

Pantheon Report

Generated at 2018-09-25 14:16:55 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

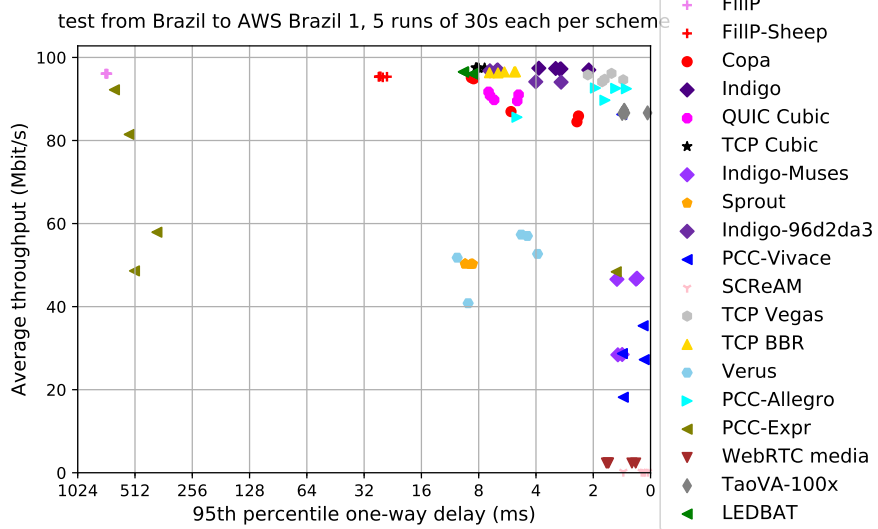
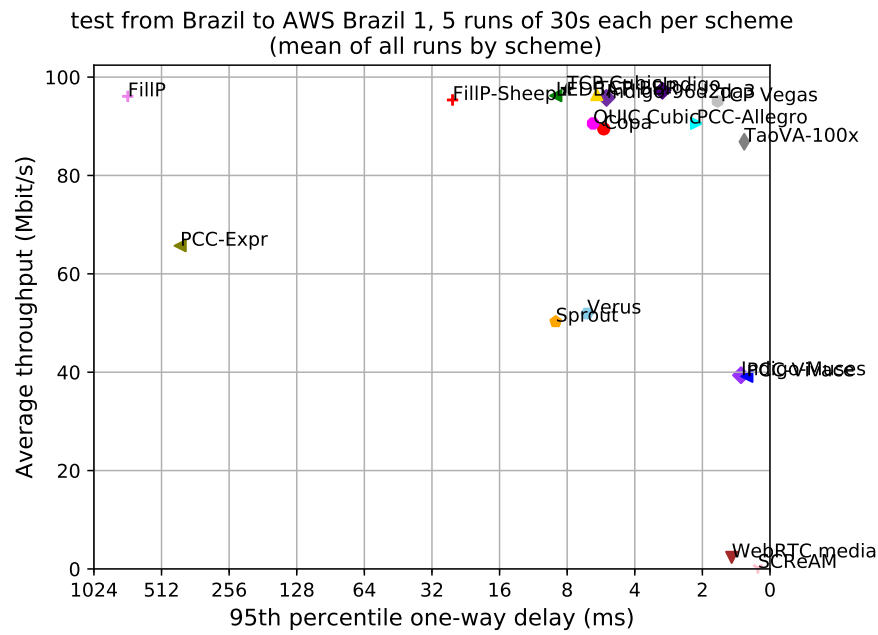
System info:

```
Linux 4.15.0-1021-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 = 184101 245469 368202
```

Git summary:

```
branch: muses @ 90192f6b64ce1a1191dcca0e9ff9ee24950674d7
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
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
```



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	96.44	5.91	0.03
Copa	5	89.48	5.50	0.04
TCP Cubic	5	97.47	8.02	0.06
FillP	5	96.08	723.58	3.36
FillP-Sheep	5	95.35	25.91	1.38
Indigo	5	97.23	3.02	0.02
Indigo-96d2da3	5	95.77	5.35	0.03
LEDBAT	5	96.22	8.99	0.09
Indigo-Muses	5	39.38	0.86	0.01
PCC-Allegro	5	90.59	2.12	0.02
PCC-Expr	5	65.72	423.06	3.13
QUIC Cubic	5	90.58	6.13	0.02
SCReAM	5	0.22	0.36	0.05
Sprout	5	50.28	9.00	0.06
TaoVA-100x	5	86.85	0.76	0.01
TCP Vegas	5	95.09	1.55	0.01
Verus	5	51.93	6.52	0.07
PCC-Vivace	5	39.16	0.68	0.01
WebRTC media	5	2.35	1.13	0.04

Run 1: Statistics of TCP BBR

Start at: 2018-09-25 12:33:07

End at: 2018-09-25 12:33:37

Local clock offset: -6.17 ms

Remote clock offset: 0.776 ms

Below is generated by plot.py at 2018-09-25 14:05:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.55 Mbit/s

95th percentile per-packet one-way delay: 5.129 ms

Loss rate: 0.02%

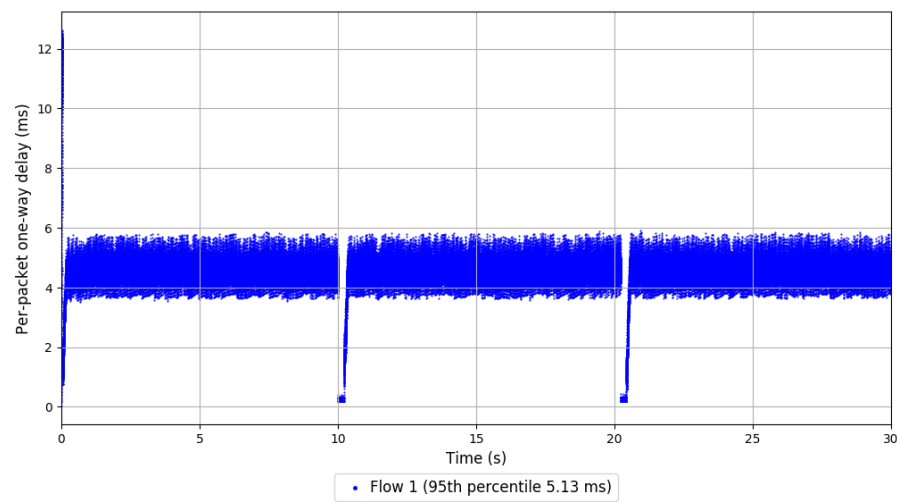
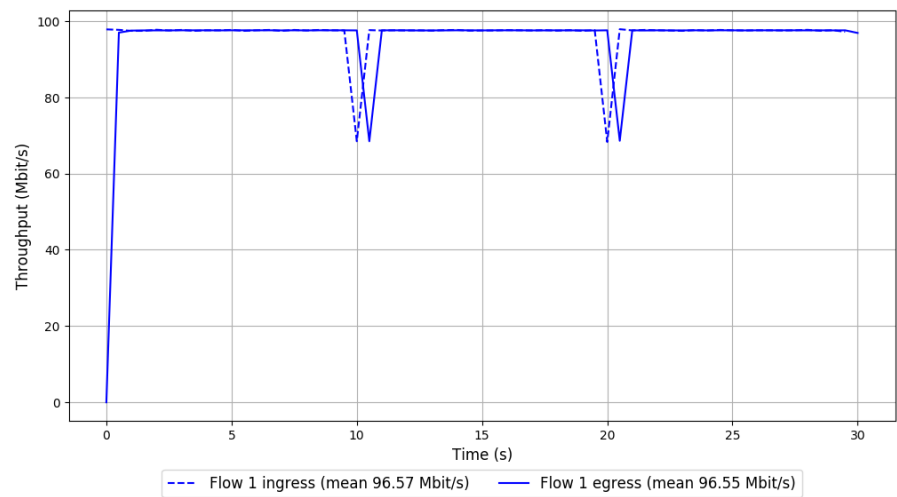
-- Flow 1:

Average throughput: 96.55 Mbit/s

95th percentile per-packet one-way delay: 5.129 ms

Loss rate: 0.02%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-25 12:54:33

End at: 2018-09-25 12:55:03

Local clock offset: -4.795 ms

Remote clock offset: 0.886 ms

Below is generated by plot.py at 2018-09-25 14:05:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.32 Mbit/s

95th percentile per-packet one-way delay: 7.021 ms

Loss rate: 0.03%

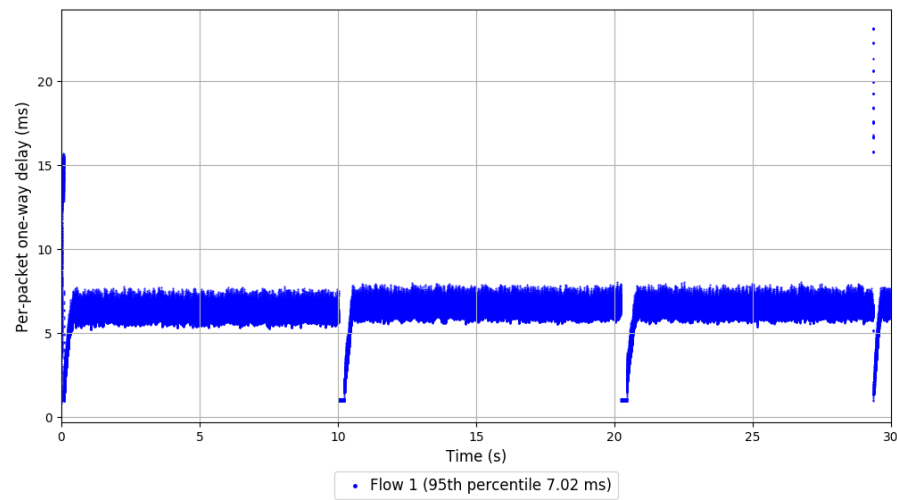
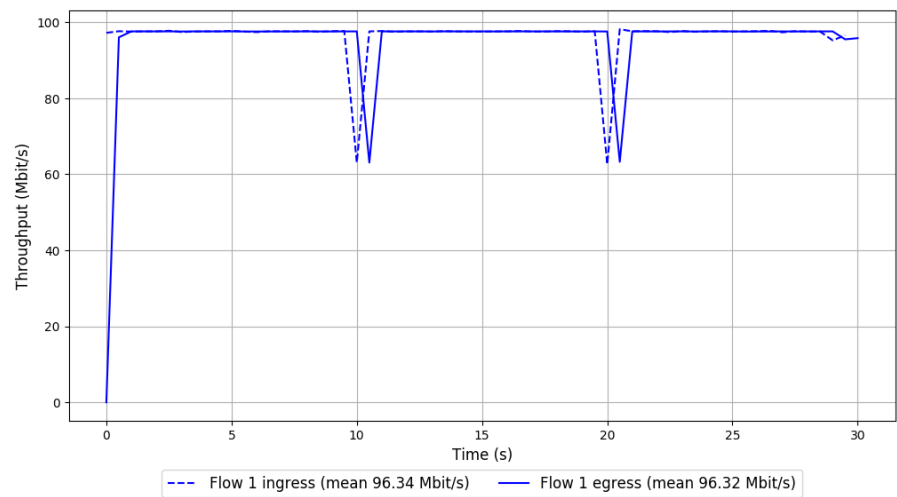
-- Flow 1:

Average throughput: 96.32 Mbit/s

95th percentile per-packet one-way delay: 7.021 ms

Loss rate: 0.03%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-09-25 13:15:58

End at: 2018-09-25 13:16:28

Local clock offset: -6.39 ms

Remote clock offset: 0.866 ms

Below is generated by plot.py at 2018-09-25 14:05:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.55 Mbit/s

95th percentile per-packet one-way delay: 5.197 ms

Loss rate: 0.02%

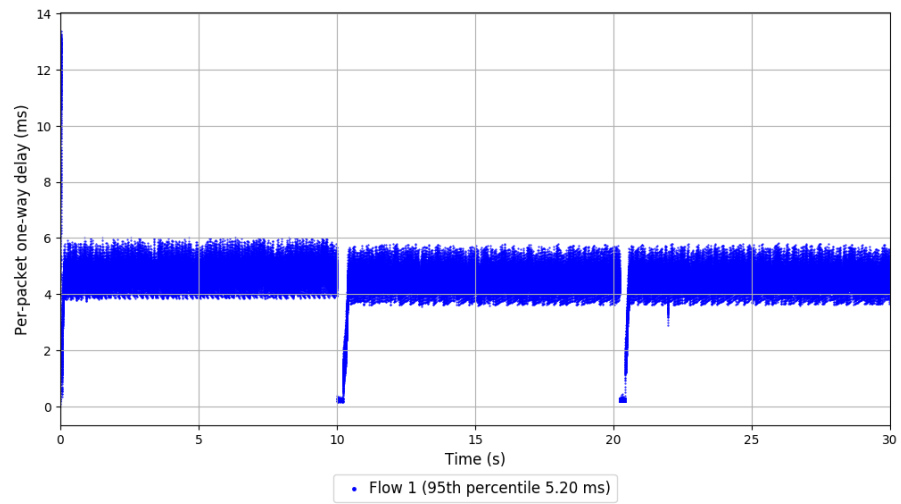
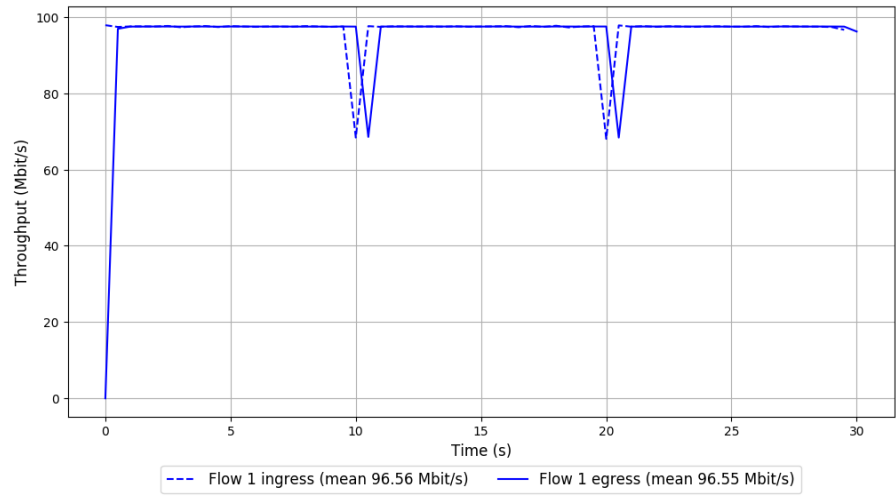
-- Flow 1:

Average throughput: 96.55 Mbit/s

95th percentile per-packet one-way delay: 5.197 ms

Loss rate: 0.02%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-25 13:37:24

End at: 2018-09-25 13:37:54

Local clock offset: -7.332 ms

Remote clock offset: 0.61 ms

Below is generated by plot.py at 2018-09-25 14:05:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.28 Mbit/s

95th percentile per-packet one-way delay: 6.336 ms

Loss rate: 0.04%

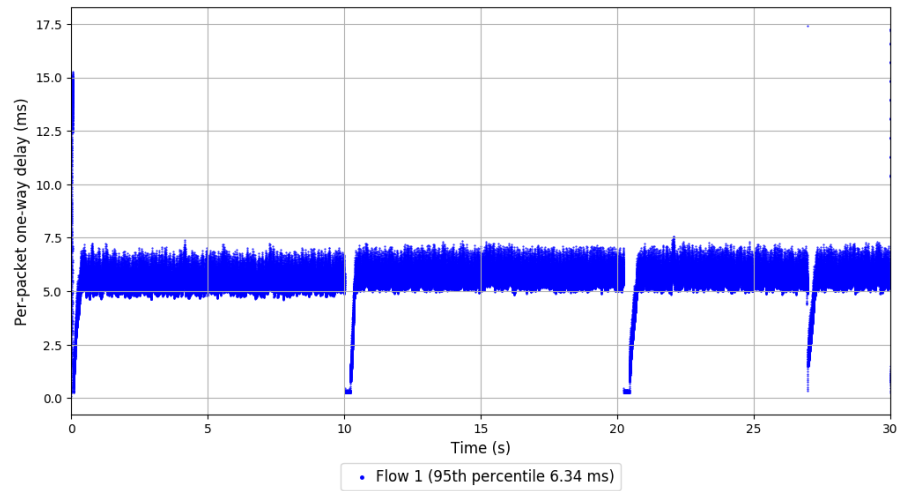
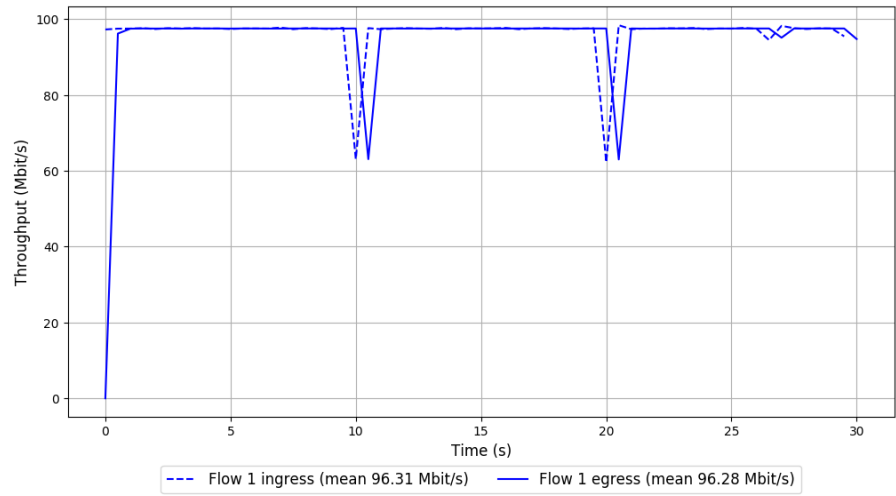
-- Flow 1:

Average throughput: 96.28 Mbit/s

95th percentile per-packet one-way delay: 6.336 ms

Loss rate: 0.04%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-25 13:58:50

End at: 2018-09-25 13:59:20

Local clock offset: -5.094 ms

Remote clock offset: 0.507 ms

Below is generated by plot.py at 2018-09-25 14:05:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.51 Mbit/s

95th percentile per-packet one-way delay: 5.858 ms

Loss rate: 0.02%

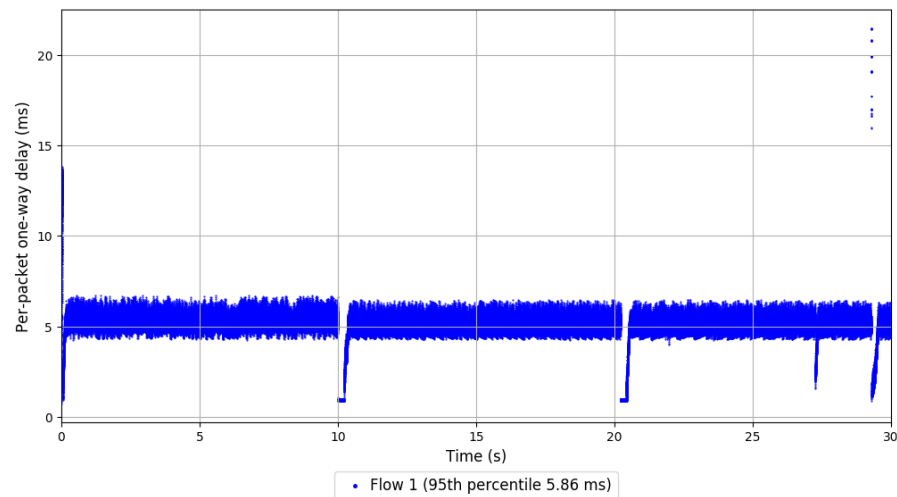
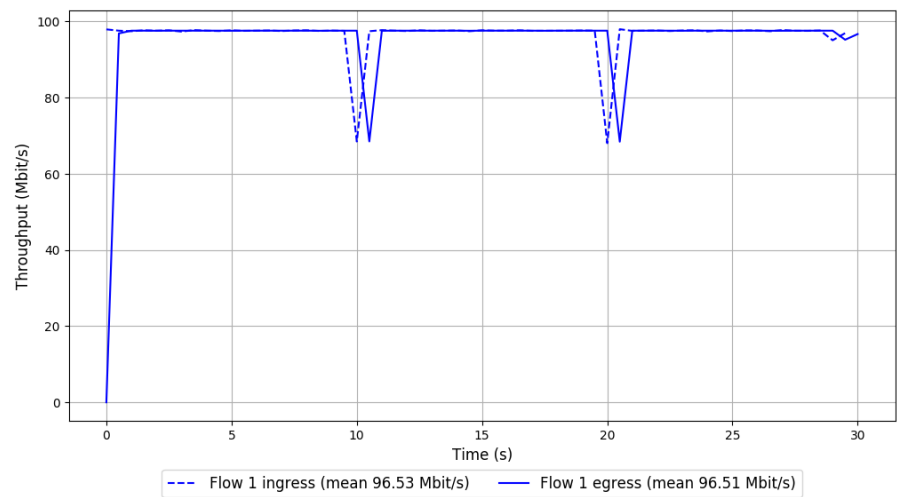
-- Flow 1:

Average throughput: 96.51 Mbit/s

95th percentile per-packet one-way delay: 5.858 ms

Loss rate: 0.02%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-25 12:34:15

End at: 2018-09-25 12:34:45

Local clock offset: -5.393 ms

Remote clock offset: 0.756 ms

Below is generated by plot.py at 2018-09-25 14:06:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.90 Mbit/s

95th percentile per-packet one-way delay: 2.392 ms

Loss rate: 0.01%

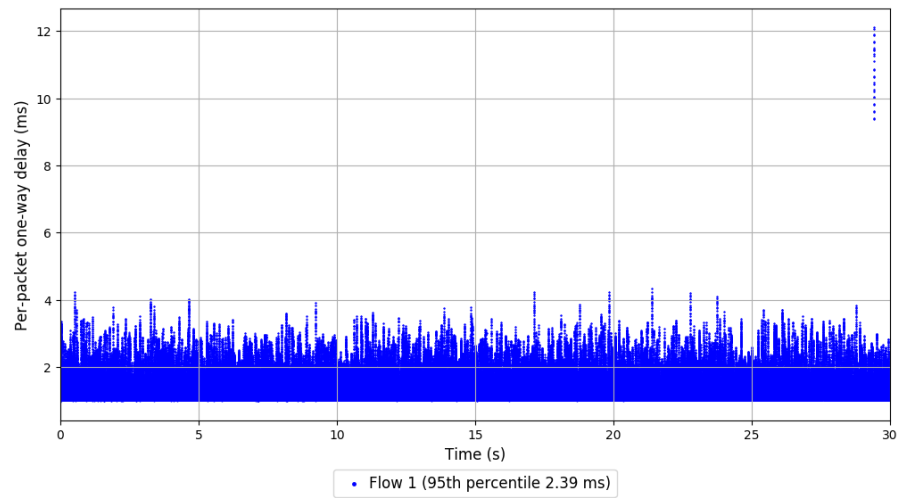
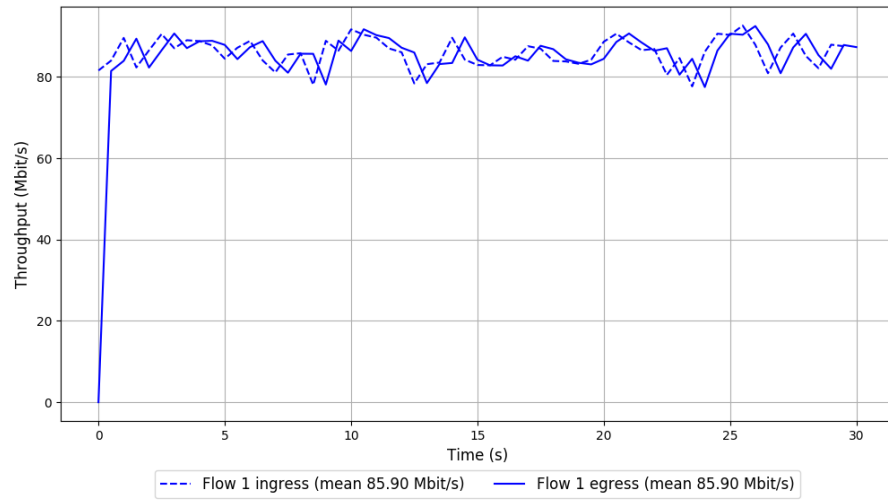
-- Flow 1:

Average throughput: 85.90 Mbit/s

95th percentile per-packet one-way delay: 2.392 ms

Loss rate: 0.01%

Run 1: Report of Copa — Data Link

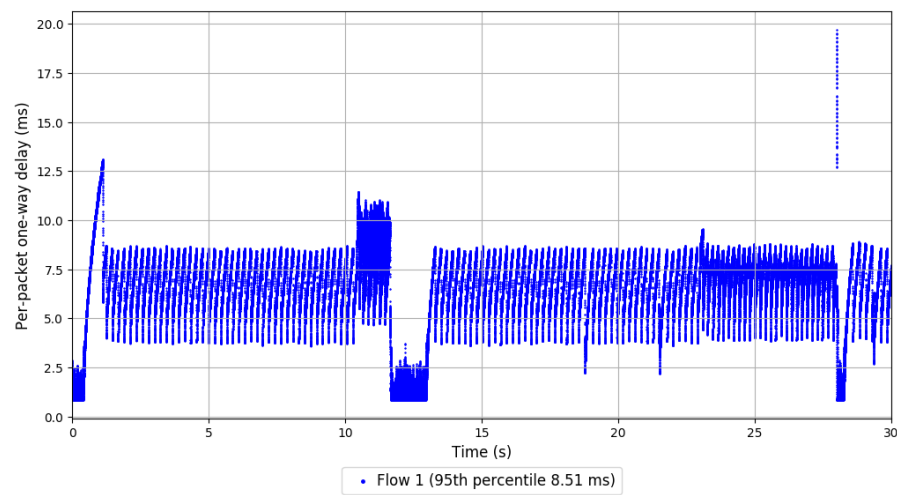
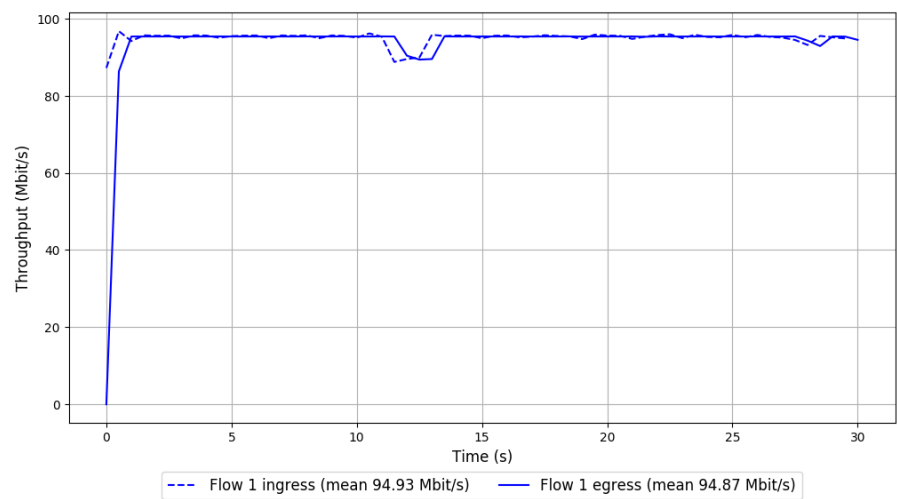


Run 2: Statistics of Copa

Start at: 2018-09-25 12:55:41
End at: 2018-09-25 12:56:11
Local clock offset: -4.793 ms
Remote clock offset: 0.96 ms

Below is generated by plot.py at 2018-09-25 14:06:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 94.87 Mbit/s
95th percentile per-packet one-way delay: 8.509 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 94.87 Mbit/s
95th percentile per-packet one-way delay: 8.509 ms
Loss rate: 0.07%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-25 13:17:06

End at: 2018-09-25 13:17:36

Local clock offset: -6.498 ms

Remote clock offset: 0.841 ms

Below is generated by plot.py at 2018-09-25 14:06:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.14 Mbit/s

95th percentile per-packet one-way delay: 8.746 ms

Loss rate: 0.07%

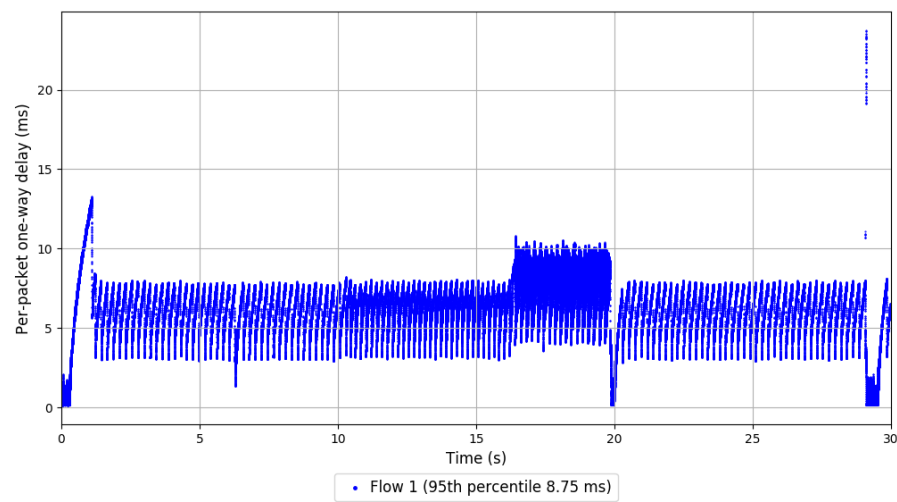
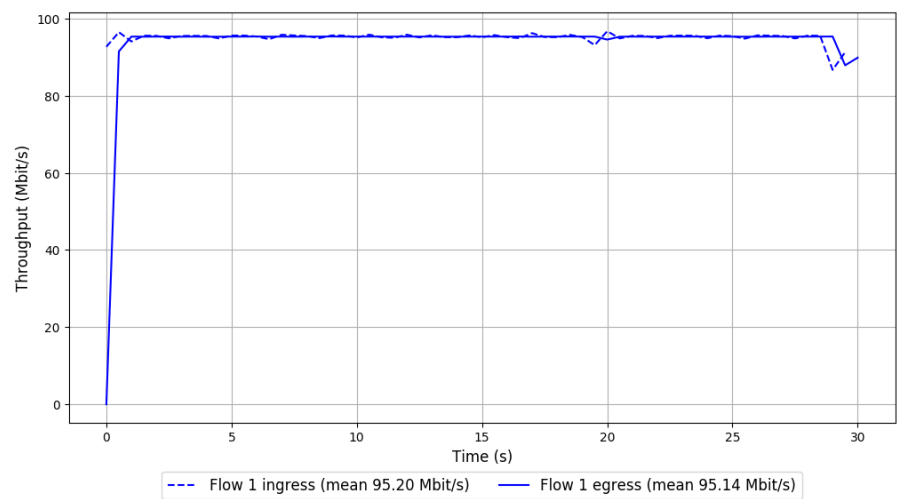
-- Flow 1:

Average throughput: 95.14 Mbit/s

95th percentile per-packet one-way delay: 8.746 ms

Loss rate: 0.07%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-25 13:38:32

End at: 2018-09-25 13:39:02

Local clock offset: -6.658 ms

Remote clock offset: 0.567 ms

Below is generated by plot.py at 2018-09-25 14:07:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.51 Mbit/s

95th percentile per-packet one-way delay: 2.437 ms

Loss rate: 0.01%

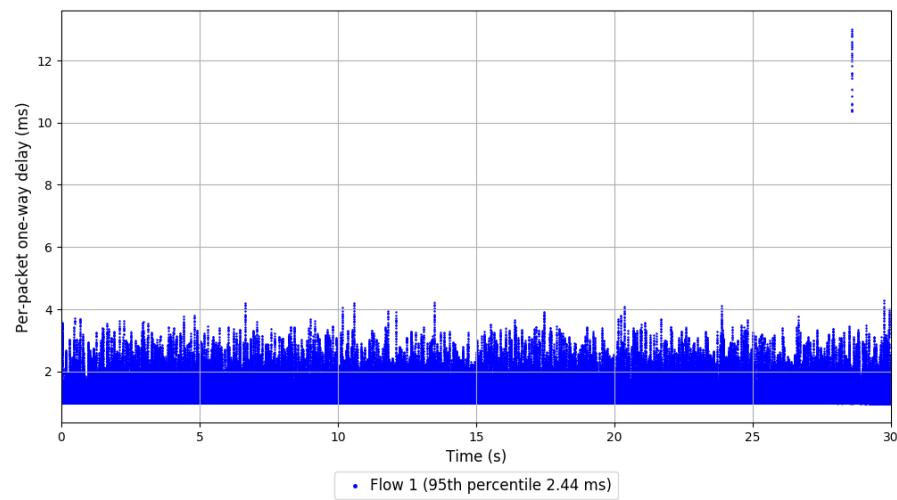
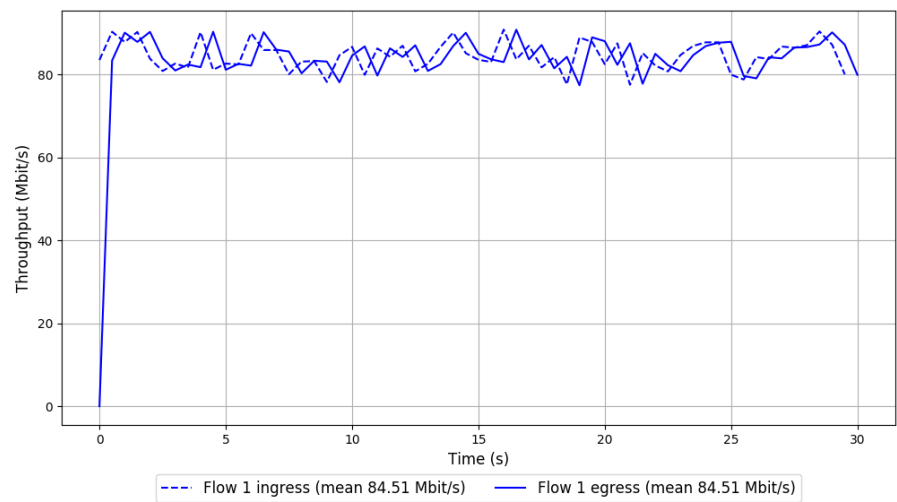
-- Flow 1:

Average throughput: 84.51 Mbit/s

95th percentile per-packet one-way delay: 2.437 ms

Loss rate: 0.01%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-25 13:59:58

End at: 2018-09-25 14:00:28

Local clock offset: -5.9 ms

Remote clock offset: 0.409 ms

Below is generated by plot.py at 2018-09-25 14:07:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.96 Mbit/s

95th percentile per-packet one-way delay: 5.412 ms

Loss rate: 0.02%

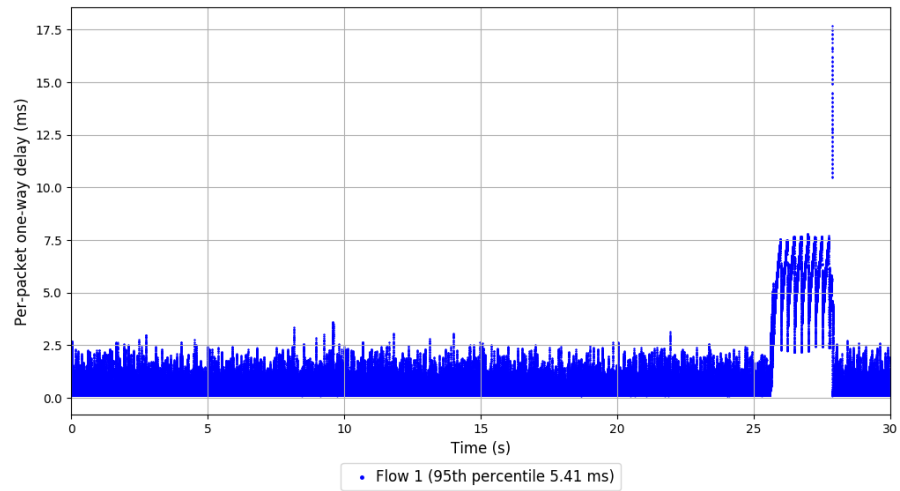
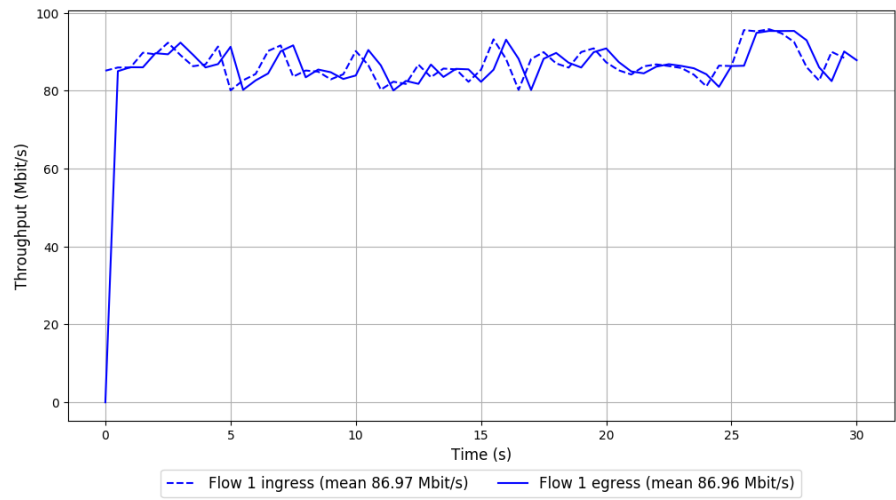
-- Flow 1:

Average throughput: 86.96 Mbit/s

95th percentile per-packet one-way delay: 5.412 ms

Loss rate: 0.02%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-25 12:36:33

End at: 2018-09-25 12:37:03

Local clock offset: -5.428 ms

Remote clock offset: 0.824 ms

Below is generated by plot.py at 2018-09-25 14:07:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 8.230 ms

