

Pantheon Report

Generated at 2018-12-20 22:40:34 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

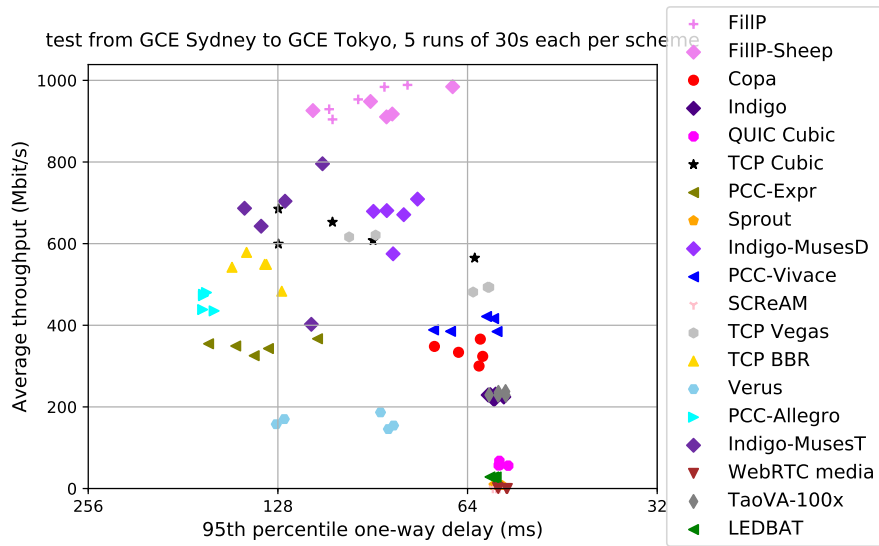
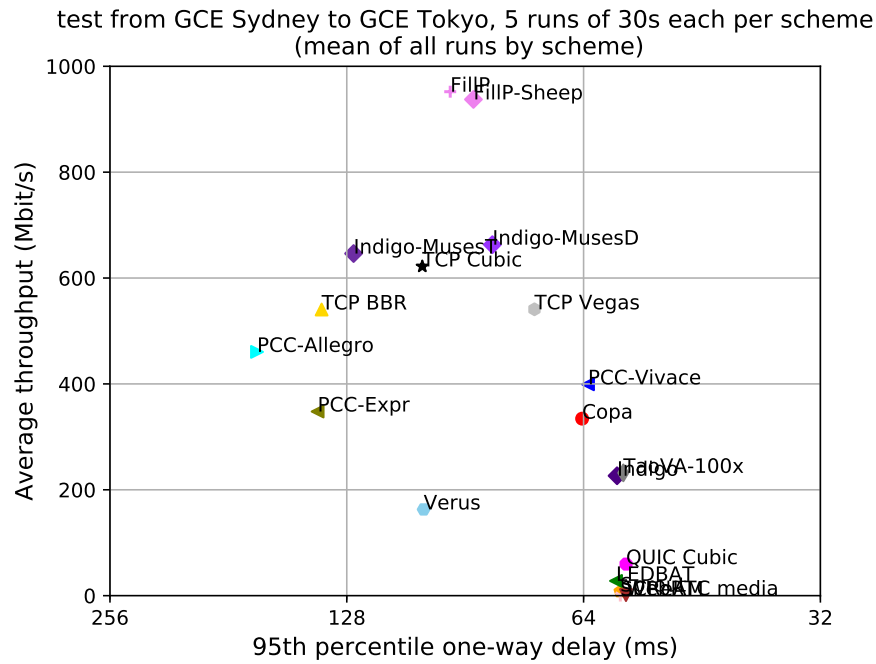
System info:

```
Linux 4.15.0-1025-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 @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
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



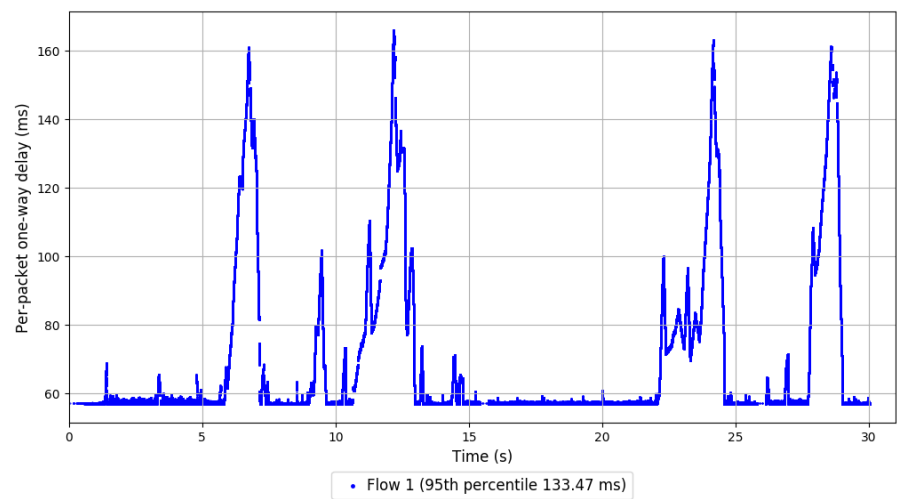
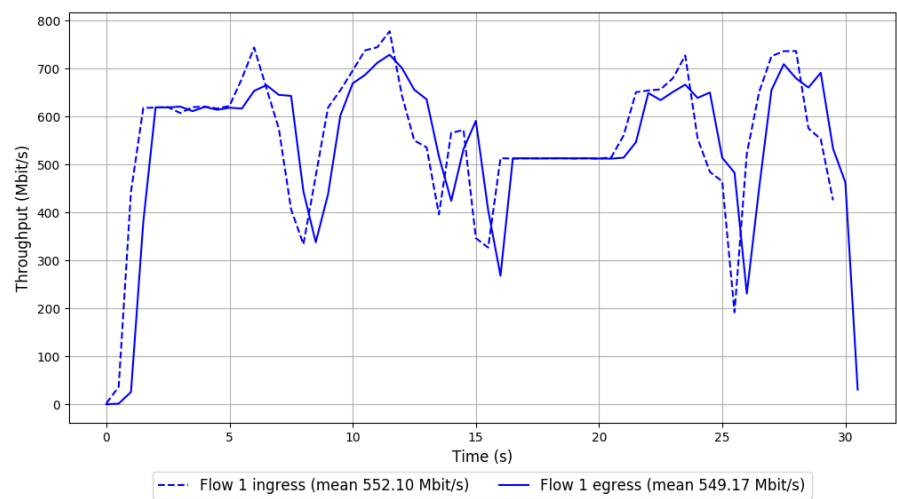
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	540.54	137.78	0.49
Copa	5	334.38	64.27	0.01
TCP Cubic	5	621.89	102.61	0.10
FillP	5	951.97	94.56	0.30
FillP-Sheep	5	937.38	88.35	0.30
Indigo	5	226.50	58.03	0.00
Indigo-MusesD	5	663.03	83.58	0.03
Indigo-MusesT	5	646.26	125.47	0.24
LEDBAT	5	27.86	58.21	0.00
PCC-Allegro	5	460.47	166.45	3.17
PCC-Expr	5	347.86	139.42	2.30
QUIC Cubic	4	59.65	56.52	0.00
SCReAM	5	0.22	57.47	0.00
Sprout	5	7.86	57.50	0.00
TaoVA-100x	5	231.97	56.97	0.00
TCP Vegas	5	540.95	73.90	0.06
Verus	5	162.89	102.21	0.06
PCC-Vivace	5	399.25	63.18	0.00
WebRTC media	5	1.03	56.53	0.50

Run 1: Statistics of TCP BBR

Start at: 2018-12-20 18:38:51
End at: 2018-12-20 18:39:21
Local clock offset: -0.233 ms
Remote clock offset: -0.145 ms

Below is generated by plot.py at 2018-12-20 21:06:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 549.17 Mbit/s
95th percentile per-packet one-way delay: 133.472 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 549.17 Mbit/s
95th percentile per-packet one-way delay: 133.472 ms
Loss rate: 0.53%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-12-20 19:07:10

End at: 2018-12-20 19:07:40

Local clock offset: -0.195 ms

Remote clock offset: 0.003 ms

Below is generated by plot.py at 2018-12-20 21:06:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 483.44 Mbit/s

95th percentile per-packet one-way delay: 126.205 ms

Loss rate: 0.31%

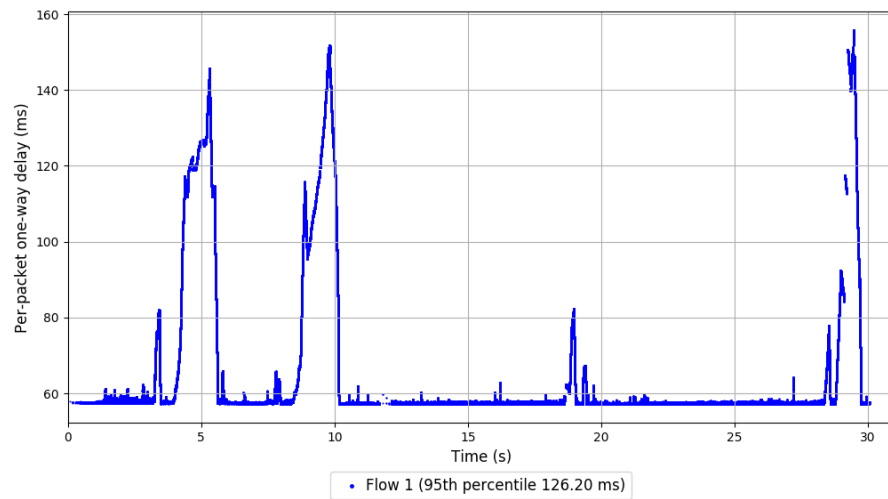
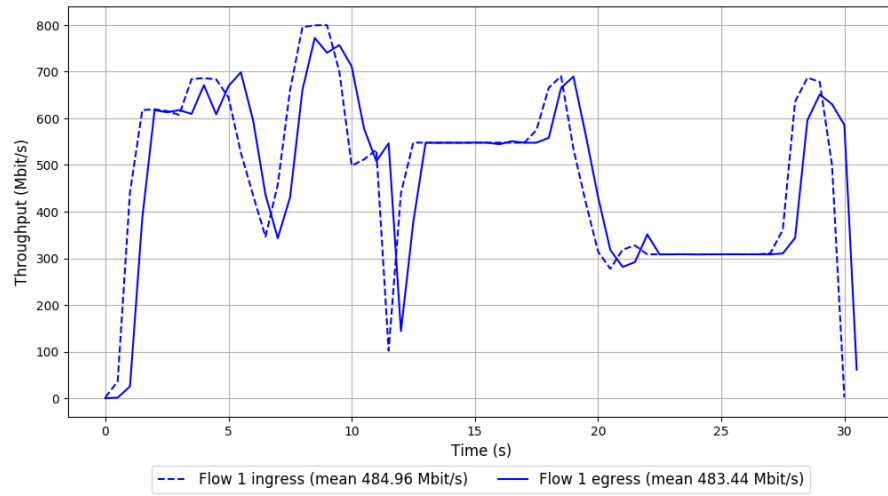
-- Flow 1:

Average throughput: 483.44 Mbit/s

95th percentile per-packet one-way delay: 126.205 ms

Loss rate: 0.31%

Run 2: Report of TCP BBR — Data Link

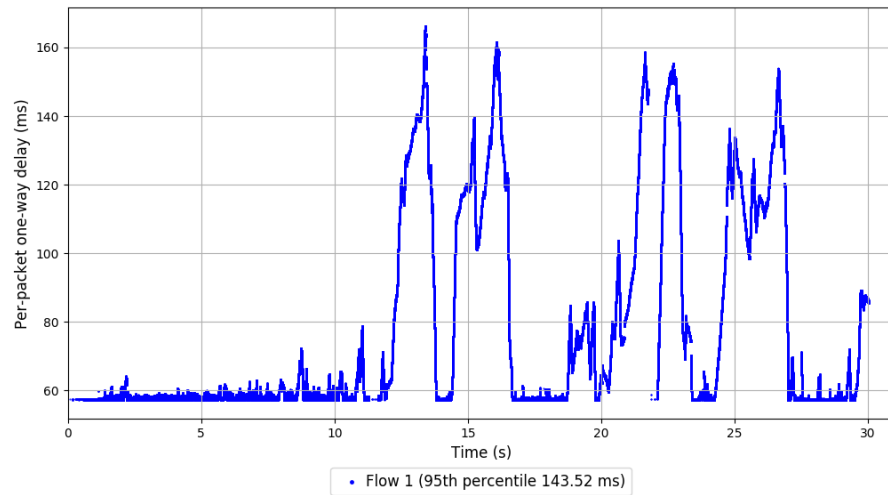
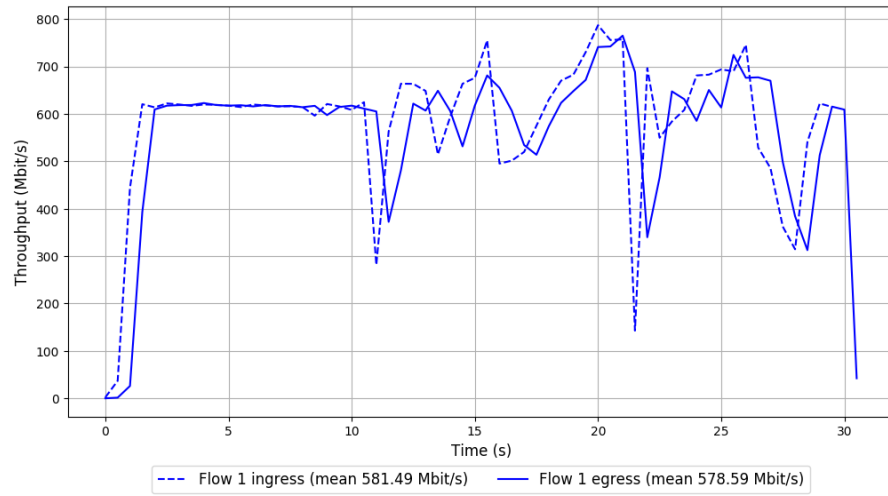


Run 3: Statistics of TCP BBR

Start at: 2018-12-20 19:35:44
End at: 2018-12-20 19:36:14
Local clock offset: -0.162 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-12-20 21:06:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 578.59 Mbit/s
95th percentile per-packet one-way delay: 143.524 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 578.59 Mbit/s
95th percentile per-packet one-way delay: 143.524 ms
Loss rate: 0.50%

Run 3: Report of TCP BBR — Data Link

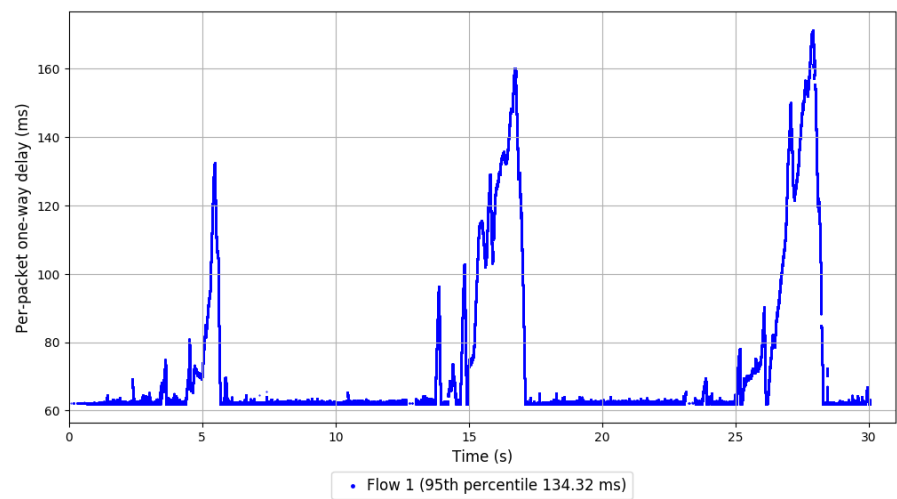
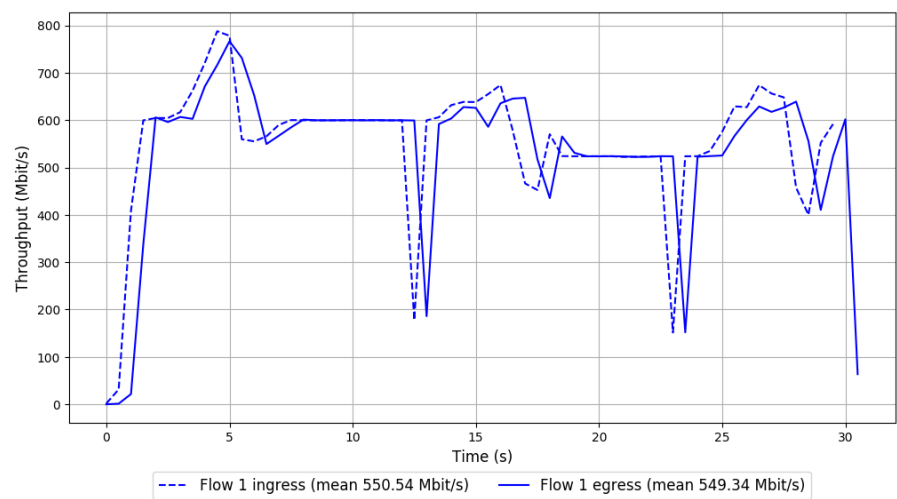


Run 4: Statistics of TCP BBR

Start at: 2018-12-20 20:04:40
End at: 2018-12-20 20:05:10
Local clock offset: -1.935 ms
Remote clock offset: -0.148 ms

Below is generated by plot.py at 2018-12-20 21:06:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 549.34 Mbit/s
95th percentile per-packet one-way delay: 134.318 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 549.34 Mbit/s
95th percentile per-packet one-way delay: 134.318 ms
Loss rate: 0.23%

Run 4: Report of TCP BBR — Data Link

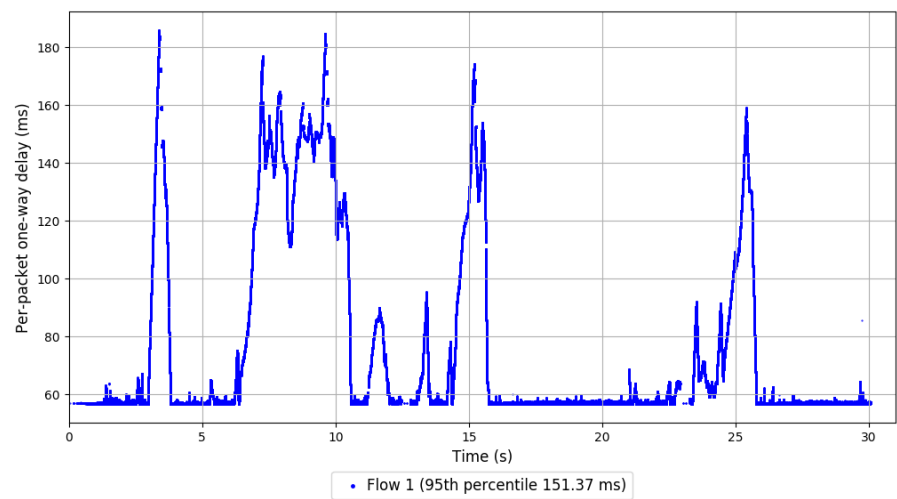
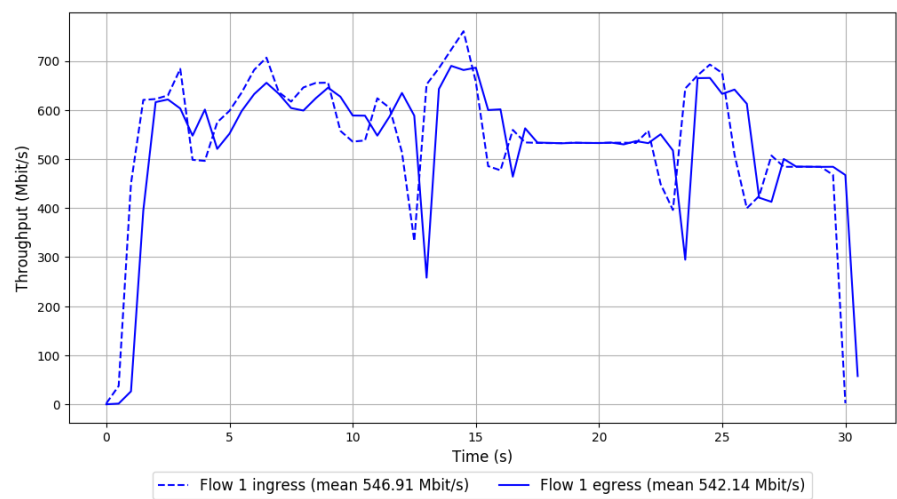


Run 5: Statistics of TCP BBR

Start at: 2018-12-20 20:34:08
End at: 2018-12-20 20:34:38
Local clock offset: -0.159 ms
Remote clock offset: -0.129 ms

Below is generated by plot.py at 2018-12-20 21:06:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 542.14 Mbit/s
95th percentile per-packet one-way delay: 151.365 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 542.14 Mbit/s
95th percentile per-packet one-way delay: 151.365 ms
Loss rate: 0.87%

Run 5: Report of TCP BBR — Data Link

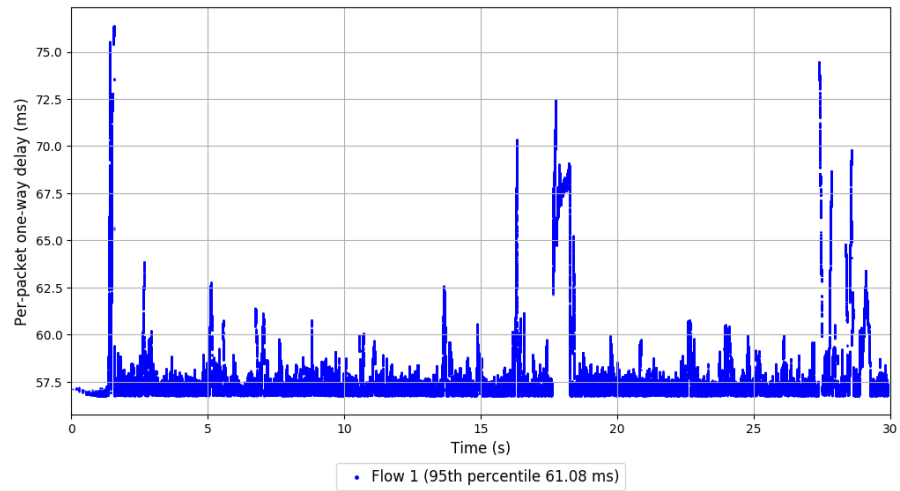
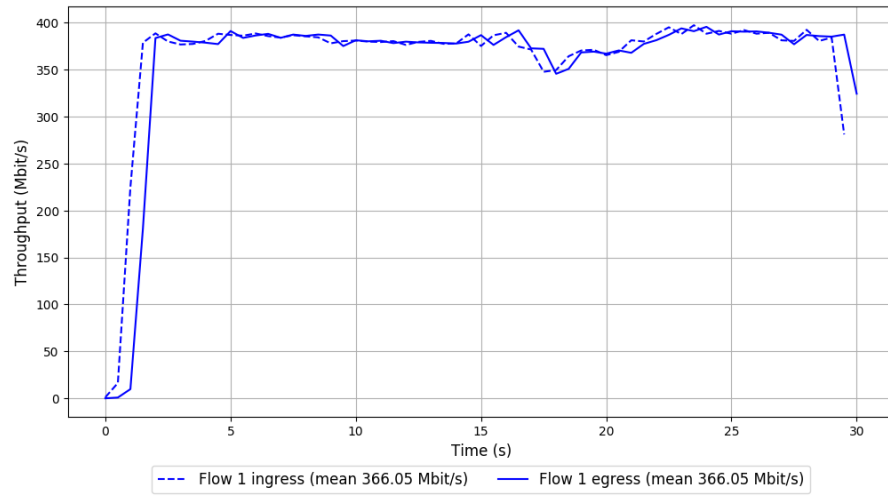


Run 1: Statistics of Copa

Start at: 2018-12-20 18:33:54
End at: 2018-12-20 18:34:24
Local clock offset: -0.234 ms
Remote clock offset: -0.434 ms

Below is generated by plot.py at 2018-12-20 21:07:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 366.05 Mbit/s
95th percentile per-packet one-way delay: 61.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 366.05 Mbit/s
95th percentile per-packet one-way delay: 61.077 ms
Loss rate: 0.00%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-12-20 19:02:09

End at: 2018-12-20 19:02:39

Local clock offset: -0.06 ms

Remote clock offset: 0.004 ms

Below is generated by plot.py at 2018-12-20 21:07:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 323.85 Mbit/s

95th percentile per-packet one-way delay: 60.550 ms

Loss rate: 0.03%

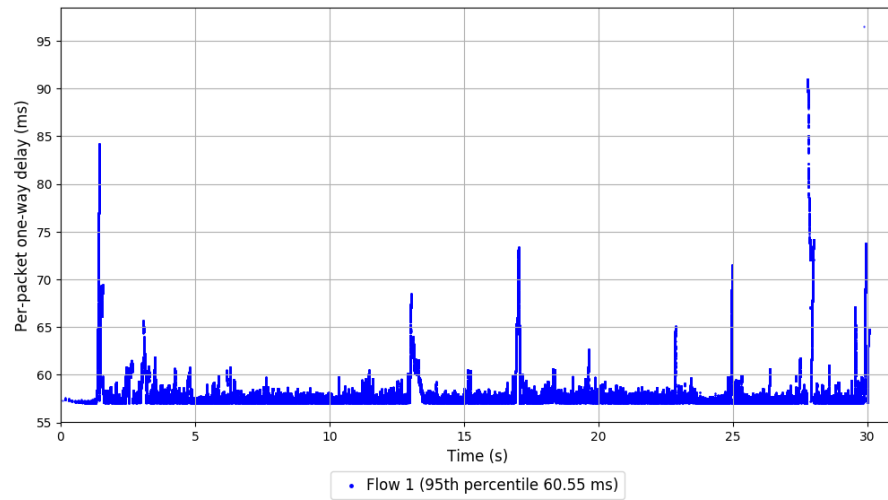
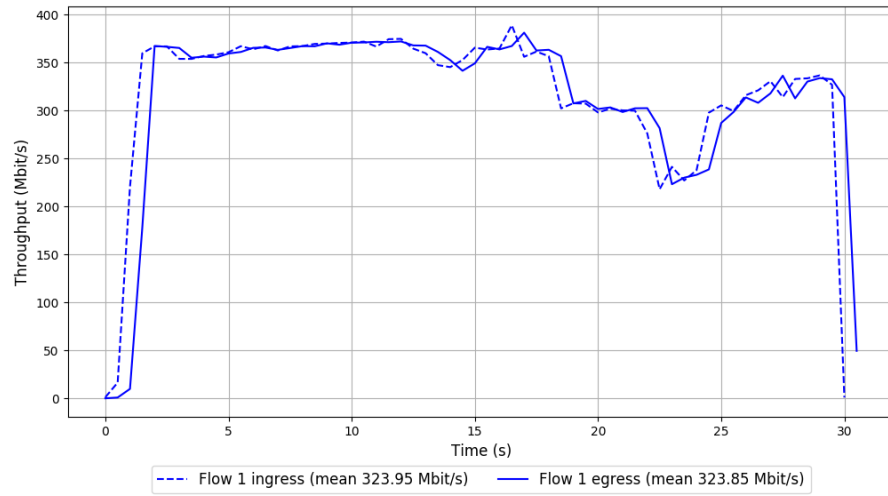
-- Flow 1:

Average throughput: 323.85 Mbit/s

95th percentile per-packet one-way delay: 60.550 ms

Loss rate: 0.03%

Run 2: Report of Copa — Data Link

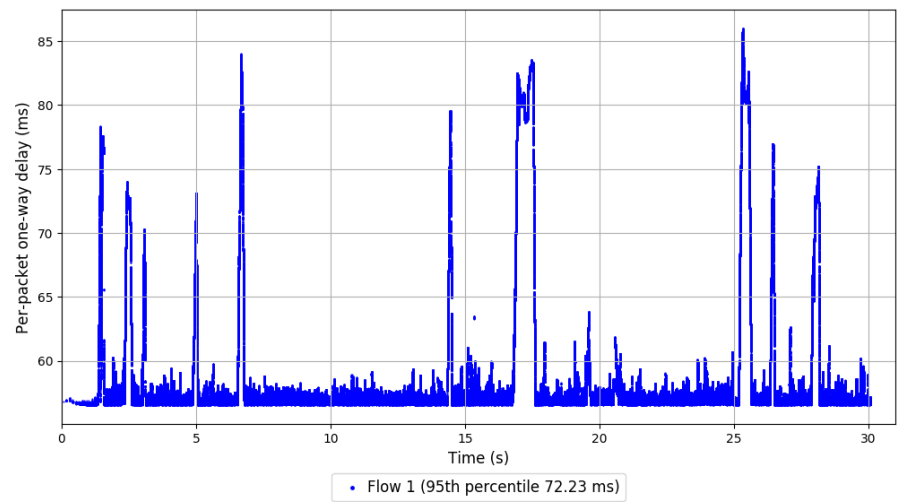
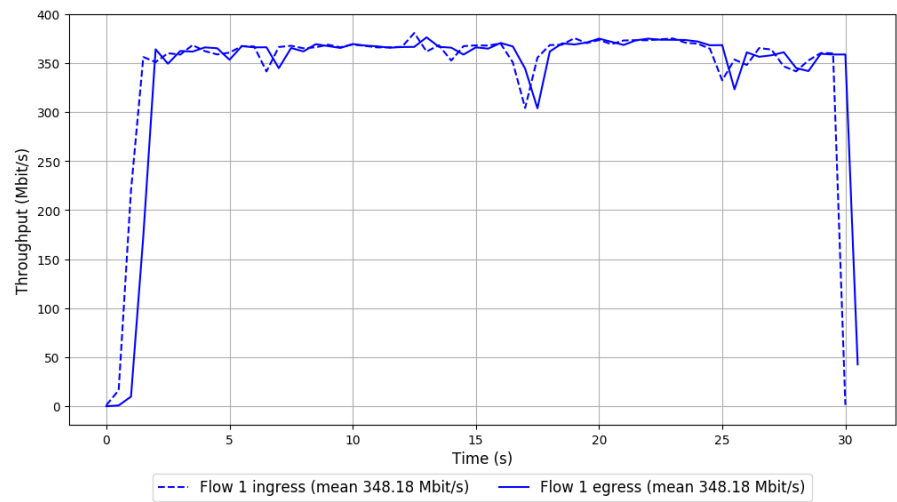


Run 3: Statistics of Copa

Start at: 2018-12-20 19:30:39
End at: 2018-12-20 19:31:09
Local clock offset: 0.143 ms
Remote clock offset: -0.161 ms

Below is generated by plot.py at 2018-12-20 21:07:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 348.18 Mbit/s
95th percentile per-packet one-way delay: 72.233 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 348.18 Mbit/s
95th percentile per-packet one-way delay: 72.233 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-12-20 19:59:38

End at: 2018-12-20 20:00:08

Local clock offset: 0.113 ms

Remote clock offset: 0.043 ms

Below is generated by plot.py at 2018-12-20 21:14:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 300.10 Mbit/s

95th percentile per-packet one-way delay: 61.363 ms

Loss rate: 0.00%

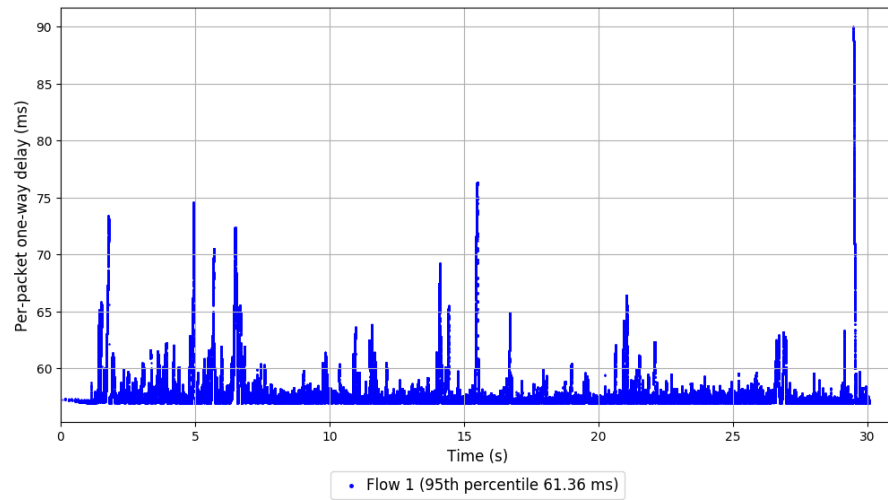
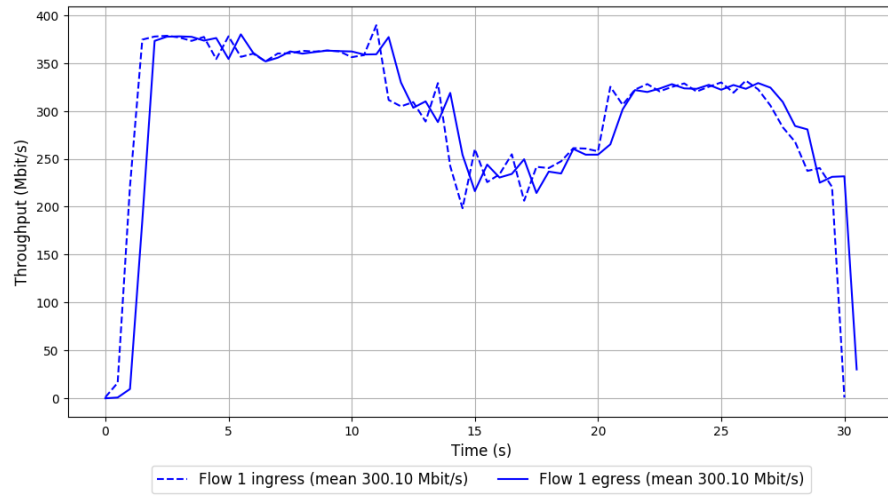
-- Flow 1:

Average throughput: 300.10 Mbit/s

95th percentile per-packet one-way delay: 61.363 ms

Loss rate: 0.00%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-12-20 20:29:00

End at: 2018-12-20 20:29:30

Local clock offset: -0.032 ms

Remote clock offset: 0.092 ms

Below is generated by plot.py at 2018-12-20 21:17:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 333.71 Mbit/s

95th percentile per-packet one-way delay: 66.143 ms

Loss rate: 0.01%

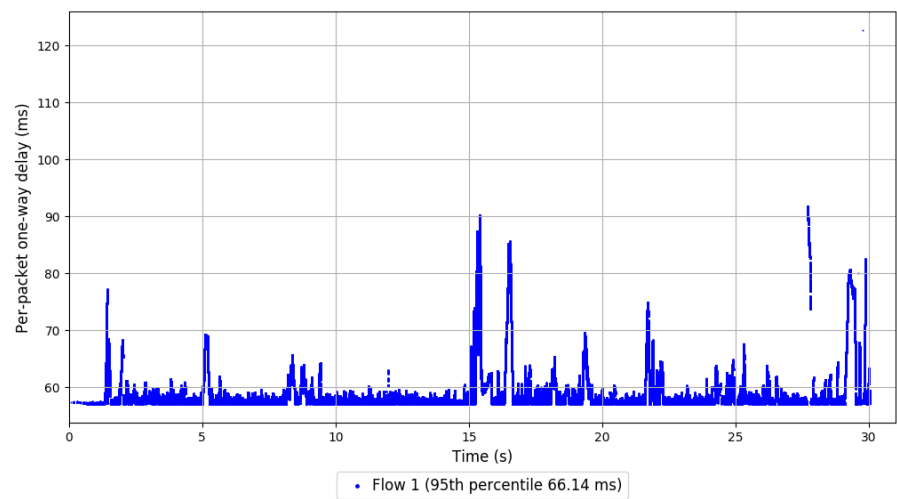
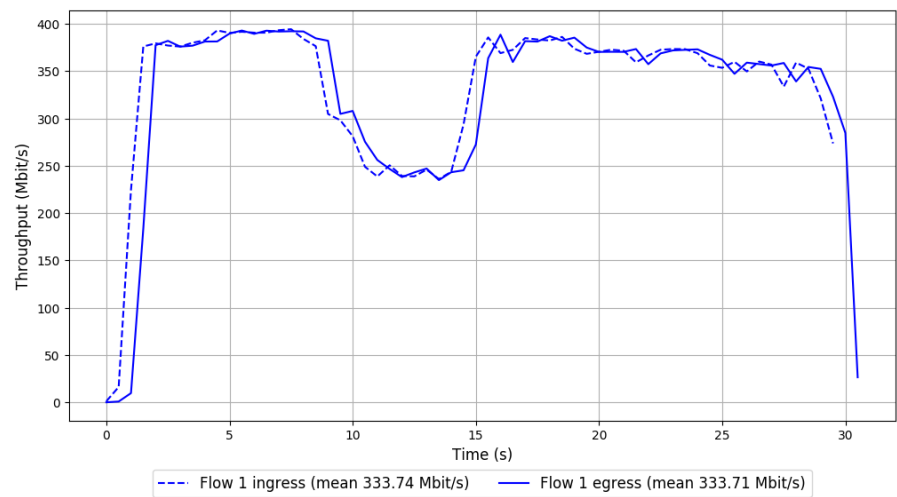
-- Flow 1:

Average throughput: 333.71 Mbit/s

95th percentile per-packet one-way delay: 66.143 ms

Loss rate: 0.01%

Run 5: Report of Copa — Data Link

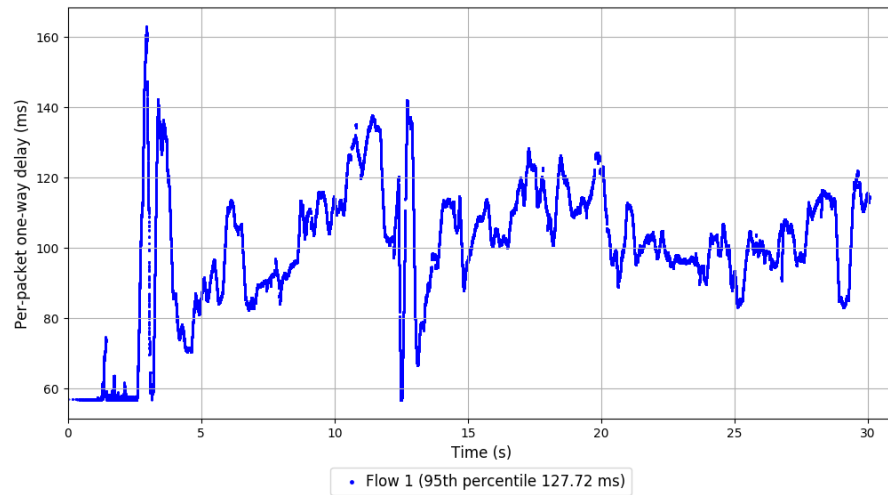
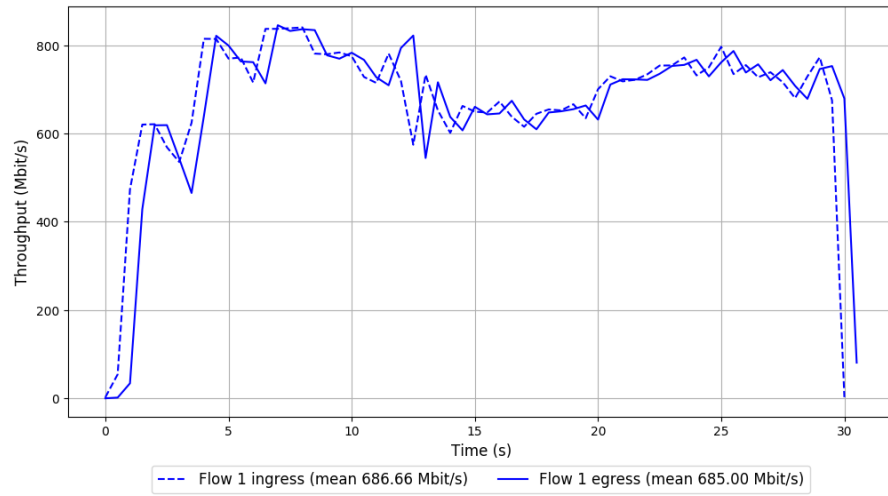


Run 1: Statistics of TCP Cubic

Start at: 2018-12-20 18:30:36
End at: 2018-12-20 18:31:06
Local clock offset: -0.029 ms
Remote clock offset: -0.348 ms

Below is generated by plot.py at 2018-12-20 21:18:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 685.00 Mbit/s
95th percentile per-packet one-way delay: 127.724 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 685.00 Mbit/s
95th percentile per-packet one-way delay: 127.724 ms
Loss rate: 0.24%

Run 1: Report of TCP Cubic — Data Link

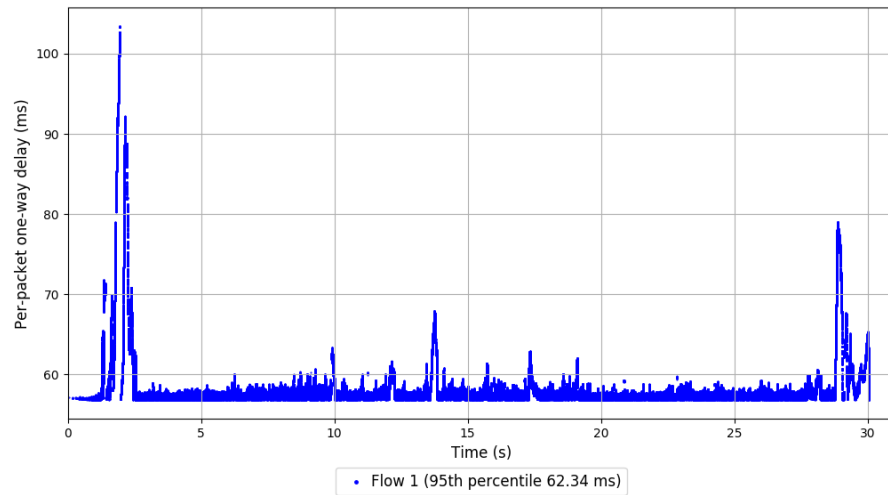
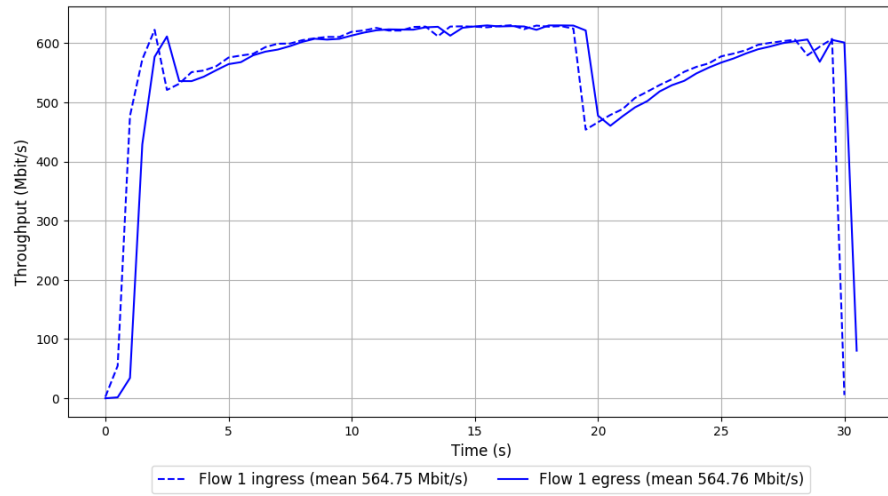


Run 2: Statistics of TCP Cubic

Start at: 2018-12-20 18:58:51
End at: 2018-12-20 18:59:21
Local clock offset: -0.199 ms
Remote clock offset: -0.062 ms

Below is generated by plot.py at 2018-12-20 21:18:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 564.76 Mbit/s
95th percentile per-packet one-way delay: 62.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 564.76 Mbit/s
