

Pantheon Report

Generated at 2018-11-15 14:29:31 (UTC).

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

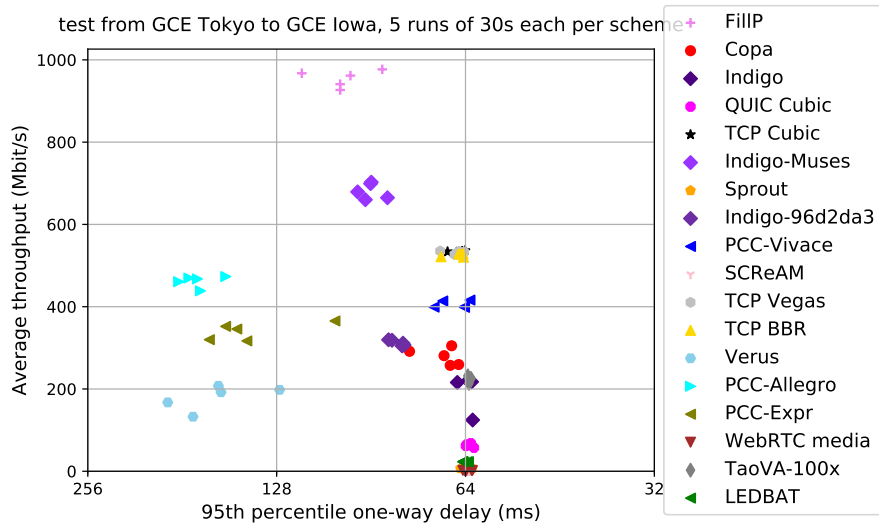
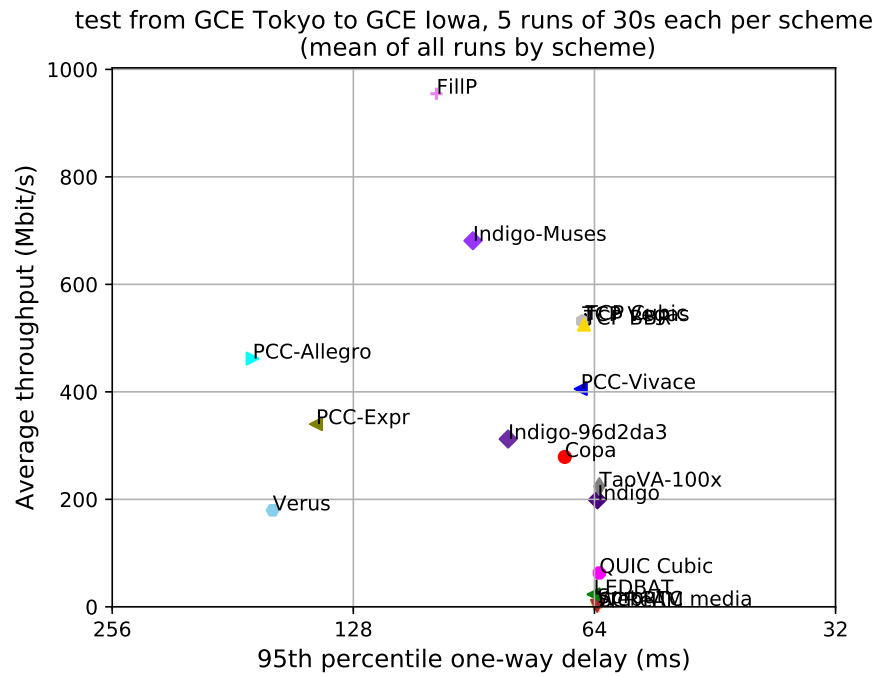
System info:

```
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 @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-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	525.15	65.95	0.45
Copa	5	278.87	69.70	0.38
TCP Cubic	5	533.90	65.68	0.44
FillP	5	954.72	100.79	0.66
Indigo	5	199.12	63.46	0.48
Indigo-96d2da3	5	312.16	82.03	0.37
LEDBAT	5	23.15	64.16	0.84
Indigo-Muses	5	681.15	90.77	0.52
PCC-Allegro	5	461.93	170.96	2.80
PCC-Expr	5	339.96	142.51	2.38
QUIC Cubic	4	63.02	63.11	0.67
SCReAM	5	0.22	63.22	0.38
Sprout	5	6.78	63.47	0.51
TaoVA-100x	5	223.72	63.11	0.43
TCP Vegas	5	531.81	66.28	0.41
Verus	5	179.54	161.40	1.24
PCC-Vivace	5	405.47	66.57	0.48
WebRTC media	5	2.01	63.51	0.50

Run 1: Statistics of TCP BBR

Start at: 2018-11-15 10:43:24

End at: 2018-11-15 10:43:54

Local clock offset: -0.11 ms

Remote clock offset: -0.074 ms

Below is generated by plot.py at 2018-11-15 13:12:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 528.18 Mbit/s

95th percentile per-packet one-way delay: 64.574 ms

Loss rate: 0.45%

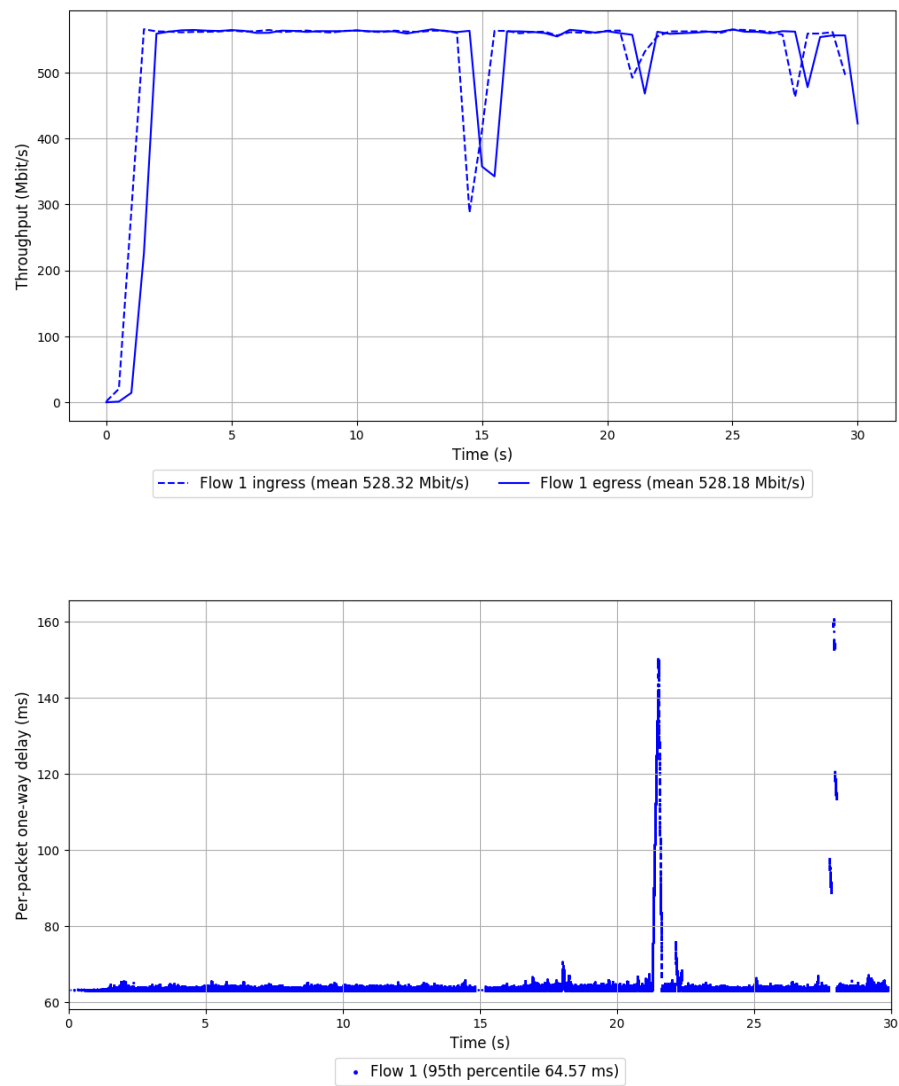
-- Flow 1:

Average throughput: 528.18 Mbit/s

95th percentile per-packet one-way delay: 64.574 ms

Loss rate: 0.45%

Run 1: Report of TCP BBR — Data Link

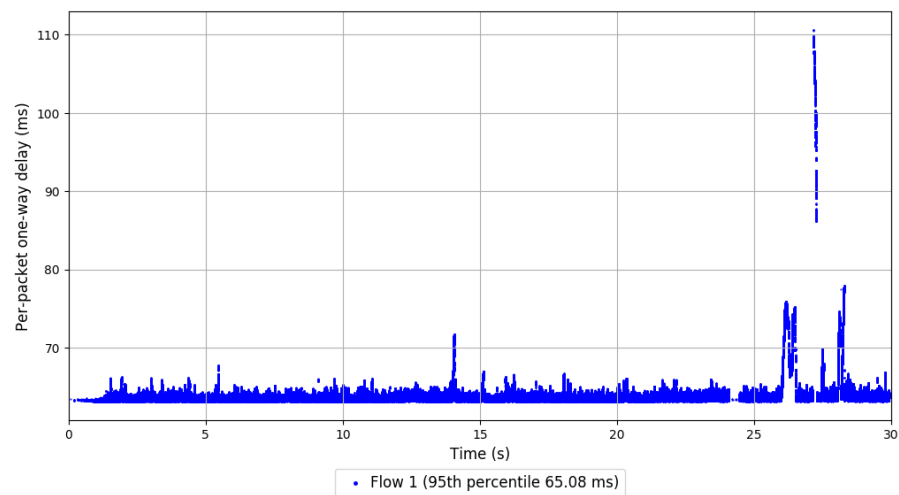
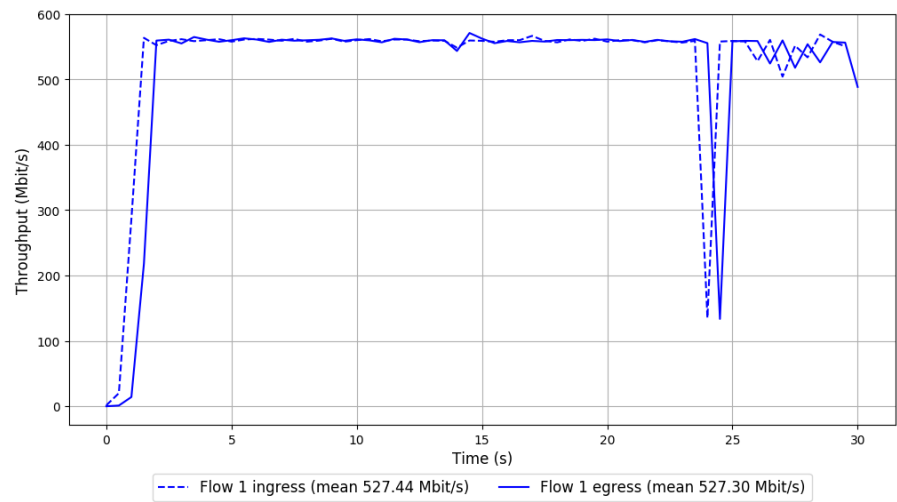


Run 2: Statistics of TCP BBR

Start at: 2018-11-15 11:09:26
End at: 2018-11-15 11:09:56
Local clock offset: -0.112 ms
Remote clock offset: -0.115 ms

Below is generated by plot.py at 2018-11-15 13:12:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 527.30 Mbit/s
95th percentile per-packet one-way delay: 65.083 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 527.30 Mbit/s
95th percentile per-packet one-way delay: 65.083 ms
Loss rate: 0.45%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-11-15 11:35:33

End at: 2018-11-15 11:36:03

Local clock offset: -0.07 ms

Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-11-15 13:12:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 521.41 Mbit/s

95th percentile per-packet one-way delay: 70.017 ms

Loss rate: 0.45%

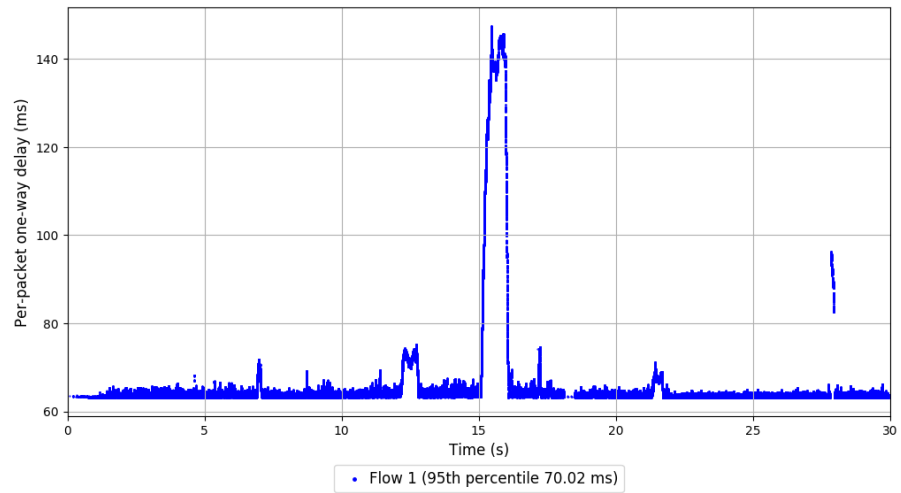
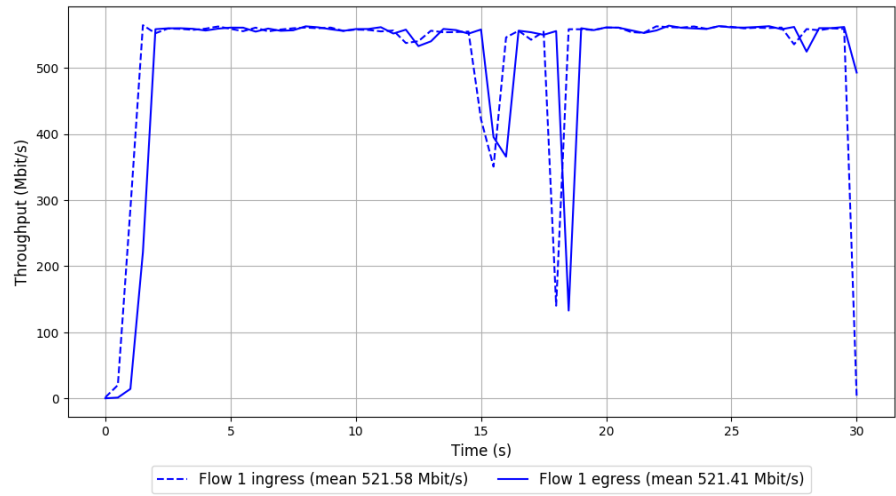
-- Flow 1:

Average throughput: 521.41 Mbit/s

95th percentile per-packet one-way delay: 70.017 ms

Loss rate: 0.45%

Run 3: Report of TCP BBR — Data Link

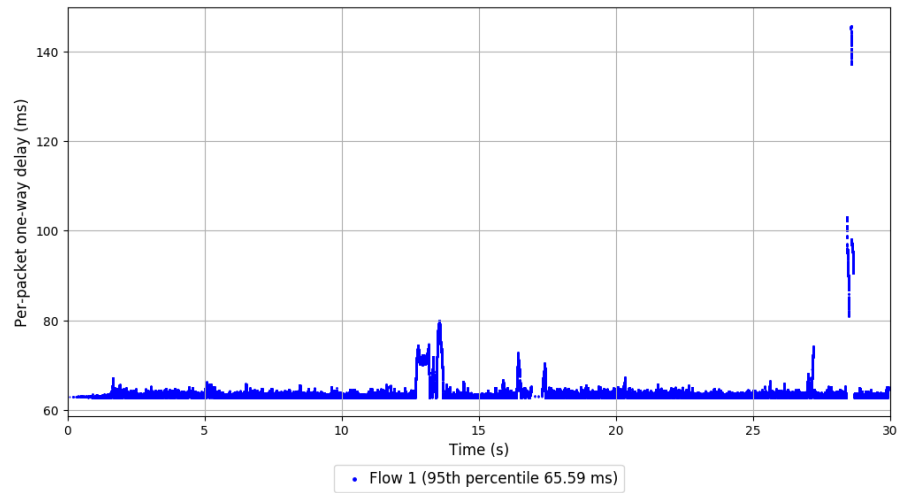
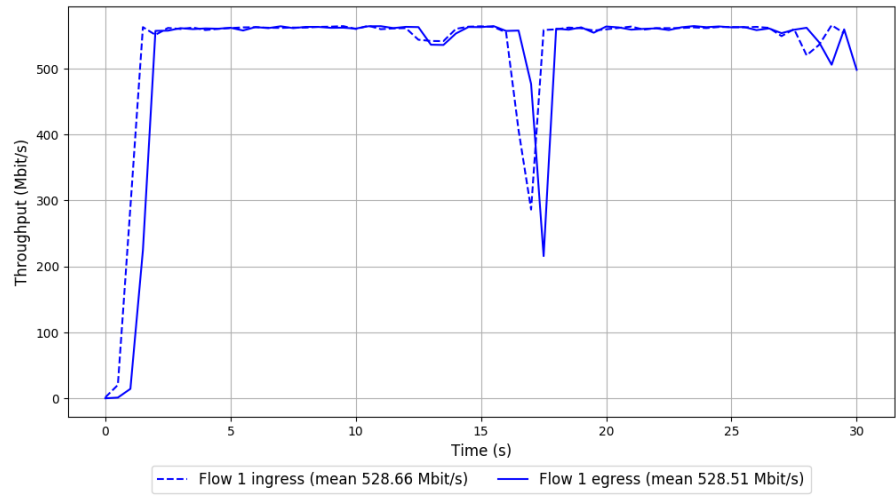


Run 4: Statistics of TCP BBR

Start at: 2018-11-15 12:01:42
End at: 2018-11-15 12:02:13
Local clock offset: -0.059 ms
Remote clock offset: -0.258 ms

Below is generated by plot.py at 2018-11-15 13:12:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 528.51 Mbit/s
95th percentile per-packet one-way delay: 65.590 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 528.51 Mbit/s
95th percentile per-packet one-way delay: 65.590 ms
Loss rate: 0.45%

Run 4: Report of TCP BBR — Data Link

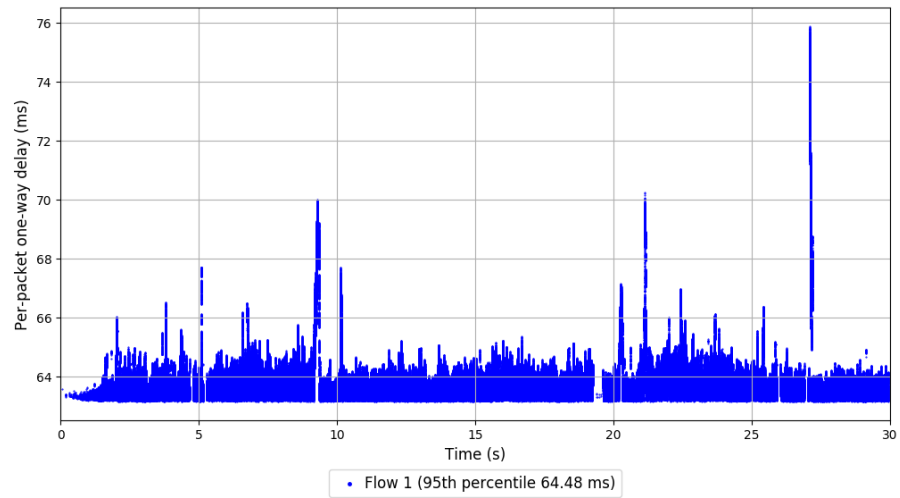
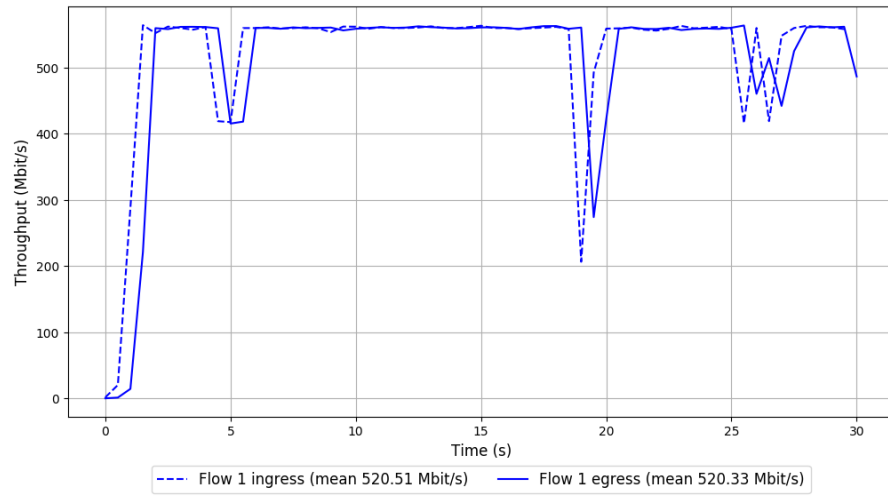


Run 5: Statistics of TCP BBR

Start at: 2018-11-15 12:27:48
End at: 2018-11-15 12:28:18
Local clock offset: -0.016 ms
Remote clock offset: -0.662 ms

Below is generated by plot.py at 2018-11-15 13:12:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 520.33 Mbit/s
95th percentile per-packet one-way delay: 64.481 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 520.33 Mbit/s
95th percentile per-packet one-way delay: 64.481 ms
Loss rate: 0.46%

Run 5: Report of TCP BBR — Data Link

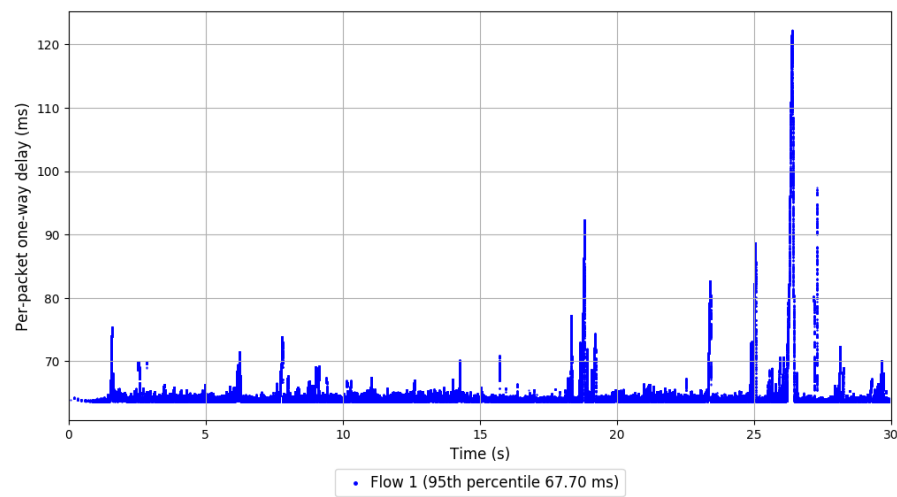
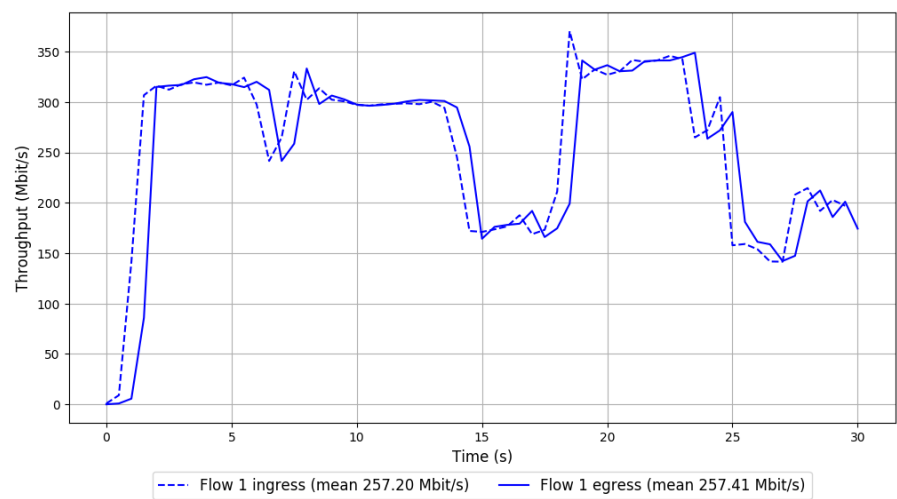


Run 1: Statistics of Copa

Start at: 2018-11-15 10:55:28
End at: 2018-11-15 10:55:58
Local clock offset: -0.082 ms
Remote clock offset: -0.288 ms

Below is generated by plot.py at 2018-11-15 13:12:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 257.41 Mbit/s
95th percentile per-packet one-way delay: 67.696 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 257.41 Mbit/s
95th percentile per-packet one-way delay: 67.696 ms
Loss rate: 0.34%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

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

End at: 2018-11-15 11:22:06

Local clock offset: -0.08 ms

Remote clock offset: -1.36 ms

Below is generated by plot.py at 2018-11-15 13:12:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 259.42 Mbit/s

95th percentile per-packet one-way delay: 65.616 ms

Loss rate: 0.38%

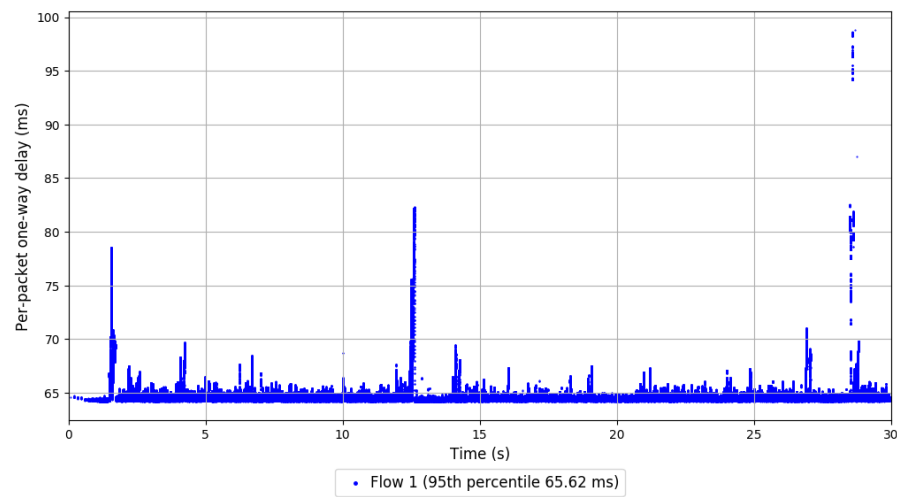
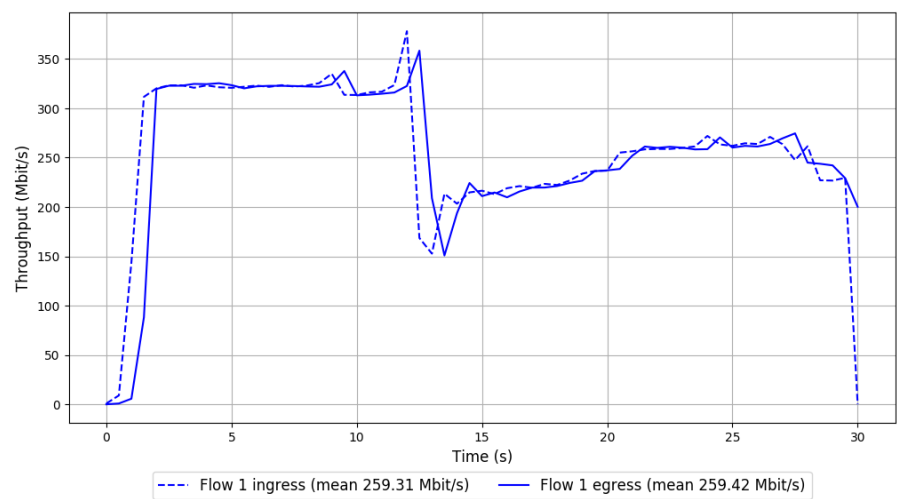
-- Flow 1:

Average throughput: 259.42 Mbit/s

95th percentile per-packet one-way delay: 65.616 ms

Loss rate: 0.38%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-11-15 11:47:43

End at: 2018-11-15 11:48:13

Local clock offset: -0.058 ms

Remote clock offset: 0.28 ms

Below is generated by plot.py at 2018-11-15 13:12:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 291.48 Mbit/s

95th percentile per-packet one-way delay: 78.593 ms

Loss rate: 0.47%

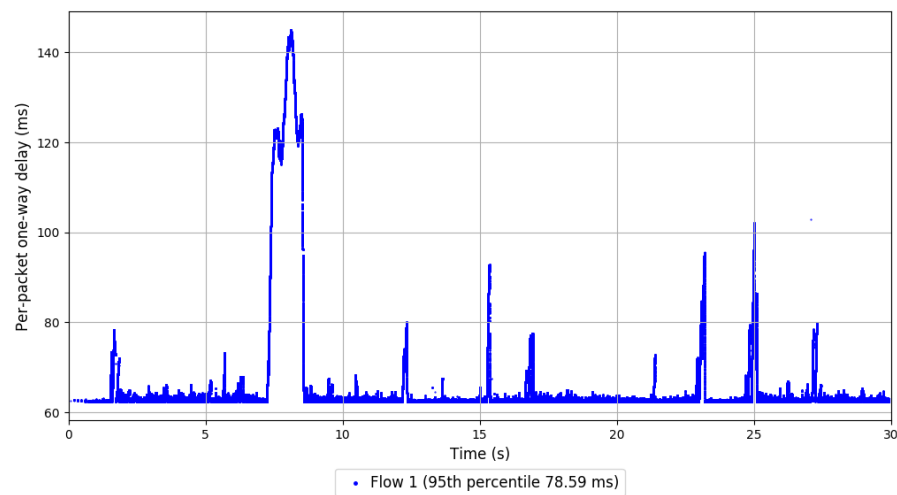
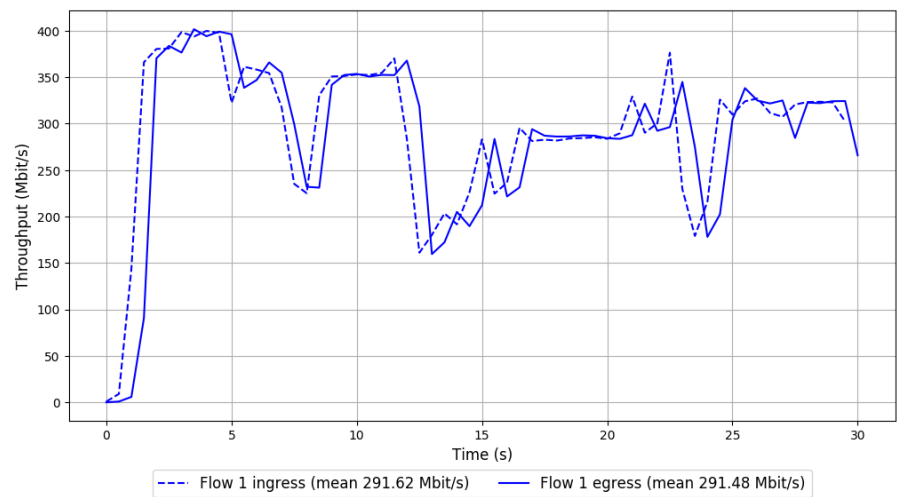
-- Flow 1:

Average throughput: 291.48 Mbit/s

95th percentile per-packet one-way delay: 78.593 ms

Loss rate: 0.47%

Run 3: Report of Copa — Data Link

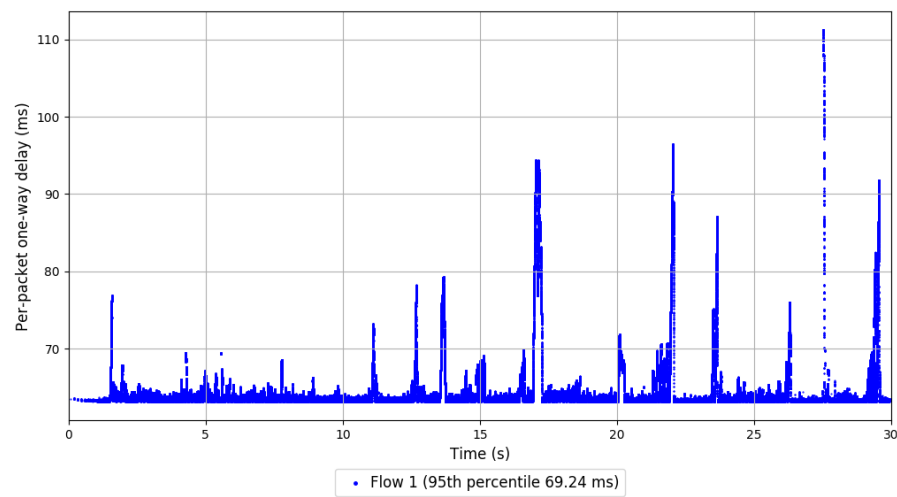
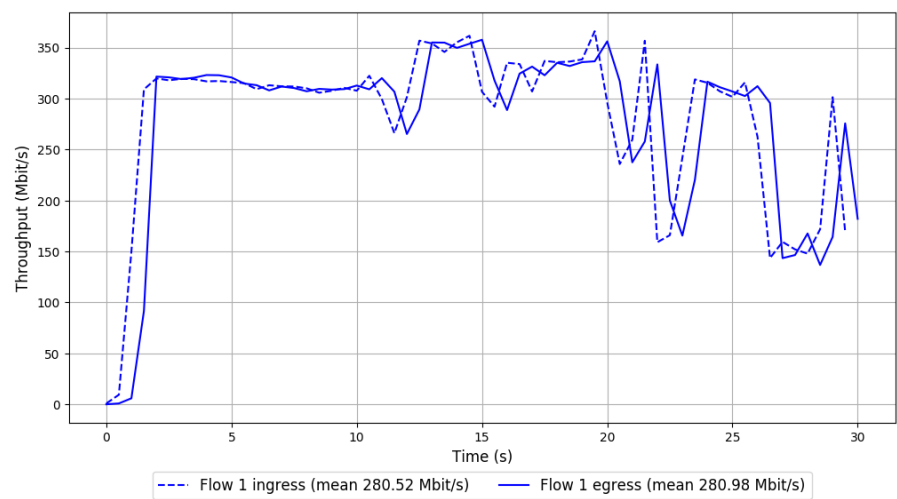


Run 4: Statistics of Copa

Start at: 2018-11-15 12:13:55
End at: 2018-11-15 12:14:25
Local clock offset: -0.067 ms
Remote clock offset: -0.563 ms

Below is generated by plot.py at 2018-11-15 13:21:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 280.98 Mbit/s
95th percentile per-packet one-way delay: 69.241 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 280.98 Mbit/s
95th percentile per-packet one-way delay: 69.241 ms
Loss rate: 0.26%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-15 12:40:00

End at: 2018-11-15 12:40:30

