

Pantheon Report

Generated at 2019-01-02 22:13:37 (UTC).

Data path: GCE Tokyo on *ens4 (local)* → GCE London on *ens4 (remote)*.

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

System info:

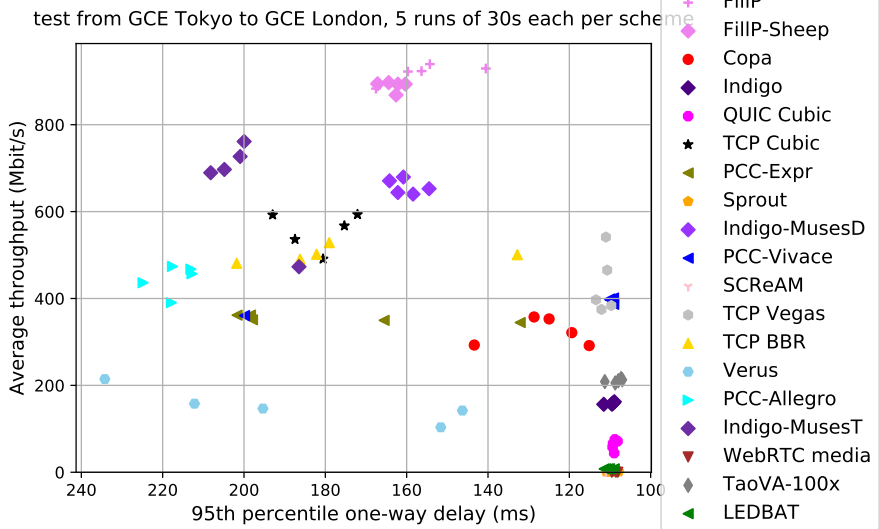
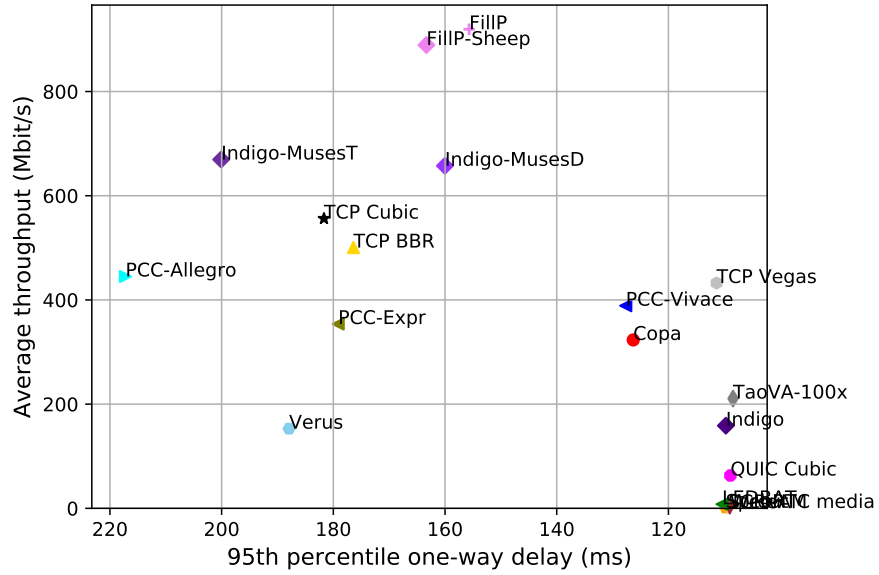
```
Linux 4.15.0-1025-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 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 GCE Tokyo to GCE London, 5 runs of 30s each per scheme
(mean of all runs by scheme)



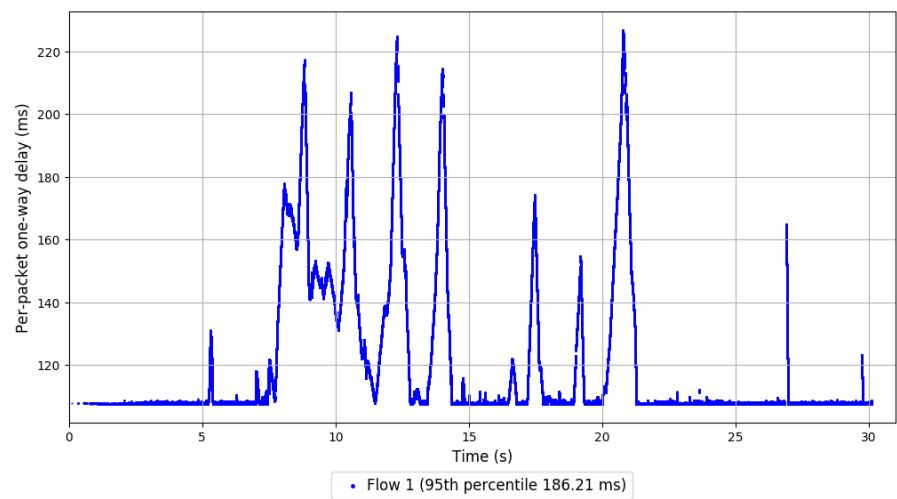
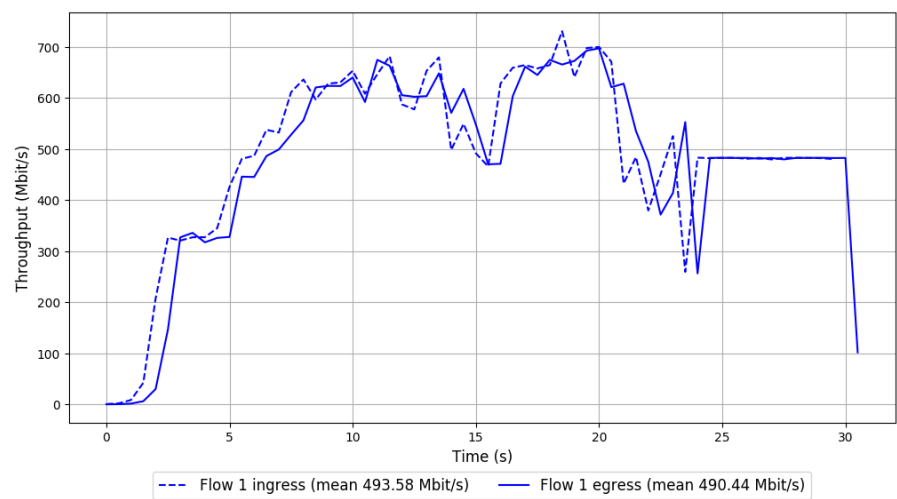
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	500.55	176.40	0.41
Copa	5	323.21	126.30	0.00
TCP Cubic	5	556.08	181.68	0.10
FillP	5	919.54	155.68	0.89
FillP-Sheep	5	889.25	163.34	1.23
Indigo	5	158.65	109.72	0.00
Indigo-MusesD	5	657.41	160.02	0.11
Indigo-MusesT	5	669.53	200.08	3.19
LEDBAT	5	7.86	110.39	0.00
PCC-Allegro	5	444.99	217.22	3.44
PCC-Expr	5	353.75	179.13	1.84
QUIC Cubic	5	63.06	108.90	0.00
SCReAM	5	0.21	109.33	0.00
Sprout	5	0.99	109.75	0.00
TaoVA-100x	5	210.70	108.43	0.00
TCP Vegas	5	432.44	111.38	0.03
Verus	5	152.89	187.93	1.26
PCC-Vivace	5	388.88	127.64	0.08
WebRTC media	5	0.80	109.01	0.00

Run 1: Statistics of TCP BBR

Start at: 2019-01-02 18:17:26
End at: 2019-01-02 18:17:56
Local clock offset: 13.096 ms
Remote clock offset: 10.446 ms

Below is generated by plot.py at 2019-01-02 20:44:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 490.44 Mbit/s
95th percentile per-packet one-way delay: 186.206 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 490.44 Mbit/s
95th percentile per-packet one-way delay: 186.206 ms
Loss rate: 0.64%

Run 1: Report of TCP BBR — Data Link

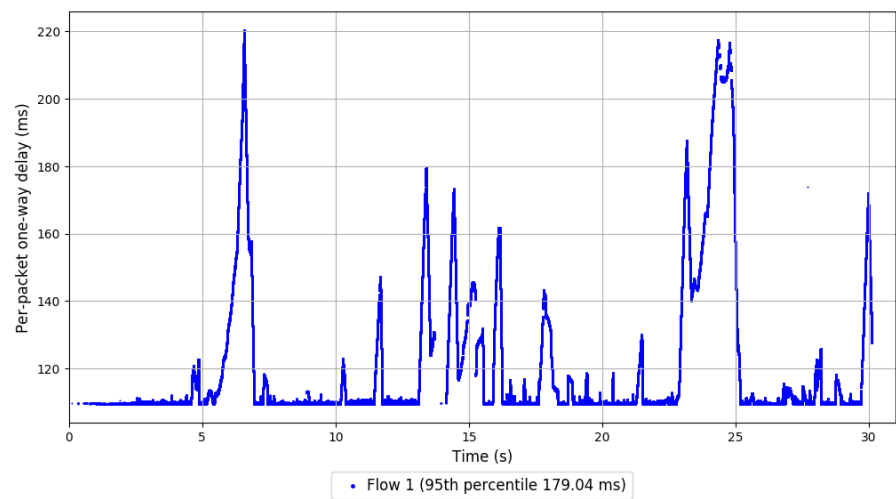
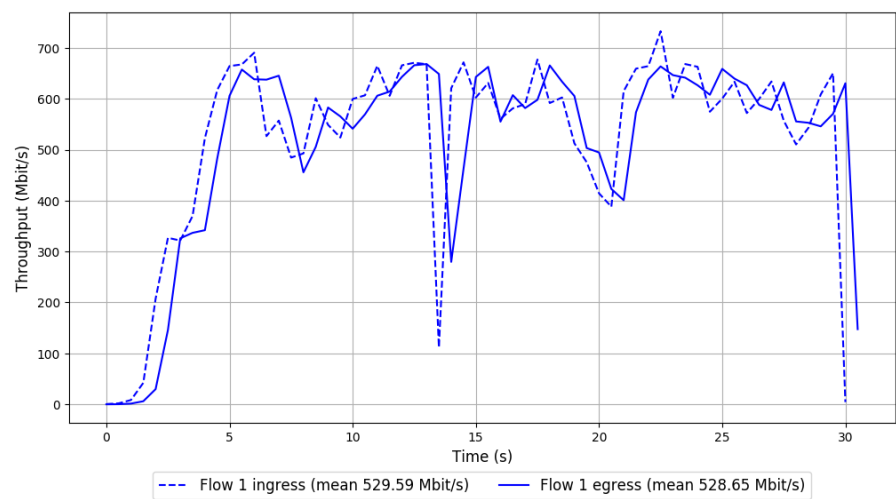


Run 2: Statistics of TCP BBR

Start at: 2019-01-02 18:46:36
End at: 2019-01-02 18:47:06
Local clock offset: 21.799 ms
Remote clock offset: 18.781 ms

Below is generated by plot.py at 2019-01-02 20:45:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 528.65 Mbit/s
95th percentile per-packet one-way delay: 179.037 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 528.65 Mbit/s
95th percentile per-packet one-way delay: 179.037 ms
Loss rate: 0.17%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-01-02 19:15:25

End at: 2019-01-02 19:15:55

Local clock offset: 10.213 ms

Remote clock offset: 9.421 ms

Below is generated by plot.py at 2019-01-02 20:45:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 501.76 Mbit/s

95th percentile per-packet one-way delay: 182.153 ms

Loss rate: 0.37%

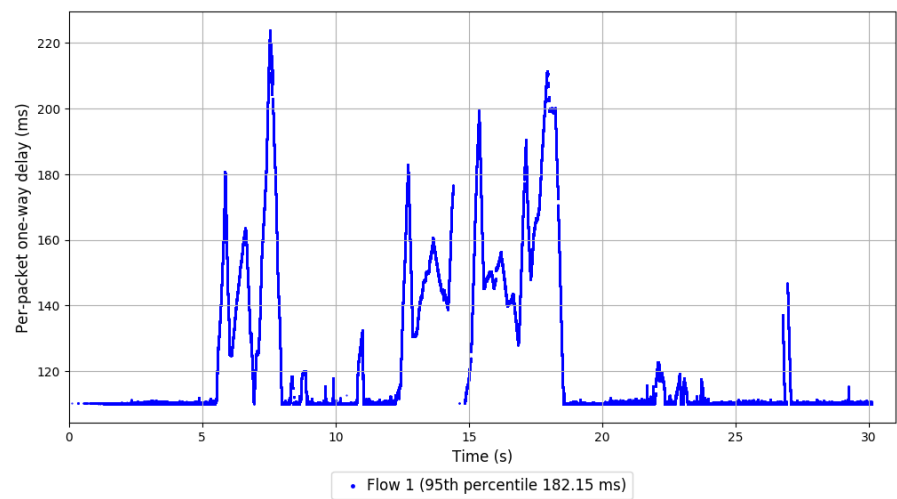
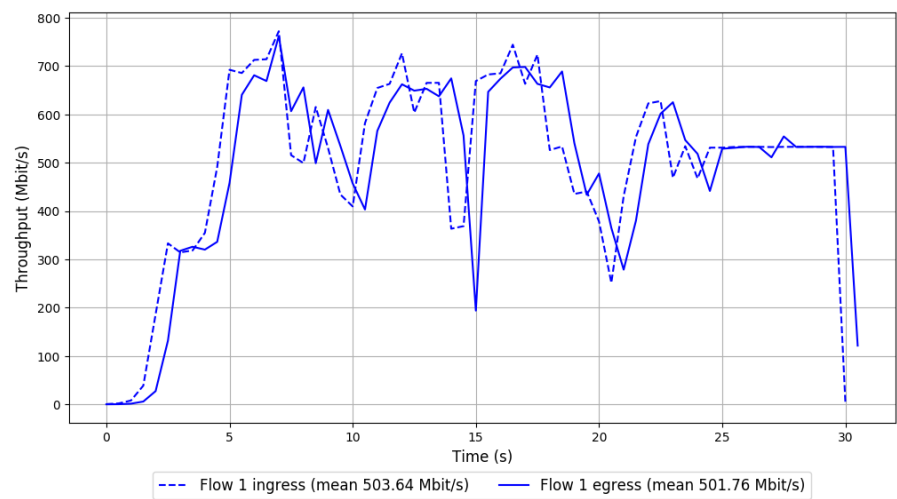
-- Flow 1:

Average throughput: 501.76 Mbit/s

95th percentile per-packet one-way delay: 182.153 ms

Loss rate: 0.37%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2019-01-02 19:44:22

End at: 2019-01-02 19:44:53

Local clock offset: 5.211 ms

Remote clock offset: 3.641 ms

Below is generated by plot.py at 2019-01-02 20:45:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 481.14 Mbit/s

95th percentile per-packet one-way delay: 201.795 ms

Loss rate: 0.86%

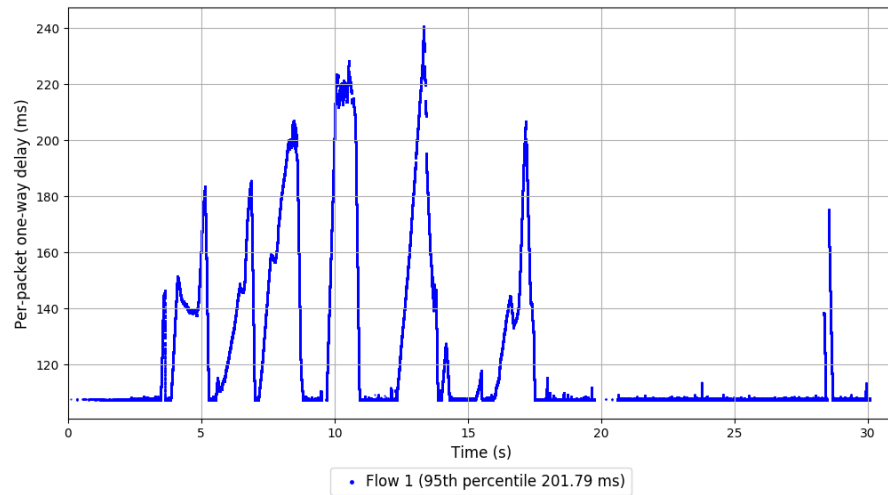
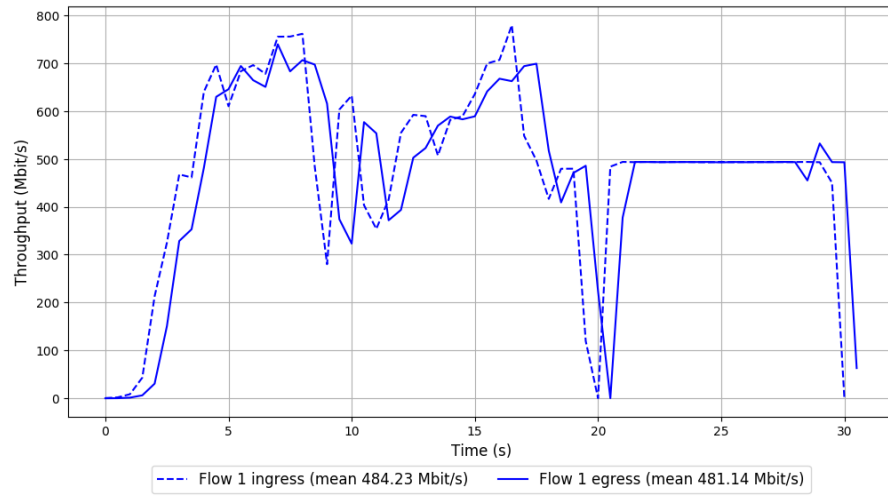
-- Flow 1:

Average throughput: 481.14 Mbit/s

95th percentile per-packet one-way delay: 201.795 ms

Loss rate: 0.86%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2019-01-02 20:13:30

End at: 2019-01-02 20:14:00

Local clock offset: 3.098 ms

Remote clock offset: 2.439 ms

Below is generated by plot.py at 2019-01-02 20:45:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 500.77 Mbit/s

95th percentile per-packet one-way delay: 132.789 ms

Loss rate: 0.00%

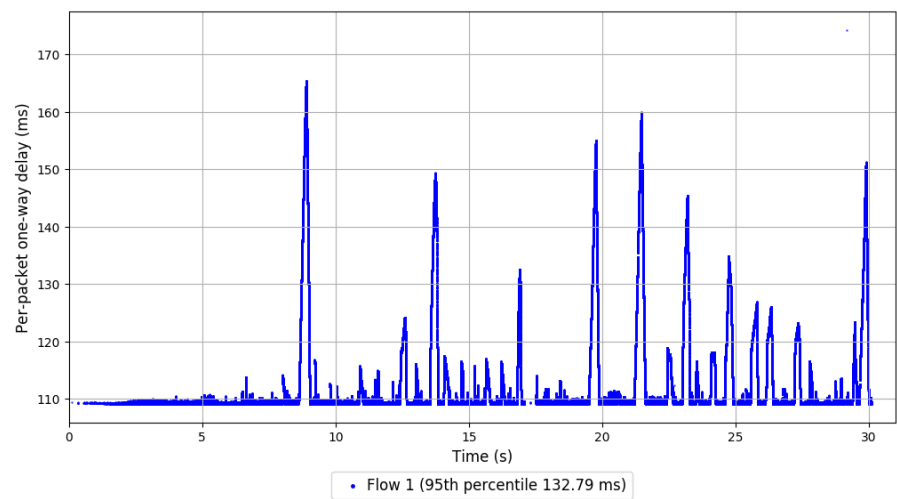
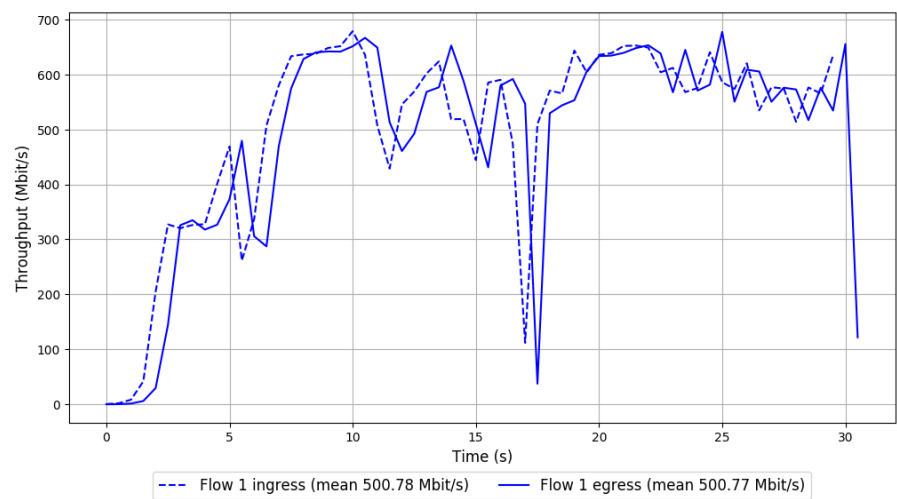
-- Flow 1:

Average throughput: 500.77 Mbit/s

95th percentile per-packet one-way delay: 132.789 ms

Loss rate: 0.00%

Run 5: Report of TCP BBR — Data Link

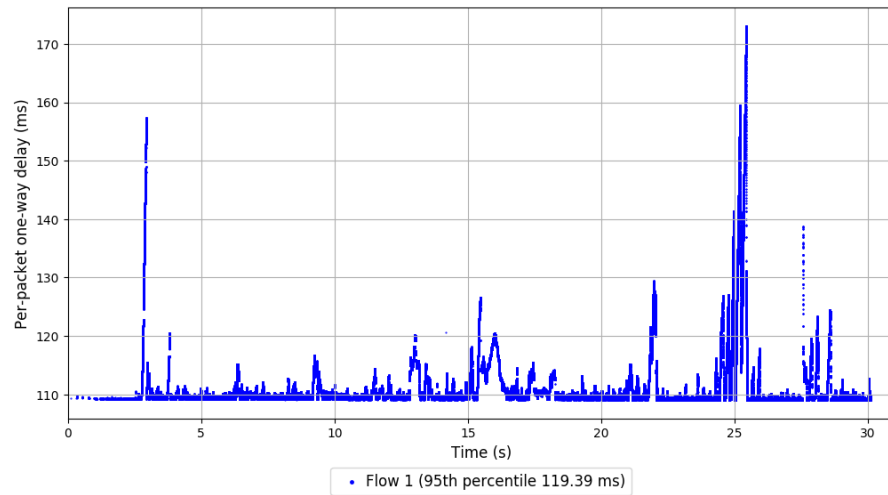
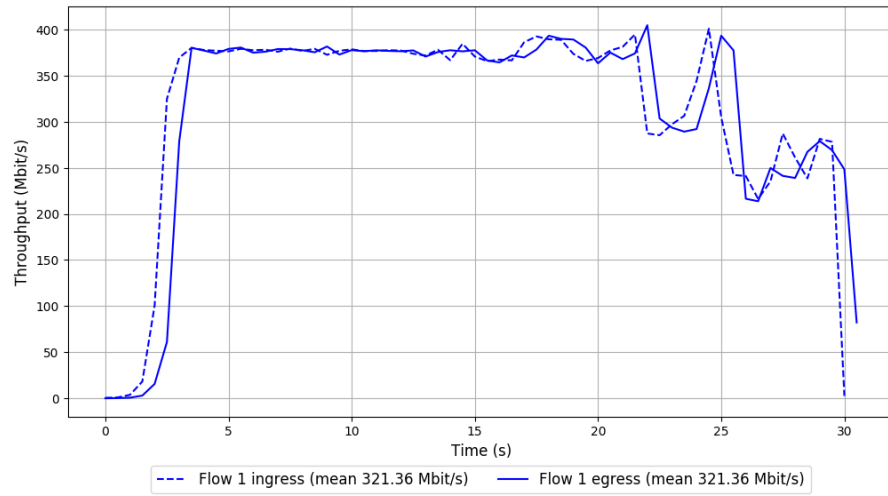


Run 1: Statistics of Copa

Start at: 2019-01-02 18:11:19
End at: 2019-01-02 18:11:49
Local clock offset: 15.355 ms
Remote clock offset: 12.909 ms

Below is generated by plot.py at 2019-01-02 20:46:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 321.36 Mbit/s
95th percentile per-packet one-way delay: 119.389 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 321.36 Mbit/s
95th percentile per-packet one-way delay: 119.389 ms
Loss rate: 0.00%

Run 1: Report of Copa — Data Link

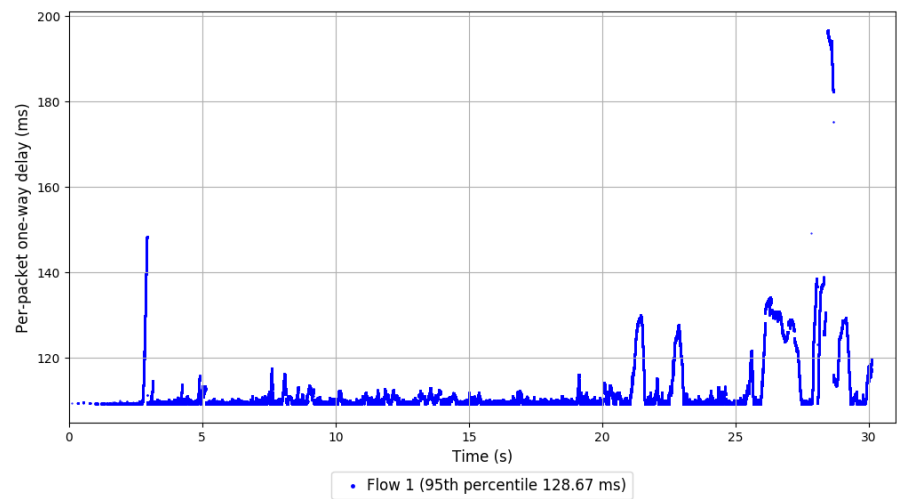
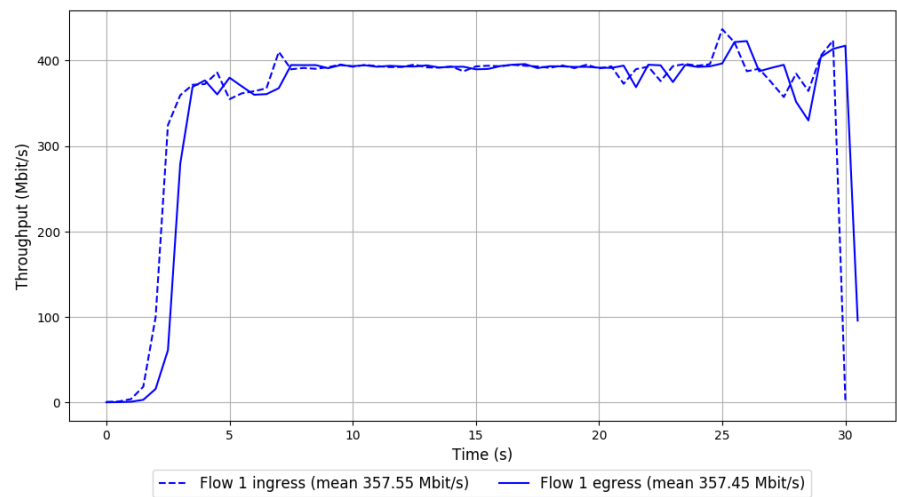


Run 2: Statistics of Copa

Start at: 2019-01-02 18:40:27
End at: 2019-01-02 18:40:57
Local clock offset: 18.362 ms
Remote clock offset: 15.445 ms

Below is generated by plot.py at 2019-01-02 20:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 357.45 Mbit/s
95th percentile per-packet one-way delay: 128.669 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 357.45 Mbit/s
95th percentile per-packet one-way delay: 128.669 ms
Loss rate: 0.02%

Run 2: Report of Copa — Data Link

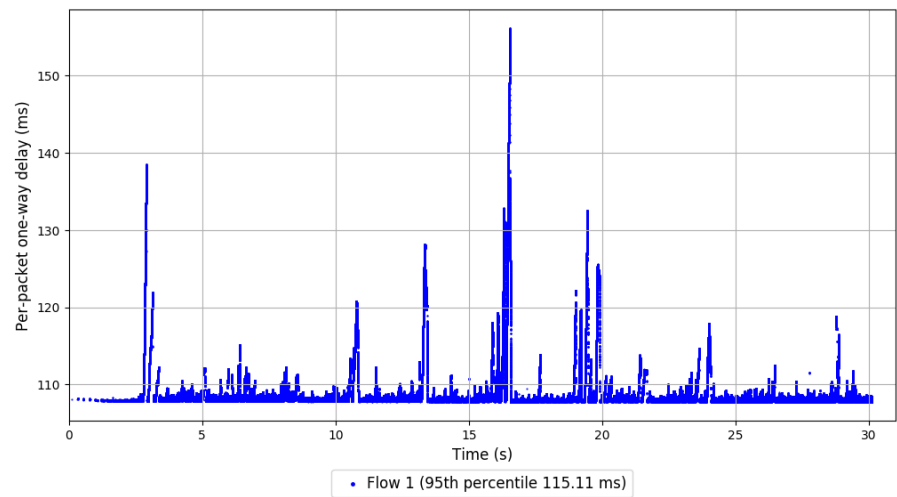
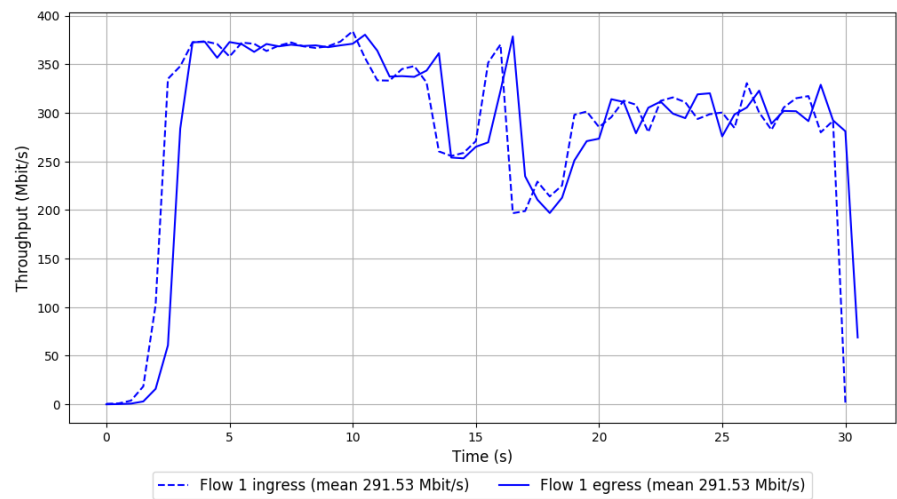


Run 3: Statistics of Copa

Start at: 2019-01-02 19:09:35
End at: 2019-01-02 19:10:05
Local clock offset: 17.048 ms
Remote clock offset: 13.921 ms

Below is generated by plot.py at 2019-01-02 20:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 291.53 Mbit/s
95th percentile per-packet one-way delay: 115.108 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 291.53 Mbit/s
95th percentile per-packet one-way delay: 115.108 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2019-01-02 19:38:13

End at: 2019-01-02 19:38:43

Local clock offset: 8.14 ms

Remote clock offset: 6.259 ms

Below is generated by plot.py at 2019-01-02 20:56:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 352.91 Mbit/s

95th percentile per-packet one-way delay: 124.972 ms

Loss rate: 0.00%

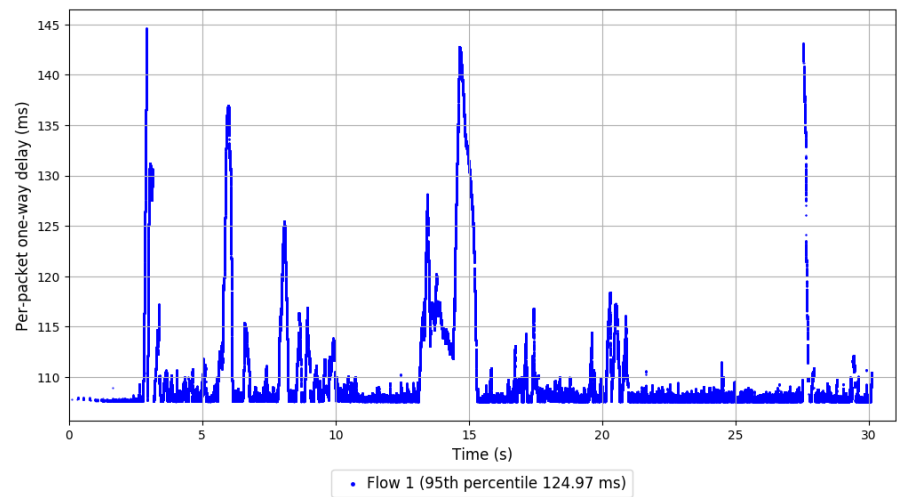
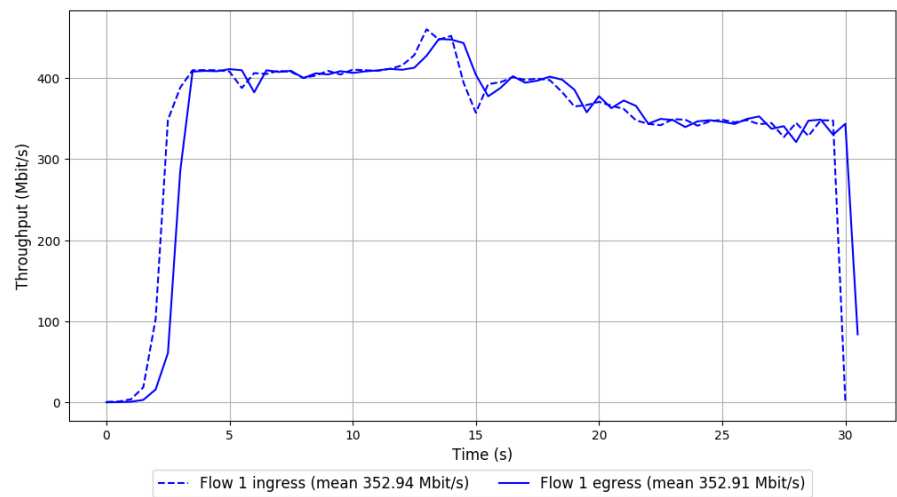
-- Flow 1:

Average throughput: 352.91 Mbit/s

95th percentile per-packet one-way delay: 124.972 ms

Loss rate: 0.00%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2019-01-02 20:07:25

End at: 2019-01-02 20:07:56

Local clock offset: 3.77 ms

Remote clock offset: 2.762 ms

Below is generated by plot.py at 2019-01-02 20:56:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 292.81 Mbit/s

95th percentile per-packet one-way delay: 143.373 ms

Loss rate: 0.00%

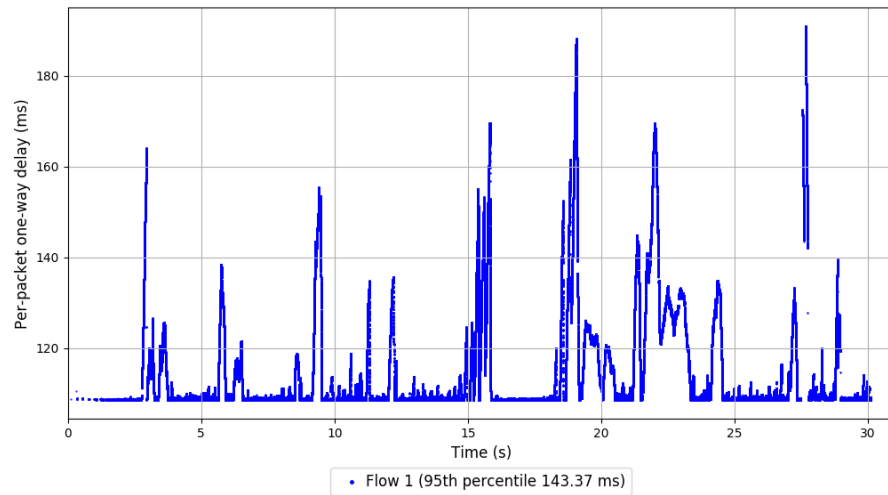
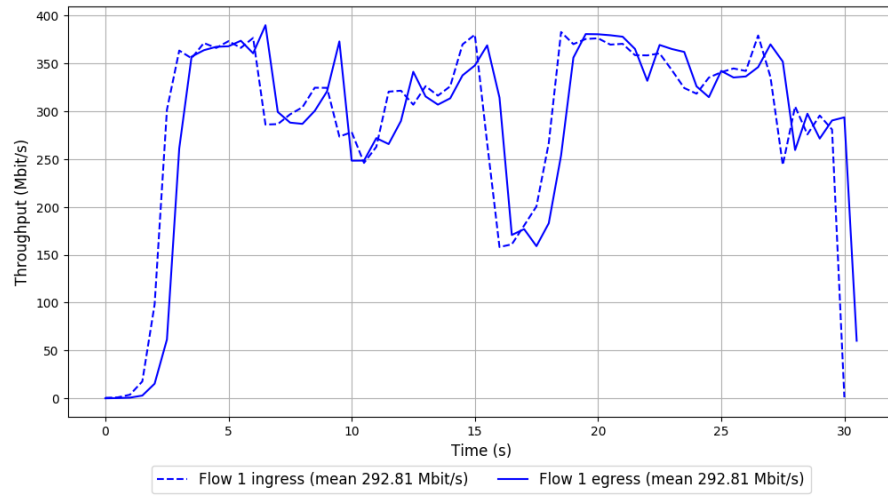
-- Flow 1:

Average throughput: 292.81 Mbit/s

95th percentile per-packet one-way delay: 143.373 ms

Loss rate: 0.00%

Run 5: Report of Copa — Data Link

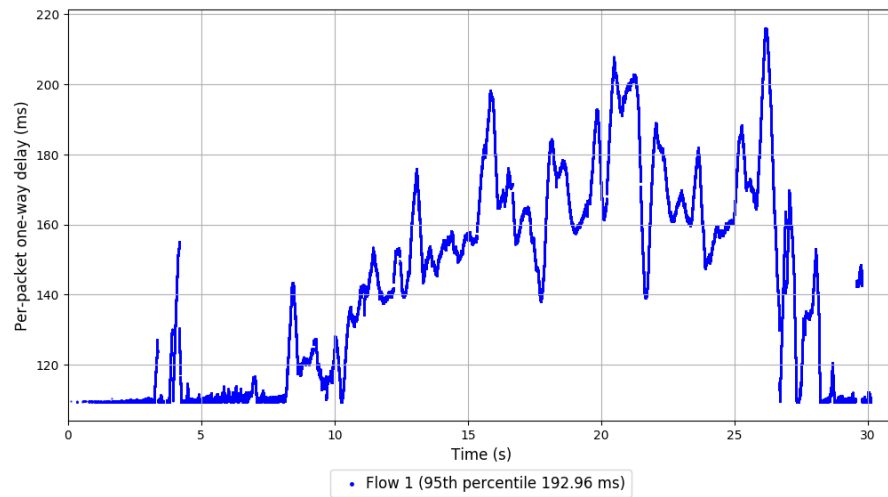
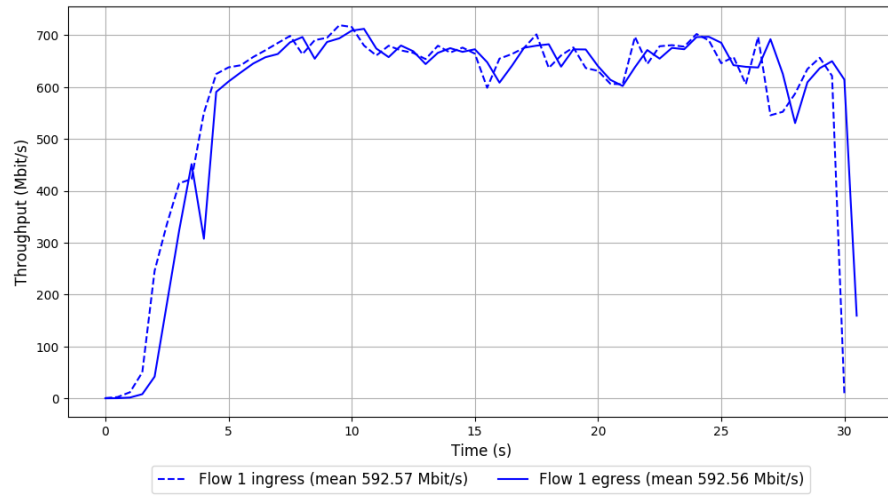


Run 1: Statistics of TCP Cubic

Start at: 2019-01-02 18:25:56
End at: 2019-01-02 18:26:26
Local clock offset: 20.953 ms
Remote clock offset: 17.757 ms

Below is generated by plot.py at 2019-01-02 20:56:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 592.56 Mbit/s
95th percentile per-packet one-way delay: 192.961 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 592.56 Mbit/s
95th percentile per-packet one-way delay: 192.961 ms
Loss rate: 0.00%

Run 1: Report of TCP Cubic — Data Link

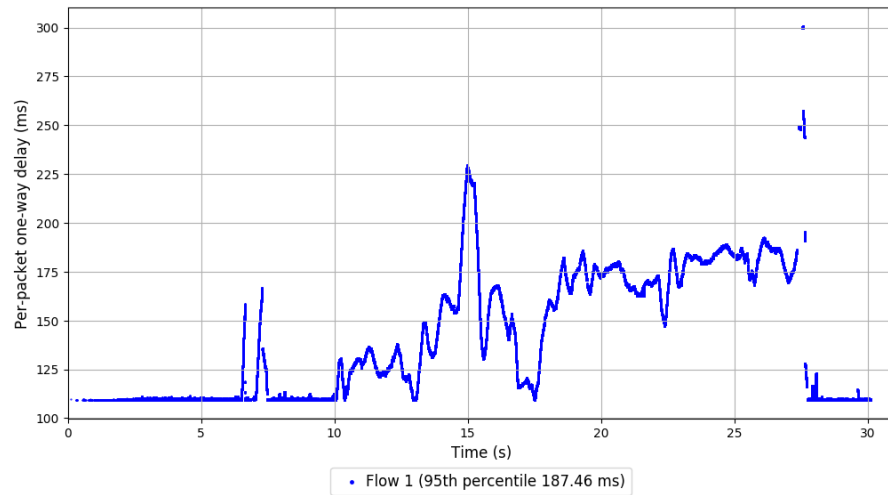
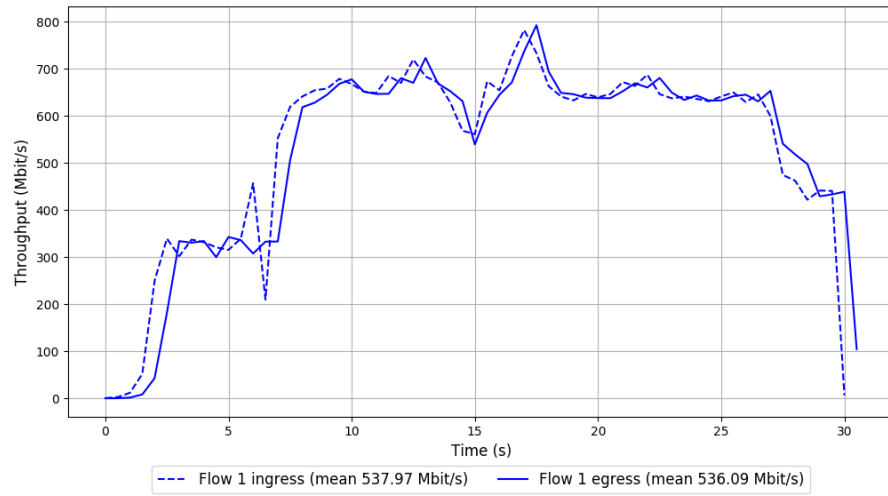


Run 2: Statistics of TCP Cubic

Start at: 2019-01-02 18:55:04
End at: 2019-01-02 18:55:34
Local clock offset: 28.671 ms
Remote clock offset: 23.926 ms

Below is generated by plot.py at 2019-01-02 20:56:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 536.09 Mbit/s
95th percentile per-packet one-way delay: 187.459 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 536.09 Mbit/s
95th percentile per-packet one-way delay: 187.459 ms
Loss rate: 0.35%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2019-01-02 19:23:51

End at: 2019-01-02 19:24:21

Local clock offset: 8.336 ms

Remote clock offset: 6.84 ms

Below is generated by plot.py at 2019-01-02 20:56:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 490.99 Mbit/s

95th percentile per-packet one-way delay: 180.556 ms

Loss rate: 0.04%

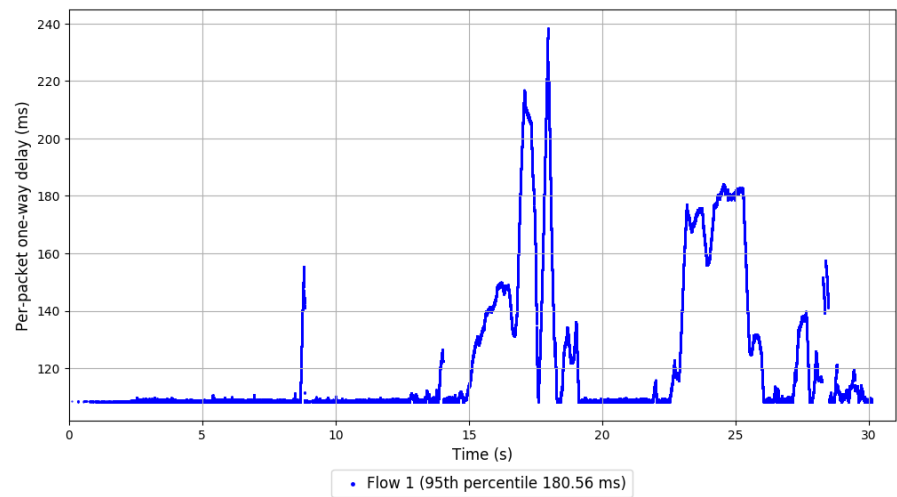
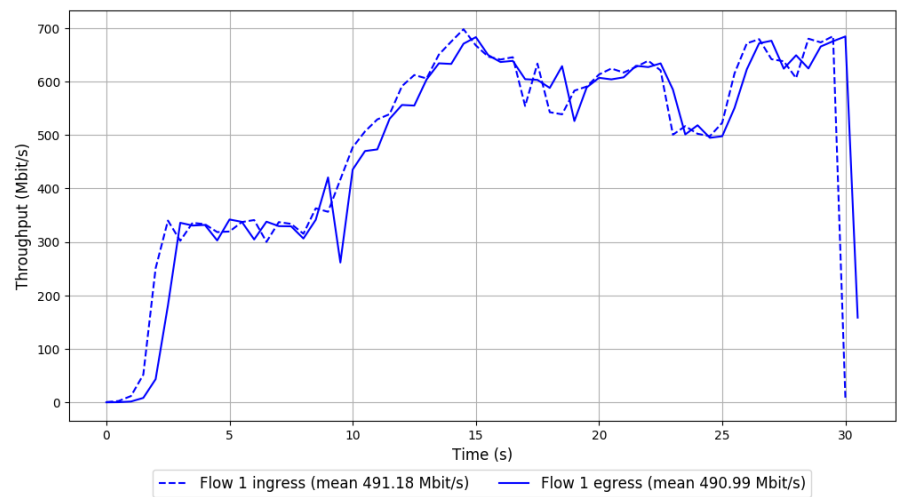
-- Flow 1:

Average throughput: 490.99 Mbit/s

95th percentile per-packet one-way delay: 180.556 ms

Loss rate: 0.04%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2019-01-02 19:52:44

End at: 2019-01-02 19:53:14

Local clock offset: 1.96 ms

Remote clock offset: 2.584 ms

Below is generated by plot.py at 2019-01-02 20:56:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 593.44 Mbit/s

95th percentile per-packet one-way delay: 172.090 ms

Loss rate: 0.03%

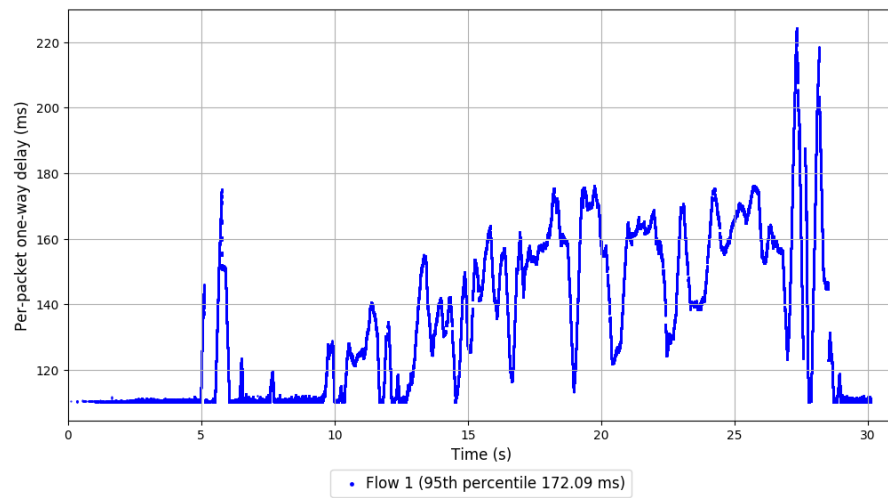
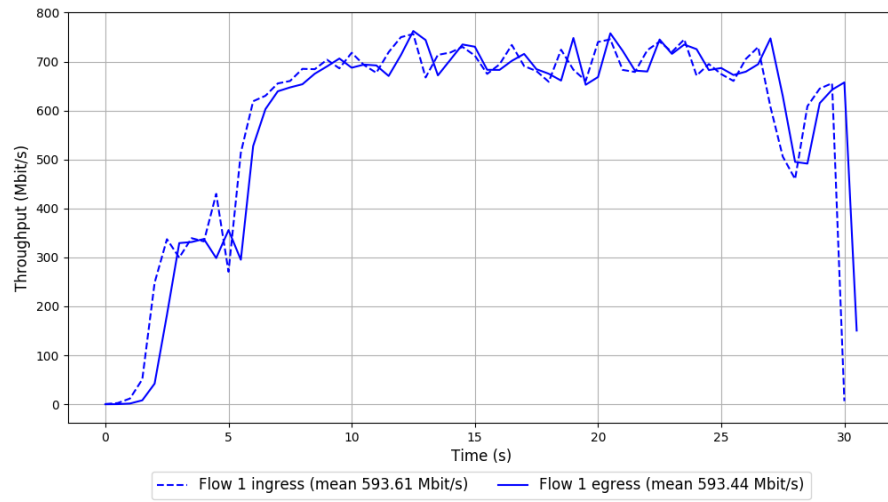
-- Flow 1:

Average throughput: 593.44 Mbit/s

95th percentile per-packet one-way delay: 172.090 ms

Loss rate: 0.03%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2019-01-02 20:21:57

