

Pantheon Report

Generated at 2018-11-03 15:40:06 (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.

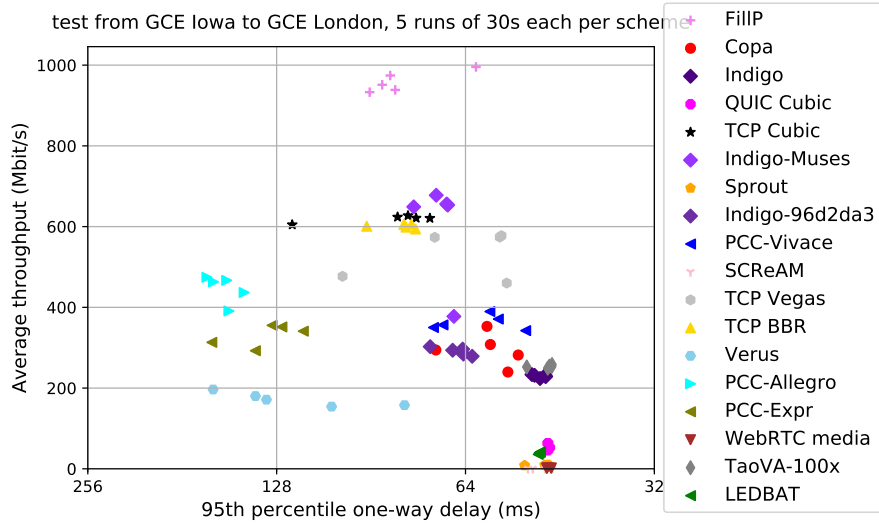
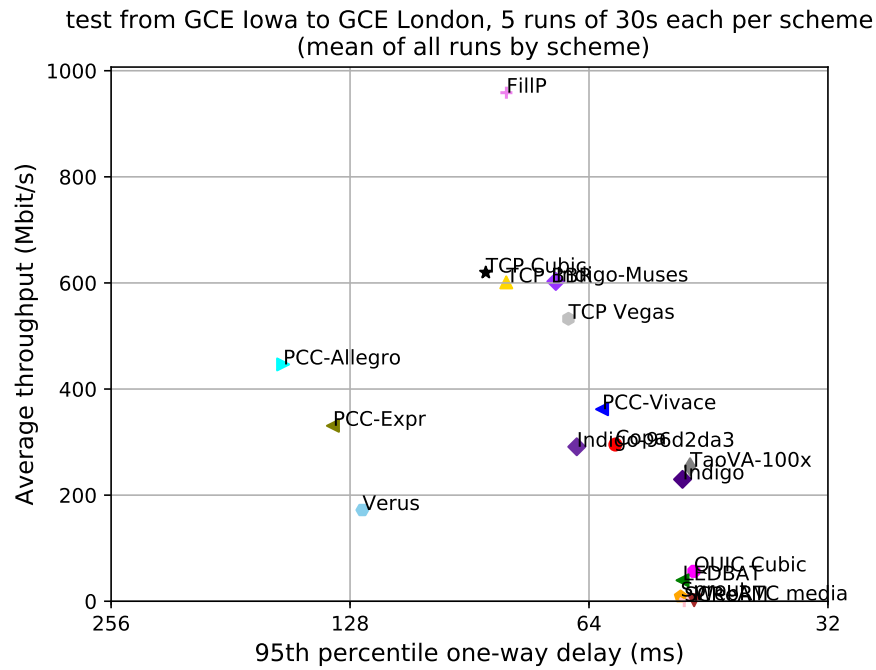
System info:

```
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 @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	601.04	81.36	0.39
Copa	5	295.35	59.29	0.36
TCP Cubic	5	619.55	86.34	0.38
FillP	5	958.57	81.33	0.48
Indigo	5	229.72	48.79	0.36
Indigo-96d2da3	5	291.17	66.31	0.44
LEDBAT	4	39.44	48.79	0.48
Indigo-Muses	5	602.72	70.47	0.40
PCC-Allegro	5	446.39	155.42	2.16
PCC-Expr	5	330.71	134.52	1.48
QUIC Cubic	4	56.33	47.21	0.53
SCReAM	5	0.22	48.55	0.28
Sprout	5	9.02	49.07	0.36
TaoVA-100x	5	253.54	47.74	0.32
TCP Vegas	5	532.41	67.94	0.28
Verus	5	171.97	123.50	0.42
PCC-Vivace	5	361.92	61.62	0.30
WebRTC media	5	1.87	47.18	0.37

Run 1: Statistics of TCP BBR

Start at: 2018-11-03 12:00:59

End at: 2018-11-03 12:01:29

Local clock offset: -0.03 ms

Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-11-03 14:16:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 605.42 Mbit/s

95th percentile per-packet one-way delay: 80.244 ms

Loss rate: 0.39%

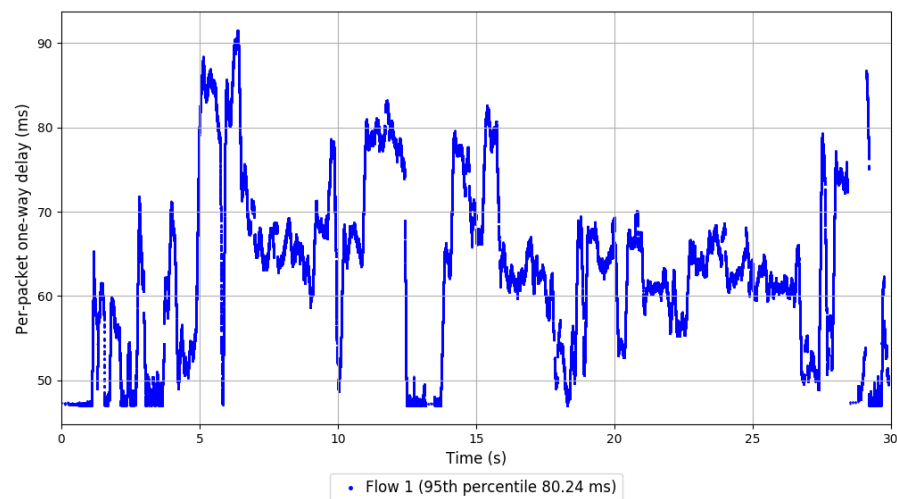
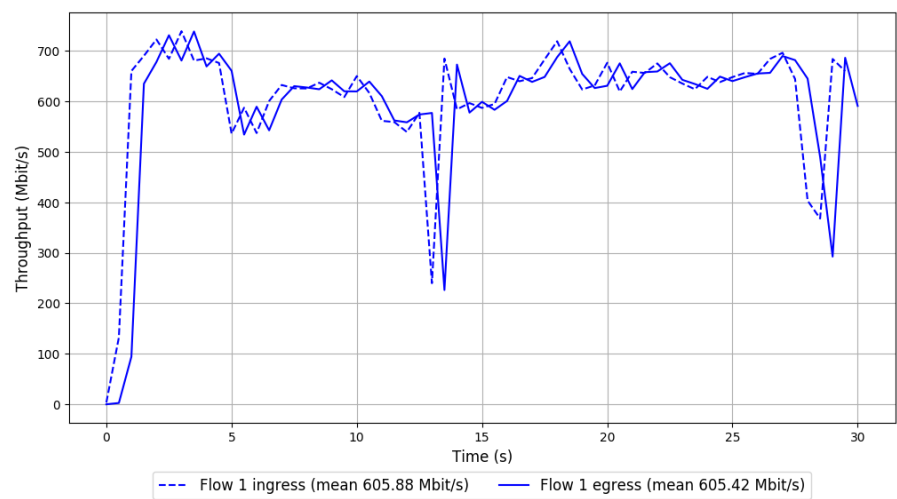
-- Flow 1:

Average throughput: 605.42 Mbit/s

95th percentile per-packet one-way delay: 80.244 ms

Loss rate: 0.39%

Run 1: Report of TCP BBR — Data Link

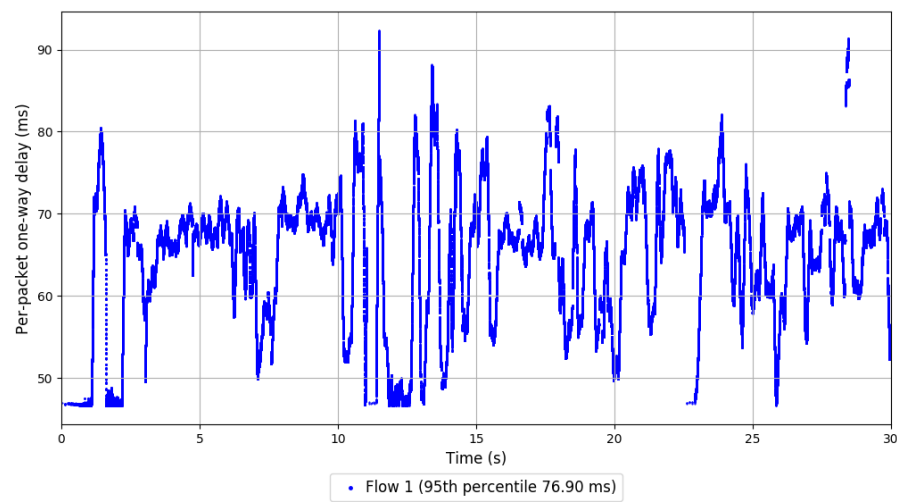
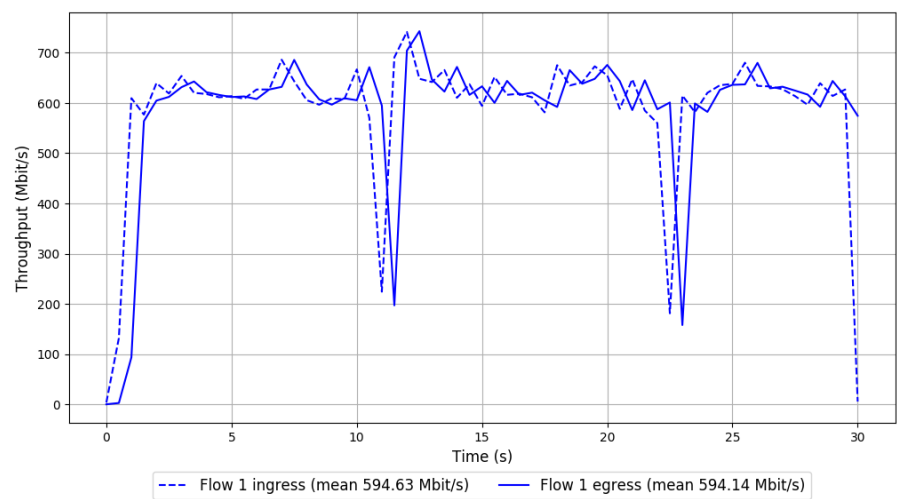


Run 2: Statistics of TCP BBR

Start at: 2018-11-03 12:26:51
End at: 2018-11-03 12:27:21
Local clock offset: -0.463 ms
Remote clock offset: -0.092 ms

Below is generated by plot.py at 2018-11-03 14:16:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 594.14 Mbit/s
95th percentile per-packet one-way delay: 76.899 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 594.14 Mbit/s
95th percentile per-packet one-way delay: 76.899 ms
Loss rate: 0.40%

Run 2: Report of TCP BBR — Data Link

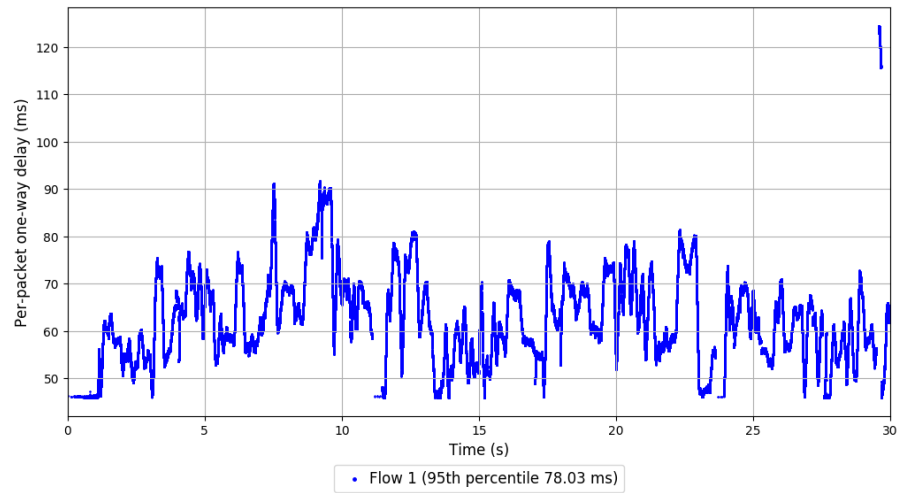
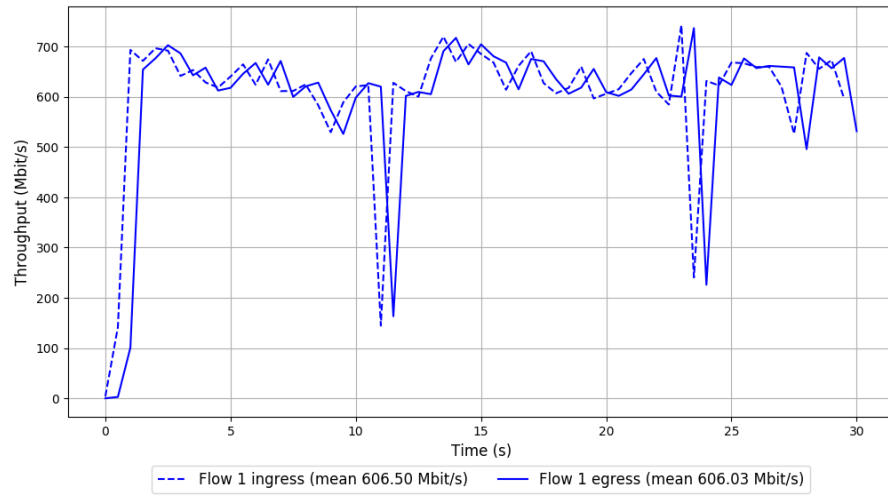


Run 3: Statistics of TCP BBR

Start at: 2018-11-03 12:53:09
End at: 2018-11-03 12:53:40
Local clock offset: -0.479 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-11-03 14:16:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 606.03 Mbit/s
95th percentile per-packet one-way delay: 78.033 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 606.03 Mbit/s
95th percentile per-packet one-way delay: 78.033 ms
Loss rate: 0.39%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-11-03 13:19:14

End at: 2018-11-03 13:19:44

Local clock offset: -0.175 ms

Remote clock offset: -0.05 ms

Below is generated by plot.py at 2018-11-03 14:16:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 598.75 Mbit/s

95th percentile per-packet one-way delay: 79.648 ms

Loss rate: 0.40%

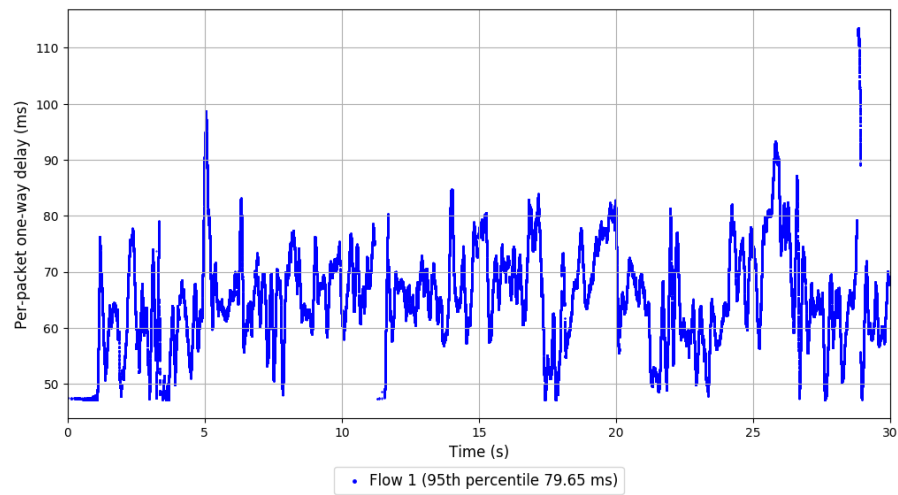
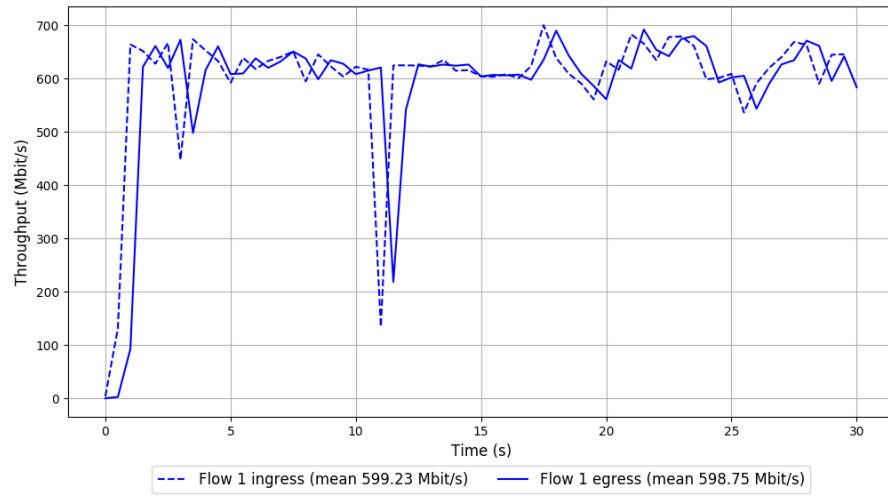
-- Flow 1:

Average throughput: 598.75 Mbit/s

95th percentile per-packet one-way delay: 79.648 ms

Loss rate: 0.40%

Run 4: Report of TCP BBR — Data Link

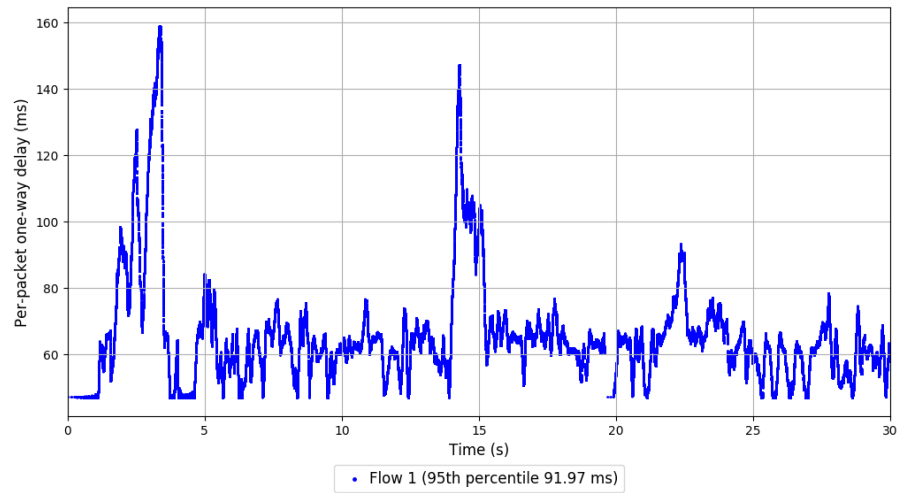
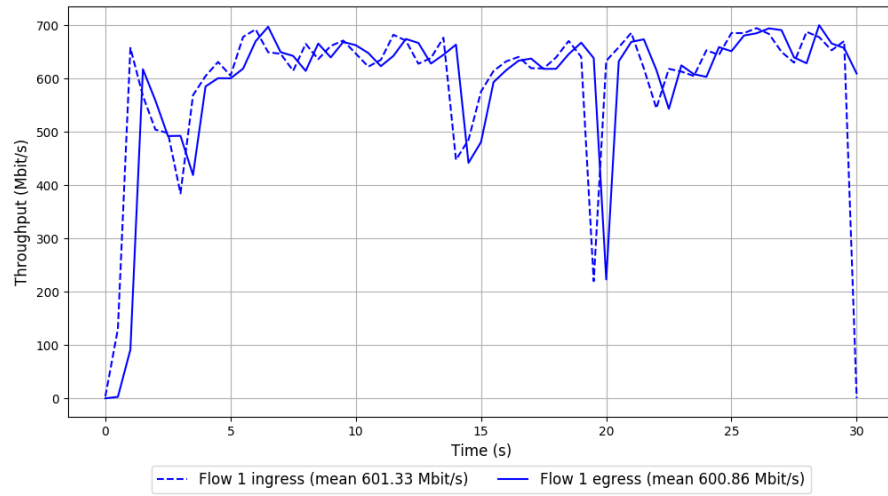


Run 5: Statistics of TCP BBR

Start at: 2018-11-03 13:45:23
End at: 2018-11-03 13:45:53
Local clock offset: -0.086 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-11-03 14:16:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 600.86 Mbit/s
95th percentile per-packet one-way delay: 91.968 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 600.86 Mbit/s
95th percentile per-packet one-way delay: 91.968 ms
Loss rate: 0.39%

Run 5: Report of TCP BBR — Data Link

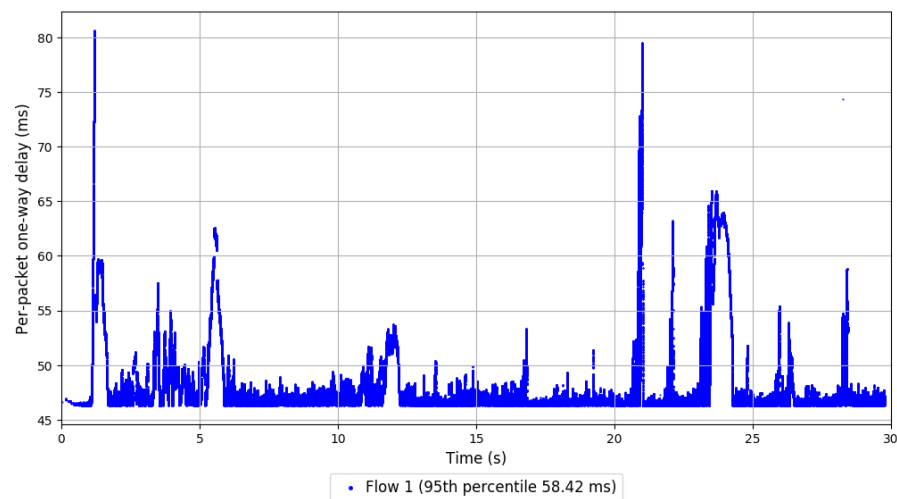
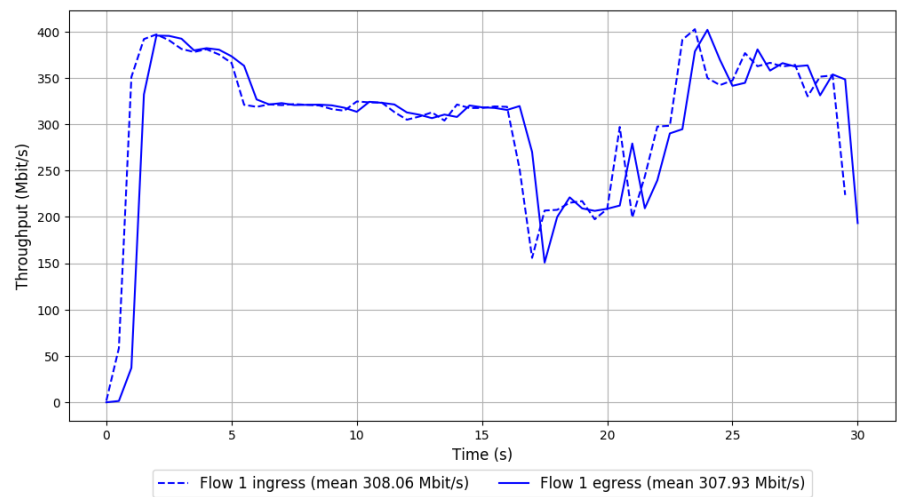


Run 1: Statistics of Copa

Start at: 2018-11-03 11:48:17
End at: 2018-11-03 11:48:47
Local clock offset: -0.054 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-11-03 14:16:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 307.93 Mbit/s
95th percentile per-packet one-way delay: 58.419 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 307.93 Mbit/s
95th percentile per-packet one-way delay: 58.419 ms
Loss rate: 0.36%

Run 1: Report of Copa — Data Link

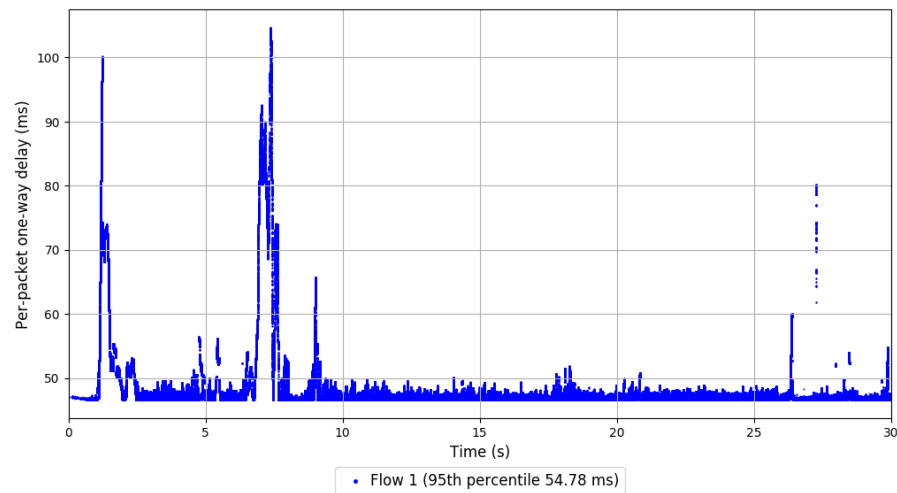
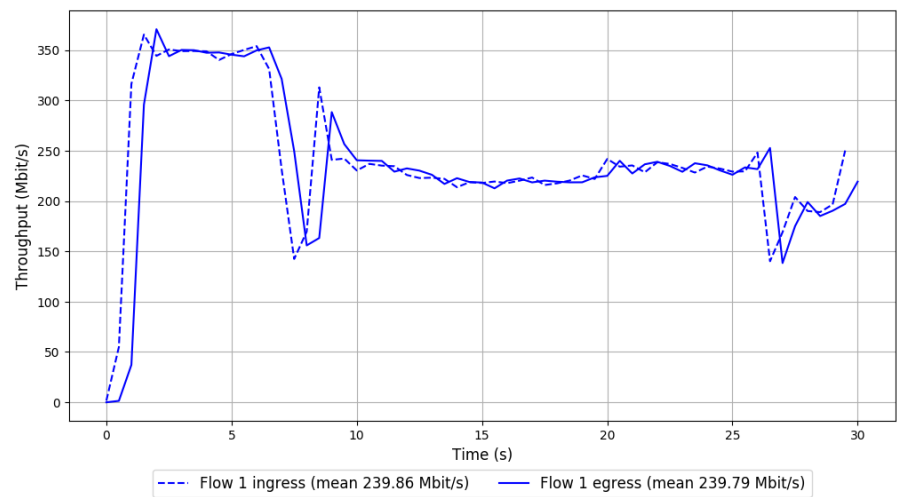


Run 2: Statistics of Copa

Start at: 2018-11-03 12:14:06
End at: 2018-11-03 12:14:36
Local clock offset: -0.401 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-11-03 14:16:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 239.79 Mbit/s
95th percentile per-packet one-way delay: 54.783 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 239.79 Mbit/s
95th percentile per-packet one-way delay: 54.783 ms
Loss rate: 0.34%

Run 2: Report of Copa — Data Link

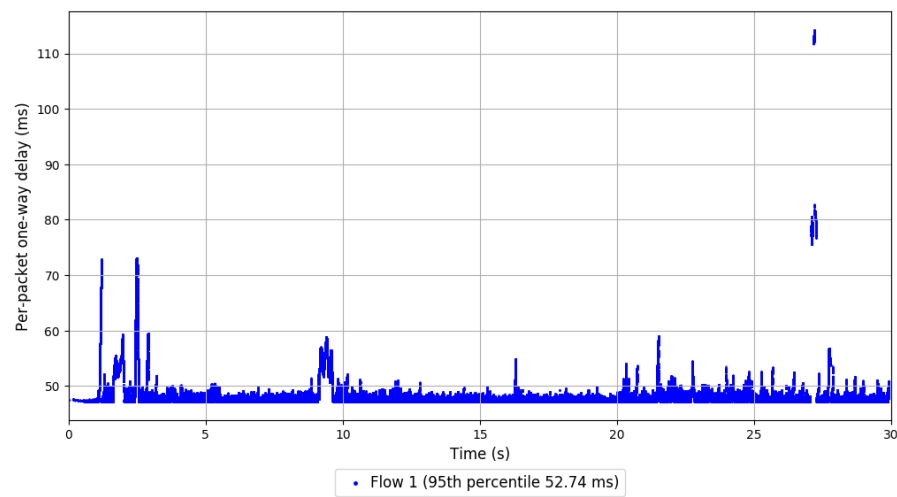
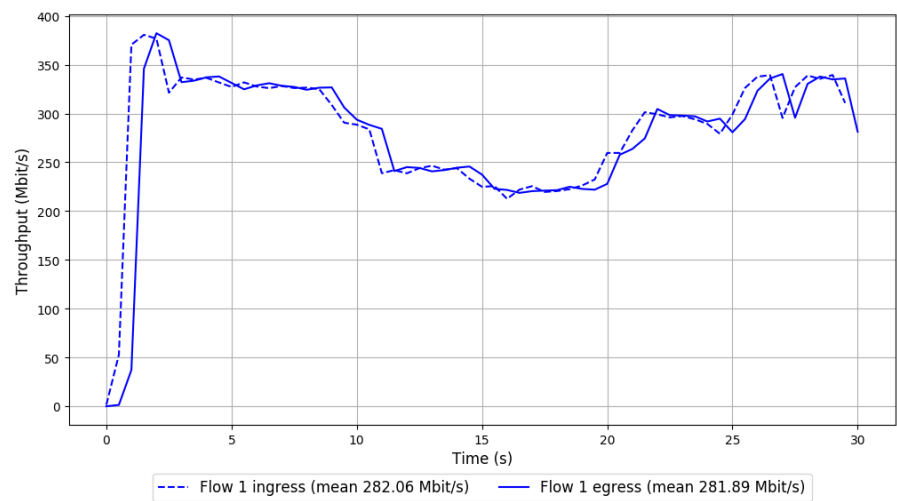


Run 3: Statistics of Copa

Start at: 2018-11-03 12:40:01
End at: 2018-11-03 12:40:31
Local clock offset: -0.094 ms
Remote clock offset: -0.11 ms

Below is generated by plot.py at 2018-11-03 14:16:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 281.89 Mbit/s
95th percentile per-packet one-way delay: 52.737 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 281.89 Mbit/s
95th percentile per-packet one-way delay: 52.737 ms
Loss rate: 0.38%

Run 3: Report of Copa — Data Link

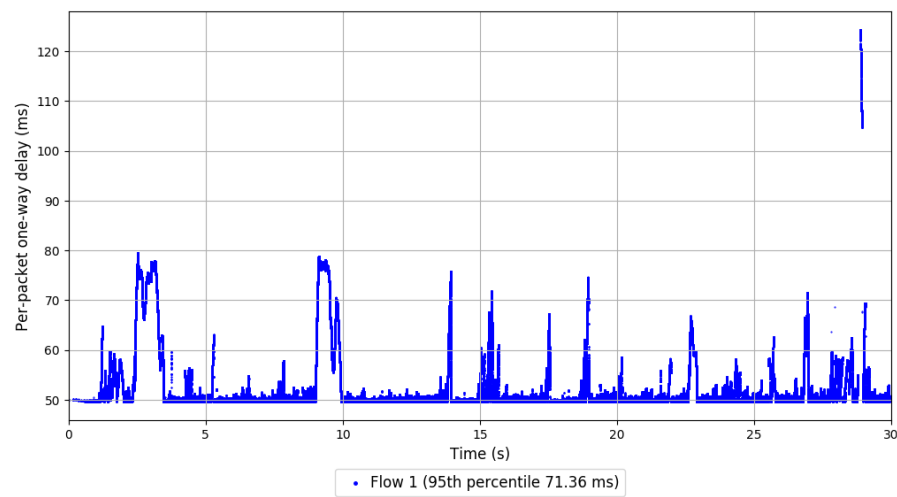
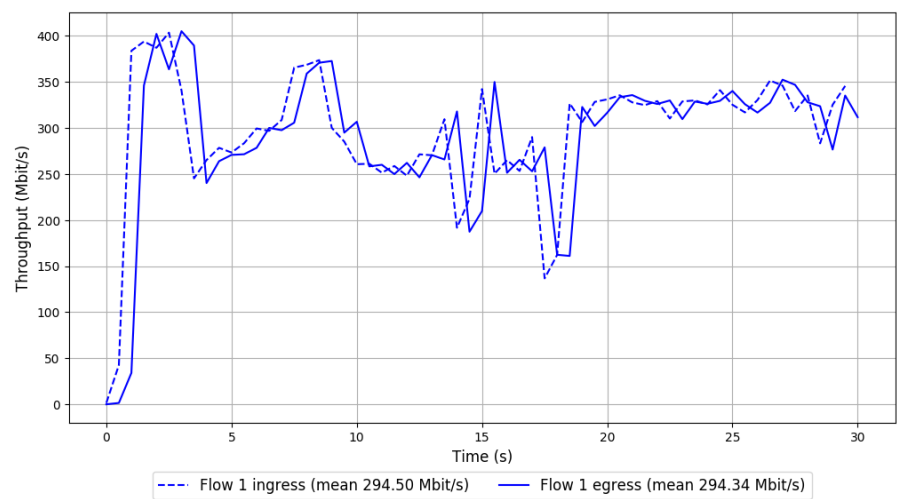


Run 4: Statistics of Copa

Start at: 2018-11-03 13:06:23
End at: 2018-11-03 13:06:53
Local clock offset: -0.147 ms
Remote clock offset: -0.093 ms

Below is generated by plot.py at 2018-11-03 14:22:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 294.34 Mbit/s
95th percentile per-packet one-way delay: 71.355 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 294.34 Mbit/s
95th percentile per-packet one-way delay: 71.355 ms
Loss rate: 0.38%

Run 4: Report of Copa — Data Link

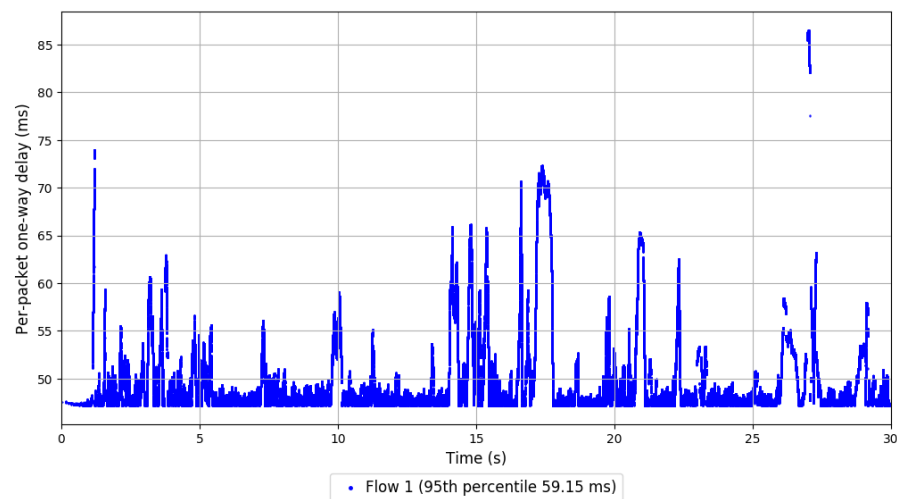
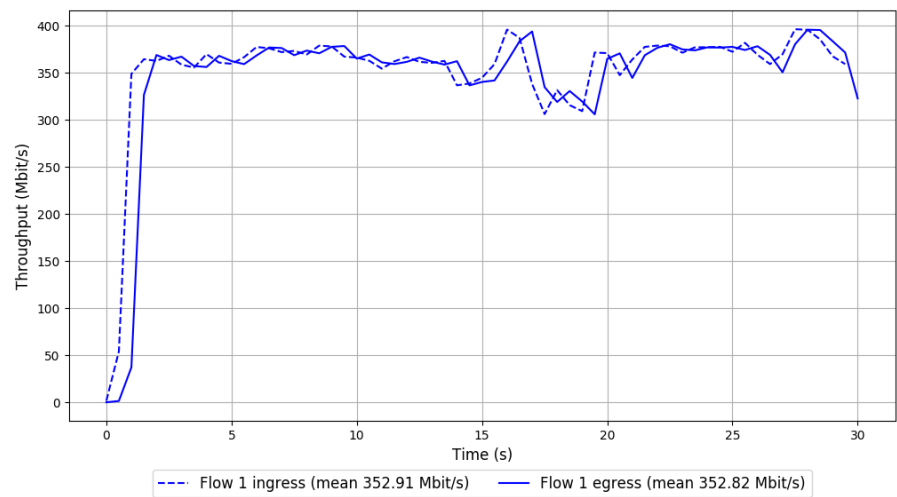


Run 5: Statistics of Copa

Start at: 2018-11-03 13:32:24
End at: 2018-11-03 13:32:54
Local clock offset: -0.108 ms
