

Pantheon Report

Generated at 2018-11-30 08:04:23 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

System info:

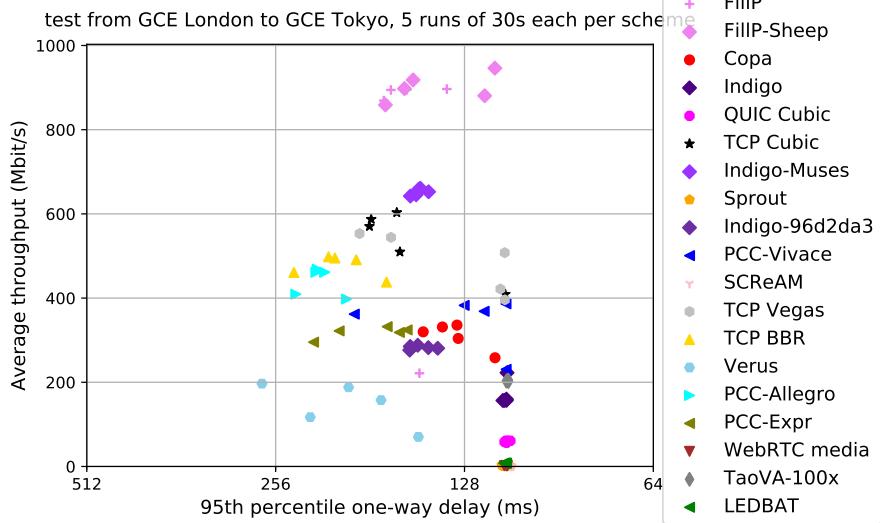
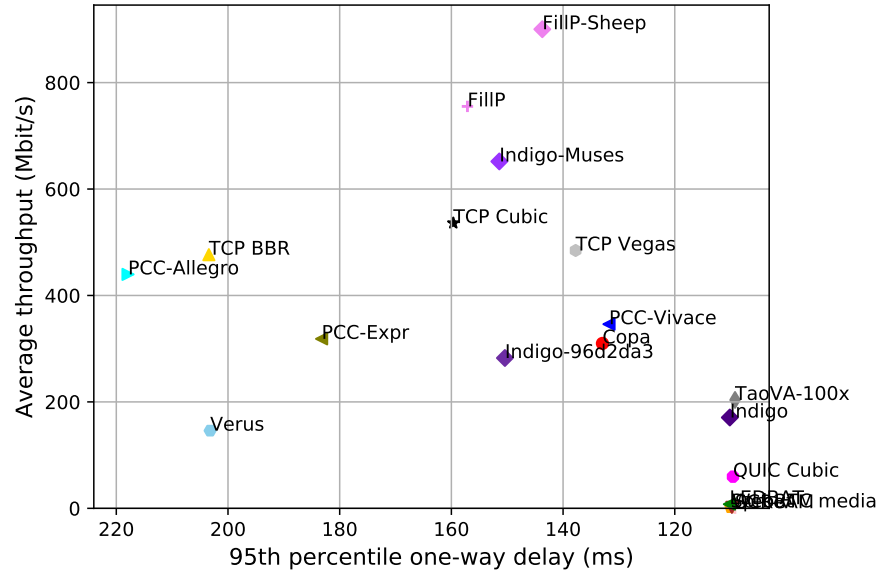
```
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
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)



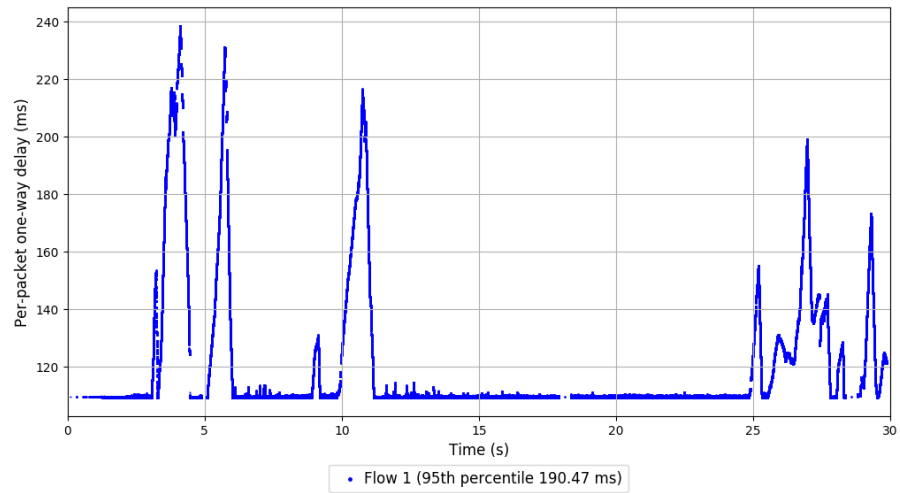
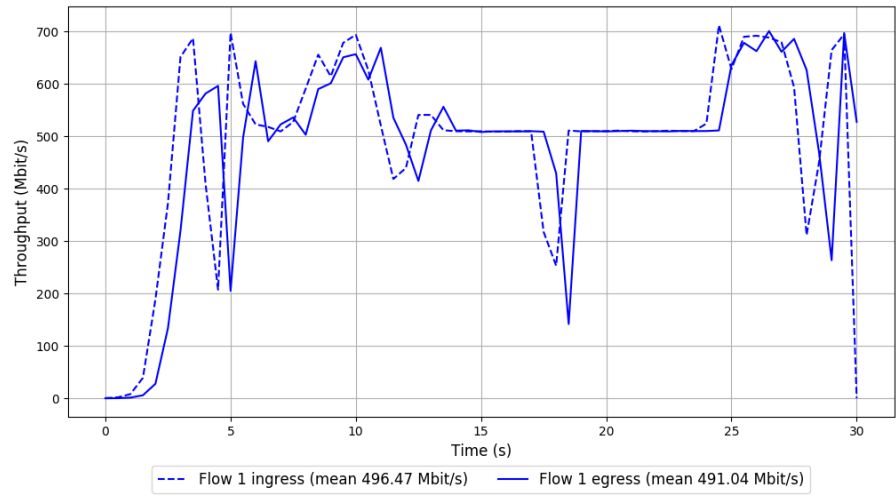
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	476.63	203.42	1.92
Copa	5	309.87	132.95	0.76
TCP Cubic	5	536.00	159.65	0.86
FillP	5	755.29	157.12	1.82
FillP-Sheep	5	900.29	143.72	1.71
Indigo	5	170.67	110.14	0.78
Indigo-96d2da3	5	282.49	150.42	0.58
LEDBAT	5	7.82	110.21	1.46
Indigo-Muses	5	651.87	151.42	0.97
PCC-Allegro	5	439.60	217.90	3.51
PCC-Expr	5	318.47	183.24	3.14
QUIC Cubic	5	59.50	109.58	1.15
SCReAM	5	0.22	109.24	0.69
Sprout	5	1.60	109.99	0.77
TaoVA-100x	5	203.69	109.21	0.76
TCP Vegas	5	484.54	137.75	0.65
Verus	5	145.99	203.20	5.27
PCC-Vivace	5	346.07	131.78	0.99
WebRTC media	5	1.81	109.78	0.99

Run 1: Statistics of TCP BBR

Start at: 2018-11-30 04:00:49
End at: 2018-11-30 04:01:19
Local clock offset: -0.155 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-11-30 06:37:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 491.04 Mbit/s
95th percentile per-packet one-way delay: 190.466 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 491.04 Mbit/s
95th percentile per-packet one-way delay: 190.466 ms
Loss rate: 1.82%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-11-30 04:29:09

End at: 2018-11-30 04:29:39

Local clock offset: 0.688 ms

Remote clock offset: -0.172 ms

Below is generated by plot.py at 2018-11-30 06:37:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 498.12 Mbit/s

95th percentile per-packet one-way delay: 210.832 ms

Loss rate: 2.00%

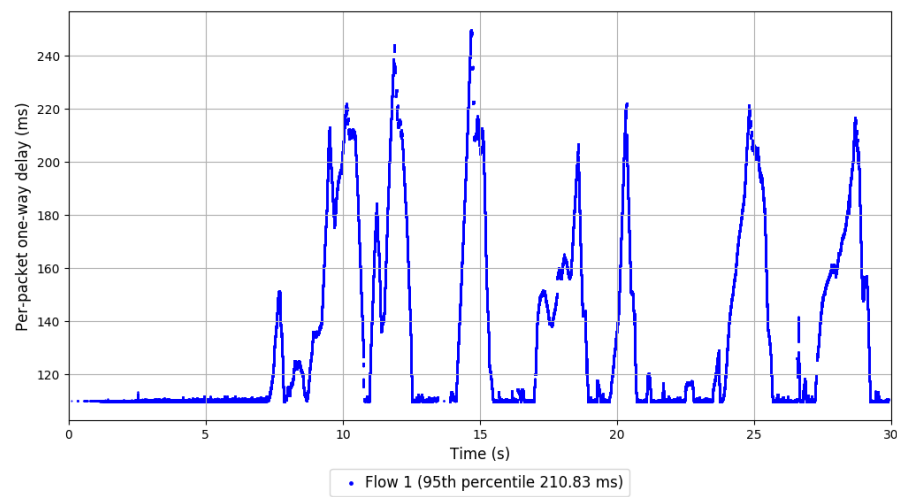
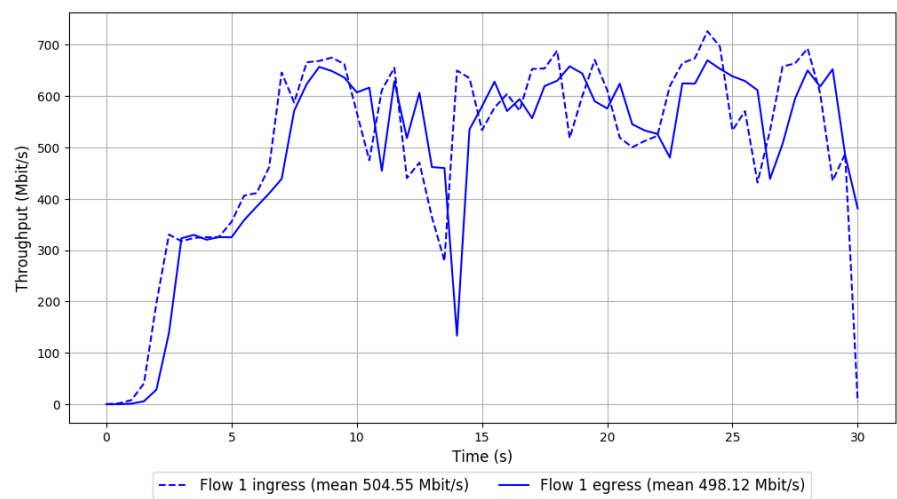
-- Flow 1:

Average throughput: 498.12 Mbit/s

95th percentile per-packet one-way delay: 210.832 ms

Loss rate: 2.00%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-11-30 04:58:14

End at: 2018-11-30 04:58:44

Local clock offset: -0.012 ms

Remote clock offset: 0.232 ms

Below is generated by plot.py at 2018-11-30 06:37:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 495.13 Mbit/s

95th percentile per-packet one-way delay: 205.946 ms

Loss rate: 1.19%

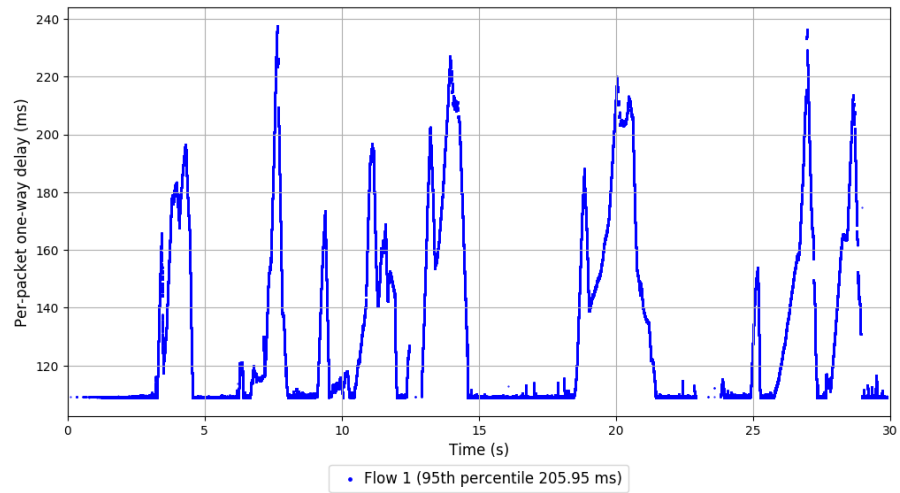
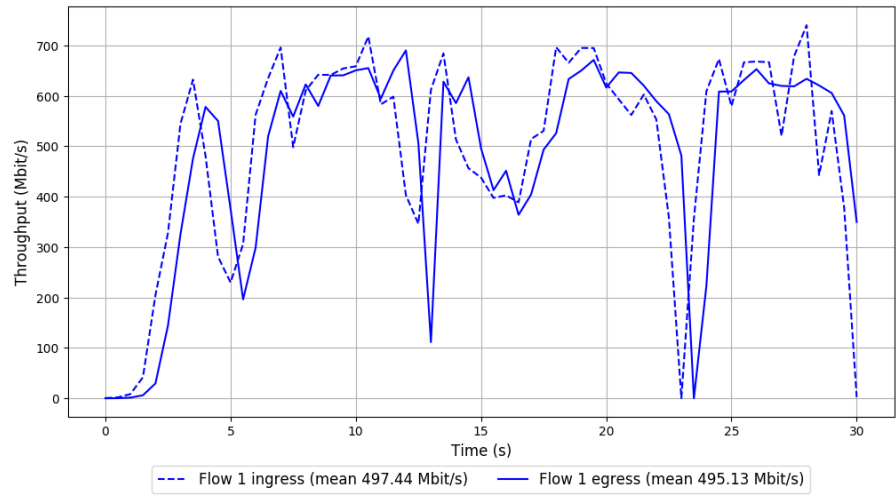
-- Flow 1:

Average throughput: 495.13 Mbit/s

95th percentile per-packet one-way delay: 205.946 ms

Loss rate: 1.19%

Run 3: Report of TCP BBR — Data Link

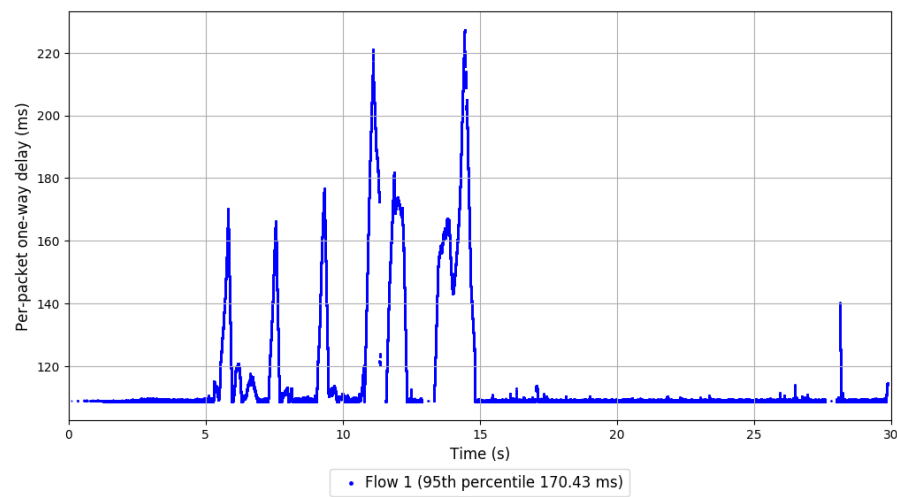
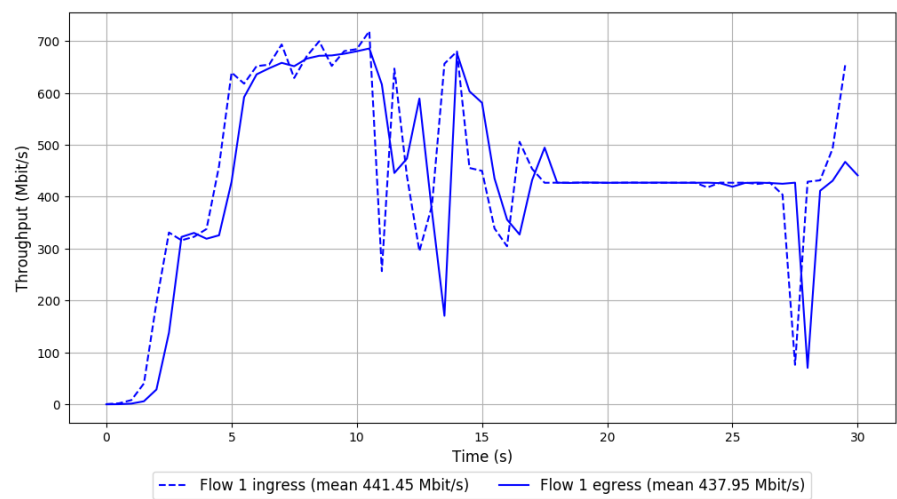


Run 4: Statistics of TCP BBR

Start at: 2018-11-30 05:27:04
End at: 2018-11-30 05:27:34
Local clock offset: -0.139 ms
Remote clock offset: -0.495 ms

Below is generated by plot.py at 2018-11-30 06:37:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 437.95 Mbit/s
95th percentile per-packet one-way delay: 170.429 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 437.95 Mbit/s
95th percentile per-packet one-way delay: 170.429 ms
Loss rate: 1.52%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-11-30 05:55:55

End at: 2018-11-30 05:56:25

Local clock offset: 0.011 ms

Remote clock offset: -0.126 ms

Below is generated by plot.py at 2018-11-30 06:37:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 460.89 Mbit/s

95th percentile per-packet one-way delay: 239.438 ms

Loss rate: 3.09%

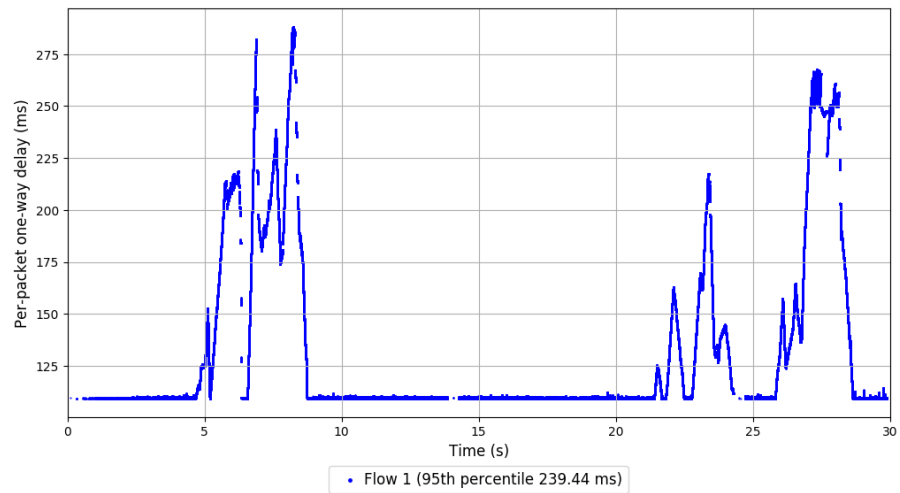
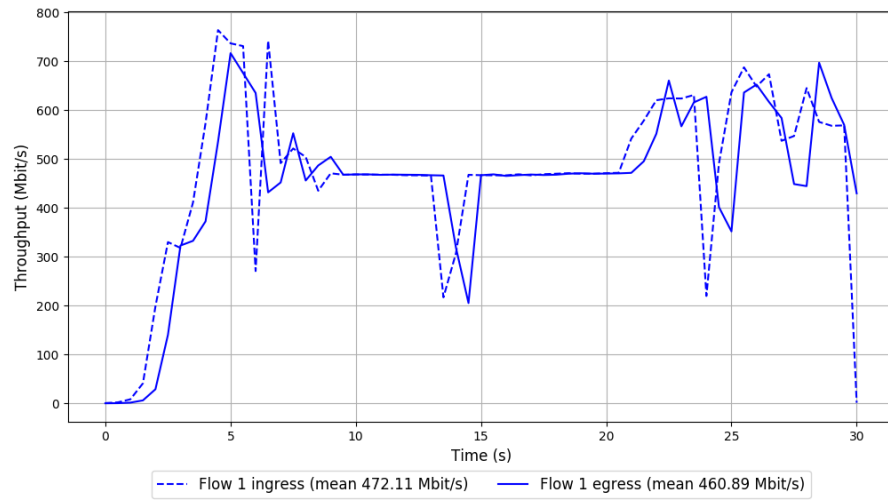
-- Flow 1:

Average throughput: 460.89 Mbit/s

95th percentile per-packet one-way delay: 239.438 ms

Loss rate: 3.09%

Run 5: Report of TCP BBR — Data Link

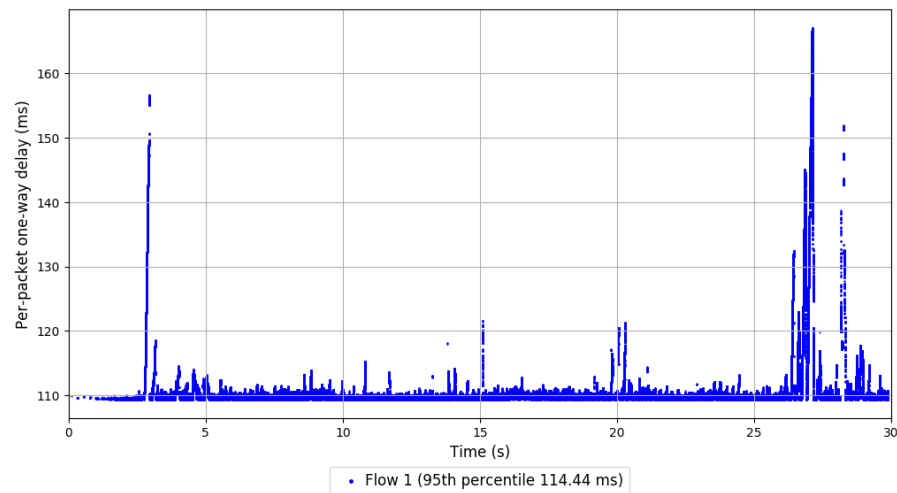
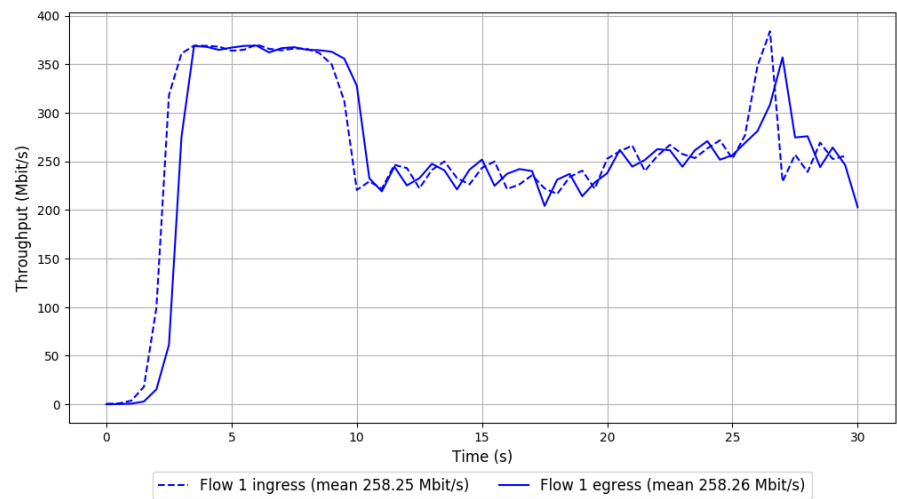


Run 1: Statistics of Copa

Start at: 2018-11-30 04:07:05
End at: 2018-11-30 04:07:35
Local clock offset: -0.099 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-11-30 06:37:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 258.26 Mbit/s
95th percentile per-packet one-way delay: 114.441 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 258.26 Mbit/s
95th percentile per-packet one-way delay: 114.441 ms
Loss rate: 0.73%

Run 1: Report of Copa — Data Link

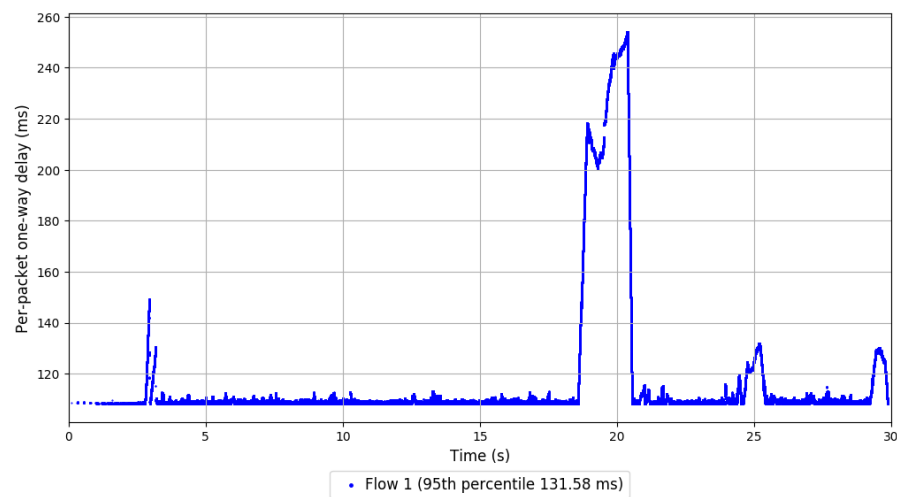
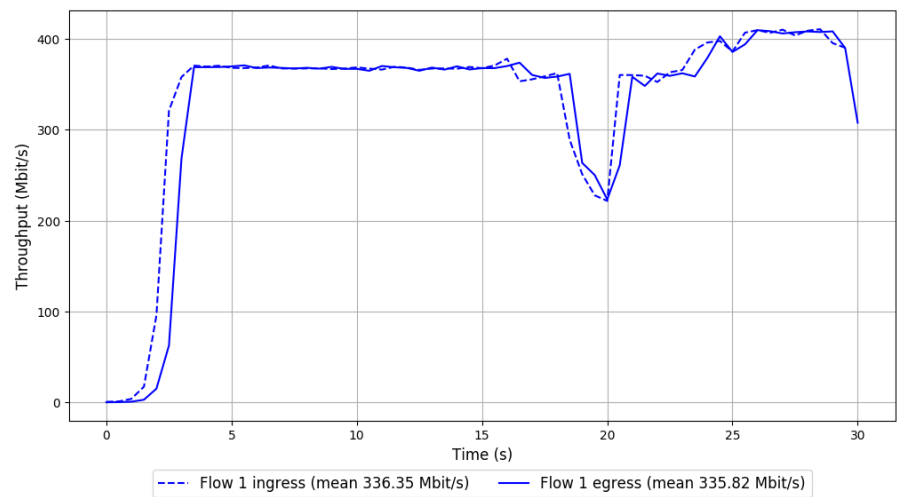


Run 2: Statistics of Copa

Start at: 2018-11-30 04:35:30
End at: 2018-11-30 04:36:00
Local clock offset: -0.685 ms
Remote clock offset: -0.149 ms

Below is generated by plot.py at 2018-11-30 06:38:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 335.82 Mbit/s
95th percentile per-packet one-way delay: 131.580 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 335.82 Mbit/s
95th percentile per-packet one-way delay: 131.580 ms
Loss rate: 0.89%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-11-30 05:04:37

End at: 2018-11-30 05:05:07

Local clock offset: -0.187 ms

Remote clock offset: 0.249 ms

Below is generated by plot.py at 2018-11-30 06:38:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 331.33 Mbit/s

95th percentile per-packet one-way delay: 138.811 ms

Loss rate: 0.85%

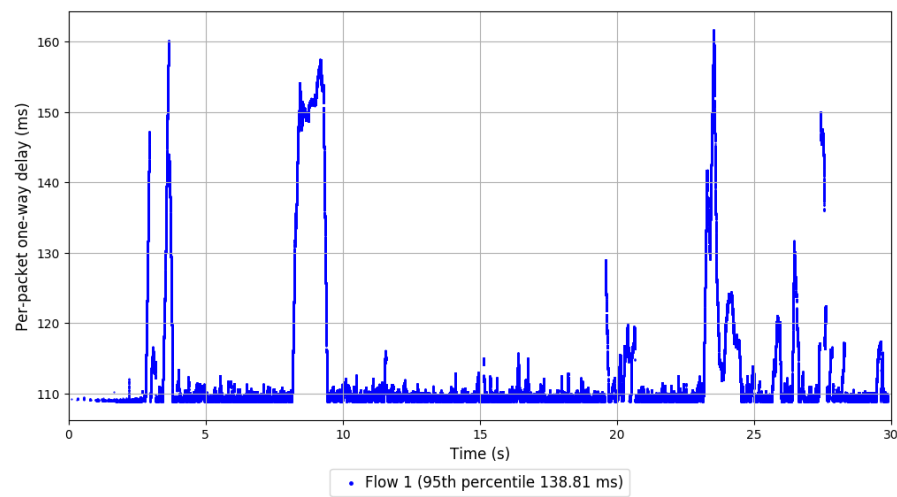
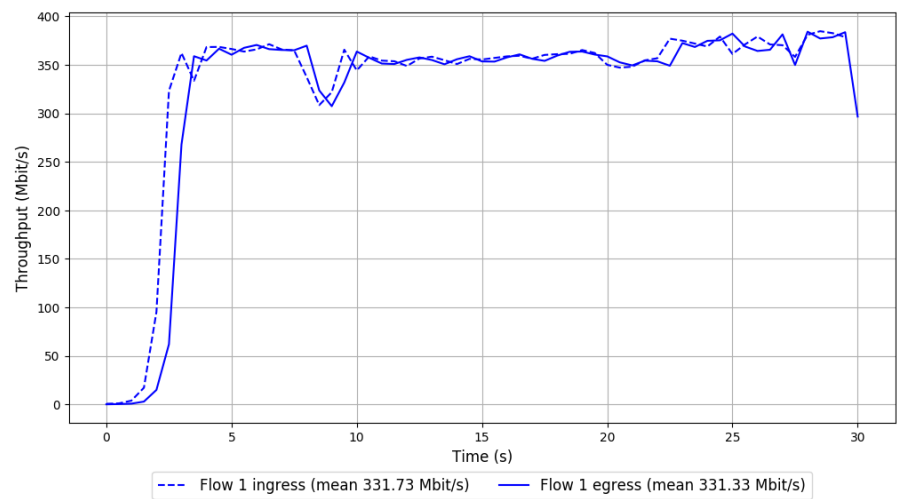
-- Flow 1:

Average throughput: 331.33 Mbit/s

95th percentile per-packet one-way delay: 138.811 ms

Loss rate: 0.85%

Run 3: Report of Copa — Data Link

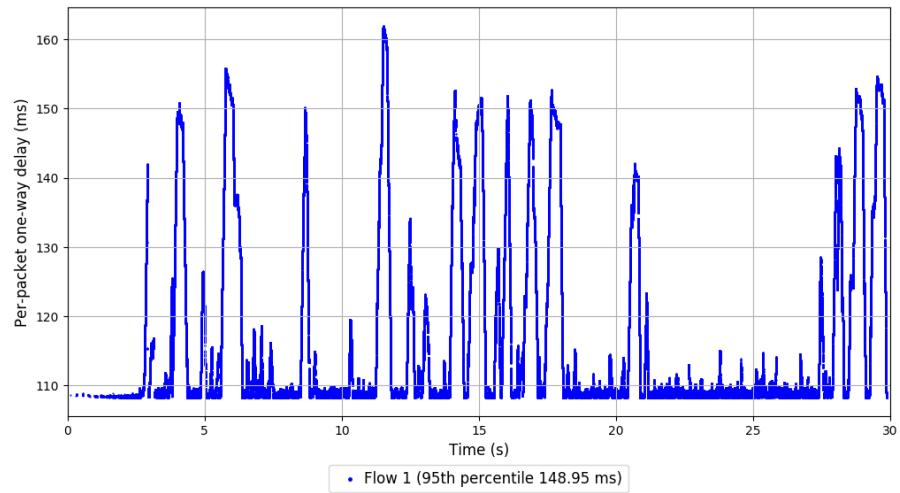
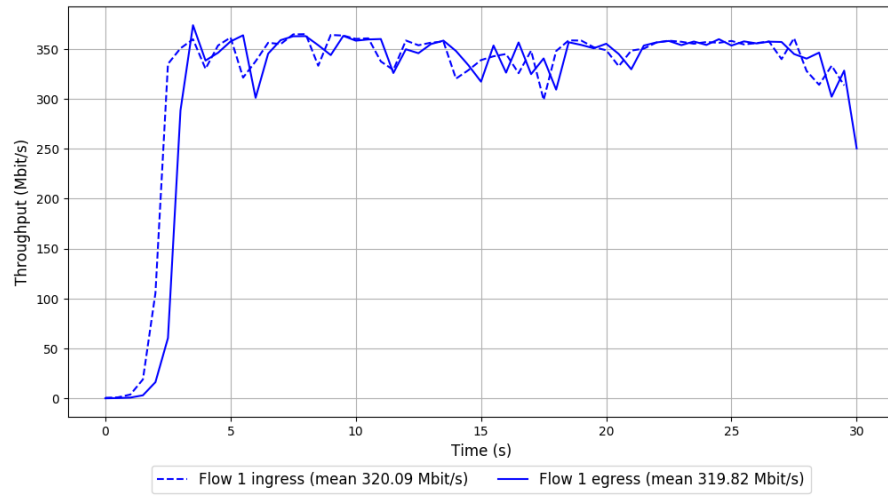


Run 4: Statistics of Copa

Start at: 2018-11-30 05:33:14
End at: 2018-11-30 05:33:44
Local clock offset: -0.19 ms
Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-11-30 06:47:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 319.82 Mbit/s
95th percentile per-packet one-way delay: 148.946 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 319.82 Mbit/s
95th percentile per-packet one-way delay: 148.946 ms
Loss rate: 0.81%

Run 4: Report of Copa — Data Link

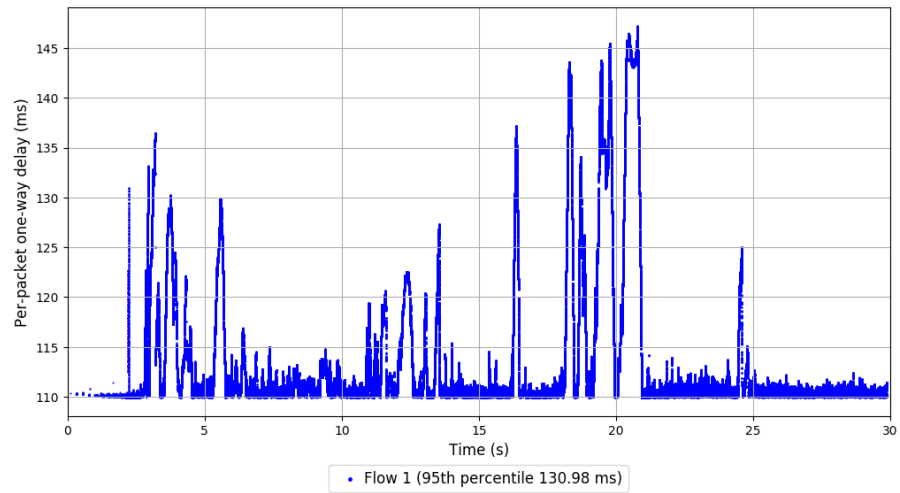
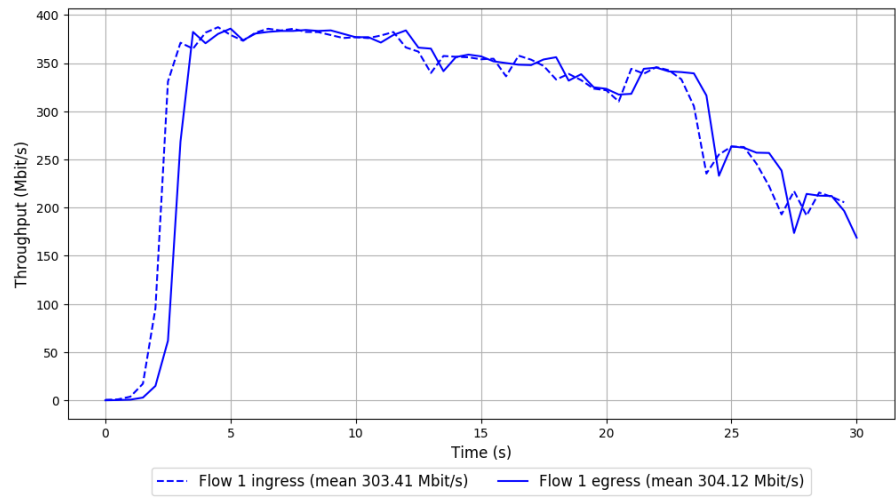


Run 5: Statistics of Copa

Start at: 2018-11-30 06:02:10
End at: 2018-11-30 06:02:40
Local clock offset: -0.018 ms
Remote clock offset: -0.465 ms

Below is generated by plot.py at 2018-11-30 06:47:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 304.12 Mbit/s
95th percentile per-packet one-way delay: 130.976 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 304.12 Mbit/s
95th percentile per-packet one-way delay: 130.976 ms
