

Pantheon Report

Generated at 2018-09-06 16:03:10 (UTC).

Data path: Brazil on **p4p1** (*remote*) → AWS Brazil 1 on **ens5** (*local*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

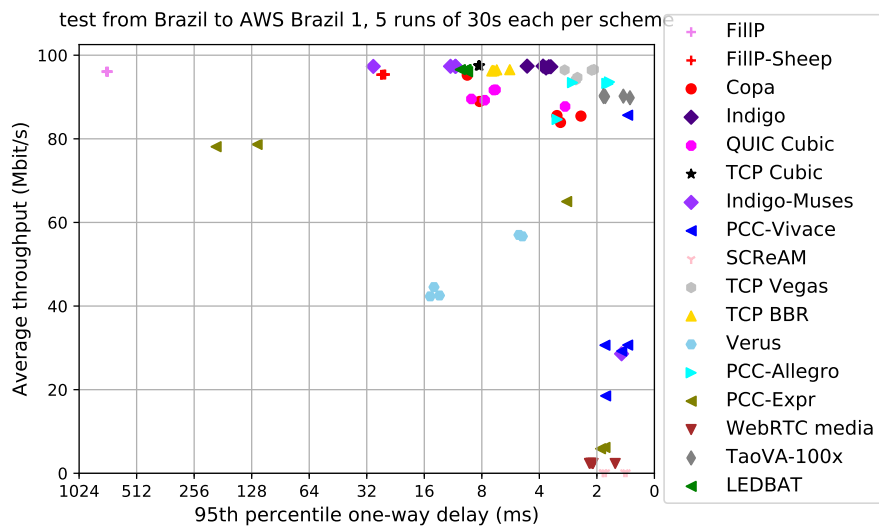
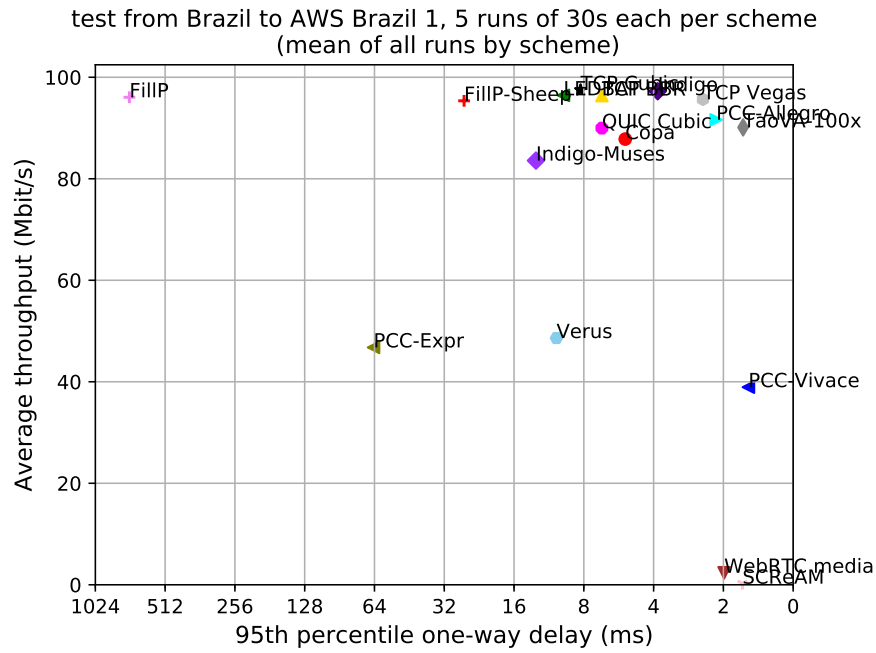
NTP offsets were measured against **gps.ntp.br** and have been applied to correct the timestamps in logs.