95th percentile per-packet one-way delay: 62.344 ms
Loss rate: 0.00%

Run 2: Report of TCP Cubic — Data Link

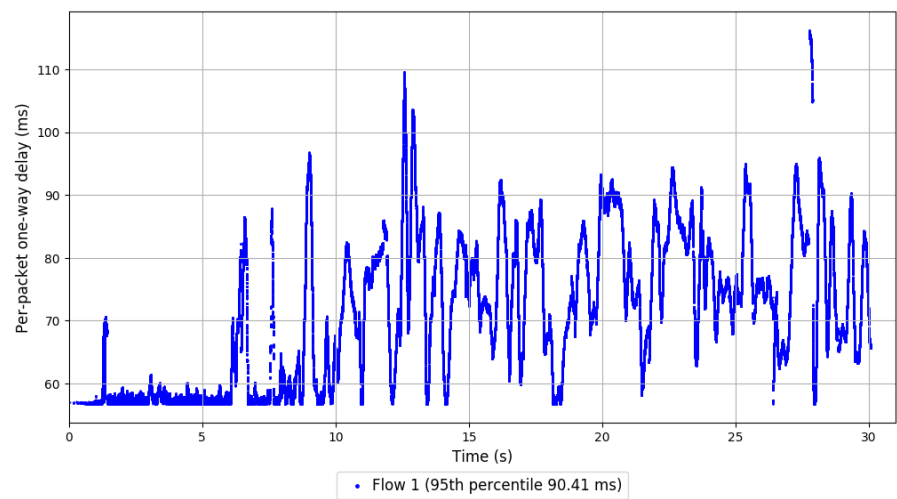
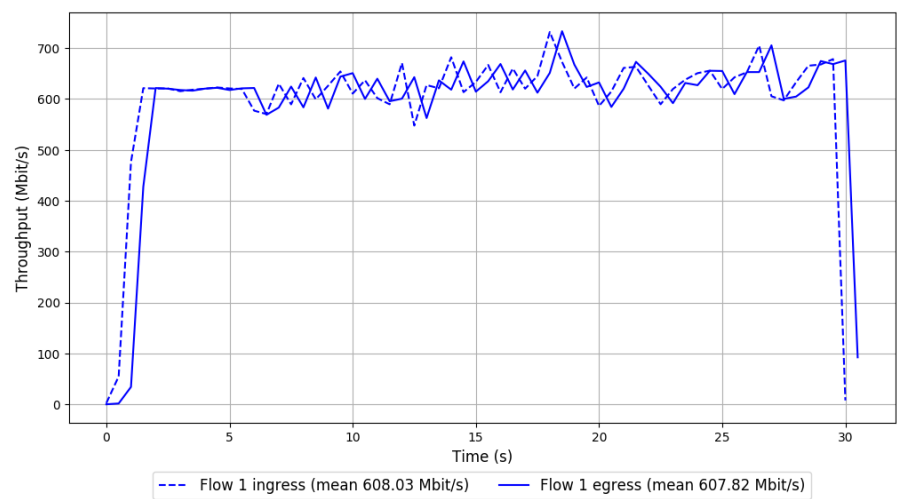


Run 3: Statistics of TCP Cubic

Start at: 2018-12-20 19:27:26
End at: 2018-12-20 19:27:56
Local clock offset: -0.23 ms
Remote clock offset: -0.181 ms

Below is generated by plot.py at 2018-12-20 21:18:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 607.82 Mbit/s
95th percentile per-packet one-way delay: 90.406 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 607.82 Mbit/s
95th percentile per-packet one-way delay: 90.406 ms
Loss rate: 0.03%

Run 3: Report of TCP Cubic — Data Link

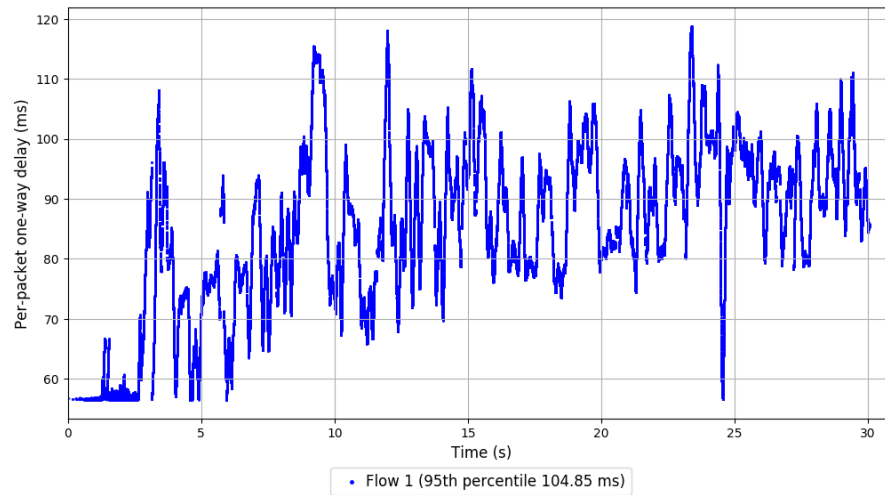
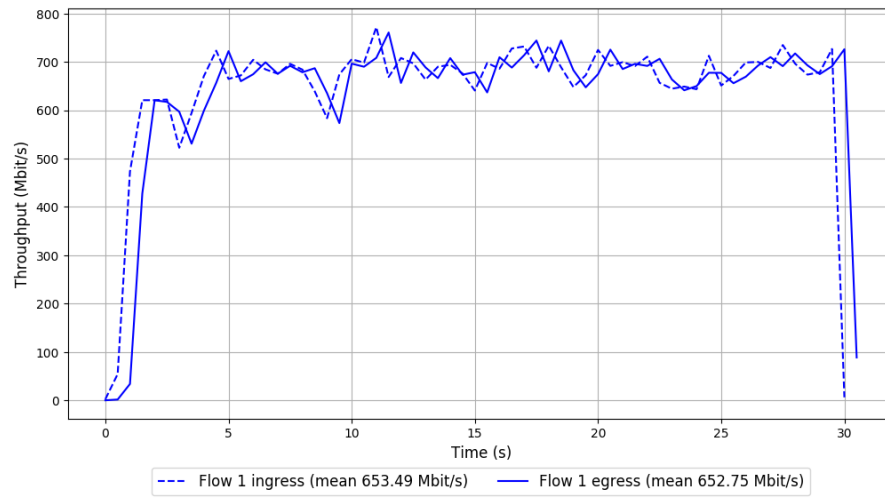


Run 4: Statistics of TCP Cubic

Start at: 2018-12-20 19:56:19
End at: 2018-12-20 19:56:49
Local clock offset: 0.117 ms
Remote clock offset: -0.308 ms

Below is generated by plot.py at 2018-12-20 21:18:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 652.75 Mbit/s
95th percentile per-packet one-way delay: 104.848 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 652.75 Mbit/s
95th percentile per-packet one-way delay: 104.848 ms
Loss rate: 0.11%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 20:25:32

End at: 2018-12-20 20:26:02

Local clock offset: -0.254 ms

Remote clock offset: -0.19 ms

Below is generated by plot.py at 2018-12-20 21:18:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 599.14 Mbit/s

95th percentile per-packet one-way delay: 127.745 ms

Loss rate: 0.13%

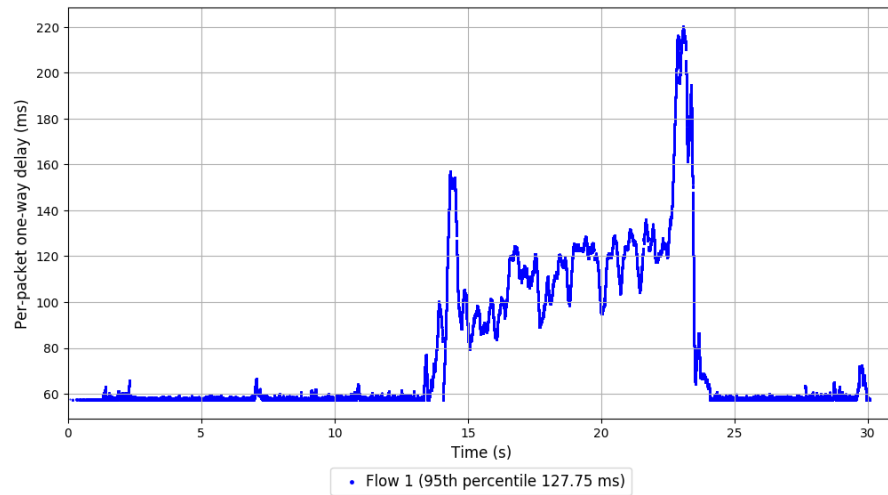
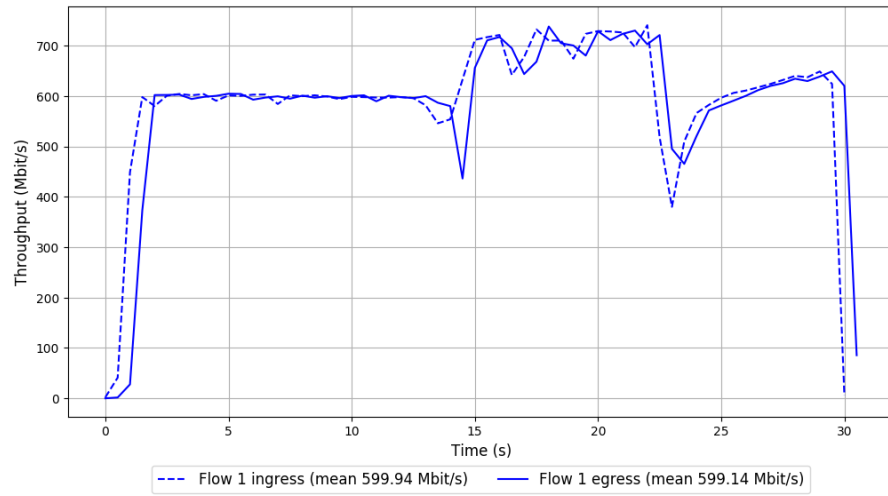
-- Flow 1:

Average throughput: 599.14 Mbit/s

95th percentile per-packet one-way delay: 127.745 ms

Loss rate: 0.13%

Run 5: Report of TCP Cubic — Data Link

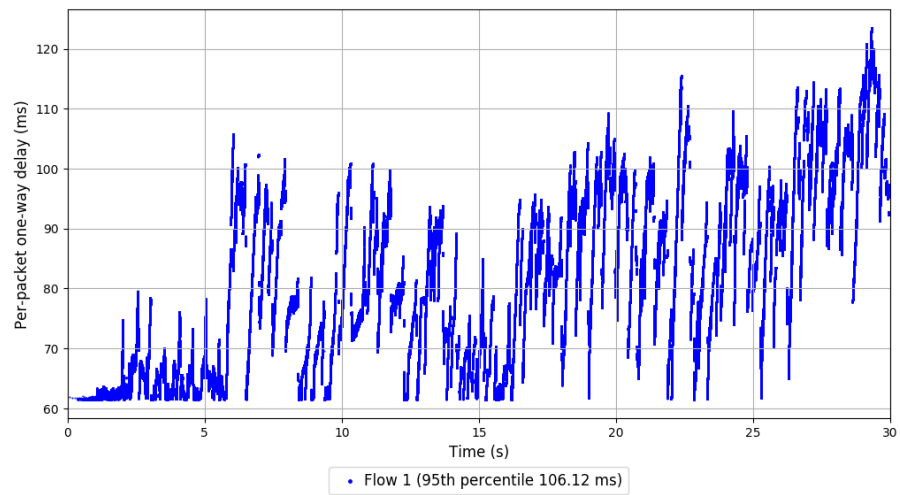
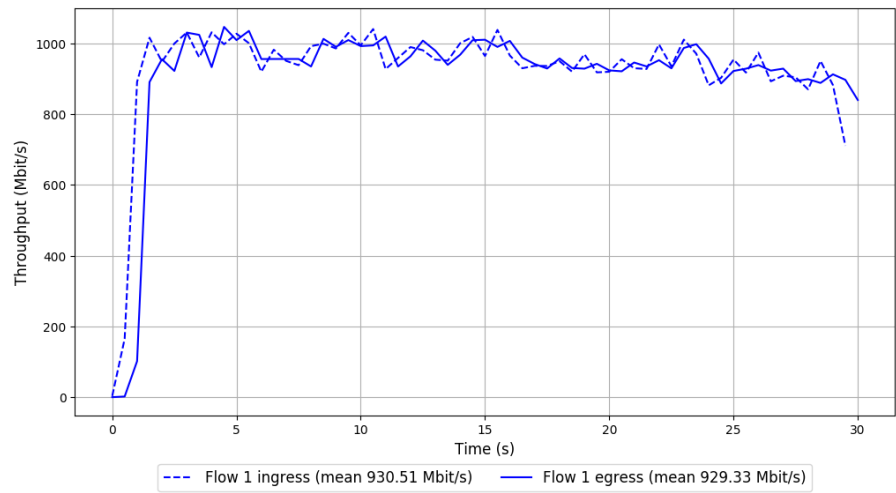


Run 1: Statistics of FillP

Start at: 2018-12-20 18:21:14
End at: 2018-12-20 18:21:44
Local clock offset: -1.64 ms
Remote clock offset: -0.187 ms

Below is generated by plot.py at 2018-12-20 21:25:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 929.33 Mbit/s
95th percentile per-packet one-way delay: 106.121 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 929.33 Mbit/s
95th percentile per-packet one-way delay: 106.121 ms
Loss rate: 0.14%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-12-20 18:49:23

End at: 2018-12-20 18:49:53

Local clock offset: 0.13 ms

Remote clock offset: 0.062 ms

Below is generated by plot.py at 2018-12-20 21:36:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 983.95 Mbit/s

95th percentile per-packet one-way delay: 86.710 ms

Loss rate: 0.36%

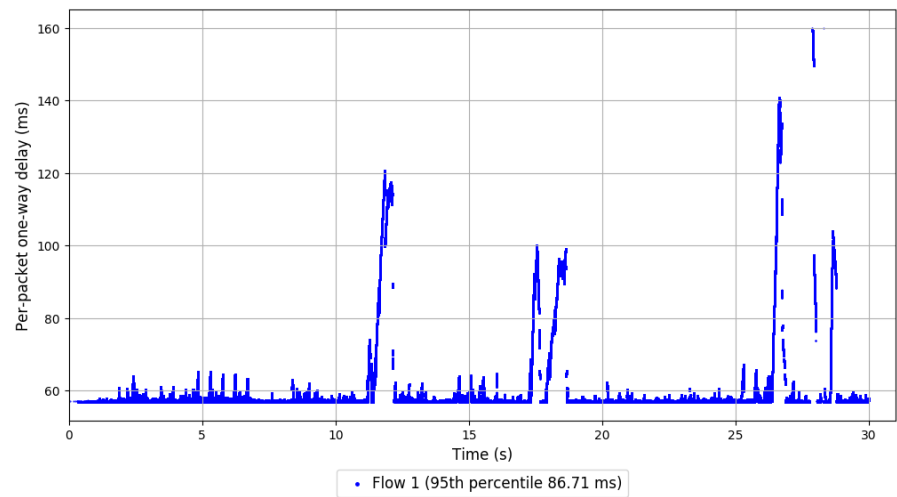
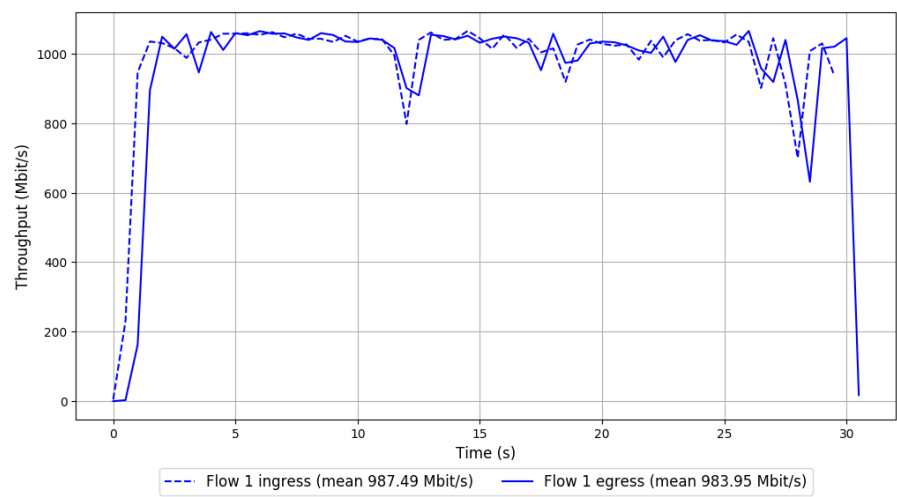
-- Flow 1:

Average throughput: 983.95 Mbit/s

95th percentile per-packet one-way delay: 86.710 ms

Loss rate: 0.36%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-12-20 19:18:08

End at: 2018-12-20 19:18:38

Local clock offset: -0.167 ms

Remote clock offset: 0.179 ms

Below is generated by plot.py at 2018-12-20 21:37:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 953.37 Mbit/s

95th percentile per-packet one-way delay: 95.450 ms

Loss rate: 0.62%

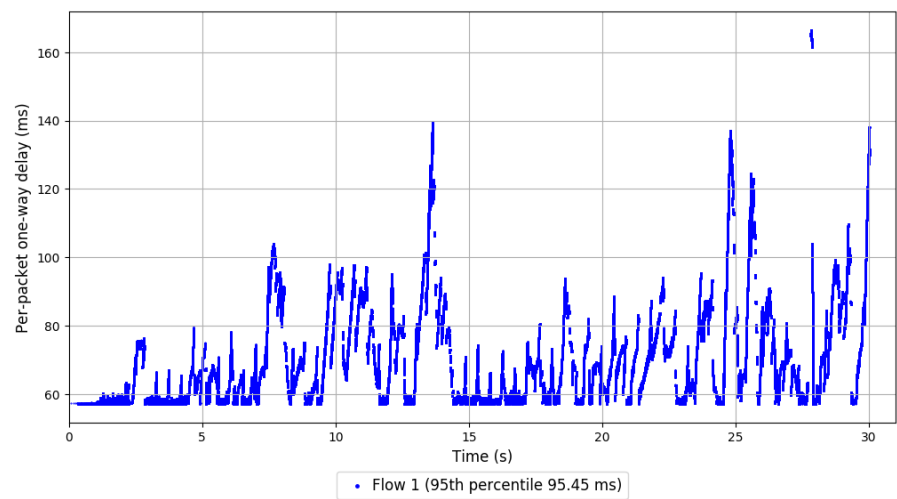
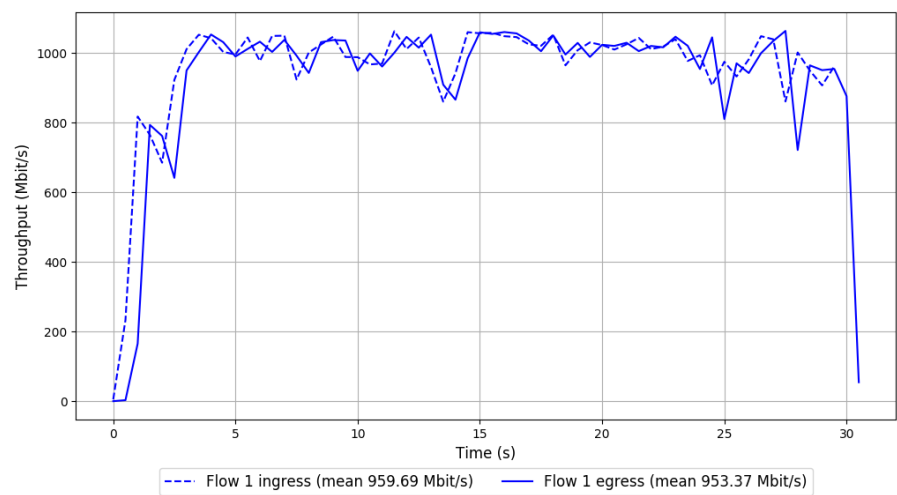
-- Flow 1:

Average throughput: 953.37 Mbit/s

95th percentile per-packet one-way delay: 95.450 ms

Loss rate: 0.62%

Run 3: Report of FillP — Data Link

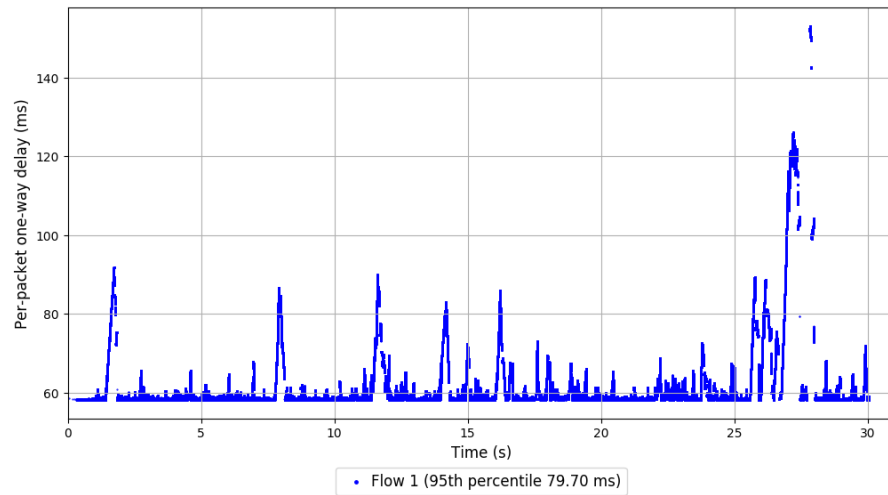
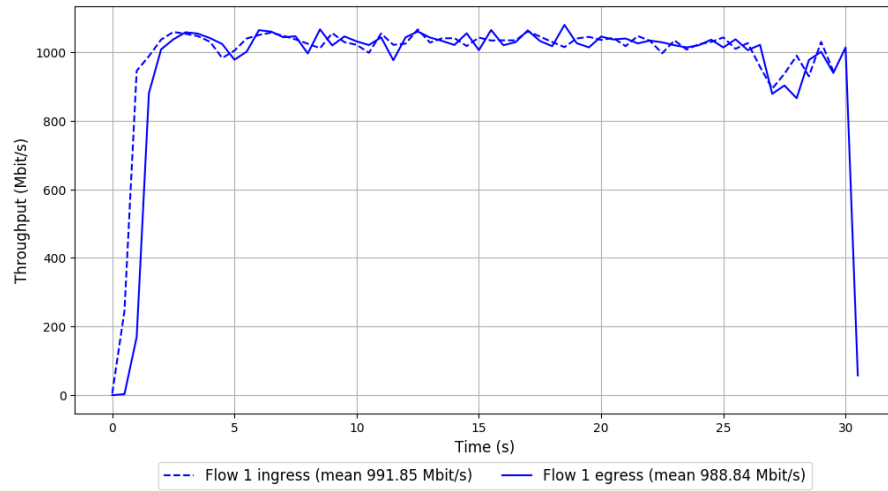


Run 4: Statistics of FillP

Start at: 2018-12-20 19:46:41
End at: 2018-12-20 19:47:11
Local clock offset: -1.741 ms
Remote clock offset: -0.293 ms

Below is generated by plot.py at 2018-12-20 21:38:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 988.84 Mbit/s
95th percentile per-packet one-way delay: 79.699 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 988.84 Mbit/s
95th percentile per-packet one-way delay: 79.699 ms
Loss rate: 0.30%

Run 4: Report of FillP — Data Link

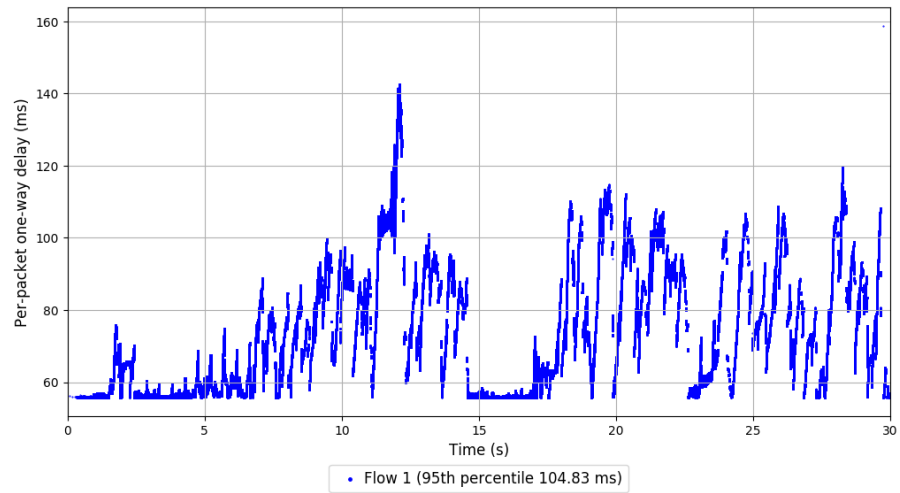
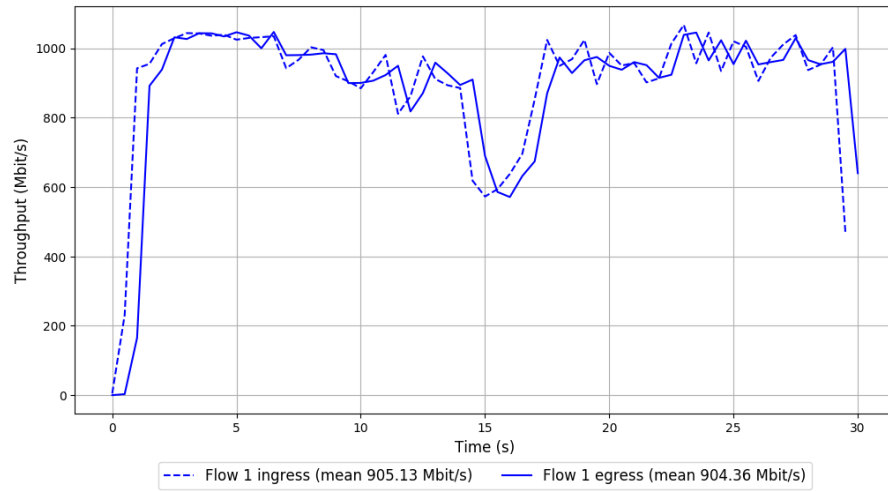


Run 5: Statistics of FillP

Start at: 2018-12-20 20:16:01
End at: 2018-12-20 20:16:31
Local clock offset: 1.515 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-12-20 21:38:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 904.36 Mbit/s
95th percentile per-packet one-way delay: 104.825 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 904.36 Mbit/s
95th percentile per-packet one-way delay: 104.825 ms
Loss rate: 0.09%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-12-20 18:41:56

End at: 2018-12-20 18:42:26

Local clock offset: -0.045 ms

Remote clock offset: 0.016 ms

Below is generated by plot.py at 2018-12-20 21:38:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 917.59 Mbit/s

95th percentile per-packet one-way delay: 84.254 ms

Loss rate: 0.13%

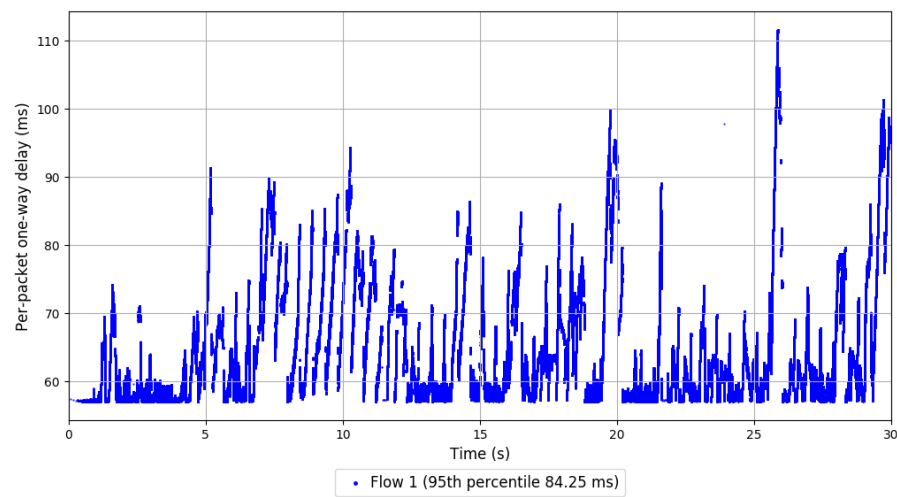
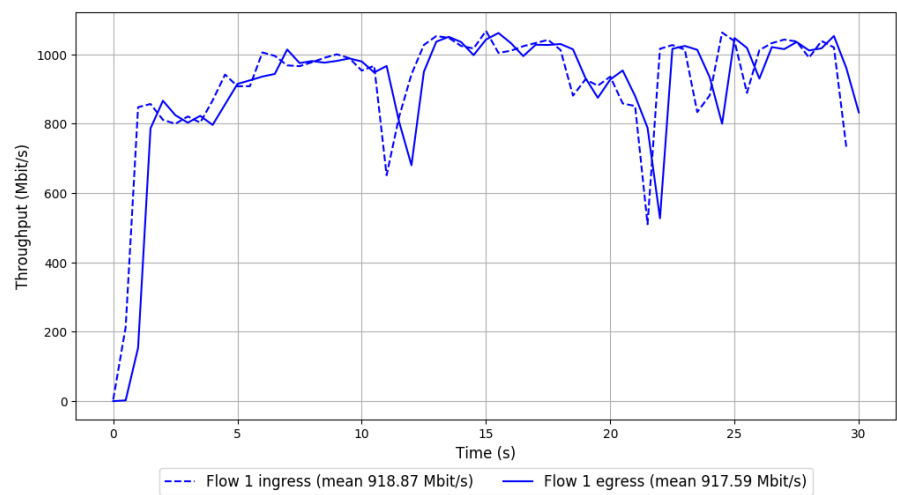
-- Flow 1:

Average throughput: 917.59 Mbit/s

95th percentile per-packet one-way delay: 84.254 ms

Loss rate: 0.13%

Run 1: Report of FillP-Sheep — Data Link

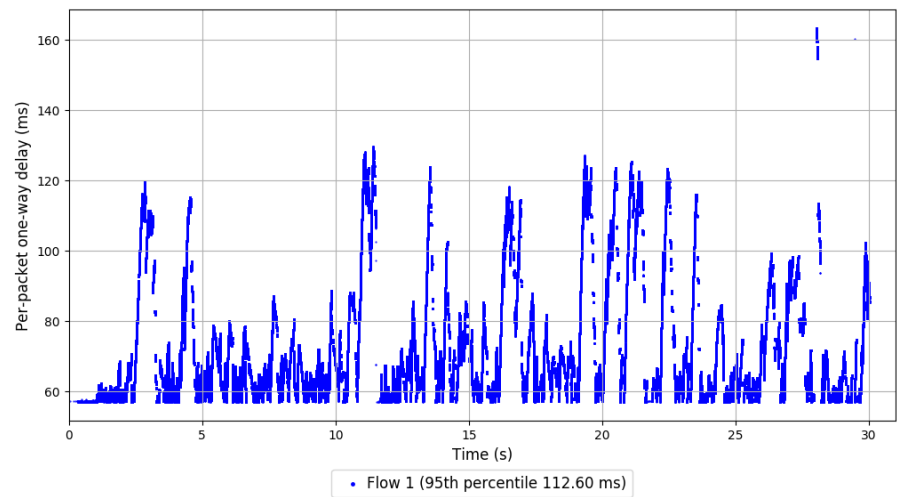
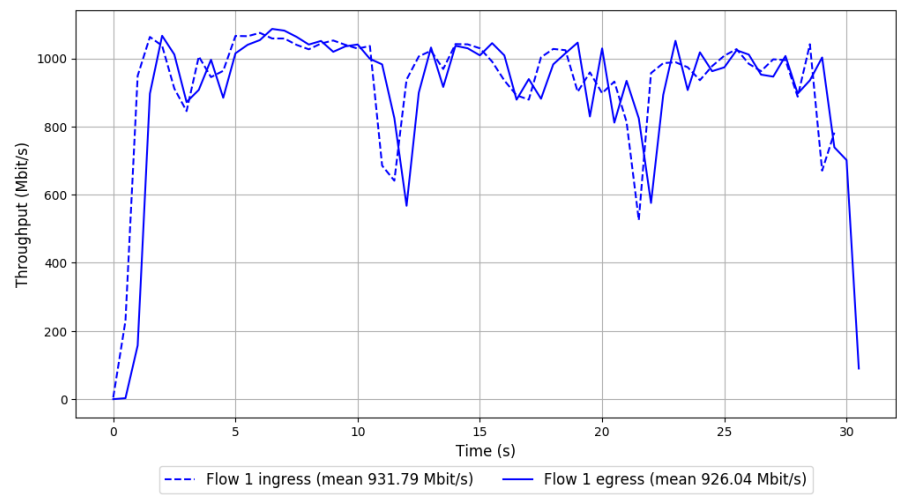


Run 2: Statistics of FillP-Sheep

Start at: 2018-12-20 19:10:13
End at: 2018-12-20 19:10:43
Local clock offset: -0.311 ms
Remote clock offset: 0.002 ms

Below is generated by plot.py at 2018-12-20 21:38:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 926.04 Mbit/s
95th percentile per-packet one-way delay: 112.604 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 926.04 Mbit/s
95th percentile per-packet one-way delay: 112.604 ms
Loss rate: 0.61%

Run 2: Report of FillP-Sheep — Data Link

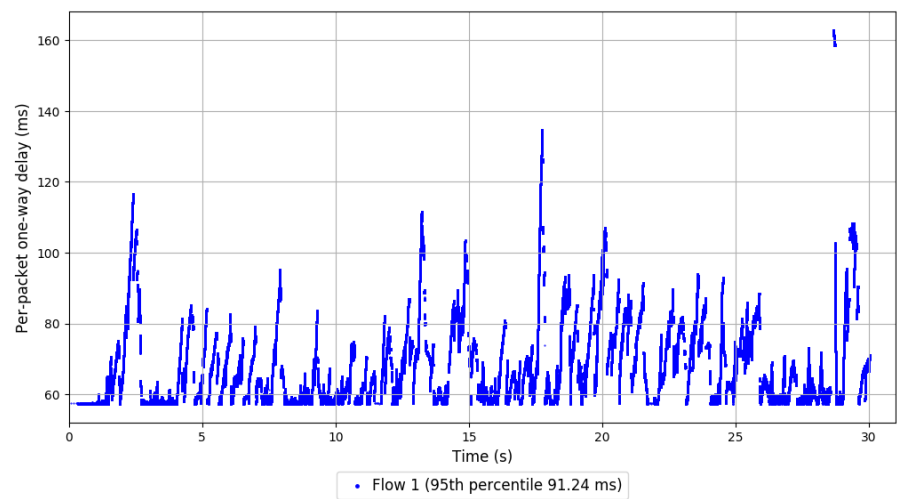
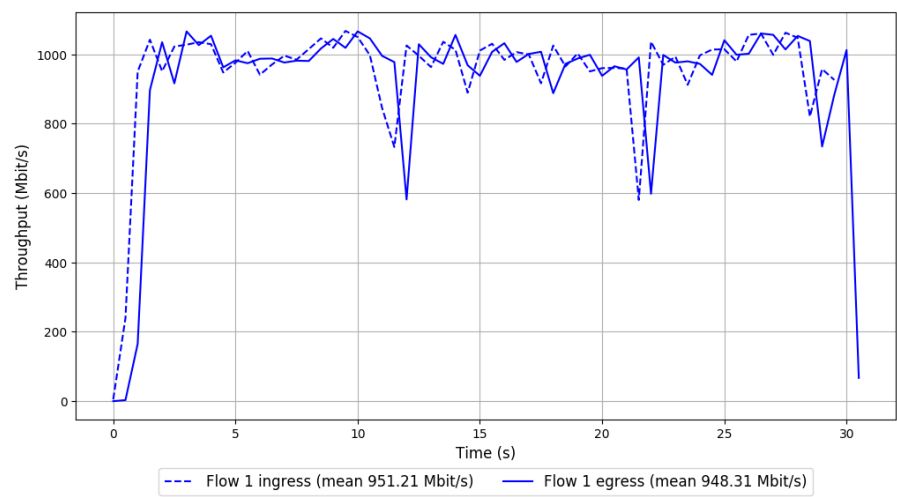


Run 3: Statistics of FillP-Sheep

Start at: 2018-12-20 19:38:53
End at: 2018-12-20 19:39:23
Local clock offset: -0.573 ms
Remote clock offset: -0.167 ms

Below is generated by plot.py at 2018-12-20 21:38:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 948.31 Mbit/s
95th percentile per-packet one-way delay: 91.243 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 948.31 Mbit/s
95th percentile per-packet one-way delay: 91.243 ms
Loss rate: 0.30%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-12-20 20:07:58

End at: 2018-12-20 20:08:28

Local clock offset: 1.683 ms

Remote clock offset: -0.31 ms

Below is generated by plot.py at 2018-12-20 21:47:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 910.50 Mbit/s

95th percentile per-packet one-way delay: 86.057 ms

Loss rate: 0.43%

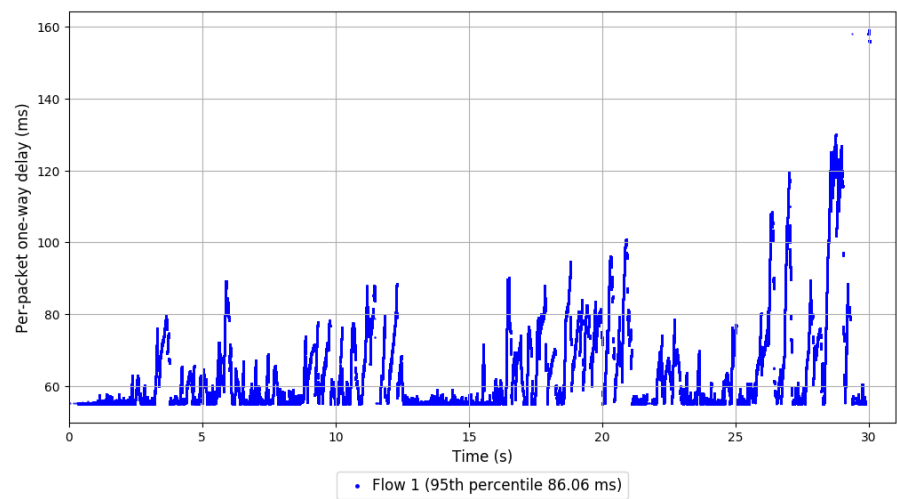
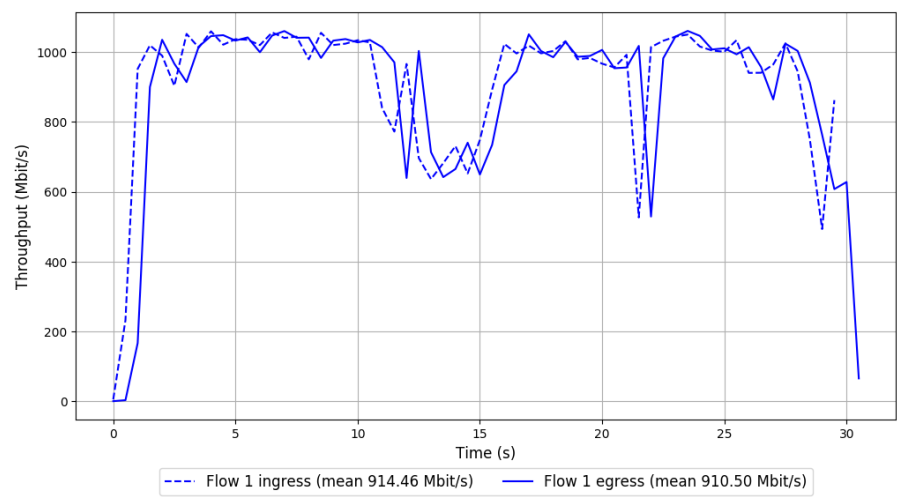
-- Flow 1:

Average throughput: 910.50 Mbit/s

95th percentile per-packet one-way delay: 86.057 ms

Loss rate: 0.43%

Run 4: Report of FillP-Sheep — Data Link

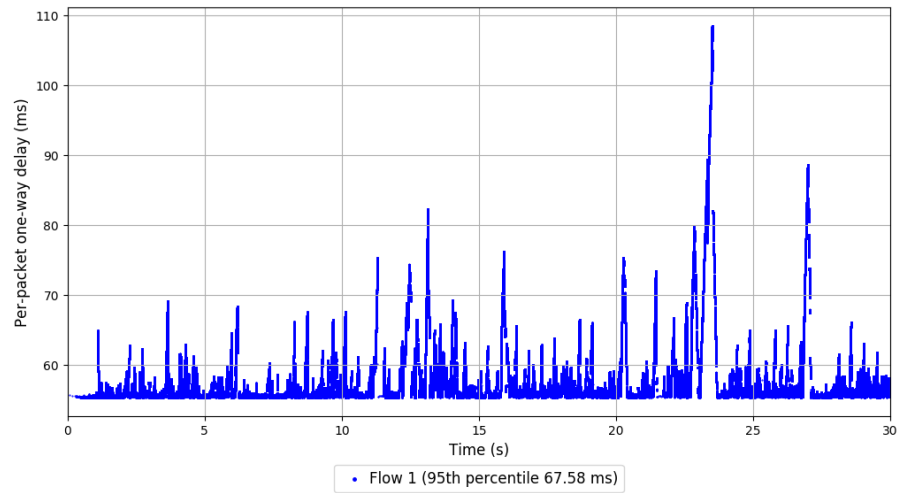
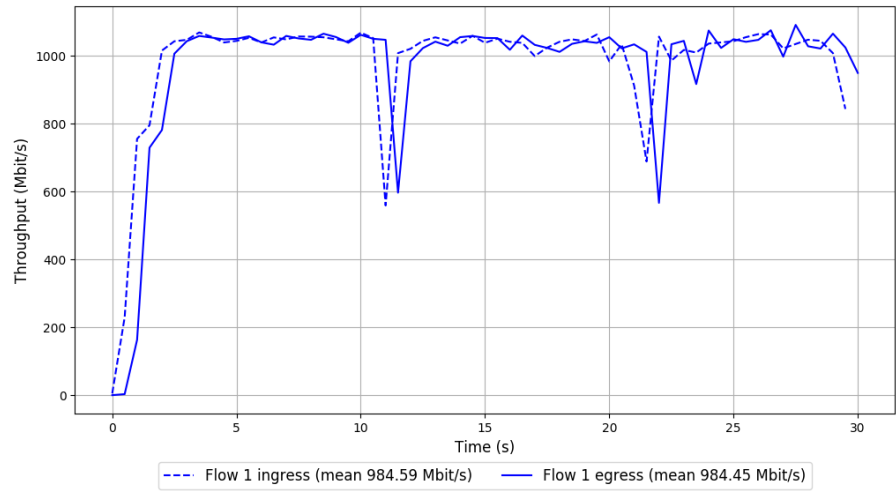


Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 20:37:20
End at: 2018-12-20 20:37:50
Local clock offset: 1.326 ms
Remote clock offset: -0.137 ms

Below is generated by plot.py at 2018-12-20 21:57:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 984.45 Mbit/s
95th percentile per-packet one-way delay: 67.580 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 984.45 Mbit/s
95th percentile per-packet one-way delay: 67.580 ms
Loss rate: 0.01%

Run 5: Report of FillP-Sheep — Data Link

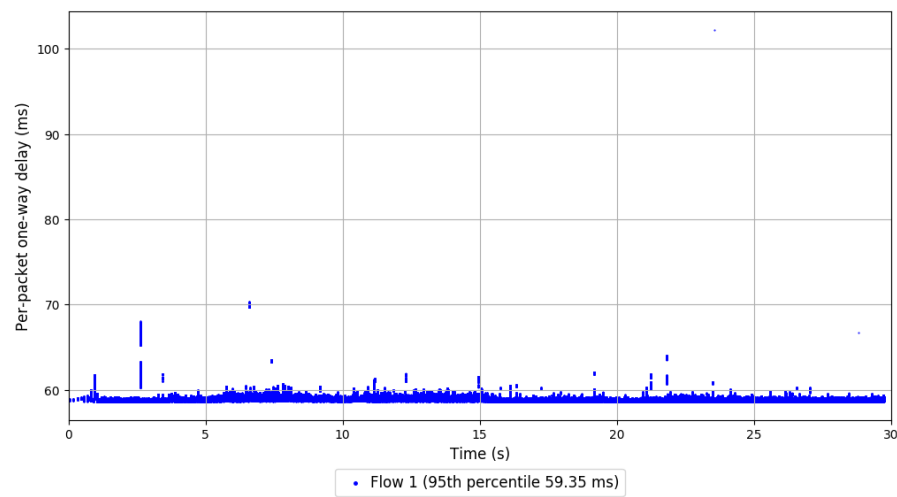
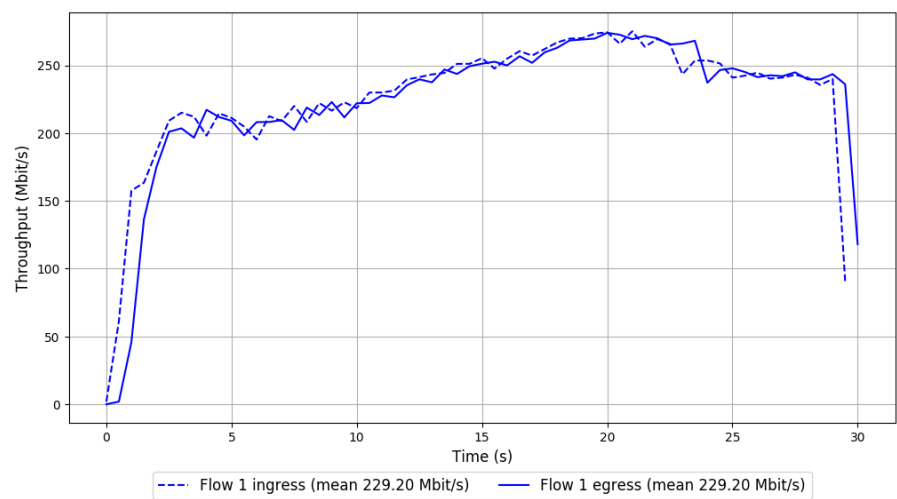