Loss rate: 0.05%

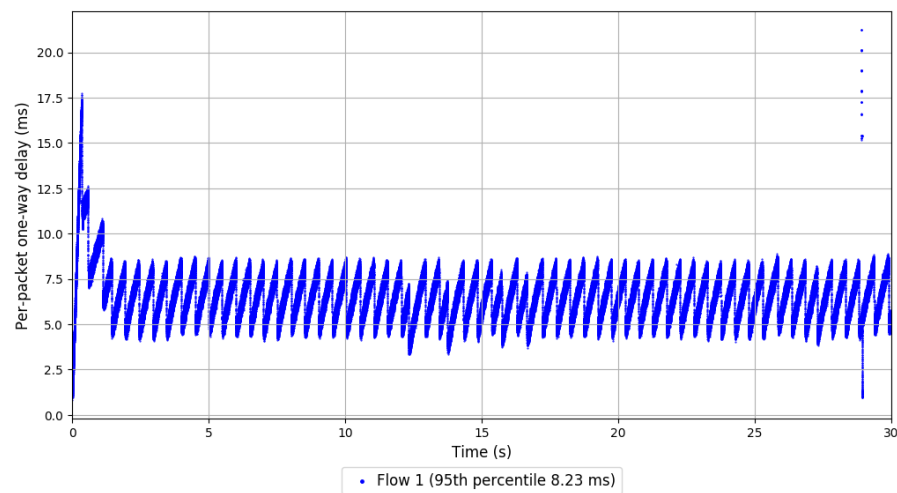
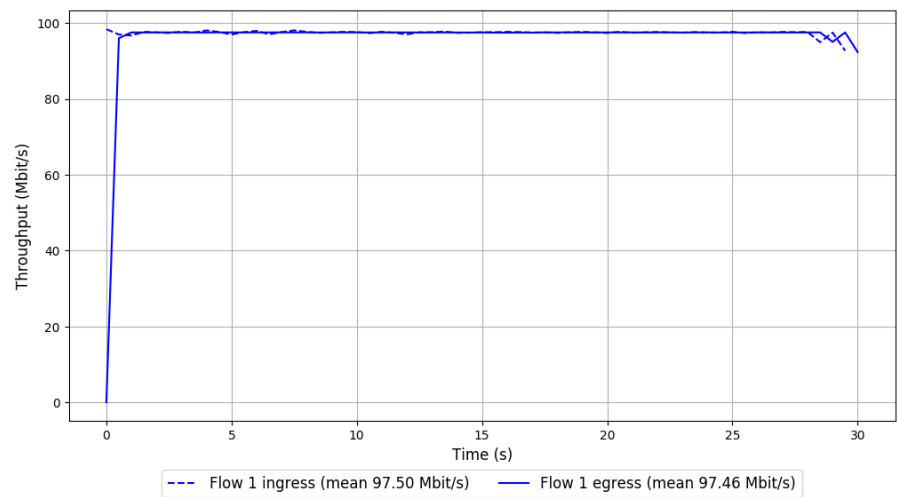
-- Flow 1:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 8.230 ms

Loss rate: 0.05%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-25 12:58:00

End at: 2018-09-25 12:58:30

Local clock offset: -4.774 ms

Remote clock offset: 0.88 ms

Below is generated by plot.py at 2018-09-25 14:07:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.52 Mbit/s

95th percentile per-packet one-way delay: 8.283 ms

Loss rate: 0.06%

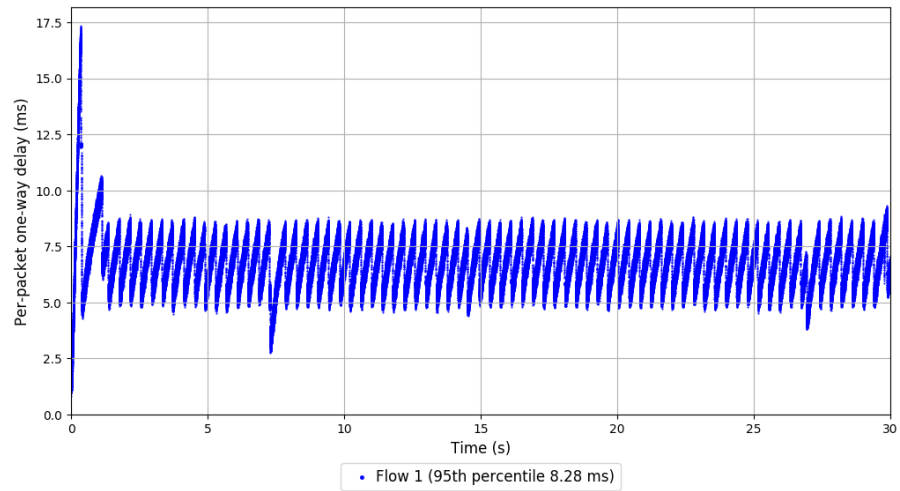
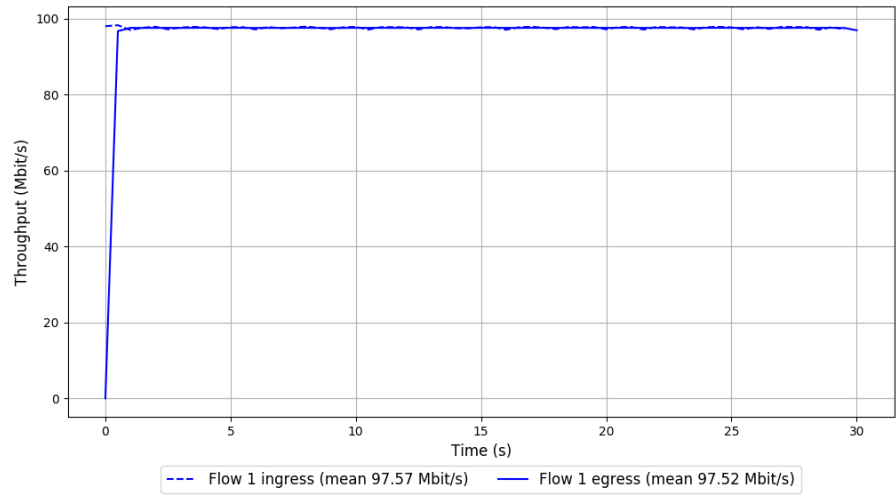
-- Flow 1:

Average throughput: 97.52 Mbit/s

95th percentile per-packet one-way delay: 8.283 ms

Loss rate: 0.06%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-25 13:19:25

End at: 2018-09-25 13:19:55

Local clock offset: -6.59 ms

Remote clock offset: 0.904 ms

Below is generated by plot.py at 2018-09-25 14:07:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 7.450 ms

Loss rate: 0.06%

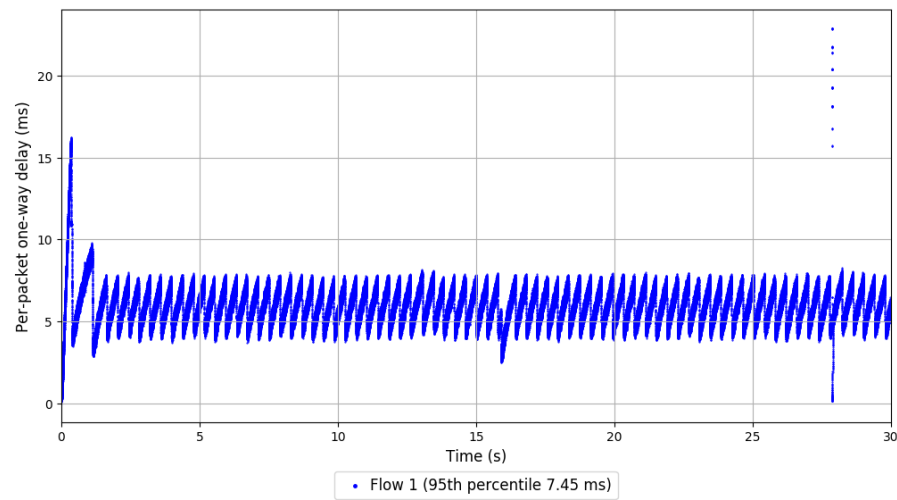
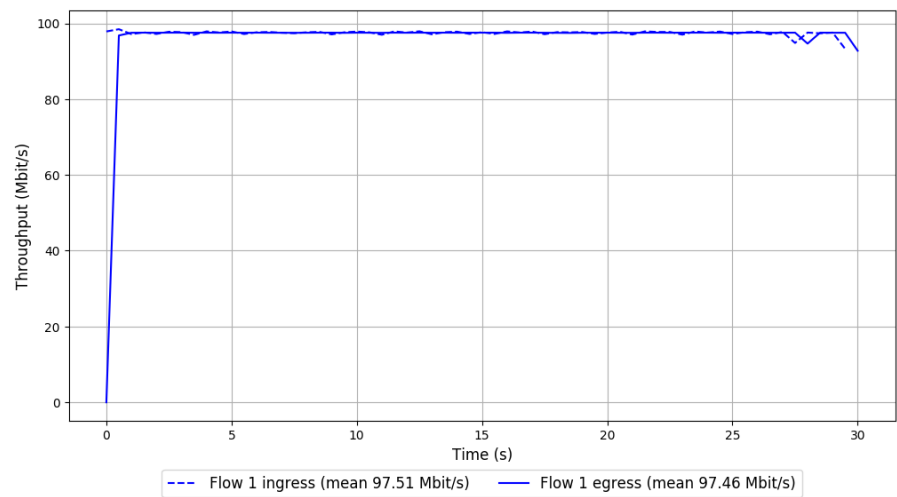
-- Flow 1:

Average throughput: 97.46 Mbit/s

95th percentile per-packet one-way delay: 7.450 ms

Loss rate: 0.06%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-25 13:40:50

End at: 2018-09-25 13:41:20

Local clock offset: -6.346 ms

Remote clock offset: 0.714 ms

Below is generated by plot.py at 2018-09-25 14:07:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.42 Mbit/s

95th percentile per-packet one-way delay: 7.995 ms

Loss rate: 0.06%

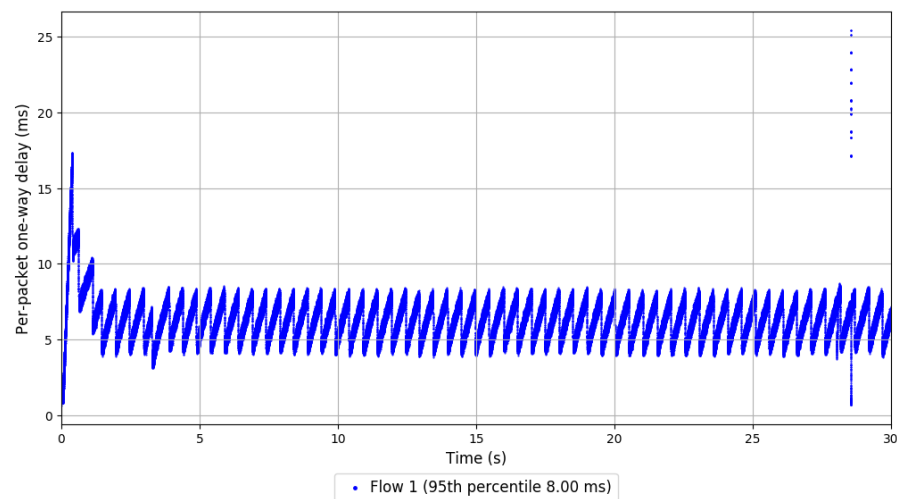
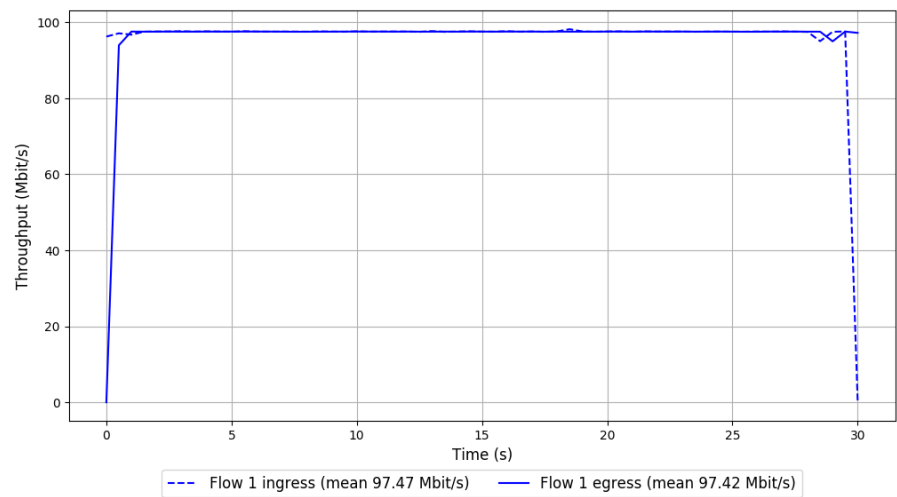
-- Flow 1:

Average throughput: 97.42 Mbit/s

95th percentile per-packet one-way delay: 7.995 ms

Loss rate: 0.06%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-25 14:02:17

End at: 2018-09-25 14:02:47

Local clock offset: -5.139 ms

Remote clock offset: 0.451 ms

Below is generated by plot.py at 2018-09-25 14:07:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 8.150 ms

Loss rate: 0.06%

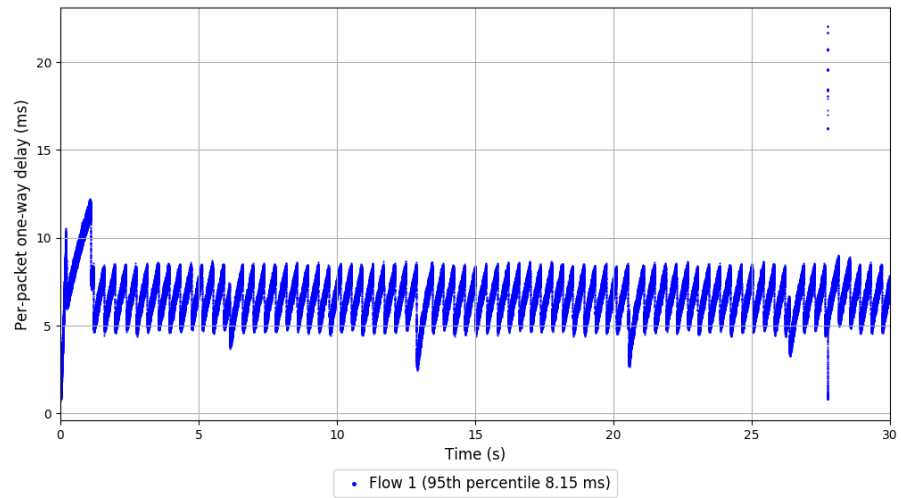
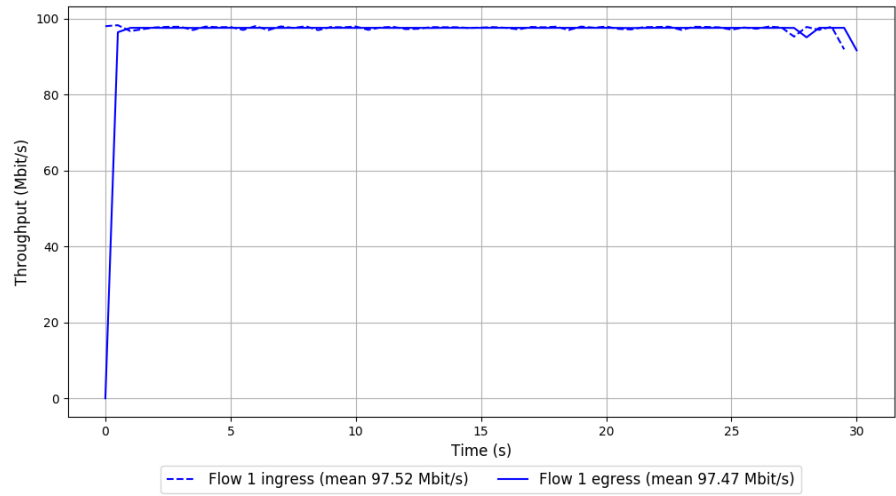
-- Flow 1:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 8.150 ms

Loss rate: 0.06%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-25 12:21:49

End at: 2018-09-25 12:22:20

Local clock offset: -5.471 ms

Remote clock offset: 0.658 ms

Below is generated by plot.py at 2018-09-25 14:08:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.08 Mbit/s

95th percentile per-packet one-way delay: 715.078 ms

Loss rate: 3.08%

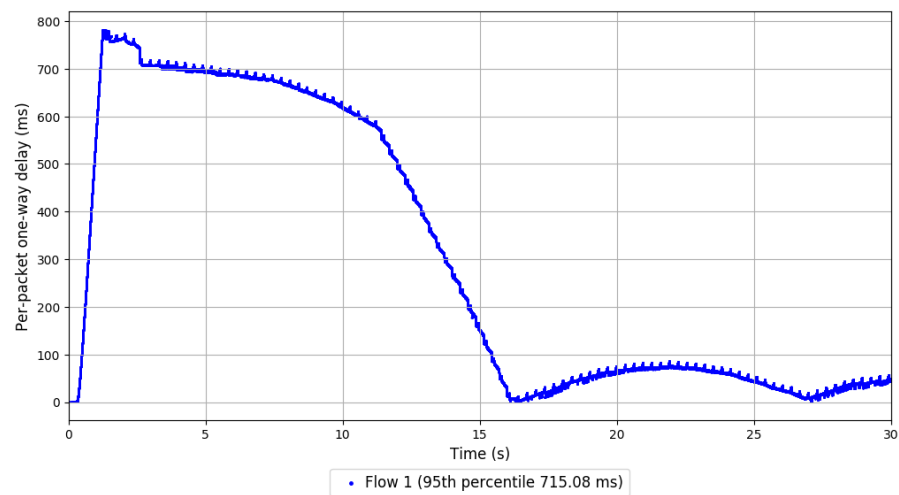
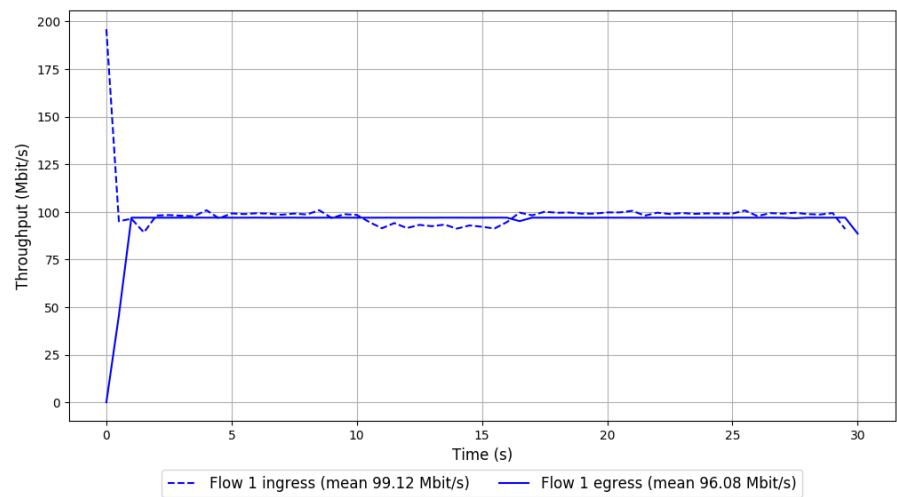
-- Flow 1:

Average throughput: 96.08 Mbit/s

95th percentile per-packet one-way delay: 715.078 ms

Loss rate: 3.08%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-25 12:43:13

End at: 2018-09-25 12:43:43

Local clock offset: -5.159 ms

Remote clock offset: 0.931 ms

Below is generated by plot.py at 2018-09-25 14:08:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 727.224 ms

Loss rate: 3.69%

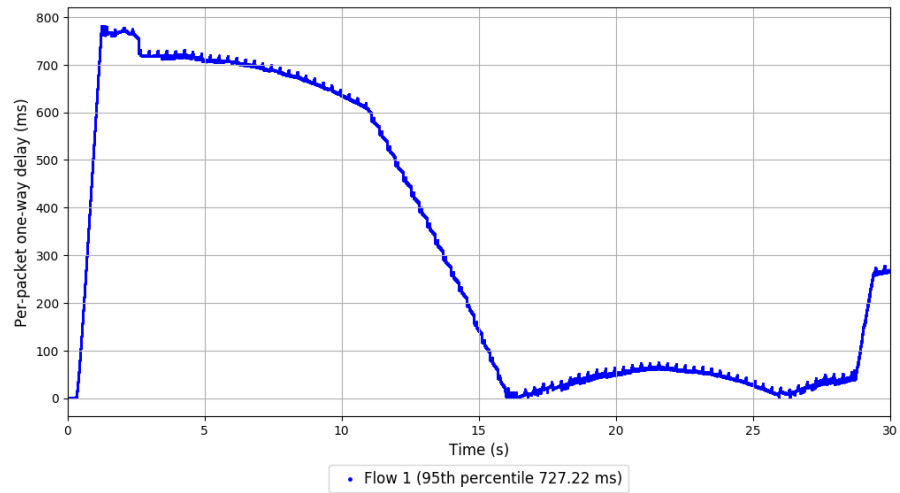
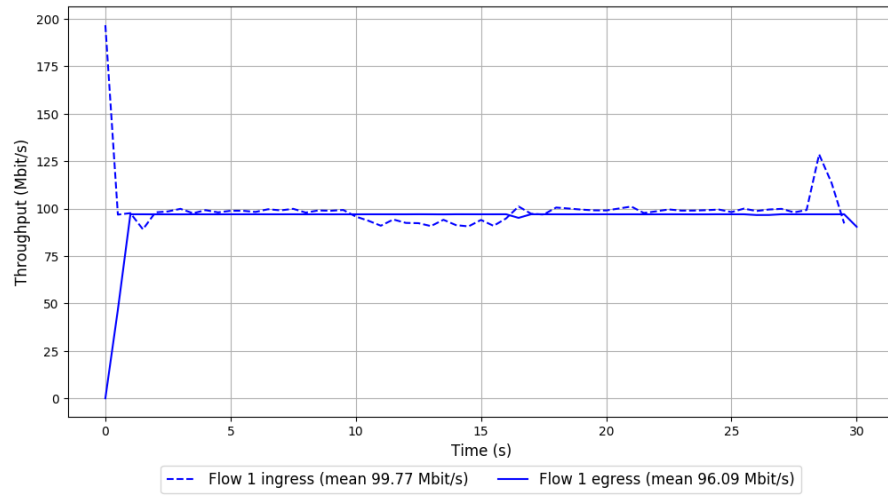
-- Flow 1:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 727.224 ms

Loss rate: 3.69%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-25 13:04:40

End at: 2018-09-25 13:05:10

Local clock offset: -4.764 ms

Remote clock offset: 0.969 ms

Below is generated by plot.py at 2018-09-25 14:08:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.07 Mbit/s

95th percentile per-packet one-way delay: 722.912 ms

Loss rate: 3.12%

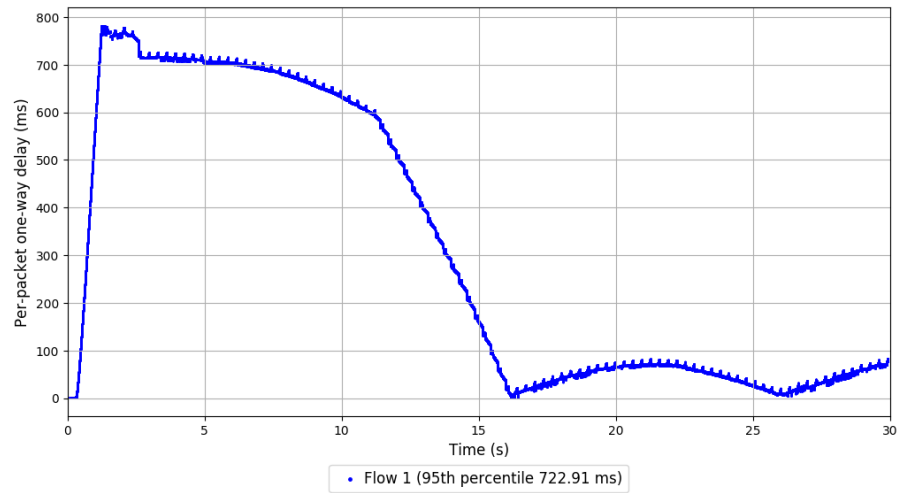
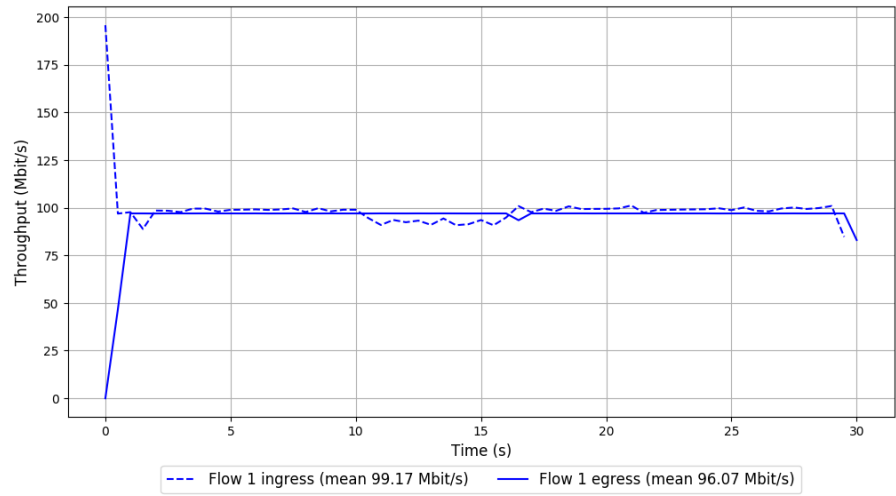
-- Flow 1:

Average throughput: 96.07 Mbit/s

95th percentile per-packet one-way delay: 722.912 ms

Loss rate: 3.12%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-25 13:26:05

End at: 2018-09-25 13:26:36

Local clock offset: -6.998 ms

Remote clock offset: 0.76 ms

Below is generated by plot.py at 2018-09-25 14:08:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 720.807 ms

Loss rate: 3.09%

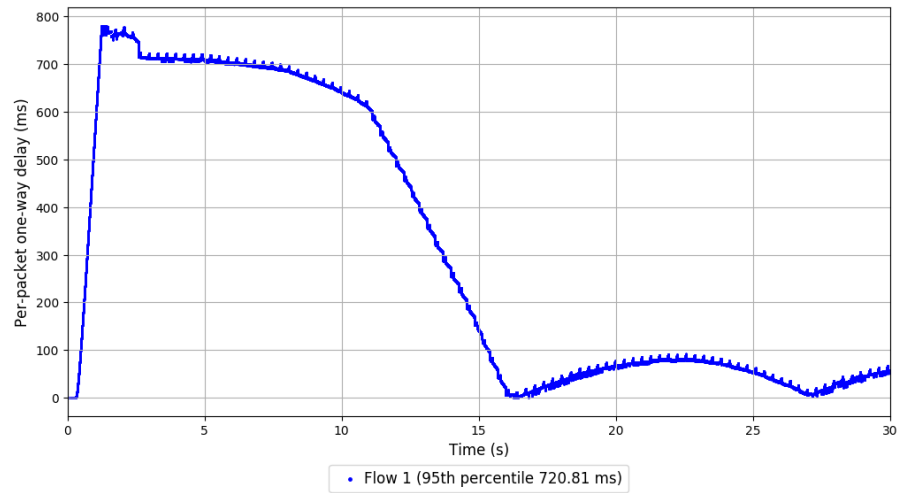
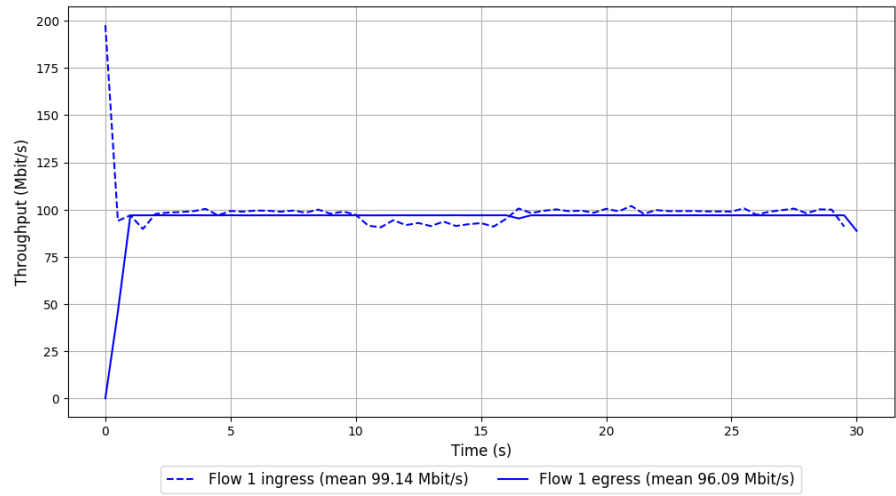
-- Flow 1:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 720.807 ms

Loss rate: 3.09%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-25 13:47:31

End at: 2018-09-25 13:48:01

Local clock offset: -5.63 ms

Remote clock offset: 0.649 ms

Below is generated by plot.py at 2018-09-25 14:08:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 731.895 ms

Loss rate: 3.82%

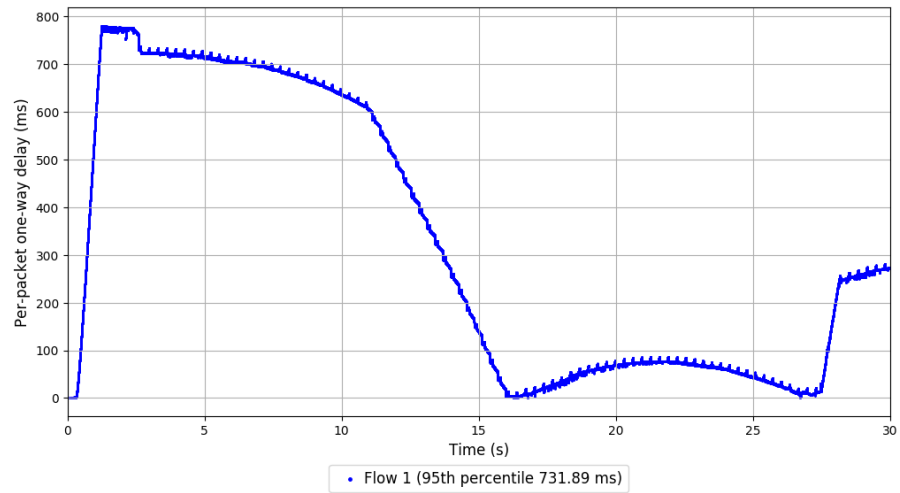
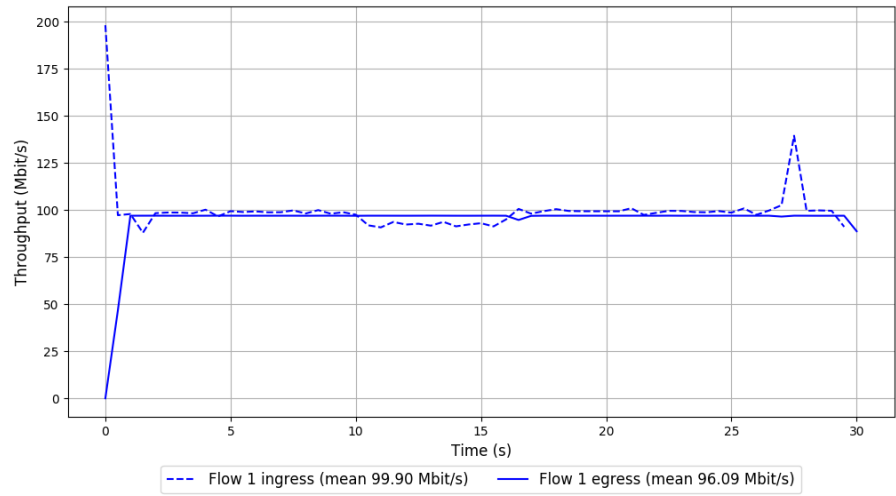
-- Flow 1:

Average throughput: 96.09 Mbit/s

95th percentile per-packet one-way delay: 731.895 ms

Loss rate: 3.82%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-25 12:24:08

End at: 2018-09-25 12:24:38

Local clock offset: -5.395 ms

Remote clock offset: 0.749 ms

Below is generated by plot.py at 2018-09-25 14:08:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.45 Mbit/s

95th percentile per-packet one-way delay: 26.257 ms

Loss rate: 1.21%

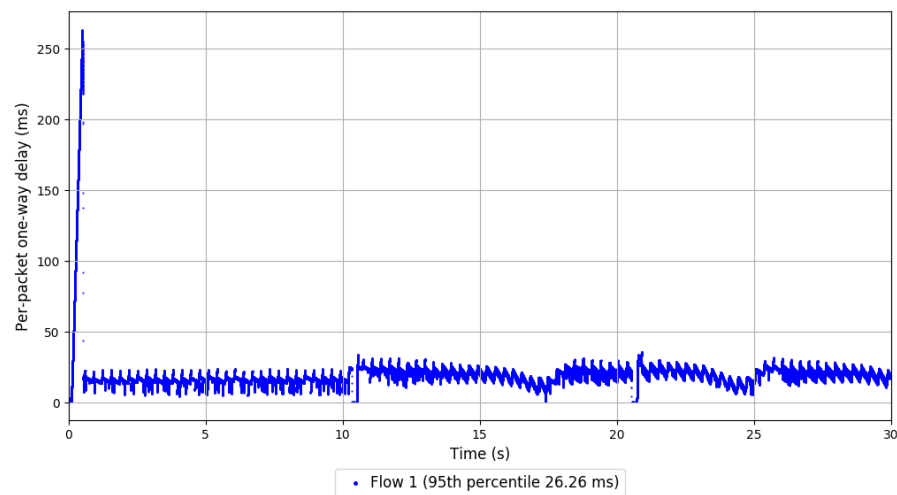
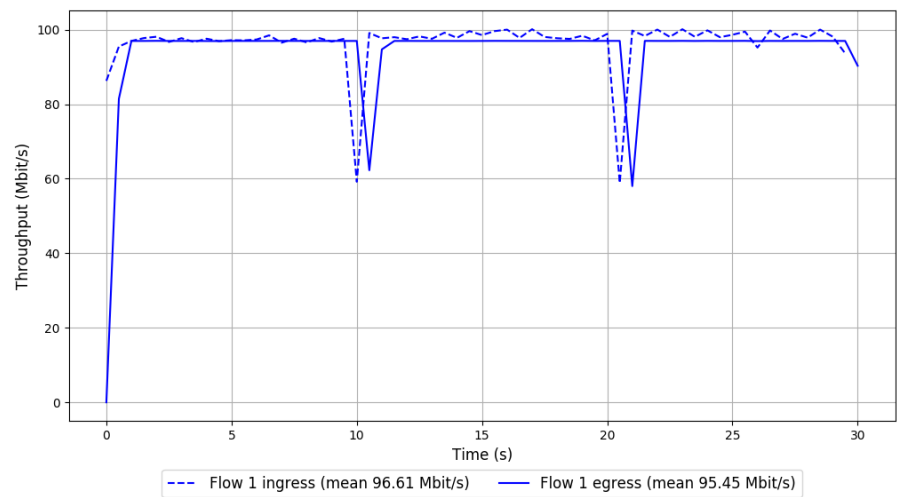
-- Flow 1:

Average throughput: 95.45 Mbit/s

95th percentile per-packet one-way delay: 26.257 ms

Loss rate: 1.21%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-25 12:45:32

End at: 2018-09-25 12:46:02

Local clock offset: -5.016 ms

Remote clock offset: 0.844 ms

Below is generated by plot.py at 2018-09-25 14:08:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.33 Mbit/s

95th percentile per-packet one-way delay: 26.810 ms

Loss rate: 1.27%

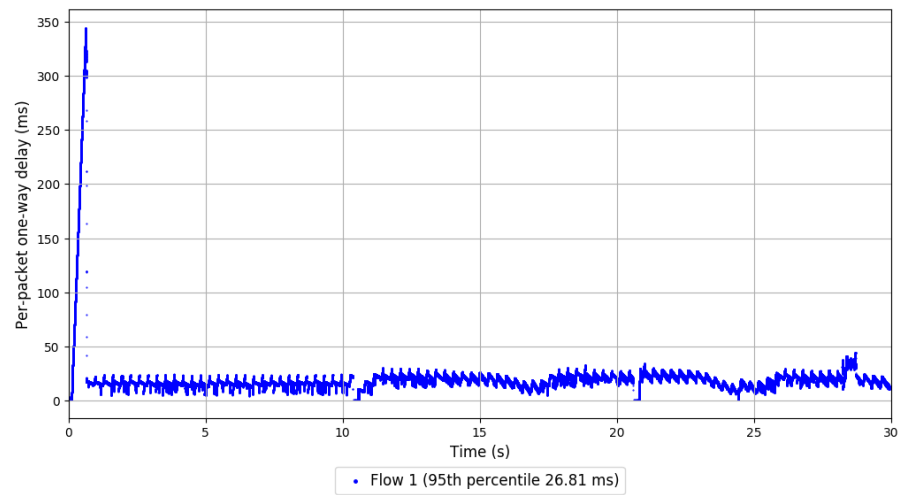
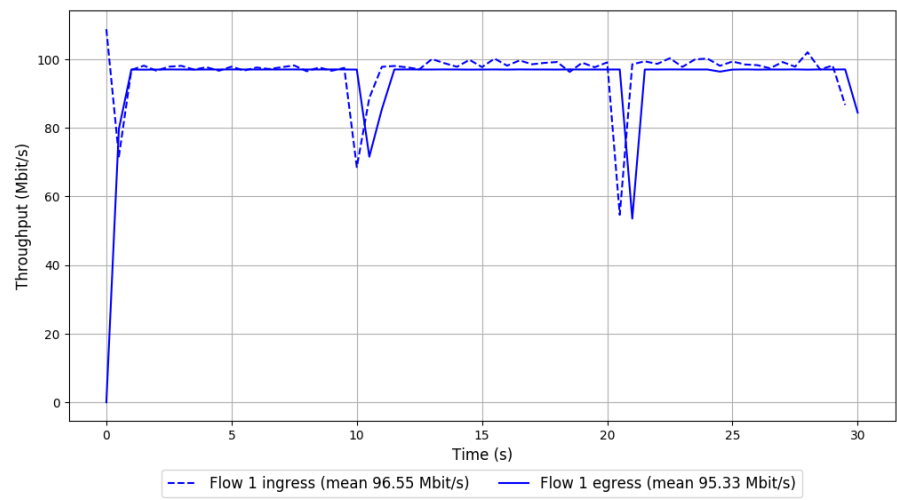
-- Flow 1:

Average throughput: 95.33 Mbit/s

95th percentile per-packet one-way delay: 26.810 ms

Loss rate: 1.27%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-25 13:06:59

End at: 2018-09-25 13:07:29

Local clock offset: -4.819 ms

Remote clock offset: 0.966 ms

Below is generated by plot.py at 2018-09-25 14:09:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.41 Mbit/s