End at: 2019-01-02 20:22:27

Local clock offset: 0.948 ms

Remote clock offset: 1.27 ms

Below is generated by plot.py at 2019-01-02 20:56:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 567.31 Mbit/s

95th percentile per-packet one-way delay: 175.310 ms

Loss rate: 0.07%

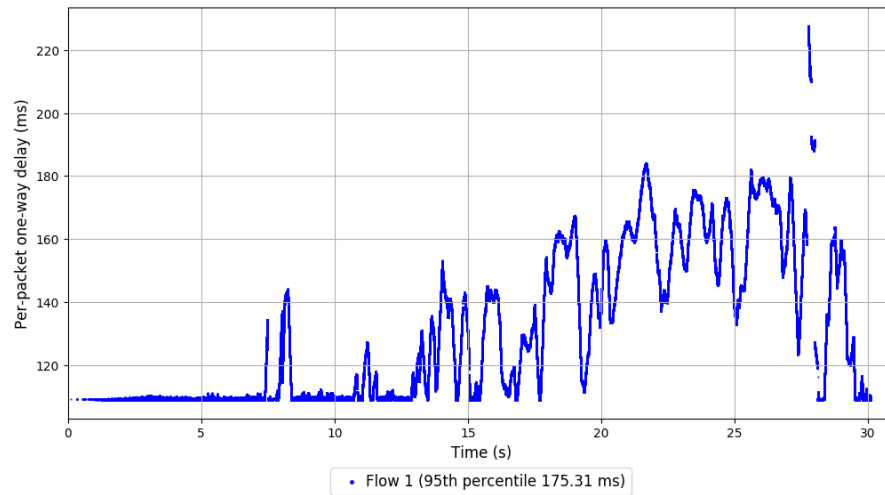
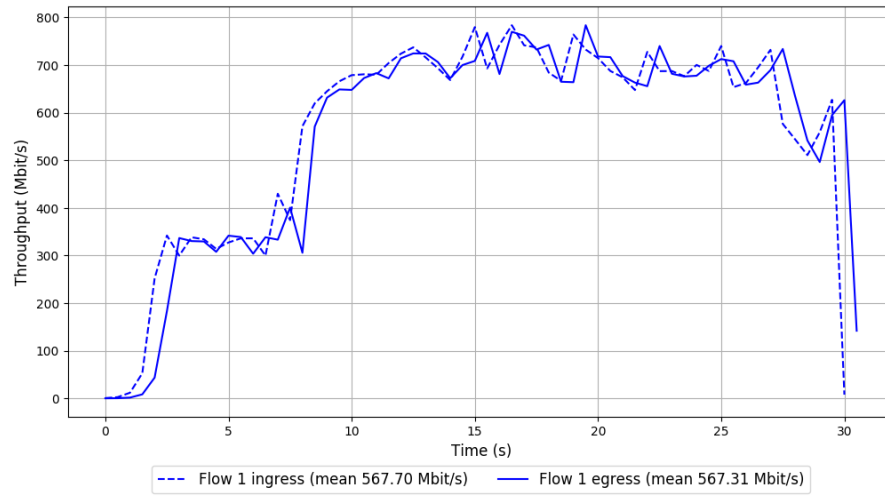
-- Flow 1:

Average throughput: 567.31 Mbit/s

95th percentile per-packet one-way delay: 175.310 ms

Loss rate: 0.07%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2019-01-02 18:01:41

End at: 2019-01-02 18:02:11

Local clock offset: 8.294 ms

Remote clock offset: 7.251 ms

Below is generated by plot.py at 2019-01-02 21:04:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 939.44 Mbit/s

95th percentile per-packet one-way delay: 154.296 ms

Loss rate: 0.32%

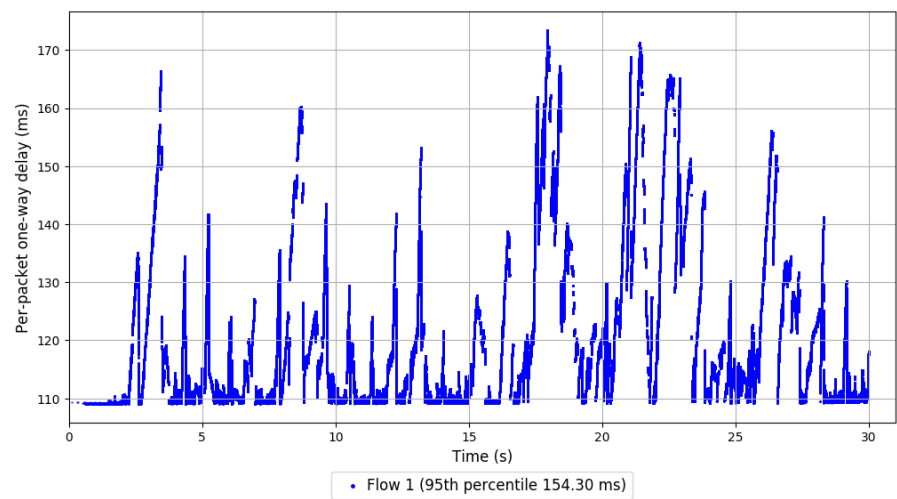
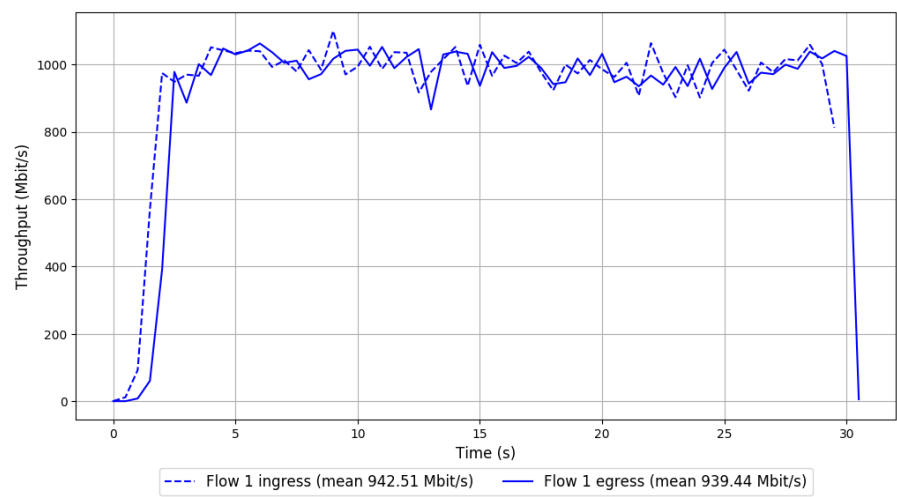
-- Flow 1:

Average throughput: 939.44 Mbit/s

95th percentile per-packet one-way delay: 154.296 ms

Loss rate: 0.32%

Run 1: Report of FillP — Data Link

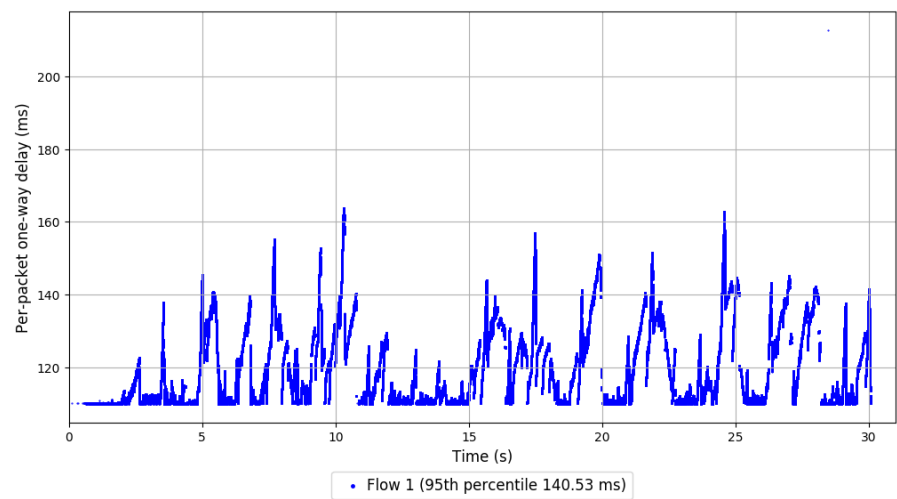
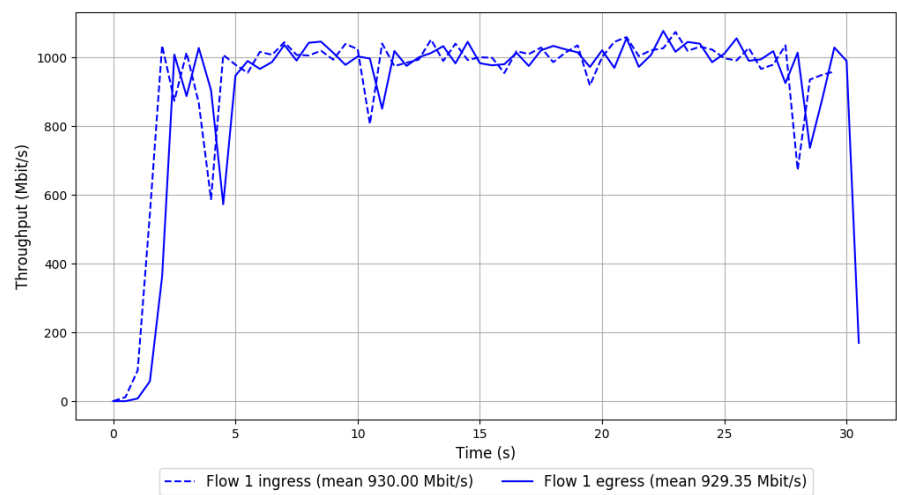


Run 2: Statistics of FillP

Start at: 2019-01-02 18:31:01
End at: 2019-01-02 18:31:31
Local clock offset: 19.256 ms
Remote clock offset: 16.577 ms

Below is generated by plot.py at 2019-01-02 21:14:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 929.35 Mbit/s
95th percentile per-packet one-way delay: 140.527 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 929.35 Mbit/s
95th percentile per-packet one-way delay: 140.527 ms
Loss rate: 0.07%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2019-01-02 19:00:06

End at: 2019-01-02 19:00:36

Local clock offset: 33.598 ms

Remote clock offset: 28.35 ms

Below is generated by plot.py at 2019-01-02 21:14:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 922.37 Mbit/s

95th percentile per-packet one-way delay: 159.685 ms

Loss rate: 1.02%

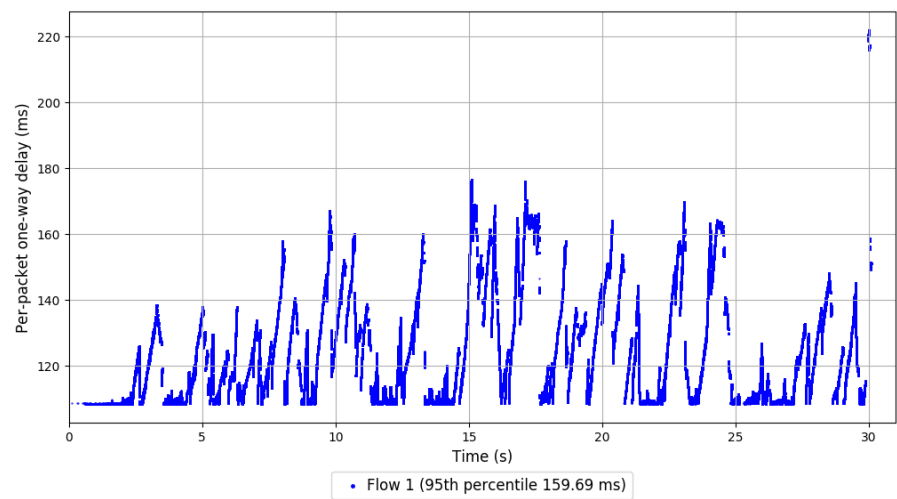
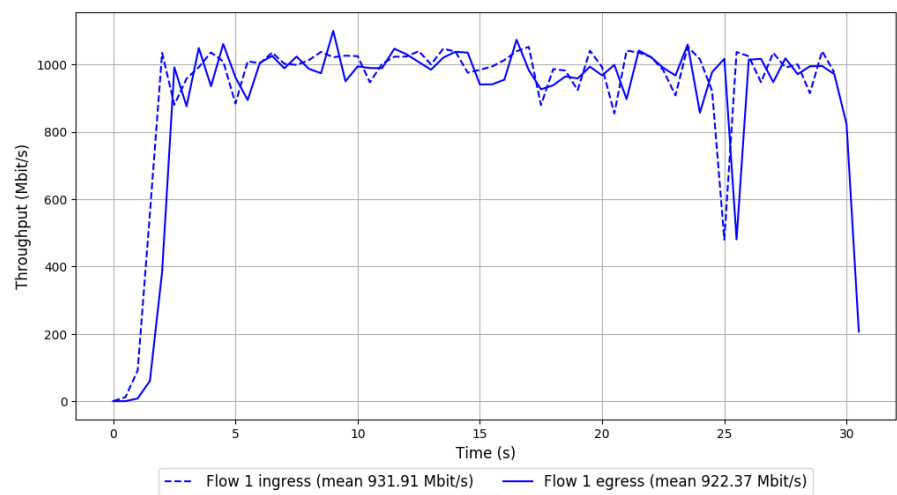
-- Flow 1:

Average throughput: 922.37 Mbit/s

95th percentile per-packet one-way delay: 159.685 ms

Loss rate: 1.02%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2019-01-02 19:28:52

End at: 2019-01-02 19:29:22

Local clock offset: 9.349 ms

Remote clock offset: 6.827 ms

Below is generated by plot.py at 2019-01-02 21:14:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 883.08 Mbit/s

95th percentile per-packet one-way delay: 167.556 ms

Loss rate: 2.44%

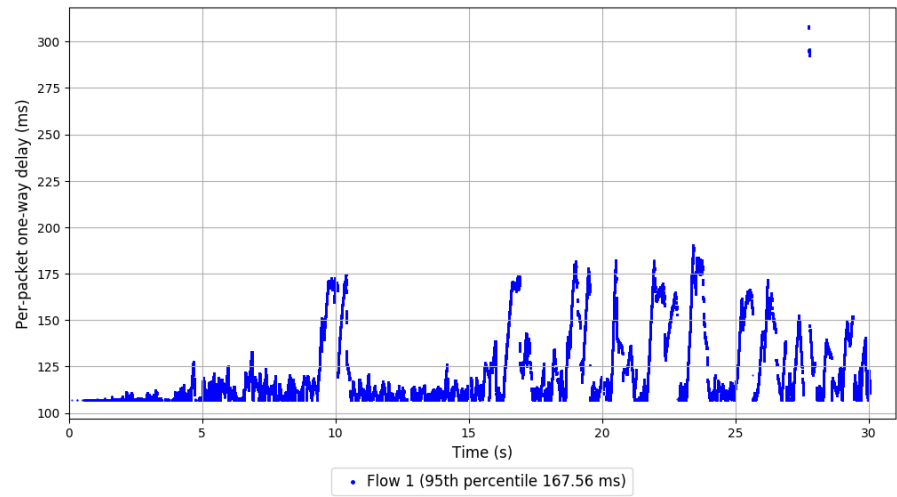
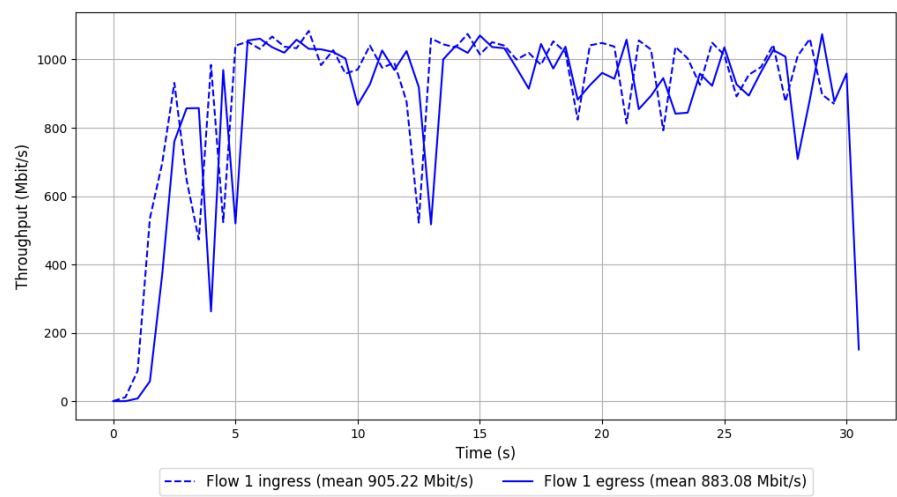
-- Flow 1:

Average throughput: 883.08 Mbit/s

95th percentile per-packet one-way delay: 167.556 ms

Loss rate: 2.44%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-01-02 19:57:50

End at: 2019-01-02 19:58:20

Local clock offset: 3.126 ms

Remote clock offset: 2.616 ms

Below is generated by plot.py at 2019-01-02 21:15:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 923.44 Mbit/s

95th percentile per-packet one-way delay: 156.344 ms

Loss rate: 0.61%

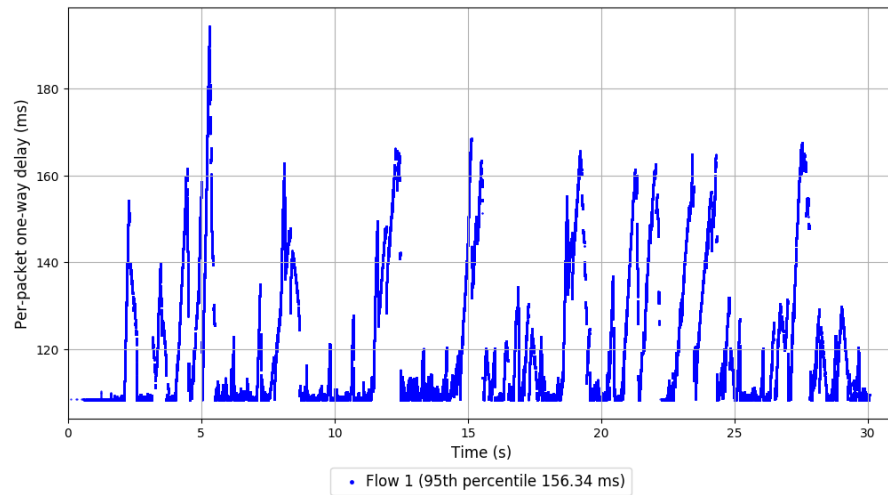
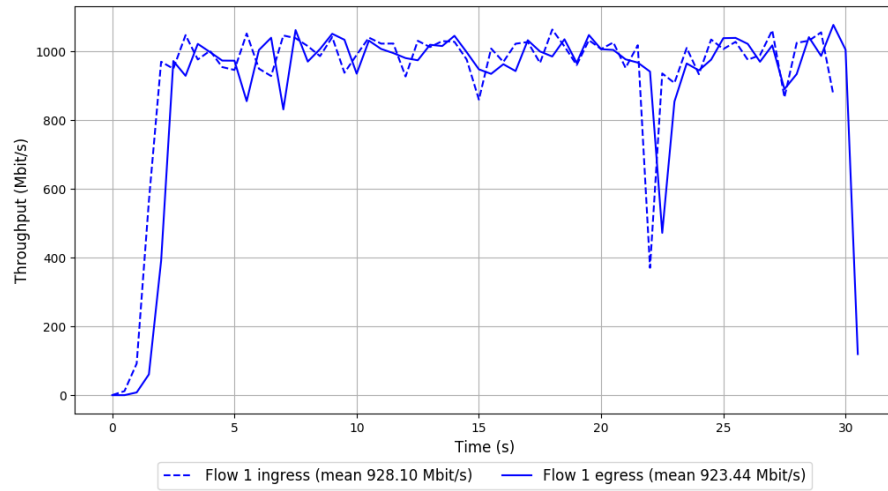
-- Flow 1:

Average throughput: 923.44 Mbit/s

95th percentile per-packet one-way delay: 156.344 ms

Loss rate: 0.61%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2019-01-02 18:20:15

End at: 2019-01-02 18:20:45

Local clock offset: 14.54 ms

Remote clock offset: 12.387 ms

Below is generated by plot.py at 2019-01-02 21:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 894.25 Mbit/s

95th percentile per-packet one-way delay: 167.150 ms

Loss rate: 1.50%

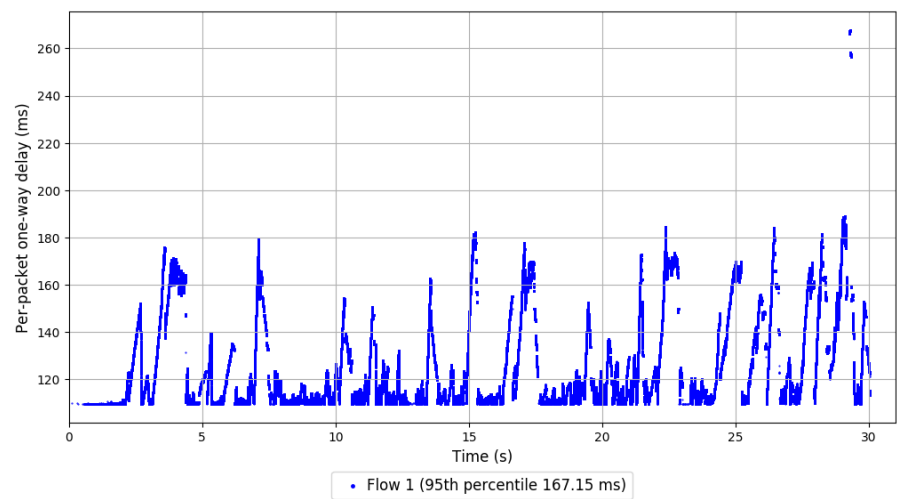
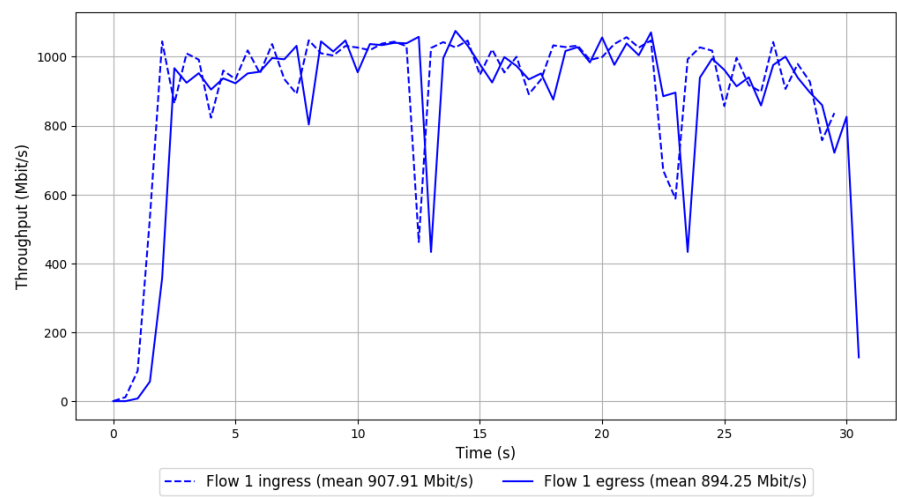
-- Flow 1:

Average throughput: 894.25 Mbit/s

95th percentile per-packet one-way delay: 167.150 ms

Loss rate: 1.50%

Run 1: Report of FillP-Sheep — Data Link

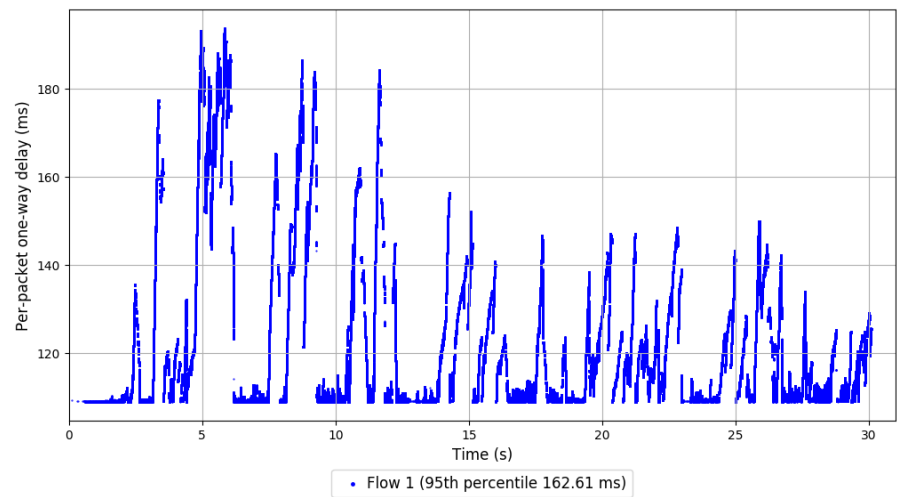
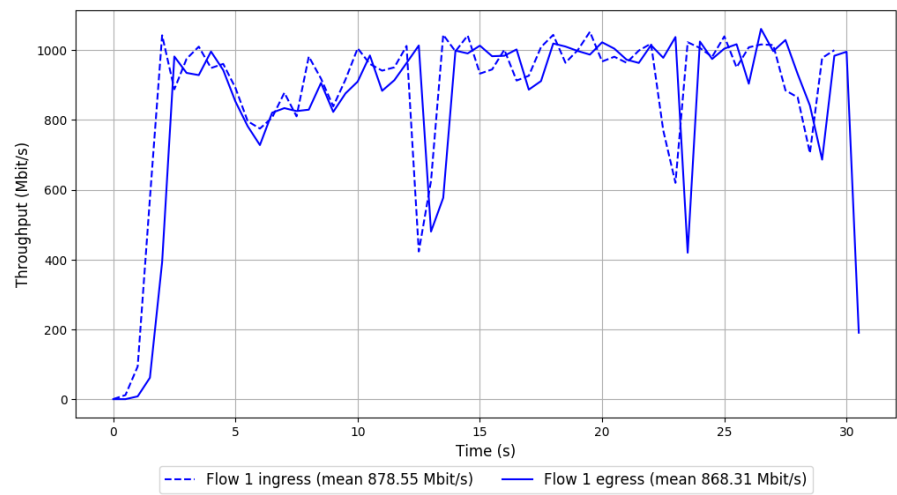


Run 2: Statistics of FillP-Sheep

Start at: 2019-01-02 18:49:27
End at: 2019-01-02 18:49:57
Local clock offset: 23.622 ms
Remote clock offset: 20.335 ms

Below is generated by plot.py at 2019-01-02 21:15:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 868.31 Mbit/s
95th percentile per-packet one-way delay: 162.608 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 868.31 Mbit/s
95th percentile per-packet one-way delay: 162.608 ms
Loss rate: 1.16%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2019-01-02 19:18:14

End at: 2019-01-02 19:18:44

Local clock offset: 9.323 ms

Remote clock offset: 8.225 ms

Below is generated by plot.py at 2019-01-02 21:16:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 897.00 Mbit/s

95th percentile per-packet one-way delay: 164.418 ms

Loss rate: 1.28%

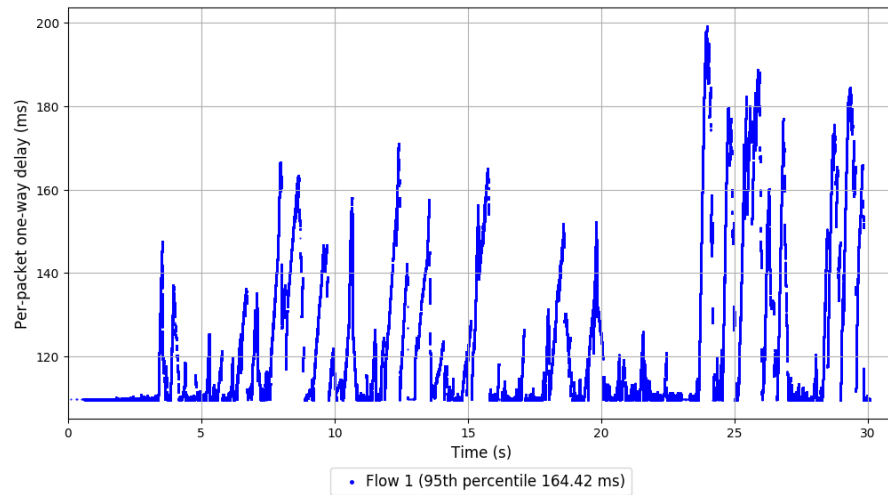
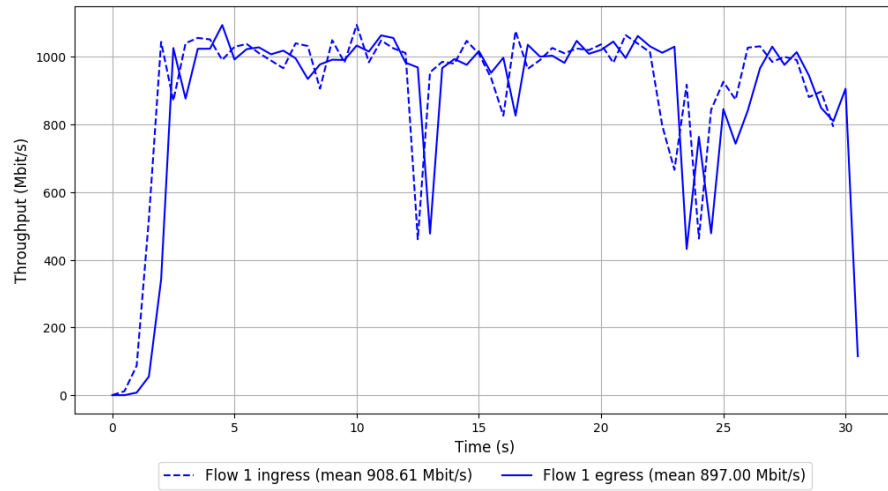
-- Flow 1:

Average throughput: 897.00 Mbit/s

95th percentile per-packet one-way delay: 164.418 ms

Loss rate: 1.28%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2019-01-02 19:47:11

End at: 2019-01-02 19:47:41

Local clock offset: 3.575 ms

Remote clock offset: 3.112 ms

Below is generated by plot.py at 2019-01-02 21:25:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 893.29 Mbit/s

95th percentile per-packet one-way delay: 162.164 ms

Loss rate: 1.00%

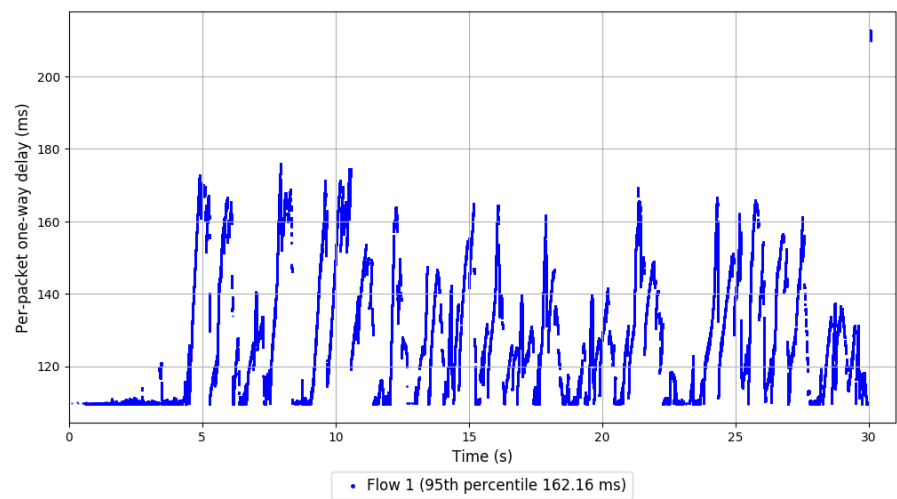
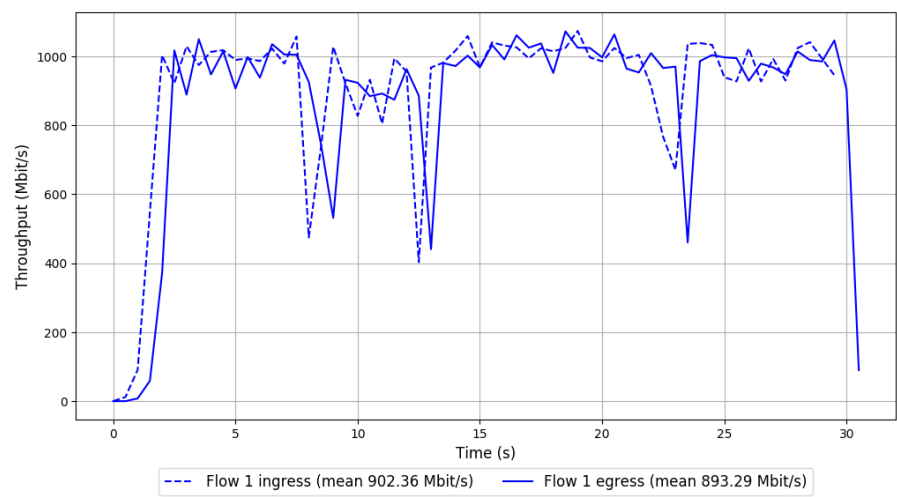
-- Flow 1:

Average throughput: 893.29 Mbit/s

95th percentile per-packet one-way delay: 162.164 ms

Loss rate: 1.00%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2019-01-02 20:16:19

End at: 2019-01-02 20:16:49

Local clock offset: 3.656 ms

Remote clock offset: 1.503 ms

Below is generated by plot.py at 2019-01-02 21:33:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 893.39 Mbit/s

95th percentile per-packet one-way delay: 160.339 ms

Loss rate: 1.20%

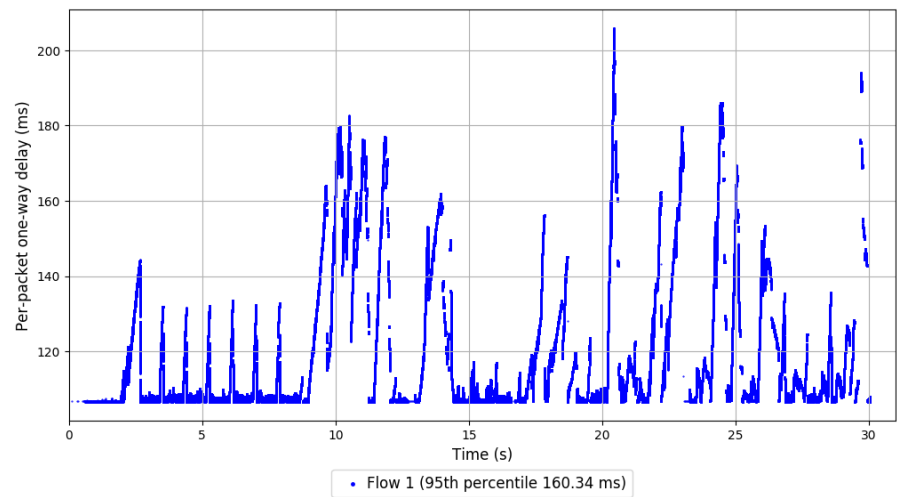
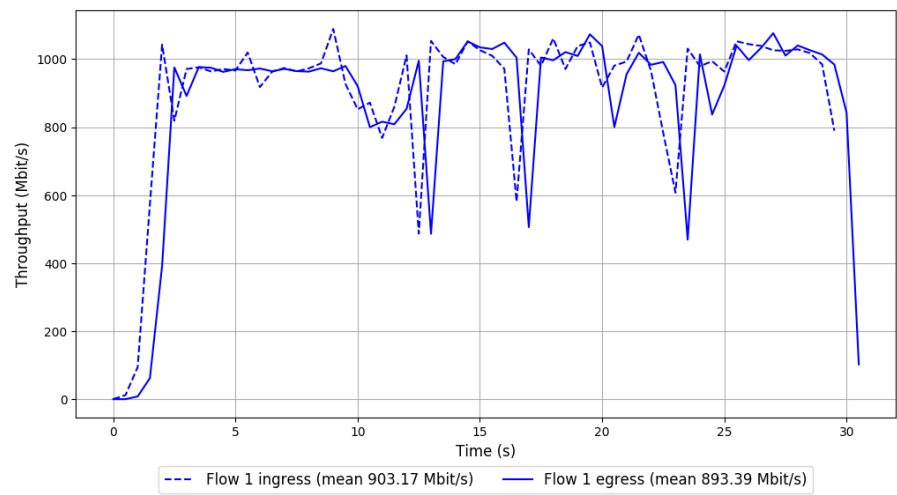
-- Flow 1:

Average throughput: 893.39 Mbit/s

95th percentile per-packet one-way delay: 160.339 ms

Loss rate: 1.20%

Run 5: Report of FillP-Sheep — Data Link

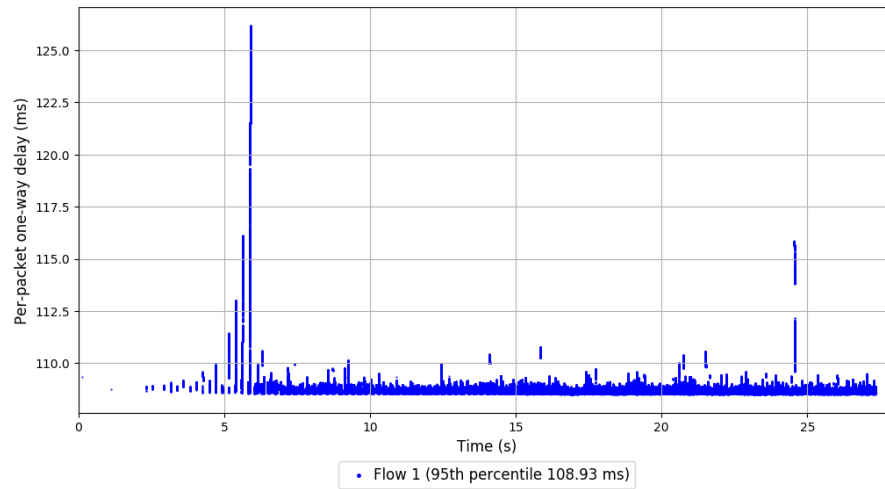
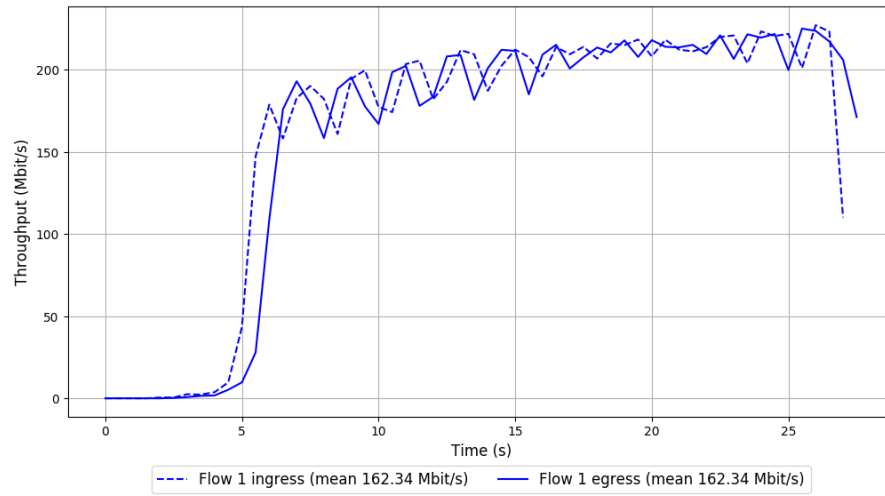


Run 1: Statistics of Indigo

Start at: 2019-01-02 18:13:01
End at: 2019-01-02 18:13:31
Local clock offset: 13.172 ms
Remote clock offset: 10.586 ms

Below is generated by plot.py at 2019-01-02 21:33:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 162.34 Mbit/s
95th percentile per-packet one-way delay: 108.934 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 162.34 Mbit/s
95th percentile per-packet one-way delay: 108.934 ms
Loss rate: 0.00%

Run 1: Report of Indigo — Data Link

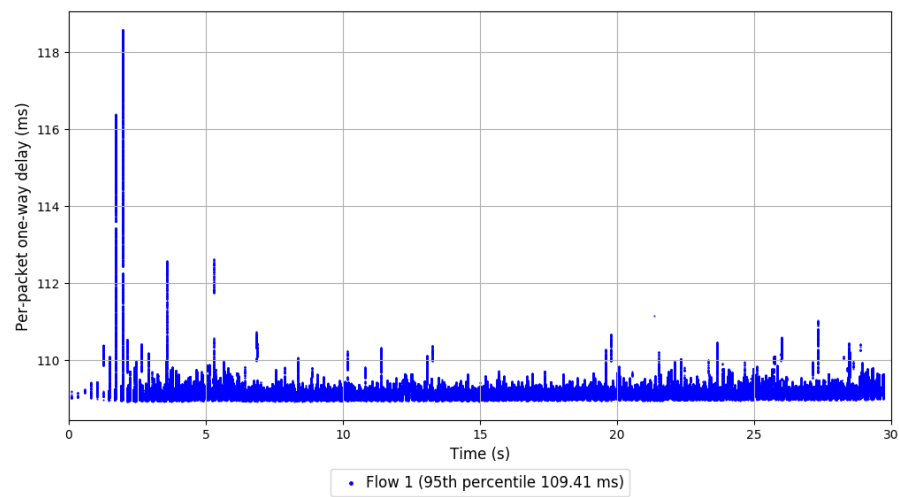
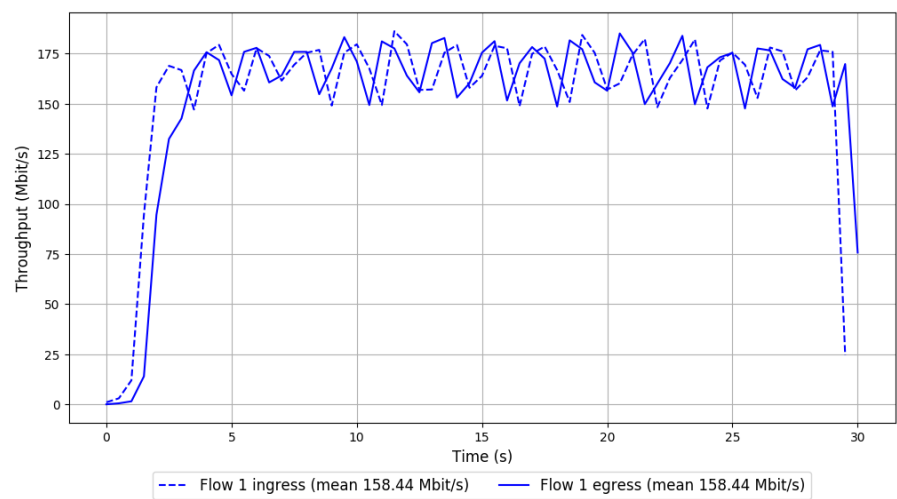


Run 2: Statistics of Indigo

Start at: 2019-01-02 18:42:13
End at: 2019-01-02 18:42:43
Local clock offset: 19.113 ms
Remote clock offset: 15.703 ms

Below is generated by plot.py at 2019-01-02 21:33:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 158.44 Mbit/s
95th percentile per-packet one-way delay: 109.412 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 158.44 Mbit/s
95th percentile per-packet one-way delay: 109.412 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link

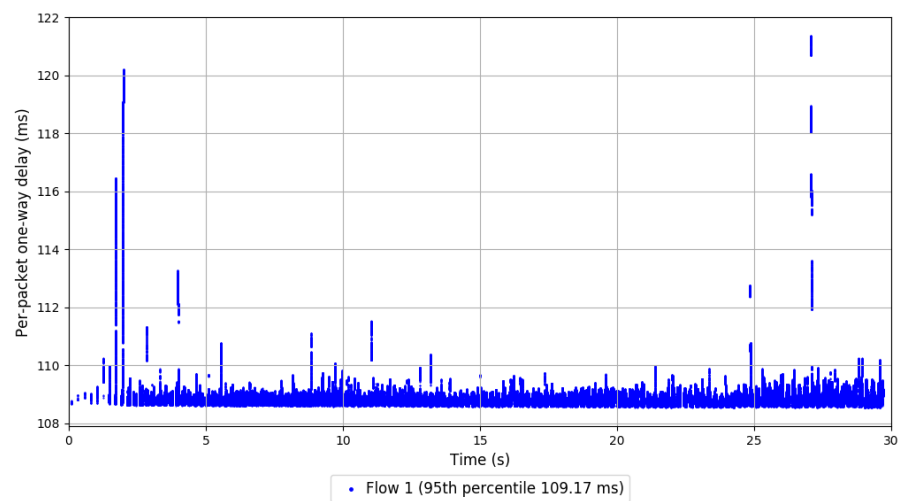
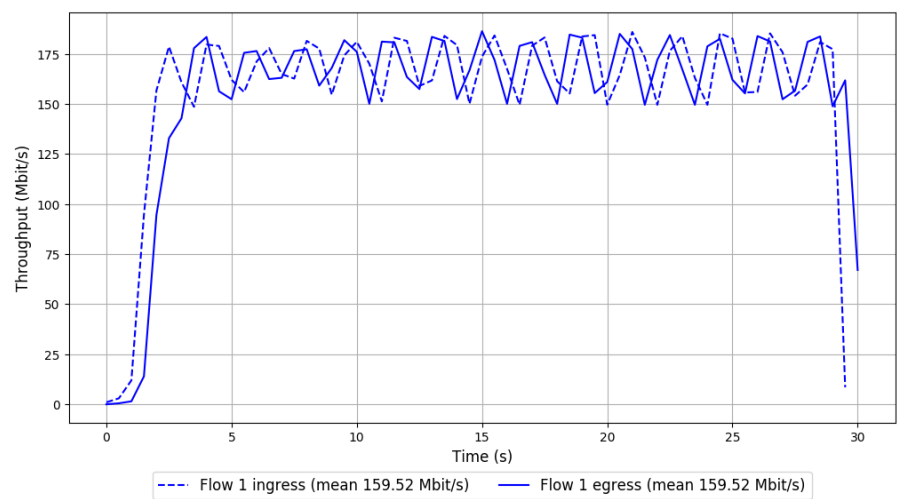


Run 3: Statistics of Indigo

Start at: 2019-01-02 19:11:14
End at: 2019-01-02 19:11:44
Local clock offset: 14.865 ms
Remote clock offset: 12.164 ms

Below is generated by plot.py at 2019-01-02 21:33:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 159.52 Mbit/s
95th percentile per-packet one-way delay: 109.166 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 159.52 Mbit/s
95th percentile per-packet one-way delay: 109.166 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2019-01-02 19:39:58

End at: 2019-01-02 19:40:28

Local clock offset: 6.395 ms

Remote clock offset: 5.268 ms

Below is generated by plot.py at 2019-01-02 21:33:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 156.57 Mbit/s

95th percentile per-packet one-way delay: 109.533 ms

Loss rate: 0.00%

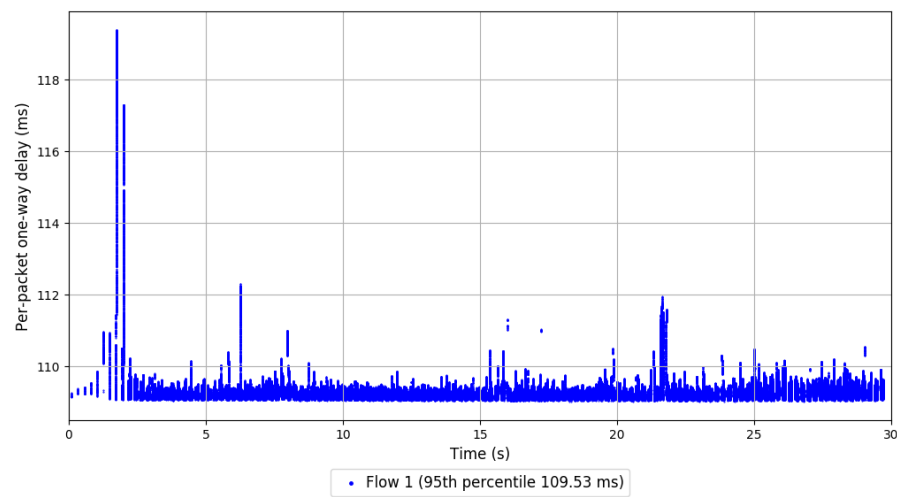
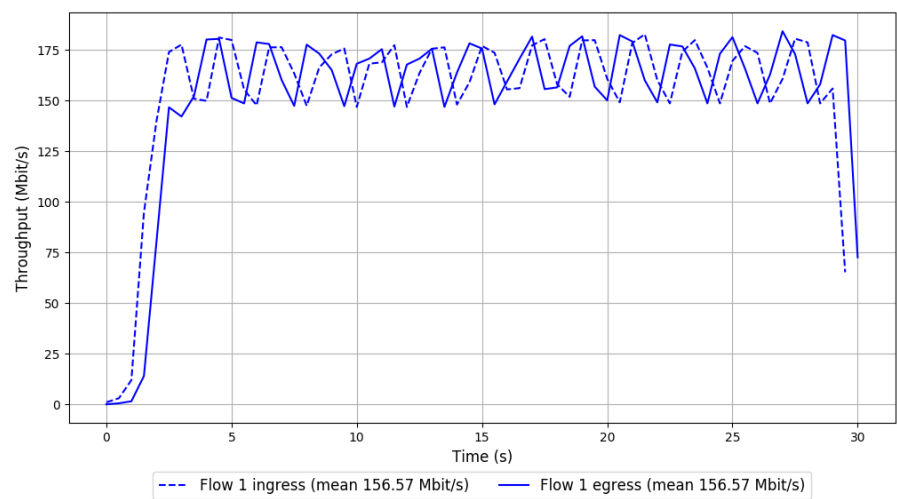
-- Flow 1:

Average throughput: 156.57 Mbit/s

95th percentile per-packet one-way delay: 109.533 ms

Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2019-01-02 20:09:06

End at: 2019-01-02 20:09:36

Local clock offset: 2.604 ms

Remote clock offset: 3.568 ms

Below is generated by plot.py at 2019-01-02 21:33:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 156.38 Mbit/s

95th percentile per-packet one-way delay: 111.536 ms

Loss rate: 0.00%

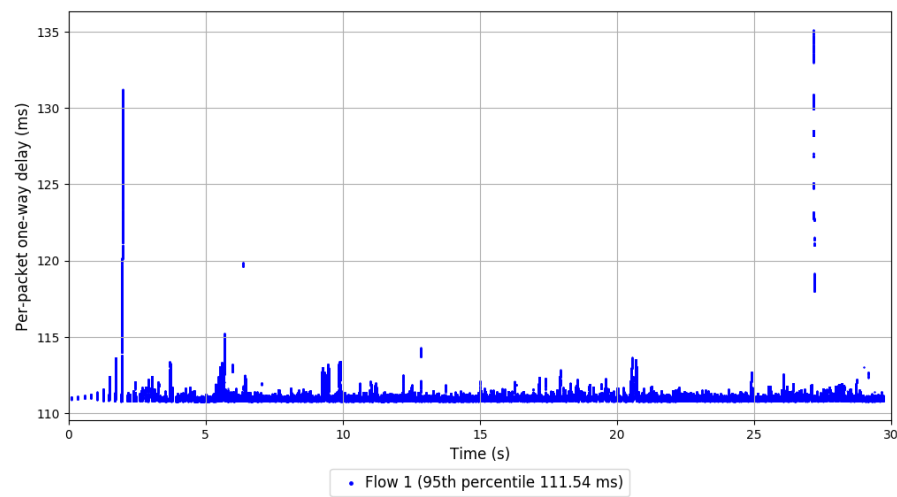
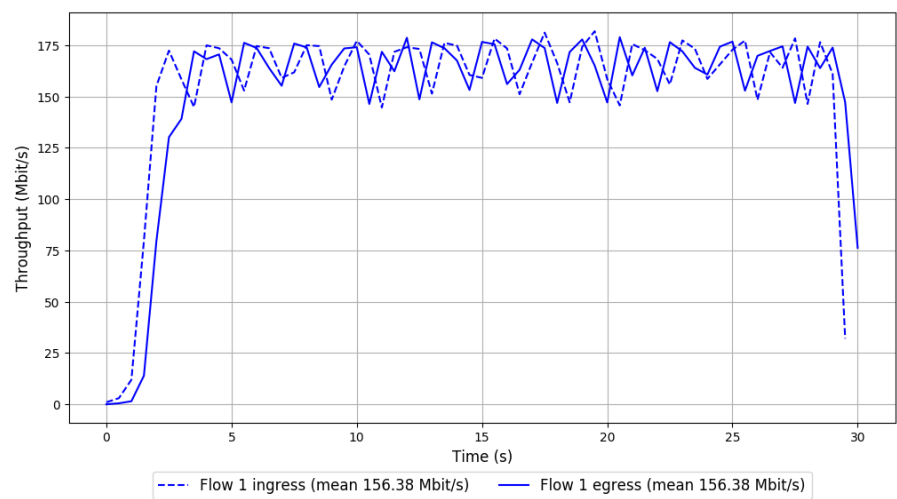
-- Flow 1:

Average throughput: 156.38 Mbit/s

95th percentile per-packet one-way delay: 111.536 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

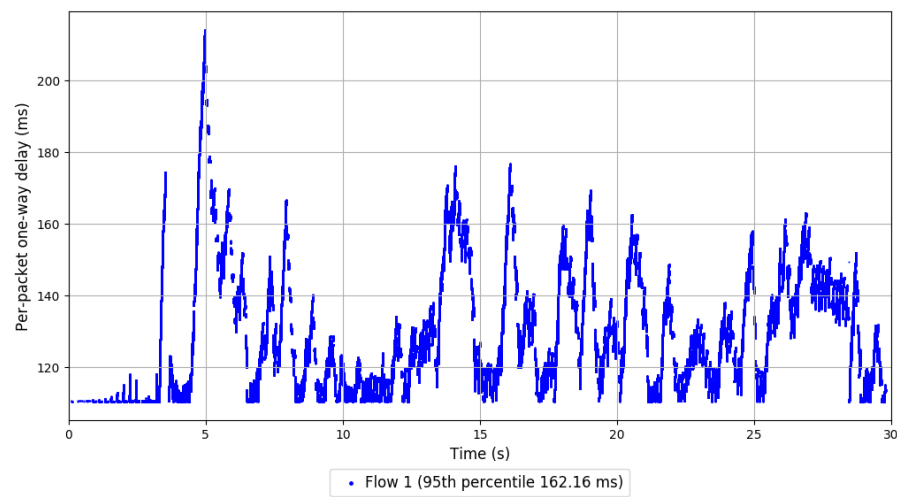
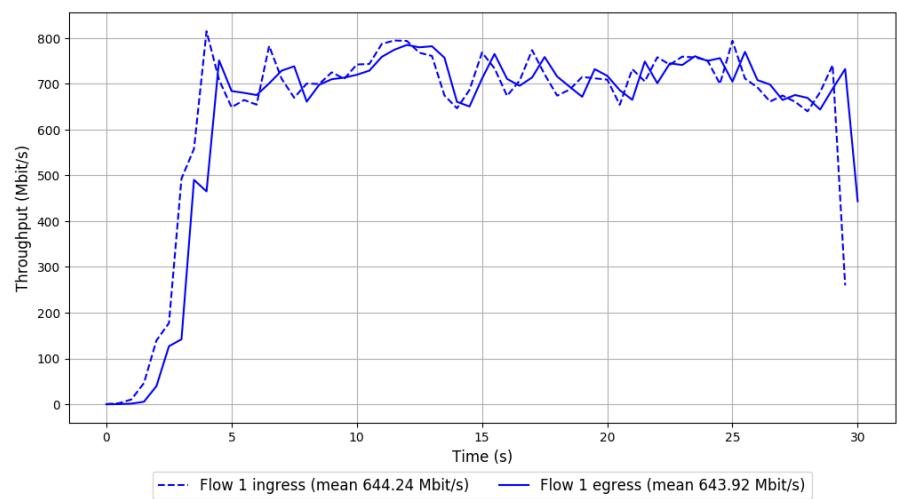