```
Run 1: Statistics of Indigo

Start at: 2018-12-20 18:47:54
End at: 2018-12-20 18:48:24
Local clock offset: -1.597 ms
Remote clock offset: 0.073 ms

# Below is generated by plot.py at 2018-12-20 21:57:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.20 Mbit/s
95th percentile per-packet one-way delay: 59.350 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 229.20 Mbit/s
95th percentile per-packet one-way delay: 59.350 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-12-20 19:16:39

End at: 2018-12-20 19:17:09

Local clock offset: -1.61 ms

Remote clock offset: 0.009 ms

Below is generated by plot.py at 2018-12-20 21:57:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 229.93 Mbit/s

95th percentile per-packet one-way delay: 58.886 ms

Loss rate: 0.00%

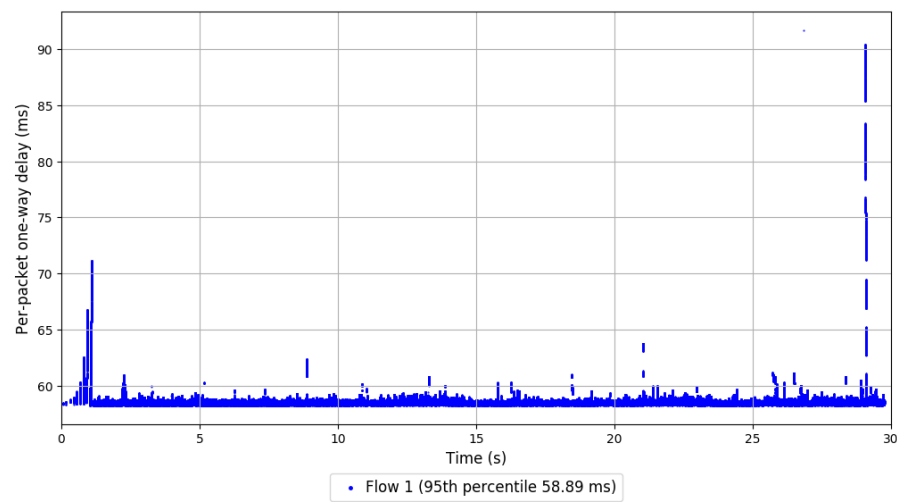
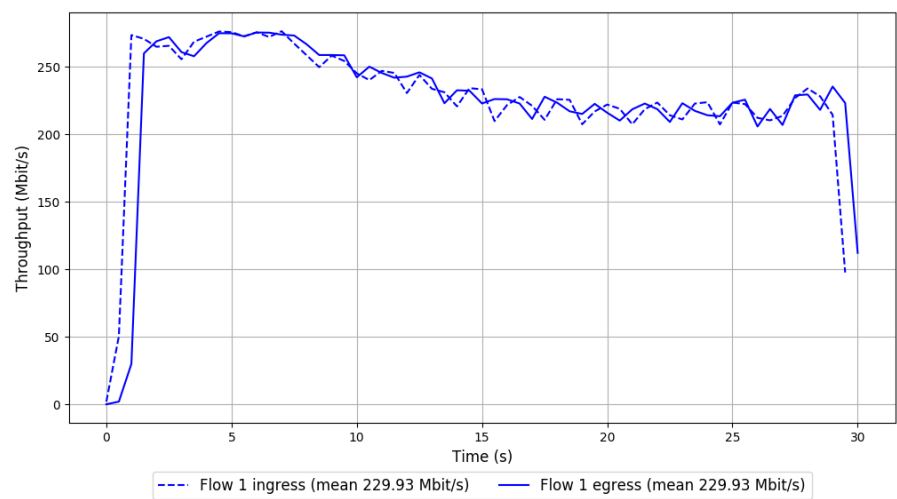
-- Flow 1:

Average throughput: 229.93 Mbit/s

95th percentile per-packet one-way delay: 58.886 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-12-20 19:45:12

End at: 2018-12-20 19:45:42

Local clock offset: -0.484 ms

Remote clock offset: 0.087 ms

Below is generated by plot.py at 2018-12-20 21:57:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 217.78 Mbit/s

95th percentile per-packet one-way delay: 58.088 ms

Loss rate: 0.00%

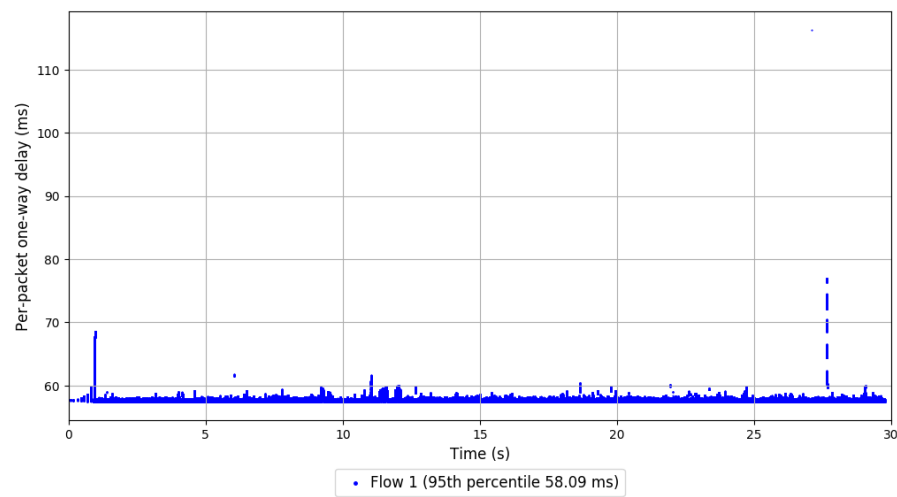
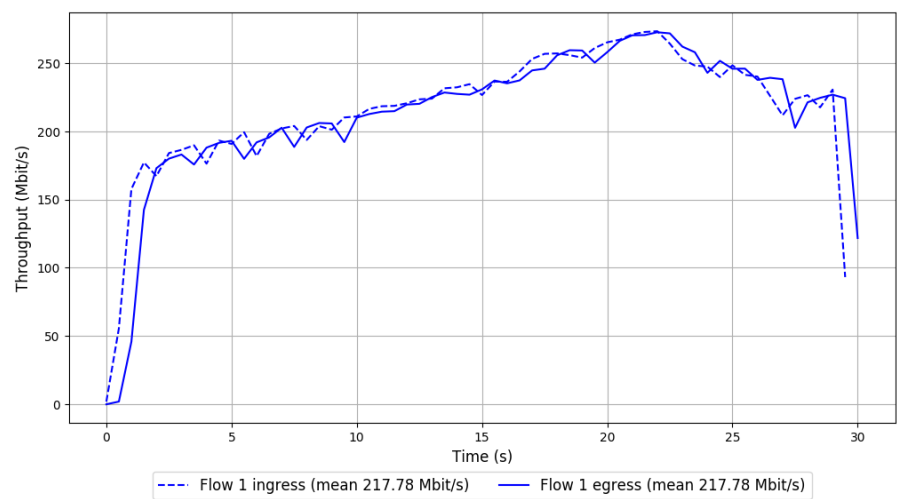
-- Flow 1:

Average throughput: 217.78 Mbit/s

95th percentile per-packet one-way delay: 58.088 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

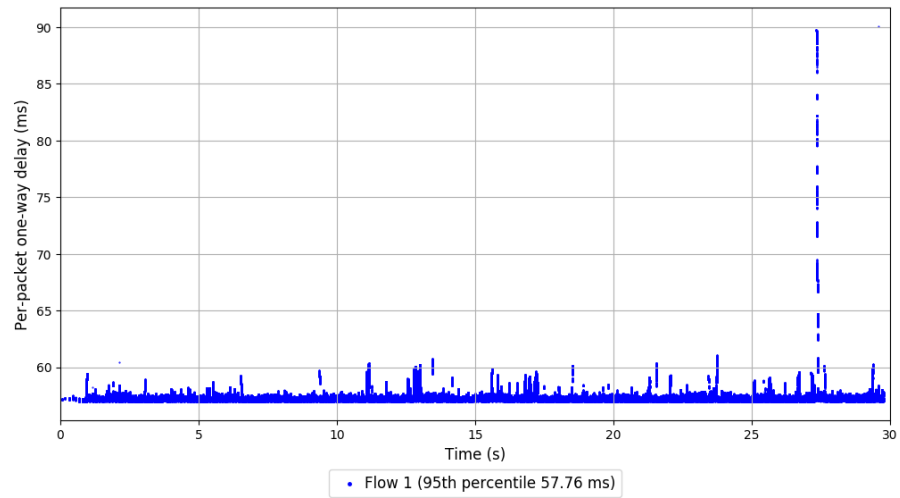
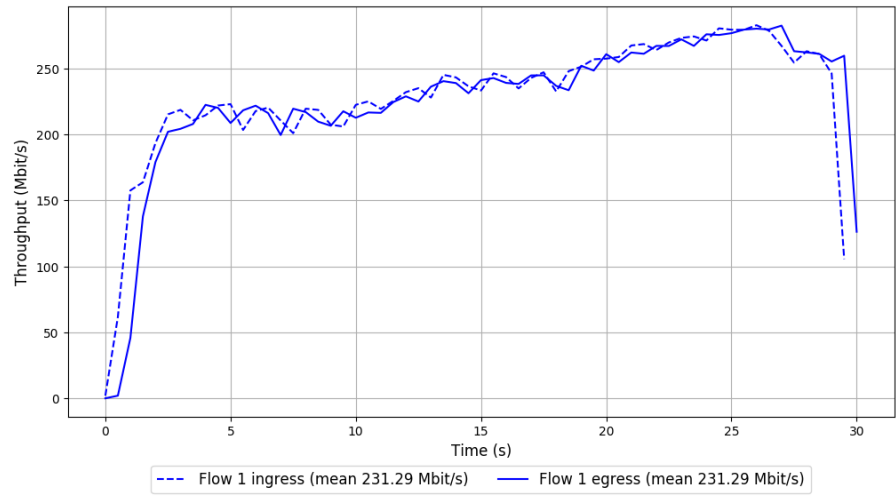


Run 4: Statistics of Indigo

Start at: 2018-12-20 20:14:27
End at: 2018-12-20 20:14:57
Local clock offset: -0.076 ms
Remote clock offset: -0.086 ms

Below is generated by plot.py at 2018-12-20 21:57:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 231.29 Mbit/s
95th percentile per-packet one-way delay: 57.759 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 231.29 Mbit/s
95th percentile per-packet one-way delay: 57.759 ms
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-12-20 20:43:55

End at: 2018-12-20 20:44:25

Local clock offset: 1.439 ms

Remote clock offset: 0.015 ms

Below is generated by plot.py at 2018-12-20 21:57:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 224.28 Mbit/s

95th percentile per-packet one-way delay: 56.059 ms

Loss rate: 0.00%

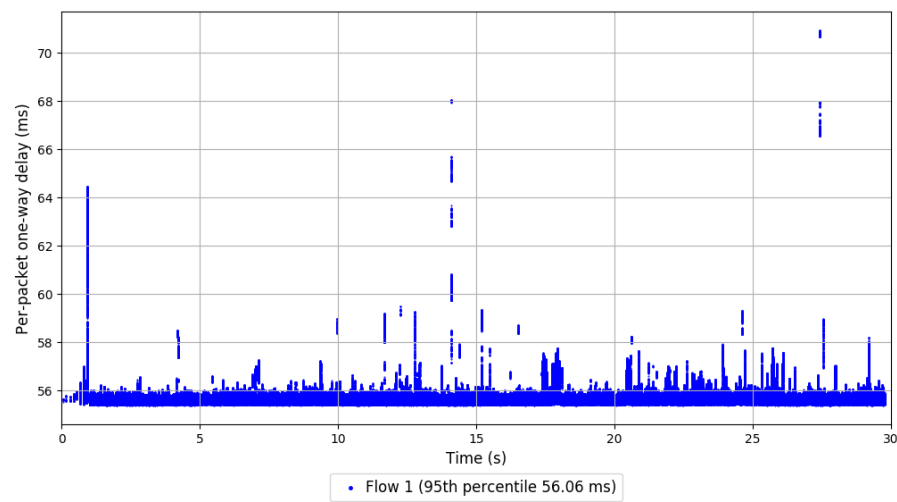
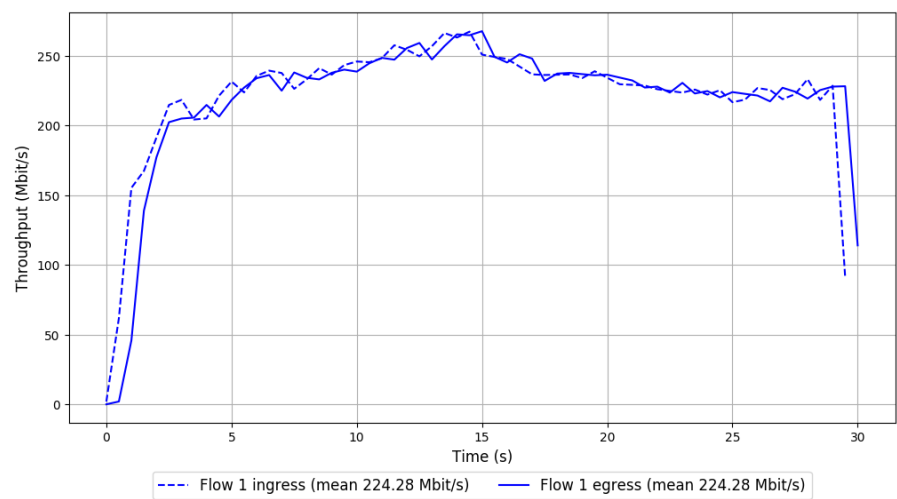
-- Flow 1:

Average throughput: 224.28 Mbit/s

95th percentile per-packet one-way delay: 56.059 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

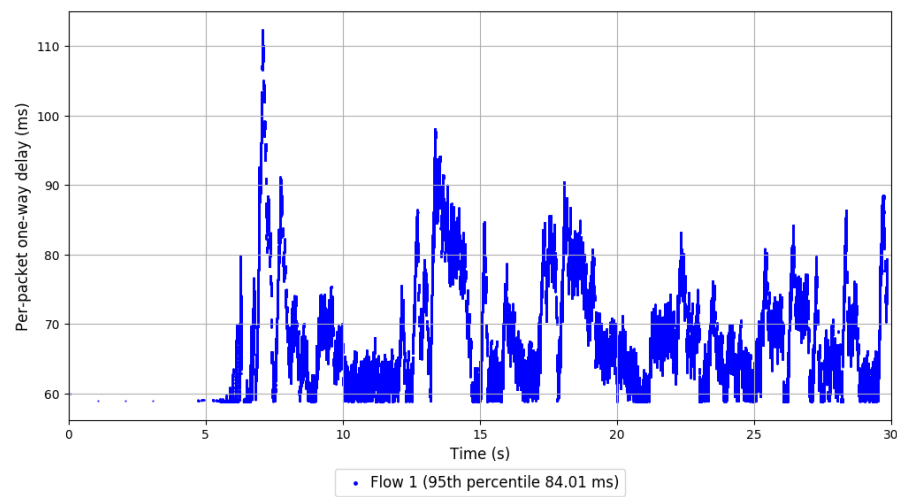
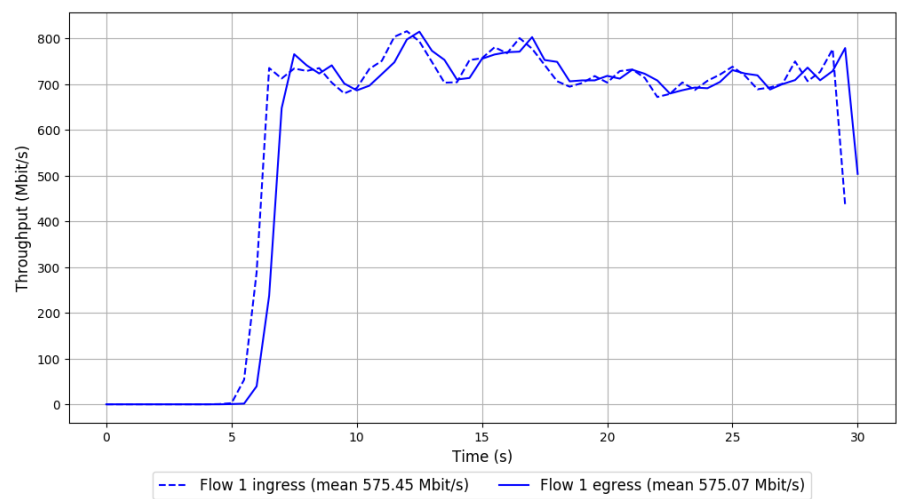


Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-20 18:35:35
End at: 2018-12-20 18:36:05
Local clock offset: -2.024 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-12-20 21:57:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 575.07 Mbit/s
95th percentile per-packet one-way delay: 84.013 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 575.07 Mbit/s
95th percentile per-packet one-way delay: 84.013 ms
Loss rate: 0.07%

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-20 19:03:48

End at: 2018-12-20 19:04:19

Local clock offset: 0.095 ms

Remote clock offset: 0.115 ms

Below is generated by plot.py at 2018-12-20 21:57:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 679.09 Mbit/s

95th percentile per-packet one-way delay: 90.271 ms

Loss rate: 0.00%

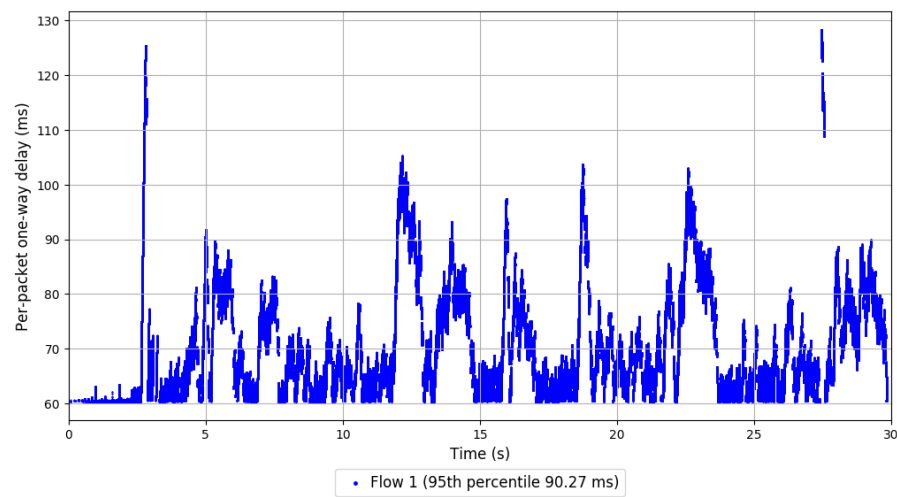
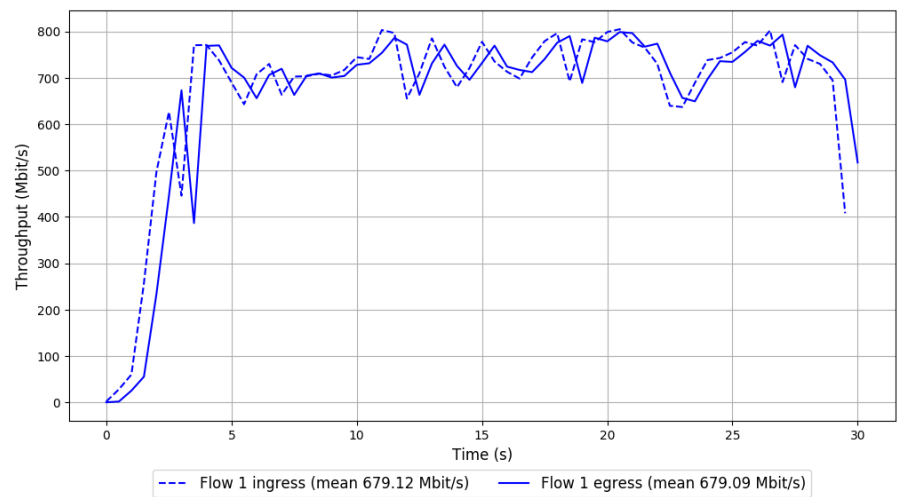
-- Flow 1:

Average throughput: 679.09 Mbit/s

95th percentile per-packet one-way delay: 90.271 ms

Loss rate: 0.00%

Run 2: Report of Indigo-MusesD — Data Link

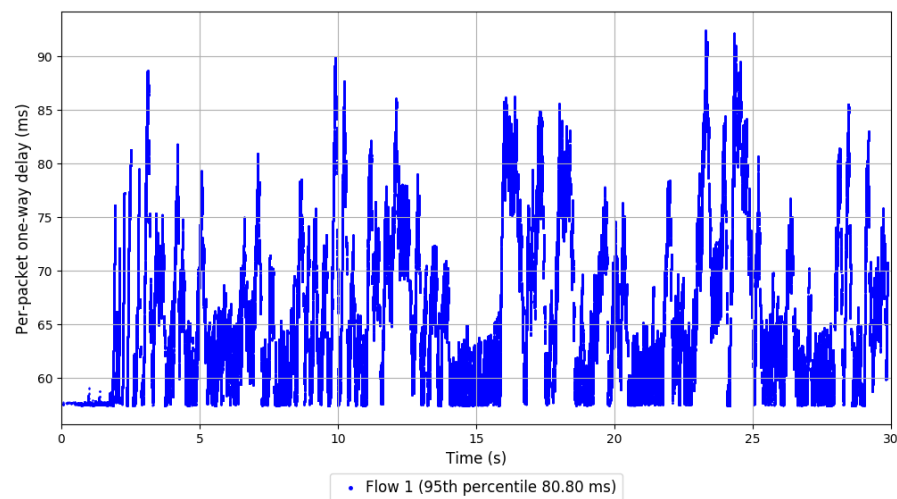
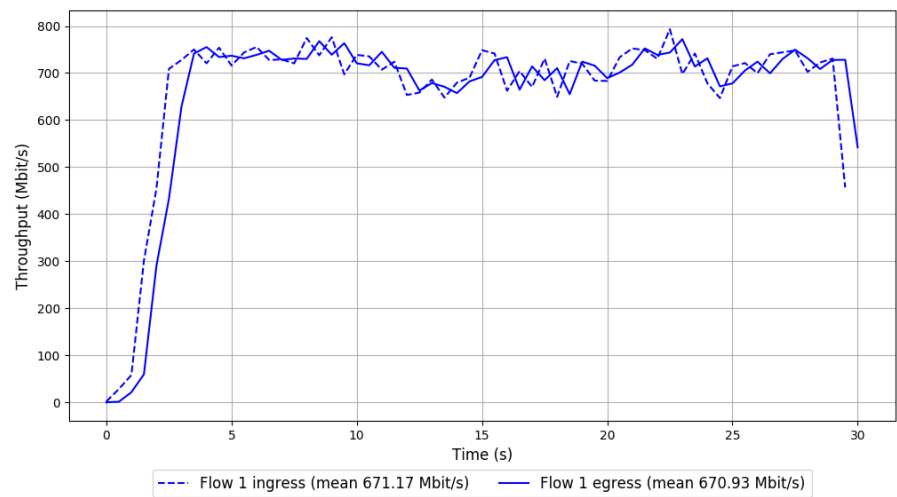


Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-20 19:32:20
End at: 2018-12-20 19:32:50
Local clock offset: -0.354 ms
Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-12-20 21:57:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 670.93 Mbit/s
95th percentile per-packet one-way delay: 80.804 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 670.93 Mbit/s
95th percentile per-packet one-way delay: 80.804 ms
Loss rate: 0.04%

Run 3: Report of Indigo-MusesD — Data Link

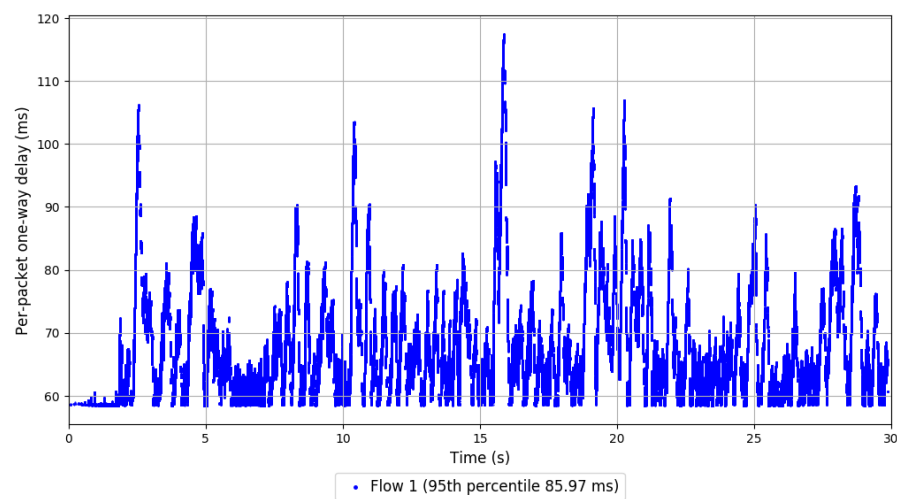
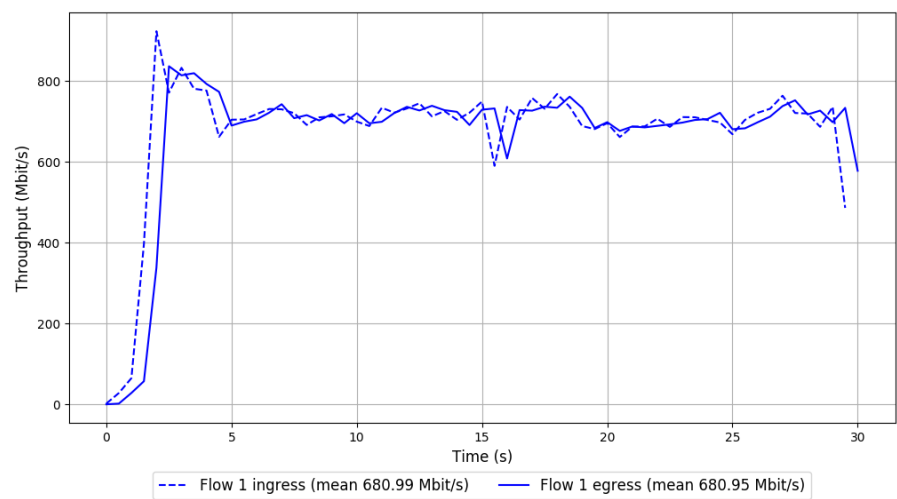


Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-20 20:01:16
End at: 2018-12-20 20:01:46
Local clock offset: -1.898 ms
Remote clock offset: -0.361 ms

Below is generated by plot.py at 2018-12-20 21:58:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 680.95 Mbit/s
95th percentile per-packet one-way delay: 85.970 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 680.95 Mbit/s
95th percentile per-packet one-way delay: 85.970 ms
Loss rate: 0.01%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 20:30:44