Loss rate: 0.50%

Run 5: Report of Copa — Data Link

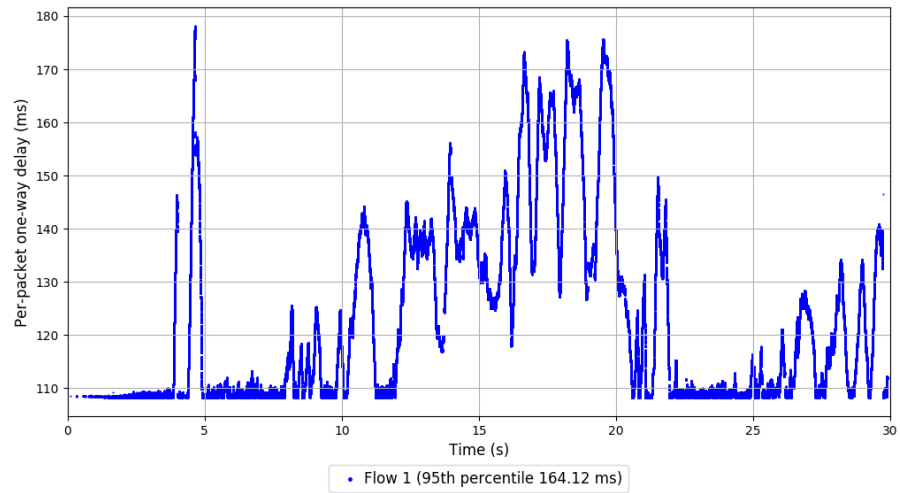
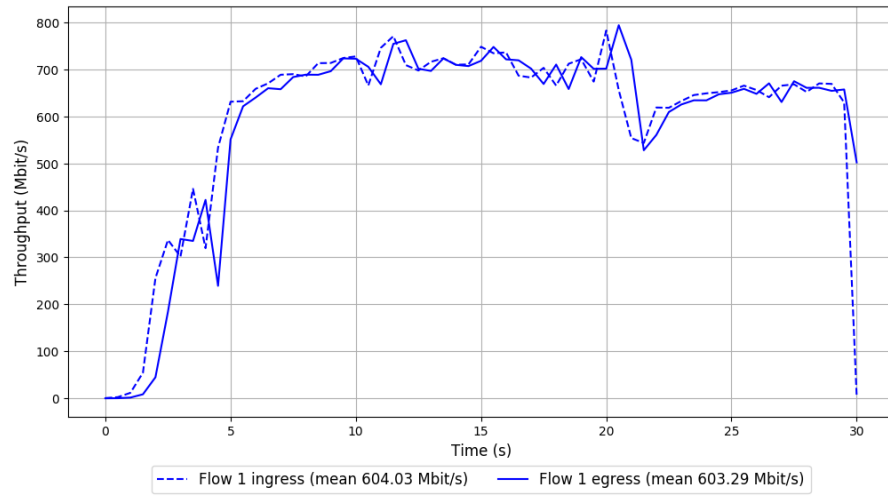


Run 1: Statistics of TCP Cubic

Start at: 2018-11-30 04:08:42
End at: 2018-11-30 04:09:12
Local clock offset: -0.124 ms
Remote clock offset: -0.097 ms

Below is generated by plot.py at 2018-11-30 06:48:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 603.29 Mbit/s
95th percentile per-packet one-way delay: 164.122 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 603.29 Mbit/s
95th percentile per-packet one-way delay: 164.122 ms
Loss rate: 0.84%

Run 1: Report of TCP Cubic — Data Link

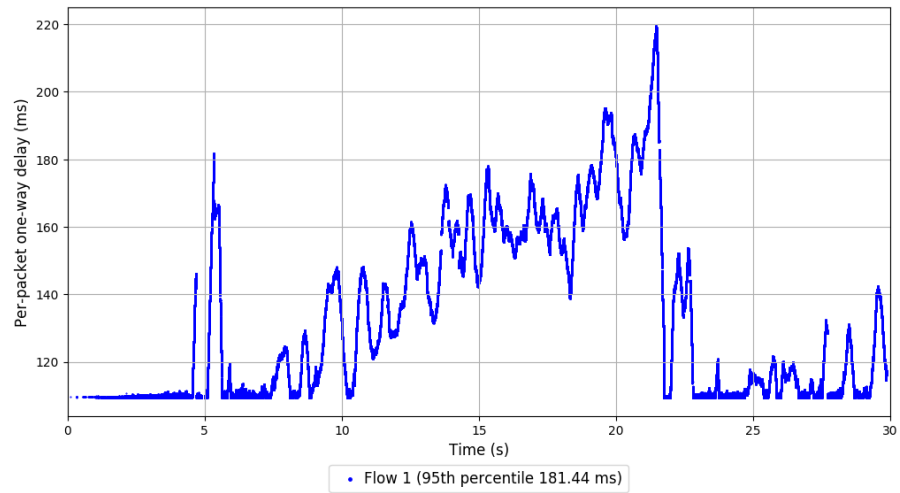
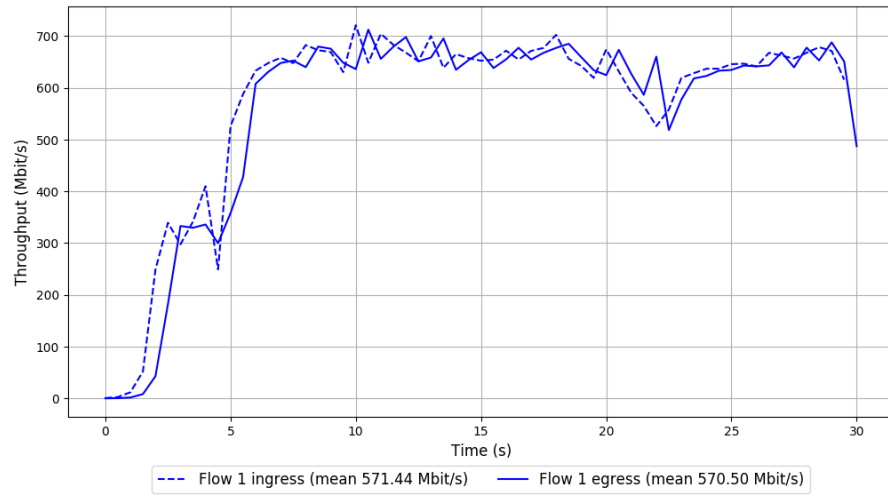


Run 2: Statistics of TCP Cubic

Start at: 2018-11-30 04:37:14
End at: 2018-11-30 04:37:44
Local clock offset: 0.003 ms
Remote clock offset: -0.156 ms

Below is generated by plot.py at 2018-11-30 06:48:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 570.50 Mbit/s
95th percentile per-packet one-way delay: 181.435 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 570.50 Mbit/s
95th percentile per-packet one-way delay: 181.435 ms
Loss rate: 0.89%

Run 2: Report of TCP Cubic — Data Link

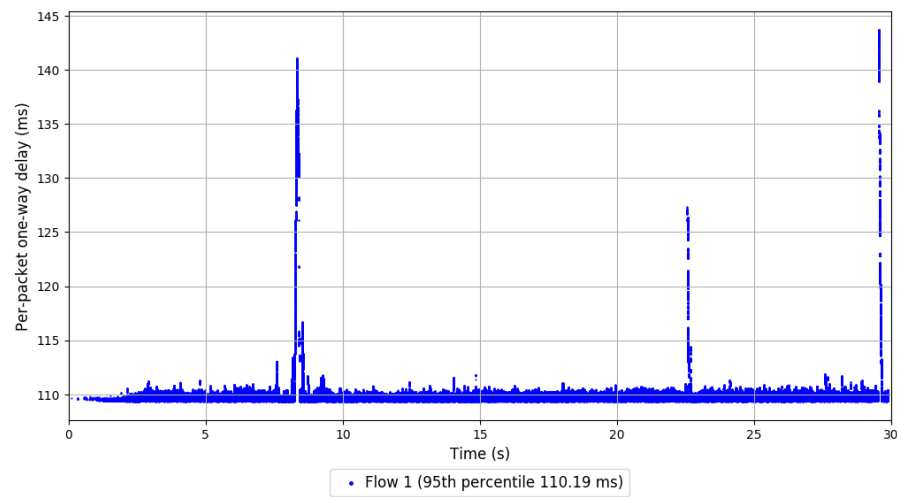
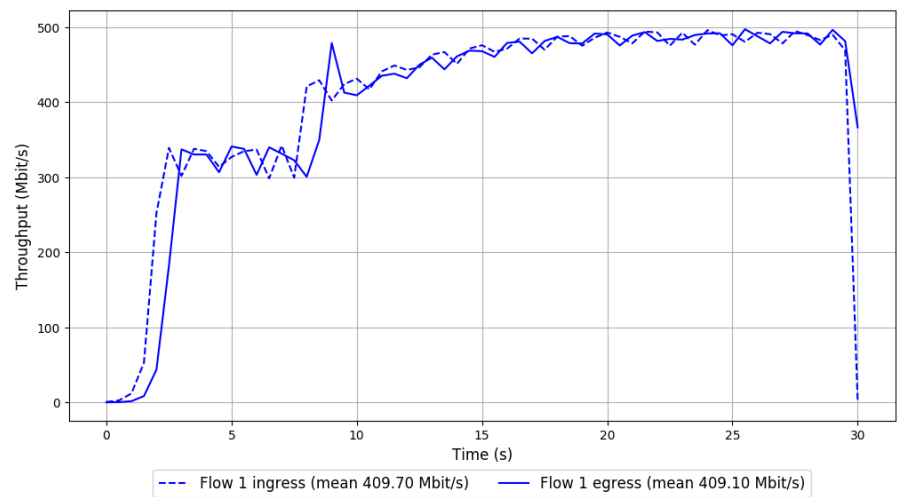


Run 3: Statistics of TCP Cubic

Start at: 2018-11-30 05:06:24
End at: 2018-11-30 05:06:54
Local clock offset: 0.352 ms
Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-11-30 06:48:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 409.10 Mbit/s
95th percentile per-packet one-way delay: 110.192 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 409.10 Mbit/s
95th percentile per-packet one-way delay: 110.192 ms
Loss rate: 0.87%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-11-30 05:34:57

End at: 2018-11-30 05:35:27

Local clock offset: -0.792 ms

Remote clock offset: 0.247 ms

Below is generated by plot.py at 2018-11-30 06:48:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 509.77 Mbit/s

95th percentile per-packet one-way delay: 162.245 ms

Loss rate: 0.73%

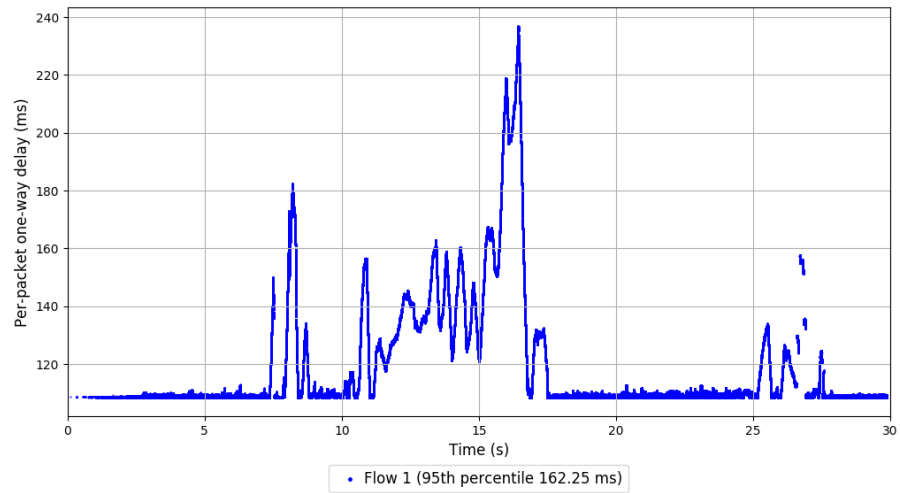
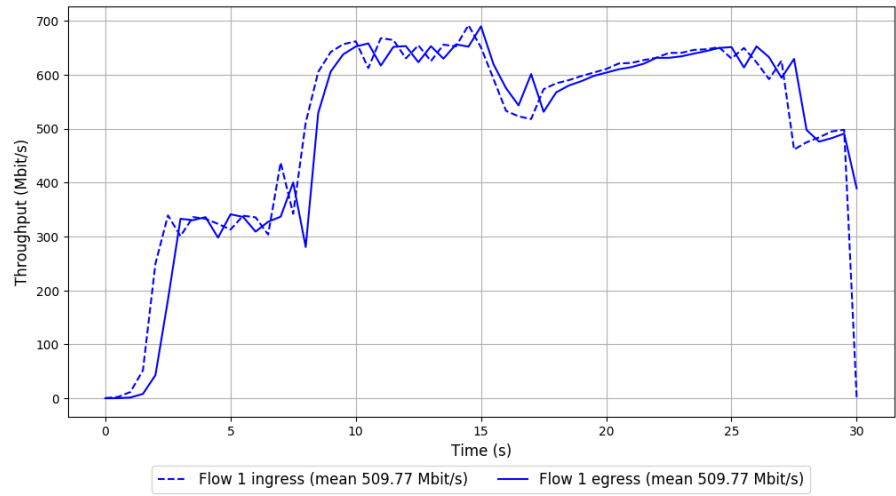
-- Flow 1:

Average throughput: 509.77 Mbit/s

95th percentile per-packet one-way delay: 162.245 ms

Loss rate: 0.73%

Run 4: Report of TCP Cubic — Data Link

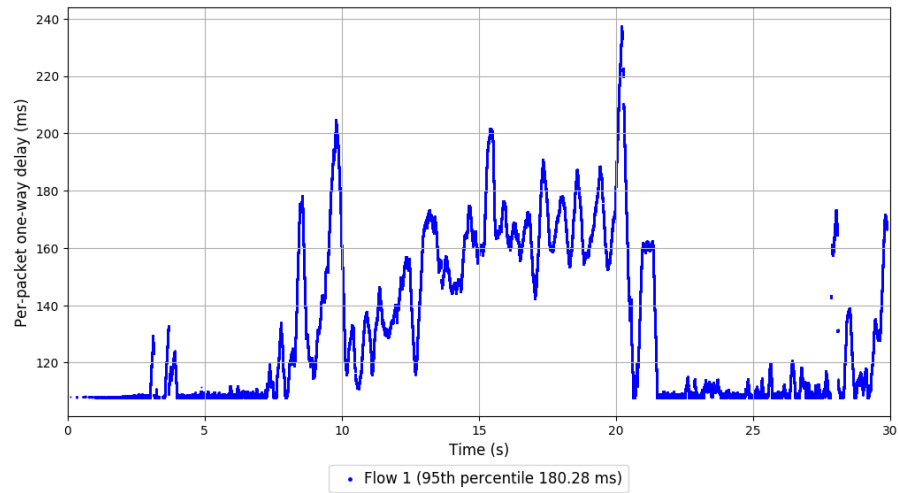
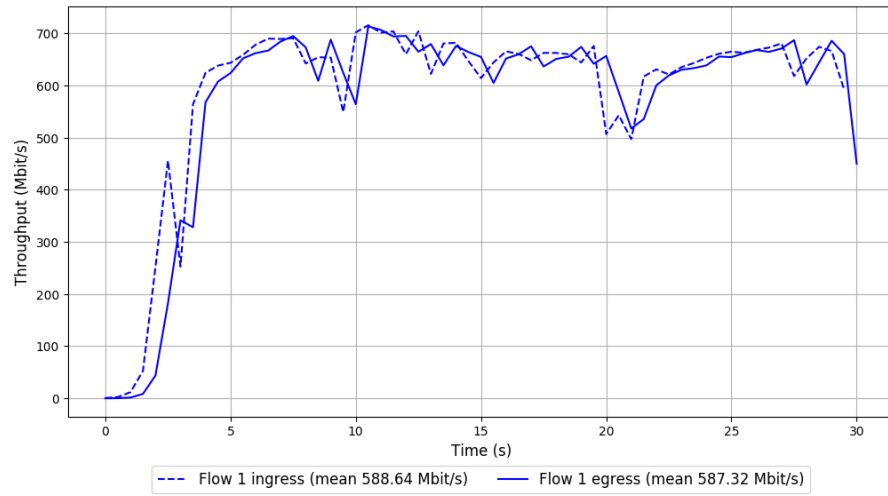


Run 5: Statistics of TCP Cubic

Start at: 2018-11-30 06:03:50
End at: 2018-11-30 06:04:20
Local clock offset: -0.779 ms
Remote clock offset: -0.152 ms

Below is generated by plot.py at 2018-11-30 06:49:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 587.32 Mbit/s
95th percentile per-packet one-way delay: 180.275 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 587.32 Mbit/s
95th percentile per-packet one-way delay: 180.275 ms
Loss rate: 0.95%

Run 5: Report of TCP Cubic — Data Link

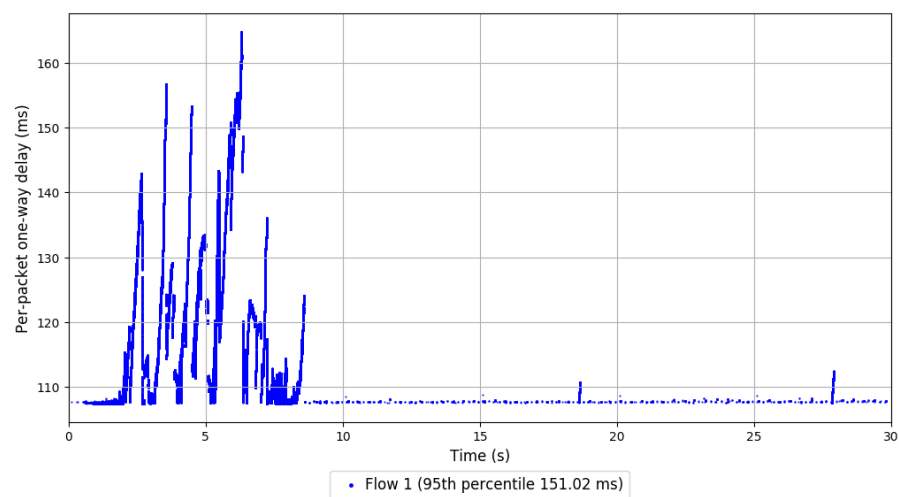
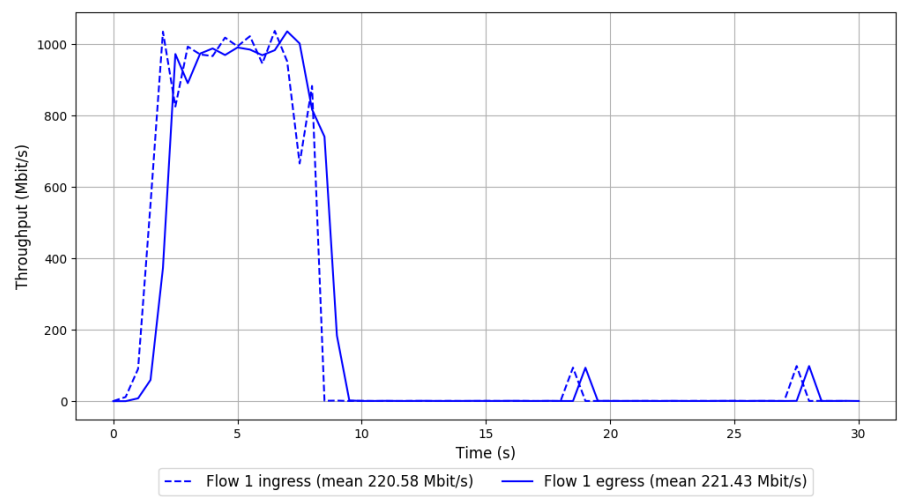


Run 1: Statistics of FillP

Start at: 2018-11-30 03:57:47
End at: 2018-11-30 03:58:17
Local clock offset: -0.876 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-11-30 06:49:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 221.43 Mbit/s
95th percentile per-packet one-way delay: 151.022 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 221.43 Mbit/s
95th percentile per-packet one-way delay: 151.022 ms
Loss rate: 0.16%

Run 1: Report of FillP — Data Link

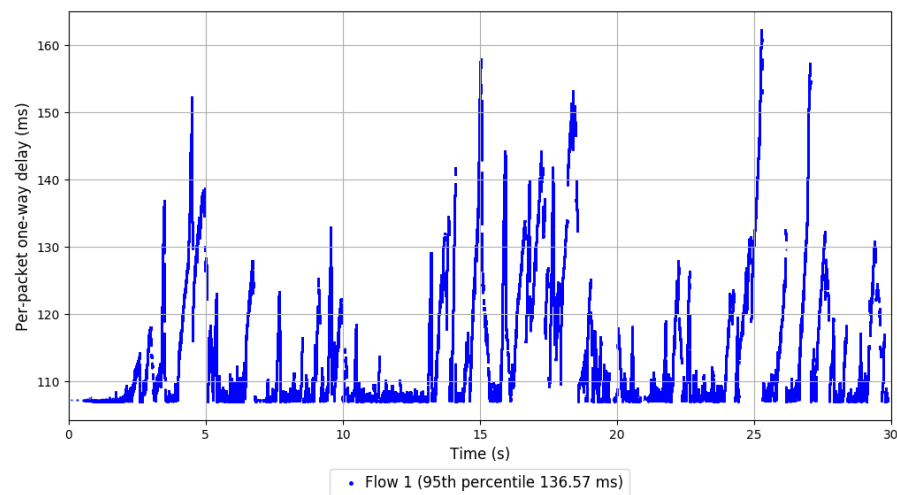
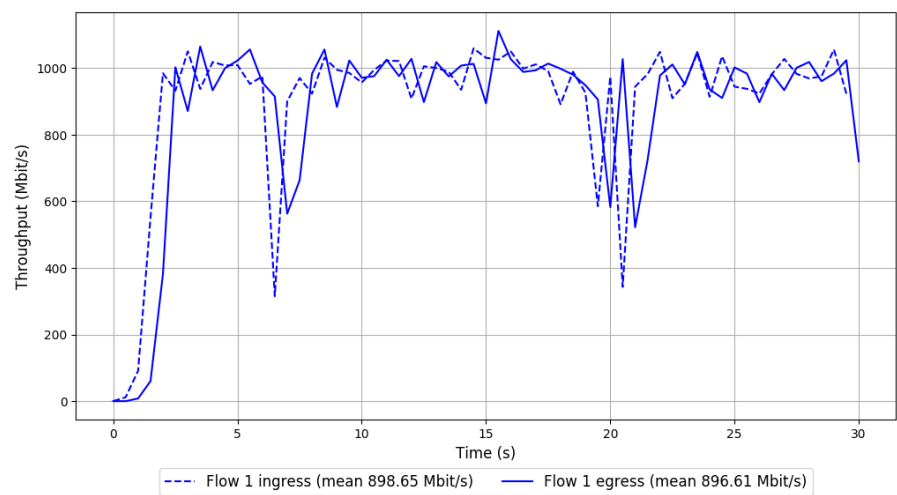


Run 2: Statistics of FillP

Start at: 2018-11-30 04:25:41
End at: 2018-11-30 04:26:11
Local clock offset: -1.286 ms
Remote clock offset: -0.161 ms

Below is generated by plot.py at 2018-11-30 07:05:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 896.61 Mbit/s
95th percentile per-packet one-way delay: 136.574 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 896.61 Mbit/s
95th percentile per-packet one-way delay: 136.574 ms
Loss rate: 0.95%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-11-30 04:54:31

End at: 2018-11-30 04:55:02

Local clock offset: 0.093 ms

Remote clock offset: 0.211 ms

Below is generated by plot.py at 2018-11-30 07:06:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 894.81 Mbit/s

95th percentile per-packet one-way delay: 158.233 ms

Loss rate: 1.85%

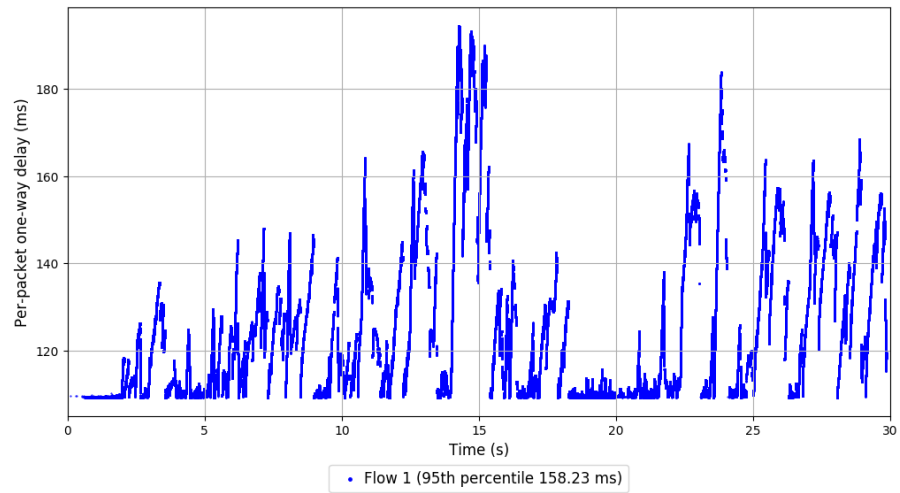
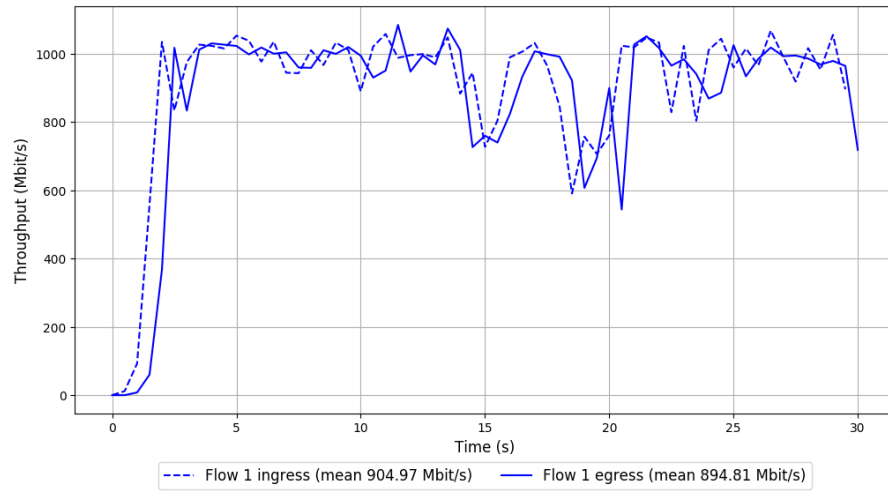
-- Flow 1:

Average throughput: 894.81 Mbit/s

95th percentile per-packet one-way delay: 158.233 ms

Loss rate: 1.85%

Run 3: Report of FillP — Data Link

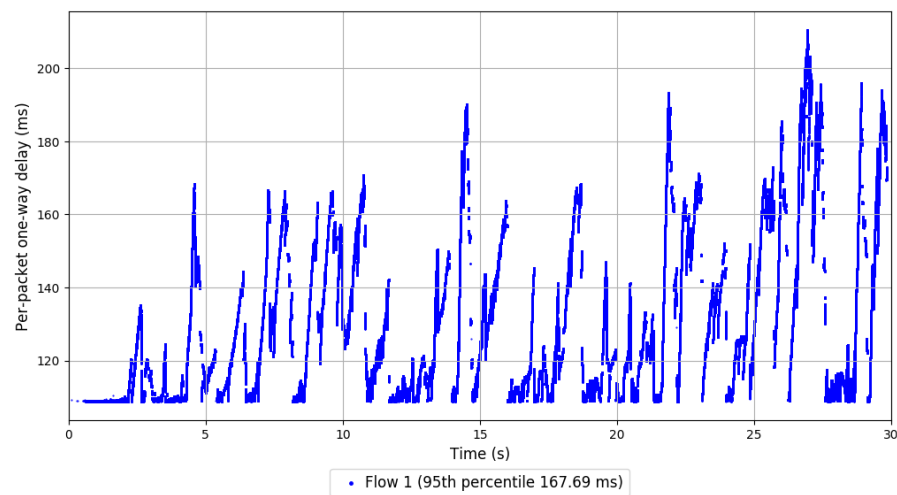
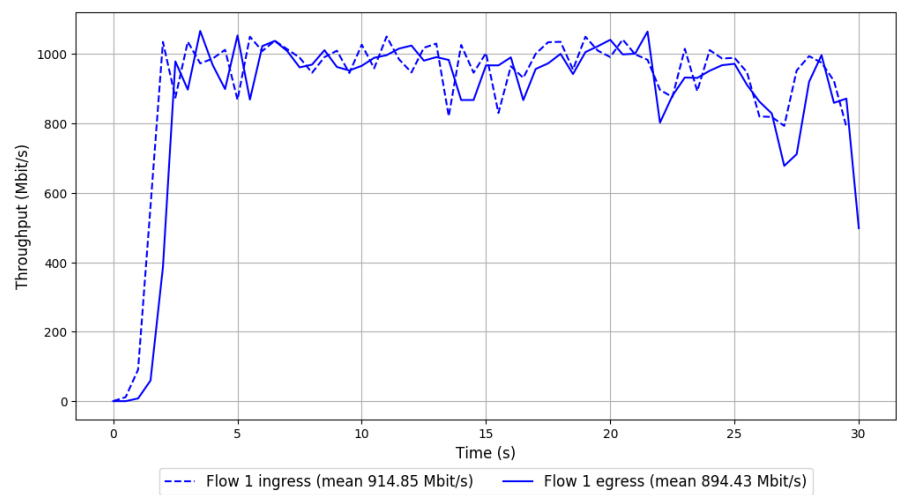


Run 4: Statistics of FillP

Start at: 2018-11-30 05:23:31
End at: 2018-11-30 05:24:01
Local clock offset: 0.039 ms
Remote clock offset: -0.478 ms

Below is generated by plot.py at 2018-11-30 07:08:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 894.43 Mbit/s
95th percentile per-packet one-way delay: 167.687 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 894.43 Mbit/s
95th percentile per-packet one-way delay: 167.687 ms
Loss rate: 2.91%

Run 4: Report of FillP — Data Link

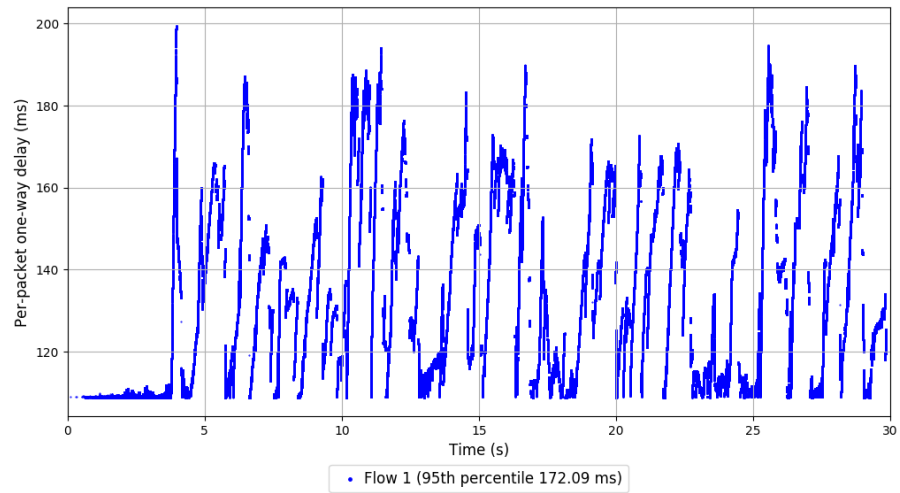
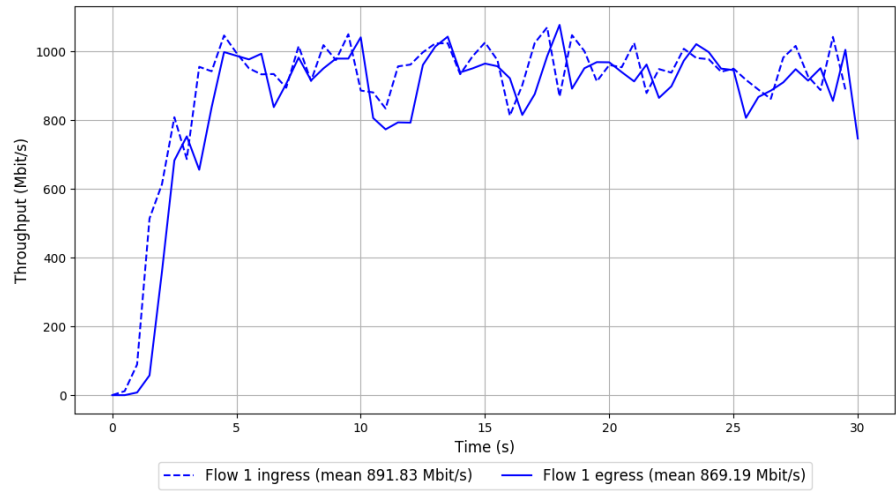


Run 5: Statistics of FillP

Start at: 2018-11-30 05:52:23
End at: 2018-11-30 05:52:53
Local clock offset: -0.776 ms
Remote clock offset: -0.112 ms

Below is generated by plot.py at 2018-11-30 07:08:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 869.19 Mbit/s
95th percentile per-packet one-way delay: 172.093 ms
Loss rate: 3.25%
-- Flow 1:
Average throughput: 869.19 Mbit/s
95th percentile per-packet one-way delay: 172.093 ms
Loss rate: 3.25%

Run 5: Report of FillP — Data Link

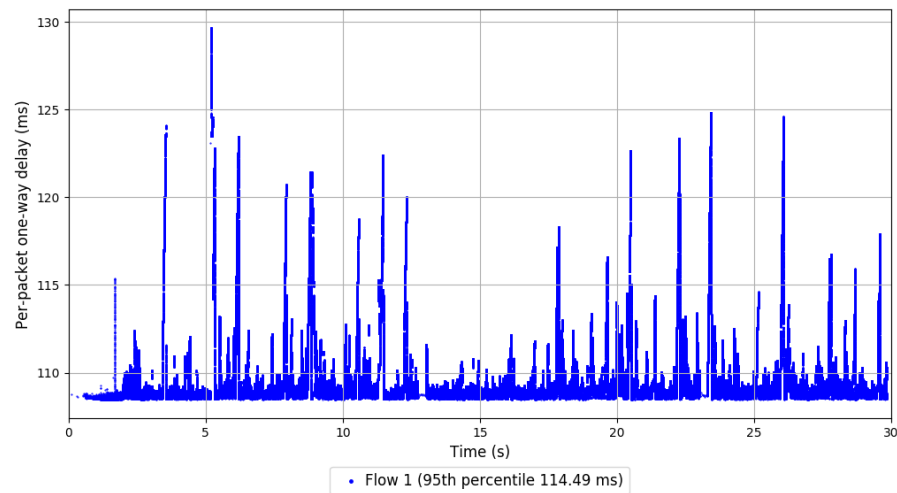
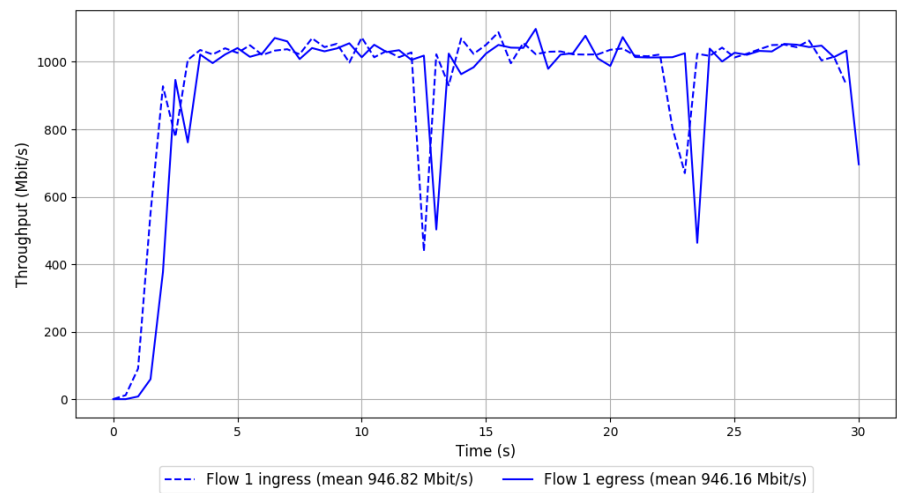


Run 1: Statistics of FillP-Sheep

Start at: 2018-11-30 04:13:09
End at: 2018-11-30 04:13:39
Local clock offset: -0.239 ms
Remote clock offset: -0.492 ms

Below is generated by plot.py at 2018-11-30 07:09:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 946.16 Mbit/s
95th percentile per-packet one-way delay: 114.492 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 946.16 Mbit/s
95th percentile per-packet one-way delay: 114.492 ms
Loss rate: 0.80%

Run 1: Report of FillP-Sheep — Data Link

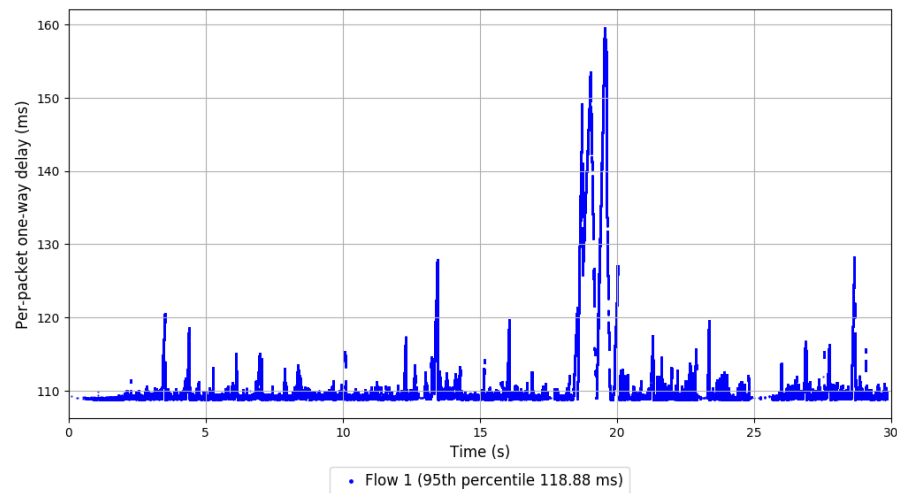
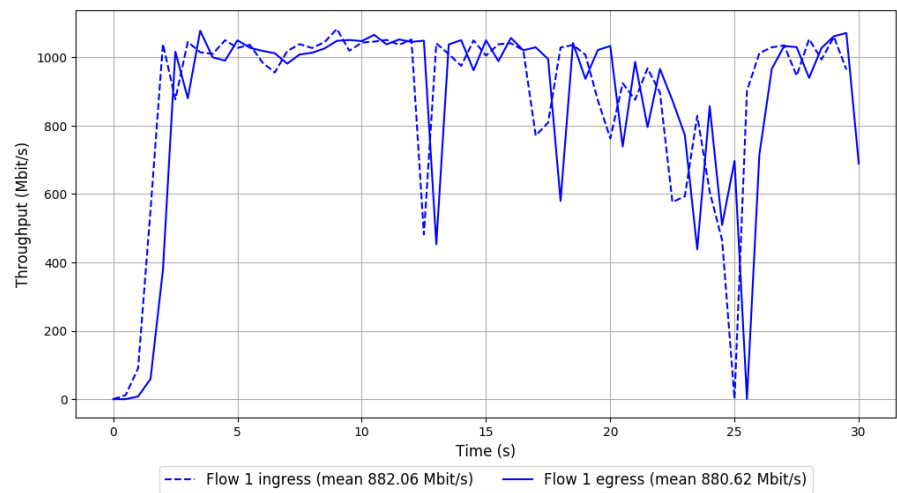


Run 2: Statistics of FillP-Sheep

Start at: 2018-11-30 04:41:47
