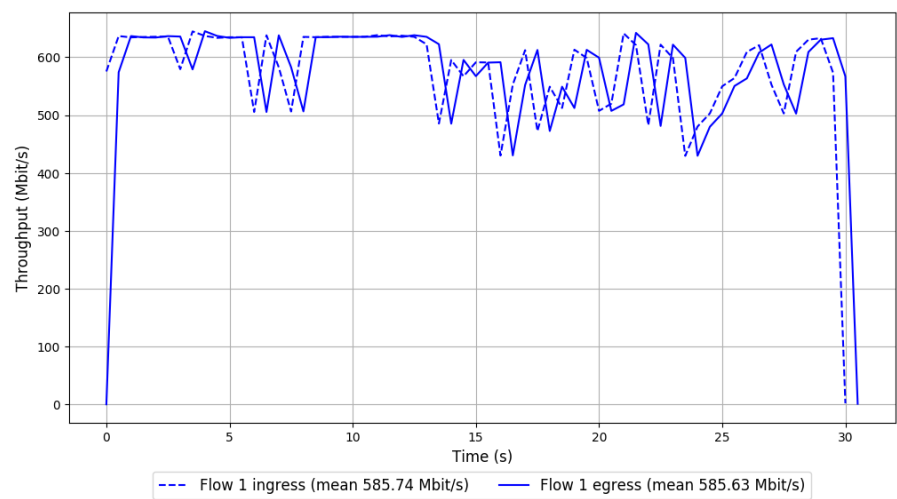



```
Run 1: Statistics of LEDBAT

Start at: 2018-12-20 04:59:26
End at: 2018-12-20 04:59:56
Local clock offset: 3.907 ms
Remote clock offset: 1.689 ms

# Below is generated by plot.py at 2018-12-20 07:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 585.63 Mbit/s
95th percentile per-packet one-way delay: 1.778 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 585.63 Mbit/s
95th percentile per-packet one-way delay: 1.778 ms
Loss rate: 0.02%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-12-20 05:26:24

End at: 2018-12-20 05:26:54

Local clock offset: 0.351 ms

Remote clock offset: 5.176 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 569.14 Mbit/s

95th percentile per-packet one-way delay: 2.389 ms

Loss rate: 0.01%

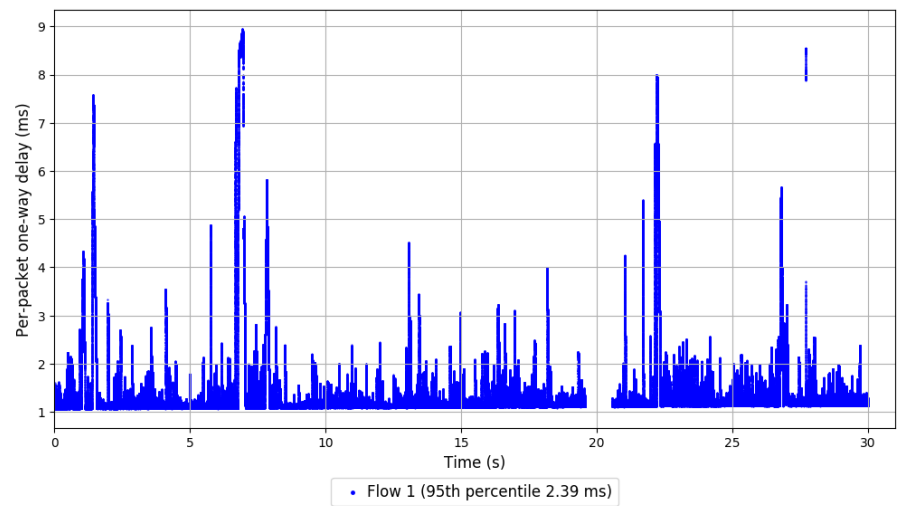
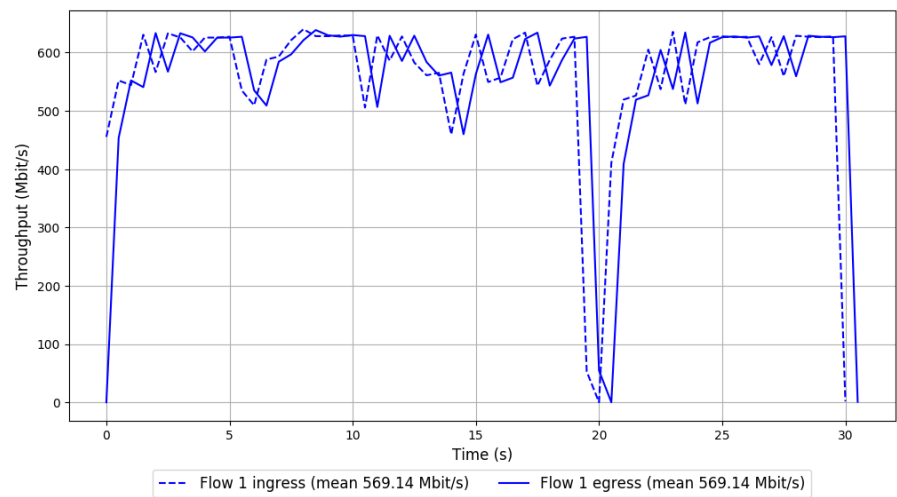
-- Flow 1:

Average throughput: 569.14 Mbit/s

95th percentile per-packet one-way delay: 2.389 ms

Loss rate: 0.01%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-12-20 05:53:24

End at: 2018-12-20 05:53:54

Local clock offset: 3.238 ms

Remote clock offset: 0.105 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 552.74 Mbit/s

95th percentile per-packet one-way delay: 8.227 ms

Loss rate: 0.00%

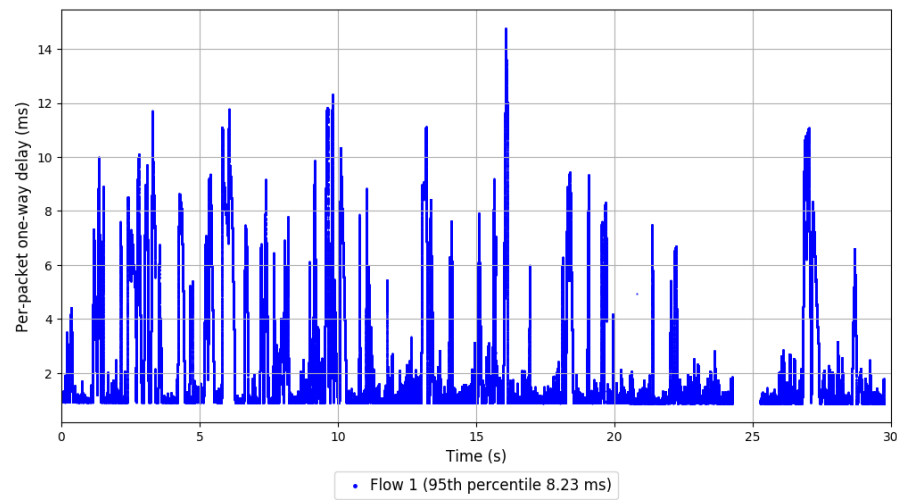
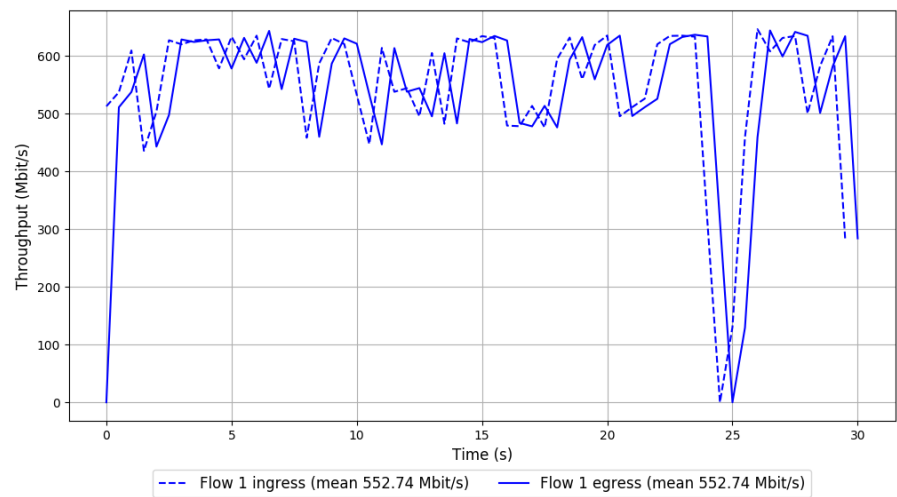
-- Flow 1:

Average throughput: 552.74 Mbit/s

95th percentile per-packet one-way delay: 8.227 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-12-20 06:20:11

End at: 2018-12-20 06:20:41

Local clock offset: -2.368 ms

Remote clock offset: -0.19 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 536.23 Mbit/s

95th percentile per-packet one-way delay: 14.373 ms

Loss rate: 0.01%

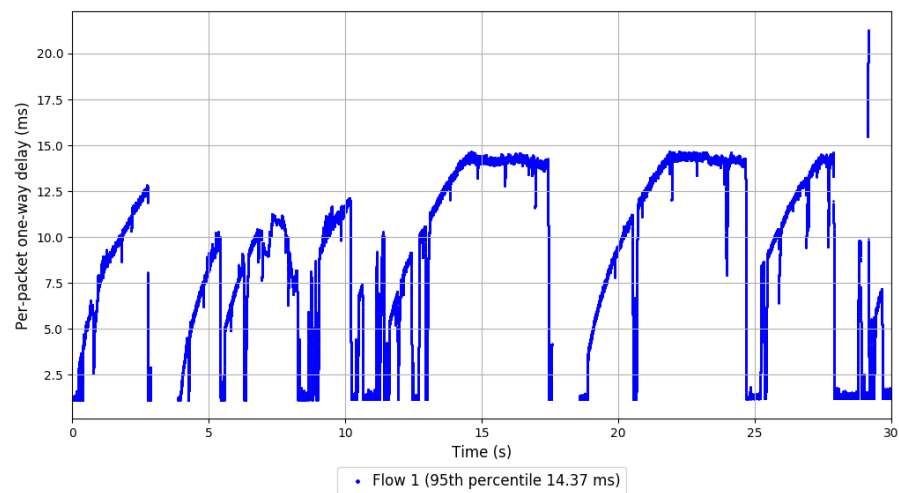
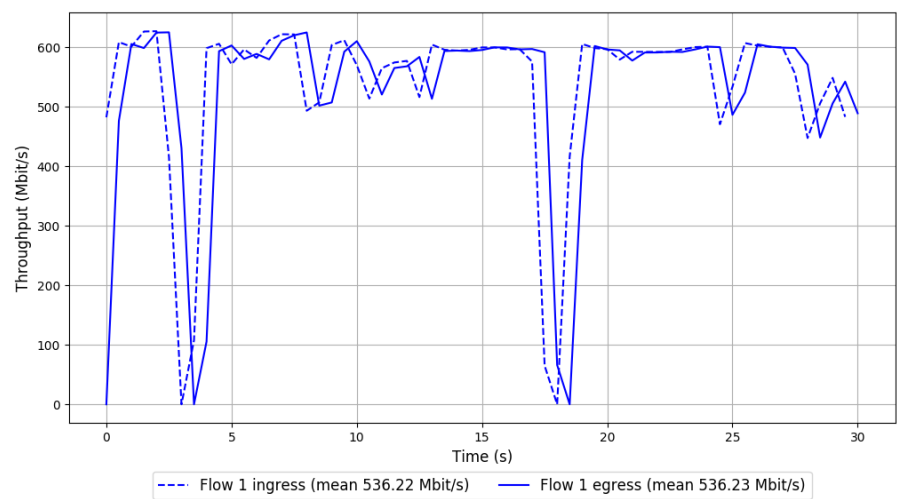
-- Flow 1:

Average throughput: 536.23 Mbit/s

95th percentile per-packet one-way delay: 14.373 ms

Loss rate: 0.01%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-12-20 06:46:57

End at: 2018-12-20 06:47:27

Local clock offset: 1.642 ms

Remote clock offset: 2.322 ms

Below is generated by plot.py at 2018-12-20 07:37:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 541.99 Mbit/s

95th percentile per-packet one-way delay: 7.506 ms

Loss rate: 0.01%

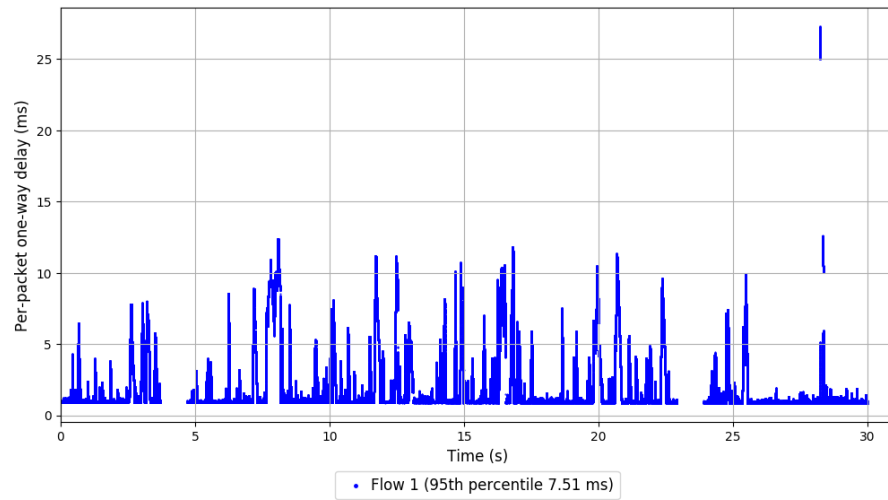
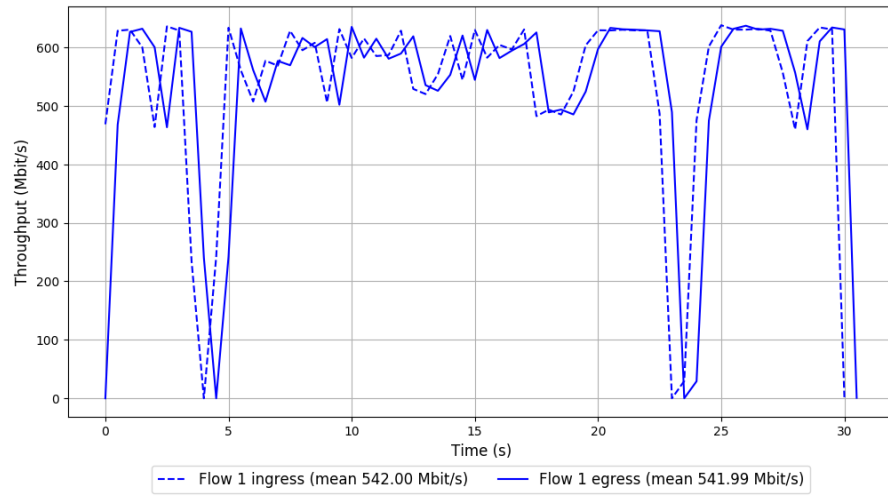
-- Flow 1:

Average throughput: 541.99 Mbit/s

95th percentile per-packet one-way delay: 7.506 ms

Loss rate: 0.01%

Run 5: Report of LEDBAT — Data Link

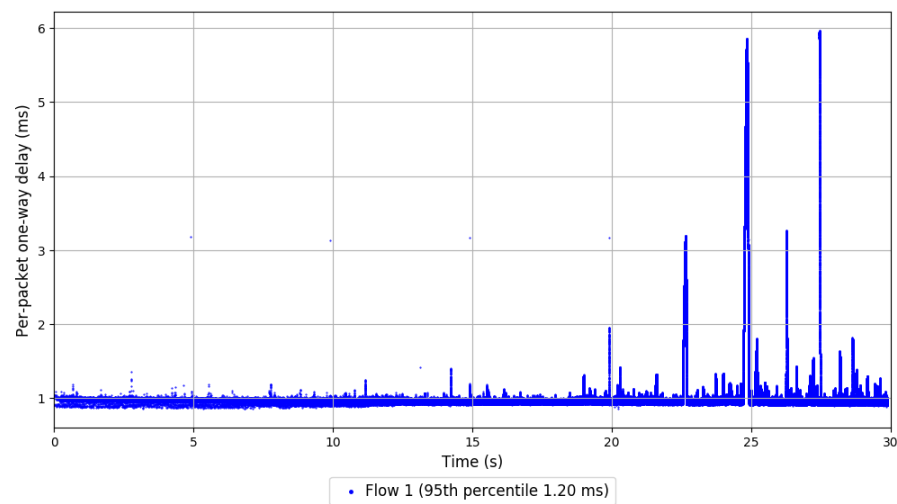
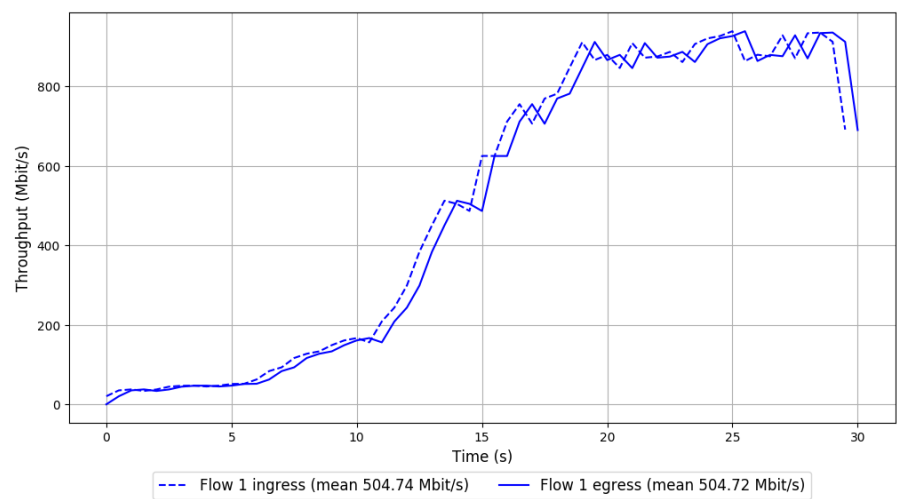


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-20 04:49:24
End at: 2018-12-20 04:49:54
Local clock offset: 3.077 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2018-12-20 07:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 504.72 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 504.72 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-12-20 05:16:13

End at: 2018-12-20 05:16:43

Local clock offset: 1.324 ms

Remote clock offset: 4.276 ms

Below is generated by plot.py at 2018-12-20 07:40:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 841.39 Mbit/s

95th percentile per-packet one-way delay: 2.219 ms

Loss rate: 0.01%

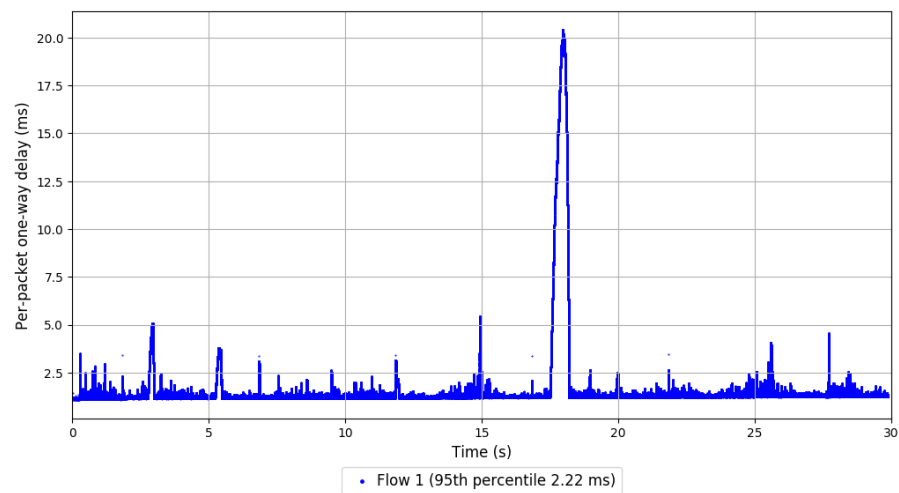
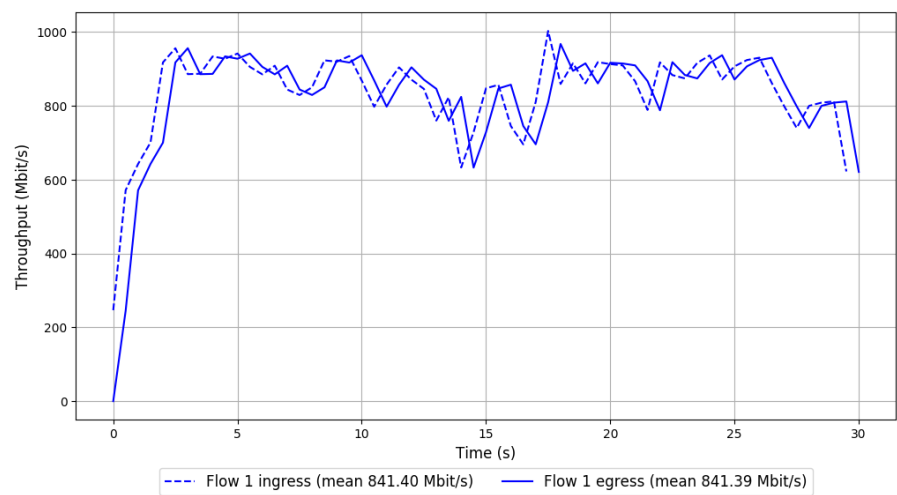
-- Flow 1:

Average throughput: 841.39 Mbit/s

95th percentile per-packet one-way delay: 2.219 ms

Loss rate: 0.01%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-20 05:43:14

End at: 2018-12-20 05:43:44

Local clock offset: 2.057 ms

Remote clock offset: 0.917 ms

Below is generated by plot.py at 2018-12-20 07:43:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 718.43 Mbit/s

95th percentile per-packet one-way delay: 2.567 ms

Loss rate: 0.01%

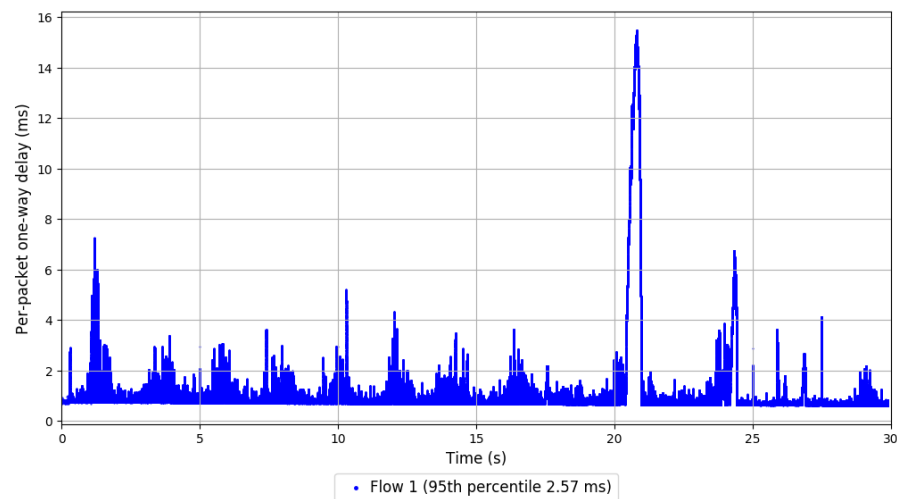
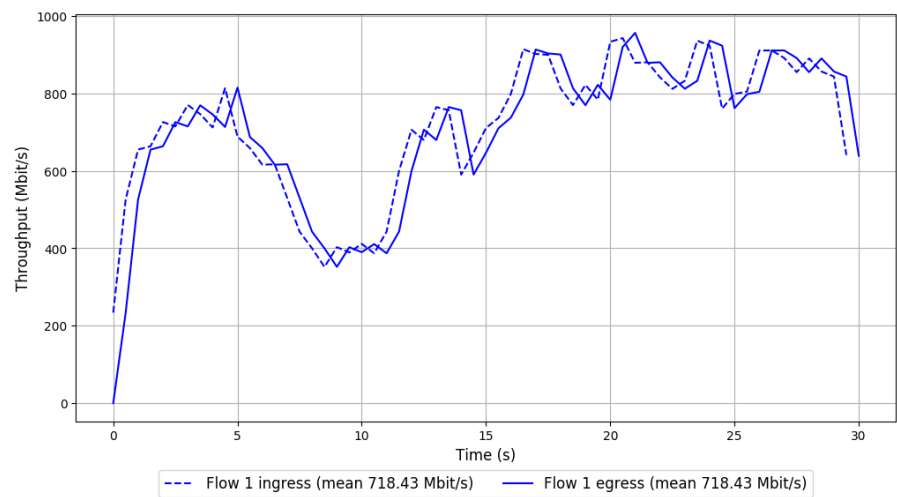
-- Flow 1:

Average throughput: 718.43 Mbit/s

95th percentile per-packet one-way delay: 2.567 ms

Loss rate: 0.01%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-12-20 06:10:07

End at: 2018-12-20 06:10:37

Local clock offset: 0.992 ms

Remote clock offset: -0.146 ms

Below is generated by plot.py at 2018-12-20 07:43:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 492.05 Mbit/s

95th percentile per-packet one-way delay: 5.810 ms

Loss rate: 0.01%

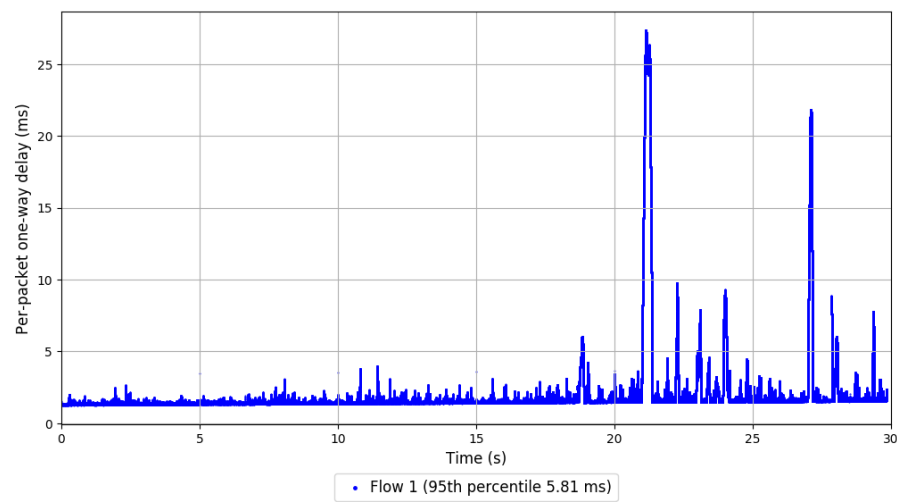
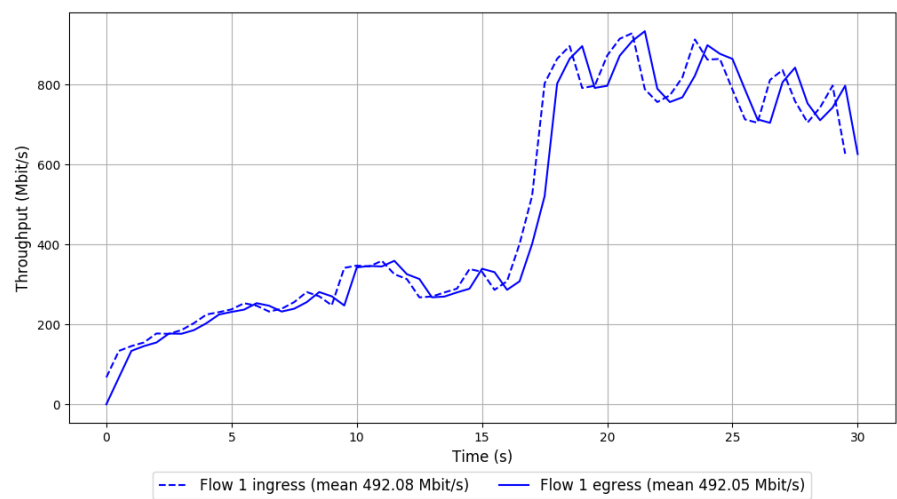
-- Flow 1:

Average throughput: 492.05 Mbit/s

95th percentile per-packet one-way delay: 5.810 ms

Loss rate: 0.01%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 06:36:45

End at: 2018-12-20 06:37:15

Local clock offset: -3.478 ms

Remote clock offset: -0.167 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 712.92 Mbit/s

95th percentile per-packet one-way delay: 1.036 ms

Loss rate: 0.00%

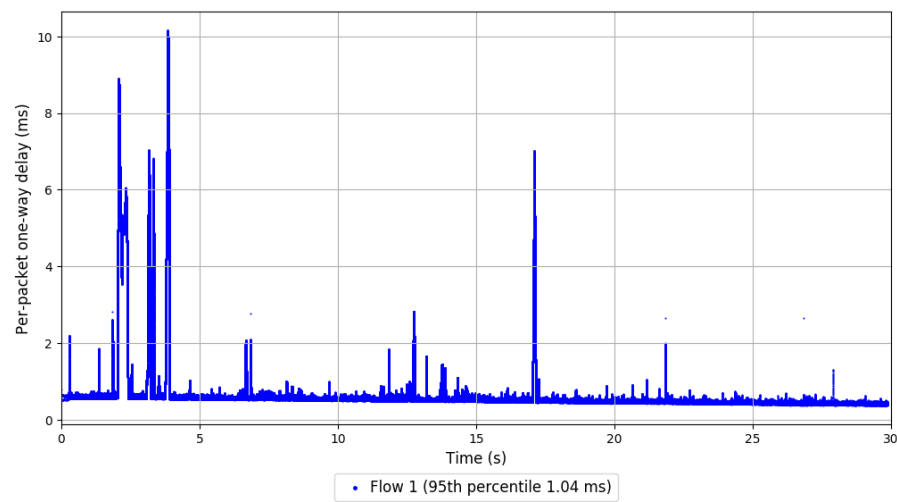
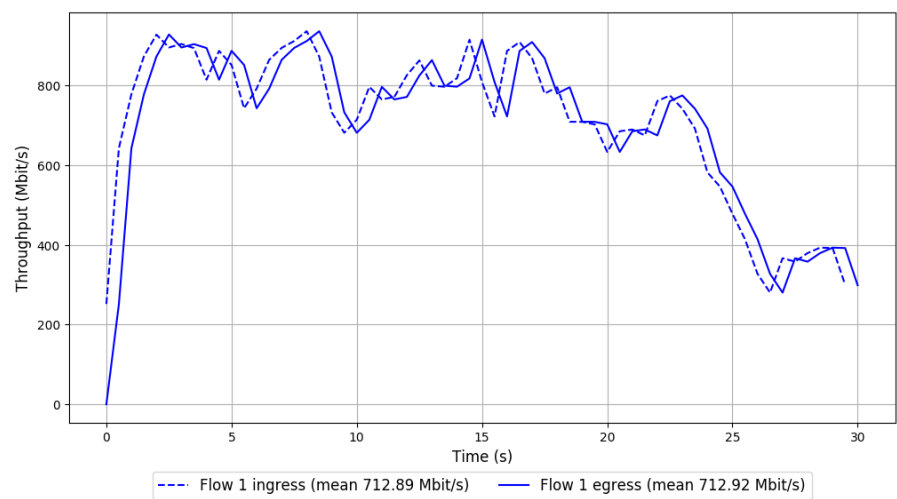
-- Flow 1:

Average throughput: 712.92 Mbit/s

95th percentile per-packet one-way delay: 1.036 ms

Loss rate: 0.00%

Run 5: Report of PCC-Allegro — Data Link

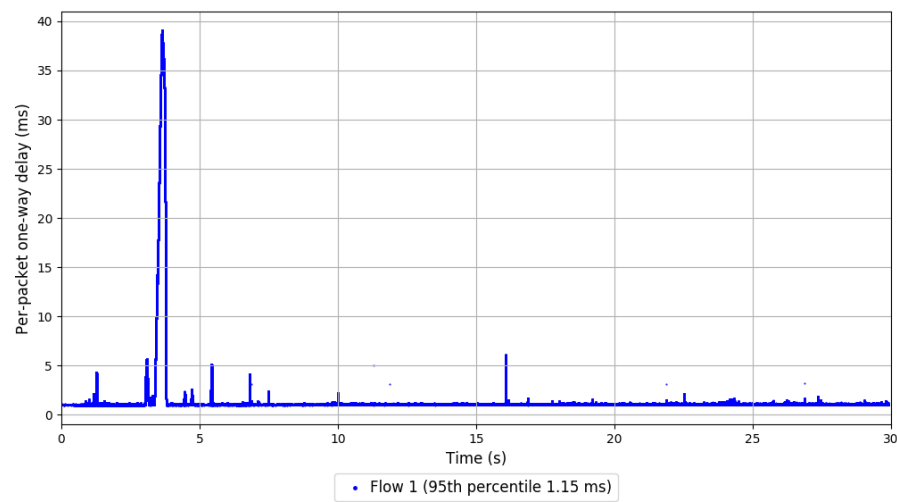
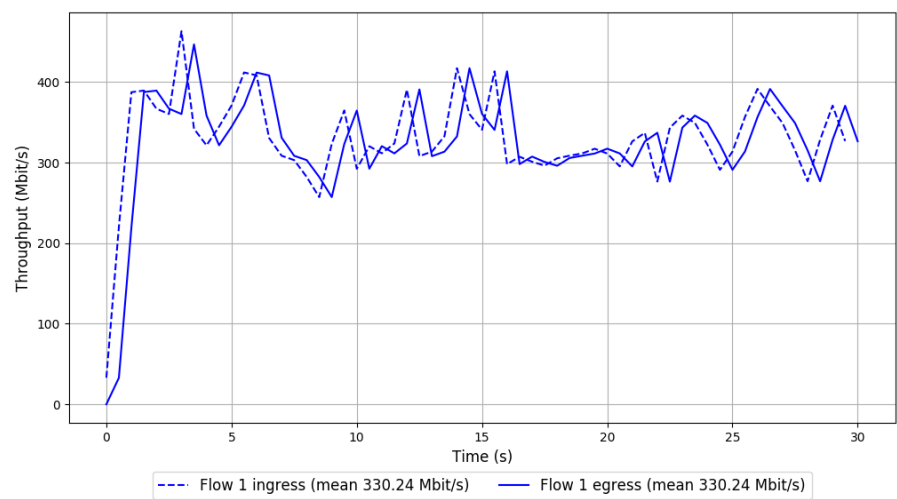


