

Pantheon Report

Generated at 2018-09-11 00:29:32 (UTC).

Data path: AWS Korea on `ens5` (*local*) → China on `eno1` (*remote*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

System info:

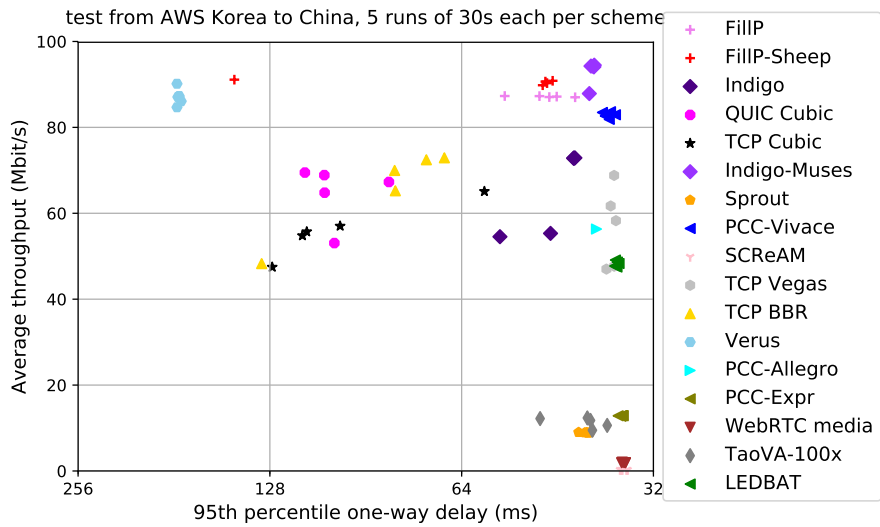
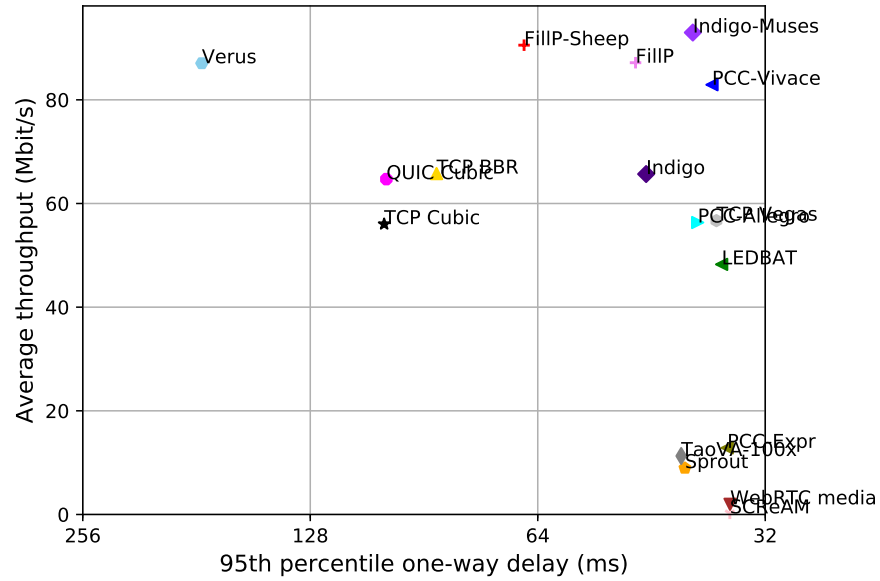
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 184101 245469 368202
```

Git summary:

```
branch: muses @ f30bceca2aec2ef14a3cf71e25642f4a30905a03
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
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

test from AWS Korea to China, 5 runs of 30s each per scheme
(mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	65.78	87.11	9.08
Copa	0	N/A	N/A	N/A
TCP Cubic	5	56.02	102.19	0.87
FillP	5	87.16	47.51	6.72
FillP-Sheep	5	90.55	66.72	0.65
Indigo	5	65.68	46.00	4.93
LEDBAT	5	48.25	36.55	0.00
Indigo-Muses	5	92.98	39.90	0.00
PCC-Allegro	1	56.33	39.31	21.47
PCC-Expr	5	12.85	35.93	49.30
QUIC Cubic	5	64.70	101.51	0.05
SCReAM	5	0.22	35.64	0.00
Sprout	5	8.95	40.87	0.00
TaoVA-100x	5	11.28	41.34	52.59
TCP Vegas	5	56.69	37.13	0.52
Verus	5	87.06	178.12	11.44
PCC-Vivace	5	82.92	37.64	0.00
WebRTC media	5	1.96	35.62	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-09-10 22:53:53

End at: 2018-09-10 22:54:23

Local clock offset: 9.684 ms

Remote clock offset: 6.153 ms

Below is generated by plot.py at 2018-09-11 00:22:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 65.24 Mbit/s

95th percentile per-packet one-way delay: 81.329 ms

Loss rate: 10.24%

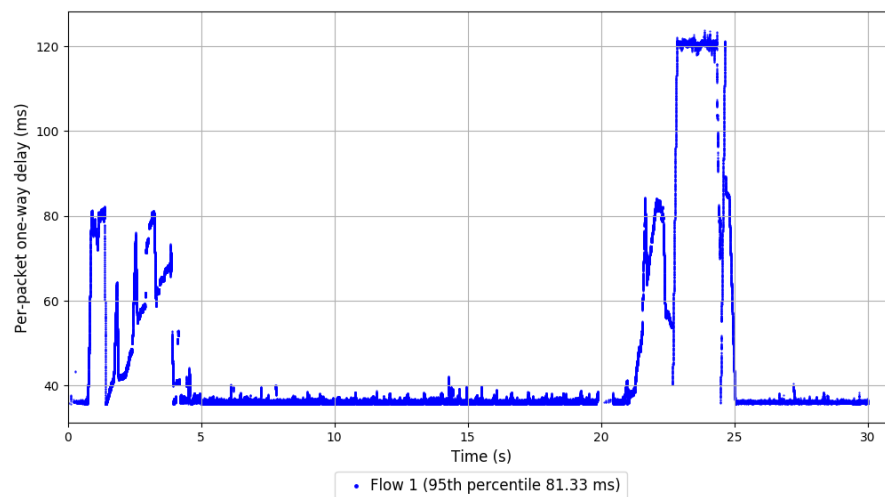
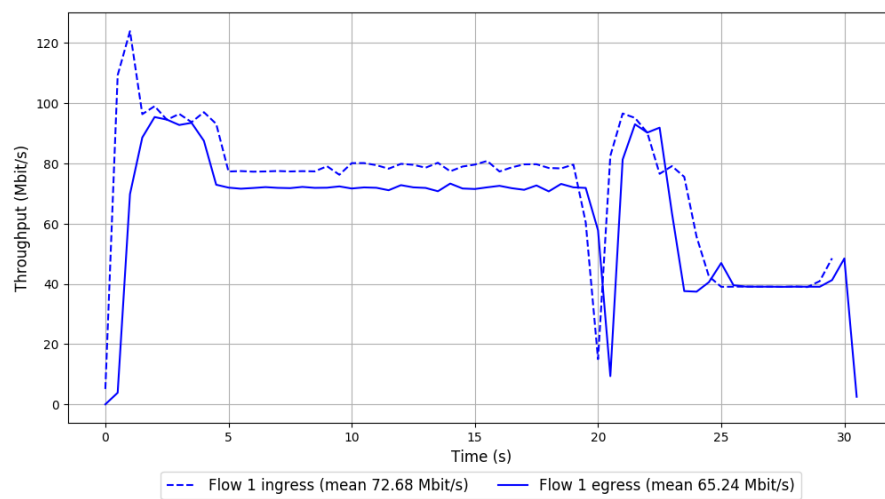
-- Flow 1:

Average throughput: 65.24 Mbit/s

95th percentile per-packet one-way delay: 81.329 ms

Loss rate: 10.24%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-10 23:15:34

End at: 2018-09-10 23:16:04

Local clock offset: 4.934 ms

Remote clock offset: 5.92 ms

Below is generated by plot.py at 2018-09-11 00:23:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.46 Mbit/s

95th percentile per-packet one-way delay: 72.703 ms

Loss rate: 8.60%

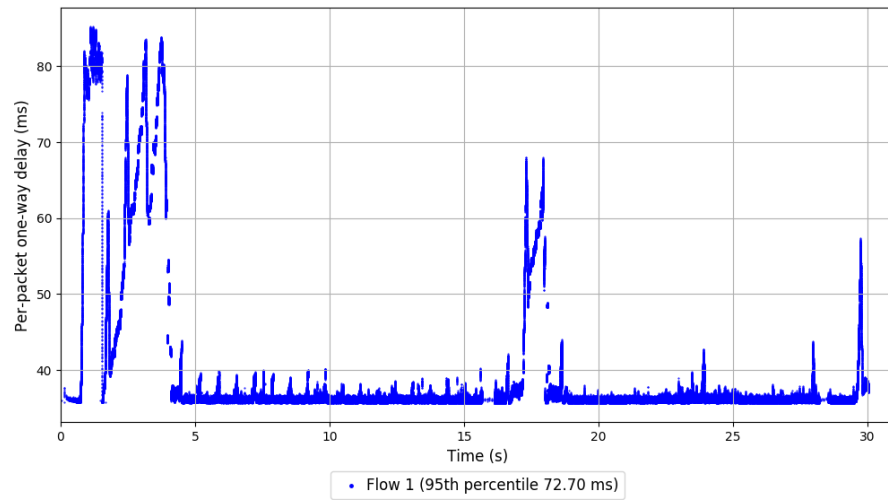
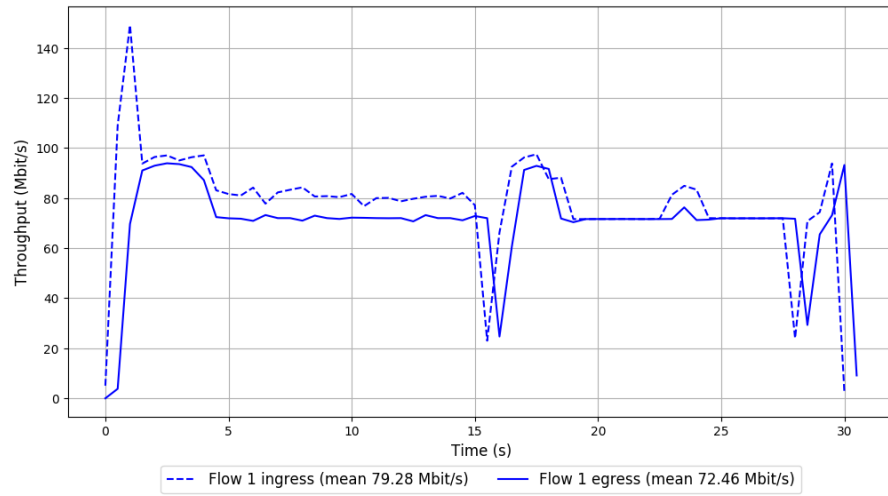
-- Flow 1:

Average throughput: 72.46 Mbit/s

95th percentile per-packet one-way delay: 72.703 ms

Loss rate: 8.60%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-09-10 23:37:04

End at: 2018-09-10 23:37:34

Local clock offset: 6.304 ms

Remote clock offset: 6.546 ms

Below is generated by plot.py at 2018-09-11 00:23:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.97 Mbit/s

95th percentile per-packet one-way delay: 81.539 ms

Loss rate: 9.47%

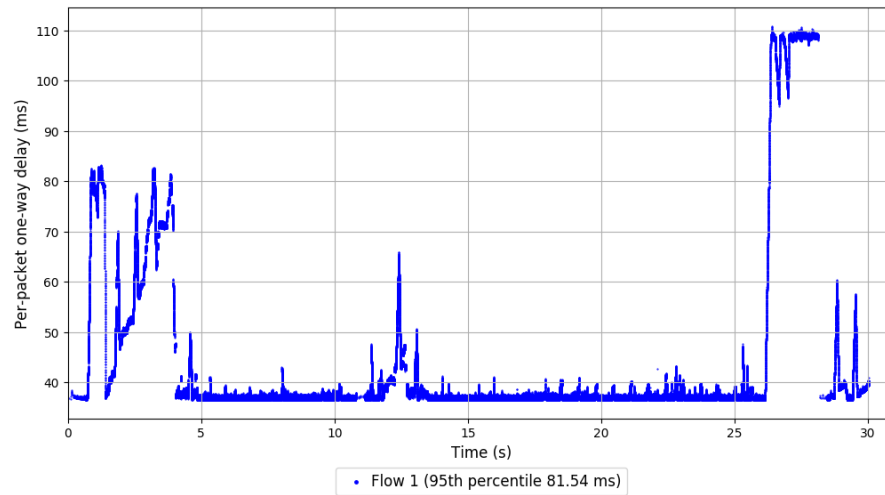
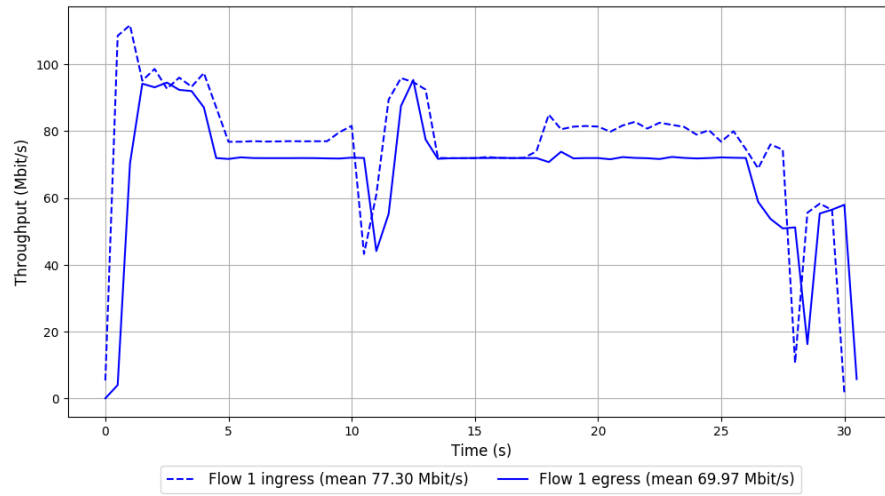
-- Flow 1:

Average throughput: 69.97 Mbit/s

95th percentile per-packet one-way delay: 81.539 ms

Loss rate: 9.47%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-10 23:58:40

End at: 2018-09-10 23:59:10

Local clock offset: 8.223 ms

Remote clock offset: 6.918 ms

Below is generated by plot.py at 2018-09-11 00:23:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.92 Mbit/s

95th percentile per-packet one-way delay: 68.123 ms

Loss rate: 8.55%

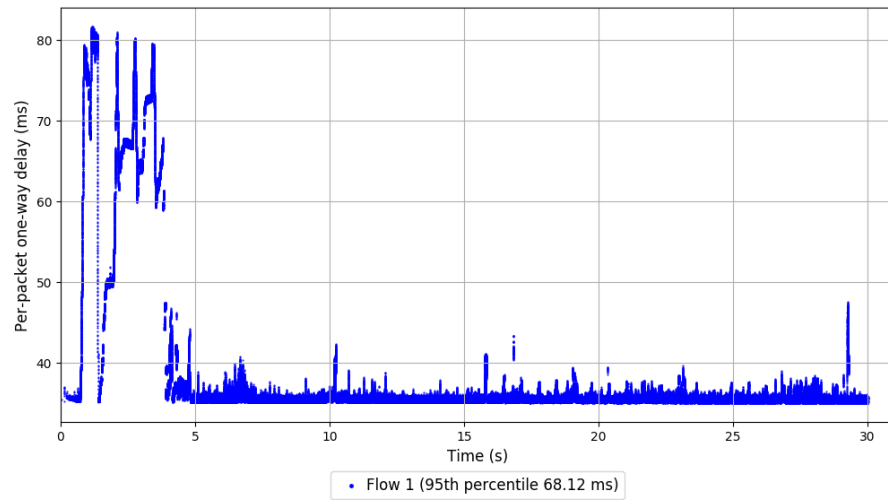
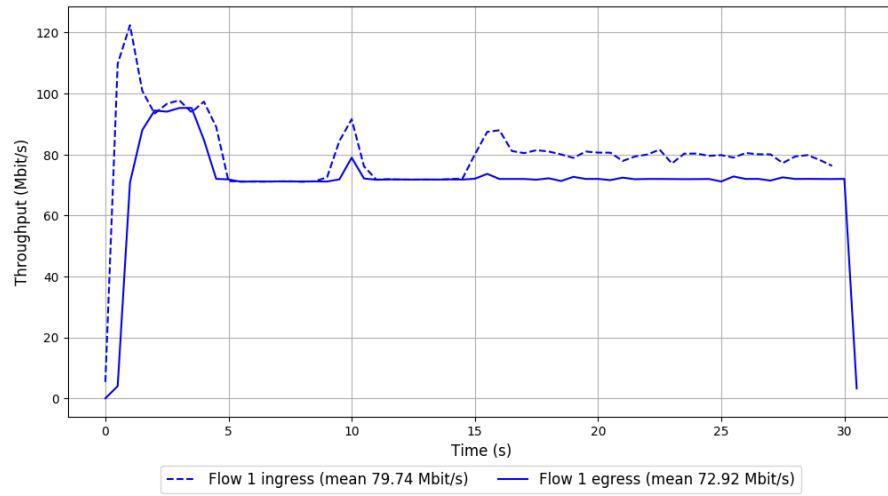
-- Flow 1:

Average throughput: 72.92 Mbit/s

95th percentile per-packet one-way delay: 68.123 ms

Loss rate: 8.55%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-11 00:20:20

End at: 2018-09-11 00:20:50

Local clock offset: 6.329 ms

Remote clock offset: 7.045 ms

Below is generated by plot.py at 2018-09-11 00:23:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.29 Mbit/s

95th percentile per-packet one-way delay: 131.865 ms

Loss rate: 8.52%

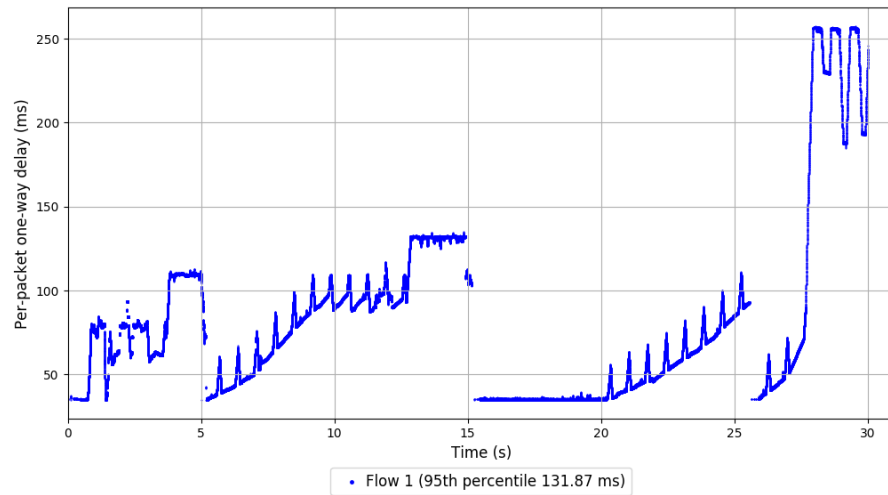
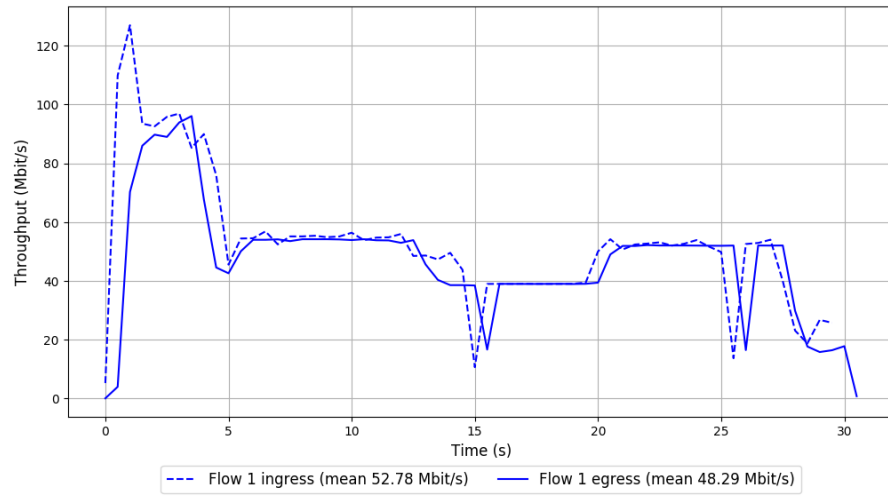
-- Flow 1:

Average throughput: 48.29 Mbit/s

95th percentile per-packet one-way delay: 131.865 ms

Loss rate: 8.52%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

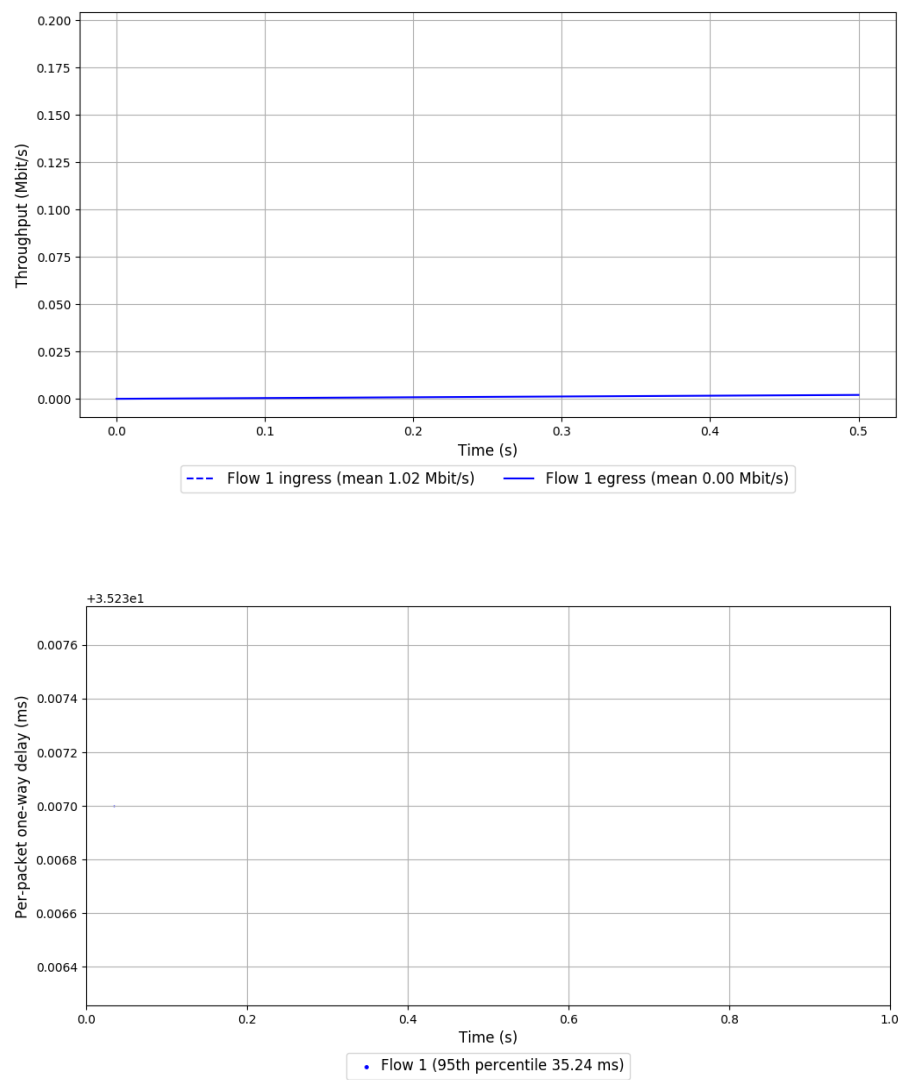
Start at: 2018-09-10 22:40:45

End at: 2018-09-10 22:41:15

Local clock offset: 6.933 ms

Remote clock offset: 6.683 ms

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

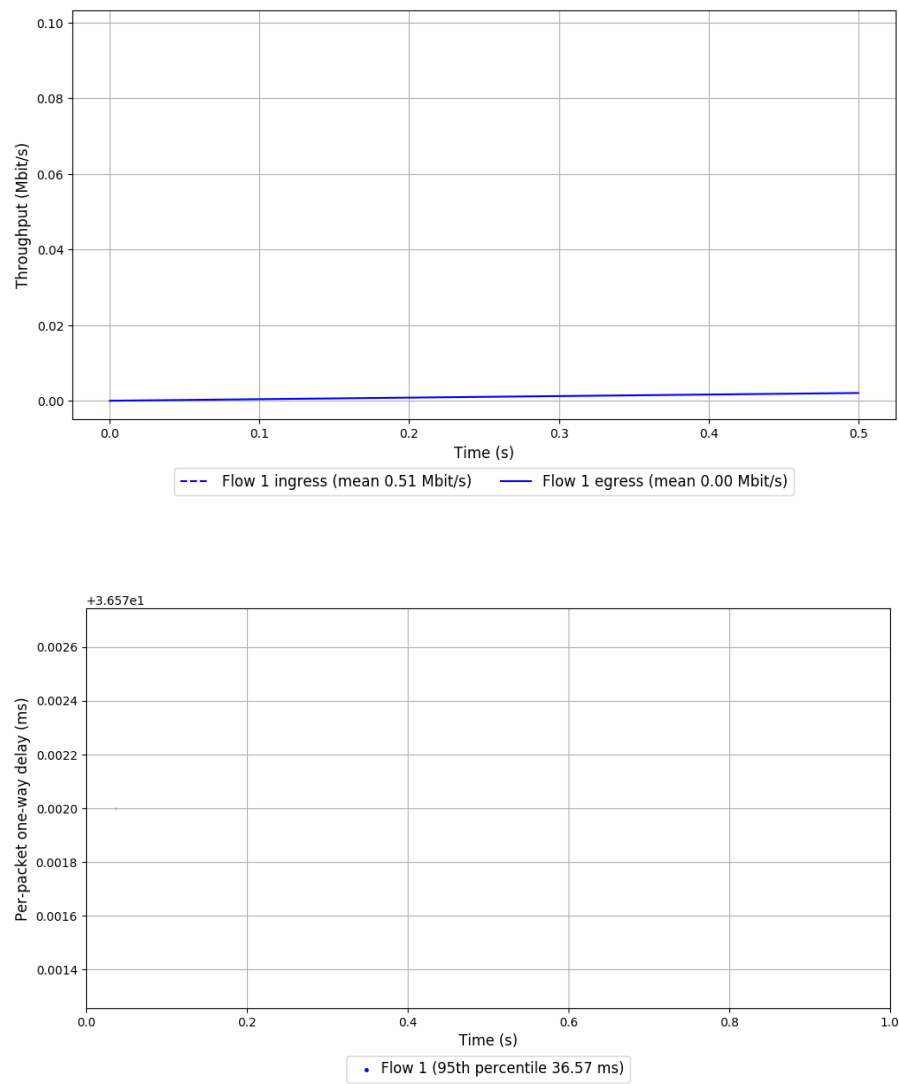
Start at: 2018-09-10 23:02:26

End at: 2018-09-10 23:02:56

Local clock offset: 7.771 ms

Remote clock offset: 6.699 ms

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

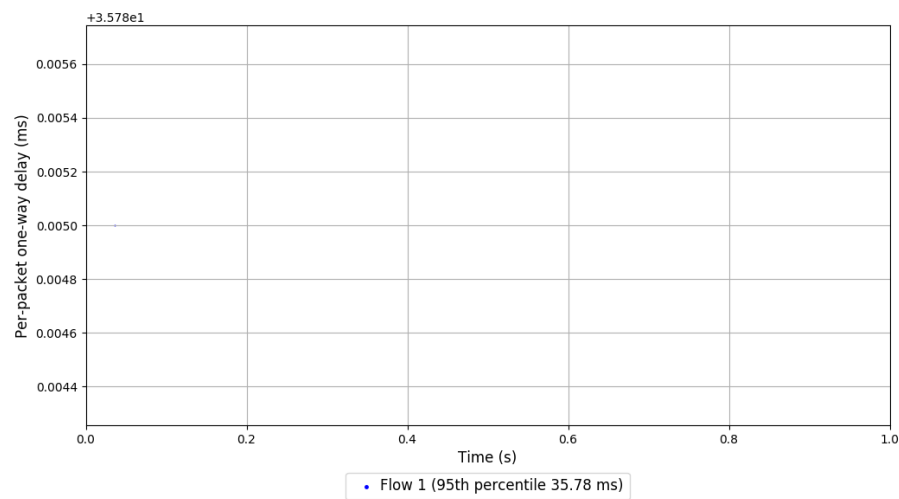
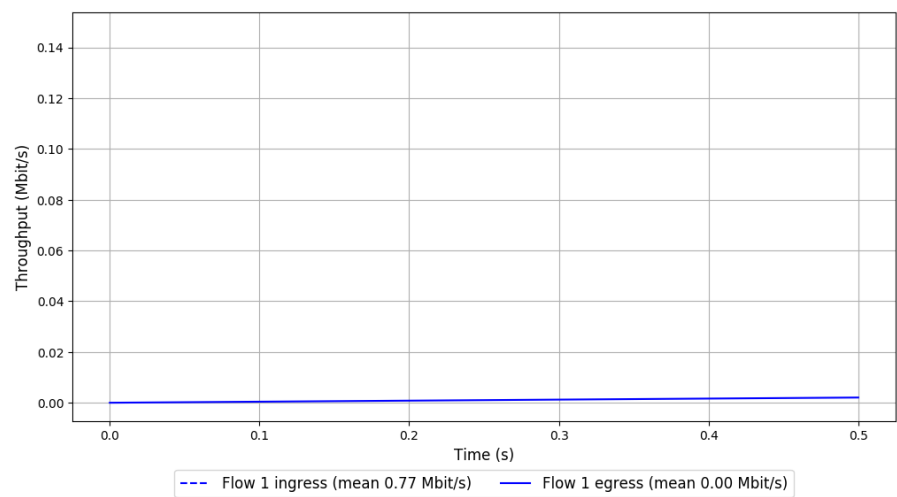
Start at: 2018-09-10 23:24:01

End at: 2018-09-10 23:24:31

Local clock offset: 4.617 ms

Remote clock offset: 5.733 ms

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

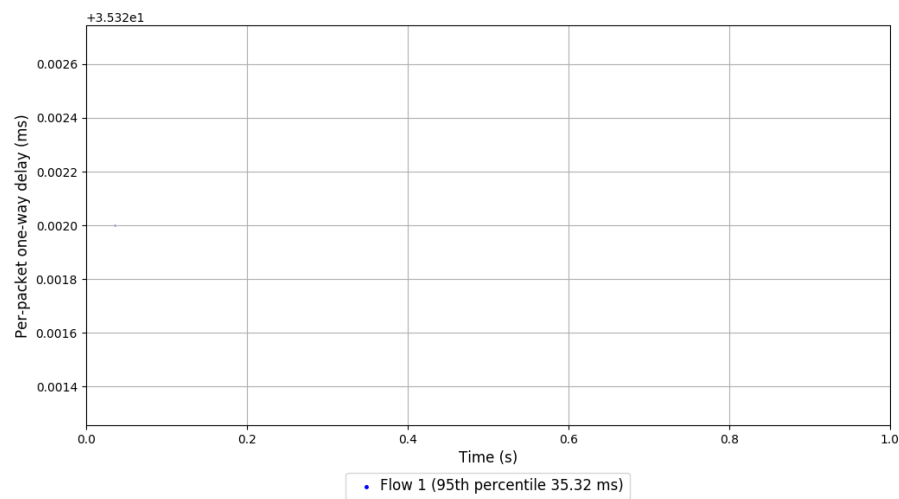
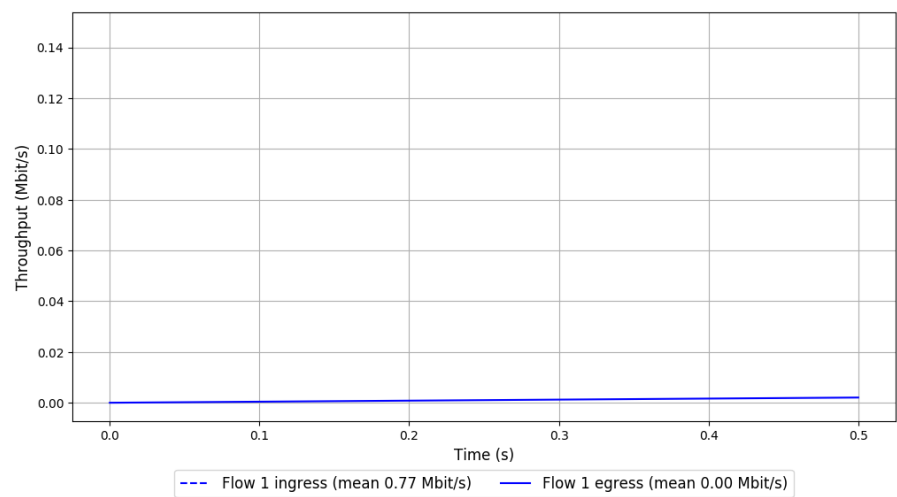
Start at: 2018-09-10 23:45:38

End at: 2018-09-10 23:46:08

Local clock offset: 7.549 ms

Remote clock offset: 6.453 ms

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

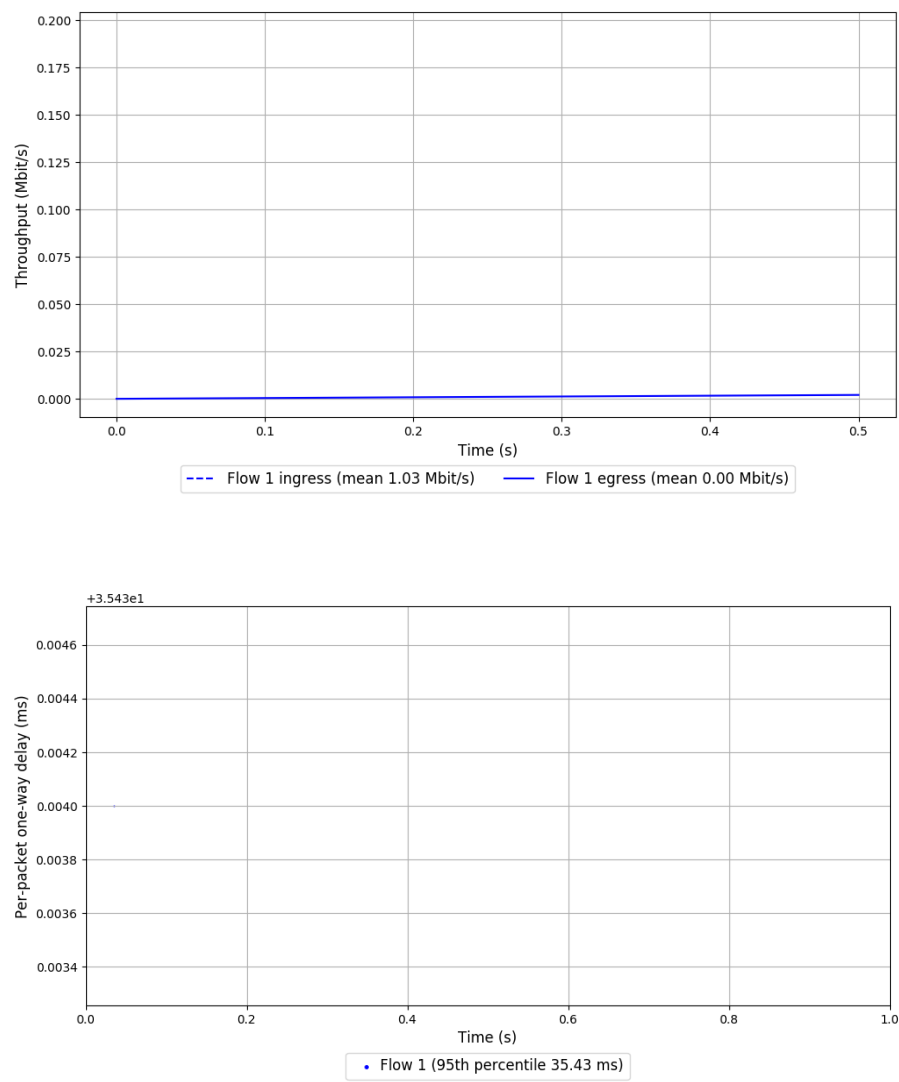
Start at: 2018-09-11 00:07:16

End at: 2018-09-11 00:07:46

Local clock offset: 6.882 ms

Remote clock offset: 7.424 ms

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-10 22:35:54

End at: 2018-09-10 22:36:24

Local clock offset: 5.064 ms

Remote clock offset: 8.024 ms

Below is generated by plot.py at 2018-09-11 00:23:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.47 Mbit/s