End at: 2018-11-30 04:42:17
Local clock offset: 0.588 ms
Remote clock offset: -0.186 ms

Below is generated by plot.py at 2018-11-30 07:09:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 880.62 Mbit/s
95th percentile per-packet one-way delay: 118.879 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 880.62 Mbit/s
95th percentile per-packet one-way delay: 118.879 ms
Loss rate: 0.88%

Run 2: Report of FillP-Sheep — Data Link

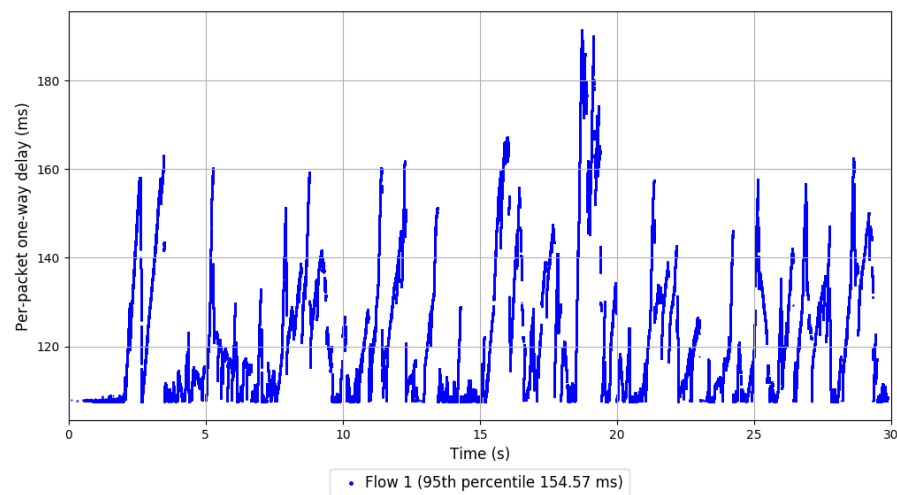
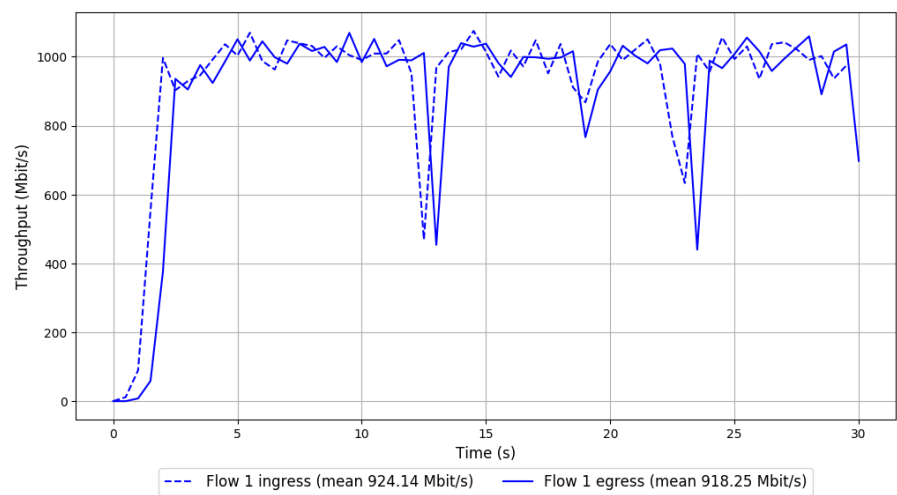


Run 3: Statistics of FillP-Sheep

Start at: 2018-11-30 05:10:45
End at: 2018-11-30 05:11:15
Local clock offset: -0.779 ms
Remote clock offset: -0.147 ms

Below is generated by plot.py at 2018-11-30 07:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 918.25 Mbit/s
95th percentile per-packet one-way delay: 154.566 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 918.25 Mbit/s
95th percentile per-packet one-way delay: 154.566 ms
Loss rate: 1.36%

Run 3: Report of FillP-Sheep — Data Link

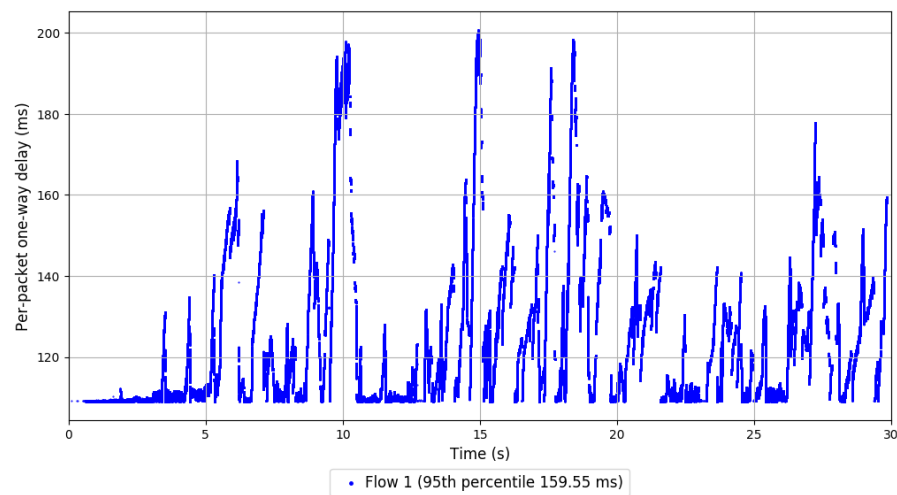
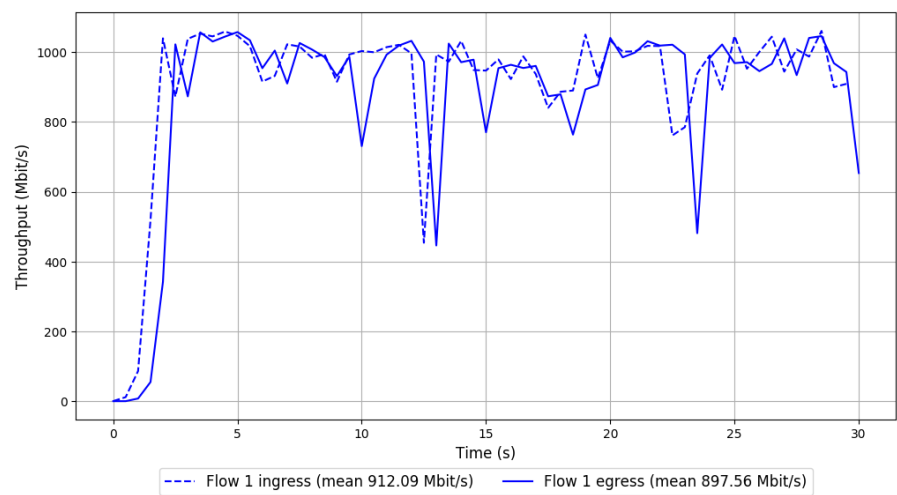


Run 4: Statistics of FillP-Sheep

Start at: 2018-11-30 05:39:30
End at: 2018-11-30 05:40:00
Local clock offset: -0.199 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-11-30 07:11:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 897.56 Mbit/s
95th percentile per-packet one-way delay: 159.551 ms
Loss rate: 2.31%
-- Flow 1:
Average throughput: 897.56 Mbit/s
95th percentile per-packet one-way delay: 159.551 ms
Loss rate: 2.31%

Run 4: Report of FillP-Sheep — Data Link

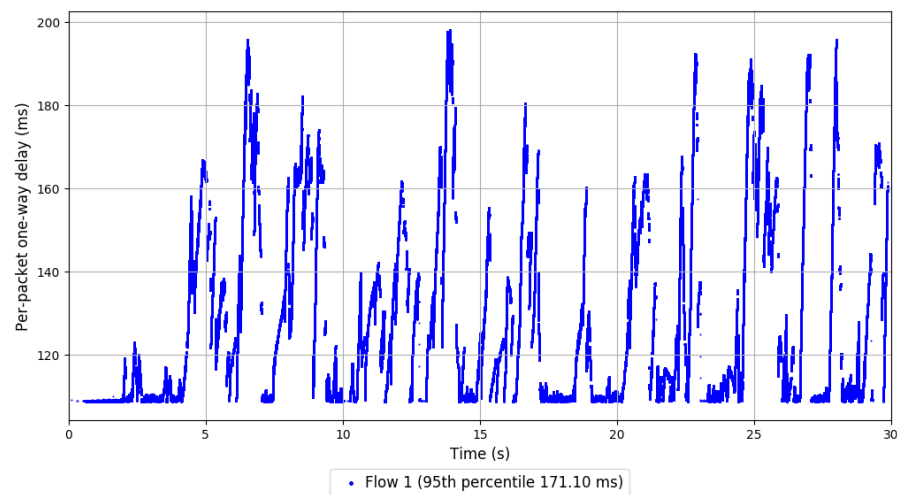
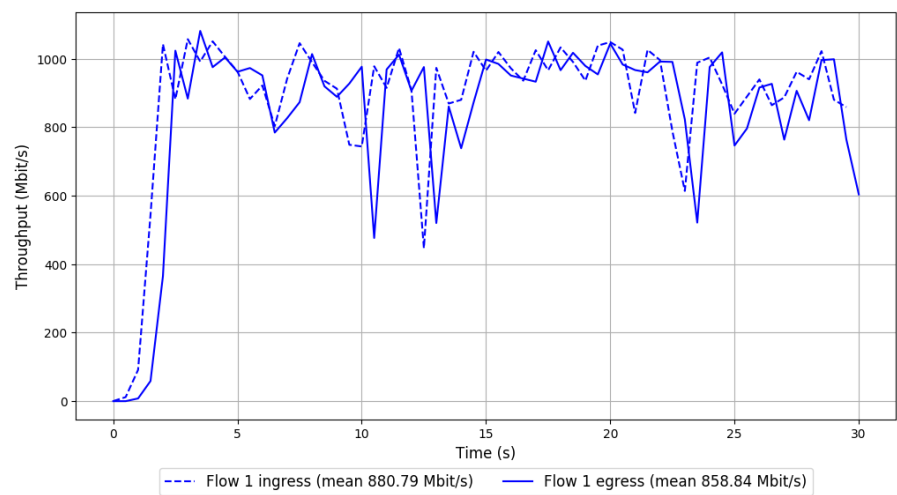


Run 5: Statistics of FillP-Sheep

Start at: 2018-11-30 06:08:28
End at: 2018-11-30 06:08:58
Local clock offset: -0.795 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 858.84 Mbit/s
95th percentile per-packet one-way delay: 171.102 ms
Loss rate: 3.21%
-- Flow 1:
Average throughput: 858.84 Mbit/s
95th percentile per-packet one-way delay: 171.102 ms
Loss rate: 3.21%

Run 5: Report of FillP-Sheep — Data Link

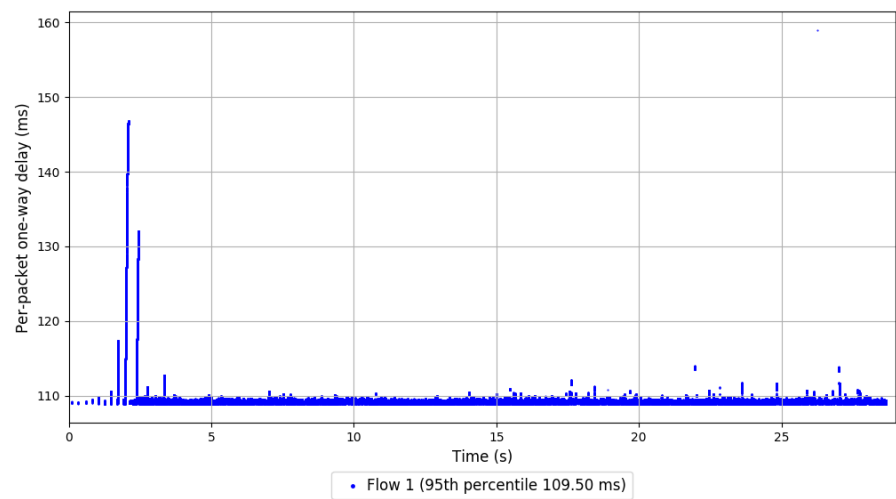
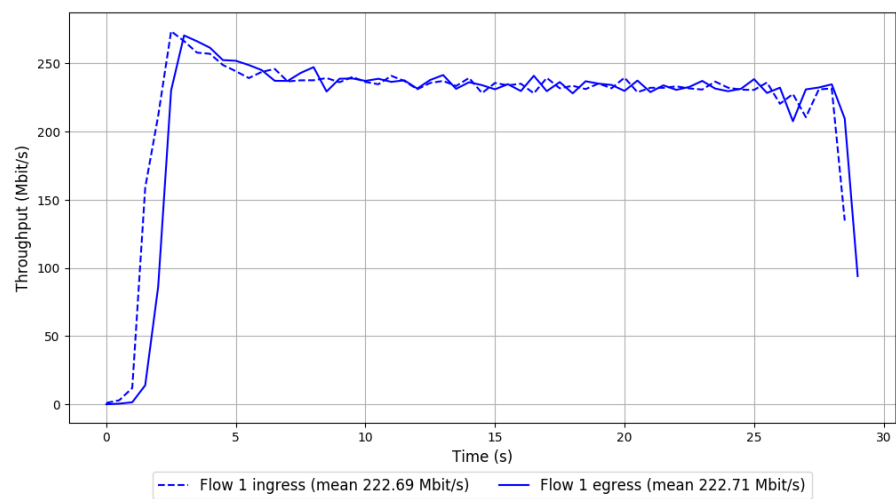


```
Run 1: Statistics of Indigo

Start at: 2018-11-30 04:21:25
End at: 2018-11-30 04:21:55
Local clock offset: 0.157 ms
Remote clock offset: 0.198 ms

# Below is generated by plot.py at 2018-11-30 07:25:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.71 Mbit/s
95th percentile per-packet one-way delay: 109.503 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 222.71 Mbit/s
95th percentile per-packet one-way delay: 109.503 ms
Loss rate: 0.78%
```

Run 1: Report of Indigo — Data Link

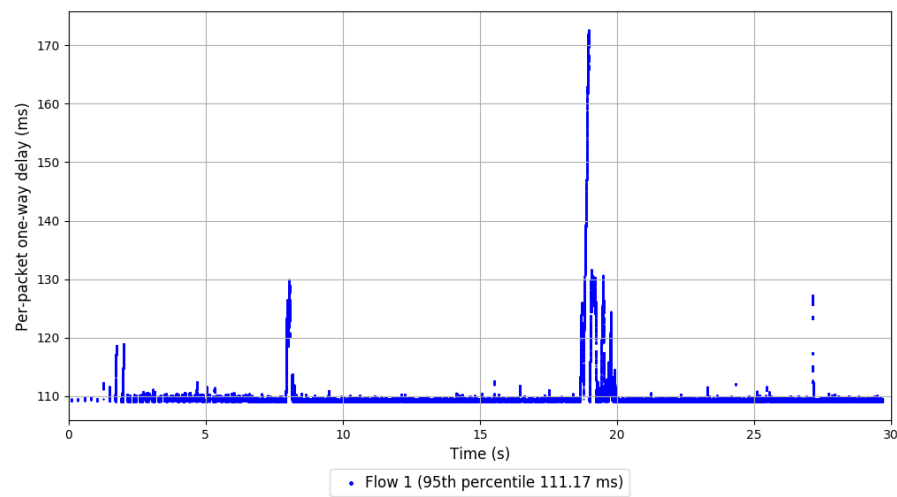
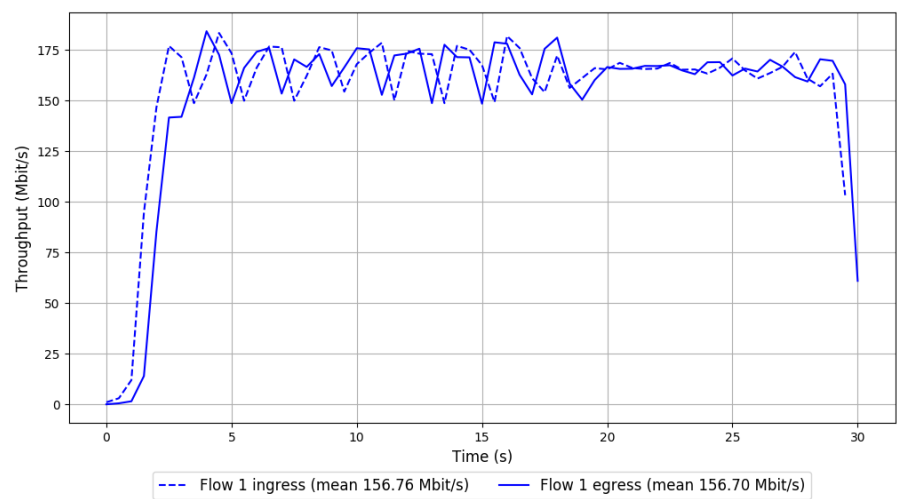


Run 2: Statistics of Indigo

Start at: 2018-11-30 04:50:01
End at: 2018-11-30 04:50:31
Local clock offset: -0.005 ms
Remote clock offset: -0.169 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 156.70 Mbit/s
95th percentile per-packet one-way delay: 111.168 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 156.70 Mbit/s
95th percentile per-packet one-way delay: 111.168 ms
Loss rate: 0.78%

Run 2: Report of Indigo — Data Link

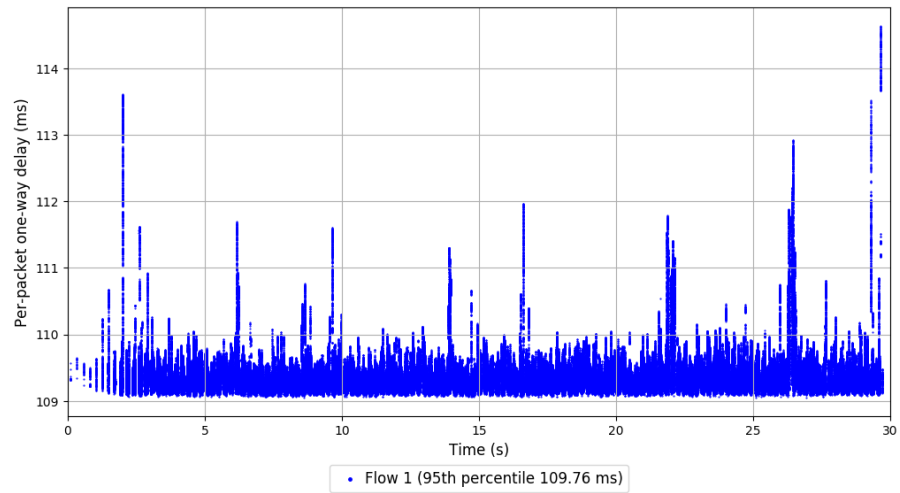
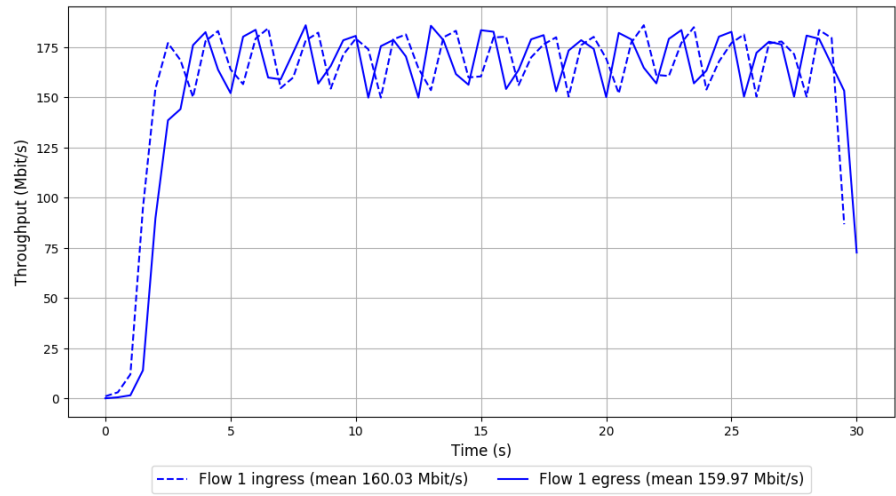


Run 3: Statistics of Indigo

Start at: 2018-11-30 05:19:01
End at: 2018-11-30 05:19:31
Local clock offset: 0.025 ms
Remote clock offset: -0.141 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 159.97 Mbit/s
95th percentile per-packet one-way delay: 109.759 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 159.97 Mbit/s
95th percentile per-packet one-way delay: 109.759 ms
Loss rate: 0.77%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-30 05:47:48

End at: 2018-11-30 05:48:18

Local clock offset: -0.09 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-11-30 07:25:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 157.00 Mbit/s

95th percentile per-packet one-way delay: 109.764 ms

Loss rate: 0.77%

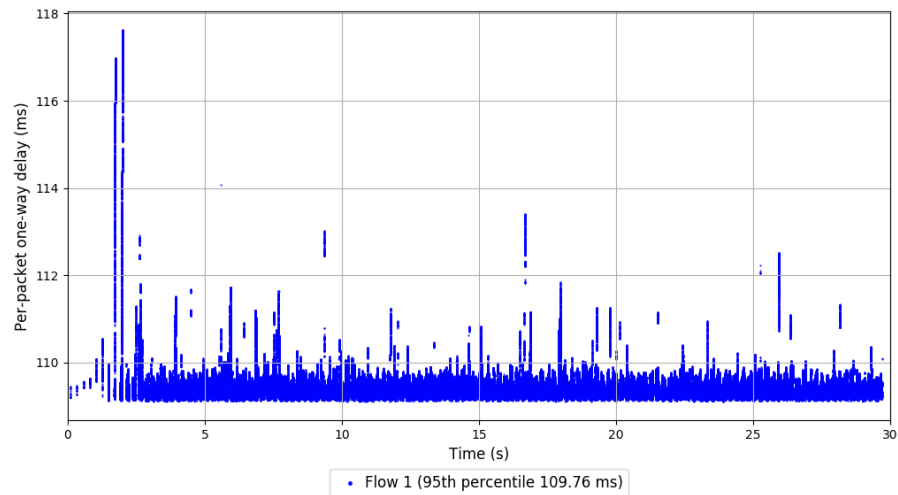
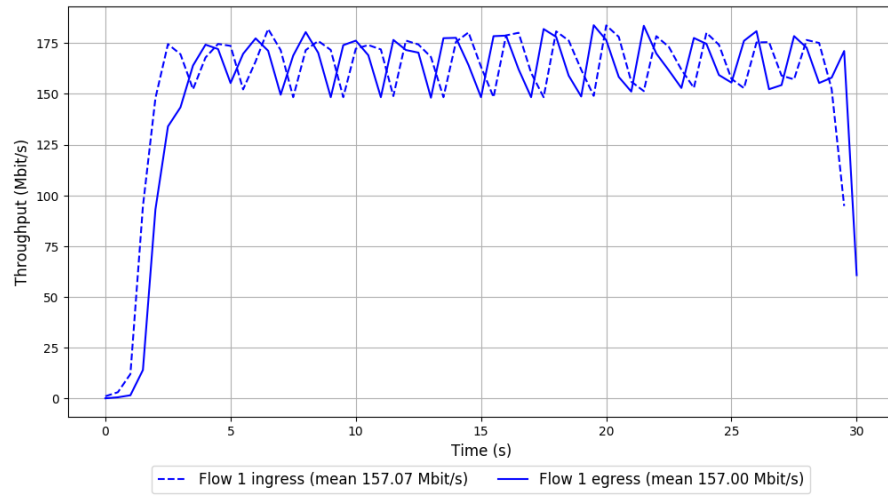
-- Flow 1:

Average throughput: 157.00 Mbit/s

95th percentile per-packet one-way delay: 109.764 ms

Loss rate: 0.77%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-11-30 06:16:43

End at: 2018-11-30 06:17:13

Local clock offset: 0.421 ms

Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-11-30 07:25:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 156.97 Mbit/s

95th percentile per-packet one-way delay: 110.525 ms

Loss rate: 0.78%

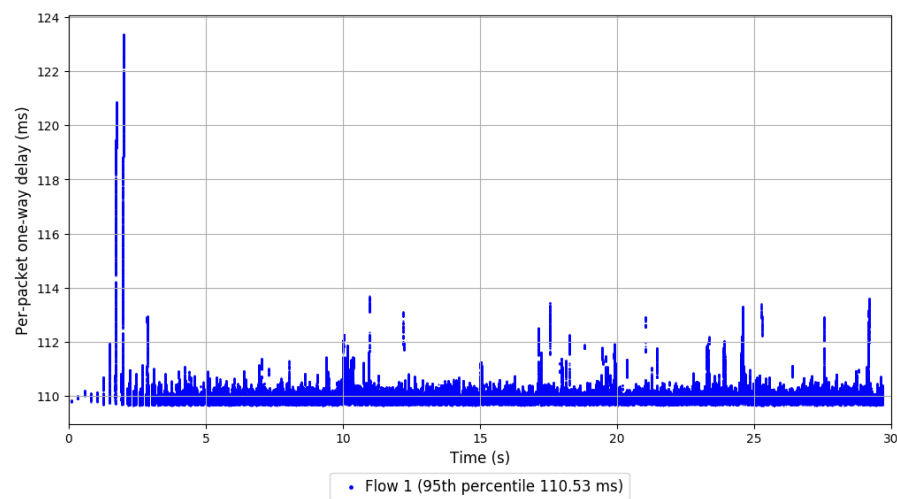
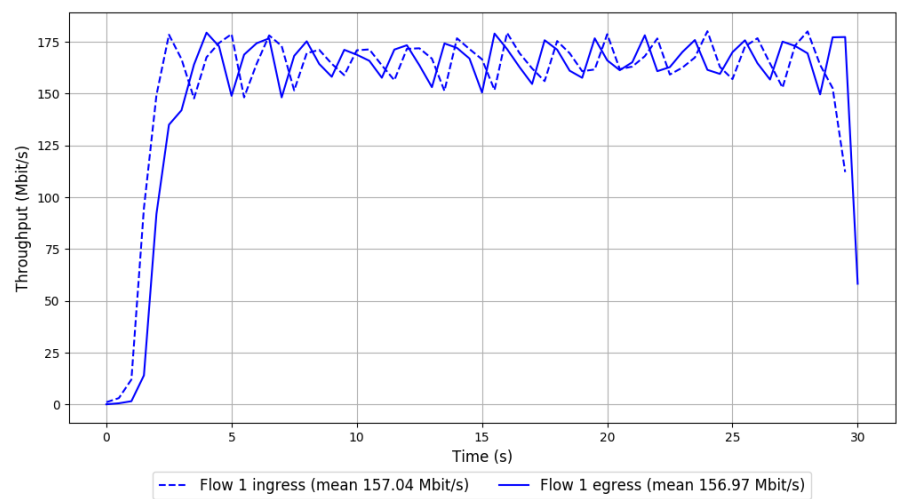
-- Flow 1:

Average throughput: 156.97 Mbit/s

95th percentile per-packet one-way delay: 110.525 ms

Loss rate: 0.78%

Run 5: Report of Indigo — Data Link

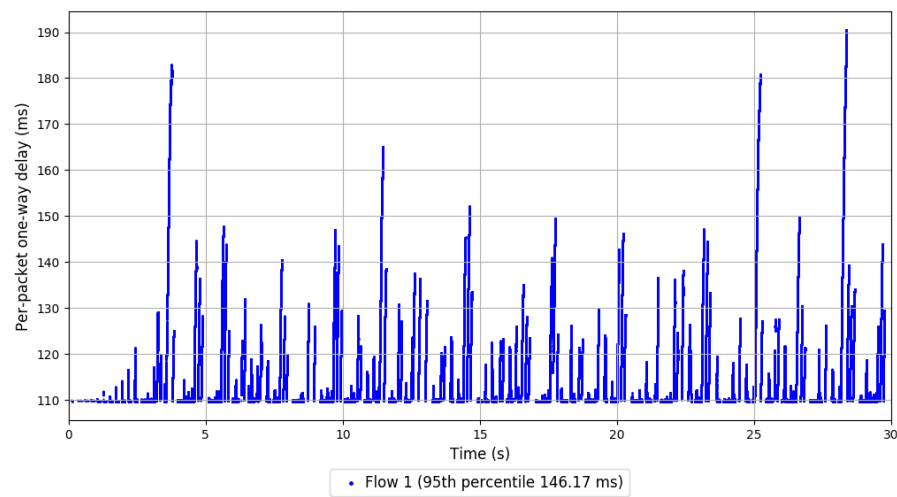
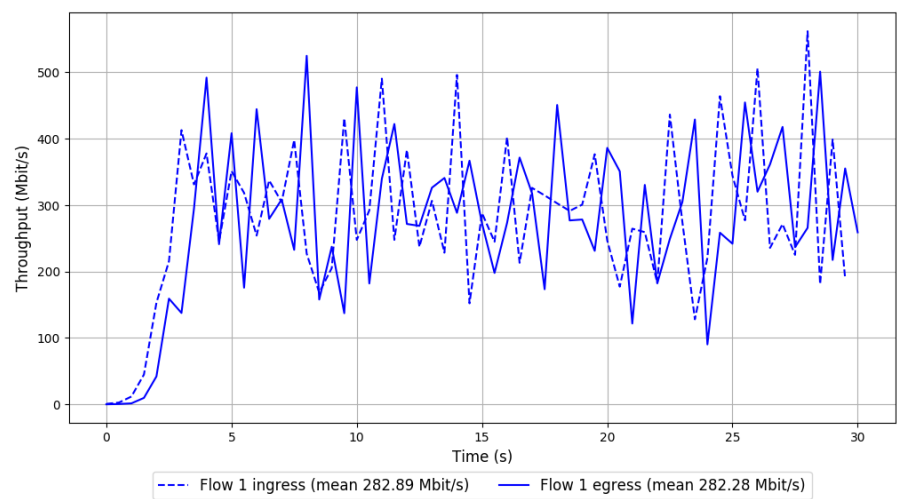


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-30 04:16:09
End at: 2018-11-30 04:16:39
Local clock offset: 0.09 ms
Remote clock offset: -0.511 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 282.28 Mbit/s
95th percentile per-packet one-way delay: 146.166 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 282.28 Mbit/s
95th percentile per-packet one-way delay: 146.166 ms
Loss rate: 0.18%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-30 04:44:46

End at: 2018-11-30 04:45:16

Local clock offset: -0.007 ms

Remote clock offset: 0.203 ms

Below is generated by plot.py at 2018-11-30 07:25:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 276.40 Mbit/s

95th percentile per-packet one-way delay: 156.513 ms

Loss rate: 0.04%

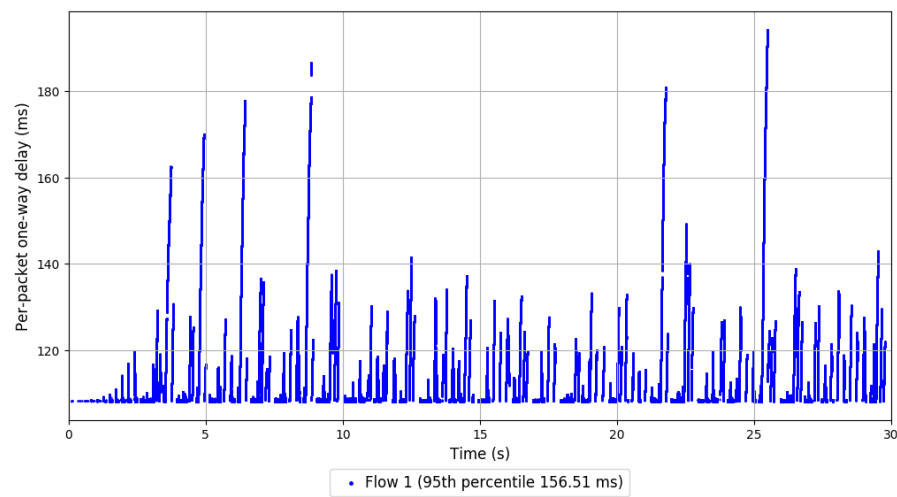
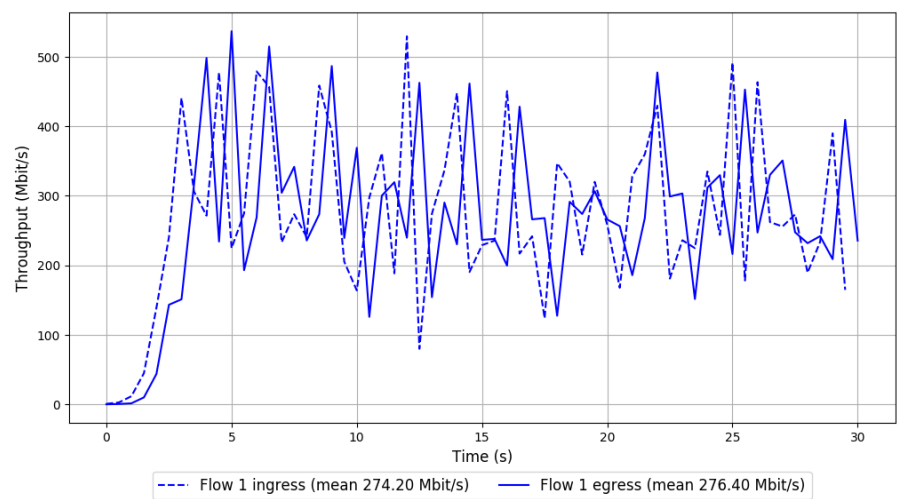
-- Flow 1:

Average throughput: 276.40 Mbit/s

95th percentile per-packet one-way delay: 156.513 ms

Loss rate: 0.04%

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

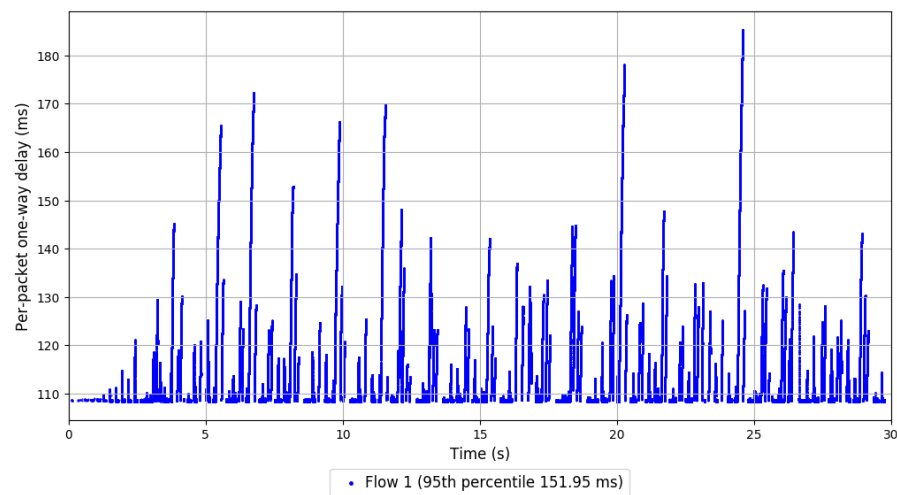
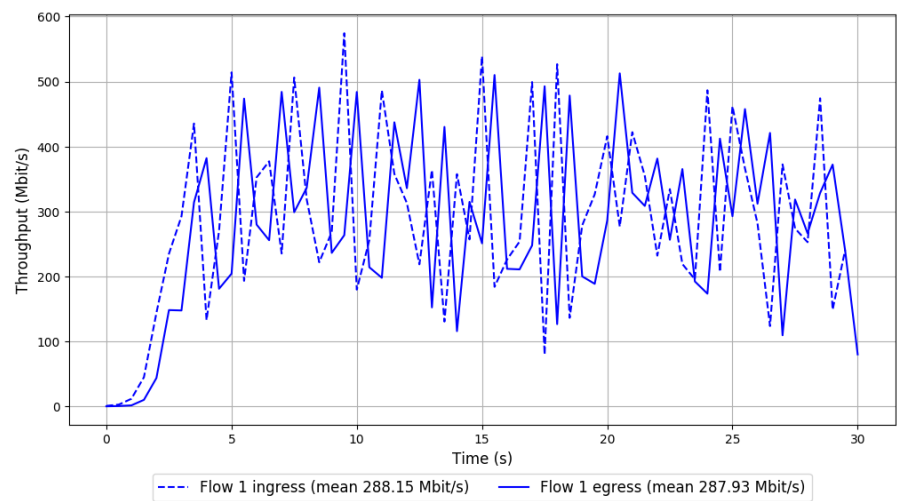


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-30 05:13:45
End at: 2018-11-30 05:14:15
Local clock offset: -0.083 ms
Remote clock offset: -0.154 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 287.93 Mbit/s
95th percentile per-packet one-way delay: 151.954 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 287.93 Mbit/s
95th percentile per-packet one-way delay: 151.954 ms
Loss rate: 1.00%

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

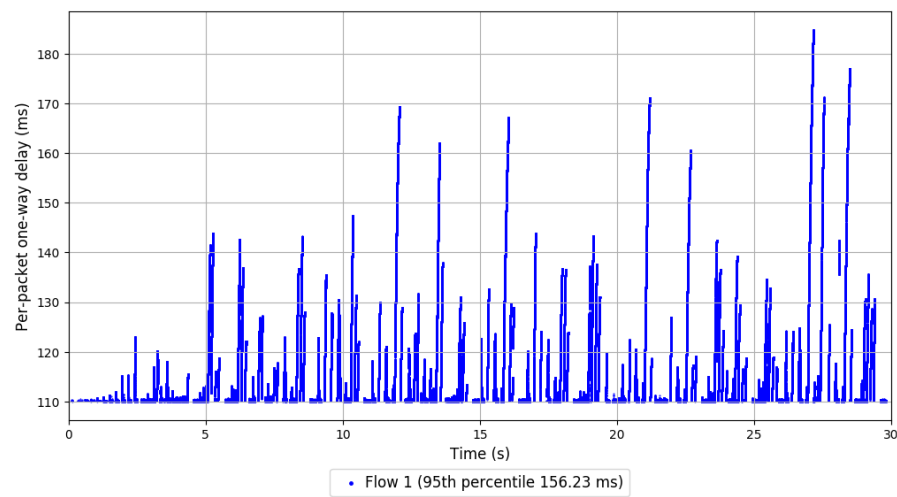