End at: 2018-12-20 20:31:14

Local clock offset: 1.217 ms

Remote clock offset: -0.114 ms

Below is generated by plot.py at 2018-12-20 21:59:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 709.13 Mbit/s

95th percentile per-packet one-way delay: 76.839 ms

Loss rate: 0.01%

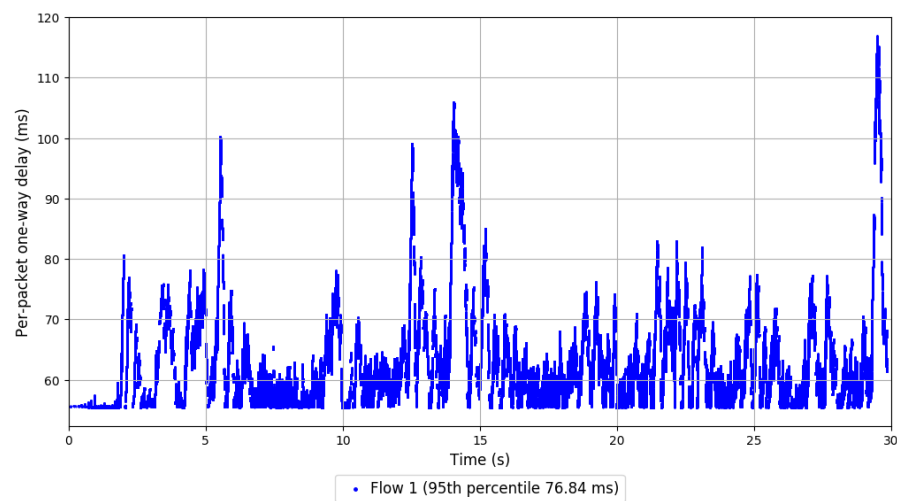
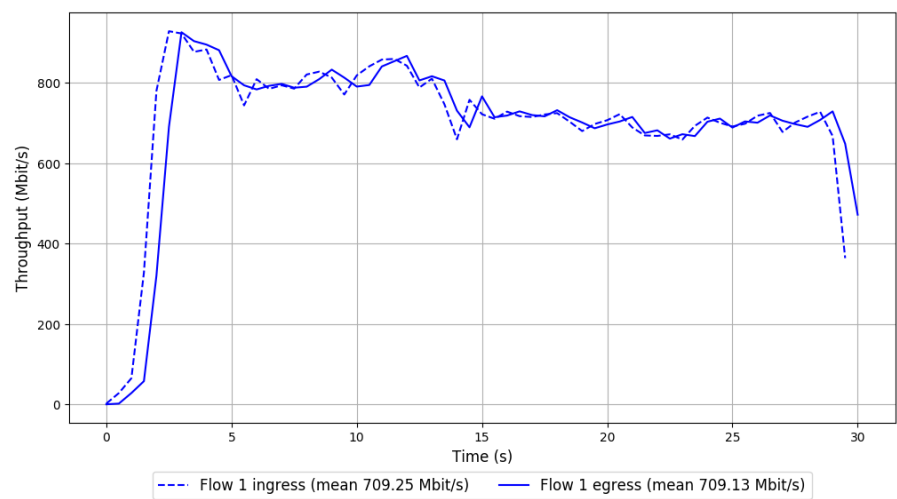
-- Flow 1:

Average throughput: 709.13 Mbit/s

95th percentile per-packet one-way delay: 76.839 ms

Loss rate: 0.01%

Run 5: Report of Indigo-MusesD — Data Link

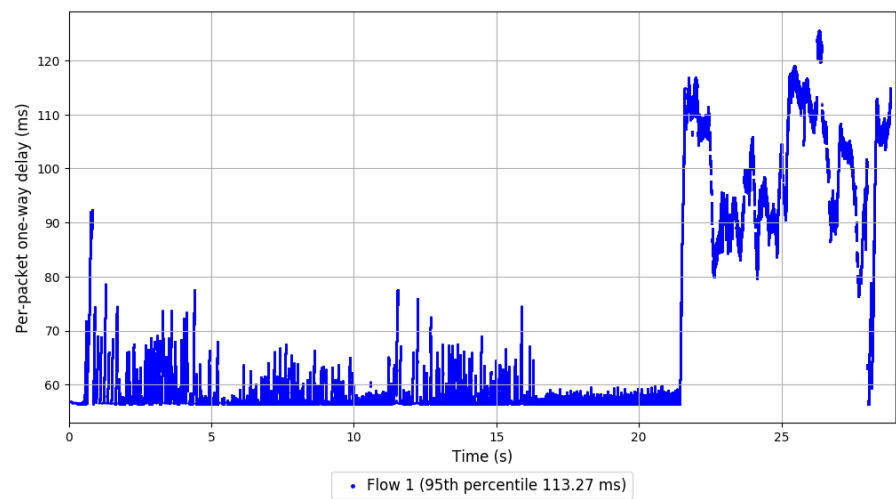
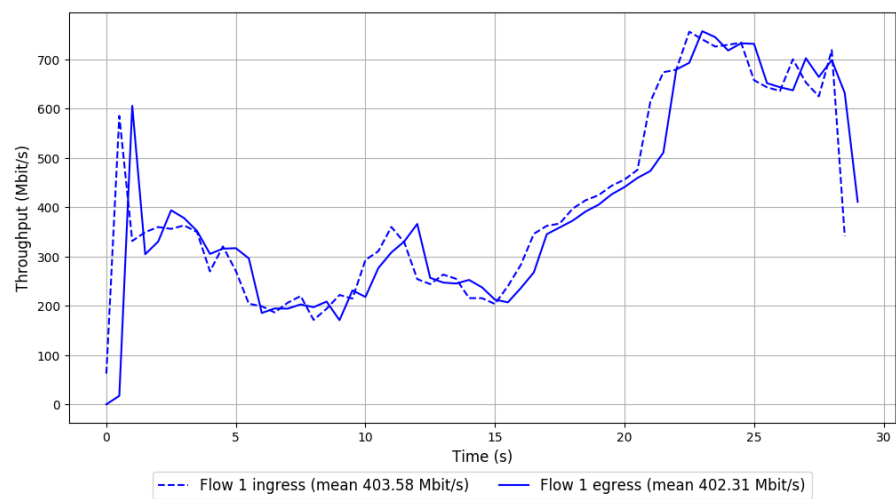


Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-20 18:43:40
End at: 2018-12-20 18:44:10
Local clock offset: 0.106 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-12-20 21:59:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 402.31 Mbit/s
95th percentile per-packet one-way delay: 113.273 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 402.31 Mbit/s
95th percentile per-packet one-way delay: 113.273 ms
Loss rate: 0.31%

Run 1: Report of Indigo-MusesT — Data Link

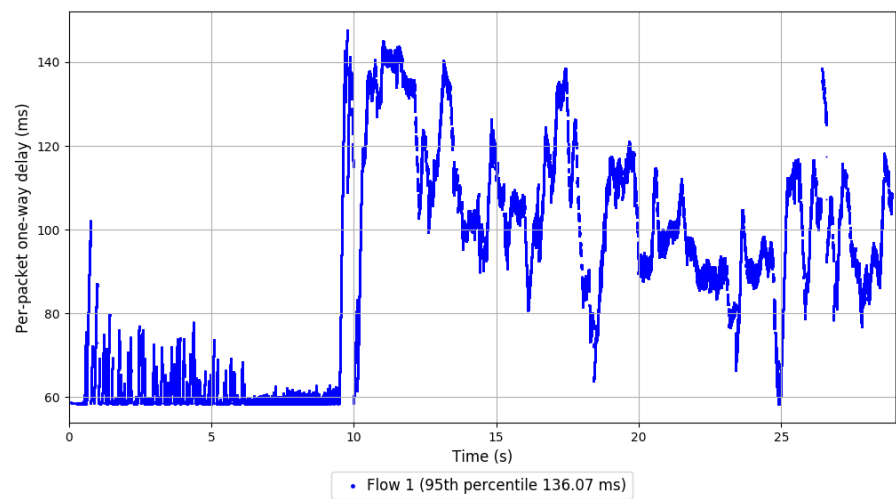
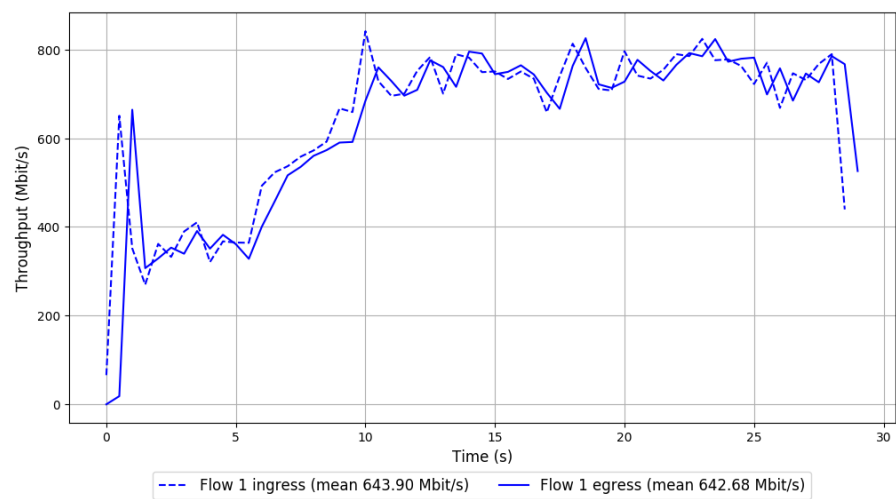


Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-20 19:11:59
End at: 2018-12-20 19:12:29
Local clock offset: -2.006 ms
Remote clock offset: -0.261 ms

Below is generated by plot.py at 2018-12-20 21:59:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 642.68 Mbit/s
95th percentile per-packet one-way delay: 136.071 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 642.68 Mbit/s
95th percentile per-packet one-way delay: 136.071 ms
Loss rate: 0.19%

Run 2: Report of Indigo-MusesT — Data Link

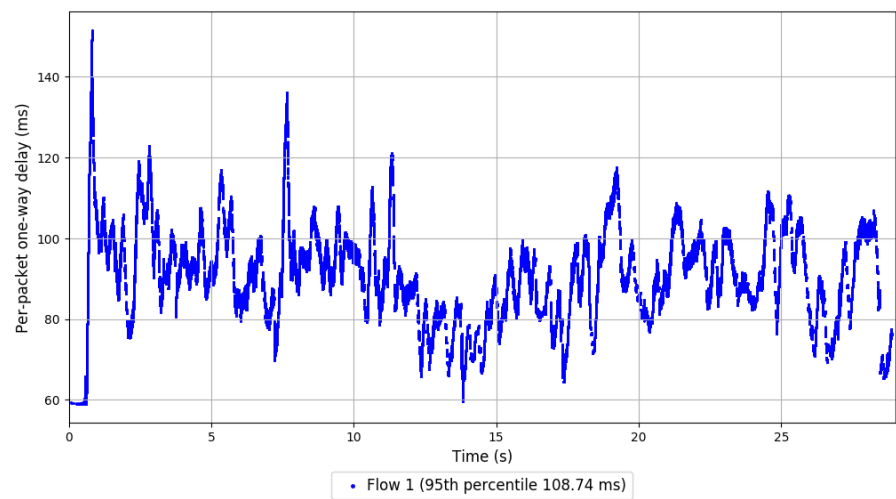
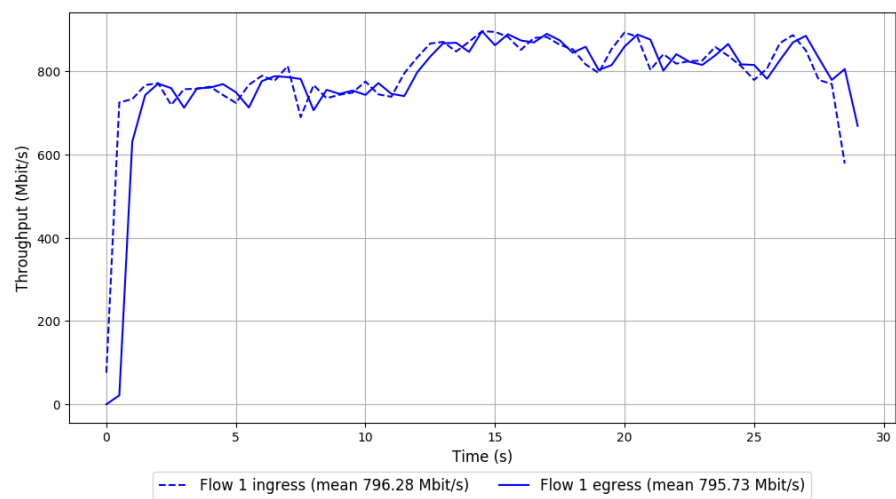


Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-20 19:40:39
End at: 2018-12-20 19:41:09
Local clock offset: -1.924 ms
Remote clock offset: -0.178 ms

Below is generated by plot.py at 2018-12-20 22:03:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 795.73 Mbit/s
95th percentile per-packet one-way delay: 108.742 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 795.73 Mbit/s
95th percentile per-packet one-way delay: 108.742 ms
Loss rate: 0.07%

Run 3: Report of Indigo-MusesT — Data Link

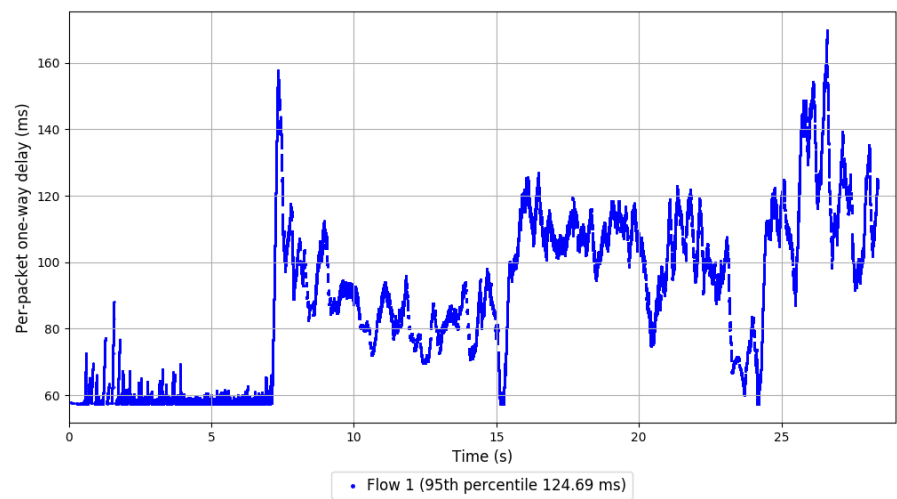
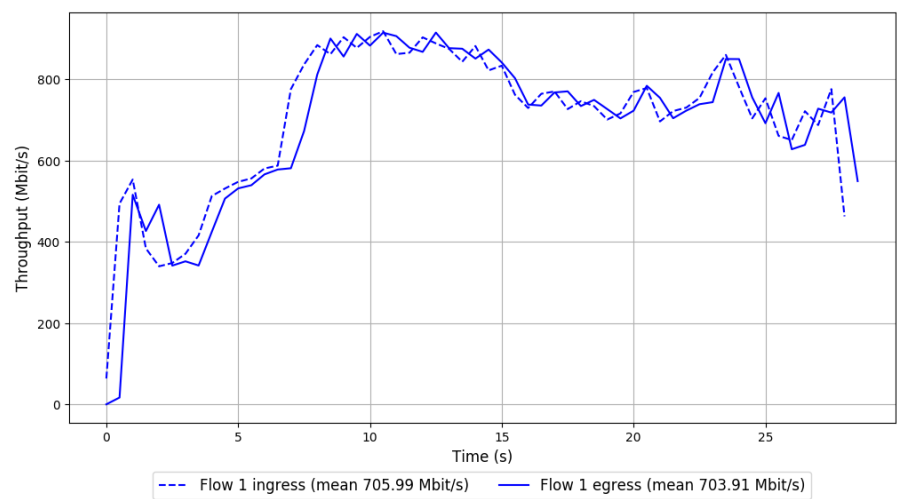


Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-20 20:09:48
End at: 2018-12-20 20:10:18
Local clock offset: -0.123 ms
Remote clock offset: -0.199 ms

Below is generated by plot.py at 2018-12-20 22:04:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 703.91 Mbit/s
95th percentile per-packet one-way delay: 124.693 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 703.91 Mbit/s
95th percentile per-packet one-way delay: 124.693 ms
Loss rate: 0.30%

Run 4: Report of Indigo-MusesT — Data Link

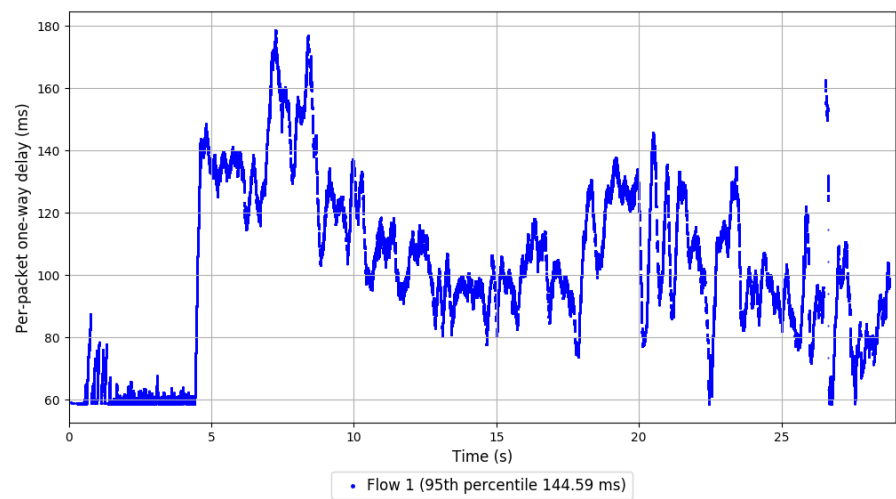
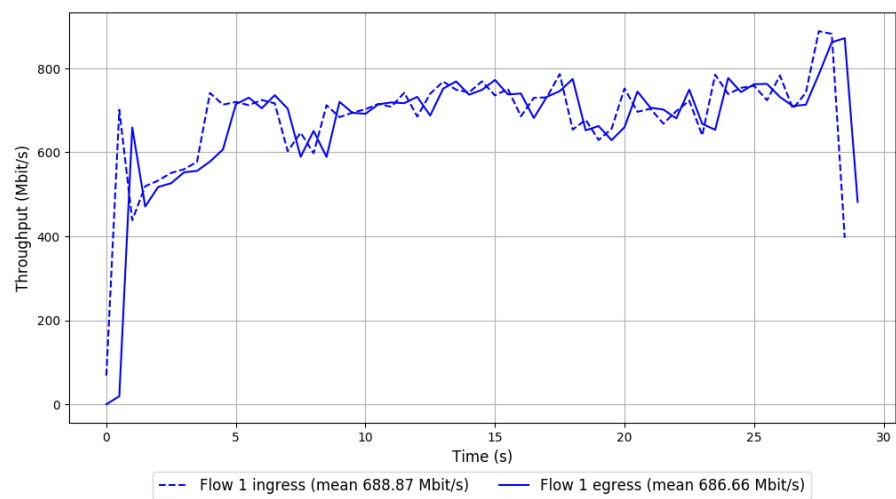


Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 20:39:15
End at: 2018-12-20 20:39:45
Local clock offset: -1.991 ms
Remote clock offset: -0.246 ms

Below is generated by plot.py at 2018-12-20 22:07:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 686.66 Mbit/s
95th percentile per-packet one-way delay: 144.590 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 686.66 Mbit/s
95th percentile per-packet one-way delay: 144.590 ms
Loss rate: 0.32%