95th percentile per-packet one-way delay: 26.658 ms

Loss rate: 1.24%

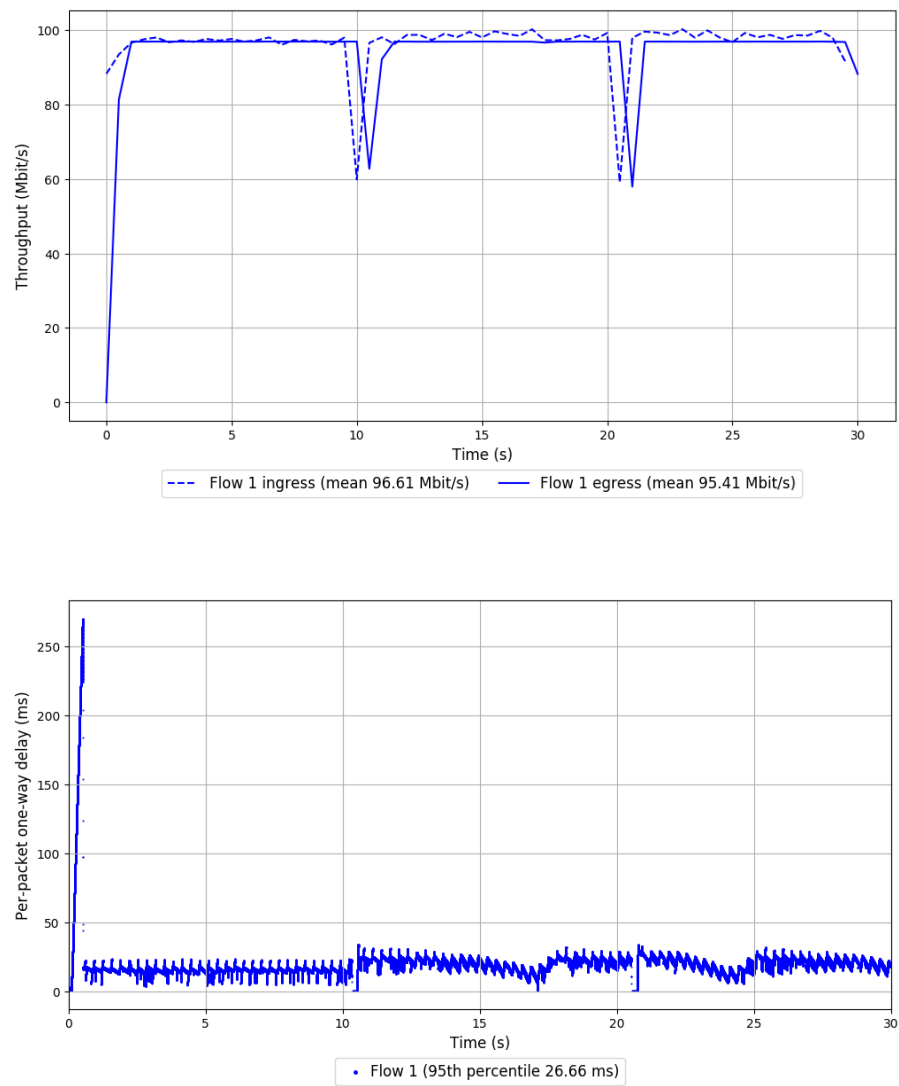
-- Flow 1:

Average throughput: 95.41 Mbit/s

95th percentile per-packet one-way delay: 26.658 ms

Loss rate: 1.24%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-25 13:28:24

End at: 2018-09-25 13:28:54

Local clock offset: -6.274 ms

Remote clock offset: 0.751 ms

Below is generated by plot.py at 2018-09-25 14:09:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.36 Mbit/s

95th percentile per-packet one-way delay: 24.269 ms

Loss rate: 1.67%

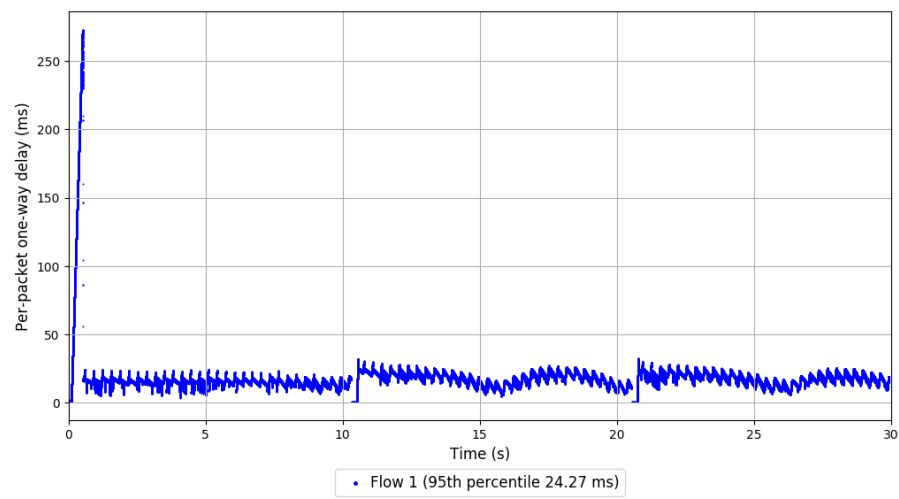
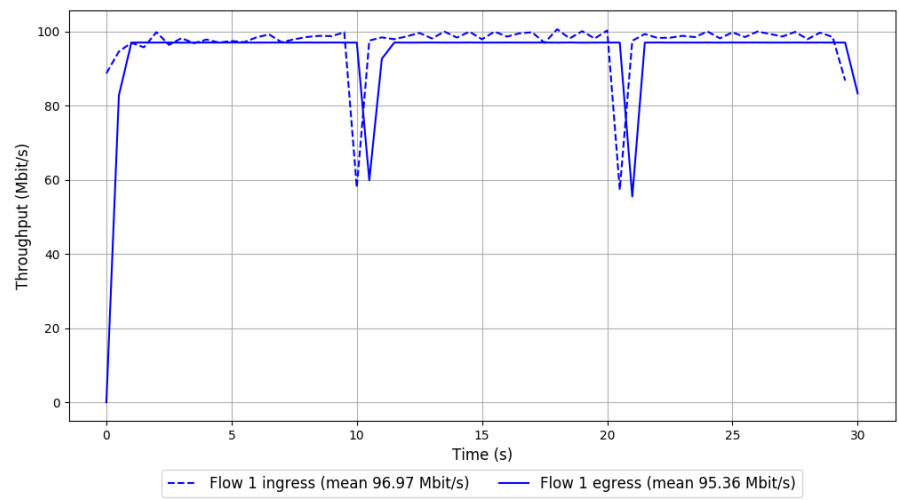
-- Flow 1:

Average throughput: 95.36 Mbit/s

95th percentile per-packet one-way delay: 24.269 ms

Loss rate: 1.67%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-25 13:49:49

End at: 2018-09-25 13:50:19

Local clock offset: -6.178 ms

Remote clock offset: 0.617 ms

Below is generated by plot.py at 2018-09-25 14:09:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.20 Mbit/s

95th percentile per-packet one-way delay: 25.536 ms

Loss rate: 1.51%

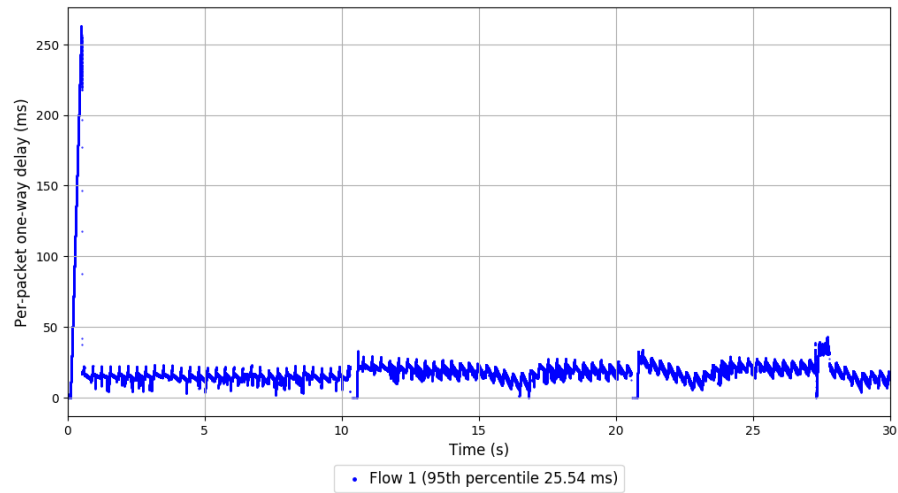
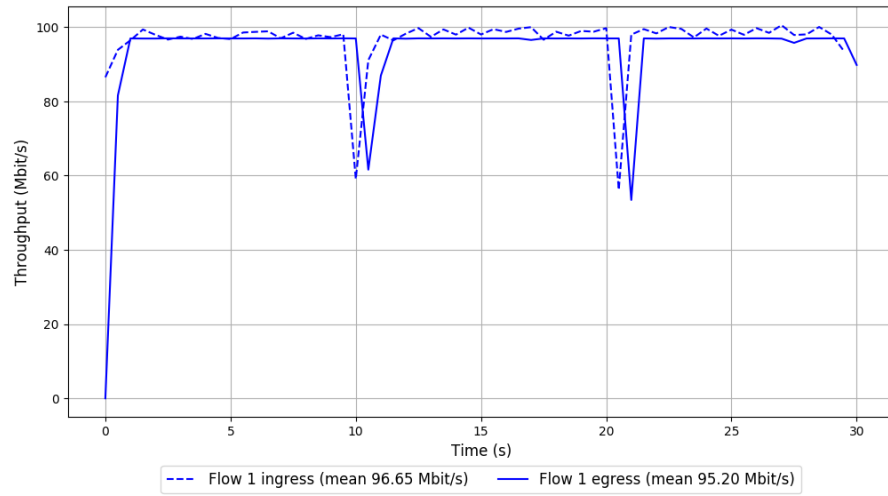
-- Flow 1:

Average throughput: 95.20 Mbit/s

95th percentile per-packet one-way delay: 25.536 ms

Loss rate: 1.51%

Run 5: Report of FillP-Sheep — Data Link

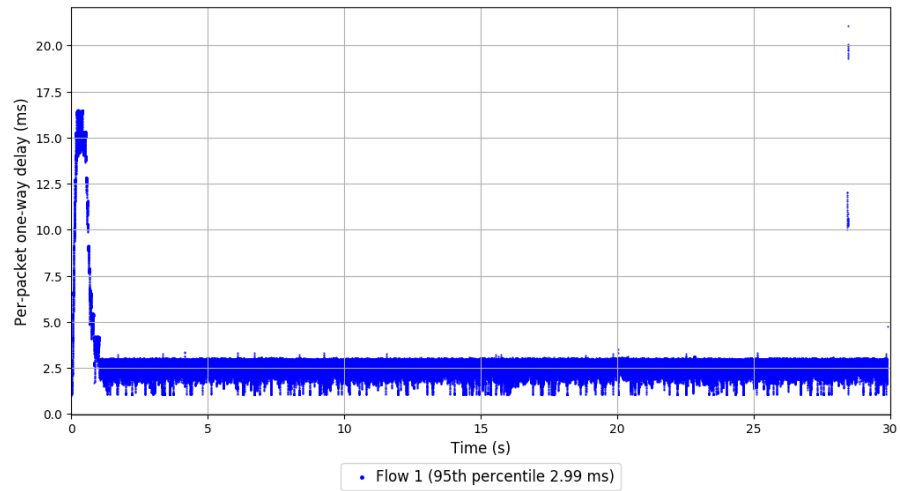
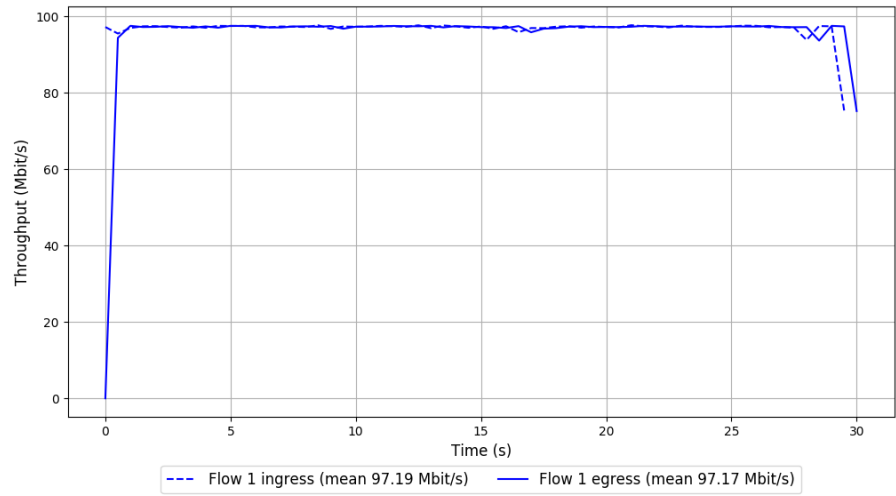


```
Run 1: Statistics of Indigo

Start at: 2018-09-25 12:31:57
End at: 2018-09-25 12:32:27
Local clock offset: -5.383 ms
Remote clock offset: 0.678 ms

# Below is generated by plot.py at 2018-09-25 14:09:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.17 Mbit/s
95th percentile per-packet one-way delay: 2.991 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 97.17 Mbit/s
95th percentile per-packet one-way delay: 2.991 ms
Loss rate: 0.02%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-25 12:53:24

End at: 2018-09-25 12:53:54

Local clock offset: -5.56 ms

Remote clock offset: 0.86 ms

Below is generated by plot.py at 2018-09-25 14:09:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 3.152 ms

Loss rate: 0.02%

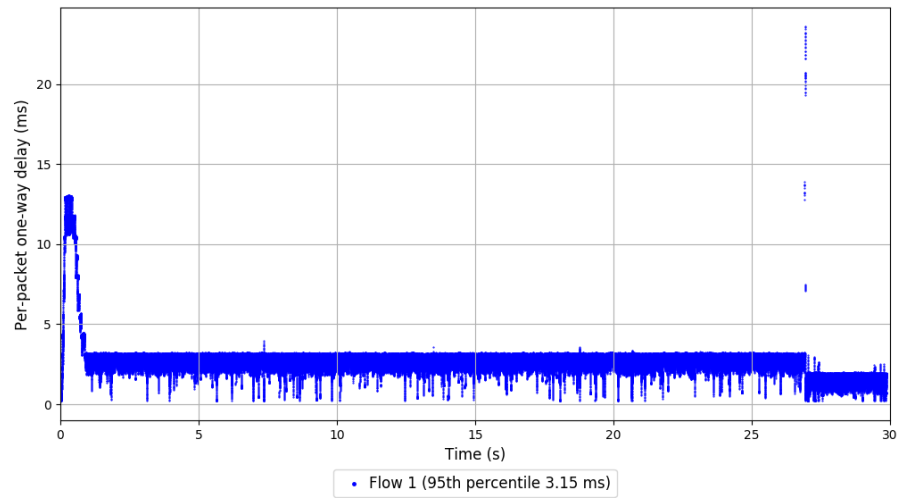
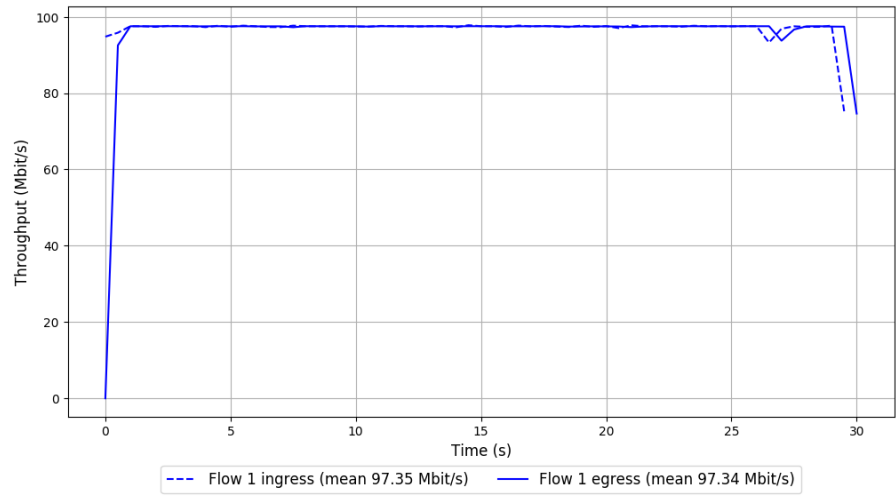
-- Flow 1:

Average throughput: 97.34 Mbit/s

95th percentile per-packet one-way delay: 3.152 ms

Loss rate: 0.02%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-25 13:14:48

End at: 2018-09-25 13:15:18

Local clock offset: -5.441 ms

Remote clock offset: 0.88 ms

Below is generated by plot.py at 2018-09-25 14:10:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.24 Mbit/s

95th percentile per-packet one-way delay: 2.958 ms

Loss rate: 0.02%

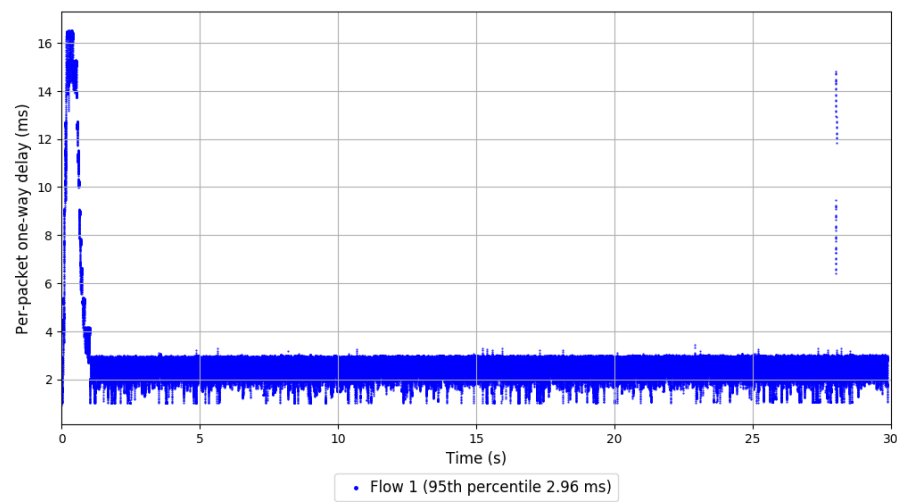
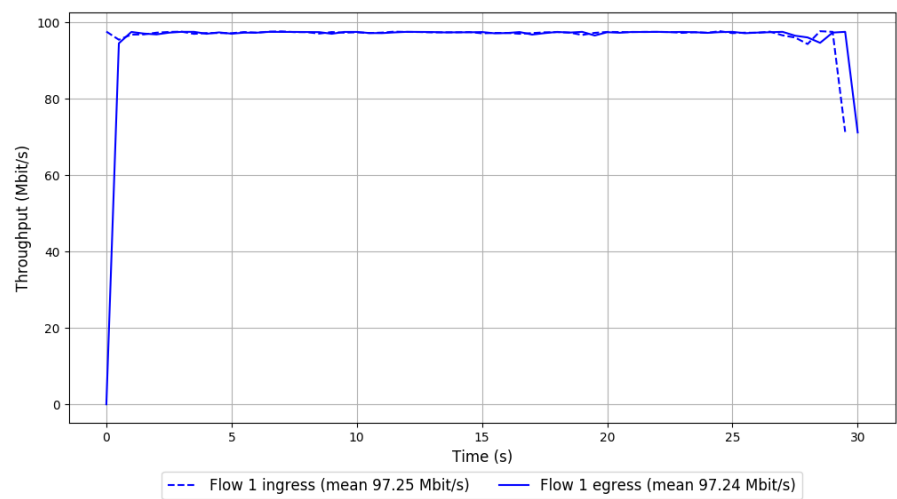
-- Flow 1:

Average throughput: 97.24 Mbit/s

95th percentile per-packet one-way delay: 2.958 ms

Loss rate: 0.02%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-25 13:36:14

End at: 2018-09-25 13:36:44

Local clock offset: -7.338 ms

Remote clock offset: 0.661 ms

Below is generated by plot.py at 2018-09-25 14:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.99 Mbit/s

95th percentile per-packet one-way delay: 2.111 ms

Loss rate: 0.01%

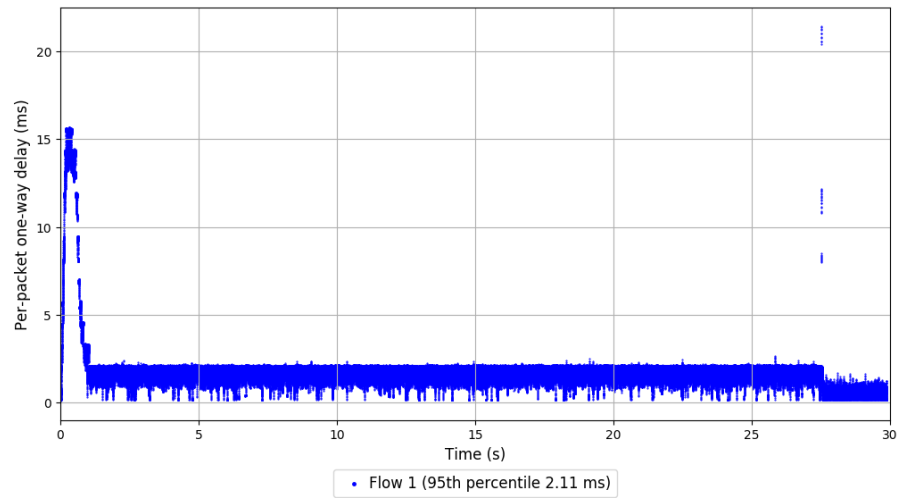
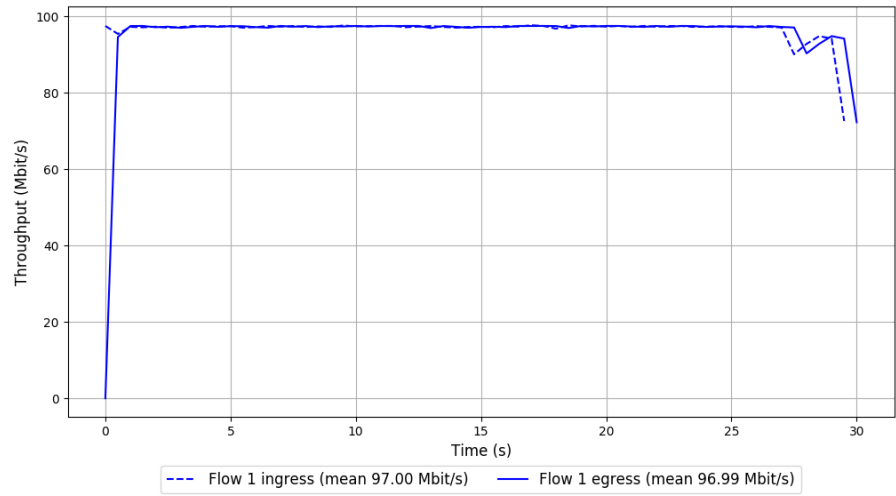
-- Flow 1:

Average throughput: 96.99 Mbit/s

95th percentile per-packet one-way delay: 2.111 ms

Loss rate: 0.01%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-25 13:57:41

End at: 2018-09-25 13:58:11

Local clock offset: -5.111 ms

Remote clock offset: 0.455 ms

Below is generated by plot.py at 2018-09-25 14:10:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 97.41 Mbit/s

95th percentile per-packet one-way delay: 3.865 ms

Loss rate: 0.02%

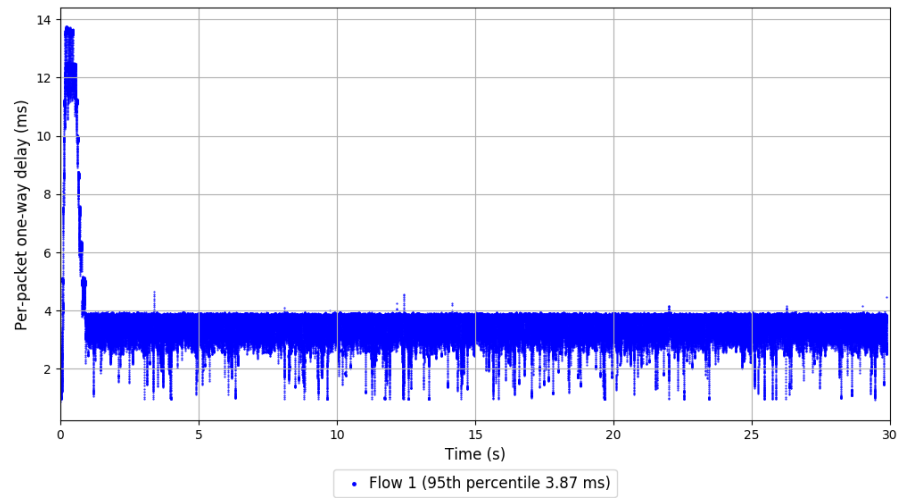
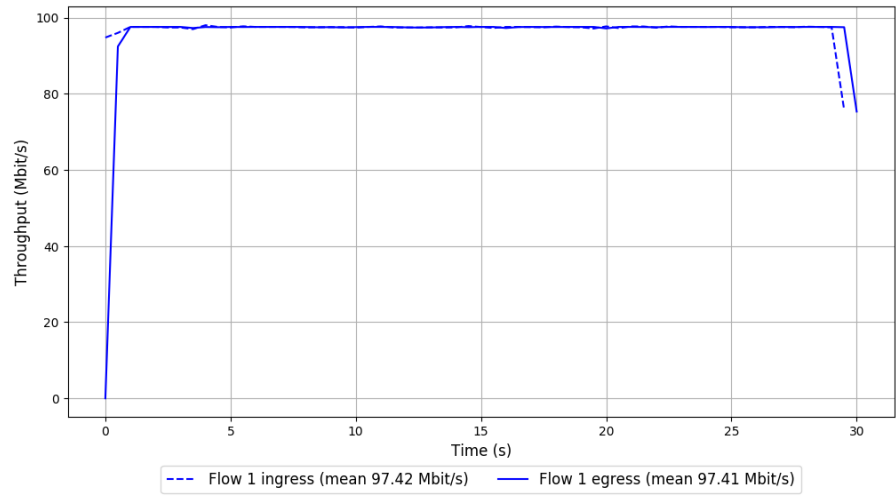
-- Flow 1:

Average throughput: 97.41 Mbit/s

95th percentile per-packet one-way delay: 3.865 ms

Loss rate: 0.02%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-09-25 12:35:25

End at: 2018-09-25 12:35:55

Local clock offset: -6.164 ms

Remote clock offset: 0.815 ms

Below is generated by plot.py at 2018-09-25 14:10:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.99 Mbit/s

95th percentile per-packet one-way delay: 6.357 ms

Loss rate: 0.03%

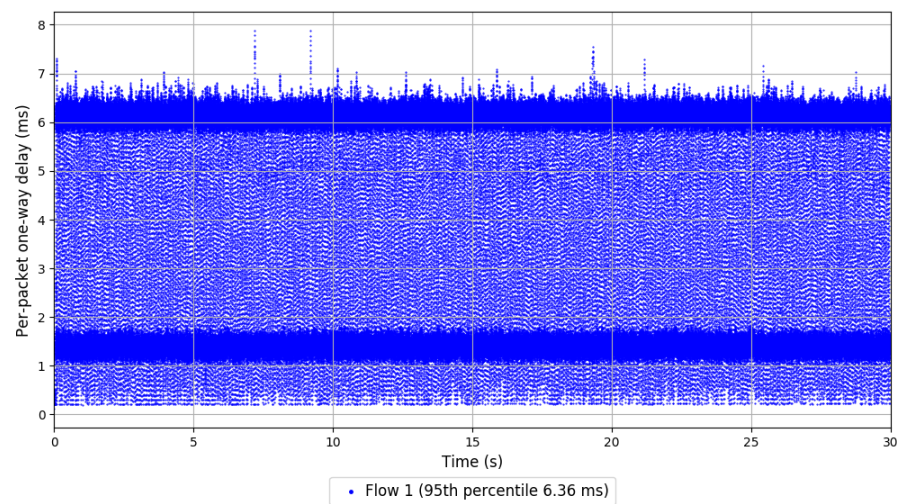
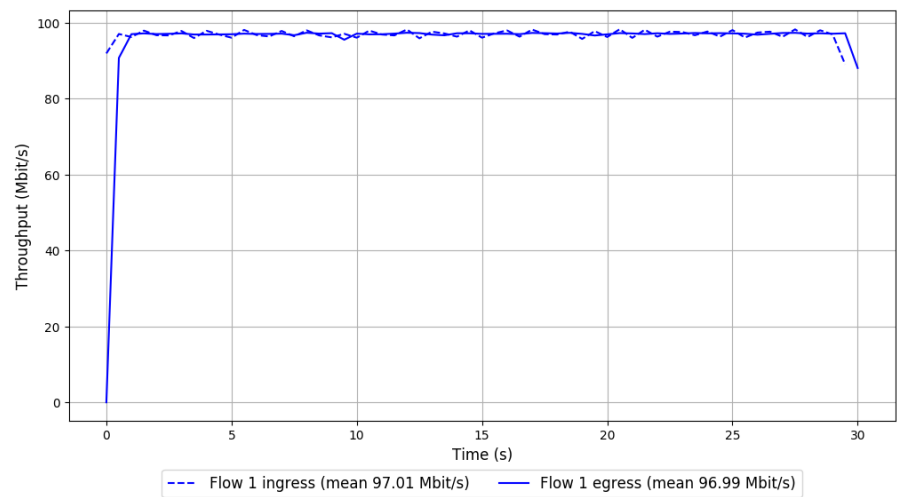
-- Flow 1:

Average throughput: 96.99 Mbit/s

95th percentile per-packet one-way delay: 6.357 ms

Loss rate: 0.03%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-09-25 12:56:52

End at: 2018-09-25 12:57:22

Local clock offset: -4.785 ms

Remote clock offset: 0.809 ms

Below is generated by plot.py at 2018-09-25 14:10:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.14 Mbit/s

95th percentile per-packet one-way delay: 4.011 ms

Loss rate: 0.02%

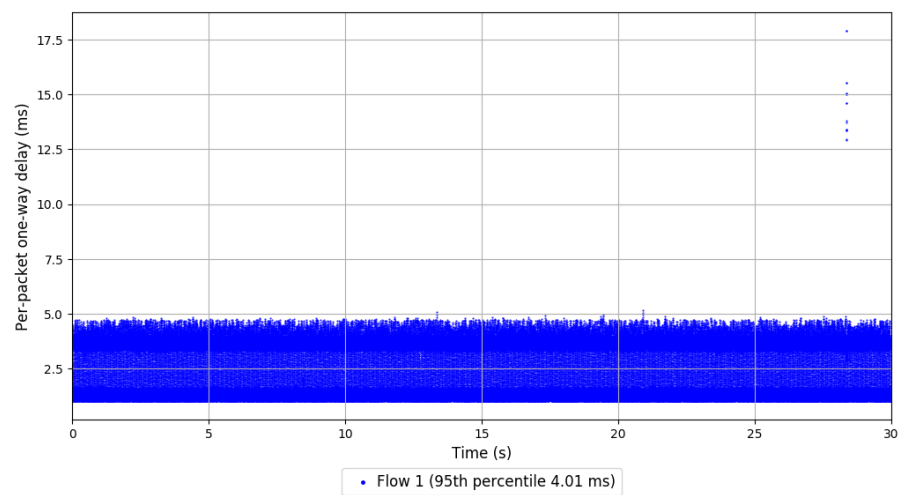
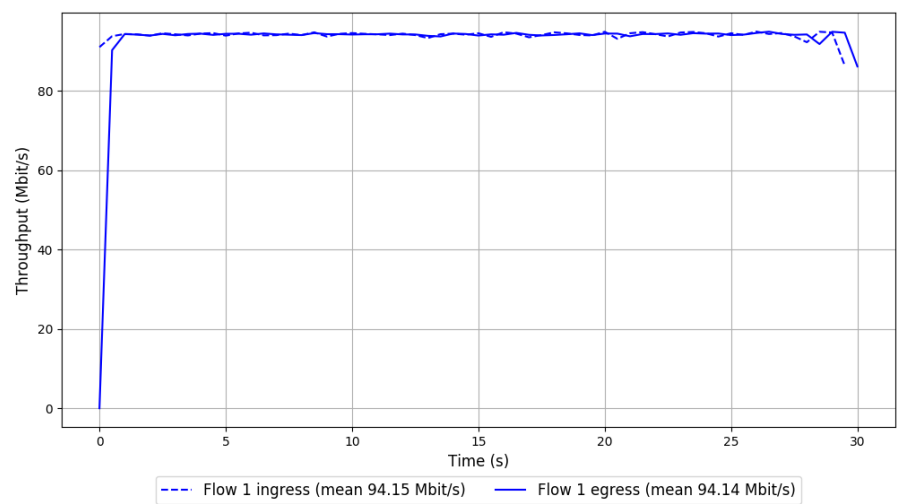
-- Flow 1:

Average throughput: 94.14 Mbit/s

95th percentile per-packet one-way delay: 4.011 ms

Loss rate: 0.02%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-09-25 13:18:17

End at: 2018-09-25 13:18:47

Local clock offset: -6.484 ms

Remote clock offset: 0.831 ms

Below is generated by plot.py at 2018-09-25 14:10:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.89 Mbit/s

95th percentile per-packet one-way delay: 6.420 ms

Loss rate: 0.03%

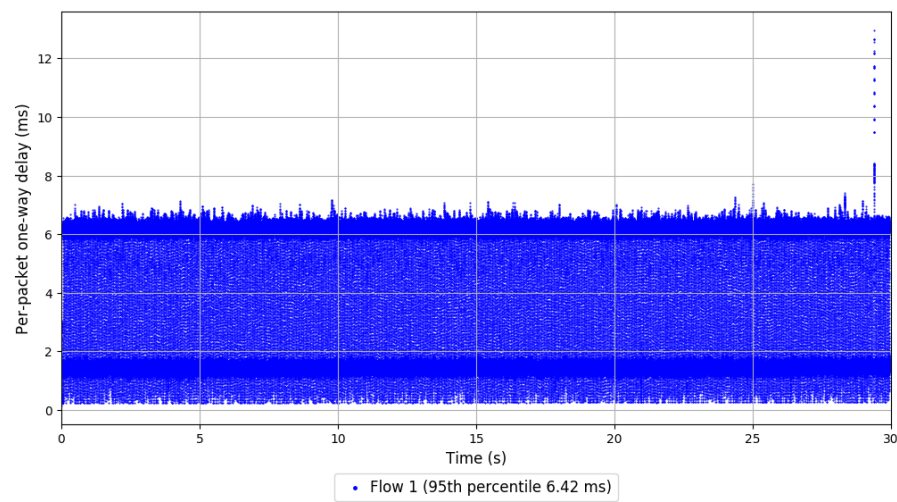
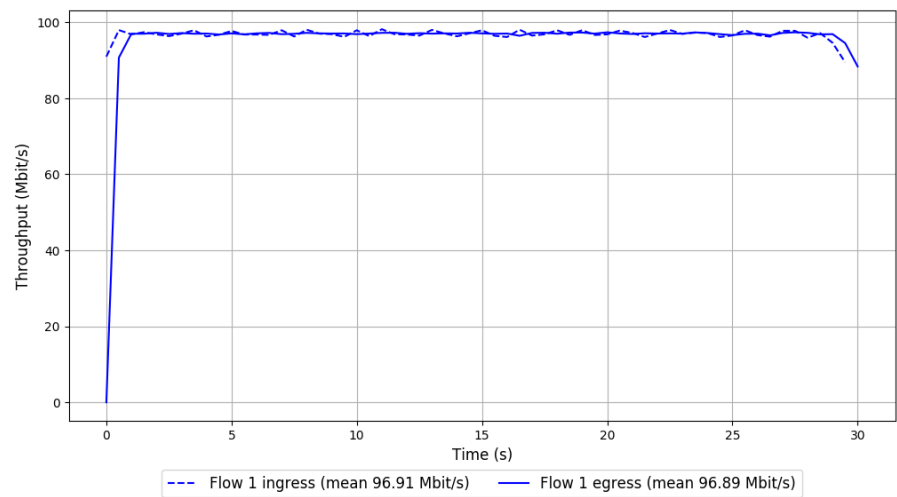
-- Flow 1:

Average throughput: 96.89 Mbit/s

95th percentile per-packet one-way delay: 6.420 ms

Loss rate: 0.03%

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



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-09-25 13:39:42

End at: 2018-09-25 13:40:12

Local clock offset: -7.338 ms

Remote clock offset: 0.708 ms

Below is generated by plot.py at 2018-09-25 14:10:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.05 Mbit/s

95th percentile per-packet one-way delay: 2.952 ms

Loss rate: 0.02%

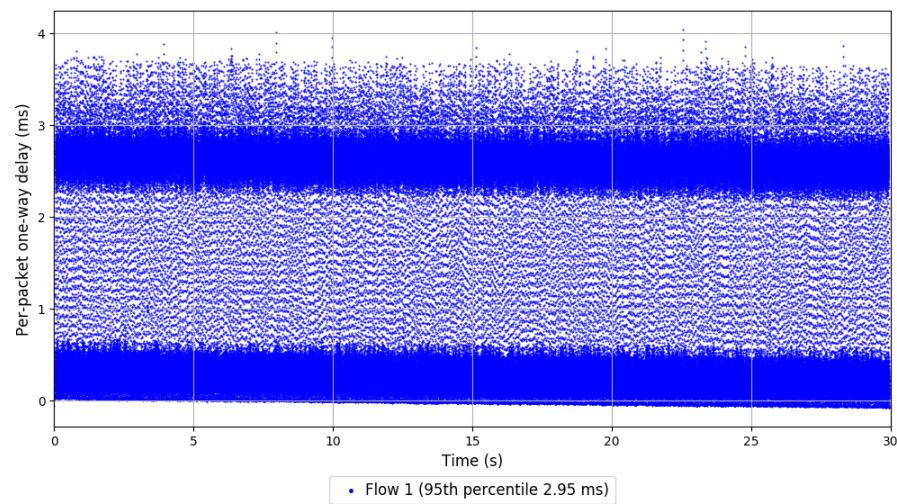
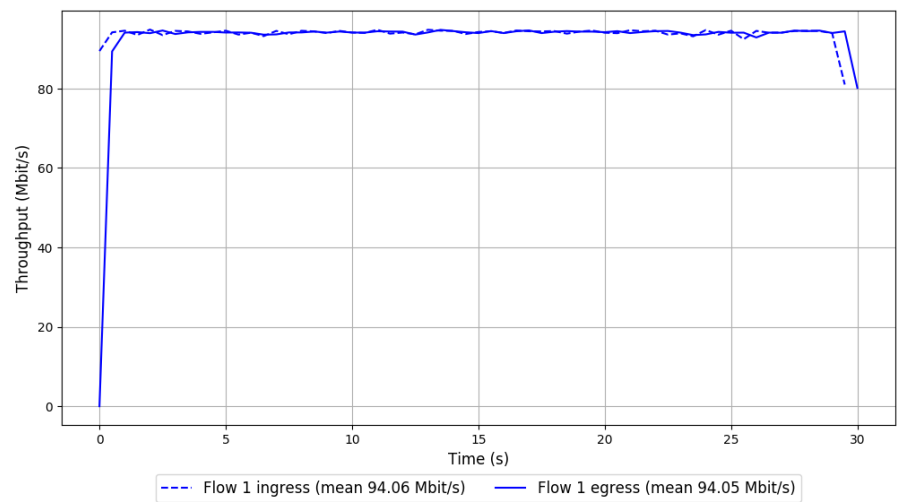
-- Flow 1:

Average throughput: 94.05 Mbit/s

95th percentile per-packet one-way delay: 2.952 ms

Loss rate: 0.02%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-09-25 14:01:09

End at: 2018-09-25 14:01:39

Local clock offset: -5.076 ms

Remote clock offset: 0.475 ms

Below is generated by plot.py at 2018-09-25 14:10:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.79 Mbit/s

95th percentile per-packet one-way delay: 6.986 ms

Loss rate: 0.03%

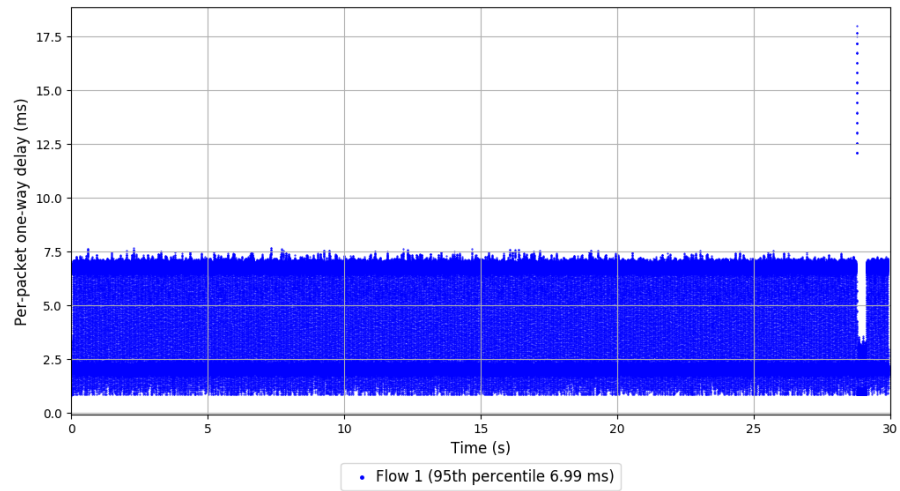
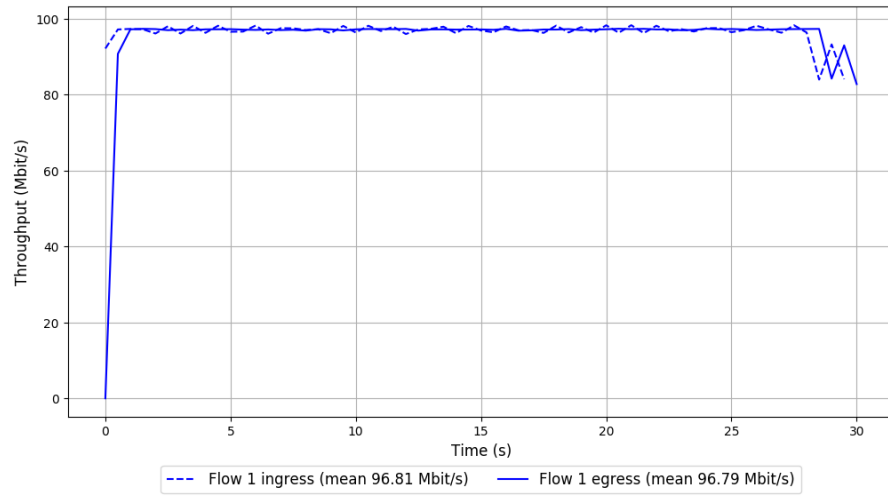
-- Flow 1:

Average throughput: 96.79 Mbit/s

95th percentile per-packet one-way delay: 6.986 ms

Loss rate: 0.03%

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



Run 1: Statistics of LEDBAT

Start at: 2018-09-25 12:25:16

End at: 2018-09-25 12:25:46

Local clock offset: -5.438 ms

Remote clock offset: 0.67 ms

Below is generated by plot.py at 2018-09-25 14:11:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 9.643 ms

Loss rate: 0.10%

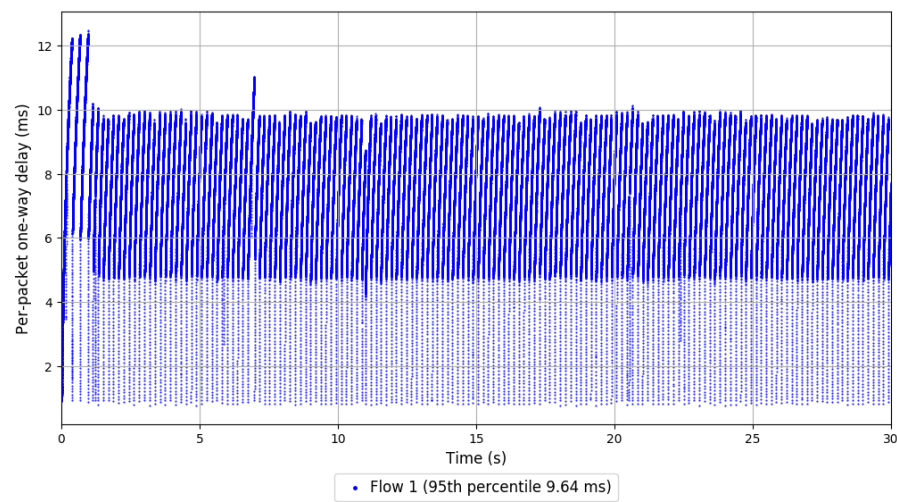
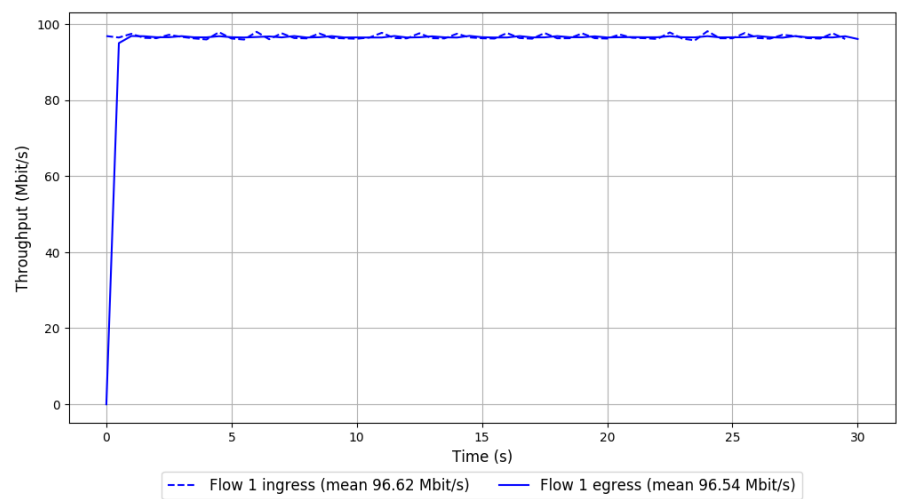
-- Flow 1:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 9.643 ms

Loss rate: 0.10%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-25 12:46:39

End at: 2018-09-25 12:47:09

Local clock offset: -4.963 ms

Remote clock offset: 0.929 ms

Below is generated by plot.py at 2018-09-25 14:11:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.45 Mbit/s

95th percentile per-packet one-way delay: 9.592 ms

Loss rate: 0.10%

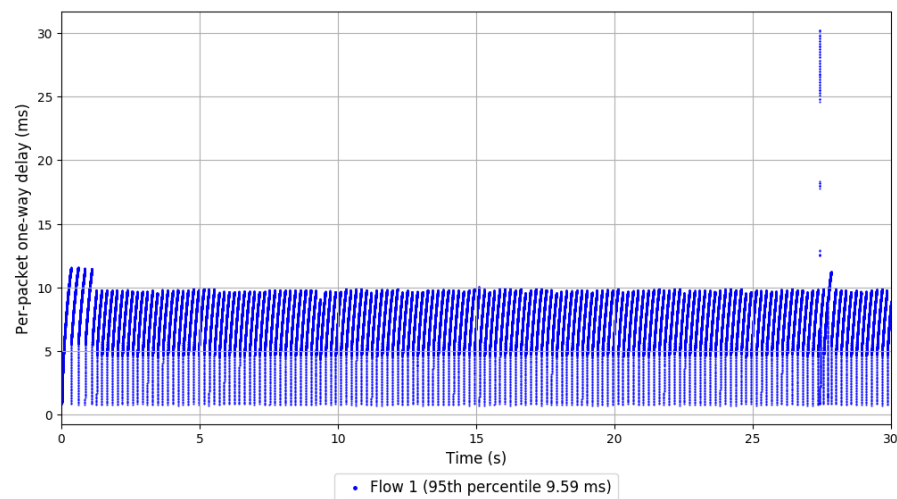
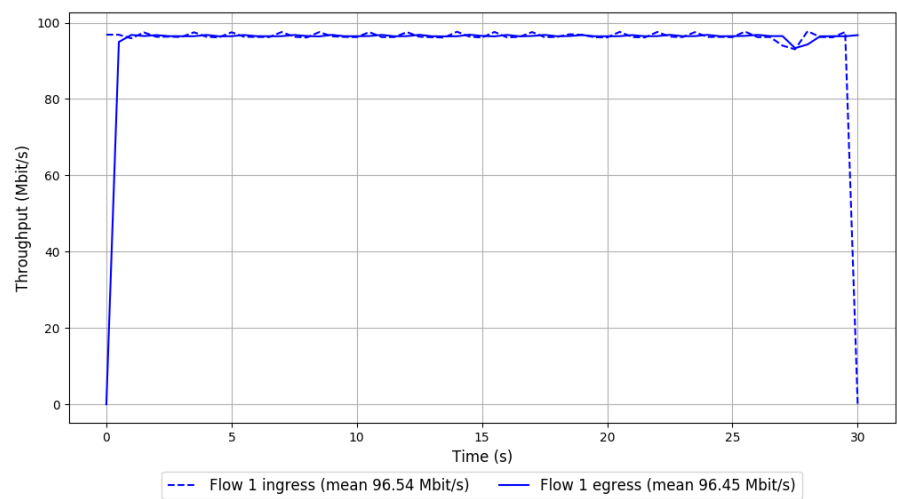
-- Flow 1:

Average throughput: 96.45 Mbit/s

95th percentile per-packet one-way delay: 9.592 ms

Loss rate: 0.10%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-25 13:08:06

End at: 2018-09-25 13:08:36

Local clock offset: -5.6 ms

Remote clock offset: 0.862 ms

Below is generated by plot.py at 2018-09-25 14:11:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.04 Mbit/s

95th percentile per-packet one-way delay: 8.578 ms

Loss rate: 0.09%

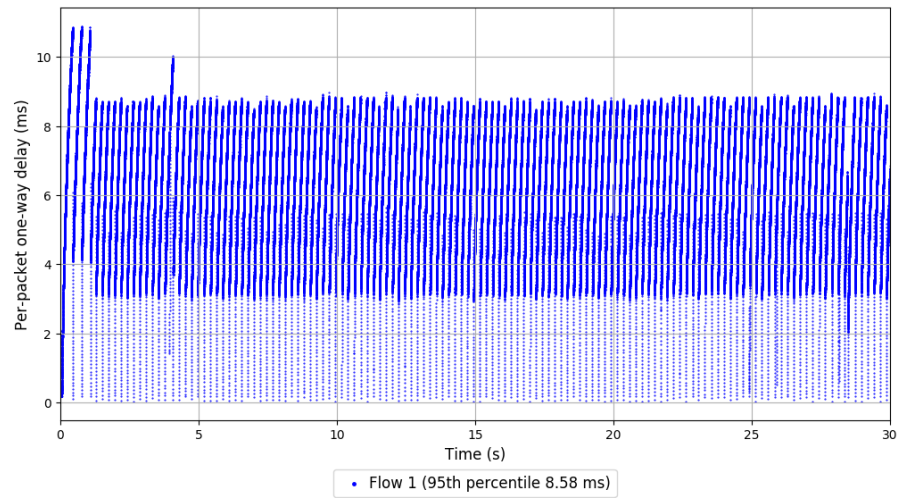
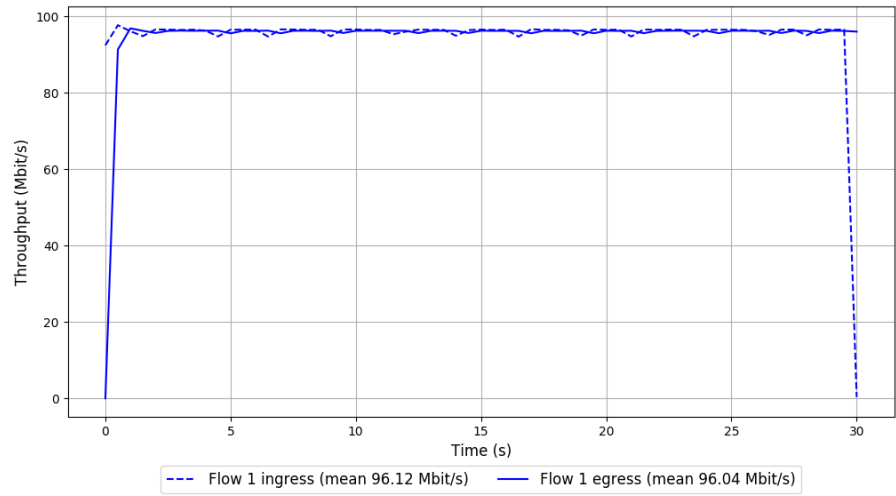
-- Flow 1:

Average throughput: 96.04 Mbit/s

95th percentile per-packet one-way delay: 8.578 ms

Loss rate: 0.09%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-25 13:29:31

End at: 2018-09-25 13:30:01

Local clock offset: -7.081 ms

Remote clock offset: 0.747 ms

Below is generated by plot.py at 2018-09-25 14:11:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.04 Mbit/s

95th percentile per-packet one-way delay: 8.602 ms

Loss rate: 0.08%

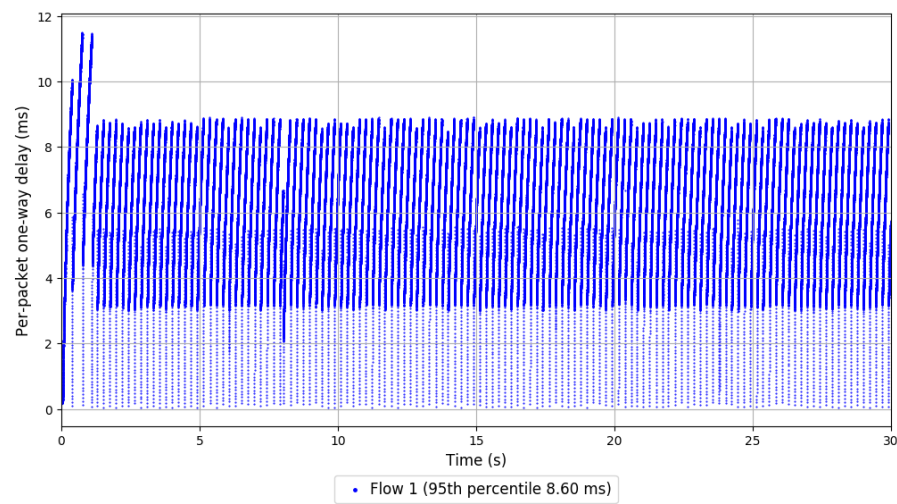
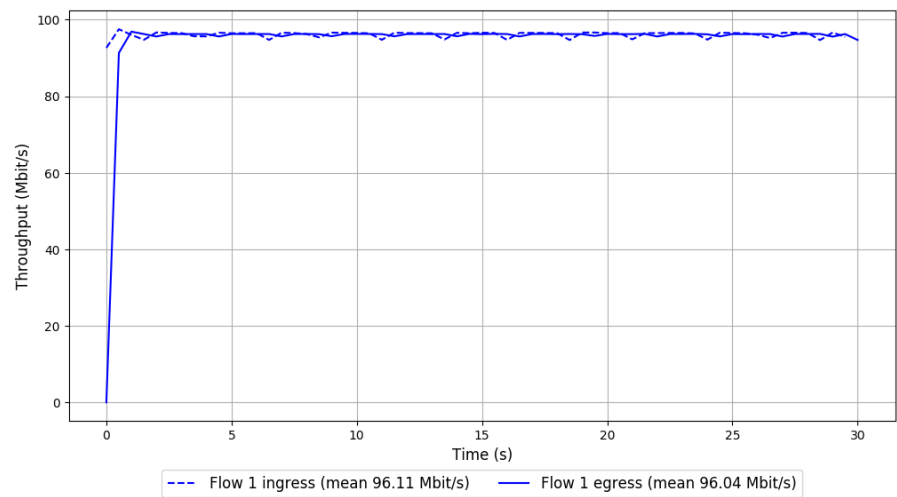
-- Flow 1:

Average throughput: 96.04 Mbit/s

95th percentile per-packet one-way delay: 8.602 ms

Loss rate: 0.08%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-25 13:50:57

End at: 2018-09-25 13:51:27

Local clock offset: -6.128 ms

Remote clock offset: 0.608 ms

Below is generated by plot.py at 2018-09-25 14:11:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 8.536 ms

Loss rate: 0.08%

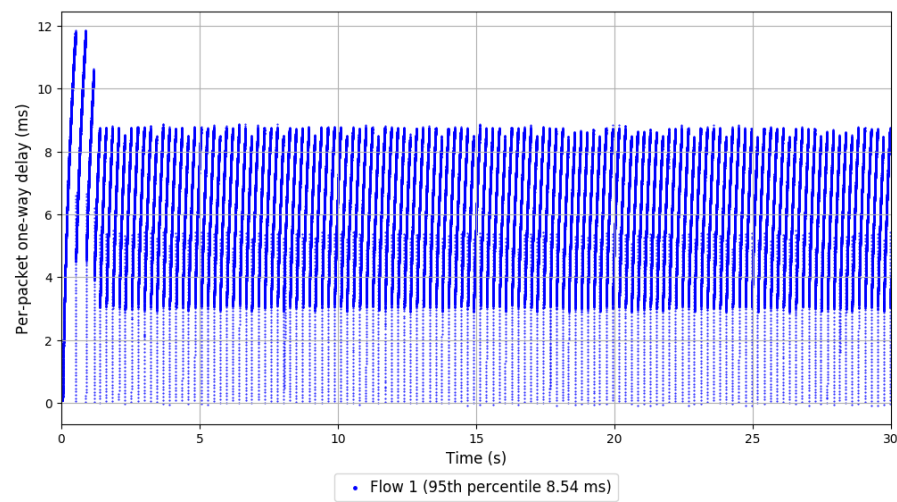
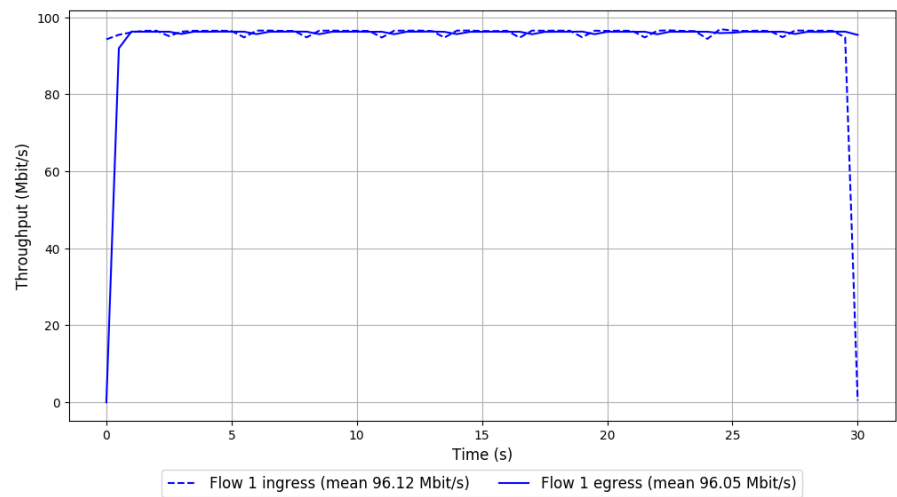
-- Flow 1:

Average throughput: 96.05 Mbit/s

95th percentile per-packet one-way delay: 8.536 ms

Loss rate: 0.08%

Run 5: Report of LEDBAT — Data Link

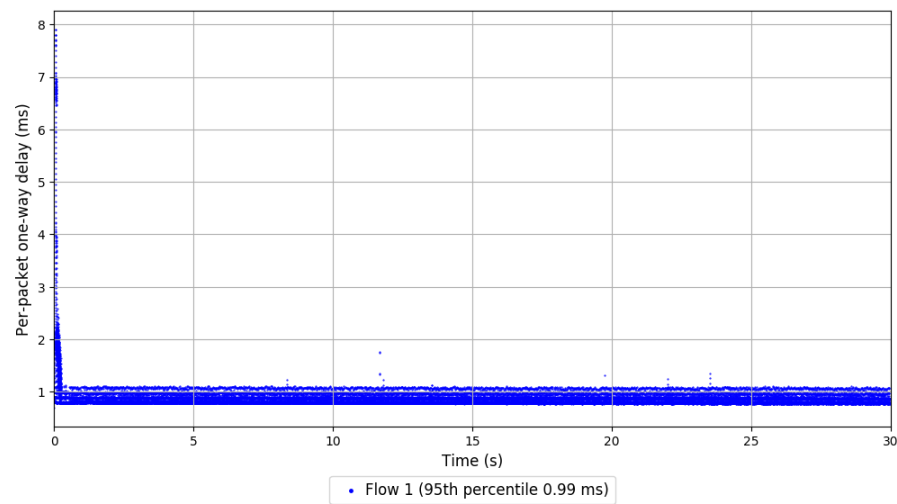
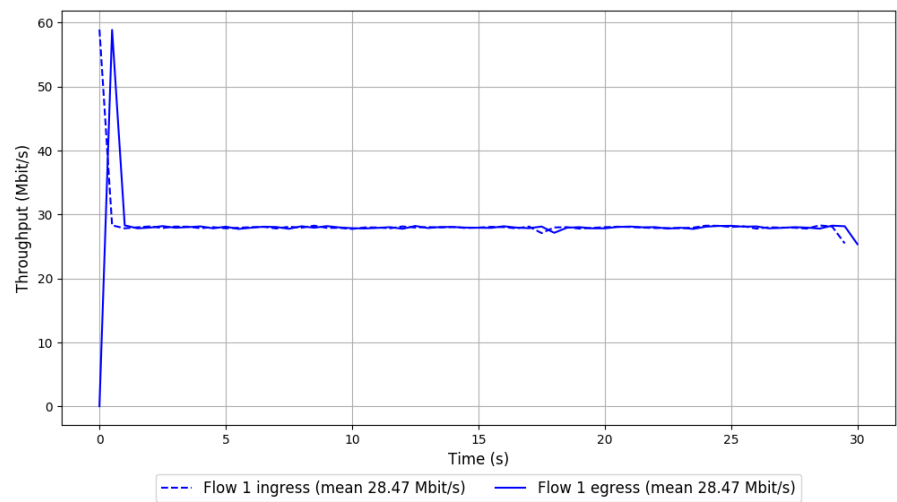