System info:

```
Linux 4.15.0-1020-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
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740d4fe1771f813cd646339e1952
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-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```



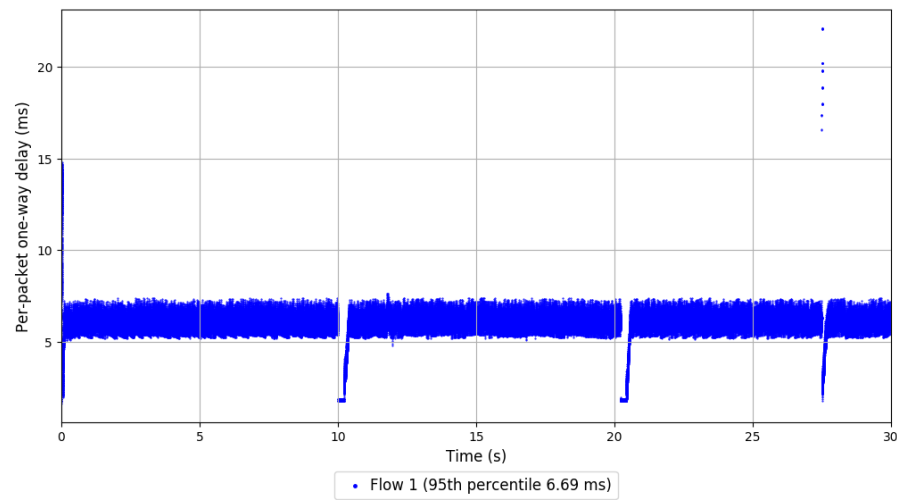
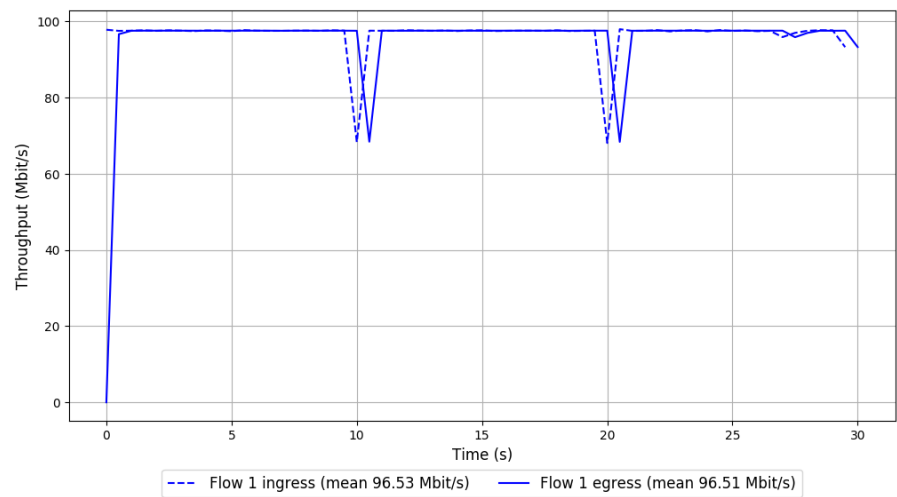
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	96.39	6.68	0.03
Copa	5	87.82	5.30	0.02
TCP Cubic	5	97.48	8.26	0.06
FillP	5	96.06	730.07	3.31
FillP-Sheep	5	95.36	26.28	1.34
Indigo	5	97.24	3.84	0.02
LEDBAT	5	96.44	9.80	0.09
Indigo-Muses	5	83.58	12.87	1.75
PCC-Allegro	5	91.62	2.15	0.01
PCC-Expr	5	46.77	64.61	0.09
QUIC Cubic	5	89.98	6.69	0.02
SCReAM	5	0.22	1.45	0.00
Sprout	0	N/A	N/A	N/A
TaoVA-100x	5	90.12	1.43	0.01
TCP Vegas	5	95.65	2.45	0.01
Verus	5	48.61	10.50	0.04
PCC-Vivace	5	38.94	1.28	0.01
WebRTC media	5	2.36	1.98	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-09-06 14:19:41
End at: 2018-09-06 14:20:11
Local clock offset: -4.208 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-09-06 15:52:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 96.51 Mbit/s
95th percentile per-packet one-way delay: 6.686 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 96.51 Mbit/s
95th percentile per-packet one-way delay: 6.686 ms
Loss rate: 0.02%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-06 14:40:03

End at: 2018-09-06 14:40:33

Local clock offset: -5.074 ms

Remote clock offset: 0.003 ms

Below is generated by plot.py at 2018-09-06 15:52:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 5.713 ms

Loss rate: 0.02%

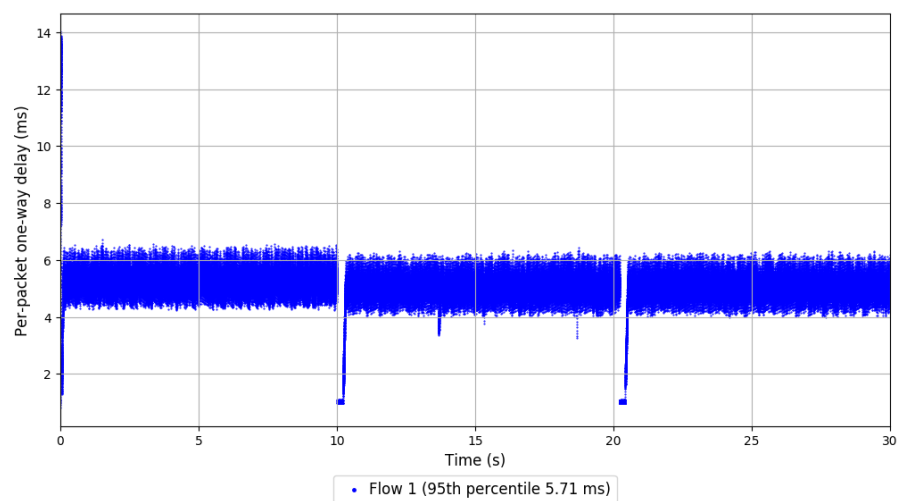
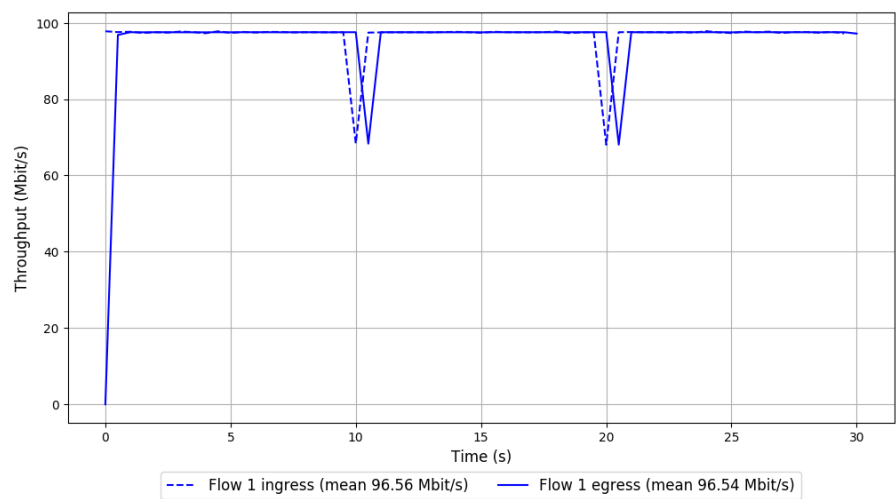
-- Flow 1:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 5.713 ms

Loss rate: 0.02%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-09-06 15:00:21

End at: 2018-09-06 15:00:51

Local clock offset: -4.673 ms

Remote clock offset: 0.112 ms

Below is generated by plot.py at 2018-09-06 15:52:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.36 Mbit/s

95th percentile per-packet one-way delay: 7.008 ms

Loss rate: 0.03%

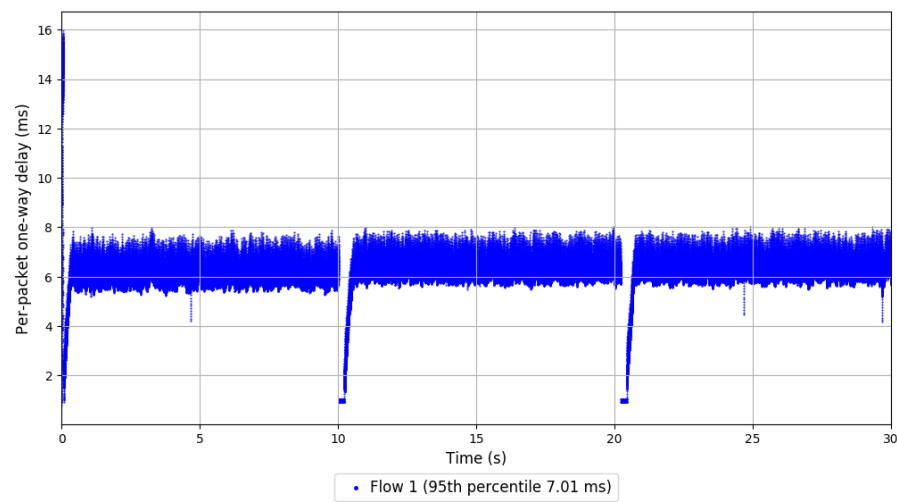
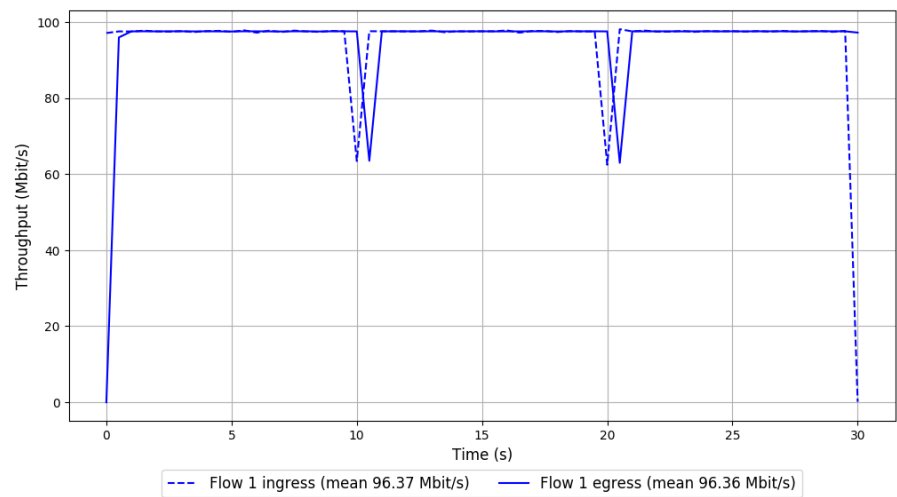
-- Flow 1:

Average throughput: 96.36 Mbit/s

95th percentile per-packet one-way delay: 7.008 ms

Loss rate: 0.03%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-06 15:20:33

End at: 2018-09-06 15:21:03

Local clock offset: -5.845 ms

Remote clock offset: 0.194 ms

Below is generated by plot.py at 2018-09-06 15:52:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.29 Mbit/s

95th percentile per-packet one-way delay: 6.909 ms

Loss rate: 0.03%

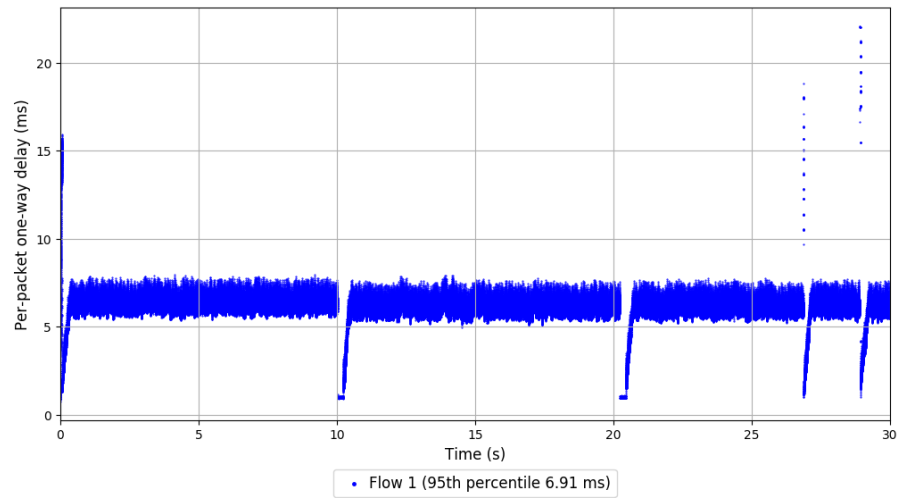
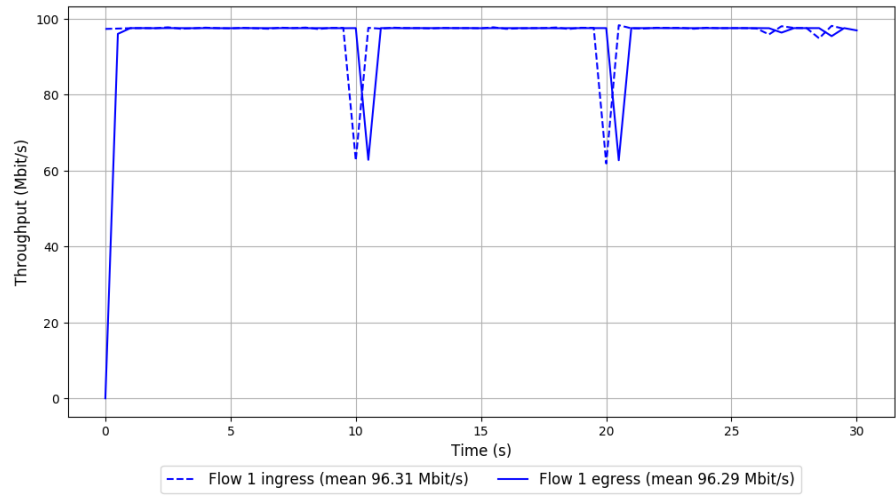
-- Flow 1:

Average throughput: 96.29 Mbit/s

95th percentile per-packet one-way delay: 6.909 ms

Loss rate: 0.03%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-06 15:40:42

End at: 2018-09-06 15:41:13

Local clock offset: -7.627 ms

Remote clock offset: 0.082 ms

Below is generated by plot.py at 2018-09-06 15:52:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.24 Mbit/s

95th percentile per-packet one-way delay: 7.093 ms

Loss rate: 0.03%

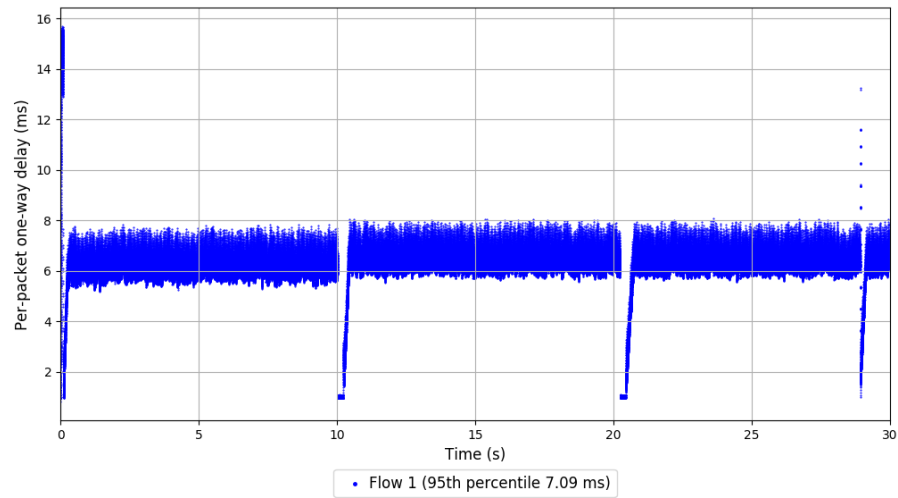
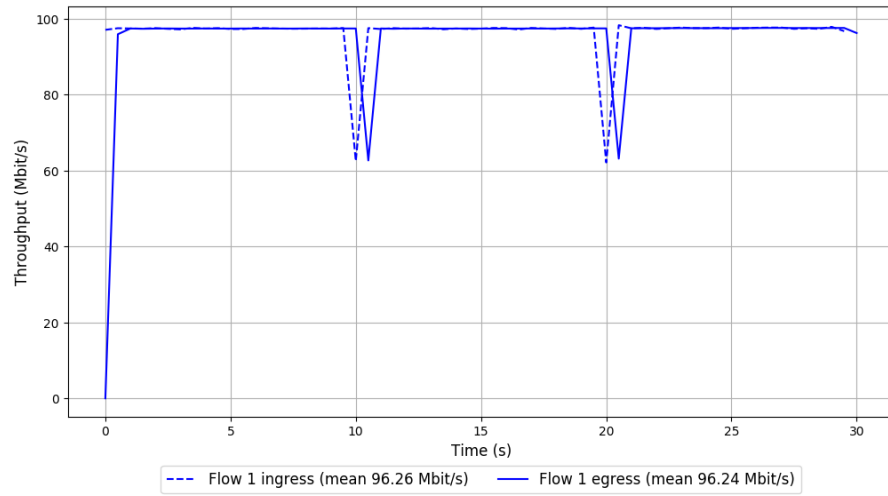
-- Flow 1:

Average throughput: 96.24 Mbit/s

95th percentile per-packet one-way delay: 7.093 ms

Loss rate: 0.03%

Run 5: Report of TCP BBR — Data Link

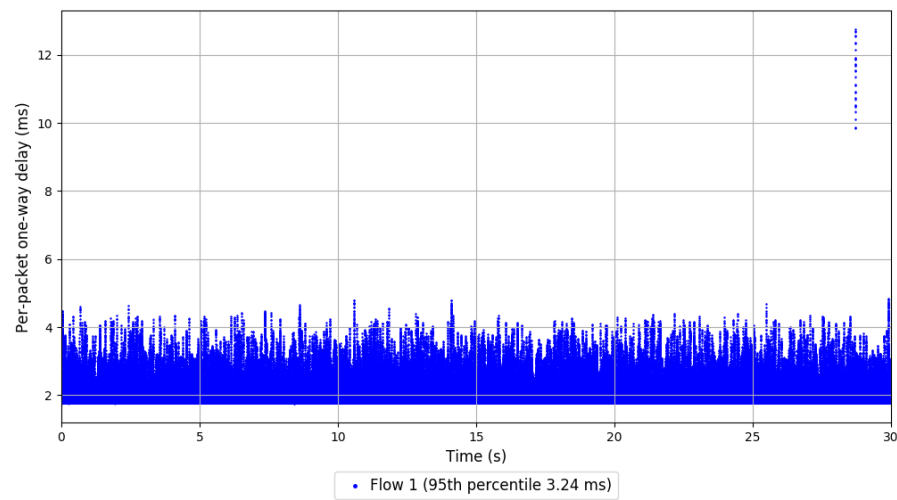
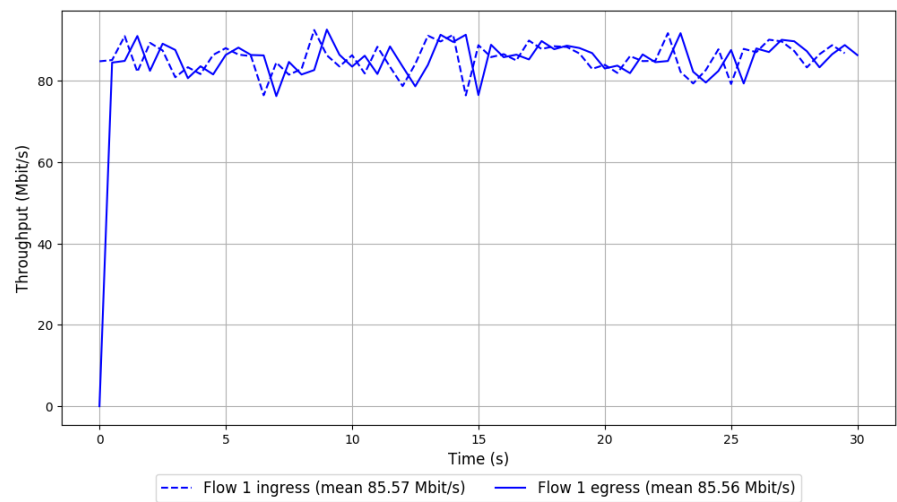


Run 1: Statistics of Copa

Start at: 2018-09-06 14:16:15
End at: 2018-09-06 14:16:45
Local clock offset: -4.145 ms
Remote clock offset: -0.171 ms

Below is generated by plot.py at 2018-09-06 15:53:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 85.56 Mbit/s
95th percentile per-packet one-way delay: 3.236 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 85.56 Mbit/s
95th percentile per-packet one-way delay: 3.236 ms
Loss rate: 0.02%

Run 1: Report of Copa — Data Link

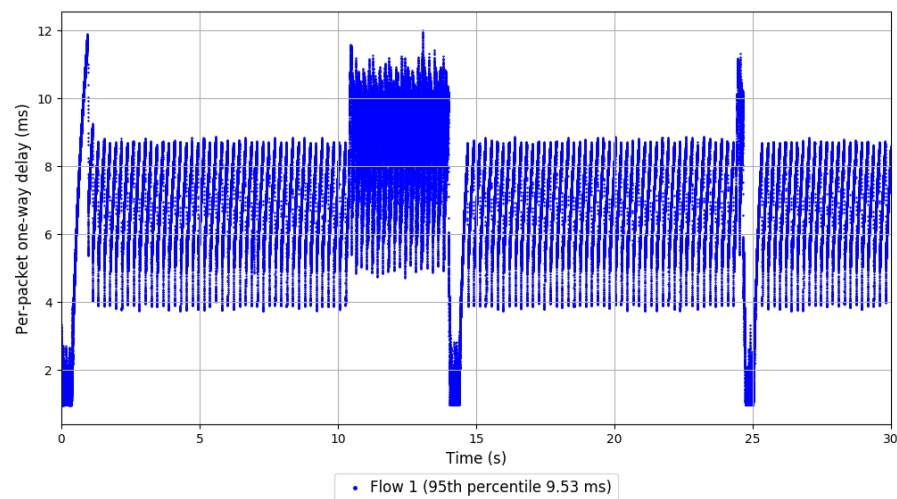
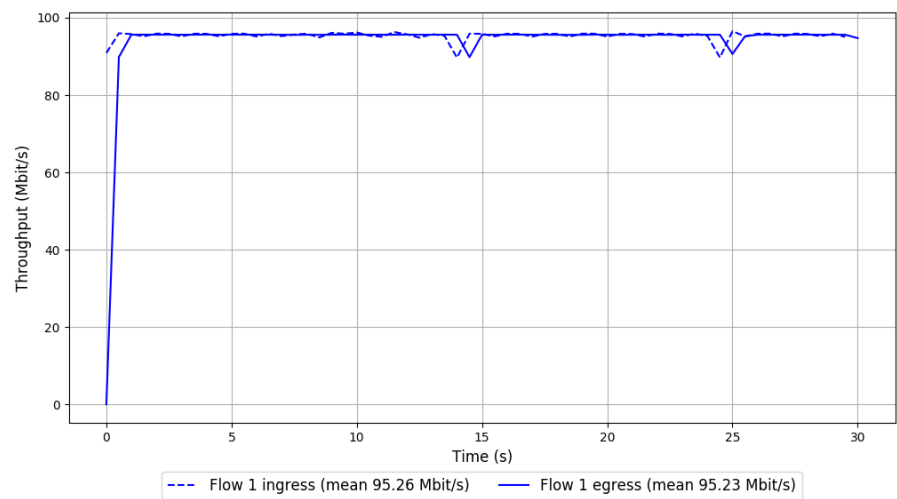


Run 2: Statistics of Copa

Start at: 2018-09-06 14:36:33
End at: 2018-09-06 14:37:03
Local clock offset: -5.071 ms
Remote clock offset: -0.013 ms

Below is generated by plot.py at 2018-09-06 15:53:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 9.534 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 9.534 ms
Loss rate: 0.04%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-06 14:56:56

End at: 2018-09-06 14:57:26

Local clock offset: -4.036 ms

Remote clock offset: 0.008 ms

Below is generated by plot.py at 2018-09-06 15:53:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.92 Mbit/s

95th percentile per-packet one-way delay: 3.101 ms

Loss rate: 0.01%

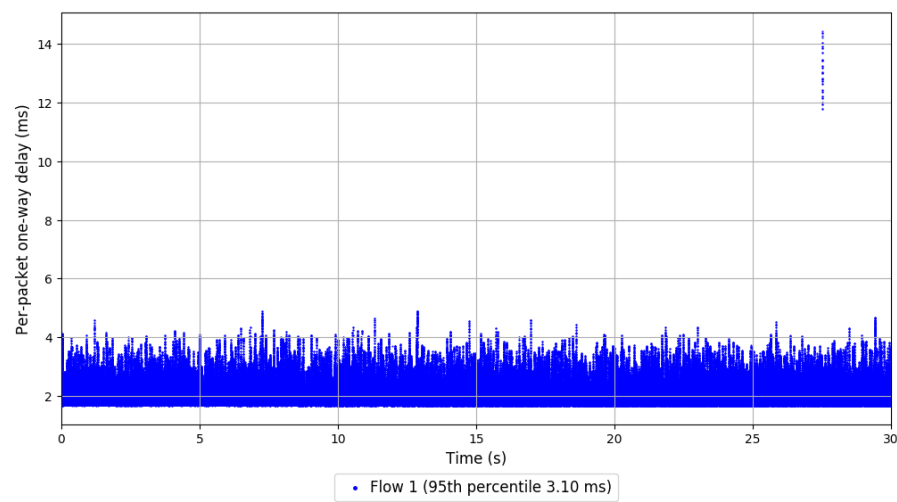
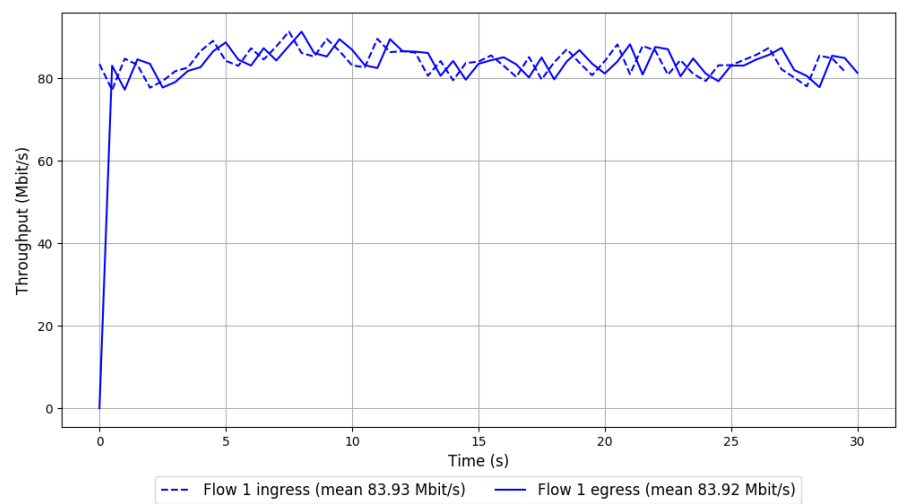
-- Flow 1:

Average throughput: 83.92 Mbit/s

95th percentile per-packet one-way delay: 3.101 ms

Loss rate: 0.01%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-06 15:17:08

End at: 2018-09-06 15:17:38

Local clock offset: -4.991 ms

Remote clock offset: 0.169 ms

Below is generated by plot.py at 2018-09-06 15:54:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.93 Mbit/s

95th percentile per-packet one-way delay: 8.212 ms

Loss rate: 0.02%

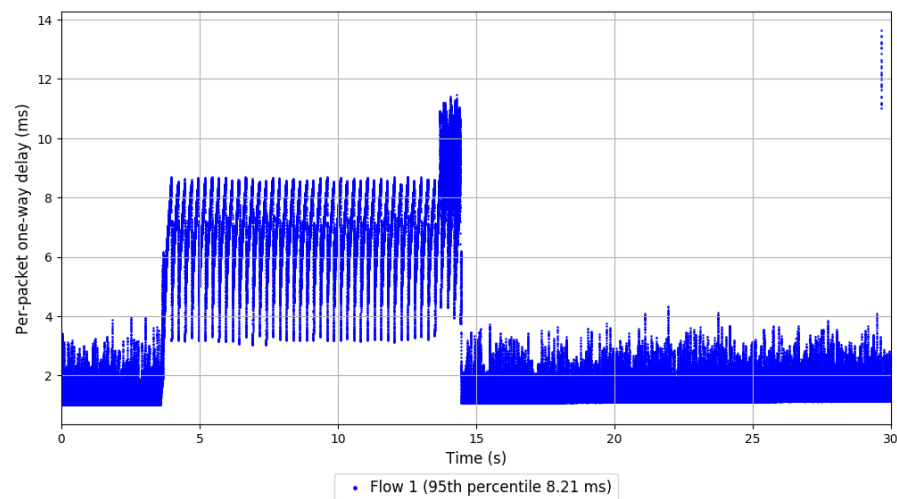
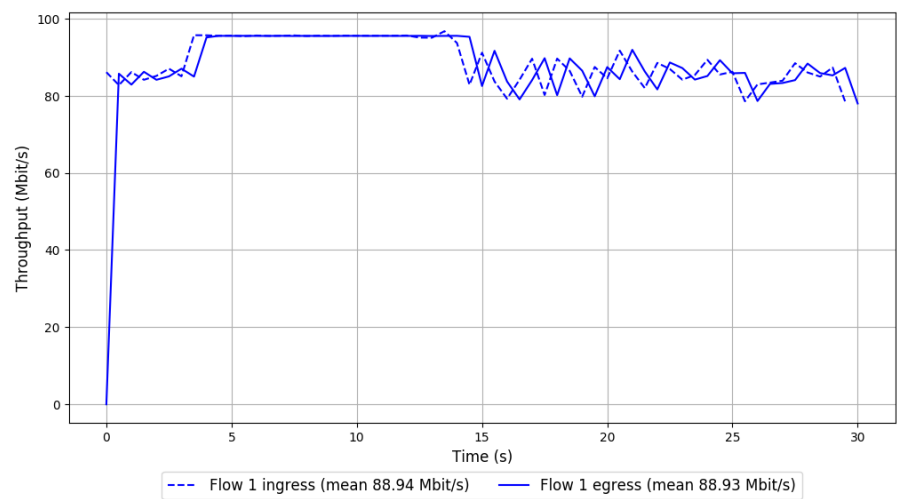
-- Flow 1:

Average throughput: 88.93 Mbit/s

95th percentile per-packet one-way delay: 8.212 ms

Loss rate: 0.02%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-06 15:37:17

End at: 2018-09-06 15:37:47

Local clock offset: -7.458 ms

Remote clock offset: 0.065 ms

Below is generated by plot.py at 2018-09-06 15:54:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.44 Mbit/s

95th percentile per-packet one-way delay: 2.424 ms

Loss rate: 0.01%

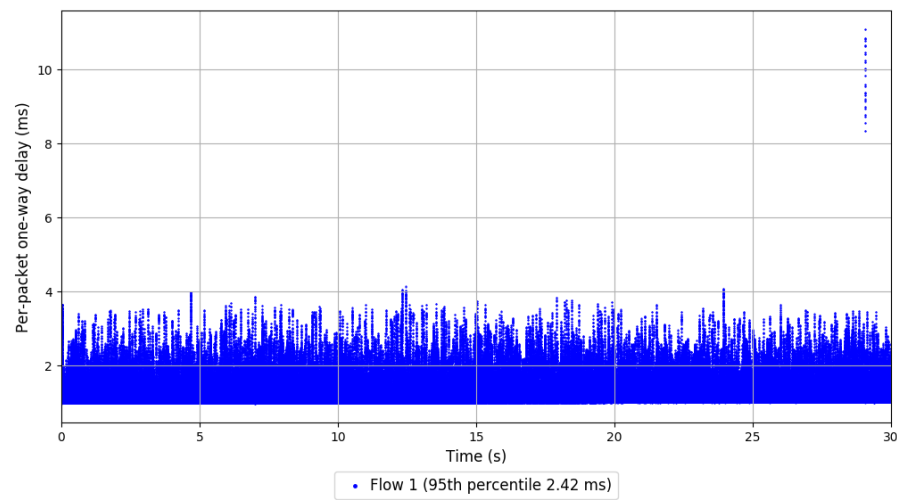
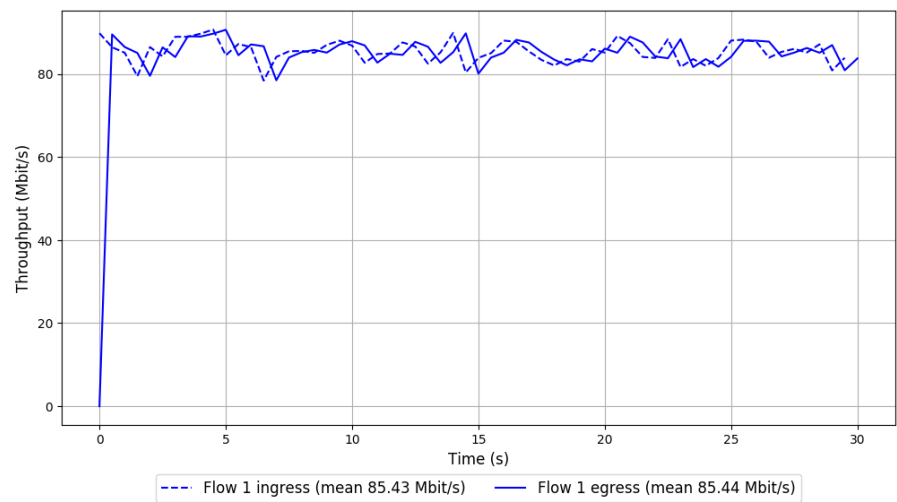
-- Flow 1:

Average throughput: 85.44 Mbit/s

95th percentile per-packet one-way delay: 2.424 ms

Loss rate: 0.01%

Run 5: Report of Copa — Data Link

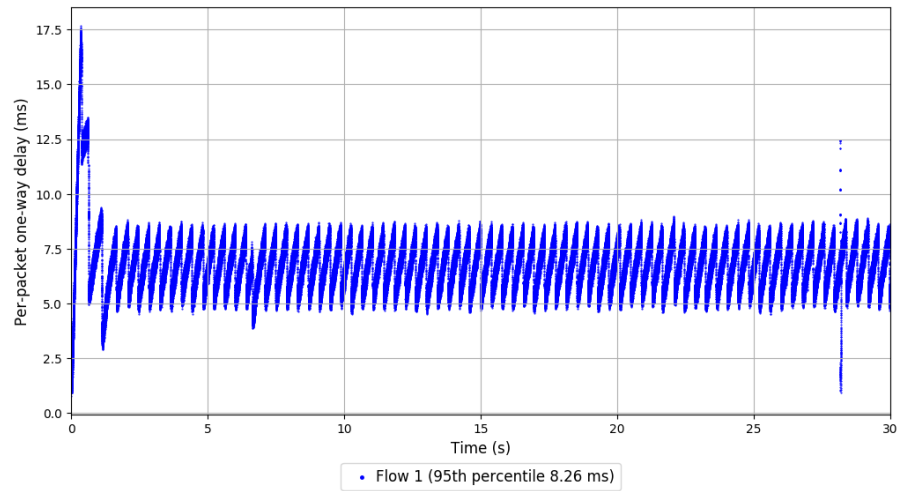
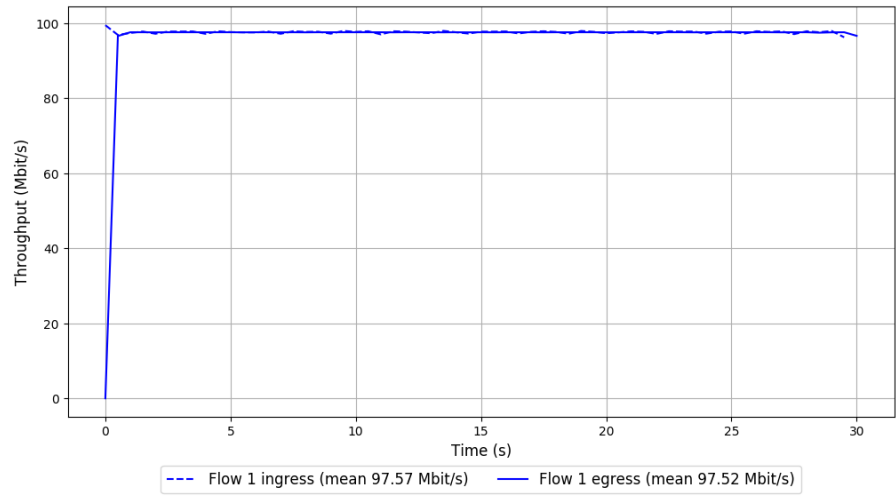


Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 14:25:13
End at: 2018-09-06 14:25:43
Local clock offset: -5.085 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-09-06 15:54:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.52 Mbit/s
95th percentile per-packet one-way delay: 8.258 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 97.52 Mbit/s
95th percentile per-packet one-way delay: 8.258 ms
Loss rate: 0.06%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-06 14:45:35

End at: 2018-09-06 14:46:05

Local clock offset: -5.052 ms

Remote clock offset: 0.025 ms

Below is generated by plot.py at 2018-09-06 15:54:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.48 Mbit/s

95th percentile per-packet one-way delay: 8.244 ms

Loss rate: 0.05%

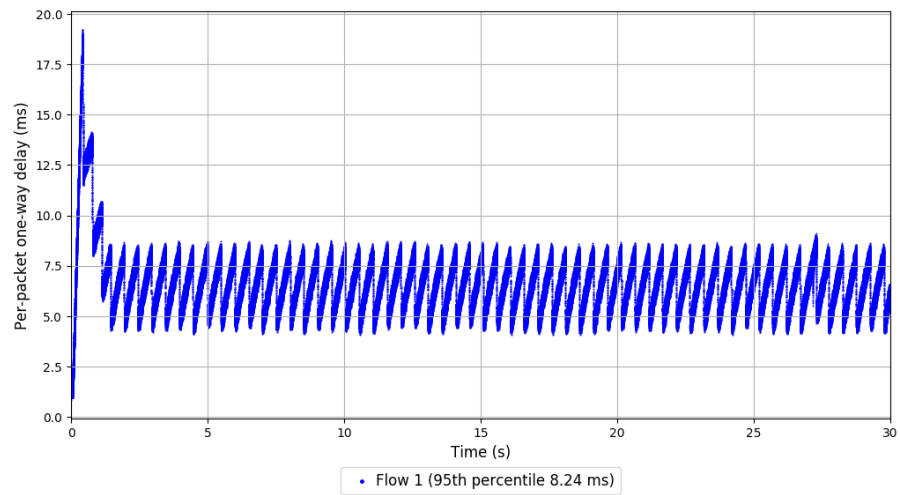
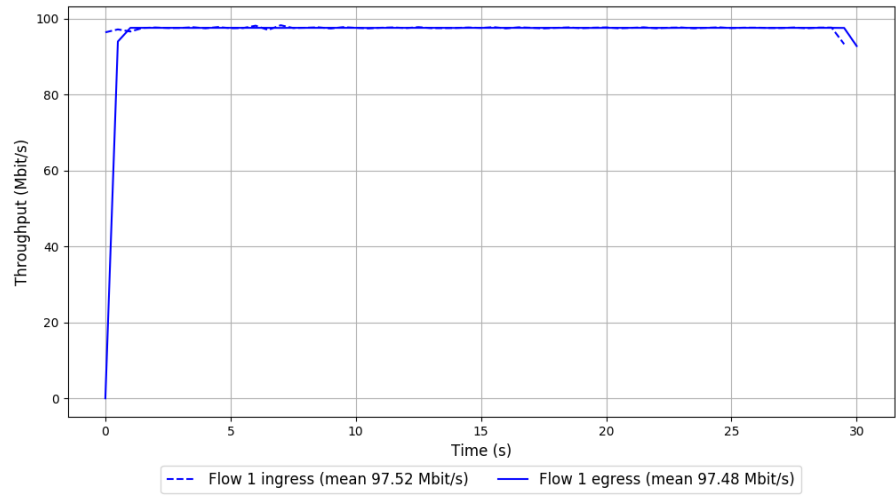
-- Flow 1:

Average throughput: 97.48 Mbit/s

95th percentile per-packet one-way delay: 8.244 ms

Loss rate: 0.05%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-06 15:05:53

End at: 2018-09-06 15:06:23

Local clock offset: -4.604 ms

Remote clock offset: 0.162 ms

Below is generated by plot.py at 2018-09-06 15:54:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.51 Mbit/s

95th percentile per-packet one-way delay: 8.284 ms

Loss rate: 0.06%

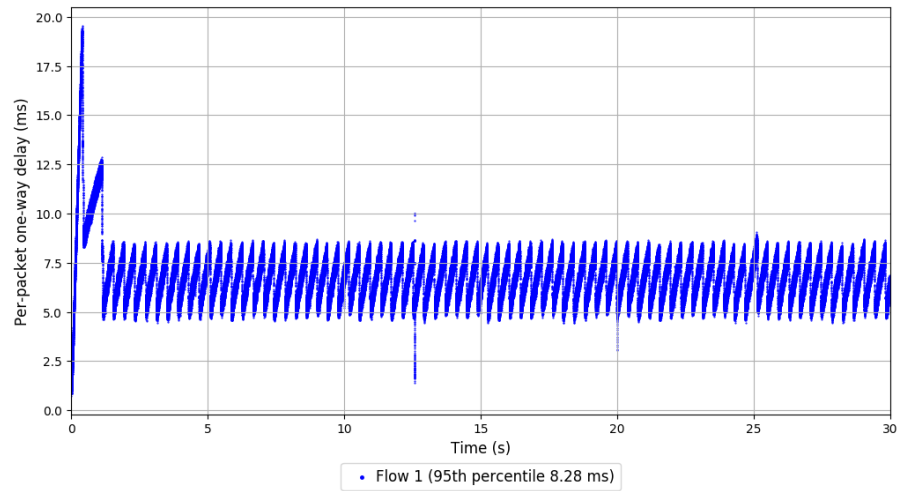
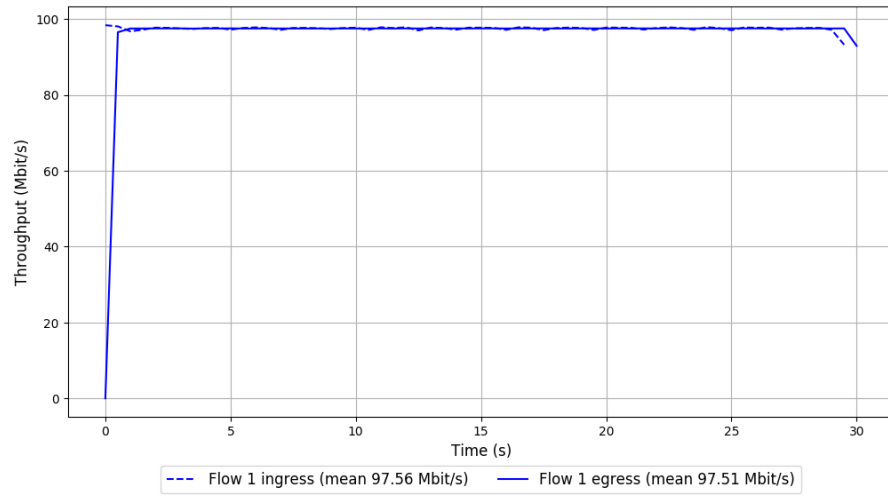
-- Flow 1:

Average throughput: 97.51 Mbit/s

95th percentile per-packet one-way delay: 8.284 ms

Loss rate: 0.06%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-06 15:26:05

End at: 2018-09-06 15:26:36

Local clock offset: -6.552 ms

Remote clock offset: 0.113 ms

Below is generated by plot.py at 2018-09-06 15:54:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.45 Mbit/s

95th percentile per-packet one-way delay: 8.346 ms

Loss rate: 0.05%

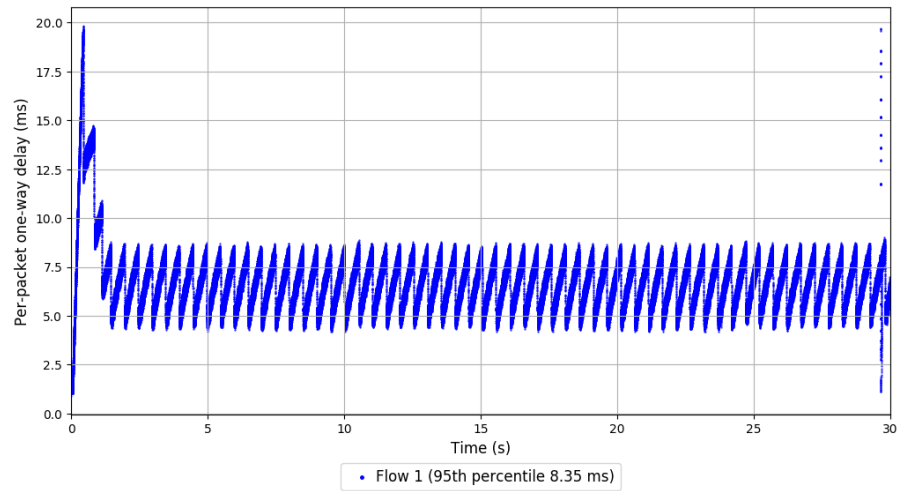
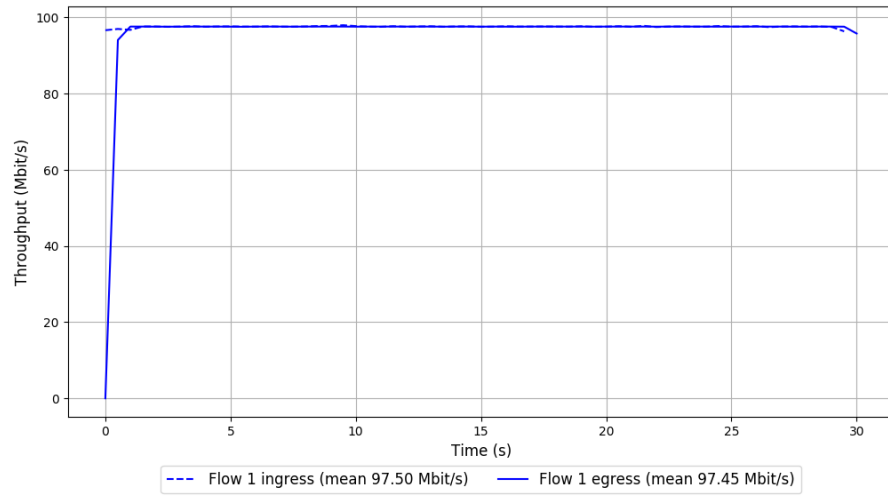
-- Flow 1:

Average throughput: 97.45 Mbit/s

95th percentile per-packet one-way delay: 8.346 ms

Loss rate: 0.05%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-06 15:46:15

End at: 2018-09-06 15:46:45

Local clock offset: -7.735 ms

Remote clock offset: 0.145 ms

Below is generated by plot.py at 2018-09-06 15:54:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.44 Mbit/s

95th percentile per-packet one-way delay: 8.191 ms

Loss rate: 0.06%

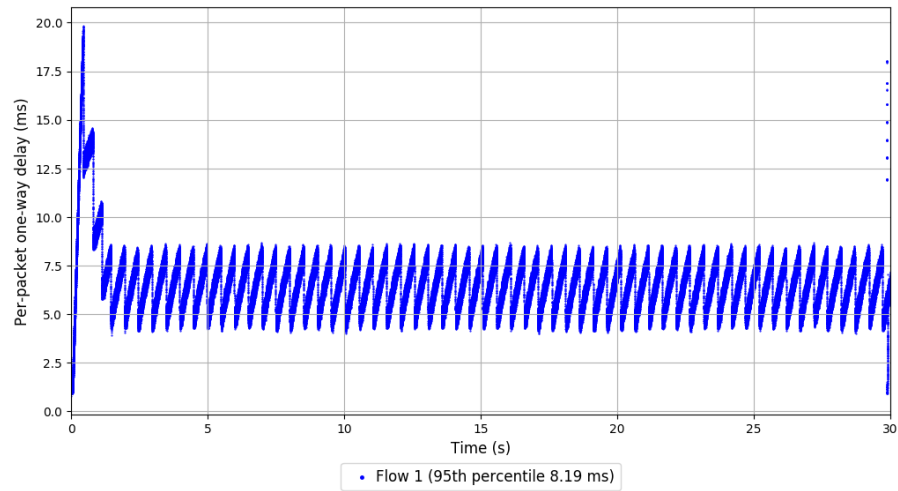
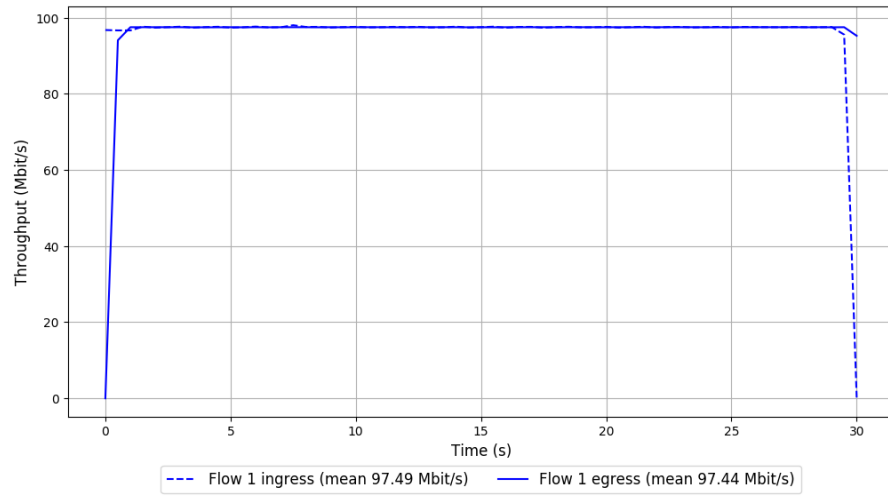
-- Flow 1:

Average throughput: 97.44 Mbit/s

