

Pantheon Report

Generated at 2018-10-26 03:03:06 (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:

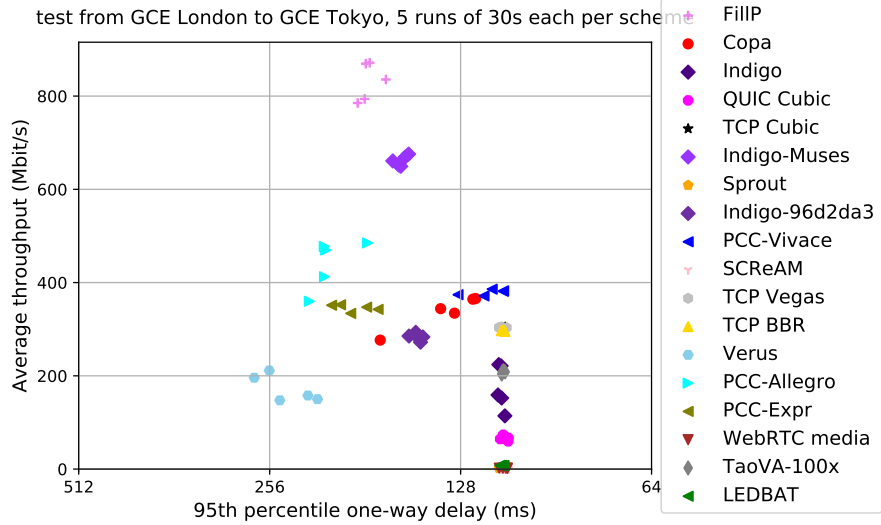
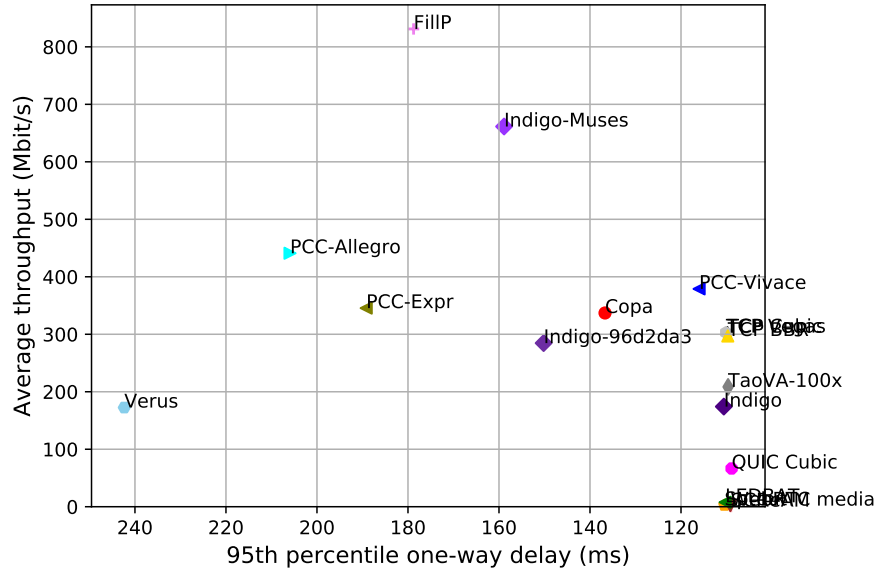
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd9bf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE London to GCE Tokyo, 5 runs of 30s each per scheme
(mean of all runs by scheme)



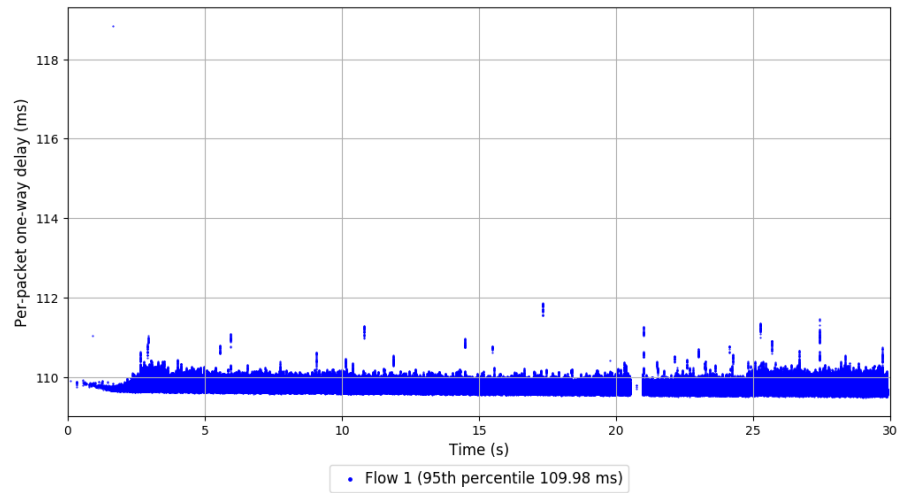
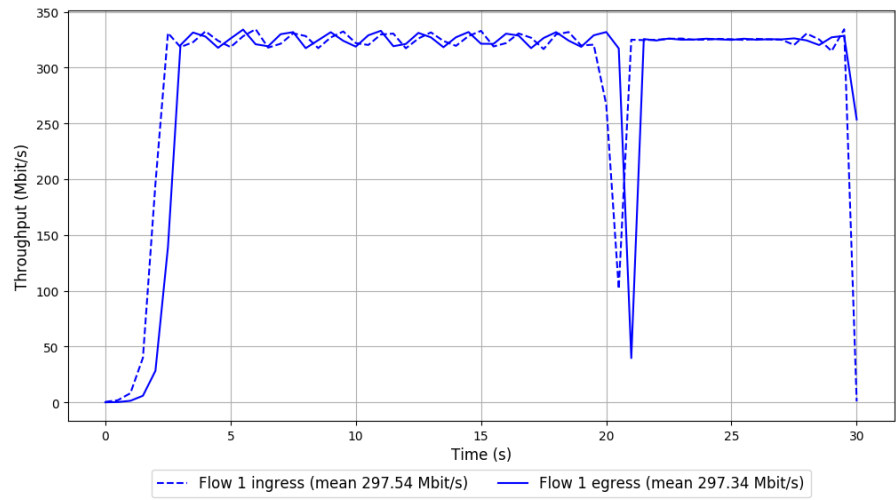
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	297.01	109.72	0.76
Copa	5	337.02	136.70	0.74
TCP Cubic	5	302.89	109.80	0.78
FillP	5	831.13	178.77	4.41
Indigo	5	174.17	110.59	0.83
Indigo-96d2da3	5	284.62	150.19	1.16
LEDBAT	5	7.77	110.31	1.46
Indigo-Muses	5	661.41	158.88	0.90
PCC-Allegro	5	440.93	205.92	2.65
PCC-Expr	5	345.50	189.19	2.52
QUIC Cubic	5	66.51	108.88	1.08
SCReAM	5	0.22	109.04	0.72
Sprout	5	2.55	110.44	0.56
TaoVA-100x	5	208.45	109.66	0.76
TCP Vegas	5	302.89	110.13	0.78
Verus	5	172.53	242.35	10.60
PCC-Vivace	5	378.96	116.03	0.89
WebRTC media	5	1.94	109.16	0.87

Run 1: Statistics of TCP BBR

Start at: 2018-10-25 23:52:18
End at: 2018-10-25 23:52:48
Local clock offset: 12.172 ms
Remote clock offset: 13.907 ms

Below is generated by plot.py at 2018-10-26 01:55:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 297.34 Mbit/s
95th percentile per-packet one-way delay: 109.985 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 297.34 Mbit/s
95th percentile per-packet one-way delay: 109.985 ms
Loss rate: 0.80%

Run 1: Report of TCP BBR — Data Link

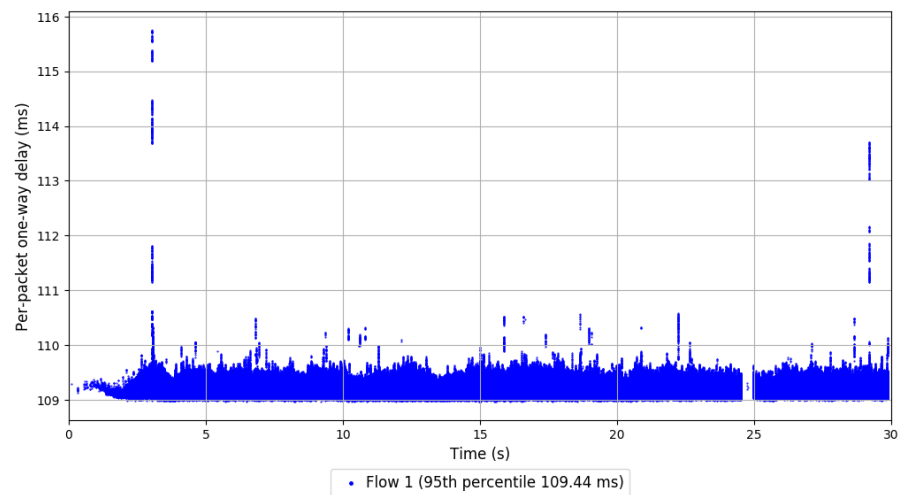
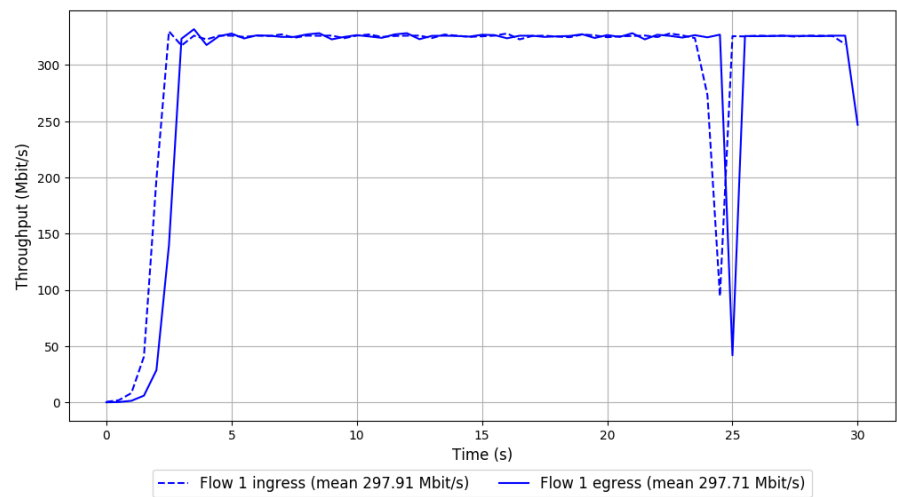


Run 2: Statistics of TCP BBR

Start at: 2018-10-26 00:18:08
End at: 2018-10-26 00:18:38
Local clock offset: 18.578 ms
Remote clock offset: 21.455 ms

Below is generated by plot.py at 2018-10-26 01:55:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 297.71 Mbit/s
95th percentile per-packet one-way delay: 109.445 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 297.71 Mbit/s
95th percentile per-packet one-way delay: 109.445 ms
Loss rate: 0.80%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-10-26 00:44:08

End at: 2018-10-26 00:44:38

Local clock offset: 24.933 ms

Remote clock offset: 29.22 ms

Below is generated by plot.py at 2018-10-26 01:55:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 297.17 Mbit/s

95th percentile per-packet one-way delay: 110.399 ms

Loss rate: 0.80%

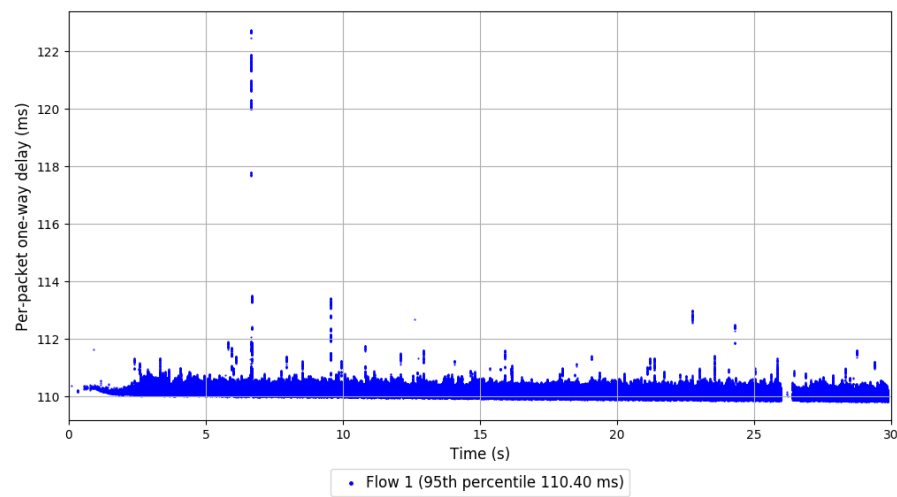
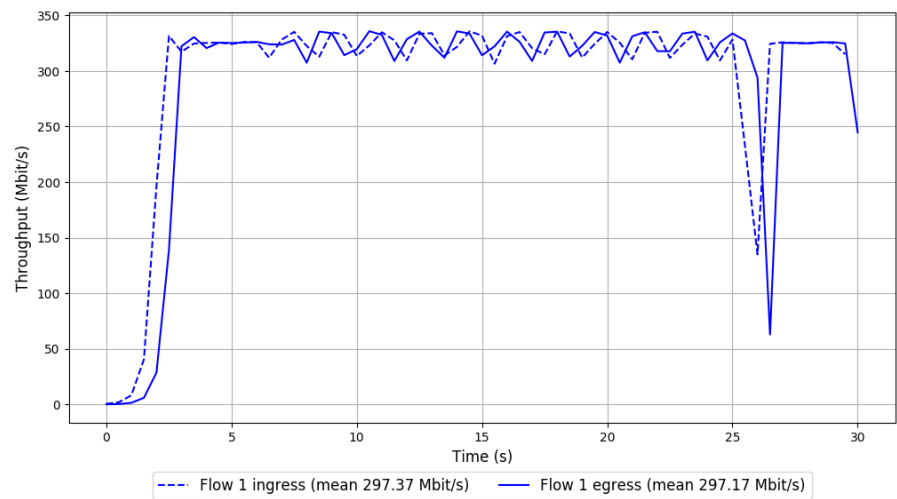
-- Flow 1:

Average throughput: 297.17 Mbit/s

95th percentile per-packet one-way delay: 110.399 ms

Loss rate: 0.80%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-10-26 01:10:11

End at: 2018-10-26 01:10:41

Local clock offset: 16.516 ms

Remote clock offset: 19.13 ms

Below is generated by plot.py at 2018-10-26 01:55:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 297.51 Mbit/s

95th percentile per-packet one-way delay: 109.794 ms

Loss rate: 0.80%

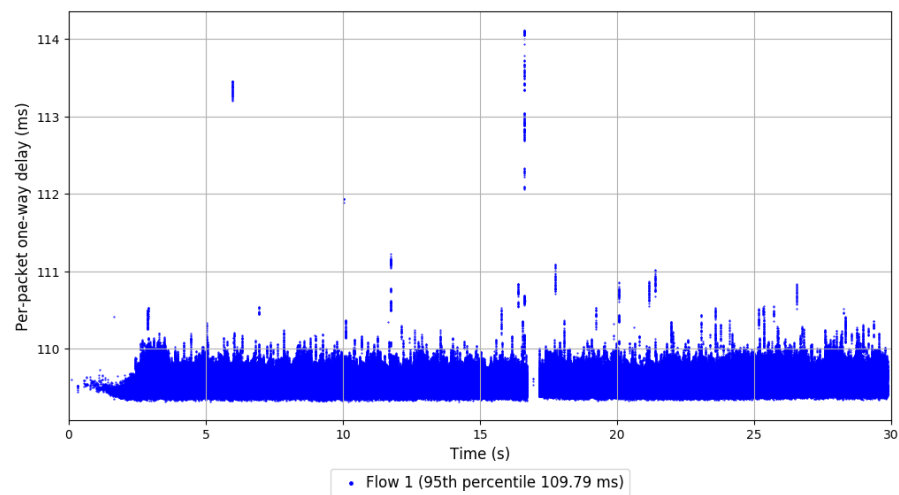
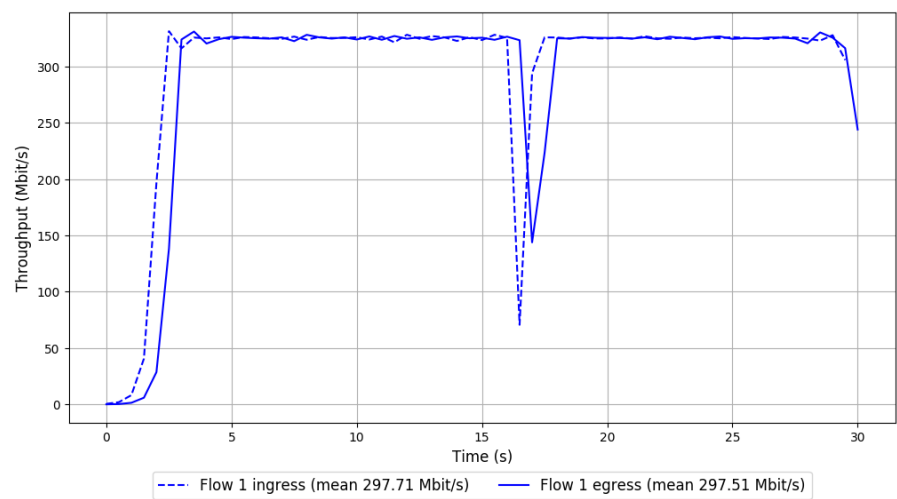
-- Flow 1:

Average throughput: 297.51 Mbit/s

95th percentile per-packet one-way delay: 109.794 ms

Loss rate: 0.80%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-10-26 01:36:05

End at: 2018-10-26 01:36:35

Local clock offset: 6.55 ms

Remote clock offset: 8.179 ms

Below is generated by plot.py at 2018-10-26 01:55:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 295.30 Mbit/s

95th percentile per-packet one-way delay: 108.977 ms

Loss rate: 0.59%

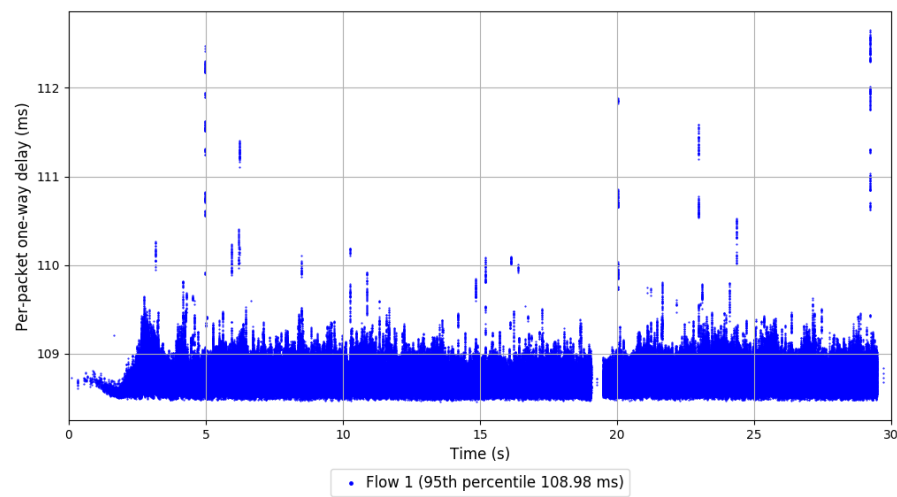
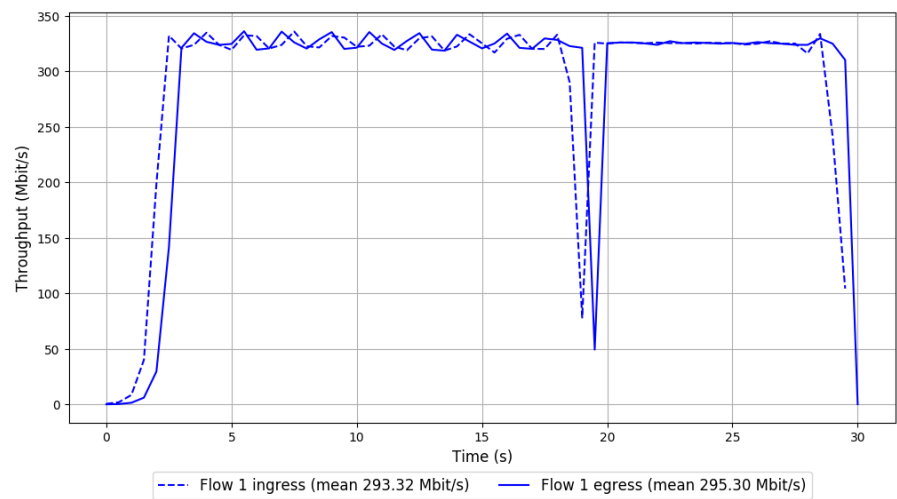
-- Flow 1:

Average throughput: 295.30 Mbit/s

95th percentile per-packet one-way delay: 108.977 ms

Loss rate: 0.59%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-10-25 23:41:48

End at: 2018-10-25 23:42:18

Local clock offset: 8.065 ms

Remote clock offset: 9.928 ms

Below is generated by plot.py at 2018-10-26 02:02:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 365.70 Mbit/s

95th percentile per-packet one-way delay: 121.187 ms

Loss rate: 0.83%

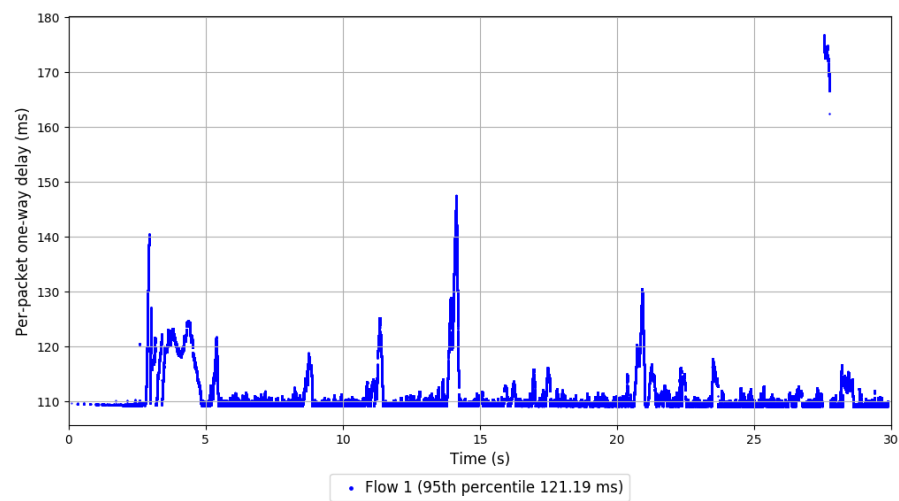
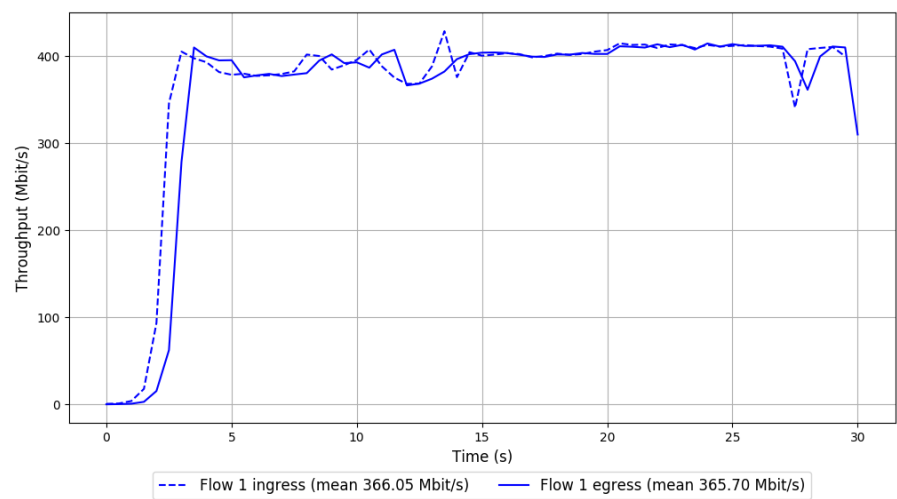
-- Flow 1:

Average throughput: 365.70 Mbit/s

95th percentile per-packet one-way delay: 121.187 ms

Loss rate: 0.83%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-10-26 00:07:49

End at: 2018-10-26 00:08:19

Local clock offset: 21.625 ms

Remote clock offset: 25.35 ms

Below is generated by plot.py at 2018-10-26 02:02:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 276.59 Mbit/s

95th percentile per-packet one-way delay: 171.373 ms

Loss rate: 0.43%

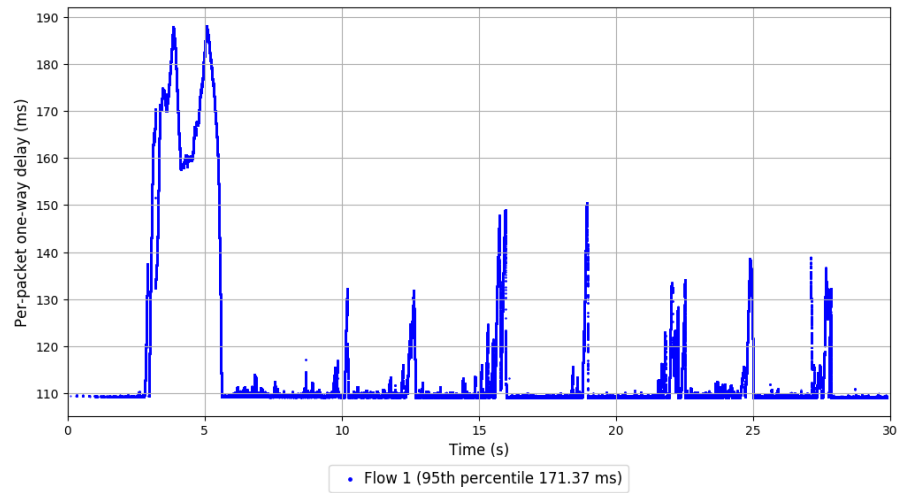
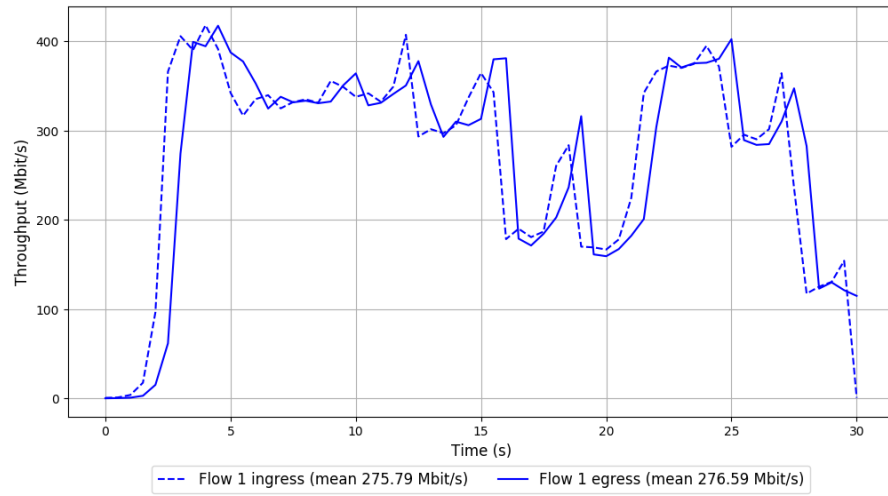
-- Flow 1:

Average throughput: 276.59 Mbit/s

95th percentile per-packet one-way delay: 171.373 ms

Loss rate: 0.43%

Run 2: Report of Copa — Data Link

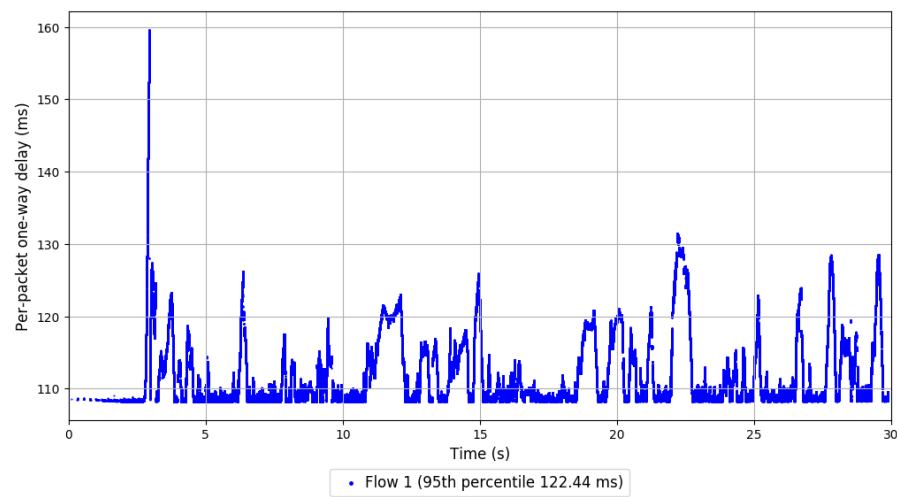
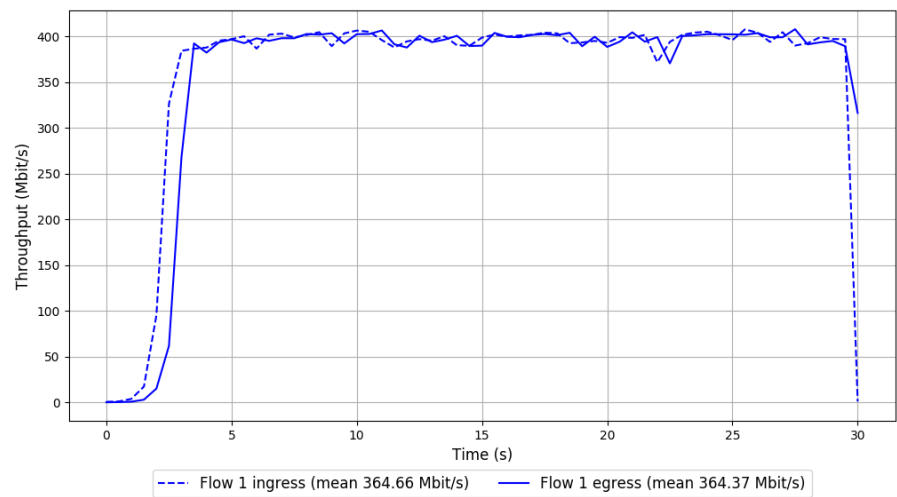


Run 3: Statistics of Copa

Start at: 2018-10-26 00:33:39
End at: 2018-10-26 00:34:09
Local clock offset: 29.798 ms
Remote clock offset: 34.952 ms

Below is generated by plot.py at 2018-10-26 02:02:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 364.37 Mbit/s
95th percentile per-packet one-way delay: 122.435 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 364.37 Mbit/s
95th percentile per-packet one-way delay: 122.435 ms
Loss rate: 0.81%

Run 3: Report of Copa — Data Link

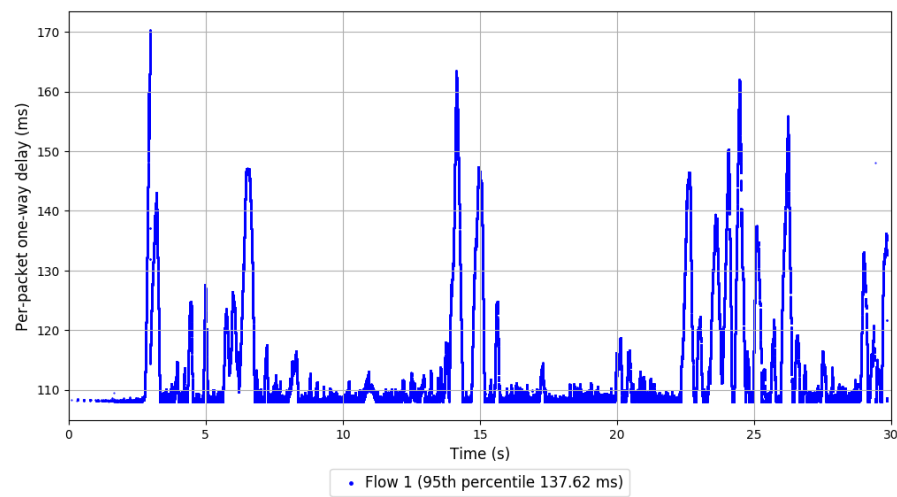
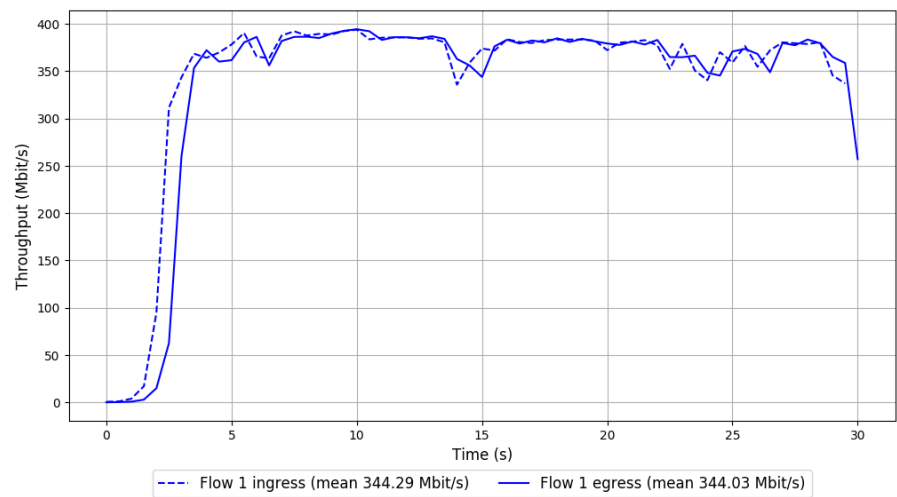


Run 4: Statistics of Copa

Start at: 2018-10-26 00:59:41
End at: 2018-10-26 01:00:11
Local clock offset: 12.358 ms
Remote clock offset: 15.929 ms

Below is generated by plot.py at 2018-10-26 02:06:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 344.03 Mbit/s
95th percentile per-packet one-way delay: 137.620 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 344.03 Mbit/s
95th percentile per-packet one-way delay: 137.620 ms
Loss rate: 0.81%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-26 01:25:33

End at: 2018-10-26 01:26:03

Local clock offset: 6.399 ms

Remote clock offset: 8.928 ms

Below is generated by plot.py at 2018-10-26 02:06:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 334.42 Mbit/s

95th percentile per-packet one-way delay: 130.871 ms

Loss rate: 0.81%

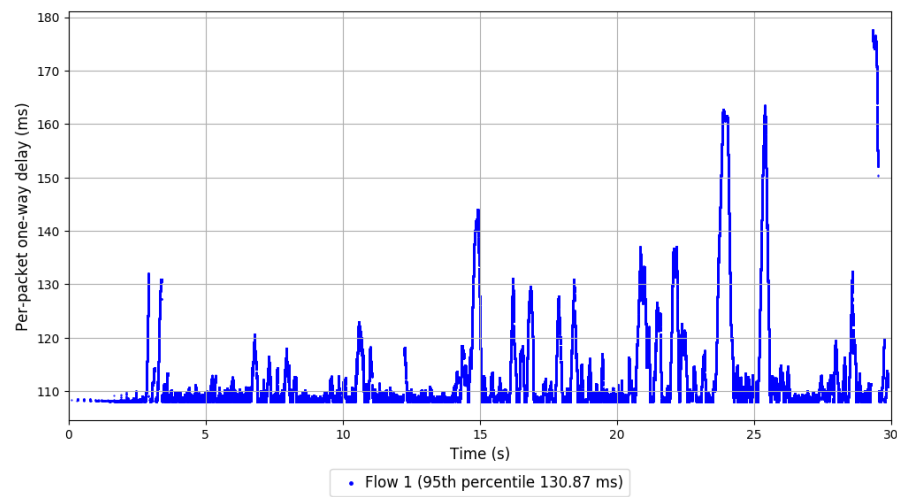
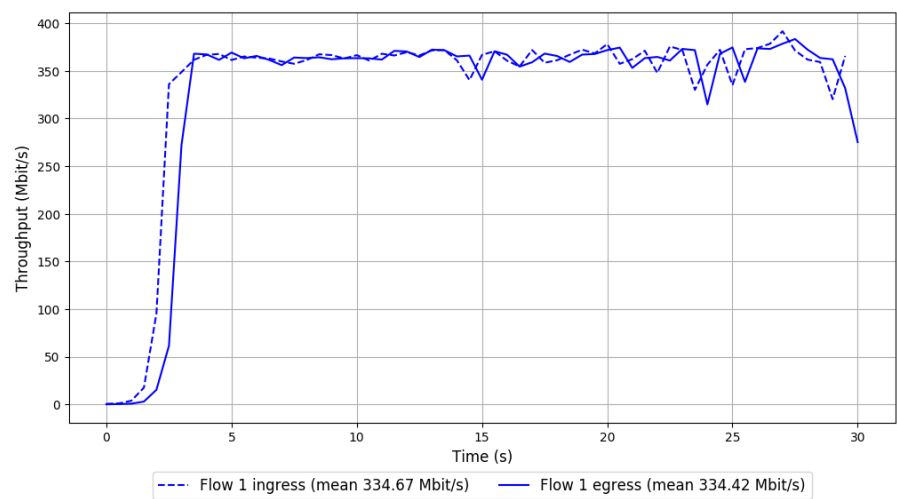
-- Flow 1:

Average throughput: 334.42 Mbit/s

95th percentile per-packet one-way delay: 130.871 ms

Loss rate: 0.81%

Run 5: Report of Copa — Data Link

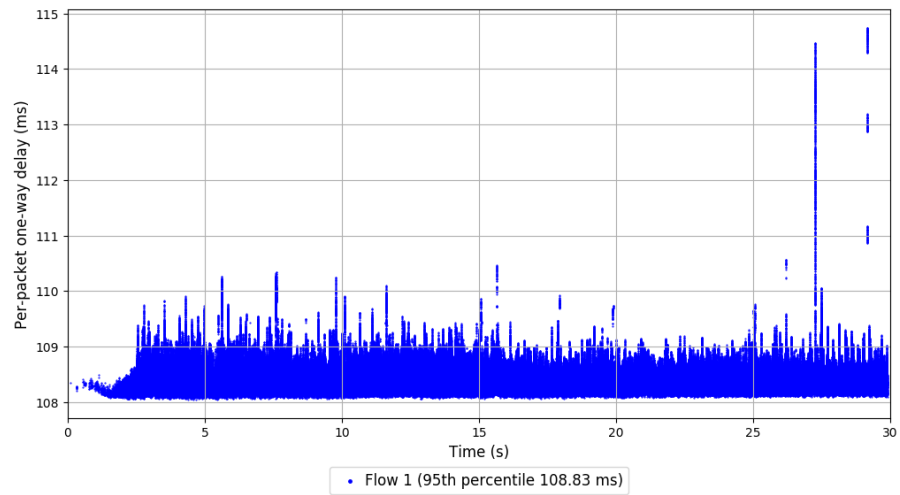
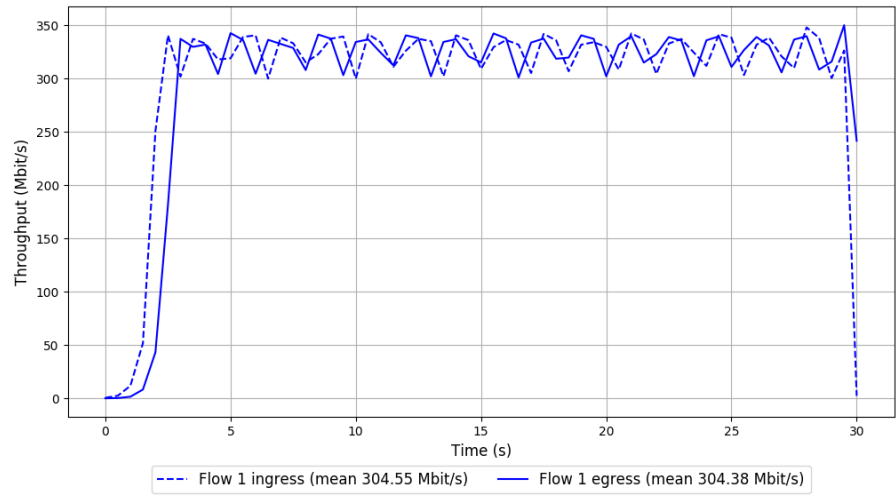


Run 1: Statistics of TCP Cubic

Start at: 2018-10-25 23:58:05
End at: 2018-10-25 23:58:35
Local clock offset: 15.068 ms
Remote clock offset: 17.141 ms

Below is generated by plot.py at 2018-10-26 02:06:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 304.38 Mbit/s
95th percentile per-packet one-way delay: 108.829 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 304.38 Mbit/s
95th percentile per-packet one-way delay: 108.829 ms
Loss rate: 0.78%

Run 1: Report of TCP Cubic — Data Link

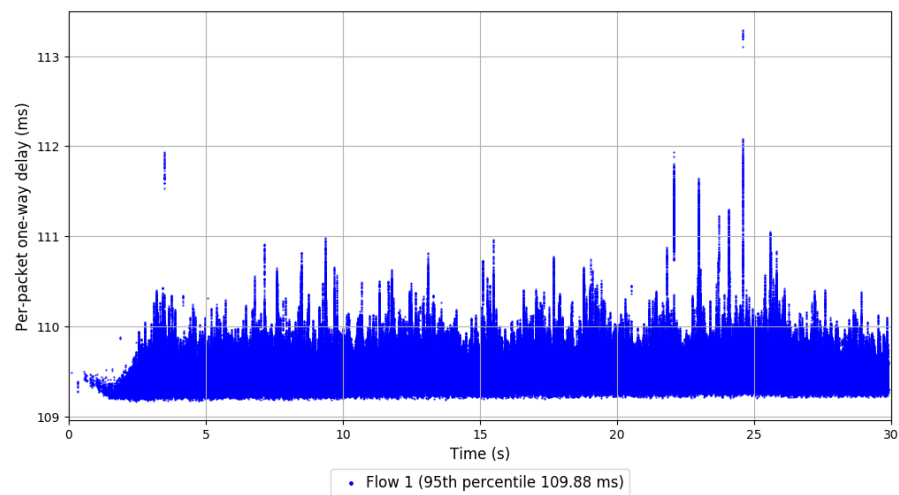
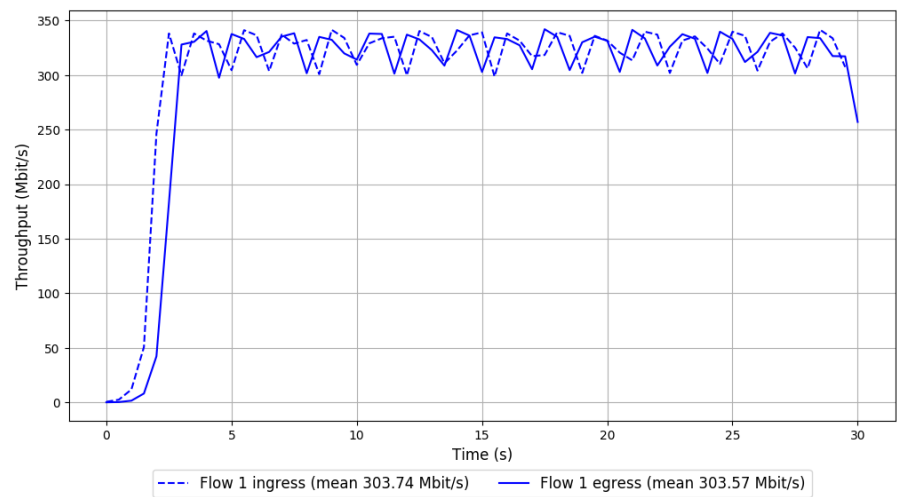


Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 00:23:57
End at: 2018-10-26 00:24:27
Local clock offset: 21.892 ms
Remote clock offset: 24.752 ms

Below is generated by plot.py at 2018-10-26 02:06:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 303.57 Mbit/s
95th percentile per-packet one-way delay: 109.880 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 303.57 Mbit/s
95th percentile per-packet one-way delay: 109.880 ms
Loss rate: 0.78%

Run 2: Report of TCP Cubic — Data Link

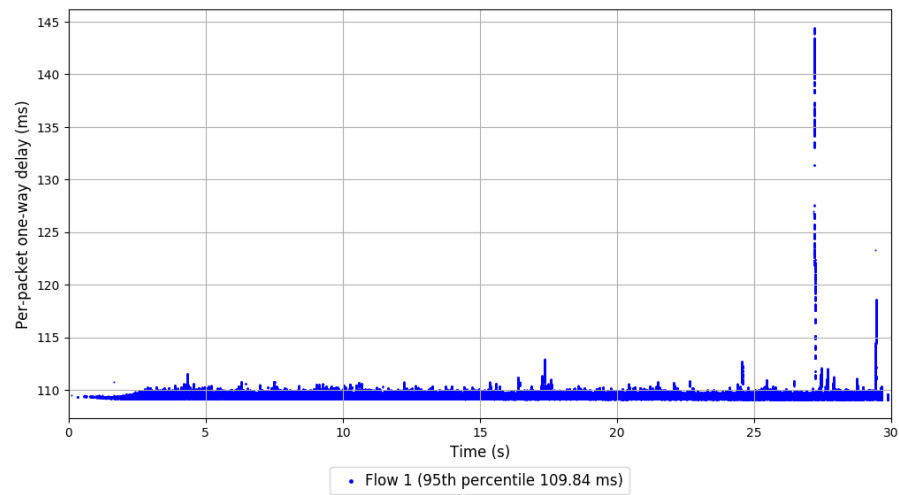
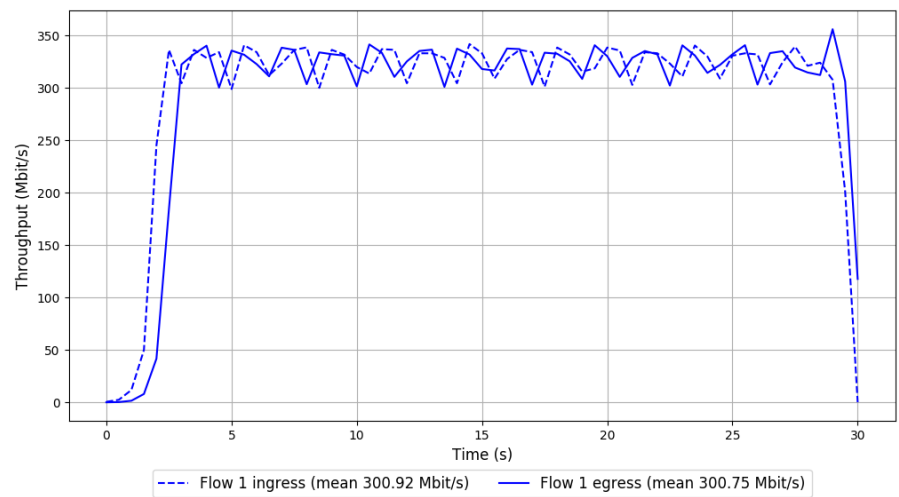


Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 00:49:57
End at: 2018-10-26 00:50:27
Local clock offset: 16.589 ms
Remote clock offset: 19.431 ms

Below is generated by plot.py at 2018-10-26 02:06:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 300.75 Mbit/s
95th percentile per-packet one-way delay: 109.839 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 300.75 Mbit/s
95th percentile per-packet one-way delay: 109.839 ms
Loss rate: 0.79%

Run 3: Report of TCP Cubic — Data Link

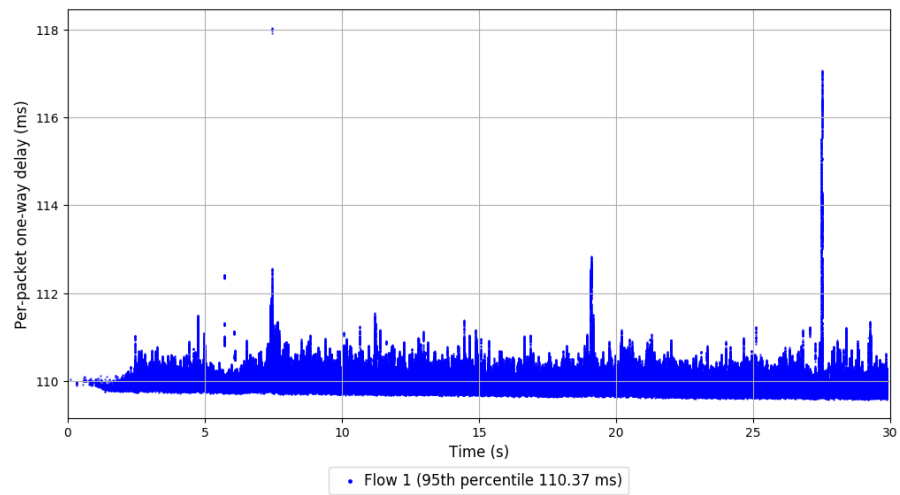
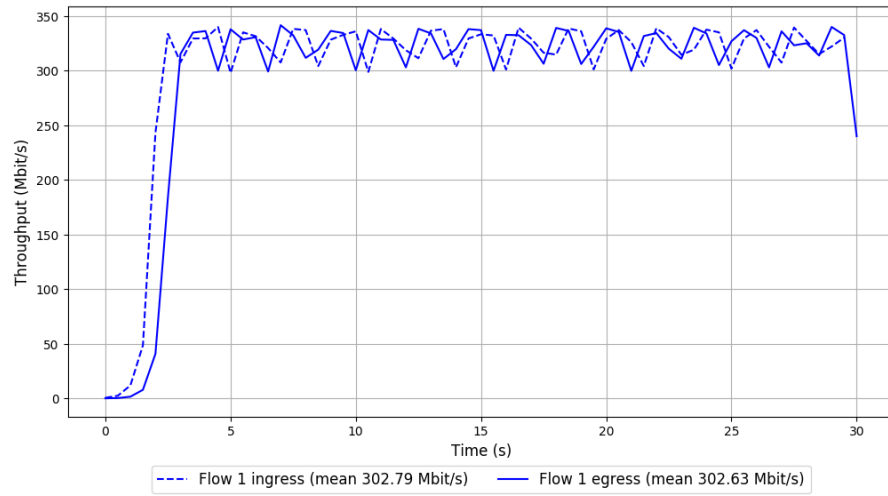


Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 01:16:00
End at: 2018-10-26 01:16:30
Local clock offset: 15.143 ms
Remote clock offset: 17.993 ms

Below is generated by plot.py at 2018-10-26 02:06:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 302.63 Mbit/s
95th percentile per-packet one-way delay: 110.374 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 302.63 Mbit/s
95th percentile per-packet one-way delay: 110.374 ms
Loss rate: 0.79%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 01:41:54

End at: 2018-10-26 01:42:24

Local clock offset: 7.922 ms

Remote clock offset: 8.706 ms

Below is generated by plot.py at 2018-10-26 02:06:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 303.14 Mbit/s

95th percentile per-packet one-way delay: 110.092 ms

Loss rate: 0.78%

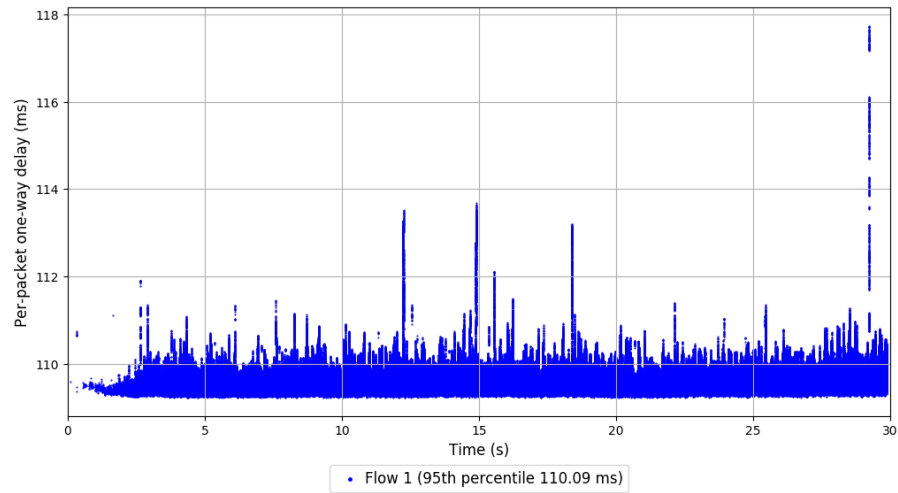
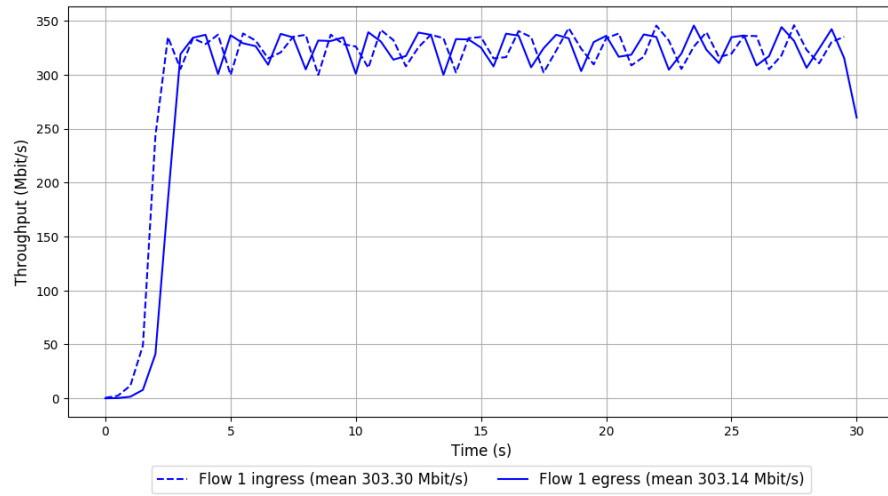
-- Flow 1:

Average throughput: 303.14 Mbit/s

95th percentile per-packet one-way delay: 110.092 ms

Loss rate: 0.78%

Run 5: Report of TCP Cubic — Data Link

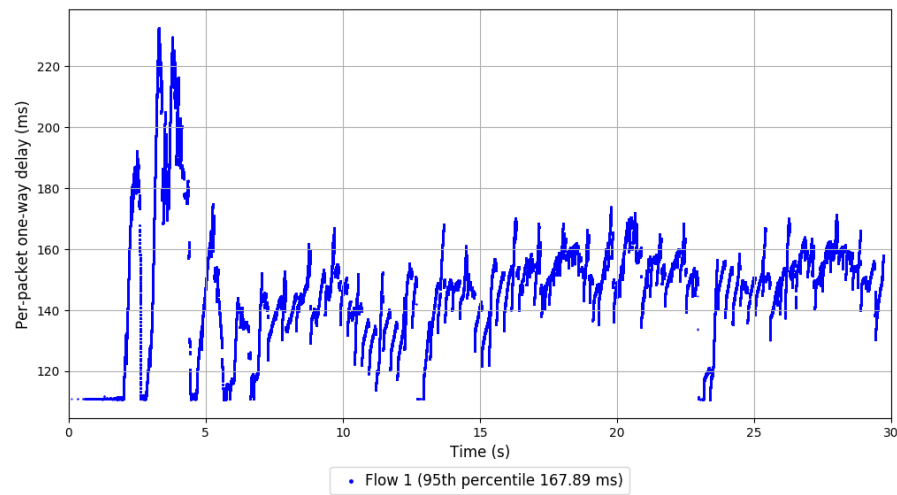
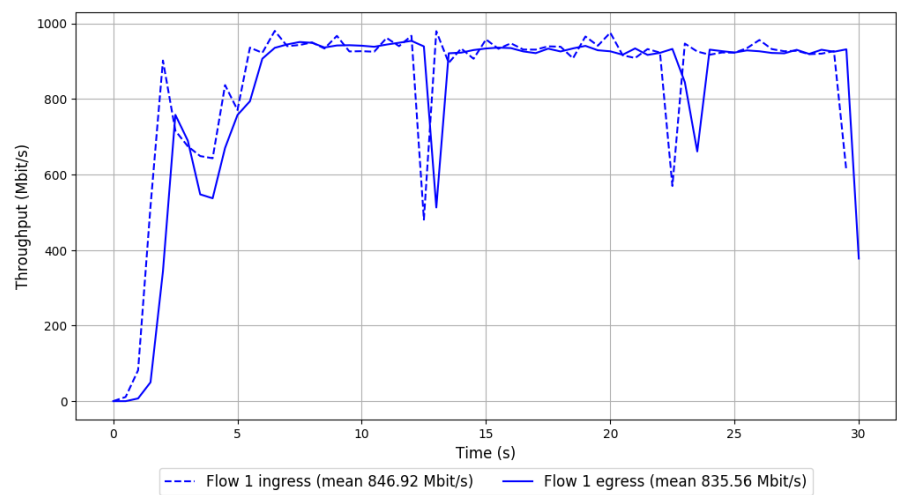


Run 1: Statistics of FillP

Start at: 2018-10-25 23:50:34
End at: 2018-10-25 23:51:04
Local clock offset: 14.611 ms
Remote clock offset: 16.081 ms

Below is generated by plot.py at 2018-10-26 02:19:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 835.56 Mbit/s
95th percentile per-packet one-way delay: 167.894 ms
Loss rate: 2.07%
-- Flow 1:
Average throughput: 835.56 Mbit/s
95th percentile per-packet one-way delay: 167.894 ms
Loss rate: 2.07%

Run 1: Report of FillP — Data Link

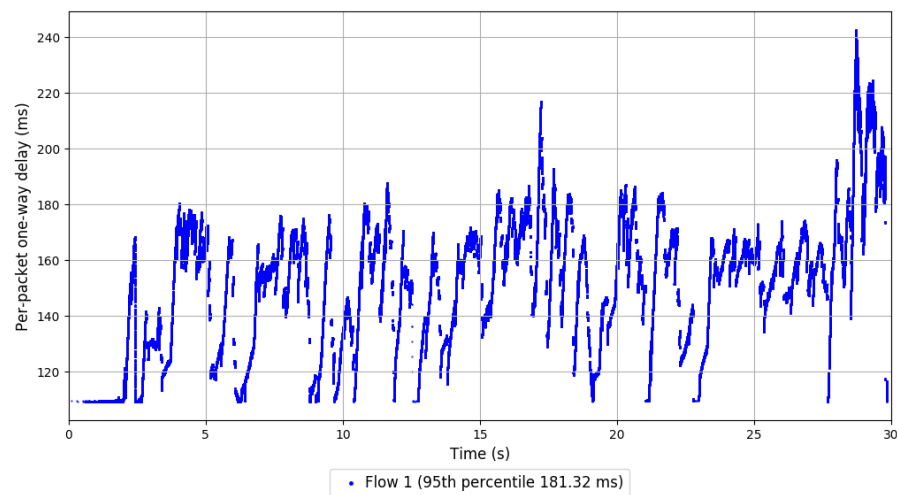
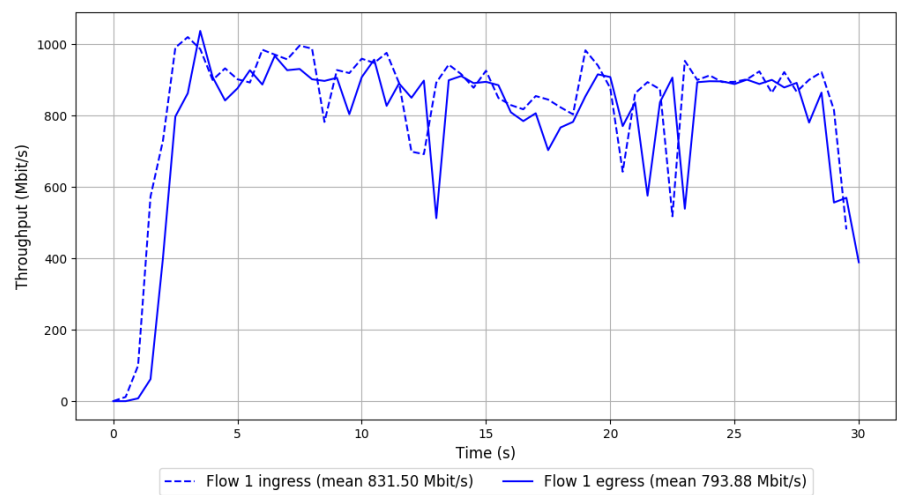


Run 2: Statistics of FillP

Start at: 2018-10-26 00:16:25
End at: 2018-10-26 00:16:55
Local clock offset: 18.317 ms
Remote clock offset: 20.963 ms

Below is generated by plot.py at 2018-10-26 02:19:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 793.88 Mbit/s
95th percentile per-packet one-way delay: 181.316 ms
Loss rate: 5.20%
-- Flow 1:
Average throughput: 793.88 Mbit/s
95th percentile per-packet one-way delay: 181.316 ms
Loss rate: 5.20%

Run 2: Report of FillP — Data Link

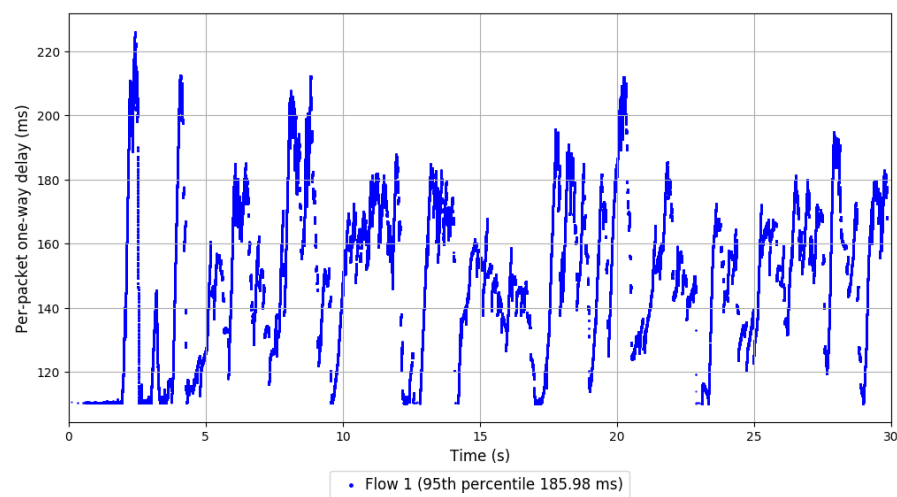
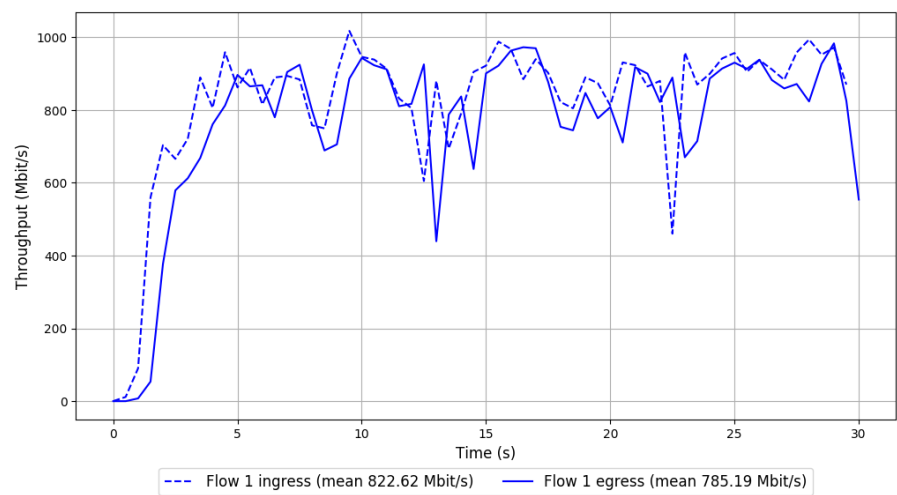


Run 3: Statistics of FillP

Start at: 2018-10-26 00:42:25
End at: 2018-10-26 00:42:55
Local clock offset: 29.06 ms
Remote clock offset: 33.941 ms

Below is generated by plot.py at 2018-10-26 02:20:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 785.19 Mbit/s
95th percentile per-packet one-way delay: 185.977 ms
Loss rate: 5.25%
-- Flow 1:
Average throughput: 785.19 Mbit/s
95th percentile per-packet one-way delay: 185.977 ms
Loss rate: 5.25%

Run 3: Report of FillP — Data Link

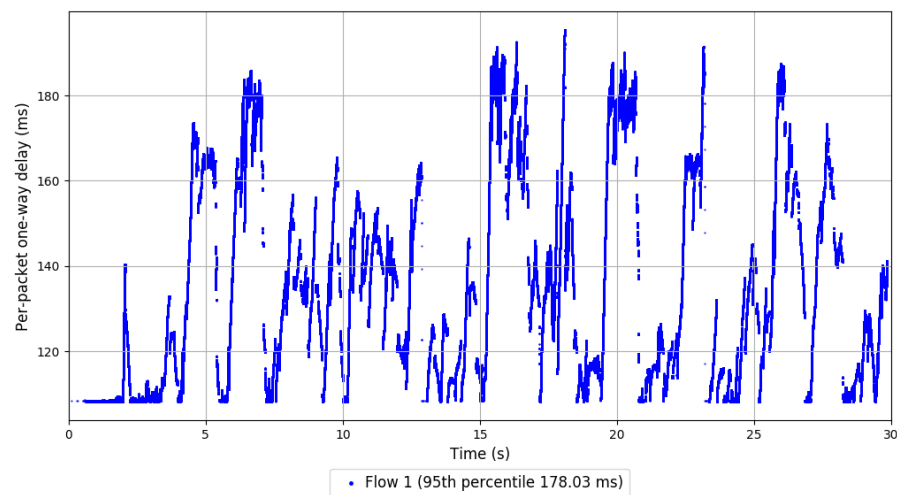
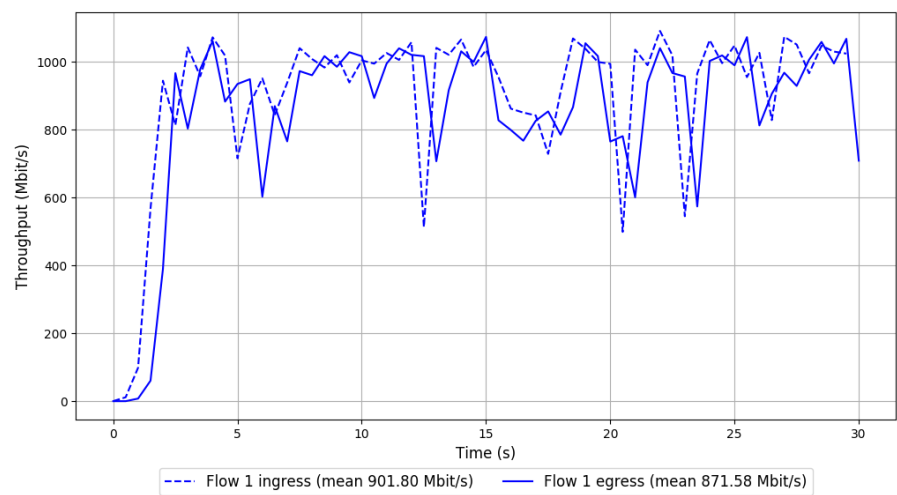


Run 4: Statistics of FillP

Start at: 2018-10-26 01:08:24
End at: 2018-10-26 01:08:54
Local clock offset: 14.617 ms
Remote clock offset: 18.382 ms

Below is generated by plot.py at 2018-10-26 02:22:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 871.58 Mbit/s
95th percentile per-packet one-way delay: 178.031 ms
Loss rate: 4.06%
-- Flow 1:
Average throughput: 871.58 Mbit/s
95th percentile per-packet one-way delay: 178.031 ms
Loss rate: 4.06%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-26 01:34:17

End at: 2018-10-26 01:34:47

Local clock offset: 6.895 ms

Remote clock offset: 8.095 ms

Below is generated by plot.py at 2018-10-26 02:24:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 869.44 Mbit/s

95th percentile per-packet one-way delay: 180.620 ms

Loss rate: 5.46%

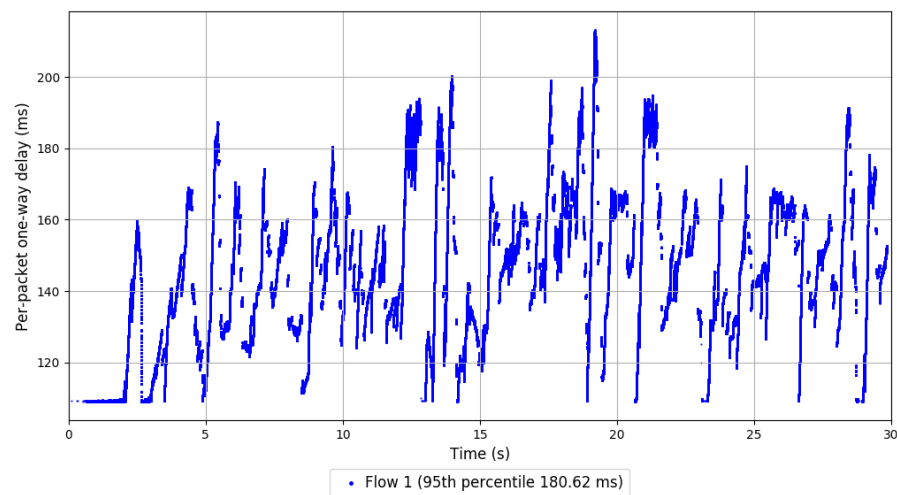
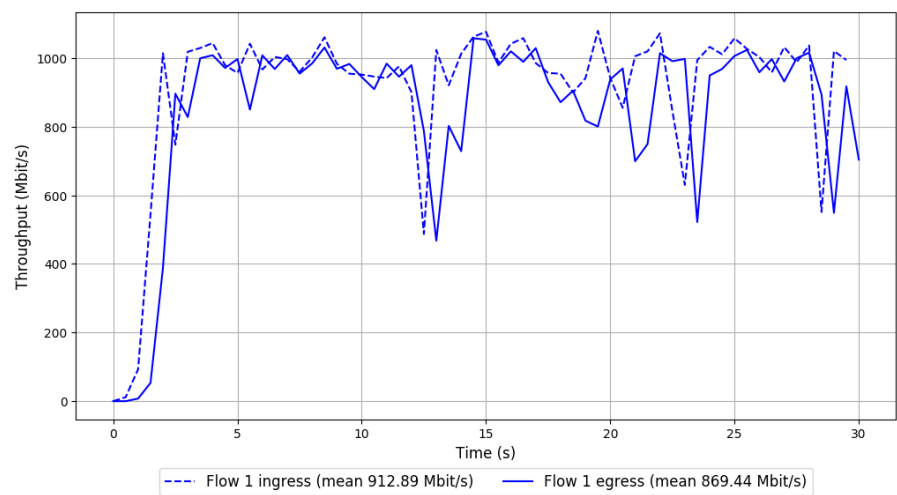
-- Flow 1:

Average throughput: 869.44 Mbit/s

95th percentile per-packet one-way delay: 180.620 ms

Loss rate: 5.46%

Run 5: Report of FillP — Data Link

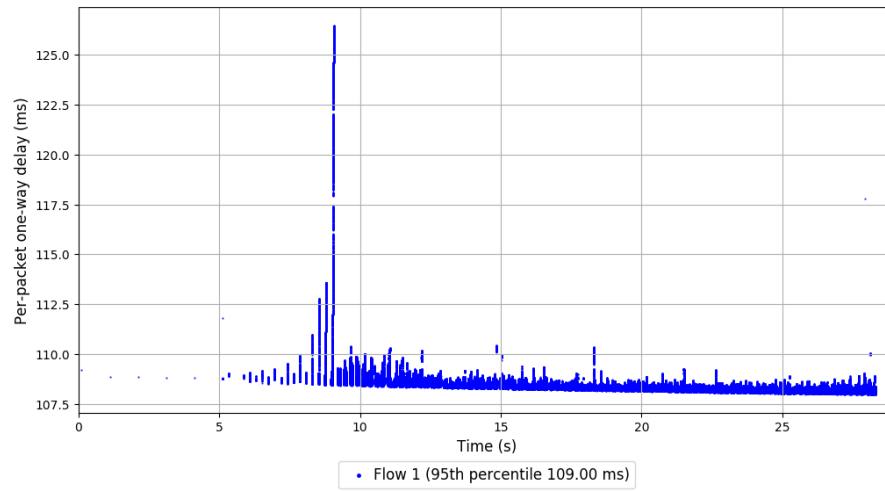
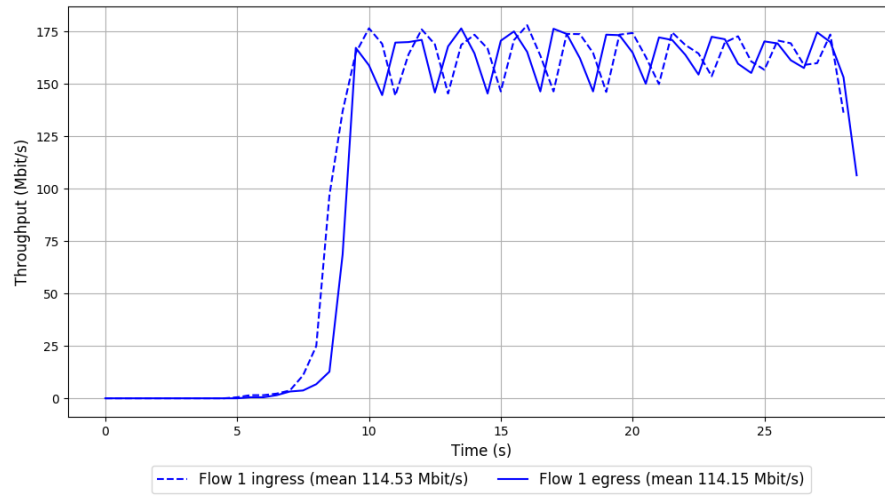


```
Run 1: Statistics of Indigo

Start at: 2018-10-25 23:36:30
End at: 2018-10-25 23:37:00
Local clock offset: 6.071 ms
Remote clock offset: 8.237 ms

# Below is generated by plot.py at 2018-10-26 02:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 114.15 Mbit/s
95th percentile per-packet one-way delay: 108.998 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 114.15 Mbit/s
95th percentile per-packet one-way delay: 108.998 ms
Loss rate: 1.11%
```