Local clock offset: 0.058 ms

Remote clock offset: 0.869 ms

Below is generated by plot.py at 2018-11-15 13:21:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 305.06 Mbit/s

95th percentile per-packet one-way delay: 67.336 ms

Loss rate: 0.46%

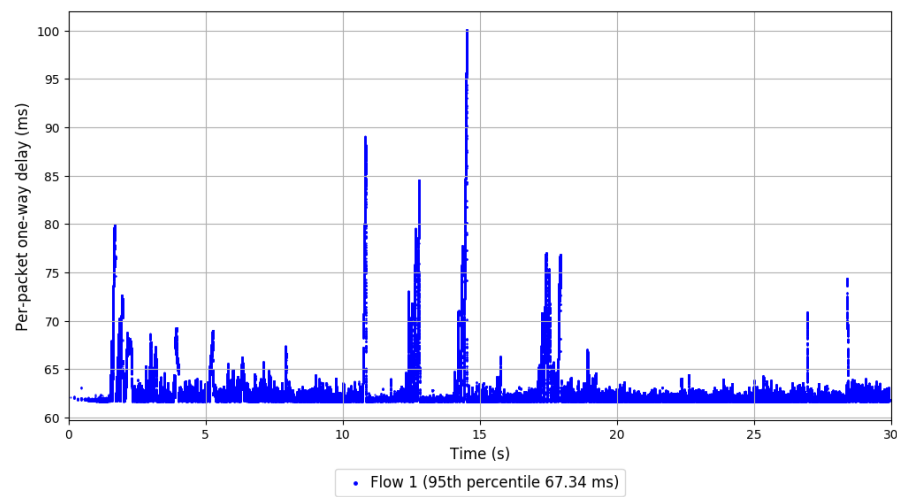
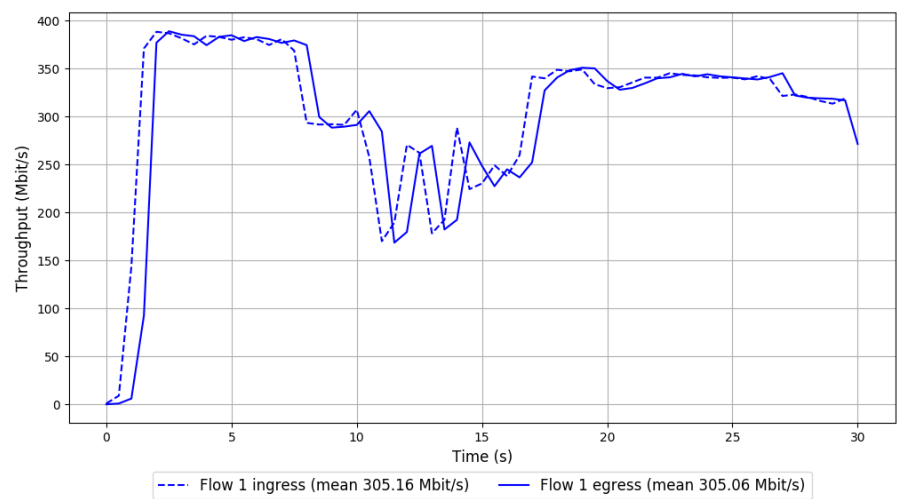
-- Flow 1:

Average throughput: 305.06 Mbit/s

95th percentile per-packet one-way delay: 67.336 ms

Loss rate: 0.46%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 11:05:15

End at: 2018-11-15 11:05:45

Local clock offset: -0.123 ms

Remote clock offset: 0.631 ms

Below is generated by plot.py at 2018-11-15 13:21:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 536.36 Mbit/s

95th percentile per-packet one-way delay: 64.101 ms

Loss rate: 0.44%

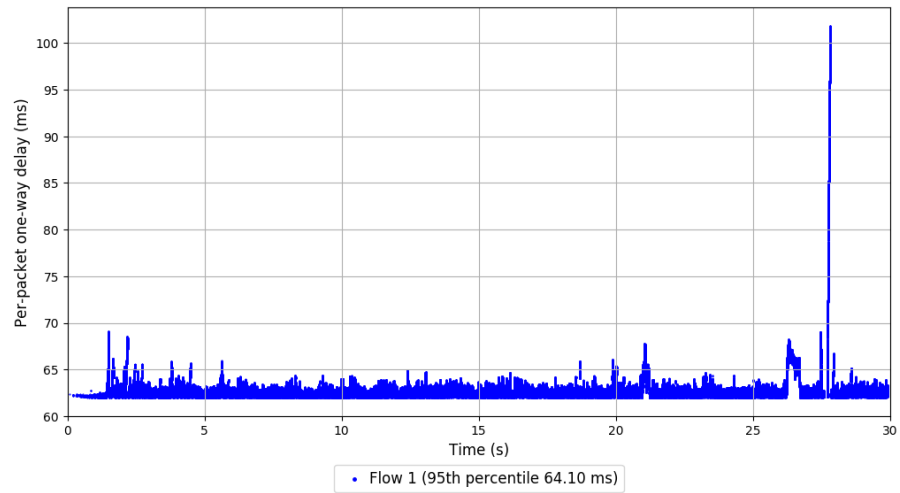
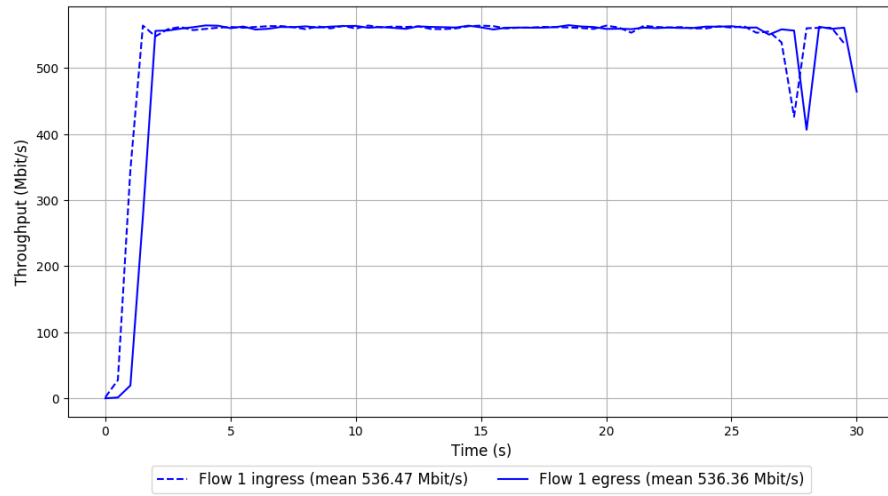
-- Flow 1:

Average throughput: 536.36 Mbit/s

95th percentile per-packet one-way delay: 64.101 ms

Loss rate: 0.44%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 11:31:23

End at: 2018-11-15 11:31:53

Local clock offset: -0.013 ms

Remote clock offset: 0.623 ms

Below is generated by plot.py at 2018-11-15 13:21:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 532.43 Mbit/s

95th percentile per-packet one-way delay: 65.048 ms

Loss rate: 0.45%

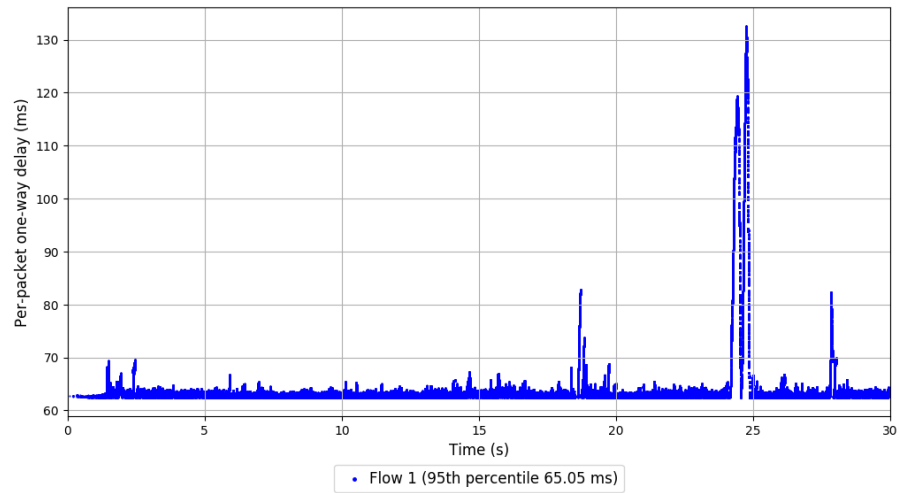
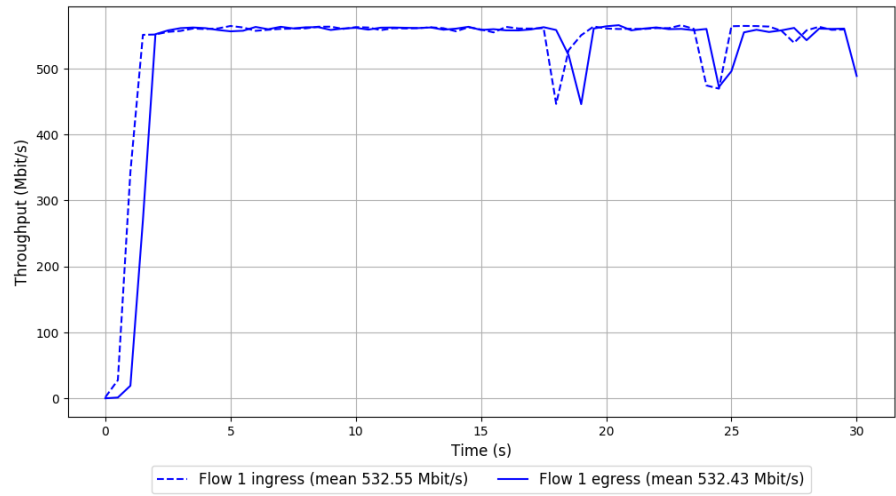
-- Flow 1:

Average throughput: 532.43 Mbit/s

95th percentile per-packet one-way delay: 65.048 ms

Loss rate: 0.45%

Run 2: Report of TCP Cubic — Data Link

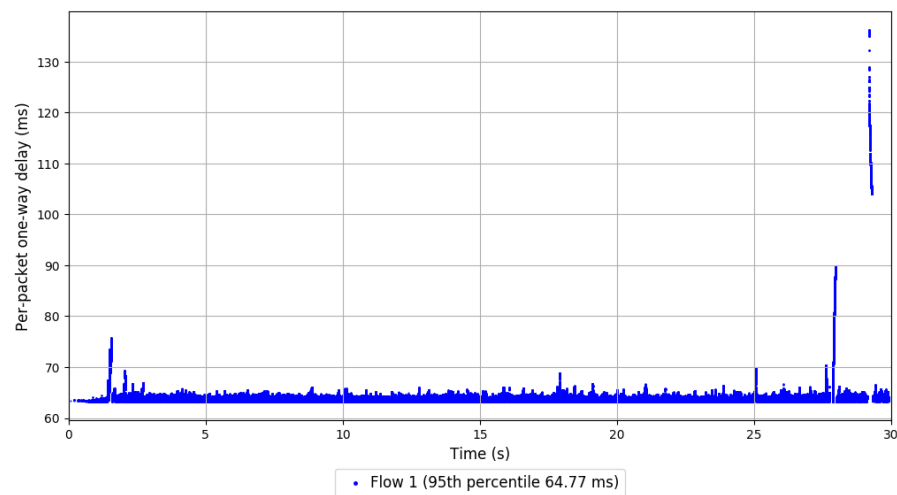
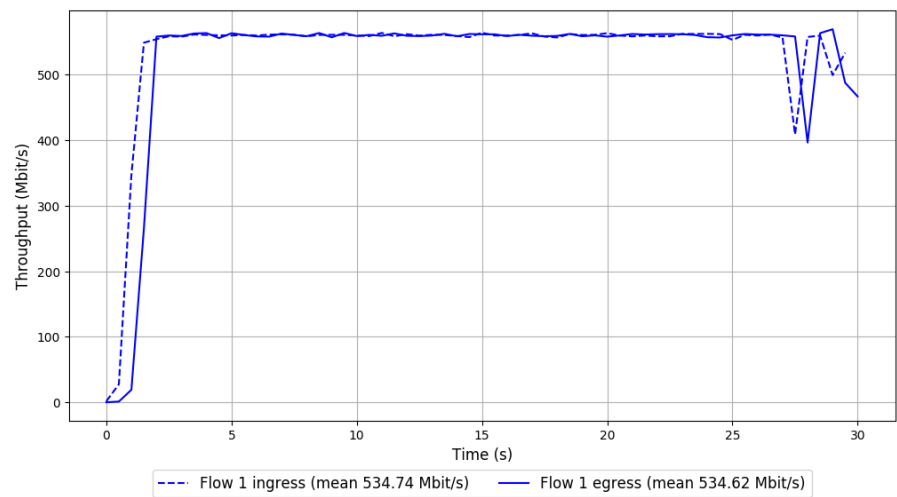


Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 11:57:34
End at: 2018-11-15 11:58:04
Local clock offset: -0.059 ms
Remote clock offset: -0.466 ms

Below is generated by plot.py at 2018-11-15 13:21:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 534.62 Mbit/s
95th percentile per-packet one-way delay: 64.770 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 534.62 Mbit/s
95th percentile per-packet one-way delay: 64.770 ms
Loss rate: 0.44%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 12:23:45

End at: 2018-11-15 12:24:15

Local clock offset: 0.026 ms

Remote clock offset: 0.826 ms

Below is generated by plot.py at 2018-11-15 13:21:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 533.58 Mbit/s

95th percentile per-packet one-way delay: 68.364 ms

Loss rate: 0.44%

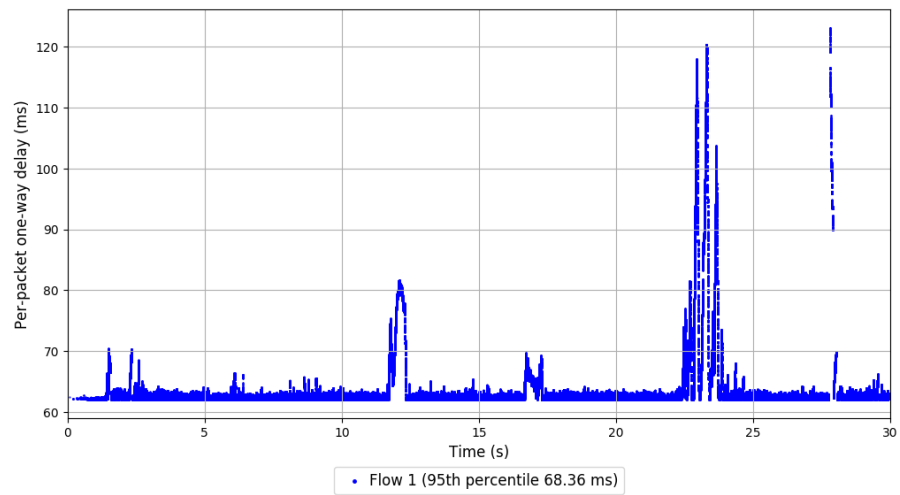
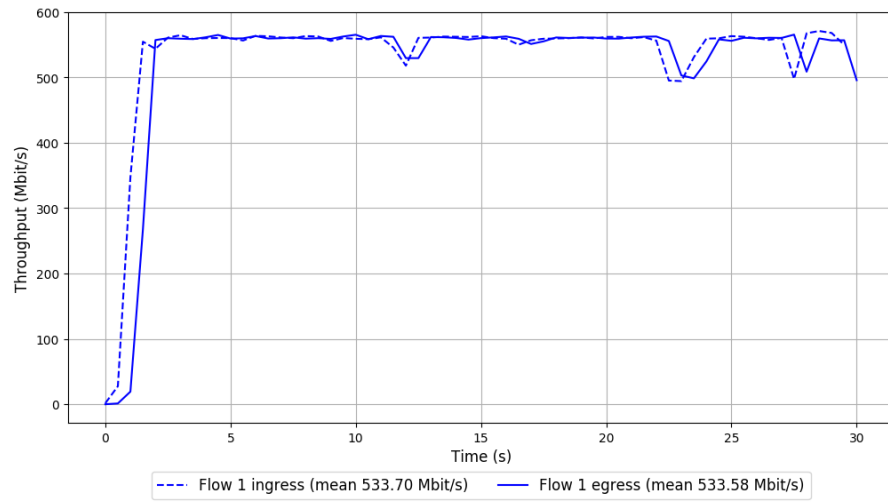
-- Flow 1:

Average throughput: 533.58 Mbit/s

95th percentile per-packet one-way delay: 68.364 ms

Loss rate: 0.44%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 12:49:56

End at: 2018-11-15 12:50:26

Local clock offset: 0.022 ms

Remote clock offset: 0.952 ms

Below is generated by plot.py at 2018-11-15 13:21:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 532.53 Mbit/s

95th percentile per-packet one-way delay: 66.129 ms

Loss rate: 0.45%

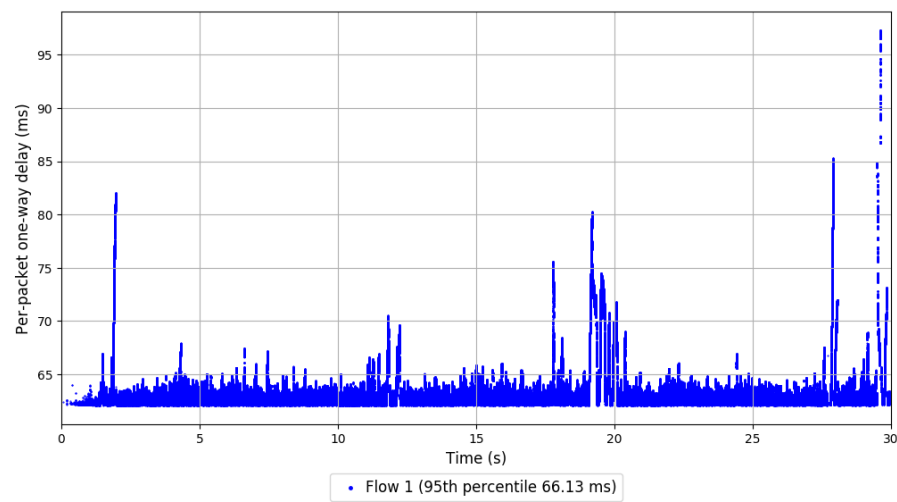
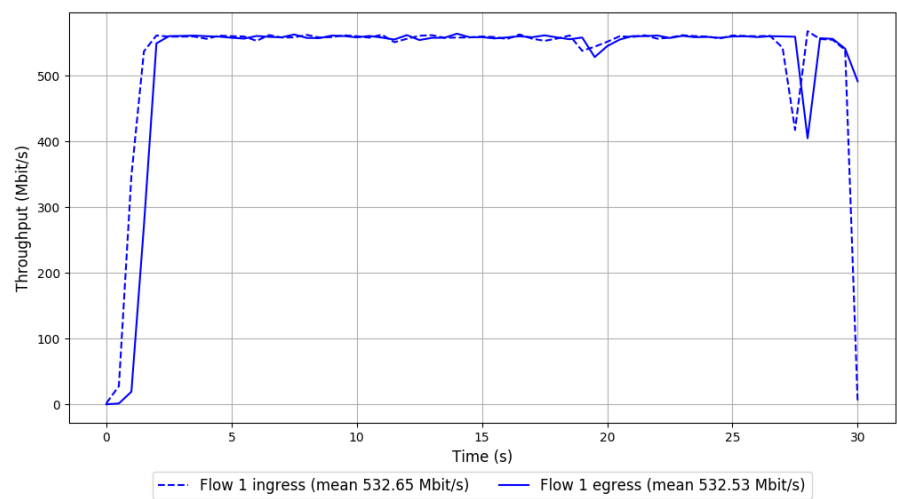
-- Flow 1:

Average throughput: 532.53 Mbit/s

95th percentile per-packet one-way delay: 66.129 ms

Loss rate: 0.45%

Run 5: Report of TCP Cubic — Data Link

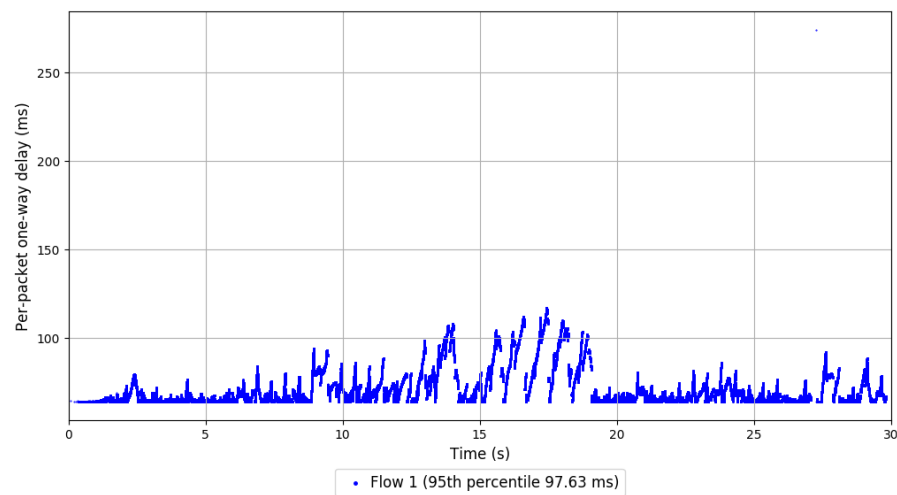
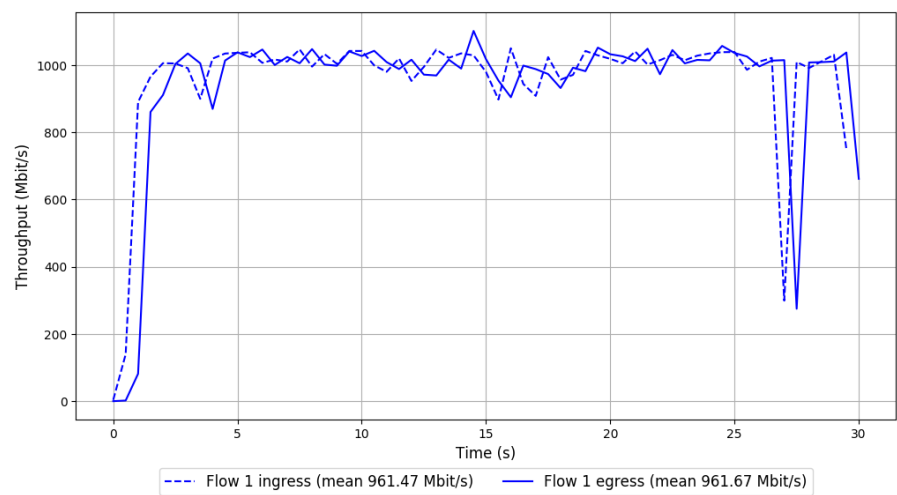


Run 1: Statistics of FillP

Start at: 2018-11-15 10:49:25
End at: 2018-11-15 10:49:55
Local clock offset: -0.089 ms
Remote clock offset: -0.722 ms

Below is generated by plot.py at 2018-11-15 13:32:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 961.67 Mbit/s
95th percentile per-packet one-way delay: 97.629 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 961.67 Mbit/s
95th percentile per-packet one-way delay: 97.629 ms
Loss rate: 0.40%

Run 1: Report of FillP — Data Link

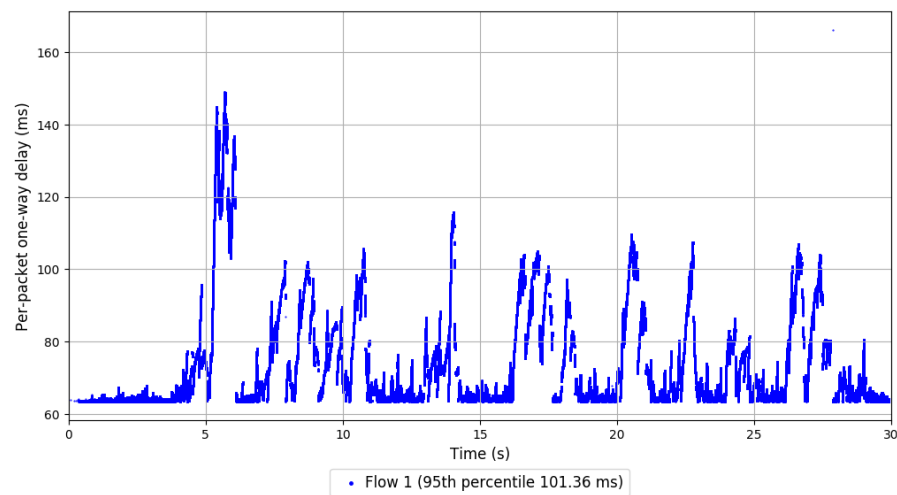
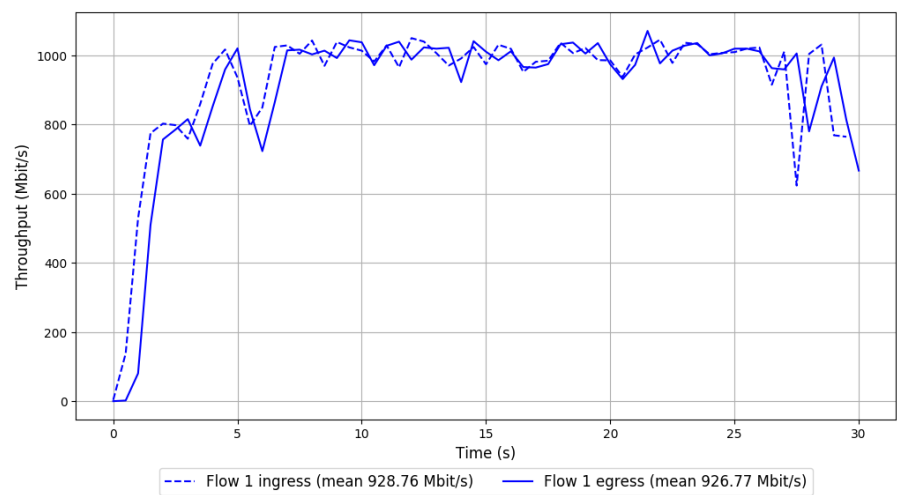


Run 2: Statistics of FillP

Start at: 2018-11-15 11:15:33
End at: 2018-11-15 11:16:03
Local clock offset: -0.053 ms
Remote clock offset: -0.172 ms

Below is generated by plot.py at 2018-11-15 13:42:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 926.77 Mbit/s
95th percentile per-packet one-way delay: 101.364 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 926.77 Mbit/s
95th percentile per-packet one-way delay: 101.364 ms
Loss rate: 0.64%

Run 2: Report of FillP — Data Link

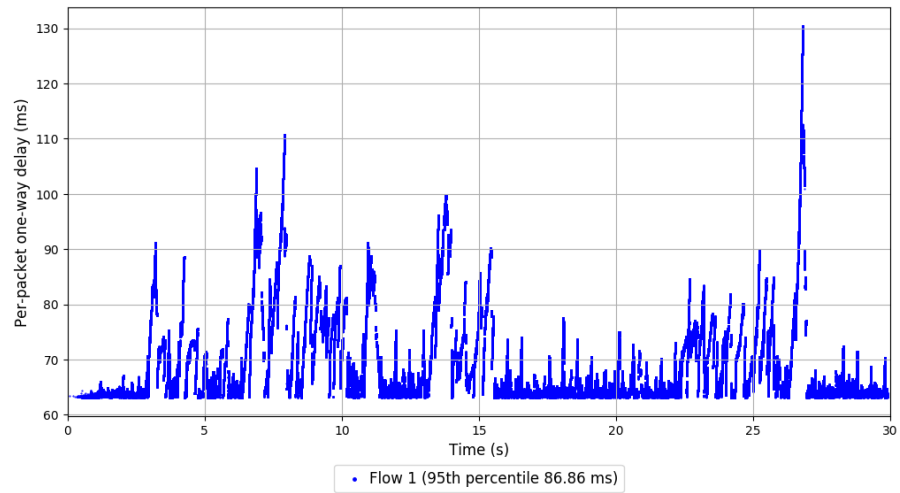
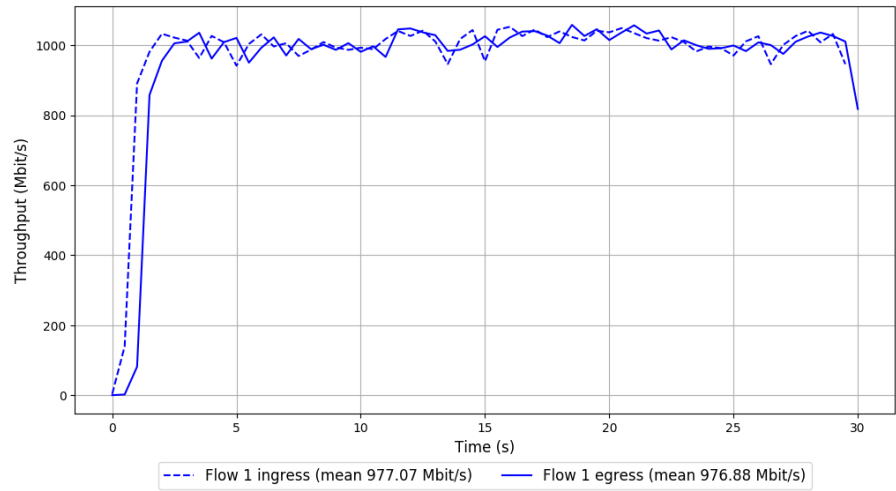


Run 3: Statistics of FillP

Start at: 2018-11-15 11:41:39
End at: 2018-11-15 11:42:09
Local clock offset: -0.023 ms
Remote clock offset: -0.193 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 976.88 Mbit/s
95th percentile per-packet one-way delay: 86.864 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 976.88 Mbit/s
95th percentile per-packet one-way delay: 86.864 ms
Loss rate: 0.45%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-11-15 12:07:50

End at: 2018-11-15 12:08:20

Local clock offset: -0.051 ms

Remote clock offset: 0.824 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 967.39 Mbit/s

95th percentile per-packet one-way delay: 116.710 ms

Loss rate: 1.27%

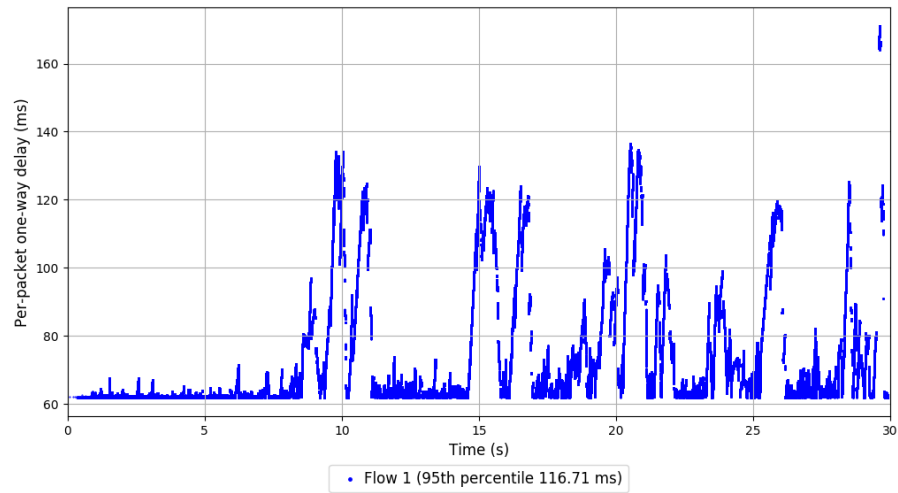
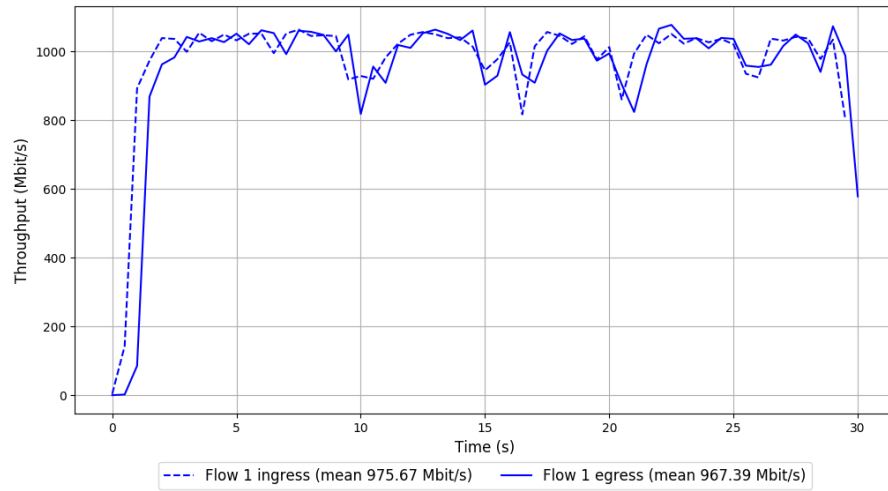
-- Flow 1:

Average throughput: 967.39 Mbit/s

95th percentile per-packet one-way delay: 116.710 ms

Loss rate: 1.27%

Run 4: Report of FillP — Data Link

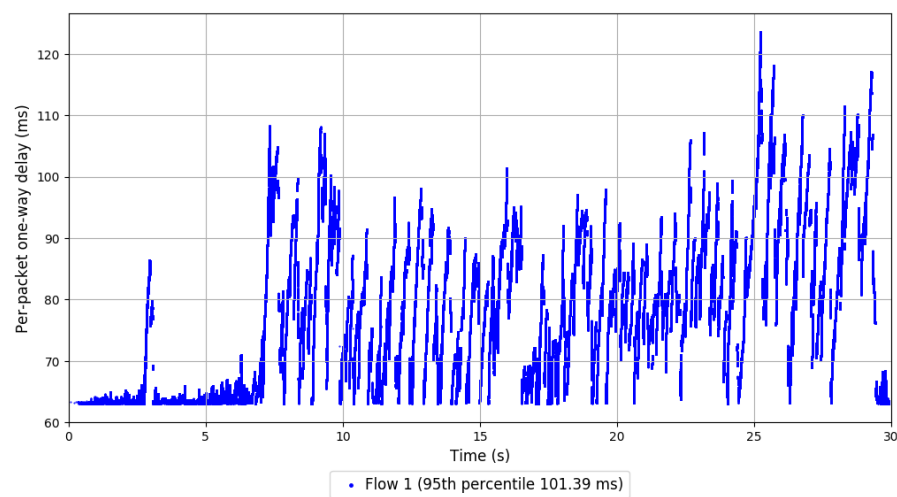
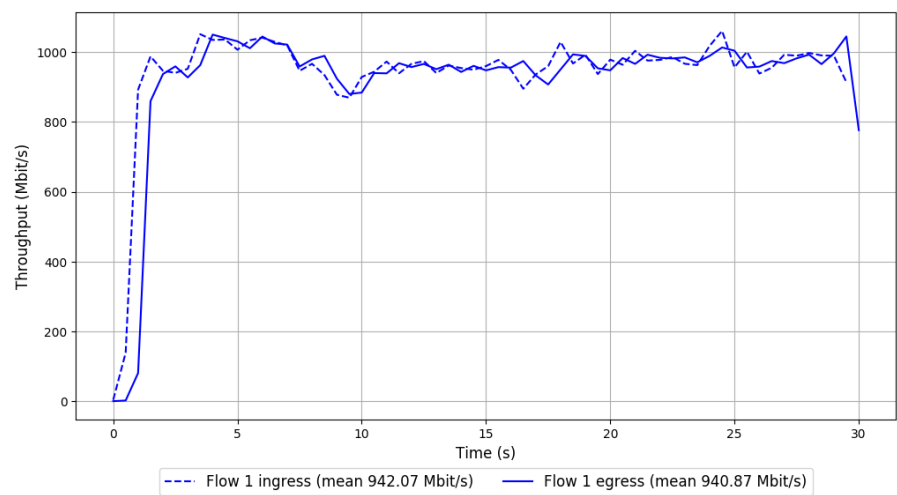


Run 5: Statistics of FillP

Start at: 2018-11-15 12:33:57
End at: 2018-11-15 12:34:27
Local clock offset: -0.023 ms
Remote clock offset: -0.484 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 940.87 Mbit/s
95th percentile per-packet one-way delay: 101.389 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 940.87 Mbit/s
95th percentile per-packet one-way delay: 101.389 ms
Loss rate: 0.55%

Run 5: Report of FillP — Data Link

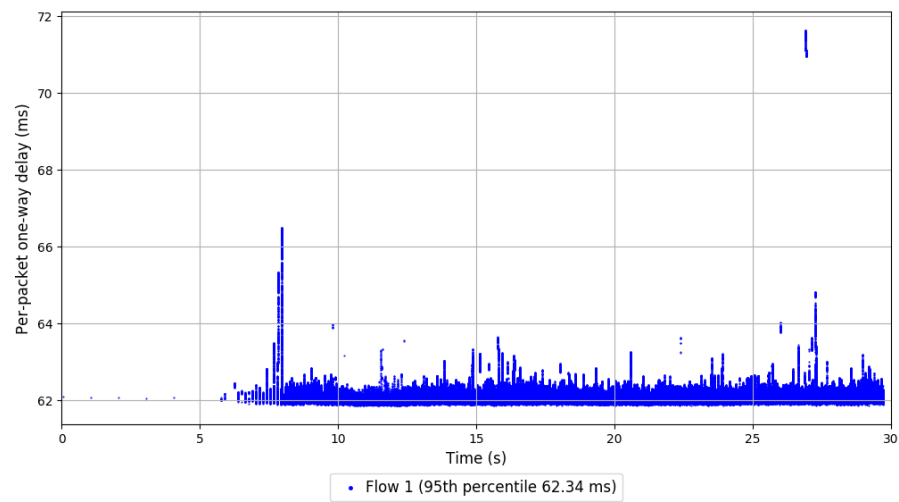
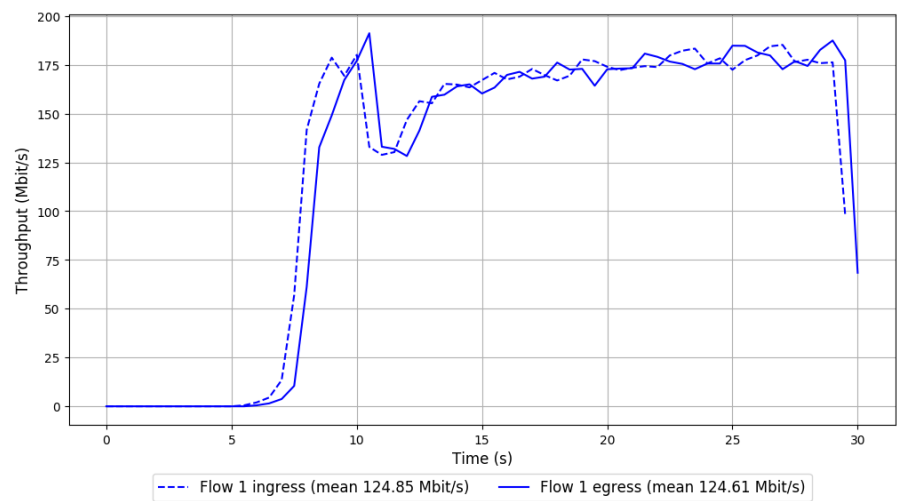