```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-25 12:19:36
End at: 2018-09-25 12:20:06
Local clock offset: -5.613 ms
Remote clock offset: 0.7 ms

# Below is generated by plot.py at 2018-09-25 14:11:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.47 Mbit/s
95th percentile per-packet one-way delay: 0.990 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 28.47 Mbit/s
95th percentile per-packet one-way delay: 0.990 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-25 12:40:59

End at: 2018-09-25 12:41:29

Local clock offset: -5.303 ms

Remote clock offset: 0.905 ms

Below is generated by plot.py at 2018-09-25 14:11:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 46.58 Mbit/s

95th percentile per-packet one-way delay: 1.174 ms

Loss rate: 0.01%

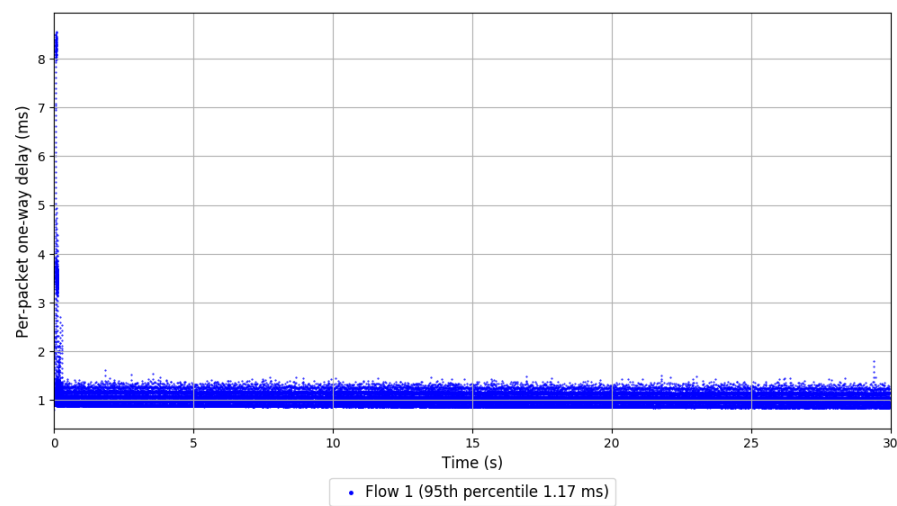
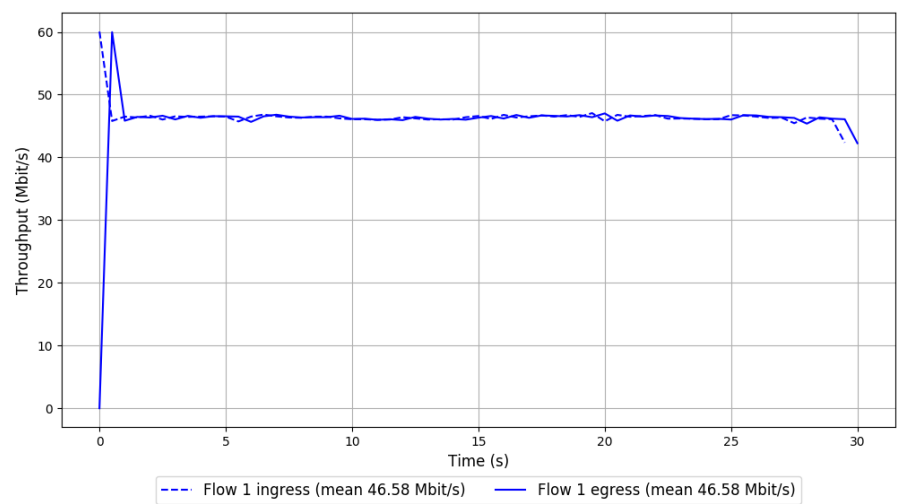
-- Flow 1:

Average throughput: 46.58 Mbit/s

95th percentile per-packet one-way delay: 1.174 ms

Loss rate: 0.01%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-25 13:02:27

End at: 2018-09-25 13:02:57

Local clock offset: -4.755 ms

Remote clock offset: 0.919 ms

Below is generated by plot.py at 2018-09-25 14:11:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.40 Mbit/s

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

Loss rate: 0.01%

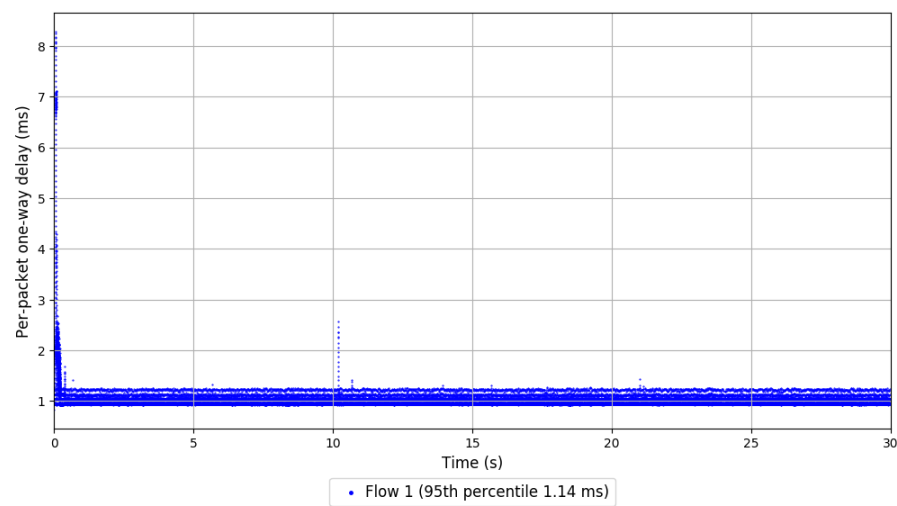
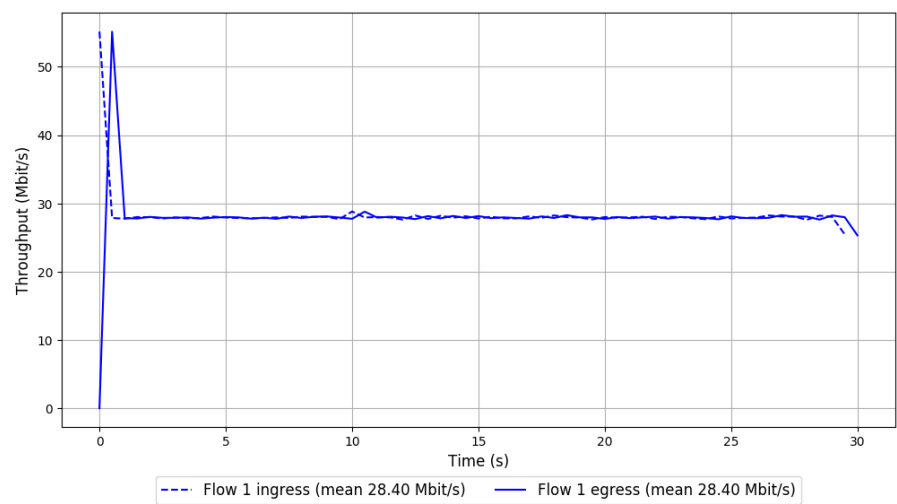
-- Flow 1:

Average throughput: 28.40 Mbit/s

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

Loss rate: 0.01%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-25 13:23:51

End at: 2018-09-25 13:24:21

Local clock offset: -6.831 ms

Remote clock offset: 0.856 ms

Below is generated by plot.py at 2018-09-25 14:11:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 46.84 Mbit/s

95th percentile per-packet one-way delay: 0.472 ms

Loss rate: 0.01%

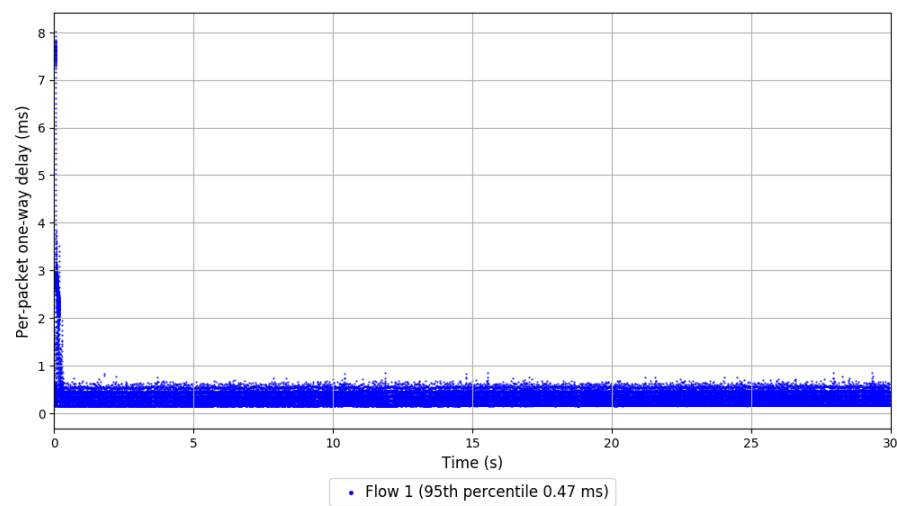
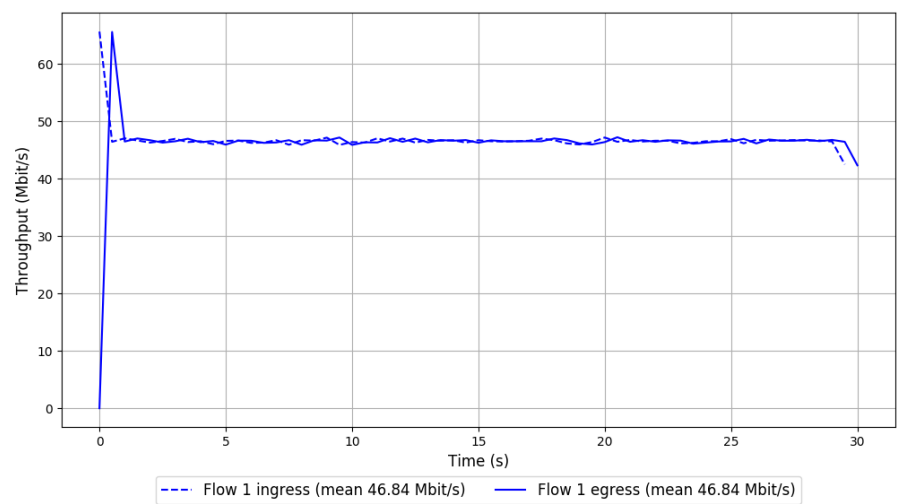
-- Flow 1:

Average throughput: 46.84 Mbit/s

95th percentile per-packet one-way delay: 0.472 ms

Loss rate: 0.01%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-25 13:45:17

End at: 2018-09-25 13:45:47

Local clock offset: -6.55 ms

Remote clock offset: 0.517 ms

Below is generated by plot.py at 2018-09-25 14:11:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 46.63 Mbit/s

95th percentile per-packet one-way delay: 0.509 ms

Loss rate: 0.01%

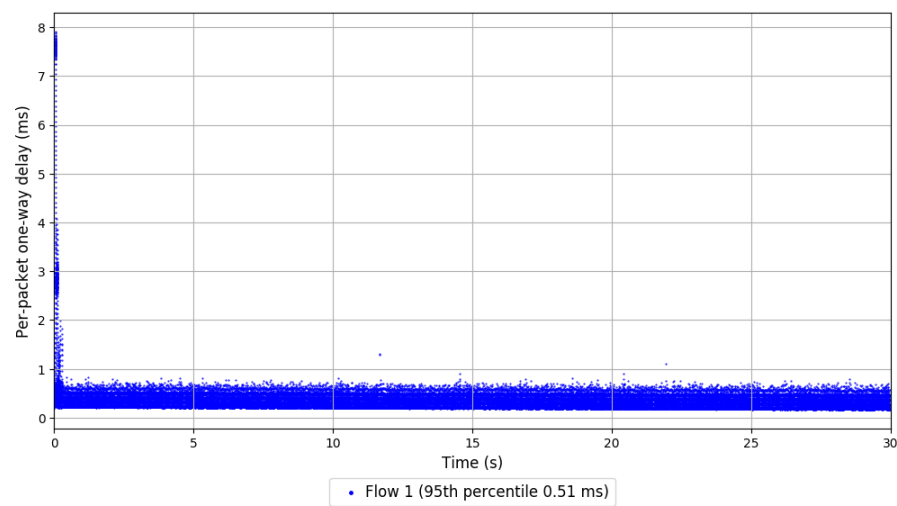
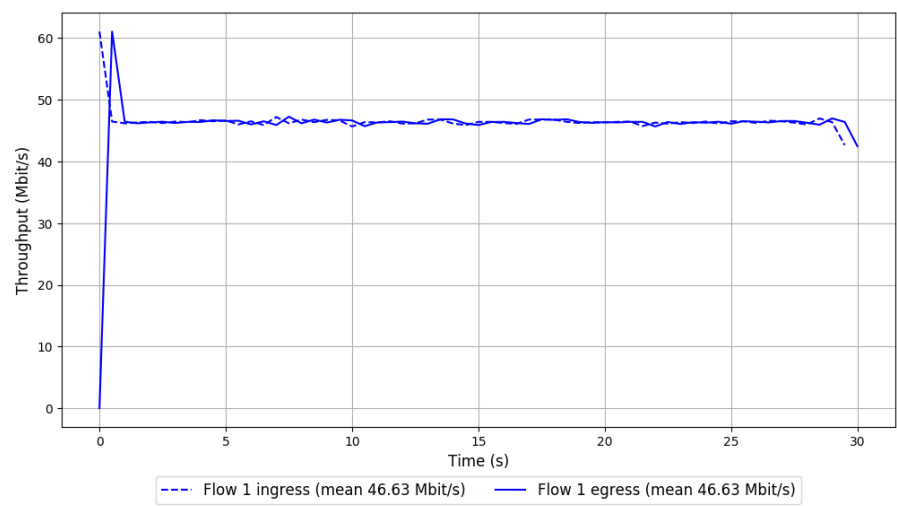
-- Flow 1:

Average throughput: 46.63 Mbit/s

95th percentile per-packet one-way delay: 0.509 ms

Loss rate: 0.01%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-09-25 12:16:18

End at: 2018-09-25 12:16:48

Local clock offset: -6.494 ms

Remote clock offset: 0.661 ms

Below is generated by plot.py at 2018-09-25 14:12:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.55 Mbit/s

95th percentile per-packet one-way delay: 1.215 ms

Loss rate: 0.01%

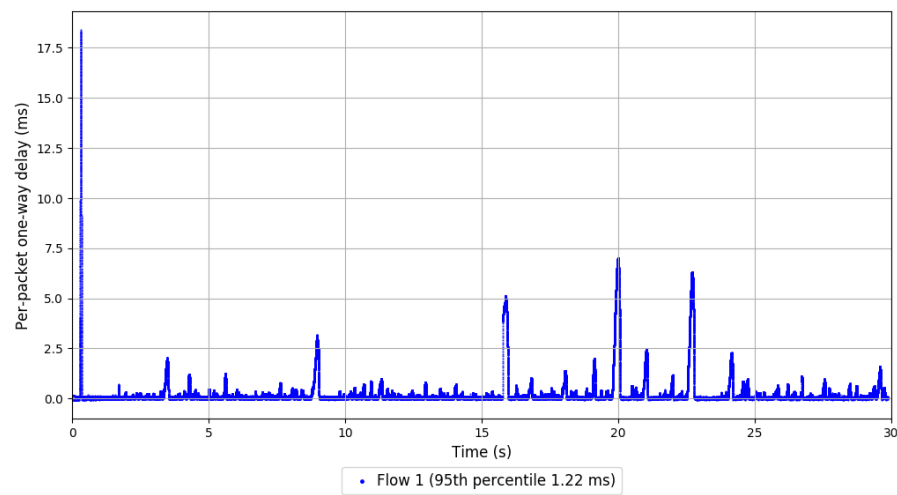
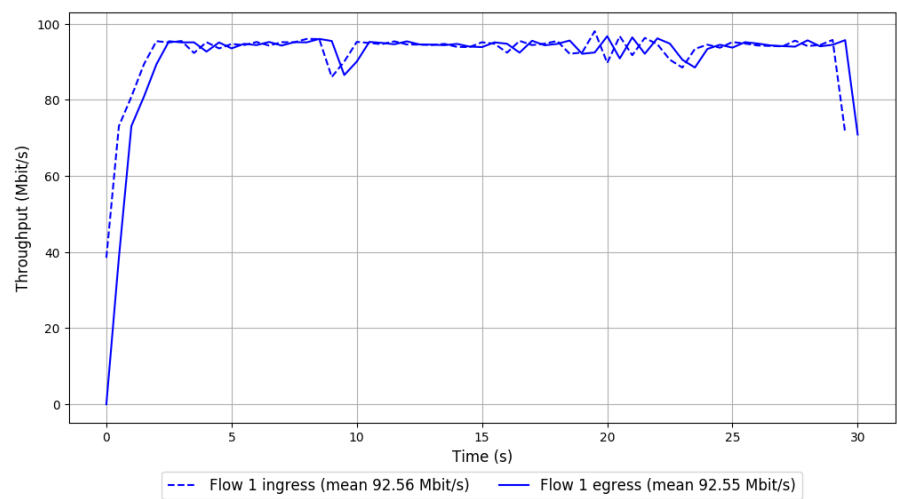
-- Flow 1:

Average throughput: 92.55 Mbit/s

95th percentile per-packet one-way delay: 1.215 ms

Loss rate: 0.01%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-25 12:37:41

End at: 2018-09-25 12:38:12

Local clock offset: -5.457 ms

Remote clock offset: 0.852 ms

Below is generated by plot.py at 2018-09-25 14:12:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 85.60 Mbit/s