Run 5: Report of Indigo-MusesT — Data Link

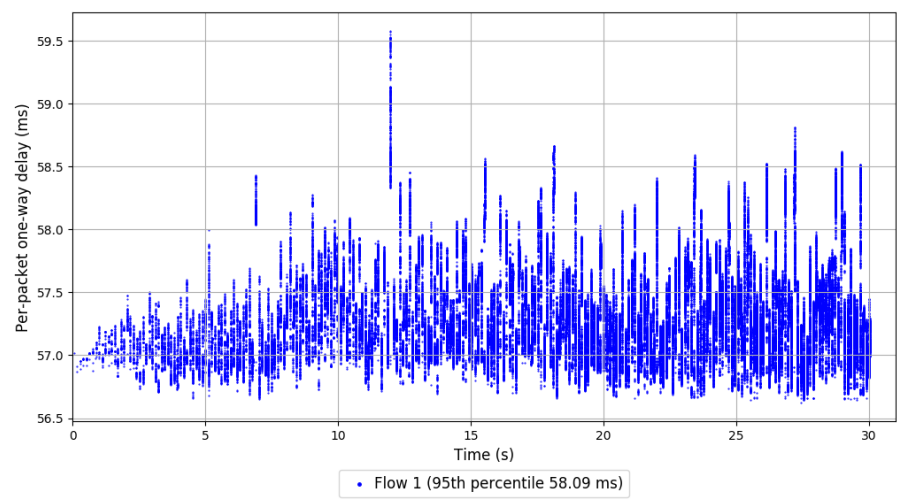
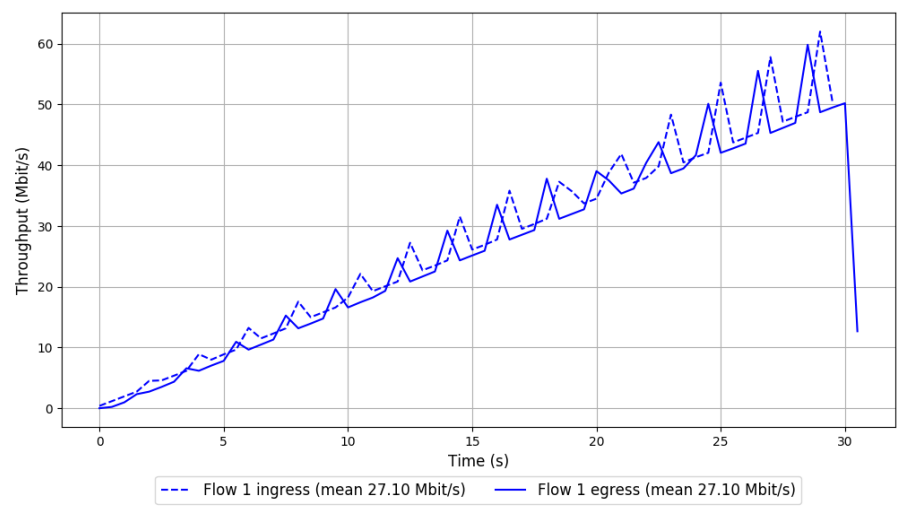


```
Run 1: Statistics of LEDBAT

Start at: 2018-12-20 18:27:08
End at: 2018-12-20 18:27:38
Local clock offset: -0.059 ms
Remote clock offset: -0.265 ms

# Below is generated by plot.py at 2018-12-20 22:07:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.10 Mbit/s
95th percentile per-packet one-way delay: 58.094 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 27.10 Mbit/s
95th percentile per-packet one-way delay: 58.094 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-12-20 18:55:21

End at: 2018-12-20 18:55:51

Local clock offset: -0.062 ms

Remote clock offset: -0.33 ms

Below is generated by plot.py at 2018-12-20 22:07:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.29 Mbit/s

95th percentile per-packet one-way delay: 57.649 ms

Loss rate: 0.00%

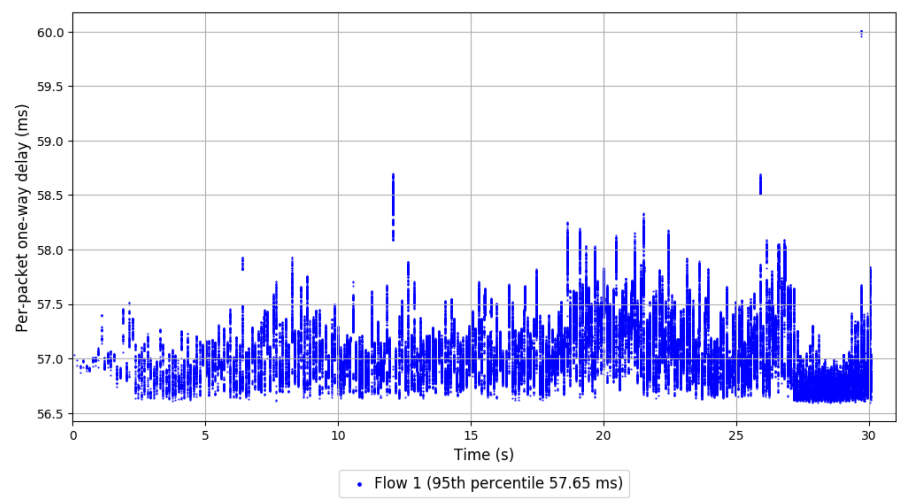
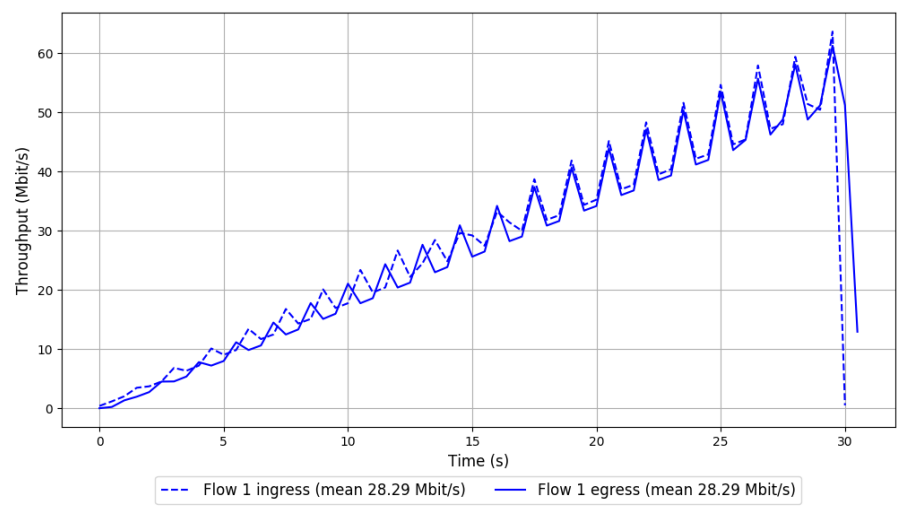
-- Flow 1:

Average throughput: 28.29 Mbit/s

95th percentile per-packet one-way delay: 57.649 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-12-20 19:23:55

End at: 2018-12-20 19:24:25

Local clock offset: 0.046 ms

Remote clock offset: 0.074 ms

Below is generated by plot.py at 2018-12-20 22:07:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.40 Mbit/s

95th percentile per-packet one-way delay: 58.163 ms

Loss rate: 0.00%

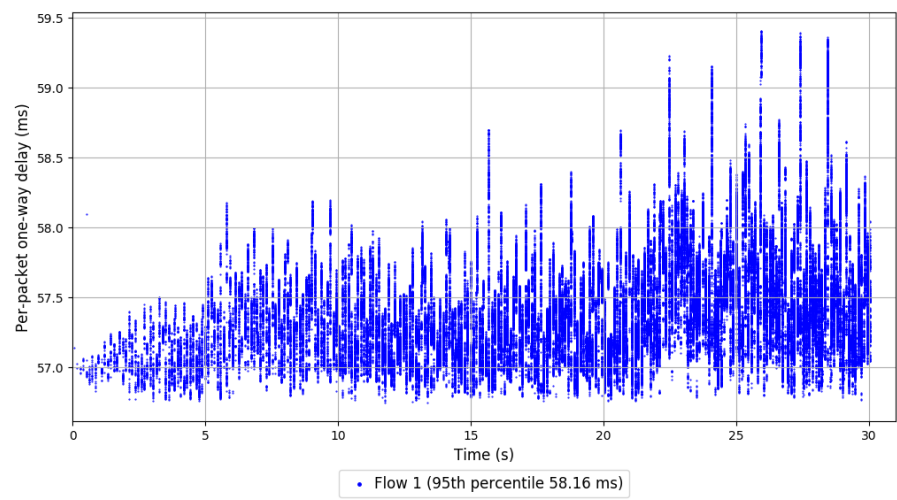
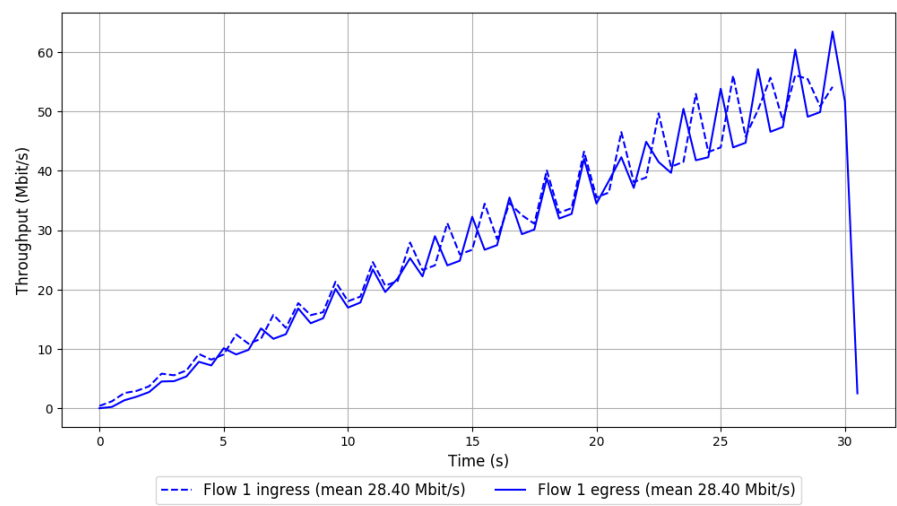
-- Flow 1:

Average throughput: 28.40 Mbit/s

95th percentile per-packet one-way delay: 58.163 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link

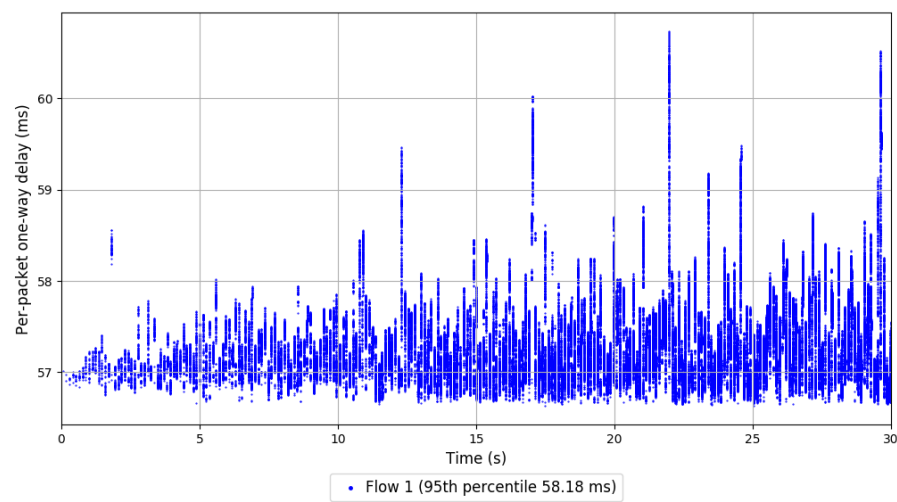
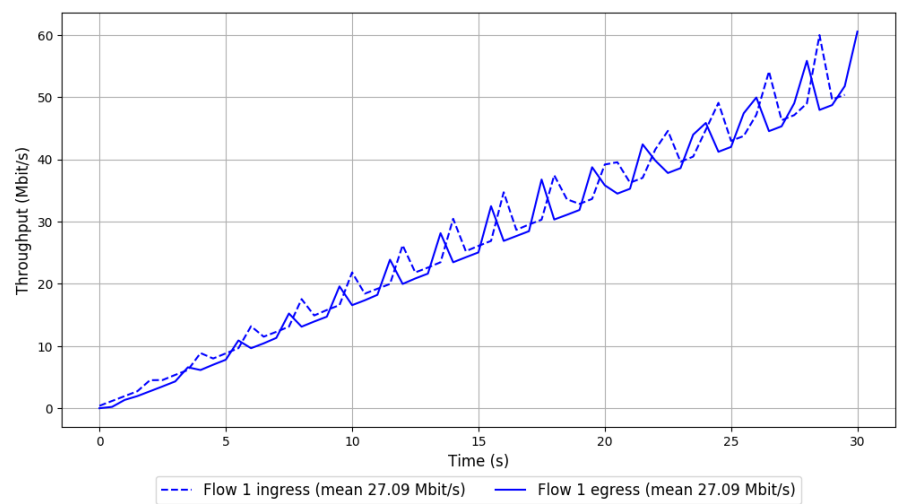


Run 4: Statistics of LEDBAT

Start at: 2018-12-20 19:52:48
End at: 2018-12-20 19:53:18
Local clock offset: -0.121 ms
Remote clock offset: -0.191 ms

Below is generated by plot.py at 2018-12-20 22:07:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 27.09 Mbit/s
95th percentile per-packet one-way delay: 58.183 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 27.09 Mbit/s
95th percentile per-packet one-way delay: 58.183 ms
Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

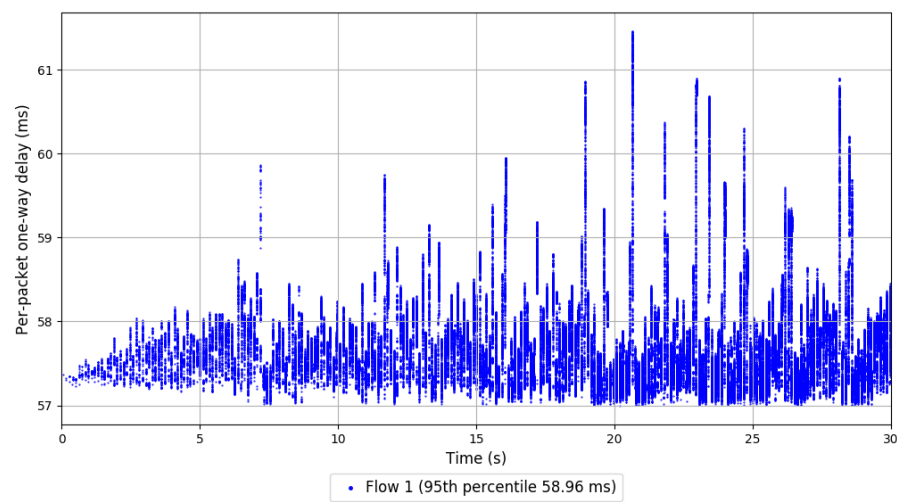
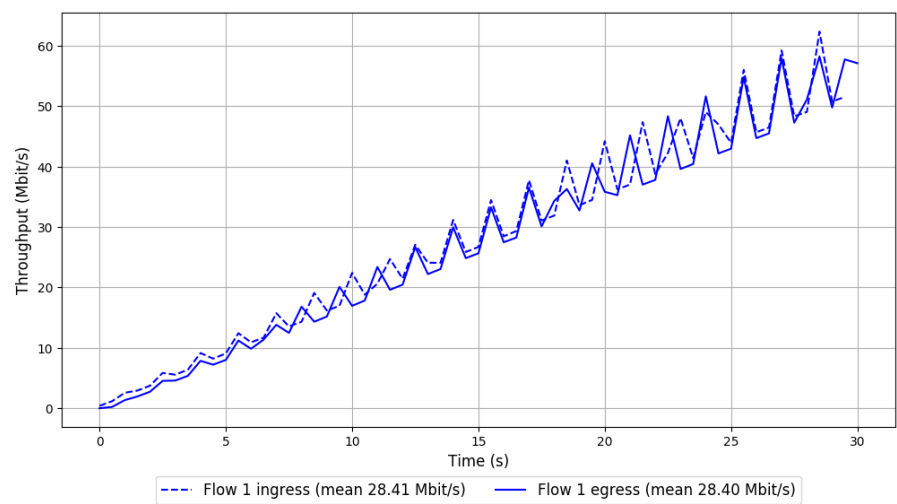


Run 5: Statistics of LEDBAT

Start at: 2018-12-20 20:22:00
End at: 2018-12-20 20:22:30
Local clock offset: 0.023 ms
Remote clock offset: -0.174 ms

Below is generated by plot.py at 2018-12-20 22:07:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 28.40 Mbit/s
95th percentile per-packet one-way delay: 58.964 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.40 Mbit/s
95th percentile per-packet one-way delay: 58.964 ms
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

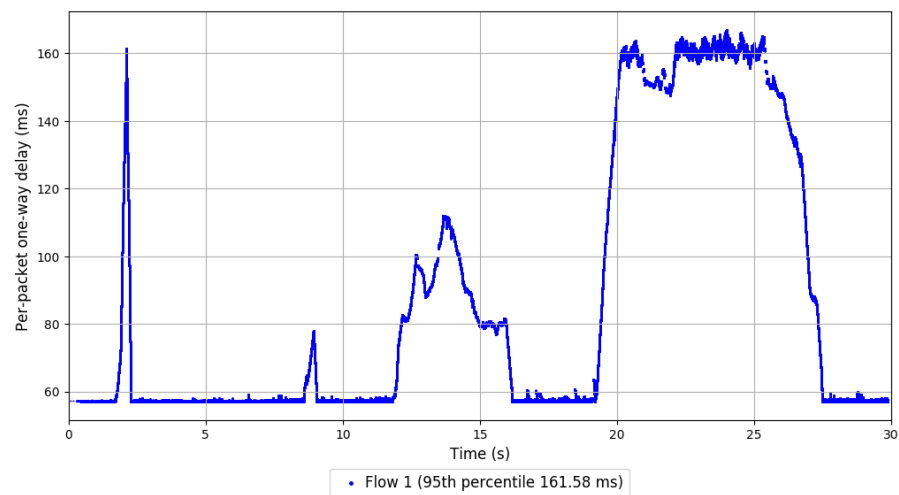
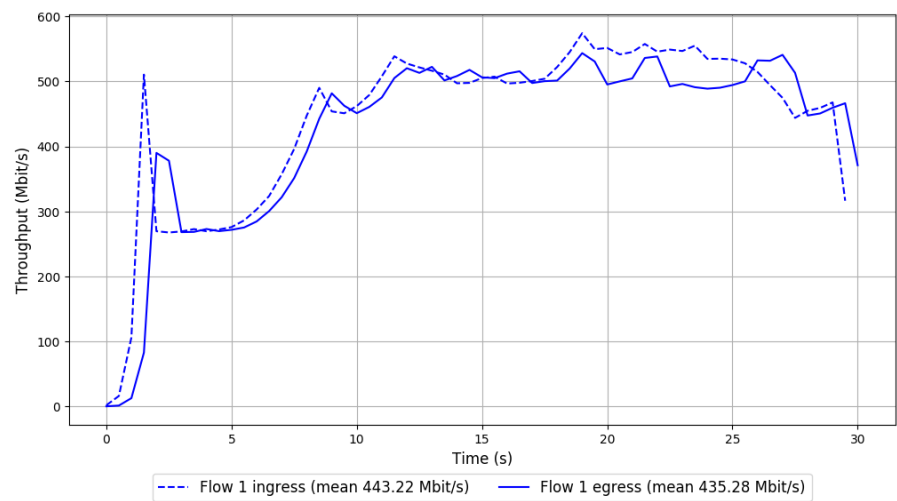


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-20 18:46:17
End at: 2018-12-20 18:46:47
Local clock offset: -0.058 ms
Remote clock offset: 0.306 ms

# Below is generated by plot.py at 2018-12-20 22:14:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 435.28 Mbit/s
95th percentile per-packet one-way delay: 161.581 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 435.28 Mbit/s
95th percentile per-packet one-way delay: 161.581 ms
Loss rate: 1.79%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-12-20 19:14:58

End at: 2018-12-20 19:15:28

Local clock offset: -0.078 ms

Remote clock offset: -0.167 ms

Below is generated by plot.py at 2018-12-20 22:16:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 480.18 Mbit/s

95th percentile per-packet one-way delay: 166.166 ms

Loss rate: 3.15%

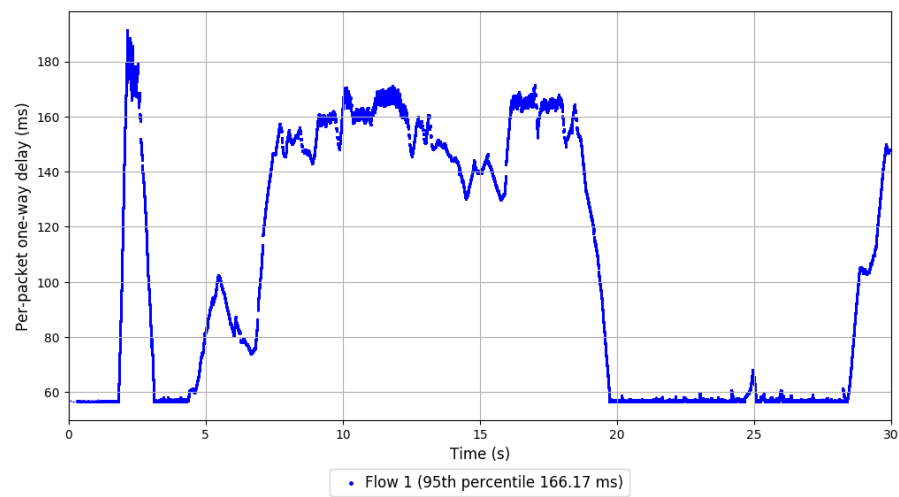
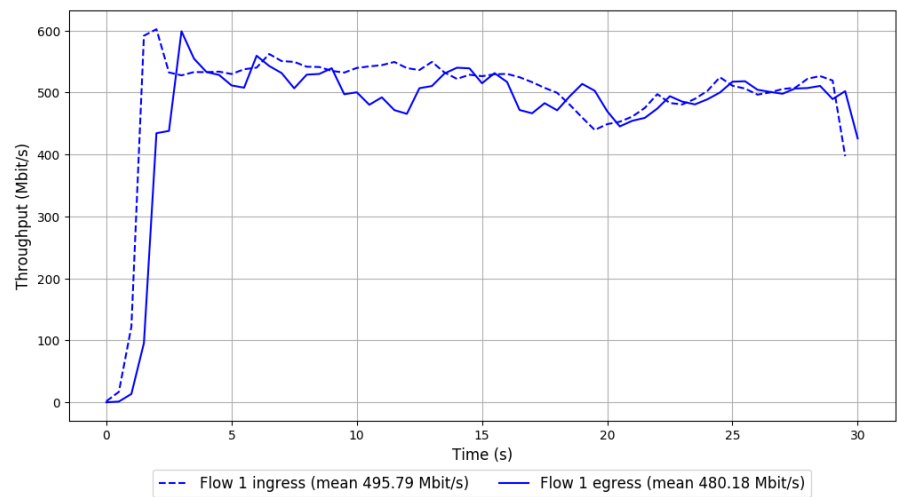
-- Flow 1:

Average throughput: 480.18 Mbit/s

95th percentile per-packet one-way delay: 166.166 ms

Loss rate: 3.15%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-20 19:43:34

End at: 2018-12-20 19:44:04

Local clock offset: 0.007 ms

Remote clock offset: -0.193 ms

Below is generated by plot.py at 2018-12-20 22:16:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 438.47 Mbit/s

95th percentile per-packet one-way delay: 168.499 ms

Loss rate: 6.81%

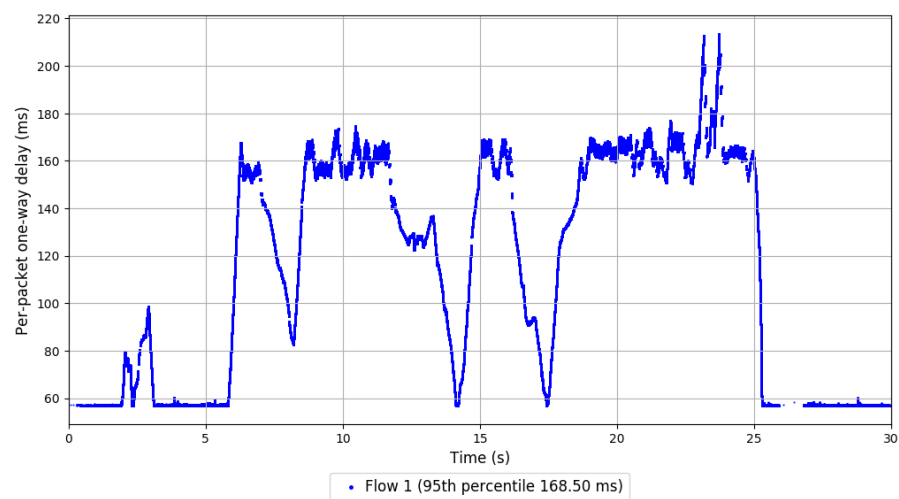
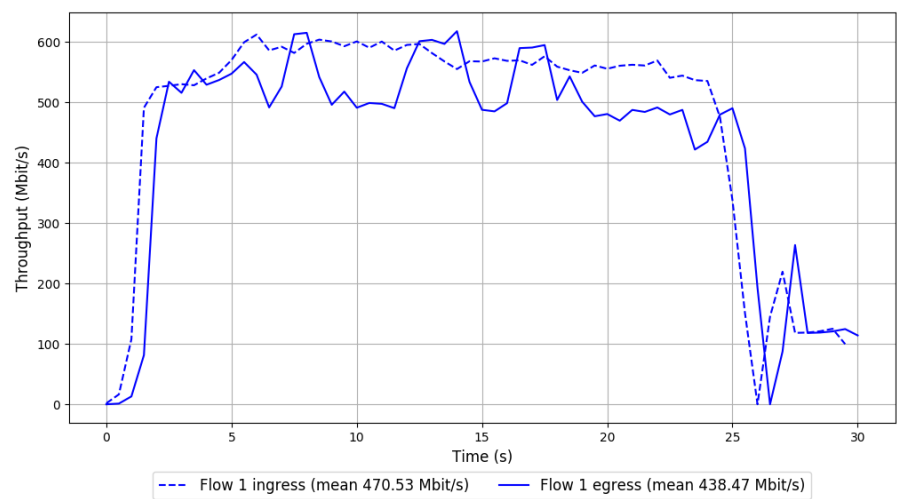
-- Flow 1:

Average throughput: 438.47 Mbit/s

95th percentile per-packet one-way delay: 168.499 ms

Loss rate: 6.81%

Run 3: Report of PCC-Allegro — Data Link

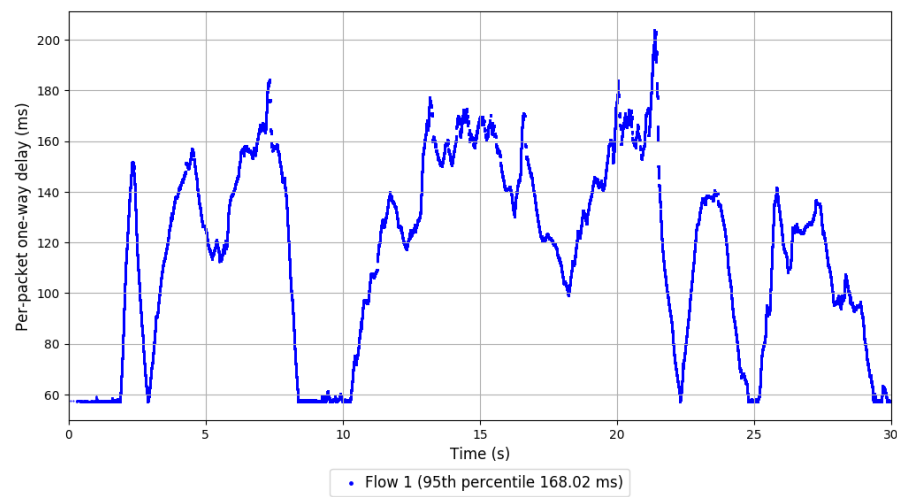
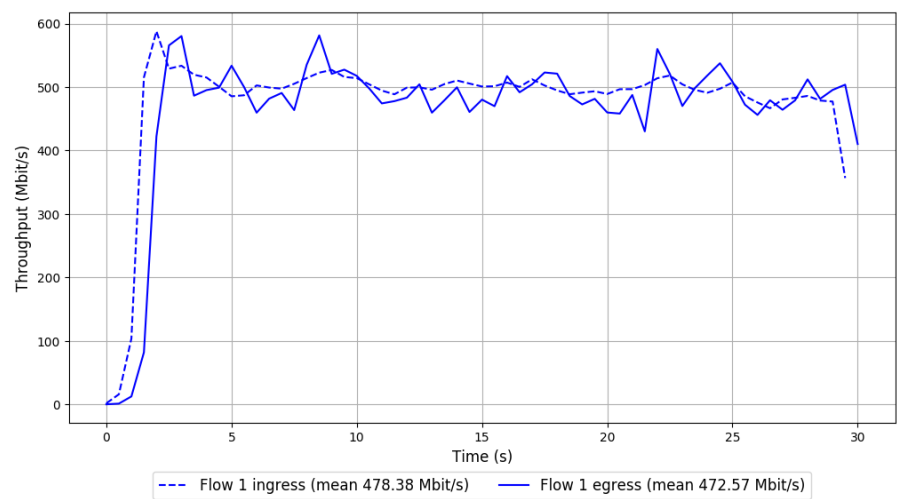


Run 4: Statistics of PCC-Allegro

Start at: 2018-12-20 20:12:41
End at: 2018-12-20 20:13:11
Local clock offset: -0.384 ms
Remote clock offset: -0.253 ms

Below is generated by plot.py at 2018-12-20 22:16:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 472.57 Mbit/s
95th percentile per-packet one-way delay: 168.018 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 472.57 Mbit/s
95th percentile per-packet one-way delay: 168.018 ms
Loss rate: 1.21%

Run 4: Report of PCC-Allegro — Data Link

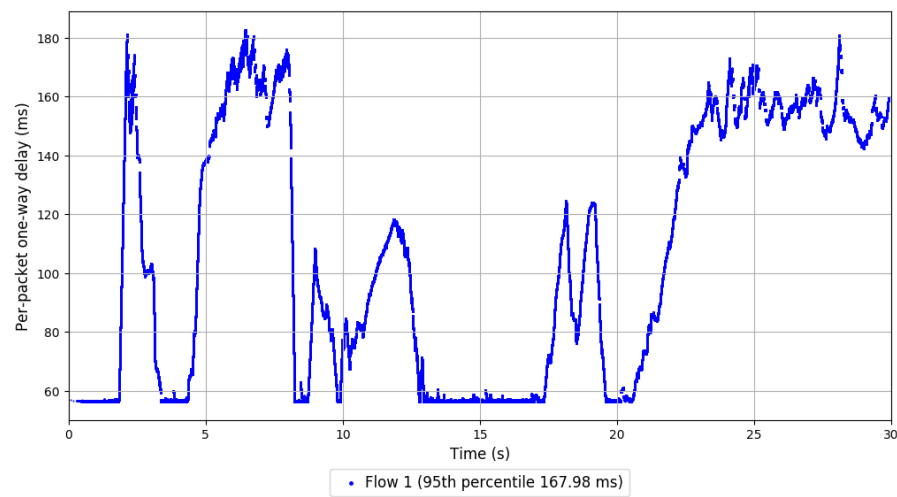
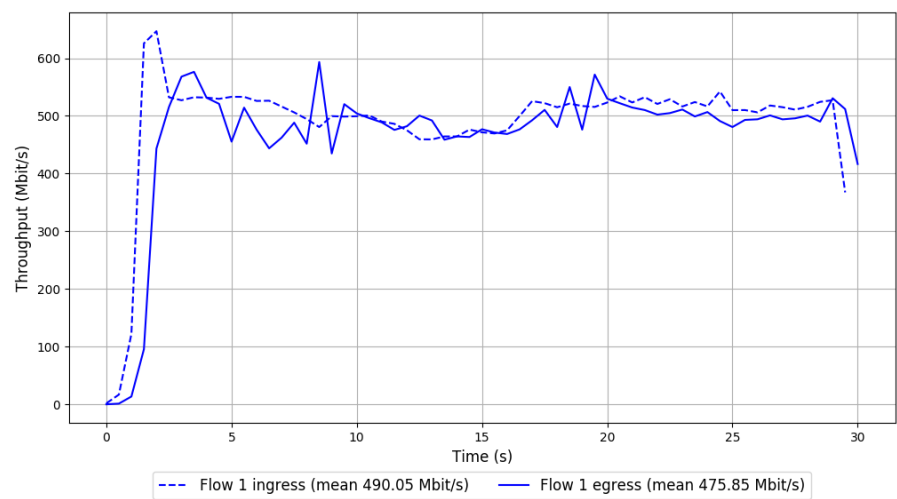


Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 20:42:09
End at: 2018-12-20 20:42:39
Local clock offset: -0.005 ms
Remote clock offset: -0.412 ms

Below is generated by plot.py at 2018-12-20 22:16:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 475.85 Mbit/s
95th percentile per-packet one-way delay: 167.982 ms
Loss rate: 2.90%
-- Flow 1:
Average throughput: 475.85 Mbit/s
95th percentile per-packet one-way delay: 167.982 ms
Loss rate: 2.90%

Run 5: Report of PCC-Allegro — Data Link

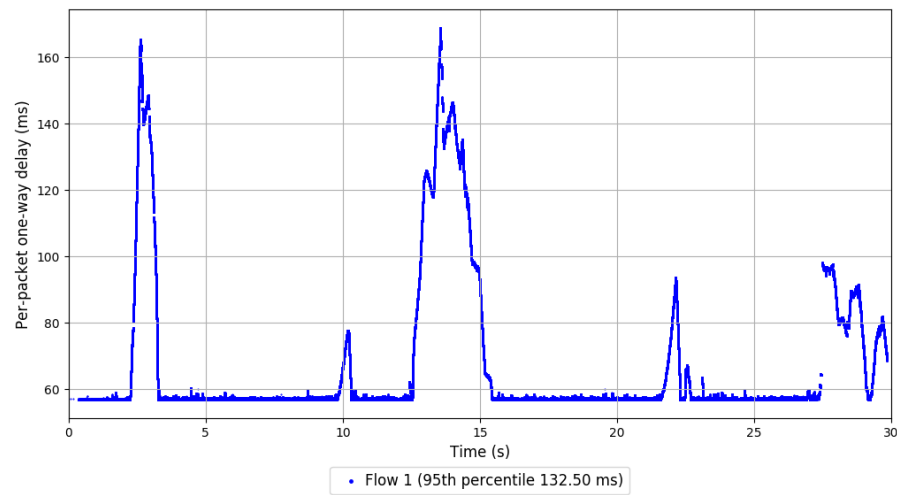
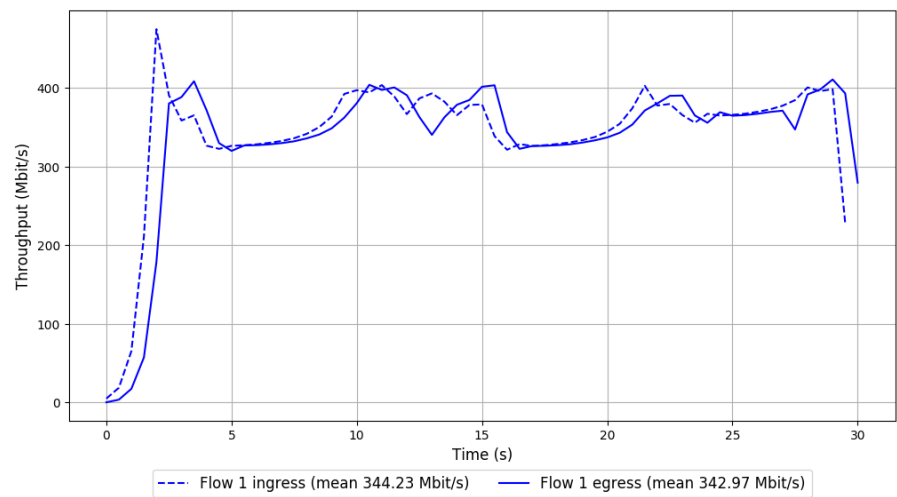


Run 1: Statistics of PCC-Expr

Start at: 2018-12-20 18:37:12
End at: 2018-12-20 18:37:42
Local clock offset: 0.115 ms
Remote clock offset: -0.337 ms

Below is generated by plot.py at 2018-12-20 22:16:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 342.97 Mbit/s
95th percentile per-packet one-way delay: 132.498 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 342.97 Mbit/s
95th percentile per-packet one-way delay: 132.498 ms
Loss rate: 0.37%

Run 1: Report of PCC-Expr — Data Link

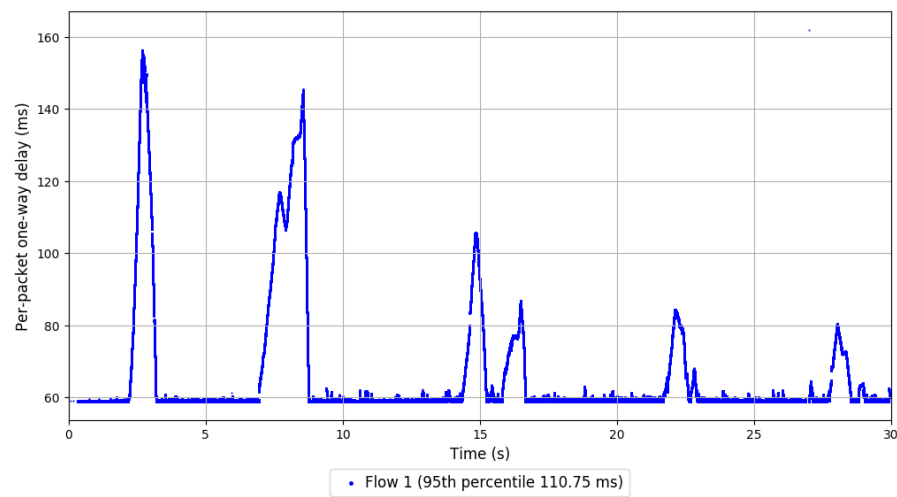
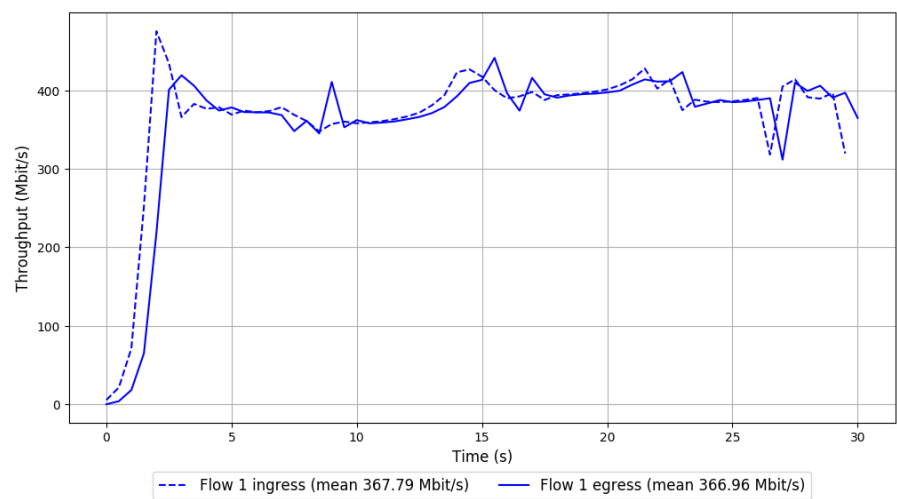


Run 2: Statistics of PCC-Expr

Start at: 2018-12-20 19:05:30
End at: 2018-12-20 19:06:00
Local clock offset: -1.709 ms
Remote clock offset: -0.053 ms

Below is generated by plot.py at 2018-12-20 22:18:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 366.96 Mbit/s
95th percentile per-packet one-way delay: 110.750 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 366.96 Mbit/s
95th percentile per-packet one-way delay: 110.750 ms
Loss rate: 0.22%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-12-20 19:34:03

End at: 2018-12-20 19:34:33

Local clock offset: -0.139 ms

Remote clock offset: 0.073 ms

Below is generated by plot.py at 2018-12-20 22:20:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 349.24 Mbit/s

95th percentile per-packet one-way delay: 149.342 ms

Loss rate: 1.03%

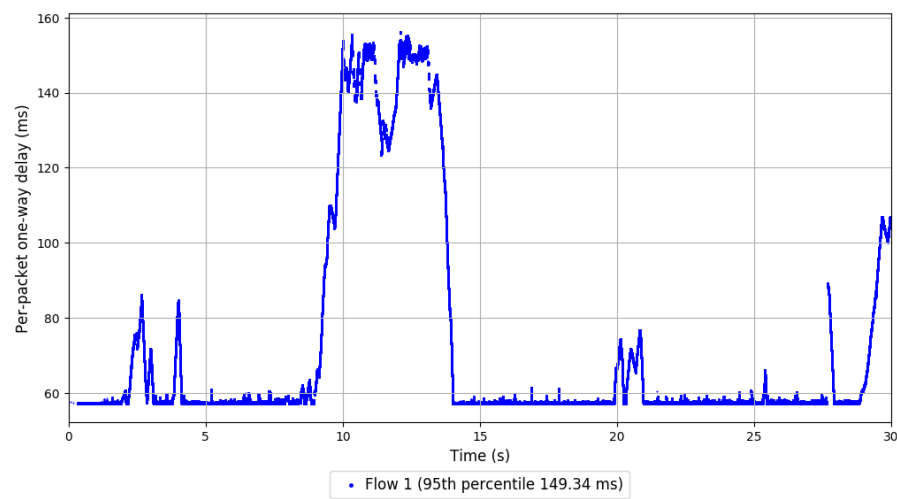
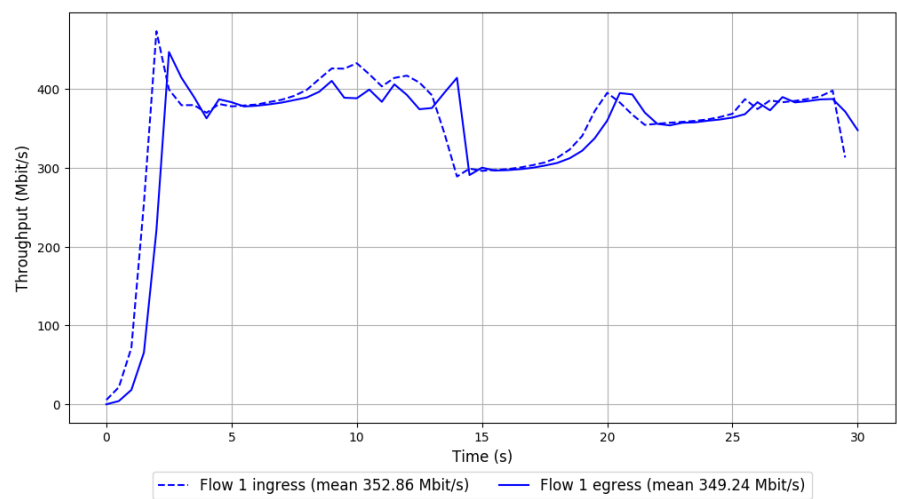
-- Flow 1:

Average throughput: 349.24 Mbit/s

95th percentile per-packet one-way delay: 149.342 ms

Loss rate: 1.03%

Run 3: Report of PCC-Expr — Data Link