```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-20 05:01:03
End at: 2018-12-20 05:01:33
Local clock offset: 4.029 ms
Remote clock offset: 2.142 ms

# Below is generated by plot.py at 2018-12-20 07:44:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 330.24 Mbit/s
95th percentile per-packet one-way delay: 1.147 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 330.24 Mbit/s
95th percentile per-packet one-way delay: 1.147 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-12-20 05:28:01

End at: 2018-12-20 05:28:31

Local clock offset: 0.26 ms

Remote clock offset: 5.343 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 301.80 Mbit/s

95th percentile per-packet one-way delay: 2.230 ms

Loss rate: 0.01%

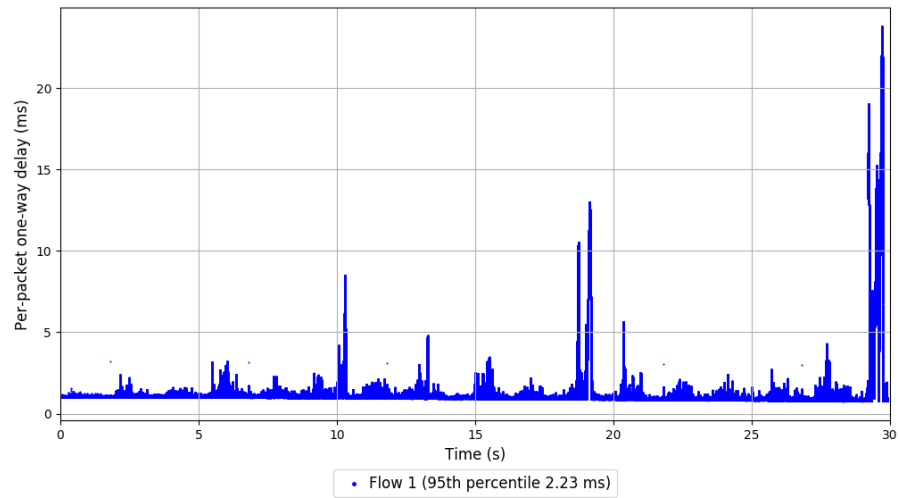
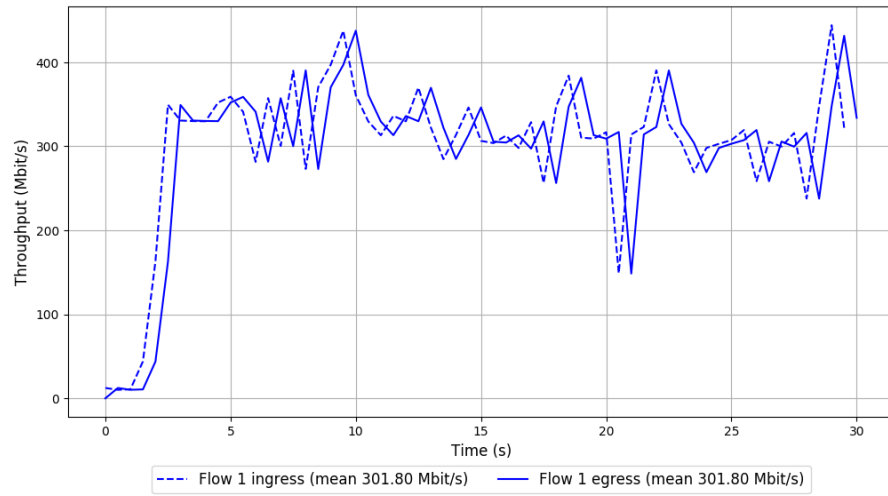
-- Flow 1:

Average throughput: 301.80 Mbit/s

95th percentile per-packet one-way delay: 2.230 ms

Loss rate: 0.01%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-12-20 05:55:00

End at: 2018-12-20 05:55:30

Local clock offset: 3.372 ms

Remote clock offset: 0.038 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 297.36 Mbit/s

95th percentile per-packet one-way delay: 1.650 ms

Loss rate: 0.01%

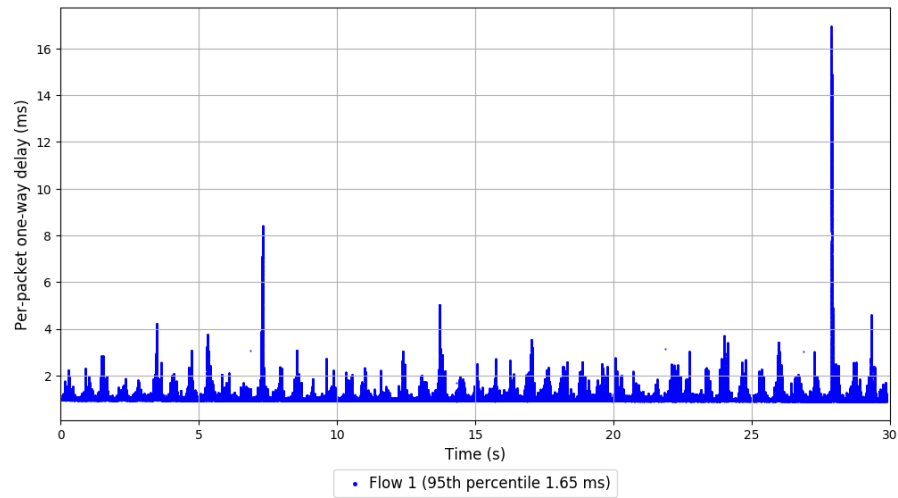
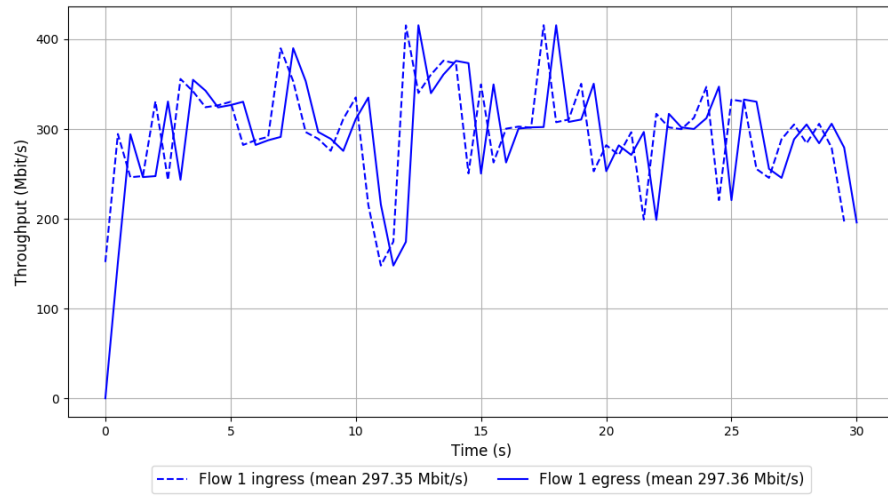
-- Flow 1:

Average throughput: 297.36 Mbit/s

95th percentile per-packet one-way delay: 1.650 ms

Loss rate: 0.01%

Run 3: Report of PCC-Expr — Data Link

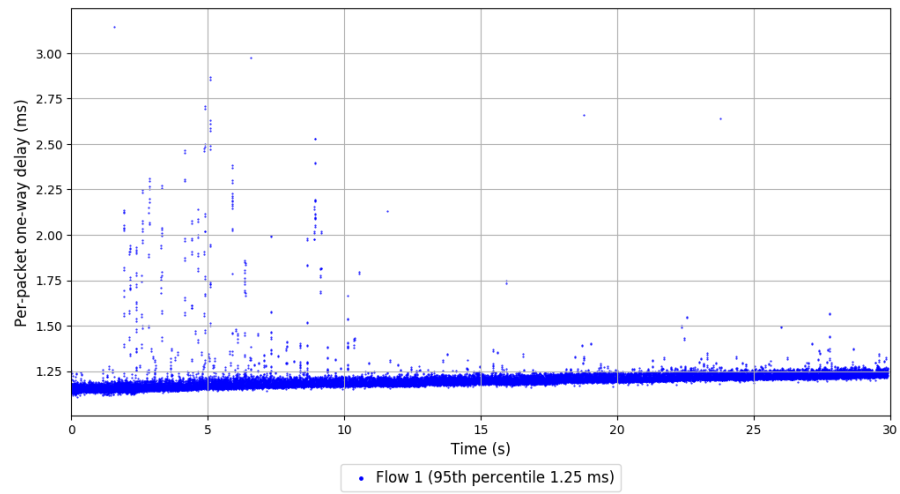
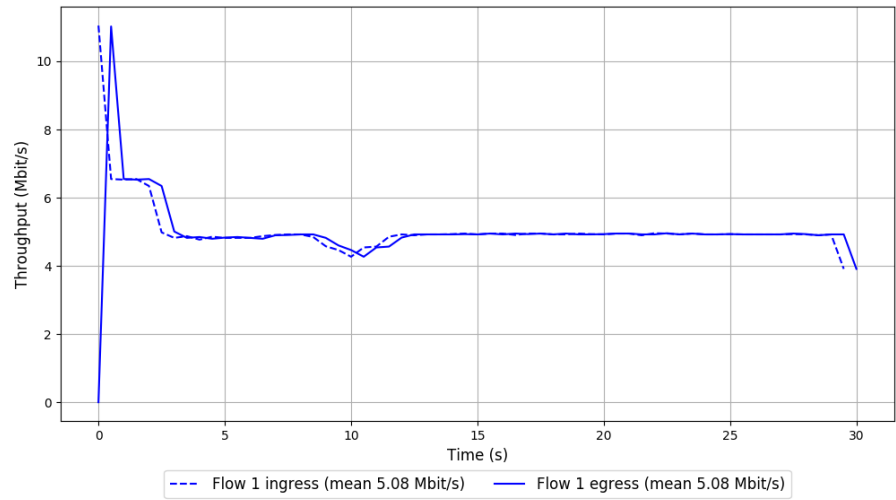