95th percentile per-packet one-way delay: 8.191 ms

Loss rate: 0.06%

Run 5: Report of TCP Cubic — Data Link

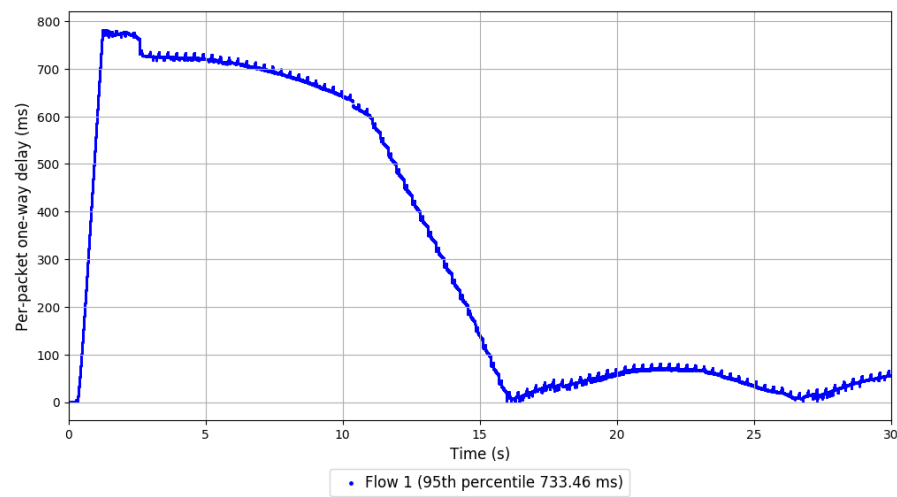
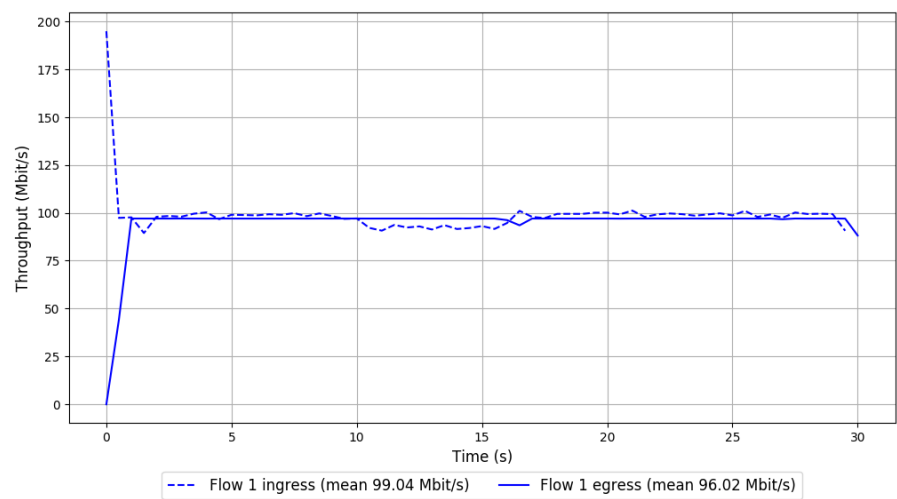


Run 1: Statistics of FillP

Start at: 2018-09-06 14:28:38
End at: 2018-09-06 14:29:08
Local clock offset: -5.046 ms
Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-09-06 15:55:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 96.02 Mbit/s
95th percentile per-packet one-way delay: 733.462 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 96.02 Mbit/s
95th percentile per-packet one-way delay: 733.462 ms
Loss rate: 3.06%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-06 14:49:01

End at: 2018-09-06 14:49:31

Local clock offset: -4.91 ms

Remote clock offset: 0.032 ms

Below is generated by plot.py at 2018-09-06 15:55:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 726.241 ms

Loss rate: 3.33%

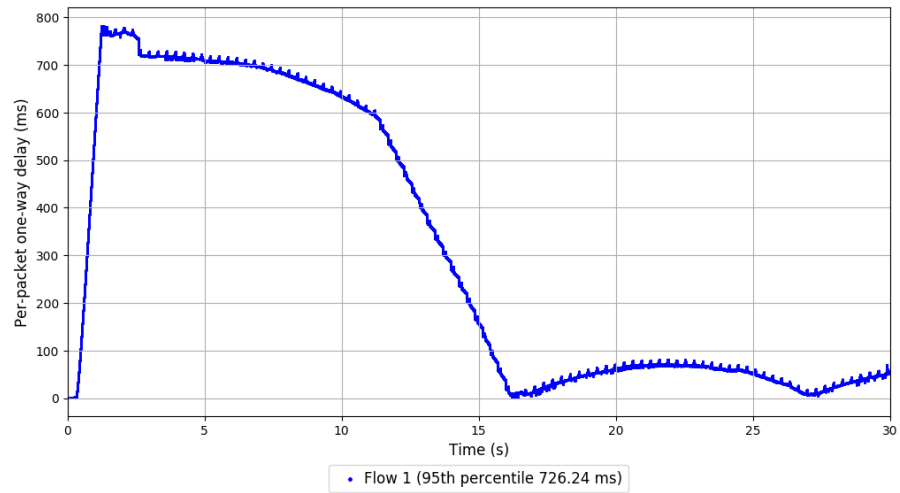
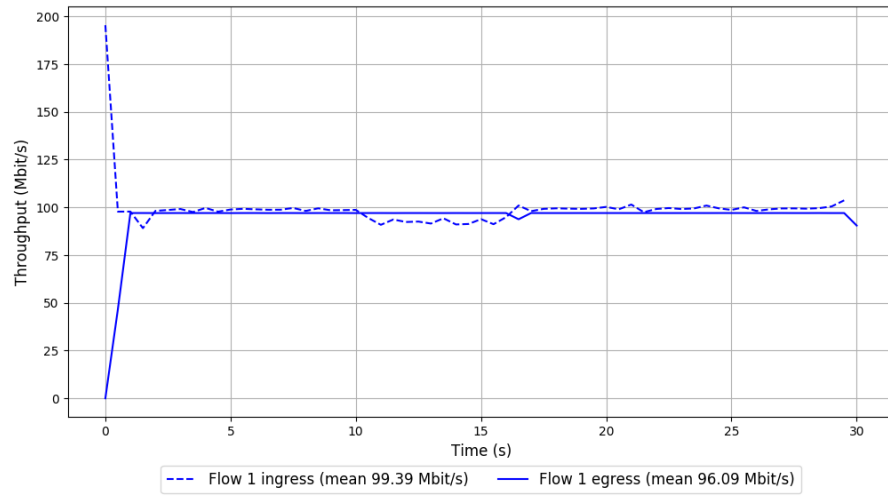
-- Flow 1:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 726.241 ms

Loss rate: 3.33%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-06 15:09:14

End at: 2018-09-06 15:09:44

Local clock offset: -3.806 ms

Remote clock offset: 0.074 ms

Below is generated by plot.py at 2018-09-06 15:55:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.08 Mbit/s

95th percentile per-packet one-way delay: 738.495 ms

Loss rate: 3.15%

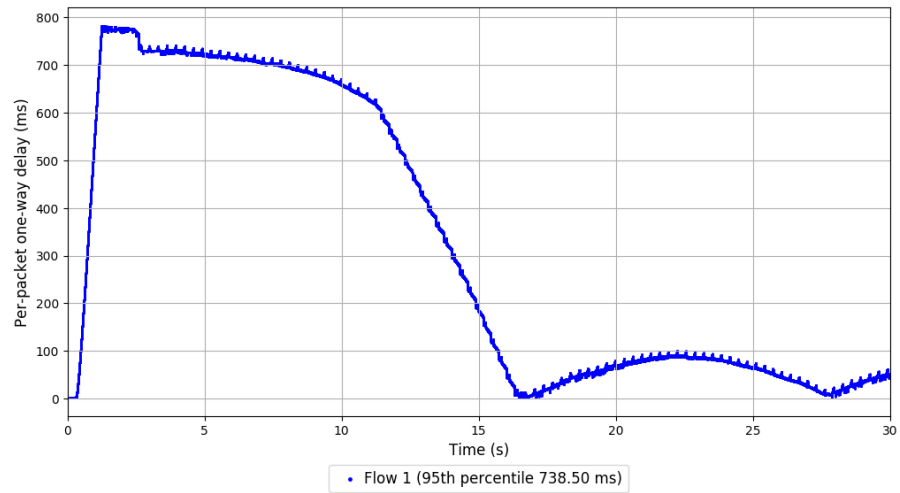
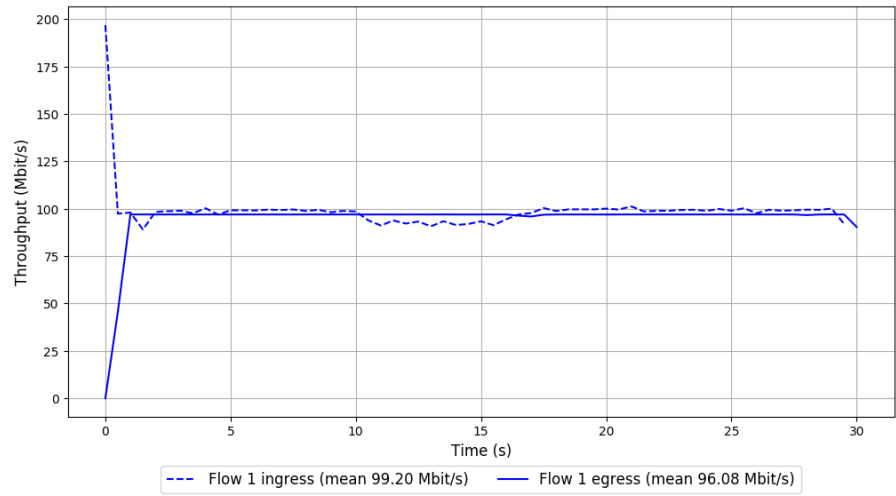
-- Flow 1:

Average throughput: 96.08 Mbit/s

95th percentile per-packet one-way delay: 738.495 ms

Loss rate: 3.15%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-06 15:29:26

End at: 2018-09-06 15:29:56

Local clock offset: -6.147 ms

Remote clock offset: 0.08 ms

Below is generated by plot.py at 2018-09-06 15:55:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 726.539 ms

Loss rate: 3.15%

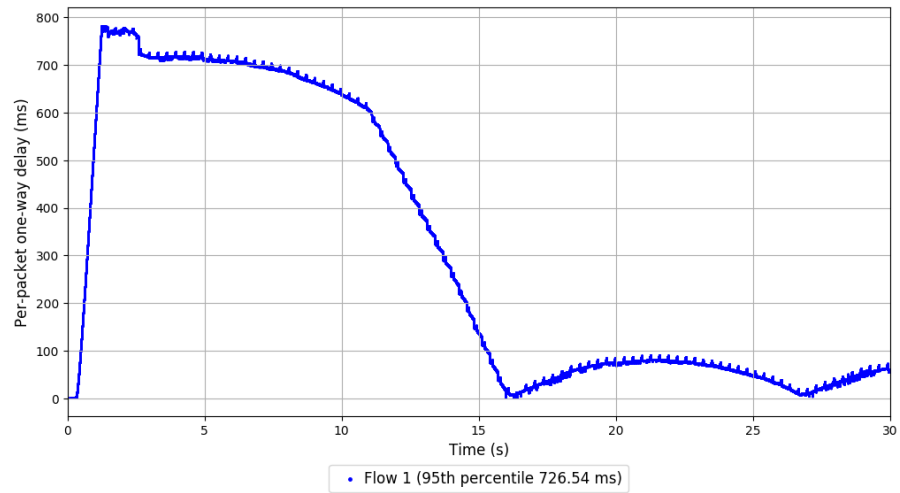
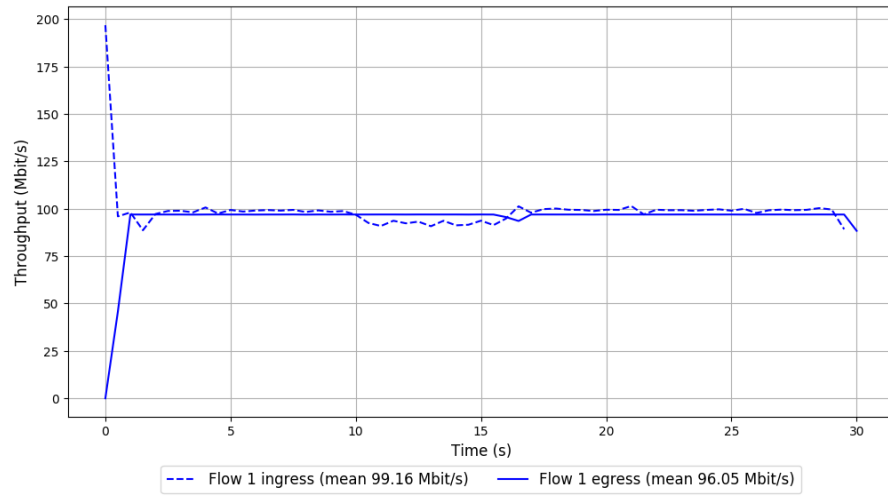
-- Flow 1:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 726.539 ms

Loss rate: 3.15%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-06 15:49:41

End at: 2018-09-06 15:50:11

Local clock offset: -7.735 ms

Remote clock offset: 0.127 ms

Below is generated by plot.py at 2018-09-06 15:56:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.04 Mbit/s

95th percentile per-packet one-way delay: 725.632 ms

Loss rate: 3.84%

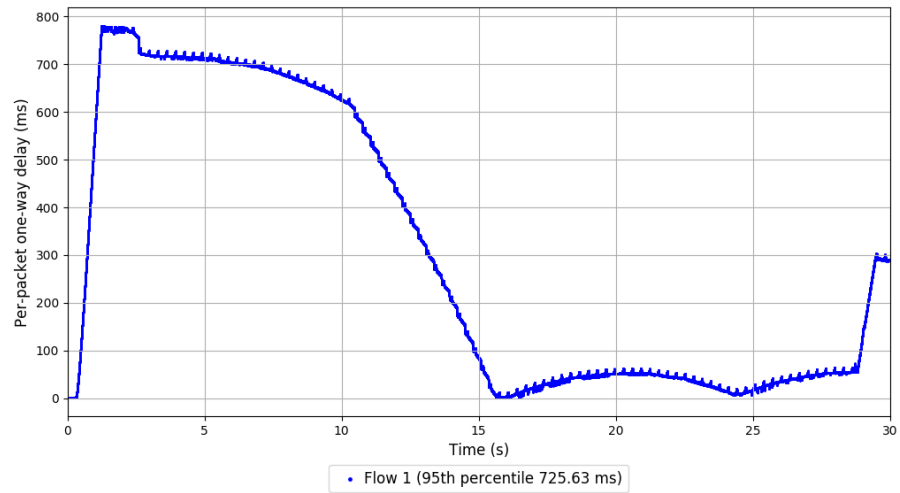
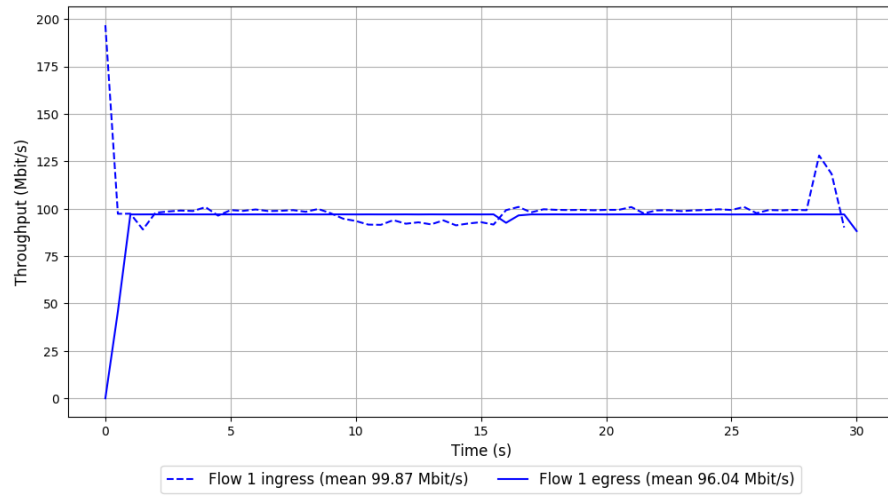
-- Flow 1:

Average throughput: 96.04 Mbit/s

95th percentile per-packet one-way delay: 725.632 ms

Loss rate: 3.84%

Run 5: Report of FillP — Data Link

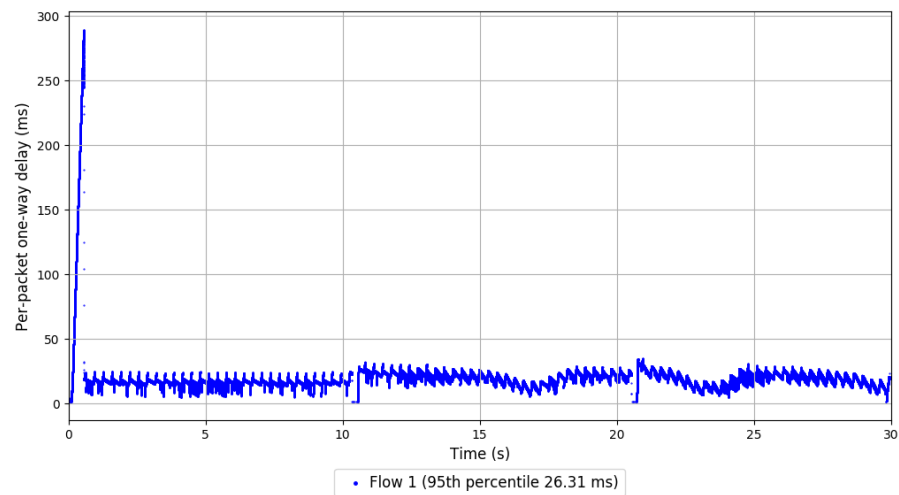
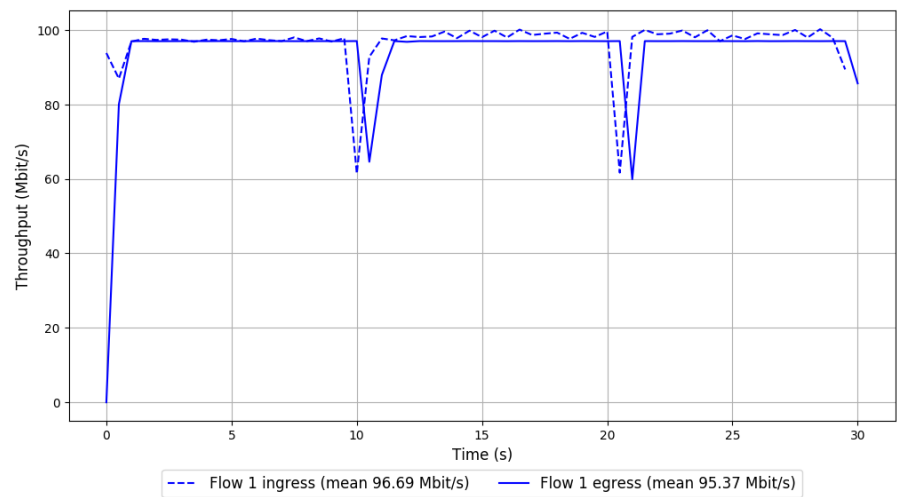


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-06 14:20:49
End at: 2018-09-06 14:21:19
Local clock offset: -4.283 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-09-06 15:56:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.37 Mbit/s
95th percentile per-packet one-way delay: 26.307 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 95.37 Mbit/s
95th percentile per-packet one-way delay: 26.307 ms
Loss rate: 1.36%

Run 1: Report of FillP-Sheep — Data Link

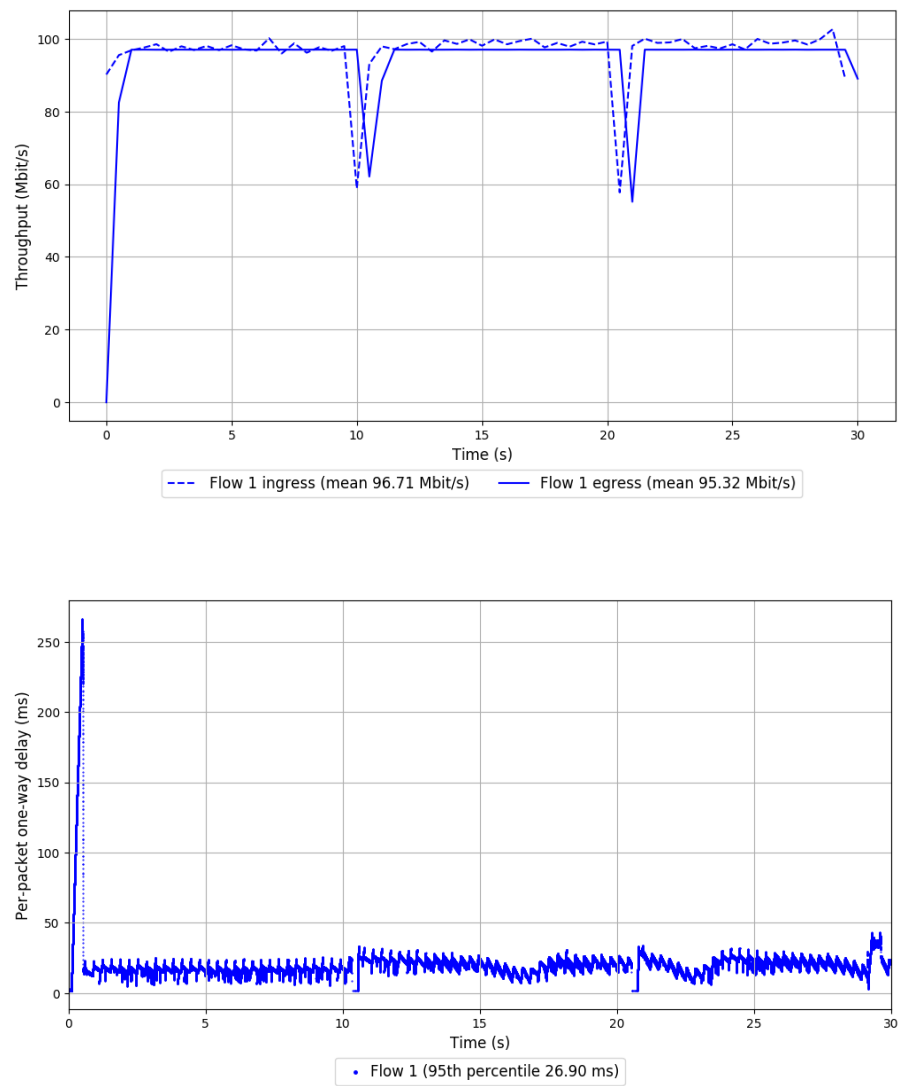


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-06 14:41:11
End at: 2018-09-06 14:41:41
Local clock offset: -4.304 ms
Remote clock offset: -0.019 ms

Below is generated by plot.py at 2018-09-06 15:56:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.32 Mbit/s
95th percentile per-packet one-way delay: 26.896 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 95.32 Mbit/s
95th percentile per-packet one-way delay: 26.896 ms
Loss rate: 1.43%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-06 15:01:29

End at: 2018-09-06 15:01:59

Local clock offset: -4.661 ms

Remote clock offset: 0.089 ms

Below is generated by plot.py at 2018-09-06 15:56:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.39 Mbit/s

95th percentile per-packet one-way delay: 25.661 ms

Loss rate: 1.24%

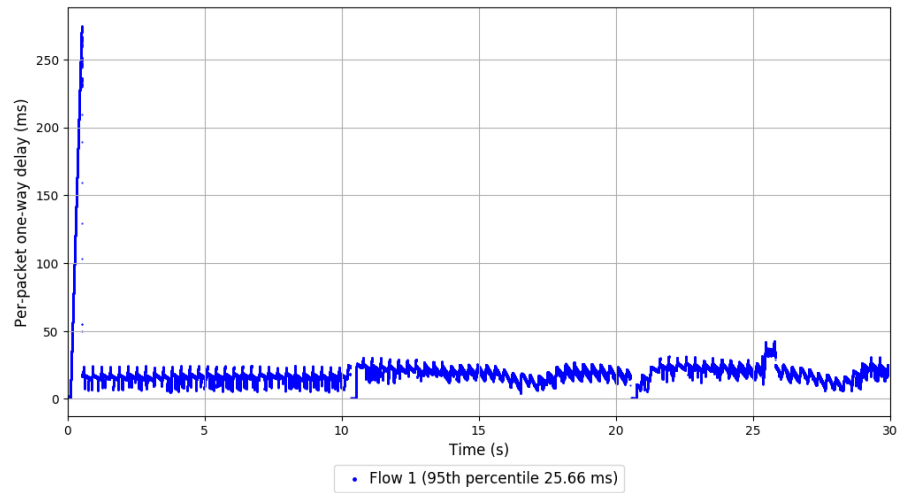
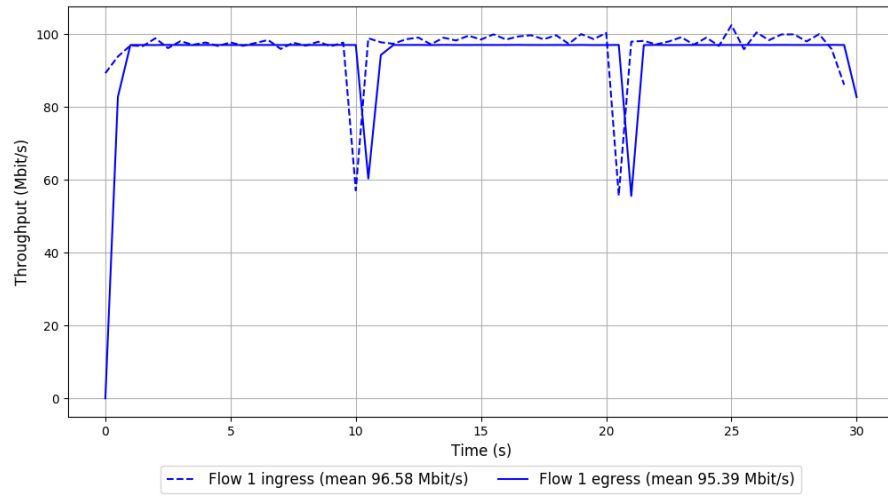
-- Flow 1:

Average throughput: 95.39 Mbit/s

95th percentile per-packet one-way delay: 25.661 ms

Loss rate: 1.24%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-06 15:21:41

End at: 2018-09-06 15:22:11

Local clock offset: -6.033 ms

Remote clock offset: 0.196 ms

Below is generated by plot.py at 2018-09-06 15:56:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.32 Mbit/s

95th percentile per-packet one-way delay: 26.771 ms

Loss rate: 1.27%

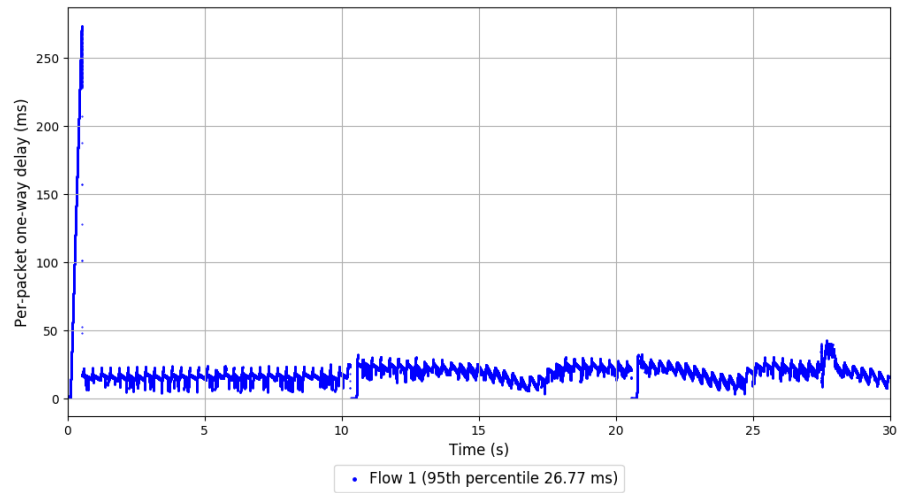
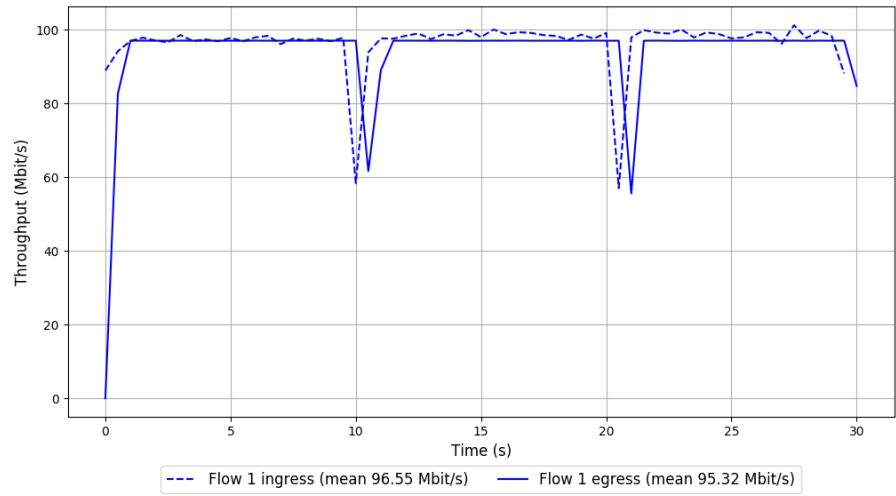
-- Flow 1:

Average throughput: 95.32 Mbit/s

95th percentile per-packet one-way delay: 26.771 ms

Loss rate: 1.27%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-06 15:41:51

End at: 2018-09-06 15:42:21

Local clock offset: -6.838 ms

Remote clock offset: 0.094 ms

Below is generated by plot.py at 2018-09-06 15:56:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.38 Mbit/s

95th percentile per-packet one-way delay: 25.783 ms

Loss rate: 1.40%

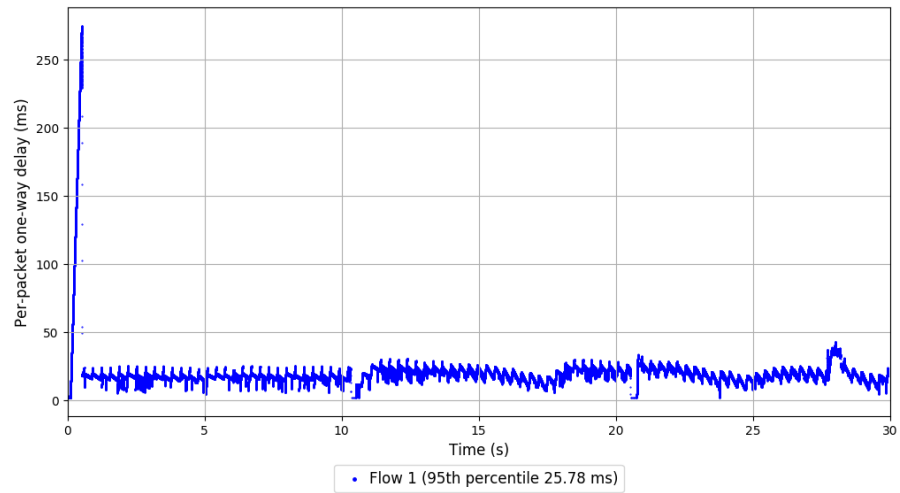
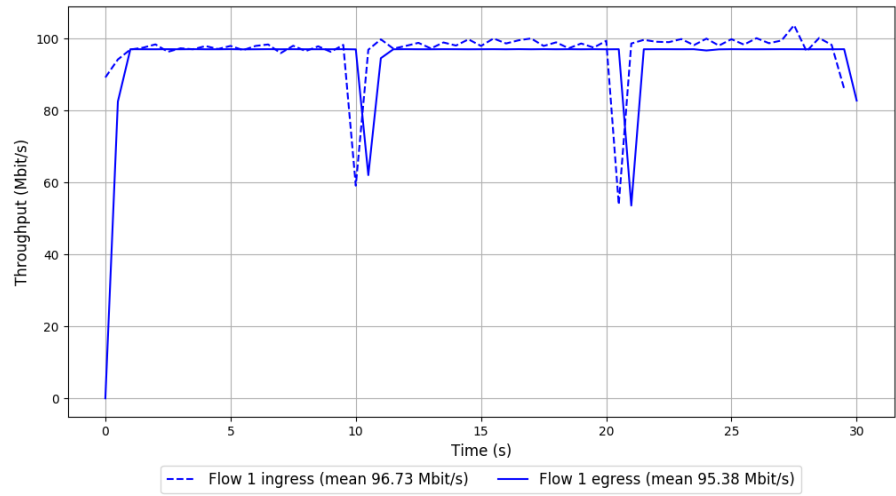
-- Flow 1:

Average throughput: 95.38 Mbit/s

95th percentile per-packet one-way delay: 25.783 ms

Loss rate: 1.40%

Run 5: Report of FillP-Sheep — Data Link

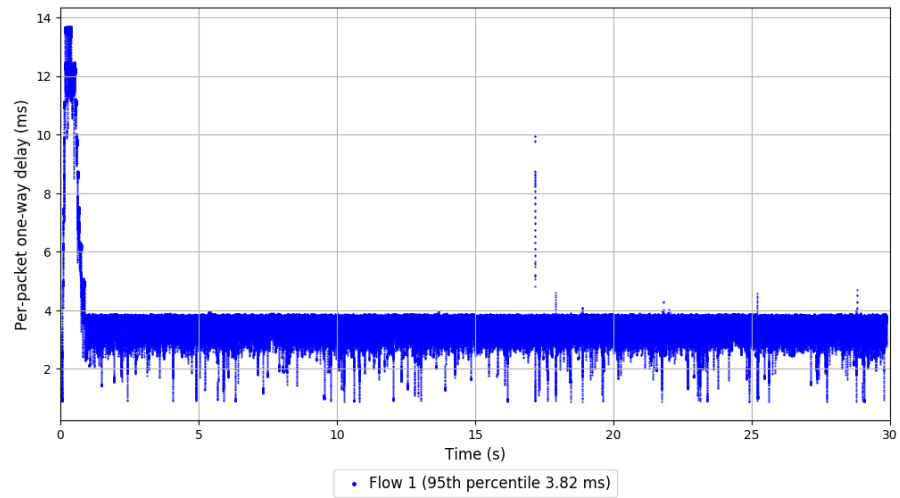
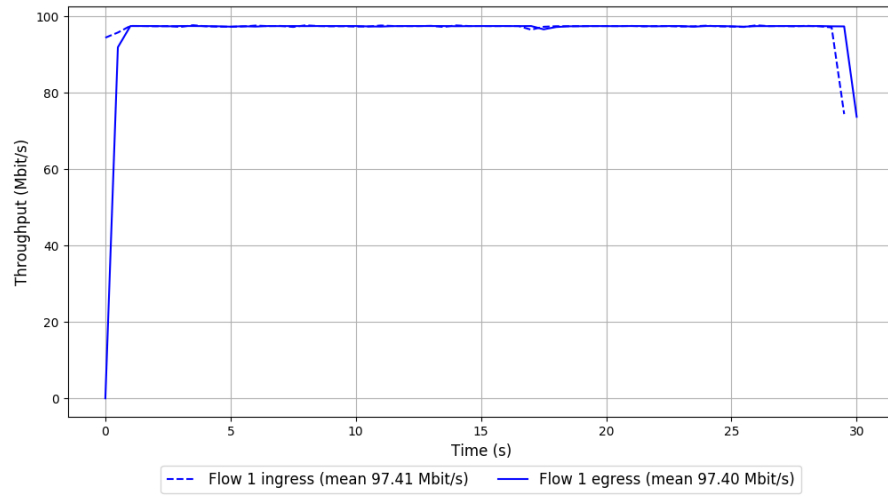


Run 1: Statistics of Indigo

Start at: 2018-09-06 14:09:29
End at: 2018-09-06 14:09:59
Local clock offset: -4.928 ms
Remote clock offset: -0.072 ms

Below is generated by plot.py at 2018-09-06 15:56:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.40 Mbit/s
95th percentile per-packet one-way delay: 3.824 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 97.40 Mbit/s
95th percentile per-packet one-way delay: 3.824 ms
Loss rate: 0.02%

Run 1: Report of Indigo — Data Link

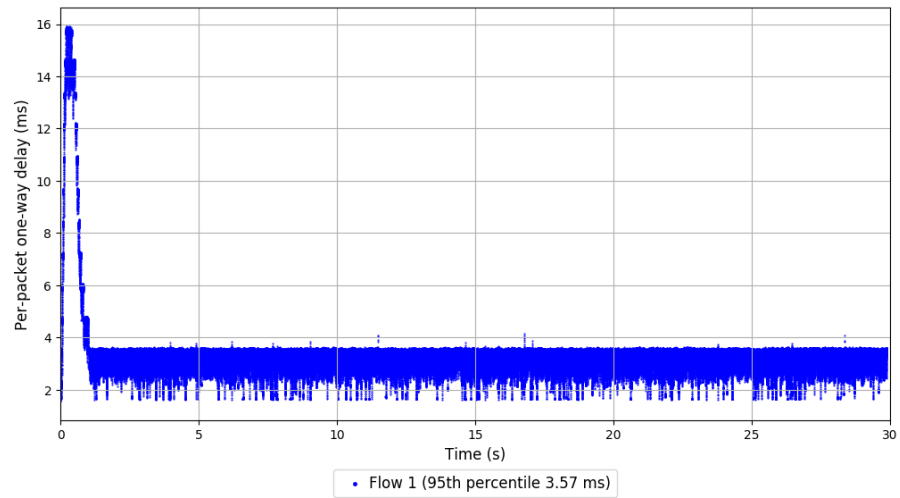
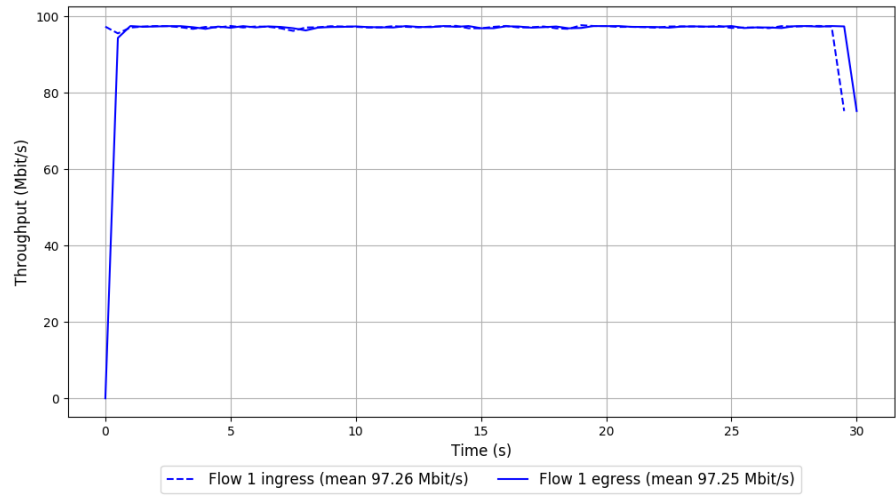


Run 2: Statistics of Indigo

Start at: 2018-09-06 14:29:46
End at: 2018-09-06 14:30:16
Local clock offset: -4.357 ms
Remote clock offset: -0.026 ms

Below is generated by plot.py at 2018-09-06 15:56:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.25 Mbit/s
95th percentile per-packet one-way delay: 3.569 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.25 Mbit/s
95th percentile per-packet one-way delay: 3.569 ms
Loss rate: 0.01%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-06 14:50:09

End at: 2018-09-06 14:50:39

Local clock offset: -4.197 ms

Remote clock offset: 0.127 ms

Below is generated by plot.py at 2018-09-06 15:57:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.24 Mbit/s

95th percentile per-packet one-way delay: 3.484 ms

Loss rate: 0.03%

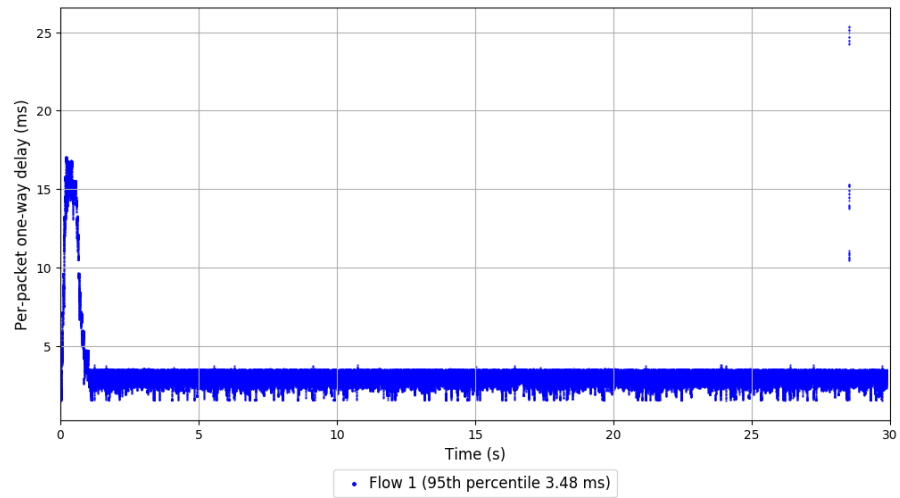
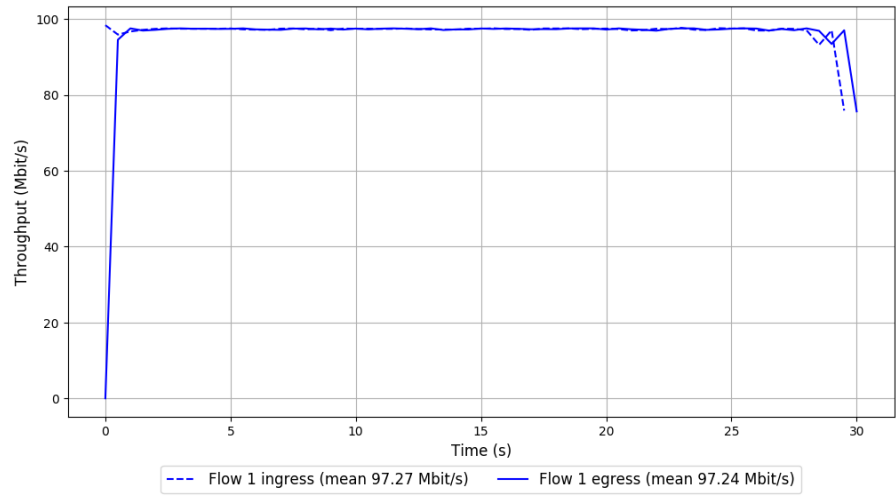
-- Flow 1:

Average throughput: 97.24 Mbit/s

95th percentile per-packet one-way delay: 3.484 ms

Loss rate: 0.03%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-06 15:10:22

End at: 2018-09-06 15:10:52

Local clock offset: -3.792 ms

Remote clock offset: 0.101 ms

Below is generated by plot.py at 2018-09-06 15:57:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.38 Mbit/s

95th percentile per-packet one-way delay: 4.634 ms

Loss rate: 0.02%

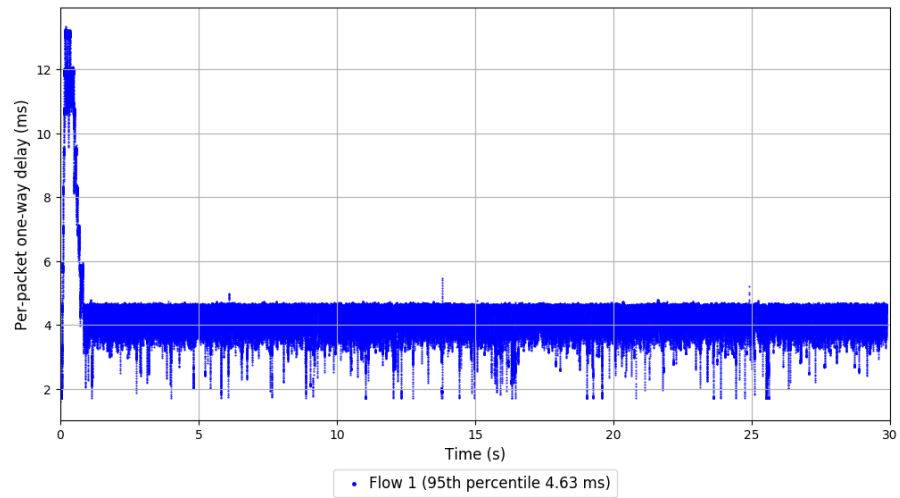
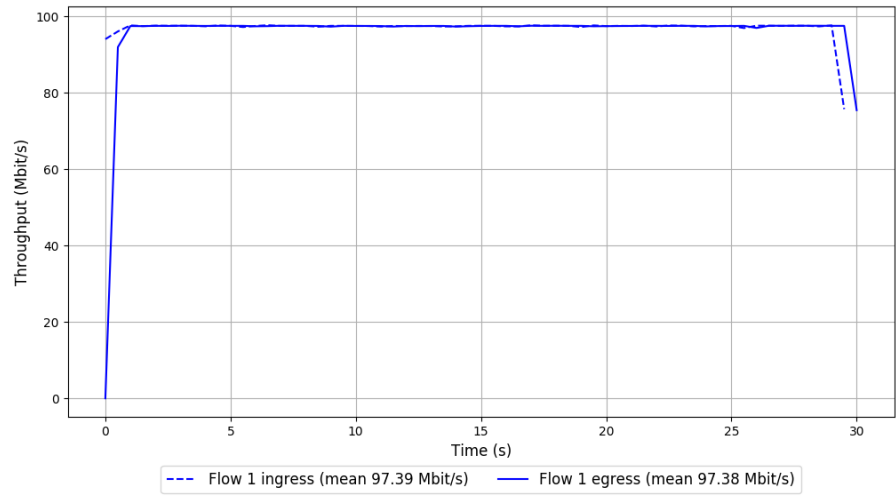
-- Flow 1:

Average throughput: 97.38 Mbit/s

95th percentile per-packet one-way delay: 4.634 ms

Loss rate: 0.02%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-06 15:30:34

End at: 2018-09-06 15:31:04

Local clock offset: -6.236 ms

Remote clock offset: 0.121 ms

Below is generated by plot.py at 2018-09-06 15:57:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.94 Mbit/s

95th percentile per-packet one-way delay: 3.691 ms

Loss rate: 0.01%

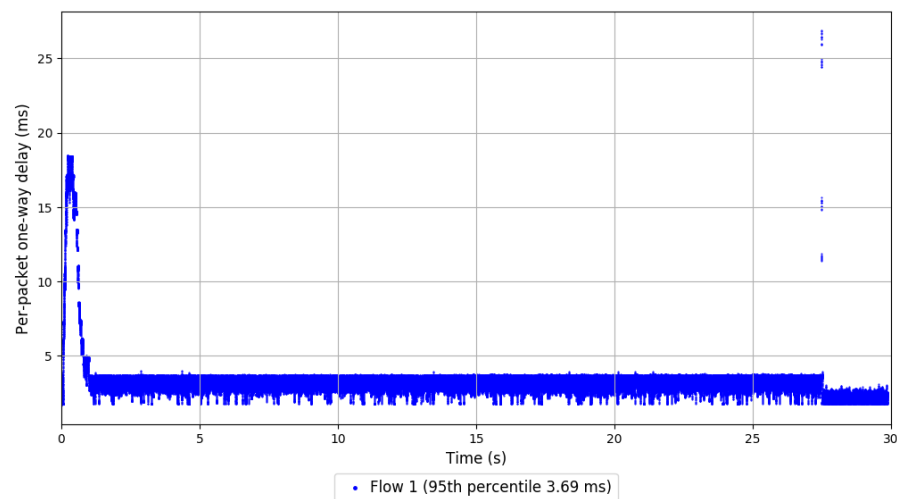
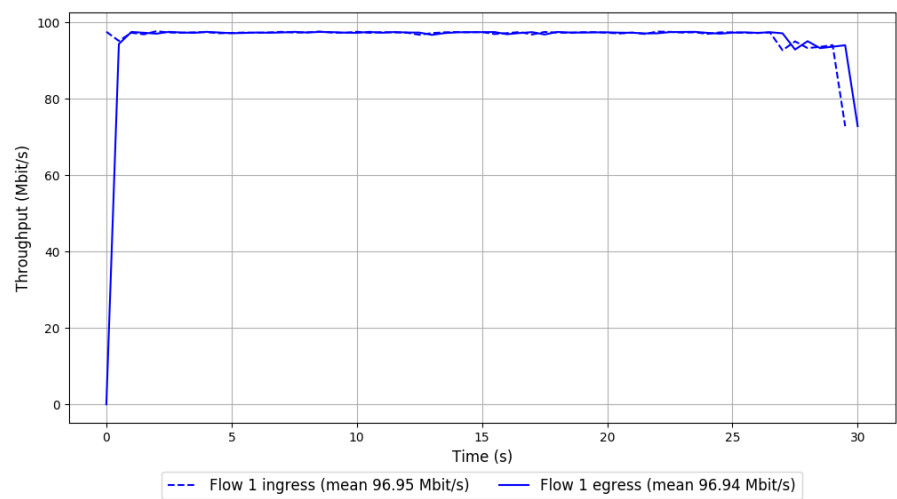
-- Flow 1:

Average throughput: 96.94 Mbit/s

95th percentile per-packet one-way delay: 3.691 ms

Loss rate: 0.01%

Run 5: Report of Indigo — Data Link

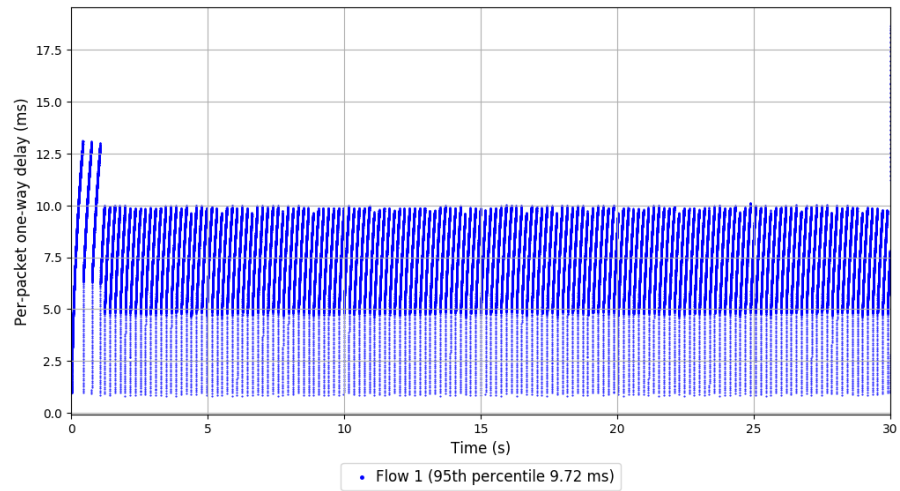
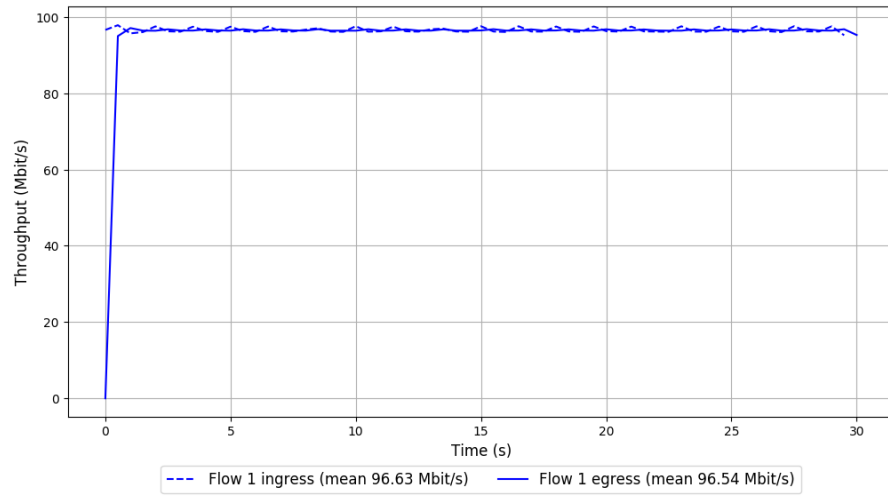


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 14:17:26
End at: 2018-09-06 14:17:56
Local clock offset: -4.922 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-09-06 15:57:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.54 Mbit/s
95th percentile per-packet one-way delay: 9.721 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 96.54 Mbit/s
95th percentile per-packet one-way delay: 9.721 ms
Loss rate: 0.09%
```


Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-06 14:37:44

End at: 2018-09-06 14:38:14

Local clock offset: -4.375 ms

Remote clock offset: 0.02 ms

Below is generated by plot.py at 2018-09-06 15:57:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.55 Mbit/s

95th percentile per-packet one-way delay: 10.372 ms

Loss rate: 0.10%

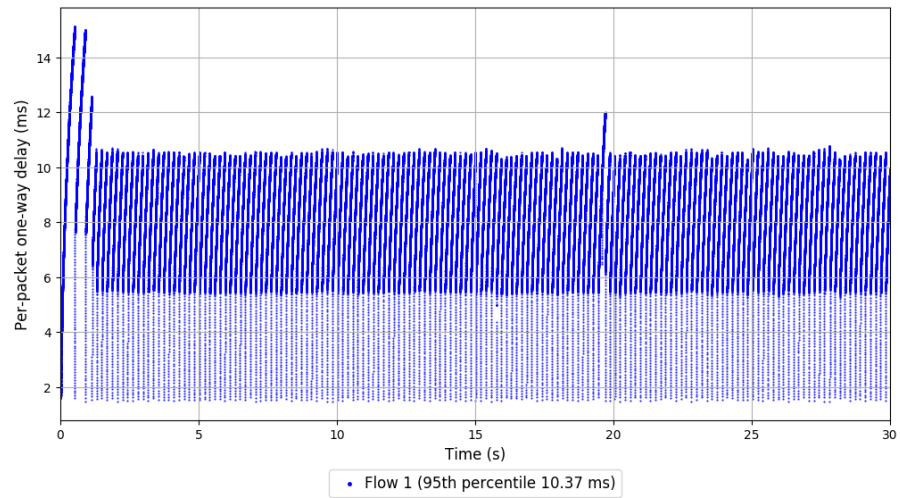
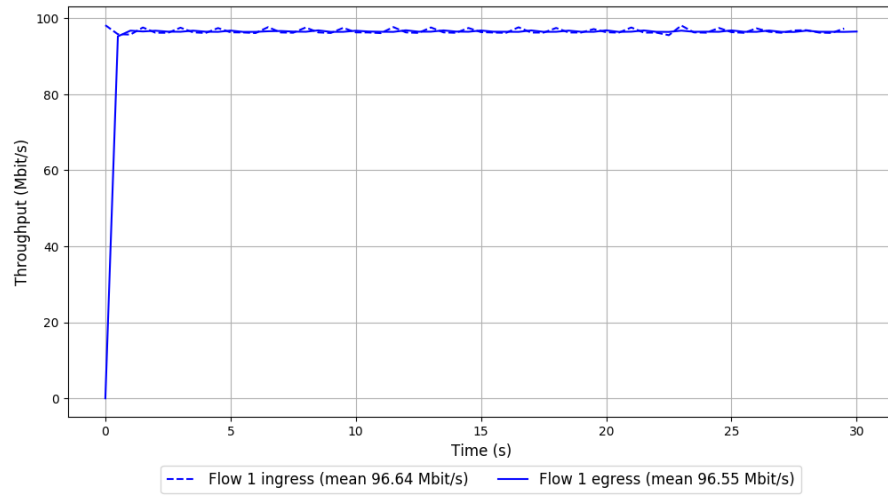
-- Flow 1:

Average throughput: 96.55 Mbit/s

95th percentile per-packet one-way delay: 10.372 ms

Loss rate: 0.10%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-06 14:58:06

End at: 2018-09-06 14:58:36

Local clock offset: -4.777 ms

Remote clock offset: 0.028 ms

Below is generated by plot.py at 2018-09-06 15:57:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.48 Mbit/s

