

Pantheon Report

Generated at 2018-09-11 01:14:33 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

System info:

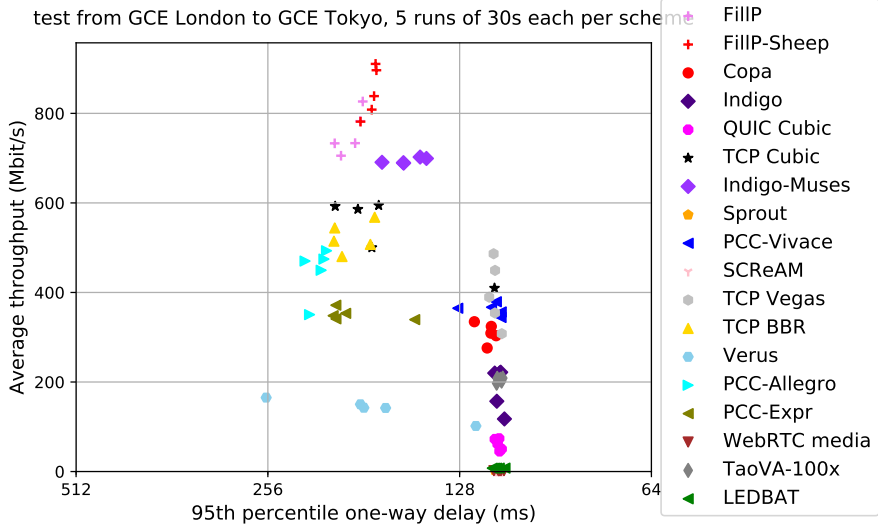
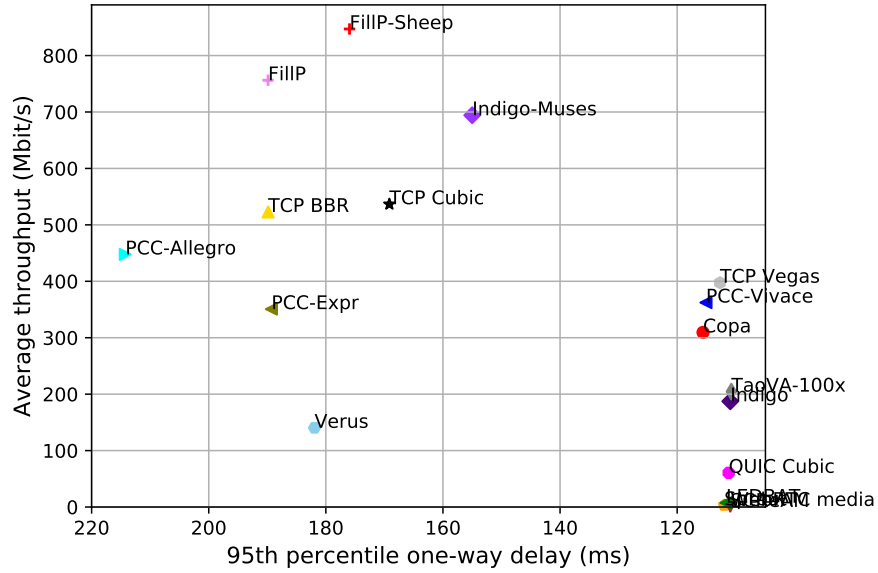
```
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651 381972
```

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 GCE London to GCE Tokyo, 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	522.89	189.85	1.62
Copa	5	309.45	115.59	0.70
TCP Cubic	5	536.56	169.15	0.94
FillP	5	756.24	189.87	6.47
FillP-Sheep	5	847.06	175.96	3.50
Indigo	5	187.33	110.93	0.84
LEDBAT	5	7.57	111.66	1.49
Indigo-Muses	5	694.24	155.00	0.90
PCC-Allegro	5	447.58	214.24	2.78
PCC-Expr	5	350.69	189.30	2.82
QUIC Cubic	5	60.58	111.20	1.18
SCReAM	5	0.22	110.91	0.74
Sprout	5	3.20	111.97	0.79
TaoVA-100x	5	204.48	110.75	0.76
TCP Vegas	5	397.47	112.69	0.82
Verus	5	140.35	181.94	2.08
PCC-Vivace	5	362.34	115.09	0.83
WebRTC media	5	1.97	110.93	0.89

Run 1: Statistics of TCP BBR

Start at: 2018-09-10 21:37:02

End at: 2018-09-10 21:37:32

Local clock offset: 9.477 ms

Remote clock offset: 9.18 ms

Below is generated by plot.py at 2018-09-11 00:02:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 568.05 Mbit/s

95th percentile per-packet one-way delay: 174.016 ms

Loss rate: 1.41%

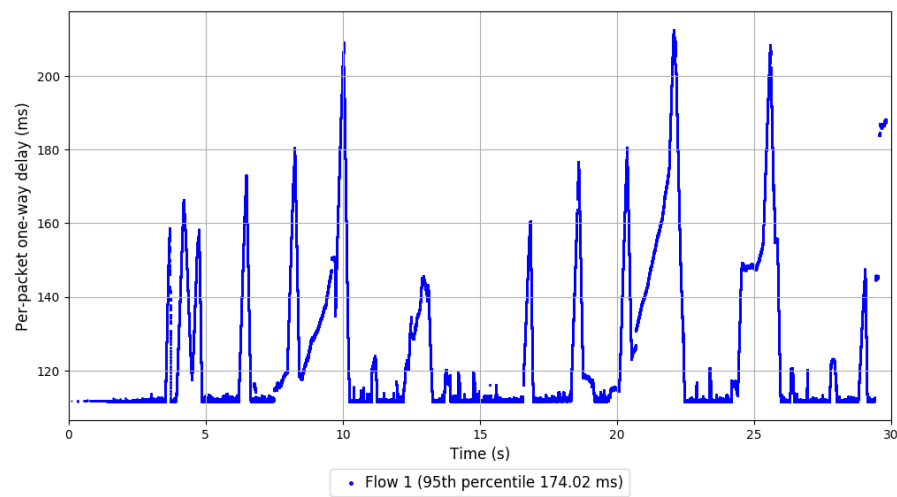
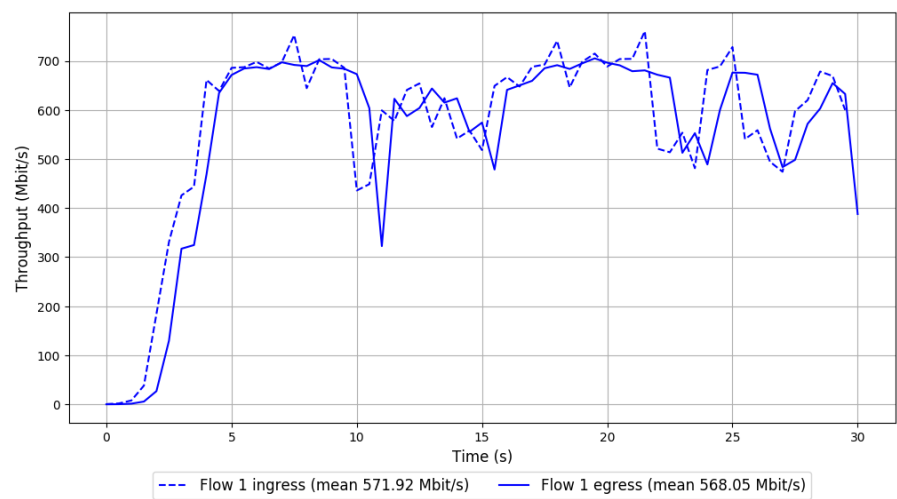
-- Flow 1:

Average throughput: 568.05 Mbit/s

95th percentile per-packet one-way delay: 174.016 ms

Loss rate: 1.41%

Run 1: Report of TCP BBR — Data Link

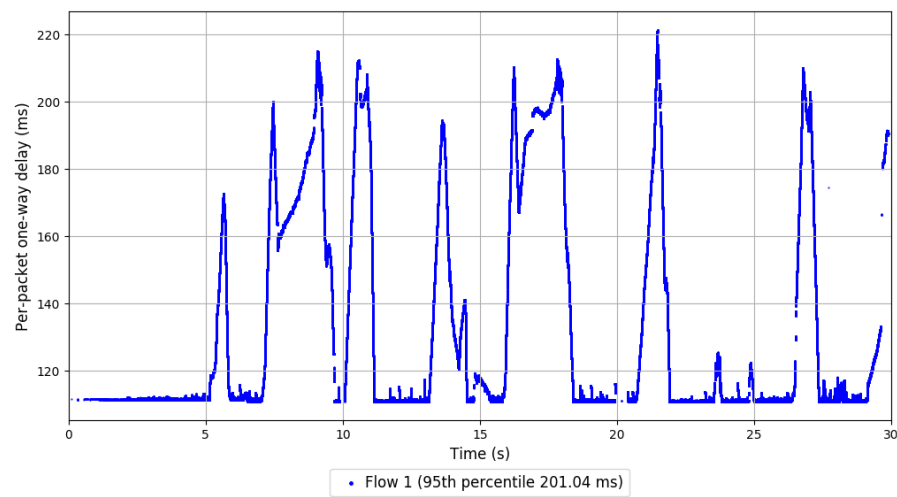
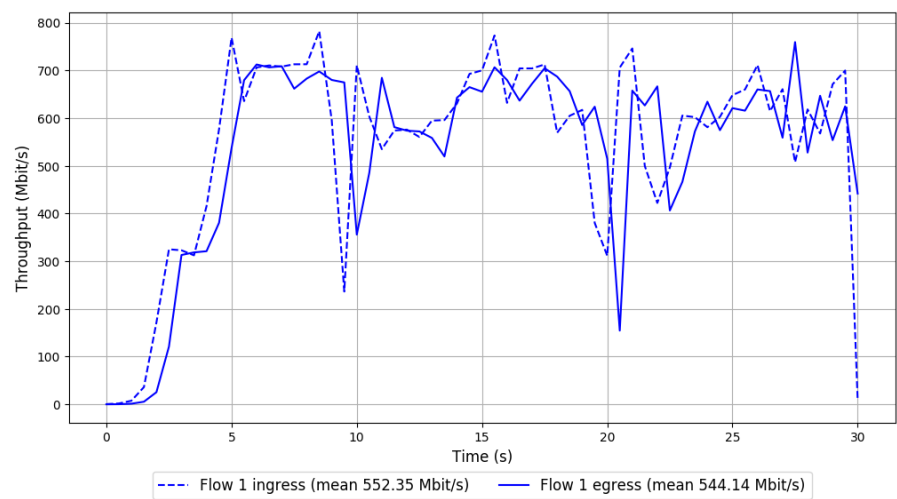


Run 2: Statistics of TCP BBR

Start at: 2018-09-10 22:03:52
End at: 2018-09-10 22:04:22
Local clock offset: 21.624 ms
Remote clock offset: 22.476 ms

Below is generated by plot.py at 2018-09-11 00:02:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 544.14 Mbit/s
95th percentile per-packet one-way delay: 201.045 ms
Loss rate: 2.21%
-- Flow 1:
Average throughput: 544.14 Mbit/s
95th percentile per-packet one-way delay: 201.045 ms
Loss rate: 2.21%

Run 2: Report of TCP BBR — Data Link

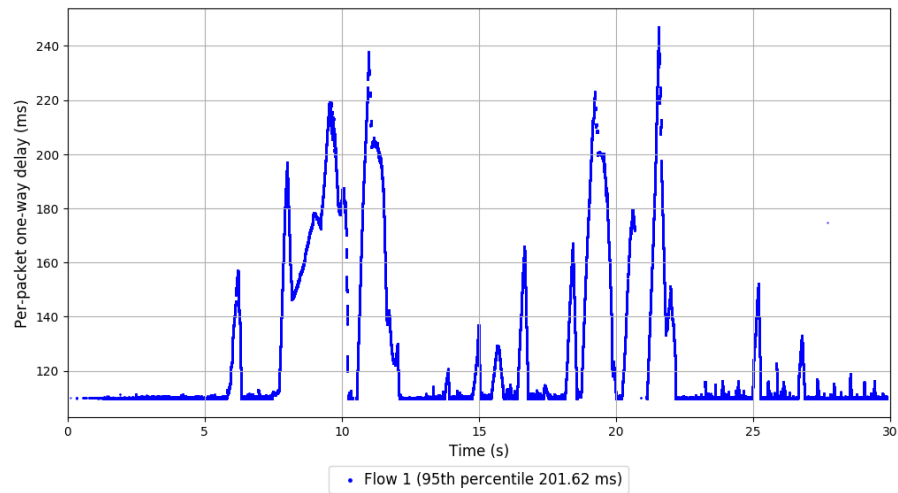
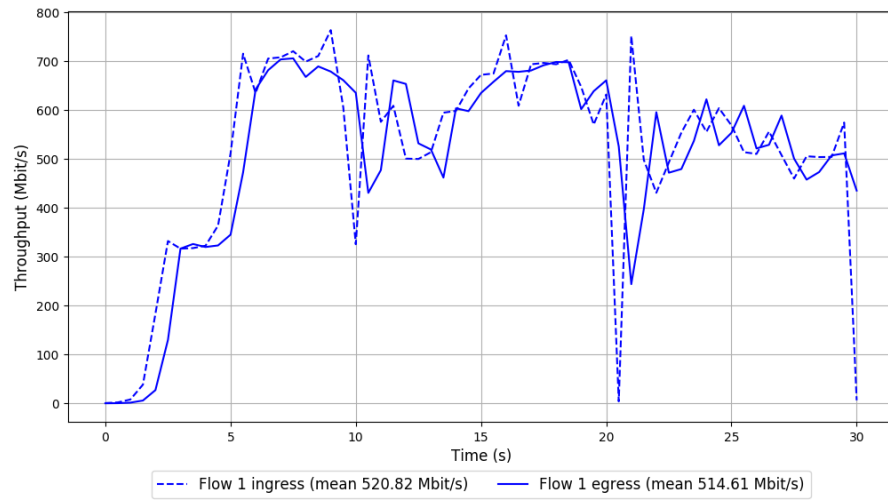


Run 3: Statistics of TCP BBR

Start at: 2018-09-10 22:30:45
End at: 2018-09-10 22:31:15
Local clock offset: 30.401 ms
Remote clock offset: 33.123 ms

Below is generated by plot.py at 2018-09-11 00:02:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 514.61 Mbit/s
95th percentile per-packet one-way delay: 201.619 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 514.61 Mbit/s
95th percentile per-packet one-way delay: 201.619 ms
Loss rate: 1.92%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-10 22:57:39

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

Local clock offset: 13.677 ms

Remote clock offset: 8.495 ms

Below is generated by plot.py at 2018-09-11 00:02:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 507.38 Mbit/s

95th percentile per-packet one-way delay: 176.753 ms

Loss rate: 1.06%

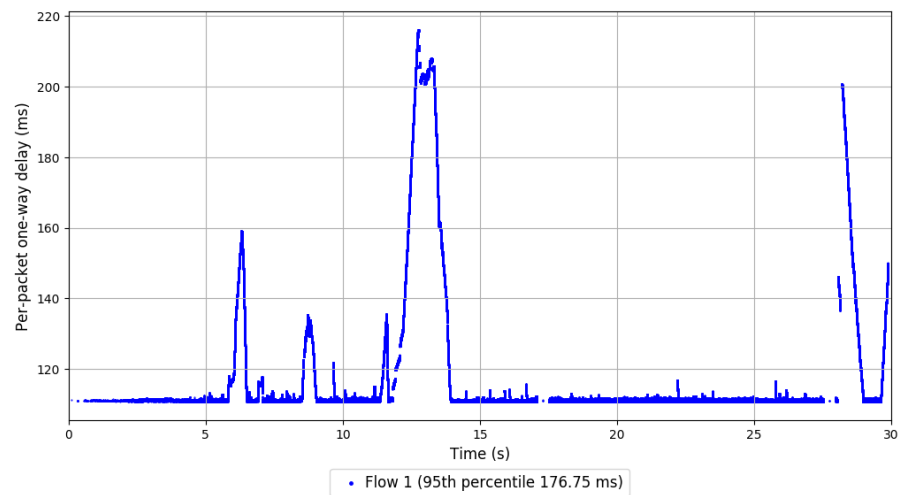
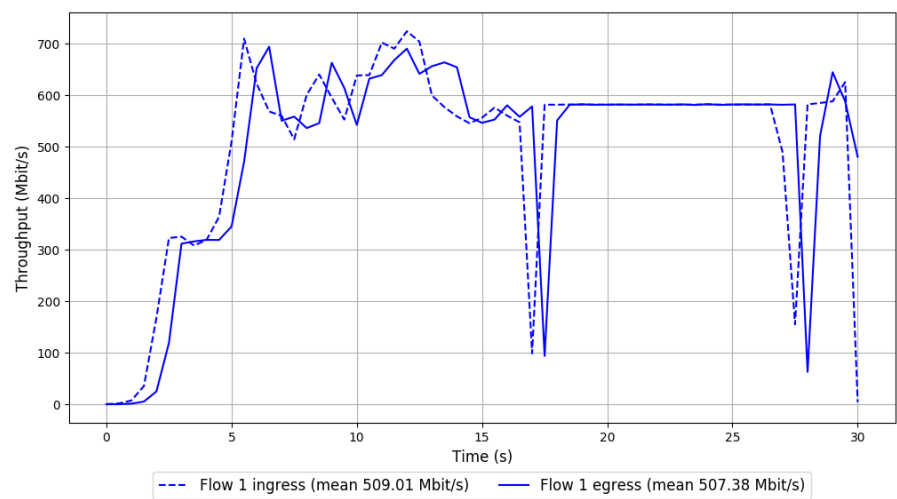
-- Flow 1:

Average throughput: 507.38 Mbit/s

95th percentile per-packet one-way delay: 176.753 ms

Loss rate: 1.06%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-10 23:24:12

End at: 2018-09-10 23:24:42

Local clock offset: 4.076 ms

Remote clock offset: 4.775 ms

Below is generated by plot.py at 2018-09-11 00:02:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 480.26 Mbit/s

95th percentile per-packet one-way delay: 195.822 ms

Loss rate: 1.48%

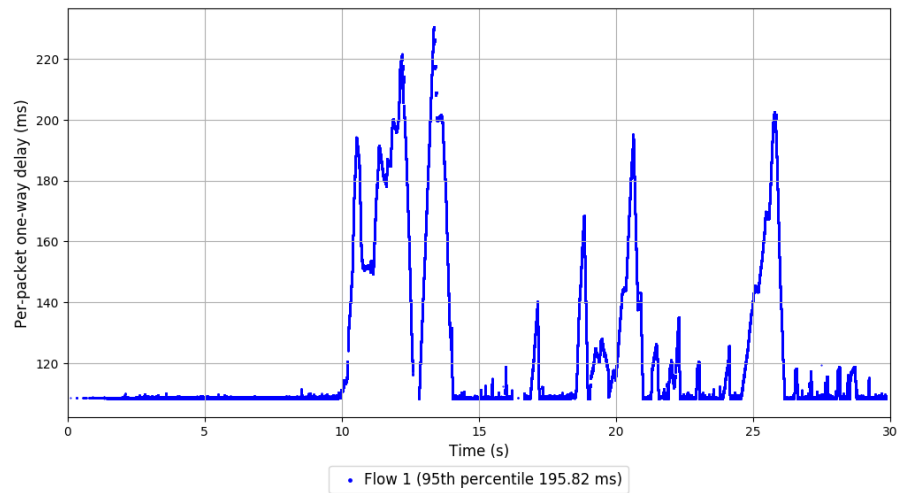
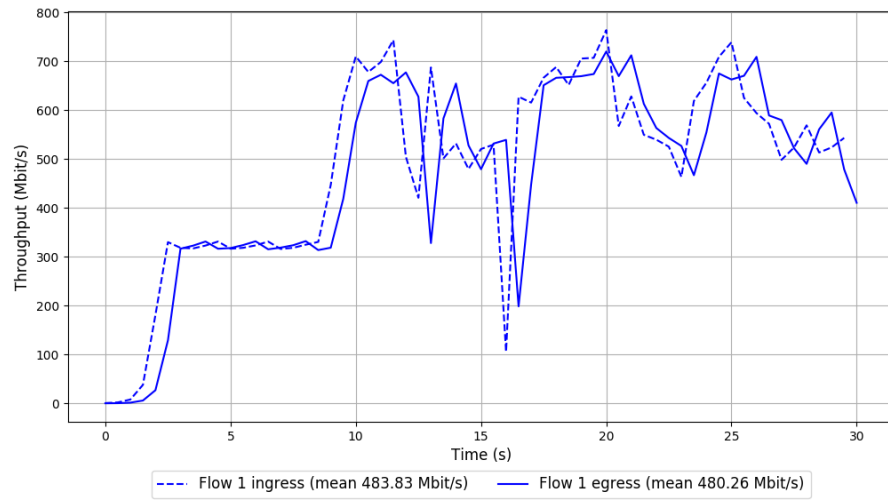
-- Flow 1:

Average throughput: 480.26 Mbit/s

95th percentile per-packet one-way delay: 195.822 ms

Loss rate: 1.48%

Run 5: Report of TCP BBR — Data Link

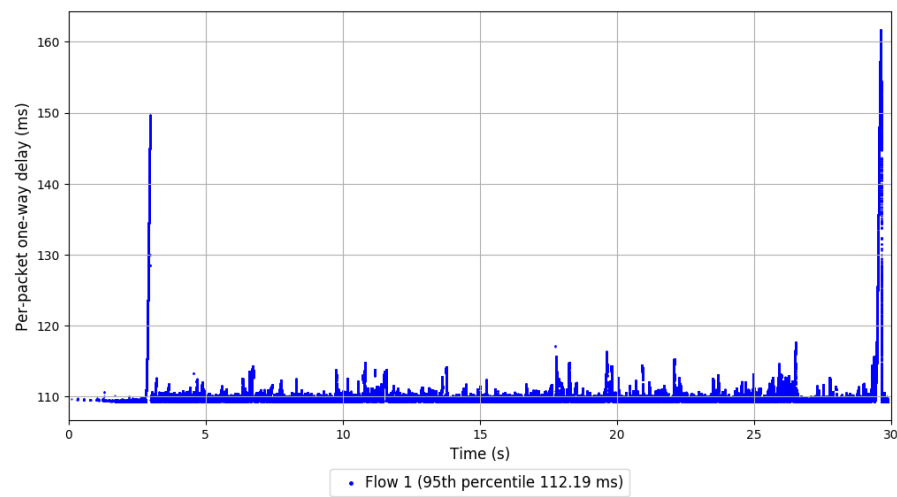
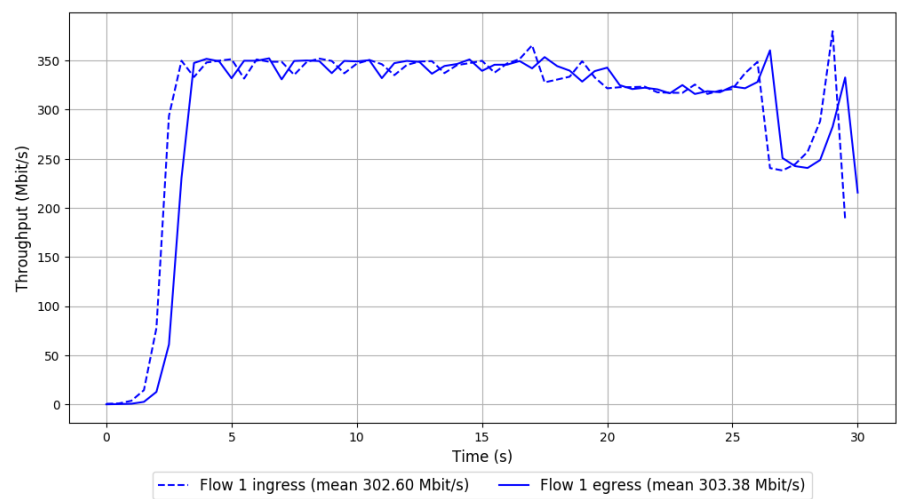


Run 1: Statistics of Copa

Start at: 2018-09-10 21:53:40
End at: 2018-09-10 21:54:10
Local clock offset: 12.544 ms
Remote clock offset: 14.864 ms

Below is generated by plot.py at 2018-09-11 00:02:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 303.38 Mbit/s
95th percentile per-packet one-way delay: 112.189 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 303.38 Mbit/s
95th percentile per-packet one-way delay: 112.189 ms
Loss rate: 0.48%

Run 1: Report of Copa — Data Link

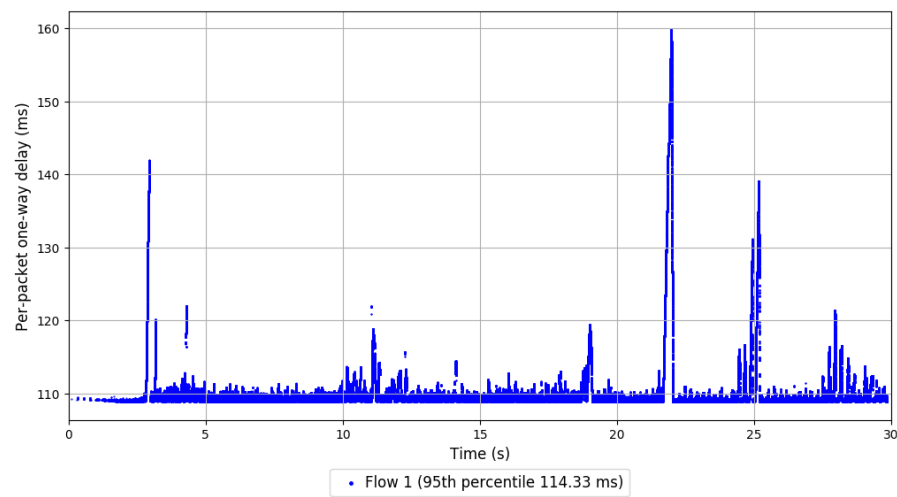
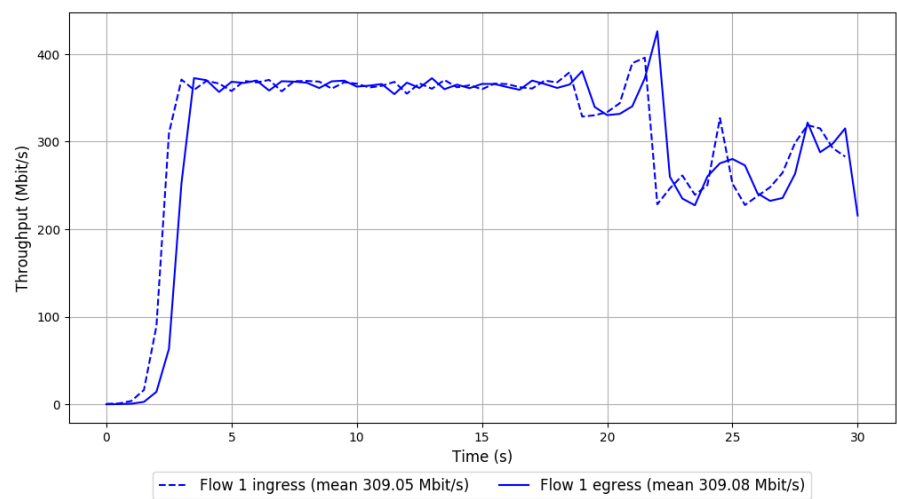


Run 2: Statistics of Copa

Start at: 2018-09-10 22:20:35
End at: 2018-09-10 22:21:05
Local clock offset: 21.002 ms
Remote clock offset: 22.999 ms

Below is generated by plot.py at 2018-09-11 00:02:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 309.08 Mbit/s
95th percentile per-packet one-way delay: 114.333 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 309.08 Mbit/s
95th percentile per-packet one-way delay: 114.333 ms
Loss rate: 0.72%

Run 2: Report of Copa — Data Link

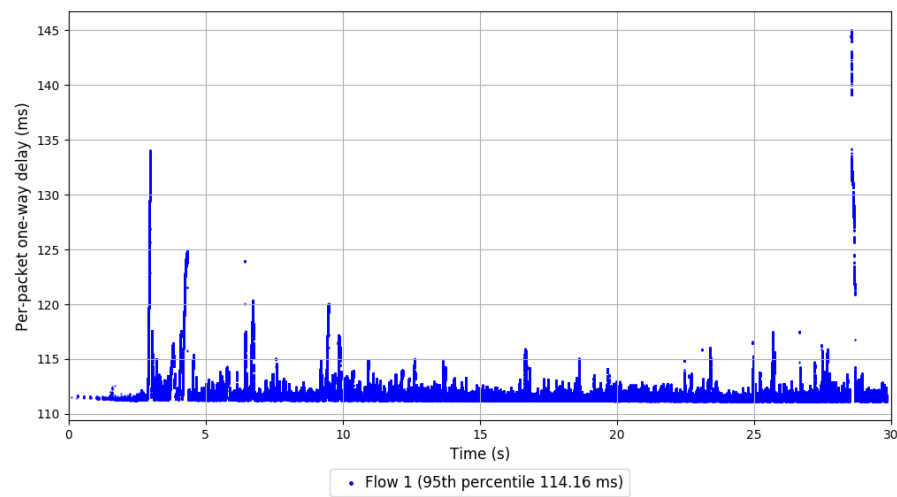
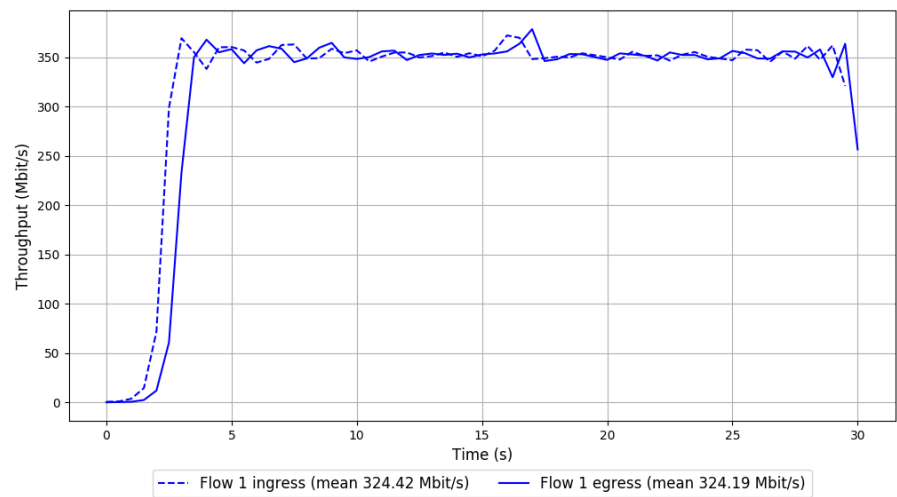


Run 3: Statistics of Copa

Start at: 2018-09-10 22:47:29
End at: 2018-09-10 22:47:59
Local clock offset: 15.211 ms
Remote clock offset: 12.352 ms

Below is generated by plot.py at 2018-09-11 00:02:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 324.19 Mbit/s
95th percentile per-packet one-way delay: 114.161 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 324.19 Mbit/s
95th percentile per-packet one-way delay: 114.161 ms
Loss rate: 0.81%

Run 3: Report of Copa — Data Link

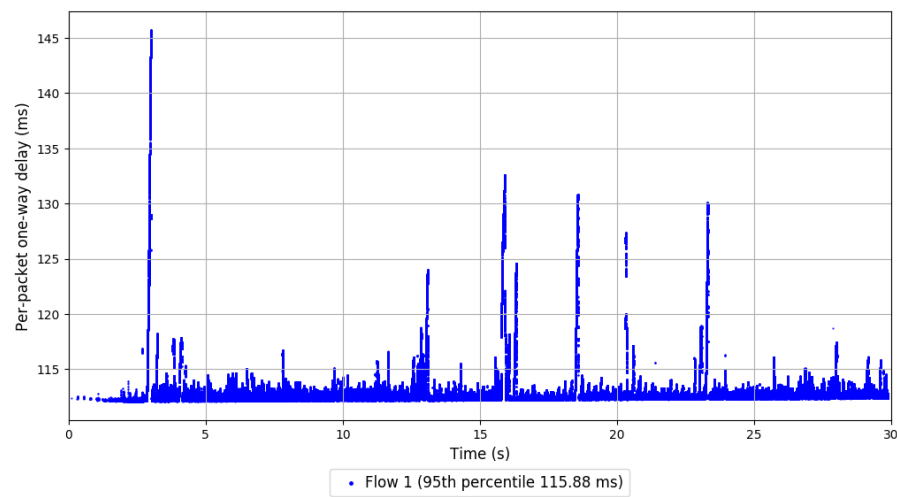
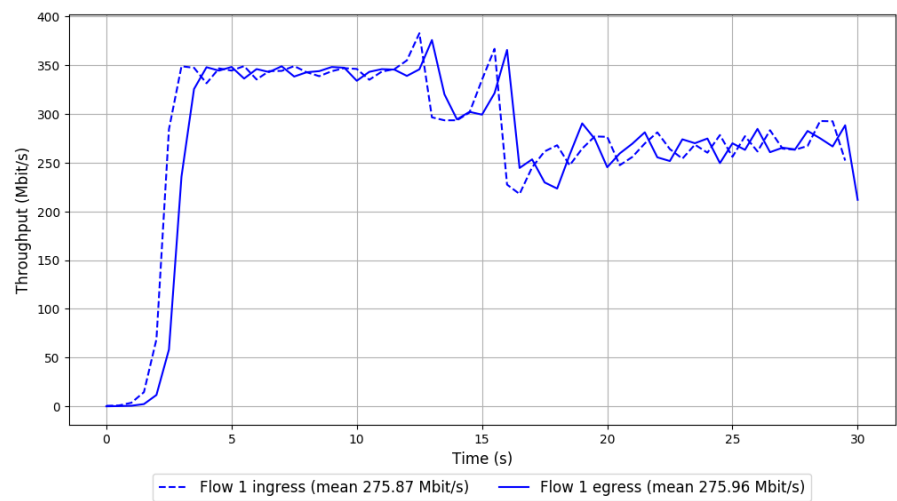


Run 4: Statistics of Copa

Start at: 2018-09-10 23:14:05
End at: 2018-09-10 23:14:35
Local clock offset: 12.265 ms
Remote clock offset: 6.77 ms

Below is generated by plot.py at 2018-09-11 00:09:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 275.96 Mbit/s
95th percentile per-packet one-way delay: 115.882 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 275.96 Mbit/s
95th percentile per-packet one-way delay: 115.882 ms
Loss rate: 0.70%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-10 23:40:49

End at: 2018-09-10 23:41:19

Local clock offset: 3.388 ms

Remote clock offset: 3.848 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 334.66 Mbit/s

95th percentile per-packet one-way delay: 121.366 ms

Loss rate: 0.81%

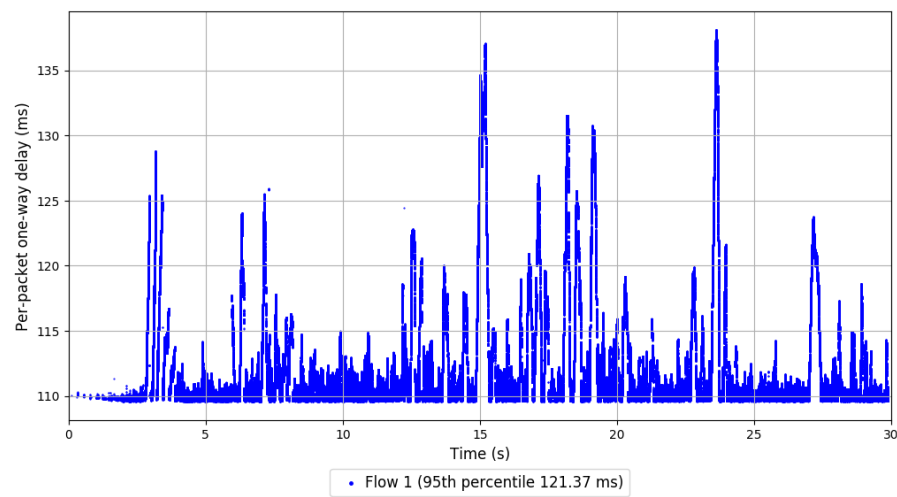
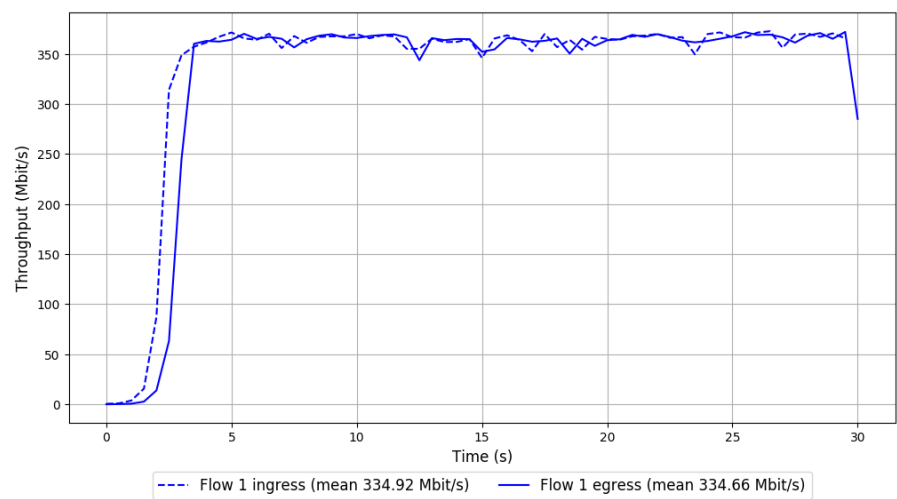
-- Flow 1:

Average throughput: 334.66 Mbit/s

95th percentile per-packet one-way delay: 121.366 ms

Loss rate: 0.81%

Run 5: Report of Copa — Data Link

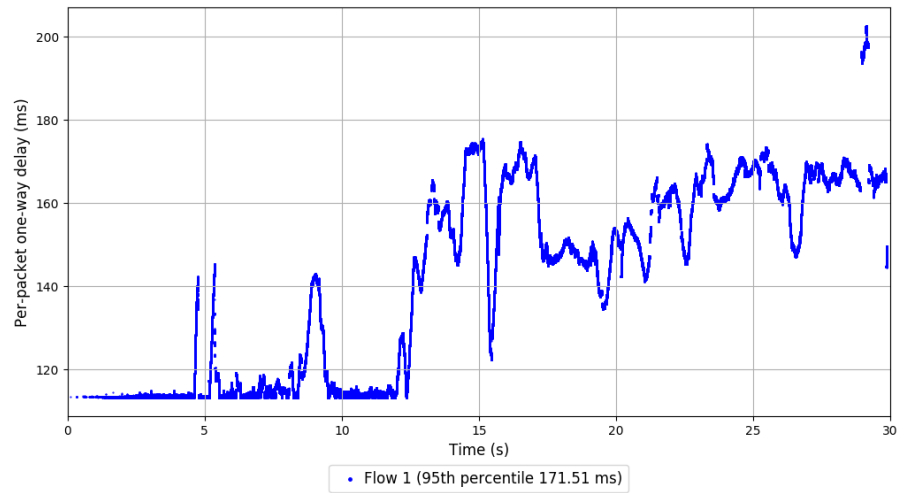
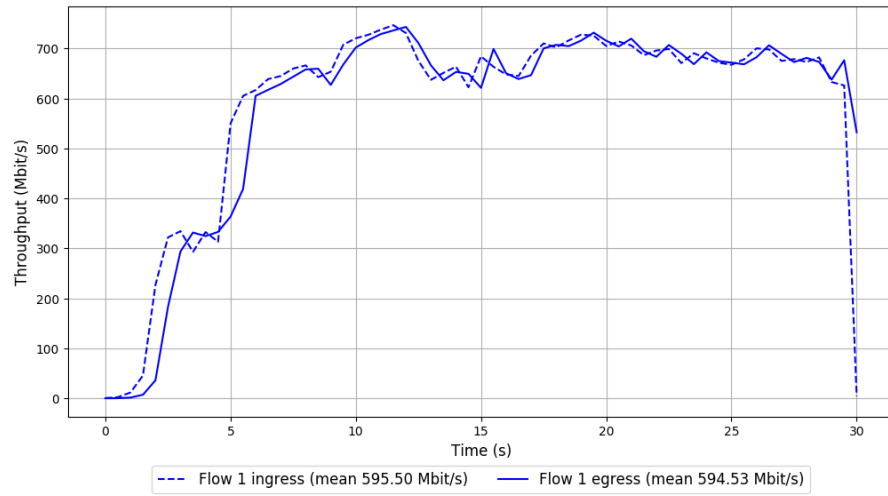


Run 1: Statistics of TCP Cubic

Start at: 2018-09-10 21:46:16
End at: 2018-09-10 21:46:46
Local clock offset: 14.343 ms
Remote clock offset: 13.778 ms

Below is generated by plot.py at 2018-09-11 00:11:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 594.53 Mbit/s
95th percentile per-packet one-way delay: 171.508 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 594.53 Mbit/s
95th percentile per-packet one-way delay: 171.508 ms
Loss rate: 0.90%

Run 1: Report of TCP Cubic — Data Link

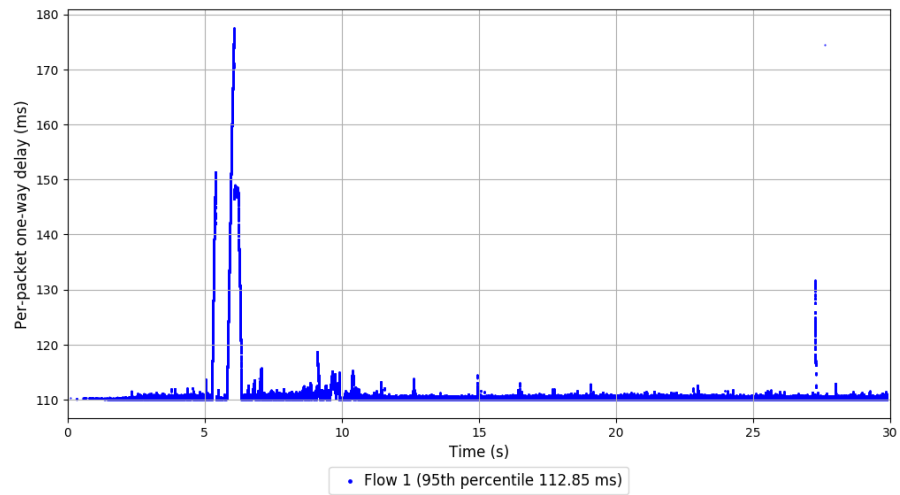
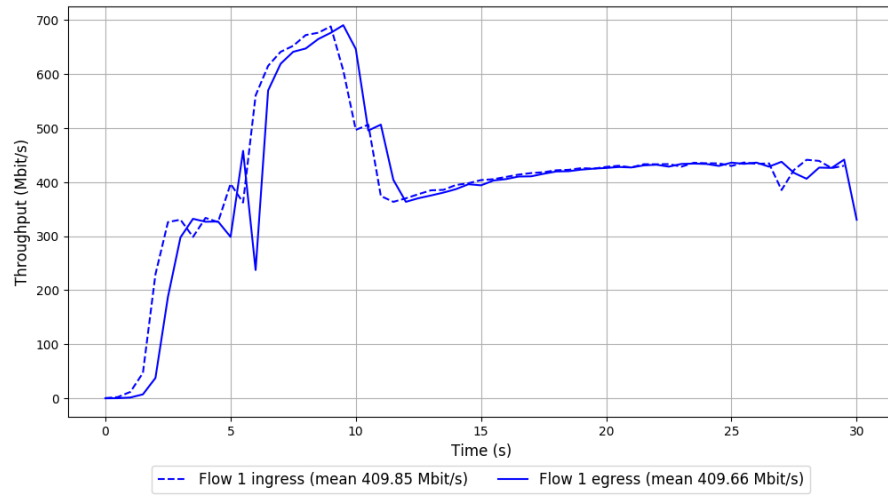


Run 2: Statistics of TCP Cubic

Start at: 2018-09-10 22:13:19
End at: 2018-09-10 22:13:49
Local clock offset: 17.746 ms
Remote clock offset: 19.872 ms

Below is generated by plot.py at 2018-09-11 00:11:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 409.66 Mbit/s
95th percentile per-packet one-way delay: 112.846 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 409.66 Mbit/s
95th percentile per-packet one-way delay: 112.846 ms
Loss rate: 0.78%

Run 2: Report of TCP Cubic — Data Link

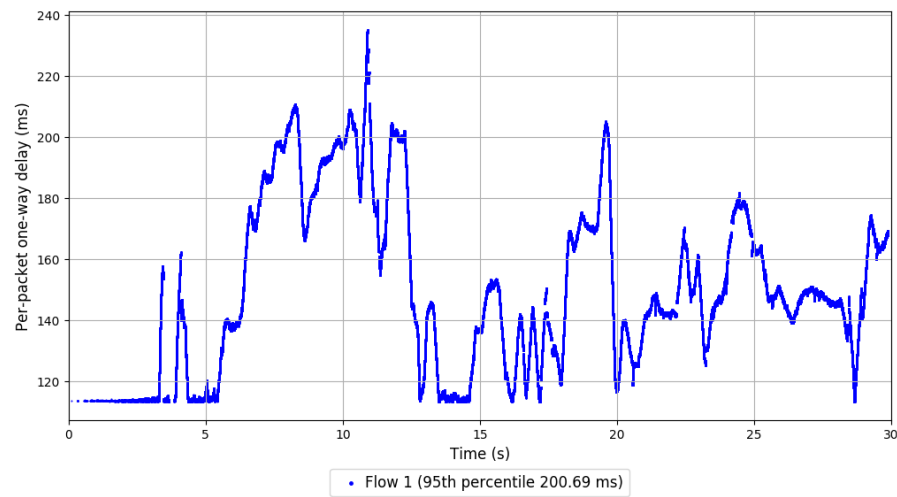
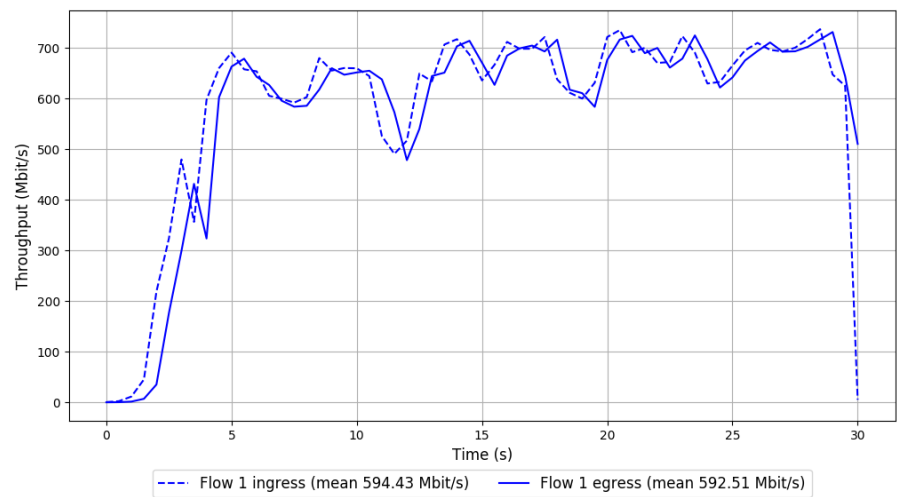


Run 3: Statistics of TCP Cubic

Start at: 2018-09-10 22:40:08
End at: 2018-09-10 22:40:38
Local clock offset: 26.267 ms
Remote clock offset: 24.687 ms

Below is generated by plot.py at 2018-09-11 00:11:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 592.51 Mbit/s
95th percentile per-packet one-way delay: 200.693 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 592.51 Mbit/s
95th percentile per-packet one-way delay: 200.693 ms
Loss rate: 1.06%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-10 23:06:49

End at: 2018-09-10 23:07:19

Local clock offset: 16.529 ms

Remote clock offset: 8.844 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 500.17 Mbit/s

95th percentile per-packet one-way delay: 175.794 ms

Loss rate: 1.09%

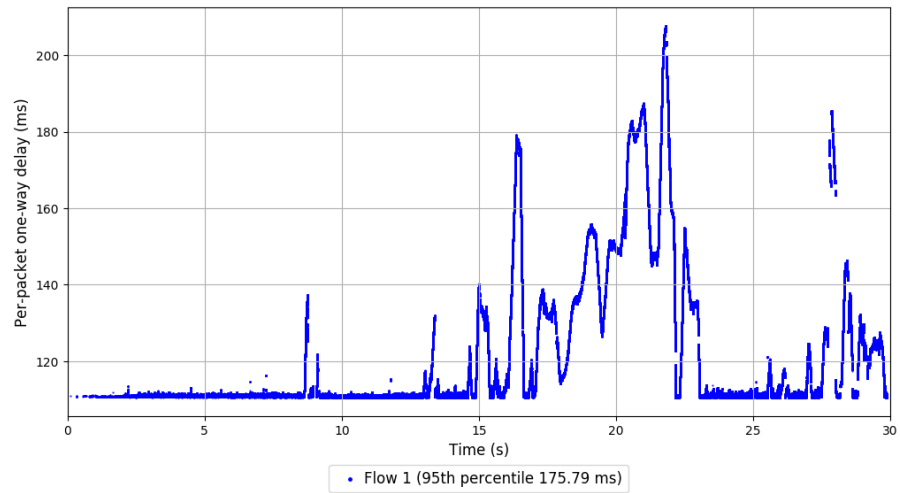
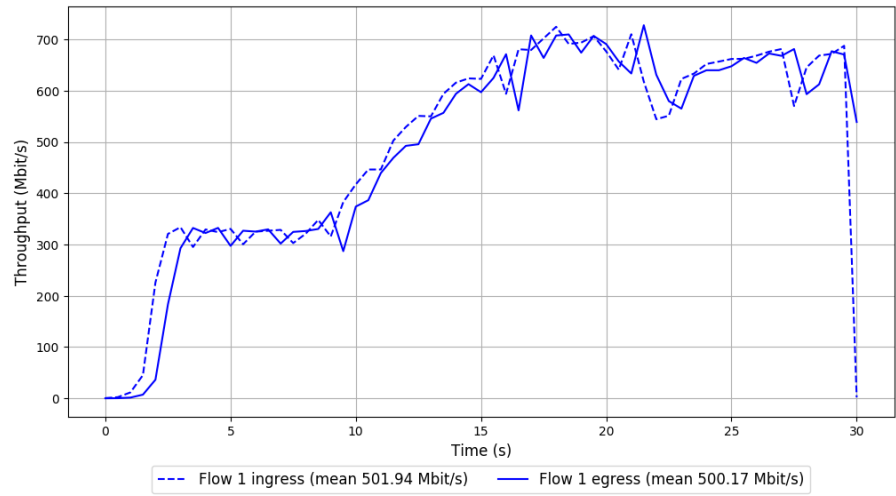
-- Flow 1:

Average throughput: 500.17 Mbit/s

95th percentile per-packet one-way delay: 175.794 ms

Loss rate: 1.09%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-10 23:33:25

End at: 2018-09-10 23:33:55

Local clock offset: 3.578 ms

Remote clock offset: 3.28 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 585.95 Mbit/s

95th percentile per-packet one-way delay: 184.909 ms

Loss rate: 0.87%

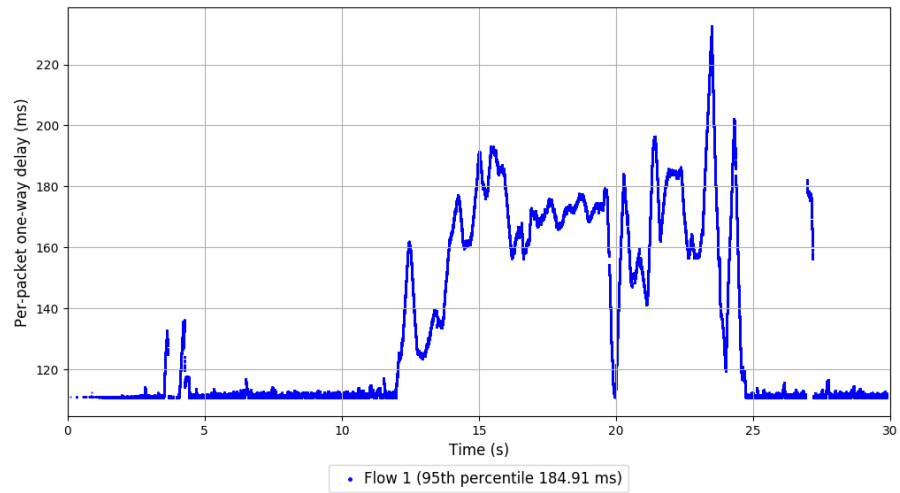
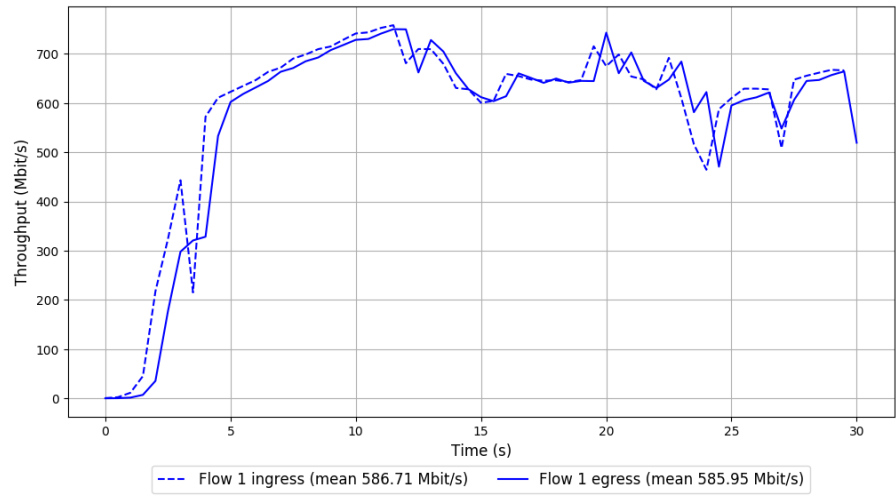
-- Flow 1:

Average throughput: 585.95 Mbit/s

95th percentile per-packet one-way delay: 184.909 ms

Loss rate: 0.87%

Run 5: Report of TCP Cubic — Data Link

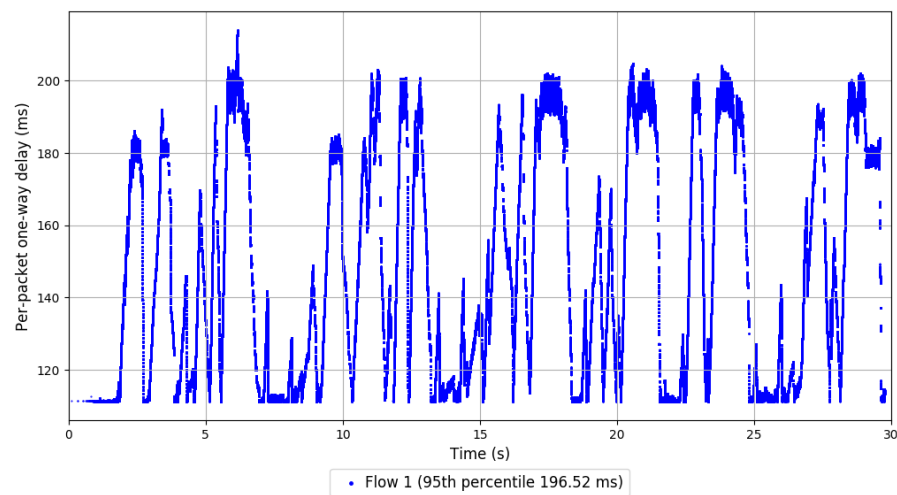
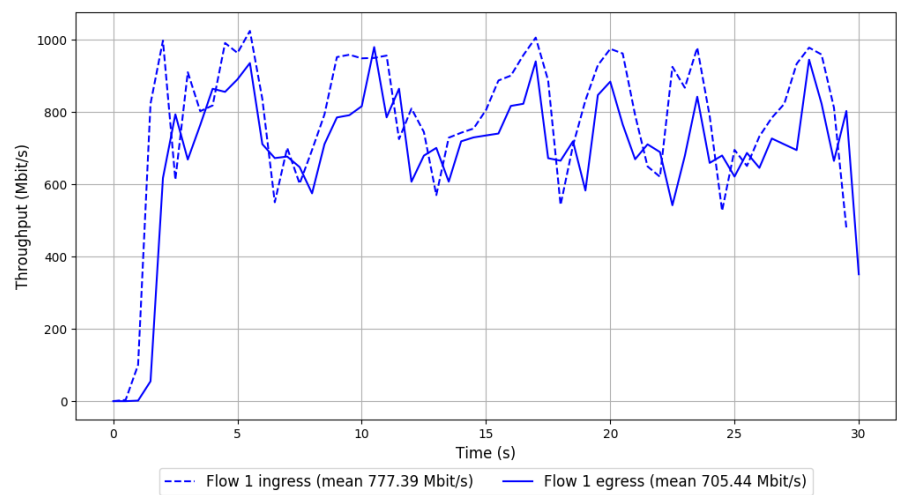


Run 1: Statistics of FillP

Start at: 2018-09-10 21:47:56
End at: 2018-09-10 21:48:26
Local clock offset: 12.268 ms
Remote clock offset: 12.571 ms

Below is generated by plot.py at 2018-09-11 00:16:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 705.44 Mbit/s
95th percentile per-packet one-way delay: 196.522 ms
Loss rate: 9.93%
-- Flow 1:
Average throughput: 705.44 Mbit/s
95th percentile per-packet one-way delay: 196.522 ms
Loss rate: 9.93%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-10 22:14:50

End at: 2018-09-10 22:15:20

Local clock offset: 19.921 ms

Remote clock offset: 20.55 ms

Below is generated by plot.py at 2018-09-11 00:26:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 826.53 Mbit/s

95th percentile per-packet one-way delay: 181.676 ms

Loss rate: 3.53%

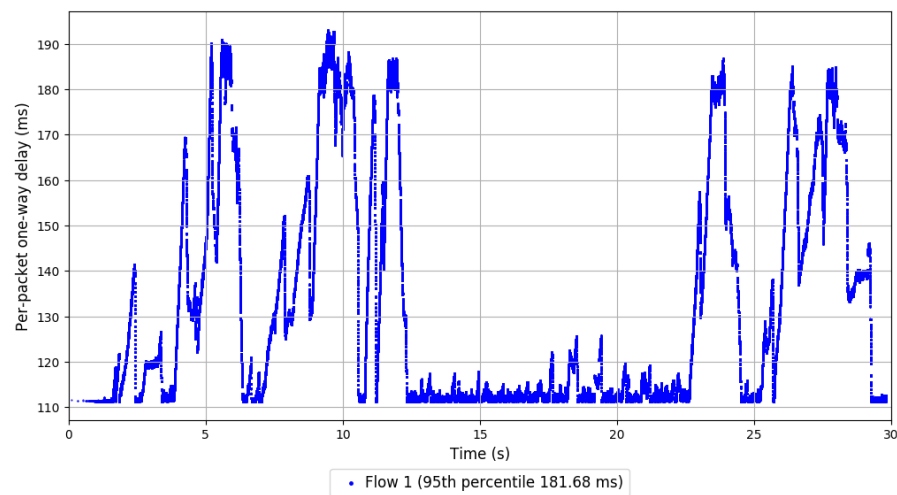
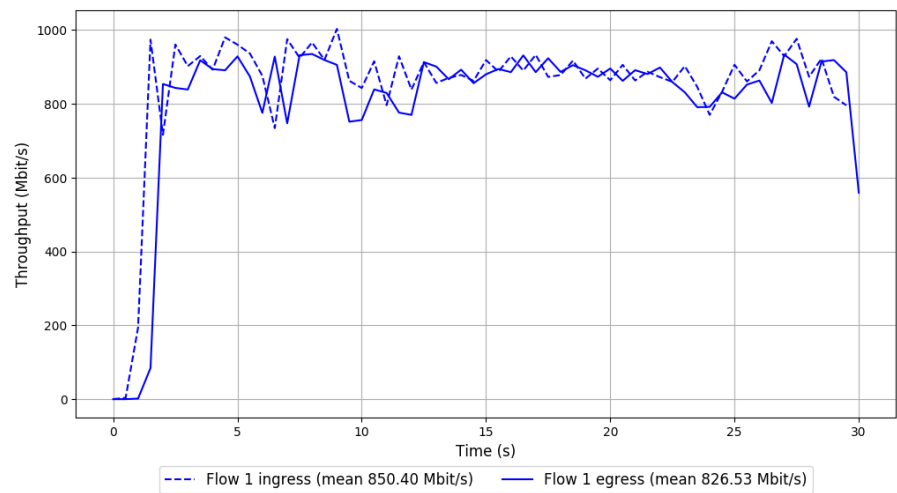
-- Flow 1:

Average throughput: 826.53 Mbit/s

95th percentile per-packet one-way delay: 181.676 ms

Loss rate: 3.53%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-10 22:41:48

End at: 2018-09-10 22:42:18

Local clock offset: 20.425 ms

Remote clock offset: 20.4 ms

Below is generated by plot.py at 2018-09-11 00:26:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 733.10 Mbit/s

95th percentile per-packet one-way delay: 201.053 ms

Loss rate: 6.60%

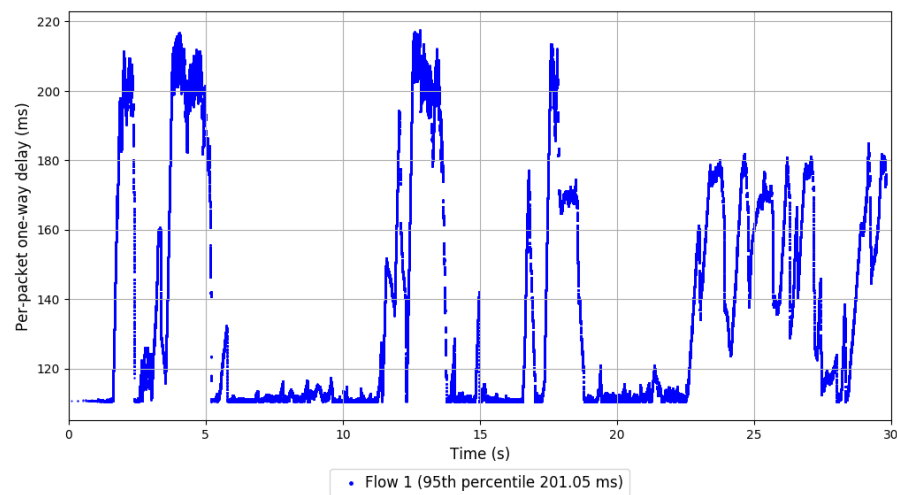
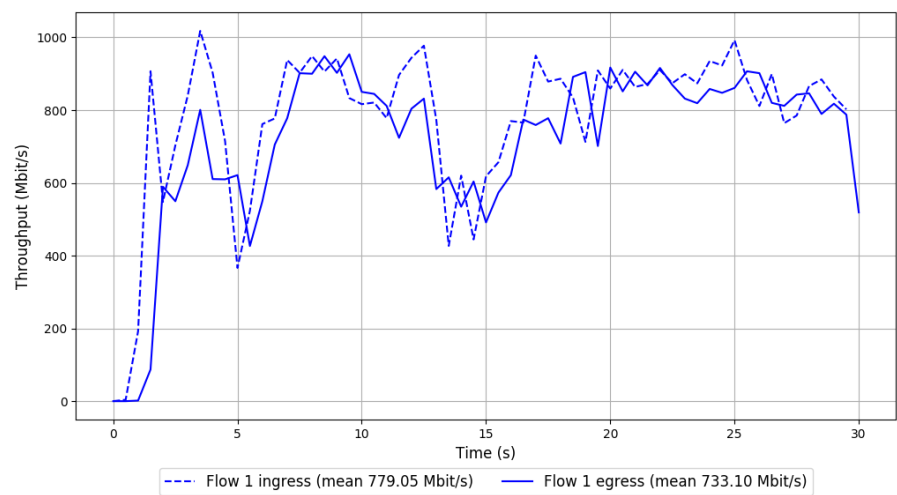
-- Flow 1:

Average throughput: 733.10 Mbit/s

95th percentile per-packet one-way delay: 201.053 ms

Loss rate: 6.60%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-10 23:08:24

End at: 2018-09-10 23:08:54

Local clock offset: 17.264 ms

Remote clock offset: 8.776 ms

Below is generated by plot.py at 2018-09-11 00:26:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 733.49 Mbit/s

95th percentile per-packet one-way delay: 186.770 ms

Loss rate: 5.67%

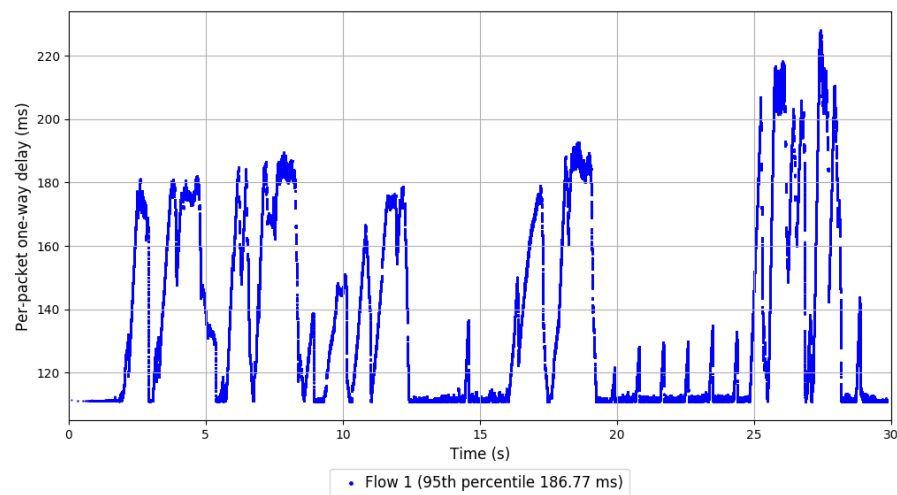
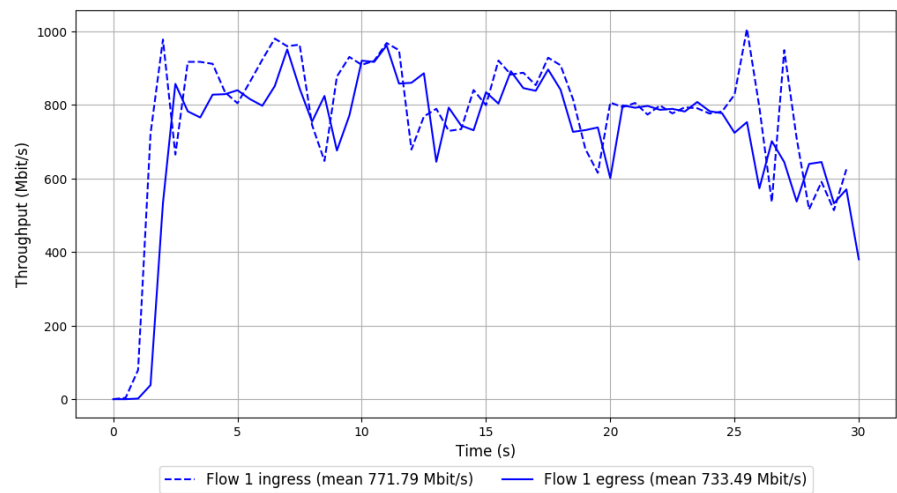
-- Flow 1:

Average throughput: 733.49 Mbit/s

95th percentile per-packet one-way delay: 186.770 ms

Loss rate: 5.67%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-10 23:35:05

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

Local clock offset: 3.558 ms

Remote clock offset: 3.773 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 782.63 Mbit/s

95th percentile per-packet one-way delay: 183.312 ms

Loss rate: 6.62%

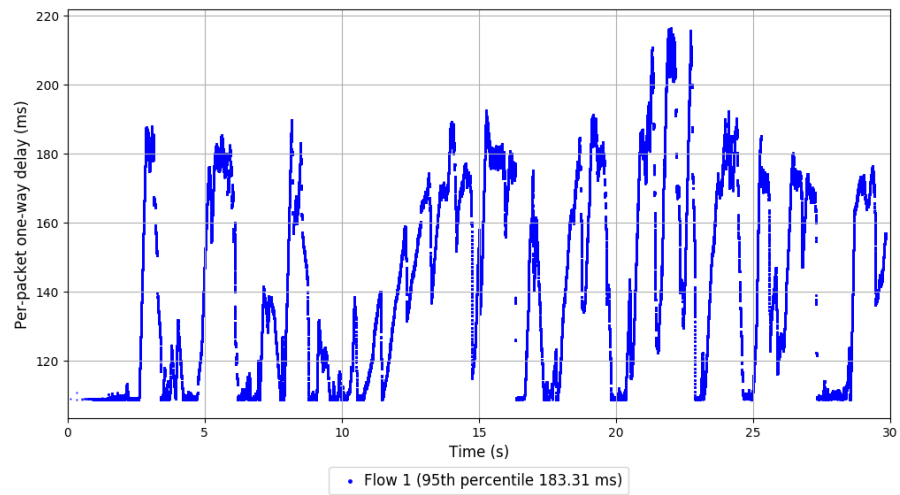
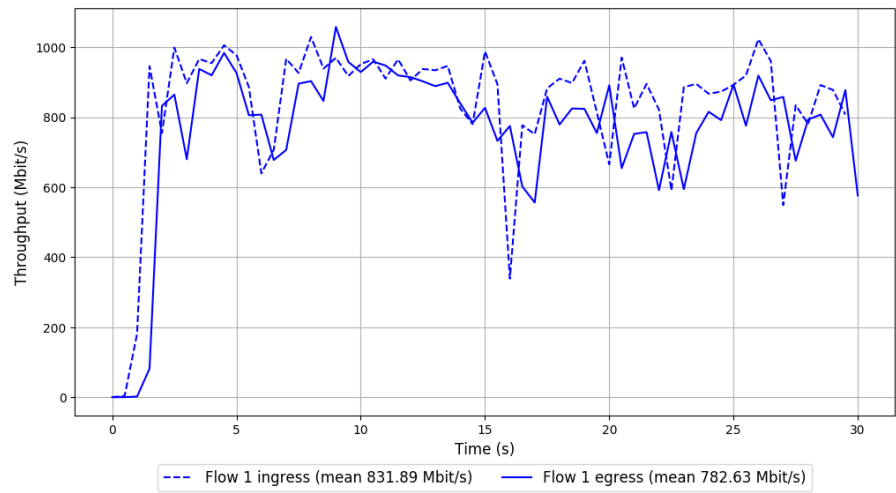
-- Flow 1:

Average throughput: 782.63 Mbit/s

95th percentile per-packet one-way delay: 183.312 ms

Loss rate: 6.62%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-10 21:31:11

End at: 2018-09-10 21:31:41

Local clock offset: 3.844 ms

Remote clock offset: 4.26 ms

Below is generated by plot.py at 2018-09-11 00:28:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 838.55 Mbit/s

95th percentile per-packet one-way delay: 174.396 ms

Loss rate: 3.00%

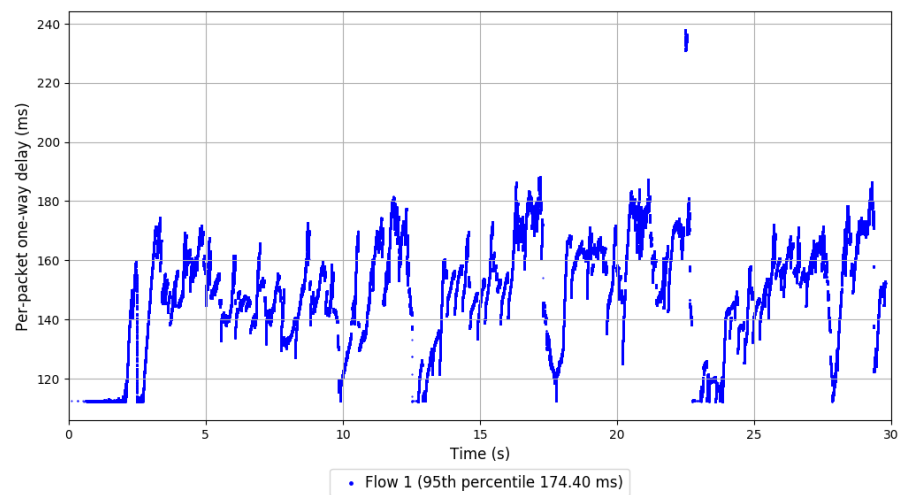
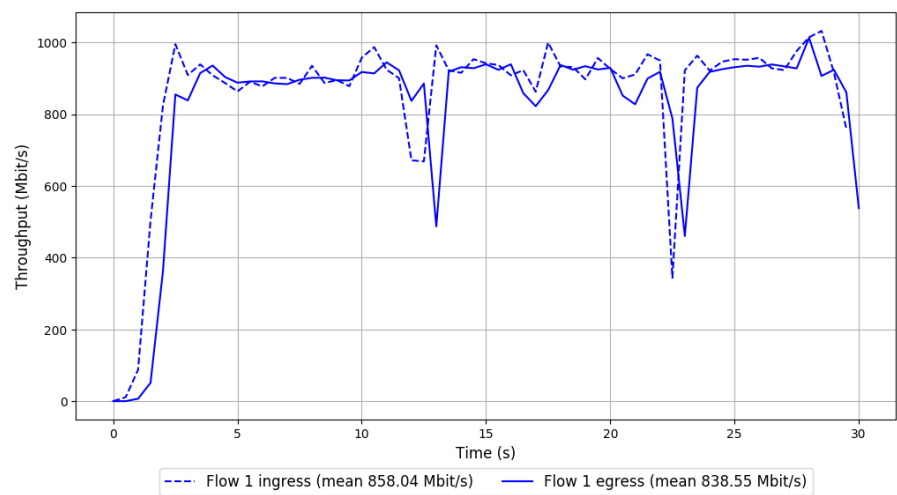
-- Flow 1:

Average throughput: 838.55 Mbit/s

95th percentile per-packet one-way delay: 174.396 ms

Loss rate: 3.00%

Run 1: Report of FillP-Sheep — Data Link

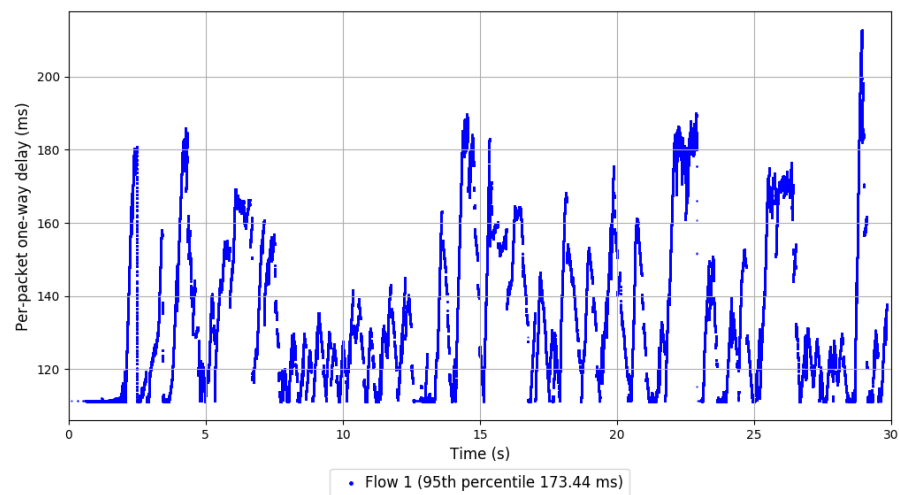
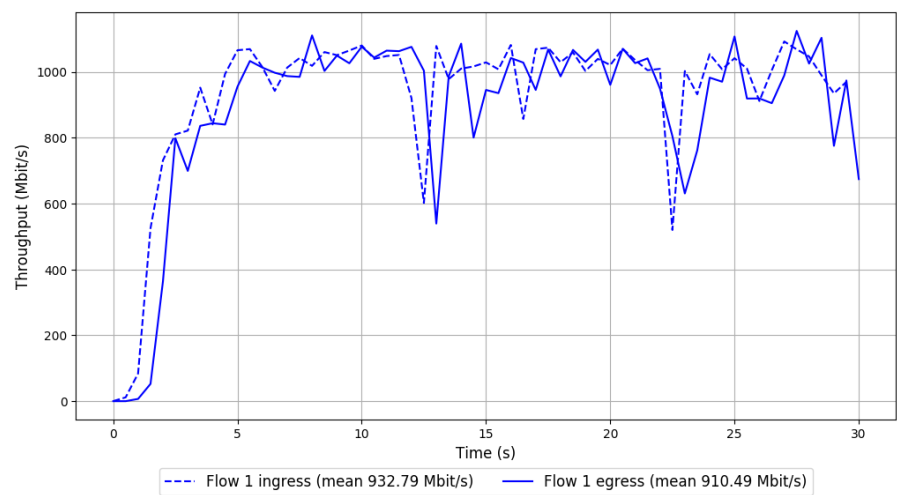


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-10 21:57:59
End at: 2018-09-10 21:58:29
Local clock offset: 18.483 ms
Remote clock offset: 19.604 ms

Below is generated by plot.py at 2018-09-11 00:30:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 910.49 Mbit/s
95th percentile per-packet one-way delay: 173.442 ms
Loss rate: 3.12%
-- Flow 1:
Average throughput: 910.49 Mbit/s
95th percentile per-packet one-way delay: 173.442 ms
Loss rate: 3.12%

Run 2: Report of FillP-Sheep — Data Link

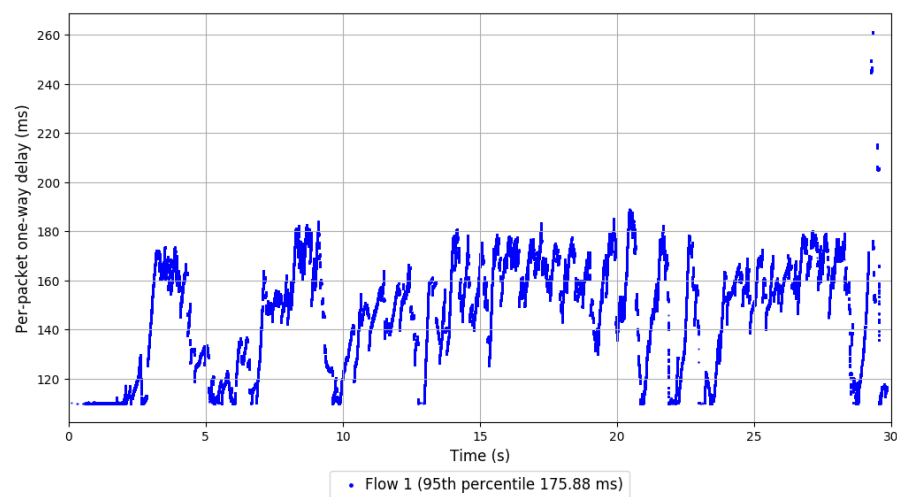
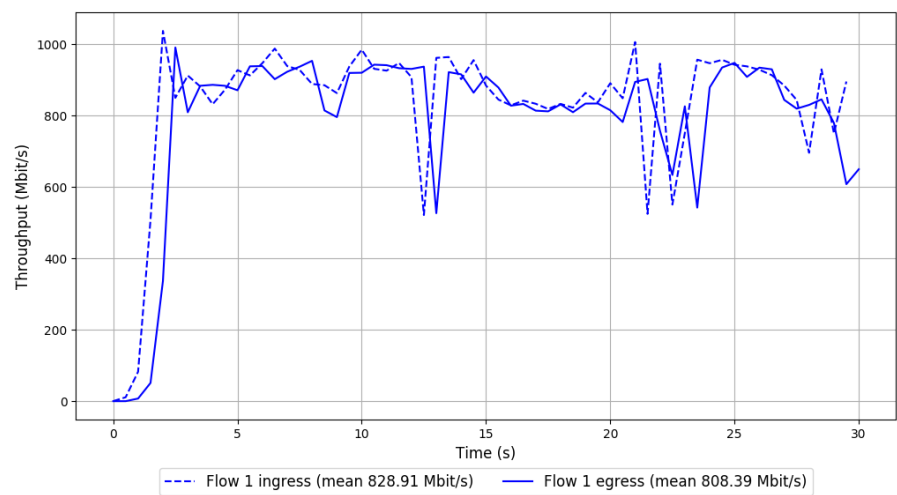


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-10 22:24:55
End at: 2018-09-10 22:25:25
Local clock offset: 24.927 ms
Remote clock offset: 27.202 ms

Below is generated by plot.py at 2018-09-11 00:30:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 808.39 Mbit/s
95th percentile per-packet one-way delay: 175.875 ms
Loss rate: 3.20%
-- Flow 1:
Average throughput: 808.39 Mbit/s
95th percentile per-packet one-way delay: 175.875 ms
Loss rate: 3.20%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-10 22:51:50

End at: 2018-09-10 22:52:20

Local clock offset: 13.05 ms

Remote clock offset: 9.84 ms

Below is generated by plot.py at 2018-09-11 00:33:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 781.54 Mbit/s

95th percentile per-packet one-way delay: 183.147 ms

Loss rate: 5.04%

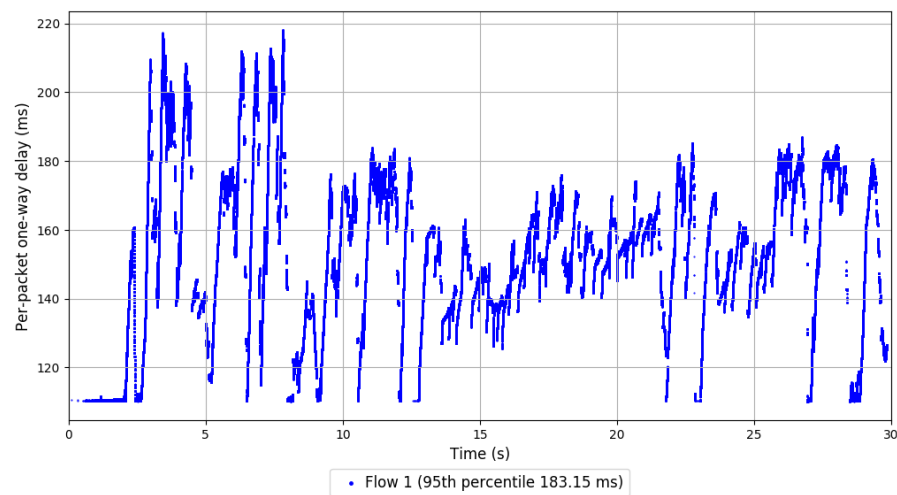
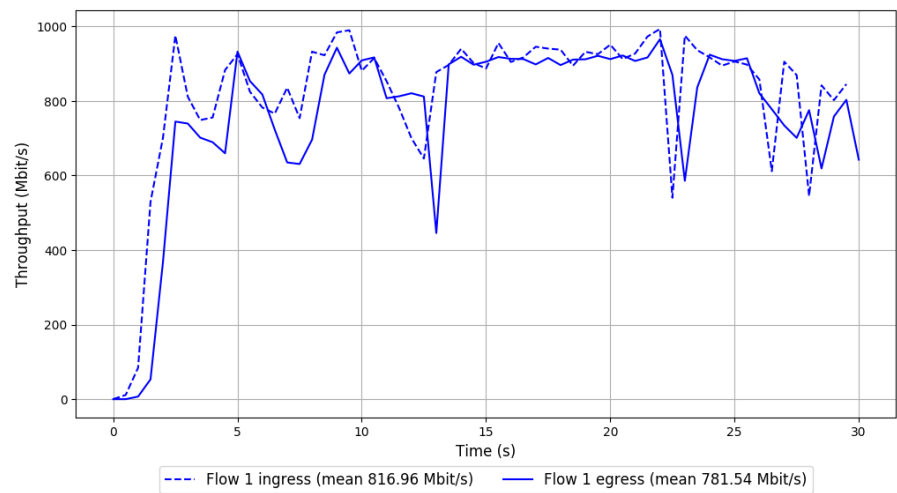
-- Flow 1:

Average throughput: 781.54 Mbit/s

95th percentile per-packet one-way delay: 183.147 ms

Loss rate: 5.04%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-10 23:18:17

End at: 2018-09-10 23:18:47

Local clock offset: 8.302 ms

Remote clock offset: 5.895 ms

Below is generated by plot.py at 2018-09-11 00:43:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 896.34 Mbit/s

95th percentile per-packet one-way delay: 172.925 ms

Loss rate: 3.16%

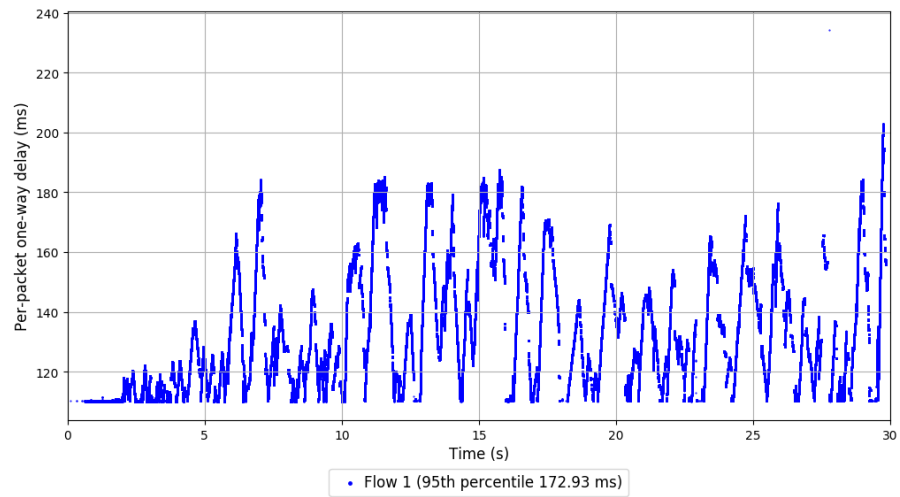
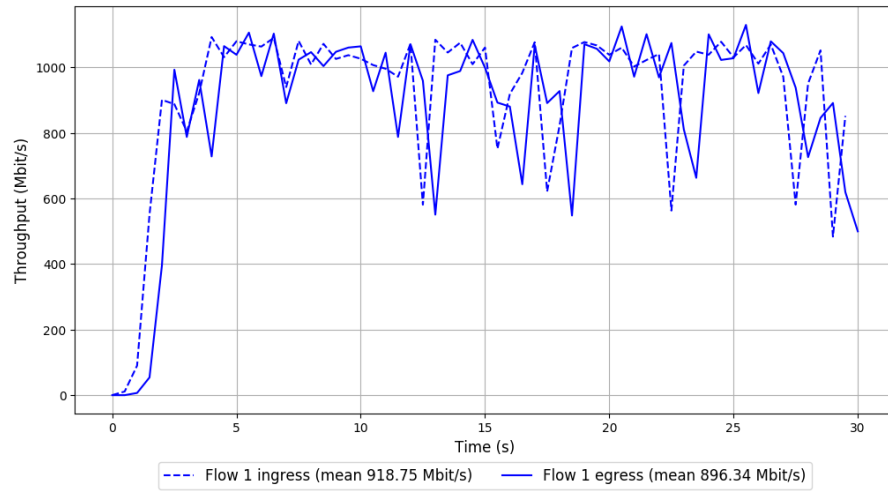
-- Flow 1:

Average throughput: 896.34 Mbit/s

95th percentile per-packet one-way delay: 172.925 ms

Loss rate: 3.16%

Run 5: Report of FillP-Sheep — Data Link

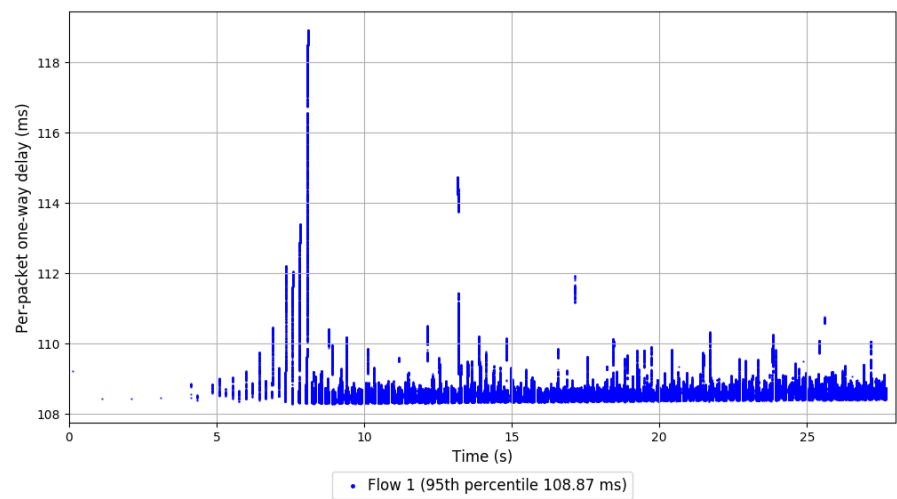
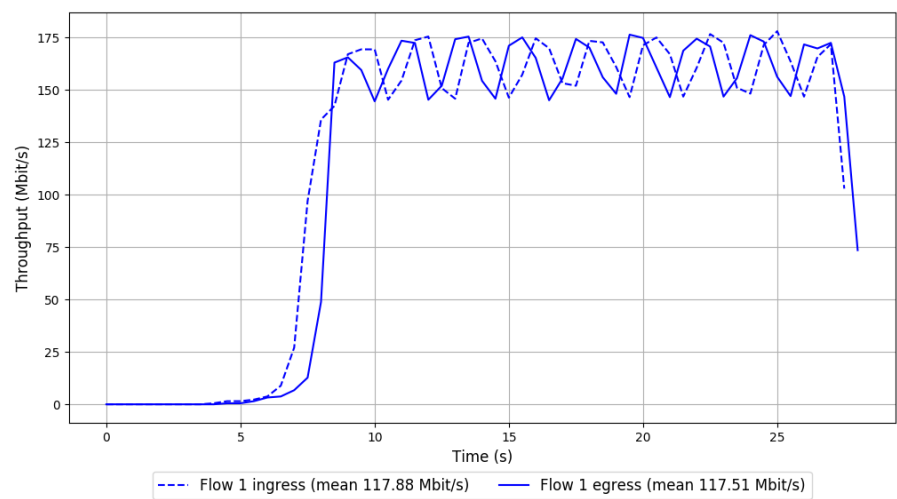


```
Run 1: Statistics of Indigo

Start at: 2018-09-10 21:29:50
End at: 2018-09-10 21:30:20
Local clock offset: 1.943 ms
Remote clock offset: 4.596 ms

# Below is generated by plot.py at 2018-09-11 00:43:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 117.51 Mbit/s
95th percentile per-packet one-way delay: 108.873 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 117.51 Mbit/s
95th percentile per-packet one-way delay: 108.873 ms
Loss rate: 1.12%
```

Run 1: Report of Indigo — Data Link

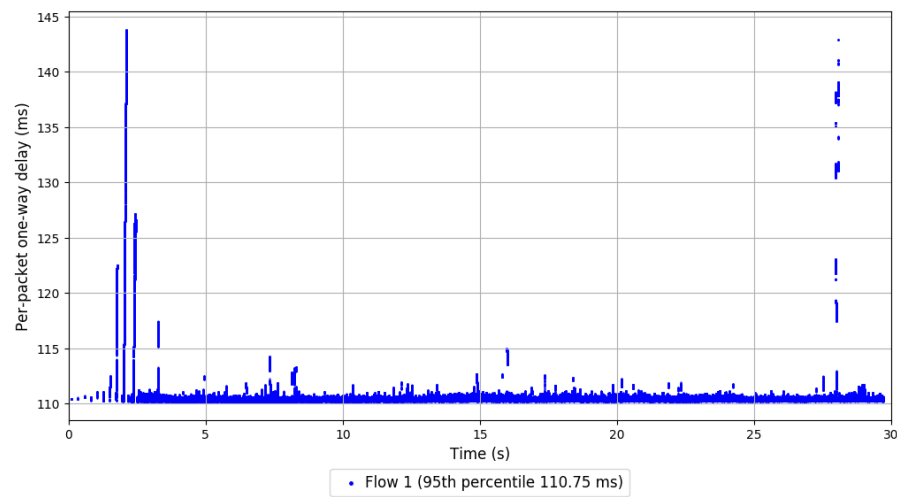
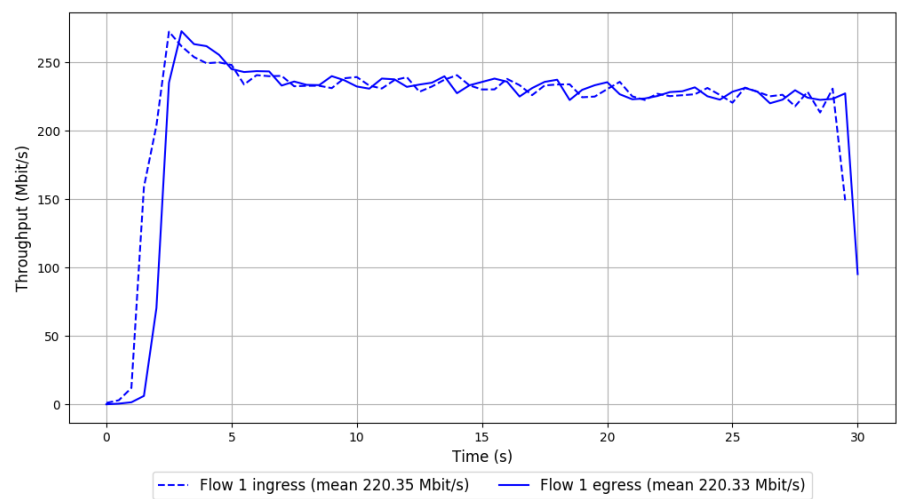


Run 2: Statistics of Indigo

Start at: 2018-09-10 21:56:28
End at: 2018-09-10 21:56:58
Local clock offset: 16.846 ms
Remote clock offset: 18.776 ms

Below is generated by plot.py at 2018-09-11 00:43:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 220.33 Mbit/s
95th percentile per-packet one-way delay: 110.755 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 220.33 Mbit/s
95th percentile per-packet one-way delay: 110.755 ms
Loss rate: 0.76%

Run 2: Report of Indigo — Data Link

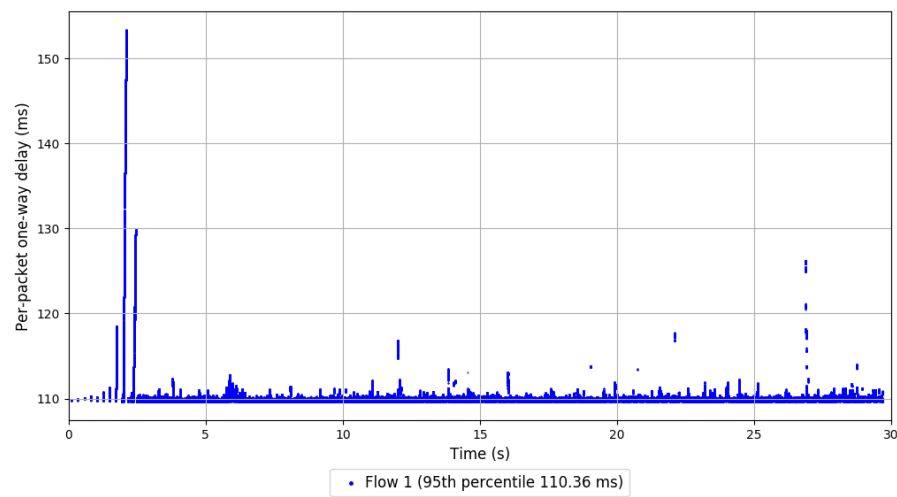
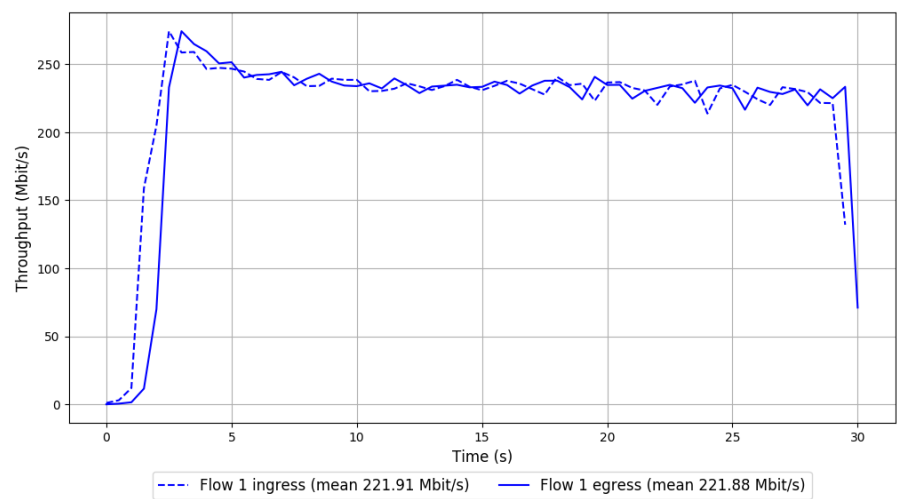


Run 3: Statistics of Indigo

Start at: 2018-09-10 22:23:24
End at: 2018-09-10 22:23:54
Local clock offset: 22.534 ms
Remote clock offset: 24.881 ms

Below is generated by plot.py at 2018-09-11 00:43:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 221.88 Mbit/s
95th percentile per-packet one-way delay: 110.356 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 221.88 Mbit/s
95th percentile per-packet one-way delay: 110.356 ms
Loss rate: 0.76%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-10 22:50:19

End at: 2018-09-10 22:50:49

Local clock offset: 15.428 ms

Remote clock offset: 10.7 ms

Below is generated by plot.py at 2018-09-11 00:43:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 219.93 Mbit/s

95th percentile per-packet one-way delay: 112.760 ms

Loss rate: 0.75%

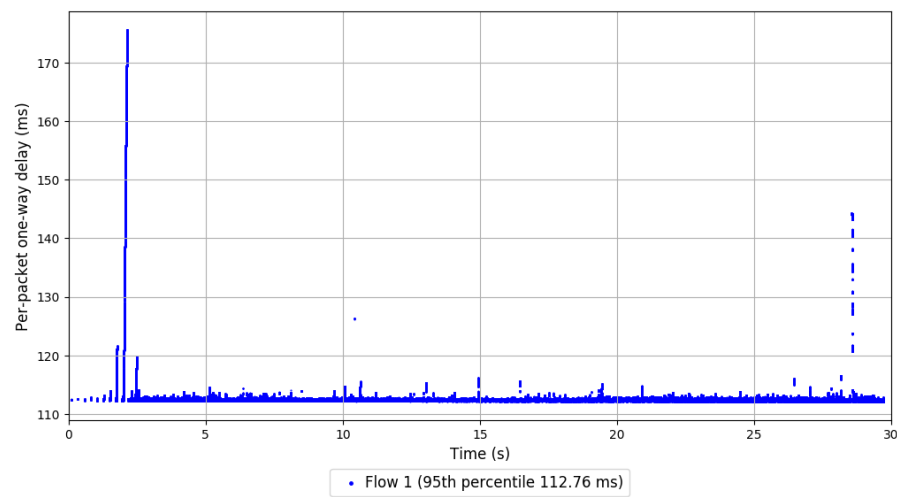
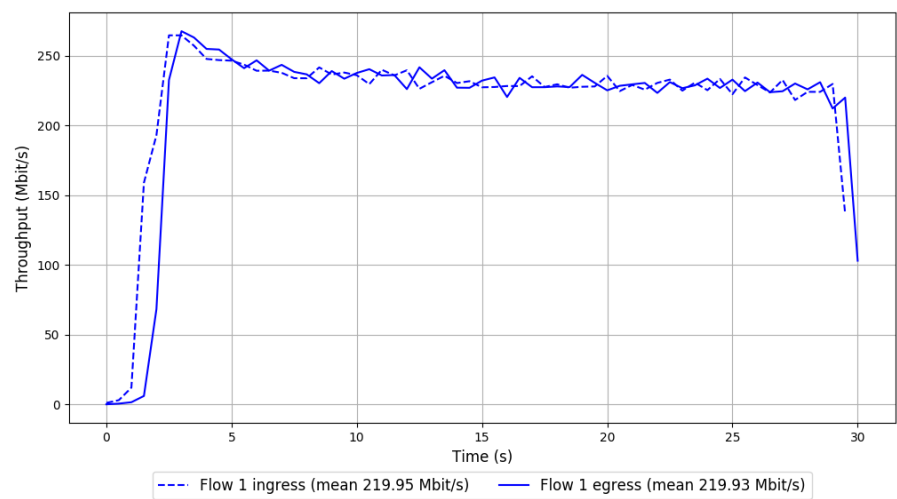
-- Flow 1:

Average throughput: 219.93 Mbit/s

95th percentile per-packet one-way delay: 112.760 ms

Loss rate: 0.75%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-10 23:16:52

End at: 2018-09-10 23:17:22

Local clock offset: 8.888 ms

Remote clock offset: 4.669 ms

Below is generated by plot.py at 2018-09-11 00:43:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 157.02 Mbit/s

95th percentile per-packet one-way delay: 111.910 ms

Loss rate: 0.79%

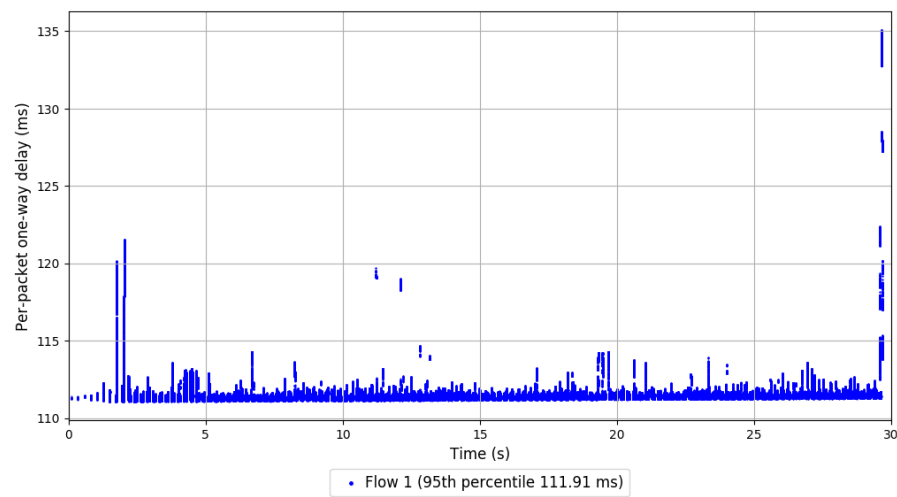
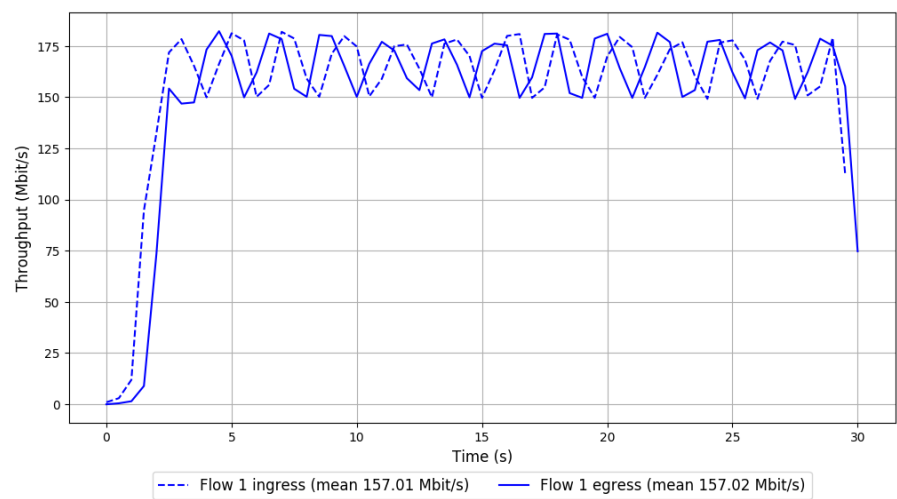
-- Flow 1:

Average throughput: 157.02 Mbit/s

95th percentile per-packet one-way delay: 111.910 ms

Loss rate: 0.79%

Run 5: Report of Indigo — Data Link

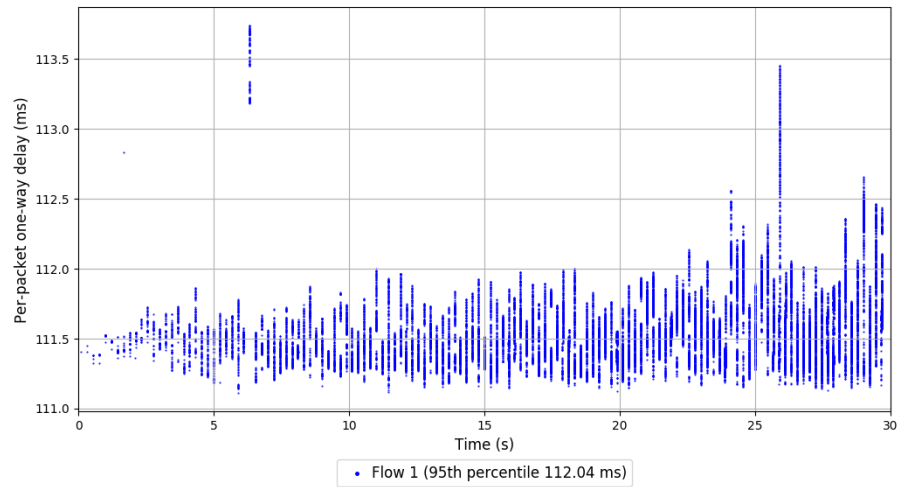
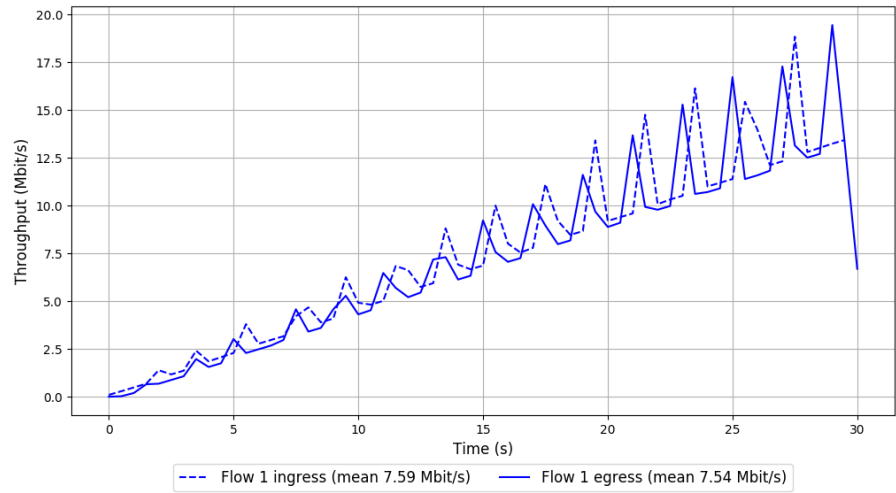



```
Run 1: Statistics of LEDBAT

Start at: 2018-09-10 21:55:18
End at: 2018-09-10 21:55:48
Local clock offset: 15.017 ms
Remote clock offset: 15.598 ms

# Below is generated by plot.py at 2018-09-11 00:43:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.54 Mbit/s
95th percentile per-packet one-way delay: 112.039 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 7.54 Mbit/s
95th percentile per-packet one-way delay: 112.039 ms
Loss rate: 1.49%
```

Run 1: Report of LEDBAT — Data Link

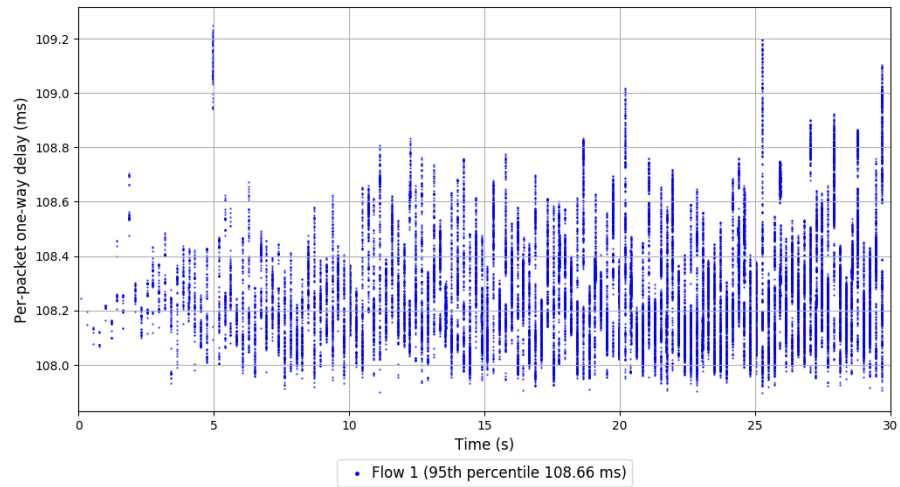
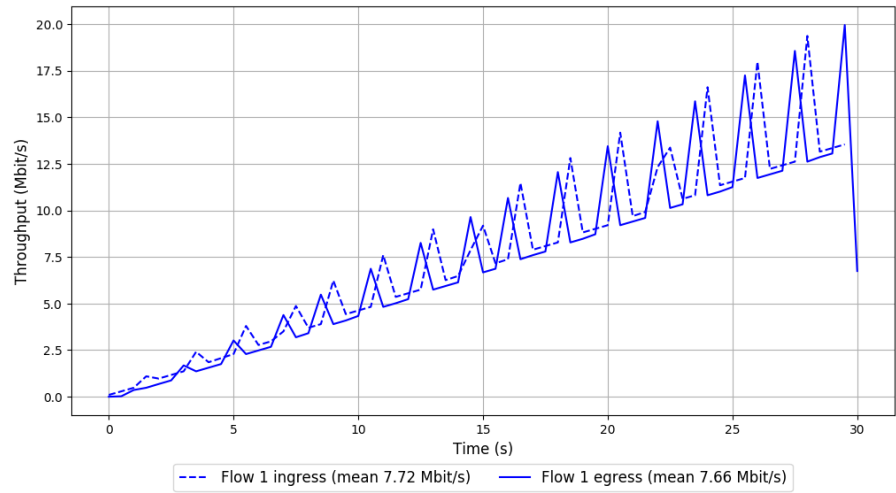


Run 2: Statistics of LEDBAT

Start at: 2018-09-10 22:22:14
End at: 2018-09-10 22:22:44
Local clock offset: 21.495 ms
Remote clock offset: 24.999 ms

Below is generated by plot.py at 2018-09-11 00:43:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 108.660 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 108.660 ms
Loss rate: 1.48%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-10 22:49:09

End at: 2018-09-10 22:49:39

Local clock offset: 15.765 ms

Remote clock offset: 11.06 ms

Below is generated by plot.py at 2018-09-11 00:43:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.51 Mbit/s

