

Pantheon Report

Generated at 2019-01-19 04:45:19 (UTC).

Data path: India cellular on `ppp0` (*remote*) → AWS India 1 on `ens5` (*local*).

Repeated the test of 21 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

System info:

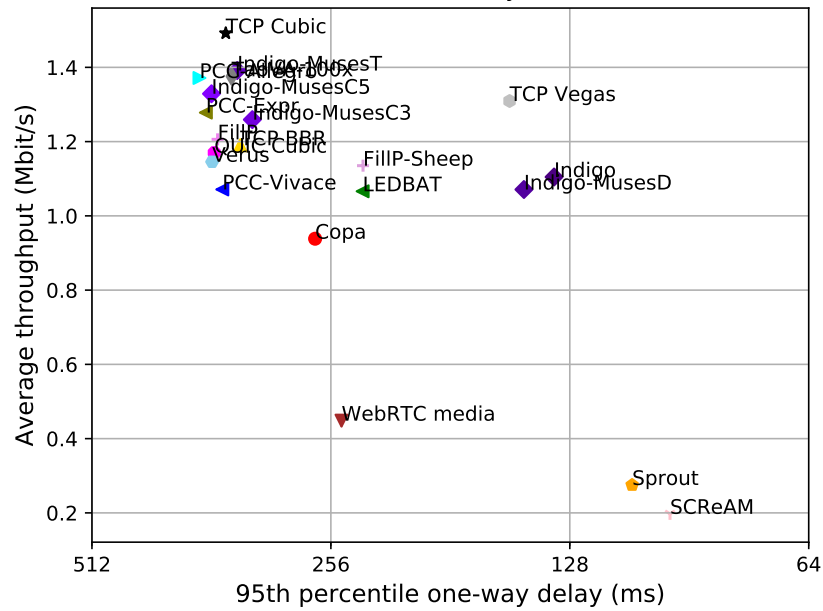
```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

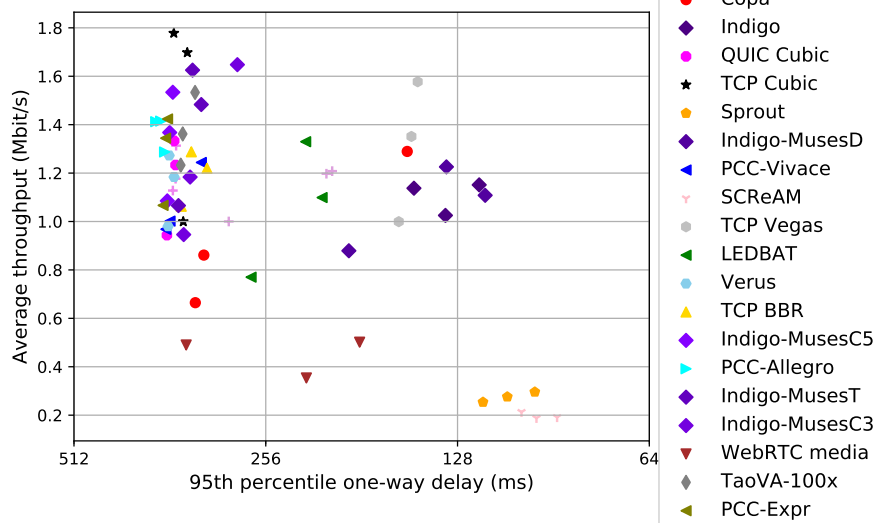
```
branch: muses @ c80a283586bf7b0cc1fe08c69c8f60d56498f81c
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ c3eee875824760ec5b2fd207fefe166e1afe2170
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from India cellular to AWS India 1, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from India cellular to AWS India 1, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	1.19	333.02	1.97
Copa	3	0.94	267.99	1.61
TCP Cubic	3	1.49	347.28	2.55
FillP	3	1.21	355.58	6.89
FillP-Sheep	3	1.14	233.20	1.36
Indigo	3	1.11	133.98	1.07
Indigo-MusesC3	3	1.26	321.52	1.90
Indigo-MusesC5	3	1.33	361.96	44.77
Indigo-MusesD	3	1.07	146.22	0.34
Indigo-MusesT	3	1.39	335.91	2.34
LEDBAT	3	1.07	233.49	0.77
PCC-Allegro	3	1.37	374.77	42.27
PCC-Expr	3	1.28	367.96	84.70
QUIC Cubic	3	1.17	359.03	6.43
SCReAM	3	0.20	95.71	0.40
Sprout	3	0.28	106.83	0.25
TaoVA-100x	3	1.37	341.40	4.21
TCP Vegas	3	1.31	152.44	0.54
Verus	3	1.14	361.29	15.68
PCC-Vivace	3	1.07	350.78	14.63
WebRTC media	3	0.45	248.23	4.72

Run 1: Statistics of TCP BBR

Start at: 2019-01-19 03:43:48

End at: 2019-01-19 03:44:18

Local clock offset: 1.528 ms

Remote clock offset: -3.812 ms

Below is generated by plot.py at 2019-01-19 04:44:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 335.015 ms

Loss rate: 2.55%

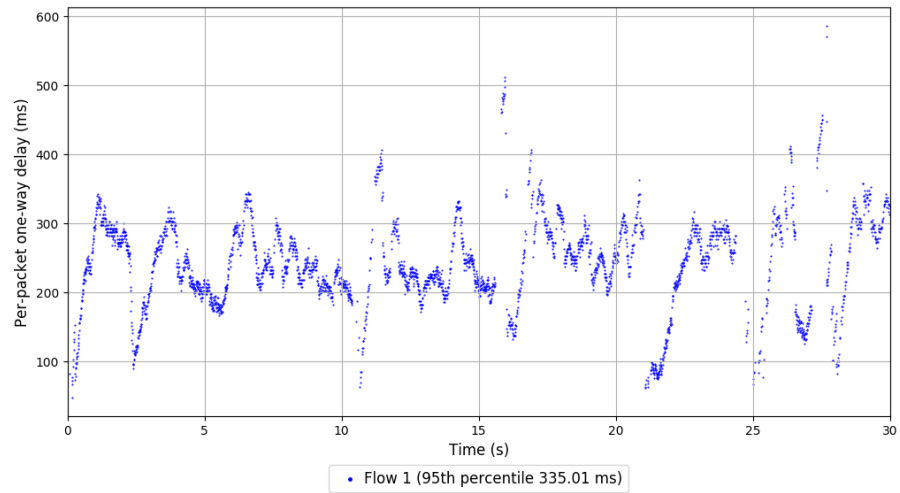
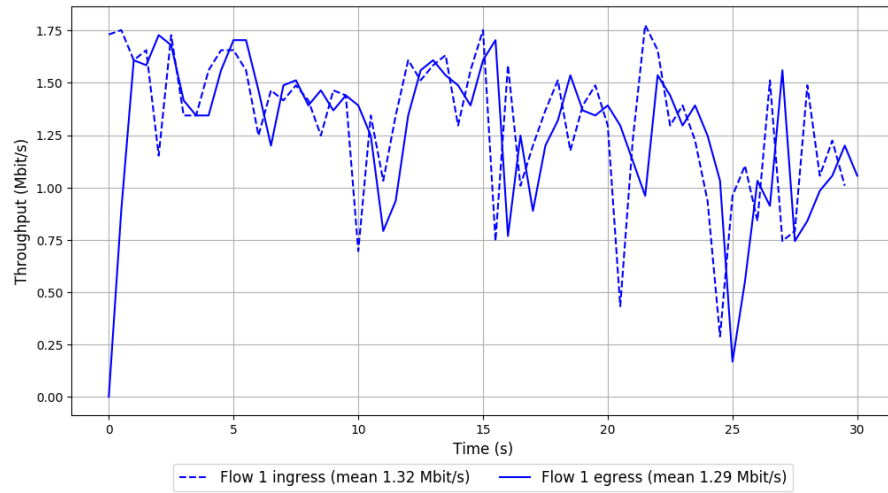
-- Flow 1:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 335.015 ms

Loss rate: 2.55%

Run 1: Report of TCP BBR — Data Link

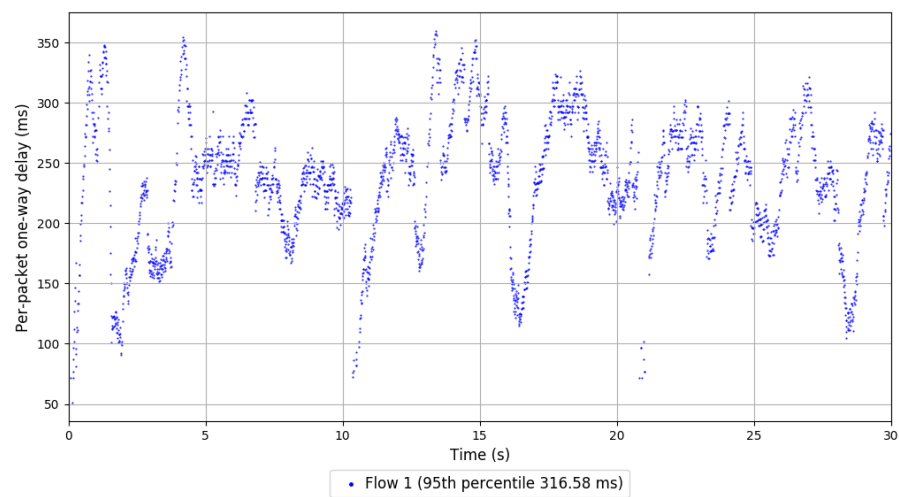
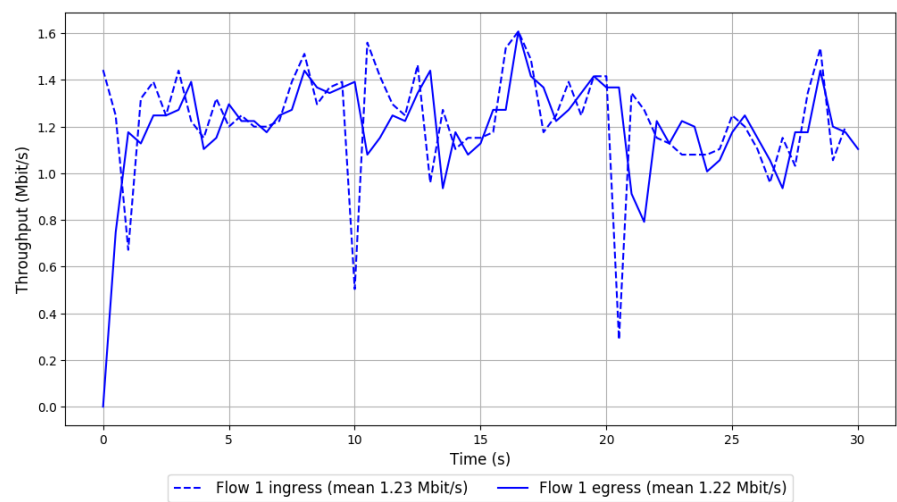


Run 2: Statistics of TCP BBR

Start at: 2019-01-19 04:07:12
End at: 2019-01-19 04:07:42
Local clock offset: 0.915 ms
Remote clock offset: -4.284 ms

Below is generated by plot.py at 2019-01-19 04:44:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 316.582 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 316.582 ms
Loss rate: 1.01%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-01-19 04:30:33

End at: 2019-01-19 04:31:03

Local clock offset: 1.002 ms

Remote clock offset: -3.658 ms

Below is generated by plot.py at 2019-01-19 04:44:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.06 Mbit/s

95th percentile per-packet one-way delay: 347.464 ms

Loss rate: 2.36%

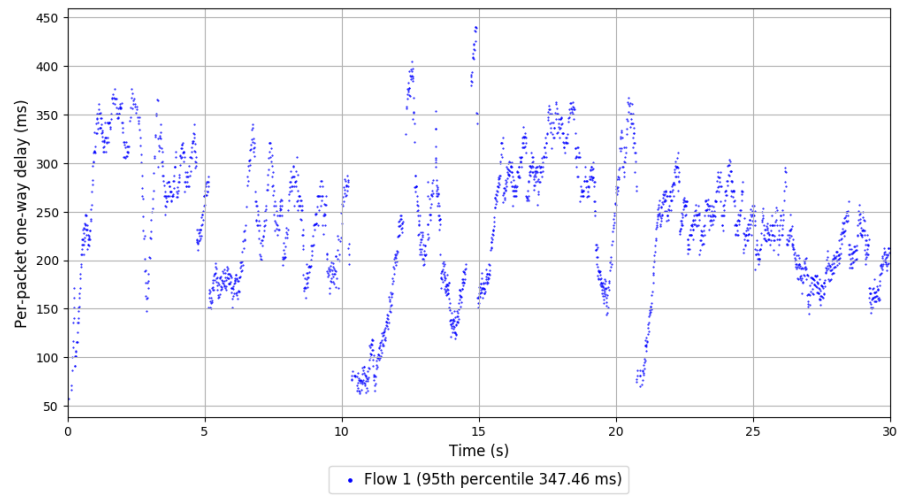
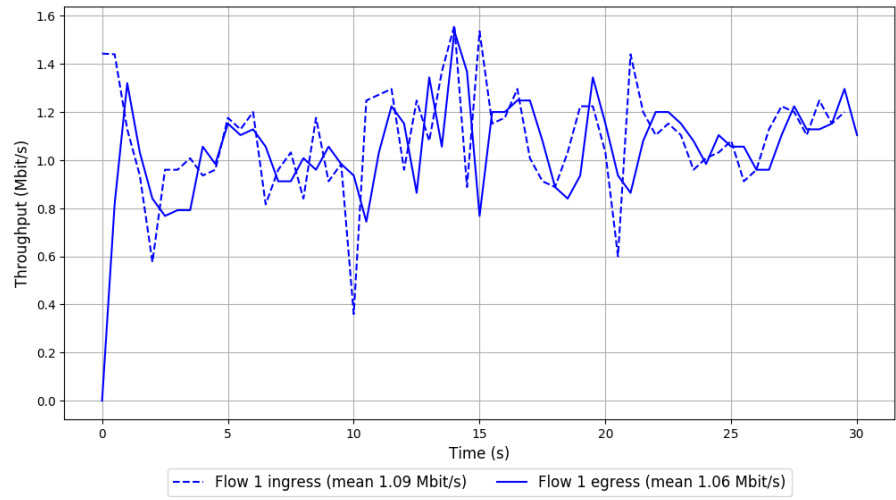
-- Flow 1:

Average throughput: 1.06 Mbit/s

95th percentile per-packet one-way delay: 347.464 ms

Loss rate: 2.36%

Run 3: Report of TCP BBR — Data Link

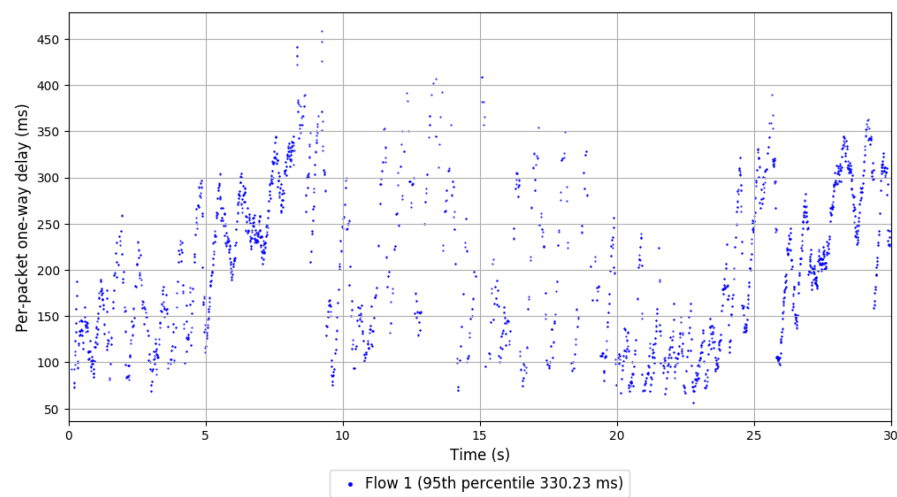
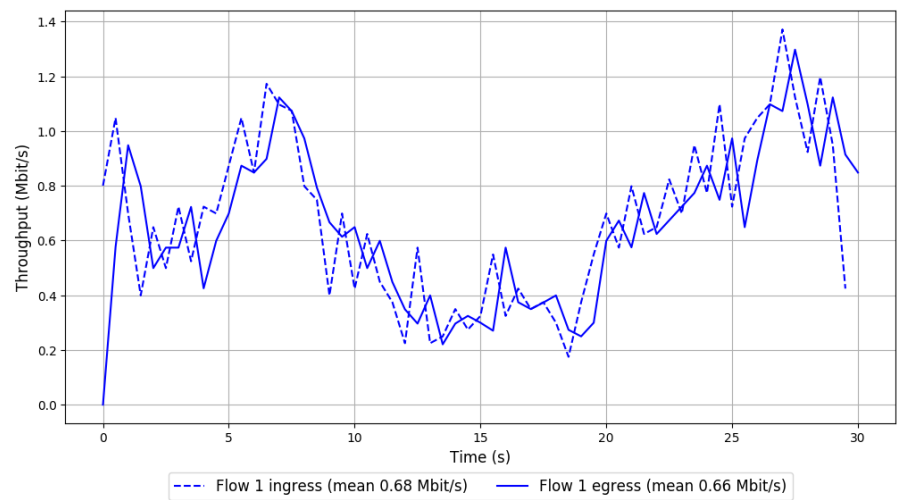


Run 1: Statistics of Copa

Start at: 2019-01-19 03:54:58
End at: 2019-01-19 03:55:28
Local clock offset: -0.196 ms
Remote clock offset: -4.527 ms

Below is generated by plot.py at 2019-01-19 04:44:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 330.225 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 330.225 ms
Loss rate: 2.11%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2019-01-19 04:18:17

End at: 2019-01-19 04:18:47

Local clock offset: 2.066 ms

Remote clock offset: -3.51 ms

Below is generated by plot.py at 2019-01-19 04:44:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 153.522 ms

Loss rate: 1.85%

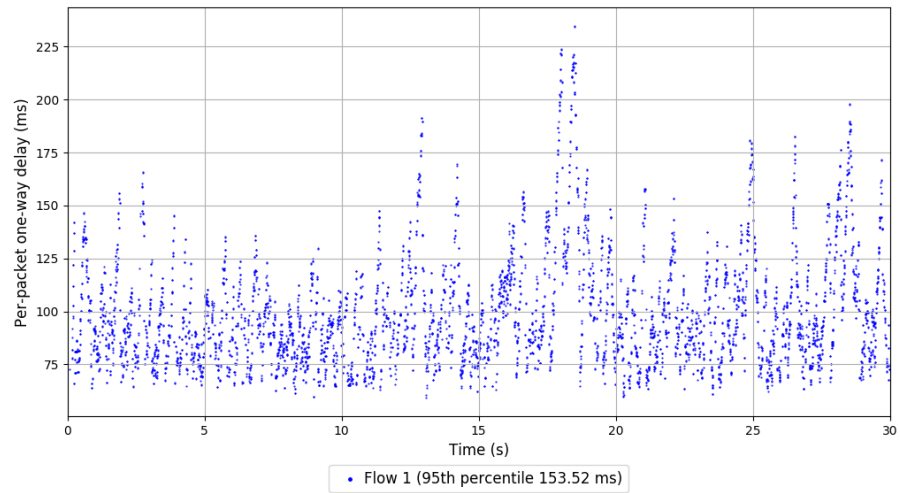
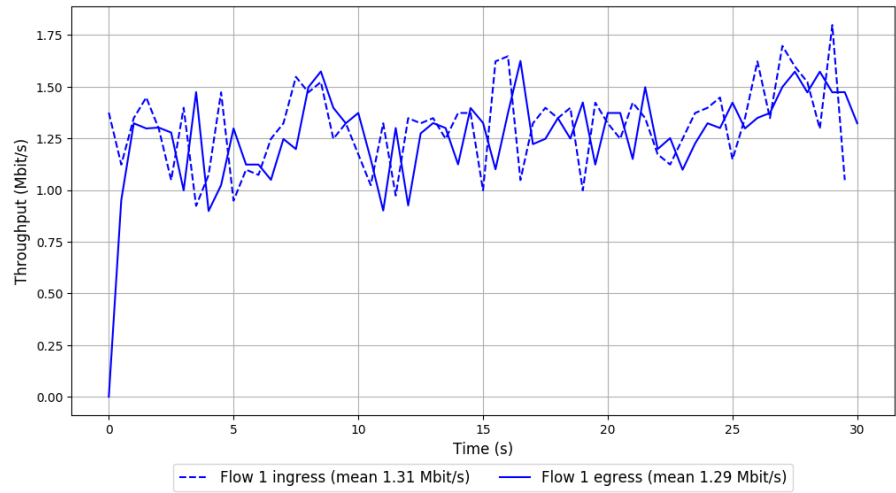
-- Flow 1:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 153.522 ms

Loss rate: 1.85%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2019-01-19 04:41:45

End at: 2019-01-19 04:42:15

Local clock offset: 0.999 ms

Remote clock offset: 0.792 ms

Below is generated by plot.py at 2019-01-19 04:44:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 320.208 ms

Loss rate: 0.87%

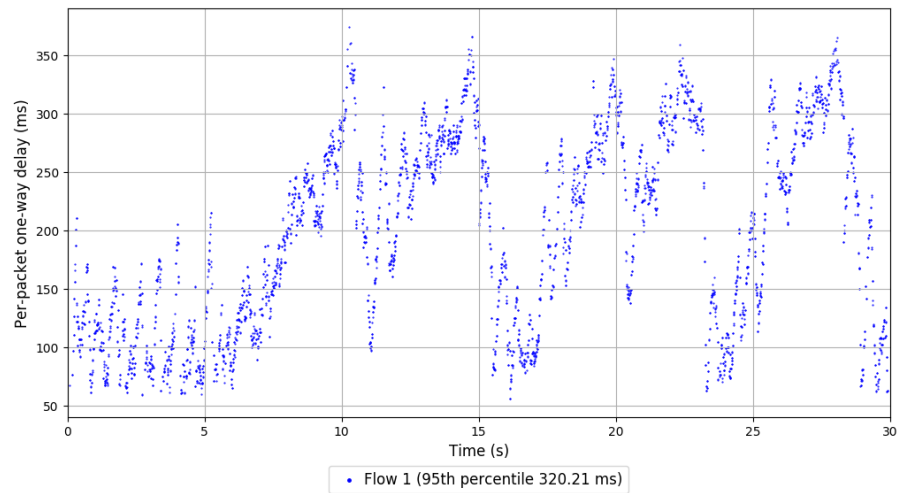
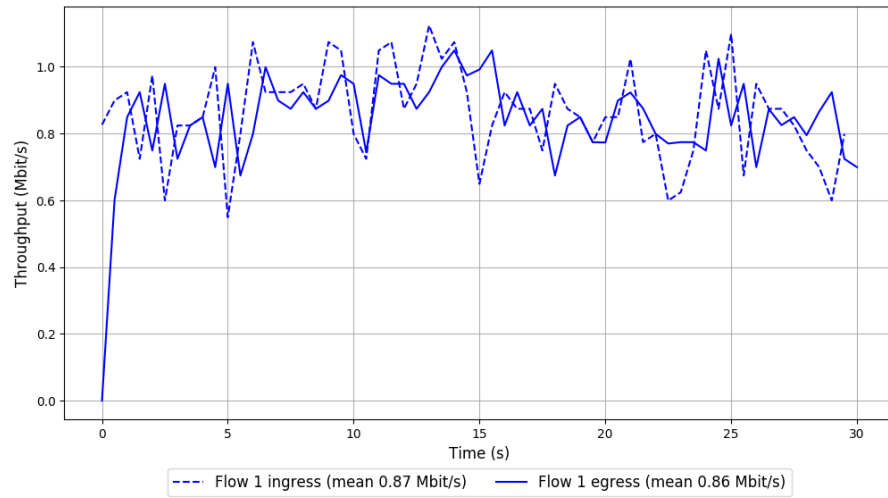
-- Flow 1:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 320.208 ms

Loss rate: 0.87%

Run 3: Report of Copa — Data Link

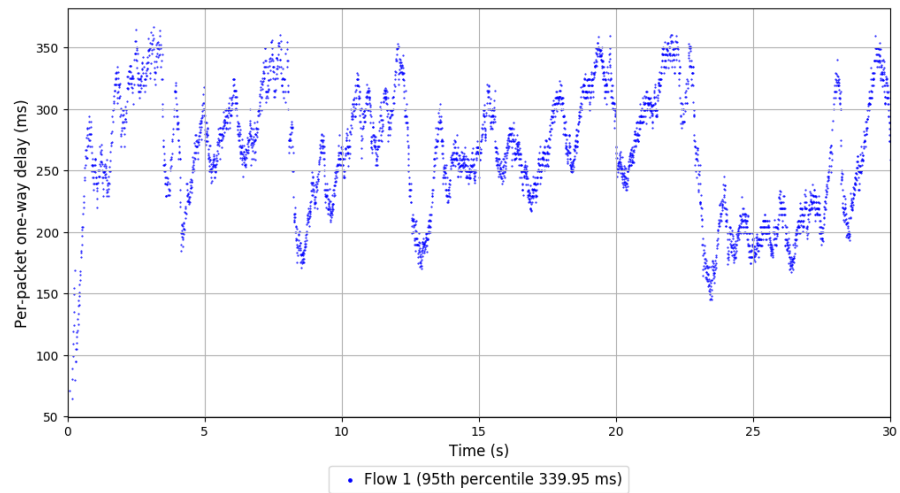
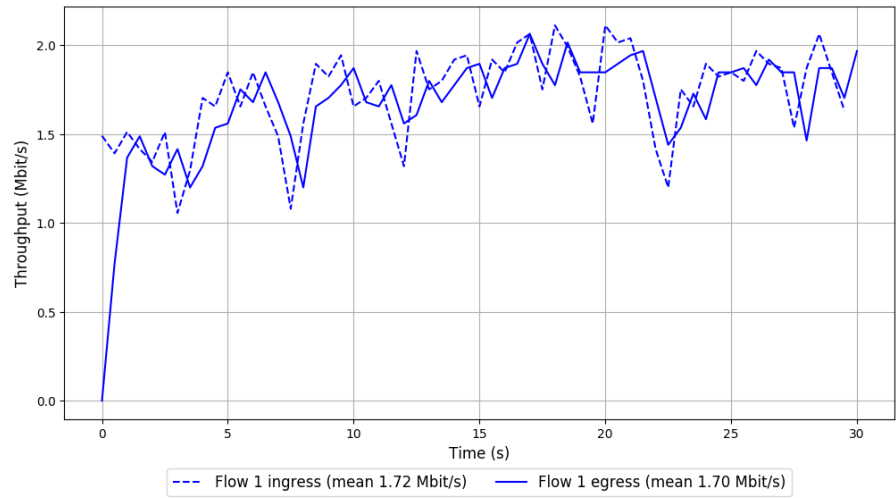