95th percentile per-packet one-way delay: 126.913 ms

Loss rate: 1.17%

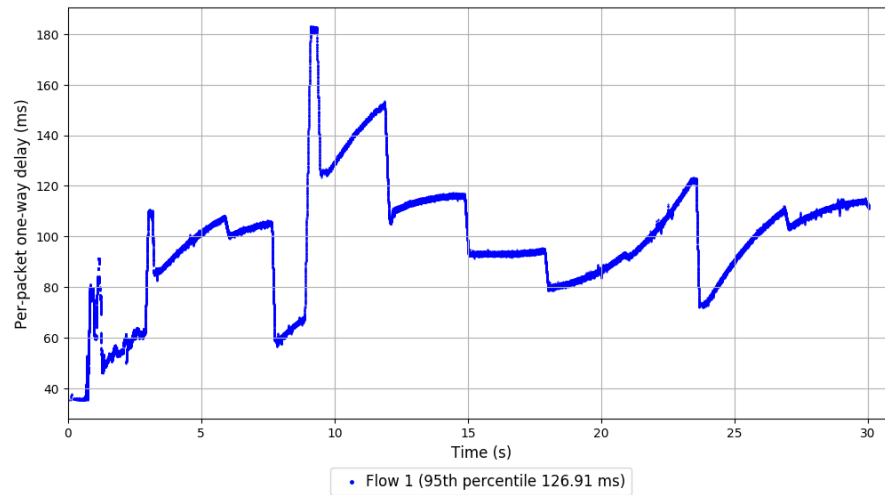
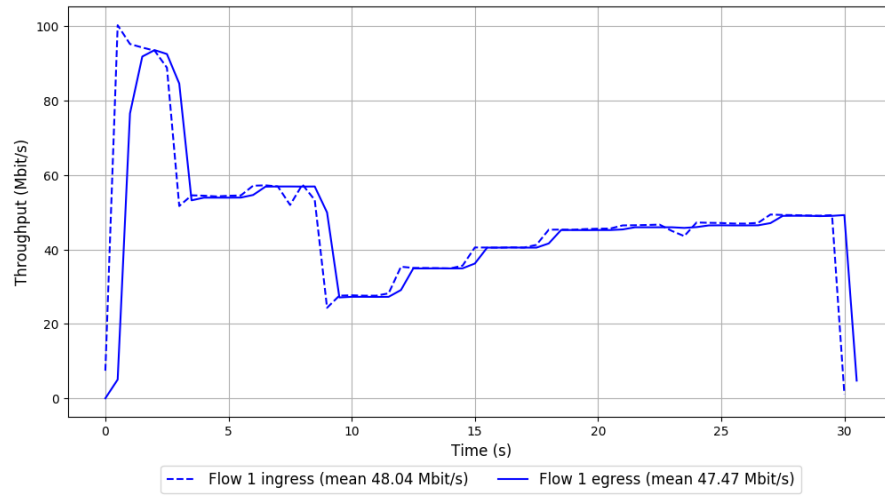
-- Flow 1:

Average throughput: 47.47 Mbit/s

95th percentile per-packet one-way delay: 126.913 ms

Loss rate: 1.17%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-10 22:57:36

End at: 2018-09-10 22:58:06

Local clock offset: 10.178 ms

Remote clock offset: 5.636 ms

Below is generated by plot.py at 2018-09-11 00:23:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 65.10 Mbit/s

95th percentile per-packet one-way delay: 58.945 ms

Loss rate: 0.78%

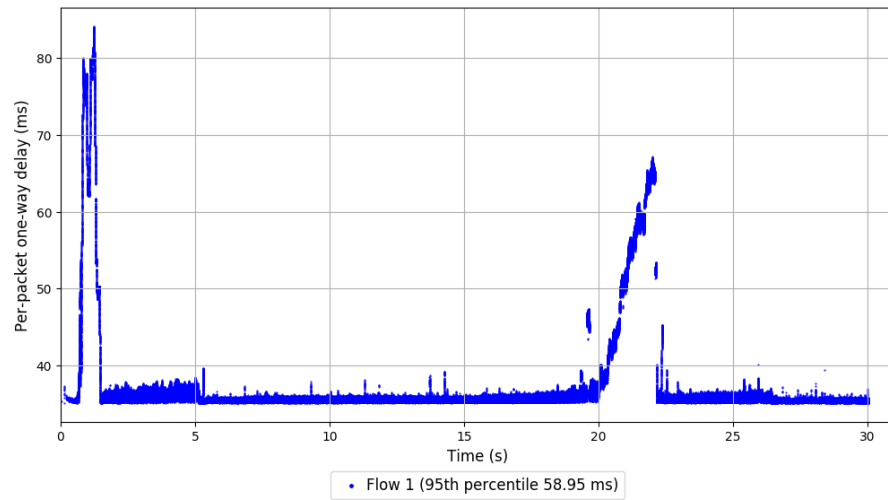
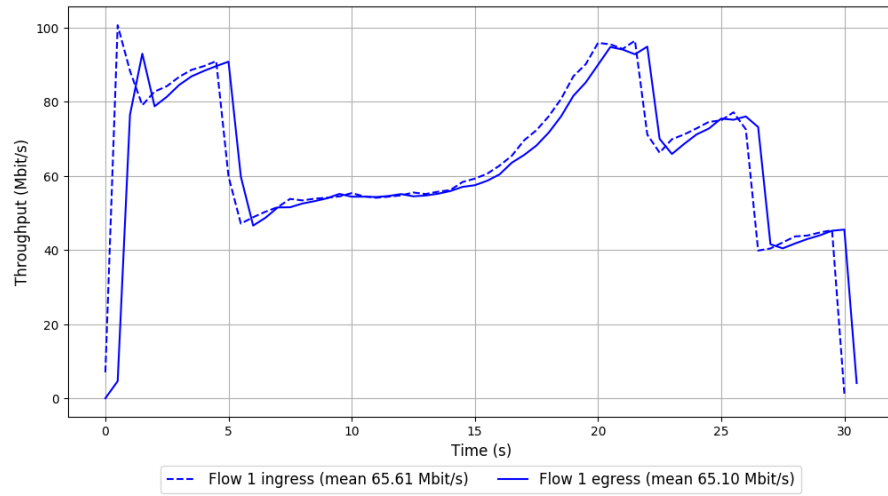
-- Flow 1:

Average throughput: 65.10 Mbit/s

95th percentile per-packet one-way delay: 58.945 ms

Loss rate: 0.78%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-10 23:19:12

End at: 2018-09-10 23:19:42

Local clock offset: 4.601 ms

Remote clock offset: 5.901 ms

Below is generated by plot.py at 2018-09-11 00:23:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 55.71 Mbit/s

95th percentile per-packet one-way delay: 112.025 ms

Loss rate: 0.87%

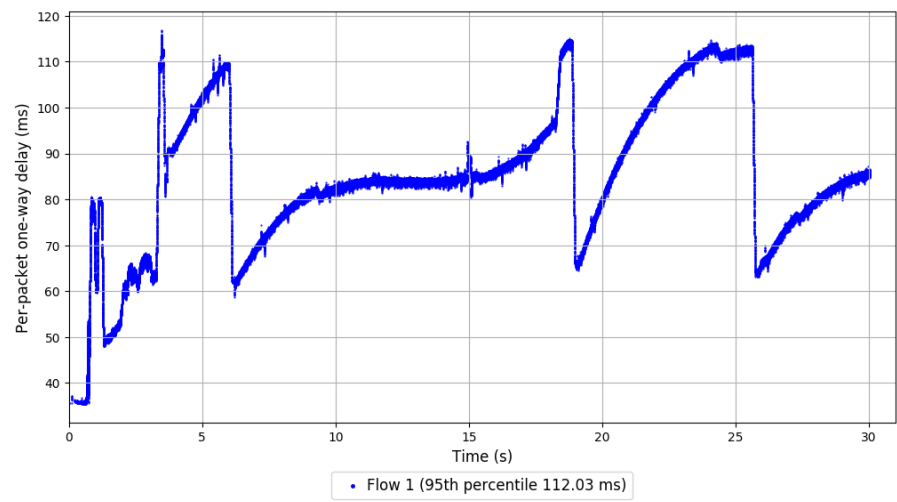
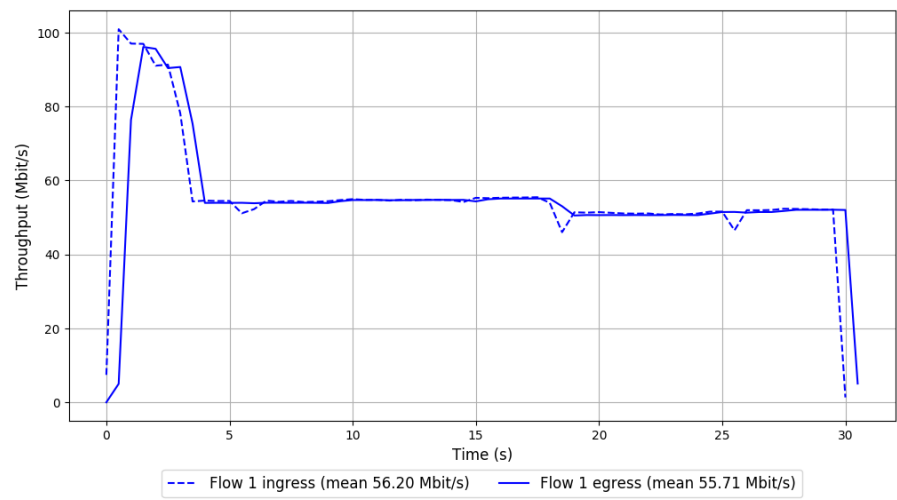
-- Flow 1:

Average throughput: 55.71 Mbit/s

95th percentile per-packet one-way delay: 112.025 ms

Loss rate: 0.87%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-10 23:40:45

End at: 2018-09-10 23:41:15

Local clock offset: 6.789 ms

Remote clock offset: 5.947 ms

Below is generated by plot.py at 2018-09-11 00:23:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 54.79 Mbit/s

95th percentile per-packet one-way delay: 113.799 ms

Loss rate: 0.92%

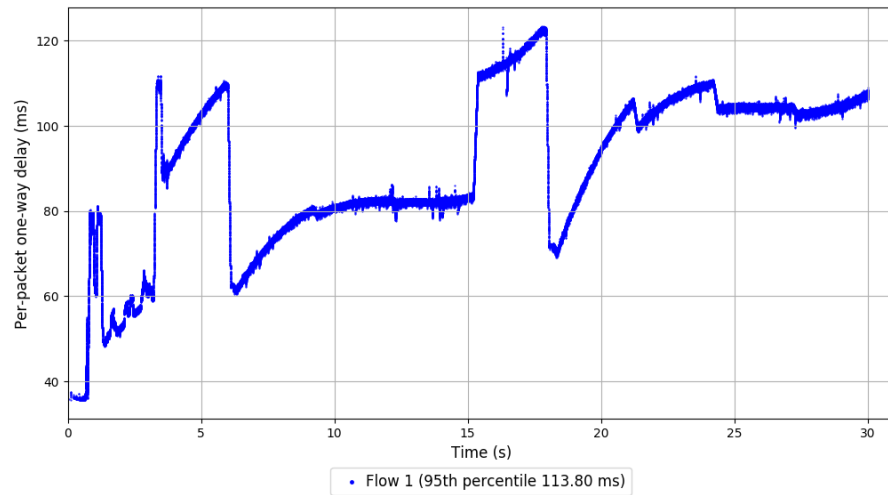
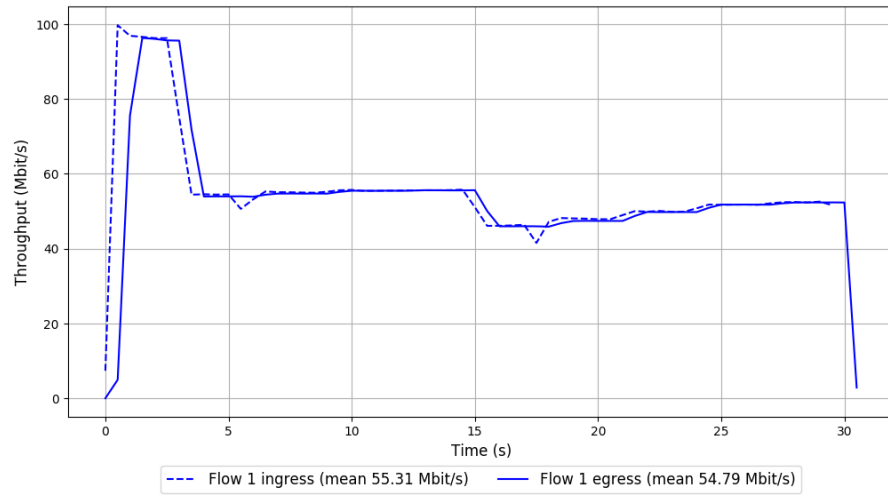
-- Flow 1:

Average throughput: 54.79 Mbit/s

95th percentile per-packet one-way delay: 113.799 ms

Loss rate: 0.92%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-11 00:02:23

End at: 2018-09-11 00:02:53

Local clock offset: 7.405 ms

Remote clock offset: 7.391 ms

Below is generated by plot.py at 2018-09-11 00:23:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 57.03 Mbit/s

95th percentile per-packet one-way delay: 99.292 ms

Loss rate: 0.61%

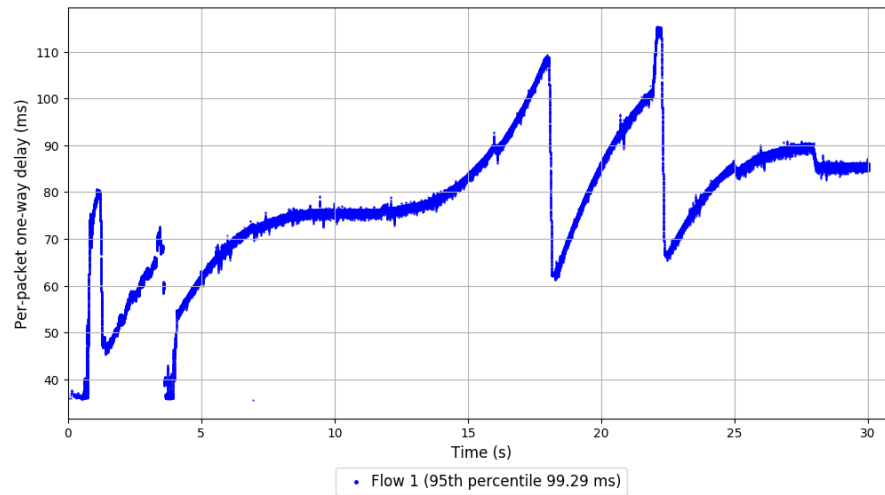
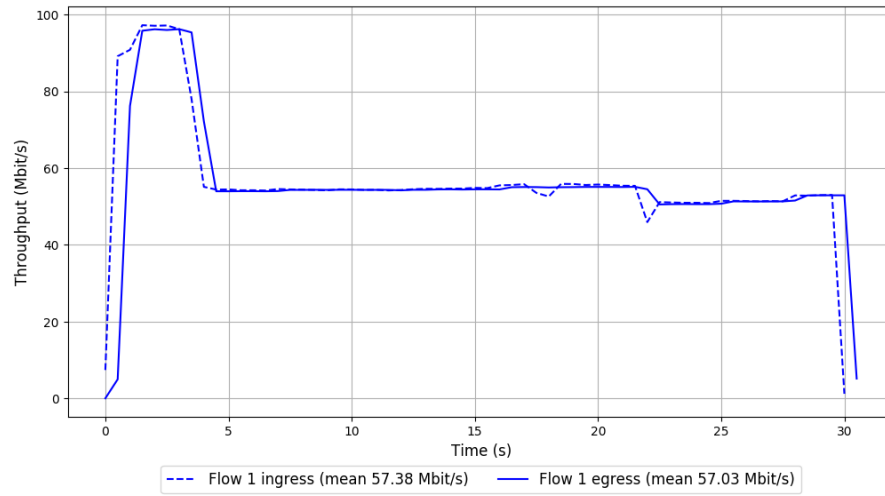
-- Flow 1:

Average throughput: 57.03 Mbit/s

95th percentile per-packet one-way delay: 99.292 ms

Loss rate: 0.61%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-10 22:45:25

End at: 2018-09-10 22:45:55

Local clock offset: 7.994 ms

Remote clock offset: 2.481 ms

Below is generated by plot.py at 2018-09-11 00:24:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.28 Mbit/s

95th percentile per-packet one-way delay: 48.308 ms

Loss rate: 7.30%

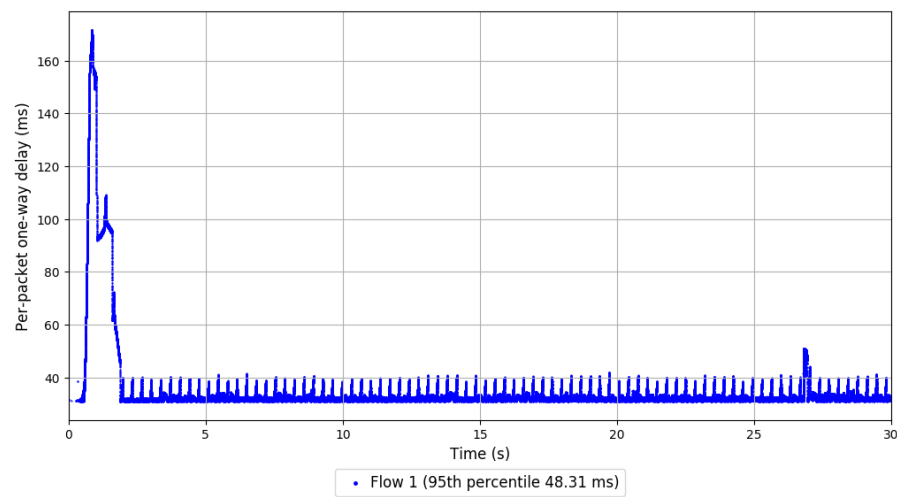
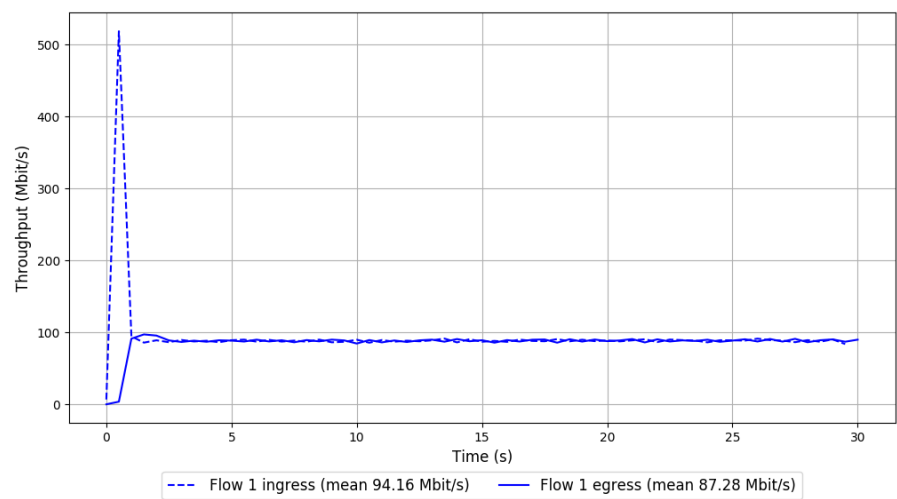
-- Flow 1:

Average throughput: 87.28 Mbit/s

95th percentile per-packet one-way delay: 48.308 ms

Loss rate: 7.30%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-10 23:07:07

End at: 2018-09-10 23:07:37

Local clock offset: 6.331 ms

Remote clock offset: 5.917 ms

Below is generated by plot.py at 2018-09-11 00:24:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.17 Mbit/s

95th percentile per-packet one-way delay: 45.390 ms

Loss rate: 6.03%

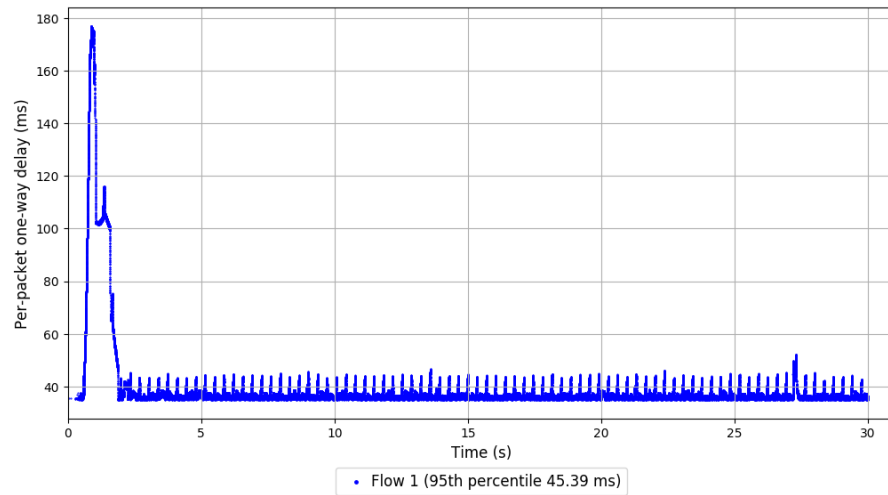
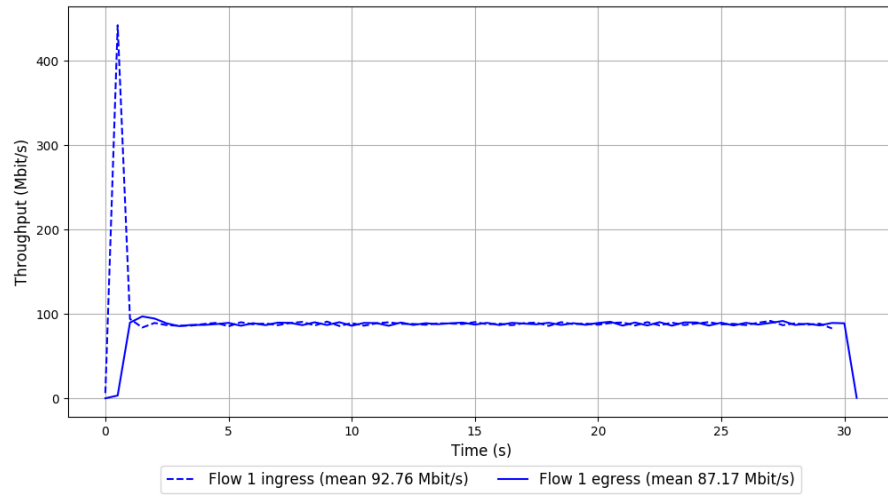
-- Flow 1:

Average throughput: 87.17 Mbit/s

95th percentile per-packet one-way delay: 45.390 ms

Loss rate: 6.03%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-10 23:28:40

End at: 2018-09-10 23:29:10

Local clock offset: 4.787 ms

Remote clock offset: 4.972 ms

Below is generated by plot.py at 2018-09-11 00:24:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.01 Mbit/s

95th percentile per-packet one-way delay: 42.466 ms

Loss rate: 6.58%

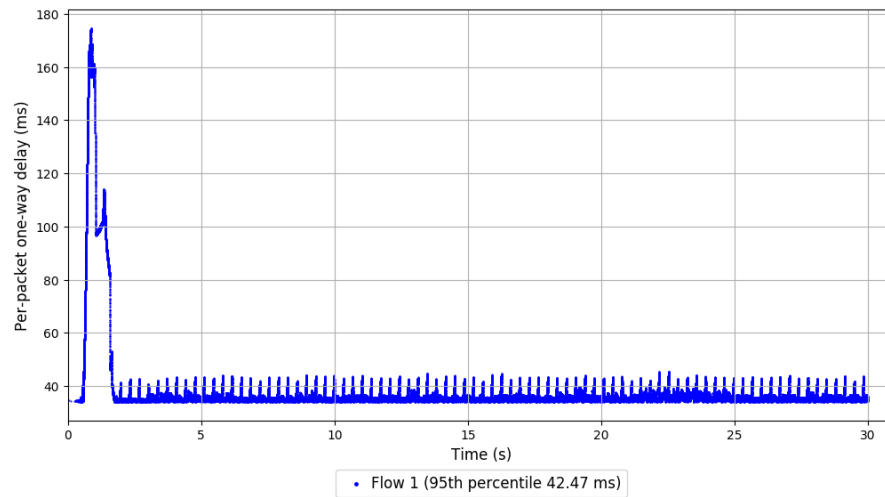
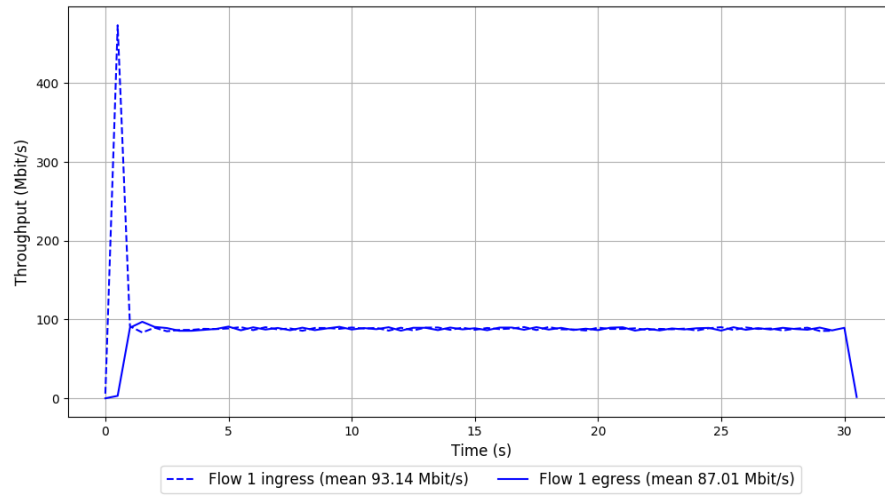
-- Flow 1:

Average throughput: 87.01 Mbit/s

95th percentile per-packet one-way delay: 42.466 ms

Loss rate: 6.58%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-10 23:50:19

End at: 2018-09-10 23:50:49

Local clock offset: 7.753 ms

Remote clock offset: 6.786 ms

Below is generated by plot.py at 2018-09-11 00:24:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.06 Mbit/s

95th percentile per-packet one-way delay: 46.619 ms

Loss rate: 6.50%

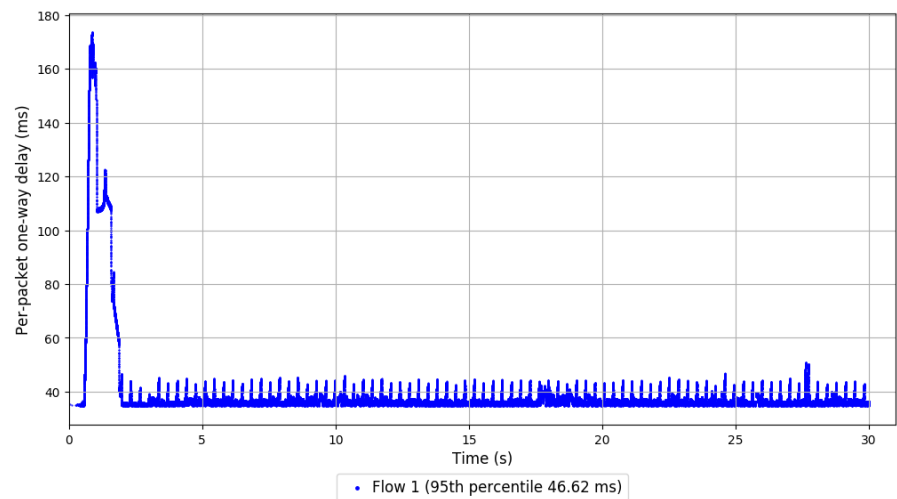
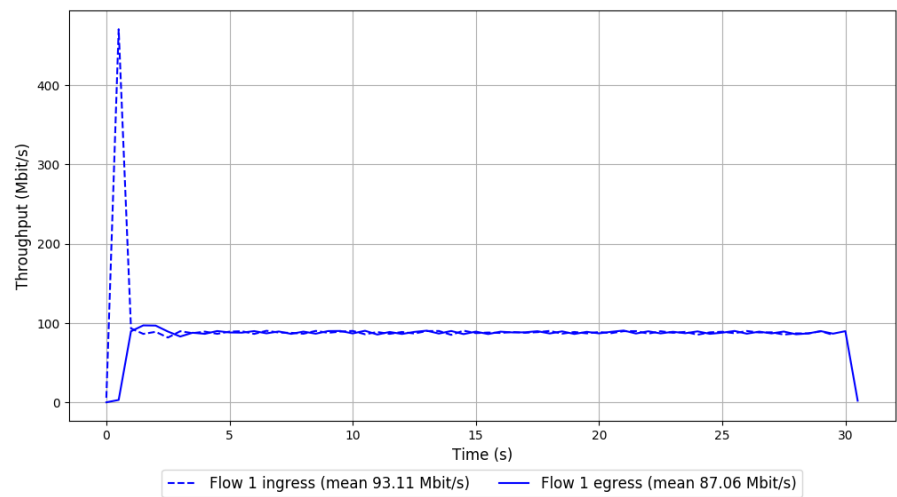
-- Flow 1:

Average throughput: 87.06 Mbit/s

95th percentile per-packet one-way delay: 46.619 ms

Loss rate: 6.50%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-11 00:11:56

End at: 2018-09-11 00:12:26

Local clock offset: 6.287 ms

Remote clock offset: 8.26 ms

Below is generated by plot.py at 2018-09-11 00:24:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.30 Mbit/s

95th percentile per-packet one-way delay: 54.767 ms

Loss rate: 7.20%

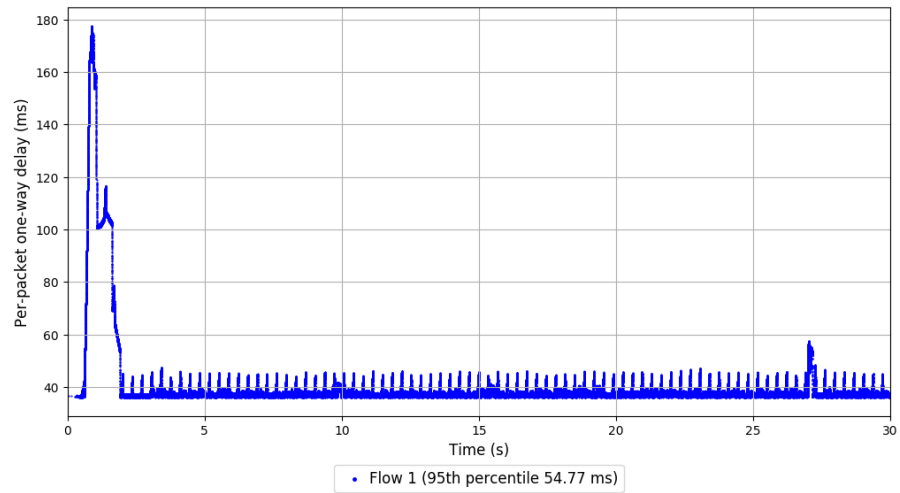
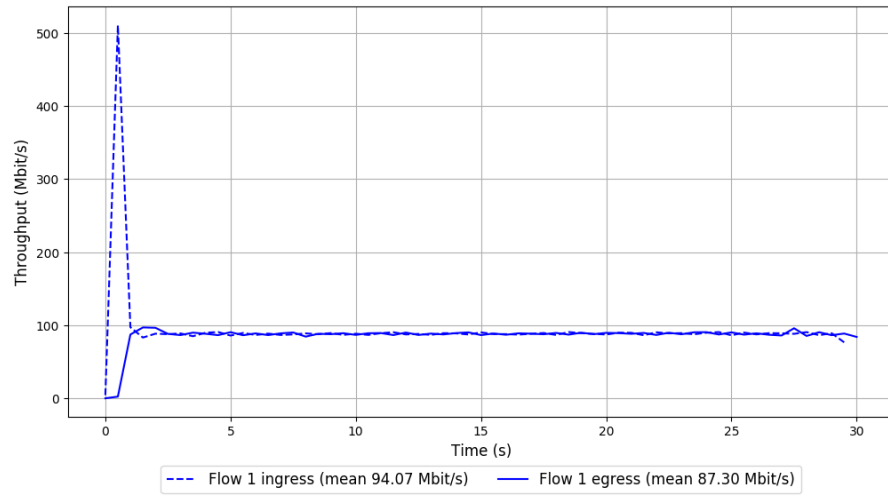
-- Flow 1:

Average throughput: 87.30 Mbit/s

95th percentile per-packet one-way delay: 54.767 ms

Loss rate: 7.20%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-10 22:43:02

End at: 2018-09-10 22:43:32

Local clock offset: 7.519 ms

Remote clock offset: 7.321 ms

Below is generated by plot.py at 2018-09-11 00:24:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.11 Mbit/s

95th percentile per-packet one-way delay: 145.526 ms

Loss rate: 0.92%

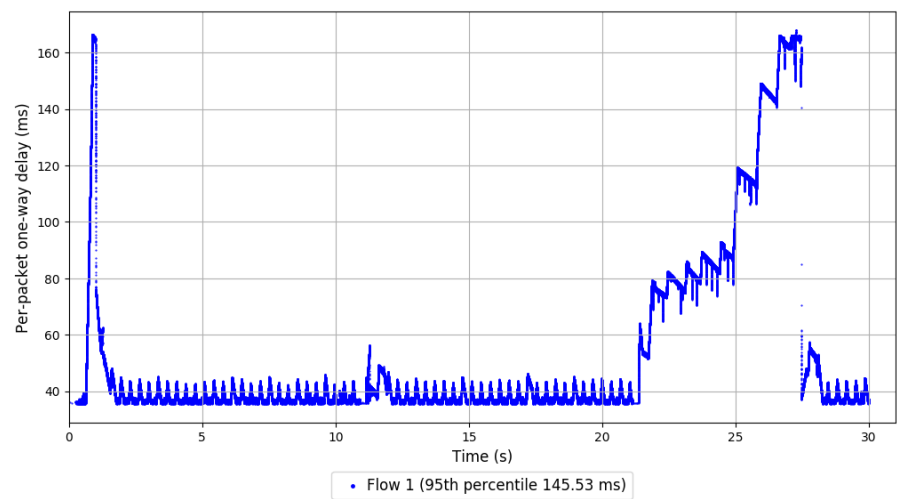
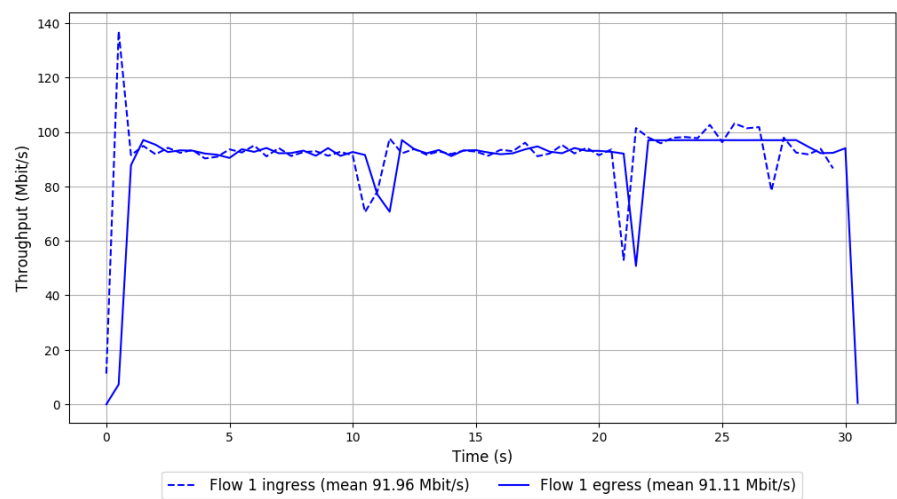
-- Flow 1:

Average throughput: 91.11 Mbit/s

95th percentile per-packet one-way delay: 145.526 ms

Loss rate: 0.92%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-10 23:04:43

End at: 2018-09-10 23:05:13

Local clock offset: 7.107 ms

Remote clock offset: 5.99 ms

Below is generated by plot.py at 2018-09-11 00:24:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 89.81 Mbit/s

