

Pantheon Report

Generated at 2019-01-17 06:22:54 (UTC).

Data path: AWS Brazil 2 on `ens5` (*local*) → Colombia cellular on `ppp0` (*remote*).

Repeated the test of 21 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

System info:

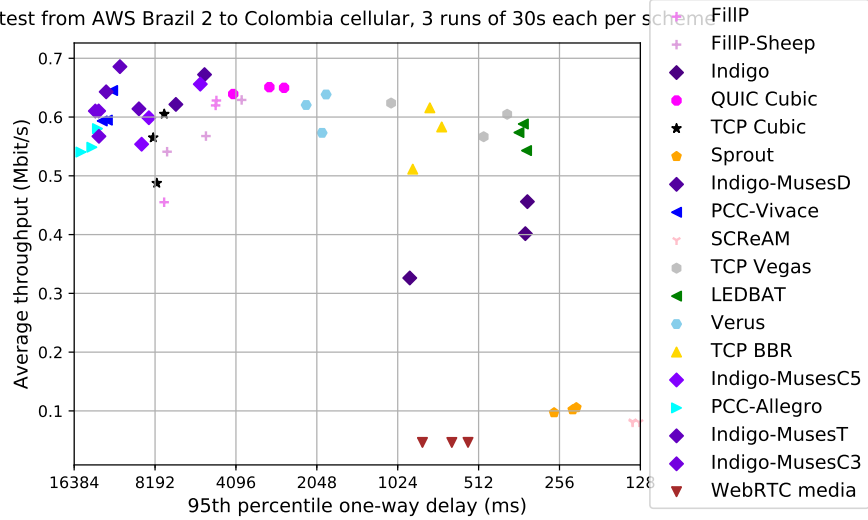
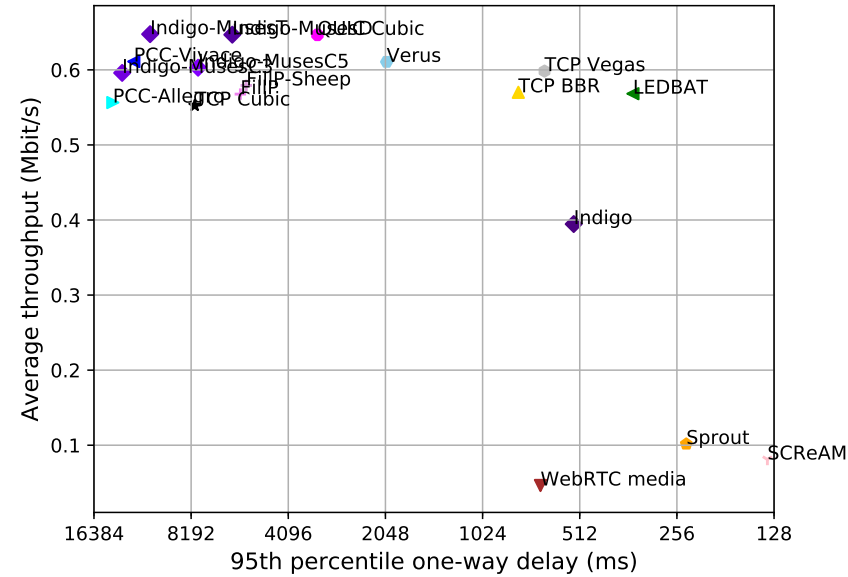
```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

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 AWS Brazil 2 to Colombia cellular, 3 runs of 30s each per scheme
(mean of all runs by scheme)



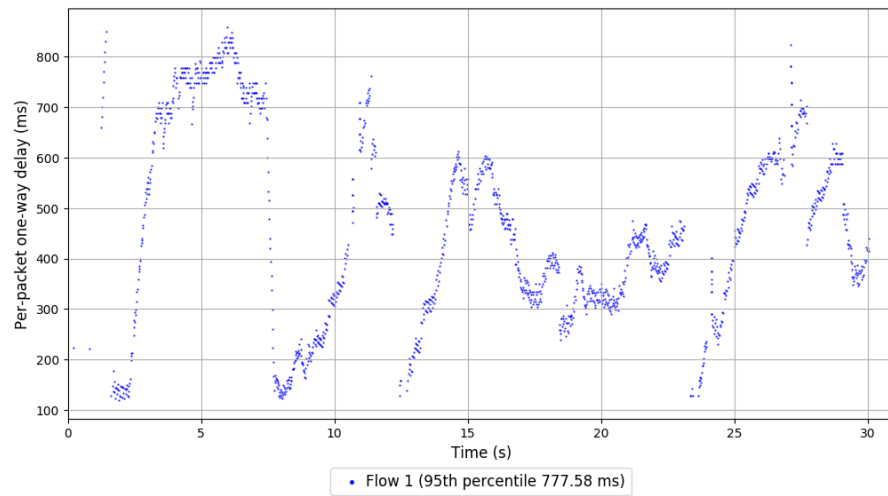
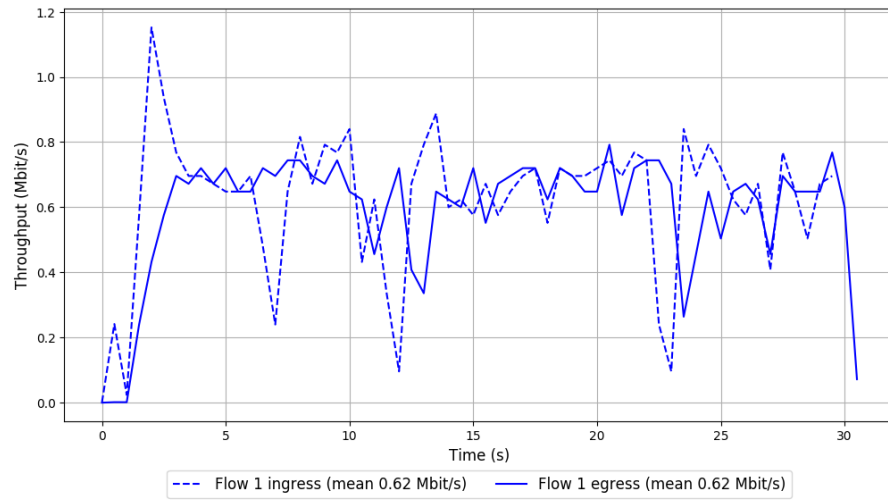
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.57	793.46	1.62
Copa	0	N/A	N/A	N/A
TCP Cubic	3	0.55	7987.72	29.56
FillP	3	0.57	5764.85	21.50
FillP-Sheep	3	0.58	5528.49	10.23
Indigo	3	0.40	534.56	0.67
Indigo-MusesC3	3	0.60	13400.26	76.23
Indigo-MusesC5	3	0.60	7796.50	32.07
Indigo-MusesD	2	0.65	6106.99	25.26
Indigo-MusesT	3	0.65	10976.25	51.43
LEDBAT	3	0.57	350.38	0.52
PCC-Allegro	3	0.56	14319.71	98.31
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	3	0.65	3326.80	11.66
SCReAM	3	0.08	134.25	0.17
Sprout	3	0.10	239.42	0.12
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	3	0.60	658.27	0.72
Verus	3	0.61	2030.80	2.72
PCC-Vivace	3	0.61	12333.67	54.84
WebRTC media	3	0.05	677.65	0.00

Run 1: Statistics of TCP BBR

Start at: 2019-01-17 05:26:00
End at: 2019-01-17 05:26:30
Local clock offset: -4.475 ms
Remote clock offset: 10.554 ms

Below is generated by plot.py at 2019-01-17 06:22:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 777.577 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 777.577 ms
Loss rate: 1.42%

Run 1: Report of TCP BBR — Data Link

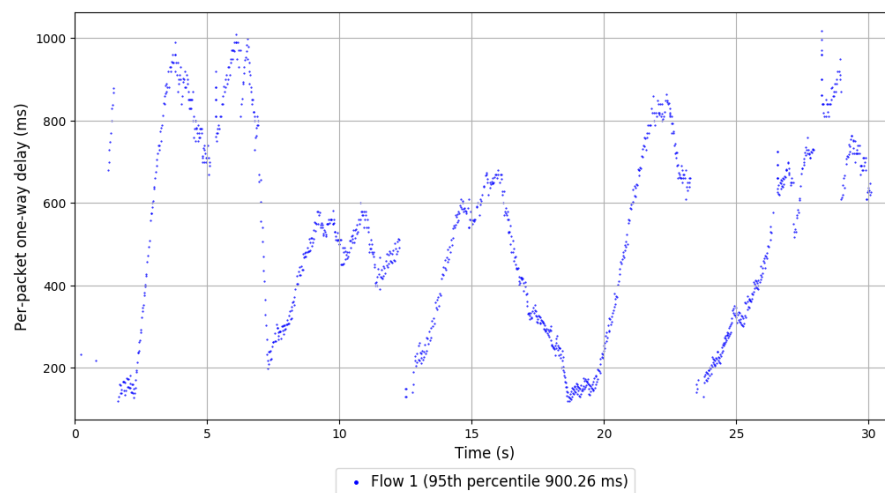
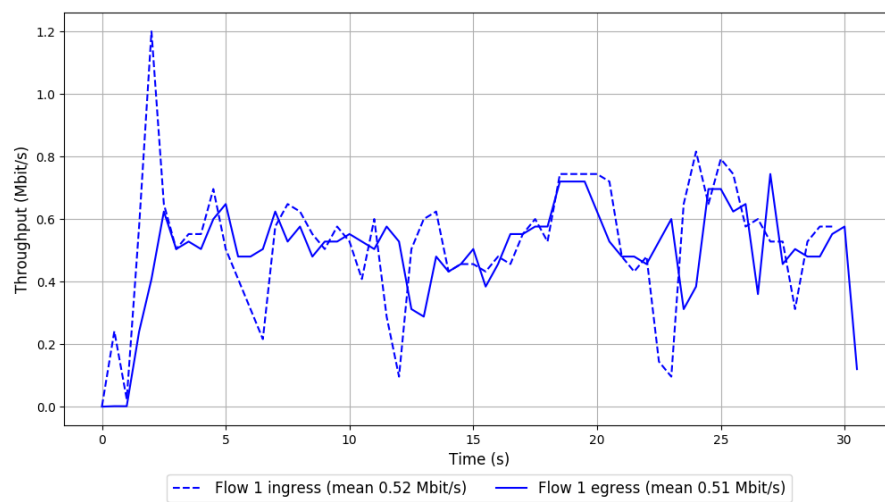


Run 2: Statistics of TCP BBR

Start at: 2019-01-17 05:49:52
End at: 2019-01-17 05:50:22
Local clock offset: -3.774 ms
Remote clock offset: 26.904 ms

Below is generated by plot.py at 2019-01-17 06:22:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 900.263 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 900.263 ms
Loss rate: 2.00%

Run 2: Report of TCP BBR — Data Link

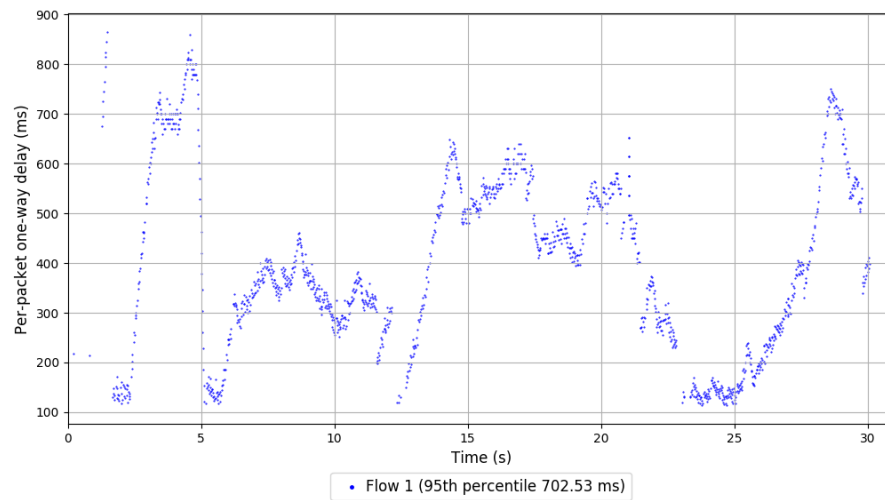
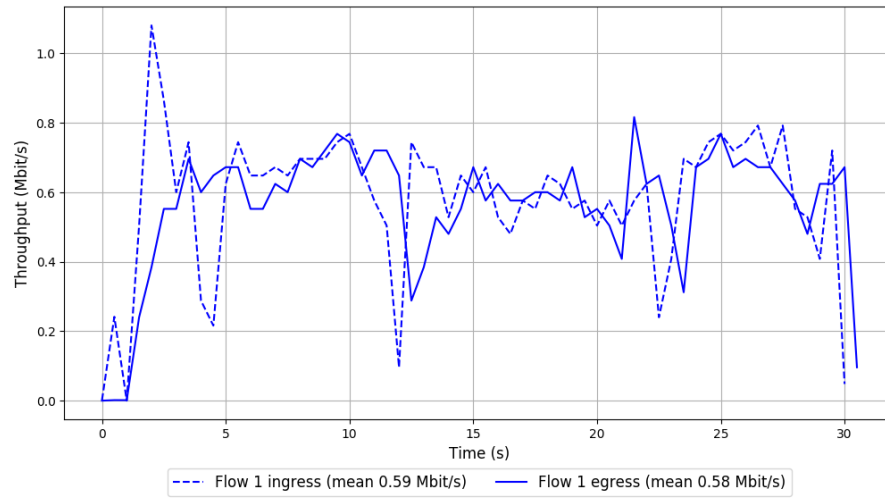


Run 3: Statistics of TCP BBR

Start at: 2019-01-17 06:13:42
End at: 2019-01-17 06:14:12
Local clock offset: -5.143 ms
Remote clock offset: 29.841 ms

Below is generated by plot.py at 2019-01-17 06:22:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 702.532 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 702.532 ms
Loss rate: 1.43%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

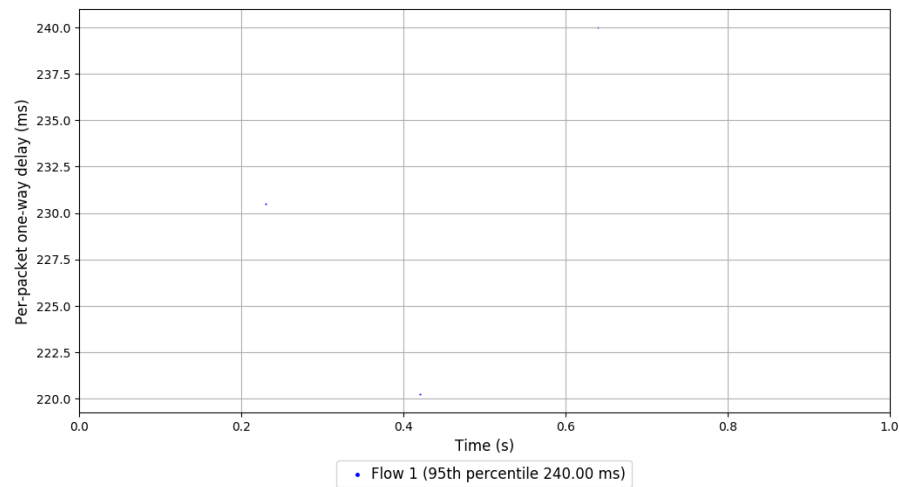
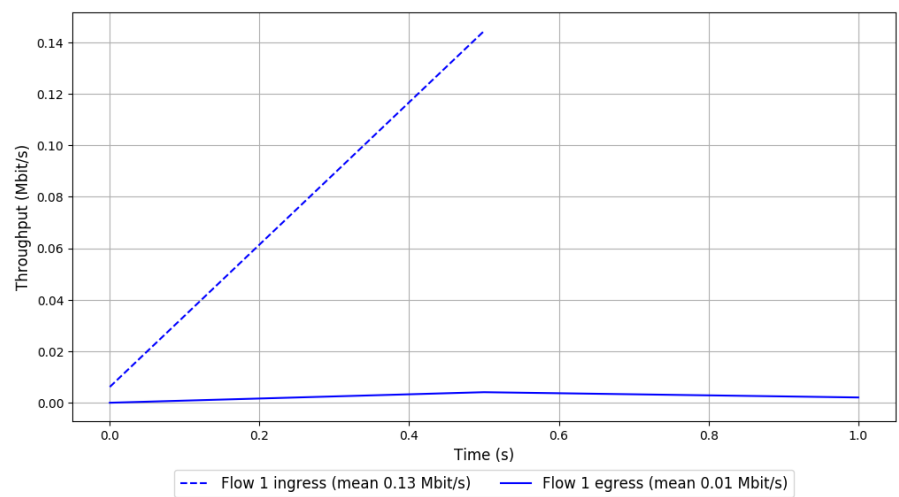
Start at: 2019-01-17 05:23:43

End at: 2019-01-17 05:24:13

Local clock offset: -3.623 ms

Remote clock offset: 7.447 ms

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

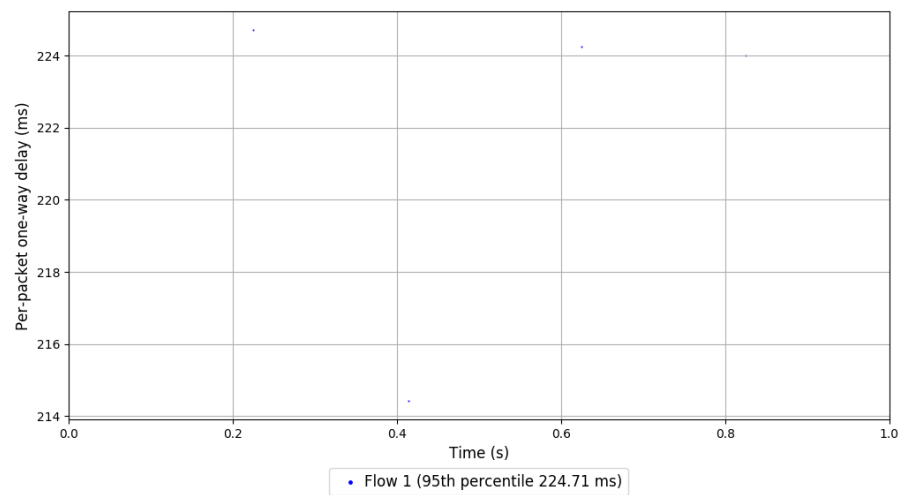
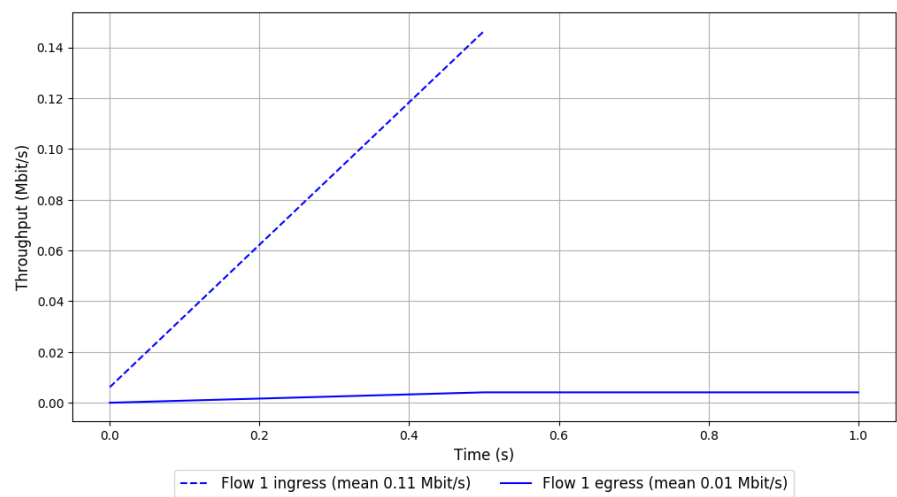
Start at: 2019-01-17 05:47:35

End at: 2019-01-17 05:48:05

Local clock offset: -4.369 ms

Remote clock offset: 19.733 ms

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

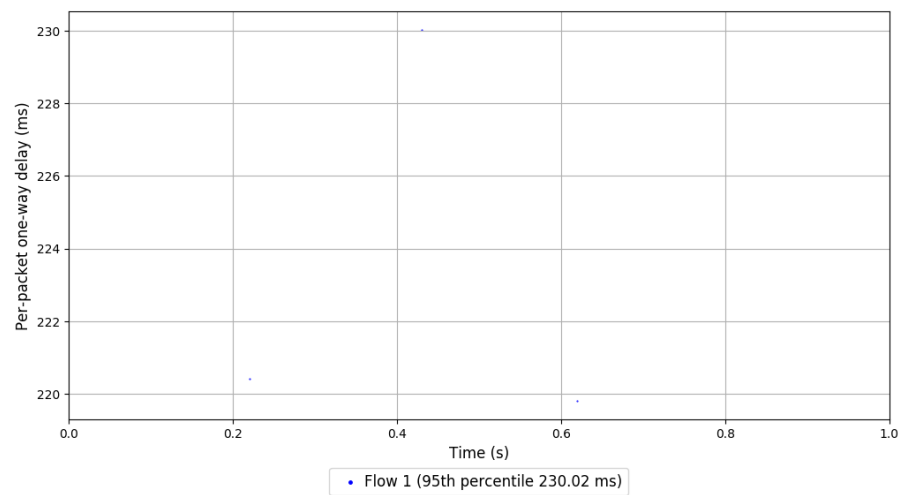
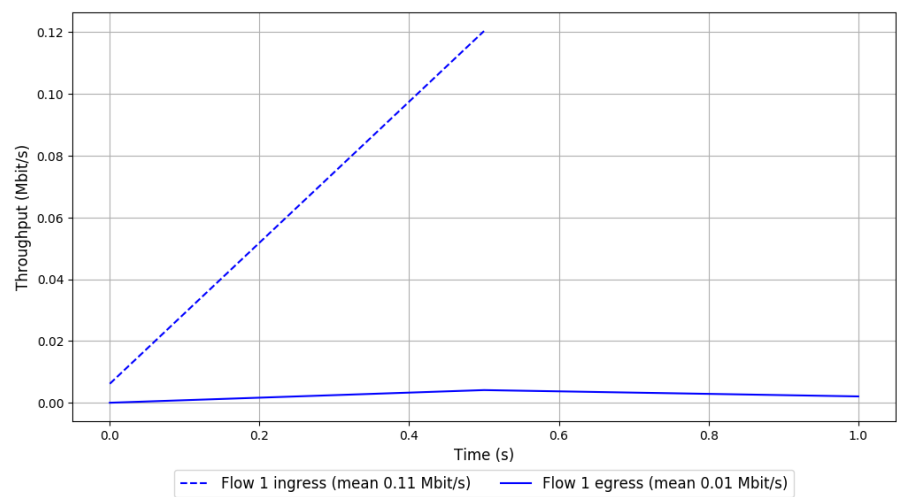
Start at: 2019-01-17 06:11:26

End at: 2019-01-17 06:11:56

Local clock offset: -4.353 ms

Remote clock offset: 34.314 ms

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-01-17 05:33:57

End at: 2019-01-17 05:34:27

Local clock offset: -4.49 ms

Remote clock offset: 17.45 ms

Below is generated by plot.py at 2019-01-17 06:22:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 7569.924 ms

Loss rate: 29.27%

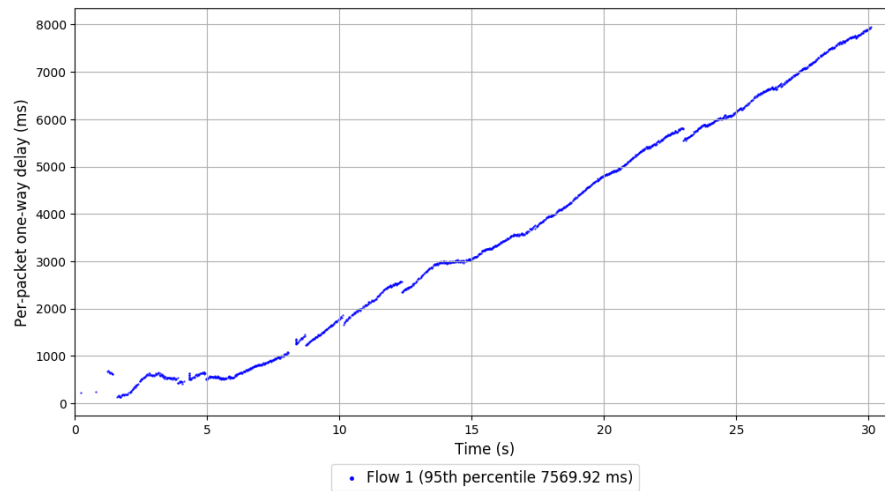
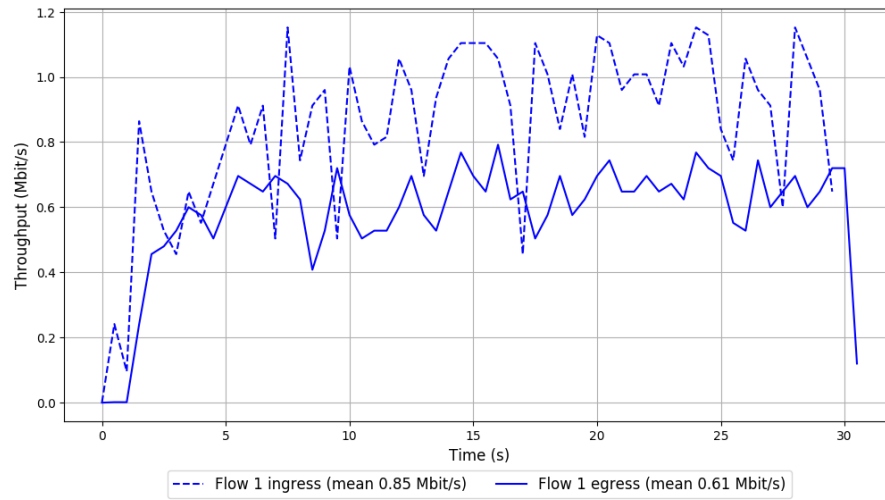
-- Flow 1:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 7569.924 ms