Remote clock offset: -0.073 ms

Below is generated by plot.py at 2018-11-03 14:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 352.82 Mbit/s
95th percentile per-packet one-way delay: 59.147 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 352.82 Mbit/s
95th percentile per-packet one-way delay: 59.147 ms
Loss rate: 0.34%

Run 5: Report of Copa — Data Link

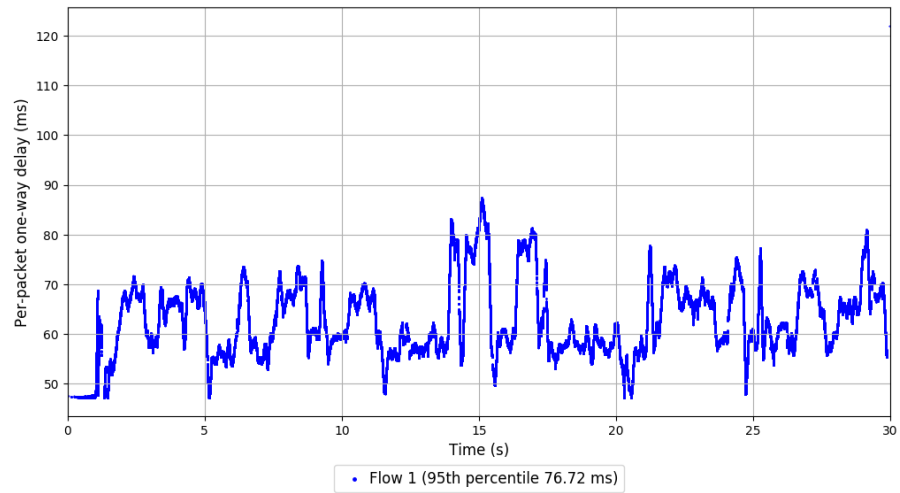
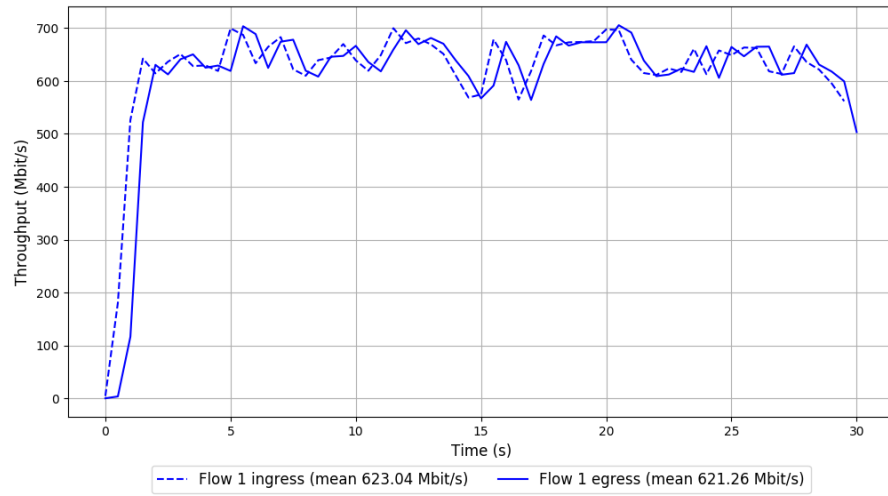


Run 1: Statistics of TCP Cubic

Start at: 2018-11-03 11:46:39
End at: 2018-11-03 11:47:09
Local clock offset: -0.011 ms
Remote clock offset: -0.039 ms

Below is generated by plot.py at 2018-11-03 14:27:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 621.26 Mbit/s
95th percentile per-packet one-way delay: 76.717 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 621.26 Mbit/s
95th percentile per-packet one-way delay: 76.717 ms
Loss rate: 0.38%

Run 1: Report of TCP Cubic — Data Link

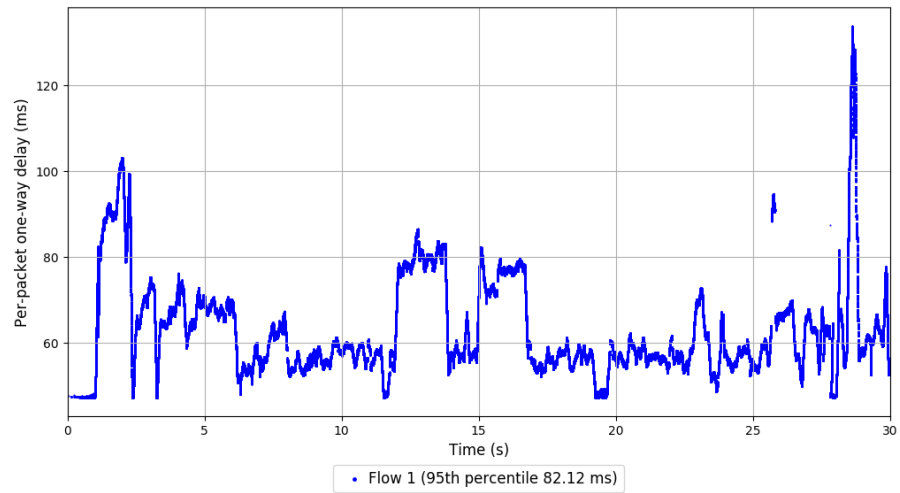
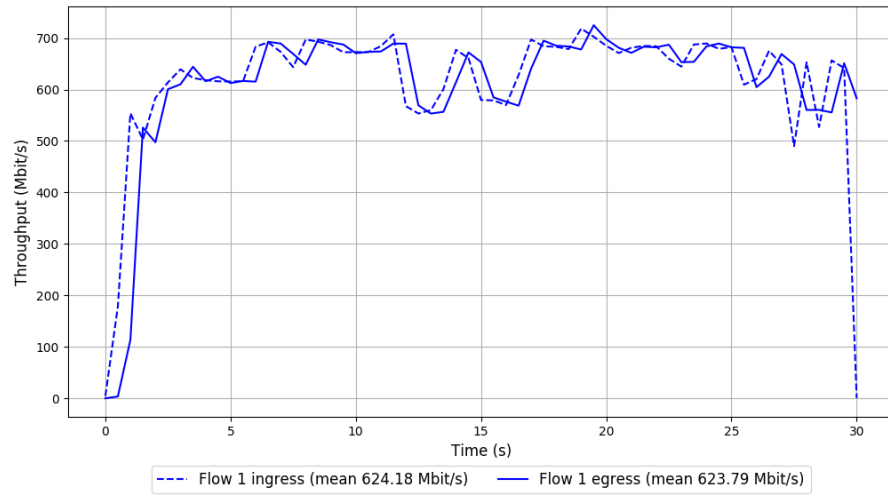


Run 2: Statistics of TCP Cubic

Start at: 2018-11-03 12:12:29
End at: 2018-11-03 12:12:59
Local clock offset: -0.055 ms
Remote clock offset: -0.056 ms

Below is generated by plot.py at 2018-11-03 14:27:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 623.79 Mbit/s
95th percentile per-packet one-way delay: 82.123 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 623.79 Mbit/s
95th percentile per-packet one-way delay: 82.123 ms
Loss rate: 0.38%

Run 2: Report of TCP Cubic — Data Link

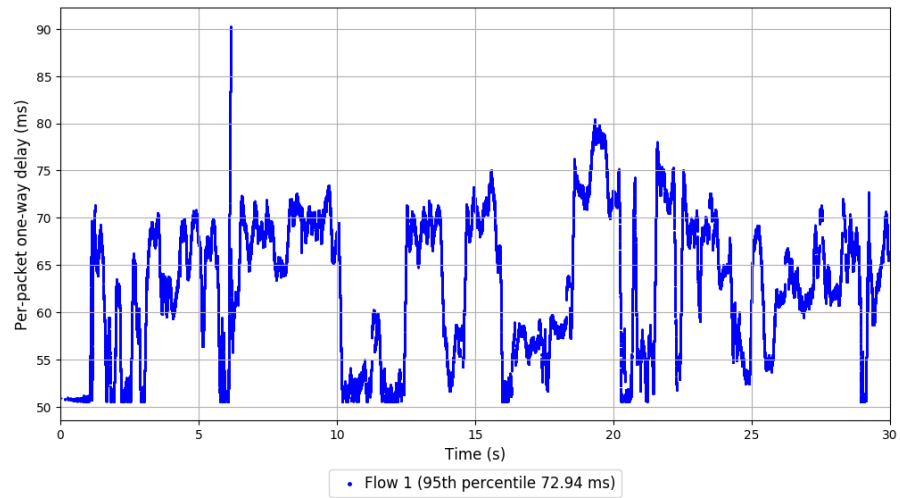
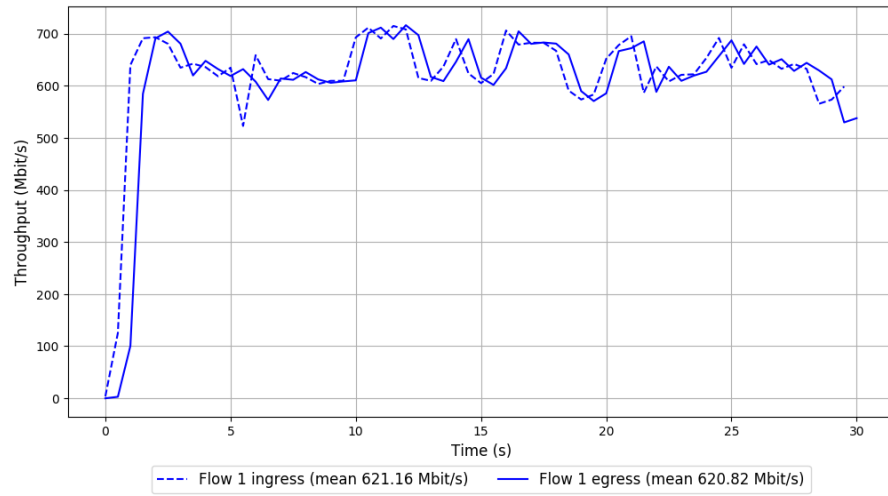


Run 3: Statistics of TCP Cubic

Start at: 2018-11-03 12:38:23
End at: 2018-11-03 12:38:53
Local clock offset: -0.106 ms
Remote clock offset: -0.117 ms

Below is generated by plot.py at 2018-11-03 14:27:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 620.82 Mbit/s
95th percentile per-packet one-way delay: 72.942 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 620.82 Mbit/s
95th percentile per-packet one-way delay: 72.942 ms
Loss rate: 0.38%

Run 3: Report of TCP Cubic — Data Link

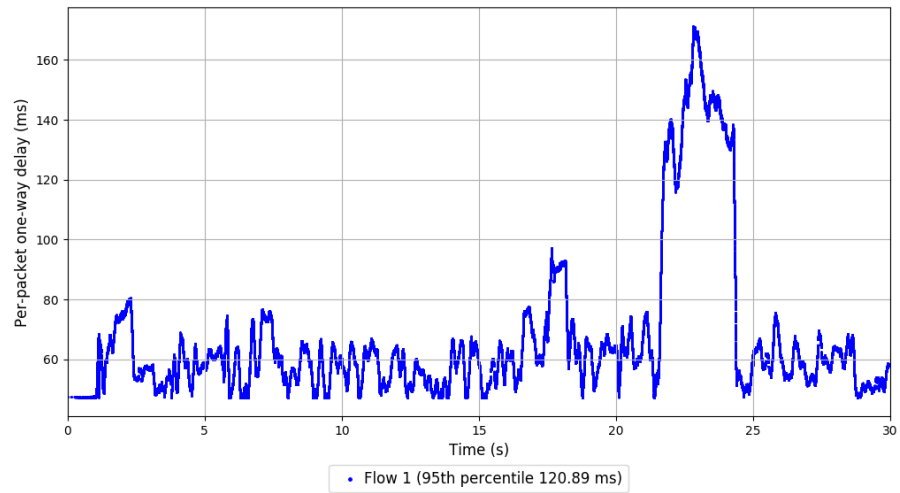
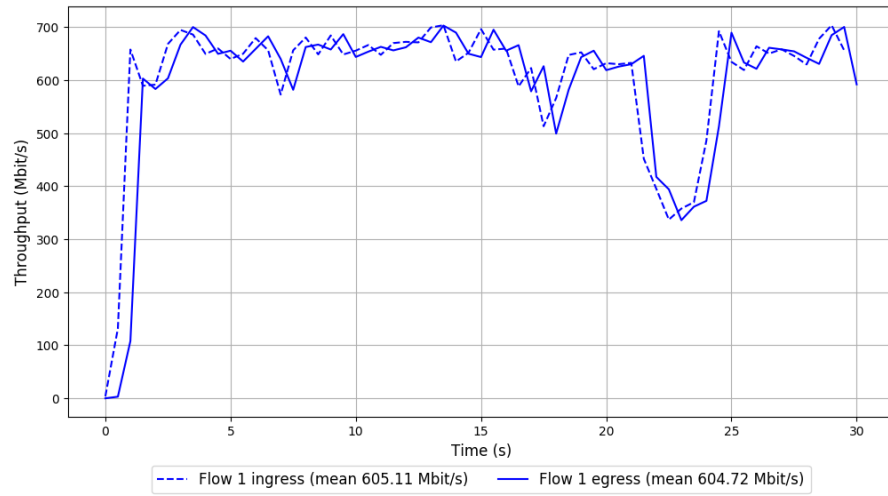


Run 4: Statistics of TCP Cubic

Start at: 2018-11-03 13:04:47
End at: 2018-11-03 13:05:17
Local clock offset: -0.145 ms
Remote clock offset: -0.096 ms

Below is generated by plot.py at 2018-11-03 14:27:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 604.72 Mbit/s
95th percentile per-packet one-way delay: 120.890 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 604.72 Mbit/s
95th percentile per-packet one-way delay: 120.890 ms
Loss rate: 0.38%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-11-03 13:30:47

End at: 2018-11-03 13:31:17

Local clock offset: -0.167 ms

Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-11-03 14:28:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 627.17 Mbit/s

95th percentile per-packet one-way delay: 79.049 ms

Loss rate: 0.38%

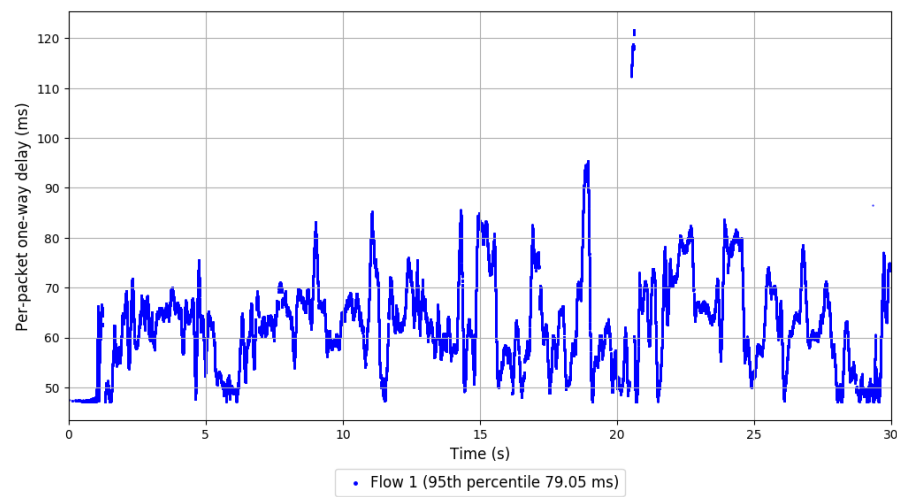
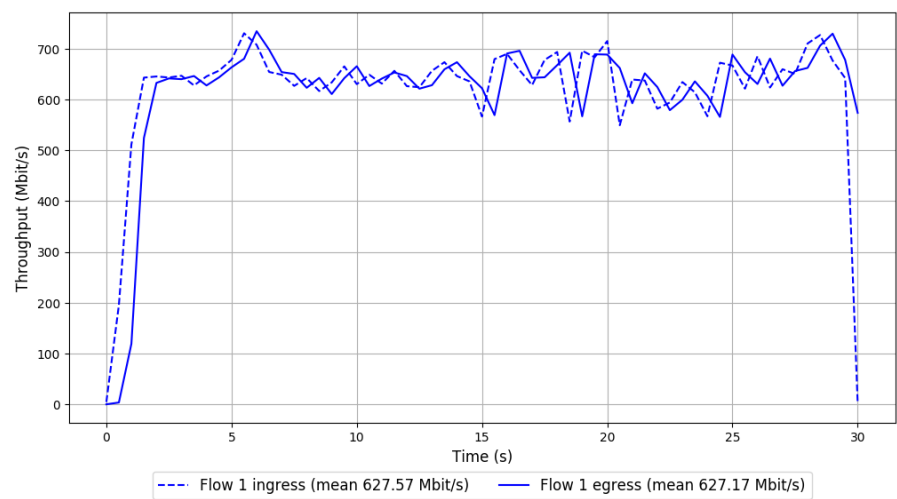
-- Flow 1:

Average throughput: 627.17 Mbit/s

95th percentile per-packet one-way delay: 79.049 ms

Loss rate: 0.38%

Run 5: Report of TCP Cubic — Data Link

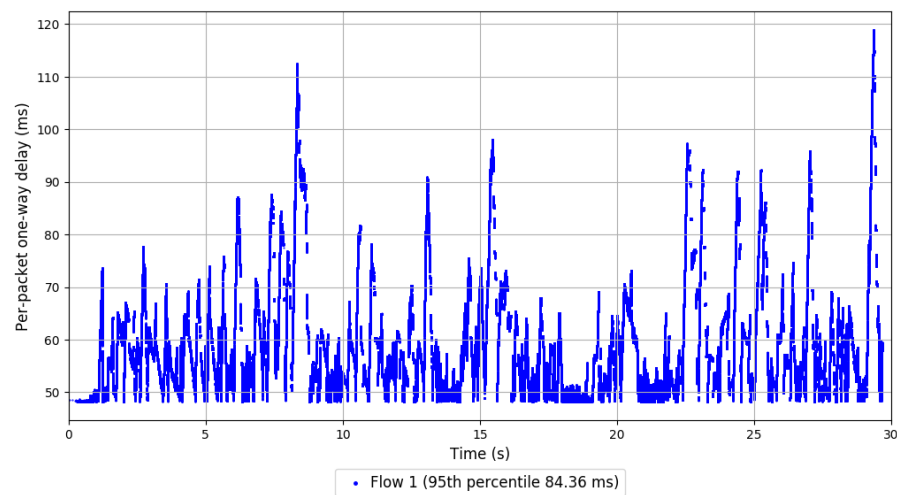
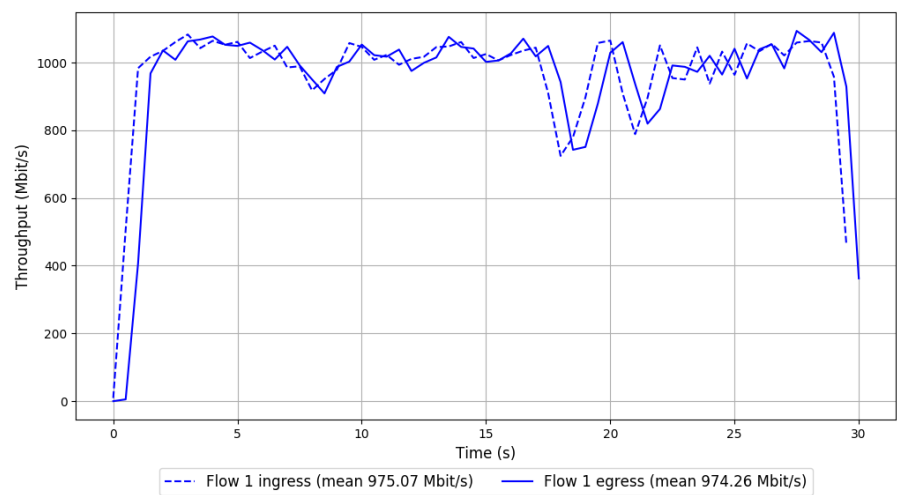


Run 1: Statistics of FillP

Start at: 2018-11-03 12:02:35
End at: 2018-11-03 12:03:05
Local clock offset: -0.398 ms
Remote clock offset: -0.064 ms

Below is generated by plot.py at 2018-11-03 14:37:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 974.26 Mbit/s
95th percentile per-packet one-way delay: 84.361 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 974.26 Mbit/s
95th percentile per-packet one-way delay: 84.361 ms
Loss rate: 0.41%

Run 1: Report of FillP — Data Link

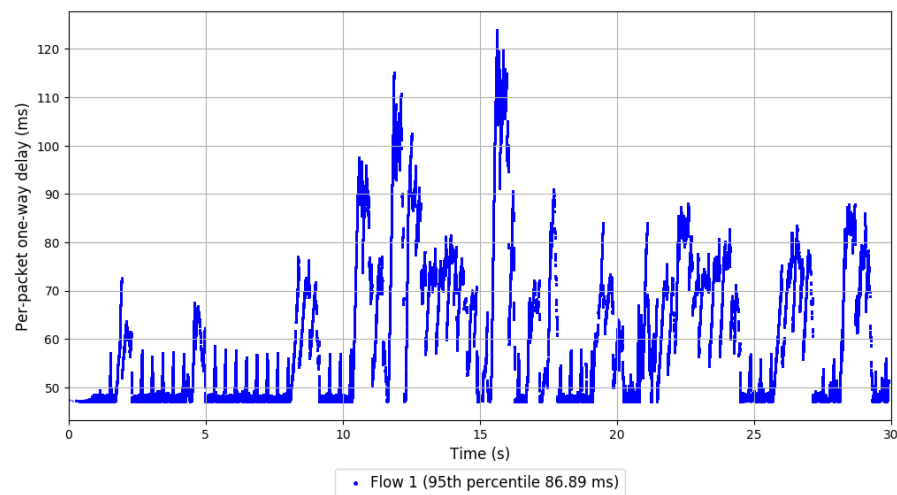
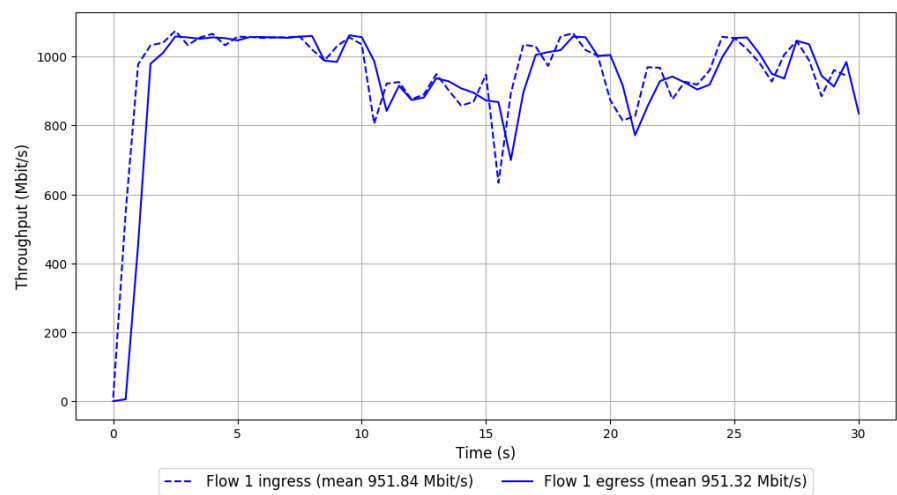


Run 2: Statistics of FillP

Start at: 2018-11-03 12:28:26
End at: 2018-11-03 12:28:56
Local clock offset: -0.078 ms
Remote clock offset: -0.113 ms

Below is generated by plot.py at 2018-11-03 14:47:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 951.32 Mbit/s
95th percentile per-packet one-way delay: 86.888 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 951.32 Mbit/s
95th percentile per-packet one-way delay: 86.888 ms
Loss rate: 0.37%

Run 2: Report of FillP — Data Link

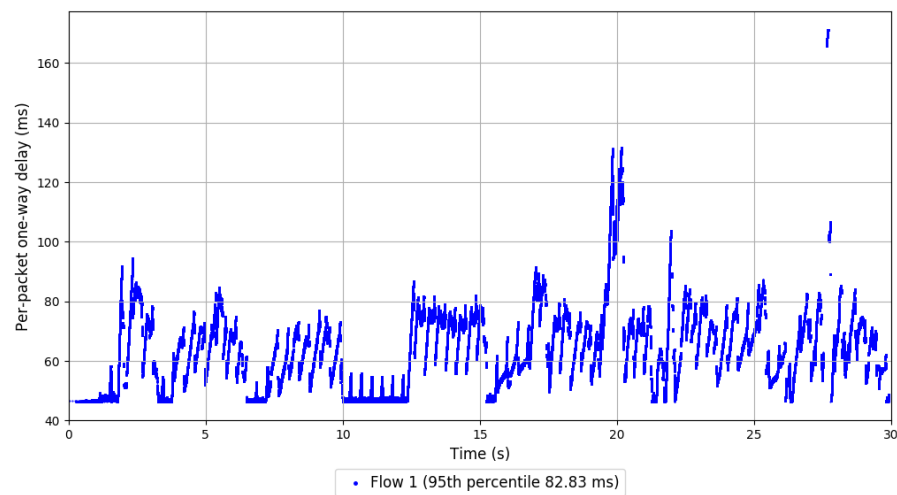
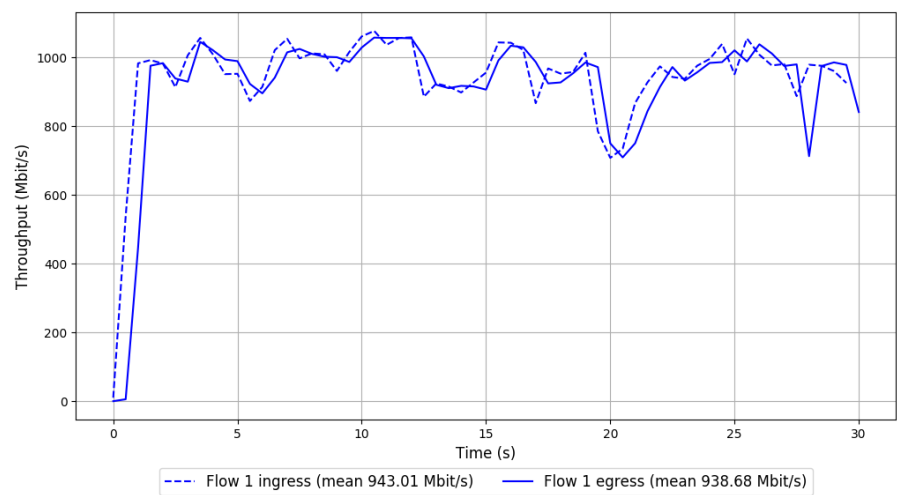


Run 3: Statistics of FillP

Start at: 2018-11-03 12:54:45
End at: 2018-11-03 12:55:15
Local clock offset: -0.112 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-11-03 14:50:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 938.68 Mbit/s
95th percentile per-packet one-way delay: 82.831 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 938.68 Mbit/s
95th percentile per-packet one-way delay: 82.831 ms
Loss rate: 0.77%

Run 3: Report of FillP — Data Link

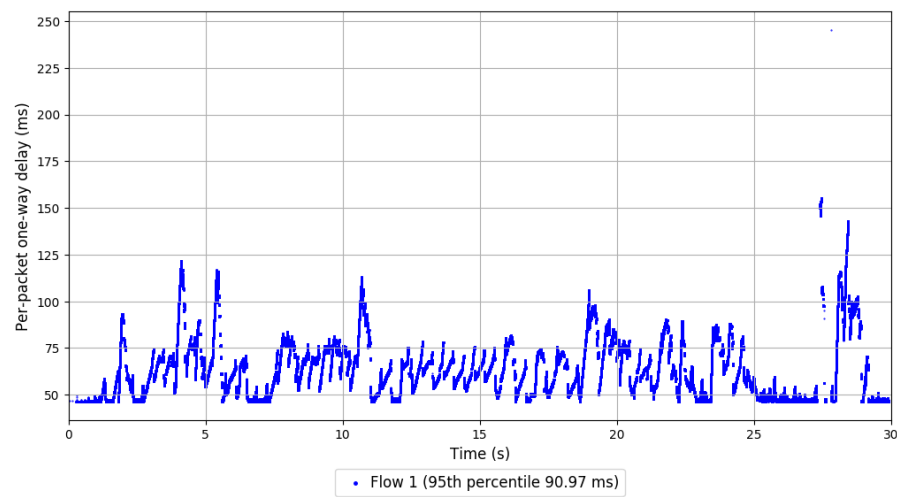
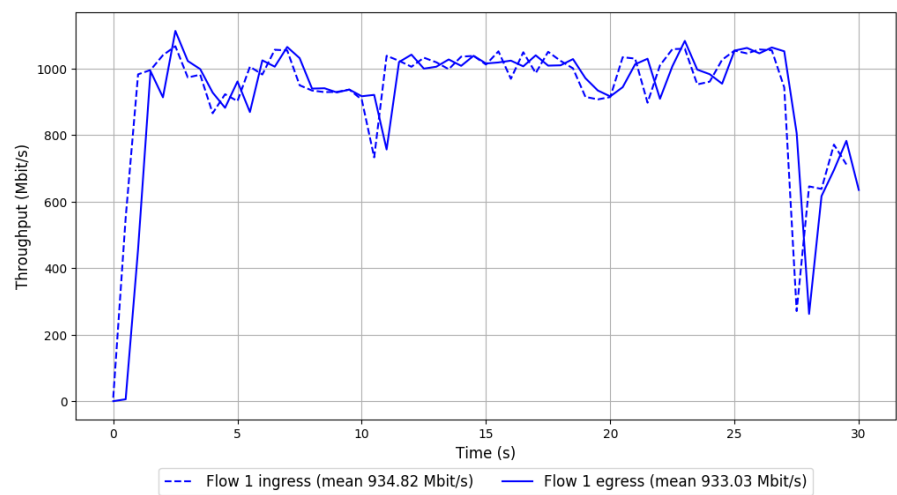


Run 4: Statistics of FillP

Start at: 2018-11-03 13:20:49
End at: 2018-11-03 13:21:19
Local clock offset: -0.183 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-11-03 14:50:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 933.03 Mbit/s
95th percentile per-packet one-way delay: 90.973 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 933.03 Mbit/s
95th percentile per-packet one-way delay: 90.973 ms
Loss rate: 0.51%

Run 4: Report of FillP — Data Link

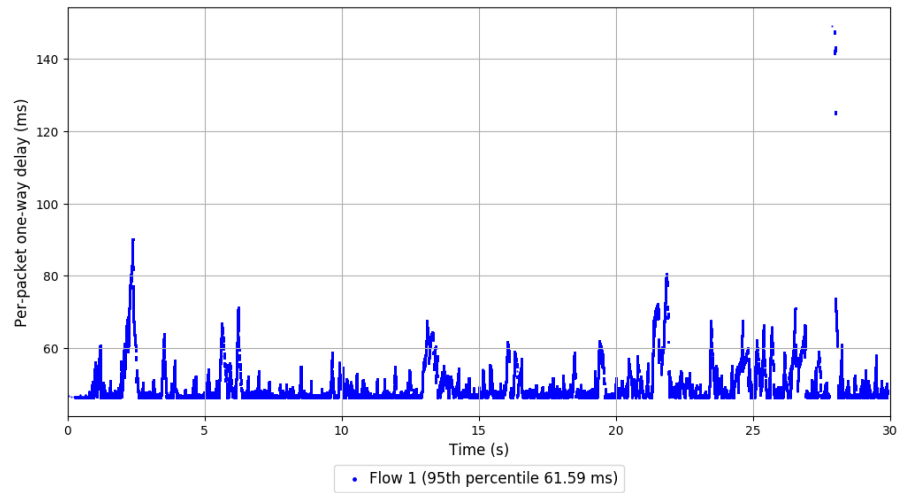
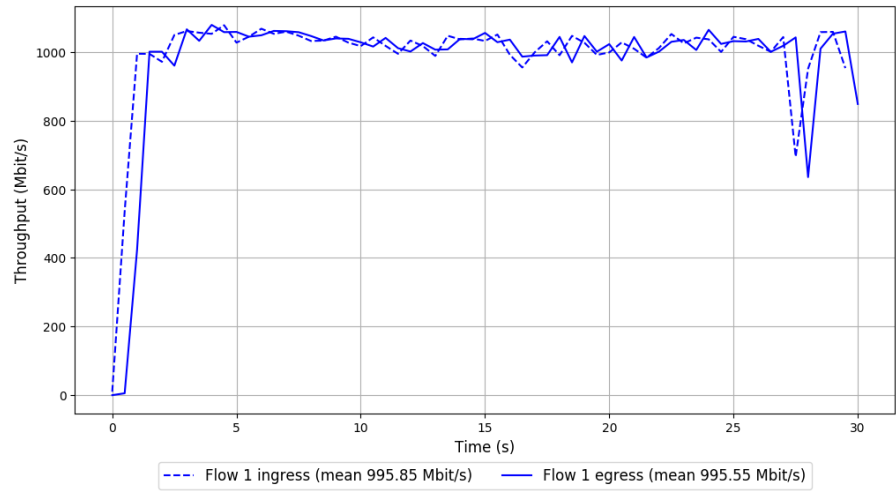


Run 5: Statistics of FillP

Start at: 2018-11-03 13:47:00
End at: 2018-11-03 13:47:30
Local clock offset: -0.095 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 995.55 Mbit/s
95th percentile per-packet one-way delay: 61.588 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 995.55 Mbit/s
95th percentile per-packet one-way delay: 61.588 ms
Loss rate: 0.35%

Run 5: Report of FillP — Data Link

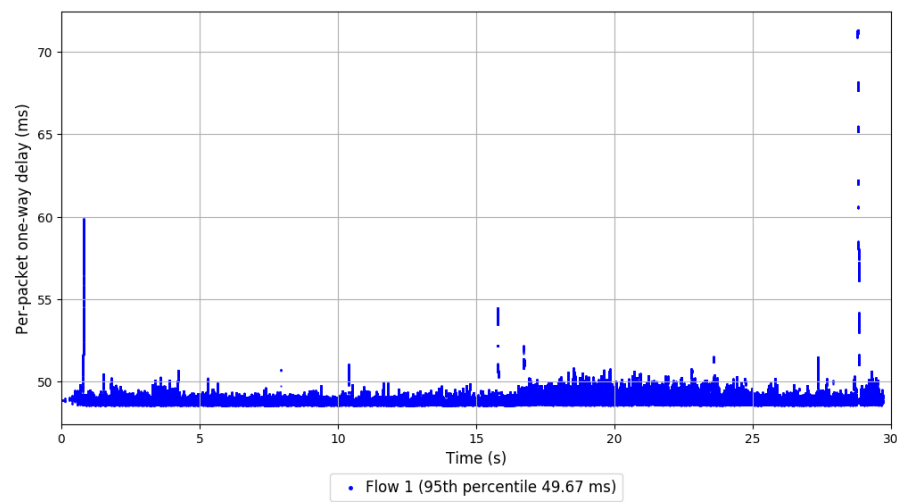
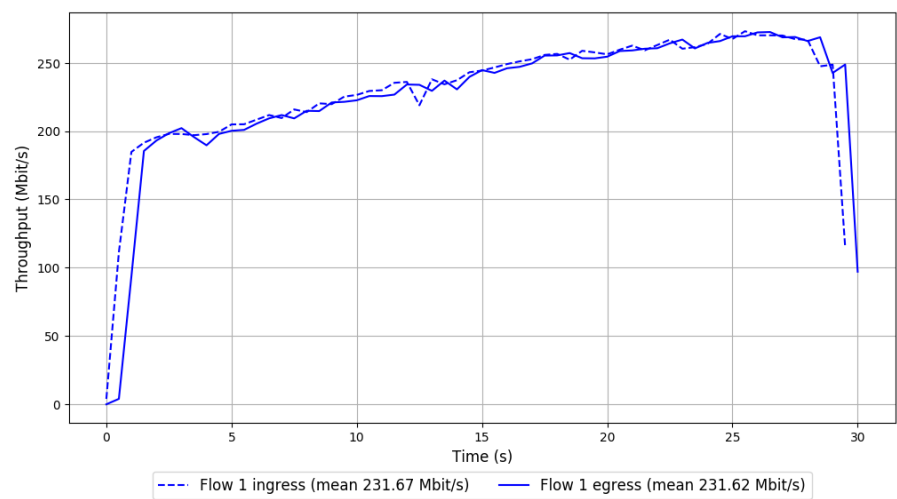