95th percentile per-packet one-way delay: 47.748 ms

Loss rate: 0.85%

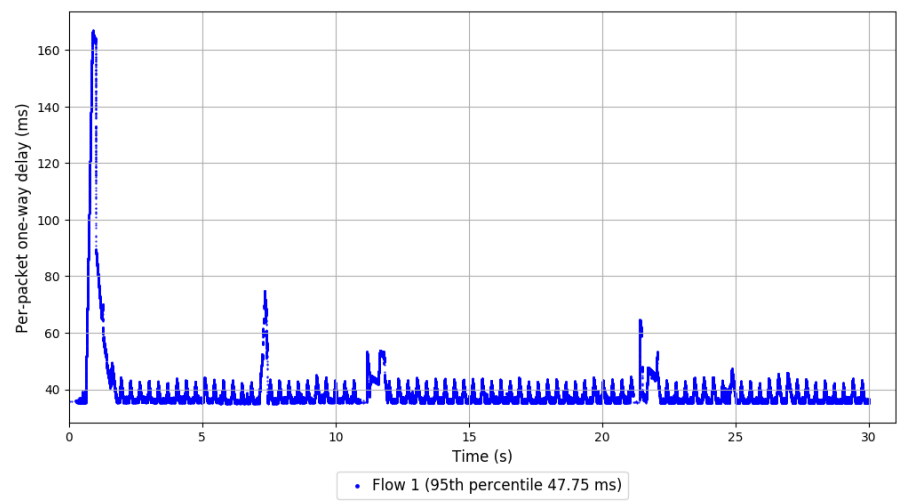
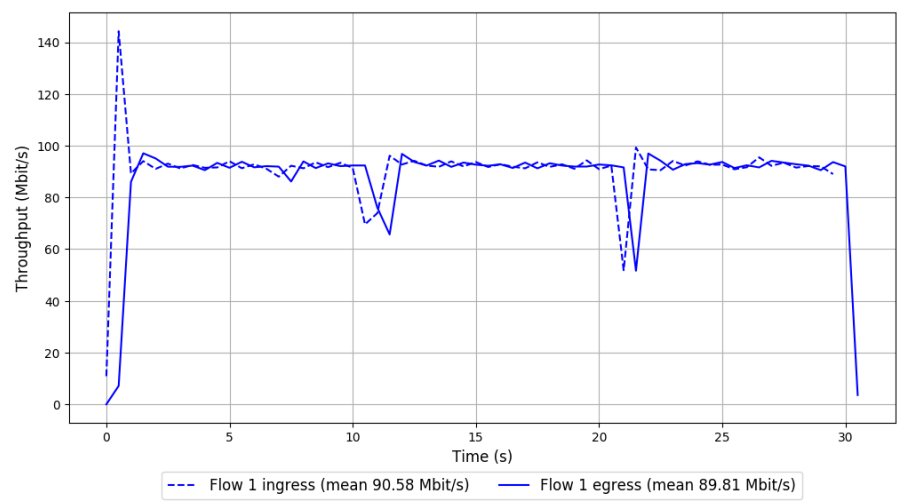
-- Flow 1:

Average throughput: 89.81 Mbit/s

95th percentile per-packet one-way delay: 47.748 ms

Loss rate: 0.85%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-10 23:26:17

End at: 2018-09-10 23:26:47

Local clock offset: 4.613 ms

Remote clock offset: 5.963 ms

Below is generated by plot.py at 2018-09-11 00:24:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.30 Mbit/s

95th percentile per-packet one-way delay: 47.001 ms

Loss rate: 0.59%

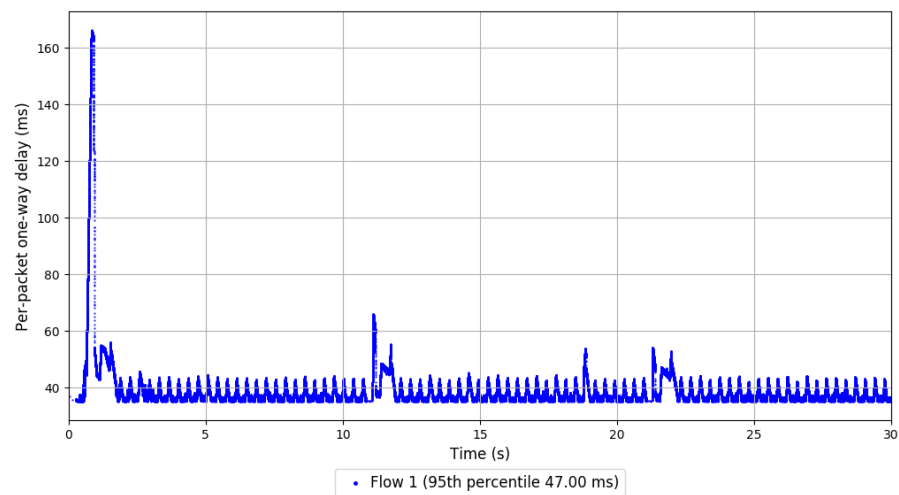
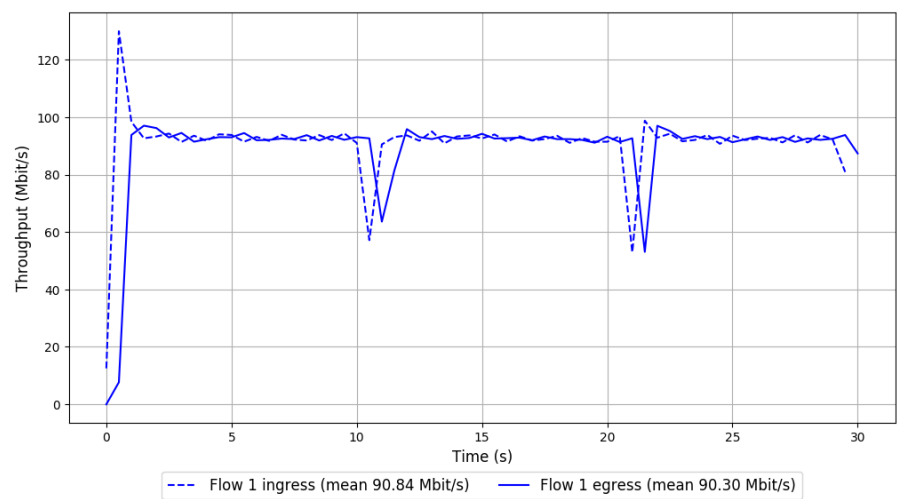
-- Flow 1:

Average throughput: 90.30 Mbit/s

95th percentile per-packet one-way delay: 47.001 ms

Loss rate: 0.59%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-10 23:47:55

End at: 2018-09-10 23:48:25

Local clock offset: 7.563 ms

Remote clock offset: 7.116 ms

Below is generated by plot.py at 2018-09-11 00:25:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.66 Mbit/s

95th percentile per-packet one-way delay: 47.286 ms

Loss rate: 0.69%

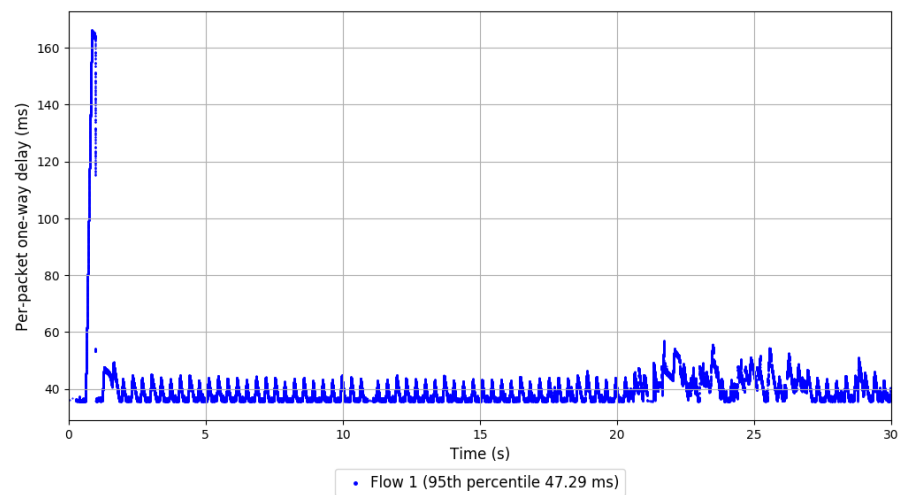
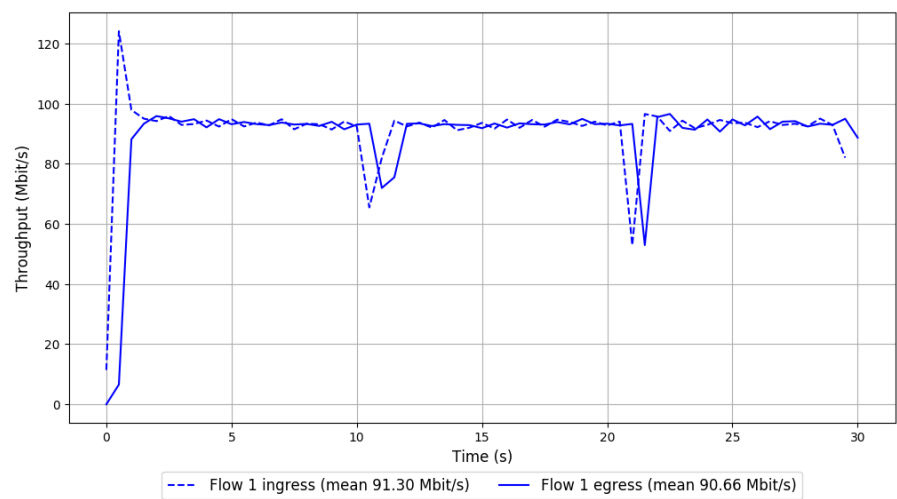
-- Flow 1:

Average throughput: 90.66 Mbit/s

95th percentile per-packet one-way delay: 47.286 ms

Loss rate: 0.69%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-11 00:09:33

End at: 2018-09-11 00:10:03

Local clock offset: 6.572 ms

Remote clock offset: 7.097 ms

Below is generated by plot.py at 2018-09-11 00:25:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.85 Mbit/s

95th percentile per-packet one-way delay: 46.060 ms

Loss rate: 0.22%

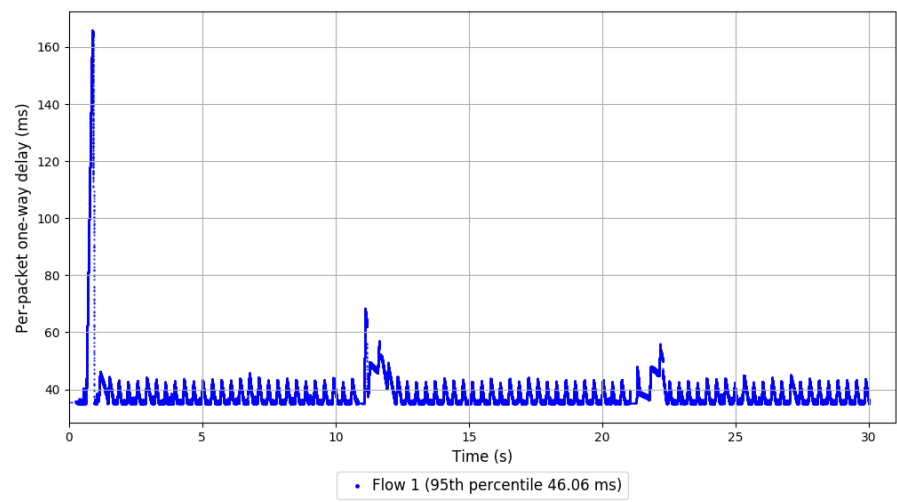
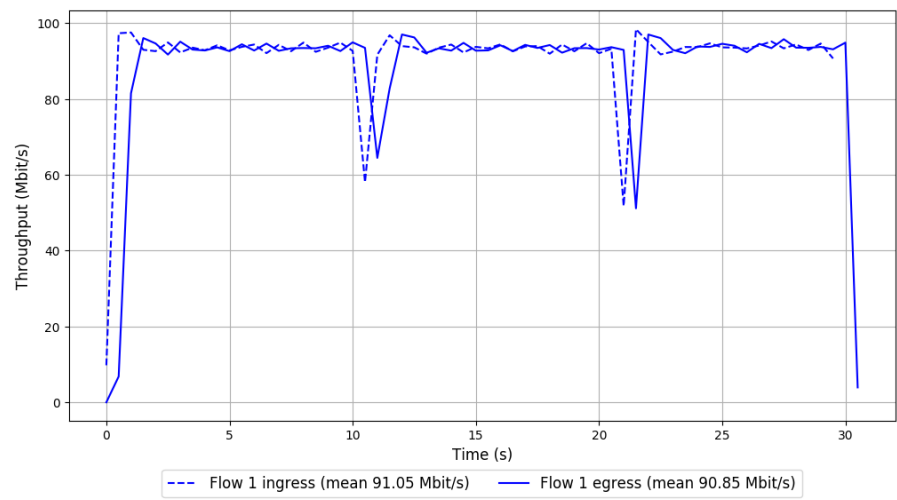
-- Flow 1:

Average throughput: 90.85 Mbit/s

95th percentile per-packet one-way delay: 46.060 ms

Loss rate: 0.22%

Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2018-09-10 22:46:42

End at: 2018-09-10 22:47:12

Local clock offset: 8.454 ms

Remote clock offset: 6.889 ms

Below is generated by plot.py at 2018-09-11 00:25:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.80 Mbit/s

95th percentile per-packet one-way delay: 42.668 ms

Loss rate: 8.47%

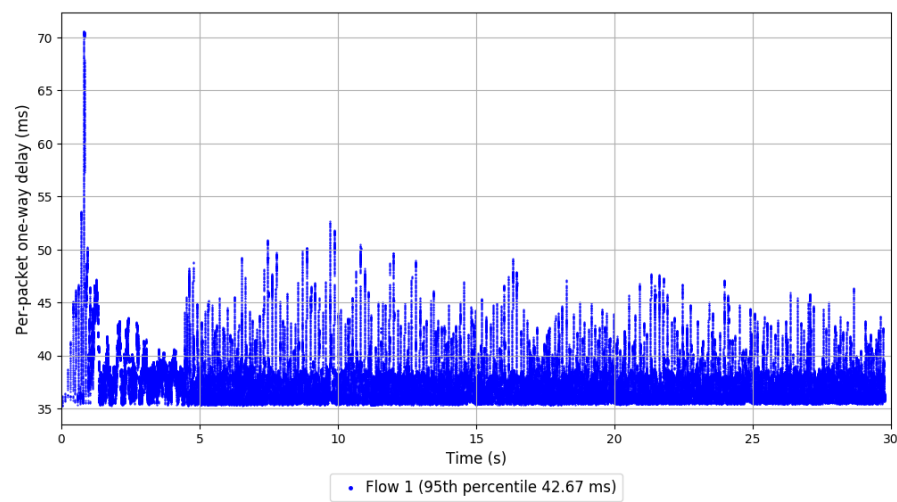
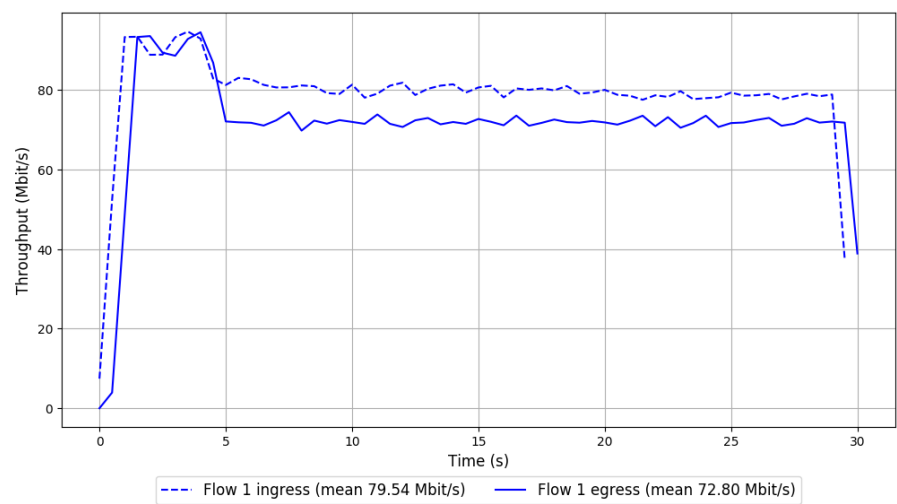
-- Flow 1:

Average throughput: 72.80 Mbit/s

95th percentile per-packet one-way delay: 42.668 ms

Loss rate: 8.47%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-10 23:08:23

End at: 2018-09-10 23:08:53

Local clock offset: 6.018 ms

Remote clock offset: 6.74 ms

Below is generated by plot.py at 2018-09-11 00:25:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.90 Mbit/s

95th percentile per-packet one-way delay: 42.501 ms

Loss rate: 8.18%

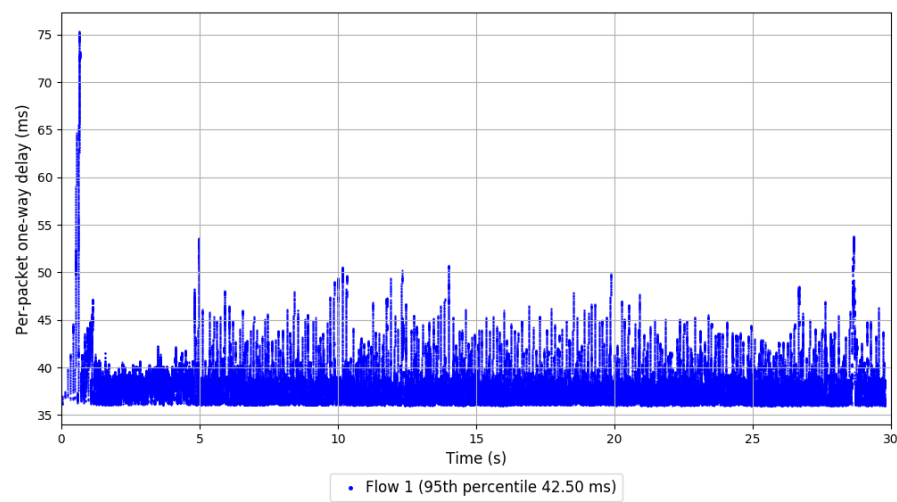
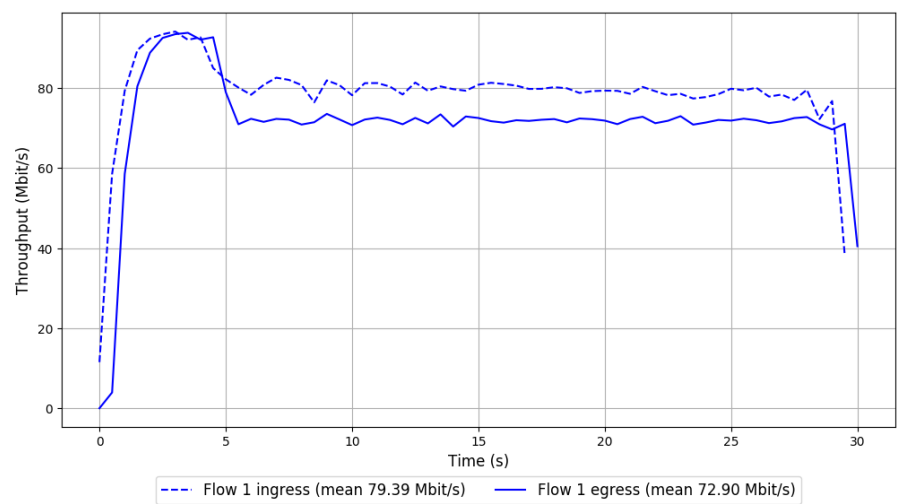
-- Flow 1:

Average throughput: 72.90 Mbit/s

95th percentile per-packet one-way delay: 42.501 ms

Loss rate: 8.18%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-10 23:29:56

End at: 2018-09-10 23:30:26

Local clock offset: 5.099 ms

Remote clock offset: 5.821 ms

Below is generated by plot.py at 2018-09-11 00:25:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 55.32 Mbit/s

95th percentile per-packet one-way delay: 46.416 ms

Loss rate: 0.02%

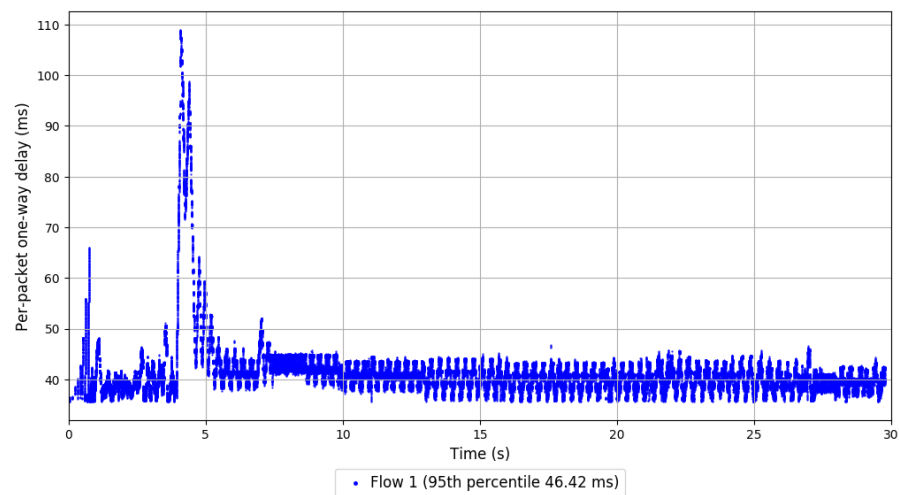
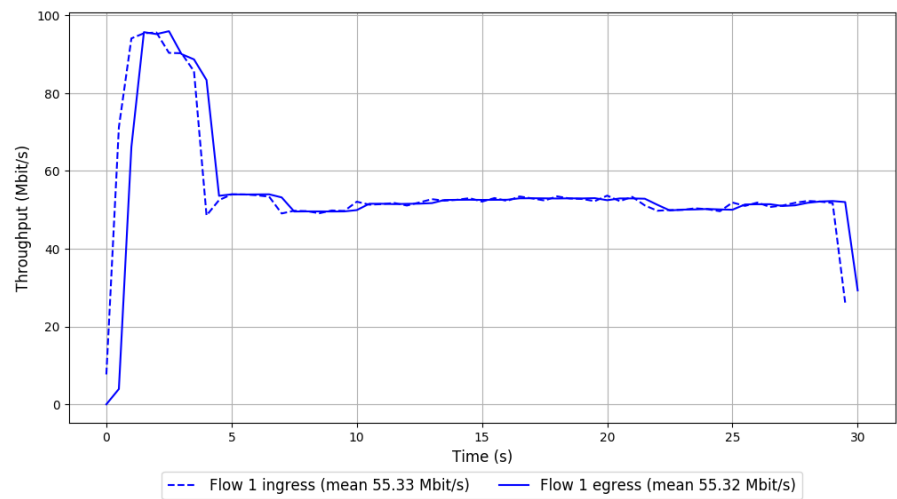
-- Flow 1:

Average throughput: 55.32 Mbit/s

95th percentile per-packet one-way delay: 46.416 ms

Loss rate: 0.02%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-10 23:51:34

End at: 2018-09-10 23:52:05

Local clock offset: 7.96 ms

Remote clock offset: 7.149 ms

Below is generated by plot.py at 2018-09-11 00:25:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.85 Mbit/s

95th percentile per-packet one-way delay: 42.693 ms

Loss rate: 7.95%

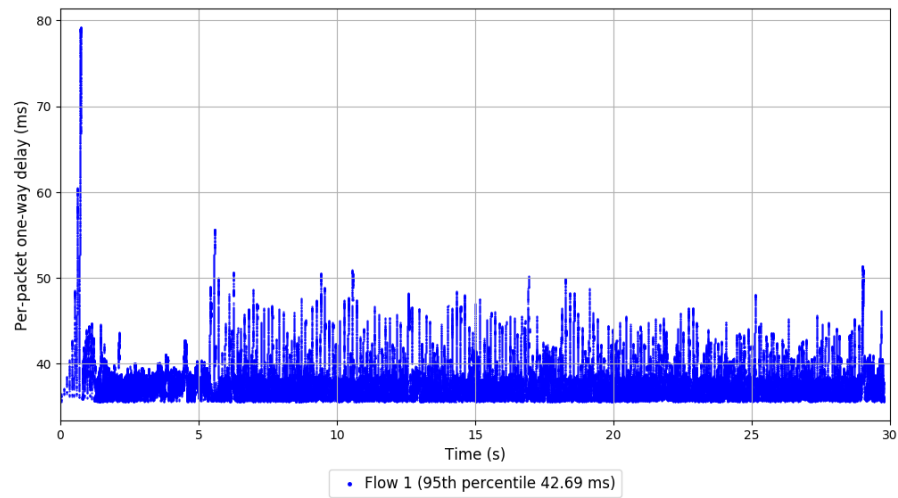
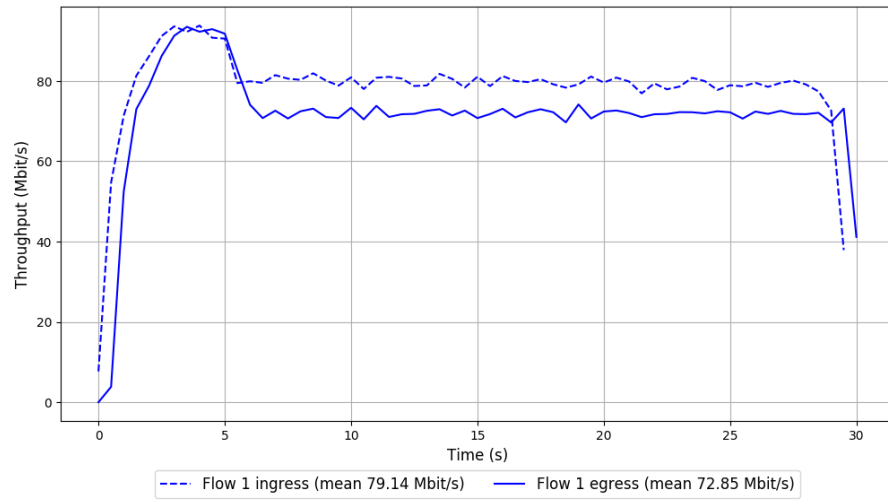
-- Flow 1:

Average throughput: 72.85 Mbit/s

95th percentile per-packet one-way delay: 42.693 ms

Loss rate: 7.95%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-11 00:13:12

End at: 2018-09-11 00:13:42

Local clock offset: 6.142 ms

Remote clock offset: 6.895 ms

Below is generated by plot.py at 2018-09-11 00:25:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 54.55 Mbit/s

95th percentile per-packet one-way delay: 55.726 ms

Loss rate: 0.01%

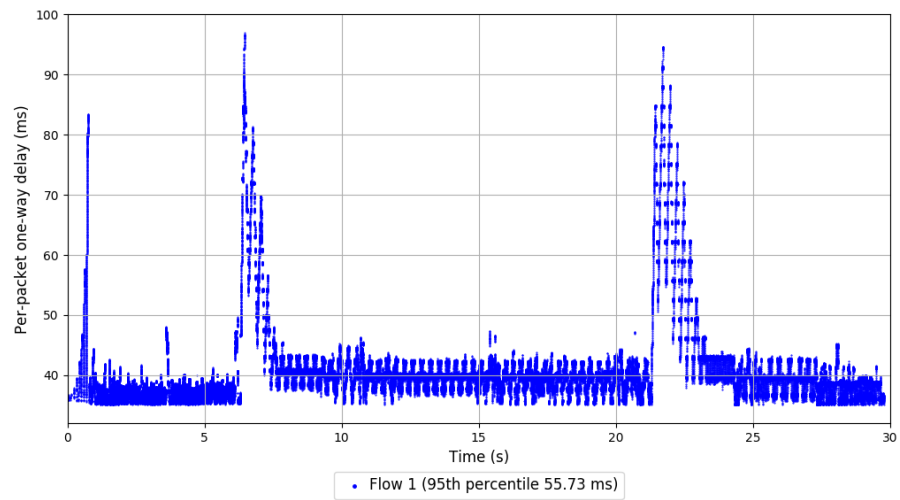
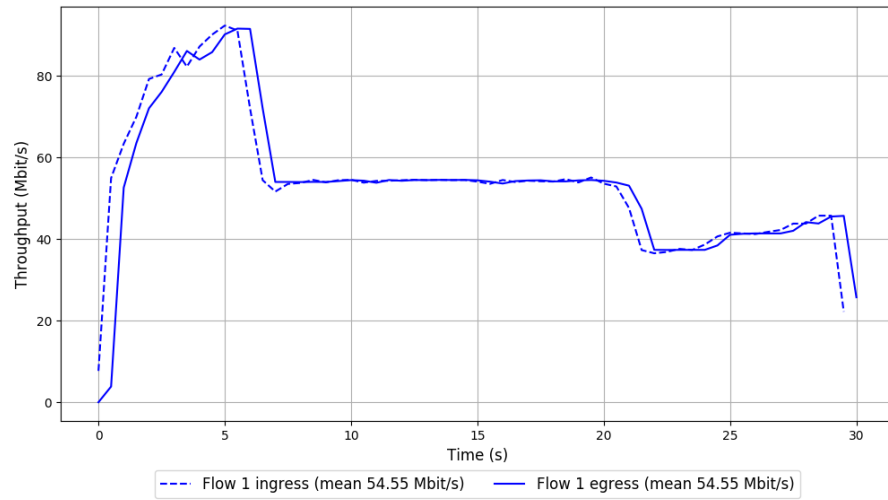
-- Flow 1:

Average throughput: 54.55 Mbit/s

95th percentile per-packet one-way delay: 55.726 ms

Loss rate: 0.01%

Run 5: Report of Indigo — Data Link

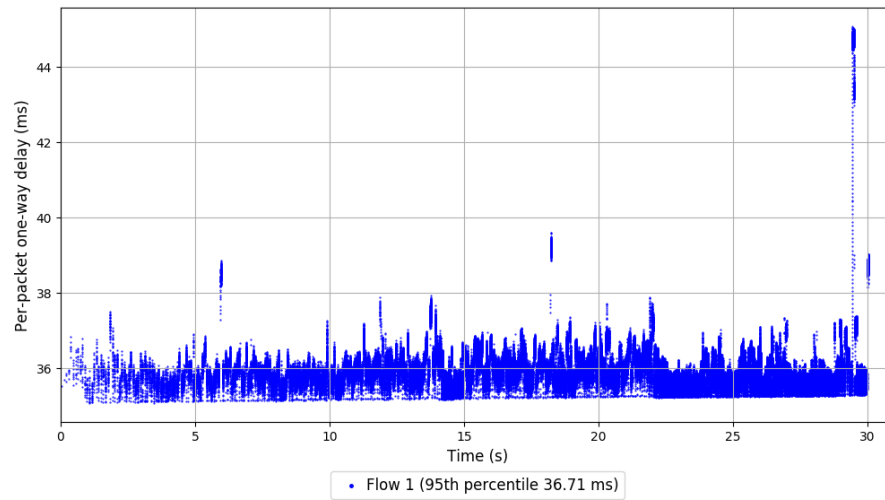
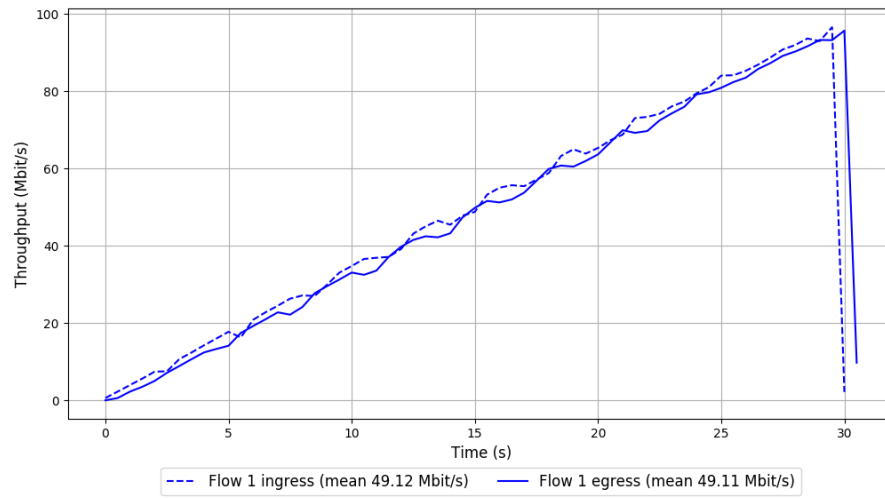


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-10 22:38:17
End at: 2018-09-10 22:38:47
Local clock offset: 6.066 ms
Remote clock offset: 7.462 ms

# Below is generated by plot.py at 2018-09-11 00:25:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.11 Mbit/s
95th percentile per-packet one-way delay: 36.713 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 49.11 Mbit/s
95th percentile per-packet one-way delay: 36.713 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-10 23:00:00

End at: 2018-09-10 23:00:30

Local clock offset: 9.306 ms

Remote clock offset: 5.893 ms

Below is generated by plot.py at 2018-09-11 00:25:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.30 Mbit/s

95th percentile per-packet one-way delay: 36.238 ms

Loss rate: 0.00%

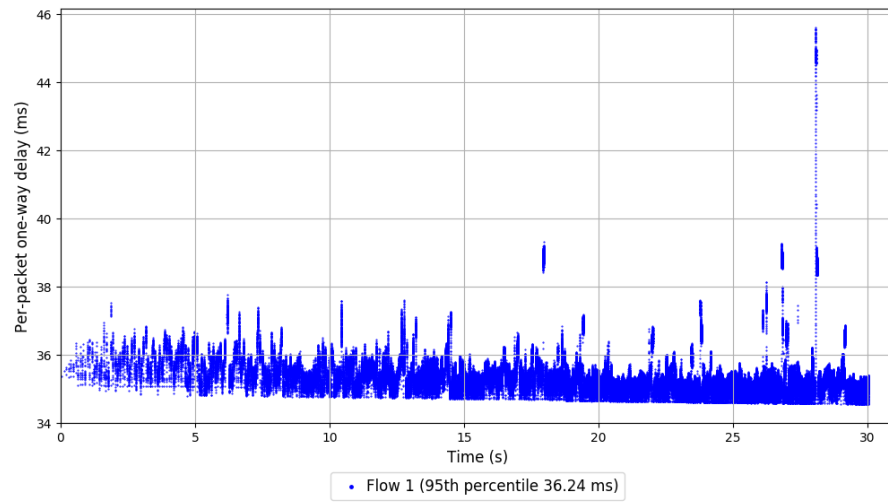
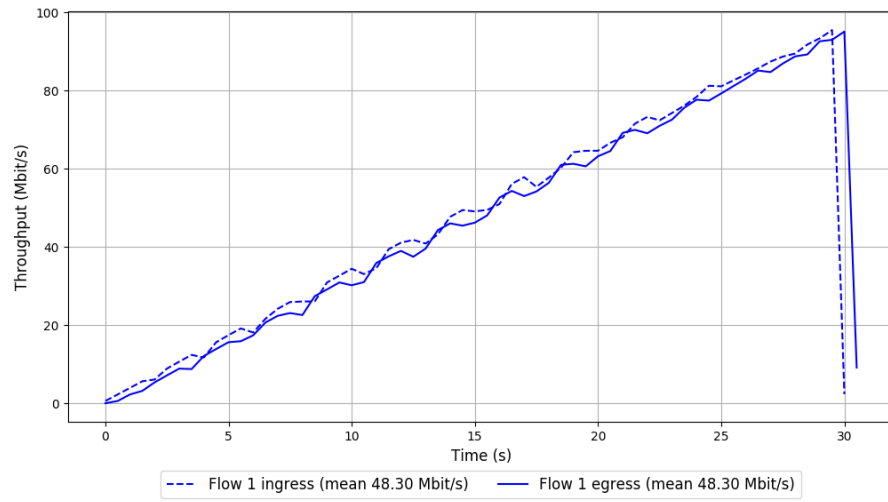
-- Flow 1:

Average throughput: 48.30 Mbit/s

95th percentile per-packet one-way delay: 36.238 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-10 23:21:35

End at: 2018-09-10 23:22:05

Local clock offset: 4.717 ms

Remote clock offset: 5.156 ms

Below is generated by plot.py at 2018-09-11 00:25:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.65 Mbit/s