Run 4: Statistics of PCC-Expr

Start at: 2018-12-20 06:21:47
End at: 2018-12-20 06:22:17
Local clock offset: -2.649 ms
Remote clock offset: -0.175 ms

Below is generated by plot.py at 2018-12-20 07:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 1.249 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 1.249 ms
Loss rate: 0.00%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-12-20 06:48:32

End at: 2018-12-20 06:49:02

Local clock offset: 2.041 ms

Remote clock offset: 2.64 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 337.32 Mbit/s

95th percentile per-packet one-way delay: 1.008 ms

Loss rate: 0.01%

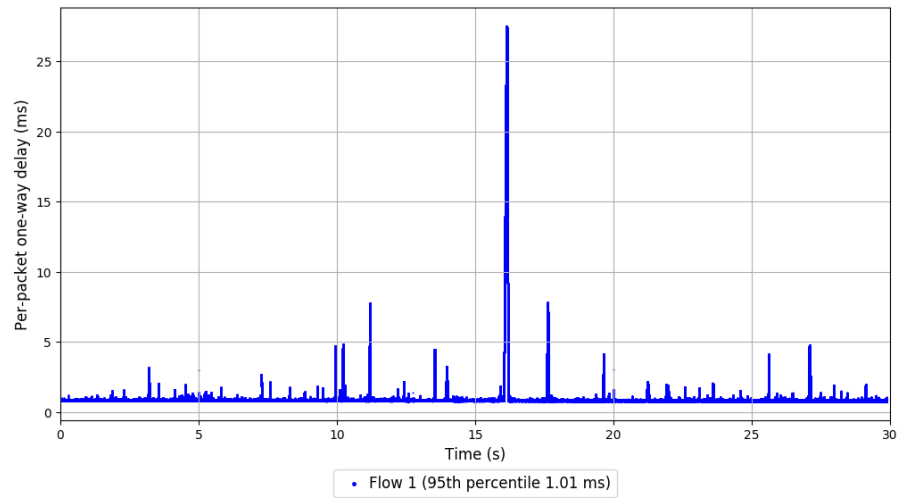
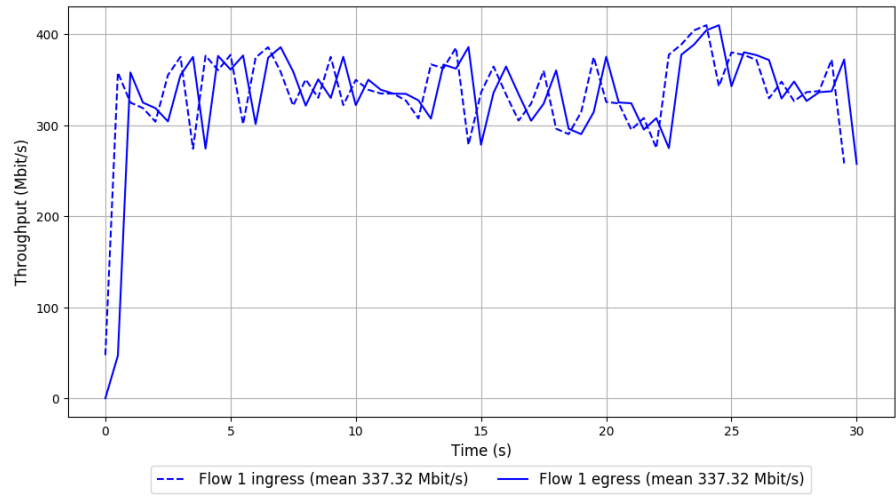
-- Flow 1:

Average throughput: 337.32 Mbit/s

95th percentile per-packet one-way delay: 1.008 ms

Loss rate: 0.01%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-12-20 04:45:02

End at: 2018-12-20 04:45:32

Local clock offset: 2.462 ms

Remote clock offset: -0.096 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.85 Mbit/s

95th percentile per-packet one-way delay: 0.902 ms

Loss rate: 0.01%

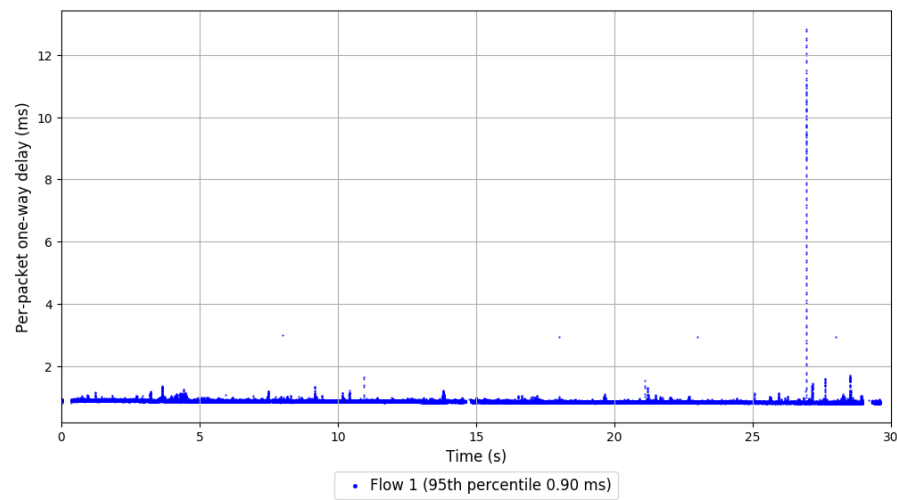
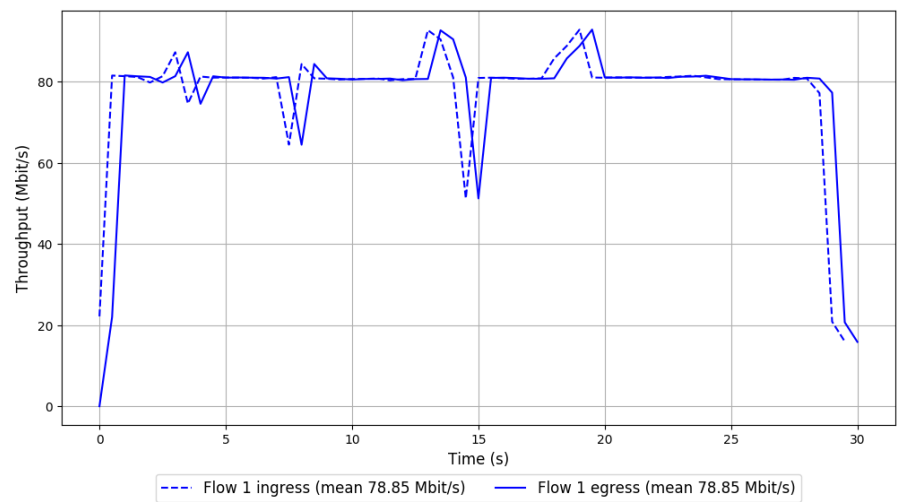
-- Flow 1:

Average throughput: 78.85 Mbit/s

95th percentile per-packet one-way delay: 0.902 ms

Loss rate: 0.01%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-12-20 05:11:56

End at: 2018-12-20 05:12:26

Local clock offset: 2.103 ms

Remote clock offset: 3.795 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.23 Mbit/s

95th percentile per-packet one-way delay: 1.343 ms

Loss rate: 0.01%

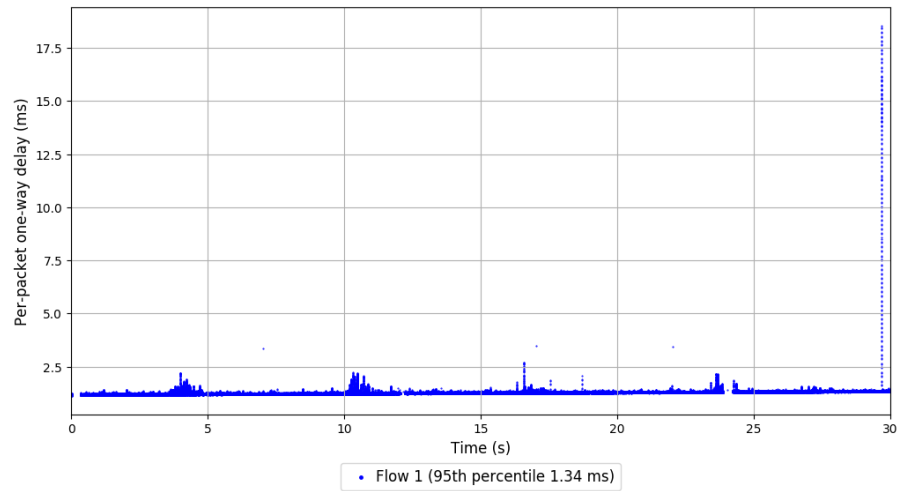
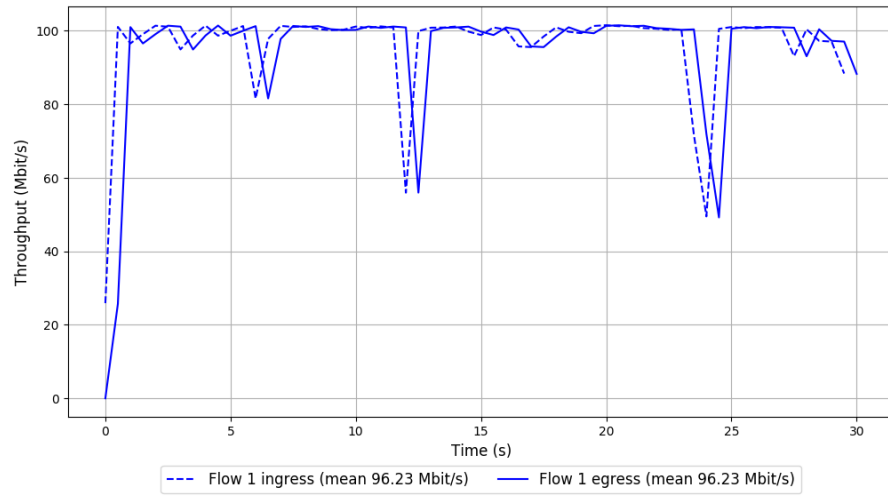
-- Flow 1:

Average throughput: 96.23 Mbit/s

95th percentile per-packet one-way delay: 1.343 ms

Loss rate: 0.01%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-20 05:38:55

End at: 2018-12-20 05:39:25

Local clock offset: 1.008 ms

Remote clock offset: 1.405 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.89 Mbit/s

95th percentile per-packet one-way delay: 0.816 ms

Loss rate: 0.01%

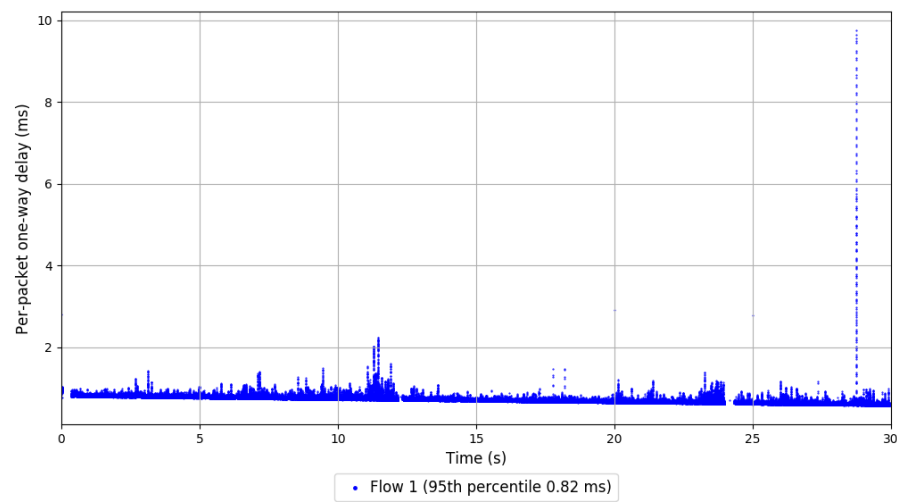
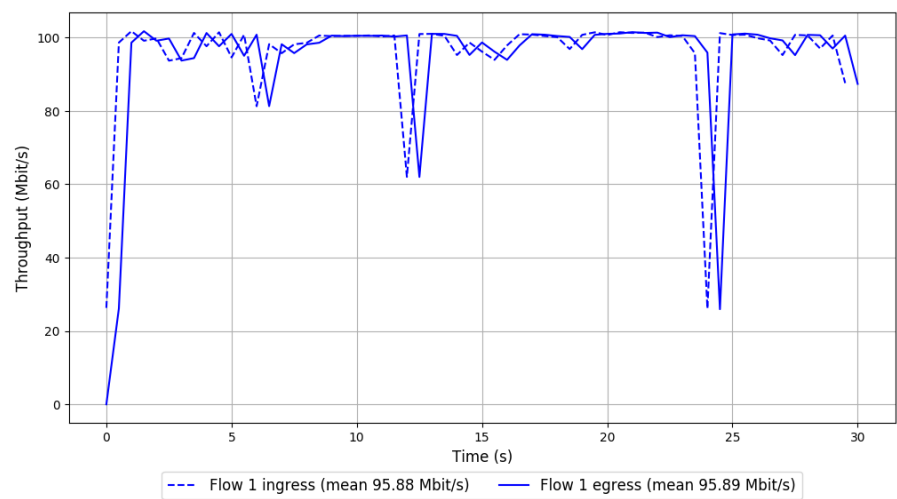
-- Flow 1:

Average throughput: 95.89 Mbit/s

95th percentile per-packet one-way delay: 0.816 ms

Loss rate: 0.01%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-12-20 06:05:54

End at: 2018-12-20 06:06:24

Local clock offset: 3.829 ms

Remote clock offset: -0.14 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.80 Mbit/s

95th percentile per-packet one-way delay: 2.413 ms

Loss rate: 0.01%

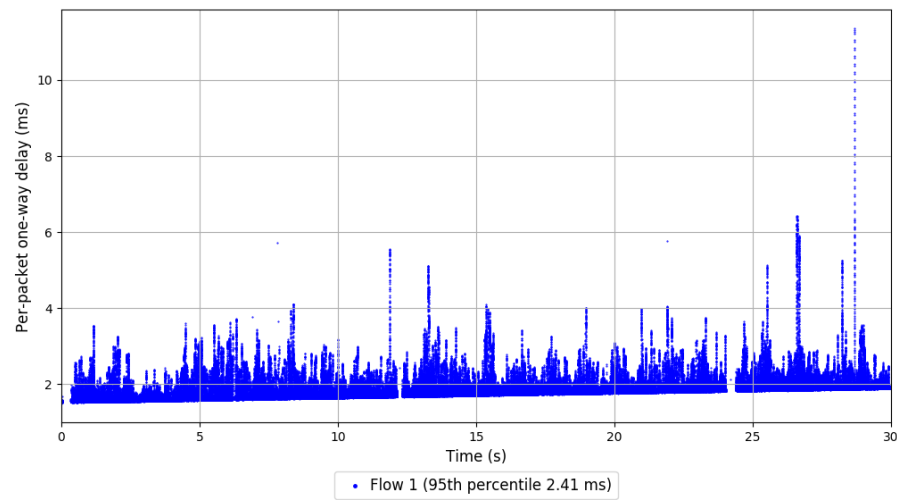
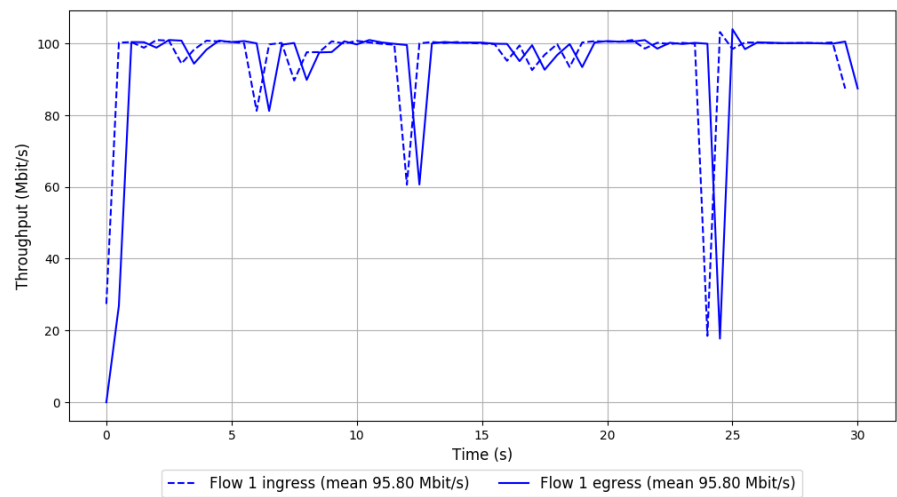
-- Flow 1:

Average throughput: 95.80 Mbit/s

95th percentile per-packet one-way delay: 2.413 ms

Loss rate: 0.01%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 06:32:22

End at: 2018-12-20 06:32:52

Local clock offset: -4.07 ms

Remote clock offset: -0.215 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.88 Mbit/s

95th percentile per-packet one-way delay: 1.111 ms

Loss rate: 0.01%

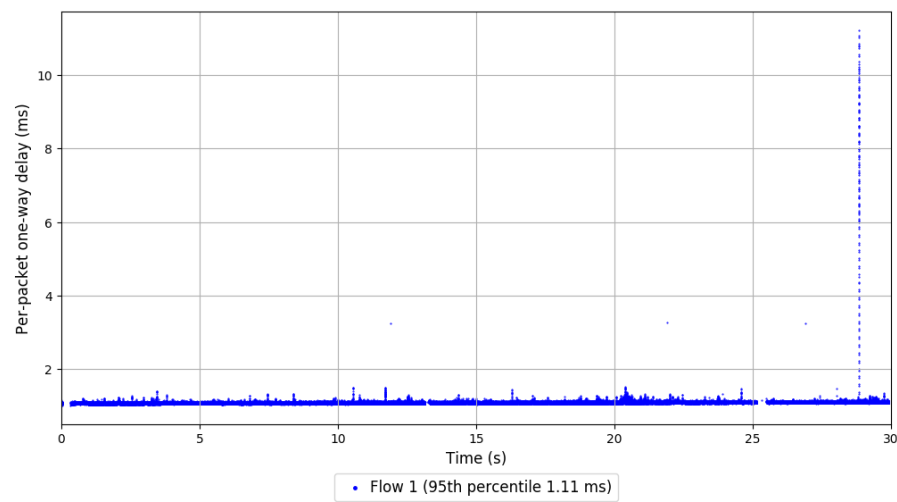
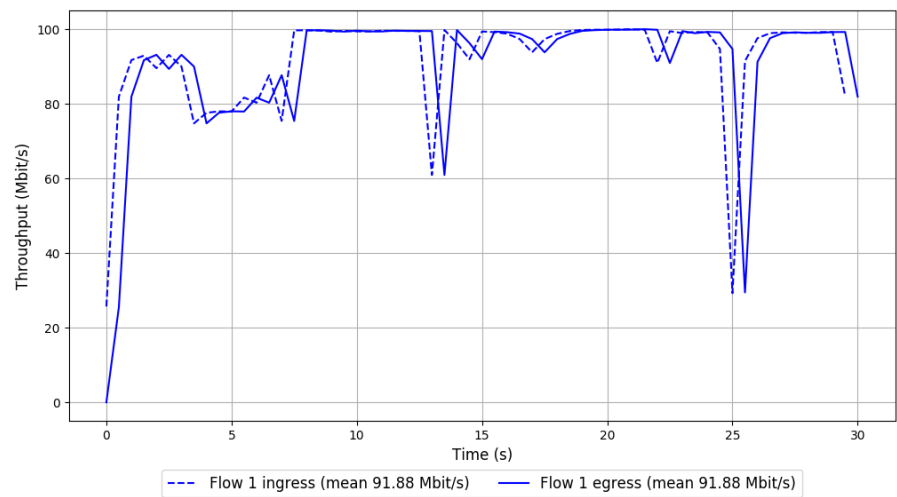
-- Flow 1:

Average throughput: 91.88 Mbit/s

95th percentile per-packet one-way delay: 1.111 ms

Loss rate: 0.01%

Run 5: Report of QUIC Cubic — Data Link

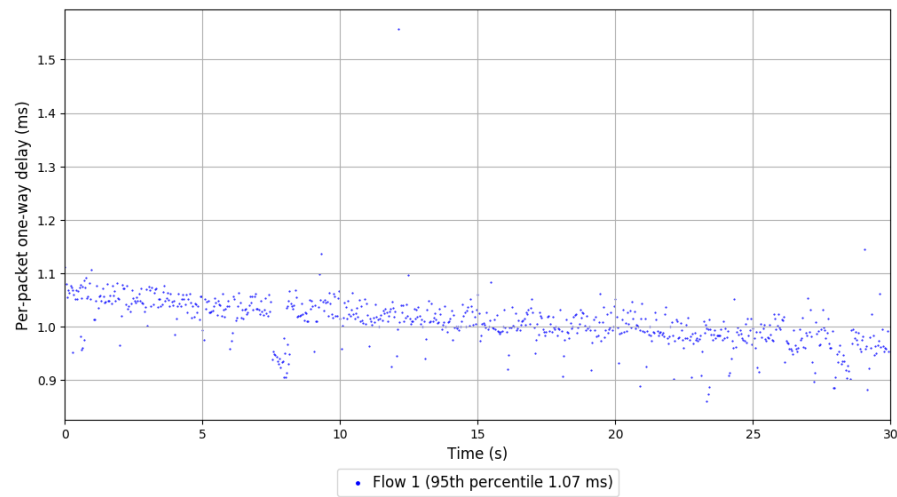
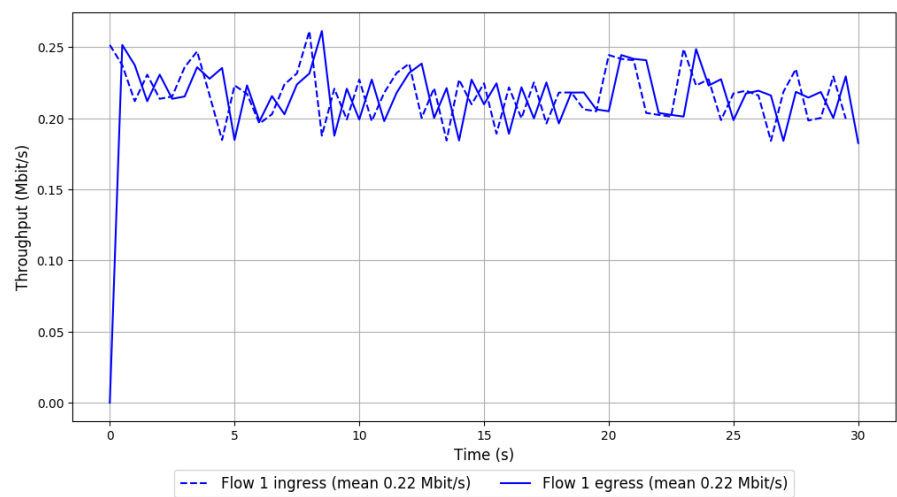