```
Run 1: Statistics of Indigo

Start at: 2018-11-03 12:06:36
End at: 2018-11-03 12:07:06
Local clock offset: -0.067 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2018-11-03 14:52:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.62 Mbit/s
95th percentile per-packet one-way delay: 49.670 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 231.62 Mbit/s
95th percentile per-packet one-way delay: 49.670 ms
Loss rate: 0.34%
```

Run 1: Report of Indigo — Data Link

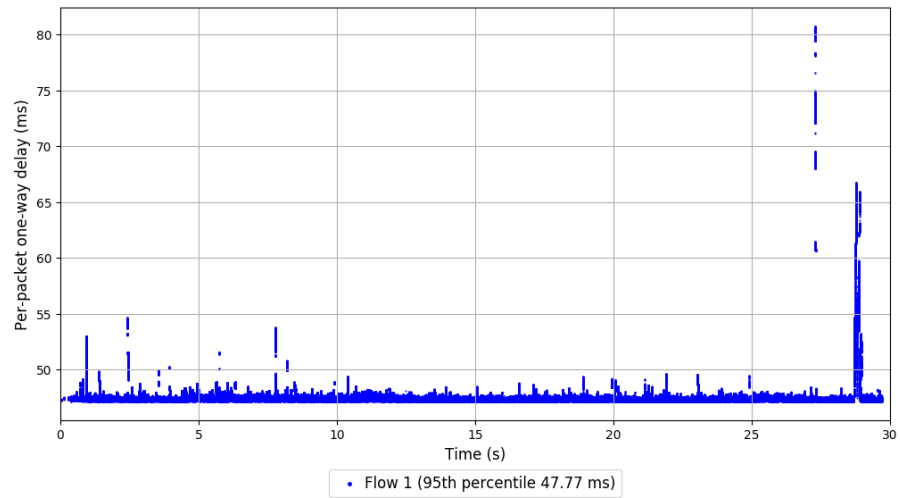
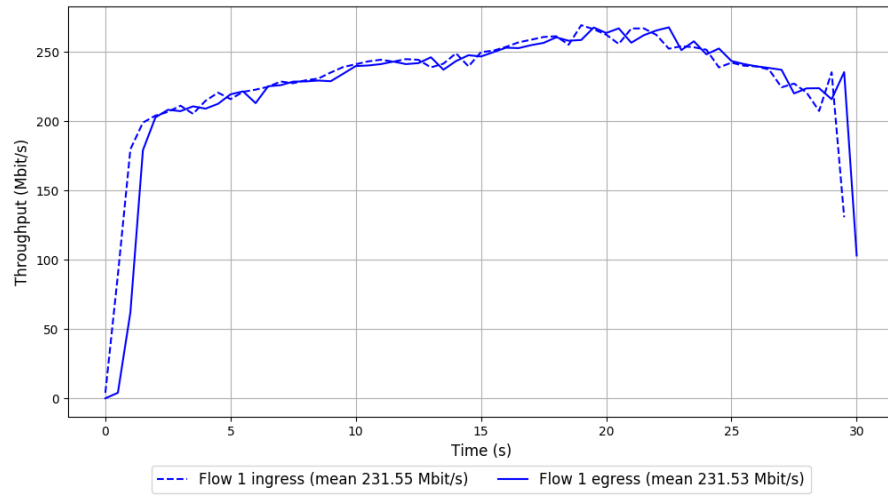


Run 2: Statistics of Indigo

Start at: 2018-11-03 12:32:29
End at: 2018-11-03 12:32:59
Local clock offset: -0.099 ms
Remote clock offset: -0.065 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 231.53 Mbit/s
95th percentile per-packet one-way delay: 47.773 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 231.53 Mbit/s
95th percentile per-packet one-way delay: 47.773 ms
Loss rate: 0.34%

Run 2: Report of Indigo — Data Link

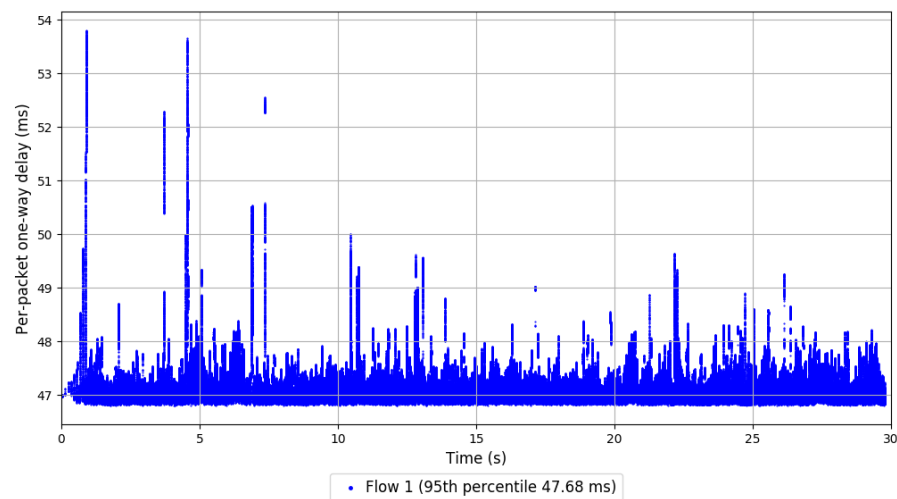
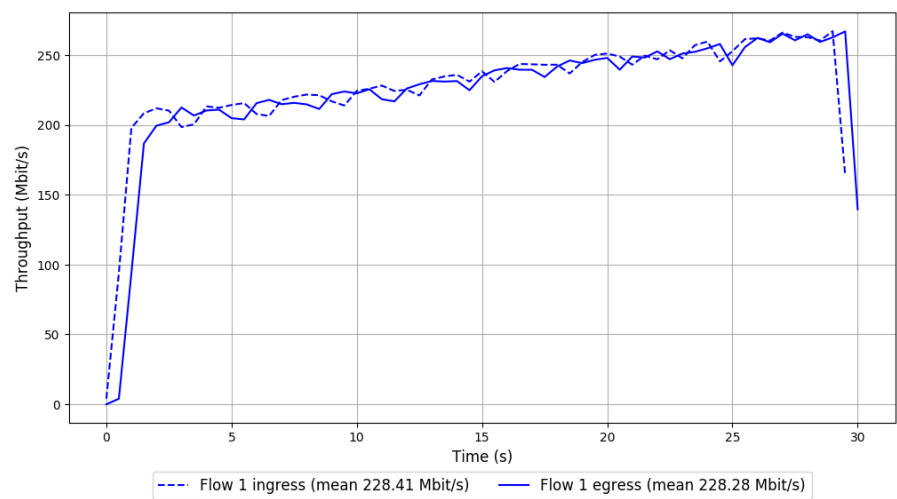


Run 3: Statistics of Indigo

Start at: 2018-11-03 12:58:49
End at: 2018-11-03 12:59:19
Local clock offset: -0.514 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 228.28 Mbit/s
95th percentile per-packet one-way delay: 47.684 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 228.28 Mbit/s
95th percentile per-packet one-way delay: 47.684 ms
Loss rate: 0.37%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-03 13:24:53

End at: 2018-11-03 13:25:24

Local clock offset: -0.546 ms

Remote clock offset: -0.074 ms

Below is generated by plot.py at 2018-11-03 14:52:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 233.49 Mbit/s

95th percentile per-packet one-way delay: 50.156 ms

Loss rate: 0.40%

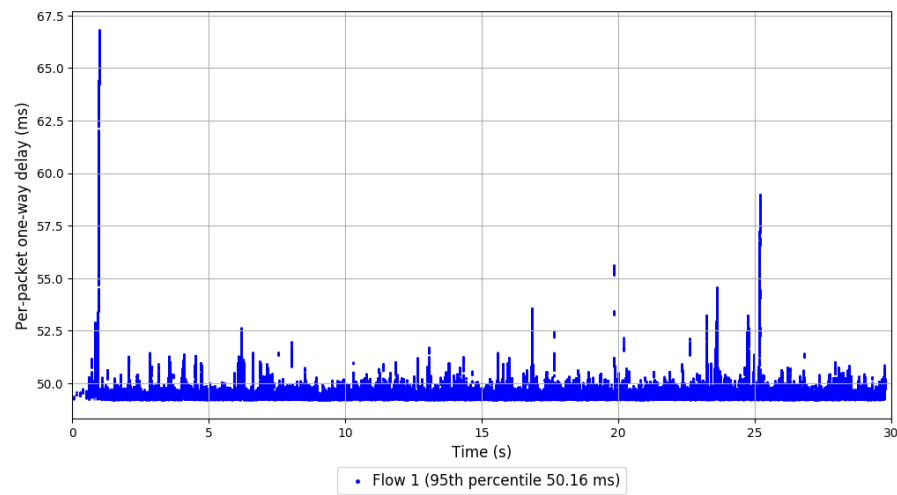
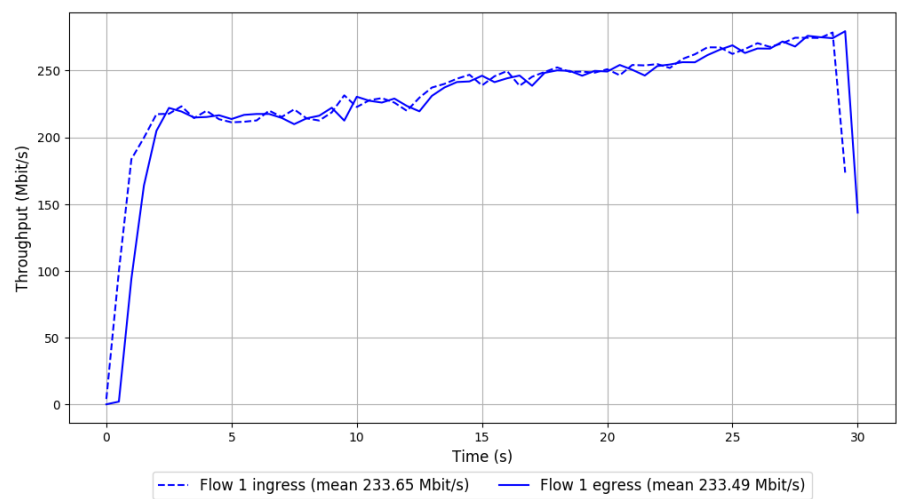
-- Flow 1:

Average throughput: 233.49 Mbit/s

95th percentile per-packet one-way delay: 50.156 ms

Loss rate: 0.40%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-11-03 13:51:06

End at: 2018-11-03 13:51:36

Local clock offset: -0.077 ms

Remote clock offset: -0.15 ms

Below is generated by plot.py at 2018-11-03 14:52:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 223.68 Mbit/s

95th percentile per-packet one-way delay: 48.682 ms

Loss rate: 0.33%

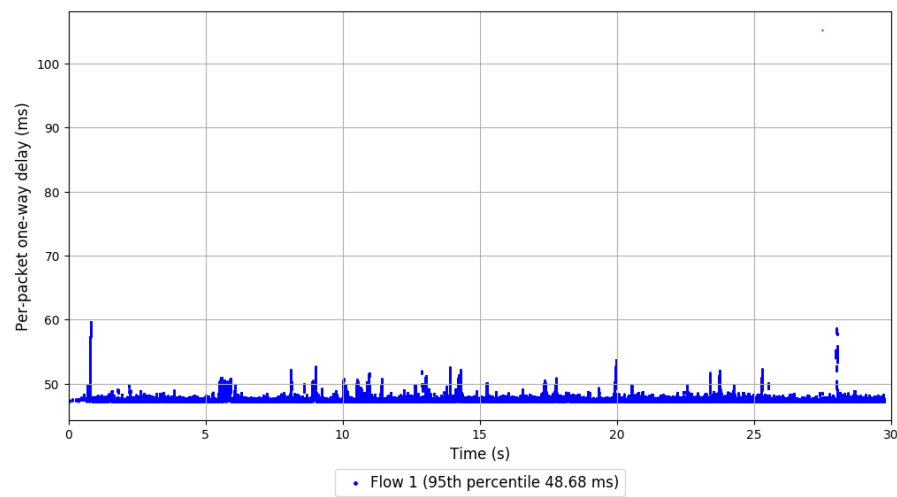
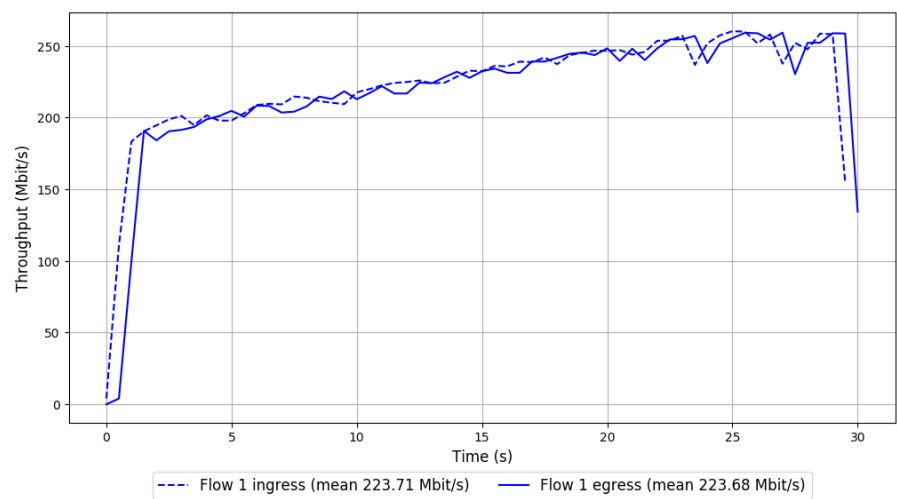
-- Flow 1:

Average throughput: 223.68 Mbit/s

95th percentile per-packet one-way delay: 48.682 ms

Loss rate: 0.33%

Run 5: Report of Indigo — Data Link

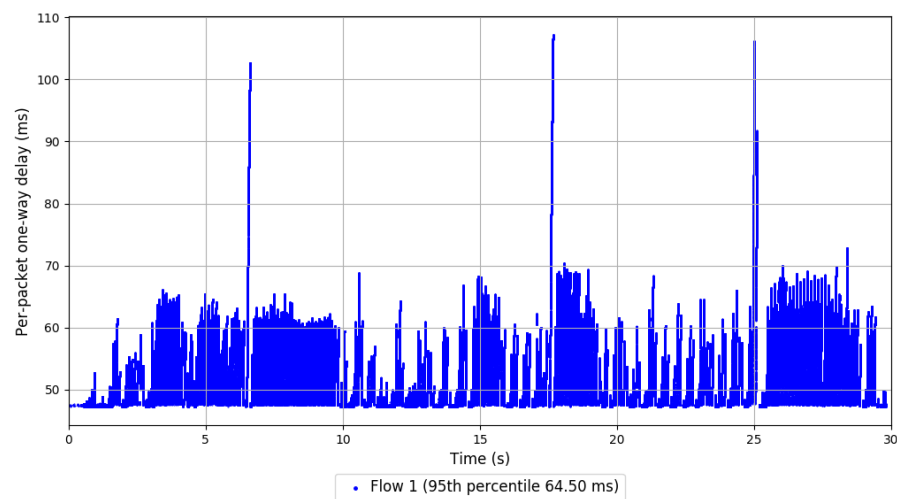
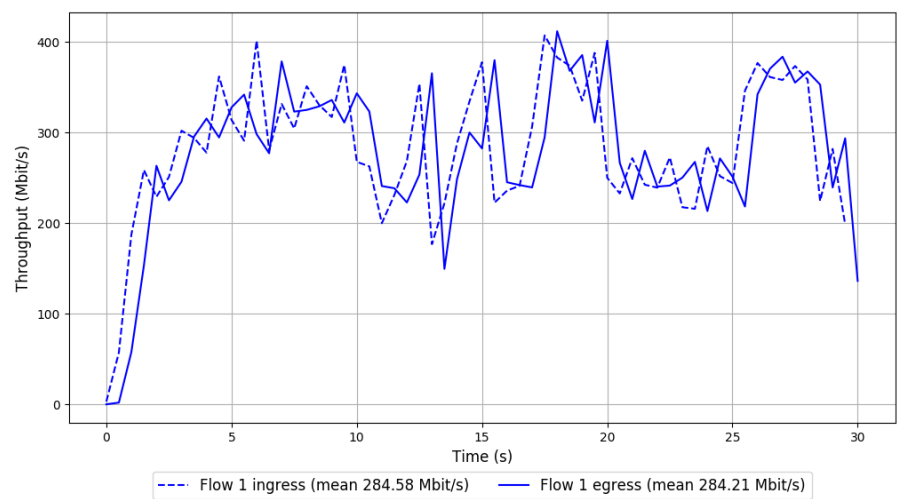


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-03 11:56:32
End at: 2018-11-03 11:57:02
Local clock offset: -0.001 ms
Remote clock offset: -0.104 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 284.21 Mbit/s
95th percentile per-packet one-way delay: 64.495 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 284.21 Mbit/s
95th percentile per-packet one-way delay: 64.495 ms
Loss rate: 0.48%

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

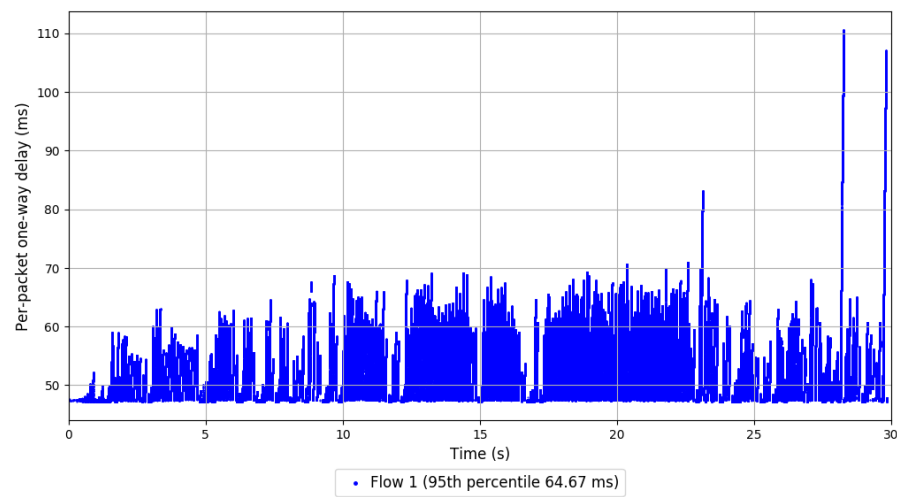
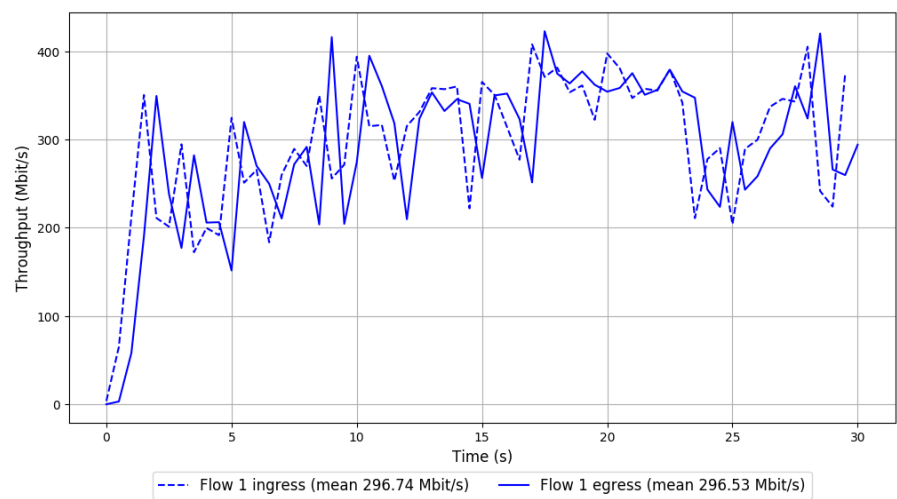


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-03 12:22:25
End at: 2018-11-03 12:22:55
Local clock offset: -0.092 ms
Remote clock offset: -0.101 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 296.53 Mbit/s
95th percentile per-packet one-way delay: 64.671 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 296.53 Mbit/s
95th percentile per-packet one-way delay: 64.671 ms
Loss rate: 0.46%

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

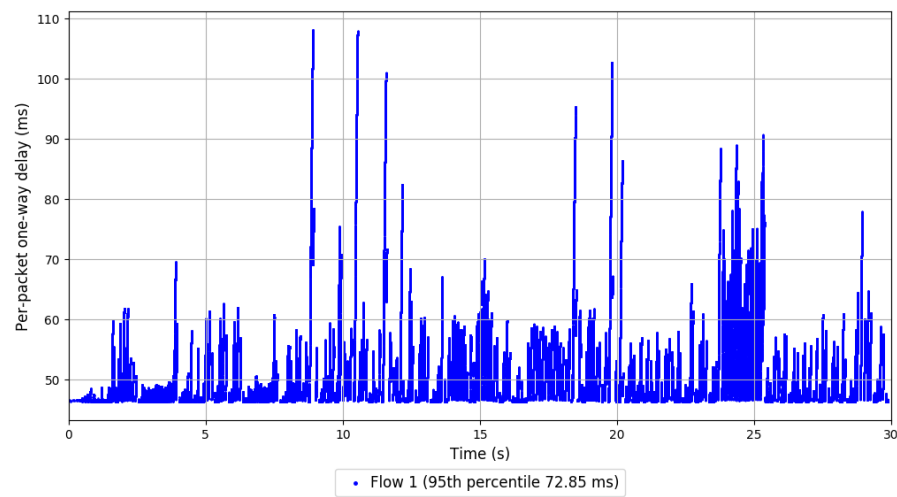
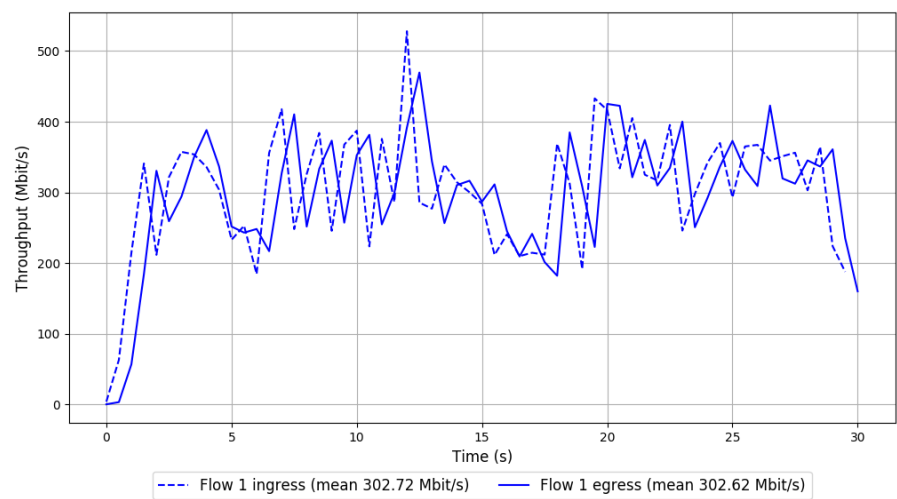


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-03 12:48:37
End at: 2018-11-03 12:49:07
Local clock offset: -0.137 ms
Remote clock offset: -0.093 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 302.62 Mbit/s
95th percentile per-packet one-way delay: 72.853 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 302.62 Mbit/s
95th percentile per-packet one-way delay: 72.853 ms
Loss rate: 0.35%

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

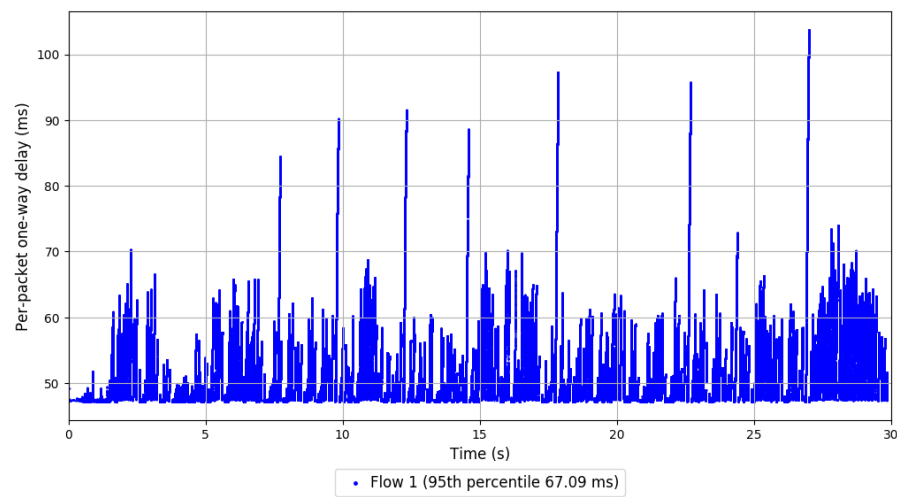
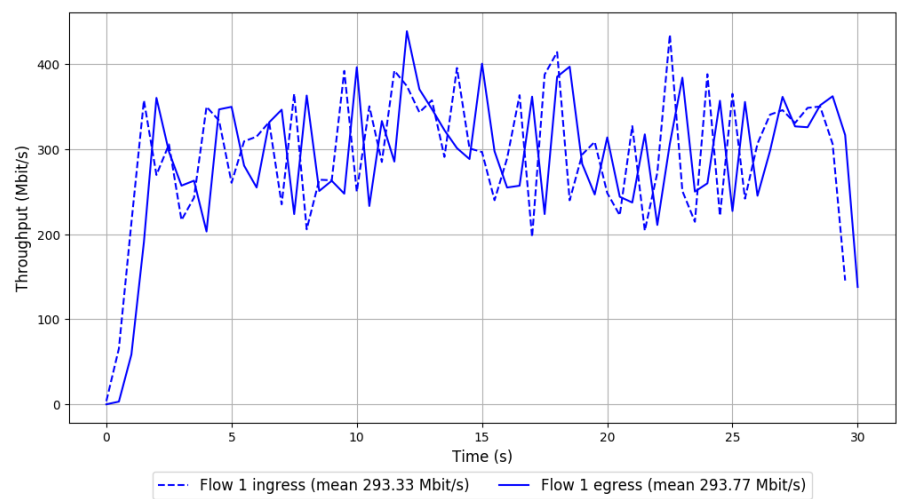


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-03 13:14:44
End at: 2018-11-03 13:15:14
Local clock offset: -0.182 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 293.77 Mbit/s
95th percentile per-packet one-way delay: 67.087 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 293.77 Mbit/s
95th percentile per-packet one-way delay: 67.087 ms
Loss rate: 0.18%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-03 13:40:53

End at: 2018-11-03 13:41:23

Local clock offset: -0.074 ms

Remote clock offset: -0.11 ms

Below is generated by plot.py at 2018-11-03 14:52:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 278.71 Mbit/s

95th percentile per-packet one-way delay: 62.453 ms

Loss rate: 0.71%

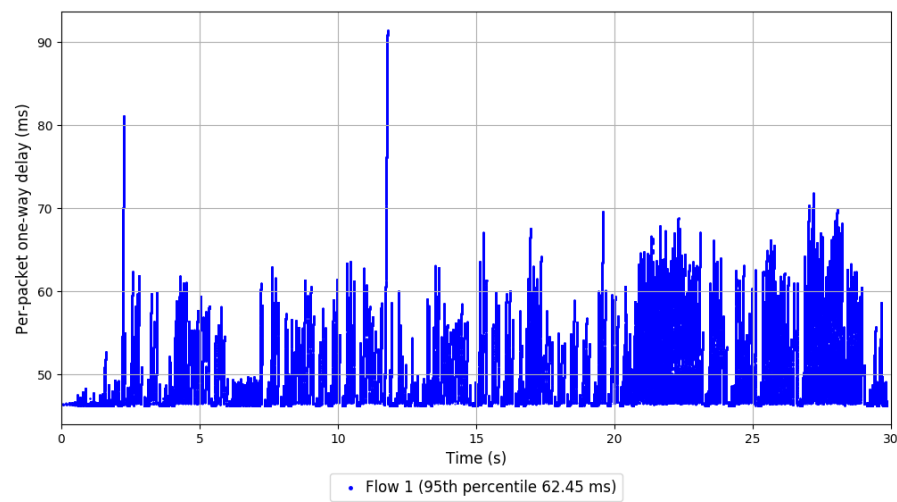
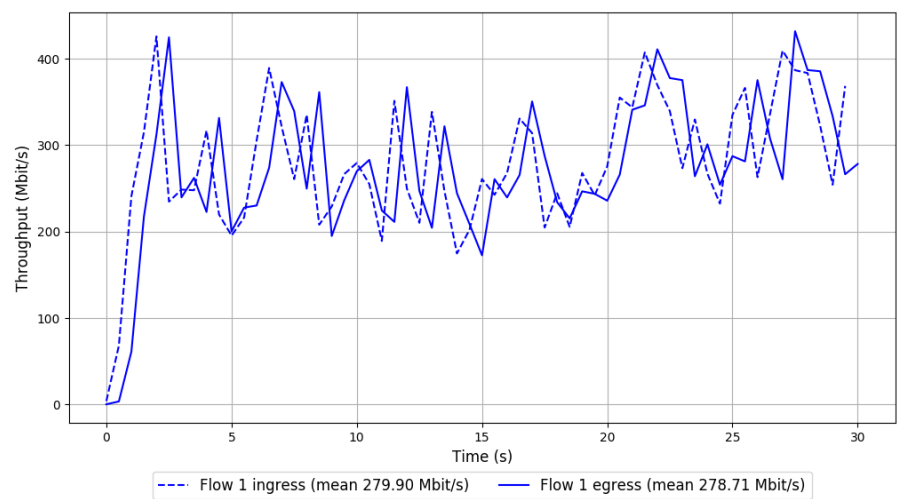
-- Flow 1:

Average throughput: 278.71 Mbit/s

95th percentile per-packet one-way delay: 62.453 ms

Loss rate: 0.71%

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

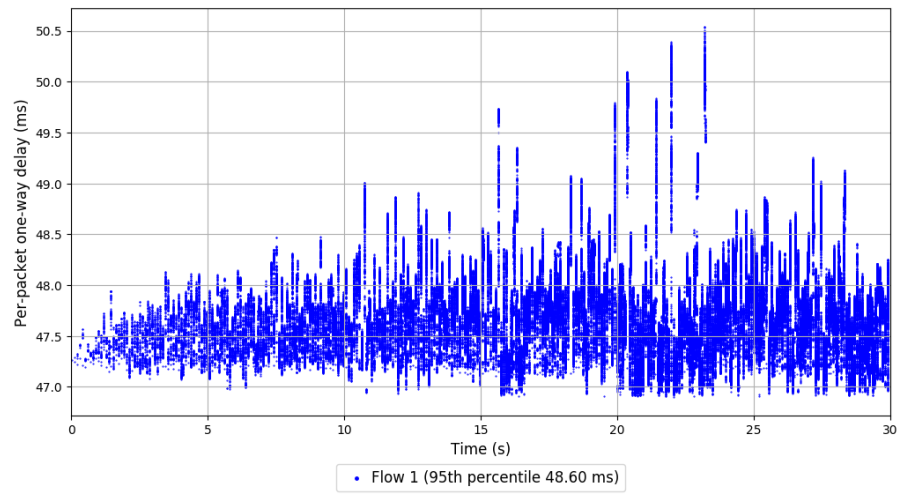
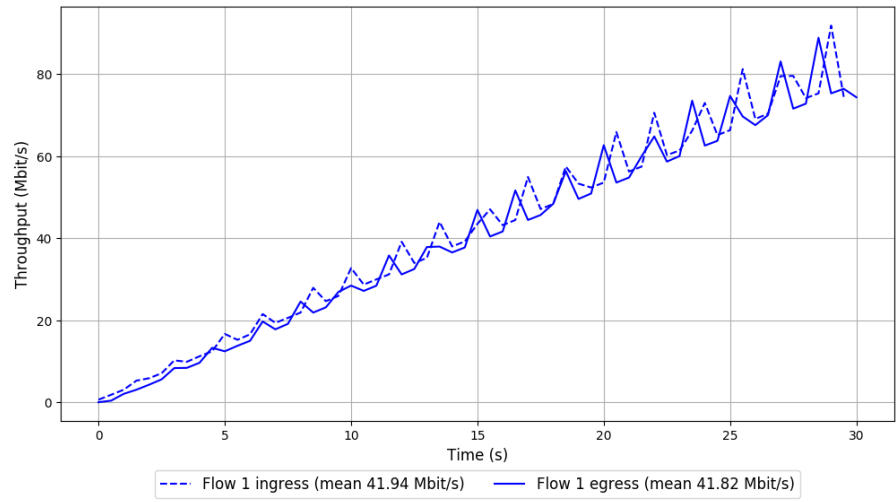


Run 1: Statistics of LEDBAT

Start at: 2018-11-03 11:55:20
End at: 2018-11-03 11:55:50
Local clock offset: -0.092 ms
Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 41.82 Mbit/s
95th percentile per-packet one-way delay: 48.597 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 41.82 Mbit/s
95th percentile per-packet one-way delay: 48.597 ms
Loss rate: 0.62%

Run 1: Report of LEDBAT — Data Link

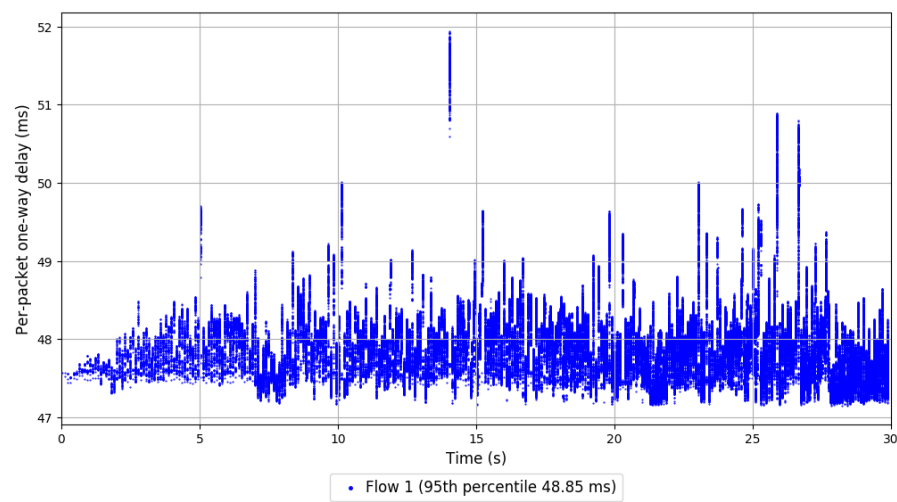
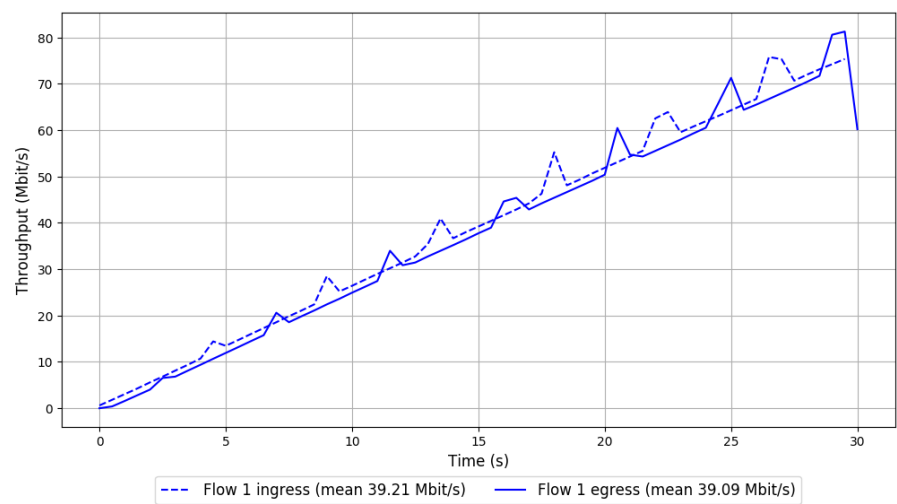


Run 2: Statistics of LEDBAT

Start at: 2018-11-03 12:21:14
End at: 2018-11-03 12:21:44
Local clock offset: -0.065 ms
Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 39.09 Mbit/s
95th percentile per-packet one-way delay: 48.853 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 39.09 Mbit/s
95th percentile per-packet one-way delay: 48.853 ms
Loss rate: 0.65%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

/home/ubuntu/pantheon/data/2018-11-03T11-44-GCE-Iowa-to-GCE-London-5-runs/ledbat_stats_run3.

Run 3: Report of LEDBAT — Data Link

Figure is missing

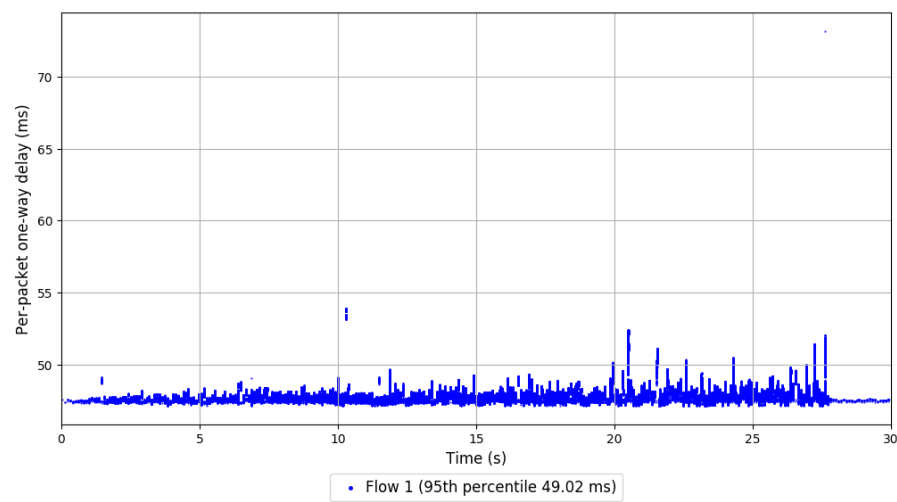
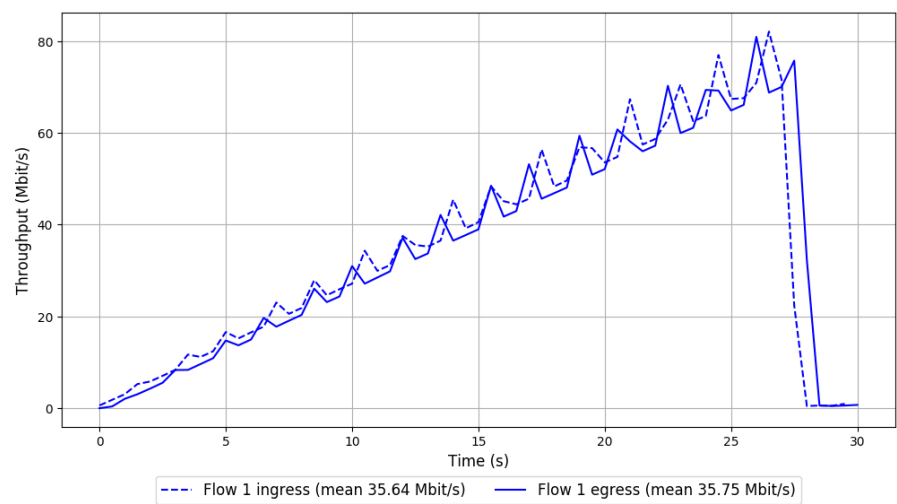
Figure is missing

Run 4: Statistics of LEDBAT

Start at: 2018-11-03 13:13:33
End at: 2018-11-03 13:14:03
Local clock offset: -0.147 ms
Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 35.75 Mbit/s
95th percentile per-packet one-way delay: 49.019 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 35.75 Mbit/s