95th percentile per-packet one-way delay: 5.034 ms

Loss rate: 0.02%

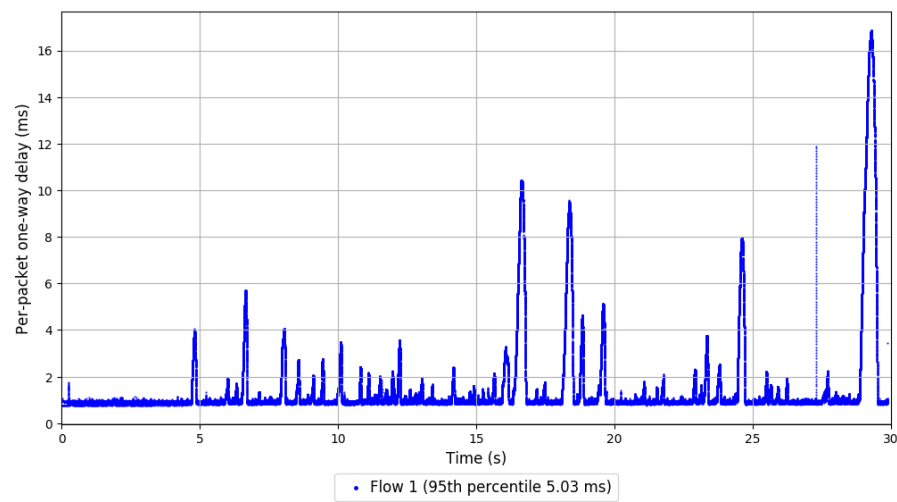
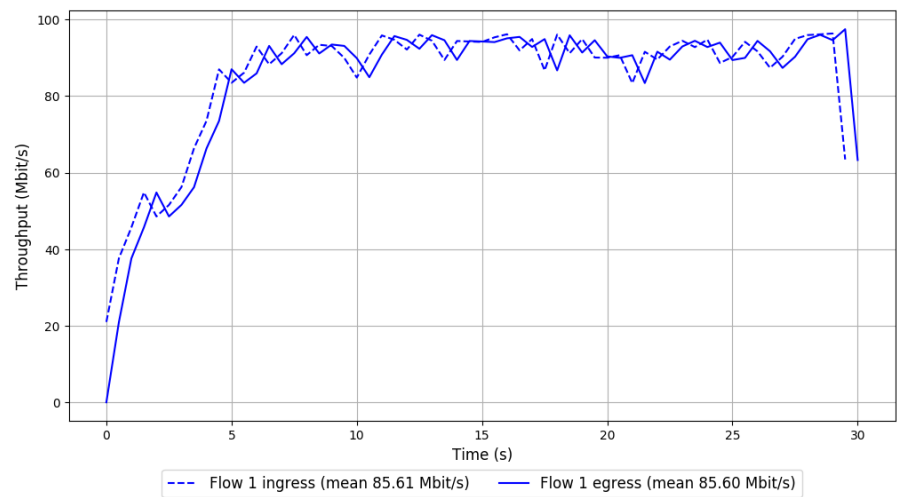
-- Flow 1:

Average throughput: 85.60 Mbit/s

95th percentile per-packet one-way delay: 5.034 ms

Loss rate: 0.02%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-25 12:59:08

End at: 2018-09-25 12:59:38

Local clock offset: -5.539 ms

Remote clock offset: 0.968 ms

Below is generated by plot.py at 2018-09-25 14:12:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.47 Mbit/s

95th percentile per-packet one-way delay: 0.844 ms

Loss rate: 0.01%

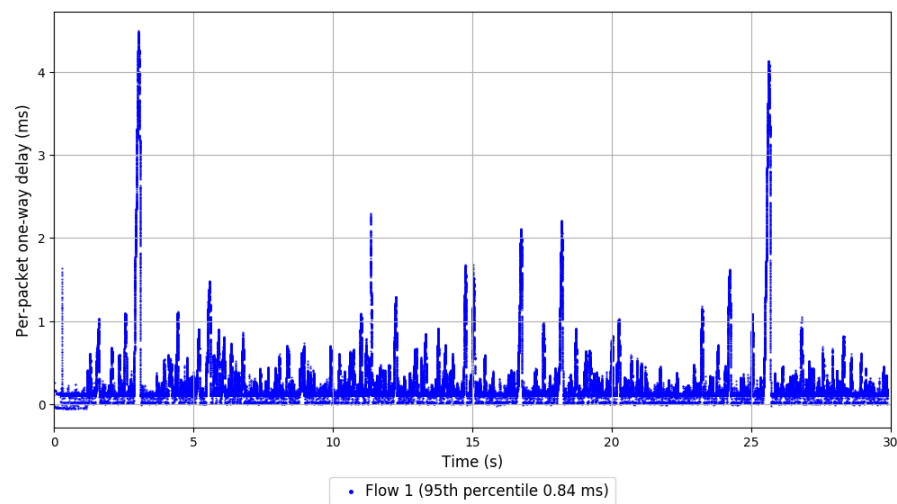
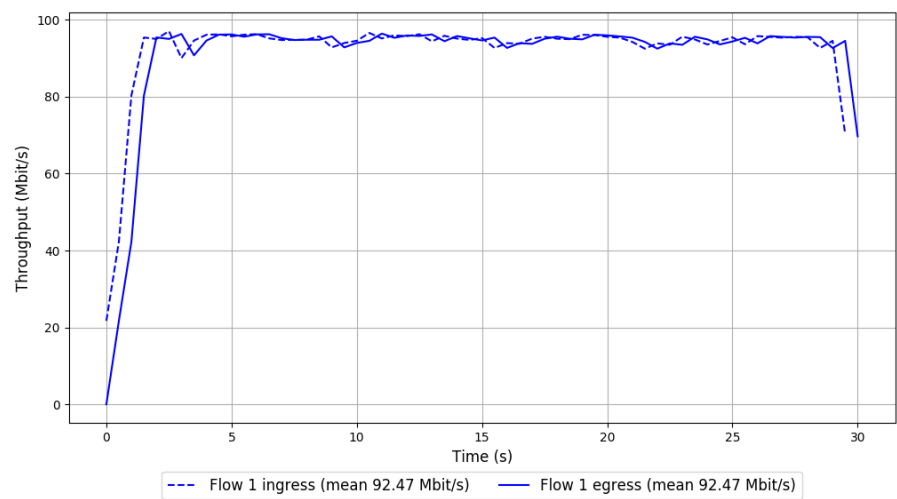
-- Flow 1:

Average throughput: 92.47 Mbit/s

95th percentile per-packet one-way delay: 0.844 ms

Loss rate: 0.01%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-25 13:20:33

End at: 2018-09-25 13:21:03

Local clock offset: -5.947 ms

Remote clock offset: 0.887 ms

Below is generated by plot.py at 2018-09-25 14:12:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.70 Mbit/s

95th percentile per-packet one-way delay: 1.592 ms

Loss rate: 0.01%

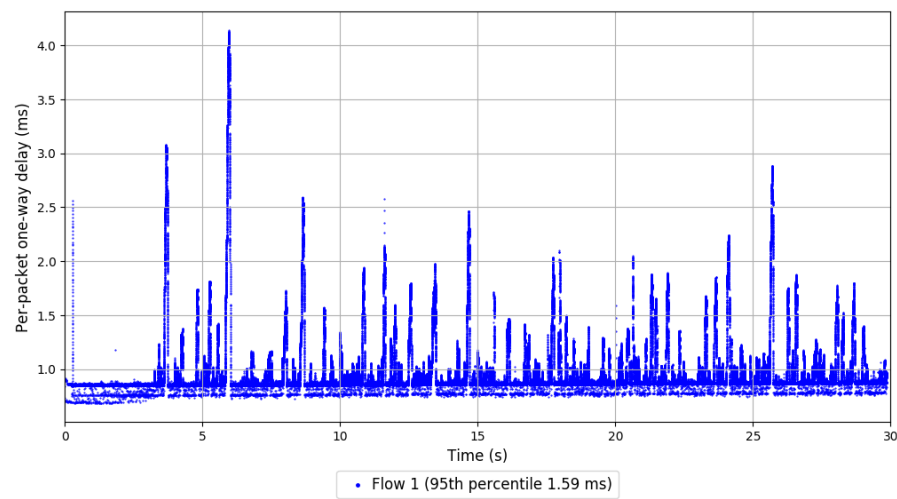
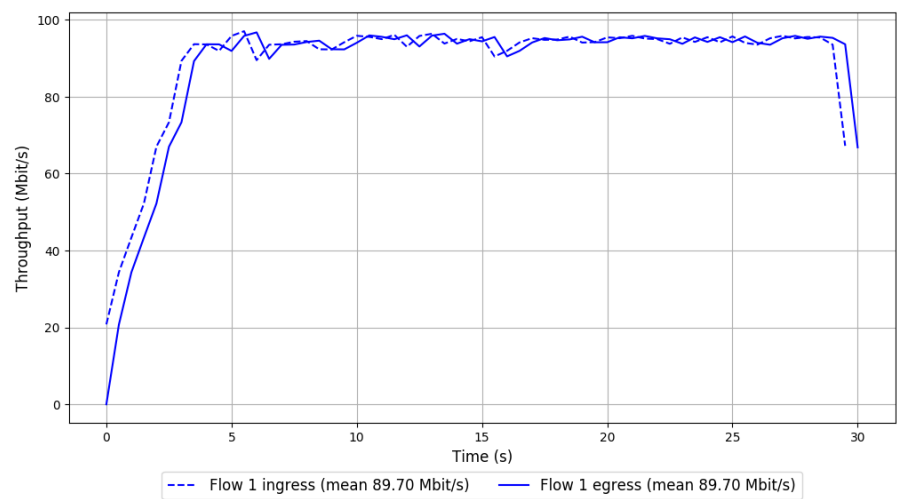
-- Flow 1:

Average throughput: 89.70 Mbit/s

95th percentile per-packet one-way delay: 1.592 ms

Loss rate: 0.01%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-25 13:41:58

End at: 2018-09-25 13:42:28

Local clock offset: -6.16 ms

Remote clock offset: 0.645 ms

Below is generated by plot.py at 2018-09-25 14:12:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.63 Mbit/s

95th percentile per-packet one-way delay: 1.925 ms

Loss rate: 0.04%

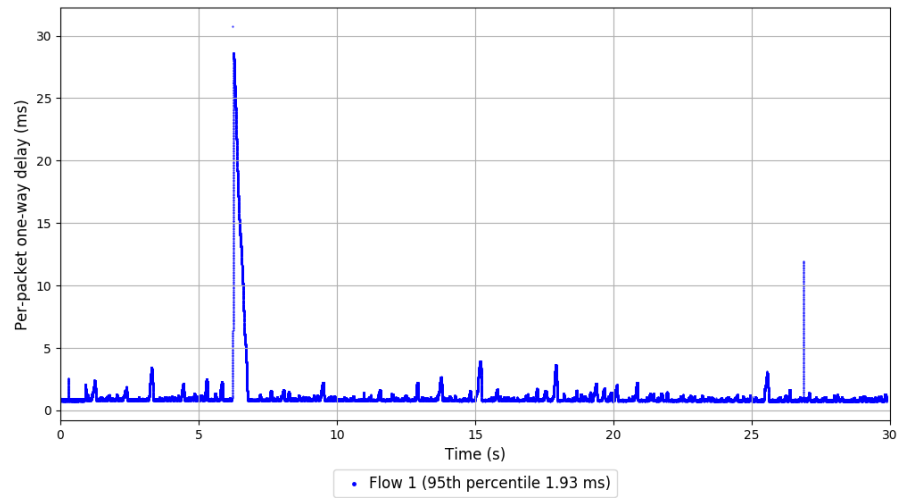
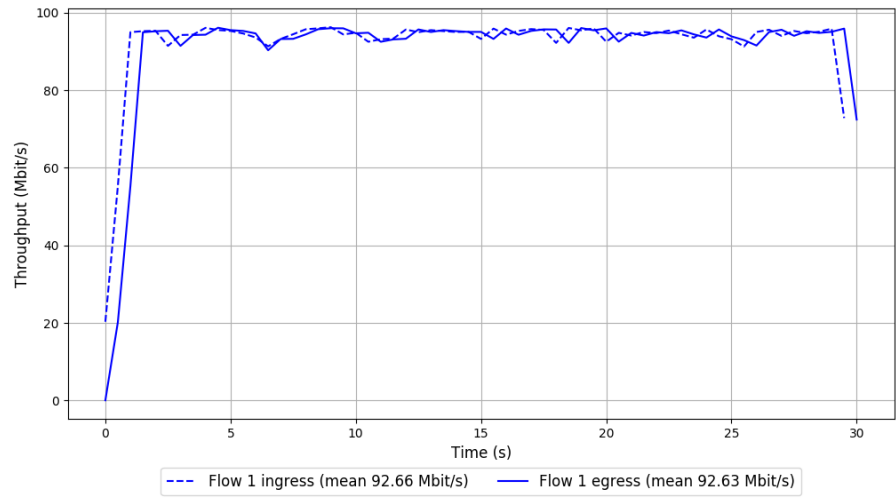
-- Flow 1:

Average throughput: 92.63 Mbit/s

95th percentile per-packet one-way delay: 1.925 ms

Loss rate: 0.04%

Run 5: Report of PCC-Allegro — Data Link

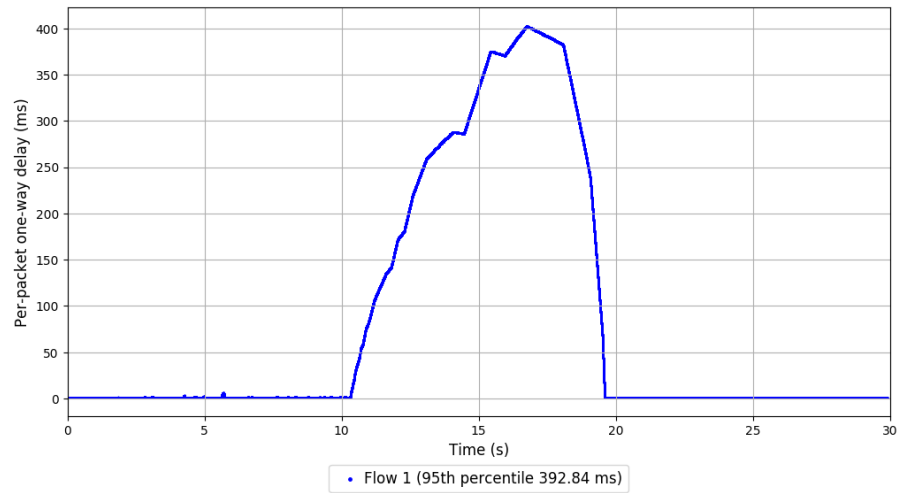
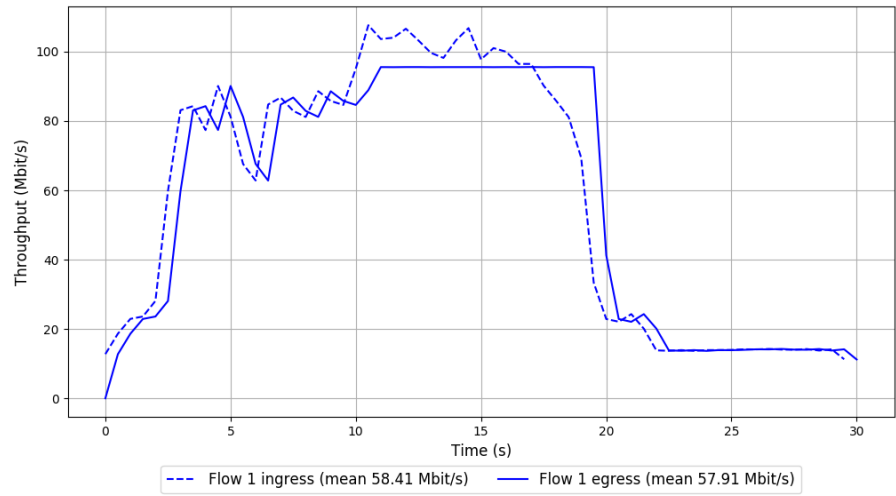


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-25 12:30:49
End at: 2018-09-25 12:31:19
Local clock offset: -5.382 ms
Remote clock offset: 0.772 ms

# Below is generated by plot.py at 2018-09-25 14:12:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.91 Mbit/s
95th percentile per-packet one-way delay: 392.841 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 57.91 Mbit/s
95th percentile per-packet one-way delay: 392.841 ms
Loss rate: 0.86%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-25 12:52:13

End at: 2018-09-25 12:52:43

Local clock offset: -4.826 ms

Remote clock offset: 0.798 ms

Below is generated by plot.py at 2018-09-25 14:13:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.21 Mbit/s

95th percentile per-packet one-way delay: 656.767 ms

Loss rate: 9.22%

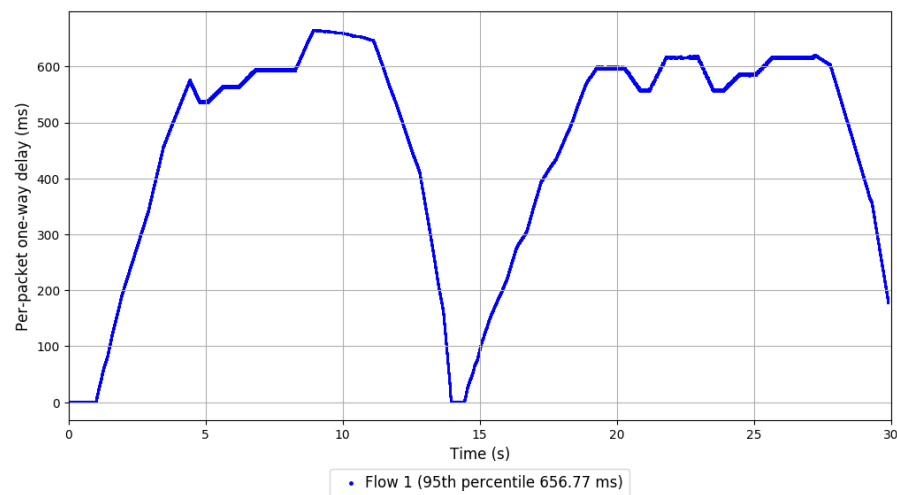
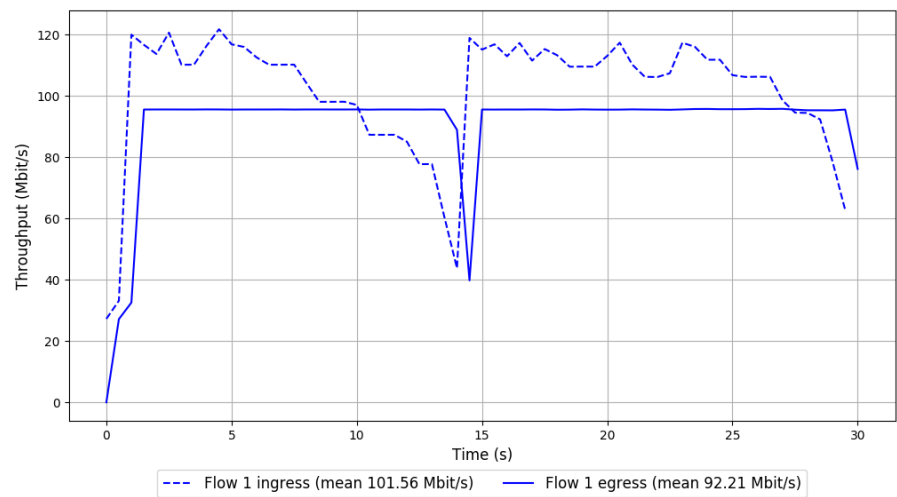
-- Flow 1:

Average throughput: 92.21 Mbit/s

95th percentile per-packet one-way delay: 656.767 ms

Loss rate: 9.22%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-25 13:13:40

End at: 2018-09-25 13:14:10

Local clock offset: -6.083 ms

Remote clock offset: 0.877 ms

Below is generated by plot.py at 2018-09-25 14:13:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.60 Mbit/s

95th percentile per-packet one-way delay: 515.328 ms

Loss rate: 4.72%

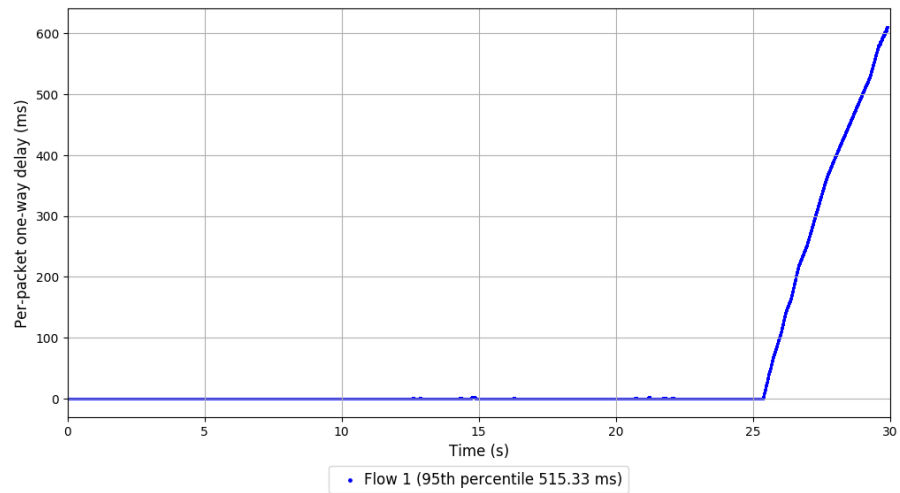
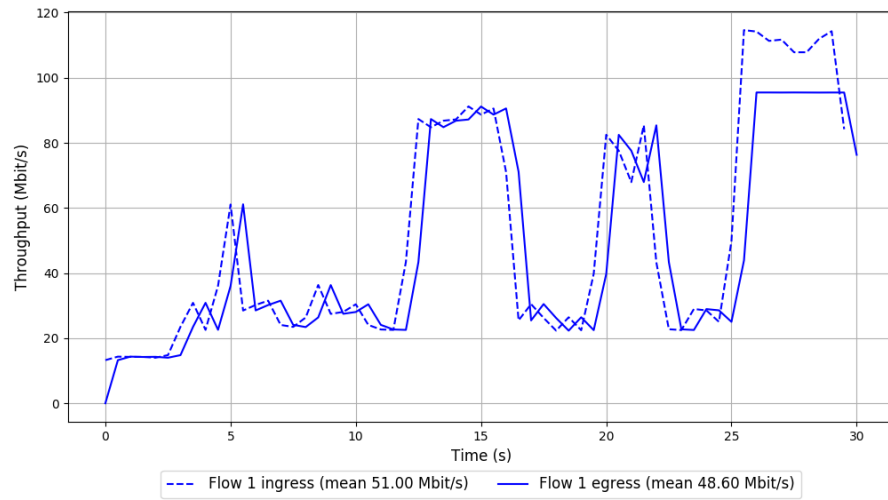
-- Flow 1:

Average throughput: 48.60 Mbit/s

95th percentile per-packet one-way delay: 515.328 ms

Loss rate: 4.72%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-25 13:35:04

End at: 2018-09-25 13:35:34

Local clock offset: -6.507 ms

Remote clock offset: 0.753 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.47 Mbit/s

95th percentile per-packet one-way delay: 549.149 ms

Loss rate: 0.85%

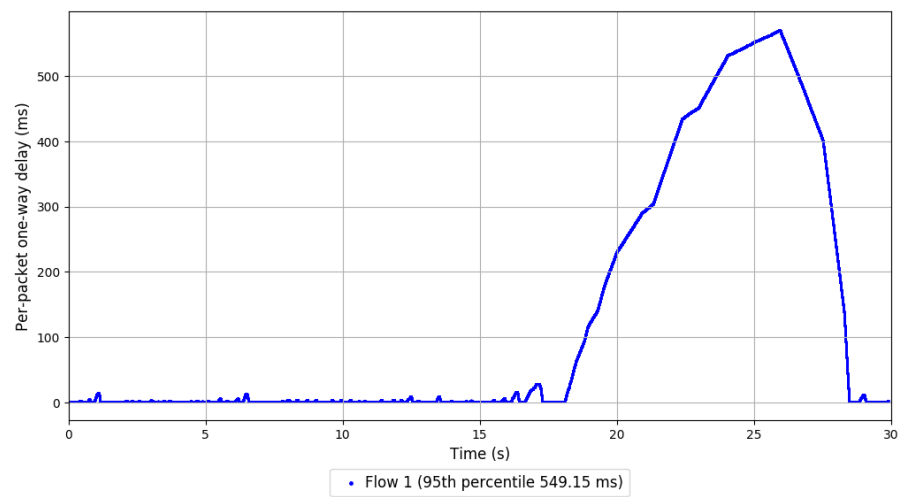
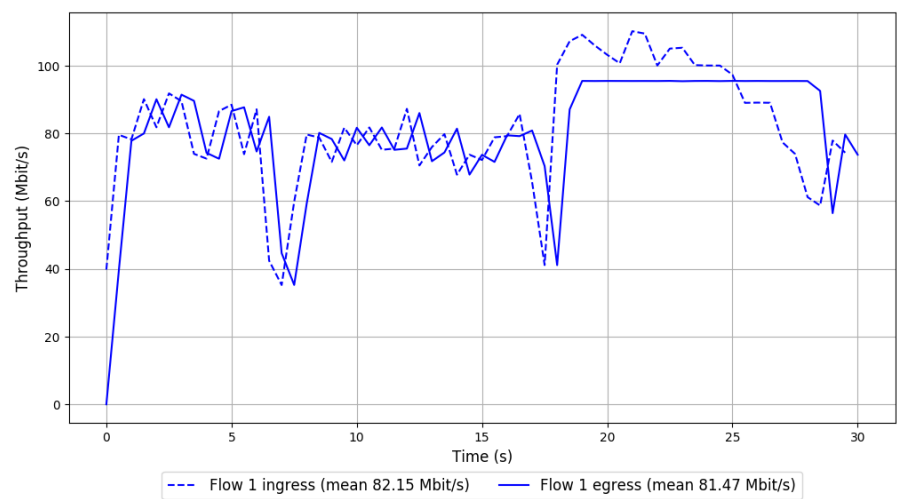
-- Flow 1:

Average throughput: 81.47 Mbit/s

95th percentile per-packet one-way delay: 549.149 ms

Loss rate: 0.85%

Run 4: Report of PCC-Expr — Data Link

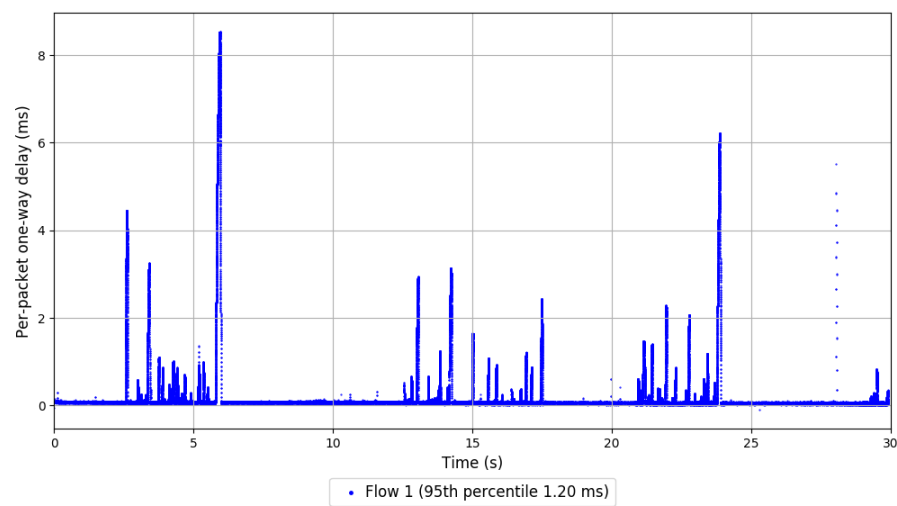
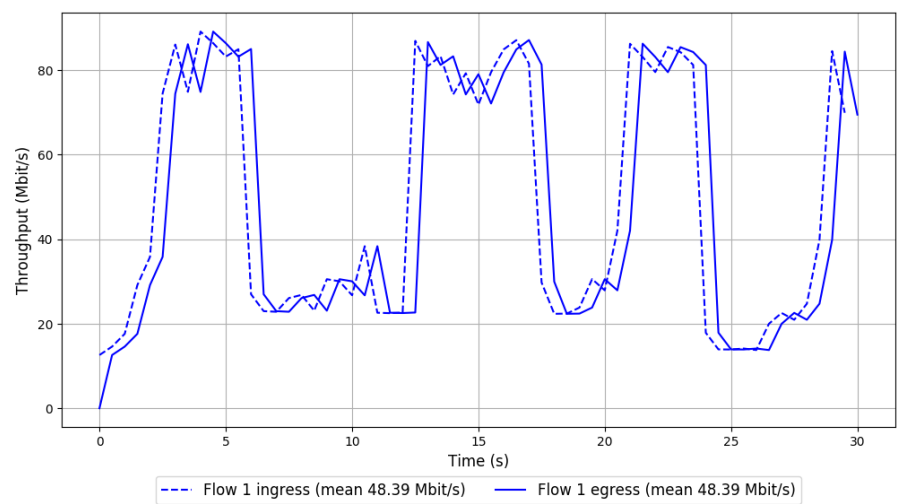


```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-25 13:56:33
End at: 2018-09-25 13:57:03
Local clock offset: -5.969 ms
Remote clock offset: 0.507 ms

# Below is generated by plot.py at 2018-09-25 14:14:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.39 Mbit/s
95th percentile per-packet one-way delay: 1.199 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 48.39 Mbit/s
95th percentile per-packet one-way delay: 1.199 ms
Loss rate: 0.02%
```

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-25 12:29:41

End at: 2018-09-25 12:30:11

Local clock offset: -5.381 ms

Remote clock offset: 0.753 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.78 Mbit/s

95th percentile per-packet one-way delay: 6.636 ms

Loss rate: 0.02%

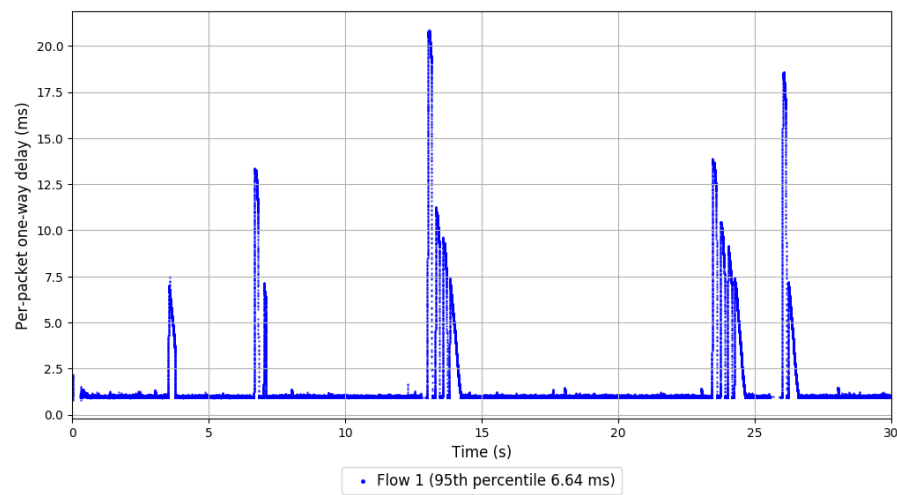
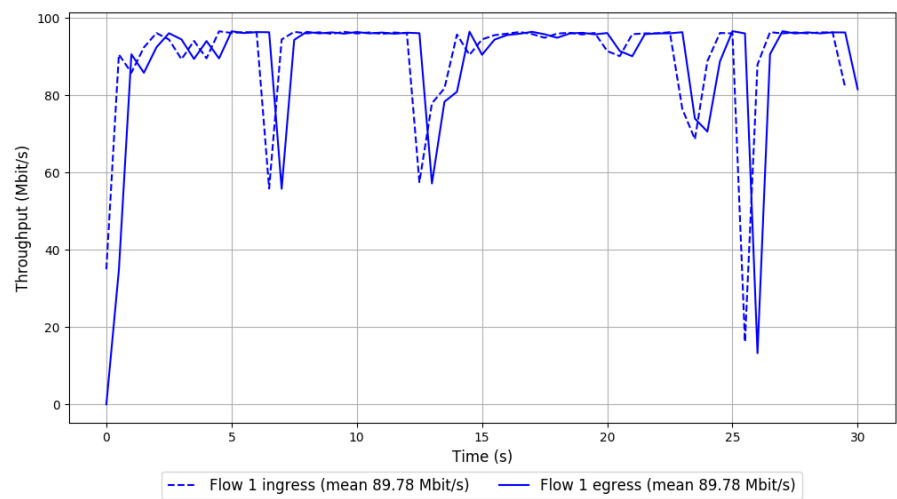
-- Flow 1:

Average throughput: 89.78 Mbit/s

95th percentile per-packet one-way delay: 6.636 ms

Loss rate: 0.02%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-25 12:51:05

End at: 2018-09-25 12:51:35

Local clock offset: -5.613 ms

Remote clock offset: 0.816 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.53 Mbit/s

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

Loss rate: 0.02%

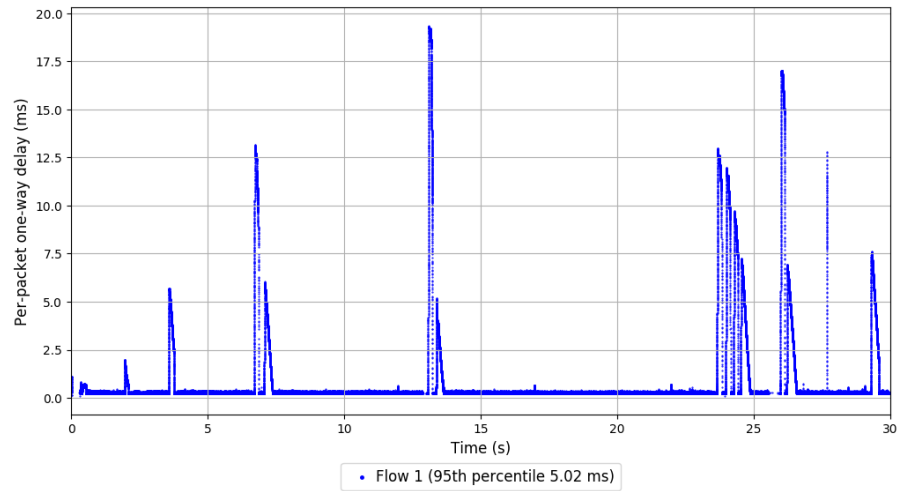
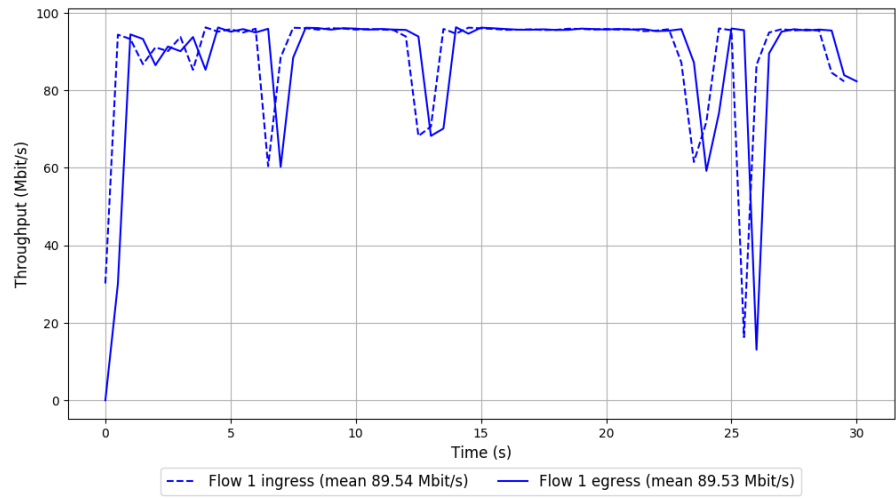
-- Flow 1:

Average throughput: 89.53 Mbit/s

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

Loss rate: 0.02%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-25 13:12:32

End at: 2018-09-25 13:13:02

Local clock offset: -6.015 ms

Remote clock offset: 0.927 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.03 Mbit/s

95th percentile per-packet one-way delay: 4.937 ms

Loss rate: 0.02%

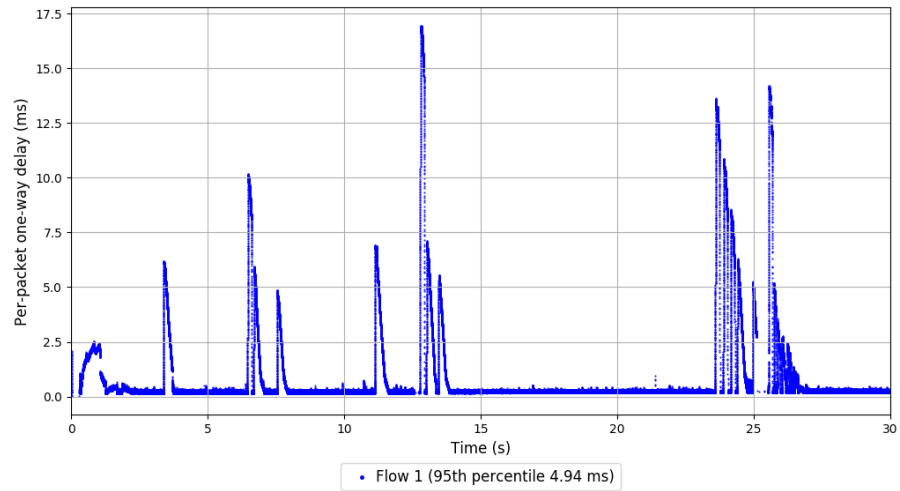
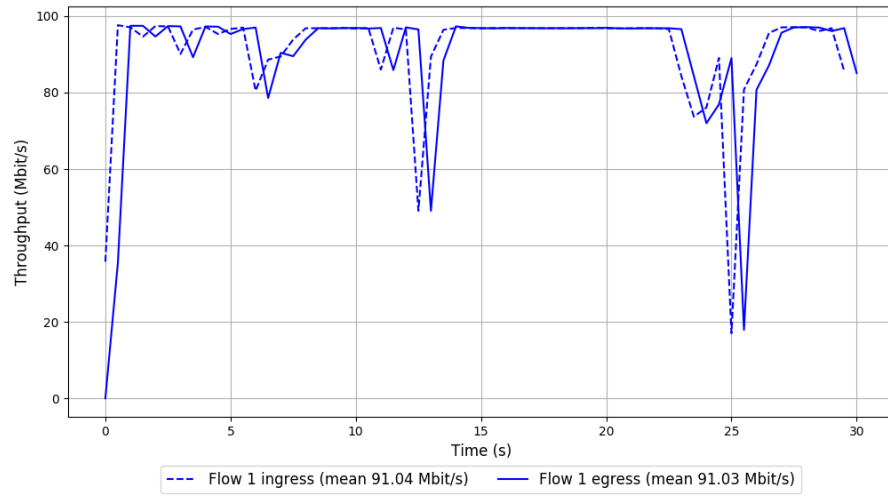
-- Flow 1:

Average throughput: 91.03 Mbit/s

95th percentile per-packet one-way delay: 4.937 ms

Loss rate: 0.02%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-25 13:33:56

End at: 2018-09-25 13:34:26

Local clock offset: -6.451 ms

Remote clock offset: 0.75 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.72 Mbit/s

