

Pantheon Report

Generated at 2018-11-15 23:41:18 (UTC).

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

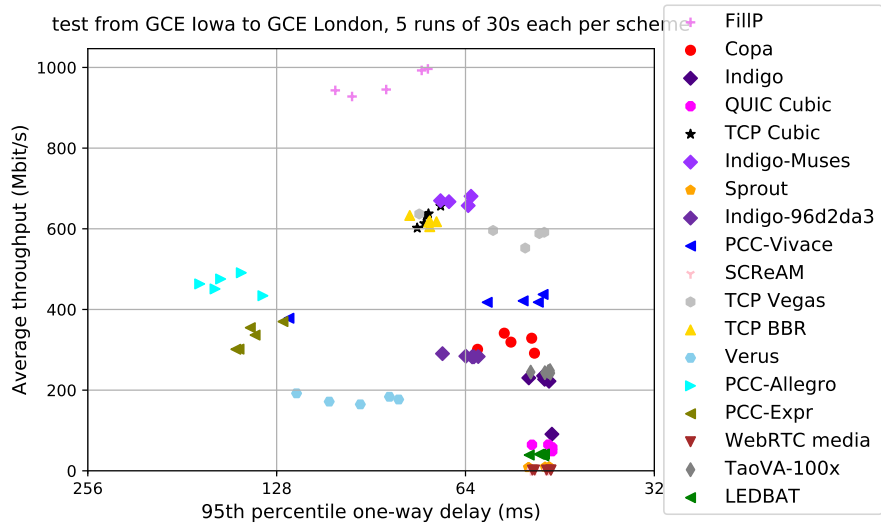
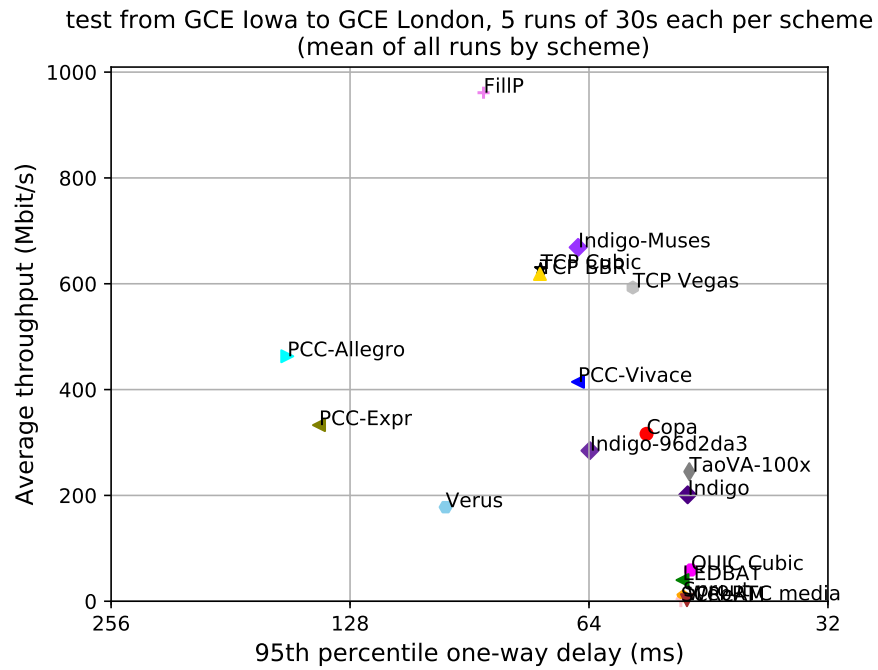
System info:

```
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 @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd9c077e64d
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-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	618.48	73.79	0.34
Copa	5	316.36	54.16	0.29
TCP Cubic	5	627.93	73.64	0.36
FillP	5	961.05	86.91	0.47
Indigo	5	201.13	48.07	0.33
Indigo-96d2da3	5	284.64	63.83	0.23
LEDBAT	5	39.98	48.80	0.51
Indigo-Muses	4	668.78	66.06	0.35
PCC-Allegro	5	462.98	153.56	2.91
PCC-Expr	5	332.86	140.06	2.74
QUIC Cubic	4	59.07	47.61	0.52
SCReAM	5	0.22	49.03	0.36
Sprout	5	9.17	48.70	0.32
TaoVA-100x	5	244.90	47.84	0.34
TCP Vegas	5	592.88	56.36	0.31
Verus	5	177.77	97.01	0.51
PCC-Vivace	5	414.51	66.08	0.30
WebRTC media	5	1.92	48.17	0.42

Run 1: Statistics of TCP BBR

Start at: 2018-11-15 19:55:35

End at: 2018-11-15 19:56:05

Local clock offset: 0.28 ms

Remote clock offset: -0.05 ms

Below is generated by plot.py at 2018-11-15 22:18:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 605.30 Mbit/s

95th percentile per-packet one-way delay: 72.978 ms

Loss rate: 0.39%

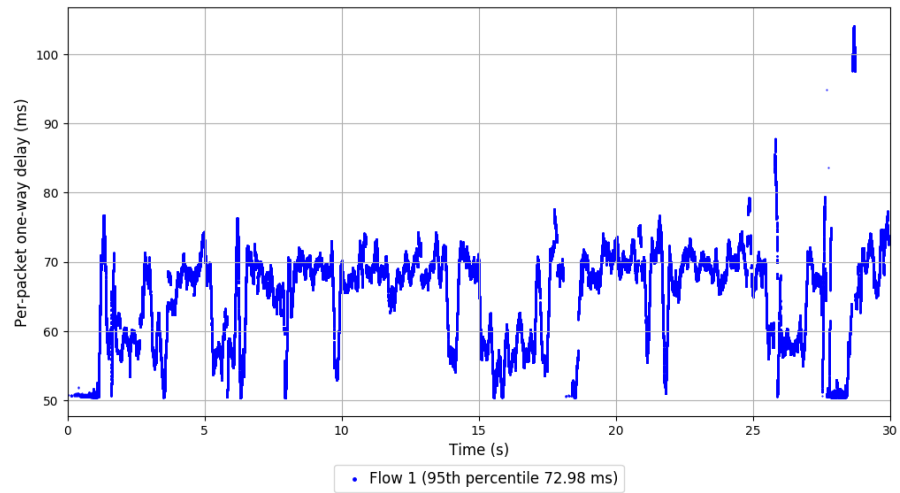
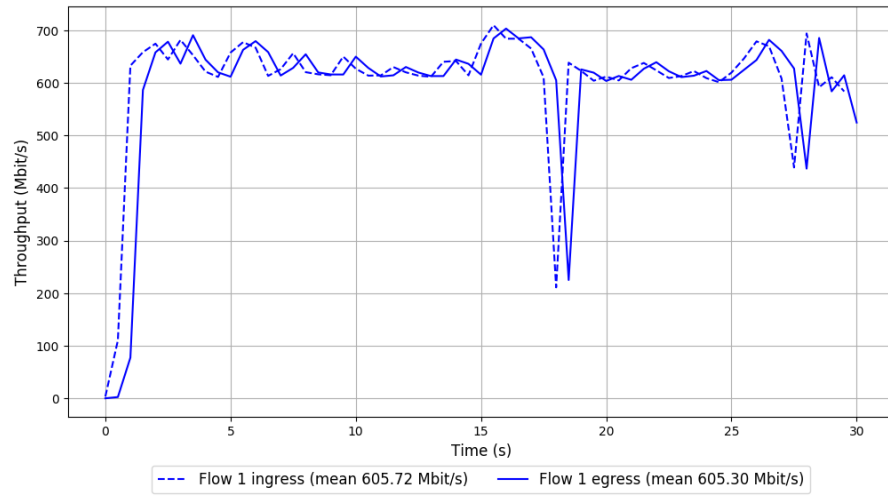
-- Flow 1:

Average throughput: 605.30 Mbit/s

95th percentile per-packet one-way delay: 72.978 ms

Loss rate: 0.39%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-11-15 20:21:23

End at: 2018-11-15 20:21:53

Local clock offset: -0.02 ms

Remote clock offset: -0.041 ms

Below is generated by plot.py at 2018-11-15 22:18:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 617.60 Mbit/s

95th percentile per-packet one-way delay: 71.183 ms

Loss rate: 0.38%

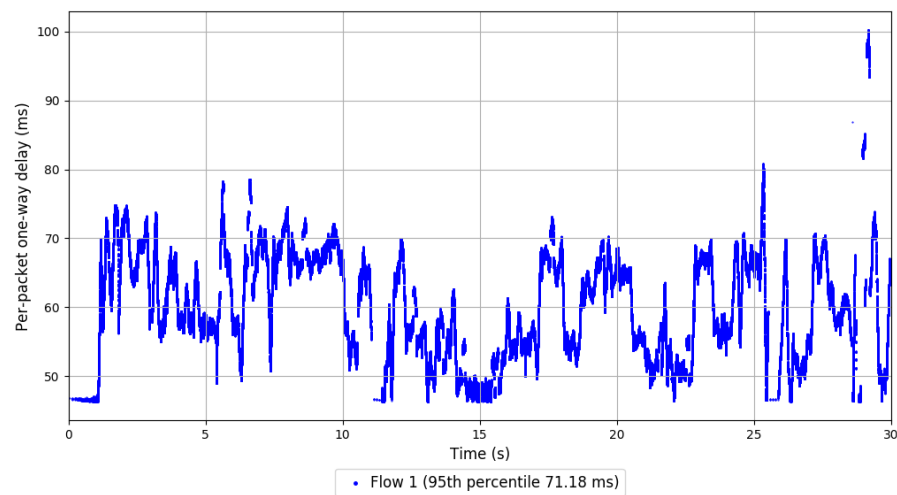
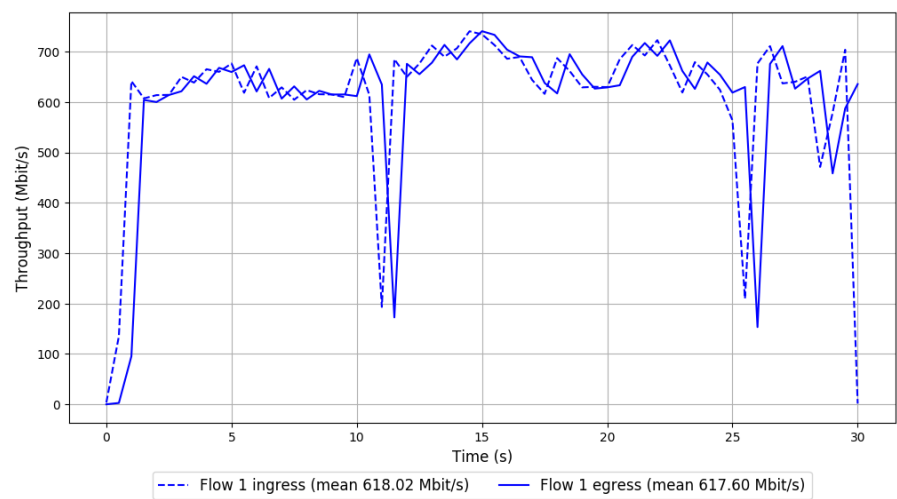
-- Flow 1:

Average throughput: 617.60 Mbit/s

95th percentile per-packet one-way delay: 71.183 ms

Loss rate: 0.38%

Run 2: Report of TCP BBR — Data Link

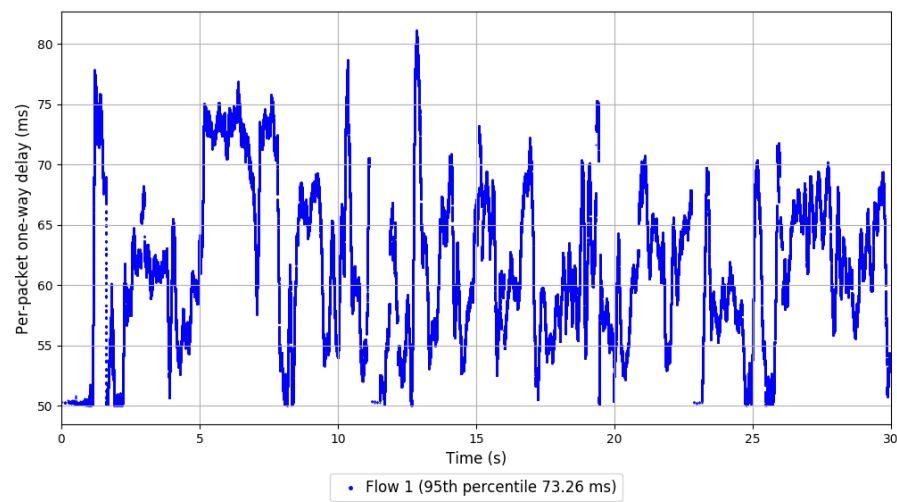
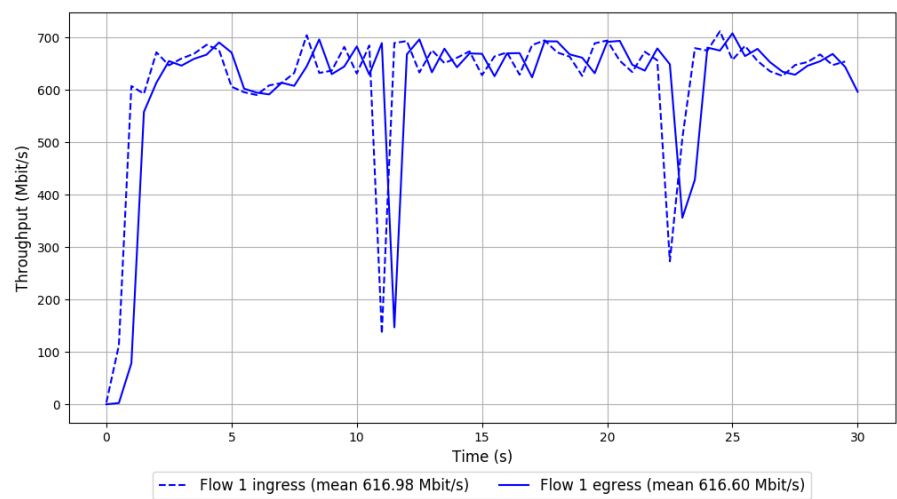


Run 3: Statistics of TCP BBR

Start at: 2018-11-15 20:47:31
End at: 2018-11-15 20:48:01
Local clock offset: 0.13 ms
Remote clock offset: -0.034 ms

Below is generated by plot.py at 2018-11-15 22:18:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 616.60 Mbit/s
95th percentile per-packet one-way delay: 73.261 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 616.60 Mbit/s
95th percentile per-packet one-way delay: 73.261 ms
Loss rate: 0.38%

Run 3: Report of TCP BBR — Data Link

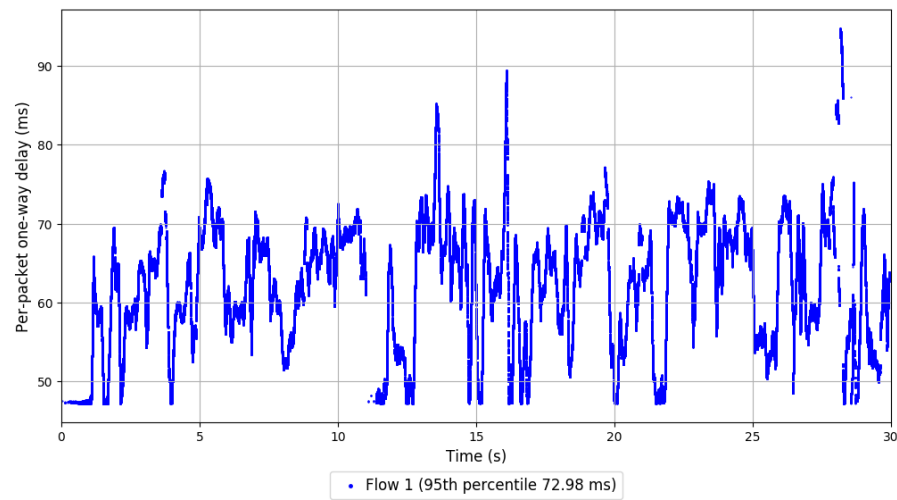
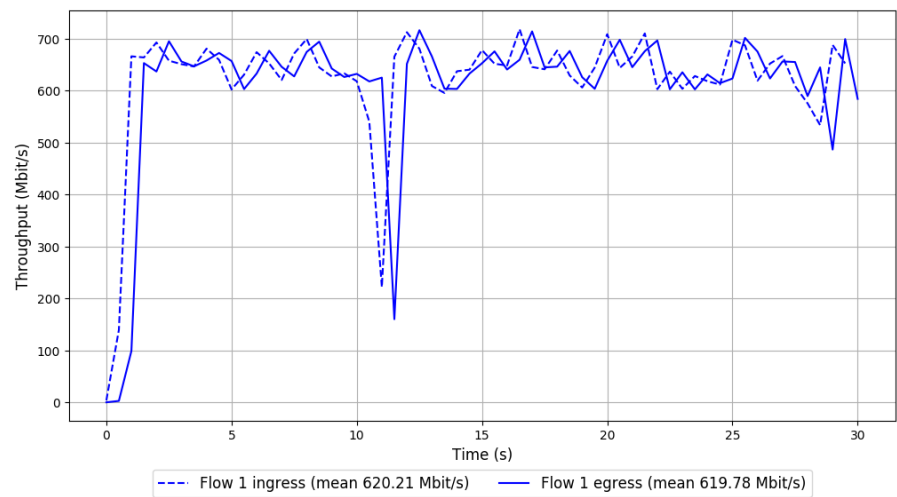


Run 4: Statistics of TCP BBR

Start at: 2018-11-15 21:13:39
End at: 2018-11-15 21:14:09
Local clock offset: 0.133 ms
Remote clock offset: -0.129 ms

Below is generated by plot.py at 2018-11-15 22:19:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 619.78 Mbit/s
95th percentile per-packet one-way delay: 72.978 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 619.78 Mbit/s
95th percentile per-packet one-way delay: 72.978 ms
Loss rate: 0.38%

Run 4: Report of TCP BBR — Data Link

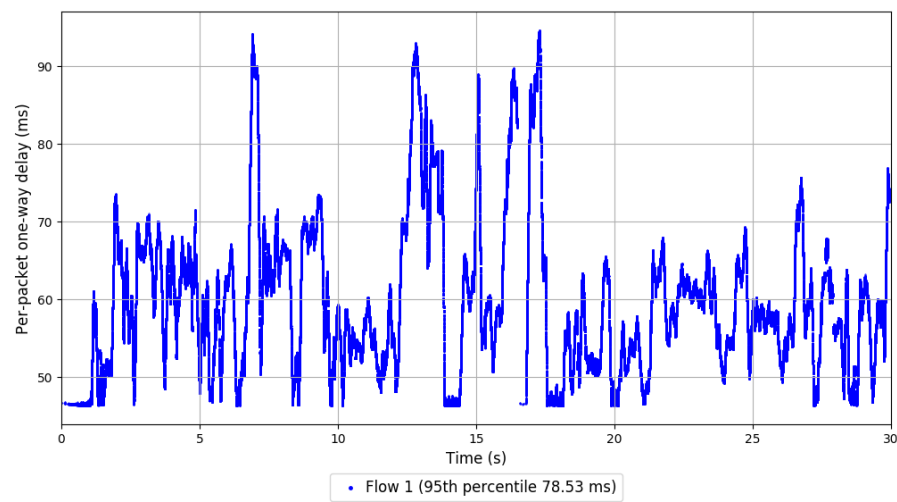
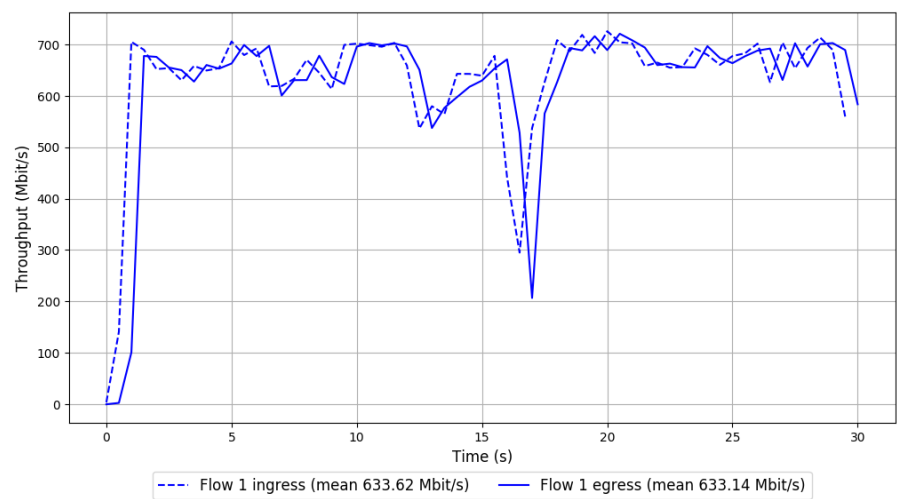


Run 5: Statistics of TCP BBR

Start at: 2018-11-15 21:40:17
End at: 2018-11-15 21:40:47
Local clock offset: 0.033 ms
Remote clock offset: -0.063 ms

Below is generated by plot.py at 2018-11-15 22:19:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 633.14 Mbit/s
95th percentile per-packet one-way delay: 78.533 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 633.14 Mbit/s
95th percentile per-packet one-way delay: 78.533 ms
Loss rate: 0.15%

Run 5: Report of TCP BBR — Data Link

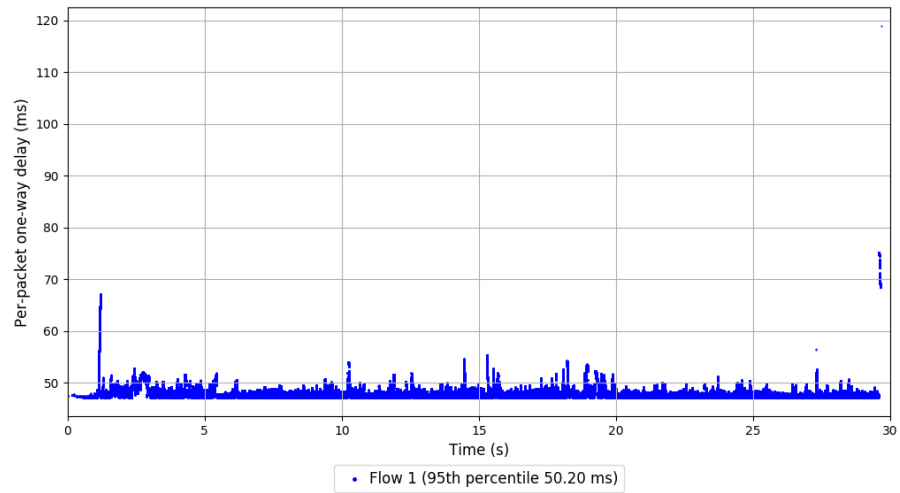
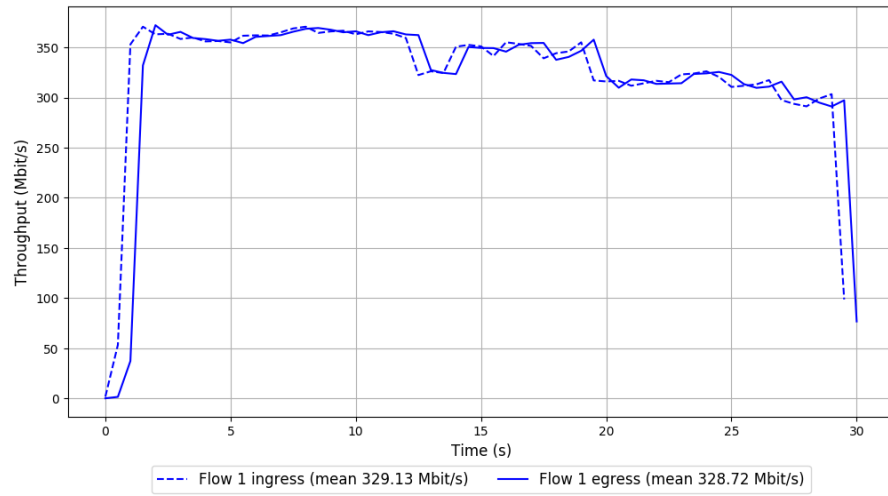


Run 1: Statistics of Copa

Start at: 2018-11-15 19:51:03
End at: 2018-11-15 19:51:33
Local clock offset: -0.042 ms
Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-11-15 22:19:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 328.72 Mbit/s
95th percentile per-packet one-way delay: 50.197 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 328.72 Mbit/s
95th percentile per-packet one-way delay: 50.197 ms
Loss rate: 0.29%

Run 1: Report of Copa — Data Link

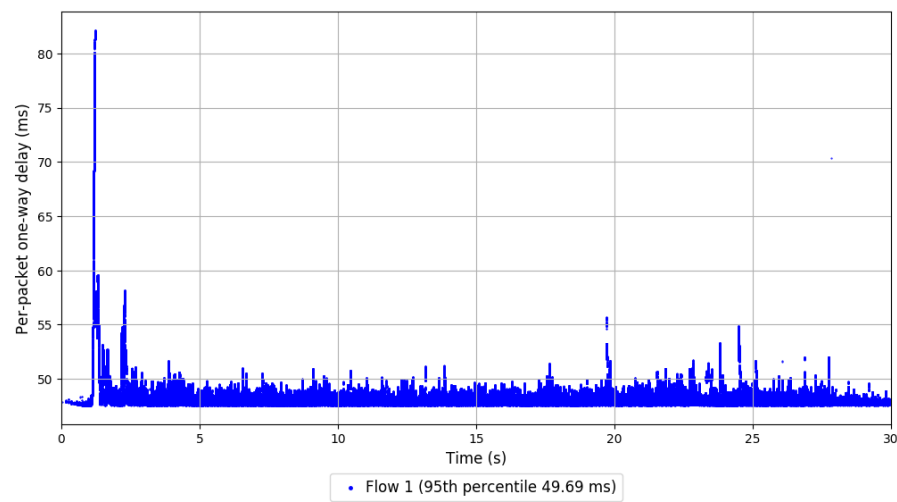
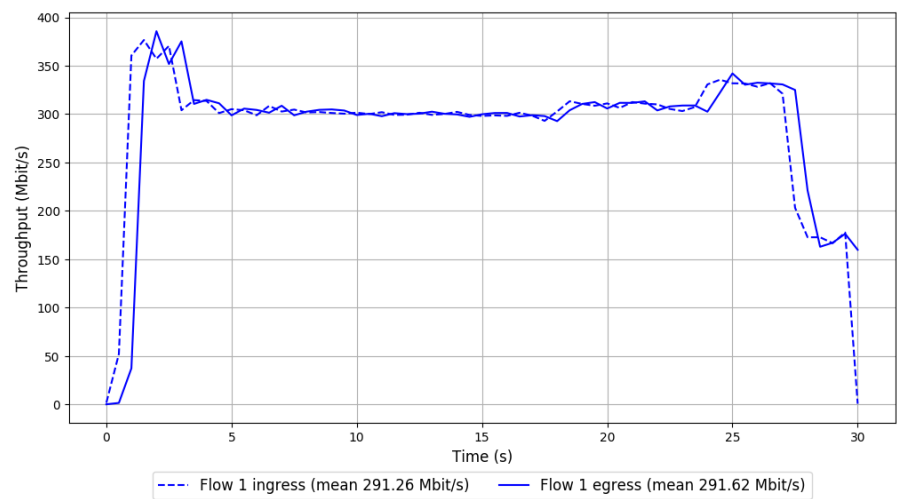


Run 2: Statistics of Copa

Start at: 2018-11-15 20:16:23
End at: 2018-11-15 20:16:53
Local clock offset: 0.337 ms
Remote clock offset: -0.038 ms

Below is generated by plot.py at 2018-11-15 22:19:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 291.62 Mbit/s
95th percentile per-packet one-way delay: 49.685 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 291.62 Mbit/s
95th percentile per-packet one-way delay: 49.685 ms
Loss rate: 0.19%

Run 2: Report of Copa — Data Link

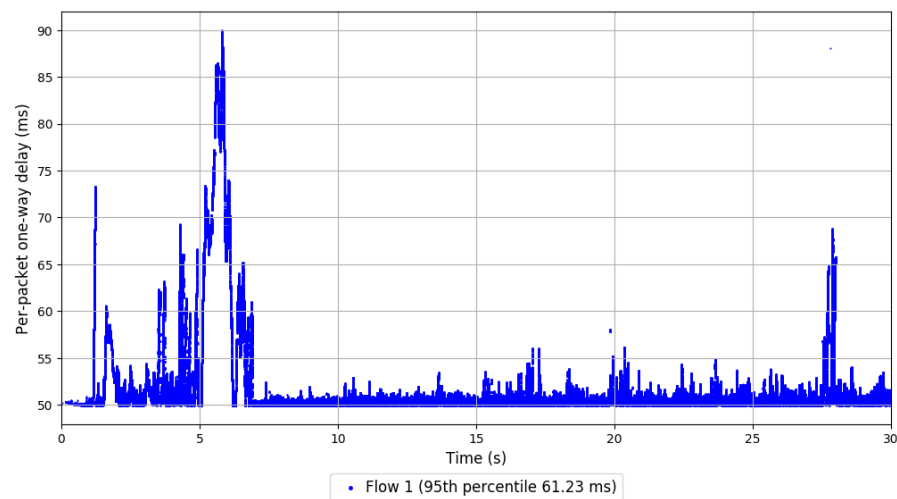
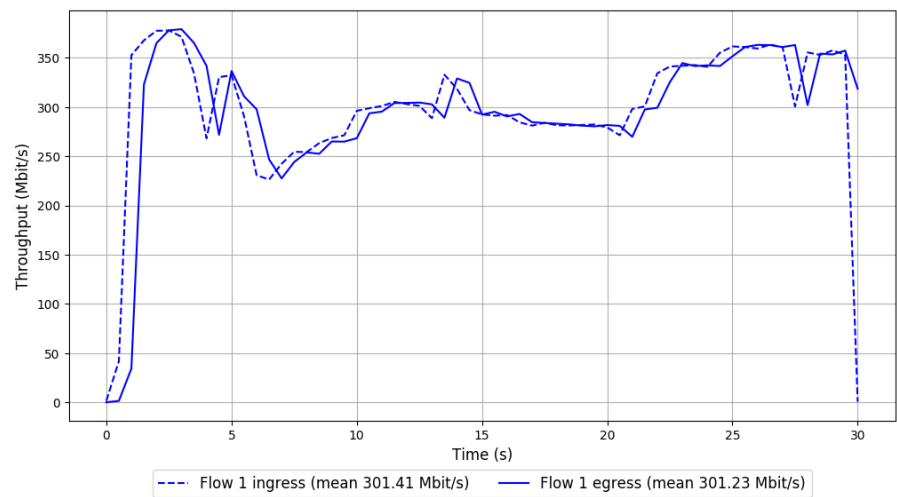


Run 3: Statistics of Copa

Start at: 2018-11-15 20:42:33
End at: 2018-11-15 20:43:03
Local clock offset: 0.102 ms
Remote clock offset: -0.034 ms

Below is generated by plot.py at 2018-11-15 22:19:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 301.23 Mbit/s
95th percentile per-packet one-way delay: 61.229 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 301.23 Mbit/s
95th percentile per-packet one-way delay: 61.229 ms
Loss rate: 0.38%

Run 3: Report of Copa — Data Link

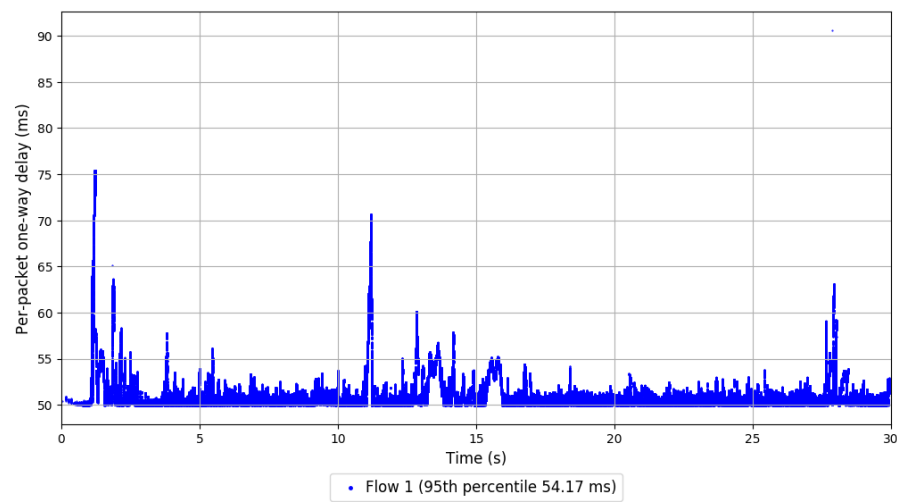
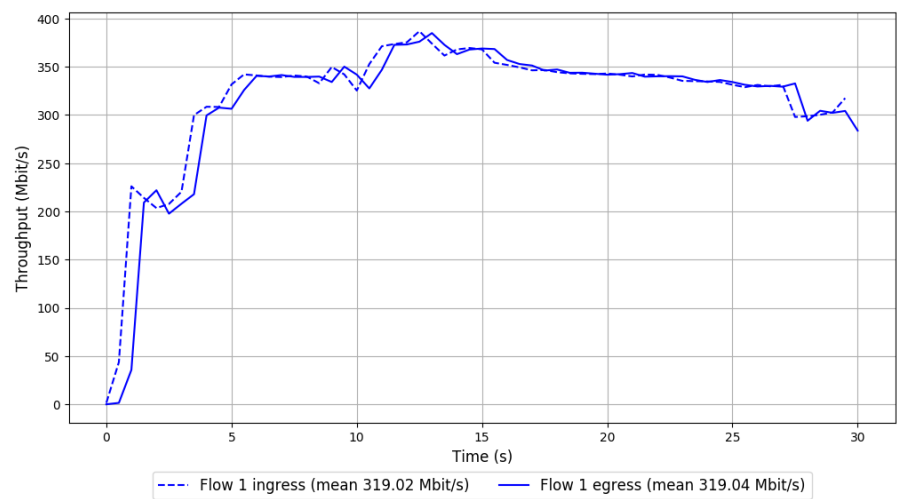


Run 4: Statistics of Copa

Start at: 2018-11-15 21:08:39
End at: 2018-11-15 21:09:09
Local clock offset: 0.092 ms
Remote clock offset: -0.106 ms

Below is generated by plot.py at 2018-11-15 22:29:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 319.04 Mbit/s
95th percentile per-packet one-way delay: 54.168 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 319.04 Mbit/s
95th percentile per-packet one-way delay: 54.168 ms
Loss rate: 0.32%

Run 4: Report of Copa — Data Link

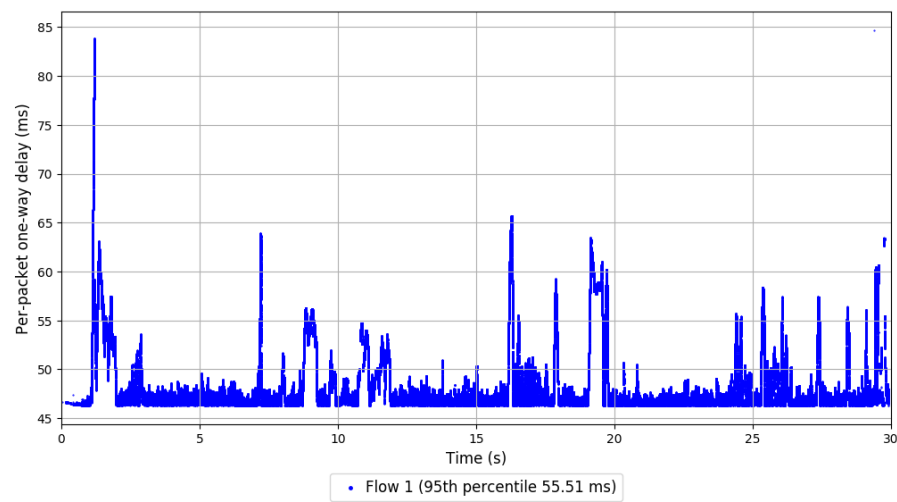
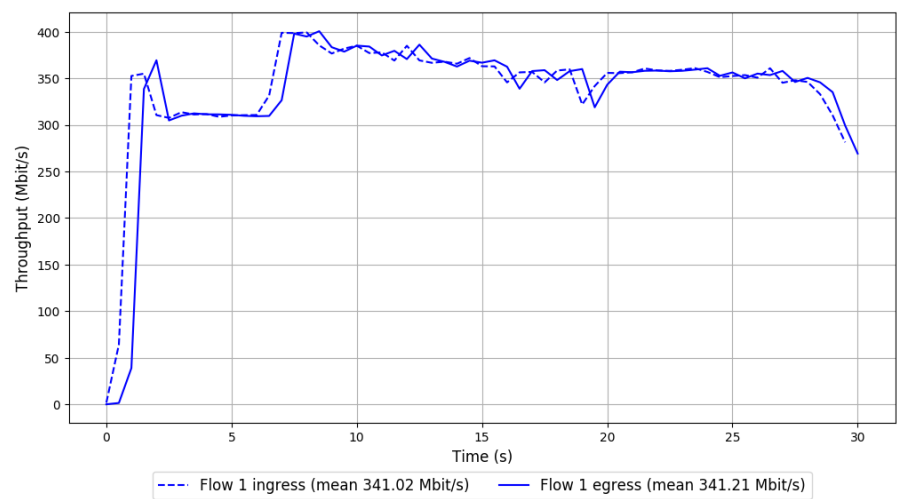


Run 5: Statistics of Copa

Start at: 2018-11-15 21:35:01
End at: 2018-11-15 21:35:31
Local clock offset: 0.048 ms
Remote clock offset: -0.061 ms

Below is generated by plot.py at 2018-11-15 22:29:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 341.21 Mbit/s
95th percentile per-packet one-way delay: 55.510 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 341.21 Mbit/s
95th percentile per-packet one-way delay: 55.510 ms
Loss rate: 0.26%

Run 5: Report of Copa — Data Link

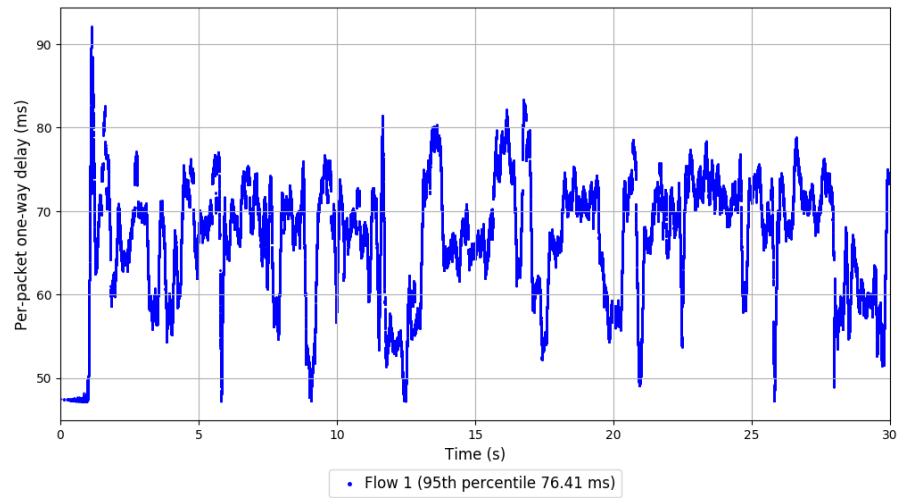
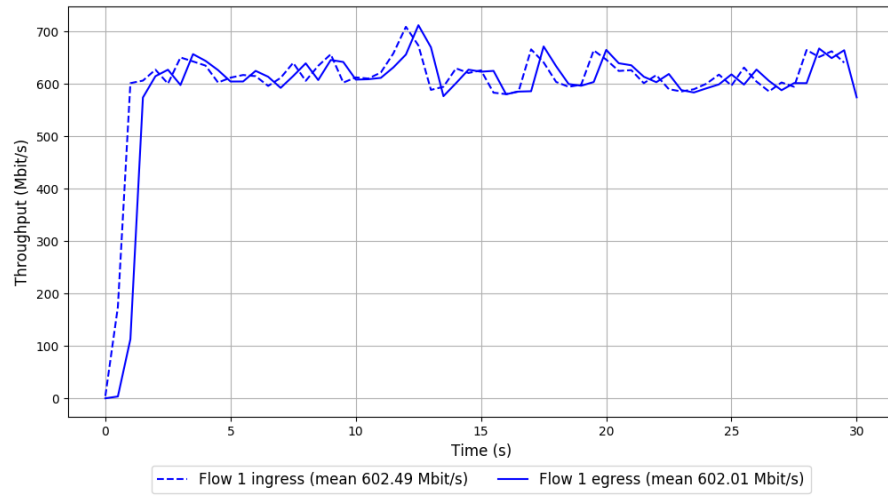


Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 20:02:58
End at: 2018-11-15 20:03:28
Local clock offset: -0.109 ms
Remote clock offset: -0.036 ms

Below is generated by plot.py at 2018-11-15 22:30:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 602.01 Mbit/s
95th percentile per-packet one-way delay: 76.409 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 602.01 Mbit/s
95th percentile per-packet one-way delay: 76.409 ms
Loss rate: 0.39%

Run 1: Report of TCP Cubic — Data Link

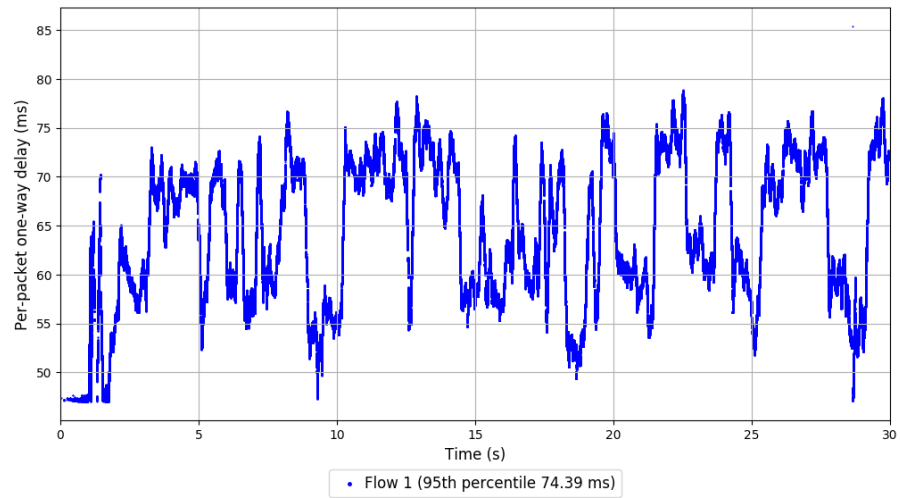
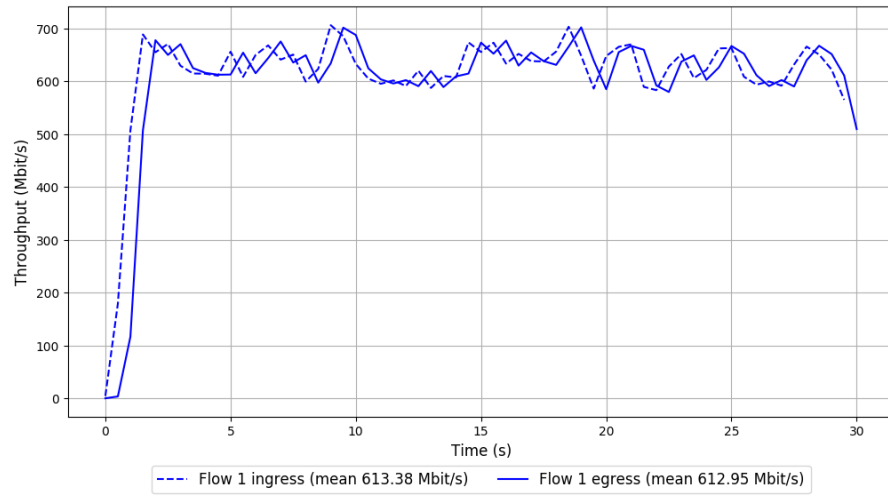


Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 20:28:55
End at: 2018-11-15 20:29:25
Local clock offset: 0.079 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-11-15 22:30:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 612.95 Mbit/s
95th percentile per-packet one-way delay: 74.393 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 612.95 Mbit/s
95th percentile per-packet one-way delay: 74.393 ms
Loss rate: 0.39%

Run 2: Report of TCP Cubic — Data Link

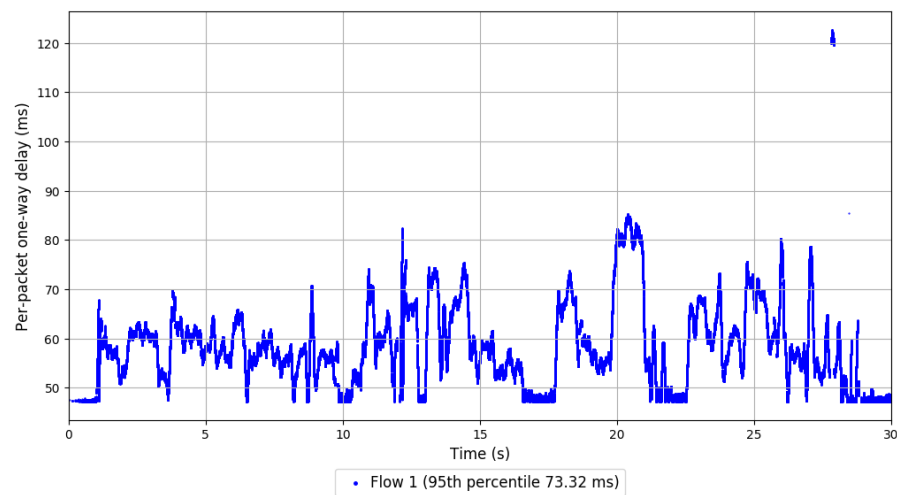
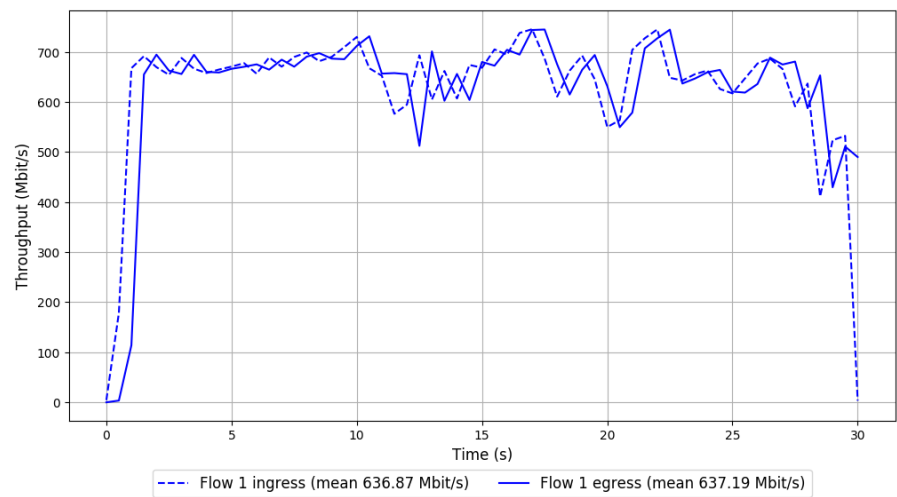


Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 20:55:00
End at: 2018-11-15 20:55:30
Local clock offset: 0.099 ms
Remote clock offset: -0.118 ms

Below is generated by plot.py at 2018-11-15 22:30:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 637.19 Mbit/s
95th percentile per-packet one-way delay: 73.320 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 637.19 Mbit/s
95th percentile per-packet one-way delay: 73.320 ms
Loss rate: 0.27%

Run 3: Report of TCP Cubic — Data Link

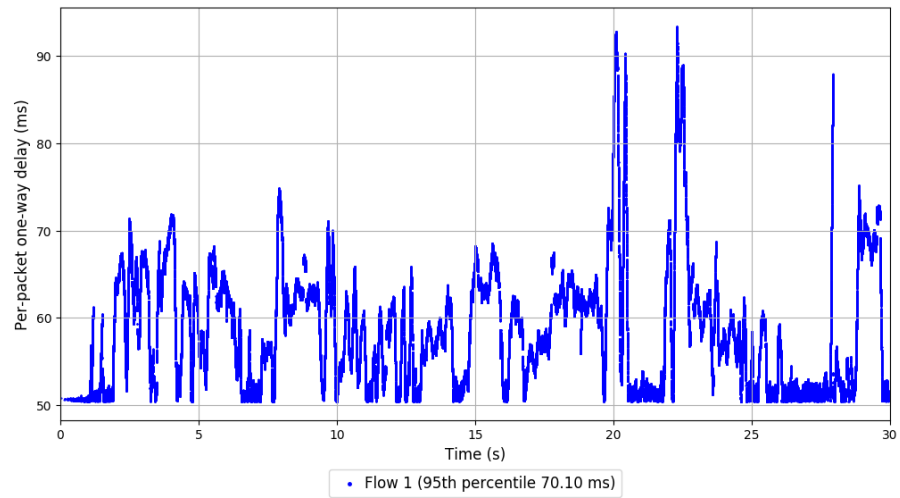
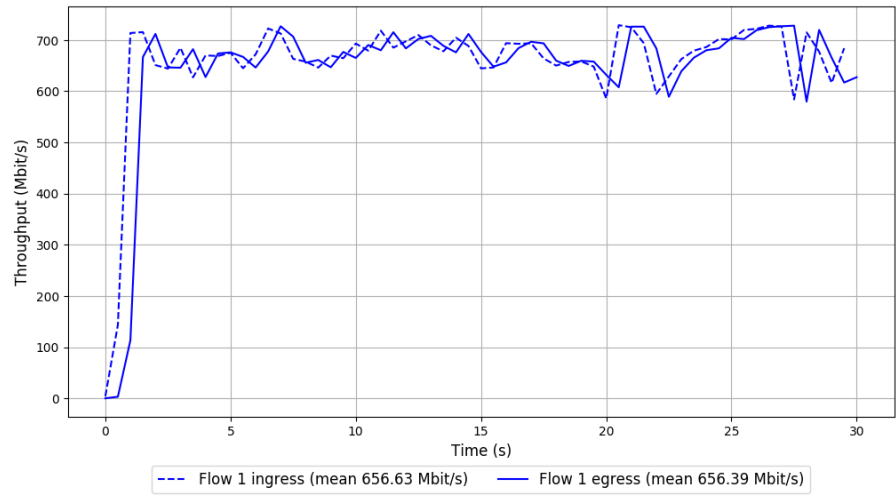


Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 21:21:12
End at: 2018-11-15 21:21:42
Local clock offset: 0.52 ms
Remote clock offset: -0.125 ms

Below is generated by plot.py at 2018-11-15 22:31:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 656.39 Mbit/s
95th percentile per-packet one-way delay: 70.102 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 656.39 Mbit/s
95th percentile per-packet one-way delay: 70.102 ms
Loss rate: 0.36%

Run 4: Report of TCP Cubic — Data Link

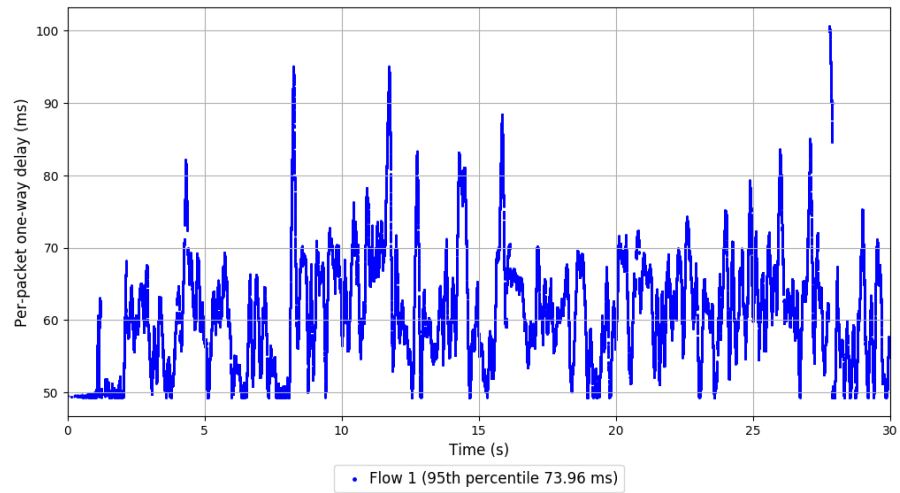
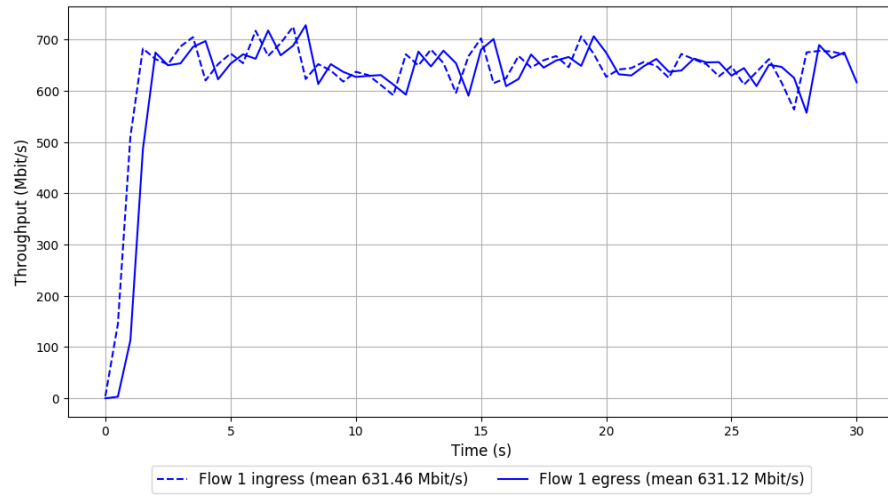


Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 21:47:48