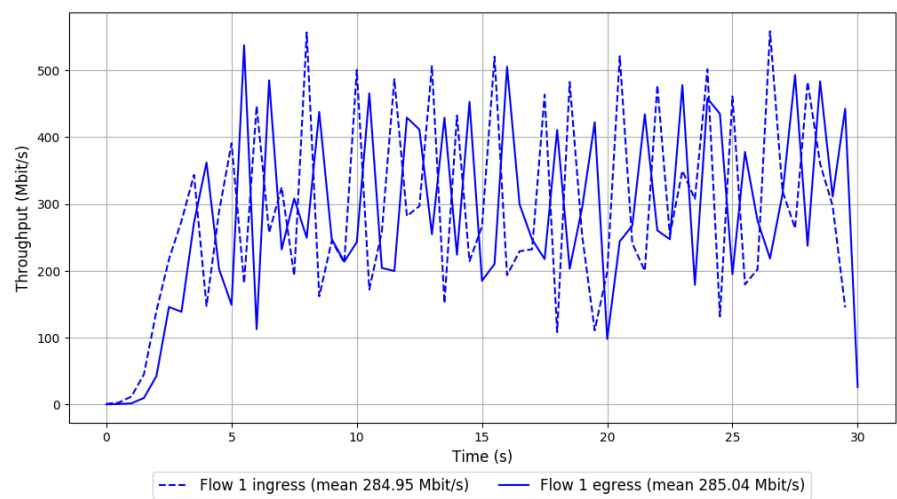


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-30 05:42:31
End at: 2018-11-30 05:43:01
Local clock offset: 0.455 ms
Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 285.04 Mbit/s
95th percentile per-packet one-way delay: 156.227 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 285.04 Mbit/s
95th percentile per-packet one-way delay: 156.227 ms
Loss rate: 0.70%

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

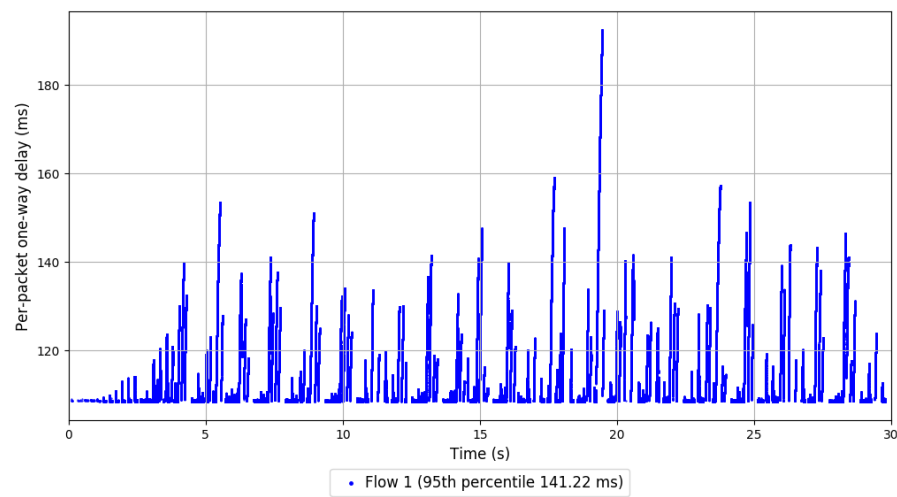
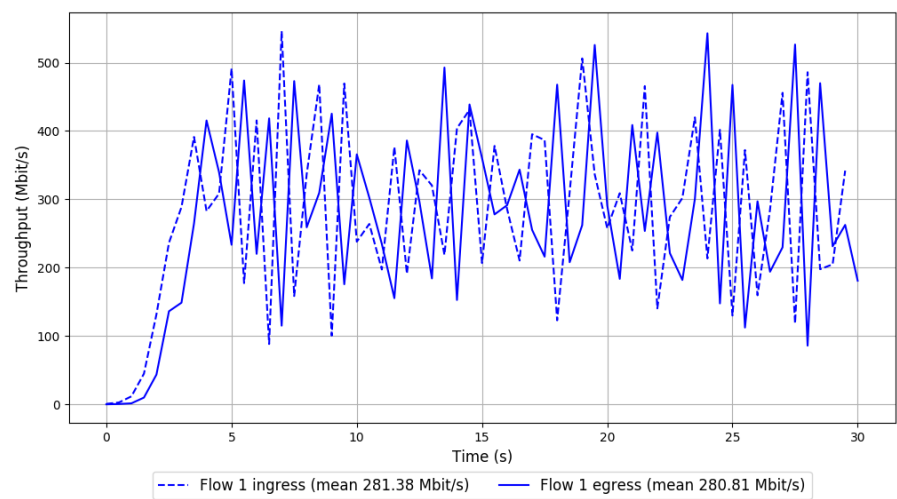


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-30 06:11:27
End at: 2018-11-30 06:11:57
Local clock offset: -0.217 ms
Remote clock offset: -0.104 ms

Below is generated by plot.py at 2018-11-30 07:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 280.81 Mbit/s
95th percentile per-packet one-way delay: 141.224 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 280.81 Mbit/s
95th percentile per-packet one-way delay: 141.224 ms
Loss rate: 0.99%

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

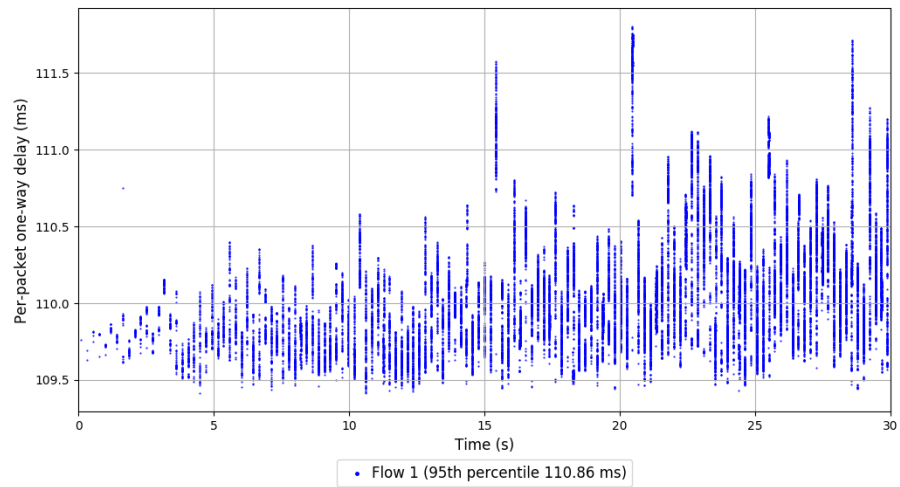
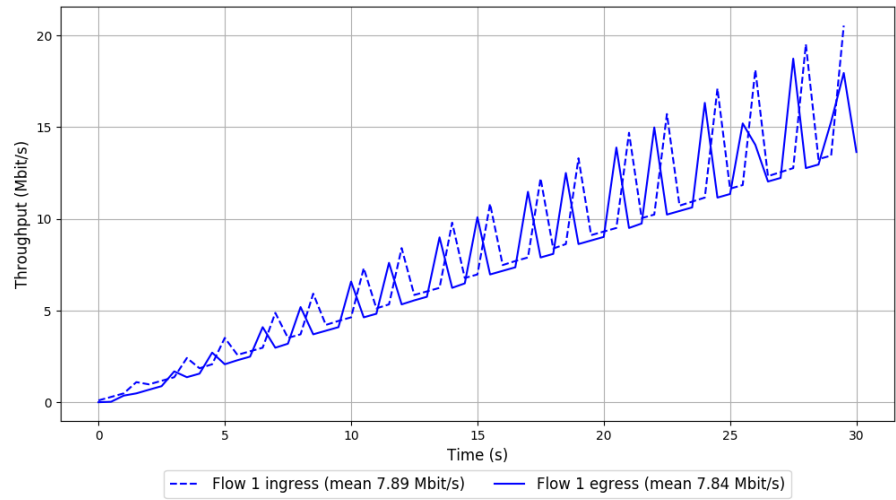


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-30 04:04:11
End at: 2018-11-30 04:04:41
Local clock offset: -0.228 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2018-11-30 07:25:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 110.856 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 110.856 ms
Loss rate: 1.46%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-11-30 04:32:35

End at: 2018-11-30 04:33:05

Local clock offset: -0.036 ms

Remote clock offset: -0.15 ms

Below is generated by plot.py at 2018-11-30 07:25:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.73 Mbit/s

95th percentile per-packet one-way delay: 109.676 ms

Loss rate: 1.48%

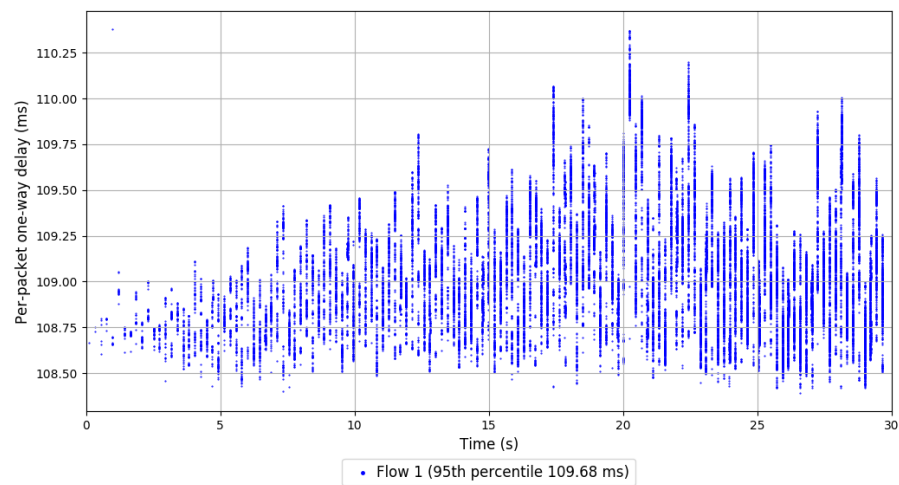
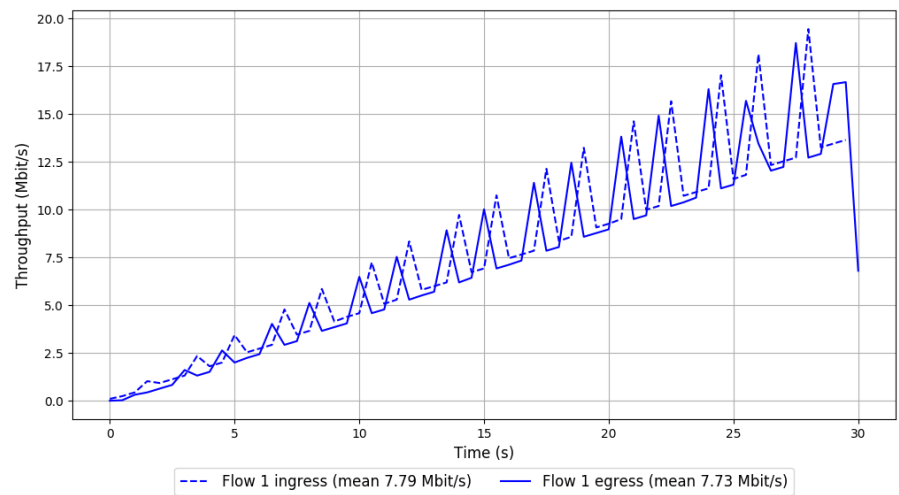
-- Flow 1:

Average throughput: 7.73 Mbit/s

95th percentile per-packet one-way delay: 109.676 ms

Loss rate: 1.48%

Run 2: Report of LEDBAT — Data Link

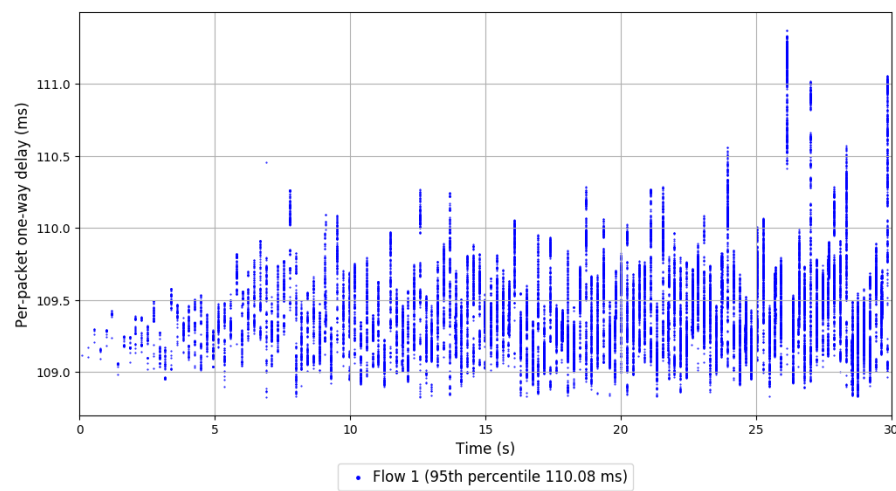
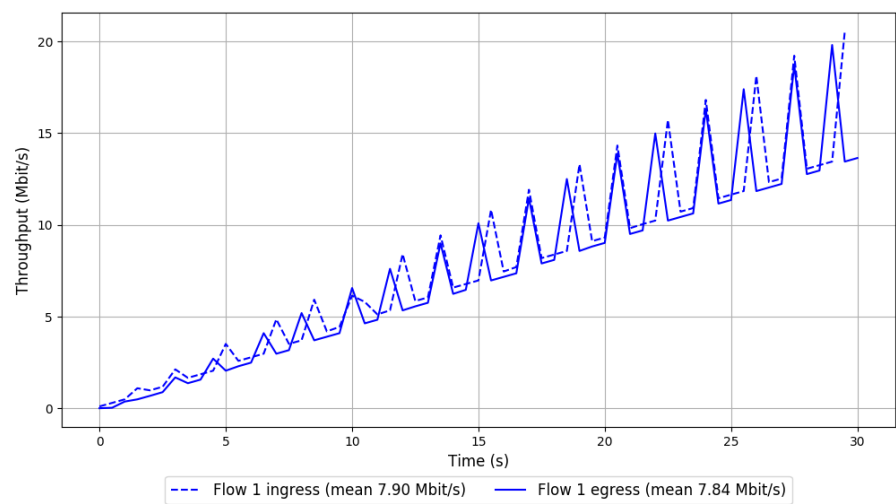


Run 3: Statistics of LEDBAT

Start at: 2018-11-30 05:01:42
End at: 2018-11-30 05:02:12
Local clock offset: -0.1 ms
Remote clock offset: -0.477 ms

Below is generated by plot.py at 2018-11-30 07:25:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 110.081 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 110.081 ms
Loss rate: 1.46%

Run 3: Report of LEDBAT — Data Link

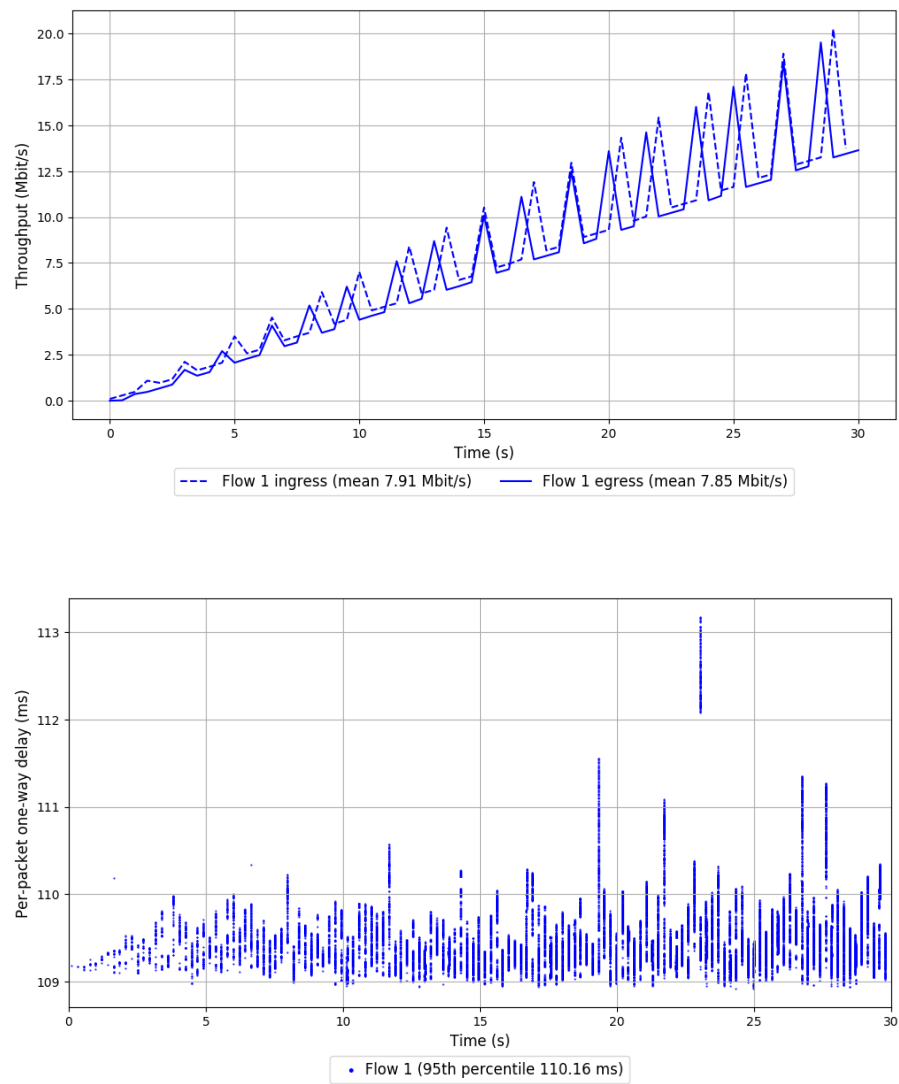


Run 4: Statistics of LEDBAT

Start at: 2018-11-30 05:30:24
End at: 2018-11-30 05:30:54
Local clock offset: -0.068 ms
Remote clock offset: -0.086 ms

Below is generated by plot.py at 2018-11-30 07:25:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 110.158 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 110.158 ms
Loss rate: 1.46%

Run 4: Report of LEDBAT — Data Link

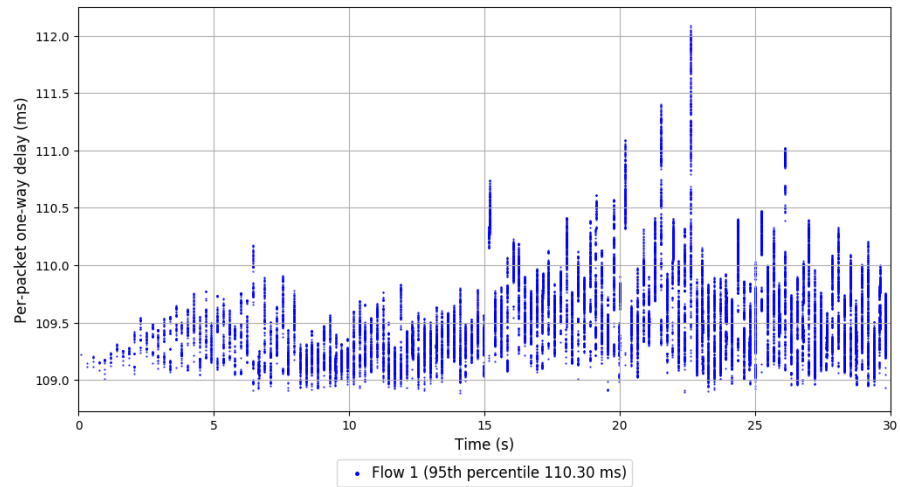
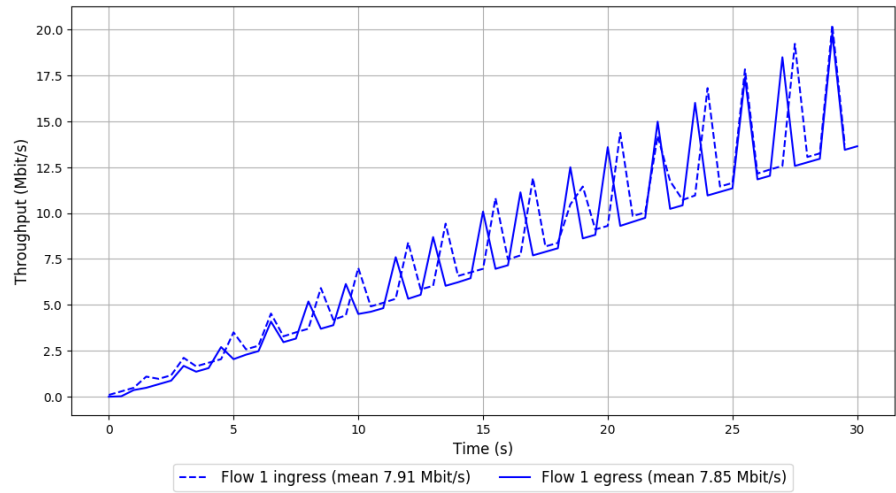


Run 5: Statistics of LEDBAT

Start at: 2018-11-30 05:59:19
End at: 2018-11-30 05:59:49
Local clock offset: -0.308 ms
Remote clock offset: -0.115 ms

Below is generated by plot.py at 2018-11-30 07:25:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 110.301 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 110.301 ms
Loss rate: 1.46%

Run 5: Report of LEDBAT — Data Link

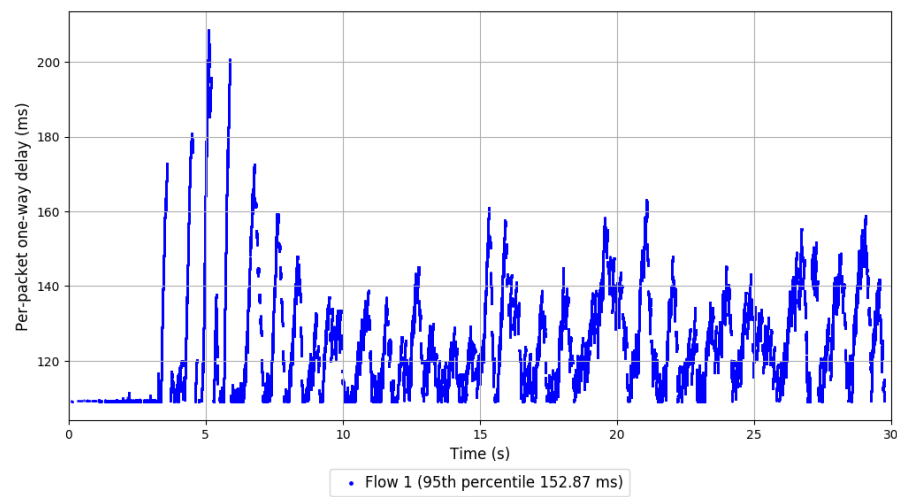
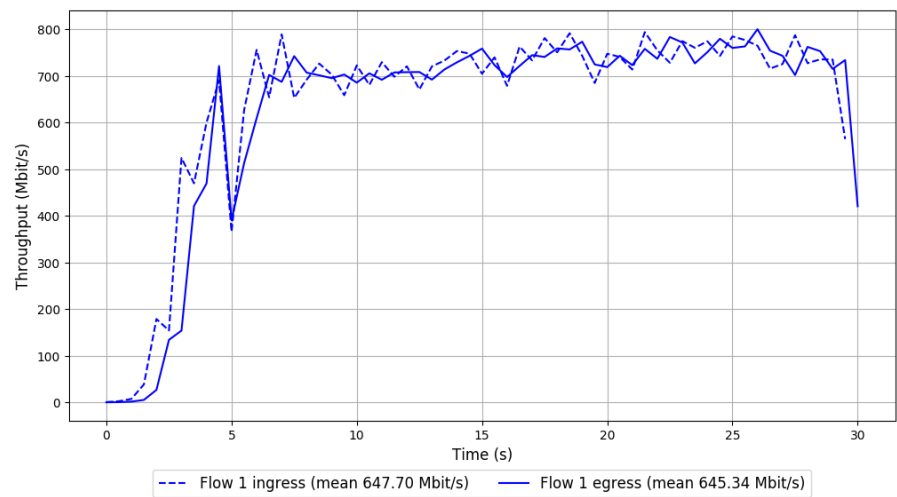



```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-30 04:02:26
End at: 2018-11-30 04:02:56
Local clock offset: -0.363 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-11-30 07:27:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 645.34 Mbit/s
95th percentile per-packet one-way delay: 152.873 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 645.34 Mbit/s
95th percentile per-packet one-way delay: 152.873 ms
Loss rate: 1.08%
```

Run 1: Report of Indigo-Muses — Data Link

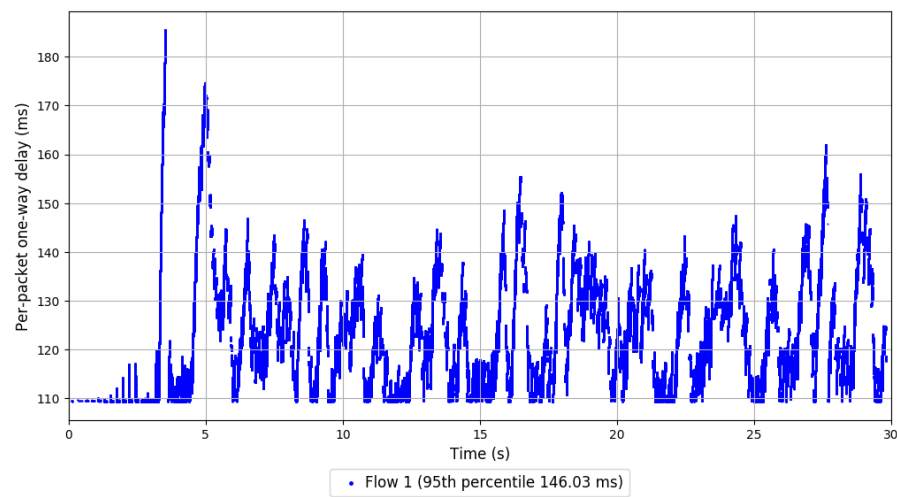
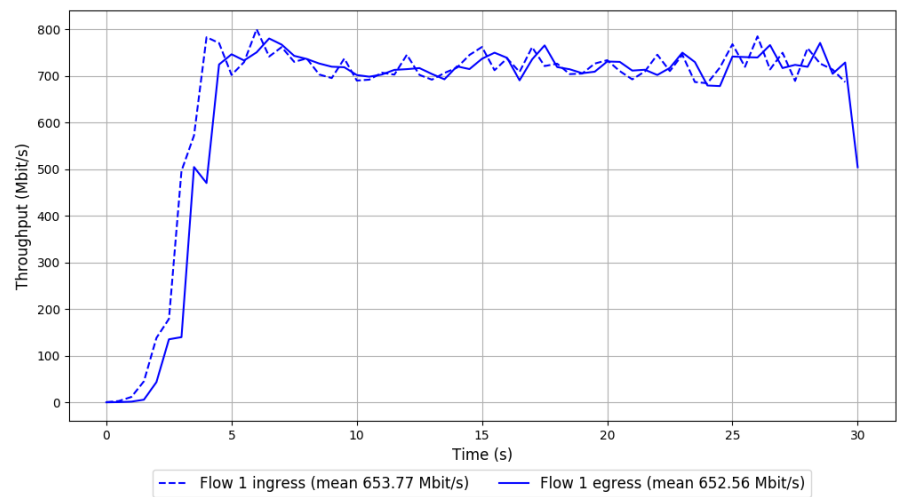


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-30 04:30:50
End at: 2018-11-30 04:31:20
Local clock offset: -0.06 ms
Remote clock offset: -0.177 ms

Below is generated by plot.py at 2018-11-30 07:27:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 652.56 Mbit/s
95th percentile per-packet one-way delay: 146.033 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 652.56 Mbit/s
95th percentile per-packet one-way delay: 146.033 ms
Loss rate: 0.92%

Run 2: Report of Indigo-Muses — Data Link

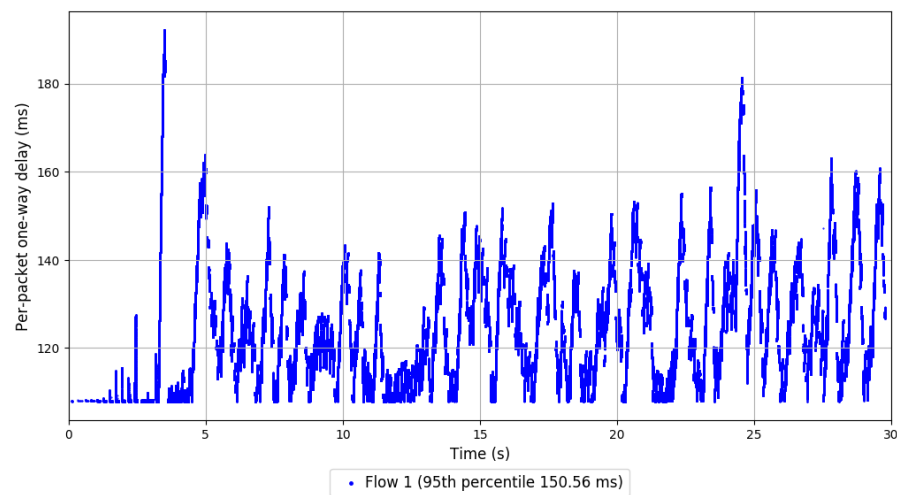
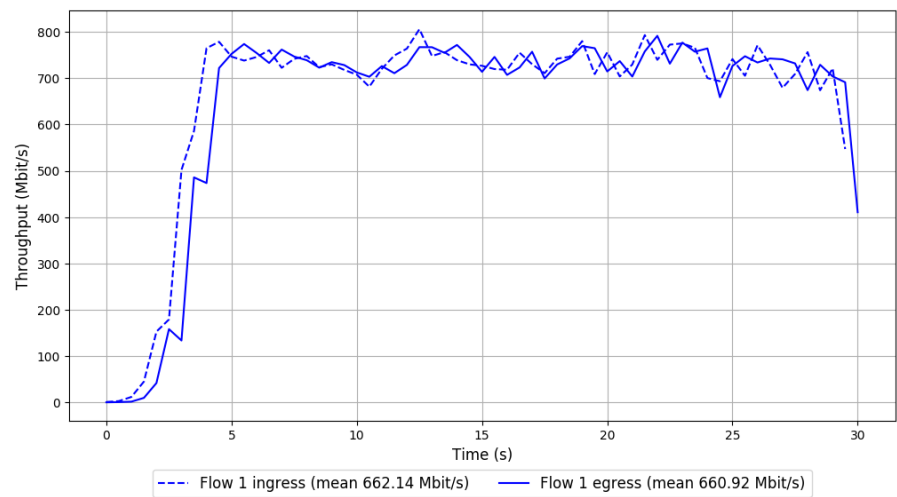


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-30 04:59:56
End at: 2018-11-30 05:00:26
Local clock offset: -0.736 ms
Remote clock offset: -0.104 ms

Below is generated by plot.py at 2018-11-30 07:28:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 660.92 Mbit/s
95th percentile per-packet one-way delay: 150.562 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 660.92 Mbit/s
95th percentile per-packet one-way delay: 150.562 ms
Loss rate: 0.91%

Run 3: Report of Indigo-Muses — Data Link

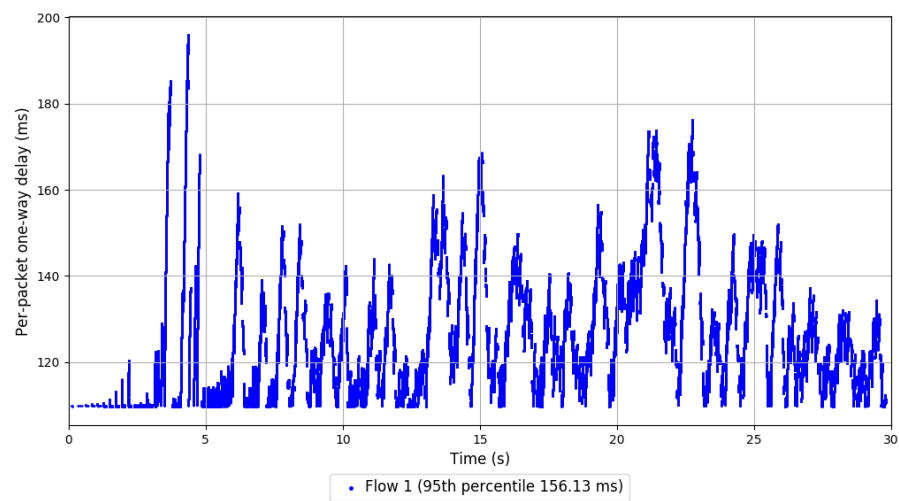
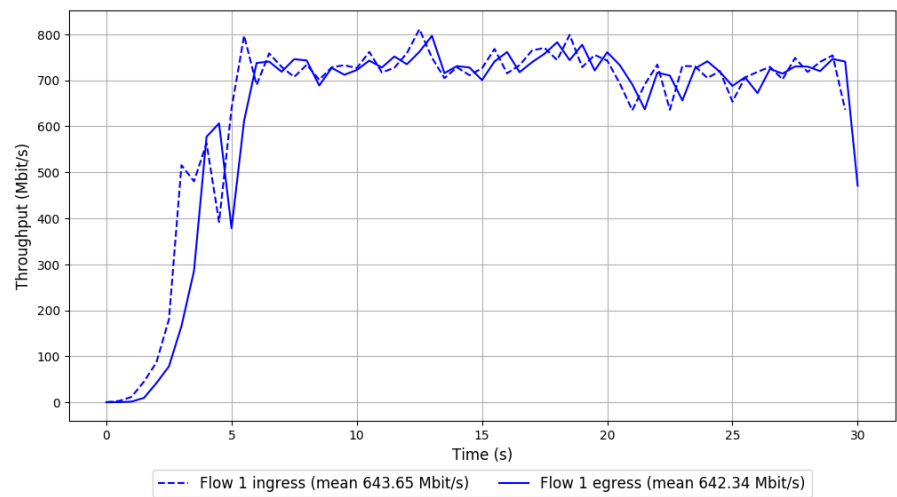


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-30 05:28:39
End at: 2018-11-30 05:29:09
Local clock offset: 1.255 ms
Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-11-30 07:29:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 642.34 Mbit/s
95th percentile per-packet one-way delay: 156.133 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 642.34 Mbit/s
95th percentile per-packet one-way delay: 156.133 ms
Loss rate: 0.93%

Run 4: Report of Indigo-Muses — Data Link

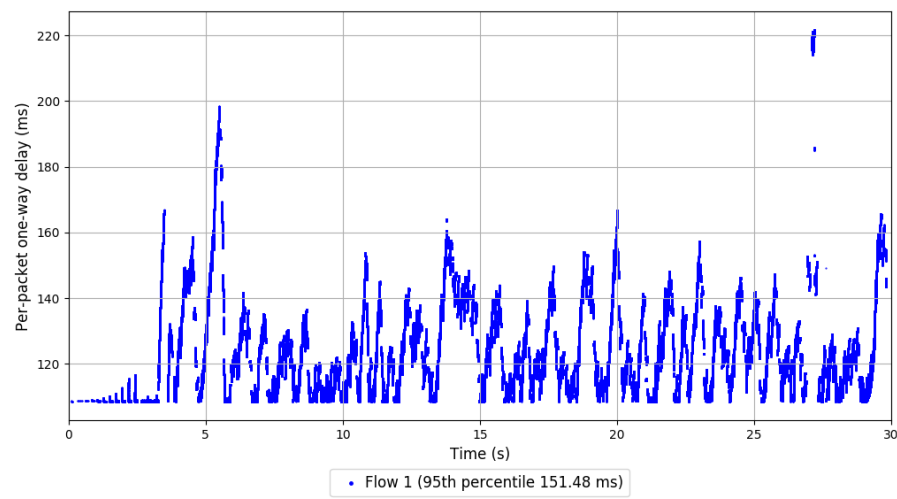
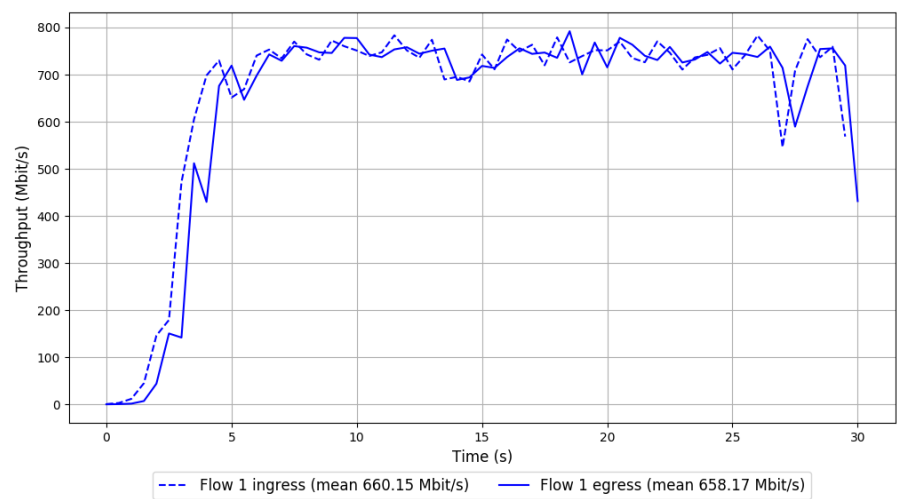


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-30 05:57:32
End at: 2018-11-30 05:58:02
Local clock offset: -0.196 ms
Remote clock offset: -0.112 ms

Below is generated by plot.py at 2018-11-30 07:32:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 658.17 Mbit/s
95th percentile per-packet one-way delay: 151.478 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 658.17 Mbit/s
95th percentile per-packet one-way delay: 151.478 ms
Loss rate: 1.03%

Run 5: Report of Indigo-Muses — Data Link

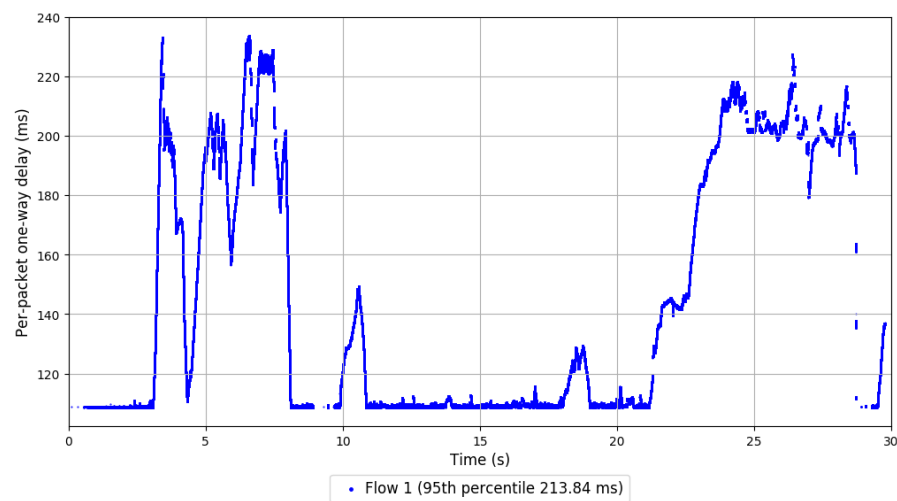
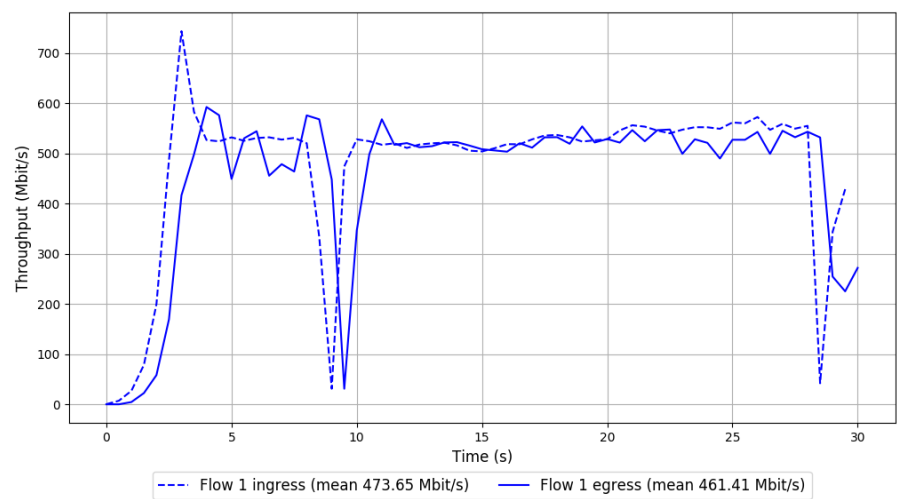


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-30 04:05:23