95th percentile per-packet one-way delay: 36.466 ms

Loss rate: 0.00%

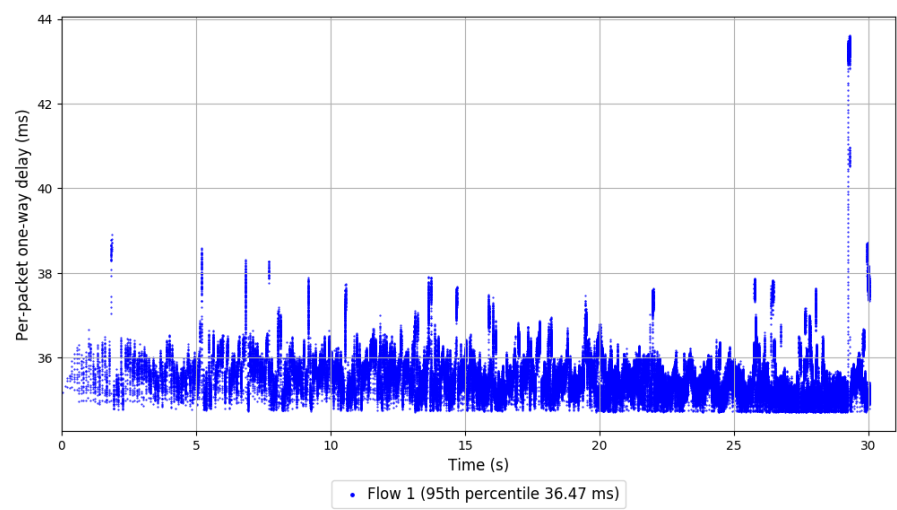
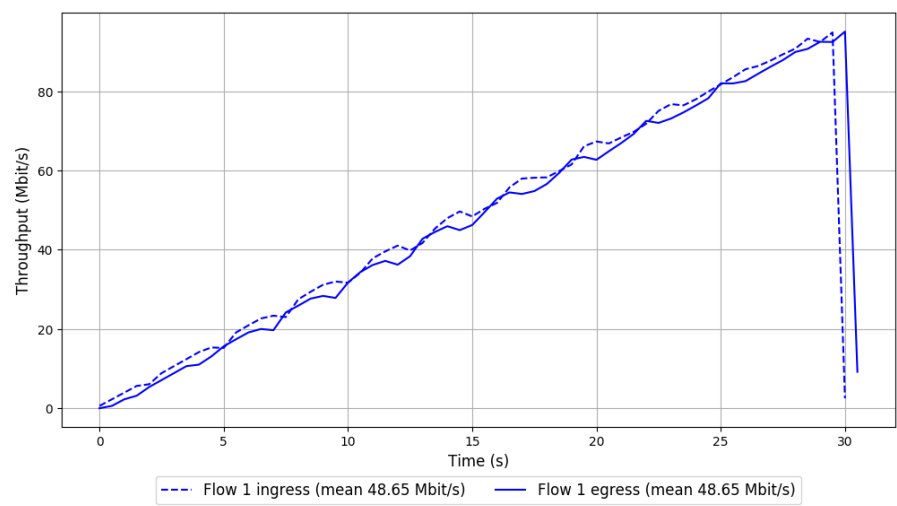
-- Flow 1:

Average throughput: 48.65 Mbit/s

95th percentile per-packet one-way delay: 36.466 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-10 23:43:10

End at: 2018-09-10 23:43:40

Local clock offset: 7.266 ms

Remote clock offset: 5.864 ms

Below is generated by plot.py at 2018-09-11 00:25:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.72 Mbit/s

95th percentile per-packet one-way delay: 36.808 ms

Loss rate: 0.00%

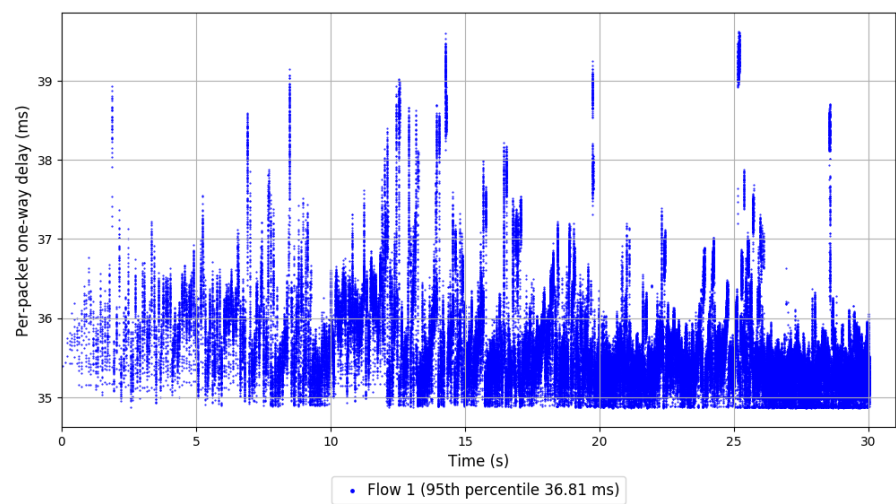
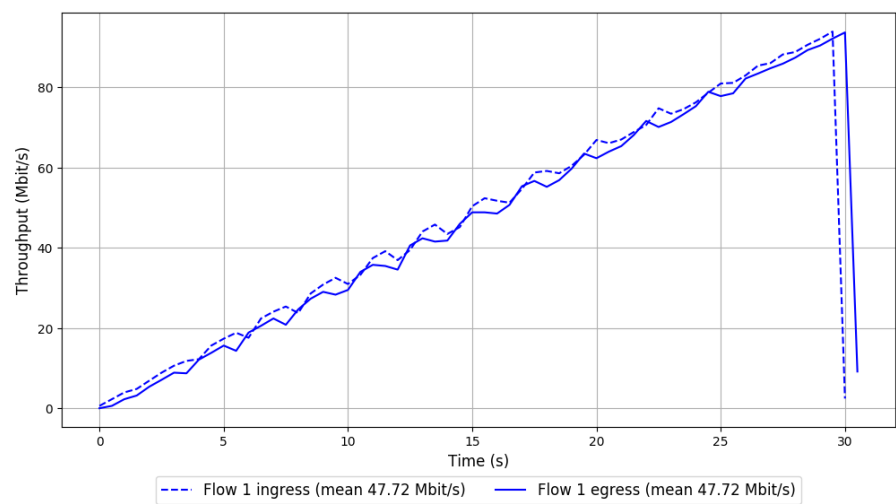
-- Flow 1:

Average throughput: 47.72 Mbit/s

95th percentile per-packet one-way delay: 36.808 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-11 00:04:48

End at: 2018-09-11 00:05:18

Local clock offset: 6.988 ms

Remote clock offset: 6.586 ms

Below is generated by plot.py at 2018-09-11 00:25:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.48 Mbit/s

95th percentile per-packet one-way delay: 36.509 ms

Loss rate: 0.00%

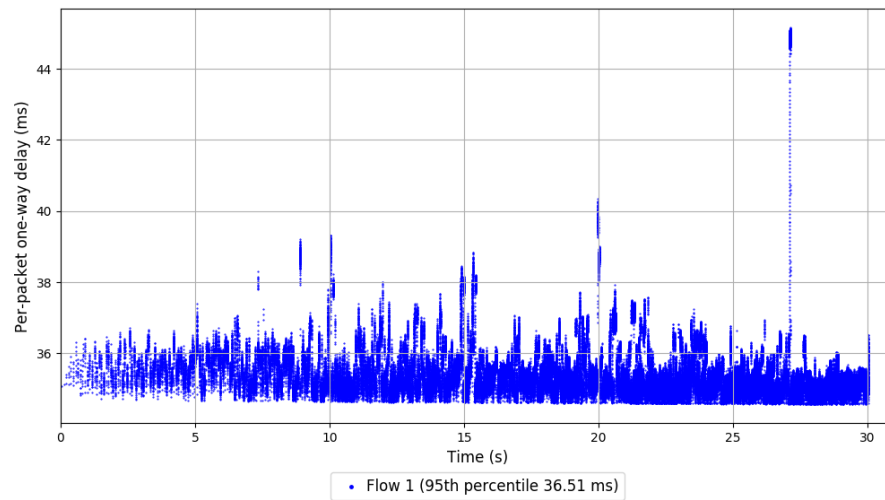
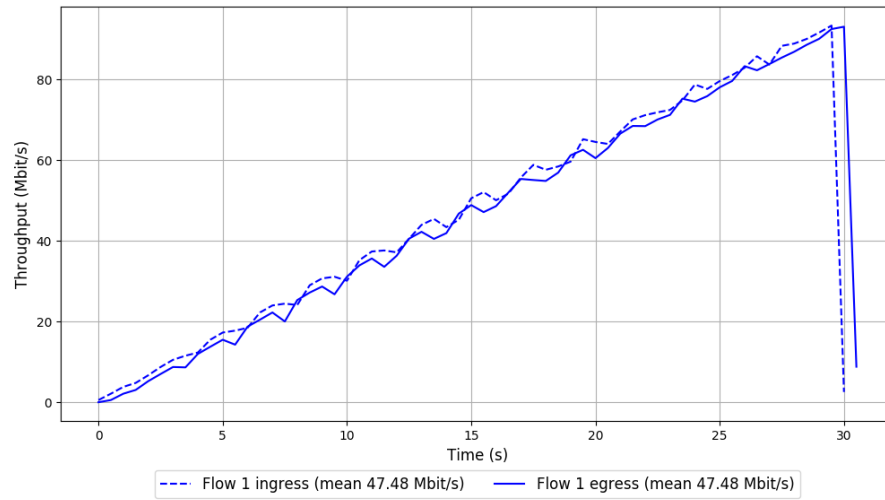
-- Flow 1:

Average throughput: 47.48 Mbit/s

95th percentile per-packet one-way delay: 36.509 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

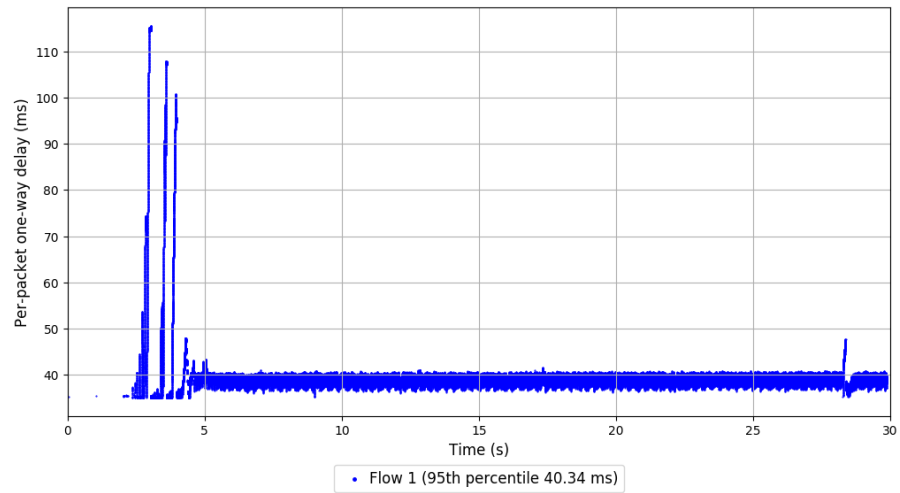
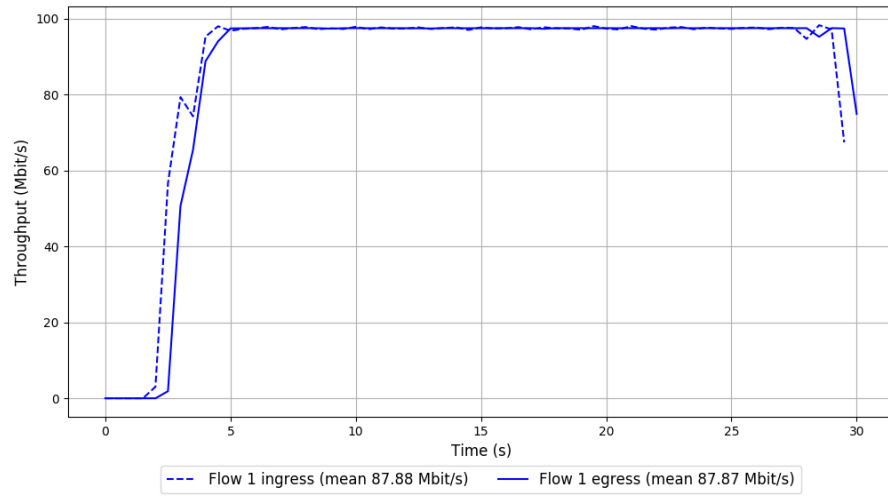


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-10 22:39:30
End at: 2018-09-10 22:40:00
Local clock offset: 6.41 ms
Remote clock offset: 6.909 ms

# Below is generated by plot.py at 2018-09-11 00:26:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.87 Mbit/s
95th percentile per-packet one-way delay: 40.341 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 87.87 Mbit/s
95th percentile per-packet one-way delay: 40.341 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-10 23:01:12

End at: 2018-09-10 23:01:42

Local clock offset: 8.439 ms

Remote clock offset: 5.866 ms

Below is generated by plot.py at 2018-09-11 00:26:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.08 Mbit/s

95th percentile per-packet one-way delay: 39.687 ms

Loss rate: 0.00%

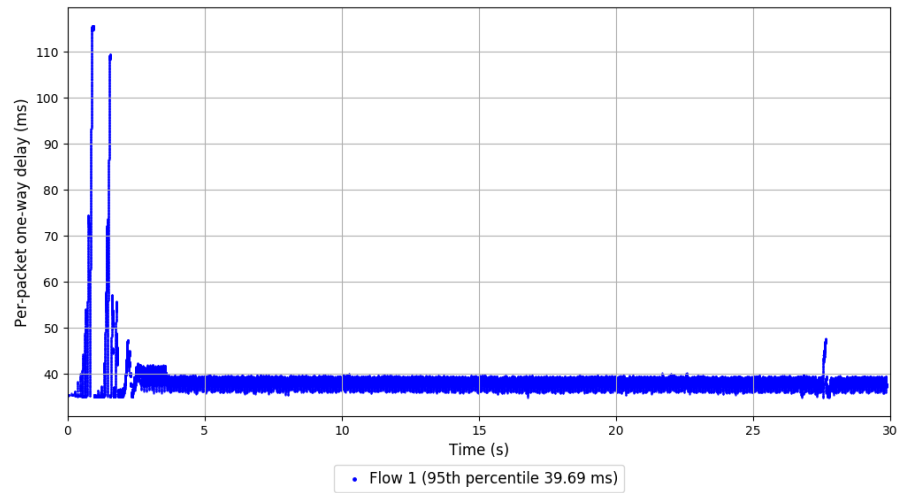
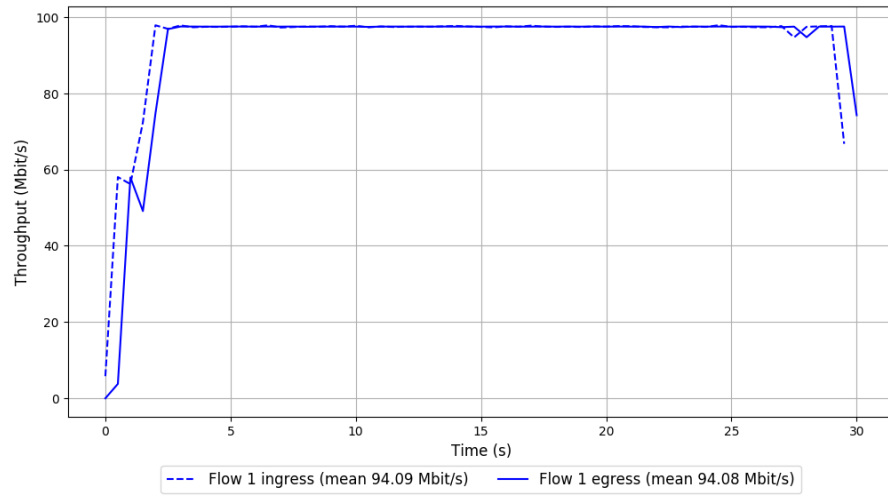
-- Flow 1:

Average throughput: 94.08 Mbit/s

95th percentile per-packet one-way delay: 39.687 ms

Loss rate: 0.00%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-10 23:22:47

End at: 2018-09-10 23:23:17

Local clock offset: 4.869 ms

Remote clock offset: 5.87 ms

Below is generated by plot.py at 2018-09-11 00:26:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.20 Mbit/s

95th percentile per-packet one-way delay: 39.749 ms

Loss rate: 0.00%

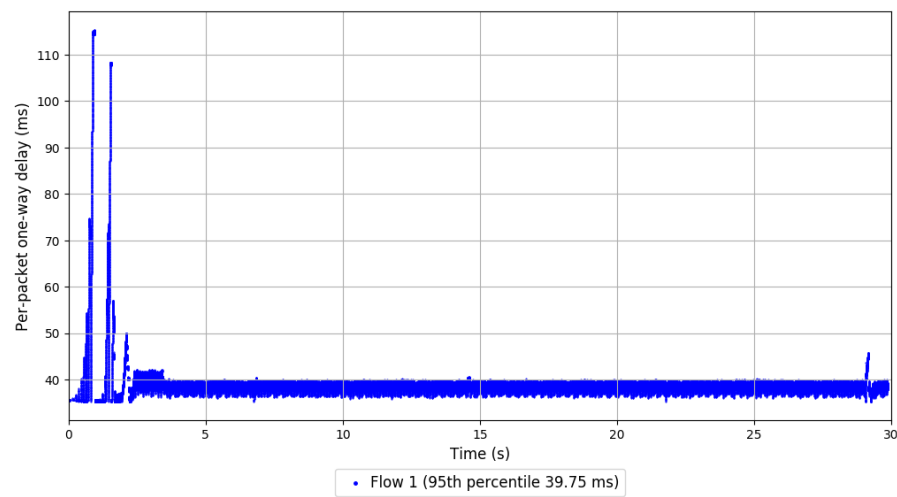
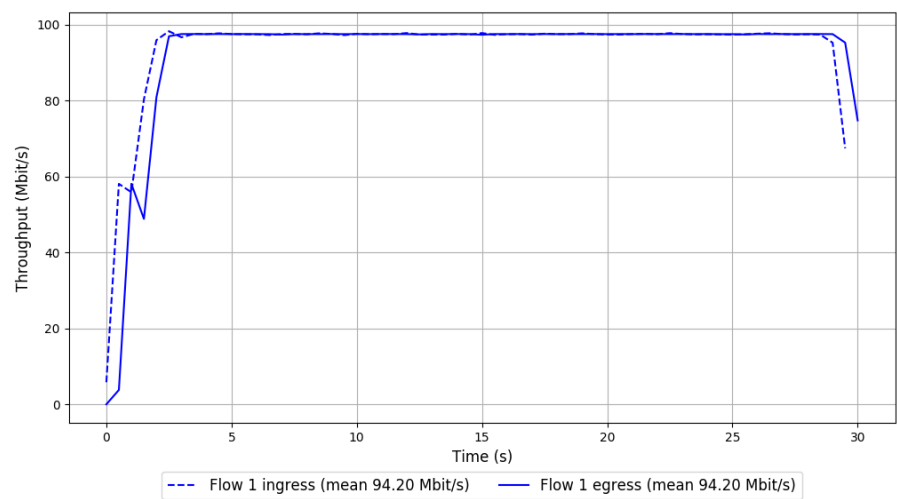
-- Flow 1:

Average throughput: 94.20 Mbit/s

95th percentile per-packet one-way delay: 39.749 ms

Loss rate: 0.00%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-10 23:44:23

End at: 2018-09-10 23:44:53

Local clock offset: 7.198 ms

Remote clock offset: 6.744 ms

Below is generated by plot.py at 2018-09-11 00:26:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.27 Mbit/s

95th percentile per-packet one-way delay: 40.101 ms

Loss rate: 0.00%

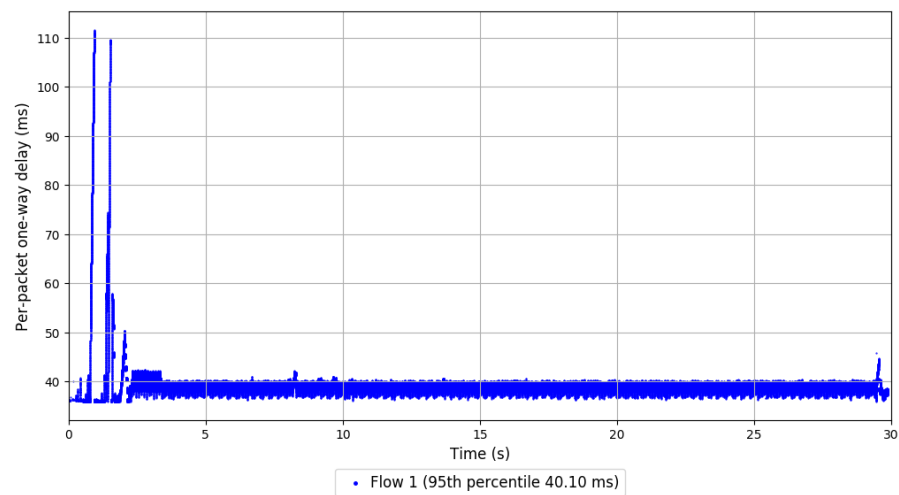
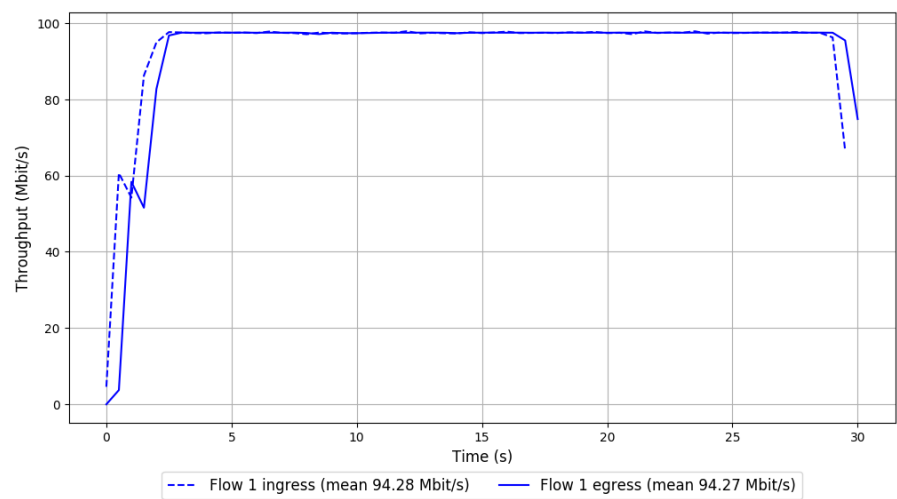
-- Flow 1:

Average throughput: 94.27 Mbit/s

95th percentile per-packet one-way delay: 40.101 ms

Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-11 00:06:01

End at: 2018-09-11 00:06:31

Local clock offset: 7.044 ms

Remote clock offset: 6.864 ms

Below is generated by plot.py at 2018-09-11 00:26:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 94.48 Mbit/s

95th percentile per-packet one-way delay: 39.628 ms

Loss rate: 0.00%

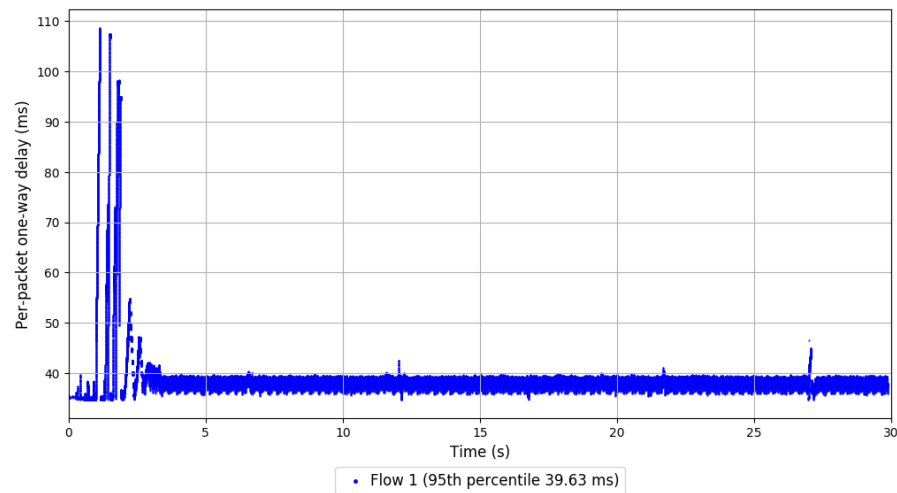
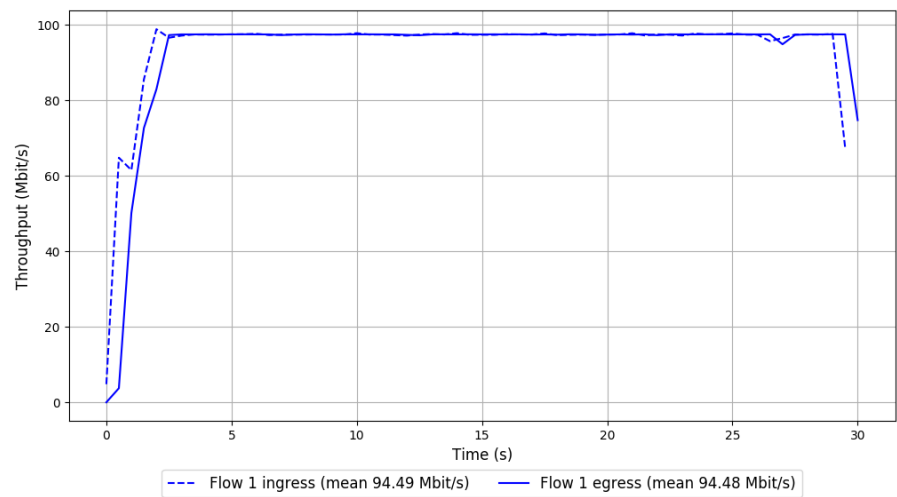
-- Flow 1:

Average throughput: 94.48 Mbit/s

95th percentile per-packet one-way delay: 39.628 ms

Loss rate: 0.00%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

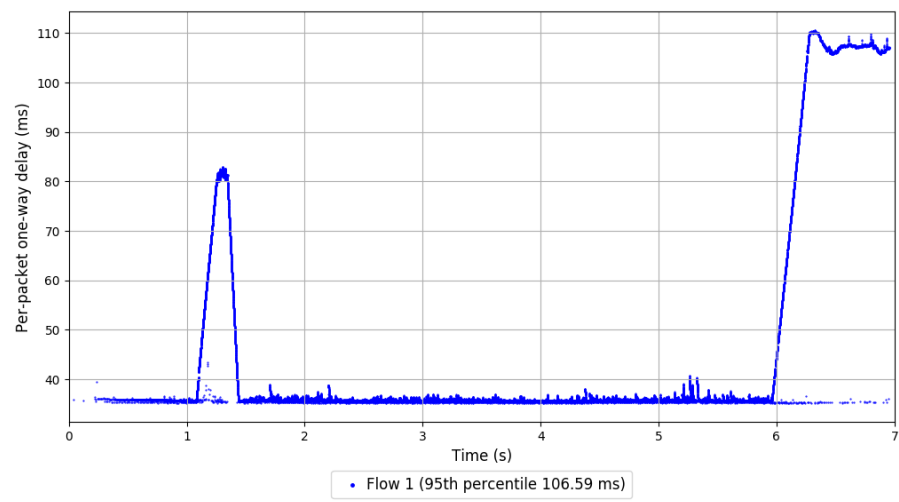
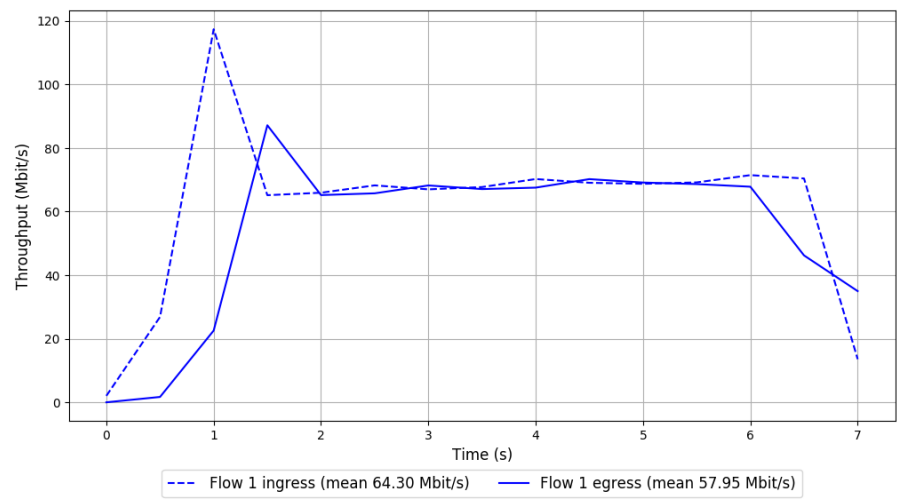
Start at: 2018-09-10 22:47:57

End at: 2018-09-10 22:48:27

Local clock offset: 8.462 ms

Remote clock offset: 6.264 ms

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

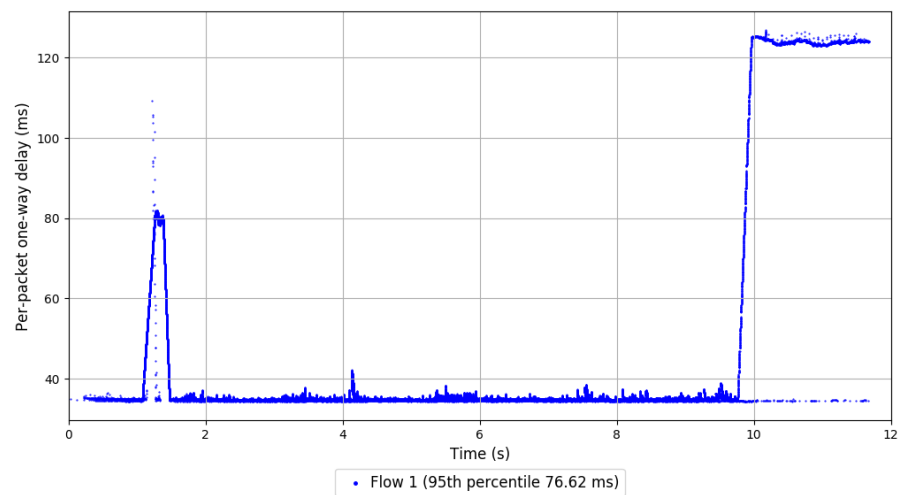
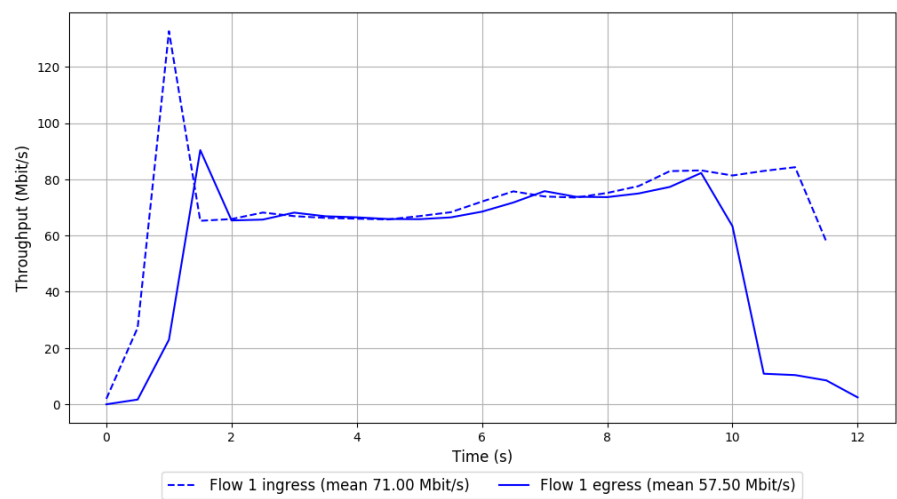
Start at: 2018-09-10 23:09:38

End at: 2018-09-10 23:10:08

Local clock offset: 5.762 ms

Remote clock offset: 5.438 ms

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-10 23:31:09

End at: 2018-09-10 23:31:39

Local clock offset: 5.197 ms

Remote clock offset: 5.577 ms

Below is generated by plot.py at 2018-09-11 00:26:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.33 Mbit/s

95th percentile per-packet one-way delay: 39.313 ms

Loss rate: 21.47%

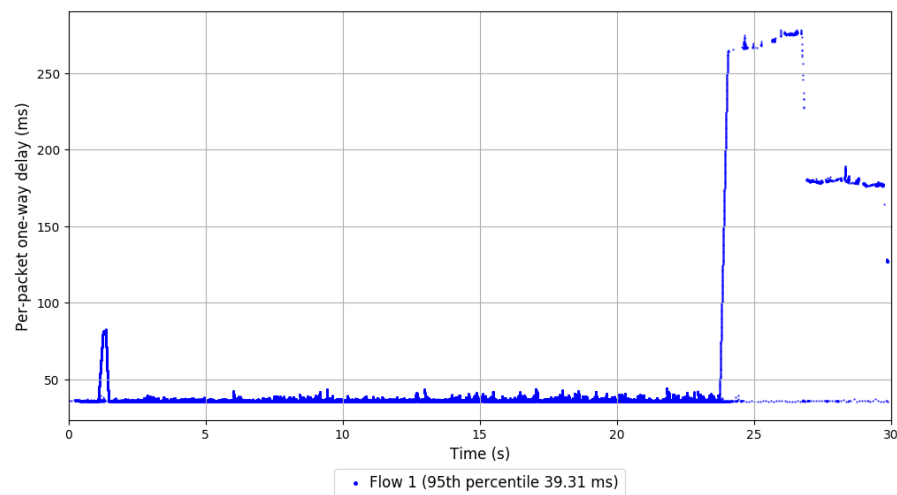
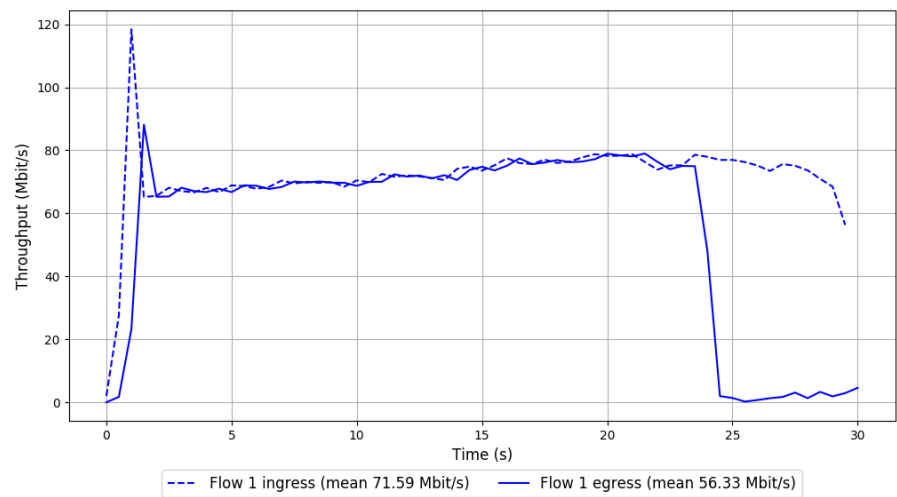
-- Flow 1:

Average throughput: 56.33 Mbit/s

95th percentile per-packet one-way delay: 39.313 ms

Loss rate: 21.47%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

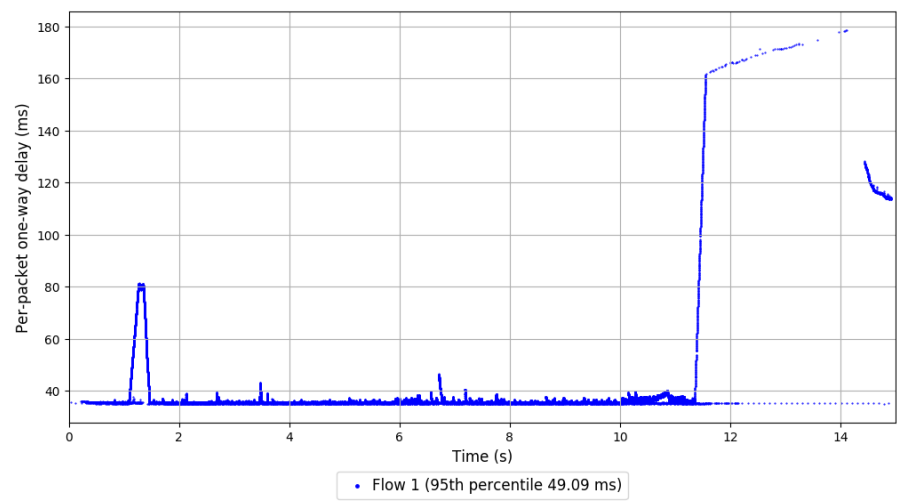
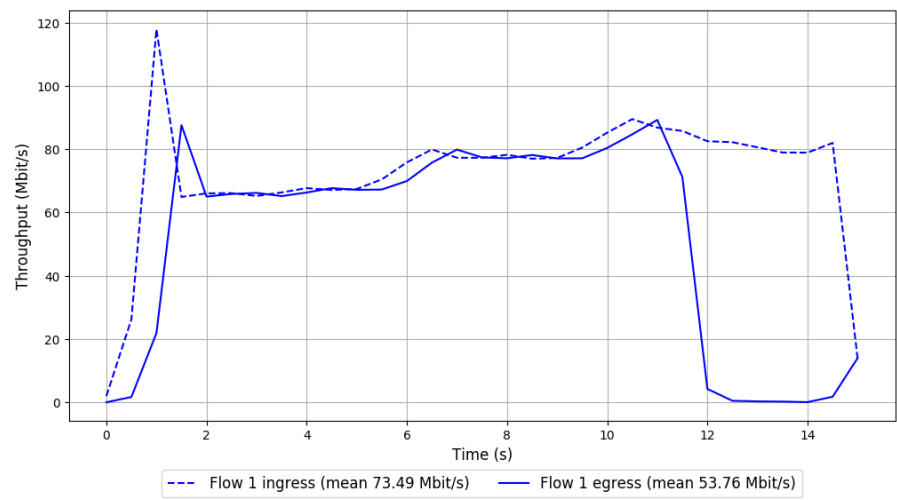
Start at: 2018-09-10 23:52:49