End at: 2018-11-15 21:48:18
Local clock offset: -0.03 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-11-15 22:31:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 631.12 Mbit/s
95th percentile per-packet one-way delay: 73.959 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 631.12 Mbit/s
95th percentile per-packet one-way delay: 73.959 ms
Loss rate: 0.38%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-11-15 19:53:48

End at: 2018-11-15 19:54:18

Local clock offset: -0.117 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-11-15 22:40:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 996.33 Mbit/s

95th percentile per-packet one-way delay: 73.473 ms

Loss rate: 0.23%

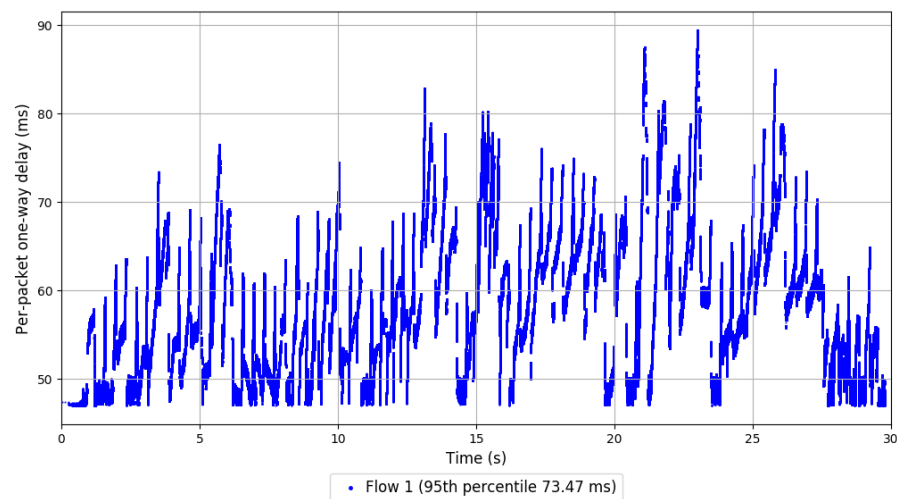
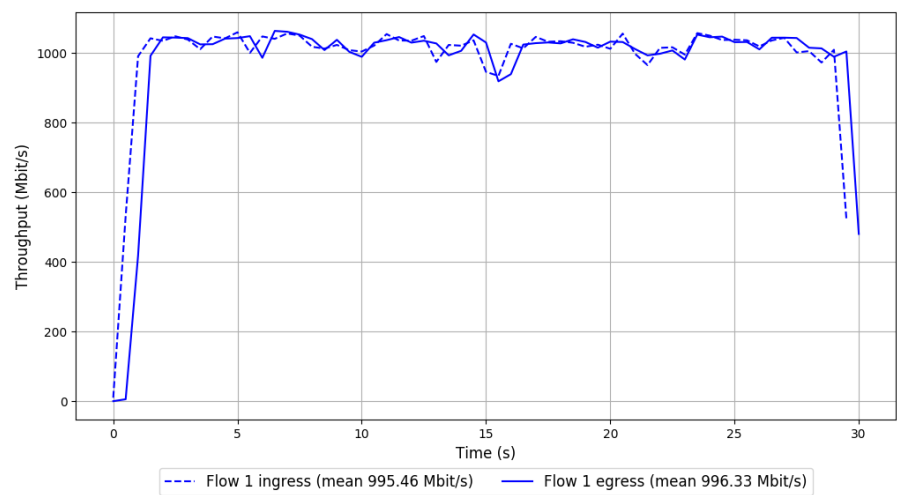
-- Flow 1:

Average throughput: 996.33 Mbit/s

95th percentile per-packet one-way delay: 73.473 ms

Loss rate: 0.23%

Run 1: Report of FillP — Data Link

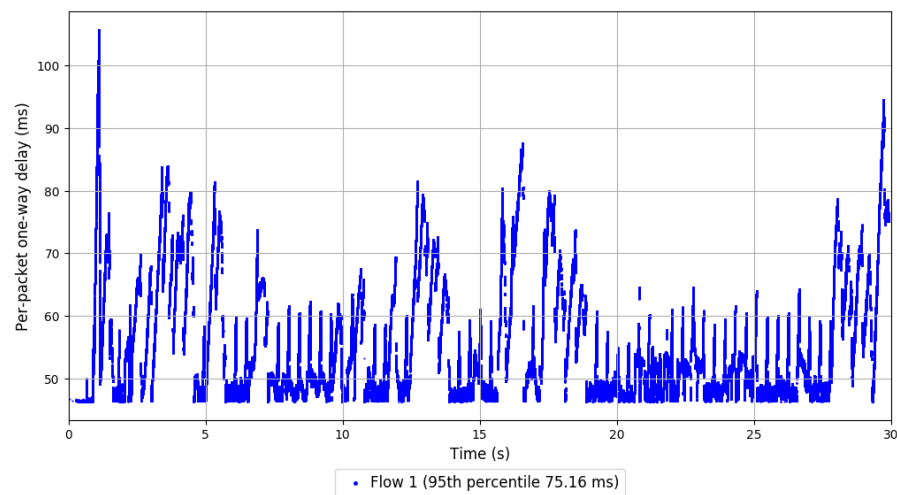
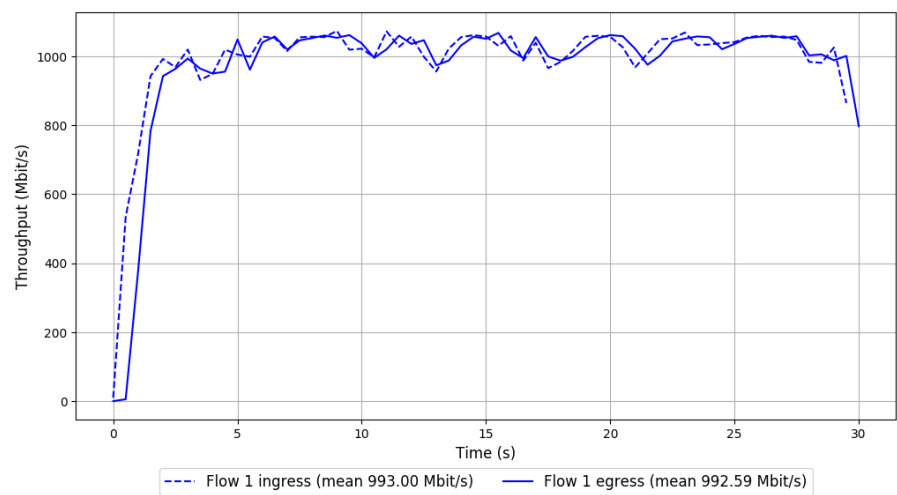


Run 2: Statistics of FillP

Start at: 2018-11-15 20:19:36
End at: 2018-11-15 20:20:06
Local clock offset: -0.036 ms
Remote clock offset: -0.027 ms

Below is generated by plot.py at 2018-11-15 22:52:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 992.59 Mbit/s
95th percentile per-packet one-way delay: 75.163 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 992.59 Mbit/s
95th percentile per-packet one-way delay: 75.163 ms
Loss rate: 0.35%

Run 2: Report of FillP — Data Link

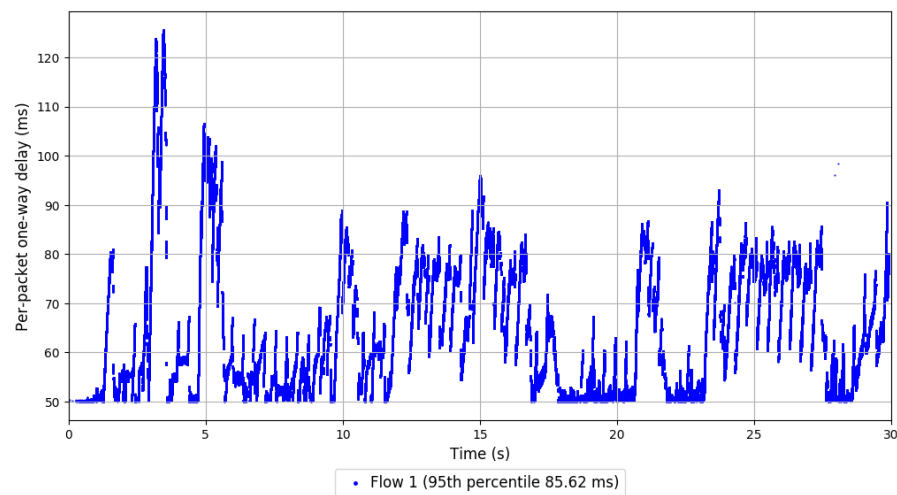
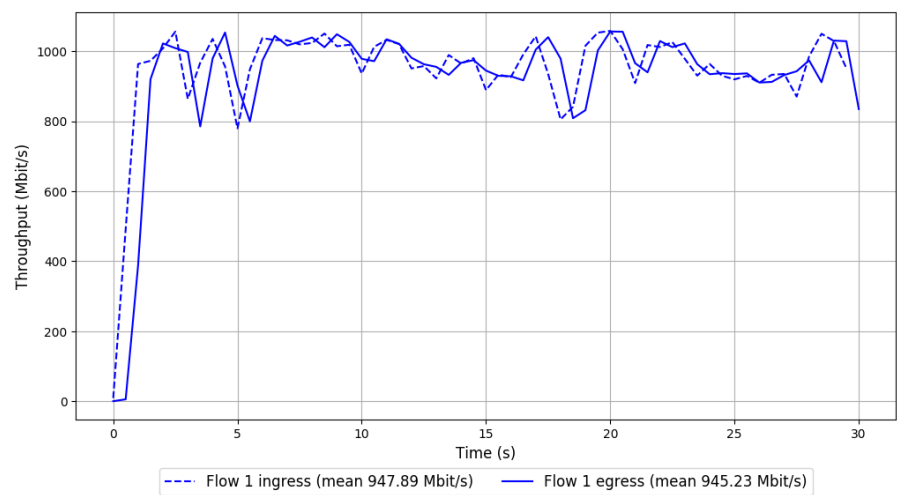


Run 3: Statistics of FillP

Start at: 2018-11-15 20:45:46
End at: 2018-11-15 20:46:16
Local clock offset: 0.125 ms
Remote clock offset: -0.031 ms

Below is generated by plot.py at 2018-11-15 22:52:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 945.23 Mbit/s
95th percentile per-packet one-way delay: 85.622 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 945.23 Mbit/s
95th percentile per-packet one-way delay: 85.622 ms
Loss rate: 0.61%

Run 3: Report of FillP — Data Link

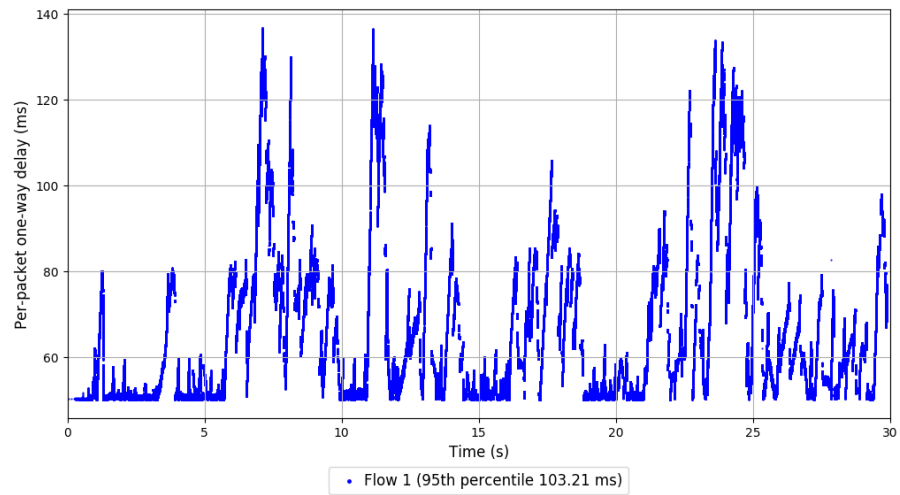
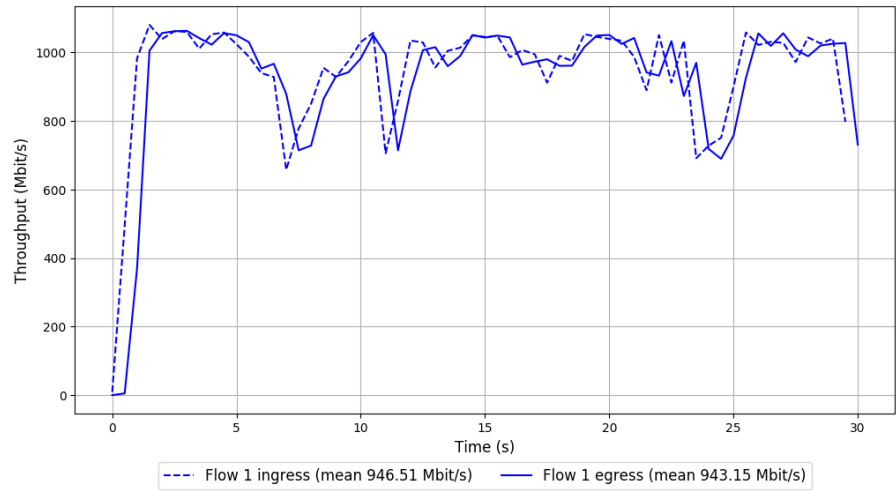


Run 4: Statistics of FillP

Start at: 2018-11-15 21:11:55
End at: 2018-11-15 21:12:25
Local clock offset: 0.131 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 943.15 Mbit/s
95th percentile per-packet one-way delay: 103.214 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 943.15 Mbit/s
95th percentile per-packet one-way delay: 103.214 ms
Loss rate: 0.68%

Run 4: Report of FillP — Data Link

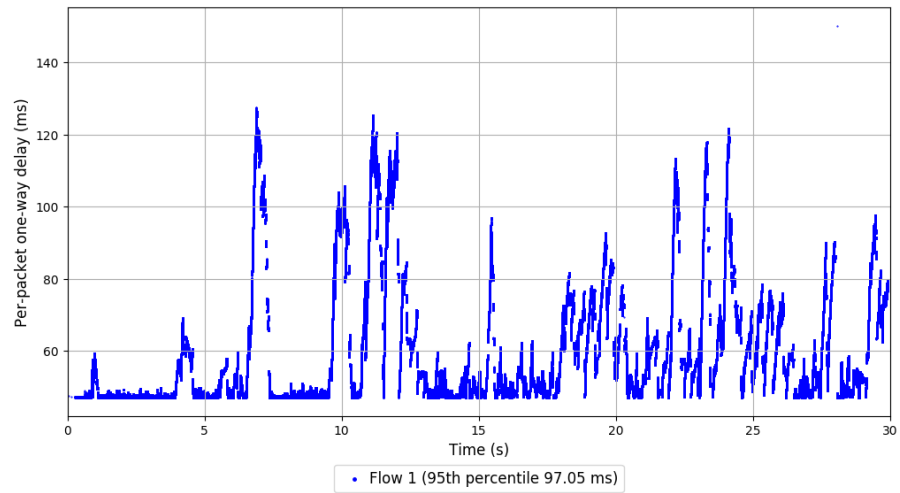
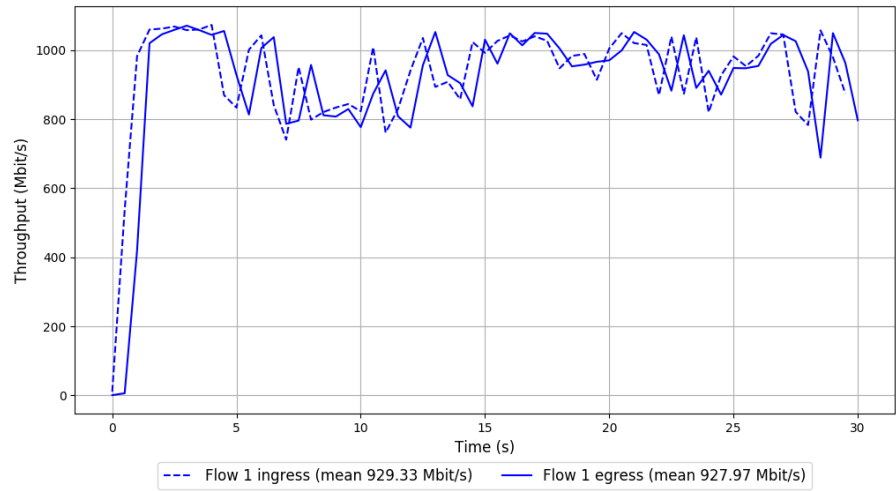


Run 5: Statistics of FillP

Start at: 2018-11-15 21:38:28
End at: 2018-11-15 21:38:59
Local clock offset: -0.012 ms
Remote clock offset: -0.025 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 927.97 Mbit/s
95th percentile per-packet one-way delay: 97.054 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 927.97 Mbit/s
95th percentile per-packet one-way delay: 97.054 ms
Loss rate: 0.46%

Run 5: Report of FillP — Data Link

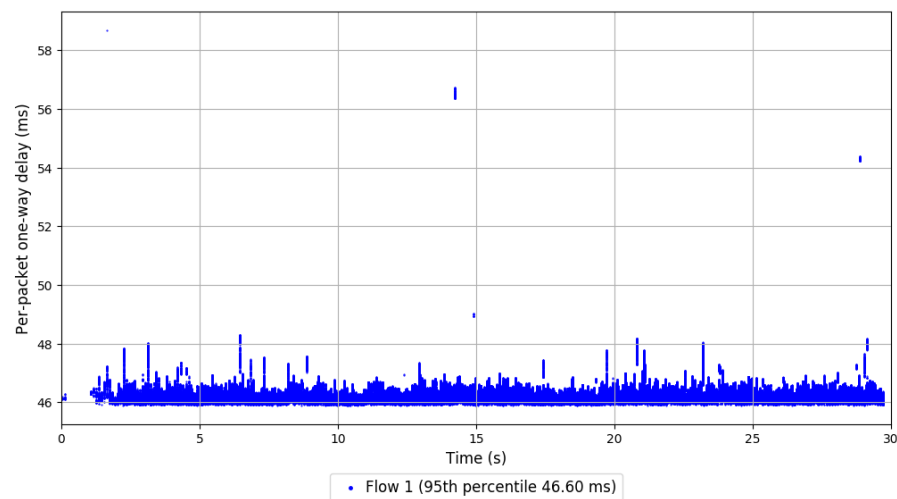
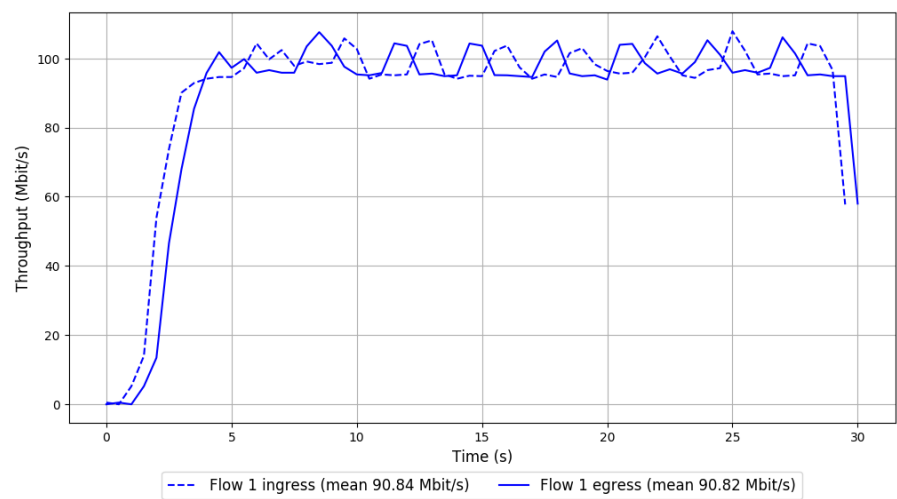


Run 1: Statistics of Indigo

Start at: 2018-11-15 20:04:35
End at: 2018-11-15 20:05:05
Local clock offset: -0.471 ms
Remote clock offset: -0.034 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 90.82 Mbit/s
95th percentile per-packet one-way delay: 46.605 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 90.82 Mbit/s
95th percentile per-packet one-way delay: 46.605 ms
Loss rate: 0.35%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-11-15 20:30:32

End at: 2018-11-15 20:31:02

Local clock offset: 0.048 ms

Remote clock offset: -0.066 ms

Below is generated by plot.py at 2018-11-15 22:52:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 222.11 Mbit/s

95th percentile per-packet one-way delay: 47.105 ms

Loss rate: 0.37%

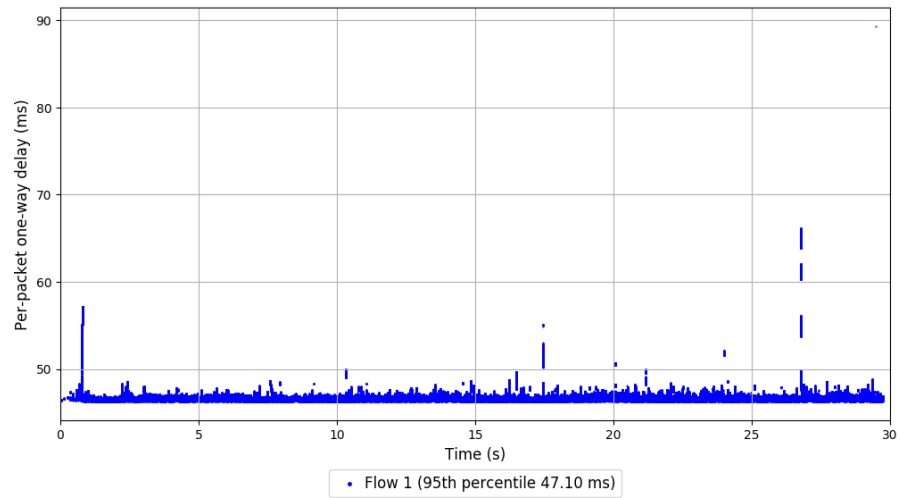
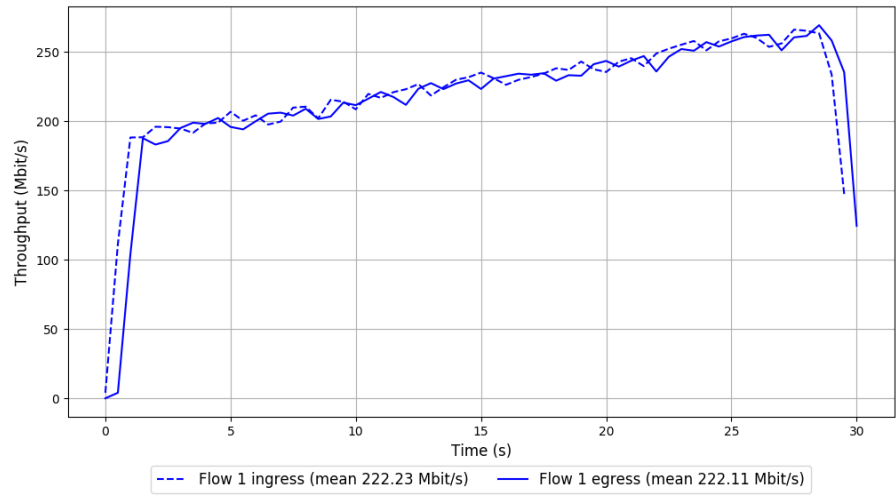
-- Flow 1:

Average throughput: 222.11 Mbit/s

95th percentile per-packet one-way delay: 47.105 ms

Loss rate: 0.37%

Run 2: Report of Indigo — Data Link

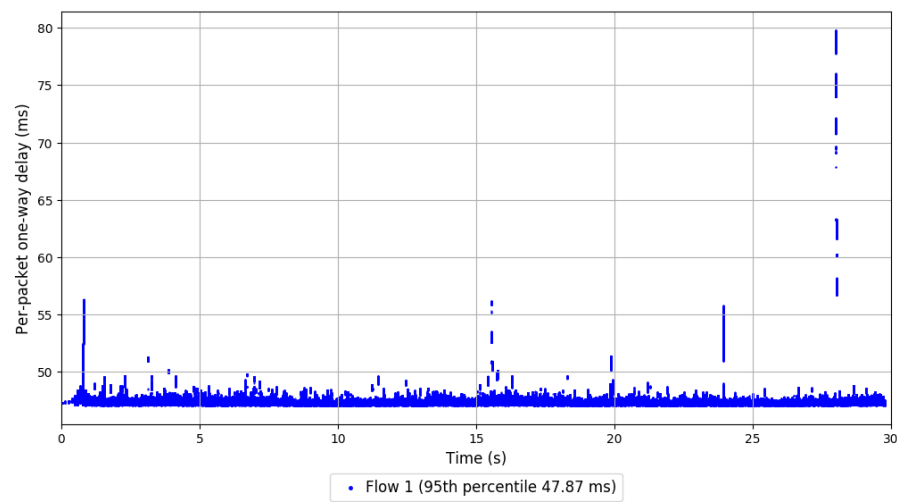
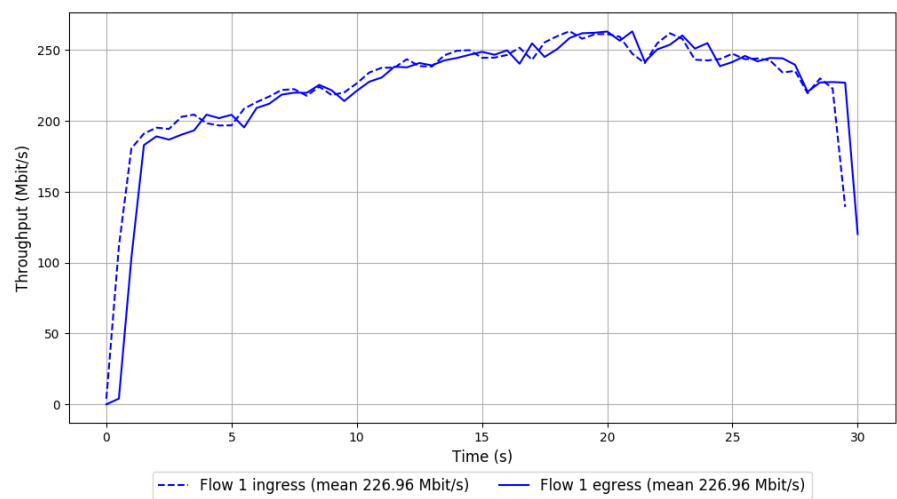


Run 3: Statistics of Indigo

Start at: 2018-11-15 20:56:38
End at: 2018-11-15 20:57:08
Local clock offset: 0.11 ms
Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 226.96 Mbit/s
95th percentile per-packet one-way delay: 47.871 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 226.96 Mbit/s
95th percentile per-packet one-way delay: 47.871 ms
Loss rate: 0.32%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-15 21:22:52

End at: 2018-11-15 21:23:22

Local clock offset: 0.09 ms

Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-11-15 22:52:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 230.37 Mbit/s

95th percentile per-packet one-way delay: 50.735 ms

Loss rate: 0.31%

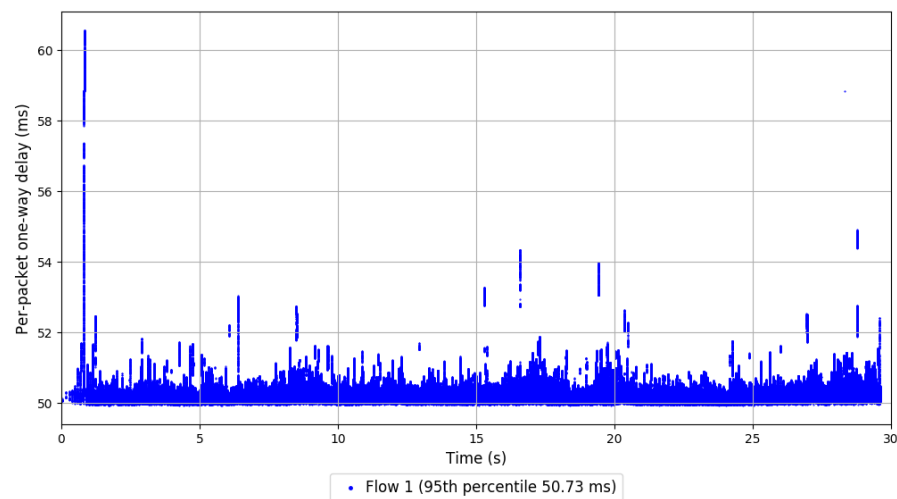
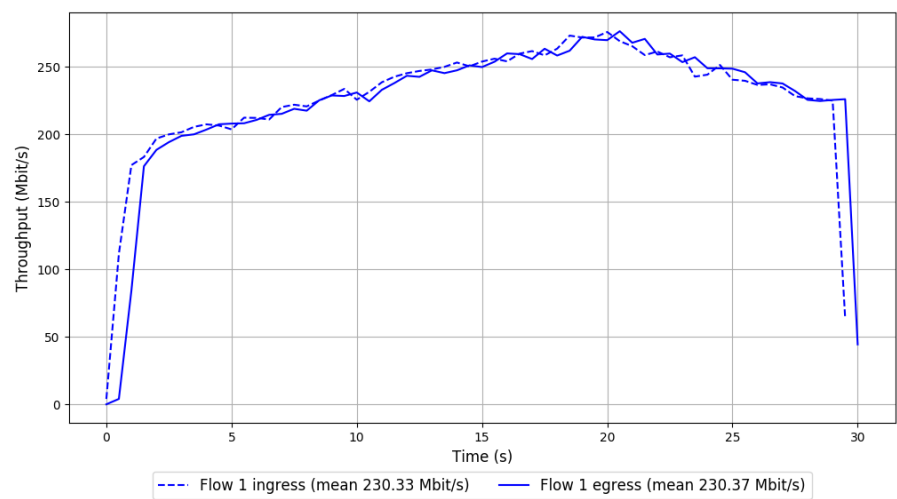
-- Flow 1:

Average throughput: 230.37 Mbit/s

95th percentile per-packet one-way delay: 50.735 ms

Loss rate: 0.31%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-11-15 21:49:27

End at: 2018-11-15 21:49:57

Local clock offset: -0.002 ms

Remote clock offset: -0.07 ms

Below is generated by plot.py at 2018-11-15 22:52:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 235.39 Mbit/s

95th percentile per-packet one-way delay: 48.053 ms

Loss rate: 0.31%

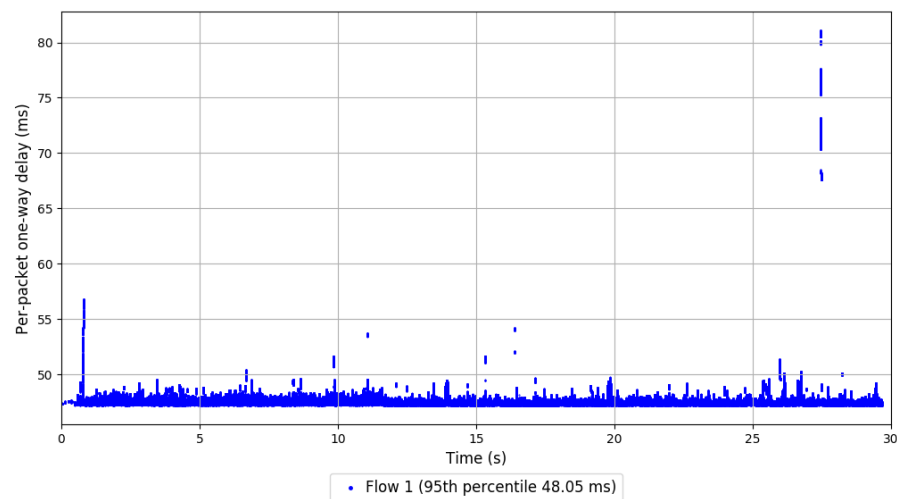
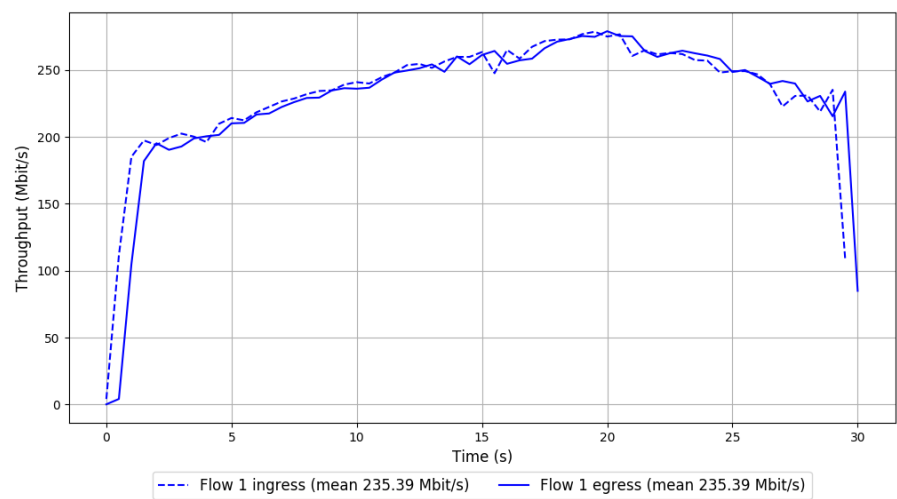
-- Flow 1:

Average throughput: 235.39 Mbit/s

95th percentile per-packet one-way delay: 48.053 ms

Loss rate: 0.31%

Run 5: Report of Indigo — Data Link

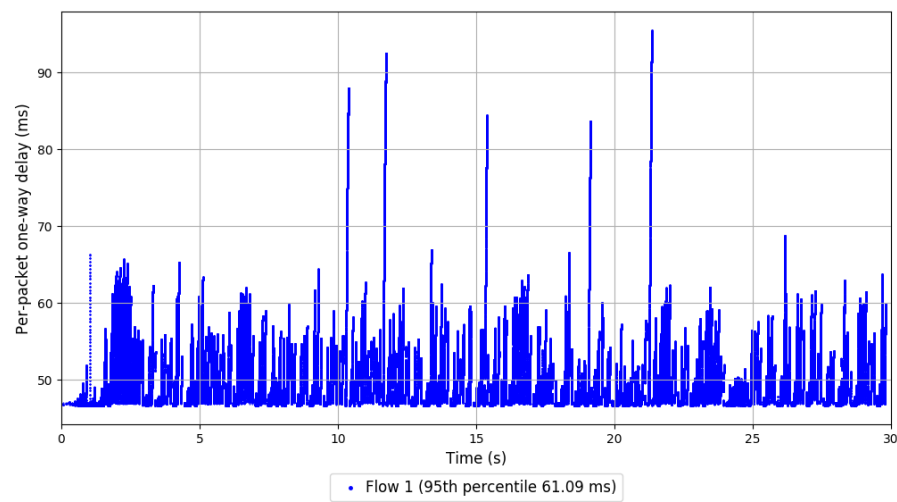
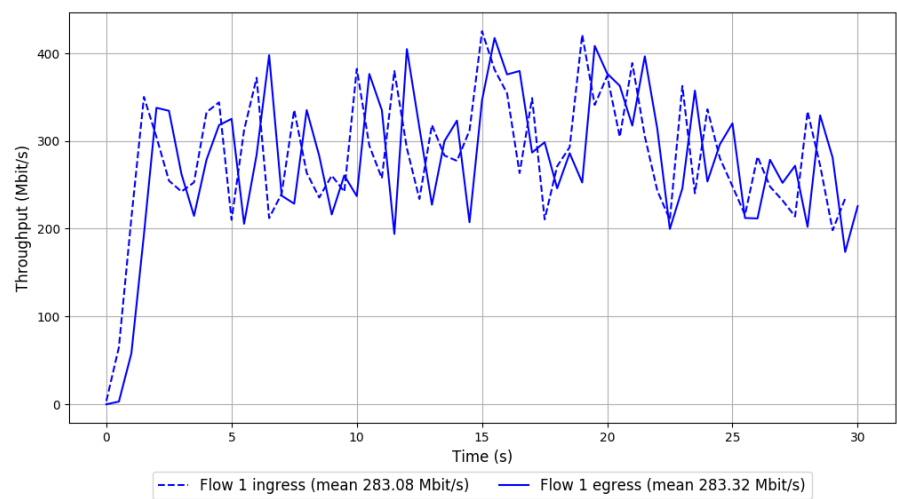


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-15 20:11:20
End at: 2018-11-15 20:11:50
Local clock offset: -0.456 ms
Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 283.32 Mbit/s
95th percentile per-packet one-way delay: 61.085 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 283.32 Mbit/s
95th percentile per-packet one-way delay: 61.085 ms
Loss rate: 0.24%

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

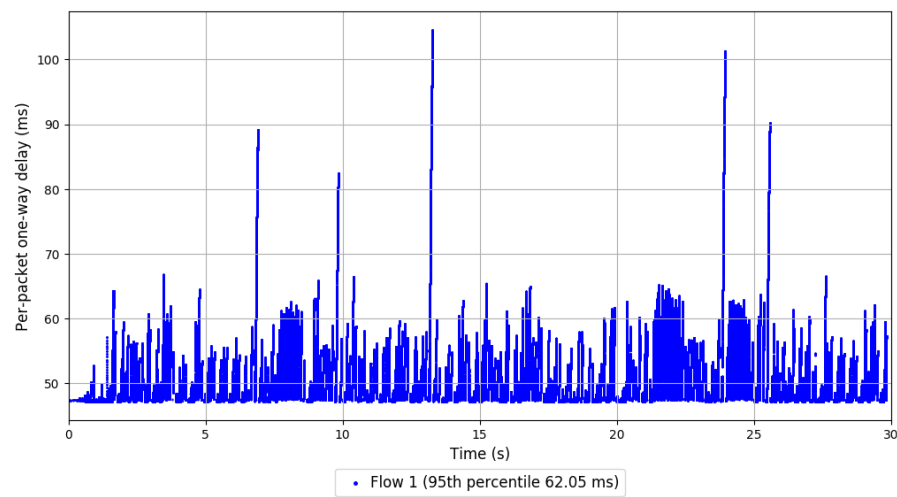
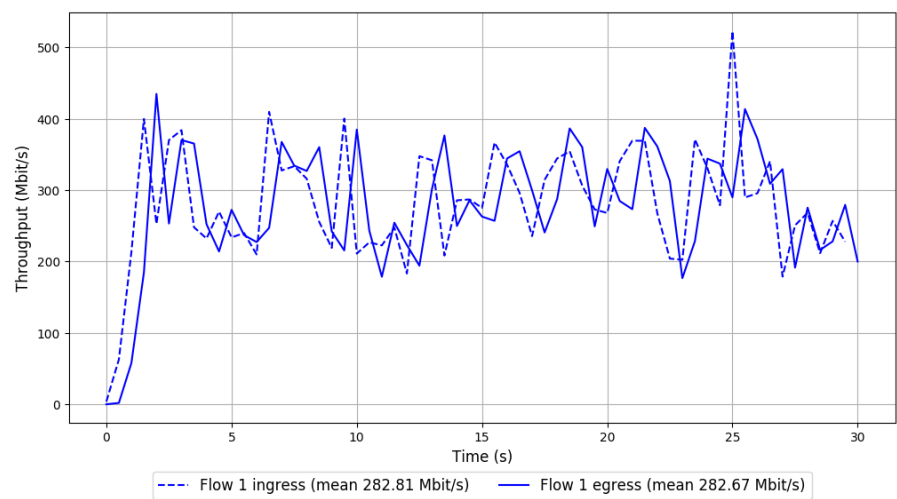


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 20:37:29
End at: 2018-11-15 20:37:59
Local clock offset: 0.089 ms
Remote clock offset: -0.031 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 282.67 Mbit/s
95th percentile per-packet one-way delay: 62.052 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 282.67 Mbit/s
95th percentile per-packet one-way delay: 62.052 ms
Loss rate: 0.31%

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

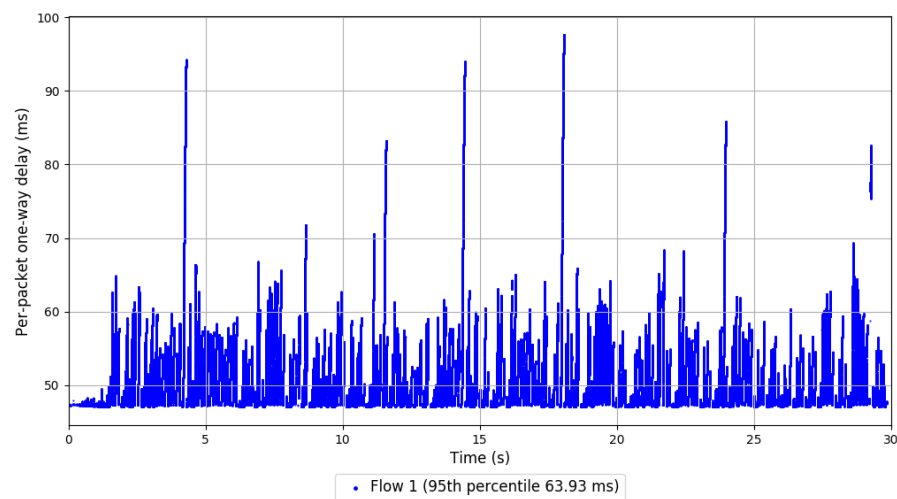
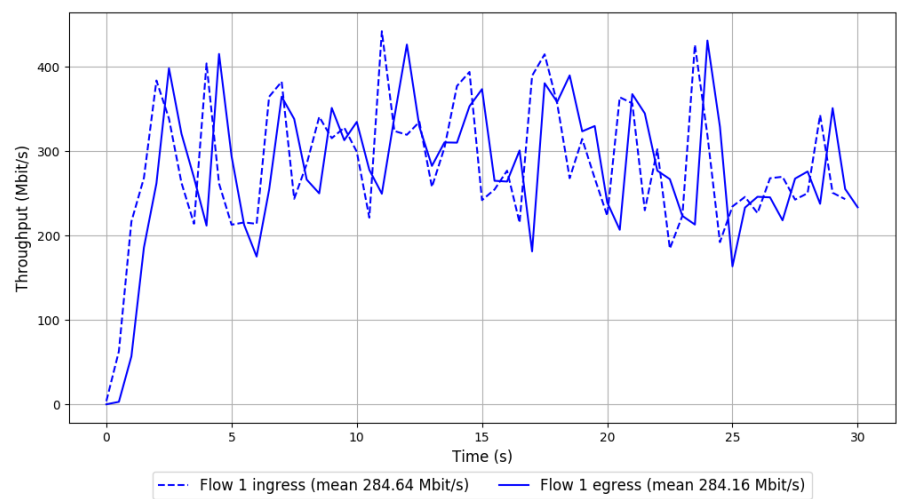


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-15 21:03:36
End at: 2018-11-15 21:04:06
Local clock offset: 0.143 ms
Remote clock offset: -0.106 ms

Below is generated by plot.py at 2018-11-15 22:52:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 284.16 Mbit/s
95th percentile per-packet one-way delay: 63.927 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 284.16 Mbit/s
95th percentile per-packet one-way delay: 63.927 ms
Loss rate: 0.23%

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



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 21:29:54

End at: 2018-11-15 21:30:24

Local clock offset: 0.069 ms

Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-11-15 22:52:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 290.48 Mbit/s

95th percentile per-packet one-way delay: 69.640 ms

Loss rate: 0.24%

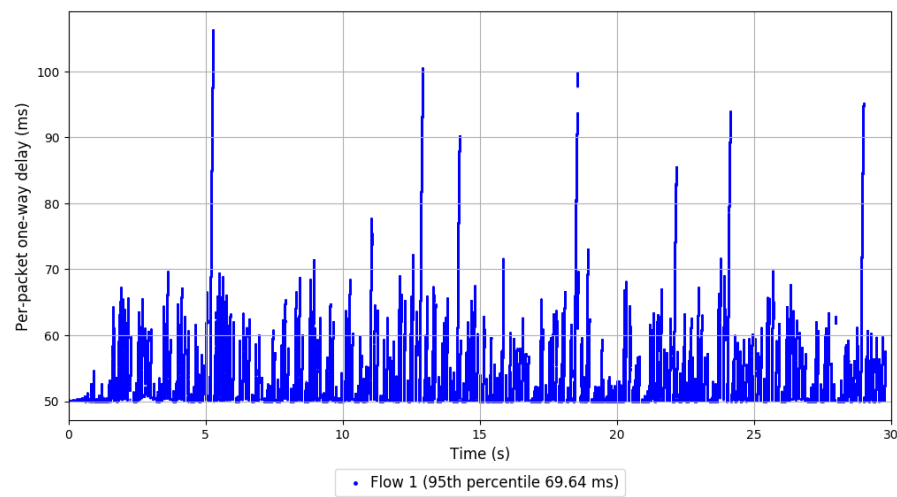
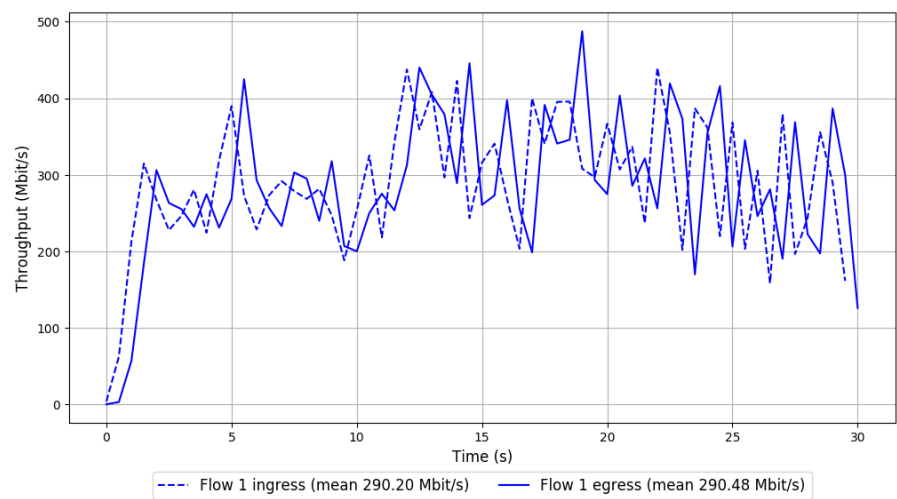
-- Flow 1:

Average throughput: 290.48 Mbit/s

95th percentile per-packet one-way delay: 69.640 ms

Loss rate: 0.24%

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

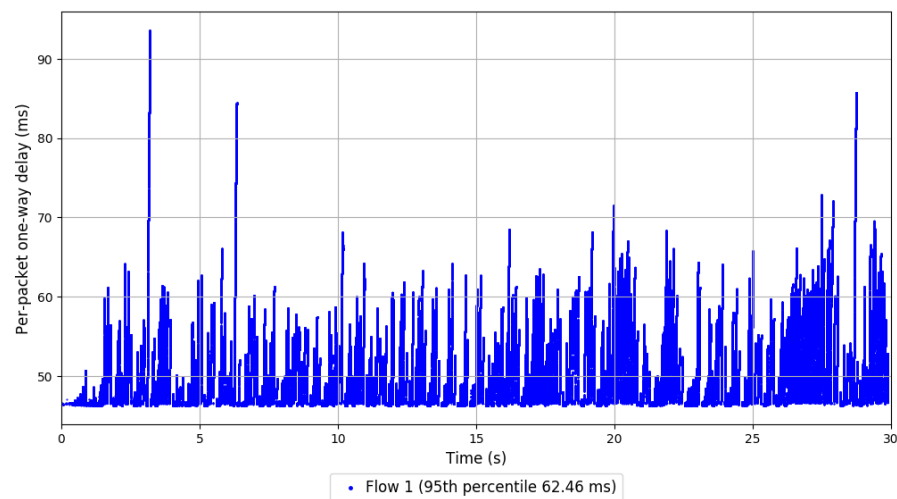
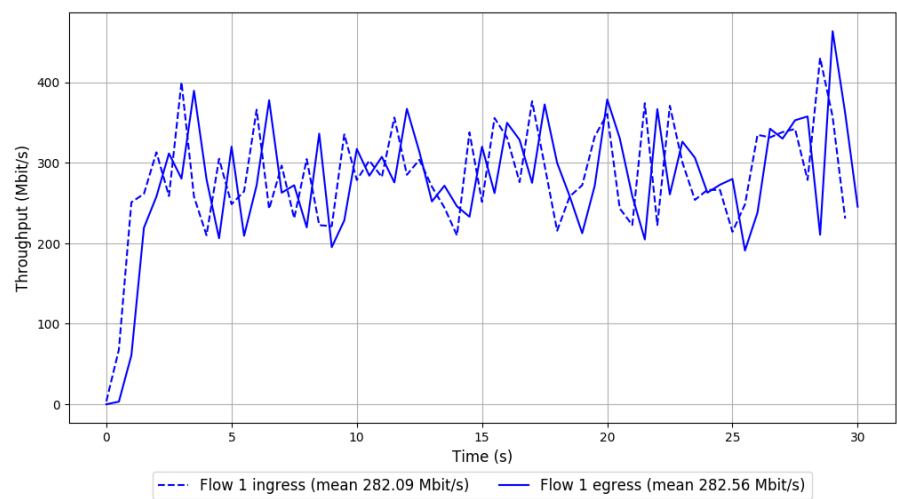


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 21:56:25
End at: 2018-11-15 21:56:55
Local clock offset: -0.009 ms
Remote clock offset: -0.065 ms

Below is generated by plot.py at 2018-11-15 22:53:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 282.56 Mbit/s
95th percentile per-packet one-way delay: 62.460 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 282.56 Mbit/s
95th percentile per-packet one-way delay: 62.460 ms
Loss rate: 0.15%

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

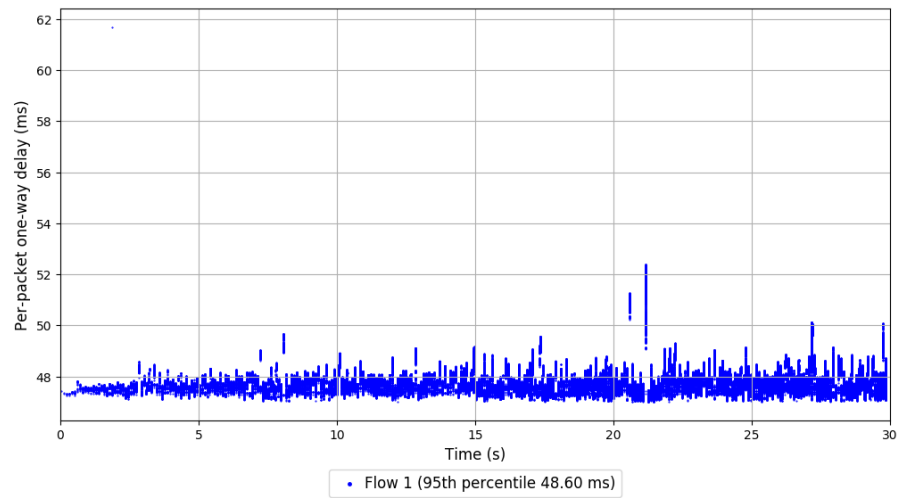
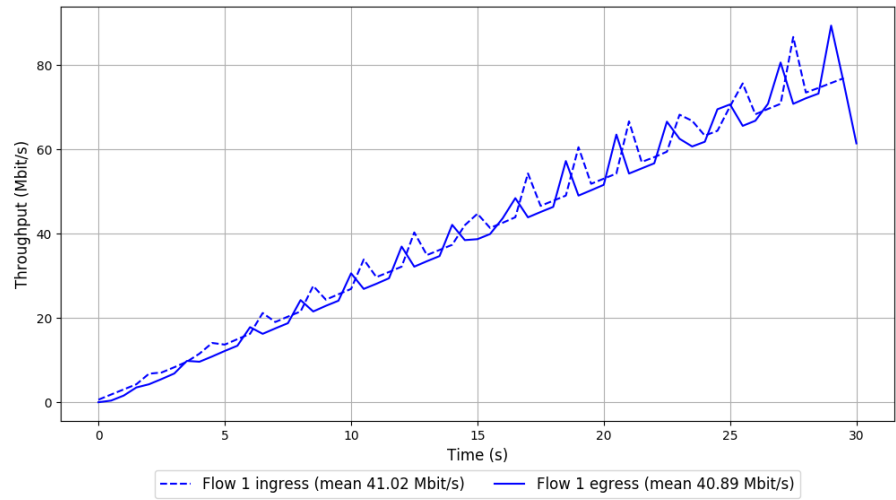


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 20:08:34
End at: 2018-11-15 20:09:04
Local clock offset: -0.085 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-11-15 22:53:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.89 Mbit/s
95th percentile per-packet one-way delay: 48.596 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 40.89 Mbit/s
95th percentile per-packet one-way delay: 48.596 ms
Loss rate: 0.63%
```