```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-02 18:27:38
End at: 2019-01-02 18:28:08
Local clock offset: 22.277 ms
Remote clock offset: 19.641 ms

# Below is generated by plot.py at 2019-01-02 21:33:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 643.92 Mbit/s
95th percentile per-packet one-way delay: 162.164 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 643.92 Mbit/s
95th percentile per-packet one-way delay: 162.164 ms
Loss rate: 0.05%
```

Run 1: Report of Indigo-MusesD — Data Link

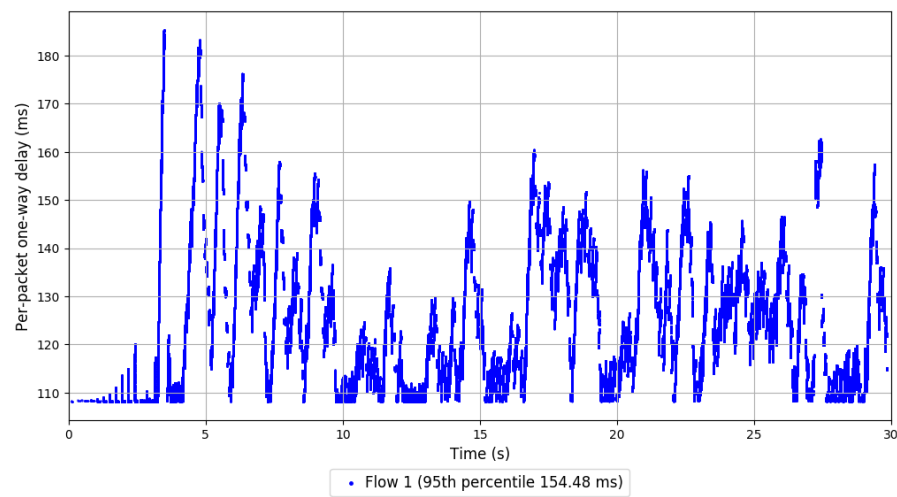
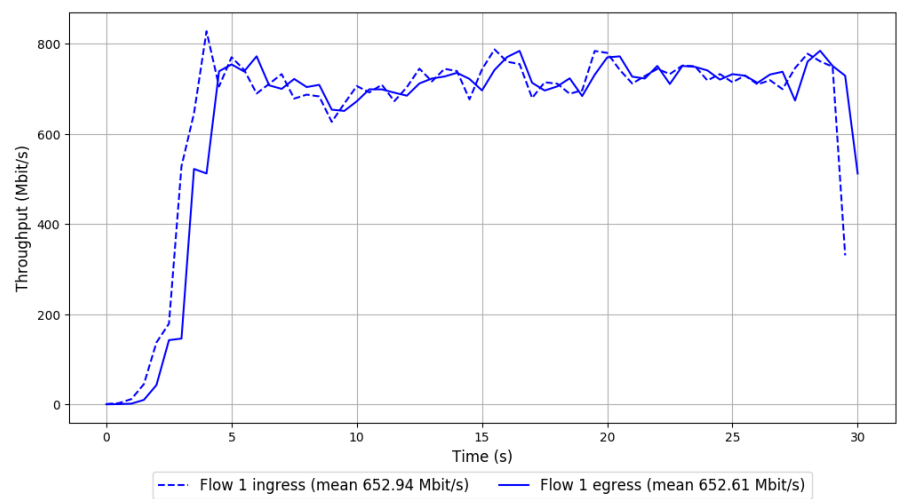


Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-02 18:56:43
End at: 2019-01-02 18:57:13
Local clock offset: 30.415 ms
Remote clock offset: 25.277 ms

Below is generated by plot.py at 2019-01-02 21:33:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 652.61 Mbit/s
95th percentile per-packet one-way delay: 154.483 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 652.61 Mbit/s
95th percentile per-packet one-way delay: 154.483 ms
Loss rate: 0.04%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-02 19:25:27

End at: 2019-01-02 19:25:57

Local clock offset: 8.767 ms

Remote clock offset: 6.748 ms

Below is generated by plot.py at 2019-01-02 21:33:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 679.54 Mbit/s

95th percentile per-packet one-way delay: 160.803 ms

Loss rate: 0.17%

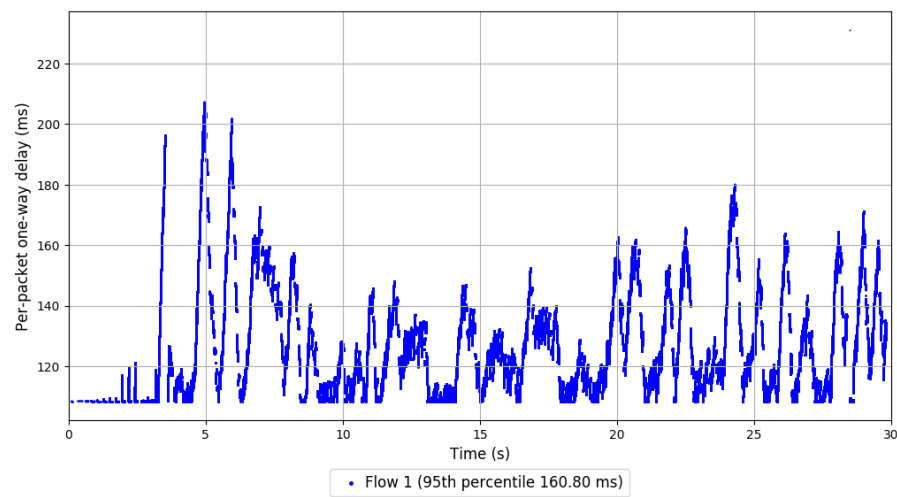
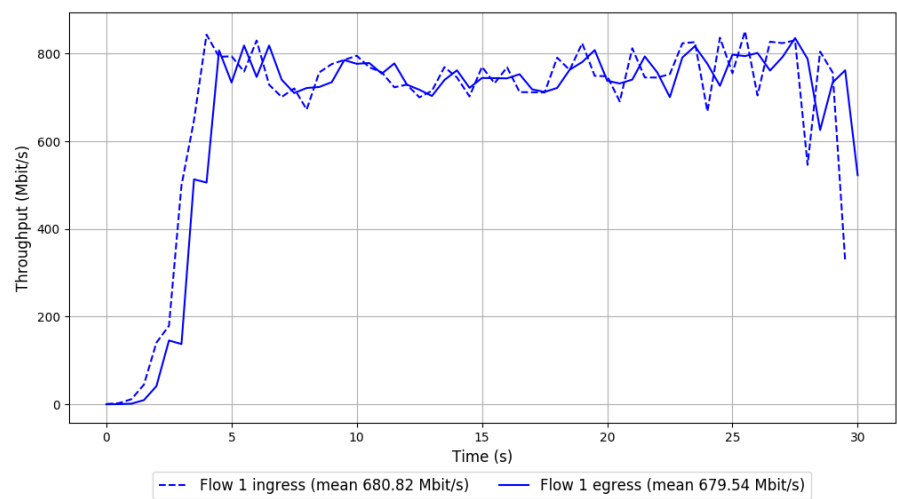
-- Flow 1:

Average throughput: 679.54 Mbit/s

95th percentile per-packet one-way delay: 160.803 ms

Loss rate: 0.17%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-02 19:54:26

End at: 2019-01-02 19:54:56

Local clock offset: 3.187 ms

Remote clock offset: 2.584 ms

Below is generated by plot.py at 2019-01-02 21:33:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 670.77 Mbit/s

95th percentile per-packet one-way delay: 164.219 ms

Loss rate: 0.16%

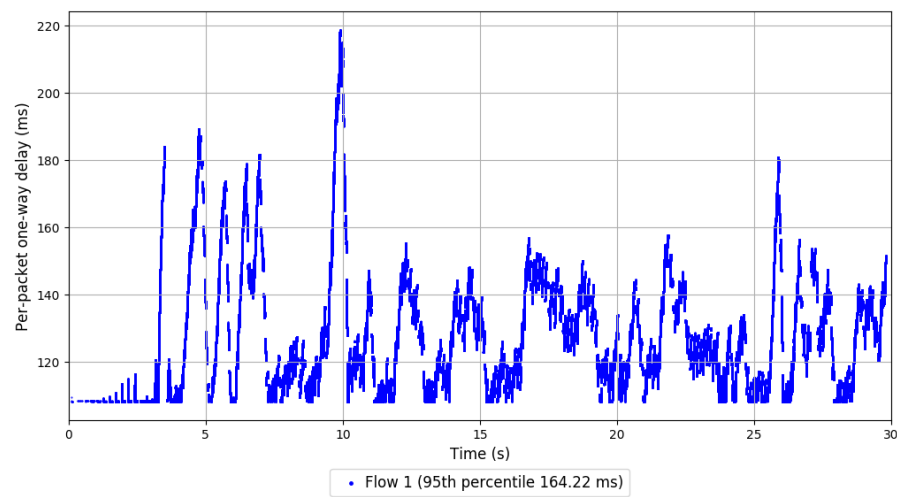
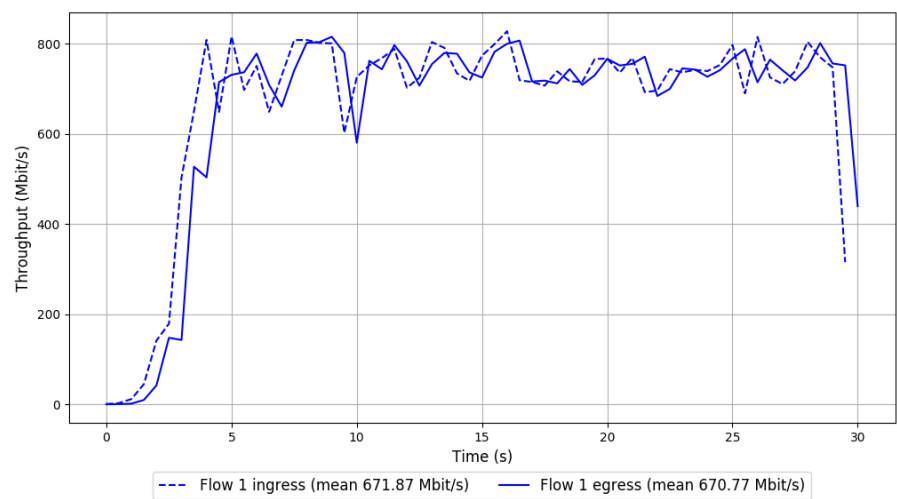
-- Flow 1:

Average throughput: 670.77 Mbit/s

95th percentile per-packet one-way delay: 164.219 ms

Loss rate: 0.16%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-02 20:23:37

End at: 2019-01-02 20:24:07

Local clock offset: 2.745 ms

Remote clock offset: 1.176 ms

Below is generated by plot.py at 2019-01-02 21:33:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 640.20 Mbit/s

95th percentile per-packet one-way delay: 158.430 ms

Loss rate: 0.15%

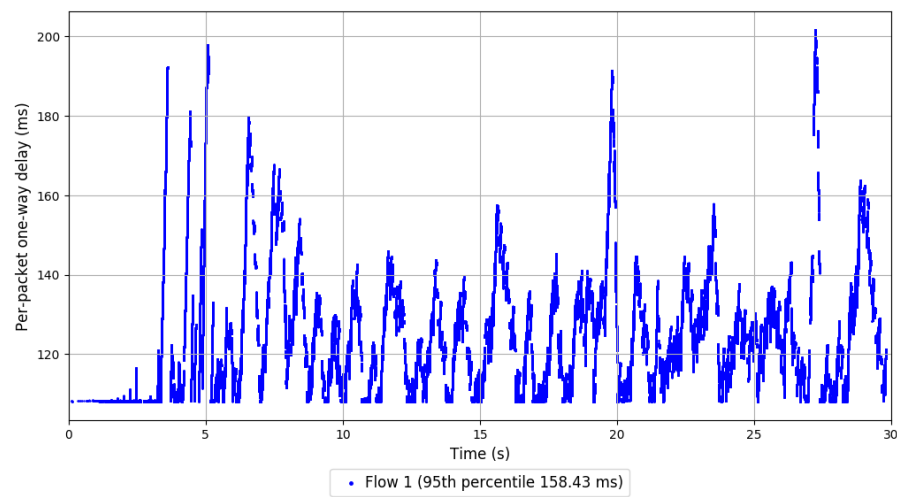
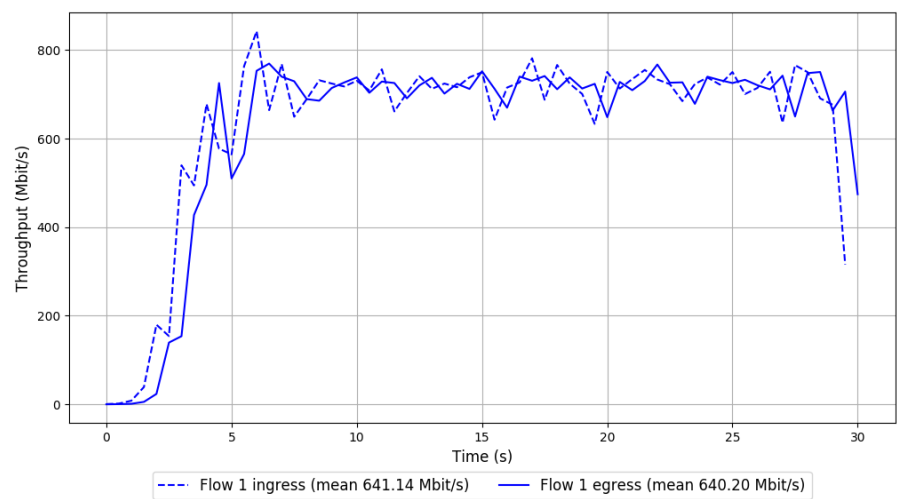
-- Flow 1:

Average throughput: 640.20 Mbit/s

95th percentile per-packet one-way delay: 158.430 ms

Loss rate: 0.15%

Run 5: Report of Indigo-MusesD — Data Link

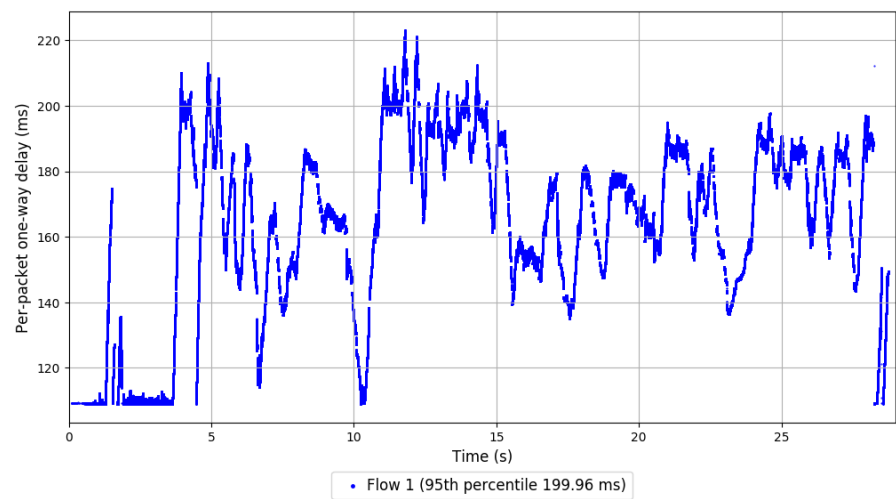
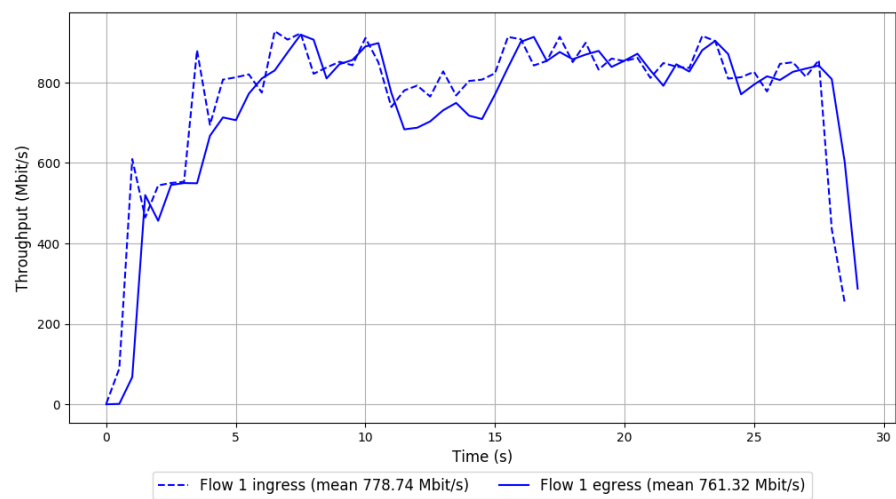