Run 1: Report of Indigo — Data Link

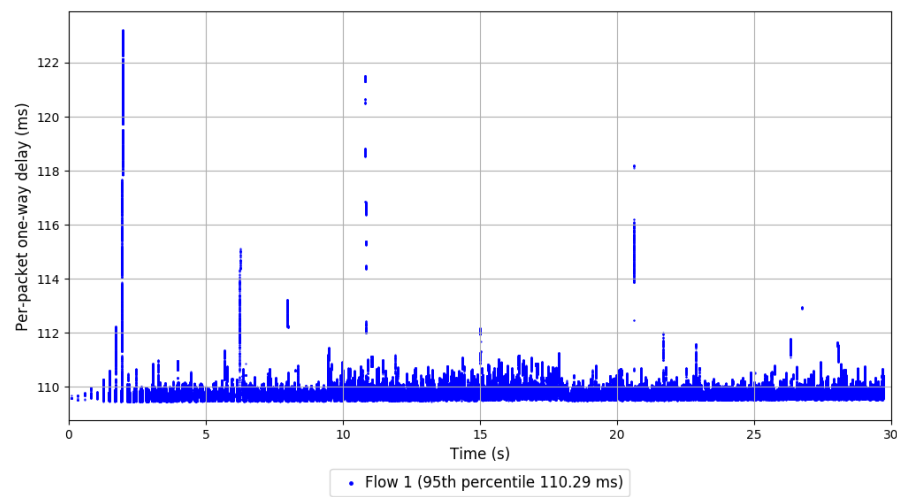
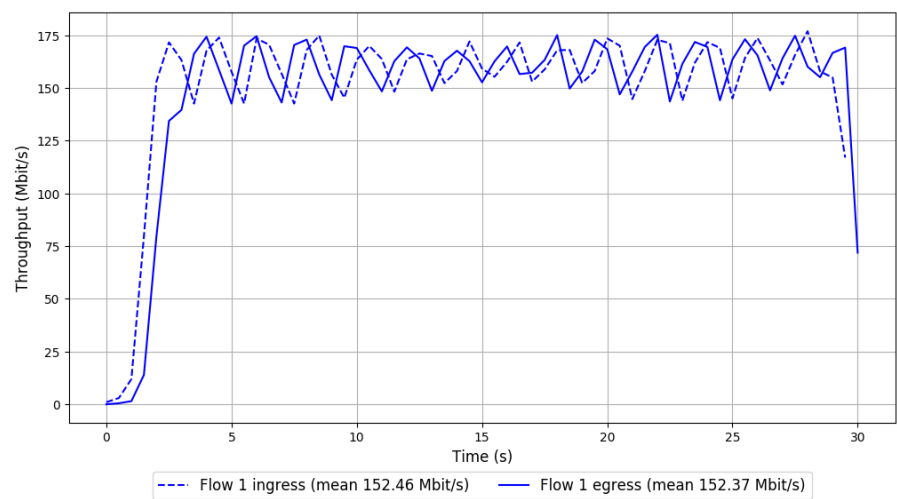


Run 2: Statistics of Indigo

Start at: 2018-10-26 00:02:20
End at: 2018-10-26 00:02:50
Local clock offset: 20.309 ms
Remote clock offset: 22.446 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 152.37 Mbit/s
95th percentile per-packet one-way delay: 110.289 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 152.37 Mbit/s
95th percentile per-packet one-way delay: 110.289 ms
Loss rate: 0.79%

Run 2: Report of Indigo — Data Link

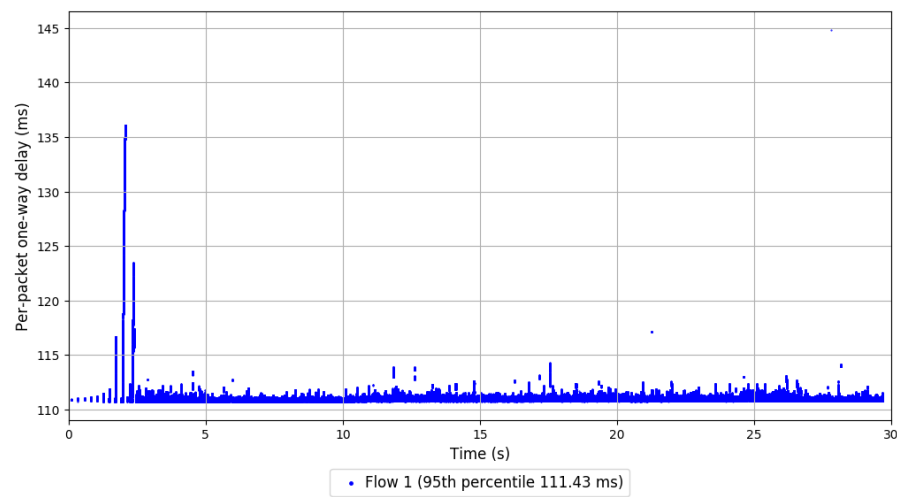
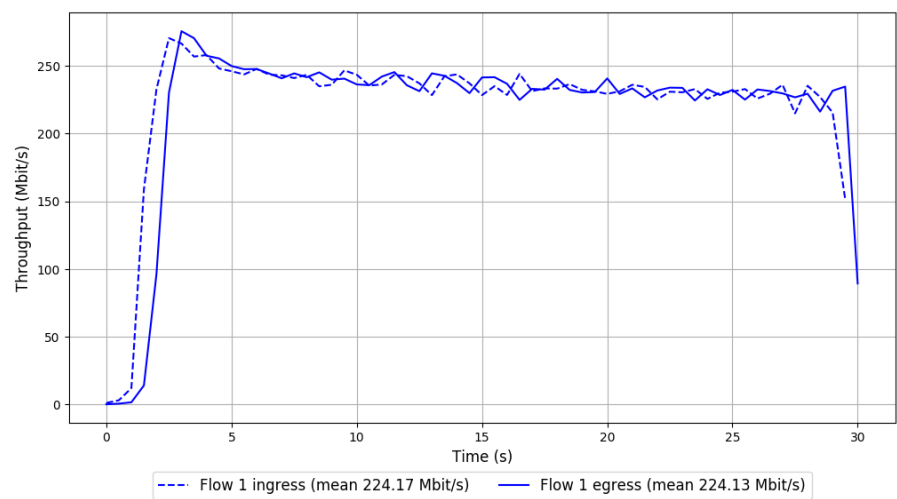


Run 3: Statistics of Indigo

Start at: 2018-10-26 00:28:06
End at: 2018-10-26 00:28:36
Local clock offset: 26.527 ms
Remote clock offset: 28.438 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 224.13 Mbit/s
95th percentile per-packet one-way delay: 111.429 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 224.13 Mbit/s
95th percentile per-packet one-way delay: 111.429 ms
Loss rate: 0.75%

Run 3: Report of Indigo — Data Link

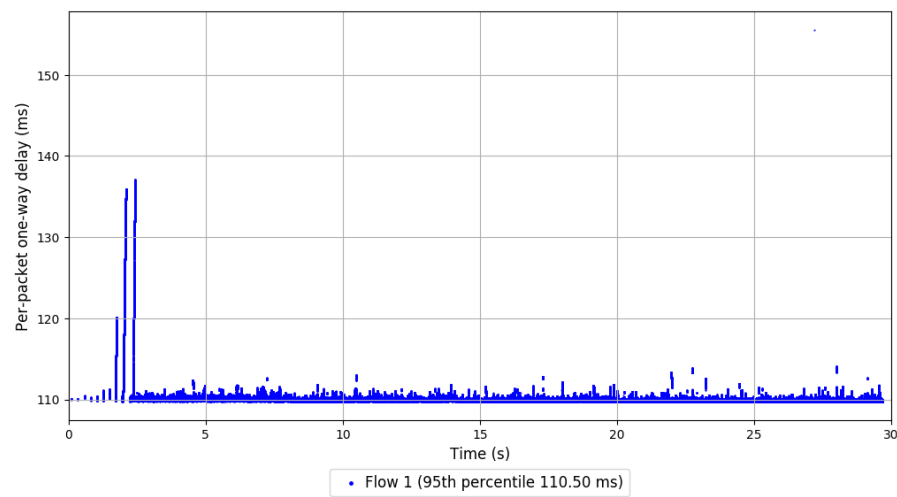
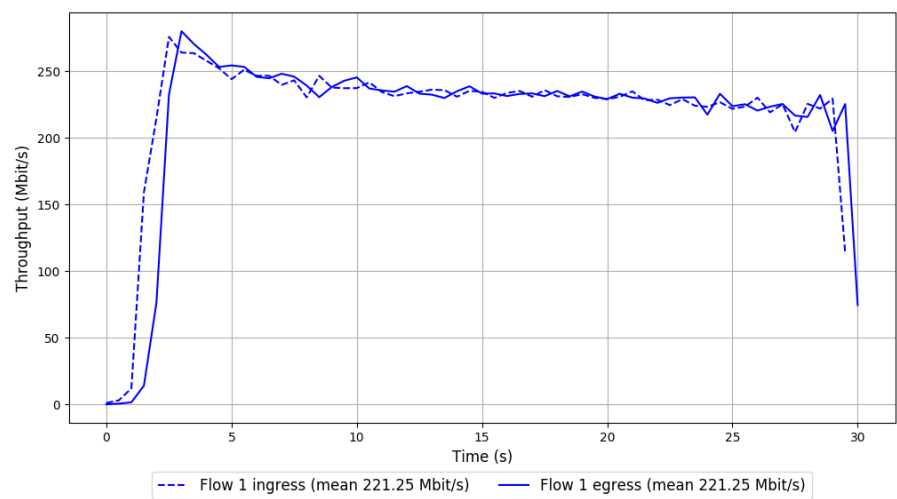


Run 4: Statistics of Indigo

Start at: 2018-10-26 00:54:12
End at: 2018-10-26 00:54:42
Local clock offset: 14.084 ms
Remote clock offset: 16.135 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 221.25 Mbit/s
95th percentile per-packet one-way delay: 110.498 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 221.25 Mbit/s
95th percentile per-packet one-way delay: 110.498 ms
Loss rate: 0.74%

Run 4: Report of Indigo — Data Link

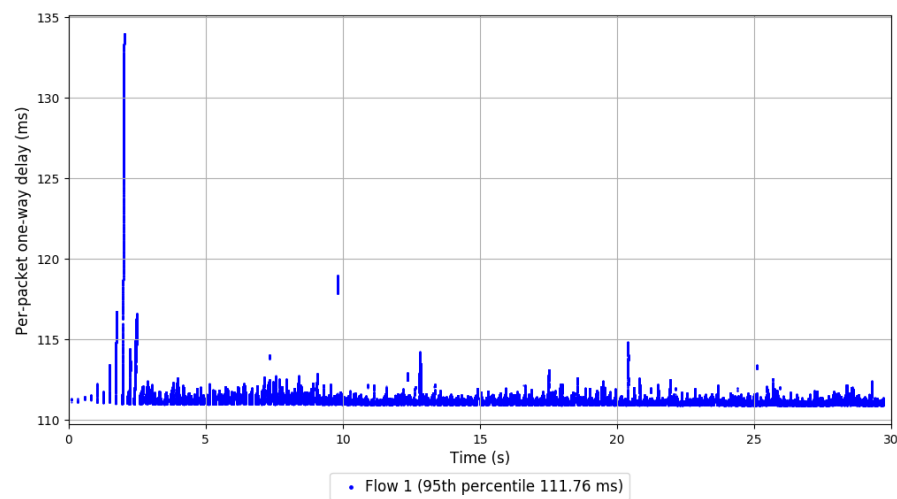
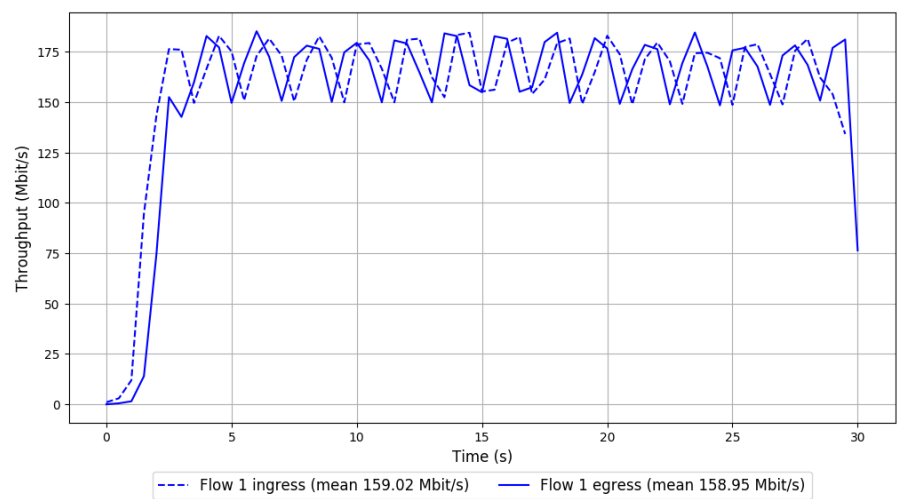


Run 5: Statistics of Indigo

Start at: 2018-10-26 01:20:11
End at: 2018-10-26 01:20:41
Local clock offset: 11.922 ms
Remote clock offset: 12.433 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 158.95 Mbit/s
95th percentile per-packet one-way delay: 111.756 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 158.95 Mbit/s
95th percentile per-packet one-way delay: 111.756 ms
Loss rate: 0.78%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-25 23:37:50

End at: 2018-10-25 23:38:20

Local clock offset: 5.108 ms

Remote clock offset: 6.887 ms

Below is generated by plot.py at 2018-10-26 02:24:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 293.39 Mbit/s

95th percentile per-packet one-way delay: 150.619 ms

Loss rate: 1.66%

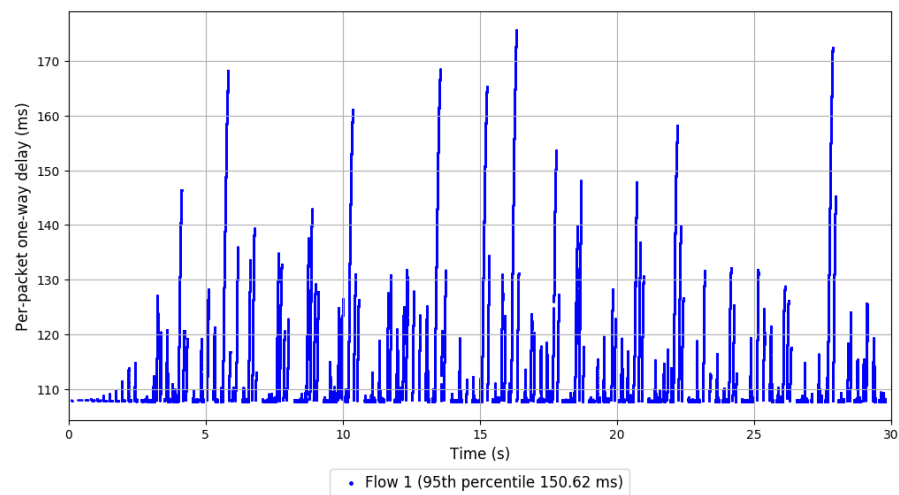
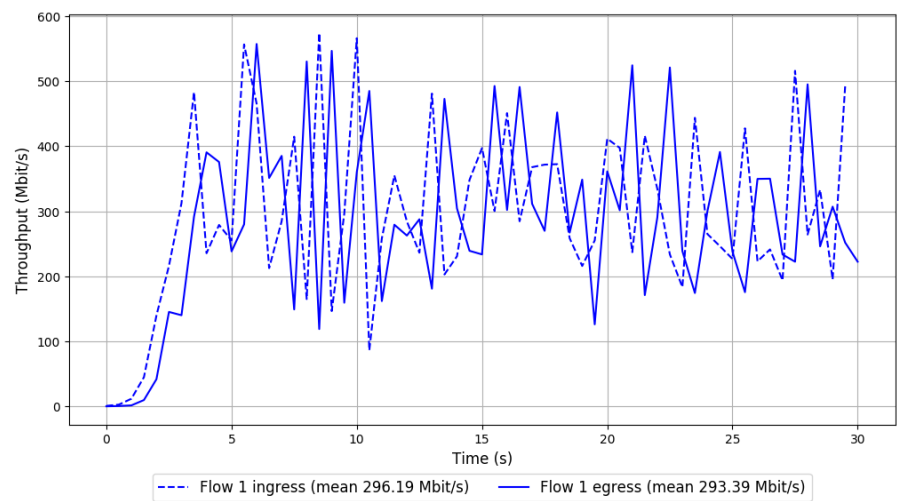
-- Flow 1:

Average throughput: 293.39 Mbit/s

95th percentile per-packet one-way delay: 150.619 ms

Loss rate: 1.66%

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

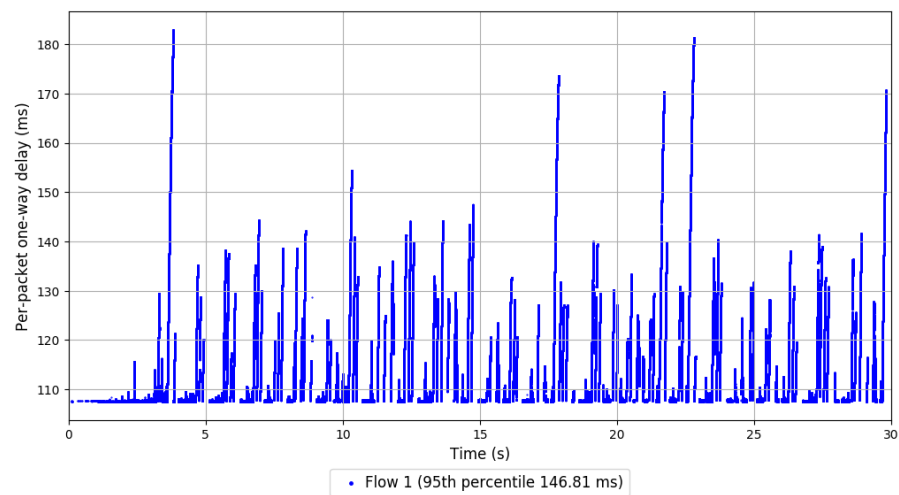
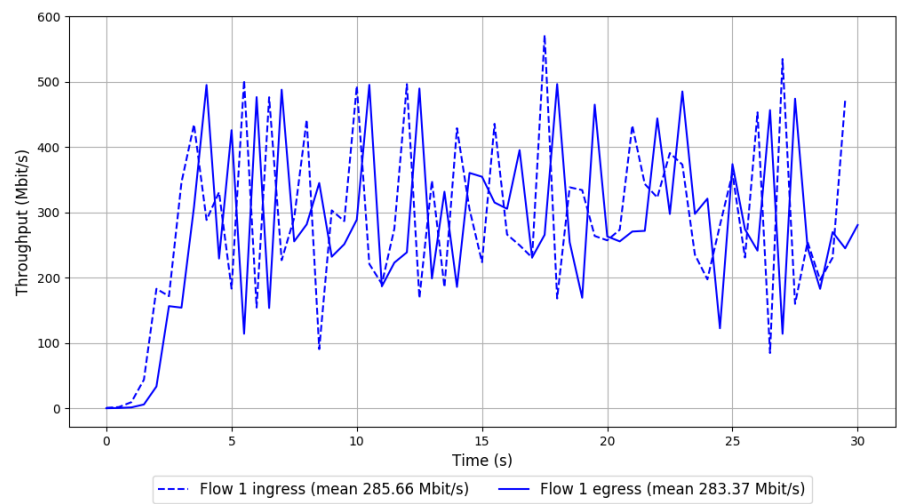


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-26 00:03:44
End at: 2018-10-26 00:04:14
Local clock offset: 20.018 ms
Remote clock offset: 24.131 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 283.37 Mbit/s
95th percentile per-packet one-way delay: 146.813 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 283.37 Mbit/s
95th percentile per-packet one-way delay: 146.813 ms
Loss rate: 1.16%

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

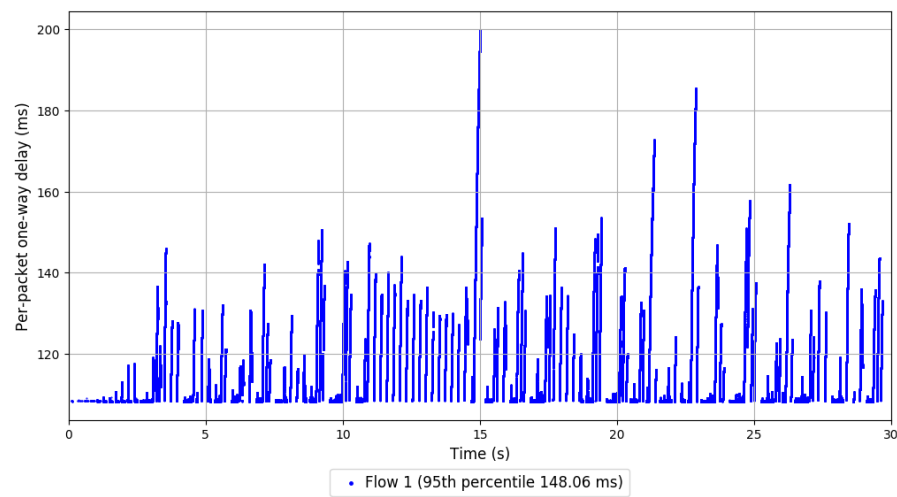
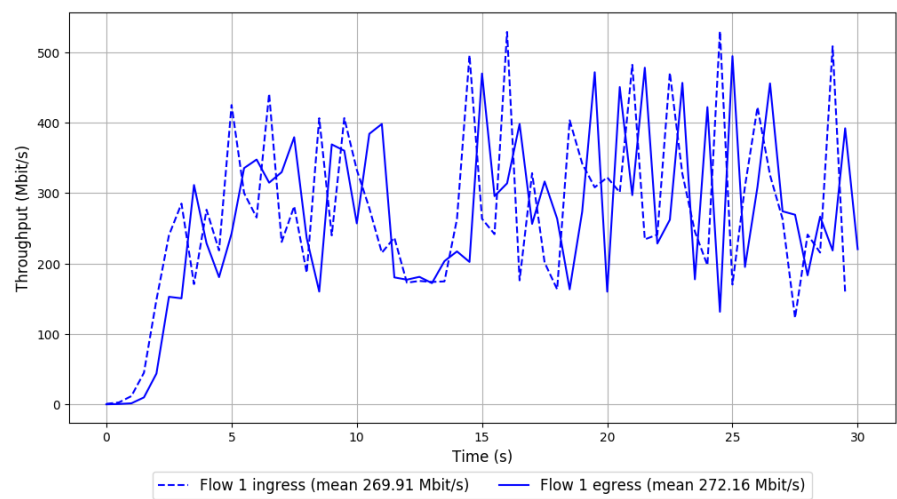


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-26 00:29:36
End at: 2018-10-26 00:30:06
Local clock offset: 26.316 ms
Remote clock offset: 30.042 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 272.16 Mbit/s
95th percentile per-packet one-way delay: 148.062 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 272.16 Mbit/s
95th percentile per-packet one-way delay: 148.062 ms
Loss rate: 0.34%

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



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-26 00:55:42

End at: 2018-10-26 00:56:12

Local clock offset: 12.734 ms

Remote clock offset: 16.09 ms

Below is generated by plot.py at 2018-10-26 02:24:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 288.85 Mbit/s

95th percentile per-packet one-way delay: 151.087 ms

Loss rate: 1.37%

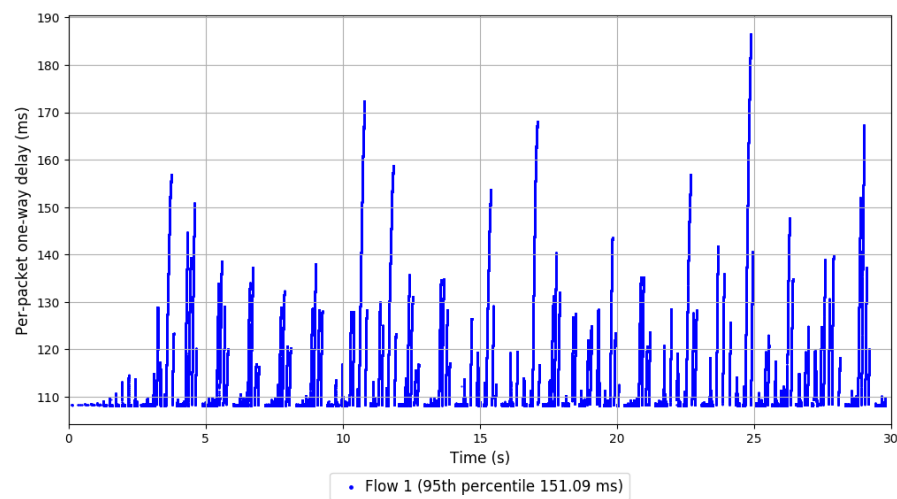
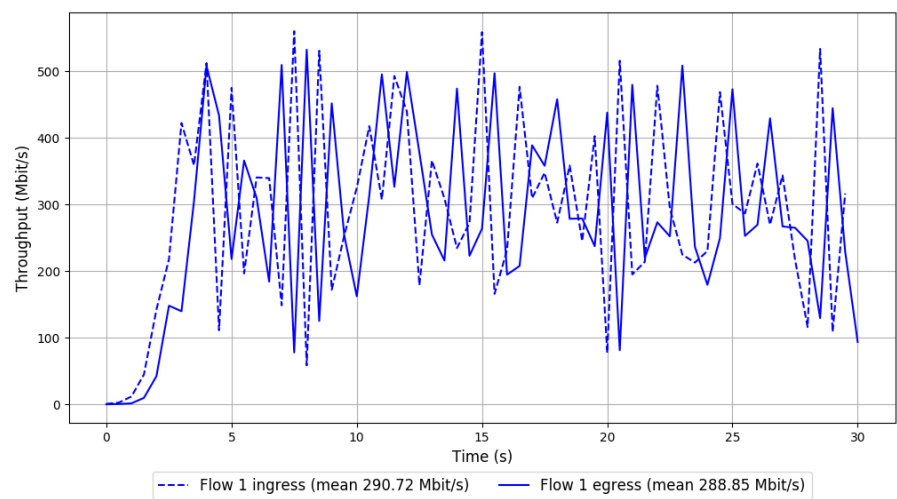
-- Flow 1:

Average throughput: 288.85 Mbit/s

95th percentile per-packet one-way delay: 151.087 ms

Loss rate: 1.37%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-26 01:21:35

End at: 2018-10-26 01:22:05

Local clock offset: 10.63 ms

Remote clock offset: 11.555 ms

Below is generated by plot.py at 2018-10-26 02:24:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 285.34 Mbit/s

95th percentile per-packet one-way delay: 154.375 ms

Loss rate: 1.25%

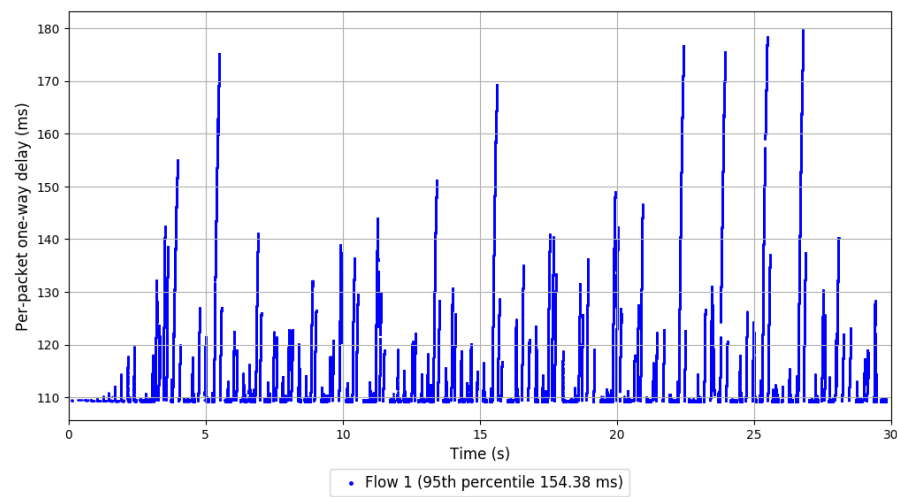
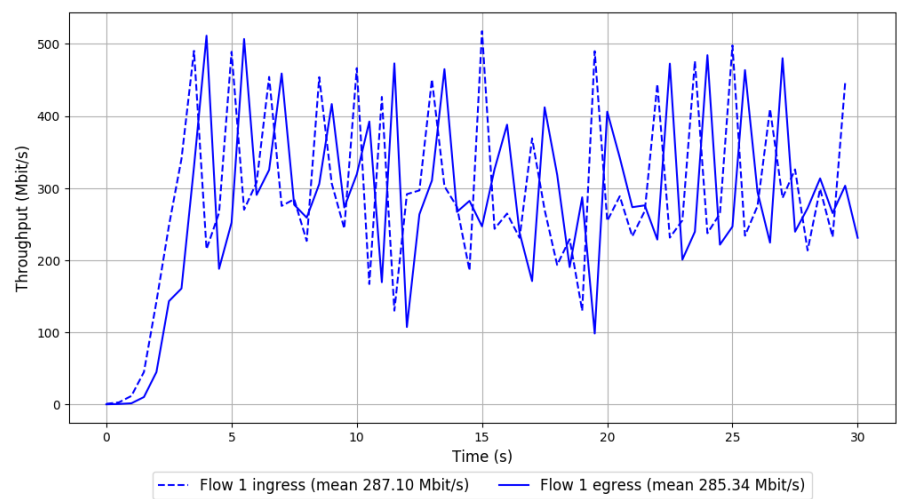
-- Flow 1:

Average throughput: 285.34 Mbit/s

95th percentile per-packet one-way delay: 154.375 ms

Loss rate: 1.25%

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

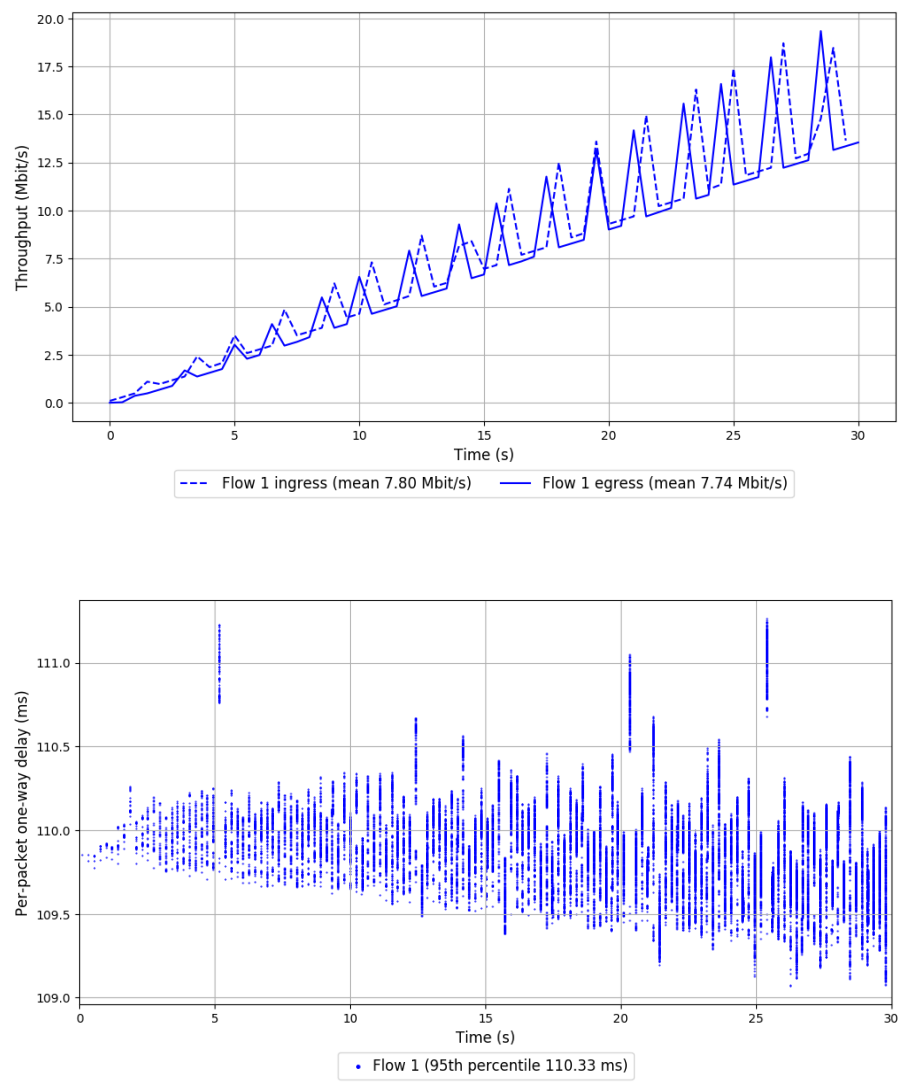



```
Run 1: Statistics of LEDBAT

Start at: 2018-10-25 23:40:38
End at: 2018-10-25 23:41:08
Local clock offset: 10.295 ms
Remote clock offset: 12.862 ms

# Below is generated by plot.py at 2018-10-26 02:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 110.332 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 110.332 ms
Loss rate: 1.47%
```

Run 1: Report of LEDBAT — Data Link

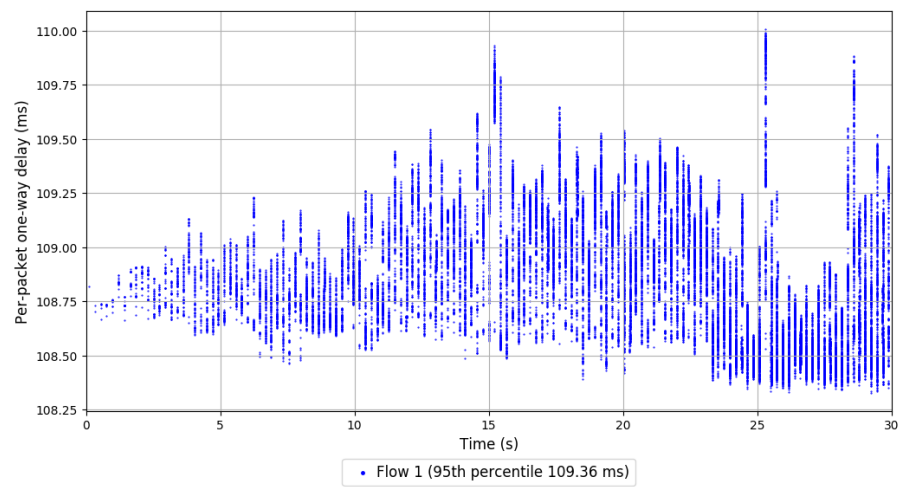
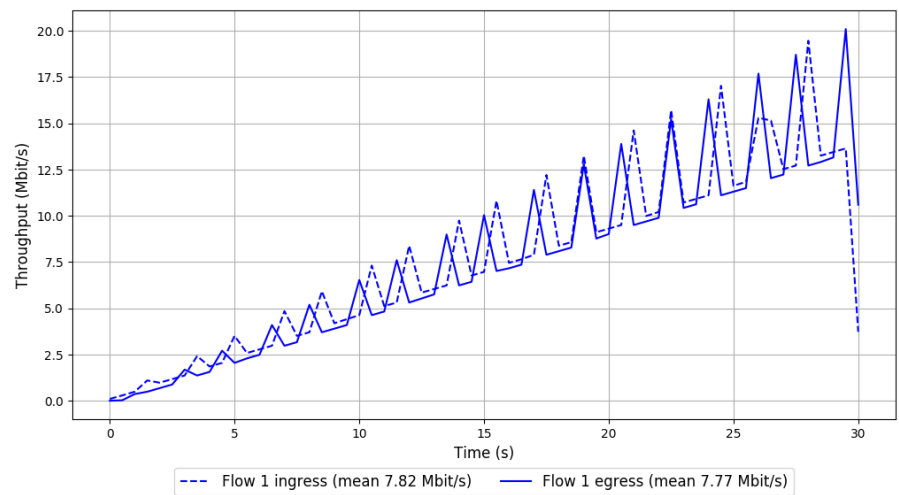


Run 2: Statistics of LEDBAT

Start at: 2018-10-26 00:06:39
End at: 2018-10-26 00:07:09
Local clock offset: 22.264 ms
Remote clock offset: 27.008 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 109.362 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 109.362 ms
Loss rate: 1.44%