Run 1: Report of LEDBAT — Data Link

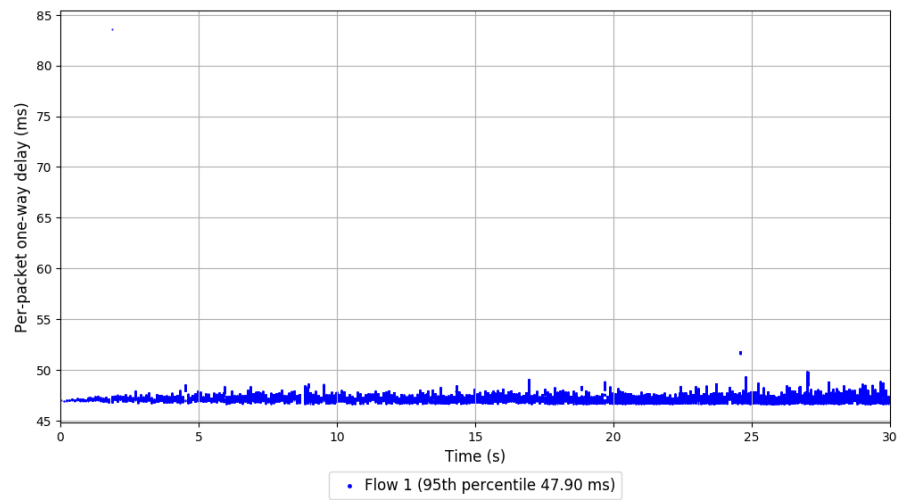
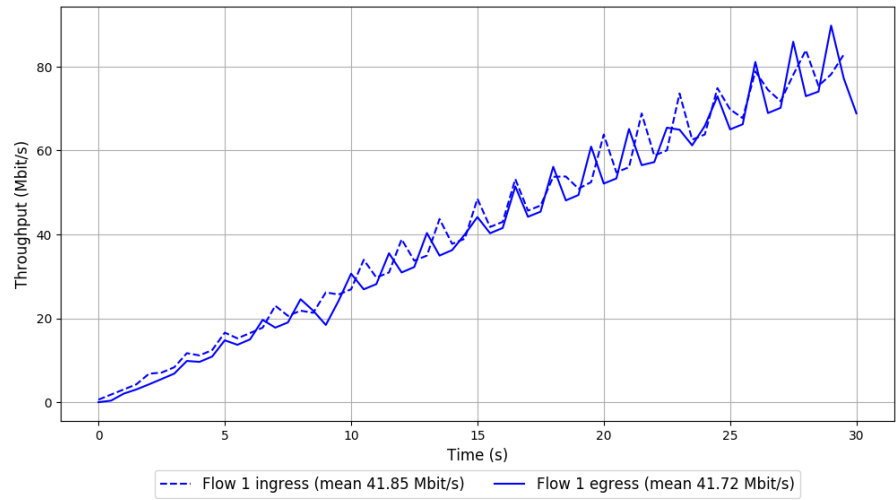


Run 2: Statistics of LEDBAT

Start at: 2018-11-15 20:34:42
End at: 2018-11-15 20:35:12
Local clock offset: 0.455 ms
Remote clock offset: -0.066 ms

Below is generated by plot.py at 2018-11-15 22:53:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 41.72 Mbit/s
95th percentile per-packet one-way delay: 47.900 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 41.72 Mbit/s
95th percentile per-packet one-way delay: 47.900 ms
Loss rate: 0.62%