Run 1: Statistics of SCReAM

Start at: 2018-12-20 04:42:37
End at: 2018-12-20 04:43:07
Local clock offset: 2.074 ms
Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-12-20 07:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.13%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-12-20 05:09:30

End at: 2018-12-20 05:10:00

Local clock offset: 2.782 ms

Remote clock offset: 3.534 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.499 ms

Loss rate: 0.13%

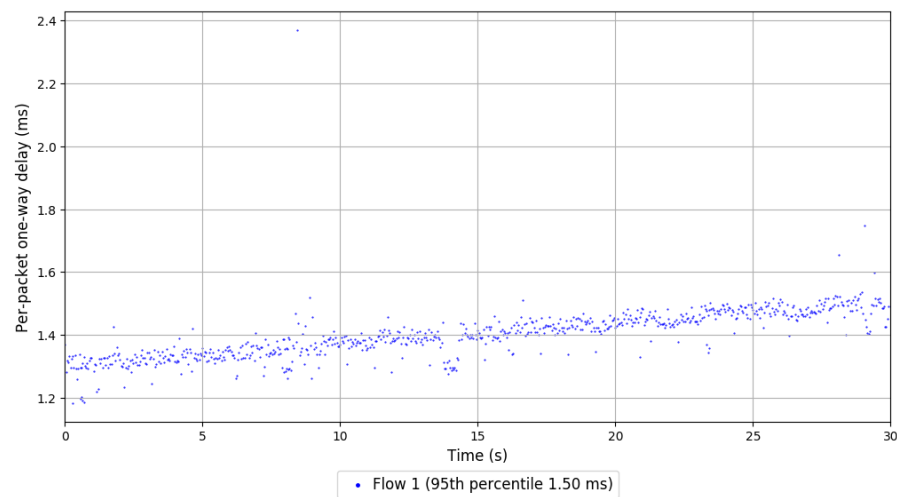
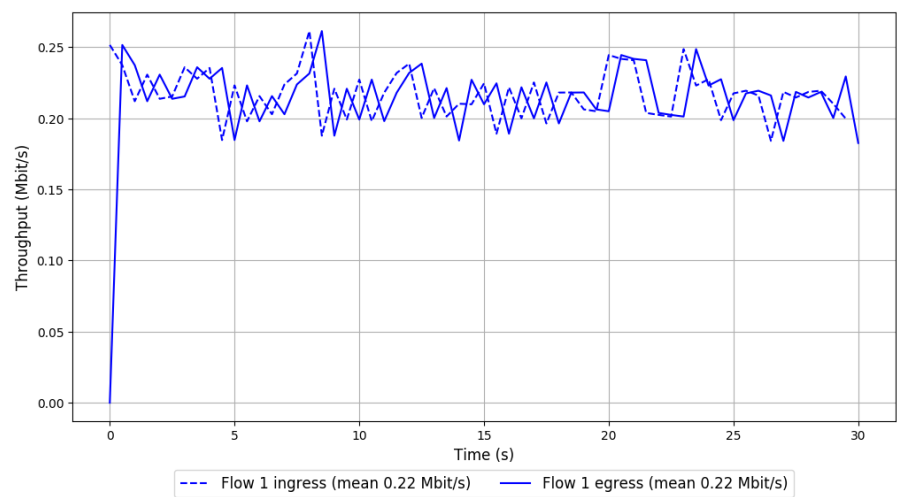
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.499 ms

Loss rate: 0.13%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-12-20 05:36:30

End at: 2018-12-20 05:37:00

Local clock offset: 0.293 ms

Remote clock offset: 2.015 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.876 ms

Loss rate: 0.13%

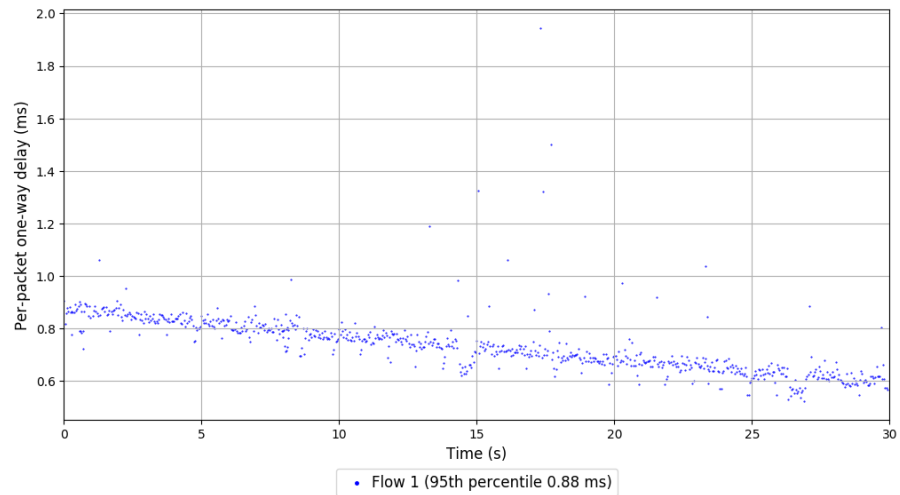
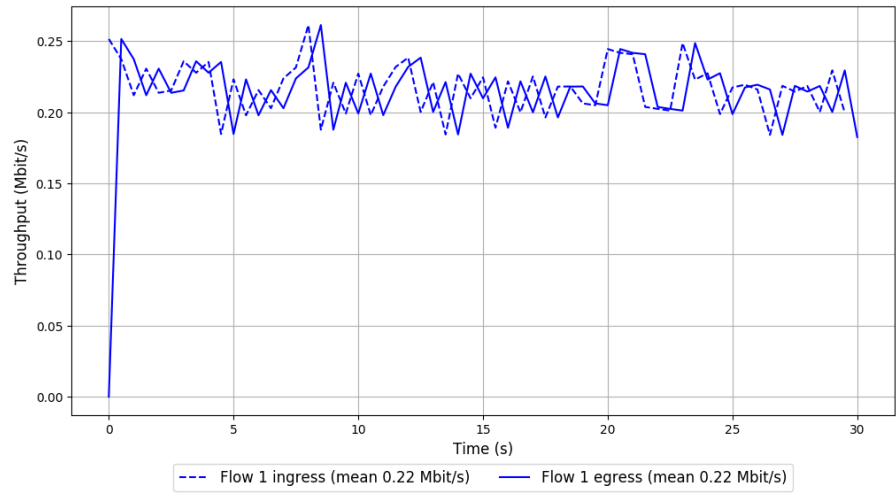
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.876 ms

Loss rate: 0.13%

Run 3: Report of SReAM — Data Link

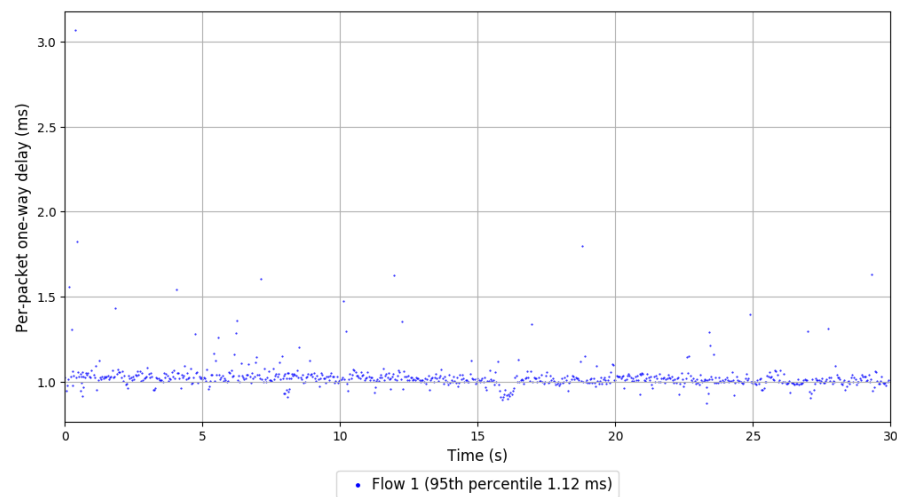
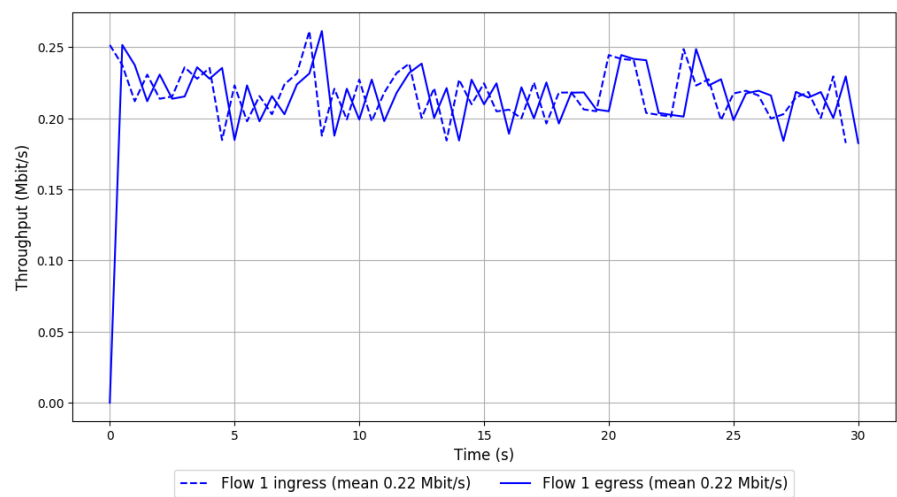


Run 4: Statistics of SCReAM

Start at: 2018-12-20 06:03:28
End at: 2018-12-20 06:03:58
Local clock offset: 3.808 ms
Remote clock offset: -0.057 ms

Below is generated by plot.py at 2018-12-20 07:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.118 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.118 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link

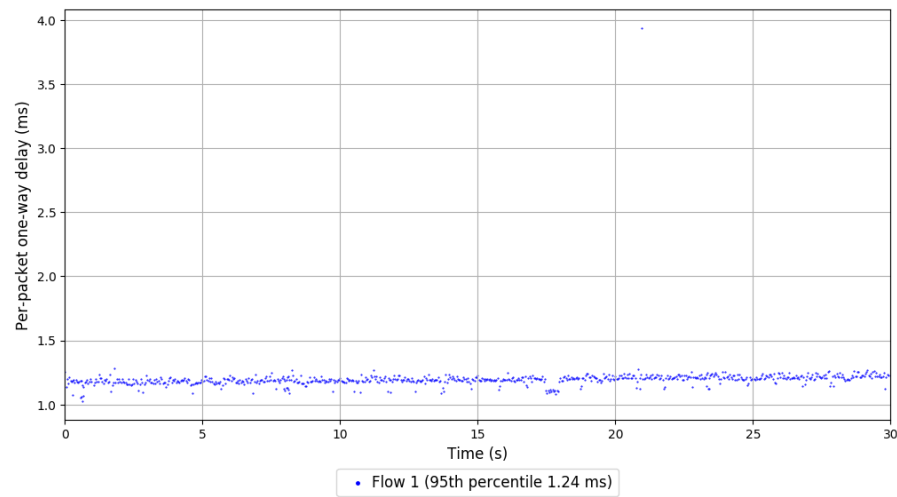
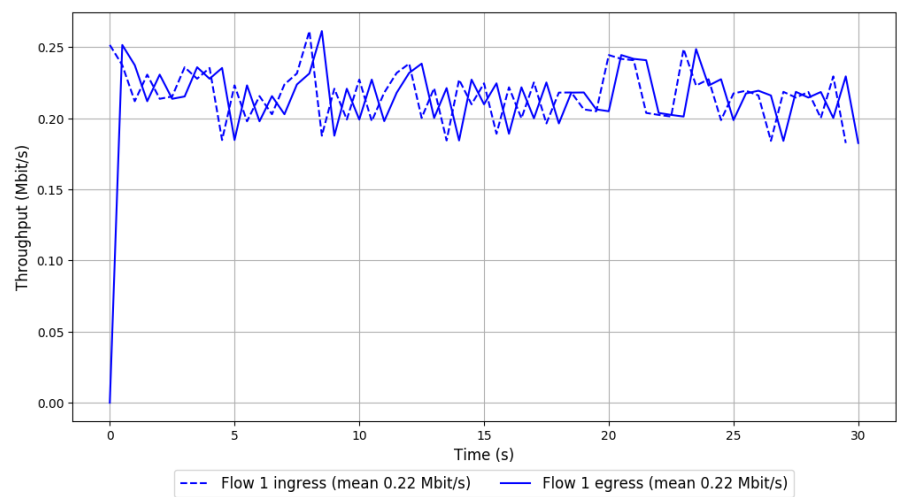


Run 5: Statistics of SCReAM

Start at: 2018-12-20 06:29:57
End at: 2018-12-20 06:30:27
Local clock offset: -3.794 ms
Remote clock offset: -0.176 ms

Below is generated by plot.py at 2018-12-20 07:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.239 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.239 ms
Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-12-20 04:53:40

End at: 2018-12-20 04:54:10

Local clock offset: 3.489 ms

Remote clock offset: 0.049 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.24 Mbit/s

95th percentile per-packet one-way delay: 0.973 ms

Loss rate: 0.00%

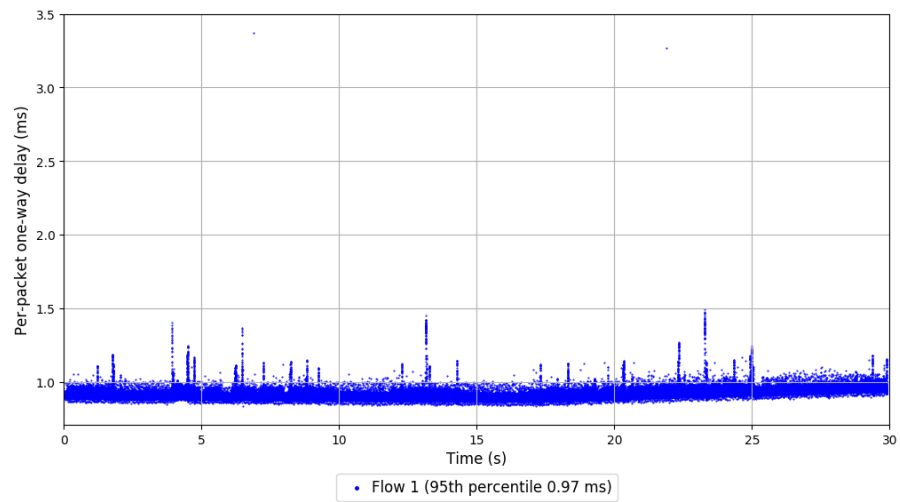
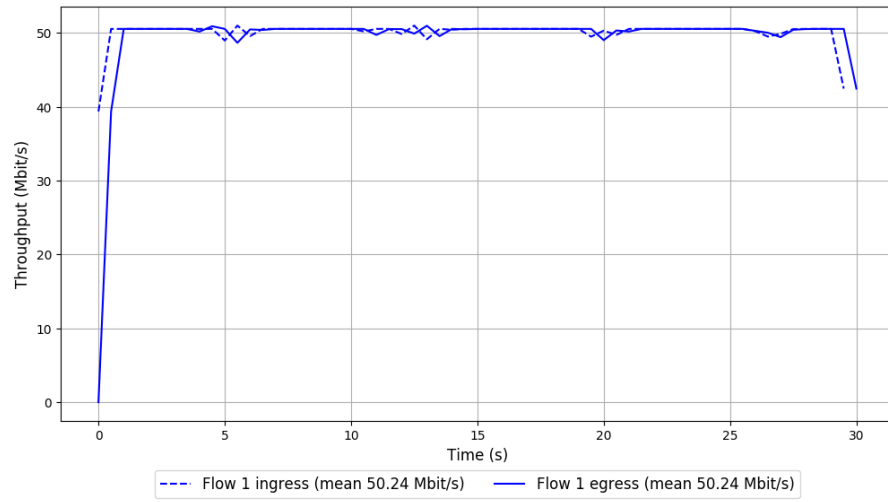
-- Flow 1:

Average throughput: 50.24 Mbit/s

95th percentile per-packet one-way delay: 0.973 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-12-20 05:20:36

End at: 2018-12-20 05:21:06

Local clock offset: 0.766 ms

Remote clock offset: 4.679 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.31 Mbit/s

95th percentile per-packet one-way delay: 1.516 ms

Loss rate: 0.02%

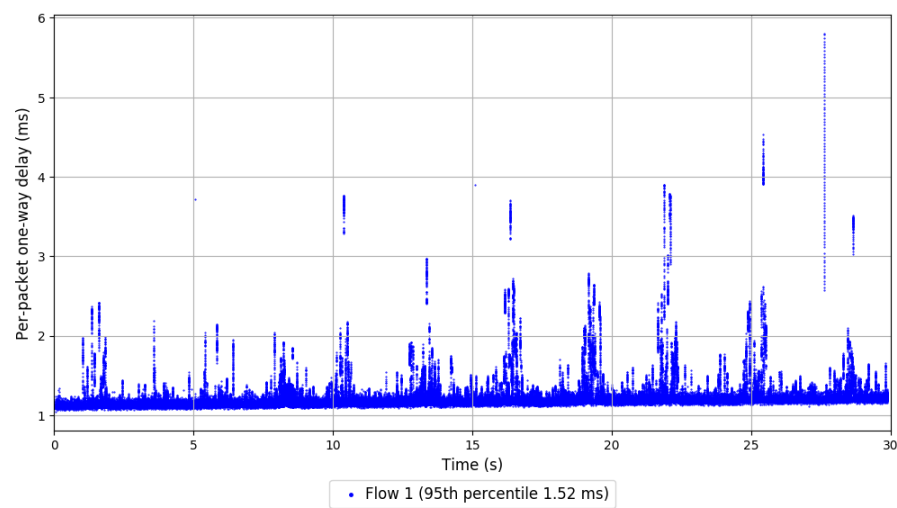
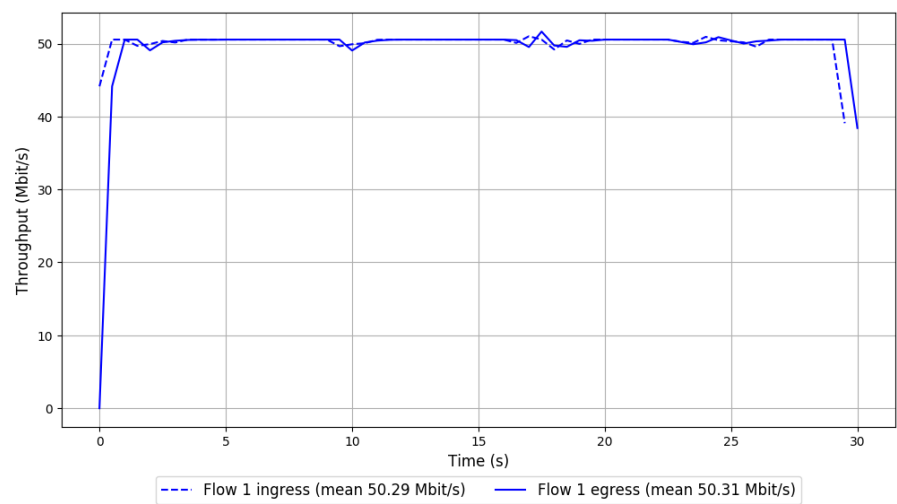
-- Flow 1:

Average throughput: 50.31 Mbit/s

95th percentile per-packet one-way delay: 1.516 ms

Loss rate: 0.02%

Run 2: Report of Sprout — Data Link

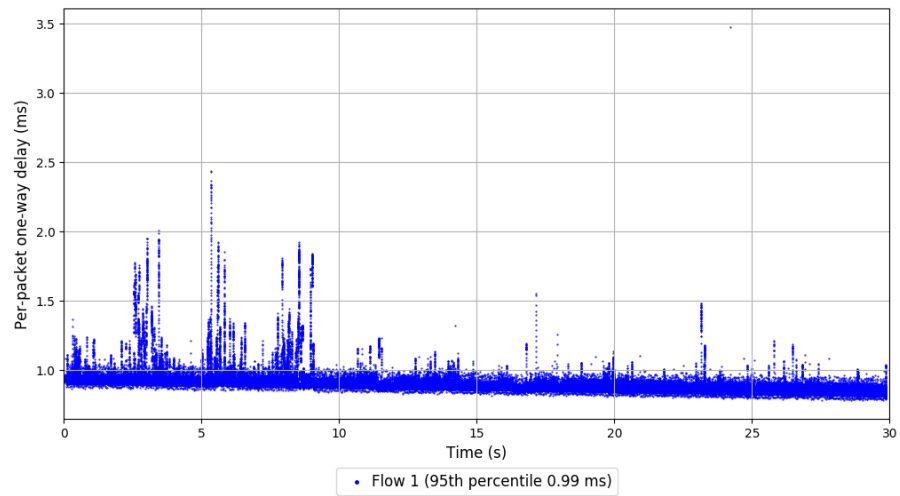
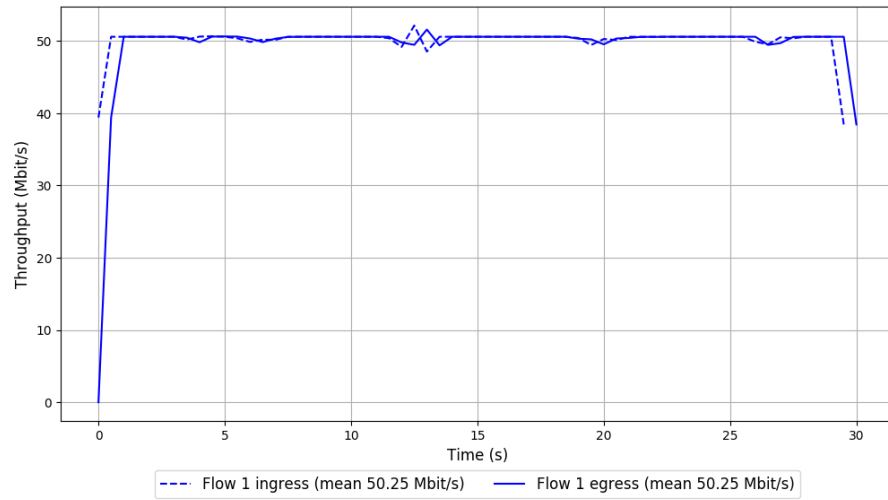


Run 3: Statistics of Sprout

Start at: 2018-12-20 05:47:35
End at: 2018-12-20 05:48:05
Local clock offset: 2.708 ms
Remote clock offset: 0.448 ms

Below is generated by plot.py at 2018-12-20 07:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.25 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.25 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

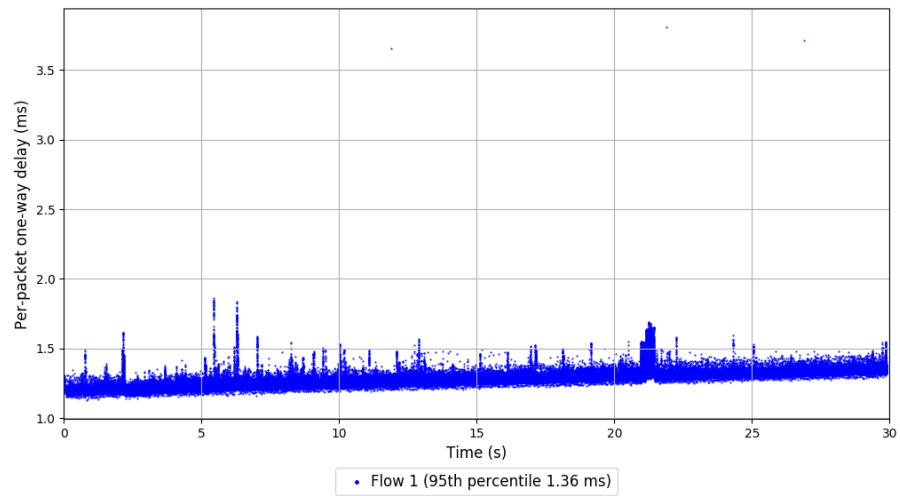
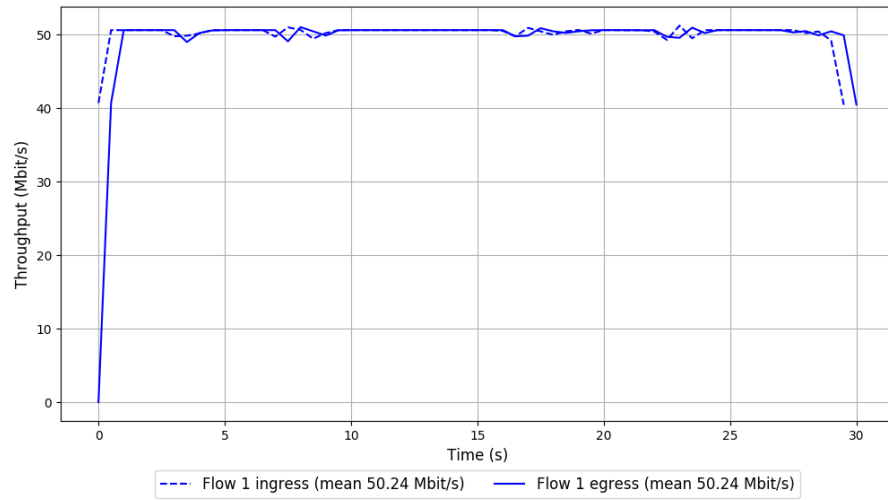


Run 4: Statistics of Sprout

Start at: 2018-12-20 06:14:23
End at: 2018-12-20 06:14:53
Local clock offset: -0.868 ms
Remote clock offset: -0.145 ms

Below is generated by plot.py at 2018-12-20 07:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-12-20 06:41:08

End at: 2018-12-20 06:41:38

Local clock offset: -0.594 ms

Remote clock offset: 1.319 ms

Below is generated by plot.py at 2018-12-20 07:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.22 Mbit/s

95th percentile per-packet one-way delay: 0.725 ms

Loss rate: 0.01%

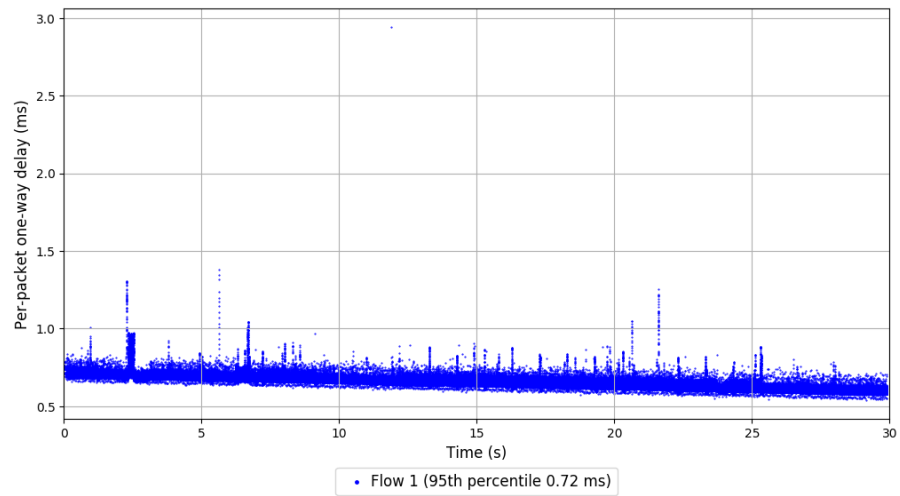
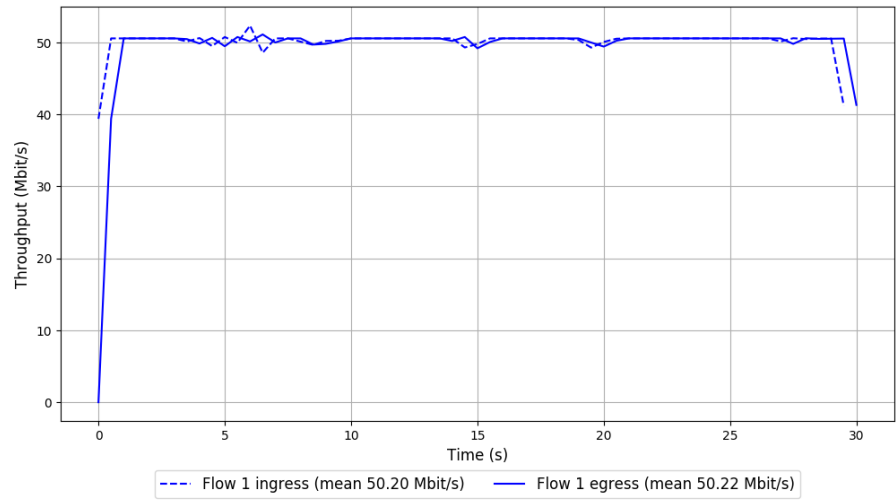
-- Flow 1:

Average throughput: 50.22 Mbit/s

95th percentile per-packet one-way delay: 0.725 ms

Loss rate: 0.01%

Run 5: Report of Sprout — Data Link

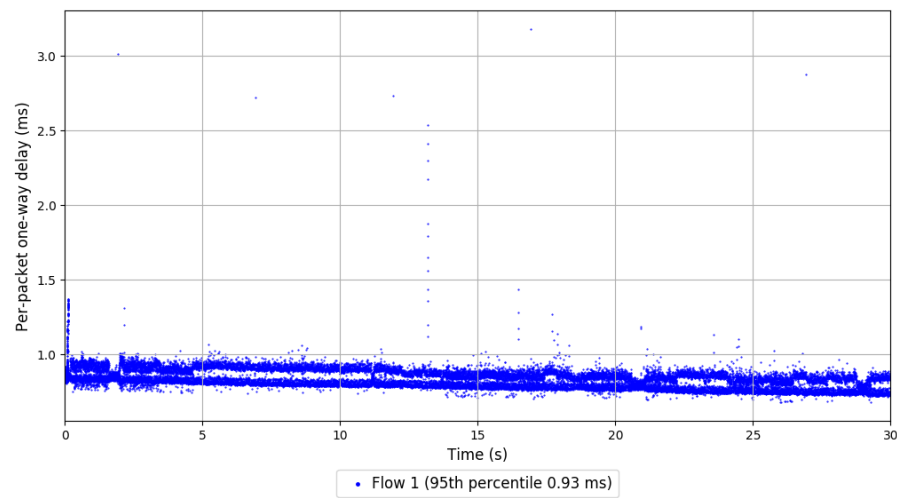
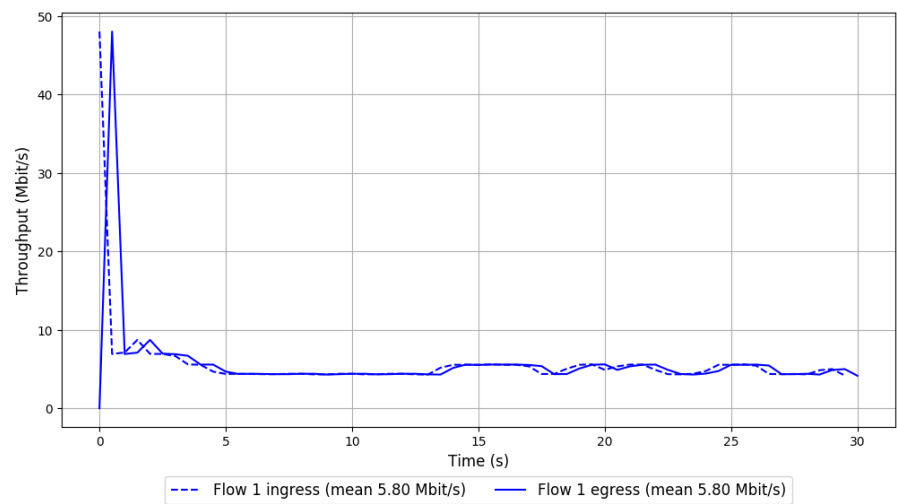


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-12-20 04:41:24
End at: 2018-12-20 04:41:54
Local clock offset: 1.781 ms
Remote clock offset: -0.076 ms

# Below is generated by plot.py at 2018-12-20 07:44:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 0.930 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 0.930 ms
Loss rate: 0.01%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-12-20 05:08:12

End at: 2018-12-20 05:08:42

Local clock offset: 3.183 ms

Remote clock offset: 3.426 ms

Below is generated by plot.py at 2018-12-20 07:45:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.60 Mbit/s

95th percentile per-packet one-way delay: 1.356 ms

Loss rate: 0.01%

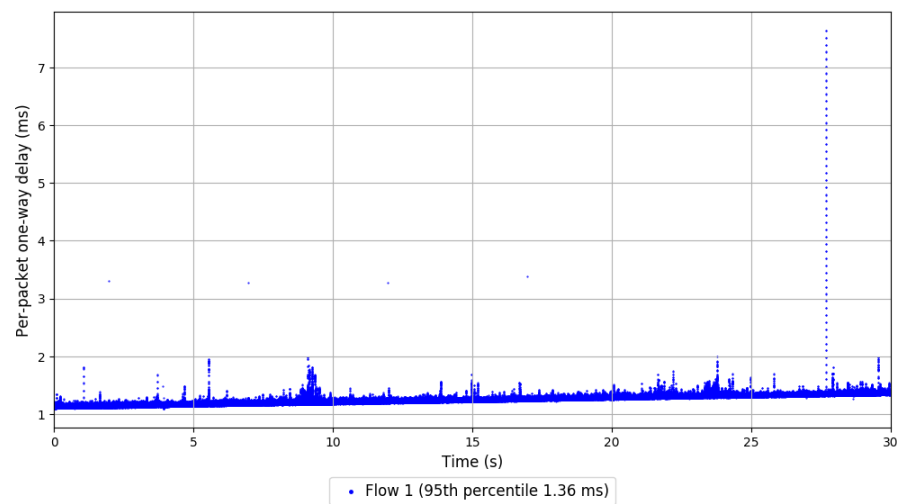
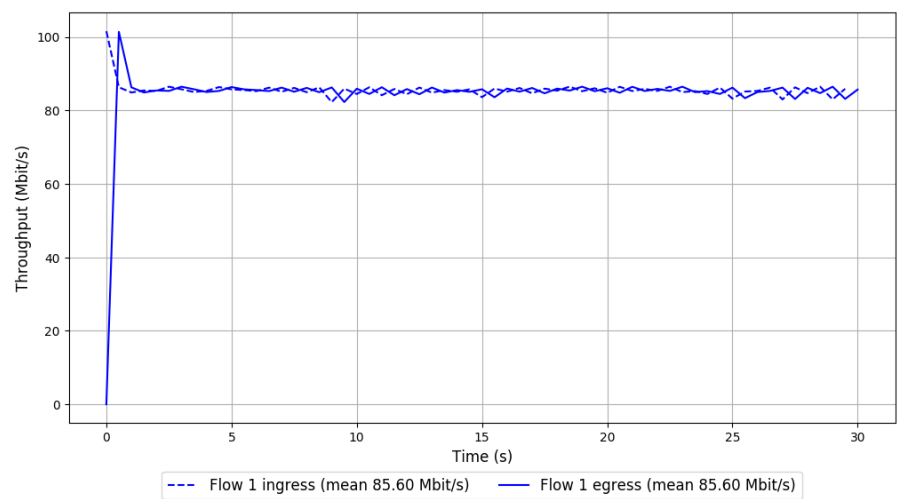
-- Flow 1:

Average throughput: 85.60 Mbit/s

95th percentile per-packet one-way delay: 1.356 ms

Loss rate: 0.01%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-12-20 05:35:12

End at: 2018-12-20 05:35:42

Local clock offset: 0.006 ms

Remote clock offset: 2.353 ms

Below is generated by plot.py at 2018-12-20 07:45:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.71 Mbit/s

95th percentile per-packet one-way delay: 0.939 ms

Loss rate: 0.01%

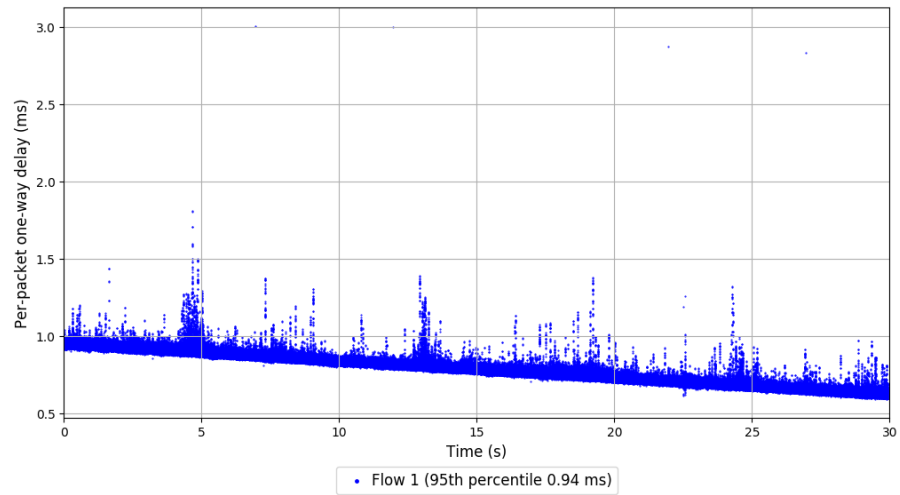
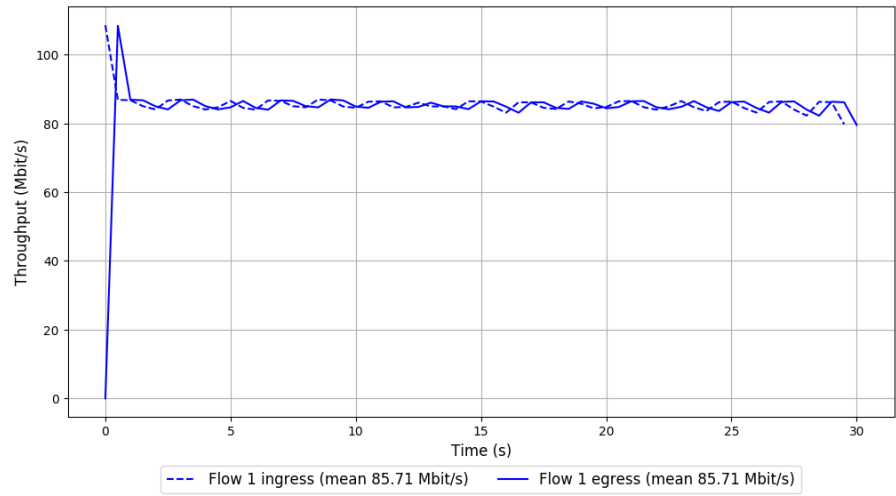
-- Flow 1:

Average throughput: 85.71 Mbit/s

95th percentile per-packet one-way delay: 0.939 ms

Loss rate: 0.01%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-12-20 06:02:10

End at: 2018-12-20 06:02:40

Local clock offset: 3.777 ms

Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-12-20 07:46:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.65 Mbit/s

95th percentile per-packet one-way delay: 1.025 ms

Loss rate: 0.01%

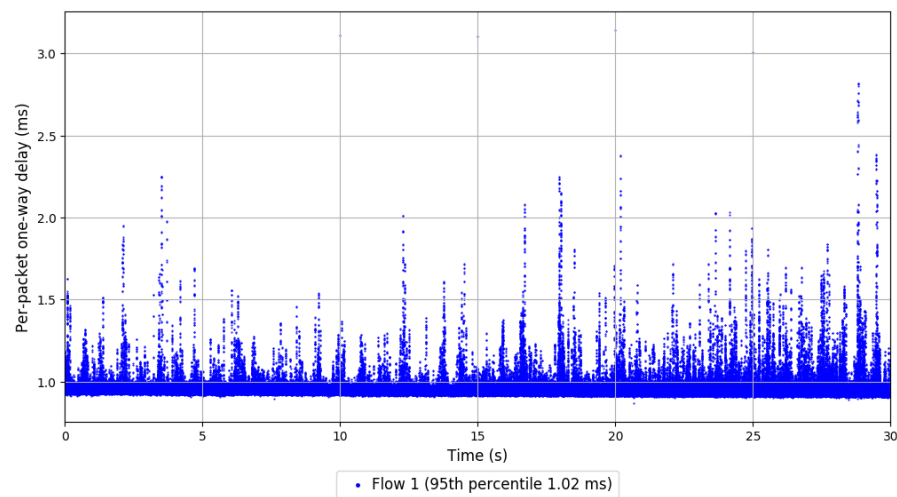
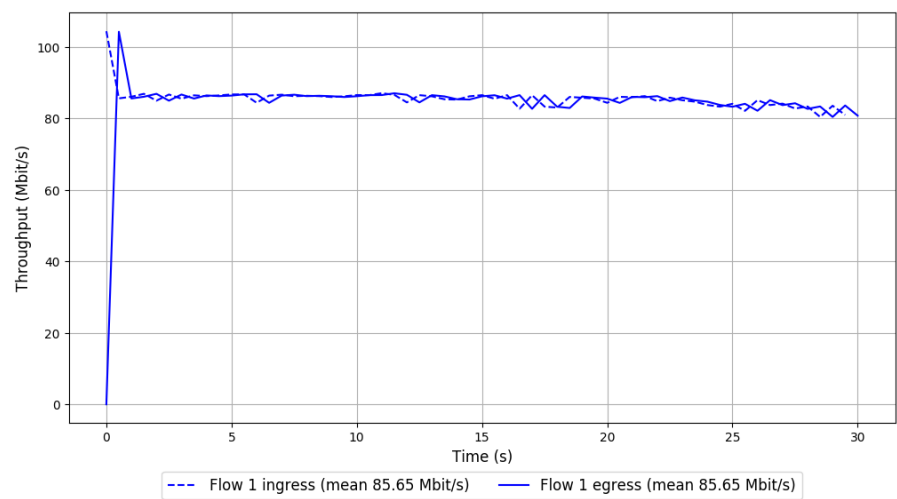
-- Flow 1:

Average throughput: 85.65 Mbit/s

95th percentile per-packet one-way delay: 1.025 ms

Loss rate: 0.01%

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

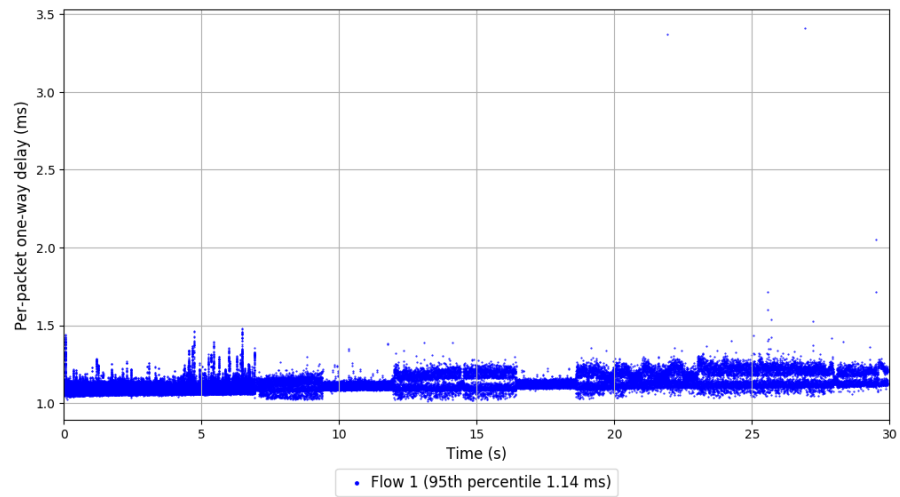
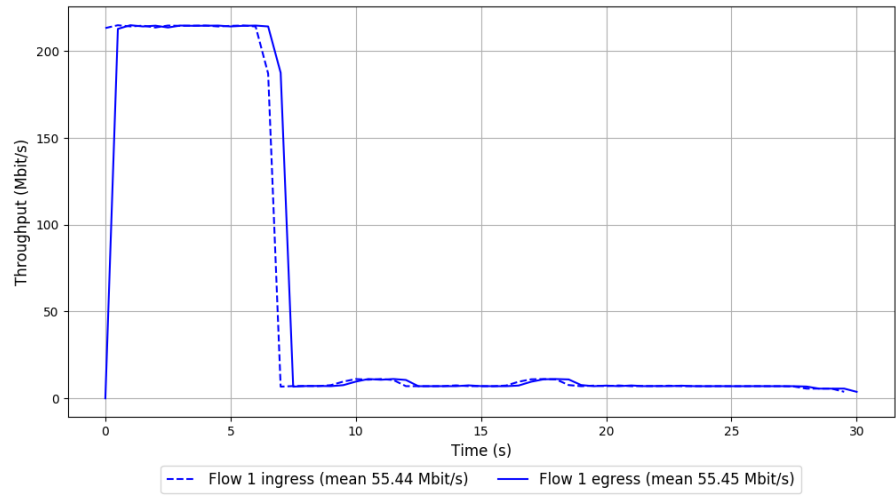


Run 5: Statistics of TaoVA-100x

Start at: 2018-12-20 06:28:40
End at: 2018-12-20 06:29:10
Local clock offset: -3.682 ms
Remote clock offset: -0.199 ms

Below is generated by plot.py at 2018-12-20 07:46:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 55.45 Mbit/s
95th percentile per-packet one-way delay: 1.142 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 55.45 Mbit/s
95th percentile per-packet one-way delay: 1.142 ms
Loss rate: 0.00%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-12-20 05:02:36

End at: 2018-12-20 05:03:06

Local clock offset: 4.106 ms

Remote clock offset: 2.393 ms

Below is generated by plot.py at 2018-12-20 07:46:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 192.42 Mbit/s

95th percentile per-packet one-way delay: 1.760 ms

Loss rate: 0.00%

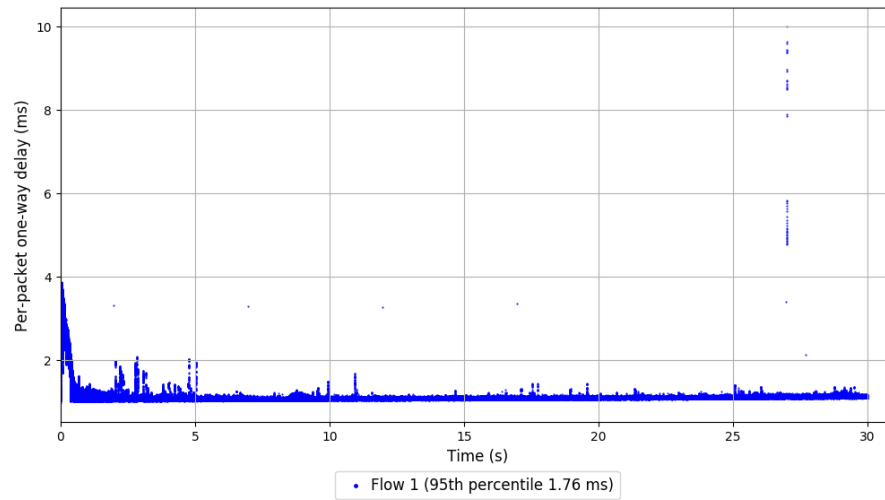
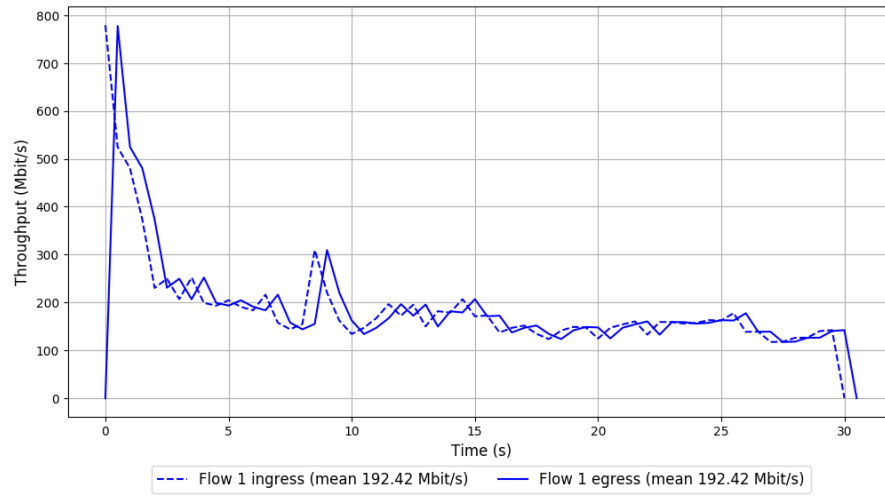
-- Flow 1:

Average throughput: 192.42 Mbit/s

95th percentile per-packet one-way delay: 1.760 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-12-20 05:29:31

End at: 2018-12-20 05:30:01

Local clock offset: 0.176 ms

Remote clock offset: 4.594 ms

Below is generated by plot.py at 2018-12-20 07:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 187.47 Mbit/s

95th percentile per-packet one-way delay: 1.402 ms

Loss rate: 0.00%

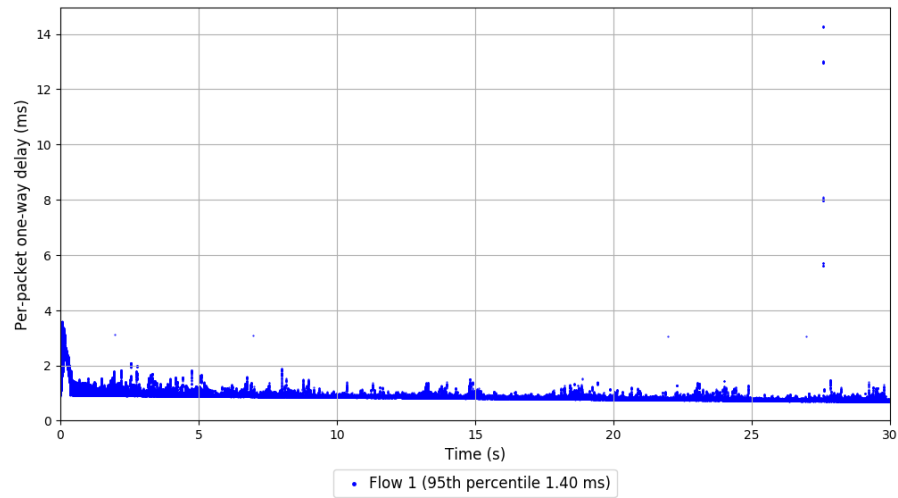
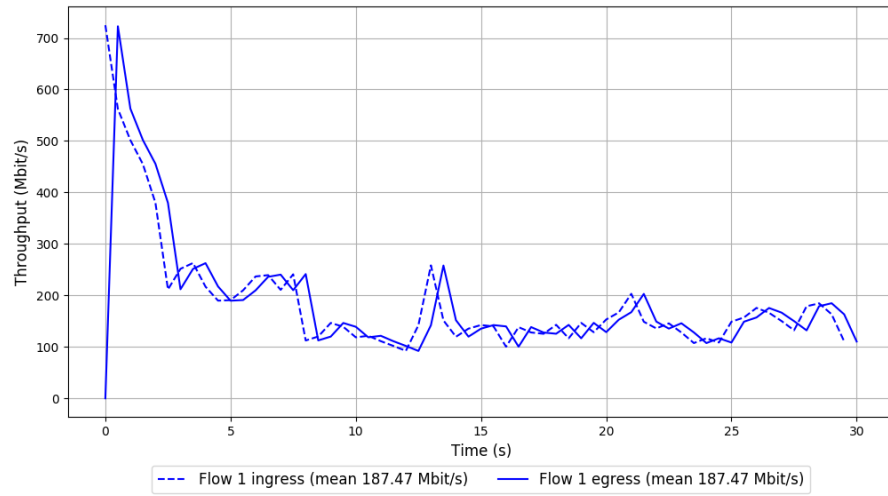
-- Flow 1:

Average throughput: 187.47 Mbit/s

95th percentile per-packet one-way delay: 1.402 ms

Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-12-20 05:56:30

End at: 2018-12-20 05:57:00

Local clock offset: 3.484 ms

Remote clock offset: -0.01 ms

Below is generated by plot.py at 2018-12-20 07:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 173.87 Mbit/s

95th percentile per-packet one-way delay: 1.118 ms

Loss rate: 0.00%

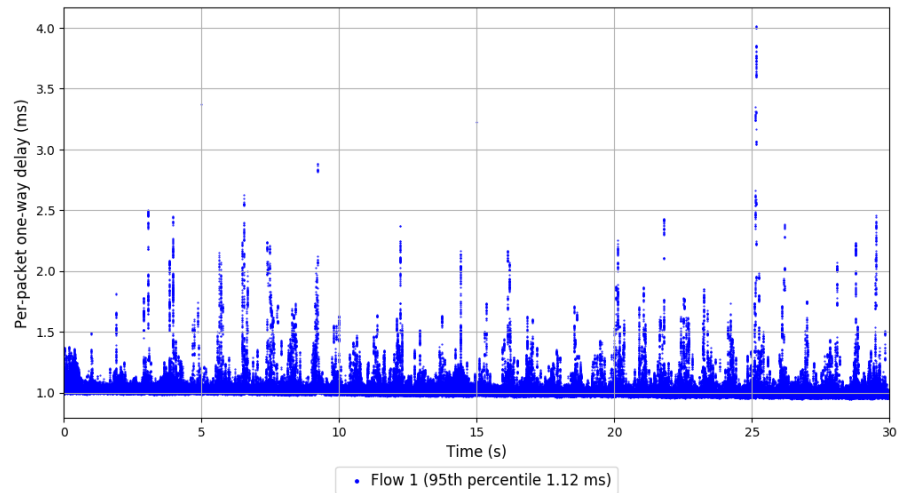
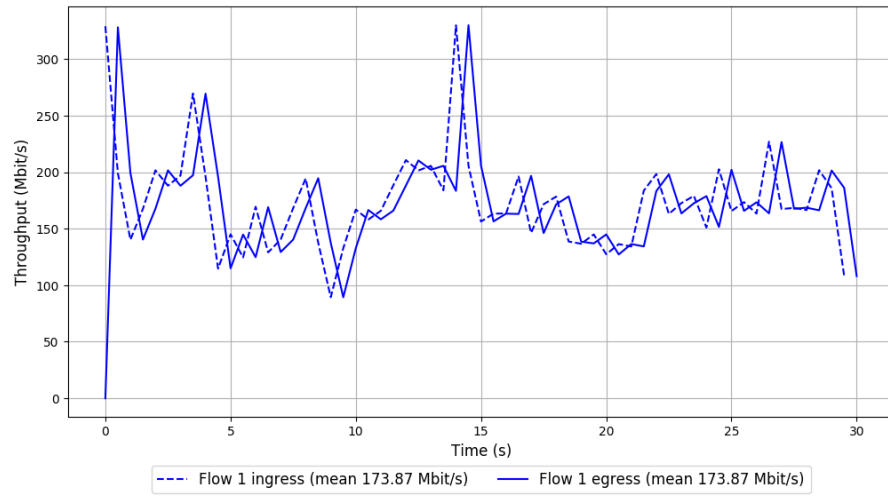
-- Flow 1:

Average throughput: 173.87 Mbit/s

95th percentile per-packet one-way delay: 1.118 ms

Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link

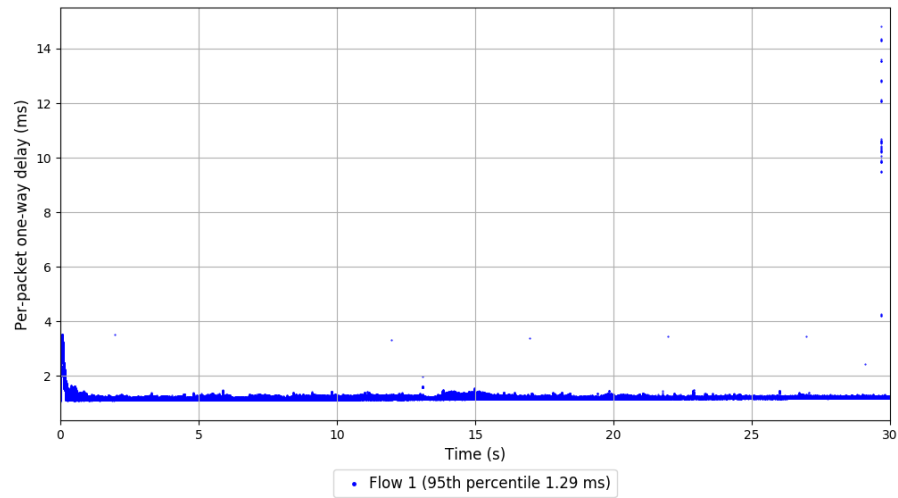
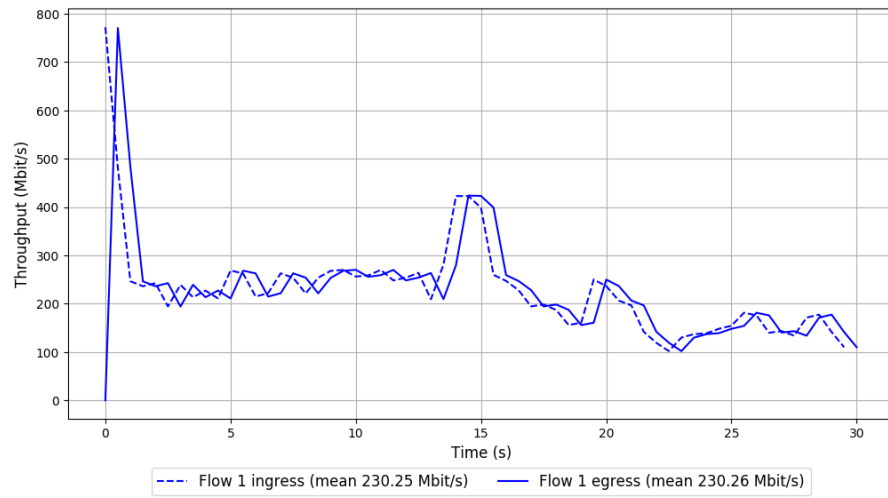


Run 4: Statistics of TCP Vegas

Start at: 2018-12-20 06:23:00
End at: 2018-12-20 06:23:30
Local clock offset: -2.893 ms
Remote clock offset: -0.198 ms

Below is generated by plot.py at 2018-12-20 07:47:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 230.26 Mbit/s
95th percentile per-packet one-way delay: 1.293 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 230.26 Mbit/s
95th percentile per-packet one-way delay: 1.293 ms
Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 06:50:05

End at: 2018-12-20 06:50:35

Local clock offset: 2.375 ms

Remote clock offset: 2.791 ms

Below is generated by plot.py at 2018-12-20 07:47:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 215.84 Mbit/s

95th percentile per-packet one-way delay: 1.149 ms

Loss rate: 0.01%

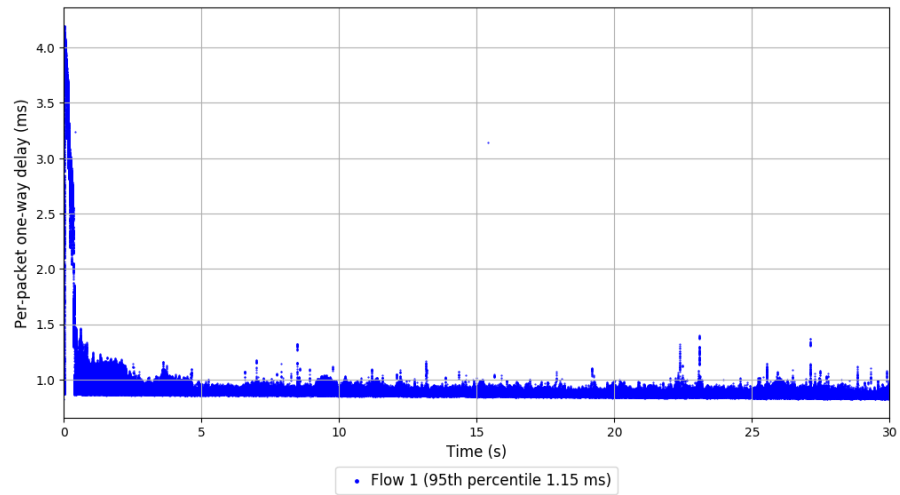
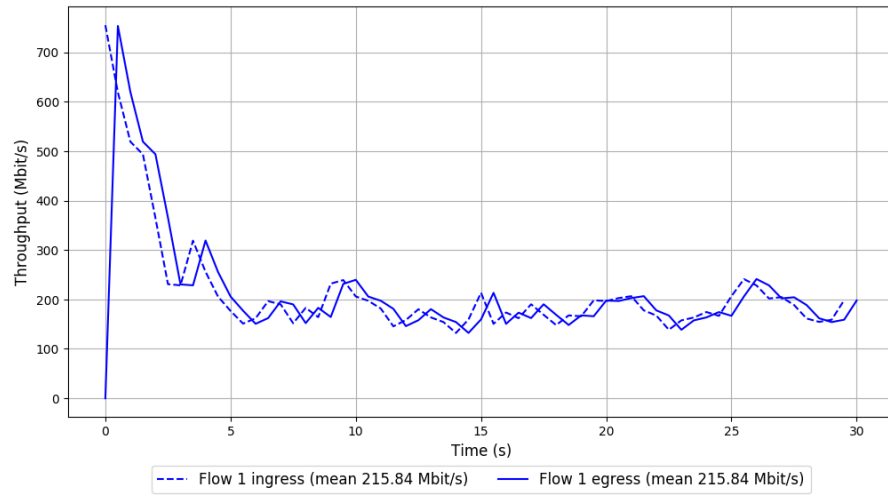
-- Flow 1:

Average throughput: 215.84 Mbit/s

95th percentile per-packet one-way delay: 1.149 ms

Loss rate: 0.01%

Run 5: Report of TCP Vegas — Data Link

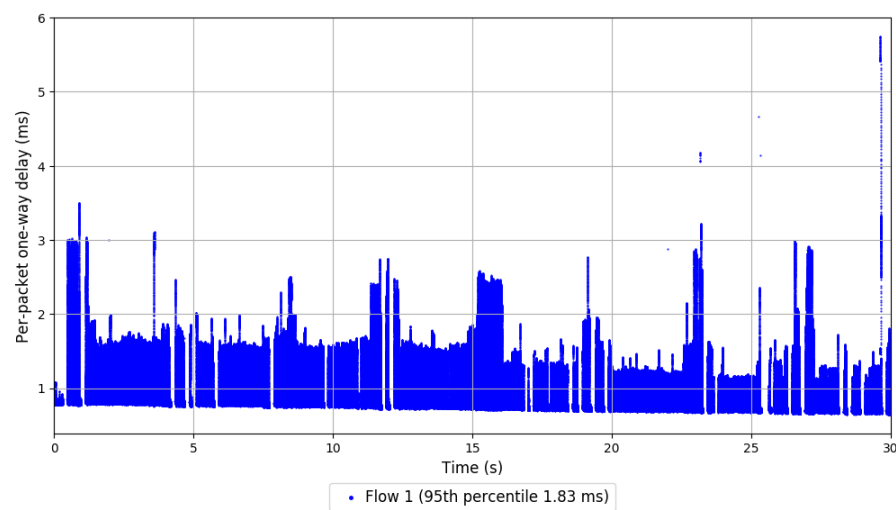
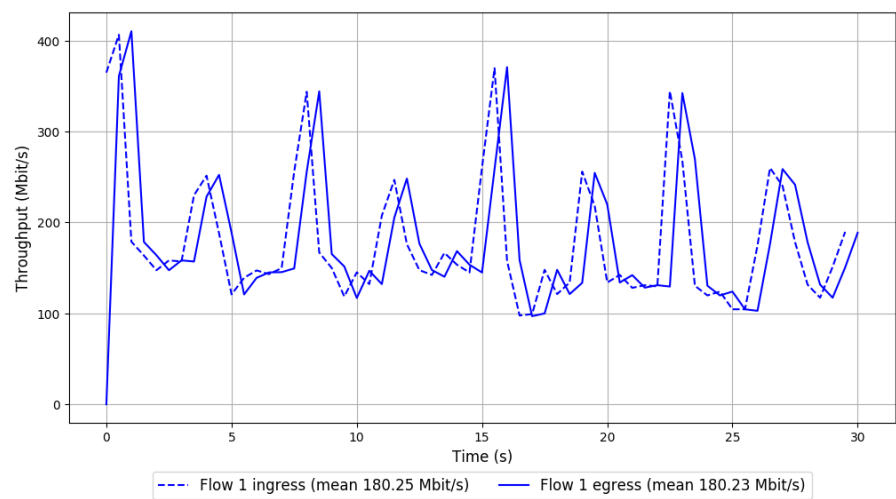