95th percentile per-packet one-way delay: 7.102 ms

Loss rate: 0.02%

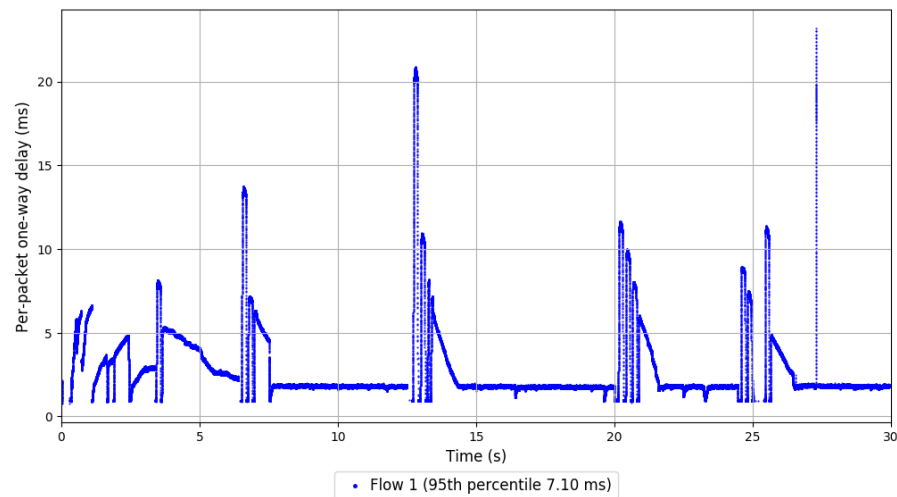
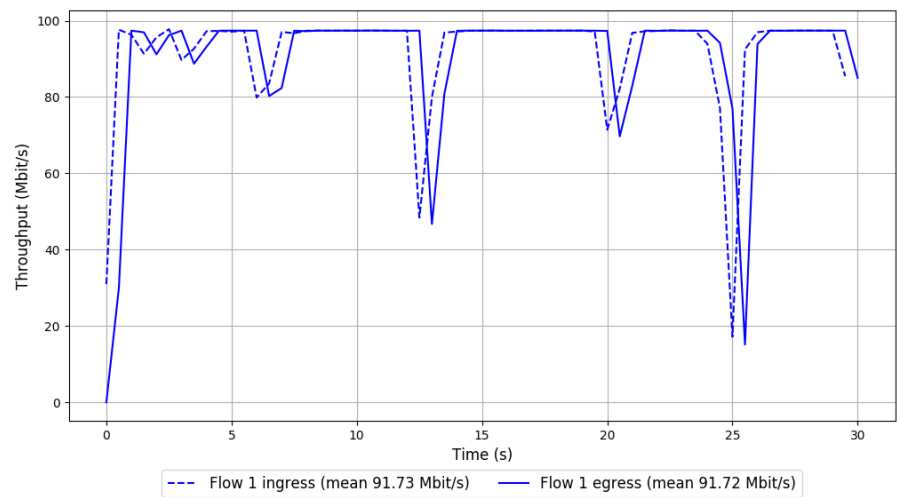
-- Flow 1:

Average throughput: 91.72 Mbit/s

95th percentile per-packet one-way delay: 7.102 ms

Loss rate: 0.02%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-25 13:55:25

End at: 2018-09-25 13:55:55

Local clock offset: -5.248 ms

Remote clock offset: 0.543 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.83 Mbit/s

95th percentile per-packet one-way delay: 6.977 ms

Loss rate: 0.02%

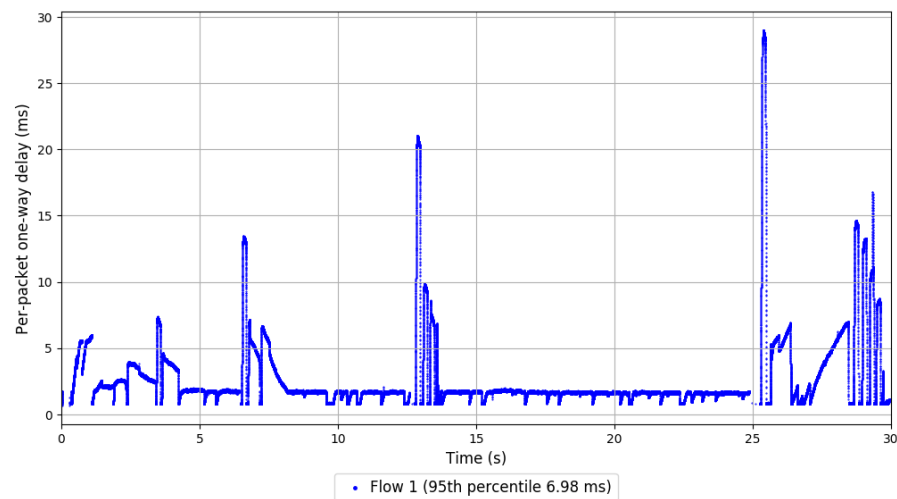
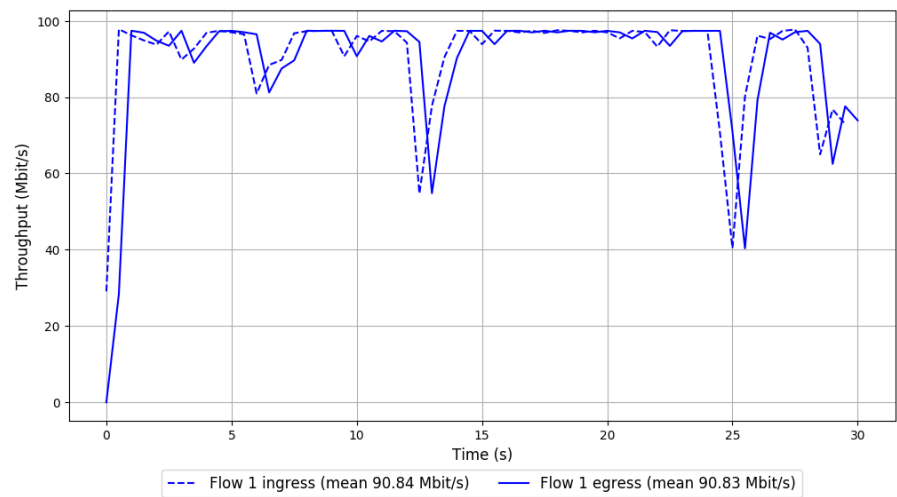
-- Flow 1:

Average throughput: 90.83 Mbit/s

95th percentile per-packet one-way delay: 6.977 ms

Loss rate: 0.02%

Run 5: Report of QUIC Cubic — Data Link



Run 1: Statistics of SCReAM

Start at: 2018-09-25 12:17:25

End at: 2018-09-25 12:17:55

Local clock offset: -6.436 ms

Remote clock offset: 0.576 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.196 ms

Loss rate: 0.00%

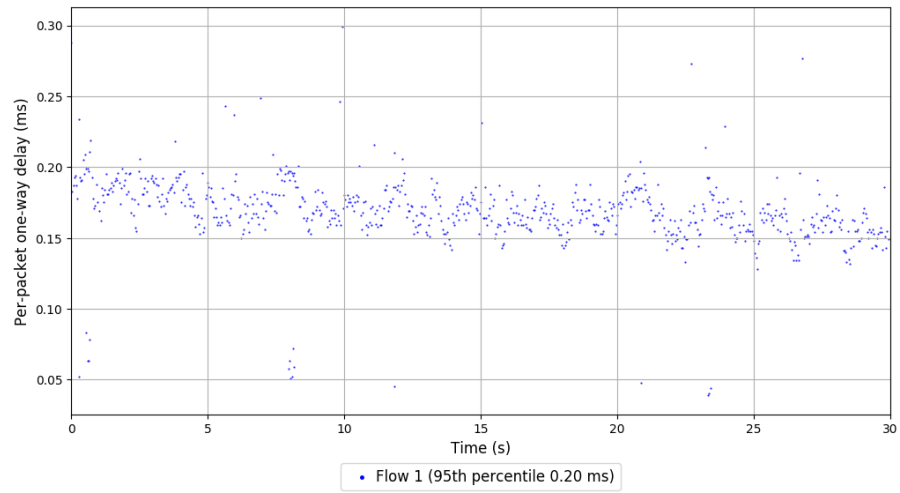
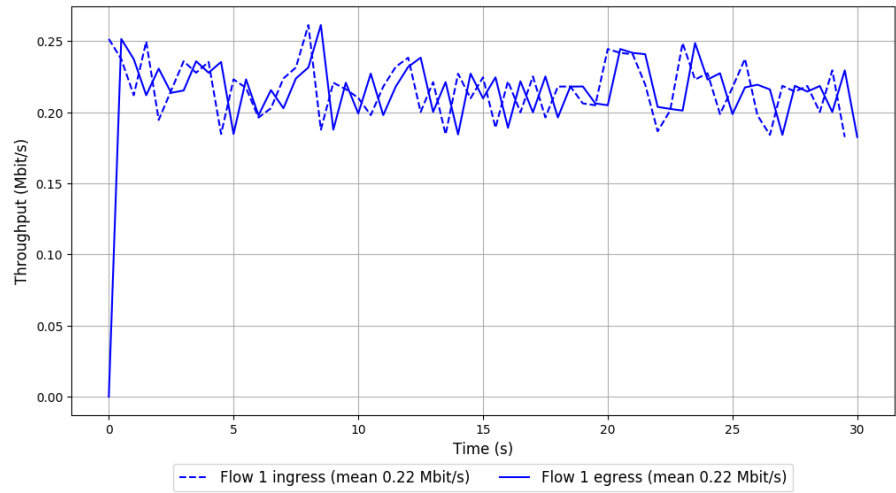
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.196 ms

Loss rate: 0.00%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-25 12:38:48

End at: 2018-09-25 12:39:18

Local clock offset: -5.532 ms

Remote clock offset: 0.789 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.951 ms

Loss rate: 0.00%

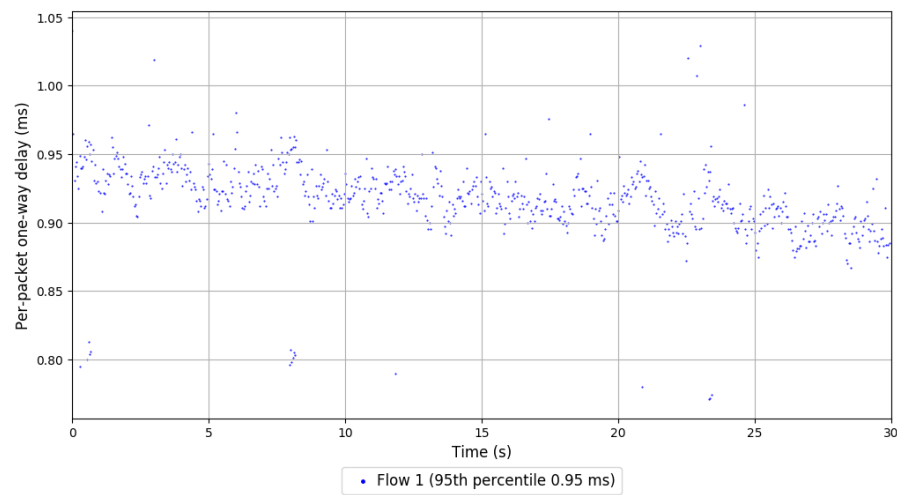
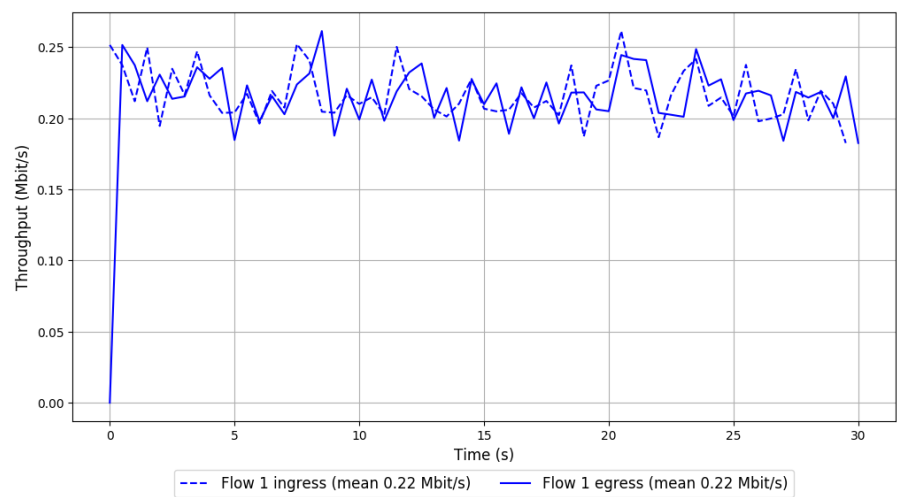
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.951 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-25 13:00:15

End at: 2018-09-25 13:00:45

Local clock offset: -5.513 ms

Remote clock offset: 0.881 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.244 ms

Loss rate: 0.00%

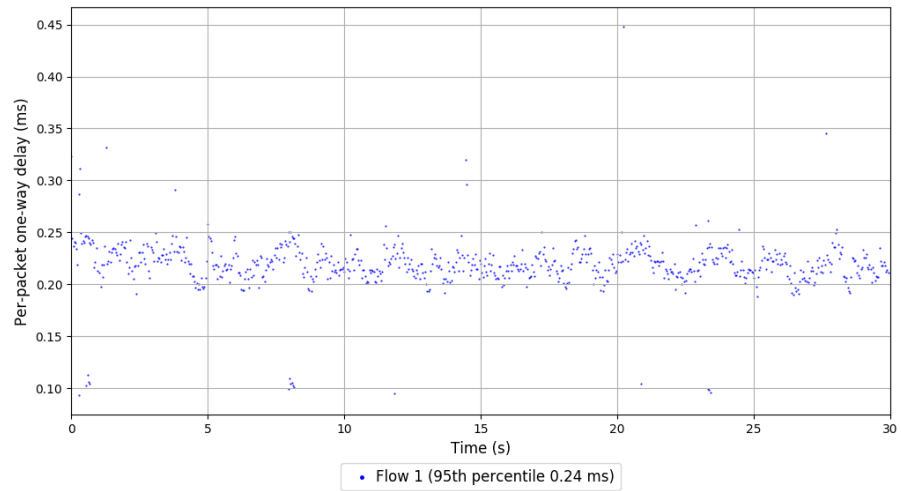
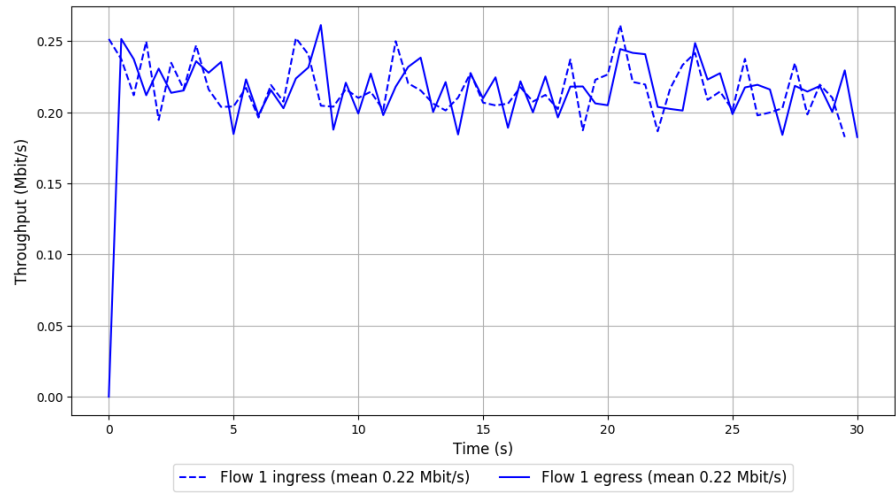
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.244 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-25 13:21:40

End at: 2018-09-25 13:22:10

Local clock offset: -6.707 ms

Remote clock offset: 0.764 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.309 ms

Loss rate: 0.13%

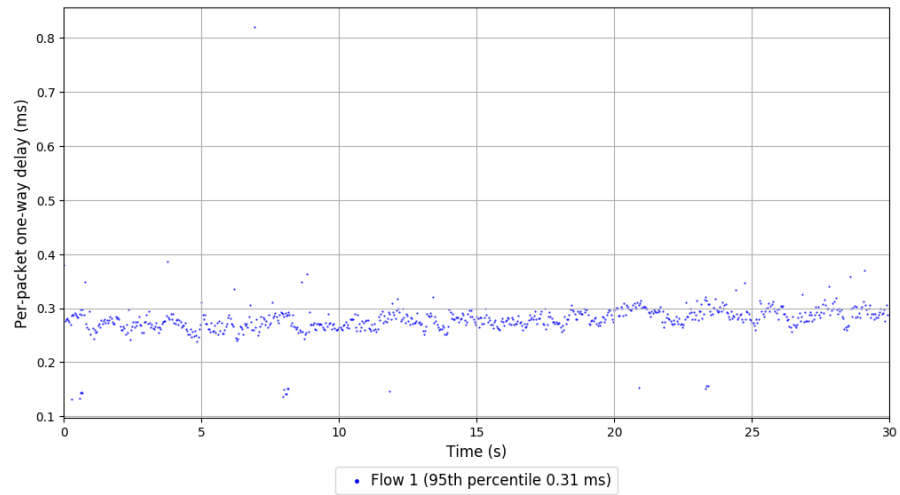
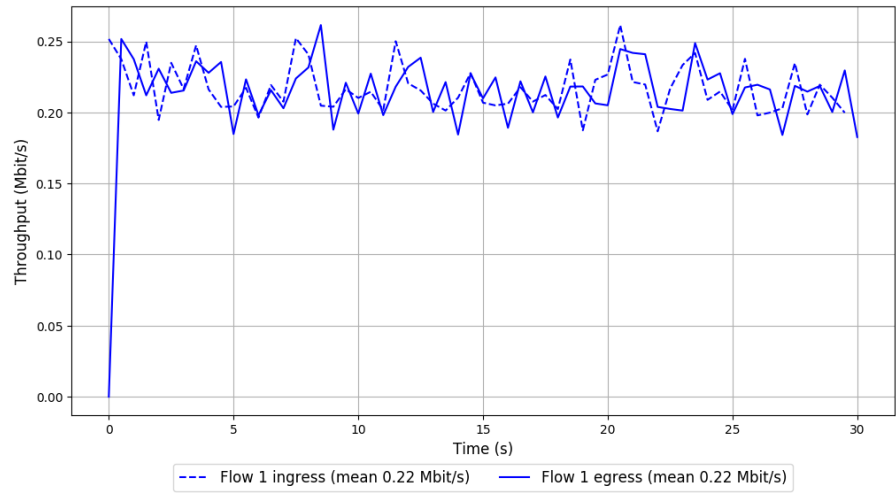
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.309 ms

Loss rate: 0.13%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-25 13:43:05

End at: 2018-09-25 13:43:35

Local clock offset: -6.816 ms

Remote clock offset: 0.629 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.093 ms

Loss rate: 0.13%

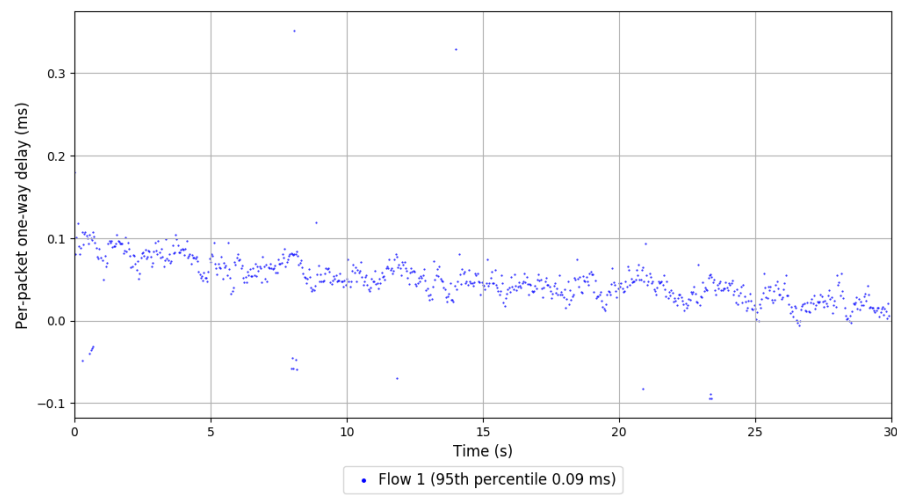
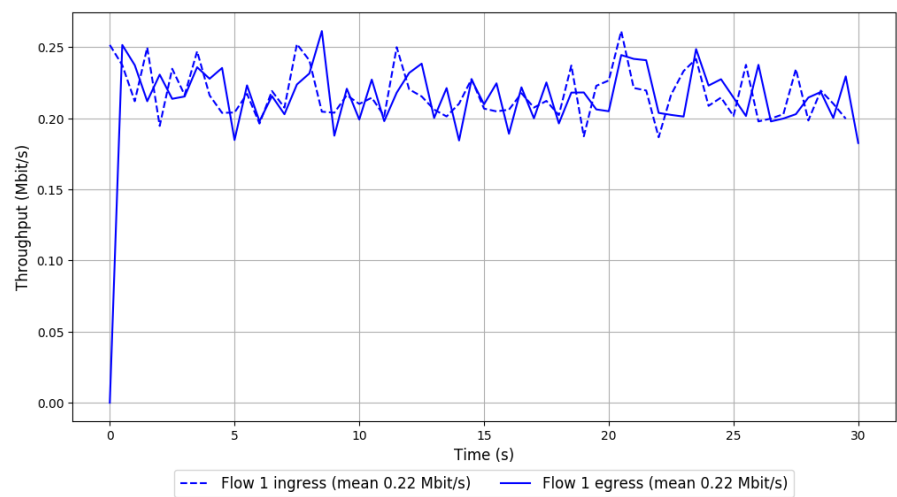
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 0.093 ms

Loss rate: 0.13%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-25 12:28:35

End at: 2018-09-25 12:29:05

Local clock offset: -5.422 ms

Remote clock offset: 0.726 ms

Below is generated by plot.py at 2018-09-25 14:14:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.31 Mbit/s

95th percentile per-packet one-way delay: 9.443 ms

Loss rate: 0.07%

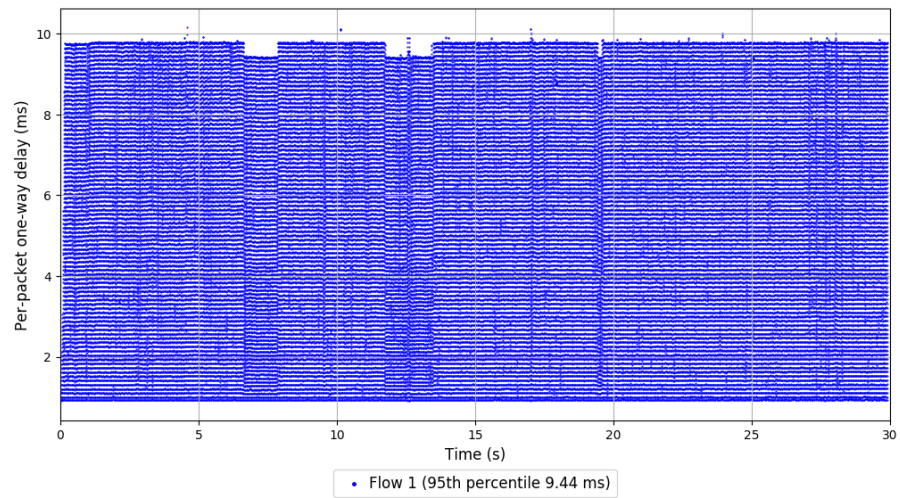
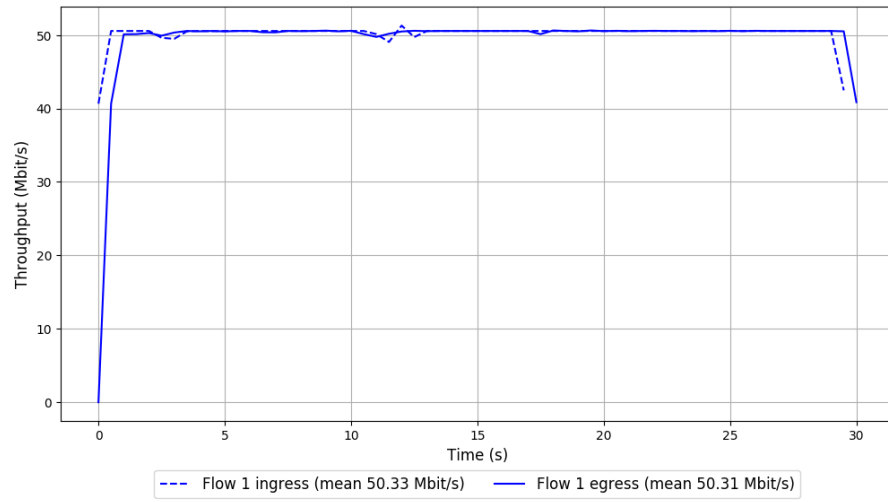
-- Flow 1:

Average throughput: 50.31 Mbit/s

95th percentile per-packet one-way delay: 9.443 ms

Loss rate: 0.07%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-09-25 12:49:59

End at: 2018-09-25 12:50:29

Local clock offset: -4.867 ms

Remote clock offset: 0.912 ms

Below is generated by plot.py at 2018-09-25 14:14:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.32 Mbit/s

95th percentile per-packet one-way delay: 9.405 ms

Loss rate: 0.05%

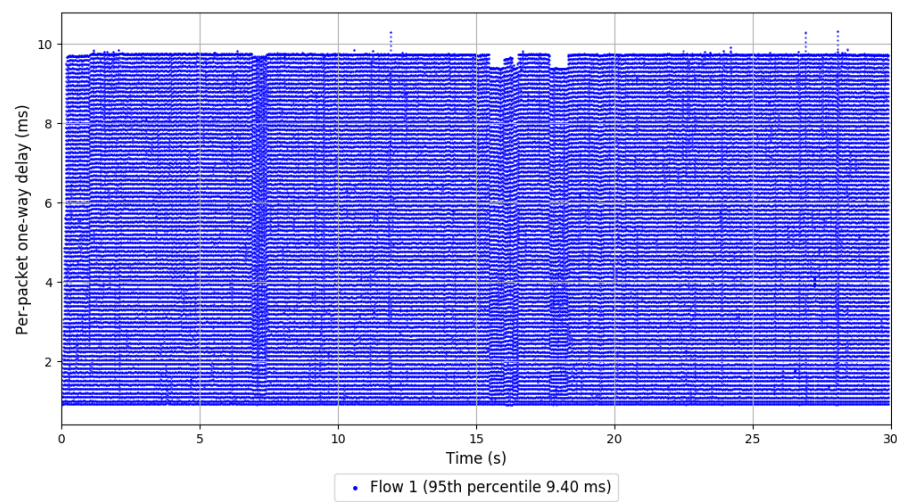
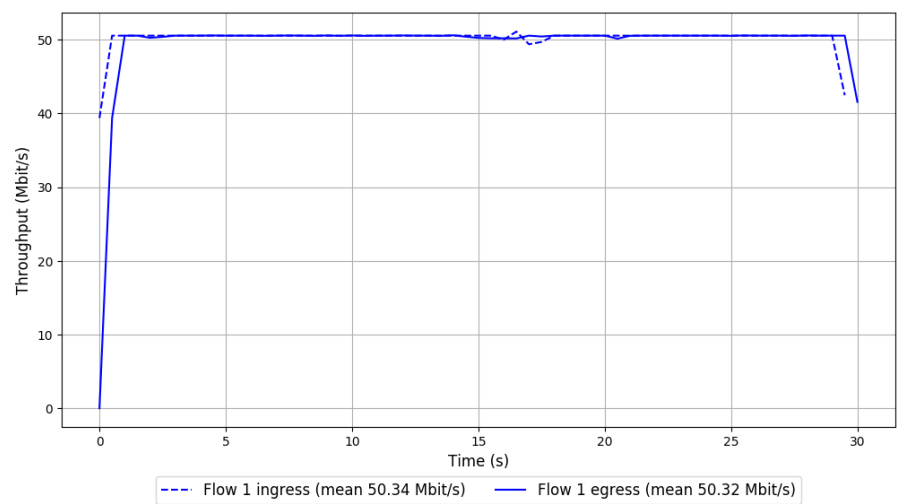
-- Flow 1:

Average throughput: 50.32 Mbit/s

95th percentile per-packet one-way delay: 9.405 ms

Loss rate: 0.05%

Run 2: Report of Sprout — Data Link

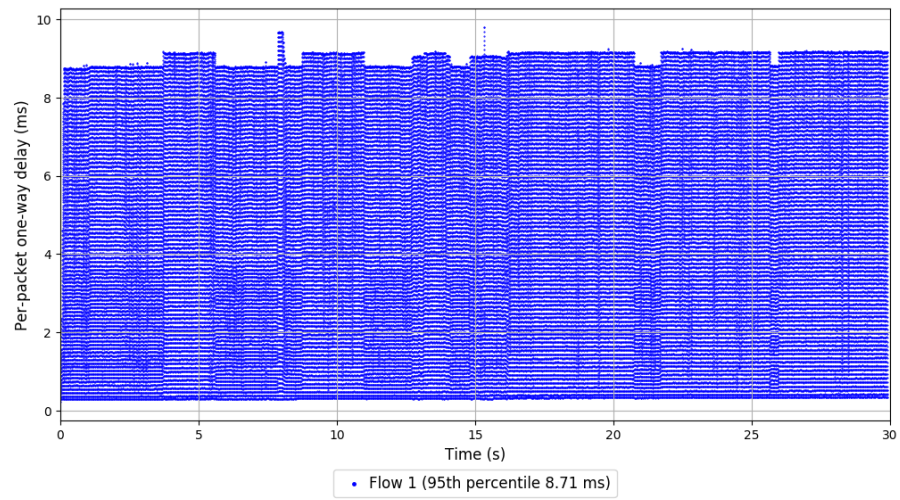
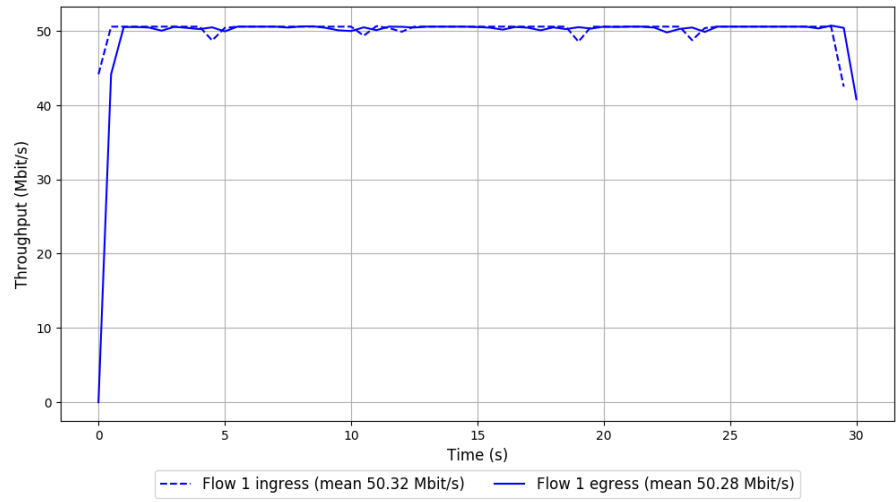


Run 3: Statistics of Sprout

Start at: 2018-09-25 13:11:26
End at: 2018-09-25 13:11:56
Local clock offset: -5.842 ms
Remote clock offset: 0.877 ms

Below is generated by plot.py at 2018-09-25 14:14:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.28 Mbit/s
95th percentile per-packet one-way delay: 8.715 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 50.28 Mbit/s
95th percentile per-packet one-way delay: 8.715 ms
Loss rate: 0.07%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-09-25 13:32:51

End at: 2018-09-25 13:33:21

Local clock offset: -7.195 ms

Remote clock offset: 0.615 ms

Below is generated by plot.py at 2018-09-25 14:14:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.21 Mbit/s

95th percentile per-packet one-way delay: 8.836 ms

Loss rate: 0.07%

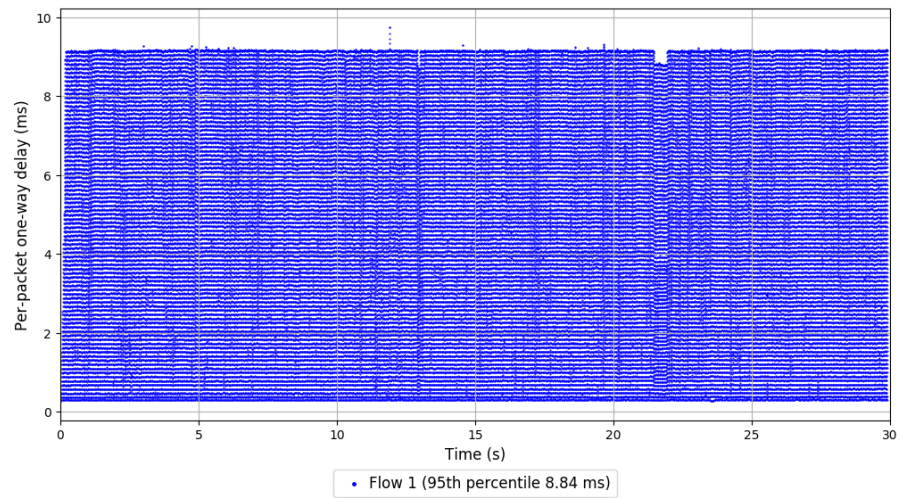
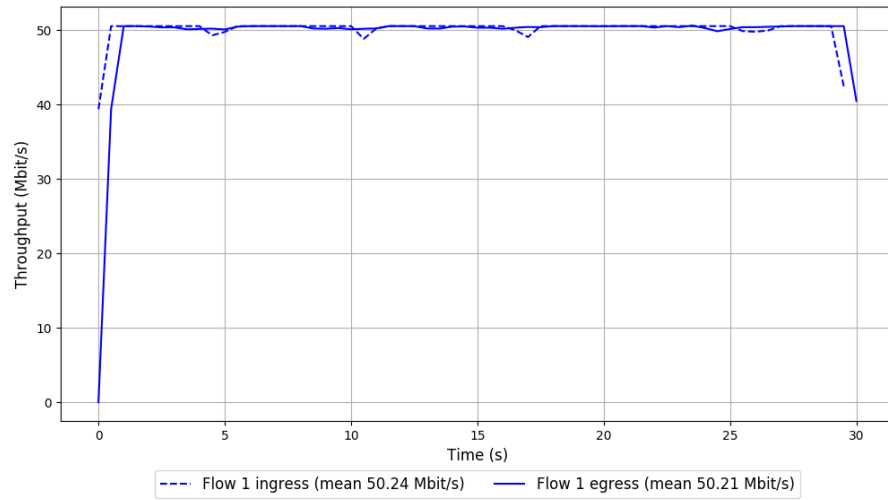
-- Flow 1:

Average throughput: 50.21 Mbit/s

95th percentile per-packet one-way delay: 8.836 ms

Loss rate: 0.07%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-09-25 13:54:19

End at: 2018-09-25 13:54:49

Local clock offset: -5.983 ms

Remote clock offset: 0.465 ms

Below is generated by plot.py at 2018-09-25 14:14:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.27 Mbit/s

95th percentile per-packet one-way delay: 8.604 ms

Loss rate: 0.06%

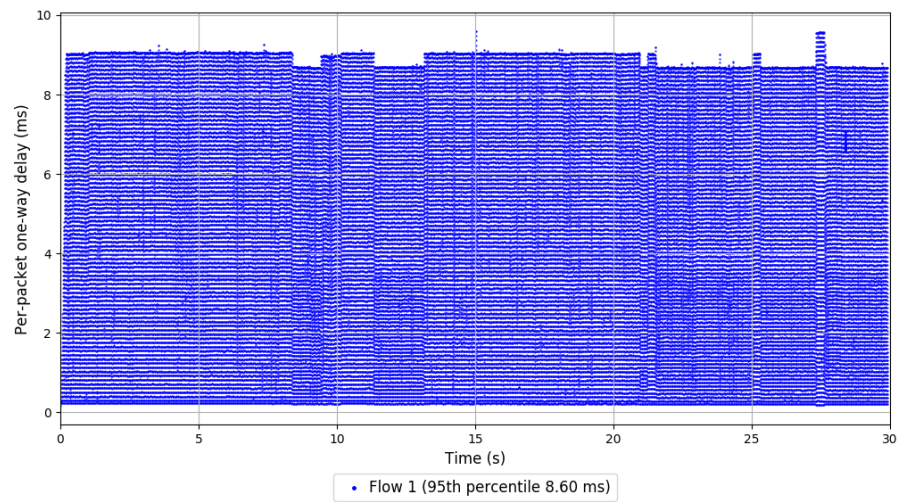
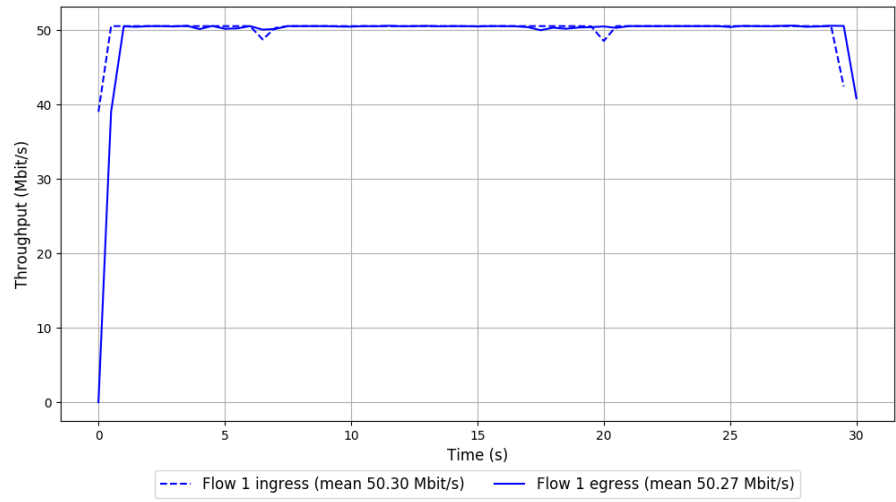
-- Flow 1:

Average throughput: 50.27 Mbit/s

95th percentile per-packet one-way delay: 8.604 ms

Loss rate: 0.06%

Run 5: Report of Sprout — Data Link

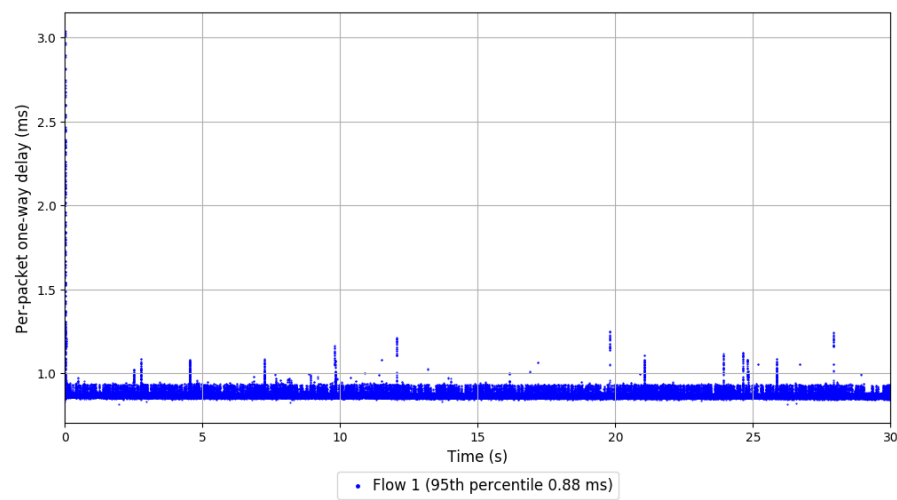
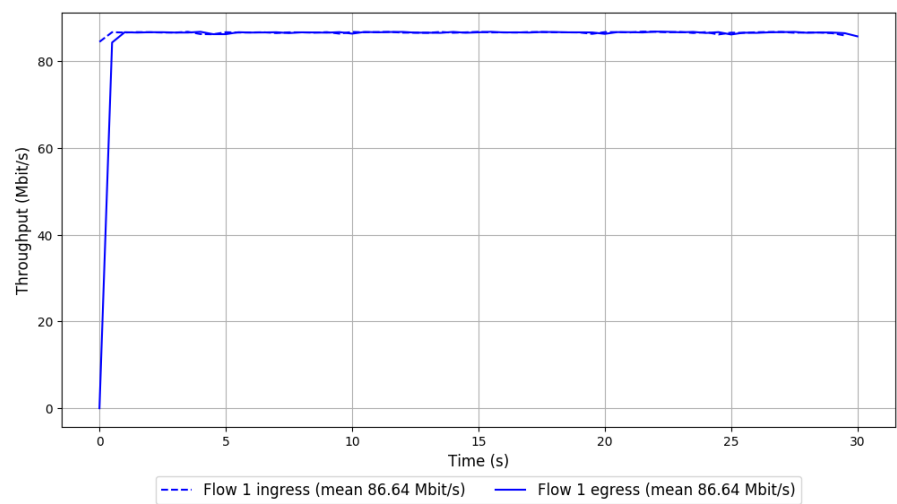


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-25 12:22:57
End at: 2018-09-25 12:23:27
Local clock offset: -5.425 ms
Remote clock offset: 0.729 ms

# Below is generated by plot.py at 2018-09-25 14:15:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.64 Mbit/s
95th percentile per-packet one-way delay: 0.876 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 86.64 Mbit/s
95th percentile per-packet one-way delay: 0.876 ms
Loss rate: 0.01%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-25 12:44:21

End at: 2018-09-25 12:44:51

Local clock offset: -5.06 ms

Remote clock offset: 0.914 ms

Below is generated by plot.py at 2018-09-25 14:15:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.27 Mbit/s

95th percentile per-packet one-way delay: 0.917 ms

Loss rate: 0.01%

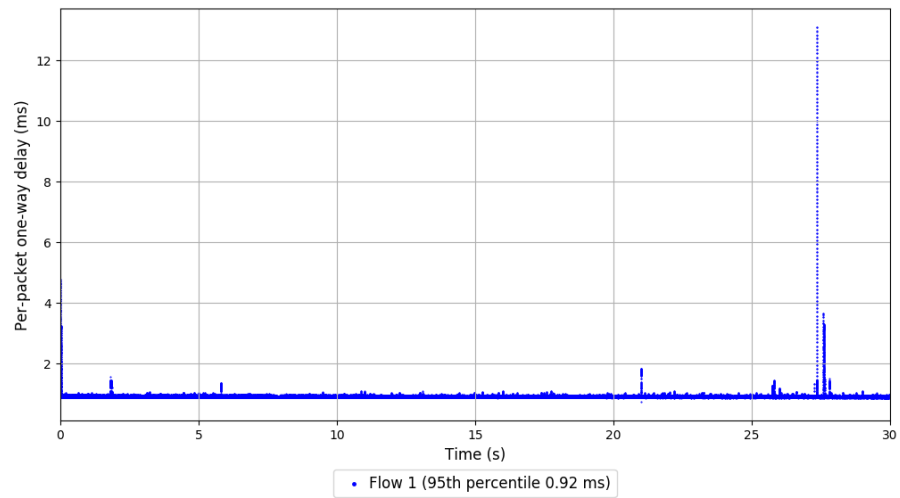
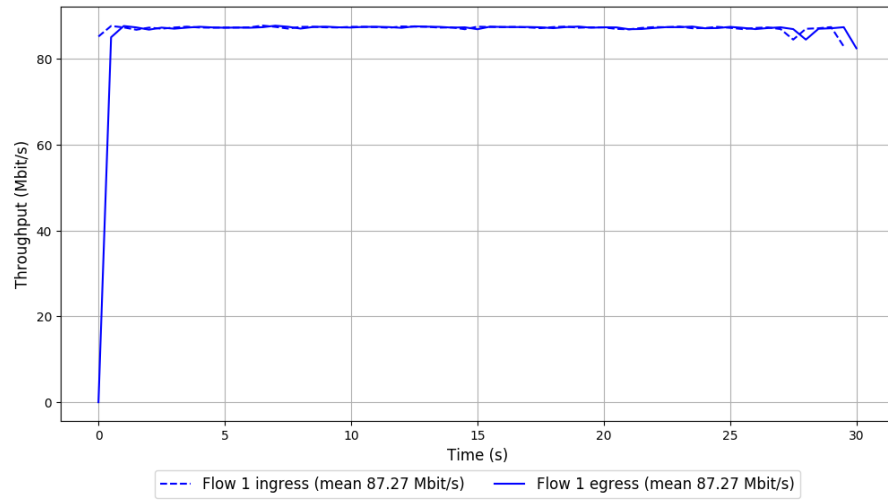
-- Flow 1:

Average throughput: 87.27 Mbit/s

95th percentile per-packet one-way delay: 0.917 ms

Loss rate: 0.01%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-25 13:05:48

End at: 2018-09-25 13:06:18

Local clock offset: -4.755 ms

Remote clock offset: 0.981 ms

Below is generated by plot.py at 2018-09-25 14:16:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.19 Mbit/s

95th percentile per-packet one-way delay: 0.921 ms

Loss rate: 0.01%

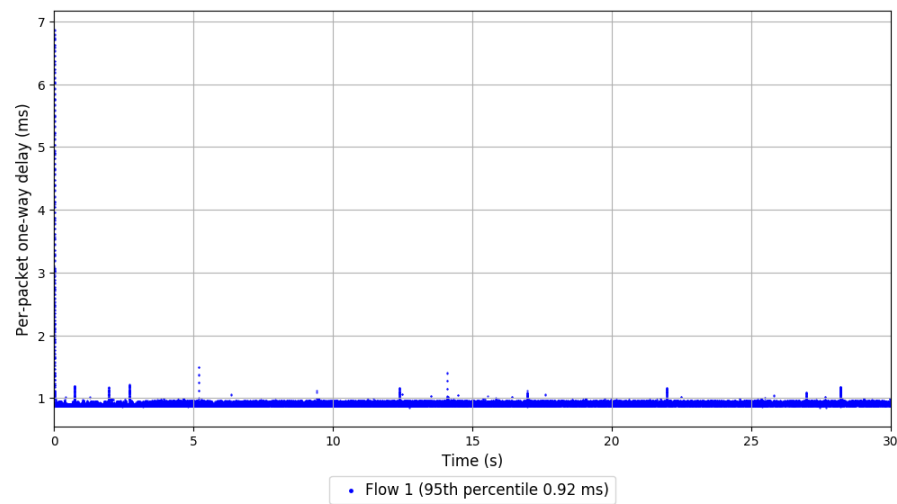
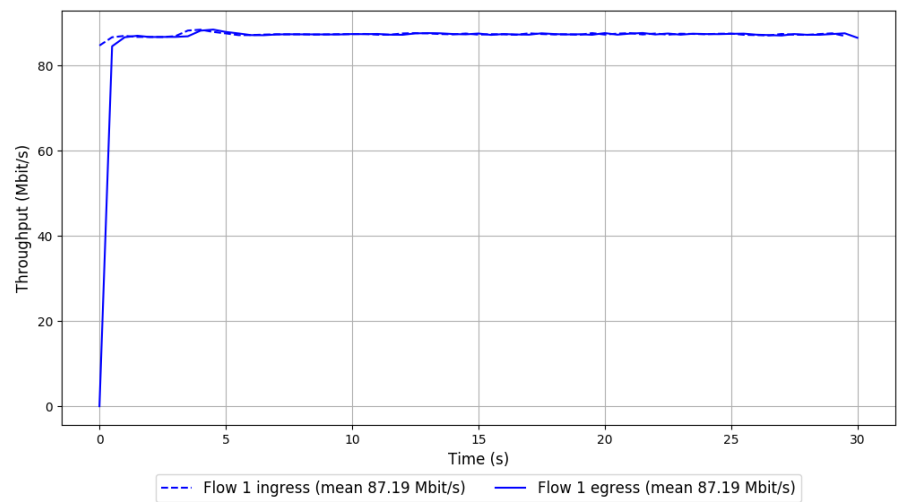
-- Flow 1:

Average throughput: 87.19 Mbit/s

95th percentile per-packet one-way delay: 0.921 ms

Loss rate: 0.01%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-25 13:27:13

End at: 2018-09-25 13:27:43

Local clock offset: -6.217 ms

Remote clock offset: 0.778 ms

Below is generated by plot.py at 2018-09-25 14:16:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.52 Mbit/s

95th percentile per-packet one-way delay: 0.990 ms

Loss rate: 0.01%

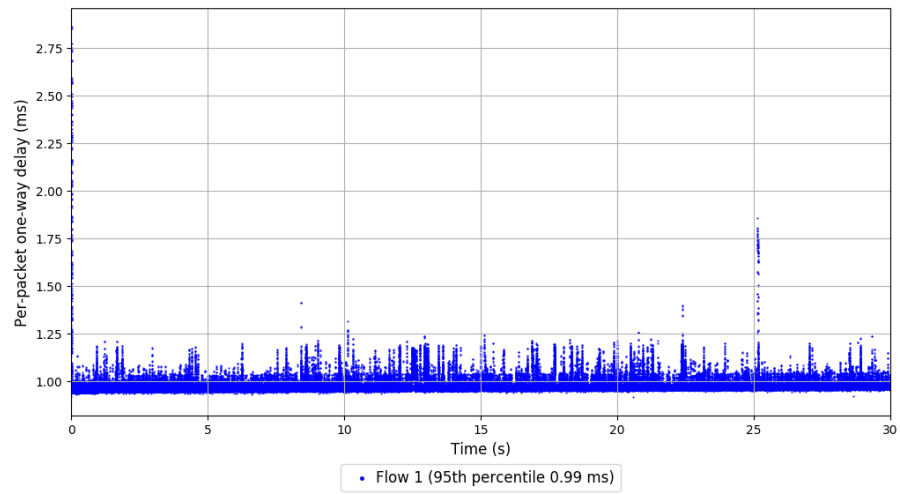
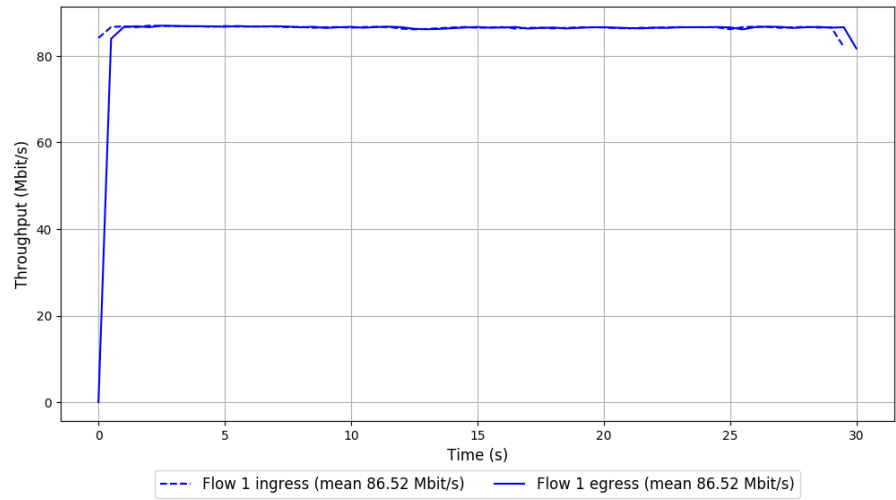
-- Flow 1:

Average throughput: 86.52 Mbit/s

95th percentile per-packet one-way delay: 0.990 ms

Loss rate: 0.01%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-25 13:48:39

End at: 2018-09-25 13:49:09

Local clock offset: -6.253 ms

Remote clock offset: 0.625 ms

Below is generated by plot.py at 2018-09-25 14:16:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.65 Mbit/s

95th percentile per-packet one-way delay: 0.105 ms

Loss rate: 0.01%

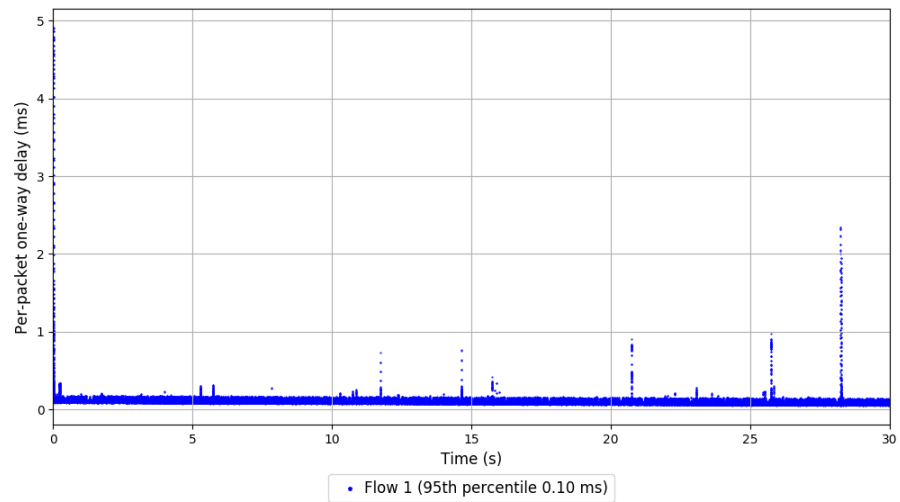
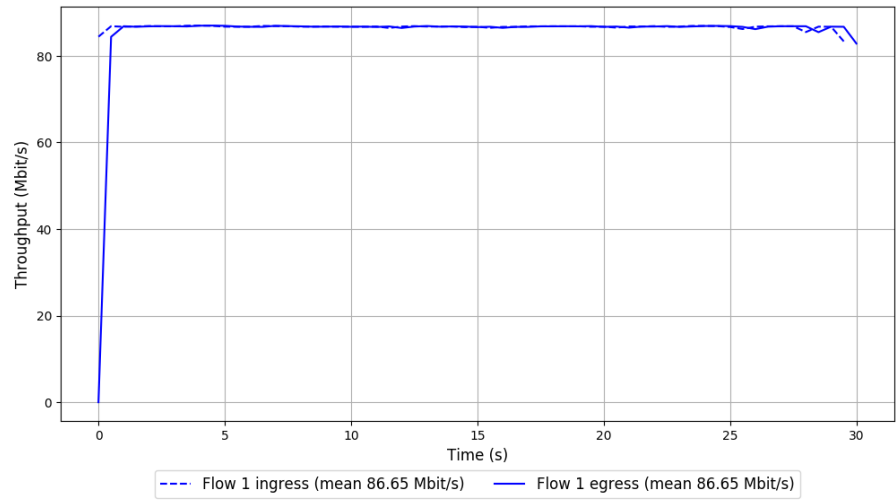
-- Flow 1:

Average throughput: 86.65 Mbit/s

95th percentile per-packet one-way delay: 0.105 ms

Loss rate: 0.01%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-09-25 12:20:42

End at: 2018-09-25 12:21:12

Local clock offset: -6.254 ms

Remote clock offset: 0.646 ms

Below is generated by plot.py at 2018-09-25 14:16:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.16 Mbit/s

95th percentile per-packet one-way delay: 1.363 ms

Loss rate: 0.01%

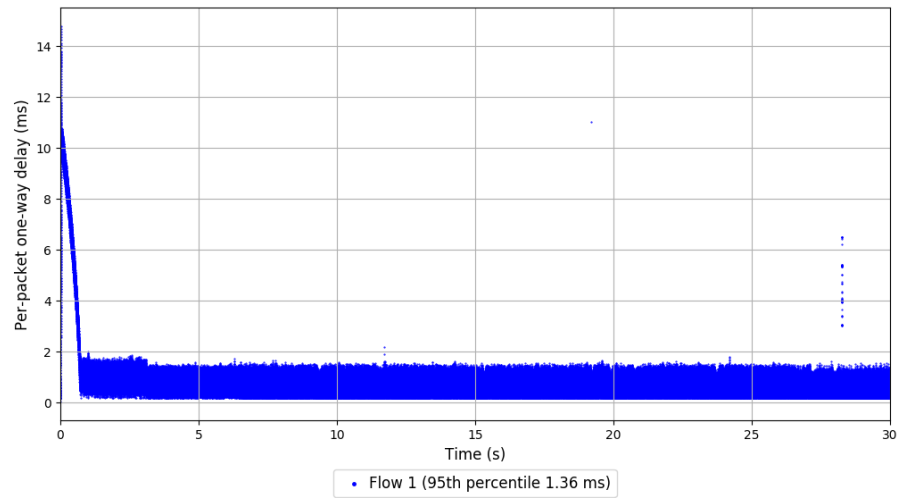
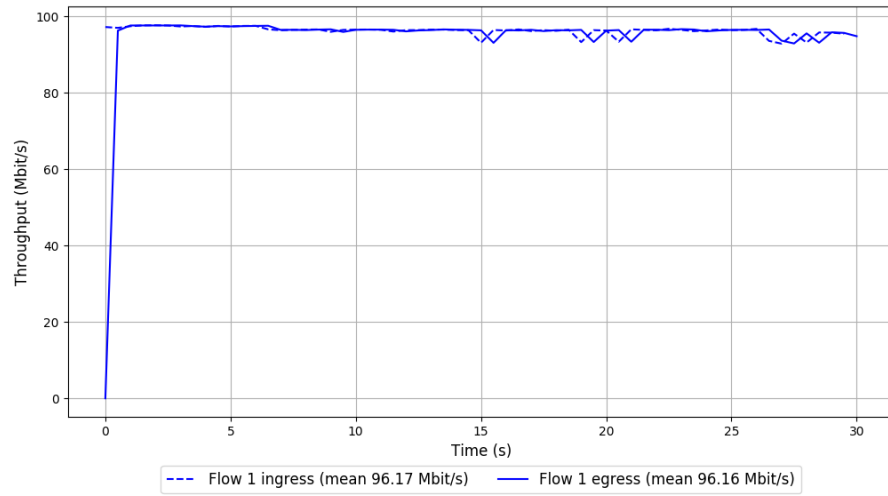
-- Flow 1:

Average throughput: 96.16 Mbit/s

95th percentile per-packet one-way delay: 1.363 ms

Loss rate: 0.01%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-25 12:42:05

End at: 2018-09-25 12:42:35

Local clock offset: -5.222 ms

Remote clock offset: 0.921 ms

Below is generated by plot.py at 2018-09-25 14:16:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.74 Mbit/s

95th percentile per-packet one-way delay: 1.603 ms

Loss rate: 0.01%

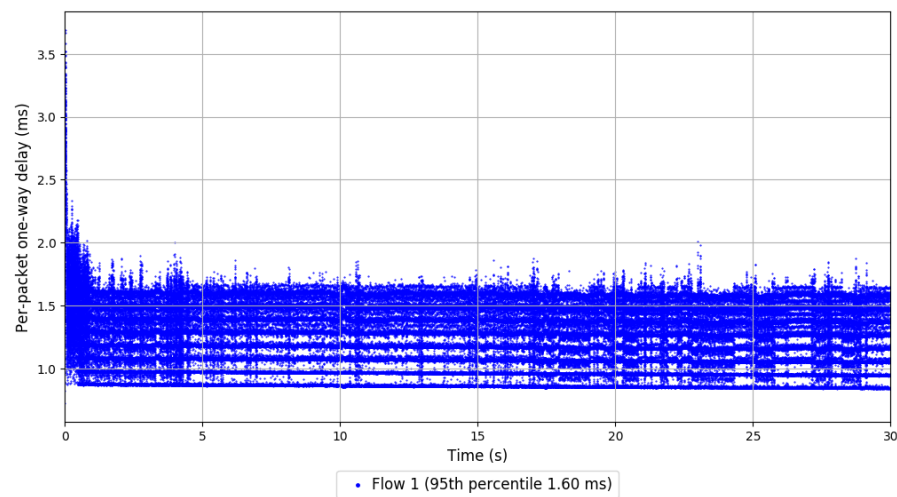
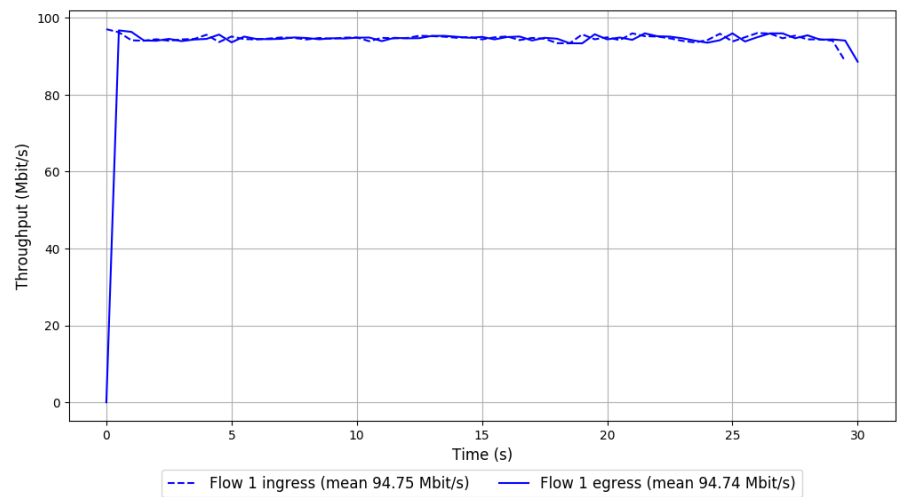
-- Flow 1:

Average throughput: 94.74 Mbit/s

95th percentile per-packet one-way delay: 1.603 ms

Loss rate: 0.01%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-25 13:03:32

End at: 2018-09-25 13:04:02

Local clock offset: -5.517 ms

Remote clock offset: 0.894 ms

Below is generated by plot.py at 2018-09-25 14:16:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.62 Mbit/s

95th percentile per-packet one-way delay: 0.954 ms

Loss rate: 0.01%

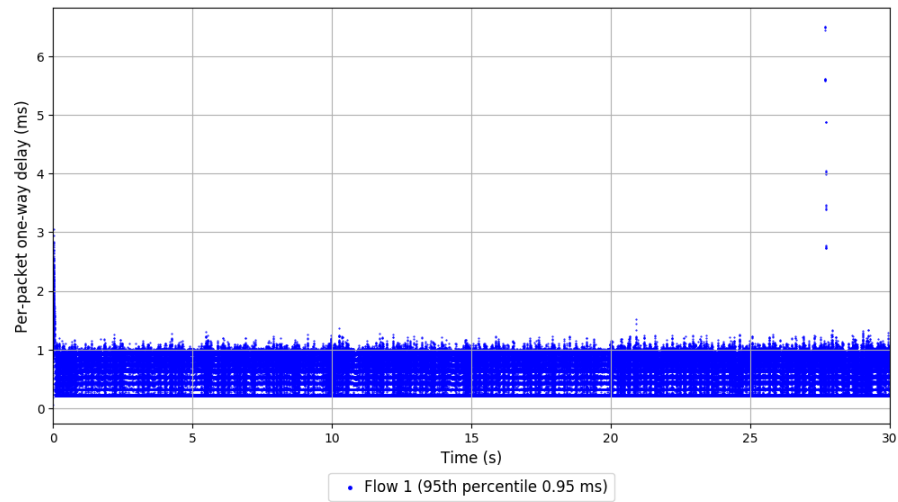
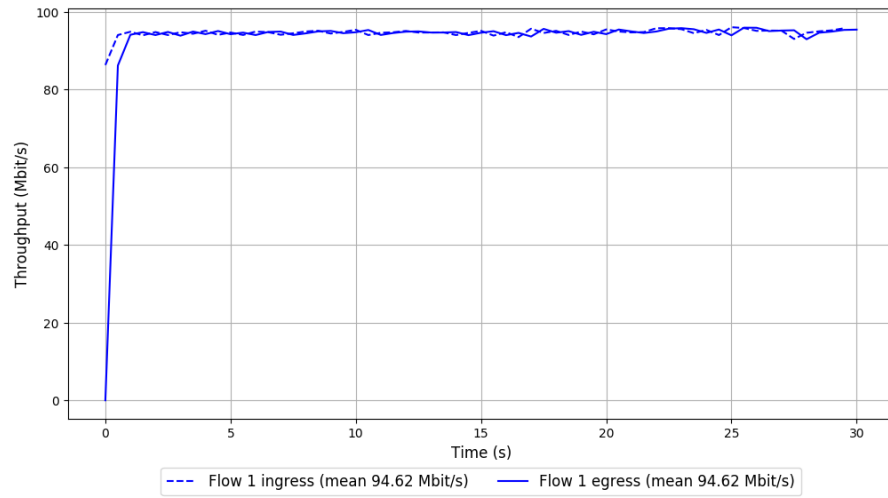
-- Flow 1:

Average throughput: 94.62 Mbit/s

95th percentile per-packet one-way delay: 0.954 ms

Loss rate: 0.01%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-25 13:24:58

End at: 2018-09-25 13:25:28

Local clock offset: -6.135 ms

Remote clock offset: 0.763 ms

Below is generated by plot.py at 2018-09-25 14:16:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.80 Mbit/s

95th percentile per-packet one-way delay: 2.137 ms

Loss rate: 0.01%

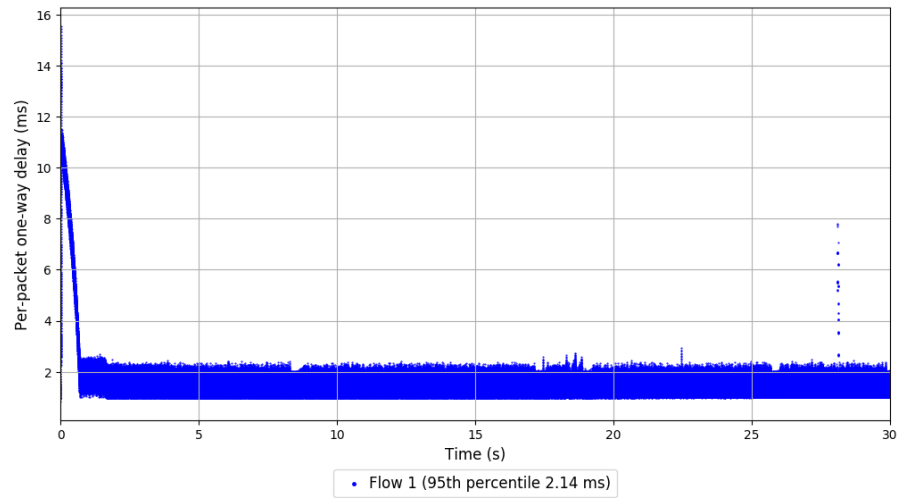
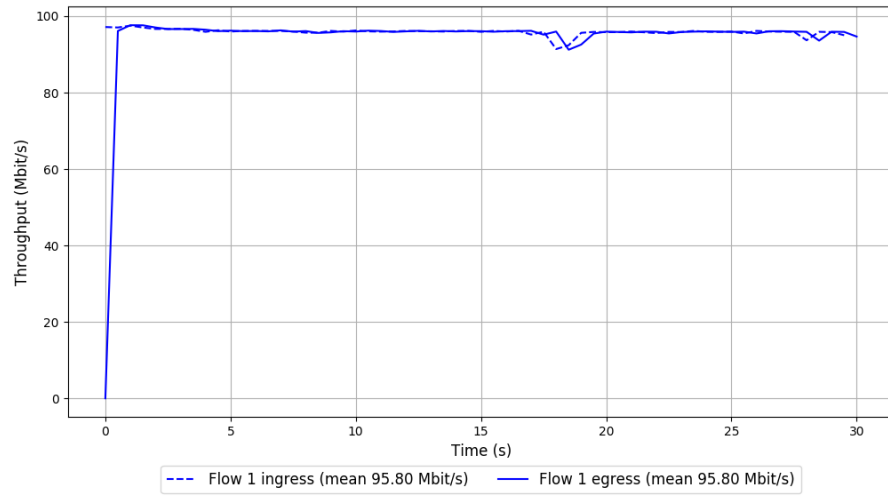
-- Flow 1:

Average throughput: 95.80 Mbit/s

95th percentile per-packet one-way delay: 2.137 ms

Loss rate: 0.01%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-25 13:46:23

End at: 2018-09-25 13:46:53

Local clock offset: -5.741 ms

Remote clock offset: 0.486 ms

Below is generated by plot.py at 2018-09-25 14:16:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.15 Mbit/s

95th percentile per-packet one-way delay: 1.690 ms

Loss rate: 0.01%

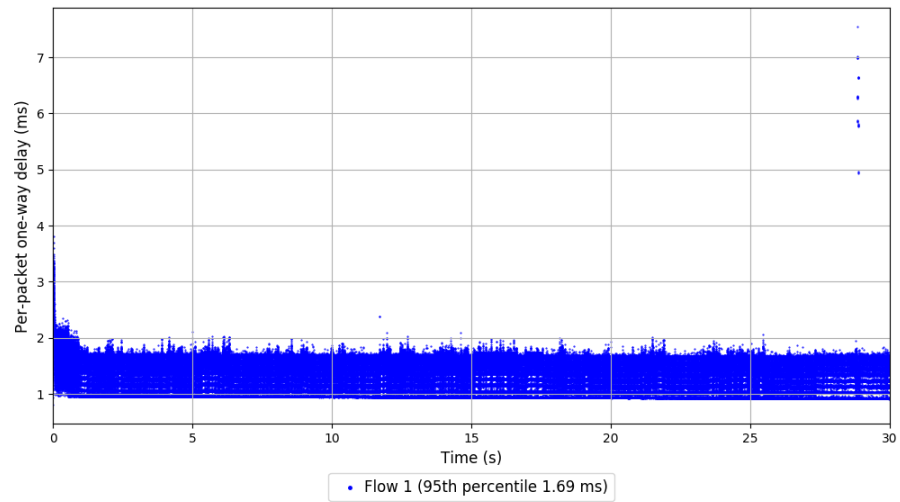
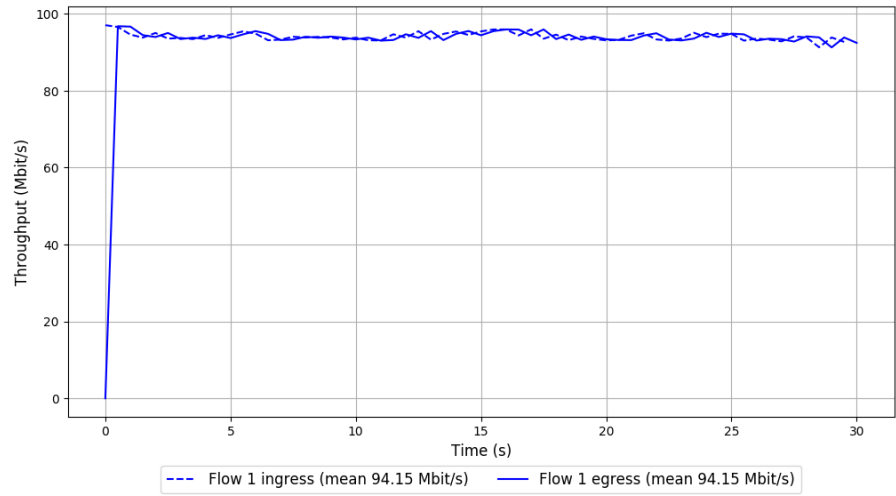
-- Flow 1:

Average throughput: 94.15 Mbit/s

95th percentile per-packet one-way delay: 1.690 ms

Loss rate: 0.01%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-25 12:18:29

End at: 2018-09-25 12:18:59

Local clock offset: -6.363 ms

Remote clock offset: 0.691 ms

Below is generated by plot.py at 2018-09-25 14:16:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 52.70 Mbit/s

95th percentile per-packet one-way delay: 3.924 ms

Loss rate: 0.02%

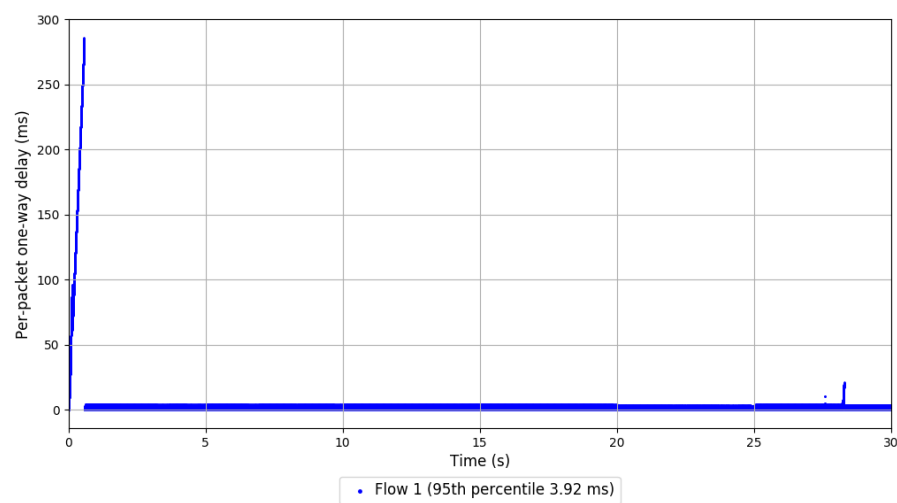
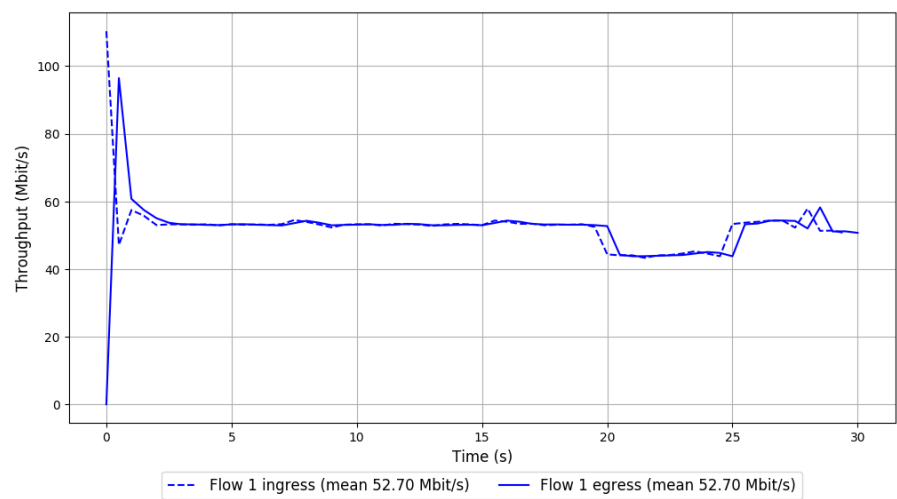
-- Flow 1:

Average throughput: 52.70 Mbit/s

95th percentile per-packet one-way delay: 3.924 ms

Loss rate: 0.02%

Run 1: Report of Verus — Data Link

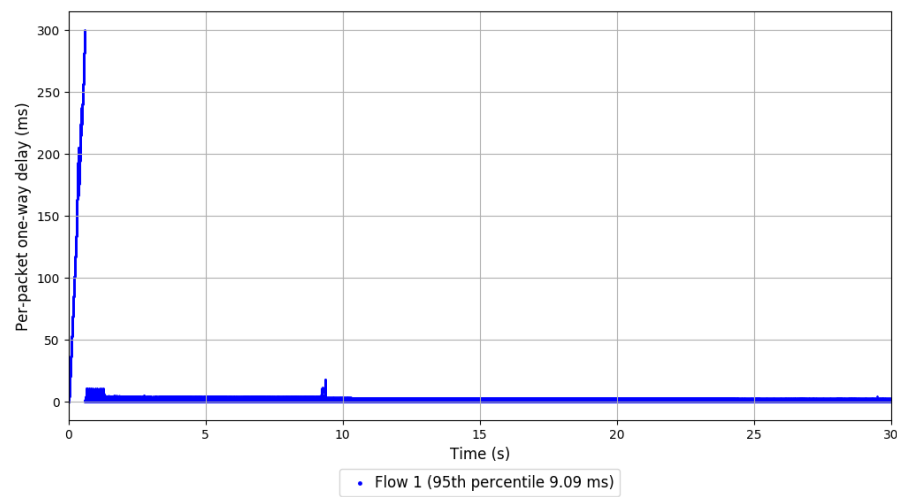
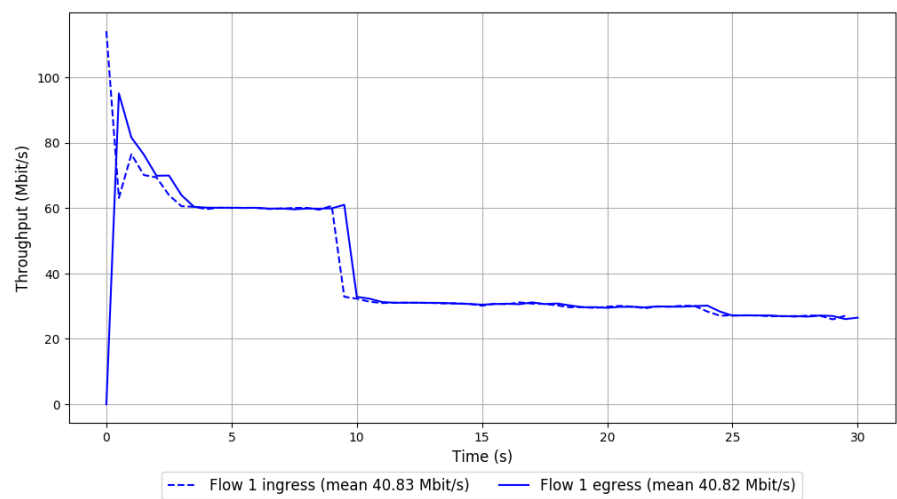


Run 2: Statistics of Verus

Start at: 2018-09-25 12:39:53
End at: 2018-09-25 12:40:23
Local clock offset: -6.173 ms
Remote clock offset: 0.835 ms

Below is generated by plot.py at 2018-09-25 14:16:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 40.82 Mbit/s
95th percentile per-packet one-way delay: 9.089 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 40.82 Mbit/s
95th percentile per-packet one-way delay: 9.089 ms
Loss rate: 0.04%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-25 13:01:20

End at: 2018-09-25 13:01:50

Local clock offset: -4.776 ms

Remote clock offset: 0.916 ms

Below is generated by plot.py at 2018-09-25 14:16:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 57.34 Mbit/s