Run 1: Statistics of TCP Cubic

Start at: 2019-01-19 03:38:17
End at: 2019-01-19 03:38:47
Local clock offset: 0.92 ms
Remote clock offset: -4.445 ms

Below is generated by plot.py at 2019-01-19 04:44:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 339.950 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 339.950 ms
Loss rate: 1.72%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2019-01-19 04:01:40

End at: 2019-01-19 04:02:10

Local clock offset: 0.533 ms

Remote clock offset: -6.79 ms

Below is generated by plot.py at 2019-01-19 04:44:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 356.940 ms

Loss rate: 2.45%

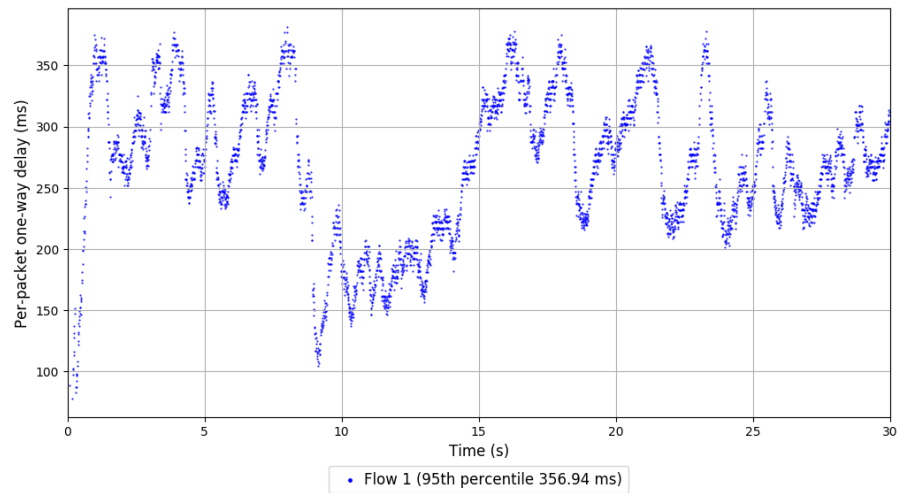
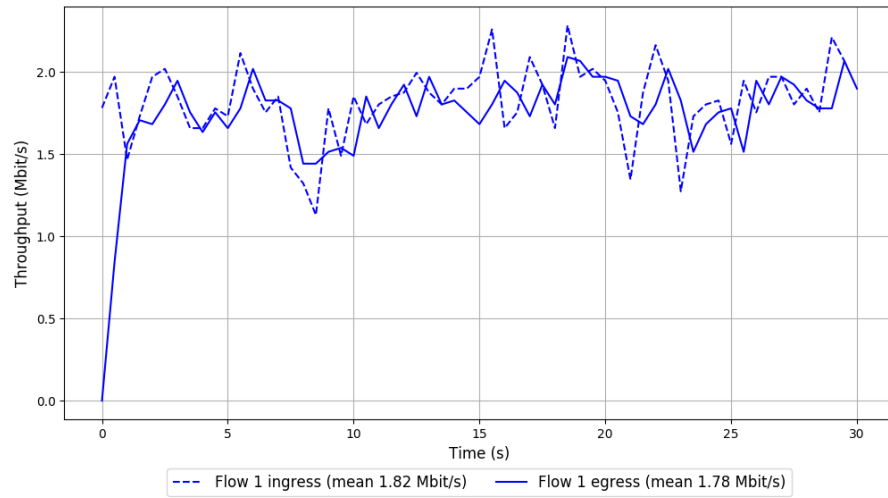
-- Flow 1:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 356.940 ms

Loss rate: 2.45%

Run 2: Report of TCP Cubic — Data Link

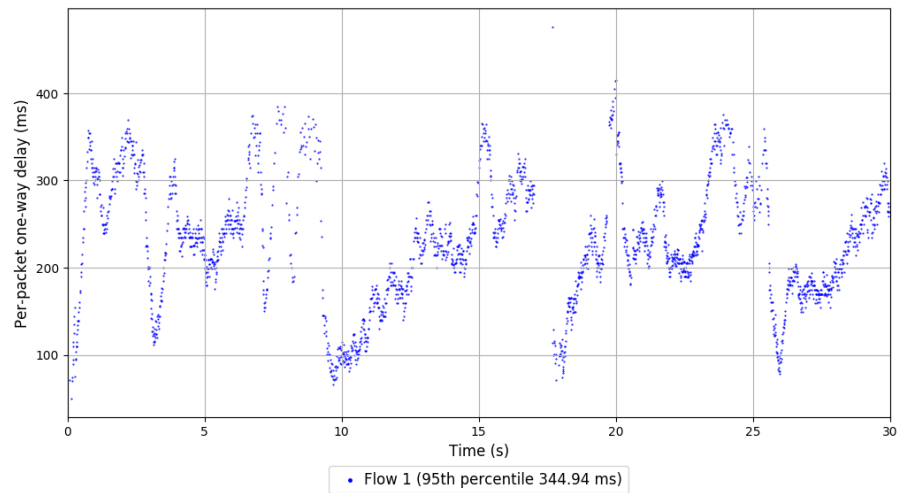
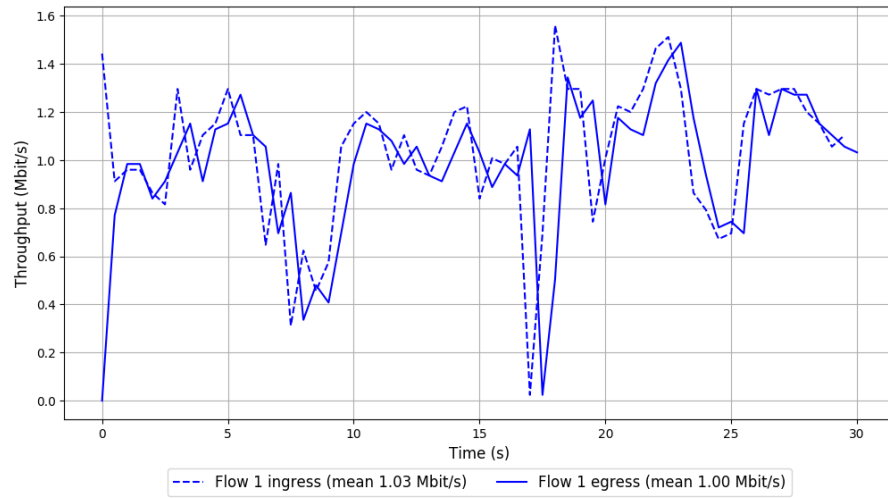


Run 3: Statistics of TCP Cubic

Start at: 2019-01-19 04:24:58
End at: 2019-01-19 04:25:28
Local clock offset: 0.266 ms
Remote clock offset: -3.193 ms

Below is generated by plot.py at 2019-01-19 04:44:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 344.945 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 344.945 ms
Loss rate: 3.49%

Run 3: Report of TCP Cubic — Data Link

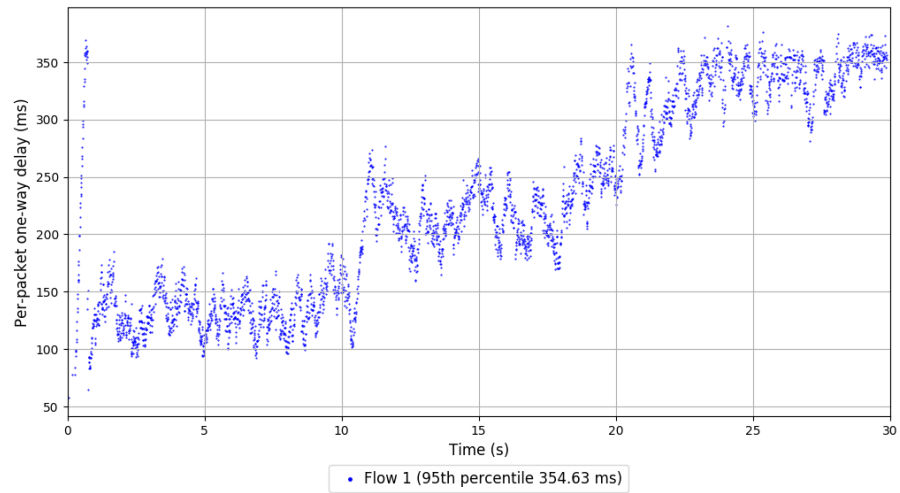
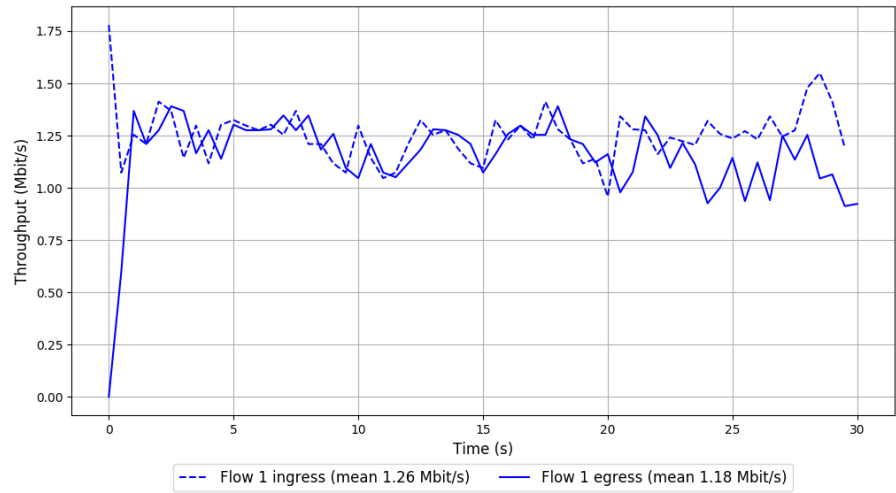


Run 1: Statistics of FillP

Start at: 2019-01-19 03:47:13
End at: 2019-01-19 03:47:43
Local clock offset: -0.091 ms
Remote clock offset: -4.886 ms

Below is generated by plot.py at 2019-01-19 04:44:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 354.635 ms
Loss rate: 6.54%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 354.635 ms
Loss rate: 6.54%

Run 1: Report of FillP — Data Link

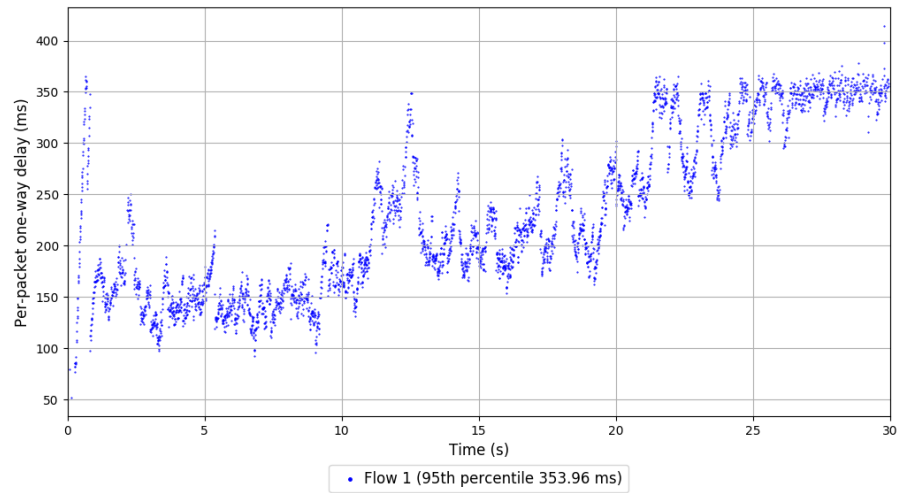
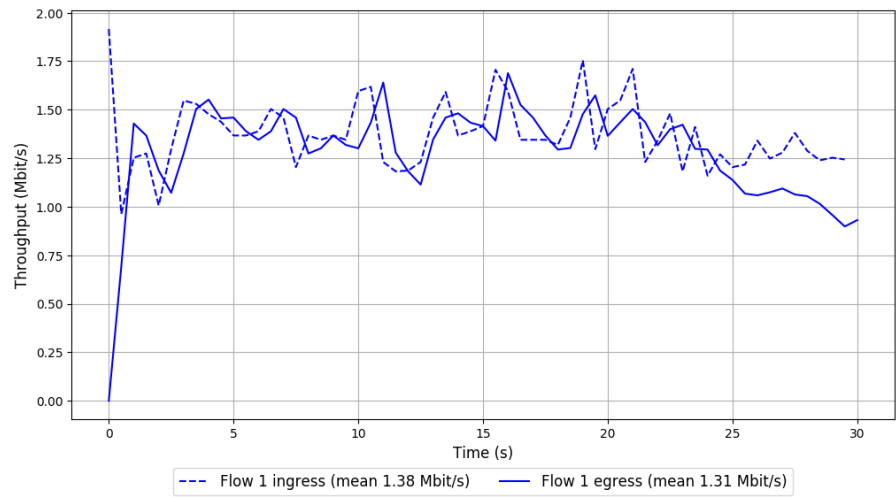


Run 2: Statistics of FillP

Start at: 2019-01-19 04:10:31
End at: 2019-01-19 04:11:01
Local clock offset: 1.198 ms
Remote clock offset: -3.626 ms

Below is generated by plot.py at 2019-01-19 04:44:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 353.965 ms
Loss rate: 4.75%
-- Flow 1:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 353.965 ms
Loss rate: 4.75%

Run 2: Report of FillP — Data Link

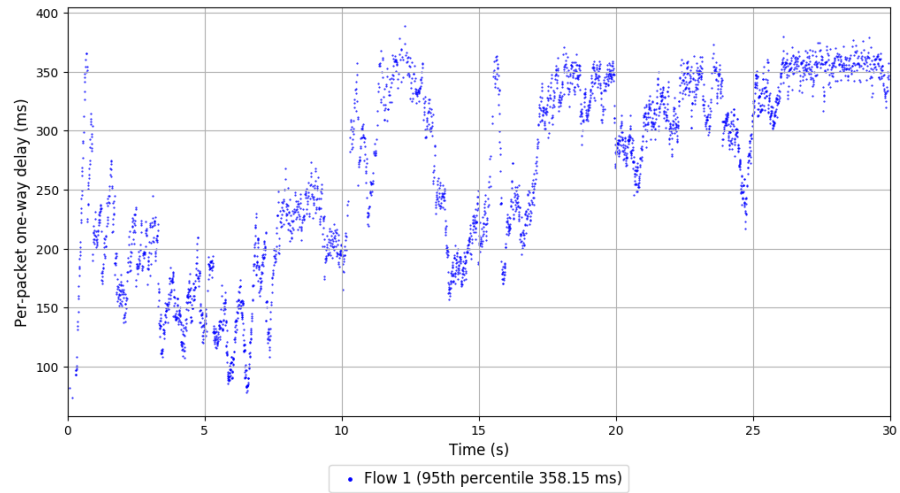
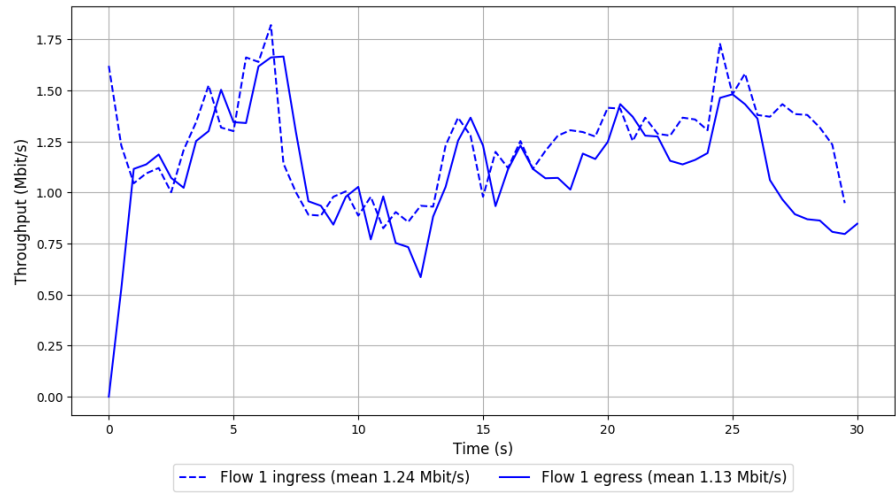


Run 3: Statistics of FillP

Start at: 2019-01-19 04:33:53
End at: 2019-01-19 04:34:23
Local clock offset: 1.128 ms
Remote clock offset: -3.199 ms

Below is generated by plot.py at 2019-01-19 04:44:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 358.150 ms
Loss rate: 9.37%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 358.150 ms
Loss rate: 9.37%

Run 3: Report of FillP — Data Link

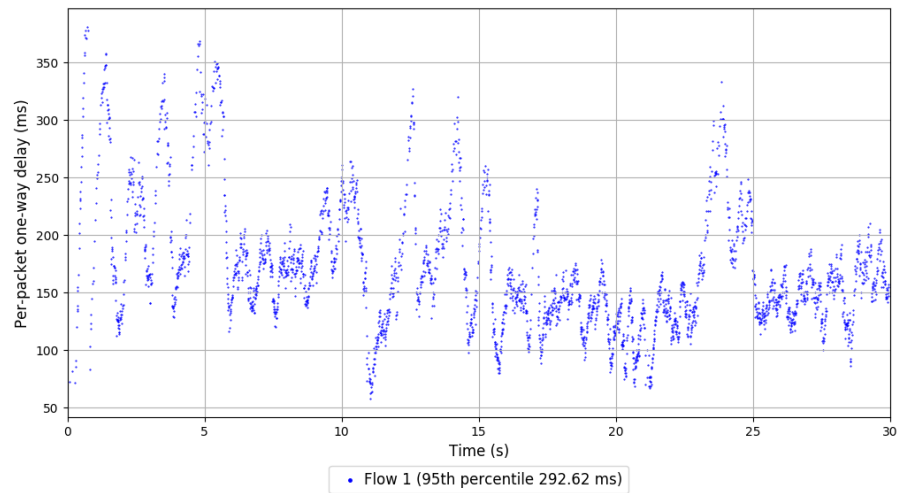
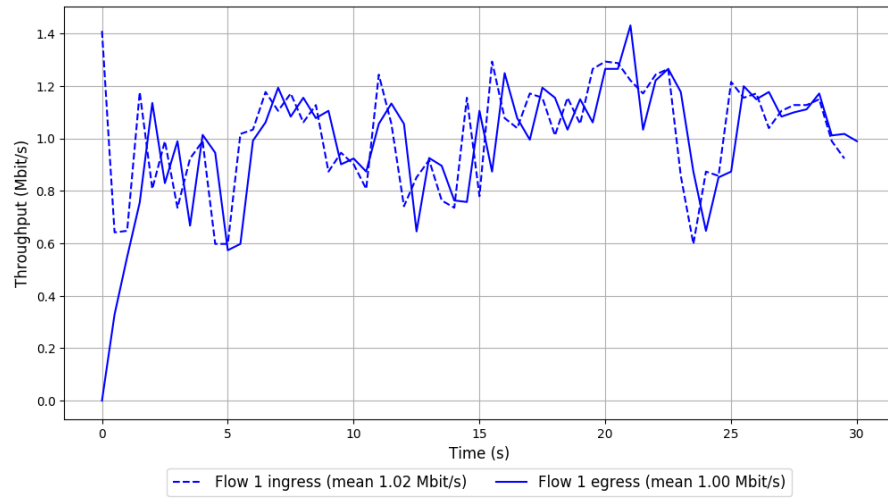


Run 1: Statistics of FillP-Sheep

Start at: 2019-01-19 03:57:11
End at: 2019-01-19 03:57:41
Local clock offset: 2.108 ms
Remote clock offset: -4.389 ms

Below is generated by plot.py at 2019-01-19 04:44:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 292.624 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 292.624 ms
Loss rate: 1.79%

Run 1: Report of FillP-Sheep — Data Link

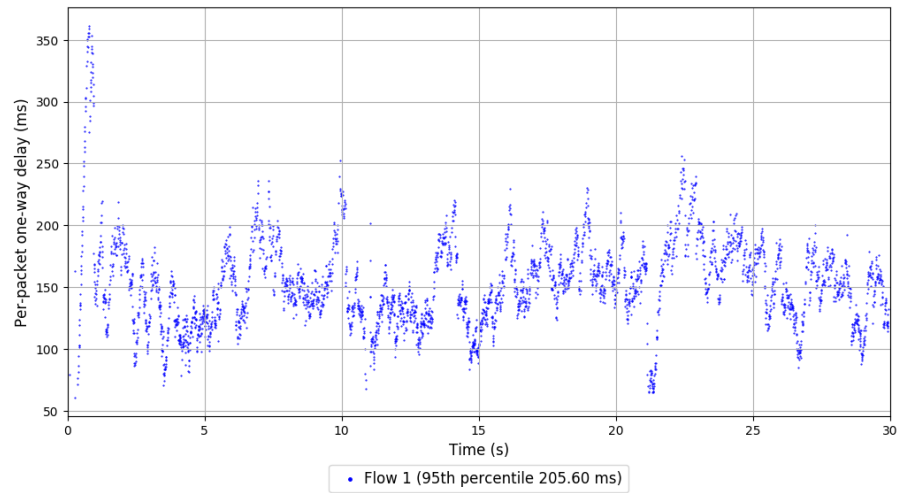
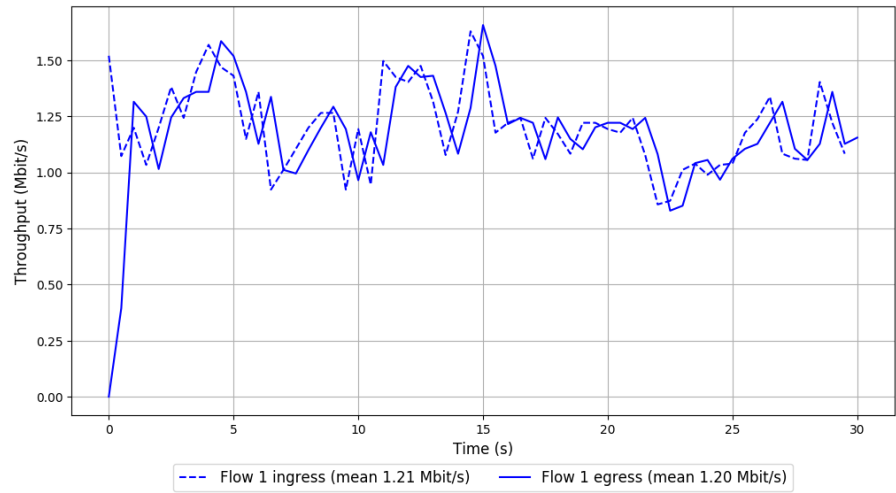


Run 2: Statistics of FillP-Sheep

Start at: 2019-01-19 04:20:30
End at: 2019-01-19 04:21:00
Local clock offset: 0.588 ms
Remote clock offset: -3.894 ms

Below is generated by plot.py at 2019-01-19 04:44:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 205.601 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 205.601 ms
Loss rate: 1.11%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2019-01-19 04:43:59

End at: 2019-01-19 04:44:29

Local clock offset: 1.645 ms

Remote clock offset: 1.633 ms

Below is generated by plot.py at 2019-01-19 04:44:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.21 Mbit/s