Loss rate: 29.27%

Run 1: Report of TCP Cubic — Data Link

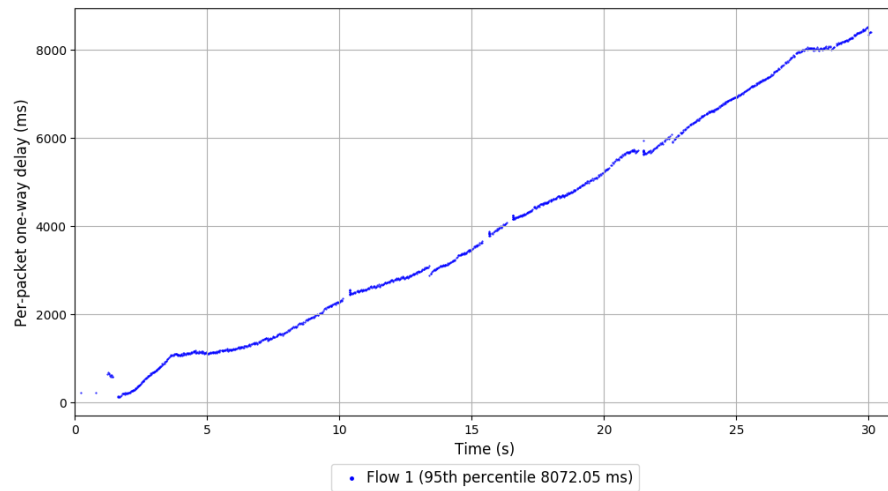
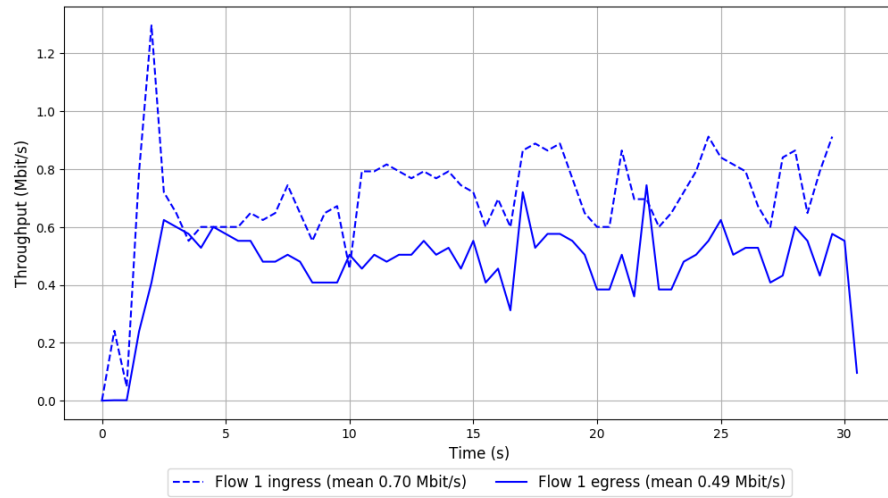


Run 2: Statistics of TCP Cubic

Start at: 2019-01-17 05:57:48
End at: 2019-01-17 05:58:18
Local clock offset: -4.166 ms
Remote clock offset: 27.287 ms

Below is generated by plot.py at 2019-01-17 06:22:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 8072.051 ms
Loss rate: 30.41%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 8072.051 ms
Loss rate: 30.41%

Run 2: Report of TCP Cubic — Data Link

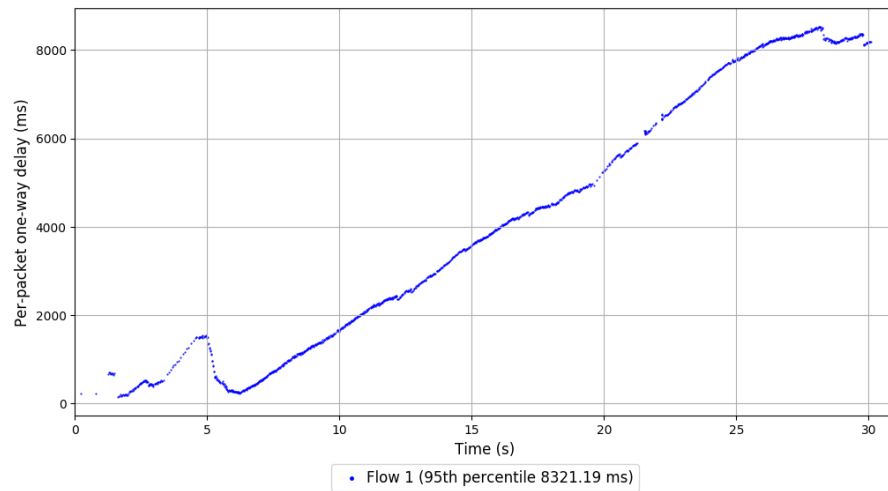
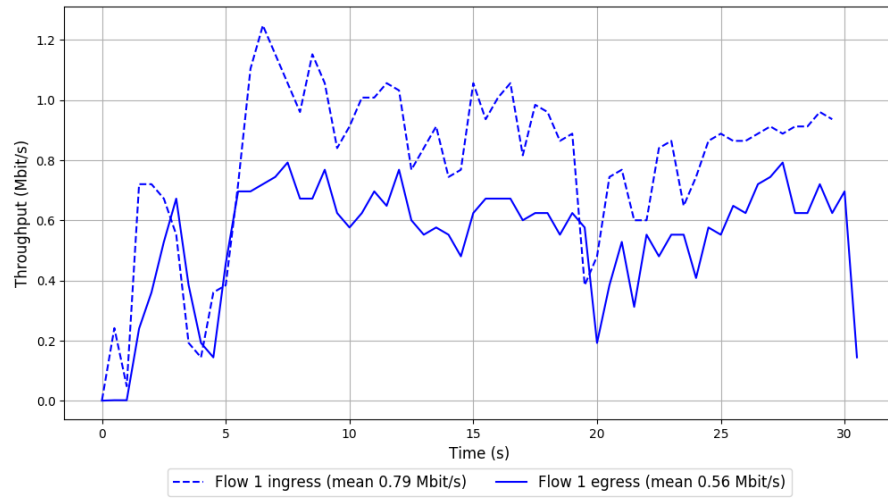


Run 3: Statistics of TCP Cubic

Start at: 2019-01-17 06:21:39
End at: 2019-01-17 06:22:09
Local clock offset: -3.616 ms
Remote clock offset: 36.676 ms

Below is generated by plot.py at 2019-01-17 06:22:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 8321.189 ms
Loss rate: 29.00%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 8321.189 ms
Loss rate: 29.00%

Run 3: Report of TCP Cubic — Data Link

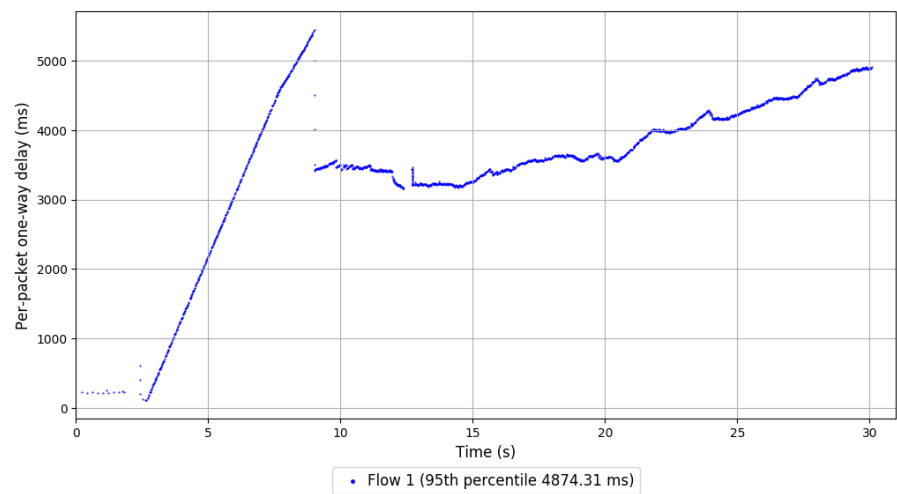
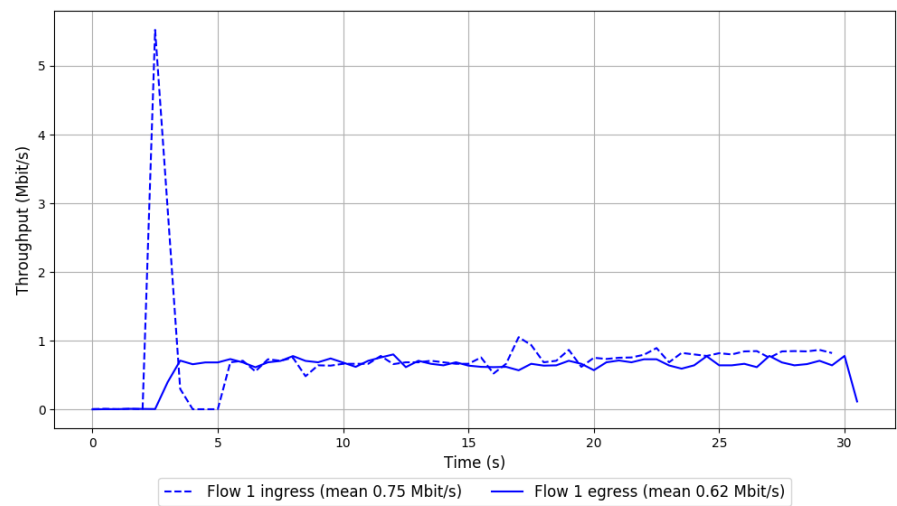


Run 1: Statistics of FillP

Start at: 2019-01-17 05:11:14
End at: 2019-01-17 05:11:44
Local clock offset: -3.527 ms
Remote clock offset: -15.225 ms

Below is generated by plot.py at 2019-01-17 06:22:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 4874.307 ms
Loss rate: 17.74%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 4874.307 ms
Loss rate: 17.74%

Run 1: Report of FillP — Data Link

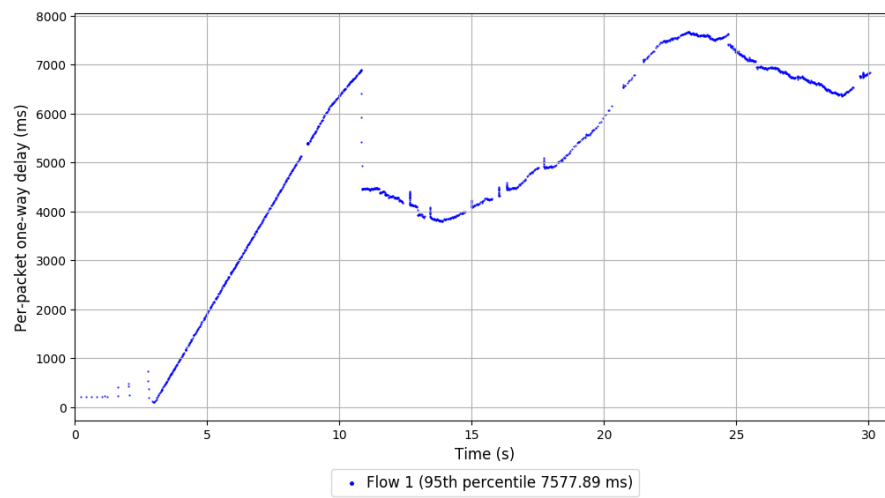
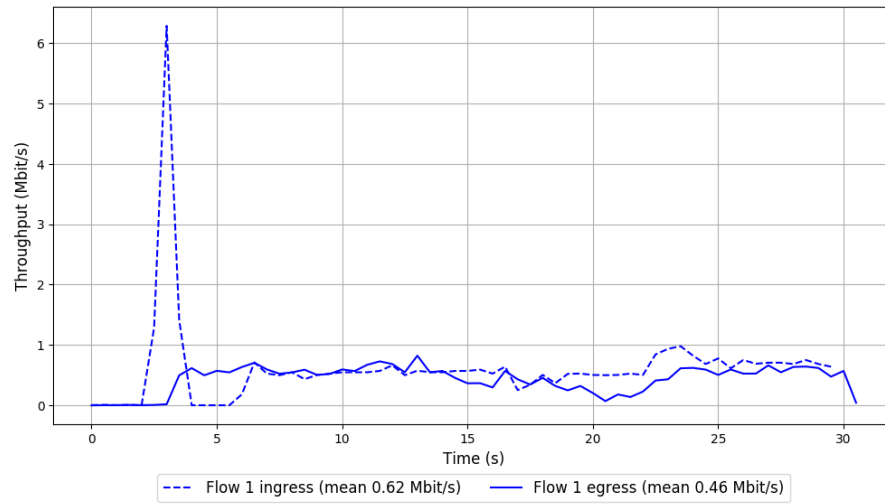


Run 2: Statistics of FillP

Start at: 2019-01-17 05:35:05
End at: 2019-01-17 05:35:35
Local clock offset: -3.658 ms
Remote clock offset: 17.062 ms

Below is generated by plot.py at 2019-01-17 06:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 7577.885 ms
Loss rate: 27.05%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 7577.885 ms
Loss rate: 27.05%

Run 2: Report of FillP — Data Link

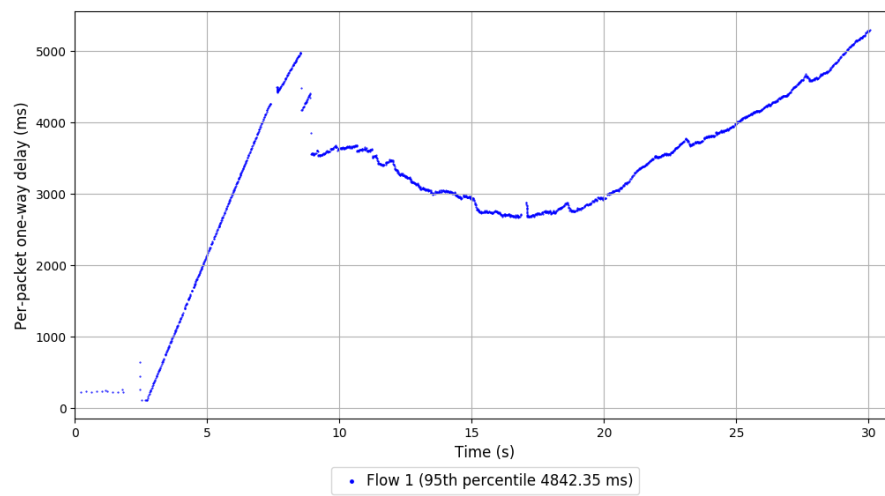
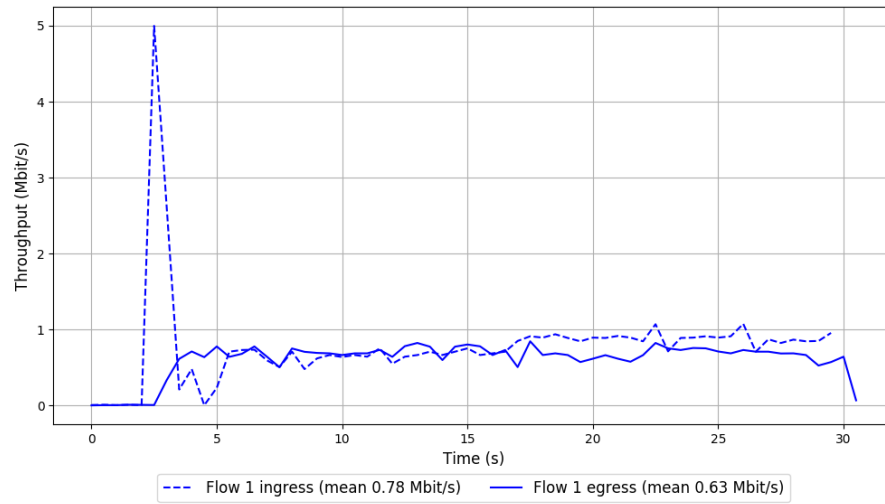


Run 3: Statistics of FillP

Start at: 2019-01-17 05:58:57
End at: 2019-01-17 05:59:27
Local clock offset: -4.946 ms
Remote clock offset: 23.856 ms

Below is generated by plot.py at 2019-01-17 06:22:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 4842.350 ms
Loss rate: 19.72%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 4842.350 ms
Loss rate: 19.72%

Run 3: Report of FillP — Data Link

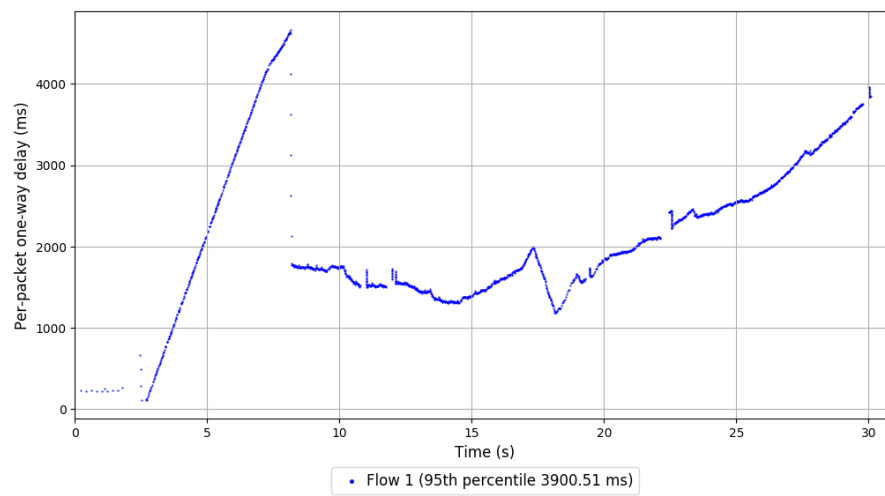
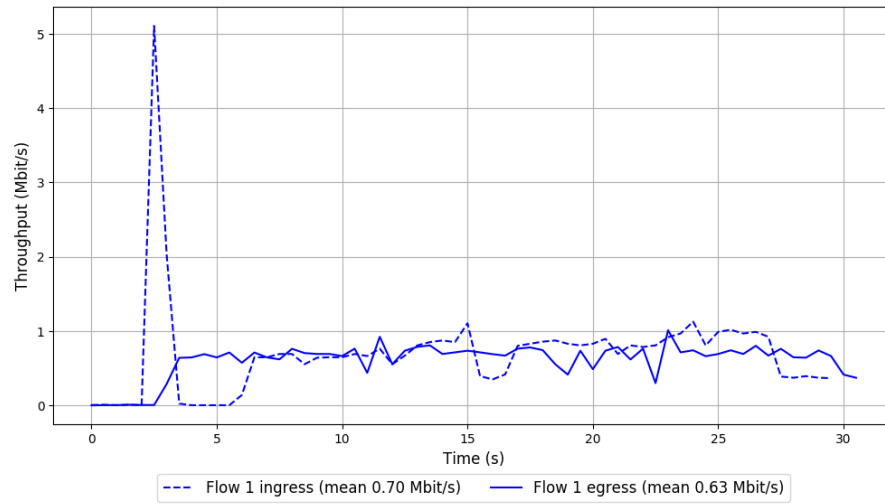


Run 1: Statistics of FillP-Sheep

Start at: 2019-01-17 05:13:30
End at: 2019-01-17 05:14:00
Local clock offset: -4.259 ms
Remote clock offset: -15.584 ms

Below is generated by plot.py at 2019-01-17 06:22:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 3900.510 ms
Loss rate: 10.34%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 3900.510 ms
Loss rate: 10.34%

Run 1: Report of FillP-Sheep — Data Link

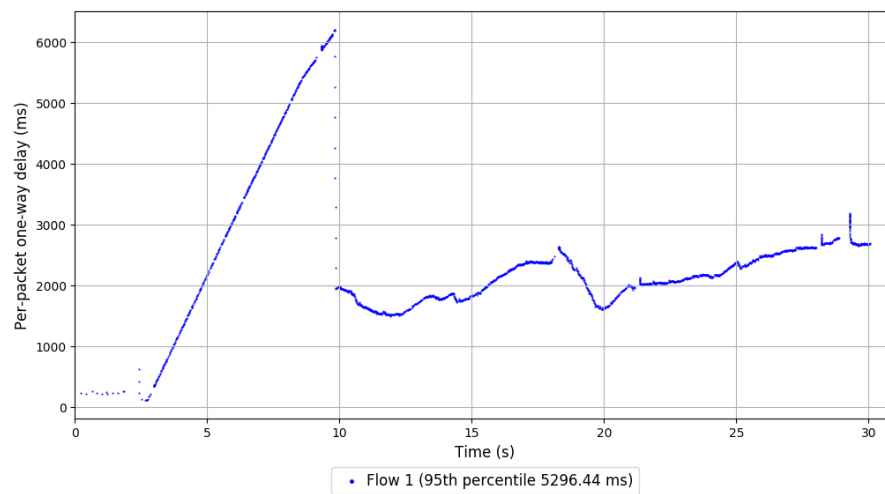
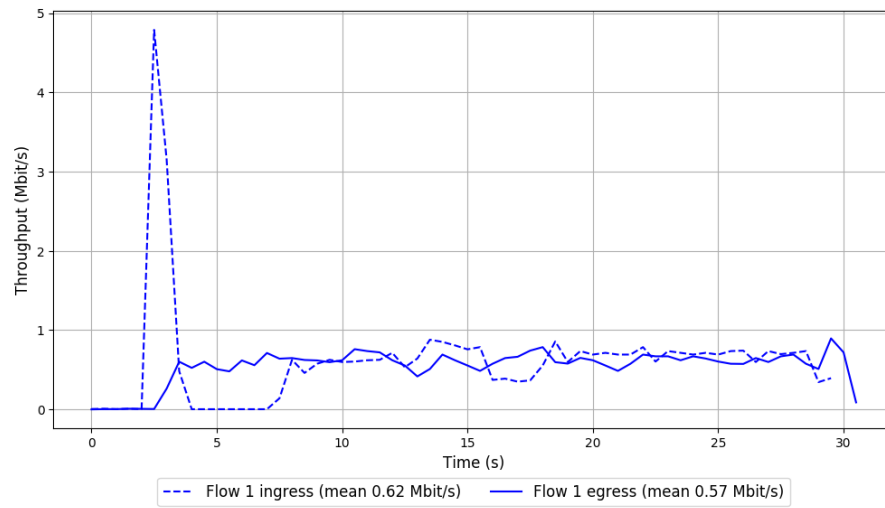


Run 2: Statistics of FillP-Sheep

Start at: 2019-01-17 05:37:21
End at: 2019-01-17 05:37:51
Local clock offset: -3.711 ms
Remote clock offset: 20.839 ms

Below is generated by plot.py at 2019-01-17 06:22:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 5296.436 ms
Loss rate: 8.30%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 5296.436 ms
Loss rate: 8.30%

Run 2: Report of FillP-Sheep — Data Link

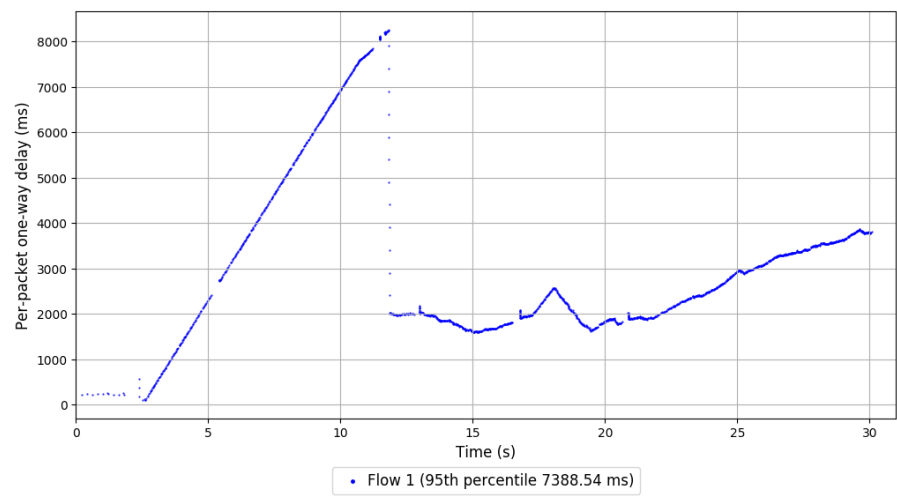
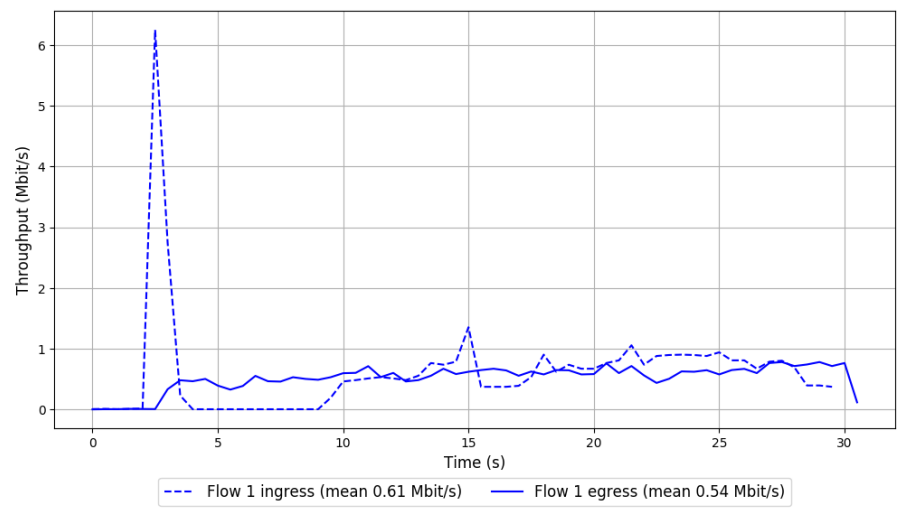


Run 3: Statistics of FillP-Sheep

Start at: 2019-01-17 06:01:13
End at: 2019-01-17 06:01:43
Local clock offset: -5.002 ms
Remote clock offset: 28.752 ms