End at: 2018-09-10 23:53:19

Local clock offset: 8.031 ms

Remote clock offset: 6.738 ms

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

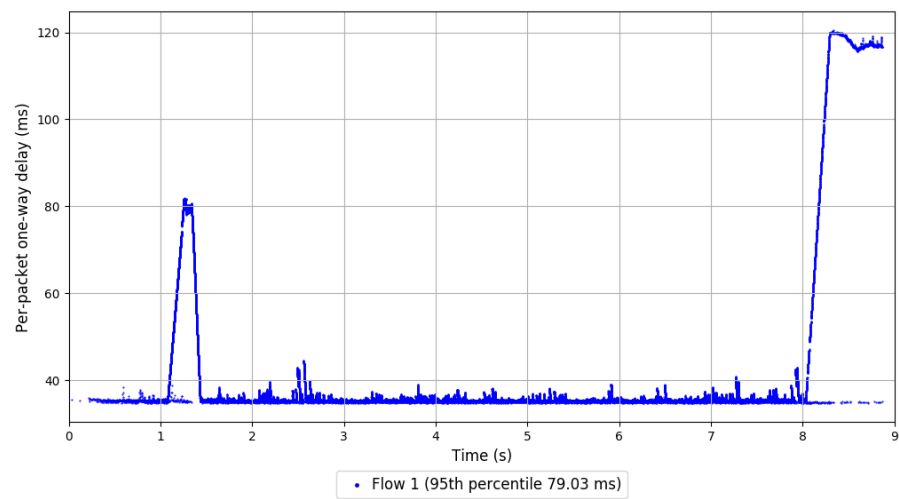
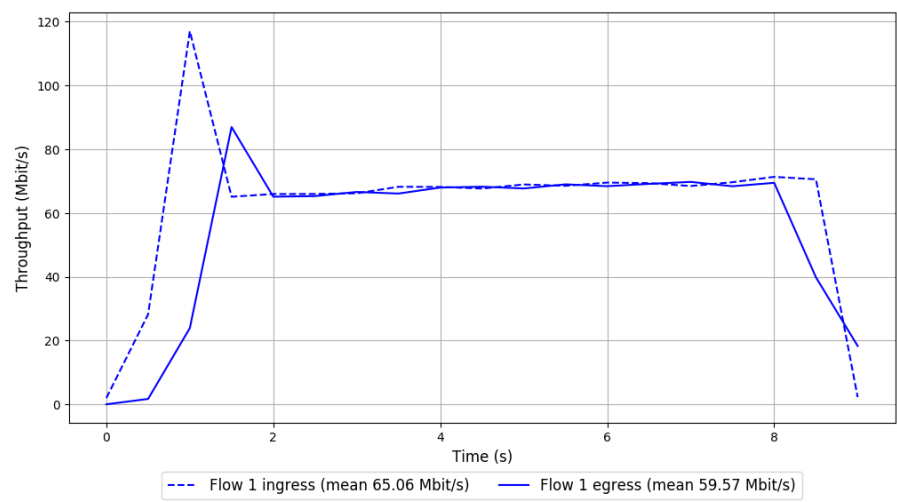
Start at: 2018-09-11 00:14:25

End at: 2018-09-11 00:14:55

Local clock offset: 6.389 ms

Remote clock offset: 7.569 ms

Run 5: Report of PCC-Allegro — Data Link

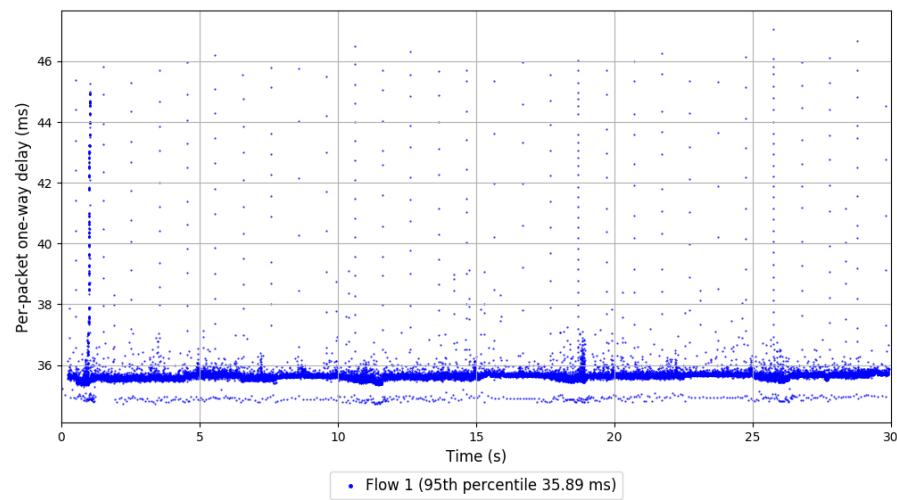
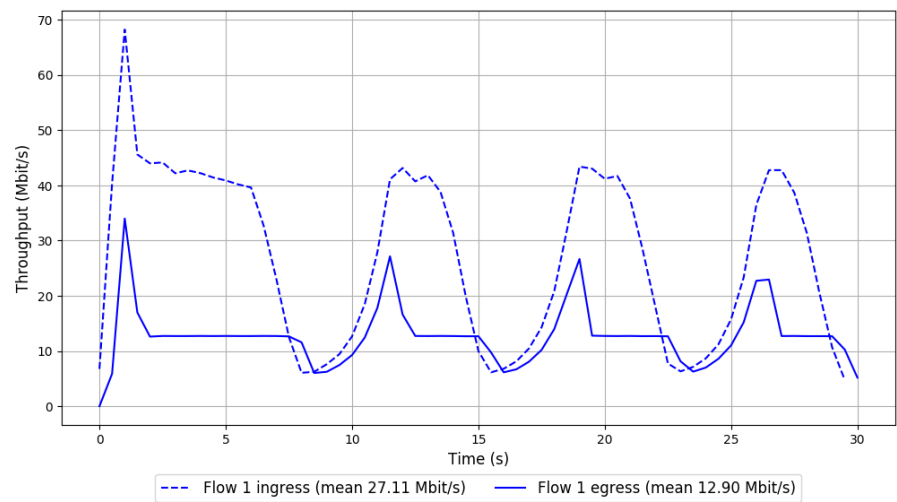


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-10 22:49:07
End at: 2018-09-10 22:49:37
Local clock offset: 8.886 ms
Remote clock offset: 6.344 ms

# Below is generated by plot.py at 2018-09-11 00:26:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 35.890 ms
Loss rate: 52.42%
-- Flow 1:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 35.890 ms
Loss rate: 52.42%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-10 23:10:49

End at: 2018-09-10 23:11:19

Local clock offset: 5.486 ms

Remote clock offset: 5.693 ms

Below is generated by plot.py at 2018-09-11 00:26:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.91 Mbit/s

95th percentile per-packet one-way delay: 35.732 ms

Loss rate: 39.23%

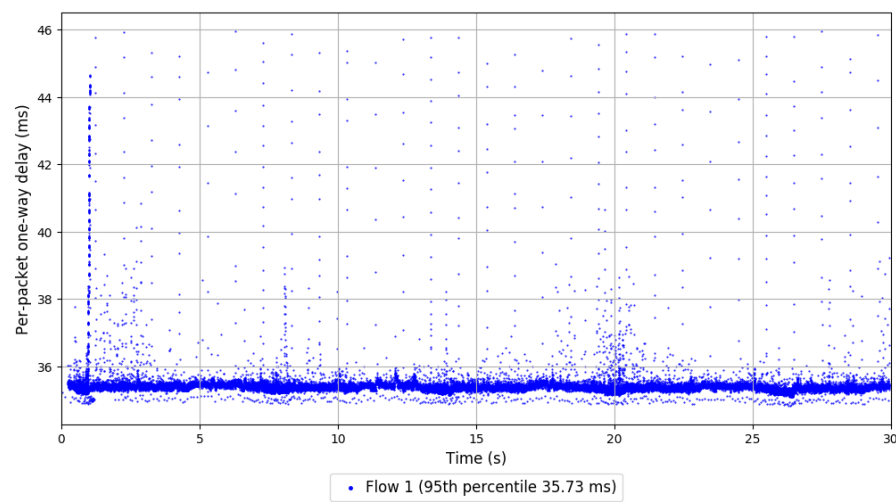
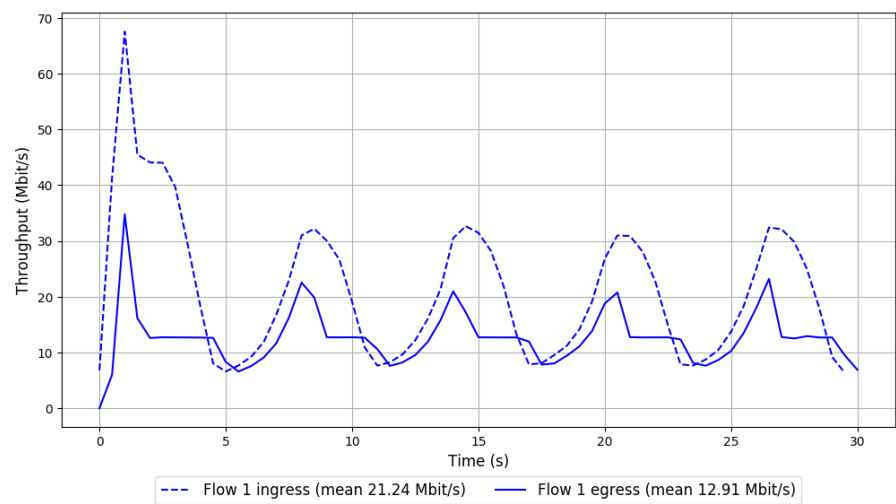
-- Flow 1:

Average throughput: 12.91 Mbit/s

95th percentile per-packet one-way delay: 35.732 ms

Loss rate: 39.23%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-10 23:32:21

End at: 2018-09-10 23:32:51

Local clock offset: 5.502 ms

Remote clock offset: 4.96 ms

Below is generated by plot.py at 2018-09-11 00:26:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 35.988 ms

Loss rate: 50.27%

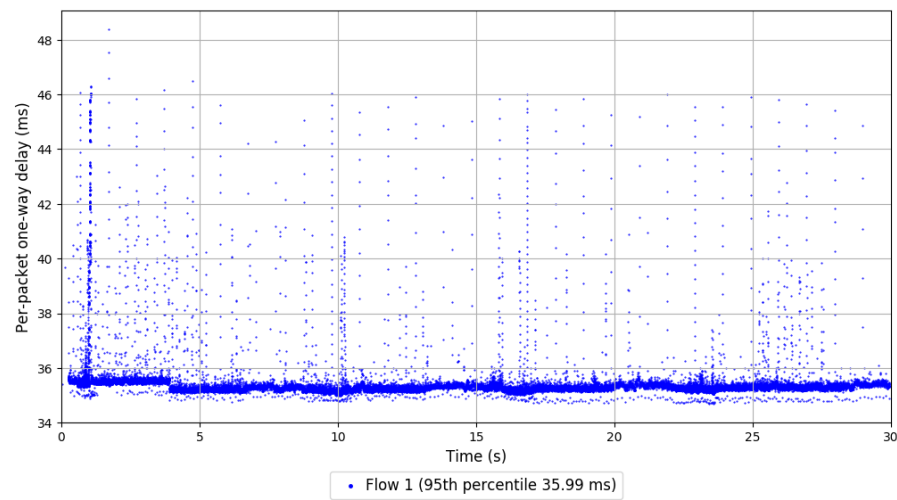
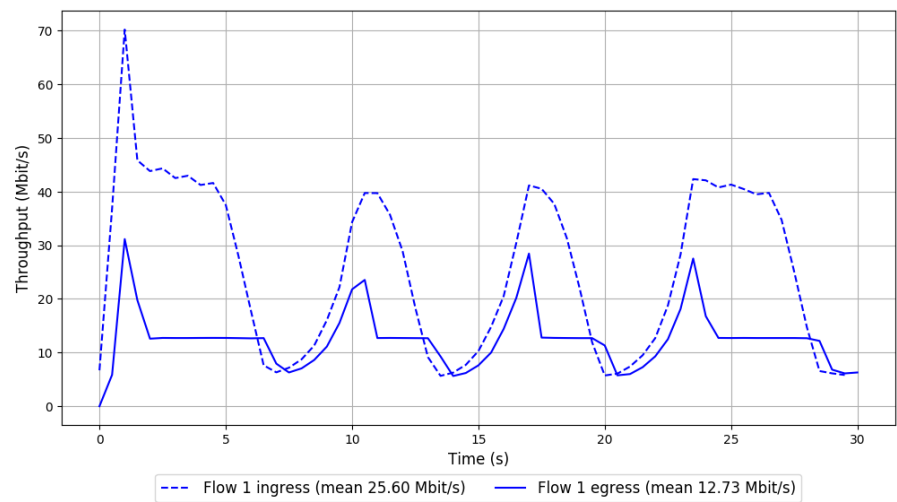
-- Flow 1:

Average throughput: 12.73 Mbit/s

95th percentile per-packet one-way delay: 35.988 ms

Loss rate: 50.27%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-10 23:53:58

End at: 2018-09-10 23:54:28

Local clock offset: 7.993 ms

Remote clock offset: 7.115 ms

Below is generated by plot.py at 2018-09-11 00:26:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.85 Mbit/s

95th percentile per-packet one-way delay: 36.353 ms

Loss rate: 51.49%

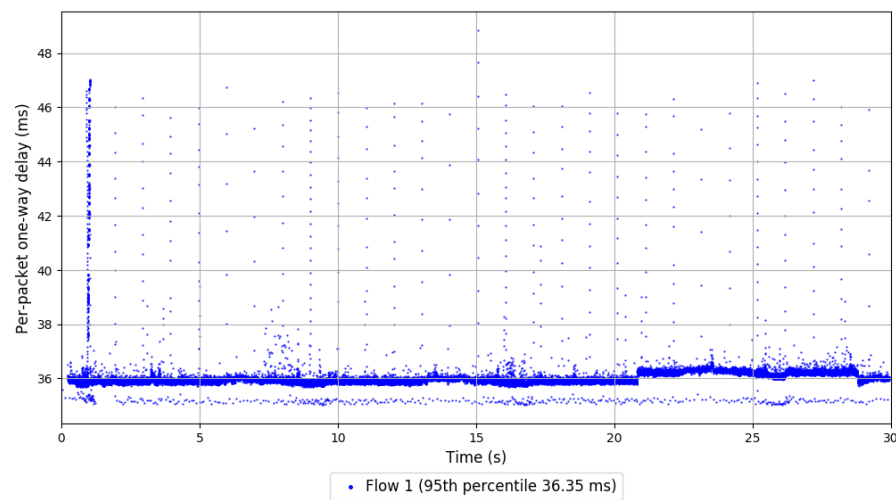
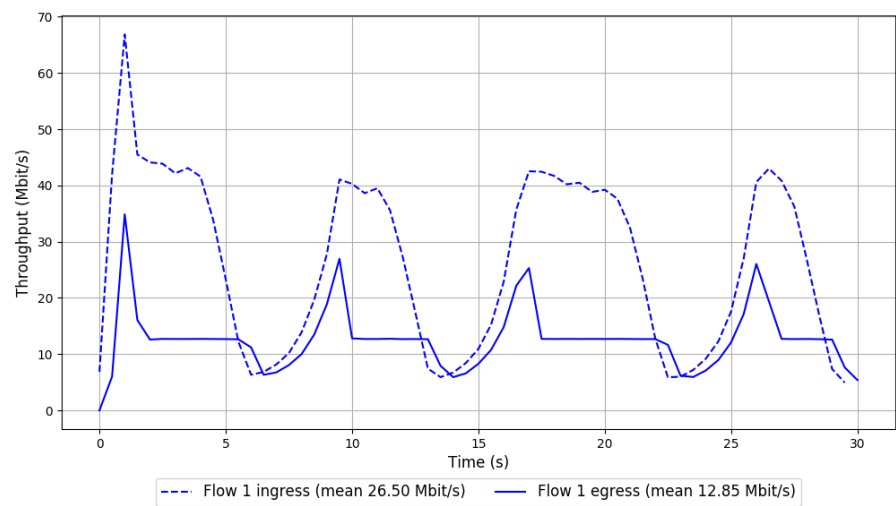
-- Flow 1:

Average throughput: 12.85 Mbit/s

95th percentile per-packet one-way delay: 36.353 ms

Loss rate: 51.49%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-11 00:15:35

End at: 2018-09-11 00:16:05

Local clock offset: 6.305 ms

Remote clock offset: 7.018 ms

Below is generated by plot.py at 2018-09-11 00:26:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.86 Mbit/s

95th percentile per-packet one-way delay: 35.702 ms

Loss rate: 53.08%

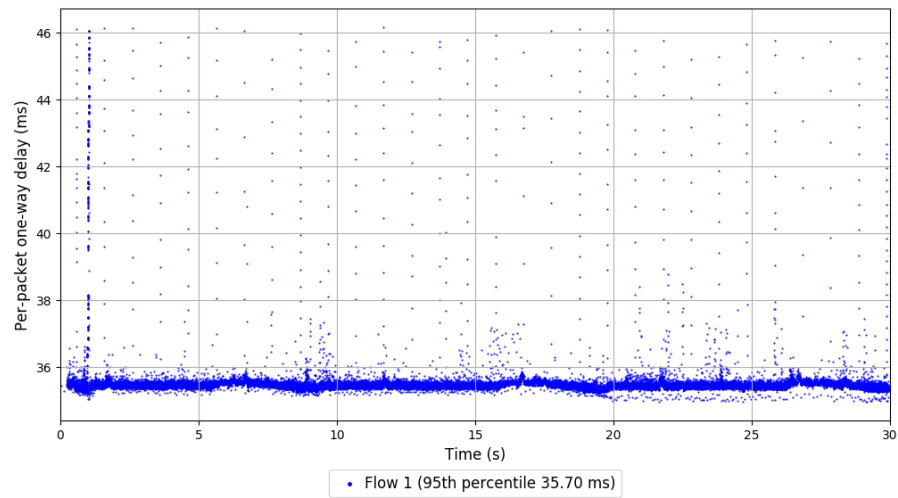
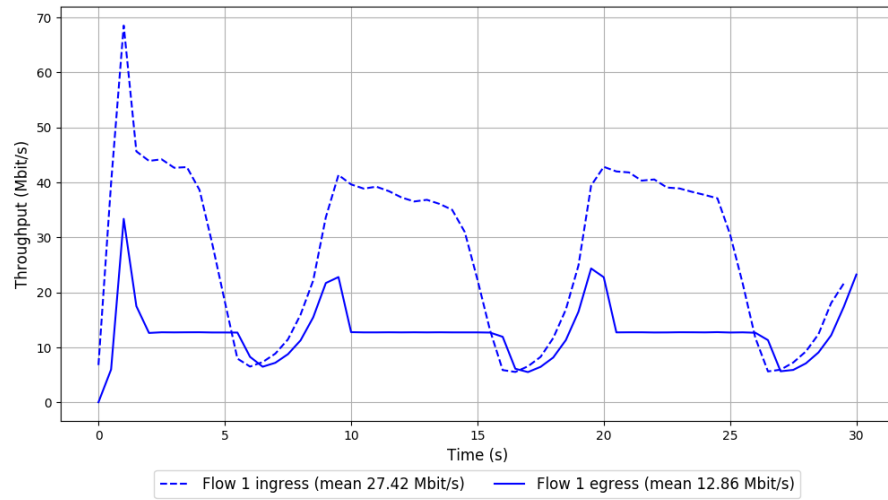
-- Flow 1:

Average throughput: 12.86 Mbit/s

95th percentile per-packet one-way delay: 35.702 ms

Loss rate: 53.08%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-10 22:37:06

End at: 2018-09-10 22:37:36

Local clock offset: 5.324 ms

Remote clock offset: 7.302 ms

Below is generated by plot.py at 2018-09-11 00:27:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 53.06 Mbit/s

95th percentile per-packet one-way delay: 101.386 ms

Loss rate: 0.00%

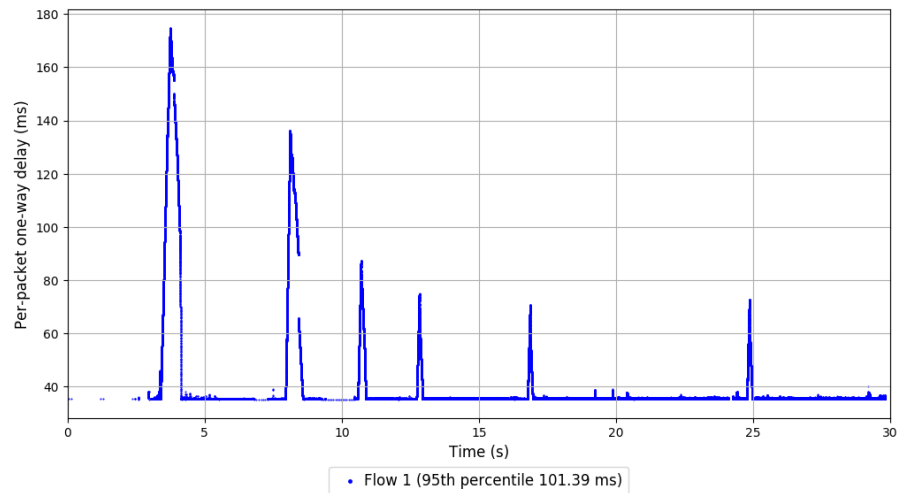
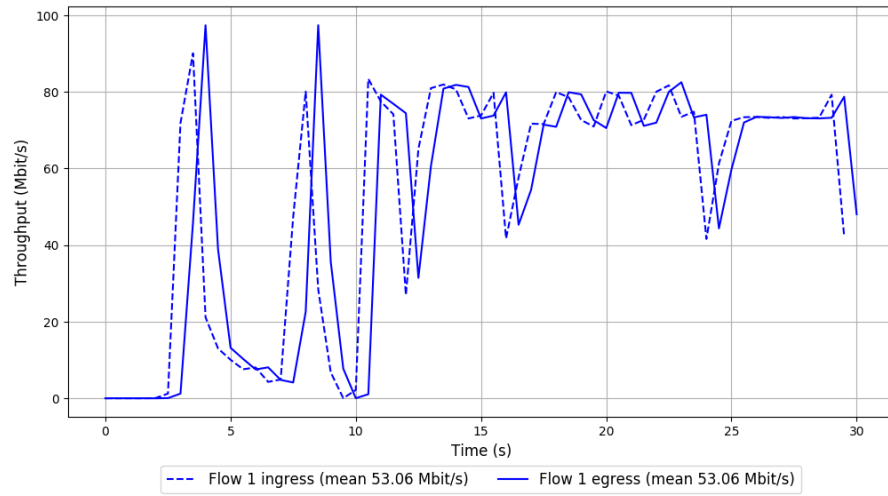
-- Flow 1:

Average throughput: 53.06 Mbit/s

95th percentile per-packet one-way delay: 101.386 ms

Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-10 22:58:47

End at: 2018-09-10 22:59:17

Local clock offset: 10.131 ms

Remote clock offset: 5.957 ms

Below is generated by plot.py at 2018-09-11 00:27:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.48 Mbit/s

95th percentile per-packet one-way delay: 112.789 ms

Loss rate: 0.06%

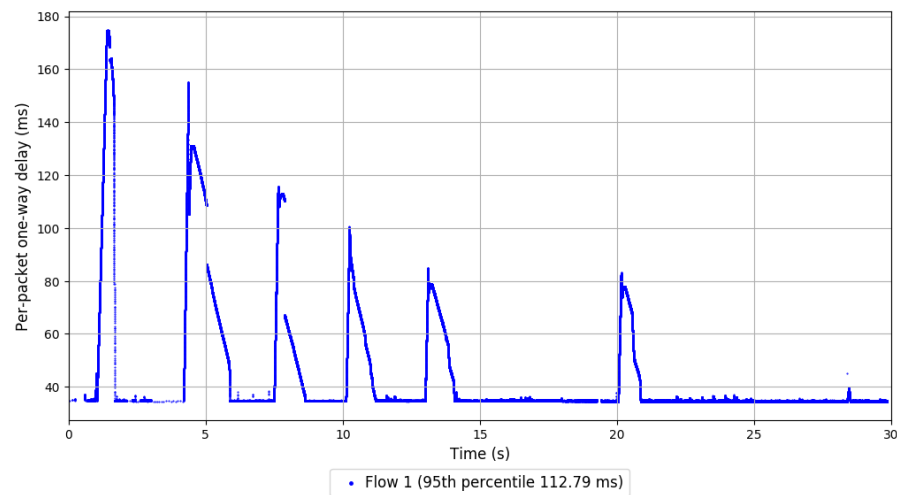
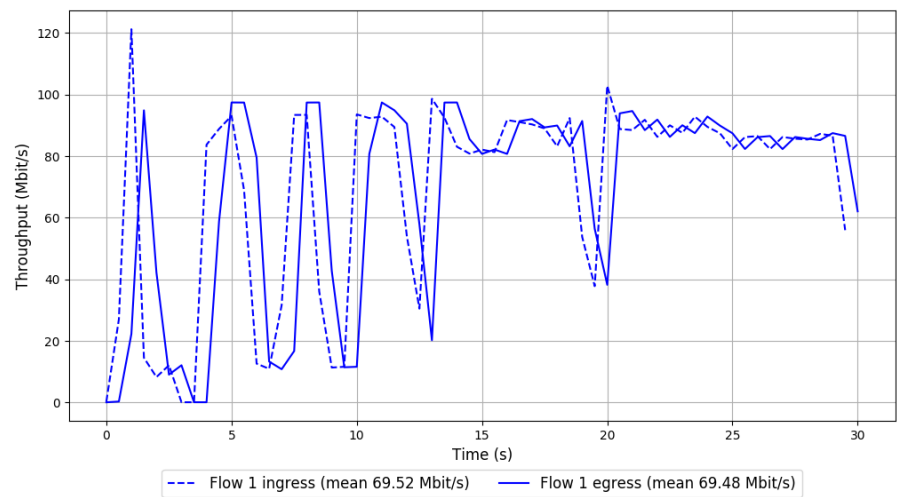
-- Flow 1:

Average throughput: 69.48 Mbit/s

95th percentile per-packet one-way delay: 112.789 ms

Loss rate: 0.06%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-10 23:20:23

End at: 2018-09-10 23:20:53

Local clock offset: 4.682 ms

Remote clock offset: 5.312 ms

Below is generated by plot.py at 2018-09-11 00:27:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 67.29 Mbit/s

95th percentile per-packet one-way delay: 83.239 ms

Loss rate: 0.03%

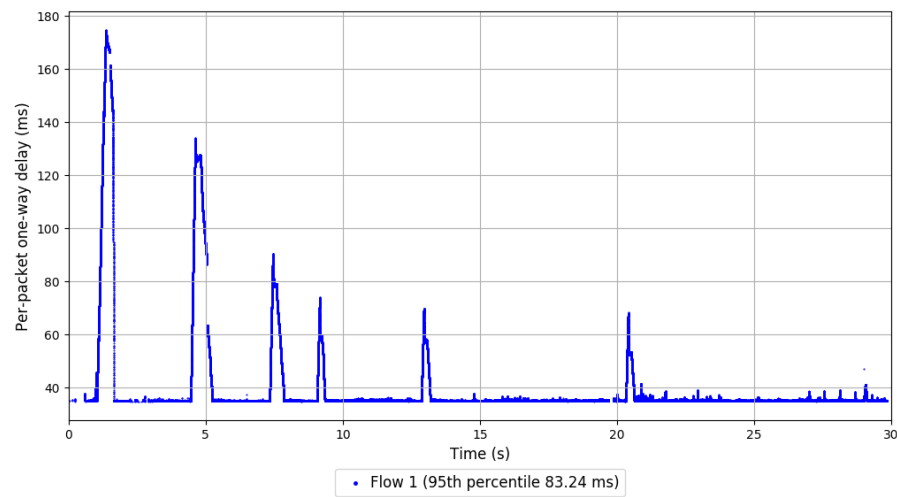
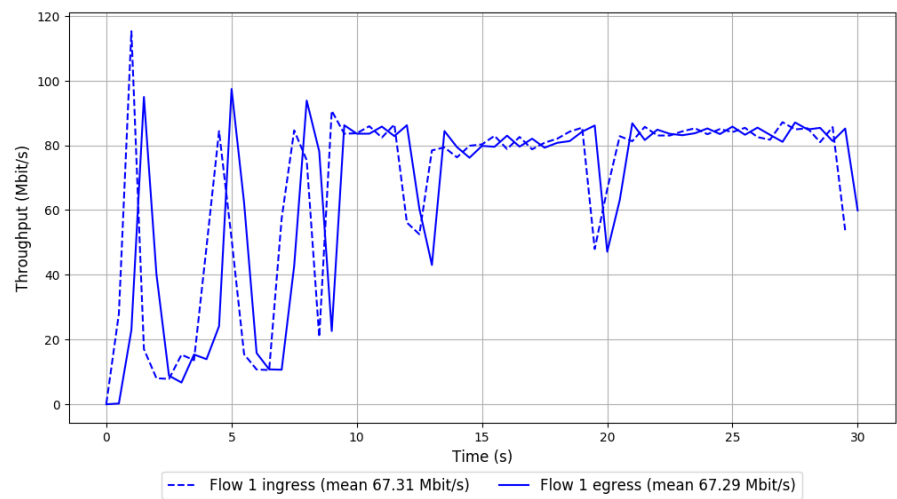
-- Flow 1:

Average throughput: 67.29 Mbit/s

95th percentile per-packet one-way delay: 83.239 ms

Loss rate: 0.03%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-10 23:41:57

End at: 2018-09-10 23:42:27

Local clock offset: 7.05 ms

Remote clock offset: 6.2 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.89 Mbit/s

95th percentile per-packet one-way delay: 105.128 ms

Loss rate: 0.06%

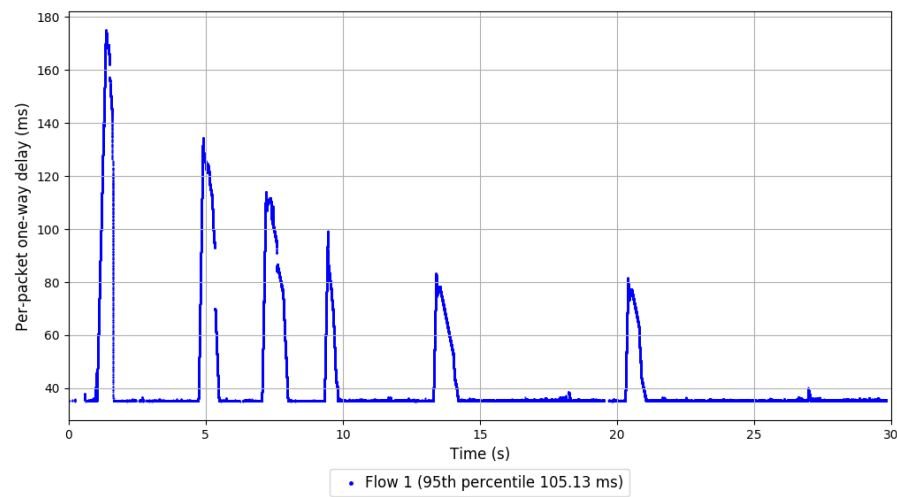
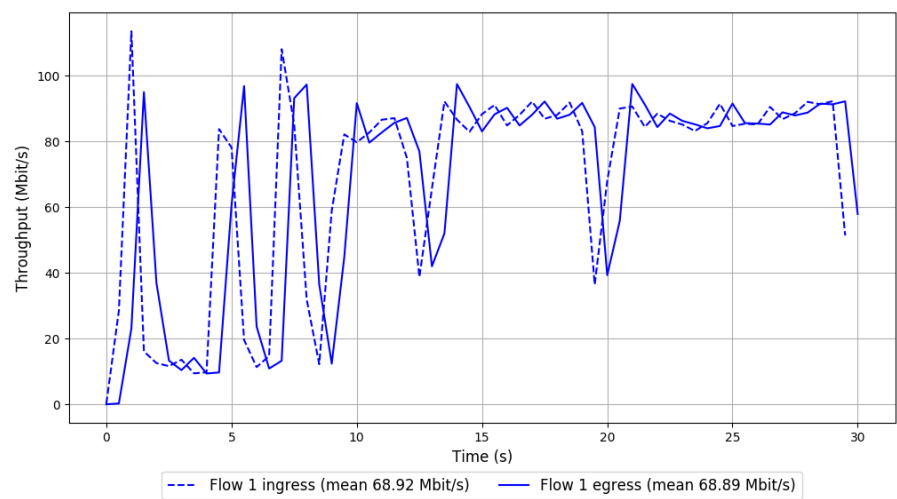
-- Flow 1:

Average throughput: 68.89 Mbit/s

95th percentile per-packet one-way delay: 105.128 ms

Loss rate: 0.06%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-11 00:03:35

End at: 2018-09-11 00:04:05

Local clock offset: 7.235 ms

Remote clock offset: 7.114 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.79 Mbit/s

95th percentile per-packet one-way delay: 105.020 ms

Loss rate: 0.09%

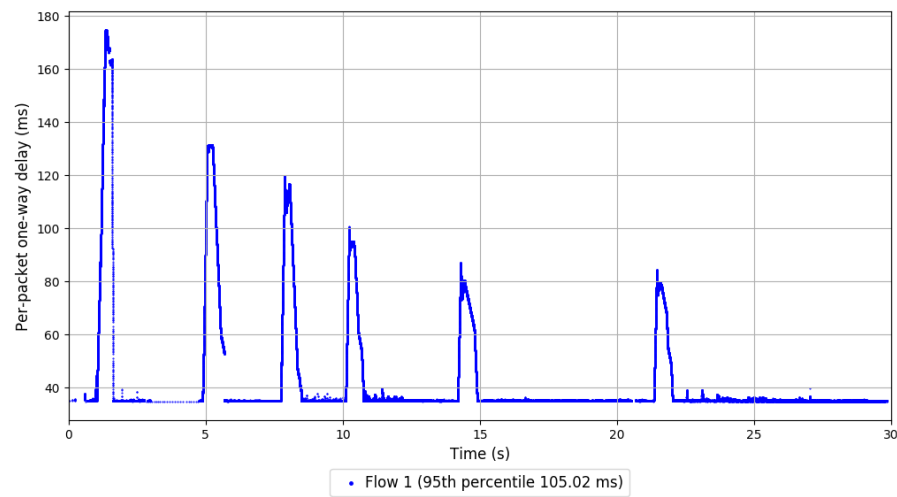
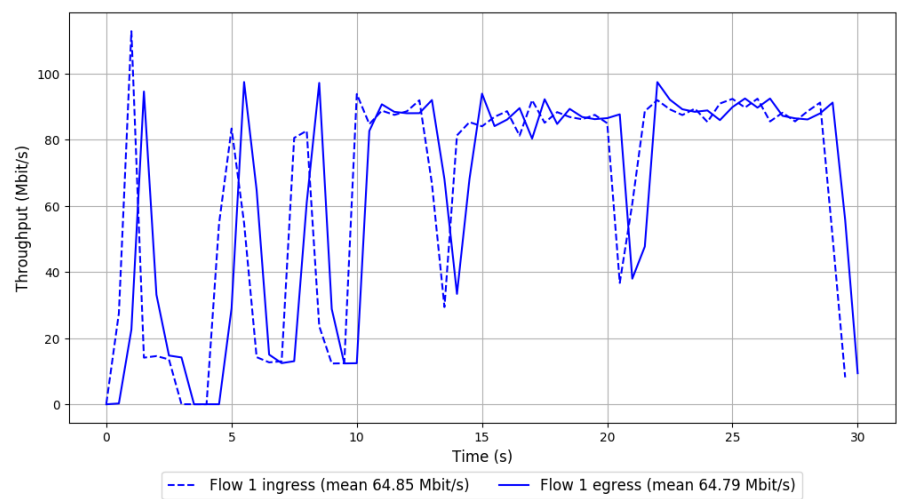
-- Flow 1:

Average throughput: 64.79 Mbit/s

95th percentile per-packet one-way delay: 105.020 ms

Loss rate: 0.09%

Run 5: Report of QUIC Cubic — Data Link

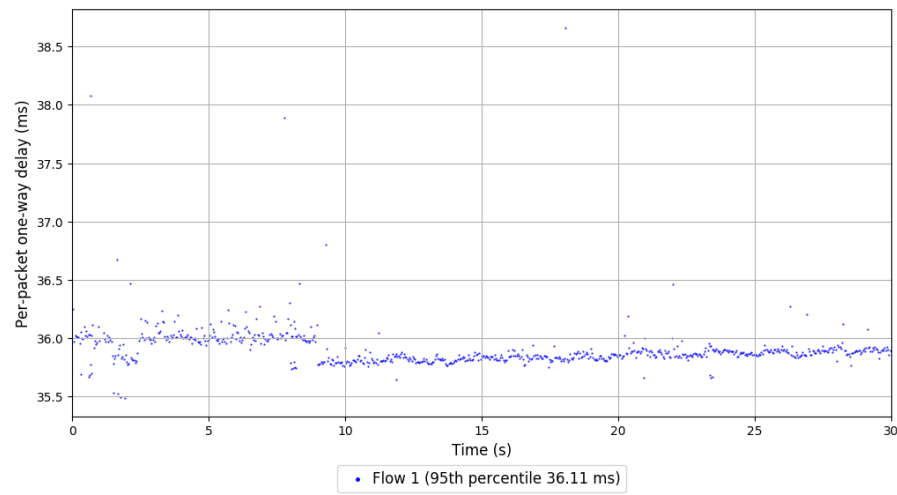
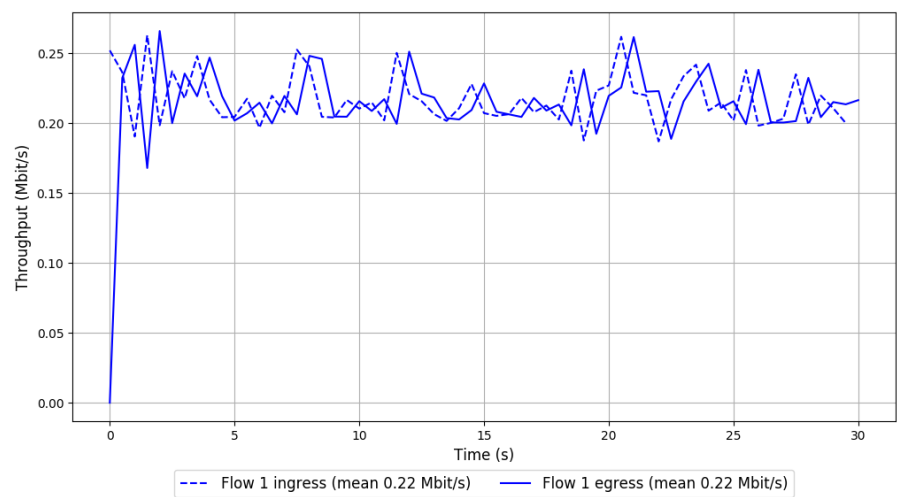


```
Run 1: Statistics of SCReAM

Start at: 2018-09-10 22:44:18
End at: 2018-09-10 22:44:48
Local clock offset: 7.787 ms
Remote clock offset: 7.117 ms

# Below is generated by plot.py at 2018-09-11 00:27:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 36.108 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 36.108 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-10 23:05:59

End at: 2018-09-10 23:06:29

Local clock offset: 6.661 ms

Remote clock offset: 6.204 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.914 ms

Loss rate: 0.00%

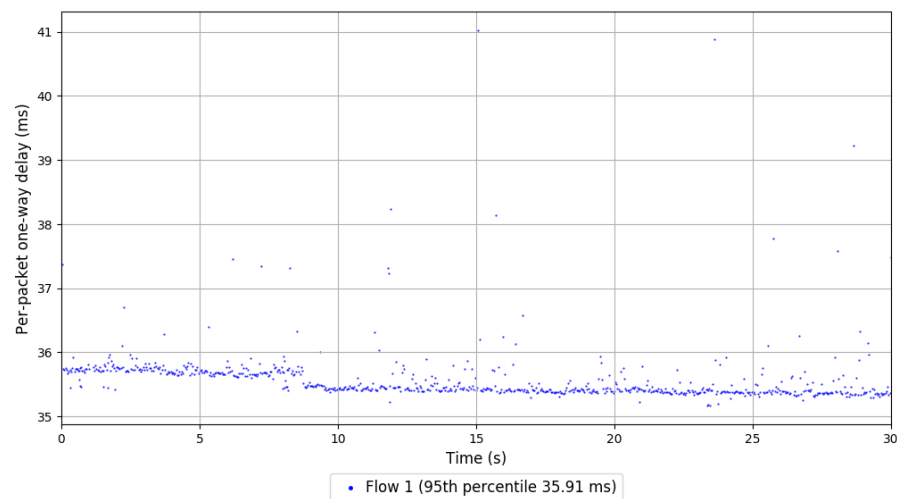
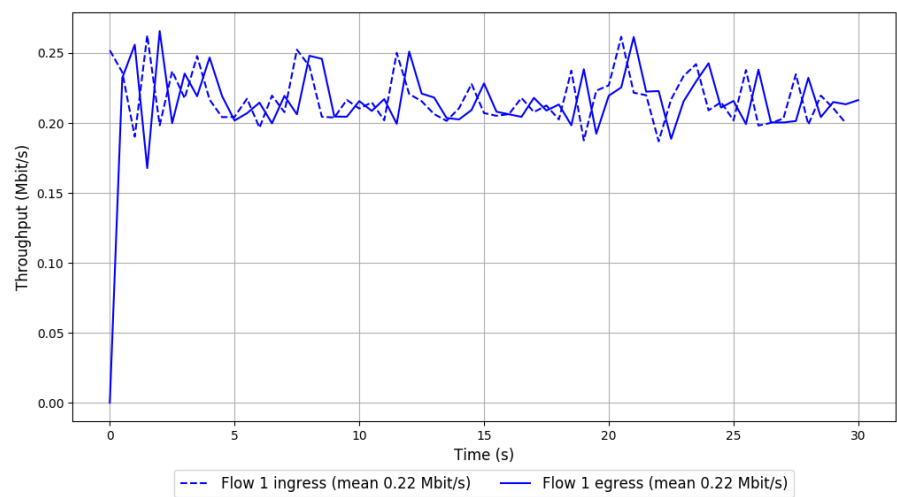
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.914 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-10 23:27:33

End at: 2018-09-10 23:28:03

Local clock offset: 4.641 ms

Remote clock offset: 6.03 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.801 ms

Loss rate: 0.00%

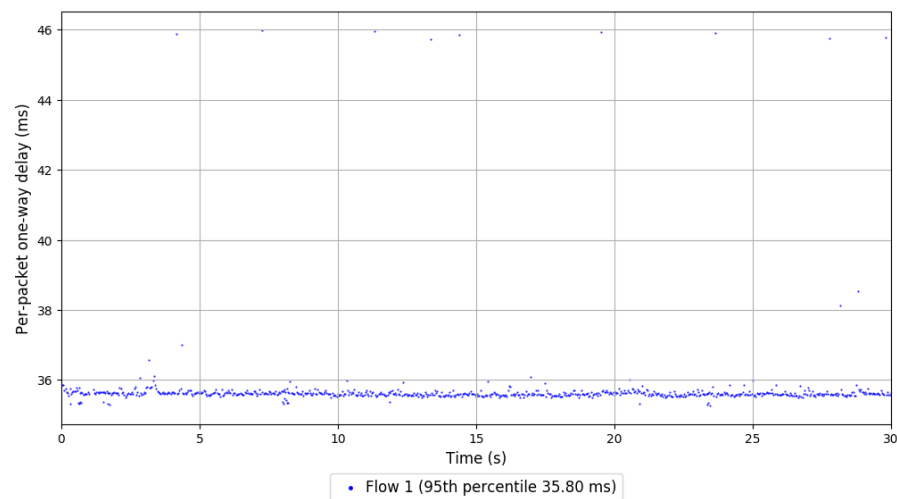
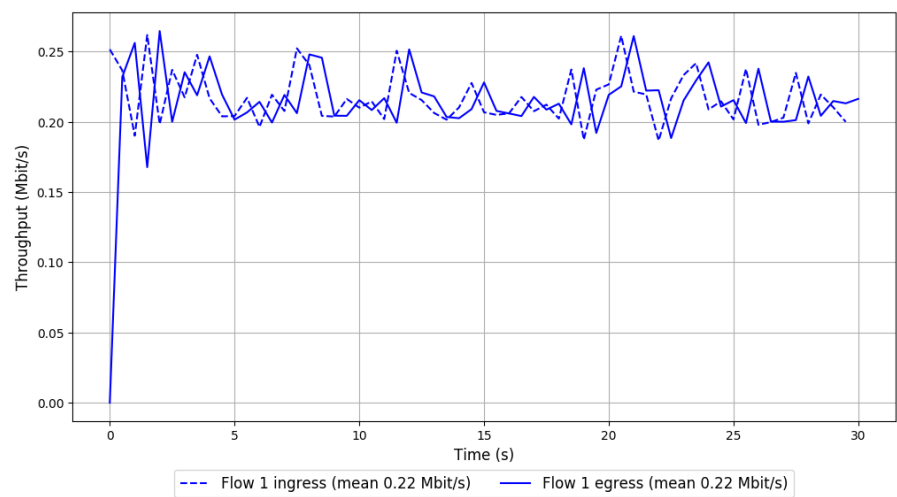
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.801 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-10 23:49:12

End at: 2018-09-10 23:49:42

Local clock offset: 7.856 ms

Remote clock offset: 6.577 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.272 ms

Loss rate: 0.00%

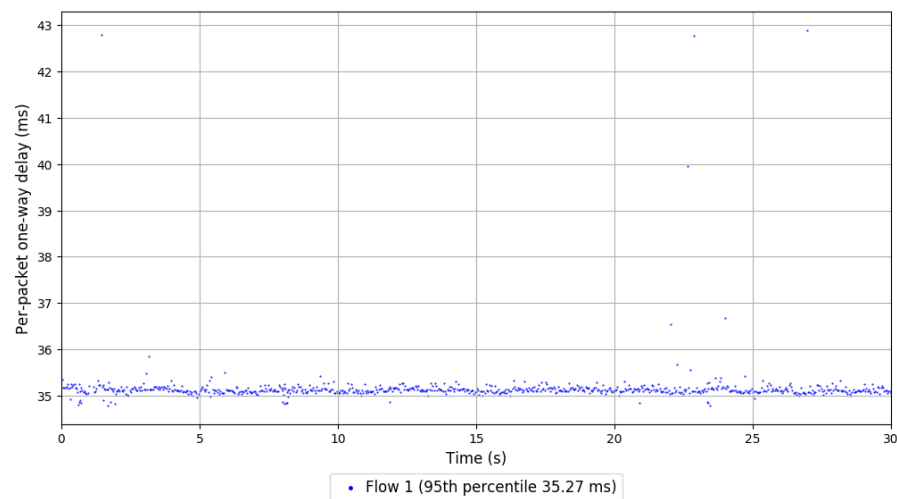
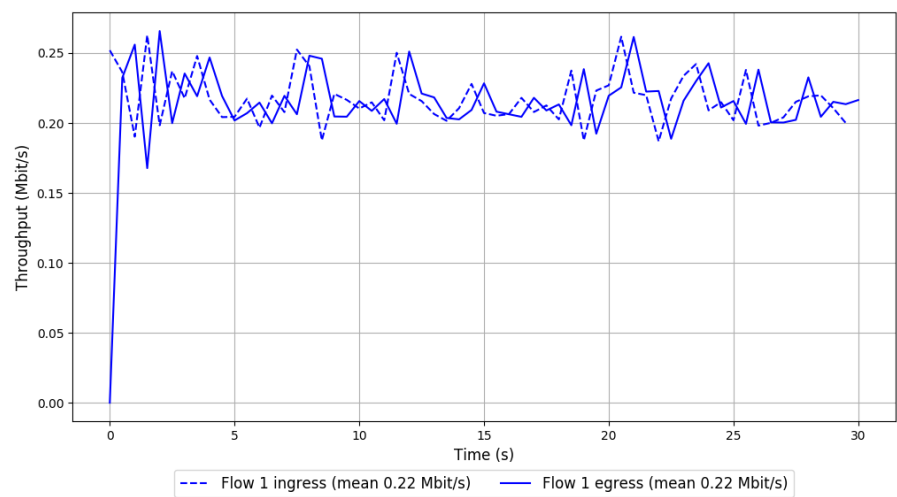
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.272 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-11 00:10:48

End at: 2018-09-11 00:11:19

Local clock offset: 6.598 ms

Remote clock offset: 6.945 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.123 ms

Loss rate: 0.00%

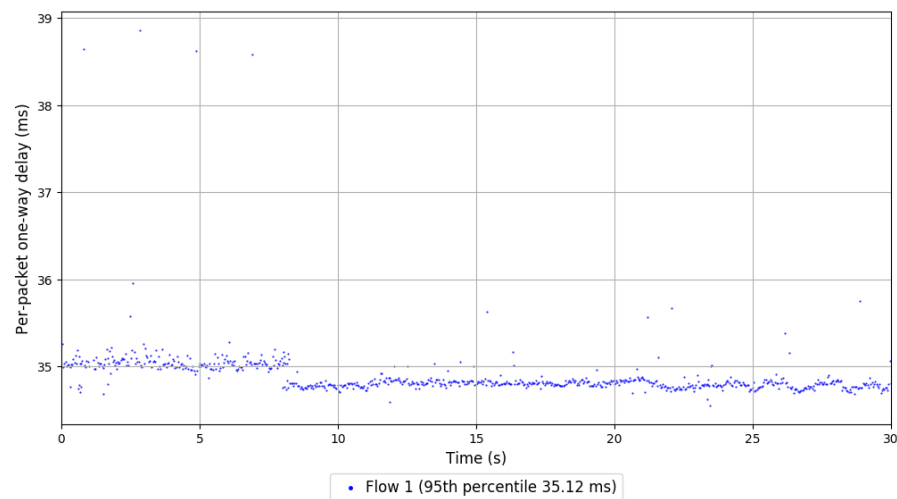
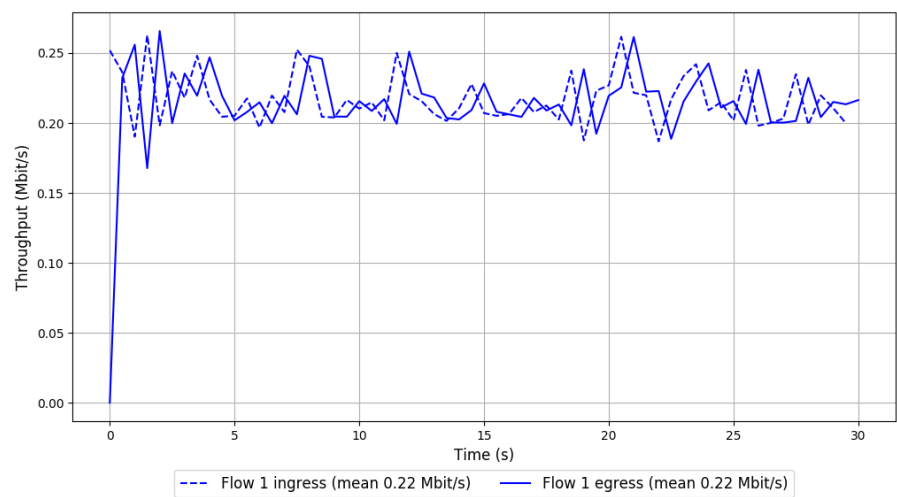
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 35.123 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-10 22:52:44

End at: 2018-09-10 22:53:14

Local clock offset: 9.52 ms

Remote clock offset: 6.155 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.93 Mbit/s

95th percentile per-packet one-way delay: 41.003 ms

Loss rate: 0.00%

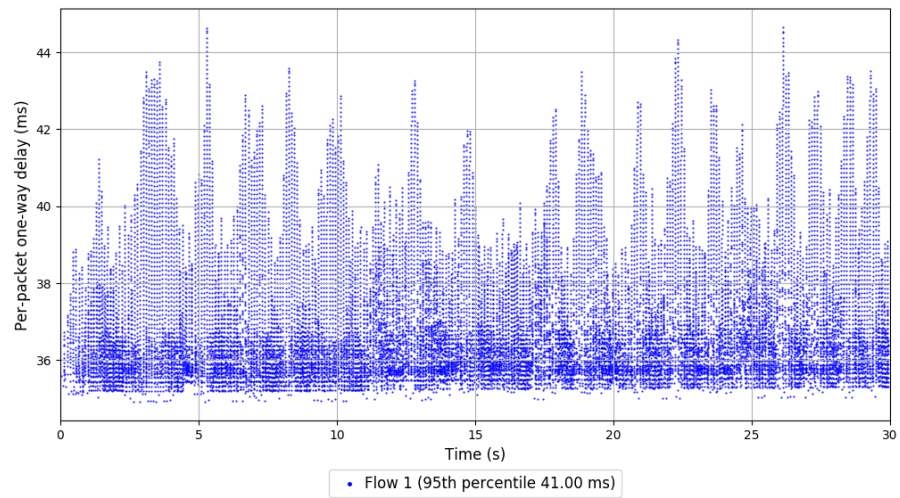
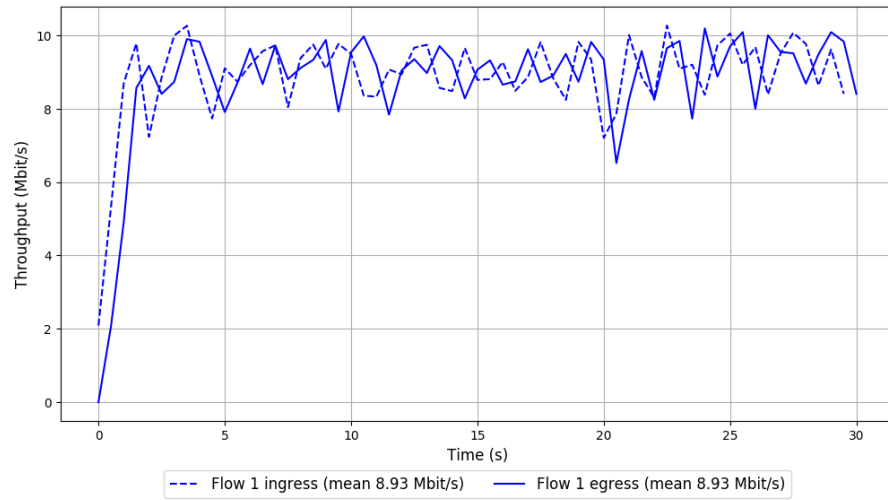
-- Flow 1:

Average throughput: 8.93 Mbit/s

95th percentile per-packet one-way delay: 41.003 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-09-10 23:14:26

End at: 2018-09-10 23:14:56

Local clock offset: 5.105 ms

Remote clock offset: 5.903 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.82 Mbit/s

95th percentile per-packet one-way delay: 40.498 ms

Loss rate: 0.00%

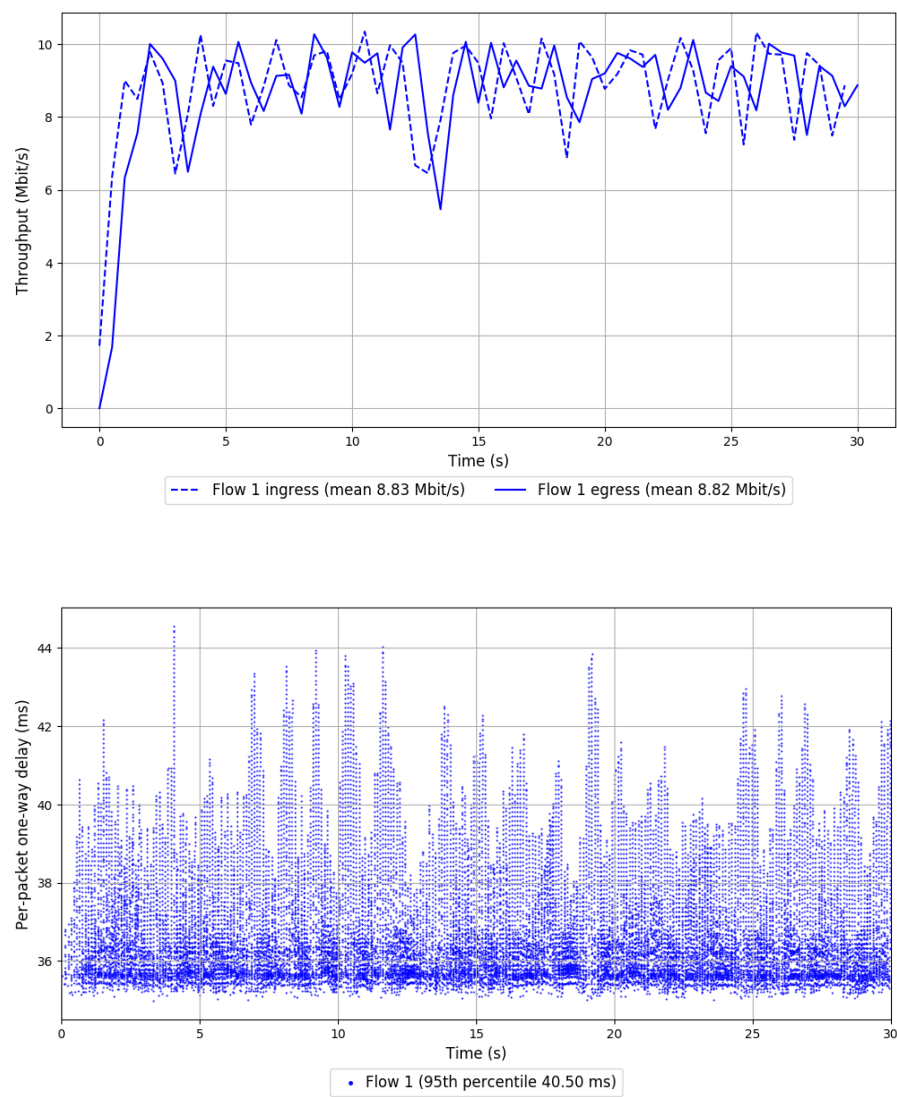
-- Flow 1:

Average throughput: 8.82 Mbit/s

95th percentile per-packet one-way delay: 40.498 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-09-10 23:35:56

End at: 2018-09-10 23:36:26

Local clock offset: 6.25 ms

Remote clock offset: 6.245 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.01 Mbit/s

95th percentile per-packet one-way delay: 41.935 ms

Loss rate: 0.00%

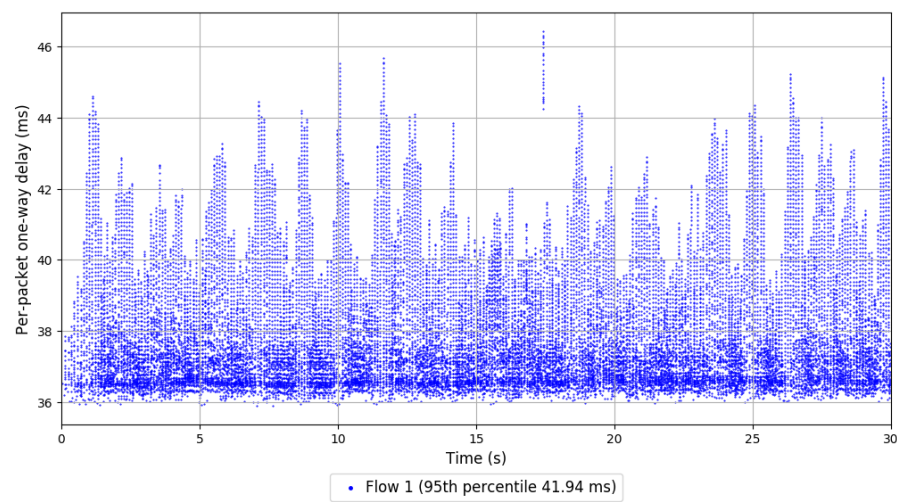
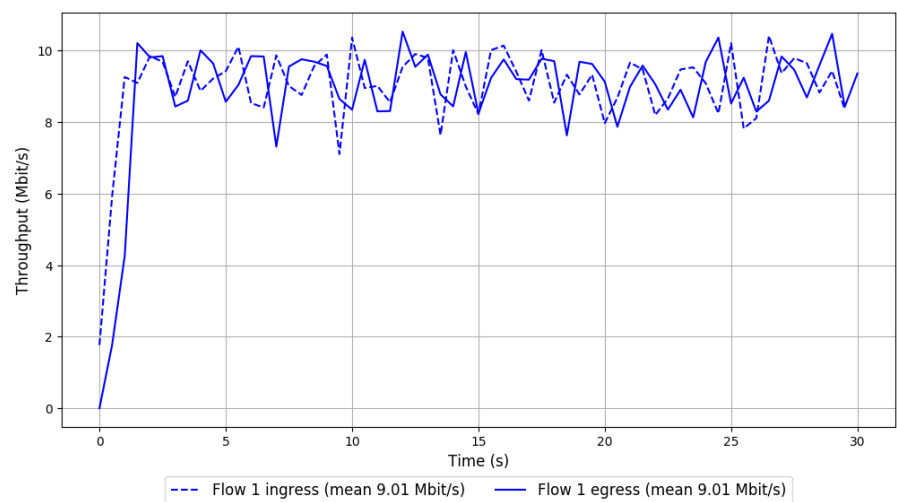
-- Flow 1:

Average throughput: 9.01 Mbit/s

95th percentile per-packet one-way delay: 41.935 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-09-10 23:57:32

End at: 2018-09-10 23:58:02

Local clock offset: 8.115 ms

Remote clock offset: 6.996 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.97 Mbit/s

95th percentile per-packet one-way delay: 40.706 ms

Loss rate: 0.00%

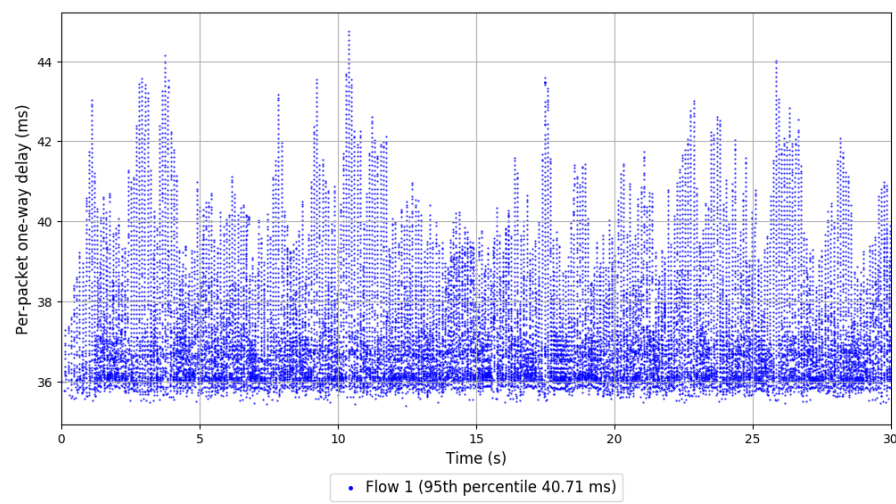
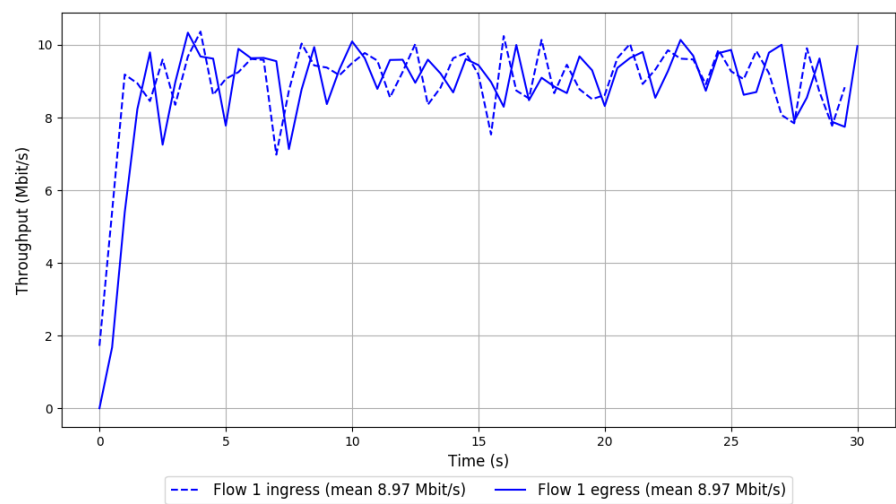
-- Flow 1:

Average throughput: 8.97 Mbit/s

95th percentile per-packet one-way delay: 40.706 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-09-11 00:19:12

End at: 2018-09-11 00:19:42

Local clock offset: 6.256 ms

Remote clock offset: 7.483 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.03 Mbit/s

95th percentile per-packet one-way delay: 40.228 ms

Loss rate: 0.00%

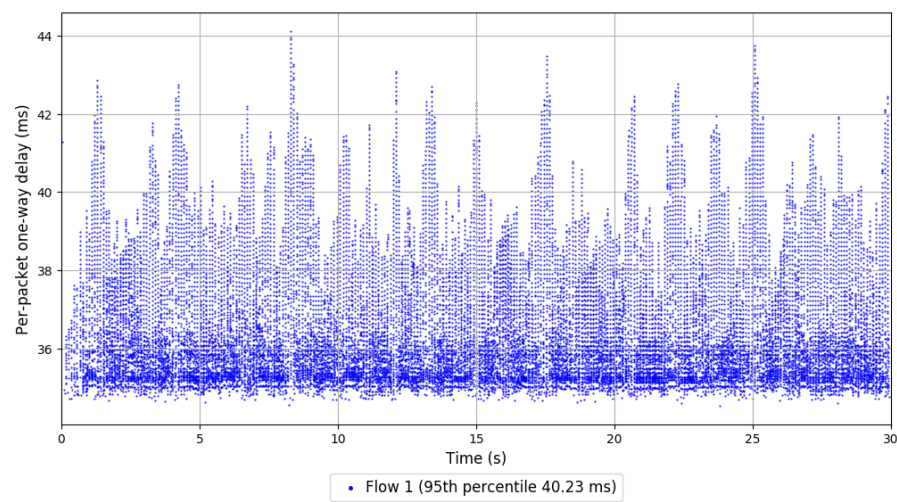
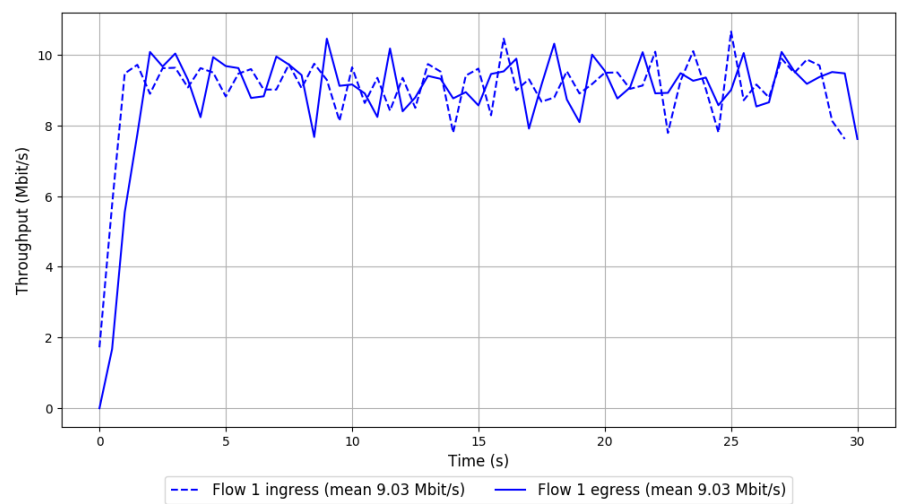
-- Flow 1:

Average throughput: 9.03 Mbit/s

95th percentile per-packet one-way delay: 40.228 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-10 22:41:52

End at: 2018-09-10 22:42:22

Local clock offset: 6.997 ms

Remote clock offset: 6.916 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.77 Mbit/s

95th percentile per-packet one-way delay: 40.170 ms

Loss rate: 60.70%

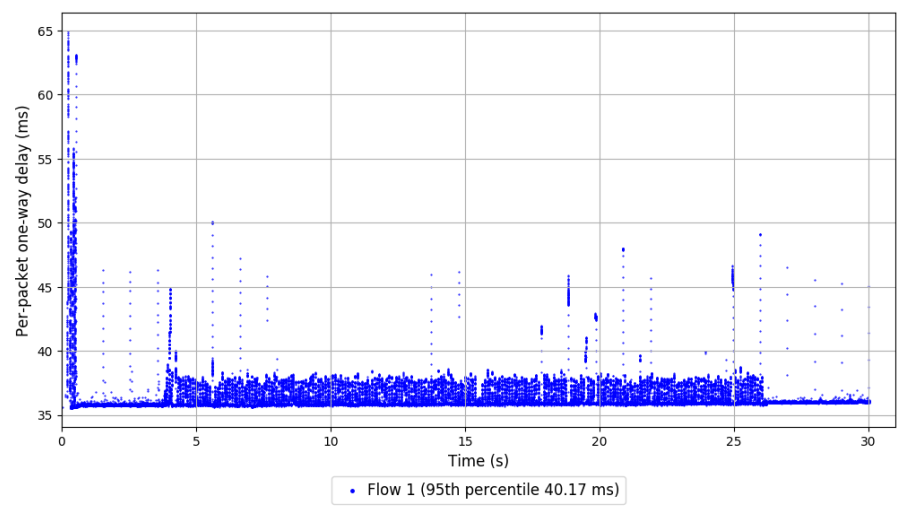
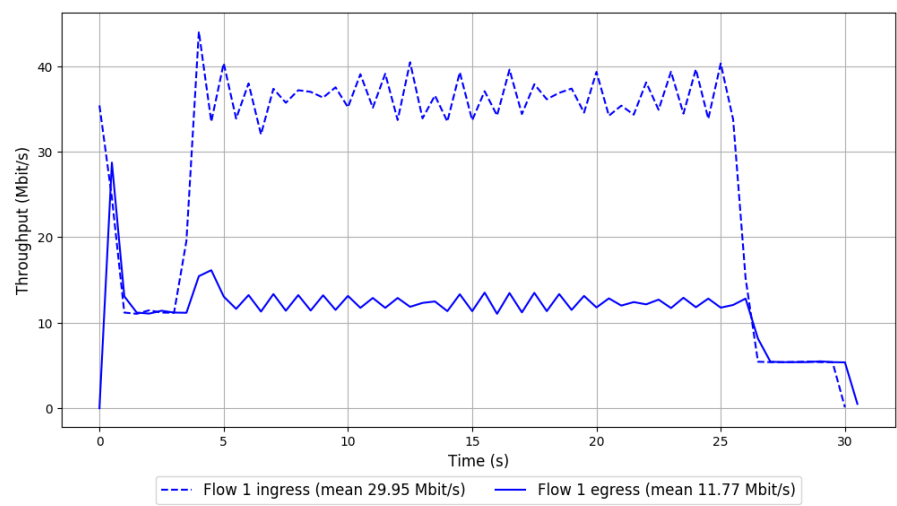
-- Flow 1:

Average throughput: 11.77 Mbit/s

95th percentile per-packet one-way delay: 40.170 ms

Loss rate: 60.70%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-10 23:03:33

End at: 2018-09-10 23:04:04

Local clock offset: 7.43 ms

Remote clock offset: 6.812 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.48 Mbit/s

95th percentile per-packet one-way delay: 39.895 ms

Loss rate: 82.09%

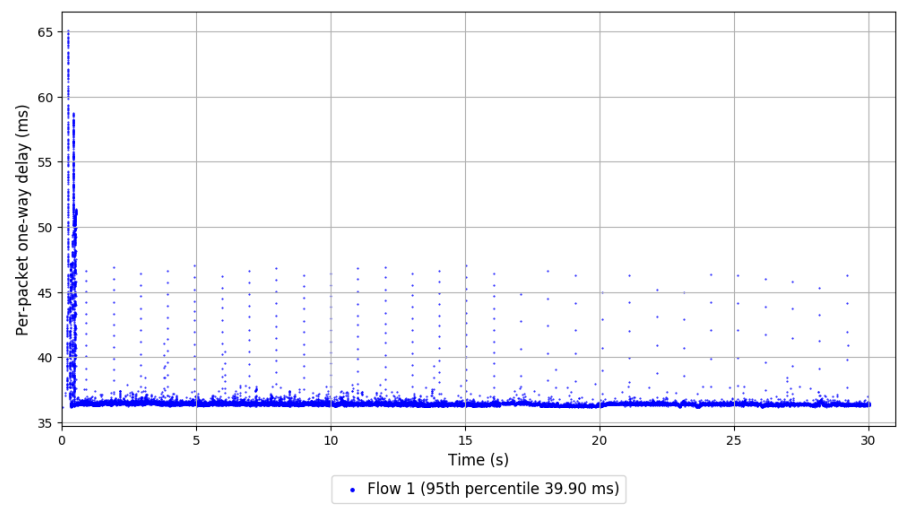
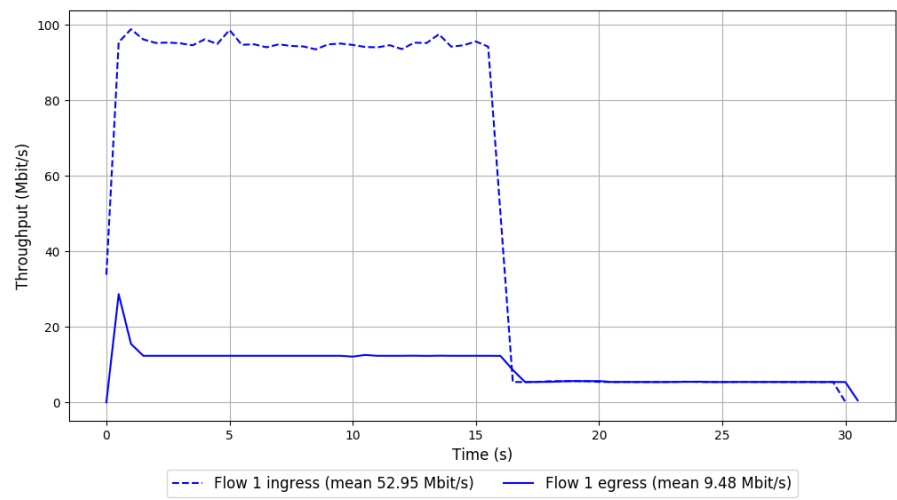
-- Flow 1:

Average throughput: 9.48 Mbit/s

95th percentile per-packet one-way delay: 39.895 ms

Loss rate: 82.09%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-10 23:25:08

End at: 2018-09-10 23:25:38

Local clock offset: 4.671 ms

Remote clock offset: 5.907 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.20 Mbit/s

95th percentile per-packet one-way delay: 48.198 ms

Loss rate: 6.07%

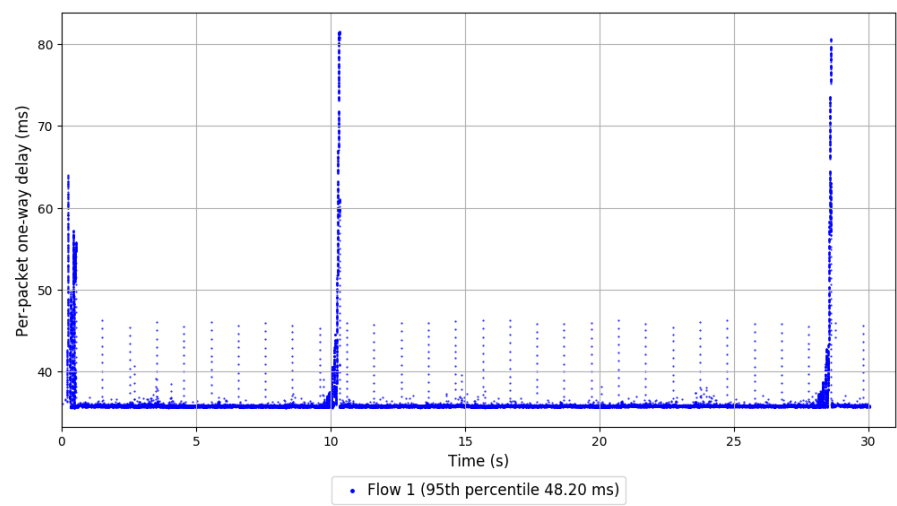
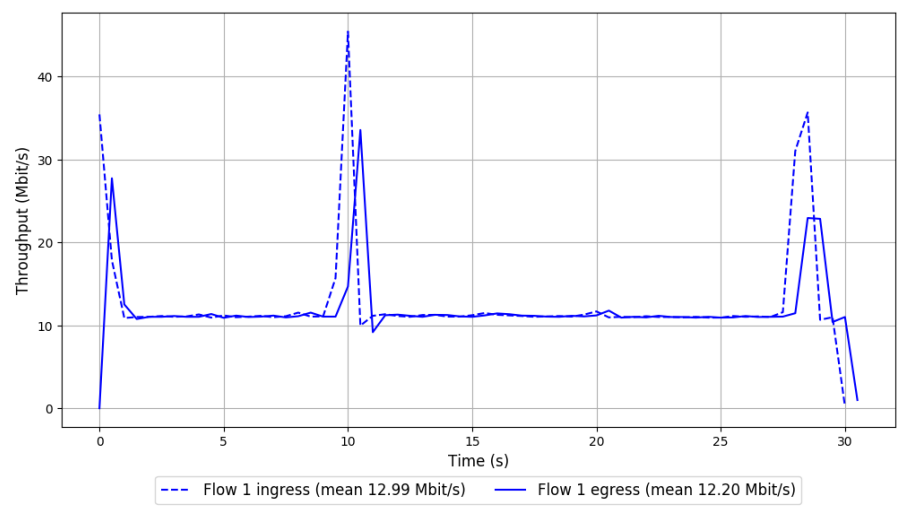