```
Run 1: Statistics of Indigo

Start at: 2018-11-15 10:44:59
End at: 2018-11-15 10:45:29
Local clock offset: -0.093 ms
Remote clock offset: 1.096 ms

# Below is generated by plot.py at 2018-11-15 13:43:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 124.61 Mbit/s
95th percentile per-packet one-way delay: 62.345 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 124.61 Mbit/s
95th percentile per-packet one-way delay: 62.345 ms
Loss rate: 0.62%
```

Run 1: Report of Indigo — Data Link

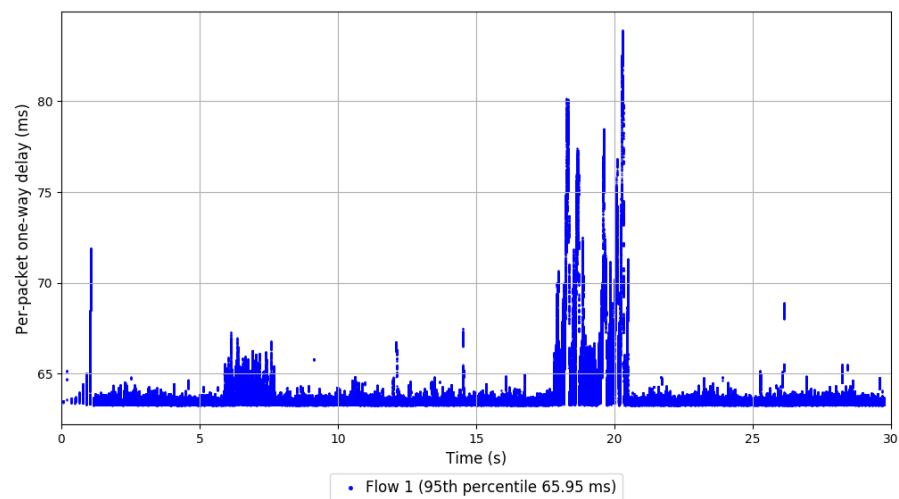
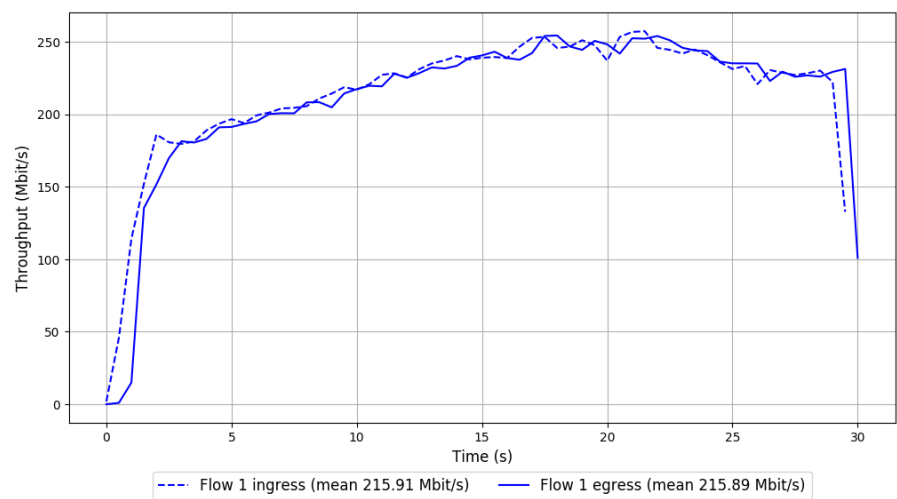


Run 2: Statistics of Indigo

Start at: 2018-11-15 11:11:00
End at: 2018-11-15 11:11:30
Local clock offset: -0.058 ms
Remote clock offset: -0.141 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 215.89 Mbit/s
95th percentile per-packet one-way delay: 65.952 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 215.89 Mbit/s
95th percentile per-packet one-way delay: 65.952 ms
Loss rate: 0.44%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-11-15 11:37:07

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

Local clock offset: 0.004 ms

Remote clock offset: 0.457 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 220.42 Mbit/s

95th percentile per-packet one-way delay: 63.329 ms

Loss rate: 0.45%

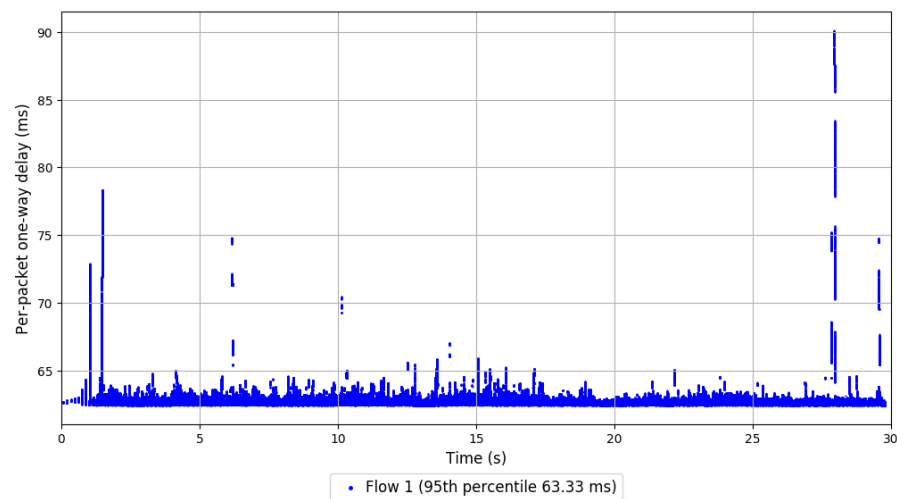
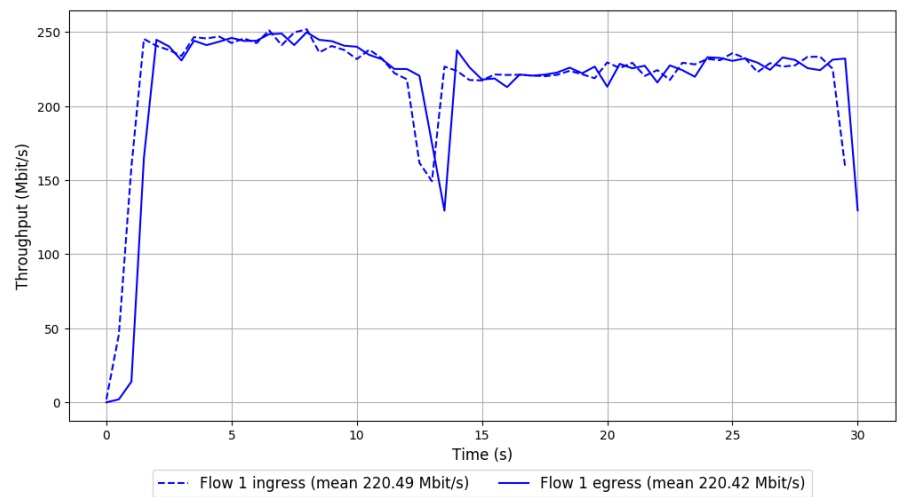
-- Flow 1:

Average throughput: 220.42 Mbit/s

95th percentile per-packet one-way delay: 63.329 ms

Loss rate: 0.45%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-15 12:03:16

End at: 2018-11-15 12:03:46

Local clock offset: -0.067 ms

Remote clock offset: 0.968 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 217.35 Mbit/s

95th percentile per-packet one-way delay: 62.588 ms

Loss rate: 0.45%

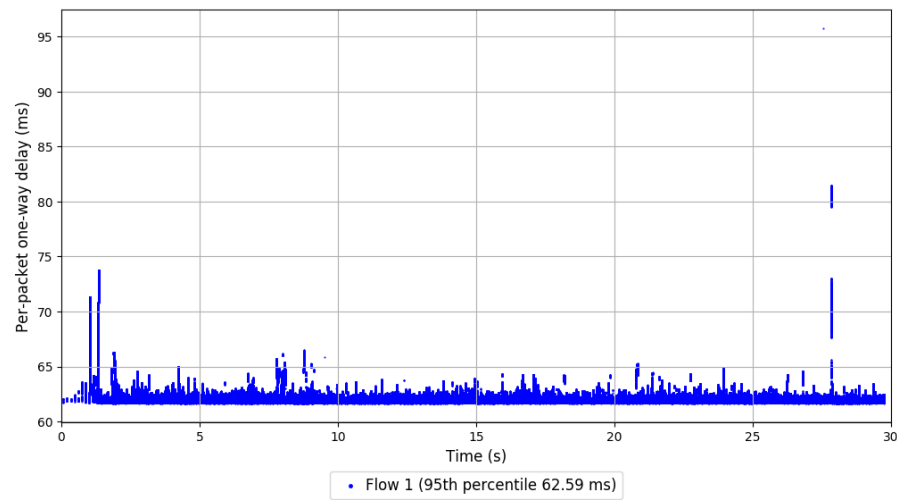
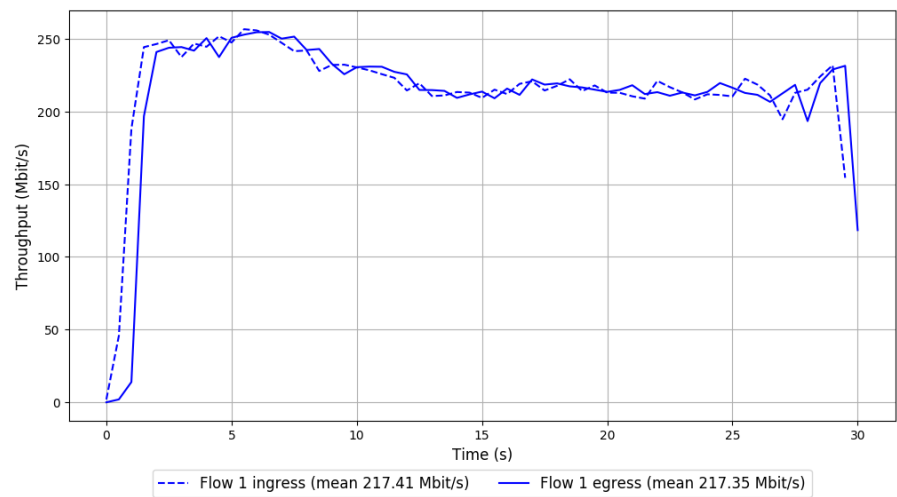
-- Flow 1:

Average throughput: 217.35 Mbit/s

95th percentile per-packet one-way delay: 62.588 ms

Loss rate: 0.45%

Run 4: Report of Indigo — Data Link

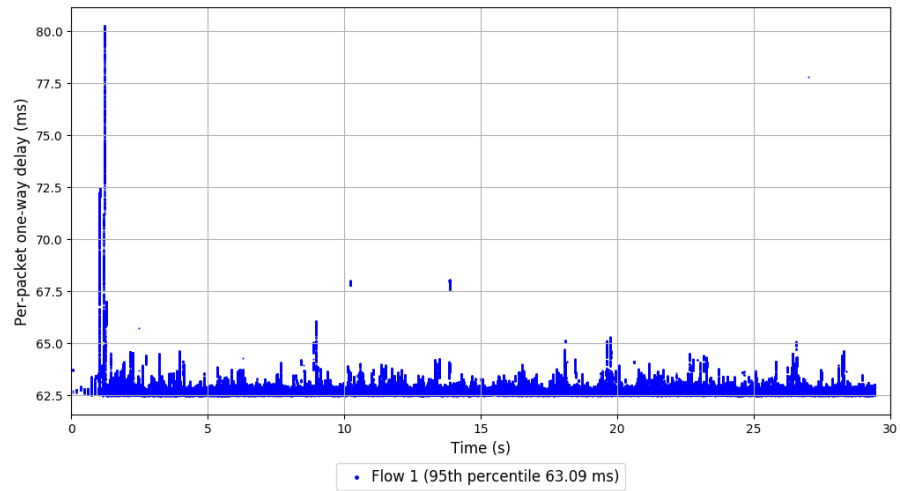
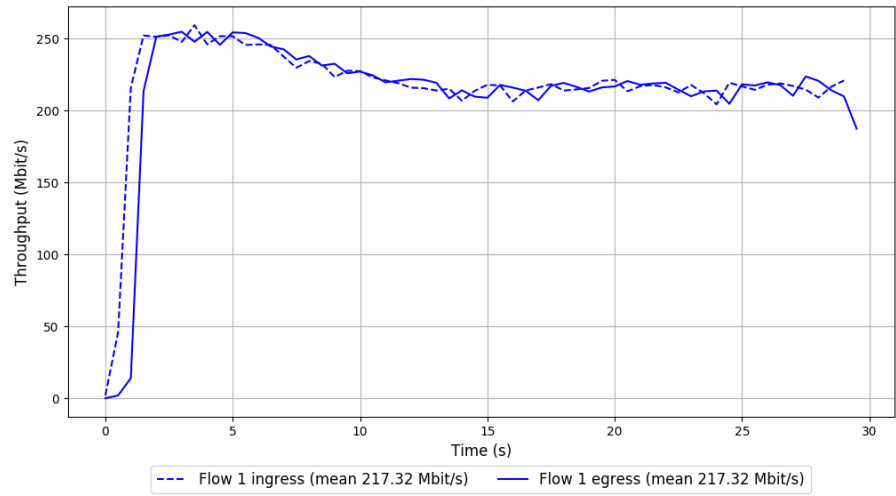


Run 5: Statistics of Indigo

Start at: 2018-11-15 12:29:22
End at: 2018-11-15 12:29:52
Local clock offset: -0.032 ms
Remote clock offset: -0.021 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 217.32 Mbit/s
95th percentile per-packet one-way delay: 63.093 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 217.32 Mbit/s
95th percentile per-packet one-way delay: 63.093 ms
Loss rate: 0.44%

Run 5: Report of Indigo — Data Link

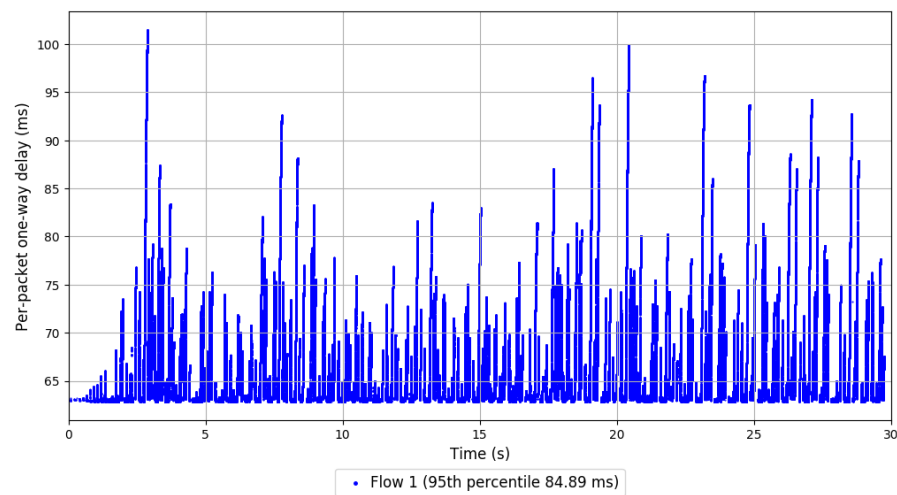
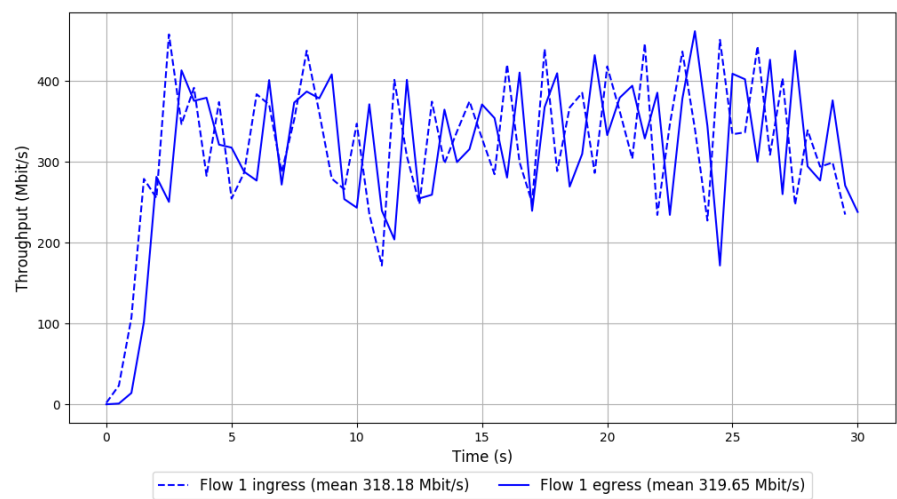


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-15 10:48:01
End at: 2018-11-15 10:48:31
Local clock offset: -0.109 ms
Remote clock offset: -0.093 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 319.65 Mbit/s
95th percentile per-packet one-way delay: 84.885 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 319.65 Mbit/s
95th percentile per-packet one-way delay: 84.885 ms
Loss rate: 0.29%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 11:14:09

End at: 2018-11-15 11:14:39

Local clock offset: -0.051 ms

Remote clock offset: 0.608 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 311.26 Mbit/s

95th percentile per-packet one-way delay: 80.504 ms

Loss rate: 0.51%

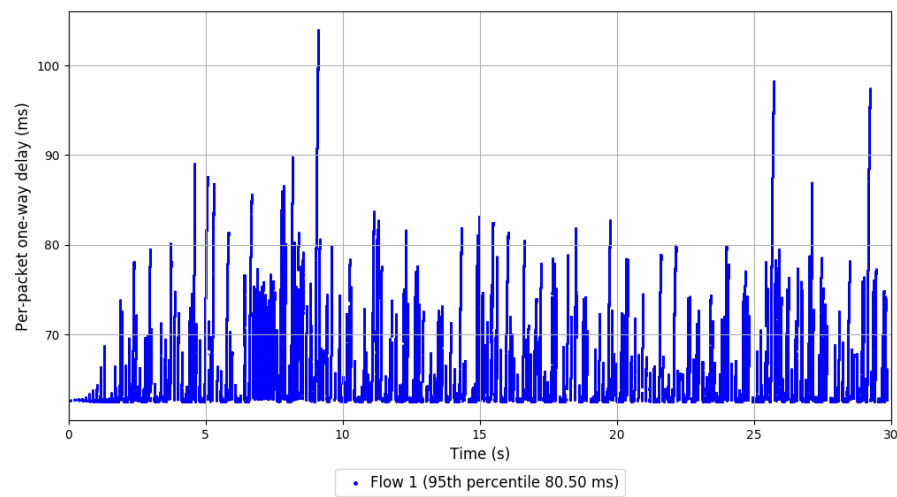
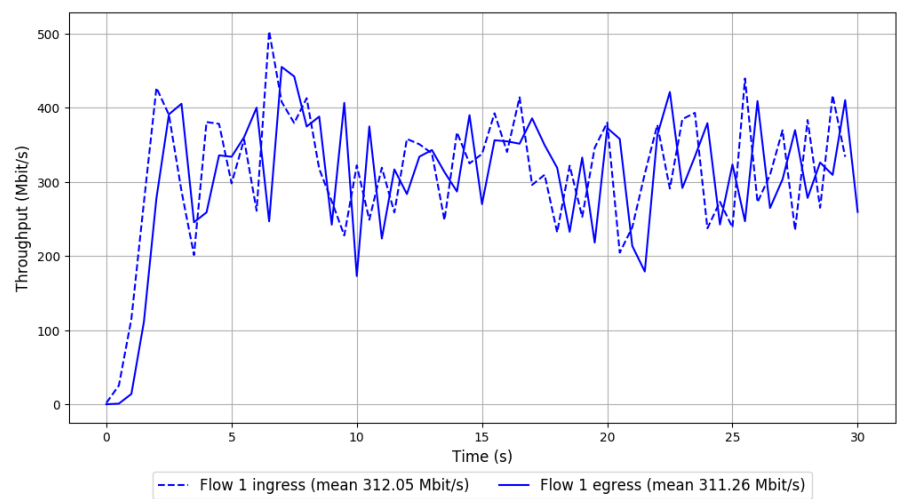
-- Flow 1:

Average throughput: 311.26 Mbit/s

95th percentile per-packet one-way delay: 80.504 ms

Loss rate: 0.51%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-15 11:40:16

End at: 2018-11-15 11:40:46

Local clock offset: 0.017 ms

Remote clock offset: 0.191 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 304.77 Mbit/s

95th percentile per-packet one-way delay: 80.766 ms

Loss rate: 0.44%

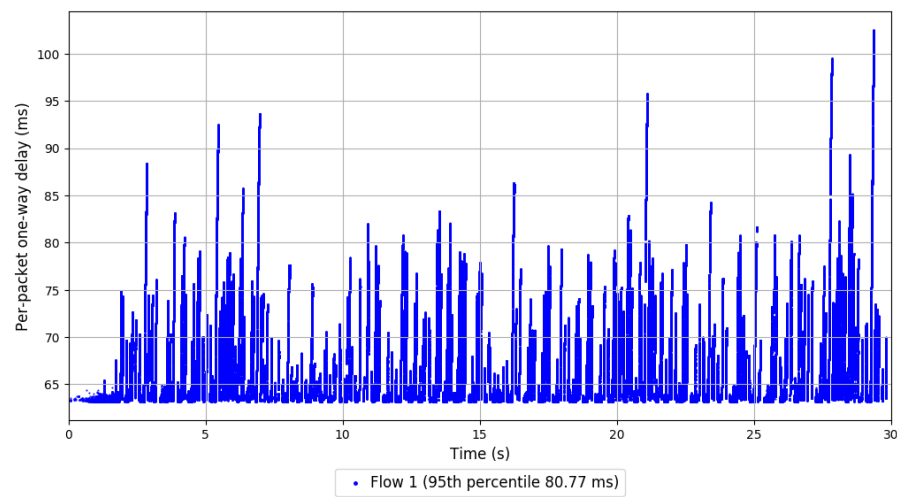
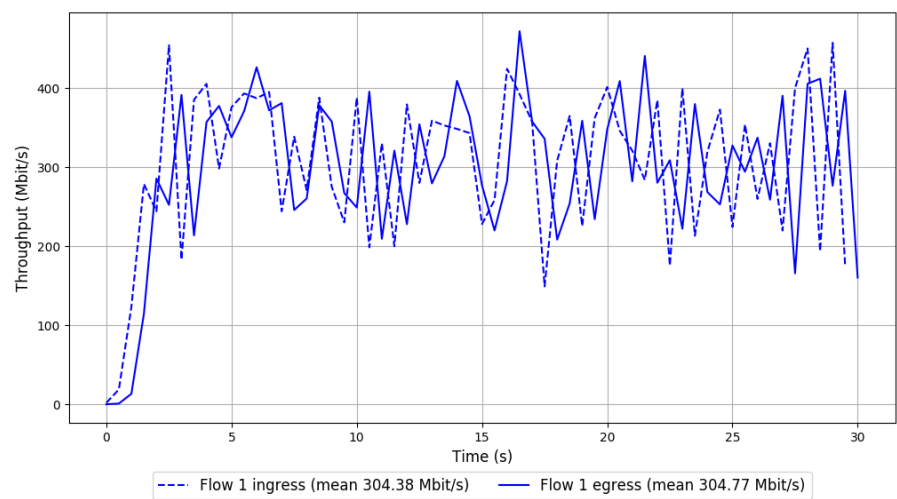
-- Flow 1:

Average throughput: 304.77 Mbit/s

95th percentile per-packet one-way delay: 80.766 ms

Loss rate: 0.44%

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



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 12:06:27

End at: 2018-11-15 12:06:57

Local clock offset: -0.03 ms

Remote clock offset: 0.919 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 306.71 Mbit/s

95th percentile per-packet one-way delay: 80.189 ms

Loss rate: 0.36%

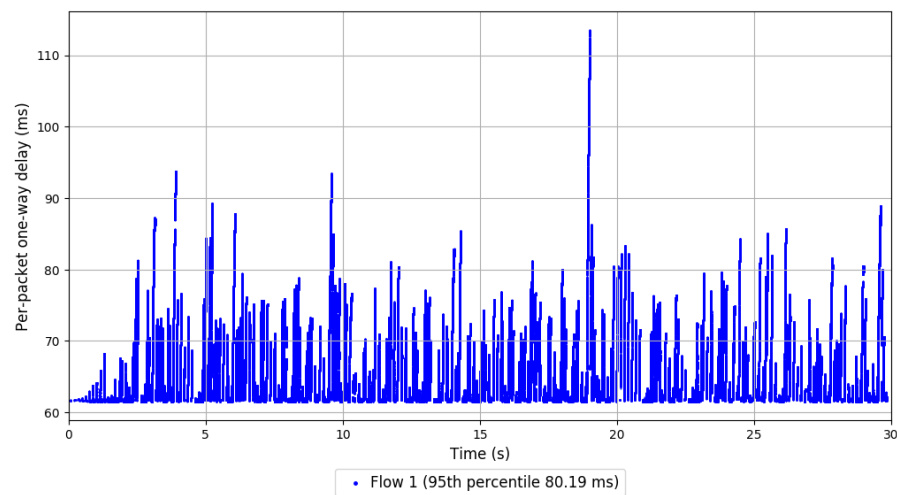
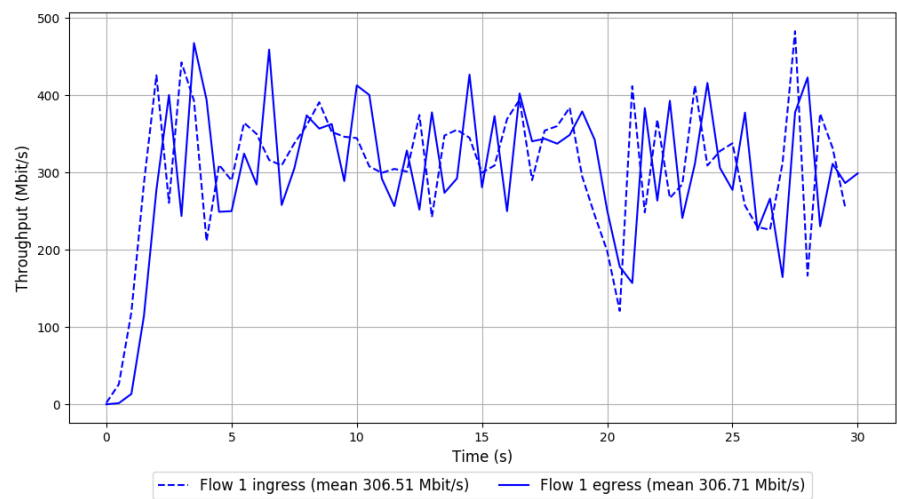
-- Flow 1:

Average throughput: 306.71 Mbit/s

95th percentile per-packet one-way delay: 80.189 ms

Loss rate: 0.36%

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

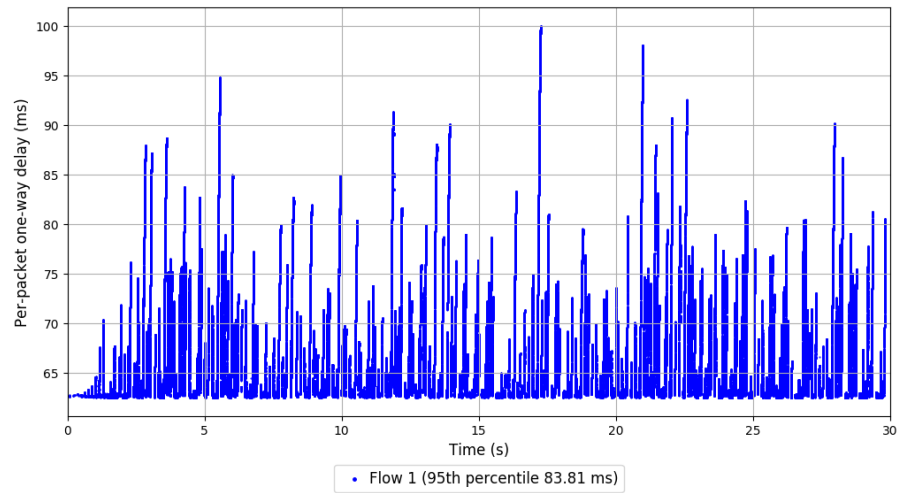
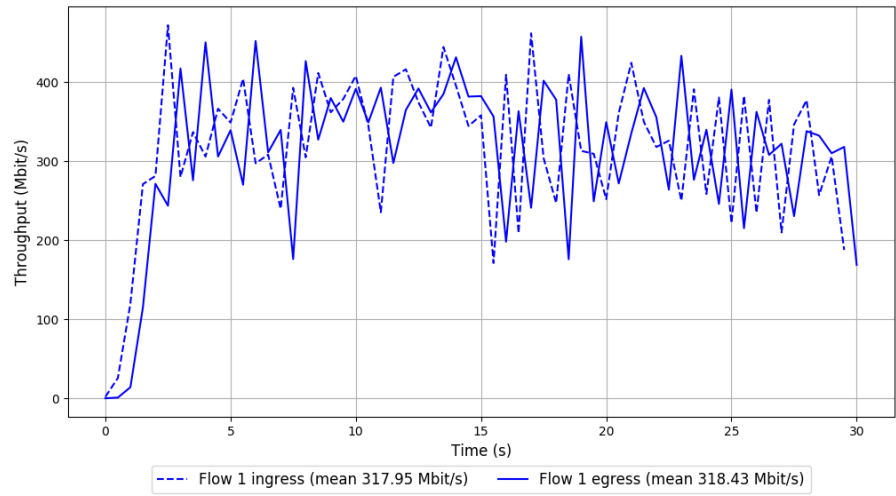


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 12:32:33
End at: 2018-11-15 12:33:03
Local clock offset: -0.024 ms
Remote clock offset: -0.268 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 318.43 Mbit/s
95th percentile per-packet one-way delay: 83.810 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 318.43 Mbit/s
95th percentile per-packet one-way delay: 83.810 ms
Loss rate: 0.26%

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

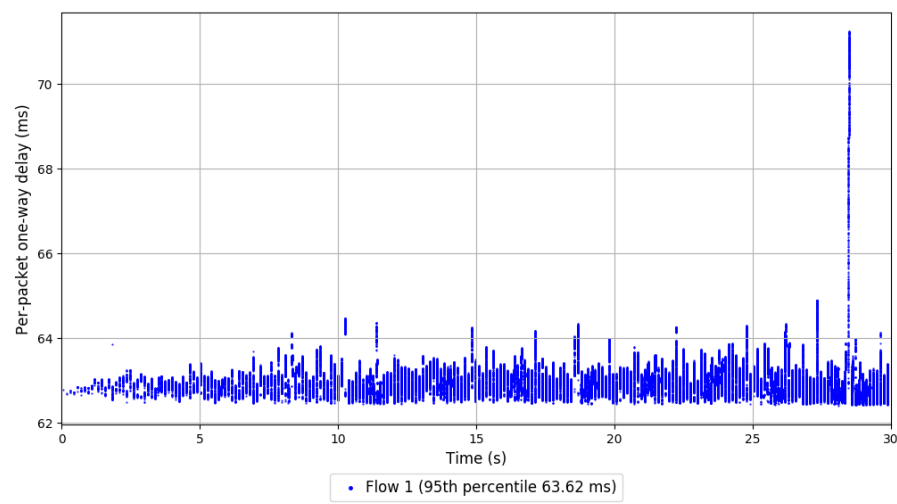
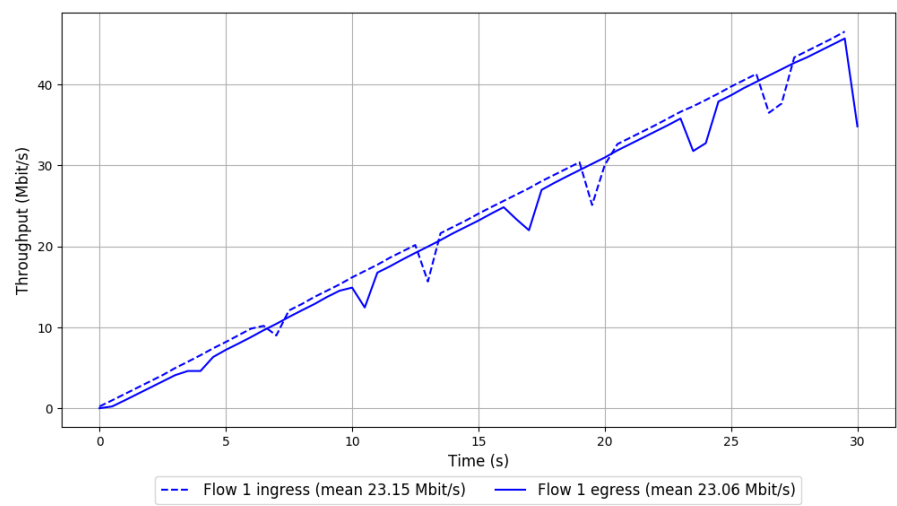



```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 10:59:18
End at: 2018-11-15 10:59:48
Local clock offset: -0.131 ms
Remote clock offset: 0.55 ms