Below is generated by plot.py at 2019-01-17 06:22:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 7388.538 ms
Loss rate: 12.06%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 7388.538 ms
Loss rate: 12.06%

Run 3: Report of FillP-Sheep — Data Link

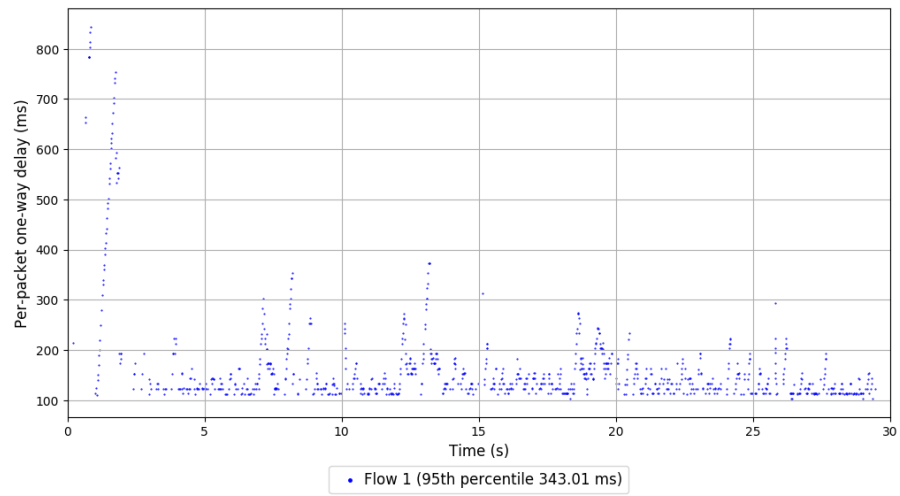
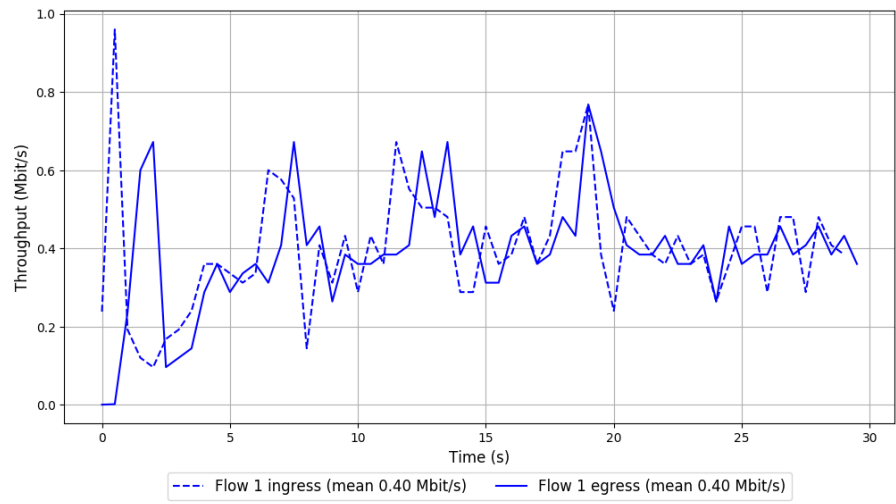


Run 1: Statistics of Indigo

Start at: 2019-01-17 05:12:22
End at: 2019-01-17 05:12:52
Local clock offset: -4.291 ms
Remote clock offset: -21.624 ms

Below is generated by plot.py at 2019-01-17 06:22:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 343.015 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 343.015 ms
Loss rate: 0.51%

Run 1: Report of Indigo — Data Link

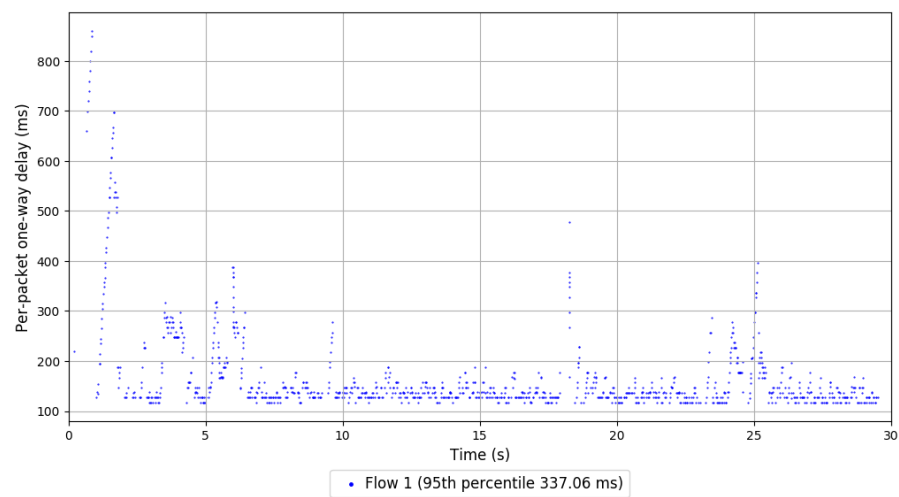
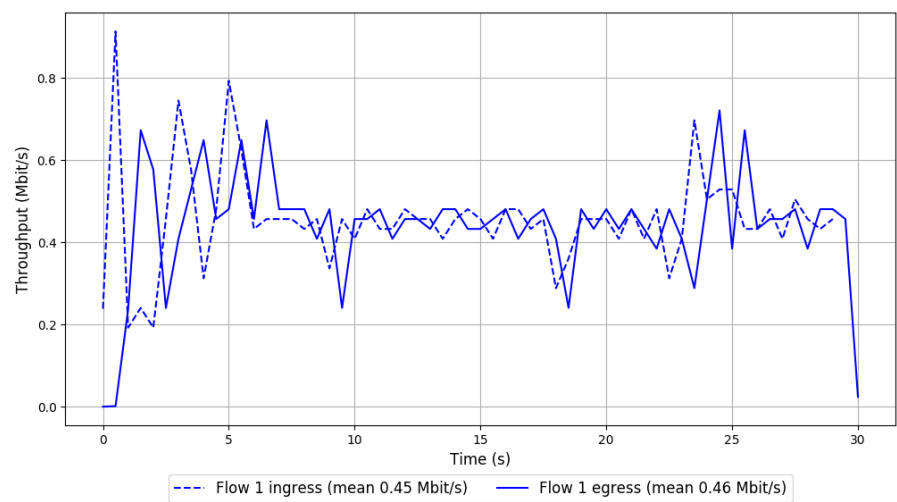


Run 2: Statistics of Indigo

Start at: 2019-01-17 05:36:13
End at: 2019-01-17 05:36:43
Local clock offset: -4.425 ms
Remote clock offset: 15.026 ms

Below is generated by plot.py at 2019-01-17 06:22:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 337.062 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 337.062 ms
Loss rate: 0.27%

Run 2: Report of Indigo — Data Link

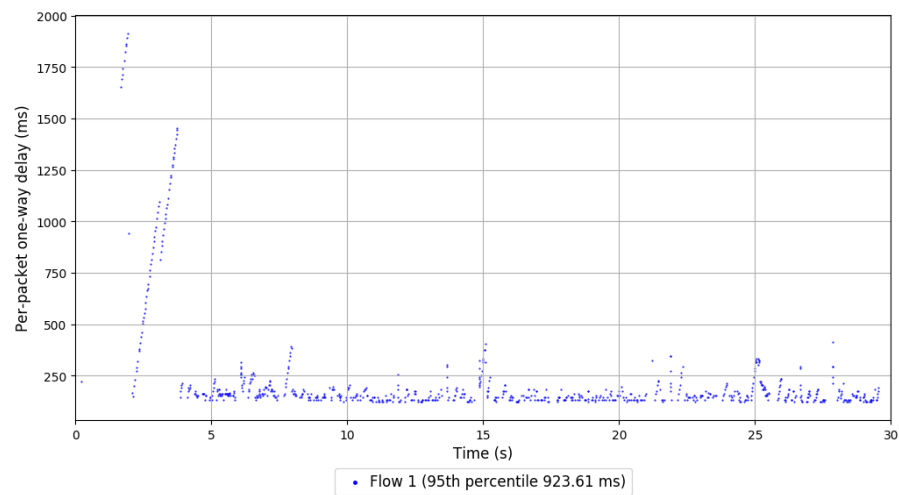
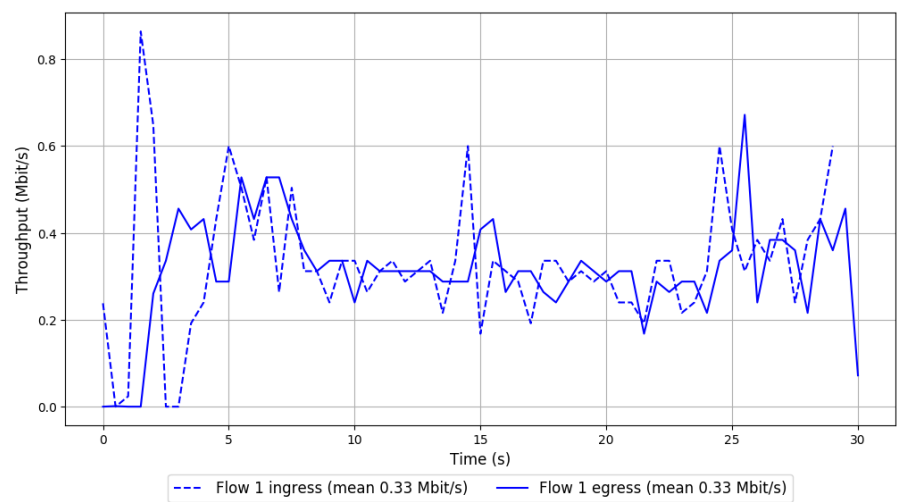


Run 3: Statistics of Indigo

Start at: 2019-01-17 06:00:05
End at: 2019-01-17 06:00:35
Local clock offset: -4.976 ms
Remote clock offset: 30.787 ms

Below is generated by plot.py at 2019-01-17 06:22:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 923.607 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 923.607 ms
Loss rate: 1.24%

Run 3: Report of Indigo — Data Link

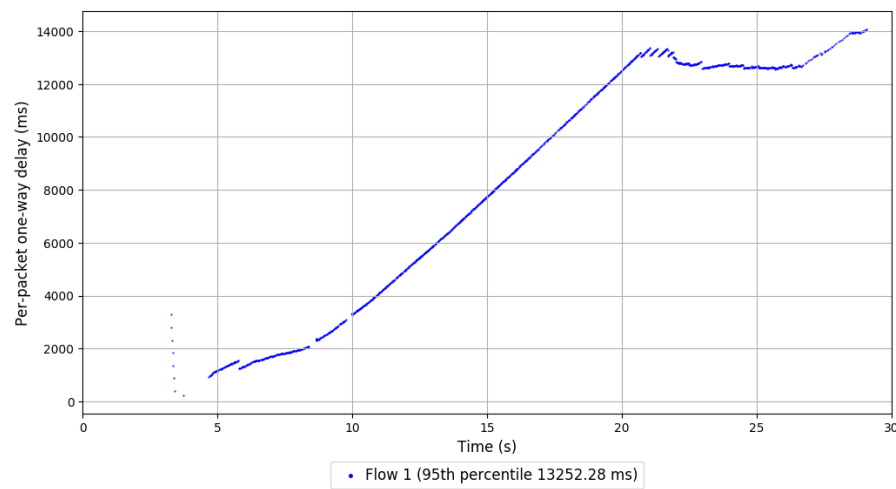
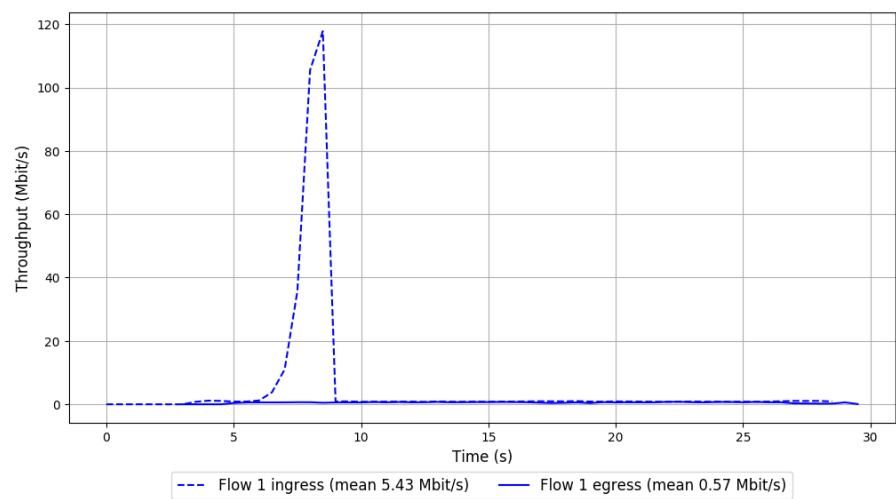


Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-17 05:20:19
End at: 2019-01-17 05:20:49
Local clock offset: -4.308 ms
Remote clock offset: -0.709 ms

Below is generated by plot.py at 2019-01-17 06:22:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 13252.280 ms
Loss rate: 90.71%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 13252.280 ms
Loss rate: 90.71%

Run 1: Report of Indigo-MusesC3 — Data Link

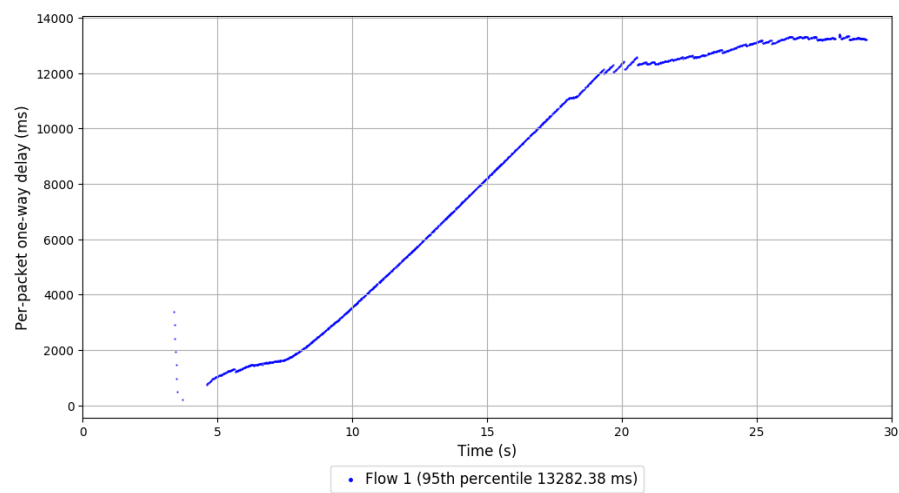
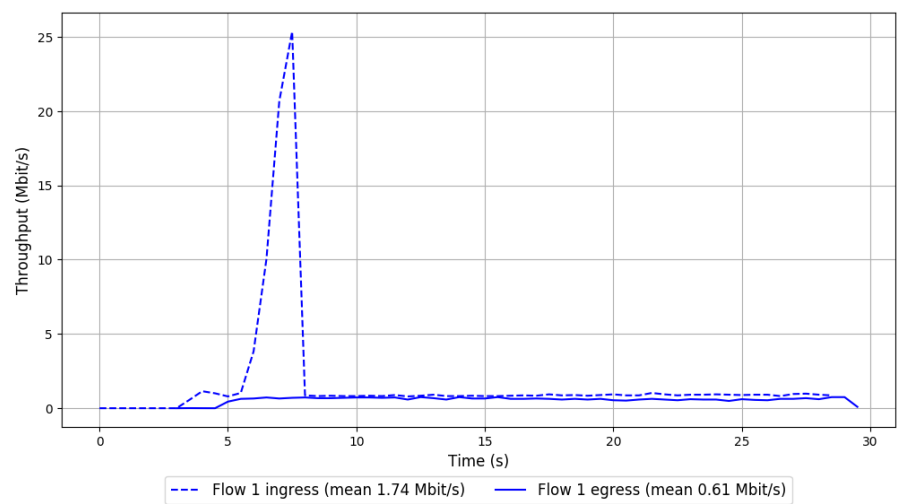


Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-17 05:44:11
End at: 2019-01-17 05:44:41
Local clock offset: -3.622 ms
Remote clock offset: 19.301 ms

Below is generated by plot.py at 2019-01-17 06:22:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 13282.379 ms
Loss rate: 69.02%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 13282.379 ms
Loss rate: 69.02%

Run 2: Report of Indigo-MusesC3 — Data Link

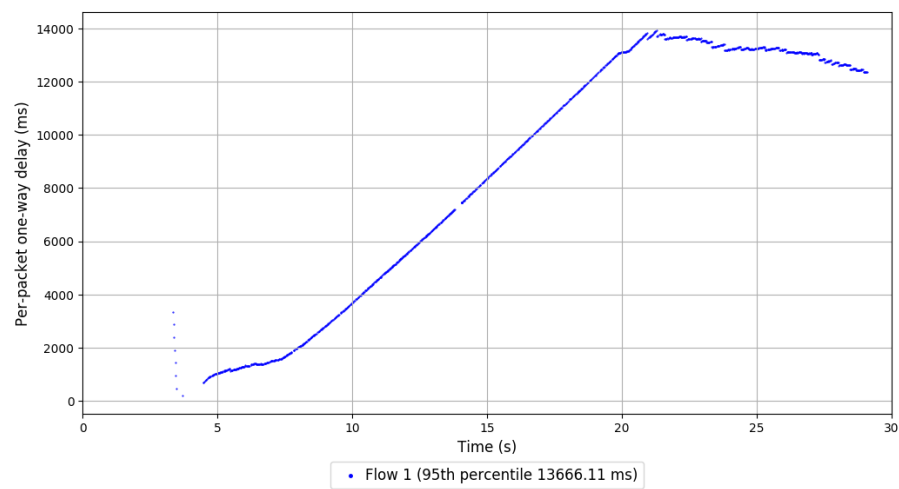
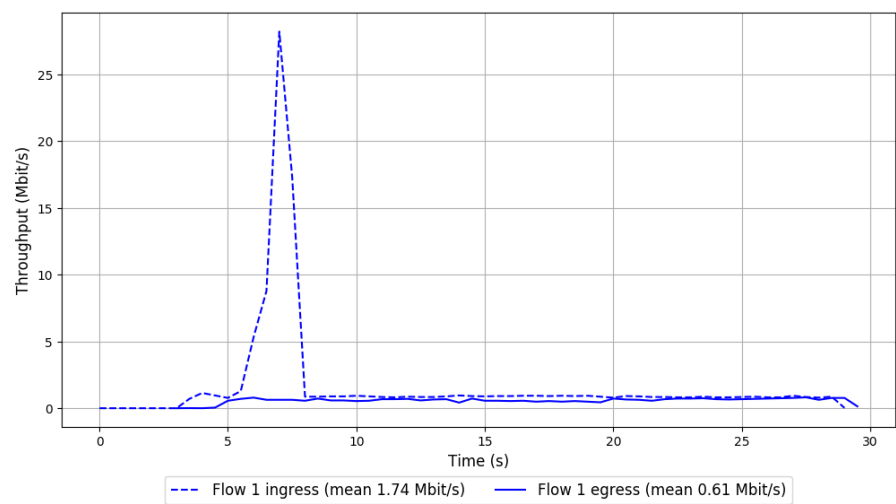


Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-17 06:08:02
End at: 2019-01-17 06:08:32
Local clock offset: -4.392 ms
Remote clock offset: 32.176 ms

Below is generated by plot.py at 2019-01-17 06:22:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 13666.112 ms
Loss rate: 68.96%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 13666.112 ms
Loss rate: 68.96%

Run 3: Report of Indigo-MusesC3 — Data Link



Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-17 05:18:03

End at: 2019-01-17 05:18:33

Local clock offset: -3.481 ms

Remote clock offset: -12.37 ms

Below is generated by plot.py at 2019-01-17 06:22:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.66 Mbit/s

95th percentile per-packet one-way delay: 5559.474 ms

Loss rate: 23.86%

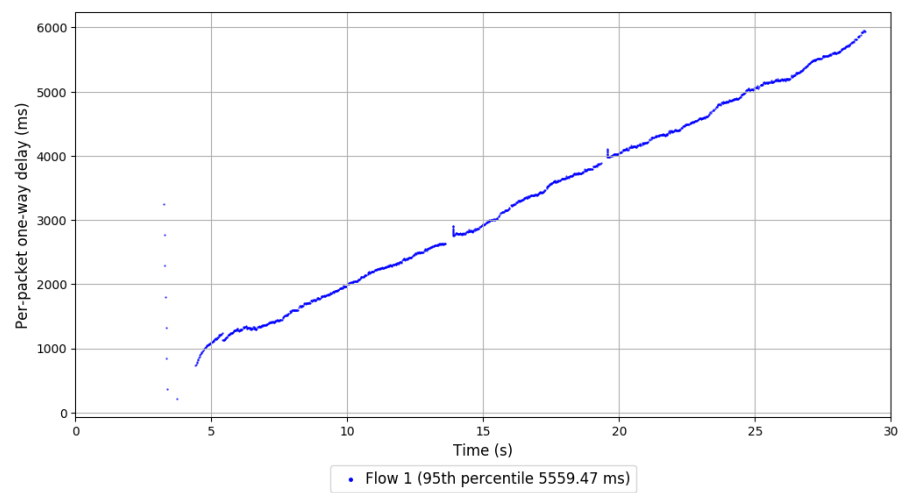
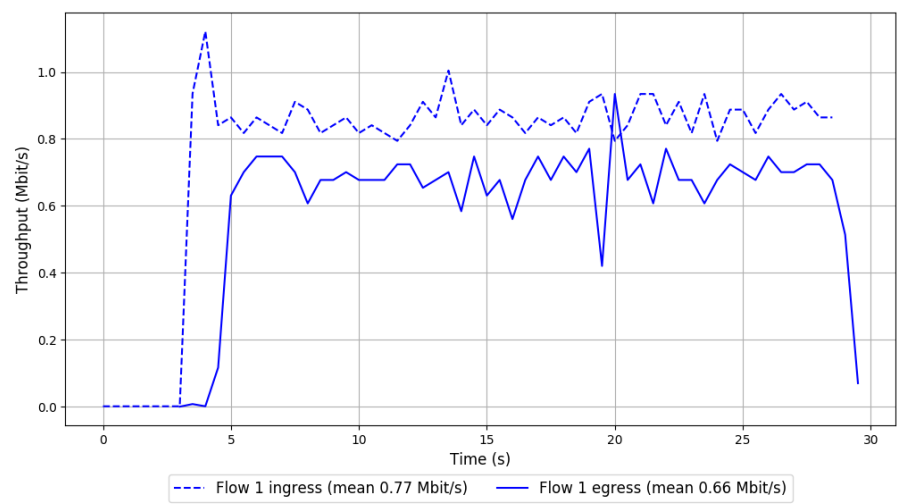
-- Flow 1:

Average throughput: 0.66 Mbit/s

95th percentile per-packet one-way delay: 5559.474 ms

Loss rate: 23.86%

Run 1: Report of Indigo-MusesC5 — Data Link

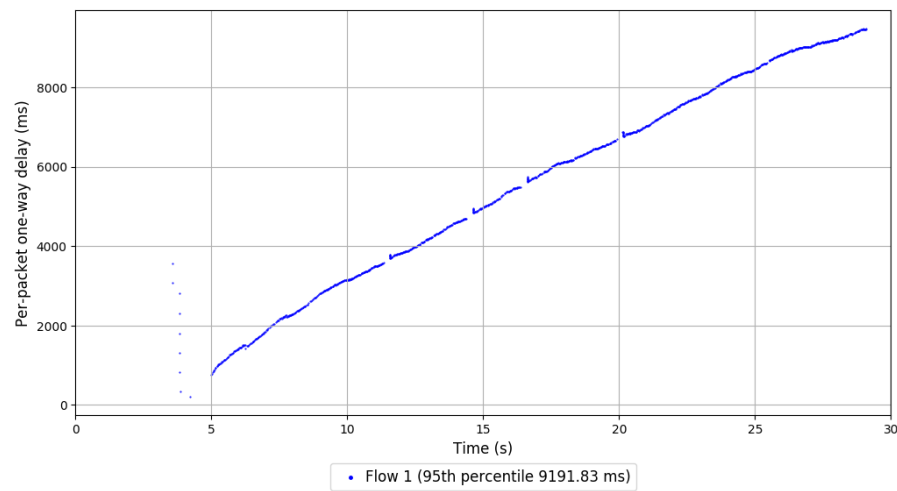
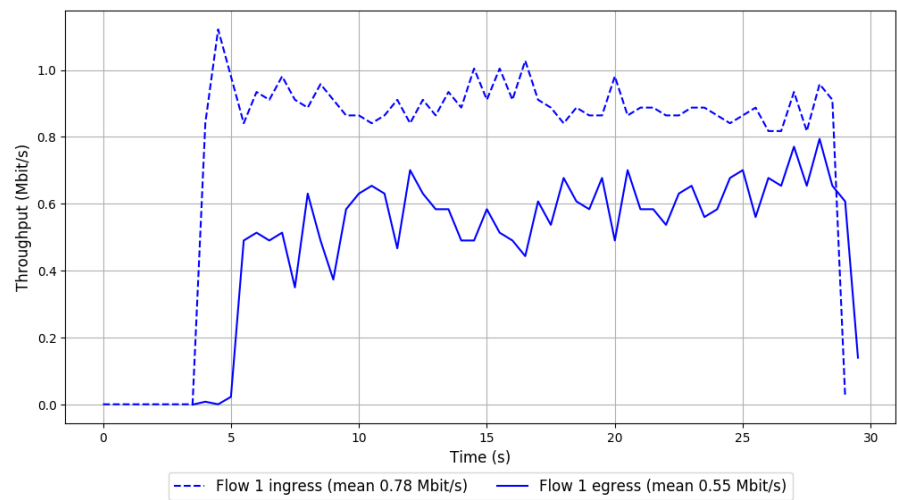


Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-17 05:41:54
End at: 2019-01-17 05:42:24
Local clock offset: -3.688 ms
Remote clock offset: 22.165 ms

Below is generated by plot.py at 2019-01-17 06:22:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 9191.830 ms
Loss rate: 37.23%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 9191.830 ms
Loss rate: 37.23%

Run 2: Report of Indigo-MusesC5 — Data Link

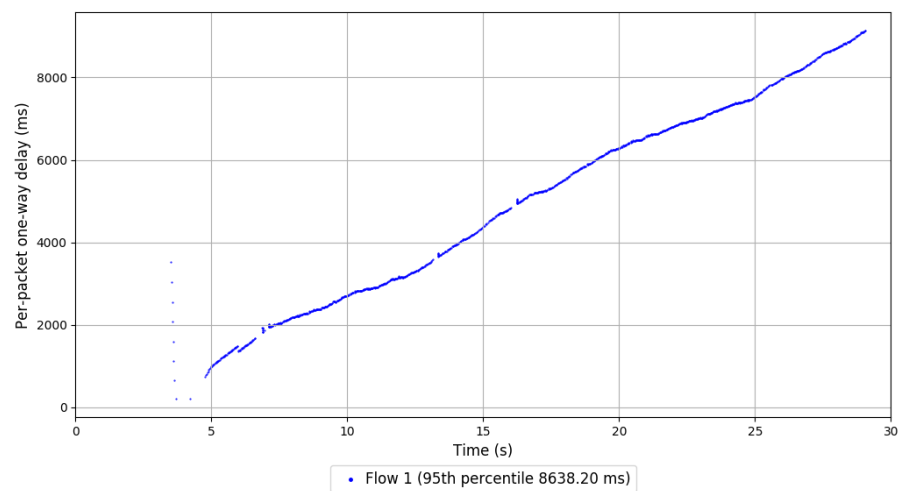
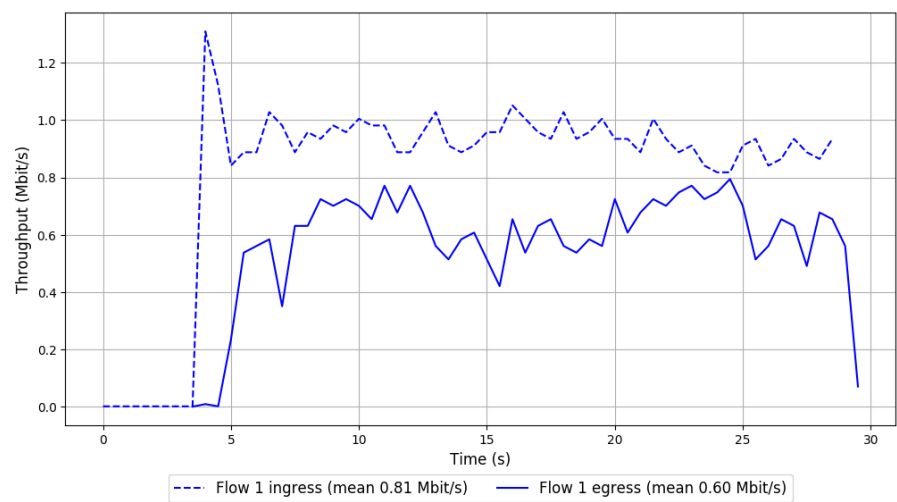


Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-17 06:05:46
End at: 2019-01-17 06:06:16
Local clock offset: -4.318 ms
Remote clock offset: 31.385 ms

Below is generated by plot.py at 2019-01-17 06:22:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 8638.205 ms
Loss rate: 35.13%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 8638.205 ms
Loss rate: 35.13%

Run 3: Report of Indigo-MusesC5 — Data Link



Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-17 05:22:35

End at: 2019-01-17 05:23:05

Local clock offset: -3.599 ms

Remote clock offset: 4.154 ms

Below is generated by plot.py at 2019-01-17 06:22:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 5361.111 ms

Loss rate: 22.21%

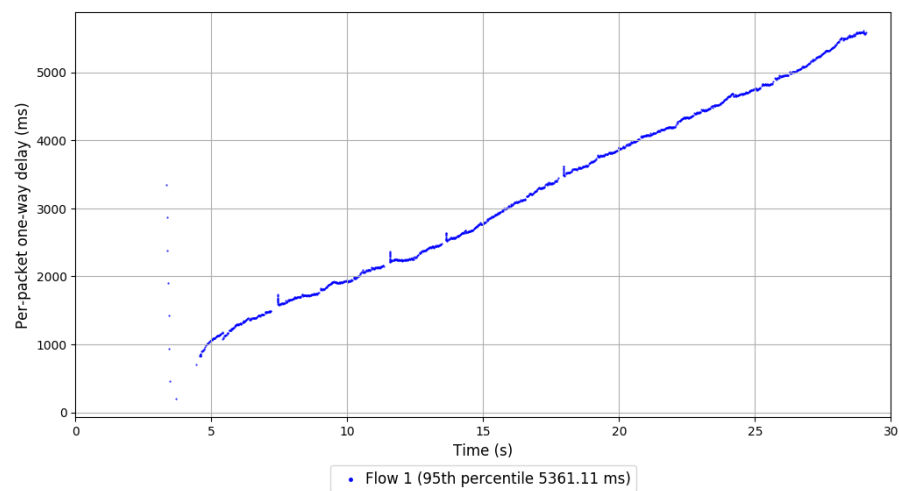
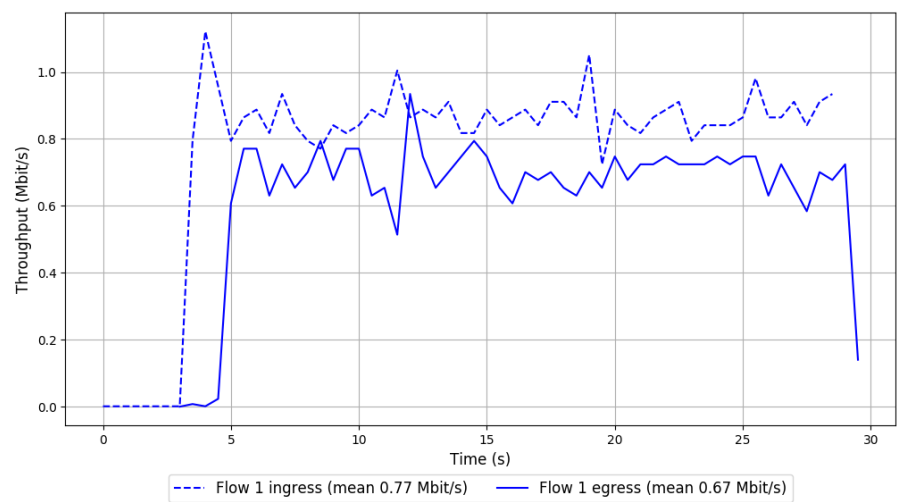
-- Flow 1:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 5361.111 ms

Loss rate: 22.21%

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

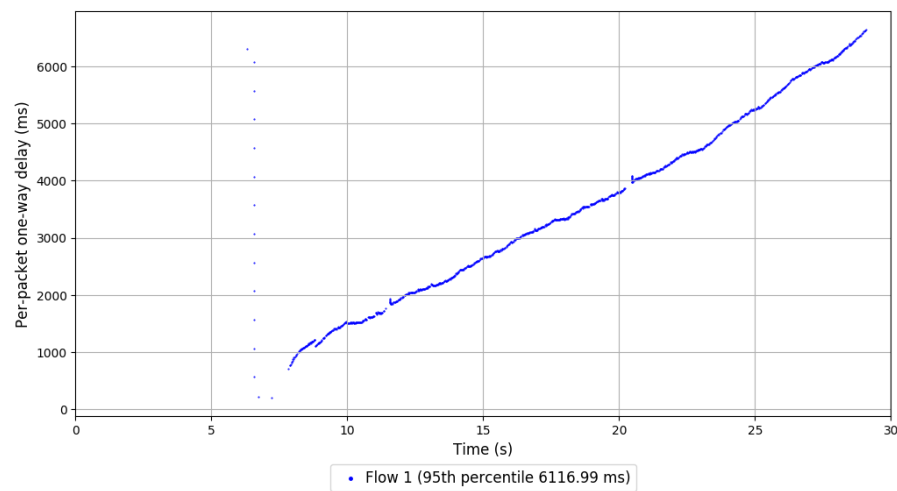
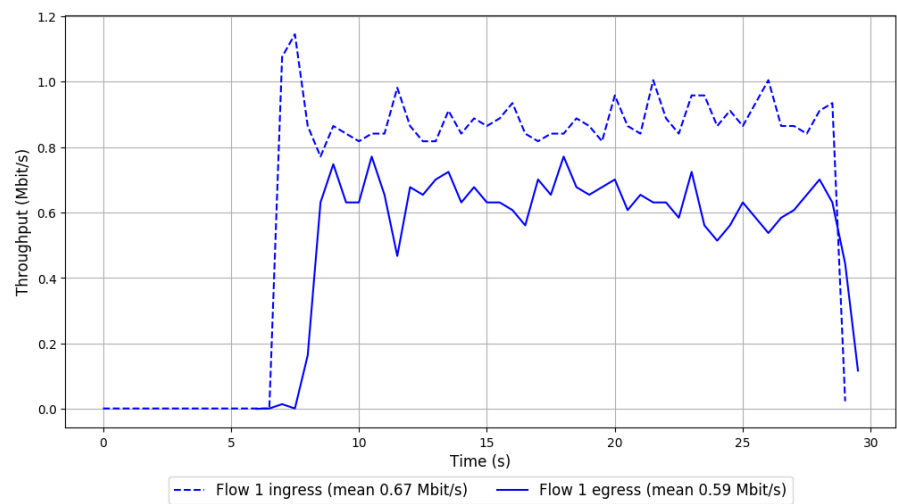
Start at: 2019-01-17 05:46:27

End at: 2019-01-17 05:46:57

Local clock offset: -4.378 ms

Remote clock offset: 19.099 ms

Run 2: Report of Indigo-MusesD — Data Link

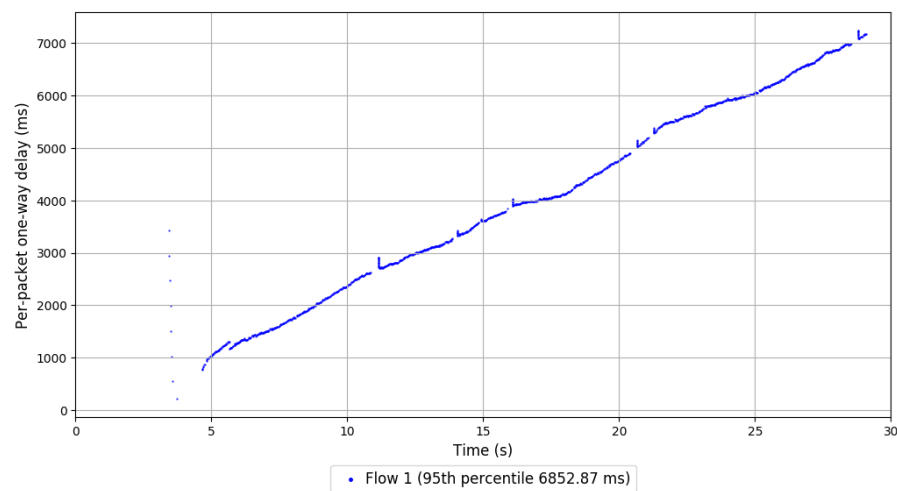
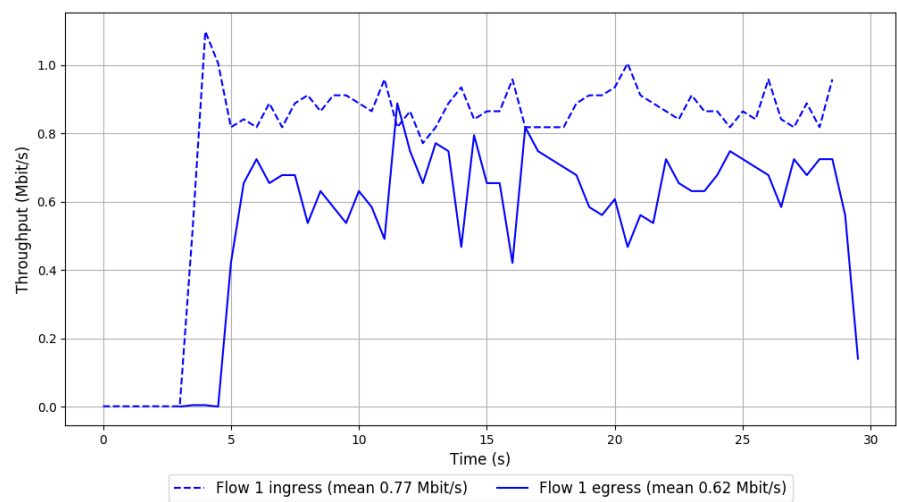


Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-17 06:10:18
End at: 2019-01-17 06:10:48
Local clock offset: -5.123 ms
Remote clock offset: 34.159 ms

Below is generated by plot.py at 2019-01-17 06:22:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 6852.869 ms
Loss rate: 28.30%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 6852.869 ms
Loss rate: 28.30%

Run 3: Report of Indigo-MusesD — Data Link



Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-17 05:31:41

End at: 2019-01-17 05:32:11

Local clock offset: -4.438 ms

Remote clock offset: 15.6 ms

Below is generated by plot.py at 2019-01-17 06:22:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 9406.070 ms

Loss rate: 35.25%

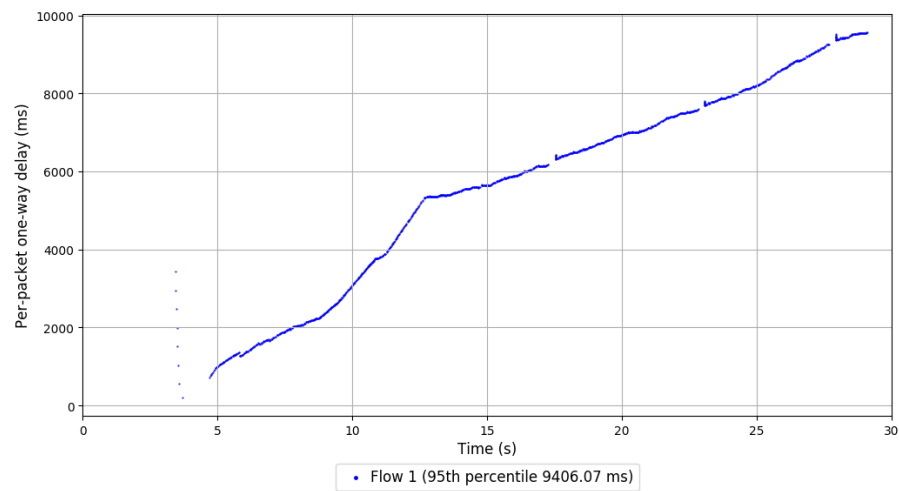
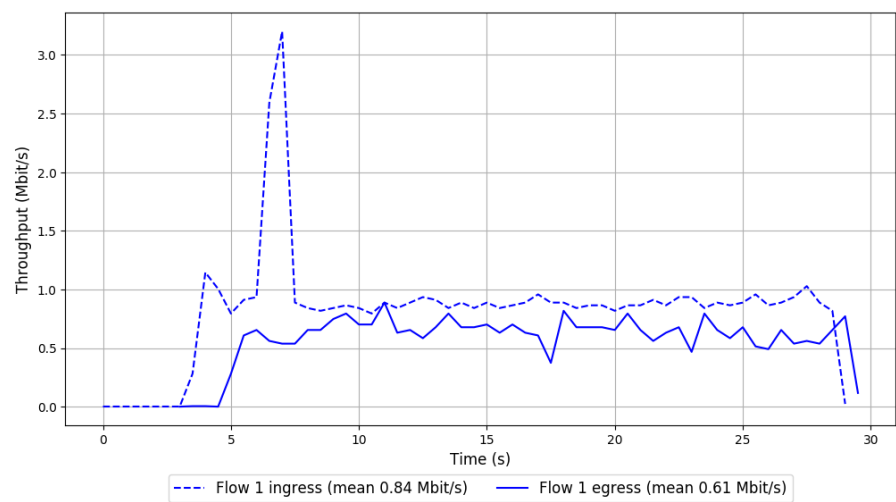
-- Flow 1:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 9406.070 ms

Loss rate: 35.25%

Run 1: Report of Indigo-MusesT — Data Link

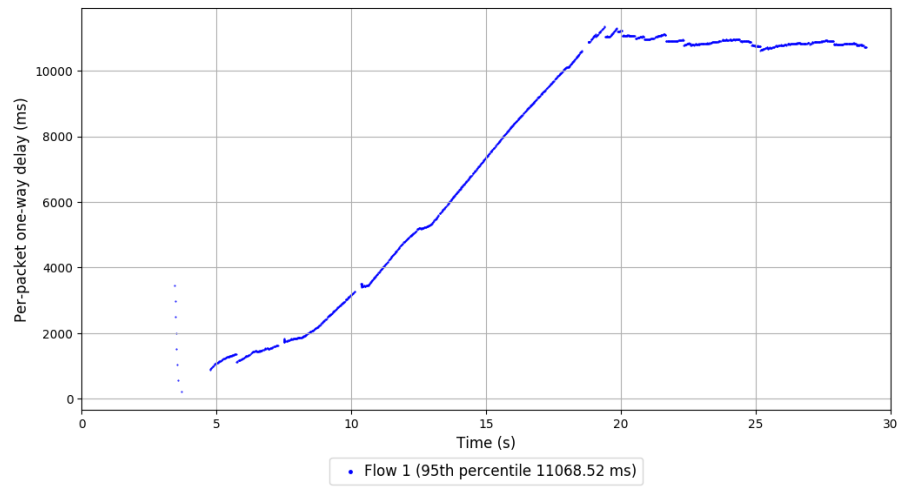
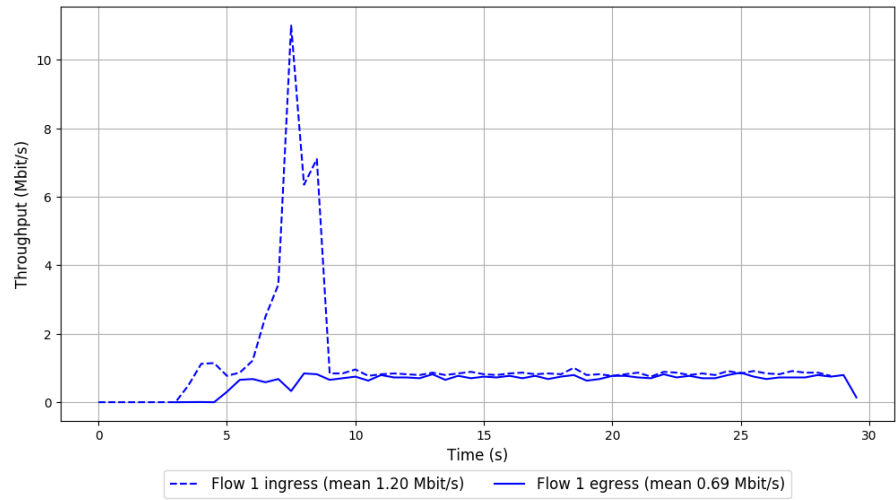


Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-17 05:55:32
End at: 2019-01-17 05:56:02
Local clock offset: -4.153 ms
Remote clock offset: 27.648 ms

Below is generated by plot.py at 2019-01-17 06:22:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 11068.525 ms
Loss rate: 49.47%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 11068.525 ms
Loss rate: 49.47%

Run 2: Report of Indigo-MusesT — Data Link

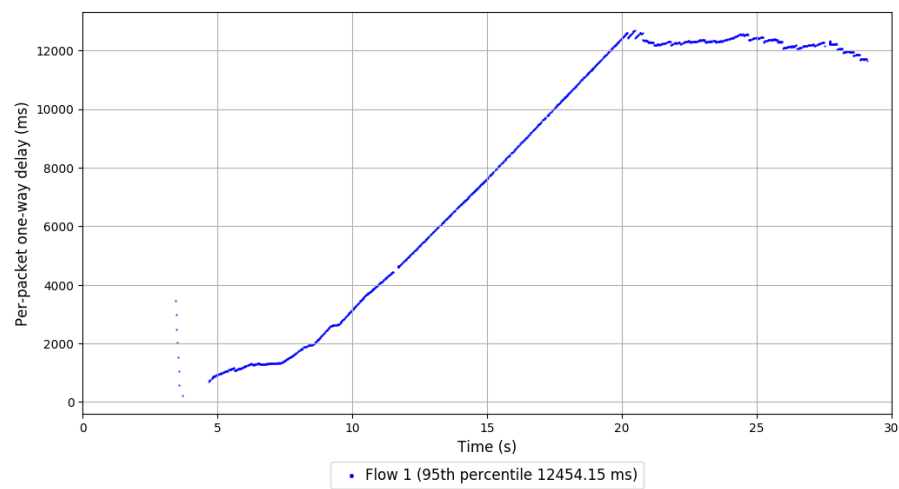
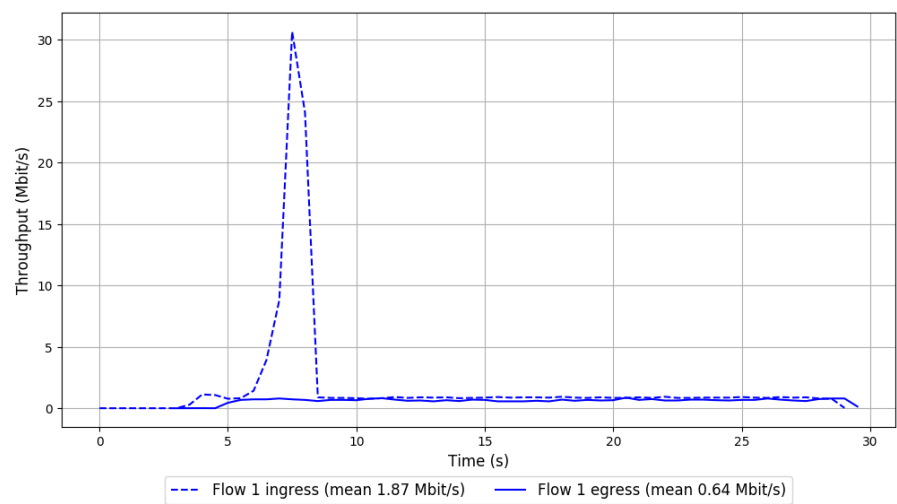


Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-17 06:19:23
End at: 2019-01-17 06:19:53
Local clock offset: -3.598 ms
Remote clock offset: 37.087 ms

Below is generated by plot.py at 2019-01-17 06:22:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 12454.151 ms
Loss rate: 69.56%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 12454.151 ms
Loss rate: 69.56%

Run 3: Report of Indigo-MusesT — Data Link

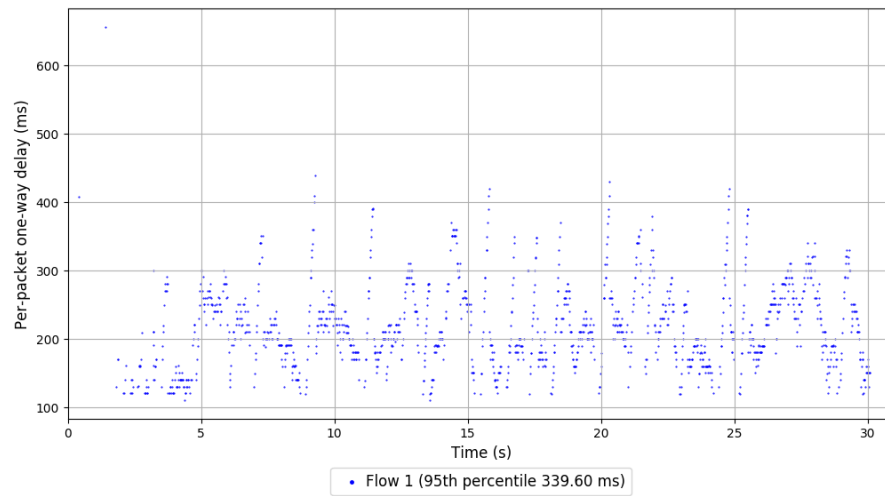
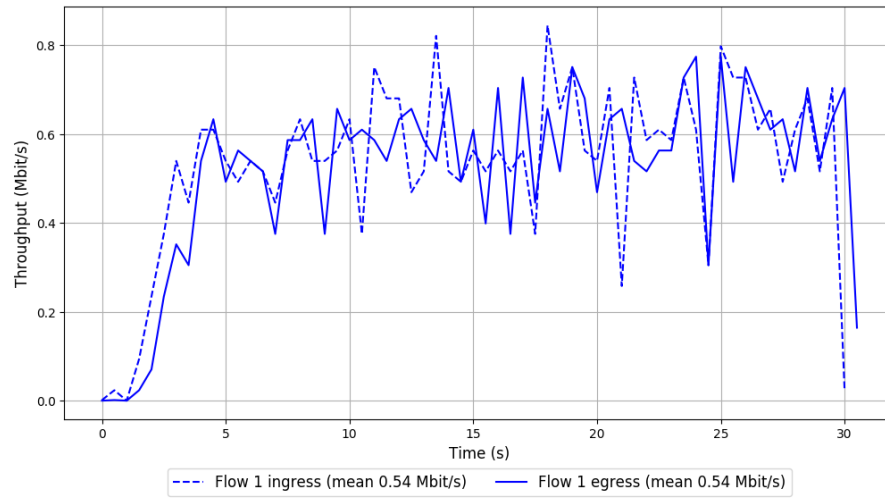