95th percentile per-packet one-way delay: 113.769 ms

Loss rate: 1.49%

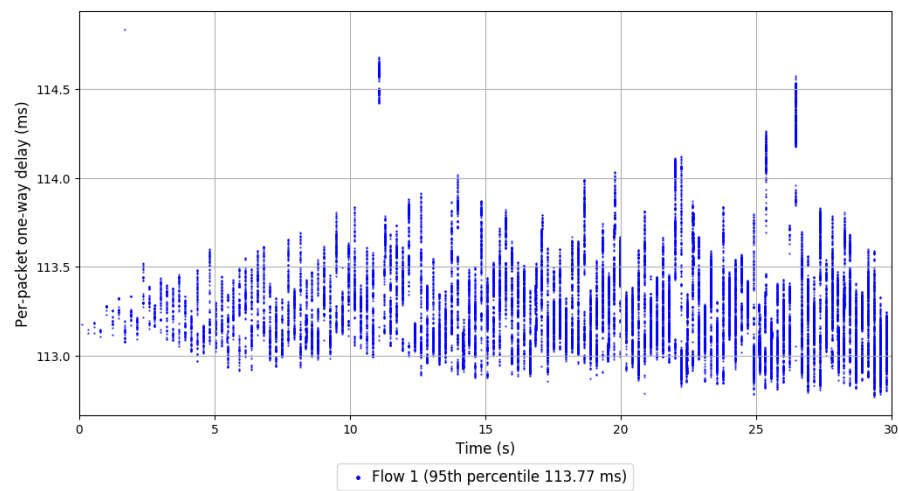
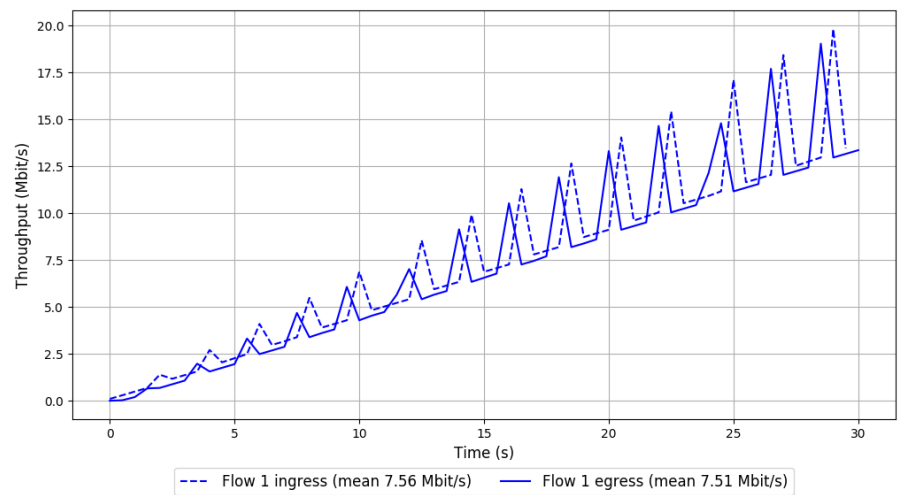
-- Flow 1:

Average throughput: 7.51 Mbit/s

95th percentile per-packet one-way delay: 113.769 ms

Loss rate: 1.49%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-10 23:15:42

End at: 2018-09-10 23:16:12

Local clock offset: 10.325 ms

Remote clock offset: 5.244 ms

Below is generated by plot.py at 2018-09-11 00:43:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.50 Mbit/s

95th percentile per-packet one-way delay: 112.882 ms

Loss rate: 1.49%

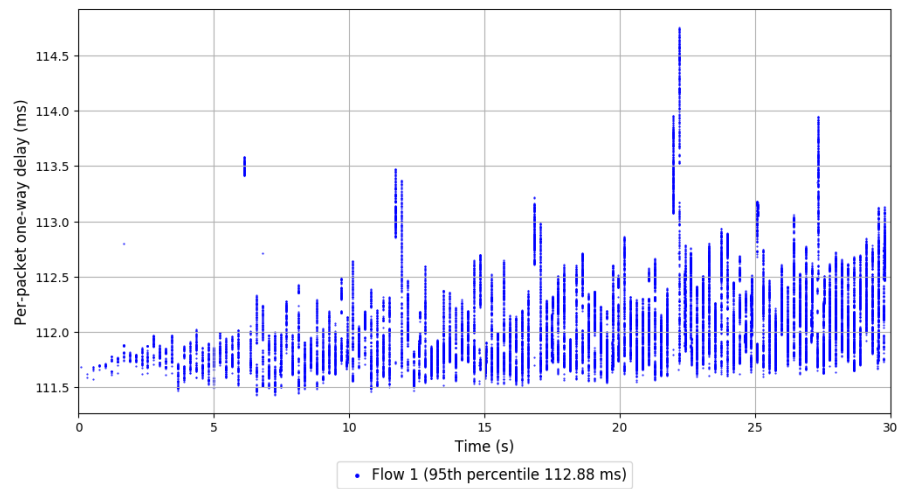
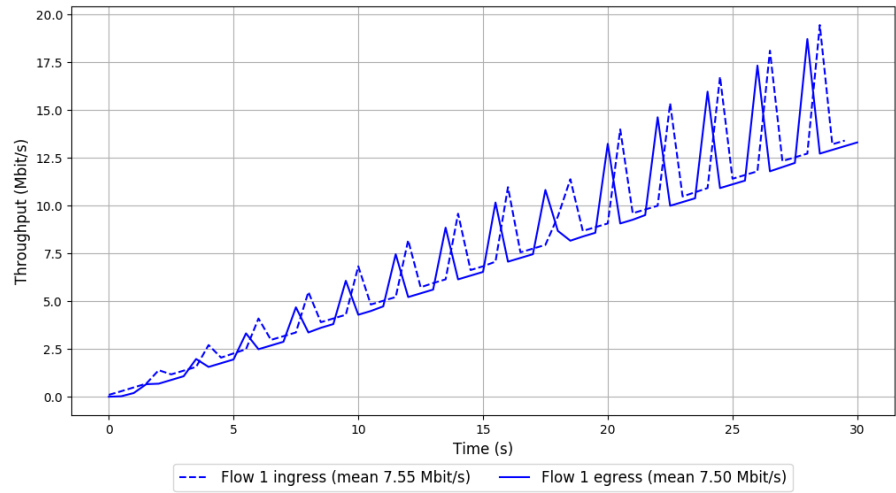
-- Flow 1:

Average throughput: 7.50 Mbit/s

95th percentile per-packet one-way delay: 112.882 ms

Loss rate: 1.49%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-10 23:42:31

End at: 2018-09-10 23:43:01

Local clock offset: 4.073 ms

Remote clock offset: 4.344 ms

Below is generated by plot.py at 2018-09-11 00:43:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.62 Mbit/s

95th percentile per-packet one-way delay: 110.946 ms

Loss rate: 1.48%

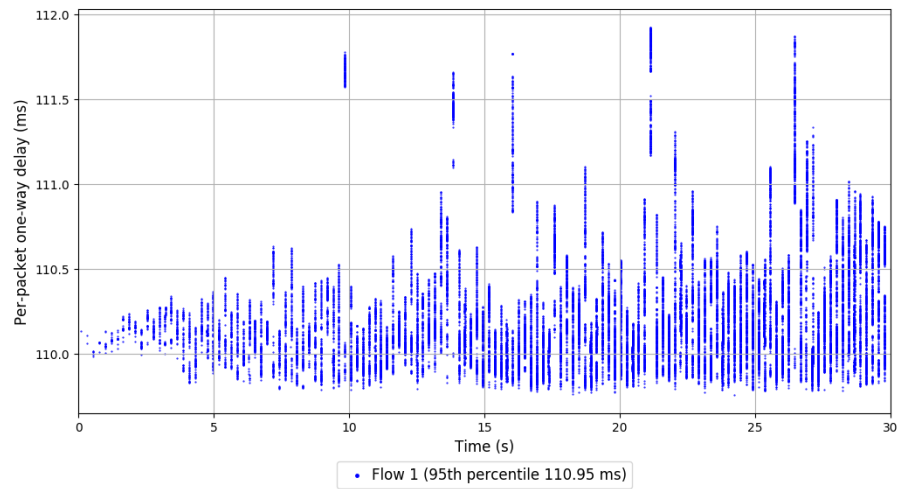
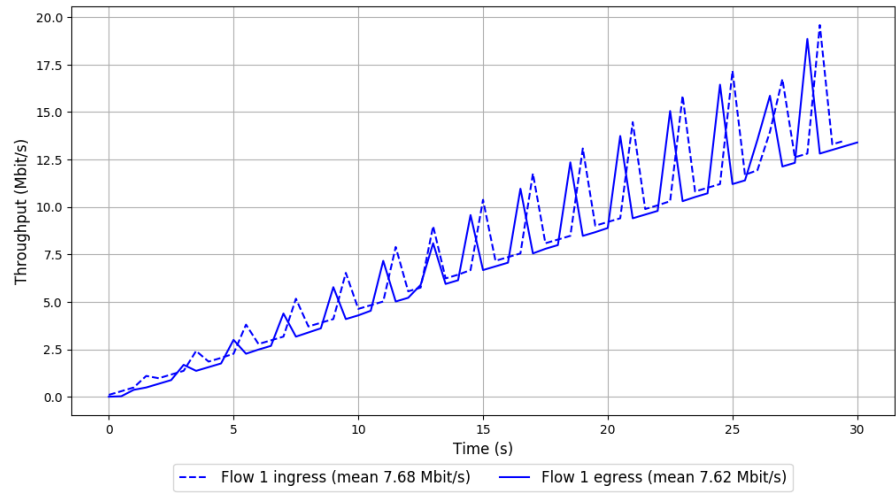
-- Flow 1:

Average throughput: 7.62 Mbit/s

95th percentile per-packet one-way delay: 110.946 ms

Loss rate: 1.48%

Run 5: Report of LEDBAT — Data Link

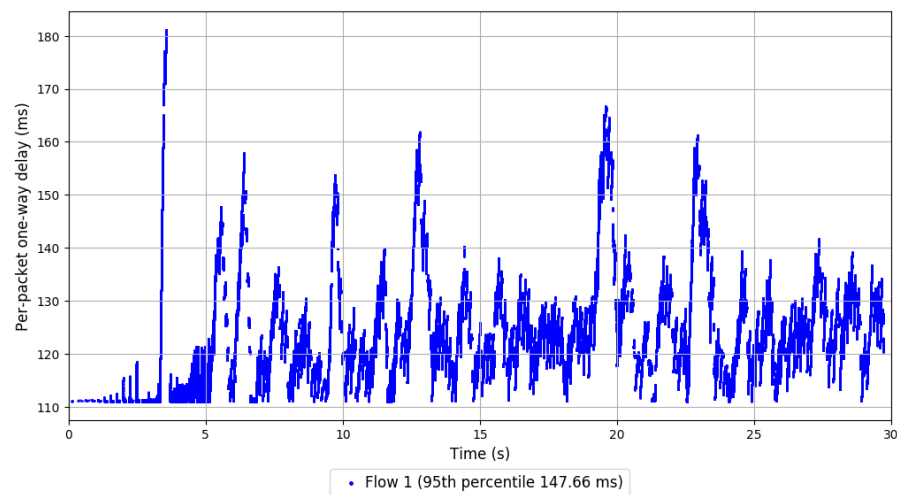
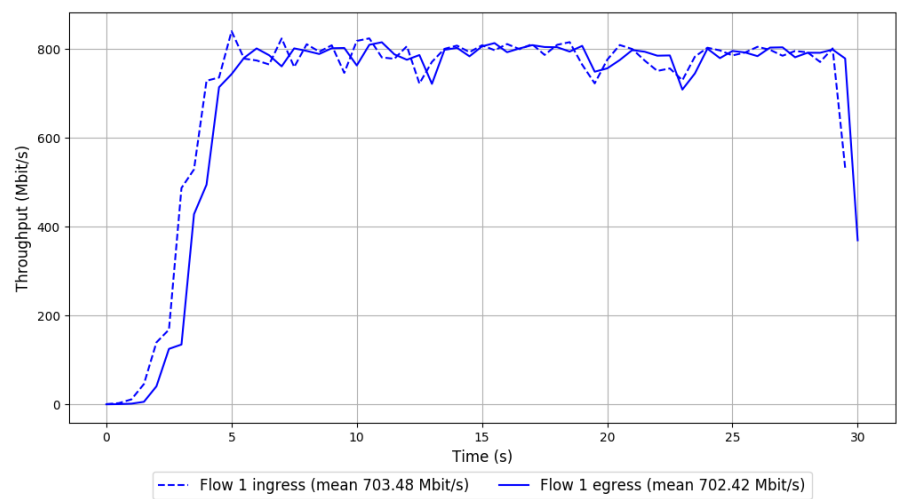


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-10 21:35:16
End at: 2018-09-10 21:35:46
Local clock offset: 8.975 ms
Remote clock offset: 8.792 ms

# Below is generated by plot.py at 2018-09-11 00:43:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 702.42 Mbit/s
95th percentile per-packet one-way delay: 147.657 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 702.42 Mbit/s
95th percentile per-packet one-way delay: 147.657 ms
Loss rate: 0.87%
```

Run 1: Report of Indigo-Muses — Data Link

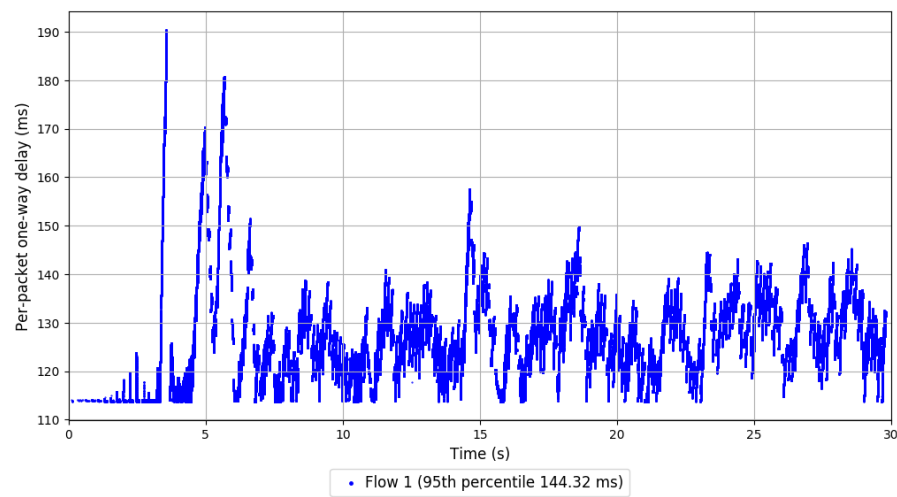
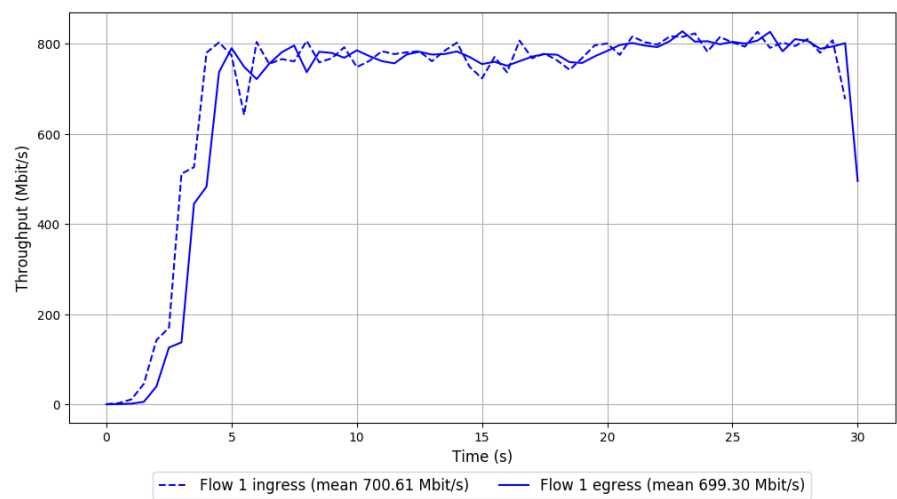


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-10 22:02:07
End at: 2018-09-10 22:02:37
Local clock offset: 24.958 ms
Remote clock offset: 23.132 ms

Below is generated by plot.py at 2018-09-11 00:43:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 699.30 Mbit/s
95th percentile per-packet one-way delay: 144.324 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 699.30 Mbit/s
95th percentile per-packet one-way delay: 144.324 ms
Loss rate: 0.93%

Run 2: Report of Indigo-Muses — Data Link

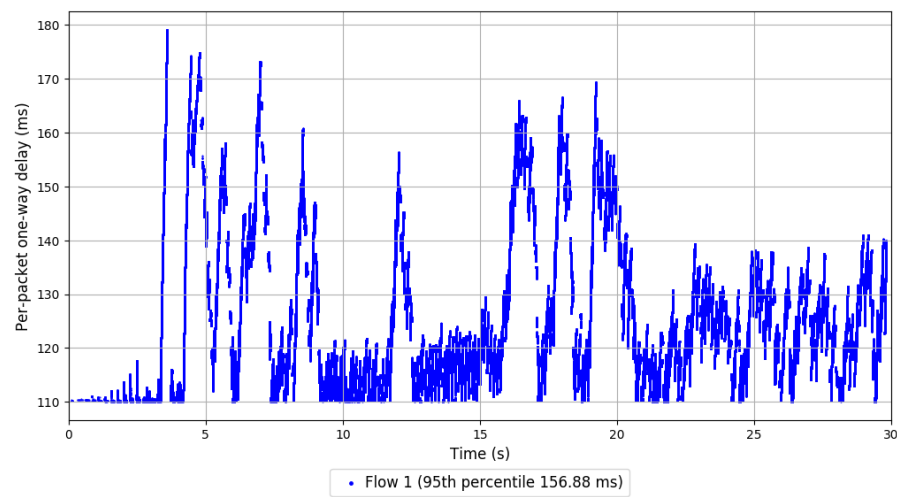
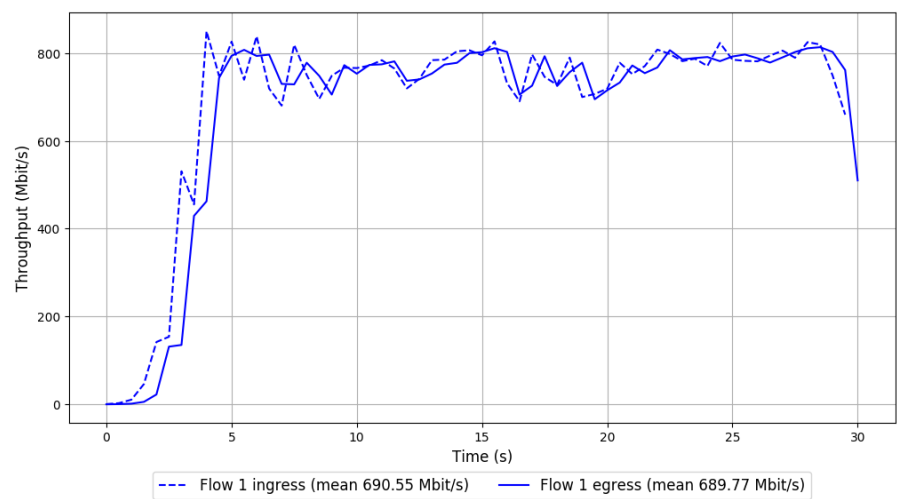


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-10 22:29:01
End at: 2018-09-10 22:29:31
Local clock offset: 29.085 ms
Remote clock offset: 31.425 ms

Below is generated by plot.py at 2018-09-11 00:44:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 689.77 Mbit/s
95th percentile per-packet one-way delay: 156.875 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 689.77 Mbit/s
95th percentile per-packet one-way delay: 156.875 ms
Loss rate: 0.85%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

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

End at: 2018-09-10 22:56:25

Local clock offset: 13.267 ms

Remote clock offset: 9.031 ms

Below is generated by plot.py at 2018-09-11 00:44:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 688.93 Mbit/s

95th percentile per-packet one-way delay: 156.694 ms

Loss rate: 0.89%

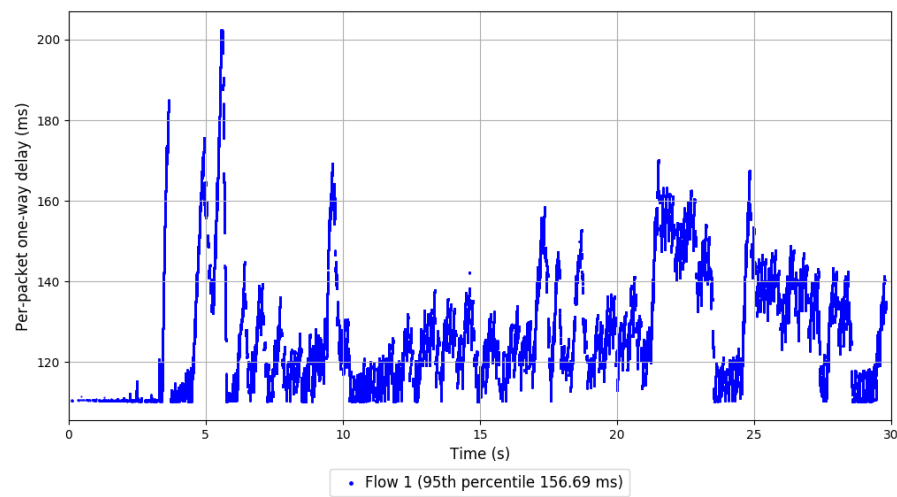
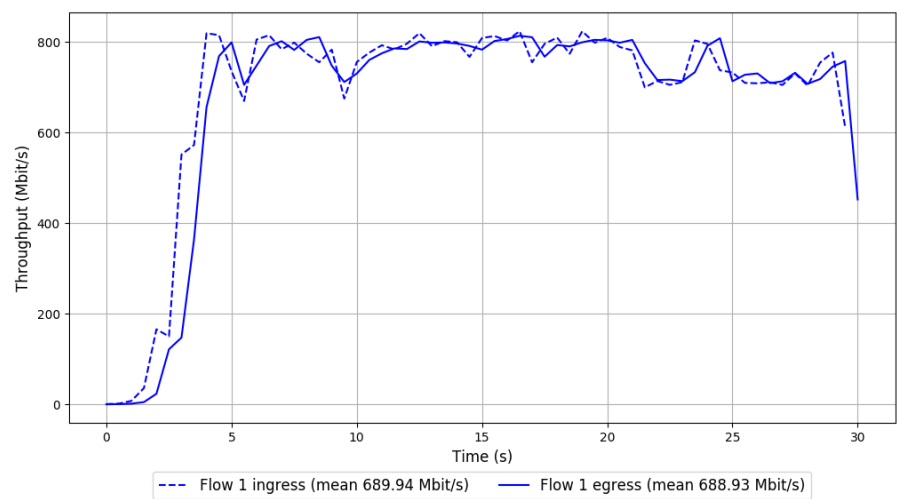
-- Flow 1:

Average throughput: 688.93 Mbit/s

95th percentile per-packet one-way delay: 156.694 ms

Loss rate: 0.89%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-10 23:22:27

End at: 2018-09-10 23:22:57

Local clock offset: 6.909 ms

Remote clock offset: 3.634 ms

Below is generated by plot.py at 2018-09-11 00:45:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 690.76 Mbit/s

95th percentile per-packet one-way delay: 169.457 ms

Loss rate: 0.97%

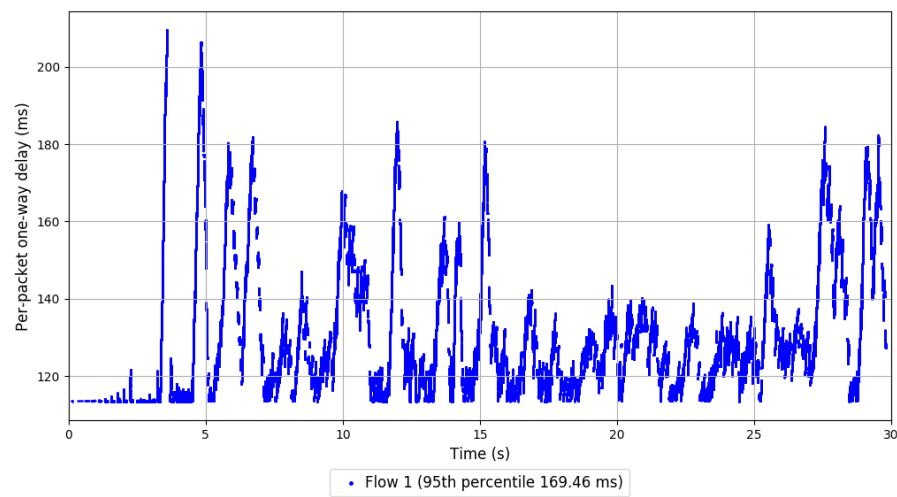
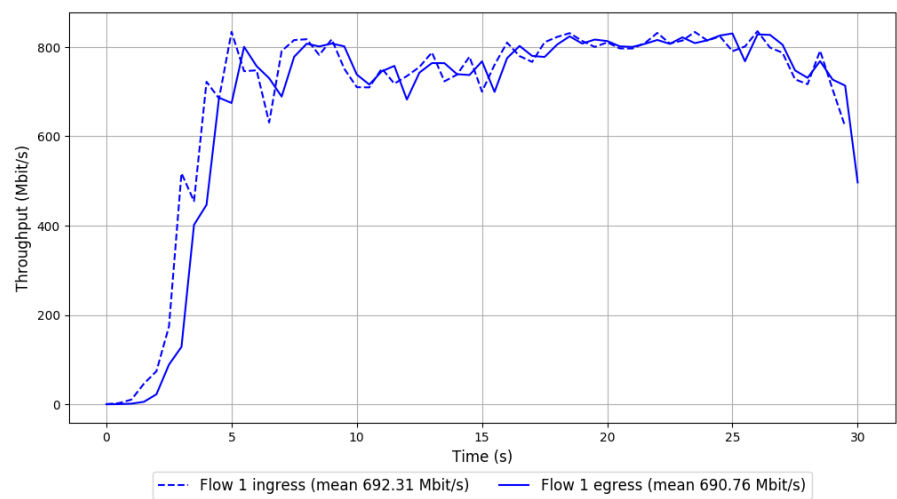
-- Flow 1:

Average throughput: 690.76 Mbit/s

95th percentile per-packet one-way delay: 169.457 ms

Loss rate: 0.97%

Run 5: Report of Indigo-Muses — Data Link

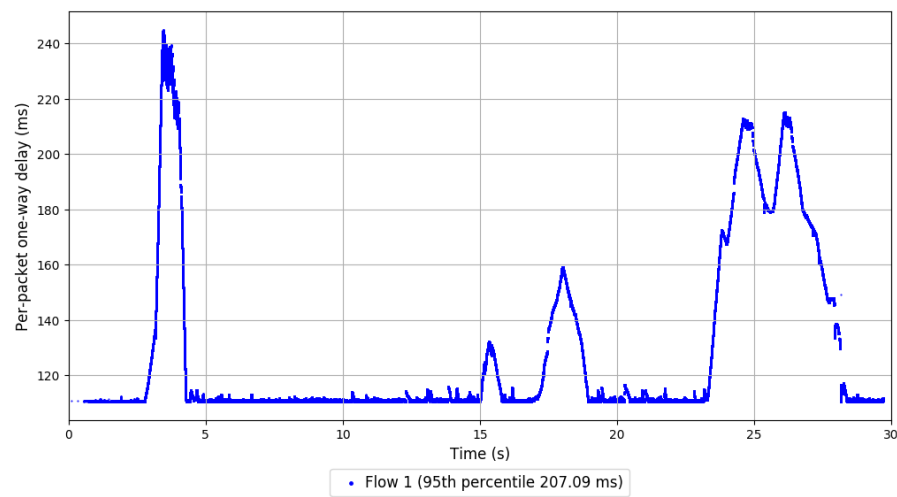
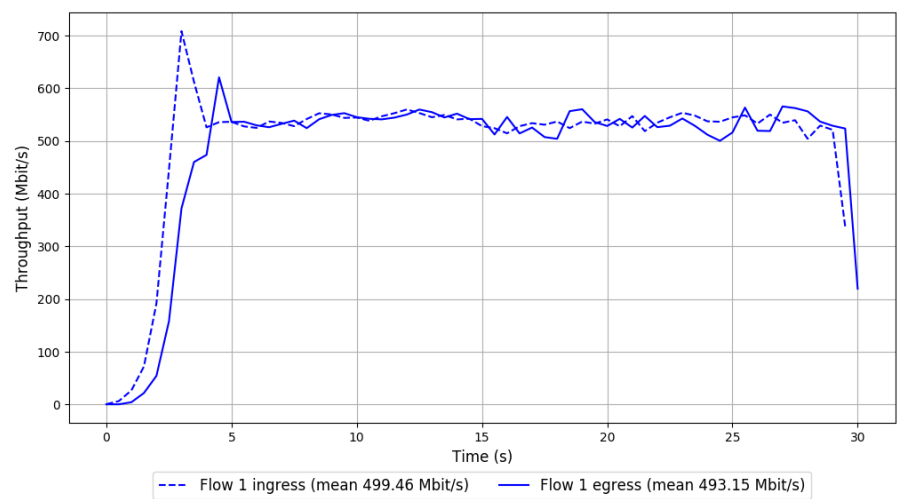


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-10 21:41:46
End at: 2018-09-10 21:42:16
Local clock offset: 9.765 ms
Remote clock offset: 10.837 ms

# Below is generated by plot.py at 2018-09-11 00:49:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 493.15 Mbit/s
95th percentile per-packet one-way delay: 207.087 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 493.15 Mbit/s
95th percentile per-packet one-way delay: 207.087 ms
Loss rate: 1.99%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-10 22:08:42

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

Local clock offset: 17.538 ms

Remote clock offset: 17.976 ms

Below is generated by plot.py at 2018-09-11 00:50:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 474.56 Mbit/s

95th percentile per-packet one-way delay: 209.020 ms

Loss rate: 1.55%

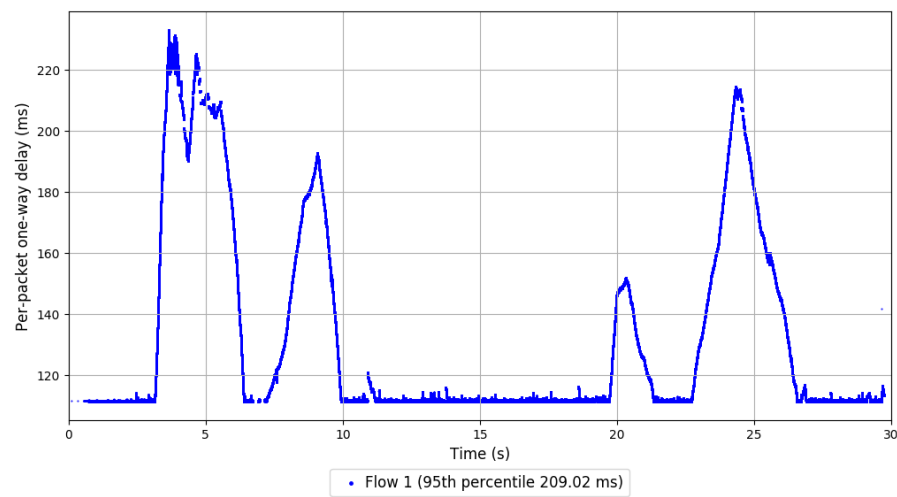
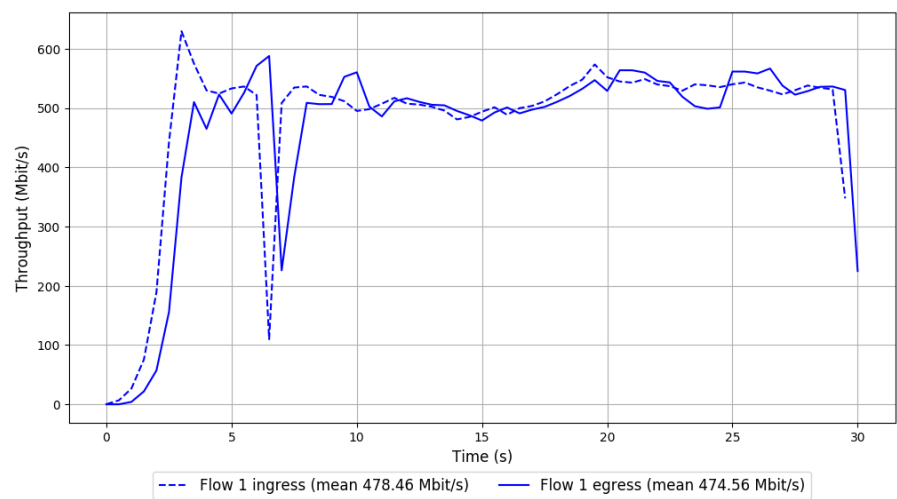
-- Flow 1:

Average throughput: 474.56 Mbit/s

95th percentile per-packet one-way delay: 209.020 ms

Loss rate: 1.55%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-10 22:35:33

End at: 2018-09-10 22:36:03

Local clock offset: 33.905 ms

Remote clock offset: 36.86 ms

Below is generated by plot.py at 2018-09-11 00:57:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 470.12 Mbit/s

95th percentile per-packet one-way delay: 223.791 ms

Loss rate: 4.25%

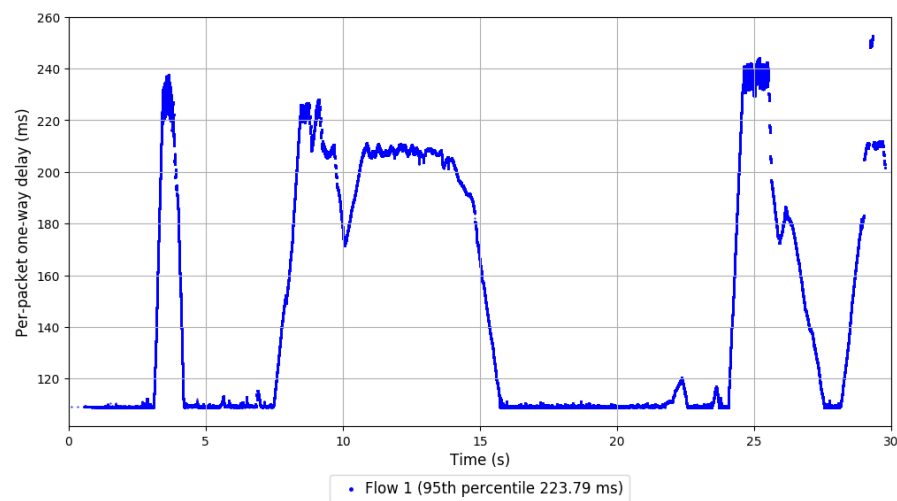
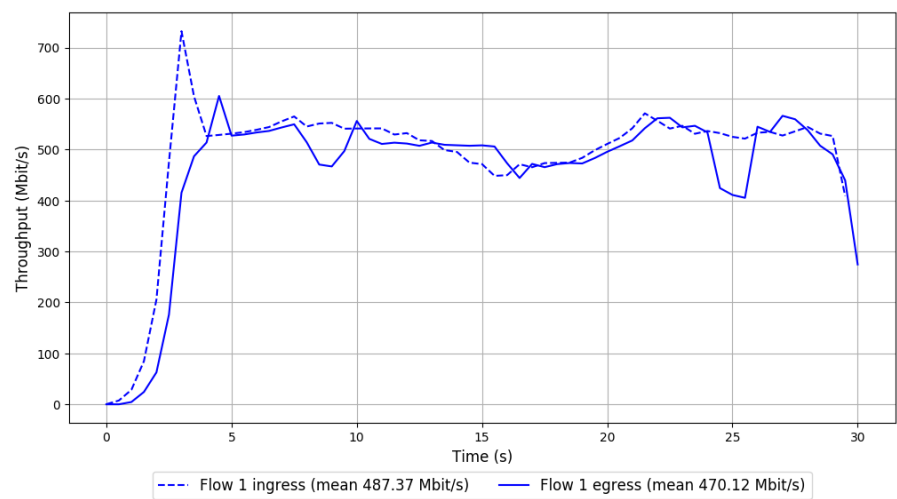
-- Flow 1:

Average throughput: 470.12 Mbit/s

95th percentile per-packet one-way delay: 223.791 ms

Loss rate: 4.25%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

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

End at: 2018-09-10 23:02:53

Local clock offset: 13.892 ms

Remote clock offset: 8.054 ms

Below is generated by plot.py at 2018-09-11 00:57:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 350.50 Mbit/s

95th percentile per-packet one-way delay: 220.183 ms

Loss rate: 3.88%

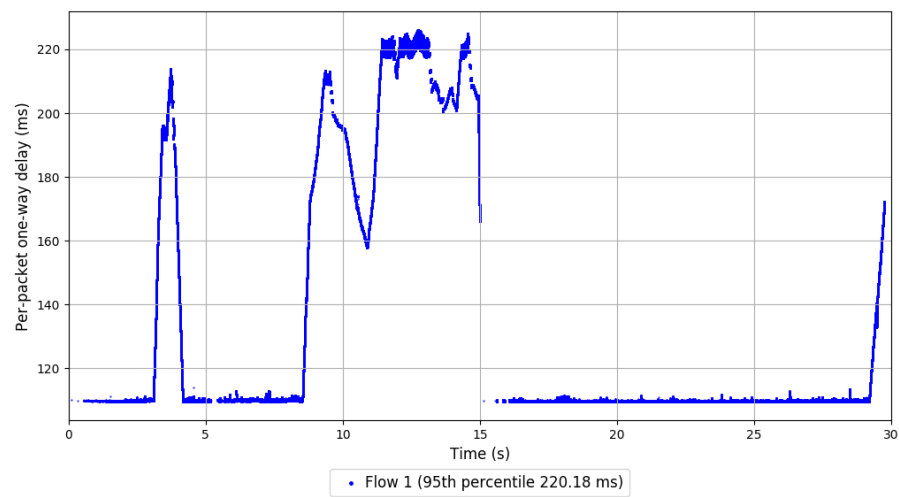
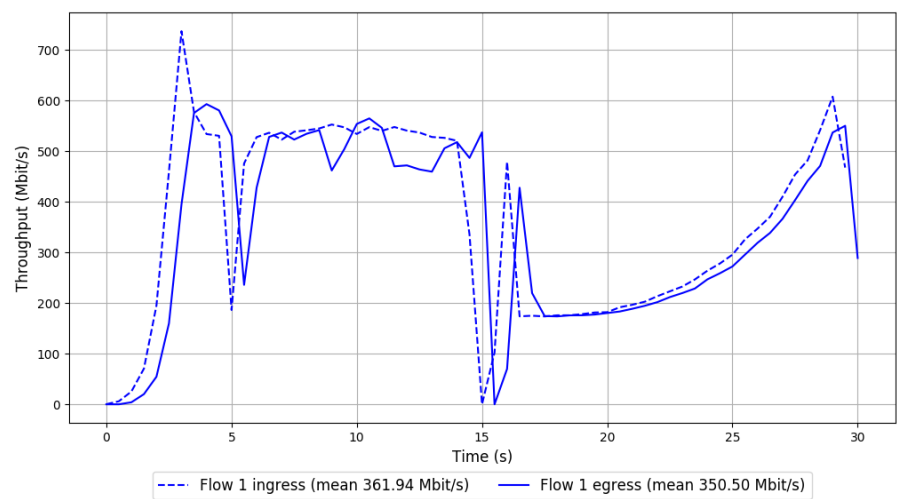
-- Flow 1:

Average throughput: 350.50 Mbit/s

95th percentile per-packet one-way delay: 220.183 ms

Loss rate: 3.88%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-10 23:28:51

End at: 2018-09-10 23:29:21

Local clock offset: 3.649 ms

Remote clock offset: 3.172 ms

Below is generated by plot.py at 2018-09-11 00:57:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 449.57 Mbit/s

95th percentile per-packet one-way delay: 211.143 ms

Loss rate: 2.22%

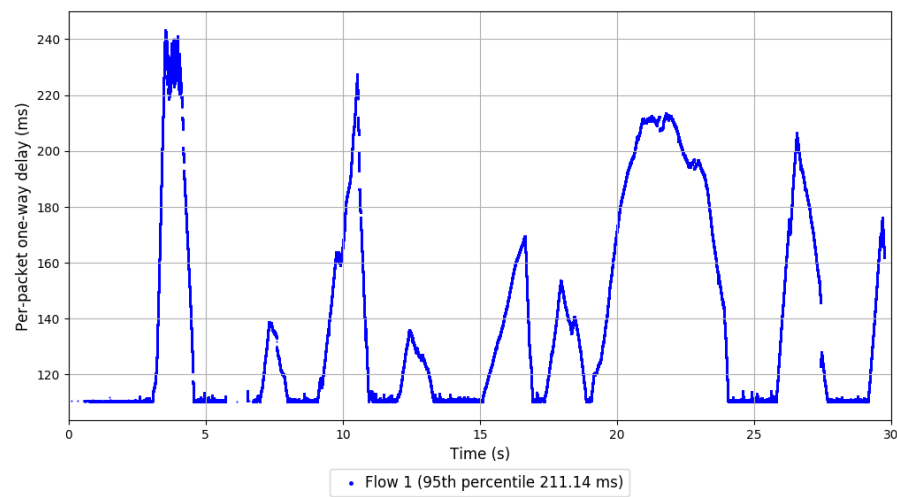
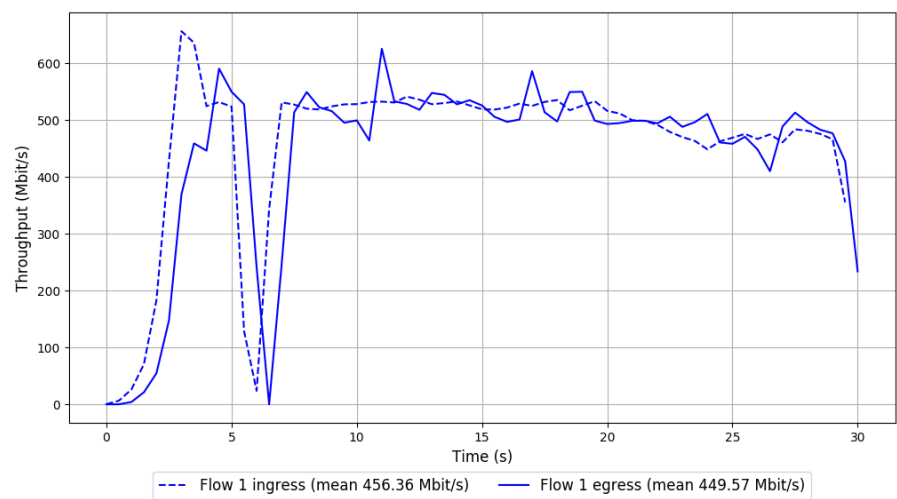
-- Flow 1:

Average throughput: 449.57 Mbit/s

95th percentile per-packet one-way delay: 211.143 ms

Loss rate: 2.22%

Run 5: Report of PCC-Allegro — Data Link

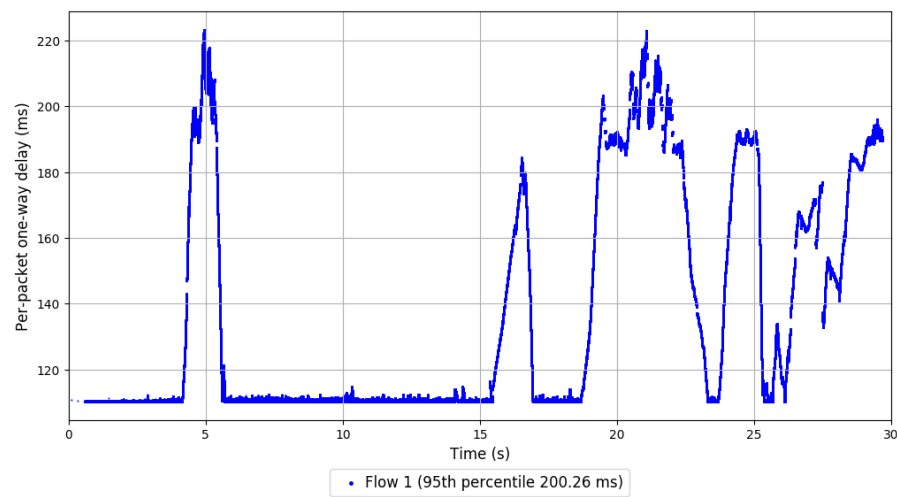
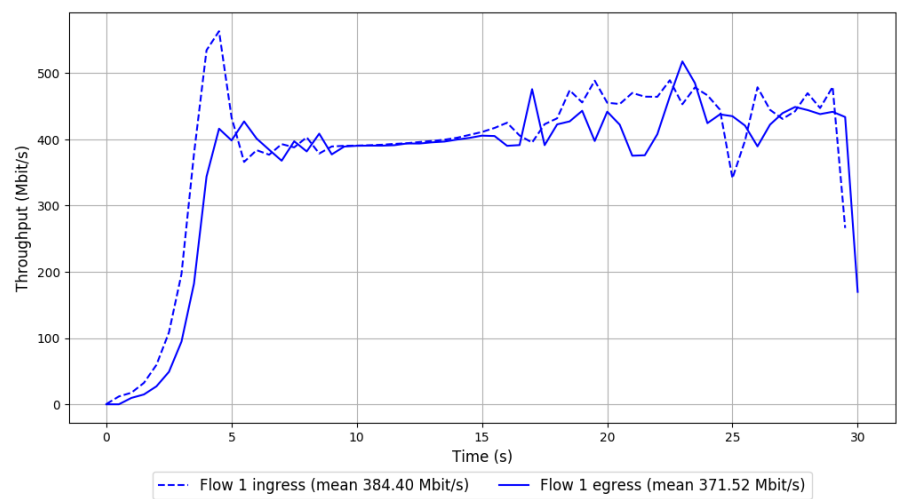


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-10 21:49:37
End at: 2018-09-10 21:50:07
Local clock offset: 11.666 ms
Remote clock offset: 12.633 ms

# Below is generated by plot.py at 2018-09-11 00:57:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 371.52 Mbit/s
95th percentile per-packet one-way delay: 200.261 ms
Loss rate: 4.07%
-- Flow 1:
Average throughput: 371.52 Mbit/s
95th percentile per-packet one-way delay: 200.261 ms
Loss rate: 4.07%
```