Run 2: Report of LEDBAT — Data Link

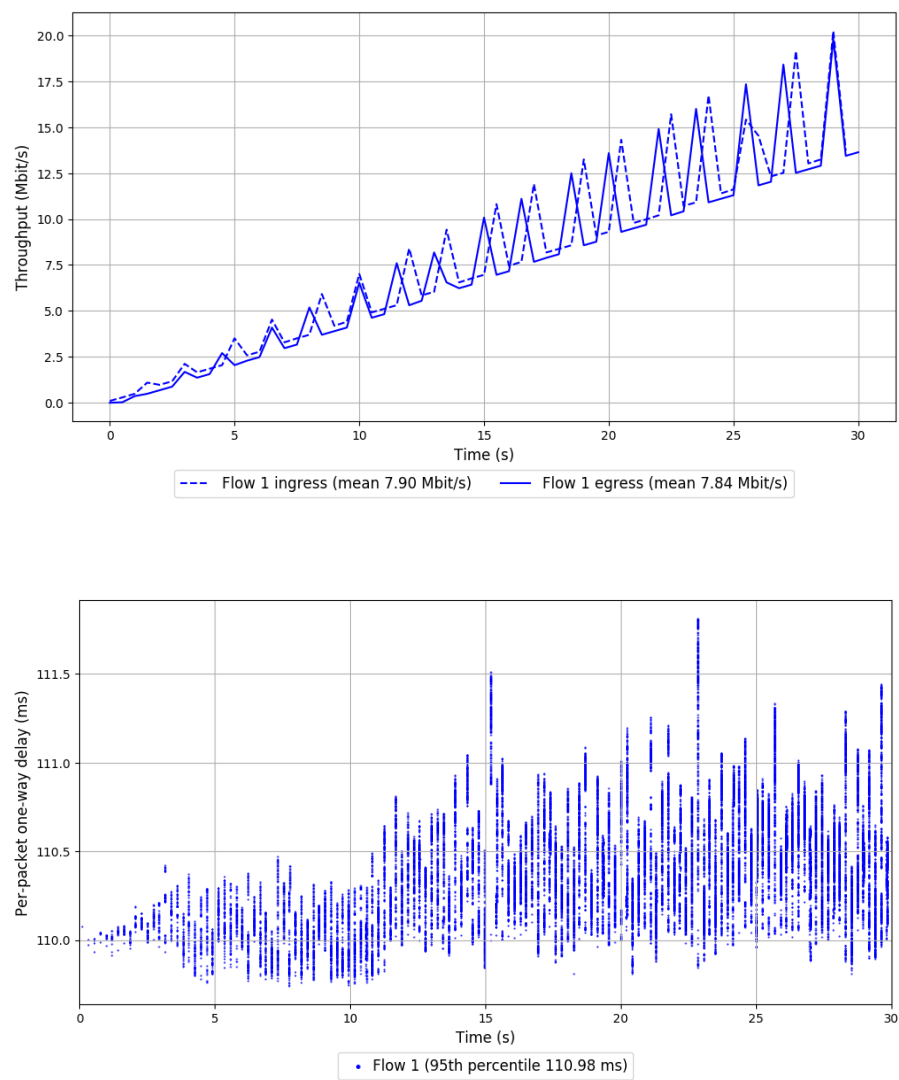


Run 3: Statistics of LEDBAT

Start at: 2018-10-26 00:32:29
End at: 2018-10-26 00:32:59
Local clock offset: 30.421 ms
Remote clock offset: 33.079 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 110.981 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 110.981 ms
Loss rate: 1.46%

Run 3: Report of LEDBAT — Data Link

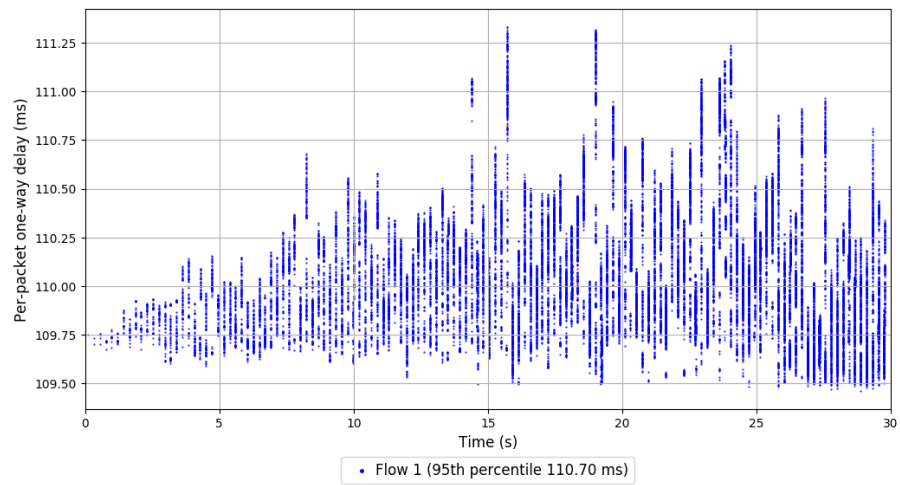
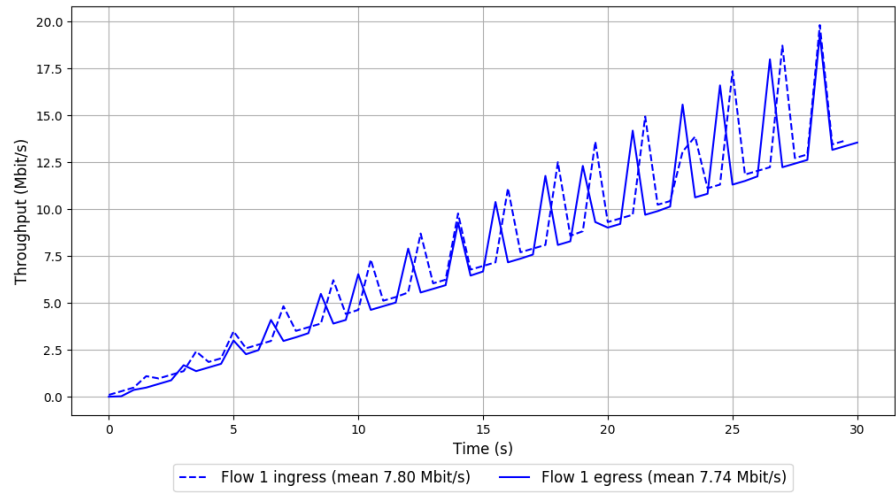


Run 4: Statistics of LEDBAT

Start at: 2018-10-26 00:58:31
End at: 2018-10-26 00:59:01
Local clock offset: 13.786 ms
Remote clock offset: 15.849 ms

Below is generated by plot.py at 2018-10-26 02:24:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 110.700 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 110.700 ms
Loss rate: 1.47%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-26 01:24:23

End at: 2018-10-26 01:24:53

Local clock offset: 8.065 ms

Remote clock offset: 9.766 ms

Below is generated by plot.py at 2018-10-26 02:24:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.74 Mbit/s

95th percentile per-packet one-way delay: 110.154 ms

Loss rate: 1.47%

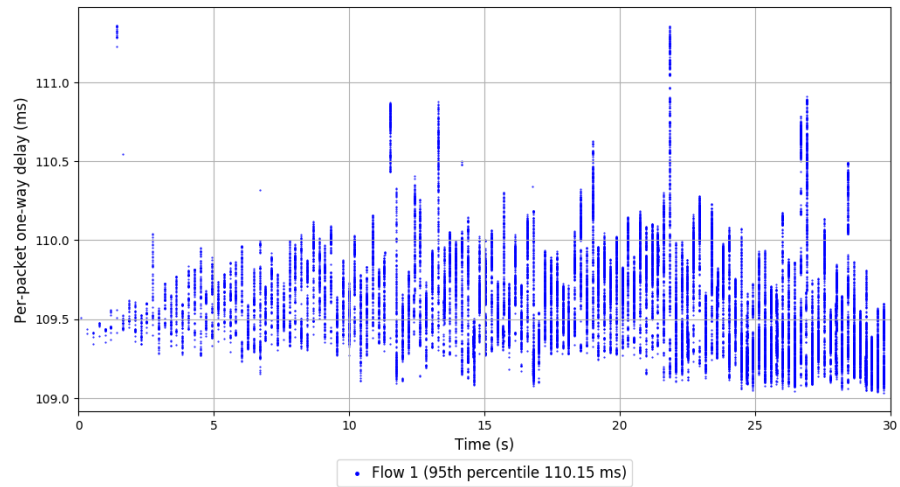
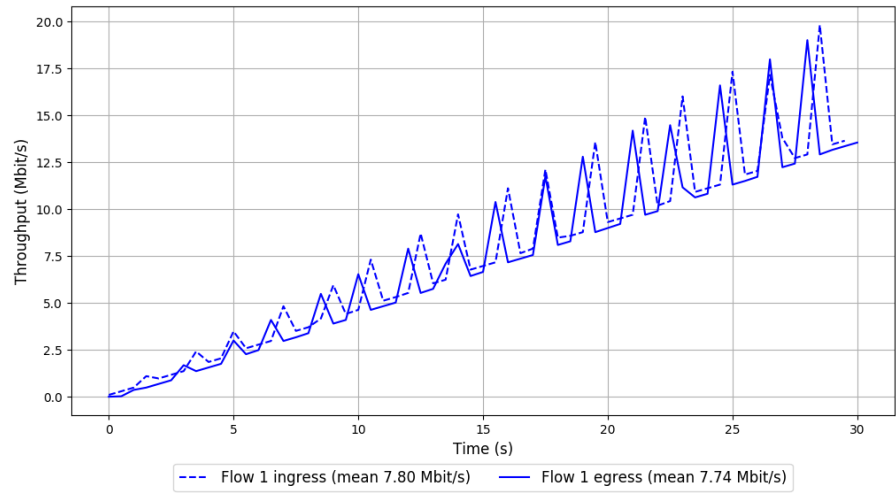
-- Flow 1:

Average throughput: 7.74 Mbit/s

95th percentile per-packet one-way delay: 110.154 ms

Loss rate: 1.47%

Run 5: Report of LEDBAT — Data Link

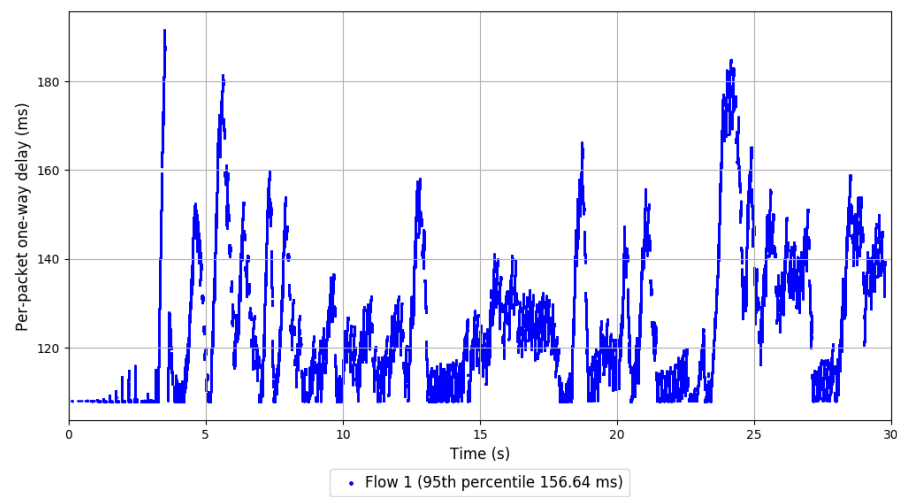
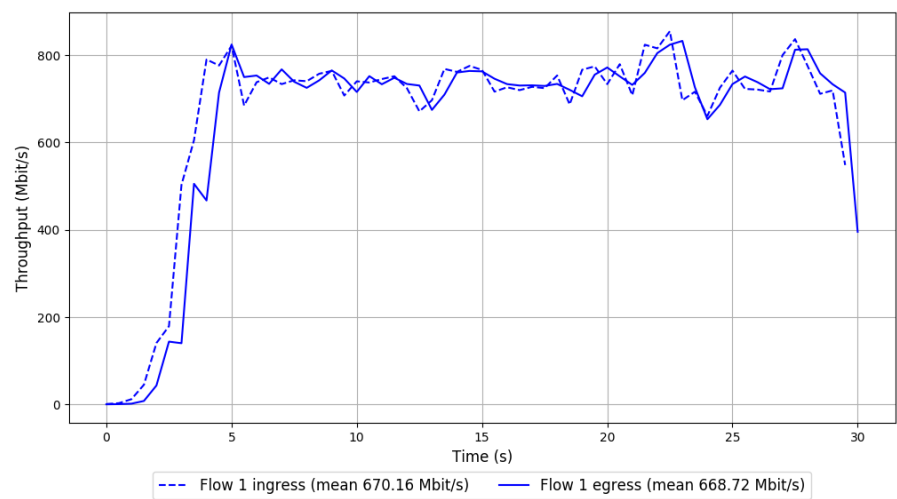


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-25 23:47:42
End at: 2018-10-25 23:48:12
Local clock offset: 13.25 ms
Remote clock offset: 16.326 ms

# Below is generated by plot.py at 2018-10-26 02:32:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 668.72 Mbit/s
95th percentile per-packet one-way delay: 156.638 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 668.72 Mbit/s
95th percentile per-packet one-way delay: 156.638 ms
Loss rate: 0.95%
```

Run 1: Report of Indigo-Muses — Data Link

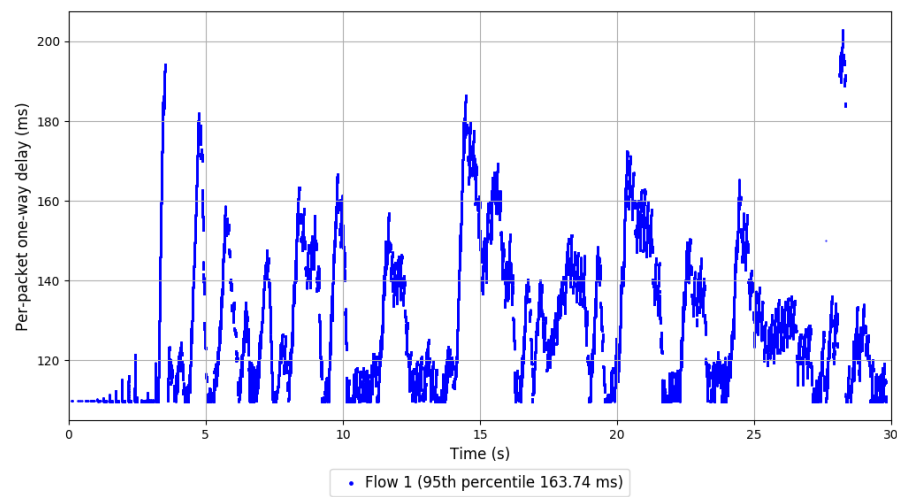
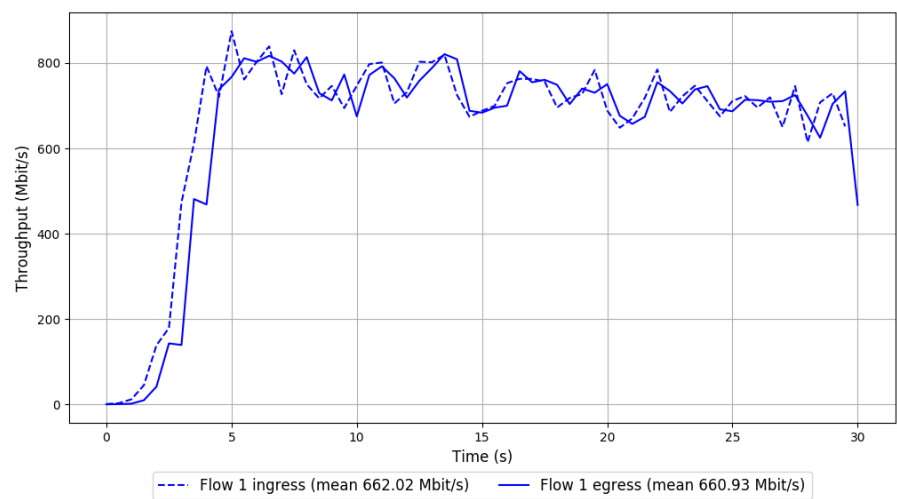


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 00:13:34
End at: 2018-10-26 00:14:04
Local clock offset: 18.069 ms
Remote clock offset: 20.463 ms

Below is generated by plot.py at 2018-10-26 02:32:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 660.93 Mbit/s
95th percentile per-packet one-way delay: 163.739 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 660.93 Mbit/s
95th percentile per-packet one-way delay: 163.739 ms
Loss rate: 0.92%

Run 2: Report of Indigo-Muses — Data Link

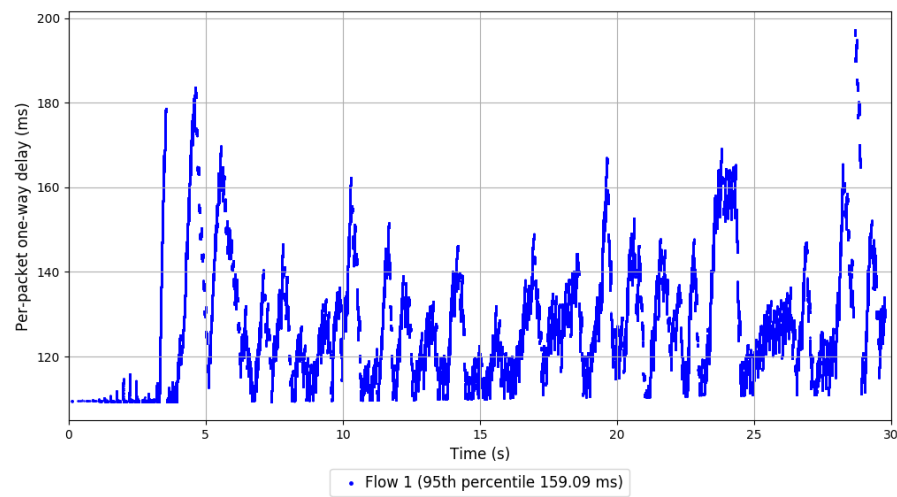
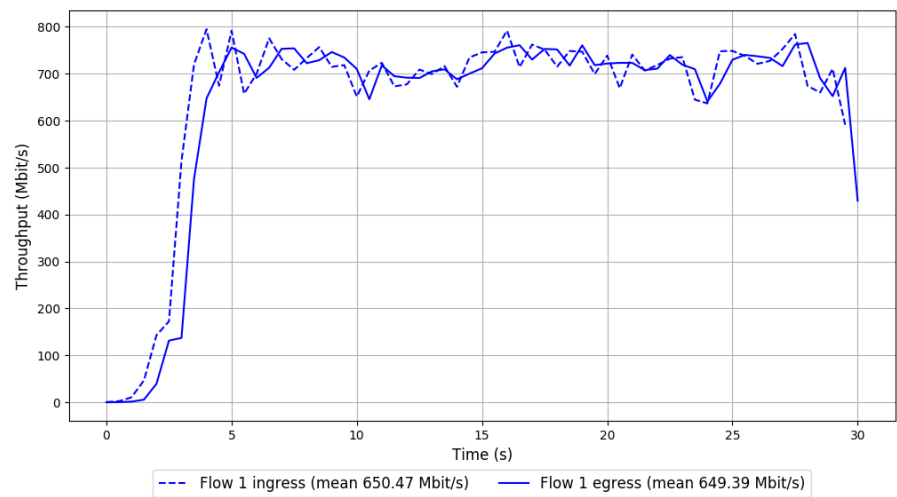


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 00:39:34
End at: 2018-10-26 00:40:04
Local clock offset: 35.854 ms
Remote clock offset: 41.156 ms

Below is generated by plot.py at 2018-10-26 02:32:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 649.39 Mbit/s
95th percentile per-packet one-way delay: 159.090 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 649.39 Mbit/s
95th percentile per-packet one-way delay: 159.090 ms
Loss rate: 0.89%

Run 3: Report of Indigo-Muses — Data Link

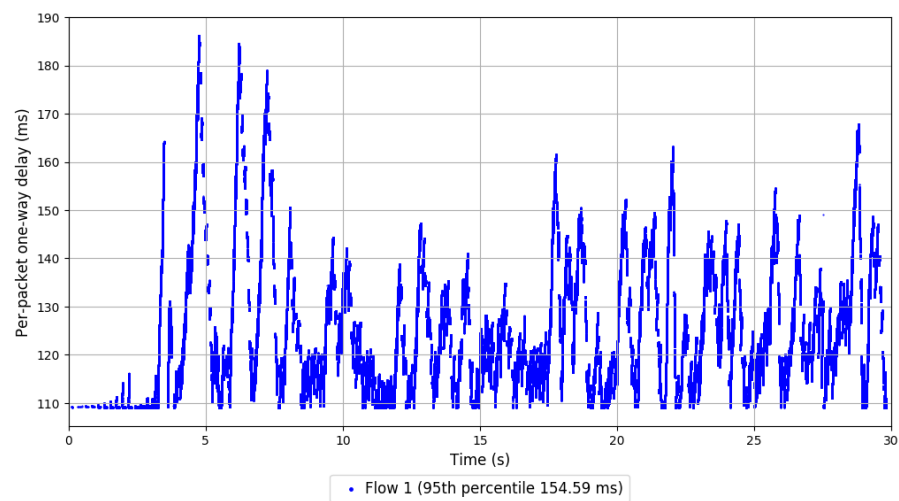
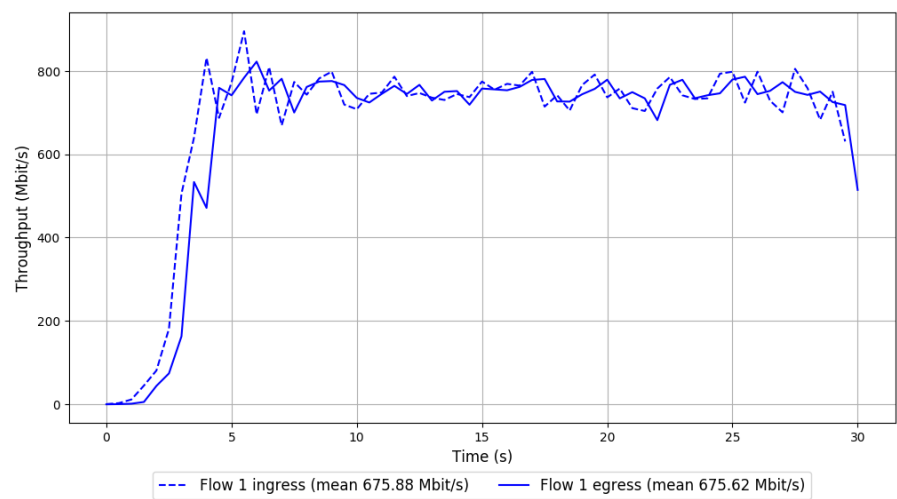


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 01:05:32
End at: 2018-10-26 01:06:02
Local clock offset: 14.834 ms
Remote clock offset: 17.212 ms

Below is generated by plot.py at 2018-10-26 02:34:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 675.62 Mbit/s
95th percentile per-packet one-way delay: 154.595 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 675.62 Mbit/s
95th percentile per-packet one-way delay: 154.595 ms
Loss rate: 0.77%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 01:31:25

End at: 2018-10-26 01:31:55

Local clock offset: 6.88 ms

Remote clock offset: 7.375 ms

Below is generated by plot.py at 2018-10-26 02:34:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 652.41 Mbit/s

95th percentile per-packet one-way delay: 160.359 ms

Loss rate: 0.95%

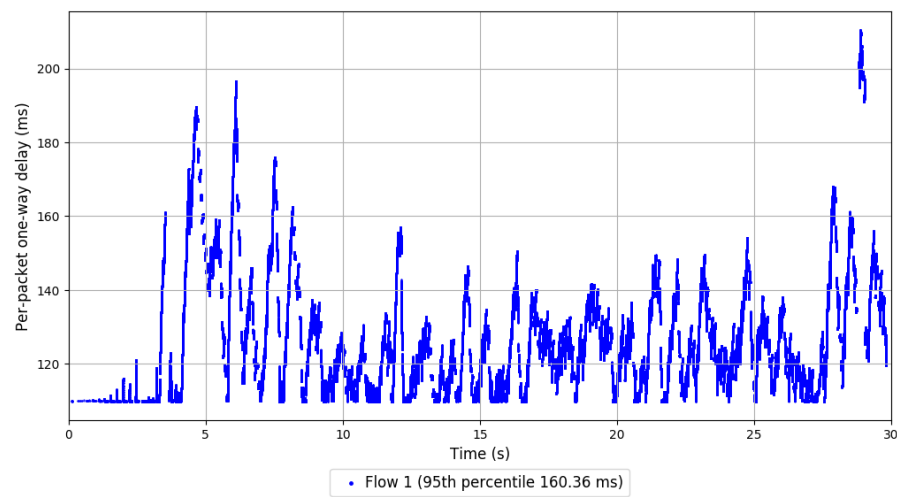
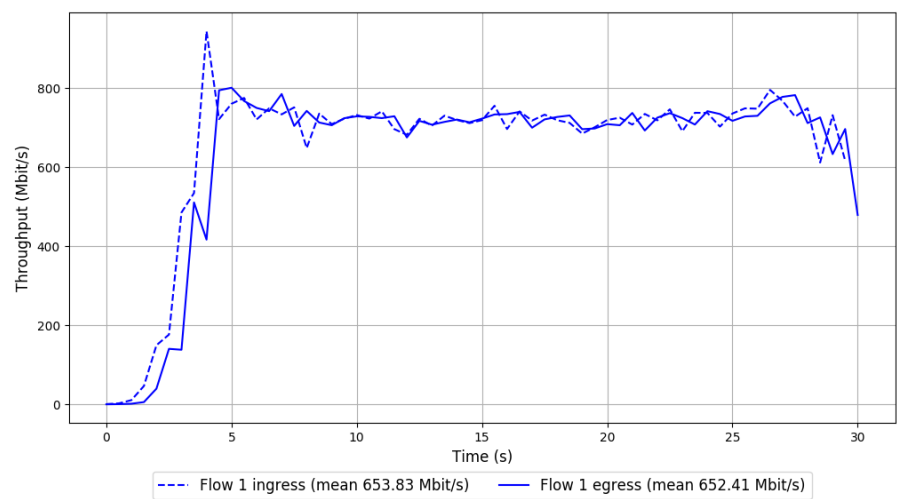
-- Flow 1:

Average throughput: 652.41 Mbit/s

95th percentile per-packet one-way delay: 160.359 ms

Loss rate: 0.95%

Run 5: Report of Indigo-Muses — Data Link

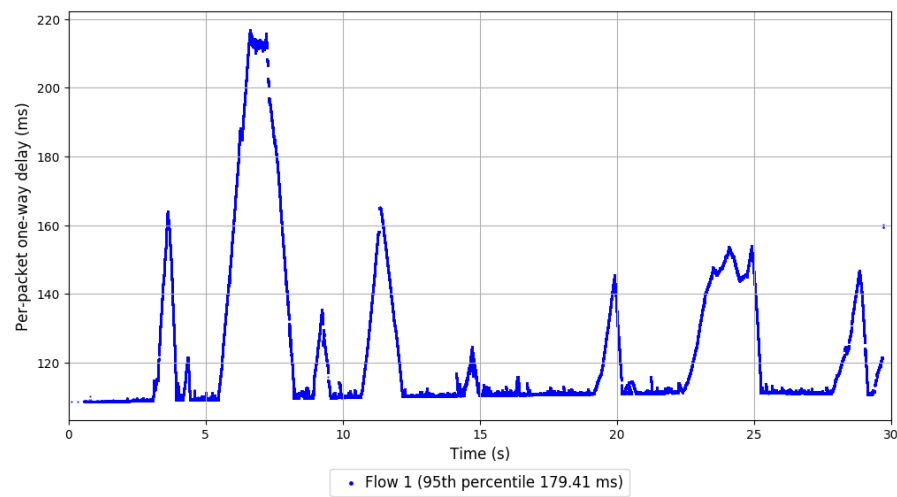
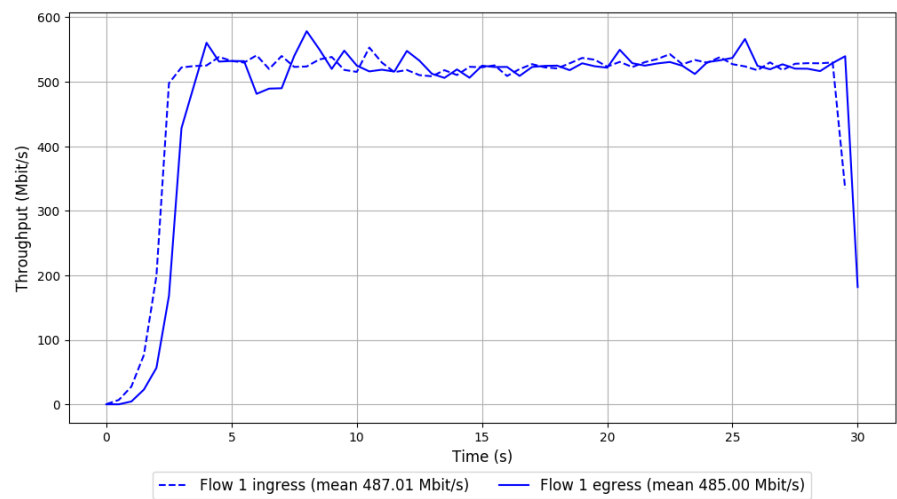


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-25 23:33:37
End at: 2018-10-25 23:34:07
Local clock offset: 2.659 ms
Remote clock offset: 2.595 ms

# Below is generated by plot.py at 2018-10-26 02:39:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 485.00 Mbit/s
95th percentile per-packet one-way delay: 179.406 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 485.00 Mbit/s
95th percentile per-packet one-way delay: 179.406 ms
Loss rate: 1.14%
```

Run 1: Report of PCC-Allegro — Data Link

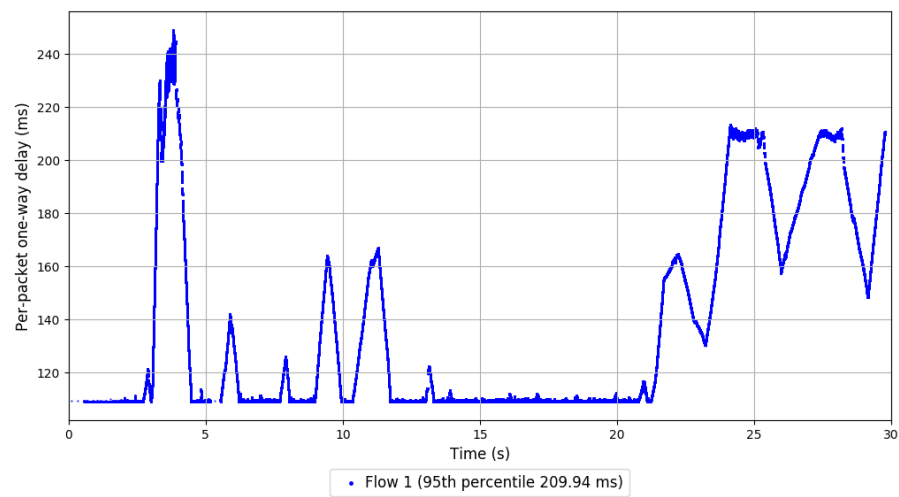
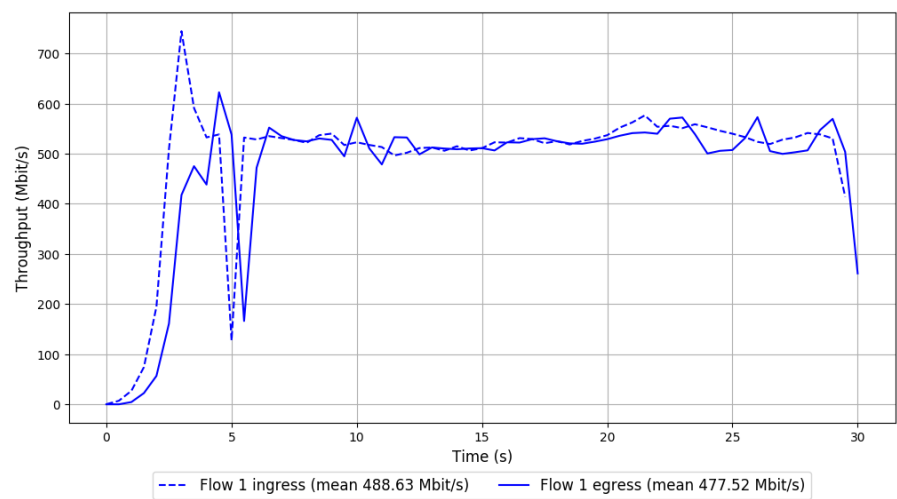


Run 2: Statistics of PCC-Allegro

Start at: 2018-10-25 23:59:29
End at: 2018-10-25 23:59:59
Local clock offset: 16.172 ms
Remote clock offset: 18.472 ms

Below is generated by plot.py at 2018-10-26 02:39:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 477.52 Mbit/s
95th percentile per-packet one-way delay: 209.937 ms
Loss rate: 2.99%
-- Flow 1:
Average throughput: 477.52 Mbit/s
95th percentile per-packet one-way delay: 209.937 ms
Loss rate: 2.99%

Run 2: Report of PCC-Allegro — Data Link

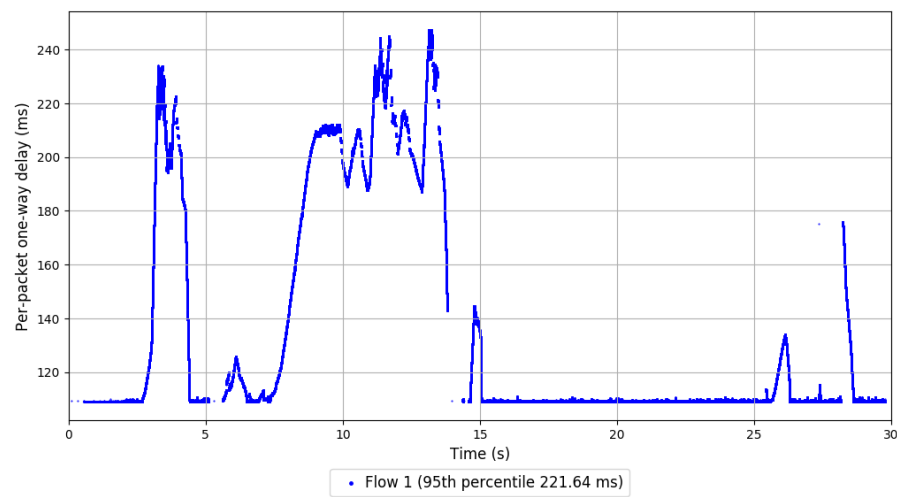
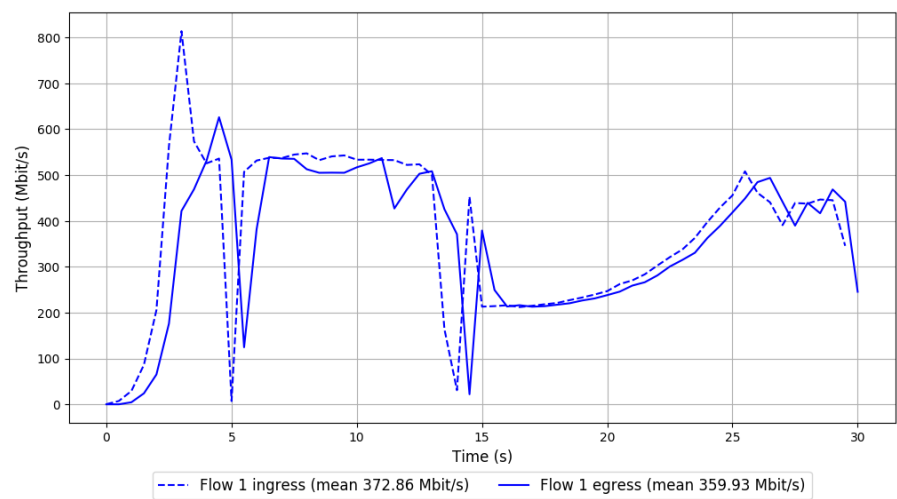


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 00:25:22
End at: 2018-10-26 00:25:52
Local clock offset: 22.942 ms
Remote clock offset: 26.304 ms

Below is generated by plot.py at 2018-10-26 02:39:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 359.93 Mbit/s
95th percentile per-packet one-way delay: 221.639 ms
Loss rate: 4.18%
-- Flow 1:
Average throughput: 359.93 Mbit/s
95th percentile per-packet one-way delay: 221.639 ms
Loss rate: 4.18%

Run 3: Report of PCC-Allegro — Data Link

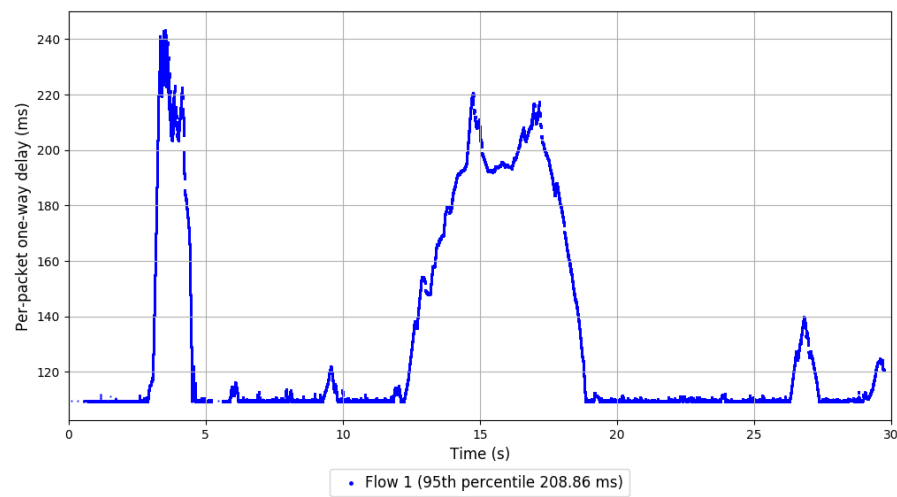
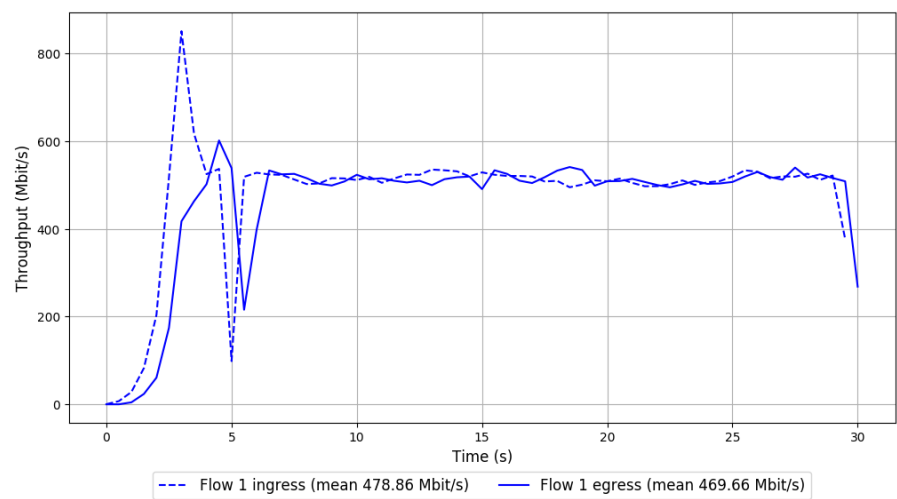


Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 00:51:22
End at: 2018-10-26 00:51:52
Local clock offset: 15.466 ms
Remote clock offset: 18.166 ms

Below is generated by plot.py at 2018-10-26 02:48:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 469.66 Mbit/s
95th percentile per-packet one-way delay: 208.861 ms
Loss rate: 2.64%
-- Flow 1:
Average throughput: 469.66 Mbit/s
95th percentile per-packet one-way delay: 208.861 ms
Loss rate: 2.64%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 01:17:24

End at: 2018-10-26 01:17:54

Local clock offset: 13.504 ms

Remote clock offset: 16.099 ms

Below is generated by plot.py at 2018-10-26 02:48:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 412.56 Mbit/s

95th percentile per-packet one-way delay: 209.753 ms

Loss rate: 2.30%

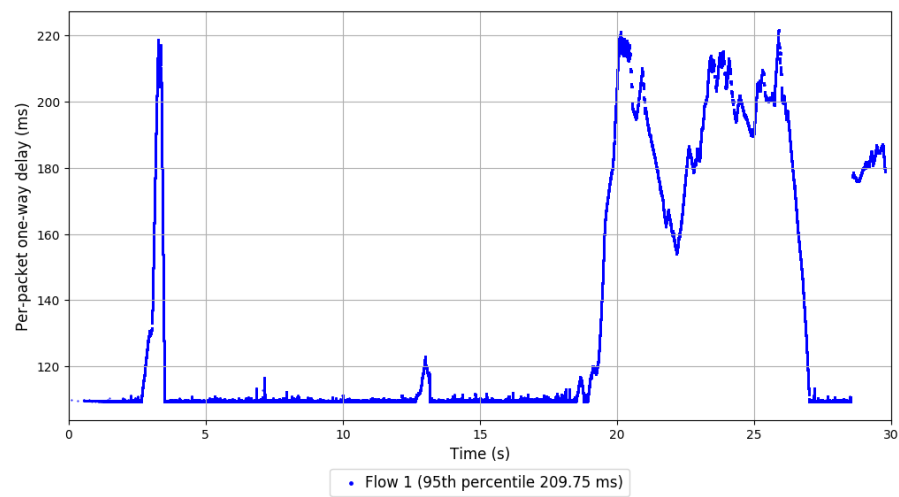
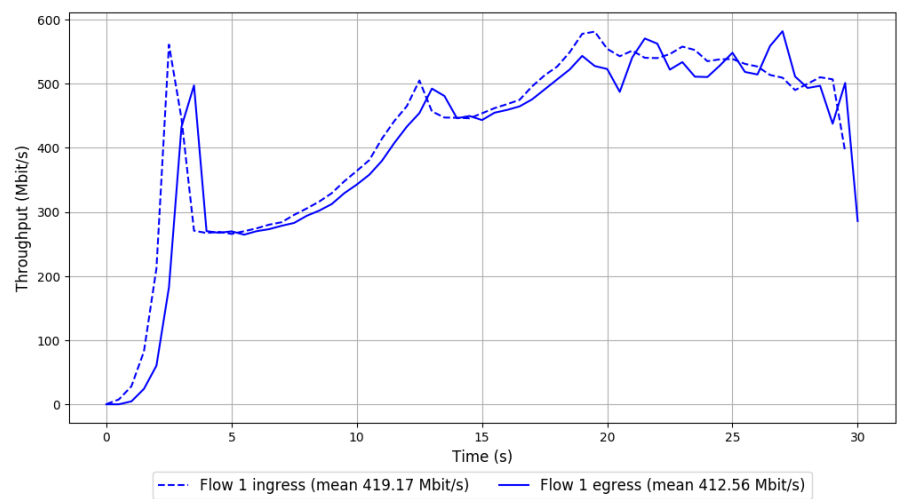
-- Flow 1:

Average throughput: 412.56 Mbit/s

95th percentile per-packet one-way delay: 209.753 ms

Loss rate: 2.30%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

Start at: 2018-10-25 23:53:43

End at: 2018-10-25 23:54:13

Local clock offset: 11.778 ms

Remote clock offset: 13.92 ms

Below is generated by plot.py at 2018-10-26 02:48:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 333.87 Mbit/s

95th percentile per-packet one-way delay: 190.772 ms

Loss rate: 1.48%

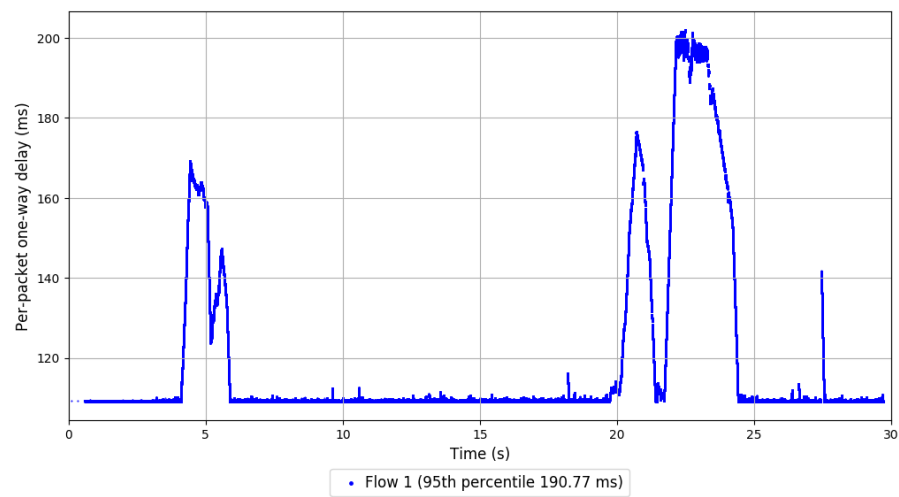
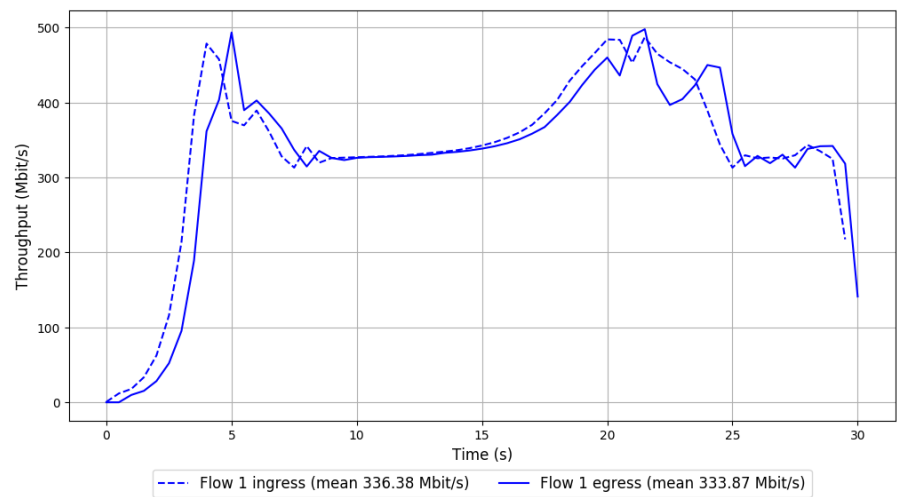
-- Flow 1:

Average throughput: 333.87 Mbit/s

95th percentile per-packet one-way delay: 190.772 ms

Loss rate: 1.48%

Run 1: Report of PCC-Expr — Data Link

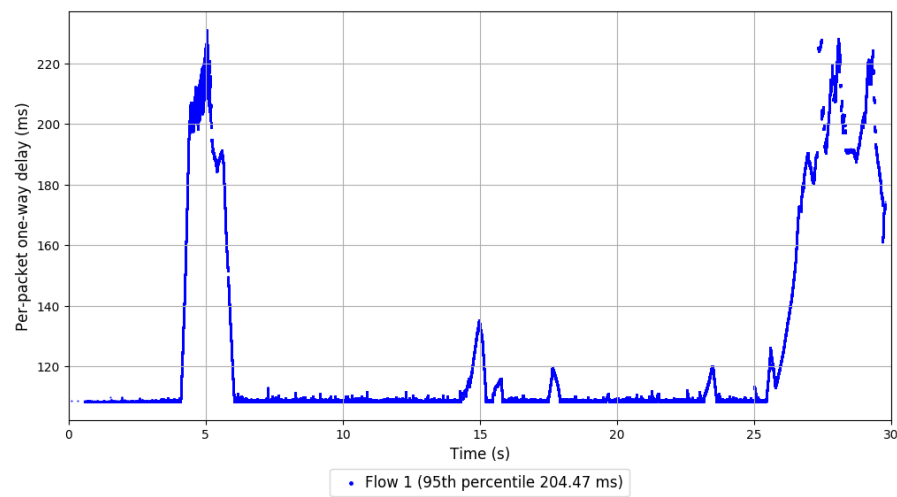
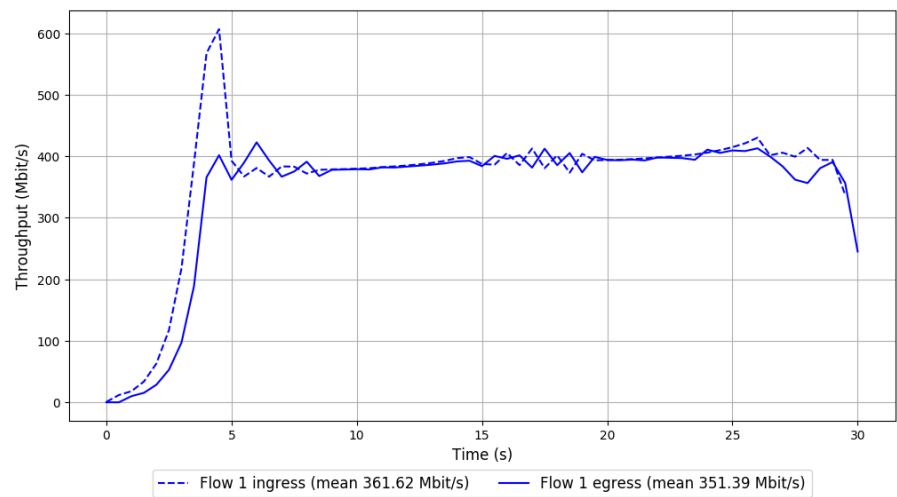


Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 00:19:32
End at: 2018-10-26 00:20:02
Local clock offset: 18.571 ms
Remote clock offset: 22.043 ms

Below is generated by plot.py at 2018-10-26 02:48:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 351.39 Mbit/s
95th percentile per-packet one-way delay: 204.475 ms
Loss rate: 3.54%
-- Flow 1:
Average throughput: 351.39 Mbit/s
95th percentile per-packet one-way delay: 204.475 ms
Loss rate: 3.54%

Run 2: Report of PCC-Expr — Data Link

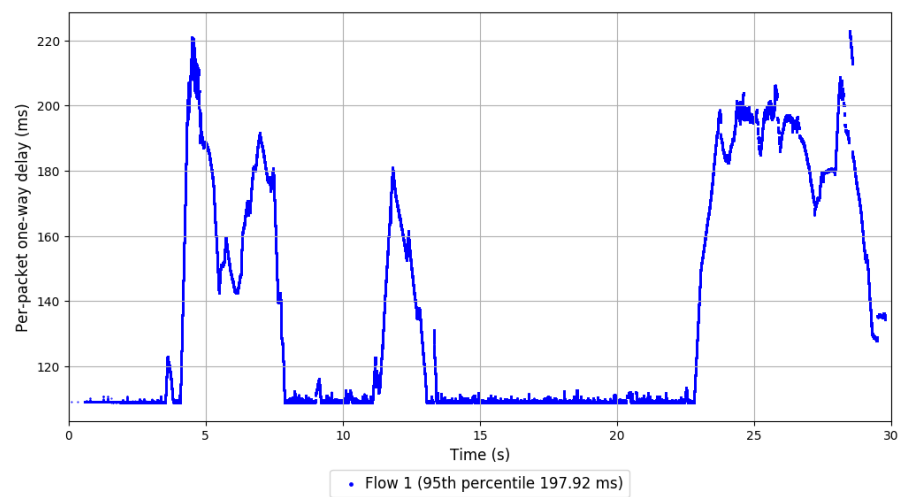
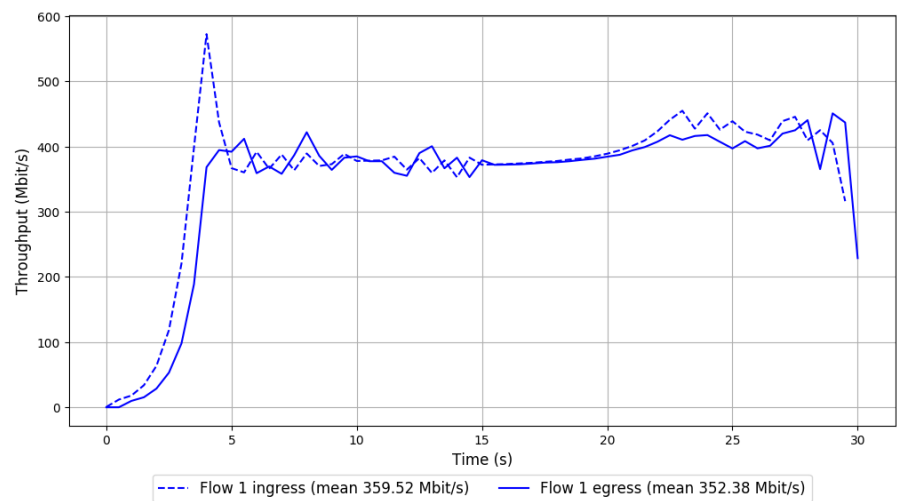


Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 00:45:32
End at: 2018-10-26 00:46:02
Local clock offset: 21.497 ms
Remote clock offset: 26.002 ms

Below is generated by plot.py at 2018-10-26 02:48:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 352.38 Mbit/s
95th percentile per-packet one-way delay: 197.923 ms
Loss rate: 2.70%
-- Flow 1:
Average throughput: 352.38 Mbit/s
95th percentile per-packet one-way delay: 197.923 ms
Loss rate: 2.70%

Run 3: Report of PCC-Expr — Data Link

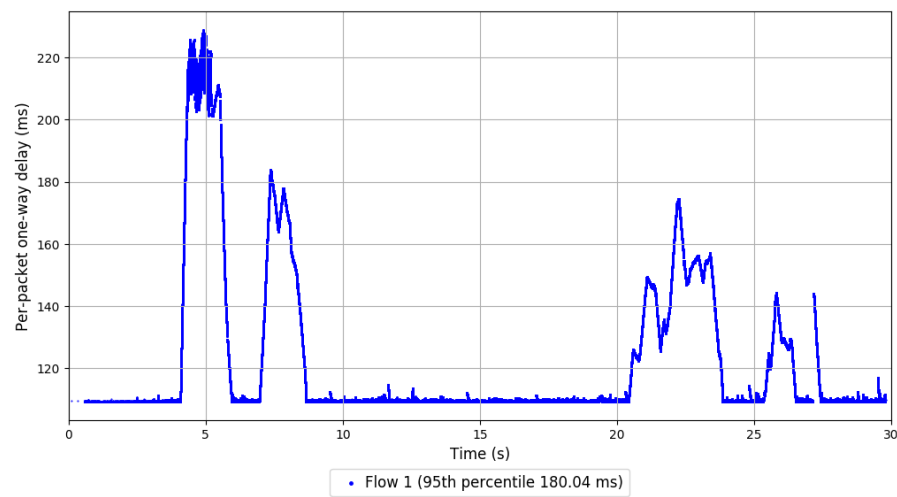
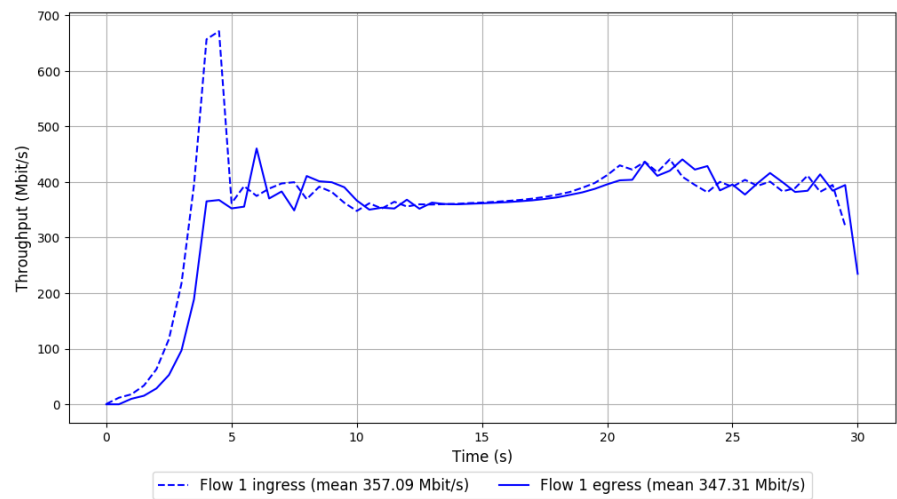


Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 01:11:35
End at: 2018-10-26 01:12:05
Local clock offset: 17.131 ms
Remote clock offset: 19.748 ms

Below is generated by plot.py at 2018-10-26 02:48:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 347.31 Mbit/s
95th percentile per-packet one-way delay: 180.042 ms
Loss rate: 3.45%
-- Flow 1:
Average throughput: 347.31 Mbit/s
95th percentile per-packet one-way delay: 180.042 ms
Loss rate: 3.45%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 01:37:30

End at: 2018-10-26 01:38:00

Local clock offset: 7.191 ms

Remote clock offset: 8.006 ms

Below is generated by plot.py at 2018-10-26 02:52:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 342.55 Mbit/s

95th percentile per-packet one-way delay: 172.716 ms

Loss rate: 1.41%

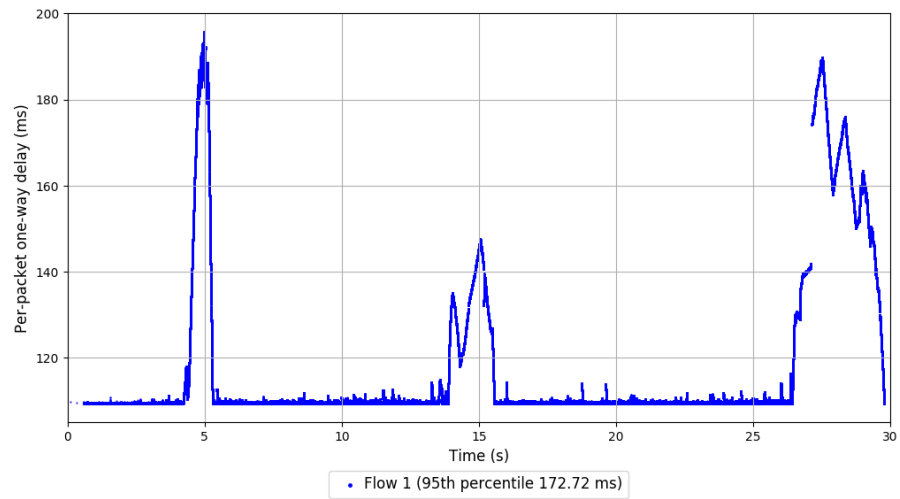
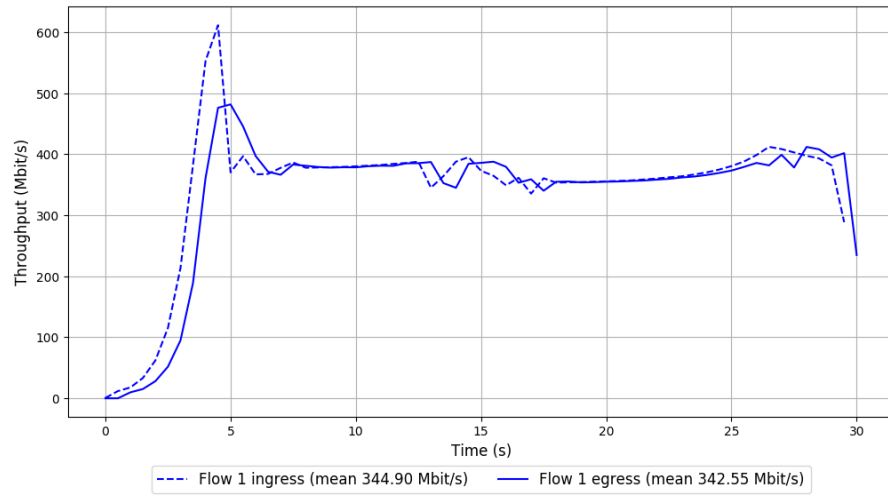
-- Flow 1:

Average throughput: 342.55 Mbit/s

95th percentile per-packet one-way delay: 172.716 ms

Loss rate: 1.41%

Run 5: Report of PCC-Expr — Data Link

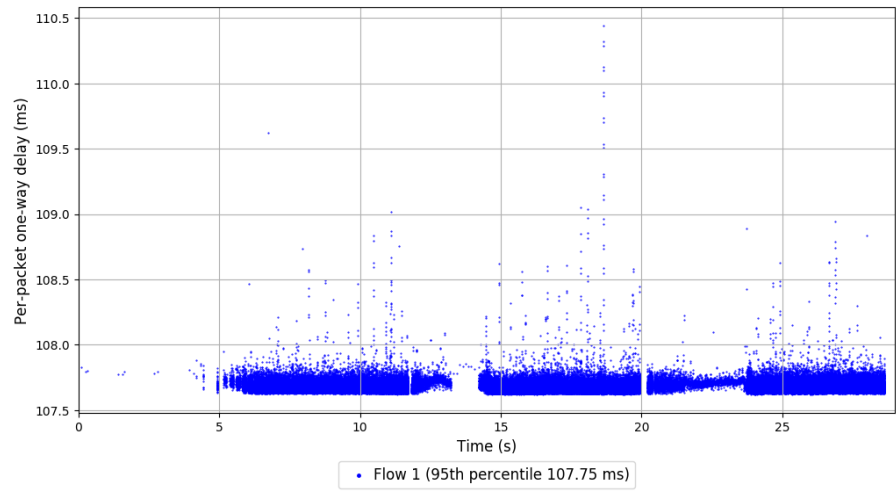
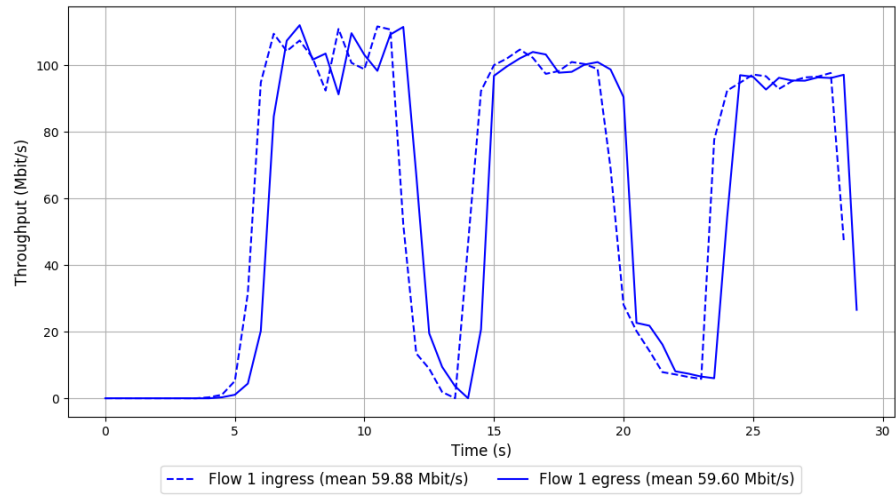



```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-25 23:55:23
End at: 2018-10-25 23:55:53
Local clock offset: 12.609 ms
Remote clock offset: 14.955 ms

# Below is generated by plot.py at 2018-10-26 02:52:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.60 Mbit/s
95th percentile per-packet one-way delay: 107.746 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 59.60 Mbit/s
95th percentile per-packet one-way delay: 107.746 ms
Loss rate: 1.22%
```

Run 1: Report of QUIC Cubic — Data Link

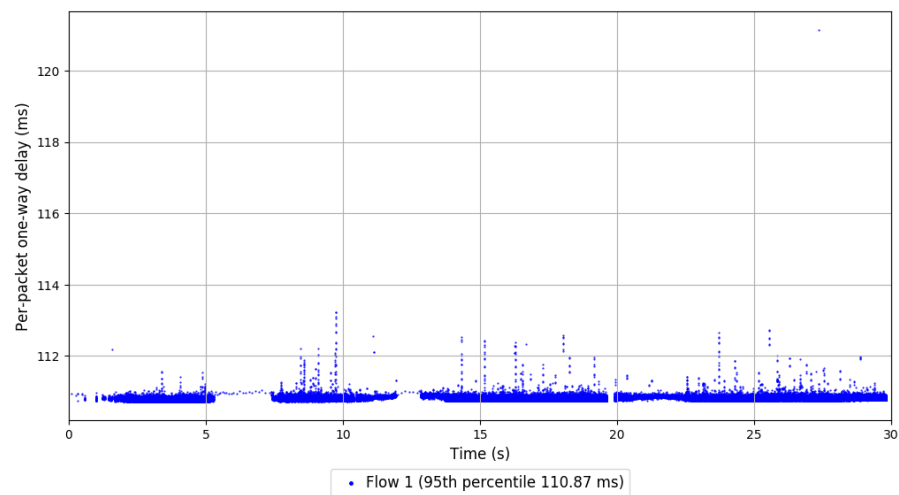
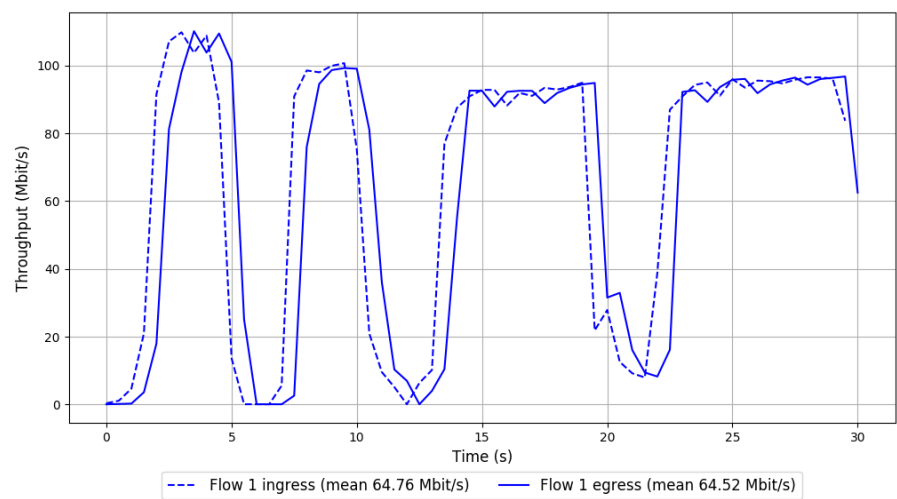


Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 00:21:15
End at: 2018-10-26 00:21:45
Local clock offset: 21.221 ms
Remote clock offset: 22.737 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 64.52 Mbit/s
95th percentile per-packet one-way delay: 110.872 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 64.52 Mbit/s
95th percentile per-packet one-way delay: 110.872 ms
Loss rate: 1.09%

Run 2: Report of QUIC Cubic — Data Link

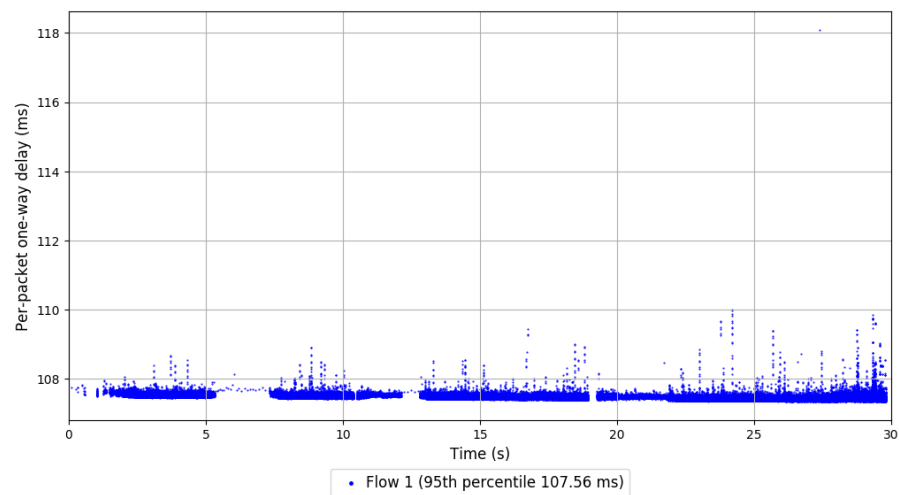
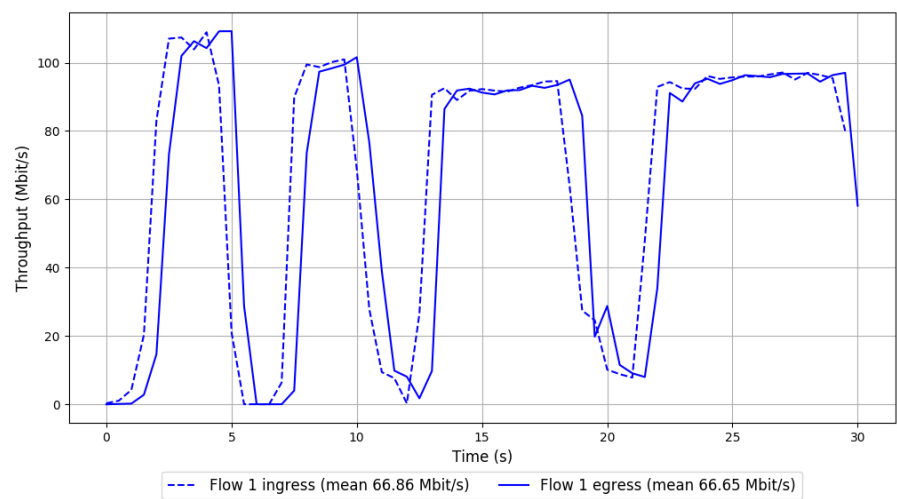


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 00:47:15
End at: 2018-10-26 00:47:45
Local clock offset: 18.257 ms
Remote clock offset: 22.935 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 66.65 Mbit/s
95th percentile per-packet one-way delay: 107.563 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 66.65 Mbit/s
95th percentile per-packet one-way delay: 107.563 ms
Loss rate: 1.05%

Run 3: Report of QUIC Cubic — Data Link

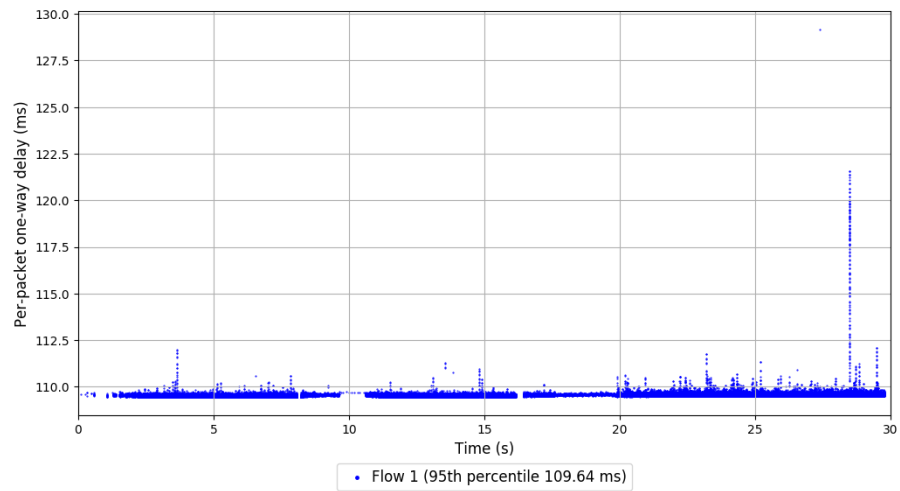
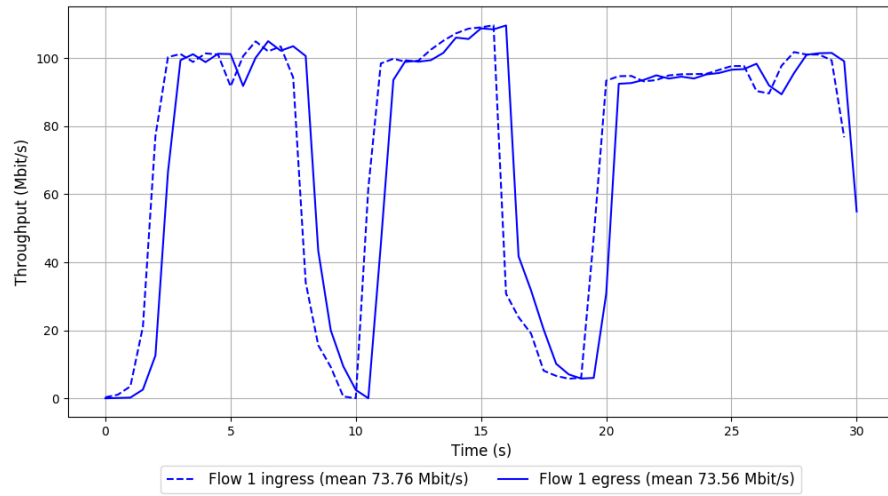


Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 01:13:17
End at: 2018-10-26 01:13:47
Local clock offset: 17.985 ms
Remote clock offset: 20.601 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 73.56 Mbit/s
95th percentile per-packet one-way delay: 109.641 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 73.56 Mbit/s
95th percentile per-packet one-way delay: 109.641 ms
Loss rate: 1.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 01:39:12

End at: 2018-10-26 01:39:42

Local clock offset: 6.64 ms

Remote clock offset: 8.619 ms

Below is generated by plot.py at 2018-10-26 02:52:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.24 Mbit/s

95th percentile per-packet one-way delay: 108.576 ms

Loss rate: 1.05%

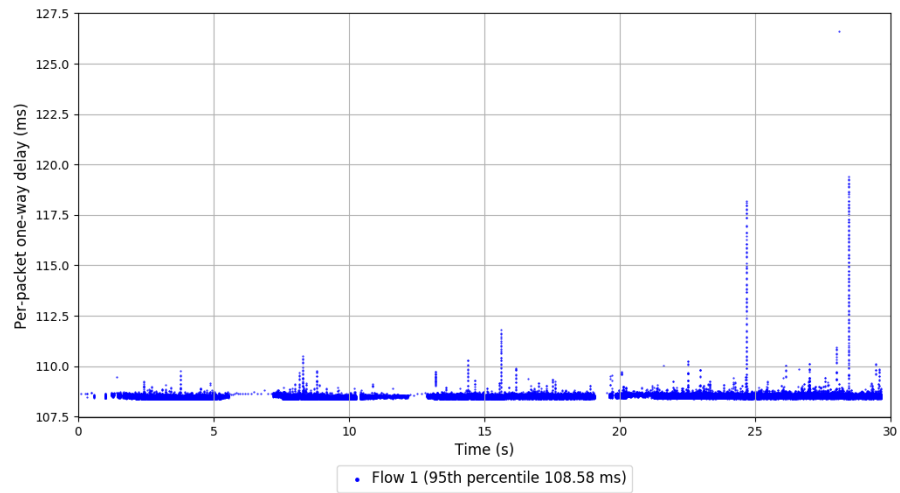
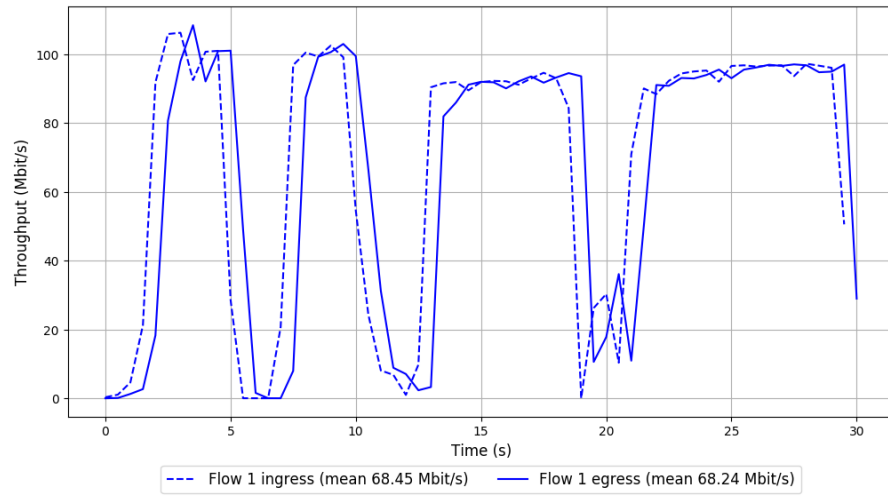
-- Flow 1:

Average throughput: 68.24 Mbit/s

95th percentile per-packet one-way delay: 108.576 ms

Loss rate: 1.05%

Run 5: Report of QUIC Cubic — Data Link

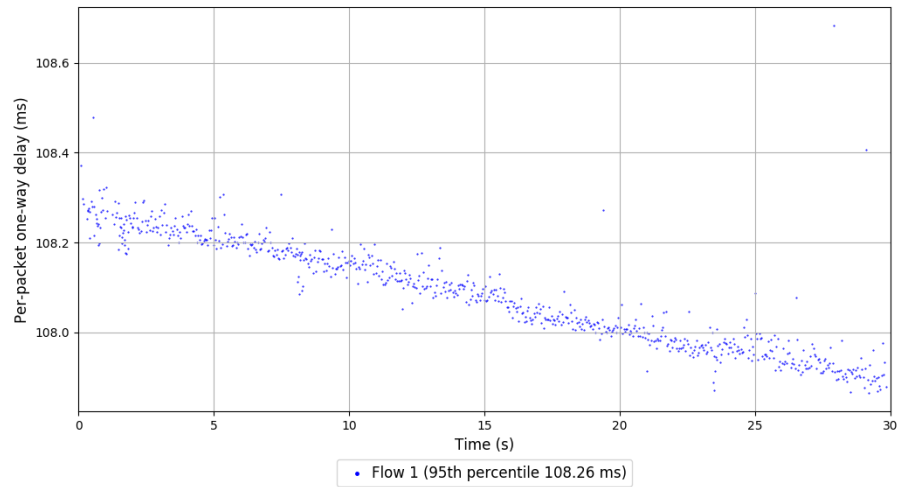
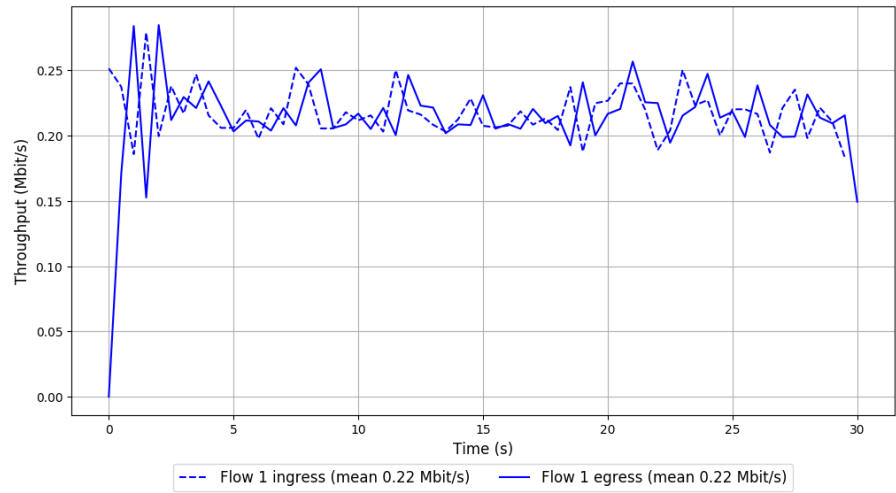


```
Run 1: Statistics of SCReAM

Start at: 2018-10-25 23:49:26
End at: 2018-10-25 23:49:56
Local clock offset: 15.068 ms
Remote clock offset: 18.894 ms

# Below is generated by plot.py at 2018-10-26 02:52:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.262 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.262 ms
Loss rate: 0.64%
```

Run 1: Report of SReAM — Data Link

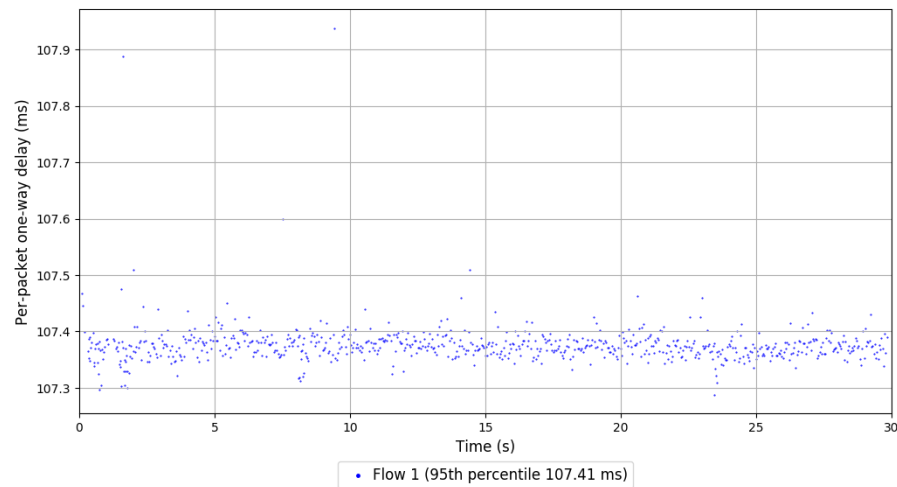
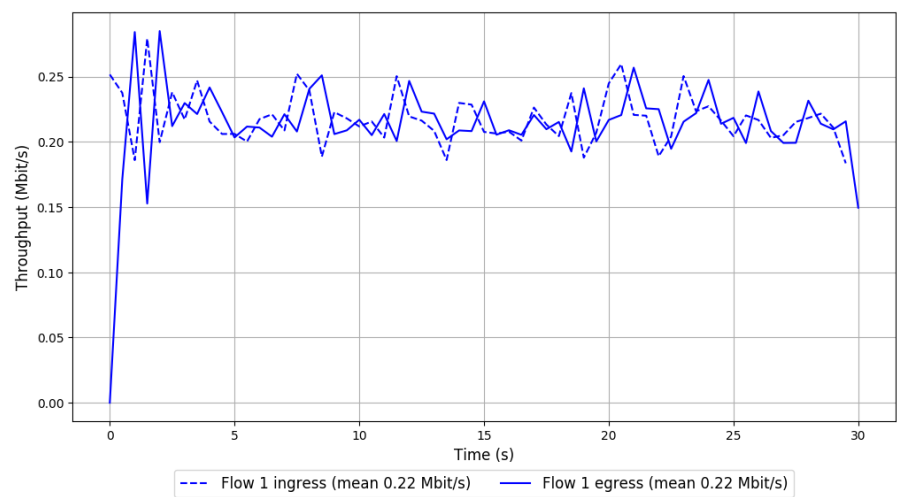


Run 2: Statistics of SCReAM

Start at: 2018-10-26 00:15:16
End at: 2018-10-26 00:15:46
Local clock offset: 17.117 ms
Remote clock offset: 21.119 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.412 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.412 ms
Loss rate: 0.64%

Run 2: Report of SReAM — Data Link

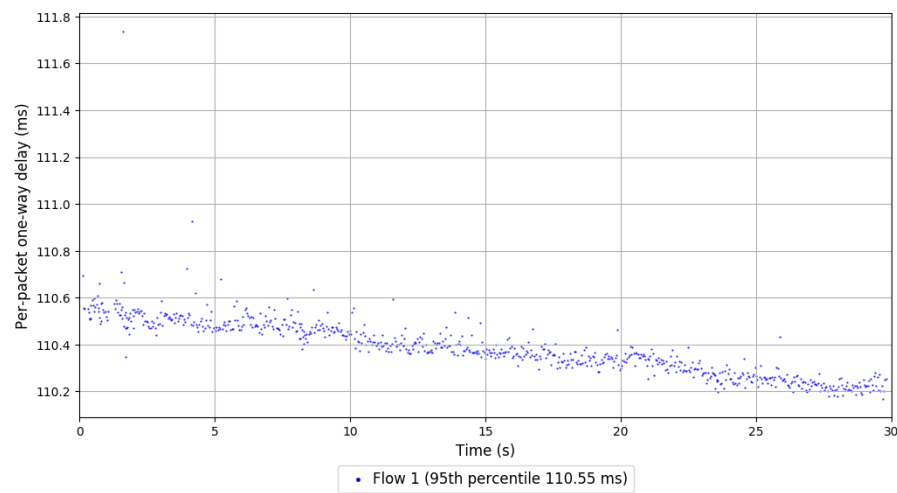
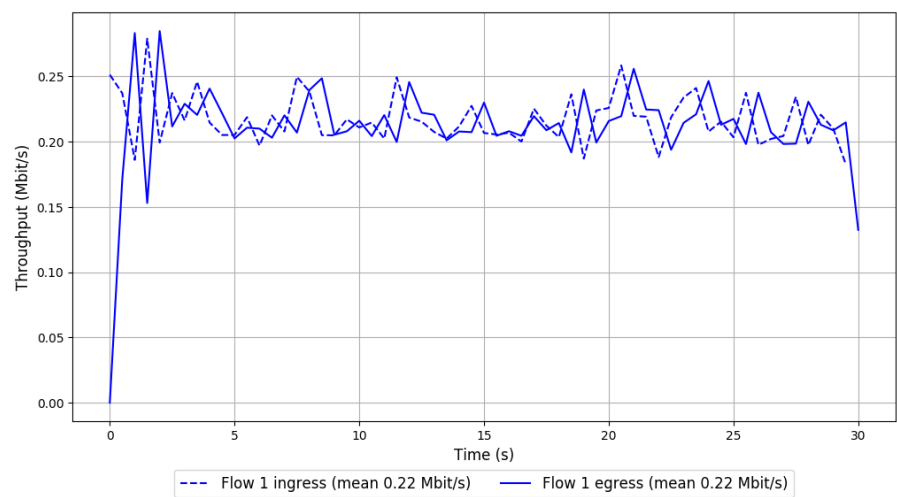


Run 3: Statistics of SCReAM

Start at: 2018-10-26 00:41:17
End at: 2018-10-26 00:41:47
Local clock offset: 32.16 ms
Remote clock offset: 37.913 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.551 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.551 ms
Loss rate: 0.77%

Run 3: Report of SReAM — Data Link

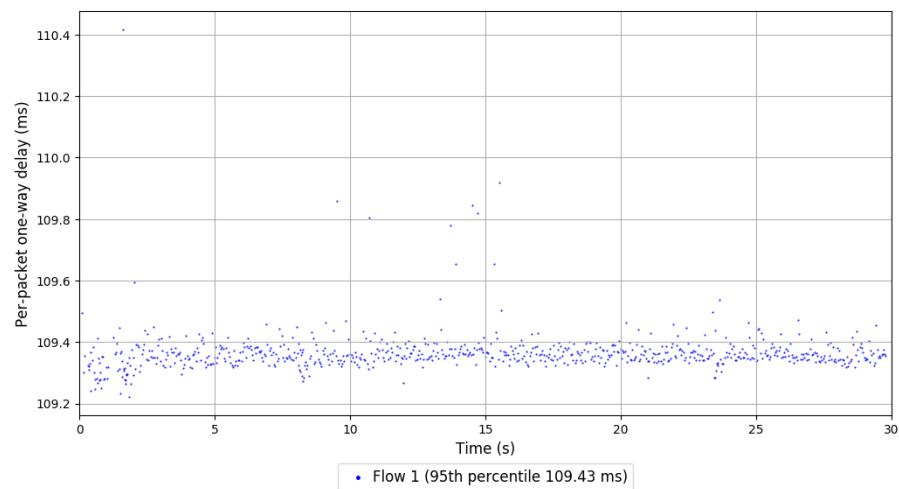
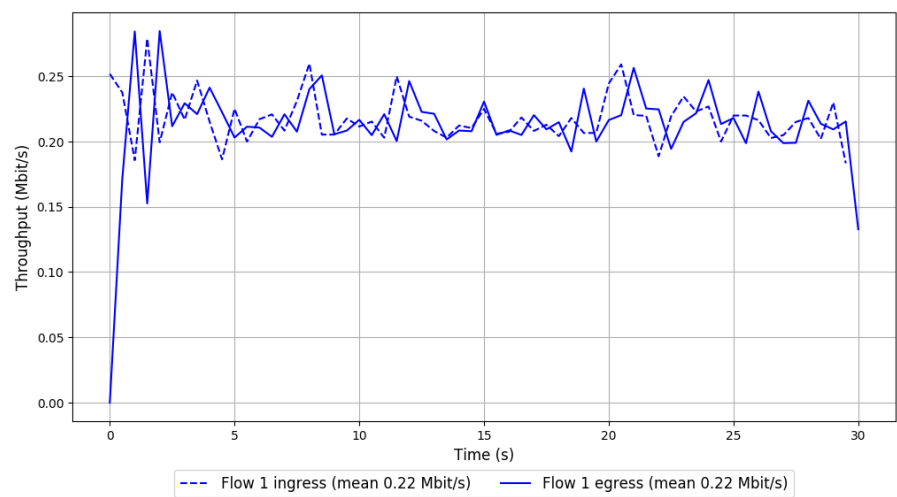


Run 4: Statistics of SCReAM

Start at: 2018-10-26 01:07:16
End at: 2018-10-26 01:07:46
Local clock offset: 15.265 ms
Remote clock offset: 17.901 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.433 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.433 ms
Loss rate: 0.77%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-10-26 01:33:09

End at: 2018-10-26 01:33:39

Local clock offset: 6.449 ms

Remote clock offset: 7.652 ms

Below is generated by plot.py at 2018-10-26 02:52:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 109.519 ms

Loss rate: 0.77%

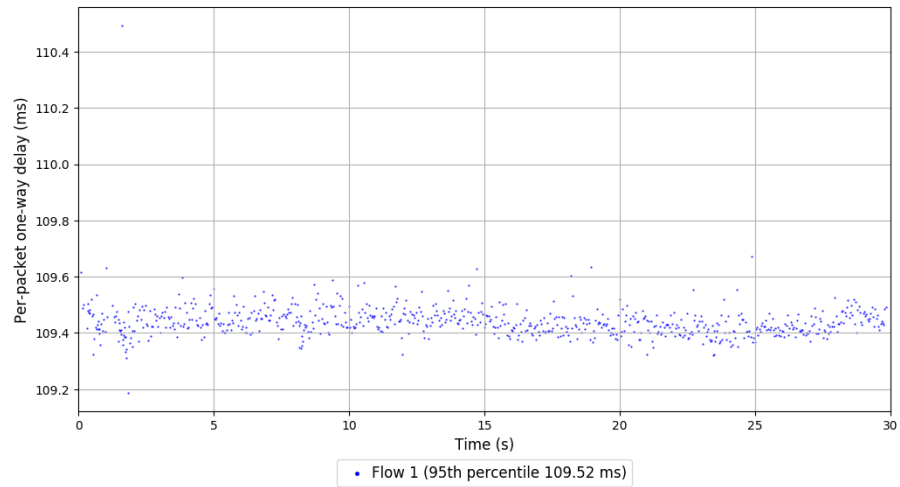
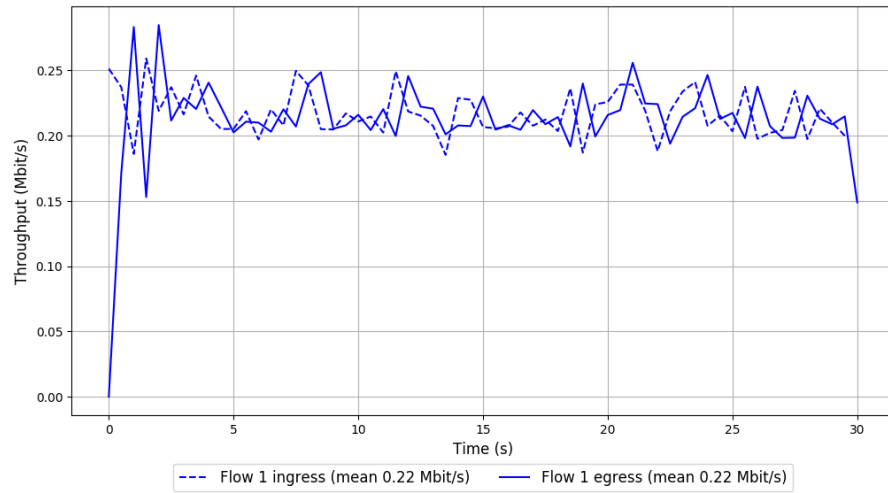
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 109.519 ms

Loss rate: 0.77%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-10-25 23:35:21

End at: 2018-10-25 23:35:51

Local clock offset: 4.413 ms

Remote clock offset: 4.523 ms

Below is generated by plot.py at 2018-10-26 02:52:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.66 Mbit/s

95th percentile per-packet one-way delay: 109.796 ms

Loss rate: 0.73%

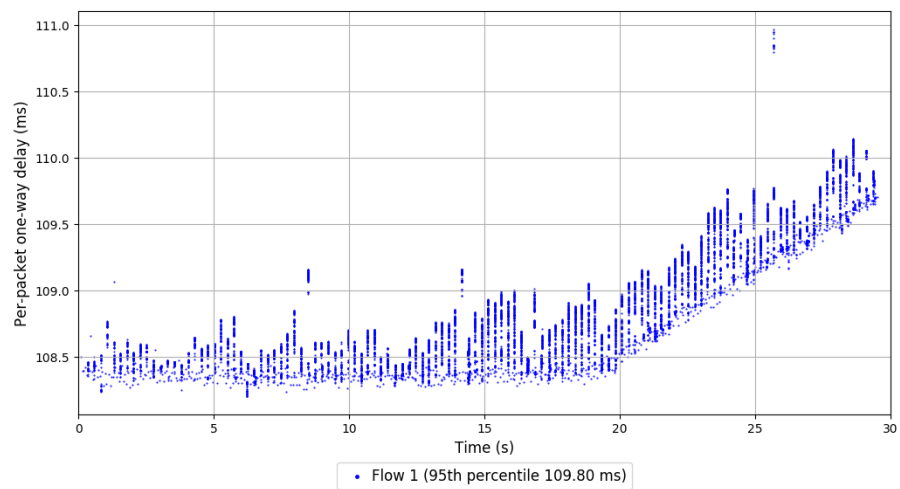
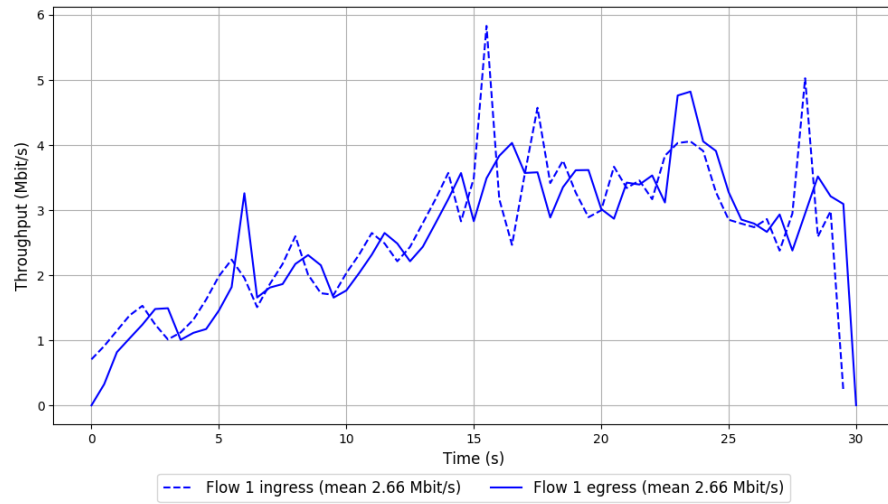
-- Flow 1:

Average throughput: 2.66 Mbit/s

95th percentile per-packet one-way delay: 109.796 ms

Loss rate: 0.73%

Run 1: Report of Sprout — Data Link

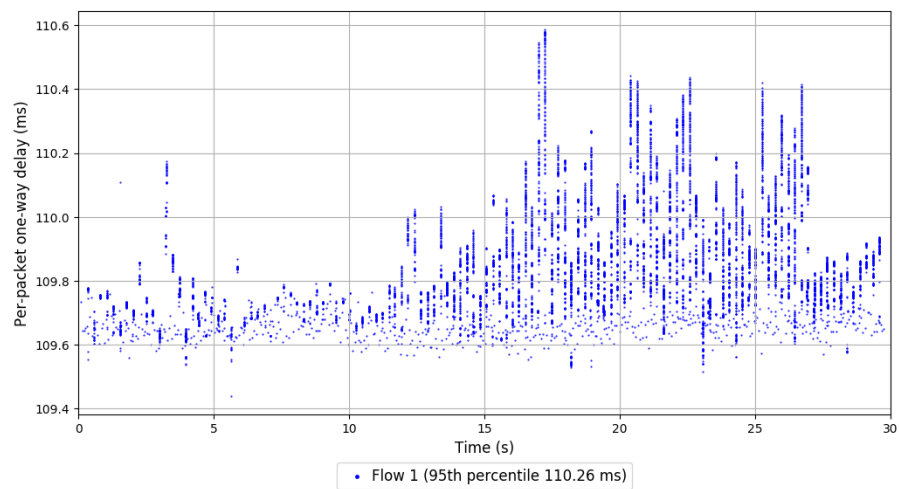
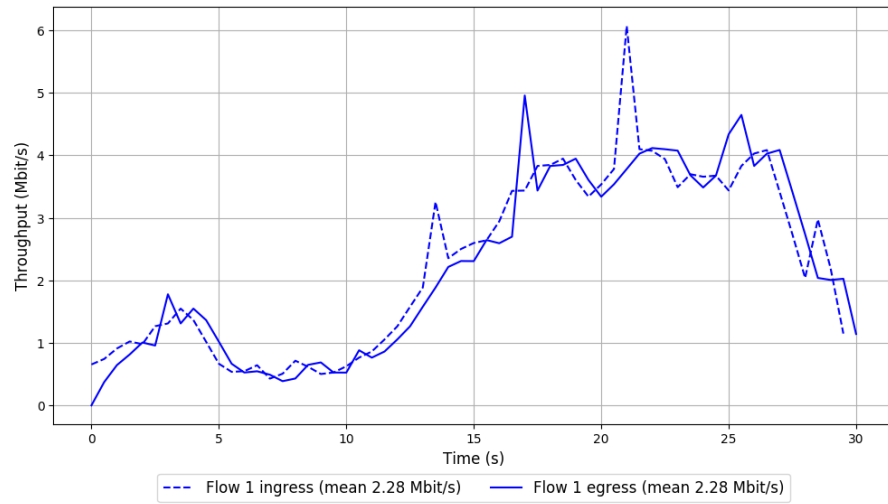


Run 2: Statistics of Sprout

Start at: 2018-10-26 00:01:11
End at: 2018-10-26 00:01:41
Local clock offset: 18.329 ms
Remote clock offset: 20.542 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 110.256 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 110.256 ms
Loss rate: 0.84%

Run 2: Report of Sprout — Data Link

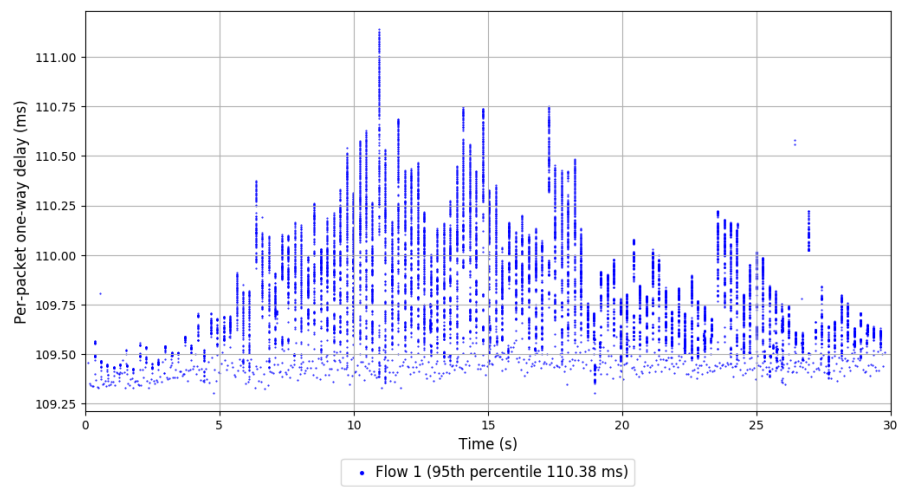
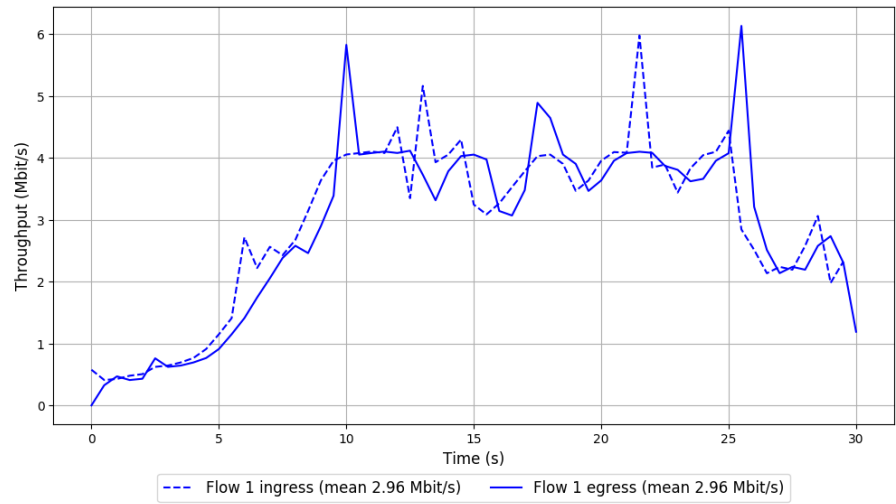


Run 3: Statistics of Sprout

Start at: 2018-10-26 00:26:57
End at: 2018-10-26 00:27:27
Local clock offset: 24.201 ms
Remote clock offset: 27.676 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 110.381 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 110.381 ms
Loss rate: 0.64%

Run 3: Report of Sprout — Data Link

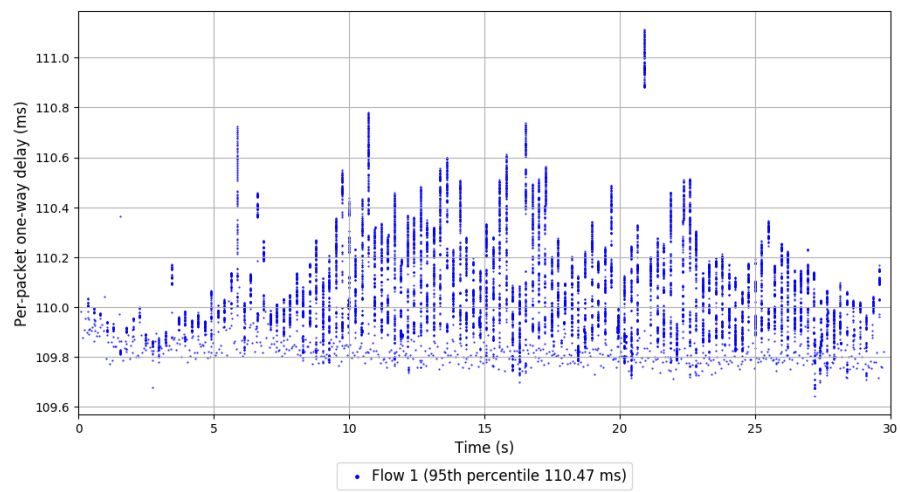
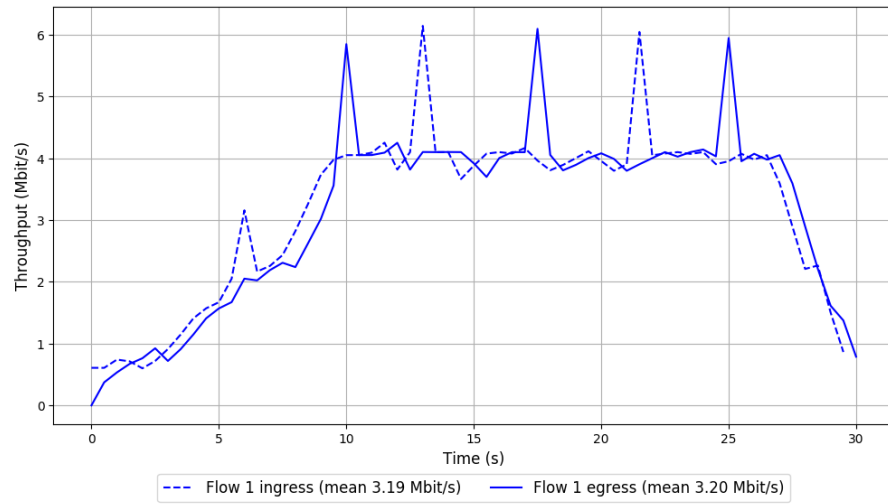


Run 4: Statistics of Sprout

Start at: 2018-10-26 00:53:03
End at: 2018-10-26 00:53:33
Local clock offset: 14.419 ms
Remote clock offset: 16.706 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 110.466 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 110.466 ms
Loss rate: 0.45%

Run 4: Report of Sprout — Data Link

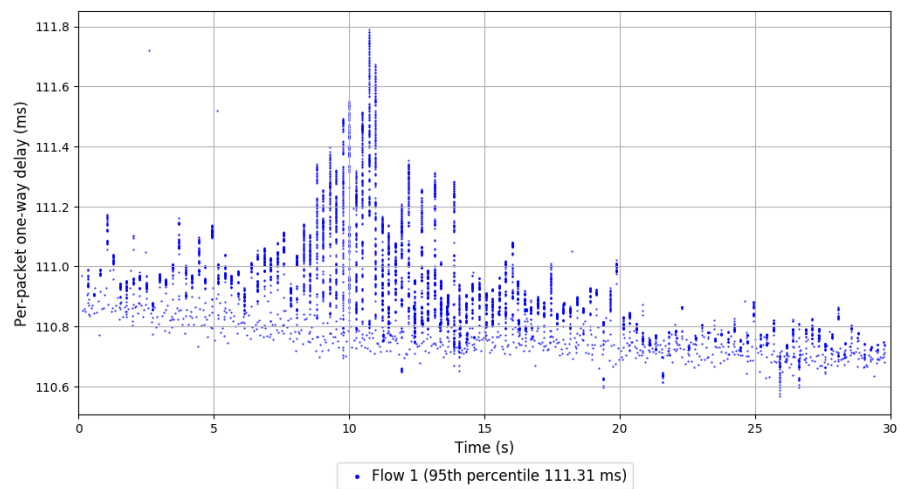
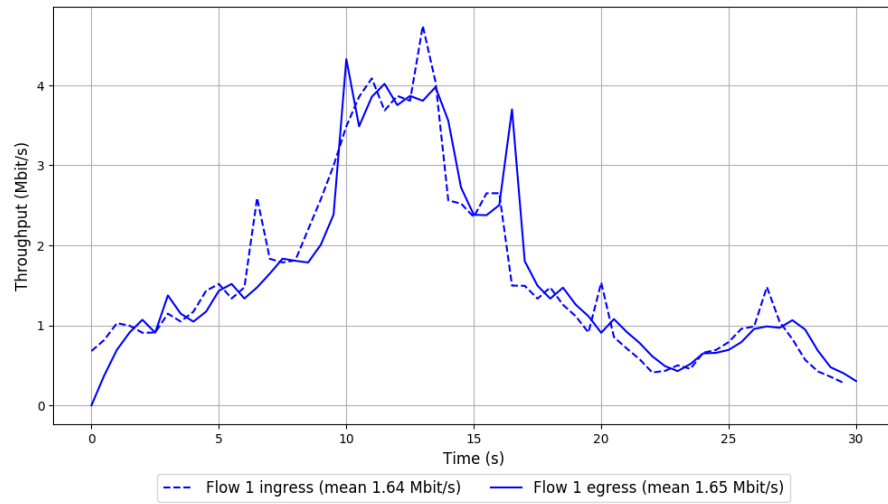


Run 5: Statistics of Sprout

Start at: 2018-10-26 01:19:02
End at: 2018-10-26 01:19:32
Local clock offset: 12.94 ms
Remote clock offset: 13.778 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 111.307 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 111.307 ms
Loss rate: 0.14%

Run 5: Report of Sprout — Data Link

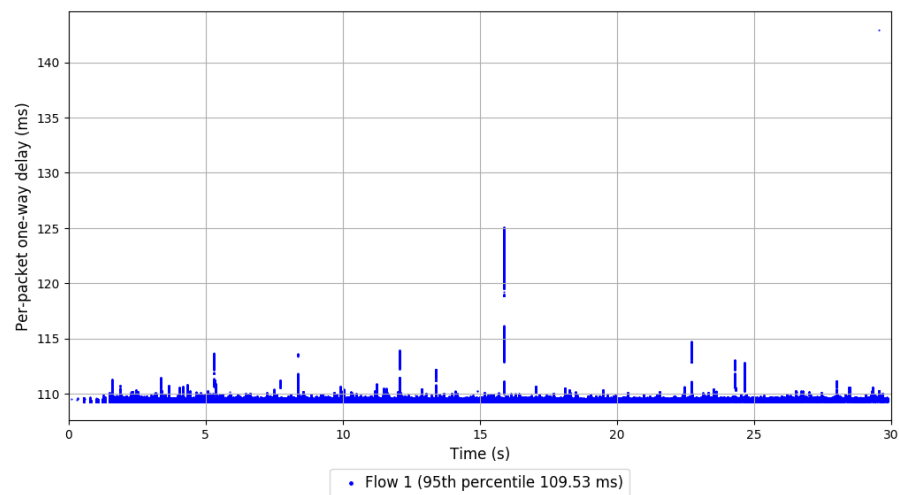
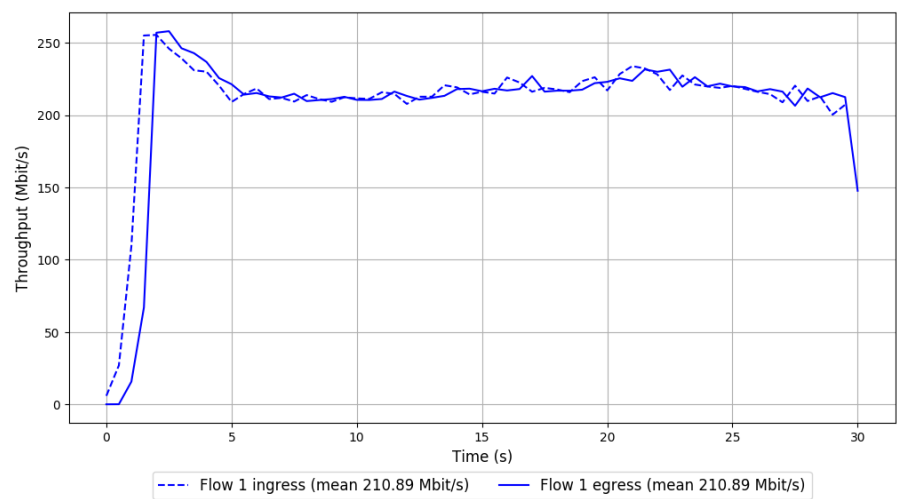


Run 1: Statistics of TaoVA-100x

Start at: 2018-10-25 23:56:35
End at: 2018-10-25 23:57:05
Local clock offset: 13.671 ms
Remote clock offset: 15.416 ms

Below is generated by plot.py at 2018-10-26 02:53:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 210.89 Mbit/s
95th percentile per-packet one-way delay: 109.535 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 210.89 Mbit/s
95th percentile per-packet one-way delay: 109.535 ms
Loss rate: 0.73%

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

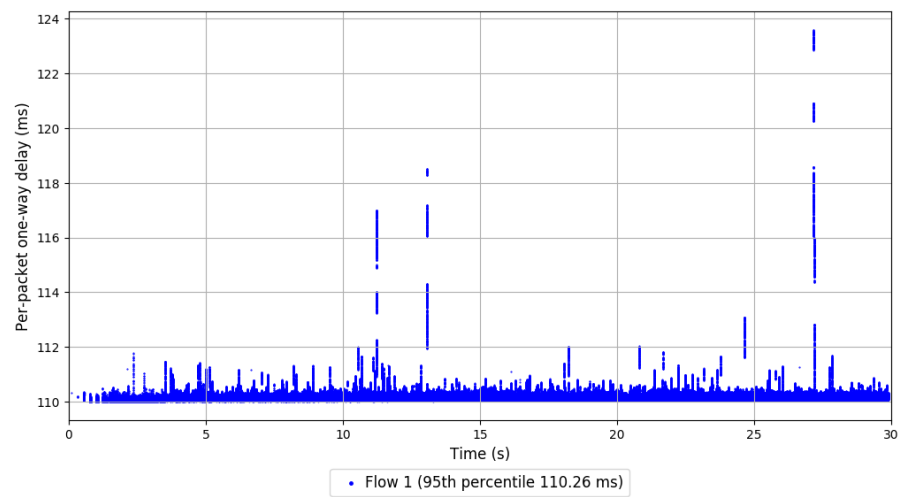
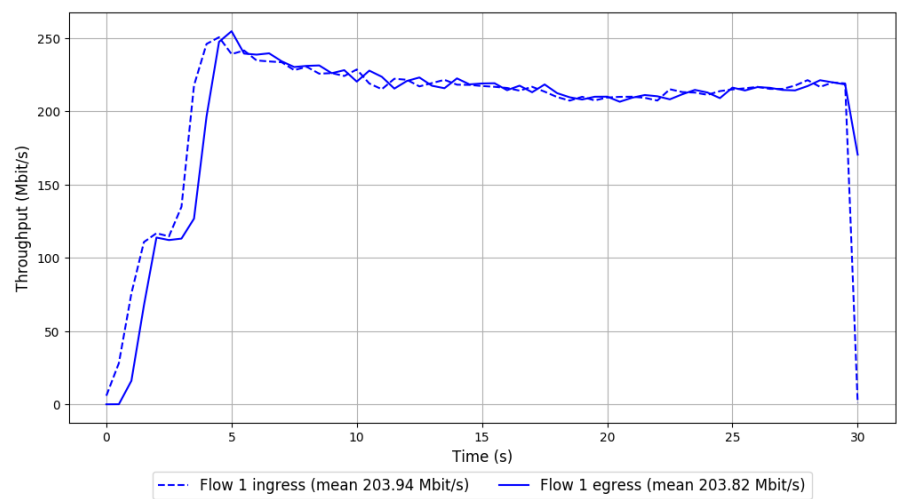