```
Run 1: Statistics of LEDBAT

Start at: 2019-01-17 05:30:33
End at: 2019-01-17 05:31:03
Local clock offset: -4.413 ms
Remote clock offset: 9.62 ms

# Below is generated by plot.py at 2019-01-17 06:22:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 339.599 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 339.599 ms
Loss rate: 0.36%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2019-01-17 05:54:24

End at: 2019-01-17 05:54:54

Local clock offset: -4.866 ms

Remote clock offset: 23.31 ms

Below is generated by plot.py at 2019-01-17 06:22:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 362.464 ms

Loss rate: 0.61%

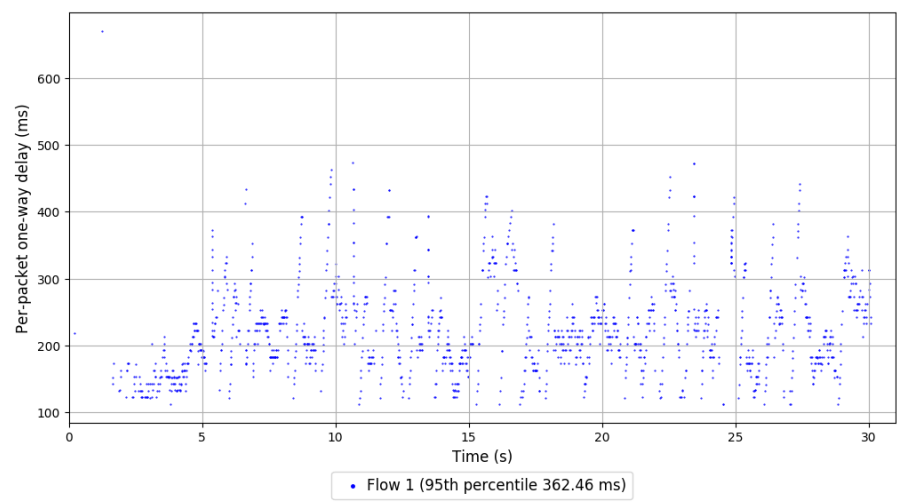
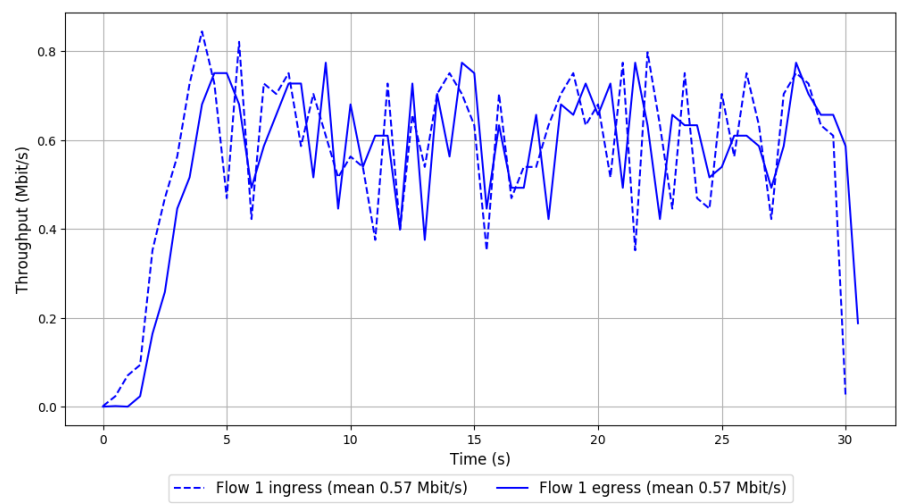
-- Flow 1:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 362.464 ms

Loss rate: 0.61%

Run 2: Report of LEDBAT — Data Link

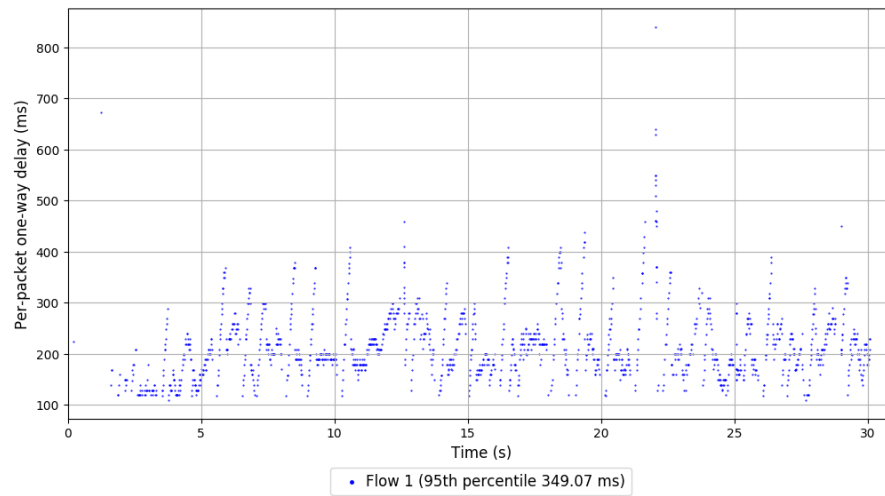
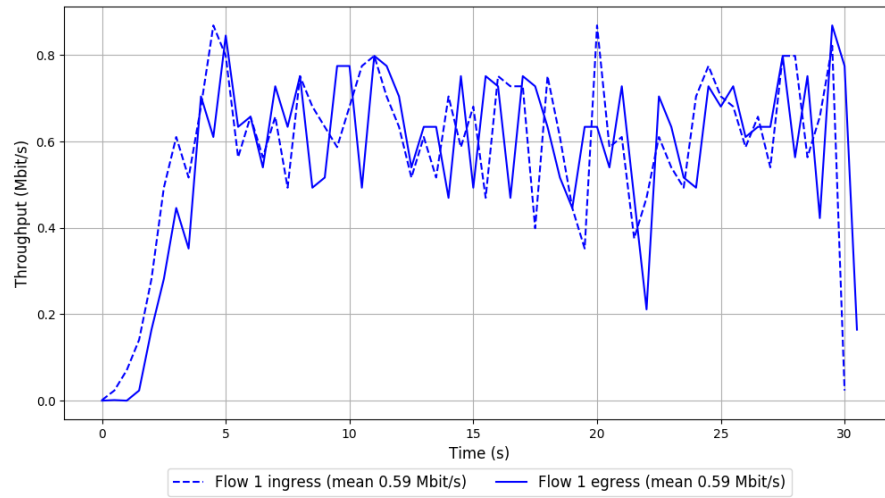


Run 3: Statistics of LEDBAT

Start at: 2019-01-17 06:18:15
End at: 2019-01-17 06:18:45
Local clock offset: -4.204 ms
Remote clock offset: 36.411 ms

Below is generated by plot.py at 2019-01-17 06:22:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 349.073 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 349.073 ms
Loss rate: 0.60%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2019-01-17 05:24:51

End at: 2019-01-17 05:25:21

Local clock offset: -3.631 ms

Remote clock offset: 2.612 ms

Below is generated by plot.py at 2019-01-17 06:22:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.55 Mbit/s

95th percentile per-packet one-way delay: 14077.469 ms

Loss rate: 98.37%

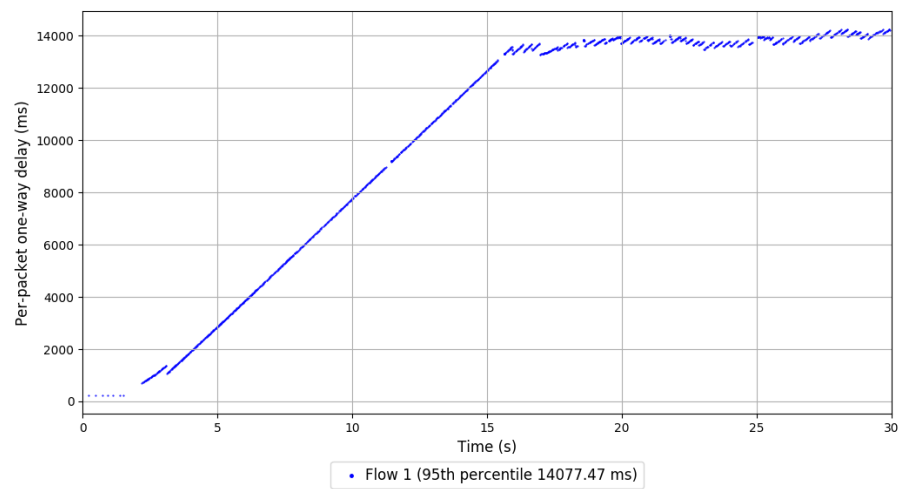
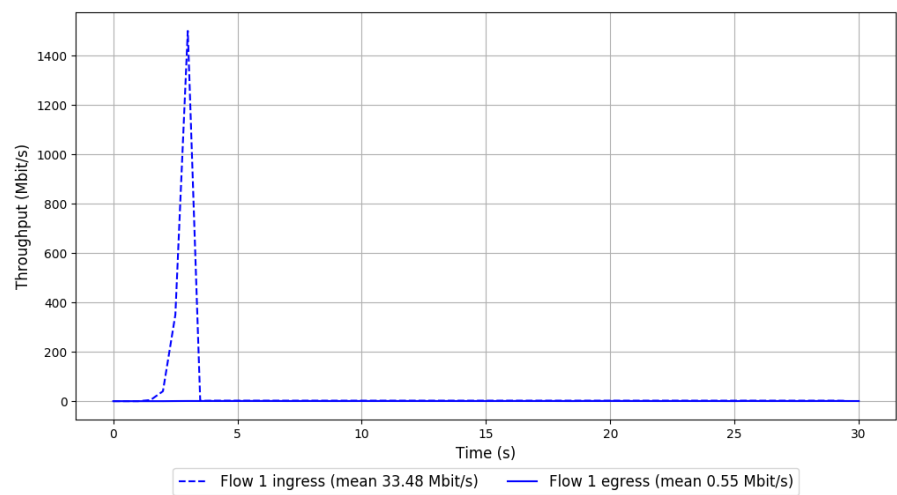
-- Flow 1:

Average throughput: 0.55 Mbit/s

95th percentile per-packet one-way delay: 14077.469 ms

Loss rate: 98.37%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-01-17 05:48:43

End at: 2019-01-17 05:49:13

Local clock offset: -3.693 ms

Remote clock offset: 20.028 ms

Below is generated by plot.py at 2019-01-17 06:22:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 13416.294 ms

Loss rate: 98.14%

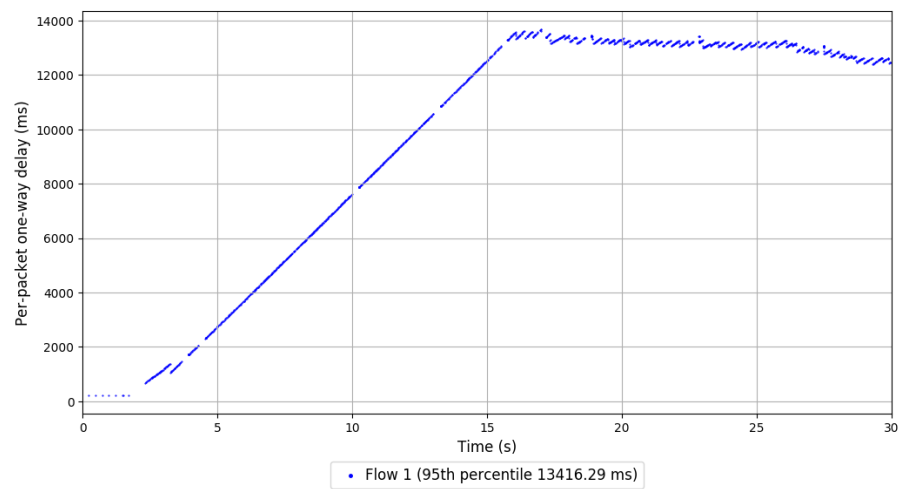
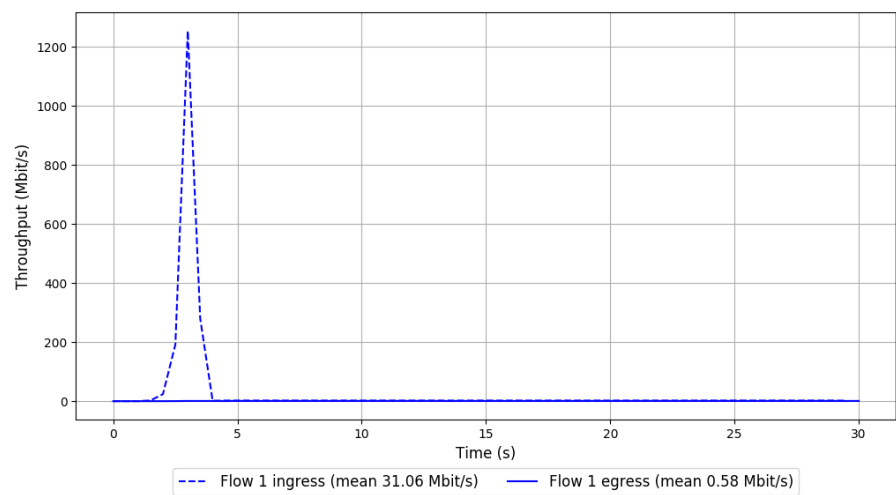
-- Flow 1:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 13416.294 ms

Loss rate: 98.14%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-01-17 06:12:34

End at: 2019-01-17 06:13:04

Local clock offset: -5.133 ms

Remote clock offset: 33.626 ms

Below is generated by plot.py at 2019-01-17 06:22:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 15465.358 ms

Loss rate: 98.41%

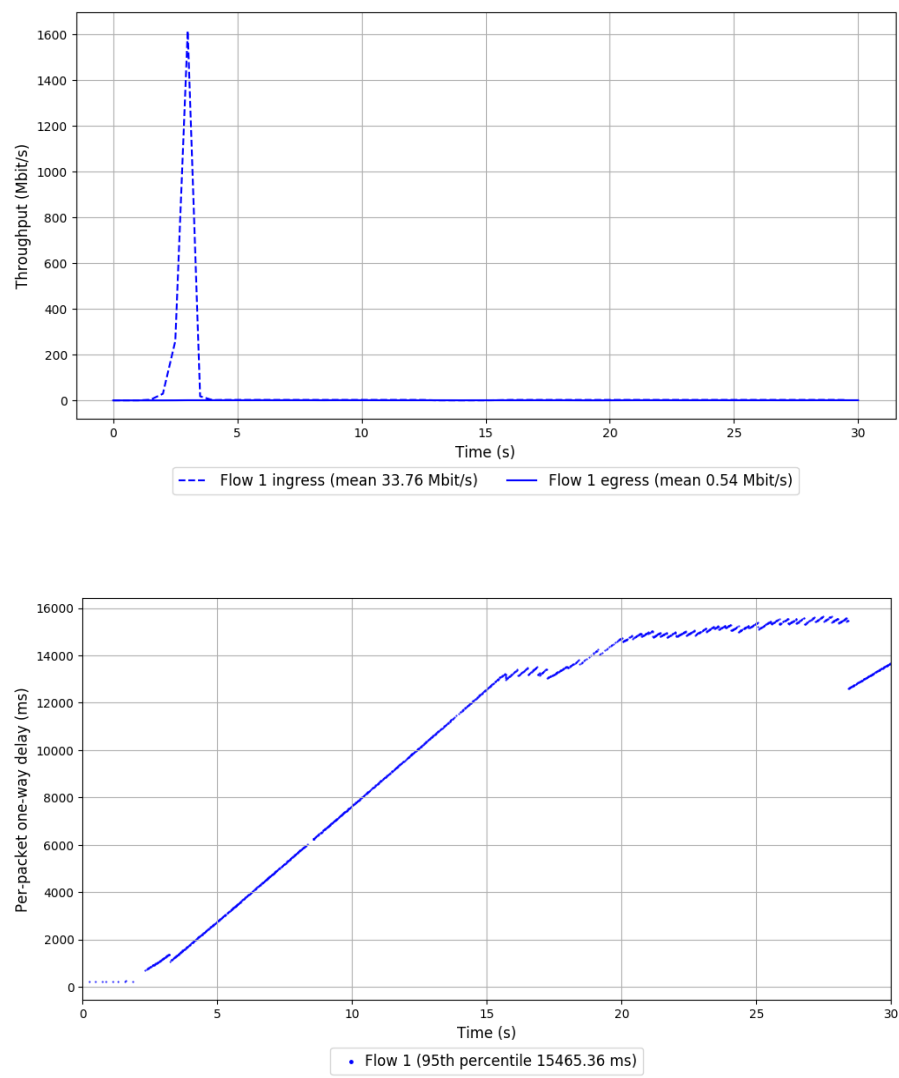
-- Flow 1:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 15465.358 ms

Loss rate: 98.41%

Run 3: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

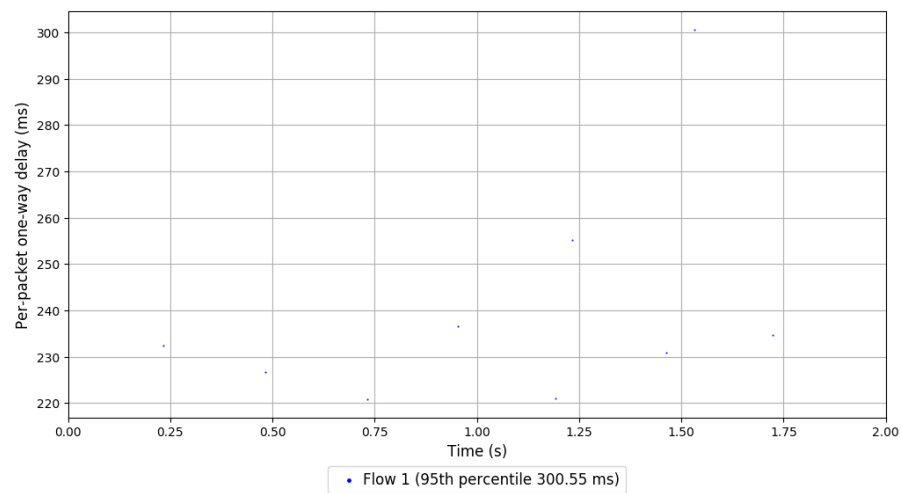
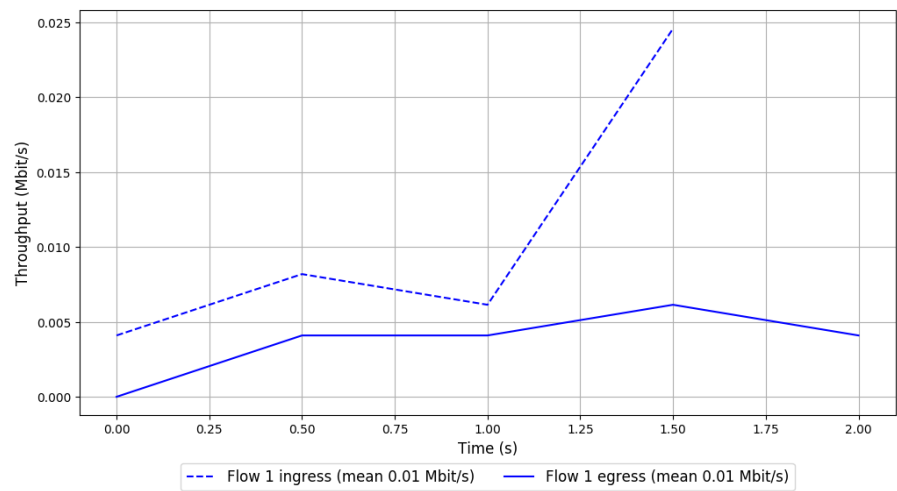
Start at: 2019-01-17 05:21:27

End at: 2019-01-17 05:21:57

Local clock offset: -3.577 ms

Remote clock offset: 2.742 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

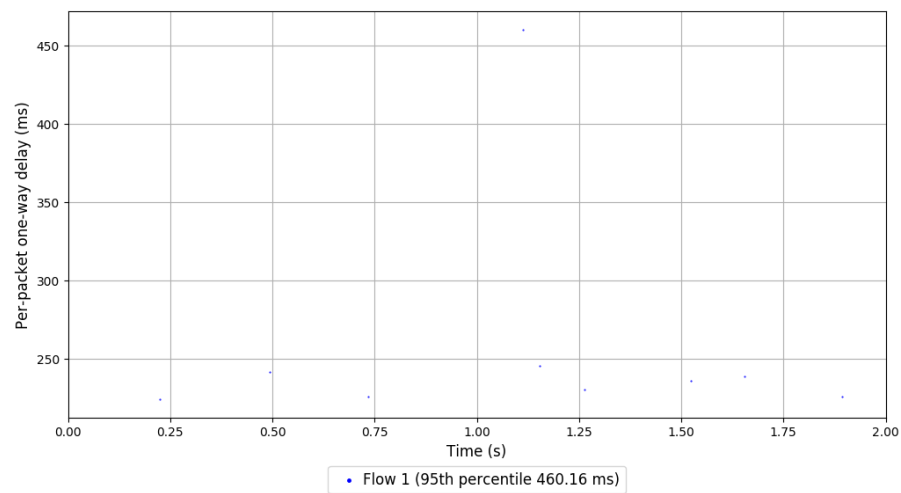
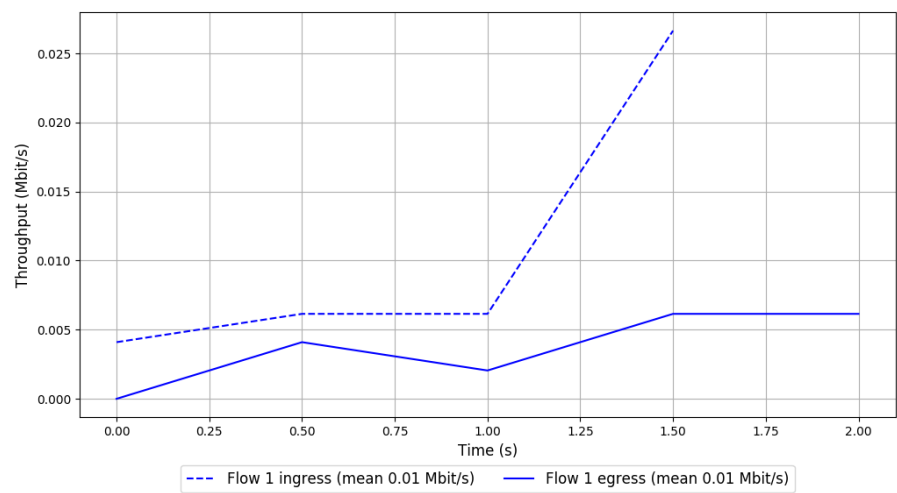
Start at: 2019-01-17 05:45:20