95th percentile per-packet one-way delay: 201.366 ms

Loss rate: 1.17%

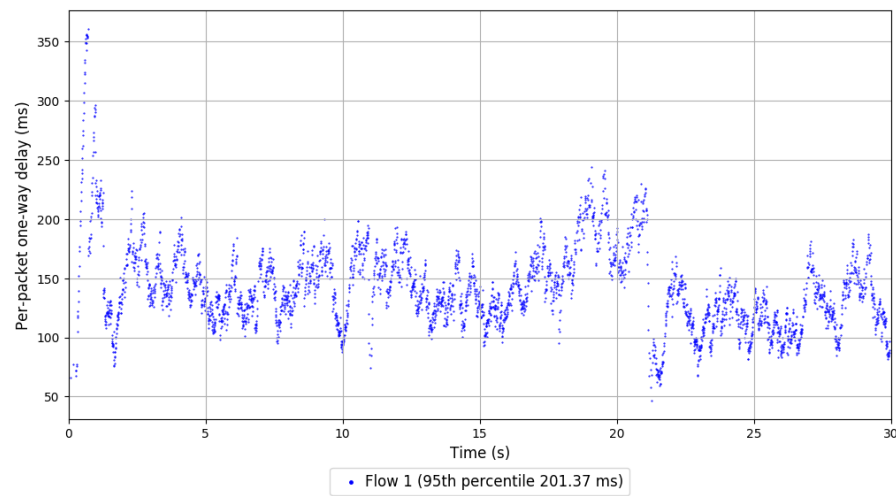
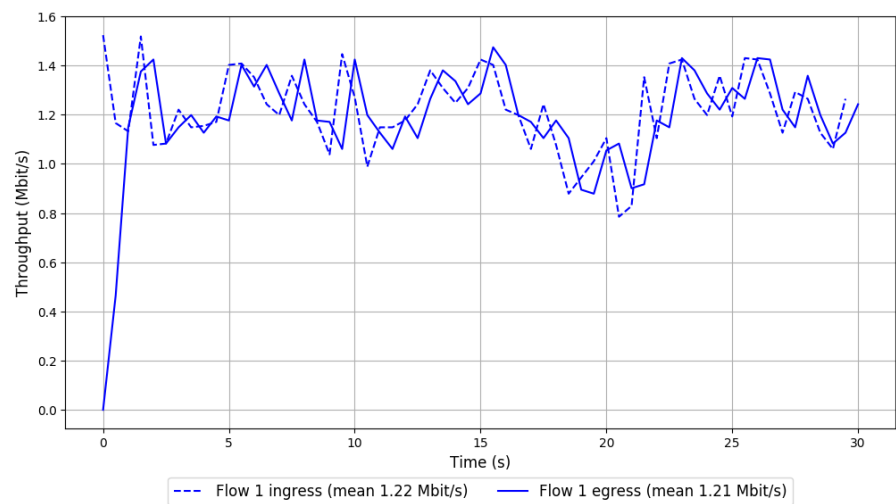
-- Flow 1:

Average throughput: 1.21 Mbit/s

95th percentile per-packet one-way delay: 201.366 ms

Loss rate: 1.17%

Run 3: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2019-01-19 03:40:29

End at: 2019-01-19 03:40:59

Local clock offset: 2.202 ms

Remote clock offset: -4.809 ms

Below is generated by plot.py at 2019-01-19 04:44:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.14 Mbit/s

95th percentile per-packet one-way delay: 149.849 ms

Loss rate: 0.61%

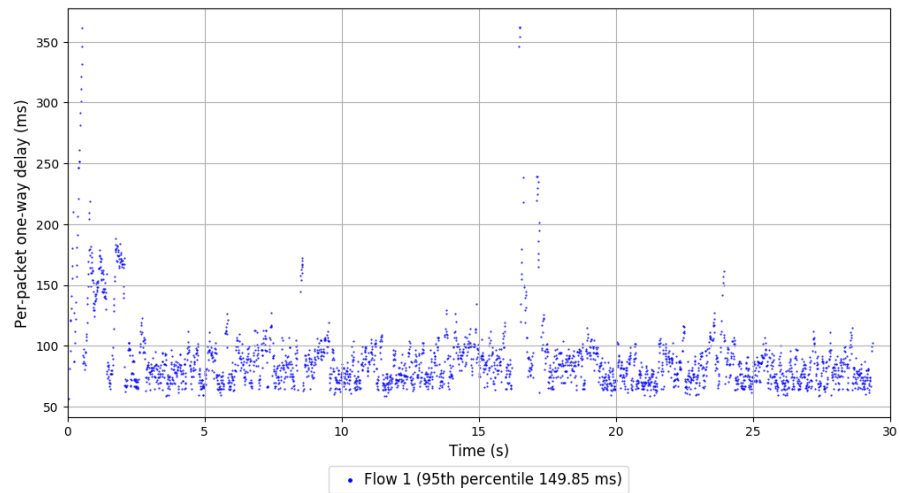
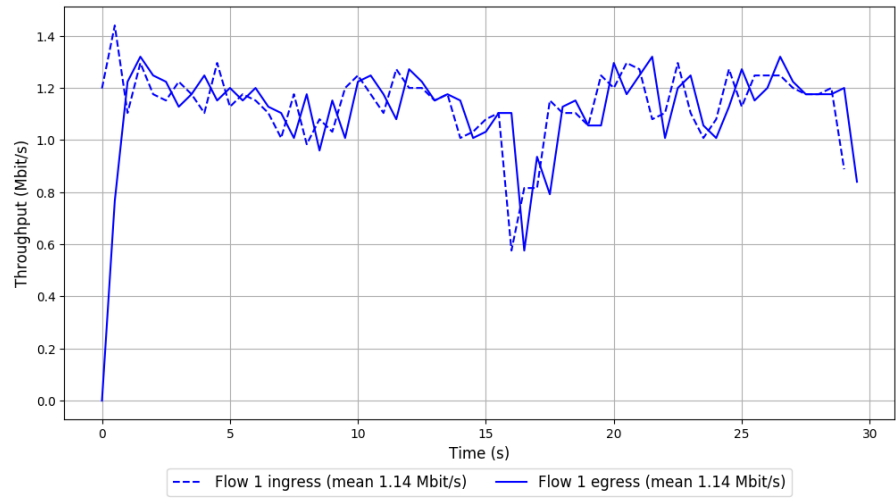
-- Flow 1:

Average throughput: 1.14 Mbit/s

95th percentile per-packet one-way delay: 149.849 ms

Loss rate: 0.61%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-01-19 04:03:52

End at: 2019-01-19 04:04:22

Local clock offset: 0.254 ms

Remote clock offset: -3.132 ms

Below is generated by plot.py at 2019-01-19 04:44:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.15 Mbit/s

95th percentile per-packet one-way delay: 118.360 ms

Loss rate: 1.82%

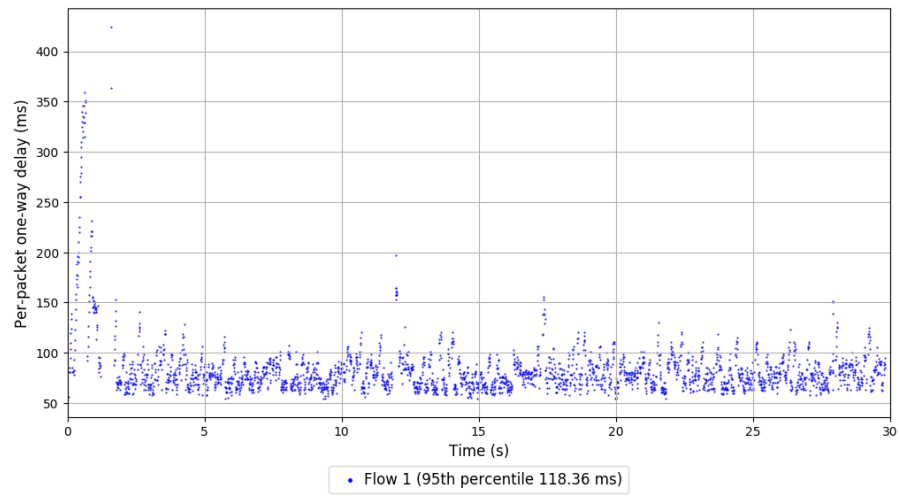
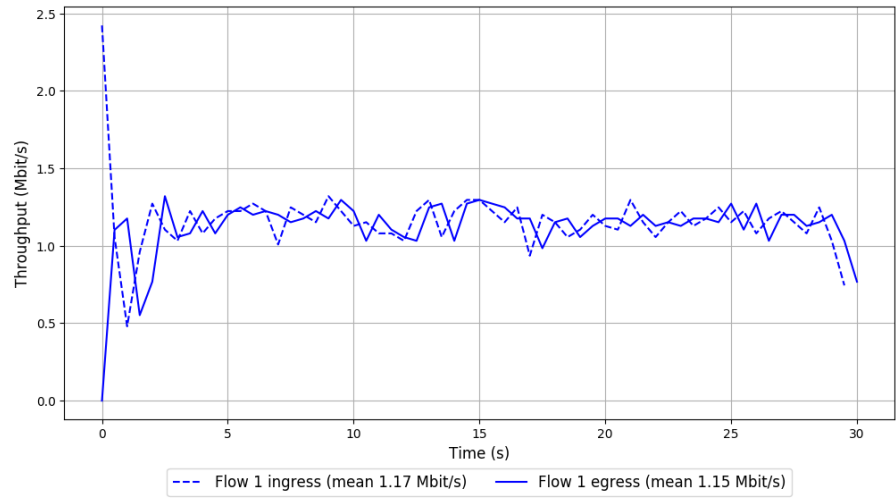
-- Flow 1:

Average throughput: 1.15 Mbit/s

95th percentile per-packet one-way delay: 118.360 ms

Loss rate: 1.82%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2019-01-19 04:27:12

End at: 2019-01-19 04:27:42

Local clock offset: 0.352 ms

Remote clock offset: -3.694 ms

Below is generated by plot.py at 2019-01-19 04:44:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.03 Mbit/s

95th percentile per-packet one-way delay: 133.720 ms

Loss rate: 0.78%

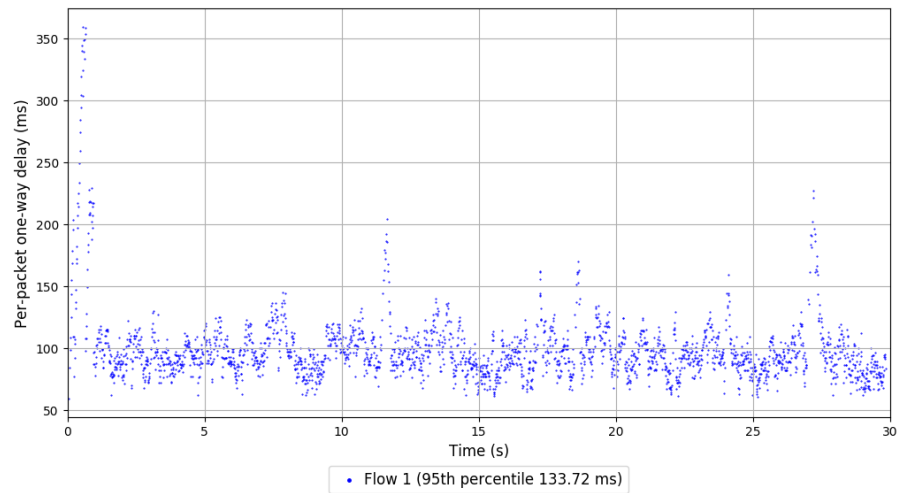
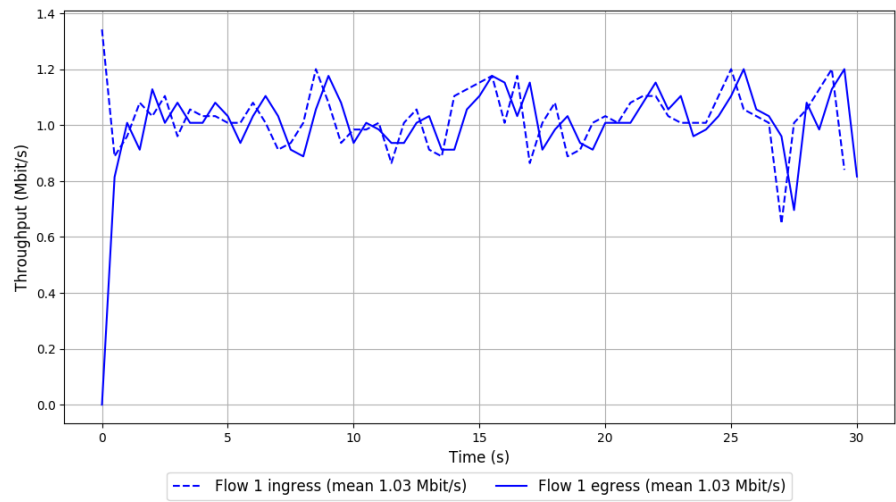
-- Flow 1:

Average throughput: 1.03 Mbit/s

95th percentile per-packet one-way delay: 133.720 ms

Loss rate: 0.78%

Run 3: Report of Indigo — Data Link



Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-19 03:39:23

End at: 2019-01-19 03:39:53

Local clock offset: 1.717 ms

Remote clock offset: -4.041 ms

Below is generated by plot.py at 2019-01-19 04:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 283.644 ms

Loss rate: 1.07%

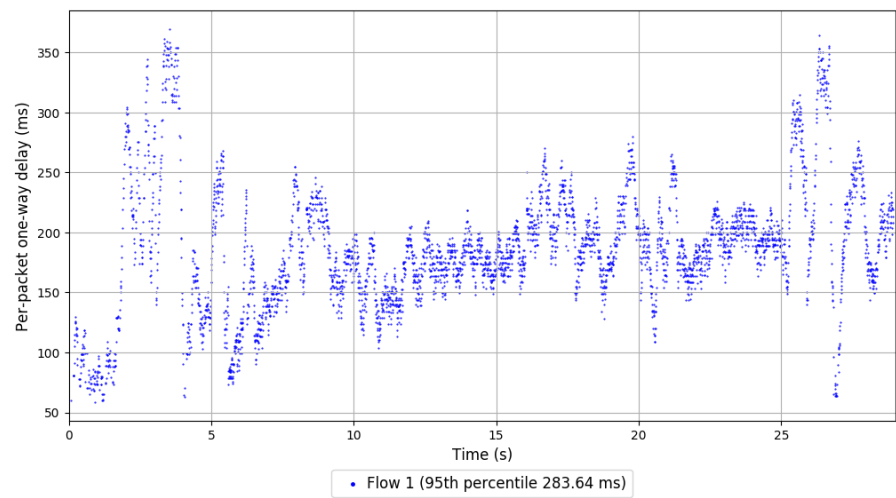
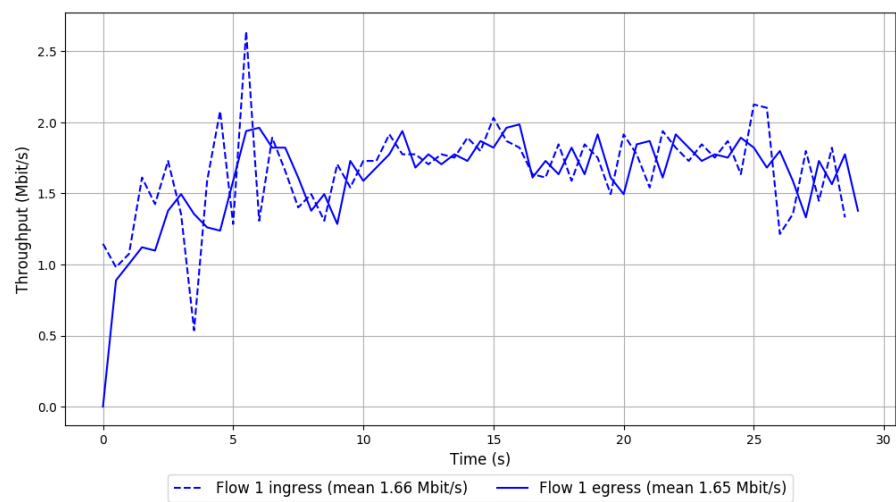
-- Flow 1:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 283.644 ms

Loss rate: 1.07%

Run 1: Report of Indigo-MusesC3 — Data Link

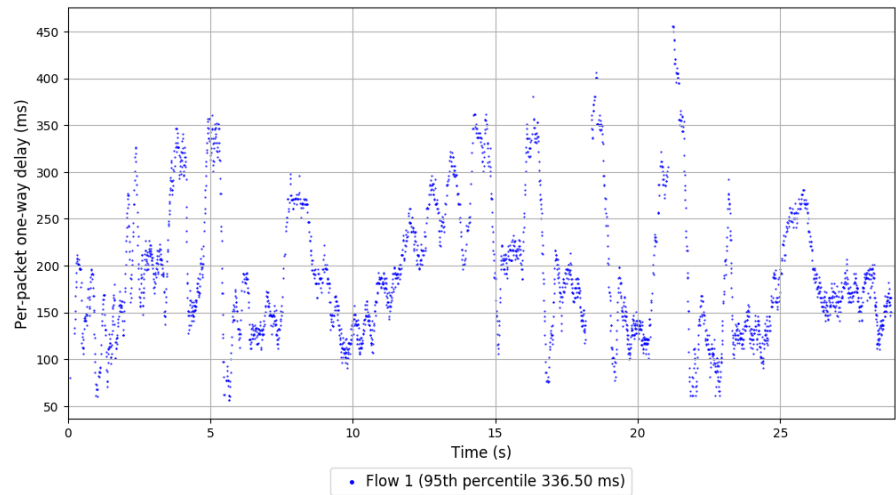
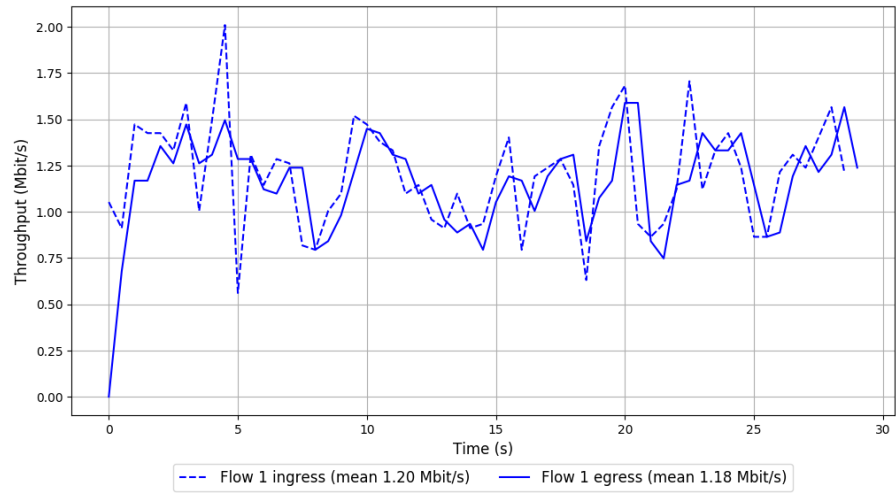


Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-19 04:02:46
End at: 2019-01-19 04:03:16
Local clock offset: -2.282 ms
Remote clock offset: -4.615 ms

Below is generated by plot.py at 2019-01-19 04:44:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 336.498 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 336.498 ms
Loss rate: 1.98%

Run 2: Report of Indigo-MusesC3 — Data Link



Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-19 04:26:05

End at: 2019-01-19 04:26:35

Local clock offset: 1.152 ms

Remote clock offset: -4.06 ms

Below is generated by plot.py at 2019-01-19 04:44:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 344.407 ms

Loss rate: 2.64%

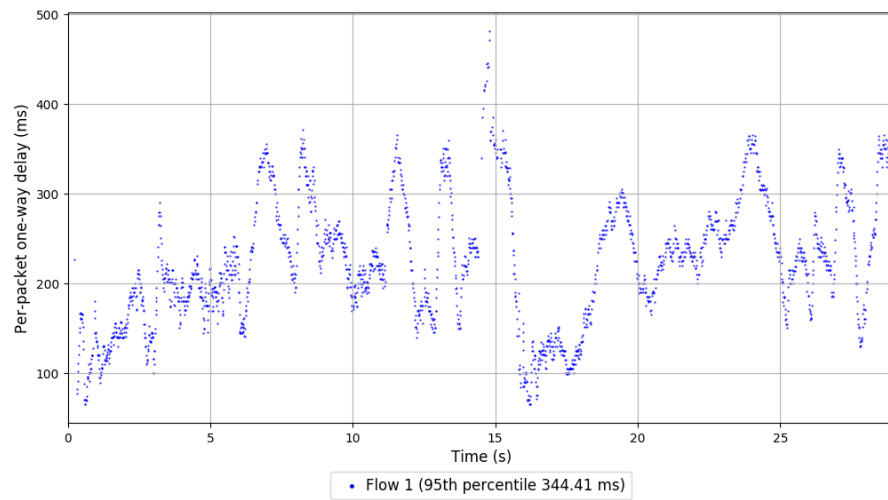
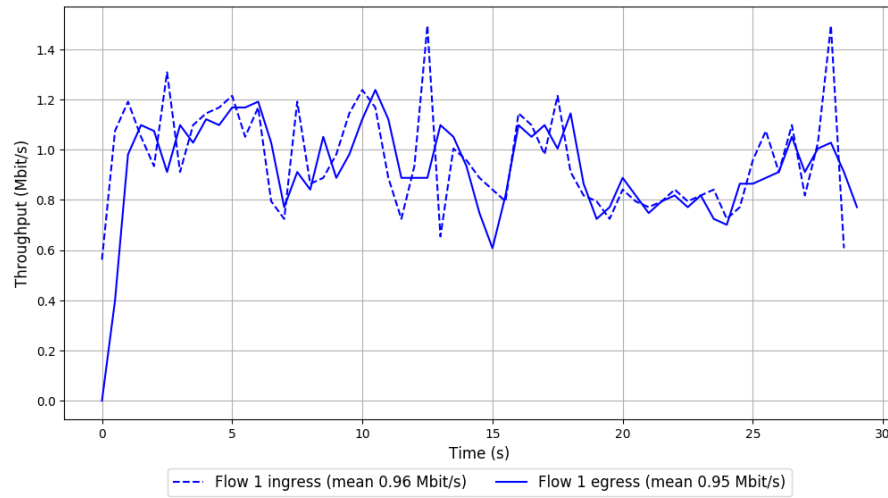
-- Flow 1:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 344.407 ms

Loss rate: 2.64%

Run 3: Report of Indigo-MusesC3 — Data Link

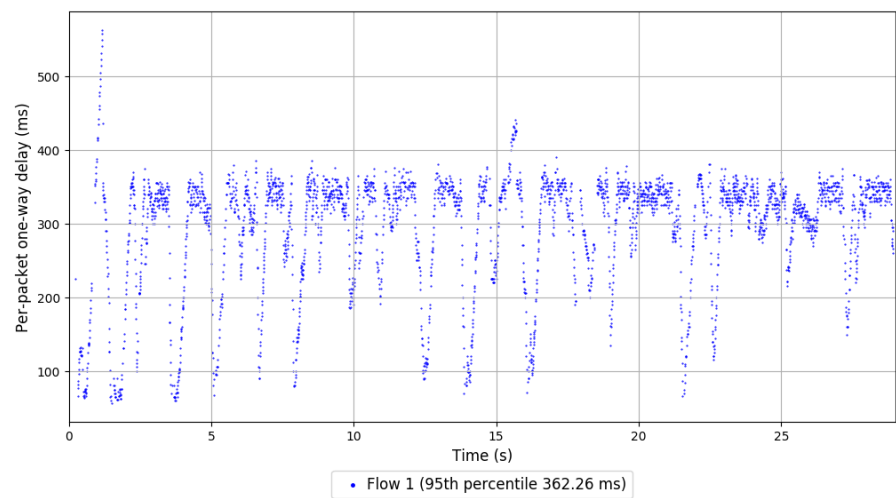
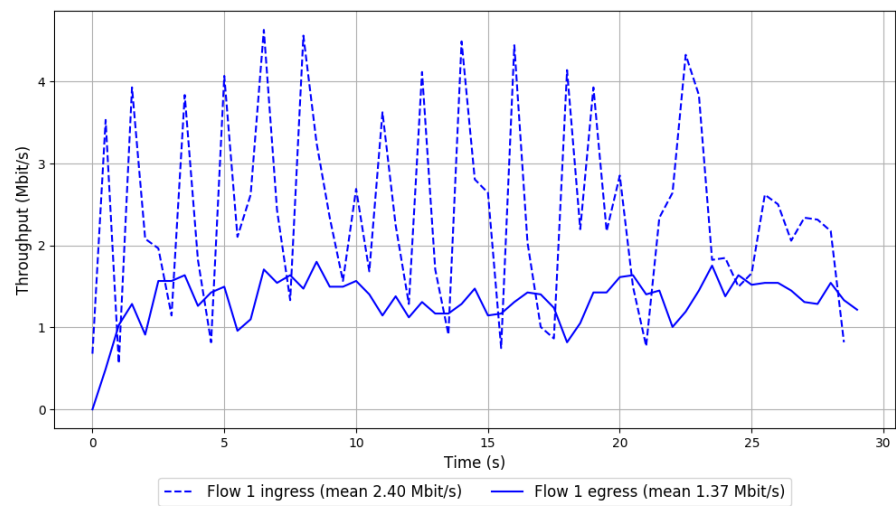


Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-19 03:50:32
End at: 2019-01-19 03:51:02
Local clock offset: 1.663 ms
Remote clock offset: -4.392 ms

Below is generated by plot.py at 2019-01-19 04:44:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 362.257 ms
Loss rate: 43.43%
-- Flow 1:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 362.257 ms
Loss rate: 43.43%