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-26 00:22:28
End at: 2018-10-26 00:22:58
Local clock offset: 21.791 ms
Remote clock offset: 23.984 ms

Below is generated by plot.py at 2018-10-26 02:53:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 203.82 Mbit/s
95th percentile per-packet one-way delay: 110.263 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 203.82 Mbit/s
95th percentile per-packet one-way delay: 110.263 ms
Loss rate: 0.79%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-10-26 00:48:27

End at: 2018-10-26 00:48:57

Local clock offset: 17.344 ms

Remote clock offset: 21.14 ms

Below is generated by plot.py at 2018-10-26 02:53:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 208.39 Mbit/s

95th percentile per-packet one-way delay: 108.889 ms

Loss rate: 0.77%

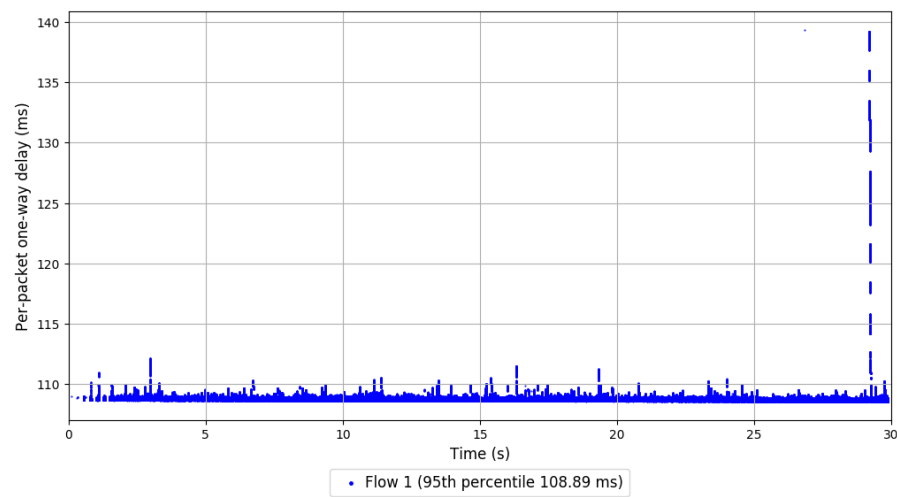
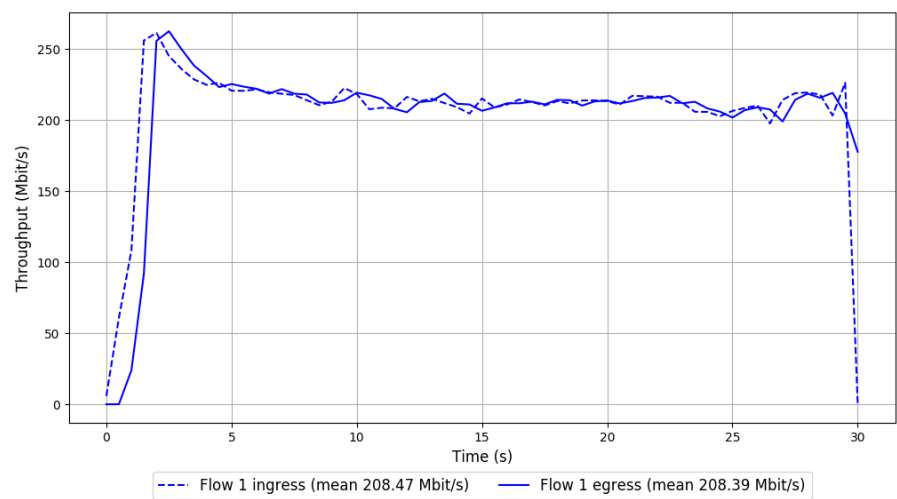
-- Flow 1:

Average throughput: 208.39 Mbit/s

95th percentile per-packet one-way delay: 108.889 ms

Loss rate: 0.77%

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

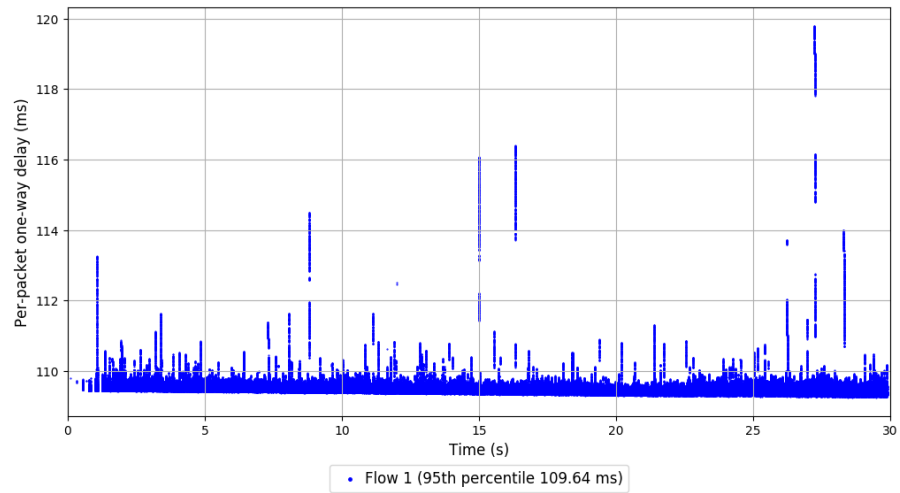
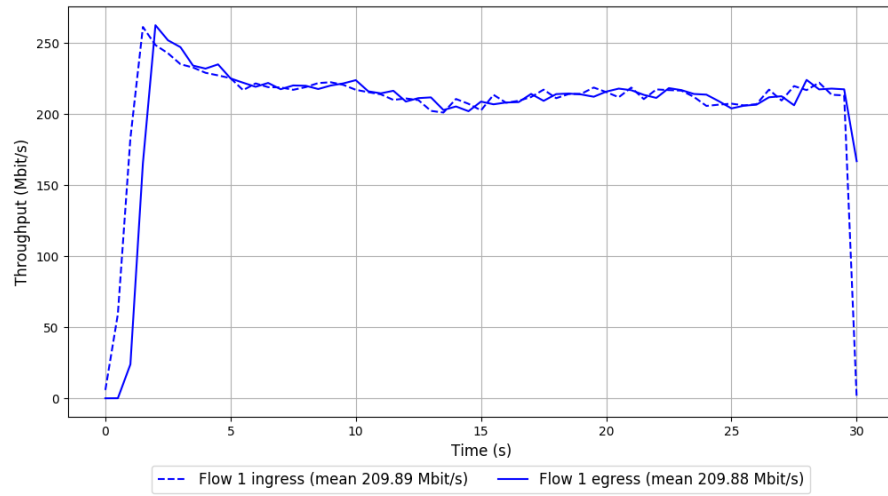


Run 4: Statistics of TaoVA-100x

Start at: 2018-10-26 01:14:30
End at: 2018-10-26 01:15:00
Local clock offset: 18.515 ms
Remote clock offset: 21.234 ms

Below is generated by plot.py at 2018-10-26 02:53:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 209.88 Mbit/s
95th percentile per-packet one-way delay: 109.639 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 209.88 Mbit/s
95th percentile per-packet one-way delay: 109.639 ms
Loss rate: 0.73%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-26 01:40:25

End at: 2018-10-26 01:40:55

Local clock offset: 8.14 ms

Remote clock offset: 8.415 ms

Below is generated by plot.py at 2018-10-26 02:53:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 209.28 Mbit/s

95th percentile per-packet one-way delay: 109.953 ms

Loss rate: 0.77%

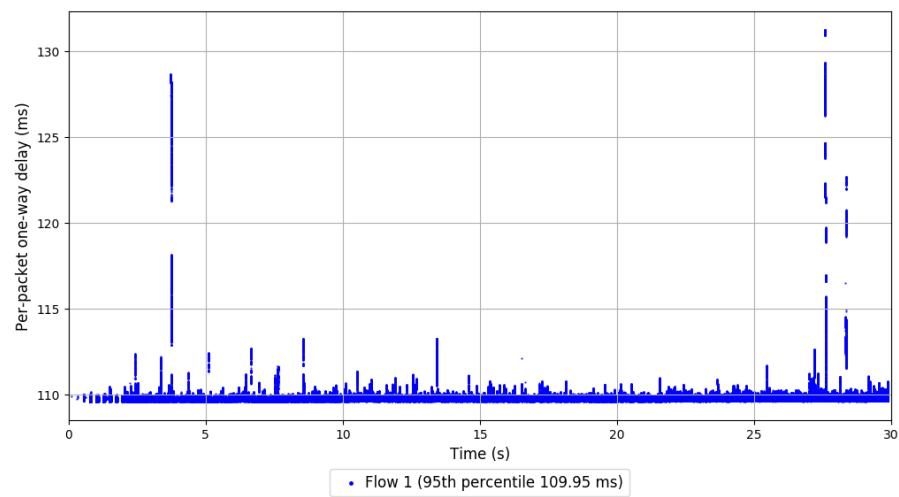
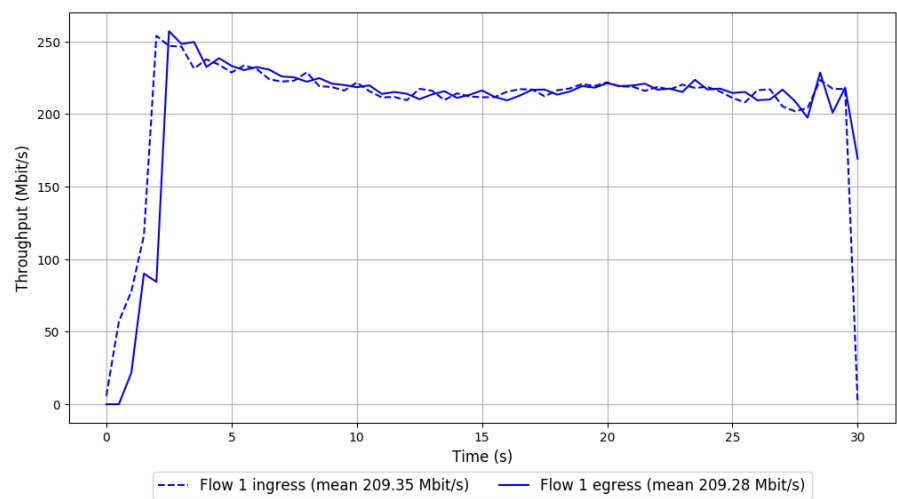
-- Flow 1:

Average throughput: 209.28 Mbit/s

95th percentile per-packet one-way delay: 109.953 ms

Loss rate: 0.77%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-10-25 23:45:09

End at: 2018-10-25 23:45:39

Local clock offset: 8.837 ms

Remote clock offset: 11.67 ms

Below is generated by plot.py at 2018-10-26 02:54:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 303.25 Mbit/s

95th percentile per-packet one-way delay: 108.272 ms

Loss rate: 0.78%

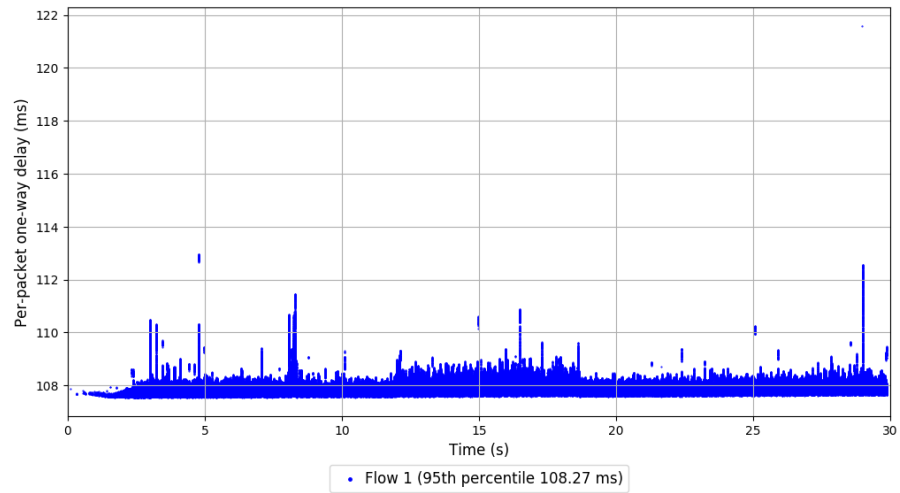
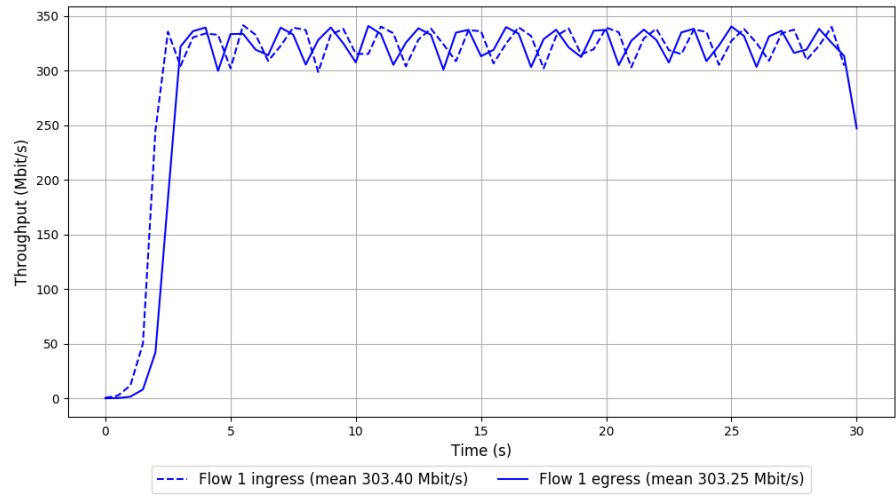
-- Flow 1:

Average throughput: 303.25 Mbit/s

95th percentile per-packet one-way delay: 108.272 ms

Loss rate: 0.78%

Run 1: Report of TCP Vegas — Data Link

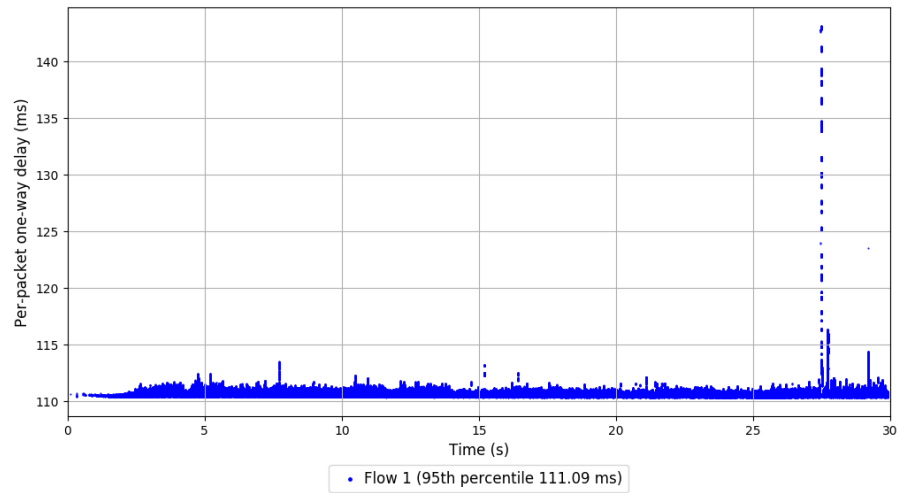
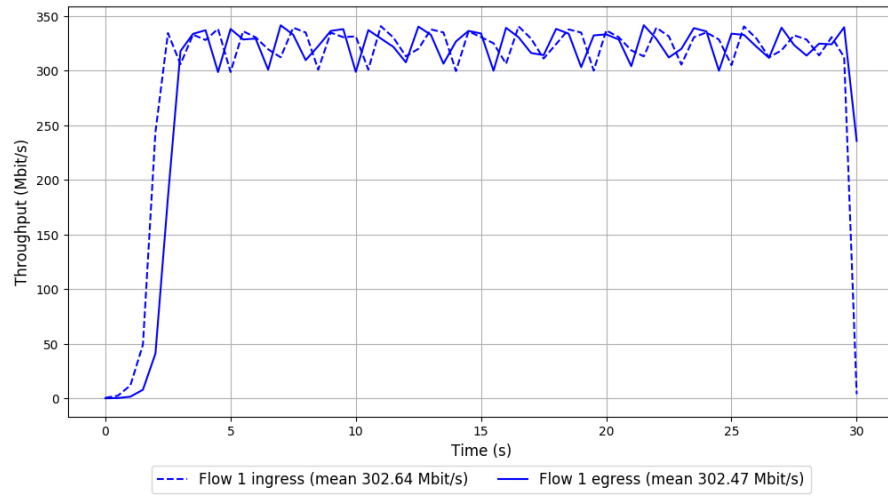


Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 00:11:00
End at: 2018-10-26 00:11:30
Local clock offset: 20.148 ms
Remote clock offset: 22.201 ms

Below is generated by plot.py at 2018-10-26 02:54:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 302.47 Mbit/s
95th percentile per-packet one-way delay: 111.092 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 302.47 Mbit/s
95th percentile per-packet one-way delay: 111.092 ms
Loss rate: 0.79%

Run 2: Report of TCP Vegas — Data Link

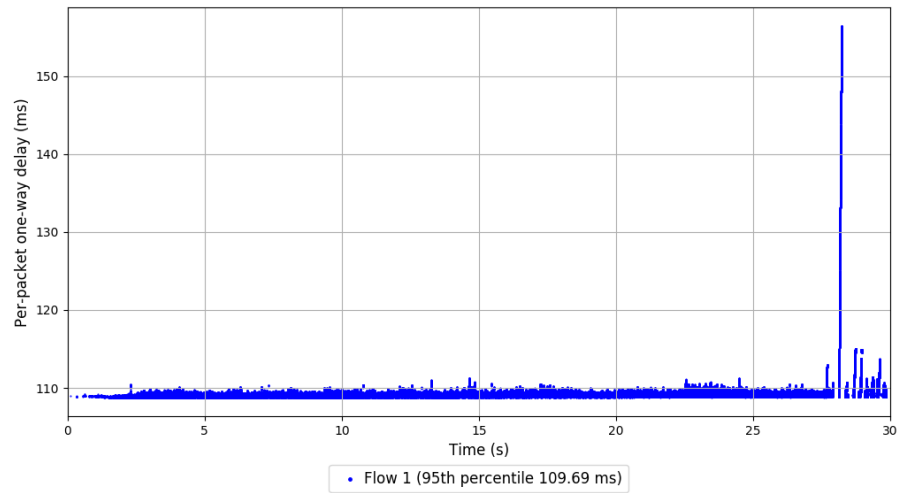
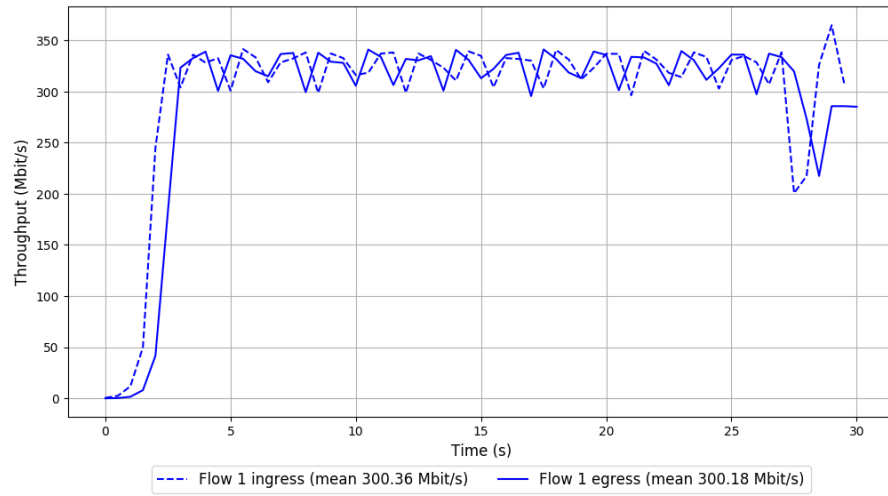


Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 00:37:00
End at: 2018-10-26 00:37:30
Local clock offset: 33.331 ms
Remote clock offset: 38.404 ms

Below is generated by plot.py at 2018-10-26 02:56:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 300.18 Mbit/s
95th percentile per-packet one-way delay: 109.690 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 300.18 Mbit/s
95th percentile per-packet one-way delay: 109.690 ms
Loss rate: 0.79%

Run 3: Report of TCP Vegas — Data Link

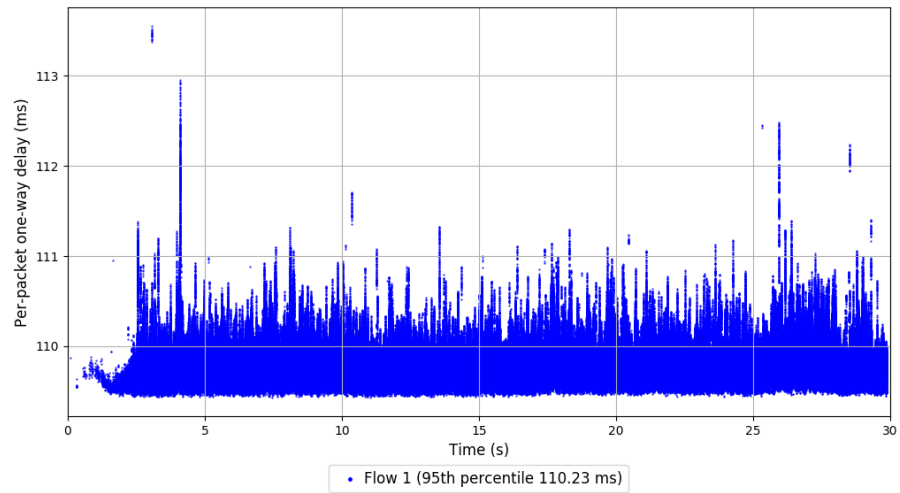
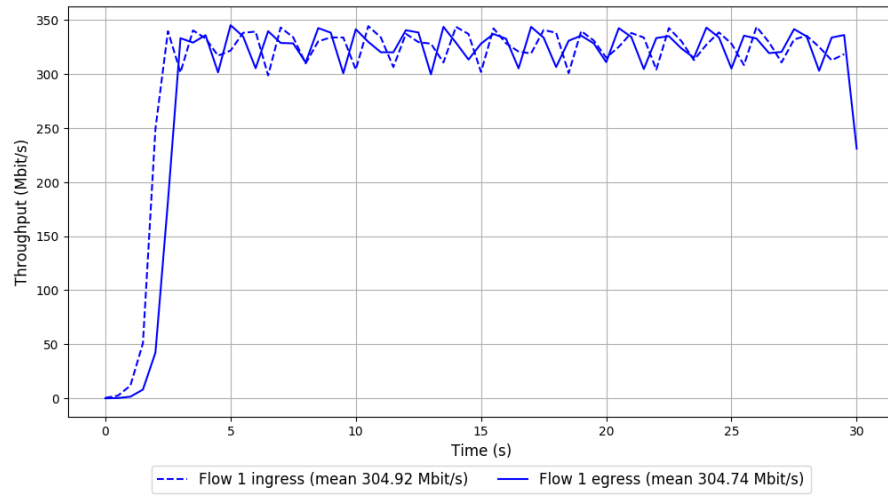


Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 01:02:58
End at: 2018-10-26 01:03:28
Local clock offset: 14.278 ms
Remote clock offset: 16.05 ms

Below is generated by plot.py at 2018-10-26 02:57:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 304.74 Mbit/s
95th percentile per-packet one-way delay: 110.226 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 304.74 Mbit/s
95th percentile per-packet one-way delay: 110.226 ms
Loss rate: 0.78%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 01:28:51

End at: 2018-10-26 01:29:21

Local clock offset: 7.681 ms

Remote clock offset: 7.7 ms

Below is generated by plot.py at 2018-10-26 02:58:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 303.83 Mbit/s

95th percentile per-packet one-way delay: 111.364 ms

Loss rate: 0.78%

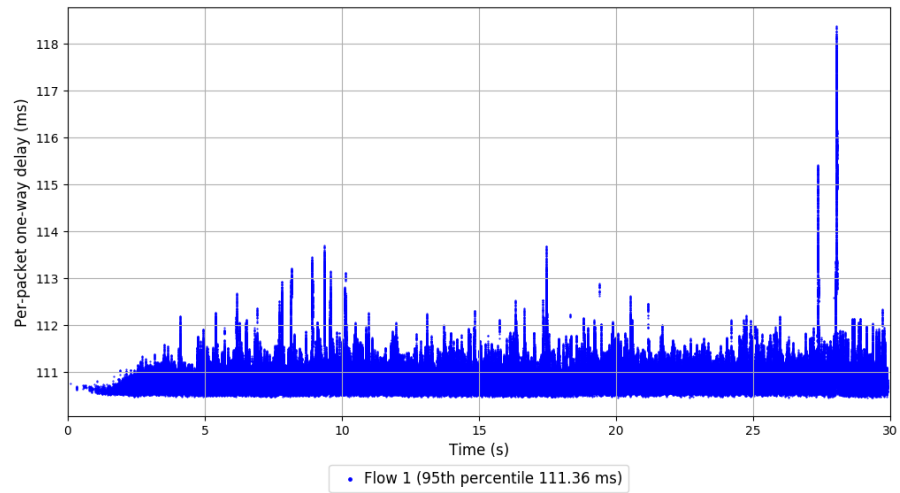
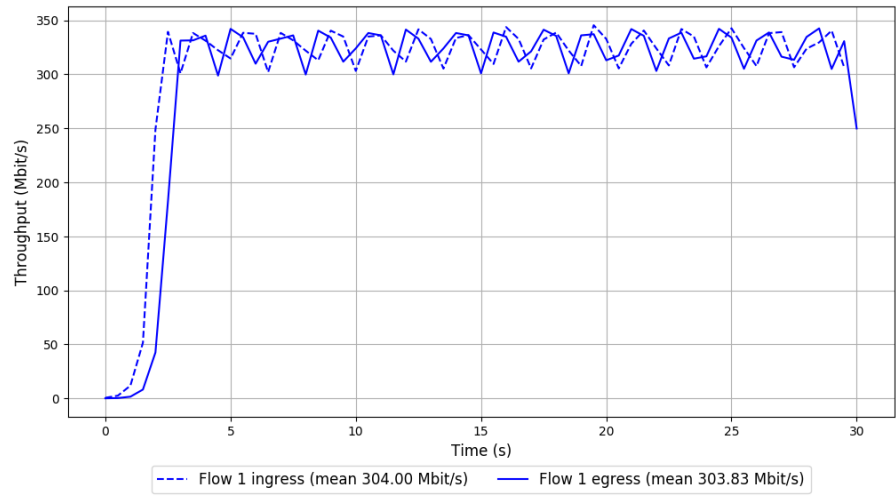
-- Flow 1:

Average throughput: 303.83 Mbit/s

95th percentile per-packet one-way delay: 111.364 ms

Loss rate: 0.78%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-10-25 23:39:14

End at: 2018-10-25 23:39:44

Local clock offset: 6.739 ms

Remote clock offset: 8.834 ms

Below is generated by plot.py at 2018-10-26 02:58:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 147.53 Mbit/s

95th percentile per-packet one-way delay: 246.728 ms

Loss rate: 13.30%

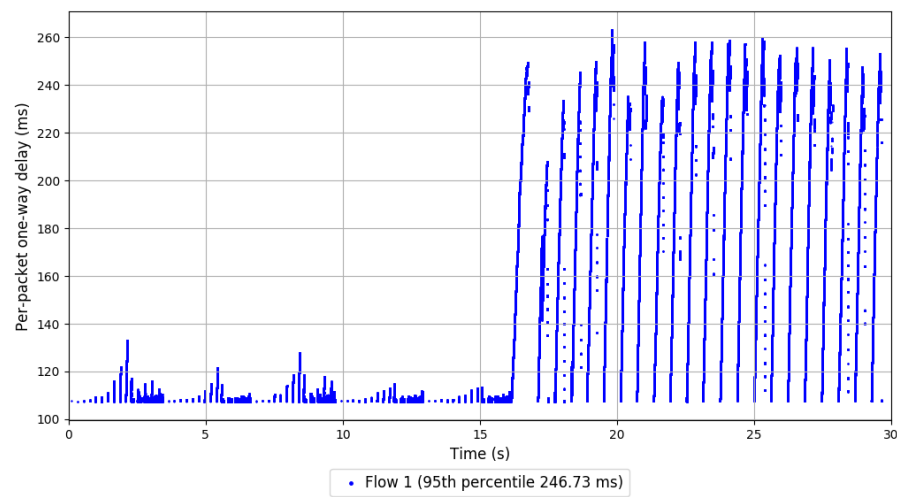
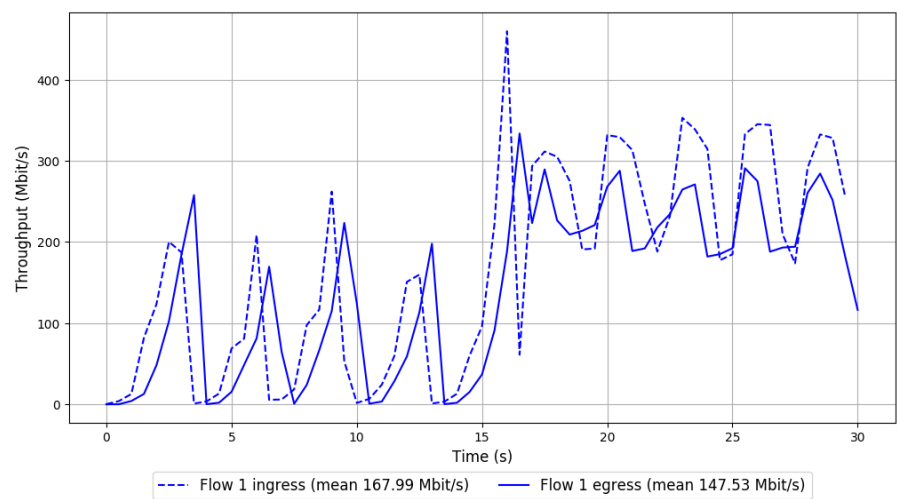
-- Flow 1:

Average throughput: 147.53 Mbit/s

95th percentile per-packet one-way delay: 246.728 ms

Loss rate: 13.30%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-10-26 00:05:08

End at: 2018-10-26 00:05:38

Local clock offset: 24.3 ms

Remote clock offset: 26.06 ms

Below is generated by plot.py at 2018-10-26 03:00:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 211.36 Mbit/s

95th percentile per-packet one-way delay: 256.319 ms

Loss rate: 14.75%

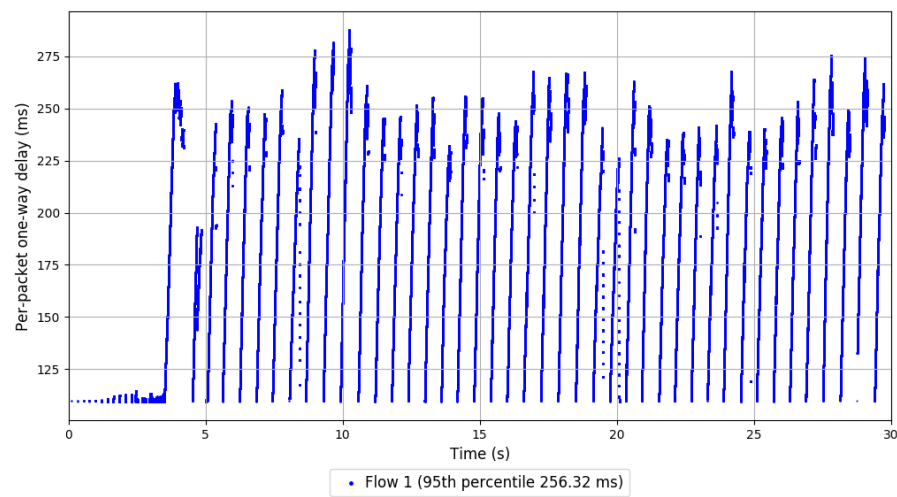
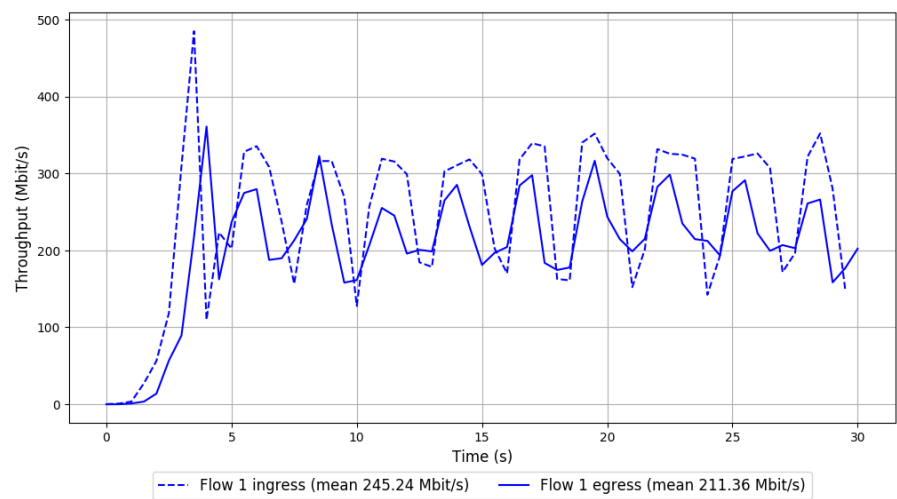
-- Flow 1:

Average throughput: 211.36 Mbit/s

95th percentile per-packet one-way delay: 256.319 ms

Loss rate: 14.75%

Run 2: Report of Verus — Data Link

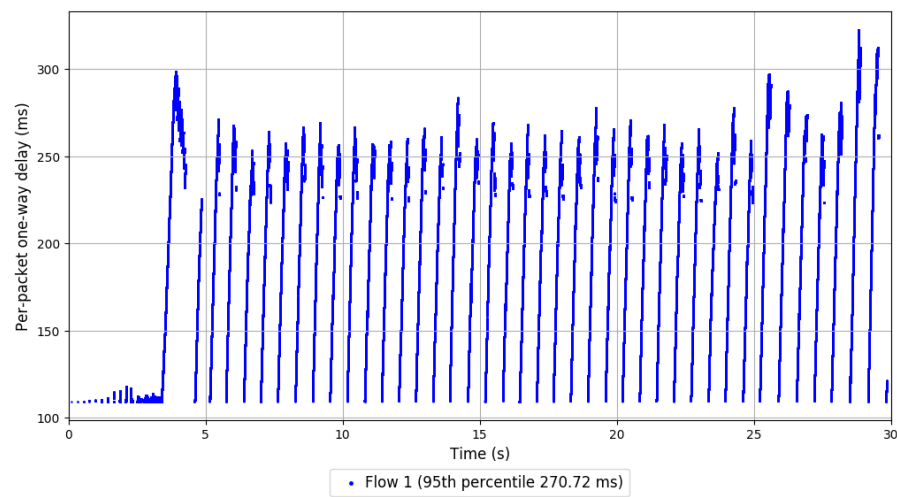
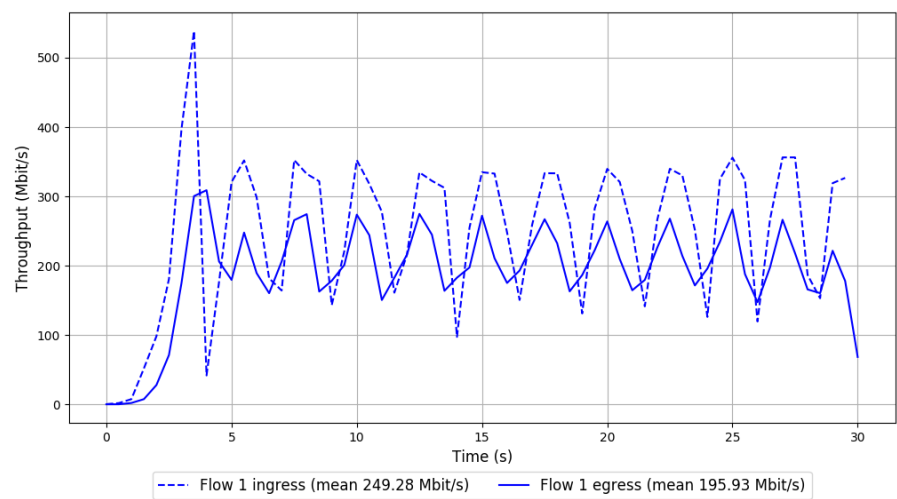