End at: 2018-11-30 04:05:53
Local clock offset: -0.851 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2018-11-30 07:35:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 461.41 Mbit/s
95th percentile per-packet one-way delay: 213.844 ms
Loss rate: 3.30%
-- Flow 1:
Average throughput: 461.41 Mbit/s
95th percentile per-packet one-way delay: 213.844 ms
Loss rate: 3.30%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-30 04:33:46

End at: 2018-11-30 04:34:16

Local clock offset: 1.491 ms

Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-11-30 07:35:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 468.54 Mbit/s

95th percentile per-packet one-way delay: 219.737 ms

Loss rate: 3.47%

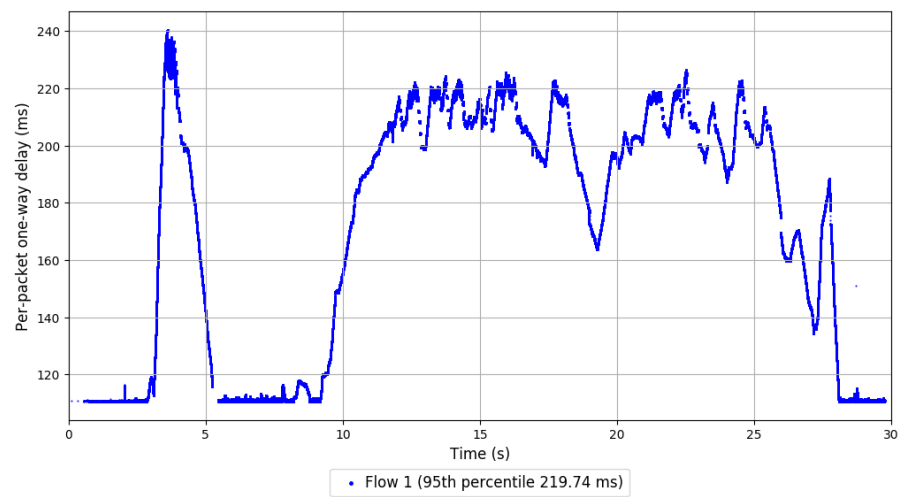
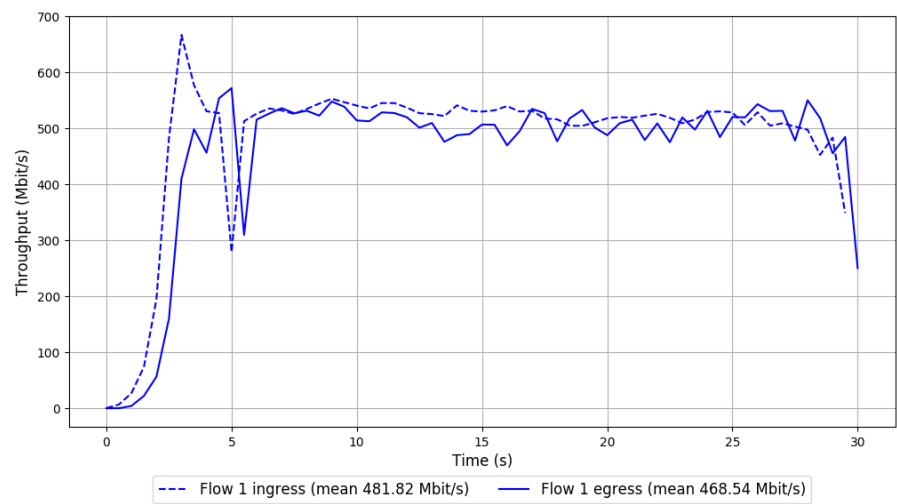
-- Flow 1:

Average throughput: 468.54 Mbit/s

95th percentile per-packet one-way delay: 219.737 ms

Loss rate: 3.47%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-11-30 05:02:53

End at: 2018-11-30 05:03:23

Local clock offset: -0.121 ms

Remote clock offset: -0.129 ms

Below is generated by plot.py at 2018-11-30 07:43:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 461.19 Mbit/s

95th percentile per-packet one-way delay: 220.840 ms

Loss rate: 3.72%

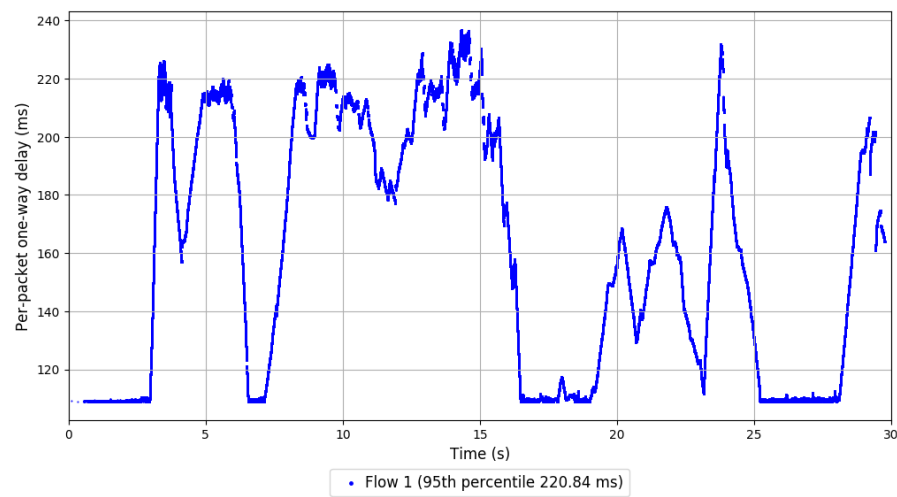
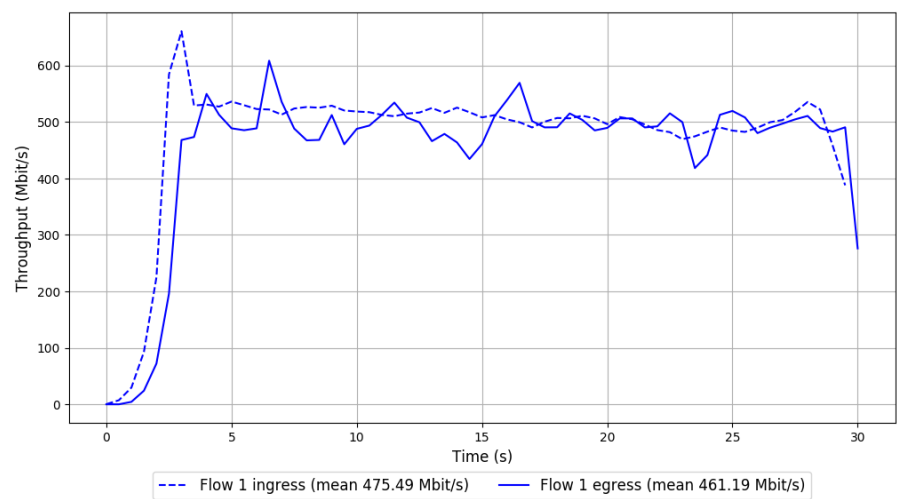
-- Flow 1:

Average throughput: 461.19 Mbit/s

95th percentile per-packet one-way delay: 220.840 ms

Loss rate: 3.72%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-30 05:31:35

End at: 2018-11-30 05:32:05

Local clock offset: -1.444 ms

Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-11-30 07:43:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 397.75 Mbit/s

95th percentile per-packet one-way delay: 197.346 ms

Loss rate: 1.80%

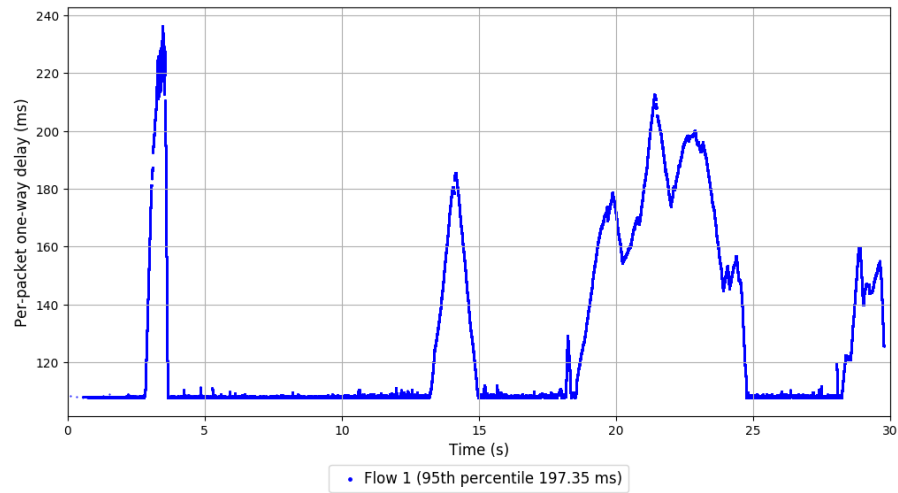
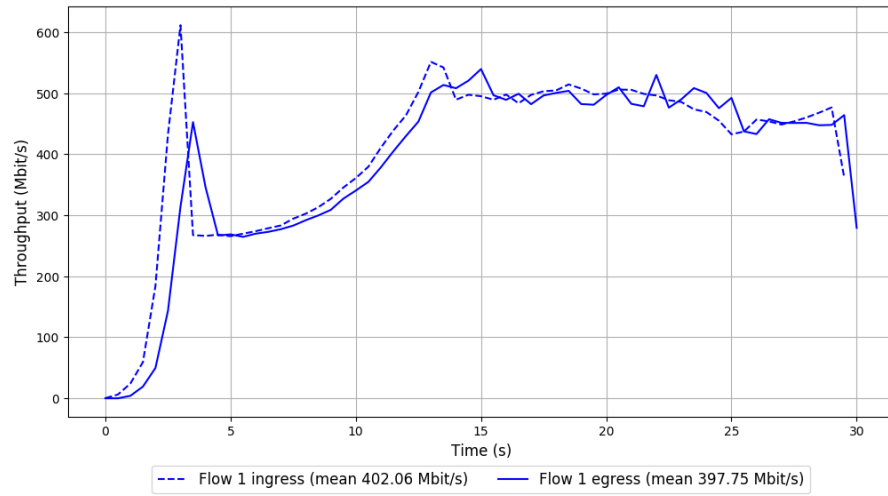
-- Flow 1:

Average throughput: 397.75 Mbit/s

95th percentile per-packet one-way delay: 197.346 ms

Loss rate: 1.80%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-30 06:00:30

End at: 2018-11-30 06:01:00

Local clock offset: 0.155 ms

Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-11-30 07:44:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 409.13 Mbit/s

95th percentile per-packet one-way delay: 237.724 ms

Loss rate: 5.27%

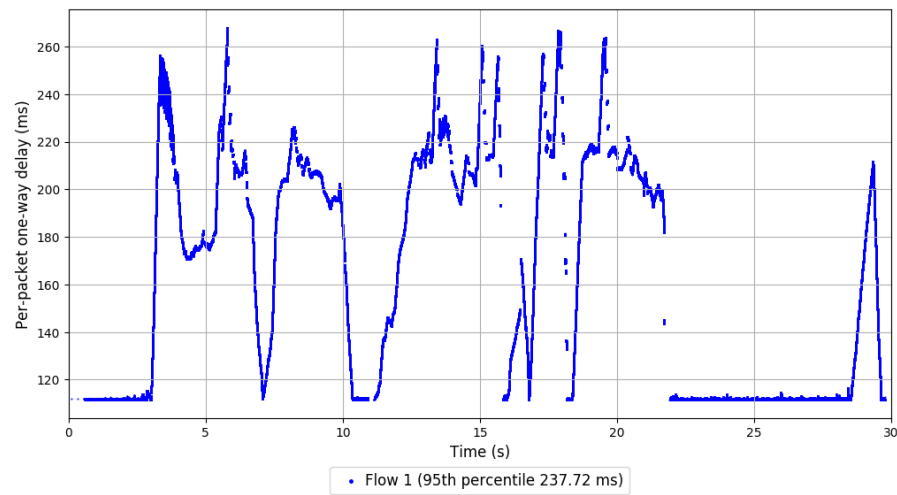
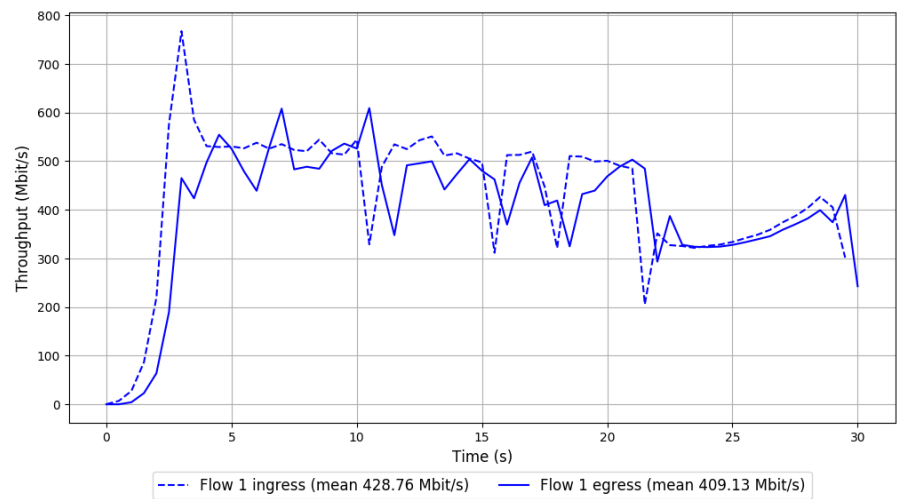
-- Flow 1:

Average throughput: 409.13 Mbit/s

95th percentile per-packet one-way delay: 237.724 ms

Loss rate: 5.27%

Run 5: Report of PCC-Allegro — Data Link

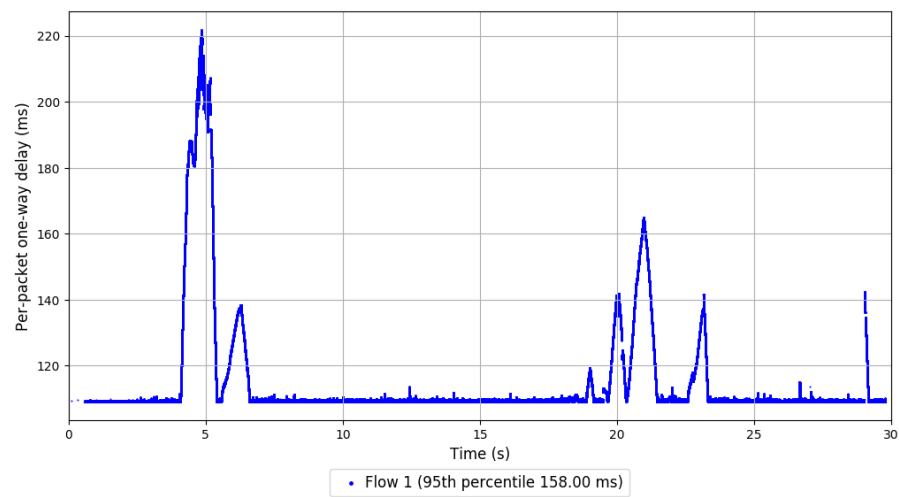
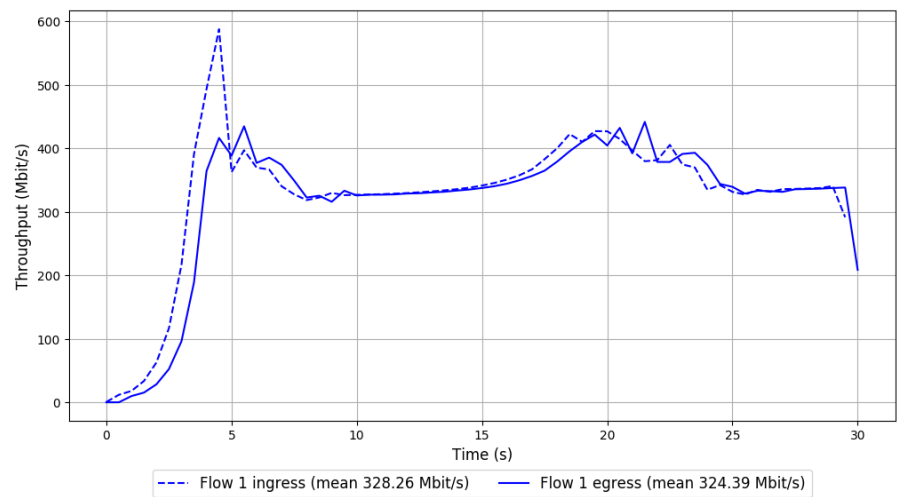


Run 1: Statistics of PCC-Expr

Start at: 2018-11-30 03:59:07
End at: 2018-11-30 03:59:37
Local clock offset: 0.038 ms
Remote clock offset: -0.135 ms

Below is generated by plot.py at 2018-11-30 07:44:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 324.39 Mbit/s
95th percentile per-packet one-way delay: 158.001 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 324.39 Mbit/s
95th percentile per-packet one-way delay: 158.001 ms
Loss rate: 1.92%

Run 1: Report of PCC-Expr — Data Link

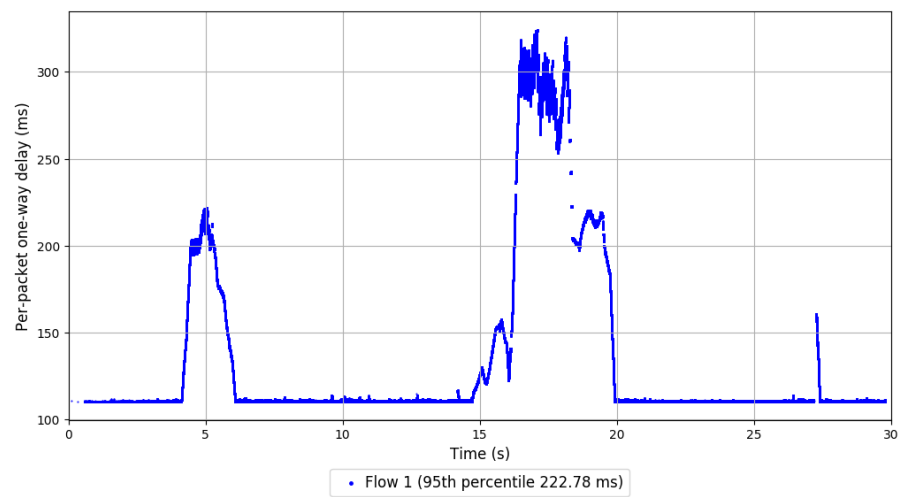
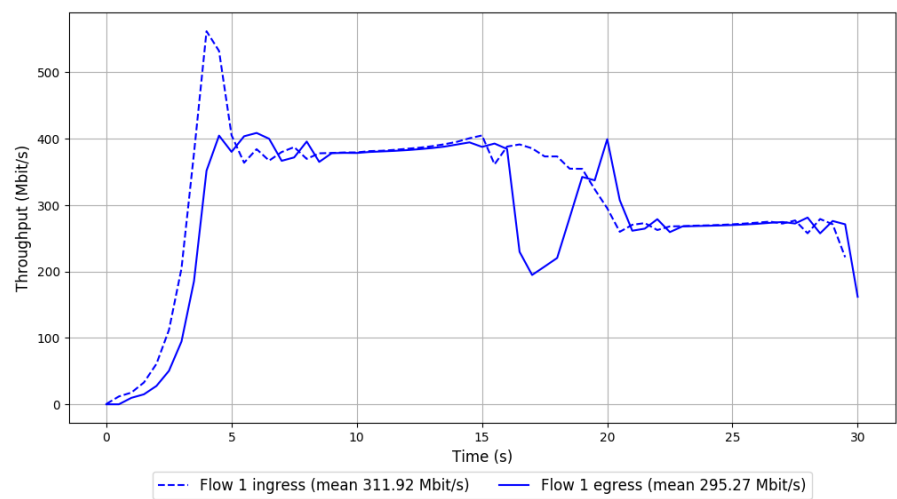


Run 2: Statistics of PCC-Expr

Start at: 2018-11-30 04:27:30
End at: 2018-11-30 04:28:00
Local clock offset: 1.413 ms
Remote clock offset: -0.143 ms

Below is generated by plot.py at 2018-11-30 07:44:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 295.27 Mbit/s
95th percentile per-packet one-way delay: 222.776 ms
Loss rate: 6.03%
-- Flow 1:
Average throughput: 295.27 Mbit/s
95th percentile per-packet one-way delay: 222.776 ms
Loss rate: 6.03%

Run 2: Report of PCC-Expr — Data Link

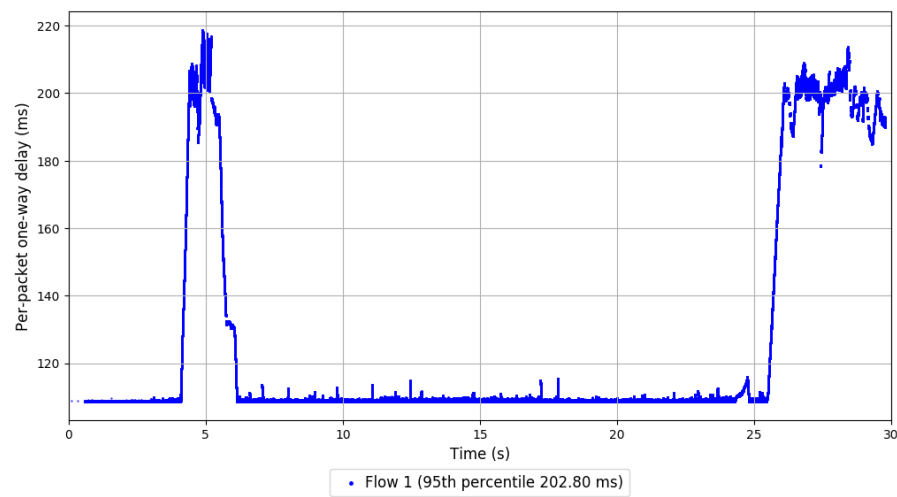
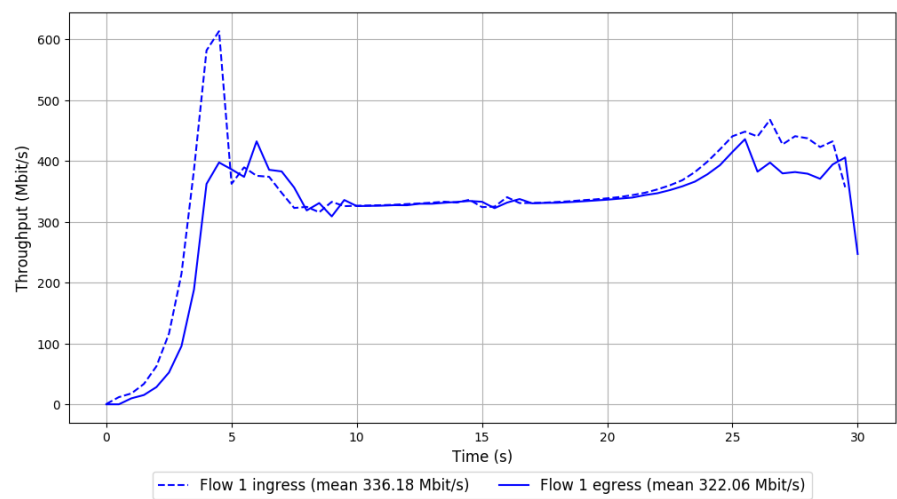


Run 3: Statistics of PCC-Expr

Start at: 2018-11-30 04:56:27
End at: 2018-11-30 04:56:57
Local clock offset: -0.368 ms
Remote clock offset: -0.114 ms

Below is generated by plot.py at 2018-11-30 07:44:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 322.06 Mbit/s
95th percentile per-packet one-way delay: 202.799 ms
Loss rate: 4.90%
-- Flow 1:
Average throughput: 322.06 Mbit/s
95th percentile per-packet one-way delay: 202.799 ms
Loss rate: 4.90%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-11-30 05:25:22

End at: 2018-11-30 05:25:52

Local clock offset: -1.489 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-11-30 07:48:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 318.44 Mbit/s

95th percentile per-packet one-way delay: 162.587 ms

Loss rate: 1.50%

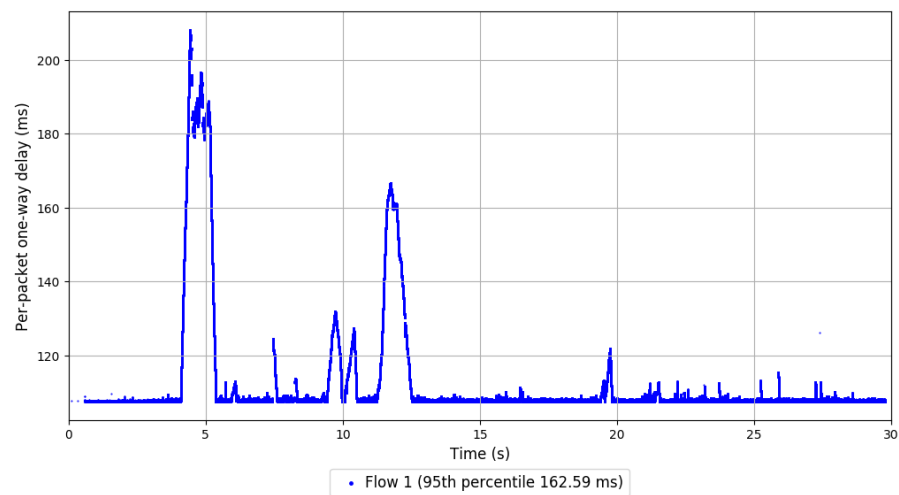
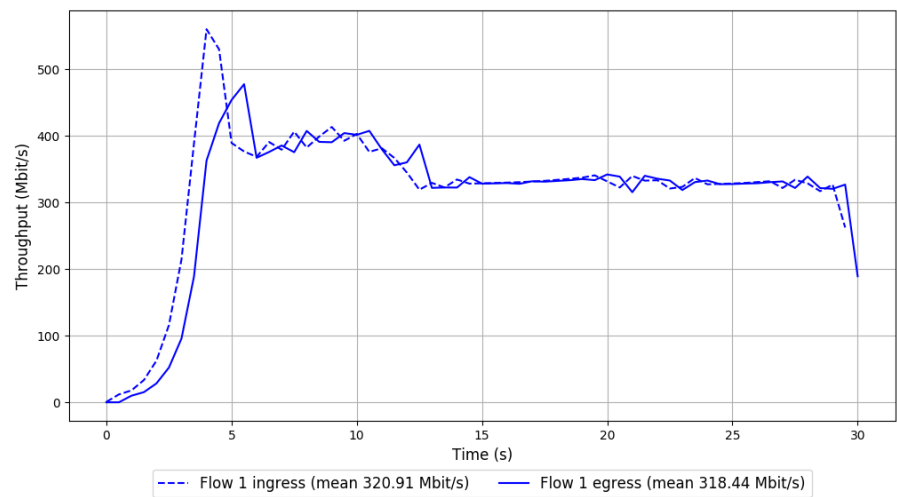
-- Flow 1:

Average throughput: 318.44 Mbit/s

95th percentile per-packet one-way delay: 162.587 ms

Loss rate: 1.50%

Run 4: Report of PCC-Expr — Data Link

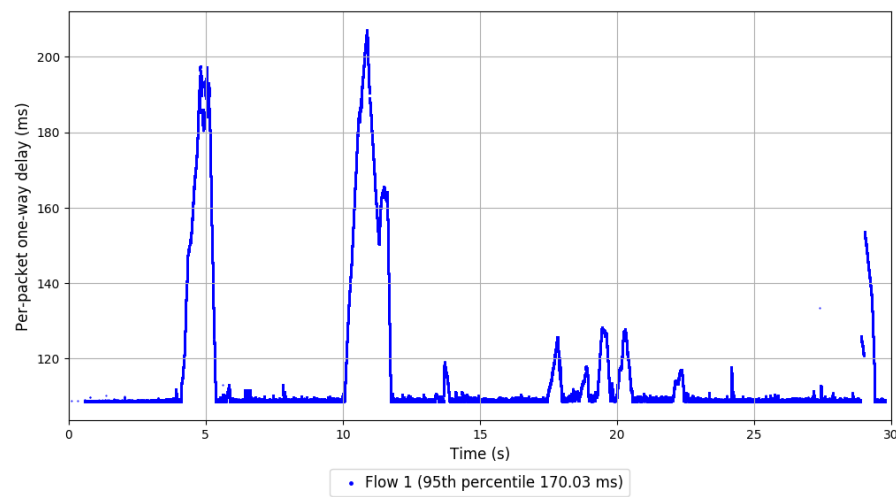
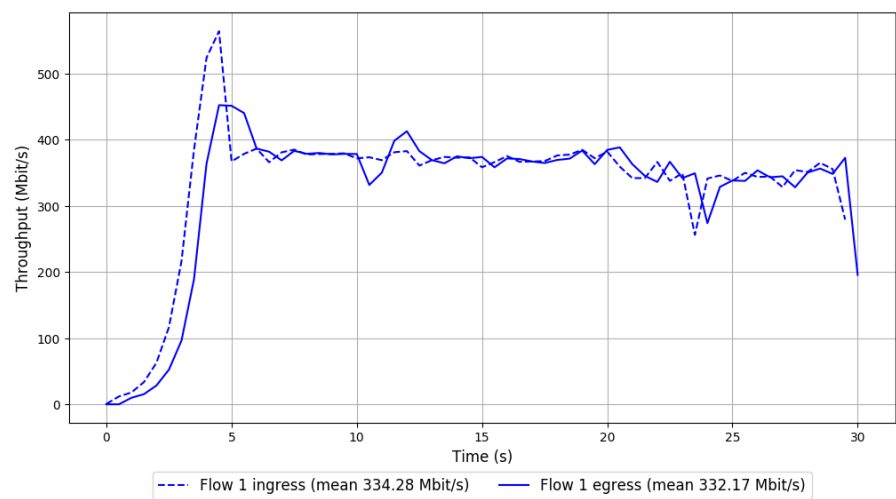


Run 5: Statistics of PCC-Expr

Start at: 2018-11-30 05:54:12
End at: 2018-11-30 05:54:42
Local clock offset: -0.734 ms
Remote clock offset: -0.096 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 332.17 Mbit/s
95th percentile per-packet one-way delay: 170.027 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 332.17 Mbit/s
95th percentile per-packet one-way delay: 170.027 ms
Loss rate: 1.36%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-11-30 04:11:55

End at: 2018-11-30 04:12:25

Local clock offset: 1.089 ms

Remote clock offset: -0.127 ms

Below is generated by plot.py at 2018-11-30 07:49:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.17 Mbit/s

95th percentile per-packet one-way delay: 110.504 ms

Loss rate: 1.22%

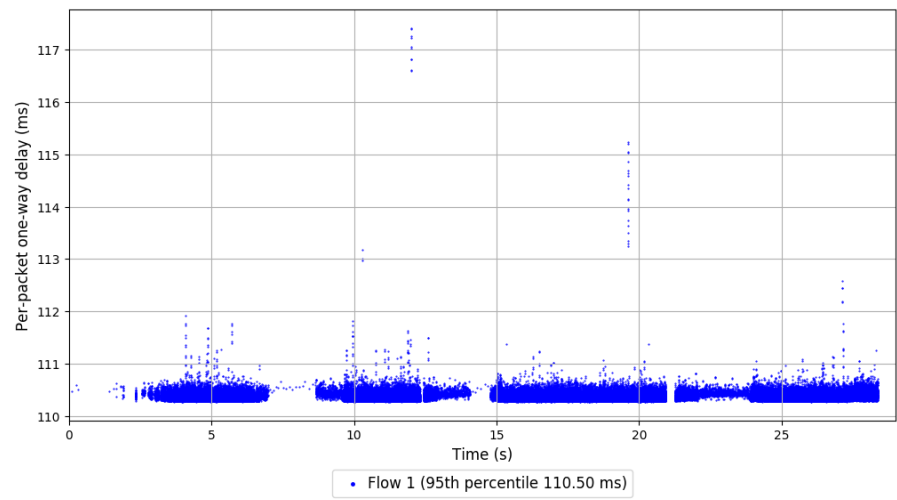
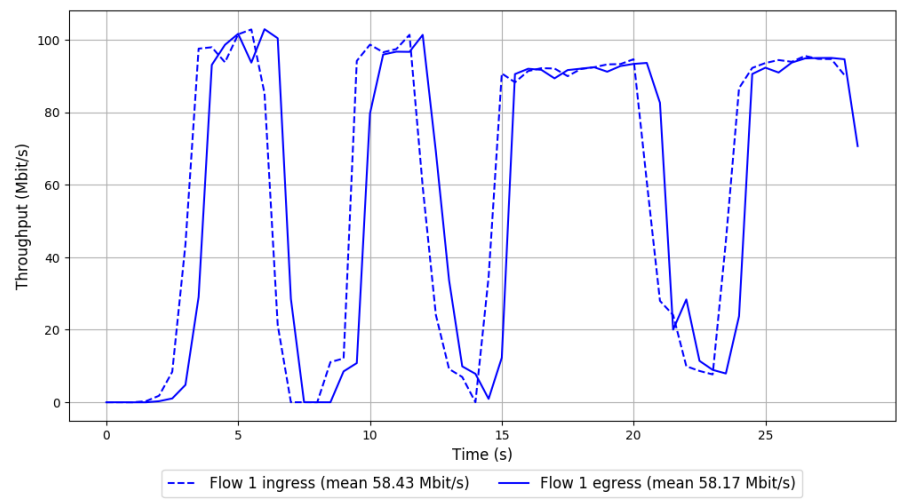
-- Flow 1:

Average throughput: 58.17 Mbit/s

95th percentile per-packet one-way delay: 110.504 ms

Loss rate: 1.22%

Run 1: Report of QUIC Cubic — Data Link

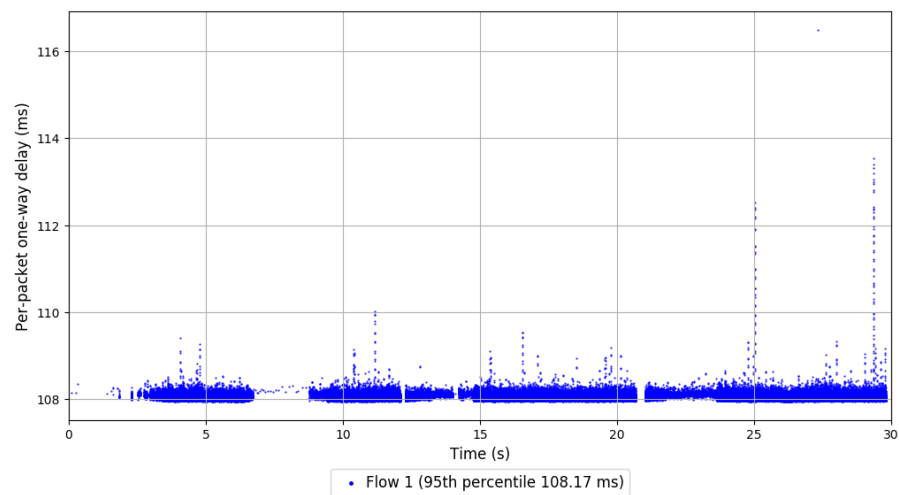
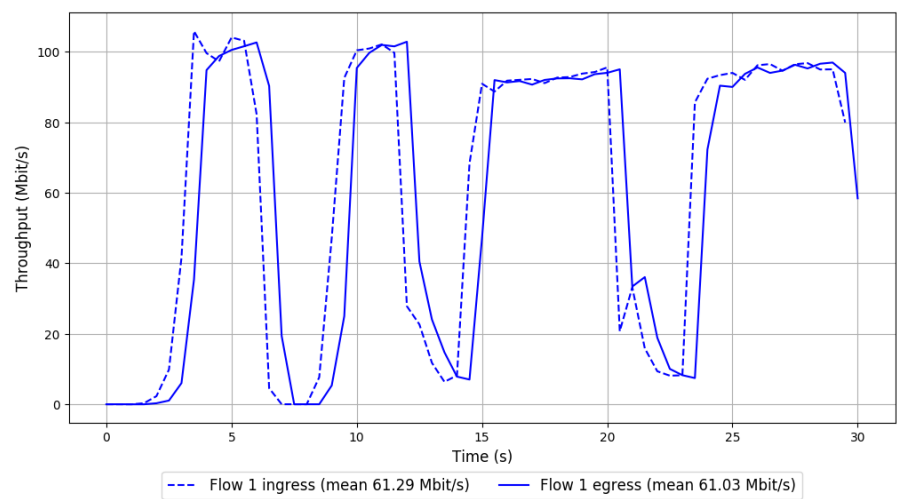


Run 2: Statistics of QUIC Cubic

Start at: 2018-11-30 04:40:33
End at: 2018-11-30 04:41:03
Local clock offset: -1.404 ms
Remote clock offset: -0.148 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 61.03 Mbit/s
95th percentile per-packet one-way delay: 108.166 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 61.03 Mbit/s
95th percentile per-packet one-way delay: 108.166 ms
Loss rate: 1.15%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-30 05:09:31