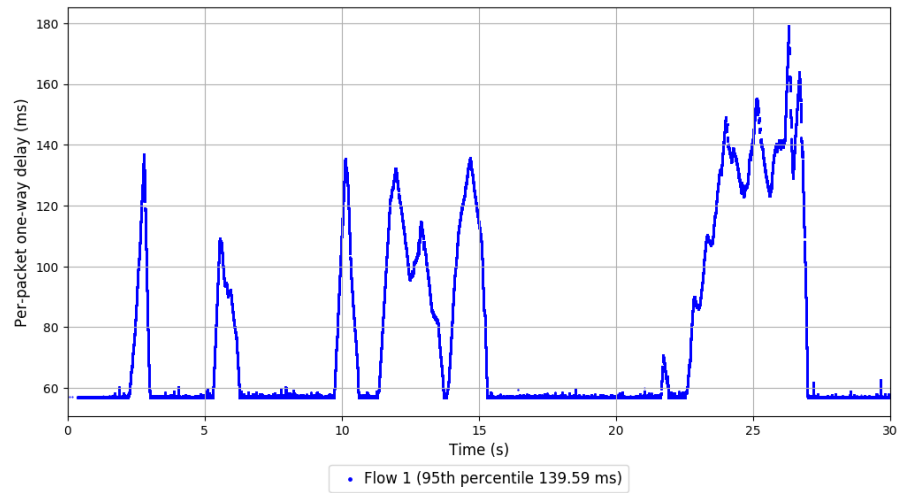
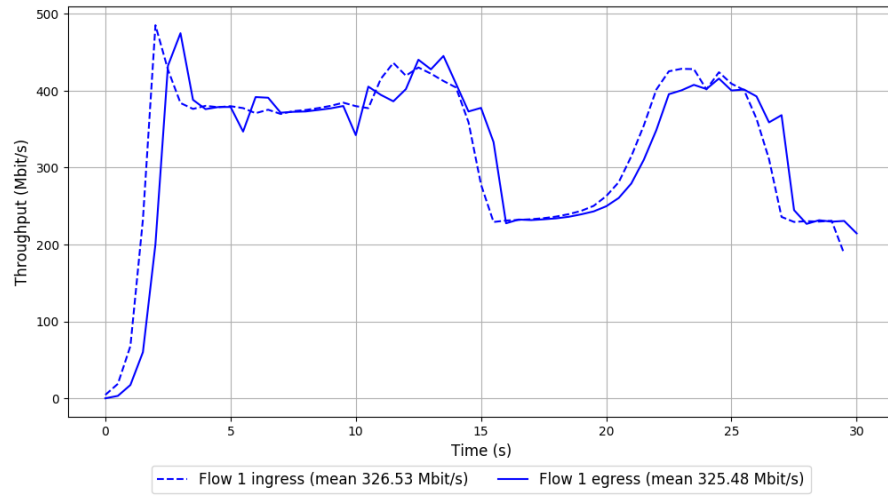


Run 4: Statistics of PCC-Expr

Start at: 2018-12-20 20:03:01
End at: 2018-12-20 20:03:31
Local clock offset: -0.103 ms
Remote clock offset: -0.236 ms

Below is generated by plot.py at 2018-12-20 22:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 325.48 Mbit/s
95th percentile per-packet one-way delay: 139.589 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 325.48 Mbit/s
95th percentile per-packet one-way delay: 139.589 ms
Loss rate: 0.32%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-12-20 20:32:28

End at: 2018-12-20 20:32:58

Local clock offset: -0.036 ms

Remote clock offset: -0.14 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 354.65 Mbit/s

95th percentile per-packet one-way delay: 164.904 ms

Loss rate: 9.54%

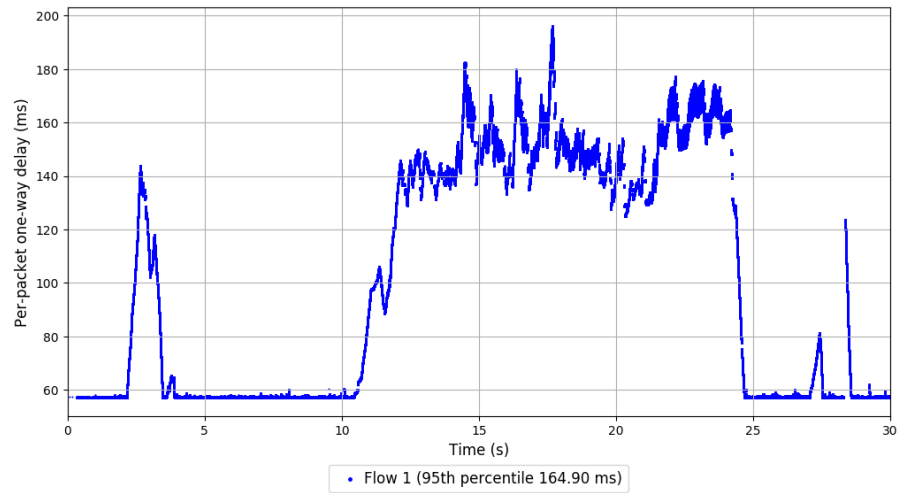
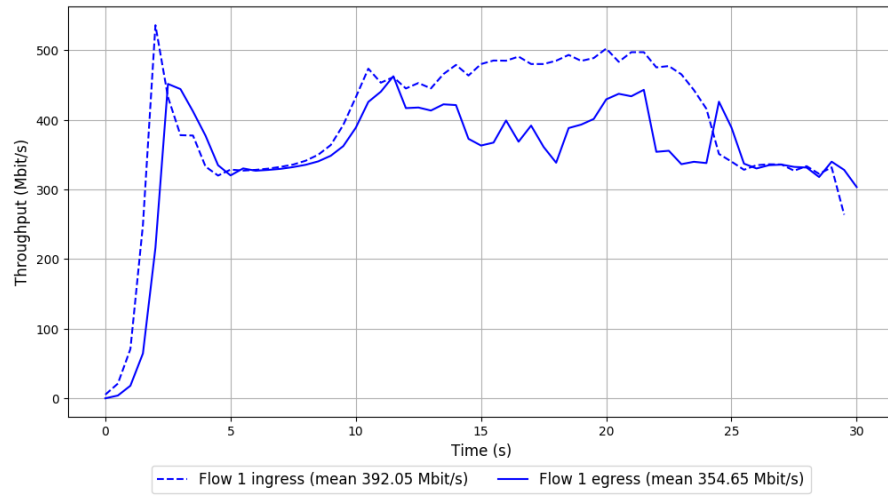
-- Flow 1:

Average throughput: 354.65 Mbit/s

95th percentile per-packet one-way delay: 164.904 ms

Loss rate: 9.54%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

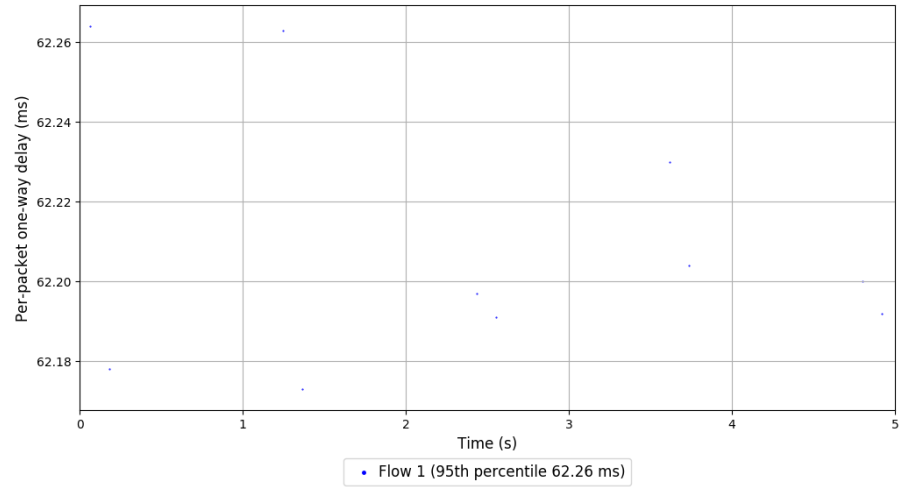
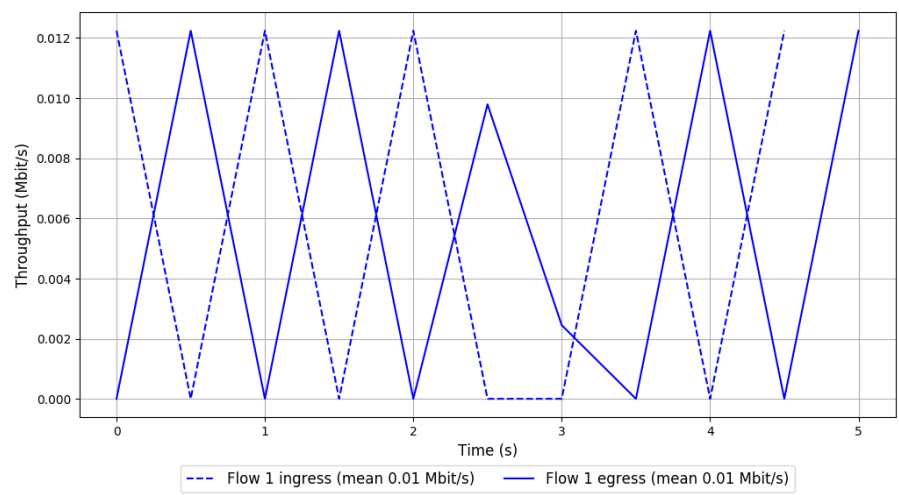
Start at: 2018-12-20 18:28:19

End at: 2018-12-20 18:28:49

Local clock offset: -1.984 ms

Remote clock offset: -0.201 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-12-20 18:56:32

End at: 2018-12-20 18:57:02

Local clock offset: -0.019 ms

Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.67 Mbit/s

95th percentile per-packet one-way delay: 57.096 ms

Loss rate: 0.00%

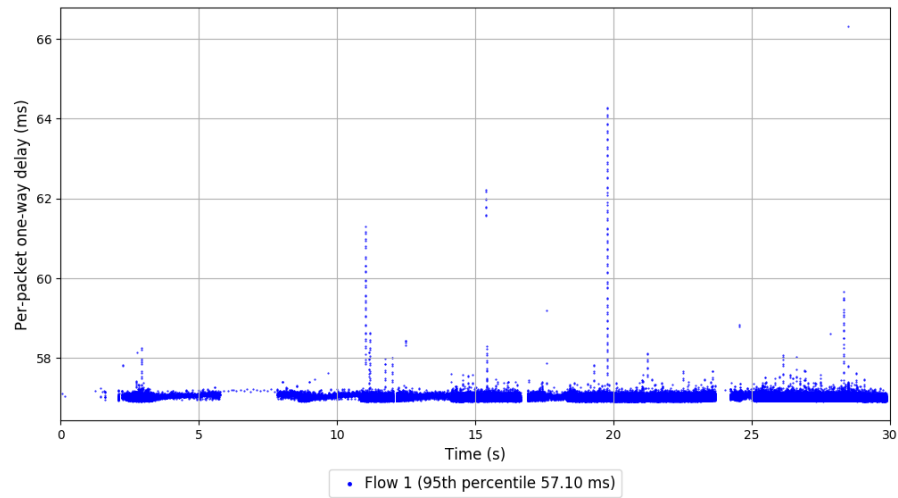
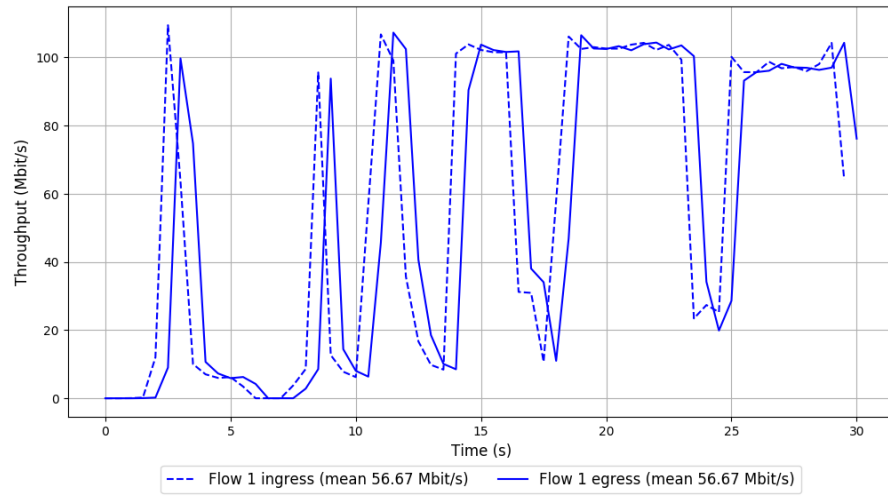
-- Flow 1:

Average throughput: 56.67 Mbit/s

95th percentile per-packet one-way delay: 57.096 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-20 19:25:06

End at: 2018-12-20 19:25:36

Local clock offset: -0.131 ms

Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 67.73 Mbit/s

95th percentile per-packet one-way delay: 56.972 ms

Loss rate: 0.00%

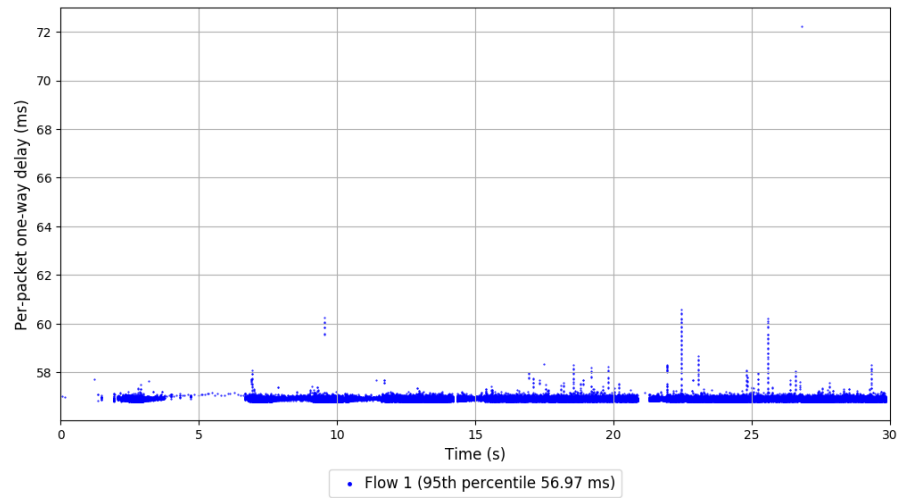
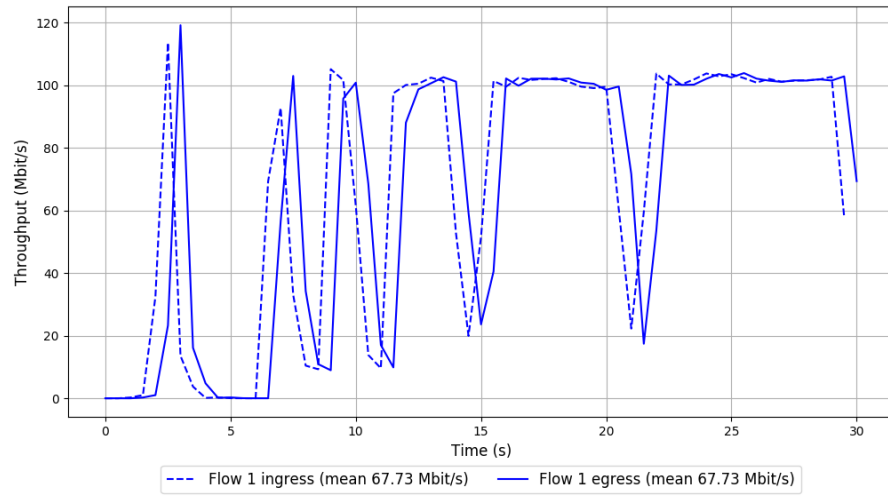
-- Flow 1:

Average throughput: 67.73 Mbit/s

95th percentile per-packet one-way delay: 56.972 ms

Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-12-20 19:53:59

End at: 2018-12-20 19:54:29

Local clock offset: 1.6 ms

Remote clock offset: -0.463 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.07 Mbit/s

95th percentile per-packet one-way delay: 55.157 ms

Loss rate: 0.00%

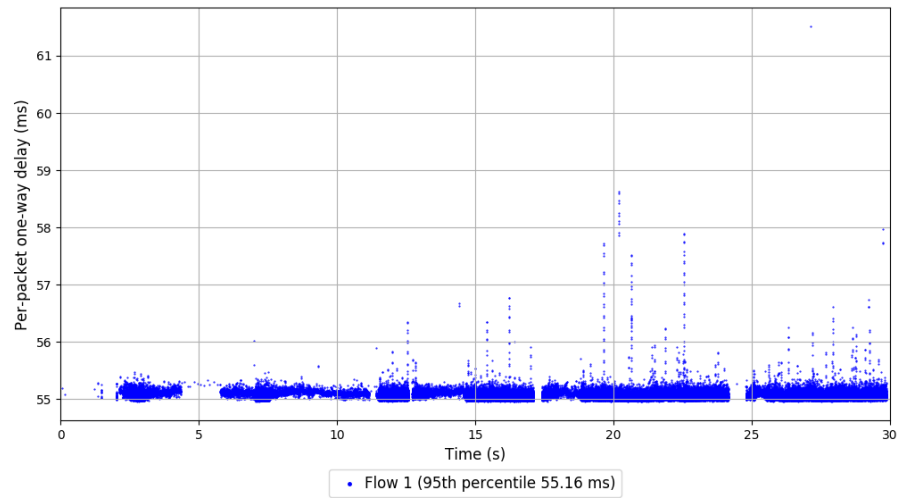
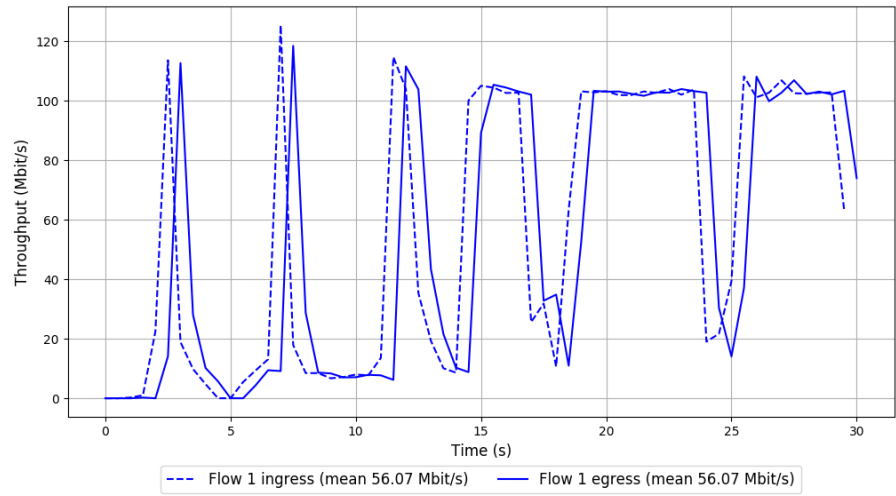
-- Flow 1:

Average throughput: 56.07 Mbit/s

95th percentile per-packet one-way delay: 55.157 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 20:23:11

End at: 2018-12-20 20:23:41

Local clock offset: 0.045 ms

Remote clock offset: -0.048 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.12 Mbit/s

95th percentile per-packet one-way delay: 56.864 ms

Loss rate: 0.00%

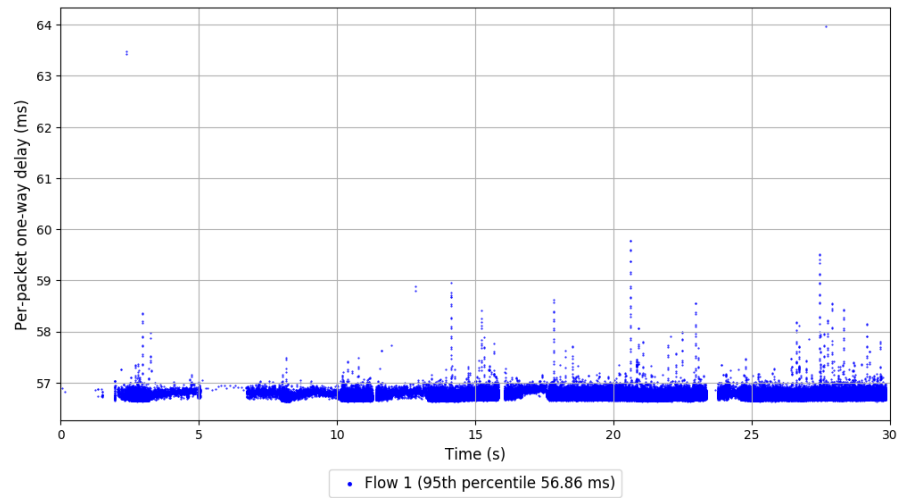
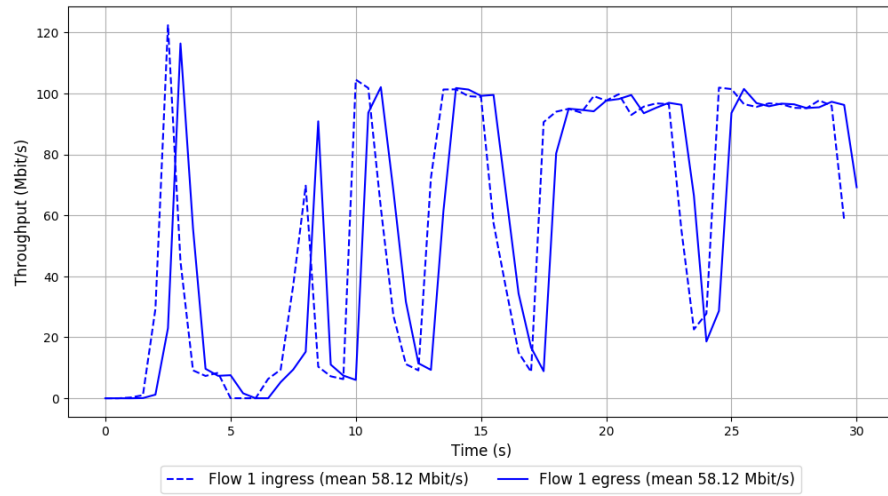
-- Flow 1:

Average throughput: 58.12 Mbit/s

95th percentile per-packet one-way delay: 56.864 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

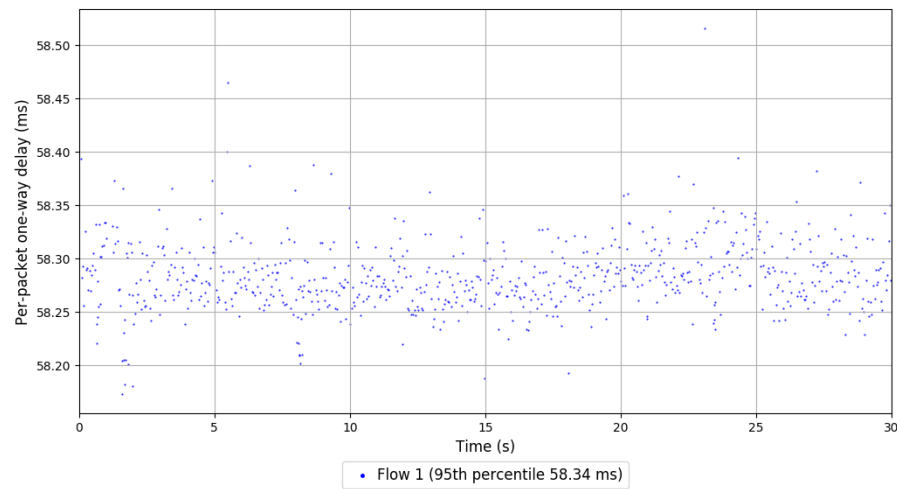
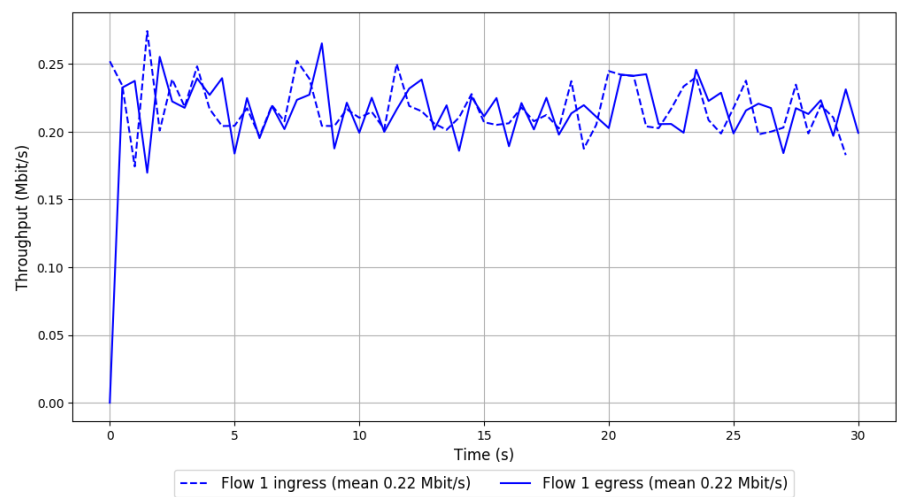


Run 1: Statistics of SCReAM

Start at: 2018-12-20 18:26:00
End at: 2018-12-20 18:26:30
Local clock offset: -1.505 ms
Remote clock offset: -0.197 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.336 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.336 ms
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link

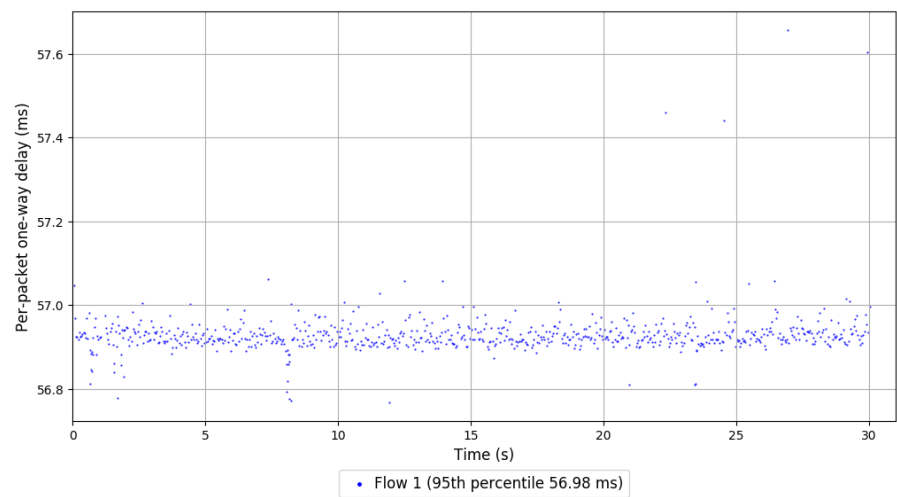
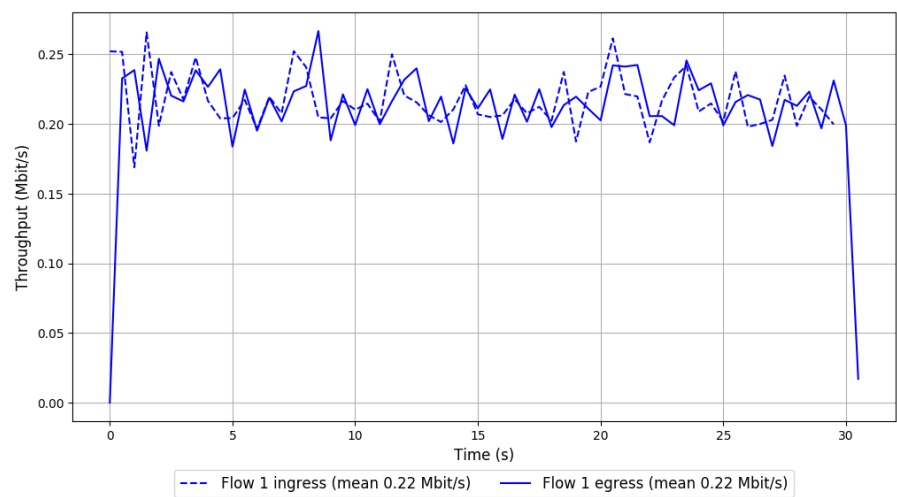


Run 2: Statistics of SCReAM

Start at: 2018-12-20 18:54:13
End at: 2018-12-20 18:54:43
Local clock offset: 0.141 ms
Remote clock offset: -0.006 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.982 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.982 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

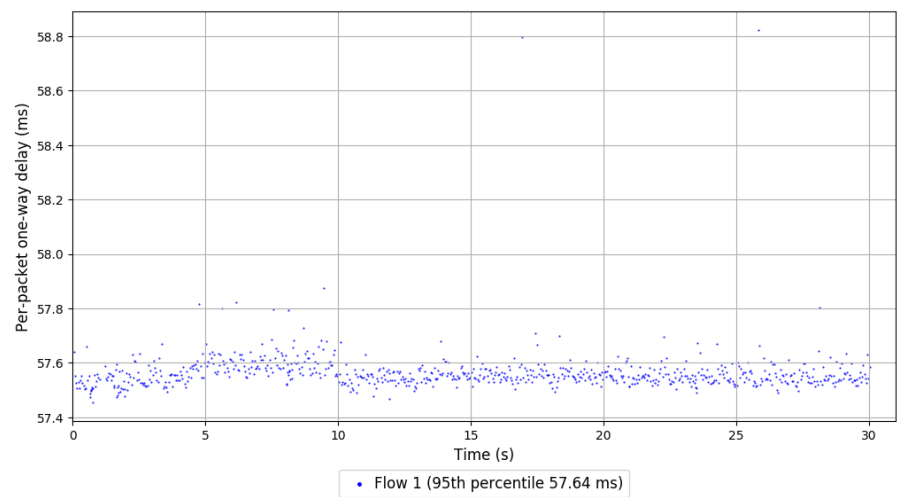
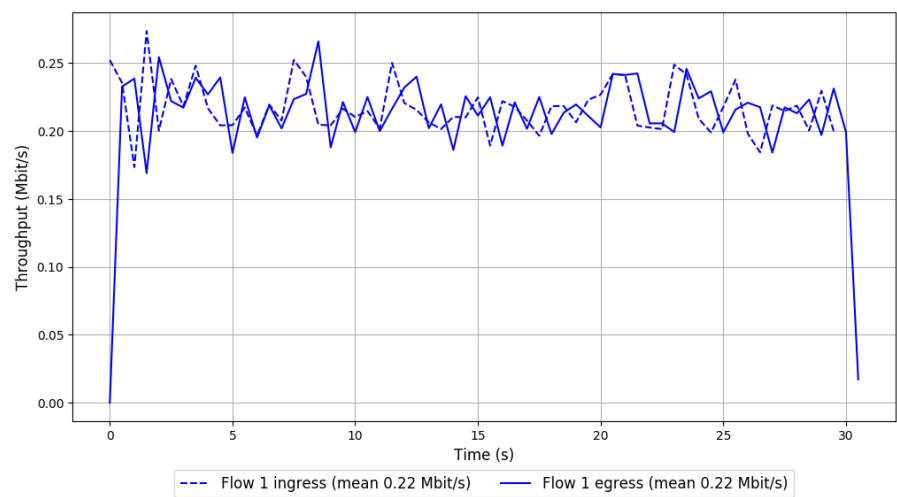


Run 3: Statistics of SCReAM

Start at: 2018-12-20 19:22:47
End at: 2018-12-20 19:23:17
Local clock offset: -0.216 ms
Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.639 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.639 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-12-20 19:51:40

End at: 2018-12-20 19:52:10

Local clock offset: 0.108 ms

Remote clock offset: -0.21 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 57.000 ms

Loss rate: 0.00%

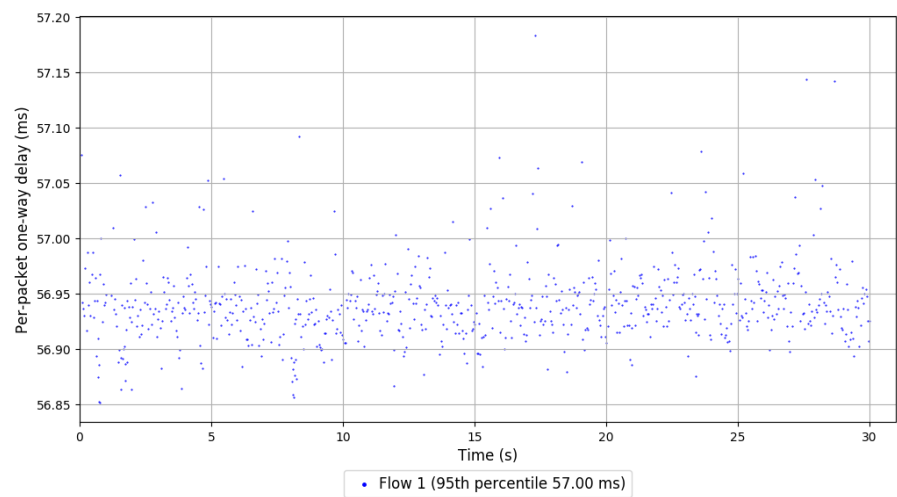
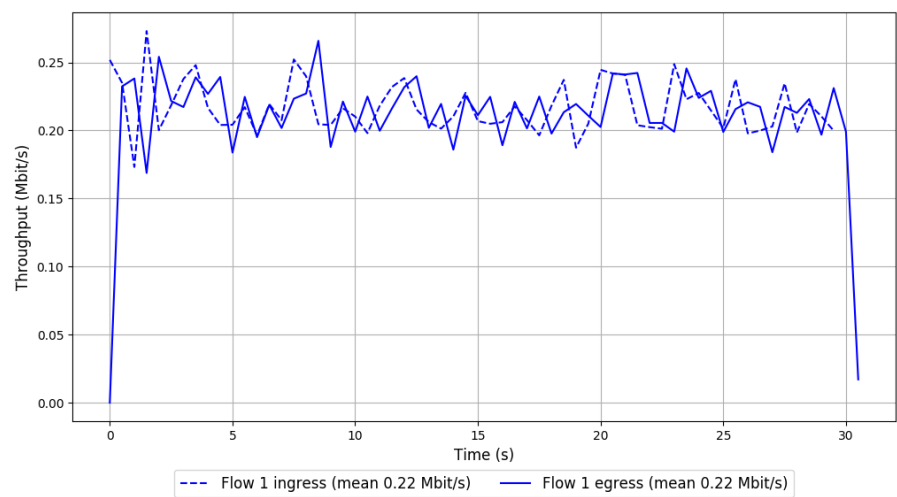
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 57.000 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link

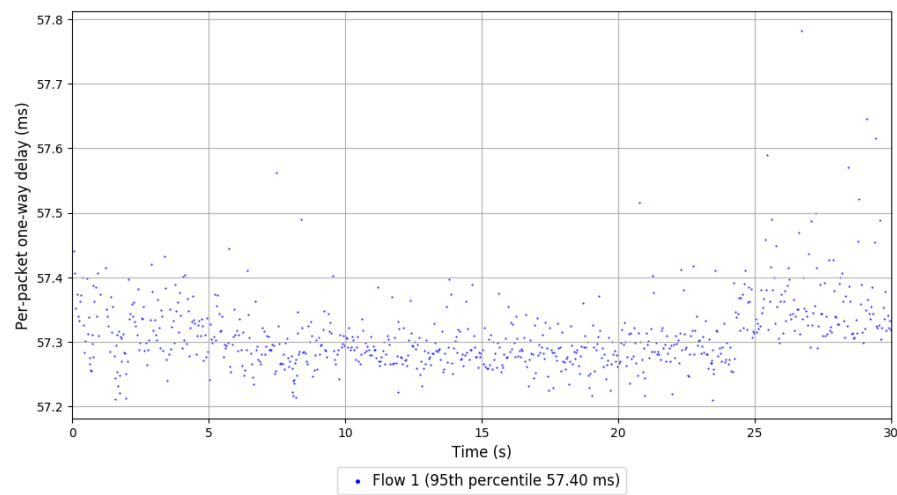
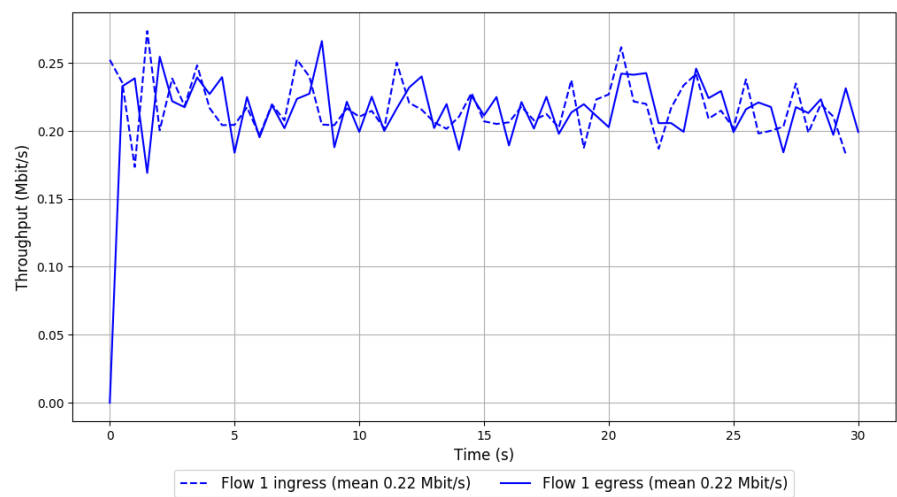


Run 5: Statistics of SCReAM

Start at: 2018-12-20 20:20:51
End at: 2018-12-20 20:21:21
Local clock offset: -0.16 ms
Remote clock offset: -0.336 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.402 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.402 ms
Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-12-20 18:45:08

End at: 2018-12-20 18:45:38

Local clock offset: -0.134 ms

Remote clock offset: 0.052 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.90 Mbit/s

95th percentile per-packet one-way delay: 57.842 ms

Loss rate: 0.00%

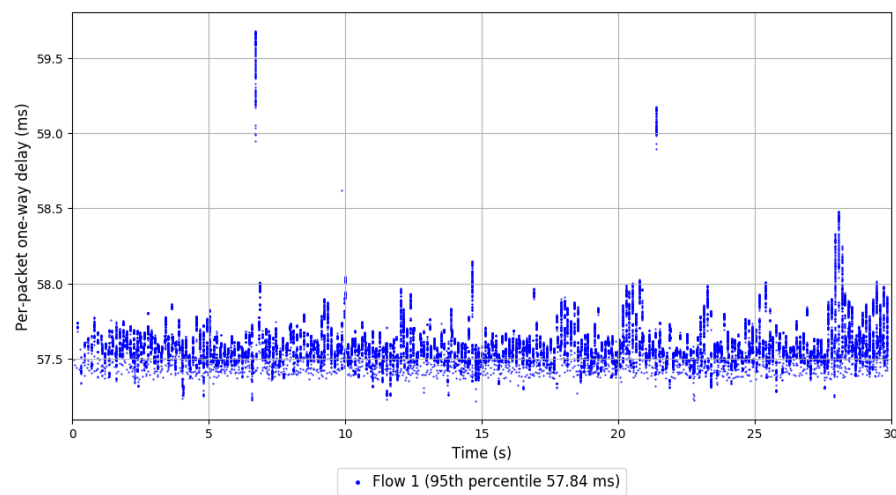
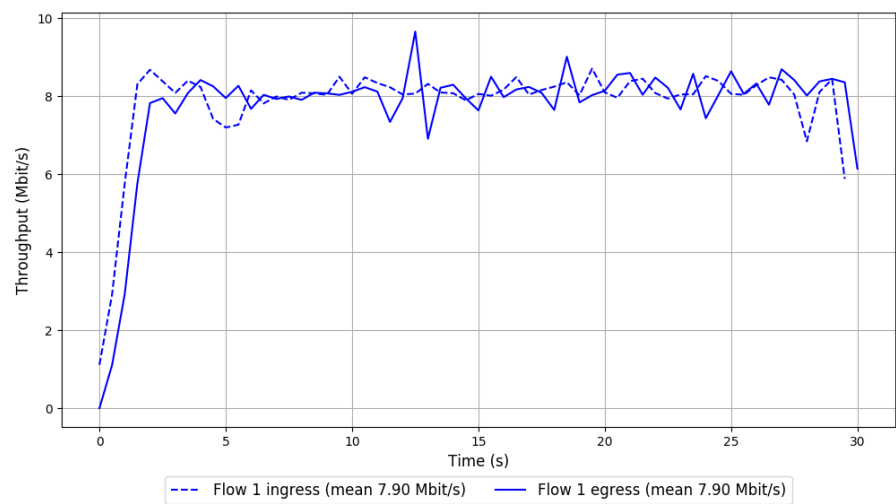
-- Flow 1:

Average throughput: 7.90 Mbit/s

95th percentile per-packet one-way delay: 57.842 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

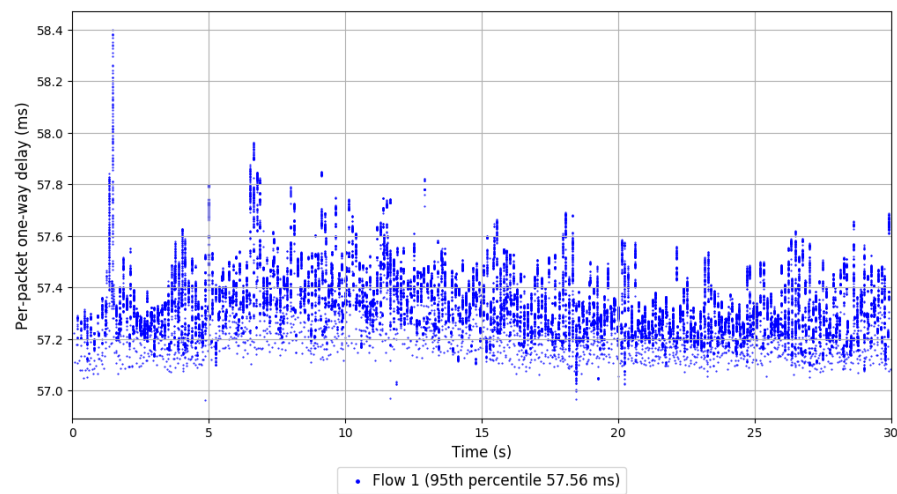
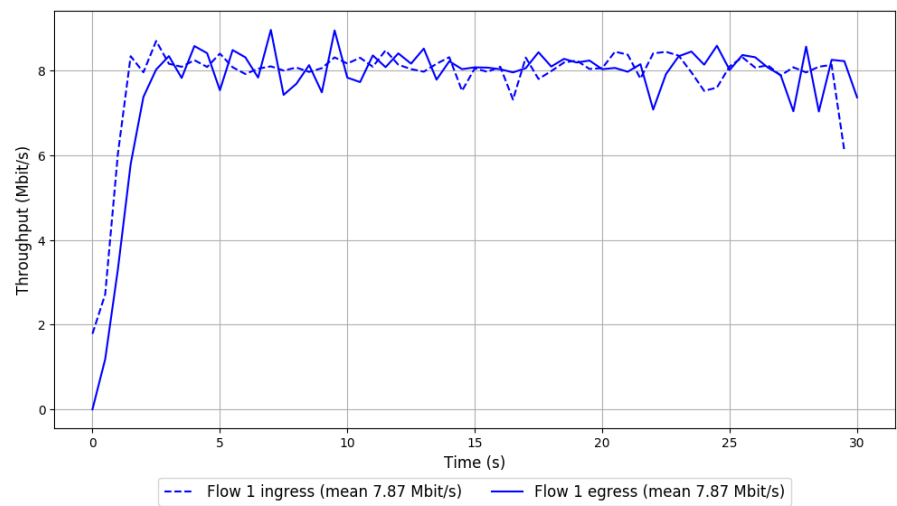


Run 2: Statistics of Sprout

Start at: 2018-12-20 19:13:49
End at: 2018-12-20 19:14:19
Local clock offset: -0.103 ms
Remote clock offset: -0.066 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 57.565 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 57.565 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-12-20 19:42:25

End at: 2018-12-20 19:42:55

Local clock offset: -0.162 ms

Remote clock offset: 0.263 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 58.148 ms

Loss rate: 0.00%

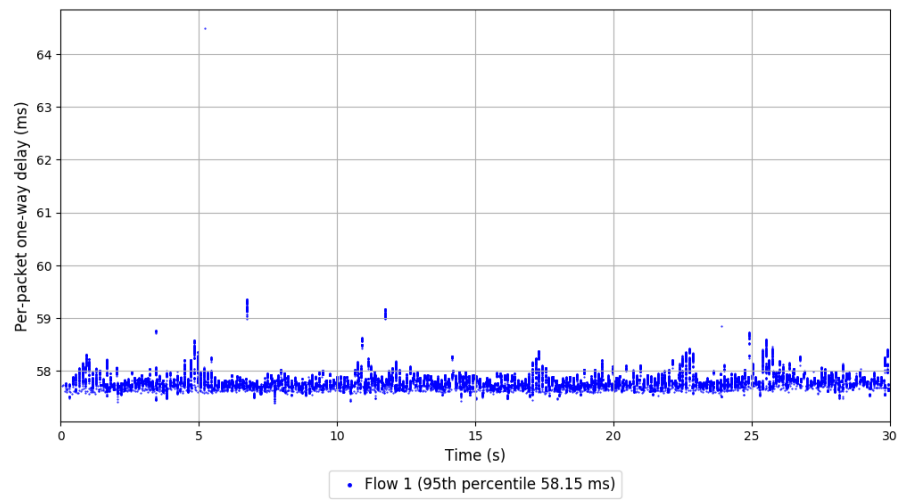
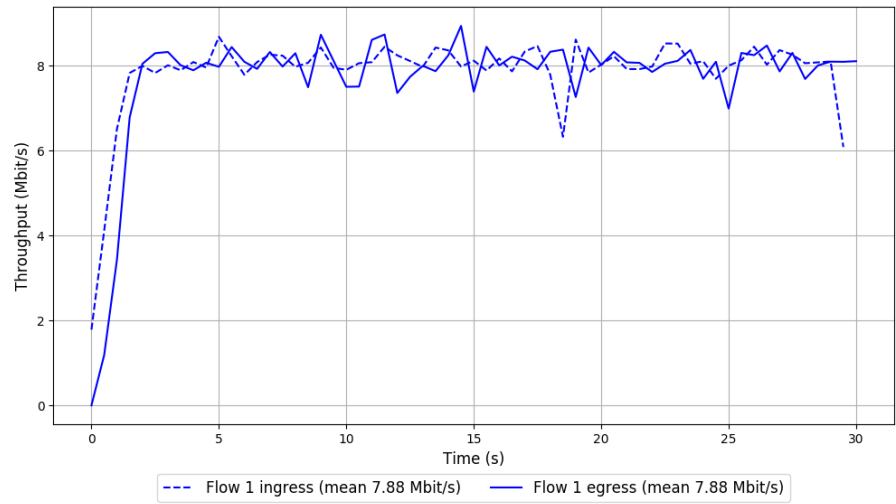
-- Flow 1:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 58.148 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

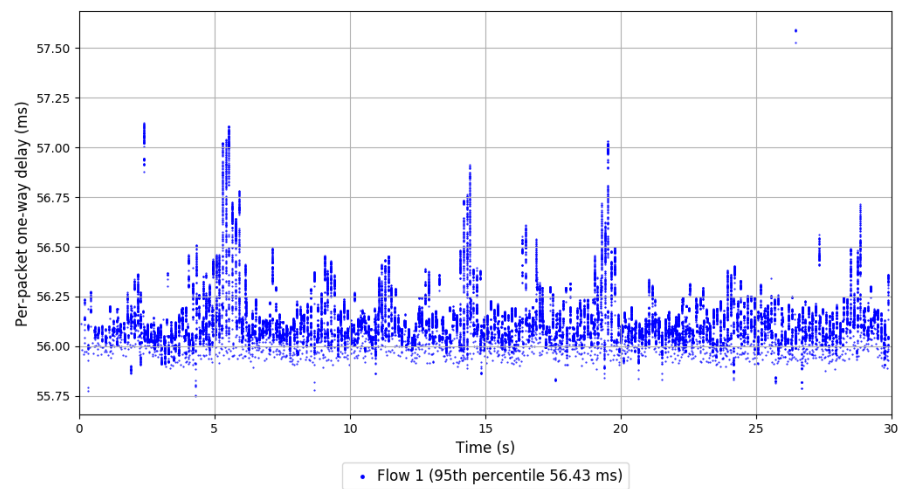
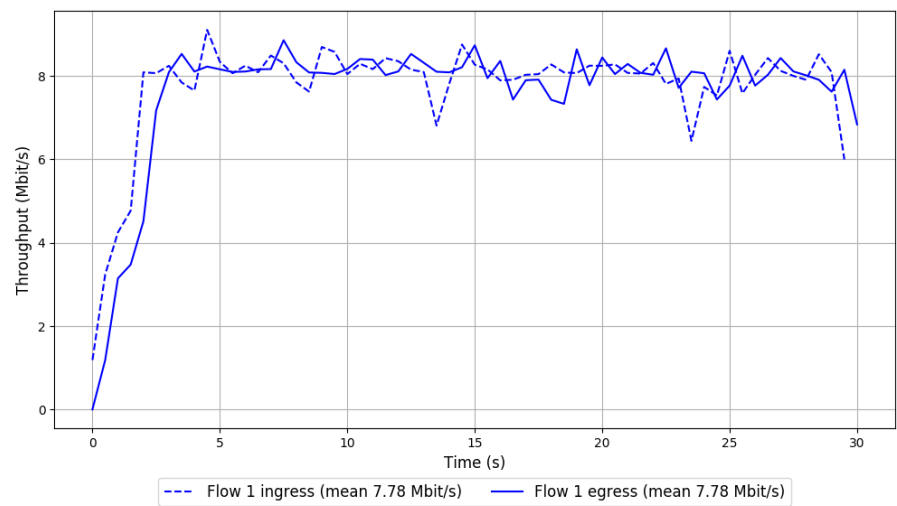


Run 4: Statistics of Sprout

Start at: 2018-12-20 20:11:32
End at: 2018-12-20 20:12:02
Local clock offset: 1.488 ms
Remote clock offset: -0.113 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 56.427 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 56.427 ms
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link

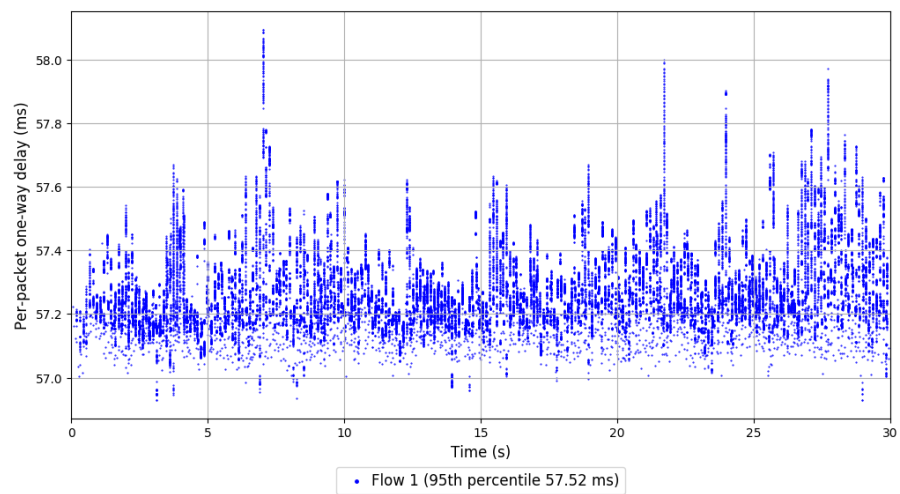
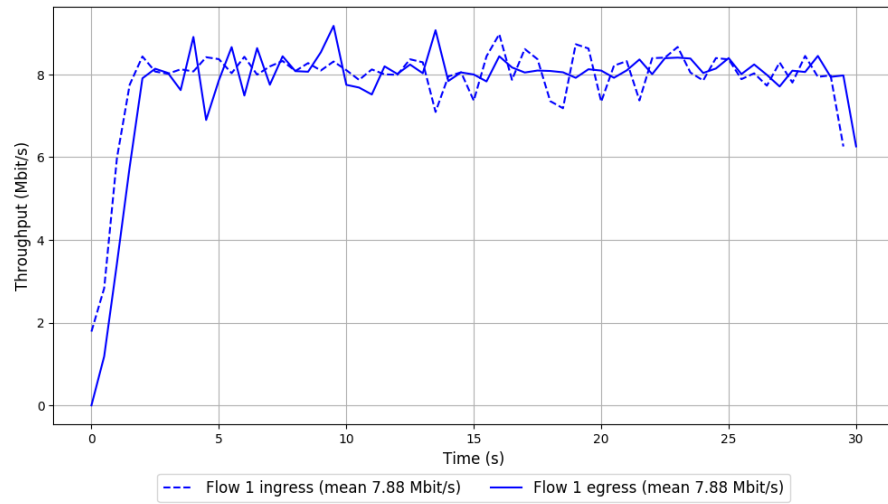


Run 5: Statistics of Sprout

Start at: 2018-12-20 20:41:00
End at: 2018-12-20 20:41:30
Local clock offset: -0.174 ms
Remote clock offset: -0.151 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.88 Mbit/s
95th percentile per-packet one-way delay: 57.522 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.88 Mbit/s
95th percentile per-packet one-way delay: 57.522 ms
Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

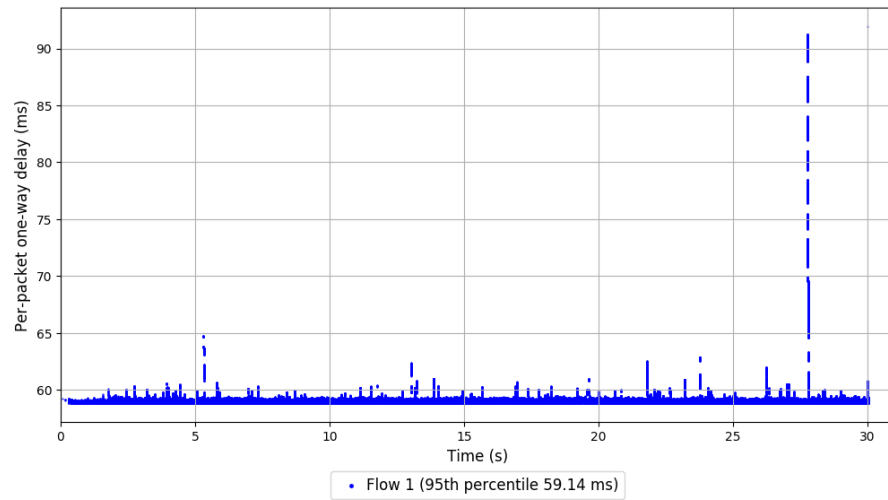
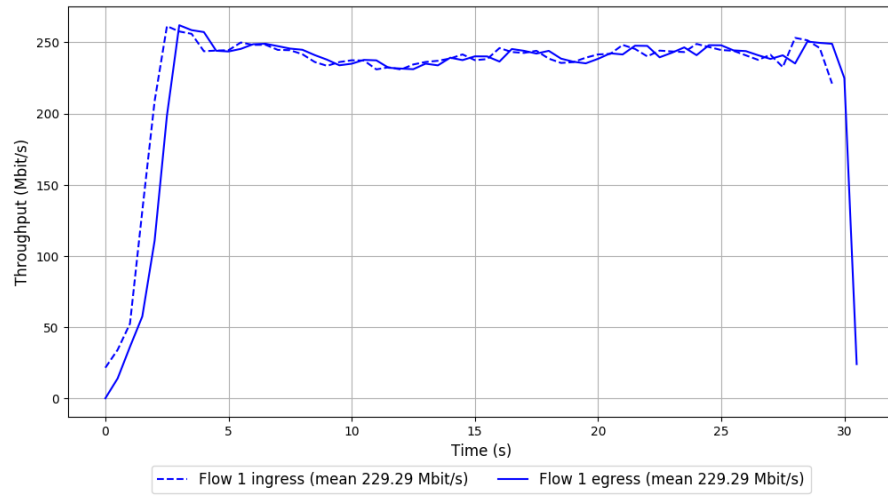