Run 3: Statistics of Verus

Start at: 2018-10-26 00:30:59
End at: 2018-10-26 00:31:29
Local clock offset: 27.303 ms
Remote clock offset: 31.433 ms

Below is generated by plot.py at 2018-10-26 03:00:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 195.93 Mbit/s
95th percentile per-packet one-way delay: 270.722 ms
Loss rate: 21.98%
-- Flow 1:
Average throughput: 195.93 Mbit/s
95th percentile per-packet one-way delay: 270.722 ms
Loss rate: 21.98%

Run 3: Report of Verus — Data Link

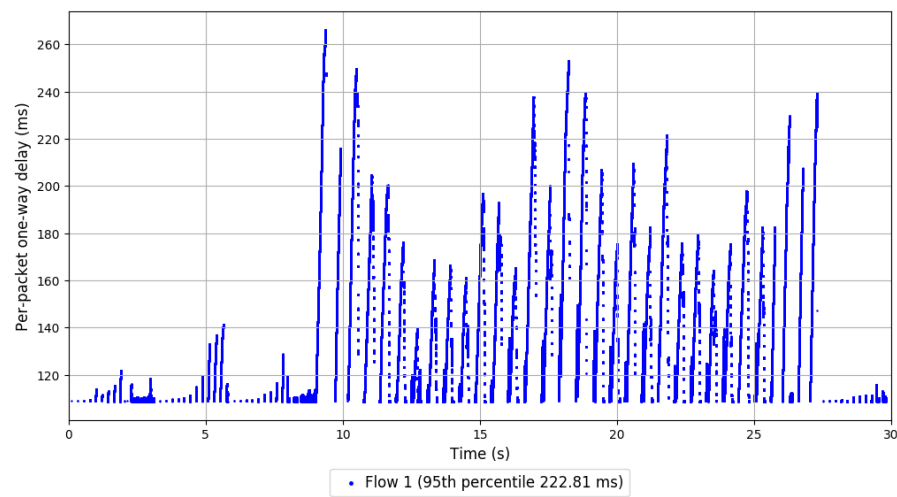
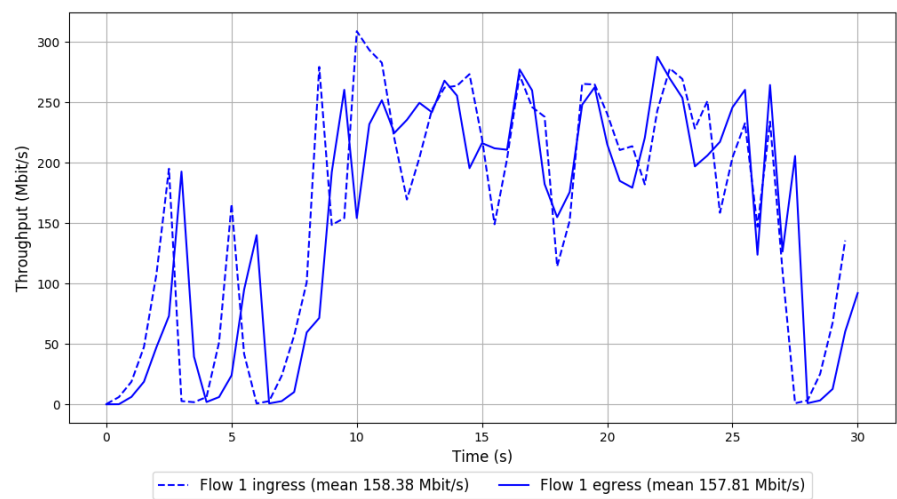


Run 4: Statistics of Verus

Start at: 2018-10-26 00:57:06
End at: 2018-10-26 00:57:36
Local clock offset: 13.537 ms
Remote clock offset: 16.255 ms

Below is generated by plot.py at 2018-10-26 03:00:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 157.81 Mbit/s
95th percentile per-packet one-way delay: 222.814 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 157.81 Mbit/s
95th percentile per-packet one-way delay: 222.814 ms
Loss rate: 1.24%

Run 4: Report of Verus — Data Link

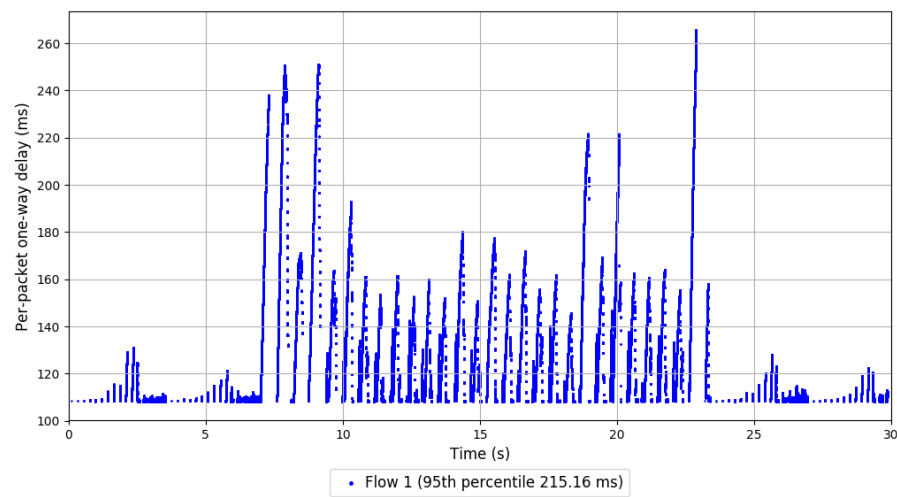
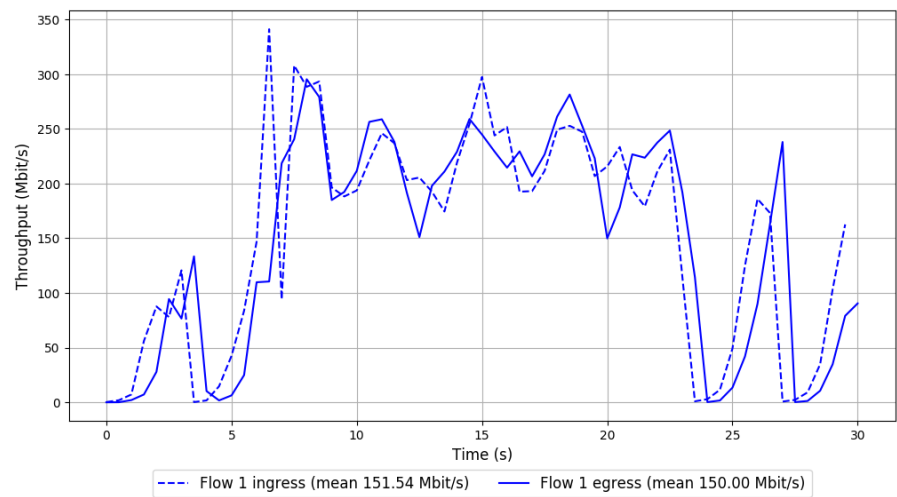


Run 5: Statistics of Verus

Start at: 2018-10-26 01:22:59
End at: 2018-10-26 01:23:29
Local clock offset: 7.686 ms
Remote clock offset: 10.517 ms

Below is generated by plot.py at 2018-10-26 03:00:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 150.00 Mbit/s
95th percentile per-packet one-way delay: 215.162 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 150.00 Mbit/s
95th percentile per-packet one-way delay: 215.162 ms
Loss rate: 1.75%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-25 23:43:32

End at: 2018-10-25 23:44:02

Local clock offset: 8.51 ms

Remote clock offset: 9.791 ms

Below is generated by plot.py at 2018-10-26 03:02:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 382.10 Mbit/s

95th percentile per-packet one-way delay: 109.495 ms

Loss rate: 0.84%

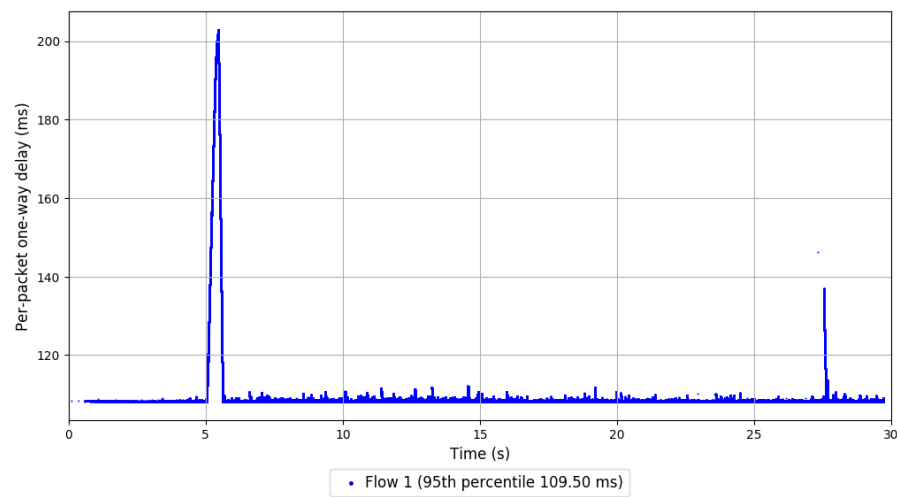
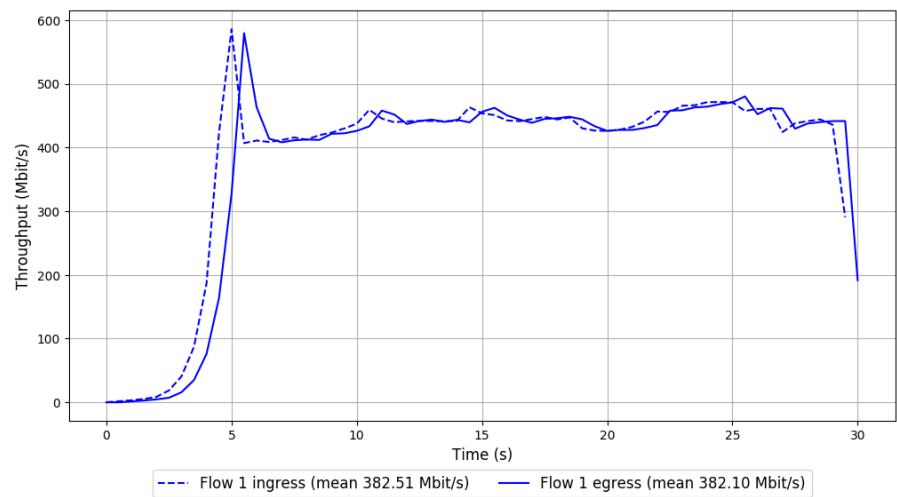
-- Flow 1:

Average throughput: 382.10 Mbit/s

95th percentile per-packet one-way delay: 109.495 ms

Loss rate: 0.84%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 00:09:24

End at: 2018-10-26 00:09:54

Local clock offset: 20.579 ms

Remote clock offset: 23.255 ms

Below is generated by plot.py at 2018-10-26 03:02:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 374.03 Mbit/s

95th percentile per-packet one-way delay: 129.228 ms

Loss rate: 1.04%

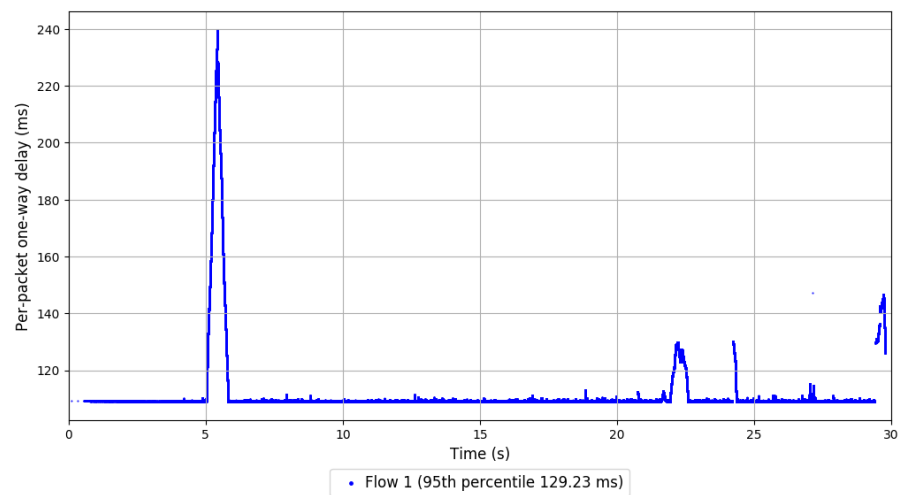
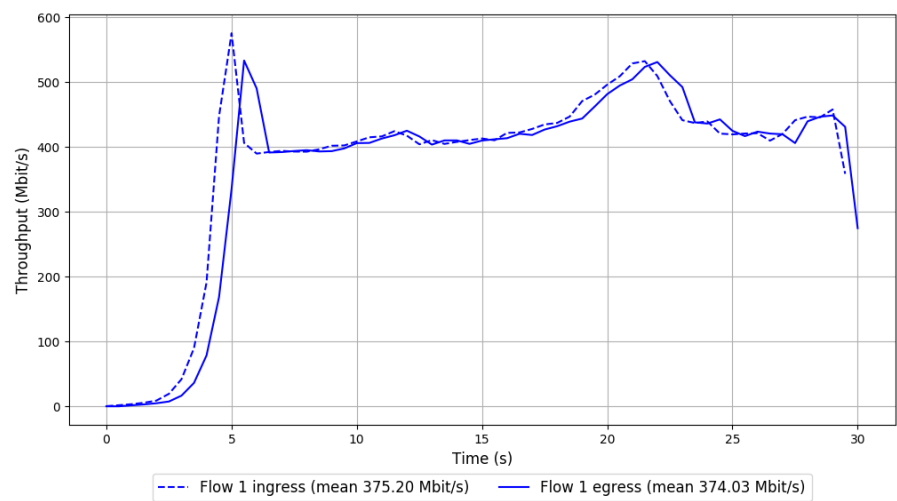
-- Flow 1:

Average throughput: 374.03 Mbit/s

95th percentile per-packet one-way delay: 129.228 ms

Loss rate: 1.04%

Run 2: Report of PCC-Vivace — Data Link

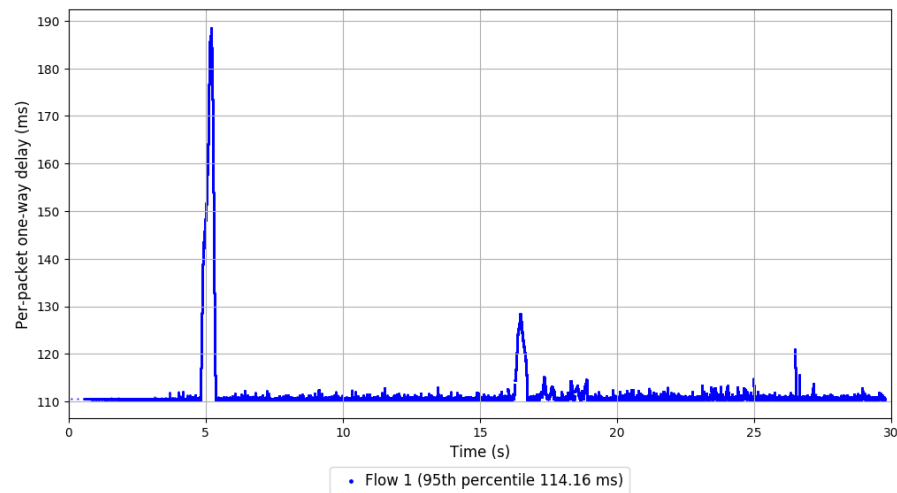
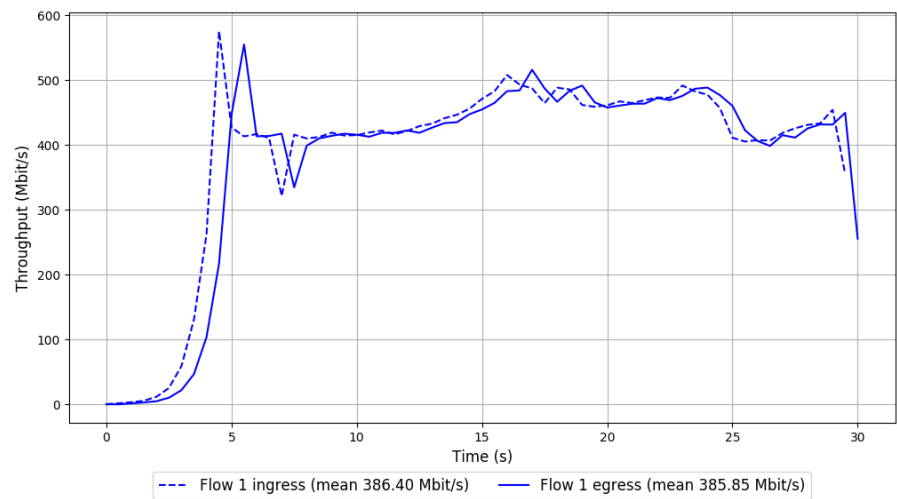


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 00:35:23
End at: 2018-10-26 00:35:53
Local clock offset: 33.181 ms
Remote clock offset: 36.506 ms

Below is generated by plot.py at 2018-10-26 03:03:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 385.85 Mbit/s
95th percentile per-packet one-way delay: 114.163 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 385.85 Mbit/s
95th percentile per-packet one-way delay: 114.163 ms
Loss rate: 0.88%

Run 3: Report of PCC-Vivace — Data Link

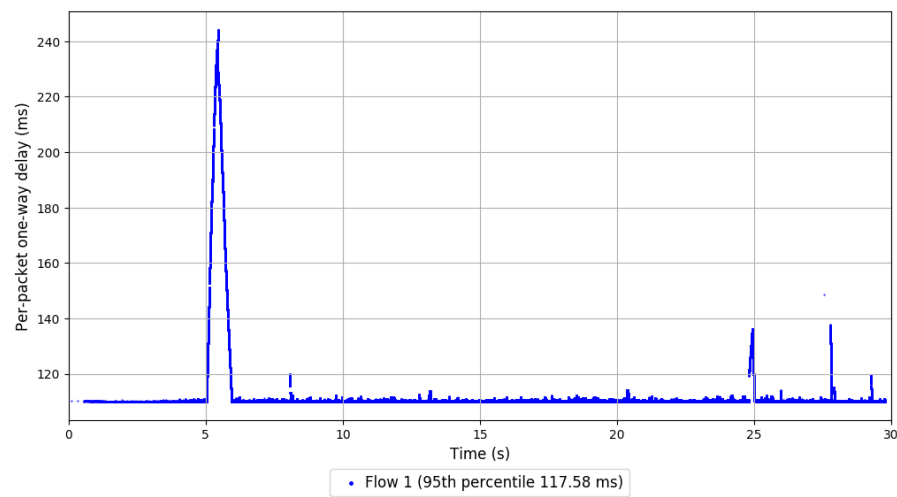
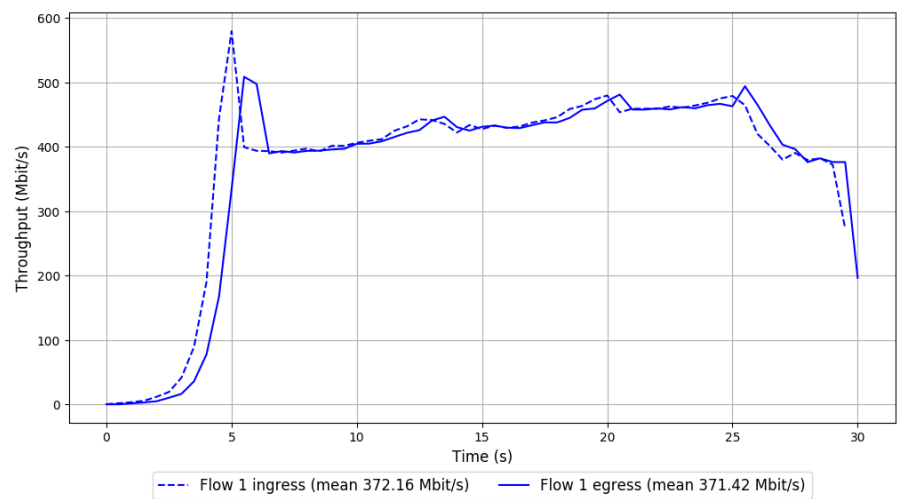


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 01:01:23
End at: 2018-10-26 01:01:53
Local clock offset: 14.609 ms
Remote clock offset: 16.183 ms

Below is generated by plot.py at 2018-10-26 03:03:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 371.42 Mbit/s
95th percentile per-packet one-way delay: 117.579 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 371.42 Mbit/s
95th percentile per-packet one-way delay: 117.579 ms
Loss rate: 0.93%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 01:27:15

End at: 2018-10-26 01:27:45

Local clock offset: 6.651 ms

Remote clock offset: 8.012 ms

Below is generated by plot.py at 2018-10-26 03:03:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 381.38 Mbit/s

95th percentile per-packet one-way delay: 109.672 ms

Loss rate: 0.76%

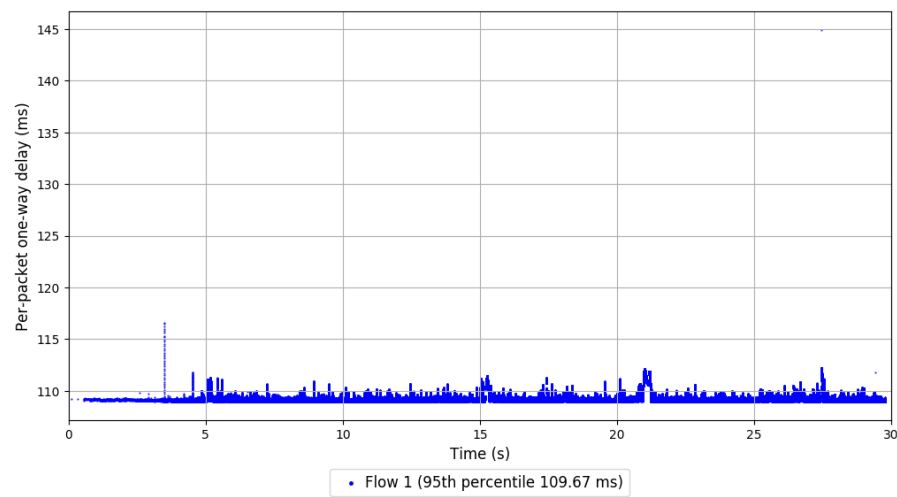
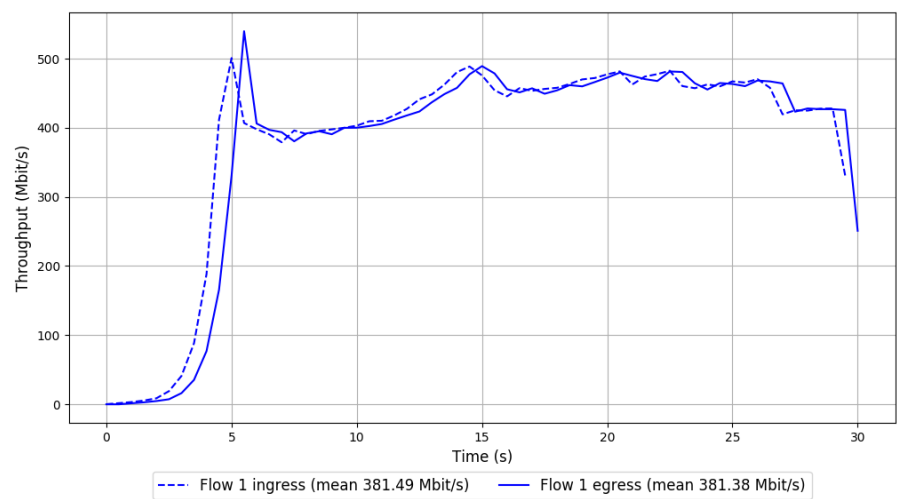
-- Flow 1:

Average throughput: 381.38 Mbit/s

95th percentile per-packet one-way delay: 109.672 ms

Loss rate: 0.76%

Run 5: Report of PCC-Vivace — Data Link

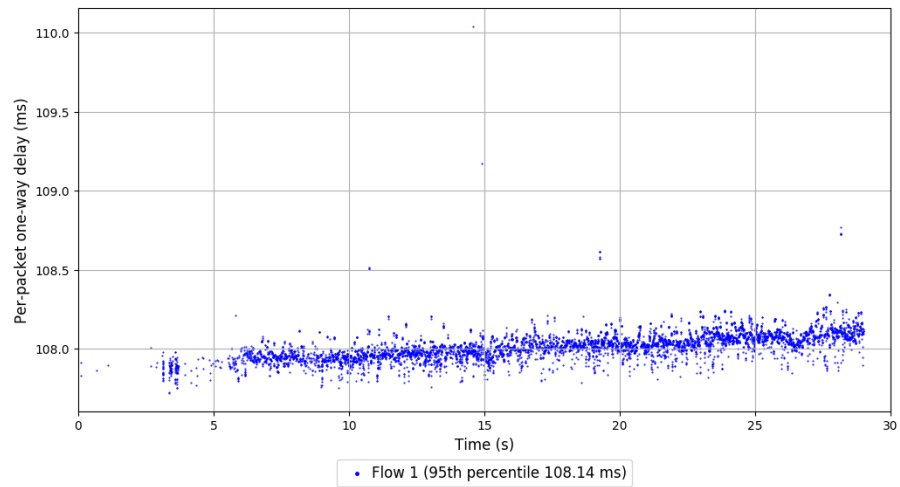
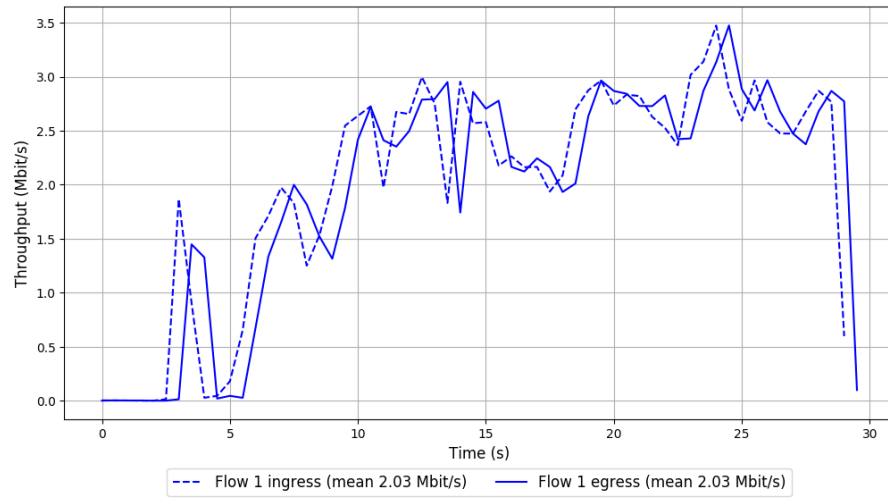


```
Run 1: Statistics of WebRTC media

Start at: 2018-10-25 23:46:33
End at: 2018-10-25 23:47:03
Local clock offset: 11.013 ms
Remote clock offset: 14.035 ms

# Below is generated by plot.py at 2018-10-26 03:03:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 108.143 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 108.143 ms
Loss rate: 0.92%
```

Run 1: Report of WebRTC media — Data Link

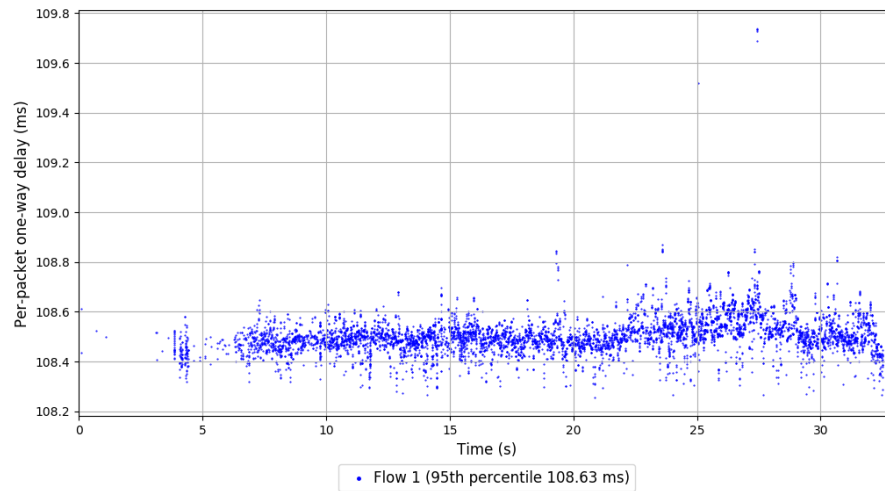
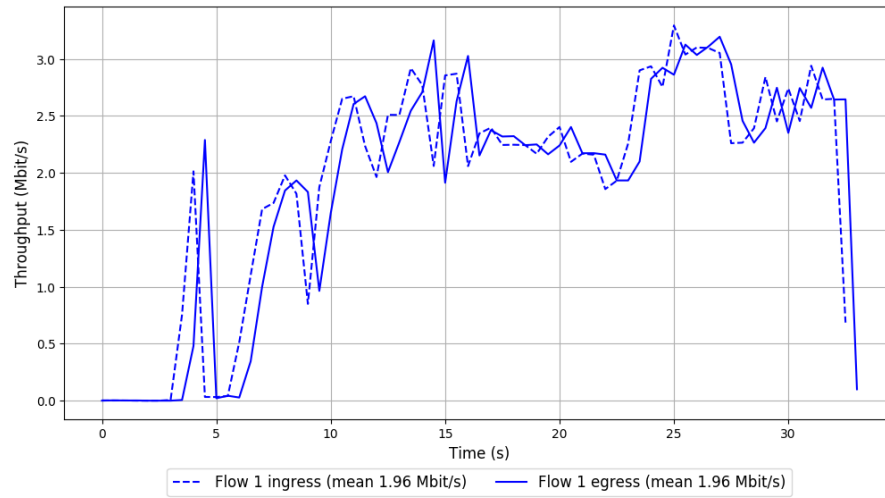


Run 2: Statistics of WebRTC media

Start at: 2018-10-26 00:12:25
End at: 2018-10-26 00:12:55
Local clock offset: 18.14 ms
Remote clock offset: 21.102 ms

Below is generated by plot.py at 2018-10-26 03:03:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 108.626 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 108.626 ms
Loss rate: 0.92%

Run 2: Report of WebRTC media — Data Link

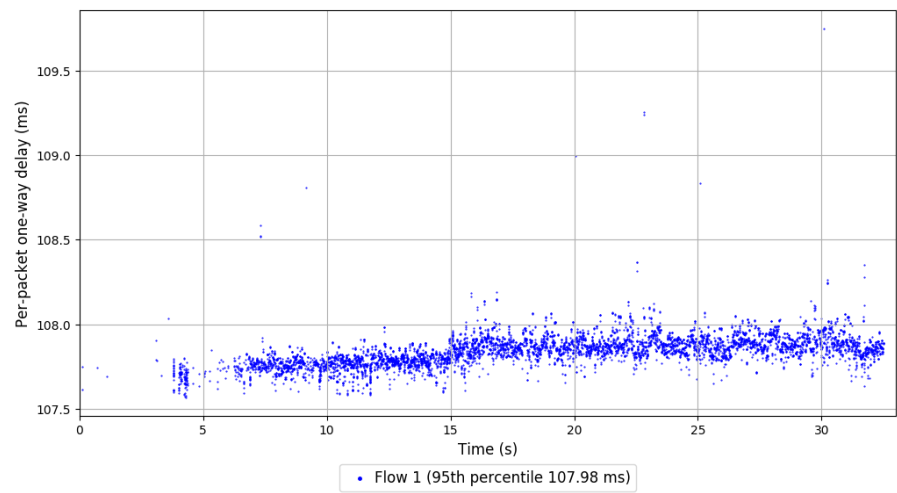
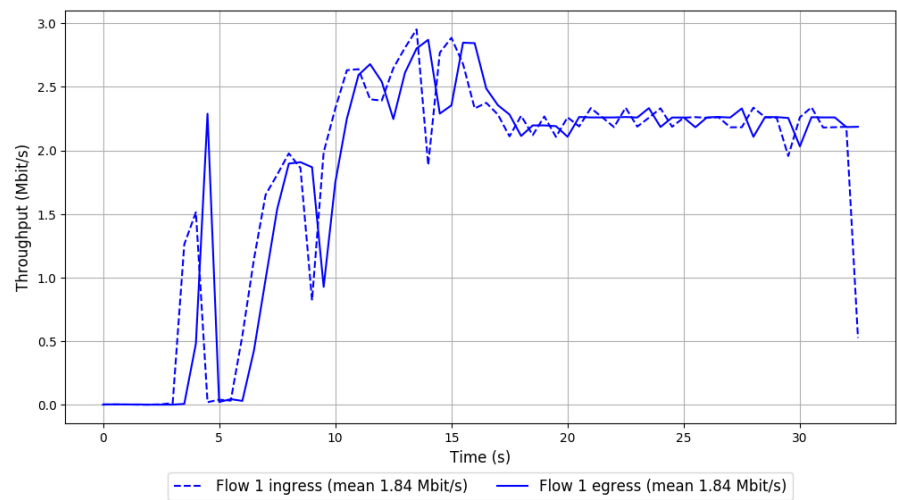


Run 3: Statistics of WebRTC media

Start at: 2018-10-26 00:38:25
End at: 2018-10-26 00:38:55
Local clock offset: 34.529 ms
Remote clock offset: 40.204 ms

Below is generated by plot.py at 2018-10-26 03:03:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 107.976 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 107.976 ms
Loss rate: 0.81%

Run 3: Report of WebRTC media — Data Link

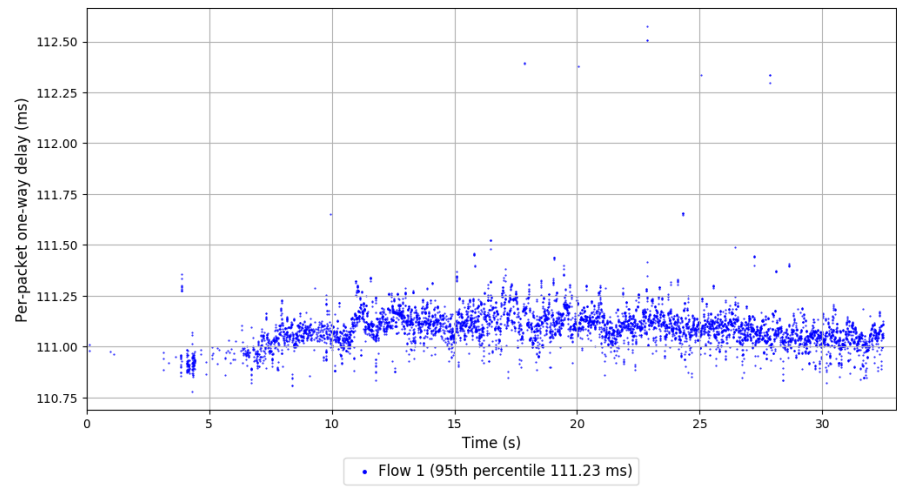
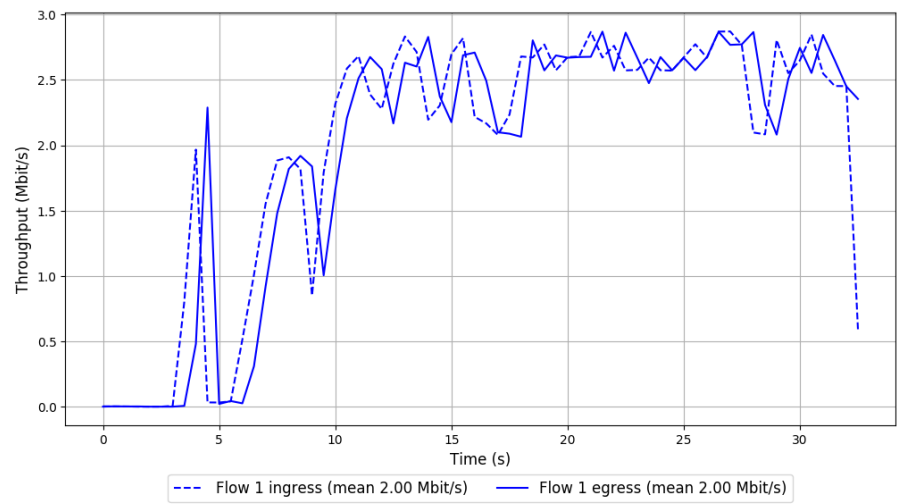


Run 4: Statistics of WebRTC media

Start at: 2018-10-26 01:04:23
End at: 2018-10-26 01:04:53
Local clock offset: 15.982 ms
Remote clock offset: 16.894 ms

Below is generated by plot.py at 2018-10-26 03:03:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 111.233 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 111.233 ms
Loss rate: 0.90%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-26 01:30:16

End at: 2018-10-26 01:30:46

Local clock offset: 6.743 ms

Remote clock offset: 7.791 ms

Below is generated by plot.py at 2018-10-26 03:03:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 109.804 ms

Loss rate: 0.82%

-- Flow 1:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 109.804 ms

Loss rate: 0.82%

Run 5: Report of WebRTC media — Data Link