End at: 2018-11-30 05:10:01

Local clock offset: -0.025 ms

Remote clock offset: -0.21 ms

Below is generated by plot.py at 2018-11-30 07:49:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.24 Mbit/s

95th percentile per-packet one-way delay: 109.473 ms

Loss rate: 1.13%

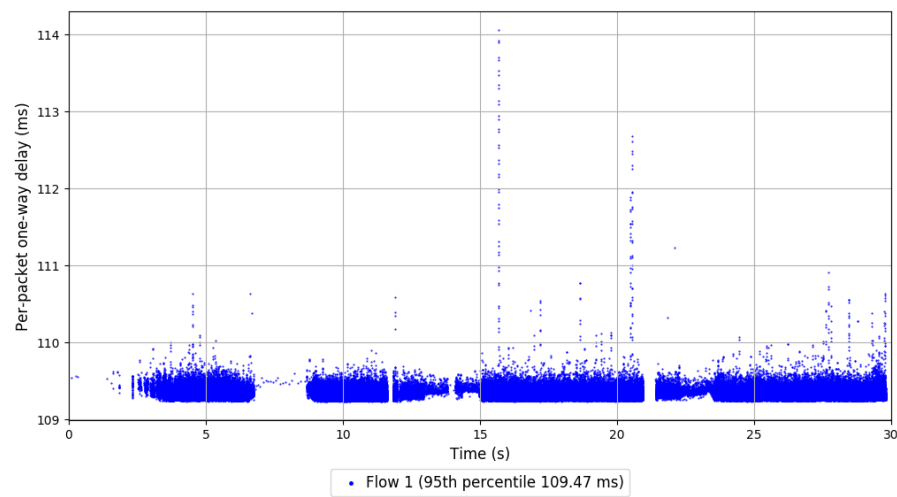
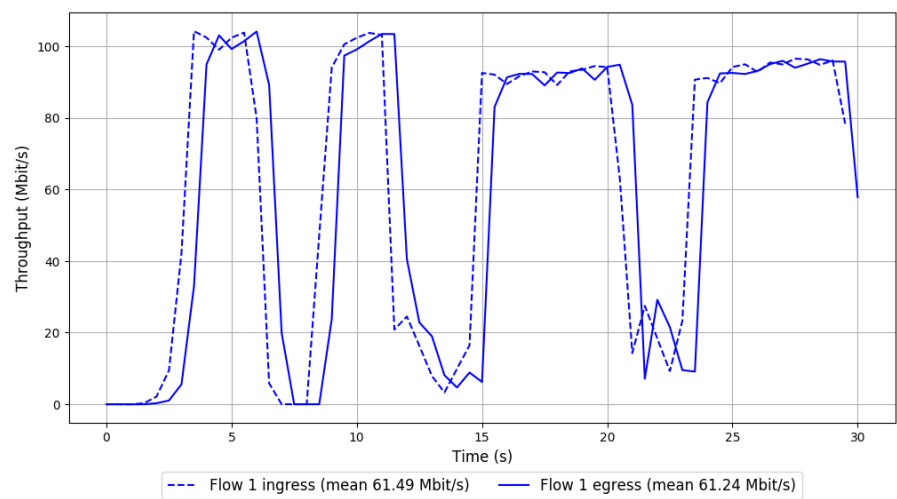
-- Flow 1:

Average throughput: 61.24 Mbit/s

95th percentile per-packet one-way delay: 109.473 ms

Loss rate: 1.13%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-30 05:38:16

End at: 2018-11-30 05:38:46

Local clock offset: -0.085 ms

Remote clock offset: -0.102 ms

Below is generated by plot.py at 2018-11-30 07:49:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.37 Mbit/s

95th percentile per-packet one-way delay: 109.659 ms

Loss rate: 1.19%

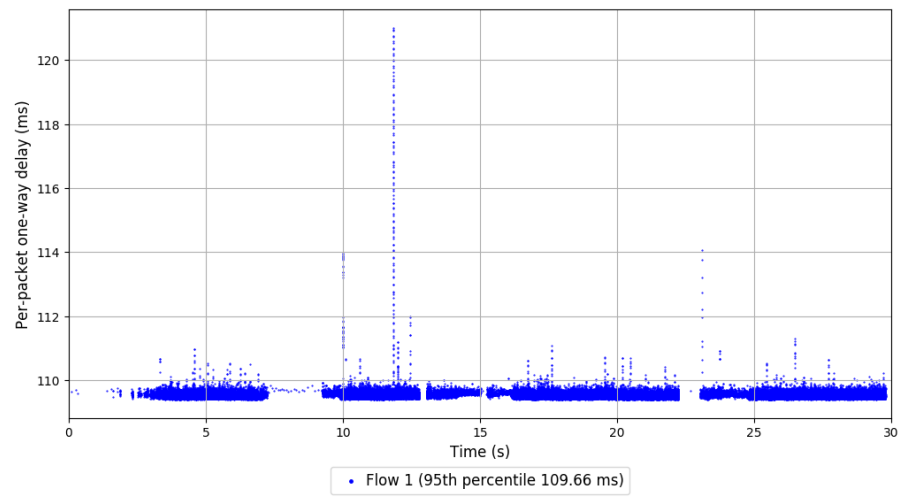
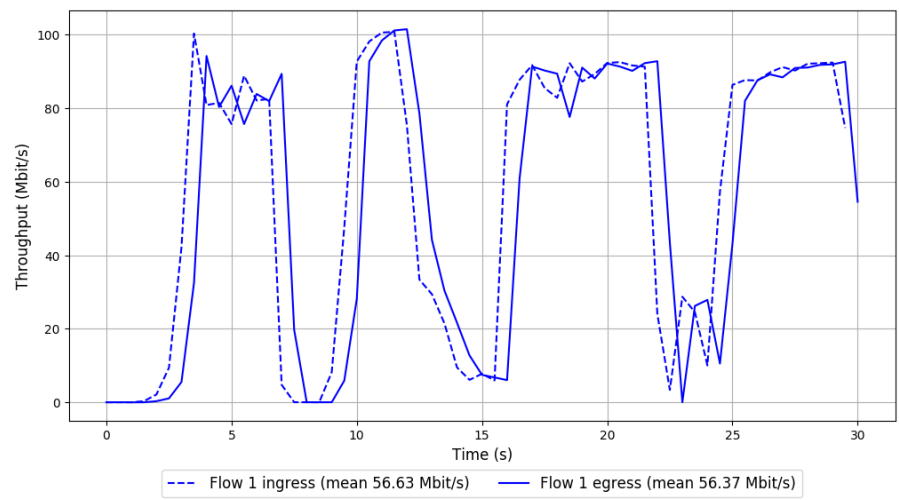
-- Flow 1:

Average throughput: 56.37 Mbit/s

95th percentile per-packet one-way delay: 109.659 ms

Loss rate: 1.19%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-11-30 06:07:14

End at: 2018-11-30 06:07:44

Local clock offset: 0.393 ms

Remote clock offset: -0.006 ms

Below is generated by plot.py at 2018-11-30 07:49:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 60.68 Mbit/s

95th percentile per-packet one-way delay: 110.093 ms

Loss rate: 1.08%

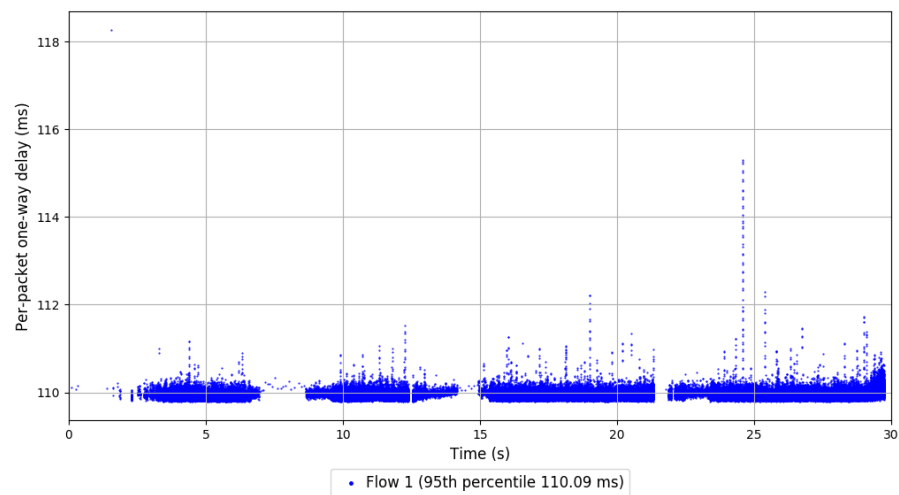
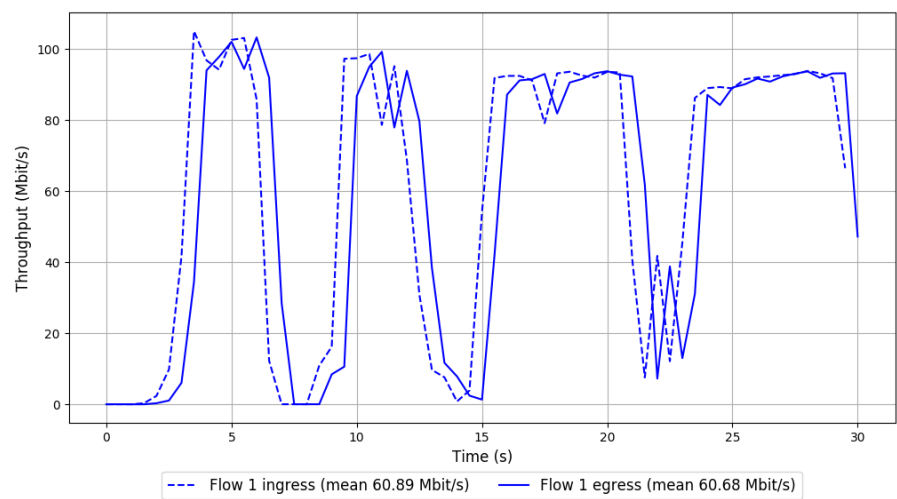
-- Flow 1:

Average throughput: 60.68 Mbit/s

95th percentile per-packet one-way delay: 110.093 ms

Loss rate: 1.08%

Run 5: Report of QUIC Cubic — Data Link

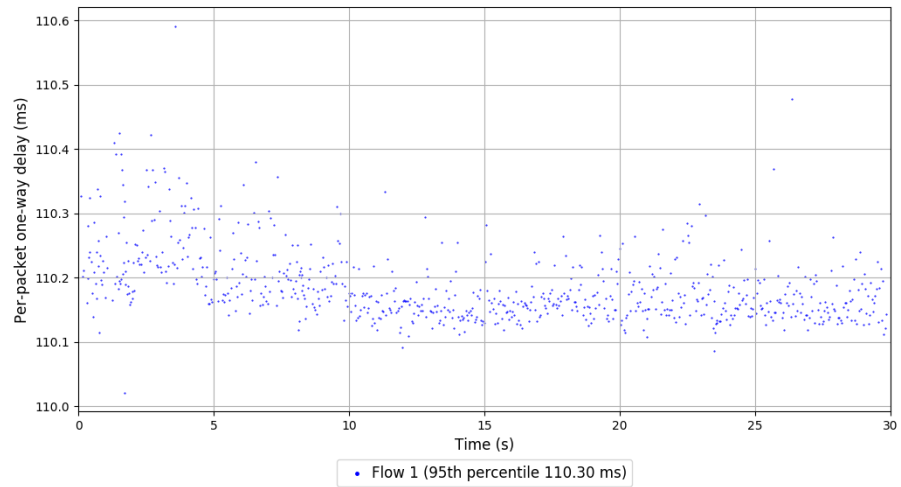
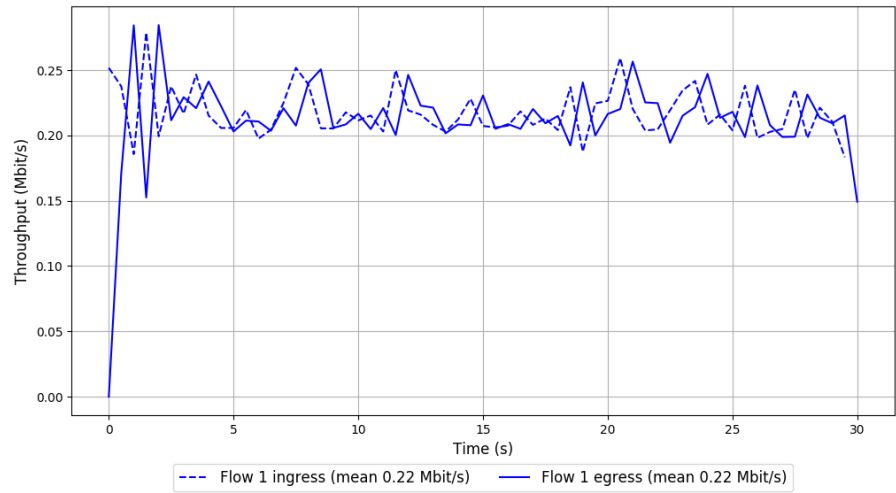


Run 1: Statistics of SCReAM

Start at: 2018-11-30 04:17:35
End at: 2018-11-30 04:18:05
Local clock offset: 0.888 ms
Remote clock offset: -0.117 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.301 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.301 ms
Loss rate: 0.64%

Run 1: Report of SReAM — Data Link

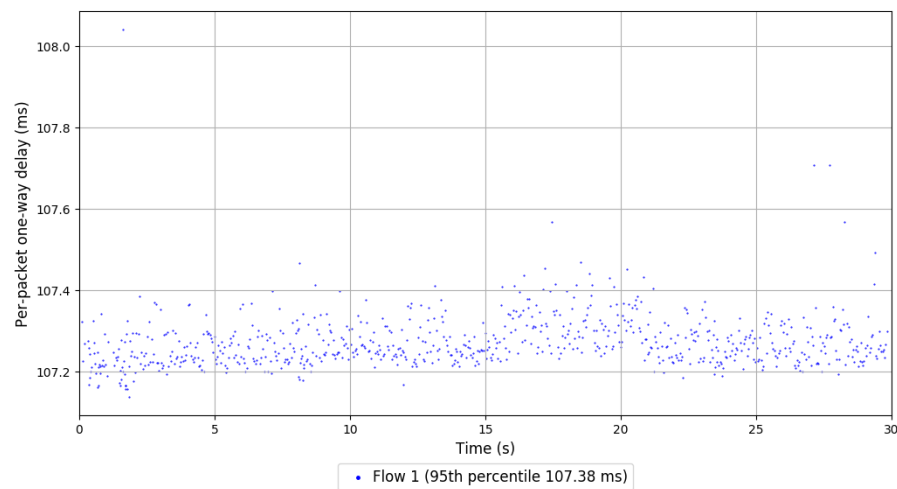
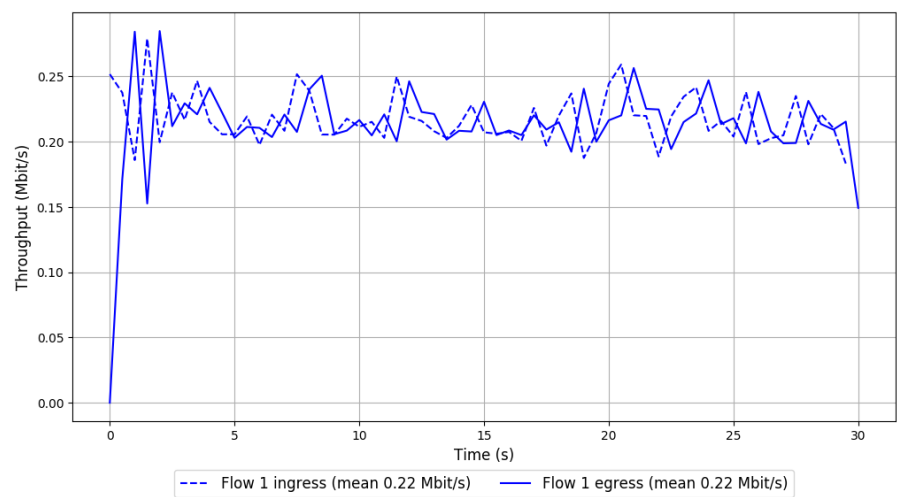


Run 2: Statistics of SCReAM

Start at: 2018-11-30 04:46:11
End at: 2018-11-30 04:46:41
Local clock offset: -1.225 ms
Remote clock offset: -0.191 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.376 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.376 ms
Loss rate: 0.64%

Run 2: Report of SReAM — Data Link

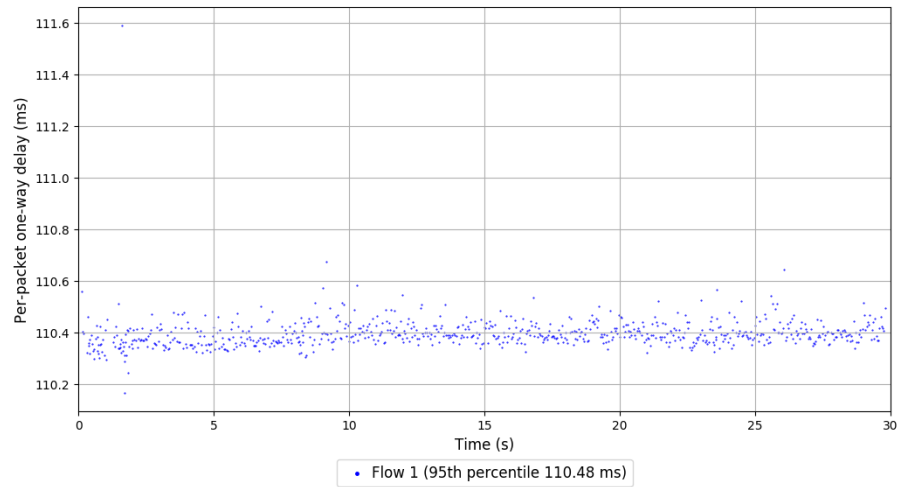
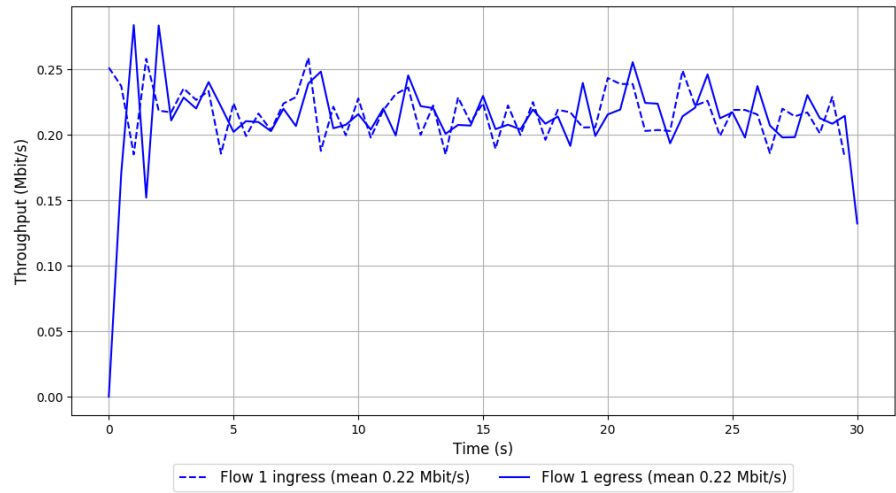


Run 3: Statistics of SCReAM

Start at: 2018-11-30 05:15:10
End at: 2018-11-30 05:15:40
Local clock offset: -0.278 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.478 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.478 ms
Loss rate: 0.77%

Run 3: Report of SReAM — Data Link

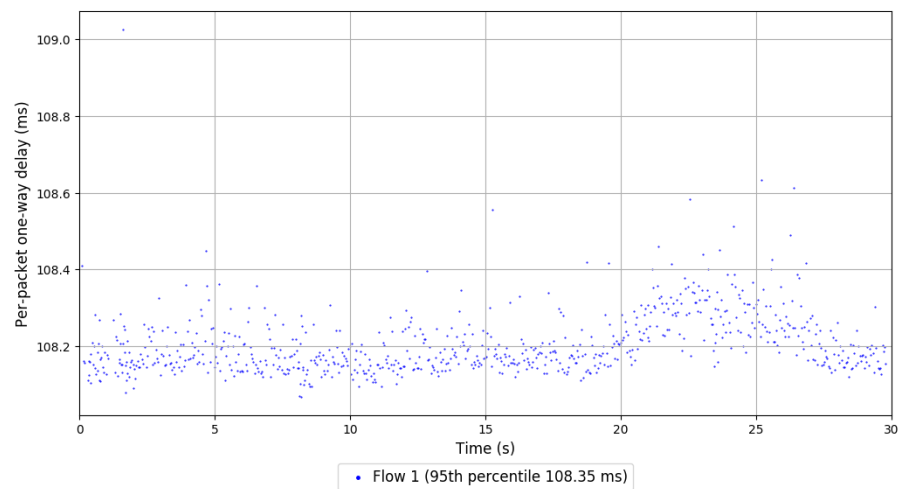
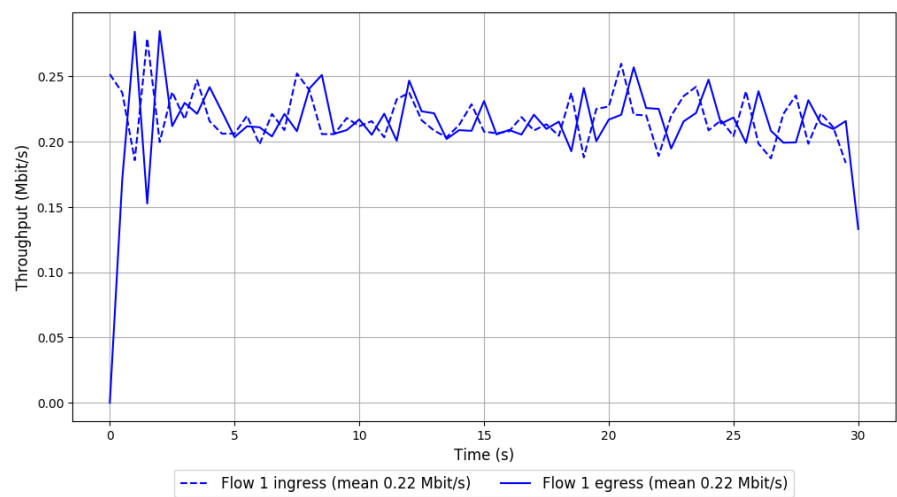


Run 4: Statistics of SCReAM

Start at: 2018-11-30 05:43:56
End at: 2018-11-30 05:44:26
Local clock offset: -0.557 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.353 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.353 ms
Loss rate: 0.77%

Run 4: Report of SReAM — Data Link

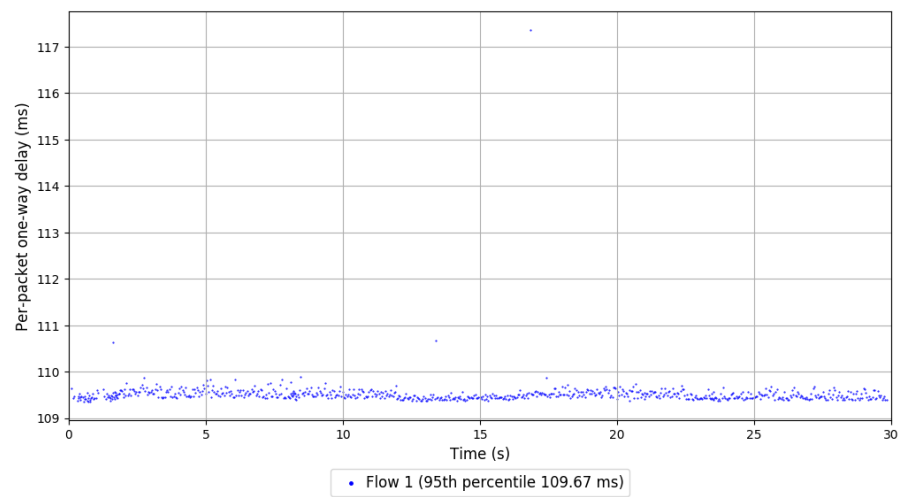
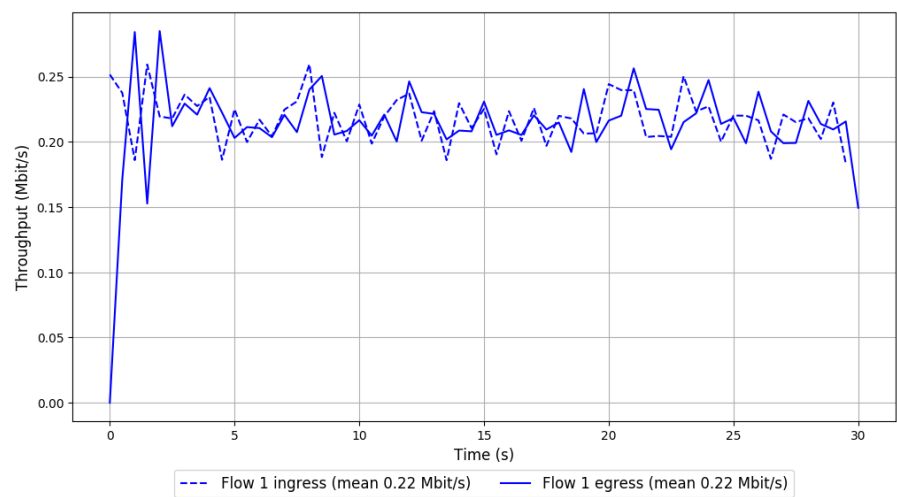


Run 5: Statistics of SCReAM

Start at: 2018-11-30 06:12:53
End at: 2018-11-30 06:13:23
Local clock offset: -0.123 ms
Remote clock offset: -0.079 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.668 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.668 ms
Loss rate: 0.64%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-11-30 04:14:59

End at: 2018-11-30 04:15:29

Local clock offset: -1.448 ms

Remote clock offset: 0.22 ms

Below is generated by plot.py at 2018-11-30 07:49:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.62 Mbit/s

95th percentile per-packet one-way delay: 108.158 ms

Loss rate: 0.76%

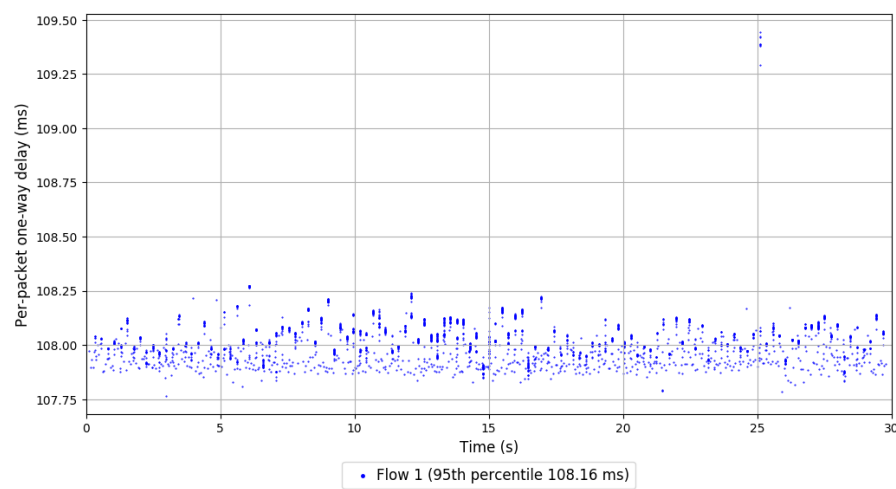
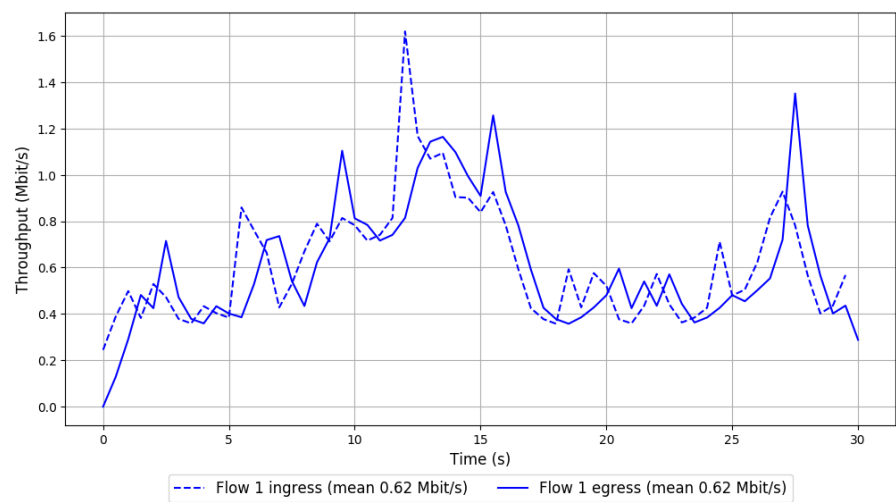
-- Flow 1:

Average throughput: 0.62 Mbit/s

95th percentile per-packet one-way delay: 108.158 ms

Loss rate: 0.76%

Run 1: Report of Sprout — Data Link

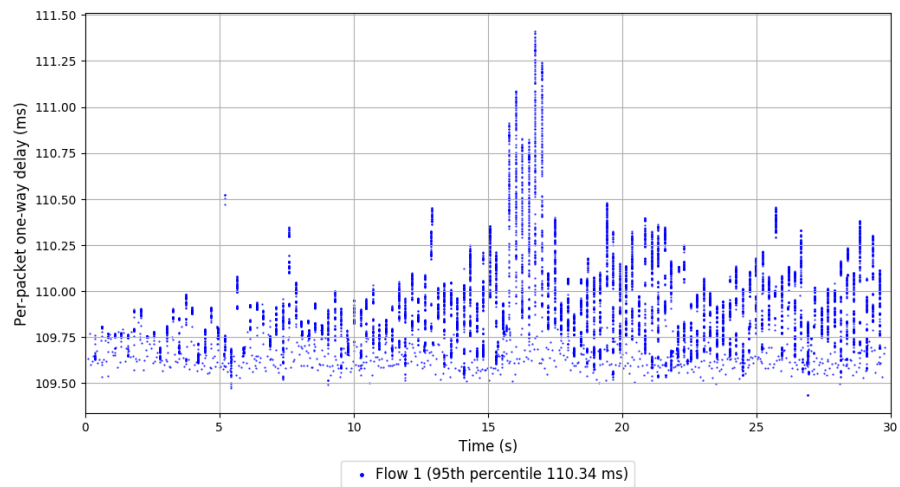
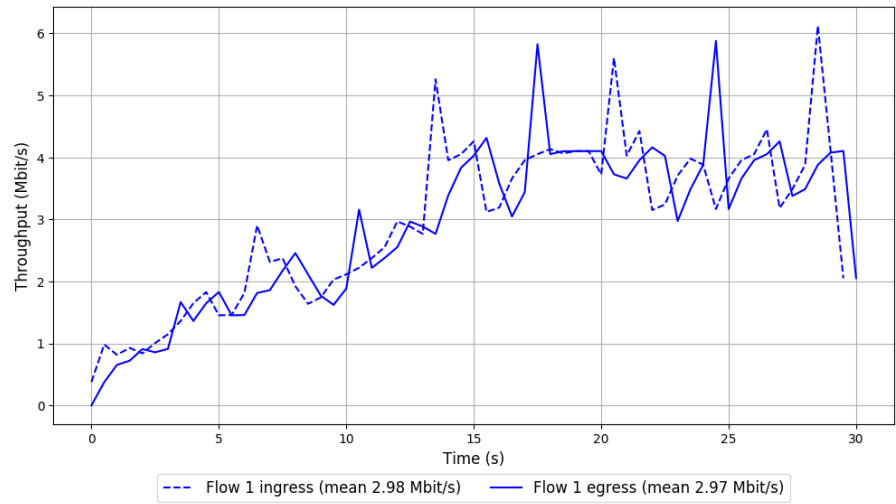


Run 2: Statistics of Sprout

Start at: 2018-11-30 04:43:35
End at: 2018-11-30 04:44:05
Local clock offset: -0.042 ms
Remote clock offset: -0.216 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 110.345 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 110.345 ms
Loss rate: 1.15%

Run 2: Report of Sprout — Data Link

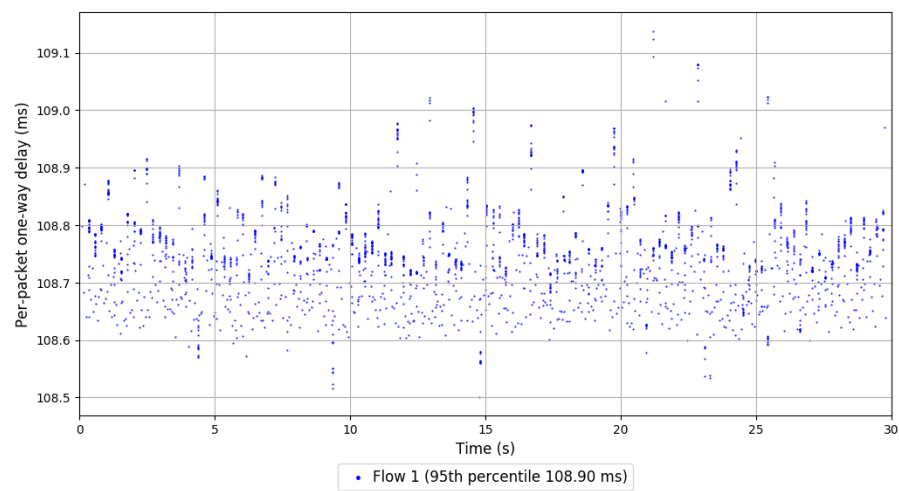
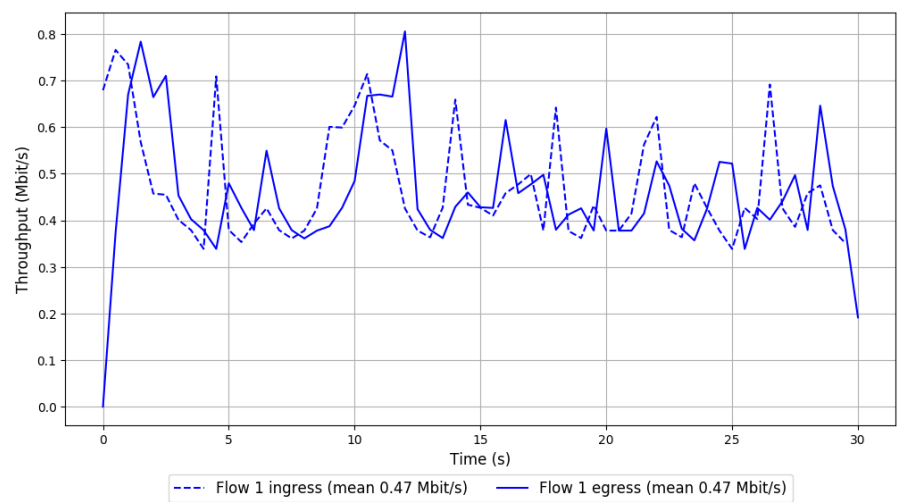


Run 3: Statistics of Sprout

Start at: 2018-11-30 05:12:35
End at: 2018-11-30 05:13:05
Local clock offset: 0.077 ms
Remote clock offset: -0.117 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 108.896 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 108.896 ms
Loss rate: 0.58%

Run 3: Report of Sprout — Data Link

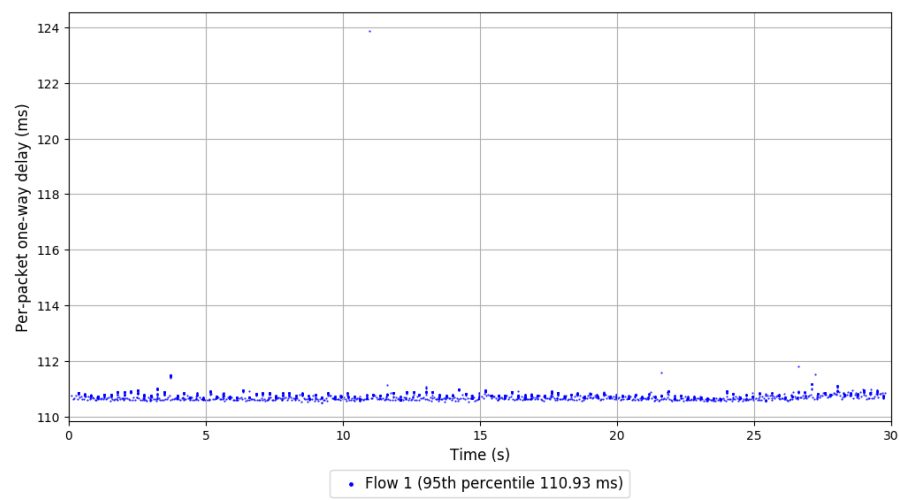
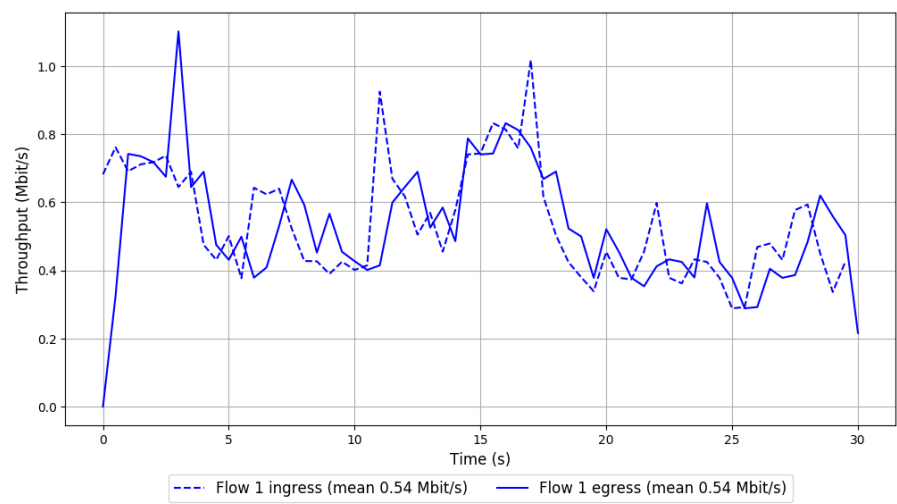


Run 4: Statistics of Sprout

Start at: 2018-11-30 05:41:21
End at: 2018-11-30 05:41:51
Local clock offset: 1.181 ms
Remote clock offset: -0.103 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 110.930 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 110.930 ms
Loss rate: 0.66%

Run 4: Report of Sprout — Data Link

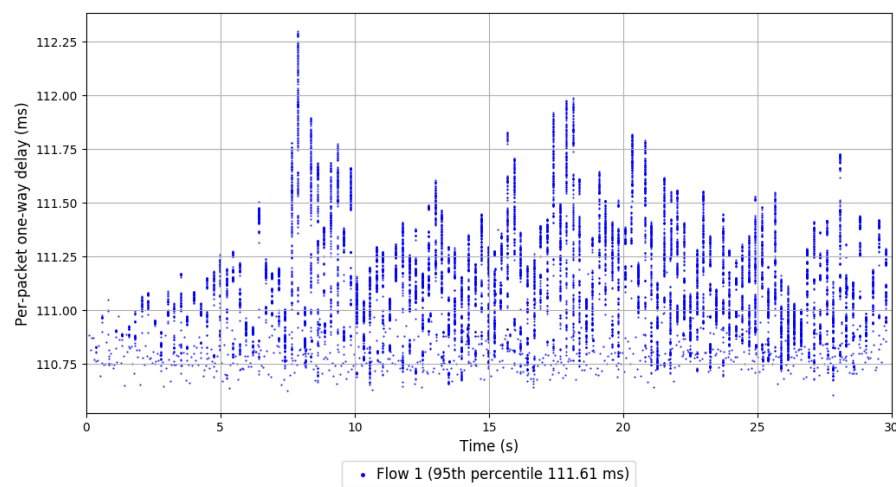
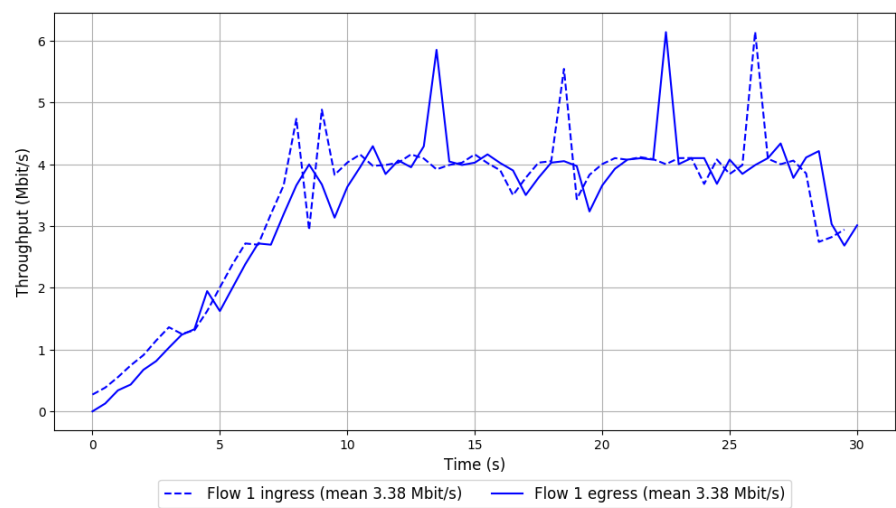


Run 5: Statistics of Sprout

Start at: 2018-11-30 06:10:17
End at: 2018-11-30 06:10:47
Local clock offset: 1.038 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-11-30 07:49:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 111.609 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 111.609 ms
Loss rate: 0.69%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-11-30 04:19:55

End at: 2018-11-30 04:20:25

Local clock offset: 0.119 ms

Remote clock offset: -0.181 ms

Below is generated by plot.py at 2018-11-30 07:51:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 204.49 Mbit/s

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

Loss rate: 0.82%

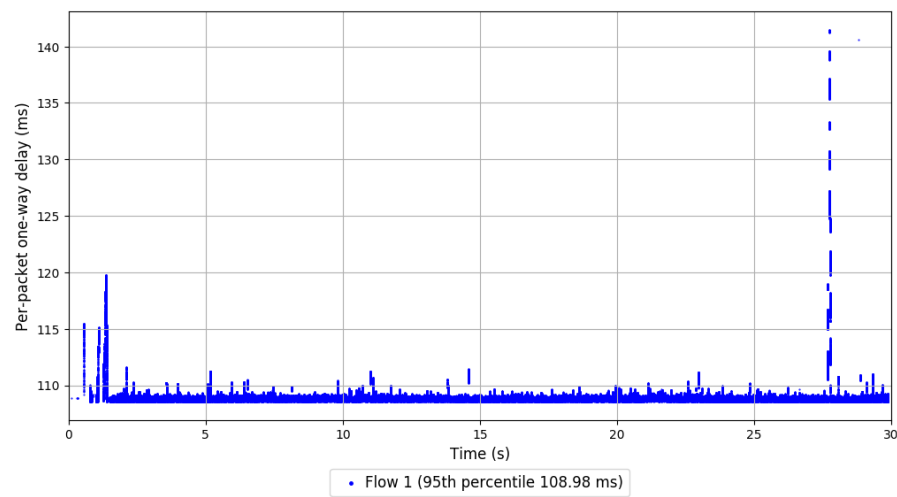
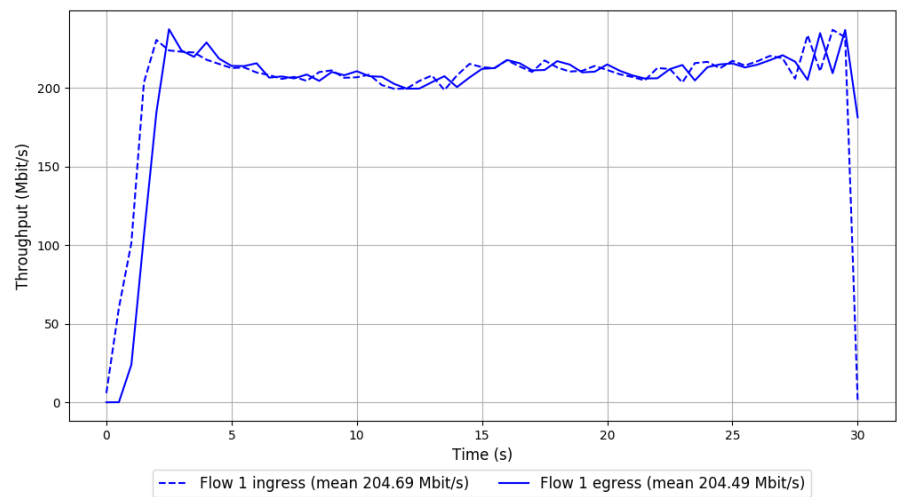
-- Flow 1:

Average throughput: 204.49 Mbit/s

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

Loss rate: 0.82%

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

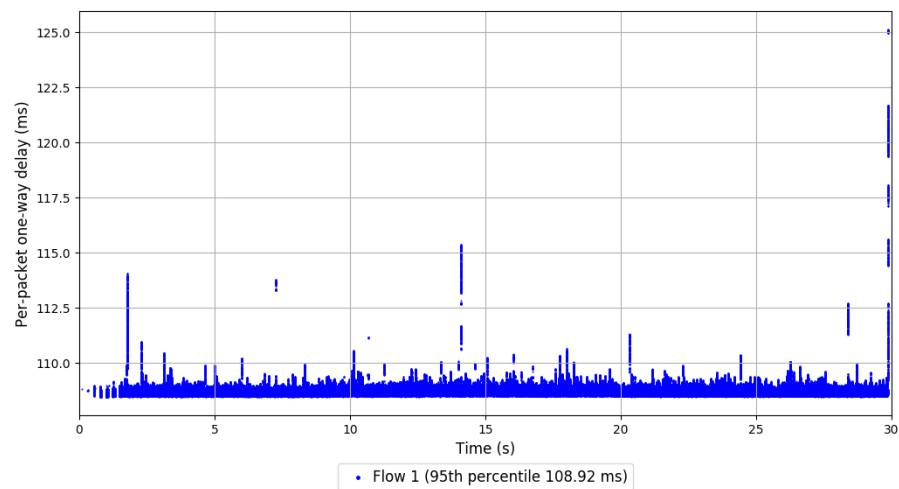
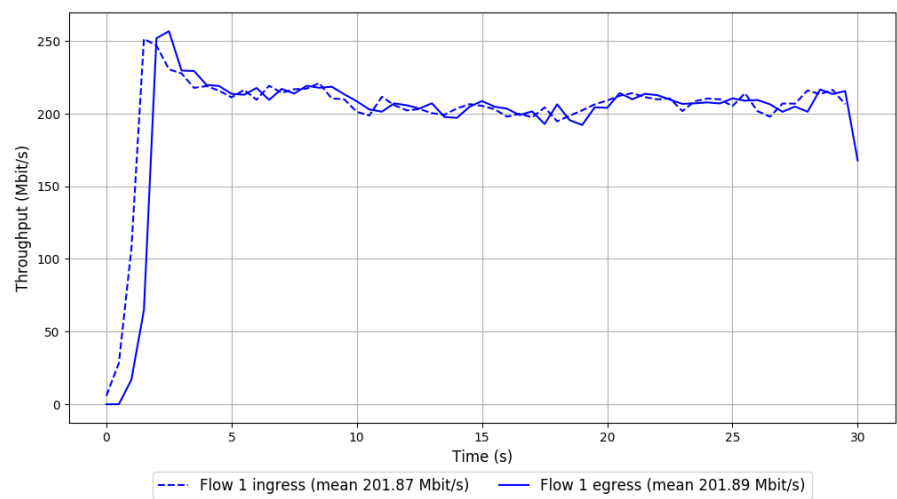