95th percentile per-packet one-way delay: 49.019 ms
Loss rate: 0.01%

Run 4: Report of LEDBAT — Data Link

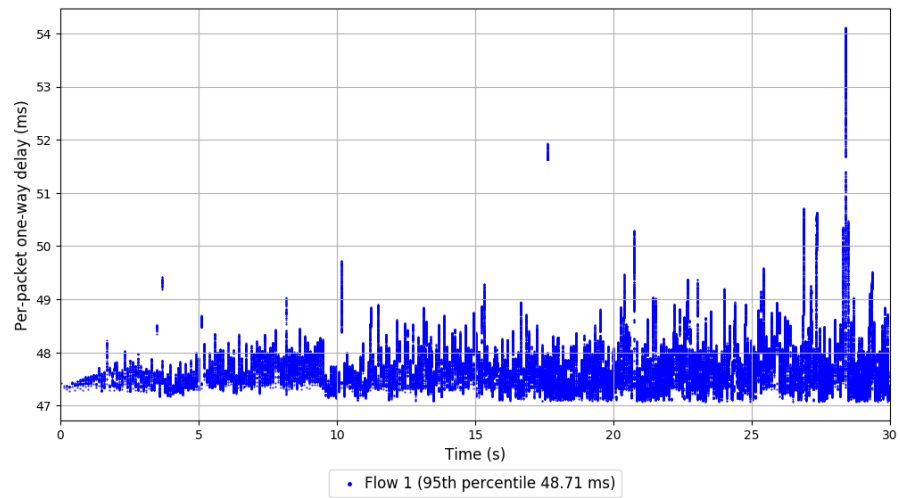
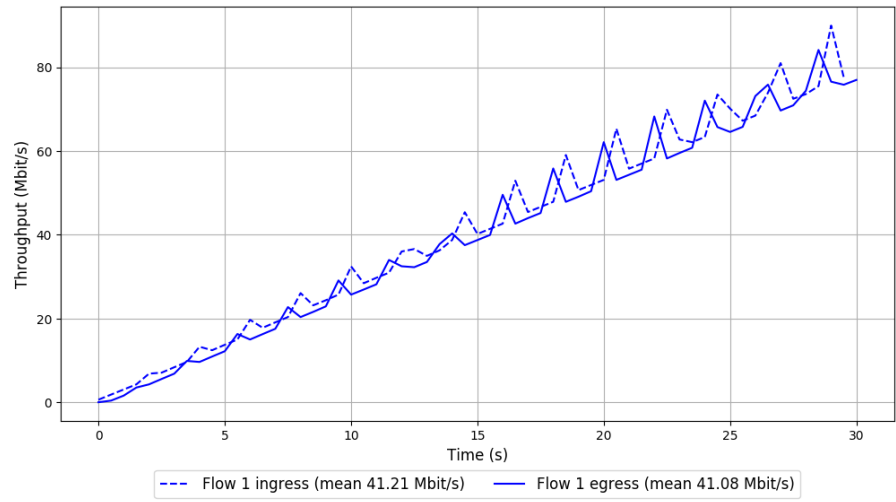


Run 5: Statistics of LEDBAT

Start at: 2018-11-03 13:39:42
End at: 2018-11-03 13:40:12
Local clock offset: -0.103 ms
Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-11-03 14:52:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 41.08 Mbit/s
95th percentile per-packet one-way delay: 48.706 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 41.08 Mbit/s
95th percentile per-packet one-way delay: 48.706 ms
Loss rate: 0.63%

Run 5: Report of LEDBAT — Data Link

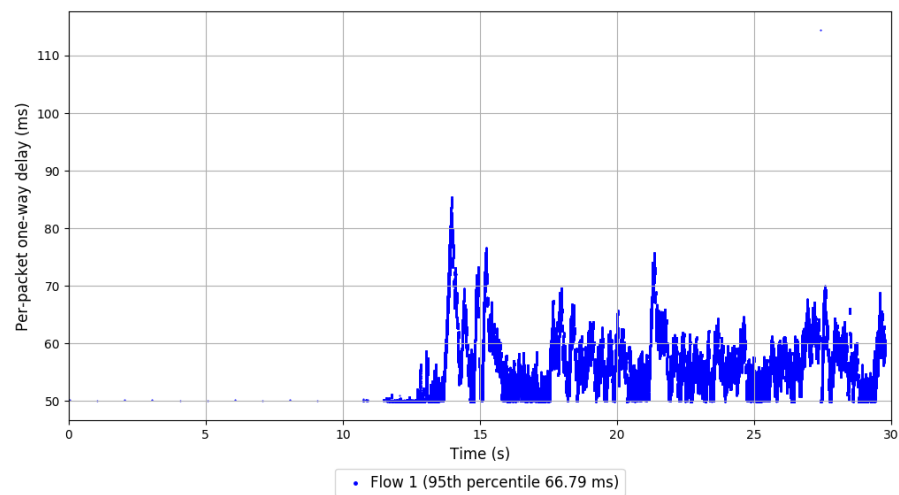
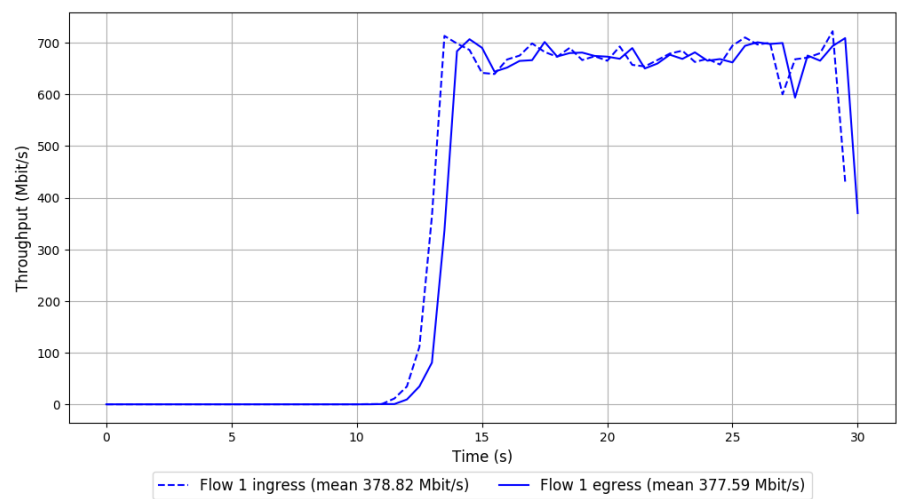


Run 1: Statistics of Indigo-Muses

Start at: 2018-11-03 11:45:12
End at: 2018-11-03 11:45:42
Local clock offset: -0.045 ms
Remote clock offset: -0.058 ms

Below is generated by plot.py at 2018-11-03 14:55:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 377.59 Mbit/s
95th percentile per-packet one-way delay: 66.786 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 377.59 Mbit/s
95th percentile per-packet one-way delay: 66.786 ms
Loss rate: 0.65%

Run 1: Report of Indigo-Muses — Data Link

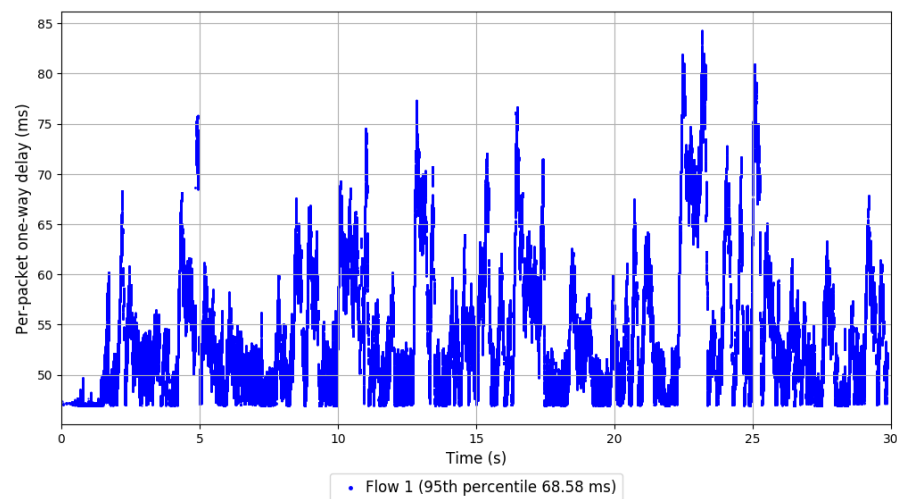
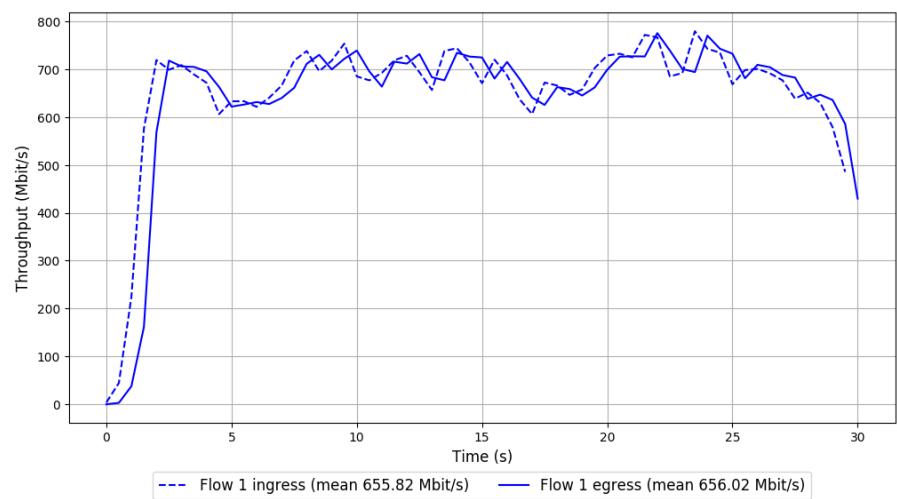


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-03 12:10:50
End at: 2018-11-03 12:11:20
Local clock offset: -0.056 ms
Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-11-03 15:02:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 656.02 Mbit/s
95th percentile per-packet one-way delay: 68.577 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 656.02 Mbit/s
95th percentile per-packet one-way delay: 68.577 ms
Loss rate: 0.29%

Run 2: Report of Indigo-Muses — Data Link

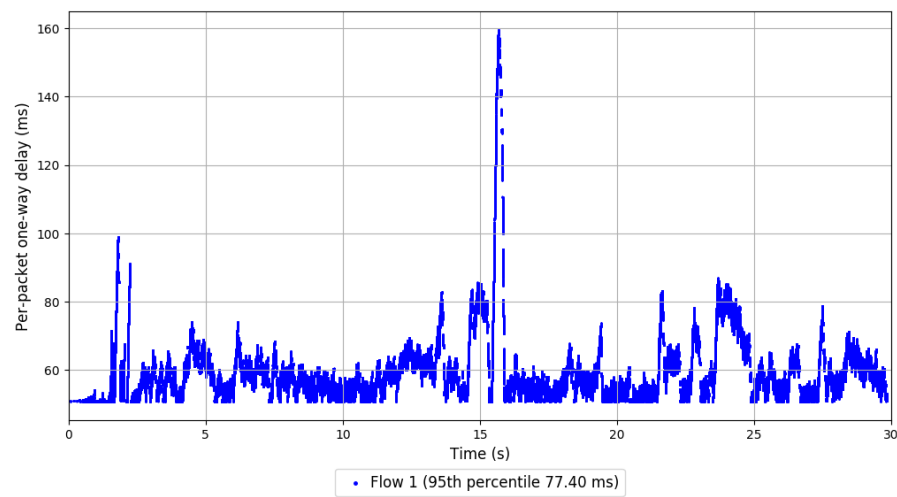
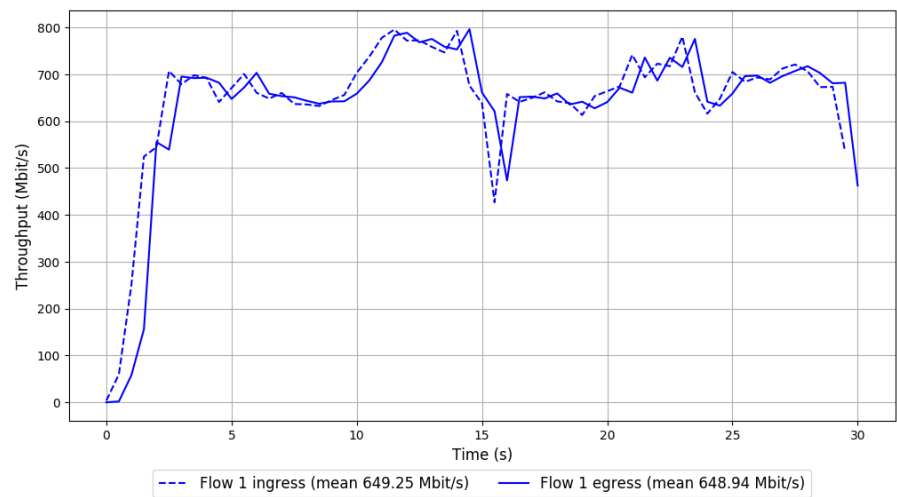


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-03 12:36:43
End at: 2018-11-03 12:37:13
Local clock offset: -0.105 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-11-03 15:03:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 648.94 Mbit/s
95th percentile per-packet one-way delay: 77.400 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 648.94 Mbit/s
95th percentile per-packet one-way delay: 77.400 ms
Loss rate: 0.37%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-11-03 13:03:07

End at: 2018-11-03 13:03:37

Local clock offset: -0.474 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-11-03 15:04:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 677.71 Mbit/s

95th percentile per-packet one-way delay: 71.259 ms

Loss rate: 0.36%

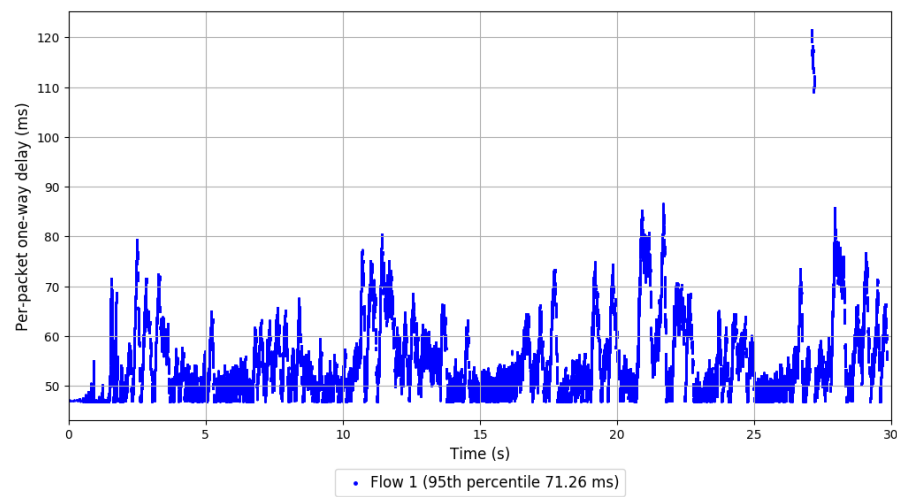
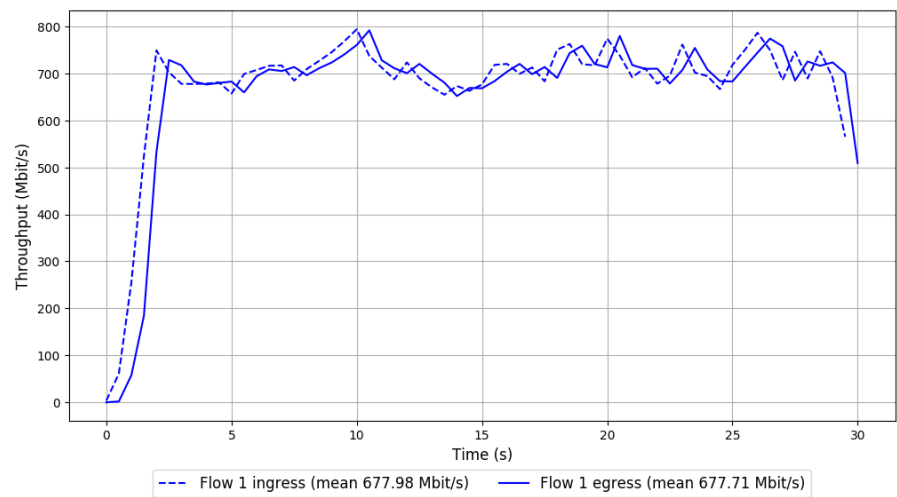
-- Flow 1:

Average throughput: 677.71 Mbit/s

95th percentile per-packet one-way delay: 71.259 ms

Loss rate: 0.36%

Run 4: Report of Indigo-Muses — Data Link

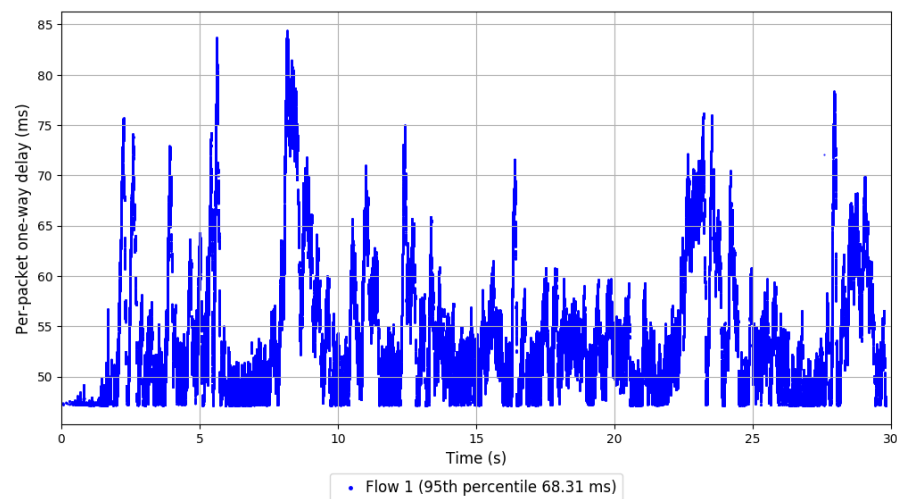
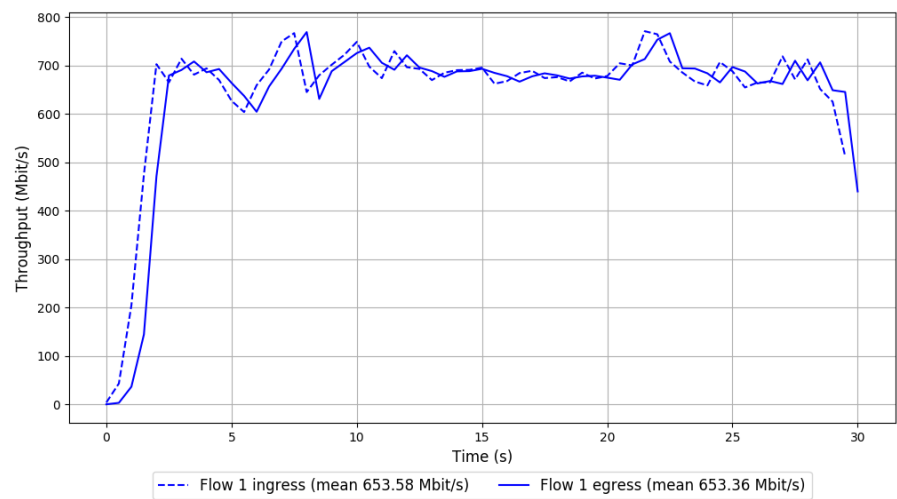


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-03 13:29:09
End at: 2018-11-03 13:29:39
Local clock offset: -0.195 ms
Remote clock offset: -0.051 ms

Below is generated by plot.py at 2018-11-03 15:04:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 653.36 Mbit/s
95th percentile per-packet one-way delay: 68.312 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 653.36 Mbit/s
95th percentile per-packet one-way delay: 68.312 ms
Loss rate: 0.35%

Run 5: Report of Indigo-Muses — Data Link

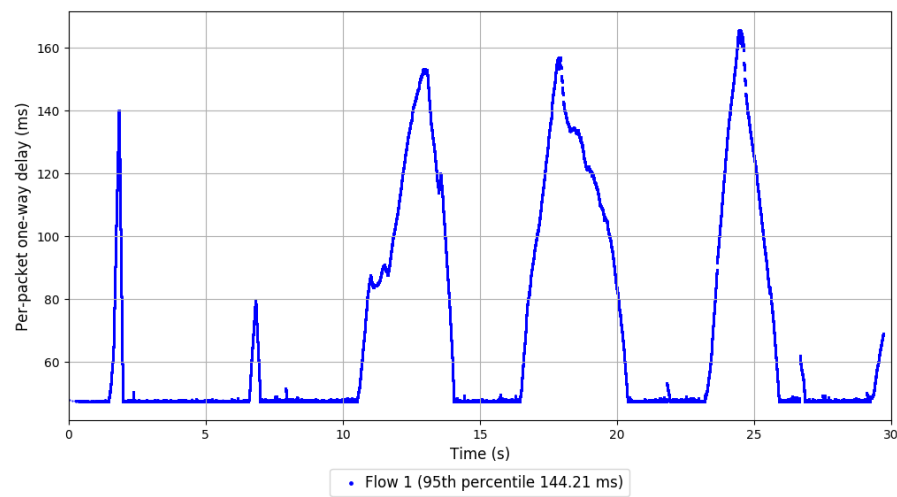
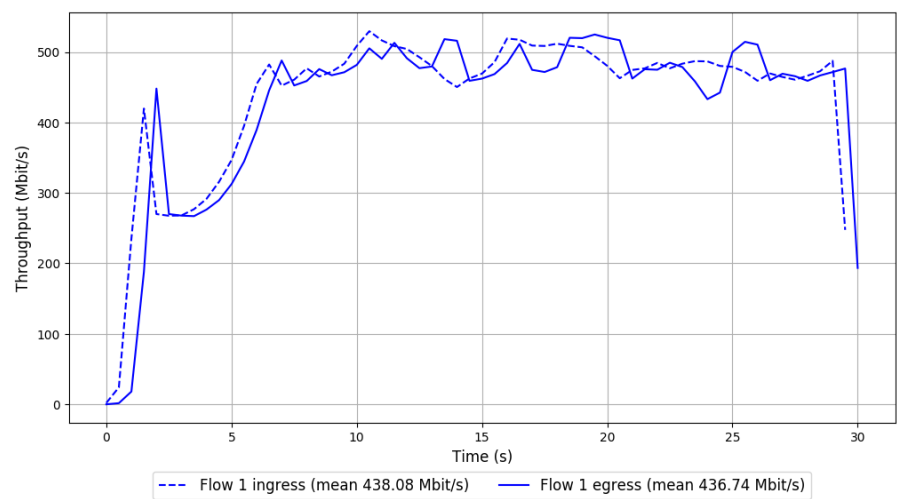


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-03 11:59:24
End at: 2018-11-03 11:59:54
Local clock offset: -0.022 ms
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2018-11-03 15:07:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 436.74 Mbit/s
95th percentile per-packet one-way delay: 144.206 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 436.74 Mbit/s
95th percentile per-packet one-way delay: 144.206 ms
Loss rate: 0.63%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-03 12:25:18

End at: 2018-11-03 12:25:48

Local clock offset: -0.071 ms

Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-11-03 15:07:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 391.01 Mbit/s

95th percentile per-packet one-way delay: 152.504 ms

Loss rate: 1.77%

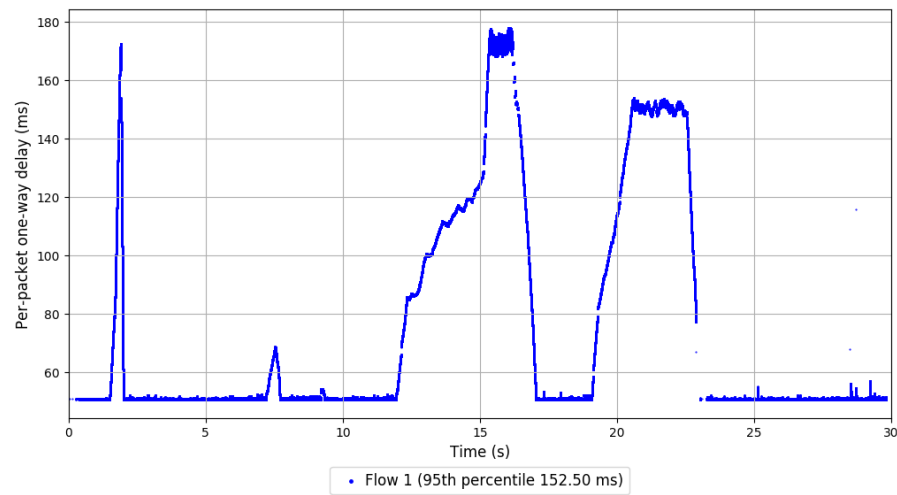
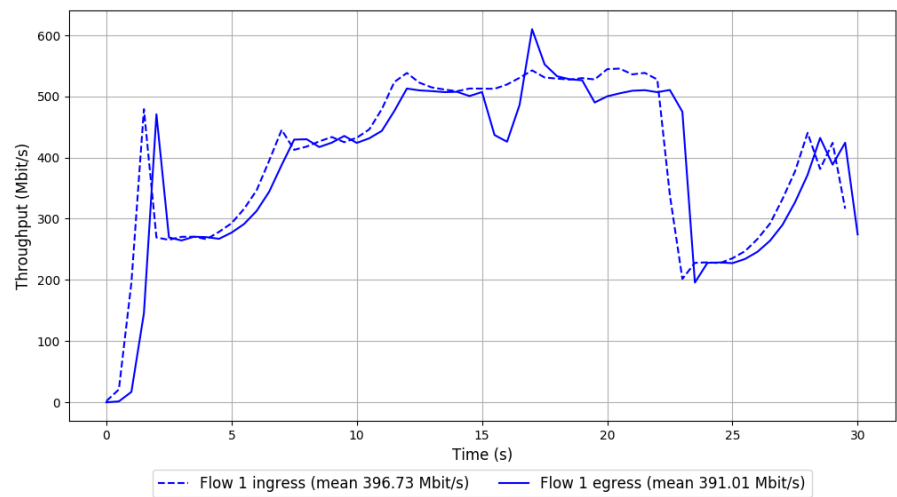
-- Flow 1:

Average throughput: 391.01 Mbit/s

95th percentile per-packet one-way delay: 152.504 ms

Loss rate: 1.77%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-11-03 12:51:33

End at: 2018-11-03 12:52:03

Local clock offset: -0.178 ms

Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-11-03 15:09:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 466.72 Mbit/s

95th percentile per-packet one-way delay: 153.732 ms

Loss rate: 1.48%

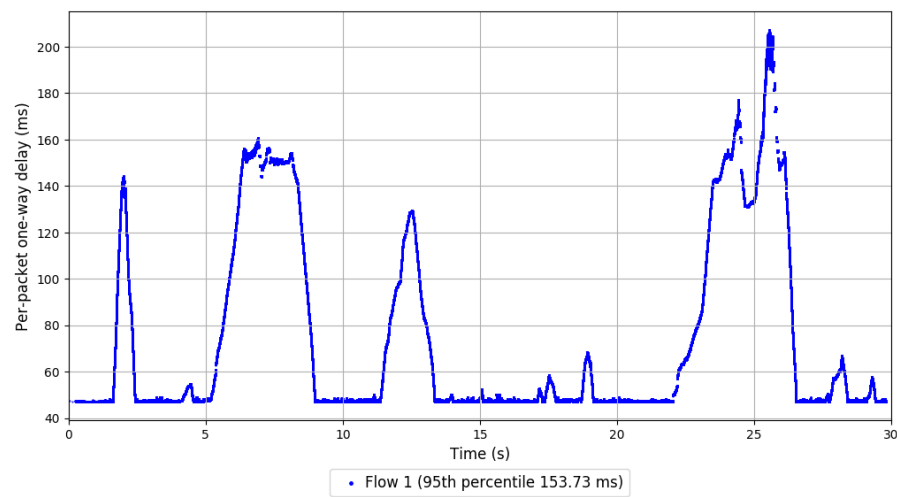
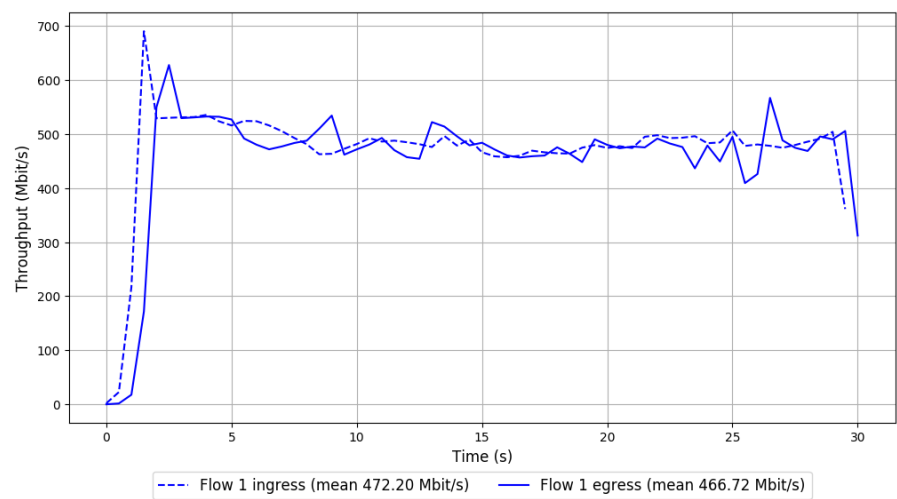
-- Flow 1:

Average throughput: 466.72 Mbit/s

95th percentile per-packet one-way delay: 153.732 ms

Loss rate: 1.48%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-03 13:17:36

End at: 2018-11-03 13:18:06

Local clock offset: 0.143 ms

Remote clock offset: -0.064 ms

Below is generated by plot.py at 2018-11-03 15:14:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 474.50 Mbit/s

95th percentile per-packet one-way delay: 165.317 ms

Loss rate: 4.91%

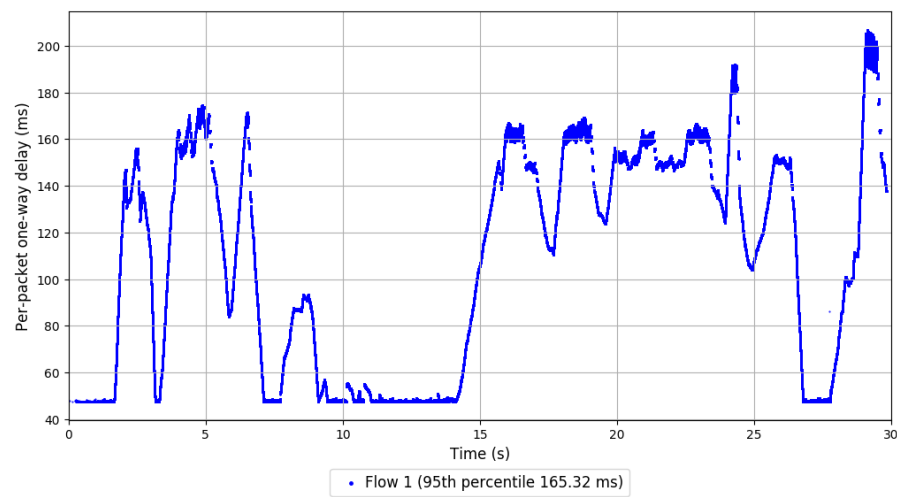
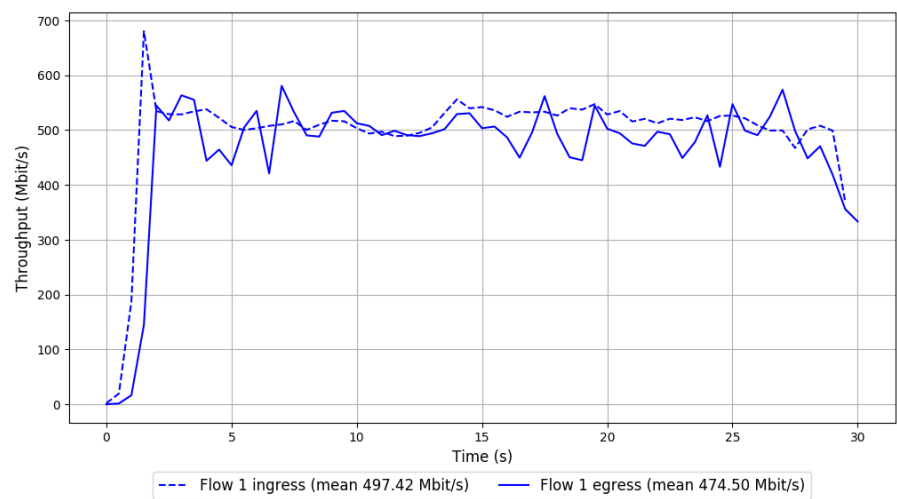
-- Flow 1:

Average throughput: 474.50 Mbit/s

95th percentile per-packet one-way delay: 165.317 ms

Loss rate: 4.91%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-03 13:43:46

End at: 2018-11-03 13:44:16

Local clock offset: -0.097 ms

Remote clock offset: -0.051 ms

Below is generated by plot.py at 2018-11-03 15:20:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 462.99 Mbit/s

95th percentile per-packet one-way delay: 161.357 ms

Loss rate: 2.00%

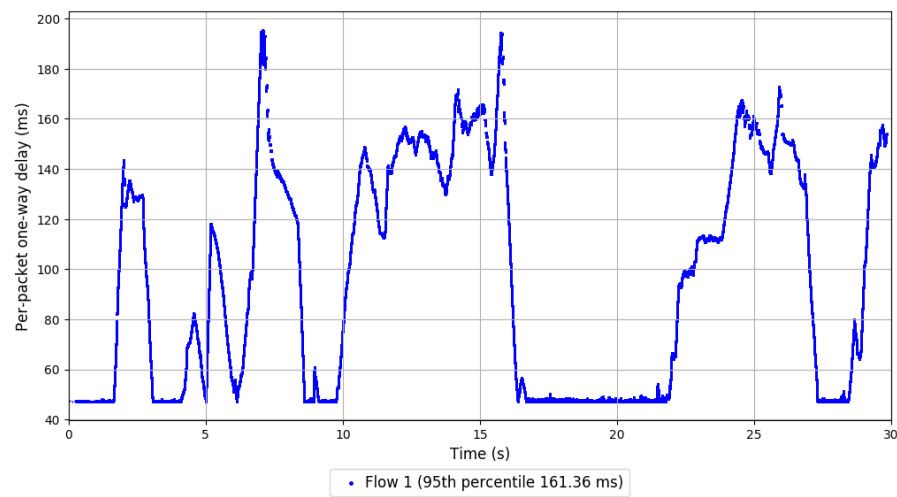
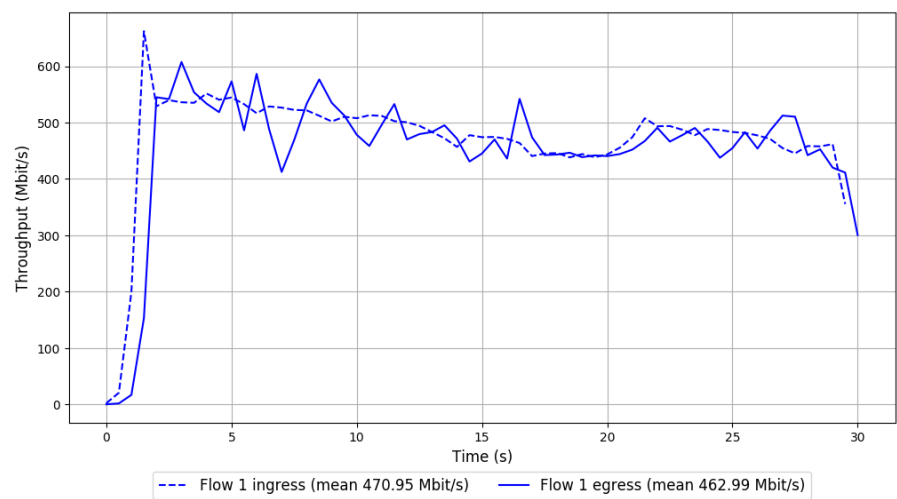
-- Flow 1:

Average throughput: 462.99 Mbit/s

95th percentile per-packet one-way delay: 161.357 ms

Loss rate: 2.00%

Run 5: Report of PCC-Allegro — Data Link

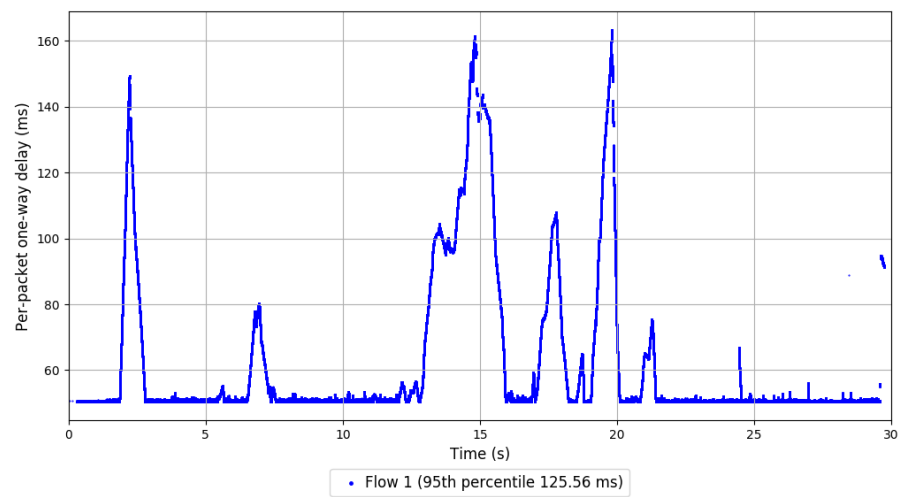
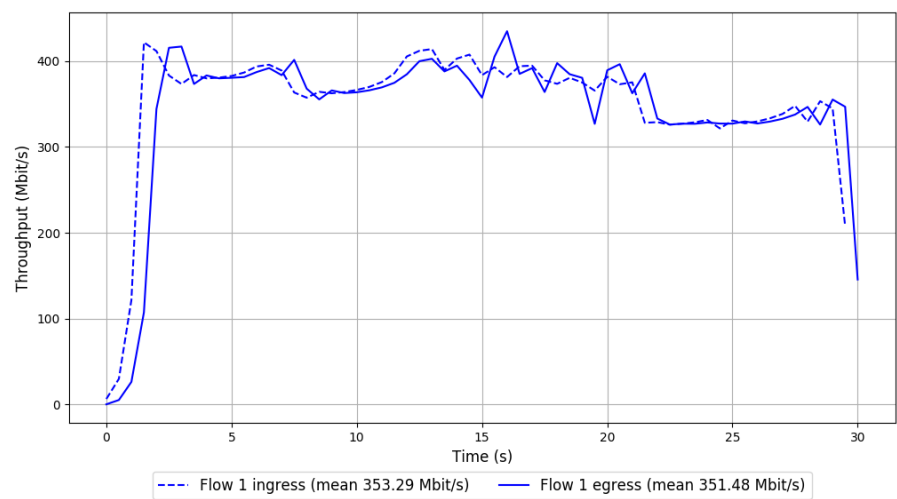


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-03 12:08:03
End at: 2018-11-03 12:08:33
Local clock offset: -0.11 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-11-03 15:20:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 351.48 Mbit/s
95th percentile per-packet one-way delay: 125.561 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 351.48 Mbit/s
95th percentile per-packet one-way delay: 125.561 ms
Loss rate: 0.84%
```