Run 1: Report of Indigo-MusesC5 — Data Link

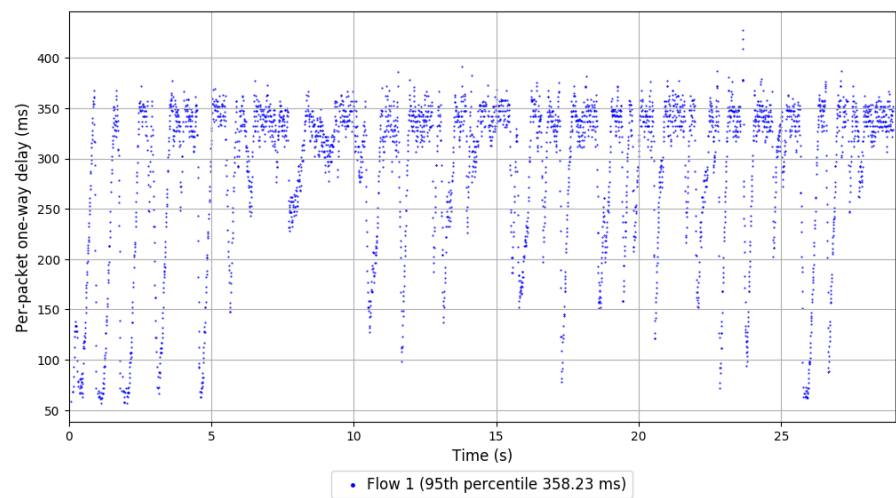
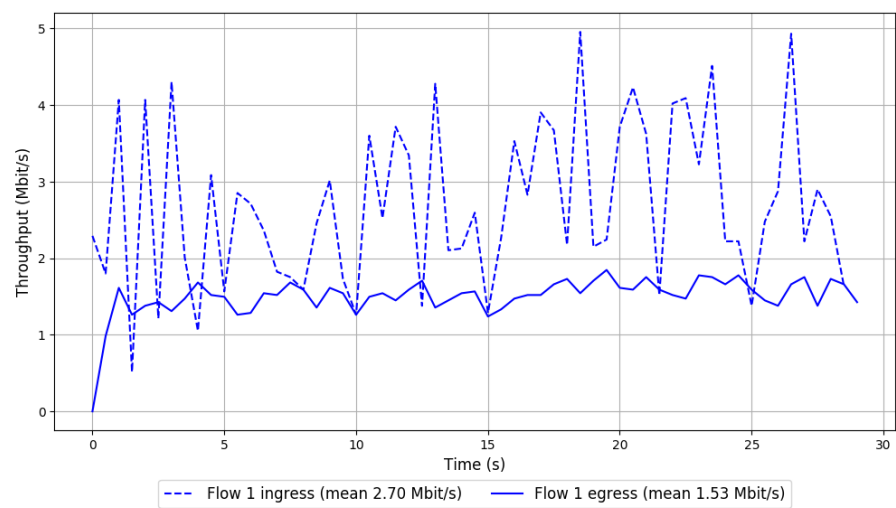


Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-19 04:13:50
End at: 2019-01-19 04:14:20
Local clock offset: 0.262 ms
Remote clock offset: -3.376 ms

Below is generated by plot.py at 2019-01-19 04:44:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 358.226 ms
Loss rate: 43.41%
-- Flow 1:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 358.226 ms
Loss rate: 43.41%

Run 2: Report of Indigo-MusesC5 — Data Link

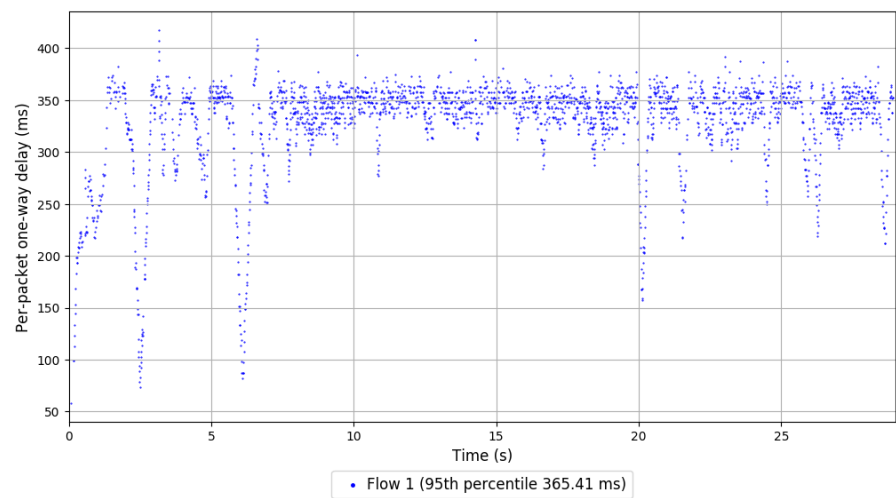
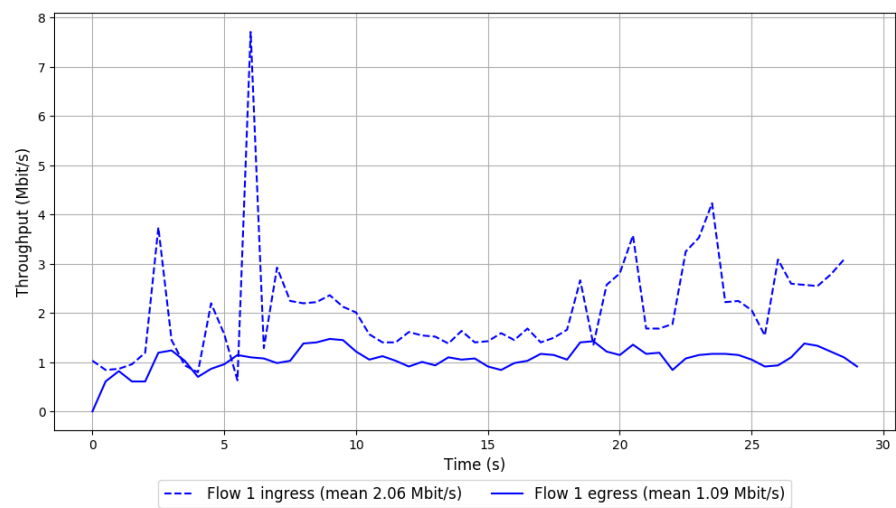


Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-19 04:37:17
End at: 2019-01-19 04:37:47
Local clock offset: 1.402 ms
Remote clock offset: -4.699 ms

Below is generated by plot.py at 2019-01-19 04:44:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 365.410 ms
Loss rate: 47.47%
-- Flow 1:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 365.410 ms
Loss rate: 47.47%

Run 3: Report of Indigo-MusesC5 — Data Link



Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-19 03:51:38

End at: 2019-01-19 03:52:08

Local clock offset: 0.938 ms

Remote clock offset: -3.942 ms

Below is generated by plot.py at 2019-01-19 04:44:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.11 Mbit/s

95th percentile per-packet one-way delay: 115.834 ms

Loss rate: 0.44%

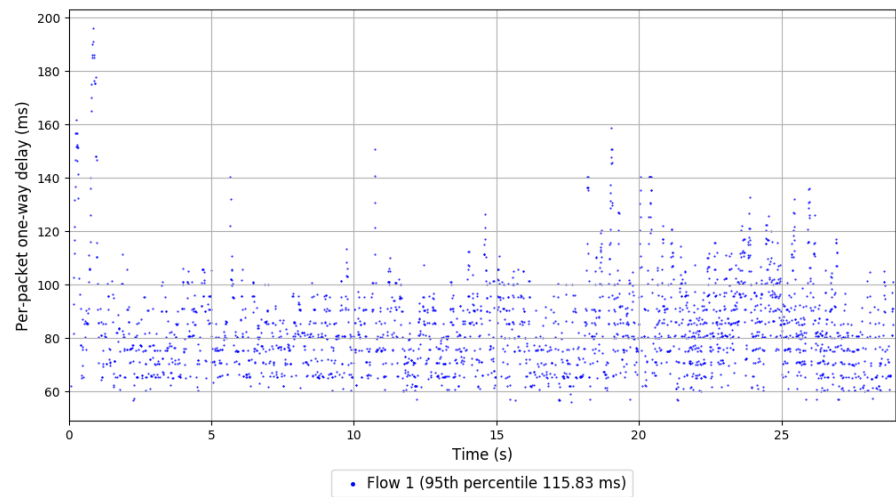
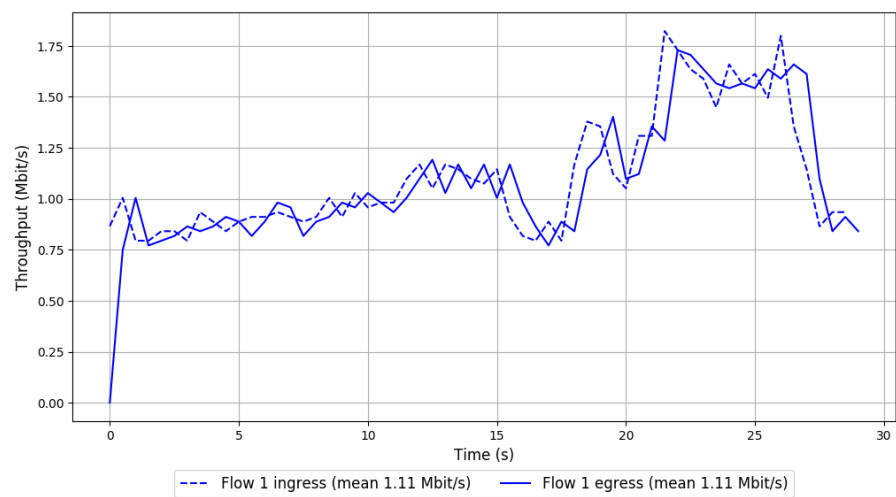
-- Flow 1:

Average throughput: 1.11 Mbit/s

95th percentile per-packet one-way delay: 115.834 ms

Loss rate: 0.44%

Run 1: Report of Indigo-MusesD — Data Link

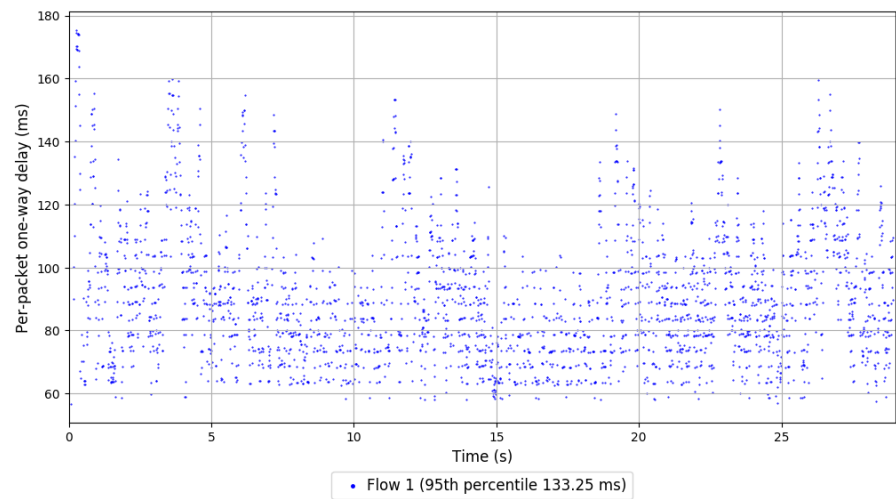
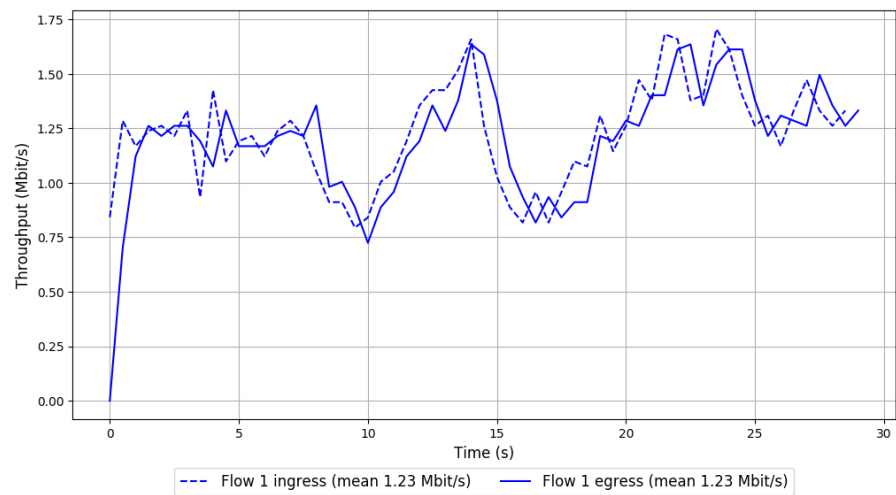


Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-19 04:14:58
End at: 2019-01-19 04:15:28
Local clock offset: -0.243 ms
Remote clock offset: -4.426 ms

Below is generated by plot.py at 2019-01-19 04:44:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 133.248 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 133.248 ms
Loss rate: 0.36%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-19 04:38:24

End at: 2019-01-19 04:38:54

Local clock offset: 2.28 ms

Remote clock offset: -2.685 ms

Below is generated by plot.py at 2019-01-19 04:44:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.88 Mbit/s

95th percentile per-packet one-way delay: 189.579 ms

Loss rate: 0.23%

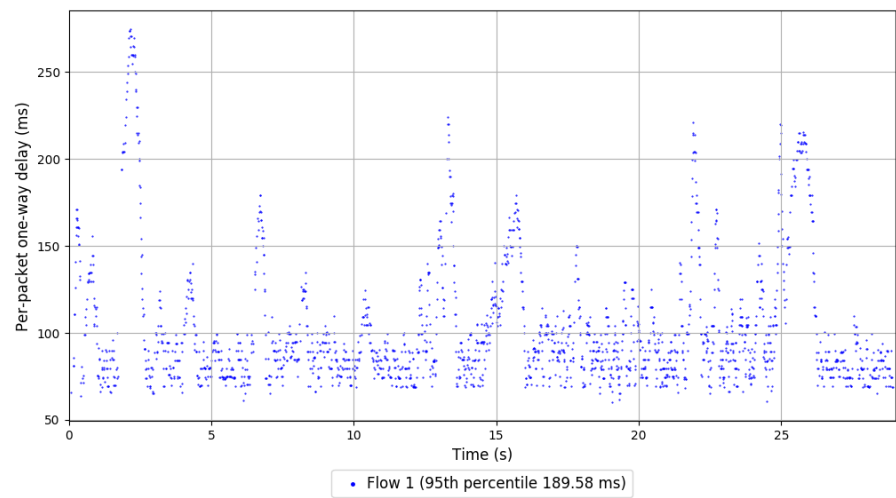
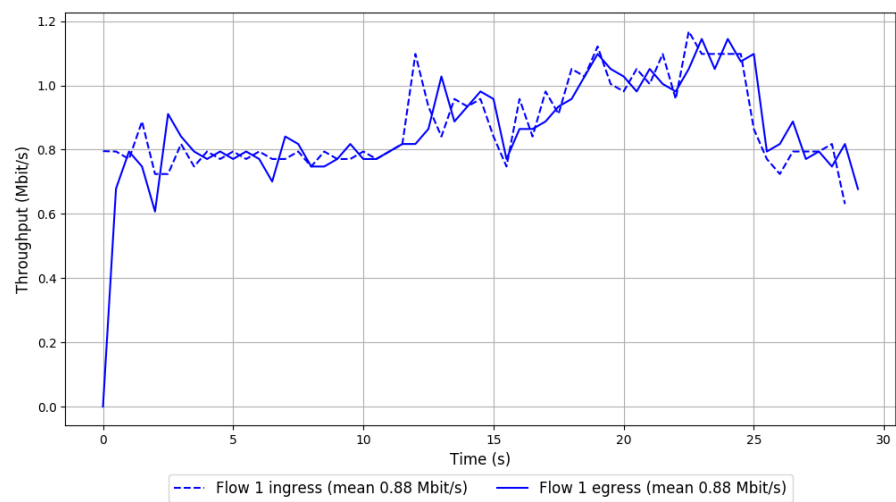
-- Flow 1:

Average throughput: 0.88 Mbit/s

95th percentile per-packet one-way delay: 189.579 ms

Loss rate: 0.23%

Run 3: Report of Indigo-MusesD — Data Link

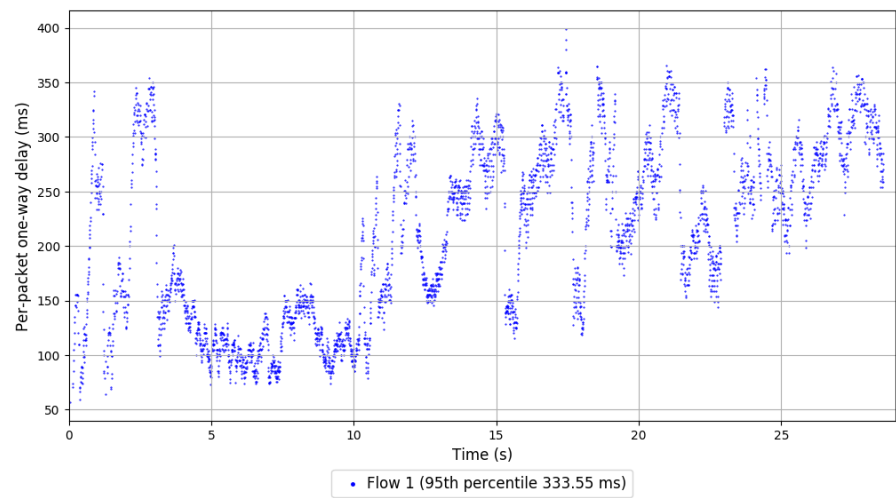
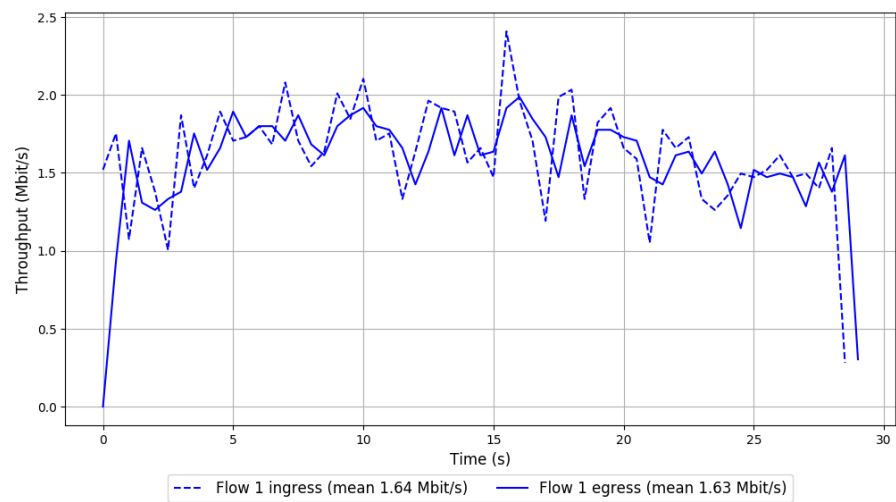


```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-19 03:42:41
End at: 2019-01-19 03:43:11
Local clock offset: 1.061 ms
Remote clock offset: -4.065 ms

# Below is generated by plot.py at 2019-01-19 04:44:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 333.551 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 333.551 ms
Loss rate: 1.39%
```

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-19 04:06:05

End at: 2019-01-19 04:06:35

Local clock offset: 0.994 ms

Remote clock offset: -5.741 ms

Below is generated by plot.py at 2019-01-19 04:44:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.48 Mbit/s

95th percentile per-packet one-way delay: 323.188 ms

Loss rate: 1.24%

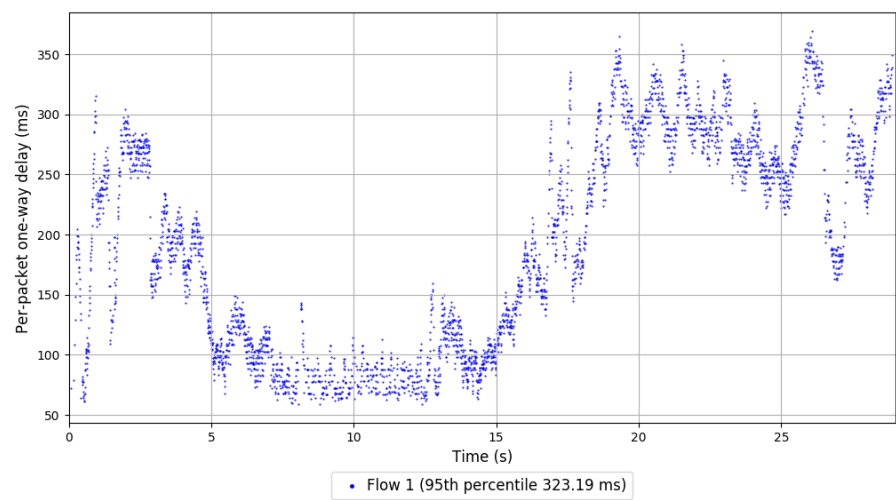
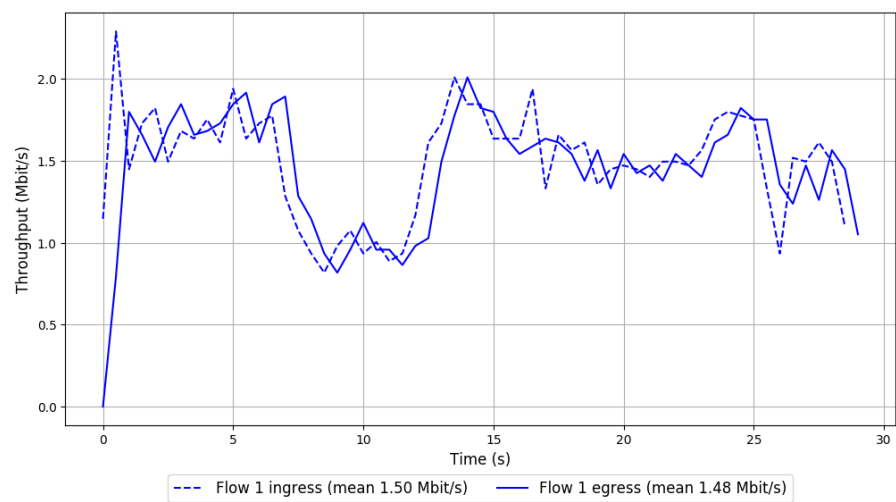
-- Flow 1:

Average throughput: 1.48 Mbit/s

95th percentile per-packet one-way delay: 323.188 ms

Loss rate: 1.24%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-19 04:29:25

End at: 2019-01-19 04:29:55

Local clock offset: 1.458 ms

Remote clock offset: -2.935 ms

Below is generated by plot.py at 2019-01-19 04:44:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 350.997 ms

Loss rate: 4.40%

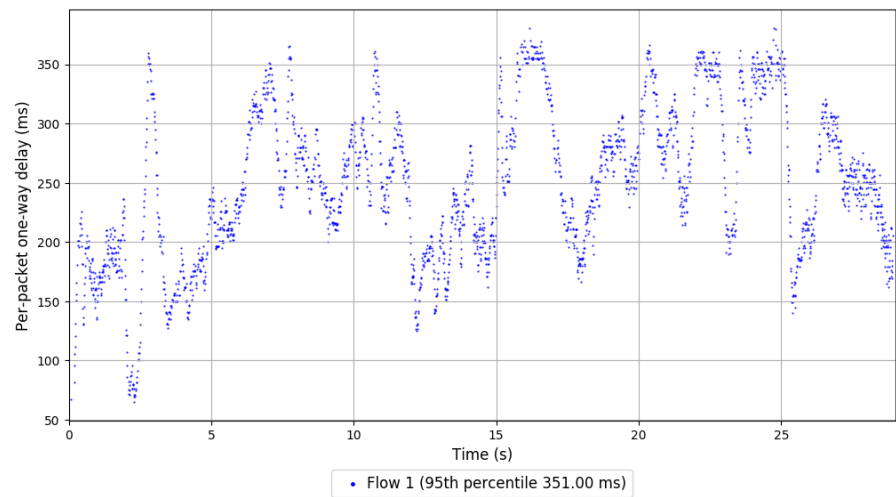
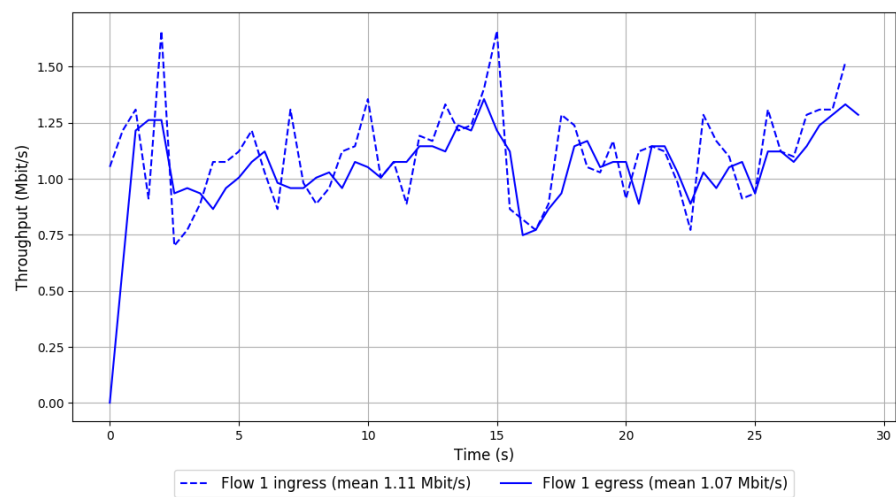
-- Flow 1:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 350.997 ms