Run 2: Report of LEDBAT — Data Link

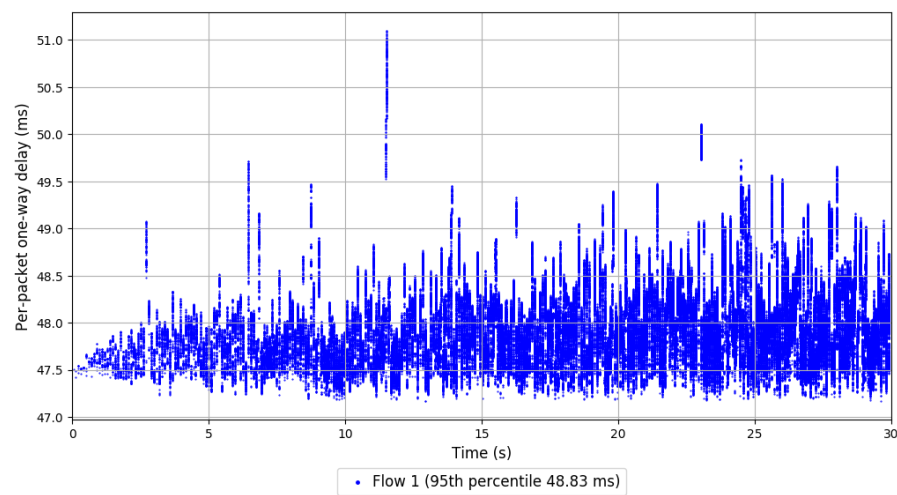
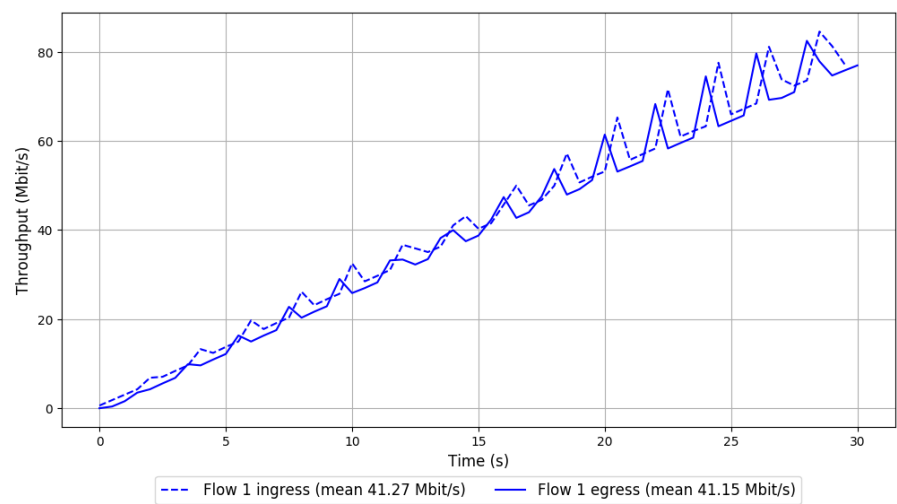


Run 3: Statistics of LEDBAT

Start at: 2018-11-15 21:00:52
End at: 2018-11-15 21:01:22
Local clock offset: 0.118 ms
Remote clock offset: -0.145 ms

Below is generated by plot.py at 2018-11-15 22:53:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 41.15 Mbit/s
95th percentile per-packet one-way delay: 48.831 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 41.15 Mbit/s
95th percentile per-packet one-way delay: 48.831 ms
Loss rate: 0.63%

Run 3: Report of LEDBAT — Data Link

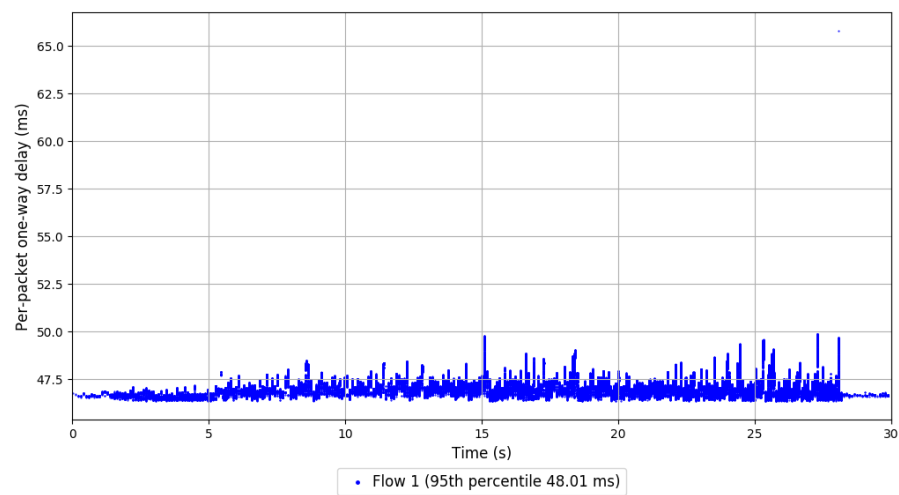
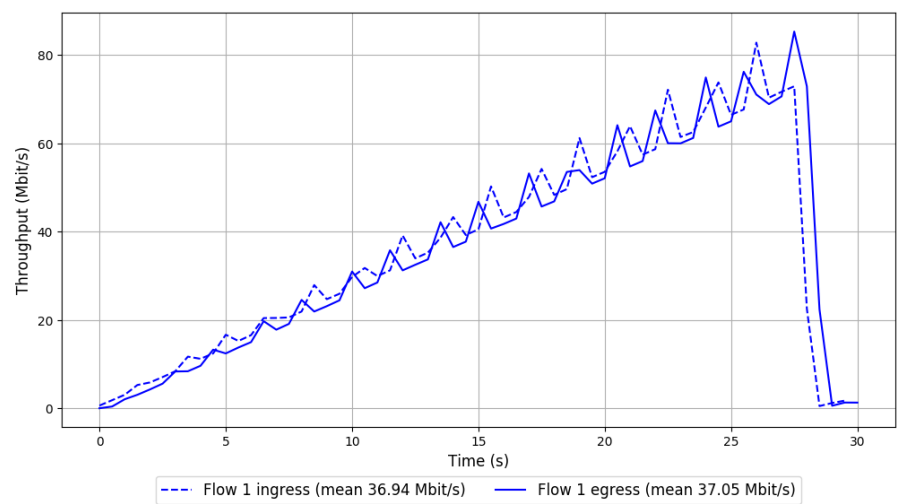


Run 4: Statistics of LEDBAT

Start at: 2018-11-15 21:27:05
End at: 2018-11-15 21:27:35
Local clock offset: 0.055 ms
Remote clock offset: -0.106 ms

Below is generated by plot.py at 2018-11-15 22:53:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 37.05 Mbit/s
95th percentile per-packet one-way delay: 48.008 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 37.05 Mbit/s
95th percentile per-packet one-way delay: 48.008 ms
Loss rate: 0.02%

Run 4: Report of LEDBAT — Data Link

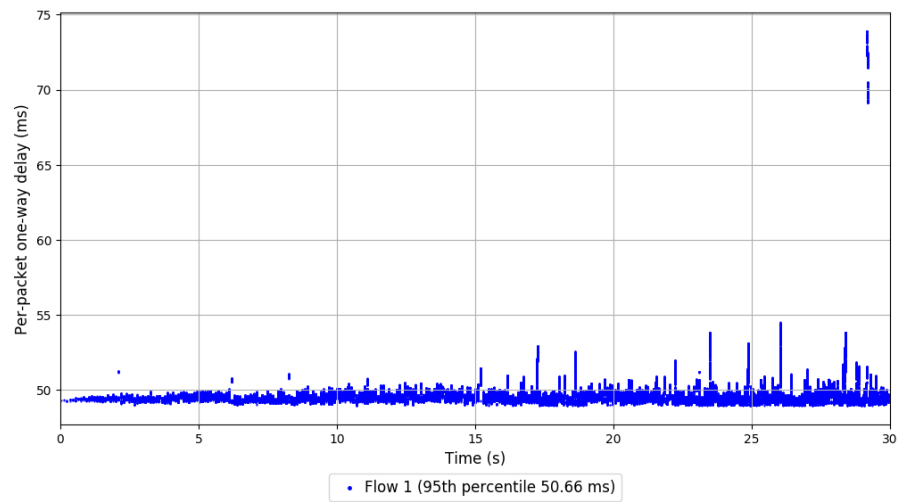
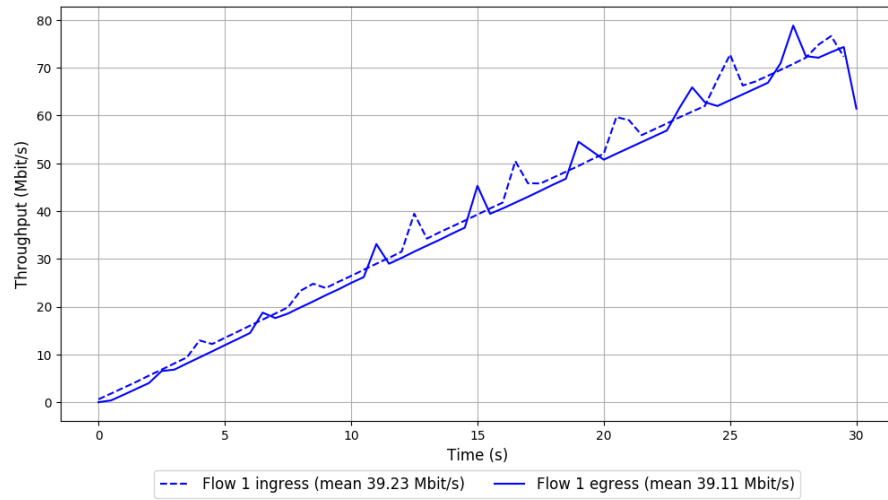


Run 5: Statistics of LEDBAT

Start at: 2018-11-15 21:53:38
End at: 2018-11-15 21:54:08
Local clock offset: -0.355 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-11-15 22:53:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 50.655 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 50.655 ms
Loss rate: 0.63%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

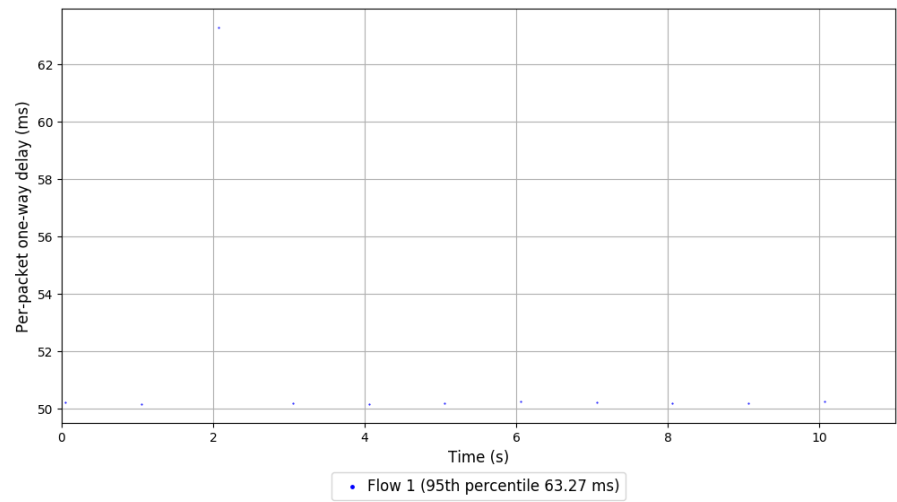
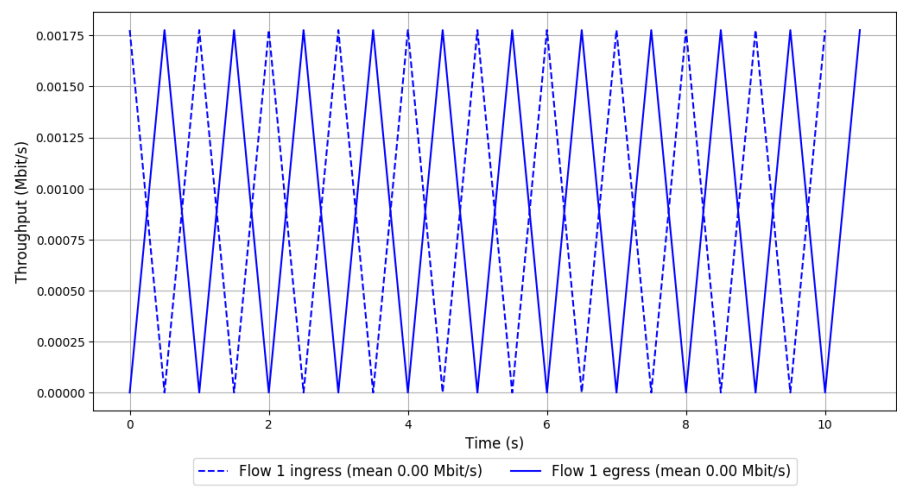
Start at: 2018-11-15 19:52:40

End at: 2018-11-15 19:53:10

Local clock offset: -0.104 ms

Remote clock offset: -0.029 ms

Run 1: Report of Indigo-Muses — Data Link

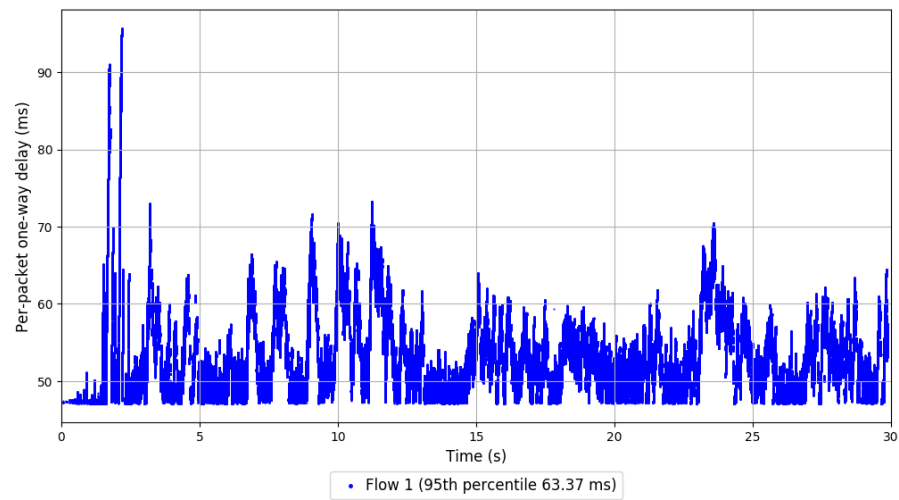
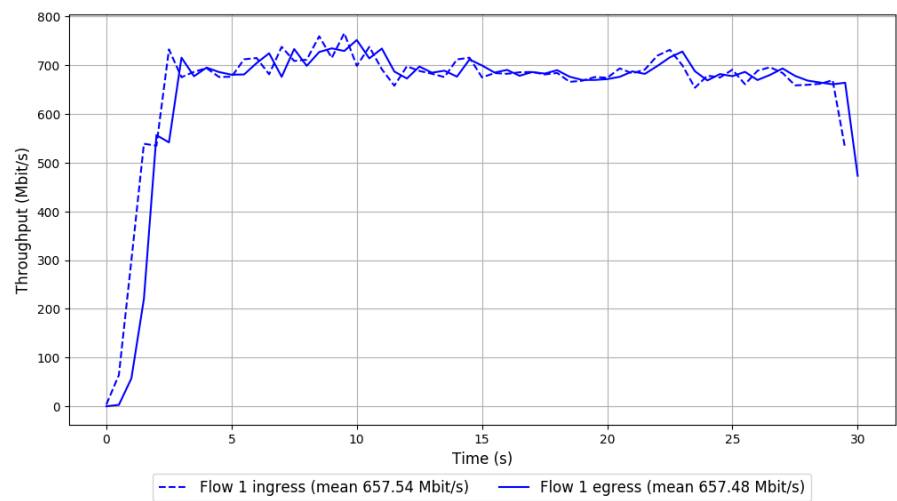


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 20:17:57
End at: 2018-11-15 20:18:27
Local clock offset: -0.009 ms
Remote clock offset: -0.103 ms

Below is generated by plot.py at 2018-11-15 23:03:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 657.48 Mbit/s
95th percentile per-packet one-way delay: 63.367 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 657.48 Mbit/s
95th percentile per-packet one-way delay: 63.367 ms
Loss rate: 0.33%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 20:44:07

End at: 2018-11-15 20:44:37

Local clock offset: 0.136 ms

Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-11-15 23:03:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 667.23 Mbit/s

95th percentile per-packet one-way delay: 67.999 ms

Loss rate: 0.38%

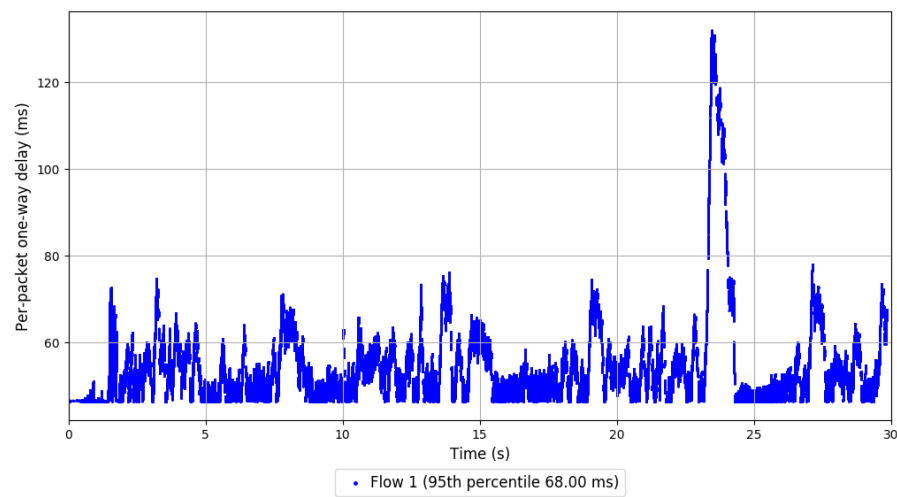
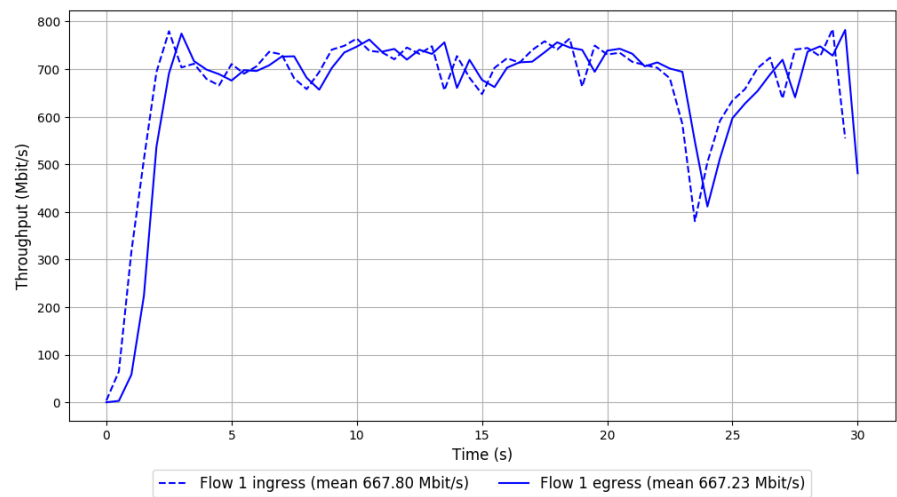
-- Flow 1:

Average throughput: 667.23 Mbit/s

95th percentile per-packet one-way delay: 67.999 ms

Loss rate: 0.38%

Run 3: Report of Indigo-Muses — Data Link

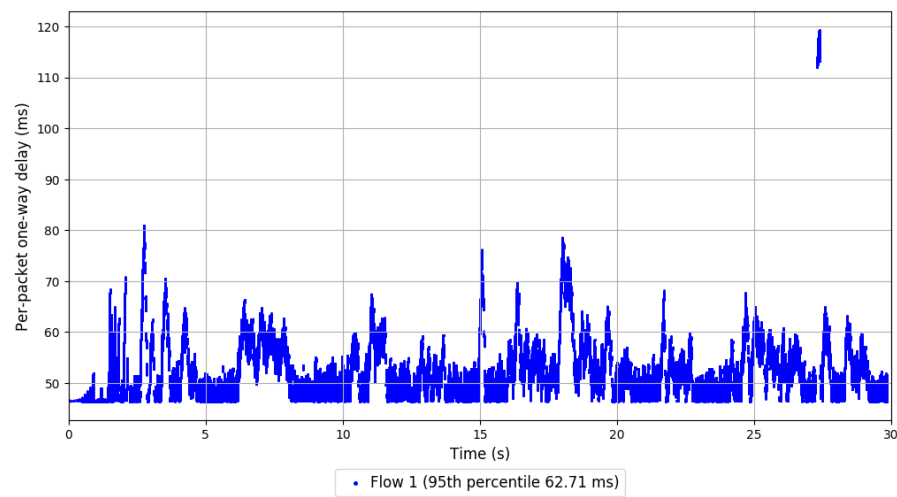
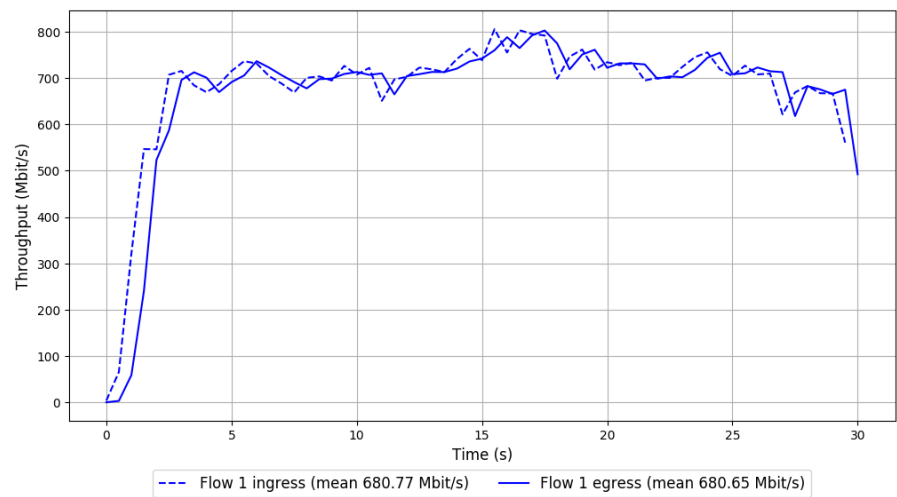


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 21:10:15
End at: 2018-11-15 21:10:45
Local clock offset: 0.094 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-11-15 23:06:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 680.65 Mbit/s
95th percentile per-packet one-way delay: 62.713 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 680.65 Mbit/s
95th percentile per-packet one-way delay: 62.713 ms
Loss rate: 0.33%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 21:36:41

End at: 2018-11-15 21:37:11

Local clock offset: 0.01 ms

Remote clock offset: -0.06 ms

Below is generated by plot.py at 2018-11-15 23:06:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 669.74 Mbit/s

95th percentile per-packet one-way delay: 70.142 ms

Loss rate: 0.37%

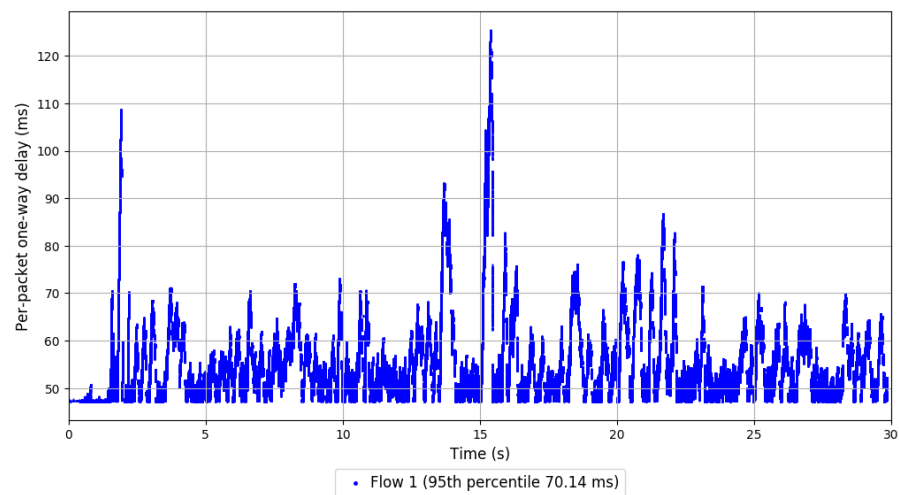
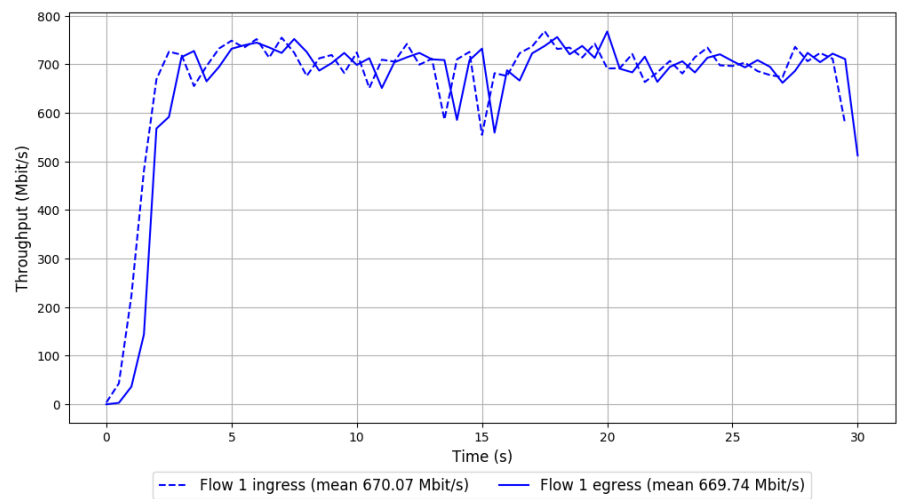
-- Flow 1:

Average throughput: 669.74 Mbit/s

95th percentile per-packet one-way delay: 70.142 ms

Loss rate: 0.37%

Run 5: Report of Indigo-Muses — Data Link

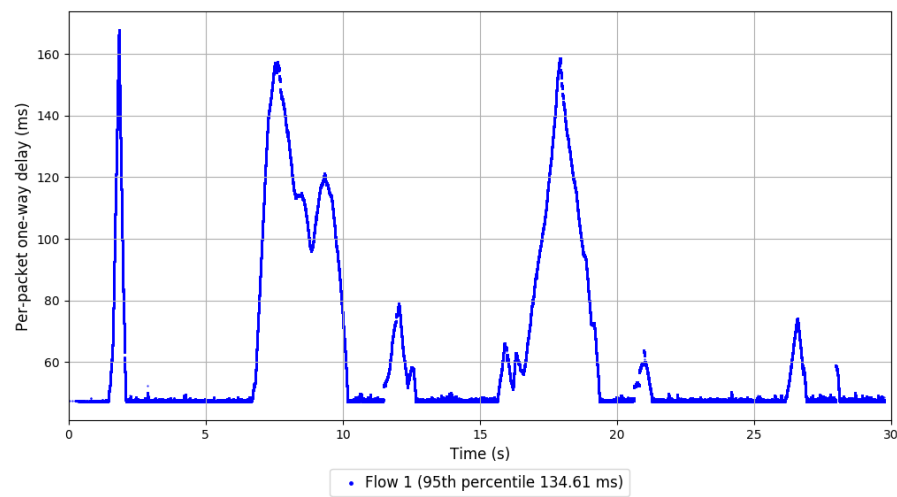
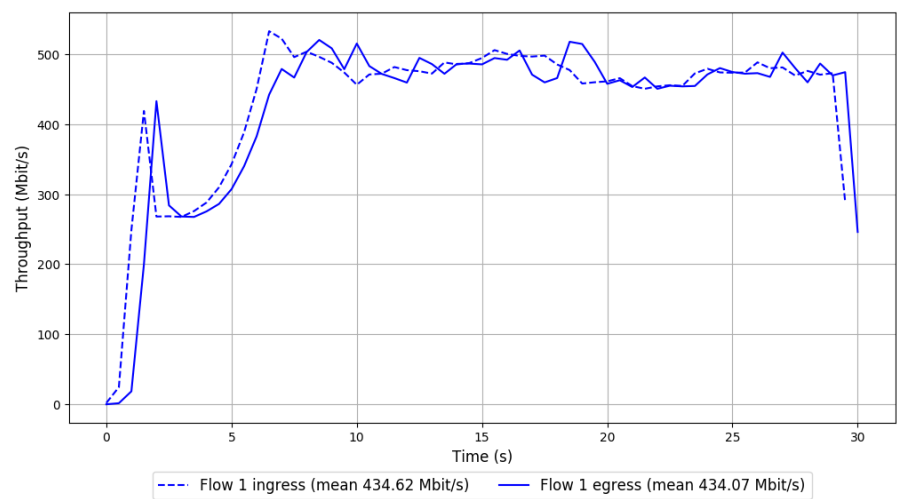


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 19:58:46
End at: 2018-11-15 19:59:16
Local clock offset: -0.087 ms
Remote clock offset: -0.024 ms

# Below is generated by plot.py at 2018-11-15 23:08:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 434.07 Mbit/s
95th percentile per-packet one-way delay: 134.613 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 434.07 Mbit/s
95th percentile per-packet one-way delay: 134.613 ms
Loss rate: 0.44%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 20:24:39

End at: 2018-11-15 20:25:09

Local clock offset: 0.036 ms

Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-11-15 23:09:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 450.93 Mbit/s

95th percentile per-packet one-way delay: 160.471 ms

Loss rate: 3.29%

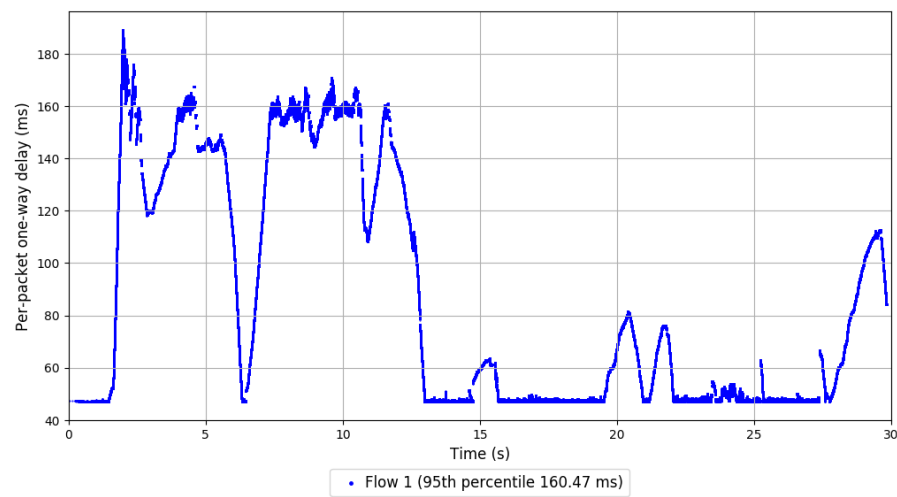
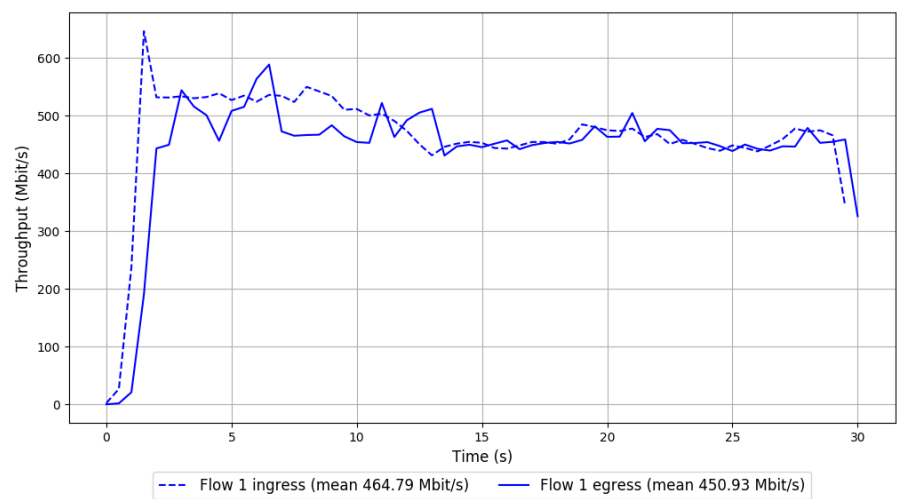
-- Flow 1:

Average throughput: 450.93 Mbit/s

95th percentile per-packet one-way delay: 160.471 ms

Loss rate: 3.29%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 20:50:45

End at: 2018-11-15 20:51:15

Local clock offset: 0.122 ms

Remote clock offset: -0.034 ms

Below is generated by plot.py at 2018-11-15 23:10:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 475.56 Mbit/s

95th percentile per-packet one-way delay: 157.211 ms

Loss rate: 3.45%

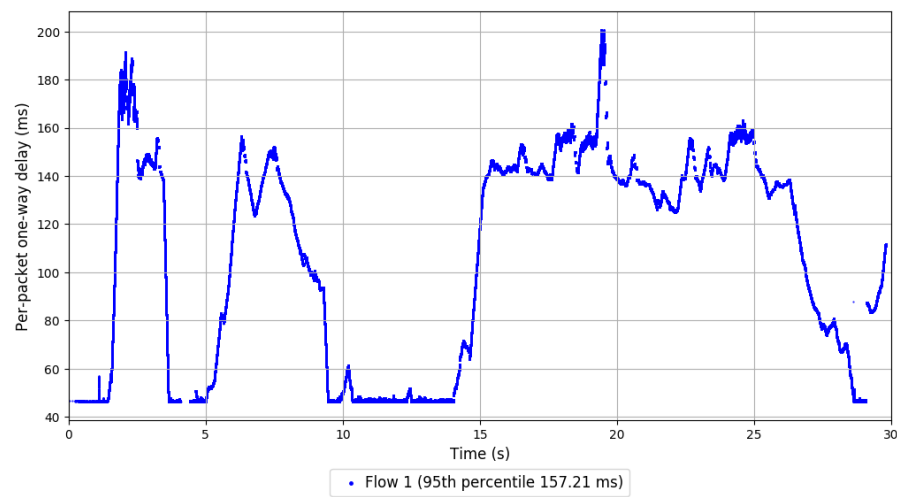
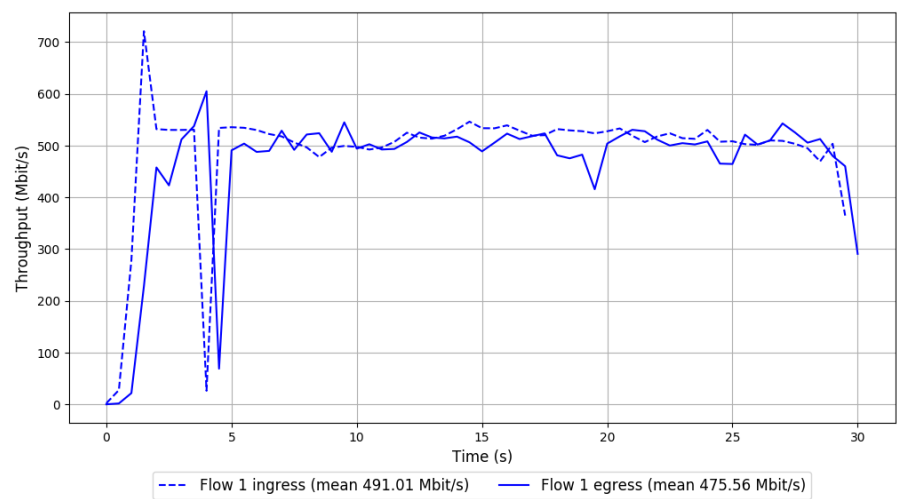
-- Flow 1:

Average throughput: 475.56 Mbit/s

95th percentile per-packet one-way delay: 157.211 ms

Loss rate: 3.45%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 21:16:56

End at: 2018-11-15 21:17:26

Local clock offset: 0.155 ms

Remote clock offset: -0.115 ms

Below is generated by plot.py at 2018-11-15 23:11:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 491.03 Mbit/s

95th percentile per-packet one-way delay: 145.726 ms

Loss rate: 1.18%

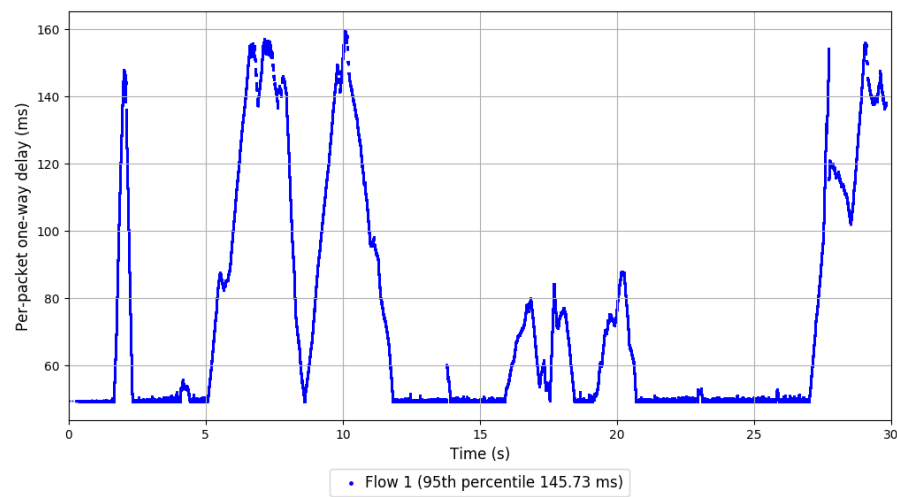
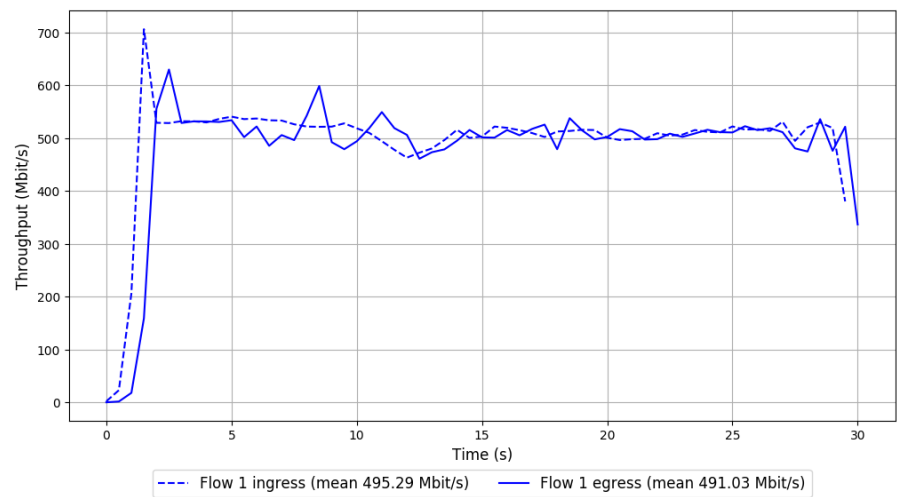
-- Flow 1:

Average throughput: 491.03 Mbit/s

95th percentile per-packet one-way delay: 145.726 ms

Loss rate: 1.18%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 21:43:31

End at: 2018-11-15 21:44:01

Local clock offset: 0.041 ms

Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-11-15 23:22:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 463.33 Mbit/s

95th percentile per-packet one-way delay: 169.767 ms

Loss rate: 6.18%

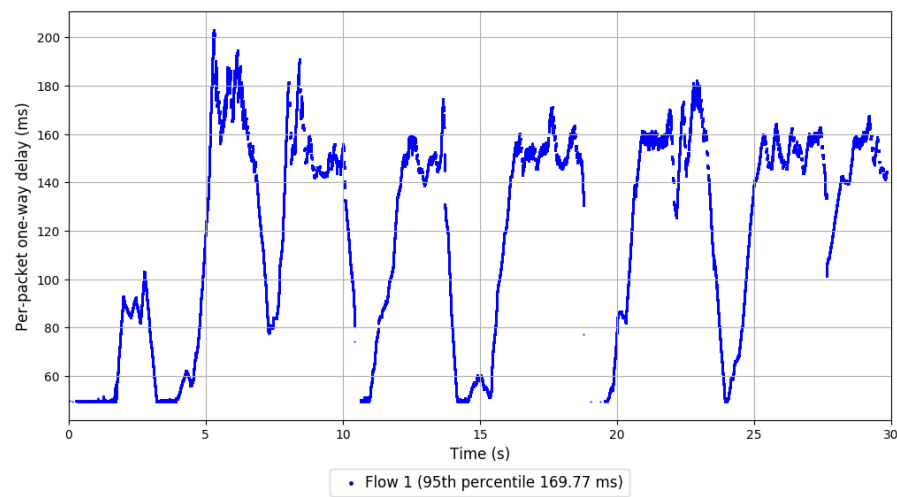
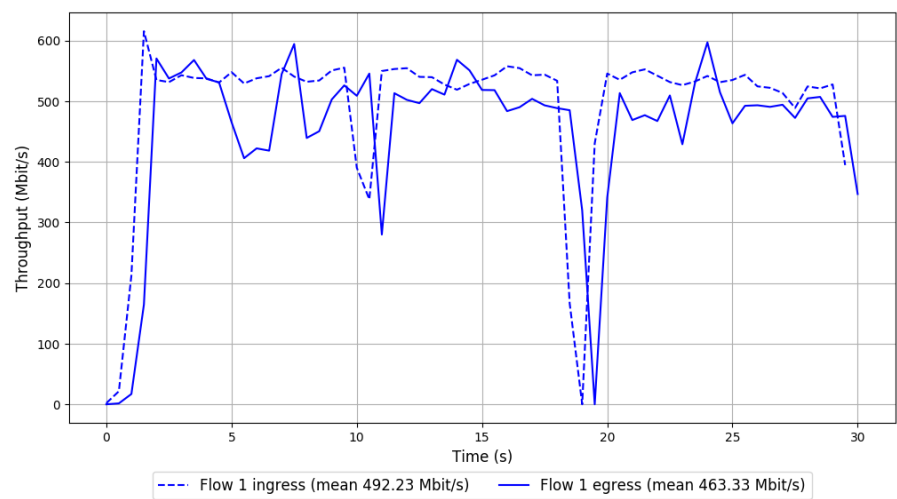
-- Flow 1:

Average throughput: 463.33 Mbit/s

95th percentile per-packet one-way delay: 169.767 ms

Loss rate: 6.18%

Run 5: Report of PCC-Allegro — Data Link

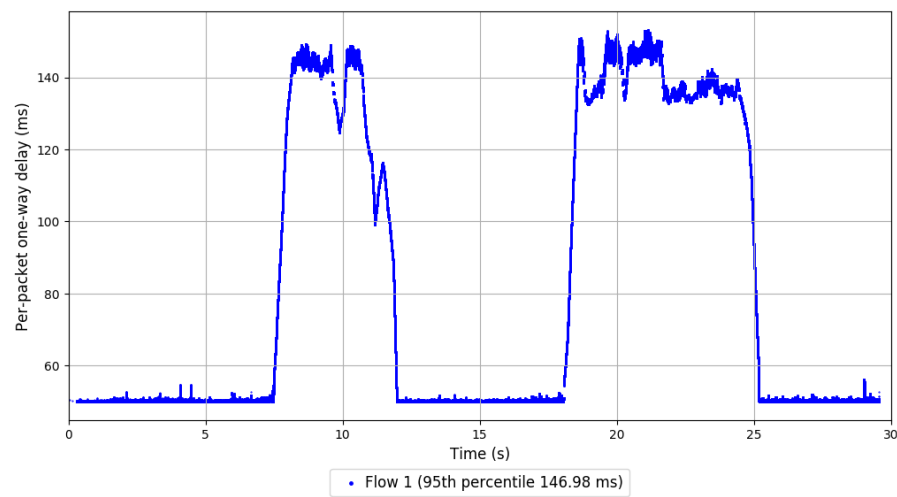
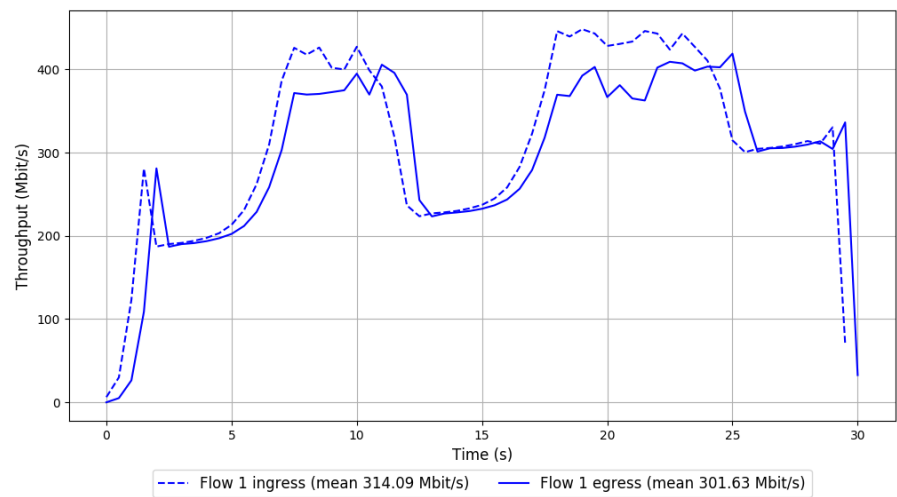


Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 19:57:11
End at: 2018-11-15 19:57:41
Local clock offset: -0.134 ms
Remote clock offset: -0.032 ms

Below is generated by plot.py at 2018-11-15 23:22:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 301.63 Mbit/s
95th percentile per-packet one-way delay: 146.980 ms
Loss rate: 4.28%
-- Flow 1:
Average throughput: 301.63 Mbit/s
95th percentile per-packet one-way delay: 146.980 ms
Loss rate: 4.28%

Run 1: Report of PCC-Expr — Data Link

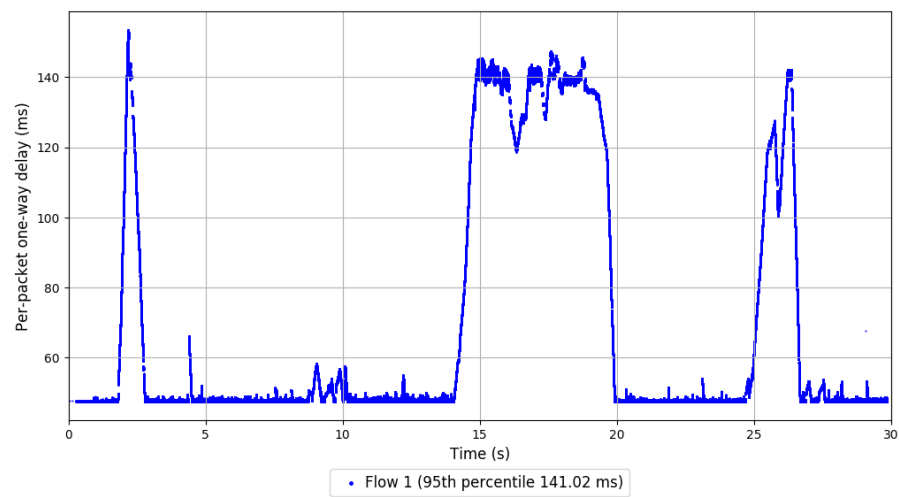
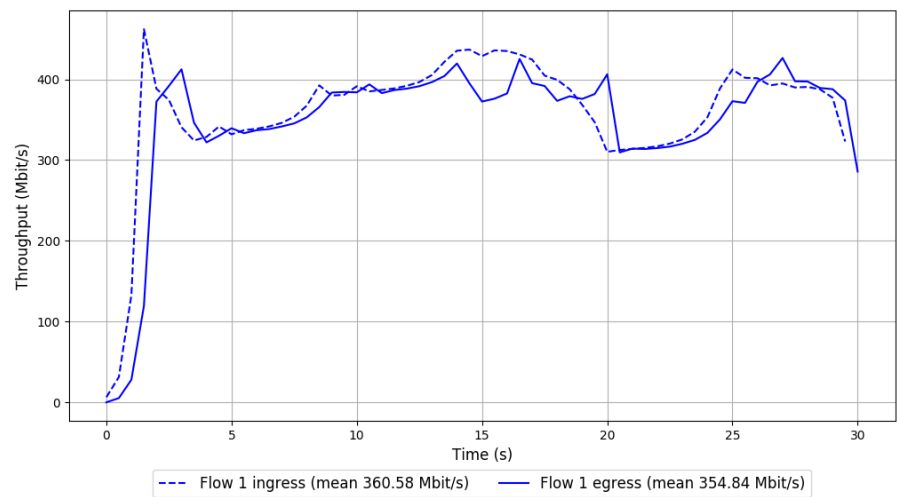


Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 20:23:00
End at: 2018-11-15 20:23:30
Local clock offset: 0.392 ms
Remote clock offset: -0.043 ms

Below is generated by plot.py at 2018-11-15 23:22:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 354.84 Mbit/s
95th percentile per-packet one-way delay: 141.017 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 354.84 Mbit/s
95th percentile per-packet one-way delay: 141.017 ms
Loss rate: 1.90%

Run 2: Report of PCC-Expr — Data Link

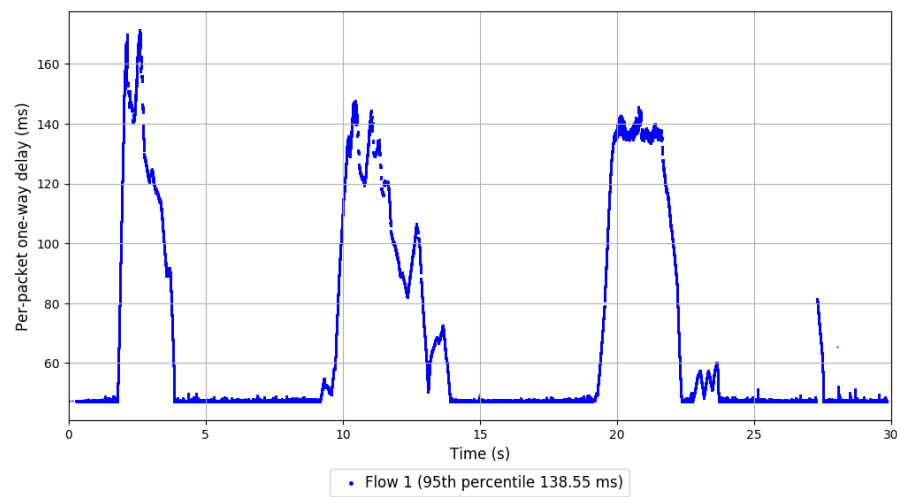
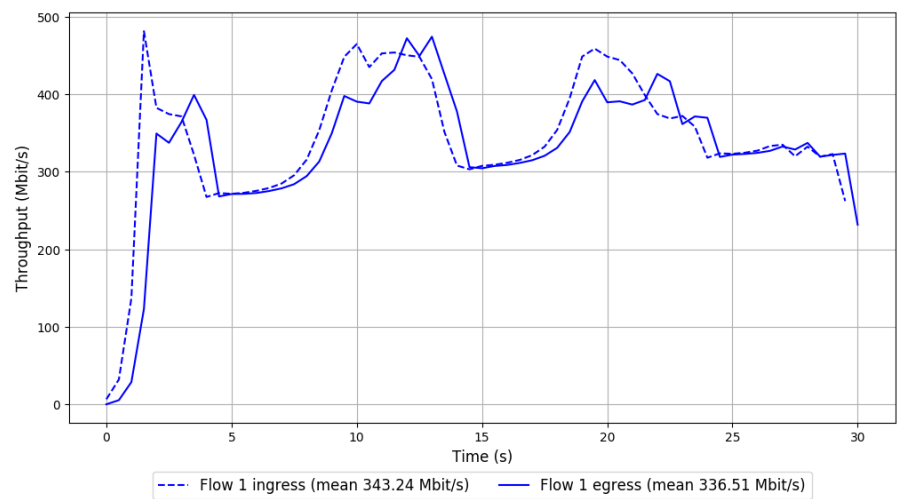


Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 20:49:08
End at: 2018-11-15 20:49:38
Local clock offset: 0.113 ms
Remote clock offset: -0.044 ms

Below is generated by plot.py at 2018-11-15 23:22:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 336.51 Mbit/s
95th percentile per-packet one-way delay: 138.554 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 336.51 Mbit/s
95th percentile per-packet one-way delay: 138.554 ms
Loss rate: 2.27%

Run 3: Report of PCC-Expr — Data Link

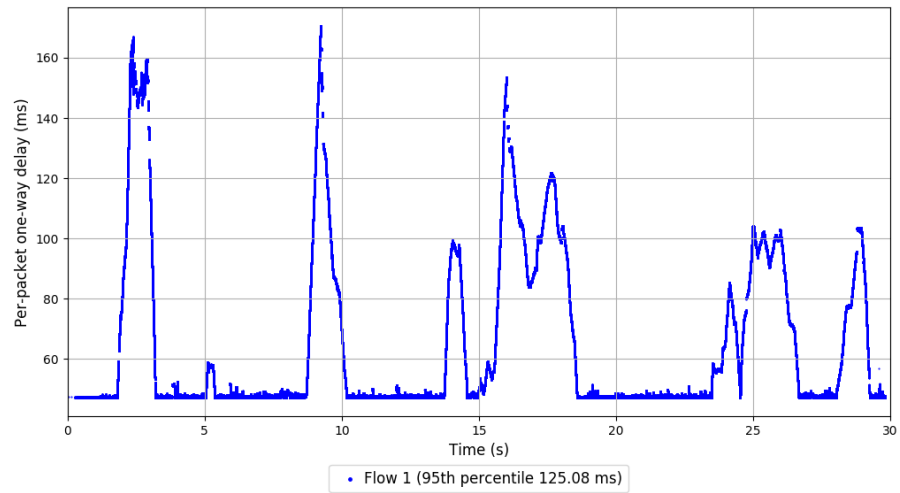
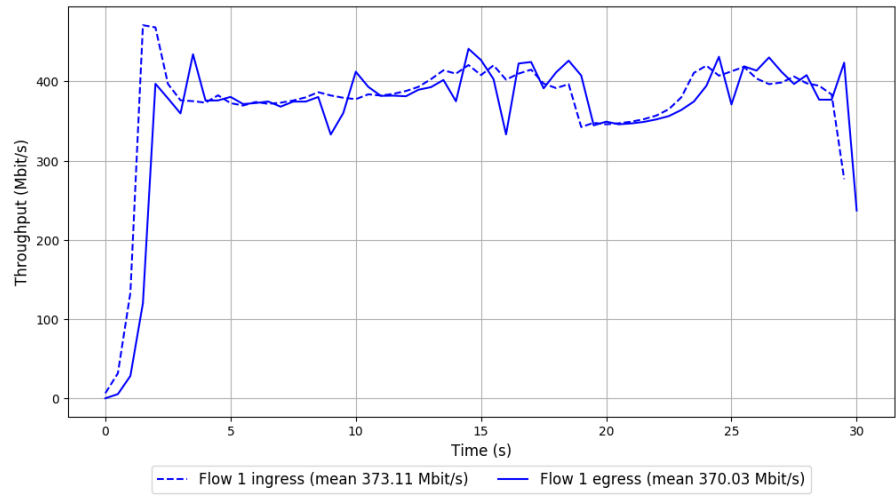


Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 21:15:16
End at: 2018-11-15 21:15:46
Local clock offset: 0.083 ms
Remote clock offset: -0.147 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 370.03 Mbit/s
95th percentile per-packet one-way delay: 125.078 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 370.03 Mbit/s
95th percentile per-packet one-way delay: 125.078 ms
Loss rate: 1.14%

Run 4: Report of PCC-Expr — Data Link

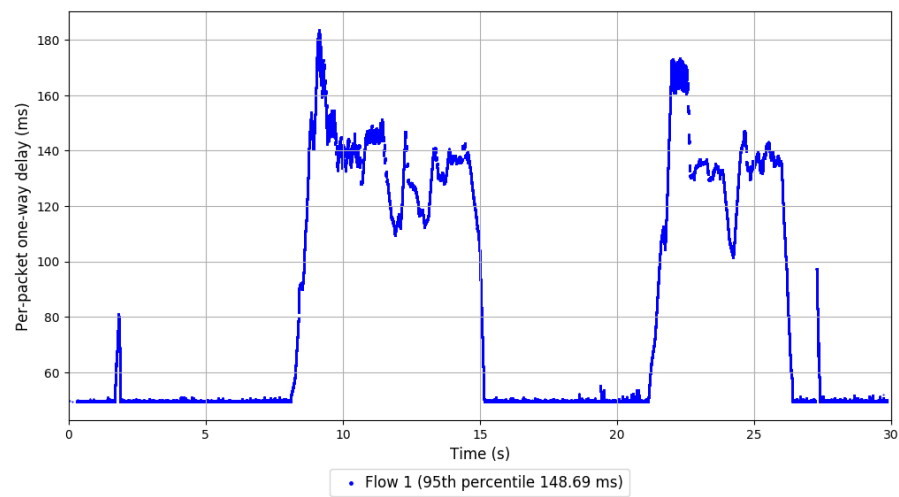
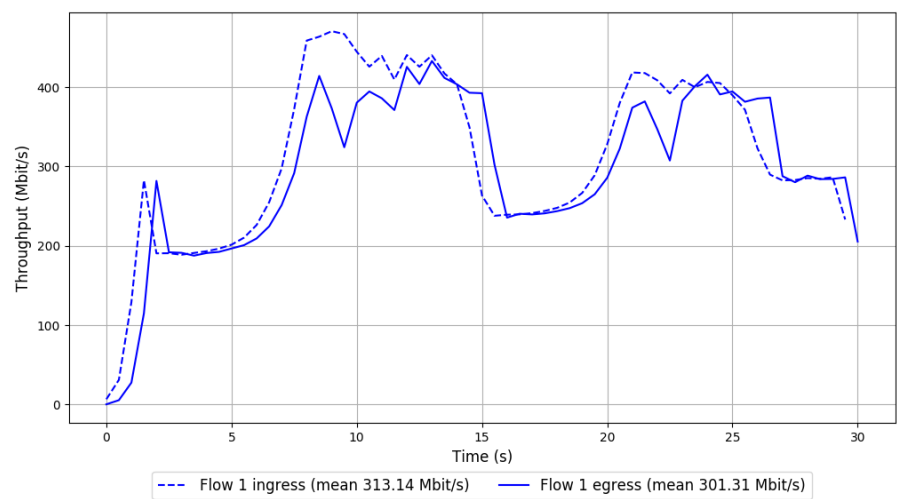


Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 21:41:56
End at: 2018-11-15 21:42:26
Local clock offset: 0.012 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 301.31 Mbit/s
95th percentile per-packet one-way delay: 148.690 ms
Loss rate: 4.09%
-- Flow 1:
Average throughput: 301.31 Mbit/s
95th percentile per-packet one-way delay: 148.690 ms
Loss rate: 4.09%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

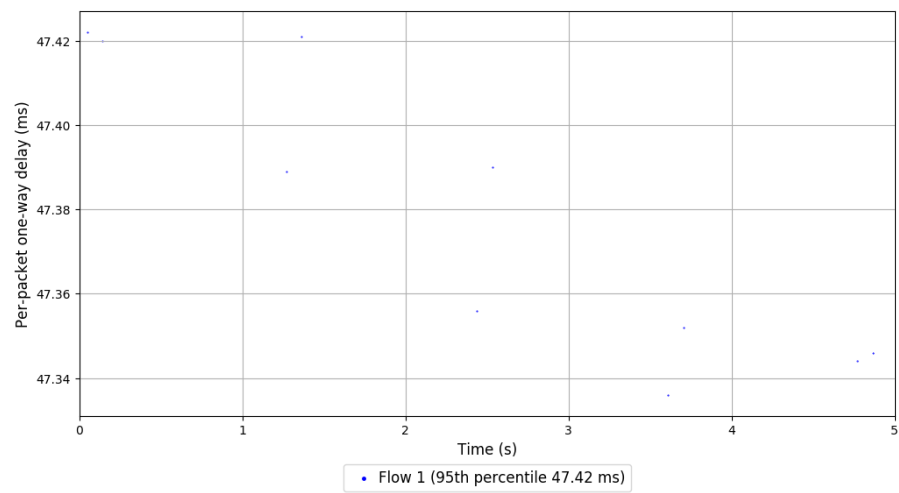
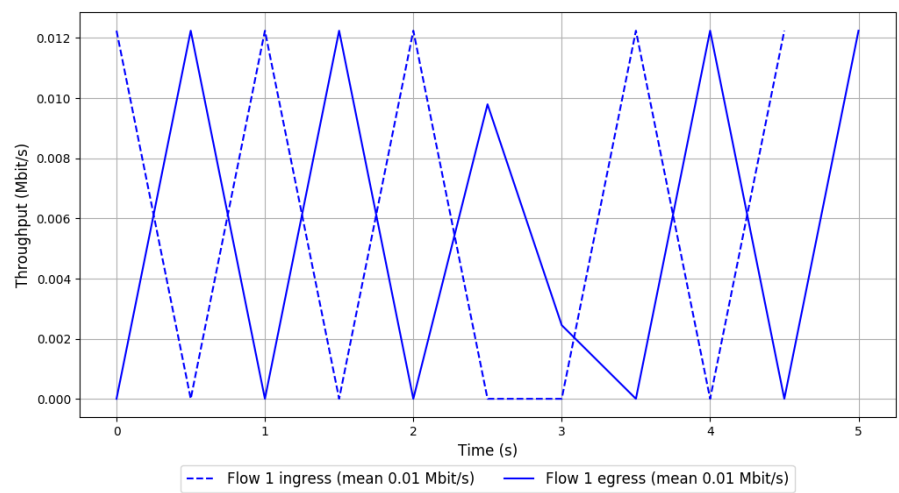
Start at: 2018-11-15 19:47:22

End at: 2018-11-15 19:47:52

Local clock offset: -0.048 ms

Remote clock offset: -0.063 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 20:12:42

End at: 2018-11-15 20:13:12

Local clock offset: -0.107 ms

Remote clock offset: -0.074 ms

Below is generated by plot.py at 2018-11-15 23:22:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.91 Mbit/s

95th percentile per-packet one-way delay: 47.221 ms

Loss rate: 0.49%

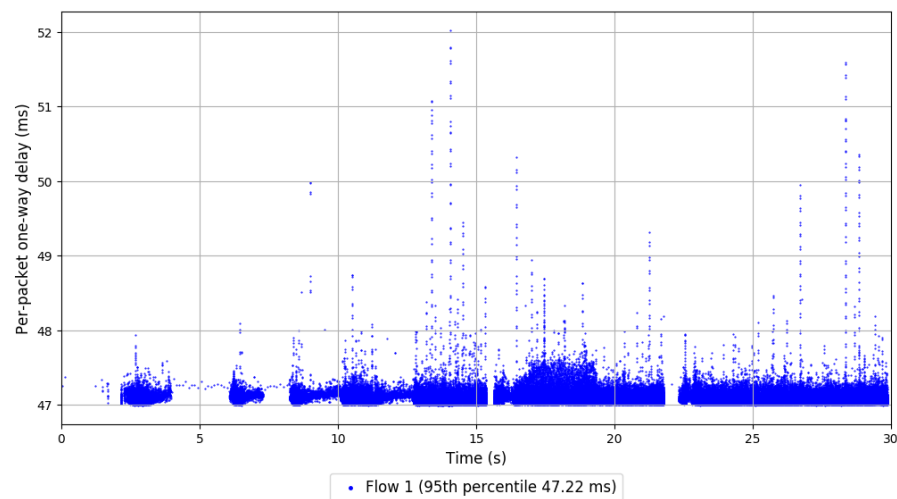
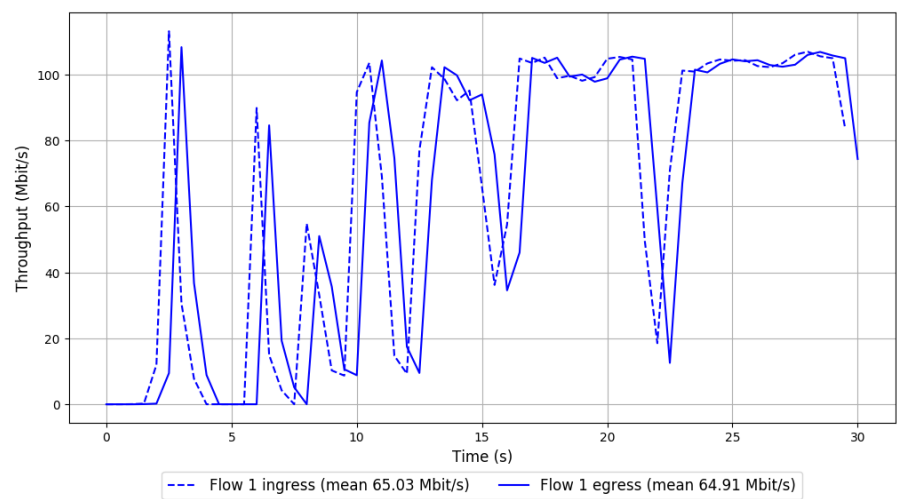
-- Flow 1:

Average throughput: 64.91 Mbit/s

95th percentile per-packet one-way delay: 47.221 ms

Loss rate: 0.49%

Run 2: Report of QUIC Cubic — Data Link

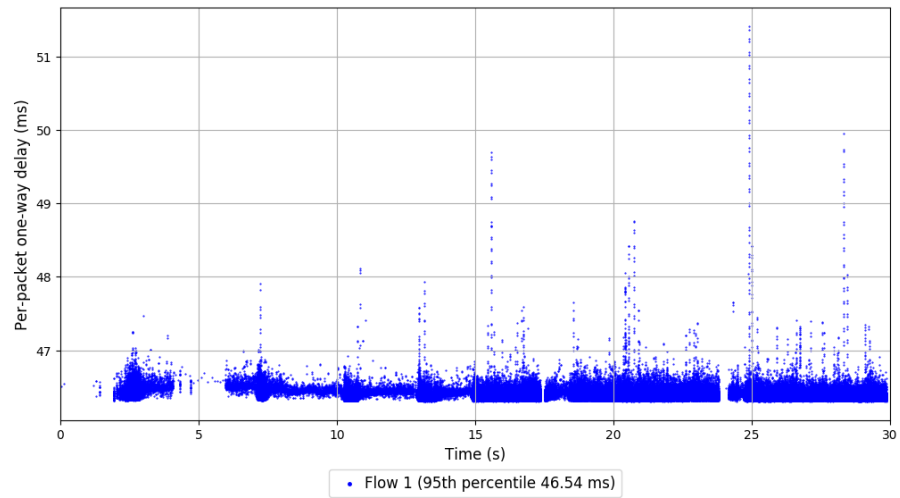
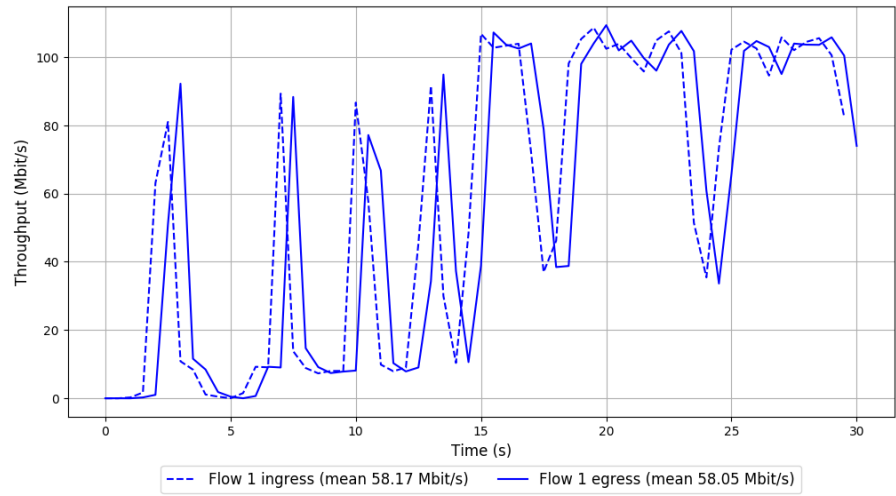


Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 20:38:51
End at: 2018-11-15 20:39:21
Local clock offset: 0.077 ms
Remote clock offset: -0.038 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 58.05 Mbit/s
95th percentile per-packet one-way delay: 46.537 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 58.05 Mbit/s
95th percentile per-packet one-way delay: 46.537 ms
Loss rate: 0.52%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 21:04:58

End at: 2018-11-15 21:05:28

Local clock offset: 0.067 ms

Remote clock offset: -0.094 ms

Below is generated by plot.py at 2018-11-15 23:22:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.61 Mbit/s

95th percentile per-packet one-way delay: 50.144 ms

Loss rate: 0.51%

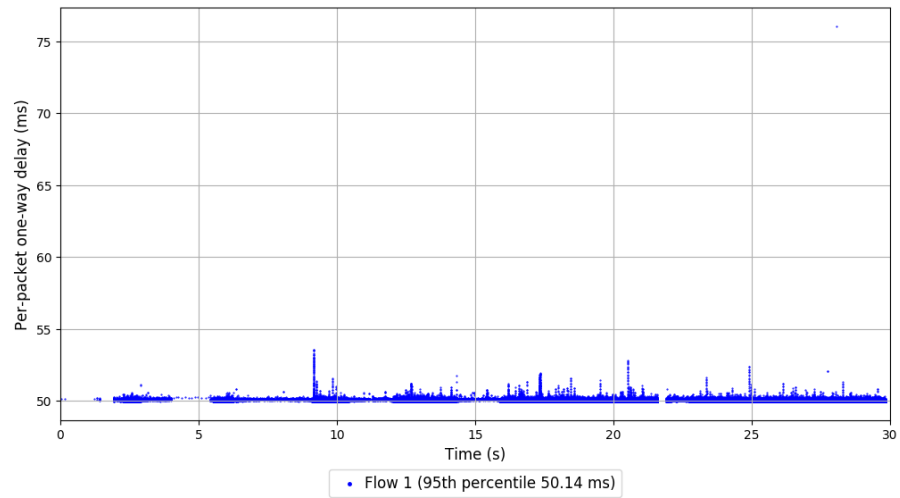
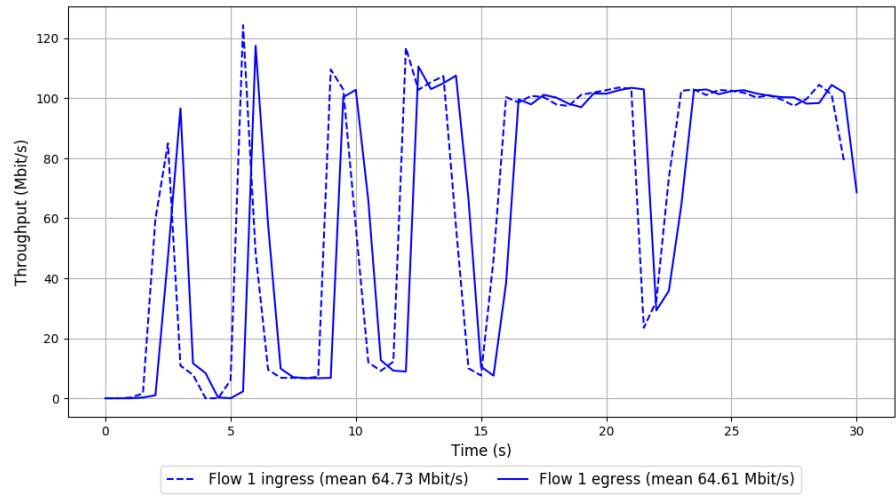
-- Flow 1:

Average throughput: 64.61 Mbit/s

95th percentile per-packet one-way delay: 50.144 ms

Loss rate: 0.51%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 21:31:17

End at: 2018-11-15 21:31:47

Local clock offset: 0.048 ms

Remote clock offset: -0.06 ms

Below is generated by plot.py at 2018-11-15 23:22:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 48.71 Mbit/s

95th percentile per-packet one-way delay: 46.548 ms

Loss rate: 0.54%

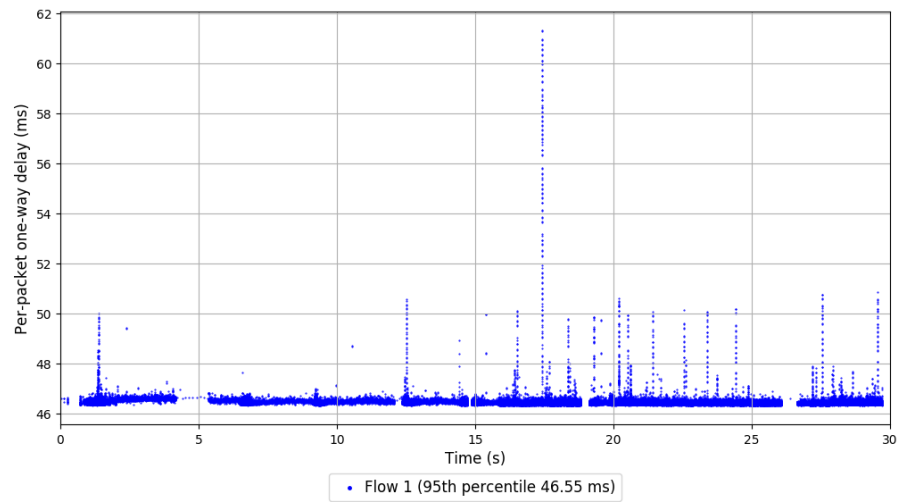
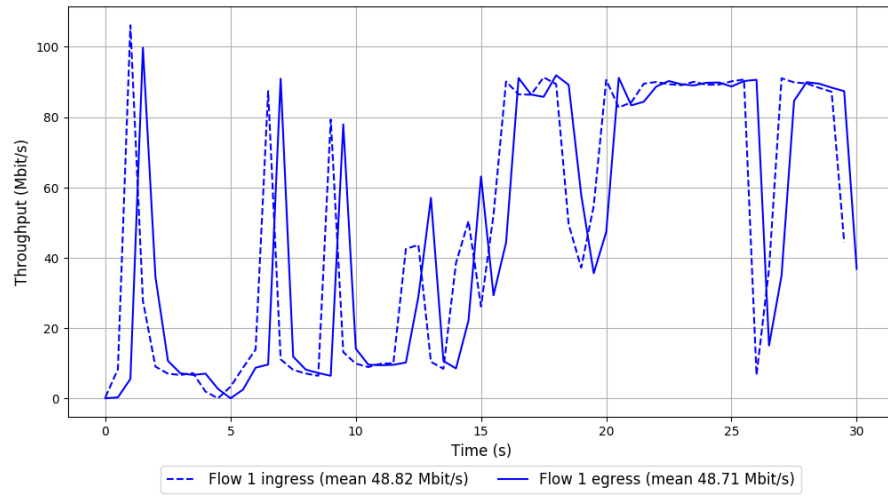
-- Flow 1:

Average throughput: 48.71 Mbit/s

95th percentile per-packet one-way delay: 46.548 ms

Loss rate: 0.54%

Run 5: Report of QUIC Cubic — Data Link

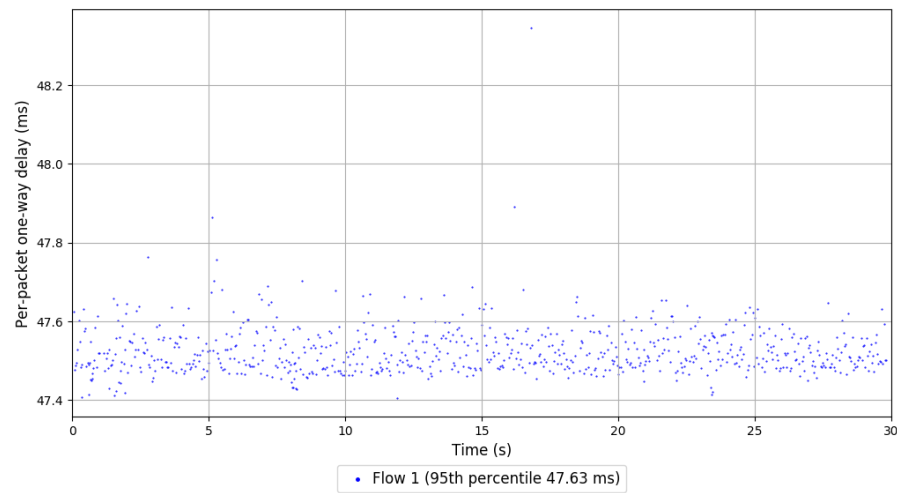
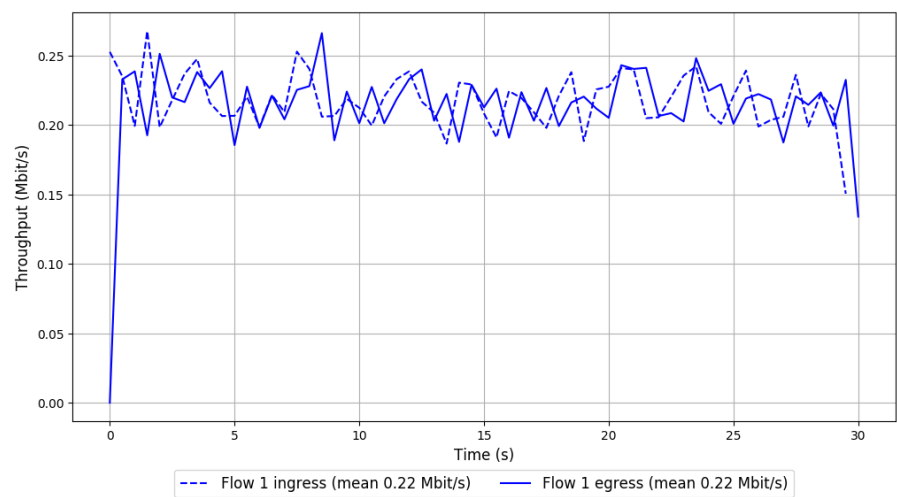


```
Run 1: Statistics of SCReAM

Start at: 2018-11-15 19:48:31
End at: 2018-11-15 19:49:01
Local clock offset: -0.038 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-11-15 23:22:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.631 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.631 ms
Loss rate: 0.25%
```

Run 1: Report of SReAM — Data Link

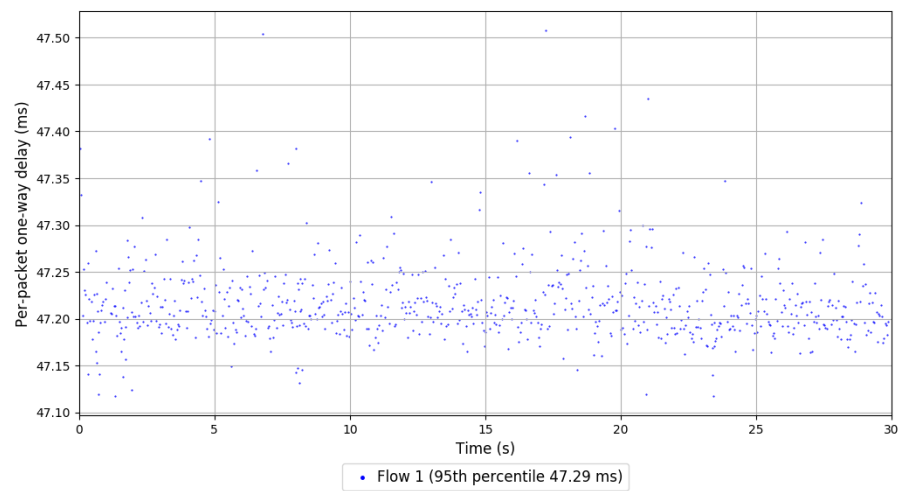
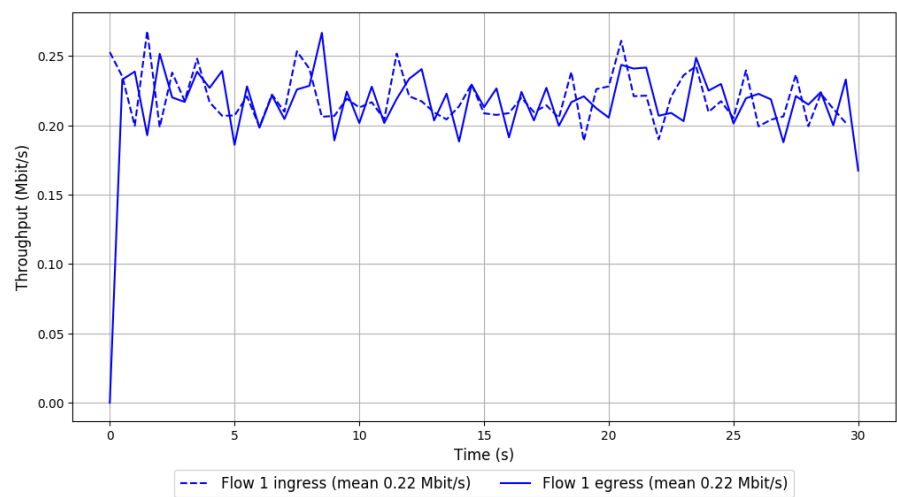


Run 2: Statistics of SCReAM

Start at: 2018-11-15 20:13:53
End at: 2018-11-15 20:14:23
Local clock offset: -0.128 ms
Remote clock offset: -0.043 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.290 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.290 ms
Loss rate: 0.39%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-11-15 20:40:01

End at: 2018-11-15 20:40:31

Local clock offset: 0.117 ms

Remote clock offset: -0.05 ms

Below is generated by plot.py at 2018-11-15 23:22:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 50.323 ms

Loss rate: 0.38%

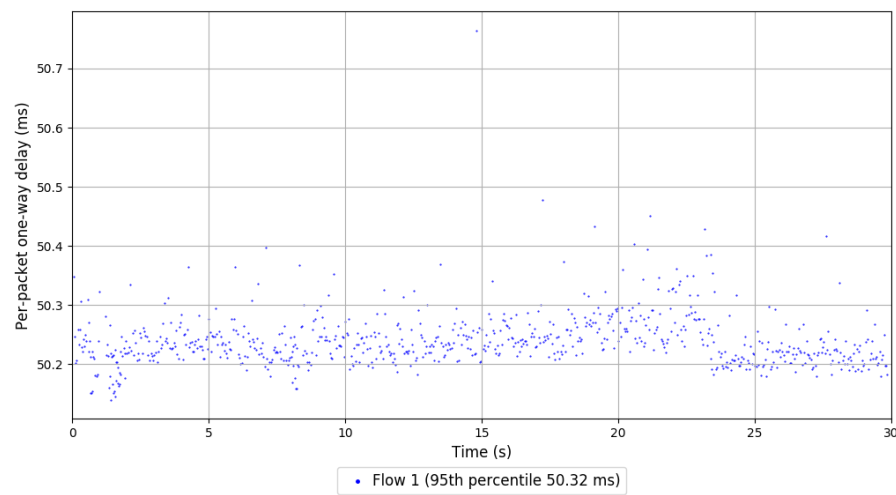
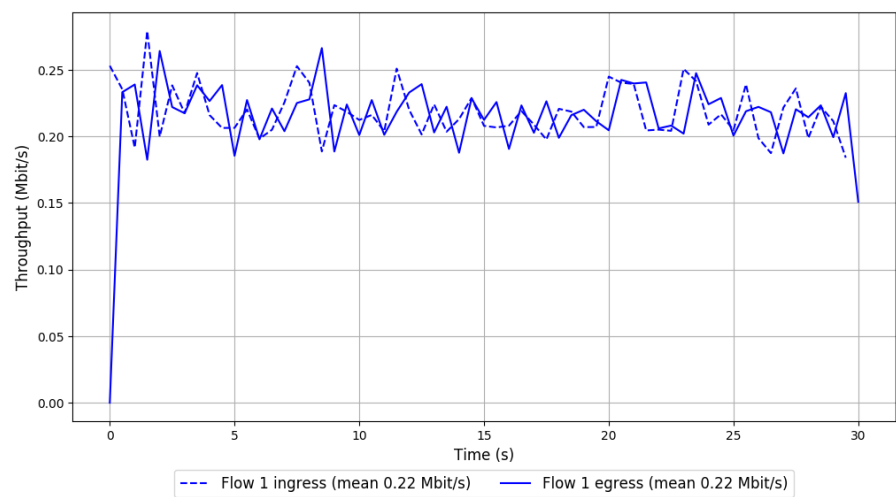
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 50.323 ms

Loss rate: 0.38%

Run 3: Report of SReAM — Data Link

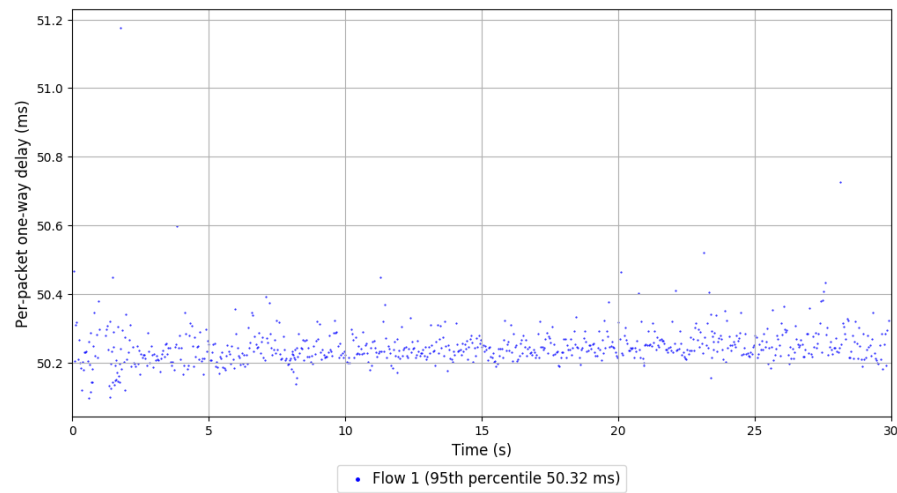
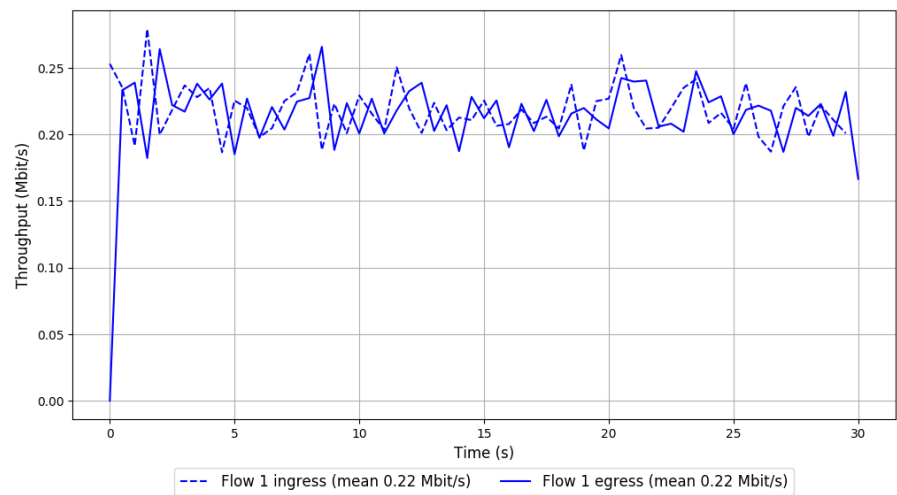


Run 4: Statistics of SCReAM

Start at: 2018-11-15 21:06:09
End at: 2018-11-15 21:06:39
Local clock offset: 0.116 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.324 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.324 ms
Loss rate: 0.39%

Run 4: Report of SCReAM — Data Link

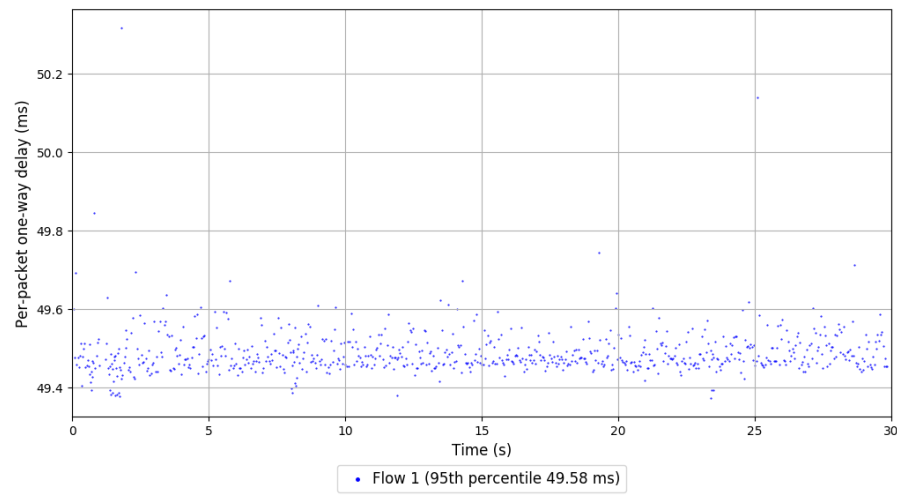
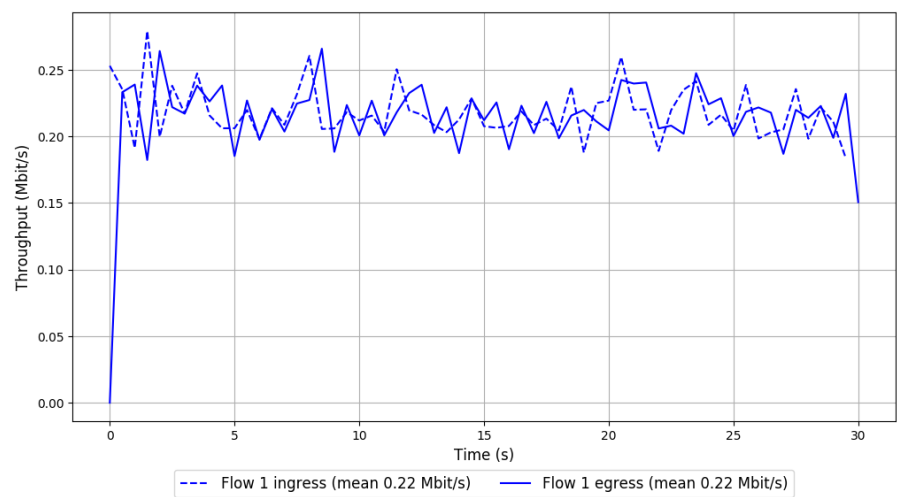


Run 5: Statistics of SCReAM

Start at: 2018-11-15 21:32:27
End at: 2018-11-15 21:32:57
Local clock offset: 0.01 ms
Remote clock offset: -0.073 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.579 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.579 ms
Loss rate: 0.38%

Run 5: Report of SReAM — Data Link

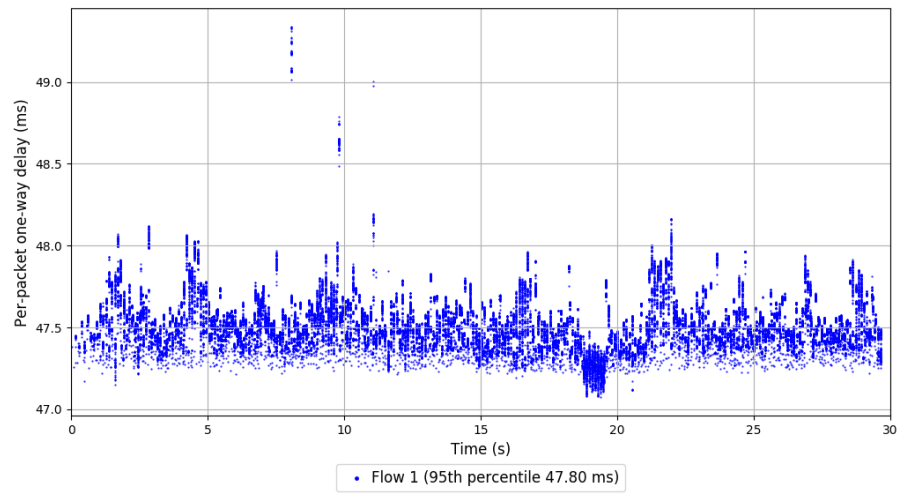
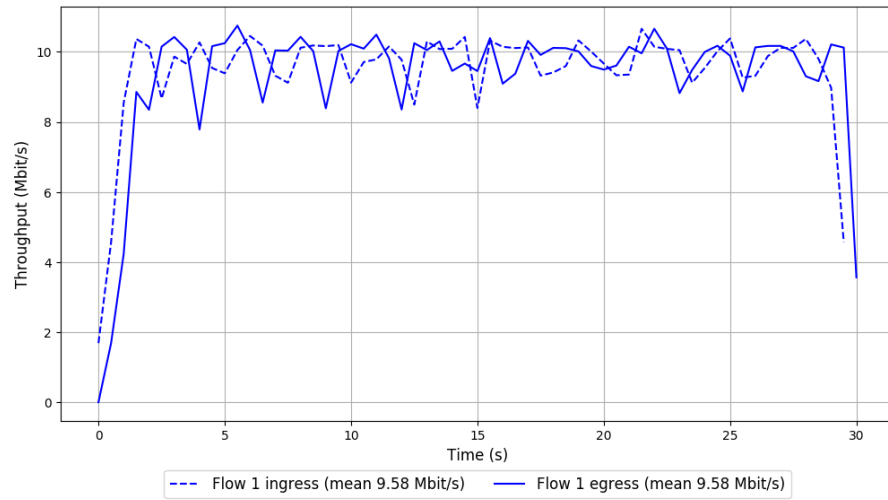


Run 1: Statistics of Sprout

Start at: 2018-11-15 20:01:50
End at: 2018-11-15 20:02:20
Local clock offset: -0.114 ms
Remote clock offset: -0.039 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 47.796 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 47.796 ms
Loss rate: 0.27%

Run 1: Report of Sprout — Data Link

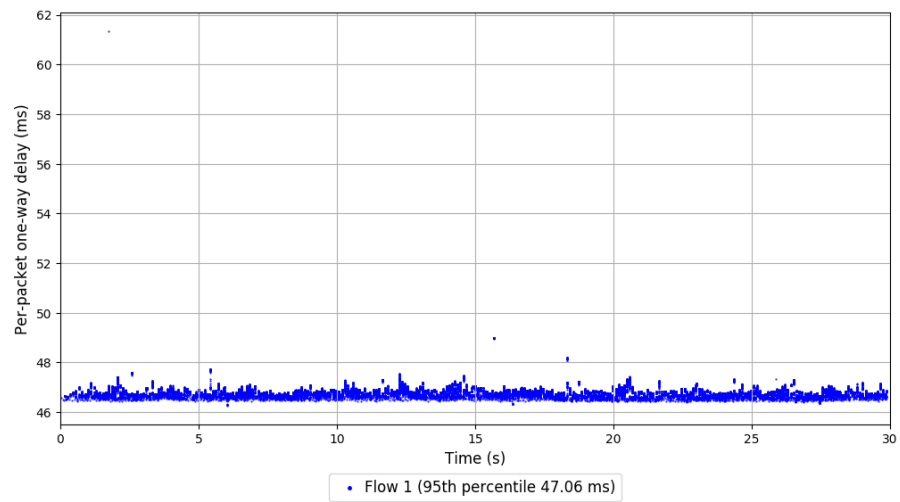
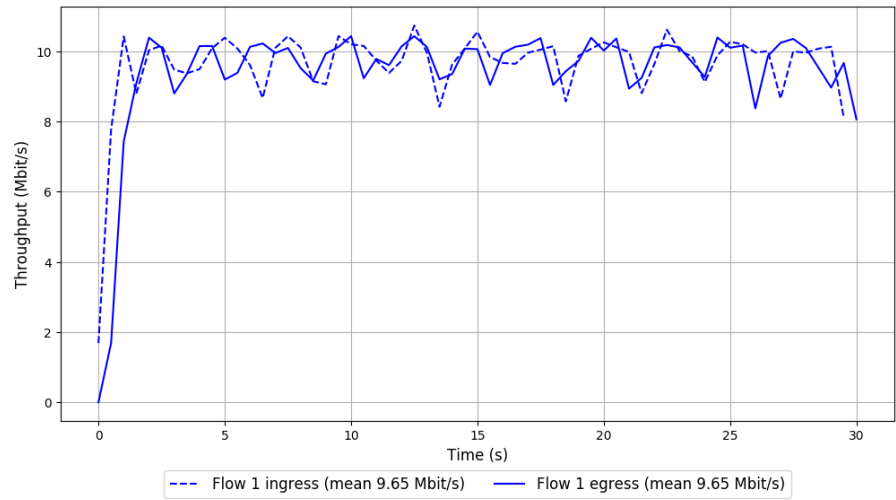


Run 2: Statistics of Sprout

Start at: 2018-11-15 20:27:46
End at: 2018-11-15 20:28:16
Local clock offset: 0.049 ms
Remote clock offset: -0.017 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 47.057 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 47.057 ms
Loss rate: 0.36%

Run 2: Report of Sprout — Data Link

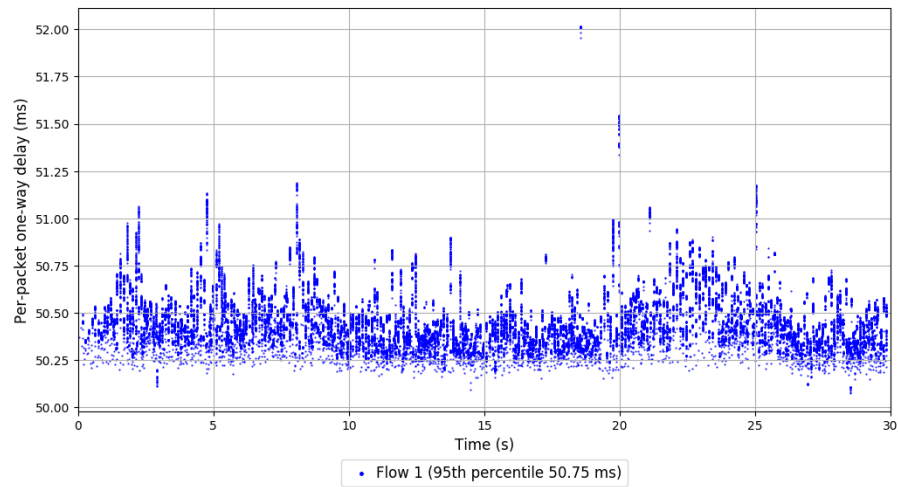
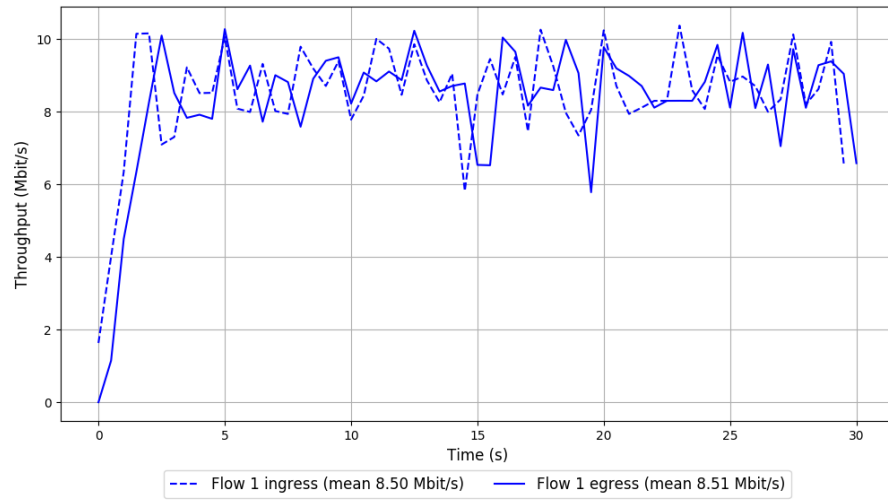


Run 3: Statistics of Sprout

Start at: 2018-11-15 20:53:52
End at: 2018-11-15 20:54:22
Local clock offset: 0.115 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 50.749 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 50.749 ms
Loss rate: 0.21%

Run 3: Report of Sprout — Data Link

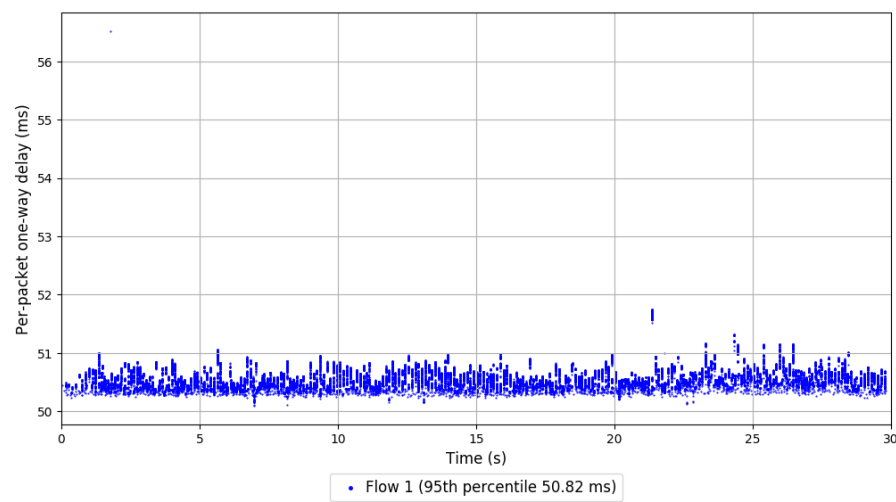
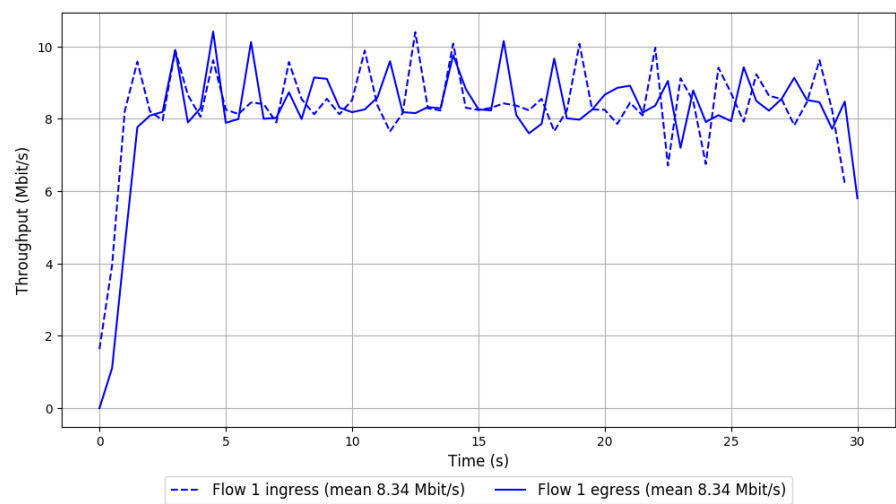


Run 4: Statistics of Sprout

Start at: 2018-11-15 21:20:04
End at: 2018-11-15 21:20:34
Local clock offset: 0.147 ms
Remote clock offset: -0.151 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.34 Mbit/s
95th percentile per-packet one-way delay: 50.821 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 8.34 Mbit/s
95th percentile per-packet one-way delay: 50.821 ms
Loss rate: 0.42%

Run 4: Report of Sprout — Data Link

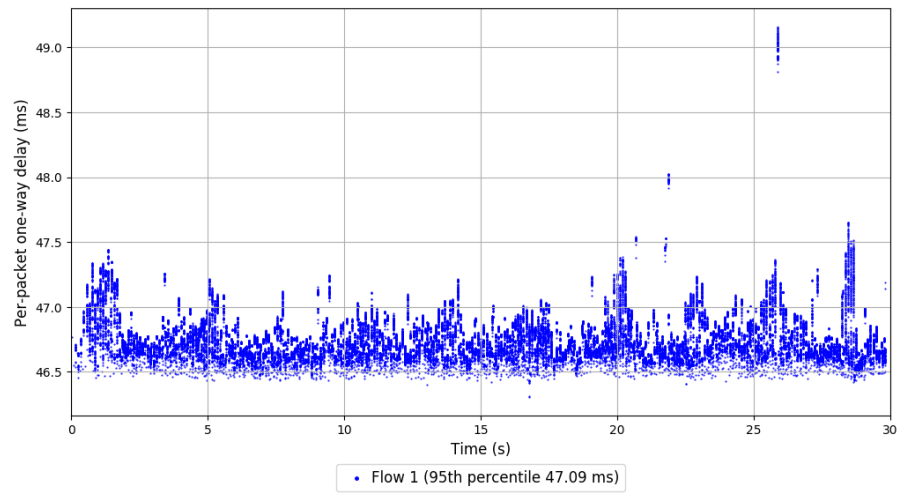
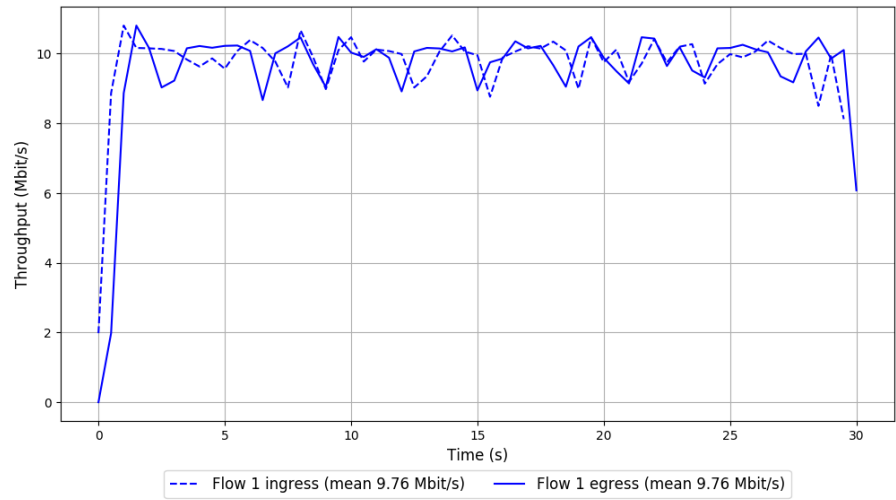


Run 5: Statistics of Sprout

Start at: 2018-11-15 21:46:39
End at: 2018-11-15 21:47:09
Local clock offset: -0.011 ms
Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-11-15 23:22:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.76 Mbit/s
95th percentile per-packet one-way delay: 47.085 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 9.76 Mbit/s
95th percentile per-packet one-way delay: 47.085 ms
Loss rate: 0.35%

Run 5: Report of Sprout — Data Link

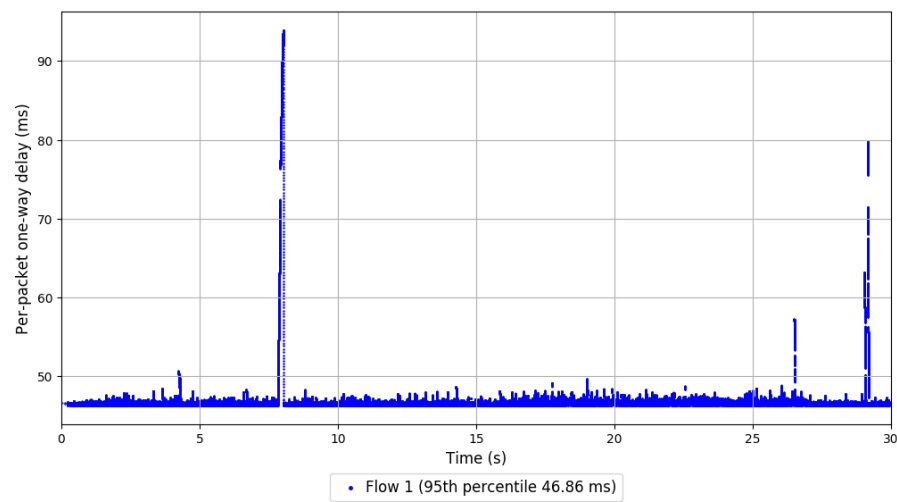
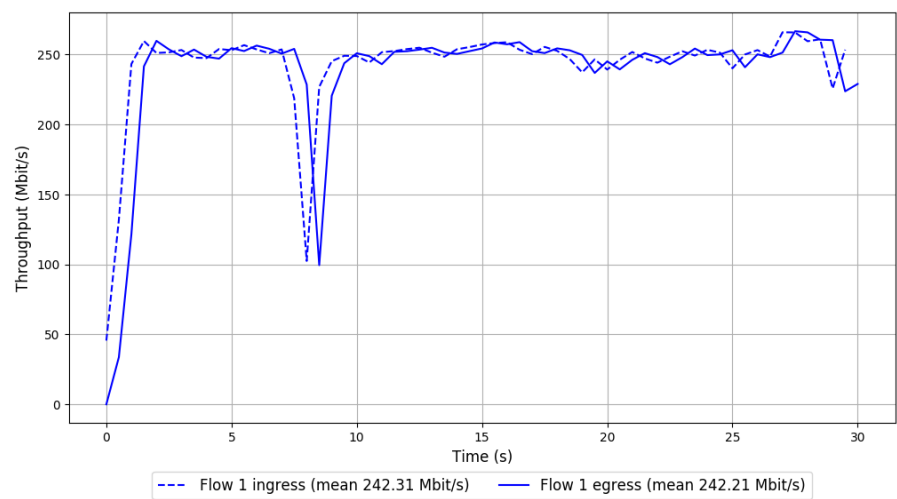


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 20:00:21
End at: 2018-11-15 20:00:51
Local clock offset: -0.092 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2018-11-15 23:23:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 242.21 Mbit/s
95th percentile per-packet one-way delay: 46.862 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 242.21 Mbit/s
95th percentile per-packet one-way delay: 46.862 ms
Loss rate: 0.35%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-15 20:26:17

End at: 2018-11-15 20:26:47

Local clock offset: 0.04 ms

Remote clock offset: -0.028 ms

Below is generated by plot.py at 2018-11-15 23:24:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 248.36 Mbit/s