Run 1: Report of PCC-Expr — Data Link

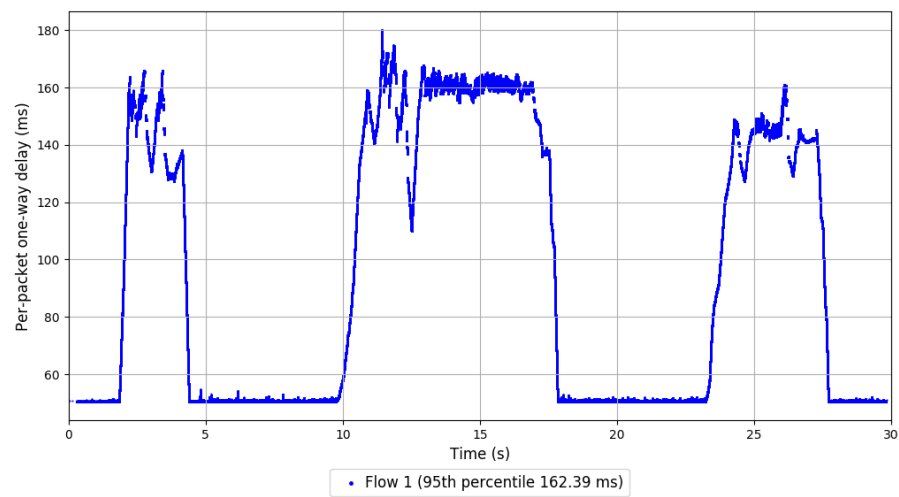
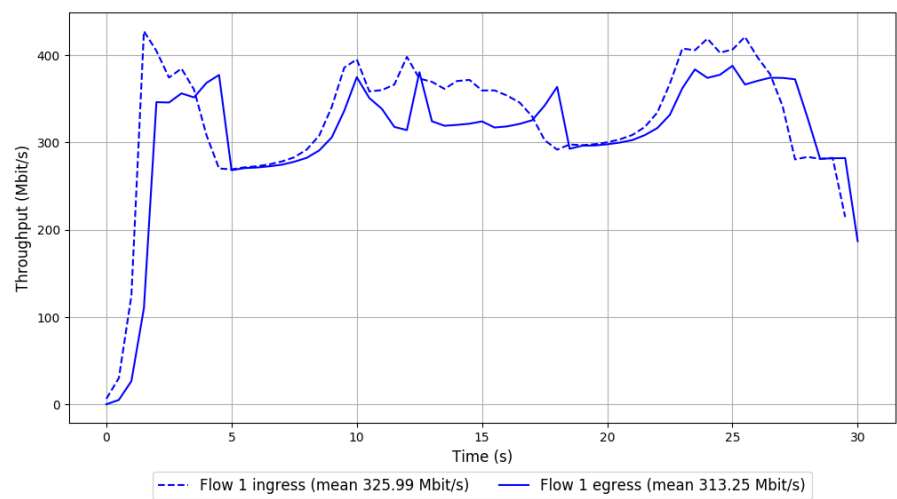


Run 2: Statistics of PCC-Expr

Start at: 2018-11-03 12:33:58
End at: 2018-11-03 12:34:28
Local clock offset: -0.074 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 313.25 Mbit/s
95th percentile per-packet one-way delay: 162.394 ms
Loss rate: 4.23%
-- Flow 1:
Average throughput: 313.25 Mbit/s
95th percentile per-packet one-way delay: 162.394 ms
Loss rate: 4.23%

Run 2: Report of PCC-Expr — Data Link

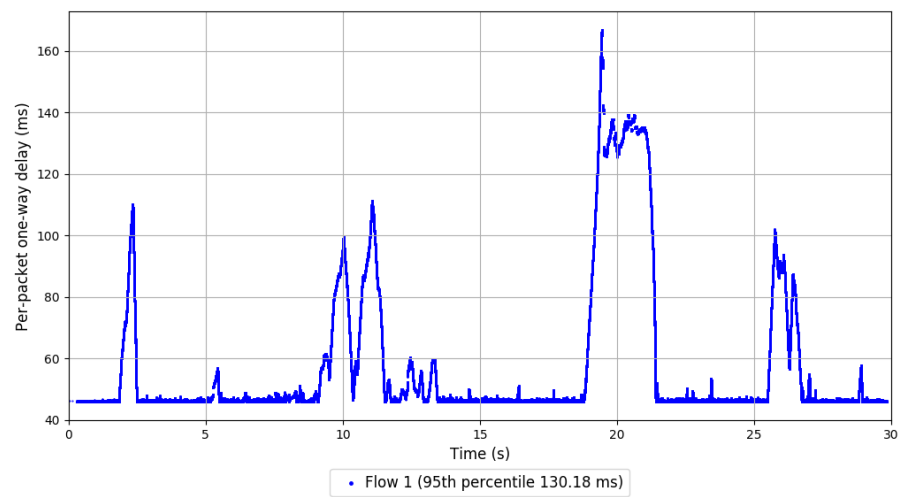
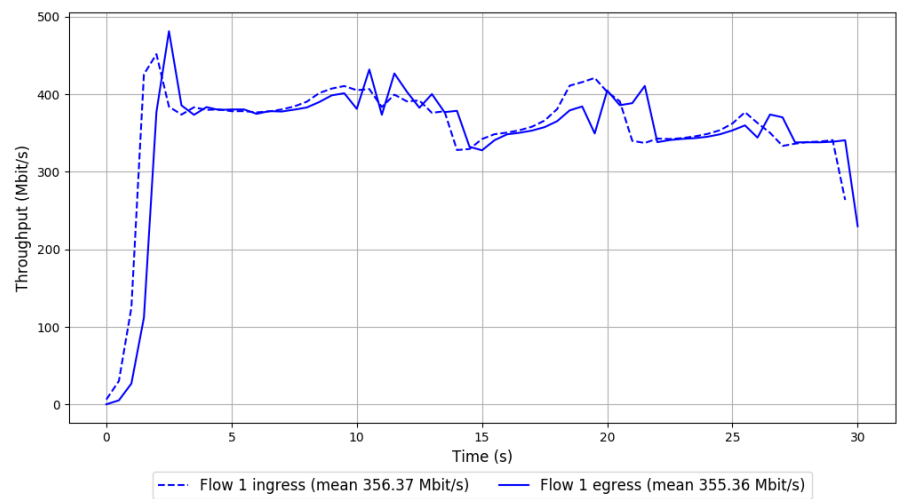


Run 3: Statistics of PCC-Expr

Start at: 2018-11-03 13:00:18
End at: 2018-11-03 13:00:48
Local clock offset: -0.566 ms
Remote clock offset: -0.113 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 355.36 Mbit/s
95th percentile per-packet one-way delay: 130.179 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 355.36 Mbit/s
95th percentile per-packet one-way delay: 130.179 ms
Loss rate: 0.60%

Run 3: Report of PCC-Expr — Data Link

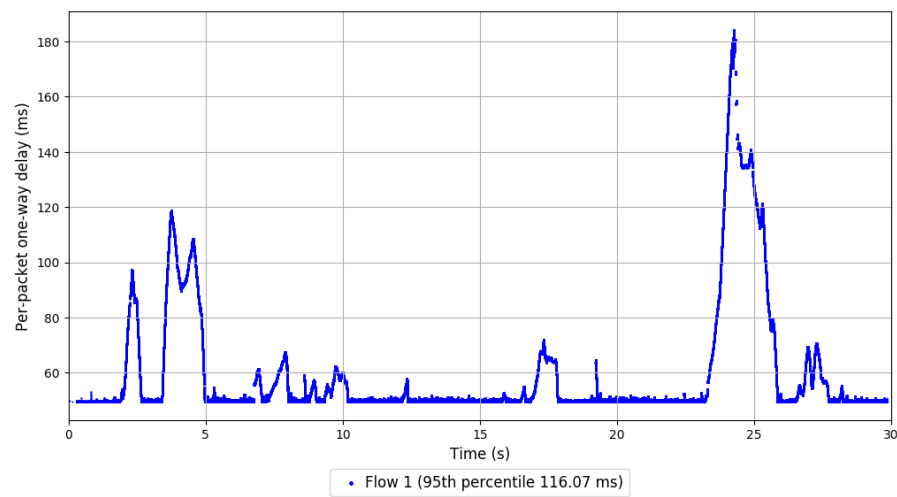
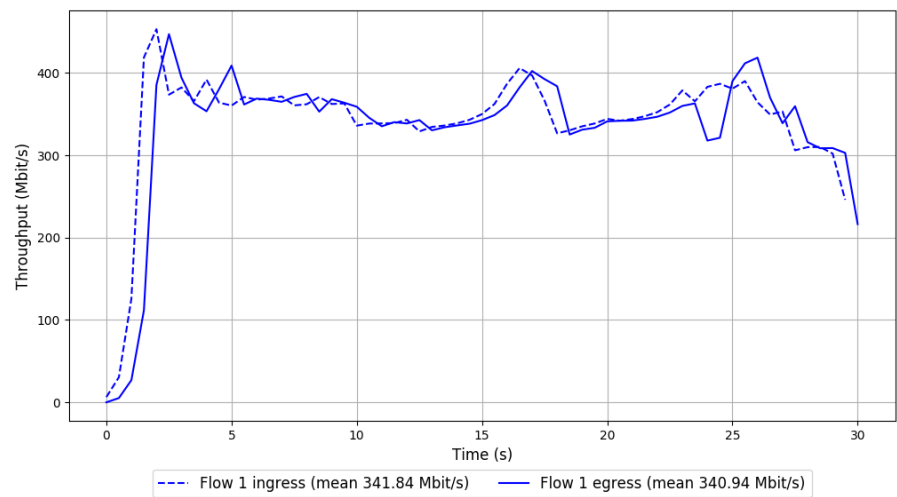


Run 4: Statistics of PCC-Expr

Start at: 2018-11-03 13:26:22
End at: 2018-11-03 13:26:52
Local clock offset: -0.188 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 340.94 Mbit/s
95th percentile per-packet one-way delay: 116.072 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 340.94 Mbit/s
95th percentile per-packet one-way delay: 116.072 ms
Loss rate: 0.59%

Run 4: Report of PCC-Expr — Data Link

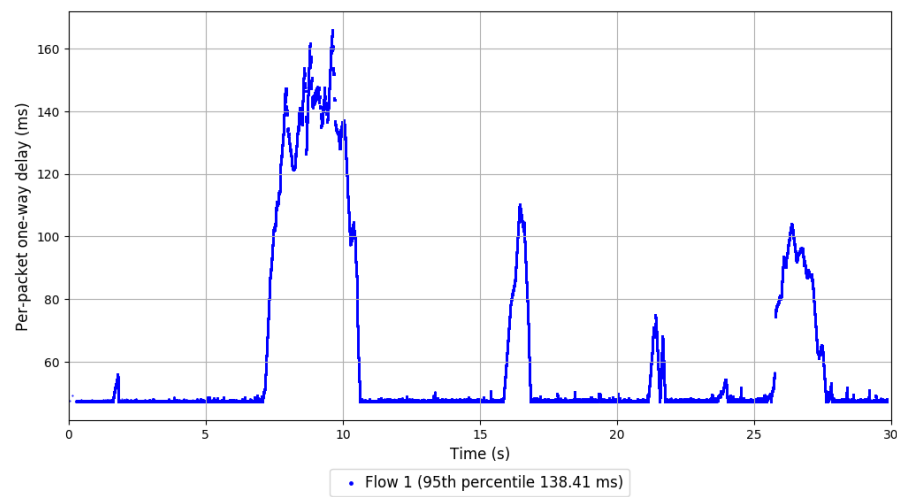
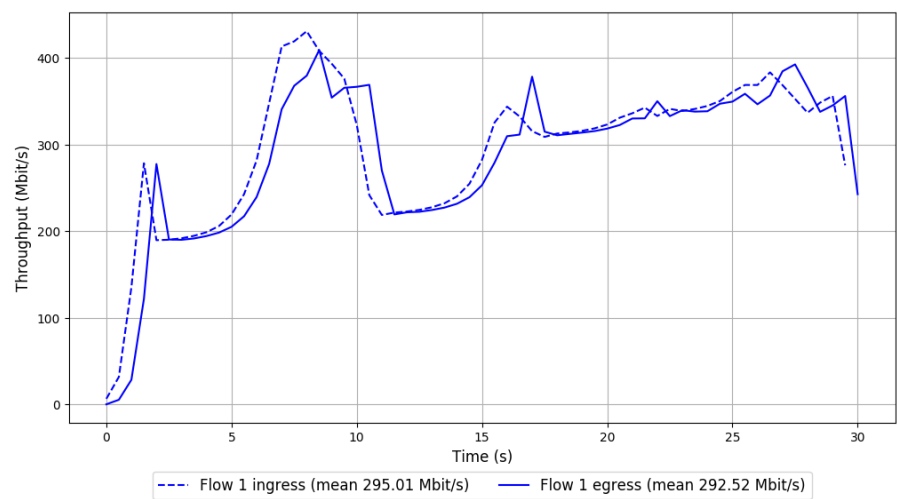


Run 5: Statistics of PCC-Expr

Start at: 2018-11-03 13:52:33
End at: 2018-11-03 13:53:03
Local clock offset: -0.108 ms
Remote clock offset: -0.136 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 292.52 Mbit/s
95th percentile per-packet one-way delay: 138.415 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 292.52 Mbit/s
95th percentile per-packet one-way delay: 138.415 ms
Loss rate: 1.16%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

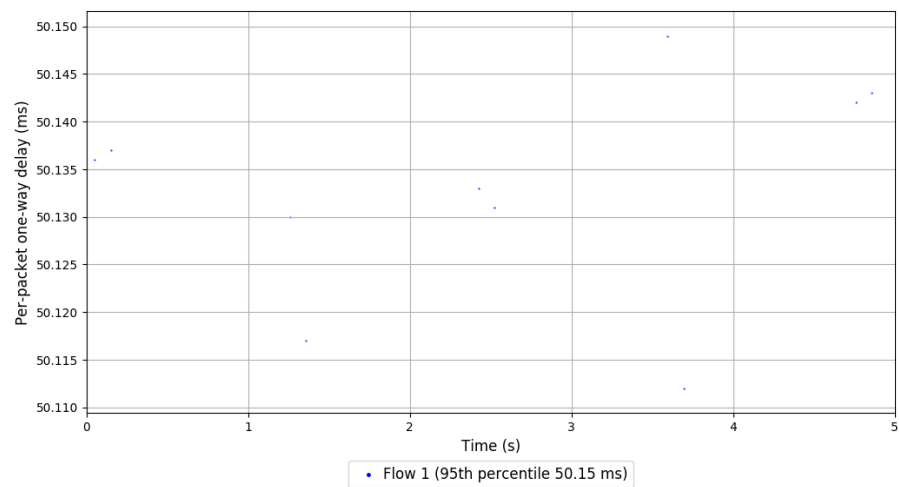
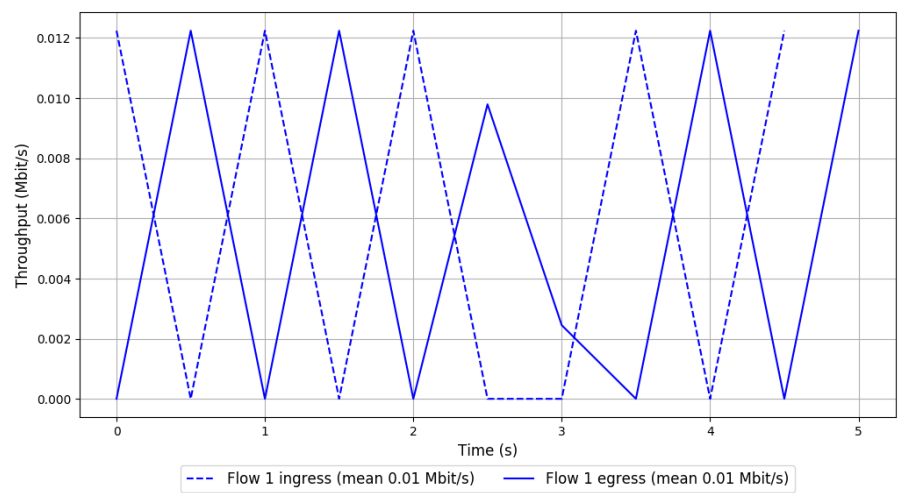
Start at: 2018-11-03 12:04:20

End at: 2018-11-03 12:04:51

Local clock offset: -0.082 ms

Remote clock offset: -0.1 ms

Run 1: Report of QUIC Cubic — Data Link

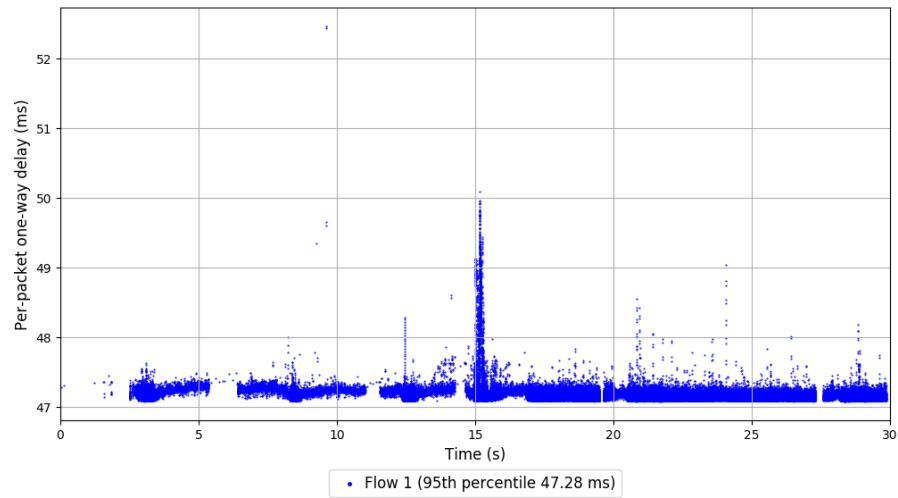
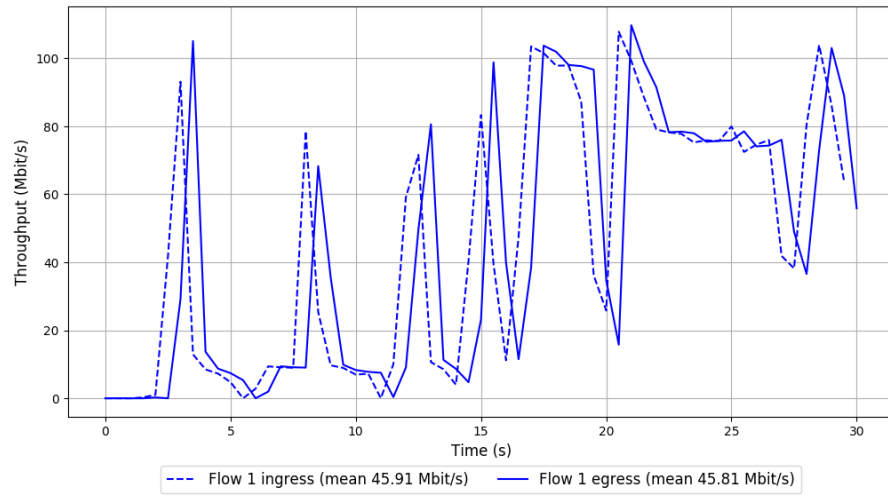


Run 2: Statistics of QUIC Cubic

Start at: 2018-11-03 12:30:11
End at: 2018-11-03 12:30:41
Local clock offset: -0.121 ms
Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 45.81 Mbit/s
95th percentile per-packet one-way delay: 47.278 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 45.81 Mbit/s
95th percentile per-packet one-way delay: 47.278 ms
Loss rate: 0.54%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-03 12:56:30

End at: 2018-11-03 12:57:00

Local clock offset: -0.132 ms

Remote clock offset: -0.11 ms

Below is generated by plot.py at 2018-11-03 15:20:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.44 Mbit/s

95th percentile per-packet one-way delay: 47.363 ms

Loss rate: 0.51%

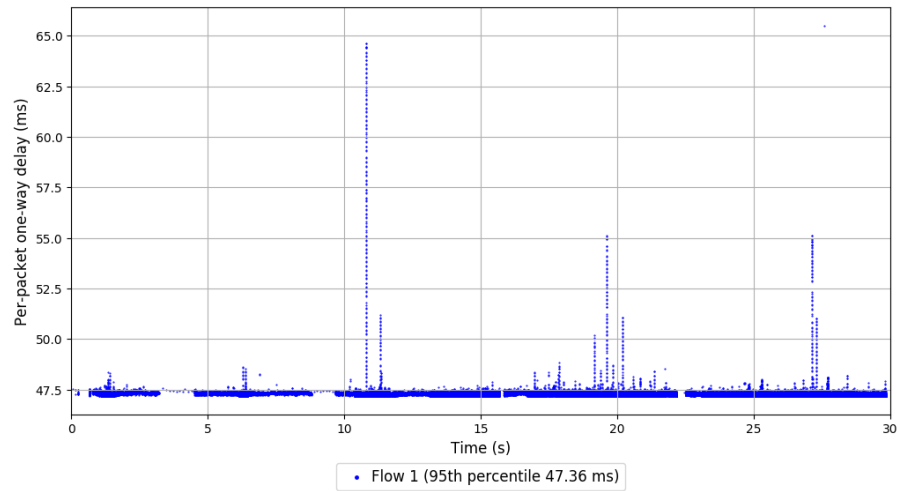
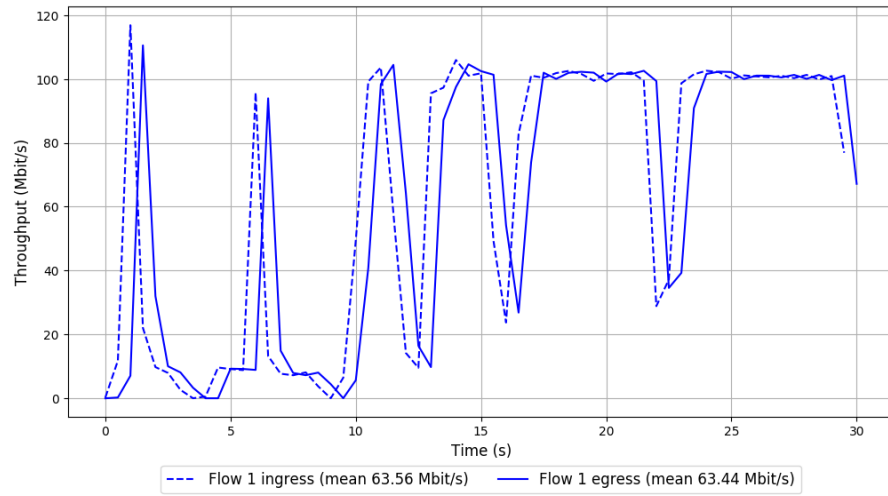
-- Flow 1:

Average throughput: 63.44 Mbit/s

95th percentile per-packet one-way delay: 47.363 ms

Loss rate: 0.51%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-03 13:22:35

End at: 2018-11-03 13:23:05

Local clock offset: -0.143 ms

Remote clock offset: -0.072 ms

Below is generated by plot.py at 2018-11-03 15:20:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.36 Mbit/s

95th percentile per-packet one-way delay: 47.252 ms

Loss rate: 0.55%

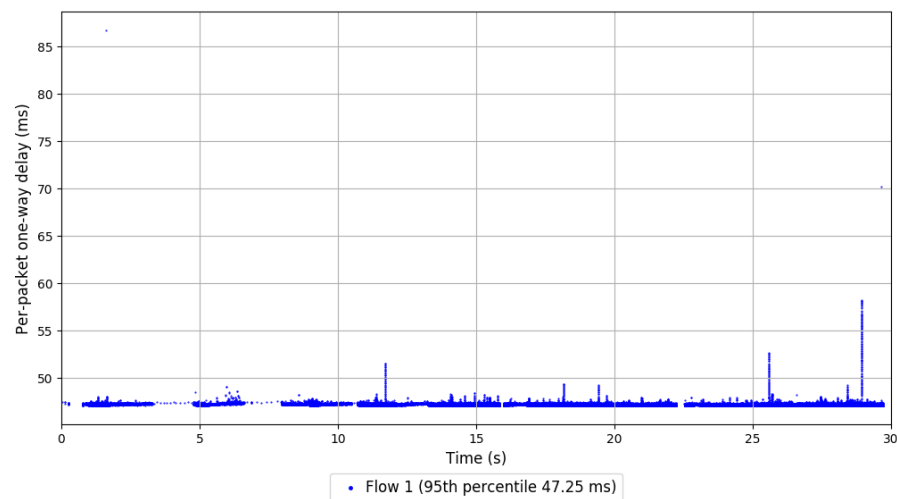
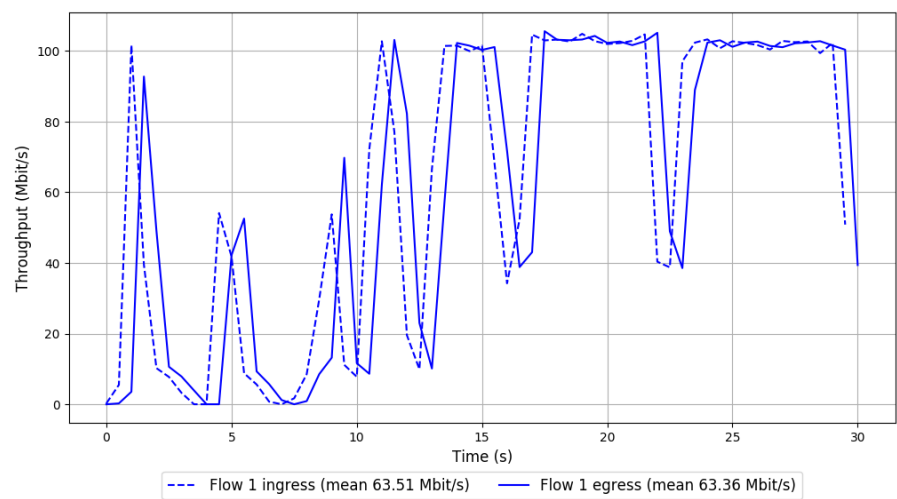
-- Flow 1:

Average throughput: 63.36 Mbit/s

95th percentile per-packet one-way delay: 47.252 ms

Loss rate: 0.55%

Run 4: Report of QUIC Cubic — Data Link

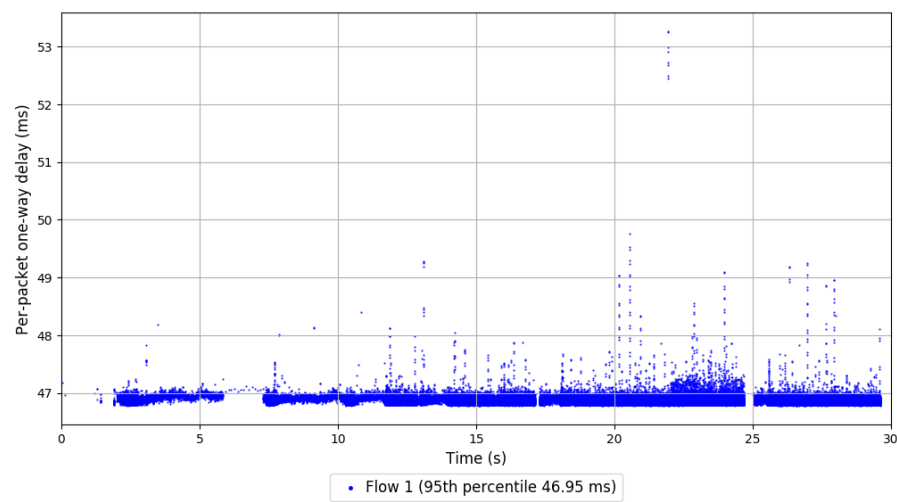
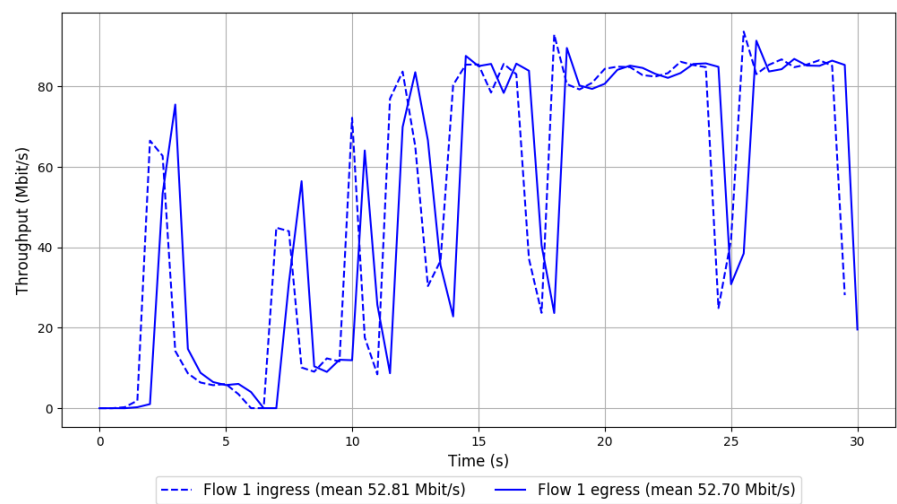


Run 5: Statistics of QUIC Cubic

Start at: 2018-11-03 13:48:47
End at: 2018-11-03 13:49:17
Local clock offset: -0.463 ms
Remote clock offset: -0.143 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 52.70 Mbit/s
95th percentile per-packet one-way delay: 46.954 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 52.70 Mbit/s
95th percentile per-packet one-way delay: 46.954 ms
Loss rate: 0.52%