```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-02 18:15:37
End at: 2019-01-02 18:16:07
Local clock offset: 11.77 ms
Remote clock offset: 9.91 ms

# Below is generated by plot.py at 2019-01-02 21:34:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 761.32 Mbit/s
95th percentile per-packet one-way delay: 199.960 ms
Loss rate: 2.24%
-- Flow 1:
Average throughput: 761.32 Mbit/s
95th percentile per-packet one-way delay: 199.960 ms
Loss rate: 2.24%
```

Run 1: Report of Indigo-MusesT — Data Link

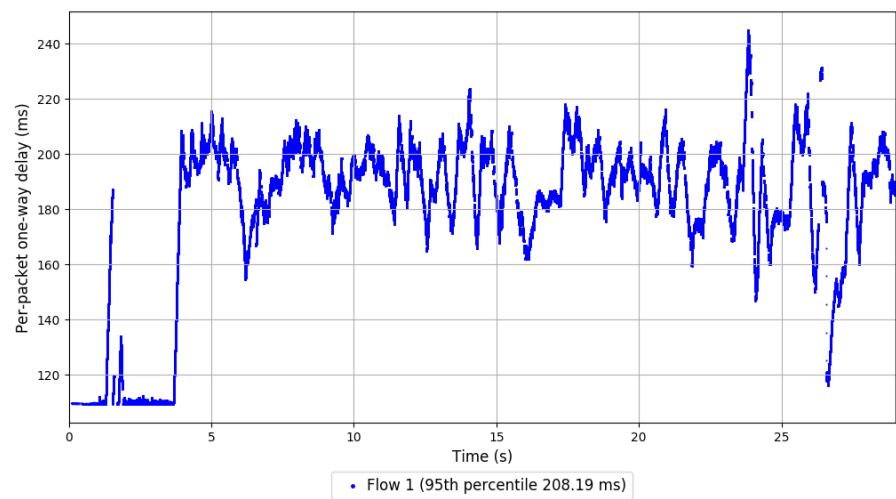
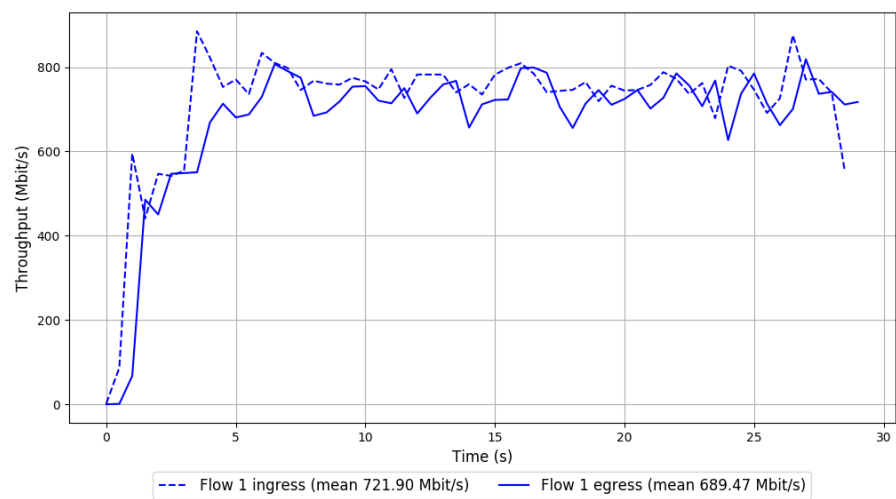


Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-02 18:44:50
End at: 2019-01-02 18:45:20
Local clock offset: 20.726 ms
Remote clock offset: 17.416 ms

Below is generated by plot.py at 2019-01-02 21:38:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 689.47 Mbit/s
95th percentile per-packet one-way delay: 208.185 ms
Loss rate: 4.48%
-- Flow 1:
Average throughput: 689.47 Mbit/s
95th percentile per-packet one-way delay: 208.185 ms
Loss rate: 4.48%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-02 19:13:51

End at: 2019-01-02 19:14:21

Local clock offset: 13.458 ms

Remote clock offset: 9.91 ms

Below is generated by plot.py at 2019-01-02 21:38:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 473.09 Mbit/s

95th percentile per-packet one-way delay: 186.477 ms

Loss rate: 1.55%

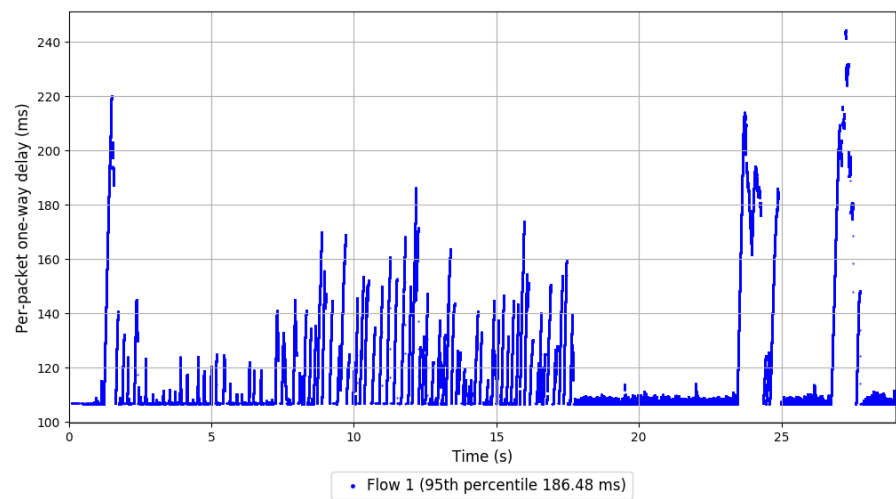
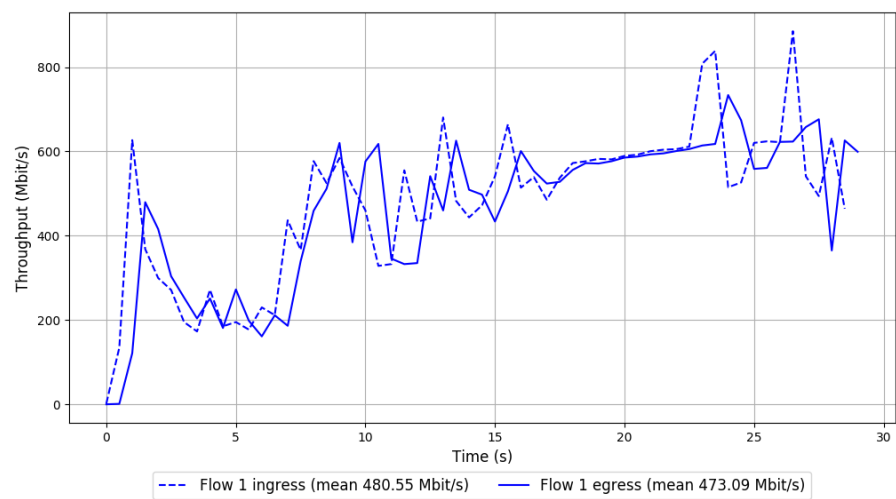
-- Flow 1:

Average throughput: 473.09 Mbit/s

95th percentile per-packet one-way delay: 186.477 ms

Loss rate: 1.55%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-02 19:42:35

End at: 2019-01-02 19:43:05

Local clock offset: 5.325 ms

Remote clock offset: 4.201 ms

Below is generated by plot.py at 2019-01-02 21:42:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 696.99 Mbit/s

95th percentile per-packet one-way delay: 204.830 ms

Loss rate: 4.38%

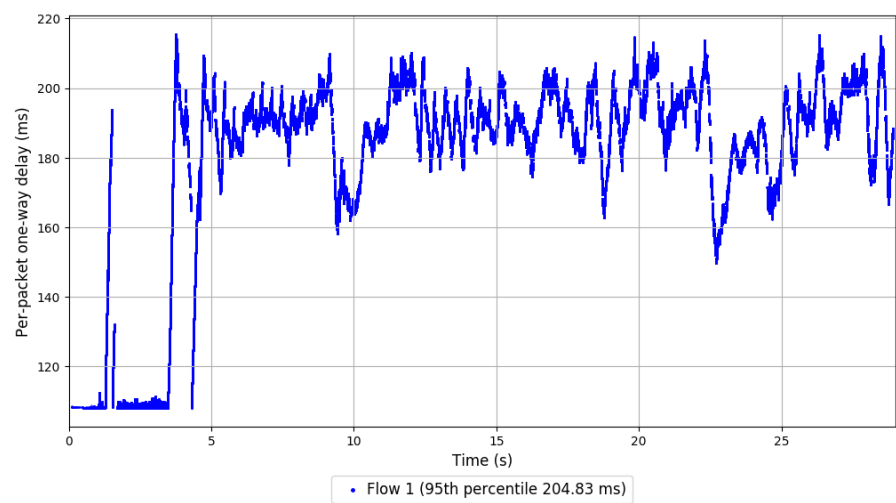
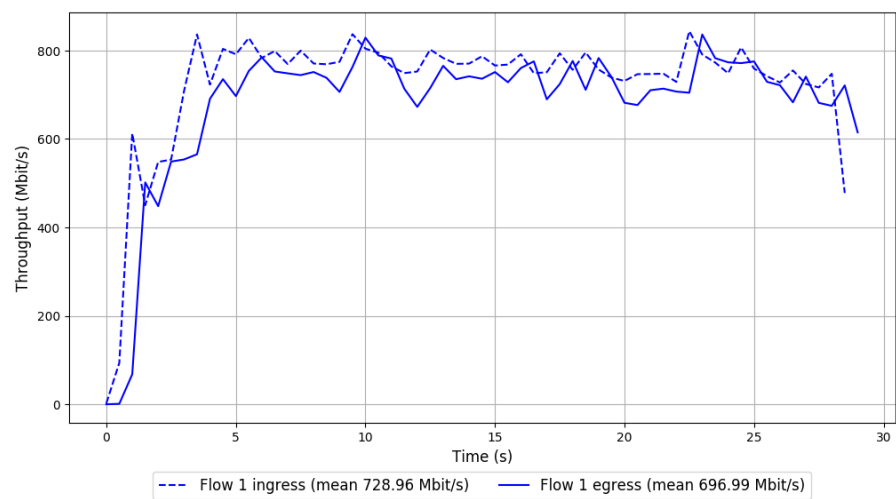
-- Flow 1:

Average throughput: 696.99 Mbit/s

95th percentile per-packet one-way delay: 204.830 ms

Loss rate: 4.38%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-02 20:11:43

End at: 2019-01-02 20:12:13

Local clock offset: 5.009 ms

Remote clock offset: 2.867 ms

Below is generated by plot.py at 2019-01-02 21:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 726.79 Mbit/s

95th percentile per-packet one-way delay: 200.947 ms

Loss rate: 3.32%

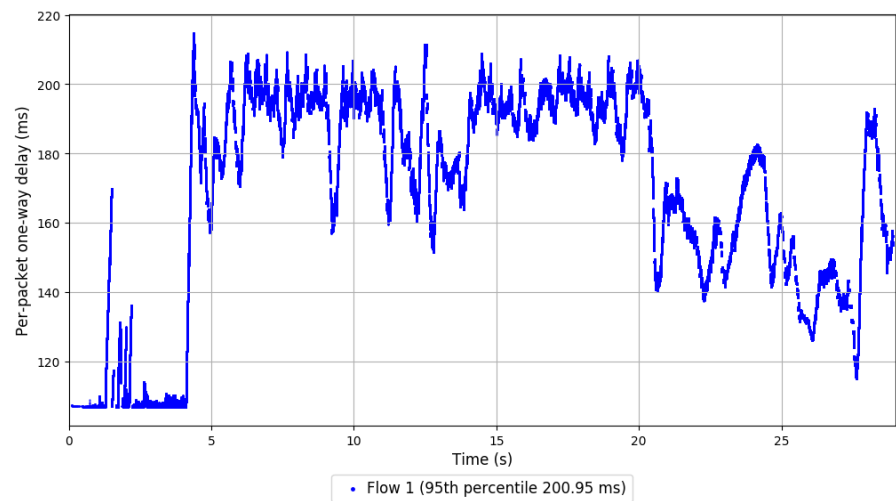
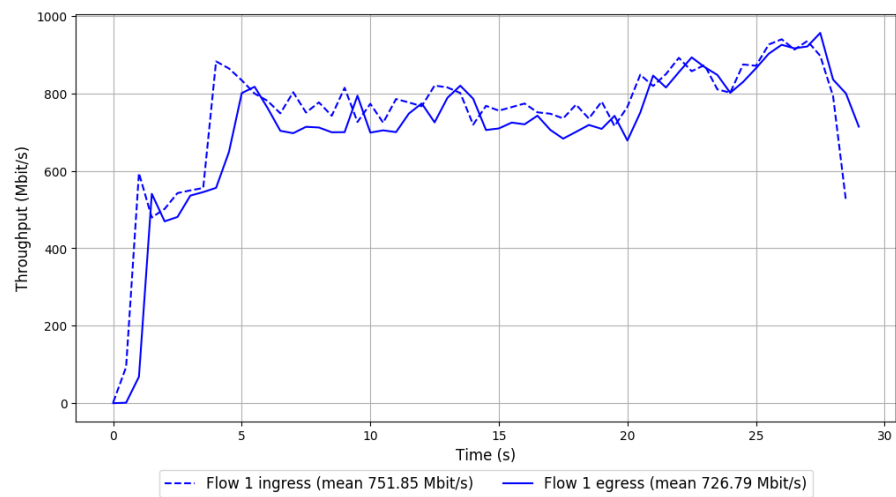
-- Flow 1:

Average throughput: 726.79 Mbit/s

95th percentile per-packet one-way delay: 200.947 ms

Loss rate: 3.32%

Run 5: Report of Indigo-MusesT — Data Link

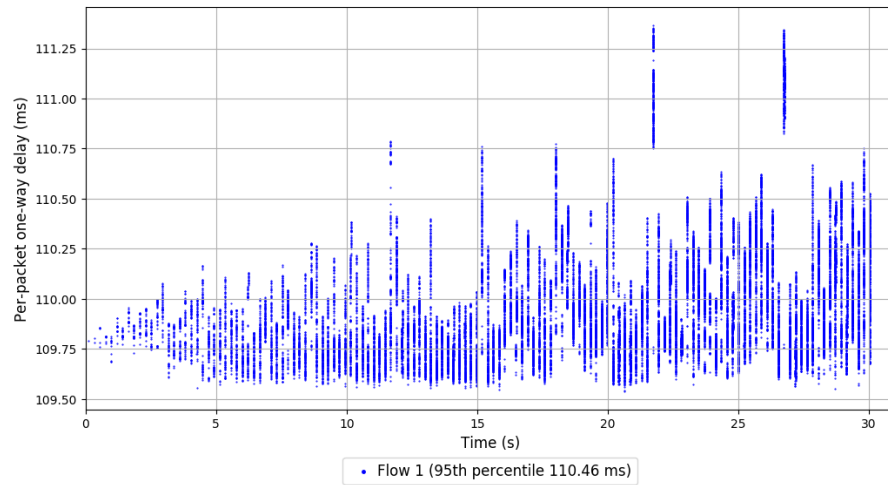
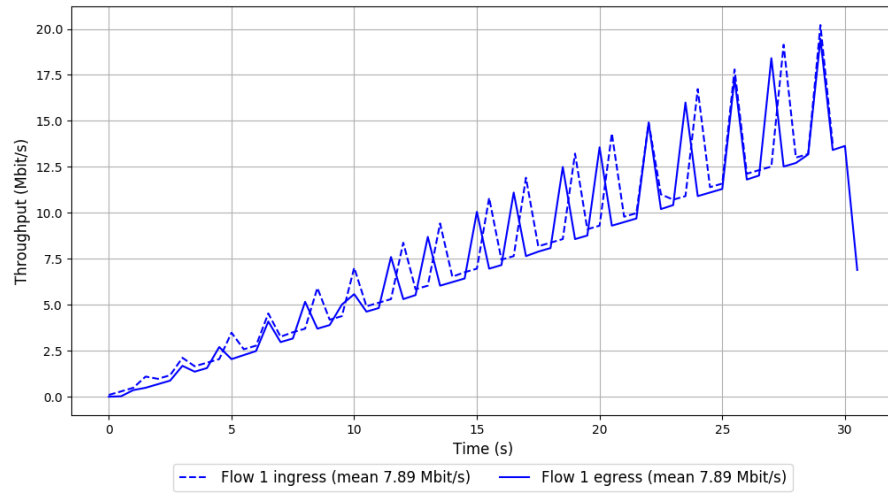


```
Run 1: Statistics of LEDBAT

Start at: 2019-01-02 18:14:26
End at: 2019-01-02 18:14:56
Local clock offset: 11.341 ms
Remote clock offset: 9.913 ms

# Below is generated by plot.py at 2019-01-02 21:44:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 110.462 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 110.462 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

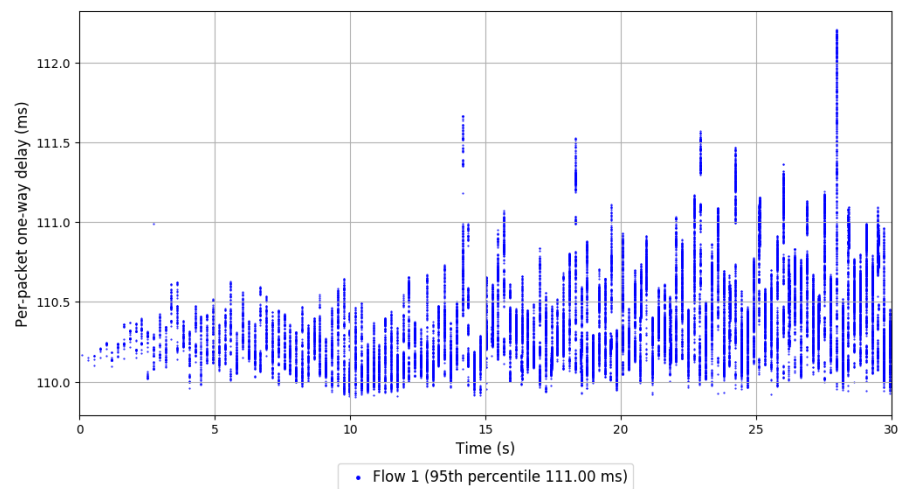
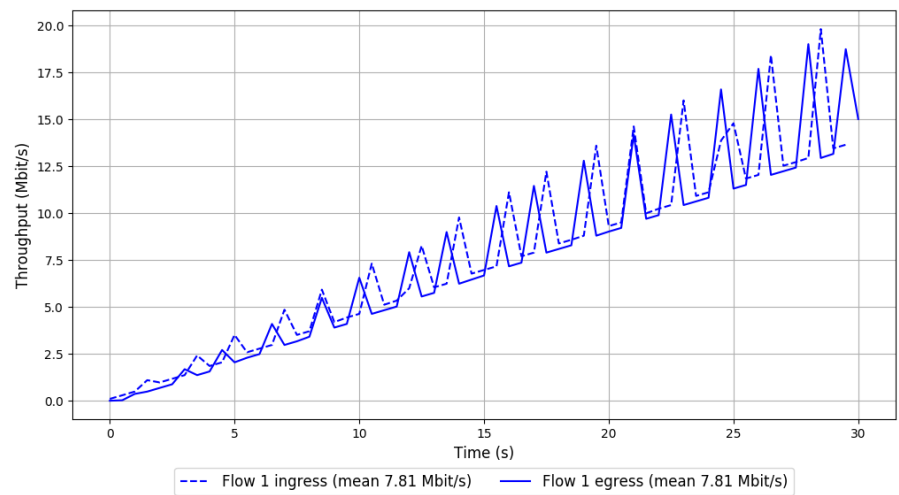


Run 2: Statistics of LEDBAT

Start at: 2019-01-02 18:43:39
End at: 2019-01-02 18:44:09
Local clock offset: 19.8 ms
Remote clock offset: 17.167 ms

Below is generated by plot.py at 2019-01-02 21:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.81 Mbit/s
95th percentile per-packet one-way delay: 111.001 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.81 Mbit/s
95th percentile per-packet one-way delay: 111.001 ms
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2019-01-02 19:12:40

End at: 2019-01-02 19:13:10

Local clock offset: 11.759 ms

Remote clock offset: 10.93 ms

Below is generated by plot.py at 2019-01-02 21:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.82 Mbit/s

95th percentile per-packet one-way delay: 111.441 ms

Loss rate: 0.00%

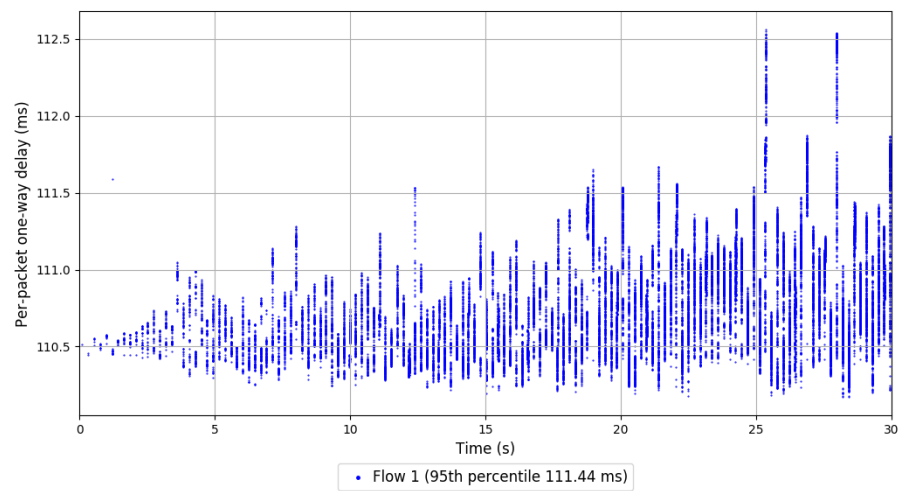
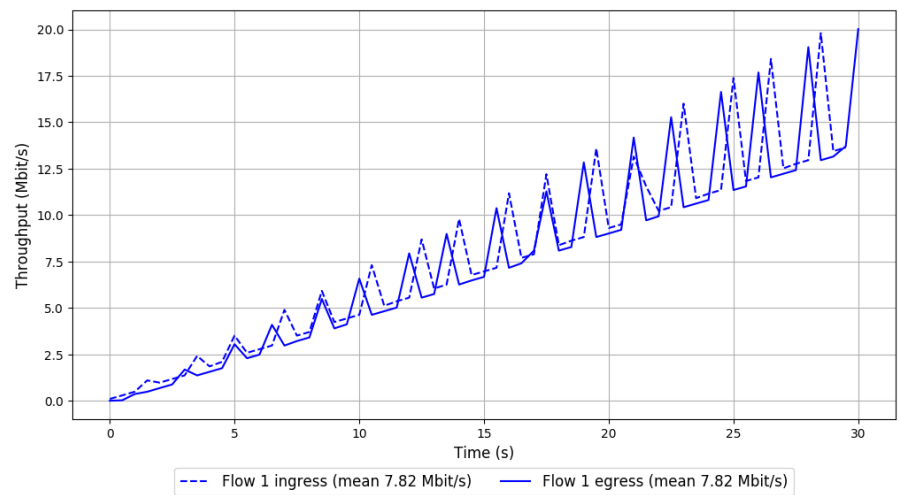
-- Flow 1:

Average throughput: 7.82 Mbit/s

95th percentile per-packet one-way delay: 111.441 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2019-01-02 19:41:24

End at: 2019-01-02 19:41:54

Local clock offset: 6.357 ms

Remote clock offset: 4.508 ms

Below is generated by plot.py at 2019-01-02 21:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 108.963 ms

Loss rate: 0.00%

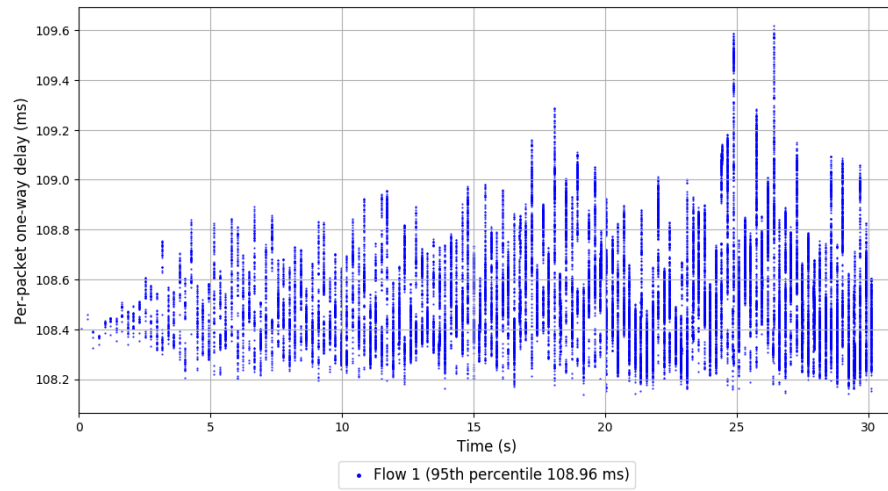
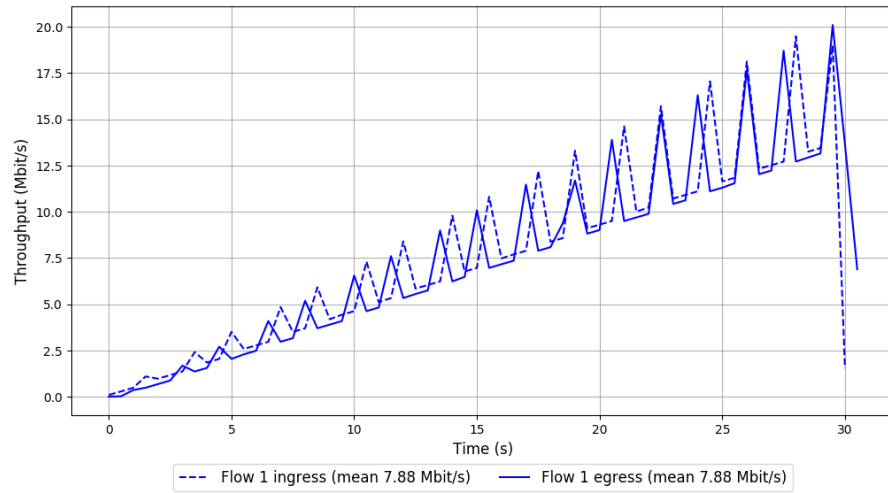
-- Flow 1:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 108.963 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2019-01-02 20:10:31

End at: 2019-01-02 20:11:01

Local clock offset: 4.26 ms

Remote clock offset: 3.304 ms

Below is generated by plot.py at 2019-01-02 21:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 110.103 ms

Loss rate: 0.00%

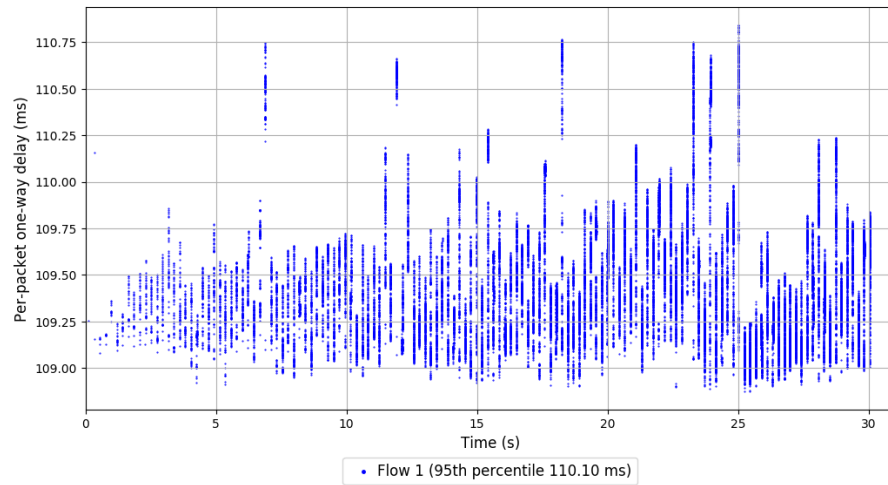
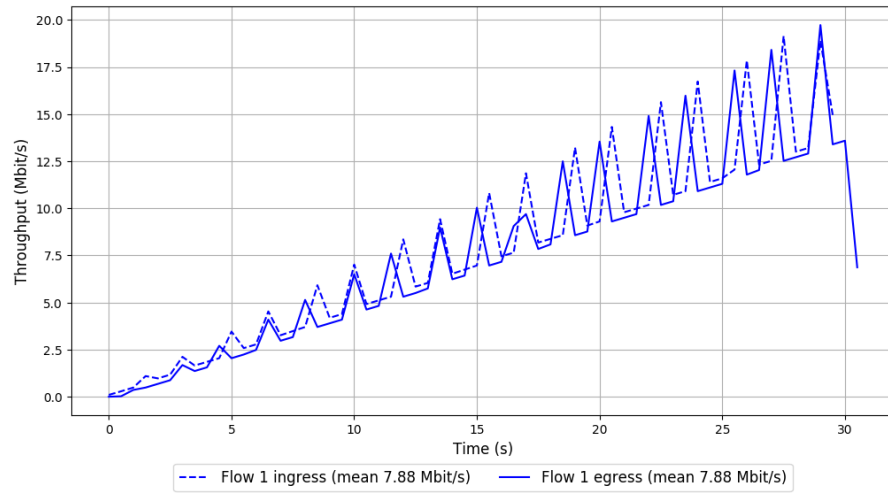
-- Flow 1:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 110.103 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

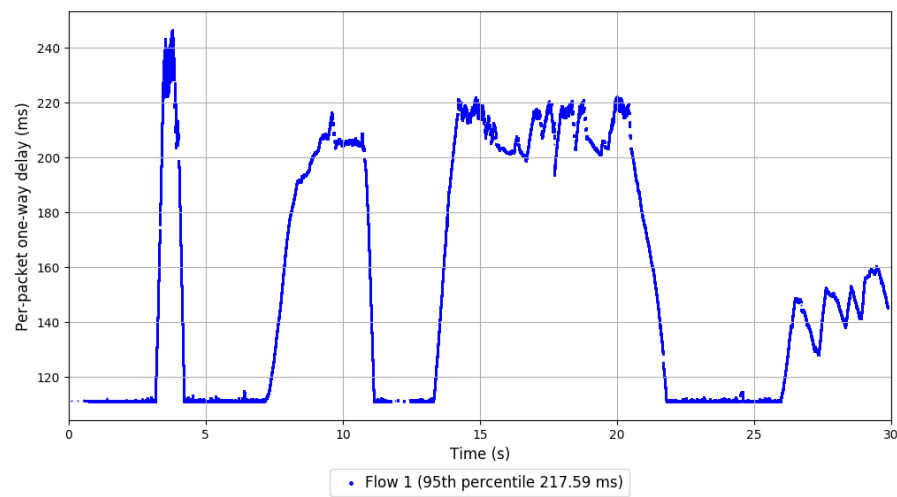
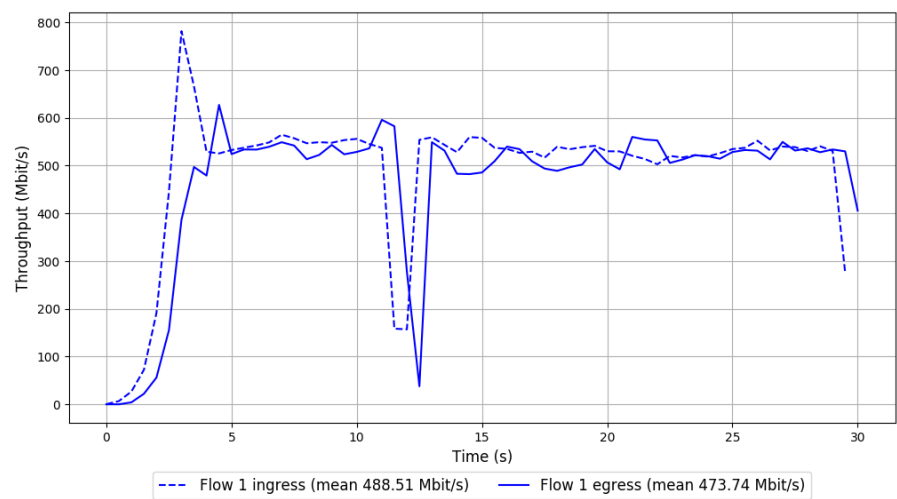


```
Run 1: Statistics of PCC-Allegro

Start at: 2019-01-02 18:03:32
End at: 2019-01-02 18:04:02
Local clock offset: 7.341 ms
Remote clock offset: 6.751 ms

# Below is generated by plot.py at 2019-01-02 21:49:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 473.74 Mbit/s
95th percentile per-packet one-way delay: 217.589 ms
Loss rate: 3.03%
-- Flow 1:
Average throughput: 473.74 Mbit/s
95th percentile per-packet one-way delay: 217.589 ms
Loss rate: 3.03%
```