95th percentile per-packet one-way delay: 46.920 ms

Loss rate: 0.34%

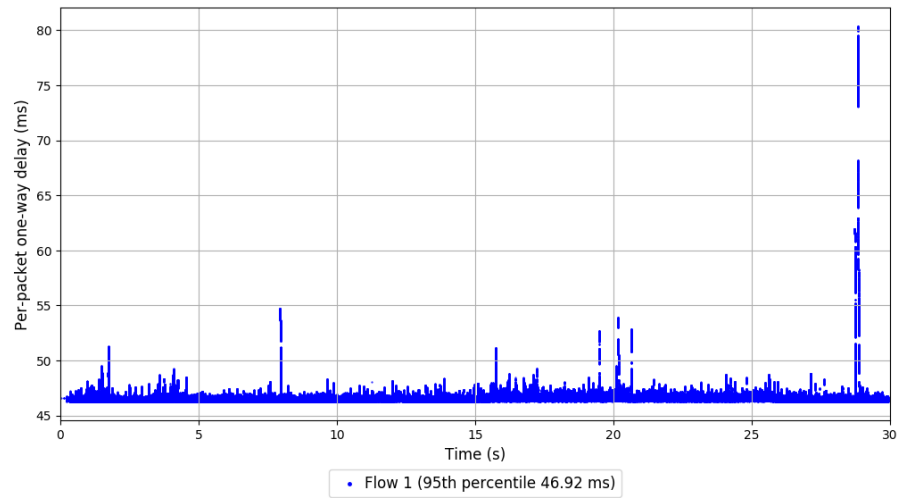
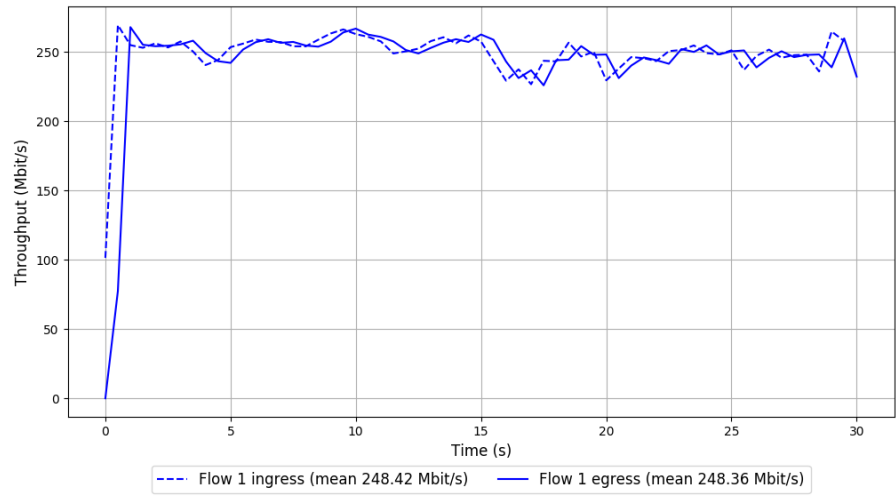
-- Flow 1:

Average throughput: 248.36 Mbit/s

95th percentile per-packet one-way delay: 46.920 ms

Loss rate: 0.34%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 20:52:22

End at: 2018-11-15 20:52:52

Local clock offset: 0.075 ms

Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-11-15 23:24:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 243.21 Mbit/s

95th percentile per-packet one-way delay: 47.827 ms

Loss rate: 0.34%

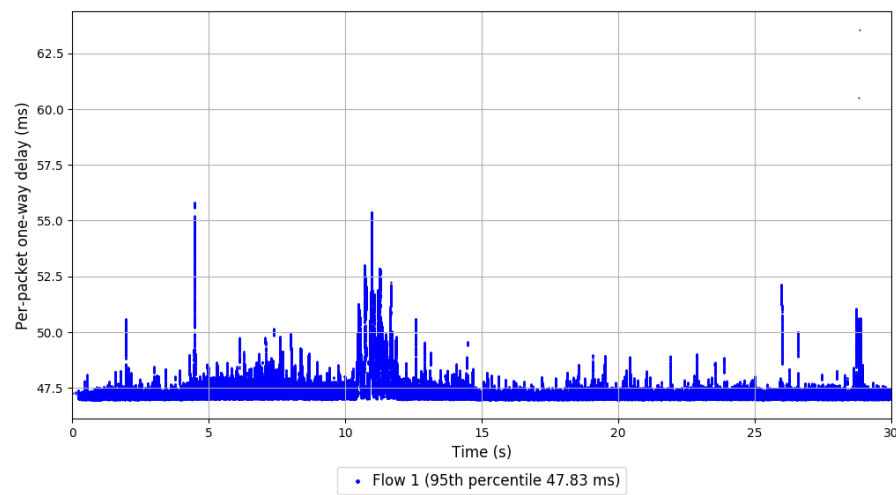
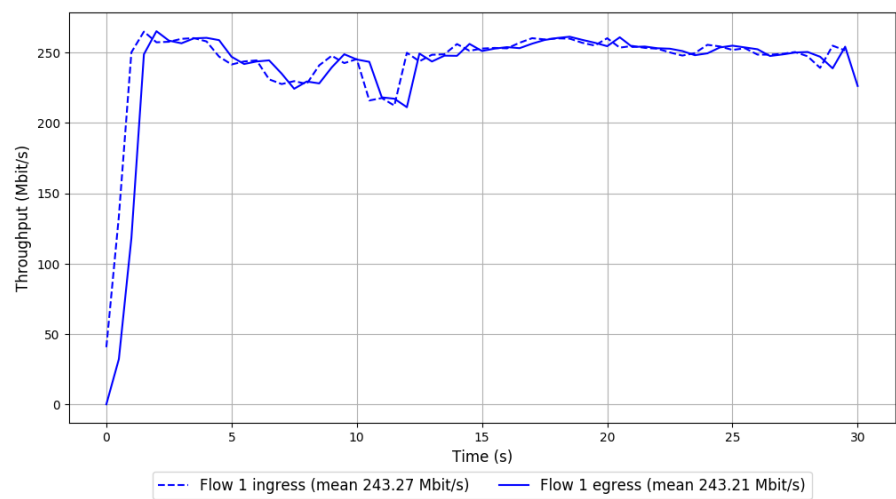
-- Flow 1:

Average throughput: 243.21 Mbit/s

95th percentile per-packet one-way delay: 47.827 ms

Loss rate: 0.34%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 21:18:34

End at: 2018-11-15 21:19:04

Local clock offset: 0.108 ms

Remote clock offset: -0.147 ms

Below is generated by plot.py at 2018-11-15 23:26:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 244.62 Mbit/s

95th percentile per-packet one-way delay: 50.381 ms

Loss rate: 0.35%

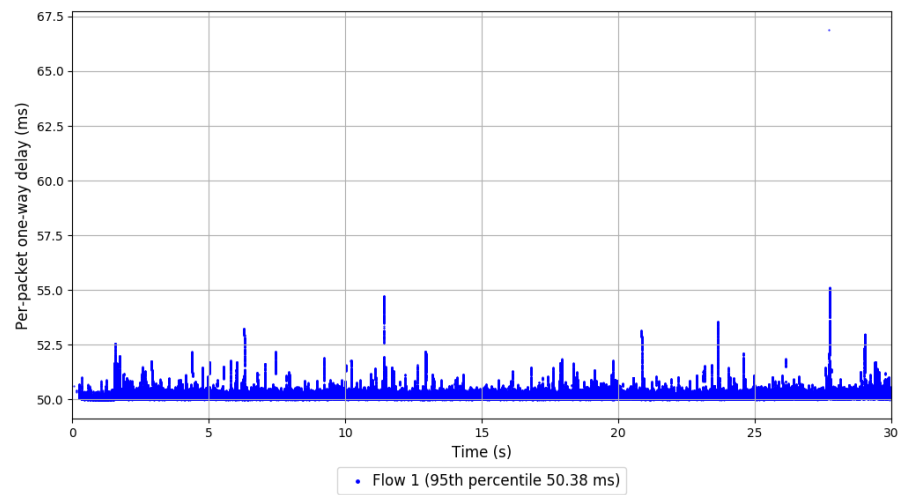
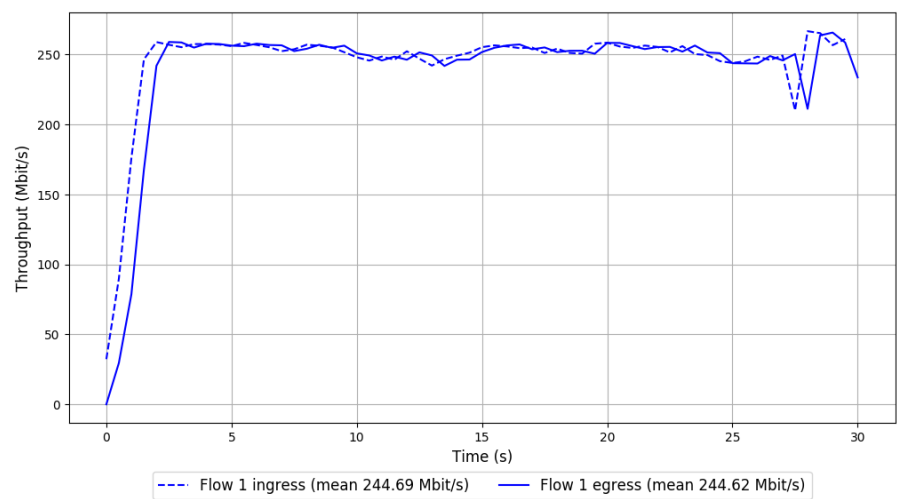
-- Flow 1:

Average throughput: 244.62 Mbit/s

95th percentile per-packet one-way delay: 50.381 ms

Loss rate: 0.35%

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

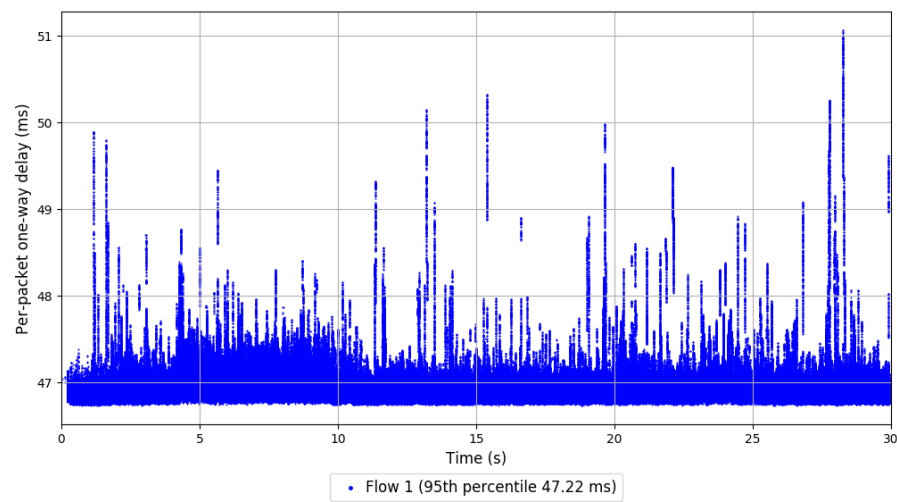
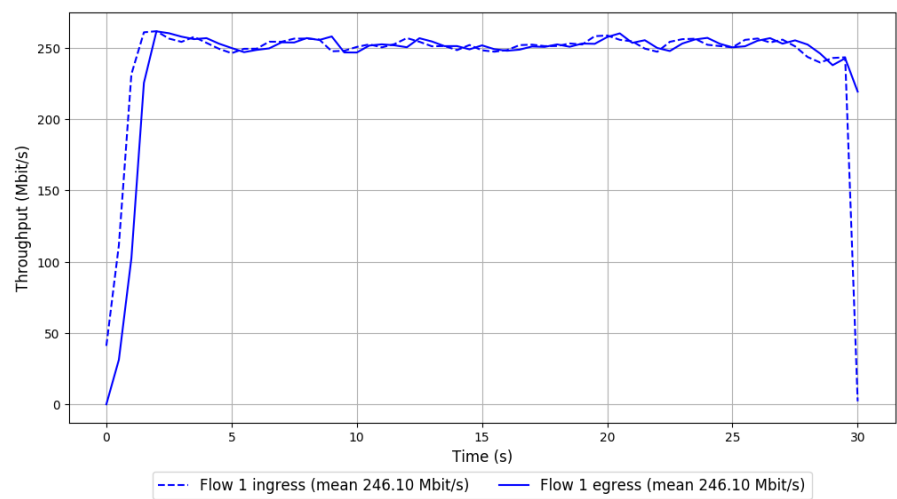


Run 5: Statistics of TaoVA-100x

Start at: 2018-11-15 21:45:10
End at: 2018-11-15 21:45:40
Local clock offset: -0.357 ms
Remote clock offset: -0.032 ms

Below is generated by plot.py at 2018-11-15 23:27:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 246.10 Mbit/s
95th percentile per-packet one-way delay: 47.216 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 246.10 Mbit/s
95th percentile per-packet one-way delay: 47.216 ms
Loss rate: 0.34%

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

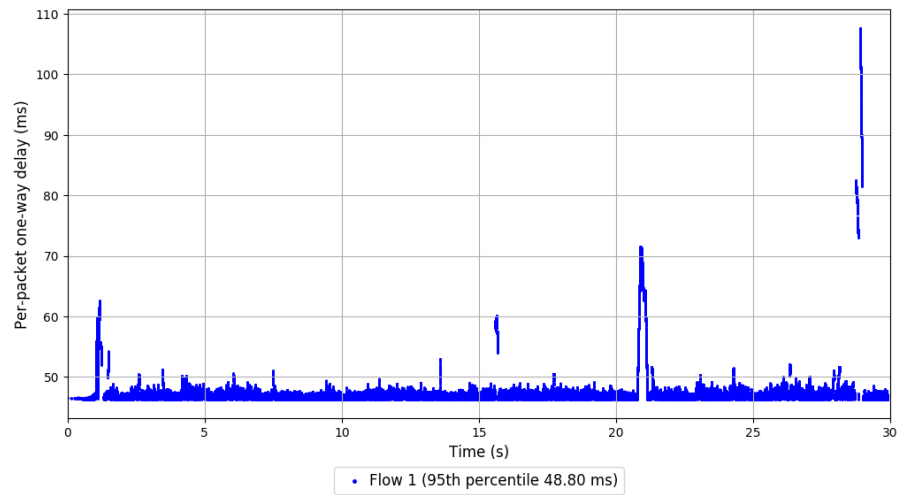
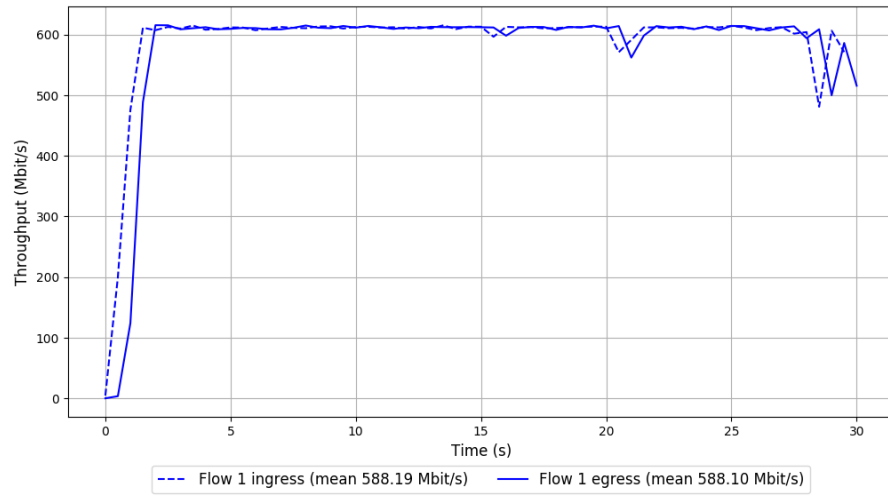


Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 20:06:58
End at: 2018-11-15 20:07:28
Local clock offset: -0.108 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-15 23:33:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 588.10 Mbit/s
95th percentile per-packet one-way delay: 48.802 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 588.10 Mbit/s
95th percentile per-packet one-way delay: 48.802 ms
Loss rate: 0.33%

Run 1: Report of TCP Vegas — Data Link

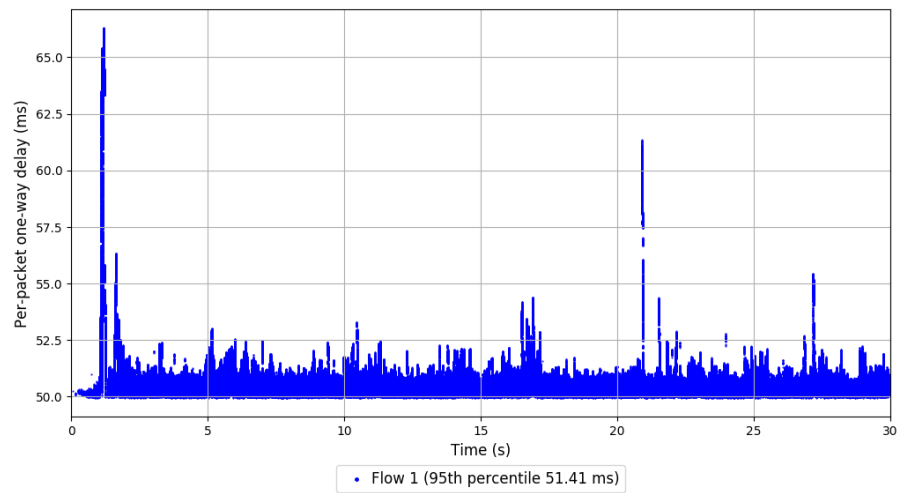
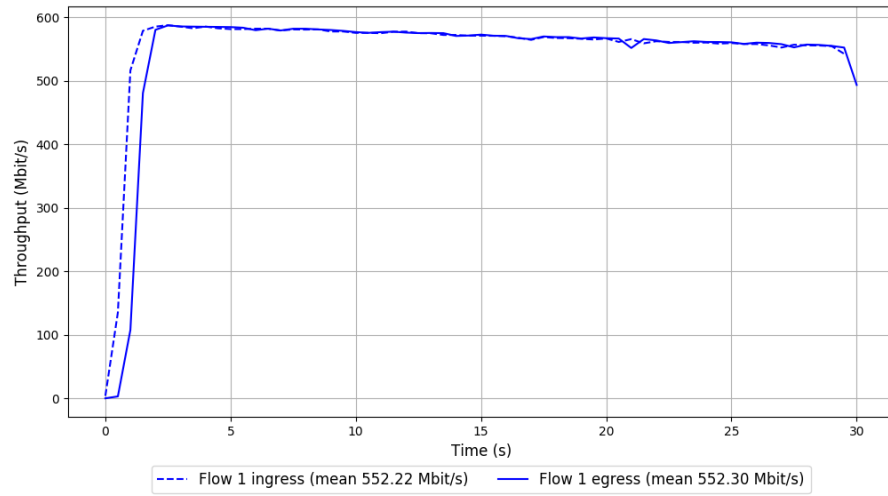


Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 20:33:07
End at: 2018-11-15 20:33:37
Local clock offset: 0.053 ms
Remote clock offset: -0.043 ms

Below is generated by plot.py at 2018-11-15 23:34:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 552.30 Mbit/s
95th percentile per-packet one-way delay: 51.405 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 552.30 Mbit/s
95th percentile per-packet one-way delay: 51.405 ms
Loss rate: 0.31%

Run 2: Report of TCP Vegas — Data Link

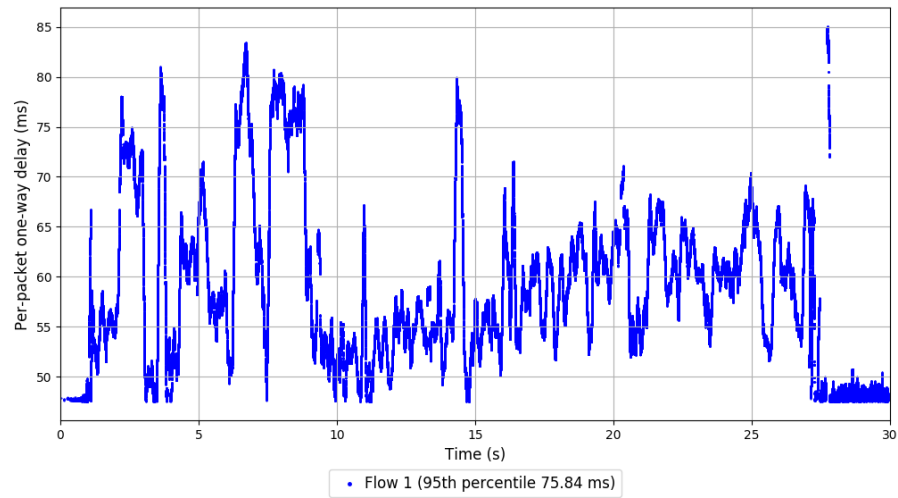
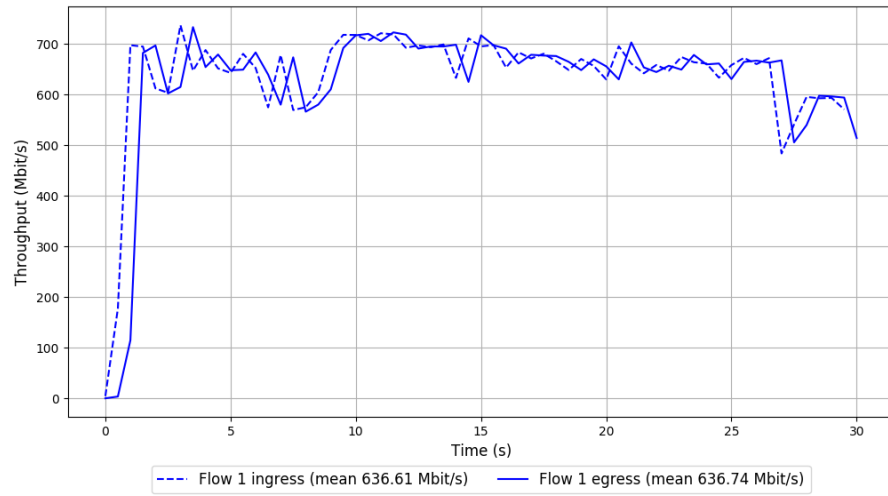


Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 20:59:14
End at: 2018-11-15 20:59:44
Local clock offset: 0.483 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-11-15 23:35:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 636.74 Mbit/s
95th percentile per-packet one-way delay: 75.841 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 636.74 Mbit/s
95th percentile per-packet one-way delay: 75.841 ms
Loss rate: 0.29%

Run 3: Report of TCP Vegas — Data Link

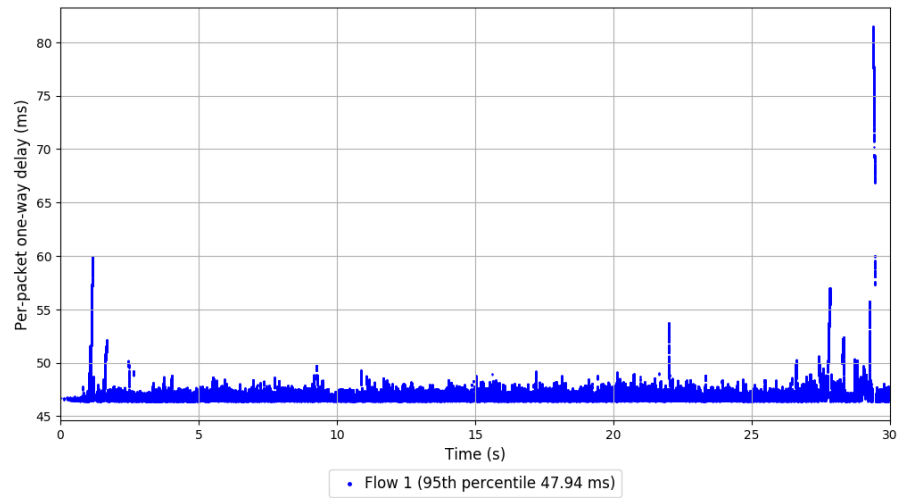
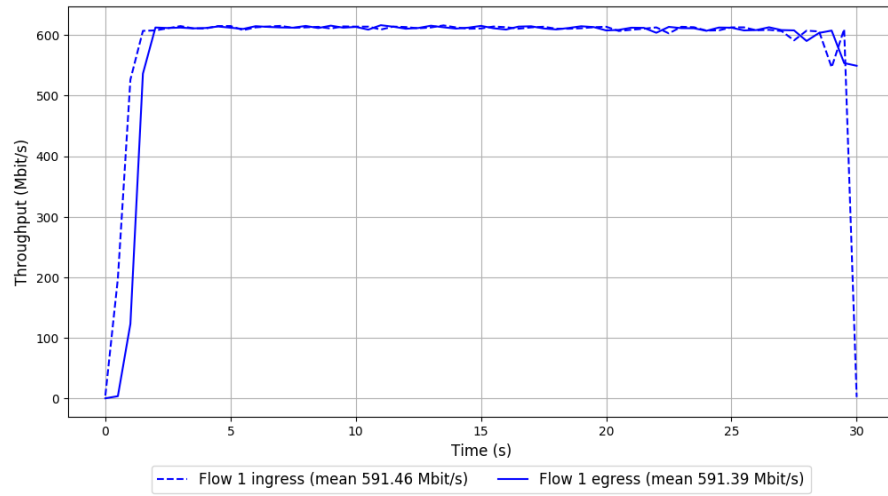


Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 21:25:28
End at: 2018-11-15 21:25:58
Local clock offset: 0.079 ms
Remote clock offset: -0.116 ms

Below is generated by plot.py at 2018-11-15 23:35:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 591.39 Mbit/s
95th percentile per-packet one-way delay: 47.936 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 591.39 Mbit/s
95th percentile per-packet one-way delay: 47.936 ms
Loss rate: 0.32%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 21:52:03

End at: 2018-11-15 21:52:33

Local clock offset: -0.396 ms

Remote clock offset: 0.011 ms

Below is generated by plot.py at 2018-11-15 23:36:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 595.86 Mbit/s

95th percentile per-packet one-way delay: 57.838 ms

Loss rate: 0.32%

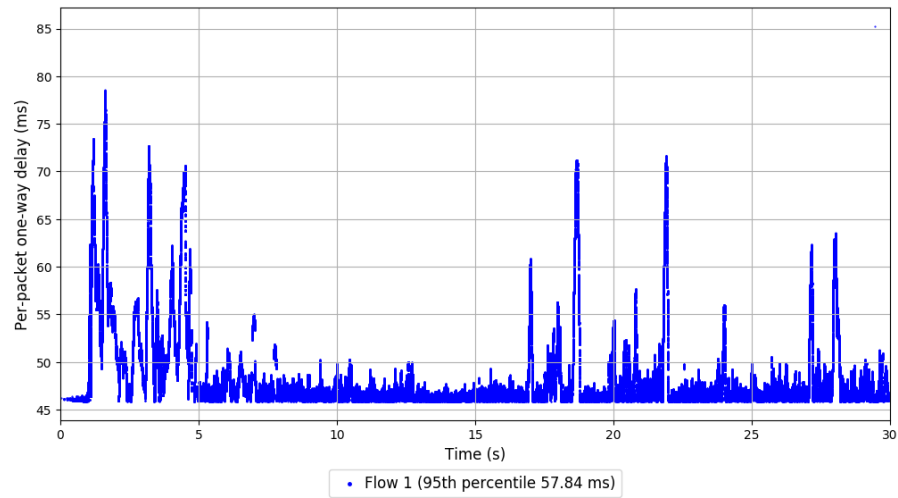
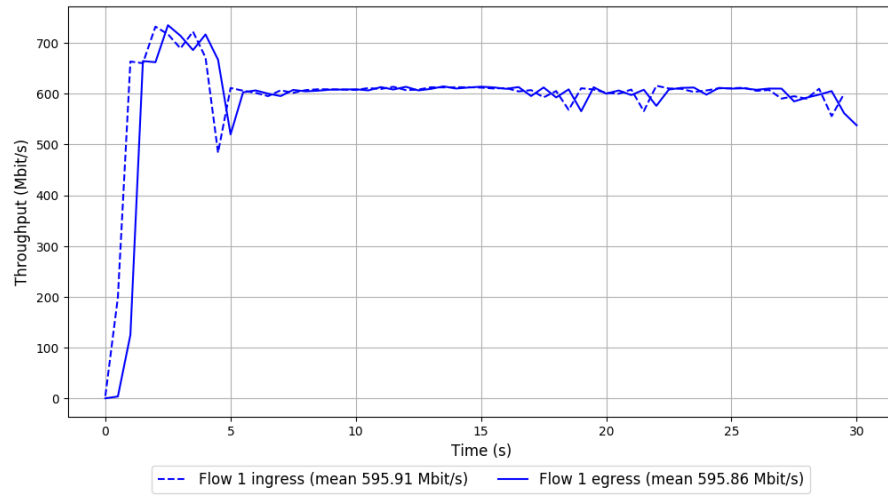
-- Flow 1:

Average throughput: 595.86 Mbit/s

95th percentile per-packet one-way delay: 57.838 ms

Loss rate: 0.32%

Run 5: Report of TCP Vegas — Data Link

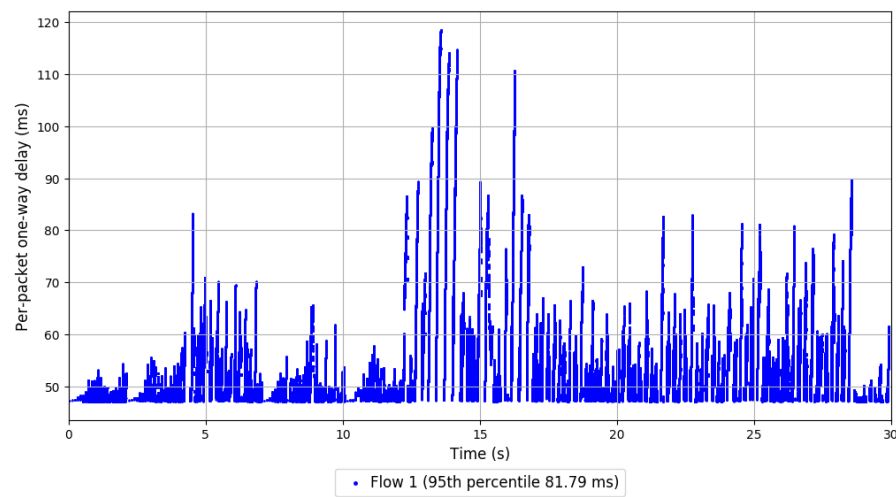
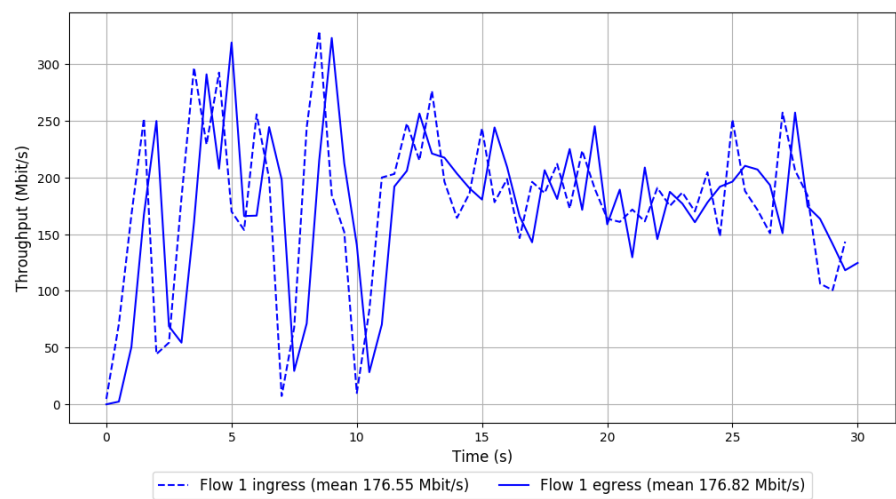


Run 1: Statistics of Verus

Start at: 2018-11-15 19:49:38
End at: 2018-11-15 19:50:08
Local clock offset: -0.049 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-15 23:36:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 176.82 Mbit/s
95th percentile per-packet one-way delay: 81.789 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 176.82 Mbit/s
95th percentile per-packet one-way delay: 81.789 ms
Loss rate: 0.18%

Run 1: Report of Verus — Data Link

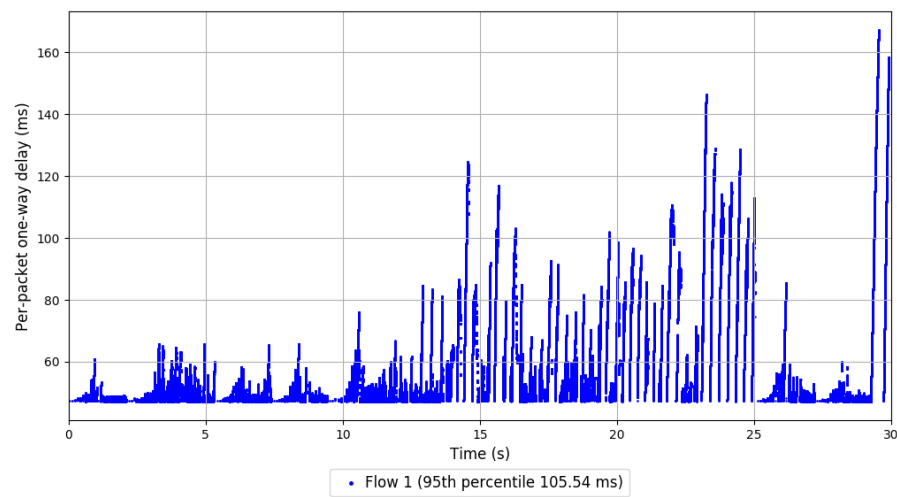
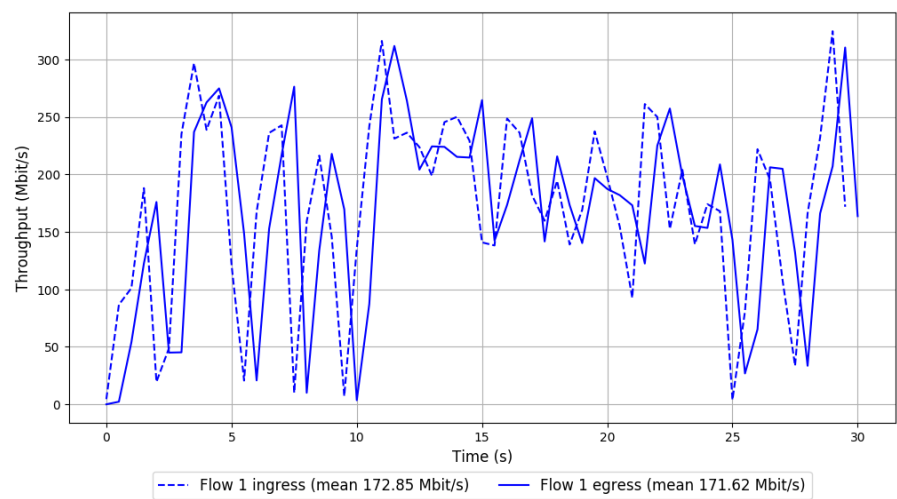


Run 2: Statistics of Verus

Start at: 2018-11-15 20:15:00
End at: 2018-11-15 20:15:30
Local clock offset: -0.091 ms
Remote clock offset: -0.05 ms

Below is generated by plot.py at 2018-11-15 23:36:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 171.62 Mbit/s
95th percentile per-packet one-way delay: 105.541 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 171.62 Mbit/s
95th percentile per-packet one-way delay: 105.541 ms
Loss rate: 0.46%

Run 2: Report of Verus — Data Link

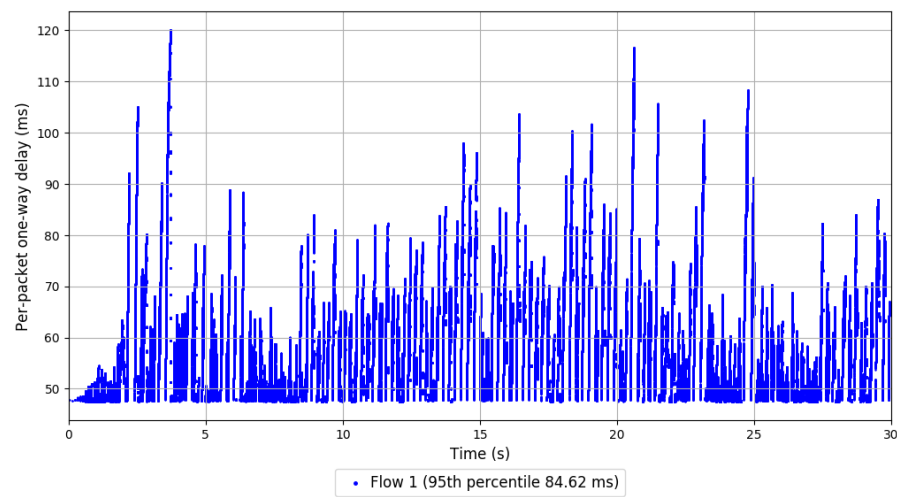
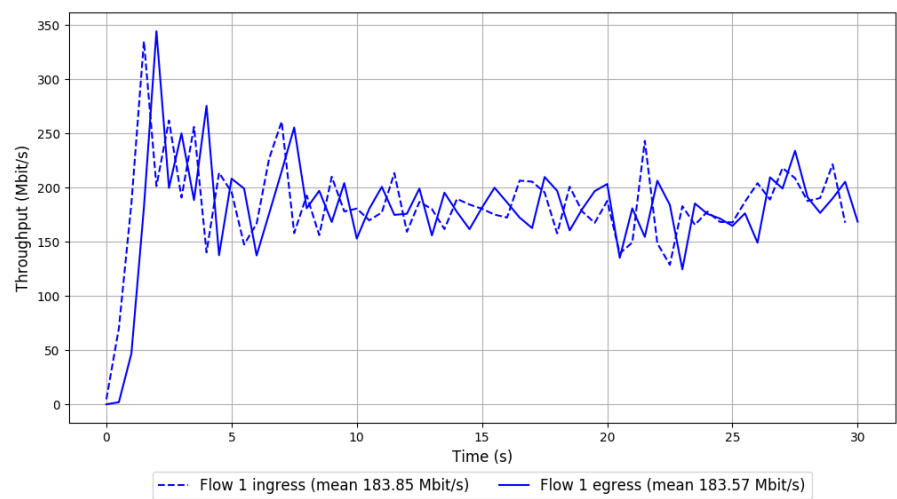