Run 5: Report of QUIC Cubic — Data Link

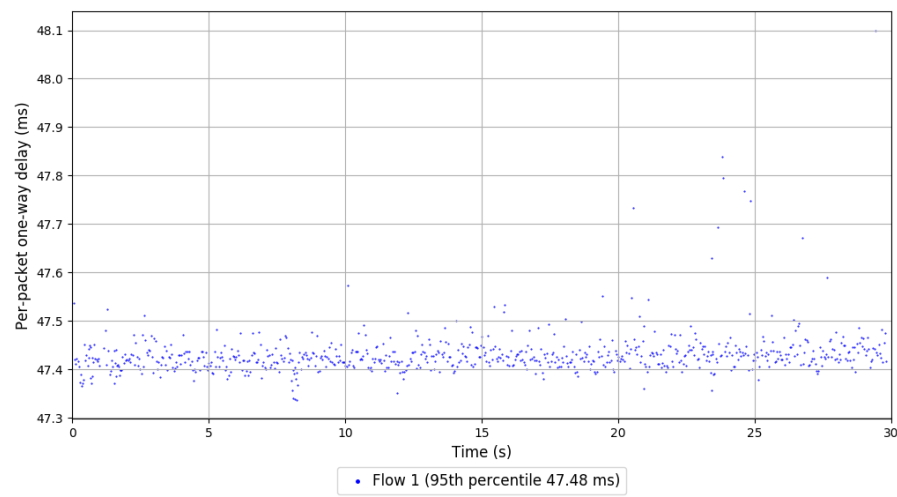
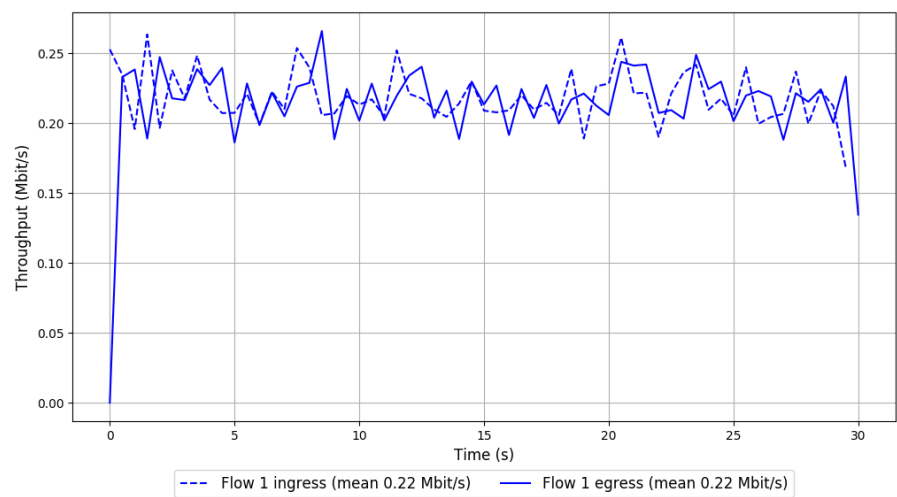


```
Run 1: Statistics of SCReAM

Start at: 2018-11-03 11:51:21
End at: 2018-11-03 11:51:51
Local clock offset: 0.02 ms
Remote clock offset: -0.058 ms

# Below is generated by plot.py at 2018-11-03 15:20:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.483 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.483 ms
Loss rate: 0.38%
```

Run 1: Report of SReAM — Data Link

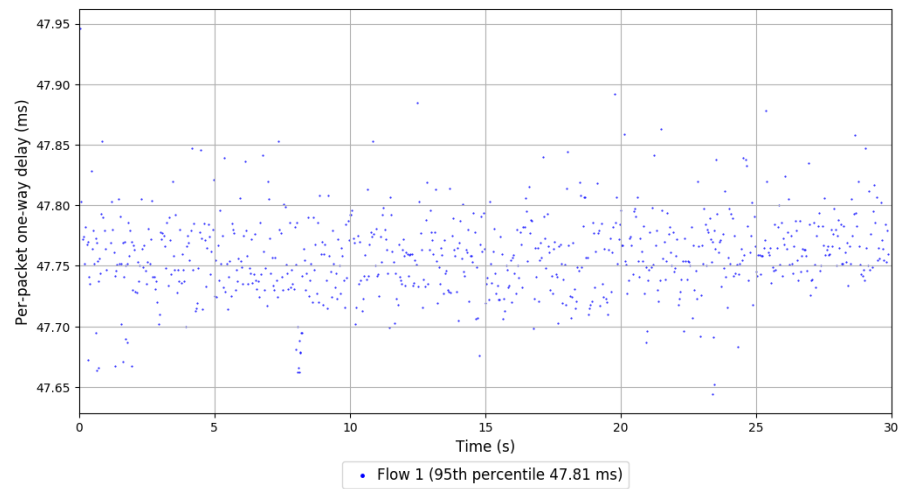
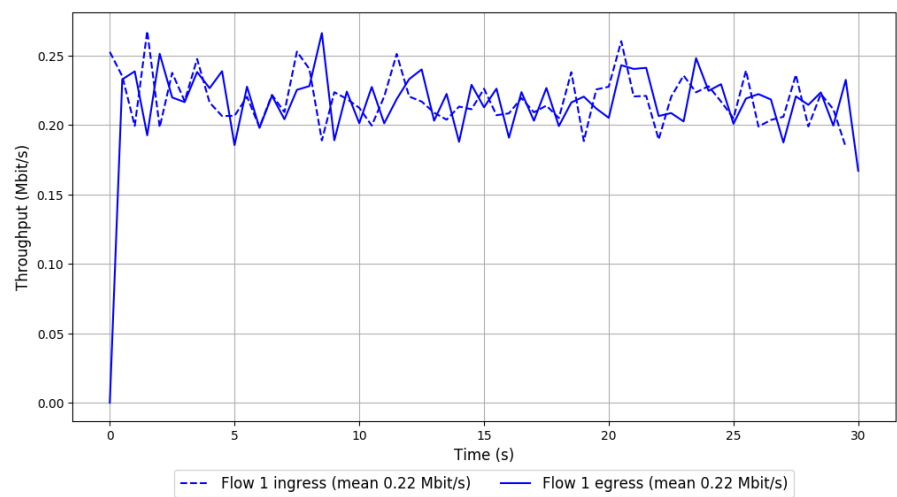


Run 2: Statistics of SCReAM

Start at: 2018-11-03 12:17:05
End at: 2018-11-03 12:17:35
Local clock offset: 0.285 ms
Remote clock offset: -0.075 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.814 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.814 ms
Loss rate: 0.26%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-11-03 12:43:04

End at: 2018-11-03 12:43:34

Local clock offset: 0.247 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-11-03 15:20:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 50.887 ms

Loss rate: 0.26%

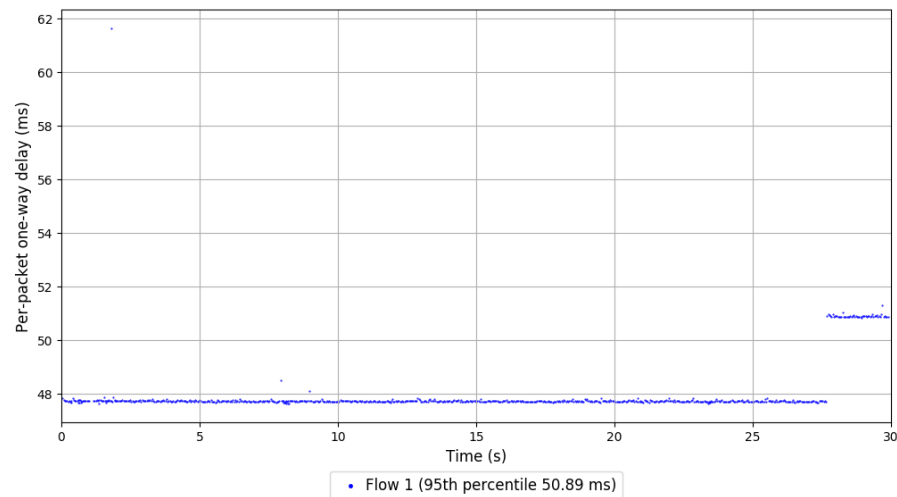
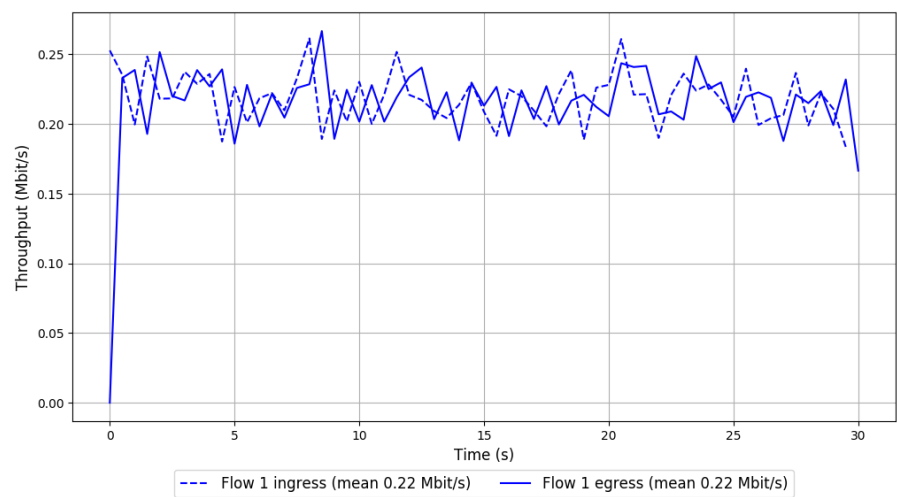
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 50.887 ms

Loss rate: 0.26%

Run 3: Report of SReAM — Data Link

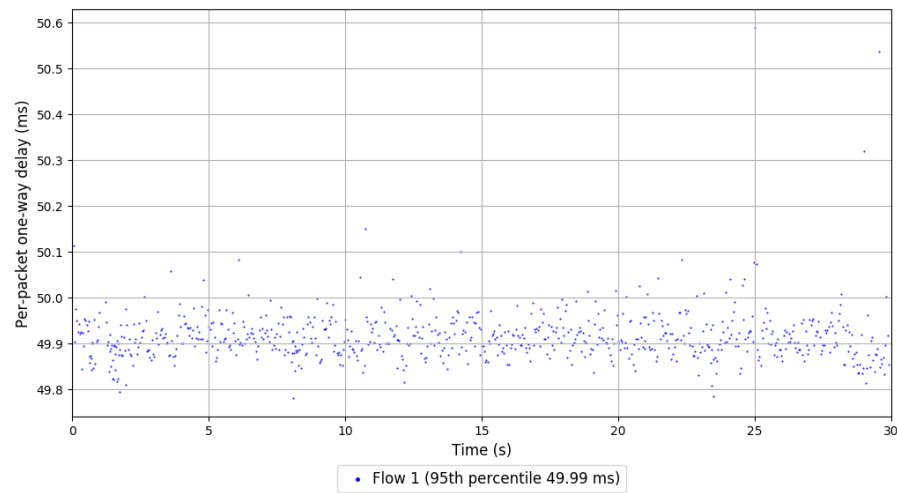
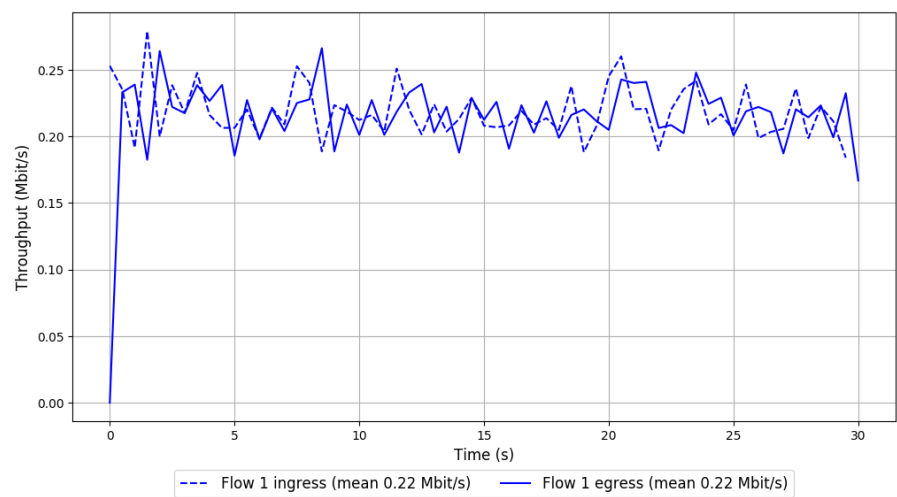


Run 4: Statistics of SCReAM

Start at: 2018-11-03 13:09:28
End at: 2018-11-03 13:09:58
Local clock offset: -0.146 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.992 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.992 ms
Loss rate: 0.26%

Run 4: Report of SReAM — Data Link

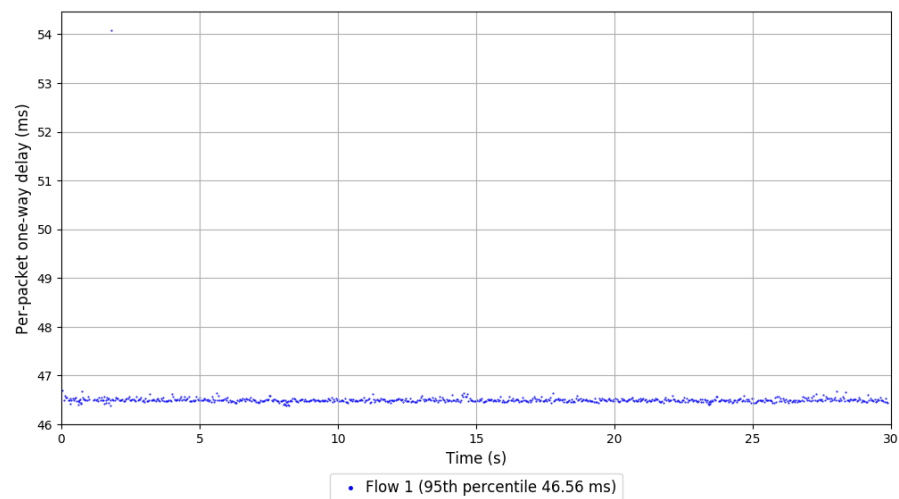
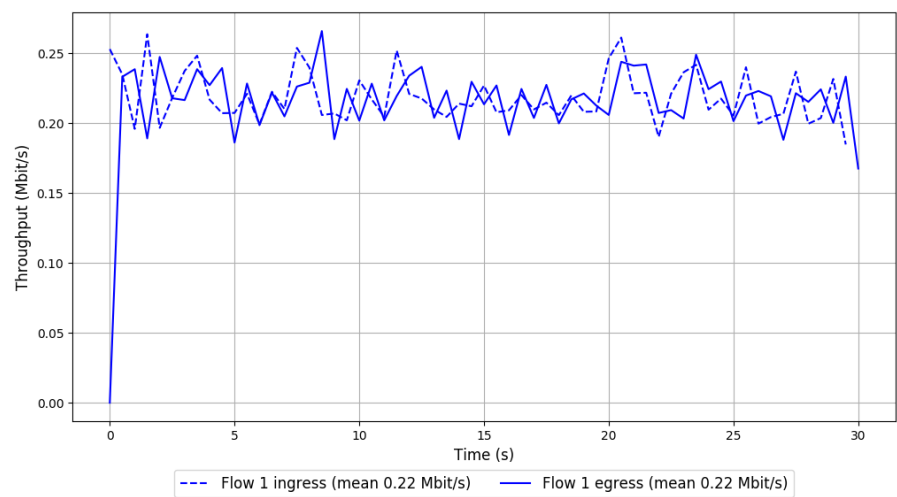


Run 5: Statistics of SCReAM

Start at: 2018-11-03 13:35:34
End at: 2018-11-03 13:36:04
Local clock offset: -0.13 ms
Remote clock offset: -0.072 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.564 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.564 ms
Loss rate: 0.26%

Run 5: Report of SReAM — Data Link

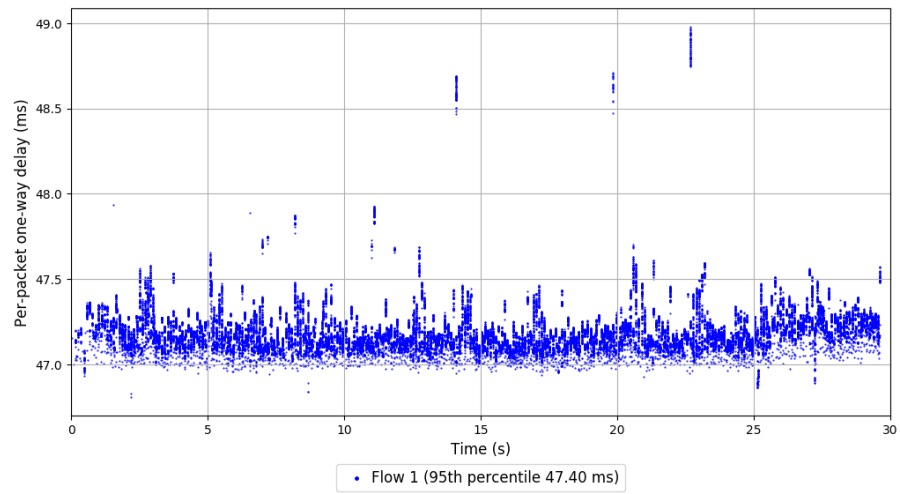
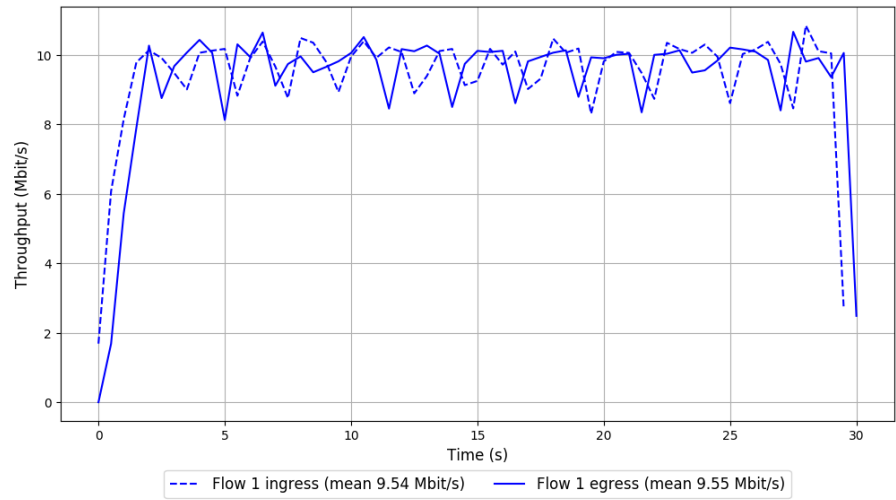


Run 1: Statistics of Sprout

Start at: 2018-11-03 12:09:42
End at: 2018-11-03 12:10:12
Local clock offset: -0.398 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 47.398 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 47.398 ms
Loss rate: 0.33%

Run 1: Report of Sprout — Data Link

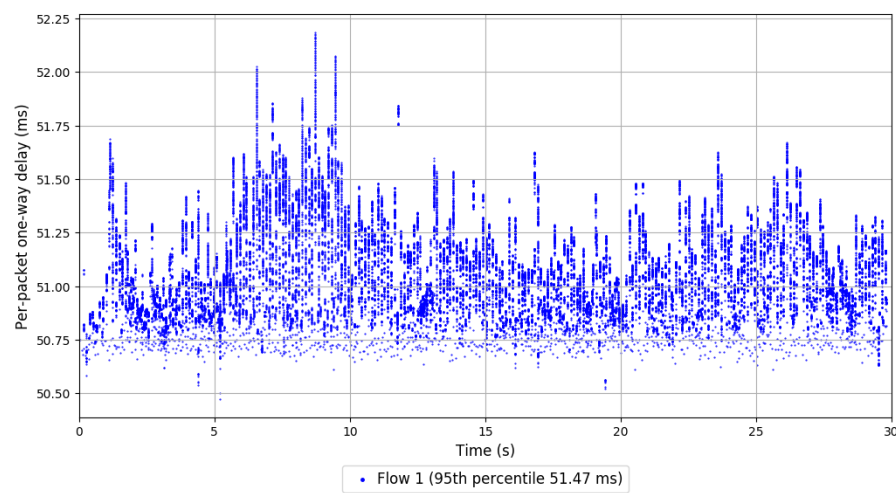
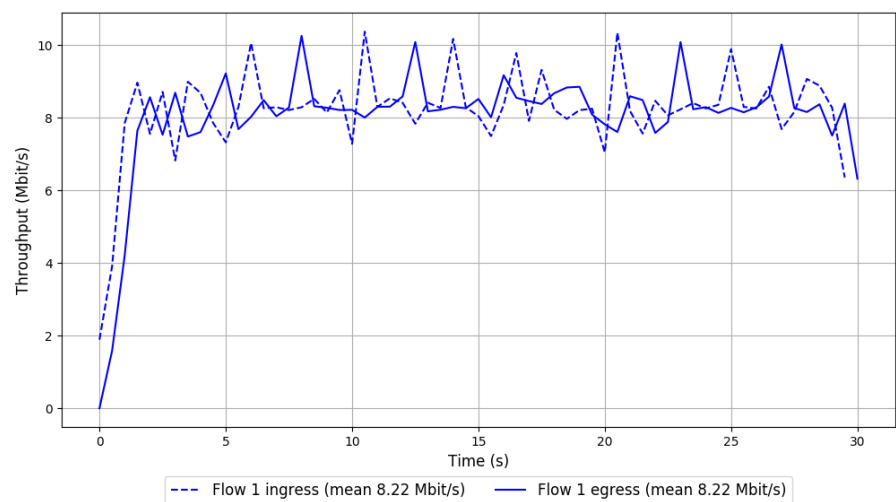


Run 2: Statistics of Sprout

Start at: 2018-11-03 12:35:35
End at: 2018-11-03 12:36:05
Local clock offset: -0.169 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.22 Mbit/s
95th percentile per-packet one-way delay: 51.474 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 8.22 Mbit/s
95th percentile per-packet one-way delay: 51.474 ms
Loss rate: 0.41%

Run 2: Report of Sprout — Data Link

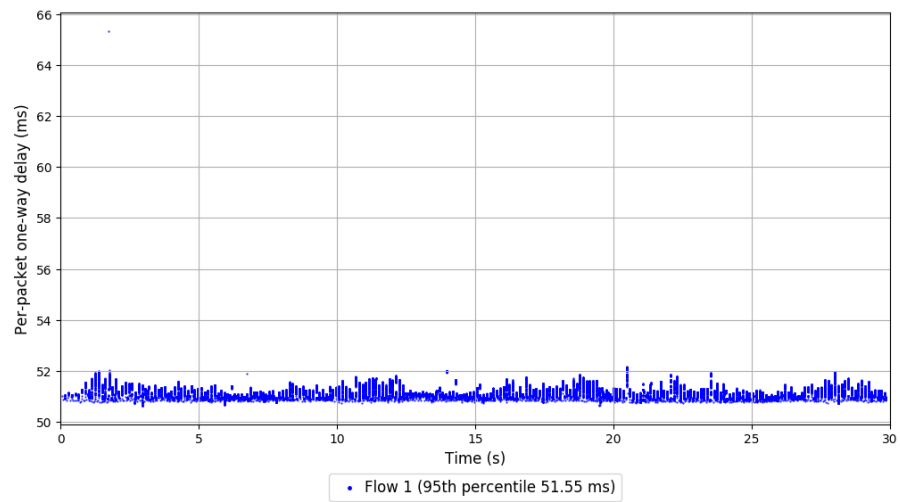
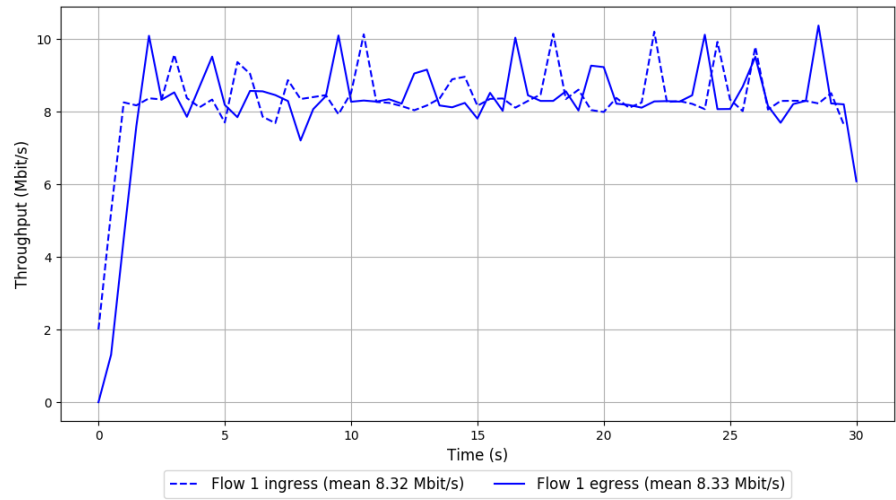


Run 3: Statistics of Sprout

Start at: 2018-11-03 13:01:58
End at: 2018-11-03 13:02:28
Local clock offset: -0.118 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.33 Mbit/s
95th percentile per-packet one-way delay: 51.550 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 8.33 Mbit/s
95th percentile per-packet one-way delay: 51.550 ms
Loss rate: 0.38%

Run 3: Report of Sprout — Data Link

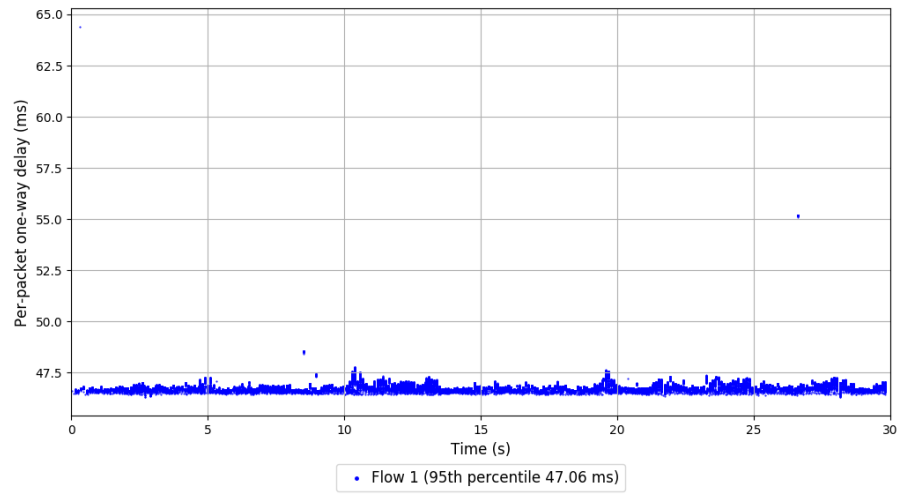
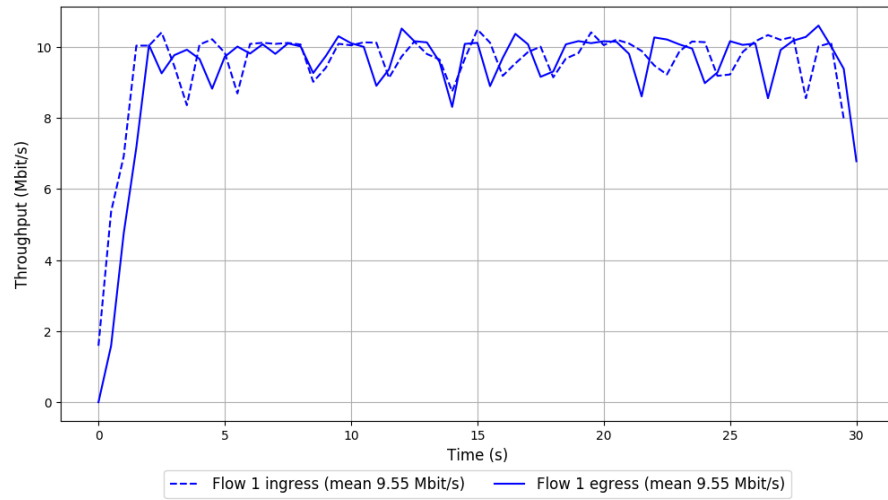


Run 4: Statistics of Sprout

Start at: 2018-11-03 13:28:00
End at: 2018-11-03 13:28:30
Local clock offset: -0.205 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 47.058 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 47.058 ms
Loss rate: 0.34%

Run 4: Report of Sprout — Data Link

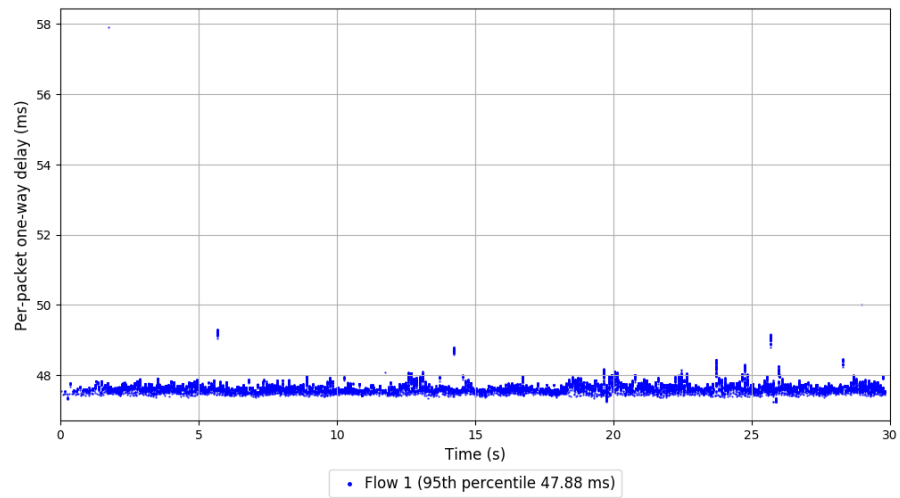
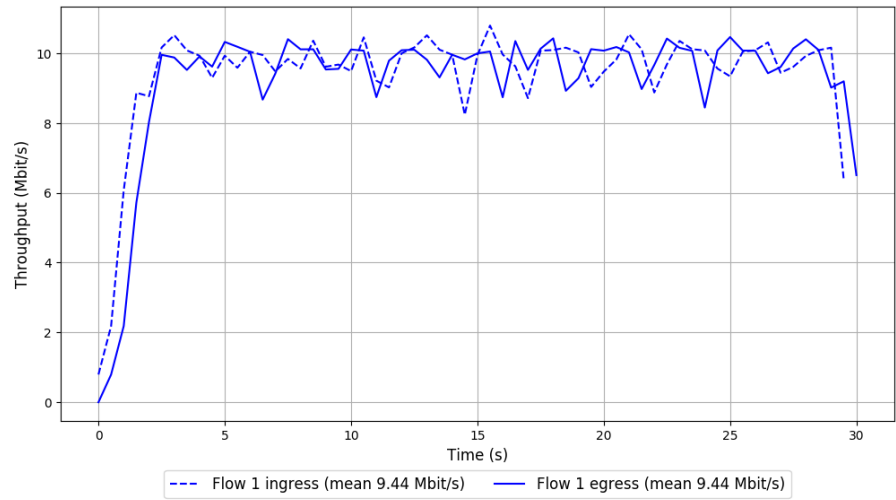


Run 5: Statistics of Sprout

Start at: 2018-11-03 13:54:06
End at: 2018-11-03 13:54:36
Local clock offset: -0.069 ms
Remote clock offset: -0.127 ms

Below is generated by plot.py at 2018-11-03 15:20:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.44 Mbit/s
95th percentile per-packet one-way delay: 47.878 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 9.44 Mbit/s
95th percentile per-packet one-way delay: 47.878 ms
Loss rate: 0.34%

Run 5: Report of Sprout — Data Link

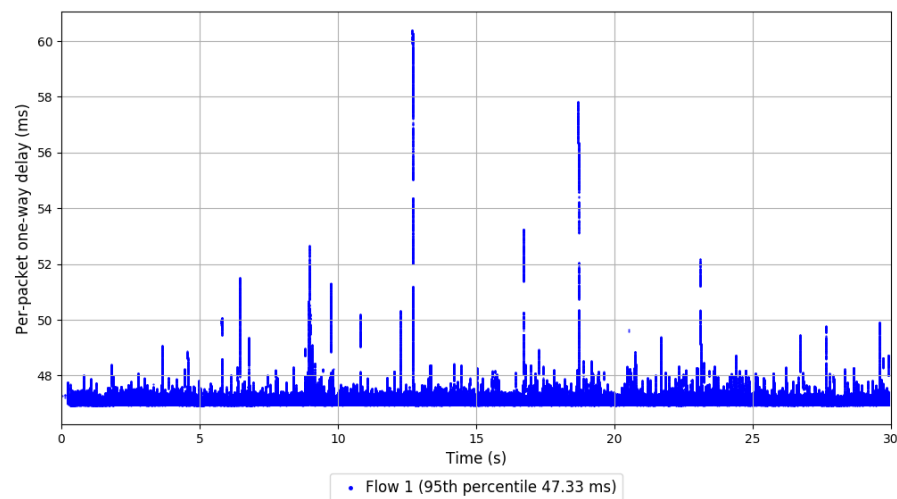
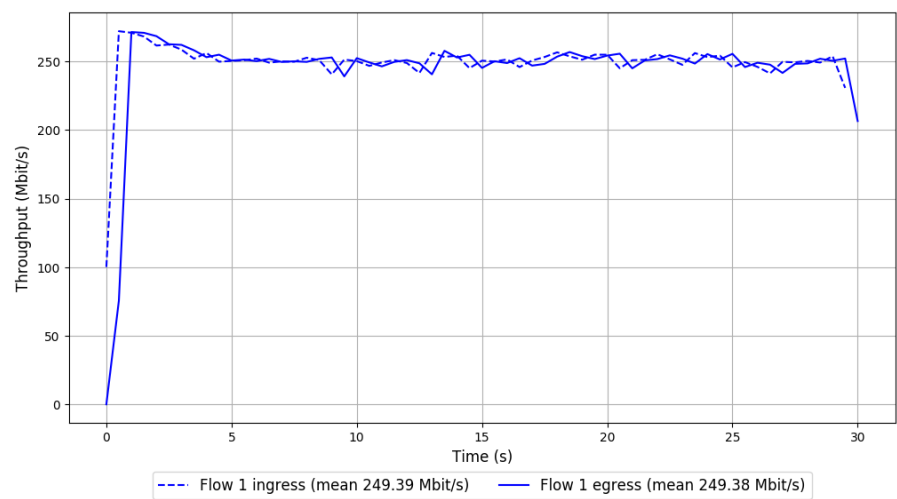


Run 1: Statistics of TaoVA-100x

Start at: 2018-11-03 11:49:52
End at: 2018-11-03 11:50:22
Local clock offset: -0.054 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-11-03 15:25:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 249.38 Mbit/s
95th percentile per-packet one-way delay: 47.331 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 249.38 Mbit/s
95th percentile per-packet one-way delay: 47.331 ms
Loss rate: 0.32%

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

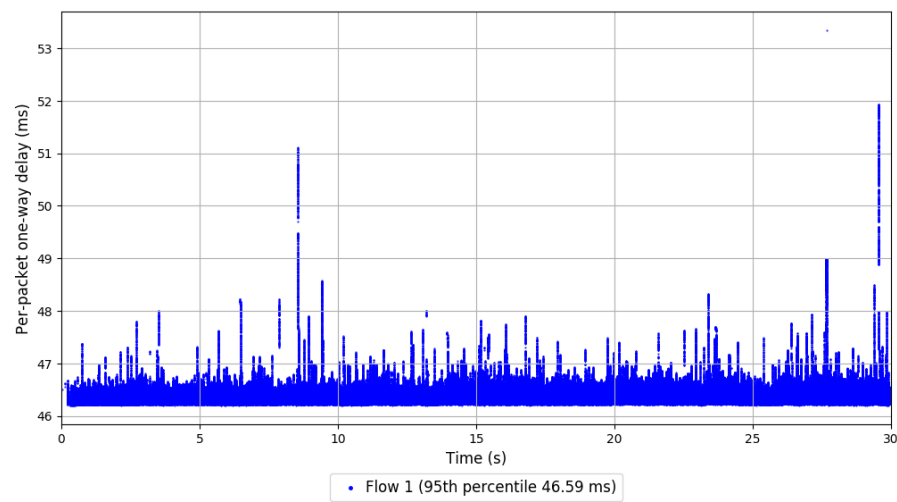
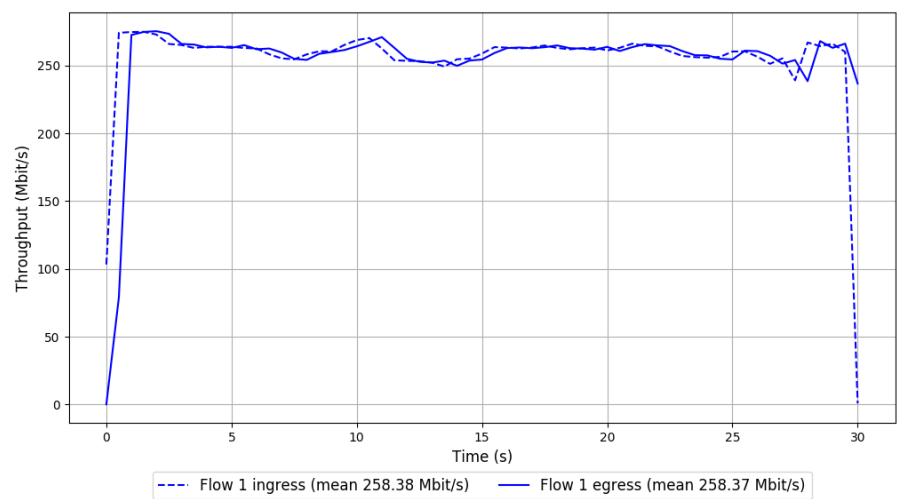