Loss rate: 4.40%

Run 3: Report of Indigo-MusesT — Data Link

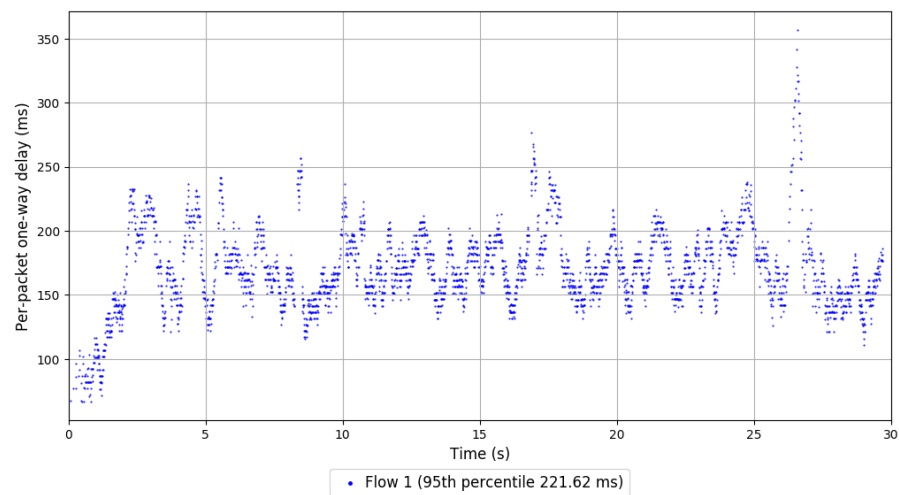
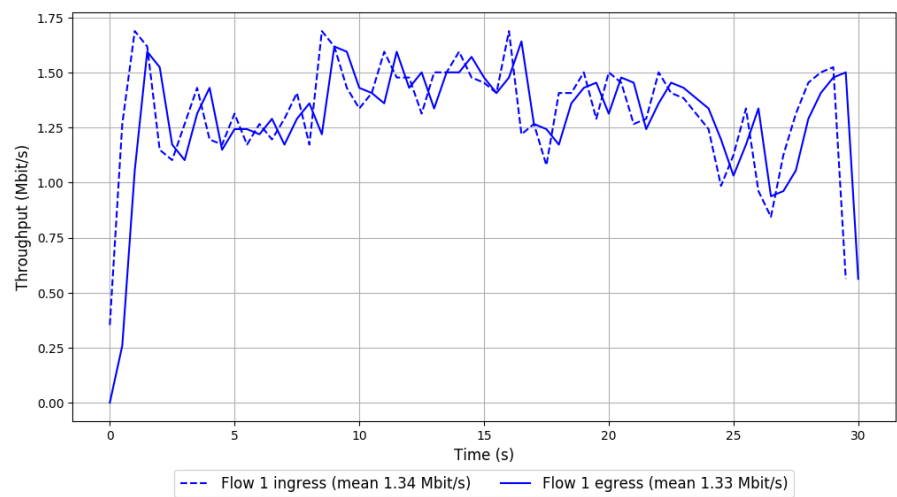



```
Run 1: Statistics of LEDBAT

Start at: 2019-01-19 03:34:58
End at: 2019-01-19 03:35:28
Local clock offset: 0.975 ms
Remote clock offset: -5.44 ms

# Below is generated by plot.py at 2019-01-19 04:44:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 221.623 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 221.623 ms
Loss rate: 0.62%
```

Run 1: Report of LEDBAT — Data Link

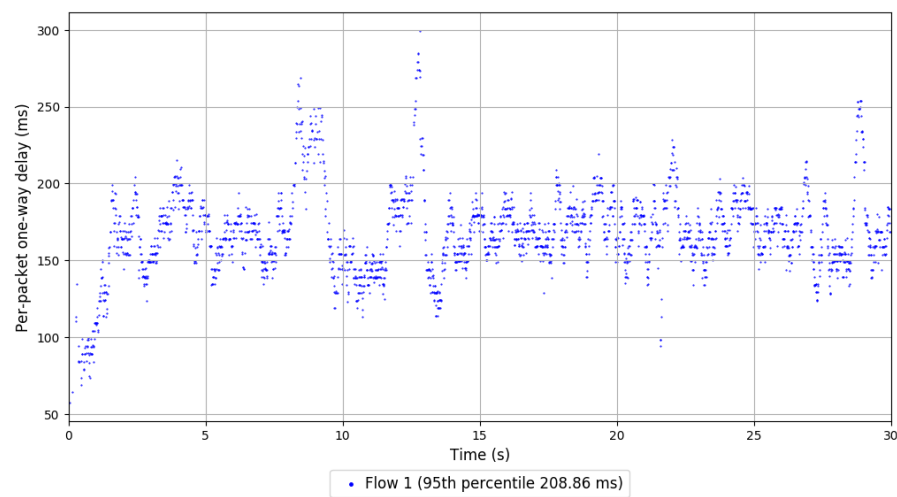
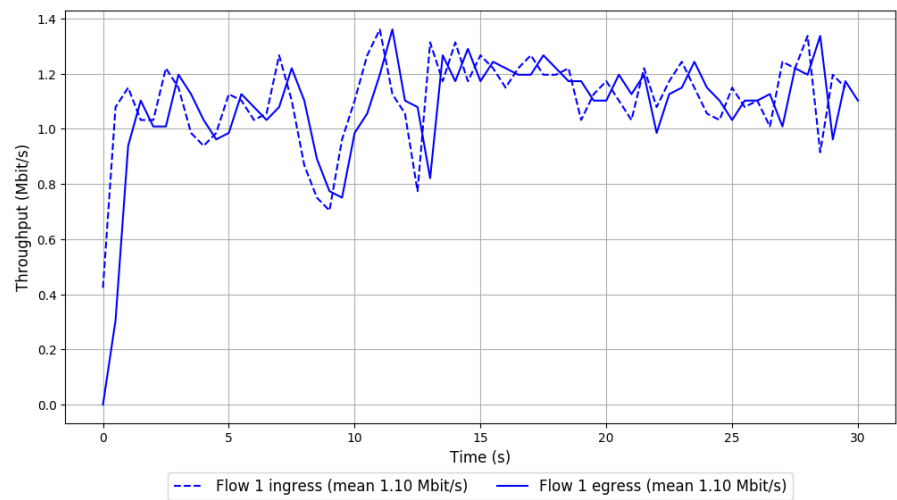


Run 2: Statistics of LEDBAT

Start at: 2019-01-19 03:58:17
End at: 2019-01-19 03:58:47
Local clock offset: 0.791 ms
Remote clock offset: -4.188 ms

Below is generated by plot.py at 2019-01-19 04:44:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 208.858 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 208.858 ms
Loss rate: 0.64%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2019-01-19 04:21:37

End at: 2019-01-19 04:22:07

Local clock offset: 0.714 ms

Remote clock offset: -3.59 ms

Below is generated by plot.py at 2019-01-19 04:44:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.77 Mbit/s

95th percentile per-packet one-way delay: 269.976 ms

Loss rate: 1.06%

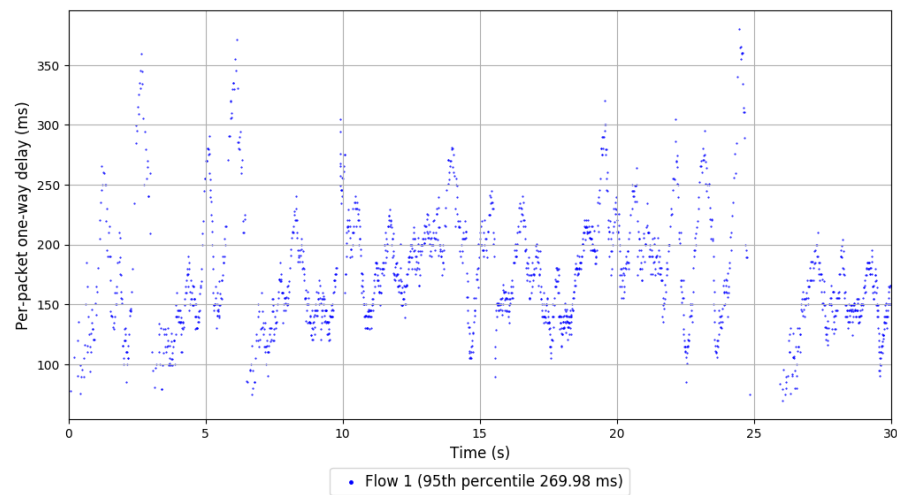
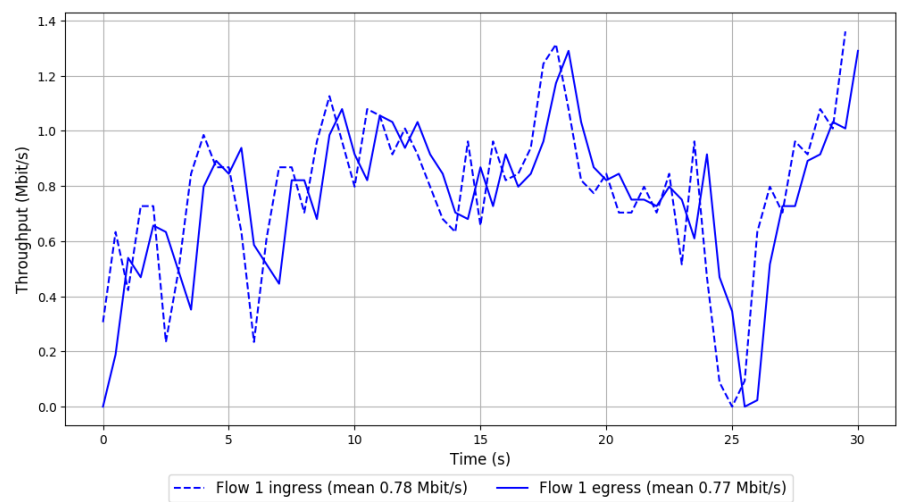
-- Flow 1:

Average throughput: 0.77 Mbit/s

95th percentile per-packet one-way delay: 269.976 ms

Loss rate: 1.06%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2019-01-19 03:36:04

End at: 2019-01-19 03:36:34

Local clock offset: 0.703 ms

Remote clock offset: -4.475 ms

Below is generated by plot.py at 2019-01-19 04:44:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 381.014 ms

Loss rate: 51.08%

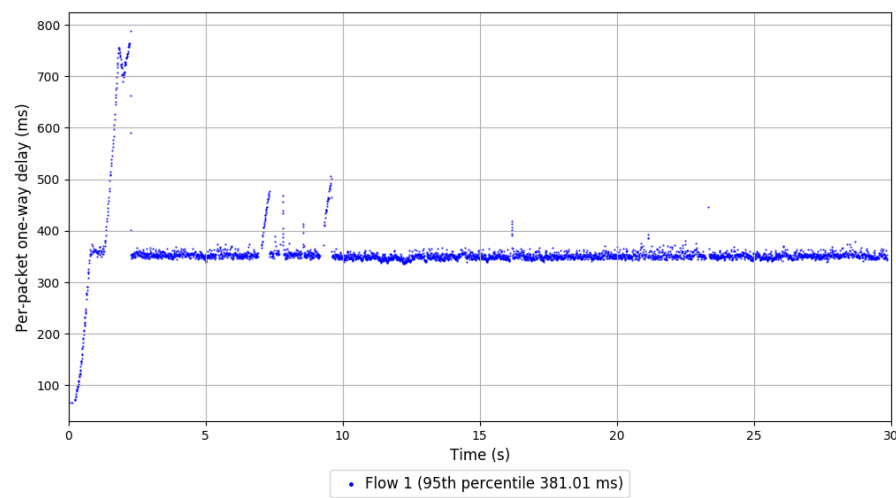
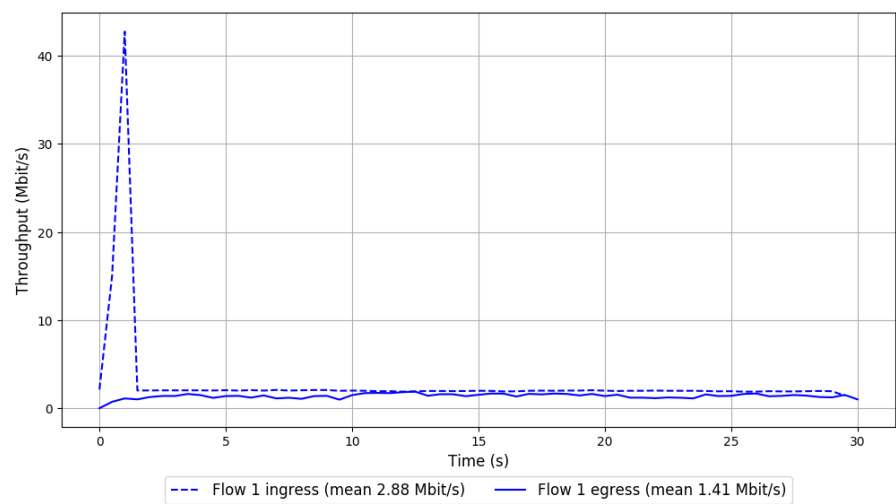
-- Flow 1:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 381.014 ms

Loss rate: 51.08%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-01-19 03:59:24

End at: 2019-01-19 03:59:54

Local clock offset: -0.247 ms

Remote clock offset: -3.854 ms

Below is generated by plot.py at 2019-01-19 04:44:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 374.263 ms

Loss rate: 32.48%

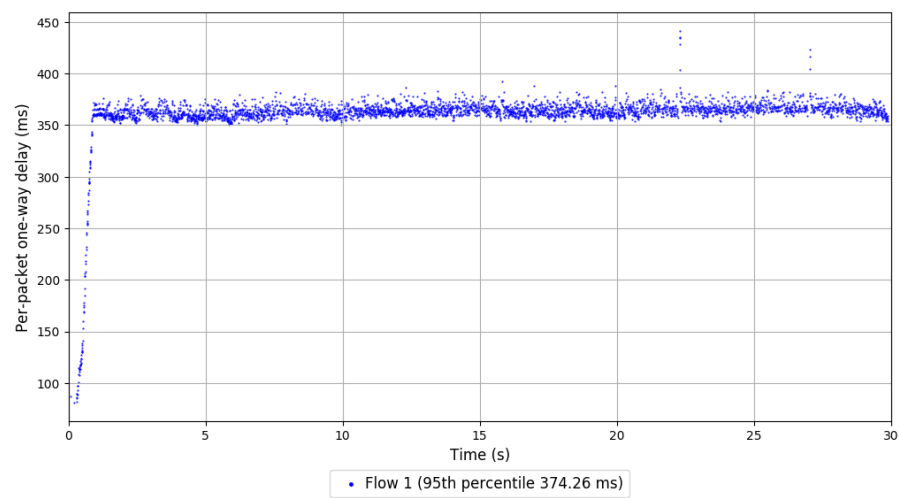
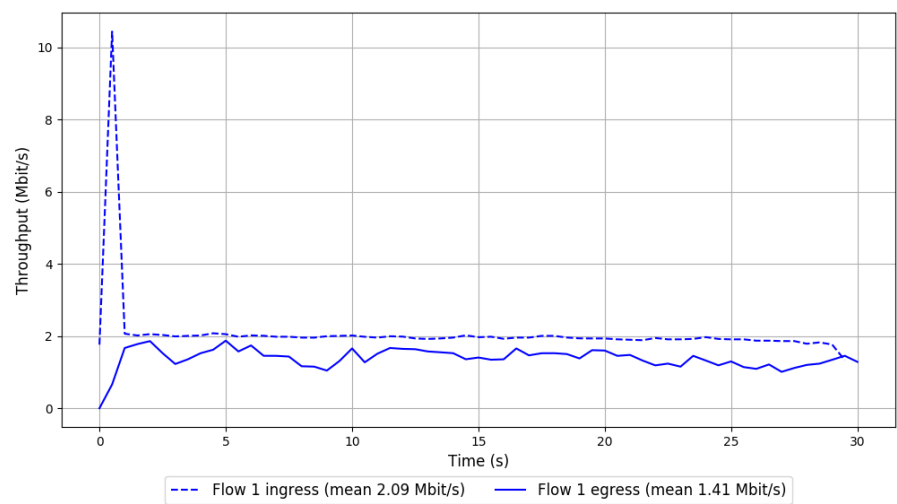
-- Flow 1:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 374.263 ms

Loss rate: 32.48%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-01-19 04:22:43

End at: 2019-01-19 04:23:13

Local clock offset: 0.913 ms

Remote clock offset: -3.854 ms

Below is generated by plot.py at 2019-01-19 04:45:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 369.041 ms

Loss rate: 43.24%

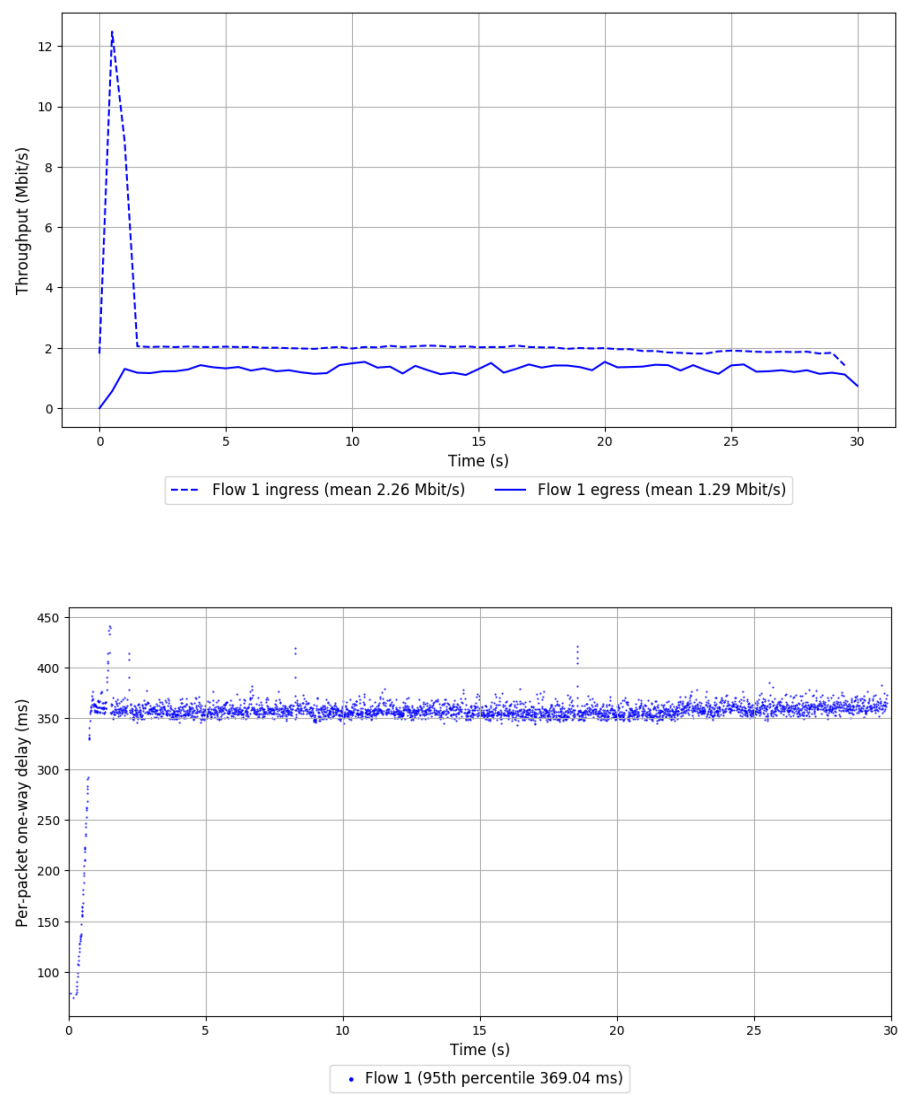
-- Flow 1:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 369.041 ms

Loss rate: 43.24%

Run 3: Report of PCC-Allegro — Data Link

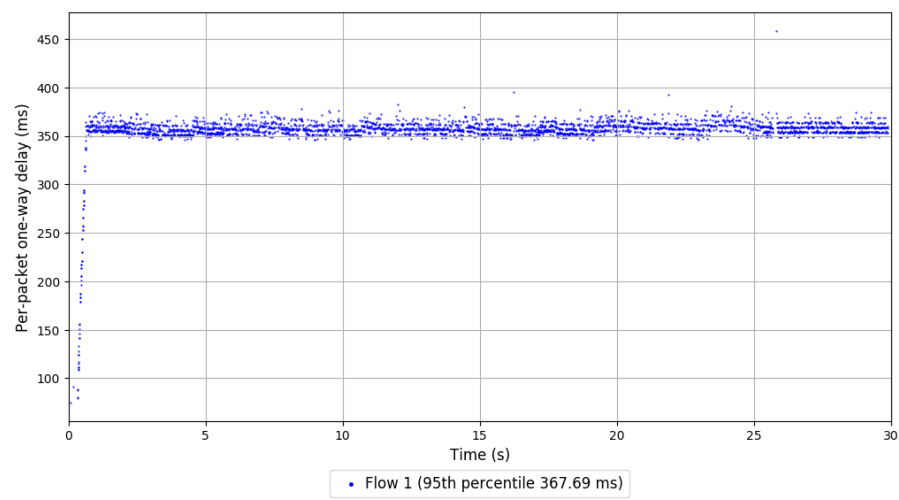
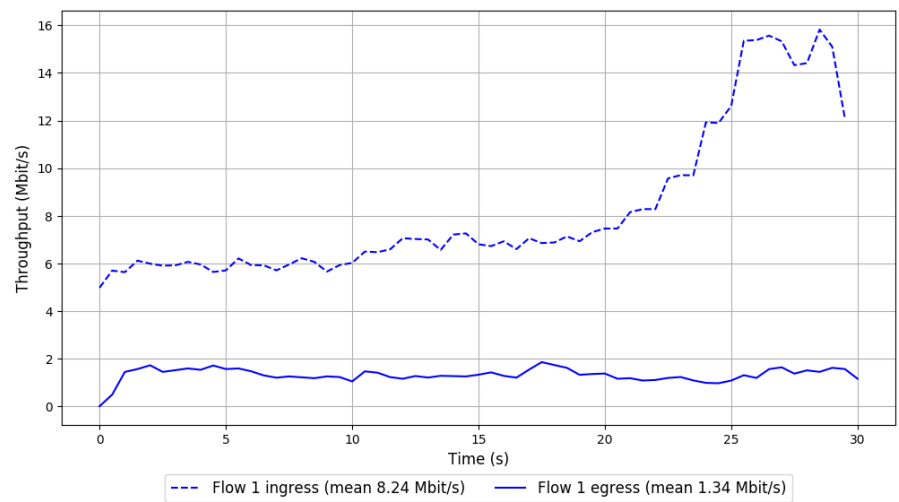


Run 1: Statistics of PCC-Expr

Start at: 2019-01-19 03:37:11
End at: 2019-01-19 03:37:41
Local clock offset: 0.501 ms
Remote clock offset: -4.566 ms

Below is generated by plot.py at 2019-01-19 04:45:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 367.691 ms
Loss rate: 83.72%
-- Flow 1:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 367.691 ms
Loss rate: 83.72%

Run 1: Report of PCC-Expr — Data Link

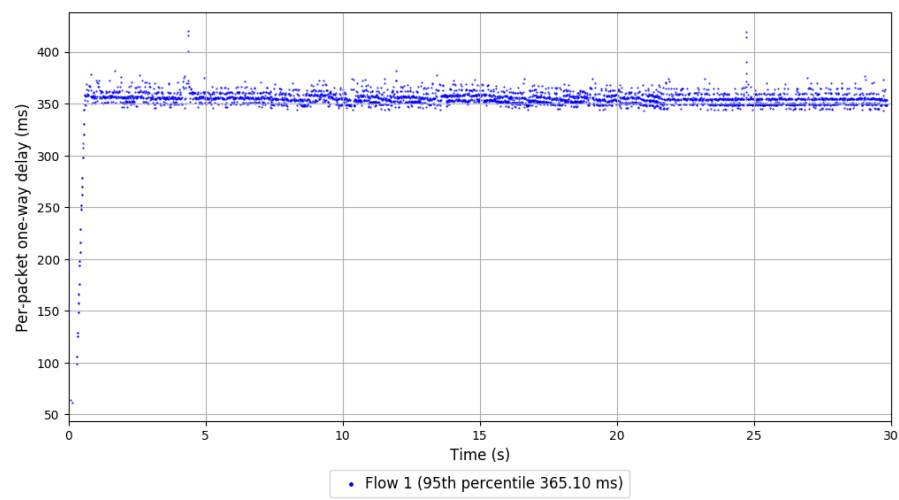
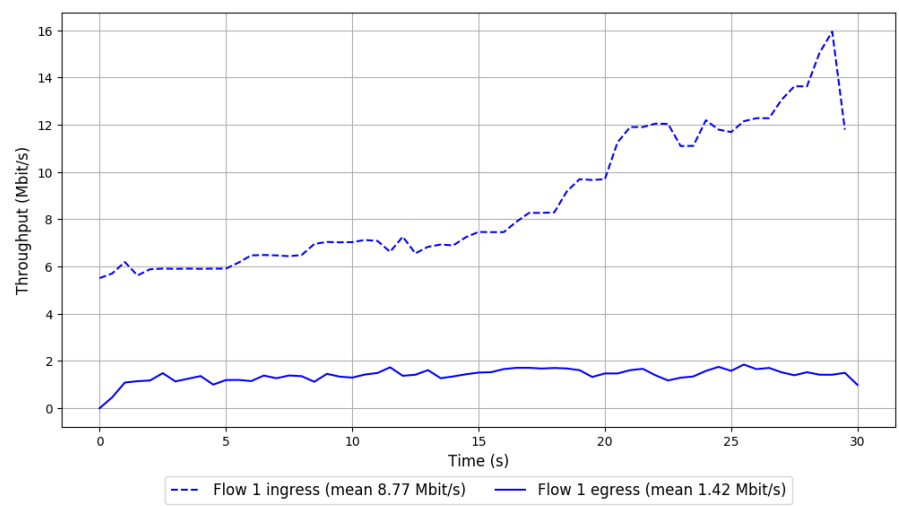


Run 2: Statistics of PCC-Expr

Start at: 2019-01-19 04:00:31
End at: 2019-01-19 04:01:01
Local clock offset: -0.389 ms
Remote clock offset: -3.879 ms

Below is generated by plot.py at 2019-01-19 04:45:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 365.098 ms
Loss rate: 83.81%
-- Flow 1:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 365.098 ms
Loss rate: 83.81%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2019-01-19 04:23:49

End at: 2019-01-19 04:24:19

Local clock offset: 1.67 ms

Remote clock offset: -3.856 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 371.084 ms