End at: 2019-01-17 05:45:50

Local clock offset: -4.384 ms

Remote clock offset: 24.814 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

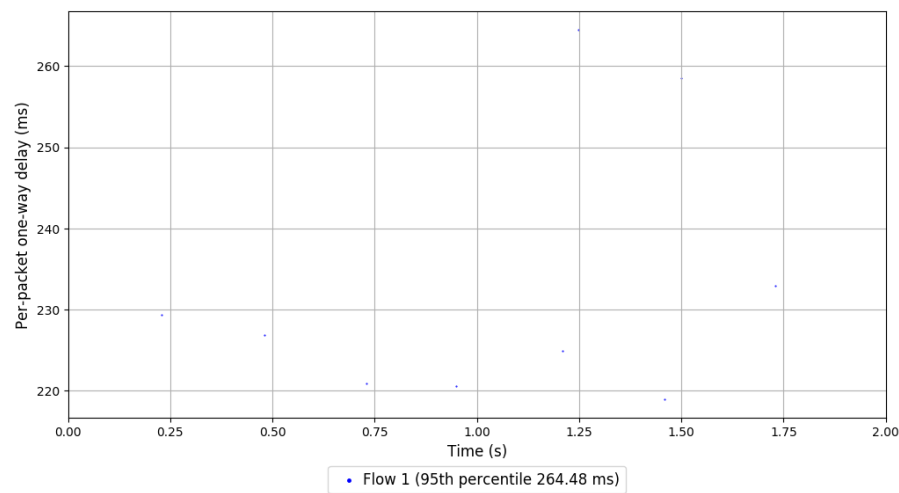
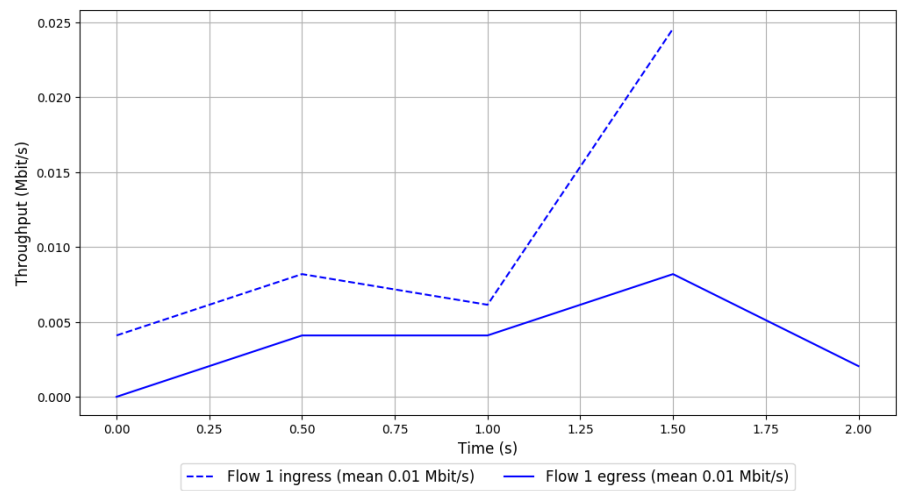
Start at: 2019-01-17 06:09:10

End at: 2019-01-17 06:09:40

Local clock offset: -5.152 ms

Remote clock offset: 28.552 ms

Run 3: Report of PCC-Expr — Data Link

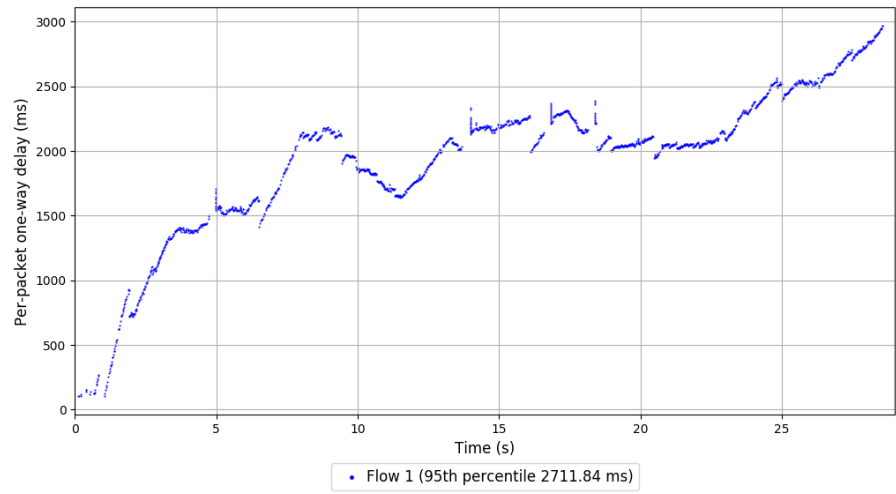
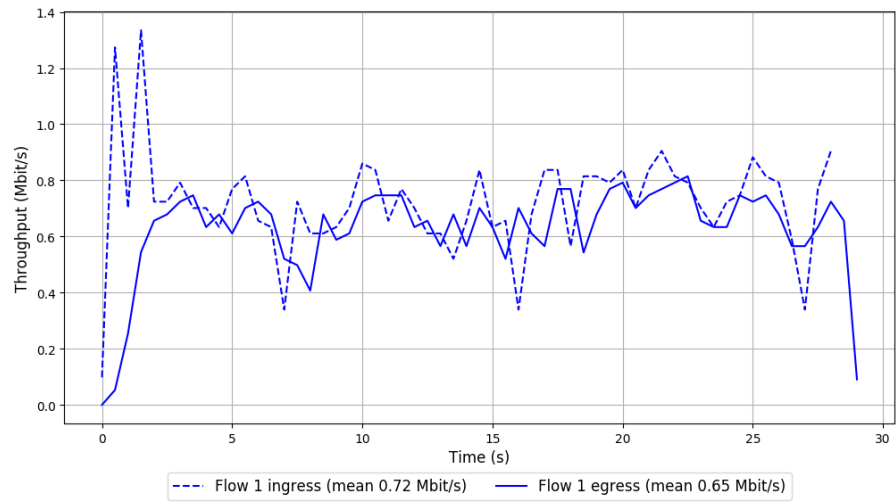


Run 1: Statistics of QUIC Cubic

Start at: 2019-01-17 05:32:49
End at: 2019-01-17 05:33:19
Local clock offset: -4.443 ms
Remote clock offset: 15.569 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 2711.841 ms
Loss rate: 9.77%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 2711.841 ms
Loss rate: 9.77%

Run 1: Report of QUIC Cubic — Data Link

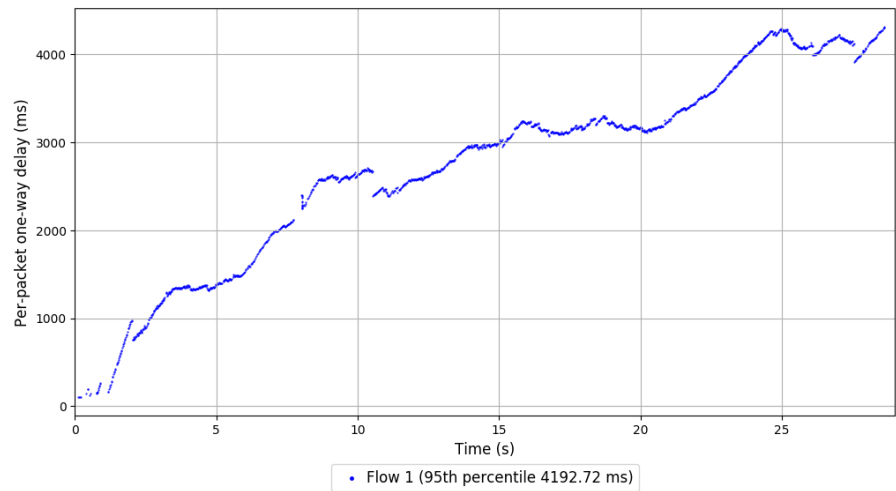
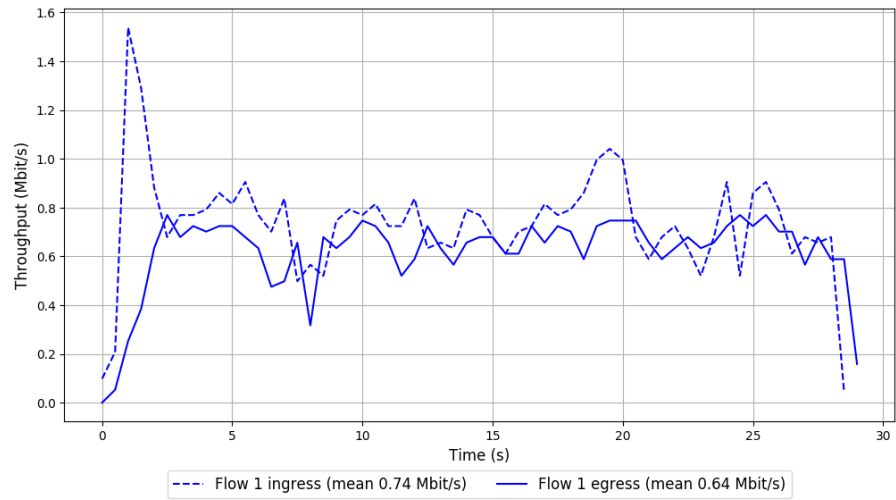


Run 2: Statistics of QUIC Cubic

Start at: 2019-01-17 05:56:40
End at: 2019-01-17 05:57:10
Local clock offset: -4.105 ms
Remote clock offset: 28.311 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 4192.724 ms
Loss rate: 14.26%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 4192.724 ms
Loss rate: 14.26%

Run 2: Report of QUIC Cubic — Data Link

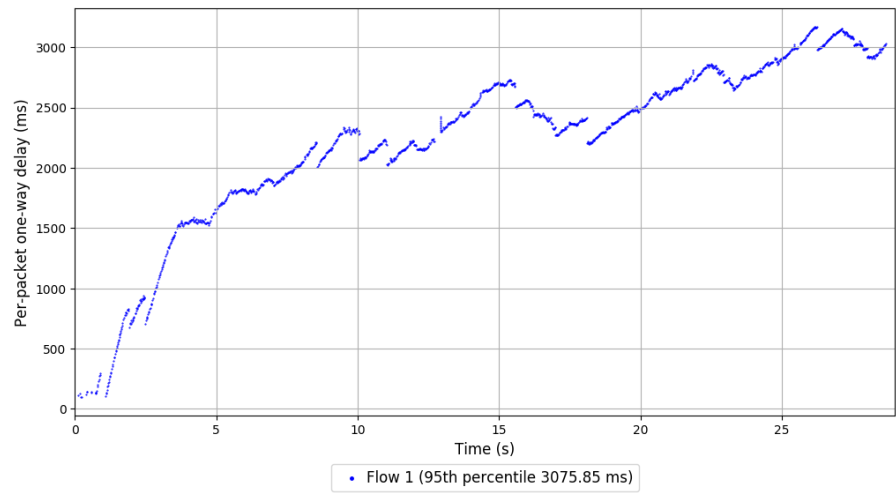
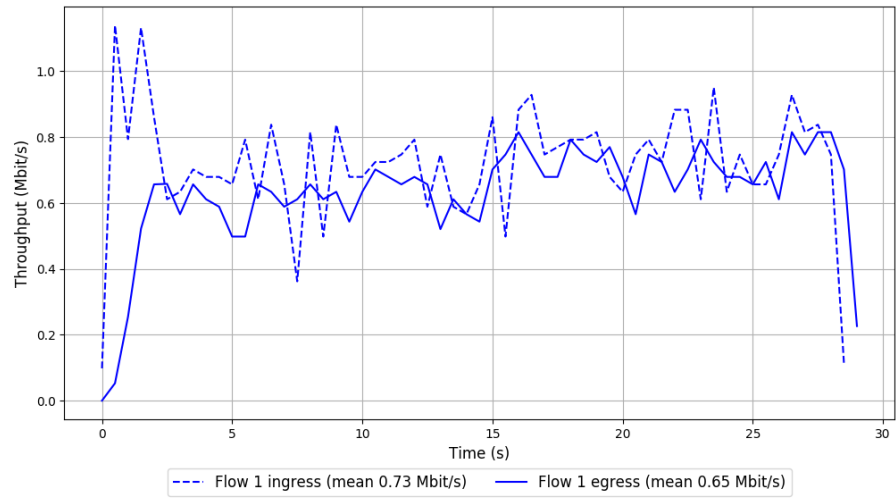


Run 3: Statistics of QUIC Cubic

Start at: 2019-01-17 06:20:31
End at: 2019-01-17 06:21:01
Local clock offset: -3.976 ms
Remote clock offset: 36.434 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 3075.847 ms
Loss rate: 10.95%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 3075.847 ms
Loss rate: 10.95%

Run 3: Report of QUIC Cubic — Data Link

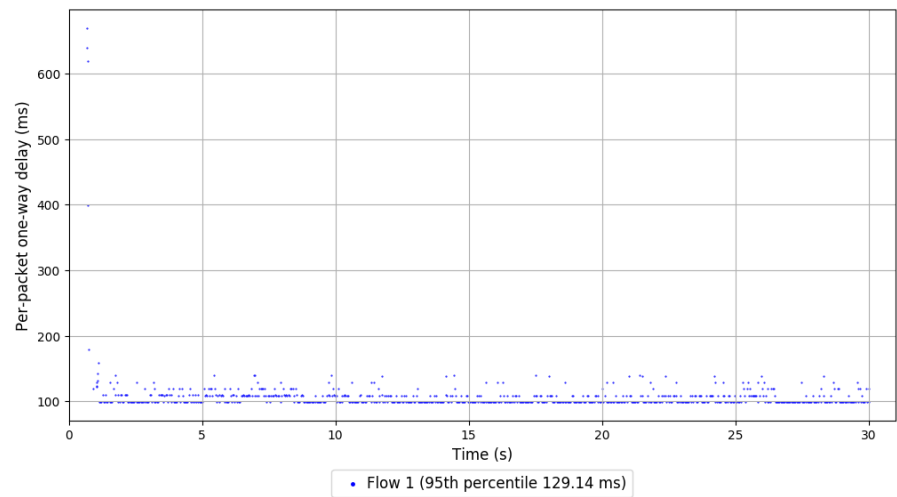
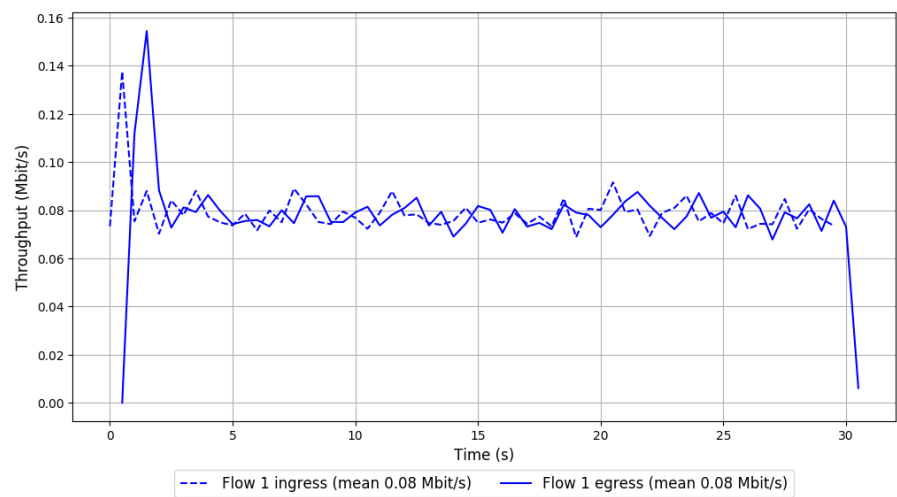



```
Run 1: Statistics of SCReAM

Start at: 2019-01-17 05:29:25
End at: 2019-01-17 05:29:55
Local clock offset: -3.667 ms
Remote clock offset: 12.05 ms

# Below is generated by plot.py at 2019-01-17 06:22:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 129.138 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 129.138 ms
Loss rate: 0.13%
```

Run 1: Report of SReAM — Data Link

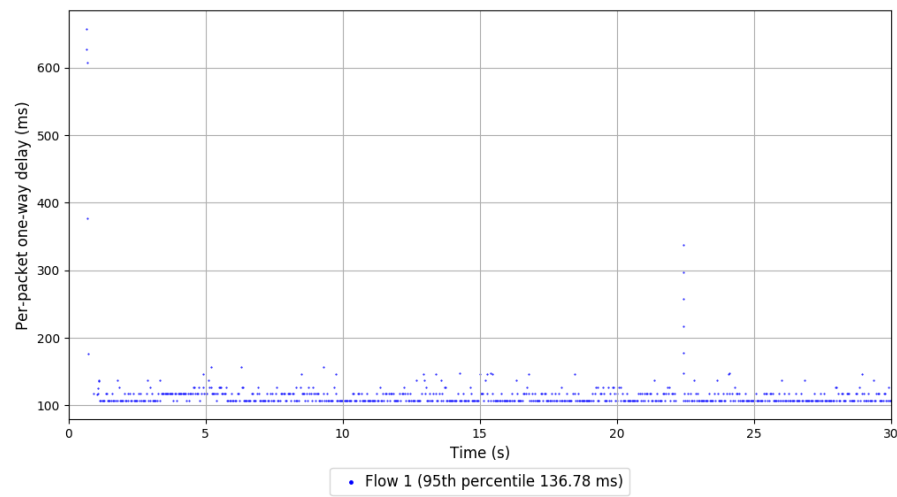
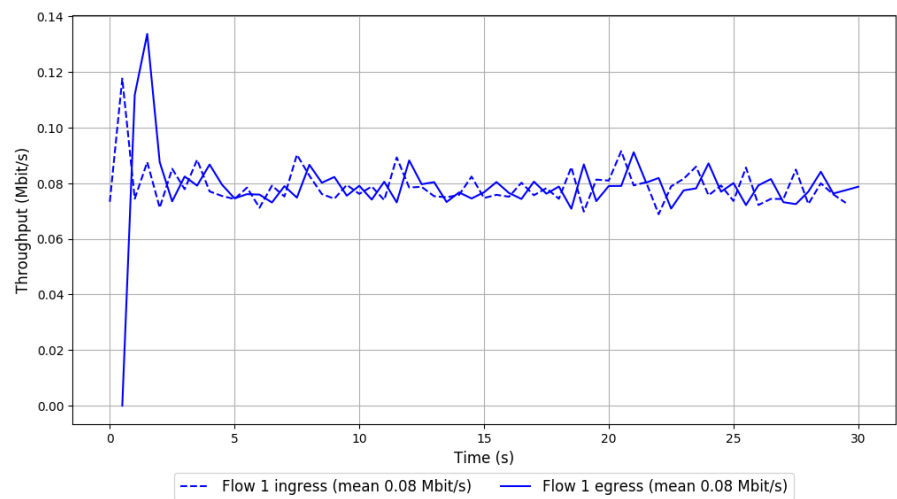


Run 2: Statistics of SCReAM

Start at: 2019-01-17 05:53:16
End at: 2019-01-17 05:53:46
Local clock offset: -4.791 ms
Remote clock offset: 21.659 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.783 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.783 ms
Loss rate: 0.26%

Run 2: Report of SReAM — Data Link

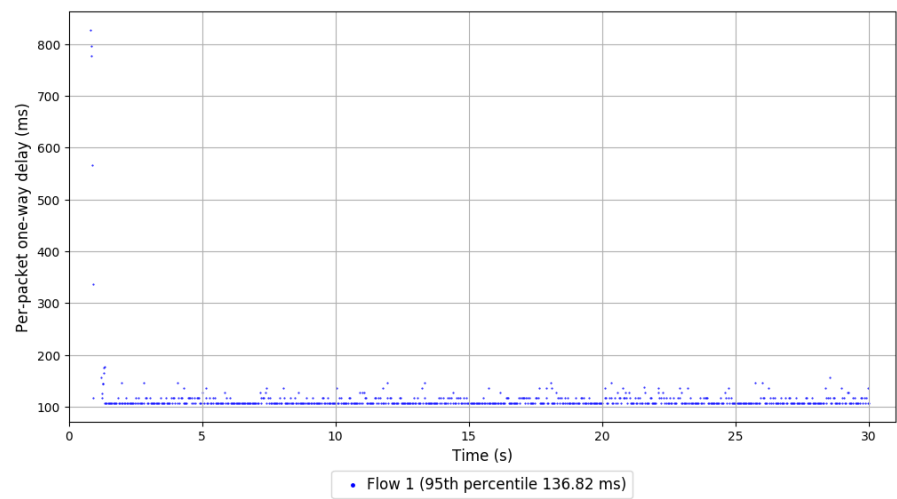
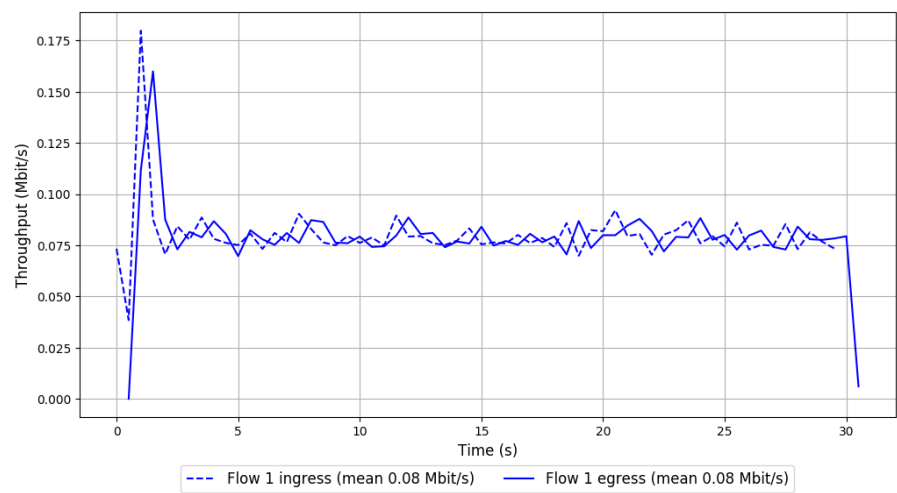


Run 3: Statistics of SCReAM

Start at: 2019-01-17 06:17:07
End at: 2019-01-17 06:17:37
Local clock offset: -5.157 ms
Remote clock offset: 30.039 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.824 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.824 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-01-17 05:28:16

End at: 2019-01-17 05:28:46

Local clock offset: -4.489 ms

Remote clock offset: 12.51 ms

Below is generated by plot.py at 2019-01-17 06:22:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.10 Mbit/s

95th percentile per-packet one-way delay: 228.572 ms

Loss rate: 0.03%

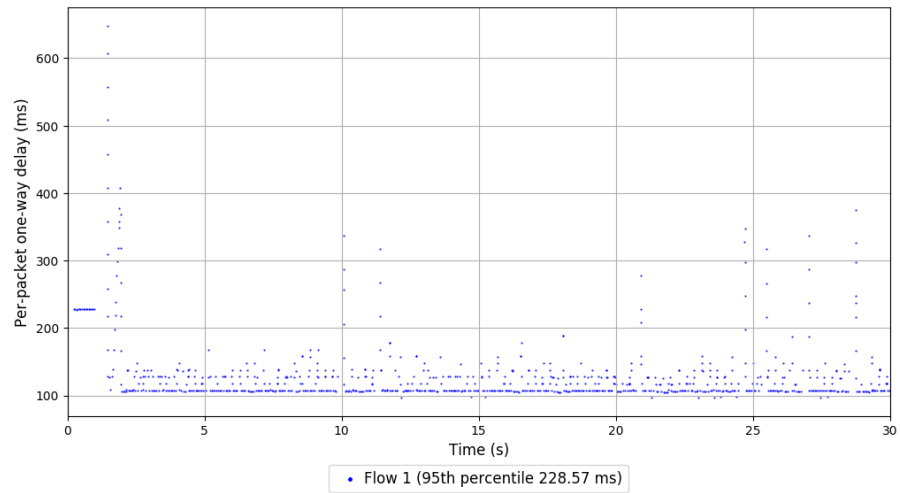
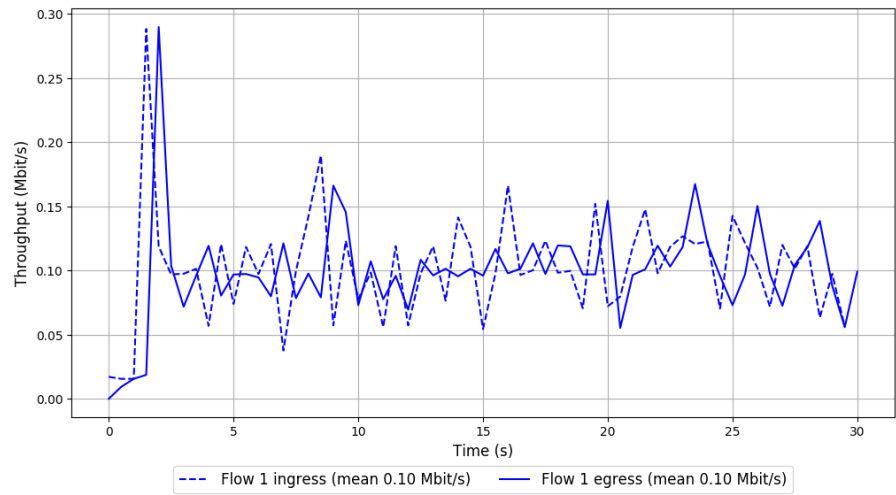
-- Flow 1:

Average throughput: 0.10 Mbit/s

95th percentile per-packet one-way delay: 228.572 ms

Loss rate: 0.03%

Run 1: Report of Sprout — Data Link

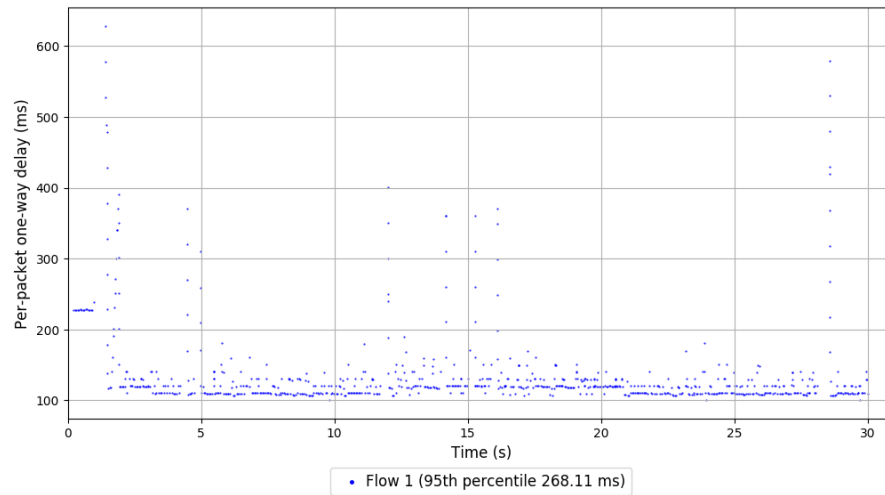
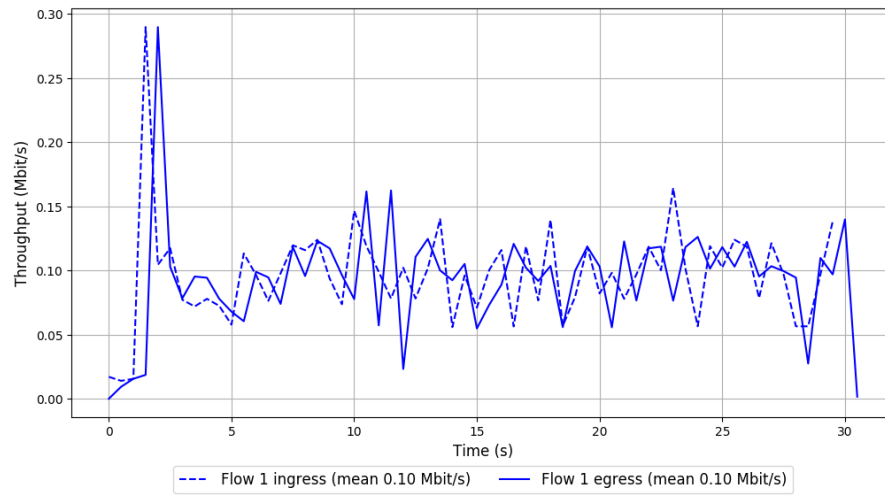


Run 2: Statistics of Sprout

Start at: 2019-01-17 05:52:08
End at: 2019-01-17 05:52:38
Local clock offset: -3.928 ms
Remote clock offset: 26.573 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 268.113 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 268.113 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

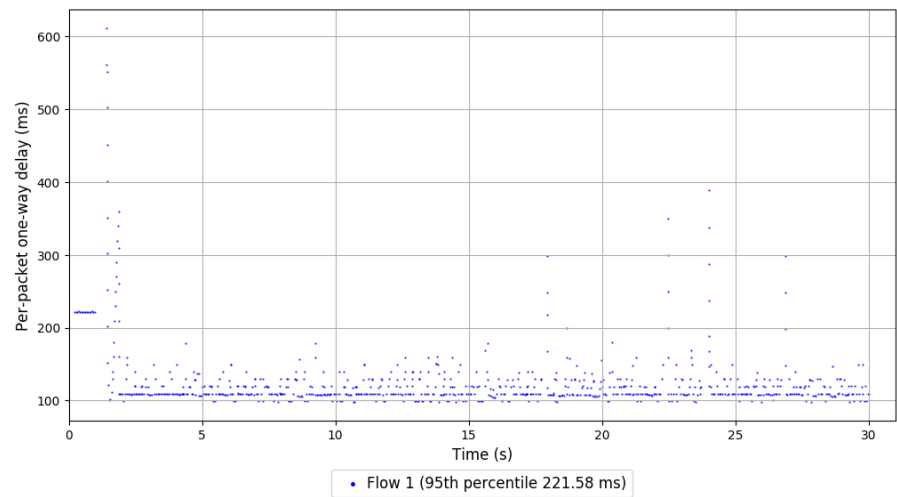
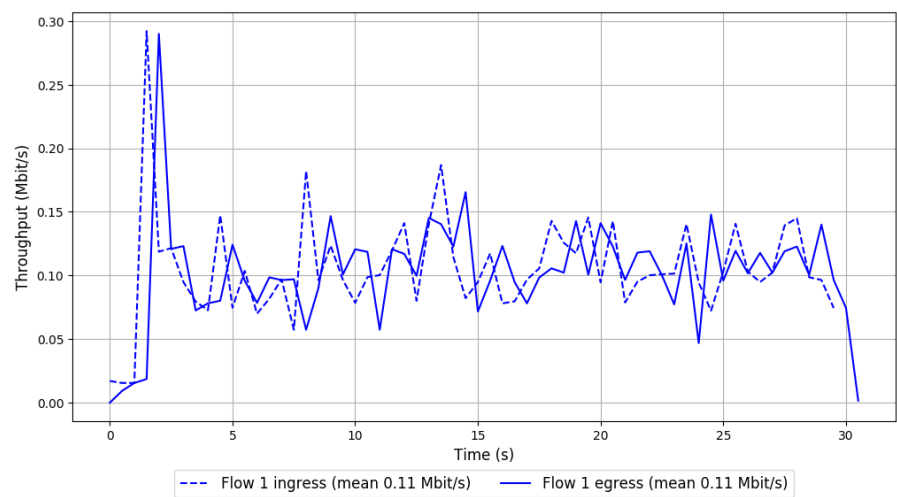


Run 3: Statistics of Sprout

Start at: 2019-01-17 06:15:58
End at: 2019-01-17 06:16:28
Local clock offset: -4.387 ms
Remote clock offset: 29.656 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 221.584 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 221.584 ms
Loss rate: 0.33%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

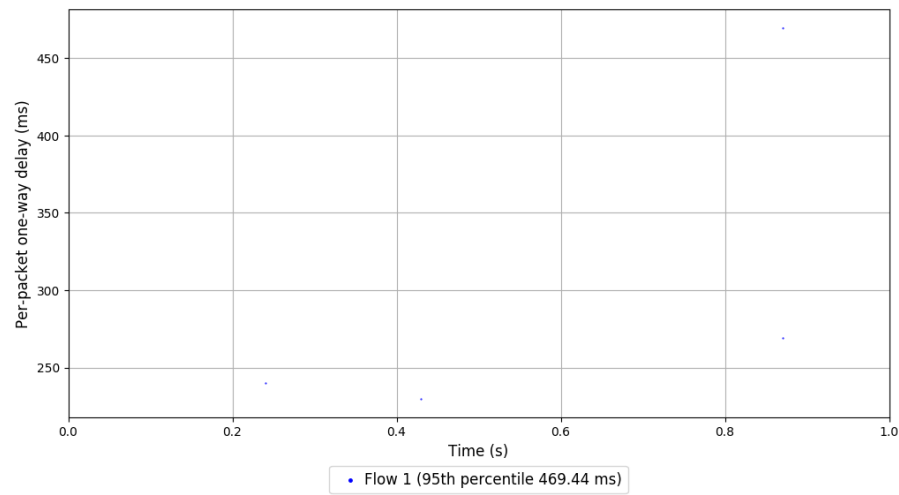
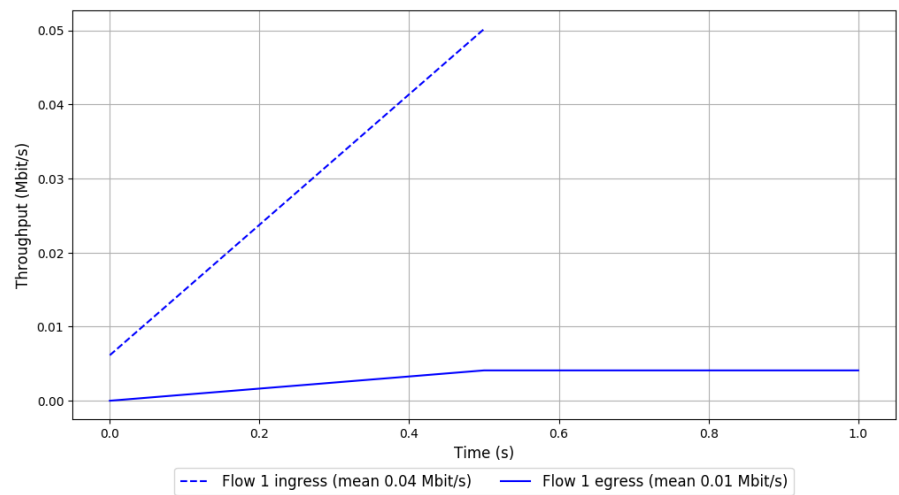
Start at: 2019-01-17 05:27:08

End at: 2019-01-17 05:27:38

Local clock offset: -3.653 ms

Remote clock offset: 12.047 ms

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



Run 2: Statistics of TaoVA-100x

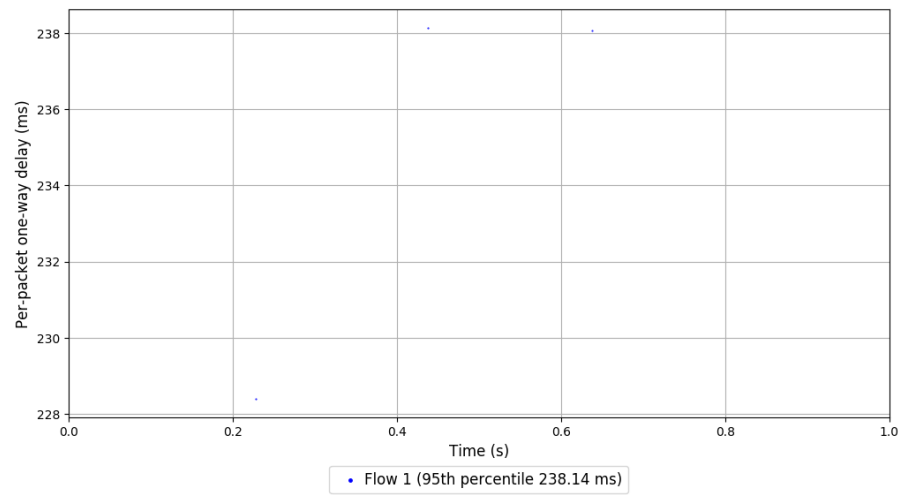
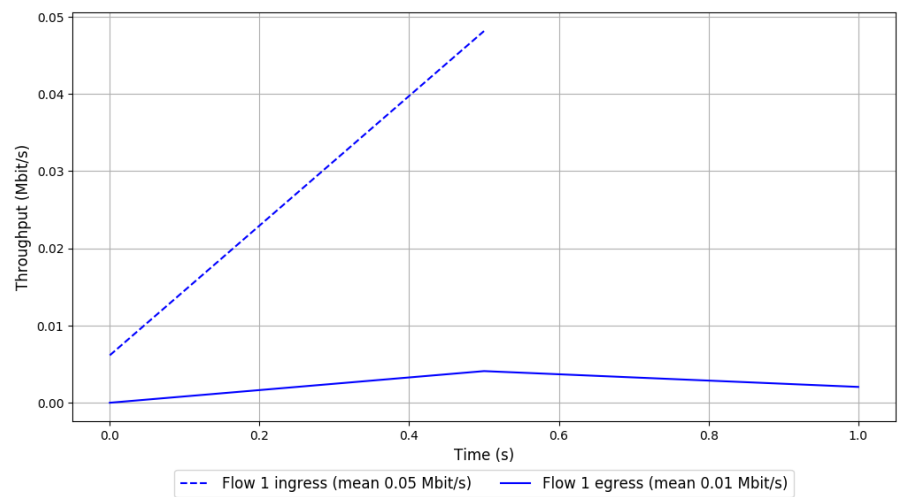
Start at: 2019-01-17 05:51:00

End at: 2019-01-17 05:51:30

Local clock offset: -4.603 ms

Remote clock offset: 24.776 ms

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



Run 3: Statistics of TaoVA-100x

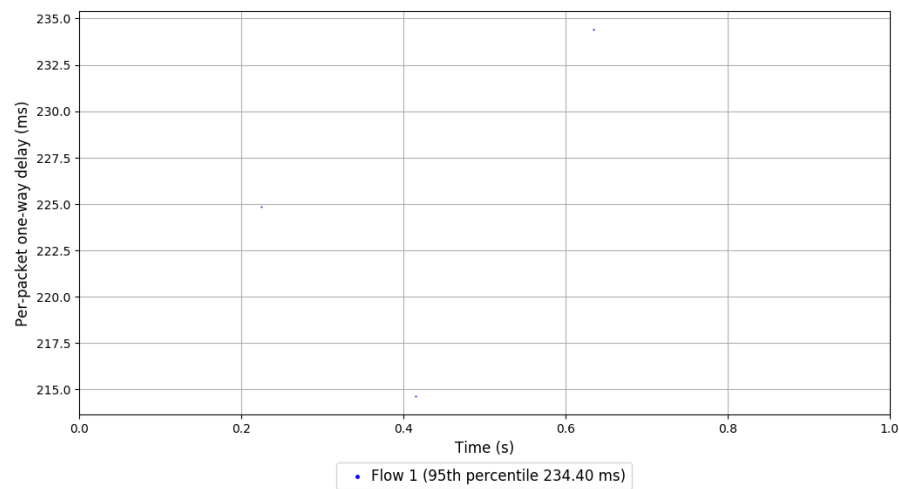
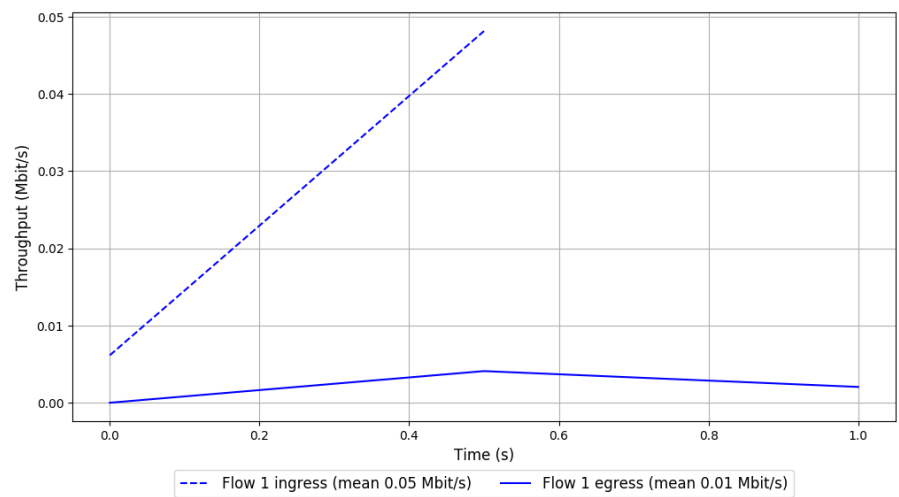
Start at: 2019-01-17 06:14:51

End at: 2019-01-17 06:15:21

Local clock offset: -5.142 ms

Remote clock offset: 29.353 ms

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

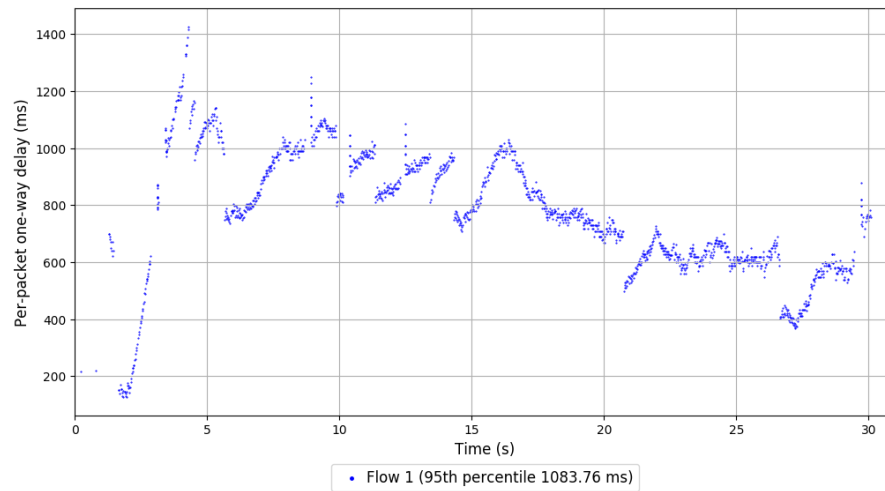
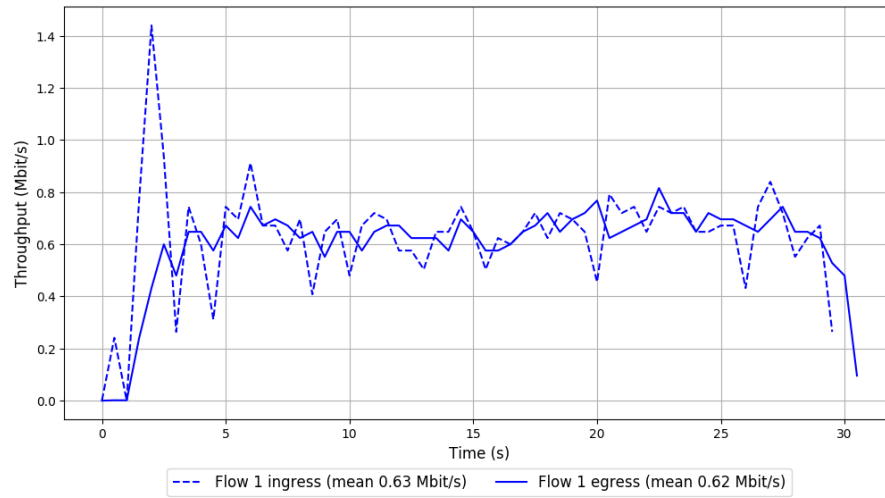


Run 1: Statistics of TCP Vegas

Start at: 2019-01-17 05:15:47
End at: 2019-01-17 05:16:17
Local clock offset: -3.487 ms
Remote clock offset: -18.203 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 1083.764 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 1083.764 ms
Loss rate: 1.40%

Run 1: Report of TCP Vegas — Data Link

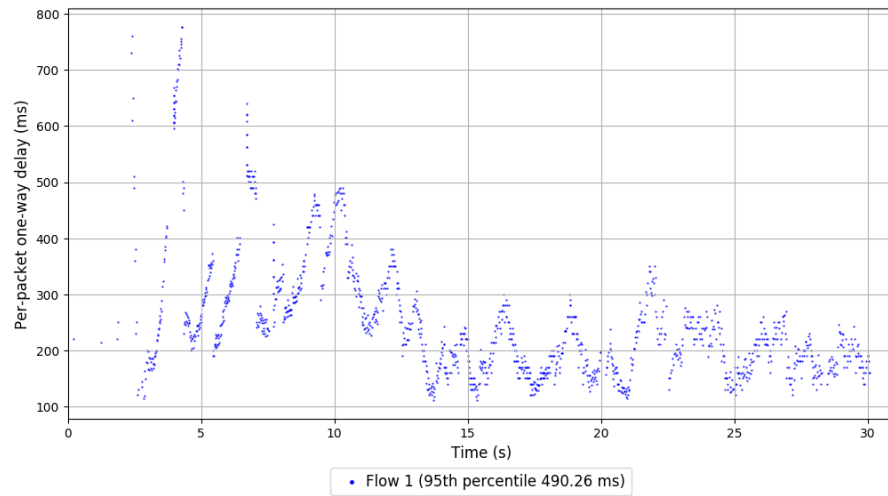
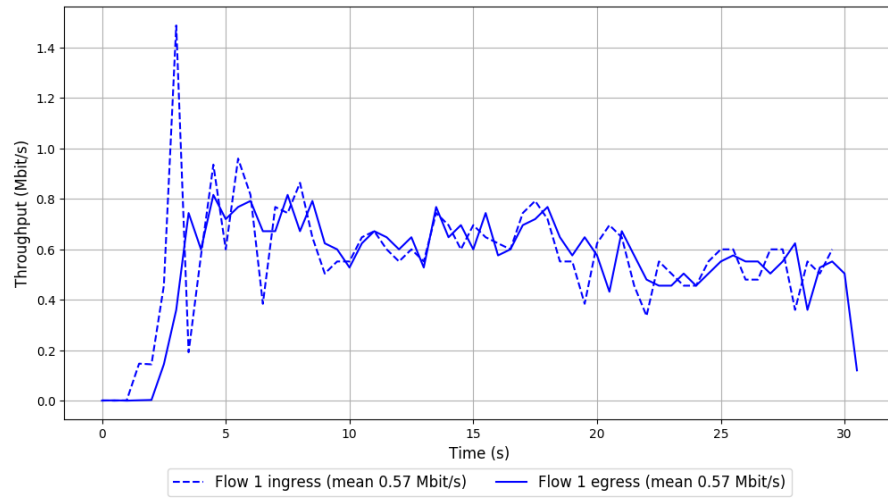


Run 2: Statistics of TCP Vegas

Start at: 2019-01-17 05:39:37
End at: 2019-01-17 05:40:07
Local clock offset: -3.662 ms
Remote clock offset: 19.831 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 490.264 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 490.264 ms
Loss rate: 0.42%

Run 2: Report of TCP Vegas — Data Link

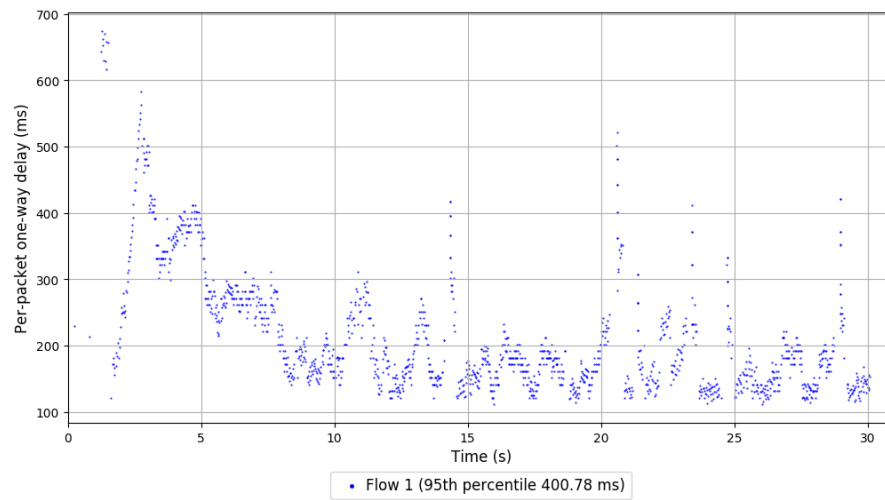
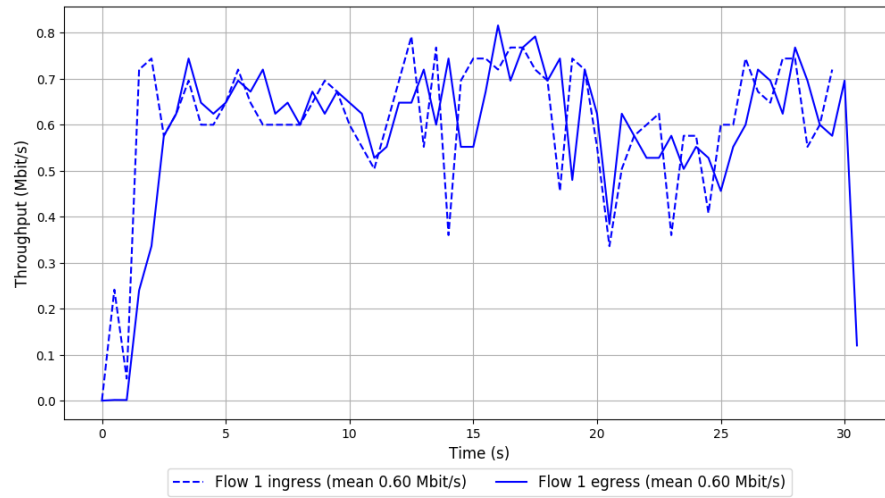