-- Flow 1:

Average throughput: 12.20 Mbit/s

95th percentile per-packet one-way delay: 48.198 ms

Loss rate: 6.07%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-10 23:46:46

End at: 2018-09-10 23:47:16

Local clock offset: 7.543 ms

Remote clock offset: 6.651 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.61 Mbit/s

95th percentile per-packet one-way delay: 37.819 ms

Loss rate: 66.83%

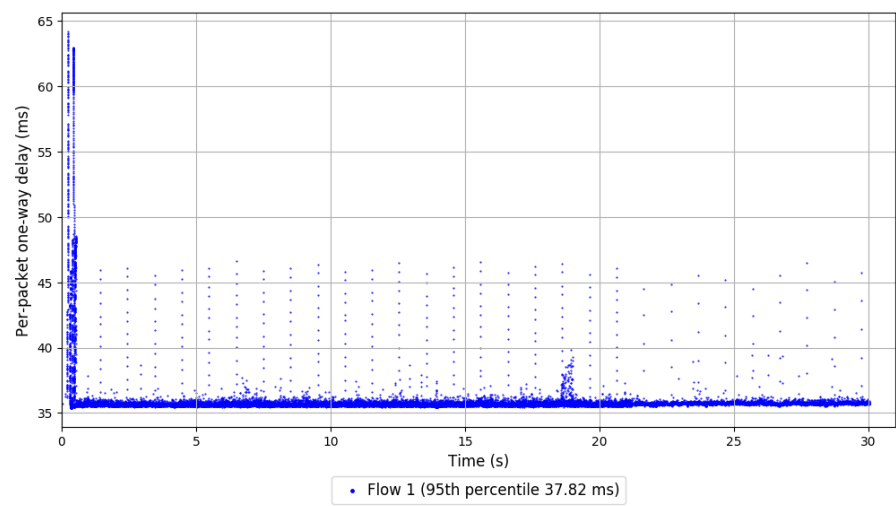
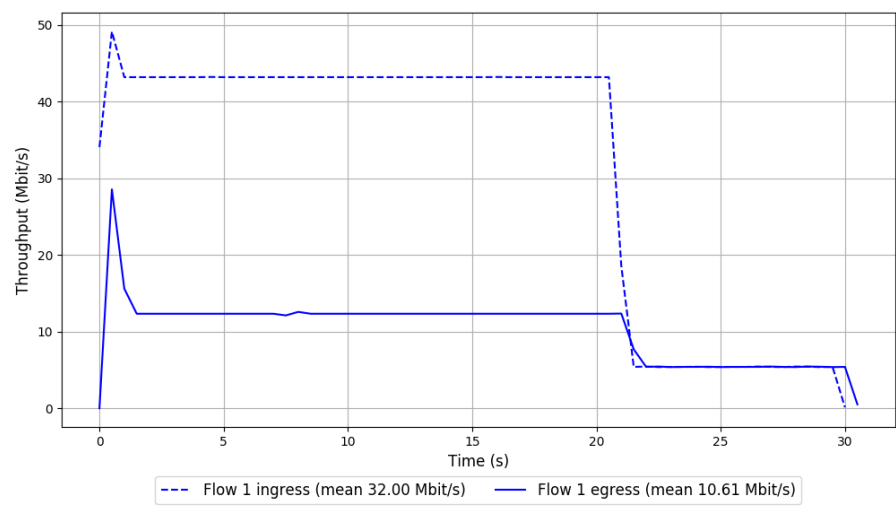
-- Flow 1:

Average throughput: 10.61 Mbit/s

95th percentile per-packet one-way delay: 37.819 ms

Loss rate: 66.83%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-11 00:08:24

End at: 2018-09-11 00:08:54

Local clock offset: 6.425 ms

Remote clock offset: 7.547 ms

Below is generated by plot.py at 2018-09-11 00:27:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.35 Mbit/s

95th percentile per-packet one-way delay: 40.631 ms

Loss rate: 47.26%

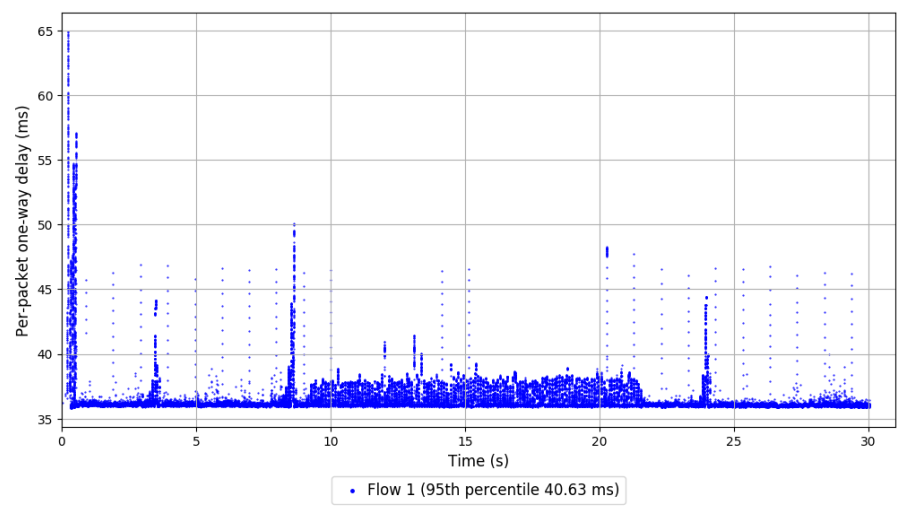
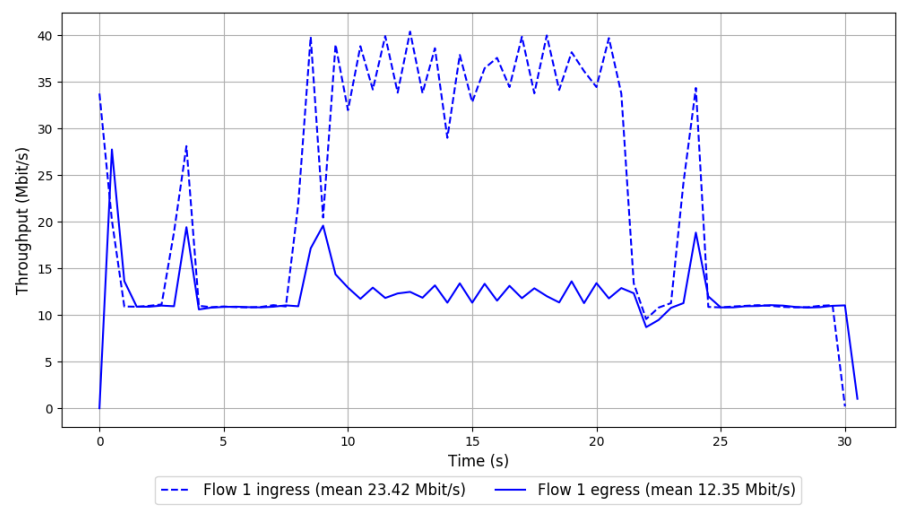
-- Flow 1:

Average throughput: 12.35 Mbit/s

95th percentile per-packet one-way delay: 40.631 ms

Loss rate: 47.26%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-09-10 22:33:27

End at: 2018-09-10 22:33:58

Local clock offset: 3.83 ms

Remote clock offset: 8.838 ms

Below is generated by plot.py at 2018-09-11 00:28:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.70 Mbit/s

95th percentile per-packet one-way delay: 37.345 ms

Loss rate: 0.79%

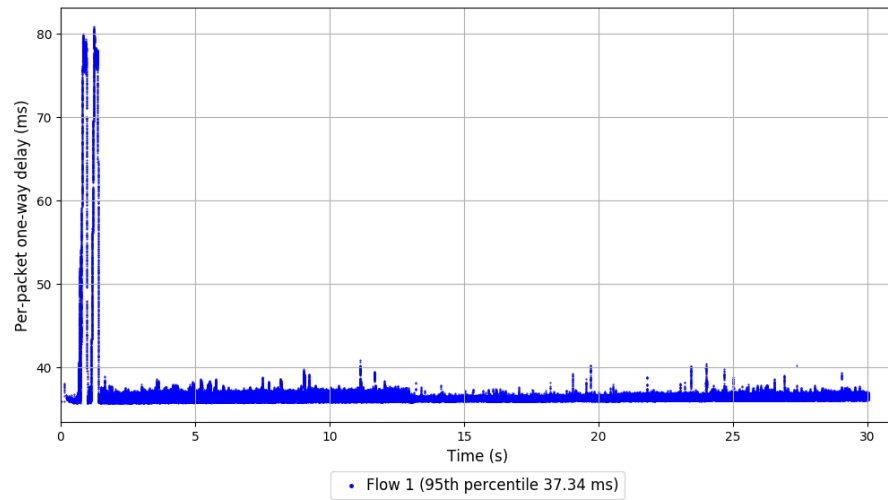
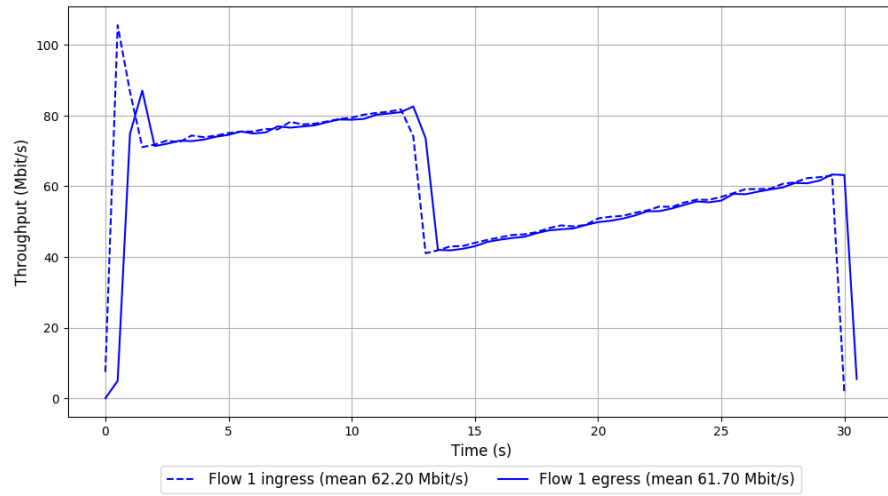
-- Flow 1:

Average throughput: 61.70 Mbit/s

95th percentile per-packet one-way delay: 37.345 ms

Loss rate: 0.79%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-10 22:55:07

End at: 2018-09-10 22:55:37

Local clock offset: 9.779 ms

Remote clock offset: 5.935 ms

Below is generated by plot.py at 2018-09-11 00:28:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.81 Mbit/s

95th percentile per-packet one-way delay: 36.883 ms

Loss rate: 0.65%

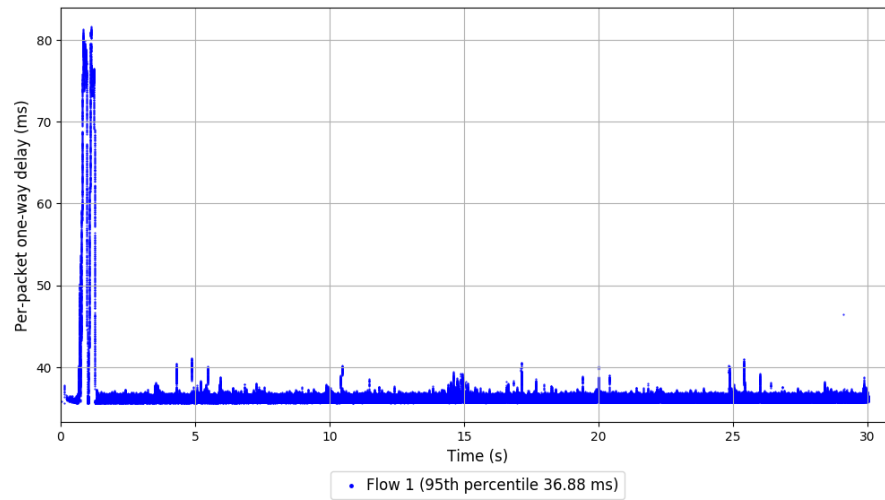
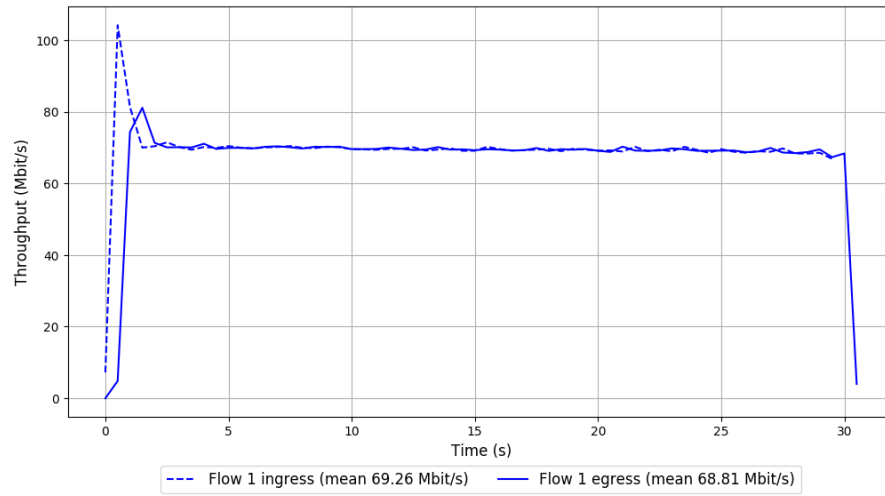
-- Flow 1:

Average throughput: 68.81 Mbit/s

95th percentile per-packet one-way delay: 36.883 ms

Loss rate: 0.65%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-10 23:16:47

End at: 2018-09-10 23:17:17

Local clock offset: 4.909 ms

Remote clock offset: 5.559 ms

Below is generated by plot.py at 2018-09-11 00:28:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.67 Mbit/s

95th percentile per-packet one-way delay: 36.875 ms

Loss rate: 0.31%

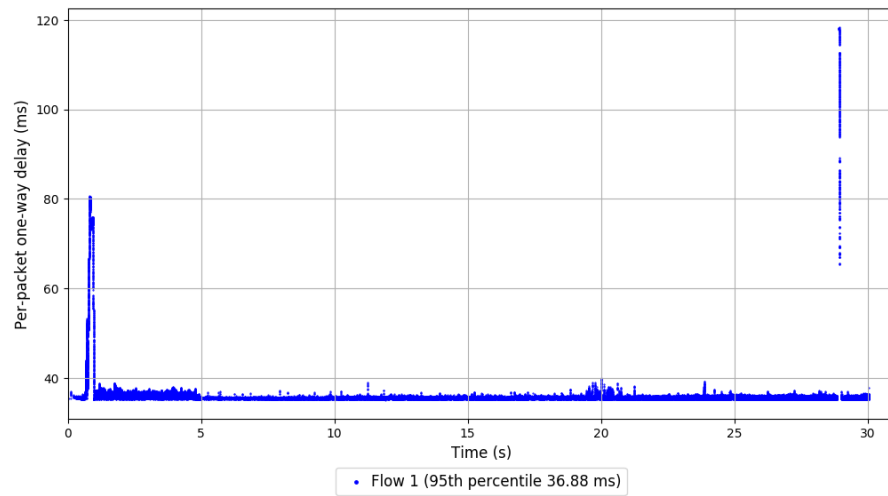
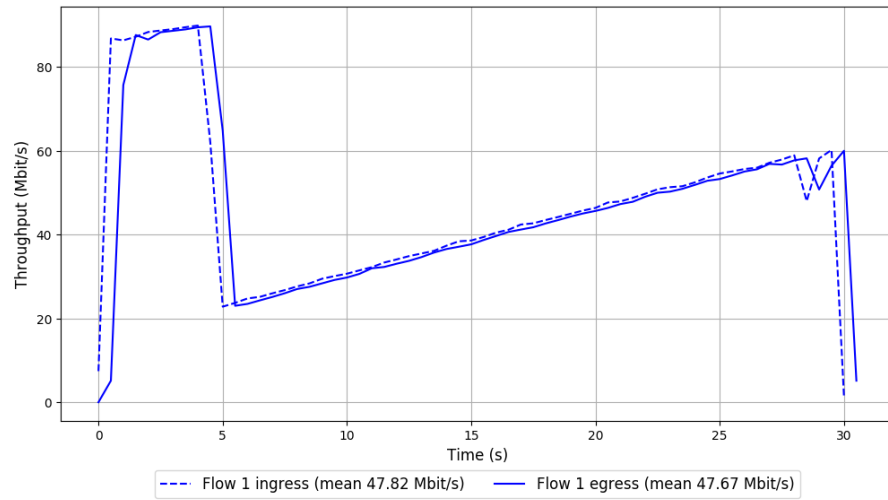
-- Flow 1:

Average throughput: 47.67 Mbit/s

95th percentile per-packet one-way delay: 36.875 ms

Loss rate: 0.31%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-10 23:38:18

End at: 2018-09-10 23:38:48

Local clock offset: 6.628 ms

Remote clock offset: 5.853 ms

Below is generated by plot.py at 2018-09-11 00:28:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 47.00 Mbit/s

95th percentile per-packet one-way delay: 37.926 ms

Loss rate: 0.09%

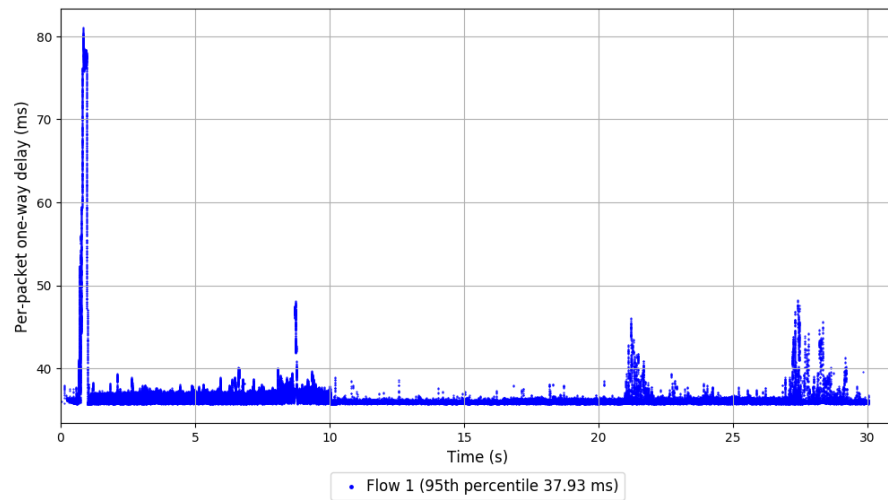
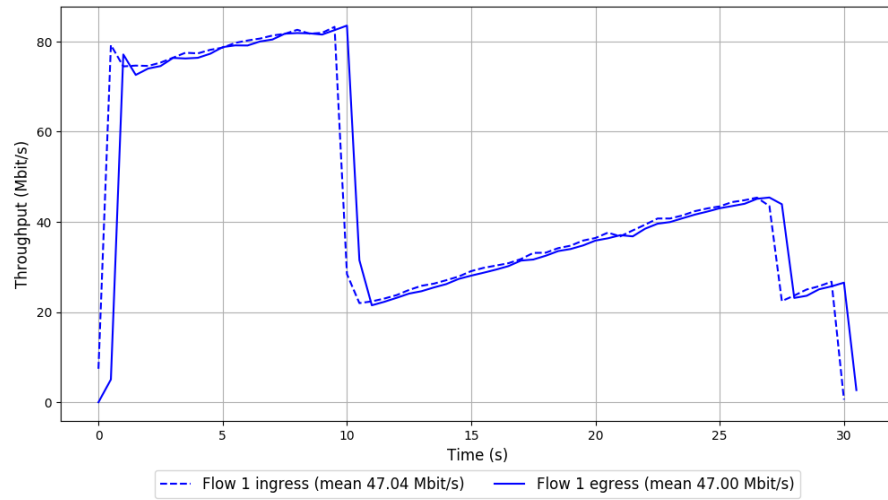
-- Flow 1:

Average throughput: 47.00 Mbit/s

95th percentile per-packet one-way delay: 37.926 ms

Loss rate: 0.09%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-10 23:59:54

End at: 2018-09-11 00:00:24

Local clock offset: 7.767 ms

Remote clock offset: 7.091 ms

Below is generated by plot.py at 2018-09-11 00:28:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.28 Mbit/s

95th percentile per-packet one-way delay: 36.642 ms

Loss rate: 0.75%

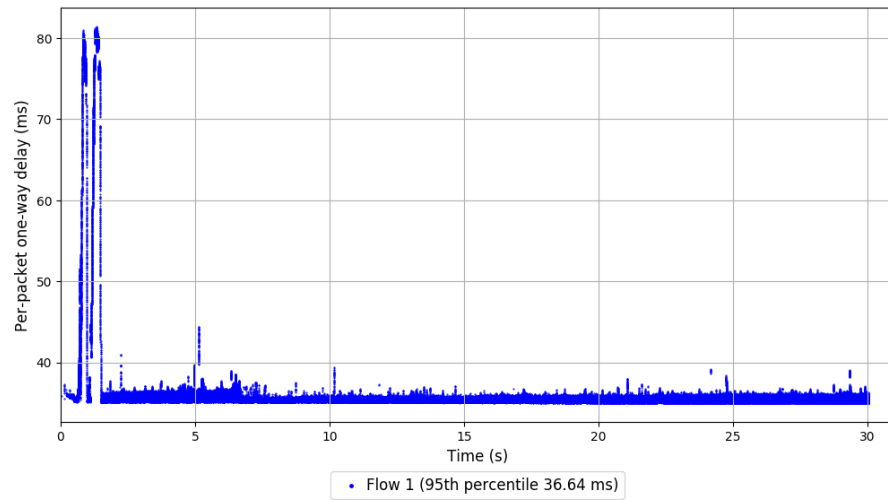
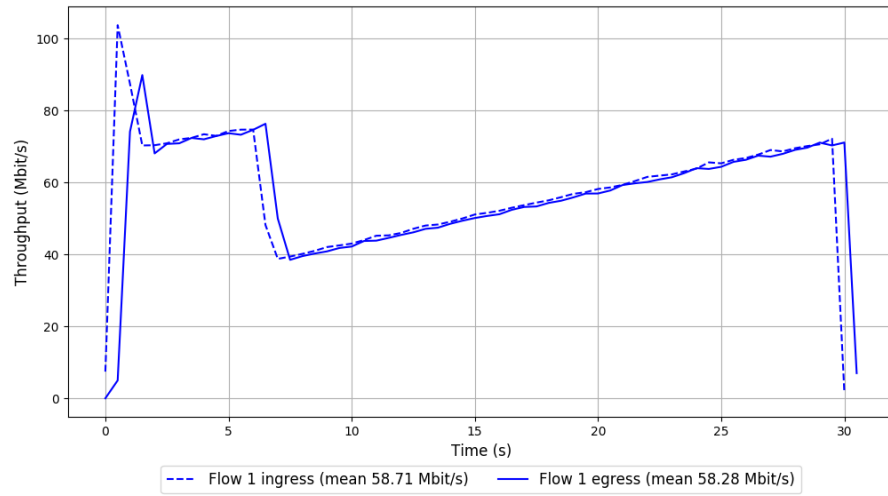
-- Flow 1:

Average throughput: 58.28 Mbit/s

95th percentile per-packet one-way delay: 36.642 ms

Loss rate: 0.75%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-10 22:50:17

End at: 2018-09-10 22:50:47

Local clock offset: 9.04 ms

Remote clock offset: 6.129 ms

Below is generated by plot.py at 2018-09-11 00:28:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.30 Mbit/s

95th percentile per-packet one-way delay: 177.642 ms

Loss rate: 10.75%

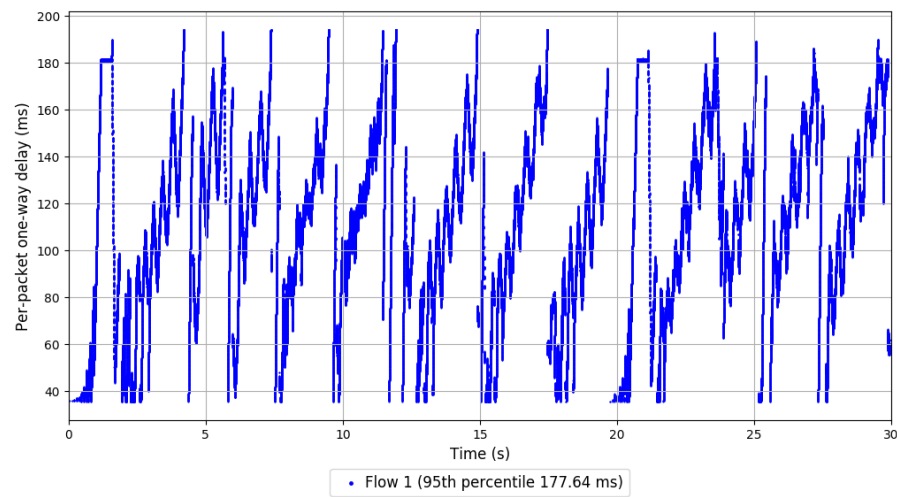
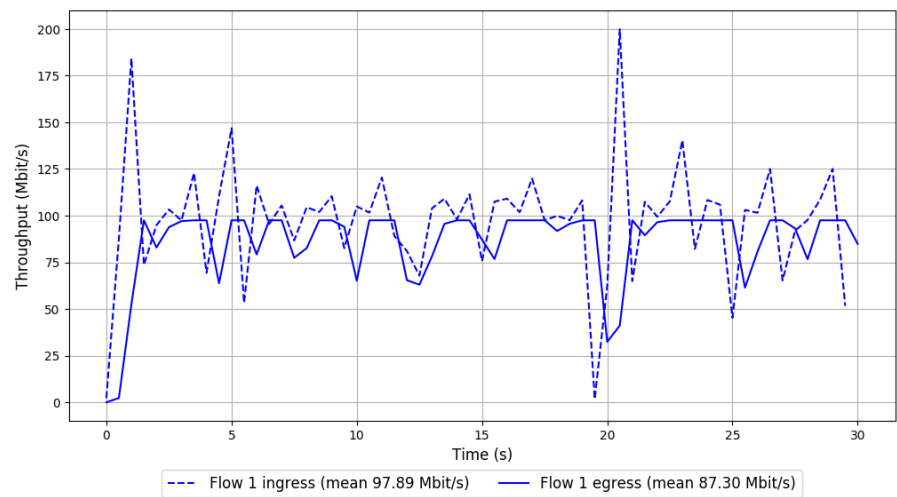
-- Flow 1:

Average throughput: 87.30 Mbit/s

95th percentile per-packet one-way delay: 177.642 ms

Loss rate: 10.75%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-10 23:11:59

End at: 2018-09-10 23:12:29

Local clock offset: 5.453 ms

Remote clock offset: 6.047 ms

Below is generated by plot.py at 2018-09-11 00:28:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.08 Mbit/s

95th percentile per-packet one-way delay: 178.490 ms

Loss rate: 12.29%

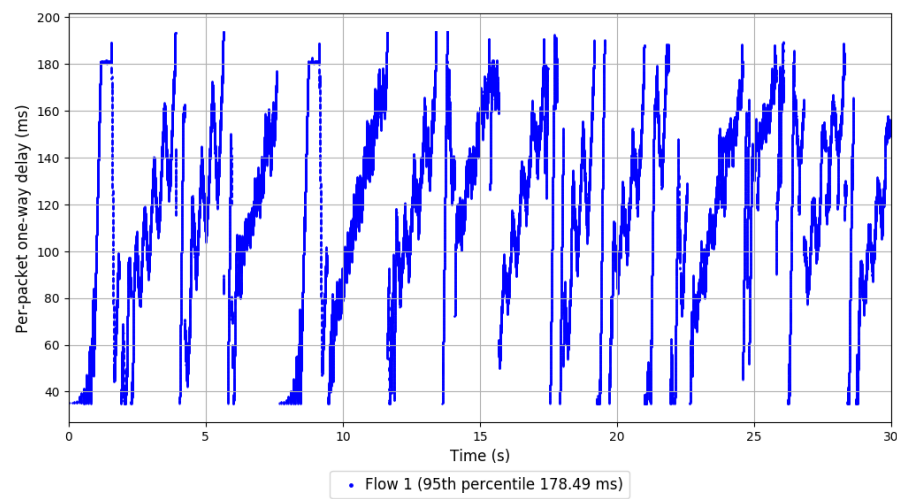
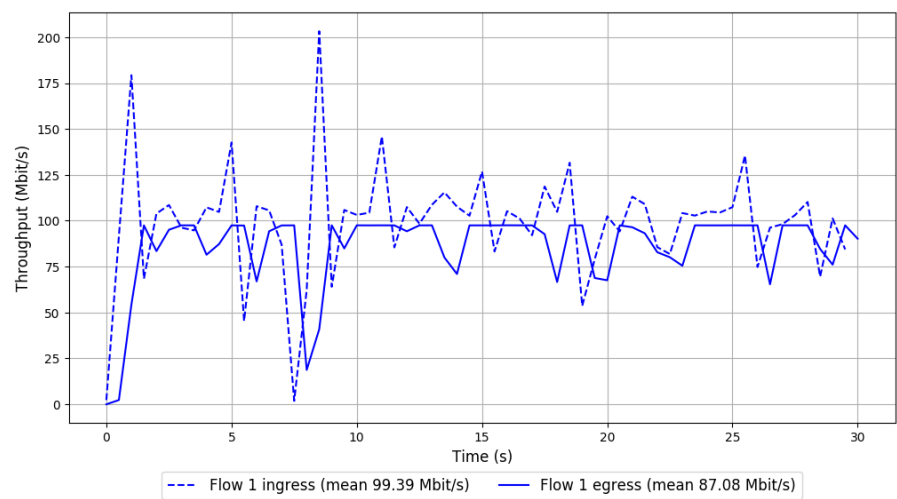
-- Flow 1:

Average throughput: 87.08 Mbit/s

95th percentile per-packet one-way delay: 178.490 ms

Loss rate: 12.29%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-10 23:33:30

End at: 2018-09-10 23:34:00

Local clock offset: 5.834 ms

Remote clock offset: 5.506 ms

Below is generated by plot.py at 2018-09-11 00:28:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 90.16 Mbit/s

95th percentile per-packet one-way delay: 179.064 ms

Loss rate: 11.95%

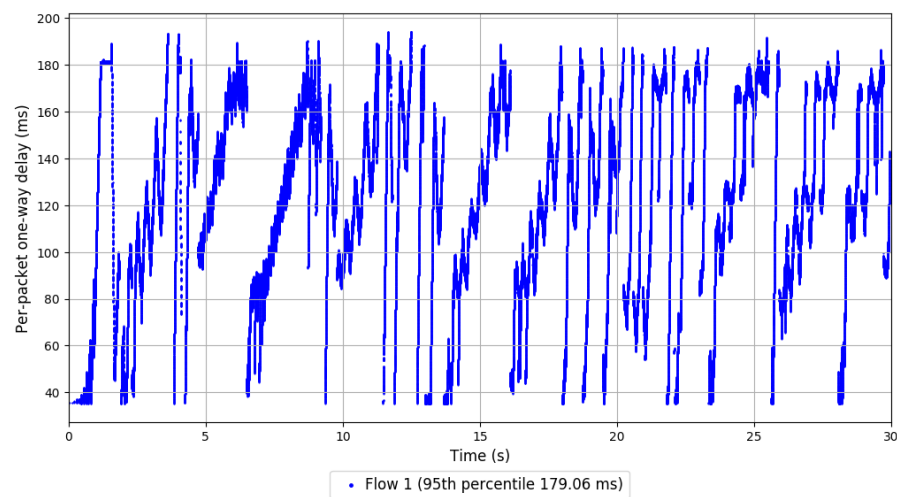
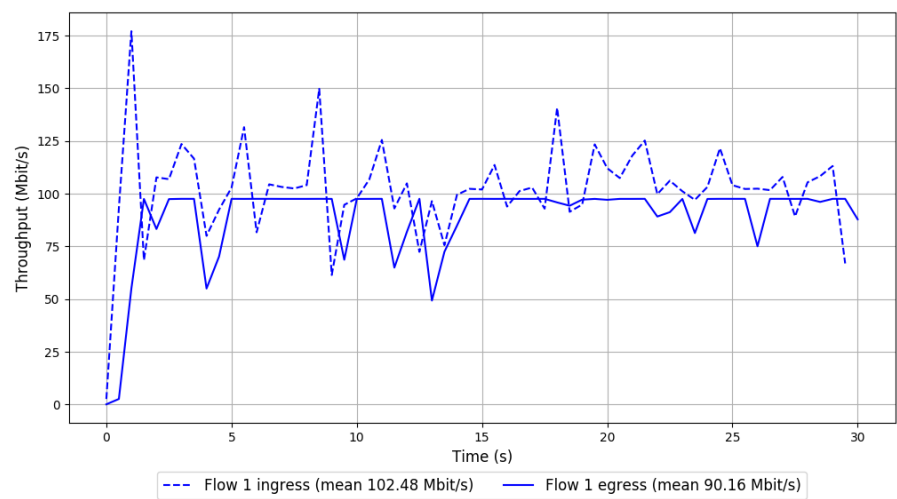
-- Flow 1:

Average throughput: 90.16 Mbit/s

95th percentile per-packet one-way delay: 179.064 ms

Loss rate: 11.95%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-10 23:55:07

End at: 2018-09-10 23:55:37

Local clock offset: 8.111 ms

Remote clock offset: 2.282 ms