Run 1: Statistics of Verus

Start at: 2018-12-20 04:38:28
End at: 2018-12-20 04:38:58
Local clock offset: 1.03 ms
Remote clock offset: -0.116 ms

Below is generated by plot.py at 2018-12-20 07:47:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 180.23 Mbit/s
95th percentile per-packet one-way delay: 1.831 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 180.23 Mbit/s
95th percentile per-packet one-way delay: 1.831 ms
Loss rate: 0.02%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-12-20 05:05:15

End at: 2018-12-20 05:05:45

Local clock offset: 4.252 ms

Remote clock offset: 2.946 ms

Below is generated by plot.py at 2018-12-20 07:47:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 190.37 Mbit/s

95th percentile per-packet one-way delay: 2.689 ms

Loss rate: 0.01%

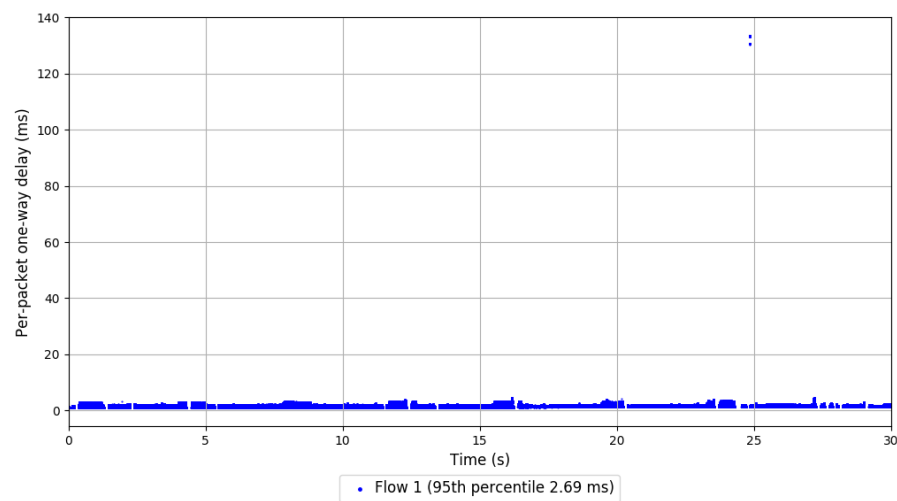
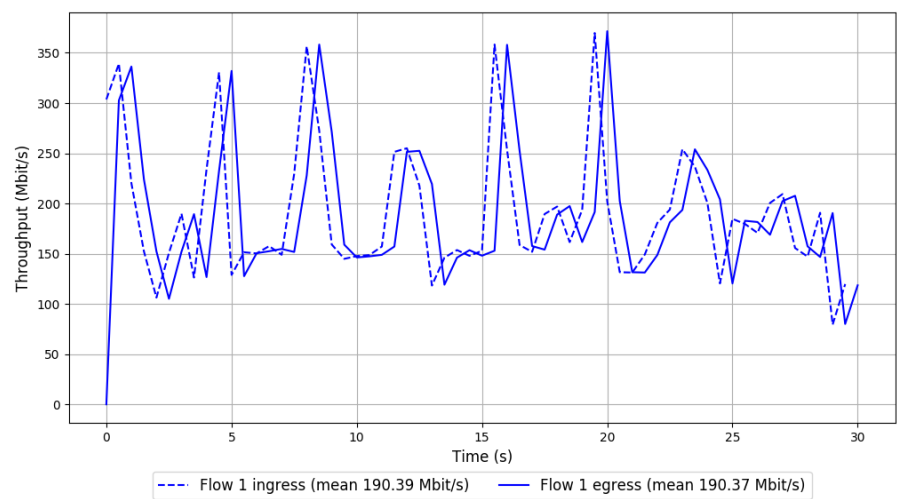
-- Flow 1:

Average throughput: 190.37 Mbit/s

95th percentile per-packet one-way delay: 2.689 ms

Loss rate: 0.01%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-12-20 05:32:10

End at: 2018-12-20 05:32:41

Local clock offset: 0.089 ms

Remote clock offset: 3.39 ms

Below is generated by plot.py at 2018-12-20 07:49:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 286.54 Mbit/s

95th percentile per-packet one-way delay: 2.462 ms

Loss rate: 0.01%

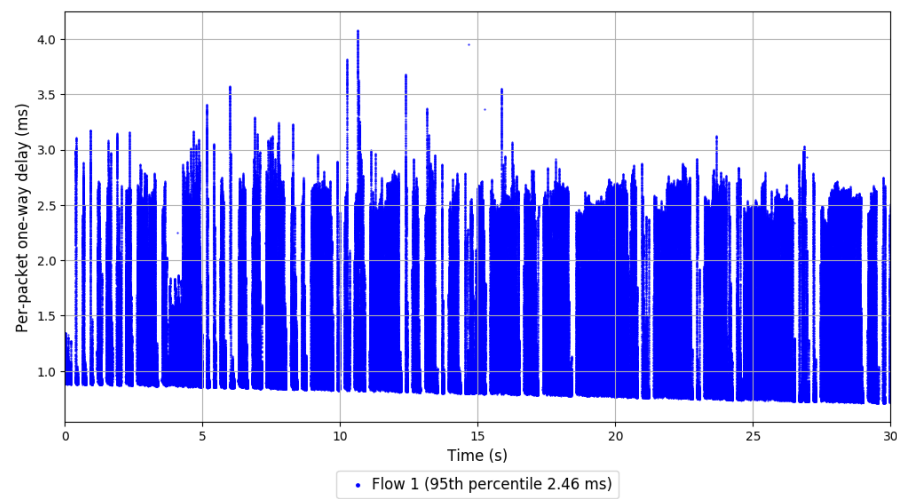
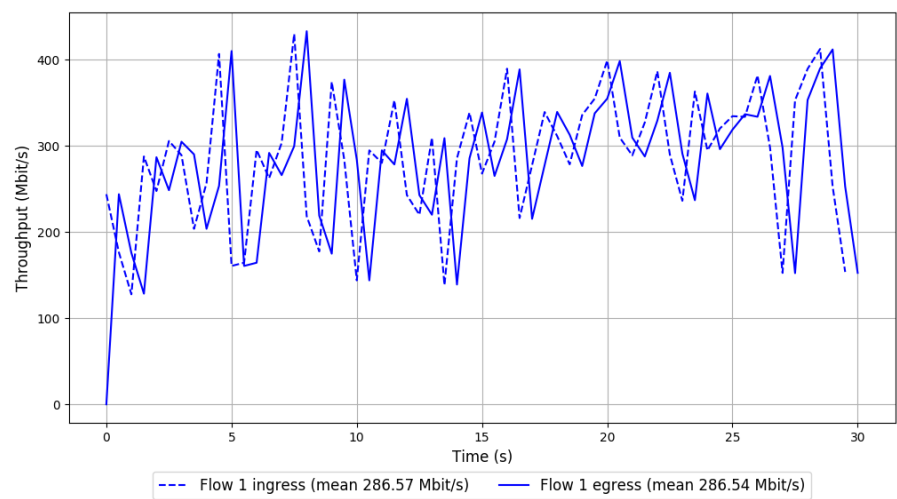
-- Flow 1:

Average throughput: 286.54 Mbit/s

95th percentile per-packet one-way delay: 2.462 ms

Loss rate: 0.01%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-12-20 05:59:09

End at: 2018-12-20 05:59:39

Local clock offset: 3.62 ms

Remote clock offset: -0.06 ms

Below is generated by plot.py at 2018-12-20 07:49:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 303.61 Mbit/s

95th percentile per-packet one-way delay: 2.765 ms

Loss rate: 0.01%

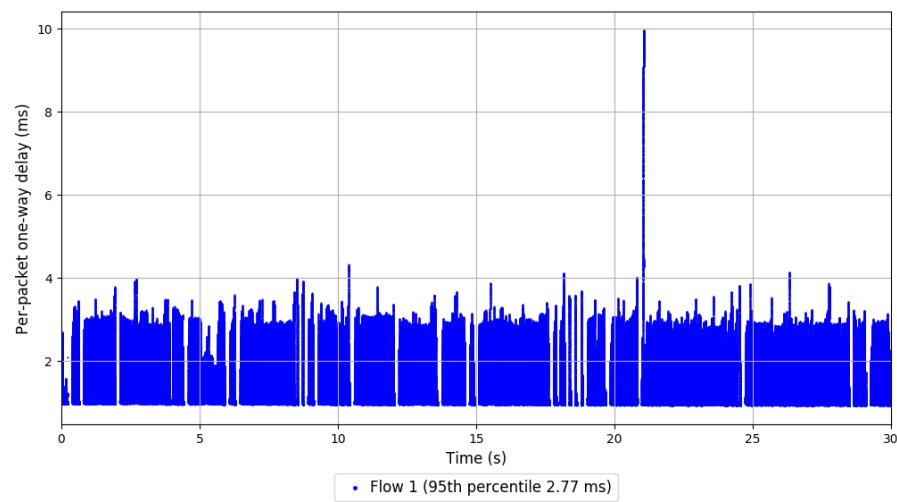
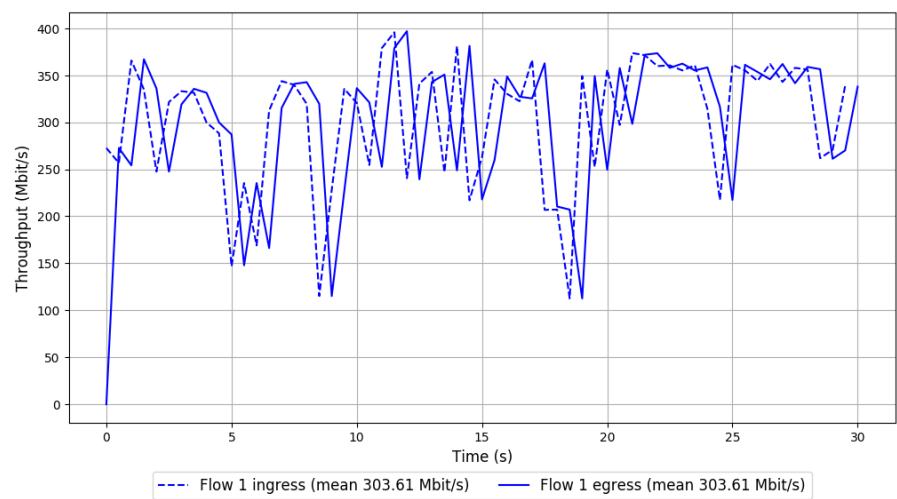
-- Flow 1:

Average throughput: 303.61 Mbit/s

95th percentile per-packet one-way delay: 2.765 ms

Loss rate: 0.01%

Run 4: Report of Verus — Data Link

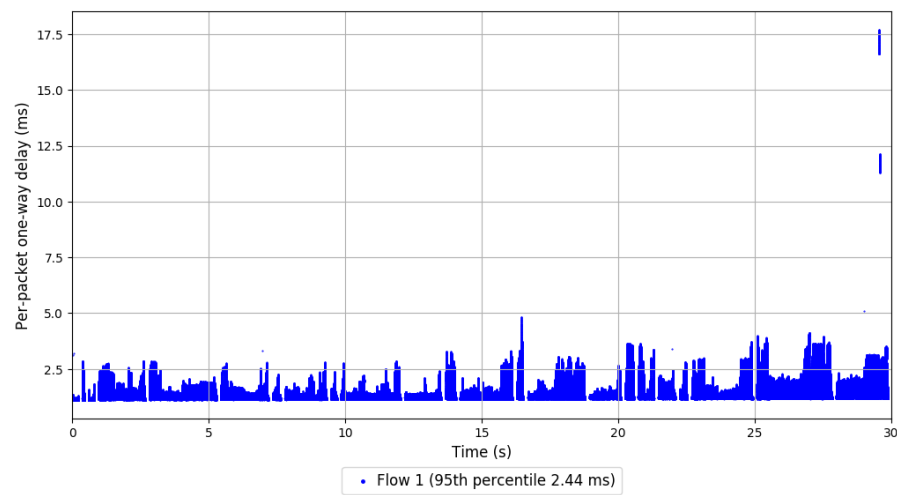
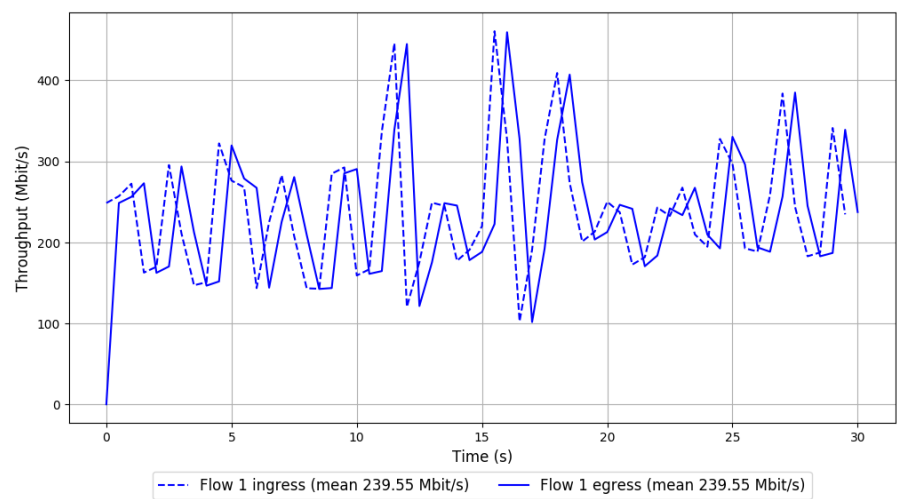


Run 5: Statistics of Verus

Start at: 2018-12-20 06:25:41
End at: 2018-12-20 06:26:11
Local clock offset: -3.276 ms
Remote clock offset: -0.212 ms

Below is generated by plot.py at 2018-12-20 07:49:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 239.55 Mbit/s
95th percentile per-packet one-way delay: 2.444 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 239.55 Mbit/s
95th percentile per-packet one-way delay: 2.444 ms
Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-12-20 04:47:55

End at: 2018-12-20 04:48:25

Local clock offset: 2.911 ms

Remote clock offset: -0.109 ms

Below is generated by plot.py at 2018-12-20 07:50:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 353.71 Mbit/s

95th percentile per-packet one-way delay: 0.997 ms

Loss rate: 0.01%

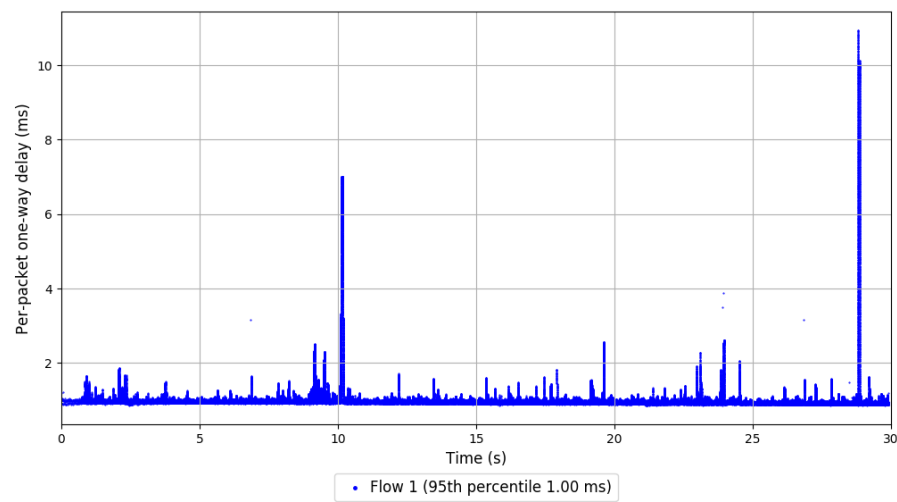
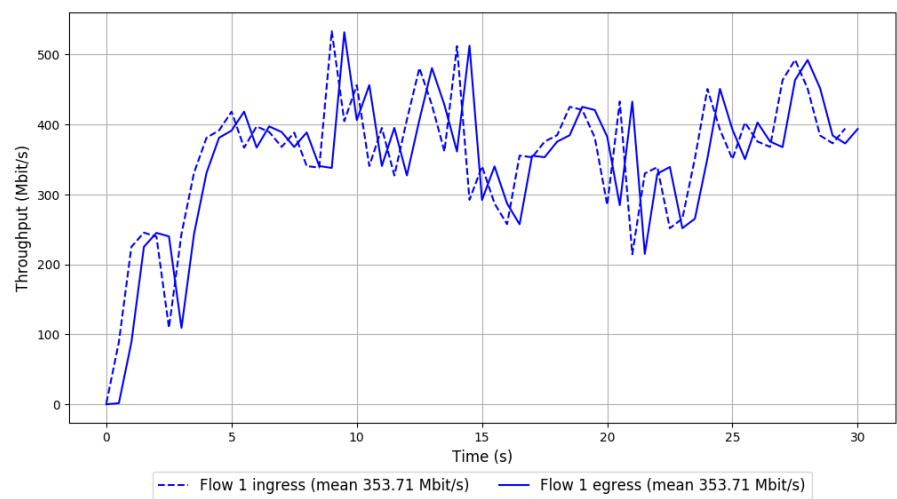
-- Flow 1:

Average throughput: 353.71 Mbit/s

95th percentile per-packet one-way delay: 0.997 ms

Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-12-20 05:14:48

End at: 2018-12-20 05:15:18

Local clock offset: 1.498 ms

Remote clock offset: 4.119 ms

Below is generated by plot.py at 2018-12-20 07:50:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 256.94 Mbit/s

95th percentile per-packet one-way delay: 1.255 ms

Loss rate: 0.01%

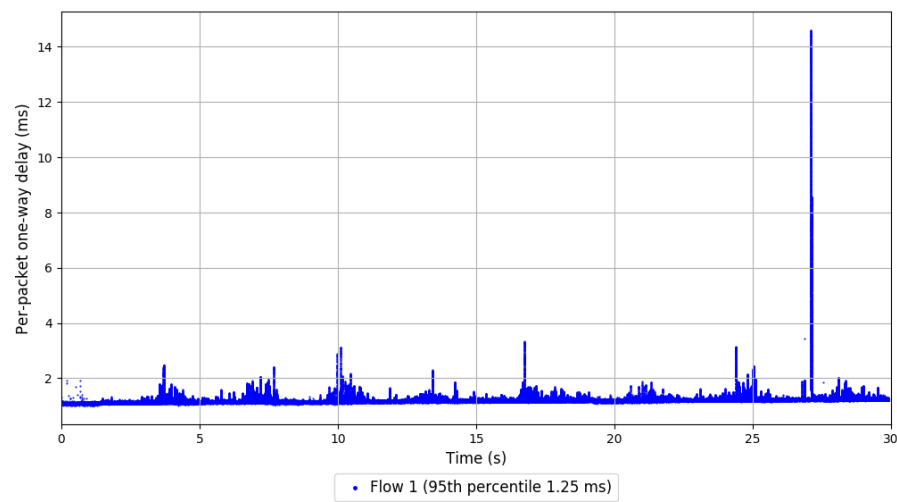
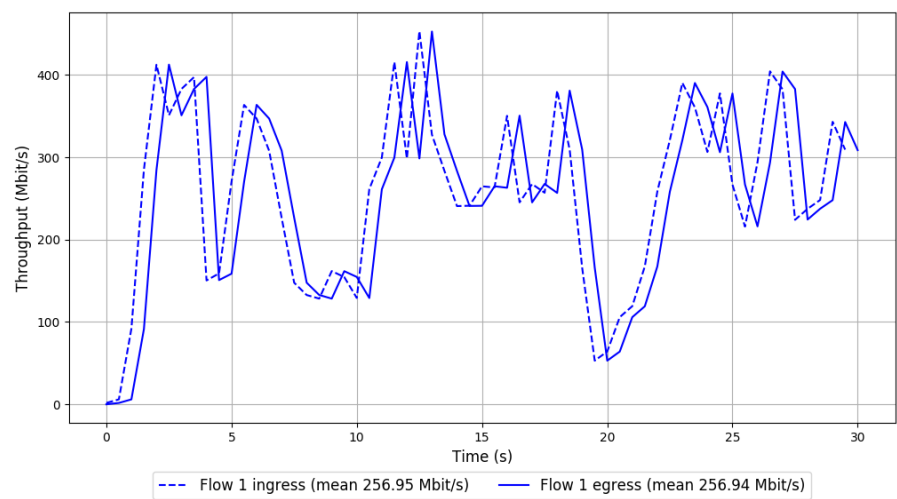
-- Flow 1:

Average throughput: 256.94 Mbit/s

95th percentile per-packet one-way delay: 1.255 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-12-20 05:41:49

End at: 2018-12-20 05:42:19

Local clock offset: 1.725 ms

Remote clock offset: 1.007 ms

Below is generated by plot.py at 2018-12-20 07:50:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 257.47 Mbit/s