Run 1: Report of PCC-Expr — Data Link

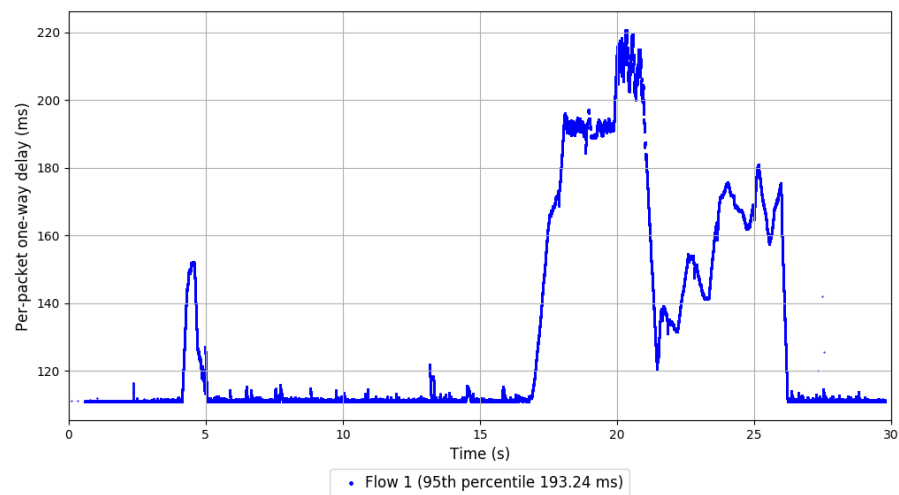
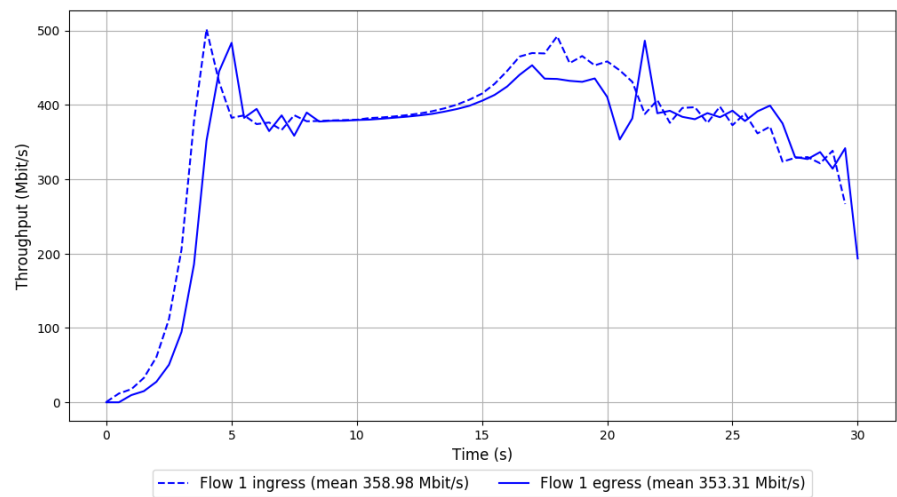


Run 2: Statistics of PCC-Expr

Start at: 2018-09-10 22:16:34
End at: 2018-09-10 22:17:04
Local clock offset: 19.296 ms
Remote clock offset: 20.336 ms

Below is generated by plot.py at 2018-09-11 00:57:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 353.31 Mbit/s
95th percentile per-packet one-way delay: 193.242 ms
Loss rate: 2.31%
-- Flow 1:
Average throughput: 353.31 Mbit/s
95th percentile per-packet one-way delay: 193.242 ms
Loss rate: 2.31%

Run 2: Report of PCC-Expr — Data Link

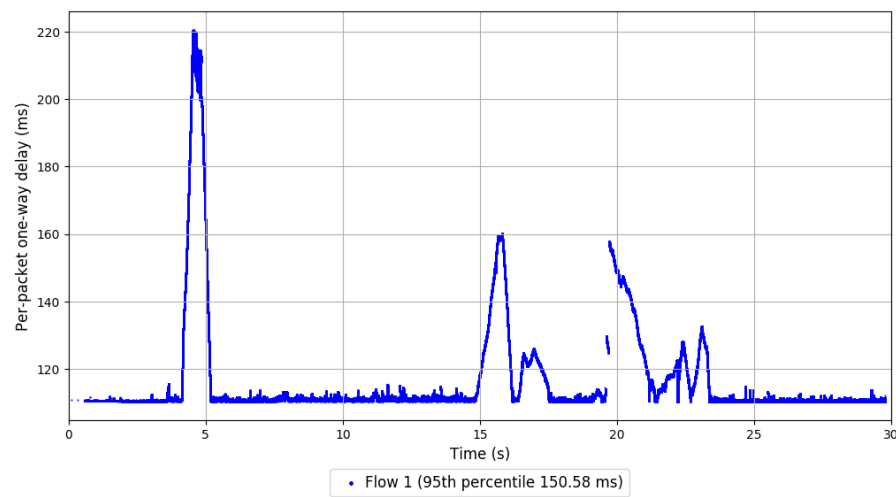
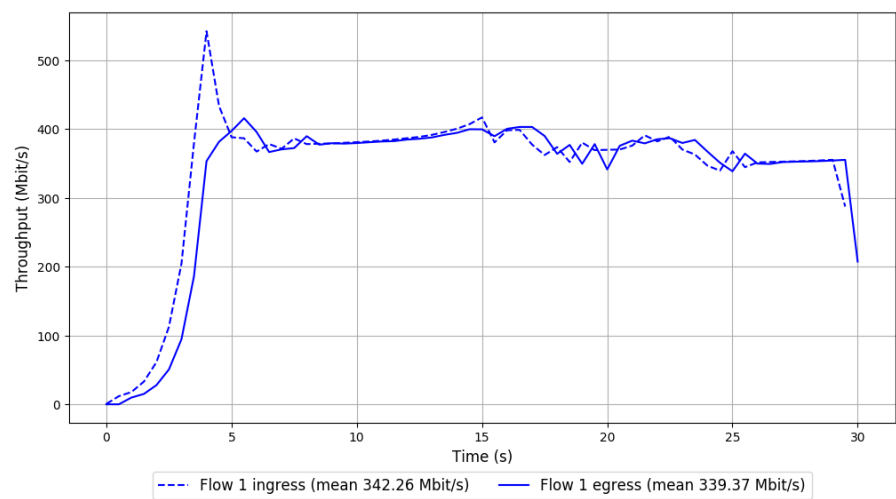


Run 3: Statistics of PCC-Expr

Start at: 2018-09-10 22:43:30
End at: 2018-09-10 22:44:00
Local clock offset: 18.894 ms
Remote clock offset: 17.915 ms

Below is generated by plot.py at 2018-09-11 00:57:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 339.37 Mbit/s
95th percentile per-packet one-way delay: 150.578 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 339.37 Mbit/s
95th percentile per-packet one-way delay: 150.578 ms
Loss rate: 1.58%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

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

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

Local clock offset: 17.998 ms

Remote clock offset: 9.016 ms

Below is generated by plot.py at 2018-09-11 01:01:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 348.15 Mbit/s

95th percentile per-packet one-way delay: 202.229 ms

Loss rate: 3.39%

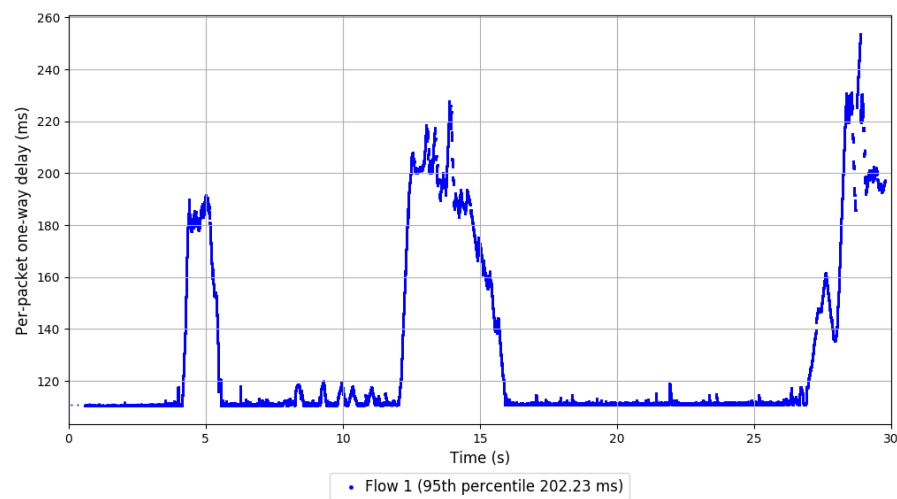
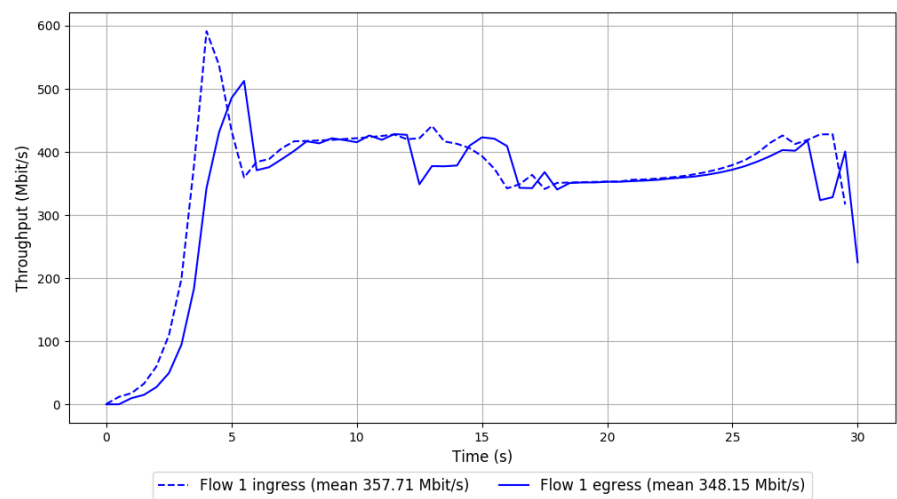
-- Flow 1:

Average throughput: 348.15 Mbit/s

95th percentile per-packet one-way delay: 202.229 ms

Loss rate: 3.39%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-10 23:36:49

End at: 2018-09-10 23:37:19

Local clock offset: 4.299 ms

Remote clock offset: 4.124 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 341.11 Mbit/s

95th percentile per-packet one-way delay: 200.196 ms

Loss rate: 2.76%

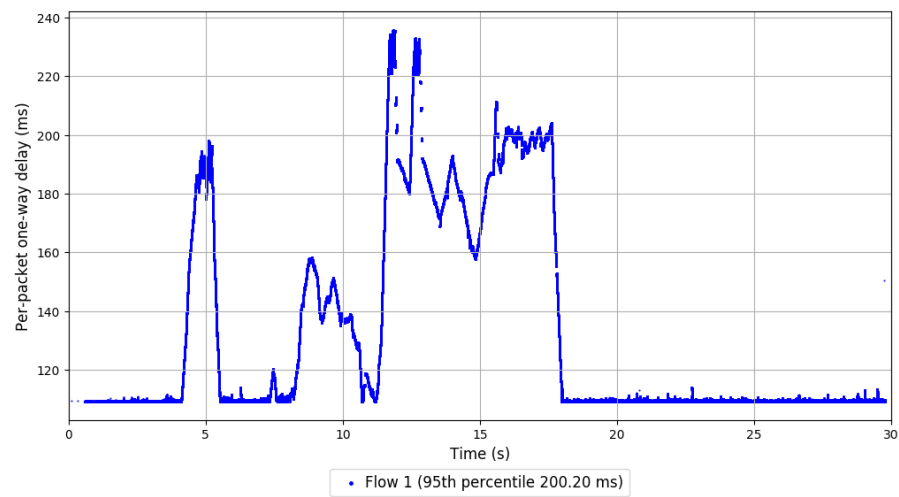
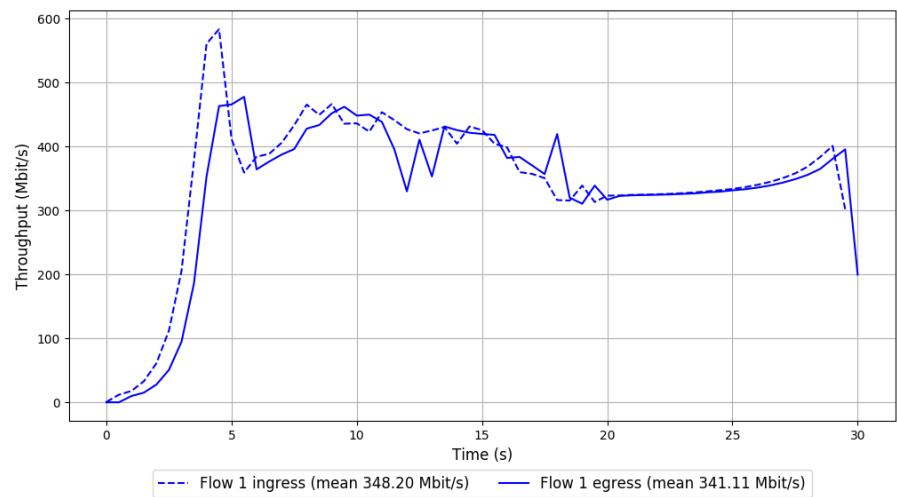
-- Flow 1:

Average throughput: 341.11 Mbit/s

95th percentile per-packet one-way delay: 200.196 ms

Loss rate: 2.76%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-10 21:34:04

End at: 2018-09-10 21:34:34

Local clock offset: 5.626 ms

Remote clock offset: 6.272 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 45.26 Mbit/s

95th percentile per-packet one-way delay: 110.796 ms

Loss rate: 1.54%

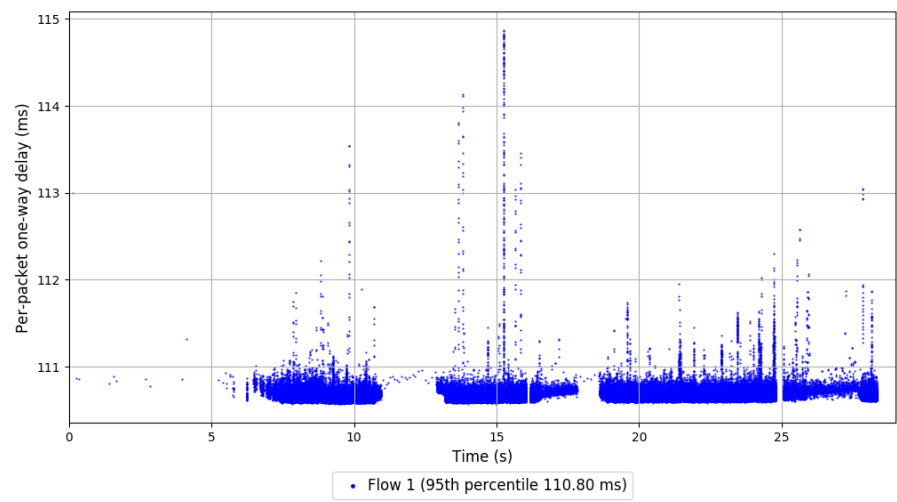
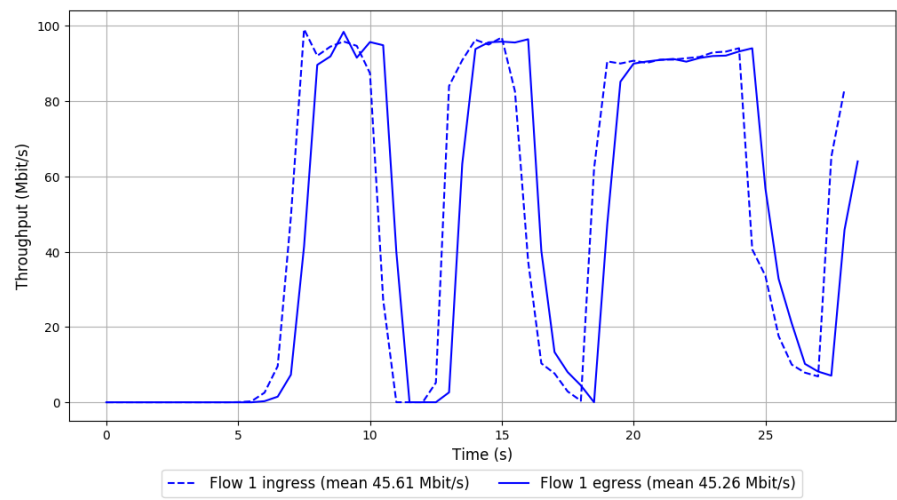
-- Flow 1:

Average throughput: 45.26 Mbit/s

95th percentile per-packet one-way delay: 110.796 ms

Loss rate: 1.54%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-10 22:00:55

End at: 2018-09-10 22:01:25

Local clock offset: 21.503 ms

Remote clock offset: 23.761 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.30 Mbit/s

95th percentile per-packet one-way delay: 109.983 ms

Loss rate: 1.23%

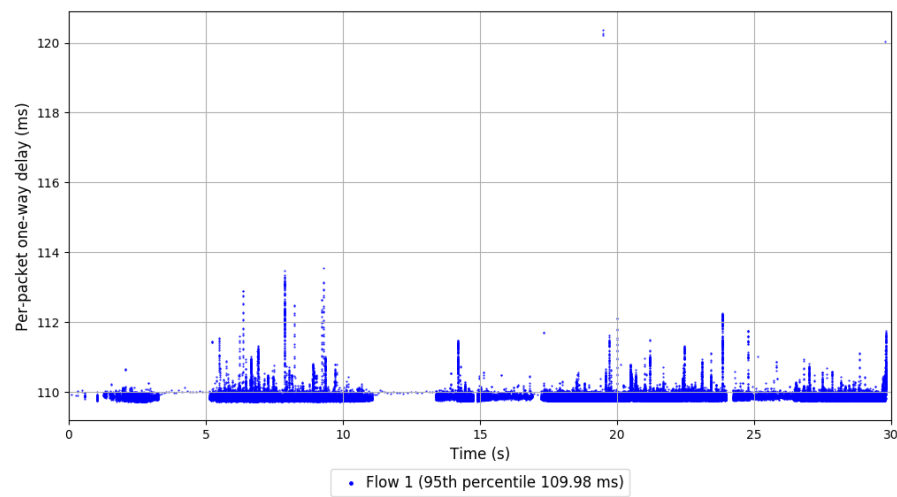
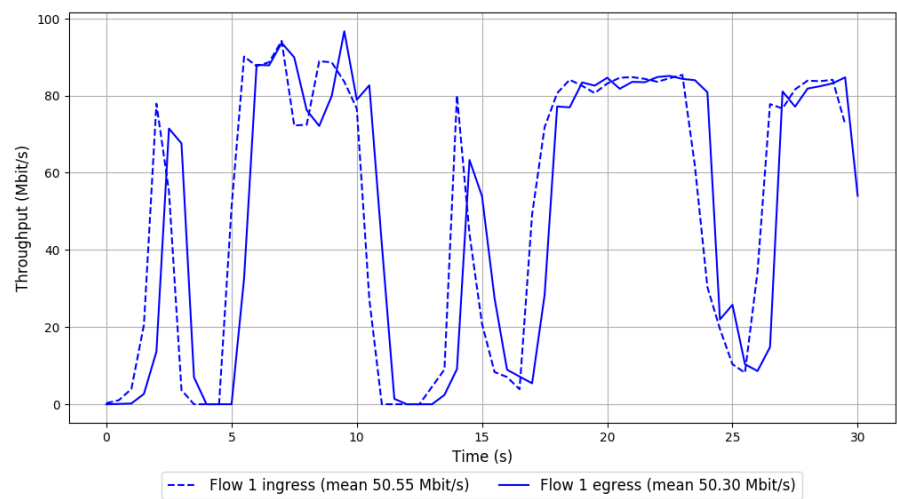
-- Flow 1:

Average throughput: 50.30 Mbit/s

95th percentile per-packet one-way delay: 109.983 ms

Loss rate: 1.23%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-10 22:27:47

End at: 2018-09-10 22:28:17

Local clock offset: 29.034 ms

Remote clock offset: 29.257 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 72.34 Mbit/s

95th percentile per-packet one-way delay: 112.703 ms

Loss rate: 1.00%

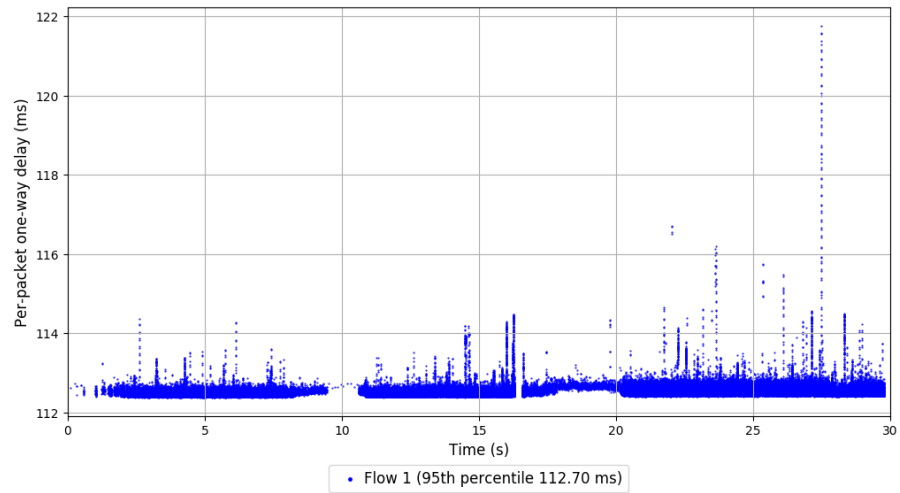
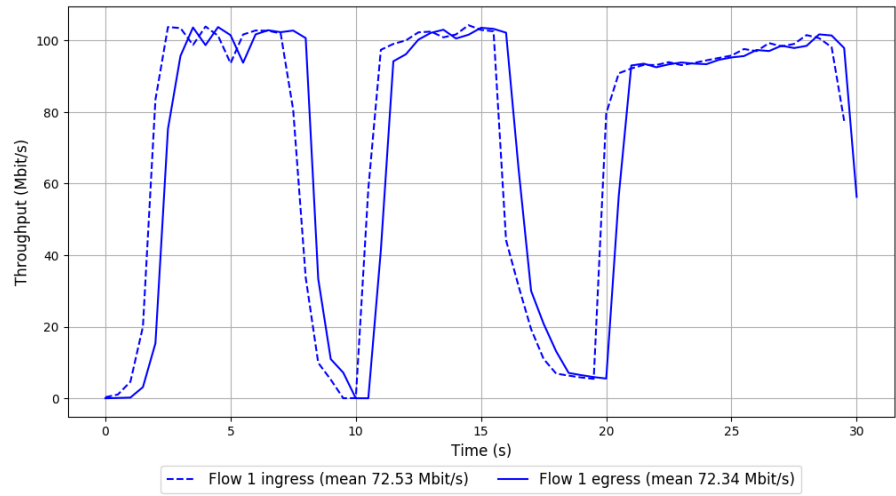
-- Flow 1:

Average throughput: 72.34 Mbit/s

95th percentile per-packet one-way delay: 112.703 ms

Loss rate: 1.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-10 22:54:41

End at: 2018-09-10 22:55:11

Local clock offset: 13.678 ms

Remote clock offset: 8.55 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 73.89 Mbit/s

95th percentile per-packet one-way delay: 110.973 ms

Loss rate: 1.01%

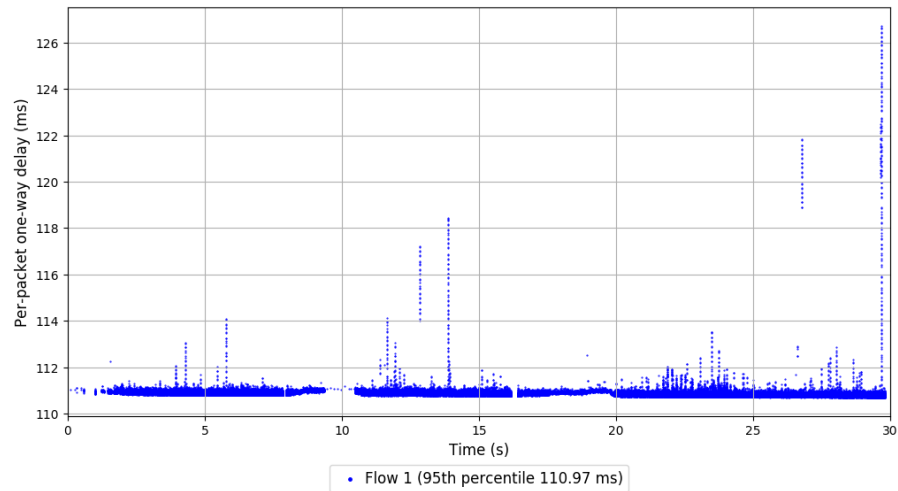
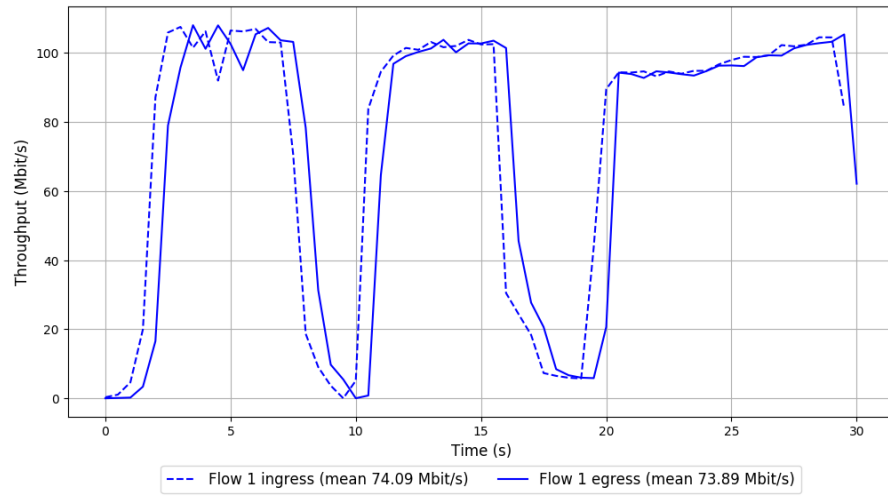
-- Flow 1:

Average throughput: 73.89 Mbit/s

95th percentile per-packet one-way delay: 110.973 ms

Loss rate: 1.01%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-10 23:21:14

End at: 2018-09-10 23:21:44

Local clock offset: 6.609 ms

Remote clock offset: 3.788 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.10 Mbit/s

95th percentile per-packet one-way delay: 111.554 ms

Loss rate: 1.11%

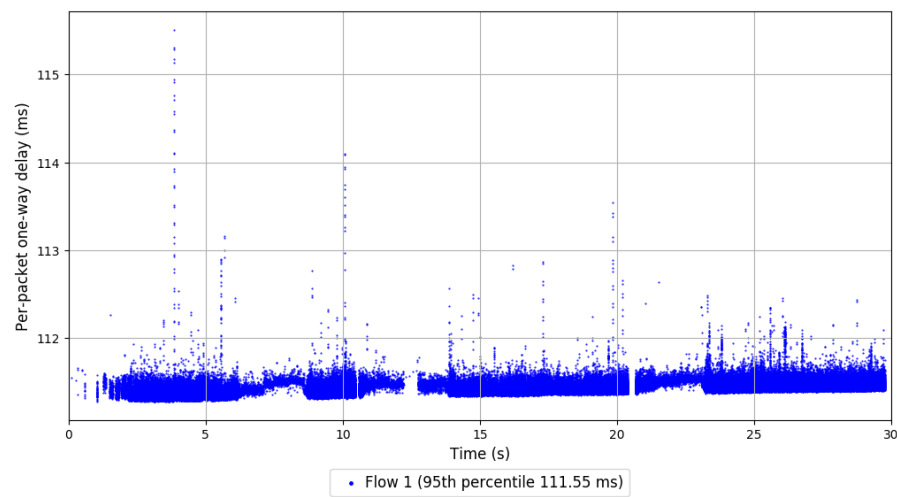
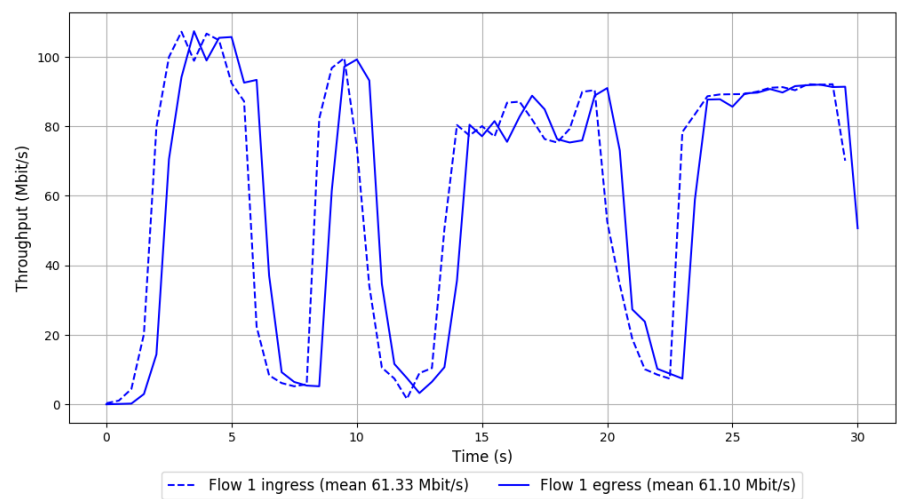
-- Flow 1:

Average throughput: 61.10 Mbit/s

95th percentile per-packet one-way delay: 111.554 ms

Loss rate: 1.11%

Run 5: Report of QUIC Cubic — Data Link

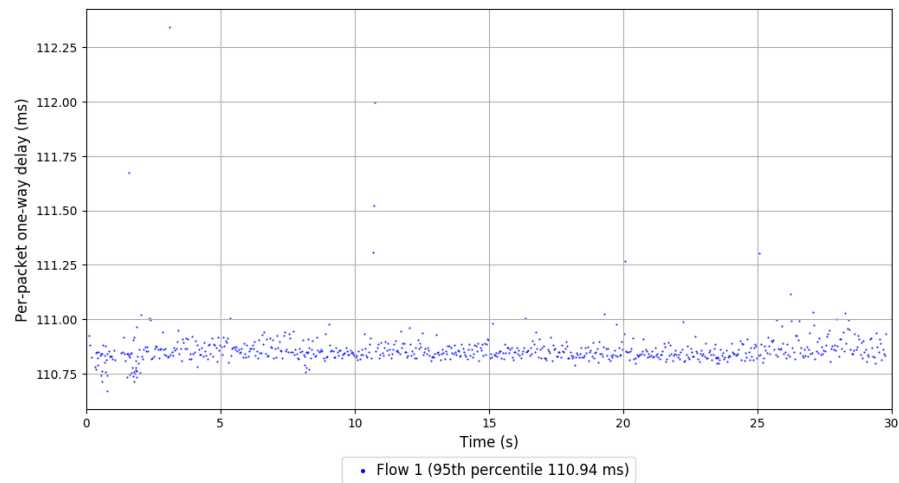
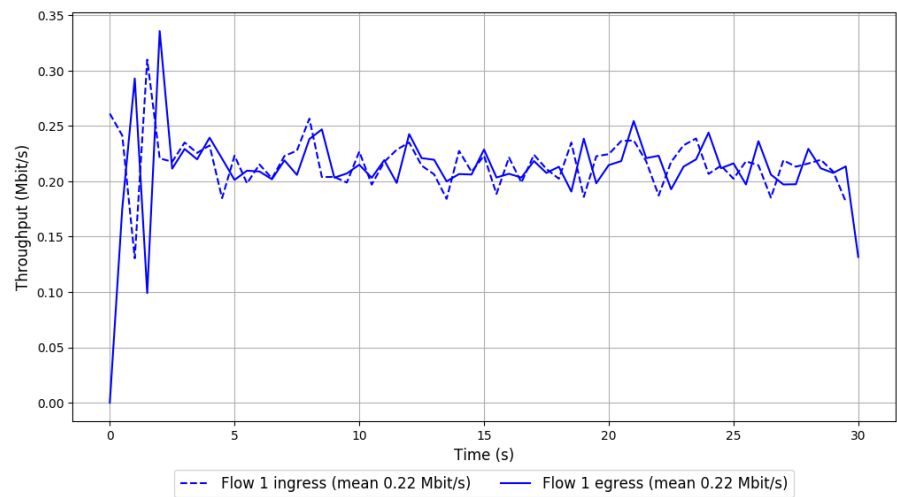


```
Run 1: Statistics of SCReAM

Start at: 2018-09-10 21:32:56
End at: 2018-09-10 21:33:26
Local clock offset: 5.315 ms
Remote clock offset: 5.136 ms

# Below is generated by plot.py at 2018-09-11 01:01:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.940 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.940 ms
Loss rate: 0.76%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-10 21:59:47

End at: 2018-09-10 22:00:17

Local clock offset: 20.614 ms

Remote clock offset: 21.97 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 111.413 ms

Loss rate: 0.64%

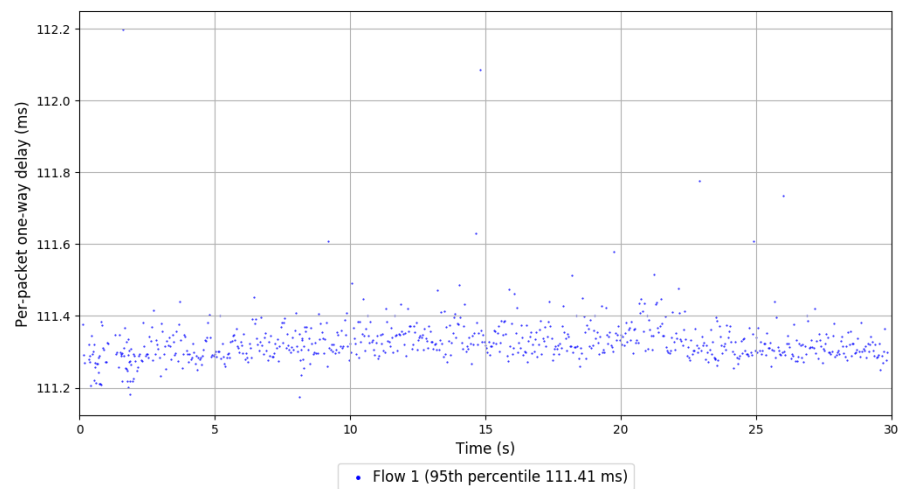
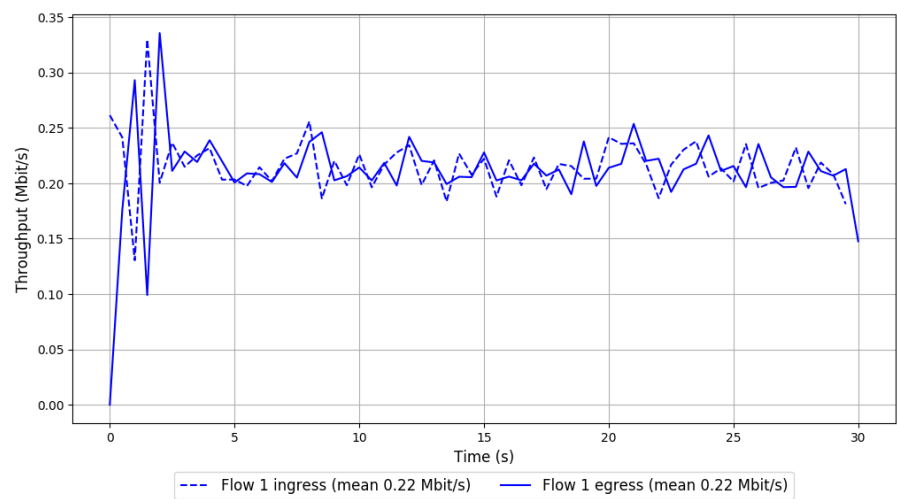
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 111.413 ms

Loss rate: 0.64%

Run 2: Report of SReAM — Data Link

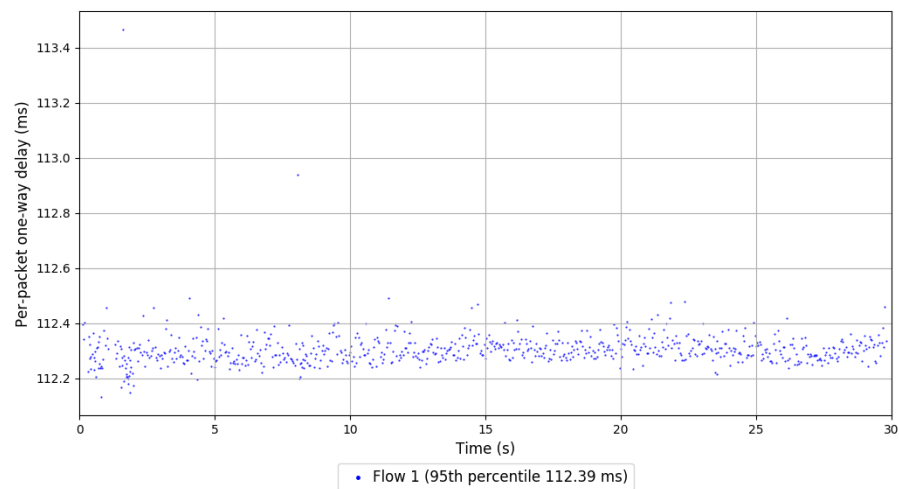
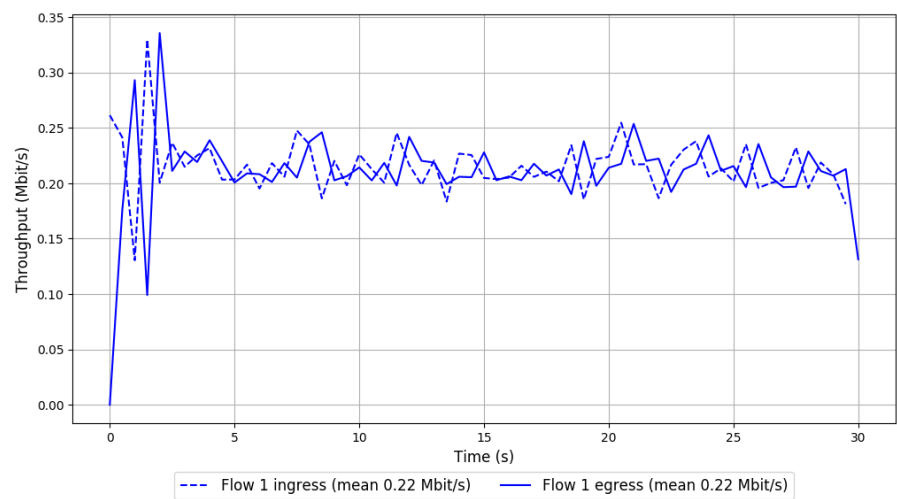


Run 3: Statistics of SCReAM

Start at: 2018-09-10 22:26:39
End at: 2018-09-10 22:27:09
Local clock offset: 27.929 ms
Remote clock offset: 28.181 ms

Below is generated by plot.py at 2018-09-11 01:01:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 112.387 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 112.387 ms
Loss rate: 0.76%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-10 22:53:33

End at: 2018-09-10 22:54:03

Local clock offset: 12.294 ms

Remote clock offset: 9.223 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 109.787 ms

Loss rate: 0.76%

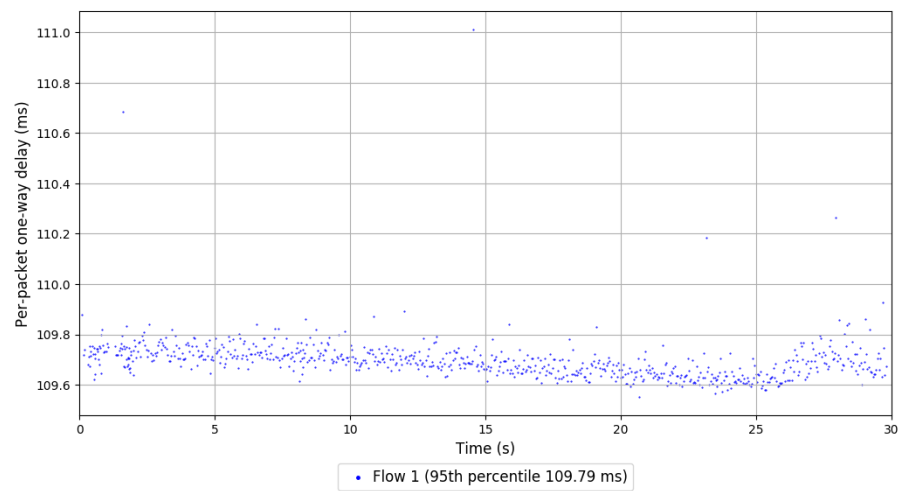
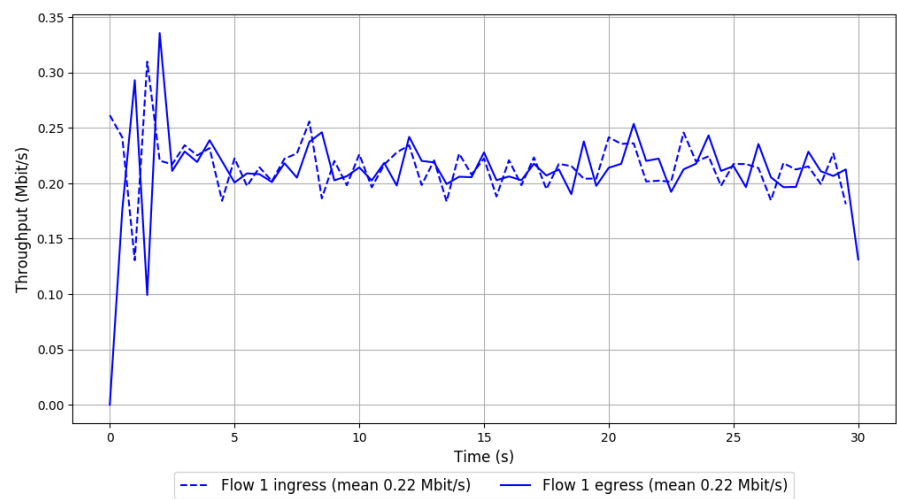
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 109.787 ms

Loss rate: 0.76%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-10 23:20:06

End at: 2018-09-10 23:20:36

Local clock offset: 6.918 ms

Remote clock offset: 4.059 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 110.017 ms

Loss rate: 0.76%

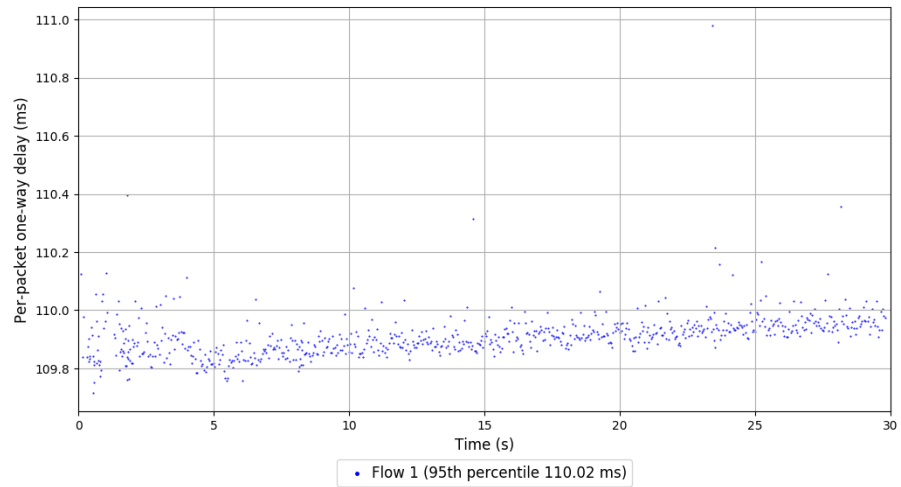
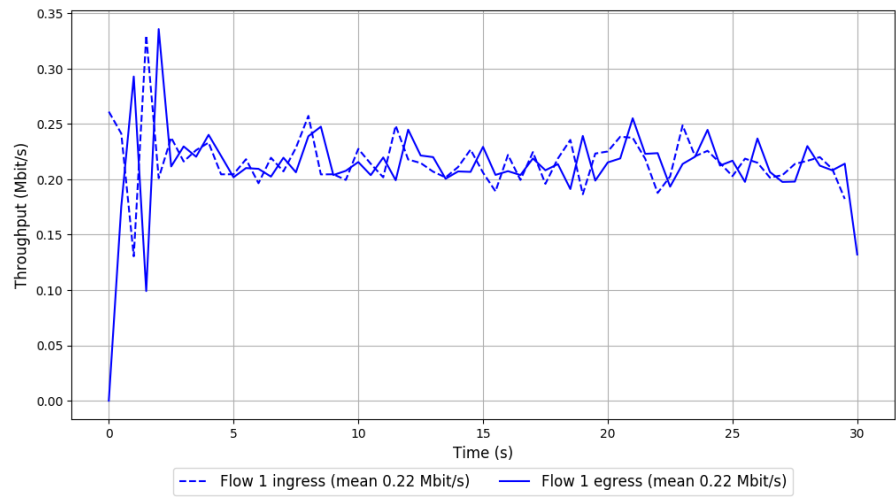
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 110.017 ms

Loss rate: 0.76%

Run 5: Report of SReAM — Data Link

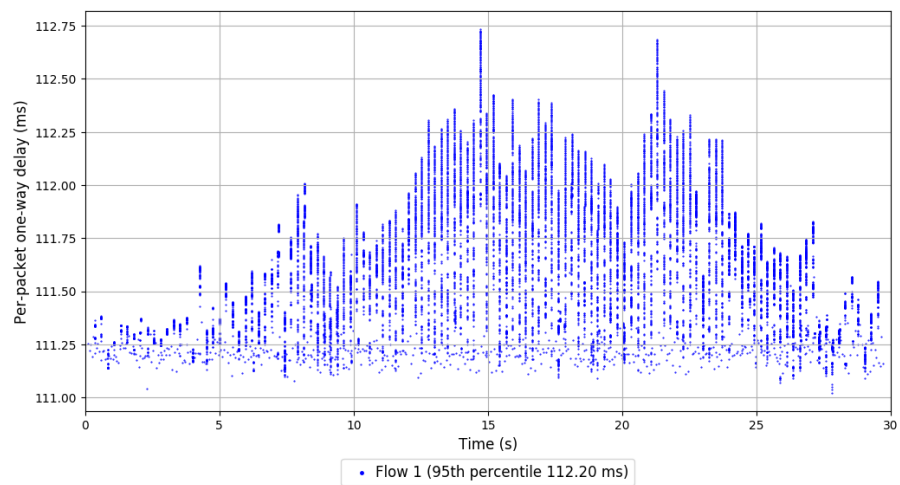
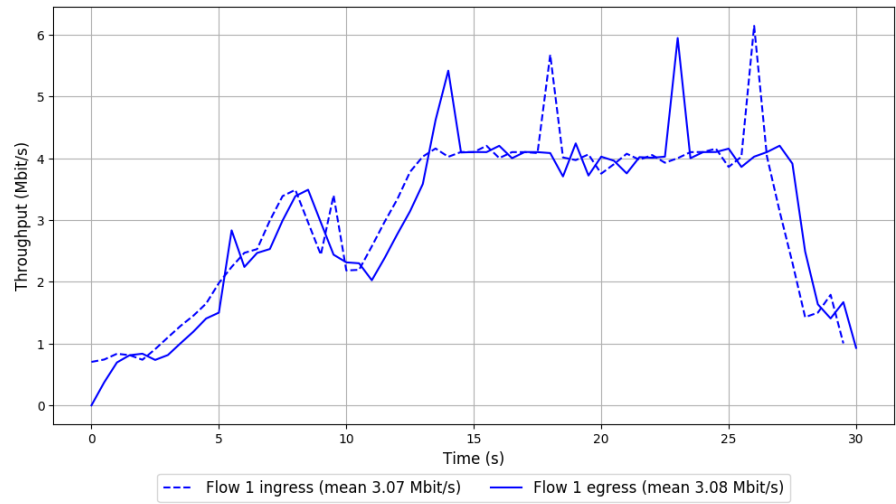


Run 1: Statistics of Sprout

Start at: 2018-09-10 21:52:30
End at: 2018-09-10 21:53:00
Local clock offset: 12.439 ms
Remote clock offset: 13.468 ms

Below is generated by plot.py at 2018-09-11 01:01:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 112.204 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 112.204 ms
Loss rate: 0.55%

Run 1: Report of Sprout — Data Link

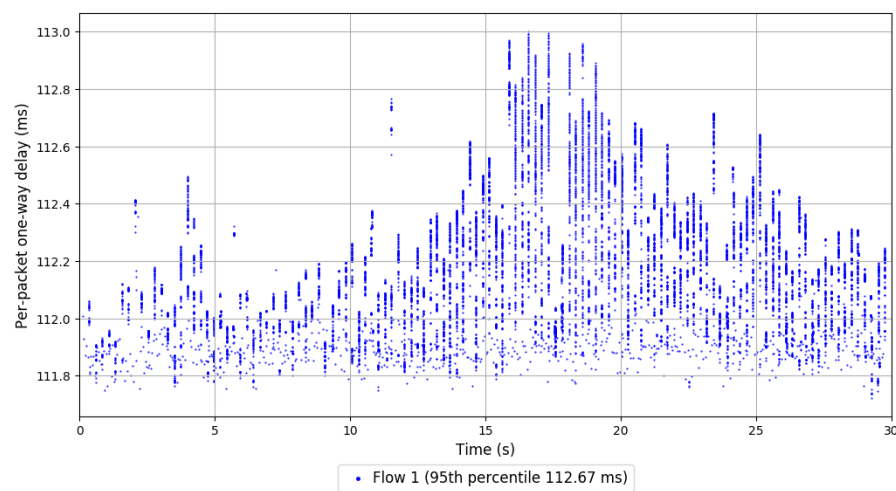
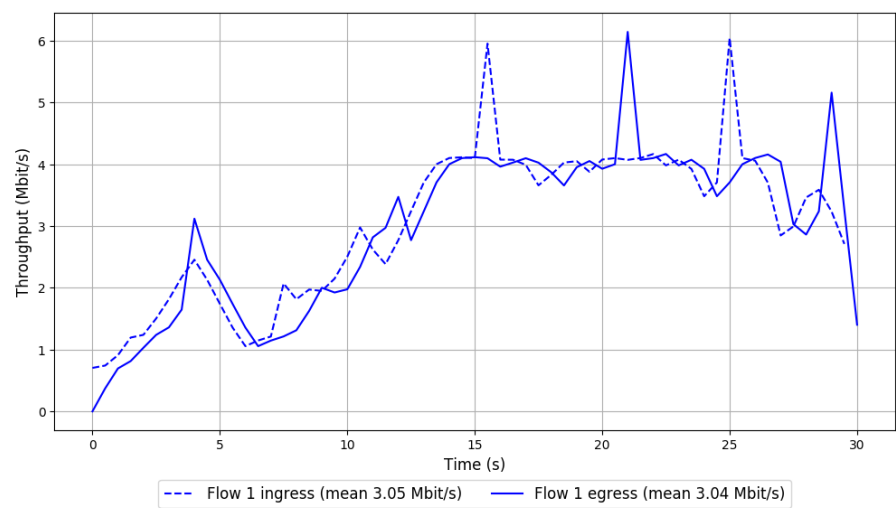


Run 2: Statistics of Sprout

Start at: 2018-09-10 22:19:26
End at: 2018-09-10 22:19:56
Local clock offset: 22.401 ms
Remote clock offset: 22.765 ms

Below is generated by plot.py at 2018-09-11 01:01:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 112.666 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 112.666 ms
Loss rate: 0.82%

Run 2: Report of Sprout — Data Link

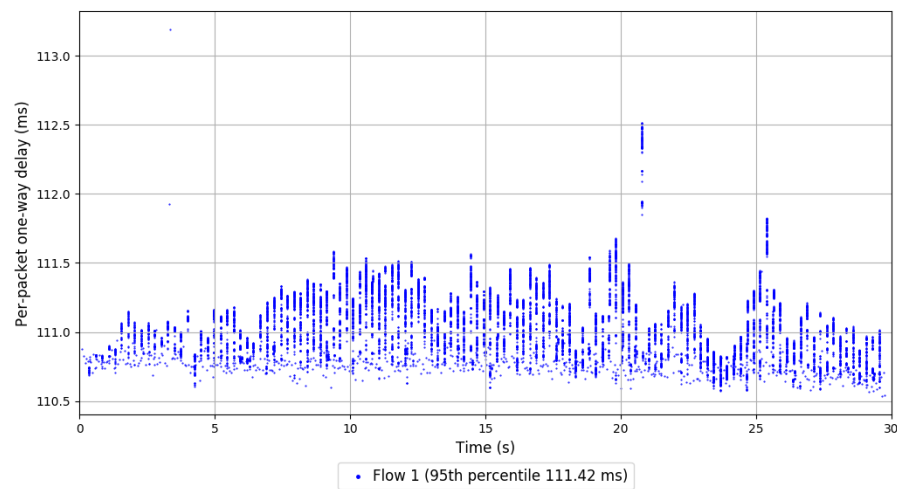
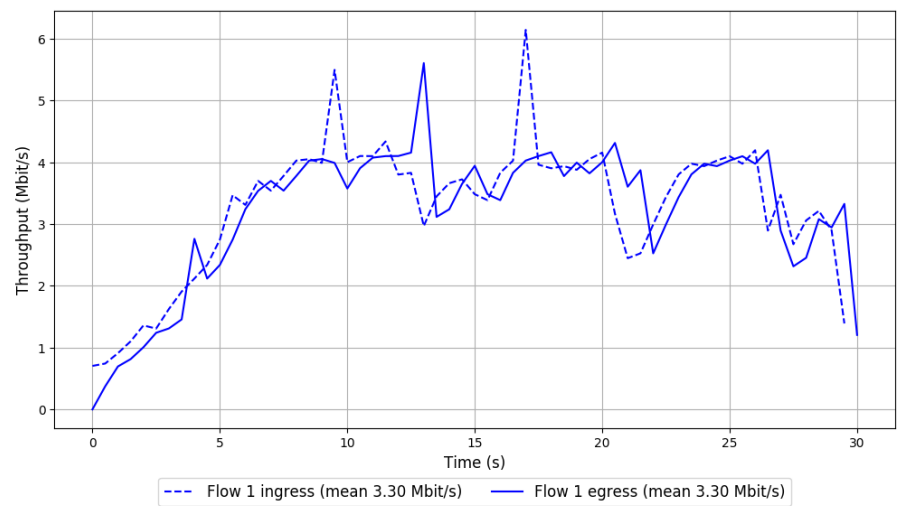


Run 3: Statistics of Sprout

Start at: 2018-09-10 22:46:19
End at: 2018-09-10 22:46:50
Local clock offset: 15.787 ms
Remote clock offset: 13.943 ms

Below is generated by plot.py at 2018-09-11 01:01:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 111.420 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 111.420 ms
Loss rate: 0.70%

Run 3: Report of Sprout — Data Link

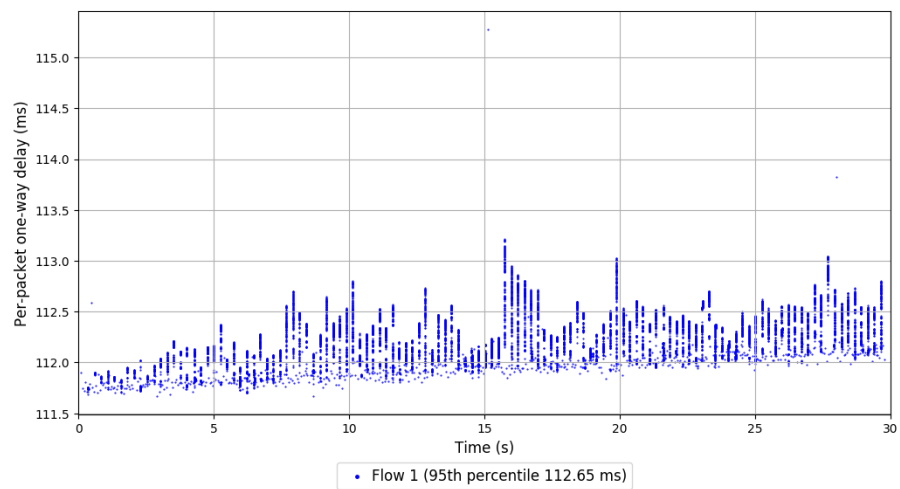
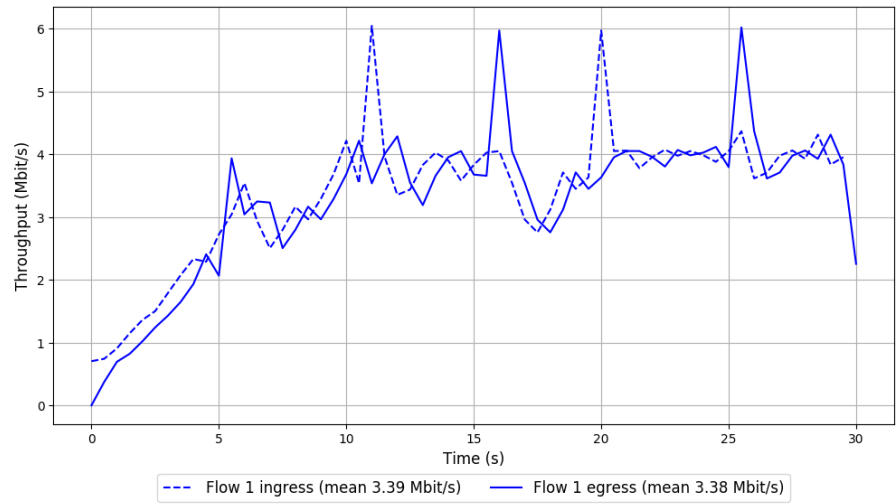


Run 4: Statistics of Sprout

Start at: 2018-09-10 23:12:56
End at: 2018-09-10 23:13:26
Local clock offset: 12.5 ms
Remote clock offset: 6.758 ms

Below is generated by plot.py at 2018-09-11 01:01:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 112.649 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 112.649 ms
Loss rate: 0.84%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-09-10 23:39:40

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

Local clock offset: 3.665 ms

Remote clock offset: 3.693 ms

Below is generated by plot.py at 2018-09-11 01:01:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.19 Mbit/s

95th percentile per-packet one-way delay: 110.894 ms

Loss rate: 1.04%

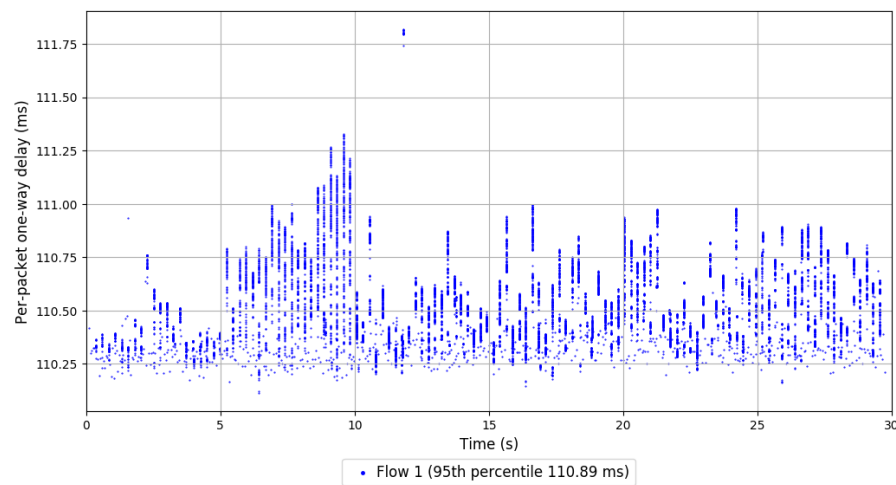
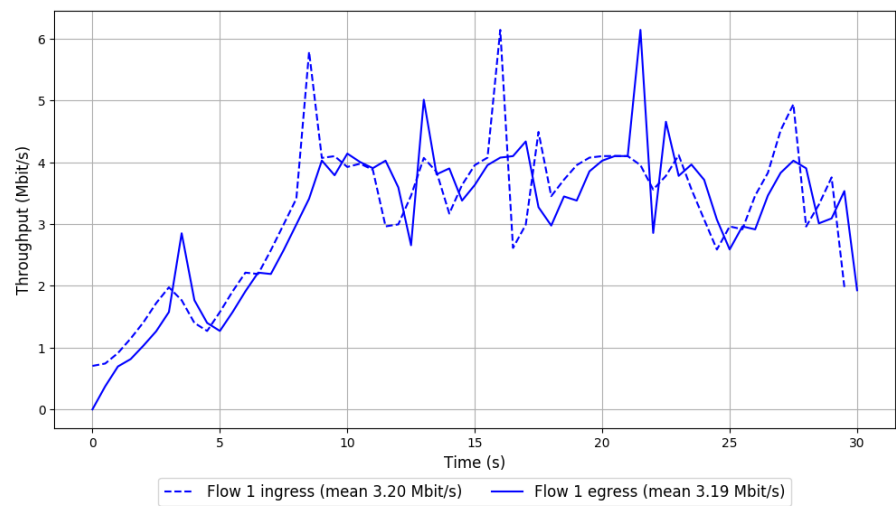
-- Flow 1:

Average throughput: 3.19 Mbit/s

95th percentile per-packet one-way delay: 110.894 ms

Loss rate: 1.04%

Run 5: Report of Sprout — Data Link

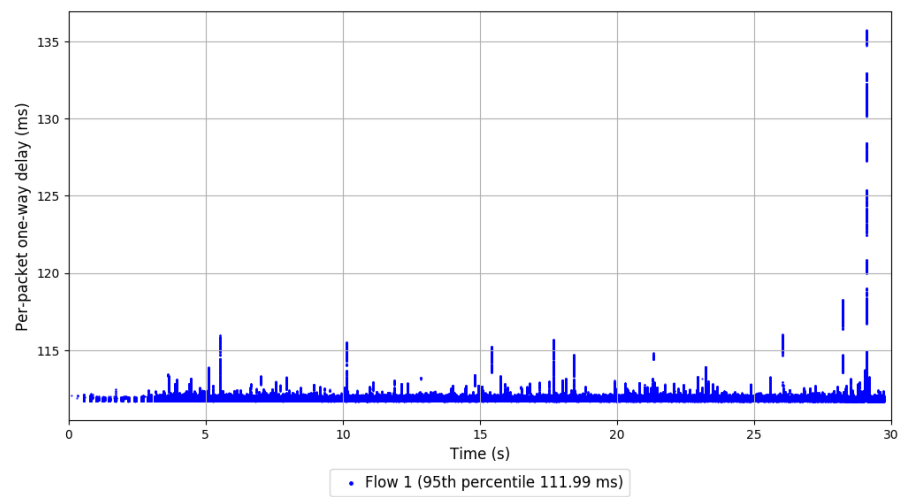
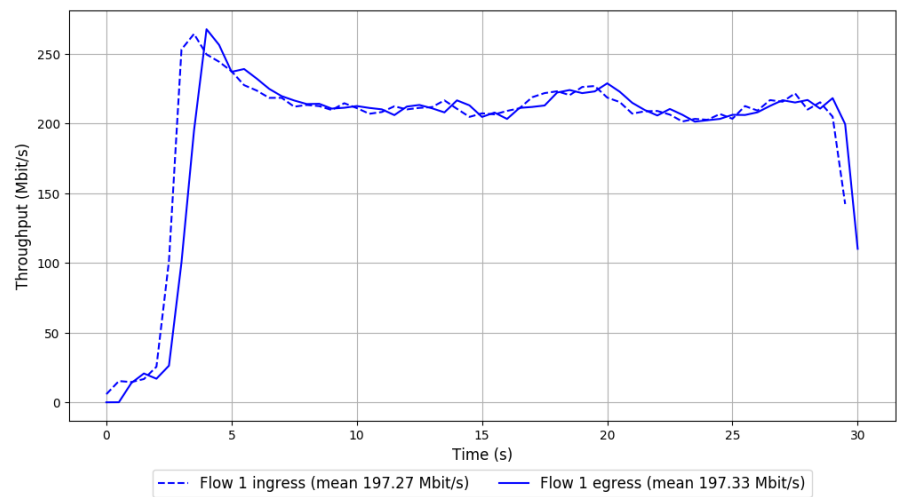


Run 1: Statistics of TaoVA-100x

Start at: 2018-09-10 21:44:48
End at: 2018-09-10 21:45:18
Local clock offset: 15.127 ms
Remote clock offset: 16.219 ms

Below is generated by plot.py at 2018-09-11 01:04:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 197.33 Mbit/s
95th percentile per-packet one-way delay: 111.987 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 197.33 Mbit/s
95th percentile per-packet one-way delay: 111.987 ms
Loss rate: 0.72%

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

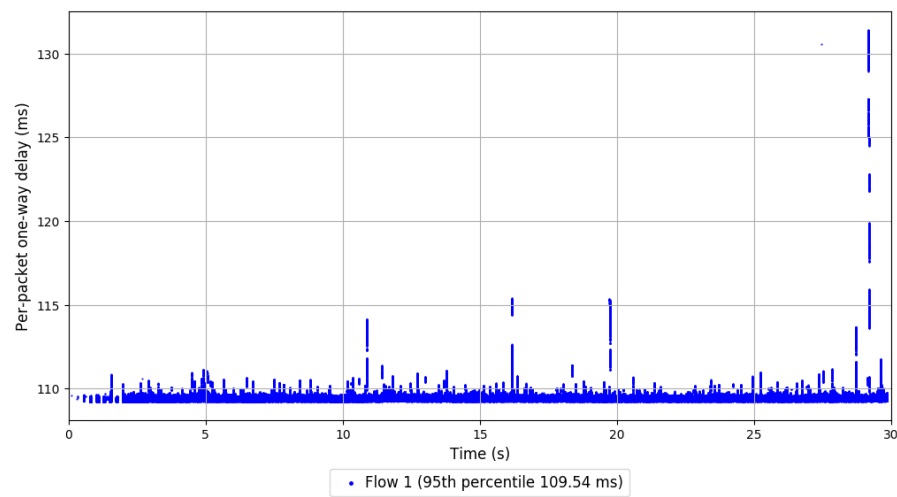
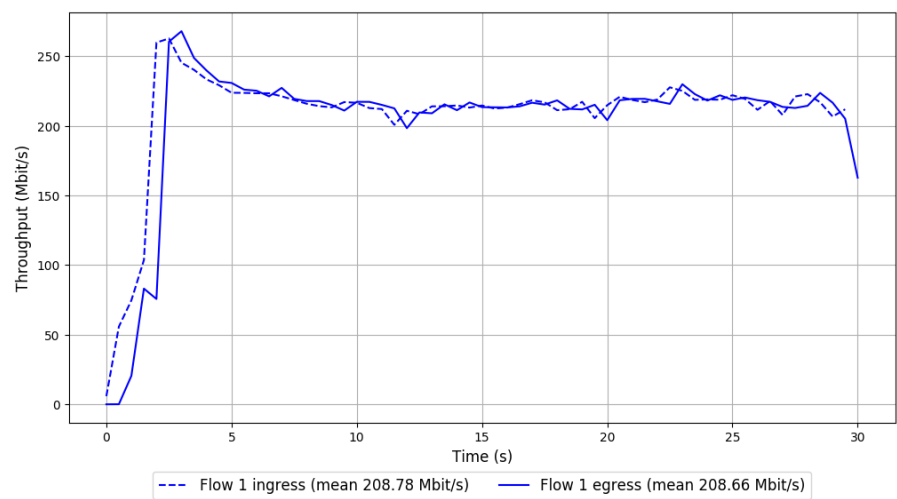


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-10 22:11:49
End at: 2018-09-10 22:12:20
Local clock offset: 17.129 ms
Remote clock offset: 19.519 ms

Below is generated by plot.py at 2018-09-11 01:04:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 208.66 Mbit/s
95th percentile per-packet one-way delay: 109.543 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 208.66 Mbit/s
95th percentile per-packet one-way delay: 109.543 ms
Loss rate: 0.80%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-10 22:38:39

End at: 2018-09-10 22:39:09

Local clock offset: 28.87 ms

Remote clock offset: 28.021 ms

Below is generated by plot.py at 2018-09-11 01:04:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 208.26 Mbit/s

95th percentile per-packet one-way delay: 111.734 ms

Loss rate: 0.73%

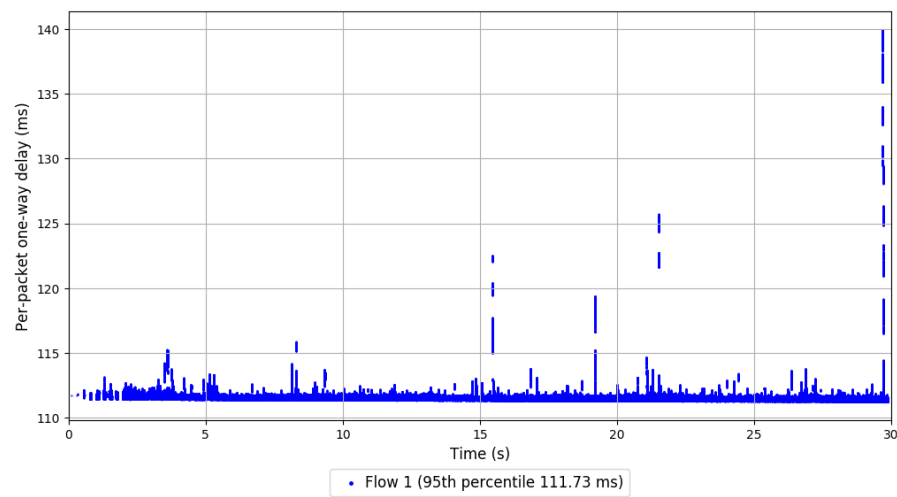
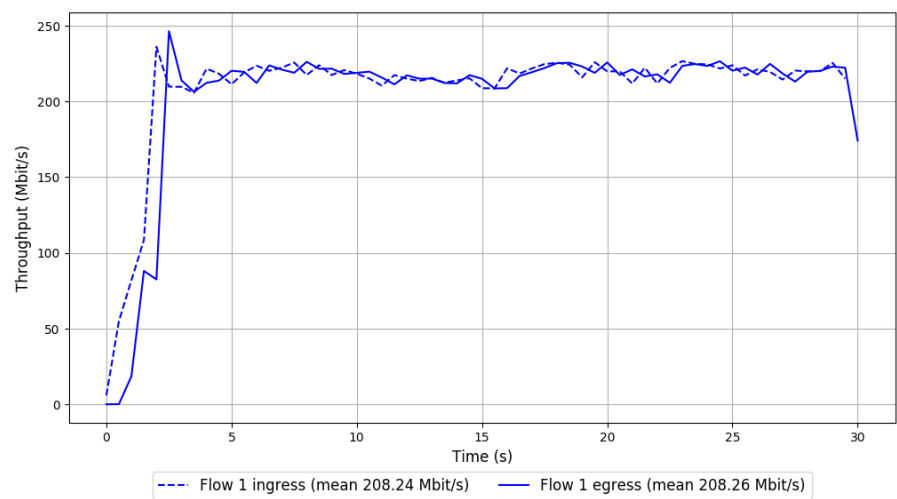
-- Flow 1:

Average throughput: 208.26 Mbit/s

95th percentile per-packet one-way delay: 111.734 ms

Loss rate: 0.73%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-10 23:05:19

End at: 2018-09-10 23:05:49

Local clock offset: 15.738 ms

Remote clock offset: 8.322 ms

Below is generated by plot.py at 2018-09-11 01:04:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 206.08 Mbit/s

95th percentile per-packet one-way delay: 110.466 ms

Loss rate: 0.77%

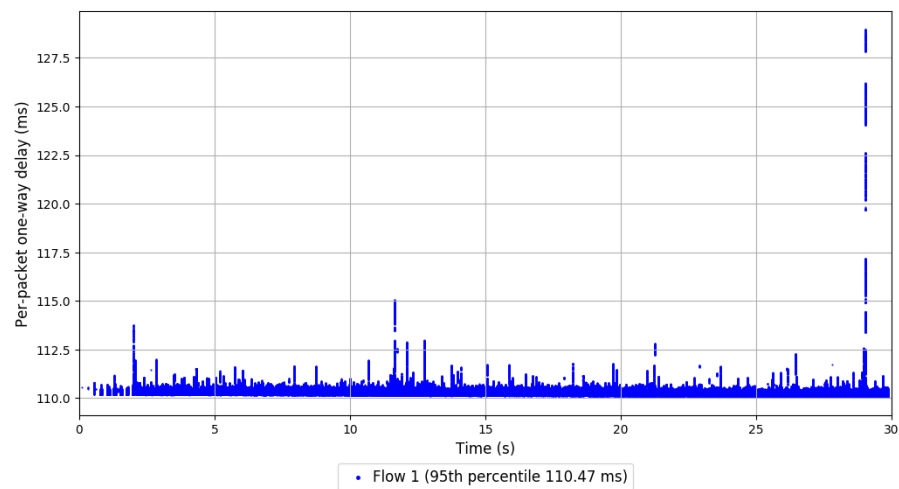
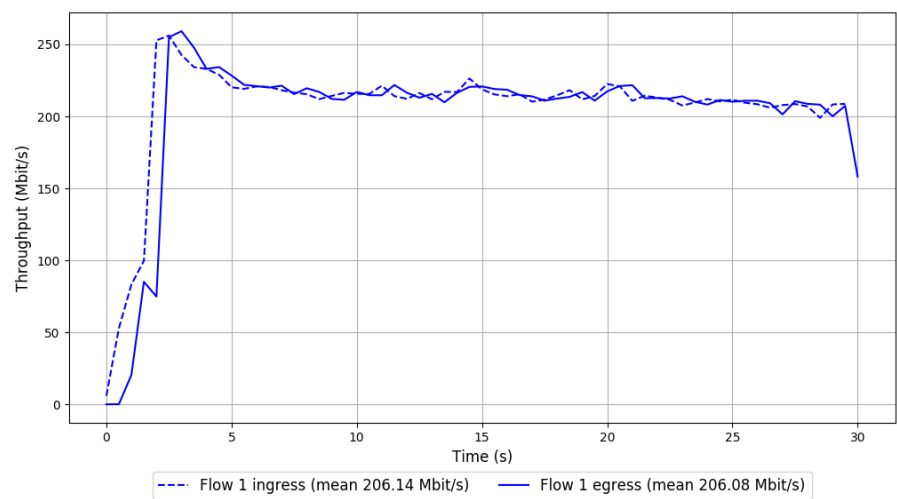
-- Flow 1:

Average throughput: 206.08 Mbit/s

95th percentile per-packet one-way delay: 110.466 ms

Loss rate: 0.77%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-10 23:31:56

End at: 2018-09-10 23:32:26

Local clock offset: 3.747 ms

Remote clock offset: 2.865 ms

Below is generated by plot.py at 2018-09-11 01:04:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 202.08 Mbit/s

95th percentile per-packet one-way delay: 110.000 ms

Loss rate: 0.80%

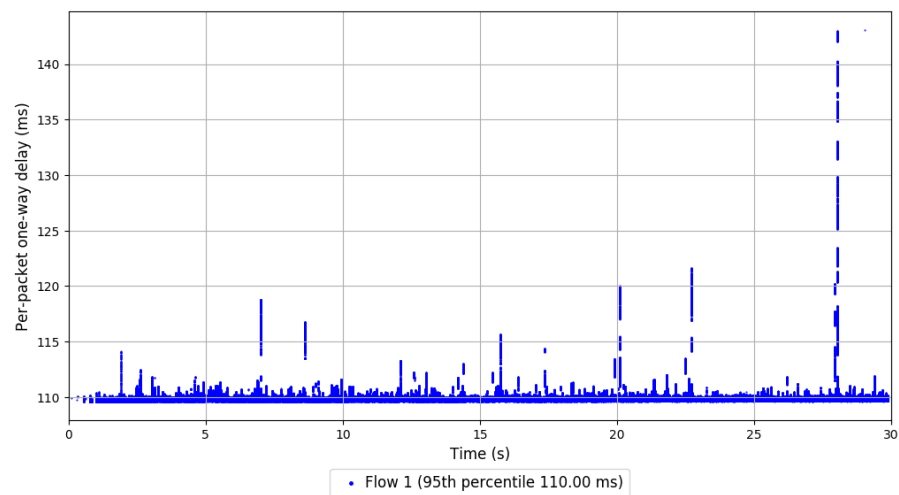
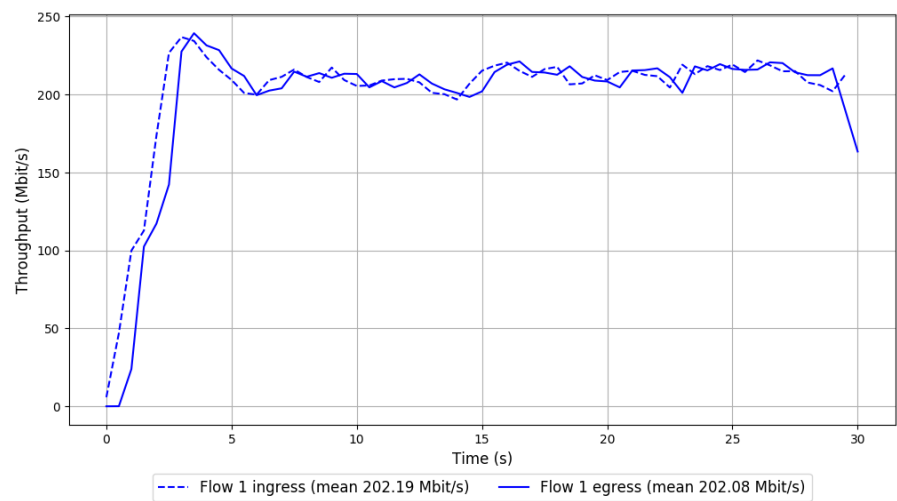
-- Flow 1:

Average throughput: 202.08 Mbit/s

95th percentile per-packet one-way delay: 110.000 ms

Loss rate: 0.80%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-09-10 21:40:18

End at: 2018-09-10 21:40:48

Local clock offset: 8.491 ms

Remote clock offset: 9.322 ms

Below is generated by plot.py at 2018-09-11 01:04:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 354.16 Mbit/s

95th percentile per-packet one-way delay: 112.663 ms

Loss rate: 0.88%

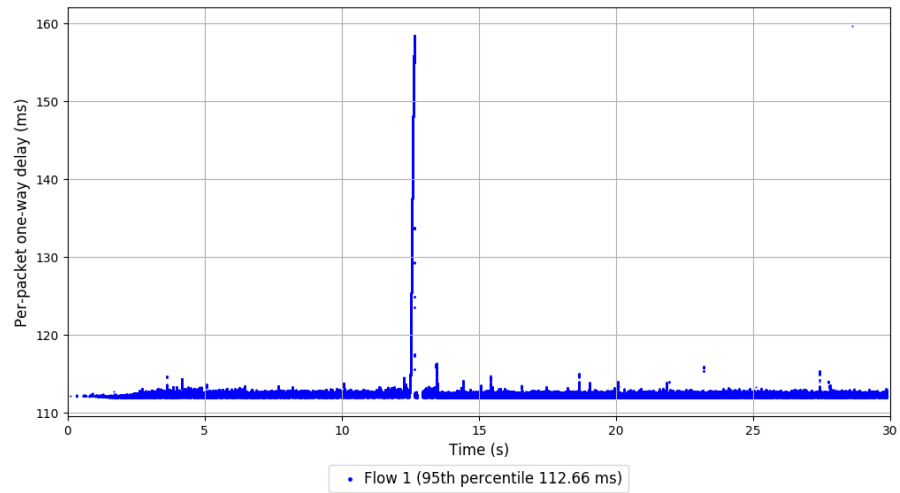
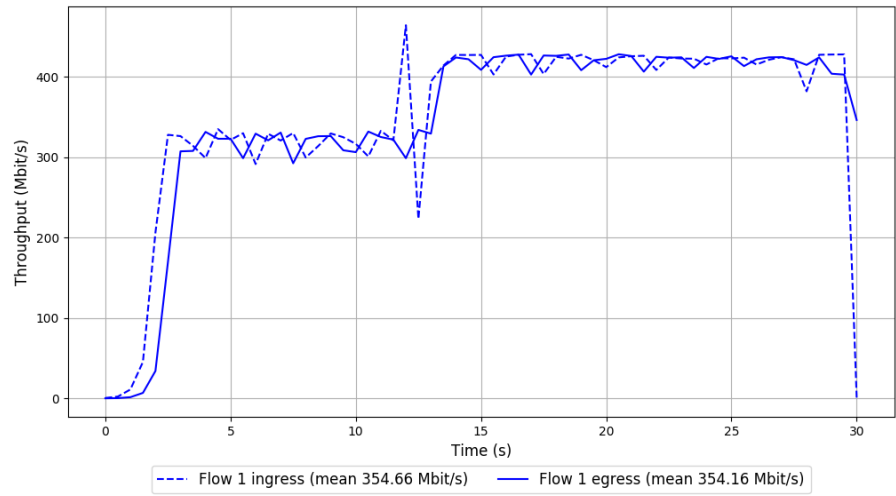
-- Flow 1:

Average throughput: 354.16 Mbit/s

95th percentile per-packet one-way delay: 112.663 ms

Loss rate: 0.88%

Run 1: Report of TCP Vegas — Data Link

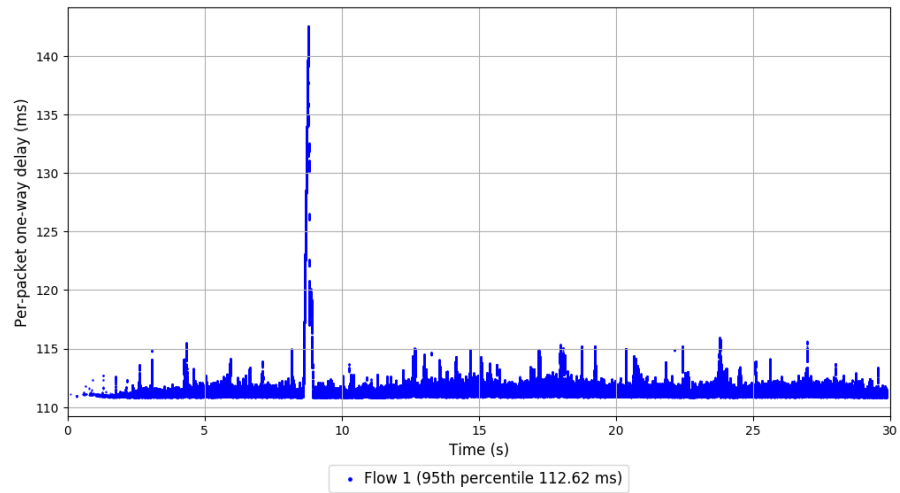