Run 2: Statistics of TaoVA-100x

Start at: 2018-11-03 12:15:35
End at: 2018-11-03 12:16:05
Local clock offset: -0.074 ms
Remote clock offset: -0.064 ms

Below is generated by plot.py at 2018-11-03 15:26:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 258.37 Mbit/s
95th percentile per-packet one-way delay: 46.590 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 258.37 Mbit/s
95th percentile per-packet one-way delay: 46.590 ms
Loss rate: 0.32%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-03 12:41:33

End at: 2018-11-03 12:42:03

Local clock offset: -0.529 ms

Remote clock offset: -0.075 ms

Below is generated by plot.py at 2018-11-03 15:26:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 254.36 Mbit/s

95th percentile per-packet one-way delay: 47.034 ms

Loss rate: 0.32%

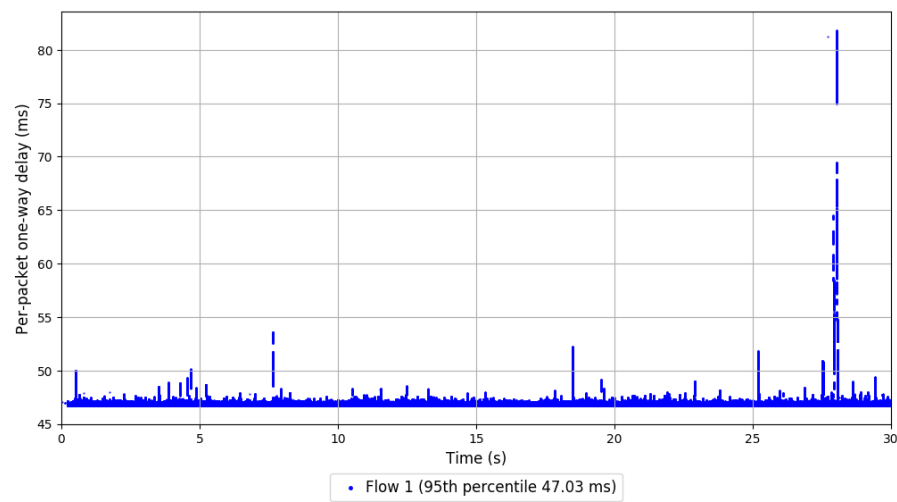
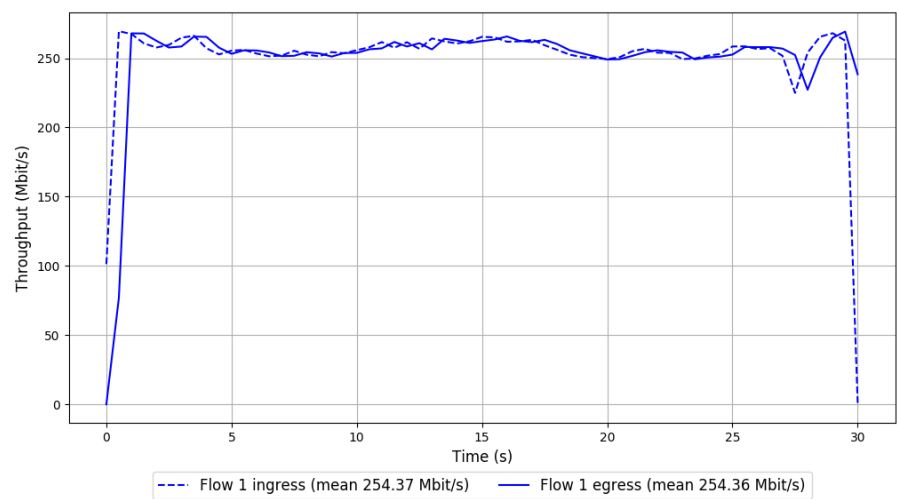
-- Flow 1:

Average throughput: 254.36 Mbit/s

95th percentile per-packet one-way delay: 47.034 ms

Loss rate: 0.32%

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

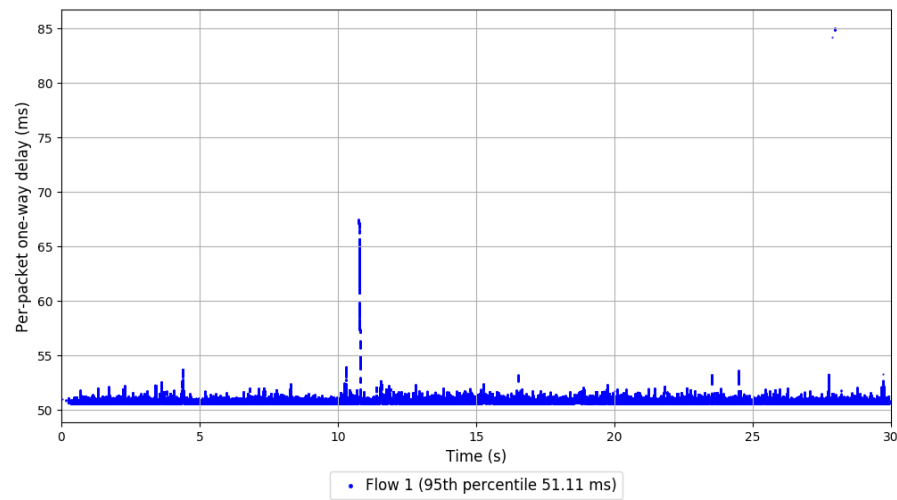
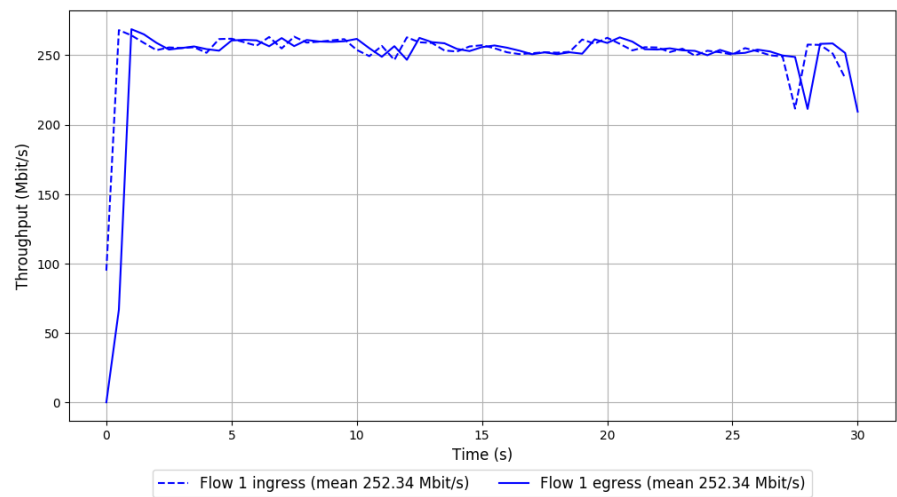


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-03 13:07:57
End at: 2018-11-03 13:08:27
Local clock offset: -0.167 ms
Remote clock offset: -0.062 ms

Below is generated by plot.py at 2018-11-03 15:26:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 252.34 Mbit/s
95th percentile per-packet one-way delay: 51.112 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 252.34 Mbit/s
95th percentile per-packet one-way delay: 51.112 ms
Loss rate: 0.33%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-03 13:34:04

End at: 2018-11-03 13:34:34

Local clock offset: -0.142 ms

Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-11-03 15:27:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 253.27 Mbit/s

95th percentile per-packet one-way delay: 46.638 ms

Loss rate: 0.32%

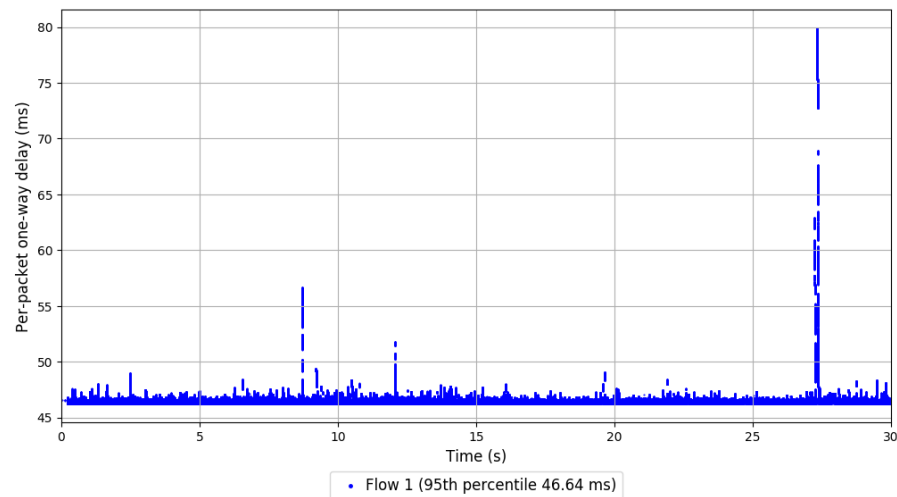
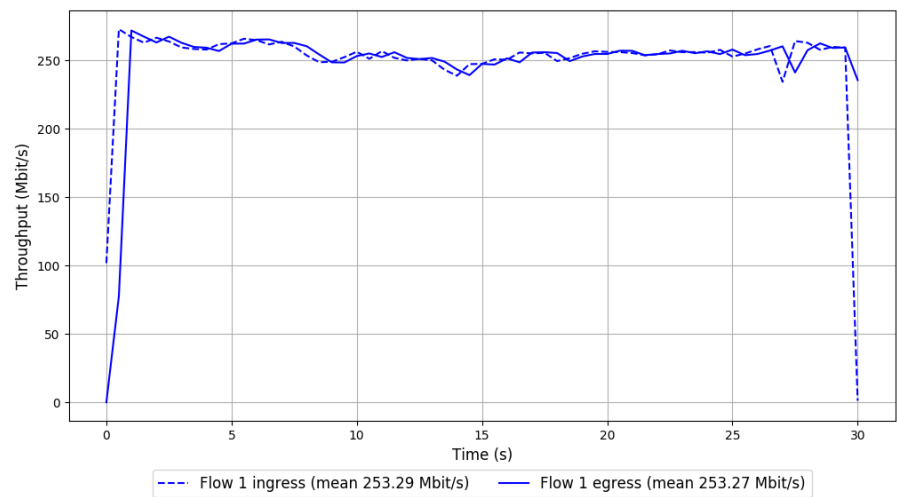
-- Flow 1:

Average throughput: 253.27 Mbit/s

95th percentile per-packet one-way delay: 46.638 ms

Loss rate: 0.32%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-11-03 11:52:29

End at: 2018-11-03 11:52:59

Local clock offset: 0.001 ms

Remote clock offset: -0.06 ms

Below is generated by plot.py at 2018-11-03 15:29:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 460.14 Mbit/s

95th percentile per-packet one-way delay: 55.010 ms

Loss rate: 0.20%

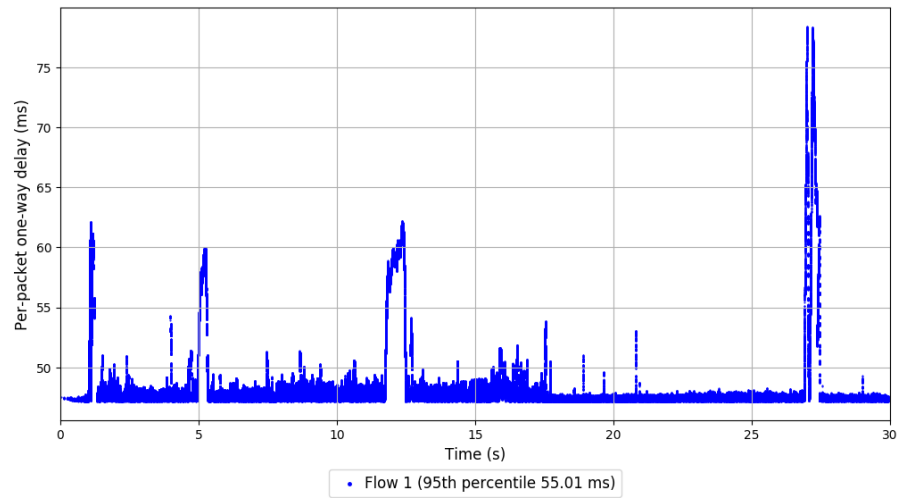
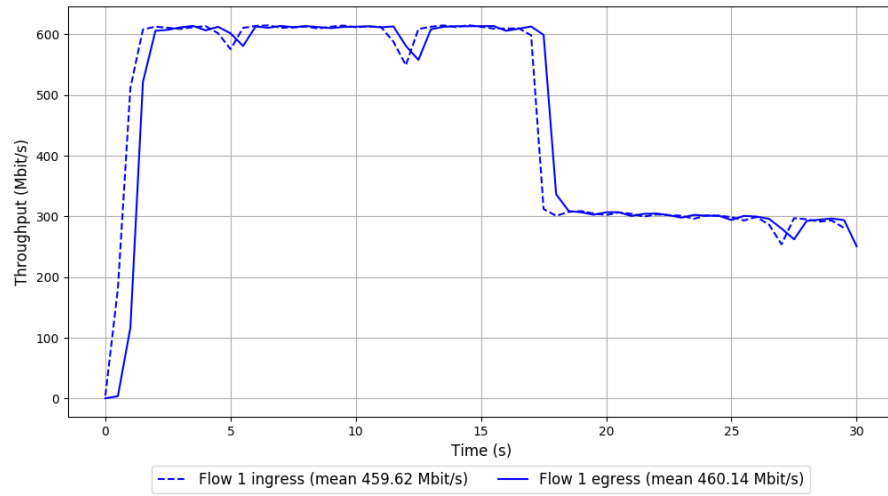
-- Flow 1:

Average throughput: 460.14 Mbit/s

95th percentile per-packet one-way delay: 55.010 ms

Loss rate: 0.20%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-11-03 12:18:13

End at: 2018-11-03 12:18:43

Local clock offset: -0.027 ms

Remote clock offset: -0.07 ms

Below is generated by plot.py at 2018-11-03 15:31:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 577.54 Mbit/s

95th percentile per-packet one-way delay: 56.082 ms

Loss rate: 0.34%

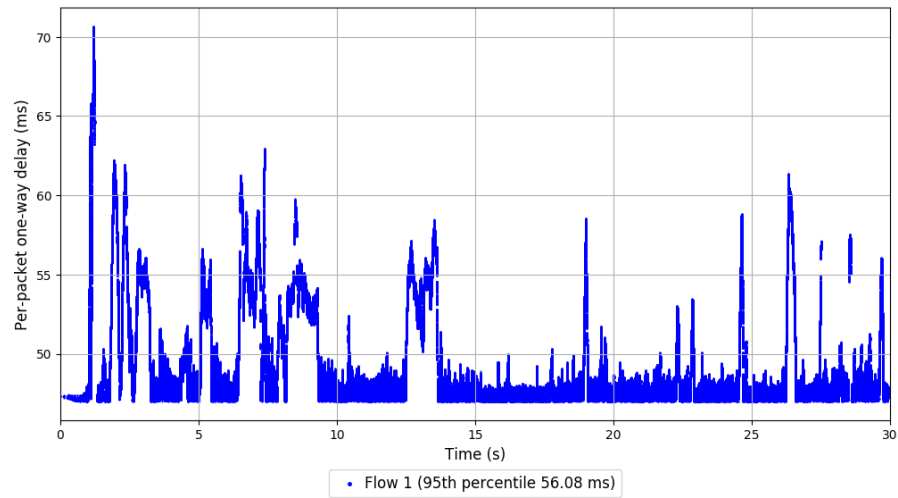
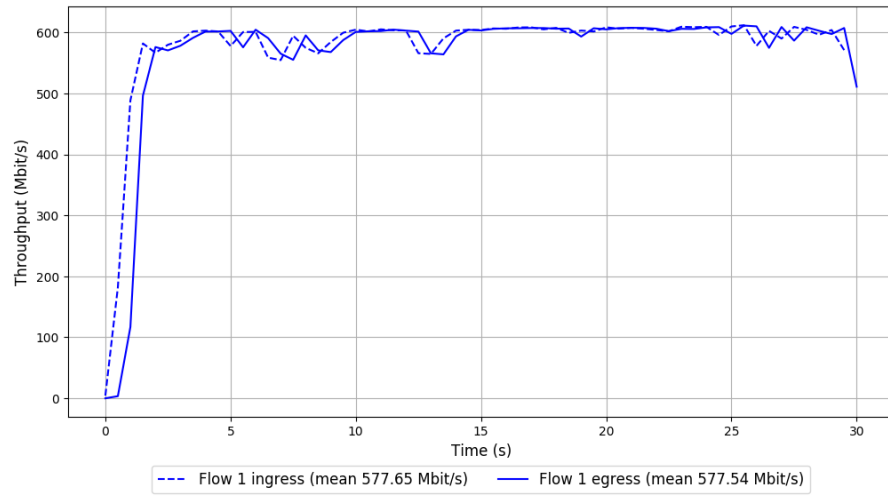
-- Flow 1:

Average throughput: 577.54 Mbit/s

95th percentile per-packet one-way delay: 56.082 ms

Loss rate: 0.34%

Run 2: Report of TCP Vegas — Data Link

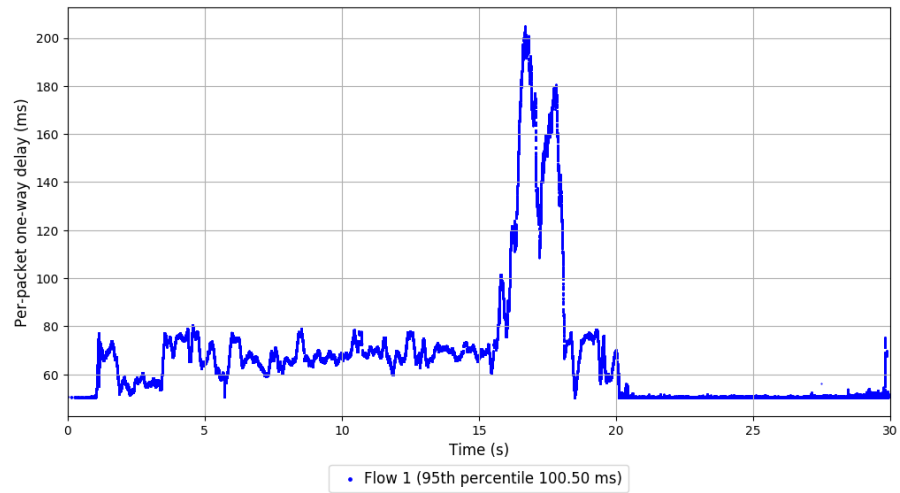
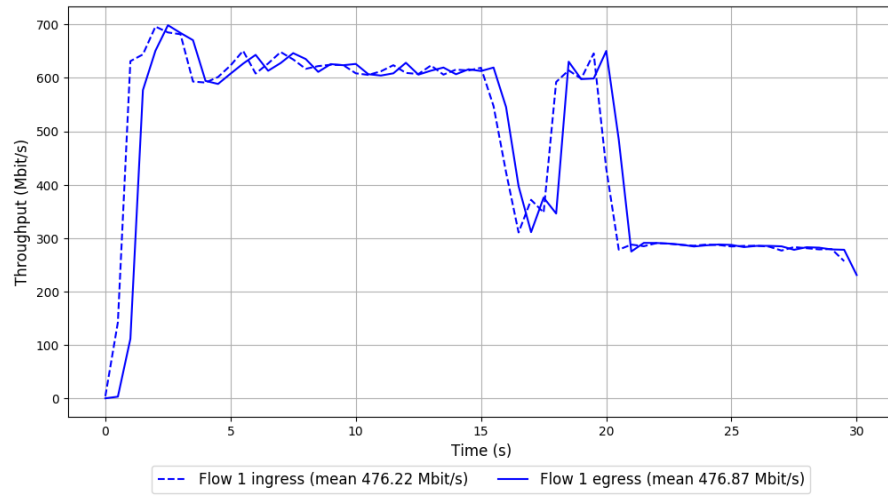


Run 3: Statistics of TCP Vegas

Start at: 2018-11-03 12:44:11
End at: 2018-11-03 12:44:41
Local clock offset: -0.151 ms
Remote clock offset: -0.08 ms

Below is generated by plot.py at 2018-11-03 15:31:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 476.87 Mbit/s
95th percentile per-packet one-way delay: 100.498 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 476.87 Mbit/s
95th percentile per-packet one-way delay: 100.498 ms
Loss rate: 0.19%

Run 3: Report of TCP Vegas — Data Link

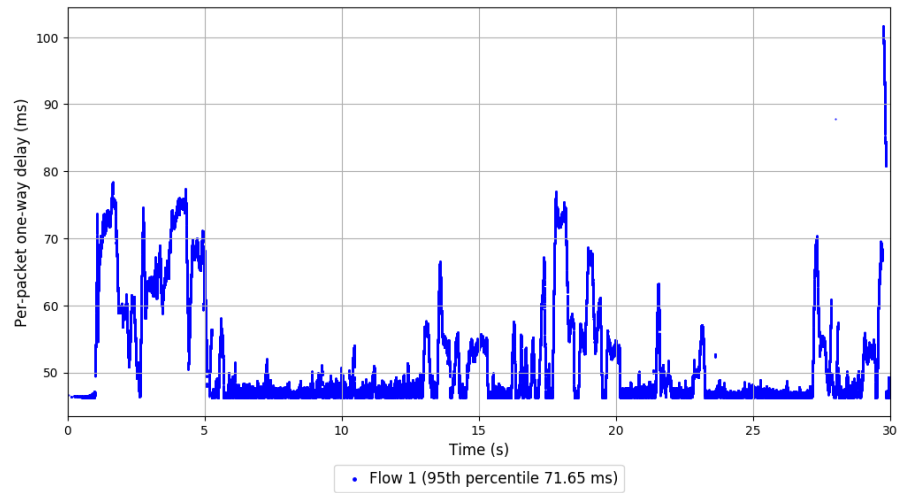
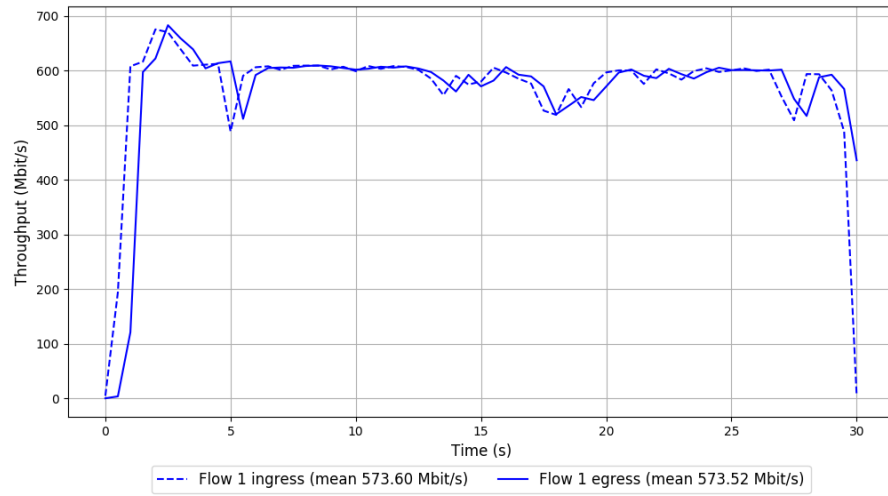


Run 4: Statistics of TCP Vegas

Start at: 2018-11-03 13:10:35
End at: 2018-11-03 13:11:05
Local clock offset: -0.142 ms
Remote clock offset: -0.029 ms

Below is generated by plot.py at 2018-11-03 15:37:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 573.52 Mbit/s
95th percentile per-packet one-way delay: 71.653 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 573.52 Mbit/s
95th percentile per-packet one-way delay: 71.653 ms
Loss rate: 0.33%

Run 4: Report of TCP Vegas — Data Link

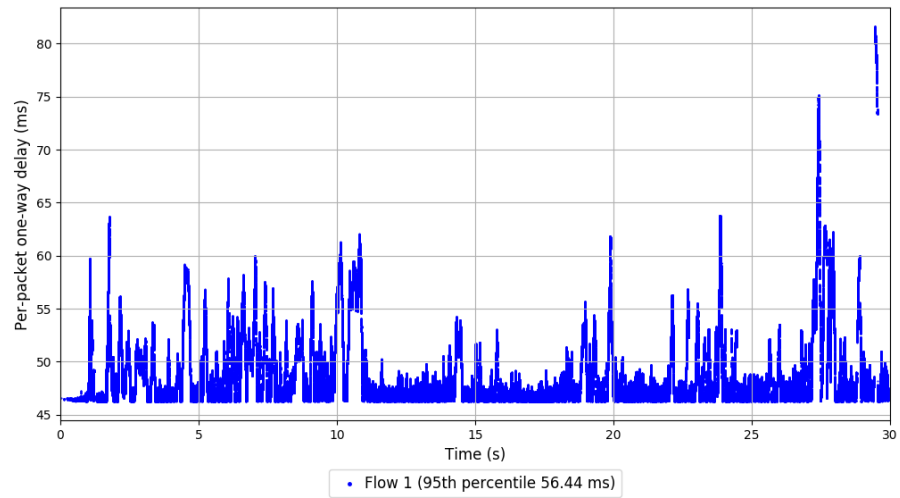
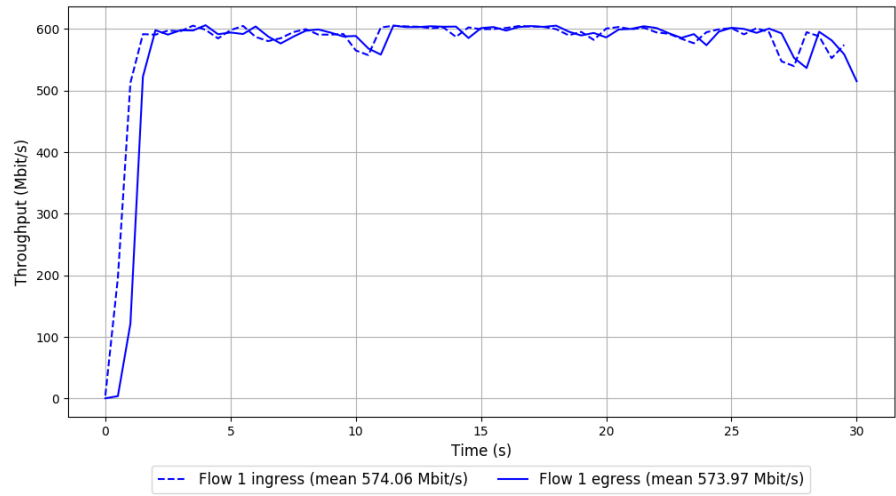


Run 5: Statistics of TCP Vegas

Start at: 2018-11-03 13:36:42
End at: 2018-11-03 13:37:12
Local clock offset: -0.114 ms
Remote clock offset: -0.069 ms

Below is generated by plot.py at 2018-11-03 15:38:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 573.97 Mbit/s
95th percentile per-packet one-way delay: 56.435 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 573.97 Mbit/s
95th percentile per-packet one-way delay: 56.435 ms
Loss rate: 0.33%

Run 5: Report of TCP Vegas — Data Link

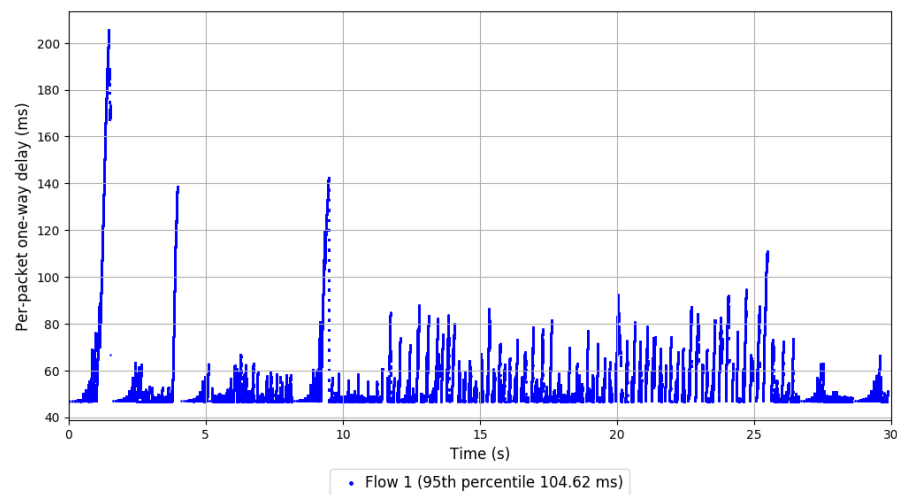
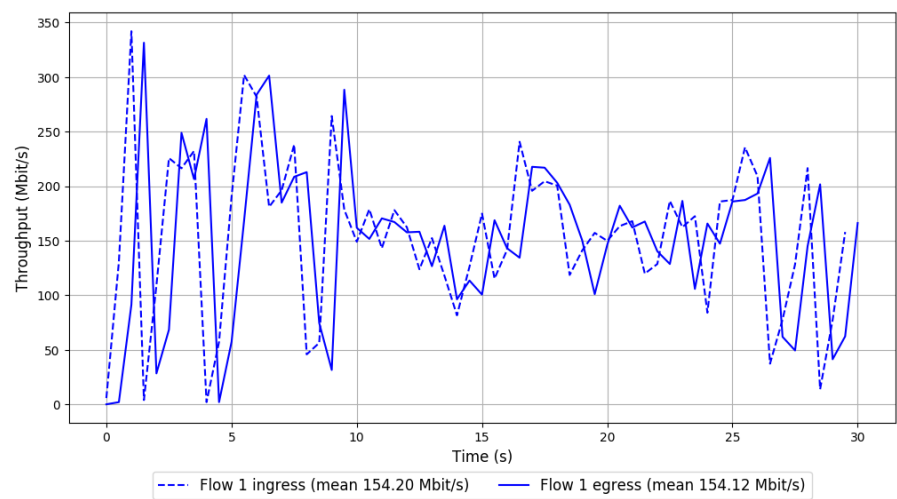


Run 1: Statistics of Verus

Start at: 2018-11-03 11:53:59
End at: 2018-11-03 11:54:29
Local clock offset: -0.389 ms
Remote clock offset: -0.094 ms

Below is generated by plot.py at 2018-11-03 15:38:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 154.12 Mbit/s
95th percentile per-packet one-way delay: 104.619 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 154.12 Mbit/s
95th percentile per-packet one-way delay: 104.619 ms
Loss rate: 0.37%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-11-03 12:19:48

End at: 2018-11-03 12:20:18

Local clock offset: -0.058 ms

Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-11-03 15:38:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 196.48 Mbit/s

95th percentile per-packet one-way delay: 161.603 ms

Loss rate: 0.21%

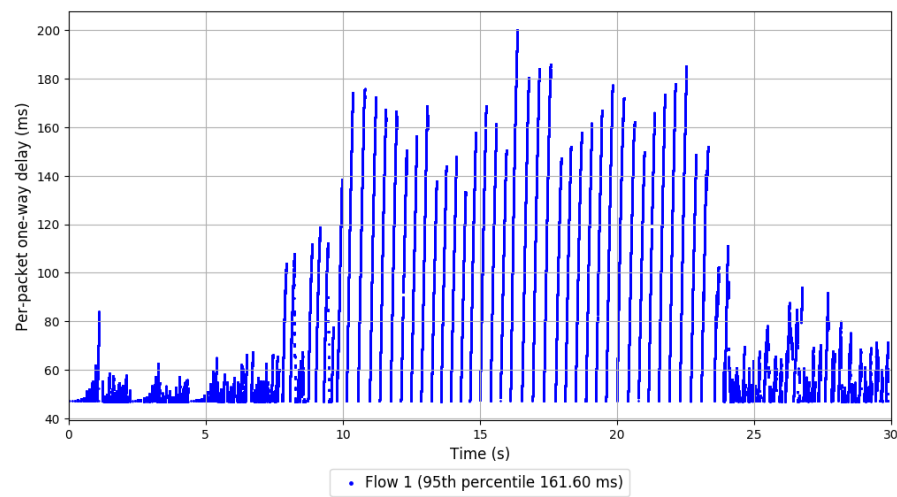
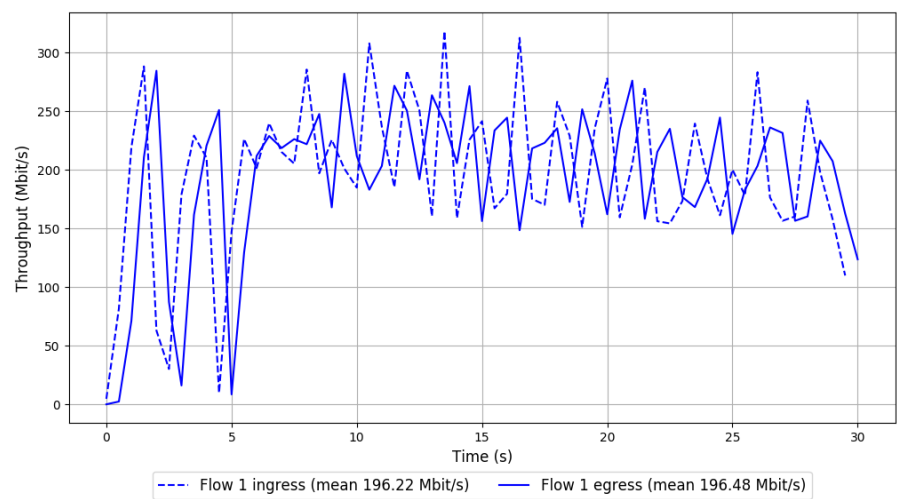
-- Flow 1:

Average throughput: 196.48 Mbit/s

95th percentile per-packet one-way delay: 161.603 ms

Loss rate: 0.21%

Run 2: Report of Verus — Data Link

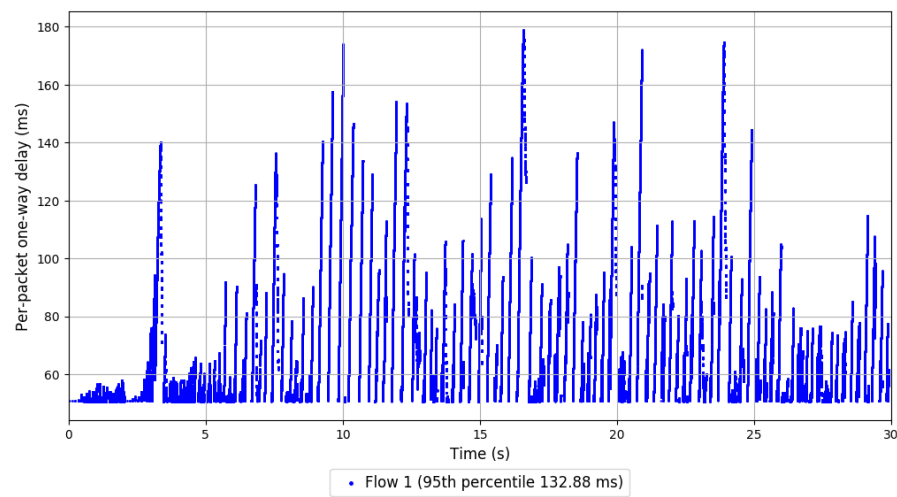
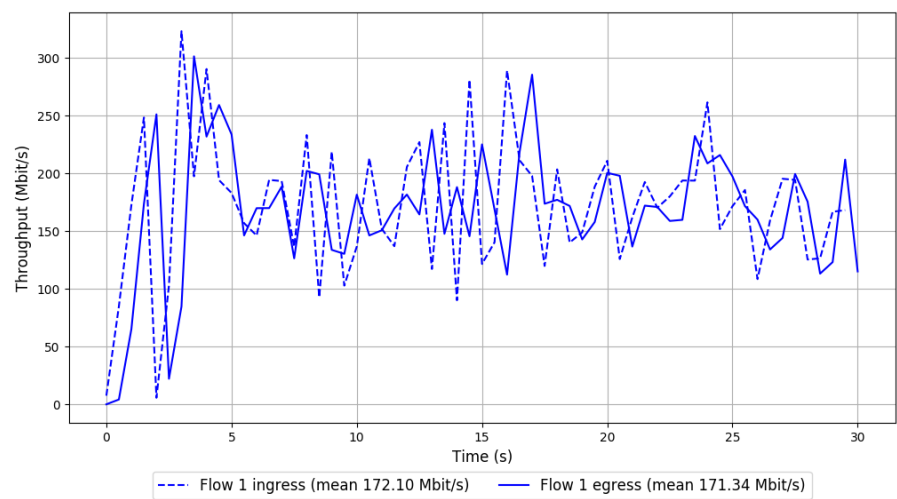