Loss rate: 86.57%

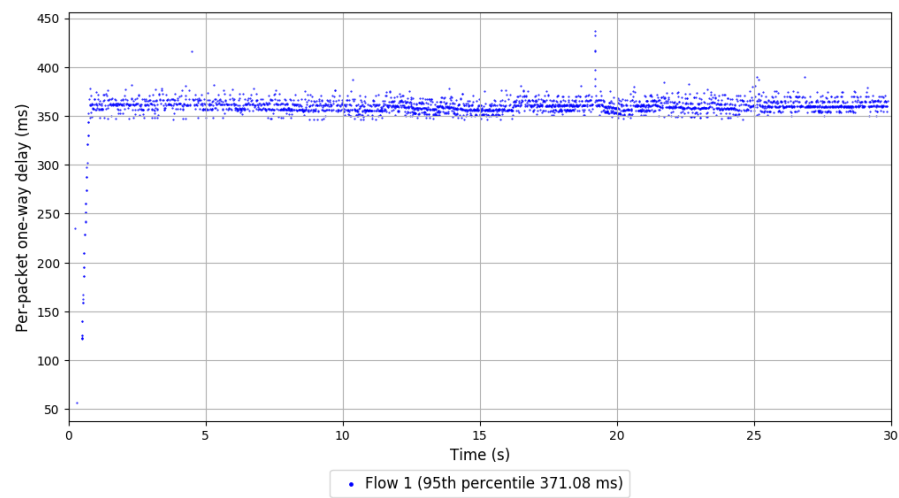
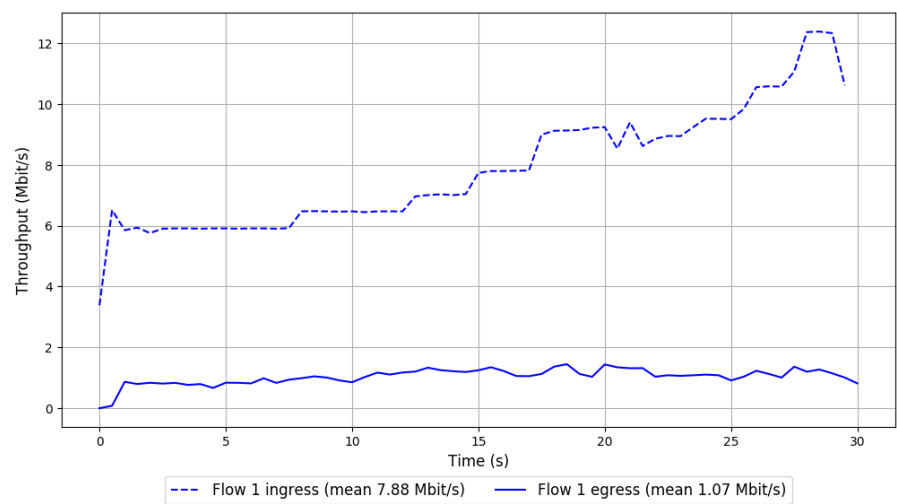
-- Flow 1:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 371.084 ms

Loss rate: 86.57%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2019-01-19 03:53:51

End at: 2019-01-19 03:54:21

Local clock offset: 1.237 ms

Remote clock offset: -4.662 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 356.422 ms

Loss rate: 6.64%

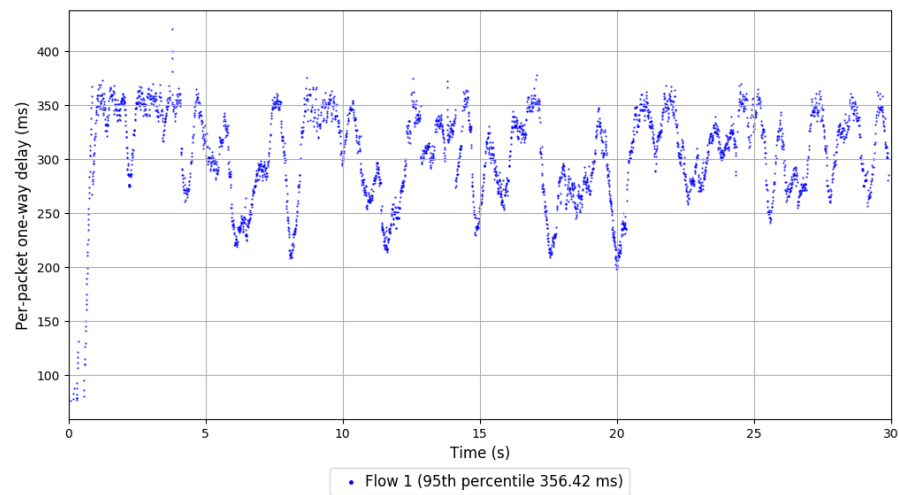
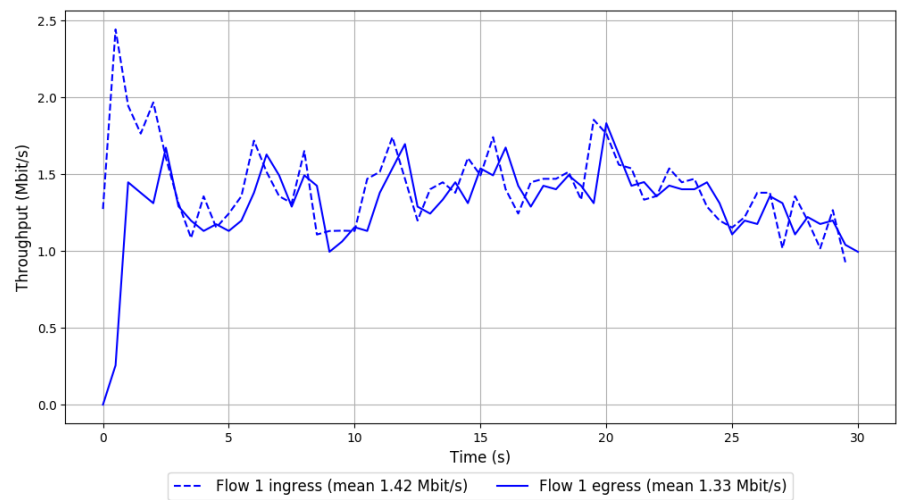
-- Flow 1:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 356.422 ms

Loss rate: 6.64%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2019-01-19 04:17:11

End at: 2019-01-19 04:17:41

Local clock offset: 0.218 ms

Remote clock offset: -3.945 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 354.732 ms

Loss rate: 6.09%

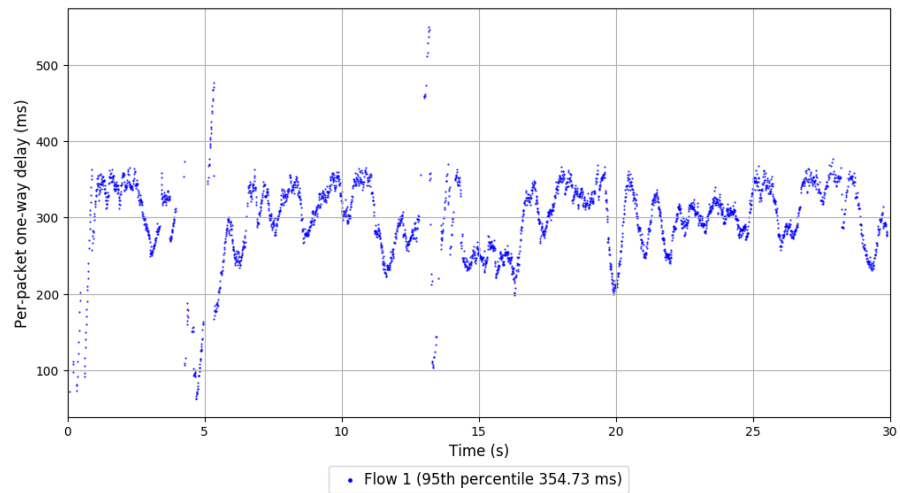
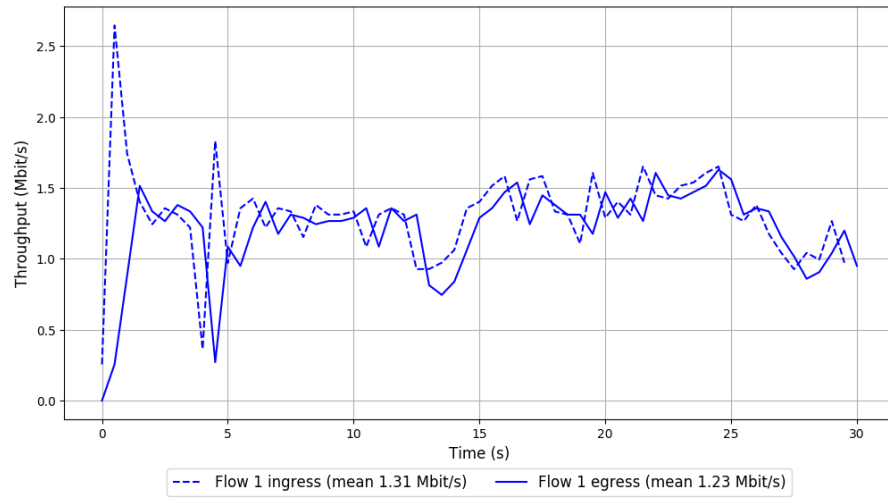
-- Flow 1:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 354.732 ms

Loss rate: 6.09%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2019-01-19 04:40:38

End at: 2019-01-19 04:41:08

Local clock offset: -0.35 ms

Remote clock offset: -2.72 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 365.943 ms

Loss rate: 6.57%

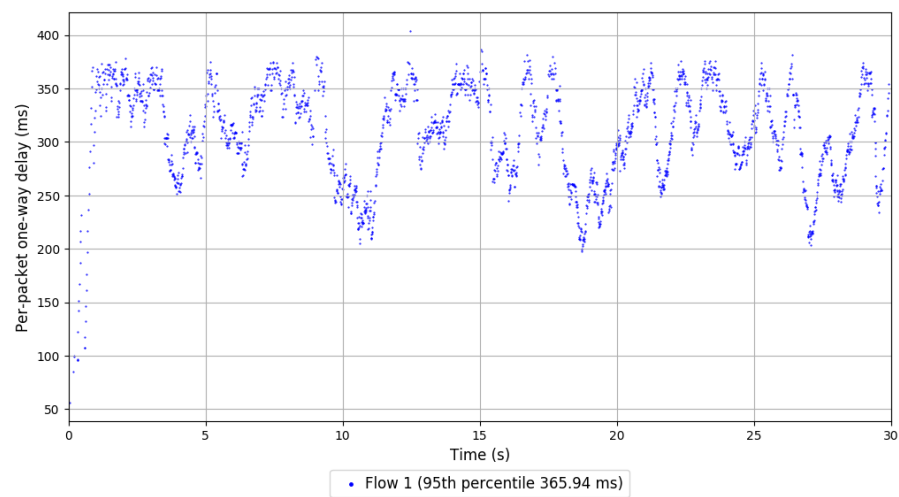
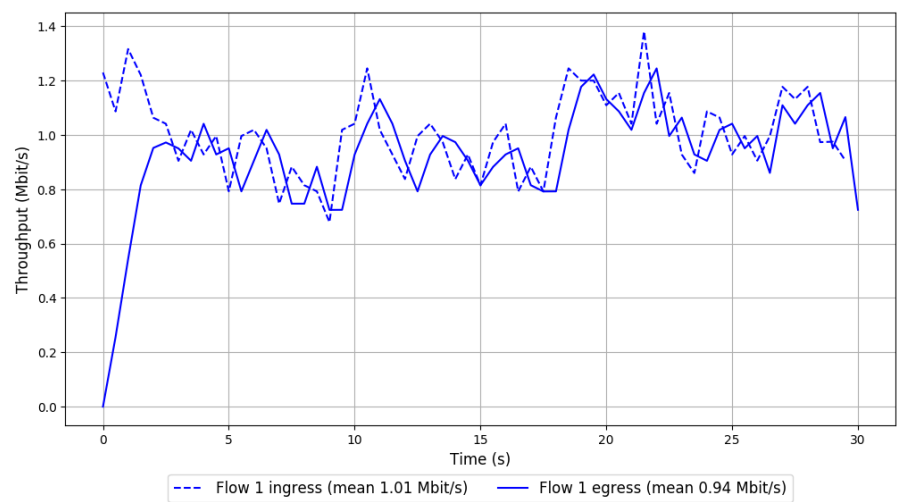
-- Flow 1:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 365.943 ms

Loss rate: 6.57%

Run 3: Report of QUIC Cubic — Data Link

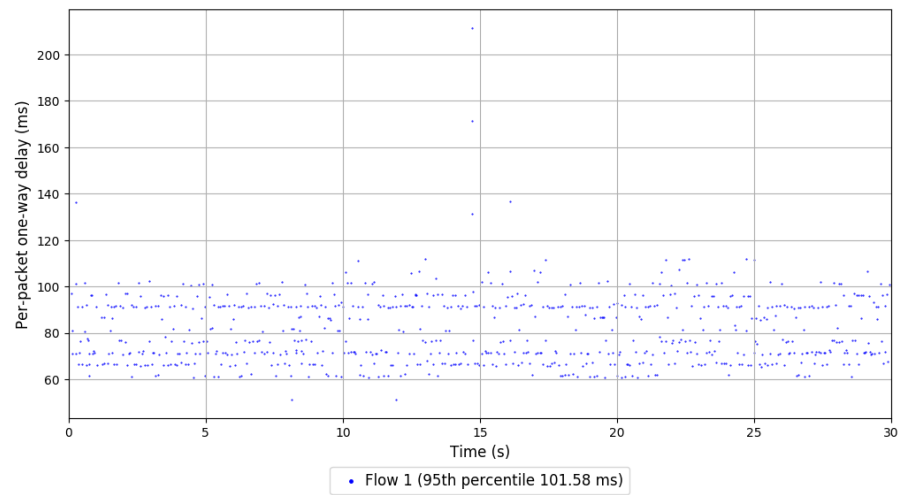
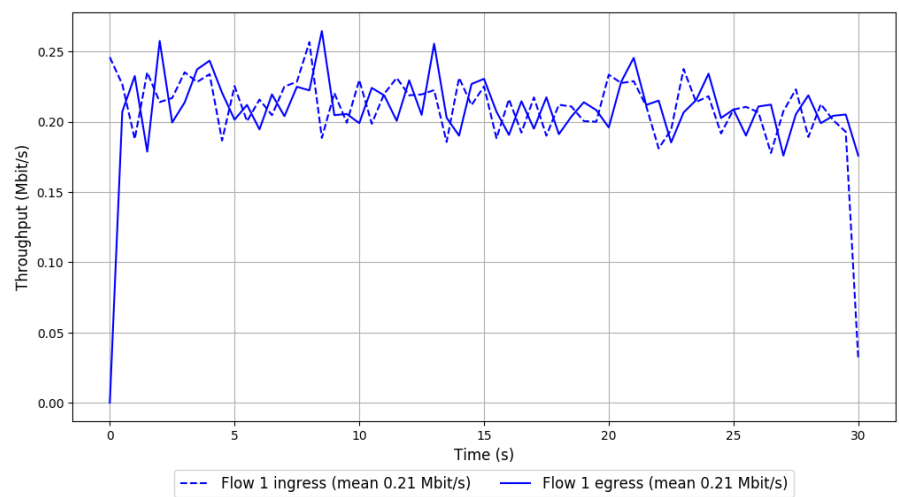


Run 1: Statistics of SCReAM

Start at: 2019-01-19 03:56:04
End at: 2019-01-19 03:56:34
Local clock offset: 0.952 ms
Remote clock offset: -4.226 ms

Below is generated by plot.py at 2019-01-19 04:45:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 101.579 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 101.579 ms
Loss rate: 0.62%

Run 1: Report of SReAM — Data Link

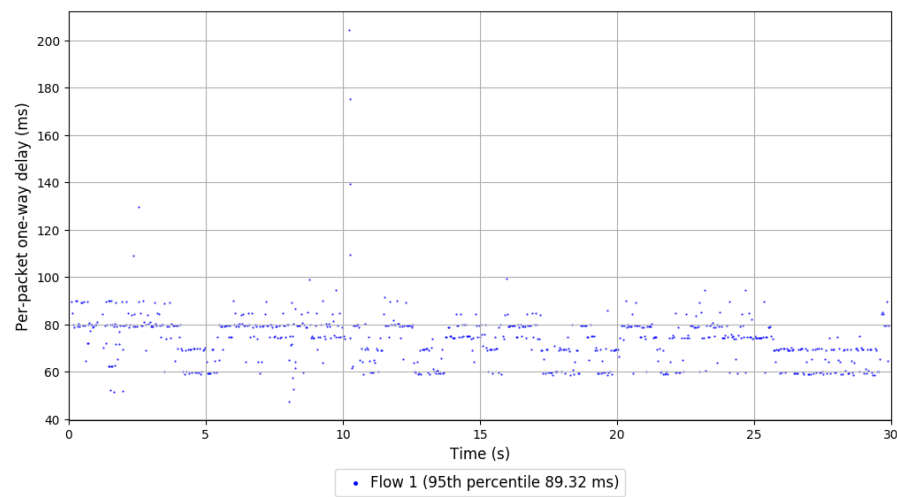
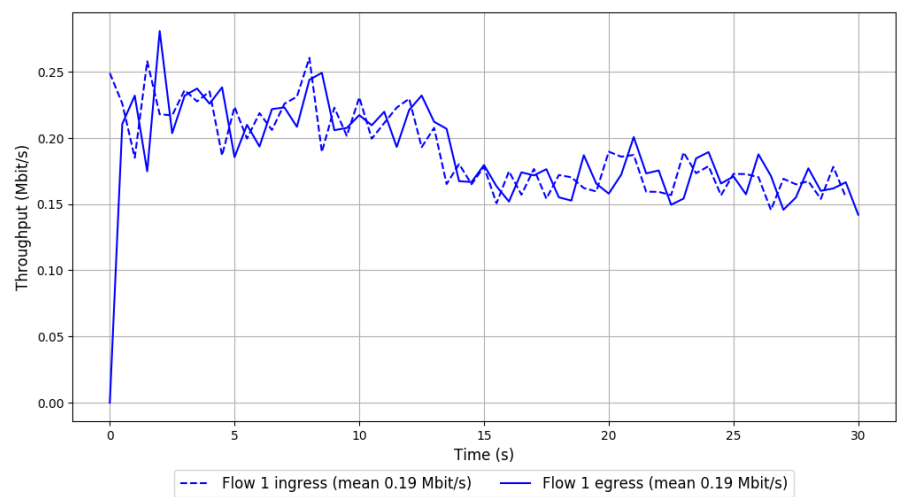


Run 2: Statistics of SCReAM

Start at: 2019-01-19 04:19:24
End at: 2019-01-19 04:19:54
Local clock offset: 0.87 ms
Remote clock offset: -3.308 ms

Below is generated by plot.py at 2019-01-19 04:45:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 89.316 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 89.316 ms
Loss rate: 0.34%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2019-01-19 04:42:53

End at: 2019-01-19 04:43:23

Local clock offset: 1.984 ms

Remote clock offset: 1.655 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 96.232 ms

Loss rate: 0.23%

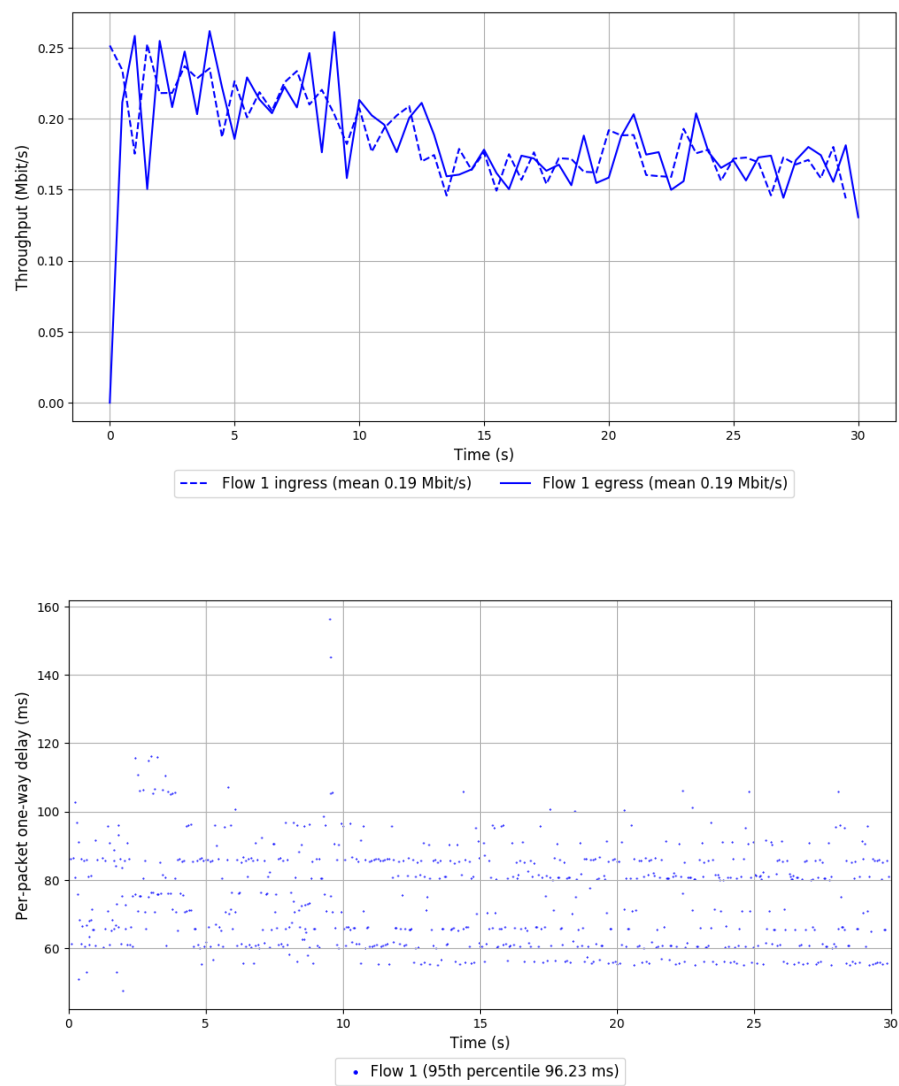
-- Flow 1:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 96.232 ms

Loss rate: 0.23%

Run 3: Report of SReAM — Data Link

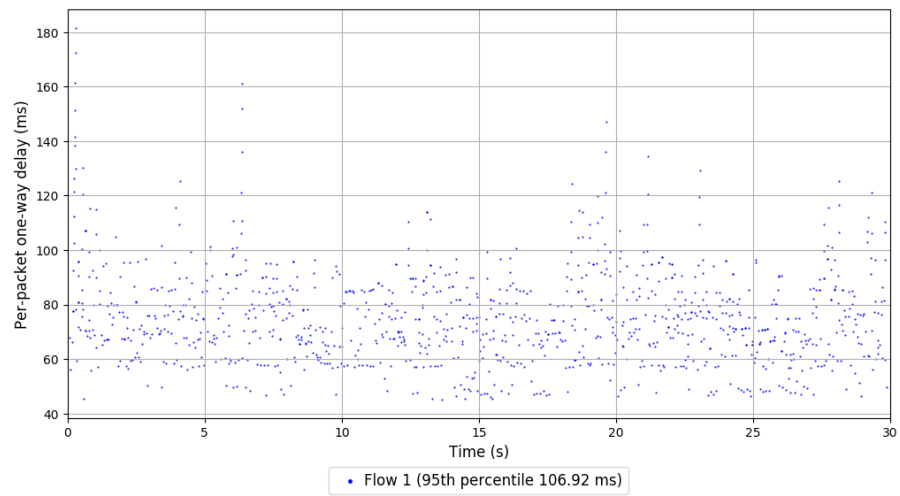
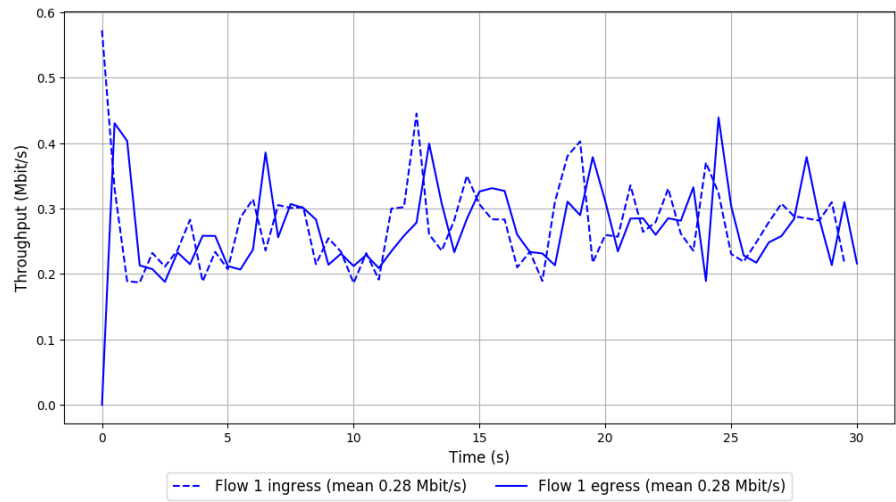


Run 1: Statistics of Sprout

Start at: 2019-01-19 03:49:25
End at: 2019-01-19 03:49:55
Local clock offset: 0.764 ms
Remote clock offset: -3.726 ms

Below is generated by plot.py at 2019-01-19 04:45:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 106.925 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 106.925 ms
Loss rate: 0.43%