95th percentile per-packet one-way delay: 9.696 ms

Loss rate: 0.10%

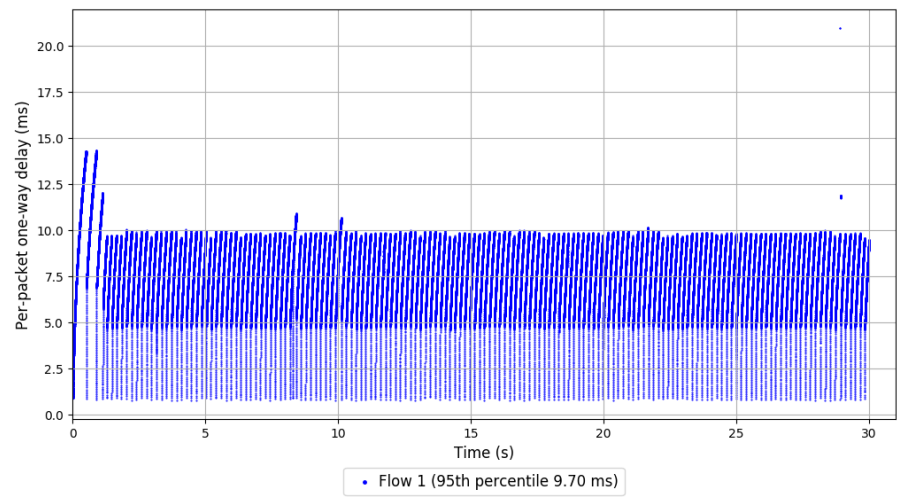
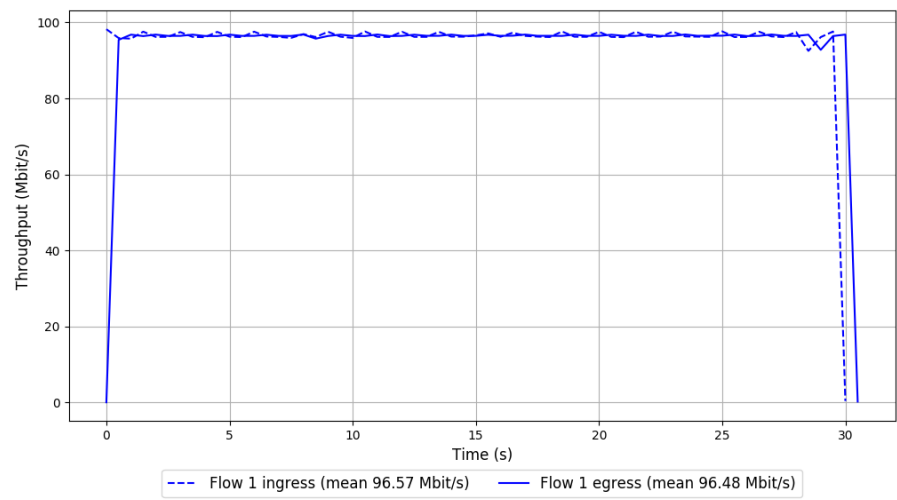
-- Flow 1:

Average throughput: 96.48 Mbit/s

95th percentile per-packet one-way delay: 9.696 ms

Loss rate: 0.10%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-06 15:18:18

End at: 2018-09-06 15:18:48

Local clock offset: -5.348 ms

Remote clock offset: 0.143 ms

Below is generated by plot.py at 2018-09-06 15:57:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 9.501 ms

Loss rate: 0.09%

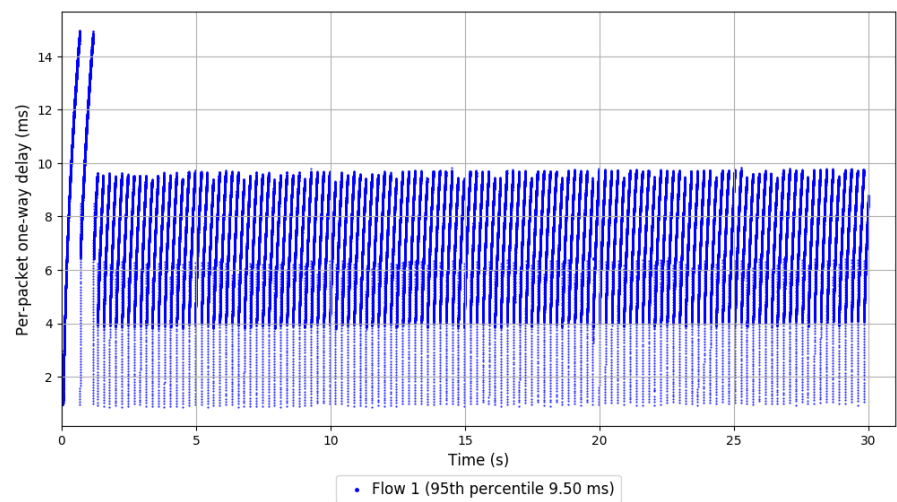
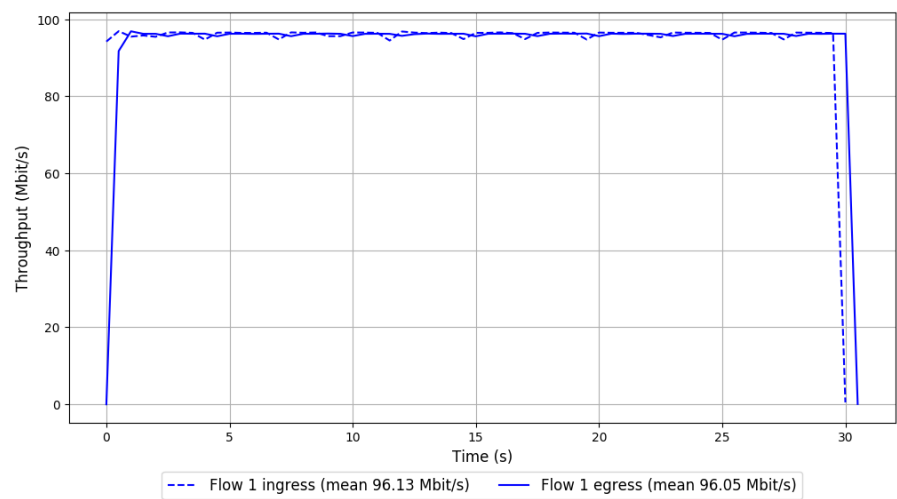
-- Flow 1:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 9.501 ms

Loss rate: 0.09%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-06 15:38:28

End at: 2018-09-06 15:38:58

Local clock offset: -7.461 ms

Remote clock offset: 0.179 ms

Below is generated by plot.py at 2018-09-06 15:57:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.57 Mbit/s

95th percentile per-packet one-way delay: 9.701 ms

Loss rate: 0.08%

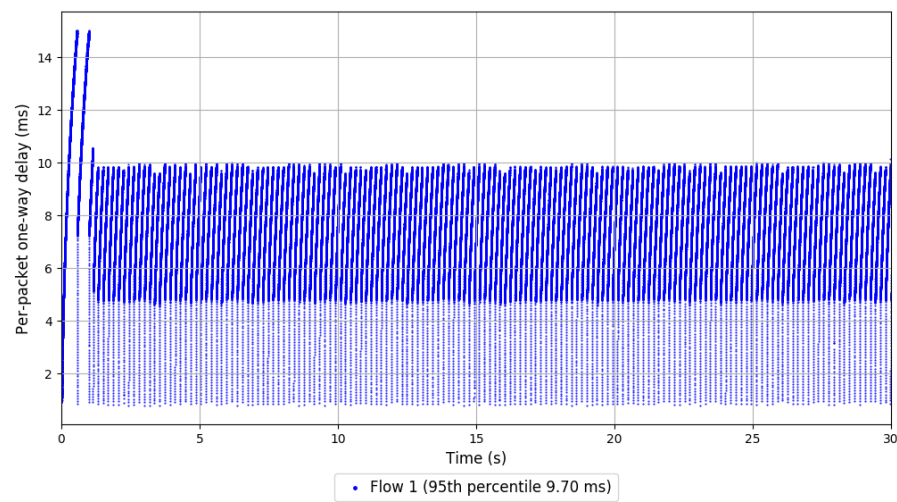
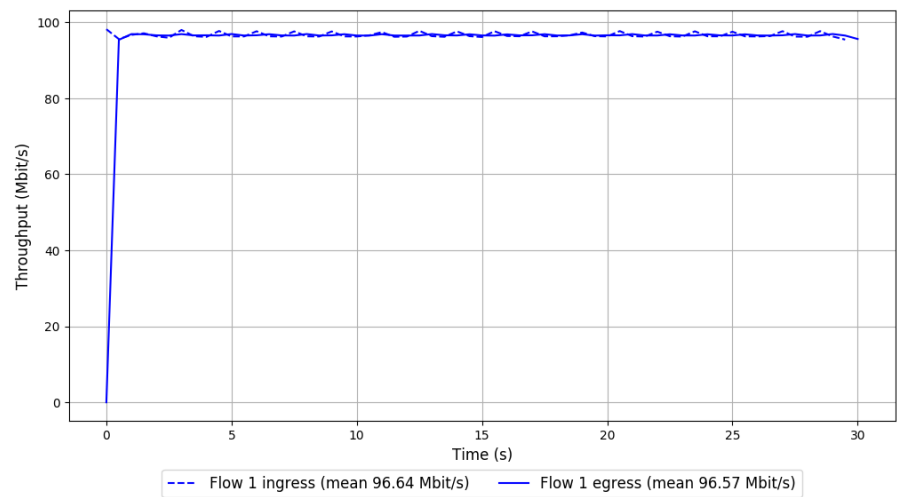
-- Flow 1:

Average throughput: 96.57 Mbit/s

95th percentile per-packet one-way delay: 9.701 ms

Loss rate: 0.08%

Run 5: Report of LEDBAT — Data Link

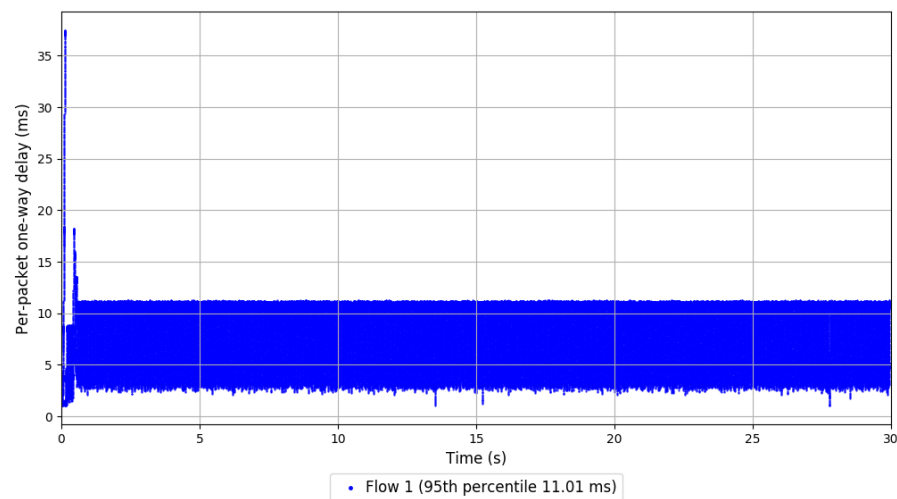
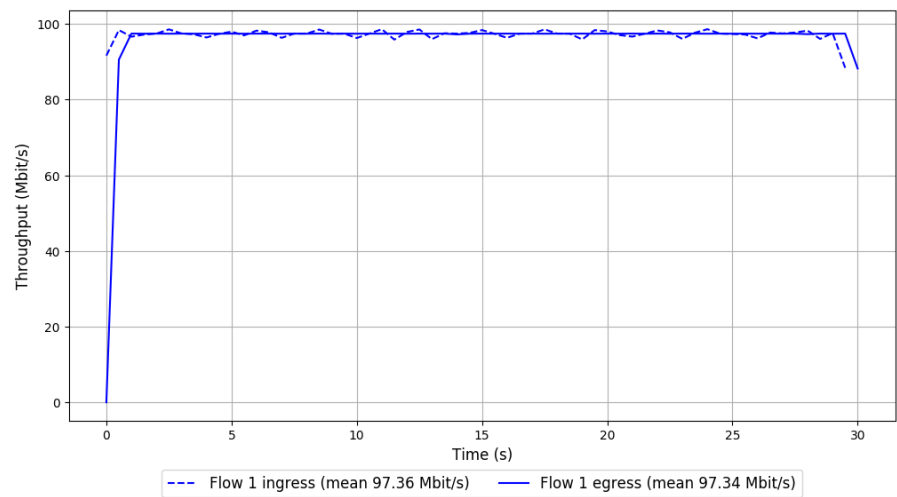


Run 1: Statistics of Indigo-Muses

Start at: 2018-09-06 14:10:38
End at: 2018-09-06 14:11:08
Local clock offset: -4.919 ms
Remote clock offset: -0.217 ms

Below is generated by plot.py at 2018-09-06 15:58:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.34 Mbit/s
95th percentile per-packet one-way delay: 11.005 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 97.34 Mbit/s
95th percentile per-packet one-way delay: 11.005 ms
Loss rate: 0.02%

Run 1: Report of Indigo-Muses — Data Link

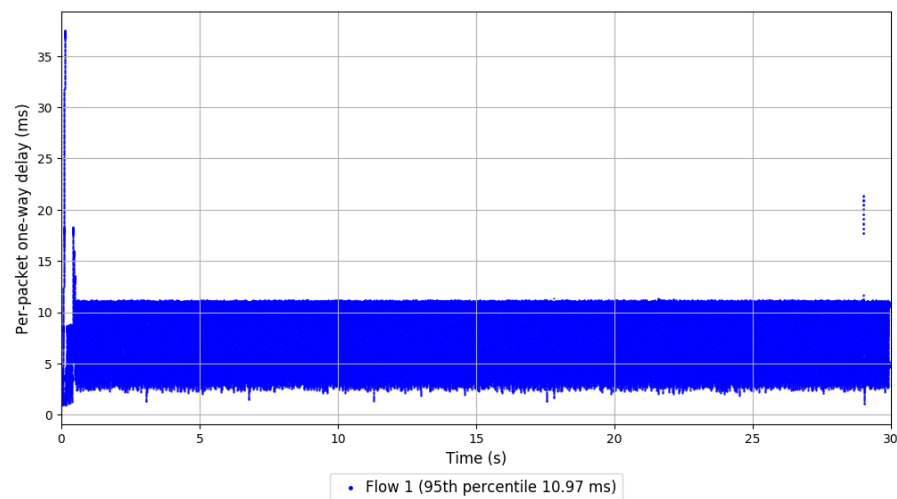
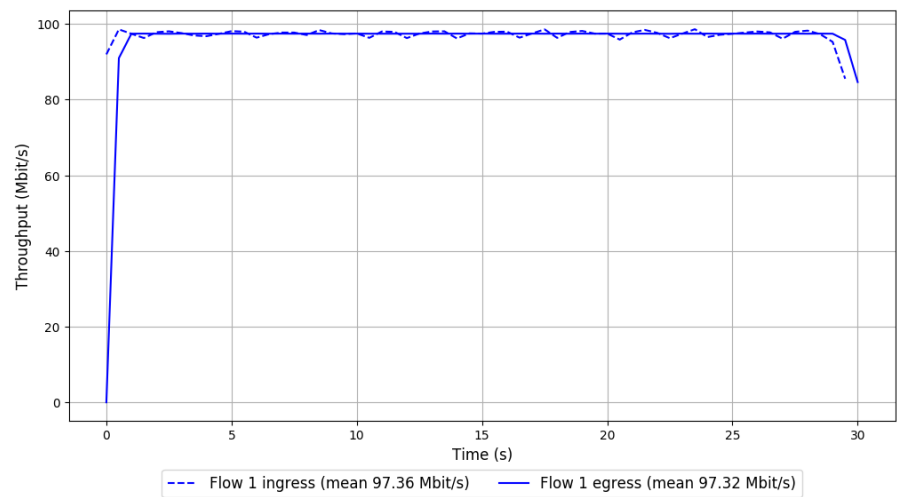


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-06 14:30:55
End at: 2018-09-06 14:31:25
Local clock offset: -5.055 ms
Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-09-06 15:58:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 10.971 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 10.971 ms
Loss rate: 0.04%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-06 14:51:18

End at: 2018-09-06 14:51:48

Local clock offset: -4.106 ms

Remote clock offset: 0.034 ms

Below is generated by plot.py at 2018-09-06 15:58:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.35 Mbit/s

95th percentile per-packet one-way delay: 11.665 ms

Loss rate: 0.04%

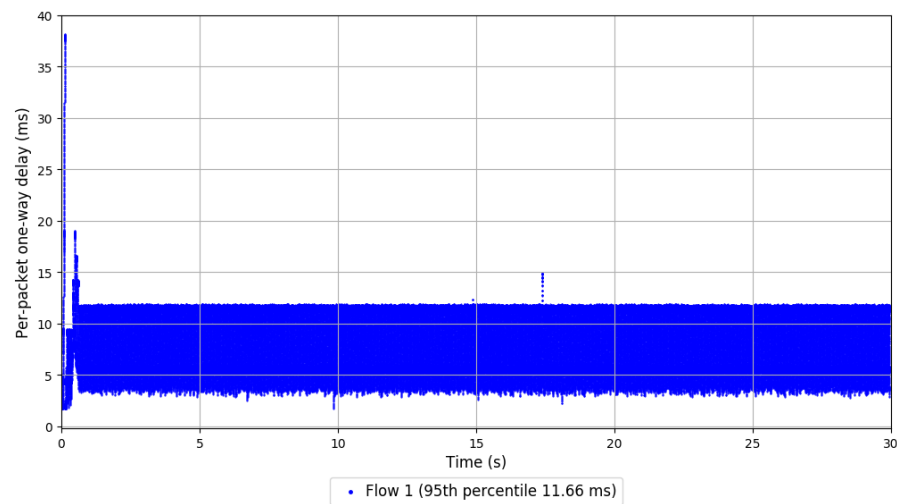
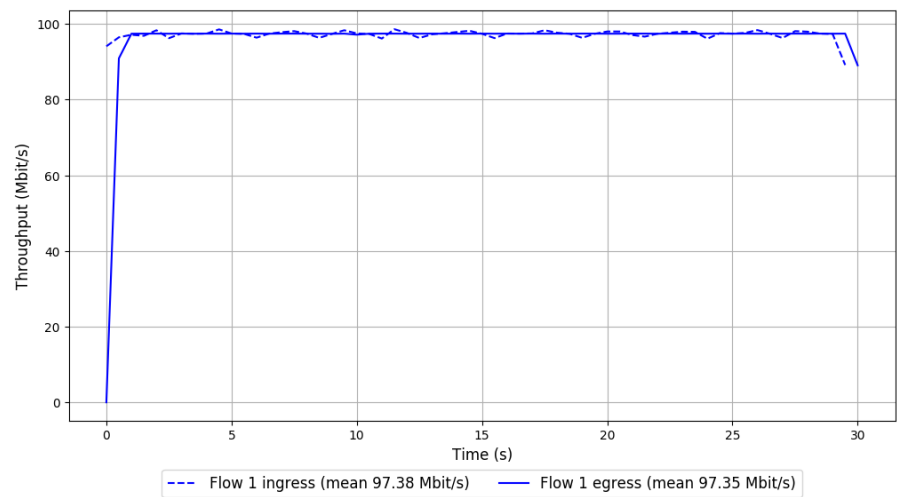
-- Flow 1:

Average throughput: 97.35 Mbit/s

95th percentile per-packet one-way delay: 11.665 ms

Loss rate: 0.04%

Run 3: Report of Indigo-Muses — Data Link

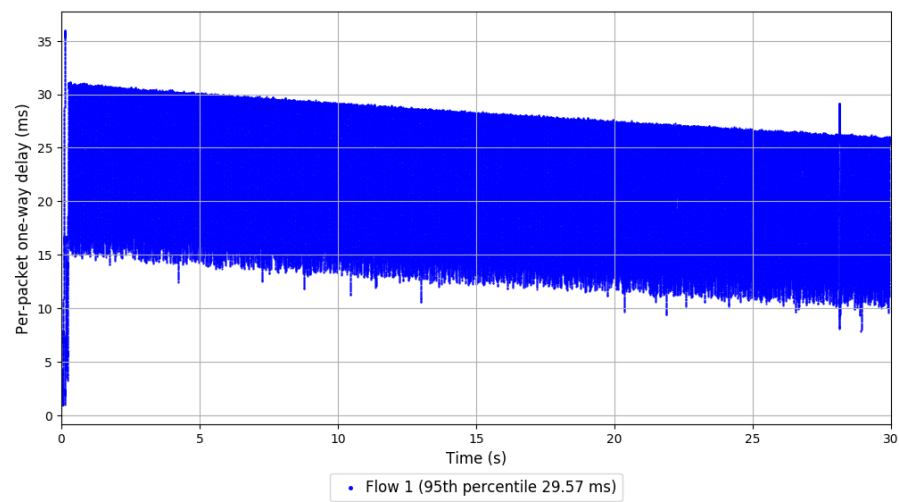
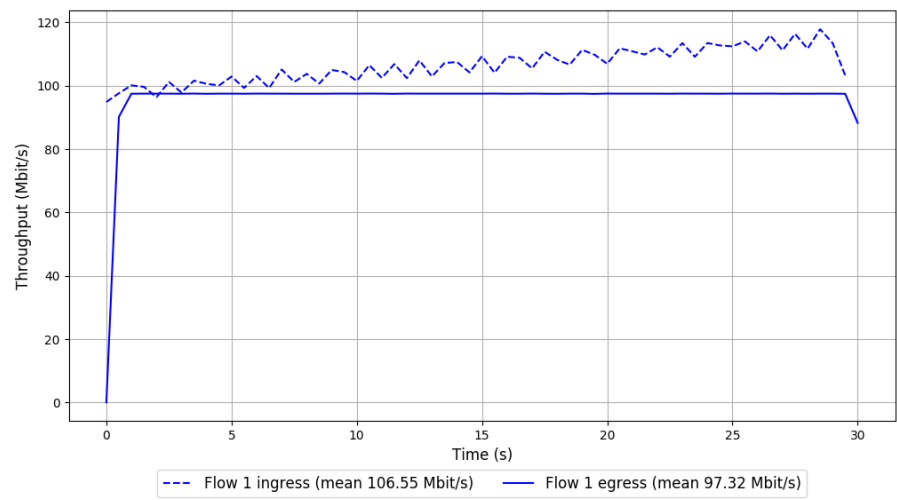


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-06 15:11:31
End at: 2018-09-06 15:12:01
Local clock offset: -4.603 ms
Remote clock offset: -0.007 ms

Below is generated by plot.py at 2018-09-06 15:58:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 29.575 ms
Loss rate: 8.63%
-- Flow 1:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 29.575 ms
Loss rate: 8.63%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-06 15:31:43

End at: 2018-09-06 15:32:13

Local clock offset: -7.139 ms

Remote clock offset: 0.117 ms

Below is generated by plot.py at 2018-09-06 15:58:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.58 Mbit/s

95th percentile per-packet one-way delay: 1.142 ms

Loss rate: 0.01%

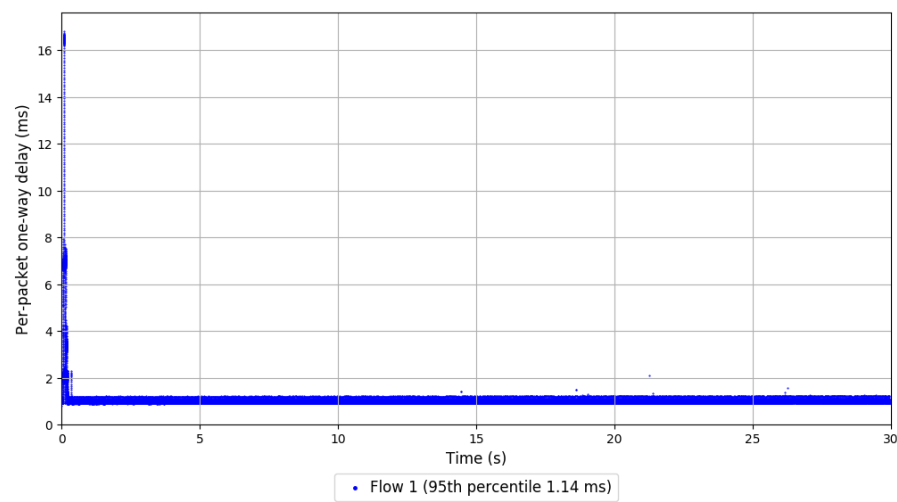
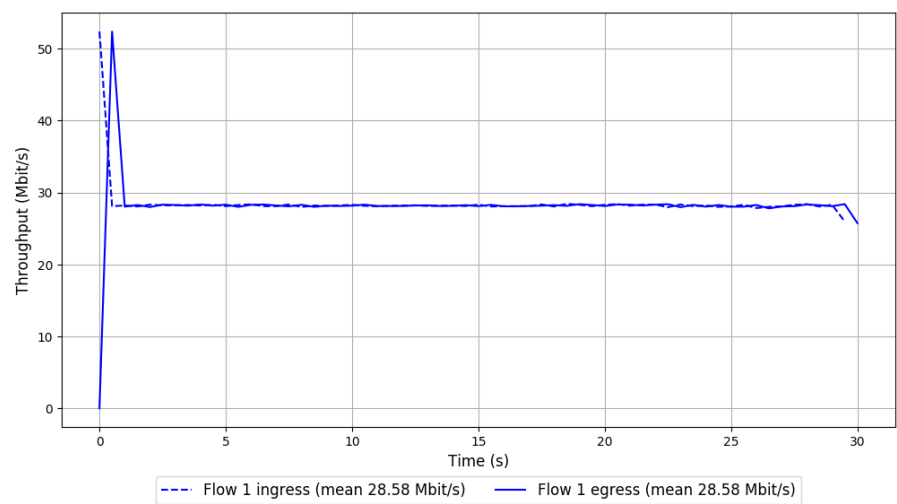
-- Flow 1:

Average throughput: 28.58 Mbit/s

95th percentile per-packet one-way delay: 1.142 ms

Loss rate: 0.01%

Run 5: Report of Indigo-Muses — Data Link

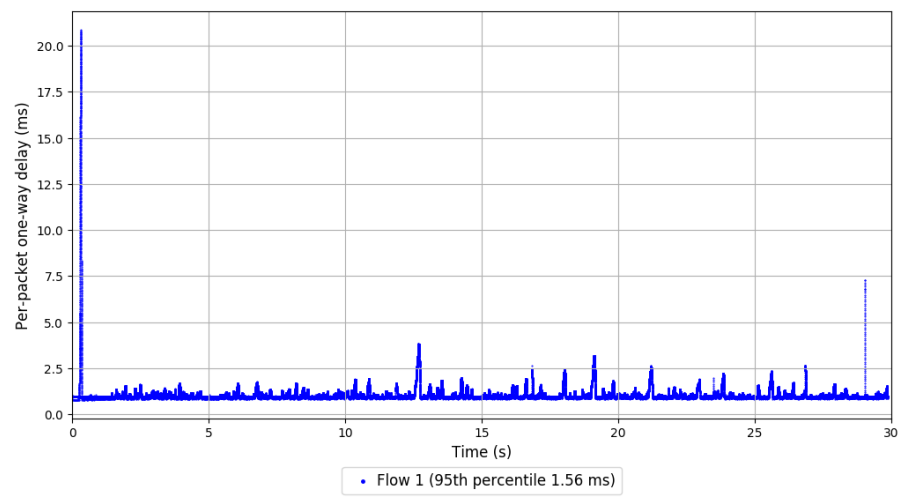
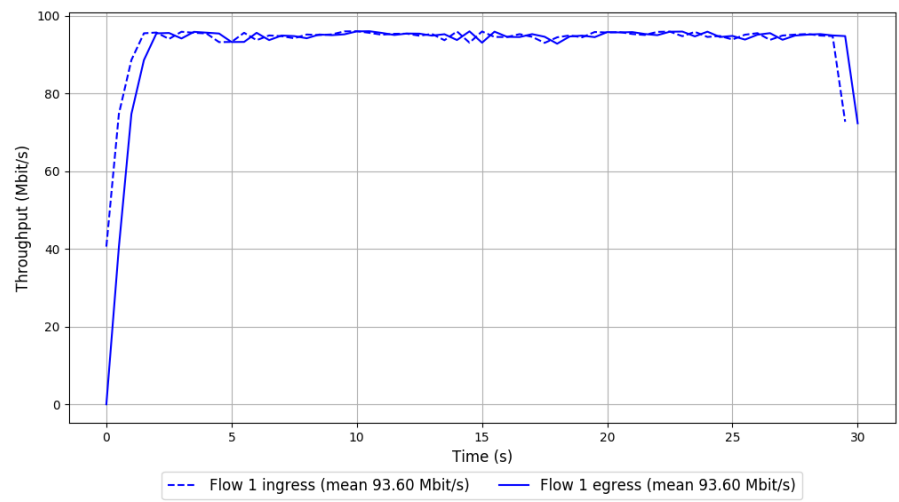


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 14:15:08
End at: 2018-09-06 14:15:38
Local clock offset: -4.877 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-09-06 15:59:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.60 Mbit/s
95th percentile per-packet one-way delay: 1.563 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 93.60 Mbit/s
95th percentile per-packet one-way delay: 1.563 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-06 14:35:26

End at: 2018-09-06 14:35:56

Local clock offset: -4.3 ms

Remote clock offset: -0.036 ms

Below is generated by plot.py at 2018-09-06 15:59:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.44 Mbit/s

95th percentile per-packet one-way delay: 2.683 ms

Loss rate: 0.01%

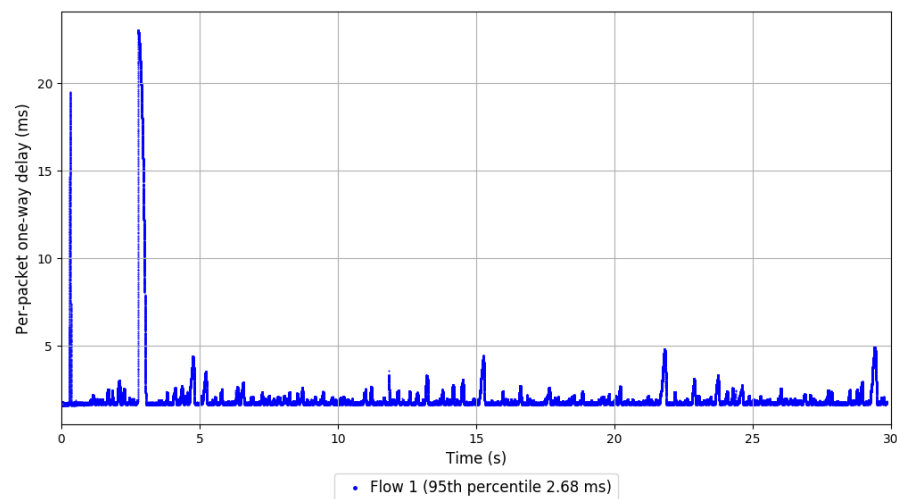
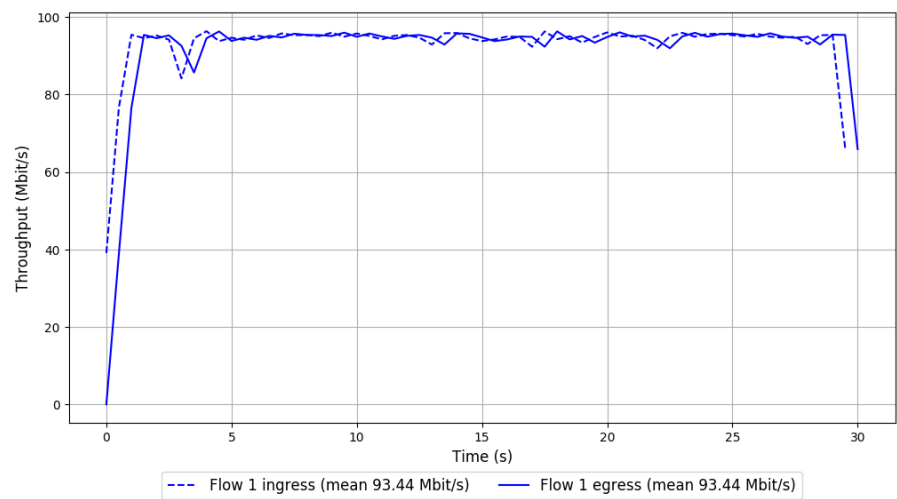
-- Flow 1:

Average throughput: 93.44 Mbit/s

95th percentile per-packet one-way delay: 2.683 ms

Loss rate: 0.01%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-06 14:55:49

End at: 2018-09-06 14:56:19

Local clock offset: -4.807 ms

Remote clock offset: 0.041 ms

Below is generated by plot.py at 2018-09-06 15:59:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.16 Mbit/s

95th percentile per-packet one-way delay: 1.614 ms

Loss rate: 0.01%

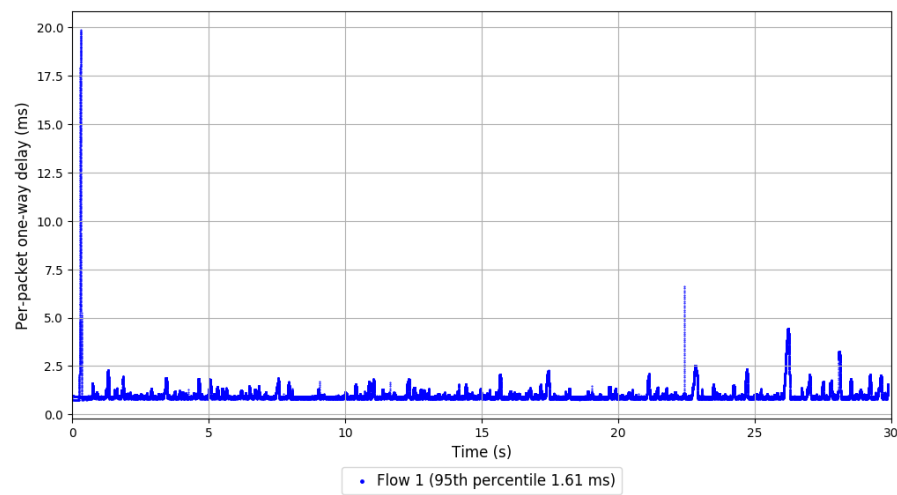
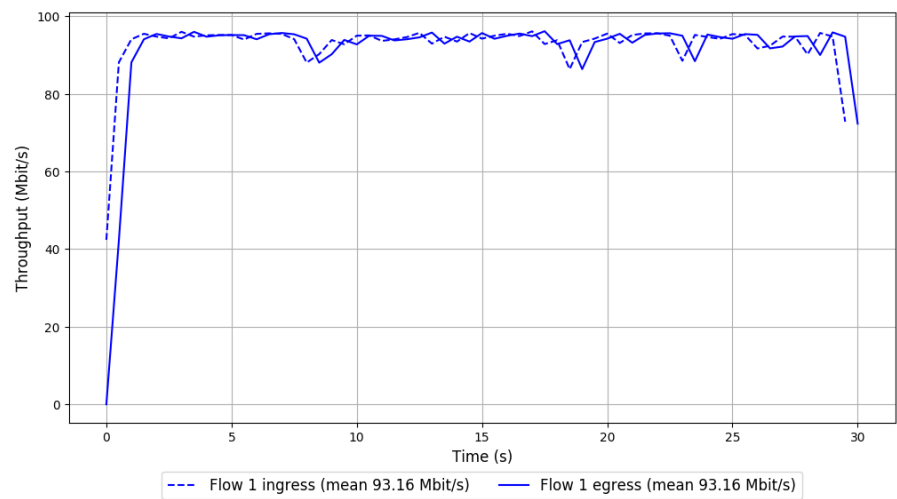
-- Flow 1:

Average throughput: 93.16 Mbit/s

95th percentile per-packet one-way delay: 1.614 ms

Loss rate: 0.01%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-06 15:16:01

End at: 2018-09-06 15:16:31

Local clock offset: -3.917 ms

Remote clock offset: 0.102 ms

Below is generated by plot.py at 2018-09-06 15:59:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.63 Mbit/s

95th percentile per-packet one-way delay: 3.229 ms

Loss rate: 0.01%

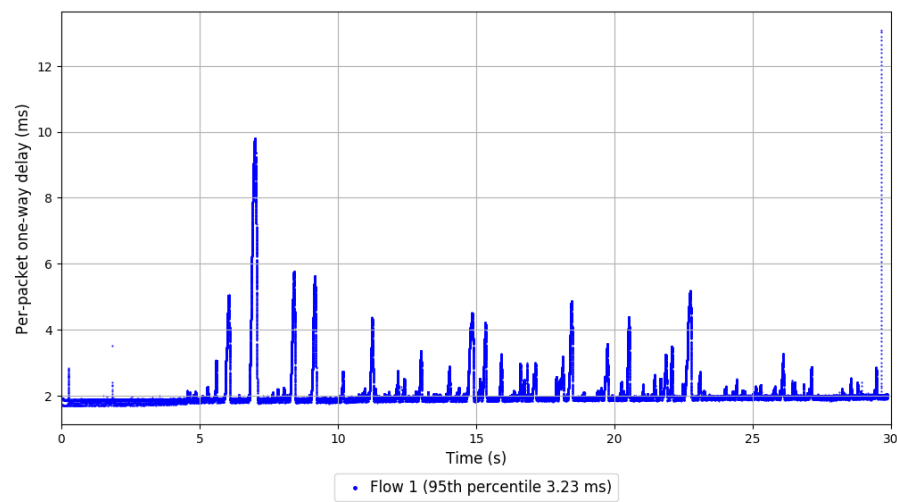
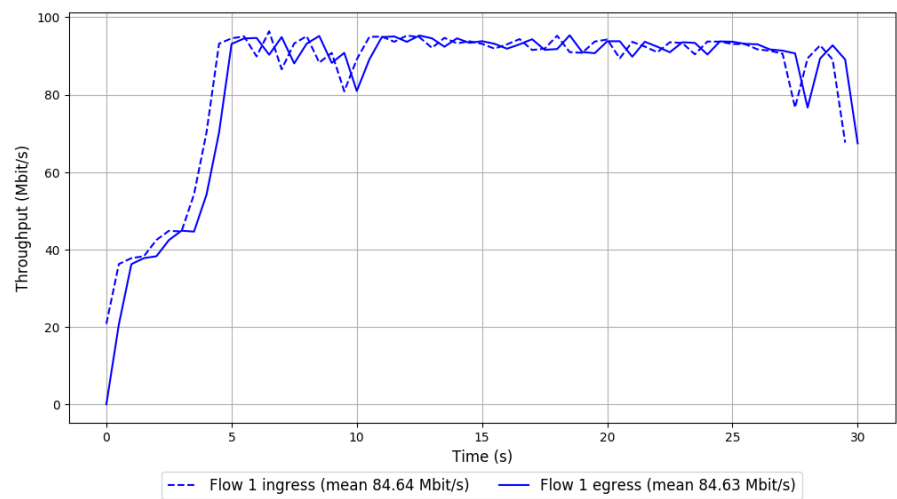
-- Flow 1:

Average throughput: 84.63 Mbit/s

95th percentile per-packet one-way delay: 3.229 ms

Loss rate: 0.01%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-06 15:36:10

End at: 2018-09-06 15:36:40

Local clock offset: -7.41 ms

Remote clock offset: 0.1 ms

Below is generated by plot.py at 2018-09-06 15:59:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 93.25 Mbit/s

95th percentile per-packet one-way delay: 1.654 ms

Loss rate: 0.01%

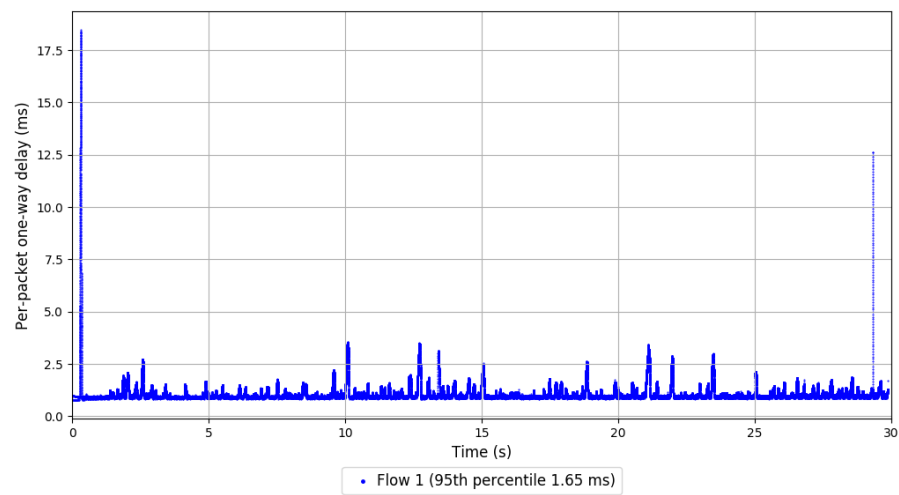
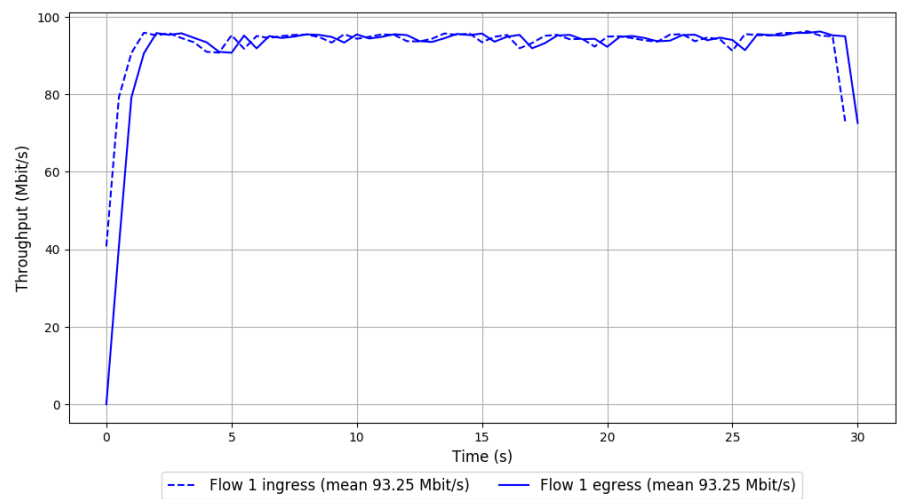
-- Flow 1:

Average throughput: 93.25 Mbit/s

95th percentile per-packet one-way delay: 1.654 ms

Loss rate: 0.01%

Run 5: Report of PCC-Allegro — Data Link

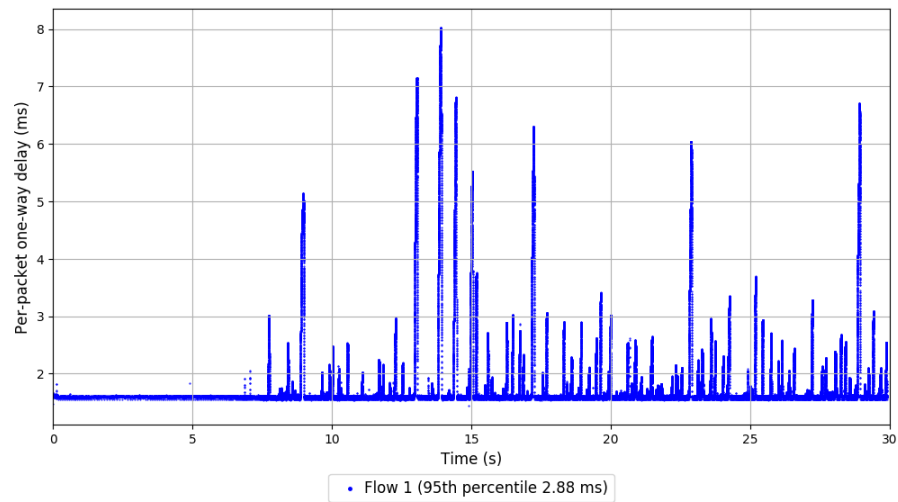
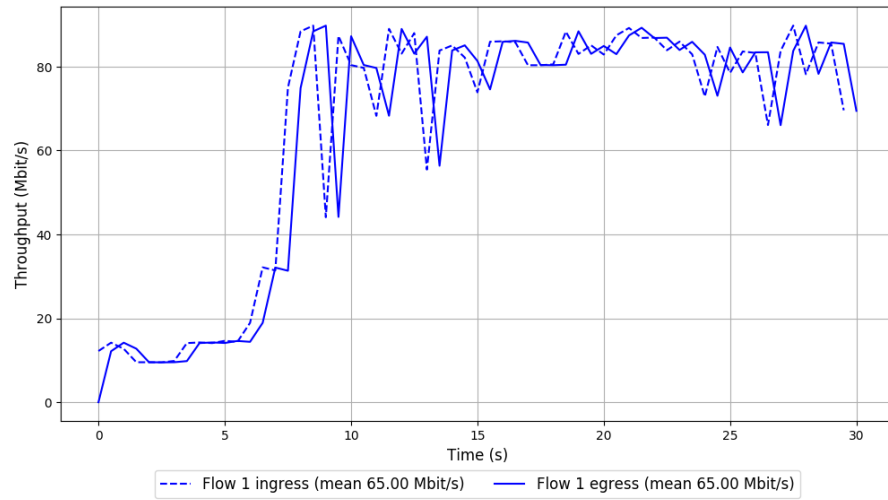


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-06 14:26:21
End at: 2018-09-06 14:26:51
Local clock offset: -4.321 ms
Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2018-09-06 15:59:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.00 Mbit/s
95th percentile per-packet one-way delay: 2.879 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 65.00 Mbit/s
95th percentile per-packet one-way delay: 2.879 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-06 14:46:43

End at: 2018-09-06 14:47:13

Local clock offset: -4.254 ms

Remote clock offset: 0.108 ms

Below is generated by plot.py at 2018-09-06 16:00:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.66 Mbit/s

95th percentile per-packet one-way delay: 119.975 ms

Loss rate: 0.24%

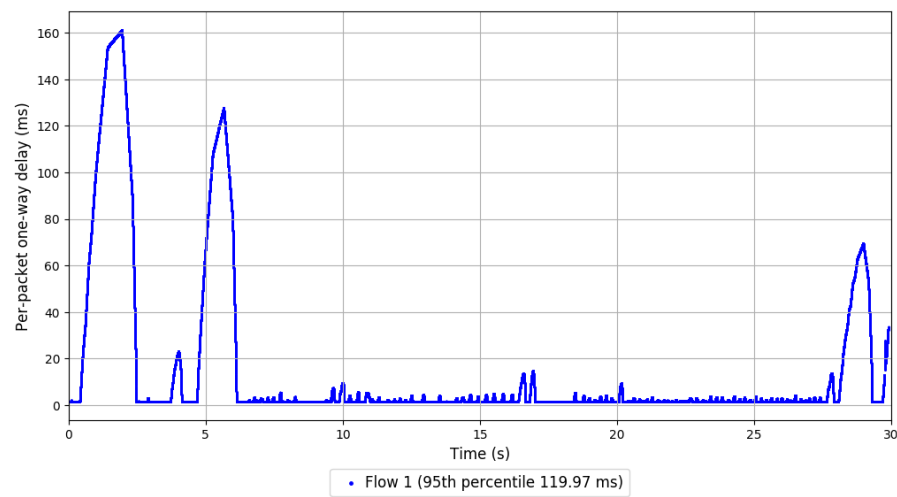
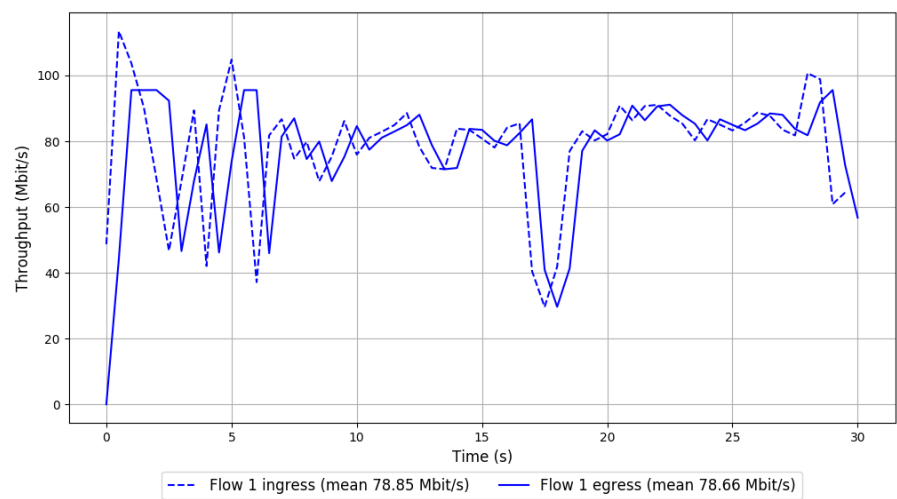
-- Flow 1:

Average throughput: 78.66 Mbit/s

95th percentile per-packet one-way delay: 119.975 ms

Loss rate: 0.24%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-06 15:07:01

End at: 2018-09-06 15:07:31

Local clock offset: -3.824 ms

Remote clock offset: 0.107 ms

Below is generated by plot.py at 2018-09-06 16:00:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.19 Mbit/s

95th percentile per-packet one-way delay: 1.720 ms

Loss rate: 0.01%

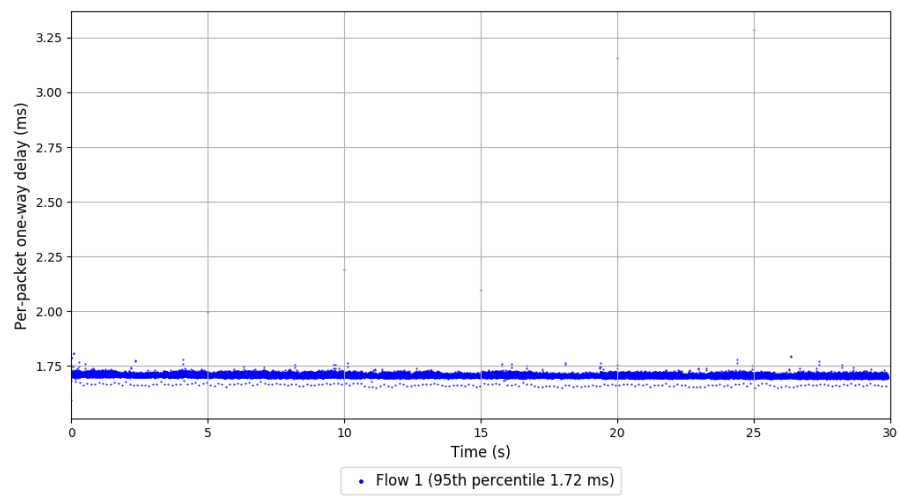
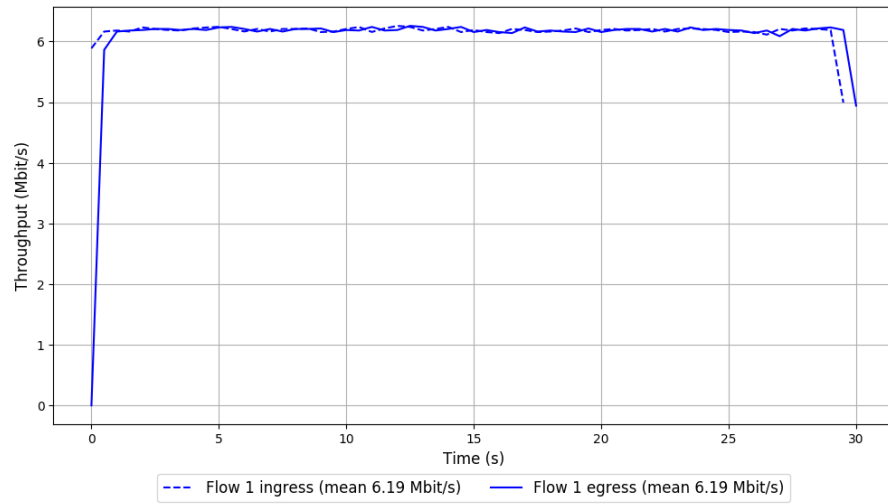
-- Flow 1:

Average throughput: 6.19 Mbit/s

95th percentile per-packet one-way delay: 1.720 ms

Loss rate: 0.01%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-06 15:27:14

End at: 2018-09-06 15:27:44

Local clock offset: -5.941 ms

Remote clock offset: 0.071 ms

Below is generated by plot.py at 2018-09-06 16:00:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.87 Mbit/s

95th percentile per-packet one-way delay: 1.874 ms

Loss rate: 0.01%

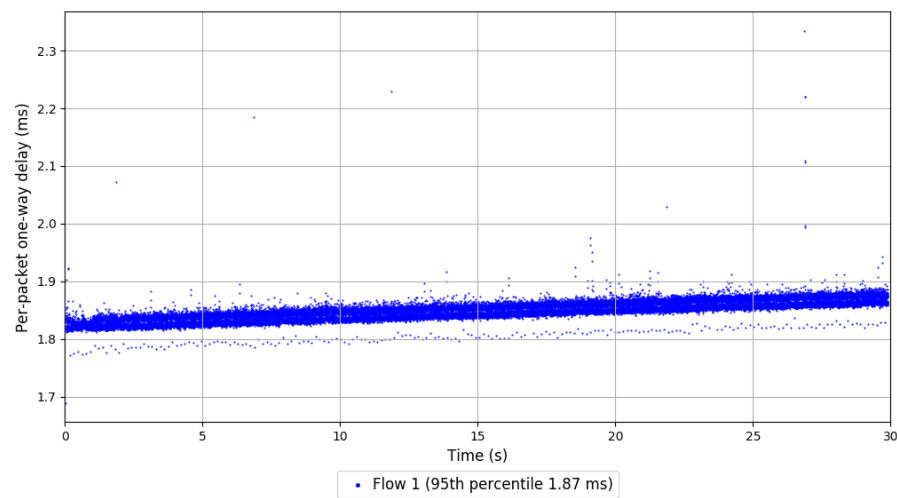
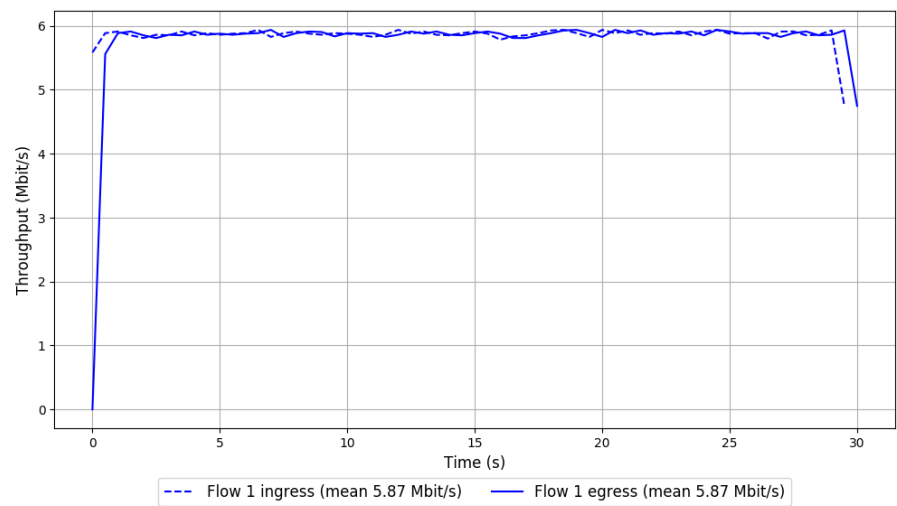
-- Flow 1:

Average throughput: 5.87 Mbit/s

95th percentile per-packet one-way delay: 1.874 ms

Loss rate: 0.01%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-06 15:47:23

End at: 2018-09-06 15:47:53

Local clock offset: -6.944 ms

Remote clock offset: 0.146 ms

Below is generated by plot.py at 2018-09-06 16:00:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.12 Mbit/s

95th percentile per-packet one-way delay: 196.598 ms

Loss rate: 0.16%

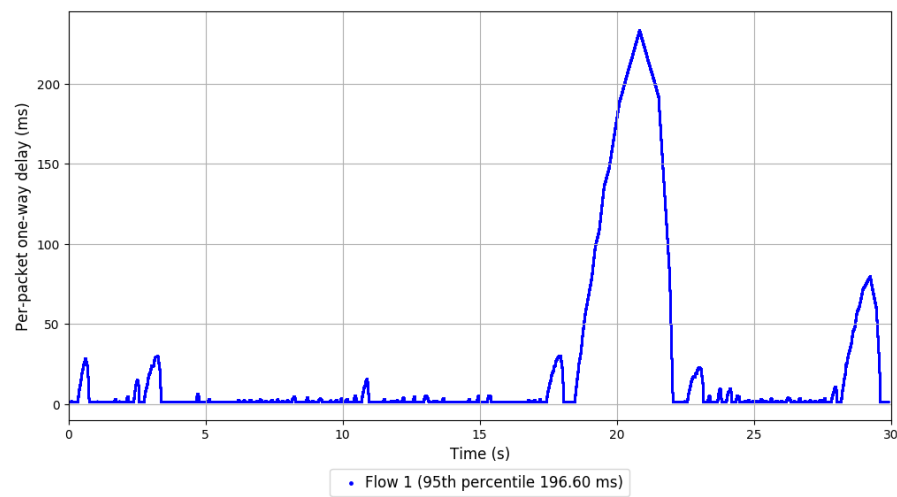
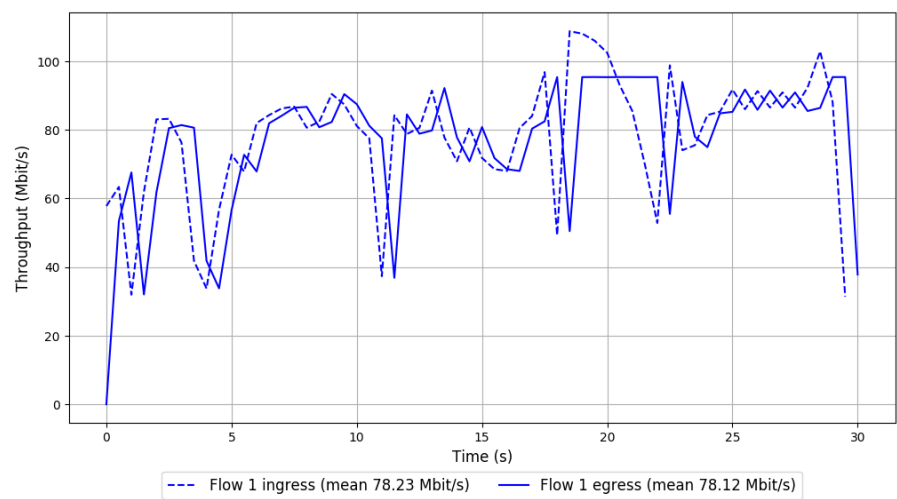
-- Flow 1:

Average throughput: 78.12 Mbit/s

95th percentile per-packet one-way delay: 196.598 ms

Loss rate: 0.16%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 14:27:30

End at: 2018-09-06 14:28:00

Local clock offset: -5.034 ms

Remote clock offset: -0.094 ms

Below is generated by plot.py at 2018-09-06 16:00:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.74 Mbit/s

95th percentile per-packet one-way delay: 6.783 ms

Loss rate: 0.02%

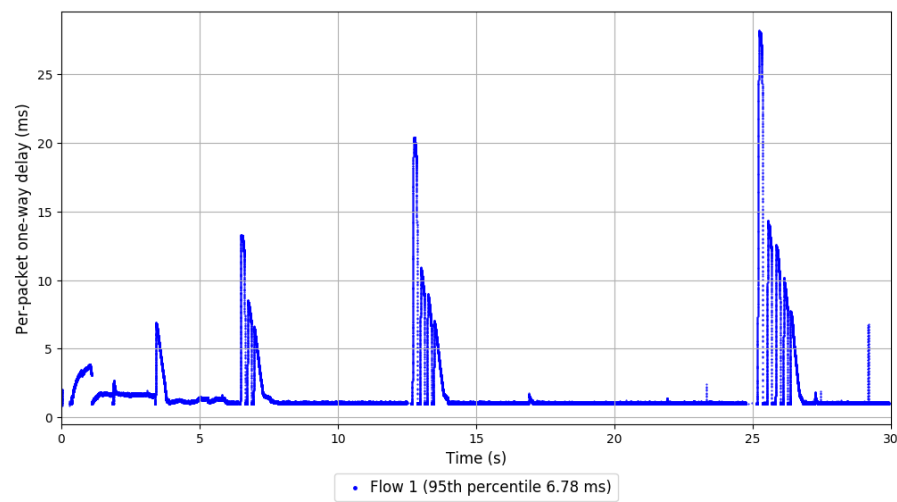
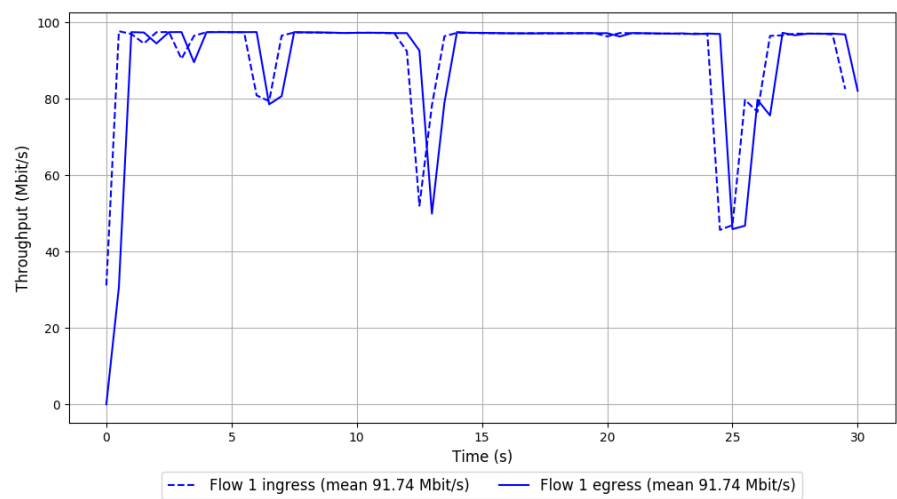
-- Flow 1:

Average throughput: 91.74 Mbit/s

95th percentile per-packet one-way delay: 6.783 ms

Loss rate: 0.02%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-06 14:47:53

End at: 2018-09-06 14:48:23

Local clock offset: -4.947 ms

Remote clock offset: 0.122 ms

Below is generated by plot.py at 2018-09-06 16:00:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.66 Mbit/s

95th percentile per-packet one-way delay: 6.917 ms

Loss rate: 0.02%

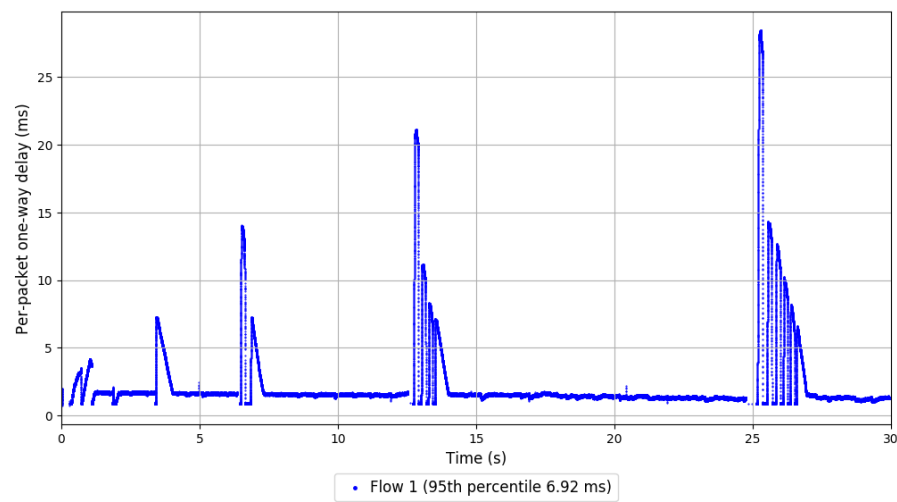
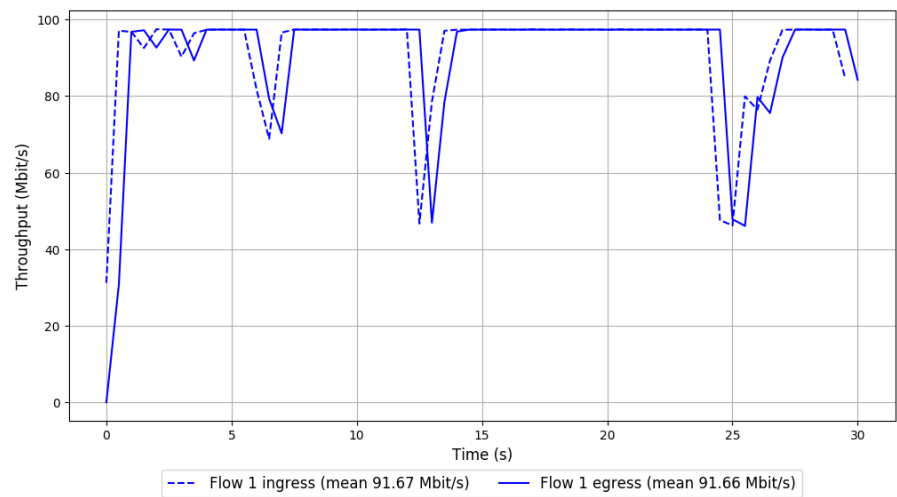
-- Flow 1:

Average throughput: 91.66 Mbit/s

95th percentile per-packet one-way delay: 6.917 ms

Loss rate: 0.02%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-06 15:08:06

End at: 2018-09-06 15:08:36

Local clock offset: -3.813 ms

Remote clock offset: 0.072 ms

Below is generated by plot.py at 2018-09-06 16:00:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.54 Mbit/s

95th percentile per-packet one-way delay: 9.069 ms

Loss rate: 0.02%

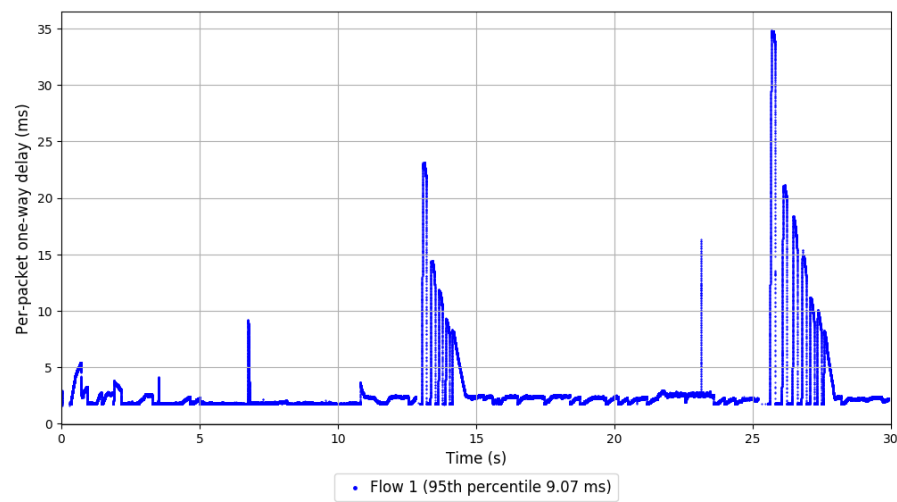
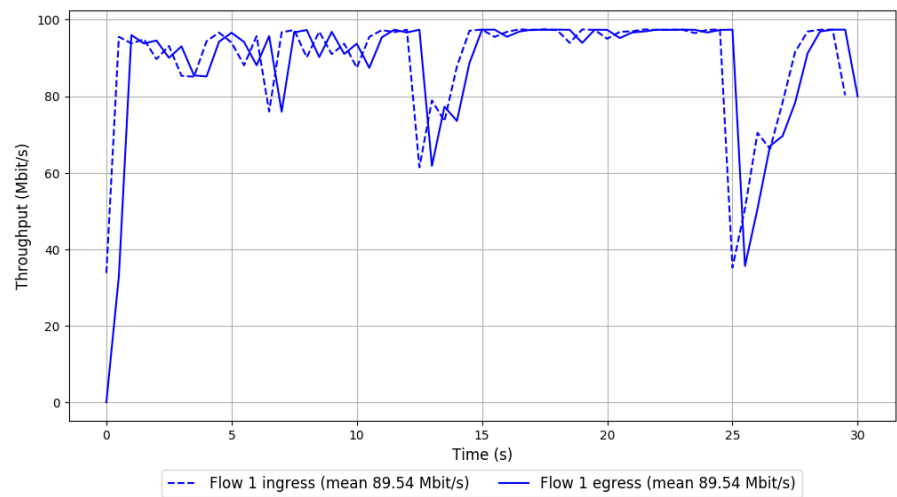
-- Flow 1:

Average throughput: 89.54 Mbit/s

95th percentile per-packet one-way delay: 9.069 ms

Loss rate: 0.02%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-06 15:28:18

End at: 2018-09-06 15:28:48

Local clock offset: -6.032 ms

Remote clock offset: 0.153 ms

Below is generated by plot.py at 2018-09-06 16:00:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.24 Mbit/s

95th percentile per-packet one-way delay: 7.731 ms

Loss rate: 0.02%

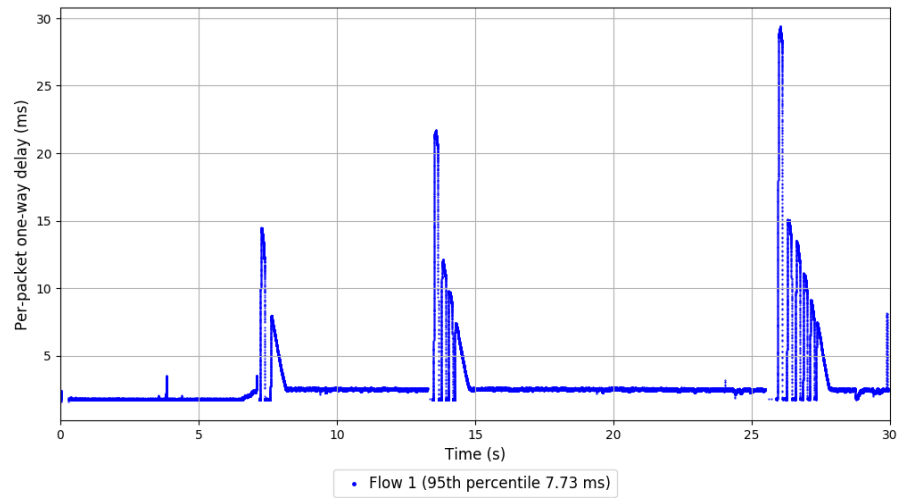
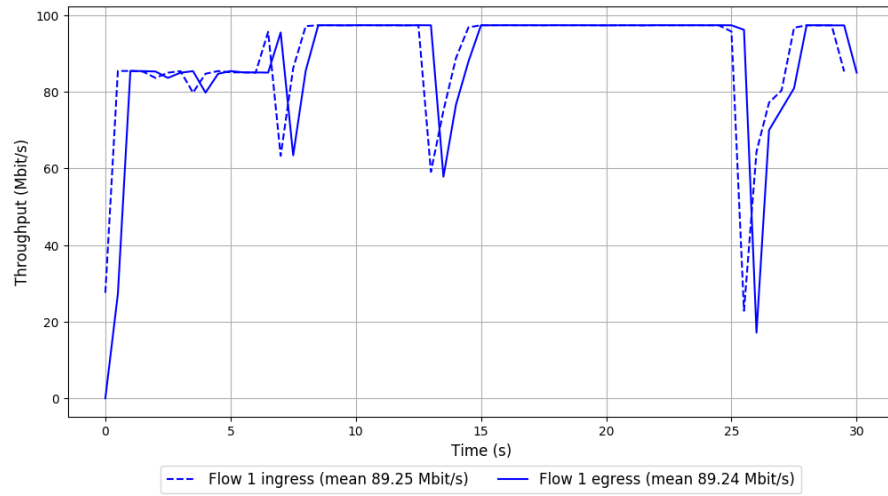
-- Flow 1:

Average throughput: 89.24 Mbit/s

95th percentile per-packet one-way delay: 7.731 ms

Loss rate: 0.02%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-06 15:48:33

End at: 2018-09-06 15:49:03

Local clock offset: -6.998 ms

Remote clock offset: 0.097 ms

Below is generated by plot.py at 2018-09-06 16:00:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.73 Mbit/s

95th percentile per-packet one-way delay: 2.934 ms

Loss rate: 0.01%

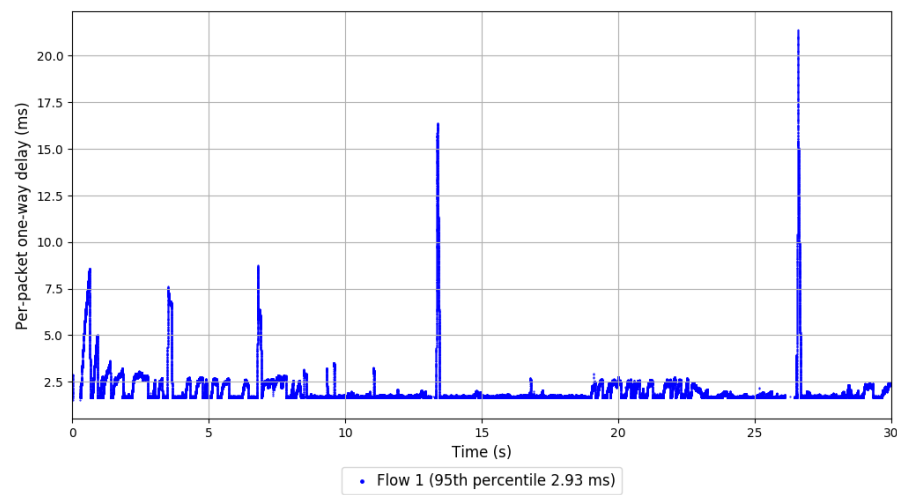
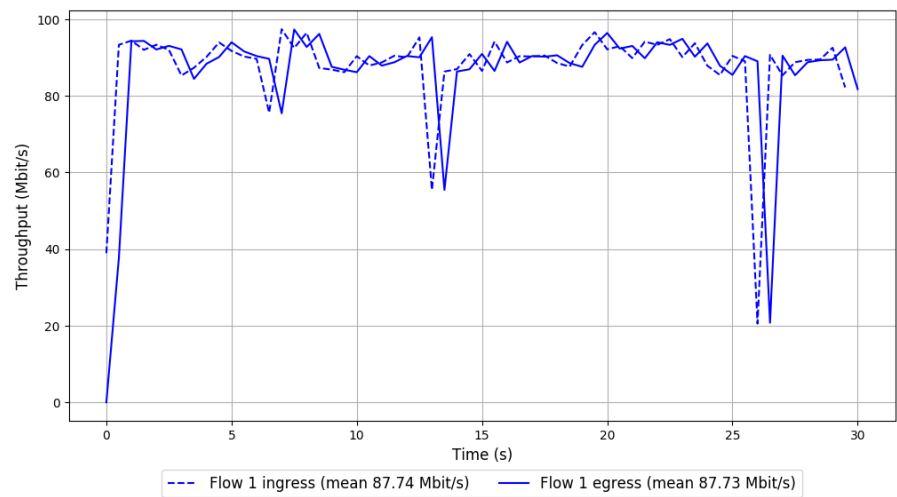
-- Flow 1:

Average throughput: 87.73 Mbit/s

95th percentile per-packet one-way delay: 2.934 ms

Loss rate: 0.01%

Run 5: Report of QUIC Cubic — Data Link

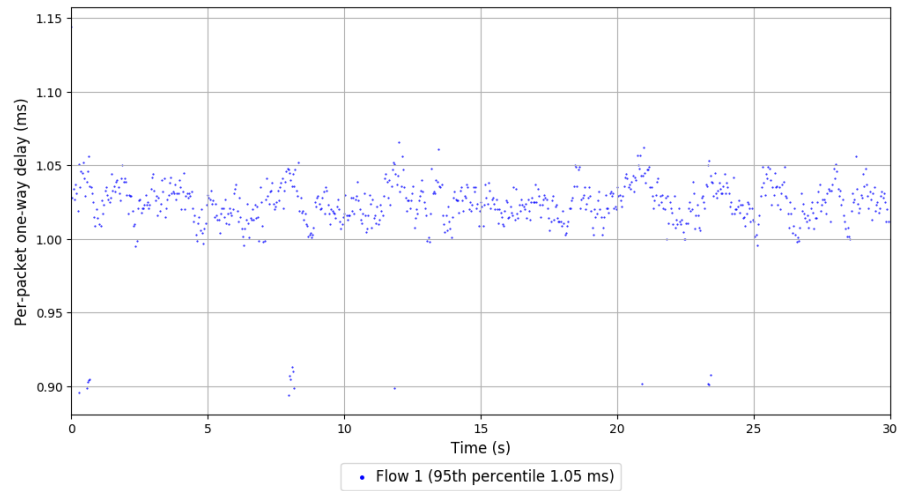
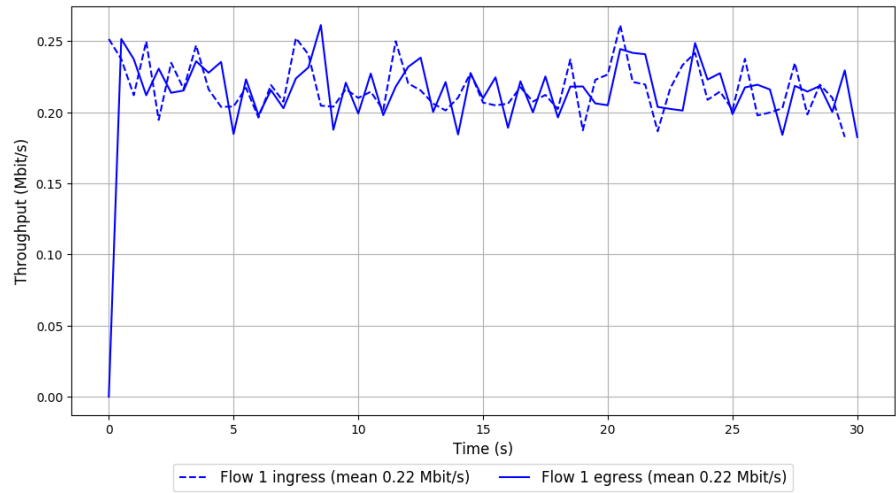


```
Run 1: Statistics of SCReAM

Start at: 2018-09-06 14:23:01
End at: 2018-09-06 14:23:31
Local clock offset: -4.997 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2018-09-06 16:00:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SReAM

Start at: 2018-09-06 14:43:22

End at: 2018-09-06 14:43:52

Local clock offset: -5.066 ms

Remote clock offset: 0.04 ms

Below is generated by plot.py at 2018-09-06 16:00:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.968 ms

Loss rate: 0.00%

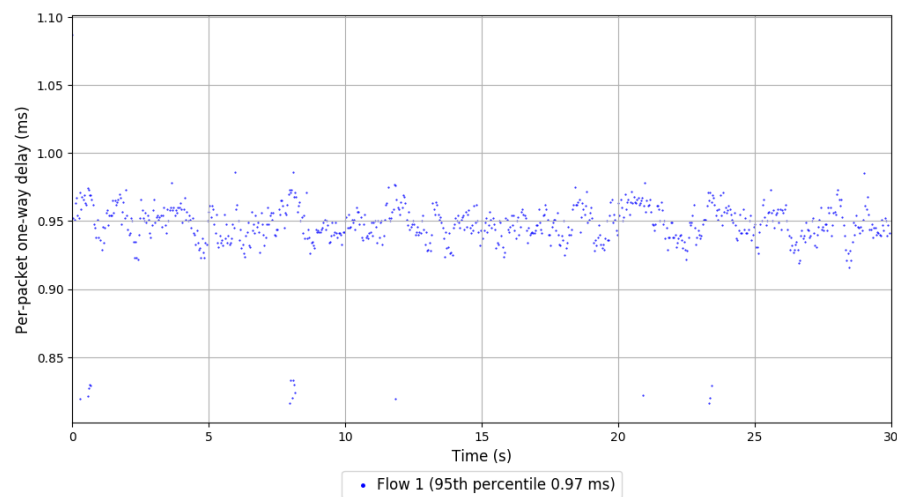
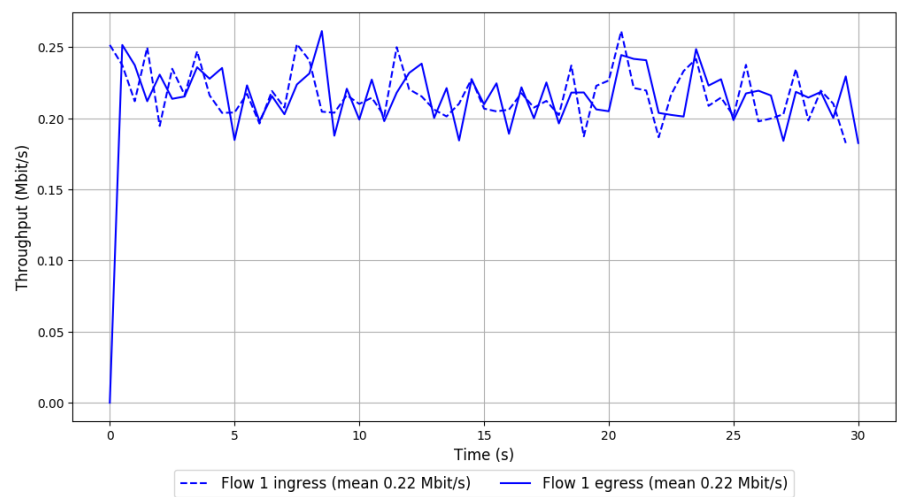
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.968 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-06 15:03:41

End at: 2018-09-06 15:04:11

Local clock offset: -3.879 ms

Remote clock offset: 0.042 ms

Below is generated by plot.py at 2018-09-06 16:00:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.771 ms

Loss rate: 0.00%

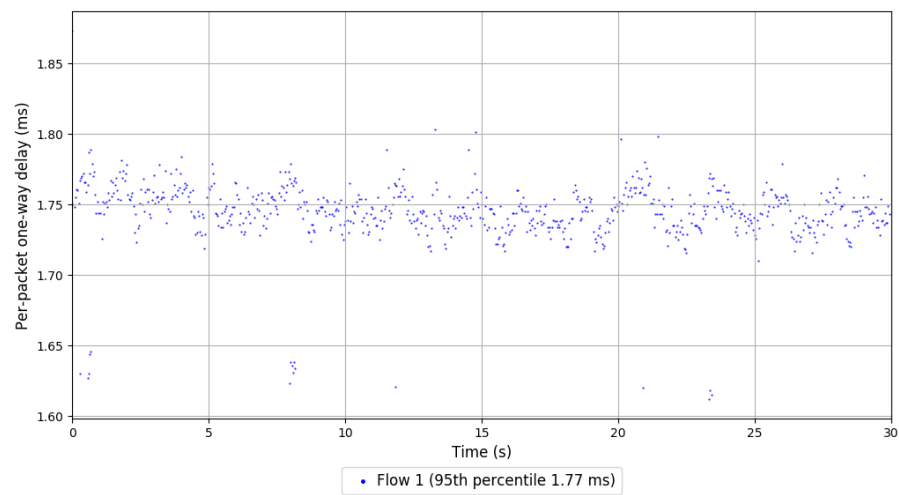
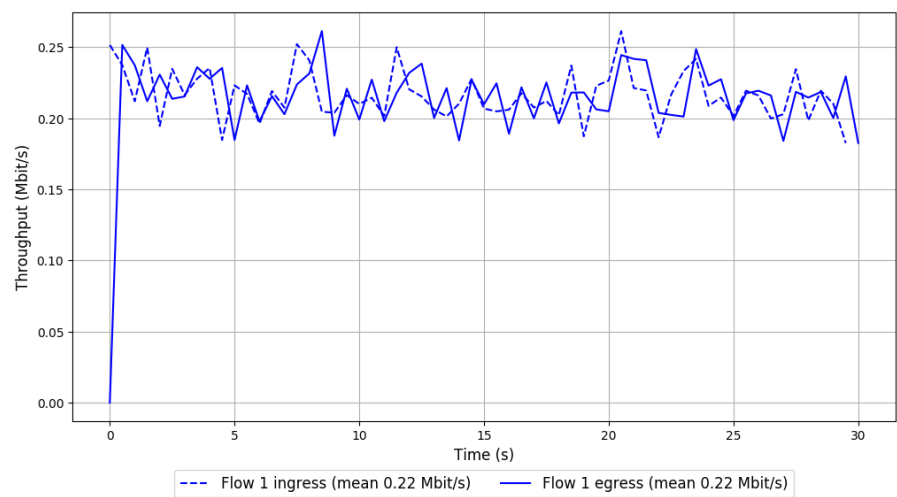
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.771 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-06 15:23:53

End at: 2018-09-06 15:24:23

Local clock offset: -5.602 ms

Remote clock offset: 0.215 ms

Below is generated by plot.py at 2018-09-06 16:00:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.688 ms

Loss rate: 0.00%

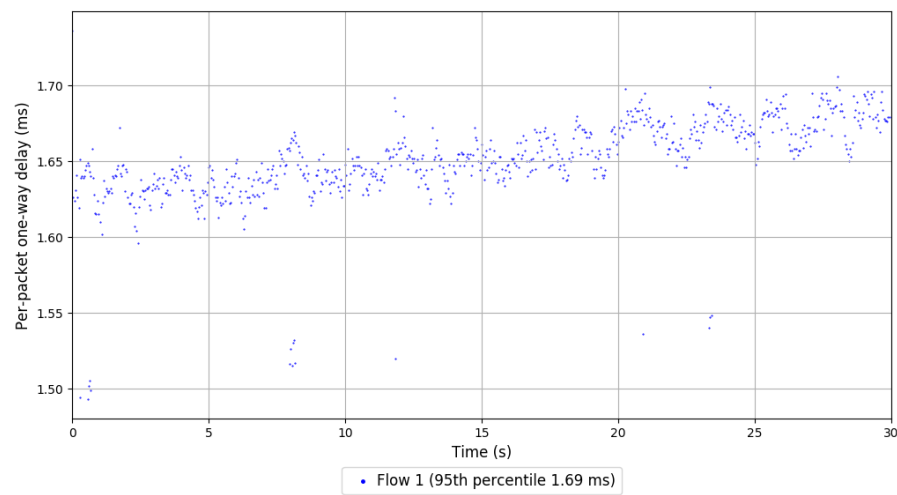
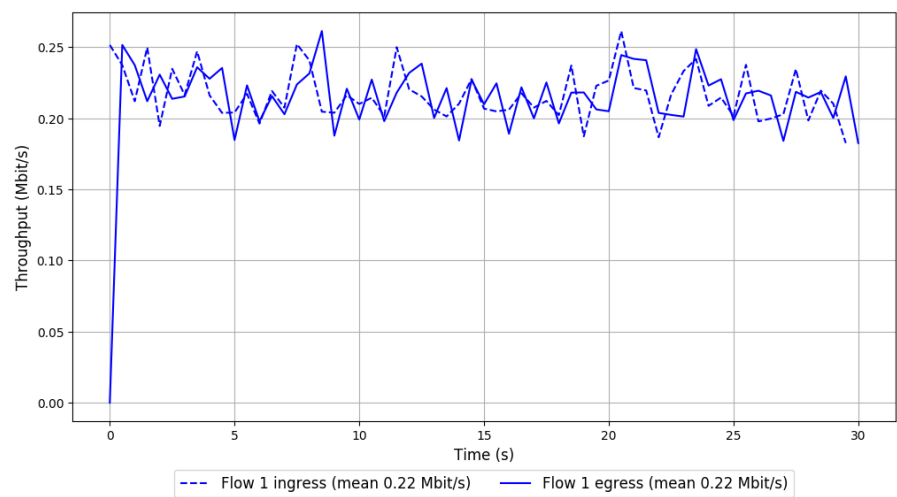
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.688 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-06 15:44:02

End at: 2018-09-06 15:44:32

Local clock offset: -6.918 ms

Remote clock offset: 0.123 ms

Below is generated by plot.py at 2018-09-06 16:00:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.795 ms

Loss rate: 0.00%

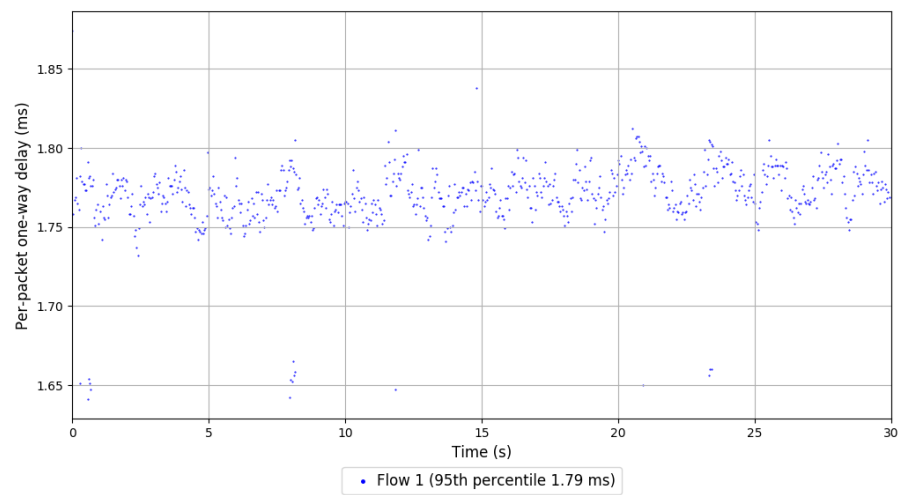
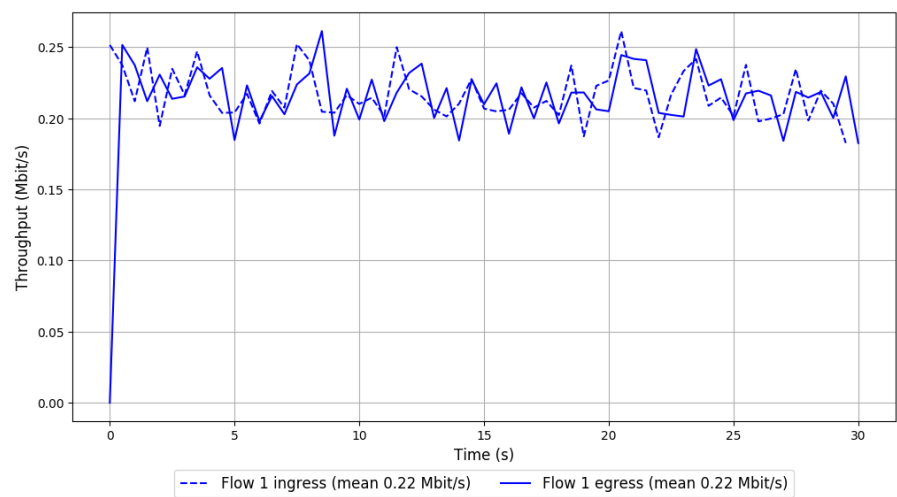
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.795 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

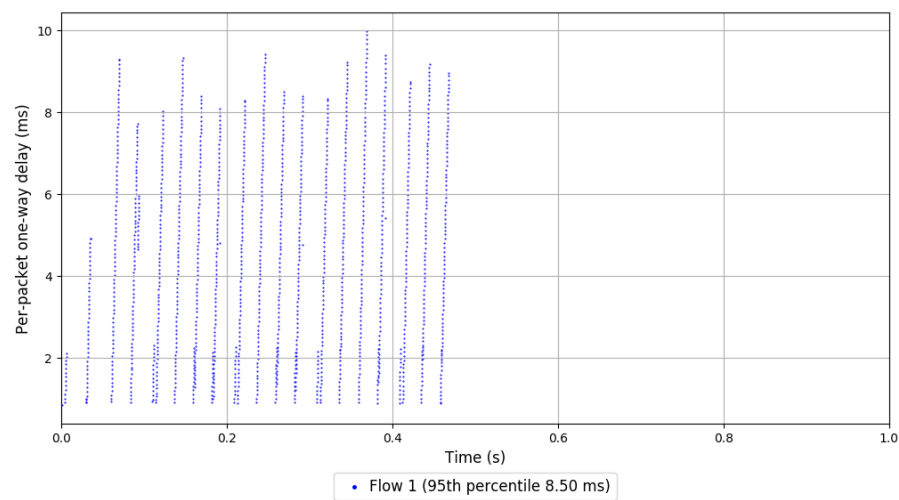
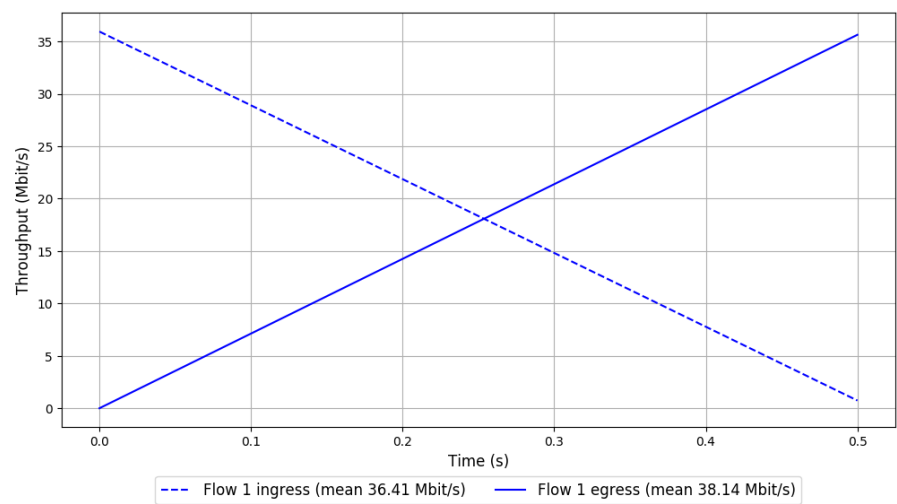
Start at: 2018-09-06 14:21:56

End at: 2018-09-06 14:22:27

Local clock offset: -4.984 ms

Remote clock offset: -0.015 ms

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

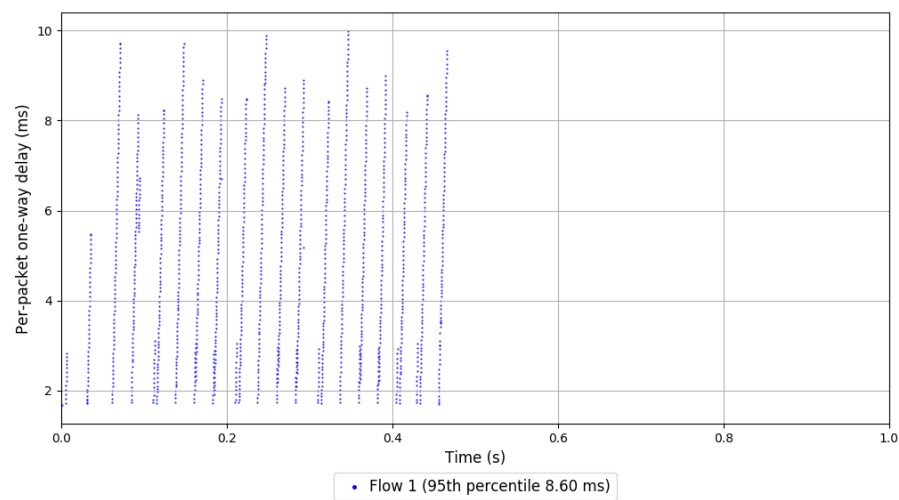
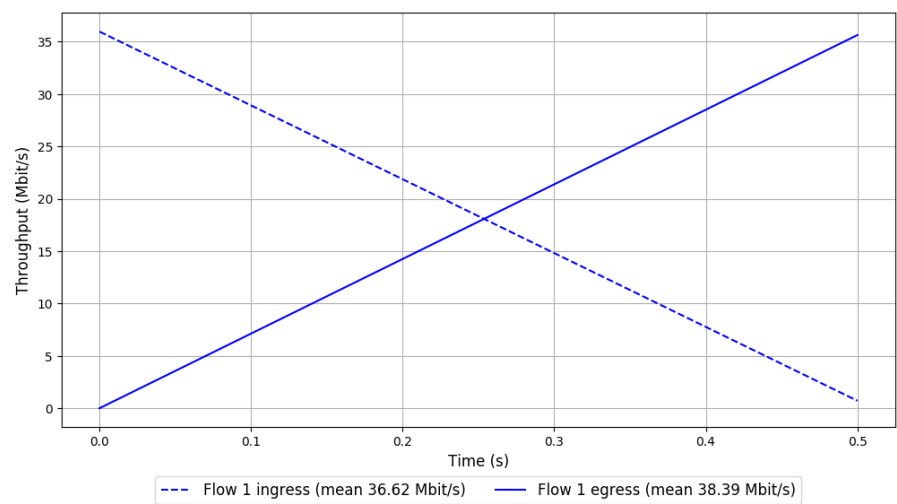
Start at: 2018-09-06 14:42:18

End at: 2018-09-06 14:42:48

Local clock offset: -4.362 ms

Remote clock offset: -0.01 ms

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

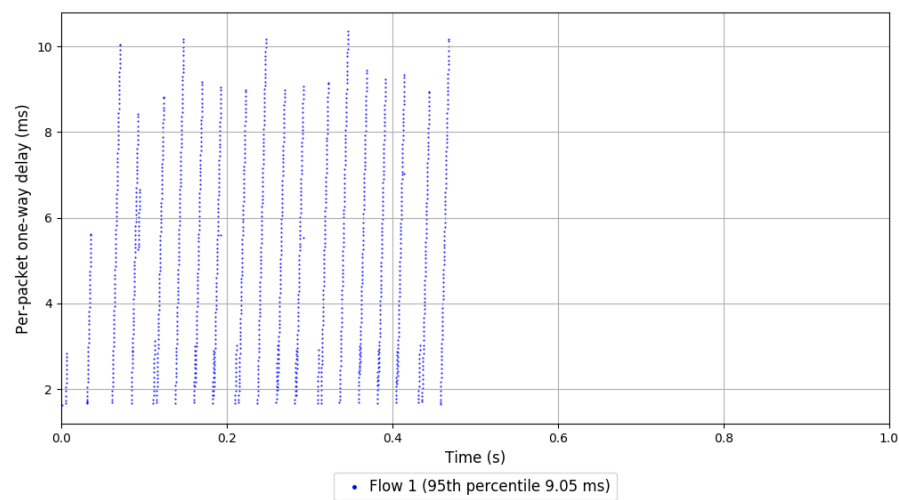
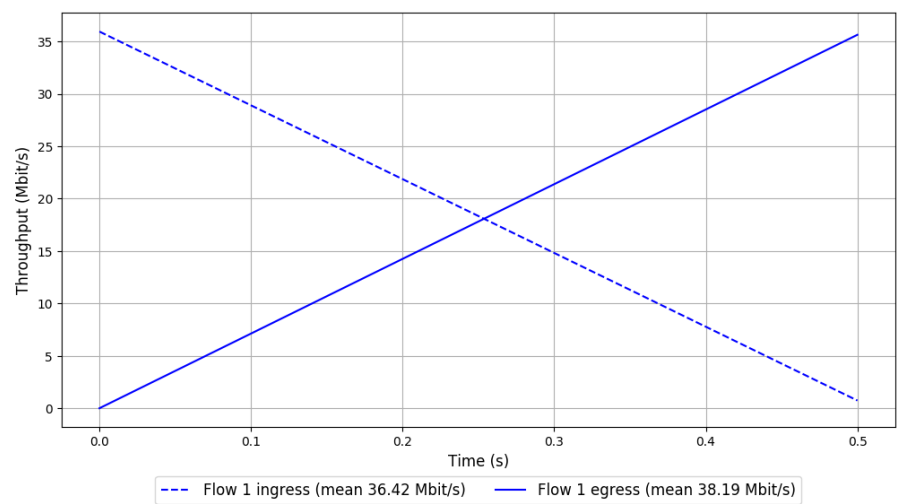
Start at: 2018-09-06 15:02:37

End at: 2018-09-06 15:03:07

Local clock offset: -3.885 ms

Remote clock offset: 0.166 ms

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

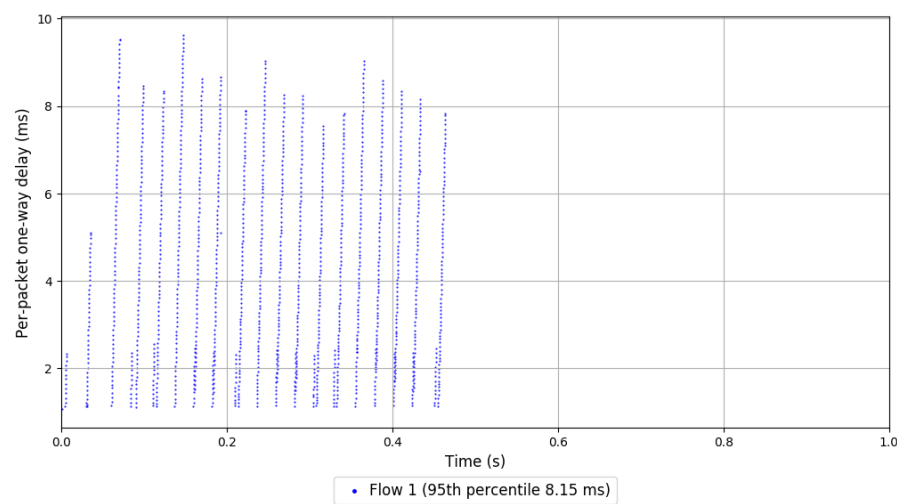
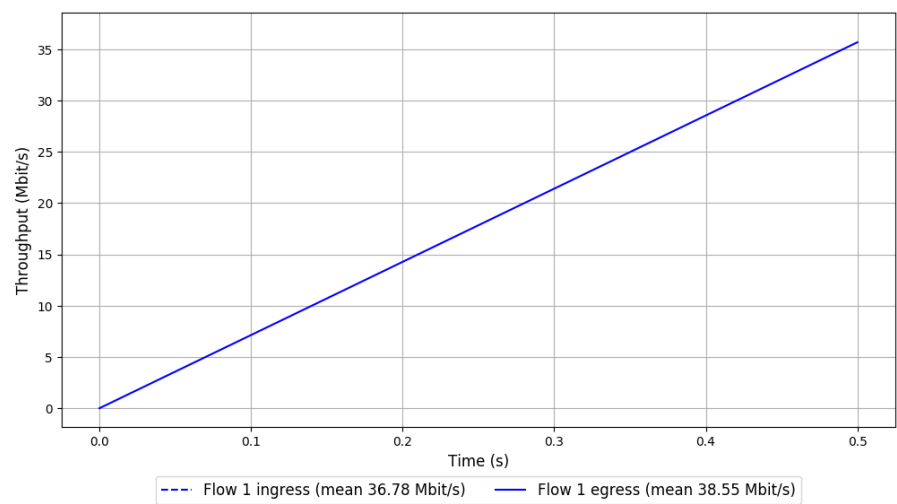
Start at: 2018-09-06 15:22:49

End at: 2018-09-06 15:23:19

Local clock offset: -6.15 ms

Remote clock offset: 0.051 ms

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

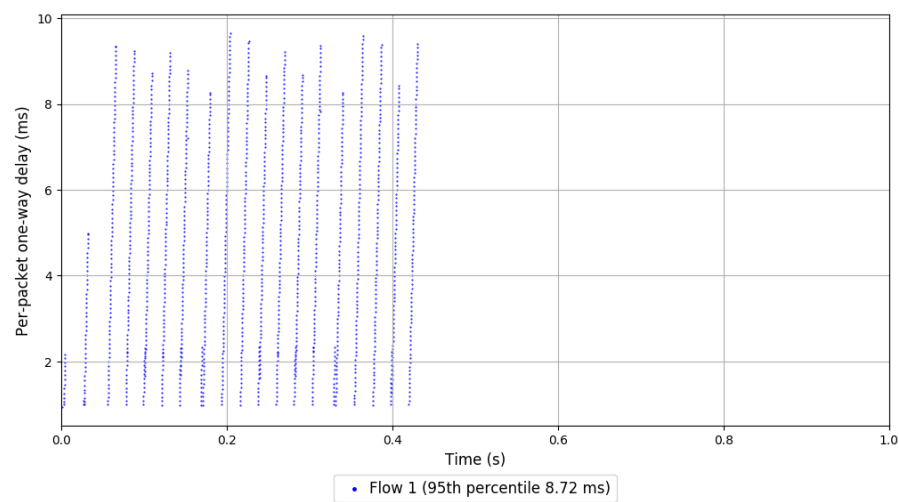
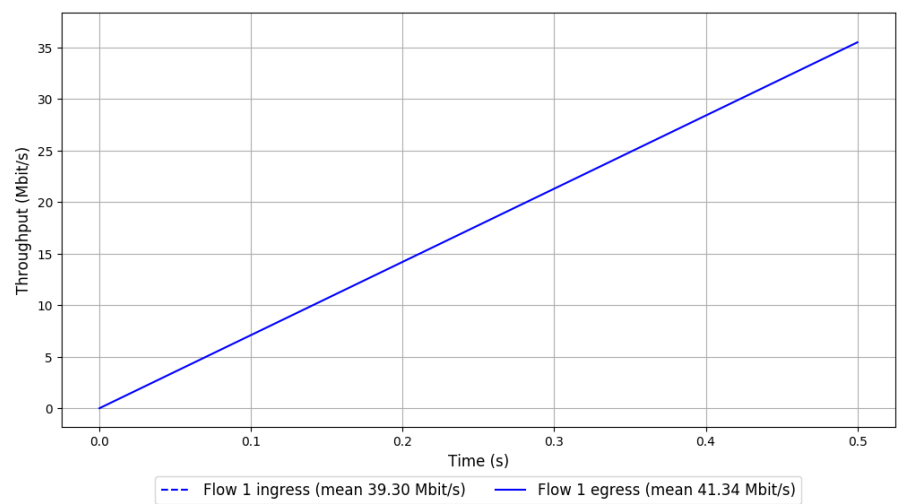
Start at: 2018-09-06 15:42:58

End at: 2018-09-06 15:43:28

Local clock offset: -7.651 ms

Remote clock offset: 0.14 ms

Run 5: Report of Sprout — Data Link

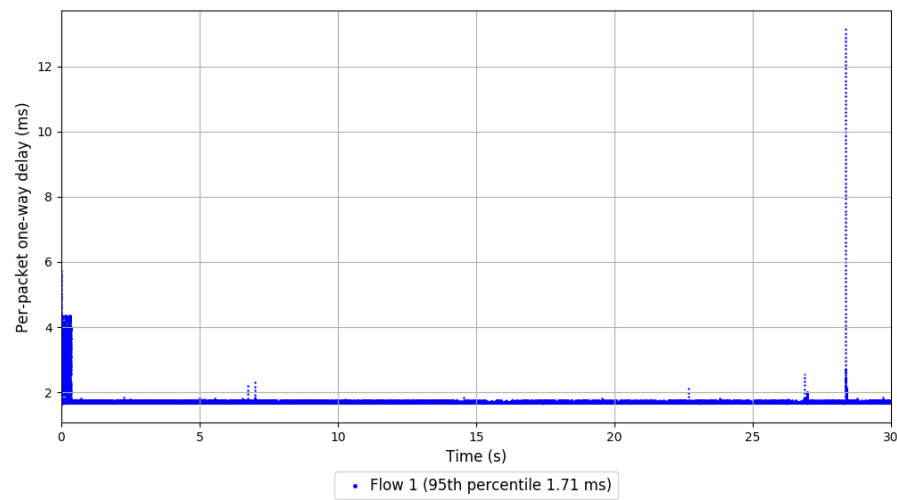
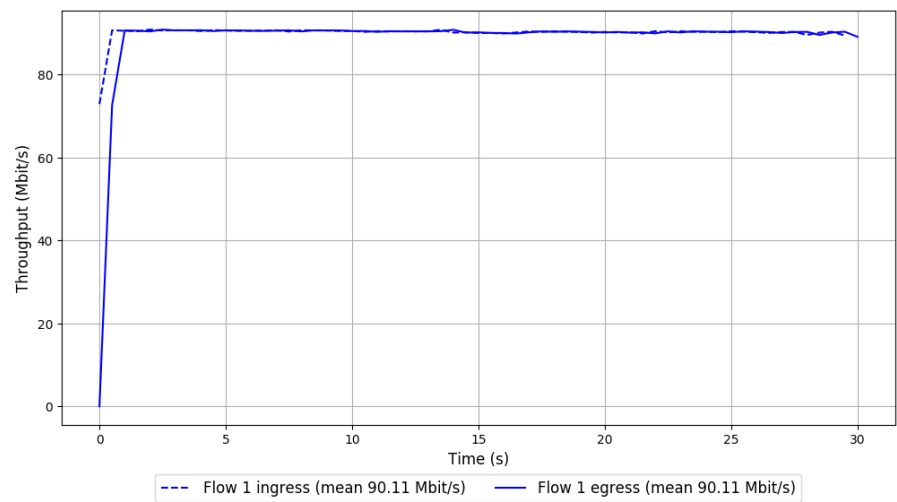


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-06 14:12:51
End at: 2018-09-06 14:13:21
Local clock offset: -4.132 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2018-09-06 16:02:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.11 Mbit/s
95th percentile per-packet one-way delay: 1.708 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 90.11 Mbit/s
95th percentile per-packet one-way delay: 1.708 ms
Loss rate: 0.01%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-06 14:33:08

End at: 2018-09-06 14:33:38

Local clock offset: -4.303 ms

Remote clock offset: -0.063 ms

Below is generated by plot.py at 2018-09-06 16:02:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.11 Mbit/s

95th percentile per-packet one-way delay: 1.765 ms

Loss rate: 0.01%

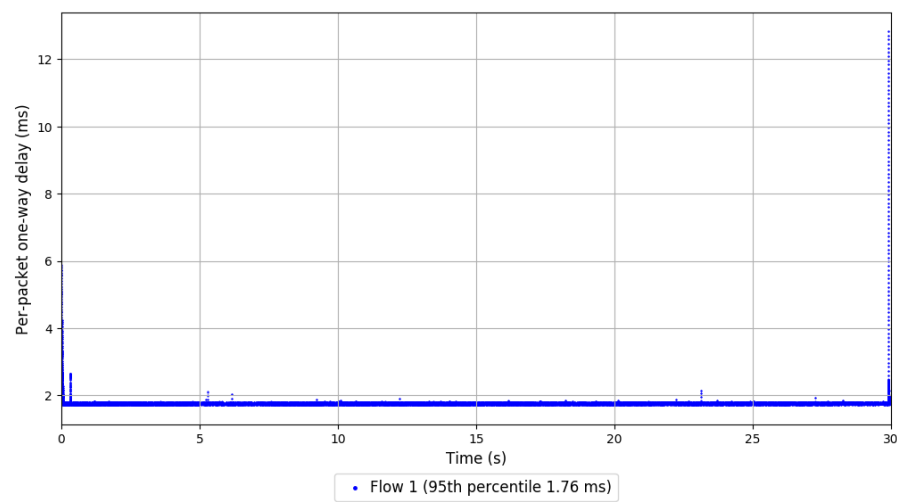
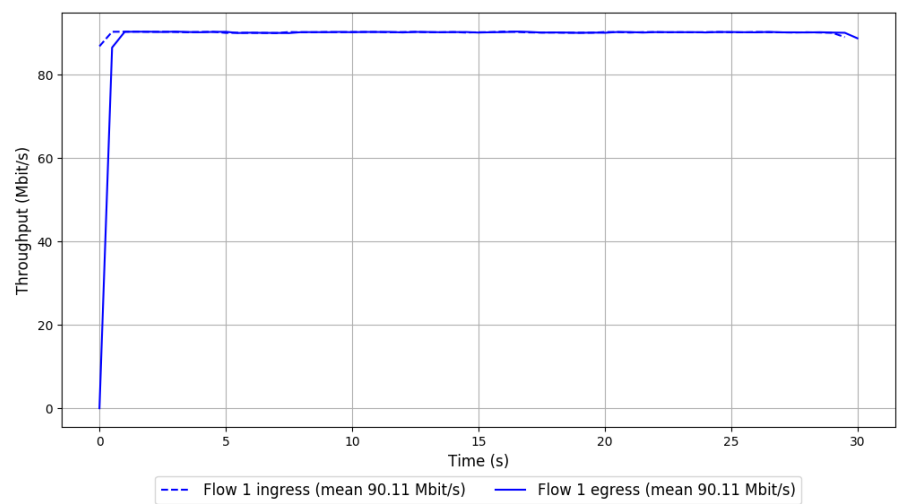
-- Flow 1:

Average throughput: 90.11 Mbit/s

95th percentile per-packet one-way delay: 1.765 ms

Loss rate: 0.01%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-06 14:53:31

End at: 2018-09-06 14:54:01

Local clock offset: -4.019 ms

Remote clock offset: 0.013 ms

Below is generated by plot.py at 2018-09-06 16:02:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.33 Mbit/s

95th percentile per-packet one-way delay: 1.771 ms

Loss rate: 0.01%

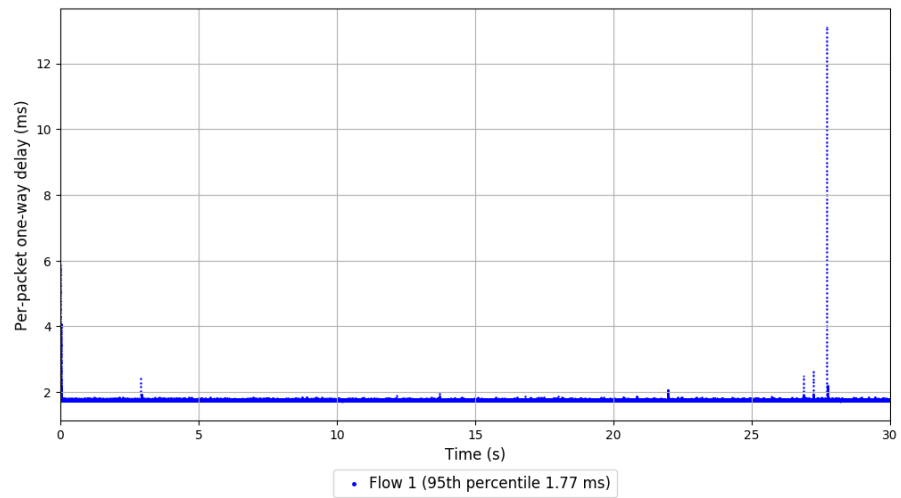
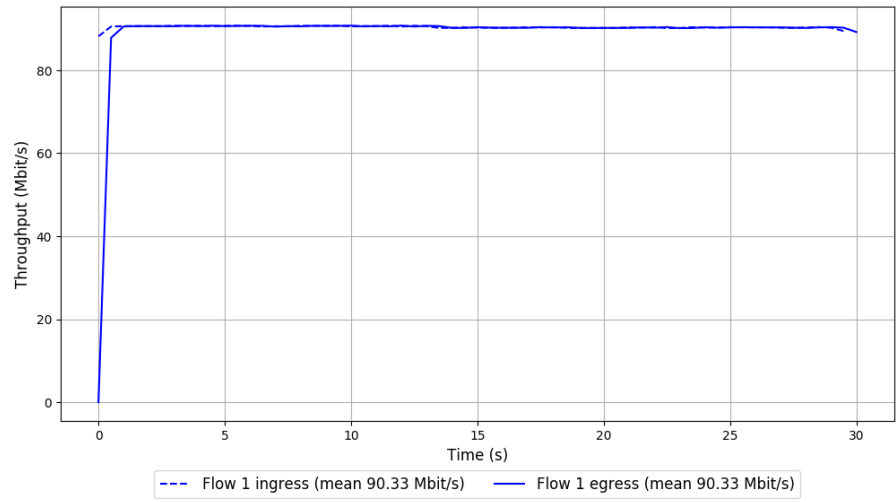
-- Flow 1:

Average throughput: 90.33 Mbit/s

95th percentile per-packet one-way delay: 1.771 ms

Loss rate: 0.01%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-06 15:13:44

End at: 2018-09-06 15:14:14

Local clock offset: -4.6 ms

Remote clock offset: 0.152 ms

Below is generated by plot.py at 2018-09-06 16:02:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.82 Mbit/s

95th percentile per-packet one-way delay: 0.850 ms

Loss rate: 0.01%

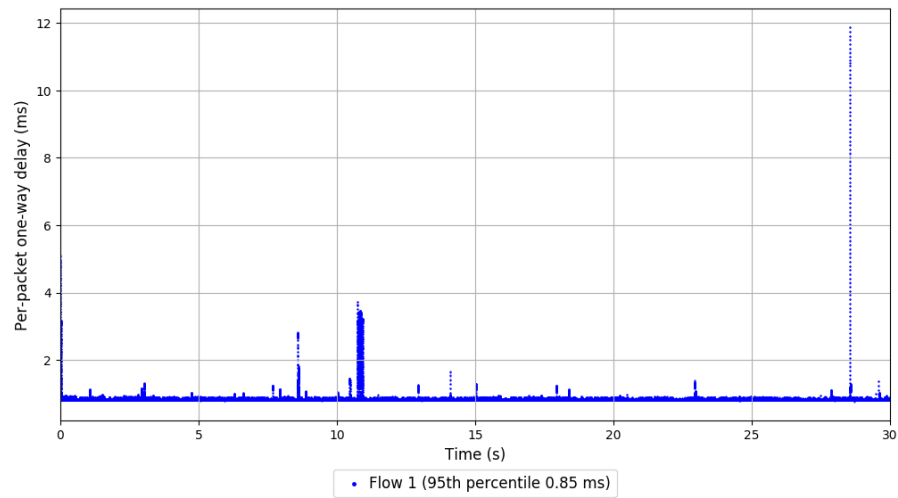
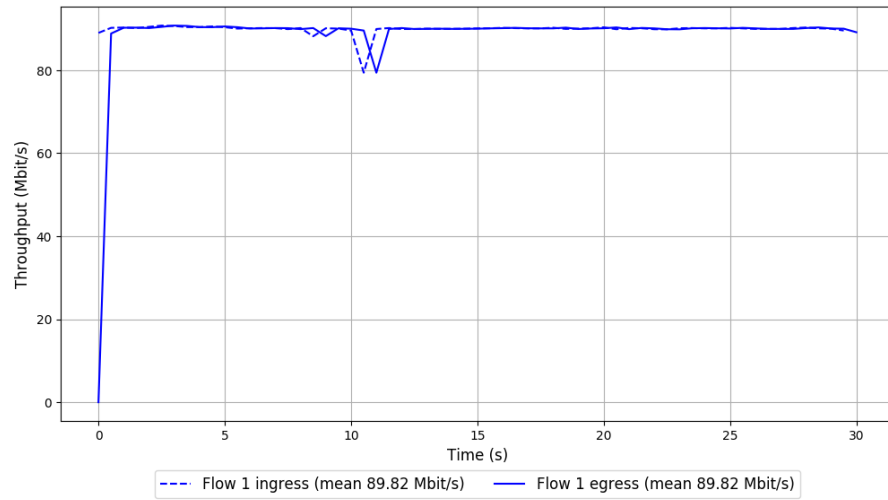
-- Flow 1:

Average throughput: 89.82 Mbit/s

95th percentile per-packet one-way delay: 0.850 ms

Loss rate: 0.01%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-06 15:33:53

End at: 2018-09-06 15:34:23

Local clock offset: -7.216 ms

Remote clock offset: 0.069 ms

Below is generated by plot.py at 2018-09-06 16:02:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.21 Mbit/s

95th percentile per-packet one-way delay: 1.080 ms

Loss rate: 0.01%

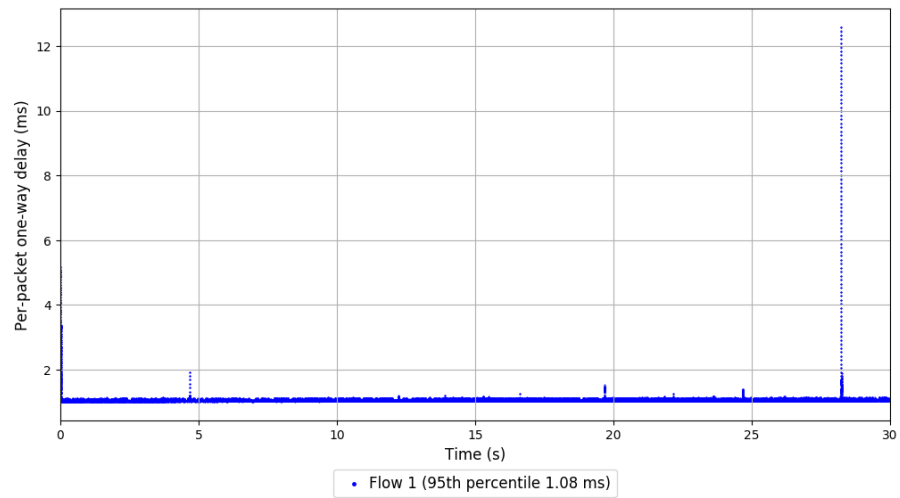
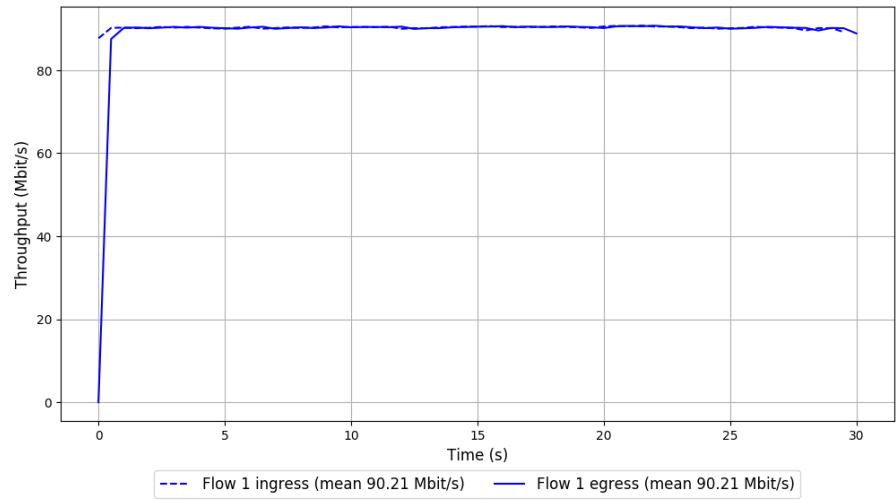
-- Flow 1:

Average throughput: 90.21 Mbit/s

95th percentile per-packet one-way delay: 1.080 ms

Loss rate: 0.01%

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

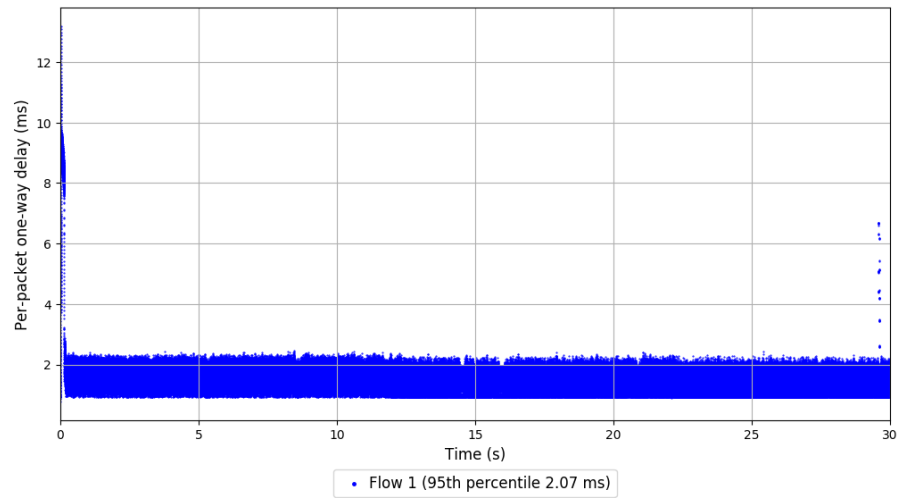
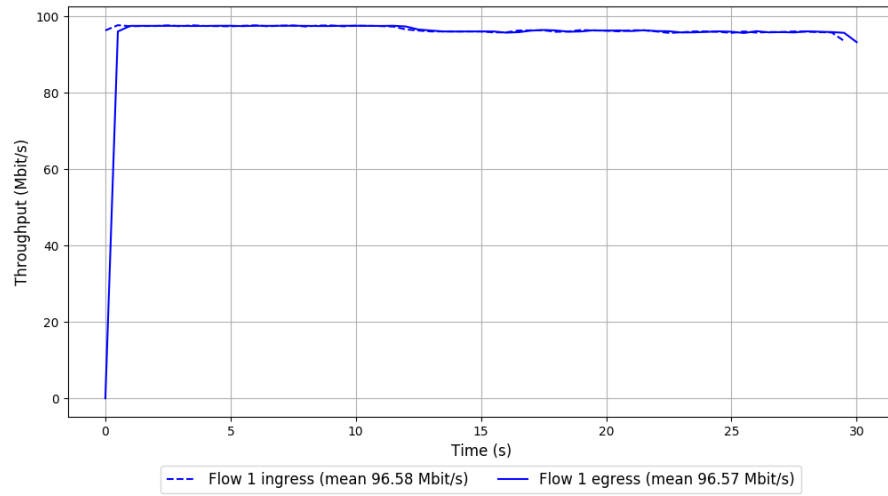


Run 1: Statistics of TCP Vegas

Start at: 2018-09-06 14:24:05
End at: 2018-09-06 14:24:35
Local clock offset: -5.008 ms
Remote clock offset: -0.022 ms

Below is generated by plot.py at 2018-09-06 16:02:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 96.57 Mbit/s
95th percentile per-packet one-way delay: 2.073 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 96.57 Mbit/s
95th percentile per-packet one-way delay: 2.073 ms
Loss rate: 0.01%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-06 14:44:27

End at: 2018-09-06 14:44:57

Local clock offset: -4.284 ms

Remote clock offset: 0.024 ms

Below is generated by plot.py at 2018-09-06 16:02:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.69 Mbit/s

95th percentile per-packet one-way delay: 2.529 ms

Loss rate: 0.01%

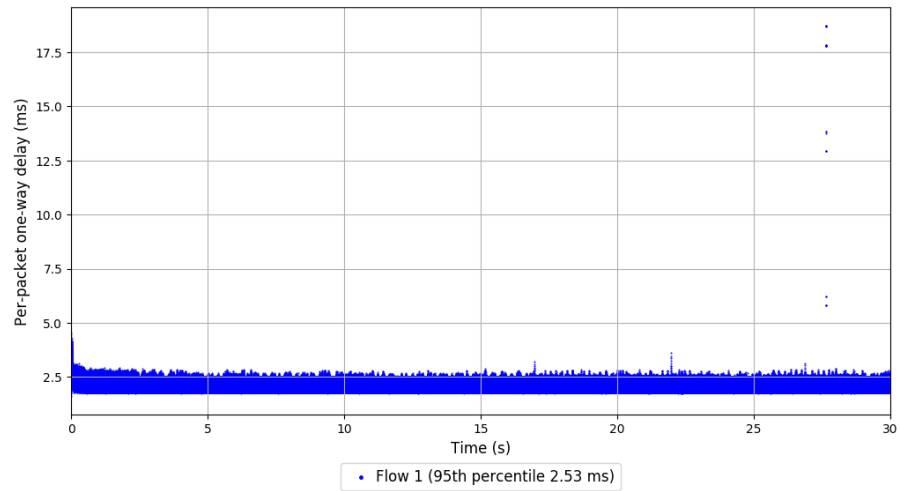
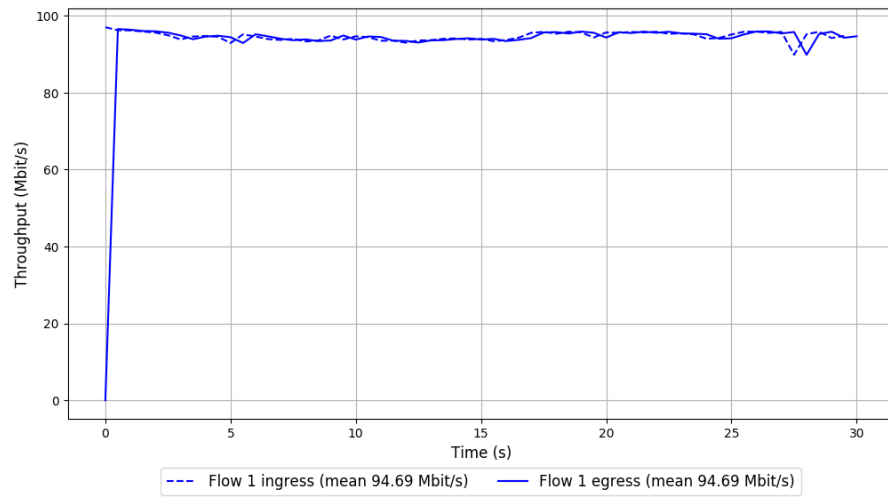
-- Flow 1:

Average throughput: 94.69 Mbit/s

95th percentile per-packet one-way delay: 2.529 ms

Loss rate: 0.01%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-06 15:04:45

End at: 2018-09-06 15:05:15

Local clock offset: -4.614 ms

Remote clock offset: 0.132 ms

Below is generated by plot.py at 2018-09-06 16:02:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.41 Mbit/s

95th percentile per-packet one-way delay: 2.128 ms

Loss rate: 0.01%

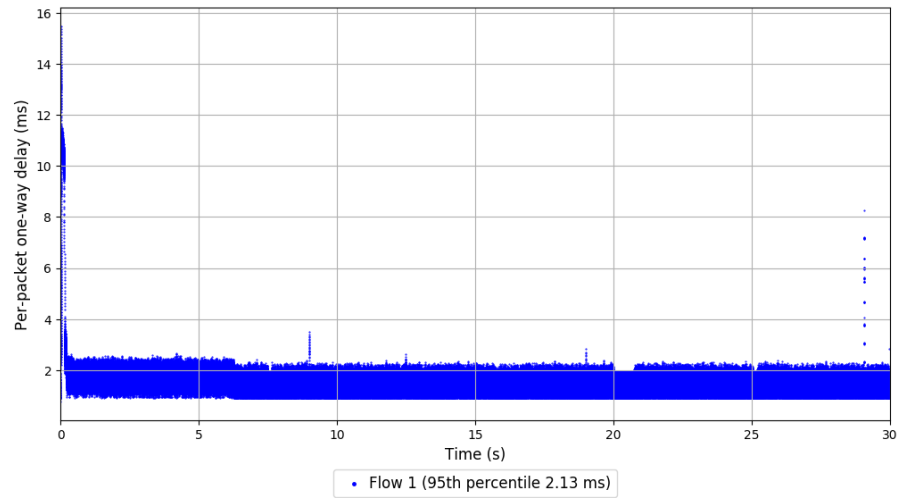
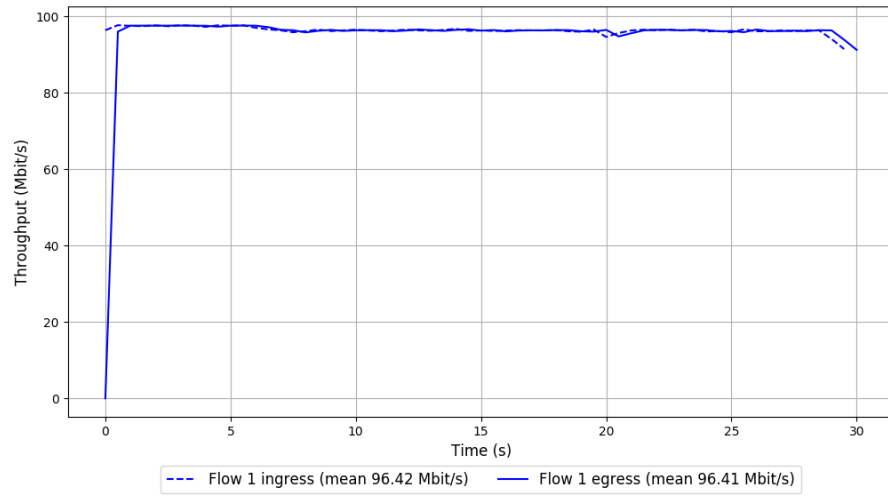
-- Flow 1:

Average throughput: 96.41 Mbit/s

95th percentile per-packet one-way delay: 2.128 ms

Loss rate: 0.01%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-06 15:24:58

End at: 2018-09-06 15:25:28

Local clock offset: -5.68 ms

Remote clock offset: 0.131 ms

Below is generated by plot.py at 2018-09-06 16:02:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.12 Mbit/s