Run 3: Statistics of Verus

Start at: 2018-11-03 12:45:42
End at: 2018-11-03 12:46:12
Local clock offset: -0.129 ms
Remote clock offset: -0.122 ms

Below is generated by plot.py at 2018-11-03 15:38:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 171.34 Mbit/s
95th percentile per-packet one-way delay: 132.878 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 171.34 Mbit/s
95th percentile per-packet one-way delay: 132.878 ms
Loss rate: 0.52%

Run 3: Report of Verus — Data Link

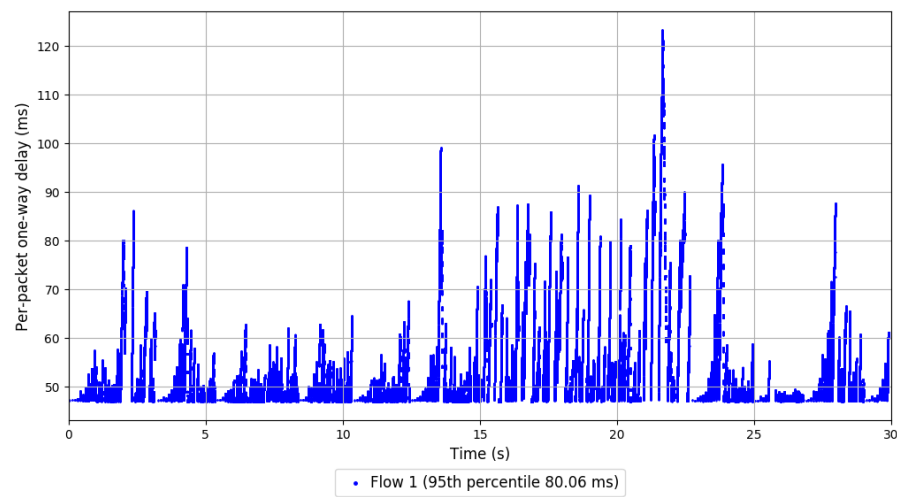
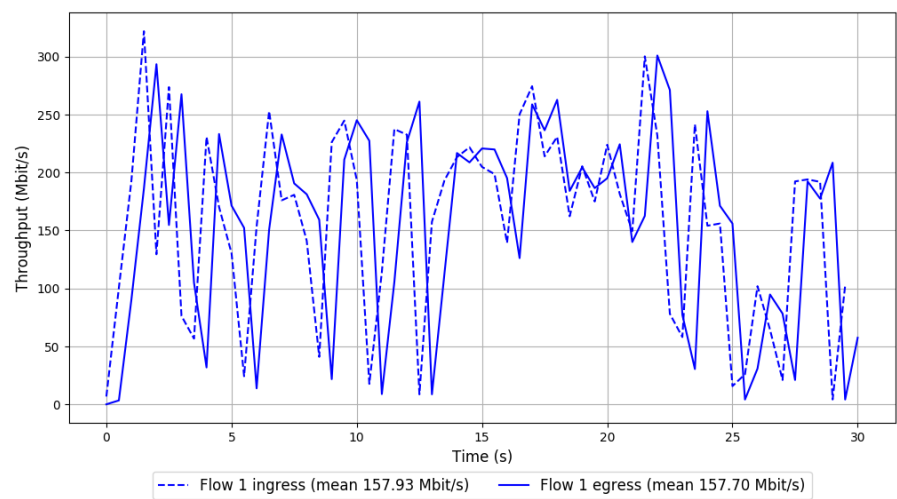


Run 4: Statistics of Verus

Start at: 2018-11-03 13:12:11
End at: 2018-11-03 13:12:41
Local clock offset: -0.222 ms
Remote clock offset: -0.062 ms

Below is generated by plot.py at 2018-11-03 15:38:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 157.70 Mbit/s
95th percentile per-packet one-way delay: 80.057 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 157.70 Mbit/s
95th percentile per-packet one-way delay: 80.057 ms
Loss rate: 0.48%

Run 4: Report of Verus — Data Link

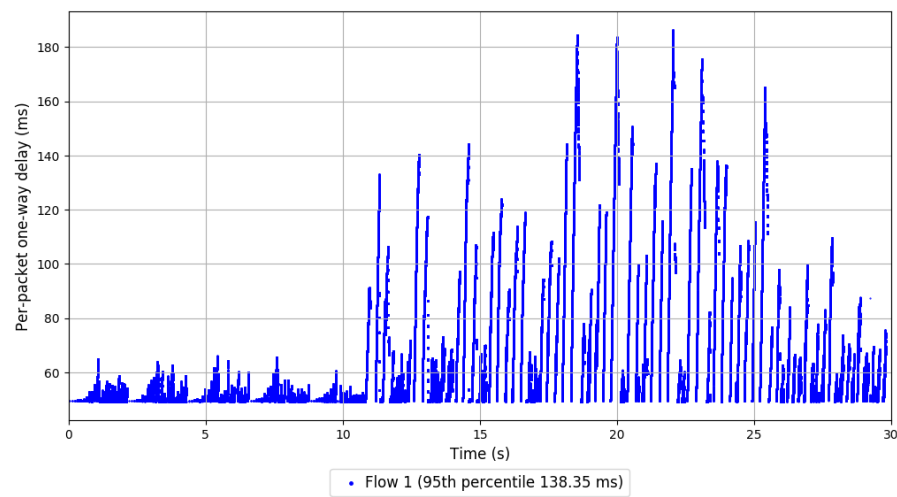
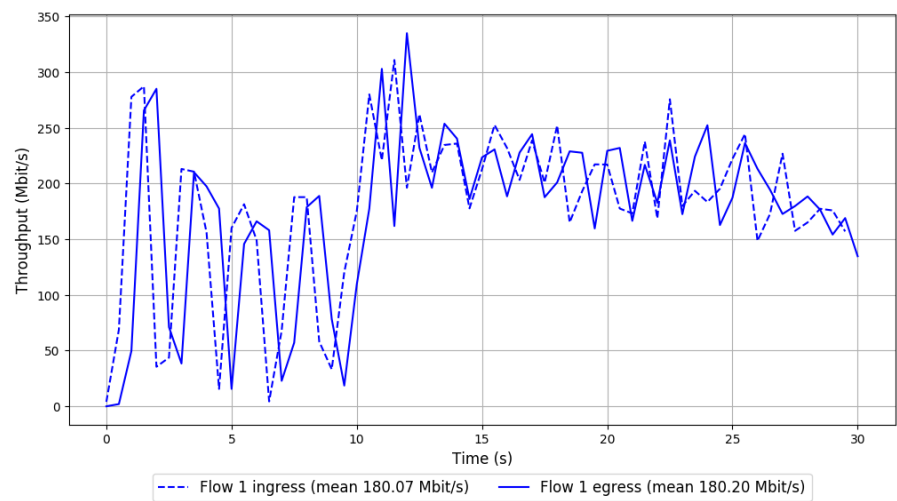


Run 5: Statistics of Verus

Start at: 2018-11-03 13:38:18
End at: 2018-11-03 13:38:48
Local clock offset: -0.502 ms
Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-11-03 15:38:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 180.20 Mbit/s
95th percentile per-packet one-way delay: 138.349 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 180.20 Mbit/s
95th percentile per-packet one-way delay: 138.349 ms
Loss rate: 0.53%

Run 5: Report of Verus — Data Link

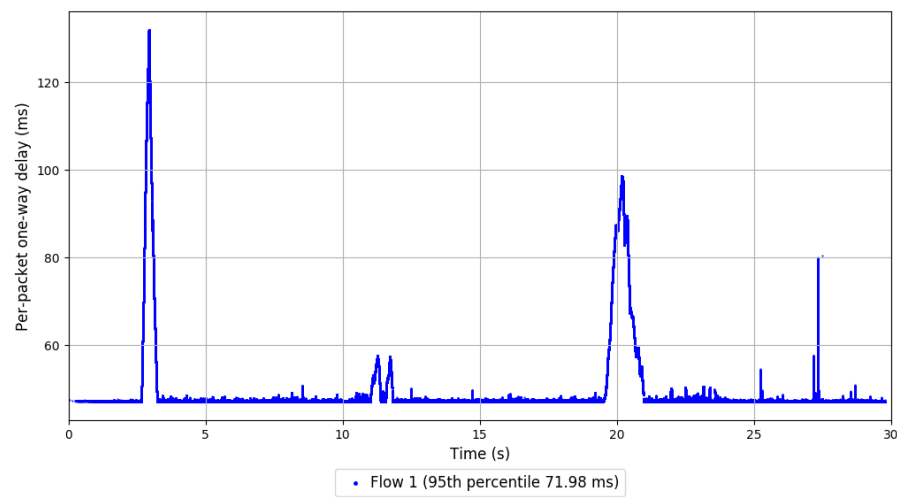
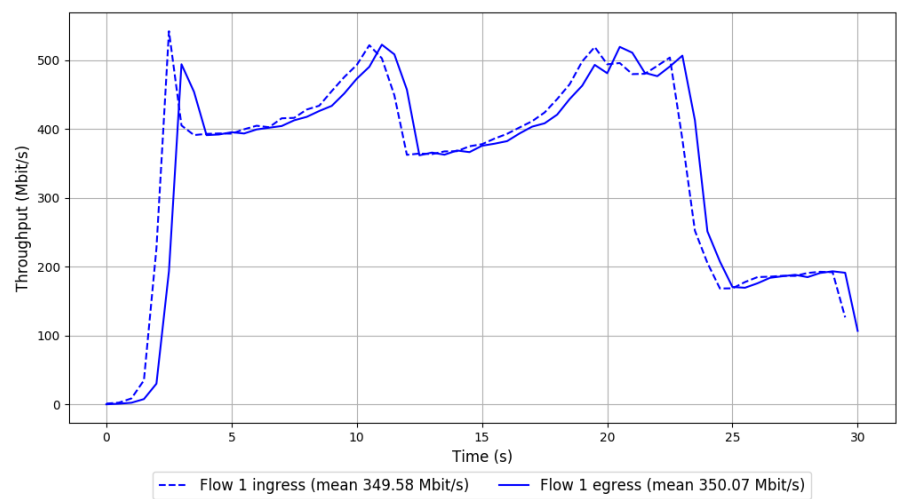


Run 1: Statistics of PCC-Vivace

Start at: 2018-11-03 11:57:53
End at: 2018-11-03 11:58:23
Local clock offset: -0.064 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-11-03 15:38:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 350.07 Mbit/s
95th percentile per-packet one-way delay: 71.984 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 350.07 Mbit/s
95th percentile per-packet one-way delay: 71.984 ms
Loss rate: 0.18%

Run 1: Report of PCC-Vivace — Data Link

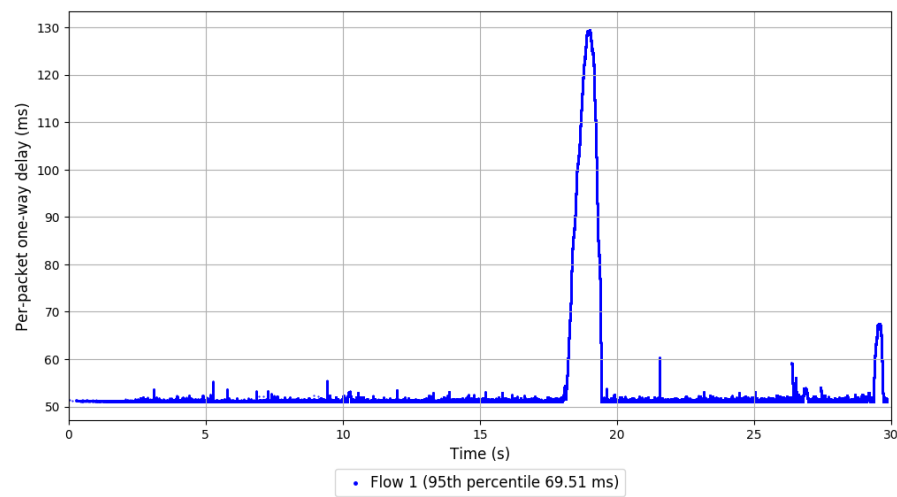
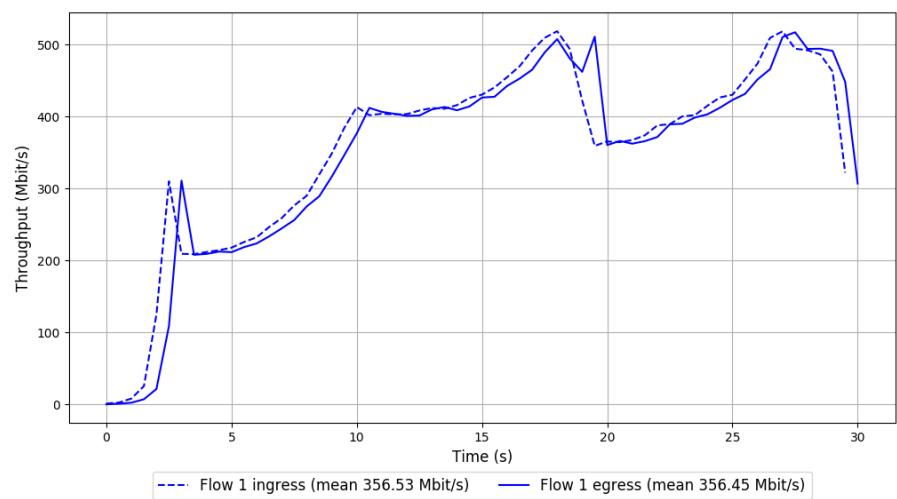


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-03 12:23:47
End at: 2018-11-03 12:24:17
Local clock offset: 0.277 ms
Remote clock offset: -0.109 ms

Below is generated by plot.py at 2018-11-03 15:38:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 356.45 Mbit/s
95th percentile per-packet one-way delay: 69.512 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 356.45 Mbit/s
95th percentile per-packet one-way delay: 69.512 ms
Loss rate: 0.35%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-11-03 12:49:59

End at: 2018-11-03 12:50:29

Local clock offset: -0.117 ms

Remote clock offset: -0.08 ms

Below is generated by plot.py at 2018-11-03 15:40:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 389.69 Mbit/s

95th percentile per-packet one-way delay: 58.532 ms

Loss rate: 0.35%

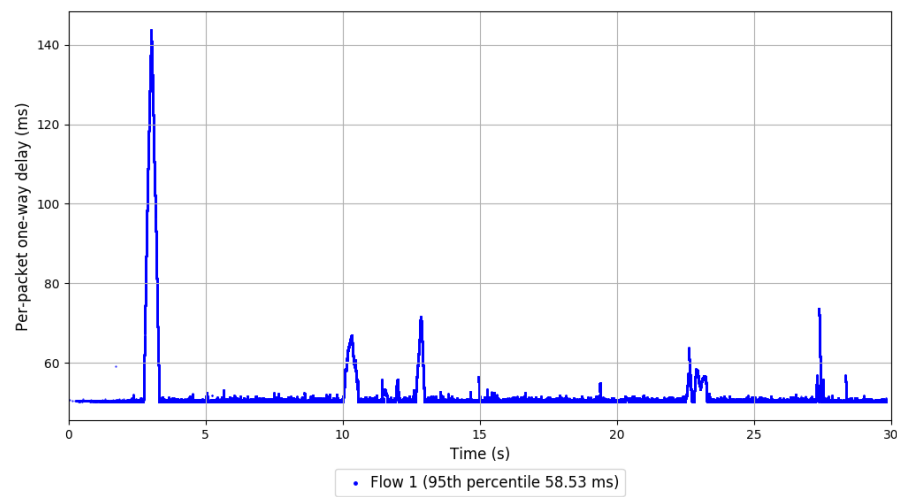
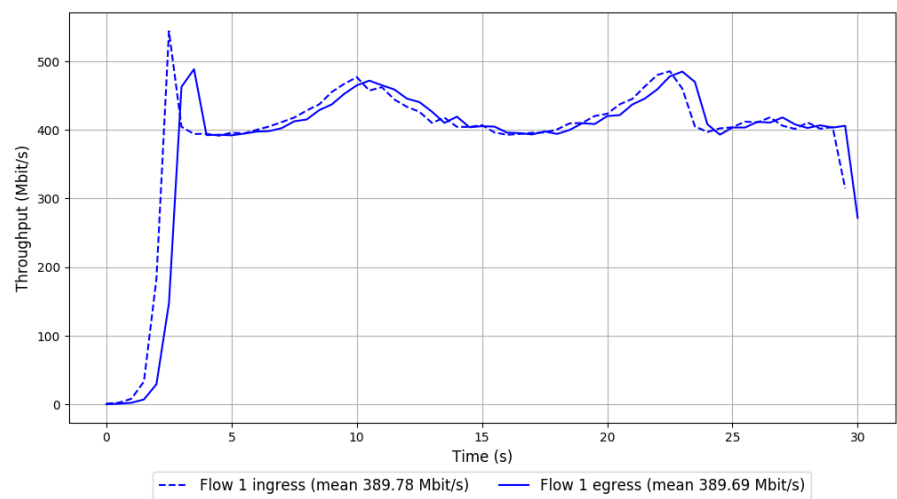
-- Flow 1:

Average throughput: 389.69 Mbit/s

95th percentile per-packet one-way delay: 58.532 ms

Loss rate: 0.35%

Run 3: Report of PCC-Vivace — Data Link

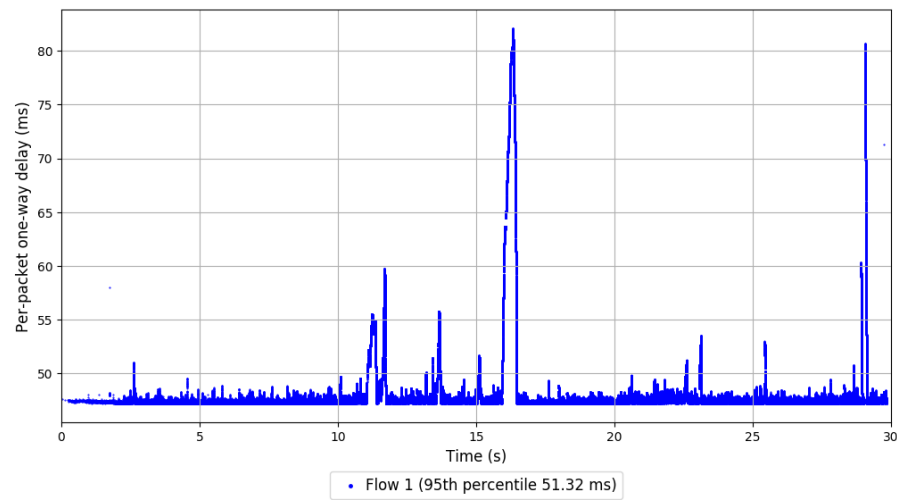
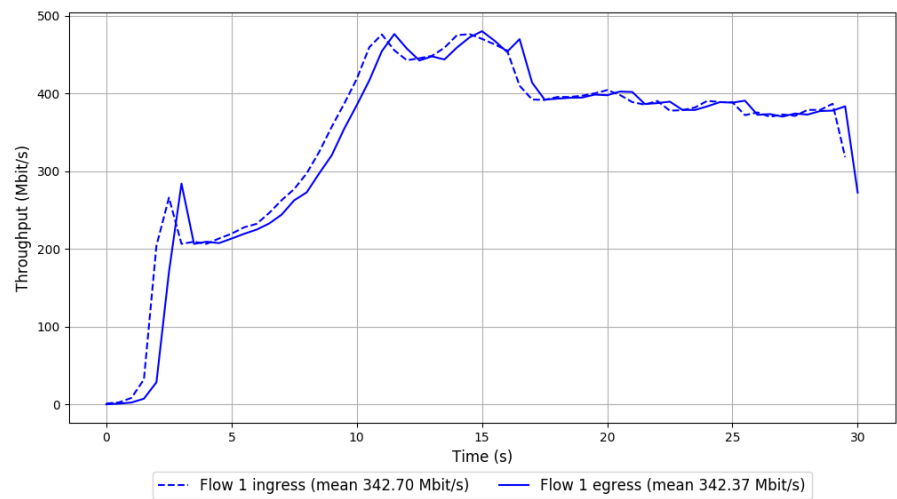


Run 4: Statistics of PCC-Vivace

Start at: 2018-11-03 13:16:06
End at: 2018-11-03 13:16:36
Local clock offset: -0.167 ms
Remote clock offset: -0.054 ms

Below is generated by plot.py at 2018-11-03 15:40:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 342.37 Mbit/s
95th percentile per-packet one-way delay: 51.319 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 342.37 Mbit/s
95th percentile per-packet one-way delay: 51.319 ms
Loss rate: 0.42%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-11-03 13:42:14

End at: 2018-11-03 13:42:44

Local clock offset: -0.06 ms

Remote clock offset: -0.098 ms

Below is generated by plot.py at 2018-11-03 15:40:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 371.02 Mbit/s

95th percentile per-packet one-way delay: 56.744 ms

Loss rate: 0.18%

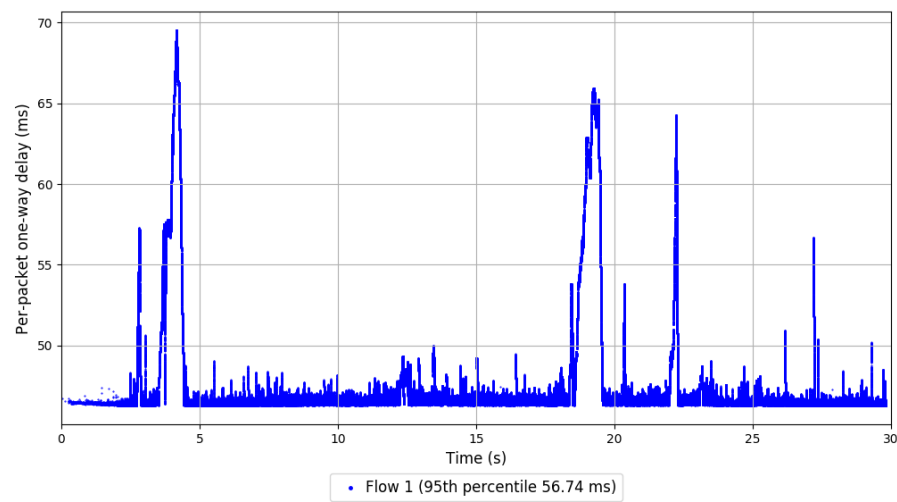
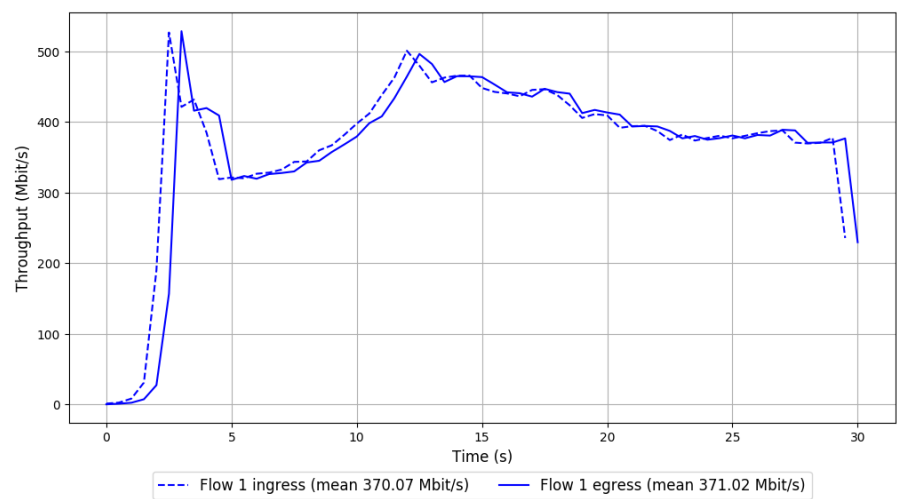
-- Flow 1:

Average throughput: 371.02 Mbit/s

95th percentile per-packet one-way delay: 56.744 ms

Loss rate: 0.18%

Run 5: Report of PCC-Vivace — Data Link

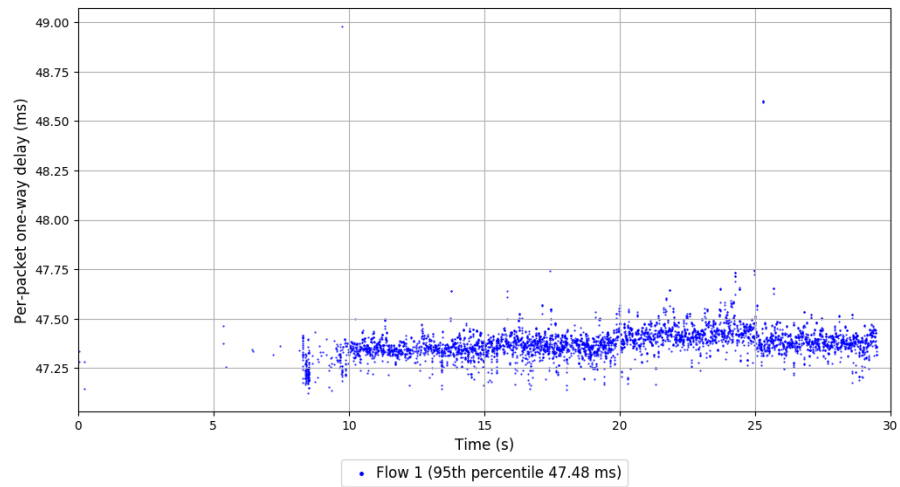
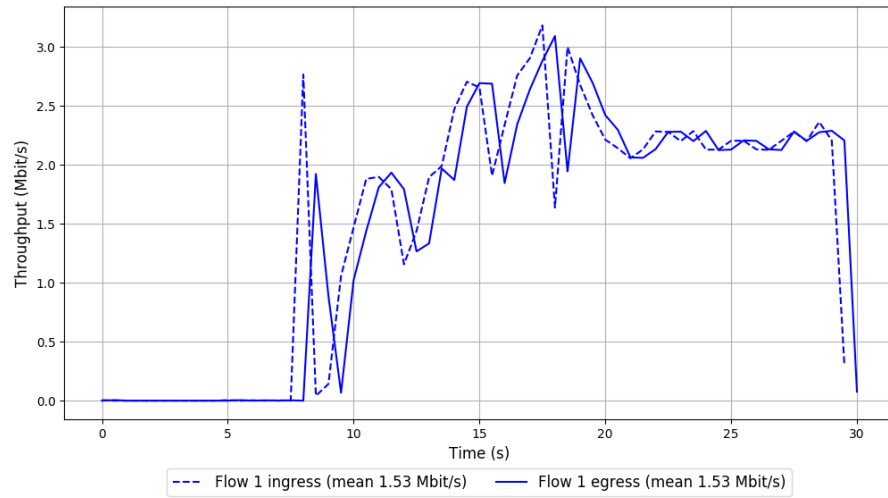


```
Run 1: Statistics of WebRTC media

Start at: 2018-11-03 12:05:28
End at: 2018-11-03 12:05:58
Local clock offset: -0.058 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2018-11-03 15:40:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 47.480 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 47.480 ms
Loss rate: 0.50%
```

Run 1: Report of WebRTC media — Data Link

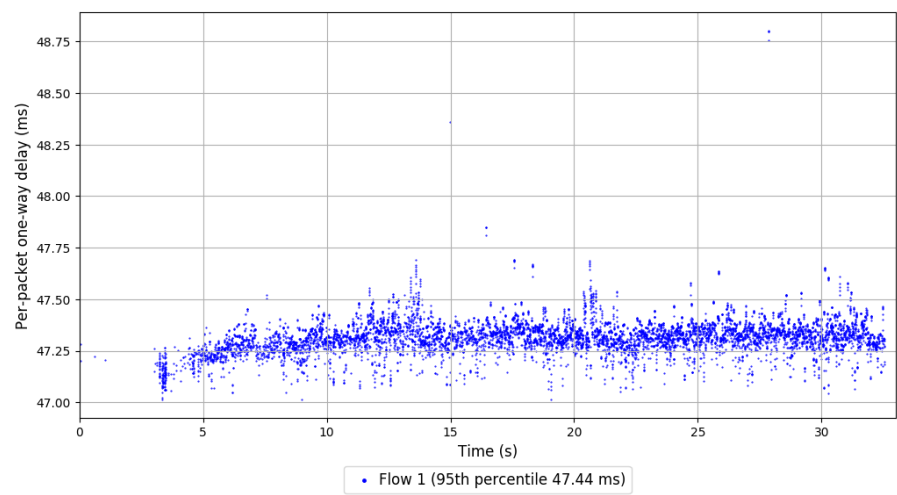
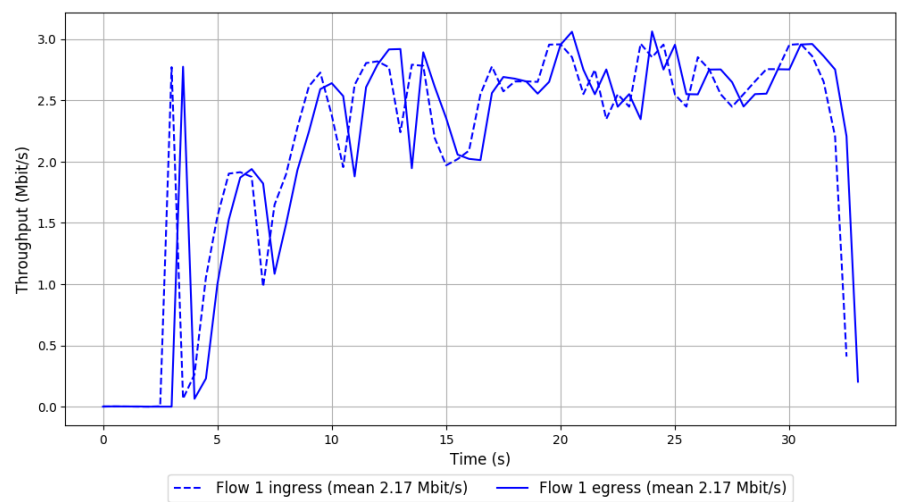


Run 2: Statistics of WebRTC media

Start at: 2018-11-03 12:31:22
End at: 2018-11-03 12:31:52
Local clock offset: -0.115 ms
Remote clock offset: -0.113 ms

Below is generated by plot.py at 2018-11-03 15:40:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 47.435 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 47.435 ms
Loss rate: 0.29%

Run 2: Report of WebRTC media — Data Link

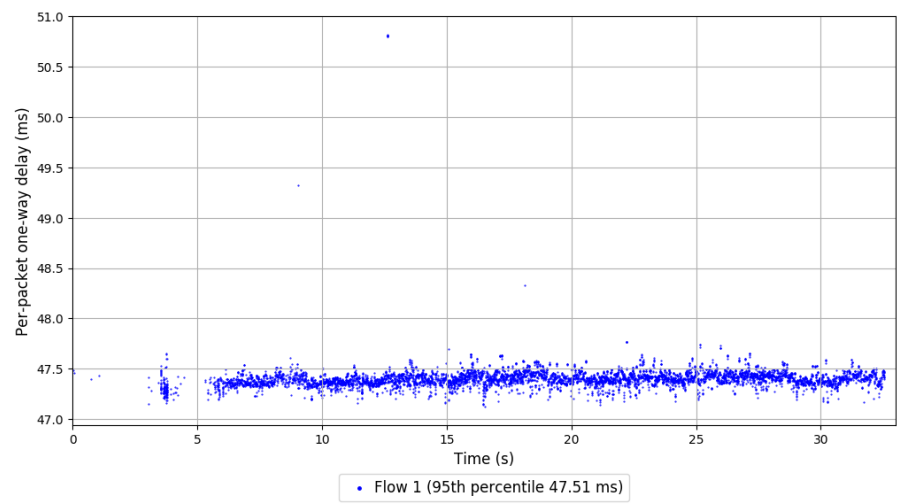
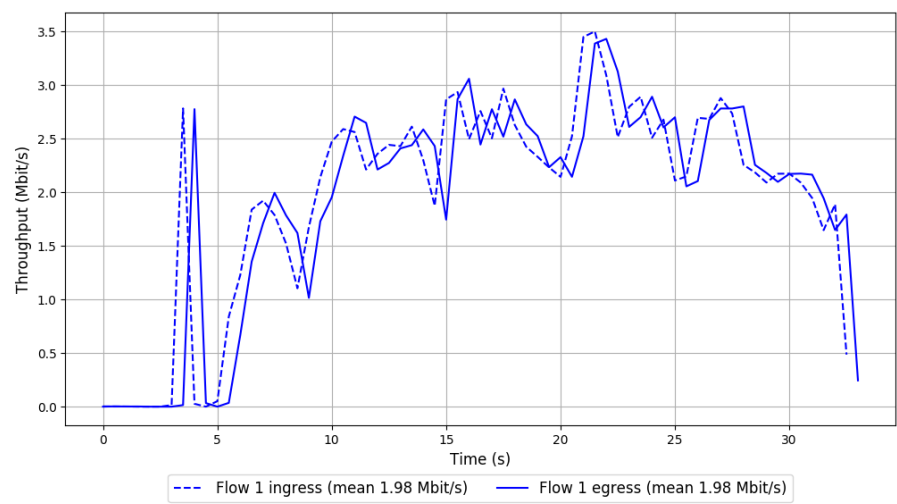


Run 3: Statistics of WebRTC media

Start at: 2018-11-03 12:57:42
End at: 2018-11-03 12:58:12
Local clock offset: -0.141 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-11-03 15:40:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 47.508 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 47.508 ms
Loss rate: 0.38%

Run 3: Report of WebRTC media — Data Link

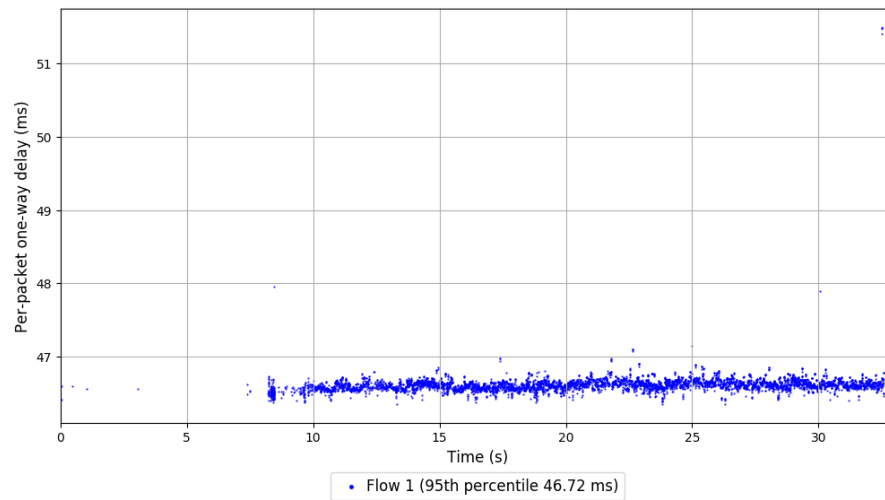
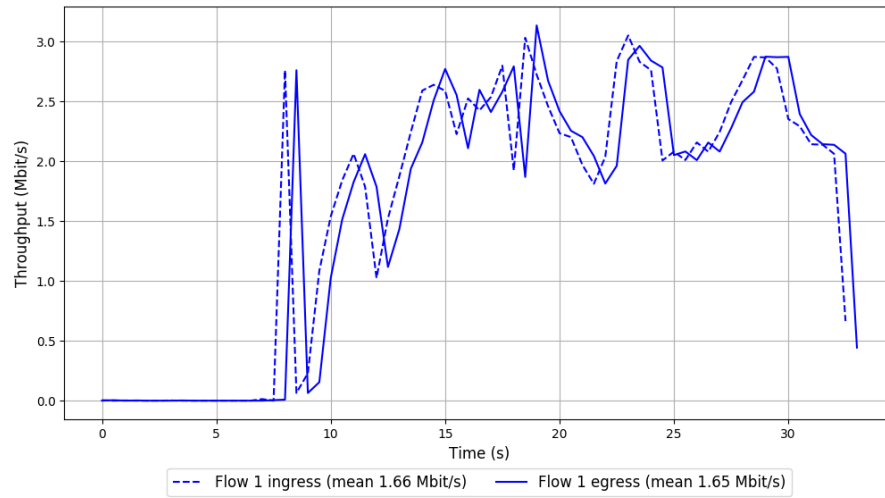


Run 4: Statistics of WebRTC media

Start at: 2018-11-03 13:23:46
End at: 2018-11-03 13:24:16
Local clock offset: -0.185 ms
Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-11-03 15:40:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 46.722 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 46.722 ms
Loss rate: 0.41%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-03 13:49:58
End at: 2018-11-03 13:50:28
Local clock offset: -0.049 ms
Remote clock offset: -0.135 ms

Below is generated by plot.py at 2018-11-03 15:40:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 46.745 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 46.745 ms
Loss rate: 0.29%

Run 5: Report of WebRTC media — Data Link