Run 2: Statistics of TaoVA-100x

Start at: 2018-11-30 04:48:31
End at: 2018-11-30 04:49:01
Local clock offset: 0.26 ms
Remote clock offset: -0.162 ms

Below is generated by plot.py at 2018-11-30 07:51:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 201.89 Mbit/s
95th percentile per-packet one-way delay: 108.919 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 201.89 Mbit/s
95th percentile per-packet one-way delay: 108.919 ms
Loss rate: 0.71%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-30 05:17:30

End at: 2018-11-30 05:18:00

Local clock offset: -0.262 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-11-30 07:51:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 204.26 Mbit/s

95th percentile per-packet one-way delay: 109.356 ms

Loss rate: 0.76%

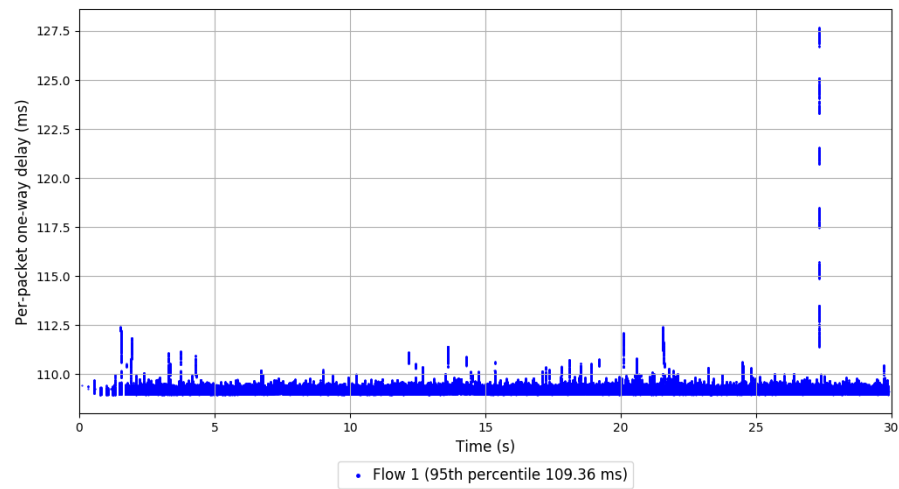
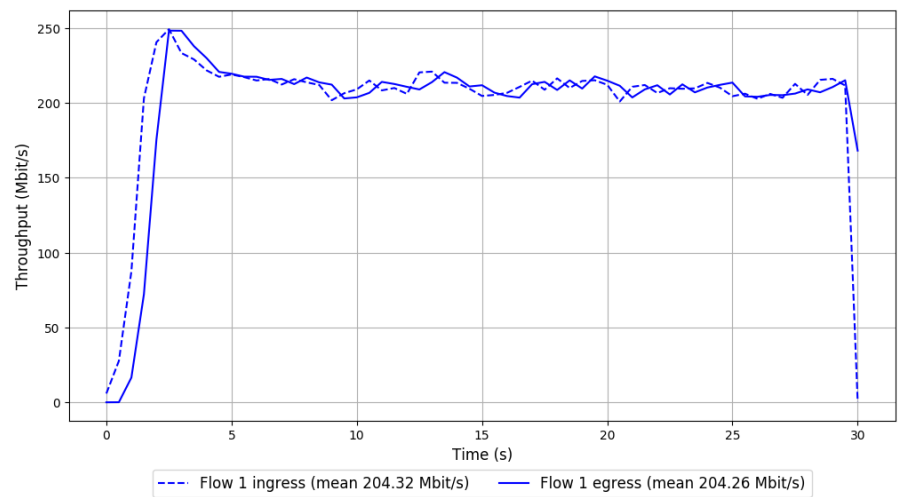
-- Flow 1:

Average throughput: 204.26 Mbit/s

95th percentile per-packet one-way delay: 109.356 ms

Loss rate: 0.76%

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

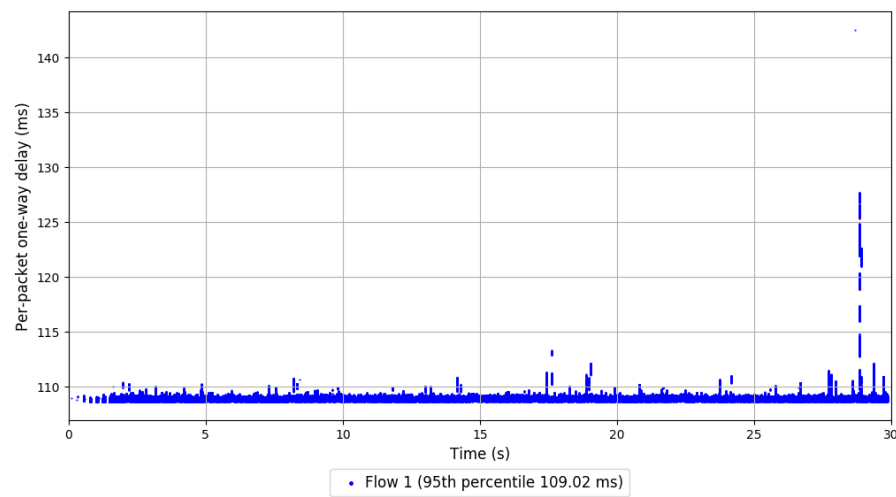
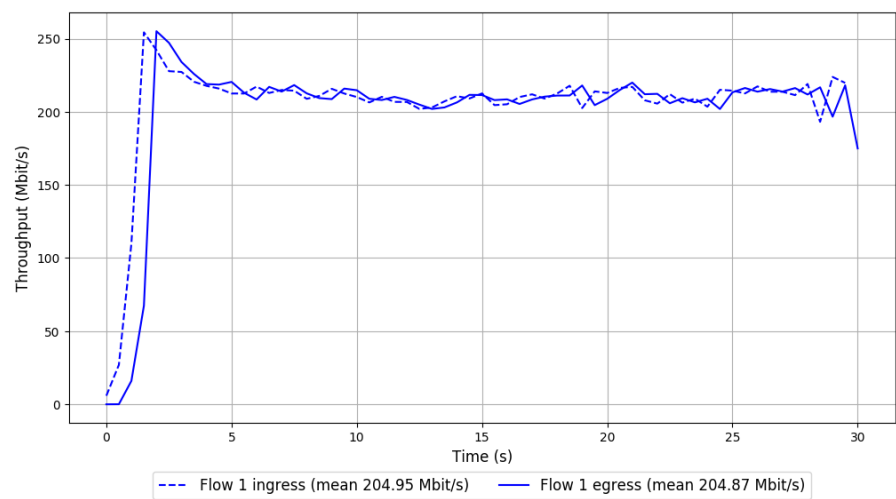


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-30 05:46:16
End at: 2018-11-30 05:46:46
Local clock offset: -0.531 ms
Remote clock offset: -0.135 ms

Below is generated by plot.py at 2018-11-30 07:52:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 204.87 Mbit/s
95th percentile per-packet one-way delay: 109.023 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 204.87 Mbit/s
95th percentile per-packet one-way delay: 109.023 ms
Loss rate: 0.77%

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

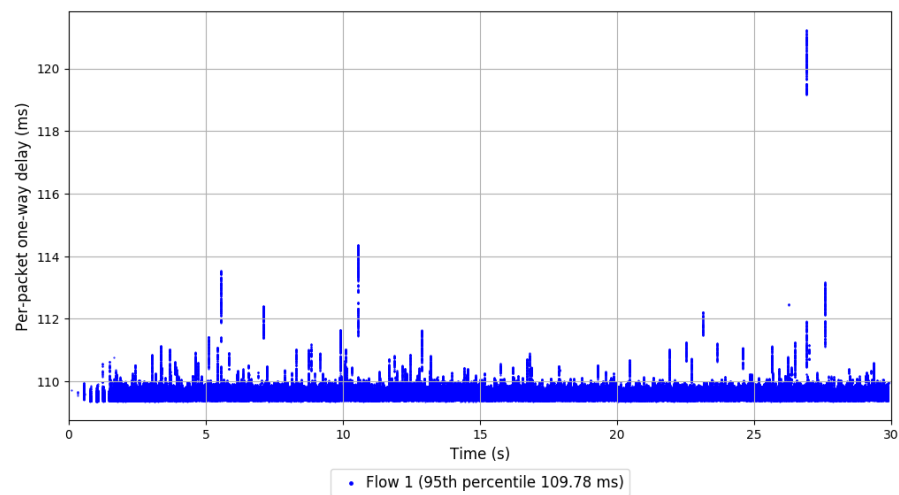
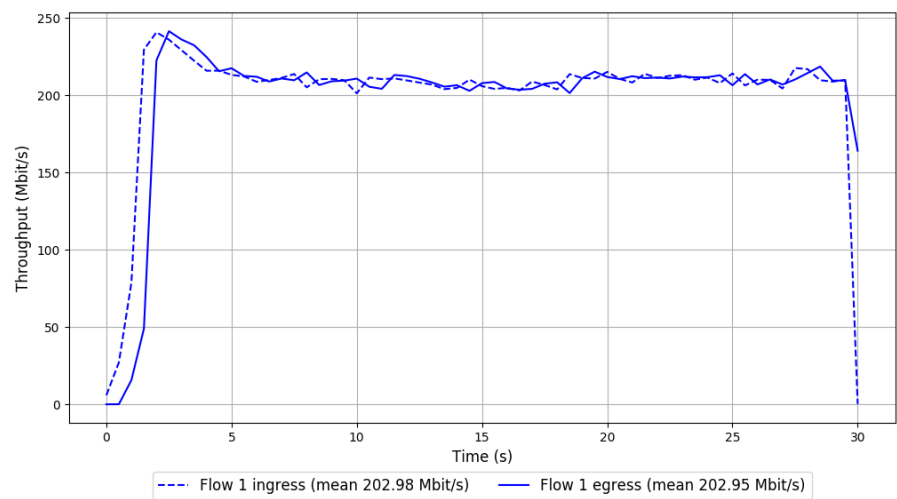


Run 5: Statistics of TaoVA-100x

Start at: 2018-11-30 06:15:12
End at: 2018-11-30 06:15:42
Local clock offset: -0.213 ms
Remote clock offset: -0.157 ms

Below is generated by plot.py at 2018-11-30 07:52:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 202.95 Mbit/s
95th percentile per-packet one-way delay: 109.775 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 202.95 Mbit/s
95th percentile per-packet one-way delay: 109.775 ms
Loss rate: 0.75%

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

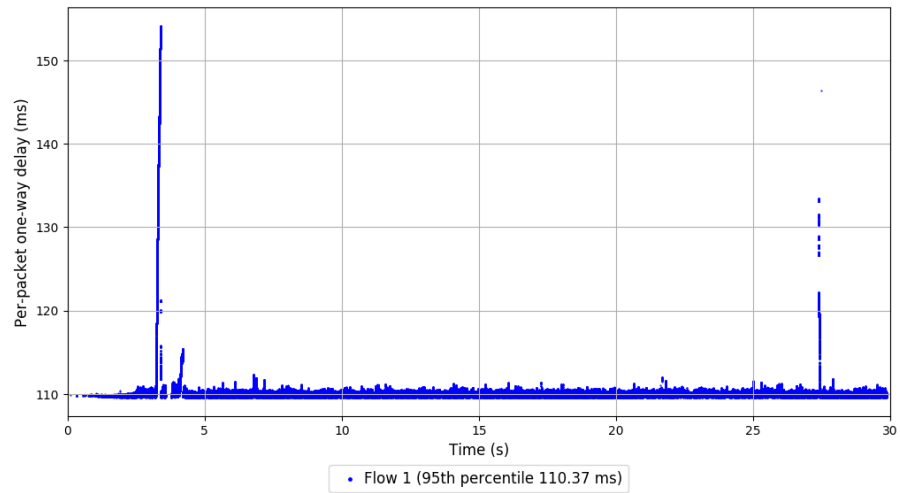
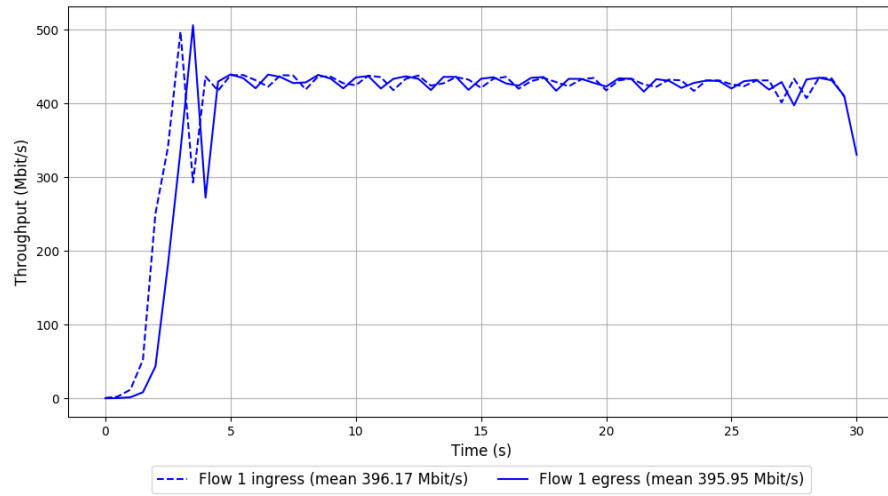


Run 1: Statistics of TCP Vegas

Start at: 2018-11-30 04:10:23
End at: 2018-11-30 04:10:53
Local clock offset: 1.053 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-11-30 07:52:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 395.95 Mbit/s
95th percentile per-packet one-way delay: 110.367 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 395.95 Mbit/s
95th percentile per-packet one-way delay: 110.367 ms
Loss rate: 0.78%

Run 1: Report of TCP Vegas — Data Link

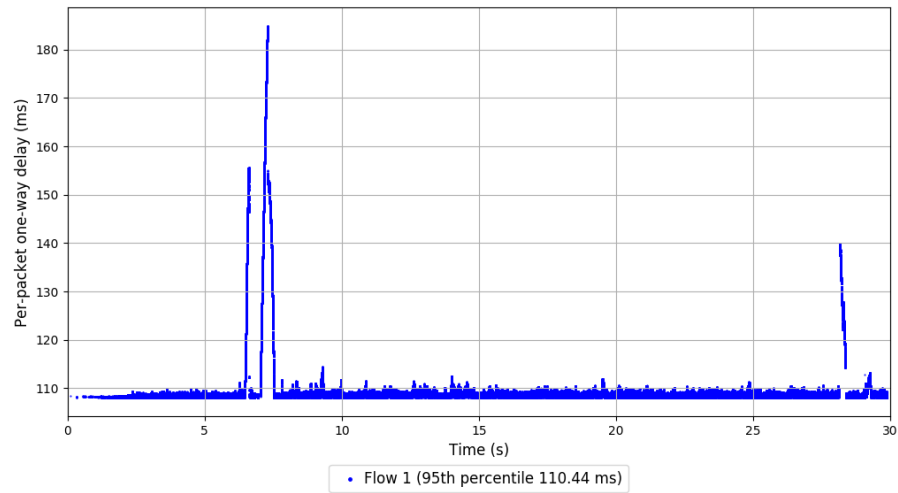
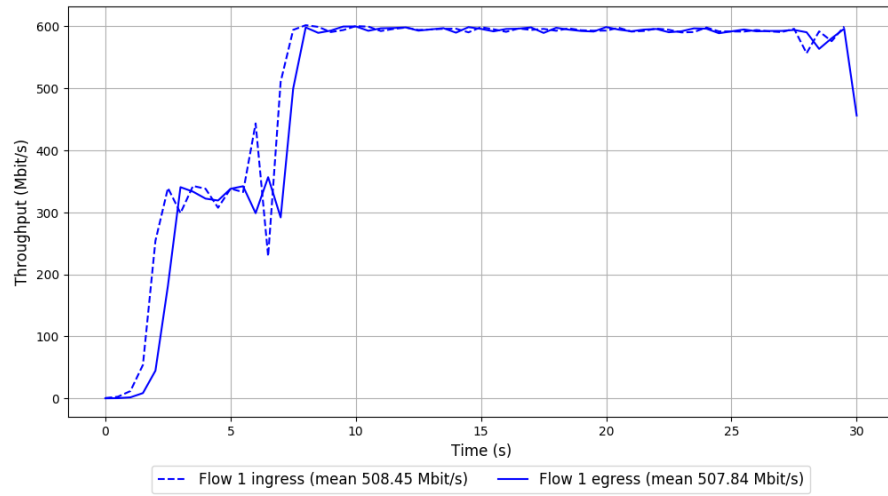


Run 2: Statistics of TCP Vegas

Start at: 2018-11-30 04:38:55
End at: 2018-11-30 04:39:25
Local clock offset: -0.029 ms
Remote clock offset: 0.208 ms

Below is generated by plot.py at 2018-11-30 07:58:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 507.84 Mbit/s
95th percentile per-packet one-way delay: 110.437 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 507.84 Mbit/s
95th percentile per-packet one-way delay: 110.437 ms
Loss rate: 0.85%

Run 2: Report of TCP Vegas — Data Link

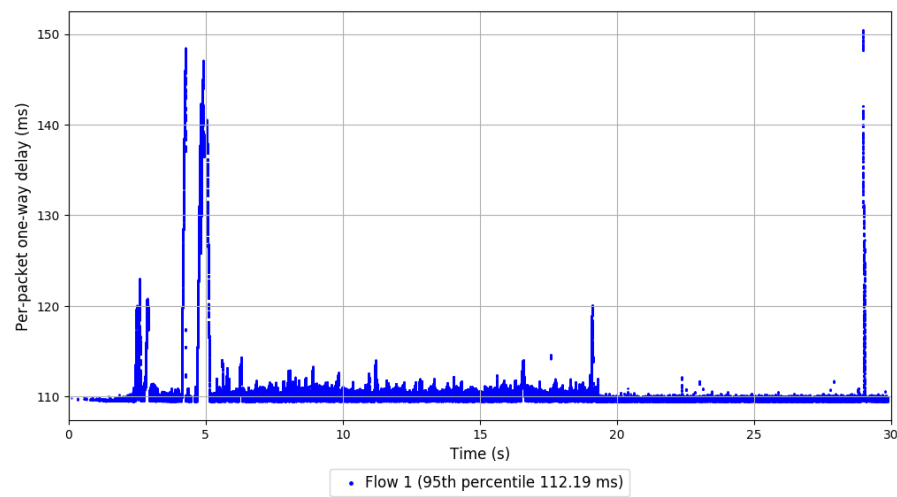
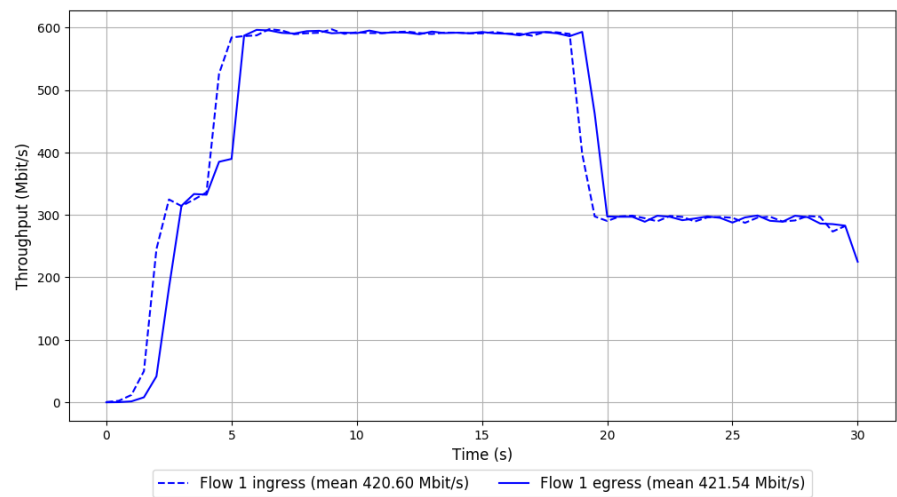


Run 3: Statistics of TCP Vegas

Start at: 2018-11-30 05:07:58
End at: 2018-11-30 05:08:28
Local clock offset: -0.181 ms
Remote clock offset: -0.477 ms

Below is generated by plot.py at 2018-11-30 07:58:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 421.54 Mbit/s
95th percentile per-packet one-way delay: 112.187 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 421.54 Mbit/s
95th percentile per-packet one-way delay: 112.187 ms
Loss rate: 0.51%

Run 3: Report of TCP Vegas — Data Link

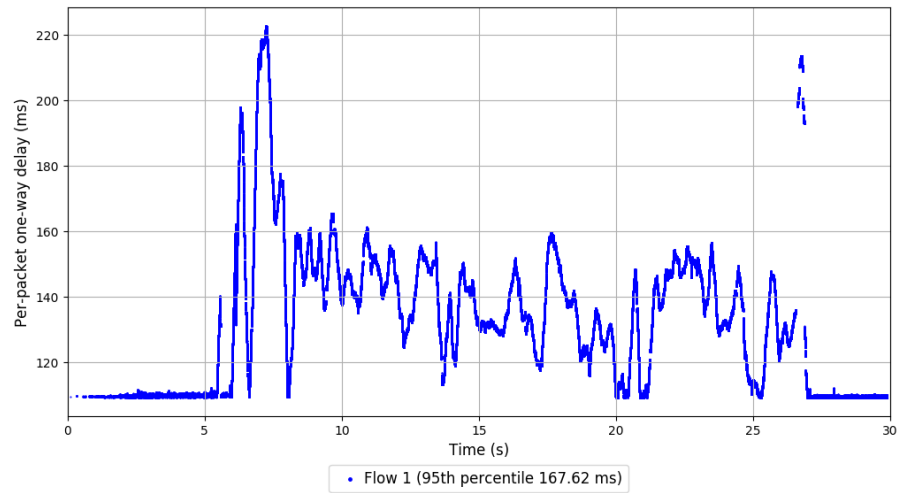
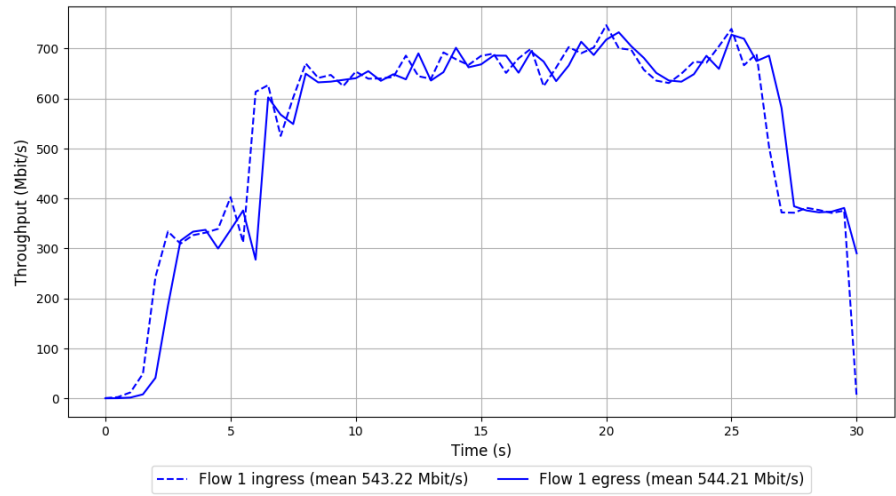


Run 4: Statistics of TCP Vegas

Start at: 2018-11-30 05:36:36
End at: 2018-11-30 05:37:06
Local clock offset: -0.199 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-11-30 08:02:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 544.21 Mbit/s
95th percentile per-packet one-way delay: 167.620 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 544.21 Mbit/s
95th percentile per-packet one-way delay: 167.620 ms
Loss rate: 0.55%

Run 4: Report of TCP Vegas — Data Link

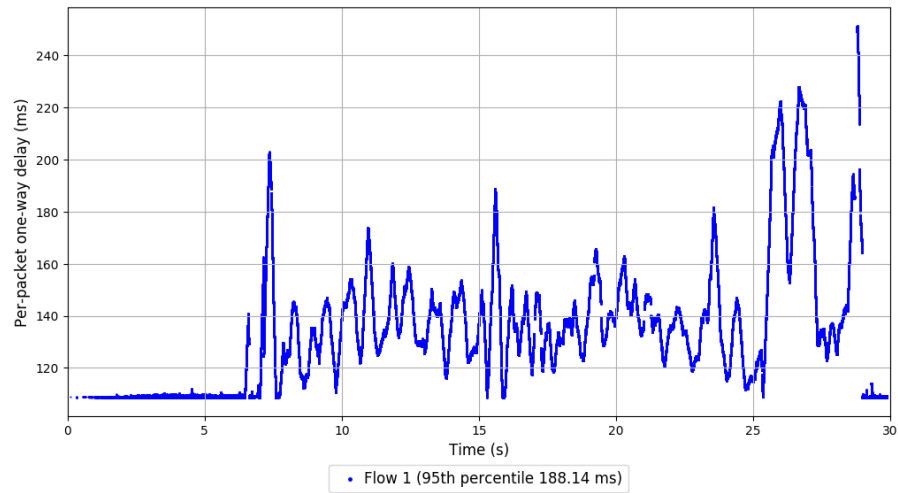
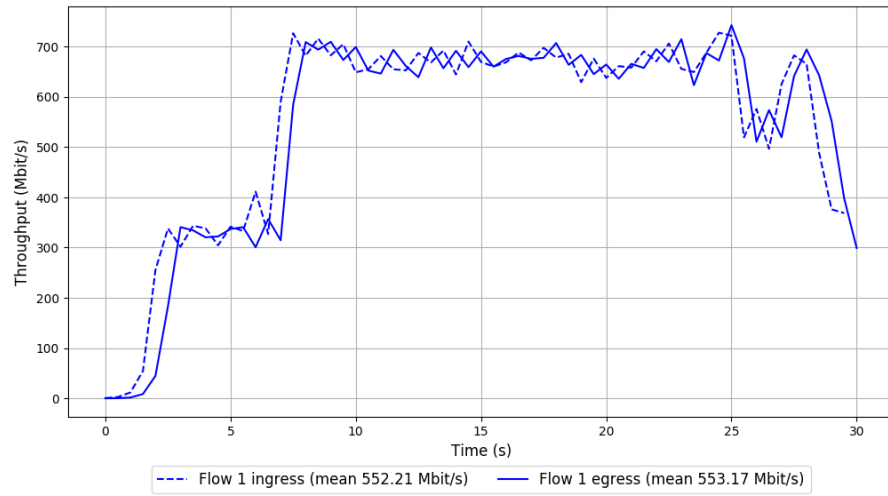


Run 5: Statistics of TCP Vegas

Start at: 2018-11-30 06:05:33
End at: 2018-11-30 06:06:03
Local clock offset: 0.073 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-11-30 08:02:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 553.17 Mbit/s
95th percentile per-packet one-way delay: 188.144 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 553.17 Mbit/s
95th percentile per-packet one-way delay: 188.144 ms
Loss rate: 0.55%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-11-30 03:54:36

End at: 2018-11-30 03:55:06

Local clock offset: -0.899 ms

Remote clock offset: 0.288 ms

Below is generated by plot.py at 2018-11-30 08:02:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 196.75 Mbit/s

95th percentile per-packet one-way delay: 269.193 ms

Loss rate: 21.10%

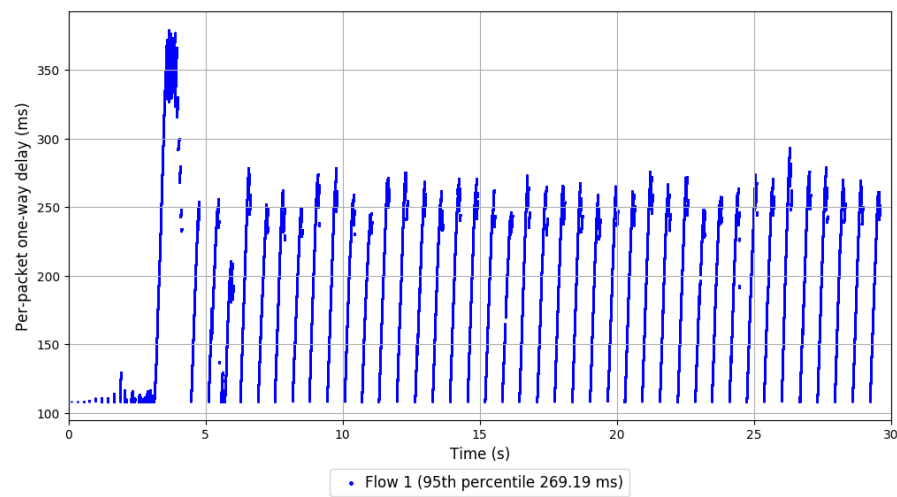
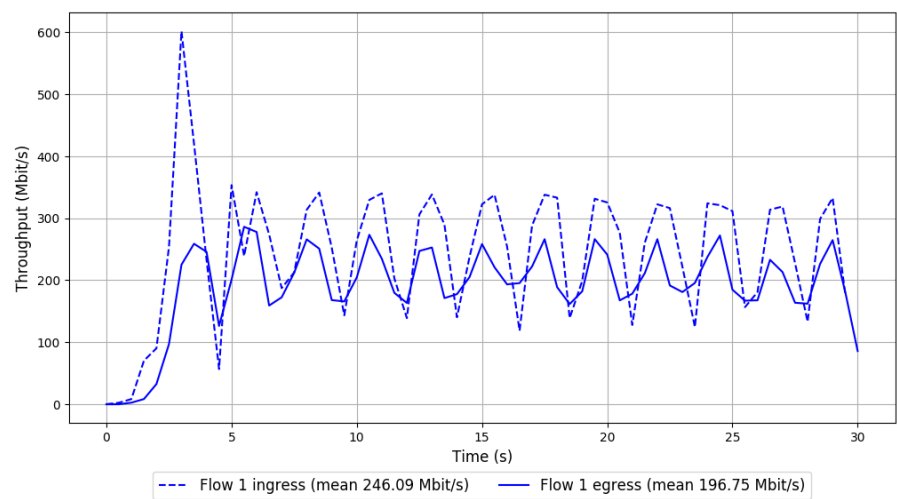
-- Flow 1:

Average throughput: 196.75 Mbit/s

95th percentile per-packet one-way delay: 269.193 ms

Loss rate: 21.10%

Run 1: Report of Verus — Data Link

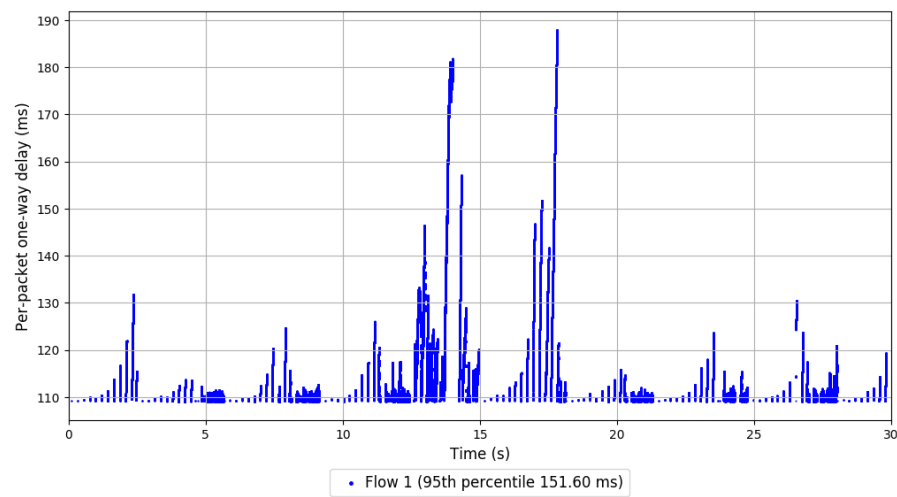
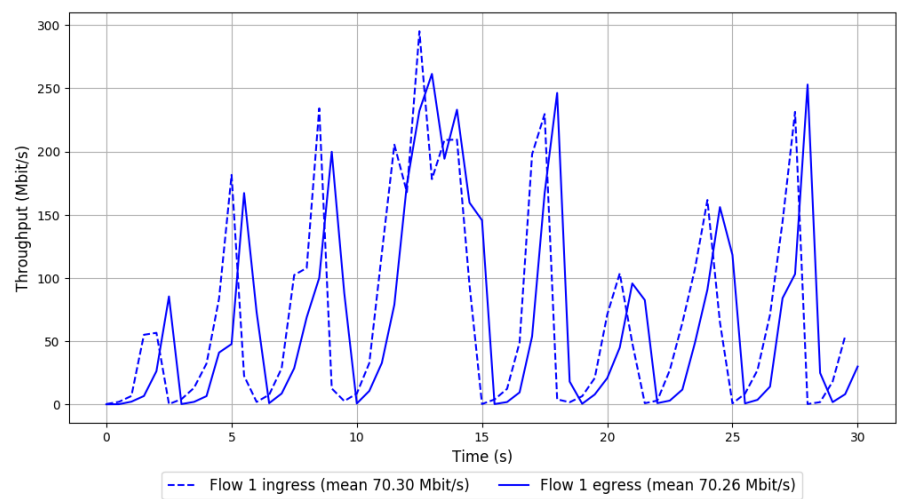


Run 2: Statistics of Verus

Start at: 2018-11-30 04:22:57
End at: 2018-11-30 04:23:27
Local clock offset: -0.093 ms
Remote clock offset: -0.151 ms

Below is generated by plot.py at 2018-11-30 08:02:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 70.26 Mbit/s
95th percentile per-packet one-way delay: 151.599 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 70.26 Mbit/s
95th percentile per-packet one-way delay: 151.599 ms
Loss rate: 0.81%

Run 2: Report of Verus — Data Link

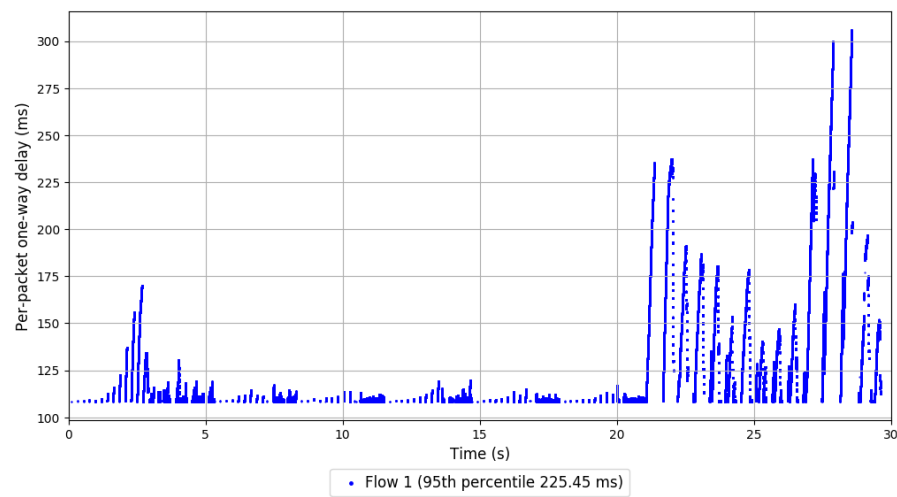
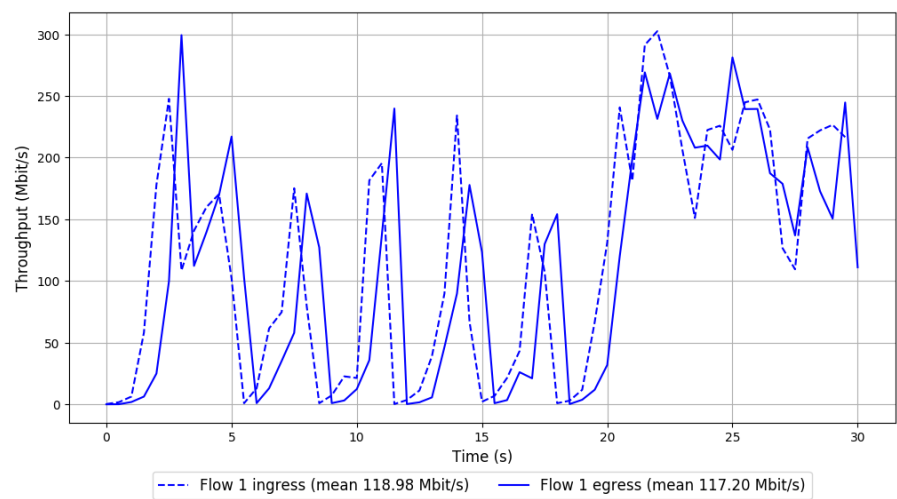


Run 3: Statistics of Verus

Start at: 2018-11-30 04:51:27
End at: 2018-11-30 04:51:57
Local clock offset: 0.015 ms
Remote clock offset: -0.187 ms