95th percentile per-packet one-way delay: 0.821 ms

Loss rate: 0.01%

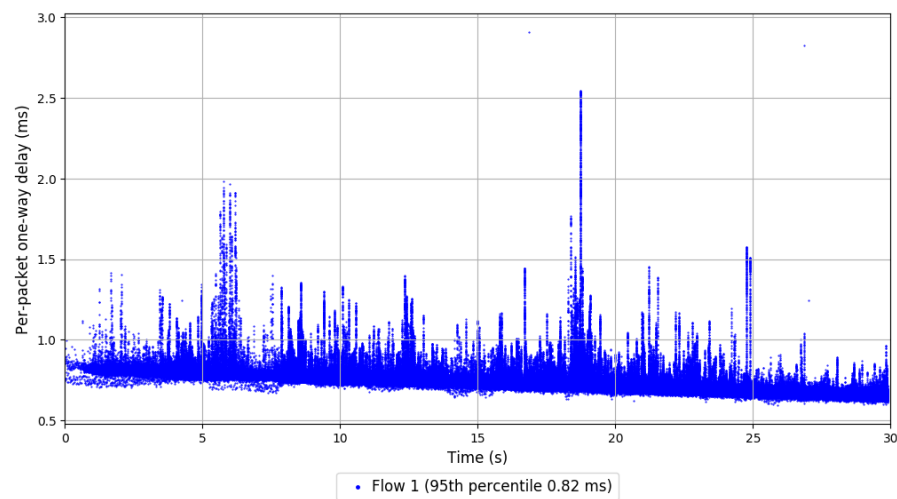
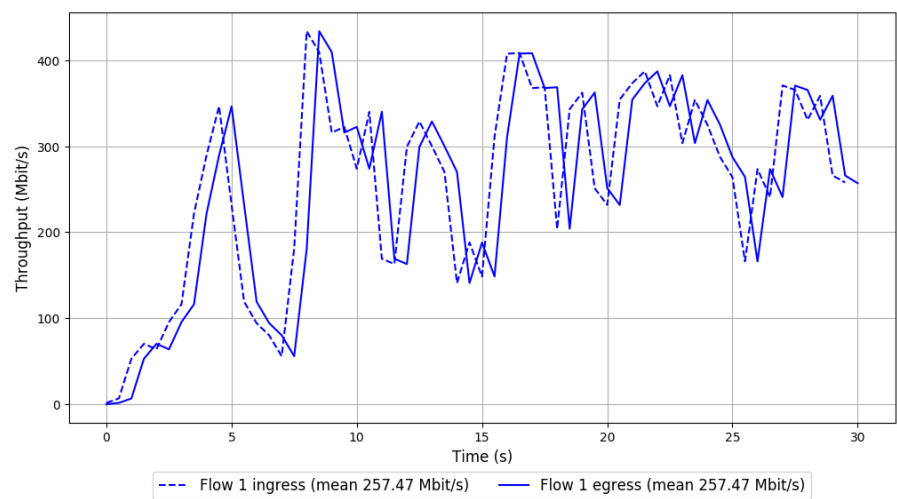
-- Flow 1:

Average throughput: 257.47 Mbit/s

95th percentile per-packet one-way delay: 0.821 ms

Loss rate: 0.01%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-12-20 06:08:47

End at: 2018-12-20 06:09:17

Local clock offset: 1.675 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-12-20 07:50:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 147.20 Mbit/s

95th percentile per-packet one-way delay: 2.757 ms

Loss rate: 0.02%

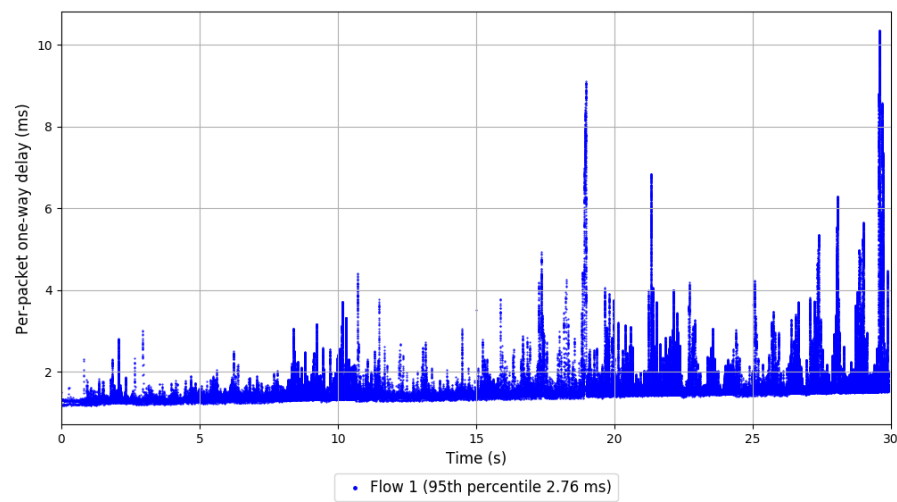
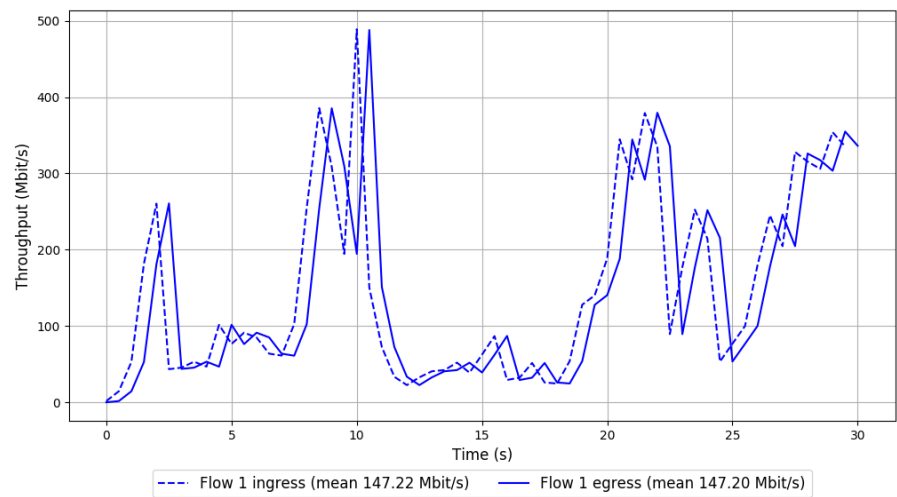
-- Flow 1:

Average throughput: 147.20 Mbit/s

95th percentile per-packet one-way delay: 2.757 ms

Loss rate: 0.02%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 06:35:16

End at: 2018-12-20 06:35:46

Local clock offset: -4.333 ms

Remote clock offset: -0.26 ms

Below is generated by plot.py at 2018-12-20 07:50:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 375.93 Mbit/s

95th percentile per-packet one-way delay: 0.904 ms

Loss rate: 0.00%

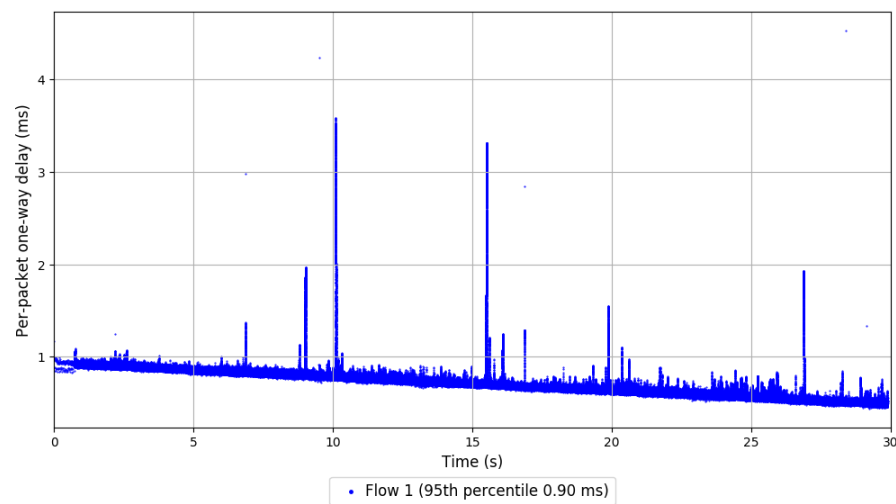
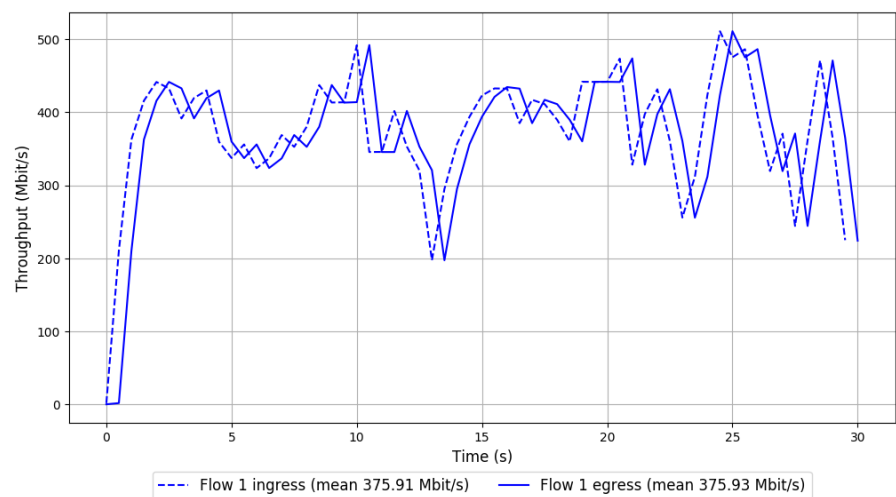
-- Flow 1:

Average throughput: 375.93 Mbit/s

95th percentile per-packet one-way delay: 0.904 ms

Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

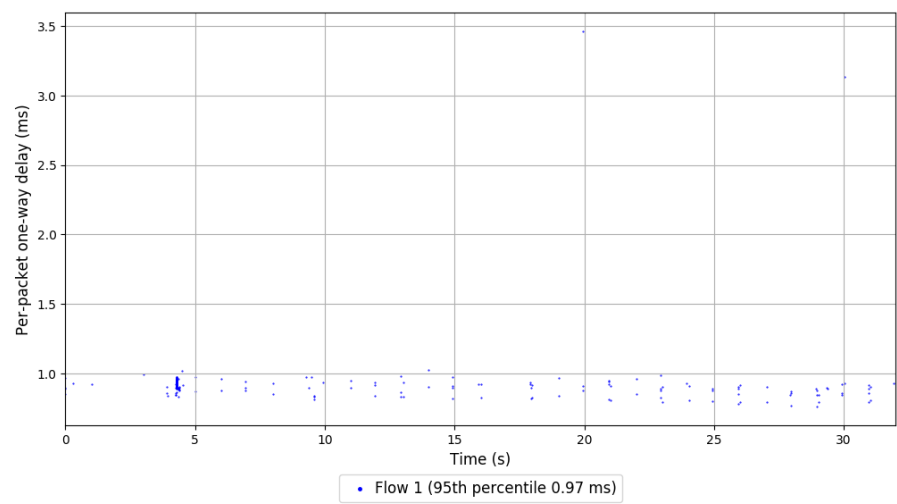
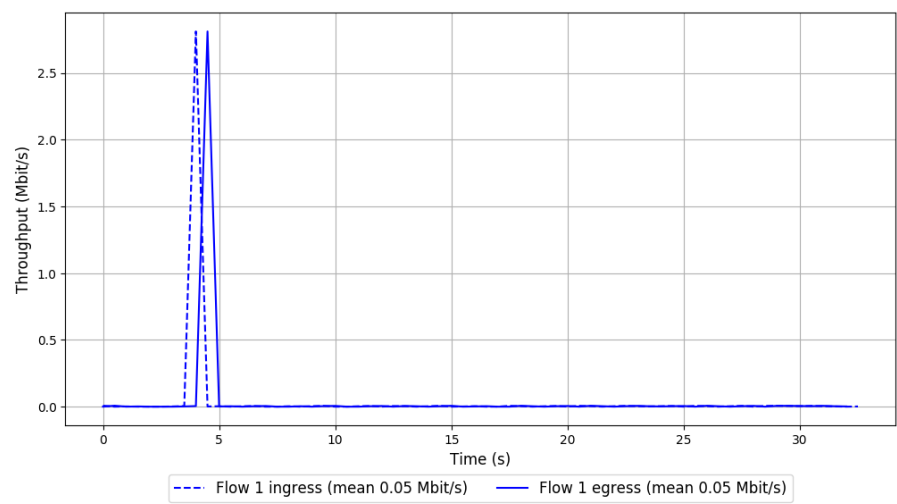


Run 1: Statistics of WebRTC media

Start at: 2018-12-20 04:43:49
End at: 2018-12-20 04:44:19
Local clock offset: 2.268 ms
Remote clock offset: -0.114 ms

Below is generated by plot.py at 2018-12-20 07:50:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 0.972 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 0.972 ms
Loss rate: 0.05%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-12-20 05:10:43

End at: 2018-12-20 05:11:13

Local clock offset: 2.424 ms

Remote clock offset: 3.765 ms

Below is generated by plot.py at 2018-12-20 07:50:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 1.402 ms

Loss rate: 0.00%

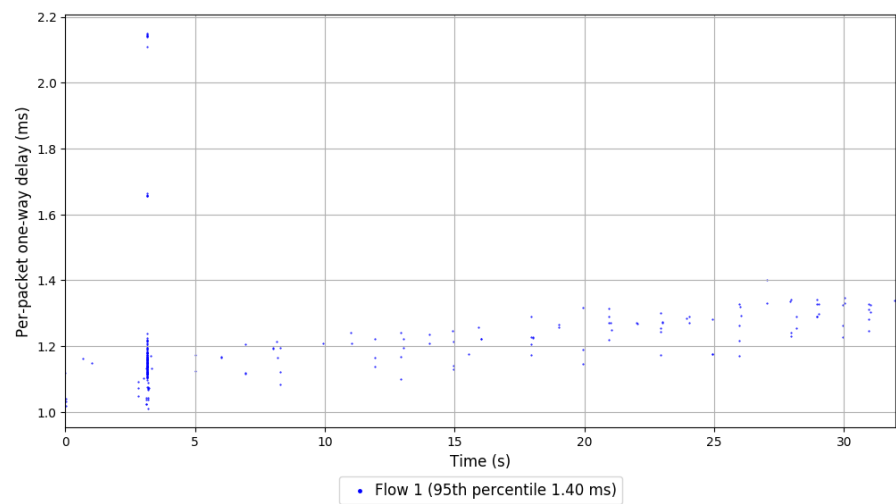
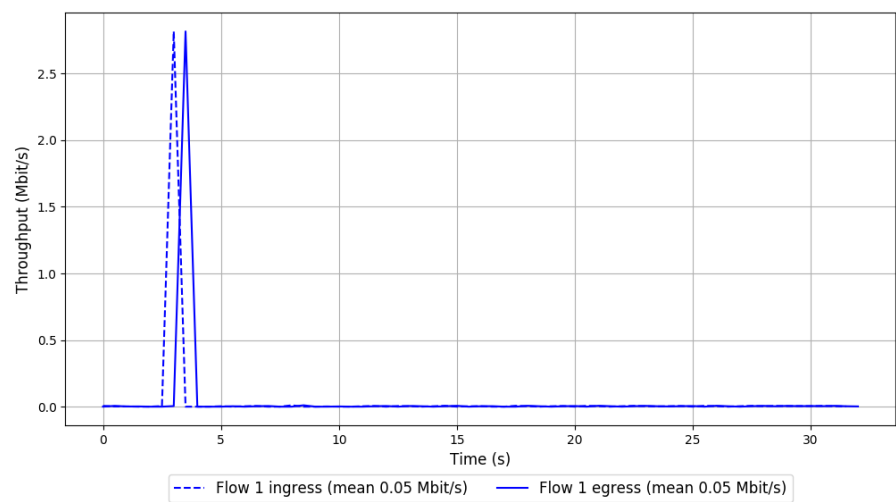
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 1.402 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-12-20 05:37:43

End at: 2018-12-20 05:38:13

Local clock offset: 0.714 ms

Remote clock offset: 1.712 ms

Below is generated by plot.py at 2018-12-20 07:50:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 0.892 ms

Loss rate: 0.00%

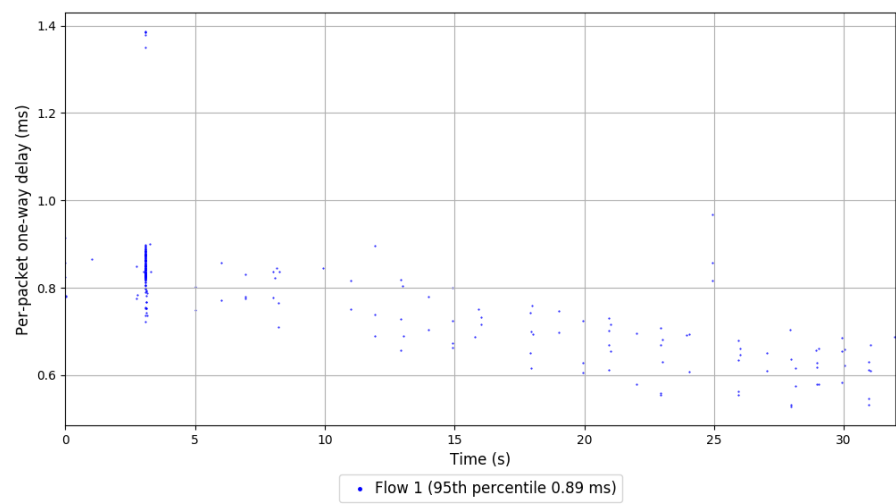
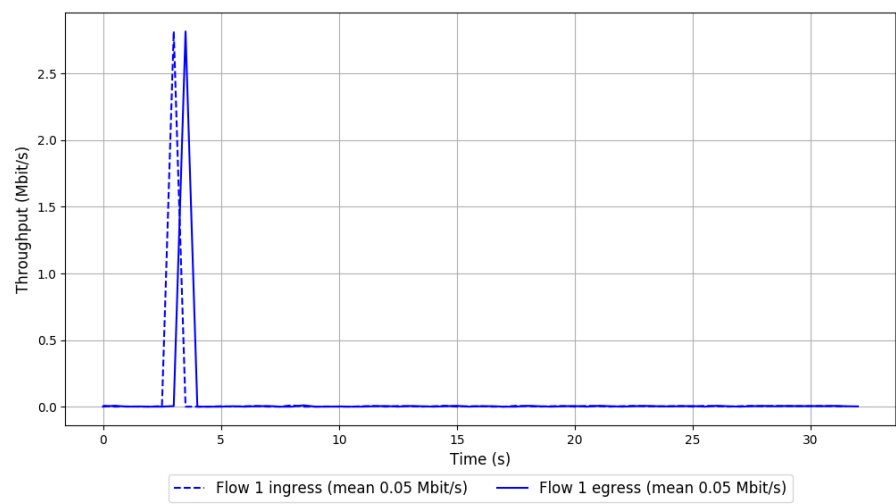
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 0.892 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

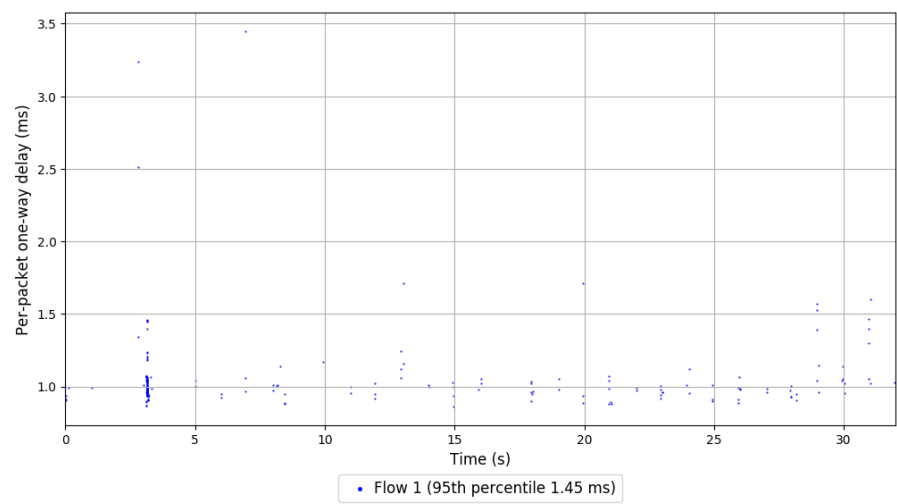
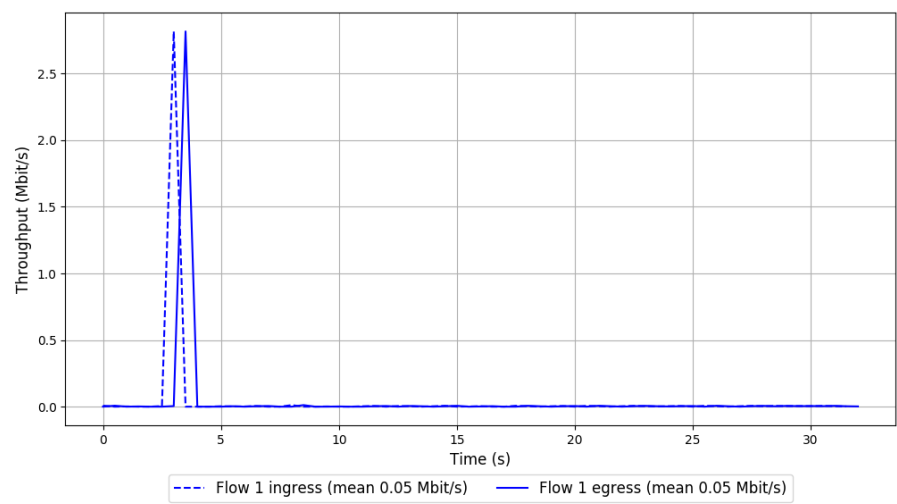


Run 4: Statistics of WebRTC media

Start at: 2018-12-20 06:04:41
End at: 2018-12-20 06:05:11
Local clock offset: 3.854 ms
Remote clock offset: -0.097 ms

Below is generated by plot.py at 2018-12-20 07:50:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.449 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.449 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-12-20 06:31:09
End at: 2018-12-20 06:31:39
Local clock offset: -3.958 ms
Remote clock offset: -0.198 ms

Below is generated by plot.py at 2018-12-20 07:50:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.205 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.205 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