Run 1: Report of PCC-Allegro — Data Link

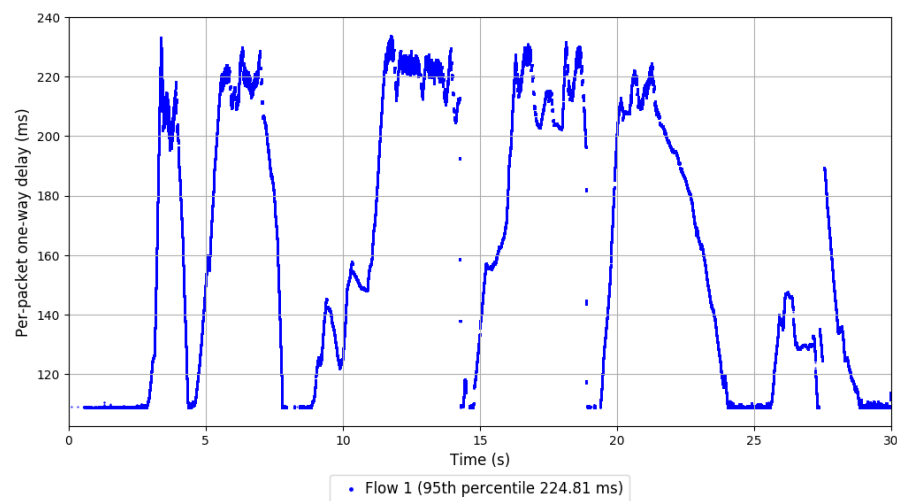
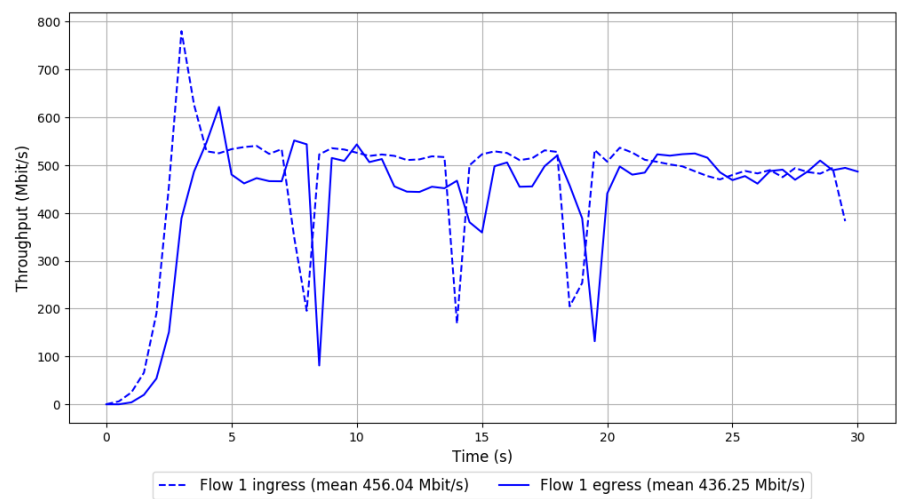


Run 2: Statistics of PCC-Allegro

Start at: 2019-01-02 18:32:51
End at: 2019-01-02 18:33:21
Local clock offset: 18.732 ms
Remote clock offset: 15.476 ms

Below is generated by plot.py at 2019-01-02 21:49:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 436.25 Mbit/s
95th percentile per-packet one-way delay: 224.815 ms
Loss rate: 4.34%
-- Flow 1:
Average throughput: 436.25 Mbit/s
95th percentile per-packet one-way delay: 224.815 ms
Loss rate: 4.34%

Run 2: Report of PCC-Allegro — Data Link

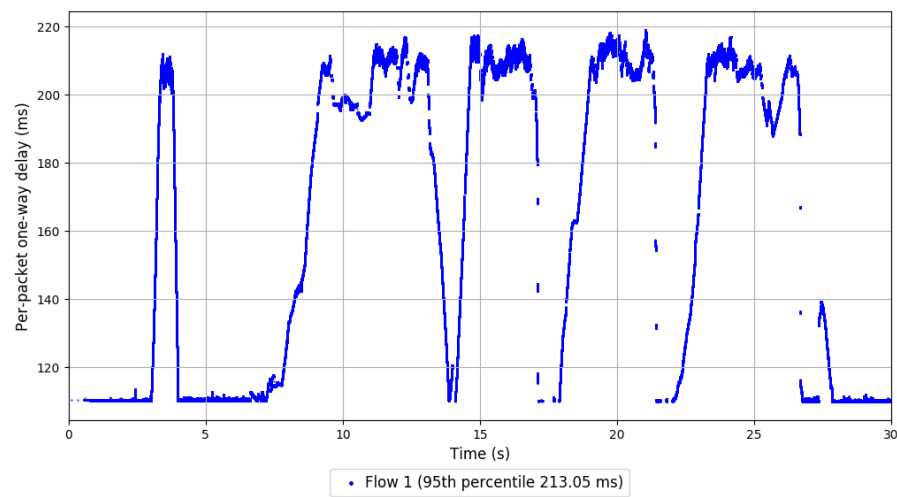
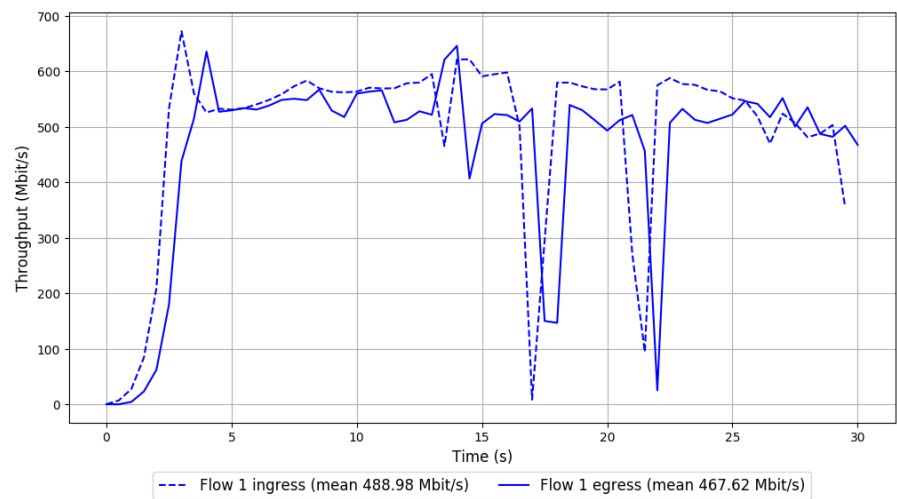


Run 3: Statistics of PCC-Allegro

Start at: 2019-01-02 19:01:56
End at: 2019-01-02 19:02:26
Local clock offset: 33.732 ms
Remote clock offset: 29.795 ms

Below is generated by plot.py at 2019-01-02 21:50:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 467.62 Mbit/s
95th percentile per-packet one-way delay: 213.050 ms
Loss rate: 4.52%
-- Flow 1:
Average throughput: 467.62 Mbit/s
95th percentile per-packet one-way delay: 213.050 ms
Loss rate: 4.52%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2019-01-02 19:30:40

End at: 2019-01-02 19:31:10

Local clock offset: 9.634 ms

Remote clock offset: 6.96 ms

Below is generated by plot.py at 2019-01-02 21:50:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 390.42 Mbit/s

95th percentile per-packet one-way delay: 217.847 ms

Loss rate: 3.25%

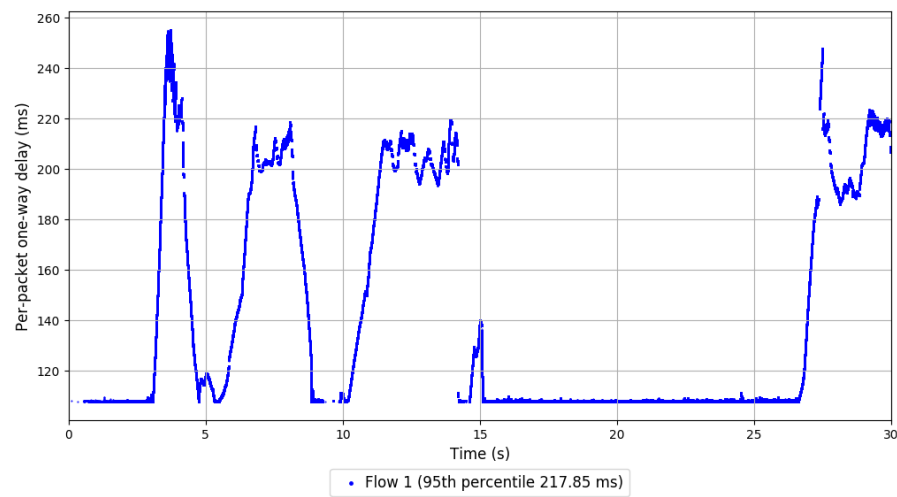
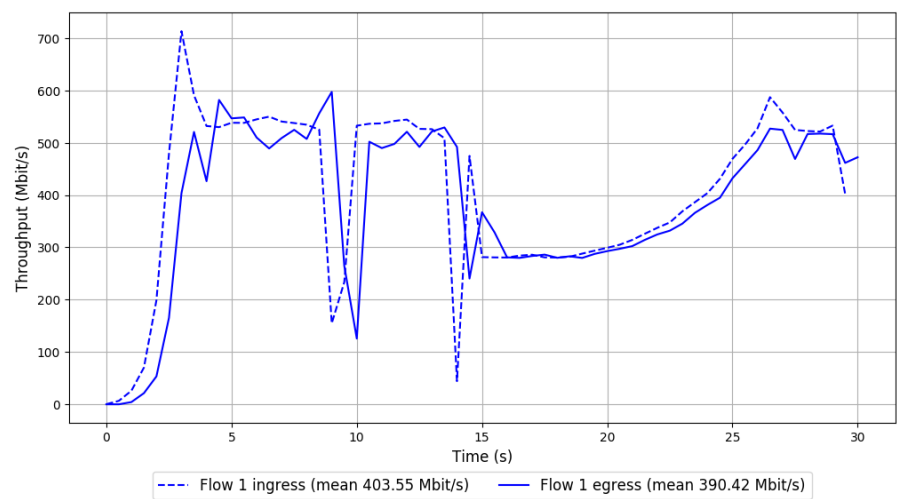
-- Flow 1:

Average throughput: 390.42 Mbit/s

95th percentile per-packet one-way delay: 217.847 ms

Loss rate: 3.25%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-01-02 19:59:41

End at: 2019-01-02 20:00:11

Local clock offset: 3.082 ms

Remote clock offset: 2.673 ms

Below is generated by plot.py at 2019-01-02 21:52:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 456.93 Mbit/s

95th percentile per-packet one-way delay: 212.779 ms

Loss rate: 2.06%

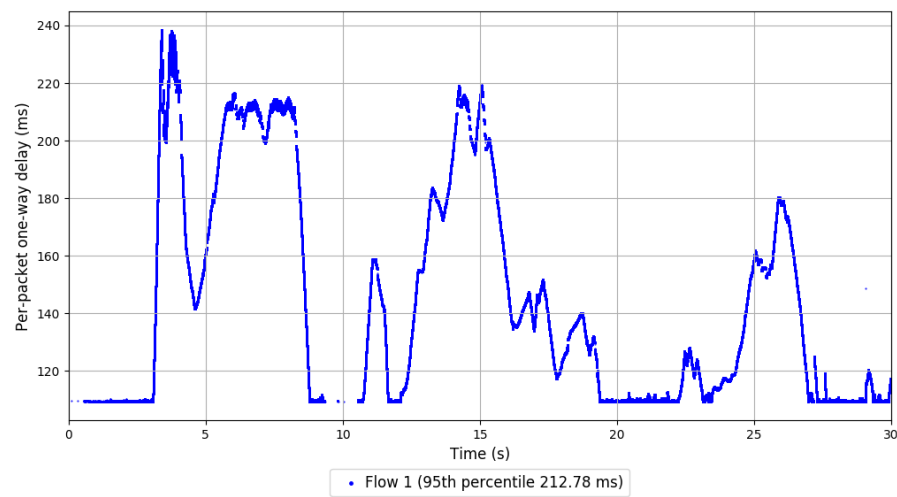
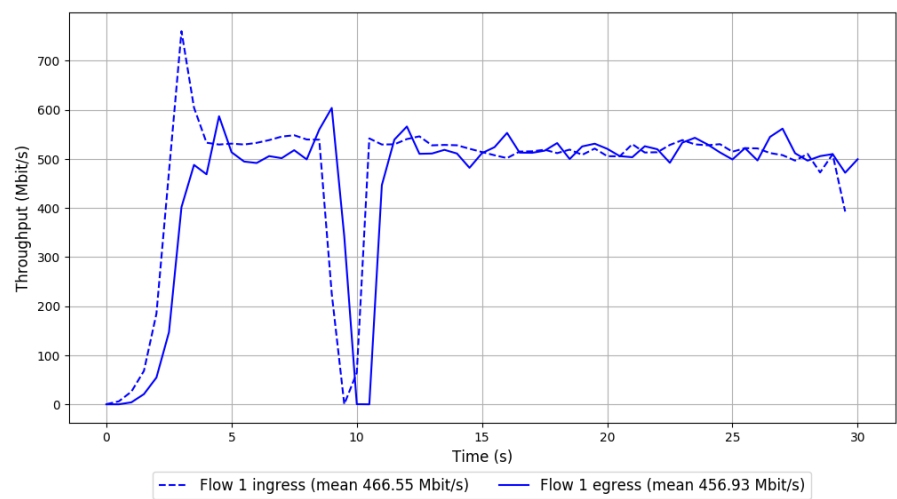
-- Flow 1:

Average throughput: 456.93 Mbit/s

95th percentile per-packet one-way delay: 212.779 ms

Loss rate: 2.06%

Run 5: Report of PCC-Allegro — Data Link

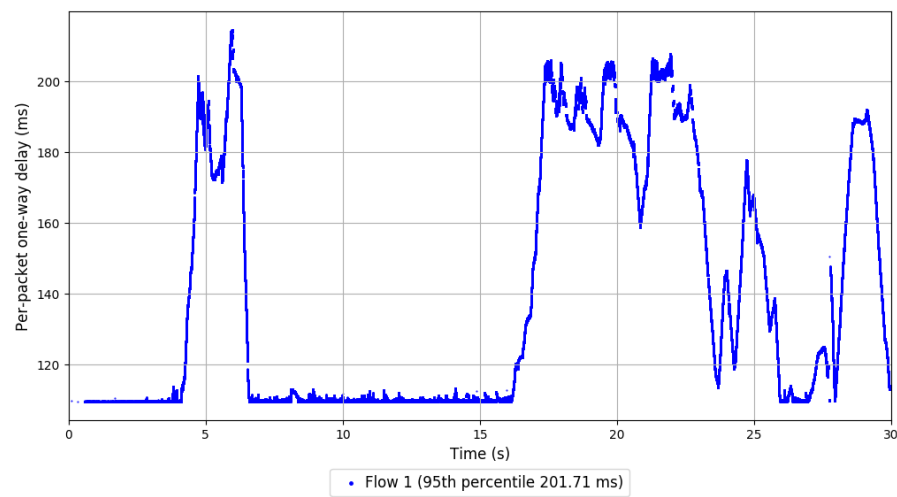
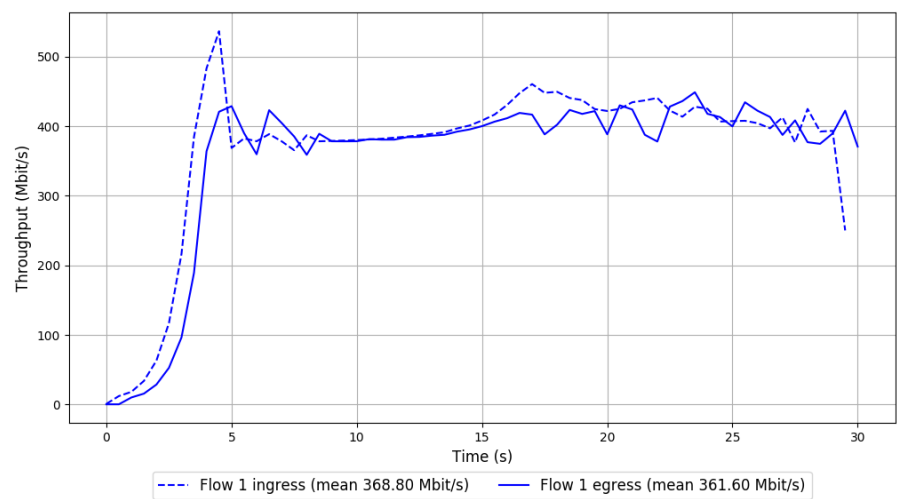


```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-02 18:08:03
End at: 2019-01-02 18:08:34
Local clock offset: 11.048 ms
Remote clock offset: 9.634 ms

# Below is generated by plot.py at 2019-01-02 21:52:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 361.60 Mbit/s
95th percentile per-packet one-way delay: 201.707 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 361.60 Mbit/s
95th percentile per-packet one-way delay: 201.707 ms
Loss rate: 1.95%
```

Run 1: Report of PCC-Expr — Data Link

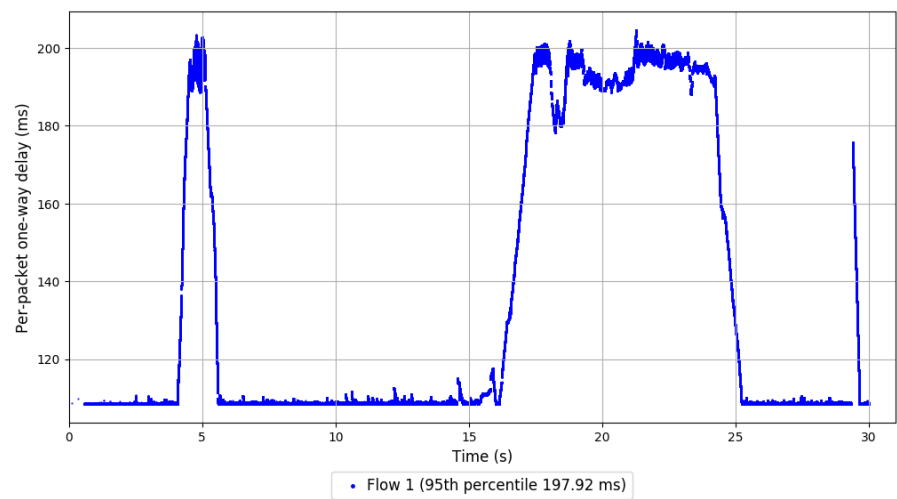
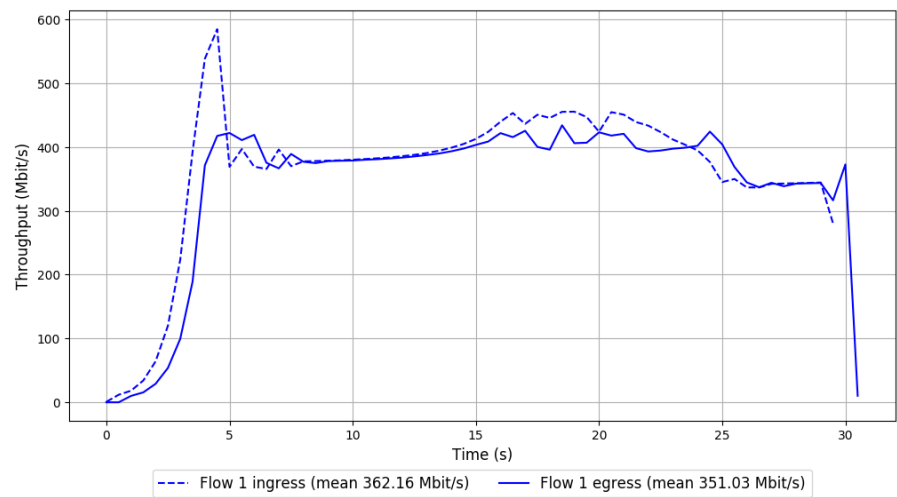


Run 2: Statistics of PCC-Expr

Start at: 2019-01-02 18:37:12
End at: 2019-01-02 18:37:42
Local clock offset: 17.784 ms
Remote clock offset: 15.134 ms

Below is generated by plot.py at 2019-01-02 21:55:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 351.03 Mbit/s
95th percentile per-packet one-way delay: 197.917 ms
Loss rate: 3.07%
-- Flow 1:
Average throughput: 351.03 Mbit/s
95th percentile per-packet one-way delay: 197.917 ms
Loss rate: 3.07%

Run 2: Report of PCC-Expr — Data Link

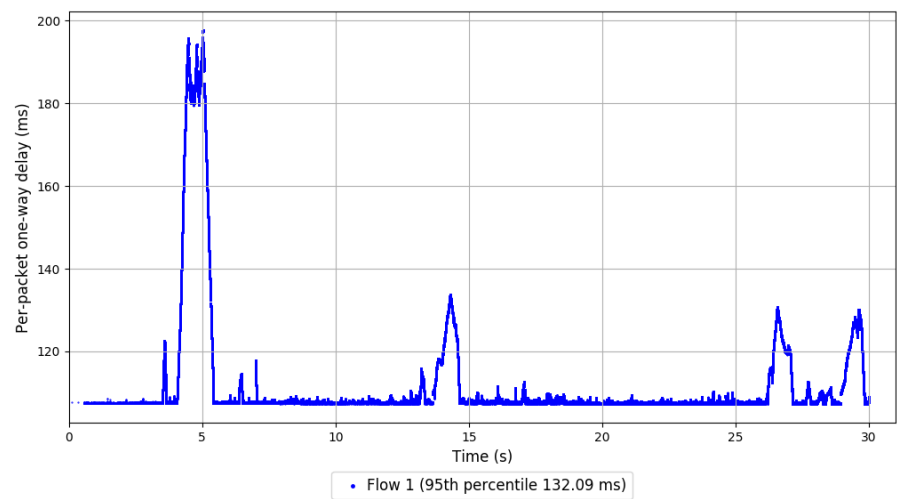
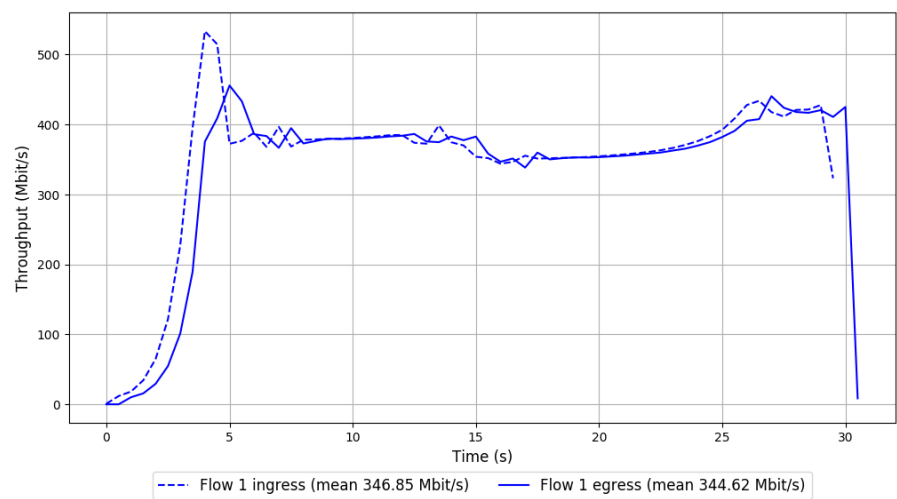


Run 3: Statistics of PCC-Expr

Start at: 2019-01-02 19:06:20
End at: 2019-01-02 19:06:50
Local clock offset: 23.709 ms
Remote clock offset: 19.153 ms

Below is generated by plot.py at 2019-01-02 21:56:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 344.62 Mbit/s
95th percentile per-packet one-way delay: 132.088 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 344.62 Mbit/s
95th percentile per-packet one-way delay: 132.088 ms
Loss rate: 0.64%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2019-01-02 19:34:58

End at: 2019-01-02 19:35:28

Local clock offset: 10.287 ms

Remote clock offset: 7.088 ms

Below is generated by plot.py at 2019-01-02 22:00:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 349.69 Mbit/s

95th percentile per-packet one-way delay: 165.550 ms

Loss rate: 0.91%

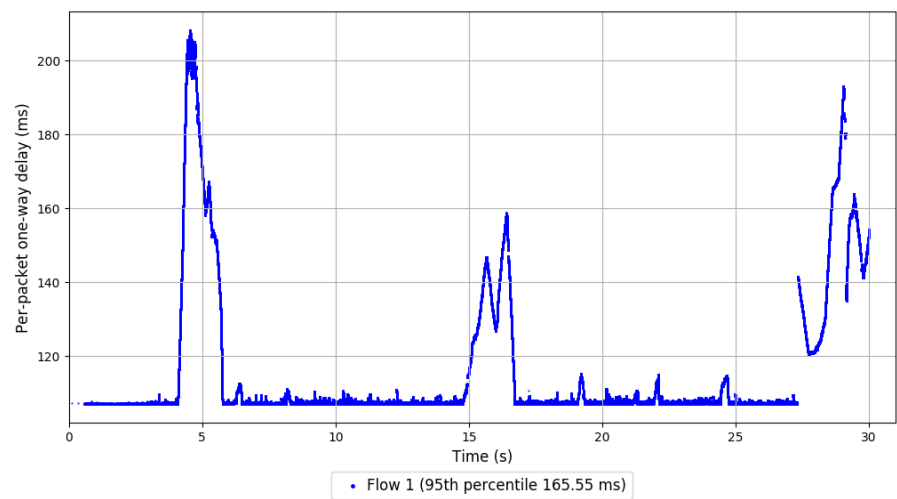
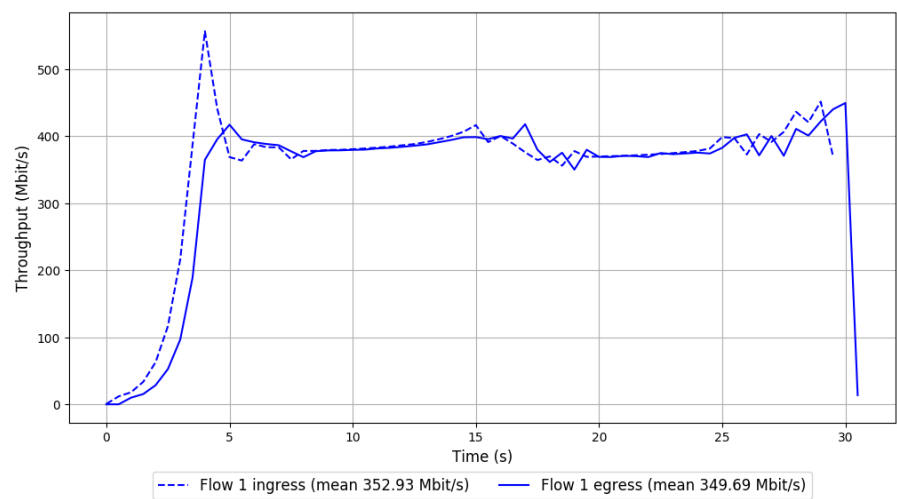
-- Flow 1:

Average throughput: 349.69 Mbit/s

95th percentile per-packet one-way delay: 165.550 ms

Loss rate: 0.91%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2019-01-02 20:04:09

End at: 2019-01-02 20:04:39

Local clock offset: 3.741 ms

Remote clock offset: 2.531 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 361.79 Mbit/s

95th percentile per-packet one-way delay: 198.412 ms

Loss rate: 2.63%

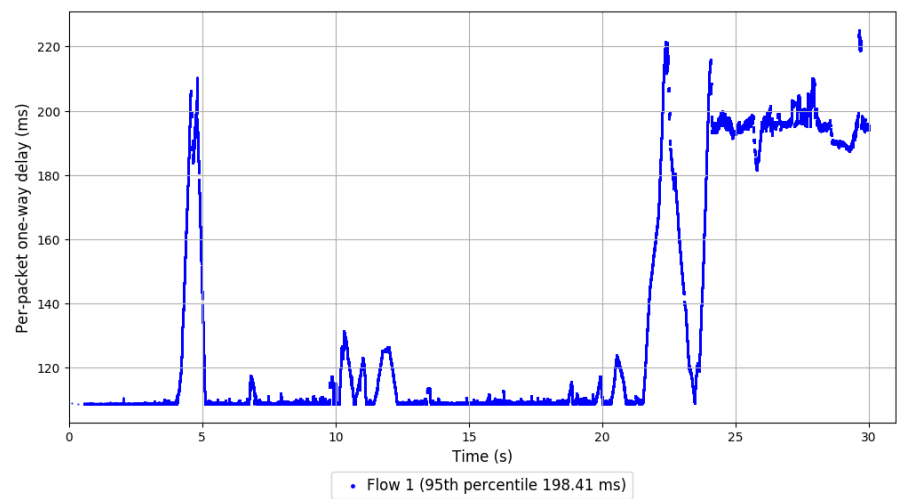
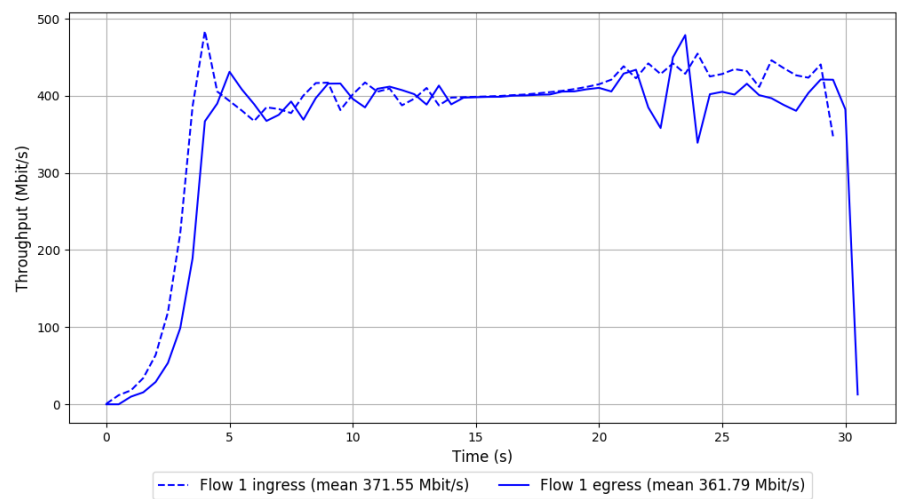
-- Flow 1:

Average throughput: 361.79 Mbit/s

95th percentile per-packet one-way delay: 198.412 ms

Loss rate: 2.63%

Run 5: Report of PCC-Expr — Data Link

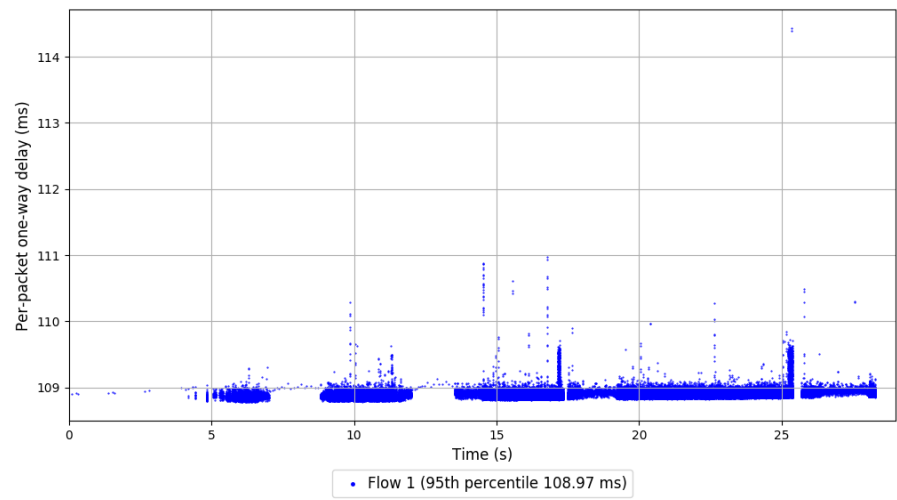
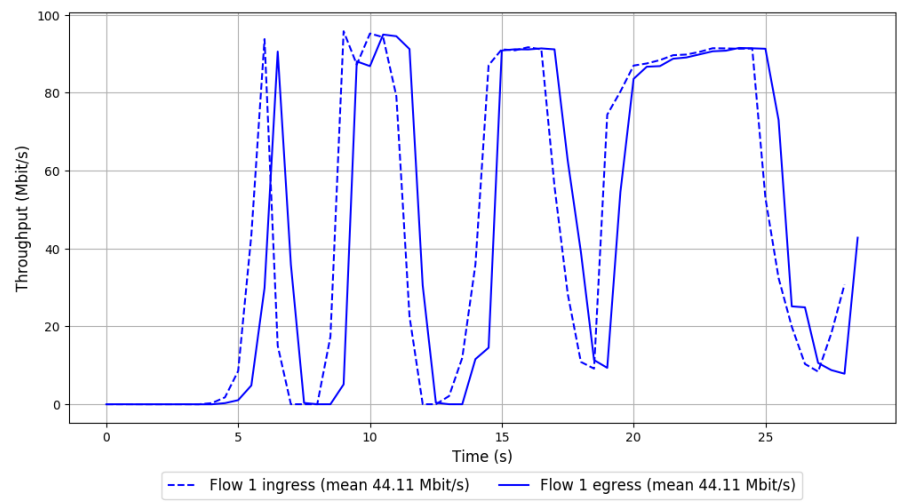


```
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-02 18:23:12
End at: 2019-01-02 18:23:42
Local clock offset: 17.698 ms
Remote clock offset: 14.683 ms

# Below is generated by plot.py at 2019-01-02 22:01:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.11 Mbit/s
95th percentile per-packet one-way delay: 108.969 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 44.11 Mbit/s
95th percentile per-packet one-way delay: 108.969 ms
Loss rate: 0.00%
```

Run 1: Report of QUIC Cubic — Data Link

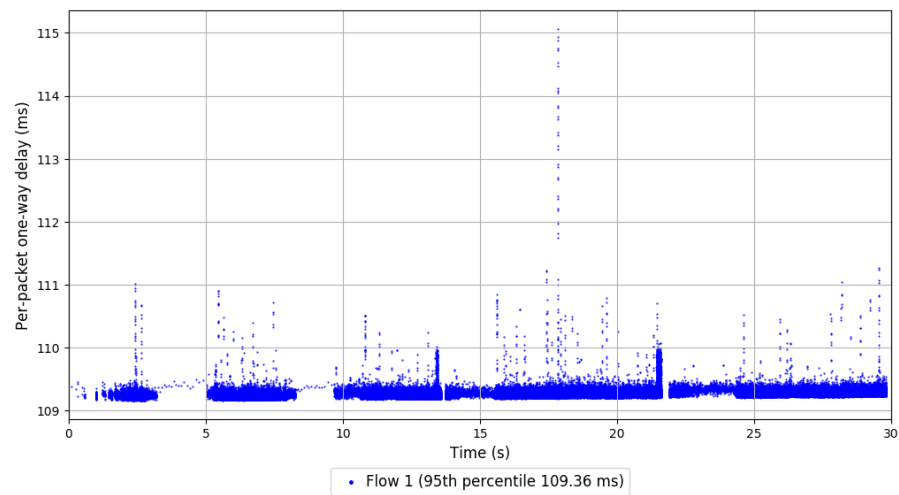
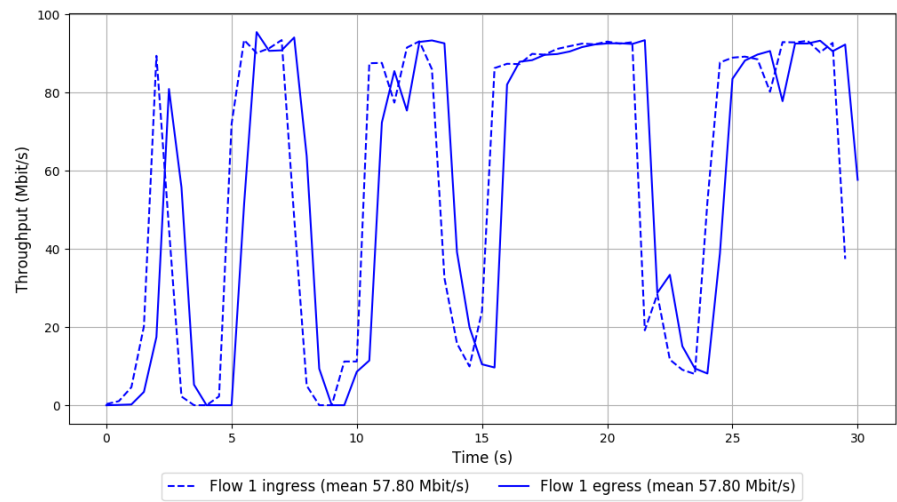


Run 2: Statistics of QUIC Cubic

Start at: 2019-01-02 18:52:25
End at: 2019-01-02 18:52:55
Local clock offset: 26.507 ms
Remote clock offset: 22.407 ms

Below is generated by plot.py at 2019-01-02 22:01:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 57.80 Mbit/s
95th percentile per-packet one-way delay: 109.356 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.80 Mbit/s
95th percentile per-packet one-way delay: 109.356 ms
Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2019-01-02 19:21:11

End at: 2019-01-02 19:21:41

Local clock offset: 8.58 ms

Remote clock offset: 6.767 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 75.70 Mbit/s

95th percentile per-packet one-way delay: 108.801 ms

Loss rate: 0.00%

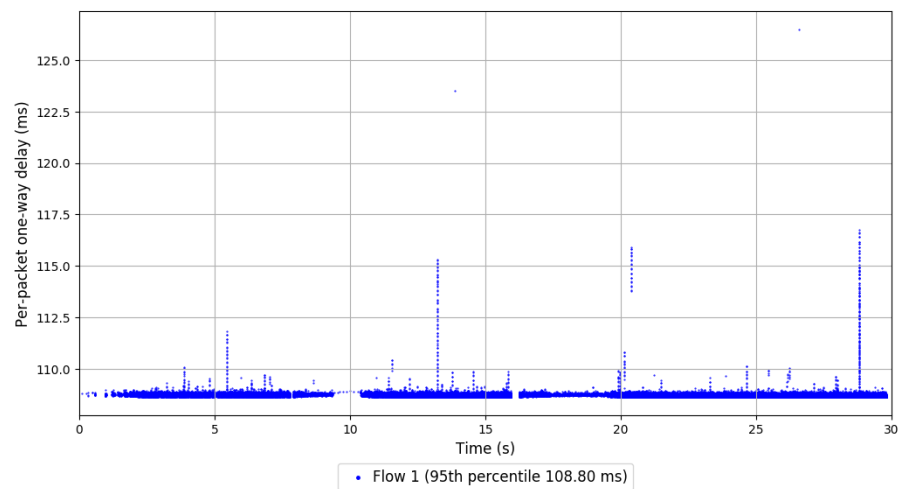
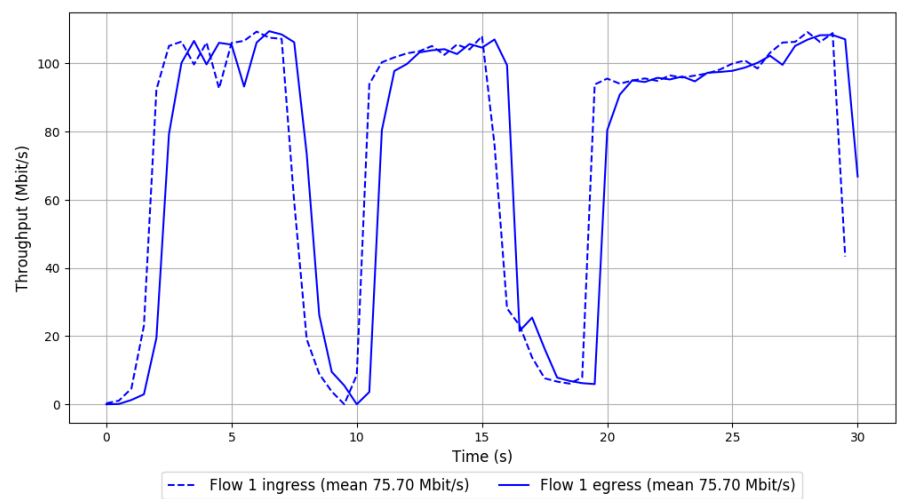
-- Flow 1:

Average throughput: 75.70 Mbit/s

95th percentile per-packet one-way delay: 108.801 ms

Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2019-01-02 19:50:09

End at: 2019-01-02 19:50:39

Local clock offset: 3.947 ms

Remote clock offset: 2.422 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 71.40 Mbit/s

95th percentile per-packet one-way delay: 108.147 ms

Loss rate: 0.00%

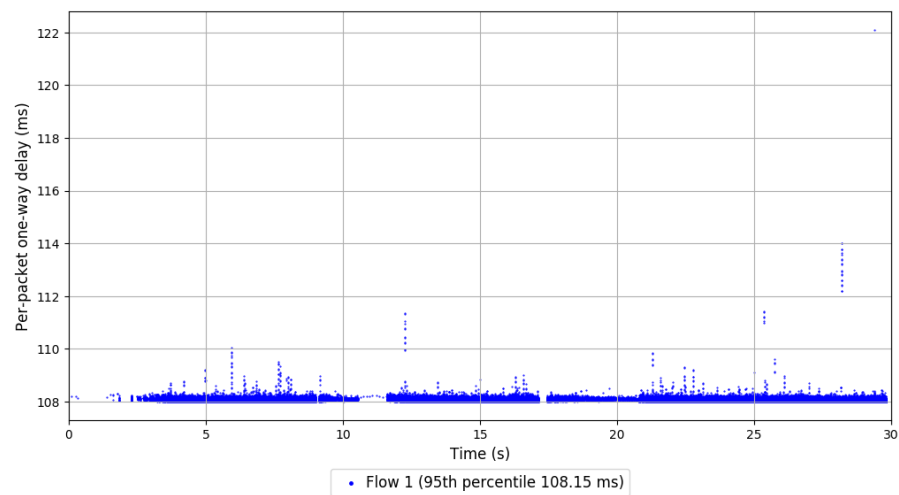
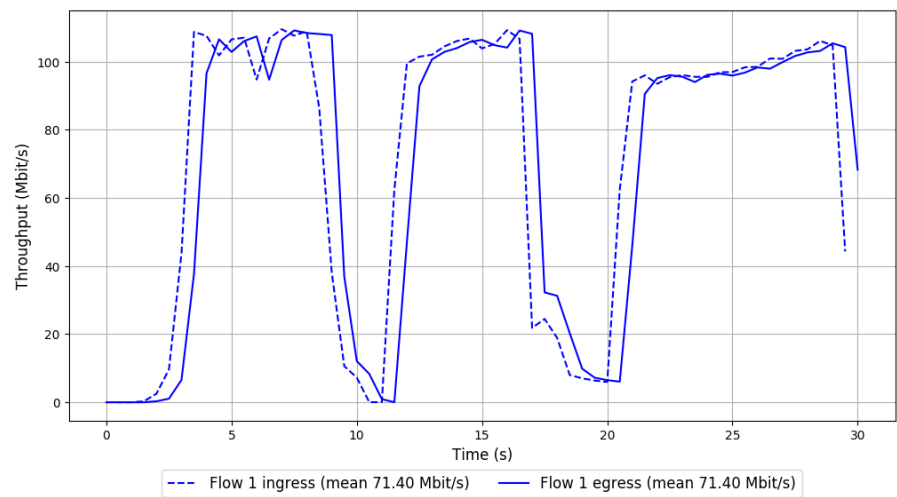
-- Flow 1:

Average throughput: 71.40 Mbit/s

95th percentile per-packet one-way delay: 108.147 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2019-01-02 20:19:18

End at: 2019-01-02 20:19:48

Local clock offset: 2.985 ms

Remote clock offset: 1.46 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 66.27 Mbit/s

95th percentile per-packet one-way delay: 109.250 ms

Loss rate: 0.00%

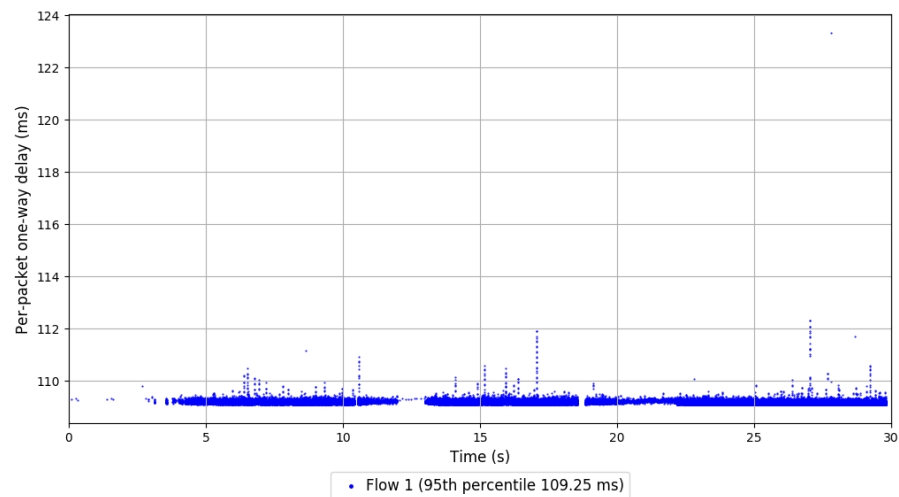
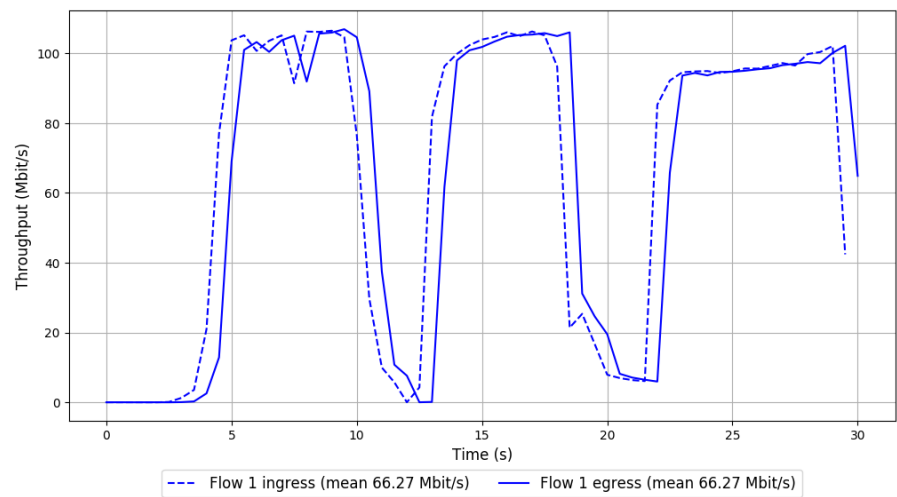
-- Flow 1:

Average throughput: 66.27 Mbit/s

95th percentile per-packet one-way delay: 109.250 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