Run 1: Report of Sprout — Data Link

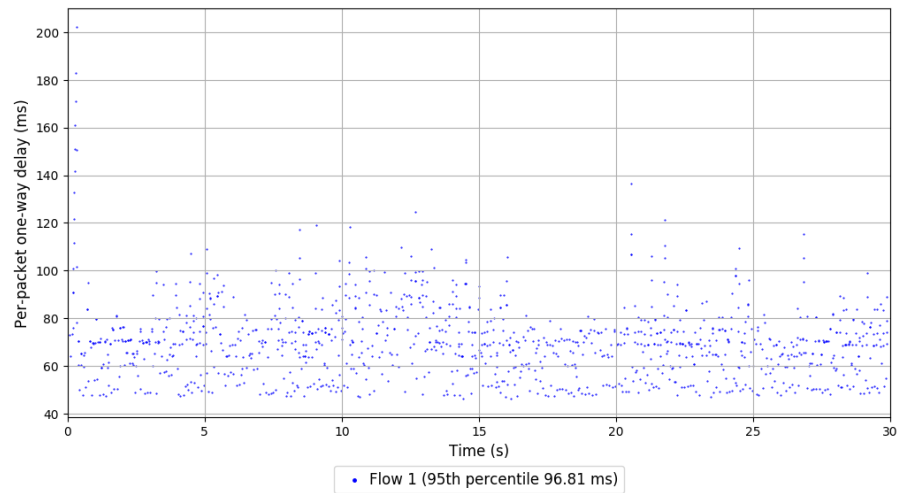
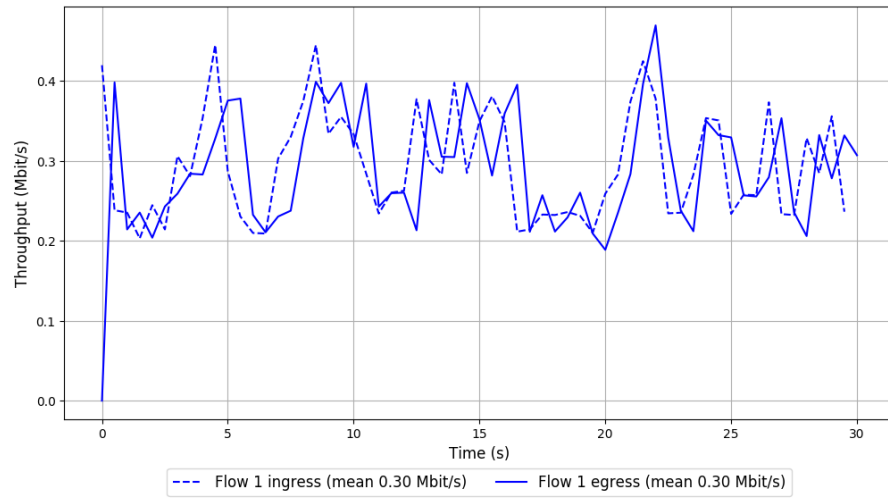


Run 2: Statistics of Sprout

Start at: 2019-01-19 04:12:44
End at: 2019-01-19 04:13:14
Local clock offset: 0.288 ms
Remote clock offset: -3.788 ms

Below is generated by plot.py at 2019-01-19 04:45:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 96.807 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 96.807 ms
Loss rate: 0.01%

Run 2: Report of Sprout — Data Link

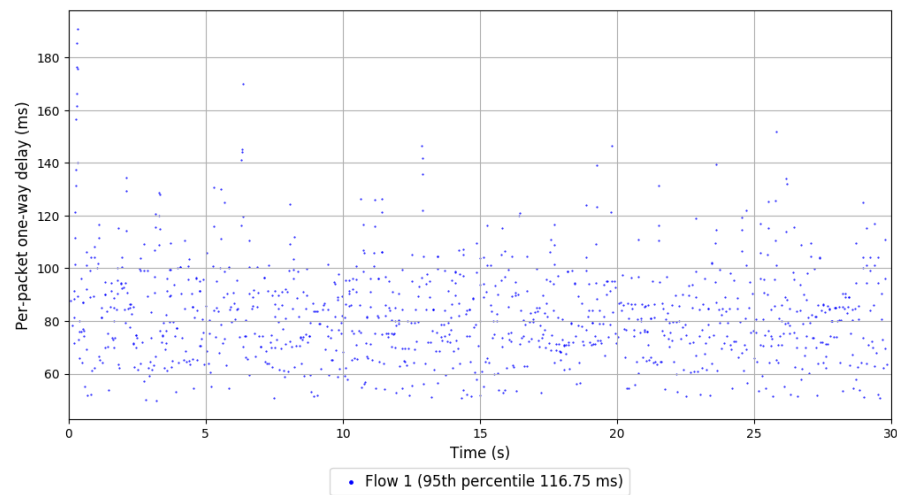
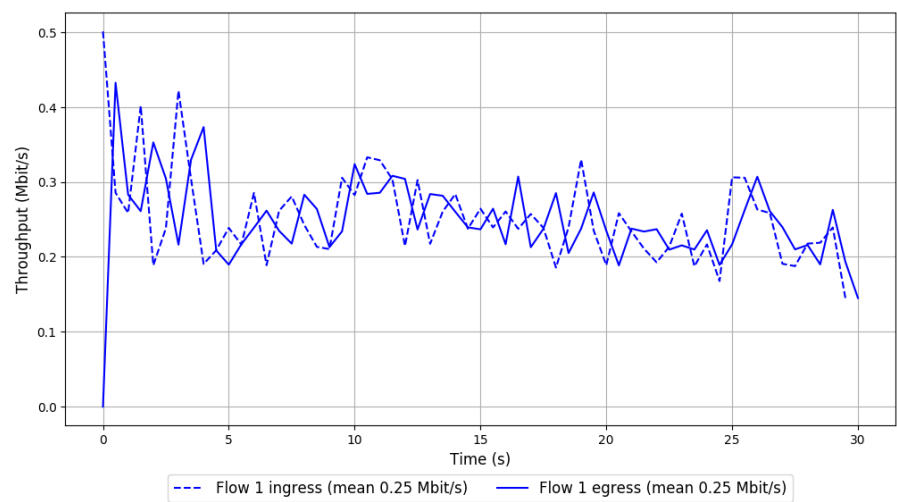


Run 3: Statistics of Sprout

Start at: 2019-01-19 04:36:06
End at: 2019-01-19 04:36:36
Local clock offset: 2.243 ms
Remote clock offset: -2.834 ms

Below is generated by plot.py at 2019-01-19 04:45:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 116.750 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 116.750 ms
Loss rate: 0.31%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2019-01-19 03:52:45

End at: 2019-01-19 03:53:15

Local clock offset: 0.332 ms

Remote clock offset: -4.819 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 330.522 ms

Loss rate: 1.85%

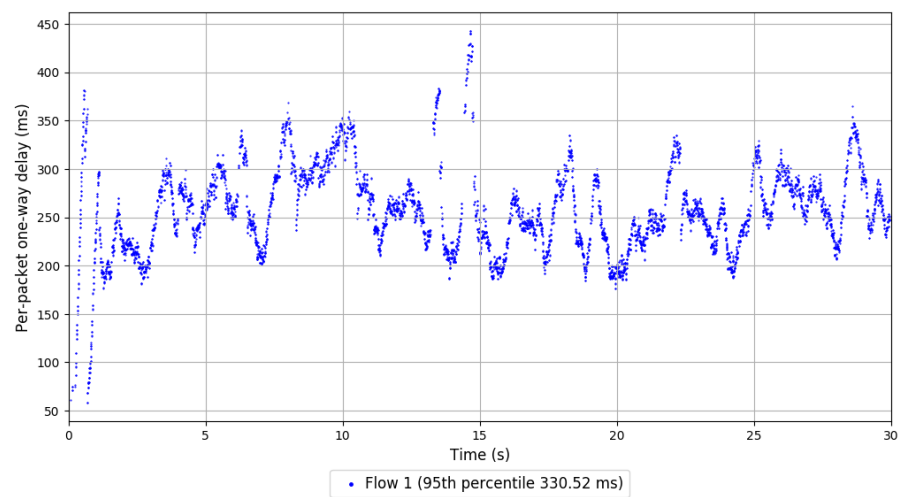
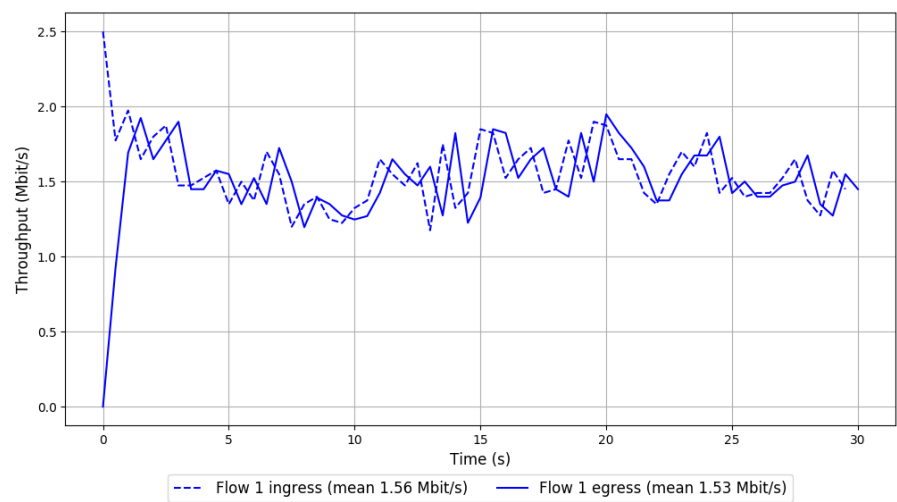
-- Flow 1:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 330.522 ms

Loss rate: 1.85%

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



Run 2: Statistics of TaoVA-100x

Start at: 2019-01-19 04:16:04

End at: 2019-01-19 04:16:34

Local clock offset: 0.822 ms

Remote clock offset: -2.857 ms

Below is generated by plot.py at 2019-01-19 04:45:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 345.614 ms

Loss rate: 5.03%

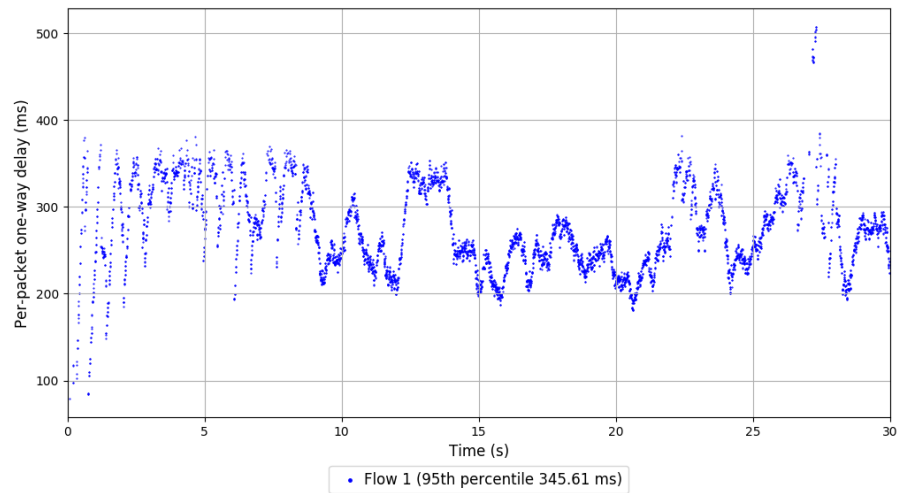
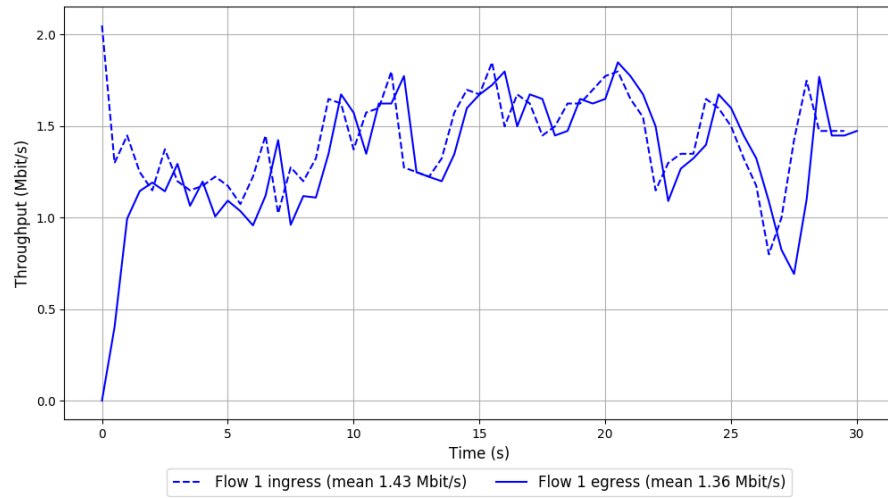
-- Flow 1:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 345.614 ms

Loss rate: 5.03%

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



Run 3: Statistics of TaoVA-100x

Start at: 2019-01-19 04:39:30

End at: 2019-01-19 04:40:00

Local clock offset: 1.466 ms

Remote clock offset: -2.191 ms

Below is generated by plot.py at 2019-01-19 04:45:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 348.074 ms

Loss rate: 5.75%

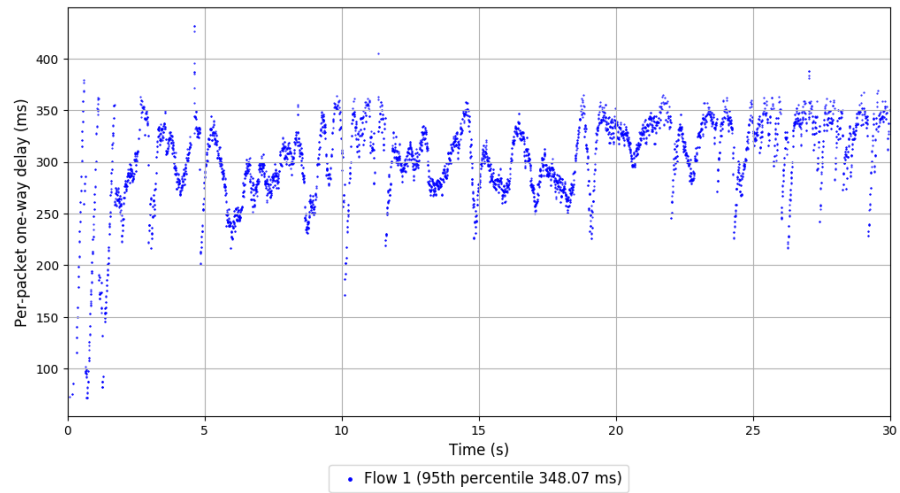
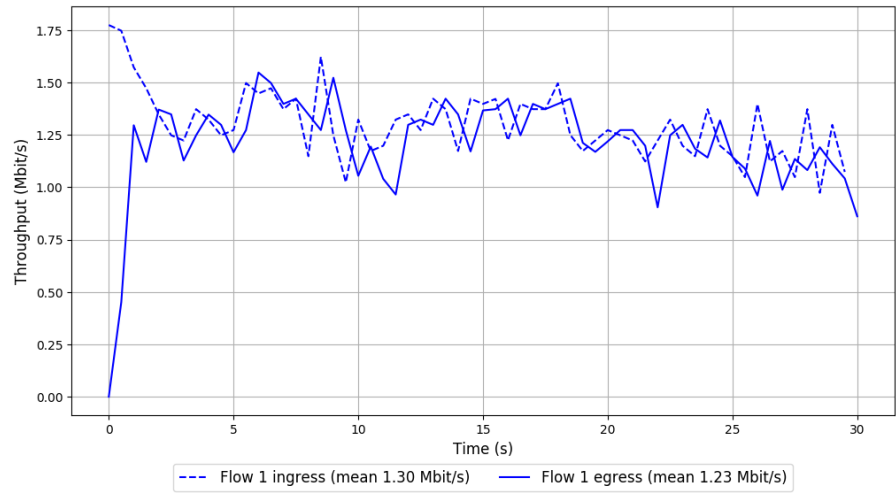
-- Flow 1:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 348.074 ms

Loss rate: 5.75%

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

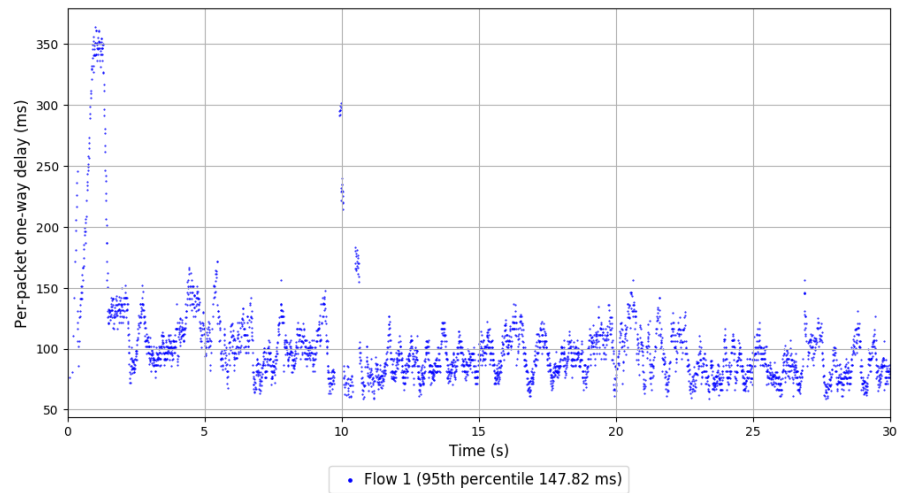
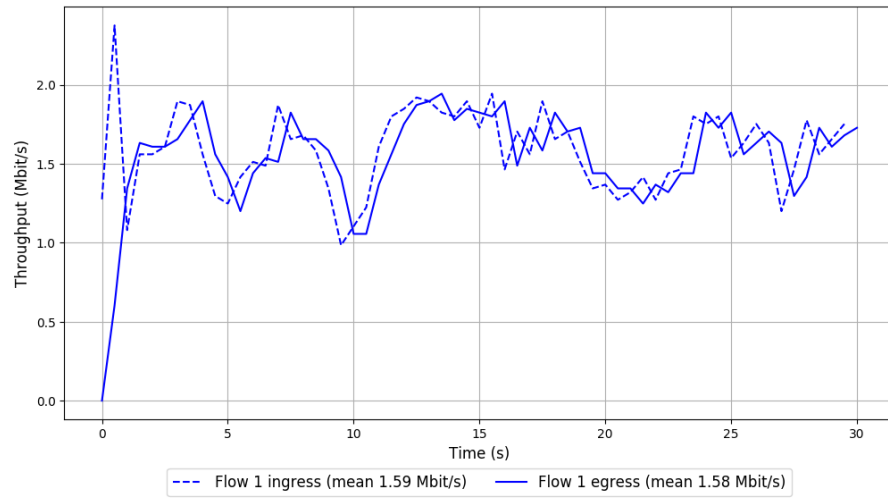


Run 1: Statistics of TCP Vegas

Start at: 2019-01-19 03:41:35
End at: 2019-01-19 03:42:06
Local clock offset: 1.412 ms
Remote clock offset: -4.658 ms

Below is generated by plot.py at 2019-01-19 04:45:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 147.821 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 147.821 ms
Loss rate: 0.83%

Run 1: Report of TCP Vegas — Data Link

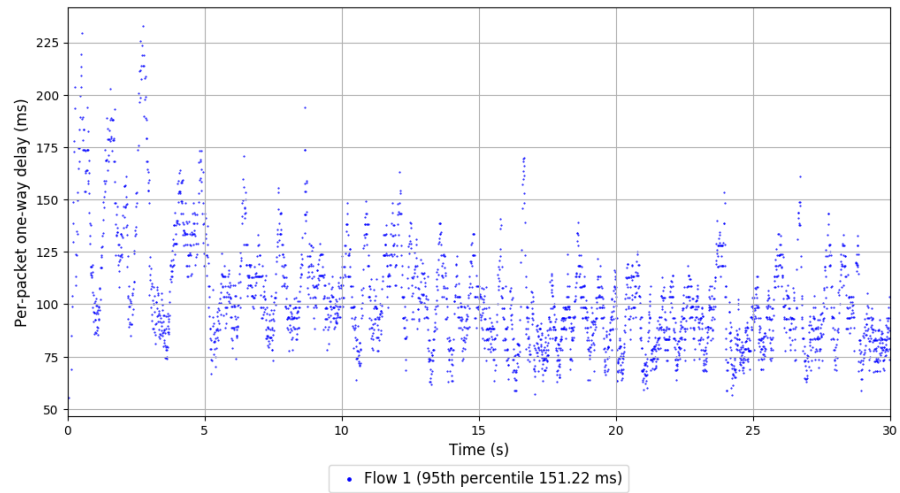
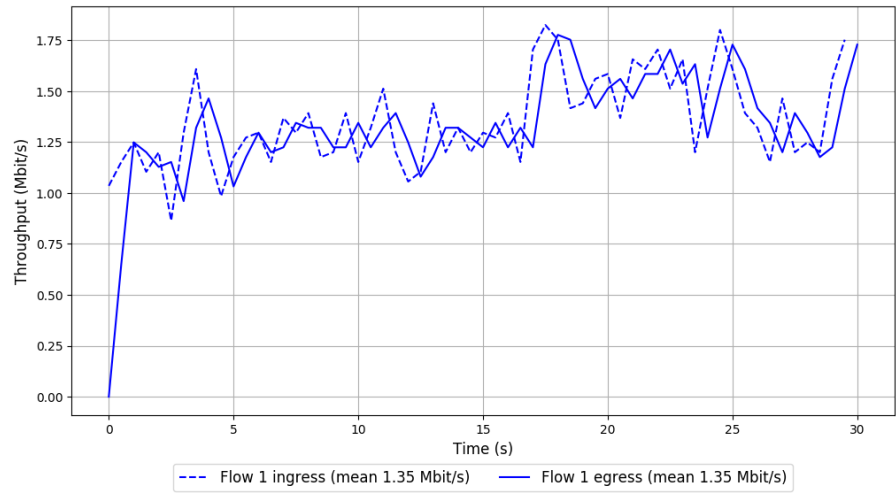


Run 2: Statistics of TCP Vegas

Start at: 2019-01-19 04:04:59
End at: 2019-01-19 04:05:29
Local clock offset: 1.502 ms
Remote clock offset: -4.513 ms

Below is generated by plot.py at 2019-01-19 04:45:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 151.216 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 151.216 ms
Loss rate: 0.38%

Run 2: Report of TCP Vegas — Data Link

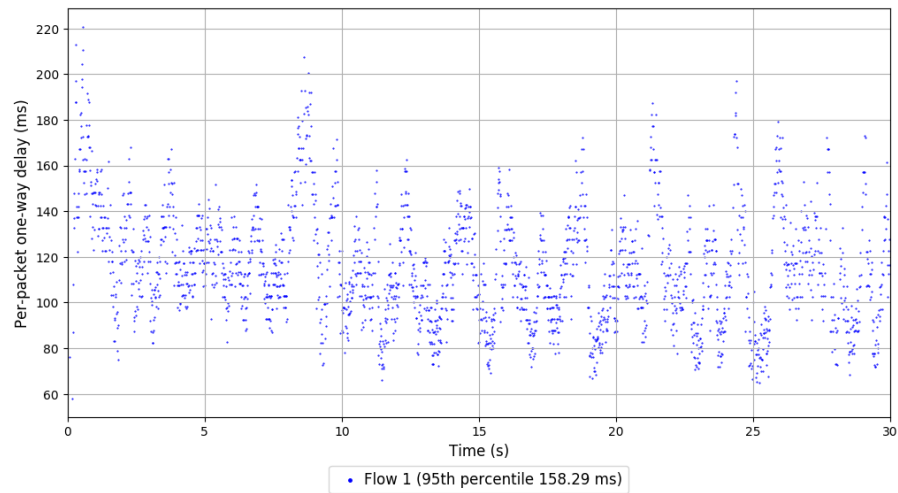
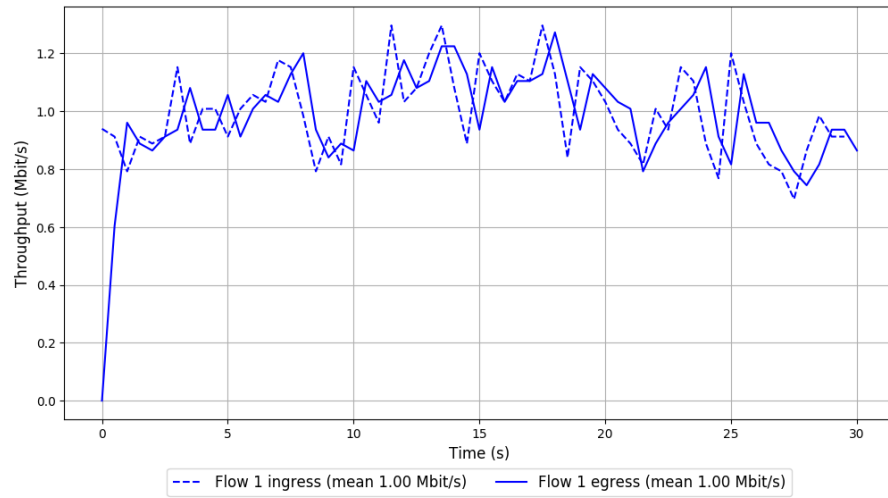


Run 3: Statistics of TCP Vegas

Start at: 2019-01-19 04:28:18
End at: 2019-01-19 04:28:48
Local clock offset: 2.484 ms
Remote clock offset: -3.555 ms

Below is generated by plot.py at 2019-01-19 04:45:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 158.287 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 158.287 ms
Loss rate: 0.40%