95th percentile per-packet one-way delay: 2.576 ms

Loss rate: 0.01%

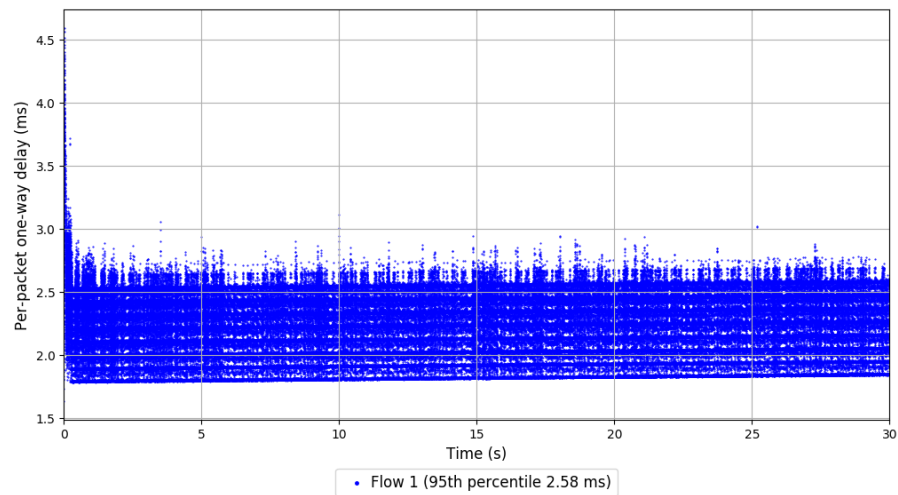
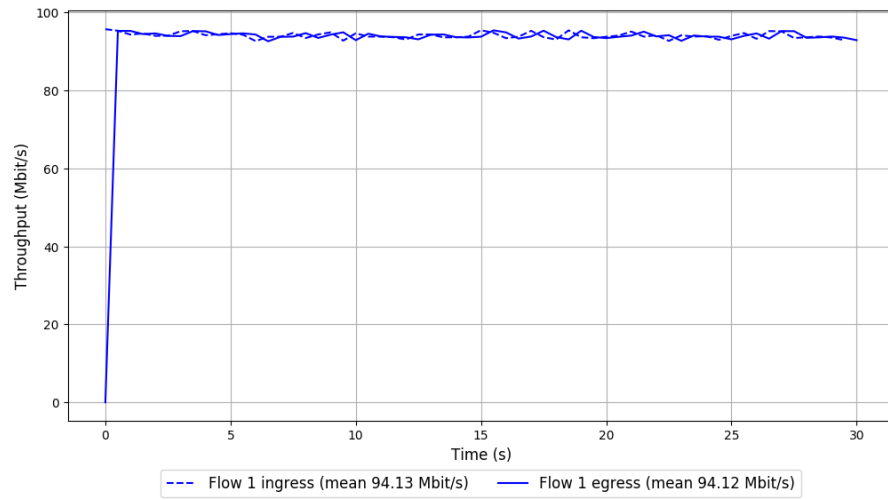
-- Flow 1:

Average throughput: 94.12 Mbit/s

95th percentile per-packet one-way delay: 2.576 ms

Loss rate: 0.01%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-06 15:45:07

End at: 2018-09-06 15:45:37

Local clock offset: -6.977 ms

Remote clock offset: 0.083 ms

Below is generated by plot.py at 2018-09-06 16:03:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.47 Mbit/s

95th percentile per-packet one-way delay: 2.949 ms

Loss rate: 0.01%

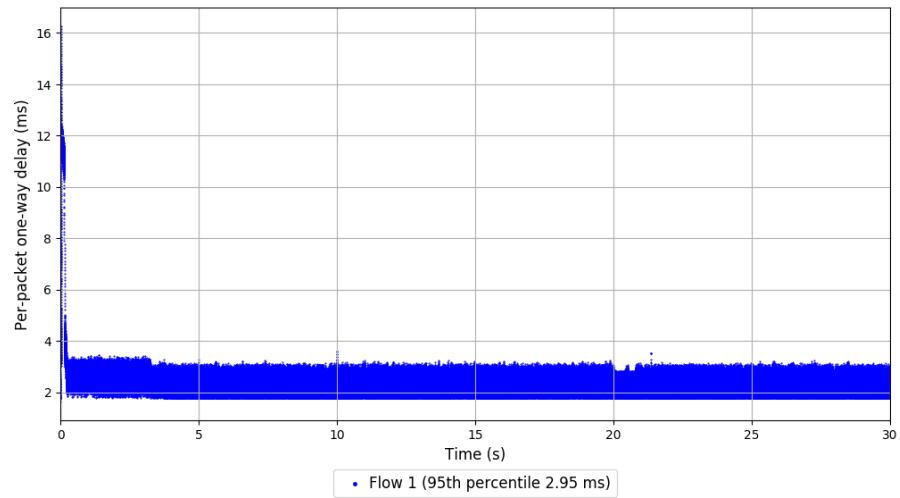
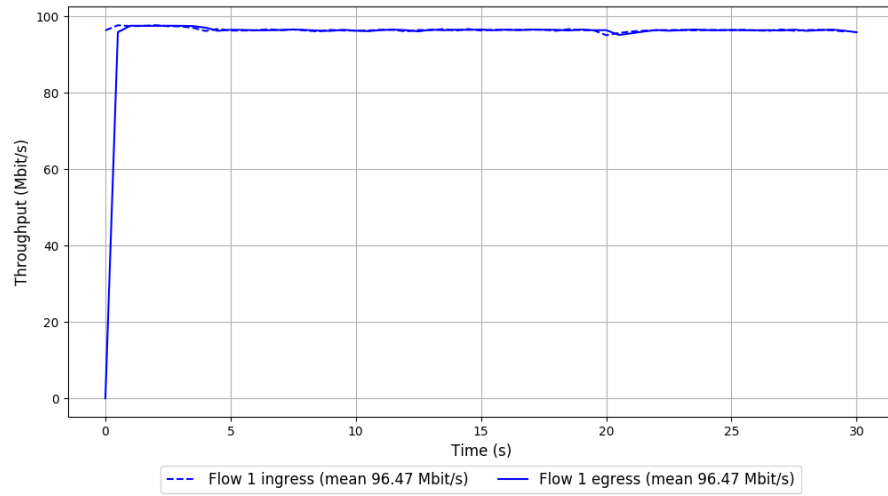
-- Flow 1:

Average throughput: 96.47 Mbit/s

95th percentile per-packet one-way delay: 2.949 ms

Loss rate: 0.01%

Run 5: Report of TCP Vegas — Data Link

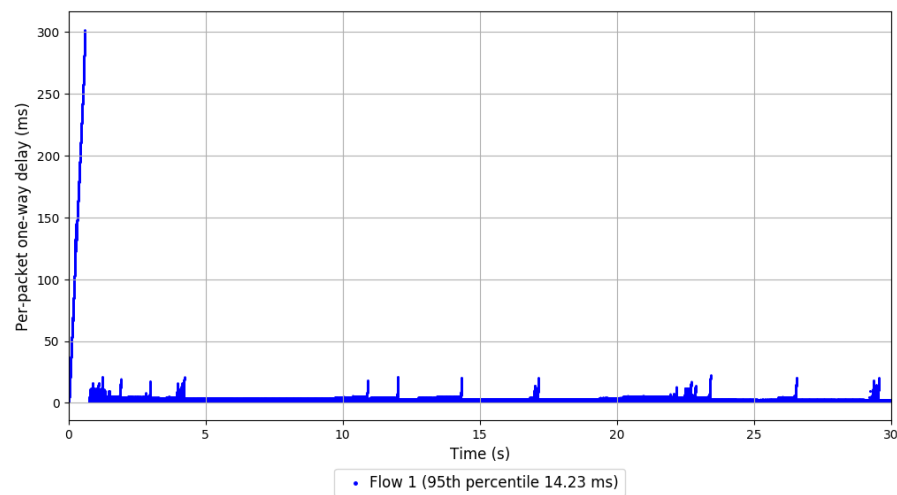
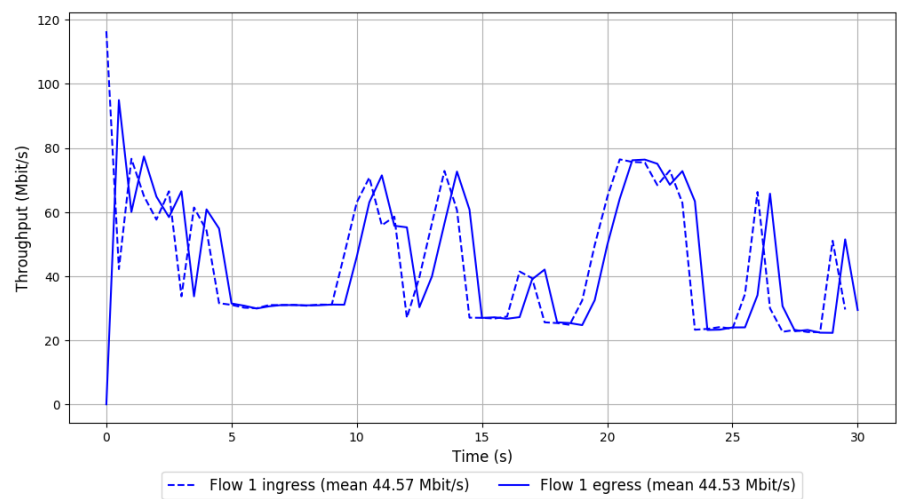


Run 1: Statistics of Verus

Start at: 2018-09-06 14:14:02
End at: 2018-09-06 14:14:32
Local clock offset: -4.954 ms
Remote clock offset: -0.159 ms

Below is generated by plot.py at 2018-09-06 16:03:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 44.53 Mbit/s
95th percentile per-packet one-way delay: 14.235 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 44.53 Mbit/s
95th percentile per-packet one-way delay: 14.235 ms
Loss rate: 0.09%

Run 1: Report of Verus — Data Link

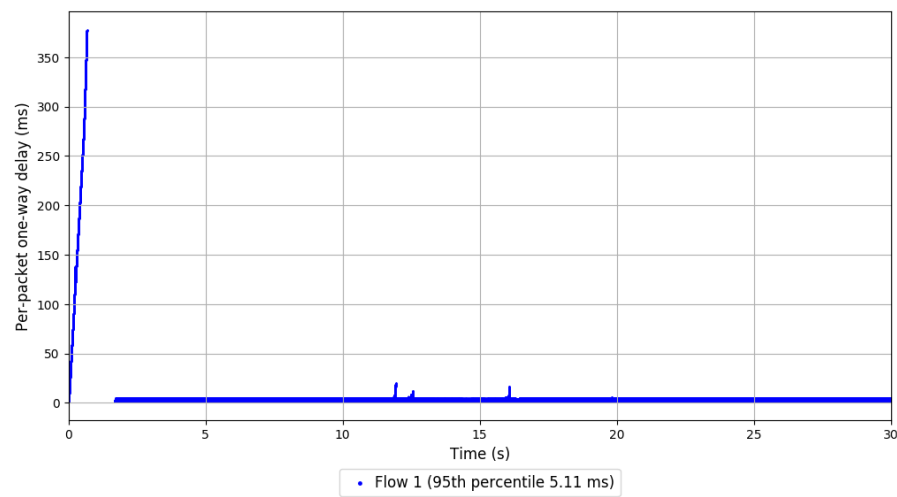
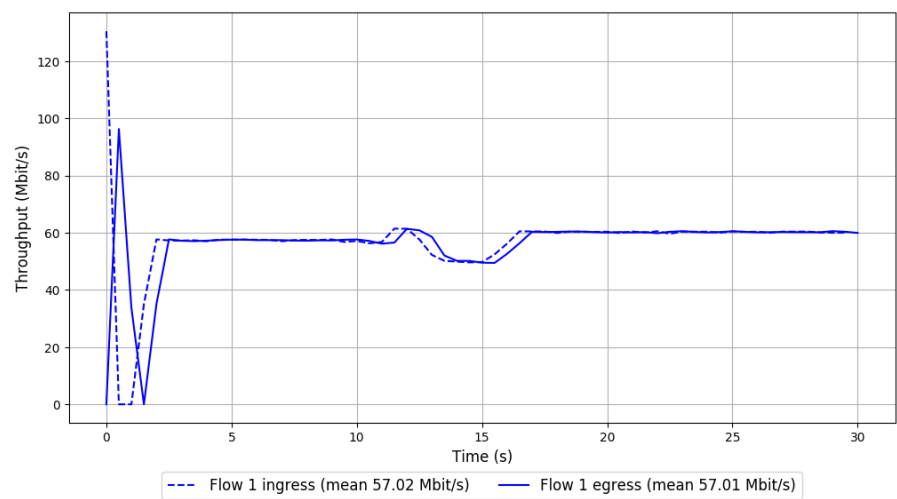


Run 2: Statistics of Verus

Start at: 2018-09-06 14:34:19
End at: 2018-09-06 14:34:49
Local clock offset: -5.062 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-09-06 16:03:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 57.01 Mbit/s
95th percentile per-packet one-way delay: 5.114 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 57.01 Mbit/s
95th percentile per-packet one-way delay: 5.114 ms
Loss rate: 0.02%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-06 14:54:41

End at: 2018-09-06 14:55:11

Local clock offset: -4.753 ms

Remote clock offset: 0.06 ms

Below is generated by plot.py at 2018-09-06 16:03:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.67 Mbit/s

95th percentile per-packet one-way delay: 4.908 ms

Loss rate: 0.04%

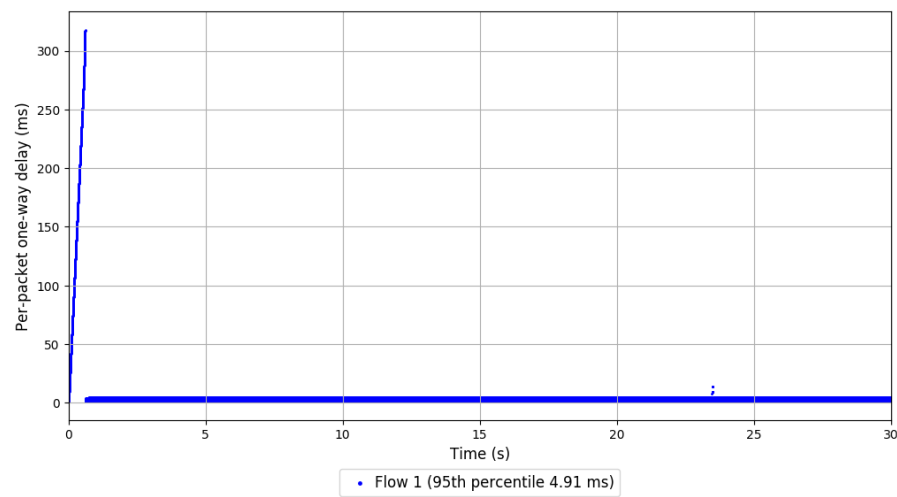
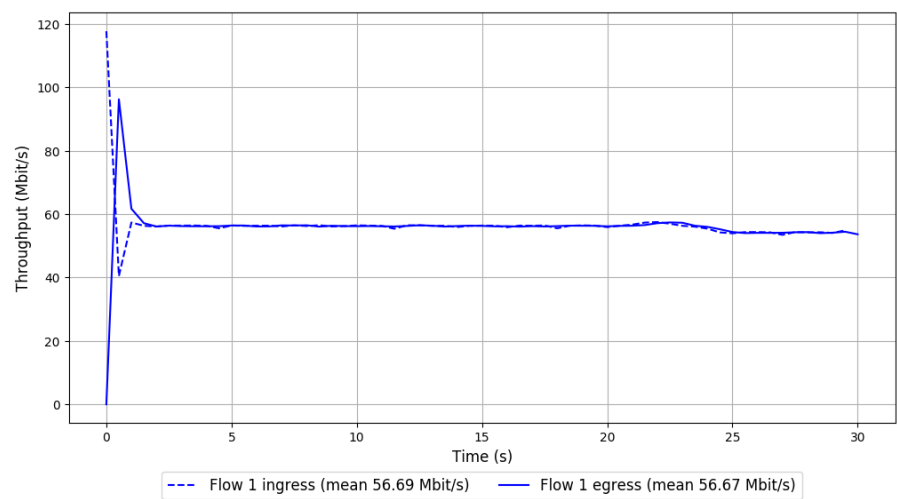
-- Flow 1:

Average throughput: 56.67 Mbit/s

95th percentile per-packet one-way delay: 4.908 ms

Loss rate: 0.04%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-06 15:14:54

End at: 2018-09-06 15:15:24

Local clock offset: -4.51 ms

Remote clock offset: 0.159 ms

Below is generated by plot.py at 2018-09-06 16:03:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 42.53 Mbit/s

95th percentile per-packet one-way delay: 13.326 ms

Loss rate: 0.01%

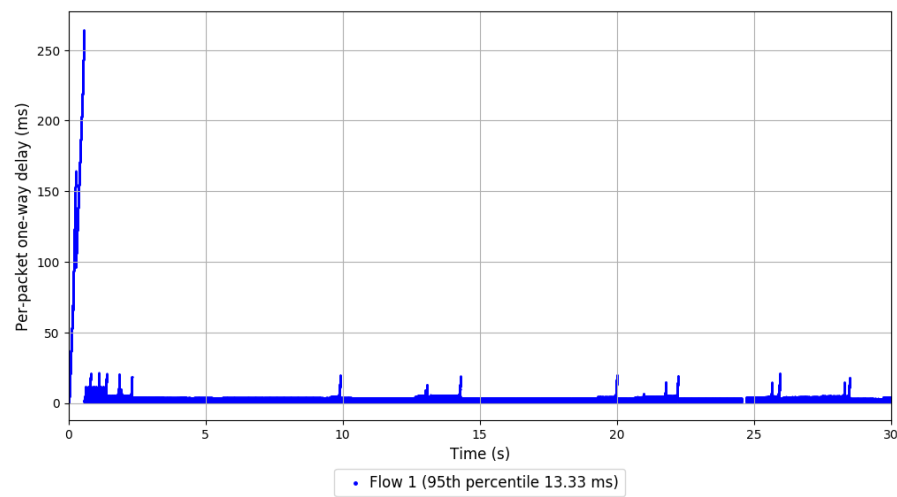
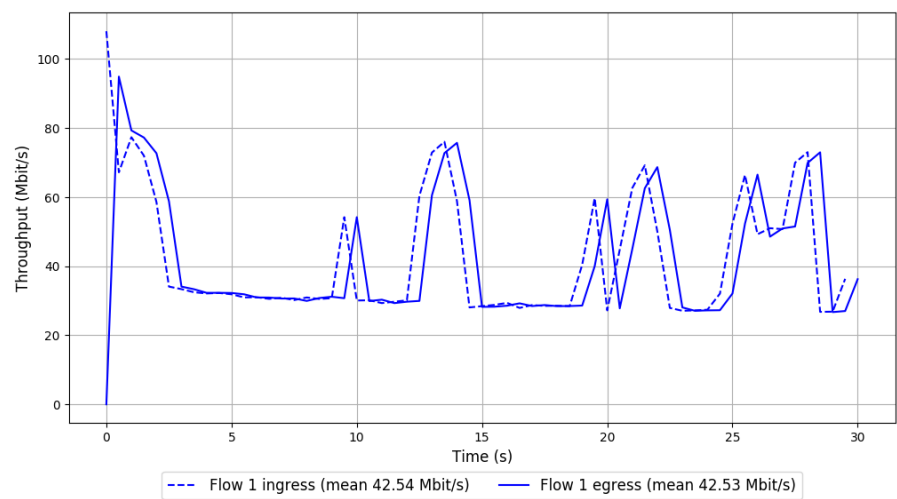
-- Flow 1:

Average throughput: 42.53 Mbit/s

95th percentile per-packet one-way delay: 13.326 ms

Loss rate: 0.01%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-06 15:35:04

End at: 2018-09-06 15:35:34

Local clock offset: -7.348 ms

Remote clock offset: 0.116 ms

Below is generated by plot.py at 2018-09-06 16:03:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 42.32 Mbit/s

95th percentile per-packet one-way delay: 14.902 ms

Loss rate: 0.04%

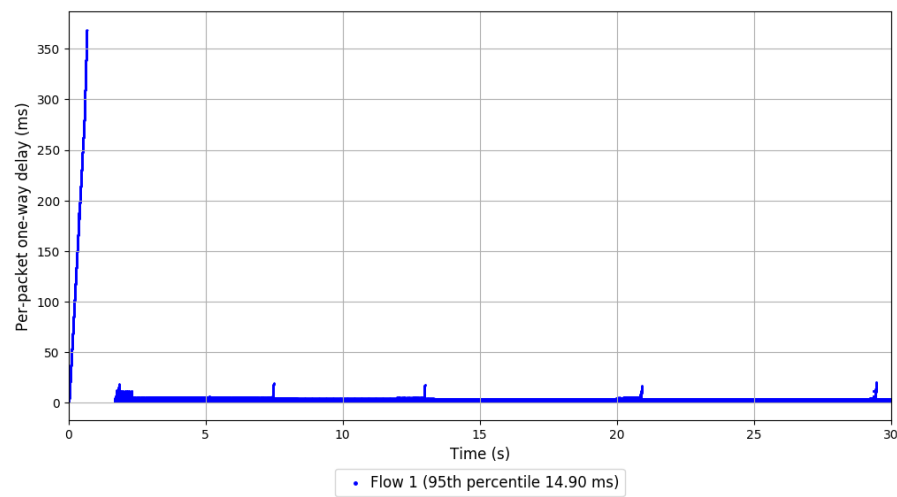
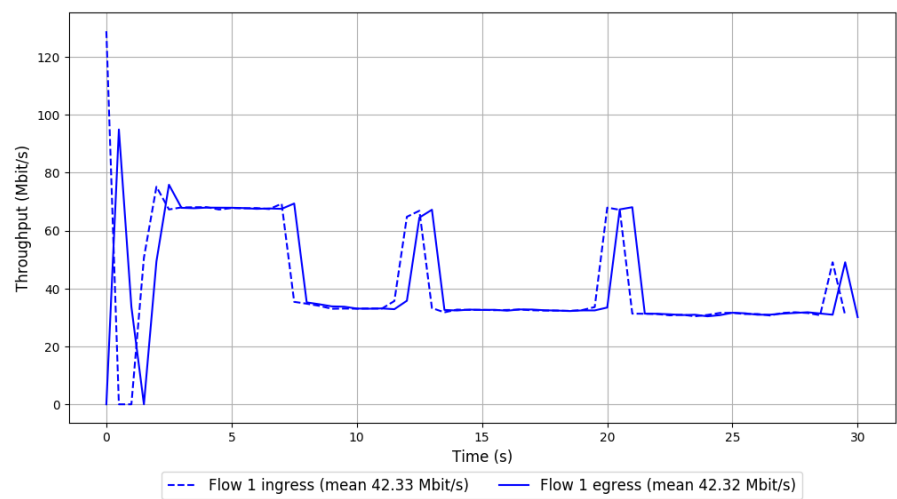
-- Flow 1:

Average throughput: 42.32 Mbit/s

95th percentile per-packet one-way delay: 14.902 ms

Loss rate: 0.04%

Run 5: Report of Verus — Data Link

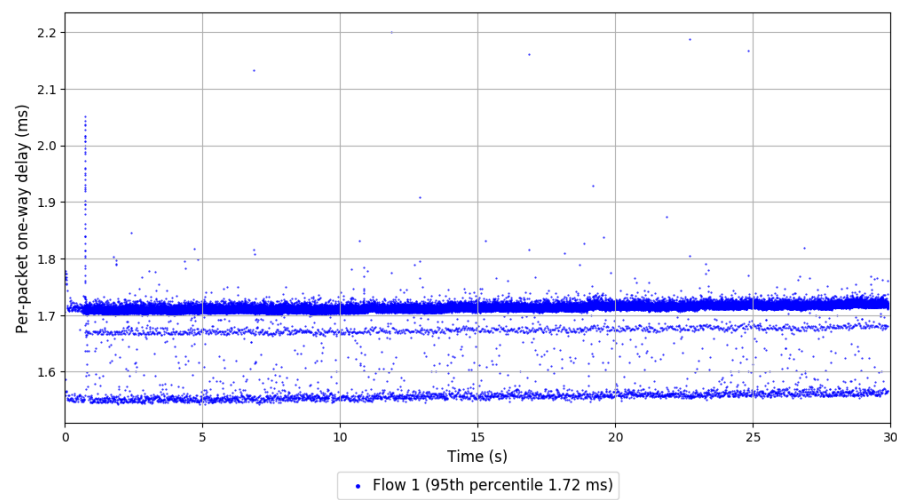
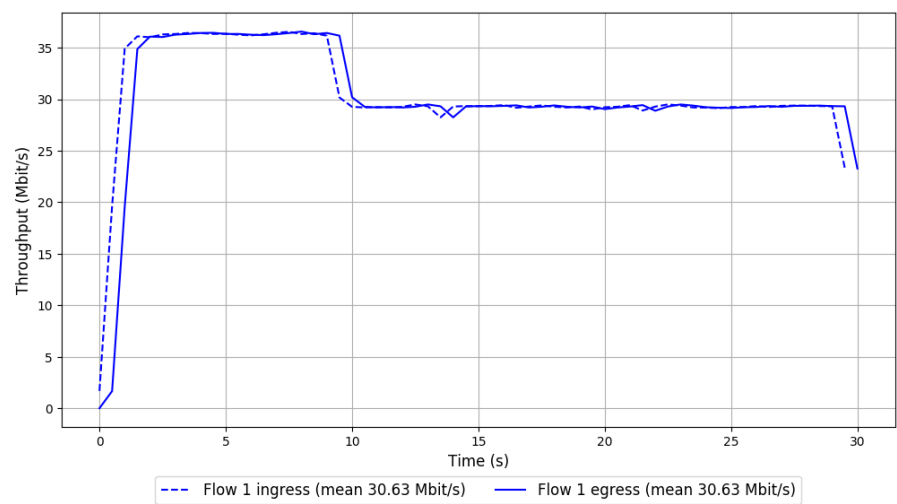


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-06 14:18:35
End at: 2018-09-06 14:19:05
Local clock offset: -4.187 ms
Remote clock offset: -0.085 ms

Below is generated by plot.py at 2018-09-06 16:03:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 30.63 Mbit/s
95th percentile per-packet one-way delay: 1.721 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 30.63 Mbit/s
95th percentile per-packet one-way delay: 1.721 ms
Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-06 14:38:54

End at: 2018-09-06 14:39:24

Local clock offset: -5.14 ms

Remote clock offset: 0.04 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.65 Mbit/s

95th percentile per-packet one-way delay: 0.931 ms

Loss rate: 0.01%

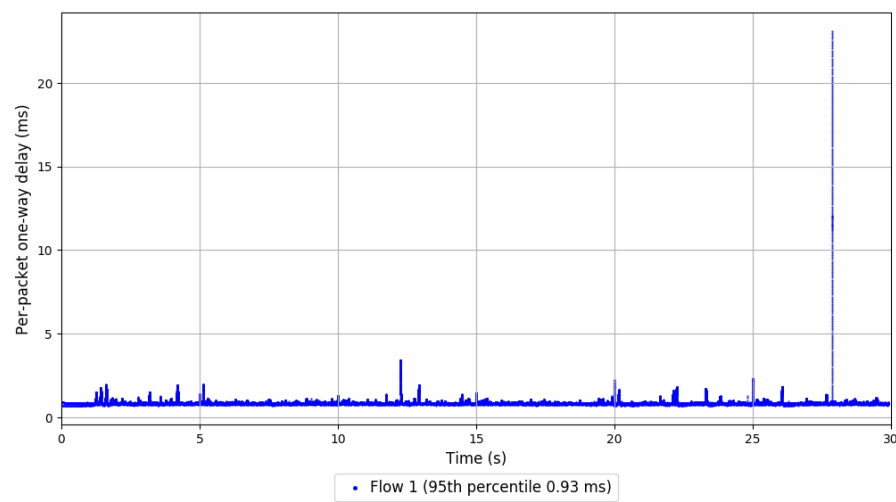
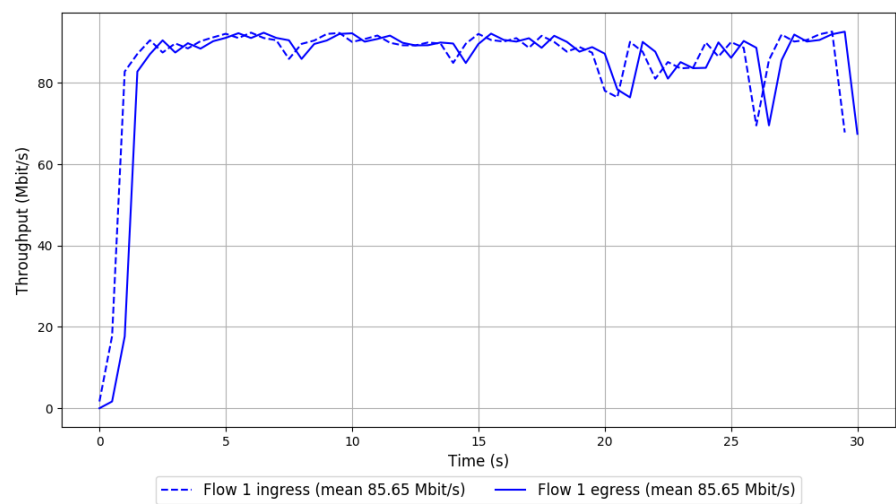
-- Flow 1:

Average throughput: 85.65 Mbit/s

95th percentile per-packet one-way delay: 0.931 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-06 14:59:15

End at: 2018-09-06 14:59:45

Local clock offset: -4.69 ms

Remote clock offset: 0.11 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.66 Mbit/s

95th percentile per-packet one-way delay: 0.930 ms

Loss rate: 0.01%

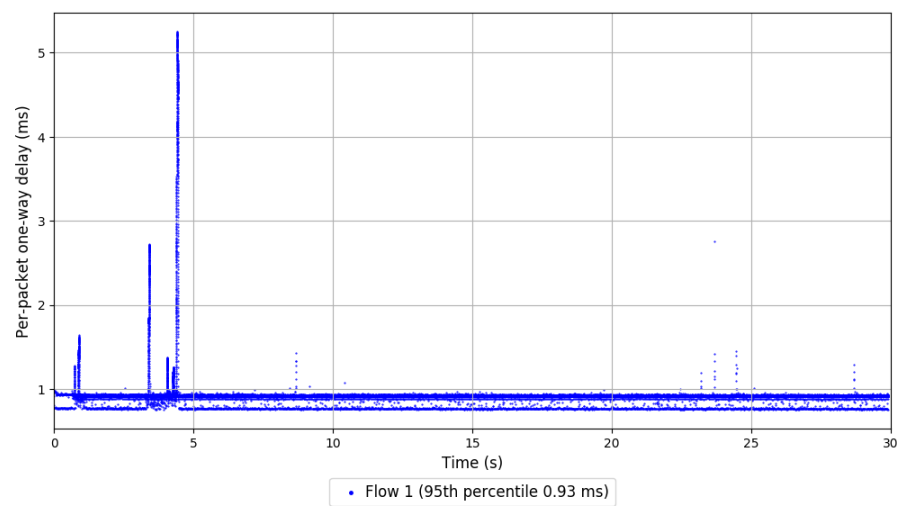
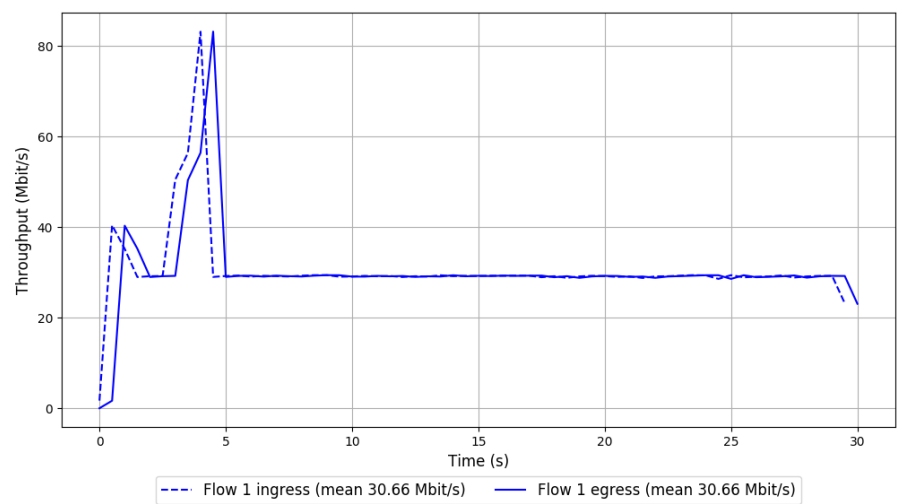
-- Flow 1:

Average throughput: 30.66 Mbit/s

95th percentile per-packet one-way delay: 0.930 ms

Loss rate: 0.01%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-06 15:19:28

End at: 2018-09-06 15:19:58

Local clock offset: -5.556 ms

Remote clock offset: 0.107 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 29.23 Mbit/s

95th percentile per-packet one-way delay: 1.138 ms

Loss rate: 0.01%

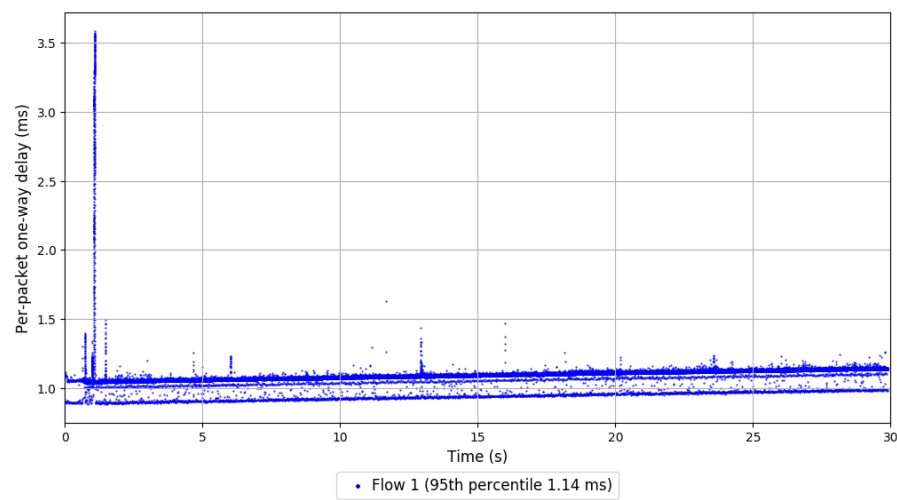
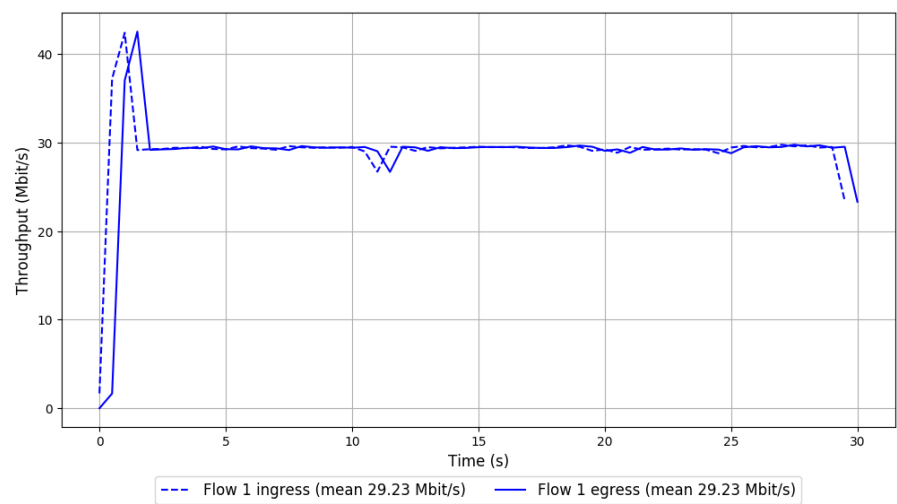
-- Flow 1:

Average throughput: 29.23 Mbit/s

95th percentile per-packet one-way delay: 1.138 ms

Loss rate: 0.01%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-06 15:39:37

End at: 2018-09-06 15:40:07

Local clock offset: -6.753 ms

Remote clock offset: 0.191 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.52 Mbit/s

95th percentile per-packet one-way delay: 1.697 ms

Loss rate: 0.01%

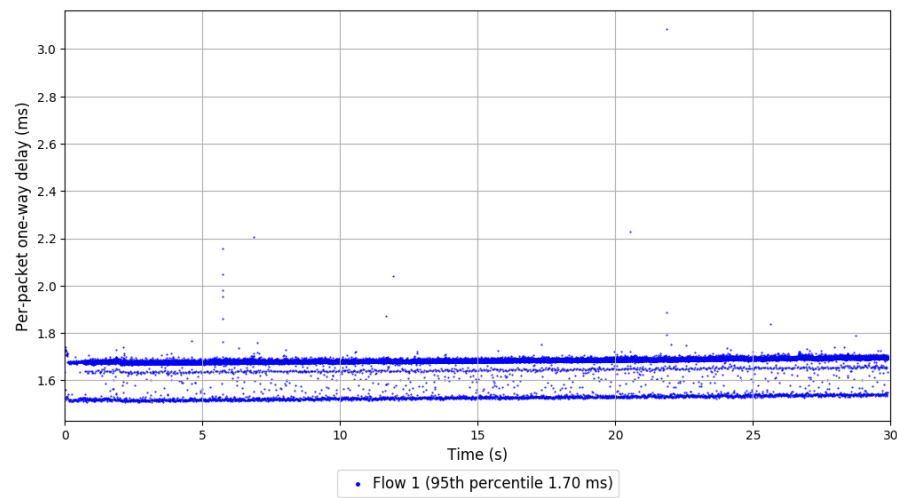
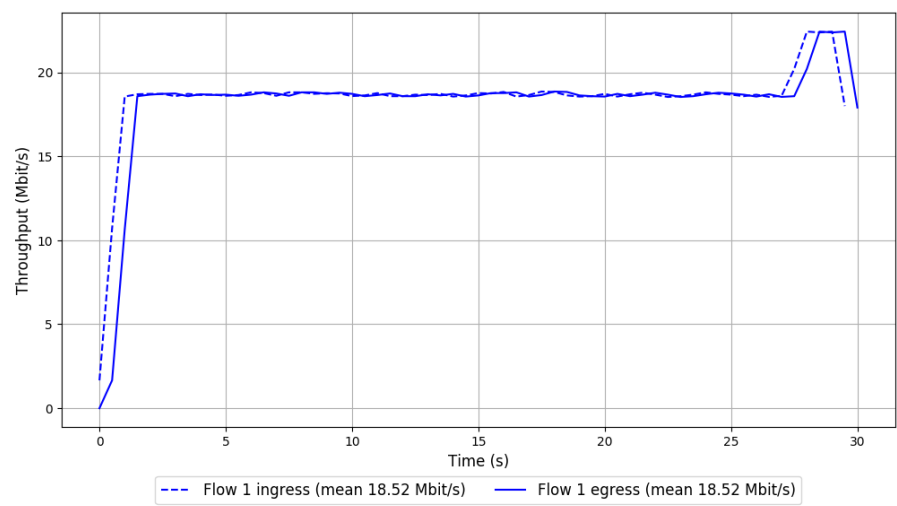
-- Flow 1:

Average throughput: 18.52 Mbit/s

95th percentile per-packet one-way delay: 1.697 ms

Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link

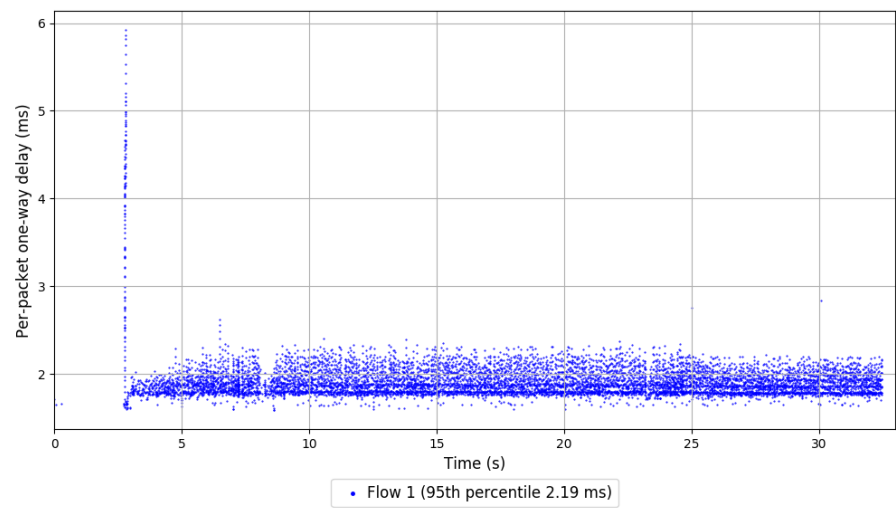
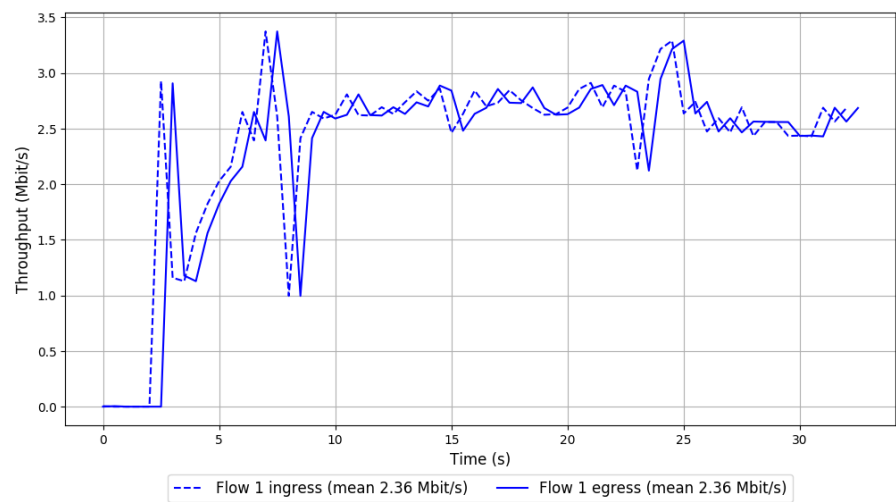


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-06 14:11:46
End at: 2018-09-06 14:12:16
Local clock offset: -4.215 ms
Remote clock offset: -0.24 ms

# Below is generated by plot.py at 2018-09-06 16:03:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 2.186 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 2.186 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

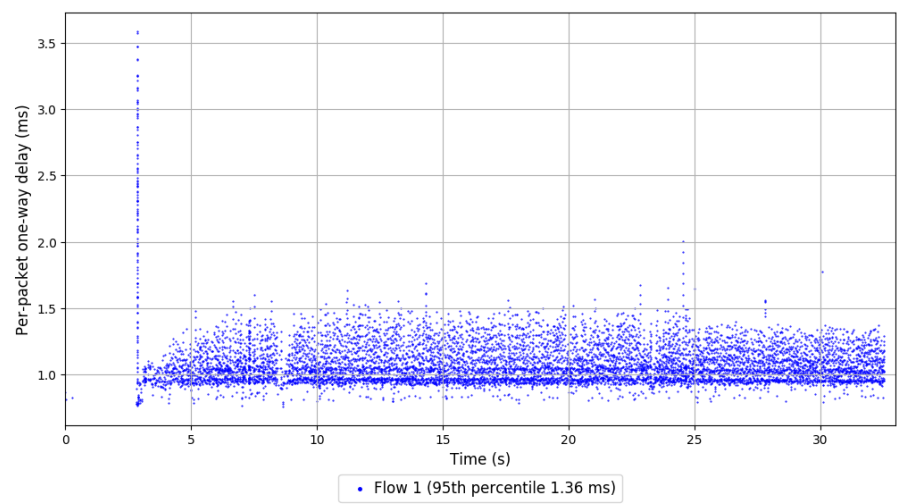
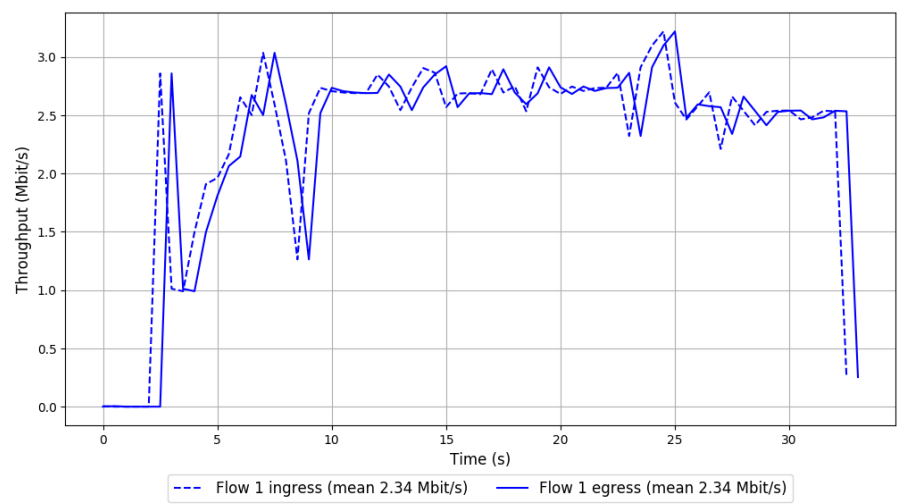


Run 2: Statistics of WebRTC media

Start at: 2018-09-06 14:32:04
End at: 2018-09-06 14:32:34
Local clock offset: -5.122 ms
Remote clock offset: -0.056 ms

Below is generated by plot.py at 2018-09-06 16:03:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-06 14:52:26

End at: 2018-09-06 14:52:56

Local clock offset: -4.059 ms

Remote clock offset: 0.12 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 2.099 ms

Loss rate: 0.00%

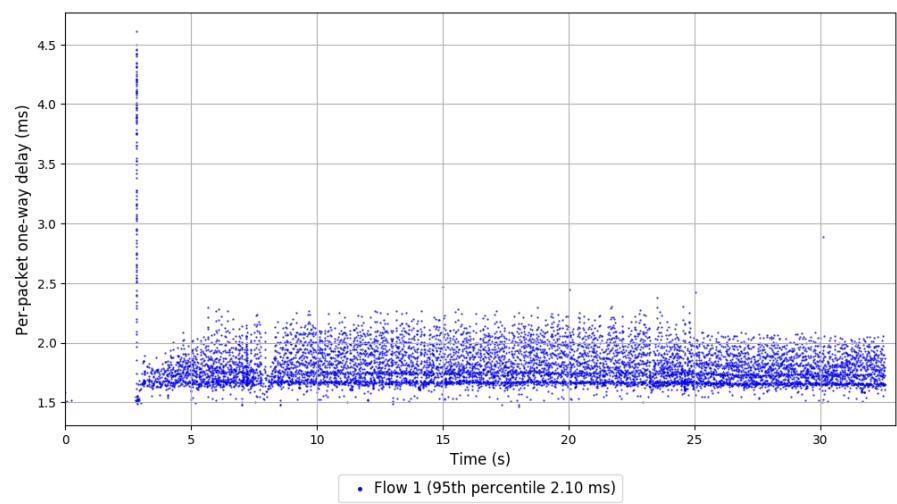
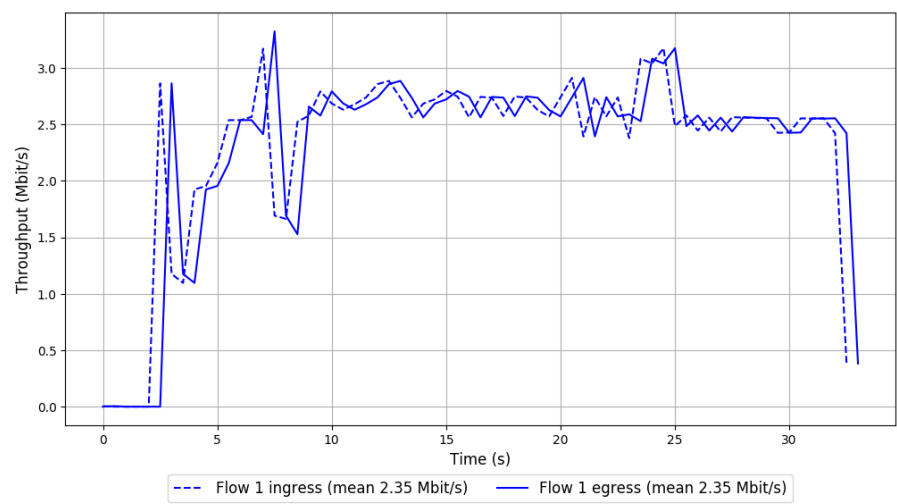
-- Flow 1:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 2.099 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-06 15:12:39

End at: 2018-09-06 15:13:09

Local clock offset: -3.769 ms

Remote clock offset: 0.151 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 2.146 ms

Loss rate: 0.00%

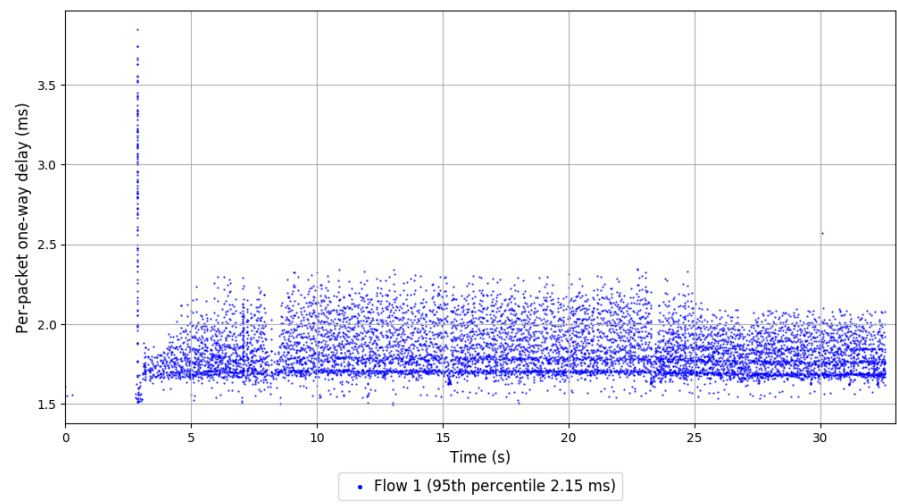
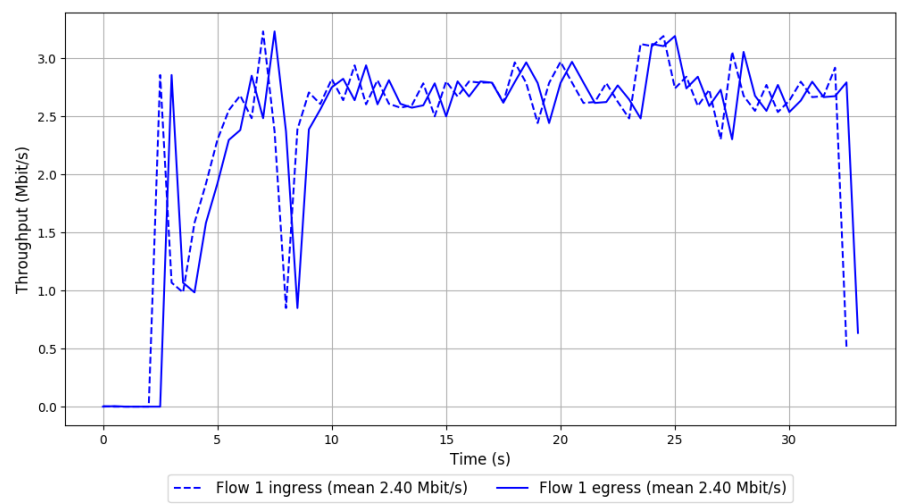
-- Flow 1:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 2.146 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-06 15:32:49

End at: 2018-09-06 15:33:19

Local clock offset: -6.451 ms

Remote clock offset: 0.153 ms

Below is generated by plot.py at 2018-09-06 16:03:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 2.100 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 2.100 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