```
Run 1: Statistics of TaoVA-100x

Start at: 2018-12-20 18:40:27
End at: 2018-12-20 18:40:58
Local clock offset: -2.176 ms
Remote clock offset: -0.204 ms

# Below is generated by plot.py at 2018-12-20 22:27:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.29 Mbit/s
95th percentile per-packet one-way delay: 59.139 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 229.29 Mbit/s
95th percentile per-packet one-way delay: 59.139 ms
Loss rate: 0.00%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-12-20 19:08:43

End at: 2018-12-20 19:09:13

Local clock offset: 1.559 ms

Remote clock offset: 0.057 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 228.45 Mbit/s

95th percentile per-packet one-way delay: 55.642 ms

Loss rate: 0.00%

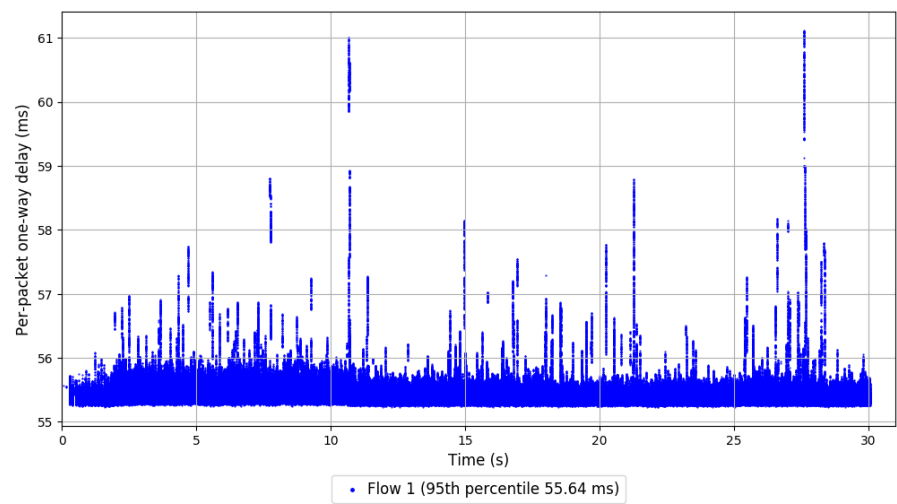
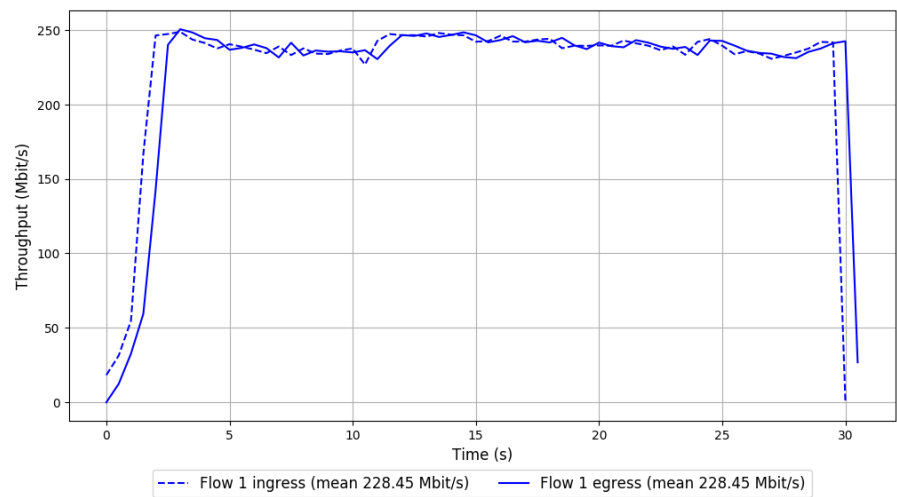
-- Flow 1:

Average throughput: 228.45 Mbit/s

95th percentile per-packet one-way delay: 55.642 ms

Loss rate: 0.00%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-12-20 19:37:23

End at: 2018-12-20 19:37:53

Local clock offset: -0.128 ms

Remote clock offset: -0.07 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 228.75 Mbit/s

95th percentile per-packet one-way delay: 57.219 ms

Loss rate: 0.00%

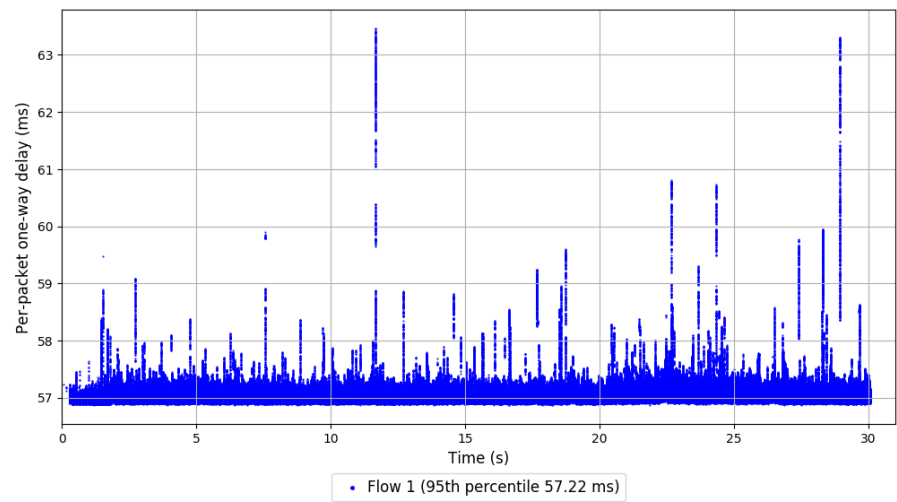
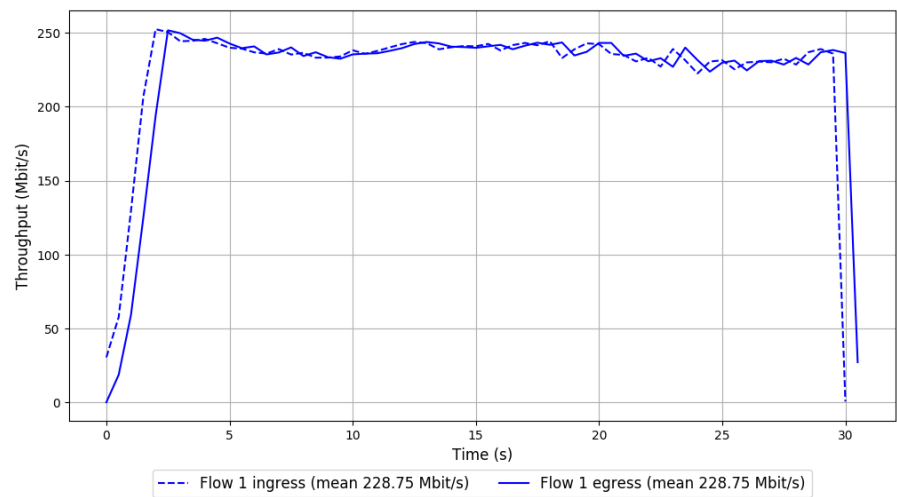
-- Flow 1:

Average throughput: 228.75 Mbit/s

95th percentile per-packet one-way delay: 57.219 ms

Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-12-20 20:06:23

End at: 2018-12-20 20:06:53

Local clock offset: 1.75 ms

Remote clock offset: -0.19 ms

Below is generated by plot.py at 2018-12-20 22:27:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 237.68 Mbit/s

95th percentile per-packet one-way delay: 55.696 ms

Loss rate: 0.00%

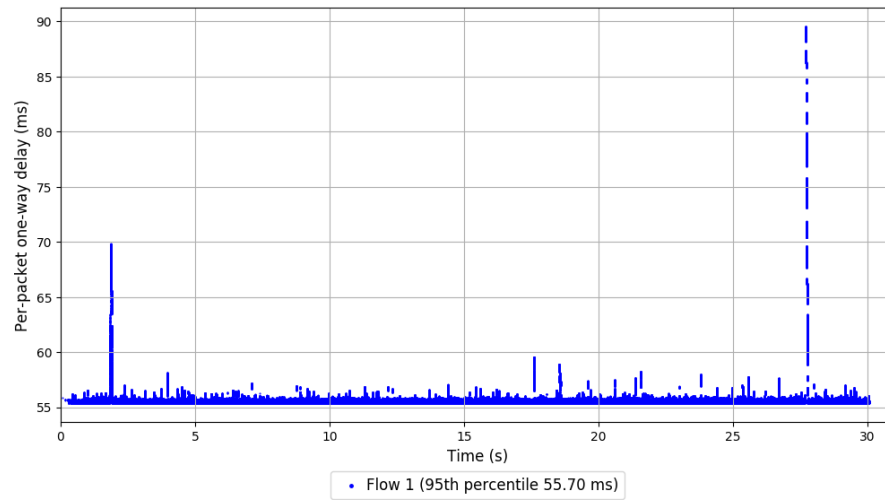
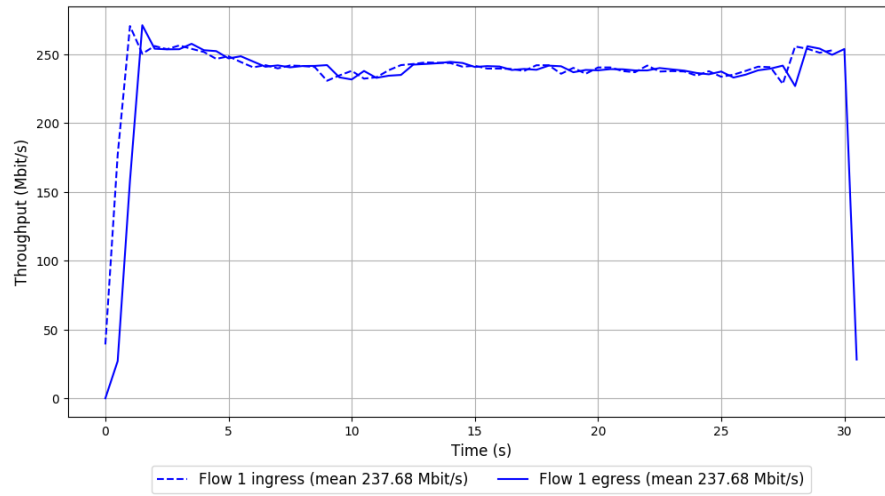
-- Flow 1:

Average throughput: 237.68 Mbit/s

95th percentile per-packet one-way delay: 55.696 ms

Loss rate: 0.00%

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

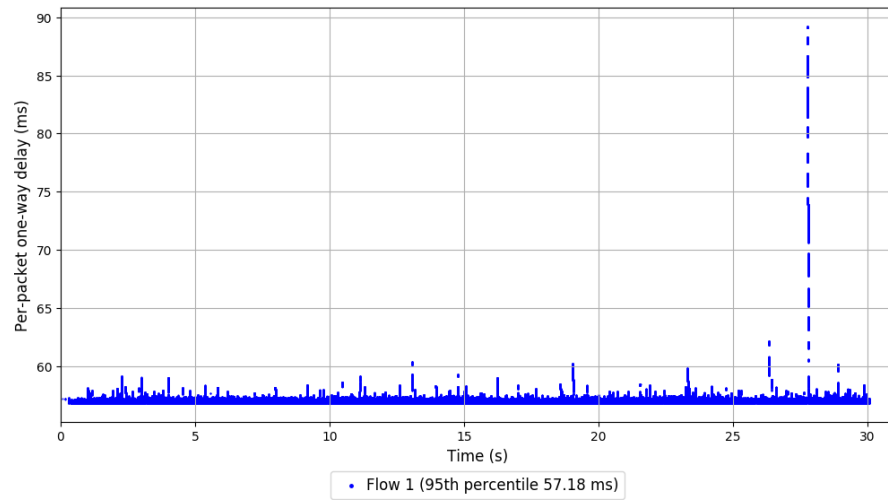
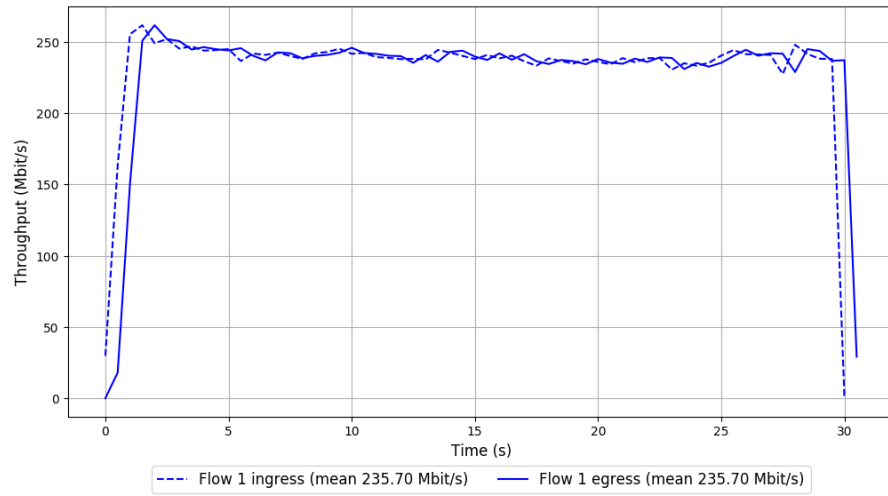


Run 5: Statistics of TaoVA-100x

Start at: 2018-12-20 20:35:46
End at: 2018-12-20 20:36:16
Local clock offset: -0.359 ms
Remote clock offset: -0.117 ms

Below is generated by plot.py at 2018-12-20 22:27:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 235.70 Mbit/s
95th percentile per-packet one-way delay: 57.176 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 235.70 Mbit/s
95th percentile per-packet one-way delay: 57.176 ms
Loss rate: 0.00%

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

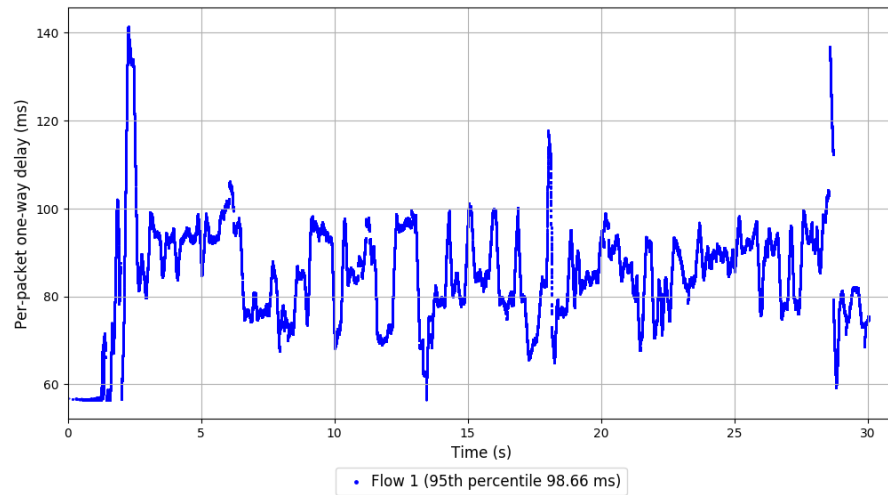
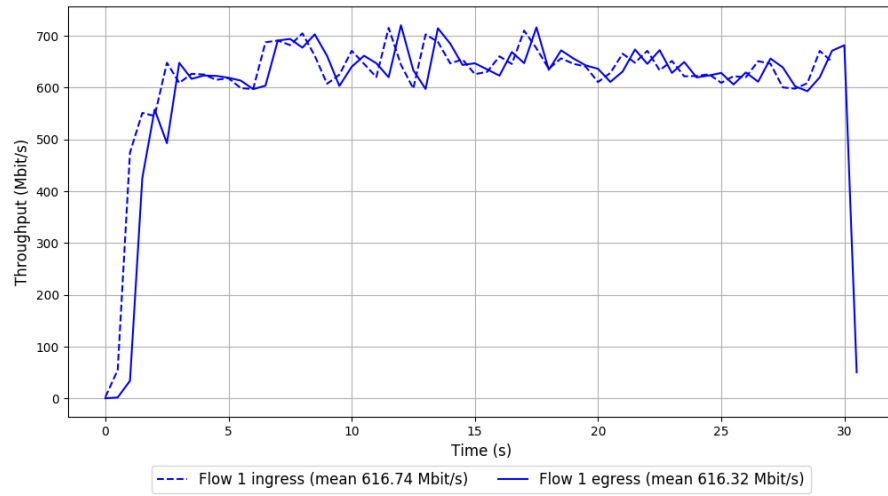


Run 1: Statistics of TCP Vegas

Start at: 2018-12-20 18:22:59
End at: 2018-12-20 18:23:29
Local clock offset: -0.158 ms
Remote clock offset: -0.454 ms

Below is generated by plot.py at 2018-12-20 22:33:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 616.32 Mbit/s
95th percentile per-packet one-way delay: 98.659 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 616.32 Mbit/s
95th percentile per-packet one-way delay: 98.659 ms
Loss rate: 0.07%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-12-20 18:51:12

End at: 2018-12-20 18:51:42

Local clock offset: 1.814 ms

Remote clock offset: 0.026 ms

Below is generated by plot.py at 2018-12-20 22:36:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 620.82 Mbit/s

95th percentile per-packet one-way delay: 89.556 ms

Loss rate: 0.10%

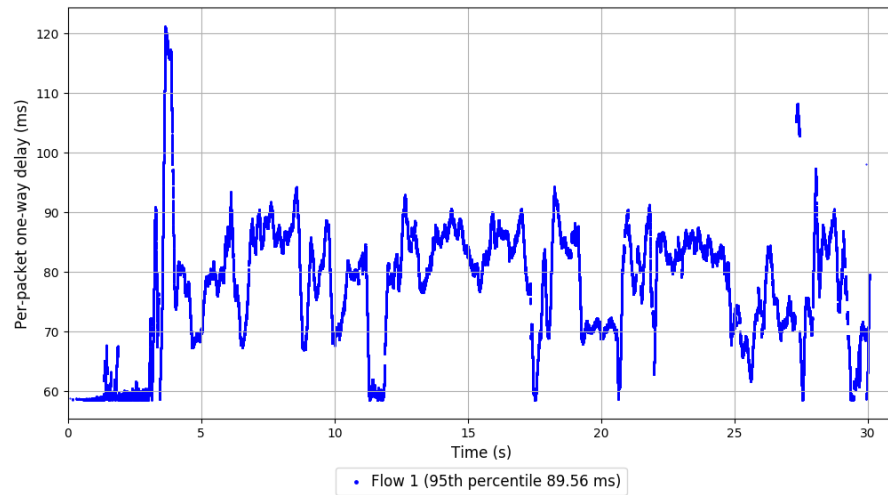
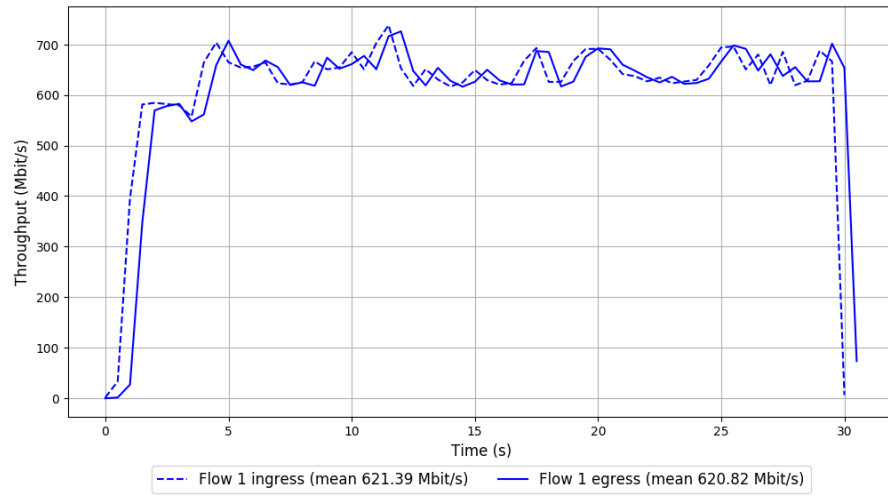
-- Flow 1:

Average throughput: 620.82 Mbit/s

95th percentile per-packet one-way delay: 89.556 ms

Loss rate: 0.10%

Run 2: Report of TCP Vegas — Data Link

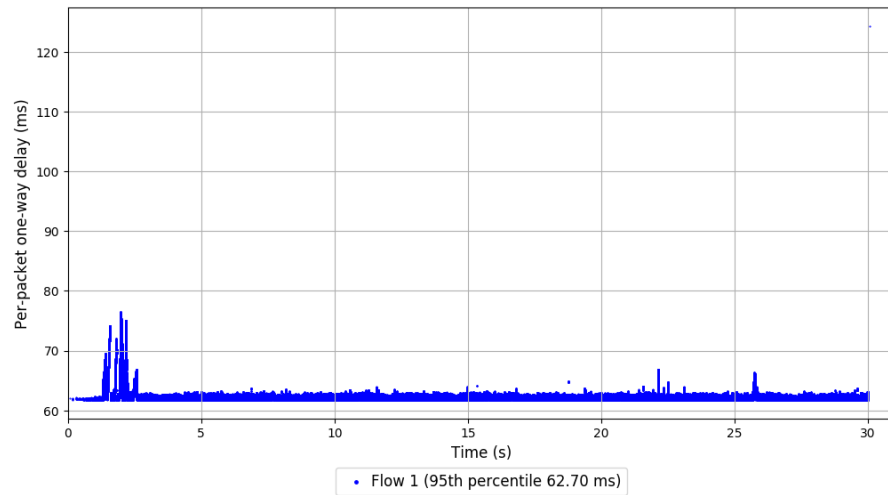
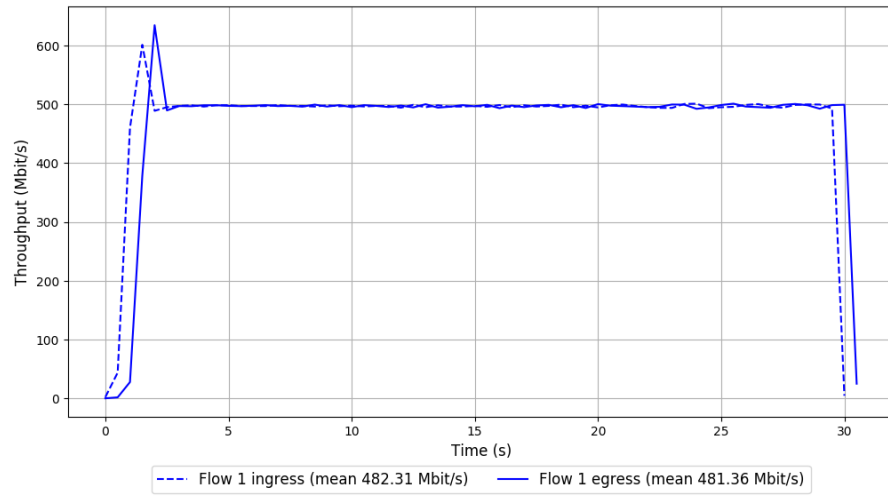


Run 3: Statistics of TCP Vegas

Start at: 2018-12-20 19:19:54
End at: 2018-12-20 19:20:24
Local clock offset: -1.788 ms
Remote clock offset: -0.241 ms

Below is generated by plot.py at 2018-12-20 22:36:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 481.36 Mbit/s
95th percentile per-packet one-way delay: 62.702 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 481.36 Mbit/s
95th percentile per-packet one-way delay: 62.702 ms
Loss rate: 0.14%

Run 3: Report of TCP Vegas — Data Link

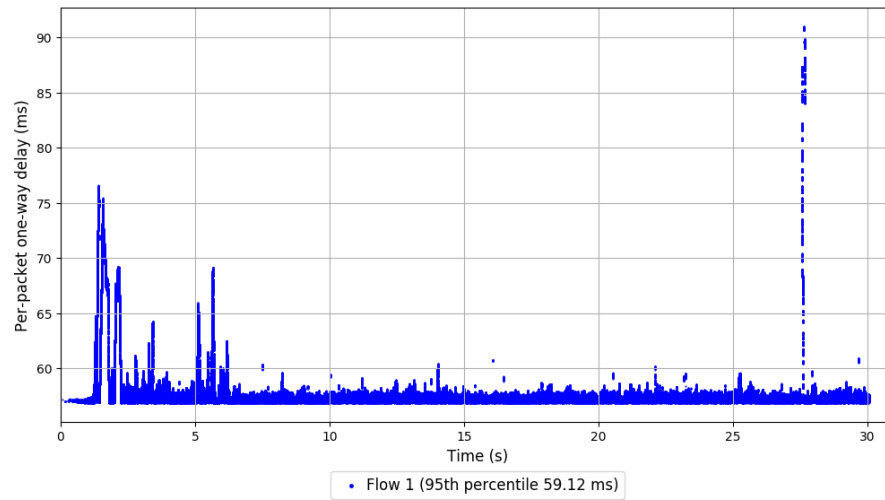
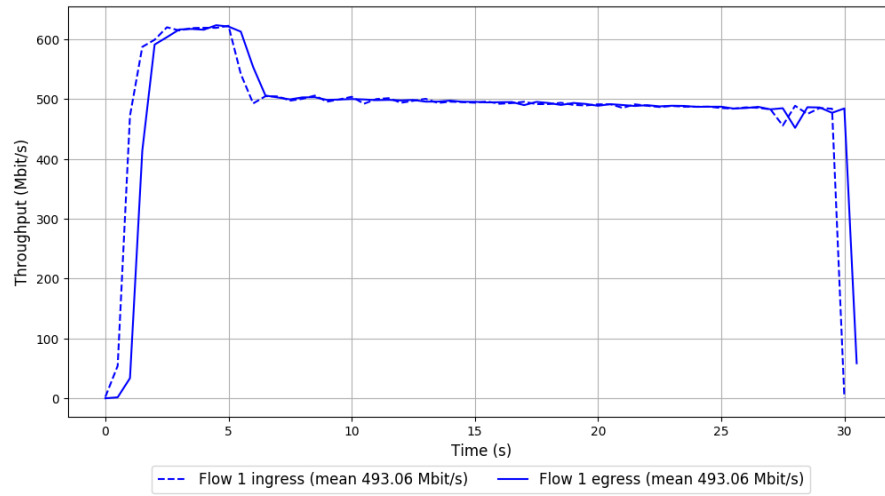


Run 4: Statistics of TCP Vegas

Start at: 2018-12-20 19:48:42
End at: 2018-12-20 19:49:12
Local clock offset: -0.14 ms
Remote clock offset: -0.178 ms

Below is generated by plot.py at 2018-12-20 22:36:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 493.06 Mbit/s
95th percentile per-packet one-way delay: 59.117 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 493.06 Mbit/s
95th percentile per-packet one-way delay: 59.117 ms
Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link

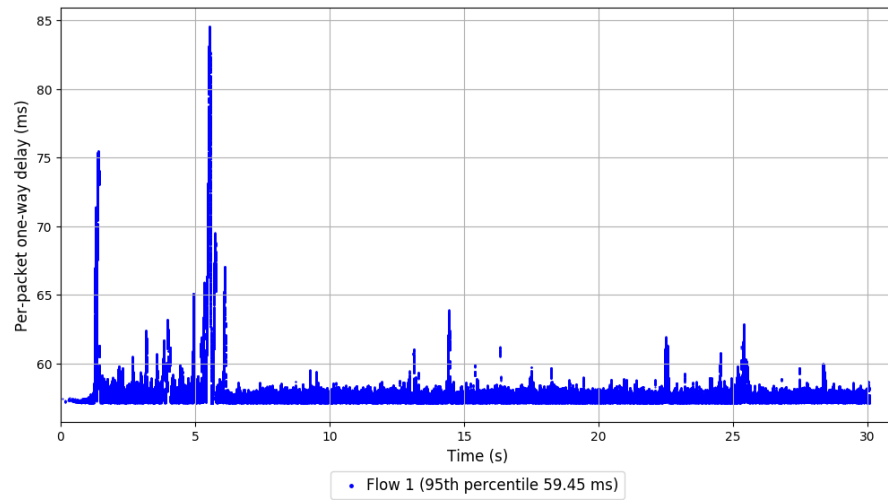
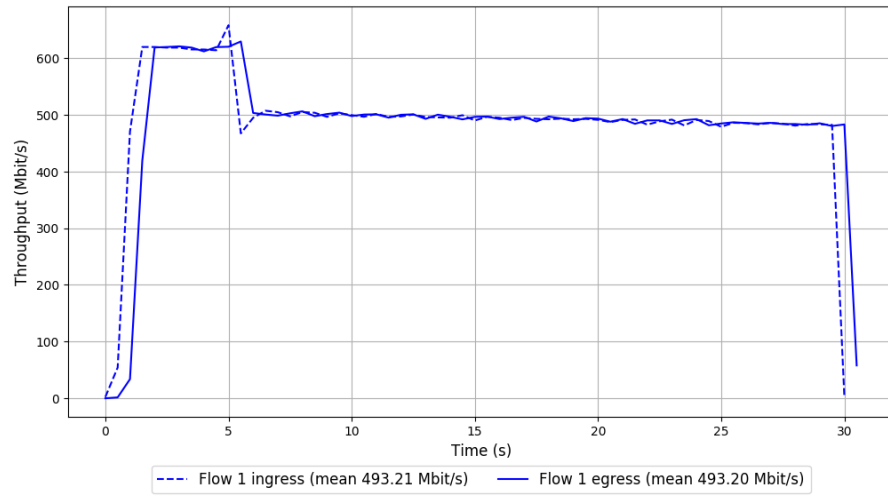


Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 20:17:49
End at: 2018-12-20 20:18:19
Local clock offset: -0.157 ms
Remote clock offset: -0.003 ms

Below is generated by plot.py at 2018-12-20 22:36:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 493.20 Mbit/s
95th percentile per-packet one-way delay: 59.451 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 493.20 Mbit/s
95th percentile per-packet one-way delay: 59.451 ms
Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link

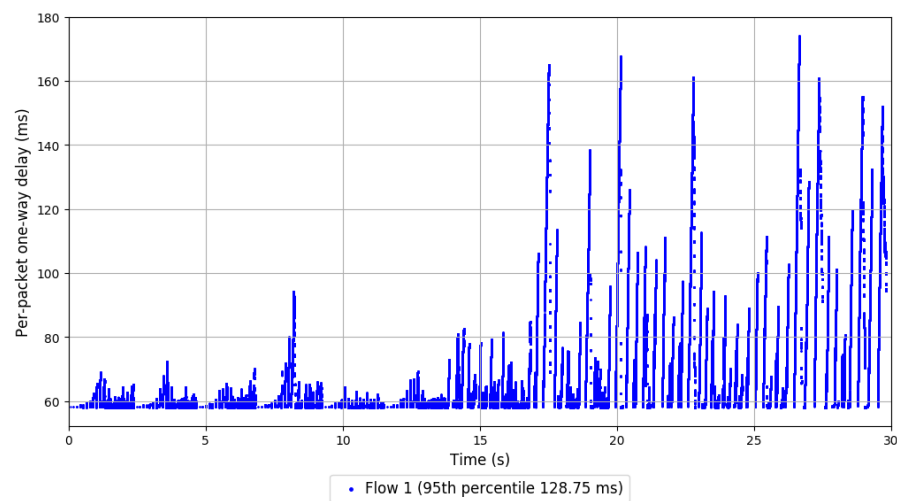
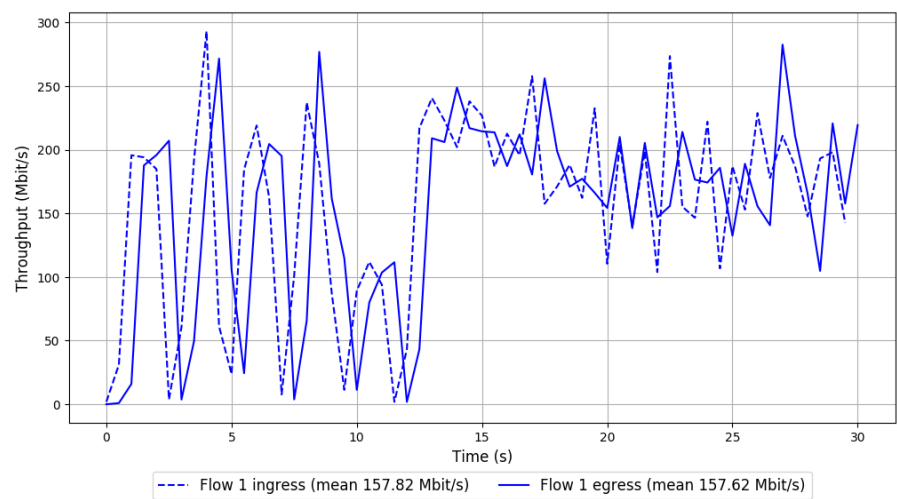


Run 1: Statistics of Verus

Start at: 2018-12-20 18:24:37
End at: 2018-12-20 18:25:07
Local clock offset: 1.607 ms
Remote clock offset: -0.551 ms

Below is generated by plot.py at 2018-12-20 22:36:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 157.62 Mbit/s
95th percentile per-packet one-way delay: 128.751 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 157.62 Mbit/s
95th percentile per-packet one-way delay: 128.751 ms
Loss rate: 0.00%

Run 1: Report of Verus — Data Link

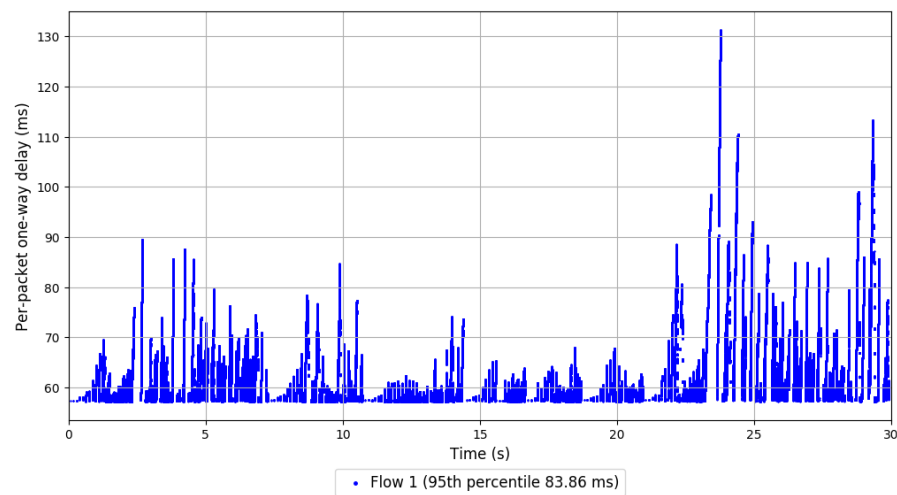
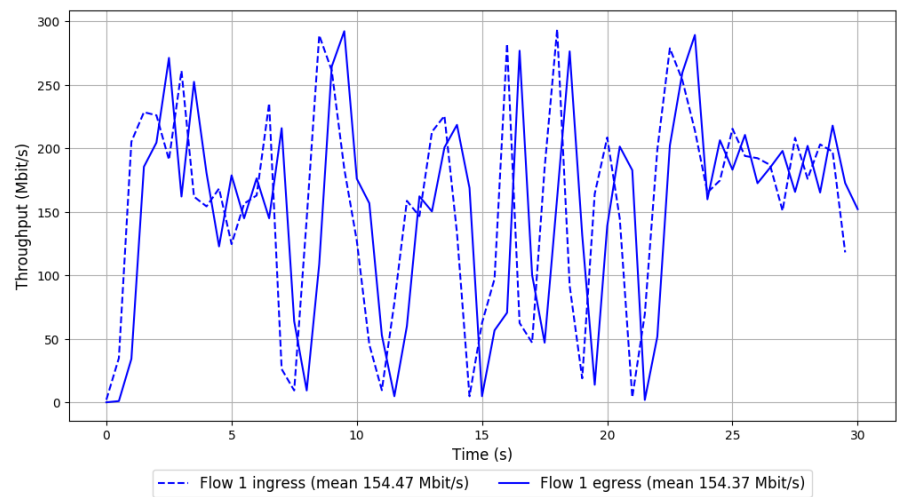


Run 2: Statistics of Verus

Start at: 2018-12-20 18:52:50
End at: 2018-12-20 18:53:20
Local clock offset: -0.036 ms
Remote clock offset: -0.111 ms