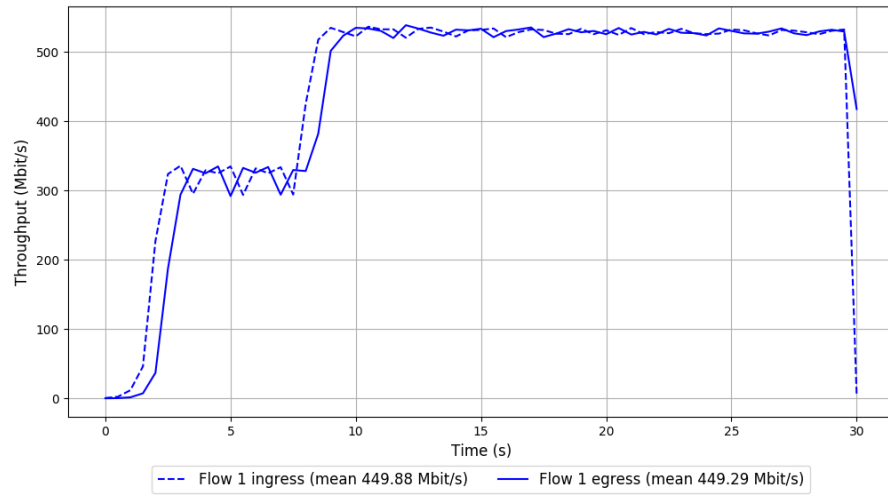


Run 2: Statistics of TCP Vegas

Start at: 2018-09-10 22:07:09
End at: 2018-09-10 22:07:39
Local clock offset: 17.279 ms
Remote clock offset: 18.218 ms

Below is generated by plot.py at 2018-09-11 01:10:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 449.29 Mbit/s
95th percentile per-packet one-way delay: 112.622 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 449.29 Mbit/s
95th percentile per-packet one-way delay: 112.622 ms
Loss rate: 0.87%

Run 2: Report of TCP Vegas — Data Link

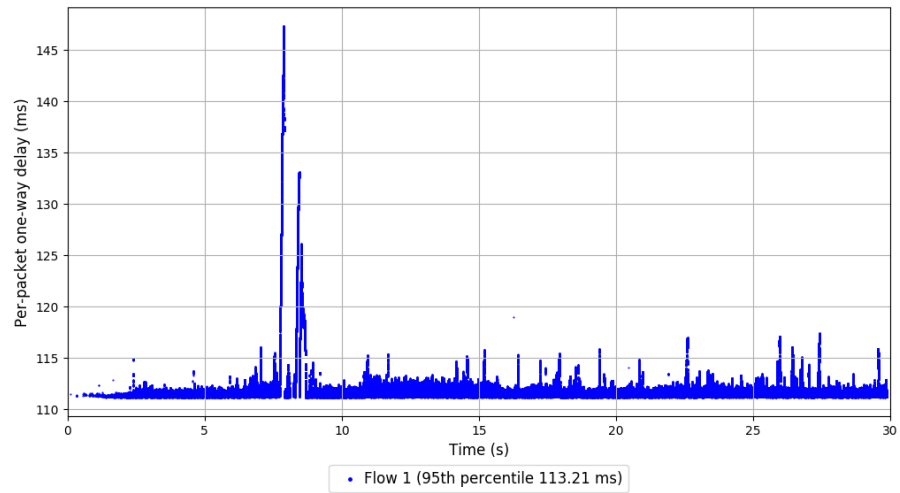
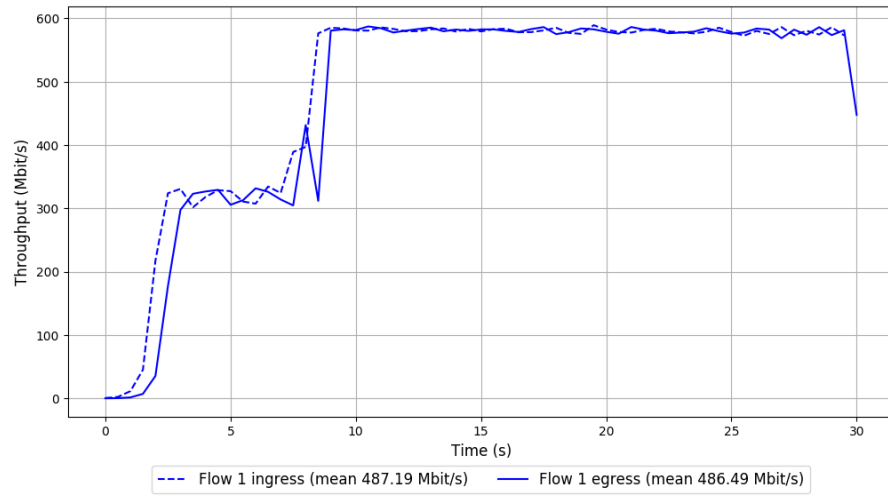


Run 3: Statistics of TCP Vegas

Start at: 2018-09-10 22:33:59
End at: 2018-09-10 22:34:29
Local clock offset: 33.681 ms
Remote clock offset: 35.443 ms

Below is generated by plot.py at 2018-09-11 01:11:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 486.49 Mbit/s
95th percentile per-packet one-way delay: 113.210 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 486.49 Mbit/s
95th percentile per-packet one-way delay: 113.210 ms
Loss rate: 0.88%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-10 23:00:53

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

Local clock offset: 13.883 ms

Remote clock offset: 8.364 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 389.47 Mbit/s

95th percentile per-packet one-way delay: 115.039 ms

Loss rate: 0.95%

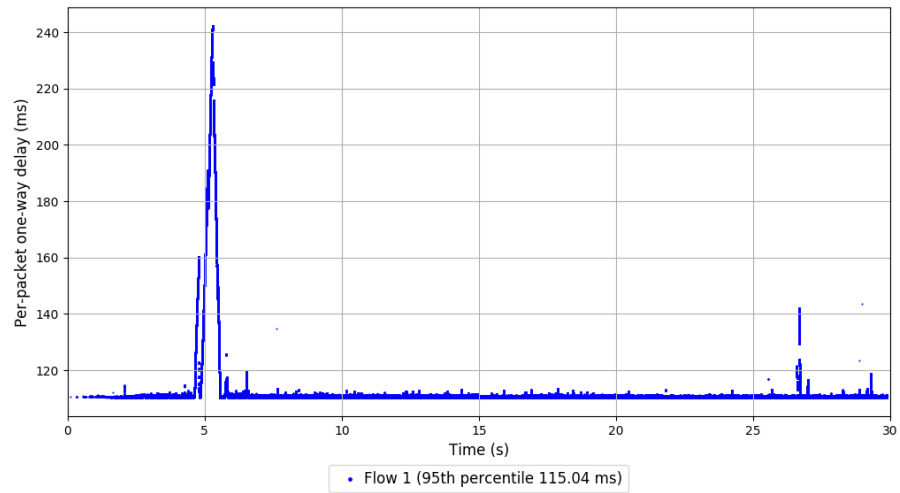
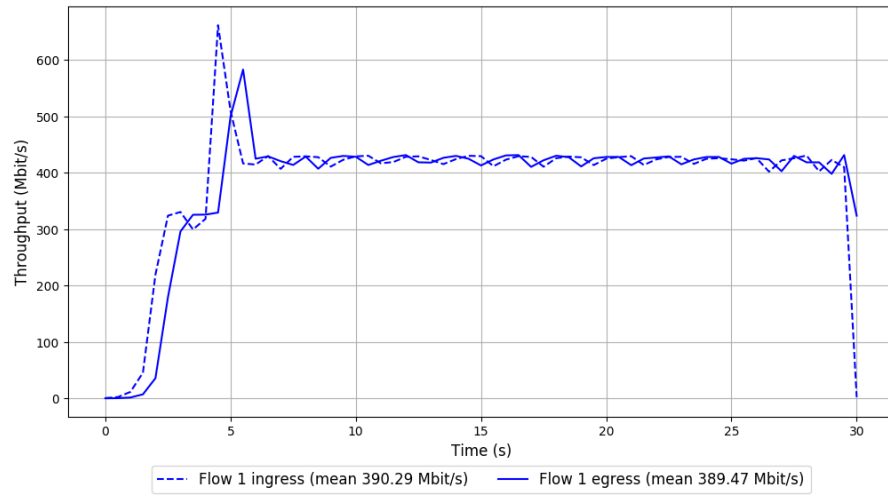
-- Flow 1:

Average throughput: 389.47 Mbit/s

95th percentile per-packet one-way delay: 115.039 ms

Loss rate: 0.95%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-10 23:27:25

End at: 2018-09-10 23:27:55

Local clock offset: 4.236 ms

Remote clock offset: 3.186 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 307.92 Mbit/s

95th percentile per-packet one-way delay: 109.920 ms

Loss rate: 0.51%

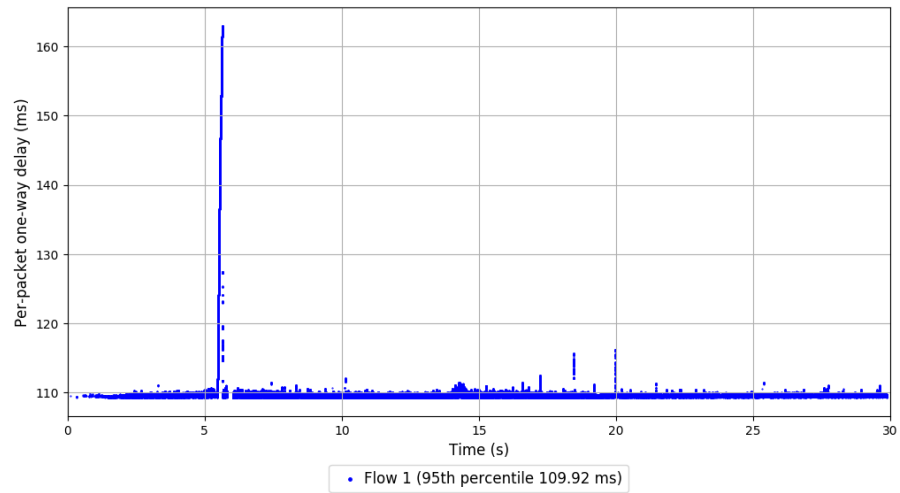
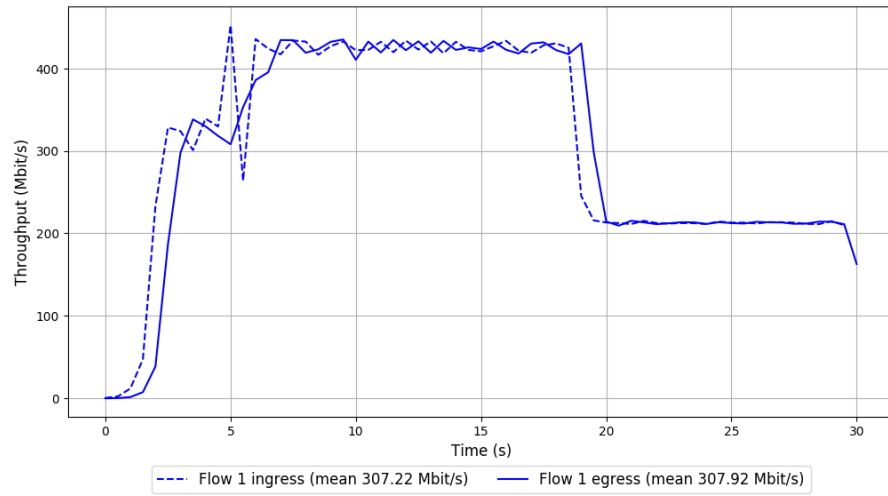
-- Flow 1:

Average throughput: 307.92 Mbit/s

95th percentile per-packet one-way delay: 109.920 ms

Loss rate: 0.51%

Run 5: Report of TCP Vegas — Data Link

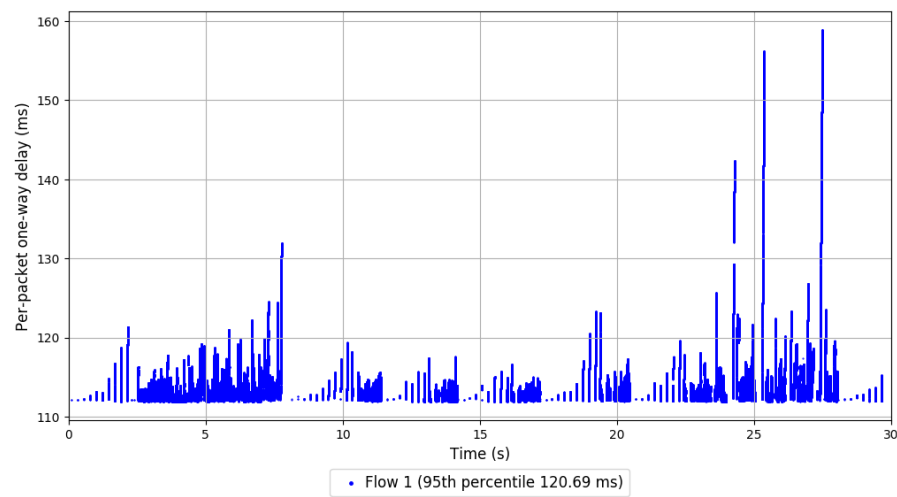
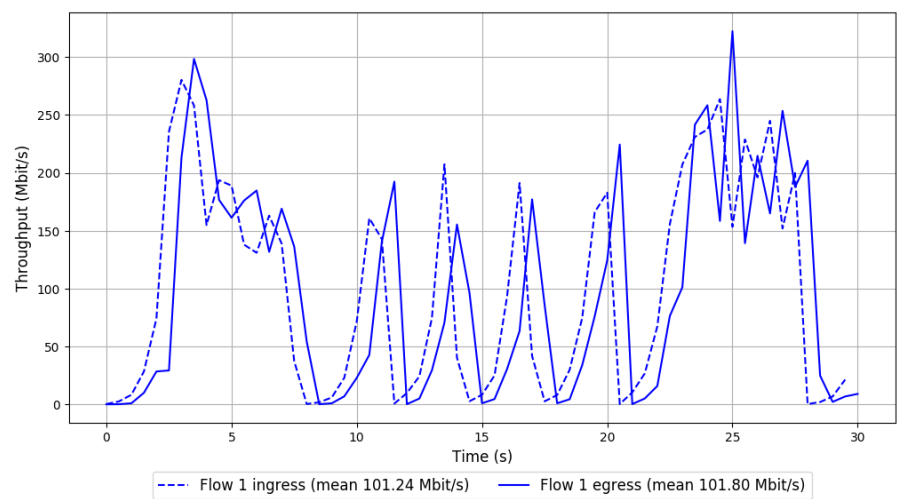


Run 1: Statistics of Verus

Start at: 2018-09-10 21:43:29
End at: 2018-09-10 21:43:59
Local clock offset: 12.966 ms
Remote clock offset: 14.041 ms

Below is generated by plot.py at 2018-09-11 01:11:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 101.80 Mbit/s
95th percentile per-packet one-way delay: 120.694 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 101.80 Mbit/s
95th percentile per-packet one-way delay: 120.694 ms
Loss rate: 0.20%

Run 1: Report of Verus — Data Link

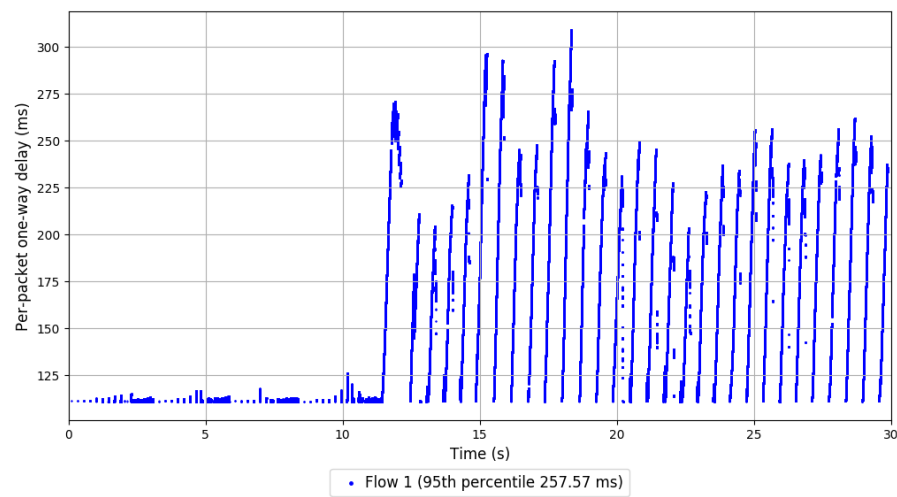
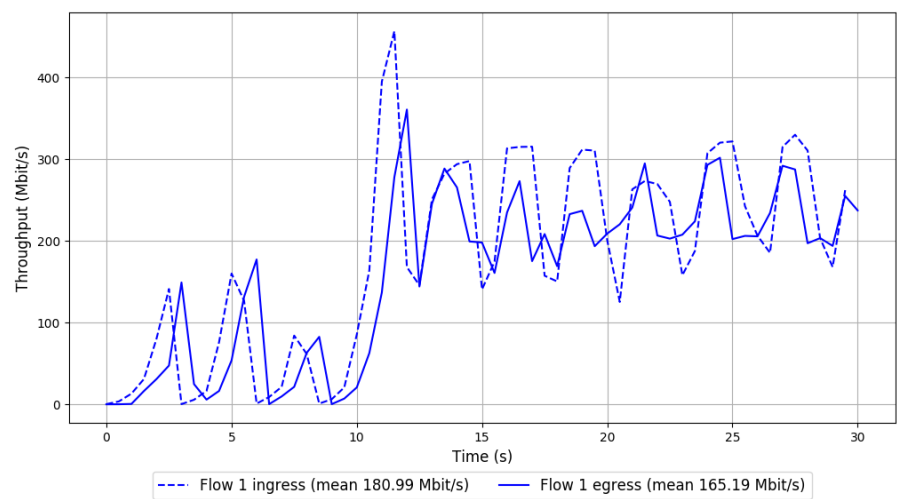


Run 2: Statistics of Verus

Start at: 2018-09-10 22:10:23
End at: 2018-09-10 22:10:53
Local clock offset: 17.663 ms
Remote clock offset: 18.401 ms

Below is generated by plot.py at 2018-09-11 01:11:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 165.19 Mbit/s
95th percentile per-packet one-way delay: 257.570 ms
Loss rate: 8.70%
-- Flow 1:
Average throughput: 165.19 Mbit/s
95th percentile per-packet one-way delay: 257.570 ms
Loss rate: 8.70%

Run 2: Report of Verus — Data Link

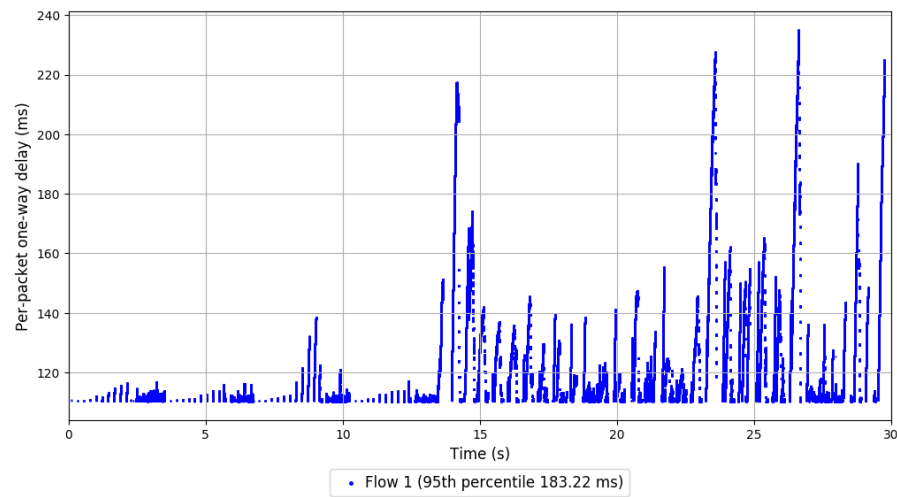
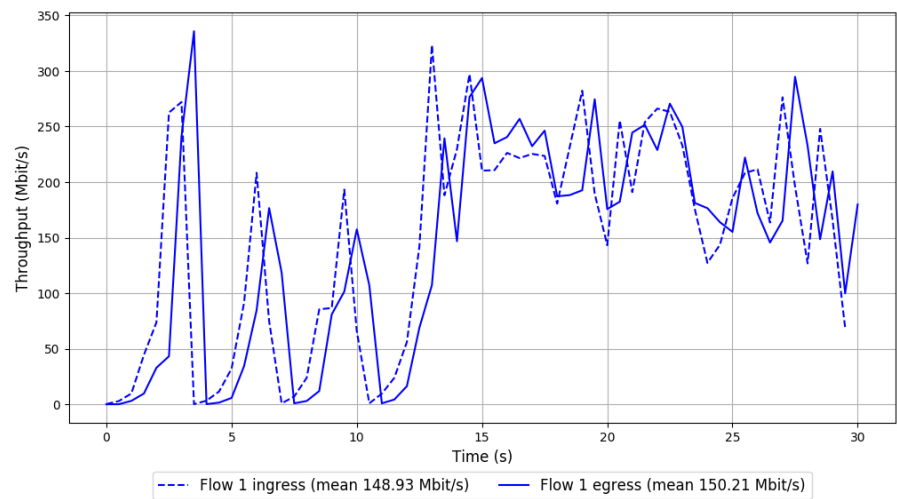


Run 3: Statistics of Verus

Start at: 2018-09-10 22:37:15
End at: 2018-09-10 22:37:45
Local clock offset: 32.108 ms
Remote clock offset: 32.989 ms

Below is generated by plot.py at 2018-09-11 01:11:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 150.21 Mbit/s
95th percentile per-packet one-way delay: 183.217 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 150.21 Mbit/s
95th percentile per-packet one-way delay: 183.217 ms
Loss rate: 0.18%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-10 23:03:56

End at: 2018-09-10 23:04:26

Local clock offset: 15.355 ms

Remote clock offset: 8.501 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 142.04 Mbit/s

95th percentile per-packet one-way delay: 167.263 ms

Loss rate: 1.32%

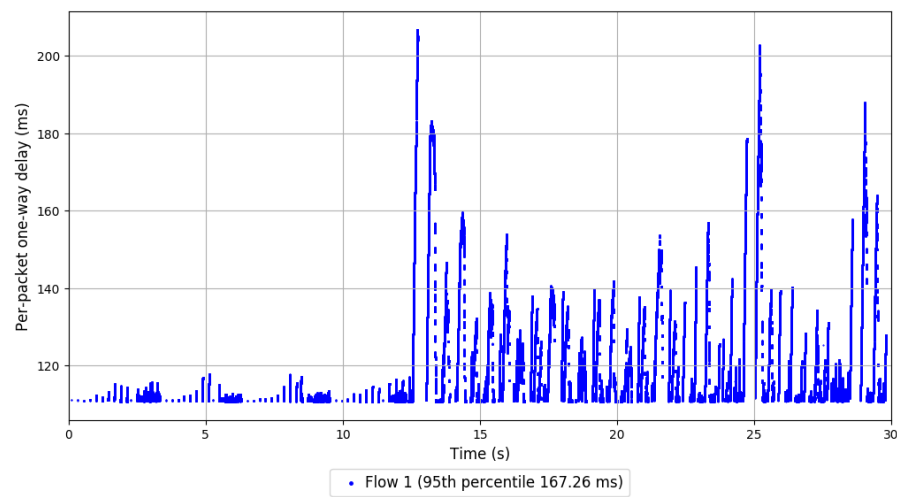
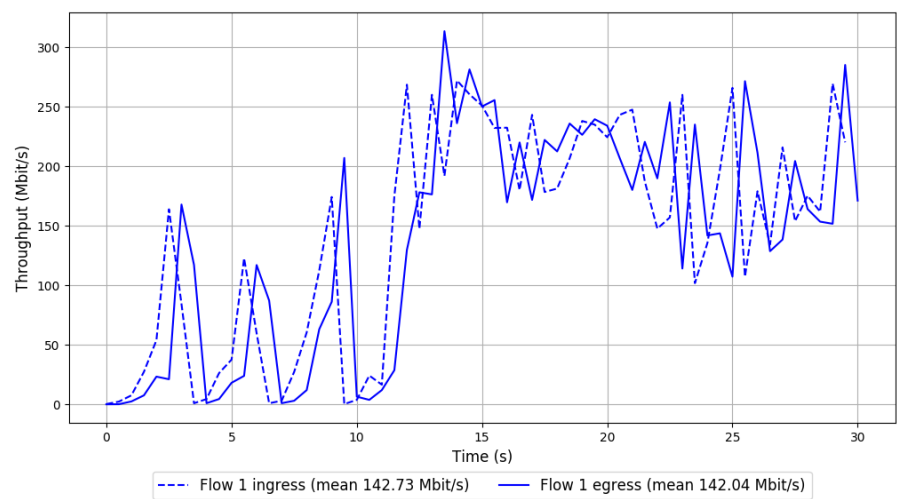
-- Flow 1:

Average throughput: 142.04 Mbit/s

95th percentile per-packet one-way delay: 167.263 ms

Loss rate: 1.32%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-10 23:30:32

End at: 2018-09-10 23:31:02

Local clock offset: 3.199 ms

Remote clock offset: 3.229 ms

Below is generated by plot.py at 2018-09-11 01:12:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 142.53 Mbit/s

95th percentile per-packet one-way delay: 180.945 ms

Loss rate: 0.00%

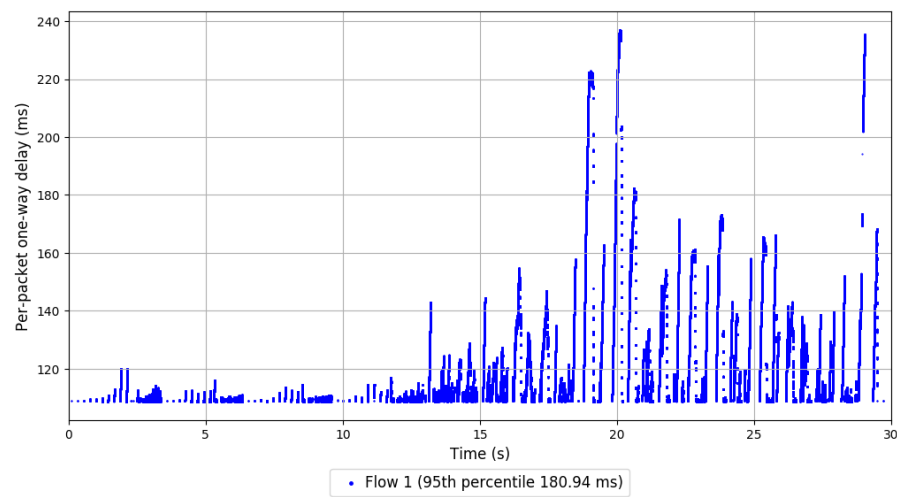
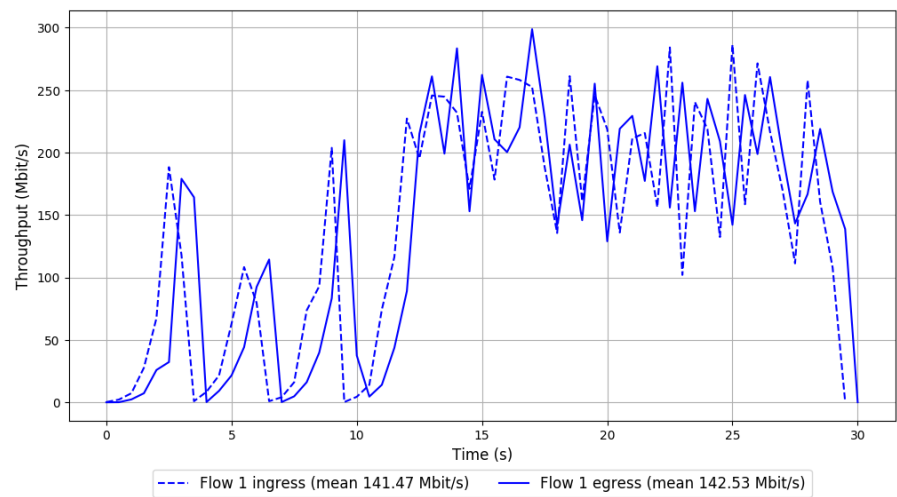
-- Flow 1:

Average throughput: 142.53 Mbit/s

95th percentile per-packet one-way delay: 180.945 ms

Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-10 21:38:43

End at: 2018-09-10 21:39:13

Local clock offset: 7.859 ms

Remote clock offset: 7.834 ms

Below is generated by plot.py at 2018-09-11 01:14:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 364.73 Mbit/s

95th percentile per-packet one-way delay: 128.867 ms

Loss rate: 0.79%

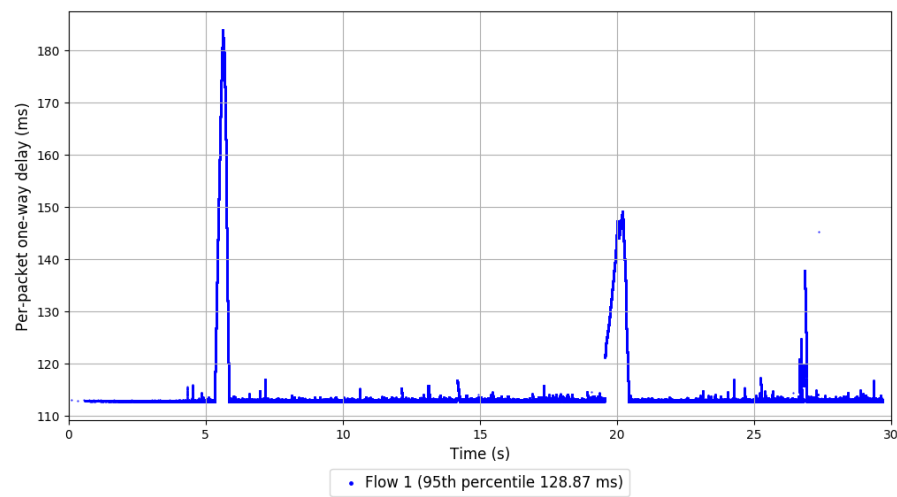
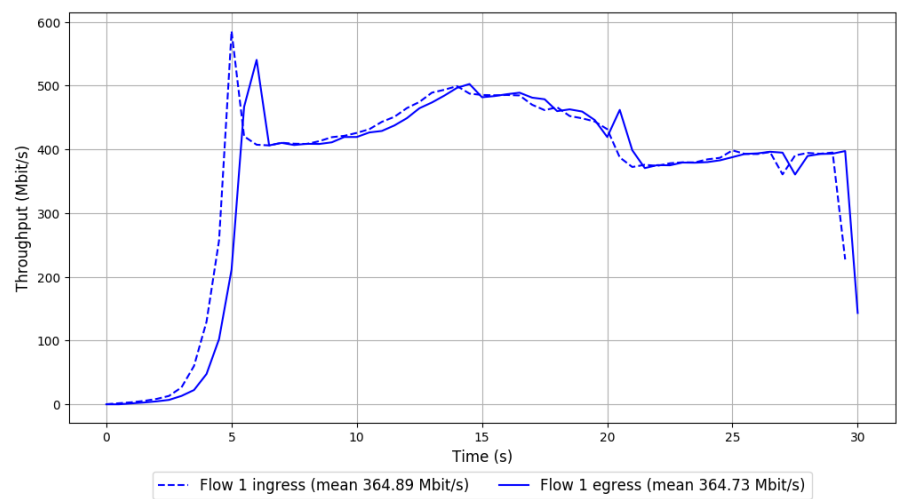
-- Flow 1:

Average throughput: 364.73 Mbit/s

95th percentile per-packet one-way delay: 128.867 ms

Loss rate: 0.79%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-10 22:05:34

End at: 2018-09-10 22:06:04

Local clock offset: 19.409 ms

Remote clock offset: 19.881 ms

Below is generated by plot.py at 2018-09-11 01:14:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 367.05 Mbit/s

95th percentile per-packet one-way delay: 114.093 ms

Loss rate: 1.00%

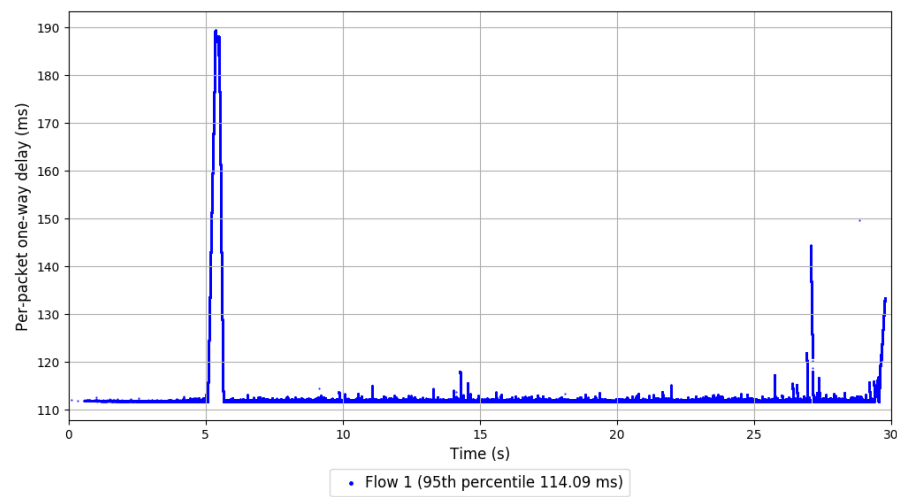
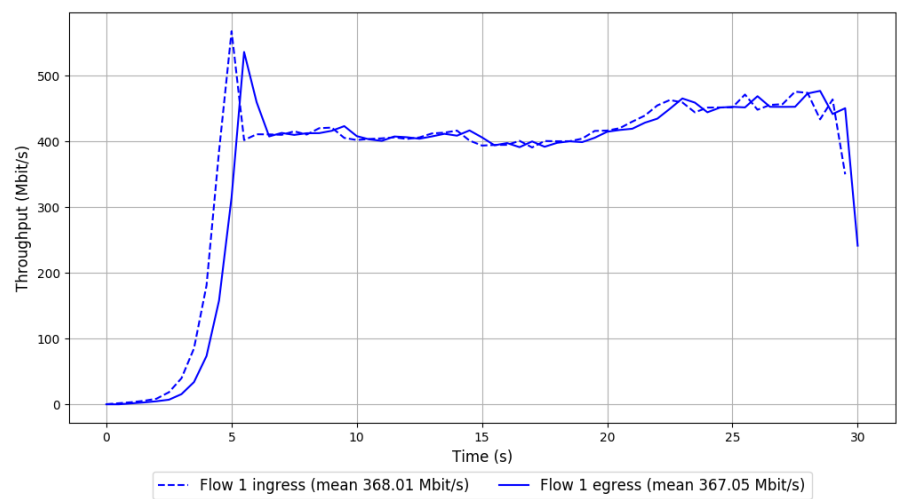
-- Flow 1:

Average throughput: 367.05 Mbit/s

95th percentile per-packet one-way delay: 114.093 ms

Loss rate: 1.00%

Run 2: Report of PCC-Vivace — Data Link

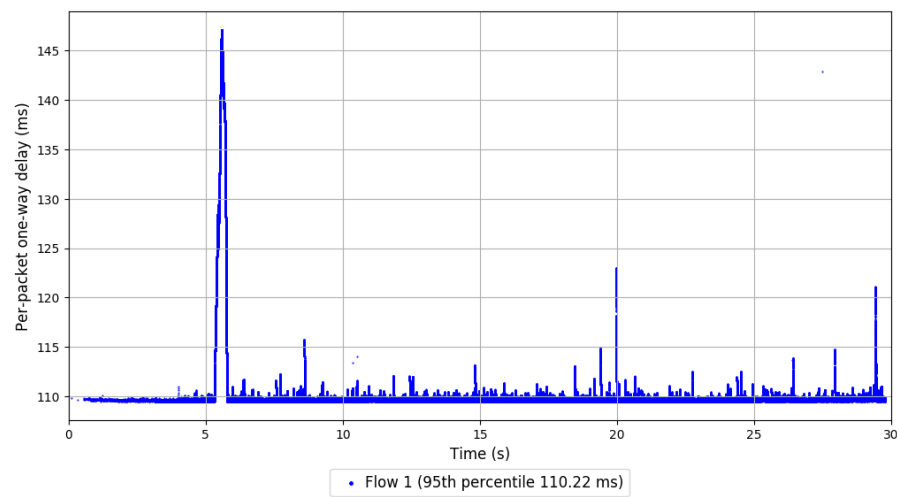
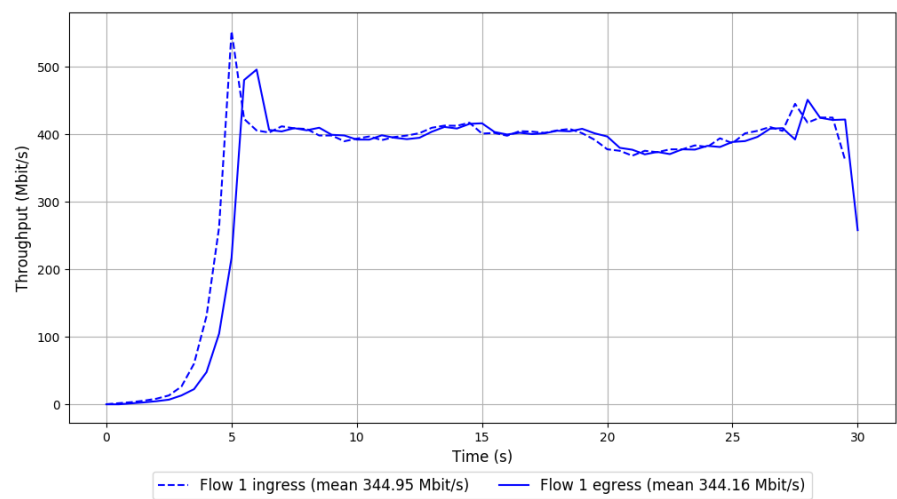


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-10 22:32:25
End at: 2018-09-10 22:32:55
Local clock offset: 31.422 ms
Remote clock offset: 34.788 ms

Below is generated by plot.py at 2018-09-11 01:14:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 344.16 Mbit/s
95th percentile per-packet one-way delay: 110.215 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 344.16 Mbit/s
95th percentile per-packet one-way delay: 110.215 ms
Loss rate: 0.97%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

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

End at: 2018-09-10 22:59:47

Local clock offset: 14.811 ms

Remote clock offset: 9.388 ms

Below is generated by plot.py at 2018-09-11 01:14:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 379.26 Mbit/s

95th percentile per-packet one-way delay: 112.113 ms

Loss rate: 0.79%

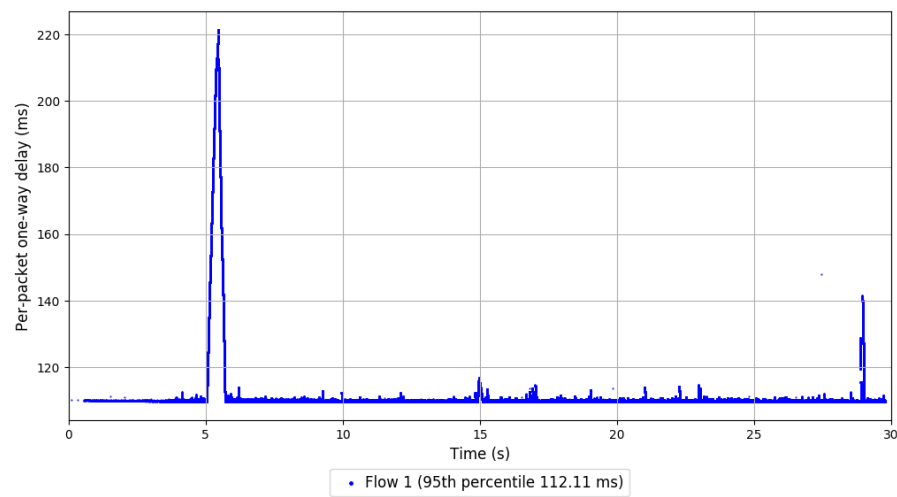
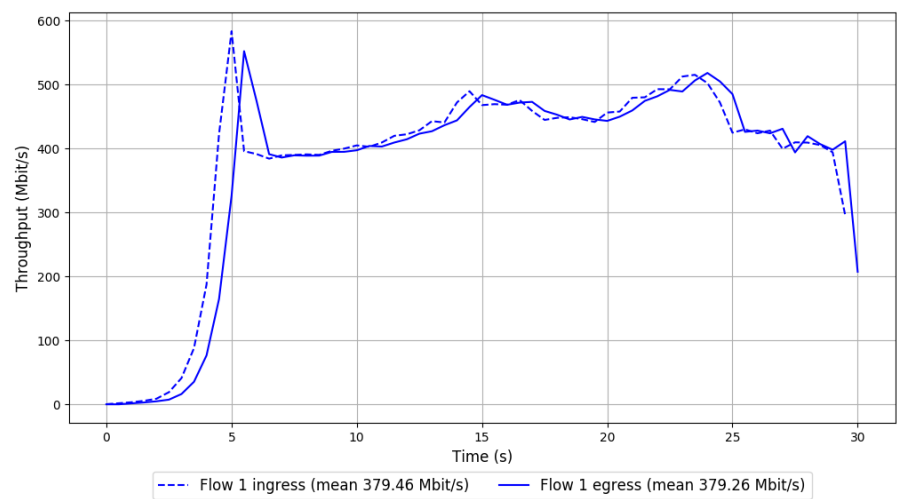
-- Flow 1:

Average throughput: 379.26 Mbit/s

95th percentile per-packet one-way delay: 112.113 ms

Loss rate: 0.79%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-10 23:25:50

End at: 2018-09-10 23:26:20

Local clock offset: 3.165 ms

Remote clock offset: 3.265 ms

Below is generated by plot.py at 2018-09-11 01:14:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 356.49 Mbit/s

95th percentile per-packet one-way delay: 110.152 ms

Loss rate: 0.59%

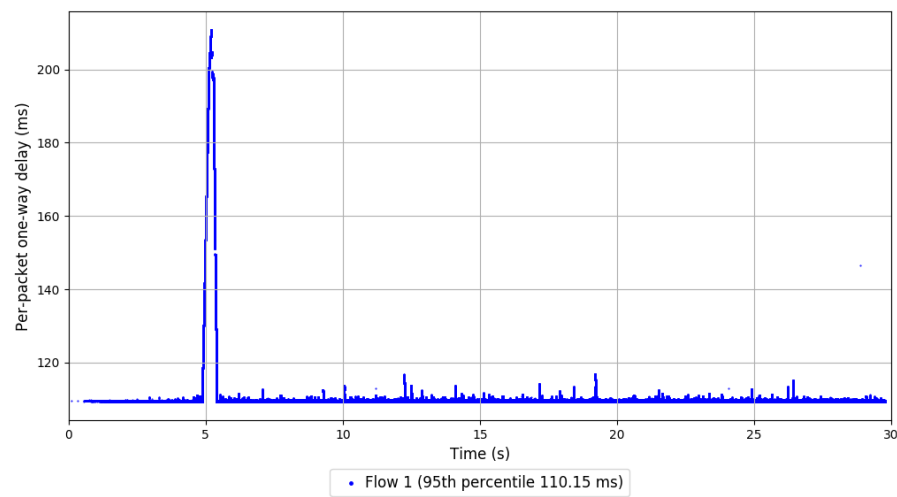
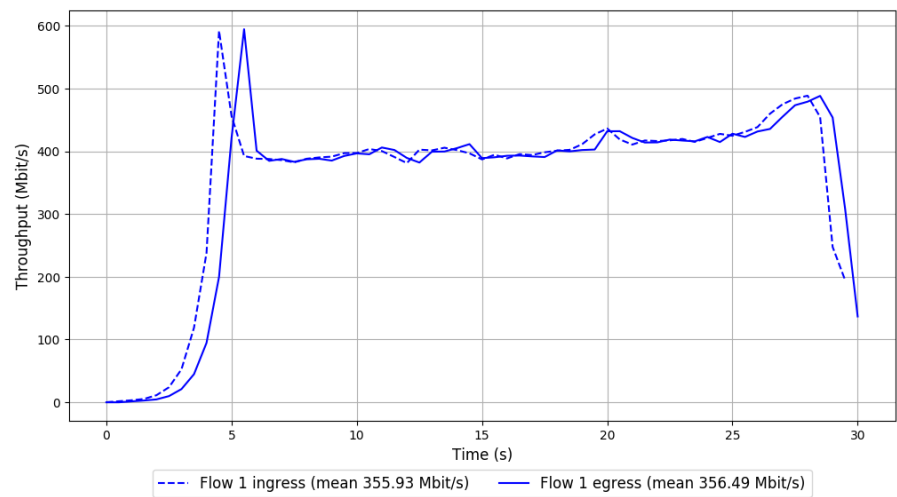
-- Flow 1:

Average throughput: 356.49 Mbit/s

95th percentile per-packet one-way delay: 110.152 ms

Loss rate: 0.59%

Run 5: Report of PCC-Vivace — Data Link

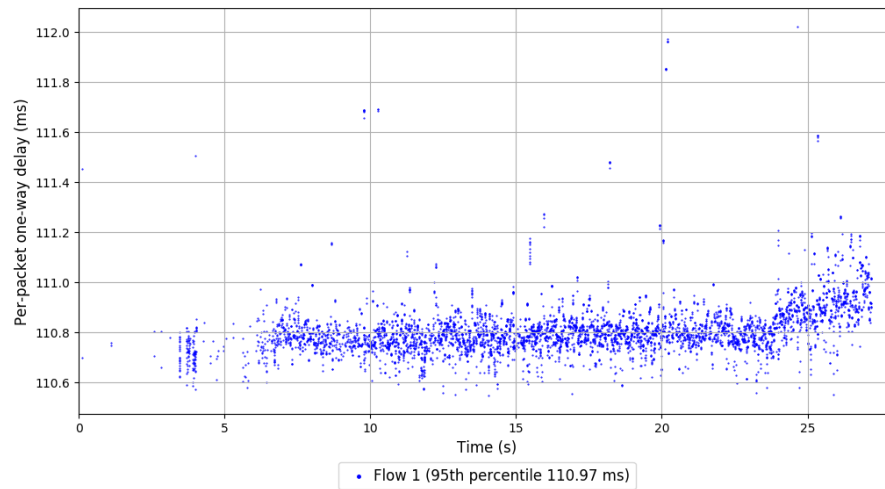
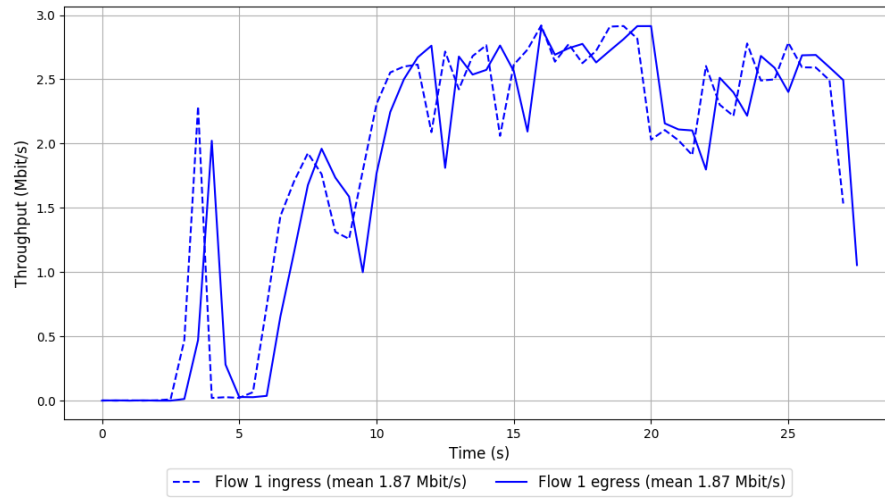


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-10 21:51:21
End at: 2018-09-10 21:51:51
Local clock offset: 11.96 ms
Remote clock offset: 13.299 ms

# Below is generated by plot.py at 2018-09-11 01:14:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 110.973 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 110.973 ms
Loss rate: 1.03%
```