# Below is generated by plot.py at 2018-11-15 13:43:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.06 Mbit/s
95th percentile per-packet one-way delay: 63.619 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 23.06 Mbit/s
95th percentile per-packet one-way delay: 63.619 ms
Loss rate: 0.84%
```

Run 1: Report of LEDBAT — Data Link

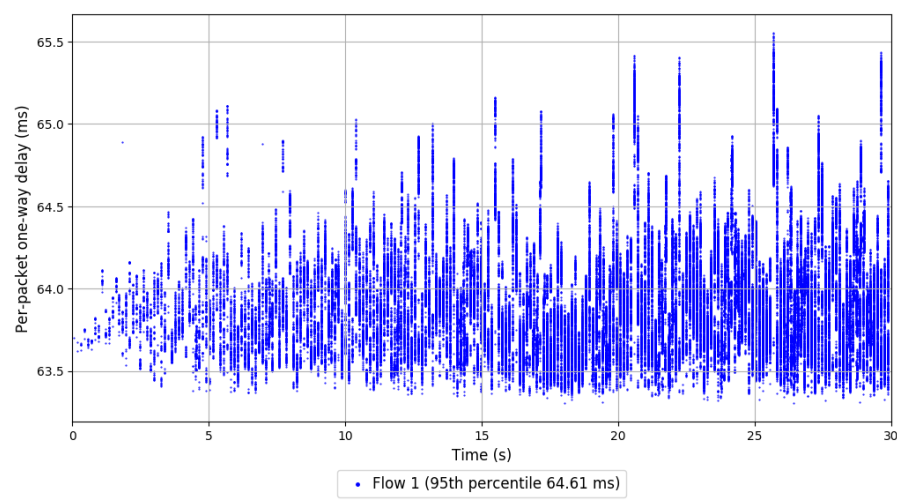
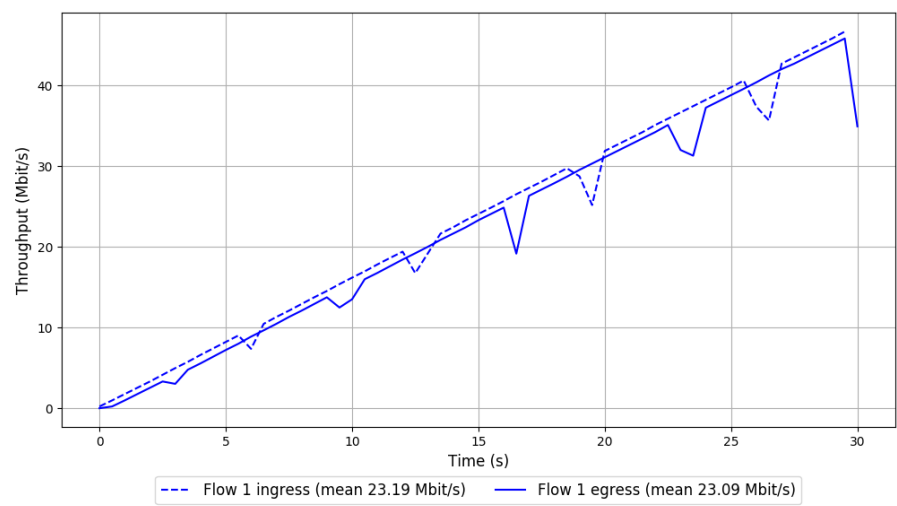


Run 2: Statistics of LEDBAT

Start at: 2018-11-15 11:25:25
End at: 2018-11-15 11:25:55
Local clock offset: -0.017 ms
Remote clock offset: -0.075 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.09 Mbit/s
95th percentile per-packet one-way delay: 64.613 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 23.09 Mbit/s
95th percentile per-packet one-way delay: 64.613 ms
Loss rate: 0.85%

Run 2: Report of LEDBAT — Data Link

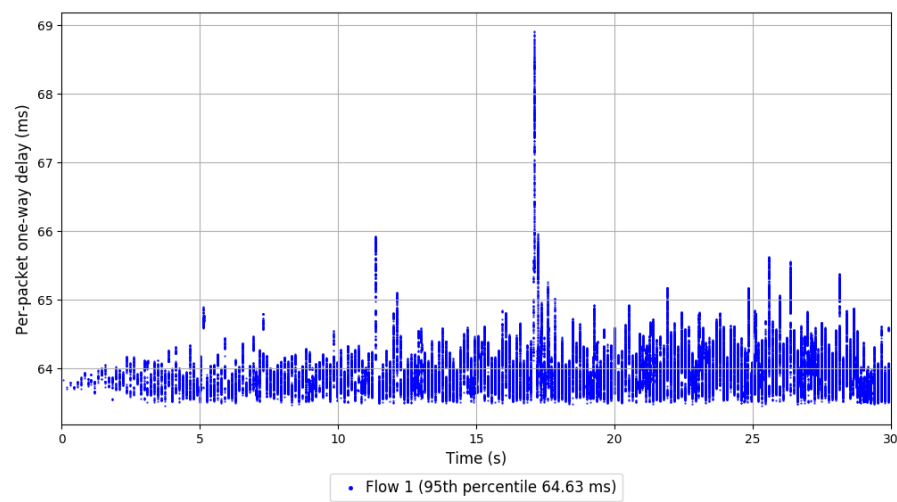
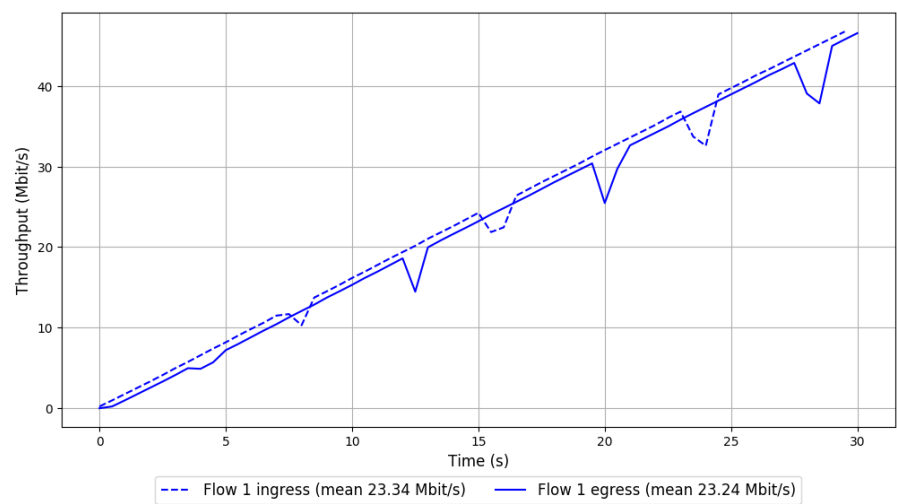


Run 3: Statistics of LEDBAT

Start at: 2018-11-15 11:51:35
End at: 2018-11-15 11:52:05
Local clock offset: -0.047 ms
Remote clock offset: -0.655 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.24 Mbit/s
95th percentile per-packet one-way delay: 64.633 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 23.24 Mbit/s
95th percentile per-packet one-way delay: 64.633 ms
Loss rate: 0.84%

Run 3: Report of LEDBAT — Data Link

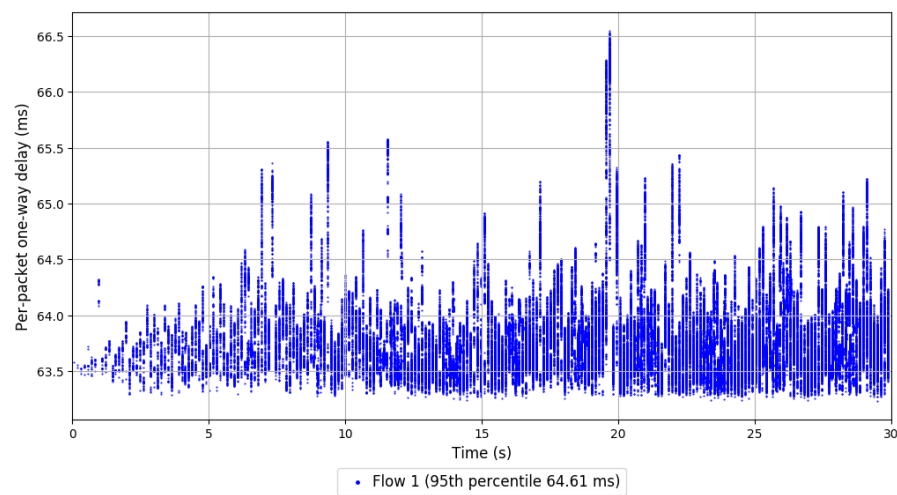
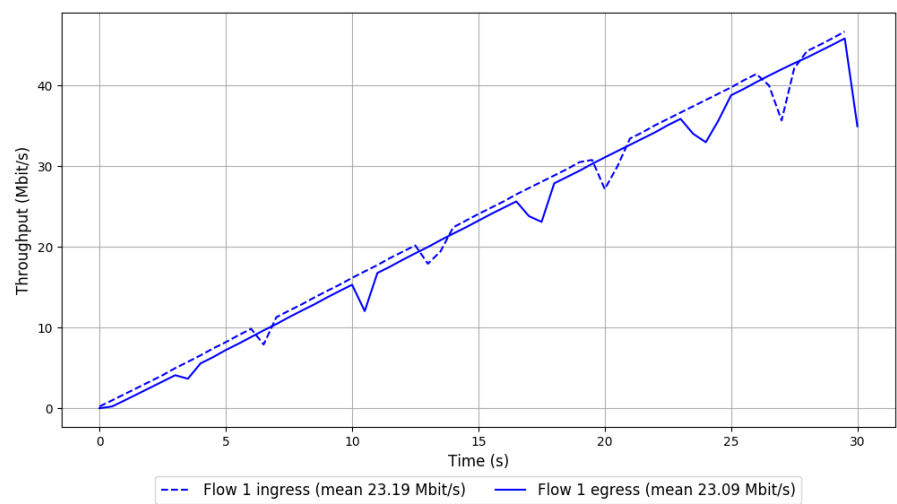


Run 4: Statistics of LEDBAT

Start at: 2018-11-15 12:17:46
End at: 2018-11-15 12:18:16
Local clock offset: -0.058 ms
Remote clock offset: -0.354 ms

Below is generated by plot.py at 2018-11-15 13:43:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.09 Mbit/s
95th percentile per-packet one-way delay: 64.615 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 23.09 Mbit/s
95th percentile per-packet one-way delay: 64.615 ms
Loss rate: 0.85%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-11-15 12:43:54

End at: 2018-11-15 12:44:24

Local clock offset: 0.02 ms

Remote clock offset: 0.088 ms

Below is generated by plot.py at 2018-11-15 13:43:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.29 Mbit/s

95th percentile per-packet one-way delay: 63.315 ms

Loss rate: 0.84%

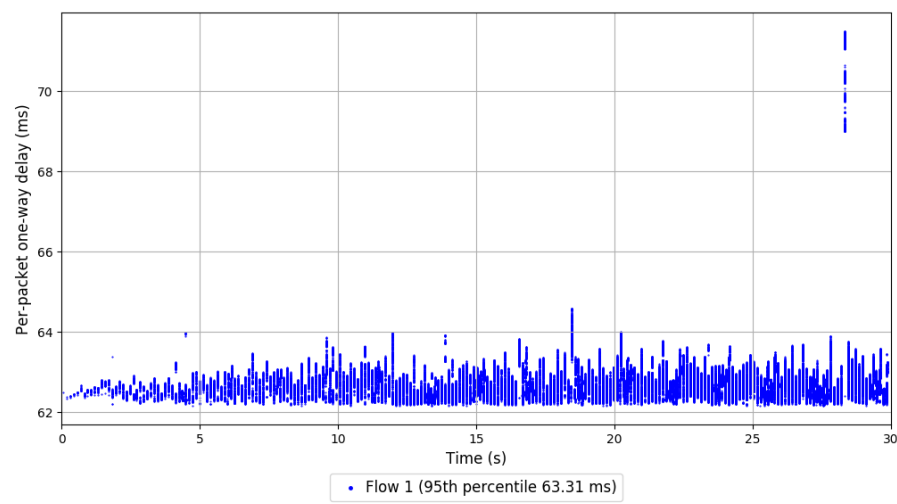
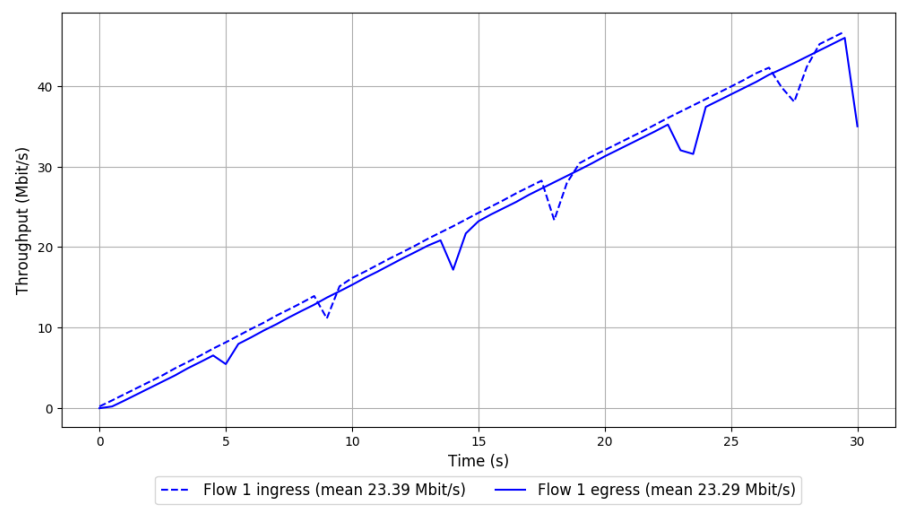
-- Flow 1:

Average throughput: 23.29 Mbit/s

95th percentile per-packet one-way delay: 63.315 ms

Loss rate: 0.84%

Run 5: Report of LEDBAT — Data Link

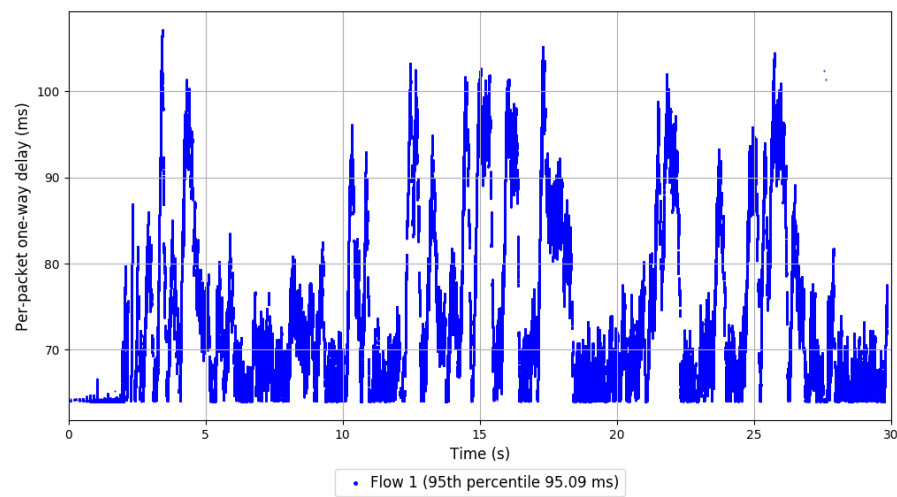
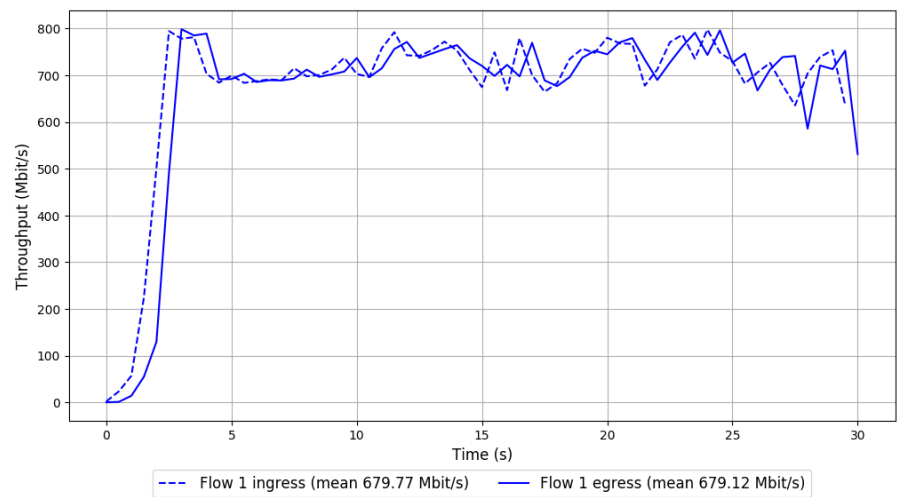


Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 10:46:19
End at: 2018-11-15 10:46:49
Local clock offset: -0.14 ms
Remote clock offset: -0.887 ms

Below is generated by plot.py at 2018-11-15 13:53:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 679.12 Mbit/s
95th percentile per-packet one-way delay: 95.095 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 679.12 Mbit/s
95th percentile per-packet one-way delay: 95.095 ms
Loss rate: 0.52%

Run 1: Report of Indigo-Muses — Data Link

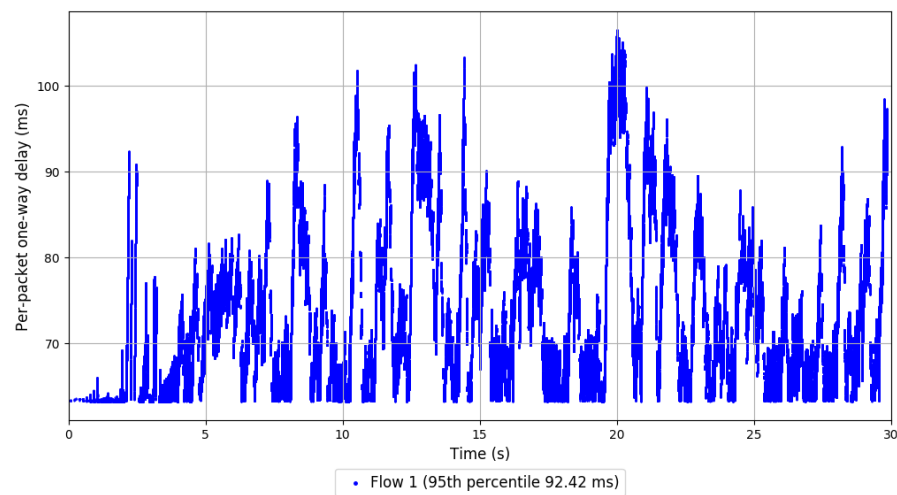
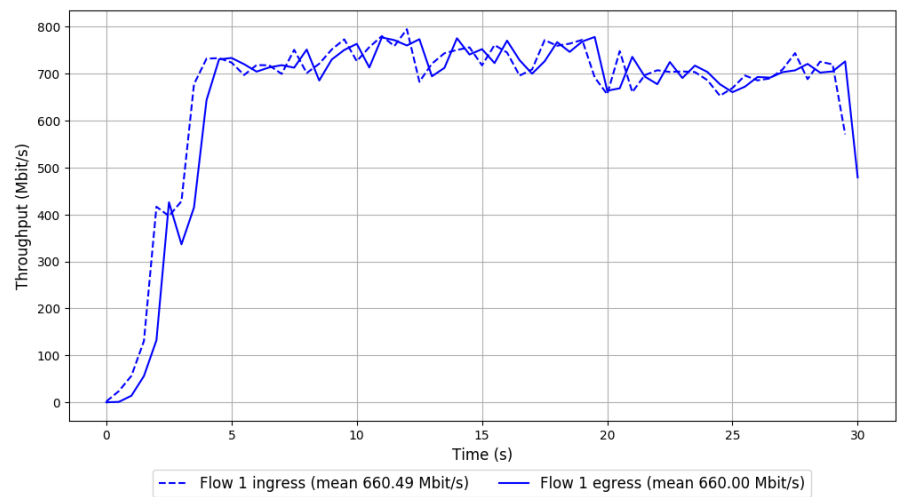


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 11:12:28
End at: 2018-11-15 11:12:58
Local clock offset: -0.06 ms
Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-11-15 13:53:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 660.00 Mbit/s
95th percentile per-packet one-way delay: 92.421 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 660.00 Mbit/s
95th percentile per-packet one-way delay: 92.421 ms
Loss rate: 0.50%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 11:38:35

End at: 2018-11-15 11:39:05

Local clock offset: -0.002 ms

Remote clock offset: 0.417 ms

Below is generated by plot.py at 2018-11-15 13:53:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 664.83 Mbit/s

95th percentile per-packet one-way delay: 85.221 ms

Loss rate: 0.59%

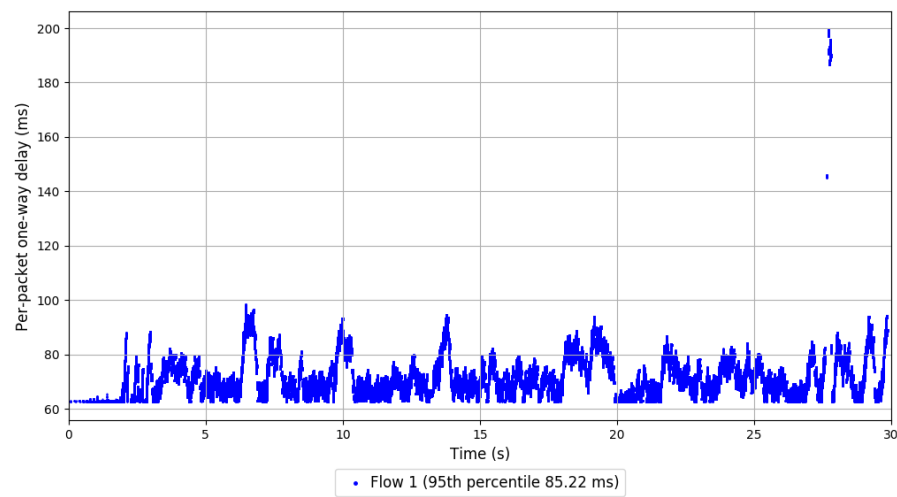
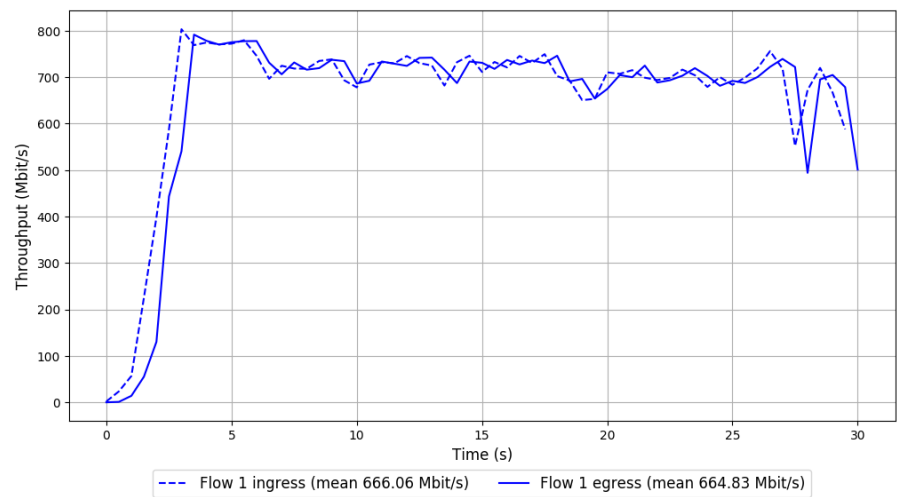
-- Flow 1:

Average throughput: 664.83 Mbit/s

95th percentile per-packet one-way delay: 85.221 ms

Loss rate: 0.59%

Run 3: Report of Indigo-Muses — Data Link

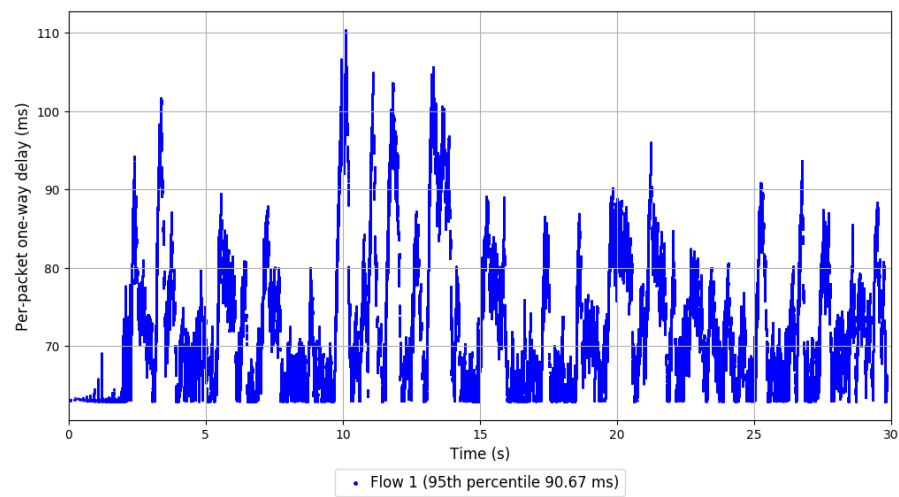
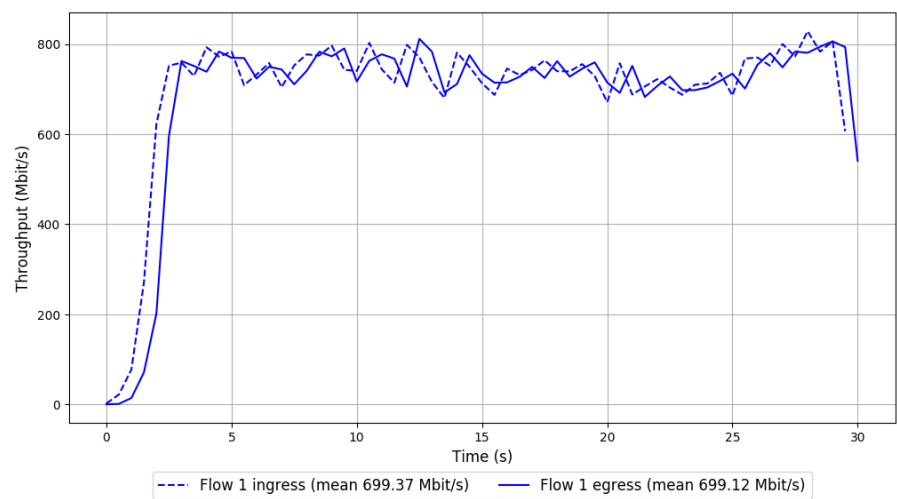


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 12:04:45
End at: 2018-11-15 12:05:15
Local clock offset: -0.081 ms
Remote clock offset: -0.182 ms

Below is generated by plot.py at 2018-11-15 13:55:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 699.12 Mbit/s
95th percentile per-packet one-way delay: 90.672 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 699.12 Mbit/s
95th percentile per-packet one-way delay: 90.672 ms
Loss rate: 0.46%

Run 4: Report of Indigo-Muses — Data Link

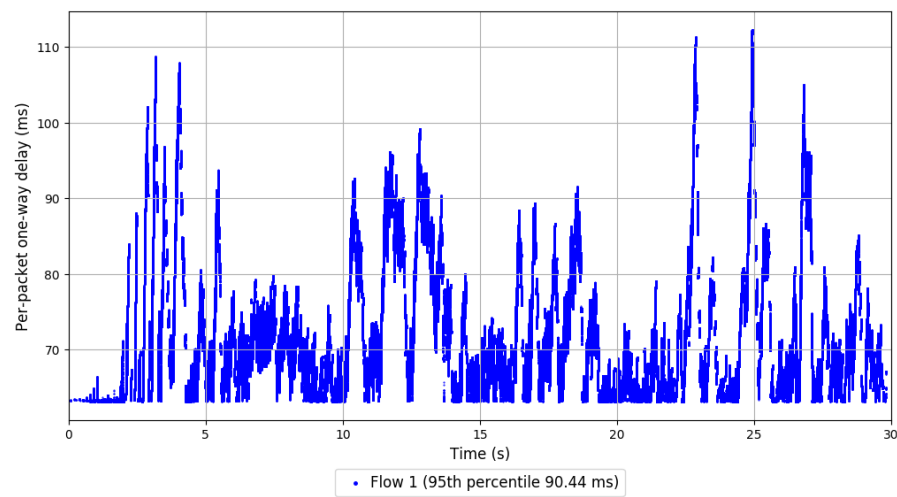
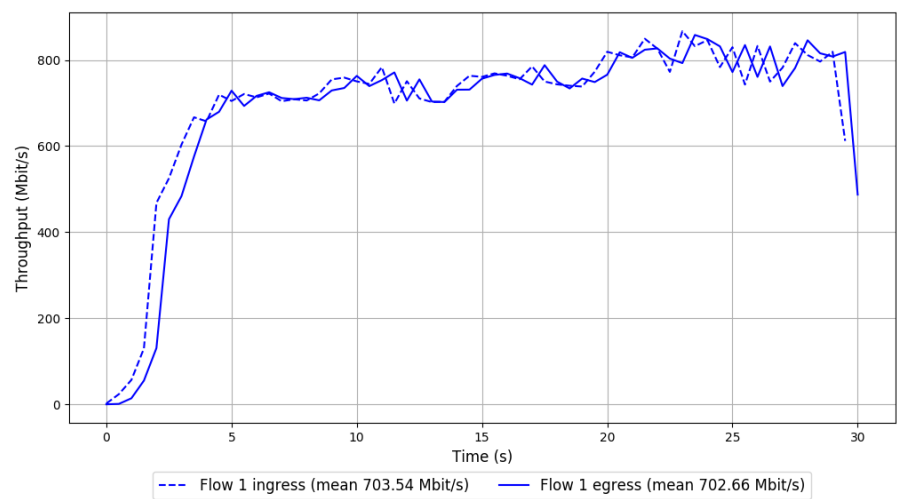


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 12:30:50
End at: 2018-11-15 12:31:20
Local clock offset: -0.0 ms
Remote clock offset: -0.473 ms

Below is generated by plot.py at 2018-11-15 13:56:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 702.66 Mbit/s
95th percentile per-packet one-way delay: 90.437 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 702.66 Mbit/s
95th percentile per-packet one-way delay: 90.437 ms
Loss rate: 0.55%

Run 5: Report of Indigo-Muses — Data Link

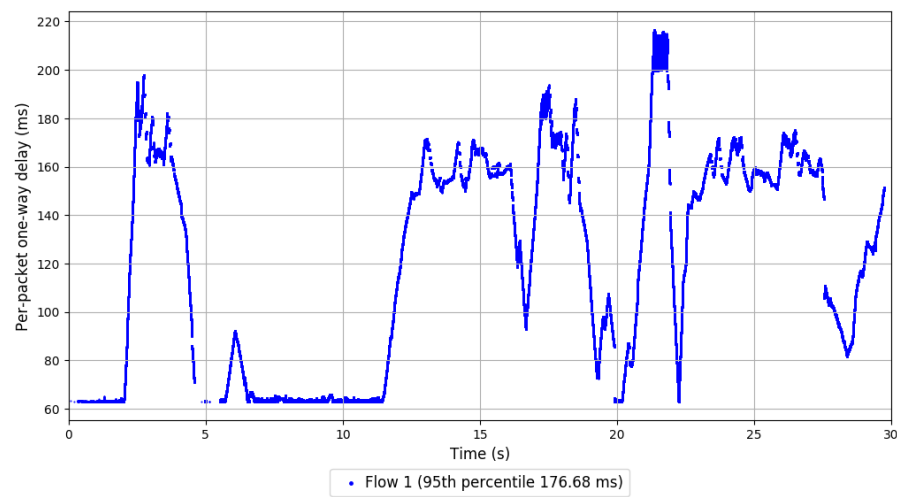
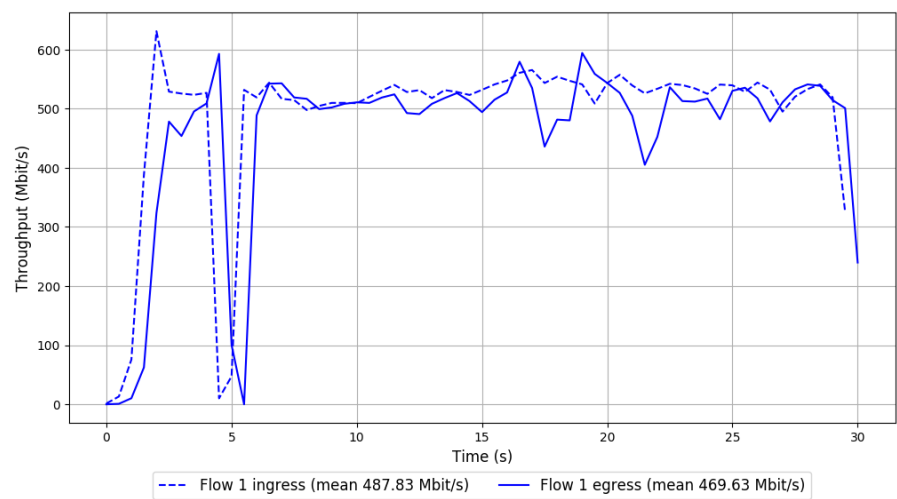


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 10:51:12
End at: 2018-11-15 10:51:42
Local clock offset: -0.112 ms
Remote clock offset: 0.064 ms

# Below is generated by plot.py at 2018-11-15 13:59:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 469.63 Mbit/s
95th percentile per-packet one-way delay: 176.681 ms
Loss rate: 4.14%
-- Flow 1:
Average throughput: 469.63 Mbit/s
95th percentile per-packet one-way delay: 176.681 ms
Loss rate: 4.14%
```

Run 1: Report of PCC-Allegro — Data Link

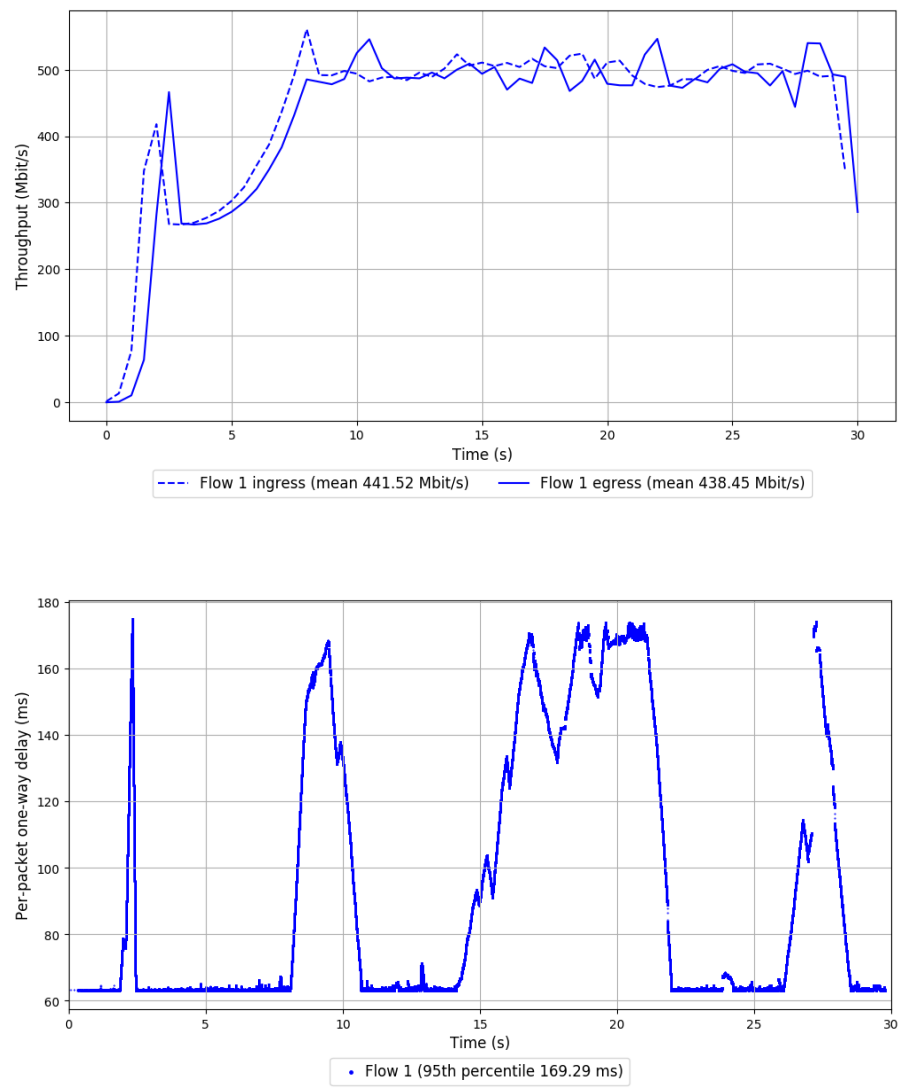


Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 11:17:19
End at: 2018-11-15 11:17:49
Local clock offset: -0.034 ms
Remote clock offset: -0.024 ms

Below is generated by plot.py at 2018-11-15 13:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 438.45 Mbit/s
95th percentile per-packet one-way delay: 169.289 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 438.45 Mbit/s
95th percentile per-packet one-way delay: 169.289 ms
Loss rate: 1.12%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 11:43:25

End at: 2018-11-15 11:43:55

Local clock offset: -0.015 ms

Remote clock offset: 0.753 ms

Below is generated by plot.py at 2018-11-15 13:59:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 460.75 Mbit/s

95th percentile per-packet one-way delay: 183.398 ms

Loss rate: 5.93%

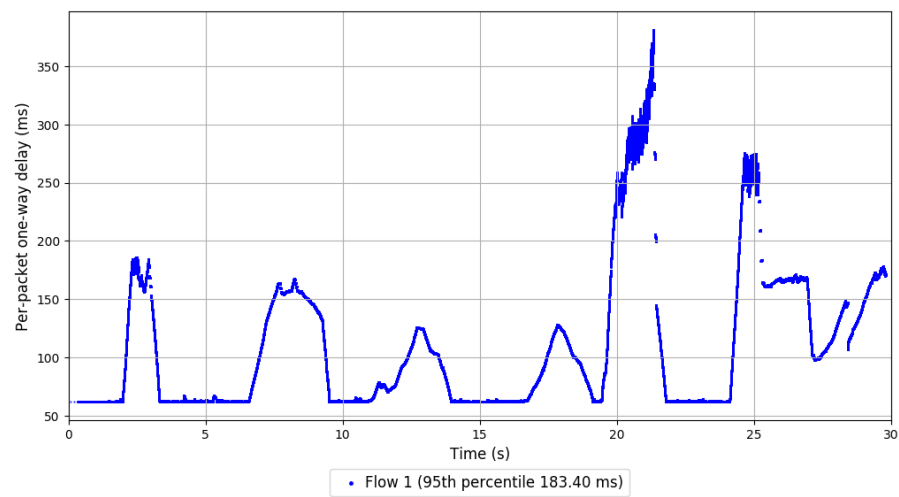
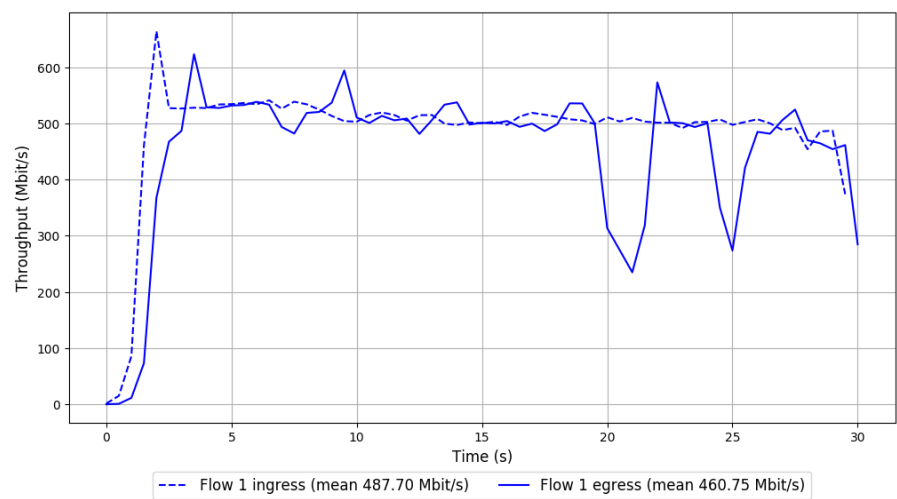
-- Flow 1:

Average throughput: 460.75 Mbit/s

95th percentile per-packet one-way delay: 183.398 ms

Loss rate: 5.93%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 12:09:36

End at: 2018-11-15 12:10:06

Local clock offset: -0.086 ms

Remote clock offset: 0.49 ms

Below is generated by plot.py at 2018-11-15 14:10:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 473.28 Mbit/s

95th percentile per-packet one-way delay: 154.282 ms

Loss rate: 1.23%

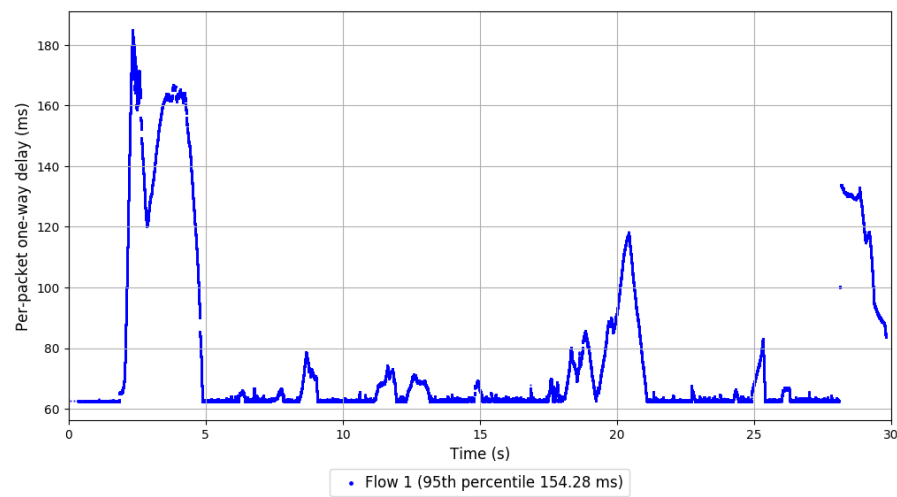
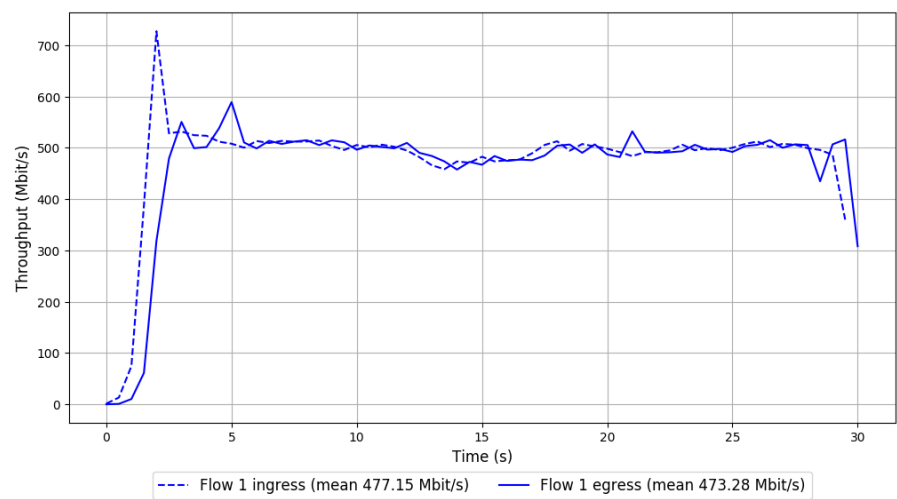
-- Flow 1:

Average throughput: 473.28 Mbit/s

95th percentile per-packet one-way delay: 154.282 ms

Loss rate: 1.23%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 12:35:43

End at: 2018-11-15 12:36:13

Local clock offset: -0.009 ms

Remote clock offset: 0.211 ms

Below is generated by plot.py at 2018-11-15 14:10:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 467.52 Mbit/s

95th percentile per-packet one-way delay: 171.165 ms

Loss rate: 1.56%

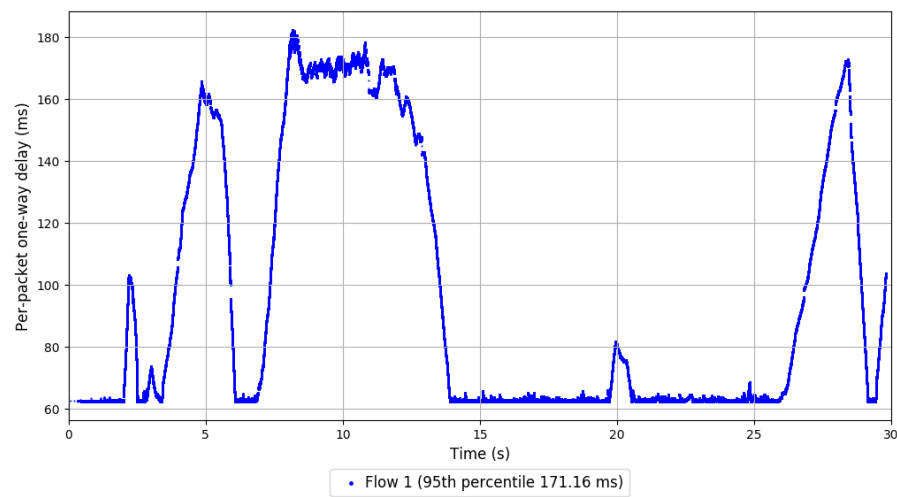
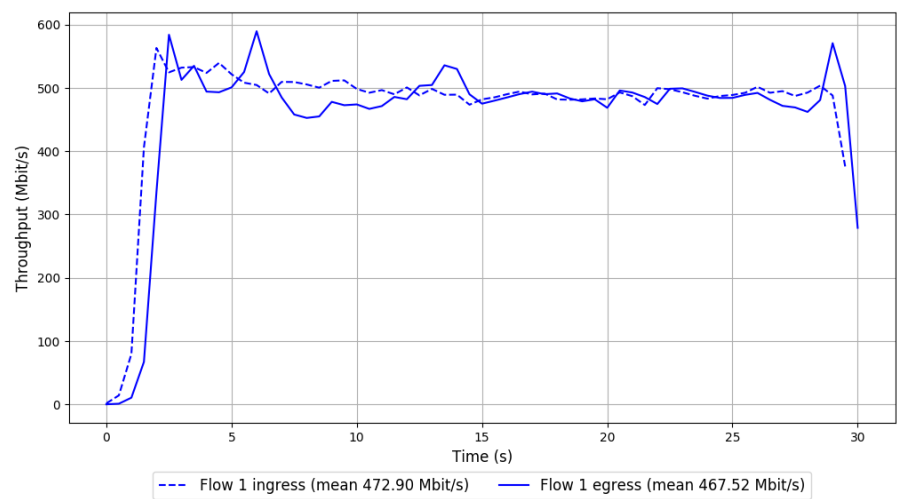
-- Flow 1:

Average throughput: 467.52 Mbit/s

95th percentile per-packet one-way delay: 171.165 ms

Loss rate: 1.56%

Run 5: Report of PCC-Allegro — Data Link

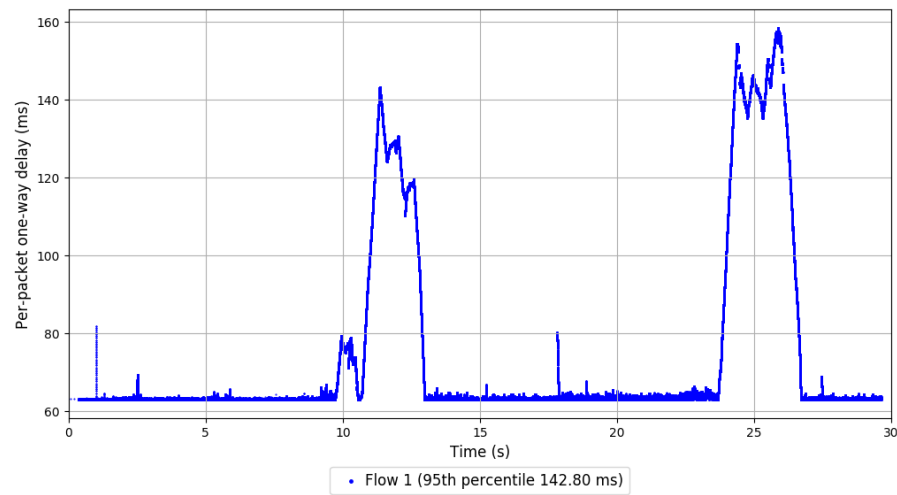
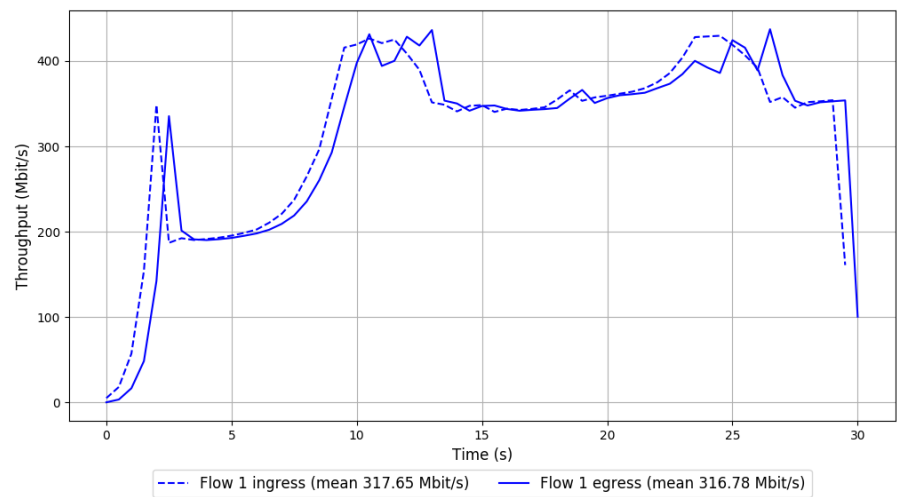


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 11:00:28
End at: 2018-11-15 11:00:58
Local clock offset: -0.147 ms
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2018-11-15 14:10:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 316.78 Mbit/s
95th percentile per-packet one-way delay: 142.797 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 316.78 Mbit/s
95th percentile per-packet one-way delay: 142.797 ms
Loss rate: 0.77%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 11:26:35

End at: 2018-11-15 11:27:05

Local clock offset: -0.037 ms

Remote clock offset: 1.253 ms

Below is generated by plot.py at 2018-11-15 14:10:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 319.81 Mbit/s

95th percentile per-packet one-way delay: 163.880 ms

Loss rate: 4.31%

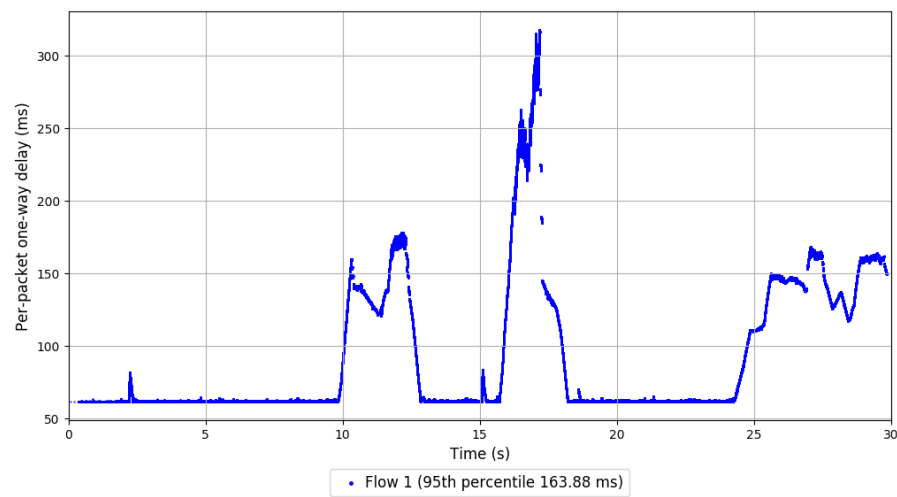
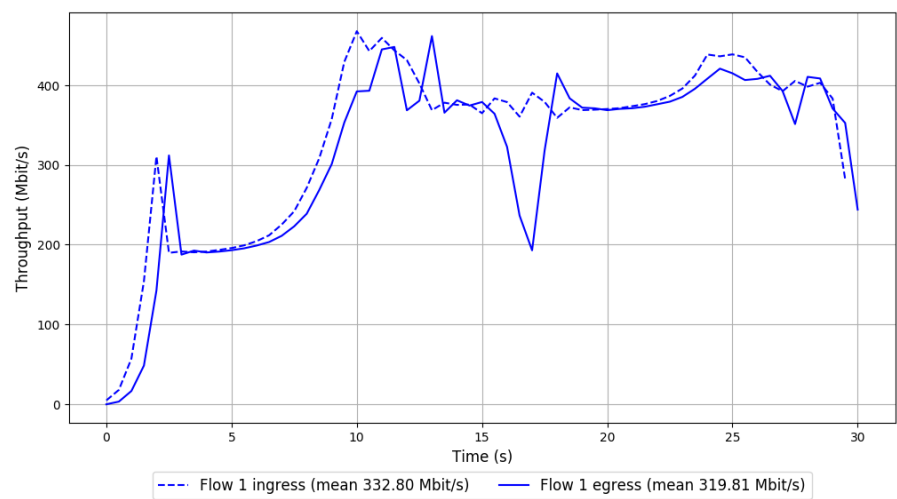
-- Flow 1:

Average throughput: 319.81 Mbit/s

95th percentile per-packet one-way delay: 163.880 ms

Loss rate: 4.31%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 11:52:45

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

Local clock offset: -0.008 ms

Remote clock offset: -0.33 ms

Below is generated by plot.py at 2018-11-15 14:10:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 352.14 Mbit/s

95th percentile per-packet one-way delay: 154.374 ms

Loss rate: 4.52%

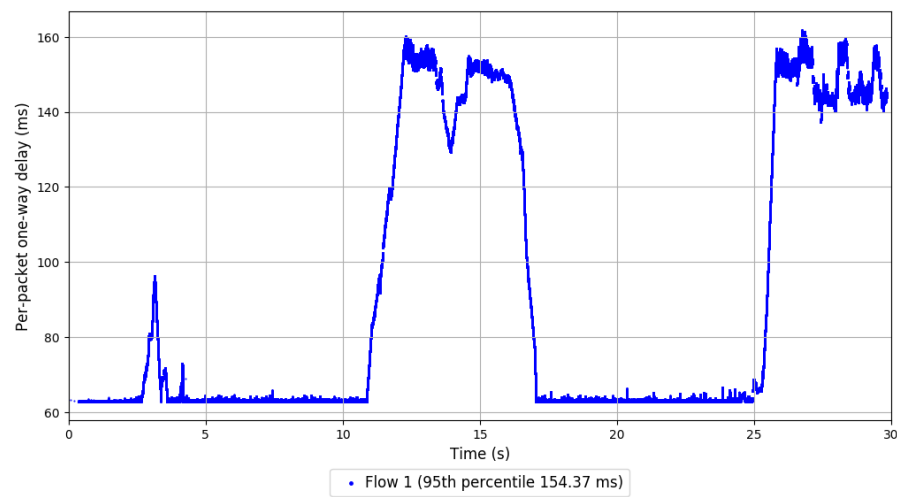
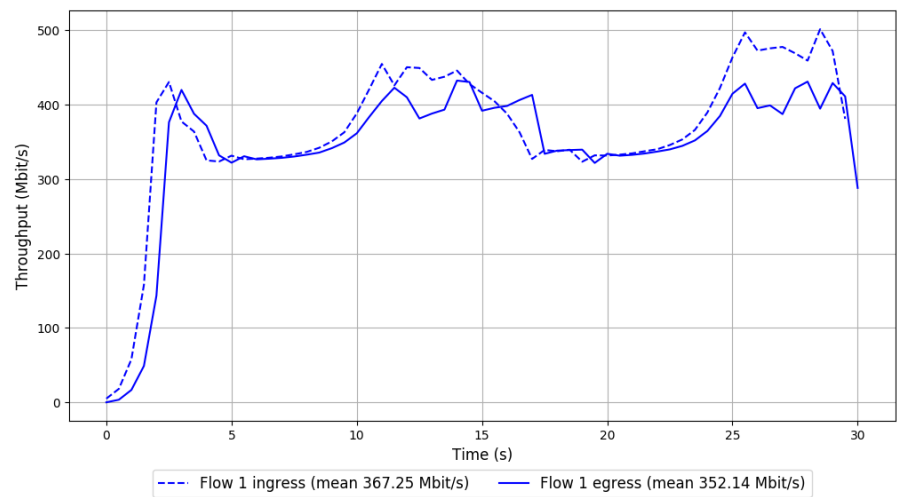
-- Flow 1:

Average throughput: 352.14 Mbit/s

95th percentile per-packet one-way delay: 154.374 ms

Loss rate: 4.52%

Run 3: Report of PCC-Expr — Data Link

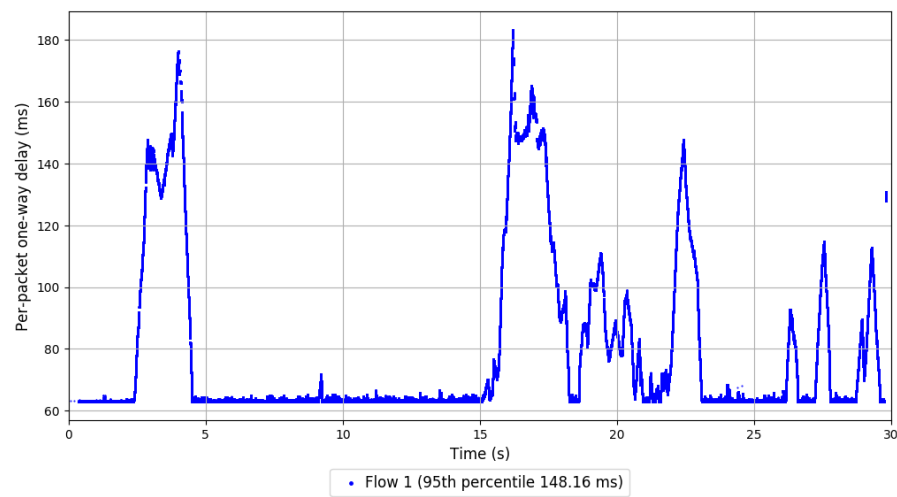
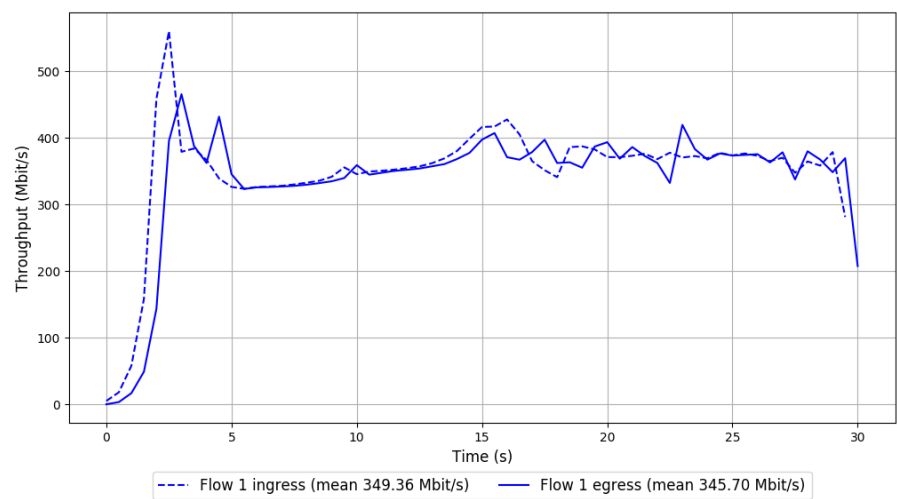


Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 12:18:56
End at: 2018-11-15 12:19:26
Local clock offset: -0.026 ms
Remote clock offset: -0.628 ms

Below is generated by plot.py at 2018-11-15 14:10:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 345.70 Mbit/s
95th percentile per-packet one-way delay: 148.162 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 345.70 Mbit/s
95th percentile per-packet one-way delay: 148.162 ms
Loss rate: 1.47%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 12:45:05

End at: 2018-11-15 12:45:35

Local clock offset: 0.044 ms

Remote clock offset: 0.163 ms

Below is generated by plot.py at 2018-11-15 14:12:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 365.37 Mbit/s

95th percentile per-packet one-way delay: 103.344 ms

Loss rate: 0.82%

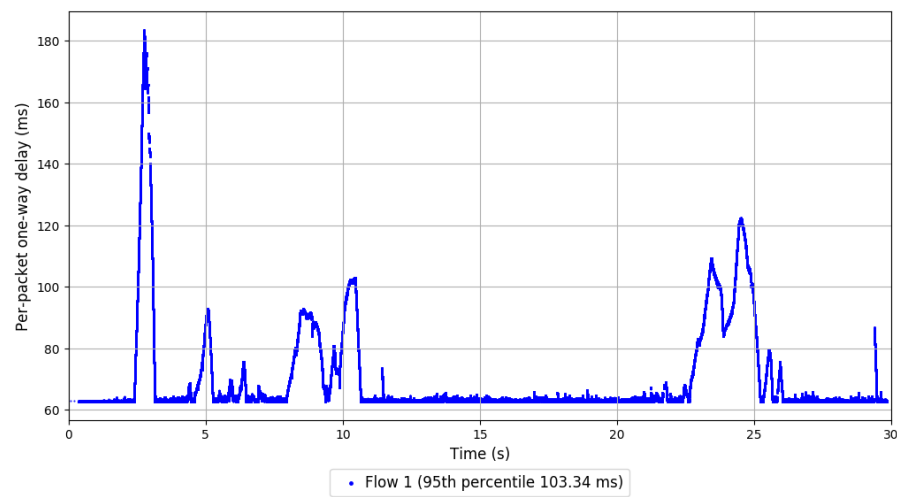
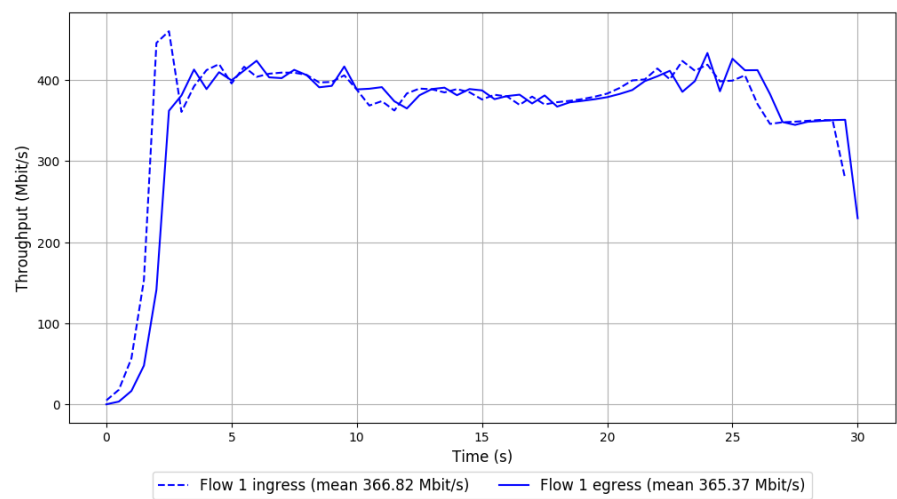
-- Flow 1:

Average throughput: 365.37 Mbit/s

95th percentile per-packet one-way delay: 103.344 ms

Loss rate: 0.82%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

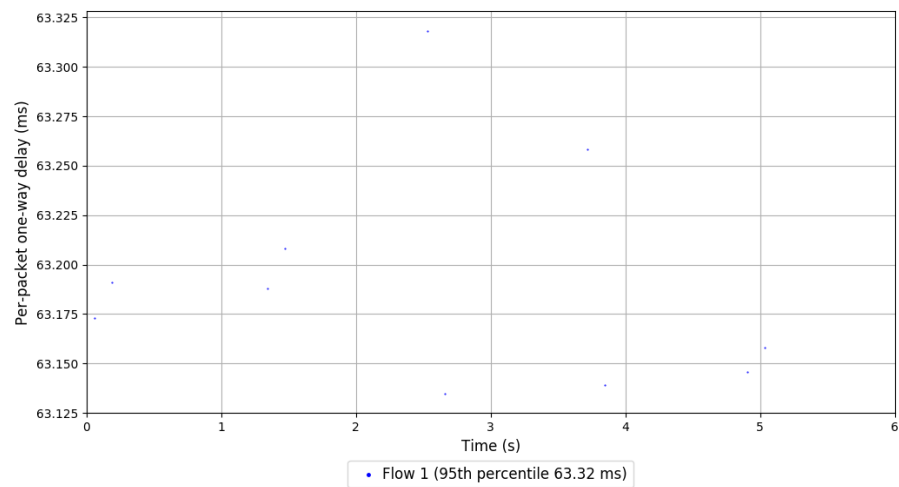
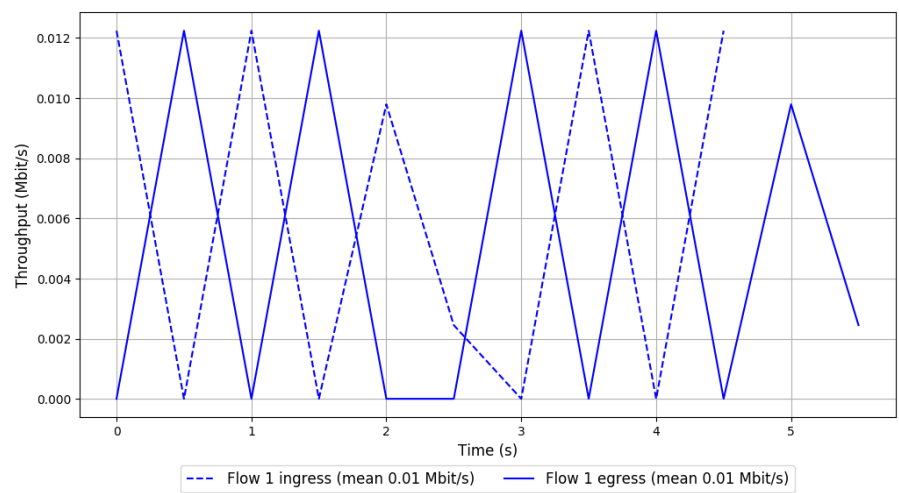
Start at: 2018-11-15 10:54:20

End at: 2018-11-15 10:54:50

Local clock offset: -0.121 ms

Remote clock offset: -0.085 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

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

End at: 2018-11-15 11:20:54

Local clock offset: -0.059 ms

Remote clock offset: -0.662 ms

Below is generated by plot.py at 2018-11-15 14:12:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 65.10 Mbit/s

95th percentile per-packet one-way delay: 63.736 ms

Loss rate: 0.63%

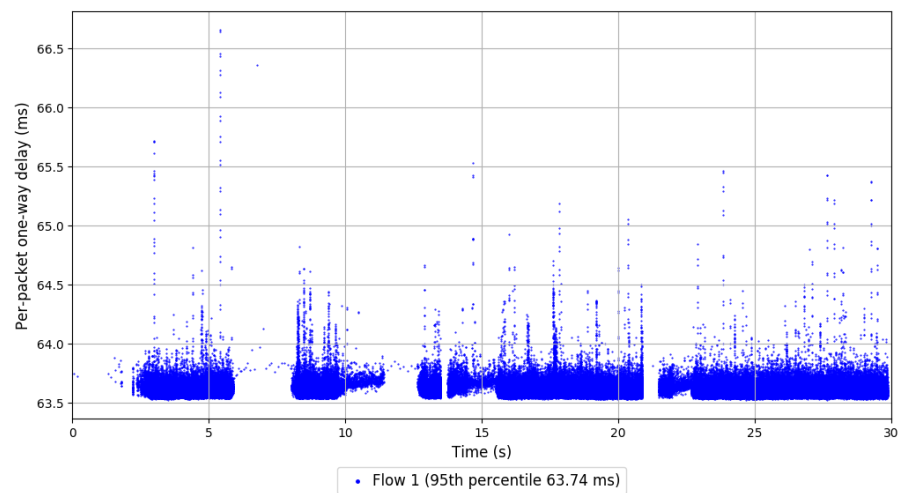
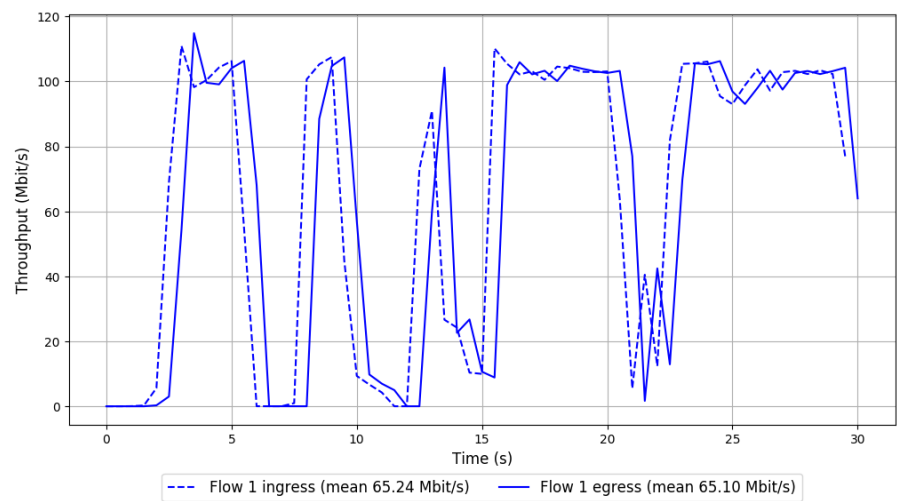
-- Flow 1:

Average throughput: 65.10 Mbit/s

95th percentile per-packet one-way delay: 63.736 ms

Loss rate: 0.63%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 11:46:32

End at: 2018-11-15 11:47:02

Local clock offset: -0.039 ms

Remote clock offset: -0.851 ms

Below is generated by plot.py at 2018-11-15 14:12:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.64 Mbit/s

95th percentile per-packet one-way delay: 63.901 ms

Loss rate: 0.67%

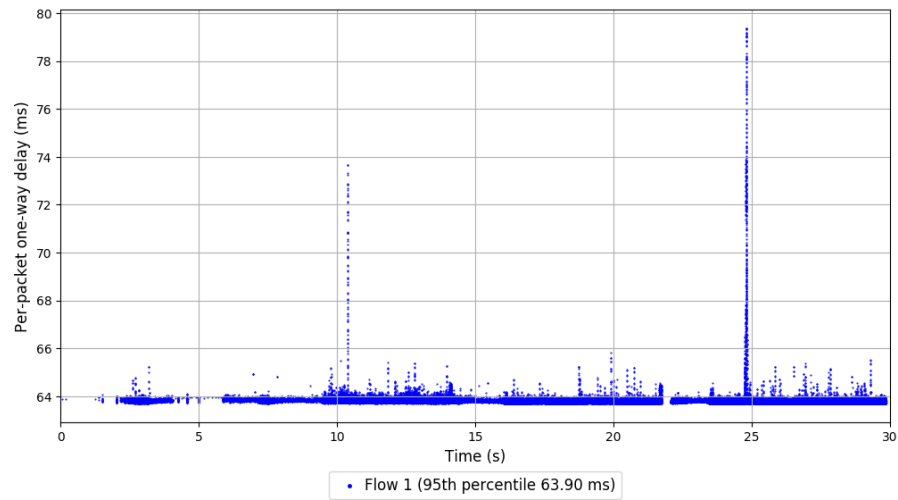
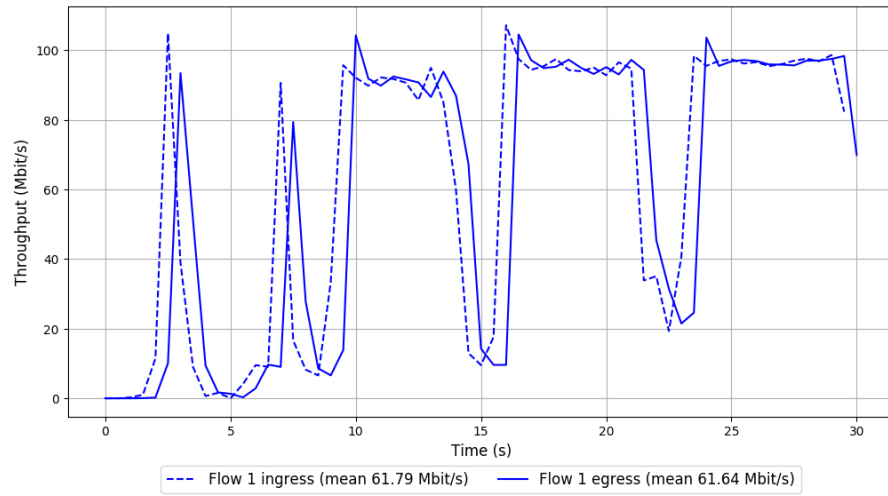
-- Flow 1:

Average throughput: 61.64 Mbit/s

95th percentile per-packet one-way delay: 63.901 ms

Loss rate: 0.67%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 12:12:43

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

Local clock offset: -0.055 ms

Remote clock offset: -0.203 ms

Below is generated by plot.py at 2018-11-15 14:12:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 68.14 Mbit/s

95th percentile per-packet one-way delay: 62.750 ms

Loss rate: 0.62%

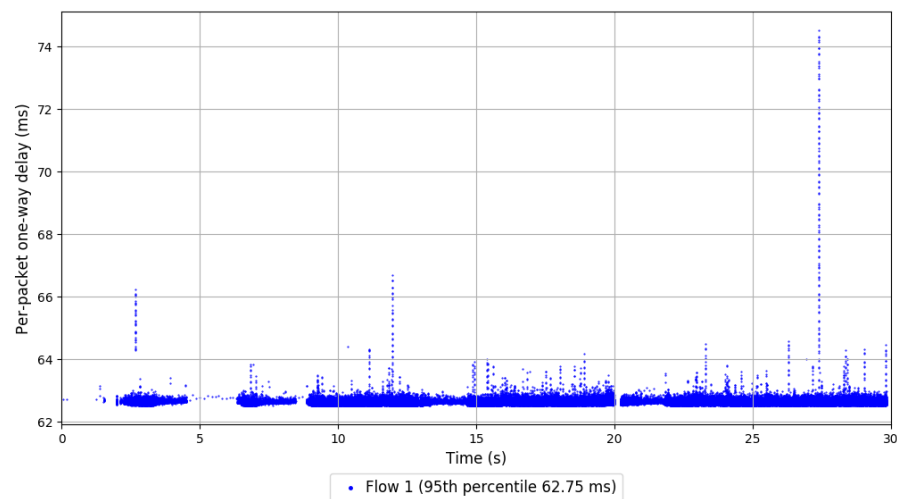
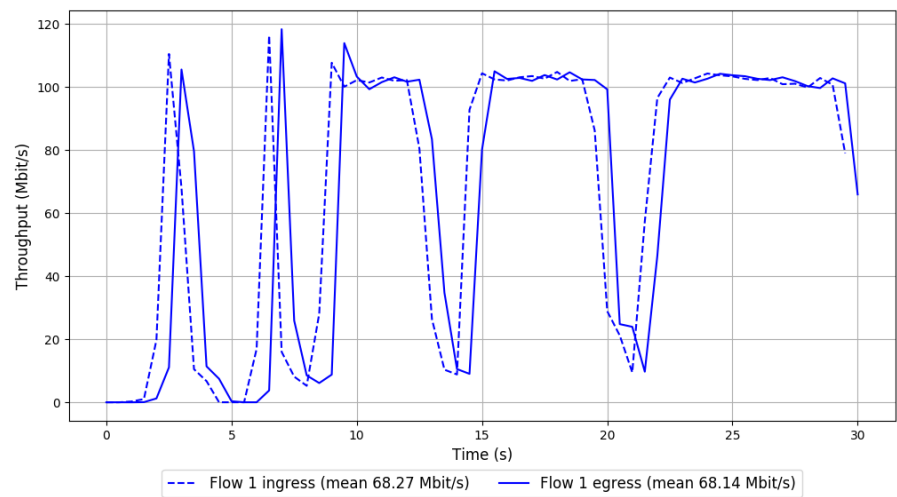
-- Flow 1:

Average throughput: 68.14 Mbit/s

95th percentile per-packet one-way delay: 62.750 ms

Loss rate: 0.62%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 12:38:49

End at: 2018-11-15 12:39:19

Local clock offset: 0.046 ms

Remote clock offset: 0.722 ms

Below is generated by plot.py at 2018-11-15 14:12:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 57.20 Mbit/s

95th percentile per-packet one-way delay: 62.044 ms

Loss rate: 0.77%

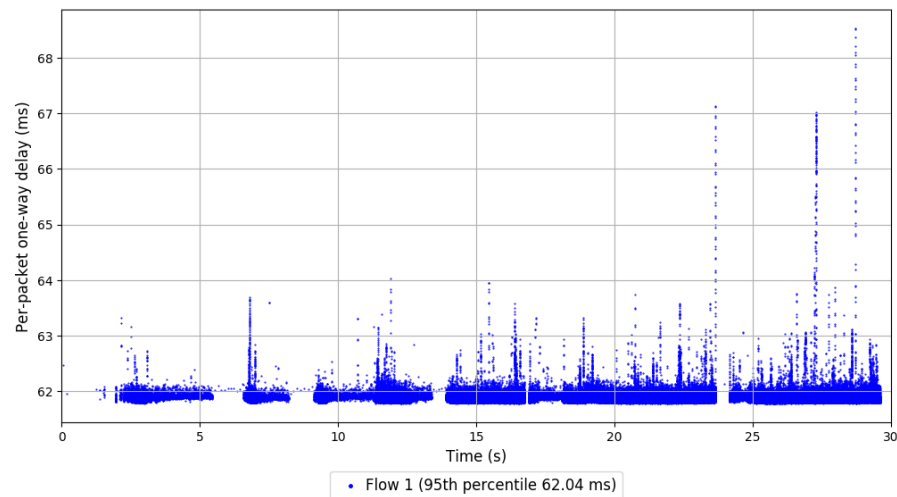
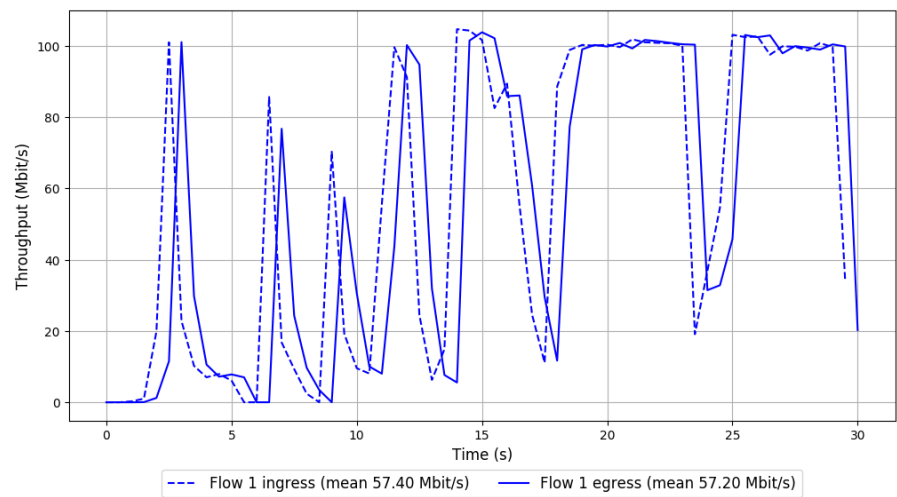
-- Flow 1:

Average throughput: 57.20 Mbit/s

95th percentile per-packet one-way delay: 62.044 ms

Loss rate: 0.77%

Run 5: Report of QUIC Cubic — Data Link

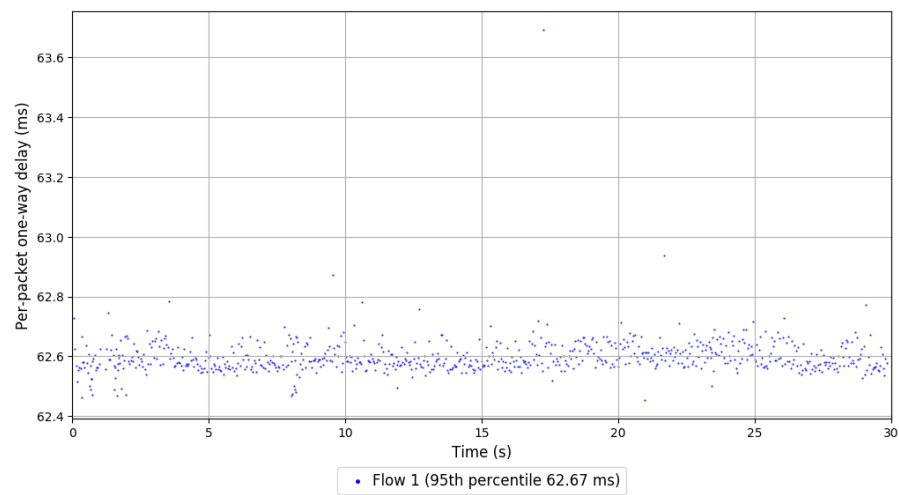
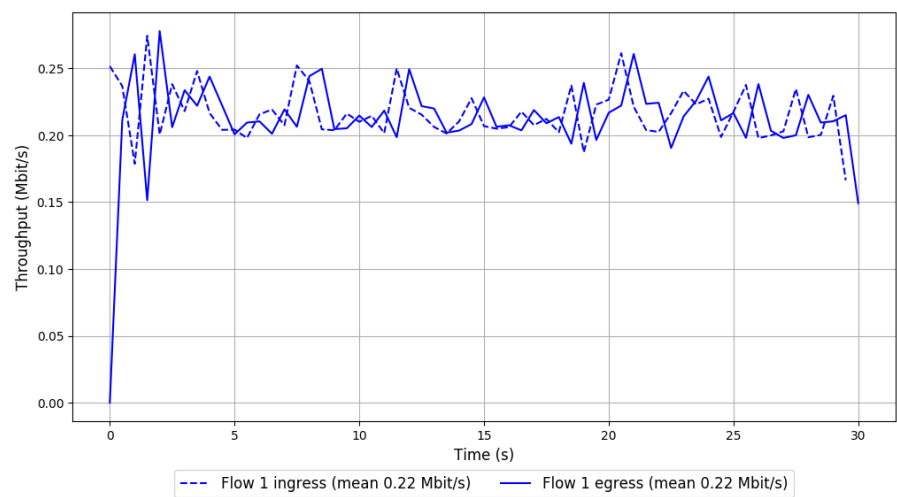


```
Run 1: Statistics of SCReAM

Start at: 2018-11-15 10:42:15
End at: 2018-11-15 10:42:45
Local clock offset: -0.103 ms
Remote clock offset: 0.662 ms

# Below is generated by plot.py at 2018-11-15 14:12:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.672 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.672 ms
Loss rate: 0.38%
```

Run 1: Report of SReAM — Data Link

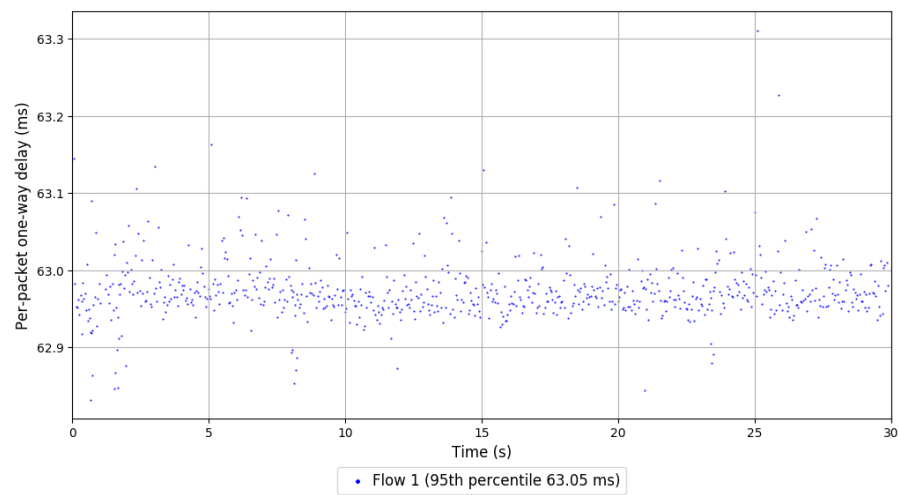
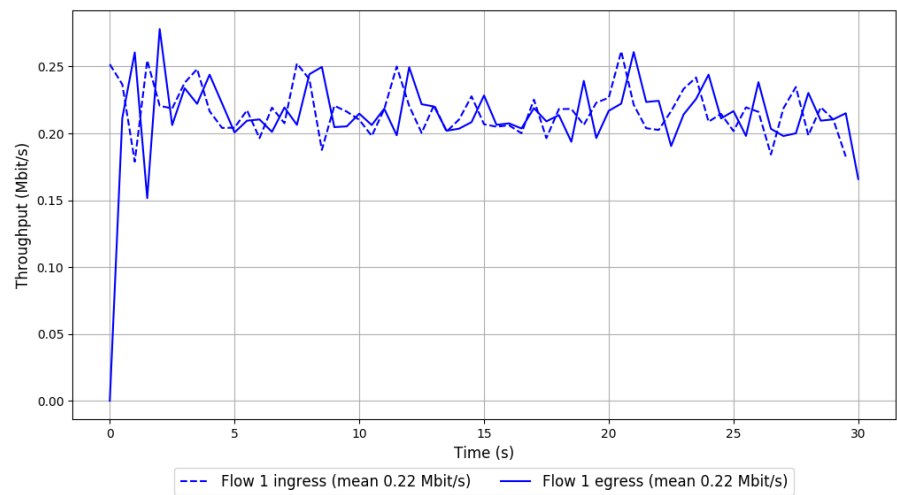


Run 2: Statistics of SCReAM

Start at: 2018-11-15 11:08:18
End at: 2018-11-15 11:08:48
Local clock offset: -0.112 ms
Remote clock offset: -0.147 ms

Below is generated by plot.py at 2018-11-15 14:12:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.046 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.046 ms
Loss rate: 0.38%

Run 2: Report of SReAM — Data Link

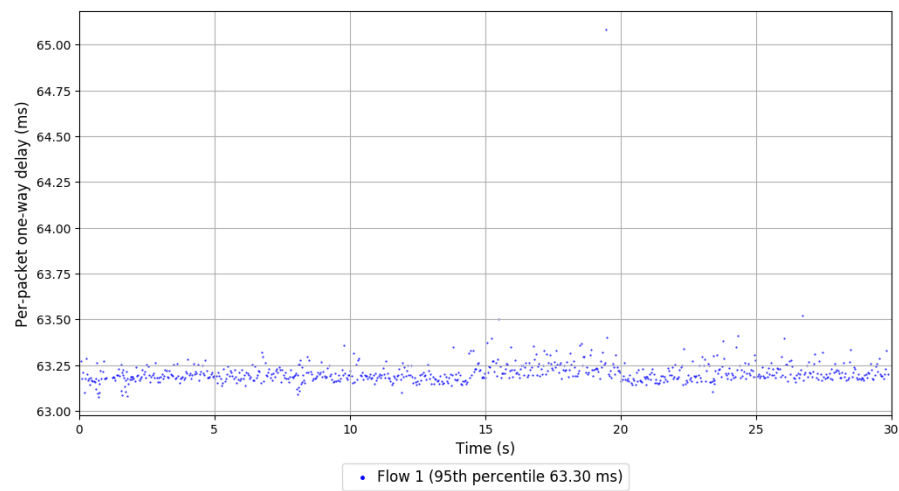
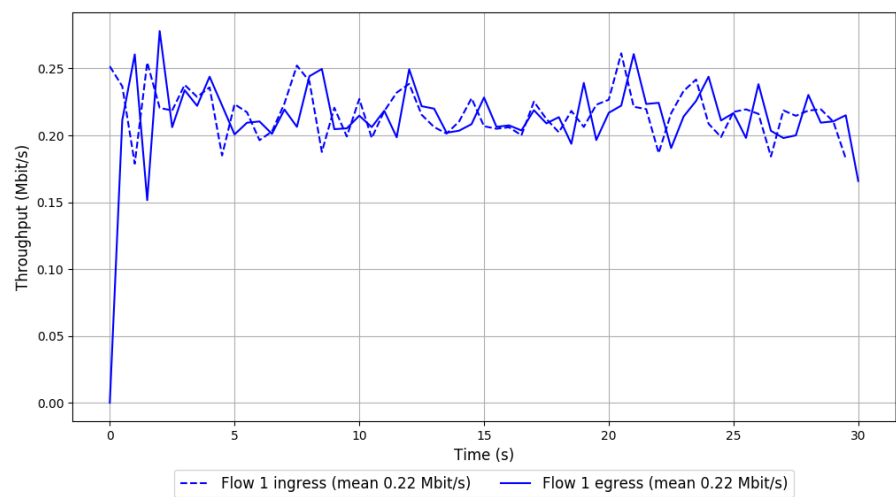


Run 3: Statistics of SCReAM

Start at: 2018-11-15 11:34:25
End at: 2018-11-15 11:34:55
Local clock offset: -0.013 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-11-15 14:12:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.303 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.303 ms
Loss rate: 0.38%

Run 3: Report of SReAM — Data Link

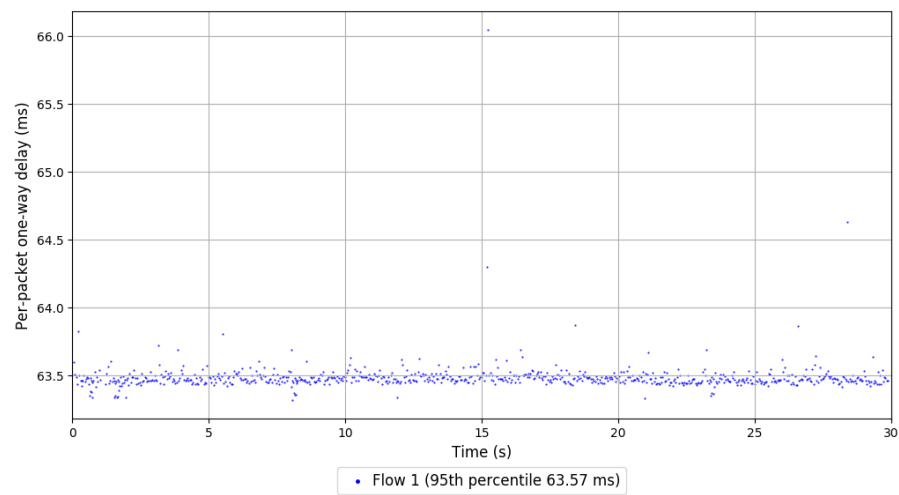
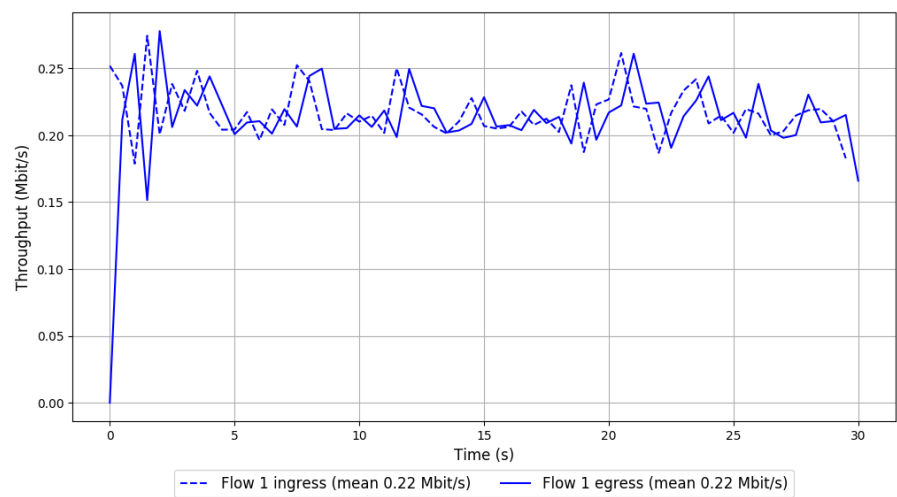


Run 4: Statistics of SCReAM

Start at: 2018-11-15 12:00:35
End at: 2018-11-15 12:01:05
Local clock offset: -0.057 ms
Remote clock offset: -0.472 ms

Below is generated by plot.py at 2018-11-15 14:12:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.567 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.567 ms
Loss rate: 0.38%

Run 4: Report of SReAM — Data Link

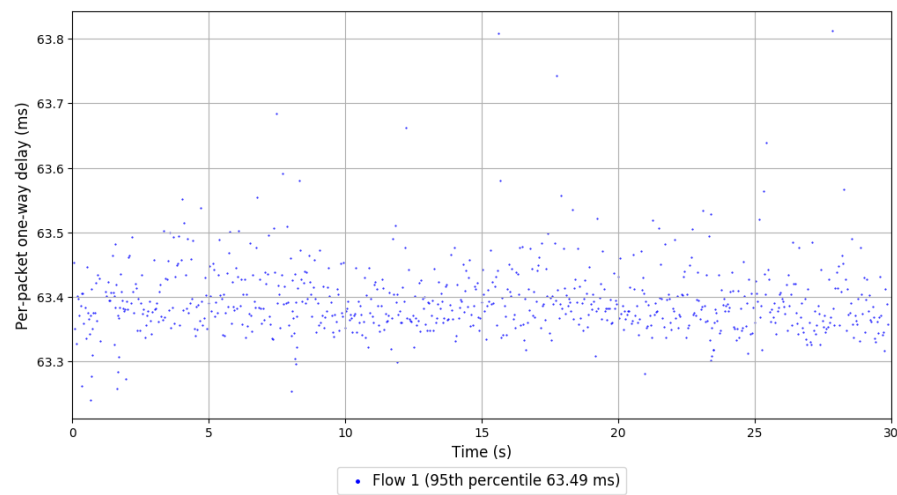
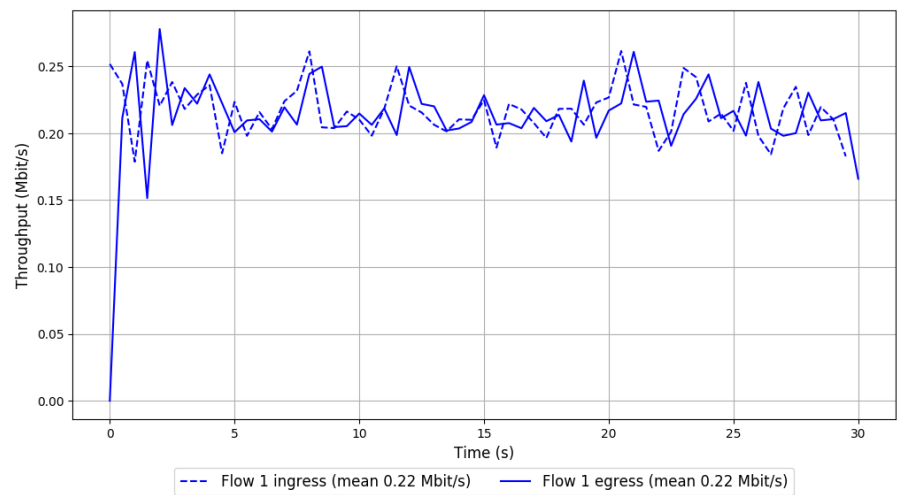


Run 5: Statistics of SCReAM

Start at: 2018-11-15 12:26:40
End at: 2018-11-15 12:27:10
Local clock offset: -0.005 ms
Remote clock offset: -0.462 ms

Below is generated by plot.py at 2018-11-15 14:12:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.490 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.490 ms
Loss rate: 0.38%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-11-15 10:58:09

End at: 2018-11-15 10:58:39

Local clock offset: -0.137 ms

Remote clock offset: 1.092 ms

Below is generated by plot.py at 2018-11-15 14:12:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.81 Mbit/s

95th percentile per-packet one-way delay: 62.837 ms

Loss rate: 0.49%

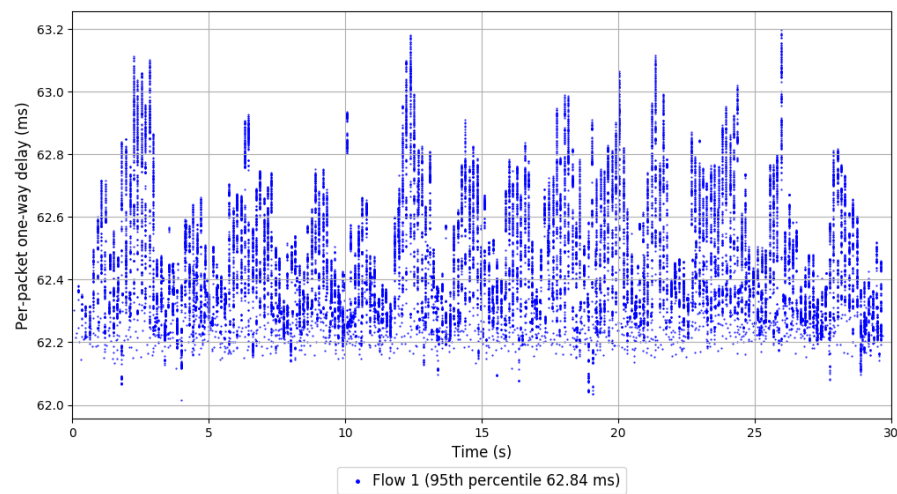
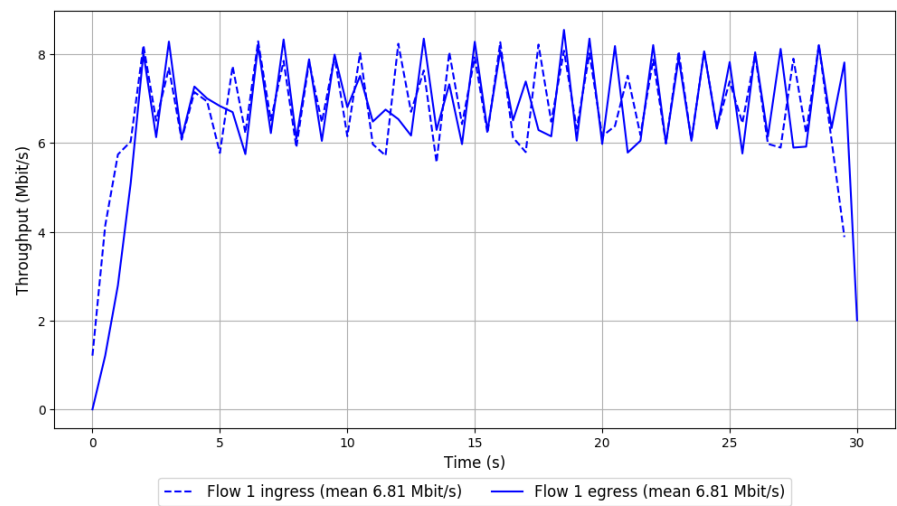
-- Flow 1:

Average throughput: 6.81 Mbit/s

95th percentile per-packet one-way delay: 62.837 ms

Loss rate: 0.49%

Run 1: Report of Sprout — Data Link

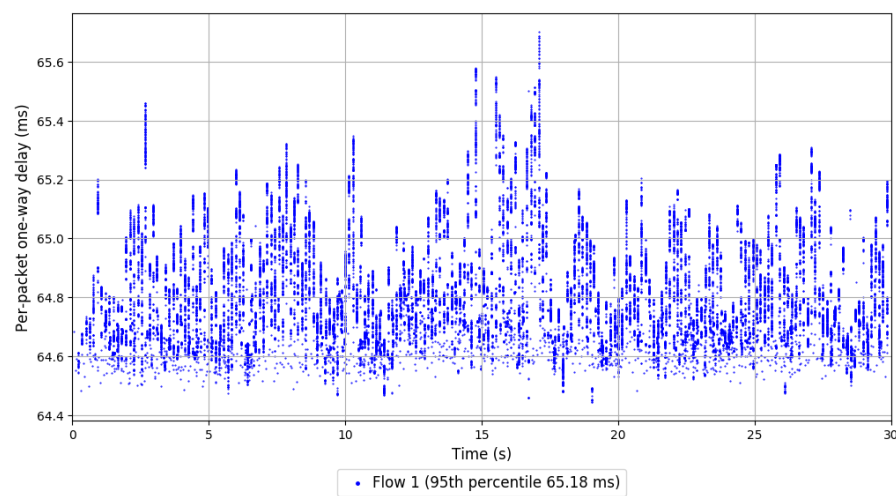
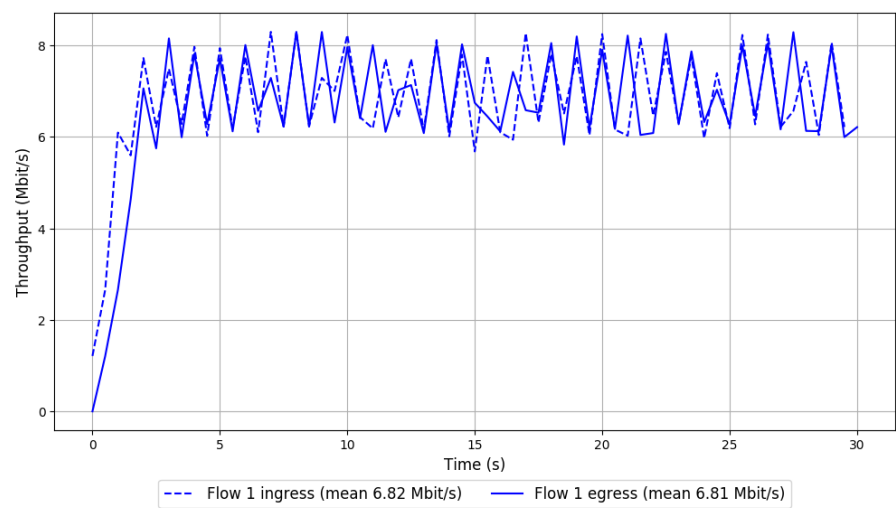


Run 2: Statistics of Sprout

Start at: 2018-11-15 11:24:16
End at: 2018-11-15 11:24:46
Local clock offset: -0.054 ms
Remote clock offset: -1.375 ms

Below is generated by plot.py at 2018-11-15 14:12:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.81 Mbit/s
95th percentile per-packet one-way delay: 65.180 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 6.81 Mbit/s
95th percentile per-packet one-way delay: 65.180 ms
Loss rate: 0.51%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-11-15 11:50:26

End at: 2018-11-15 11:50:56

Local clock offset: -0.041 ms

Remote clock offset: 1.035 ms

Below is generated by plot.py at 2018-11-15 14:12:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.84 Mbit/s

95th percentile per-packet one-way delay: 62.437 ms

Loss rate: 0.49%

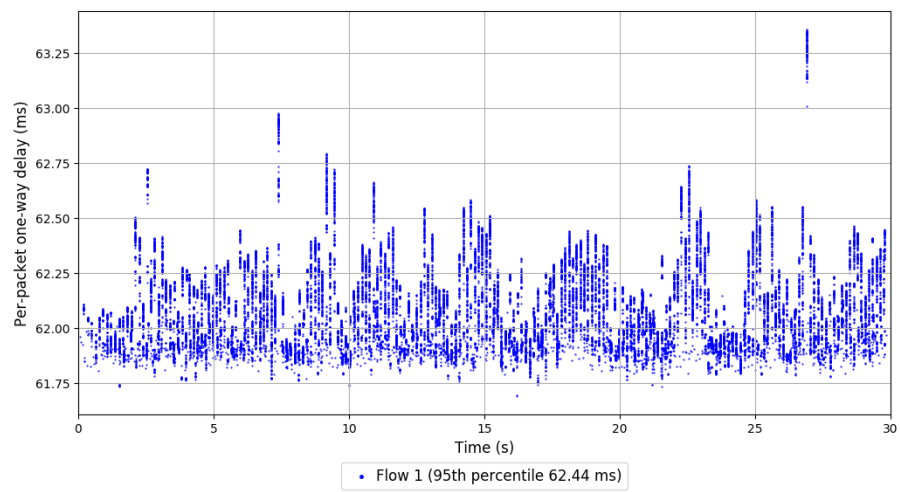
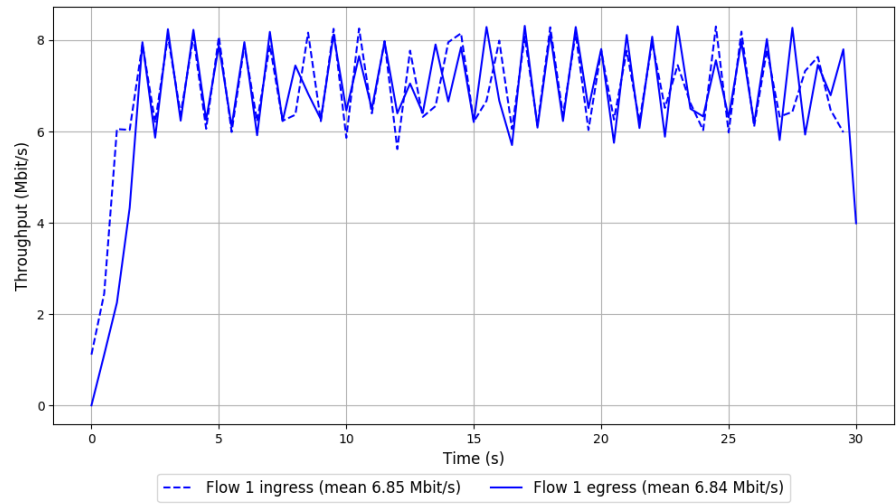
-- Flow 1:

Average throughput: 6.84 Mbit/s

95th percentile per-packet one-way delay: 62.437 ms

Loss rate: 0.49%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-11-15 12:16:37

End at: 2018-11-15 12:17:07

Local clock offset: -0.025 ms

Remote clock offset: 0.851 ms

Below is generated by plot.py at 2018-11-15 14:12:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.64 Mbit/s

95th percentile per-packet one-way delay: 62.780 ms

Loss rate: 0.54%

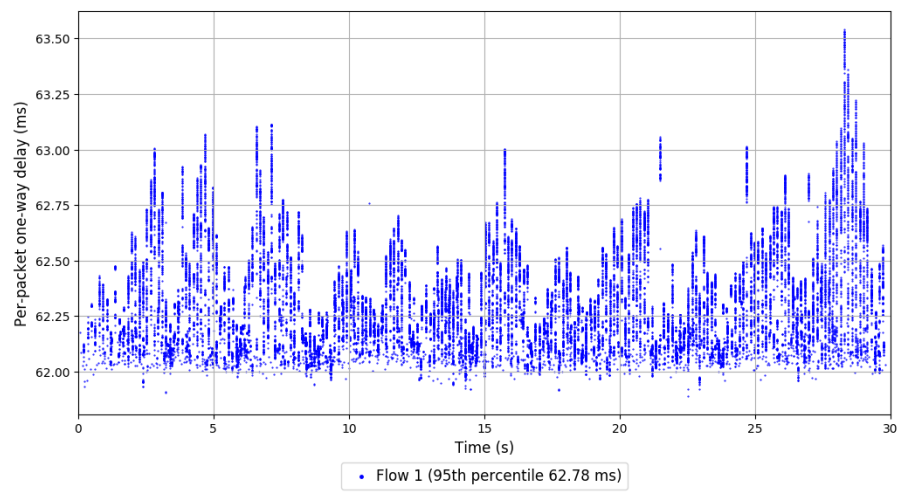
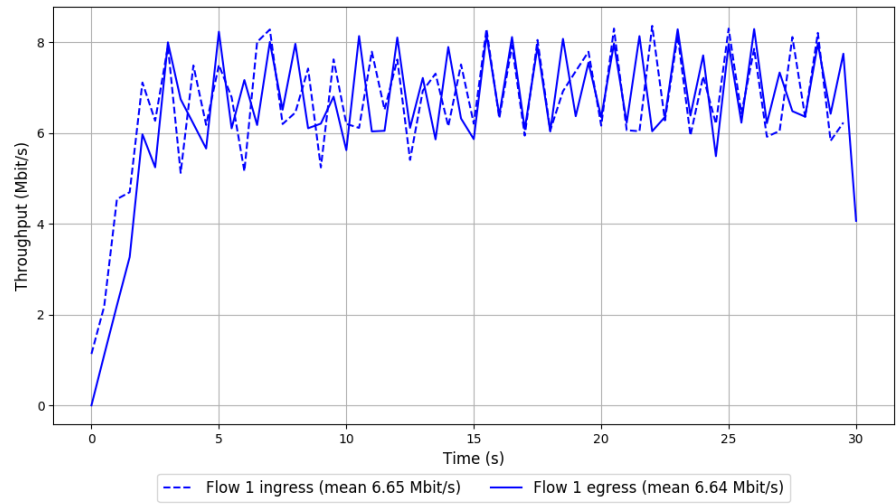
-- Flow 1:

Average throughput: 6.64 Mbit/s

95th percentile per-packet one-way delay: 62.780 ms

Loss rate: 0.54%

Run 4: Report of Sprout — Data Link

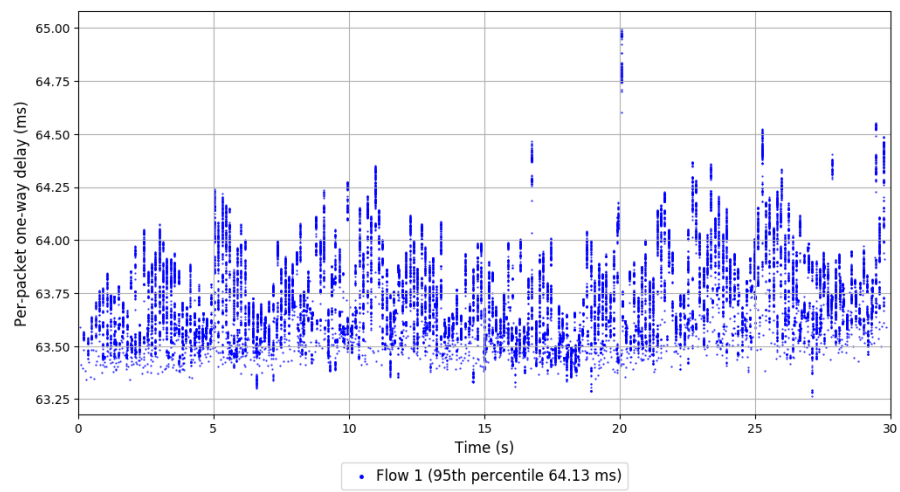
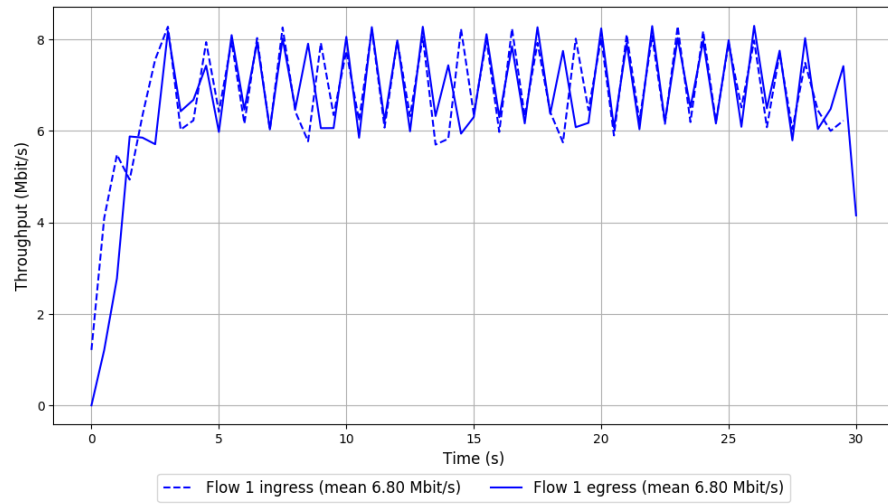


Run 5: Statistics of Sprout

Start at: 2018-11-15 12:42:45
End at: 2018-11-15 12:43:15
Local clock offset: 0.024 ms
Remote clock offset: -0.427 ms

Below is generated by plot.py at 2018-11-15 14:12:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 64.129 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 64.129 ms
Loss rate: 0.51%

Run 5: Report of Sprout — Data Link

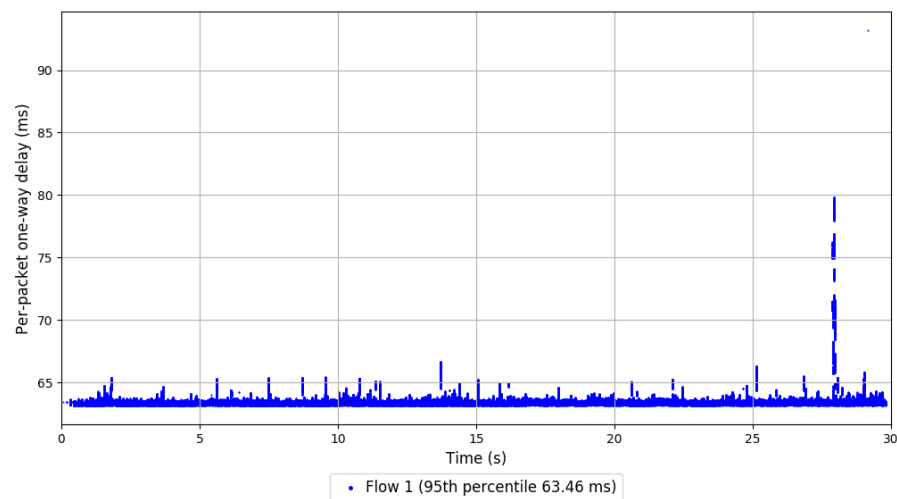
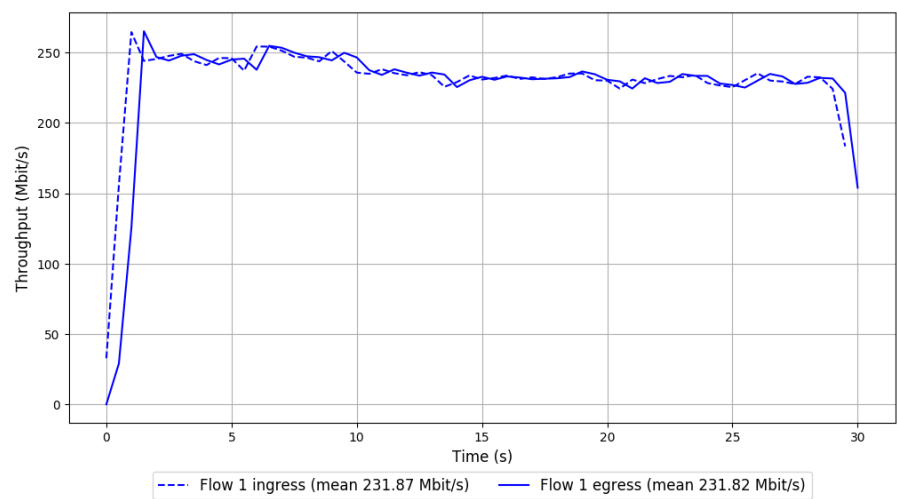


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 10:52:51
End at: 2018-11-15 10:53:21
Local clock offset: -0.118 ms
Remote clock offset: -0.157 ms

# Below is generated by plot.py at 2018-11-15 14:14:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.82 Mbit/s
95th percentile per-packet one-way delay: 63.461 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 231.82 Mbit/s
95th percentile per-packet one-way delay: 63.461 ms
Loss rate: 0.44%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-15 11:18:55

End at: 2018-11-15 11:19:25

Local clock offset: -0.055 ms

Remote clock offset: 0.631 ms

Below is generated by plot.py at 2018-11-15 14:14:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 225.60 Mbit/s