Below is generated by plot.py at 2018-12-20 22:36:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 154.37 Mbit/s
95th percentile per-packet one-way delay: 83.857 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 154.37 Mbit/s
95th percentile per-packet one-way delay: 83.857 ms
Loss rate: 0.06%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-12-20 19:21:25

End at: 2018-12-20 19:21:55

Local clock offset: 1.457 ms

Remote clock offset: 0.002 ms

Below is generated by plot.py at 2018-12-20 22:36:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 145.68 Mbit/s

95th percentile per-packet one-way delay: 85.471 ms

Loss rate: 0.23%

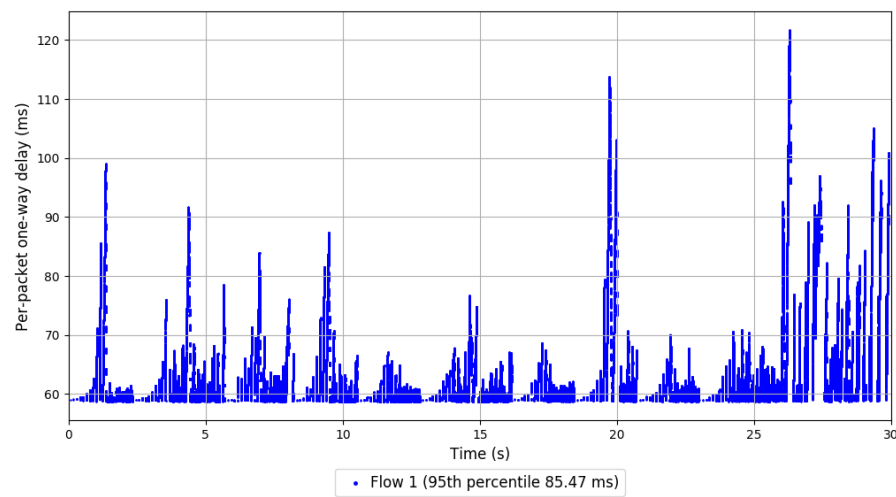
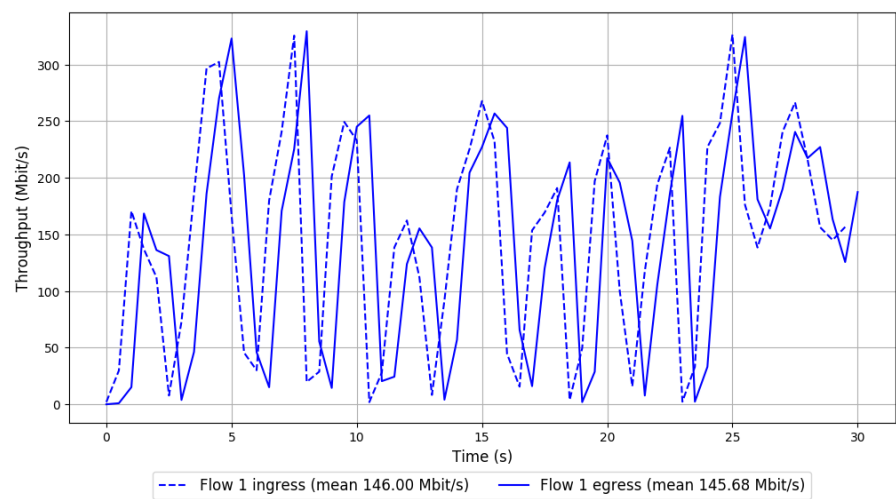
-- Flow 1:

Average throughput: 145.68 Mbit/s

95th percentile per-packet one-way delay: 85.471 ms

Loss rate: 0.23%

Run 3: Report of Verus — Data Link

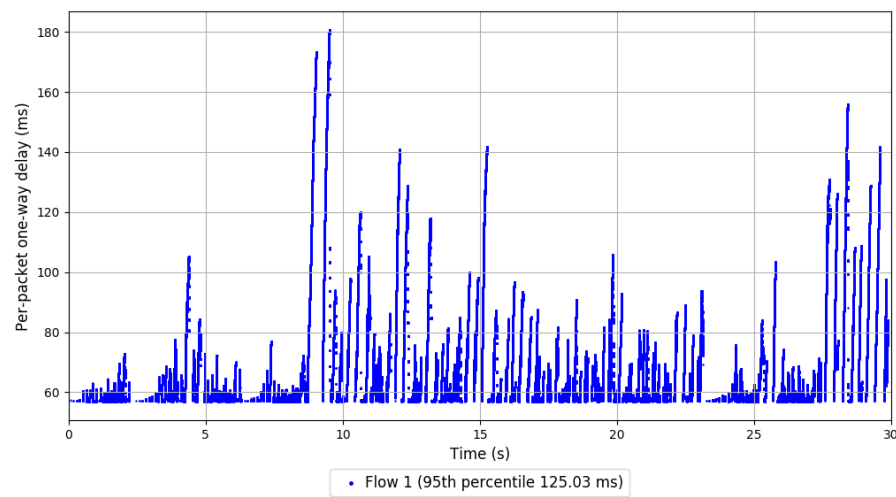
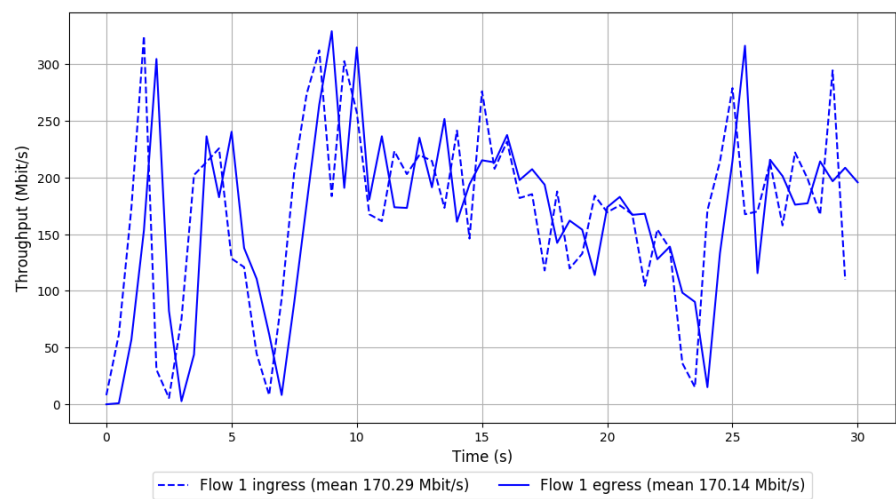


Run 4: Statistics of Verus

Start at: 2018-12-20 19:50:16
End at: 2018-12-20 19:50:46
Local clock offset: -0.13 ms
Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-12-20 22:37:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 170.14 Mbit/s
95th percentile per-packet one-way delay: 125.033 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 170.14 Mbit/s
95th percentile per-packet one-way delay: 125.033 ms
Loss rate: 0.00%

Run 4: Report of Verus — Data Link

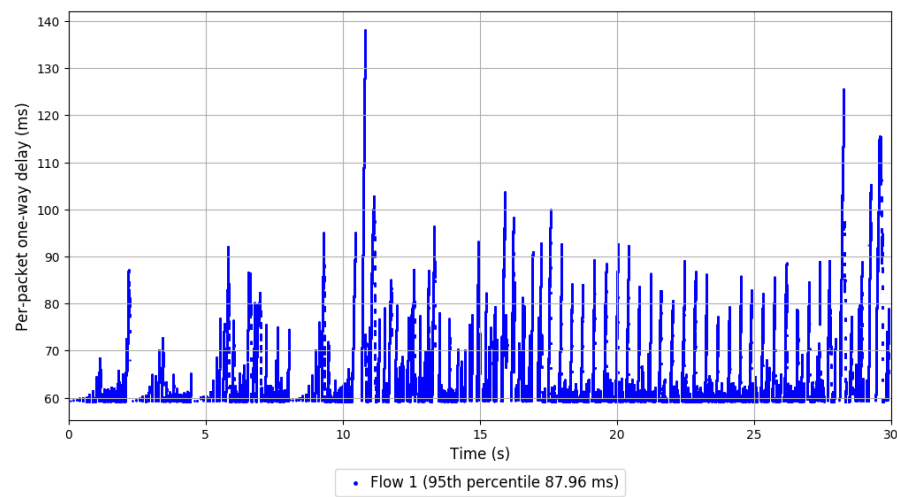
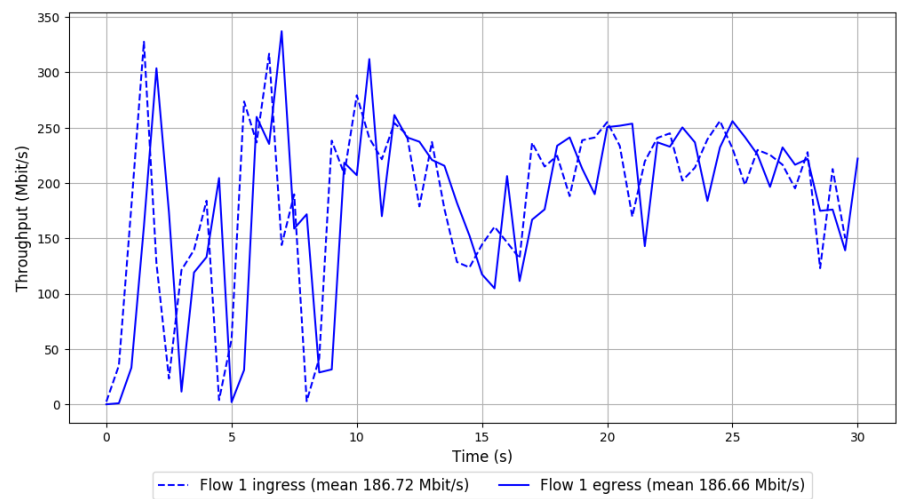


Run 5: Statistics of Verus

Start at: 2018-12-20 20:19:23
End at: 2018-12-20 20:19:54
Local clock offset: -2.219 ms
Remote clock offset: -0.066 ms

Below is generated by plot.py at 2018-12-20 22:38:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 186.66 Mbit/s
95th percentile per-packet one-way delay: 87.962 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 186.66 Mbit/s
95th percentile per-packet one-way delay: 87.962 ms
Loss rate: 0.01%

Run 5: Report of Verus — Data Link

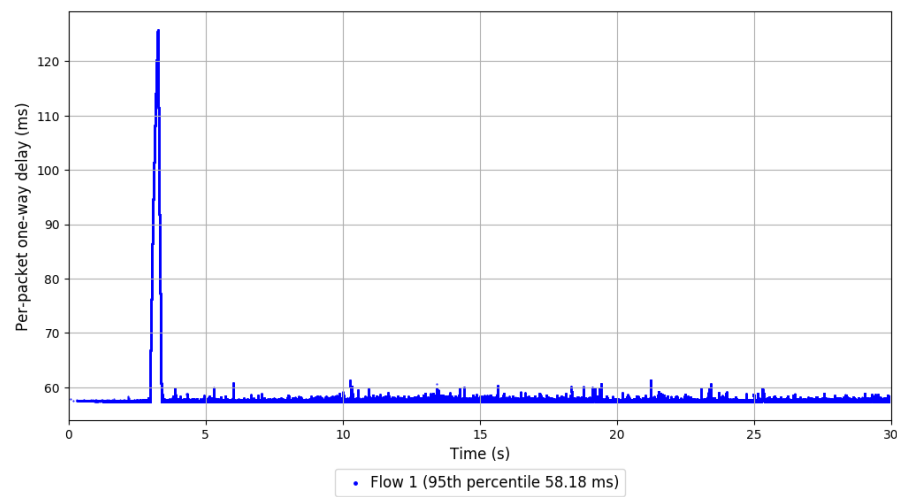
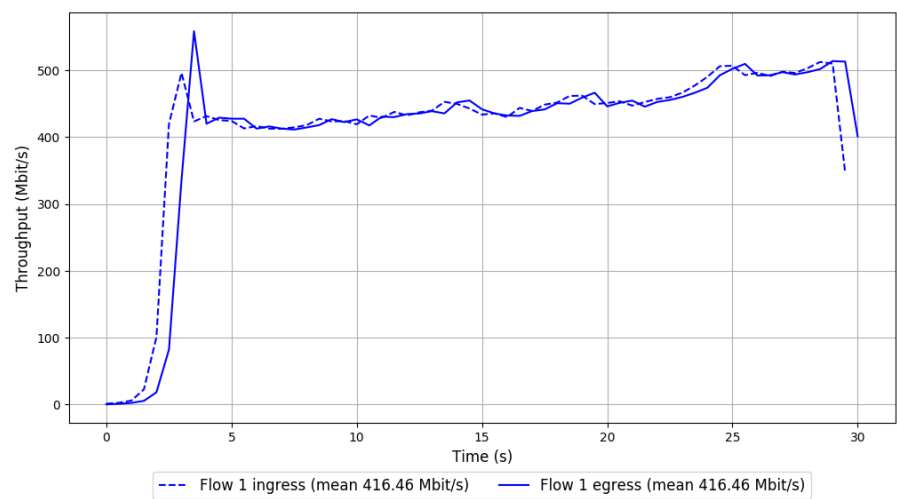


Run 1: Statistics of PCC-Vivace

Start at: 2018-12-20 18:32:18
End at: 2018-12-20 18:32:48
Local clock offset: -0.159 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-12-20 22:40:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 416.46 Mbit/s
95th percentile per-packet one-way delay: 58.184 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 416.46 Mbit/s
95th percentile per-packet one-way delay: 58.184 ms
Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-12-20 19:00:32

End at: 2018-12-20 19:01:02

Local clock offset: 1.72 ms

Remote clock offset: -0.05 ms

Below is generated by plot.py at 2018-12-20 22:40:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 388.61 Mbit/s

95th percentile per-packet one-way delay: 72.468 ms

Loss rate: 0.01%

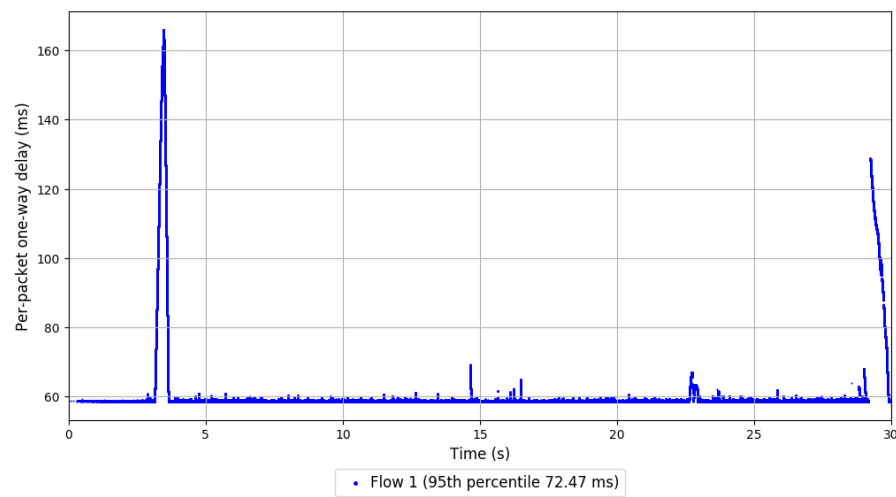
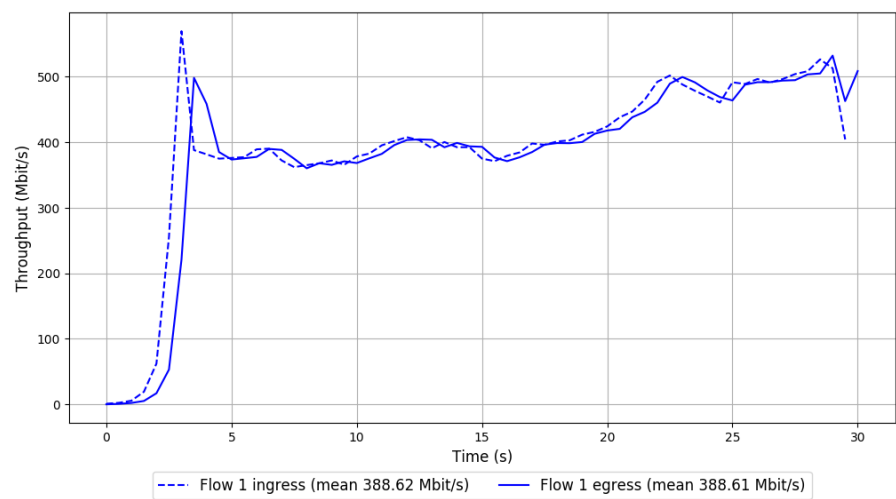
-- Flow 1:

Average throughput: 388.61 Mbit/s

95th percentile per-packet one-way delay: 72.468 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-12-20 19:29:03

End at: 2018-12-20 19:29:33

Local clock offset: -1.868 ms

Remote clock offset: -0.43 ms

Below is generated by plot.py at 2018-12-20 22:40:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 421.51 Mbit/s

95th percentile per-packet one-way delay: 59.704 ms

Loss rate: 0.00%

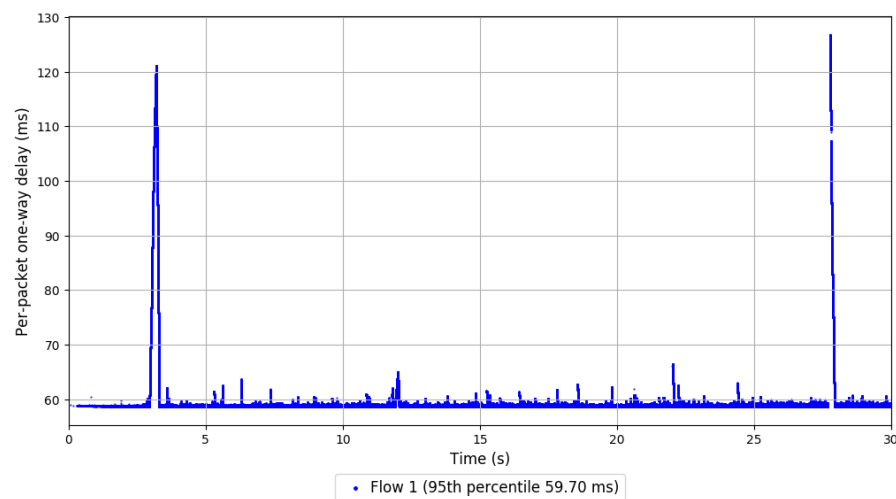
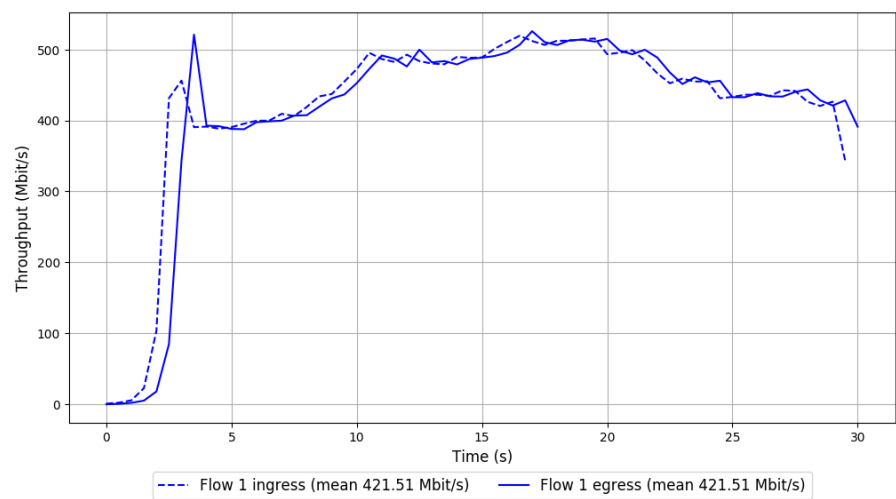
-- Flow 1:

Average throughput: 421.51 Mbit/s

95th percentile per-packet one-way delay: 59.704 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-12-20 19:58:02

End at: 2018-12-20 19:58:32

Local clock offset: 0.028 ms

Remote clock offset: -0.421 ms

Below is generated by plot.py at 2018-12-20 22:40:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 384.57 Mbit/s

95th percentile per-packet one-way delay: 57.460 ms

Loss rate: 0.00%

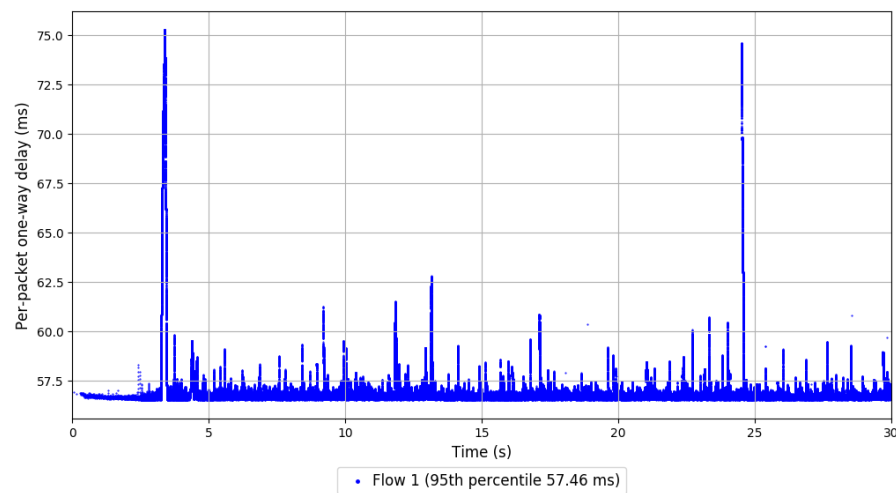
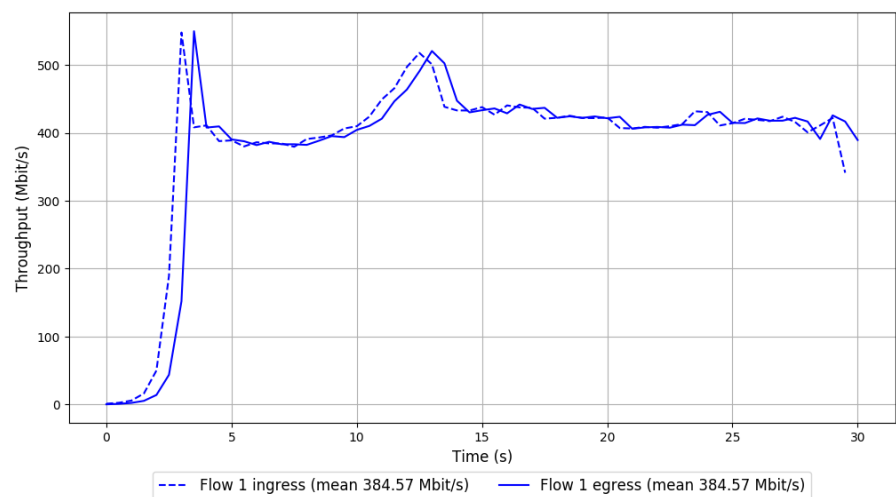
-- Flow 1:

Average throughput: 384.57 Mbit/s

95th percentile per-packet one-way delay: 57.460 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link

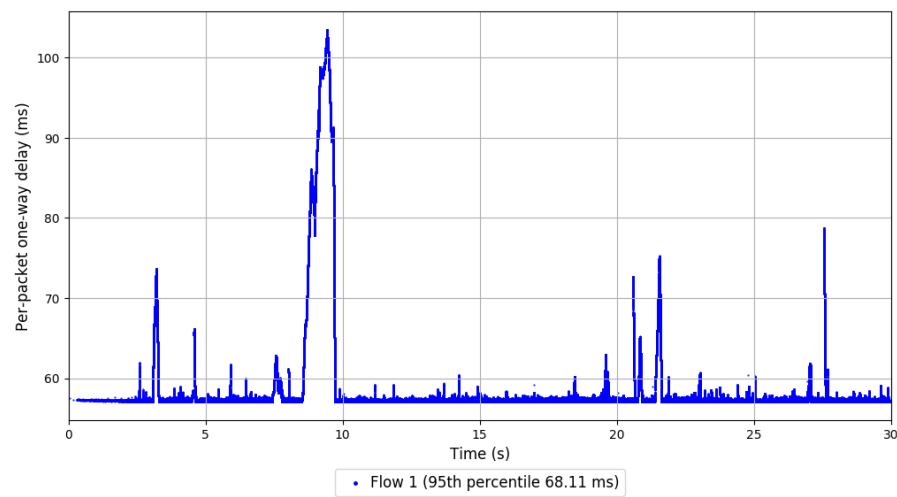
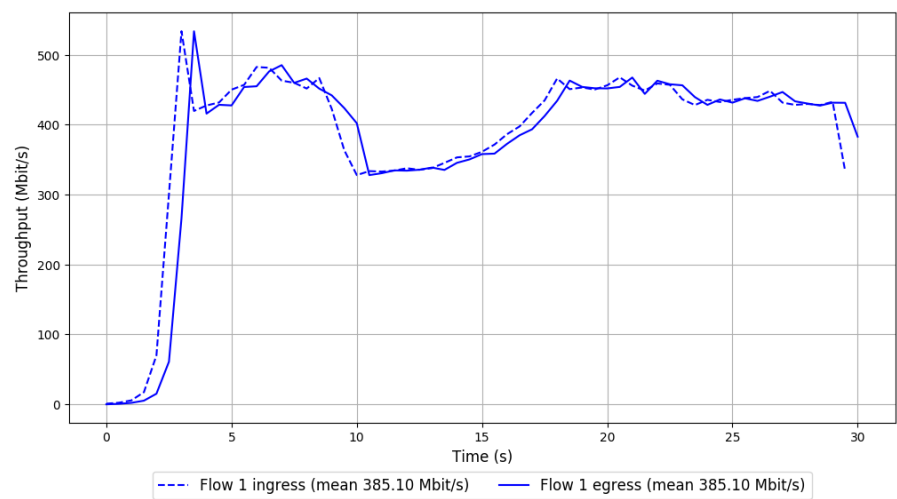


Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 20:27:21
End at: 2018-12-20 20:27:51
Local clock offset: -0.376 ms
Remote clock offset: -0.217 ms

Below is generated by plot.py at 2018-12-20 22:40:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 385.10 Mbit/s
95th percentile per-packet one-way delay: 68.105 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 385.10 Mbit/s
95th percentile per-packet one-way delay: 68.105 ms
Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

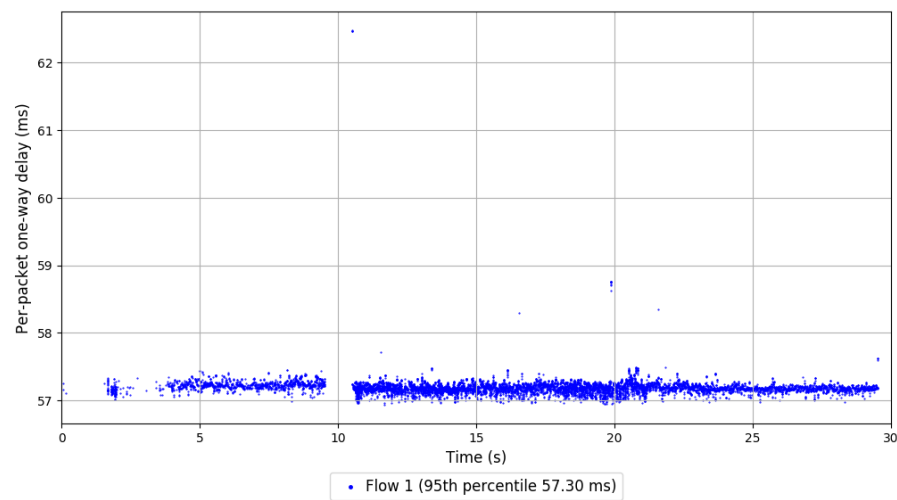
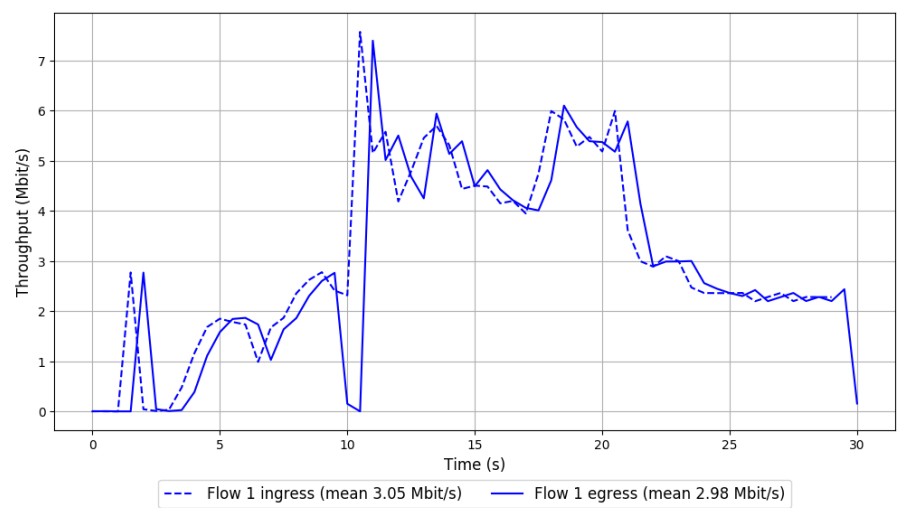


Run 1: Statistics of WebRTC media

Start at: 2018-12-20 18:29:27
End at: 2018-12-20 18:29:57
Local clock offset: -0.181 ms
Remote clock offset: -0.175 ms

Below is generated by plot.py at 2018-12-20 22:40:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 57.302 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 57.302 ms
Loss rate: 2.52%

Run 1: Report of WebRTC media — Data Link

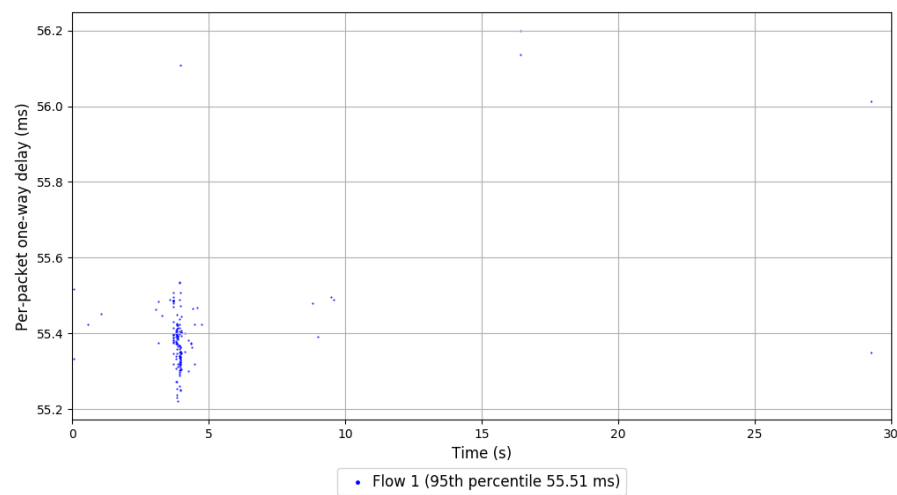
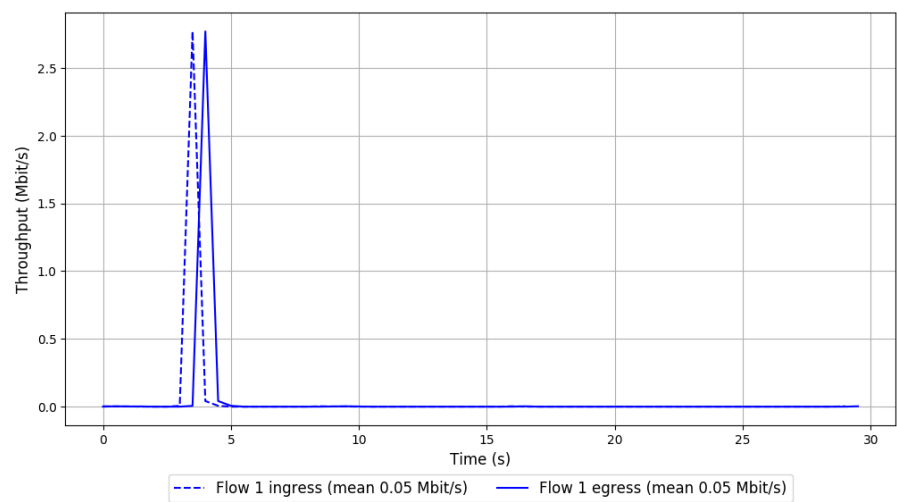


Run 2: Statistics of WebRTC media

Start at: 2018-12-20 18:57:44
End at: 2018-12-20 18:58:14
Local clock offset: 1.563 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-12-20 22:40:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 55.508 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 55.508 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

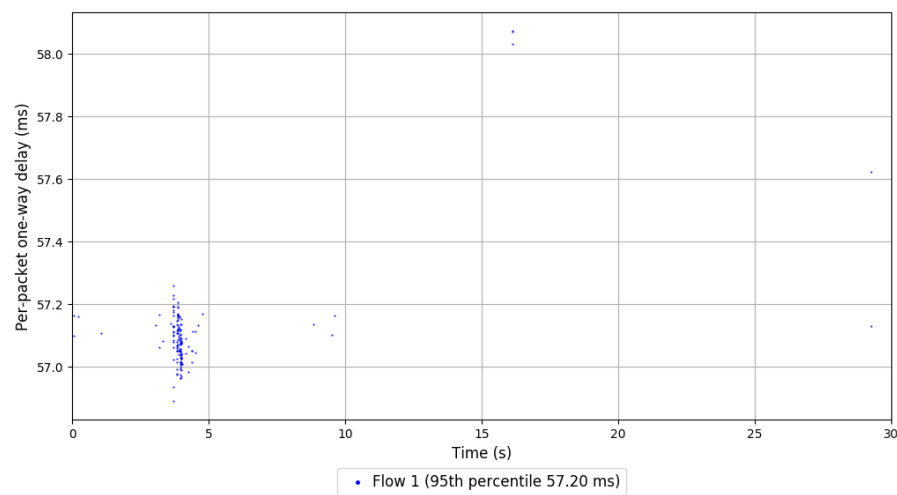
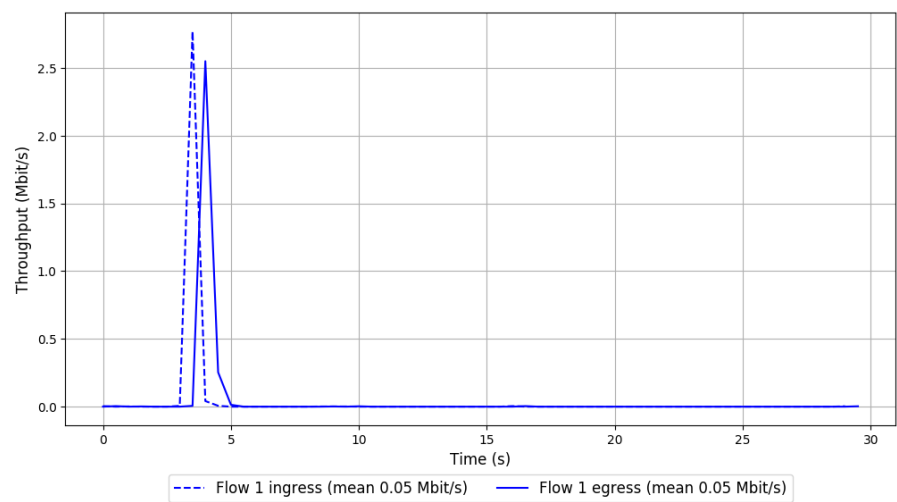


Run 3: Statistics of WebRTC media

Start at: 2018-12-20 19:26:18
End at: 2018-12-20 19:26:48
Local clock offset: -0.115 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-12-20 22:40:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.200 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.200 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-12-20 19:55:11

End at: 2018-12-20 19:55:41

Local clock offset: 1.454 ms

Remote clock offset: -0.26 ms

Below is generated by plot.py at 2018-12-20 22:40:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 55.337 ms

Loss rate: 0.00%

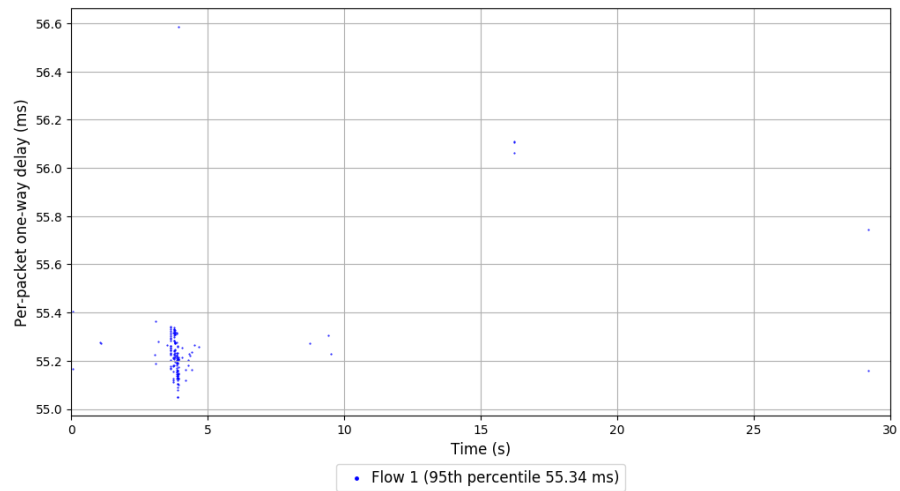
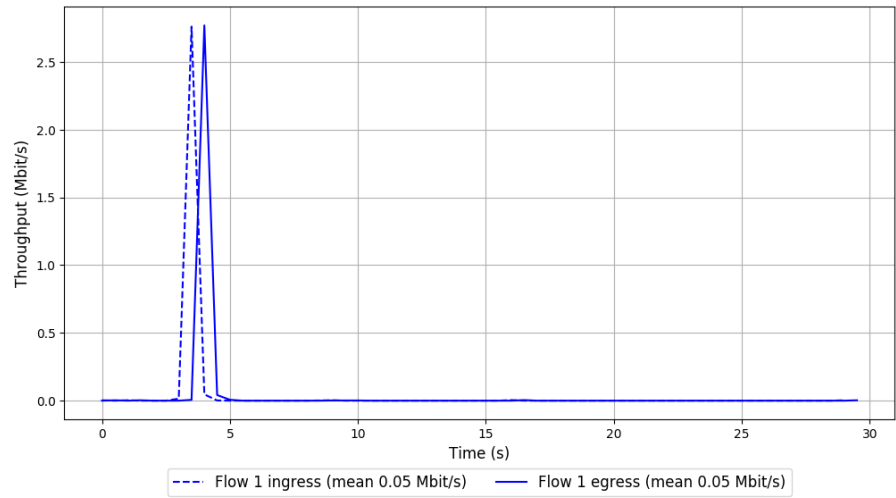
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 55.337 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-12-20 20:24:24

End at: 2018-12-20 20:24:54

Local clock offset: -0.147 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-12-20 22:40:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 57.320 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 57.320 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