Run 3: Statistics of Verus

Start at: 2018-11-15 20:41:09
End at: 2018-11-15 20:41:39
Local clock offset: 0.512 ms
Remote clock offset: -0.007 ms

Below is generated by plot.py at 2018-11-15 23:36:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 183.57 Mbit/s
95th percentile per-packet one-way delay: 84.619 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 183.57 Mbit/s
95th percentile per-packet one-way delay: 84.619 ms
Loss rate: 0.47%

Run 3: Report of Verus — Data Link

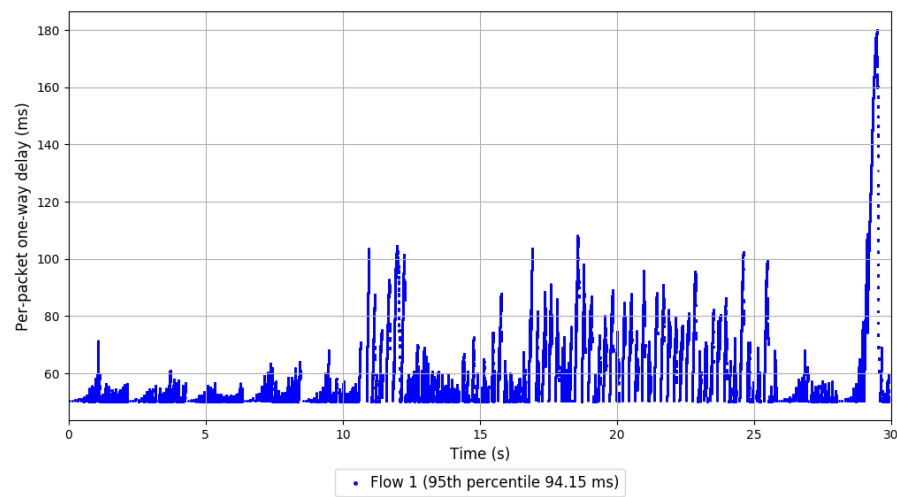
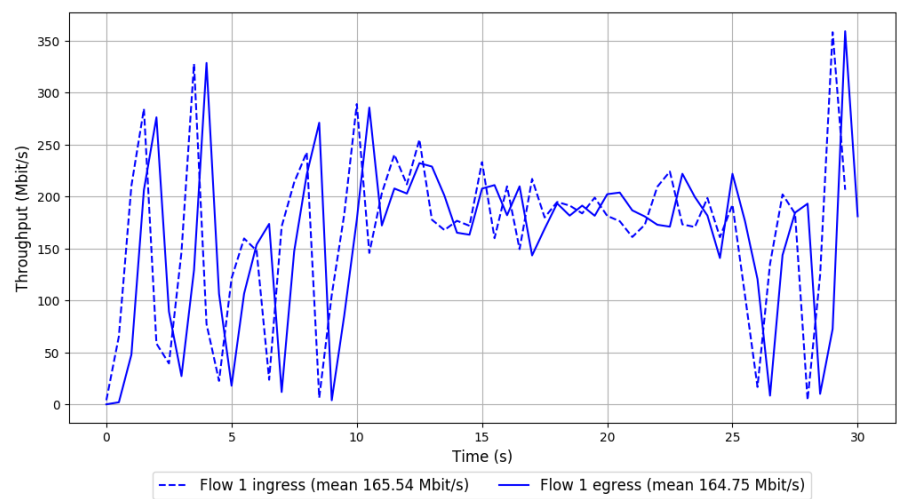


Run 4: Statistics of Verus

Start at: 2018-11-15 21:07:16
End at: 2018-11-15 21:07:46
Local clock offset: 0.121 ms
Remote clock offset: -0.142 ms

Below is generated by plot.py at 2018-11-15 23:37:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 164.75 Mbit/s
95th percentile per-packet one-way delay: 94.152 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 164.75 Mbit/s
95th percentile per-packet one-way delay: 94.152 ms
Loss rate: 0.79%

Run 4: Report of Verus — Data Link

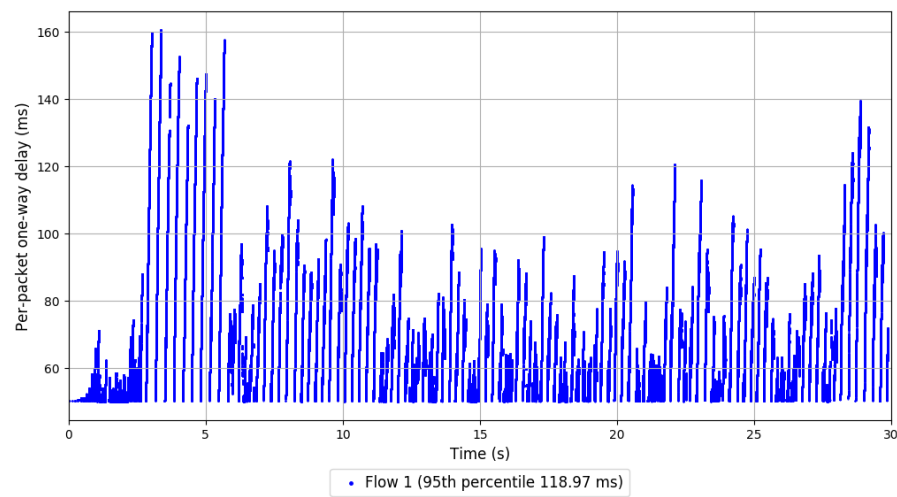
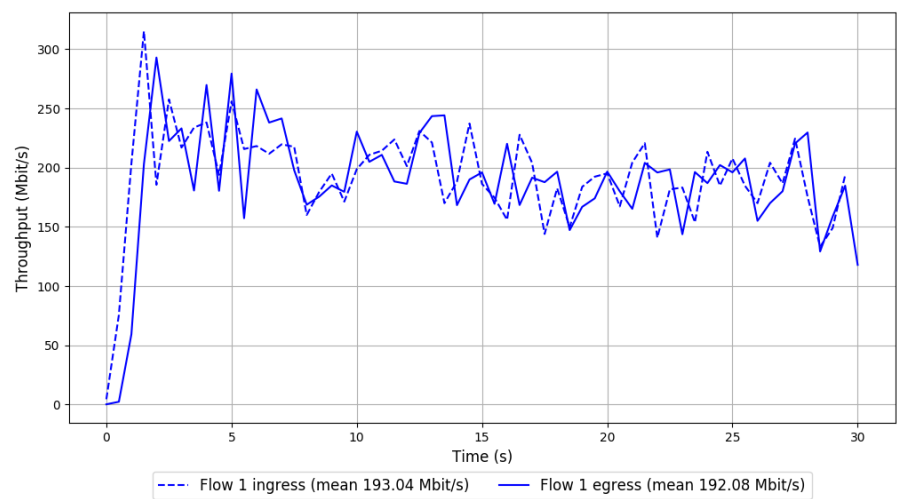


Run 5: Statistics of Verus

Start at: 2018-11-15 21:33:35
End at: 2018-11-15 21:34:05
Local clock offset: 0.059 ms
Remote clock offset: -0.065 ms

Below is generated by plot.py at 2018-11-15 23:39:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 192.08 Mbit/s
95th percentile per-packet one-way delay: 118.973 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 192.08 Mbit/s
95th percentile per-packet one-way delay: 118.973 ms
Loss rate: 0.66%

Run 5: Report of Verus — Data Link

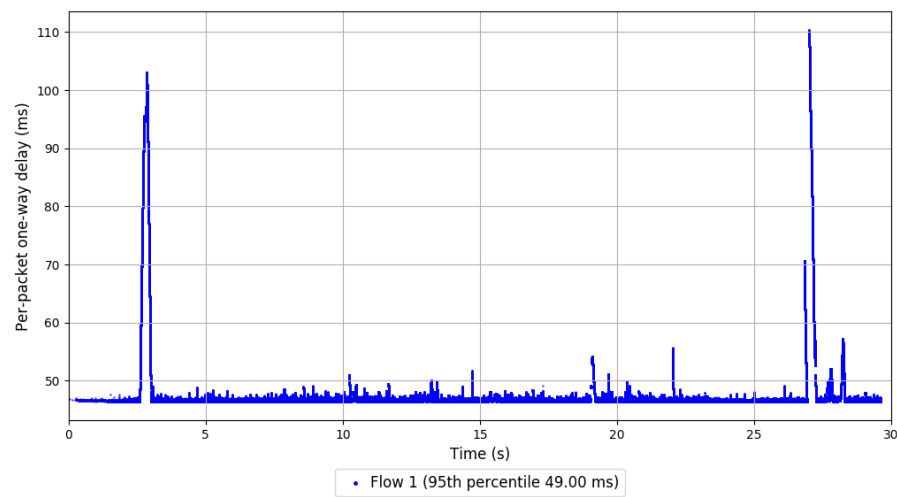
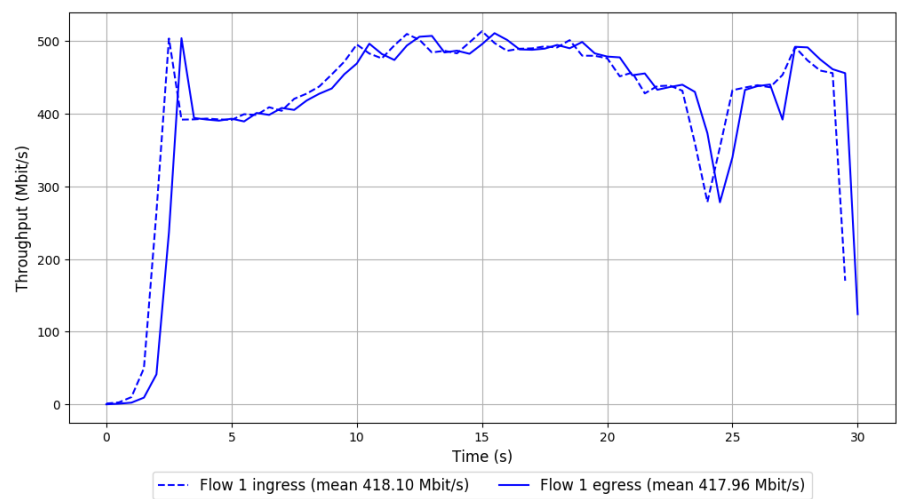


Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 20:09:45
End at: 2018-11-15 20:10:15
Local clock offset: -0.066 ms
Remote clock offset: -0.079 ms

Below is generated by plot.py at 2018-11-15 23:40:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 417.96 Mbit/s
95th percentile per-packet one-way delay: 48.996 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 417.96 Mbit/s
95th percentile per-packet one-way delay: 48.996 ms
Loss rate: 0.35%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 20:35:53

End at: 2018-11-15 20:36:23

Local clock offset: 0.078 ms

Remote clock offset: -0.054 ms

Below is generated by plot.py at 2018-11-15 23:41:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 437.28 Mbit/s

95th percentile per-packet one-way delay: 48.141 ms

Loss rate: 0.22%

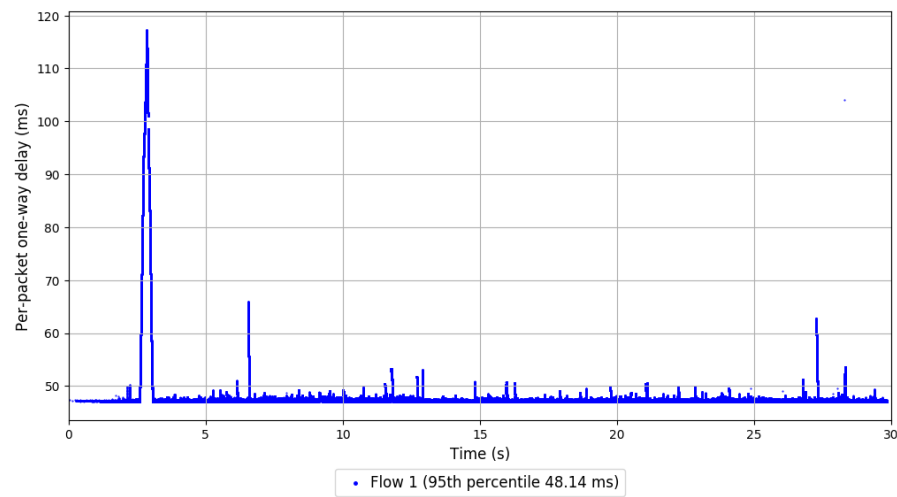
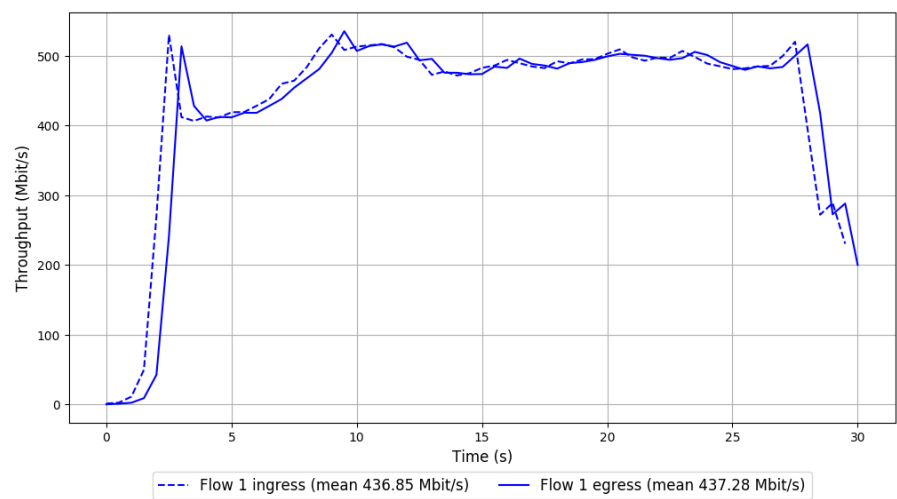
-- Flow 1:

Average throughput: 437.28 Mbit/s

95th percentile per-packet one-way delay: 48.141 ms

Loss rate: 0.22%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 21:02:03

End at: 2018-11-15 21:02:33

Local clock offset: 0.105 ms

Remote clock offset: -0.137 ms

Below is generated by plot.py at 2018-11-15 23:41:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 378.26 Mbit/s

95th percentile per-packet one-way delay: 122.362 ms

Loss rate: 0.22%

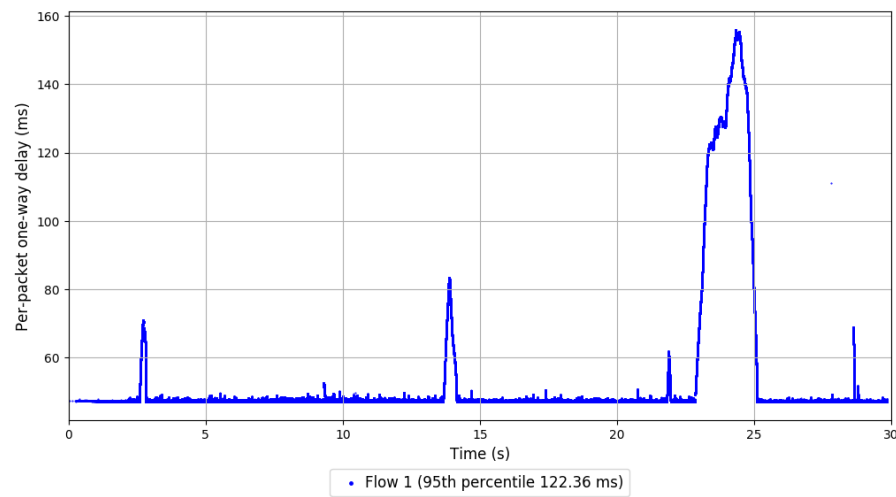
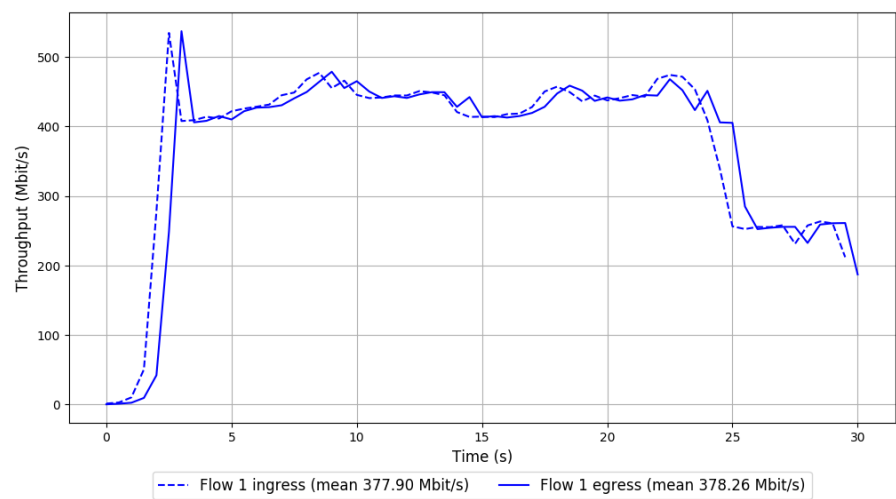
-- Flow 1:

Average throughput: 378.26 Mbit/s

95th percentile per-packet one-way delay: 122.362 ms

Loss rate: 0.22%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 21:28:16

End at: 2018-11-15 21:28:46

Local clock offset: 0.067 ms

Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-11-15 23:41:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 417.72 Mbit/s

95th percentile per-packet one-way delay: 59.103 ms

Loss rate: 0.37%

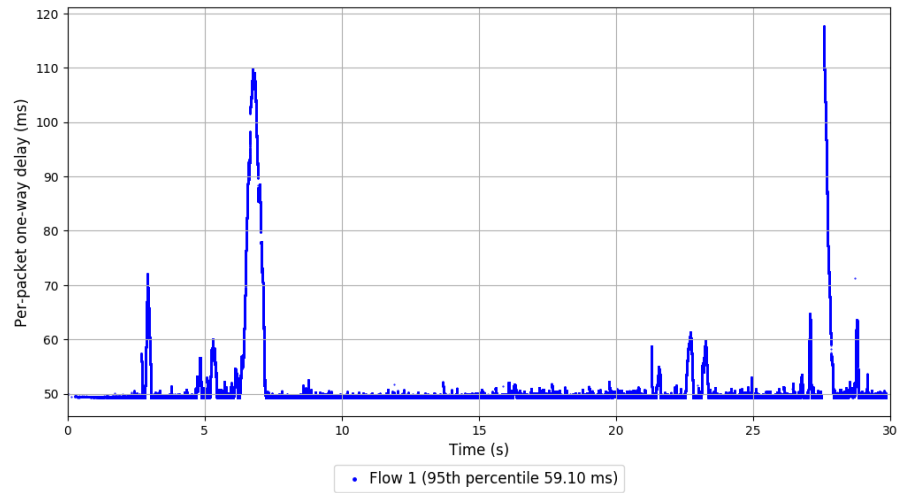
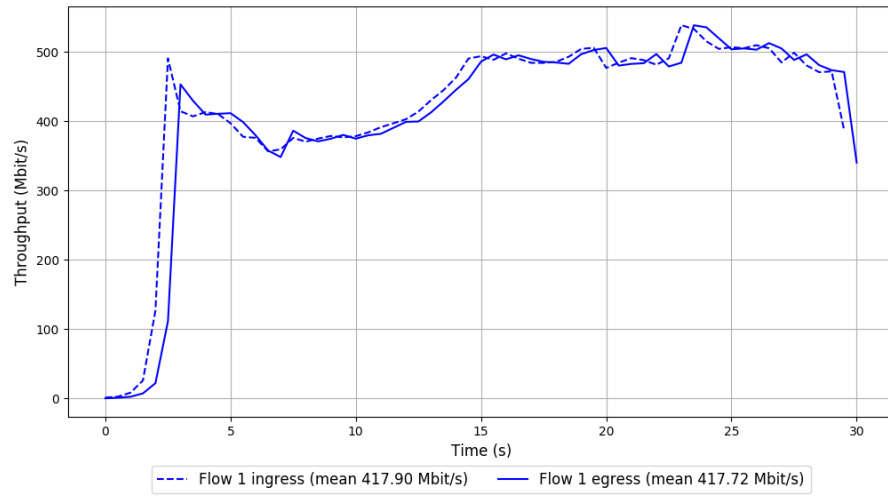
-- Flow 1:

Average throughput: 417.72 Mbit/s

95th percentile per-packet one-way delay: 59.103 ms

Loss rate: 0.37%

Run 4: Report of PCC-Vivace — Data Link

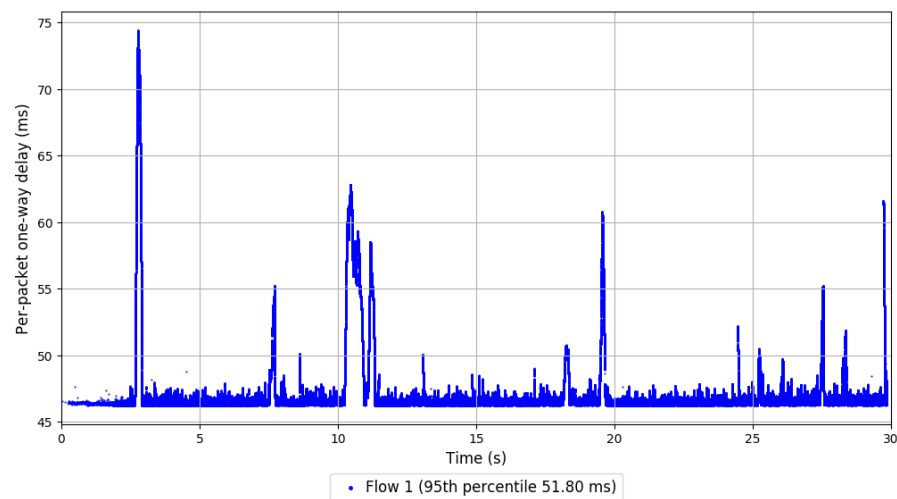
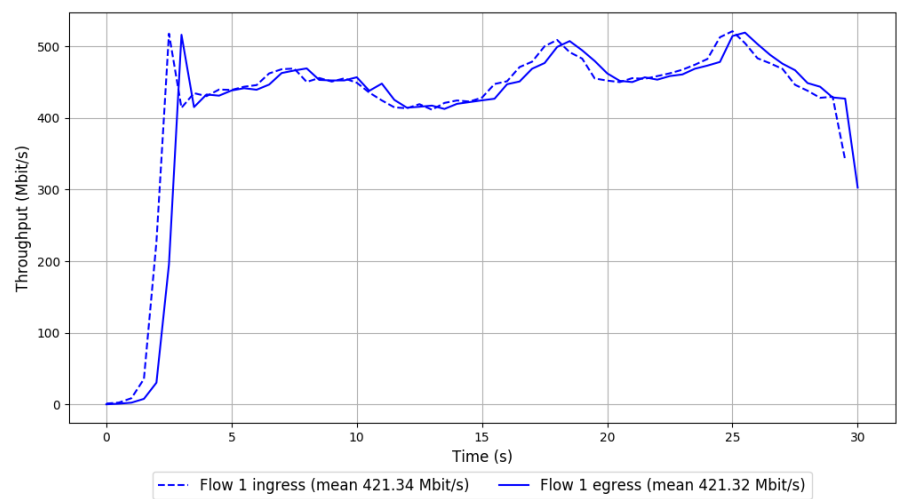


Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 21:54:49
End at: 2018-11-15 21:55:19
Local clock offset: -0.042 ms
Remote clock offset: -0.036 ms

Below is generated by plot.py at 2018-11-15 23:41:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 421.32 Mbit/s
95th percentile per-packet one-way delay: 51.798 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 421.32 Mbit/s
95th percentile per-packet one-way delay: 51.798 ms
Loss rate: 0.32%

Run 5: Report of PCC-Vivace — Data Link

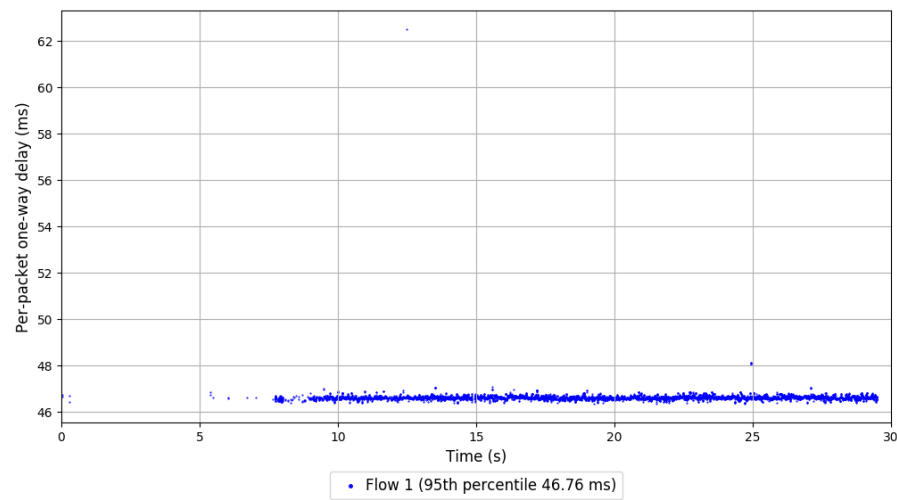
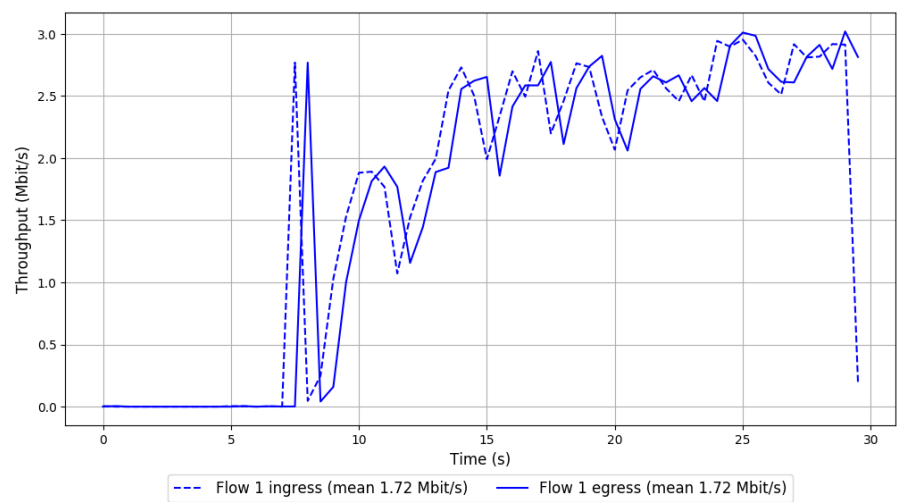


Run 1: Statistics of WebRTC media

Start at: 2018-11-15 20:05:51
End at: 2018-11-15 20:06:21
Local clock offset: -0.059 ms
Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-11-15 23:41:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 46.759 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 46.759 ms
Loss rate: 0.49%

Run 1: Report of WebRTC media — Data Link

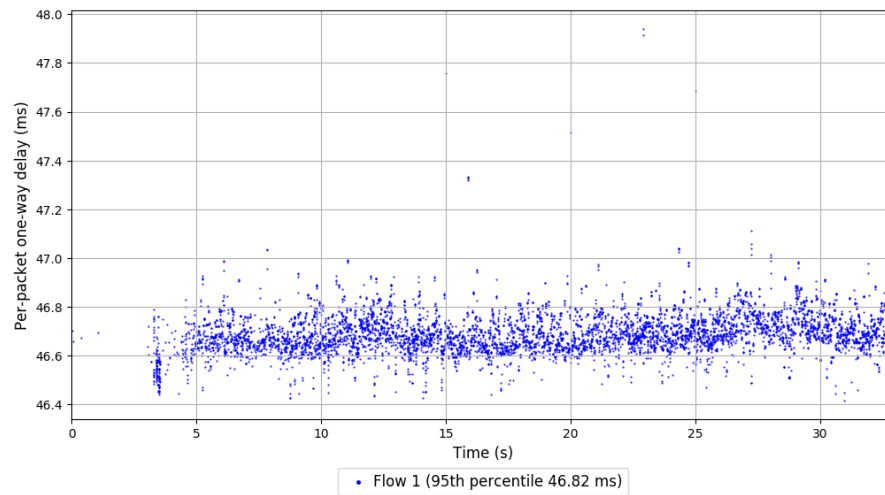
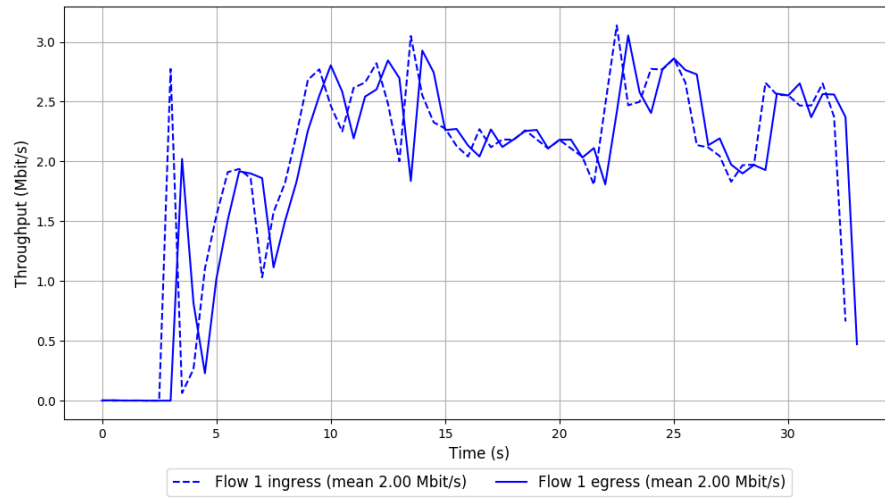


Run 2: Statistics of WebRTC media

Start at: 2018-11-15 20:31:59
End at: 2018-11-15 20:32:29
Local clock offset: 0.103 ms
Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-11-15 23:41:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 46.823 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 46.823 ms
Loss rate: 0.36%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-11-15 20:58:06

End at: 2018-11-15 20:58:36

Local clock offset: 0.138 ms

Remote clock offset: -0.1 ms

Below is generated by plot.py at 2018-11-15 23:41:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 47.531 ms

Loss rate: 0.36%

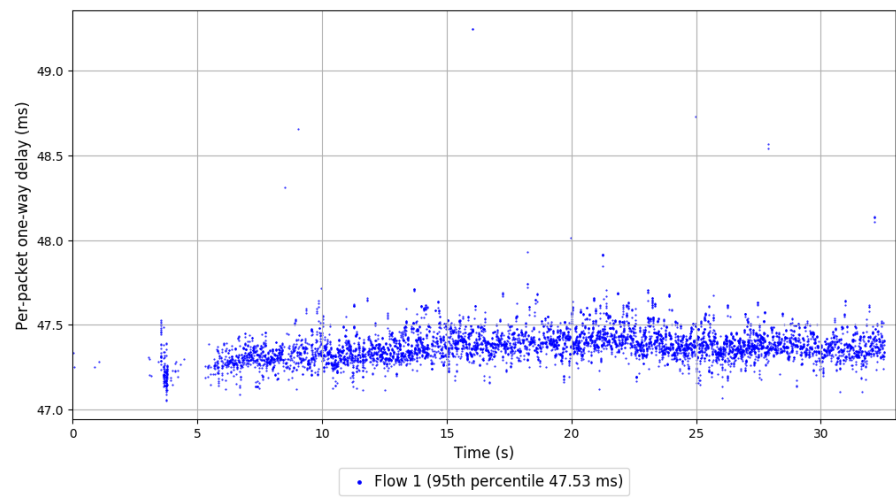
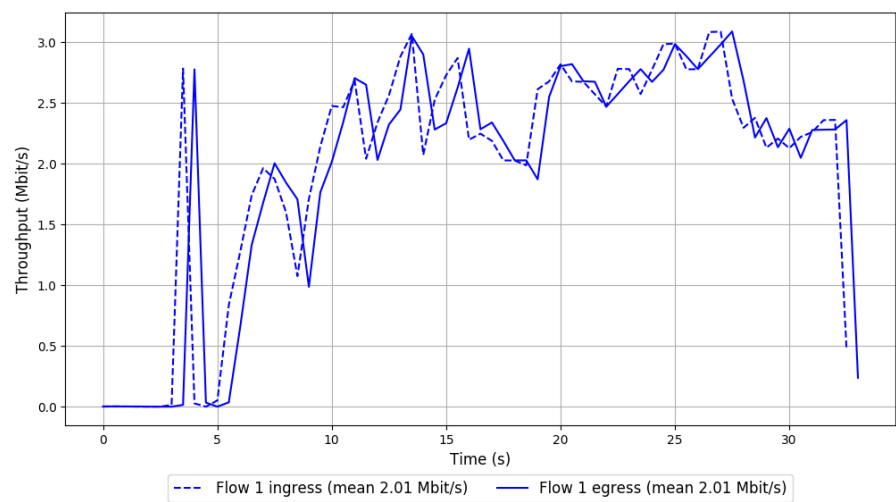
-- Flow 1:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 47.531 ms

Loss rate: 0.36%

Run 3: Report of WebRTC media — Data Link

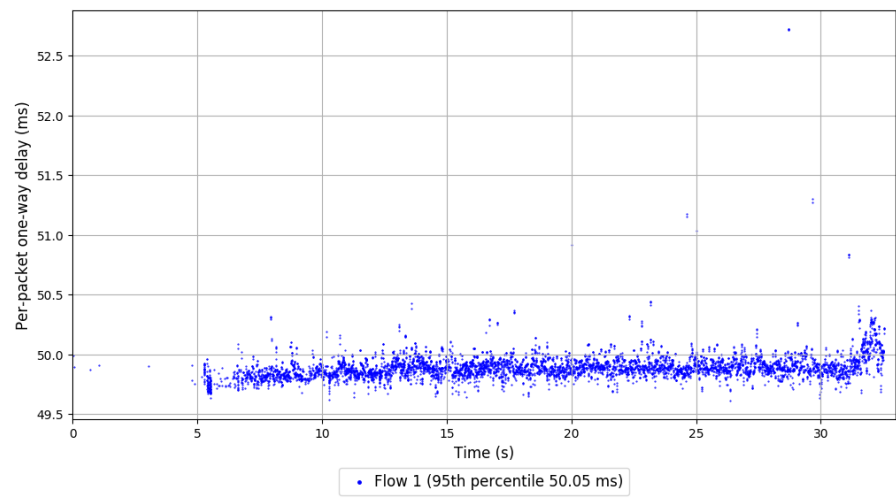
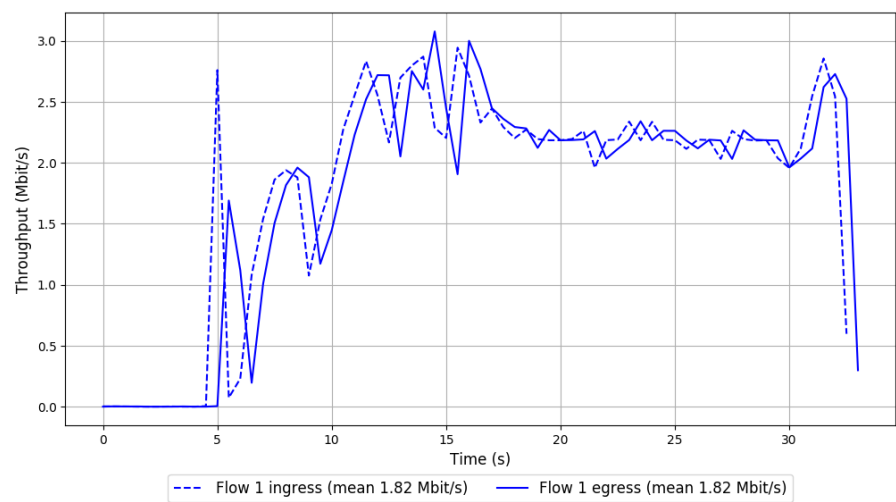


Run 4: Statistics of WebRTC media

Start at: 2018-11-15 21:24:21
End at: 2018-11-15 21:24:51
Local clock offset: -0.261 ms
Remote clock offset: -0.097 ms

Below is generated by plot.py at 2018-11-15 23:41:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 50.052 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 50.052 ms
Loss rate: 0.50%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-15 21:50:55
End at: 2018-11-15 21:51:25
Local clock offset: -0.047 ms
Remote clock offset: -0.038 ms

Below is generated by plot.py at 2018-11-15 23:41:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 49.673 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 49.673 ms
Loss rate: 0.37%

Run 5: Report of WebRTC media — Data Link