95th percentile per-packet one-way delay: 62.714 ms

Loss rate: 0.44%

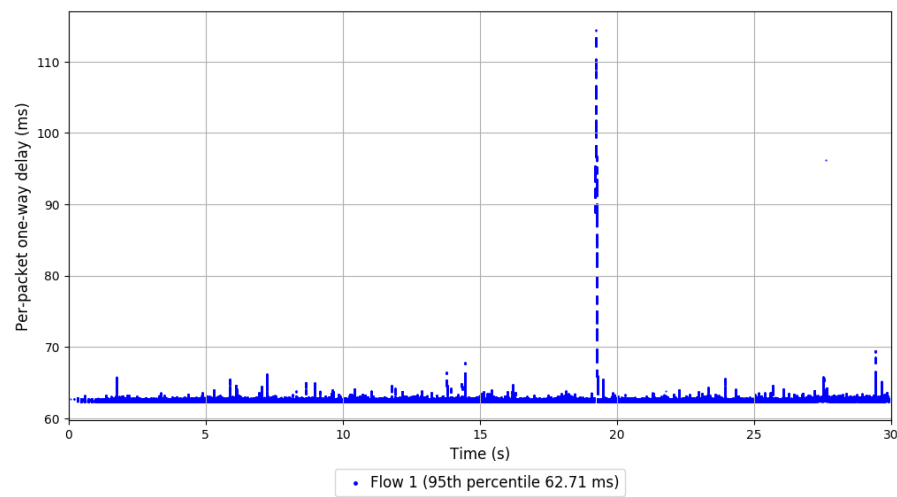
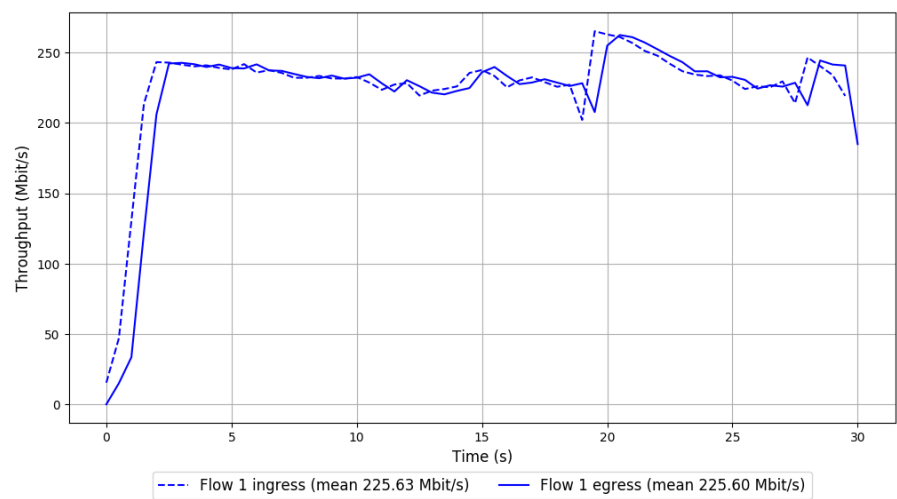
-- Flow 1:

Average throughput: 225.60 Mbit/s

95th percentile per-packet one-way delay: 62.714 ms

Loss rate: 0.44%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 11:45:04

End at: 2018-11-15 11:45:34

Local clock offset: -0.036 ms

Remote clock offset: -0.239 ms

Below is generated by plot.py at 2018-11-15 14:14:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 223.90 Mbit/s

95th percentile per-packet one-way delay: 63.156 ms

Loss rate: 0.44%

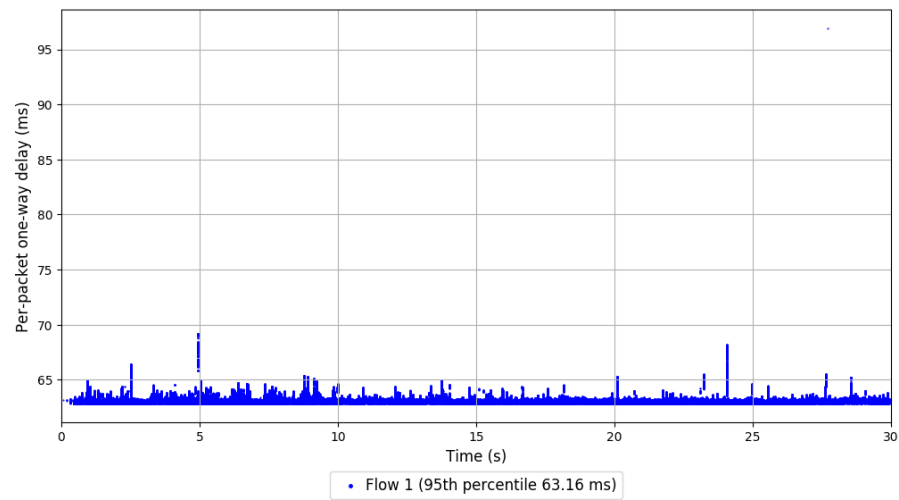
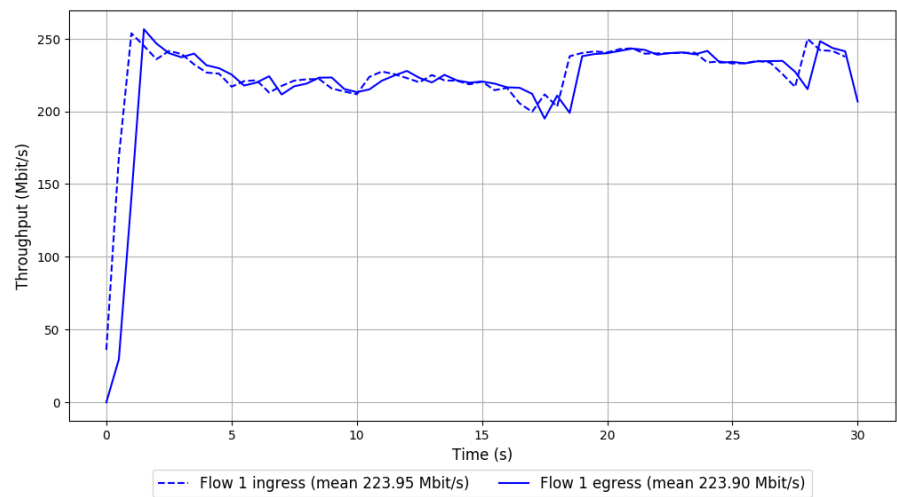
-- Flow 1:

Average throughput: 223.90 Mbit/s

95th percentile per-packet one-way delay: 63.156 ms

Loss rate: 0.44%

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

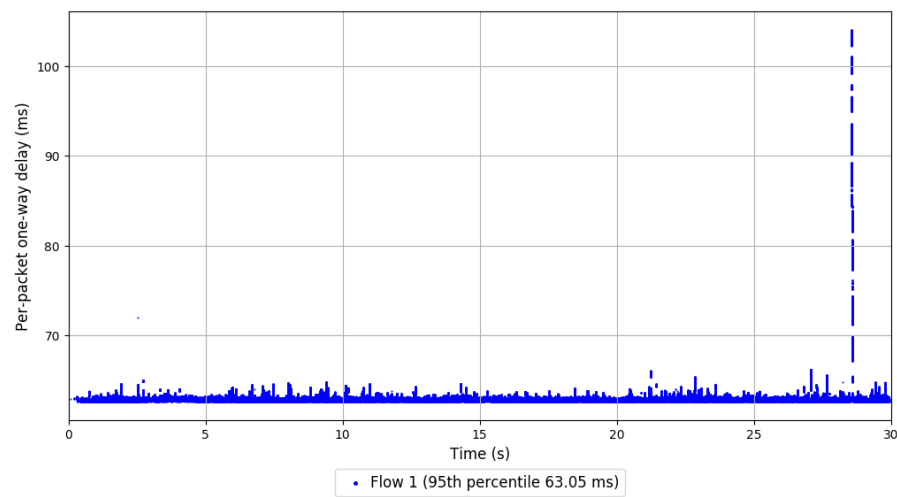
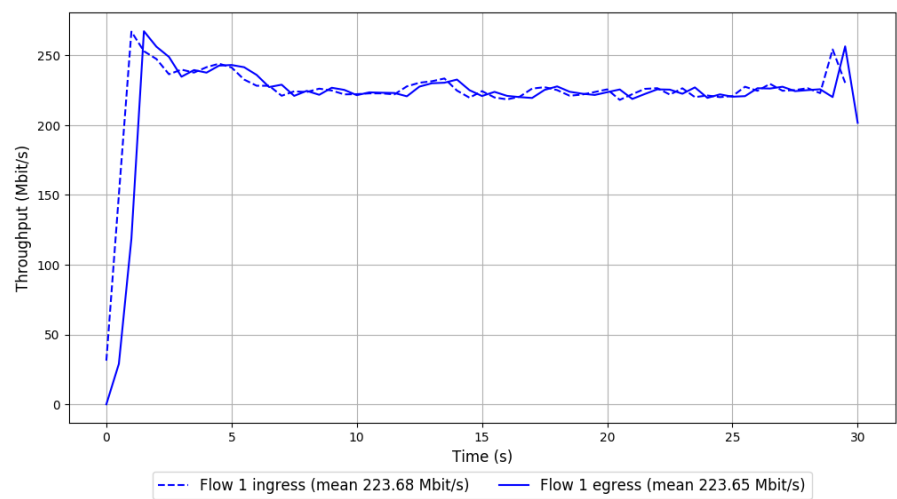


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 12:11:14
End at: 2018-11-15 12:11:44
Local clock offset: -0.087 ms
Remote clock offset: -0.361 ms

Below is generated by plot.py at 2018-11-15 14:16:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 223.65 Mbit/s
95th percentile per-packet one-way delay: 63.046 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 223.65 Mbit/s
95th percentile per-packet one-way delay: 63.046 ms
Loss rate: 0.44%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-15 12:37:21

End at: 2018-11-15 12:37:51

Local clock offset: 0.008 ms

Remote clock offset: 0.214 ms

Below is generated by plot.py at 2018-11-15 14:17:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 213.65 Mbit/s

95th percentile per-packet one-way delay: 63.192 ms

Loss rate: 0.38%

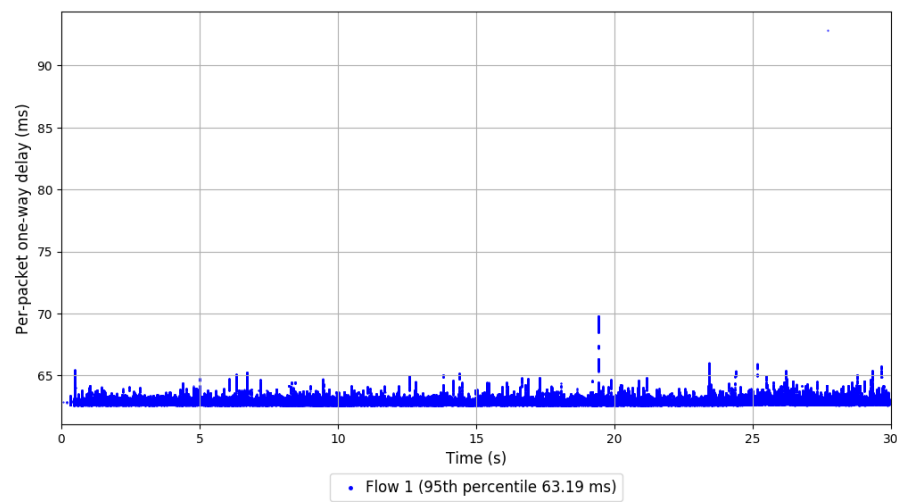
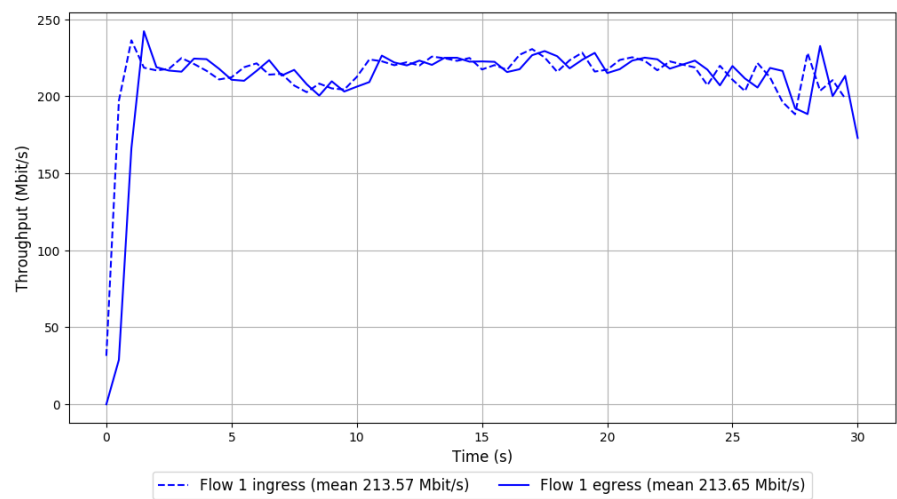
-- Flow 1:

Average throughput: 213.65 Mbit/s

95th percentile per-packet one-way delay: 63.192 ms

Loss rate: 0.38%

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

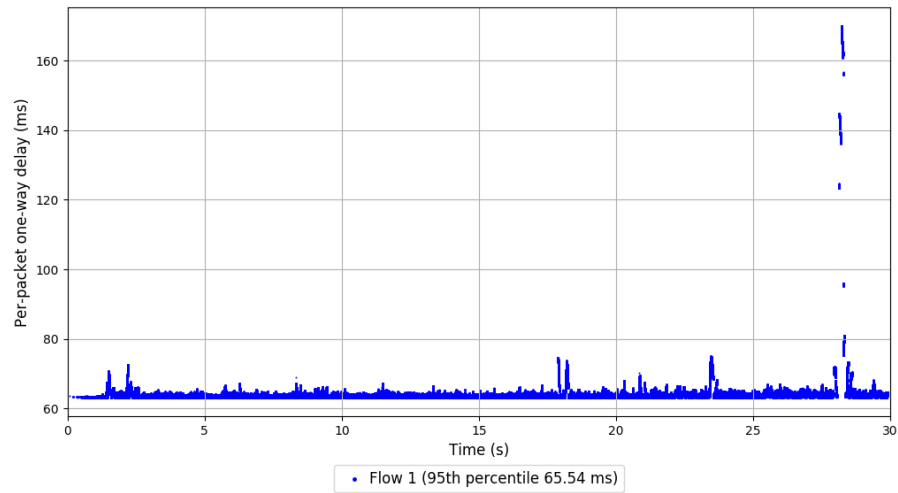
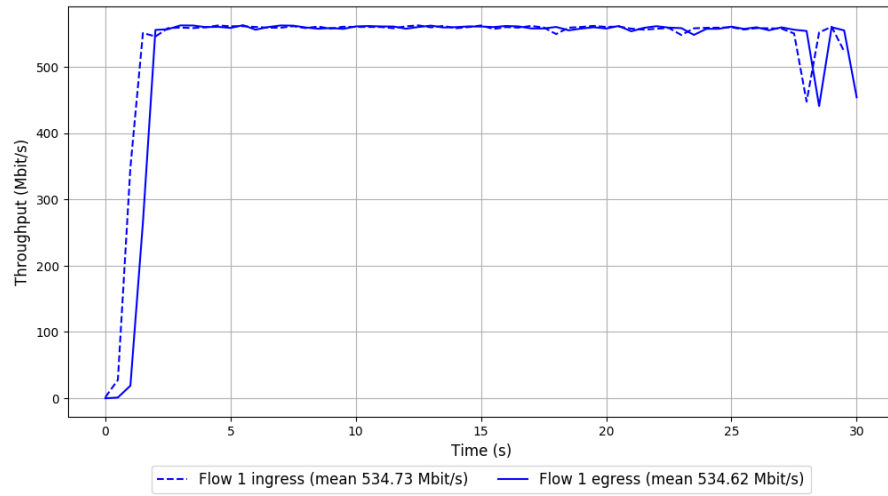


Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 11:02:05
End at: 2018-11-15 11:02:35
Local clock offset: -0.159 ms
Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-11-15 14:20:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 534.62 Mbit/s
95th percentile per-packet one-way delay: 65.544 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 534.62 Mbit/s
95th percentile per-packet one-way delay: 65.544 ms
Loss rate: 0.44%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 11:28:13

End at: 2018-11-15 11:28:43

Local clock offset: -0.009 ms

Remote clock offset: 0.527 ms

Below is generated by plot.py at 2018-11-15 14:21:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 533.14 Mbit/s

95th percentile per-packet one-way delay: 64.344 ms

Loss rate: 0.44%

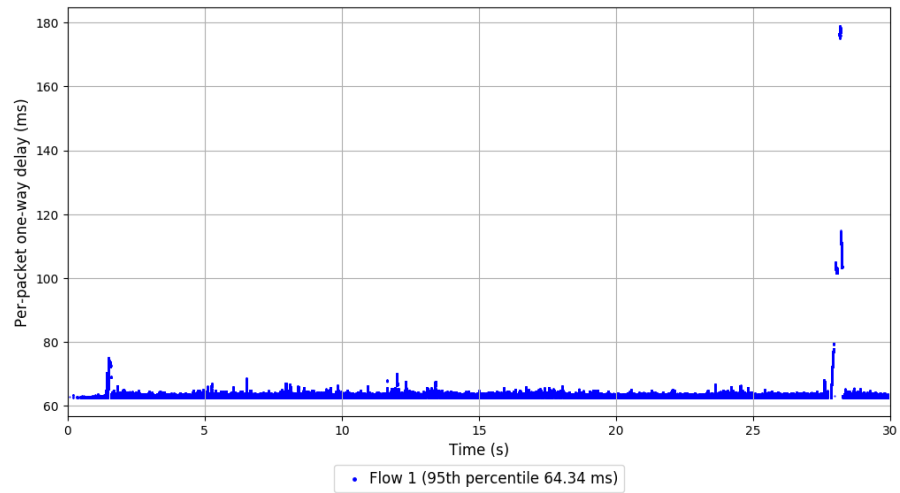
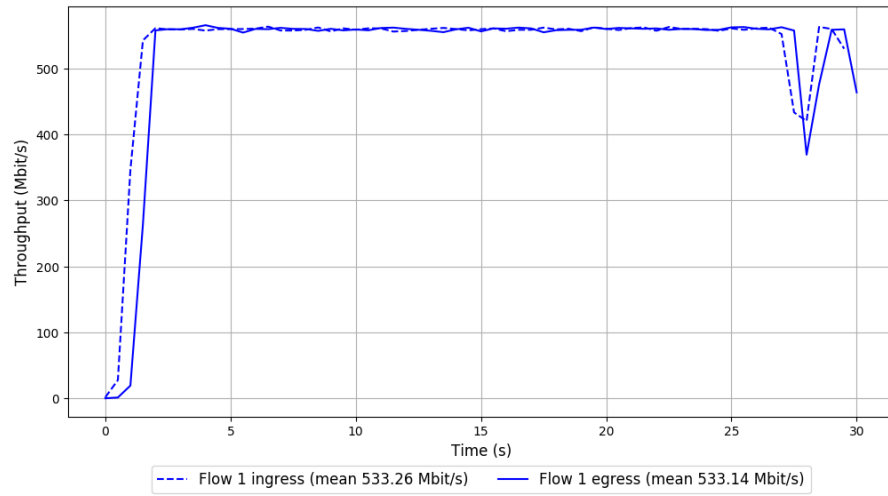
-- Flow 1:

Average throughput: 533.14 Mbit/s

95th percentile per-packet one-way delay: 64.344 ms

Loss rate: 0.44%

Run 2: Report of TCP Vegas — Data Link

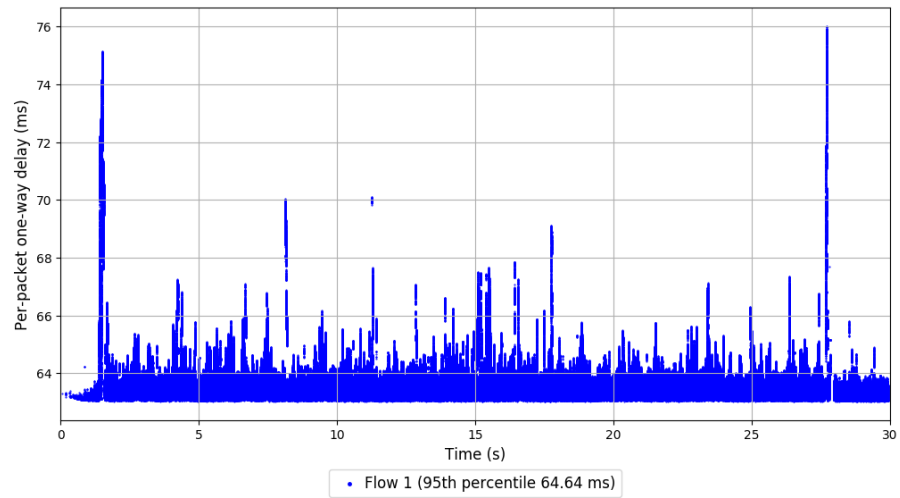
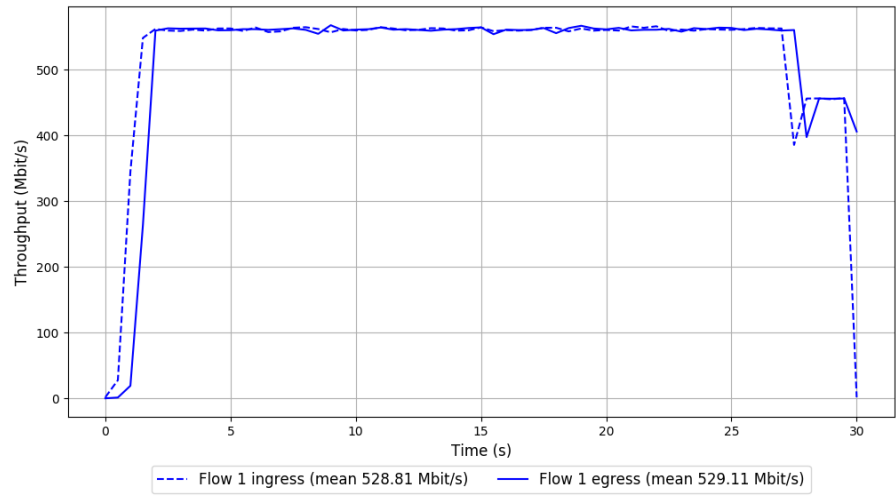


Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 11:54:25
End at: 2018-11-15 11:54:55
Local clock offset: -0.046 ms
Remote clock offset: -0.227 ms

Below is generated by plot.py at 2018-11-15 14:22:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 529.11 Mbit/s
95th percentile per-packet one-way delay: 64.635 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 529.11 Mbit/s
95th percentile per-packet one-way delay: 64.635 ms
Loss rate: 0.37%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 12:20:35

End at: 2018-11-15 12:21:05

Local clock offset: 0.066 ms

Remote clock offset: 0.578 ms

Below is generated by plot.py at 2018-11-15 14:24:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 535.28 Mbit/s

95th percentile per-packet one-way delay: 70.240 ms

Loss rate: 0.44%

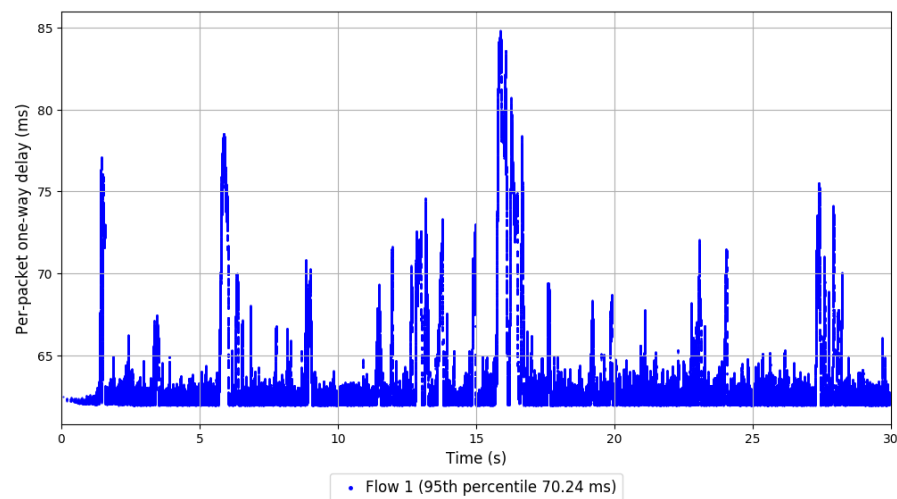
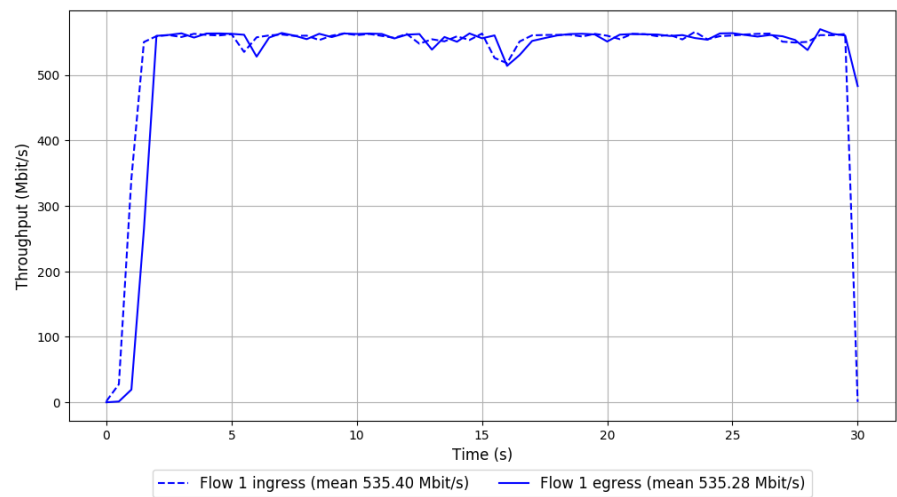
-- Flow 1:

Average throughput: 535.28 Mbit/s

95th percentile per-packet one-way delay: 70.240 ms

Loss rate: 0.44%

Run 4: Report of TCP Vegas — Data Link

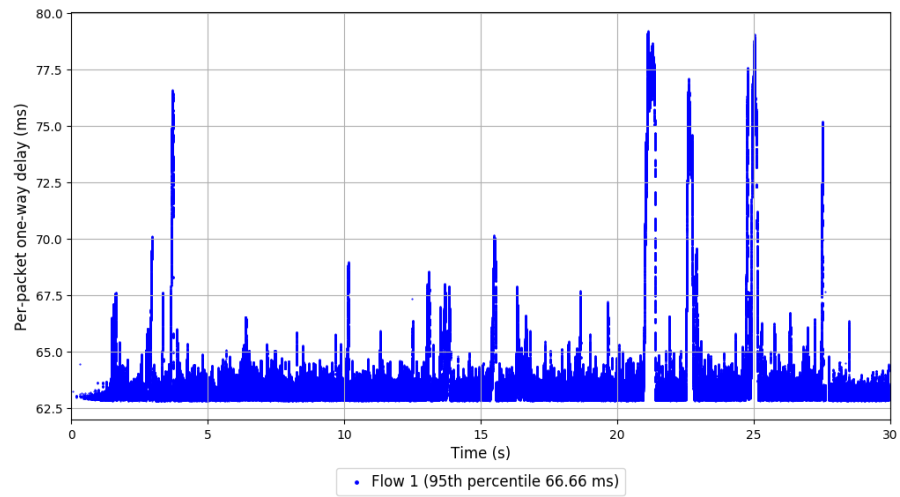
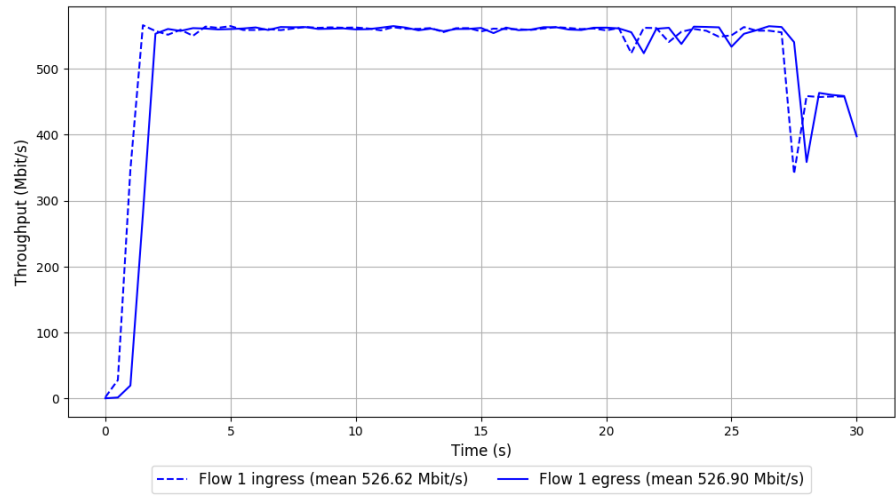


Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 12:46:47
End at: 2018-11-15 12:47:17
Local clock offset: 0.036 ms
Remote clock offset: -0.257 ms

Below is generated by plot.py at 2018-11-15 14:24:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 526.90 Mbit/s
95th percentile per-packet one-way delay: 66.660 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 526.90 Mbit/s
95th percentile per-packet one-way delay: 66.660 ms
Loss rate: 0.37%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-11-15 11:06:50

End at: 2018-11-15 11:07:20

Local clock offset: -0.106 ms

Remote clock offset: 0.471 ms

Below is generated by plot.py at 2018-11-15 14:24:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 207.66 Mbit/s

95th percentile per-packet one-way delay: 158.514 ms

Loss rate: 0.49%

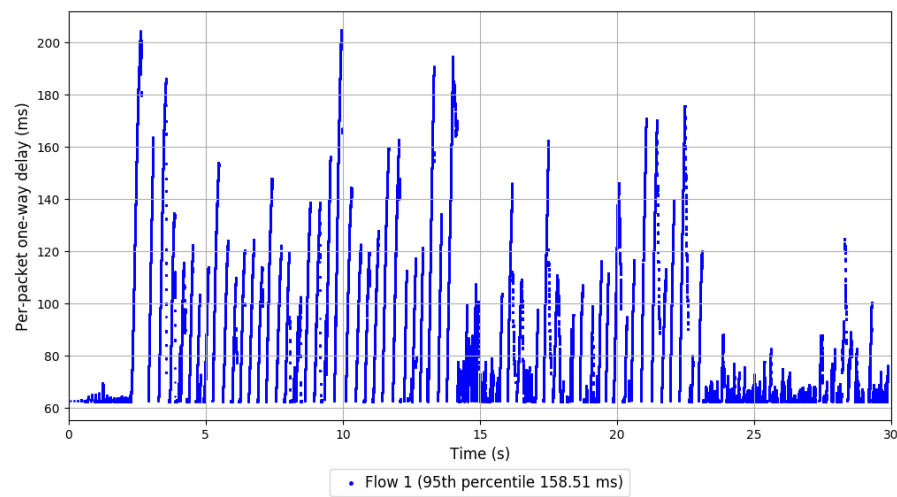
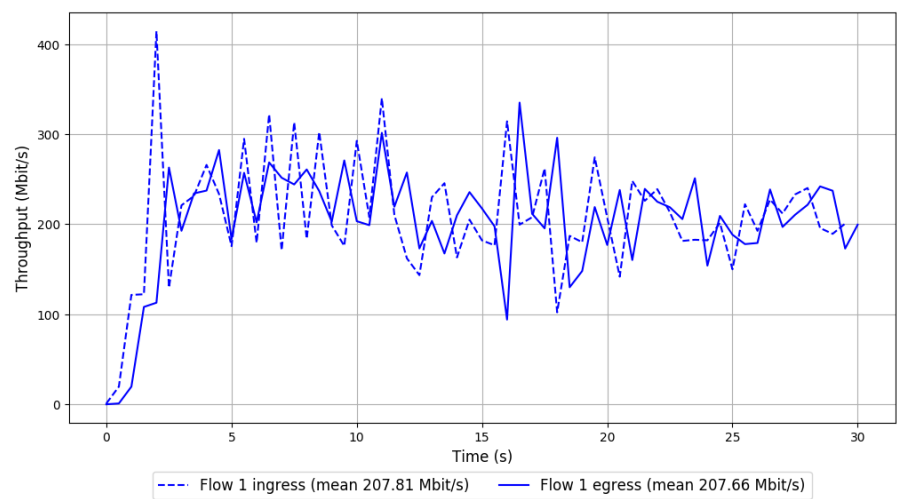
-- Flow 1:

Average throughput: 207.66 Mbit/s

95th percentile per-packet one-way delay: 158.514 ms

Loss rate: 0.49%

Run 1: Report of Verus — Data Link

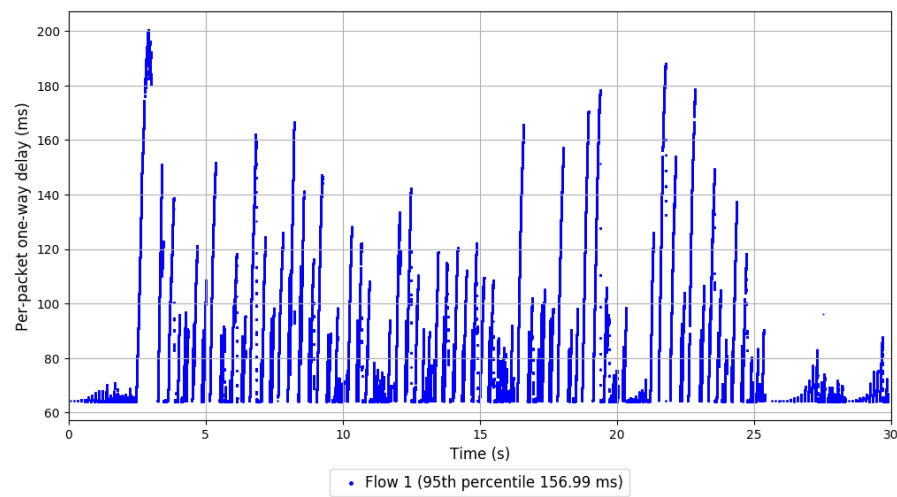
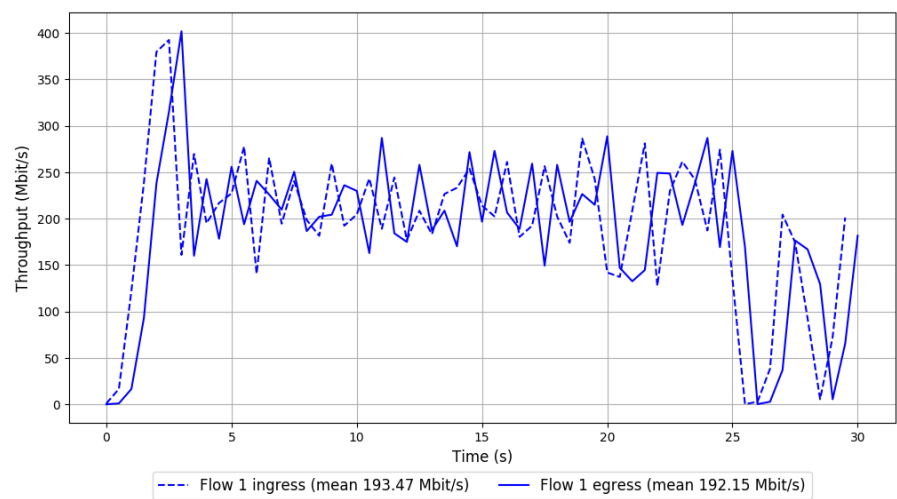


Run 2: Statistics of Verus

Start at: 2018-11-15 11:32:58
End at: 2018-11-15 11:33:28
Local clock offset: -0.054 ms
Remote clock offset: -0.89 ms

Below is generated by plot.py at 2018-11-15 14:24:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 192.15 Mbit/s
95th percentile per-packet one-way delay: 156.988 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 192.15 Mbit/s
95th percentile per-packet one-way delay: 156.988 ms
Loss rate: 0.88%

Run 2: Report of Verus — Data Link

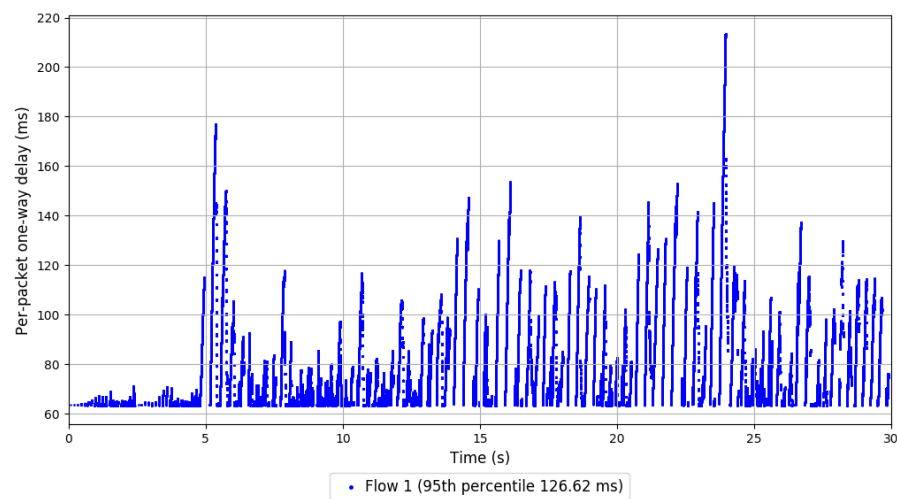
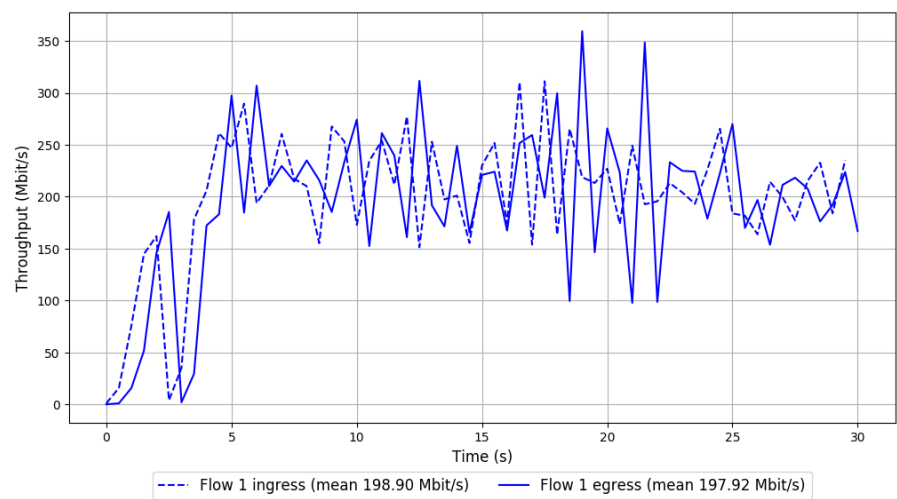