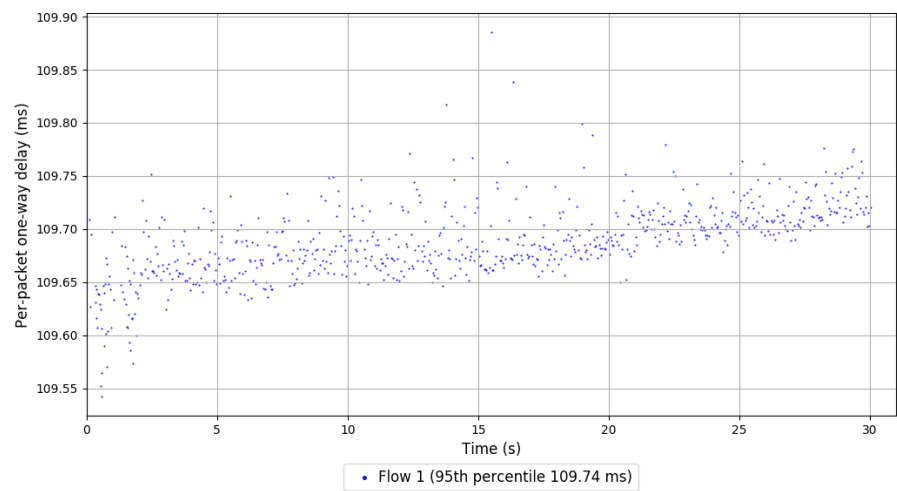
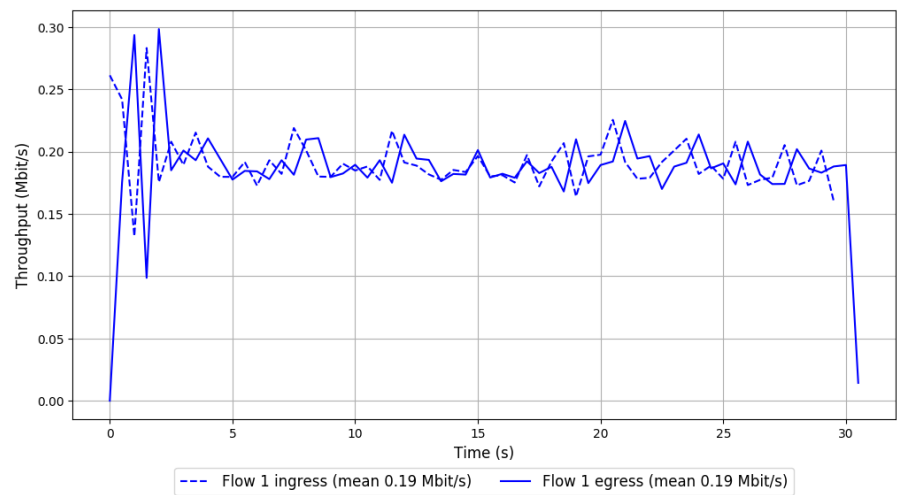


```
Run 1: Statistics of SCReAM

Start at: 2019-01-02 18:22:02
End at: 2019-01-02 18:22:32
Local clock offset: 16.238 ms
Remote clock offset: 13.84 ms

# Below is generated by plot.py at 2019-01-02 22:01:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 109.744 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 109.744 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

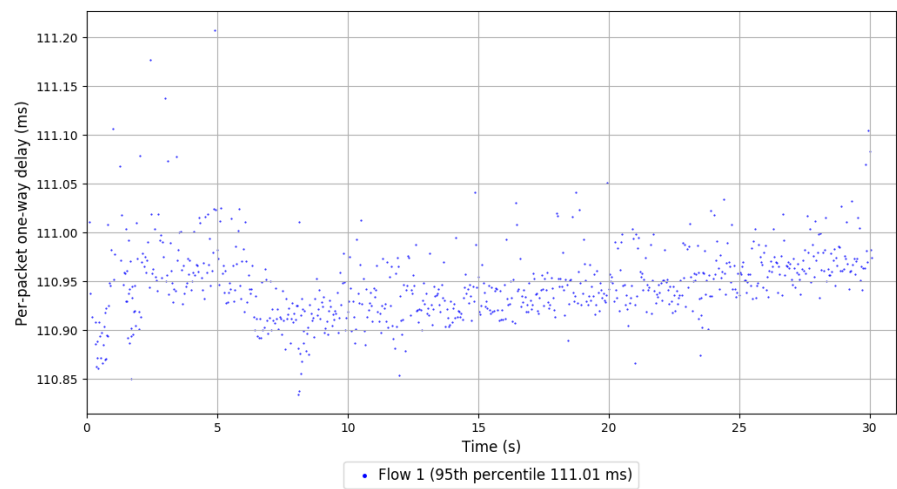
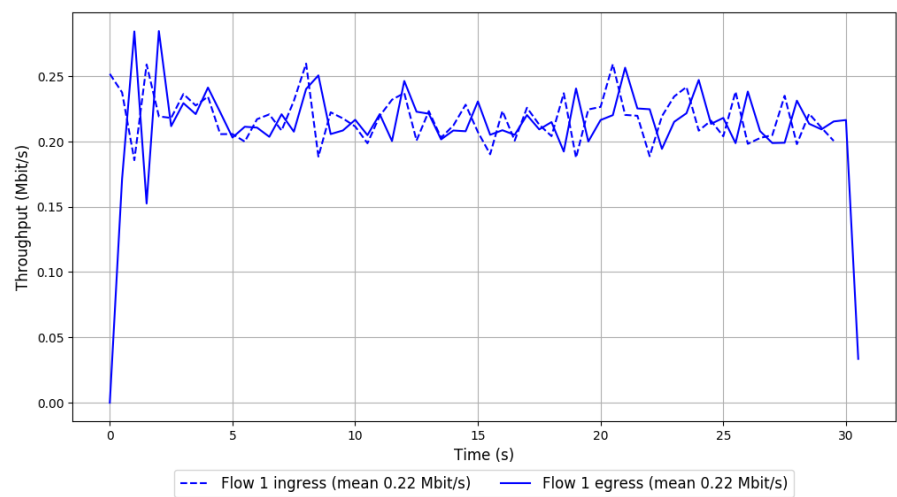


Run 2: Statistics of SCReAM

Start at: 2019-01-02 18:51:15
End at: 2019-01-02 18:51:45
Local clock offset: 24.14 ms
Remote clock offset: 21.535 ms

Below is generated by plot.py at 2019-01-02 22:01:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 111.013 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 111.013 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2019-01-02 19:20:02

End at: 2019-01-02 19:20:32

Local clock offset: 8.827 ms

Remote clock offset: 6.999 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.124 ms

Loss rate: 0.00%

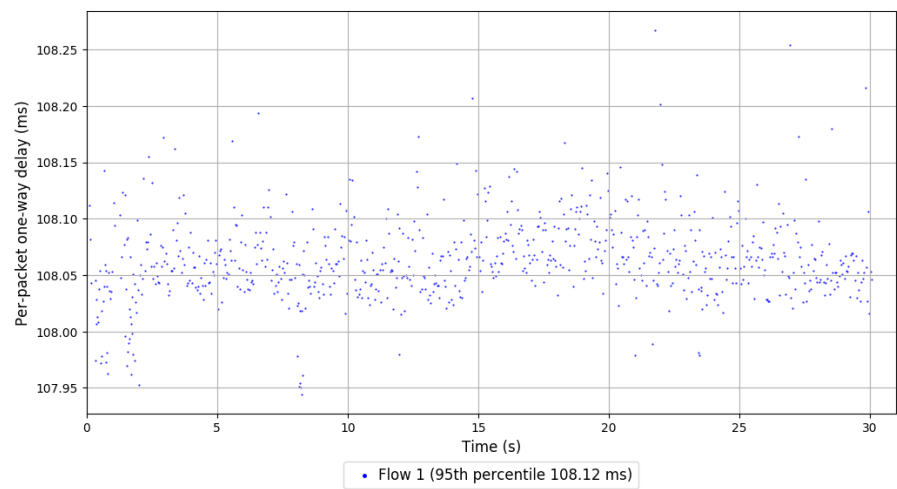
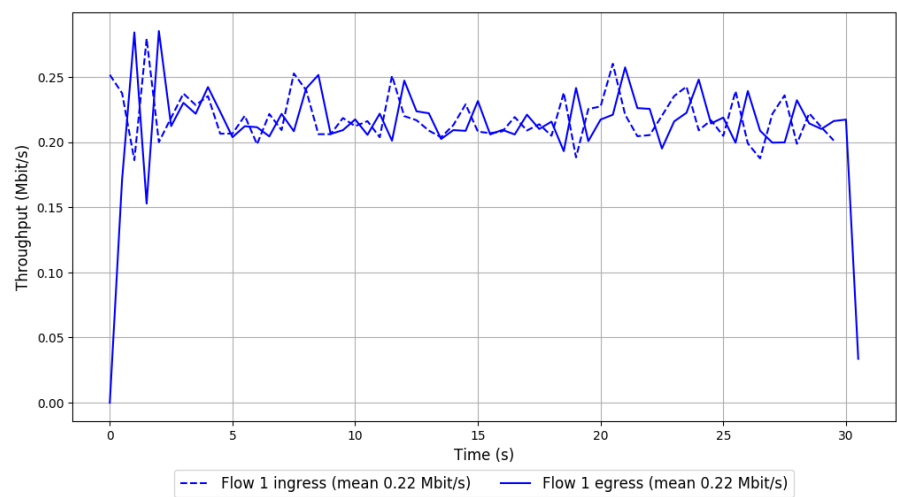
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.124 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2019-01-02 19:49:00

End at: 2019-01-02 19:49:30

Local clock offset: 4.787 ms

Remote clock offset: 2.864 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.117 ms

Loss rate: 0.00%

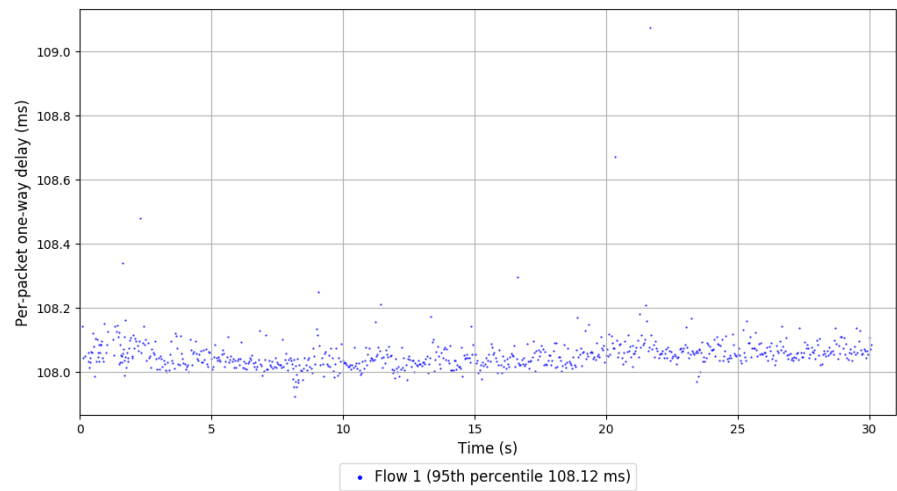
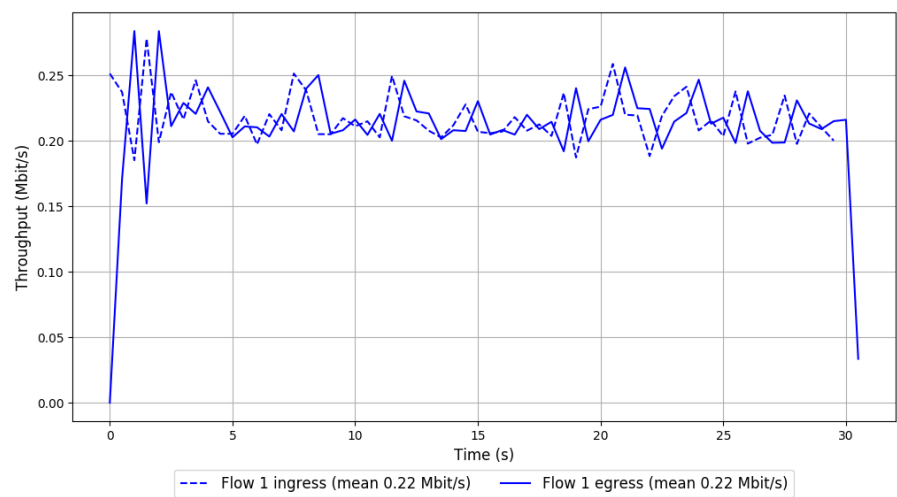
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.117 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2019-01-02 20:18:08

End at: 2019-01-02 20:18:38

Local clock offset: 1.356 ms

Remote clock offset: 1.244 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 109.654 ms

Loss rate: 0.00%

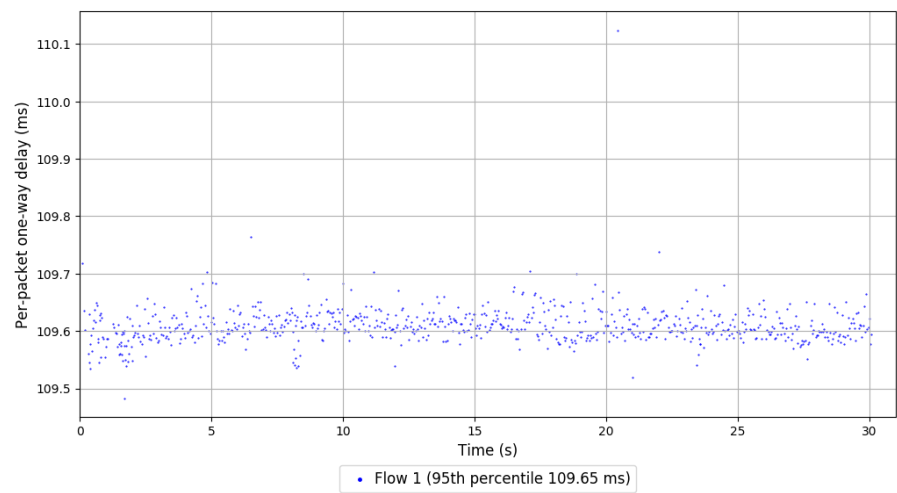
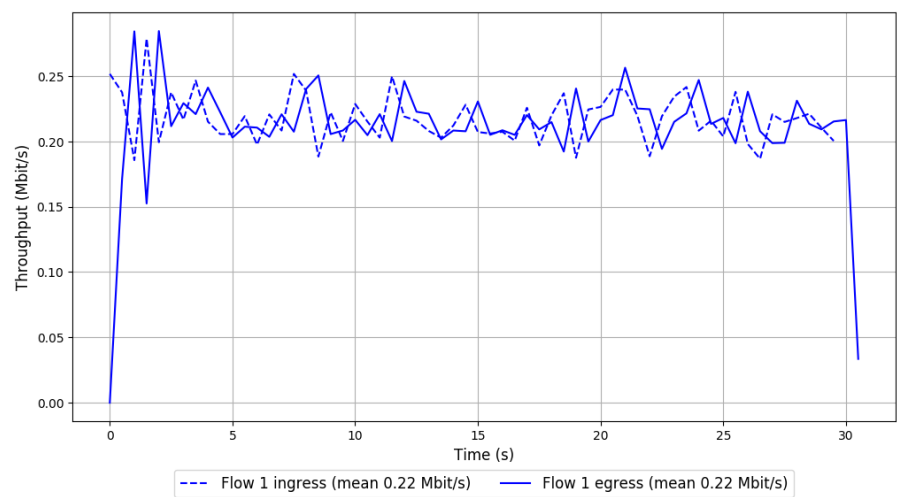
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 109.654 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-01-02 18:06:53

End at: 2019-01-02 18:07:23

Local clock offset: 9.202 ms

Remote clock offset: 8.071 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 110.273 ms

Loss rate: 0.00%

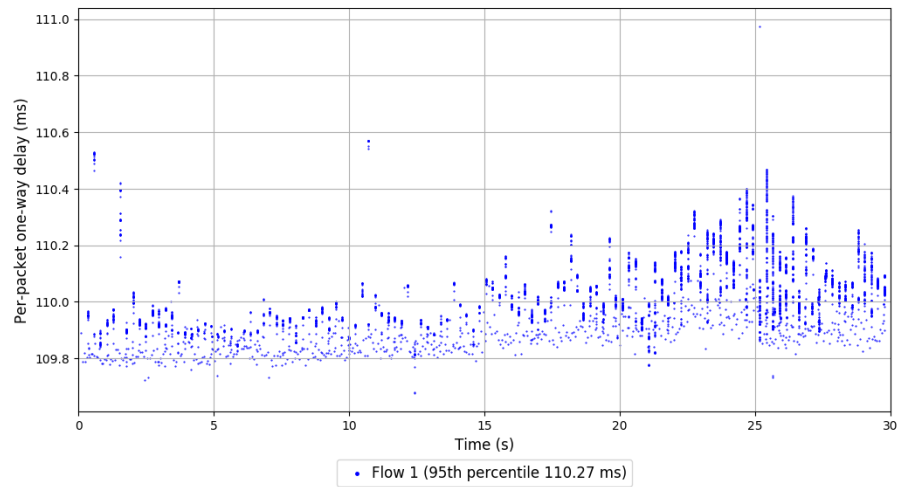
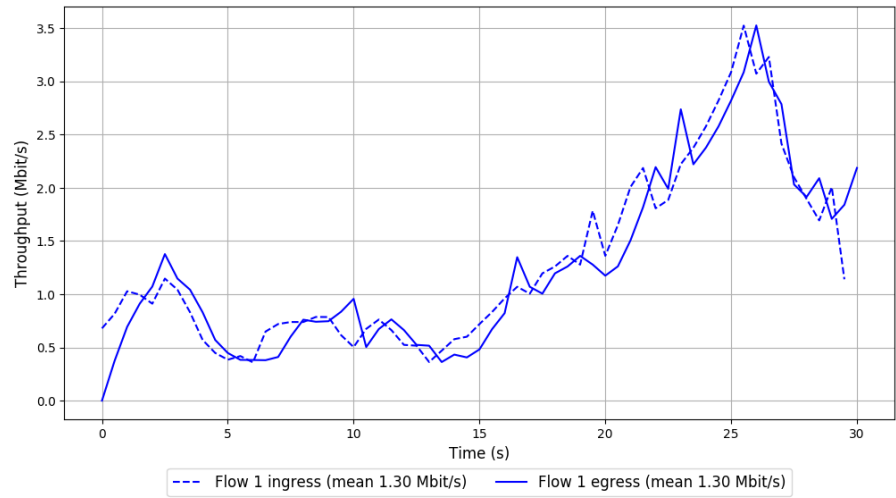
-- Flow 1:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 110.273 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

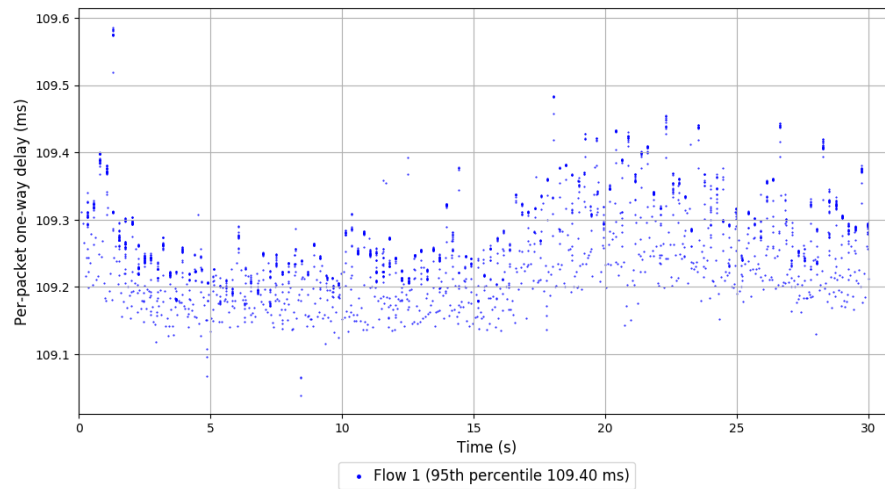
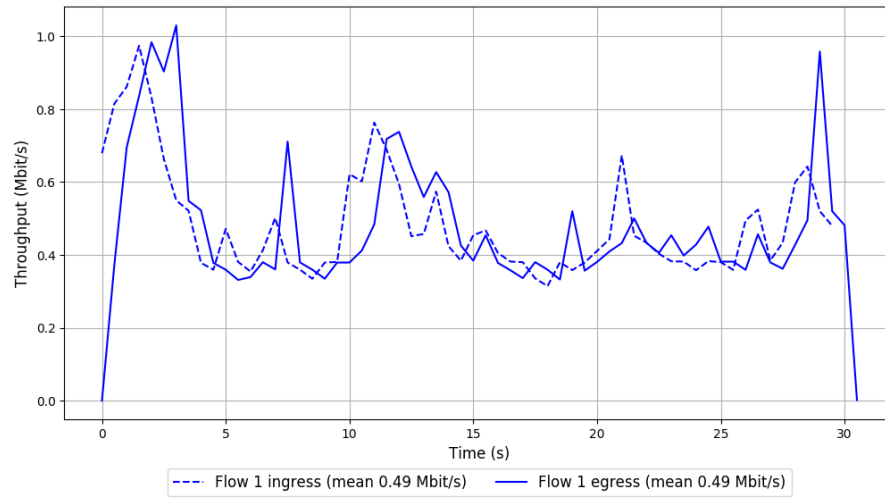


Run 2: Statistics of Sprout

Start at: 2019-01-02 18:36:02
End at: 2019-01-02 18:36:32
Local clock offset: 17.445 ms
Remote clock offset: 14.737 ms

Below is generated by plot.py at 2019-01-02 22:01:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 109.399 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 109.399 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

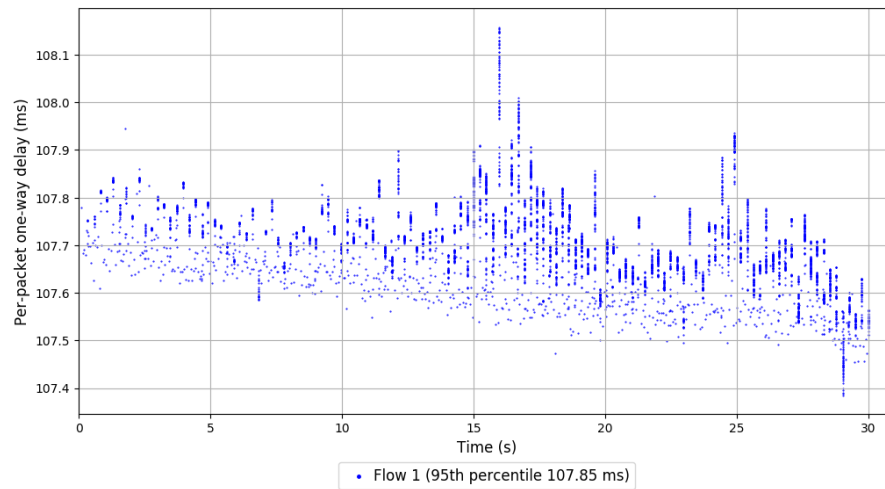
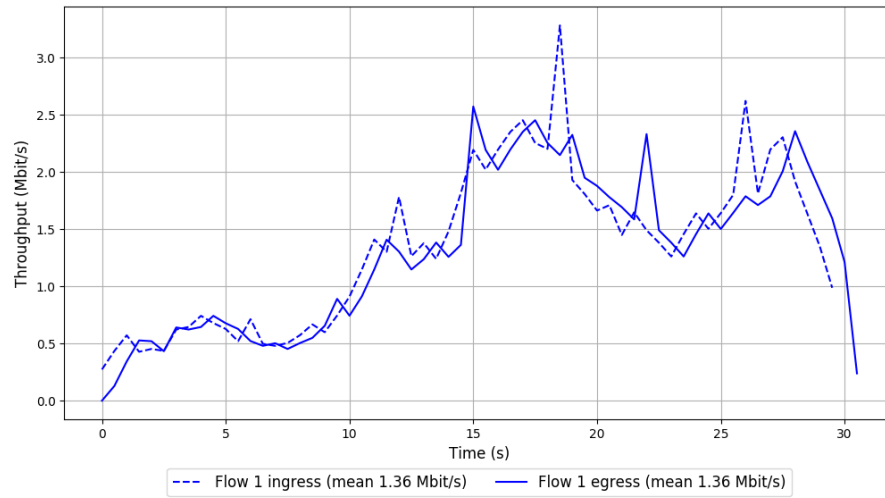


Run 3: Statistics of Sprout

Start at: 2019-01-02 19:05:10
End at: 2019-01-02 19:05:40
Local clock offset: 27.151 ms
Remote clock offset: 21.64 ms

Below is generated by plot.py at 2019-01-02 22:01:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 107.848 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 107.848 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2019-01-02 19:33:48

End at: 2019-01-02 19:34:18

Local clock offset: 7.388 ms

Remote clock offset: 7.311 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 110.909 ms

Loss rate: 0.00%

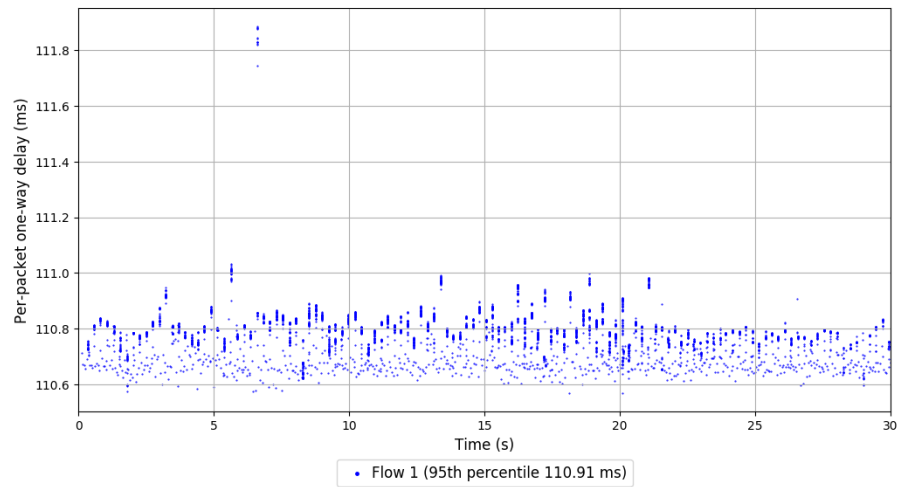
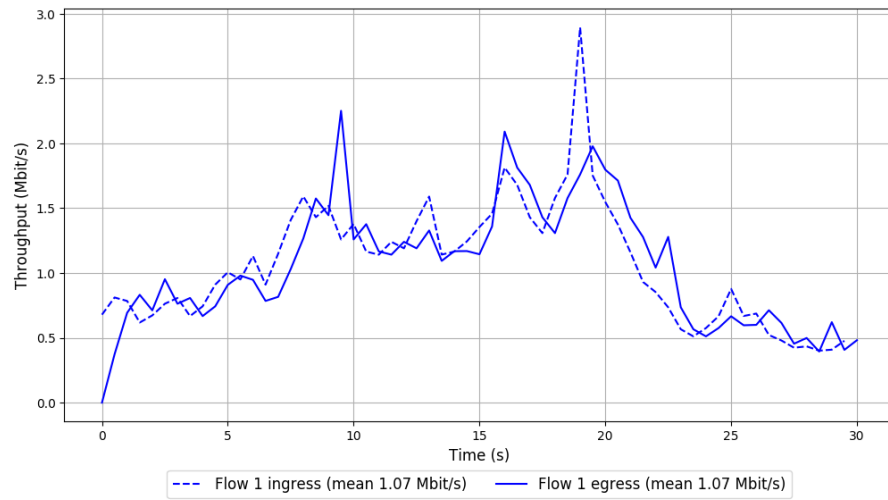
-- Flow 1:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 110.909 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2019-01-02 20:02:59

End at: 2019-01-02 20:03:29

Local clock offset: 2.467 ms

Remote clock offset: 2.484 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.73 Mbit/s

95th percentile per-packet one-way delay: 110.305 ms

Loss rate: 0.00%

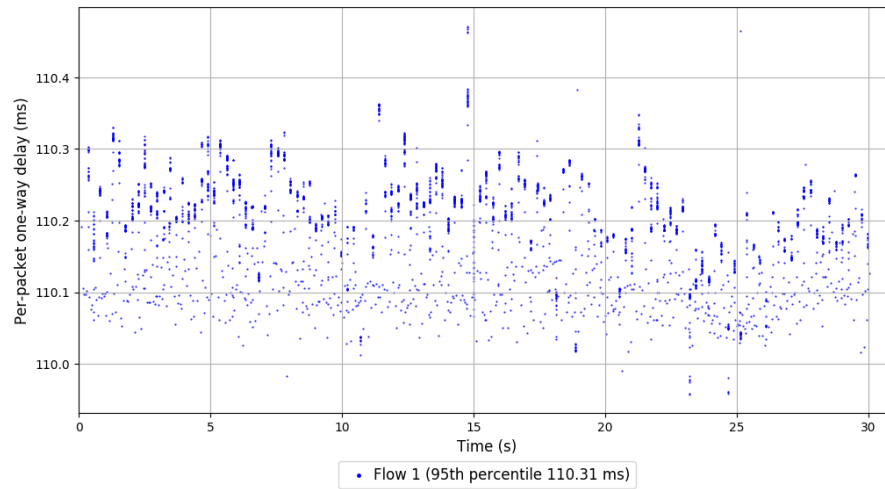
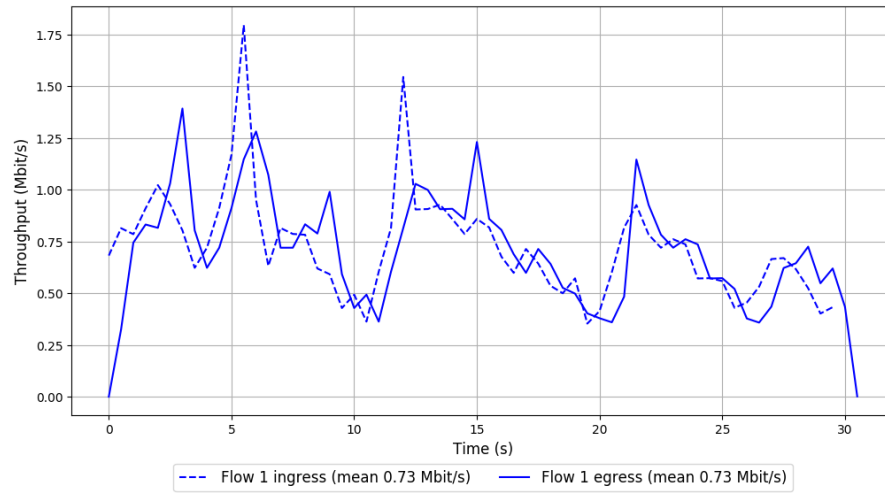
-- Flow 1:

Average throughput: 0.73 Mbit/s

95th percentile per-packet one-way delay: 110.305 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2019-01-02 18:09:48

End at: 2019-01-02 18:10:18

Local clock offset: 14.866 ms

Remote clock offset: 11.803 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 205.59 Mbit/s

95th percentile per-packet one-way delay: 108.708 ms

Loss rate: 0.00%

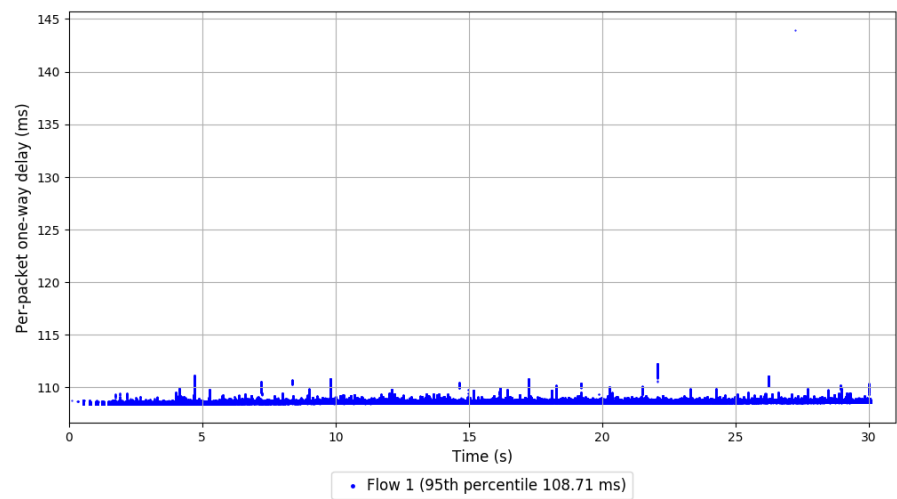
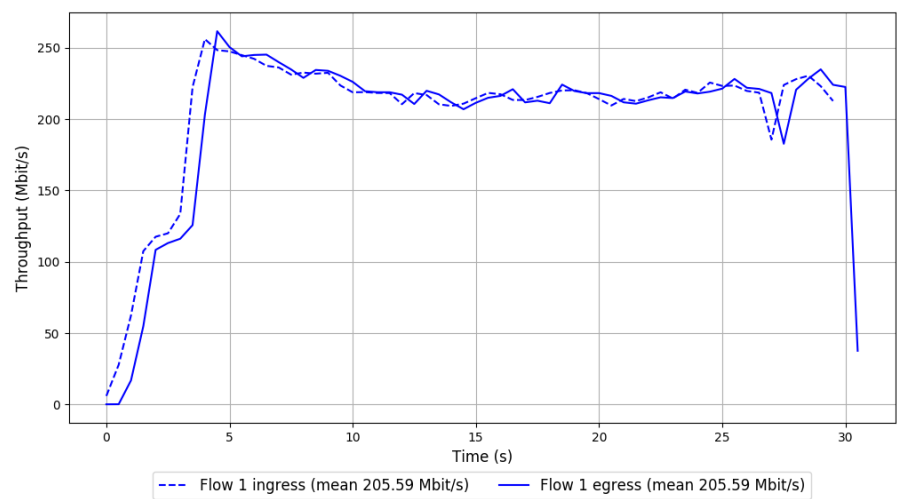
-- Flow 1:

Average throughput: 205.59 Mbit/s

95th percentile per-packet one-way delay: 108.708 ms

Loss rate: 0.00%

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

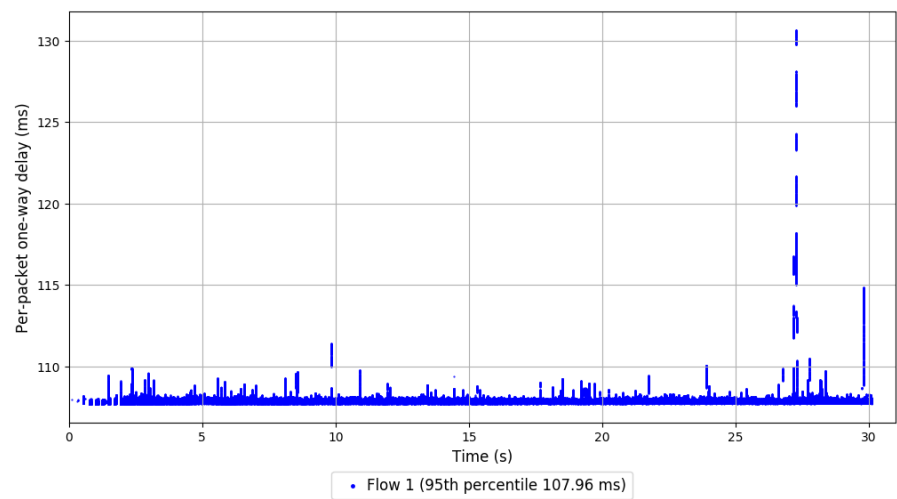
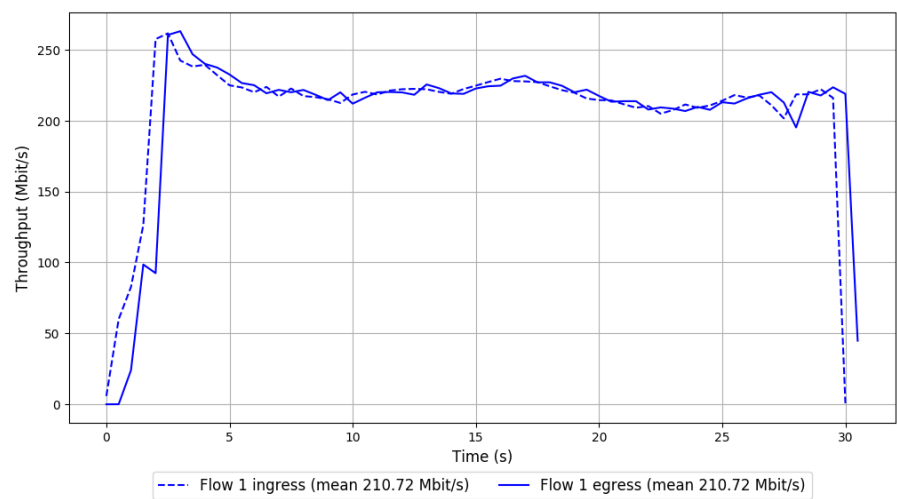


Run 2: Statistics of TaoVA-100x

Start at: 2019-01-02 18:38:56
End at: 2019-01-02 18:39:26
Local clock offset: 18.443 ms
Remote clock offset: 14.991 ms

Below is generated by plot.py at 2019-01-02 22:01:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 210.72 Mbit/s
95th percentile per-packet one-way delay: 107.956 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 210.72 Mbit/s
95th percentile per-packet one-way delay: 107.956 ms
Loss rate: 0.00%

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

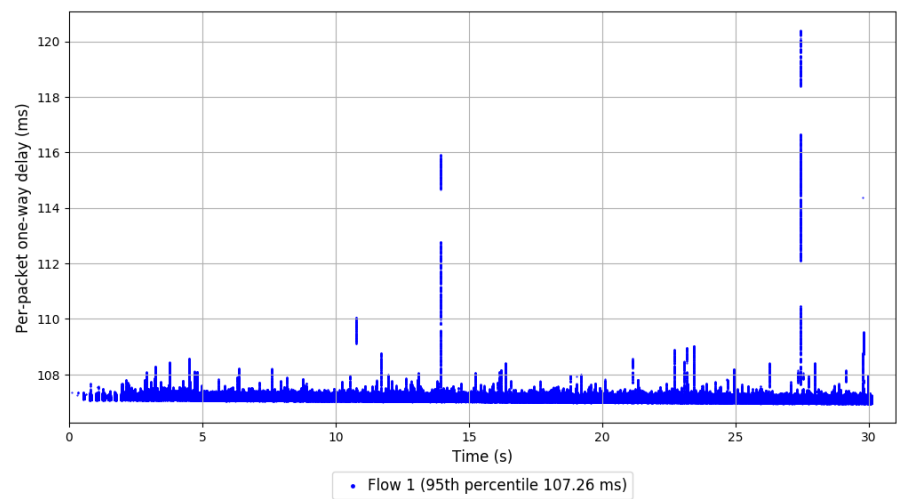
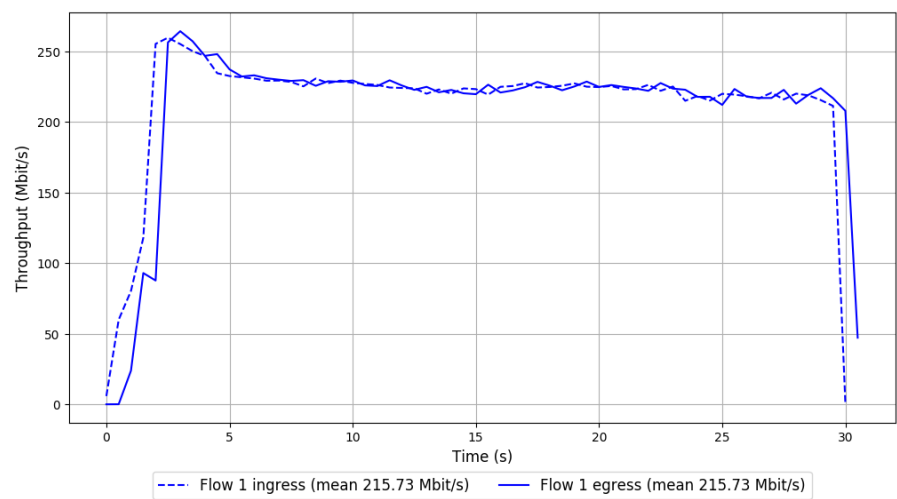


Run 3: Statistics of TaoVA-100x

Start at: 2019-01-02 19:08:04
End at: 2019-01-02 19:08:34
Local clock offset: 21.072 ms
Remote clock offset: 15.908 ms

Below is generated by plot.py at 2019-01-02 22:01:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 215.73 Mbit/s
95th percentile per-packet one-way delay: 107.262 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.73 Mbit/s
95th percentile per-packet one-way delay: 107.262 ms
Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2019-01-02 19:36:42

End at: 2019-01-02 19:37:12

Local clock offset: 10.109 ms

Remote clock offset: 7.283 ms

Below is generated by plot.py at 2019-01-02 22:01:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 212.79 Mbit/s

95th percentile per-packet one-way delay: 106.963 ms

Loss rate: 0.00%

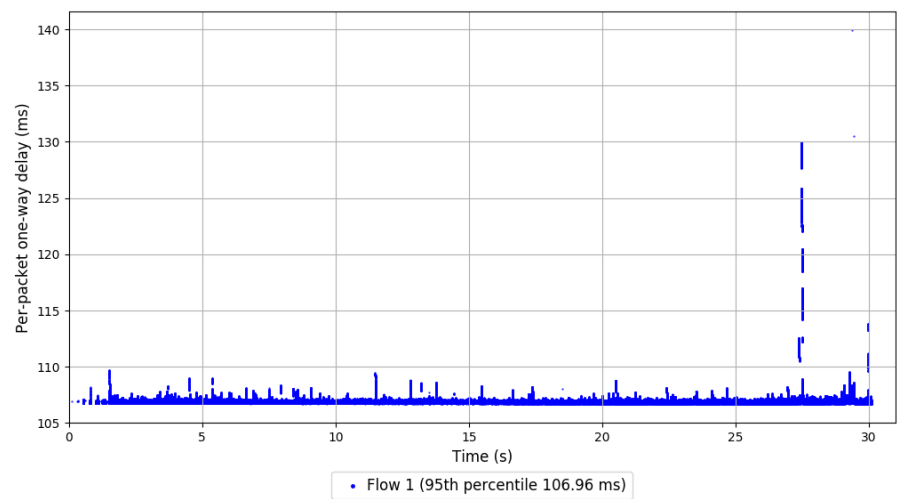
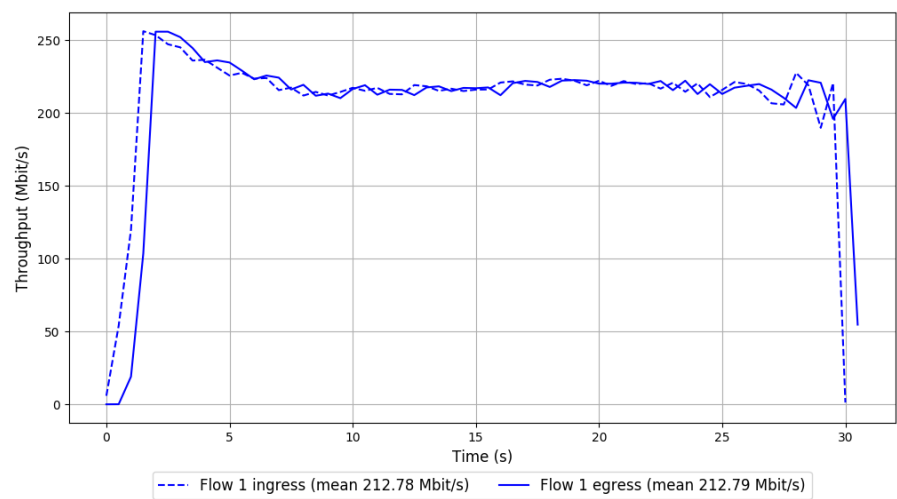
-- Flow 1:

Average throughput: 212.79 Mbit/s

95th percentile per-packet one-way delay: 106.963 ms

Loss rate: 0.00%

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



Run 5: Statistics of TaoVA-100x

Start at: 2019-01-02 20:05:54

End at: 2019-01-02 20:06:24

Local clock offset: 2.341 ms

Remote clock offset: 3.397 ms

Below is generated by plot.py at 2019-01-02 22:02:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 208.66 Mbit/s

95th percentile per-packet one-way delay: 111.272 ms

Loss rate: 0.00%

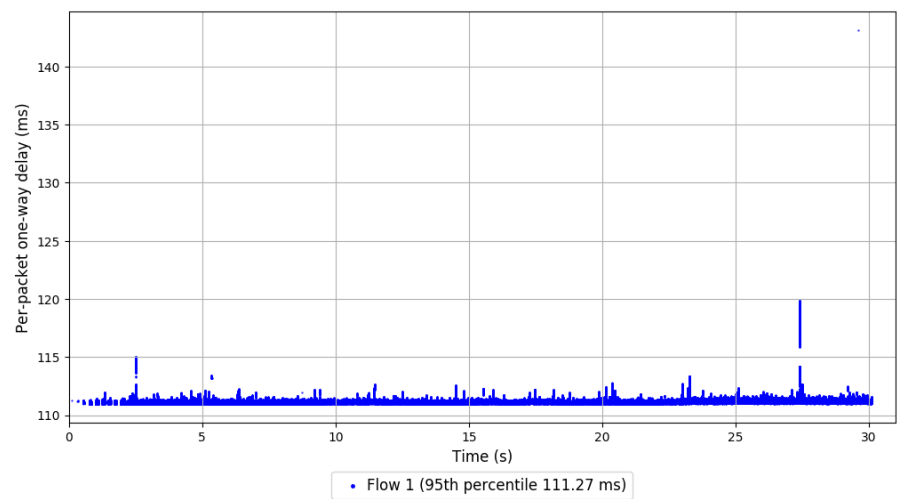
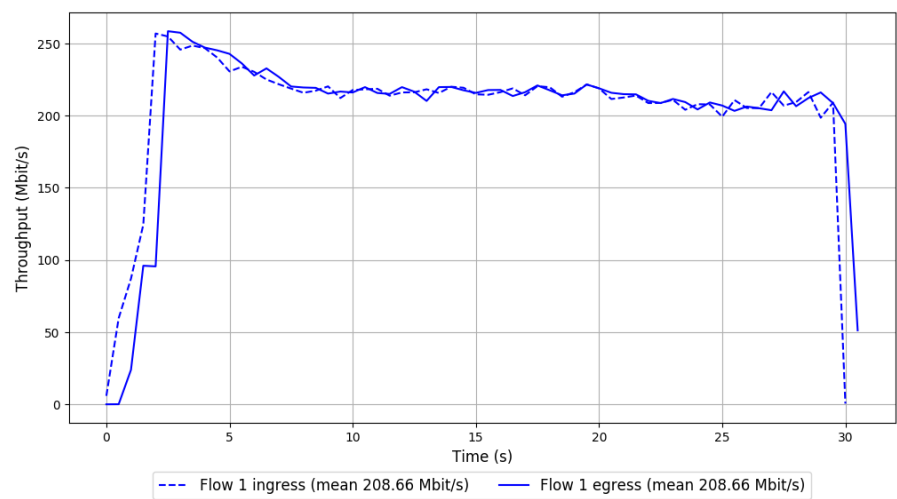
-- Flow 1:

Average throughput: 208.66 Mbit/s

95th percentile per-packet one-way delay: 111.272 ms

Loss rate: 0.00%

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



Run 1: Statistics of TCP Vegas

Start at: 2019-01-02 18:05:15

End at: 2019-01-02 18:05:45

Local clock offset: 7.974 ms

Remote clock offset: 6.714 ms

Below is generated by plot.py at 2019-01-02 22:08:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 541.33 Mbit/s

95th percentile per-packet one-way delay: 111.002 ms

Loss rate: 0.00%

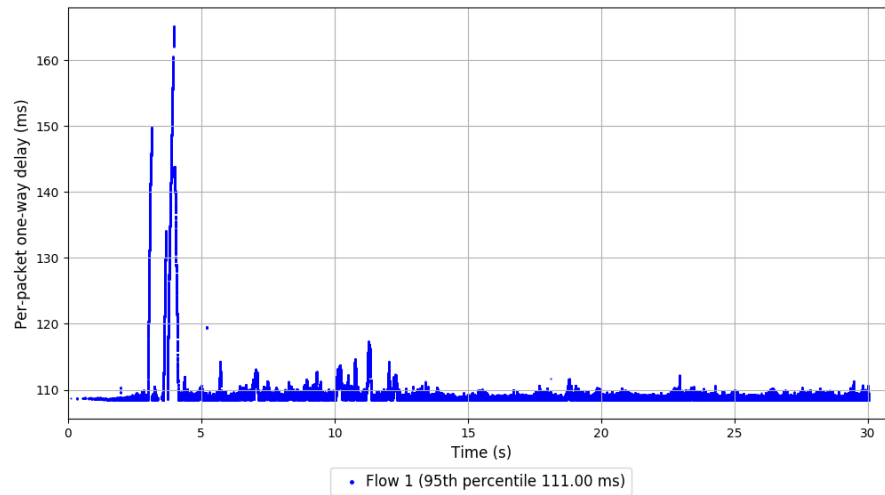
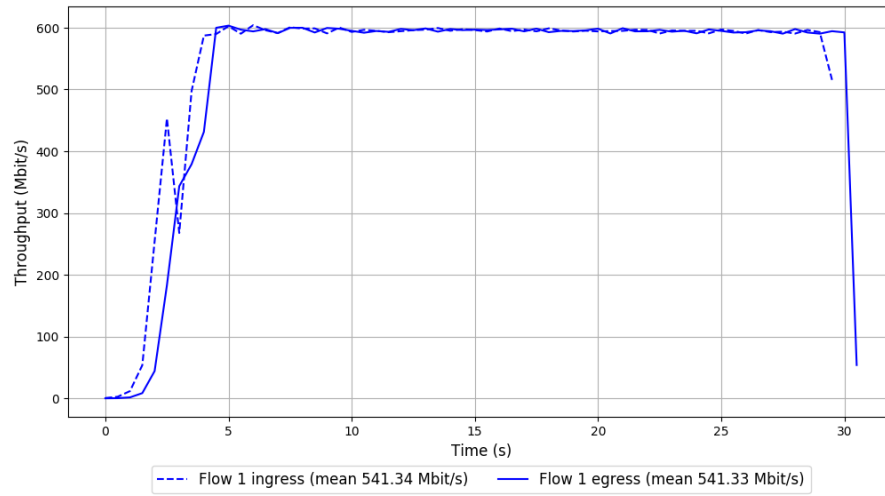
-- Flow 1:

Average throughput: 541.33 Mbit/s

95th percentile per-packet one-way delay: 111.002 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link

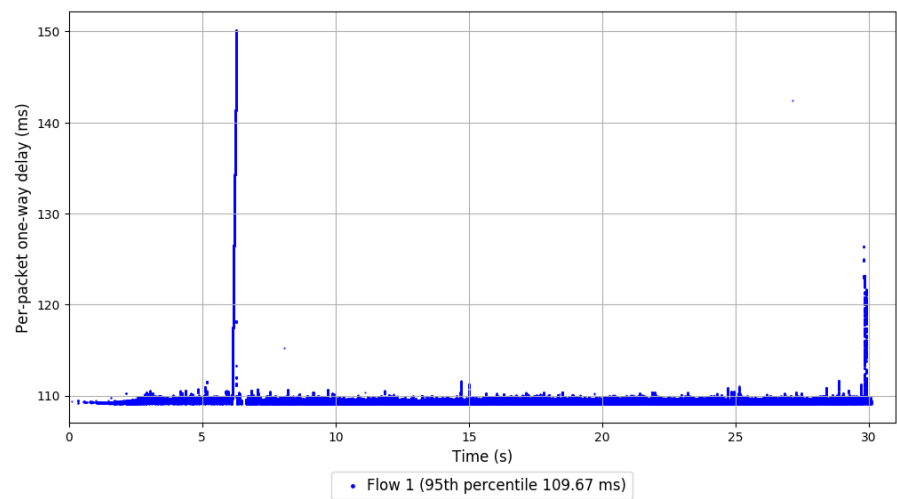
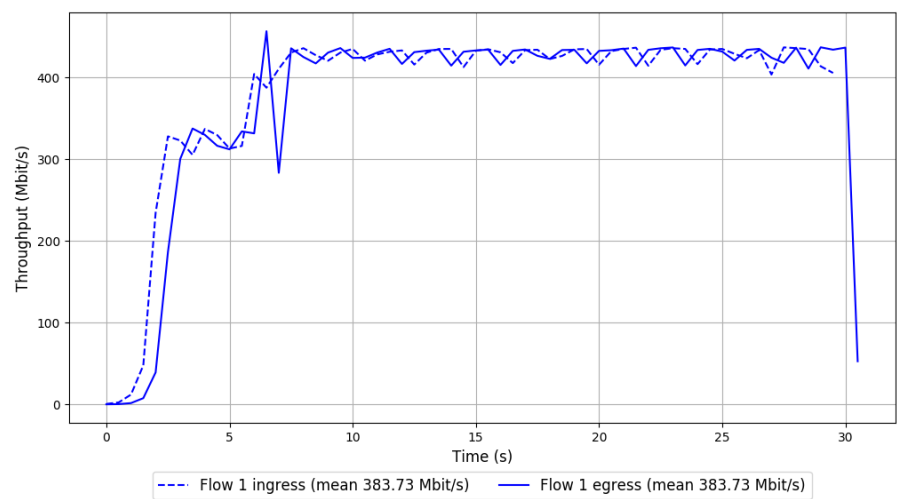


Run 2: Statistics of TCP Vegas

Start at: 2019-01-02 18:34:32
End at: 2019-01-02 18:35:02
Local clock offset: 17.871 ms
Remote clock offset: 14.927 ms

Below is generated by plot.py at 2019-01-02 22:08:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 383.73 Mbit/s
95th percentile per-packet one-way delay: 109.671 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 383.73 Mbit/s
95th percentile per-packet one-way delay: 109.671 ms
Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link

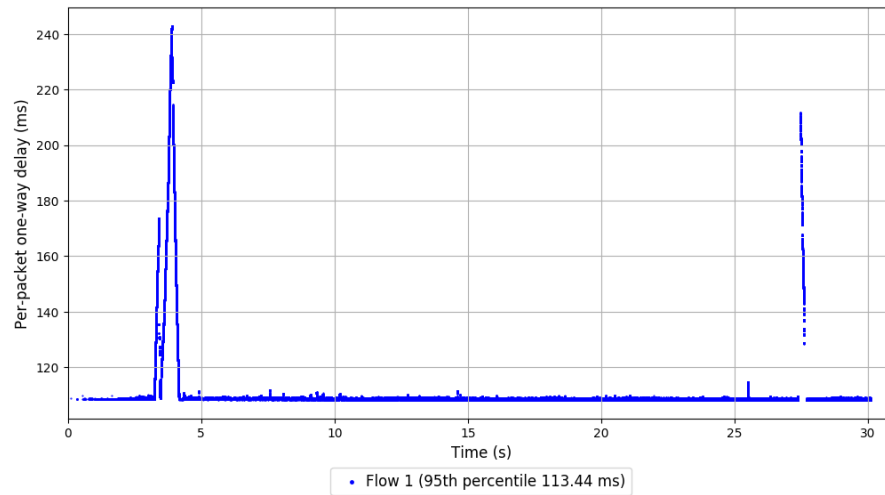
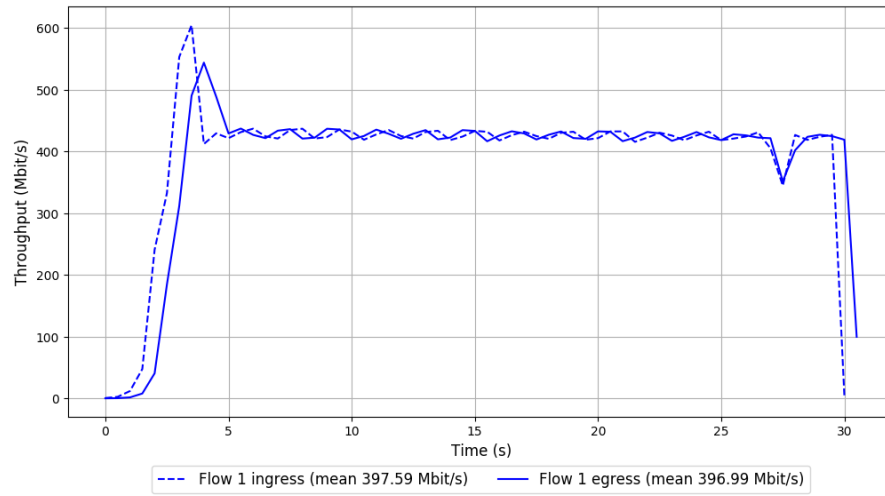


Run 3: Statistics of TCP Vegas

Start at: 2019-01-02 19:03:39
End at: 2019-01-02 19:04:09
Local clock offset: 31.929 ms
Remote clock offset: 25.2 ms

Below is generated by plot.py at 2019-01-02 22:08:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 396.99 Mbit/s
95th percentile per-packet one-way delay: 113.444 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 396.99 Mbit/s
95th percentile per-packet one-way delay: 113.444 ms
Loss rate: 0.15%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2019-01-02 19:32:18

End at: 2019-01-02 19:32:48

Local clock offset: 8.502 ms

Remote clock offset: 7.174 ms

Below is generated by plot.py at 2019-01-02 22:08:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 374.82 Mbit/s

95th percentile per-packet one-way delay: 112.097 ms

Loss rate: 0.00%

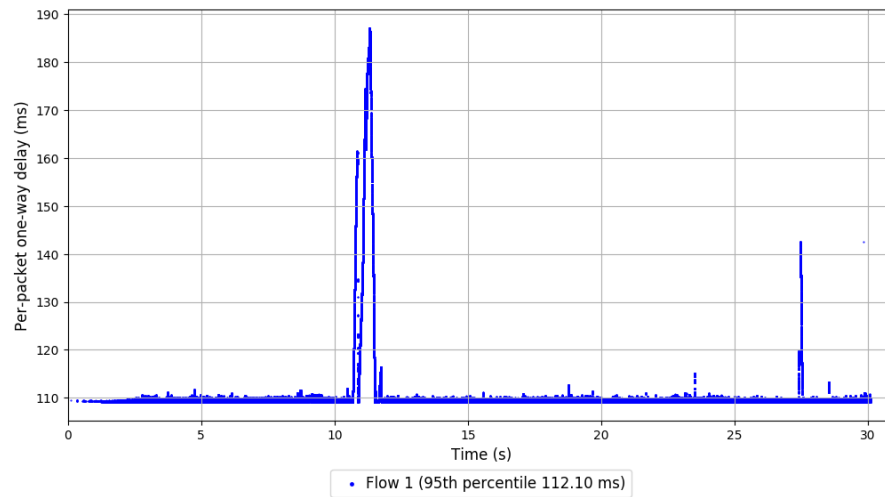
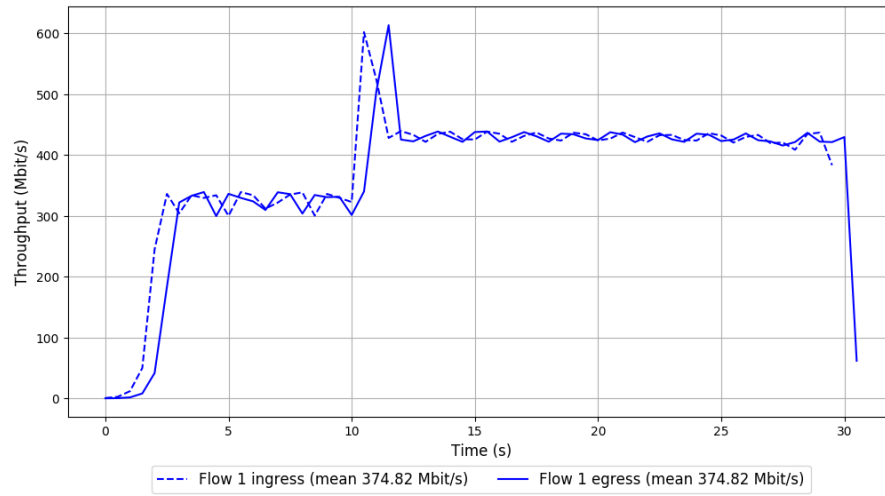
-- Flow 1:

Average throughput: 374.82 Mbit/s

95th percentile per-packet one-way delay: 112.097 ms

Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2019-01-02 20:01:23

End at: 2019-01-02 20:01:53

Local clock offset: 3.399 ms

Remote clock offset: 2.79 ms

Below is generated by plot.py at 2019-01-02 22:09:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 465.34 Mbit/s

95th percentile per-packet one-way delay: 110.685 ms

Loss rate: 0.00%

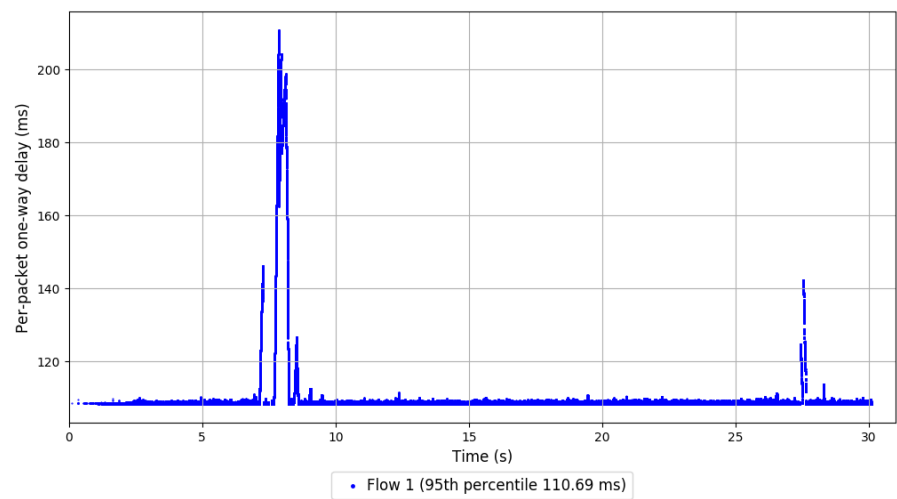
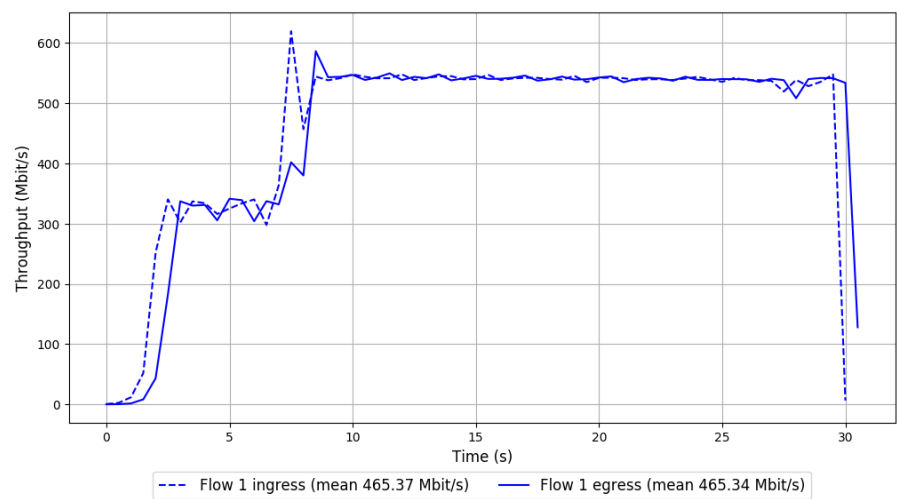
-- Flow 1:

Average throughput: 465.34 Mbit/s

95th percentile per-packet one-way delay: 110.685 ms

Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link

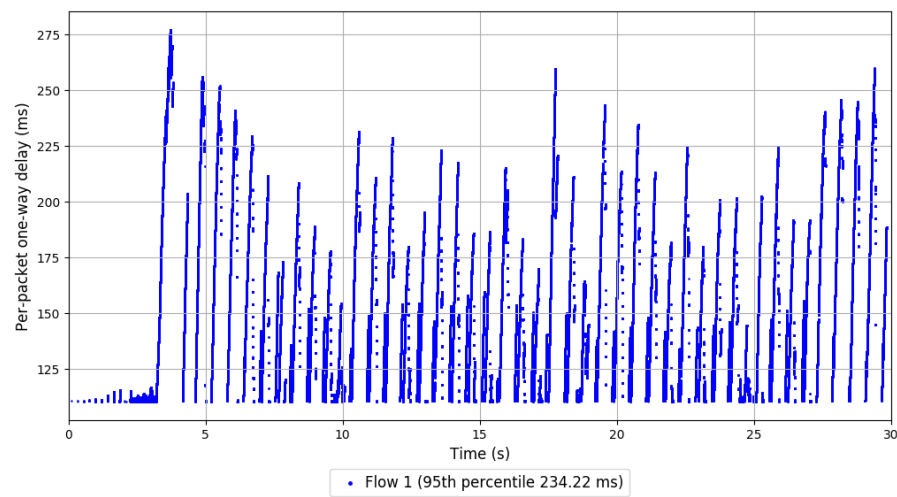
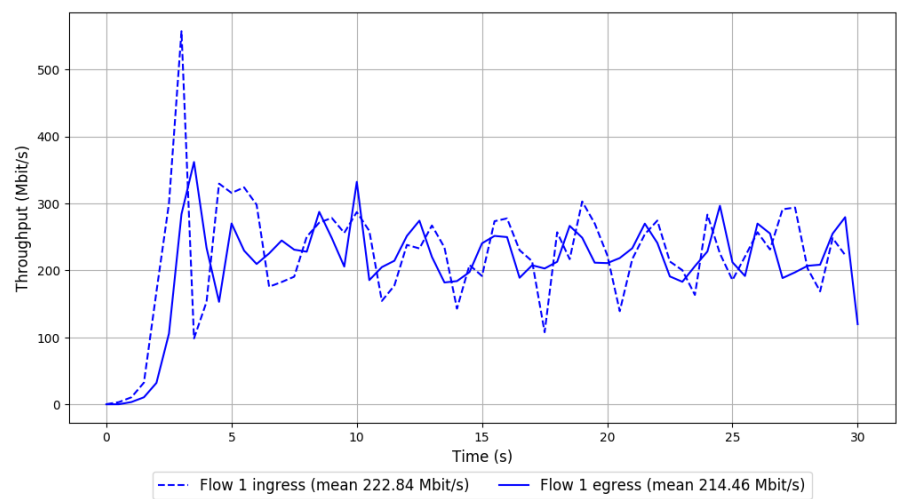


Run 1: Statistics of Verus

Start at: 2019-01-02 18:24:25
End at: 2019-01-02 18:24:55
Local clock offset: 17.706 ms
Remote clock offset: 16.159 ms

Below is generated by plot.py at 2019-01-02 22:09:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 214.46 Mbit/s
95th percentile per-packet one-way delay: 234.224 ms
Loss rate: 3.76%
-- Flow 1:
Average throughput: 214.46 Mbit/s
95th percentile per-packet one-way delay: 234.224 ms
Loss rate: 3.76%

Run 1: Report of Verus — Data Link

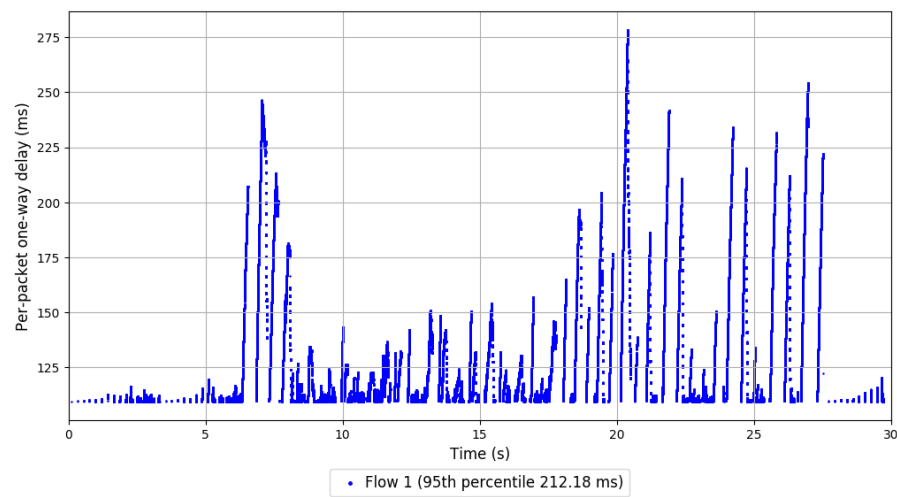
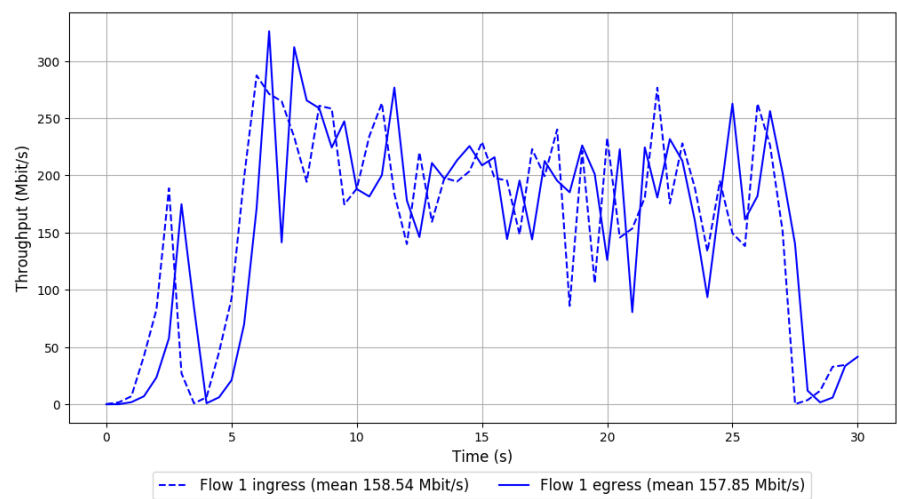


Run 2: Statistics of Verus

Start at: 2019-01-02 18:53:38
End at: 2019-01-02 18:54:08
Local clock offset: 27.436 ms
Remote clock offset: 23.176 ms

Below is generated by plot.py at 2019-01-02 22:09:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 157.85 Mbit/s
95th percentile per-packet one-way delay: 212.181 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 157.85 Mbit/s
95th percentile per-packet one-way delay: 212.181 ms
Loss rate: 0.43%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2019-01-02 19:22:26

End at: 2019-01-02 19:22:56

Local clock offset: 8.478 ms

Remote clock offset: 6.9 ms

Below is generated by plot.py at 2019-01-02 22:09:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 142.04 Mbit/s

95th percentile per-packet one-way delay: 146.297 ms

Loss rate: 0.80%

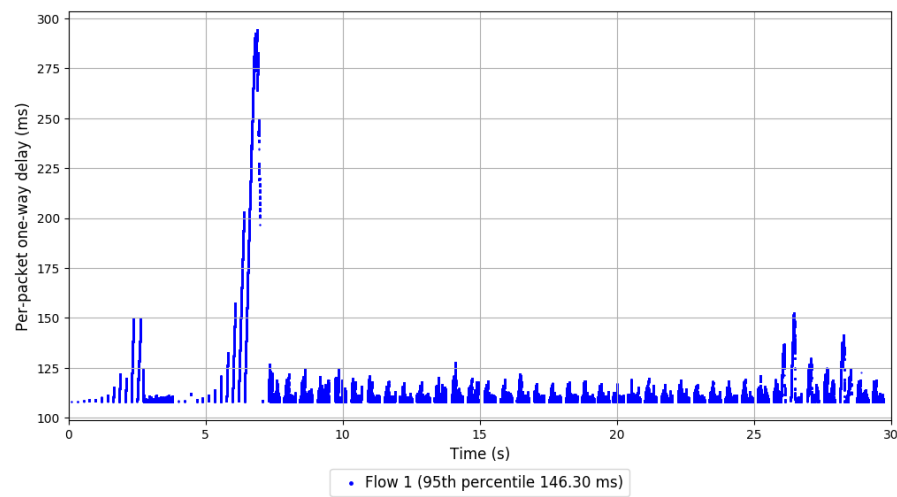
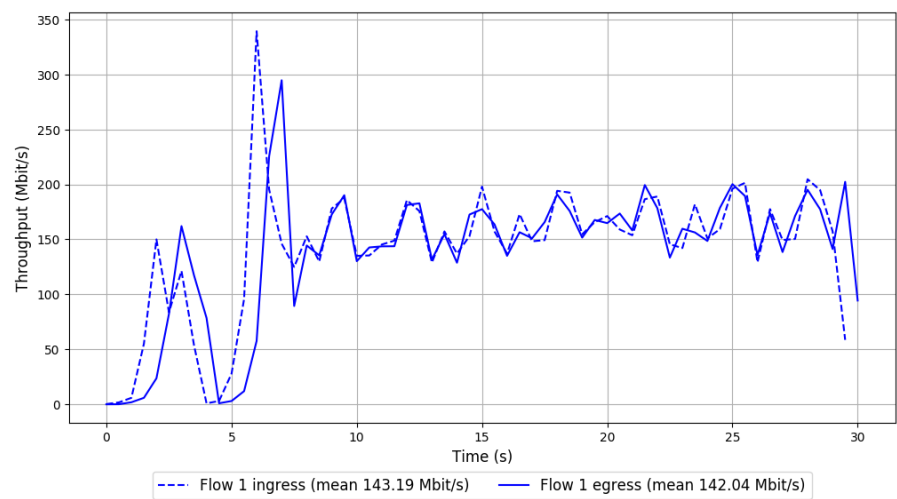
-- Flow 1:

Average throughput: 142.04 Mbit/s

95th percentile per-packet one-way delay: 146.297 ms

Loss rate: 0.80%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2019-01-02 19:51:24

End at: 2019-01-02 19:51:54

Local clock offset: 4.581 ms

Remote clock offset: 2.68 ms

Below is generated by plot.py at 2019-01-02 22:10:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 103.52 Mbit/s

95th percentile per-packet one-way delay: 151.606 ms

Loss rate: 0.00%

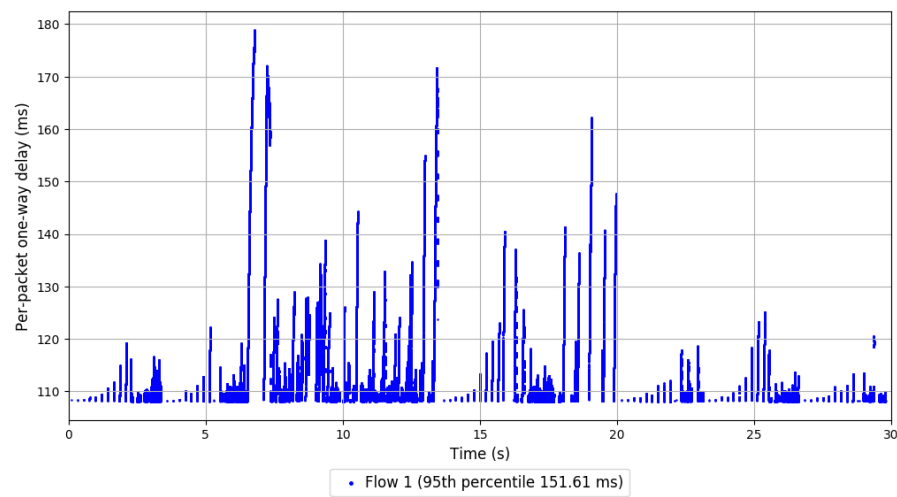
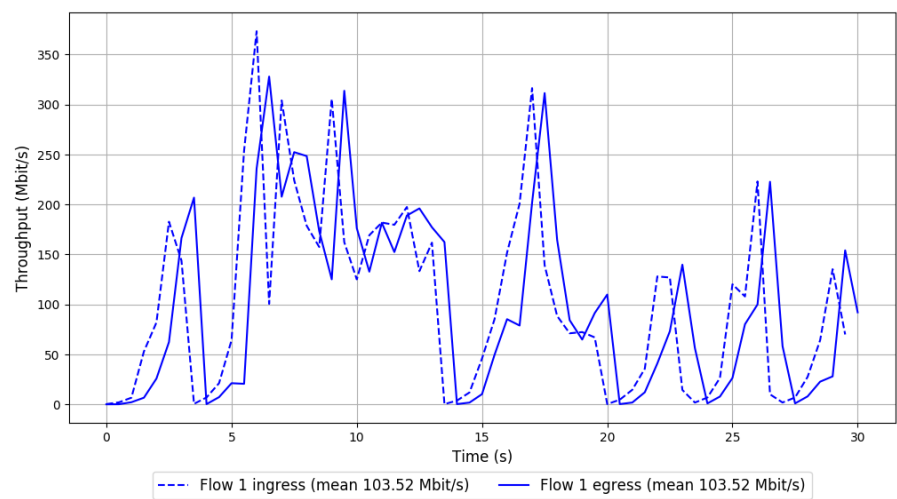
-- Flow 1:

Average throughput: 103.52 Mbit/s

95th percentile per-packet one-way delay: 151.606 ms

Loss rate: 0.00%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2019-01-02 20:20:32

End at: 2019-01-02 20:21:02

Local clock offset: 1.736 ms

Remote clock offset: 0.997 ms

Below is generated by plot.py at 2019-01-02 22:11:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 146.59 Mbit/s

95th percentile per-packet one-way delay: 195.336 ms

Loss rate: 1.31%

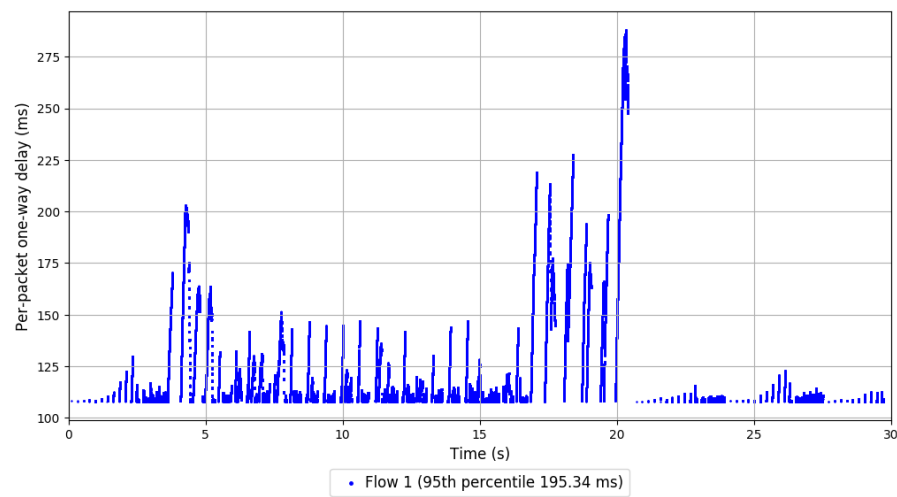
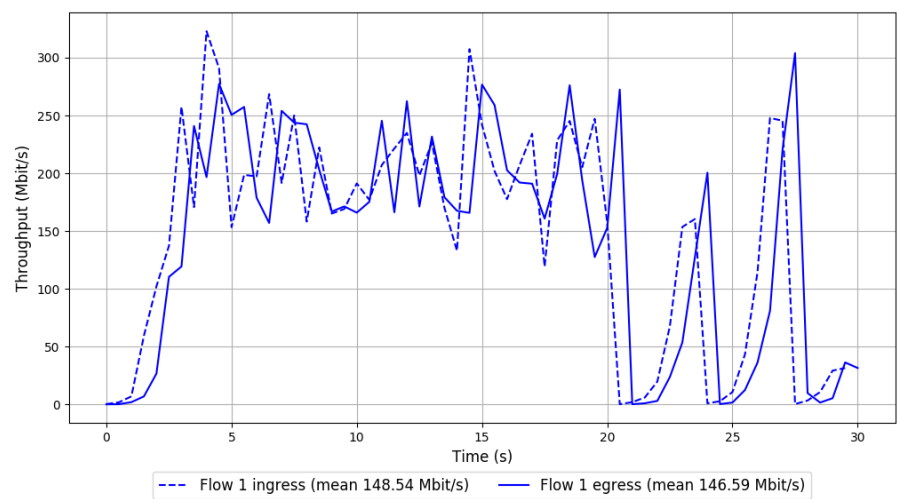
-- Flow 1:

Average throughput: 146.59 Mbit/s

95th percentile per-packet one-way delay: 195.336 ms

Loss rate: 1.31%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-01-02 18:00:03

End at: 2019-01-02 18:00:33

Local clock offset: 5.714 ms

Remote clock offset: 4.919 ms

Below is generated by plot.py at 2019-01-02 22:12:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 360.59 Mbit/s

95th percentile per-packet one-way delay: 199.877 ms

Loss rate: 0.38%

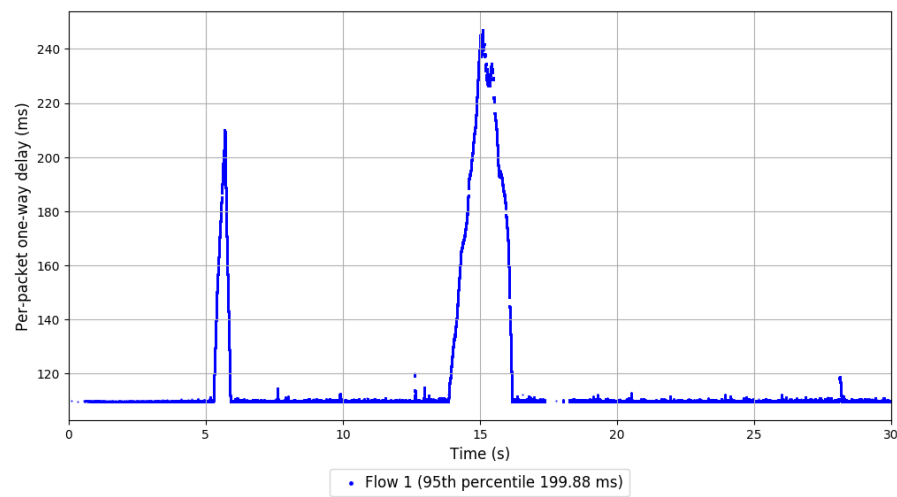
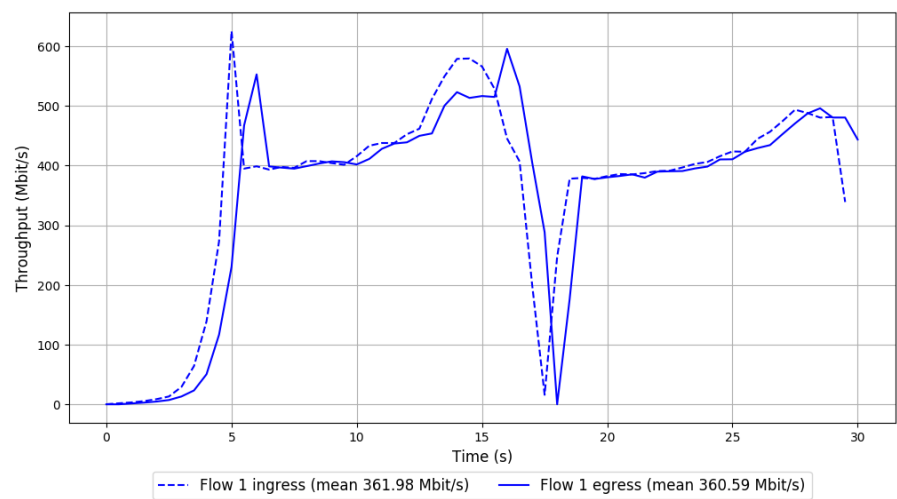
-- Flow 1:

Average throughput: 360.59 Mbit/s

95th percentile per-packet one-way delay: 199.877 ms

Loss rate: 0.38%

Run 1: Report of PCC-Vivace — Data Link

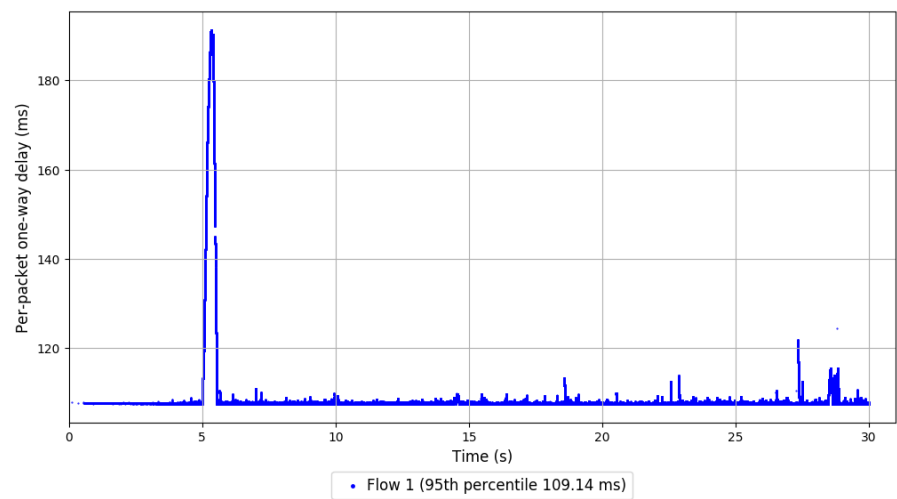
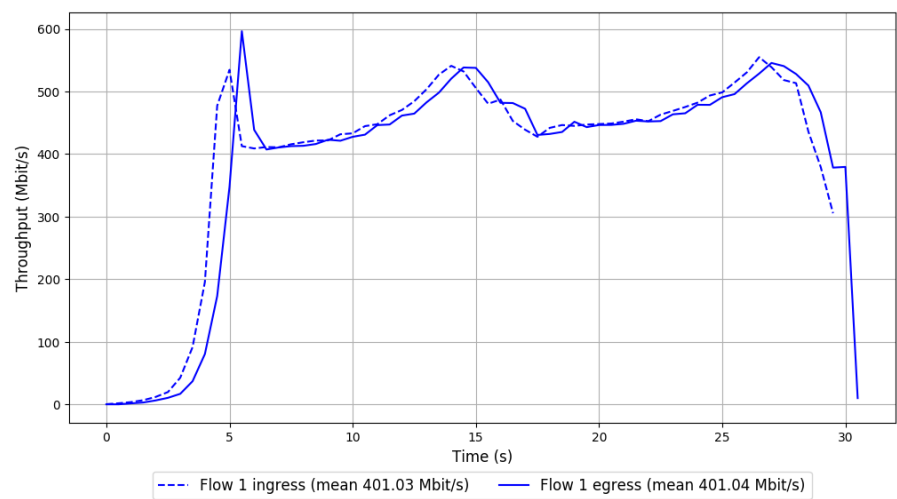


Run 2: Statistics of PCC-Vivace

Start at: 2019-01-02 18:29:22
End at: 2019-01-02 18:29:52
Local clock offset: 22.298 ms
Remote clock offset: 18.077 ms

Below is generated by plot.py at 2019-01-02 22:13:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 401.04 Mbit/s
95th percentile per-packet one-way delay: 109.137 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 401.04 Mbit/s
95th percentile per-packet one-way delay: 109.137 ms
Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link

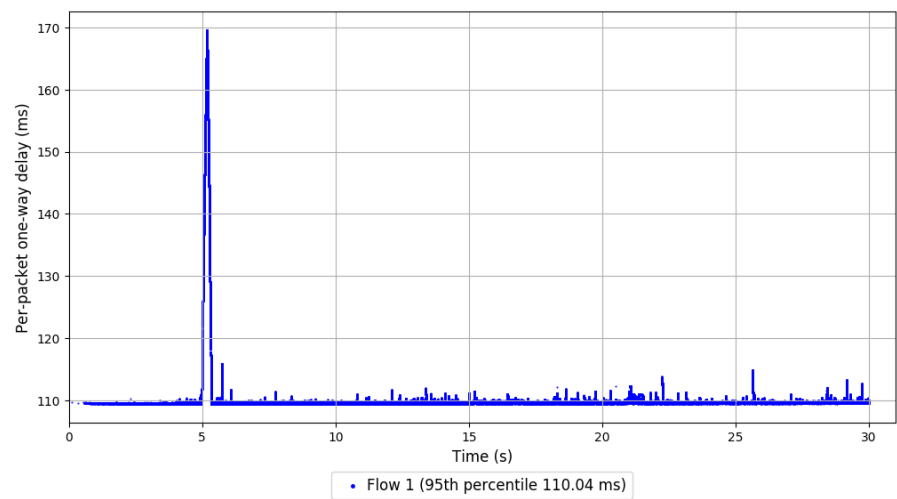
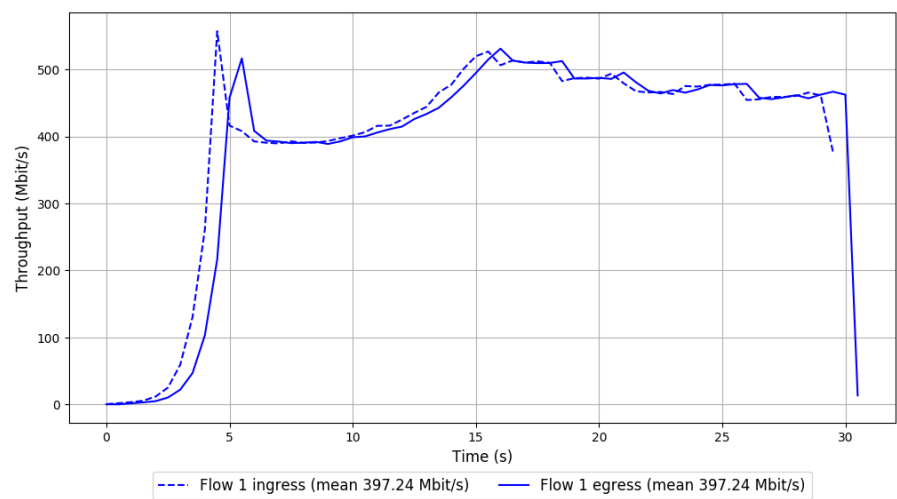


Run 3: Statistics of PCC-Vivace

Start at: 2019-01-02 18:58:27
End at: 2019-01-02 18:58:57
Local clock offset: 31.945 ms
Remote clock offset: 26.945 ms

Below is generated by plot.py at 2019-01-02 22:13:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 397.24 Mbit/s
95th percentile per-packet one-way delay: 110.040 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 397.24 Mbit/s
95th percentile per-packet one-way delay: 110.040 ms
Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2019-01-02 19:27:13

End at: 2019-01-02 19:27:43

Local clock offset: 8.269 ms

Remote clock offset: 6.775 ms

Below is generated by plot.py at 2019-01-02 22:13:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 386.65 Mbit/s

95th percentile per-packet one-way delay: 109.090 ms

Loss rate: 0.00%

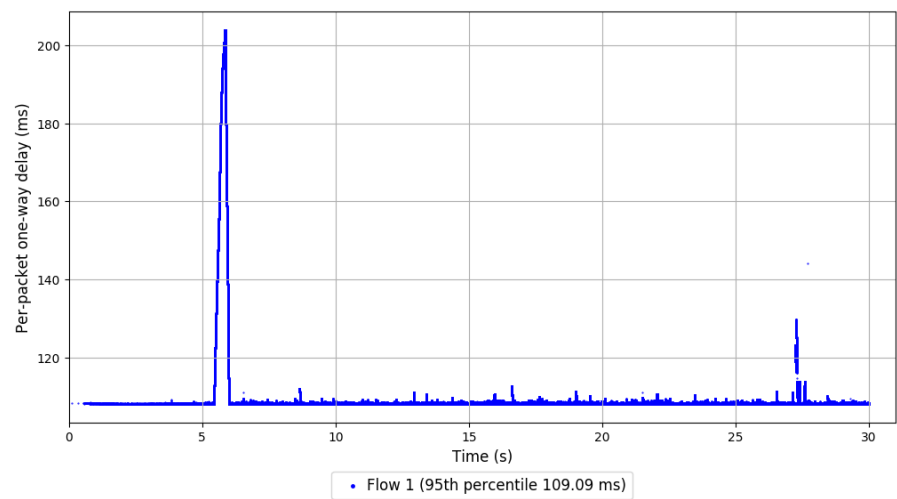
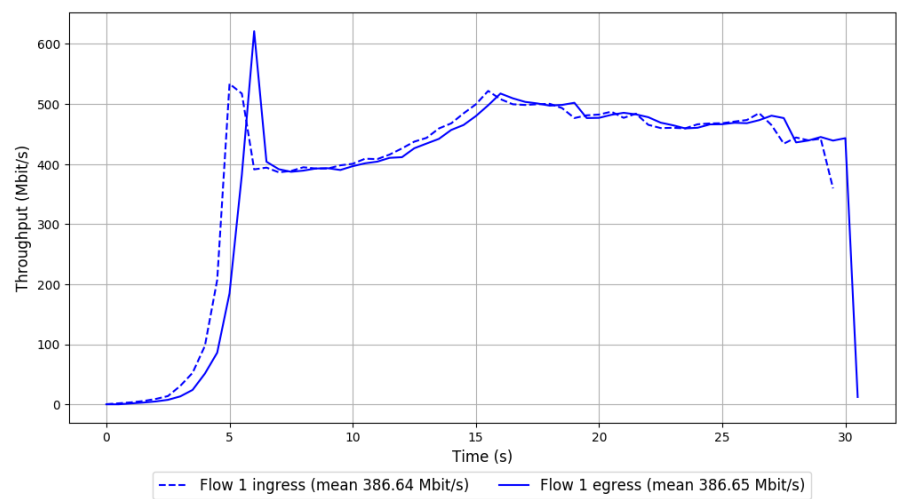
-- Flow 1:

Average throughput: 386.65 Mbit/s

95th percentile per-packet one-way delay: 109.090 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2019-01-02 19:56:11

End at: 2019-01-02 19:56:41

Local clock offset: 4.545 ms

Remote clock offset: 2.53 ms

Below is generated by plot.py at 2019-01-02 22:13:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 398.89 Mbit/s

95th percentile per-packet one-way delay: 110.062 ms

Loss rate: 0.00%

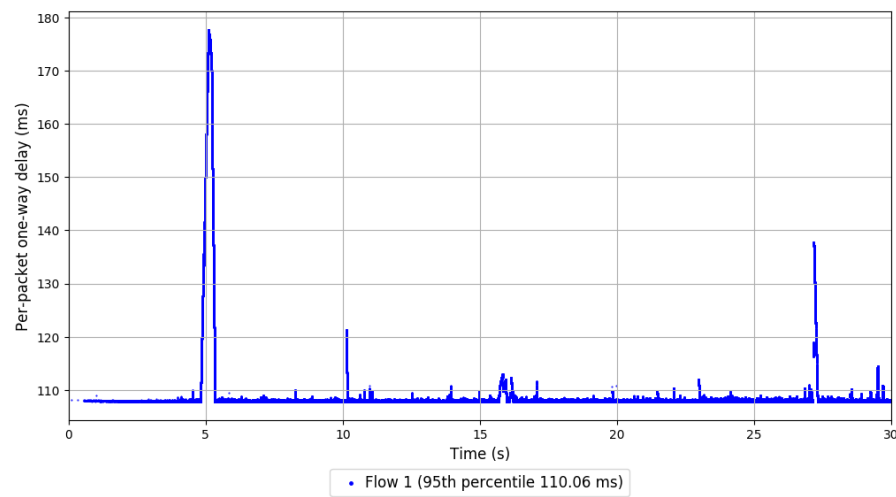
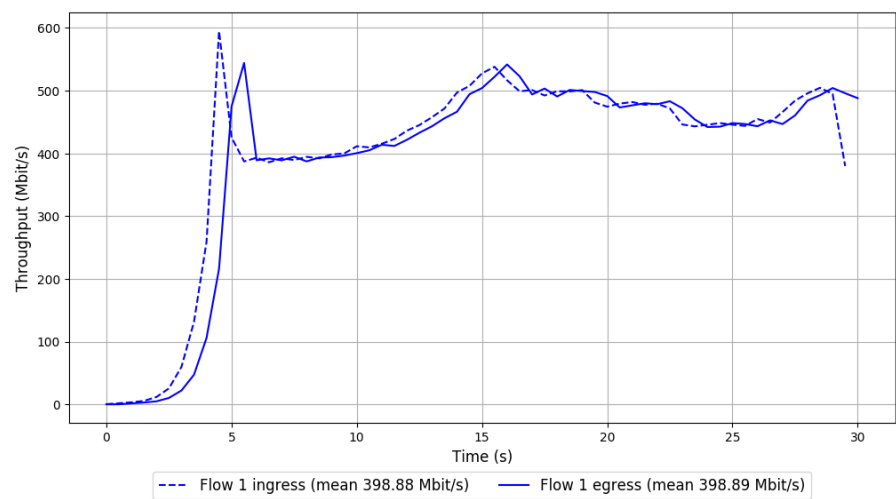
-- Flow 1:

Average throughput: 398.89 Mbit/s

95th percentile per-packet one-way delay: 110.062 ms

Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

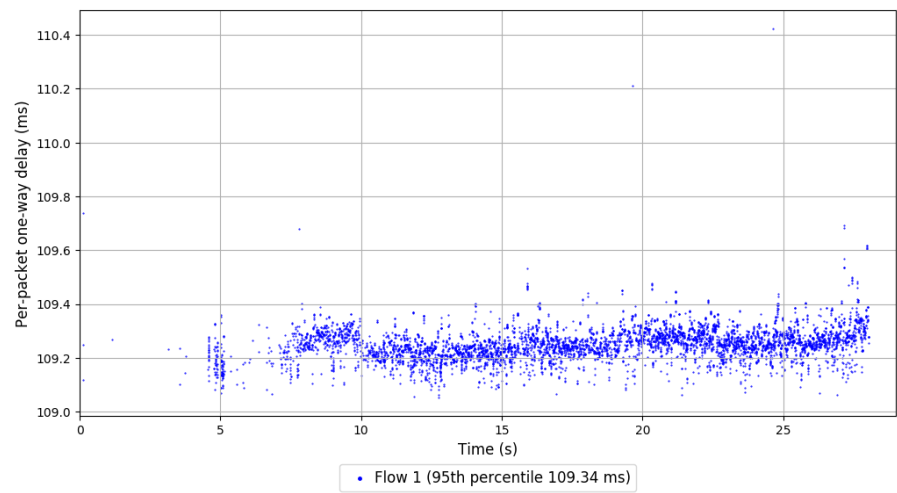
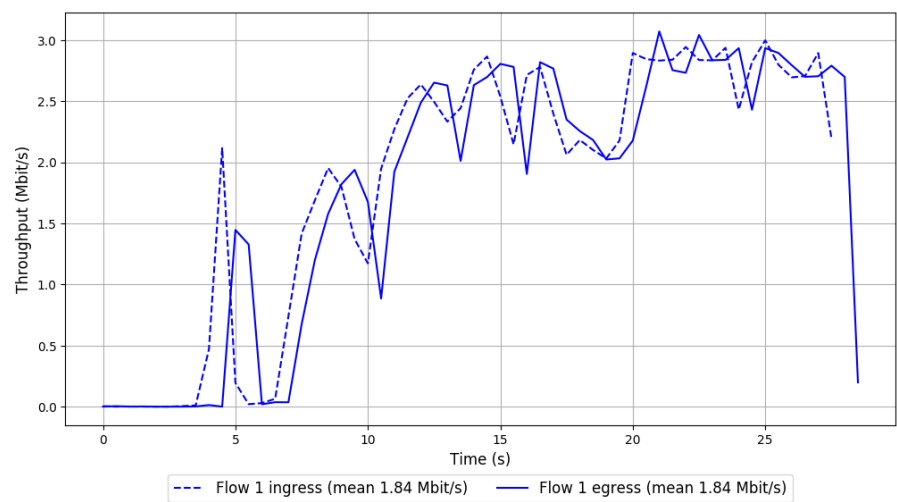