Below is generated by plot.py at 2018-09-11 00:29:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.09 Mbit/s

95th percentile per-packet one-way delay: 176.355 ms

Loss rate: 12.00%

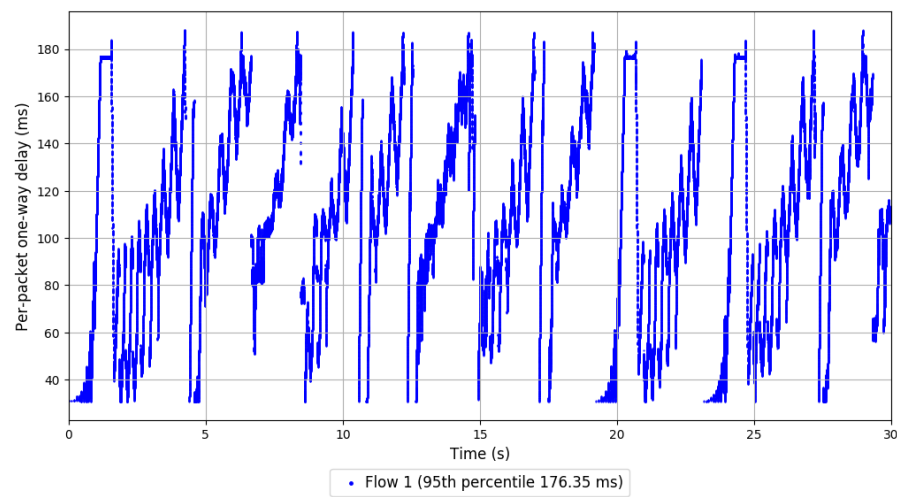
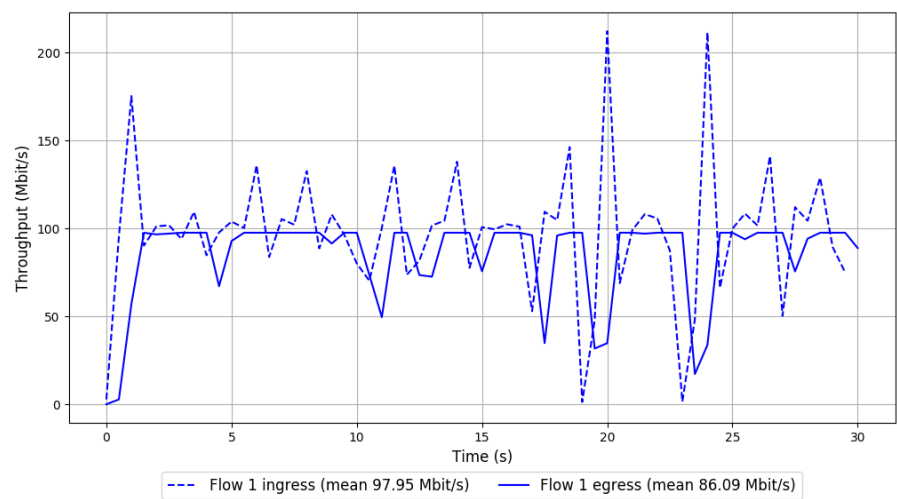
-- Flow 1:

Average throughput: 86.09 Mbit/s

95th percentile per-packet one-way delay: 176.355 ms

Loss rate: 12.00%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-11 00:16:45

End at: 2018-09-11 00:17:15

Local clock offset: 6.228 ms

Remote clock offset: 7.322 ms

Below is generated by plot.py at 2018-09-11 00:29:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 84.68 Mbit/s

95th percentile per-packet one-way delay: 179.064 ms

Loss rate: 10.19%

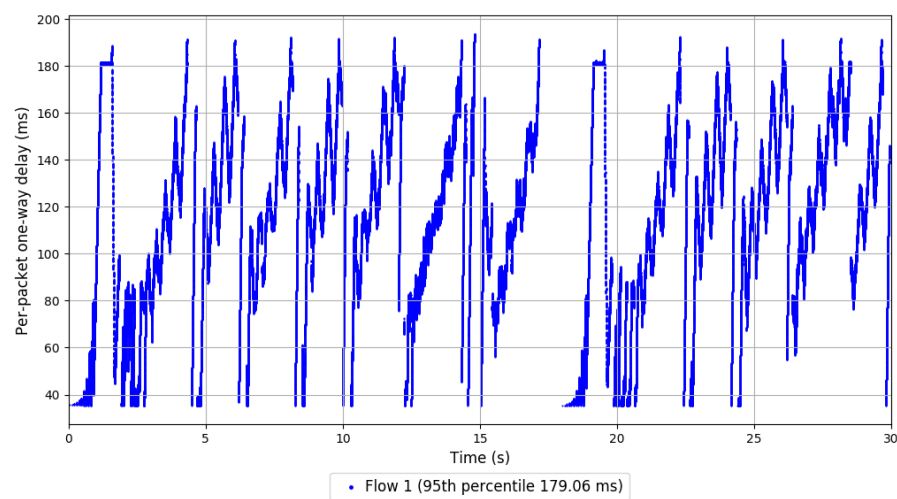
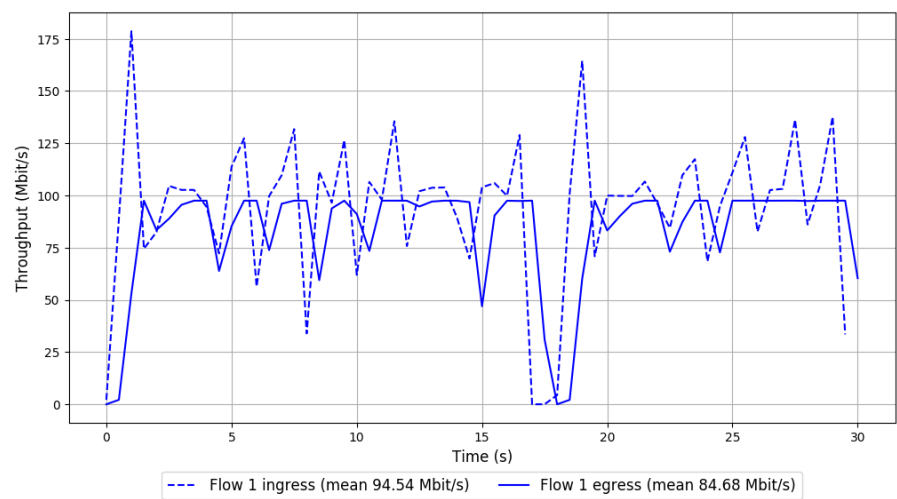
-- Flow 1:

Average throughput: 84.68 Mbit/s

95th percentile per-packet one-way delay: 179.064 ms

Loss rate: 10.19%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-10 22:34:39

End at: 2018-09-10 22:35:09

Local clock offset: 4.385 ms

Remote clock offset: 8.146 ms

Below is generated by plot.py at 2018-09-11 00:29:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.65 Mbit/s

95th percentile per-packet one-way delay: 38.081 ms

Loss rate: 0.00%

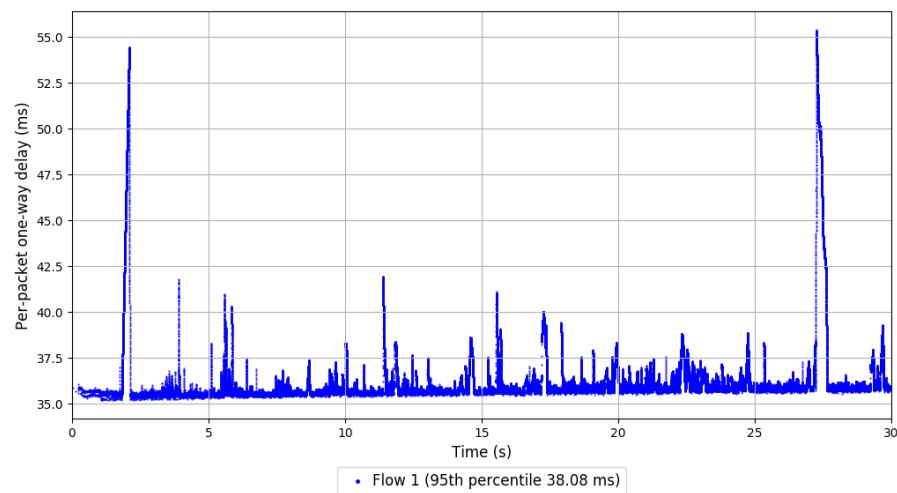
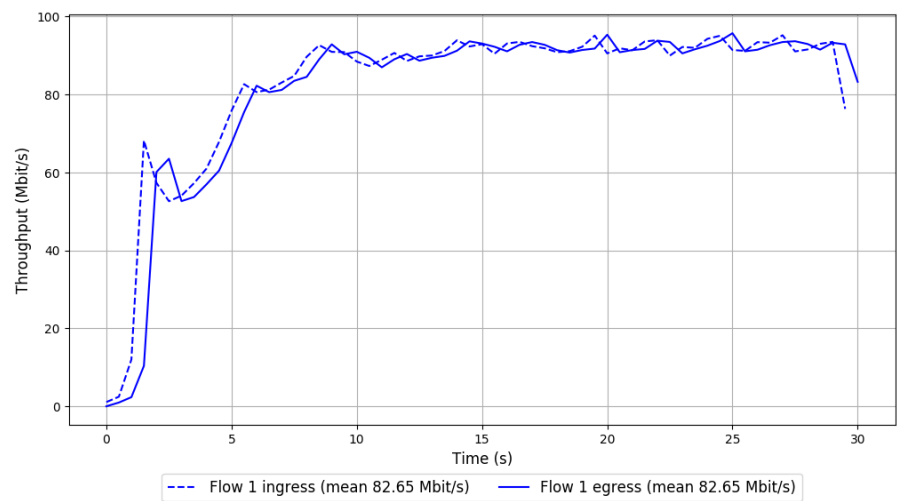
-- Flow 1:

Average throughput: 82.65 Mbit/s

95th percentile per-packet one-way delay: 38.081 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-10 22:56:20

End at: 2018-09-10 22:56:50

Local clock offset: 9.949 ms

Remote clock offset: 5.59 ms

Below is generated by plot.py at 2018-09-11 00:29:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 81.87 Mbit/s

95th percentile per-packet one-way delay: 37.542 ms

Loss rate: 0.00%

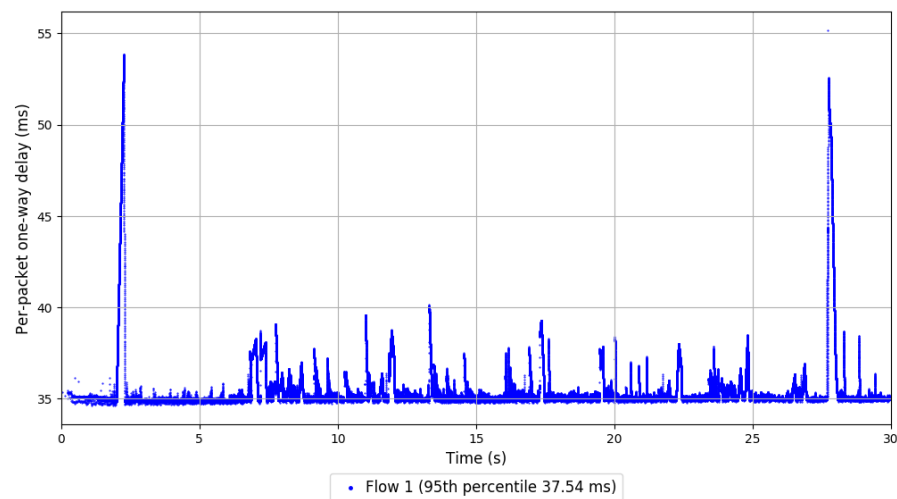
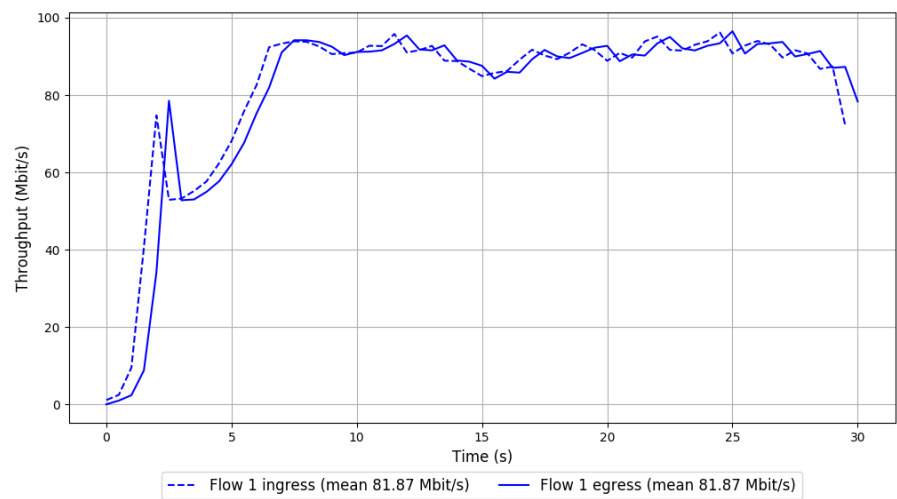
-- Flow 1:

Average throughput: 81.87 Mbit/s

95th percentile per-packet one-way delay: 37.542 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-10 23:17:57

End at: 2018-09-10 23:18:27

Local clock offset: 5.017 ms

Remote clock offset: 6.154 ms

Below is generated by plot.py at 2018-09-11 00:29:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.65 Mbit/s

95th percentile per-packet one-way delay: 37.373 ms

Loss rate: 0.00%

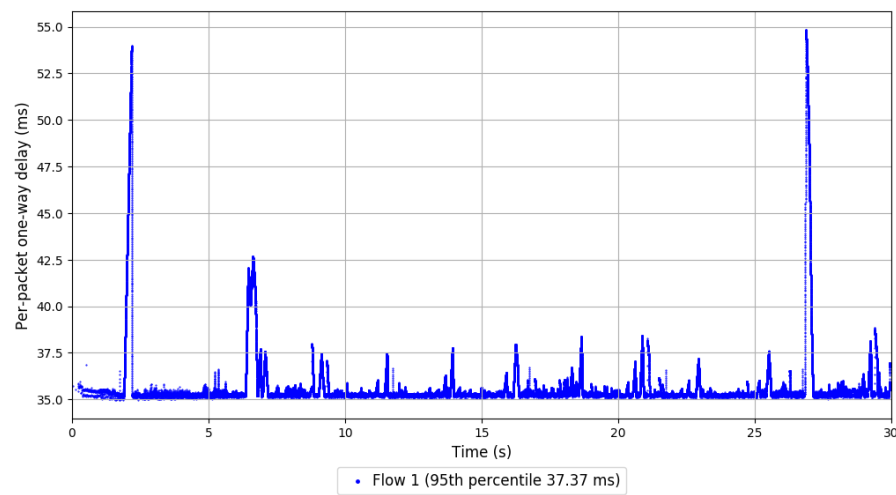
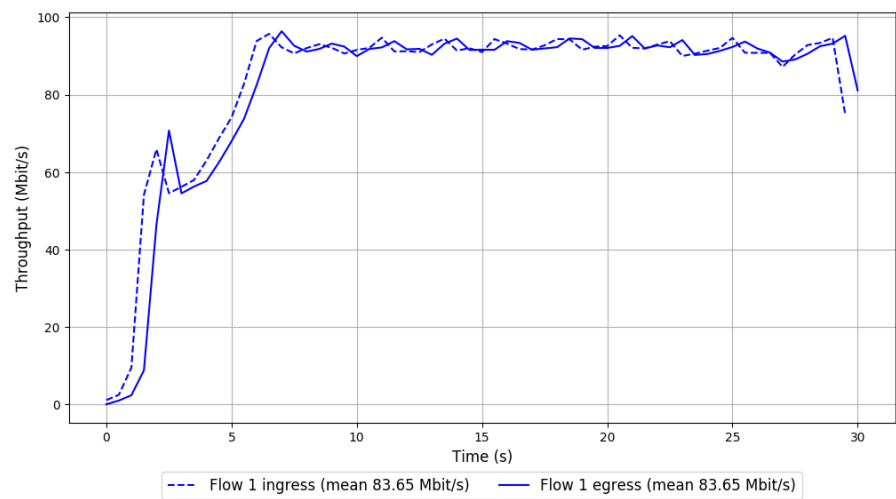
-- Flow 1:

Average throughput: 83.65 Mbit/s

95th percentile per-packet one-way delay: 37.373 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-10 23:39:29

End at: 2018-09-10 23:39:59

Local clock offset: 6.654 ms

Remote clock offset: 6.021 ms

Below is generated by plot.py at 2018-09-11 00:29:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.94 Mbit/s

95th percentile per-packet one-way delay: 36.714 ms

Loss rate: 0.00%

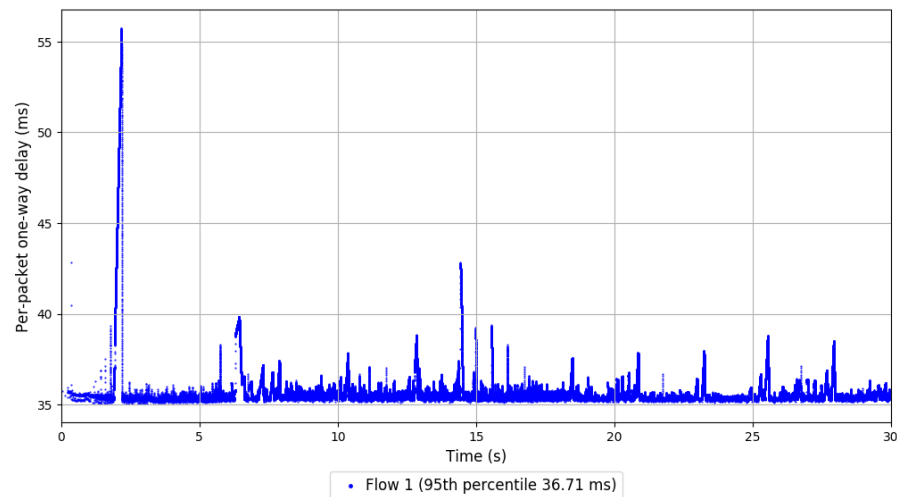
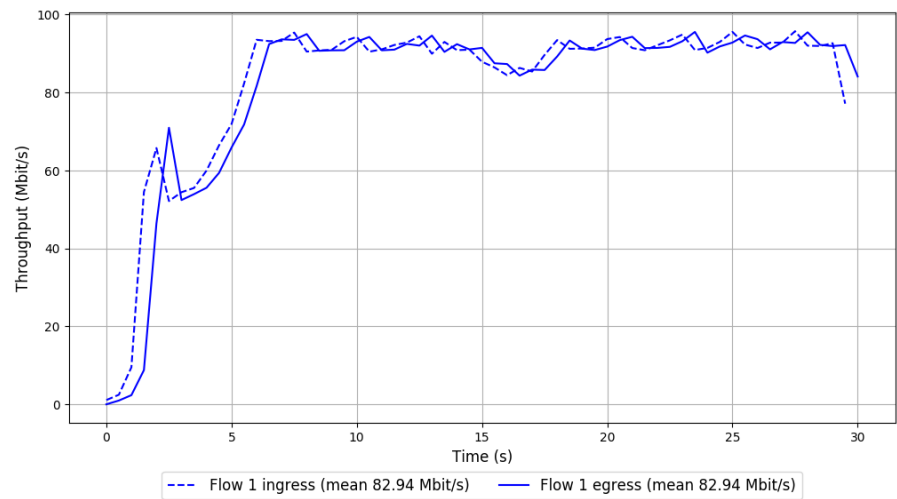
-- Flow 1:

Average throughput: 82.94 Mbit/s

95th percentile per-packet one-way delay: 36.714 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-11 00:01:07

End at: 2018-09-11 00:01:37

Local clock offset: 7.673 ms

Remote clock offset: 7.058 ms

Below is generated by plot.py at 2018-09-11 00:29:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 83.48 Mbit/s

95th percentile per-packet one-way delay: 38.477 ms

Loss rate: 0.00%

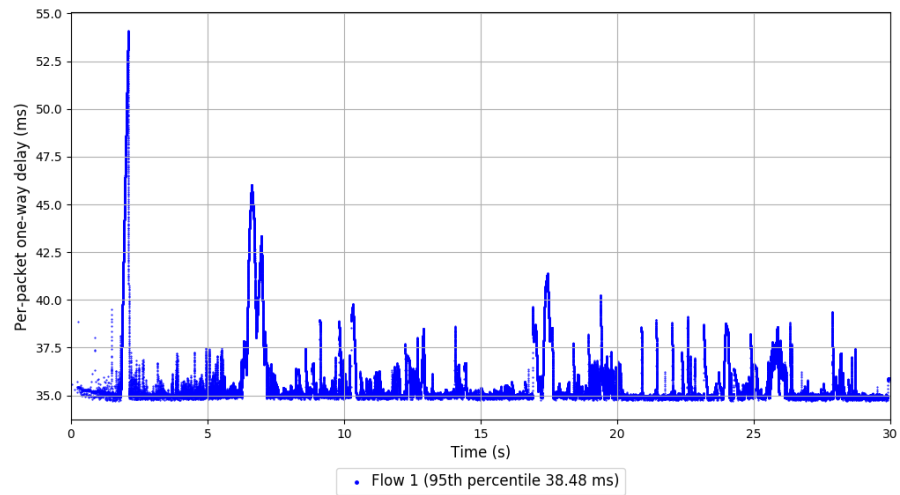
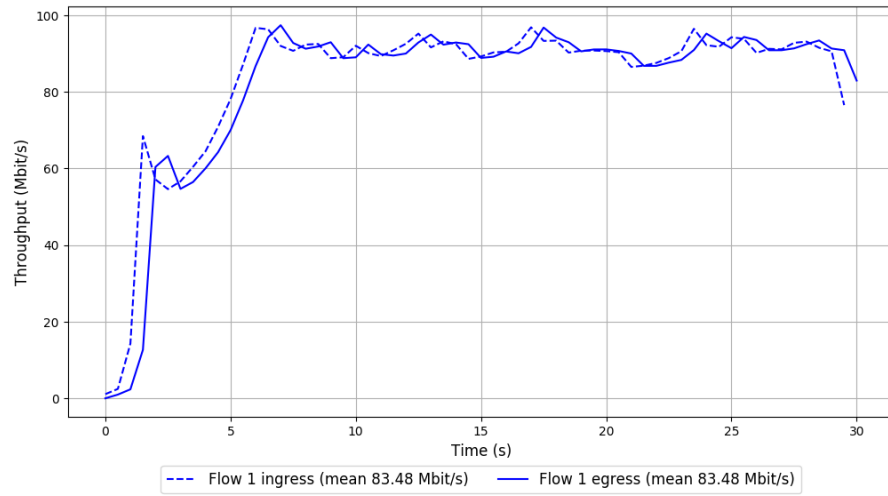
-- Flow 1:

Average throughput: 83.48 Mbit/s

95th percentile per-packet one-way delay: 38.477 ms

Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

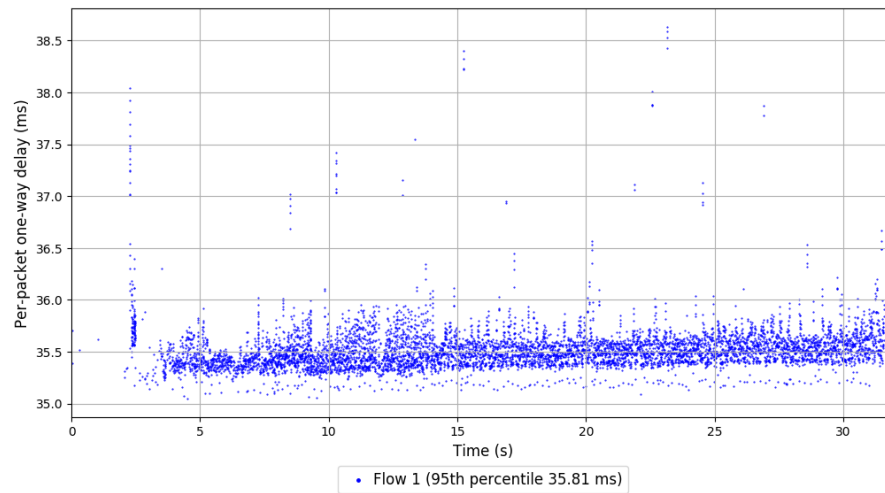
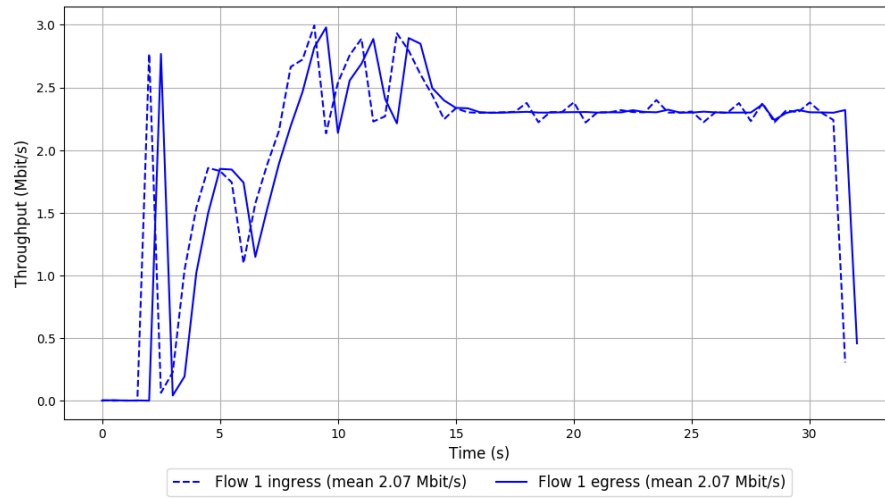


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-10 22:51:36
End at: 2018-09-10 22:52:06
Local clock offset: 9.294 ms
Remote clock offset: 6.001 ms

# Below is generated by plot.py at 2018-09-11 00:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 35.807 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 35.807 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-10 23:13:18

End at: 2018-09-10 23:13:48

Local clock offset: 5.162 ms

Remote clock offset: 6.035 ms

Below is generated by plot.py at 2018-09-11 00:29:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 35.404 ms

Loss rate: 0.00%

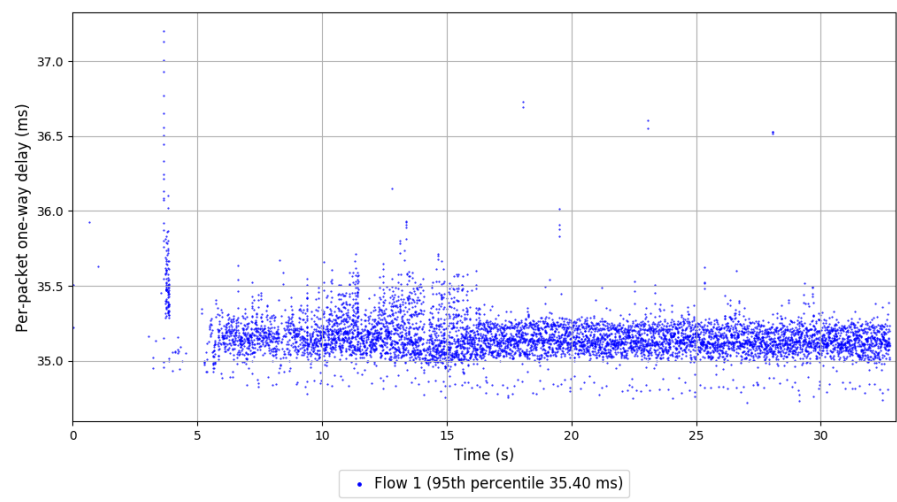
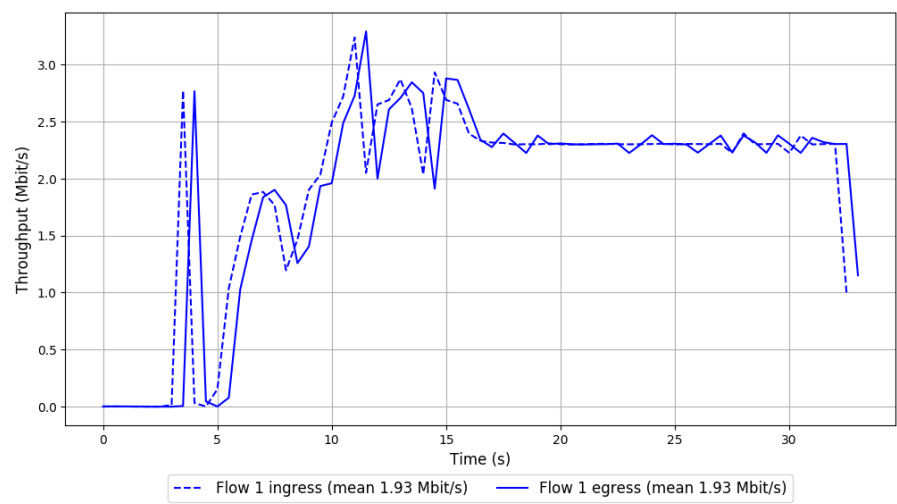
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 35.404 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-10 23:34:48

End at: 2018-09-10 23:35:18

Local clock offset: 6.031 ms

Remote clock offset: 5.192 ms

Below is generated by plot.py at 2018-09-11 00:29:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 35.424 ms

Loss rate: 0.00%

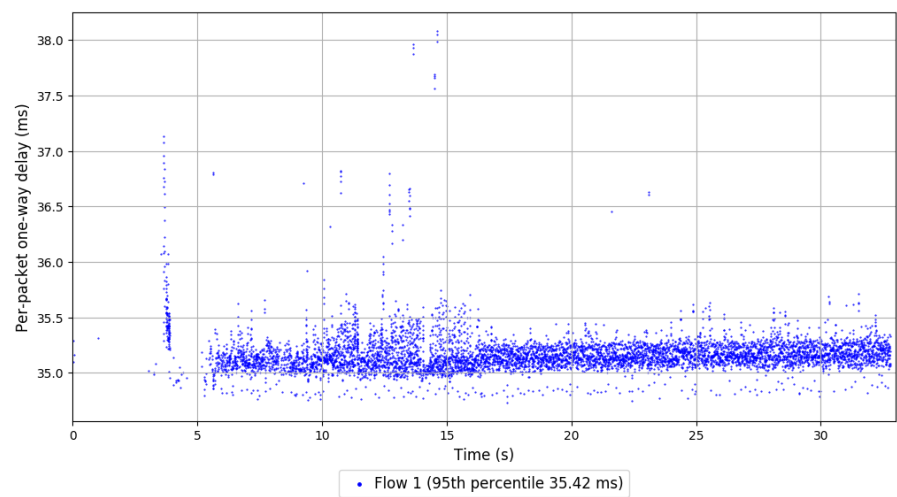
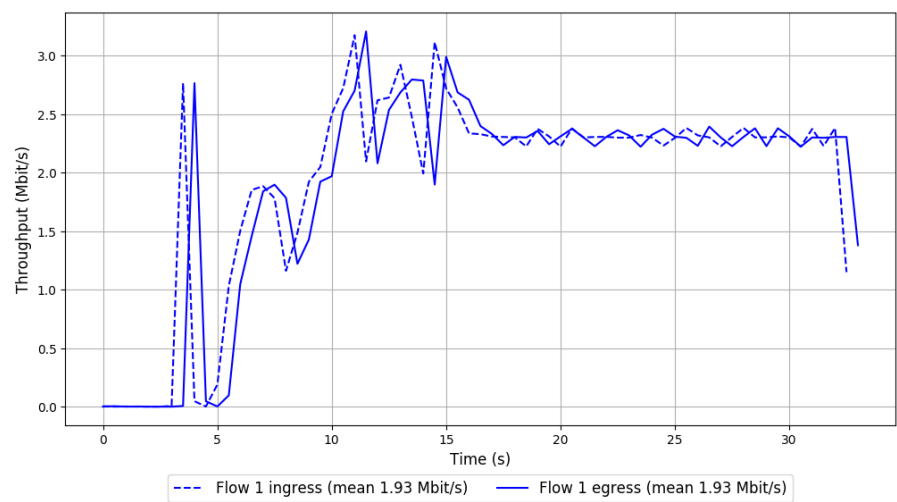
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 35.424 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-10 23:56:24

End at: 2018-09-10 23:56:54

Local clock offset: 8.244 ms

Remote clock offset: 7.033 ms

Below is generated by plot.py at 2018-09-11 00:29:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 35.900 ms

Loss rate: 0.00%

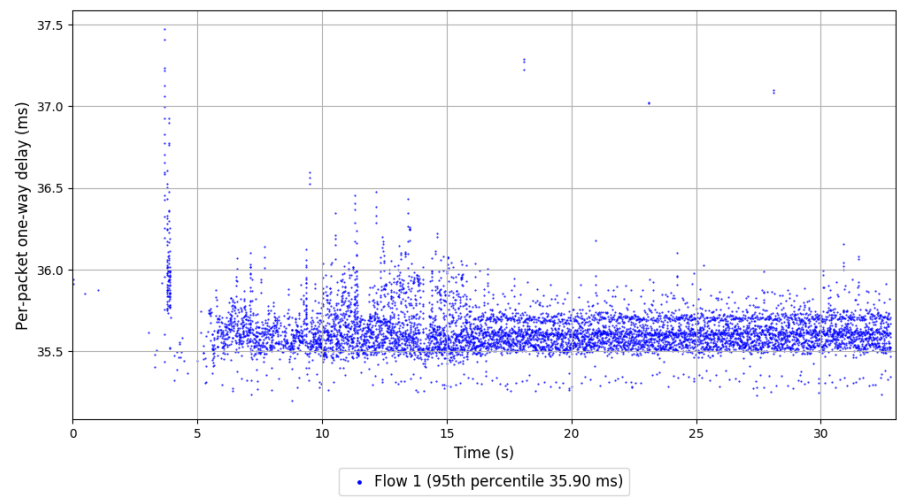
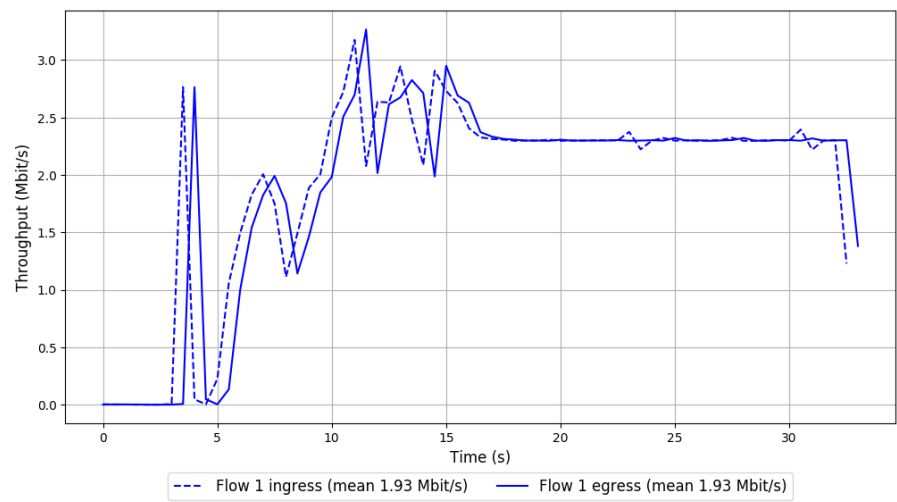
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 35.900 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-11 00:18:04

End at: 2018-09-11 00:18:34

Local clock offset: 6.141 ms

Remote clock offset: 7.25 ms

Below is generated by plot.py at 2018-09-11 00:29:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 35.579 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 35.579 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