Run 1: Report of WebRTC media — Data Link

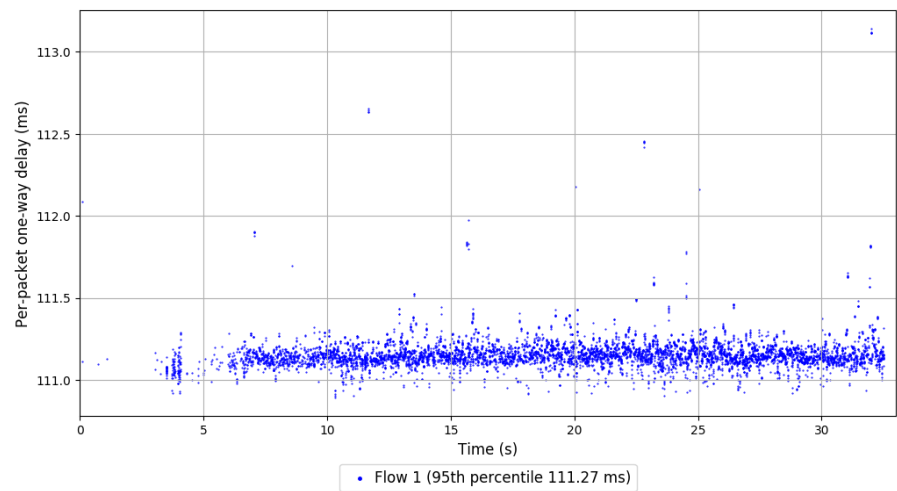
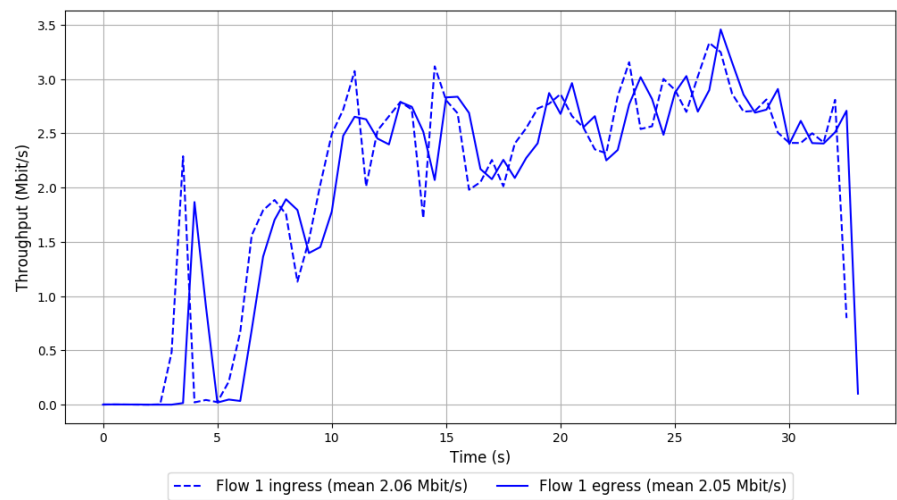


Run 2: Statistics of WebRTC media

Start at: 2018-09-10 22:18:17
End at: 2018-09-10 22:18:47
Local clock offset: 19.946 ms
Remote clock offset: 21.342 ms

Below is generated by plot.py at 2018-09-11 01:14:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 111.273 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 111.273 ms
Loss rate: 0.97%

Run 2: Report of WebRTC media — Data Link

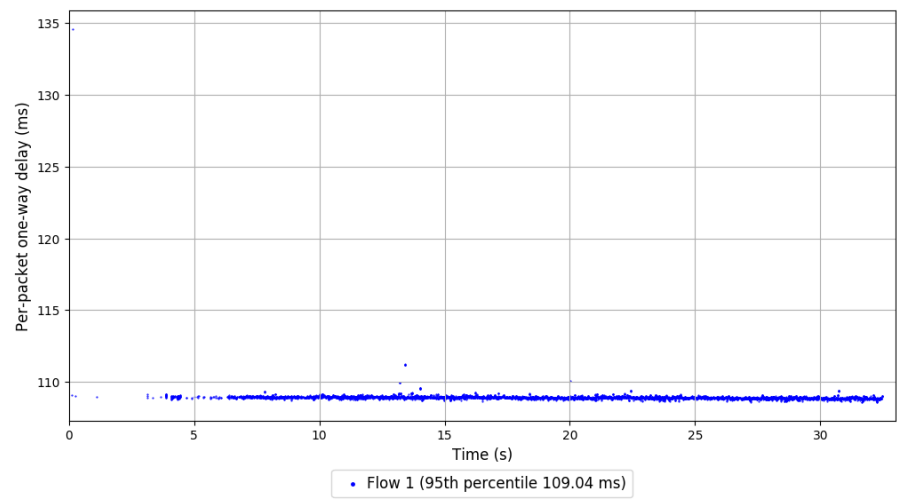
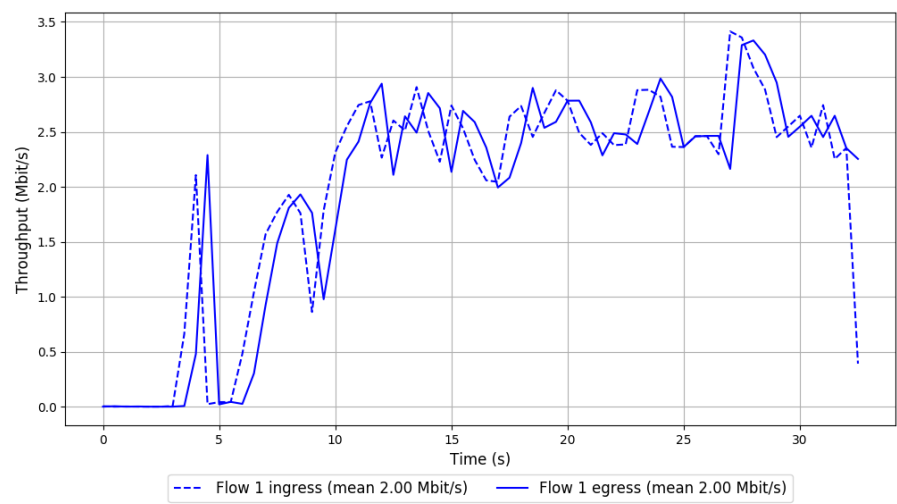


Run 3: Statistics of WebRTC media

Start at: 2018-09-10 22:45:11
End at: 2018-09-10 22:45:41
Local clock offset: 15.797 ms
Remote clock offset: 15.141 ms

Below is generated by plot.py at 2018-09-11 01:14:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 109.041 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 109.041 ms
Loss rate: 0.75%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-10 23:11:47

End at: 2018-09-10 23:12:17

Local clock offset: 16.233 ms

Remote clock offset: 7.632 ms

Below is generated by plot.py at 2018-09-11 01:14:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 113.097 ms

Loss rate: 0.83%

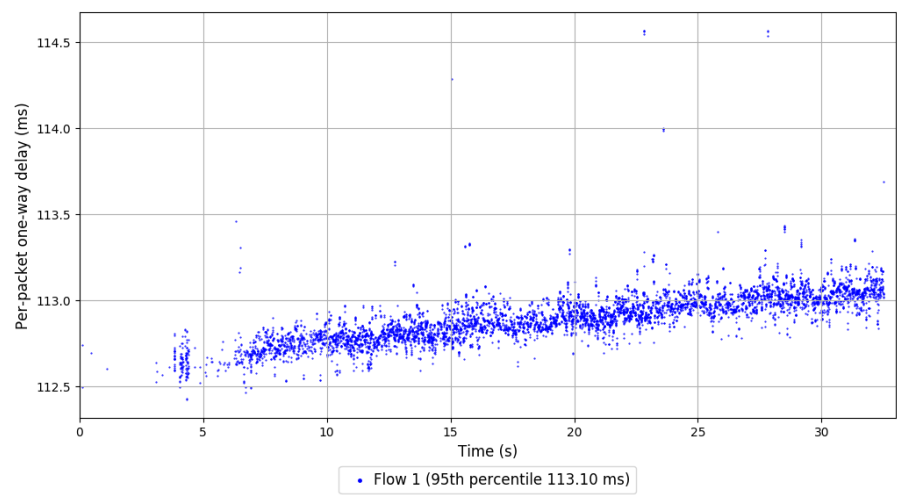
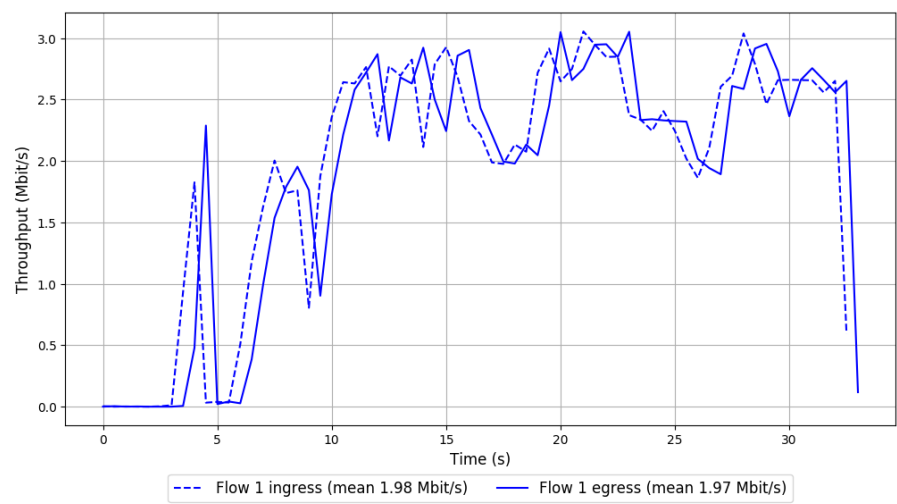
-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 113.097 ms

Loss rate: 0.83%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-10 23:38:31

End at: 2018-09-10 23:39:01

Local clock offset: 3.085 ms

Remote clock offset: 3.273 ms

Below is generated by plot.py at 2018-09-11 01:14:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 110.265 ms

Loss rate: 0.86%

-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 110.265 ms

Loss rate: 0.86%

Run 5: Report of WebRTC media — Data Link