Below is generated by plot.py at 2018-11-30 08:02:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 117.20 Mbit/s
95th percentile per-packet one-way delay: 225.450 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 117.20 Mbit/s
95th percentile per-packet one-way delay: 225.450 ms
Loss rate: 2.91%

Run 3: Report of Verus — Data Link

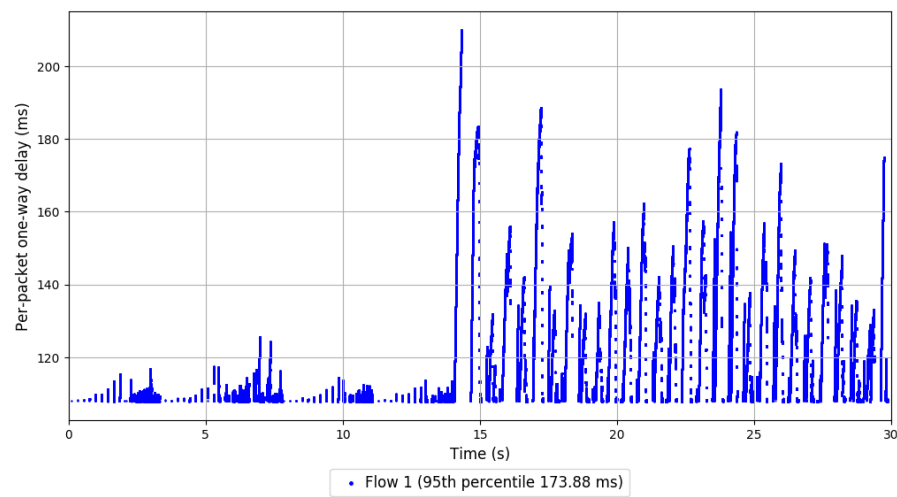
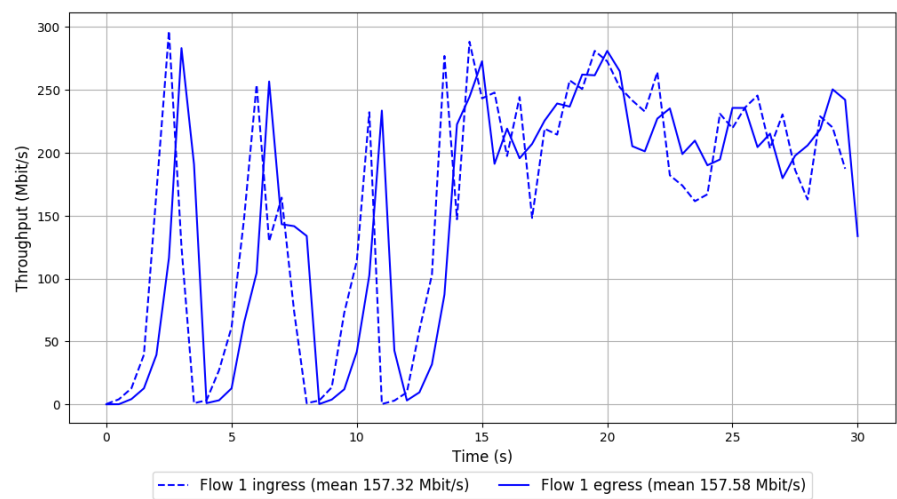


Run 4: Statistics of Verus

Start at: 2018-11-30 05:20:27
End at: 2018-11-30 05:20:57
Local clock offset: -1.452 ms
Remote clock offset: -0.132 ms

Below is generated by plot.py at 2018-11-30 08:02:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 157.58 Mbit/s
95th percentile per-packet one-way delay: 173.882 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 157.58 Mbit/s
95th percentile per-packet one-way delay: 173.882 ms
Loss rate: 0.57%

Run 4: Report of Verus — Data Link

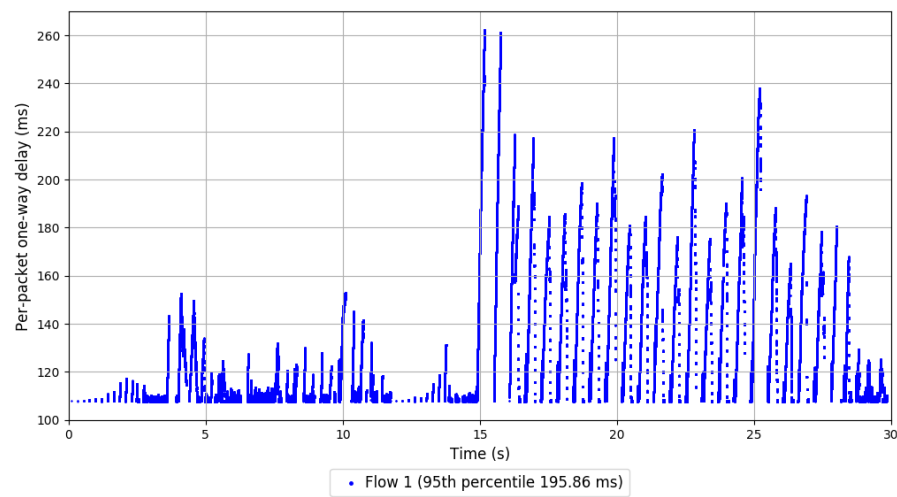
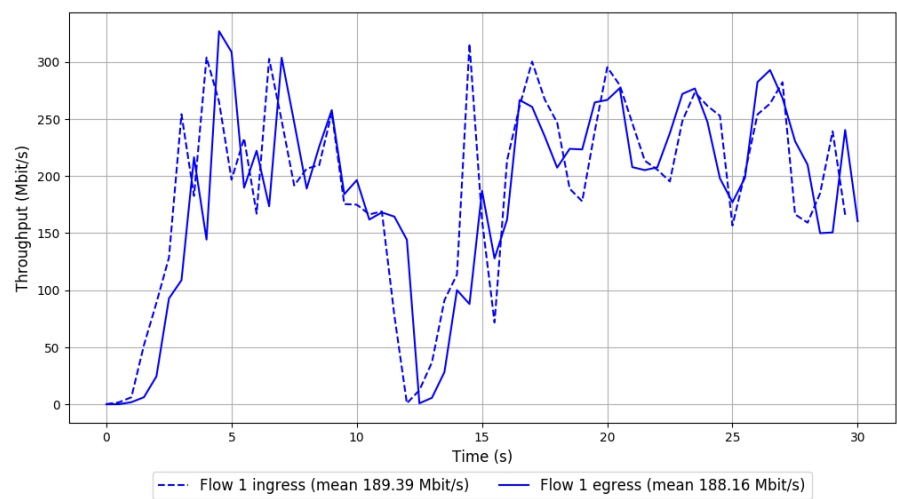


Run 5: Statistics of Verus

Start at: 2018-11-30 05:49:14
End at: 2018-11-30 05:49:44
Local clock offset: -0.855 ms
Remote clock offset: -0.093 ms

Below is generated by plot.py at 2018-11-30 08:02:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 188.16 Mbit/s
95th percentile per-packet one-way delay: 195.863 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 188.16 Mbit/s
95th percentile per-packet one-way delay: 195.863 ms
Loss rate: 0.95%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-11-30 03:56:08

End at: 2018-11-30 03:56:38

Local clock offset: -0.23 ms

Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-11-30 08:03:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 386.41 Mbit/s

95th percentile per-packet one-way delay: 109.929 ms

Loss rate: 0.91%

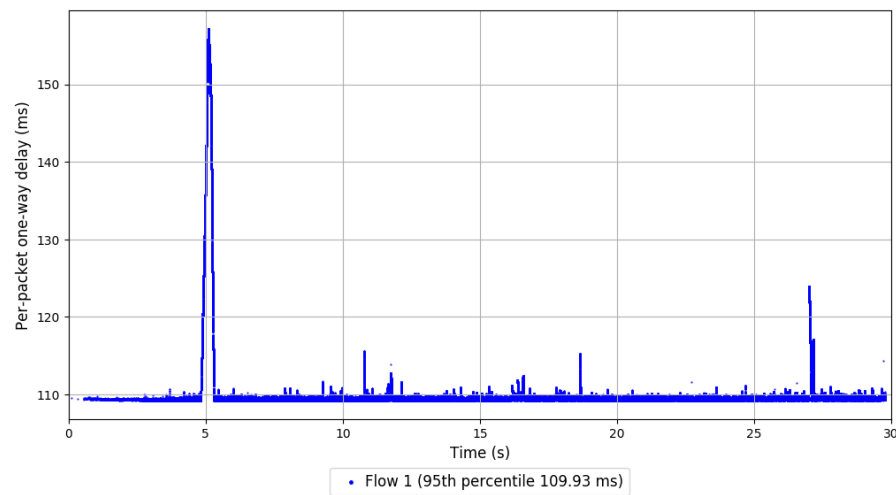
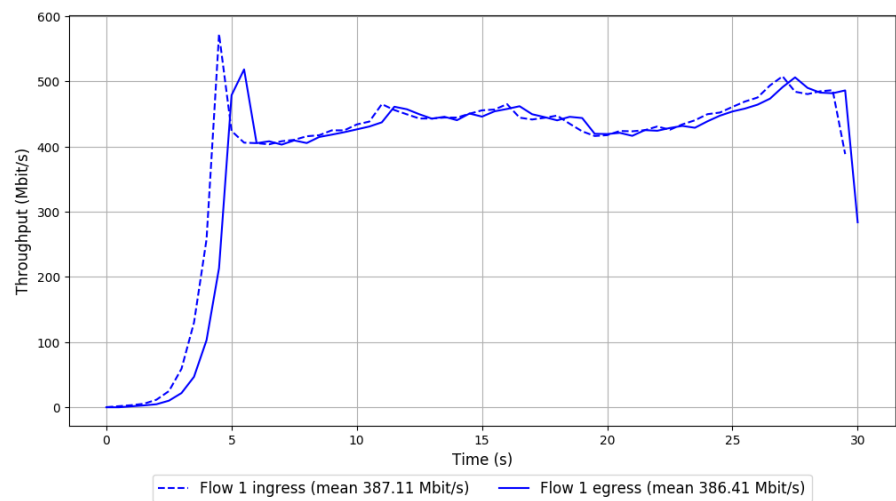
-- Flow 1:

Average throughput: 386.41 Mbit/s

95th percentile per-packet one-way delay: 109.929 ms

Loss rate: 0.91%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-11-30 04:24:14

End at: 2018-11-30 04:24:44

Local clock offset: 0.137 ms

Remote clock offset: -0.174 ms

Below is generated by plot.py at 2018-11-30 08:03:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 230.70 Mbit/s

95th percentile per-packet one-way delay: 109.867 ms

Loss rate: 1.25%

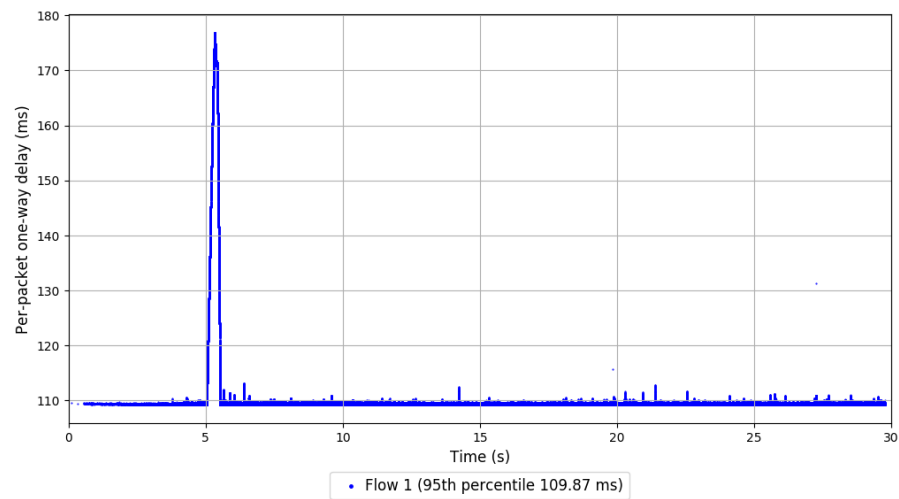
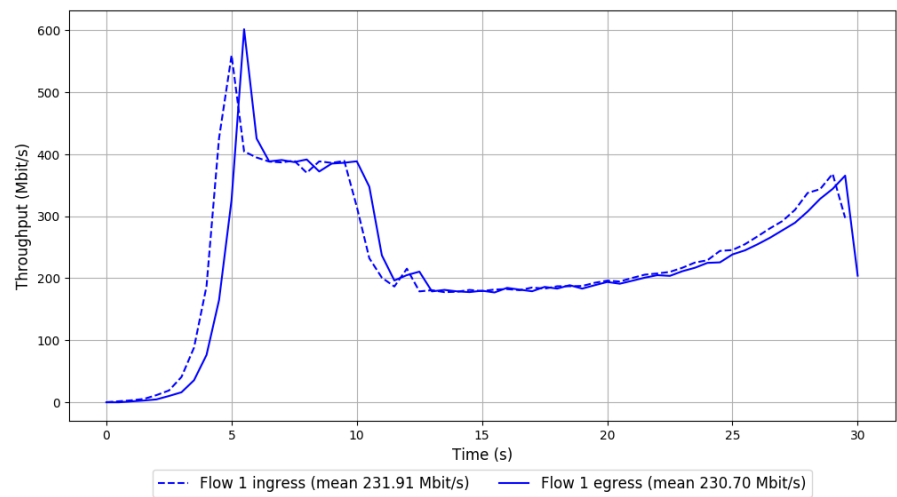
-- Flow 1:

Average throughput: 230.70 Mbit/s

95th percentile per-packet one-way delay: 109.867 ms

Loss rate: 1.25%

Run 2: Report of PCC-Vivace — Data Link

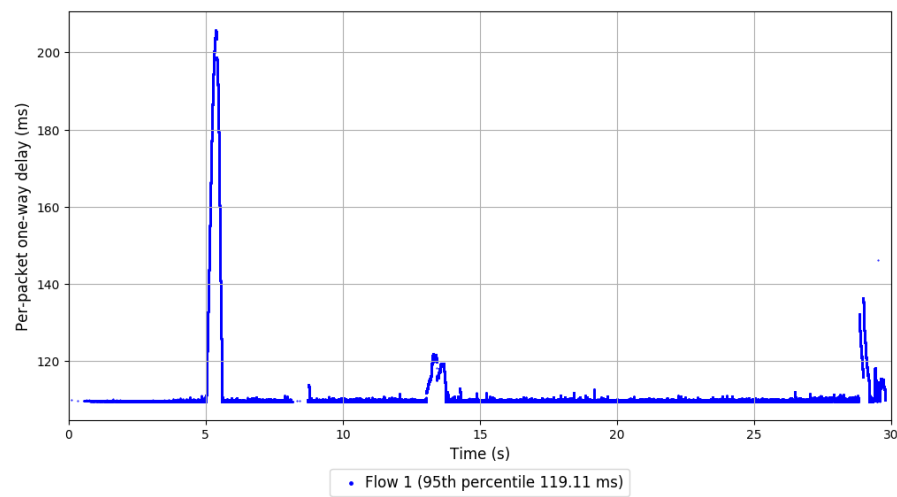
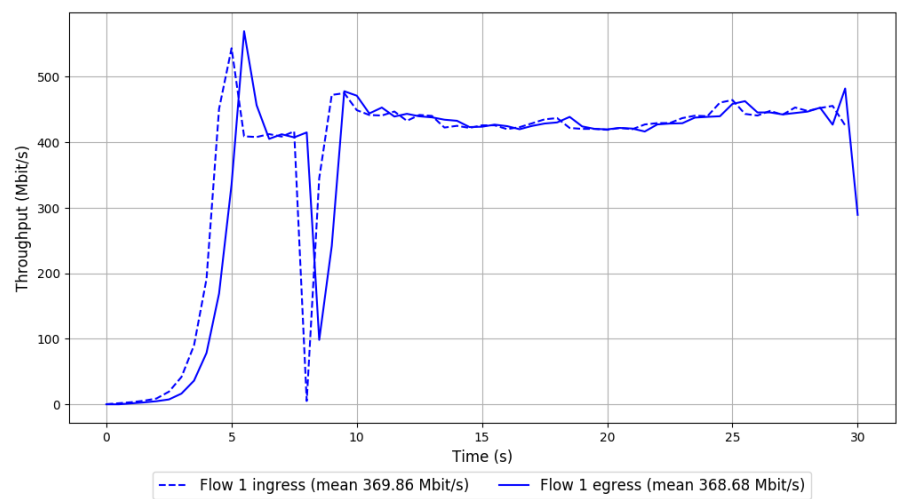


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-30 04:52:49
End at: 2018-11-30 04:53:19
Local clock offset: -0.004 ms
Remote clock offset: -0.187 ms

Below is generated by plot.py at 2018-11-30 08:04:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 368.68 Mbit/s
95th percentile per-packet one-way delay: 119.106 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 368.68 Mbit/s
95th percentile per-packet one-way delay: 119.106 ms
Loss rate: 1.05%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-11-30 05:21:54

End at: 2018-11-30 05:22:24

Local clock offset: -0.02 ms

Remote clock offset: -0.136 ms

Below is generated by plot.py at 2018-11-30 08:04:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 361.93 Mbit/s

95th percentile per-packet one-way delay: 191.831 ms

Loss rate: 0.82%

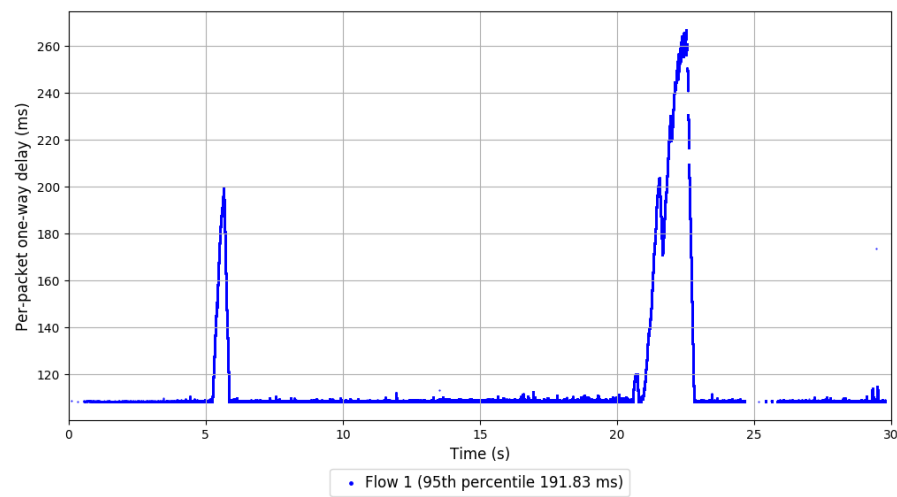
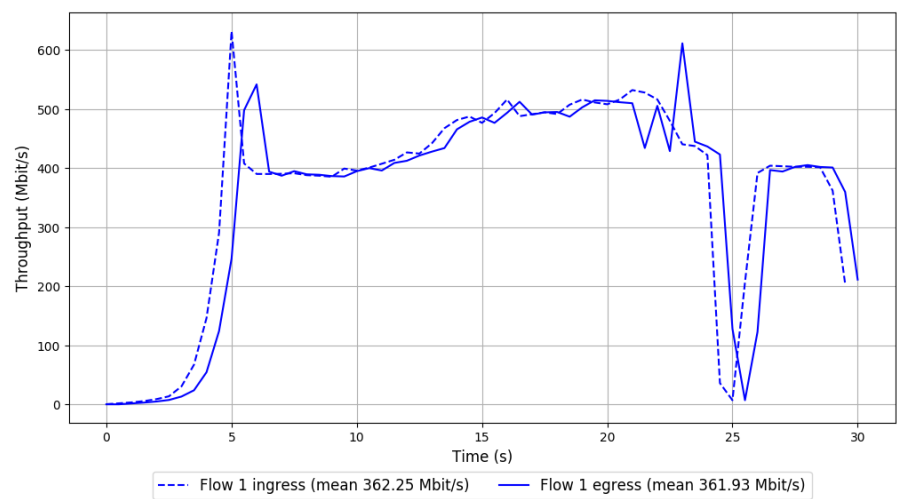
-- Flow 1:

Average throughput: 361.93 Mbit/s

95th percentile per-packet one-way delay: 191.831 ms

Loss rate: 0.82%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-11-30 05:50:44

End at: 2018-11-30 05:51:14

Local clock offset: 1.181 ms

Remote clock offset: -0.131 ms

Below is generated by plot.py at 2018-11-30 08:04:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 382.64 Mbit/s

95th percentile per-packet one-way delay: 128.164 ms

Loss rate: 0.94%

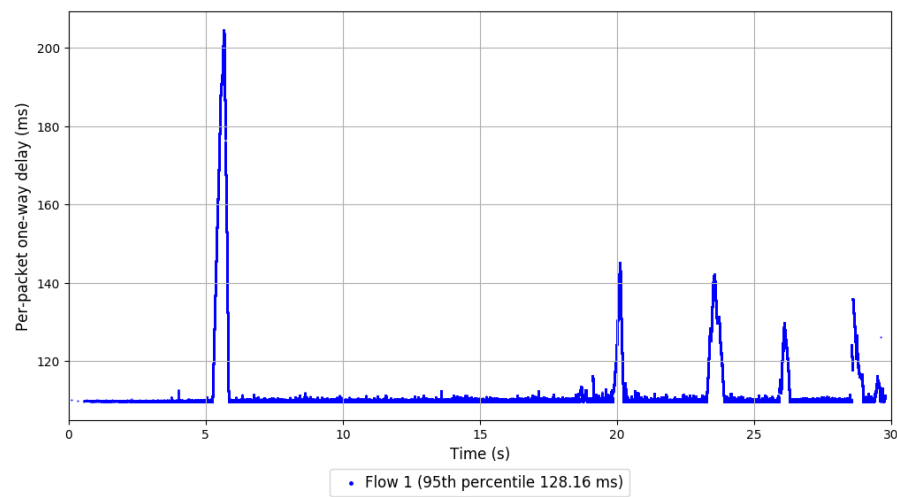
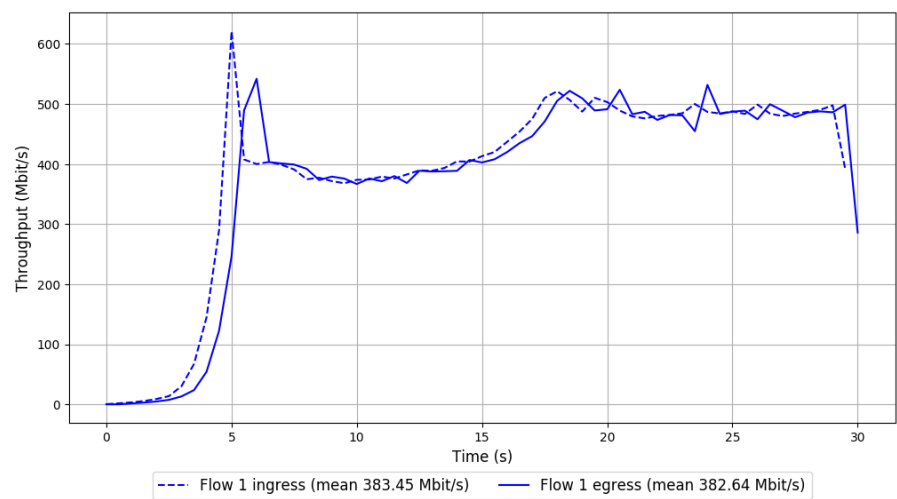
-- Flow 1:

Average throughput: 382.64 Mbit/s

95th percentile per-packet one-way delay: 128.164 ms

Loss rate: 0.94%

Run 5: Report of PCC-Vivace — Data Link

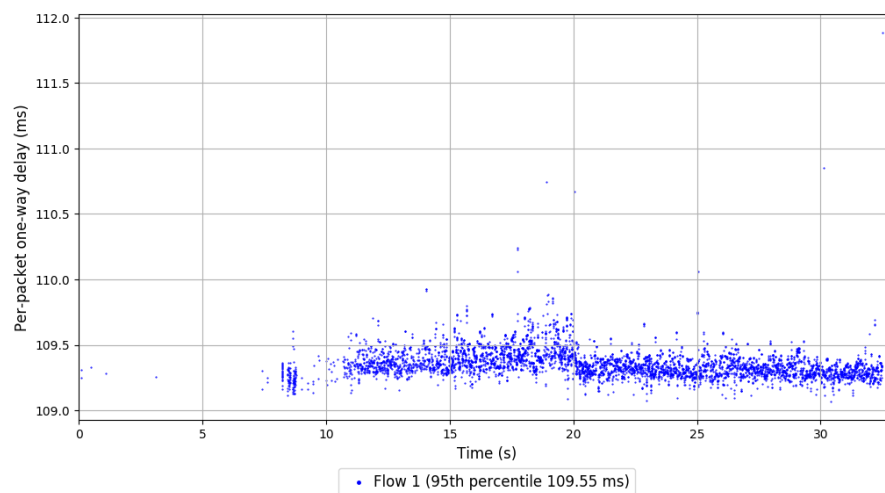
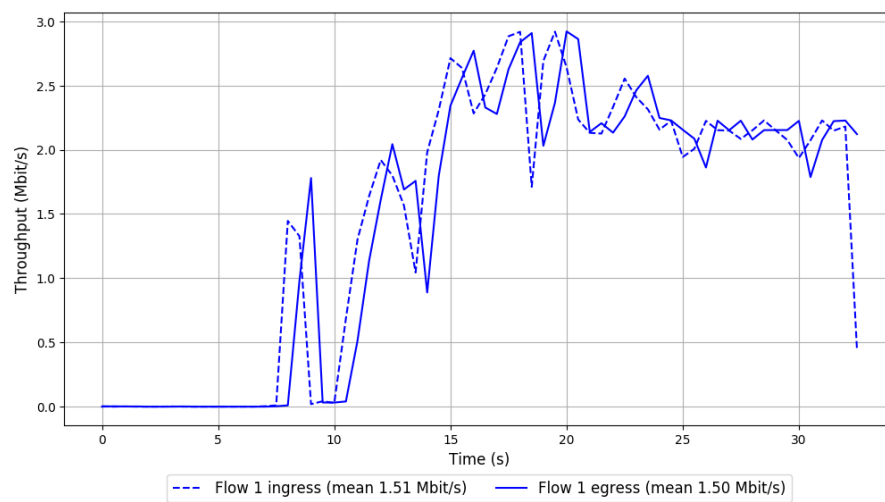


Run 1: Statistics of WebRTC media

Start at: 2018-11-30 04:18:45
End at: 2018-11-30 04:19:15
Local clock offset: 0.635 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-11-30 08:04:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 109.548 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 109.548 ms
Loss rate: 0.97%

Run 1: Report of WebRTC media — Data Link

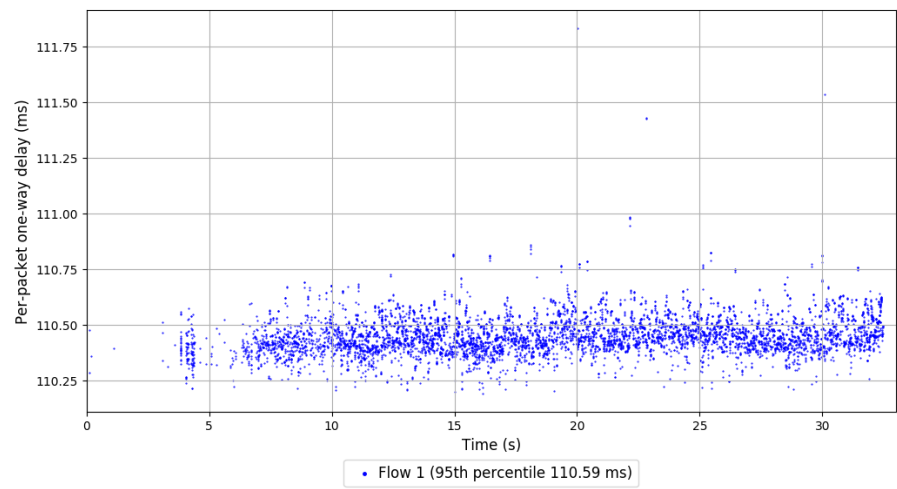
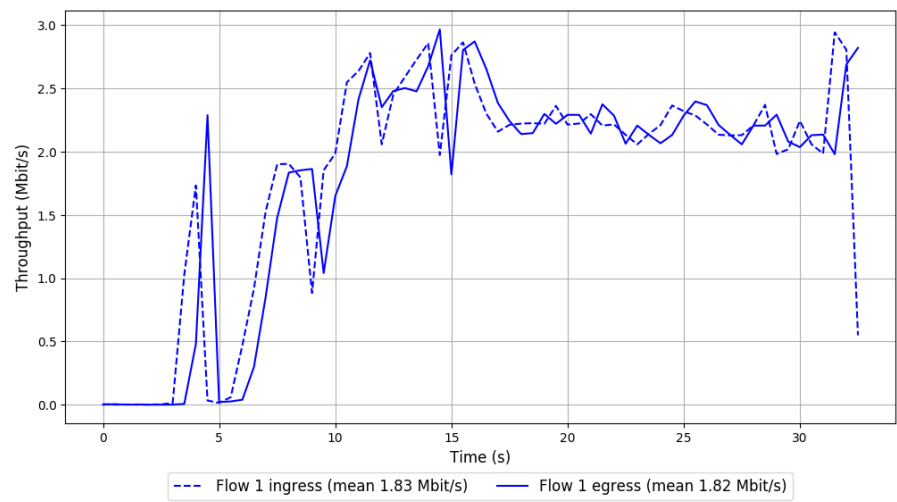


Run 2: Statistics of WebRTC media

Start at: 2018-11-30 04:47:20
End at: 2018-11-30 04:47:50
Local clock offset: 0.787 ms
Remote clock offset: -0.164 ms

Below is generated by plot.py at 2018-11-30 08:04:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 110.593 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 110.593 ms
Loss rate: 1.05%

Run 2: Report of WebRTC media — Data Link

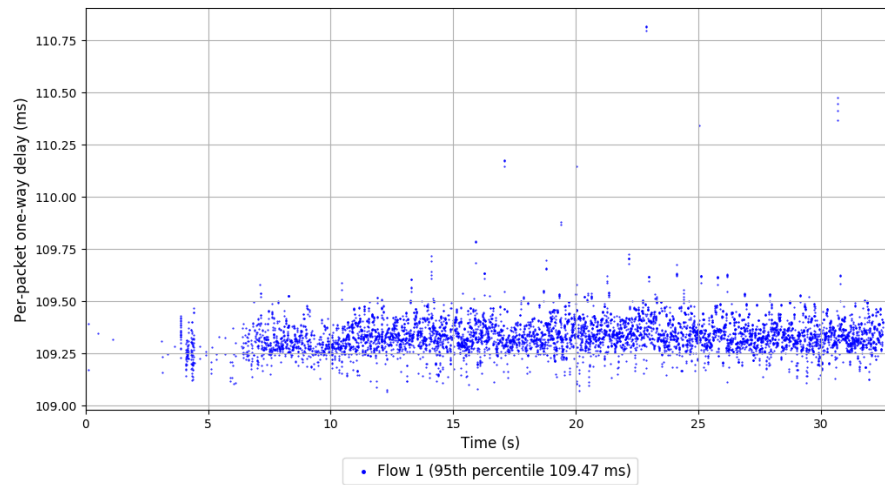
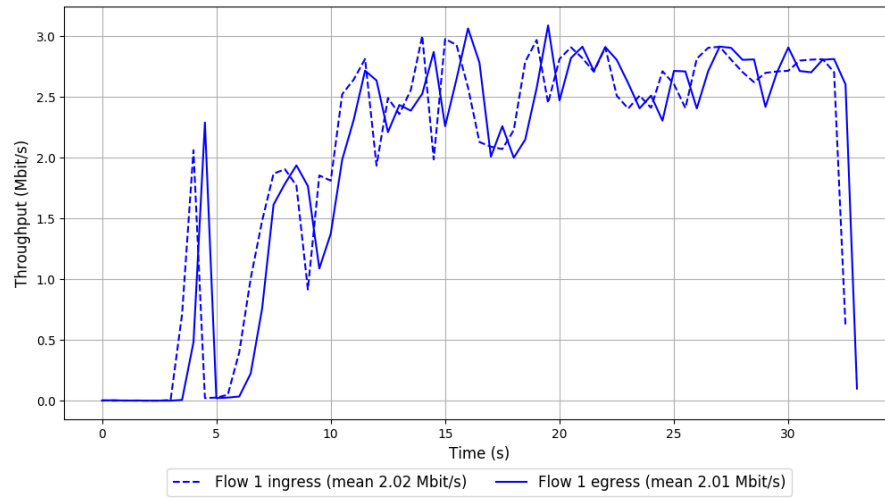


Run 3: Statistics of WebRTC media

Start at: 2018-11-30 05:16:20
End at: 2018-11-30 05:16:50
Local clock offset: -0.264 ms
Remote clock offset: -0.146 ms

Below is generated by plot.py at 2018-11-30 08:04:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 109.468 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 109.468 ms
Loss rate: 0.92%

Run 3: Report of WebRTC media — Data Link

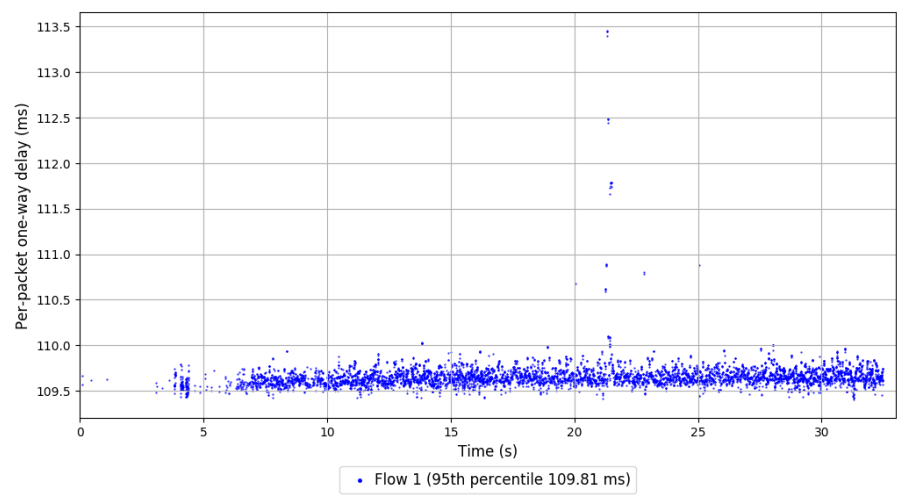
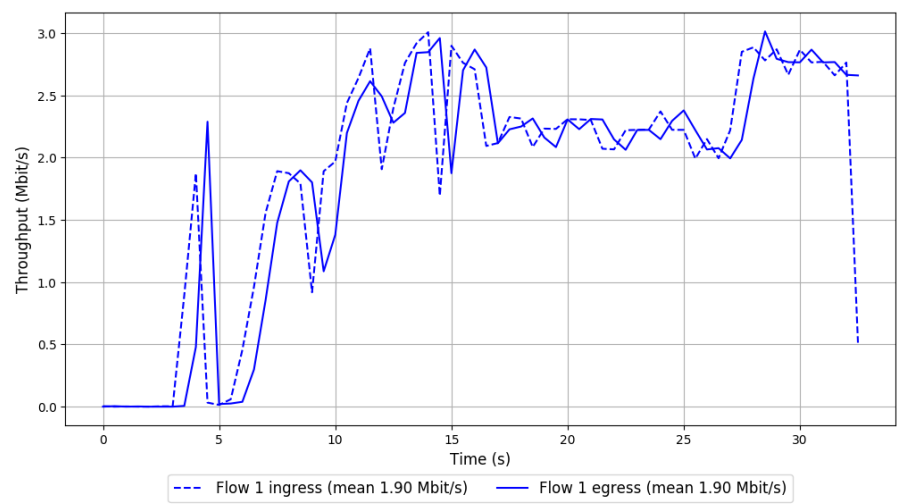


Run 4: Statistics of WebRTC media

Start at: 2018-11-30 05:45:06
End at: 2018-11-30 05:45:36
Local clock offset: 1.001 ms
Remote clock offset: -0.098 ms

Below is generated by plot.py at 2018-11-30 08:04:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 109.813 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 109.813 ms
Loss rate: 0.99%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-30 06:14:02
End at: 2018-11-30 06:14:32
Local clock offset: -0.171 ms
Remote clock offset: -0.085 ms

Below is generated by plot.py at 2018-11-30 08:04:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 109.462 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 109.462 ms
Loss rate: 1.04%

Run 5: Report of WebRTC media — Data Link