95th percentile per-packet one-way delay: 4.781 ms

Loss rate: 0.25%

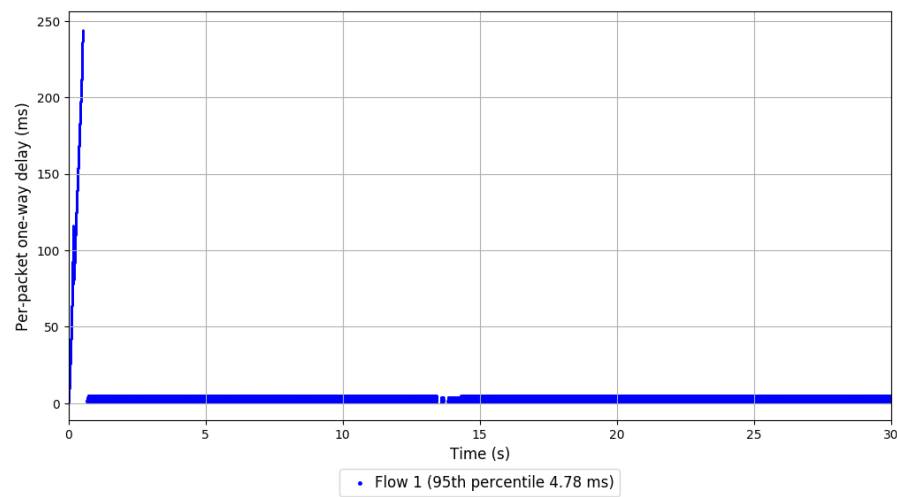
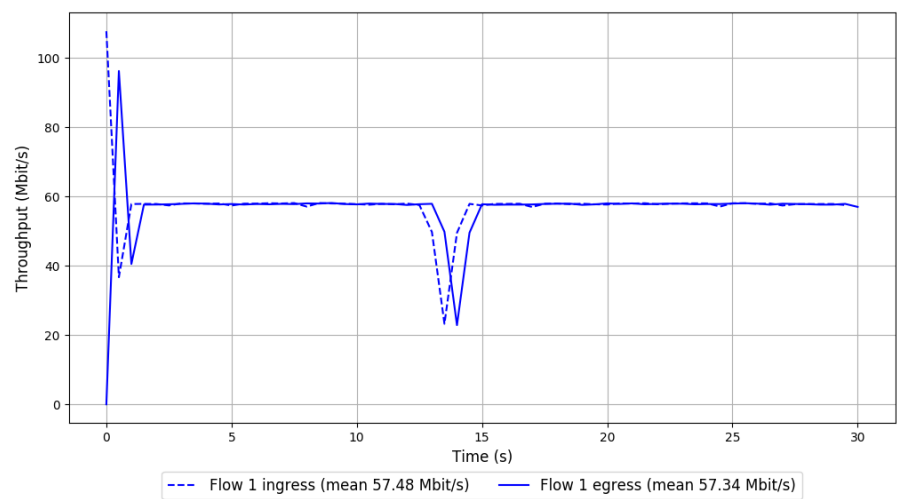
-- Flow 1:

Average throughput: 57.34 Mbit/s

95th percentile per-packet one-way delay: 4.781 ms

Loss rate: 0.25%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-25 13:22:44

End at: 2018-09-25 13:23:14

Local clock offset: -6.774 ms

Remote clock offset: 0.739 ms

Below is generated by plot.py at 2018-09-25 14:16:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 57.02 Mbit/s

95th percentile per-packet one-way delay: 4.438 ms

Loss rate: 0.03%

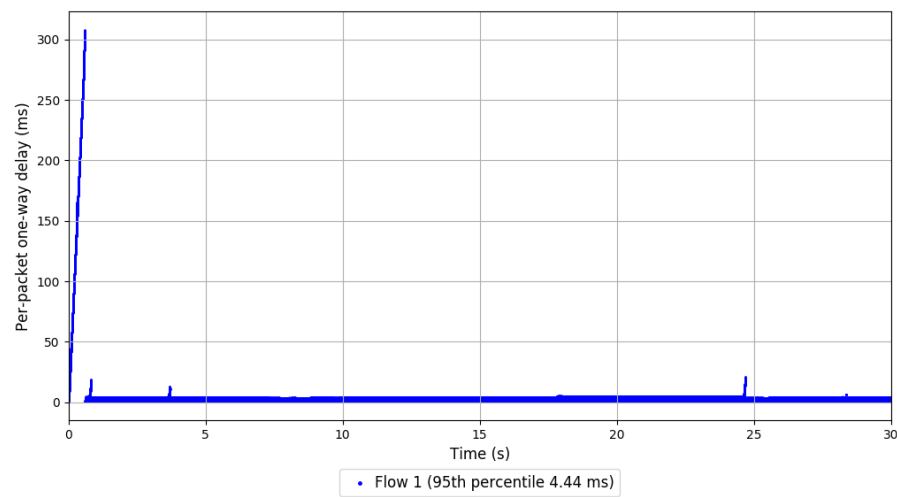
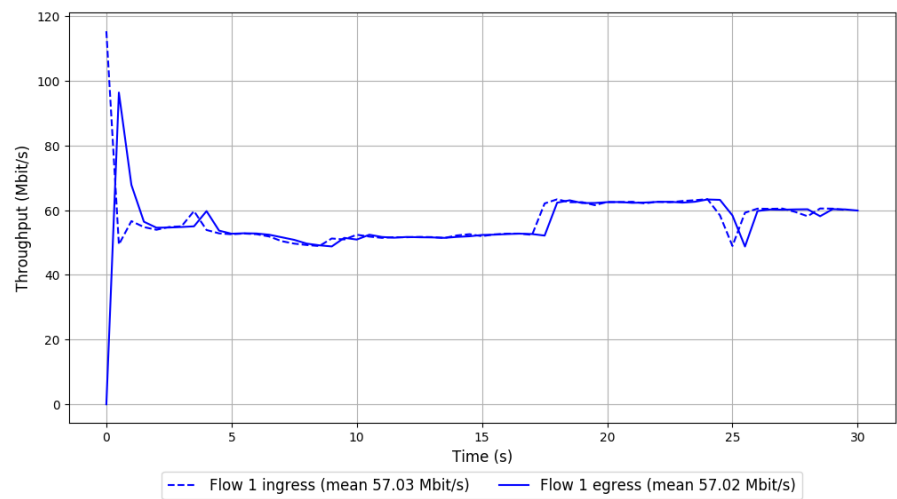
-- Flow 1:

Average throughput: 57.02 Mbit/s

95th percentile per-packet one-way delay: 4.438 ms

Loss rate: 0.03%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-25 13:44:10

End at: 2018-09-25 13:44:40

Local clock offset: -5.871 ms

Remote clock offset: 0.645 ms

Below is generated by plot.py at 2018-09-25 14:16:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 51.79 Mbit/s

95th percentile per-packet one-way delay: 10.377 ms

Loss rate: 0.01%

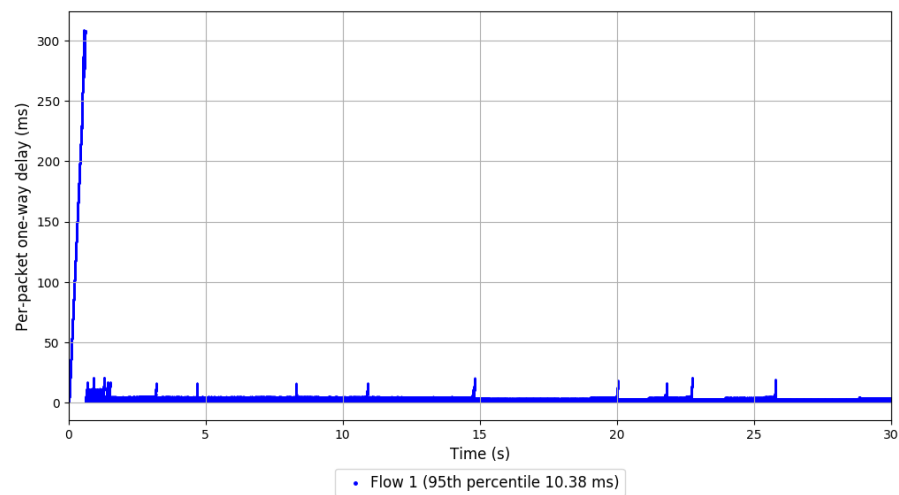
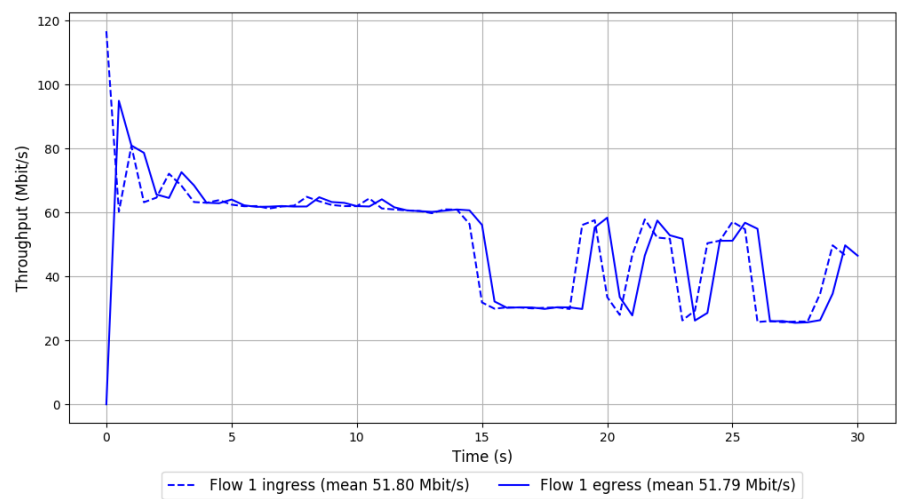
-- Flow 1:

Average throughput: 51.79 Mbit/s

95th percentile per-packet one-way delay: 10.377 ms

Loss rate: 0.01%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-25 12:27:29

End at: 2018-09-25 12:27:59

Local clock offset: -6.128 ms

Remote clock offset: 0.685 ms

Below is generated by plot.py at 2018-09-25 14:16:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 27.24 Mbit/s

95th percentile per-packet one-way delay: 0.221 ms

Loss rate: 0.01%

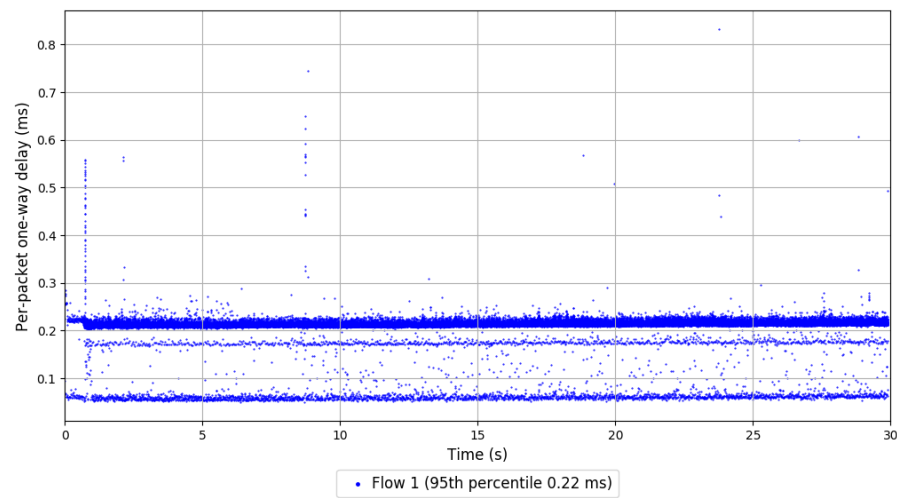
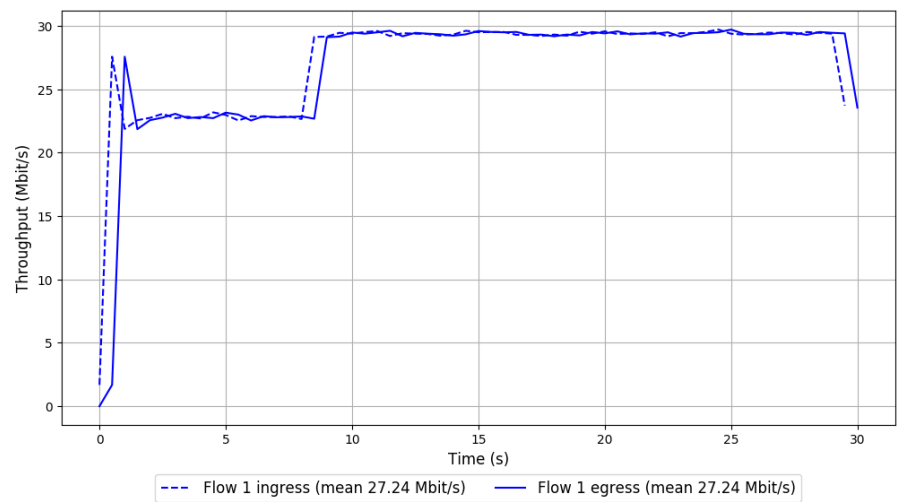
-- Flow 1:

Average throughput: 27.24 Mbit/s

95th percentile per-packet one-way delay: 0.221 ms

Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-25 12:48:53

End at: 2018-09-25 12:49:23

Local clock offset: -4.949 ms

Remote clock offset: 0.785 ms

Below is generated by plot.py at 2018-09-25 14:16:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.70 Mbit/s

95th percentile per-packet one-way delay: 0.984 ms

Loss rate: 0.01%

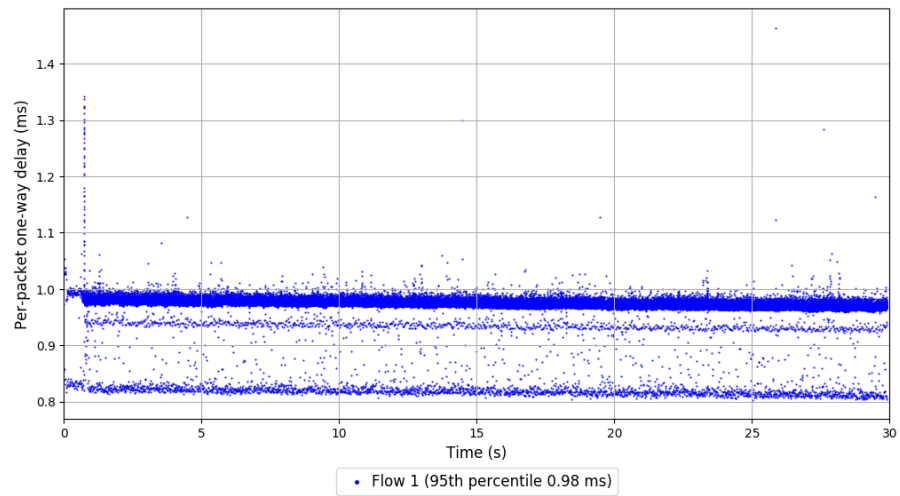
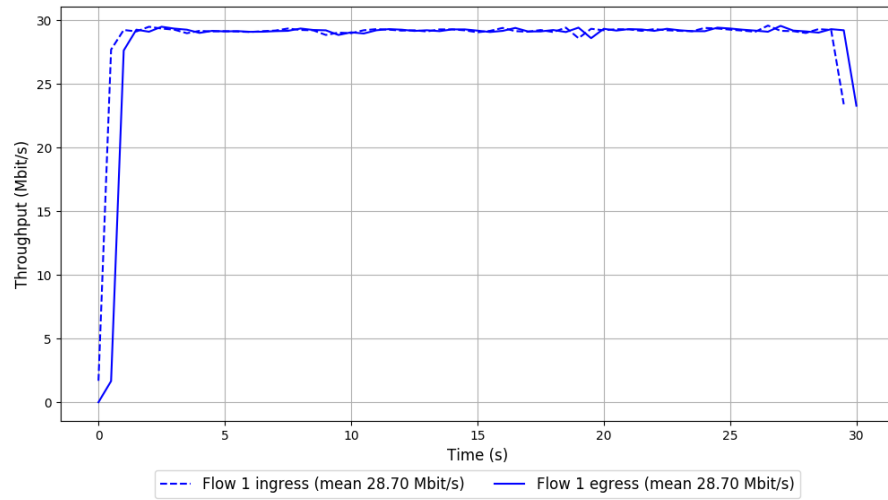
-- Flow 1:

Average throughput: 28.70 Mbit/s

95th percentile per-packet one-way delay: 0.984 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-25 13:10:20

End at: 2018-09-25 13:10:50

Local clock offset: -5.717 ms

Remote clock offset: 0.923 ms

Below is generated by plot.py at 2018-09-25 14:16:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 35.39 Mbit/s

95th percentile per-packet one-way delay: 0.260 ms

Loss rate: 0.01%

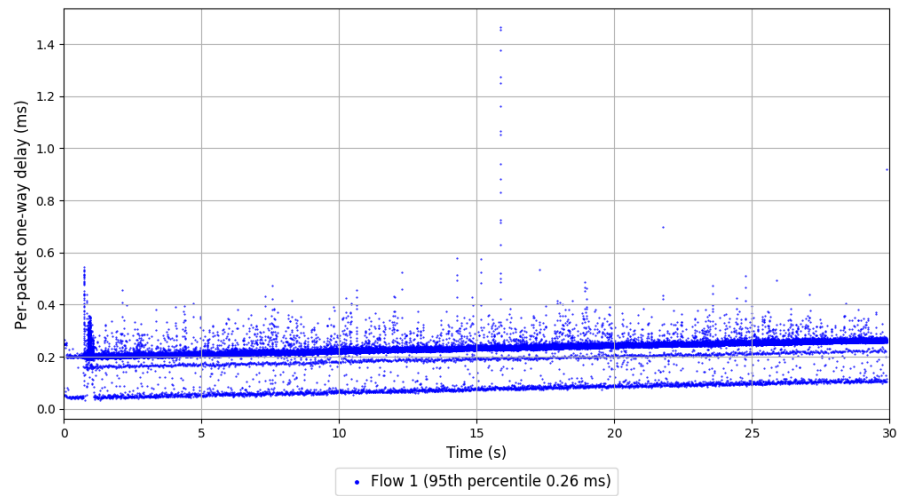
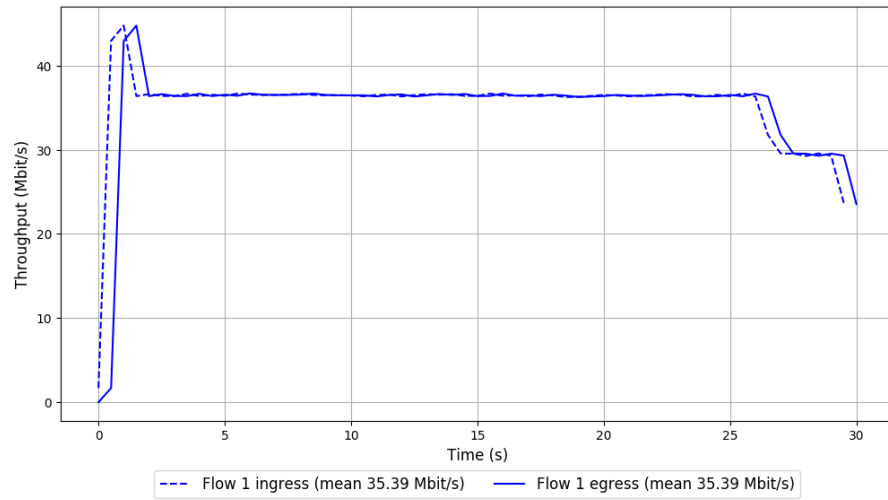
-- Flow 1:

Average throughput: 35.39 Mbit/s

95th percentile per-packet one-way delay: 0.260 ms

Loss rate: 0.01%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-25 13:31:45

End at: 2018-09-25 13:32:15

Local clock offset: -6.397 ms

Remote clock offset: 0.72 ms

Below is generated by plot.py at 2018-09-25 14:16:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.19 Mbit/s

95th percentile per-packet one-way delay: 0.953 ms

Loss rate: 0.01%

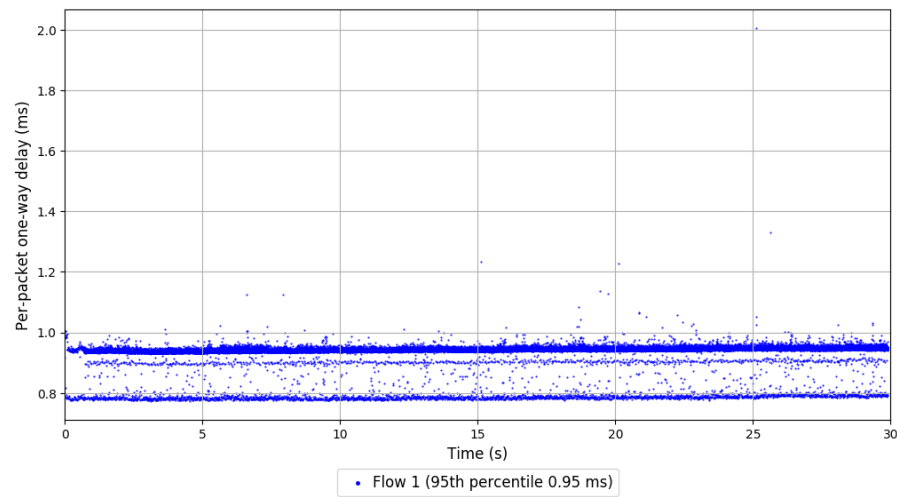
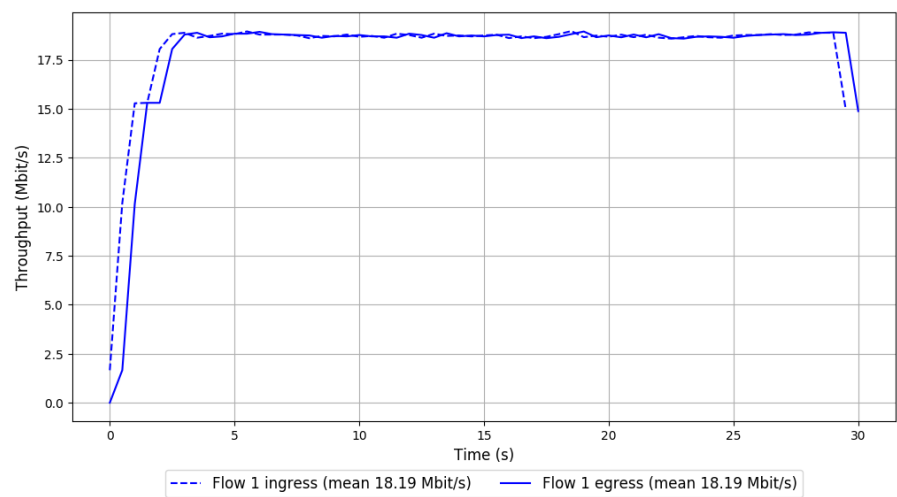
-- Flow 1:

Average throughput: 18.19 Mbit/s

95th percentile per-packet one-way delay: 0.953 ms

Loss rate: 0.01%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-25 13:53:10

End at: 2018-09-25 13:53:41

Local clock offset: -5.261 ms

Remote clock offset: 0.499 ms

Below is generated by plot.py at 2018-09-25 14:16:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.28 Mbit/s

95th percentile per-packet one-way delay: 1.007 ms

Loss rate: 0.01%

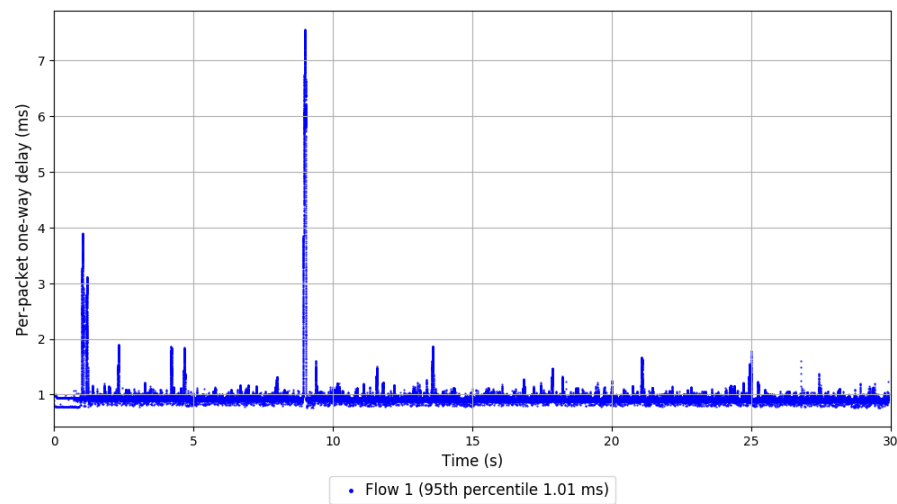
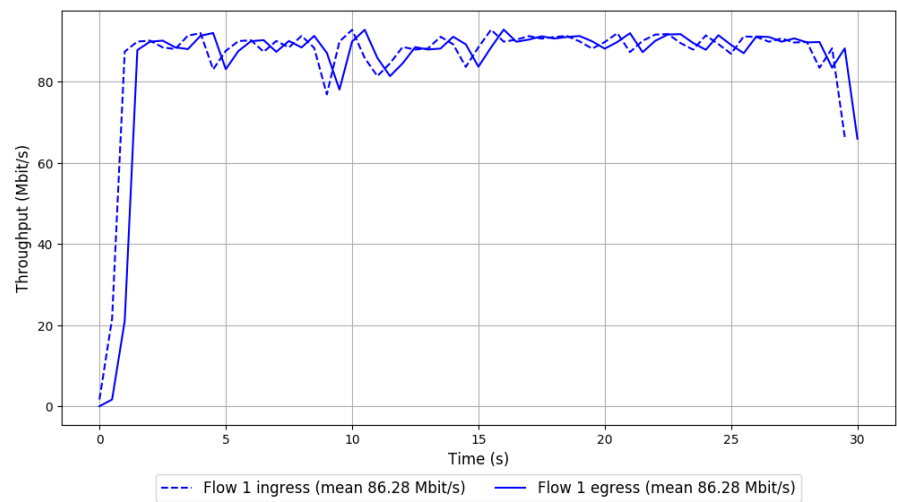
-- Flow 1:

Average throughput: 86.28 Mbit/s

95th percentile per-packet one-way delay: 1.007 ms

Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-25 12:26:25

End at: 2018-09-25 12:26:55

Local clock offset: -5.379 ms

Remote clock offset: 0.671 ms

Below is generated by plot.py at 2018-09-25 14:16:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.37 Mbit/s

95th percentile per-packet one-way delay: 1.467 ms

Loss rate: 0.00%

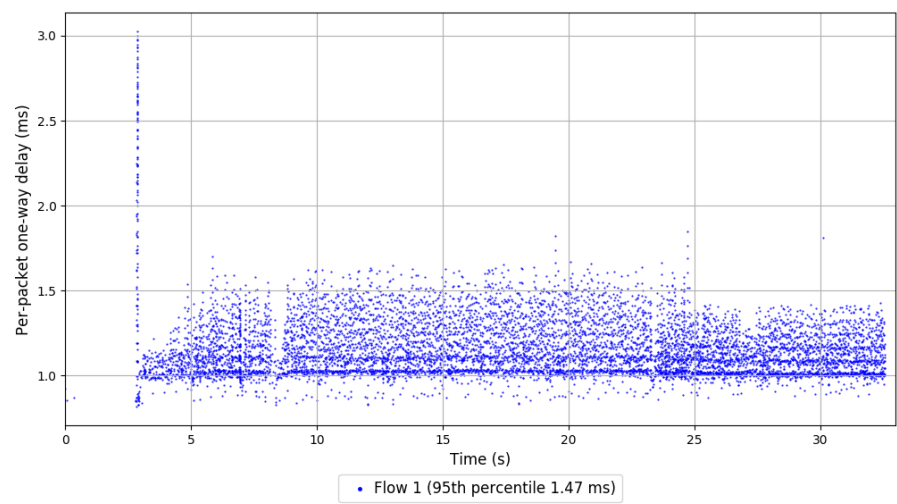
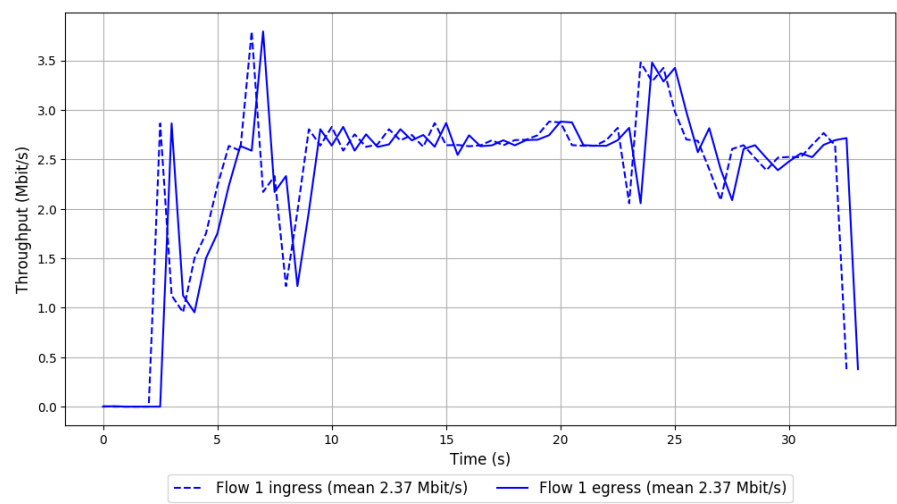
-- Flow 1:

Average throughput: 2.37 Mbit/s

95th percentile per-packet one-way delay: 1.467 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-25 12:47:49

End at: 2018-09-25 12:48:19

Local clock offset: -5.712 ms

Remote clock offset: 0.877 ms

Below is generated by plot.py at 2018-09-25 14:16:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 0.649 ms

Loss rate: 0.08%

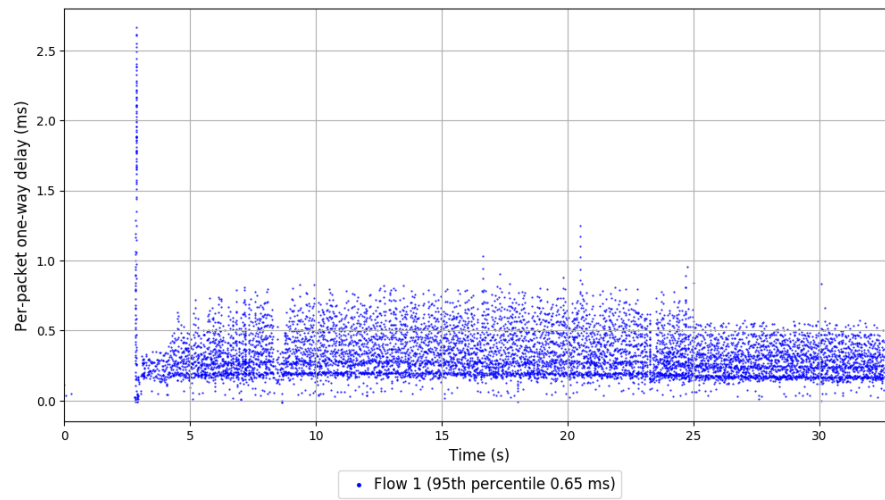
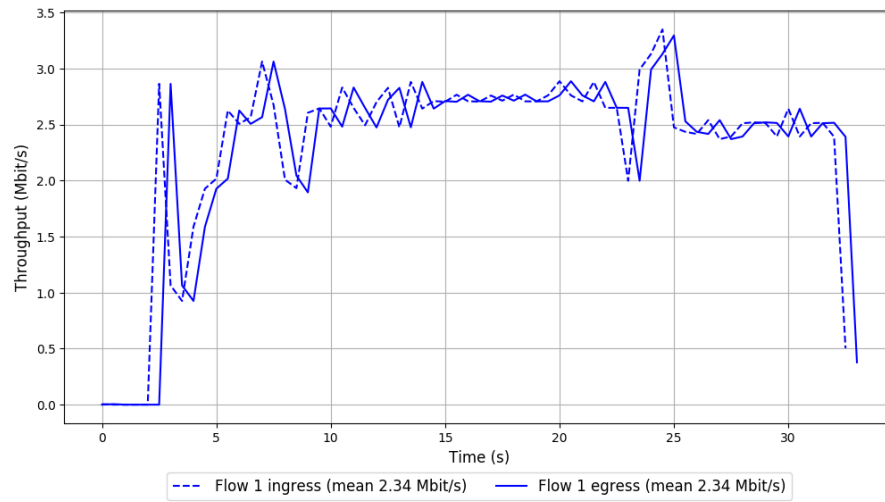
-- Flow 1:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 0.649 ms

Loss rate: 0.08%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-25 13:09:16

End at: 2018-09-25 13:09:46

Local clock offset: -4.781 ms

Remote clock offset: 0.915 ms

Below is generated by plot.py at 2018-09-25 14:16:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 1.492 ms

Loss rate: 0.00%

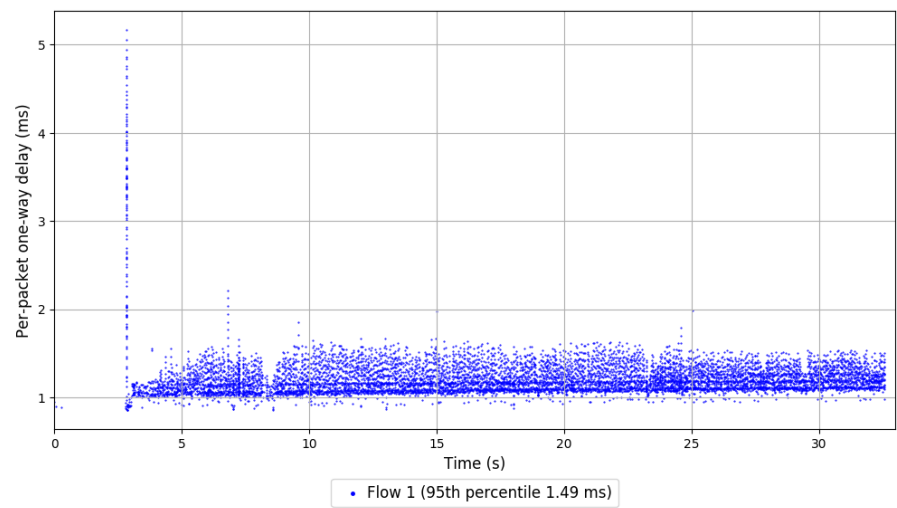
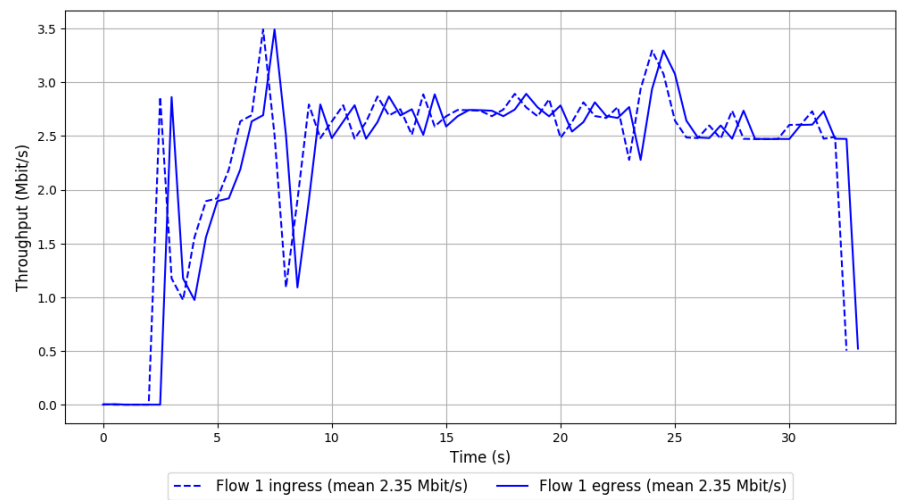
-- Flow 1:

Average throughput: 2.35 Mbit/s

95th percentile per-packet one-way delay: 1.492 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-25 13:30:41

End at: 2018-09-25 13:31:11

Local clock offset: -6.354 ms

Remote clock offset: 0.632 ms

Below is generated by plot.py at 2018-09-25 14:16:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 1.539 ms

Loss rate: 0.02%

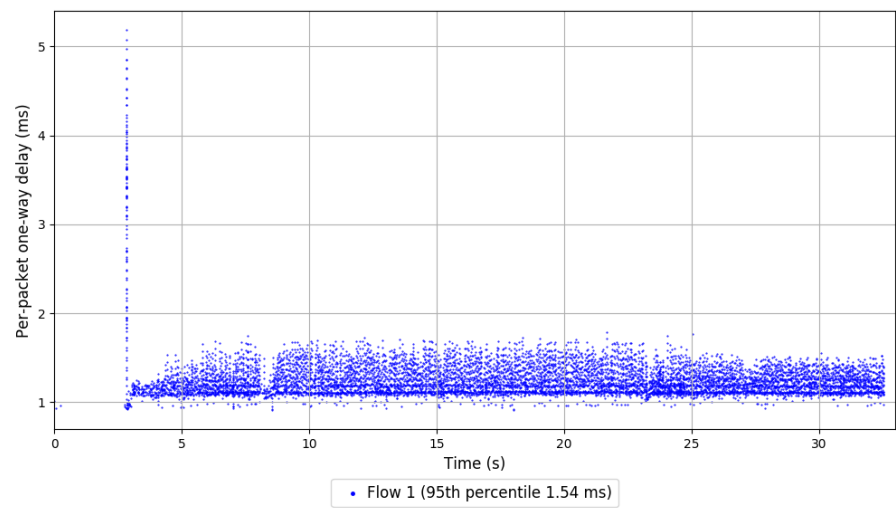
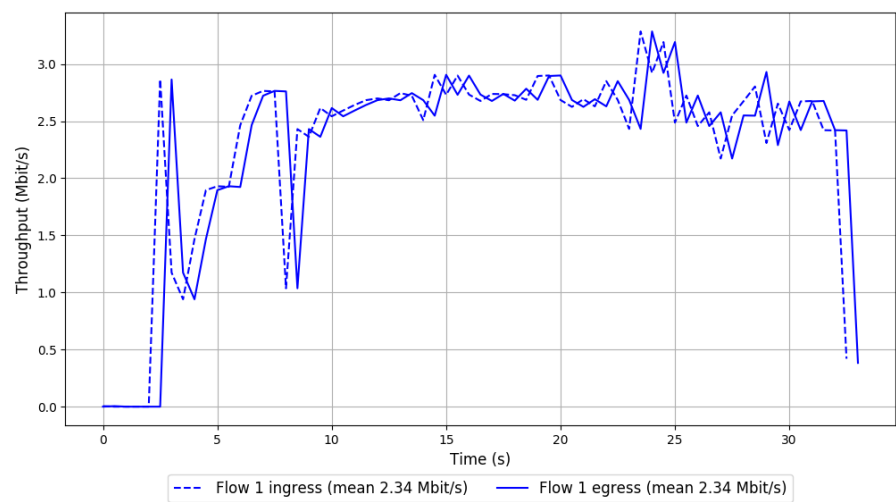
-- Flow 1:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 1.539 ms

Loss rate: 0.02%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-25 13:52:06

End at: 2018-09-25 13:52:36

Local clock offset: -6.068 ms

Remote clock offset: 0.581 ms

Below is generated by plot.py at 2018-09-25 14:16:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 0.520 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 0.520 ms

Loss rate: 0.08%

Run 5: Report of WebRTC media — Data Link