Run 3: Report of TCP Vegas — Data Link

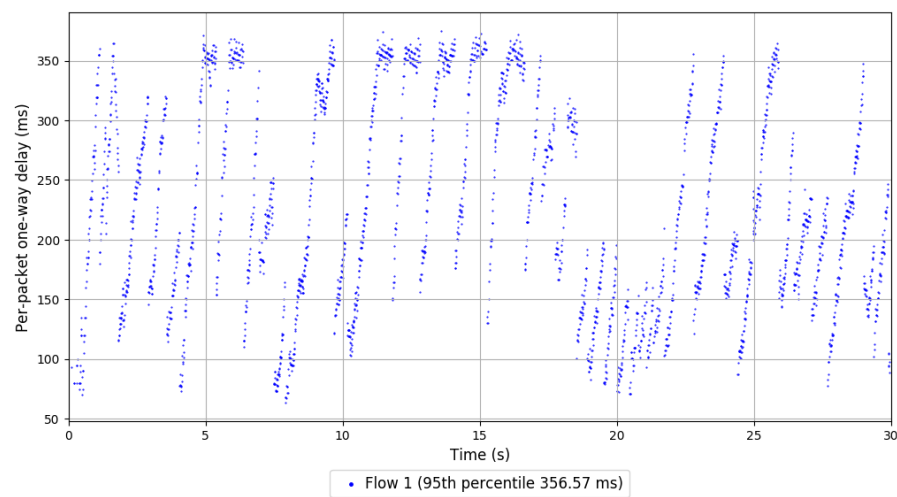
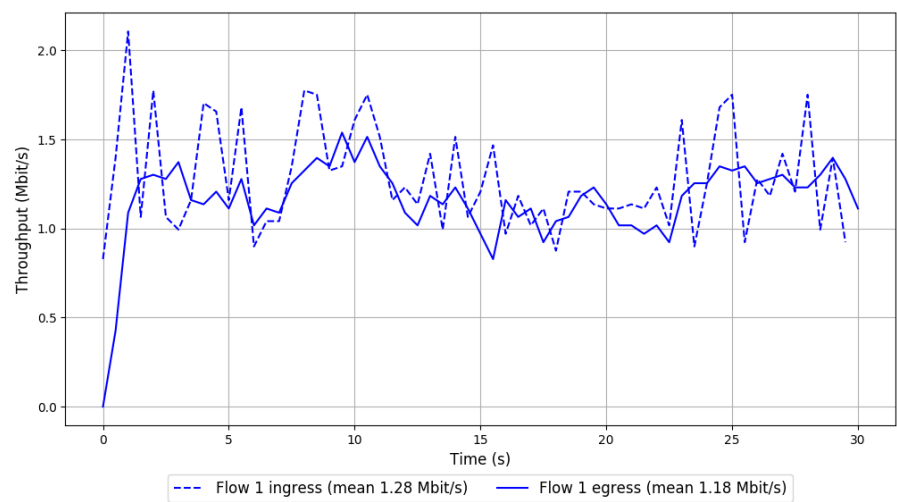


Run 1: Statistics of Verus

Start at: 2019-01-19 03:46:06
End at: 2019-01-19 03:46:36
Local clock offset: 0.624 ms
Remote clock offset: -4.689 ms

Below is generated by plot.py at 2019-01-19 04:45:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 356.575 ms
Loss rate: 8.00%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 356.575 ms
Loss rate: 8.00%

Run 1: Report of Verus — Data Link

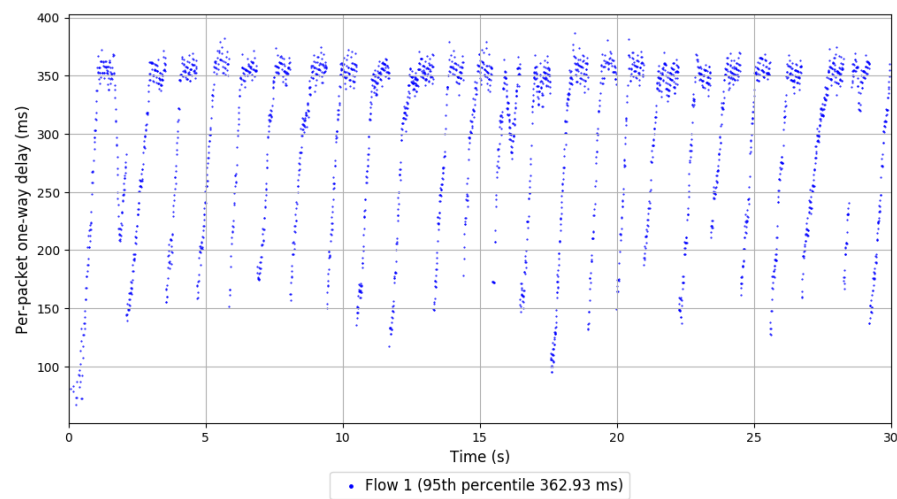
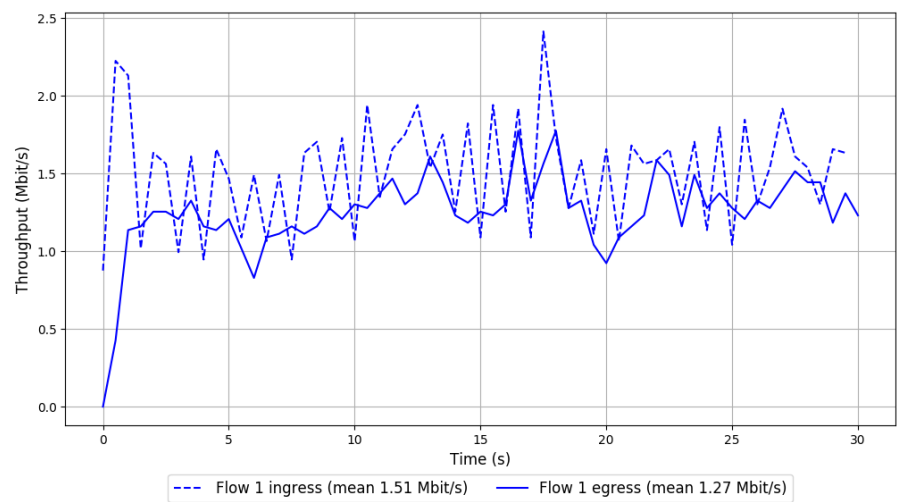


Run 2: Statistics of Verus

Start at: 2019-01-19 04:09:25
End at: 2019-01-19 04:09:55
Local clock offset: 1.039 ms
Remote clock offset: -3.749 ms

Below is generated by plot.py at 2019-01-19 04:45:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 362.926 ms
Loss rate: 15.92%
-- Flow 1:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 362.926 ms
Loss rate: 15.92%

Run 2: Report of Verus — Data Link

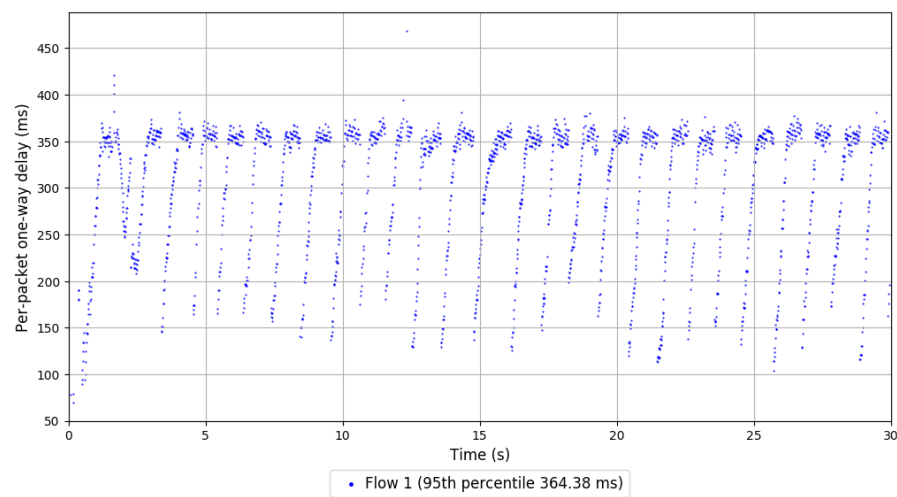
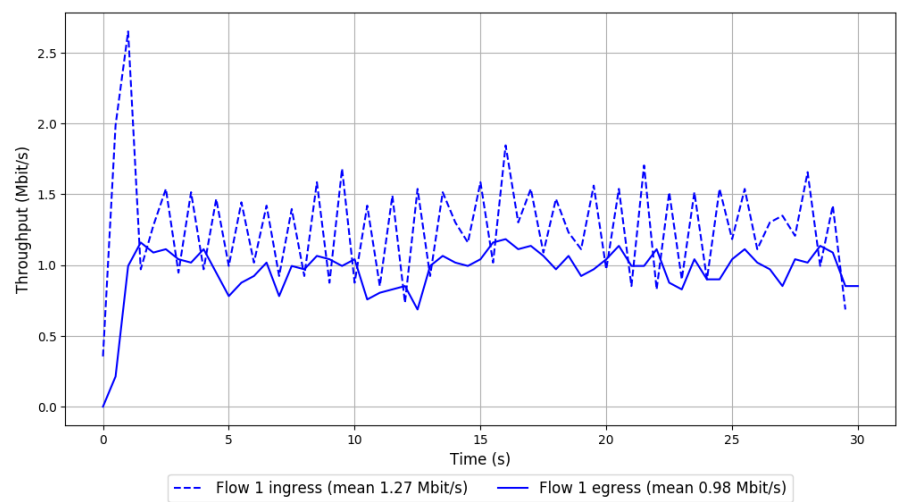


Run 3: Statistics of Verus

Start at: 2019-01-19 04:32:47
End at: 2019-01-19 04:33:17
Local clock offset: 1.682 ms
Remote clock offset: -3.291 ms

Below is generated by plot.py at 2019-01-19 04:45:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 364.383 ms
Loss rate: 23.11%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 364.383 ms
Loss rate: 23.11%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-01-19 03:44:54

End at: 2019-01-19 03:45:24

Local clock offset: 3.381 ms

Remote clock offset: -4.698 ms

Below is generated by plot.py at 2019-01-19 04:45:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 367.333 ms

Loss rate: 20.31%

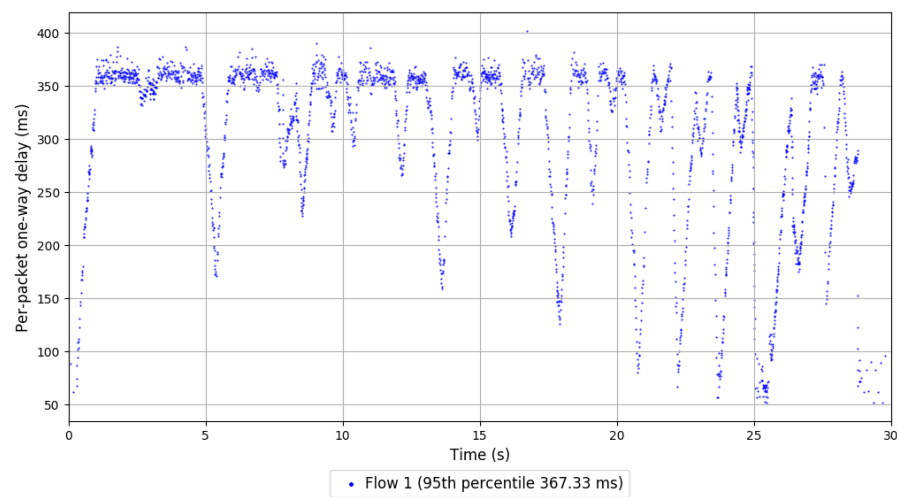
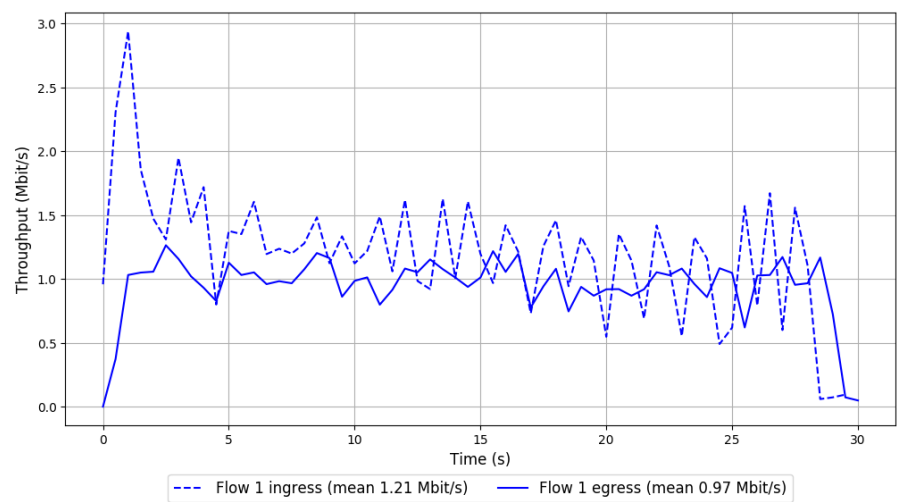
-- Flow 1:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 367.333 ms

Loss rate: 20.31%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-01-19 04:08:18

End at: 2019-01-19 04:08:48

Local clock offset: 0.695 ms

Remote clock offset: -4.147 ms

Below is generated by plot.py at 2019-01-19 04:45:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.24 Mbit/s

95th percentile per-packet one-way delay: 323.145 ms

Loss rate: 2.67%

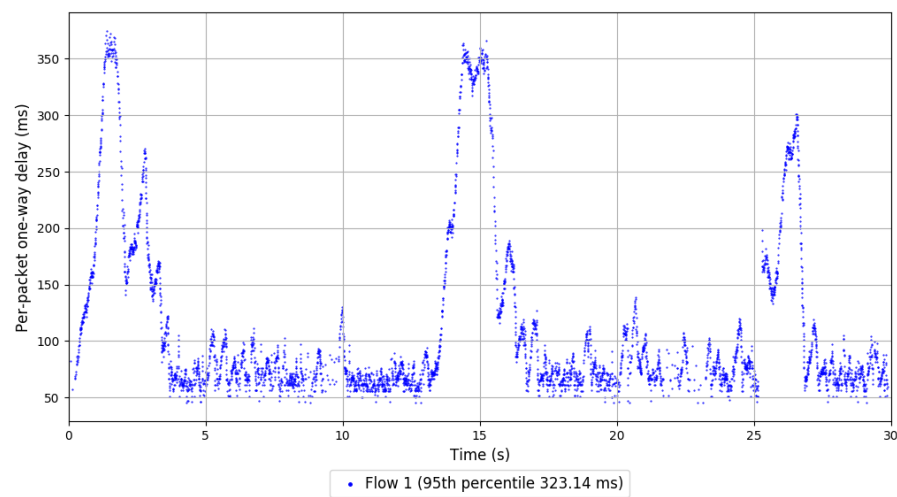
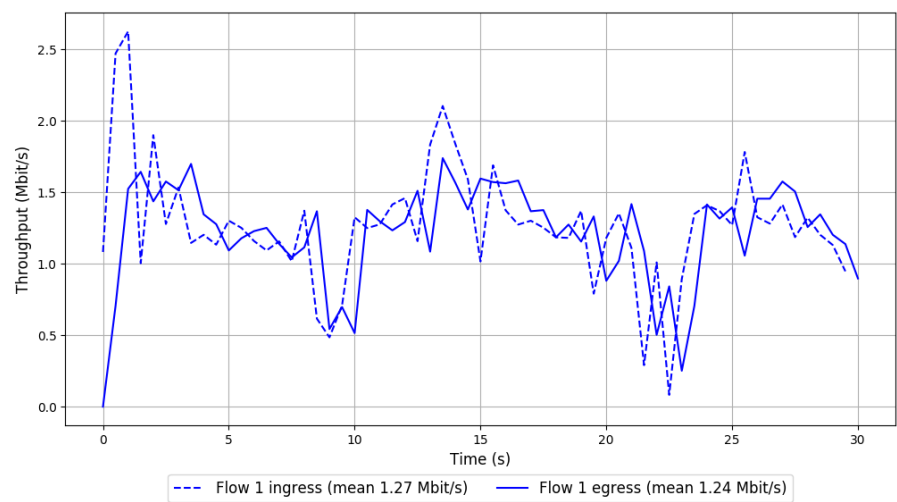
-- Flow 1:

Average throughput: 1.24 Mbit/s

95th percentile per-packet one-way delay: 323.145 ms

Loss rate: 2.67%

Run 2: Report of PCC-Vivace — Data Link

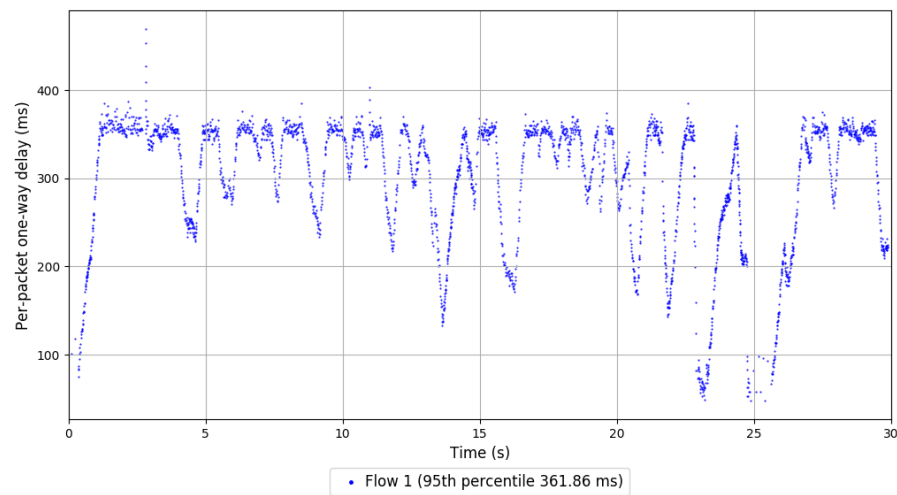
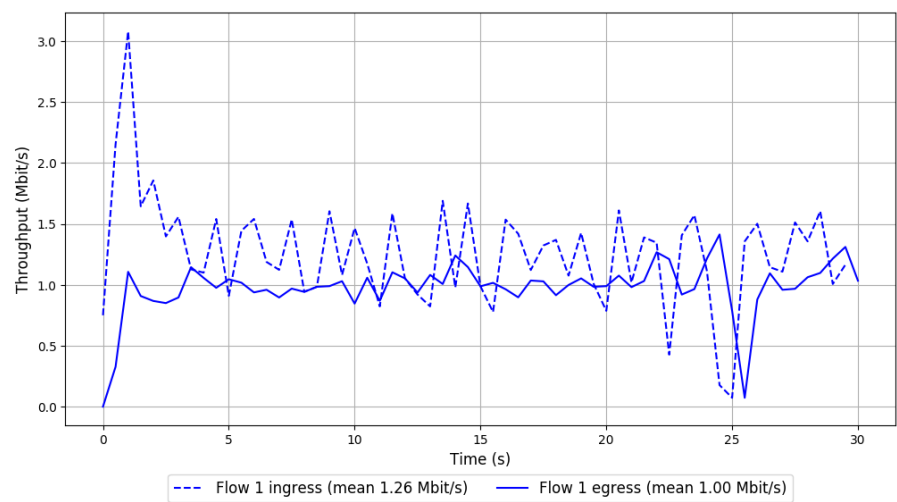


Run 3: Statistics of PCC-Vivace

Start at: 2019-01-19 04:31:39
End at: 2019-01-19 04:32:09
Local clock offset: -0.238 ms
Remote clock offset: -3.103 ms

Below is generated by plot.py at 2019-01-19 04:45:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 361.862 ms
Loss rate: 20.92%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 361.862 ms
Loss rate: 20.92%

Run 3: Report of PCC-Vivace — Data Link

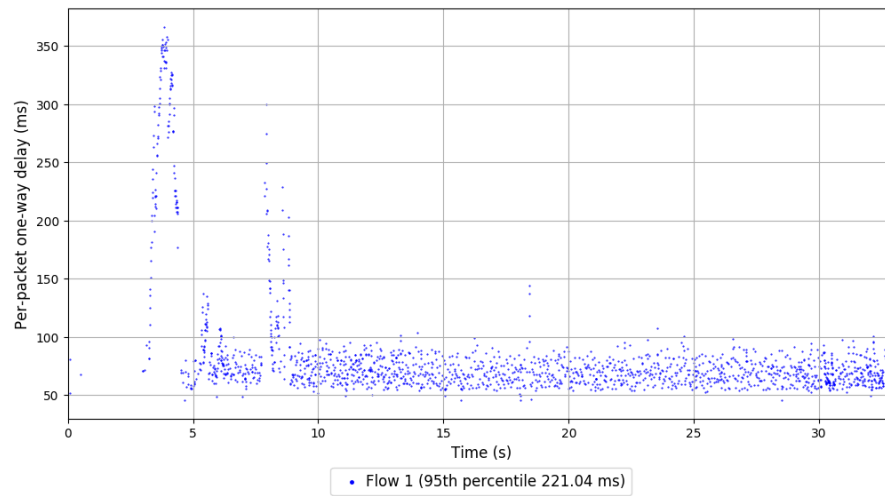
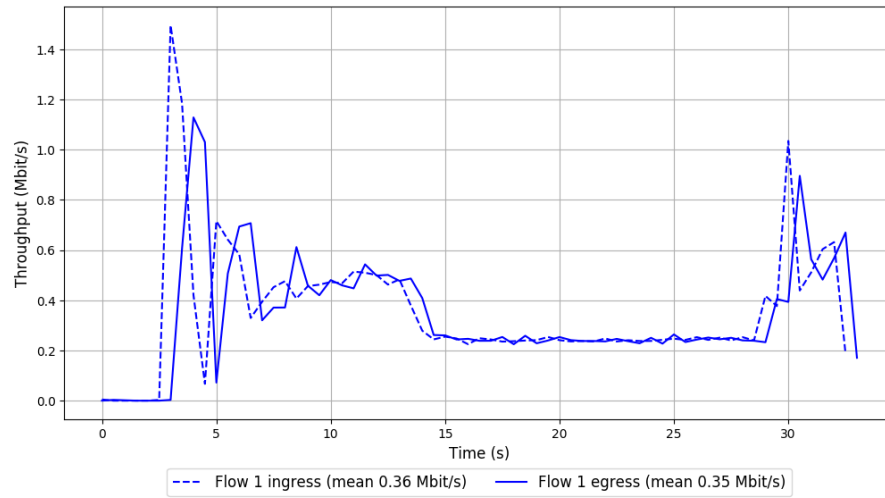


Run 1: Statistics of WebRTC media

Start at: 2019-01-19 03:48:19
End at: 2019-01-19 03:48:49
Local clock offset: 0.346 ms
Remote clock offset: -4.426 ms

Below is generated by plot.py at 2019-01-19 04:45:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 221.040 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 221.040 ms
Loss rate: 1.50%

Run 1: Report of WebRTC media — Data Link

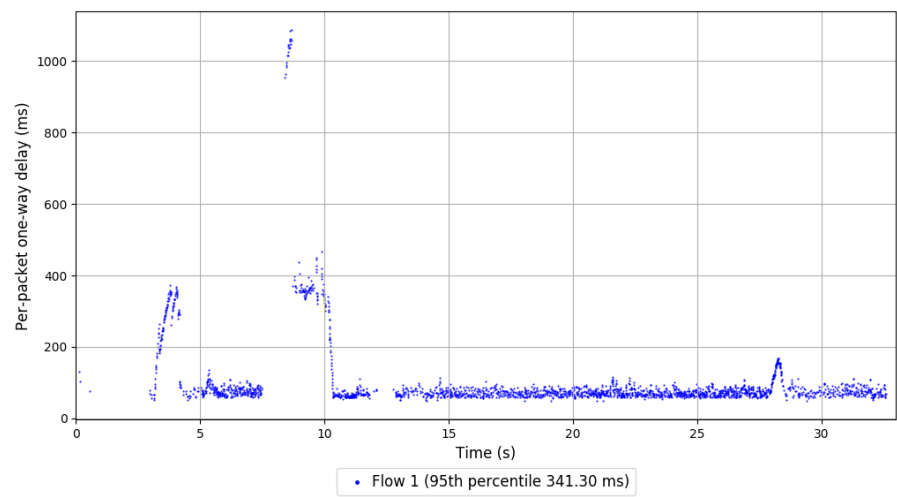
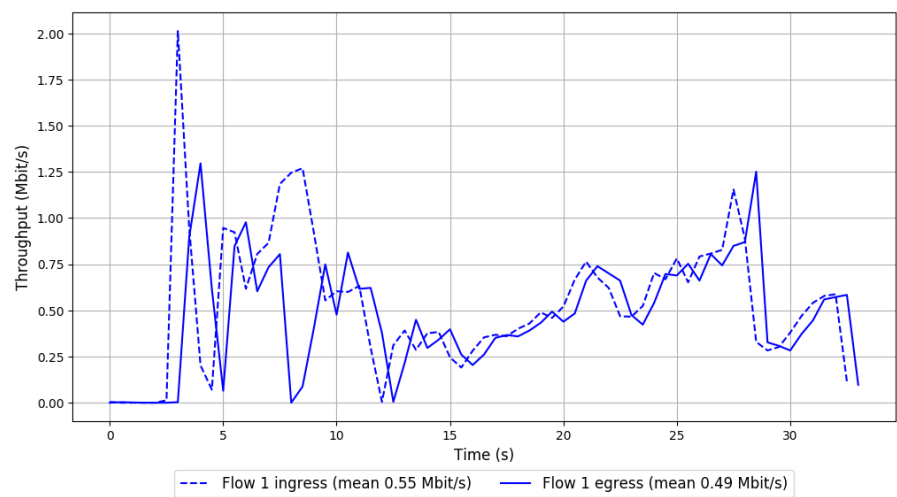


Run 2: Statistics of WebRTC media

Start at: 2019-01-19 04:11:38
End at: 2019-01-19 04:12:08
Local clock offset: 1.943 ms
Remote clock offset: -4.401 ms

Below is generated by plot.py at 2019-01-19 04:45:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 341.301 ms
Loss rate: 10.70%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 341.301 ms
Loss rate: 10.70%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-01-19 04:35:00
End at: 2019-01-19 04:35:30
Local clock offset: 1.339 ms
Remote clock offset: -3.402 ms

Below is generated by plot.py at 2019-01-19 04:45:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 182.351 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 182.351 ms
Loss rate: 1.95%

Run 3: Report of WebRTC media — Data Link