Run 3: Statistics of Verus

Start at: 2018-11-15 11:59:08
End at: 2018-11-15 11:59:38
Local clock offset: -0.081 ms
Remote clock offset: -0.341 ms

Below is generated by plot.py at 2018-11-15 14:25:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 197.92 Mbit/s
95th percentile per-packet one-way delay: 126.624 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 197.92 Mbit/s
95th percentile per-packet one-way delay: 126.624 ms
Loss rate: 0.91%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-11-15 12:25:19

End at: 2018-11-15 12:25:49

Local clock offset: -0.009 ms

Remote clock offset: -0.4 ms

Below is generated by plot.py at 2018-11-15 14:26:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 132.59 Mbit/s

95th percentile per-packet one-way delay: 173.987 ms

Loss rate: 1.06%

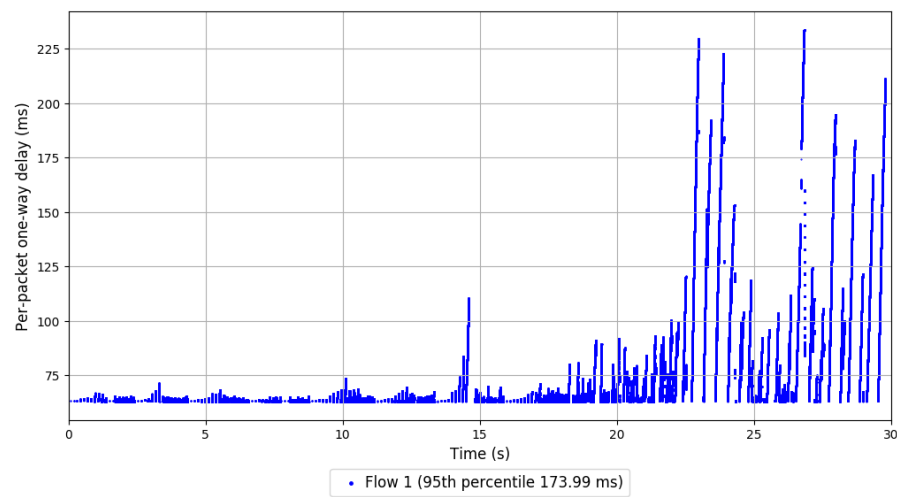
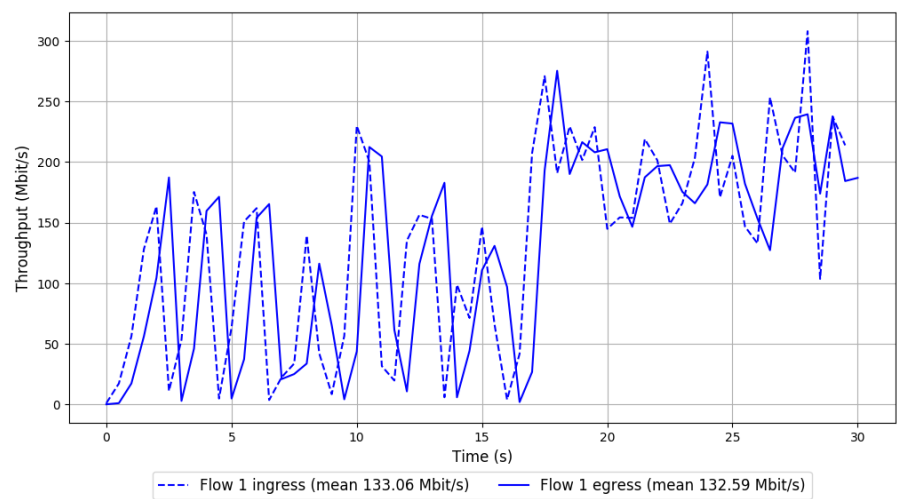
-- Flow 1:

Average throughput: 132.59 Mbit/s

95th percentile per-packet one-way delay: 173.987 ms

Loss rate: 1.06%

Run 4: Report of Verus — Data Link

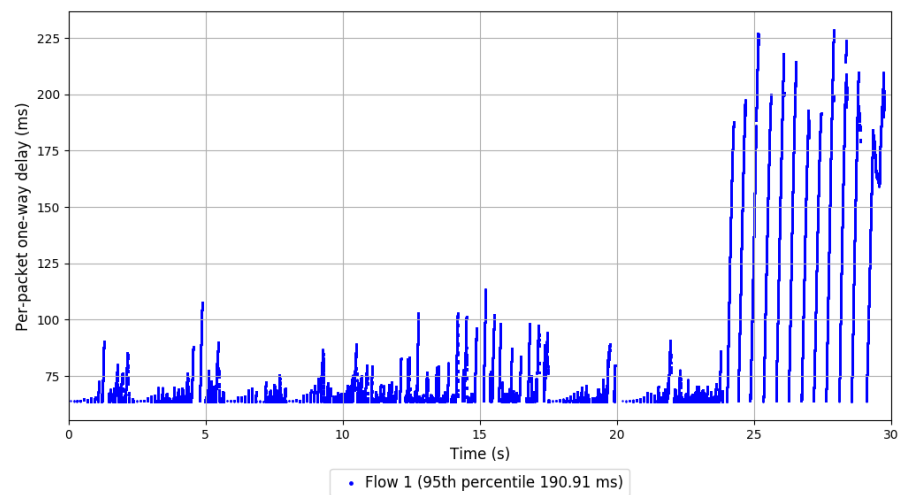
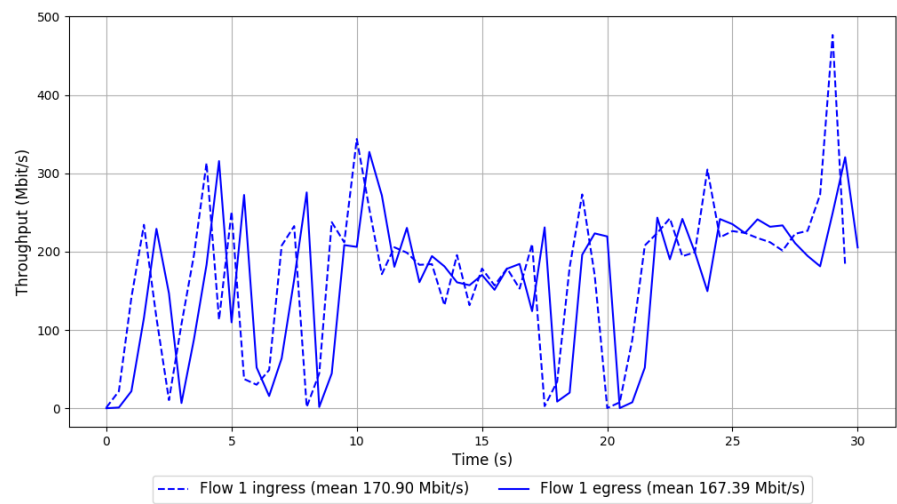


Run 5: Statistics of Verus

Start at: 2018-11-15 12:51:31
End at: 2018-11-15 12:52:01
Local clock offset: 0.015 ms
Remote clock offset: -0.871 ms

Below is generated by plot.py at 2018-11-15 14:26:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 167.39 Mbit/s
95th percentile per-packet one-way delay: 190.909 ms
Loss rate: 2.87%
-- Flow 1:
Average throughput: 167.39 Mbit/s
95th percentile per-packet one-way delay: 190.909 ms
Loss rate: 2.87%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 11:03:39

End at: 2018-11-15 11:04:09

Local clock offset: -0.173 ms

Remote clock offset: -0.17 ms

Below is generated by plot.py at 2018-11-15 14:28:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 413.93 Mbit/s

95th percentile per-packet one-way delay: 69.570 ms

Loss rate: 0.45%

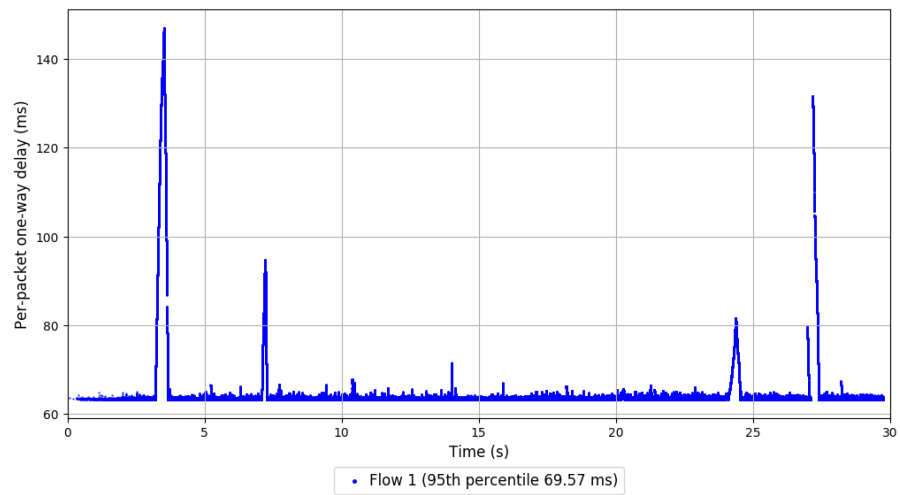
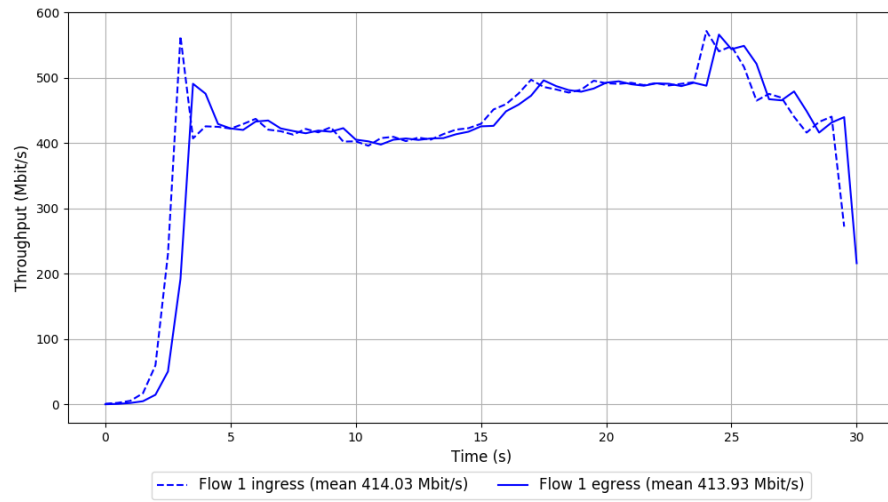
-- Flow 1:

Average throughput: 413.93 Mbit/s

95th percentile per-packet one-way delay: 69.570 ms

Loss rate: 0.45%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 11:29:47

End at: 2018-11-15 11:30:17

Local clock offset: -0.028 ms

Remote clock offset: 1.188 ms

Below is generated by plot.py at 2018-11-15 14:29:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 416.10 Mbit/s

95th percentile per-packet one-way delay: 62.962 ms

Loss rate: 0.52%

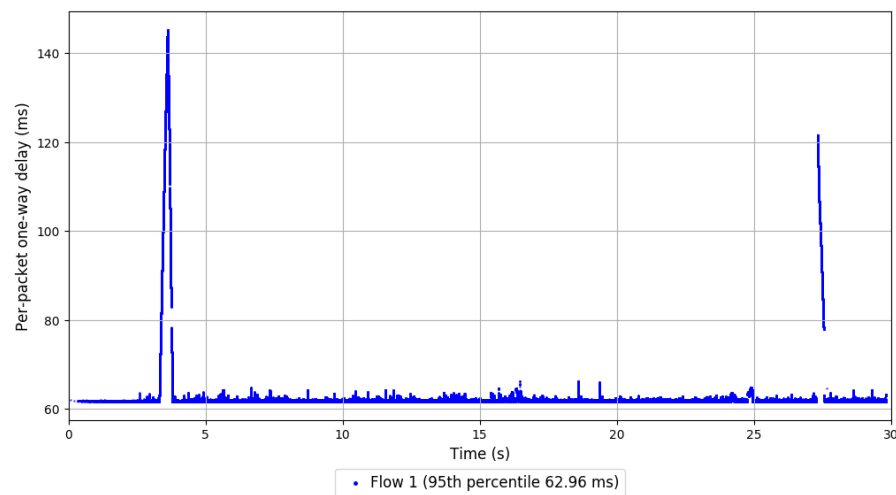
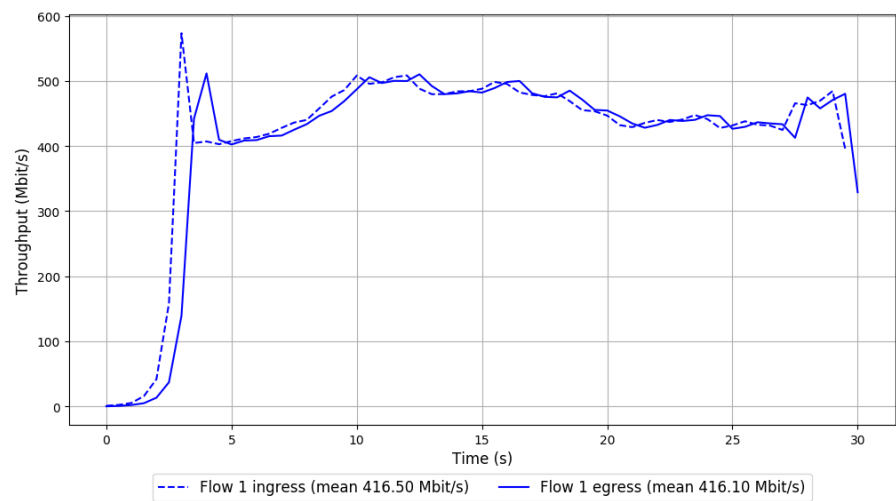
-- Flow 1:

Average throughput: 416.10 Mbit/s

95th percentile per-packet one-way delay: 62.962 ms

Loss rate: 0.52%

Run 2: Report of PCC-Vivace — Data Link

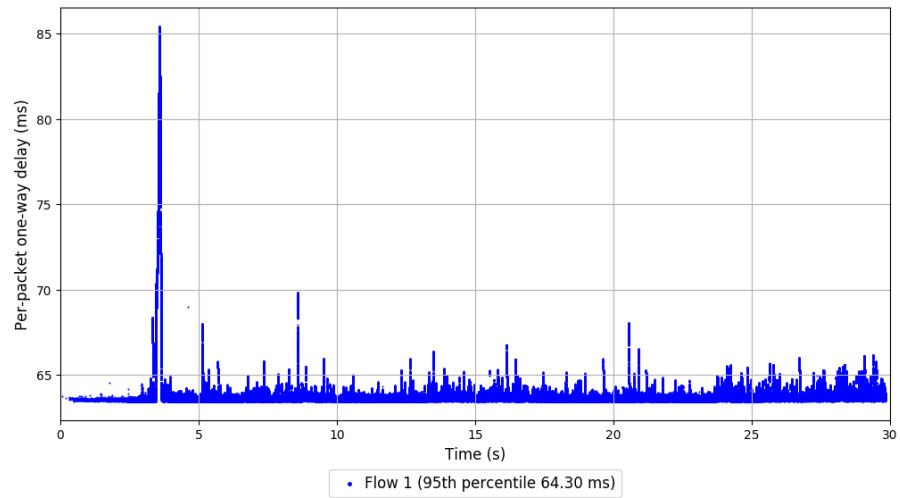
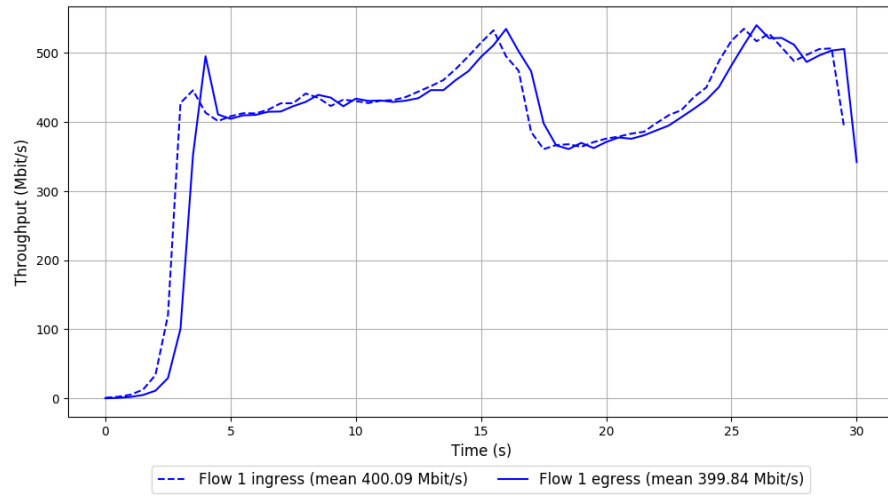


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 11:55:59
End at: 2018-11-15 11:56:29
Local clock offset: -0.042 ms
Remote clock offset: -0.522 ms

Below is generated by plot.py at 2018-11-15 14:29:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 399.84 Mbit/s
95th percentile per-packet one-way delay: 64.295 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 399.84 Mbit/s
95th percentile per-packet one-way delay: 64.295 ms
Loss rate: 0.49%

Run 3: Report of PCC-Vivace — Data Link

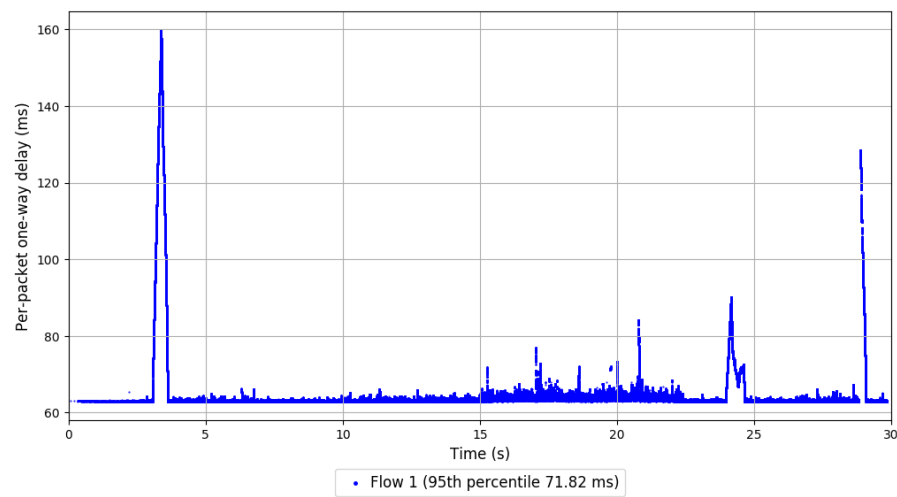
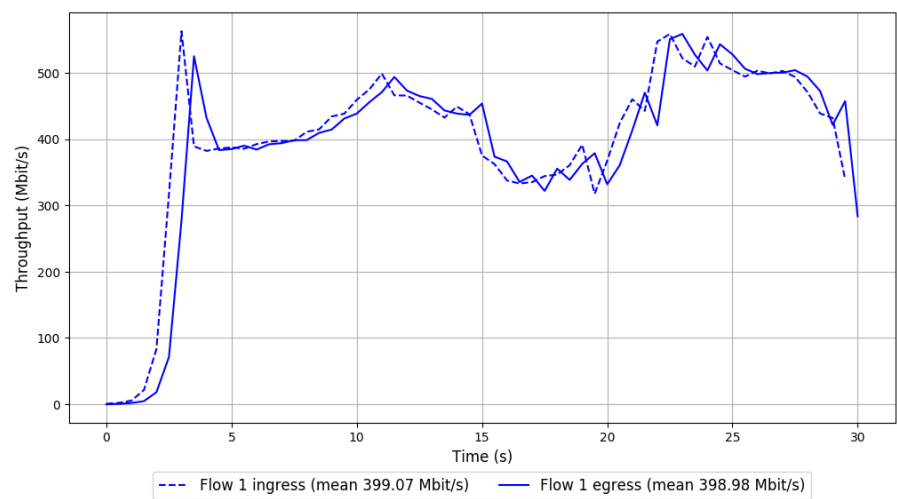


Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 12:22:10
End at: 2018-11-15 12:22:40
Local clock offset: -0.006 ms
Remote clock offset: -0.272 ms

Below is generated by plot.py at 2018-11-15 14:29:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 398.98 Mbit/s
95th percentile per-packet one-way delay: 71.819 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 398.98 Mbit/s
95th percentile per-packet one-way delay: 71.819 ms
Loss rate: 0.45%

Run 4: Report of PCC-Vivace — Data Link

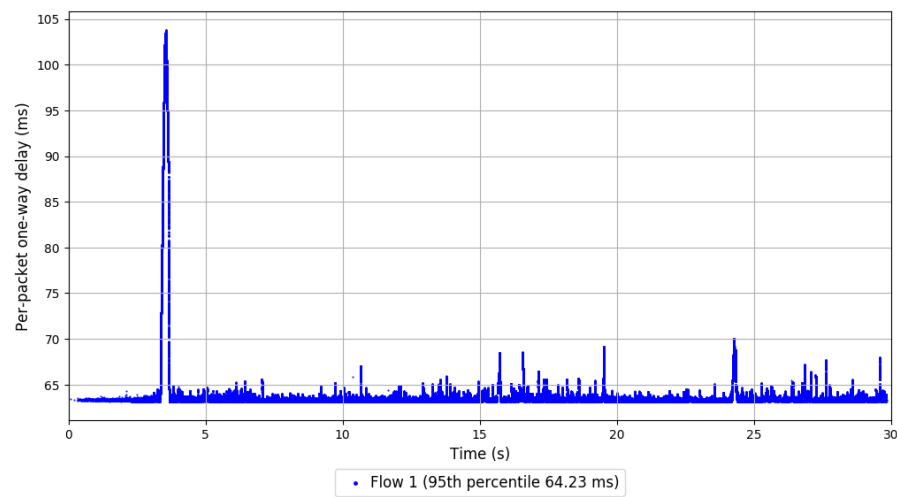
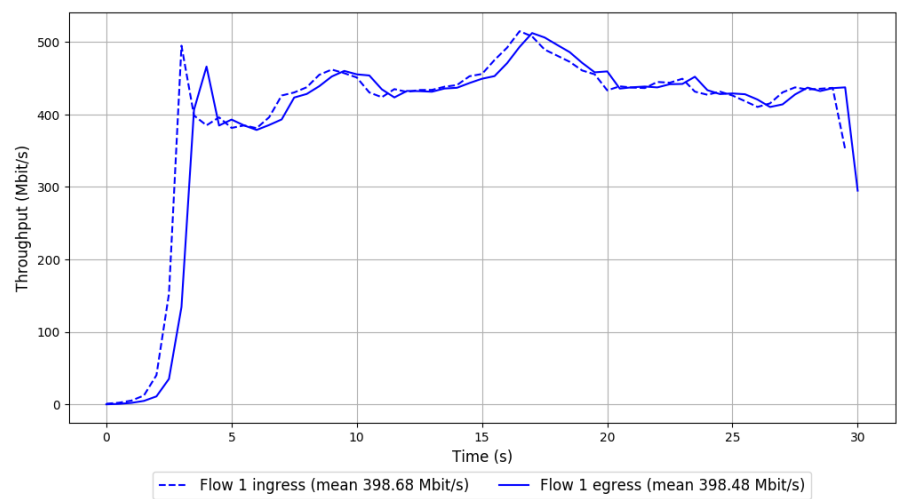


Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 12:48:21
End at: 2018-11-15 12:48:51
Local clock offset: 0.004 ms
Remote clock offset: -0.445 ms

Below is generated by plot.py at 2018-11-15 14:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 398.48 Mbit/s
95th percentile per-packet one-way delay: 64.228 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 398.48 Mbit/s
95th percentile per-packet one-way delay: 64.228 ms
Loss rate: 0.47%

Run 5: Report of PCC-Vivace — Data Link

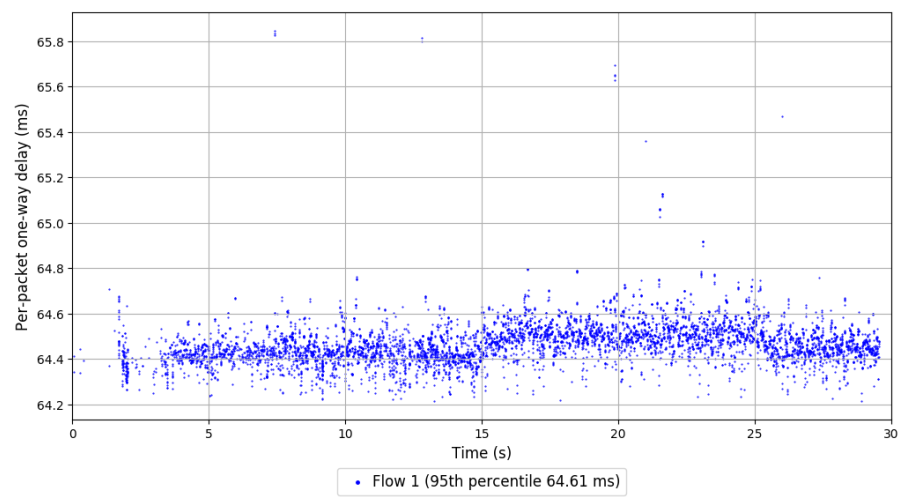
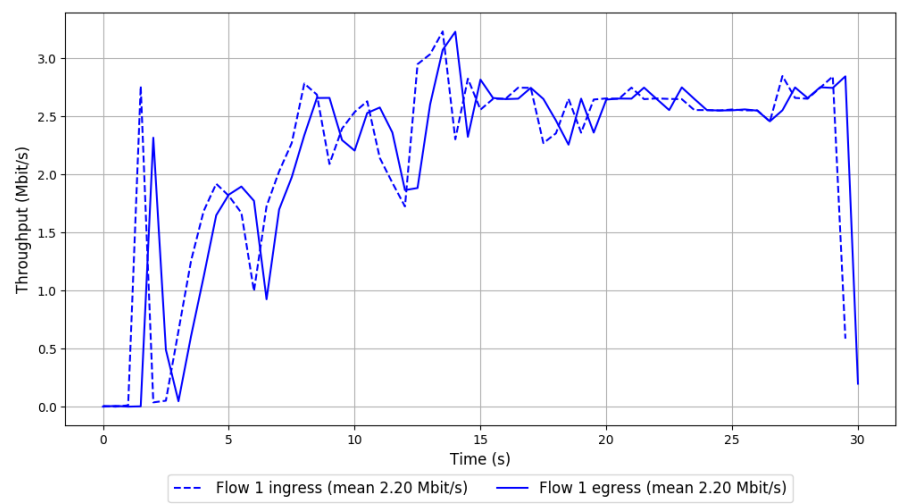


```
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 10:57:00
End at: 2018-11-15 10:57:30
Local clock offset: -0.137 ms
Remote clock offset: -1.457 ms

# Below is generated by plot.py at 2018-11-15 14:29:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.20 Mbit/s
95th percentile per-packet one-way delay: 64.605 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 2.20 Mbit/s
95th percentile per-packet one-way delay: 64.605 ms
Loss rate: 0.52%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-11-15 11:23:07

End at: 2018-11-15 11:23:37

Local clock offset: -0.047 ms

Remote clock offset: 0.911 ms

Below is generated by plot.py at 2018-11-15 14:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.03 Mbit/s

95th percentile per-packet one-way delay: 62.563 ms

Loss rate: 0.52%

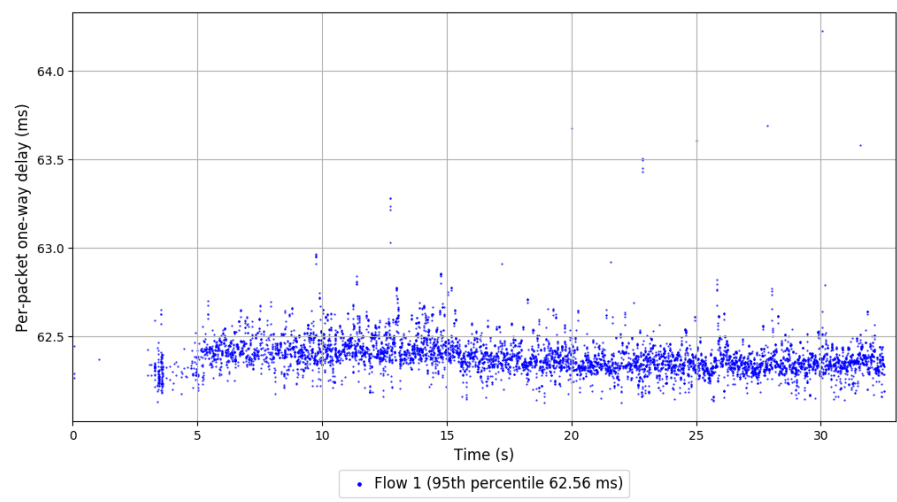
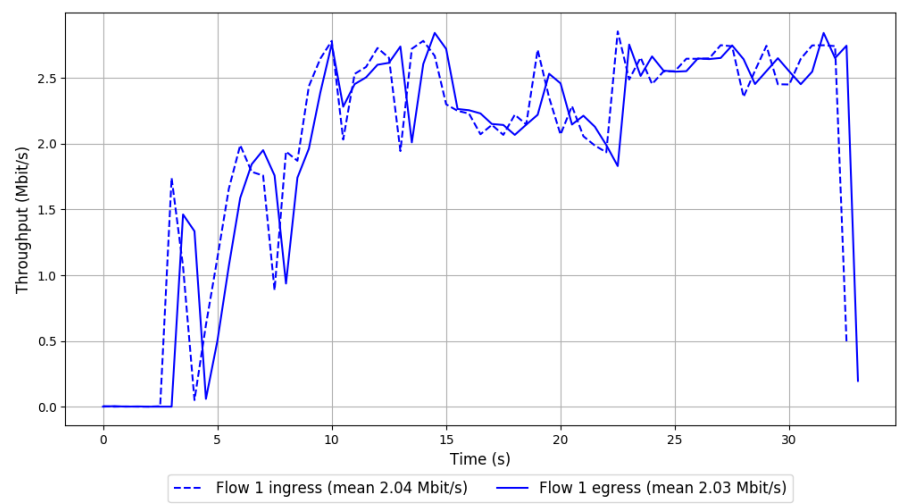
-- Flow 1:

Average throughput: 2.03 Mbit/s

95th percentile per-packet one-way delay: 62.563 ms

Loss rate: 0.52%

Run 2: Report of WebRTC media — Data Link

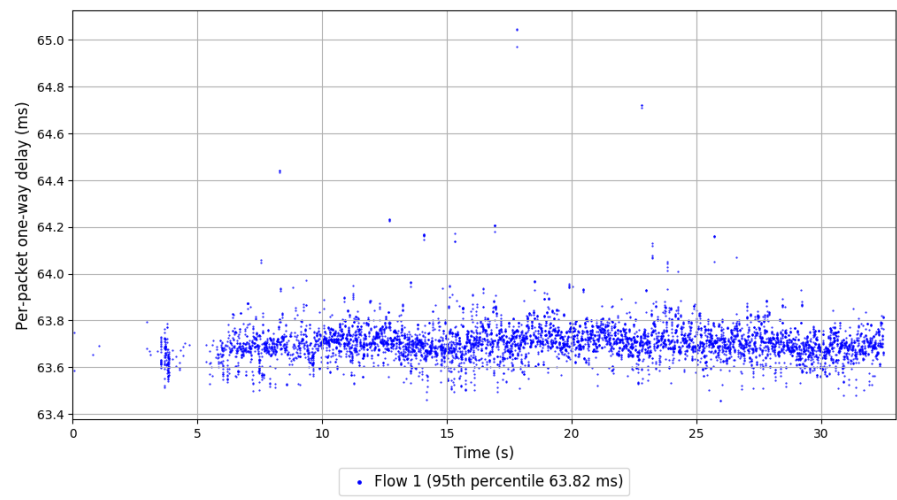
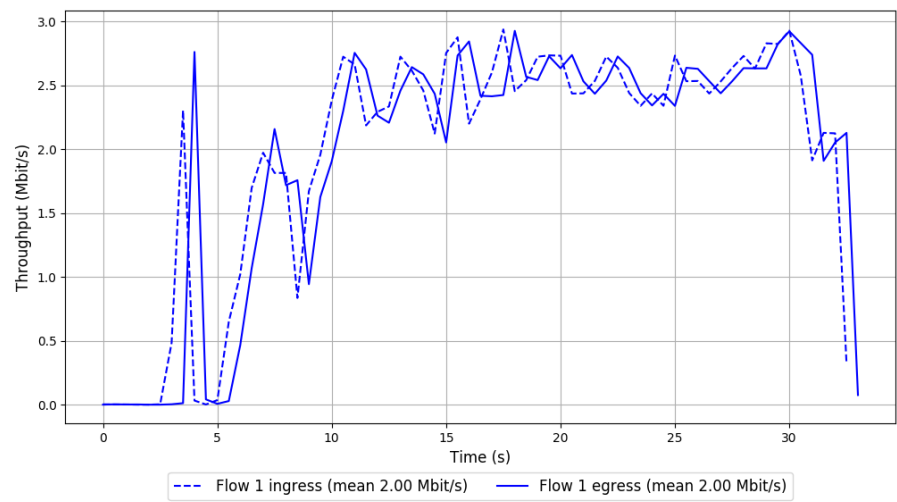


Run 3: Statistics of WebRTC media

Start at: 2018-11-15 11:49:18
End at: 2018-11-15 11:49:48
Local clock offset: -0.02 ms
Remote clock offset: -0.868 ms

Below is generated by plot.py at 2018-11-15 14:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 63.820 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 63.820 ms
Loss rate: 0.42%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-11-15 12:15:28

End at: 2018-11-15 12:15:59

Local clock offset: -0.032 ms

Remote clock offset: 0.59 ms

Below is generated by plot.py at 2018-11-15 14:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 62.401 ms

Loss rate: 0.45%

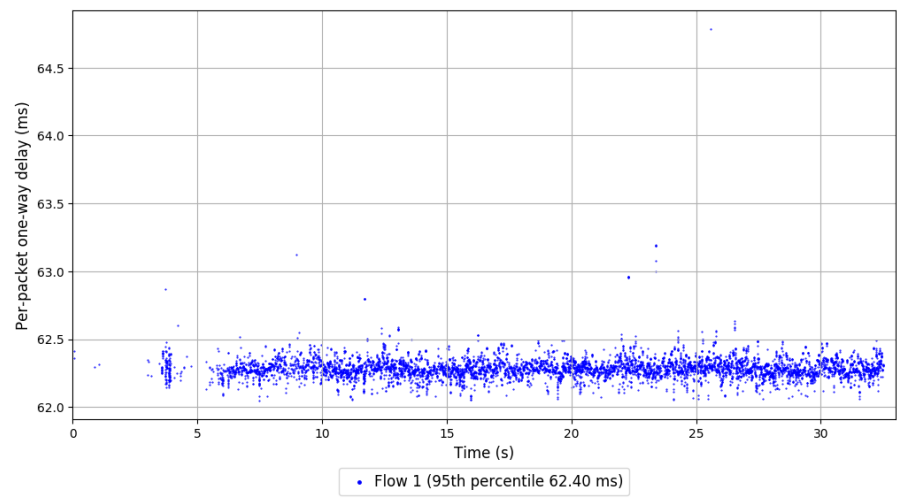
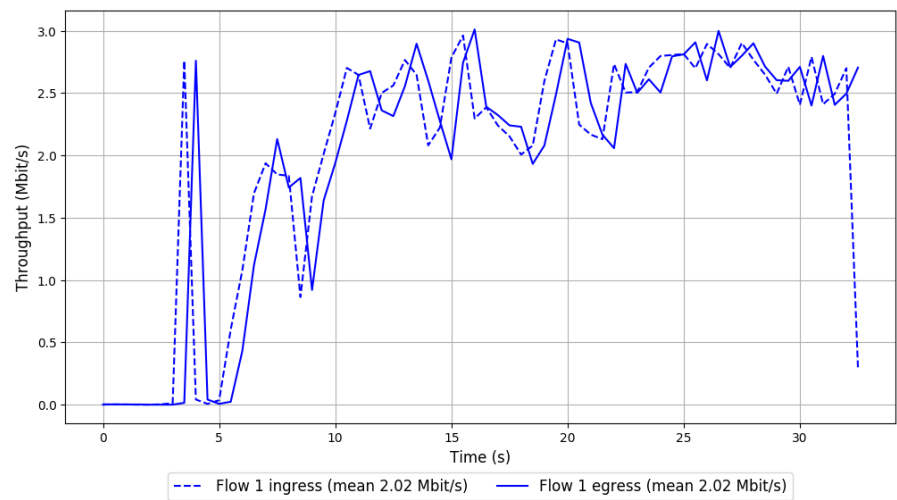
-- Flow 1:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 62.401 ms

Loss rate: 0.45%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-15 12:41:37
End at: 2018-11-15 12:42:07
Local clock offset: 0.016 ms
Remote clock offset: -1.228 ms

Below is generated by plot.py at 2018-11-15 14:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 64.148 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 64.148 ms
Loss rate: 0.58%

Run 5: Report of WebRTC media — Data Link