```
Run 1: Statistics of WebRTC media

Start at: 2019-01-02 18:19:04
End at: 2019-01-02 18:19:34
Local clock offset: 13.27 ms
Remote clock offset: 11.844 ms

# Below is generated by plot.py at 2019-01-02 22:13:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 109.342 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 109.342 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

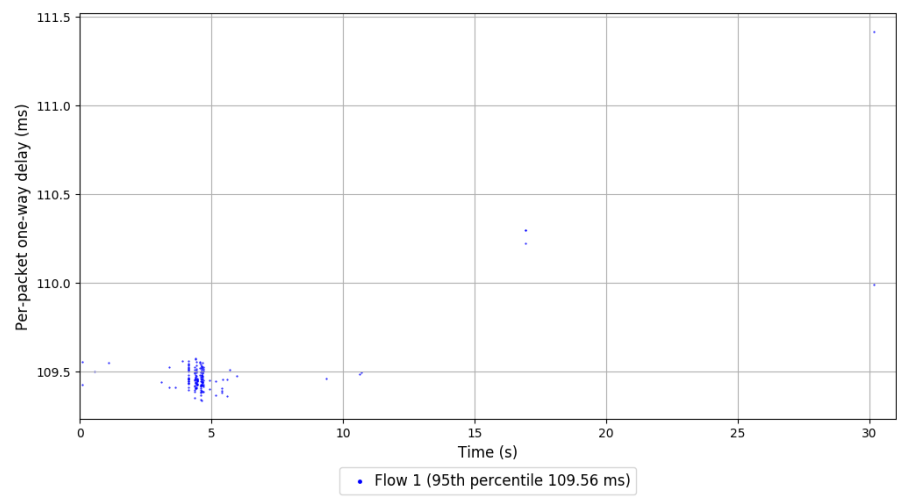
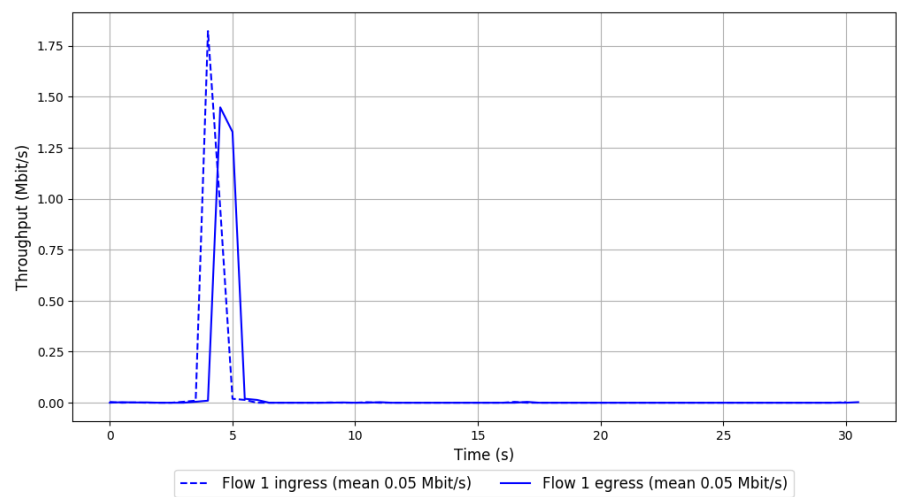


Run 2: Statistics of WebRTC media

Start at: 2019-01-02 18:48:18
End at: 2019-01-02 18:48:48
Local clock offset: 23.148 ms
Remote clock offset: 19.446 ms

Below is generated by plot.py at 2019-01-02 22:13:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.561 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 109.561 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-01-02 19:17:04

End at: 2019-01-02 19:17:34

Local clock offset: 10.136 ms

Remote clock offset: 7.931 ms

Below is generated by plot.py at 2019-01-02 22:13:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 108.547 ms

Loss rate: 0.00%

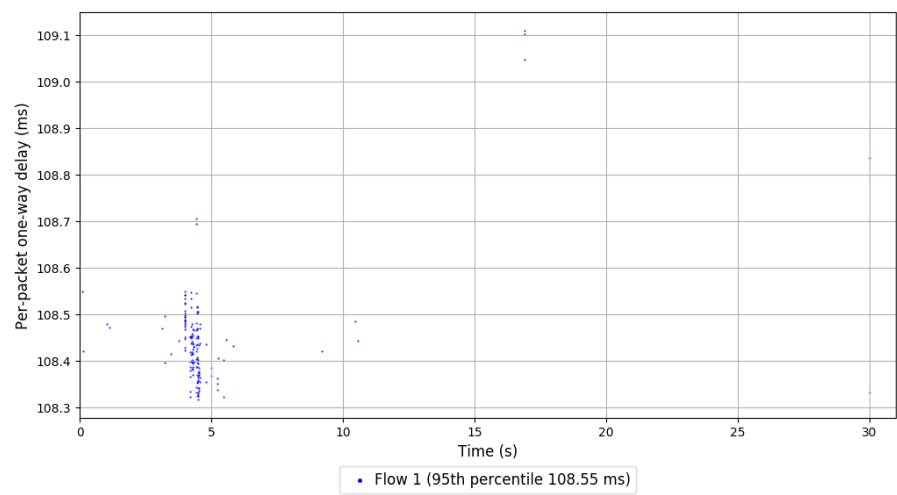
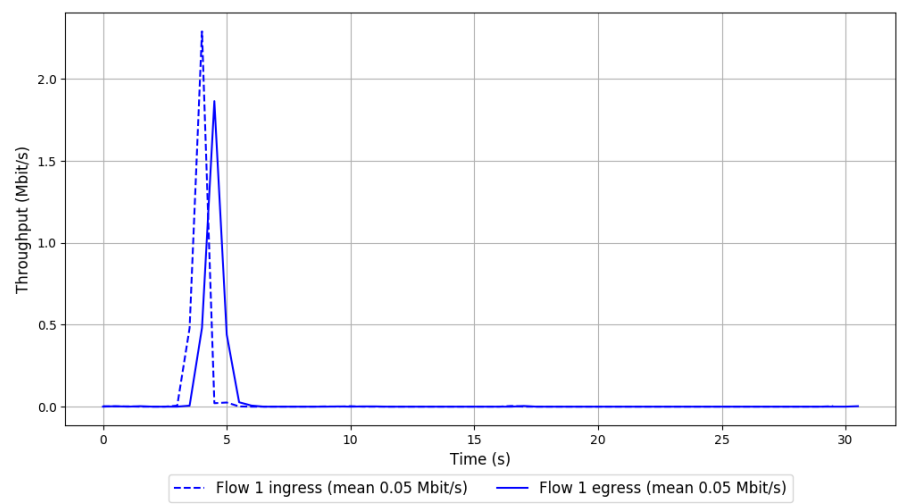
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 108.547 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2019-01-02 19:46:01

End at: 2019-01-02 19:46:31

Local clock offset: 3.883 ms

Remote clock offset: 3.233 ms

Below is generated by plot.py at 2019-01-02 22:13:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 109.487 ms

Loss rate: 0.00%

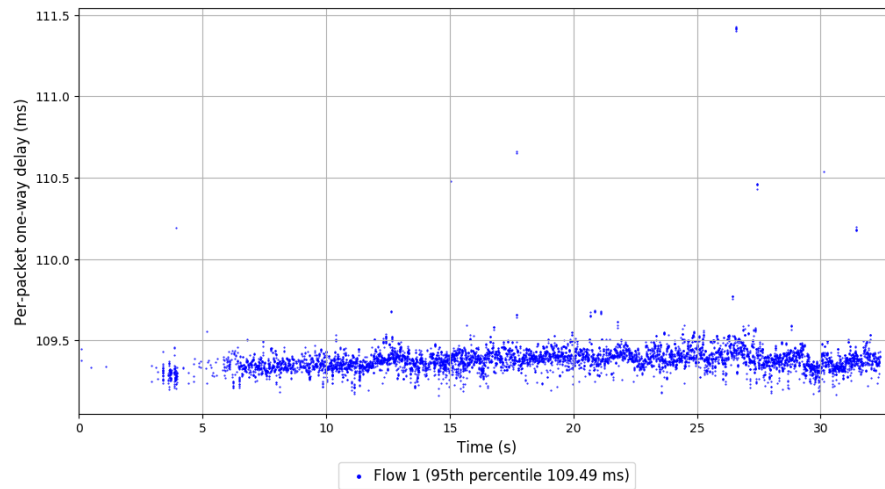
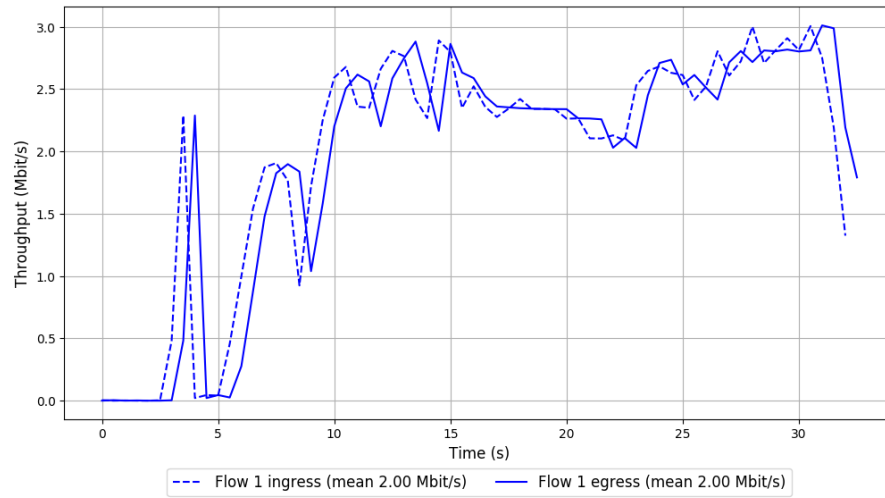
-- Flow 1:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 109.487 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-01-02 20:15:10

End at: 2019-01-02 20:15:40

Local clock offset: 3.749 ms

Remote clock offset: 2.114 ms

Below is generated by plot.py at 2019-01-02 22:13:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 108.090 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 108.090 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