Run 3: Statistics of TCP Vegas

Start at: 2019-01-17 06:03:29
End at: 2019-01-17 06:03:59
Local clock offset: -4.346 ms
Remote clock offset: 29.335 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 400.776 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 400.776 ms
Loss rate: 0.33%

Run 3: Report of TCP Vegas — Data Link

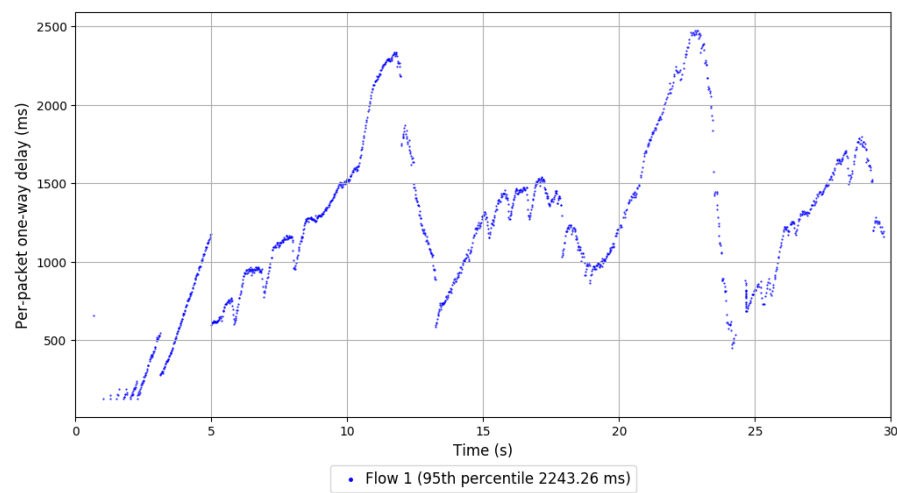
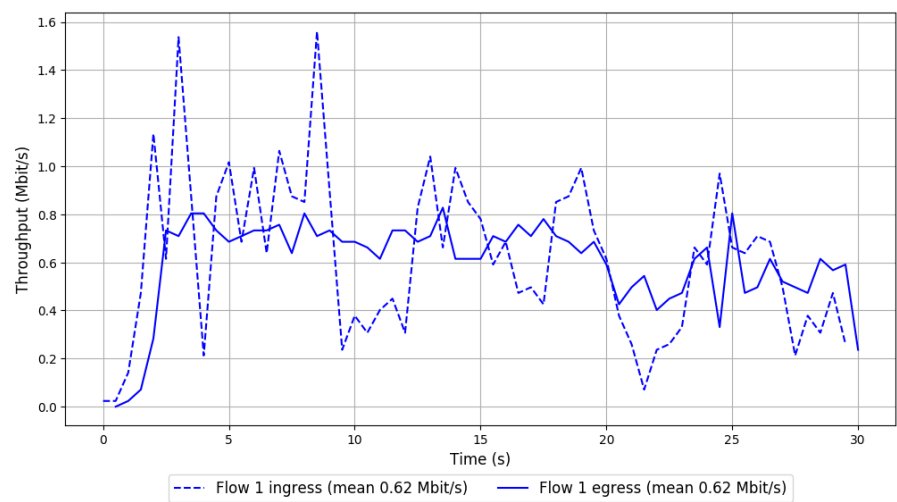


Run 1: Statistics of Verus

Start at: 2019-01-17 05:14:38
End at: 2019-01-17 05:15:09
Local clock offset: -3.518 ms
Remote clock offset: -21.104 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 2243.258 ms
Loss rate: 2.62%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 2243.258 ms
Loss rate: 2.62%

Run 1: Report of Verus — Data Link

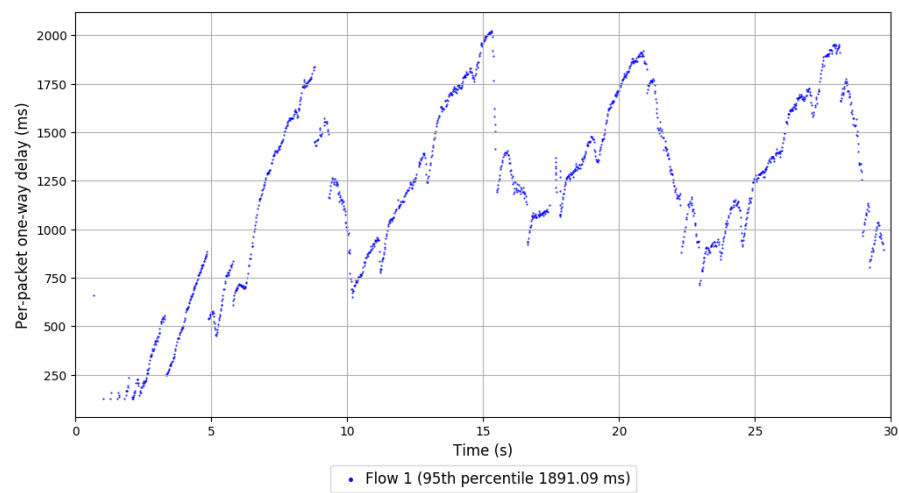
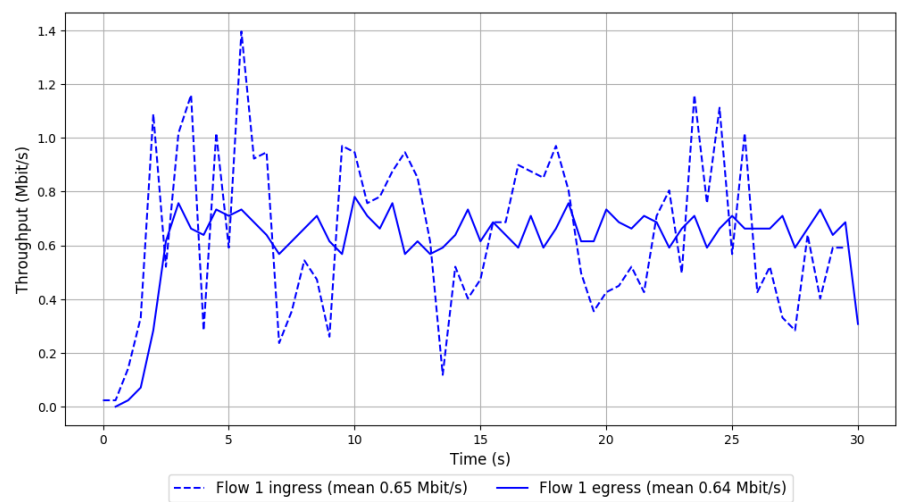


Run 2: Statistics of Verus

Start at: 2019-01-17 05:38:29
End at: 2019-01-17 05:38:59
Local clock offset: -4.484 ms
Remote clock offset: 16.424 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 1891.088 ms
Loss rate: 3.45%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 1891.088 ms
Loss rate: 3.45%

Run 2: Report of Verus — Data Link

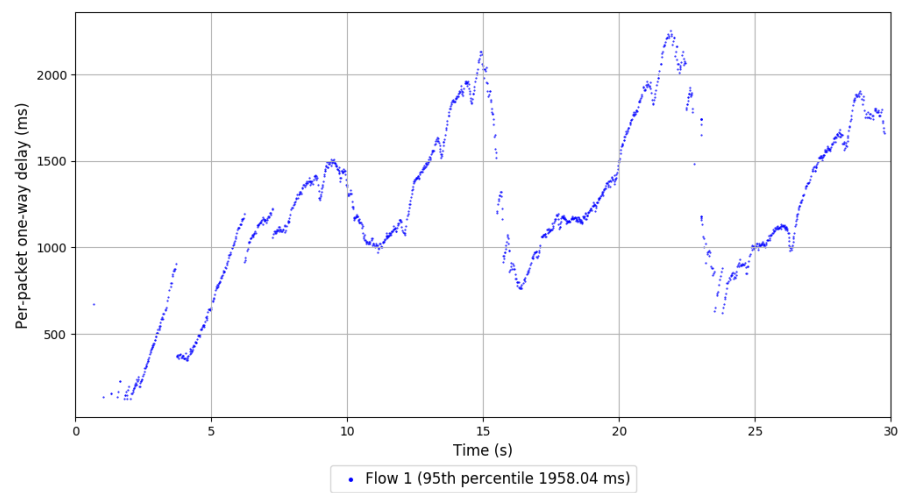
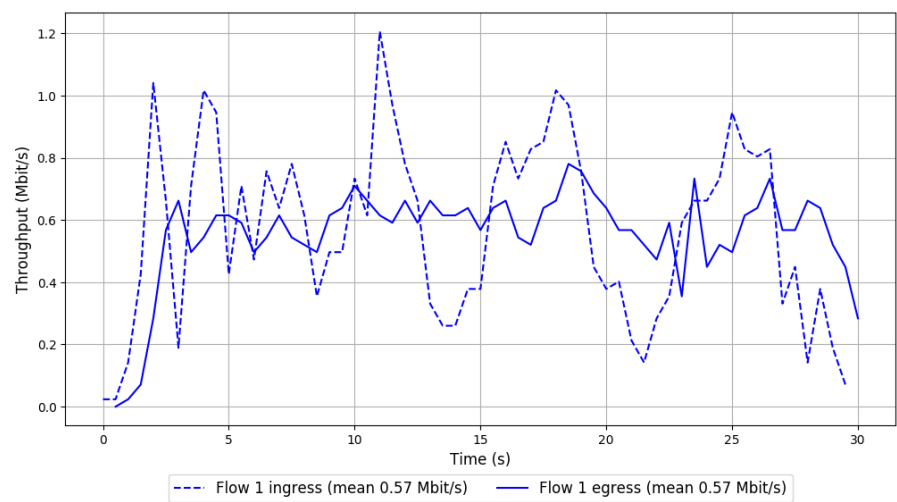


Run 3: Statistics of Verus

Start at: 2019-01-17 06:02:21
End at: 2019-01-17 06:02:51
Local clock offset: -5.016 ms
Remote clock offset: 31.211 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 1958.041 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 1958.041 ms
Loss rate: 2.08%

Run 3: Report of Verus — Data Link

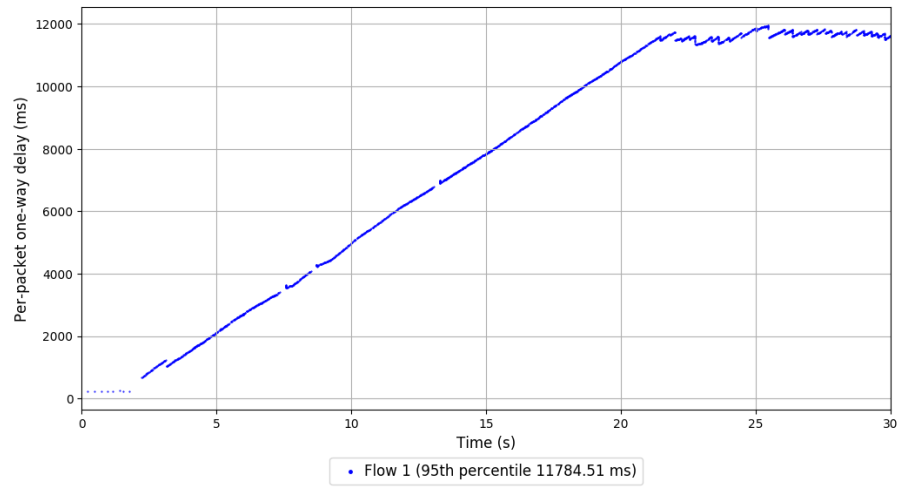
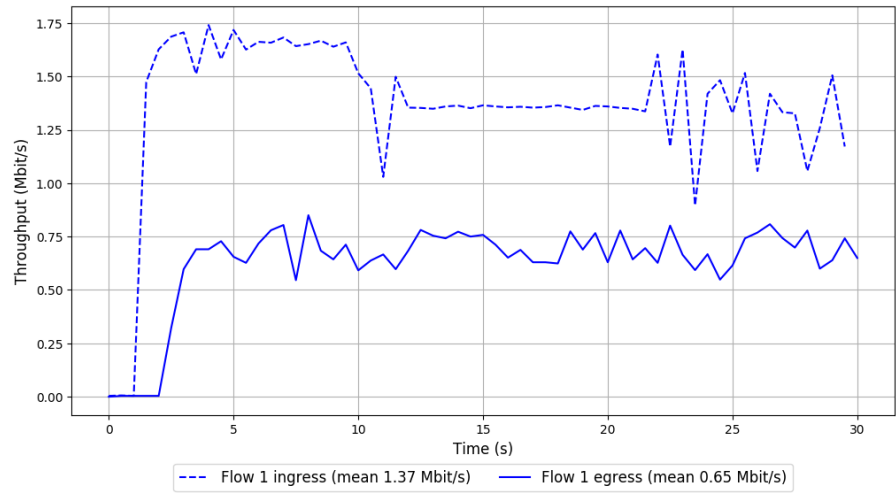


Run 1: Statistics of PCC-Vivace

Start at: 2019-01-17 05:19:11
End at: 2019-01-17 05:19:41
Local clock offset: -3.59 ms
Remote clock offset: -3.958 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 11784.506 ms
Loss rate: 53.00%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 11784.506 ms
Loss rate: 53.00%

Run 1: Report of PCC-Vivace — Data Link

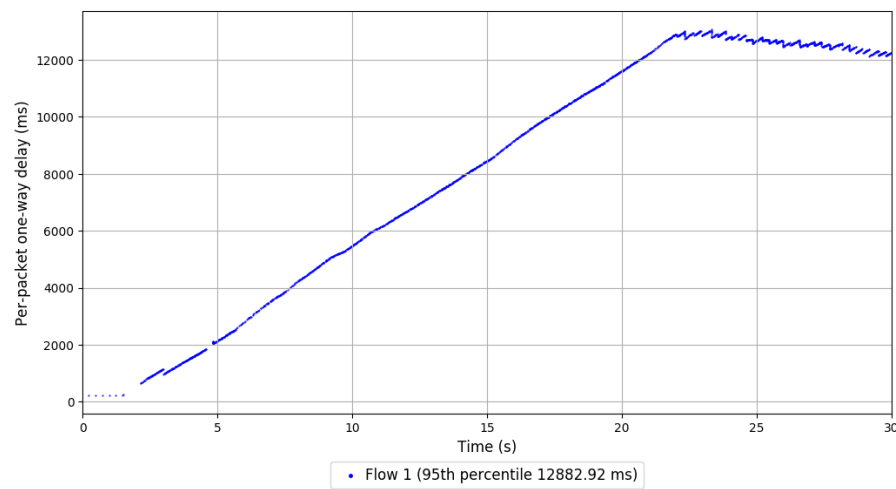
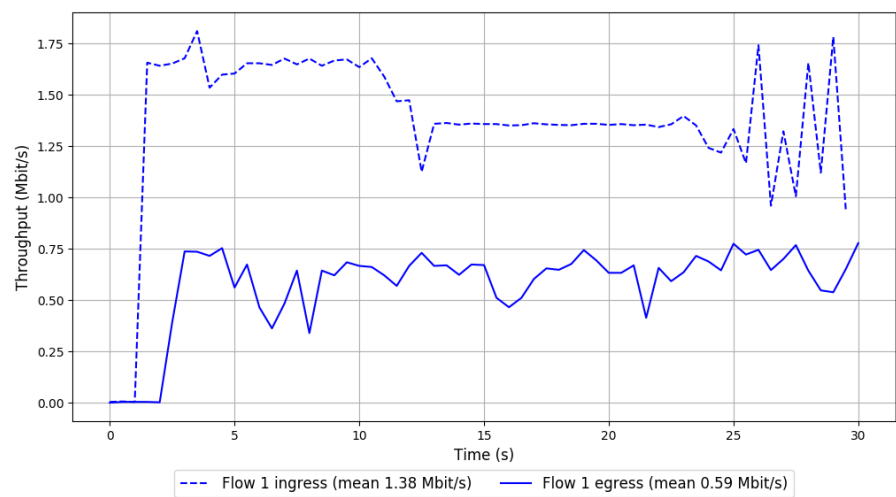


Run 2: Statistics of PCC-Vivace

Start at: 2019-01-17 05:43:02
End at: 2019-01-17 05:43:32
Local clock offset: -4.385 ms
Remote clock offset: 22.725 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 12882.920 ms
Loss rate: 57.14%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 12882.920 ms
Loss rate: 57.14%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2019-01-17 06:06:54

End at: 2019-01-17 06:07:24

Local clock offset: -5.163 ms

Remote clock offset: 26.628 ms

Below is generated by plot.py at 2019-01-17 06:22:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 12333.598 ms

Loss rate: 54.37%

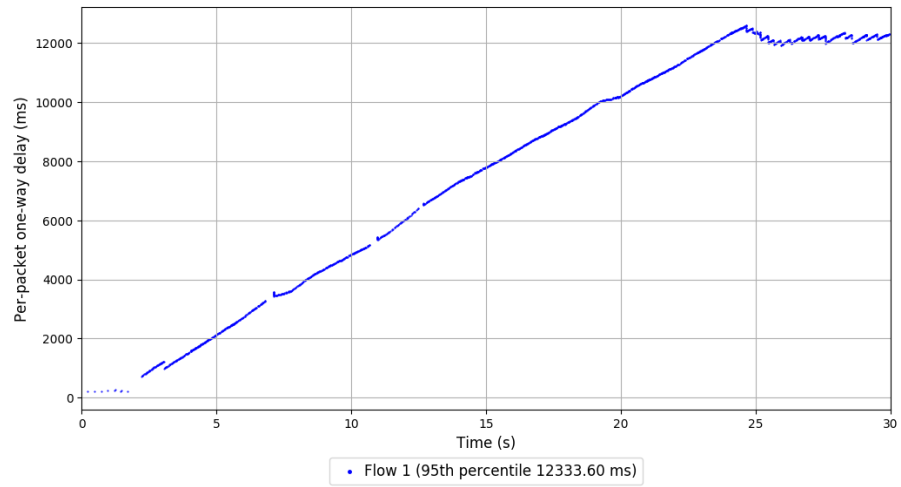
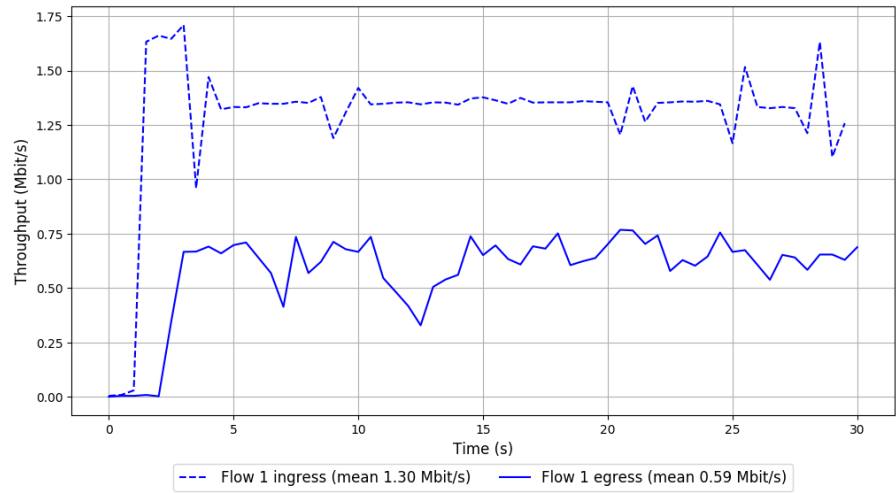
-- Flow 1:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 12333.598 ms

Loss rate: 54.37%

Run 3: Report of PCC-Vivace — Data Link

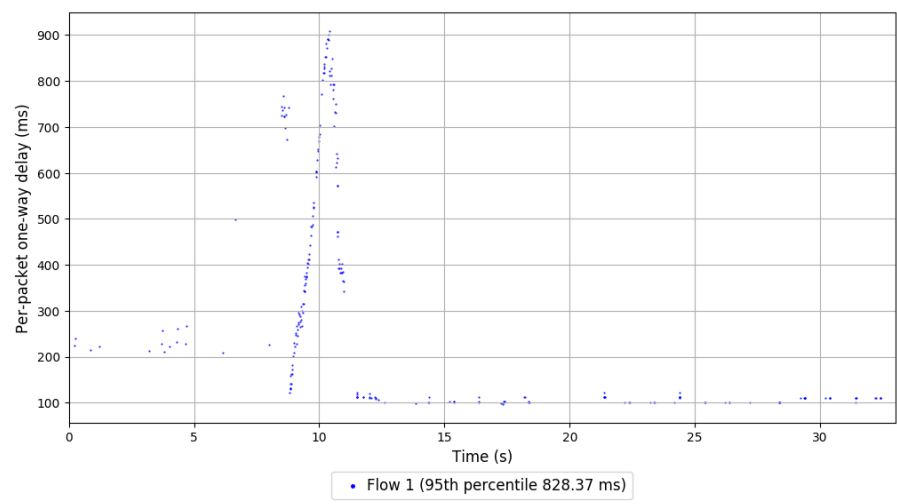
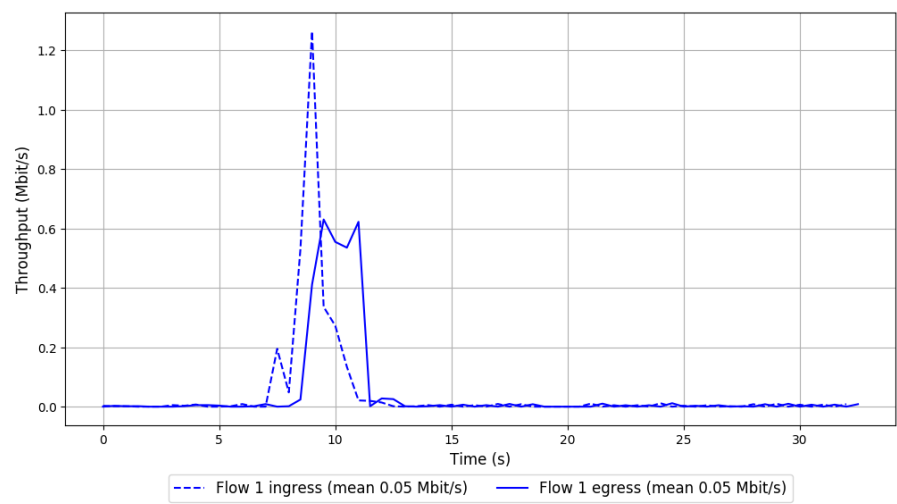


Run 1: Statistics of WebRTC media

Start at: 2019-01-17 05:16:55
End at: 2019-01-17 05:17:25
Local clock offset: -4.23 ms
Remote clock offset: -10.577 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 828.369 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 828.369 ms
Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

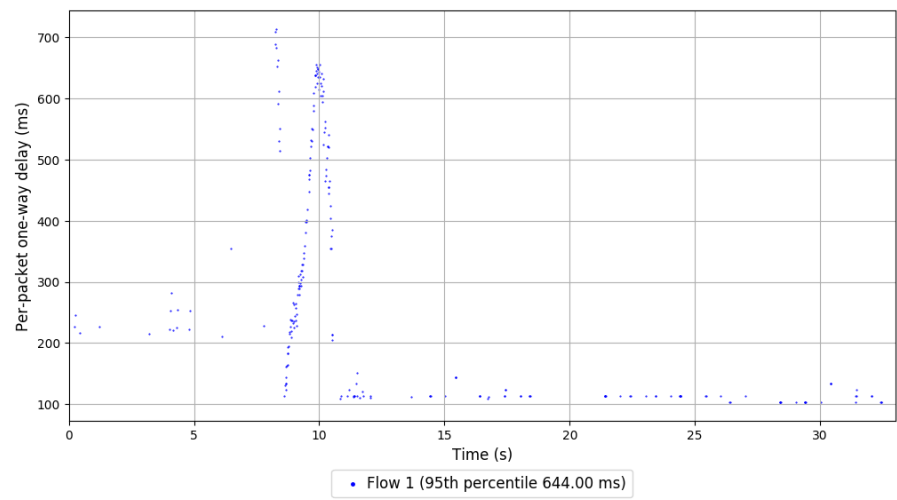
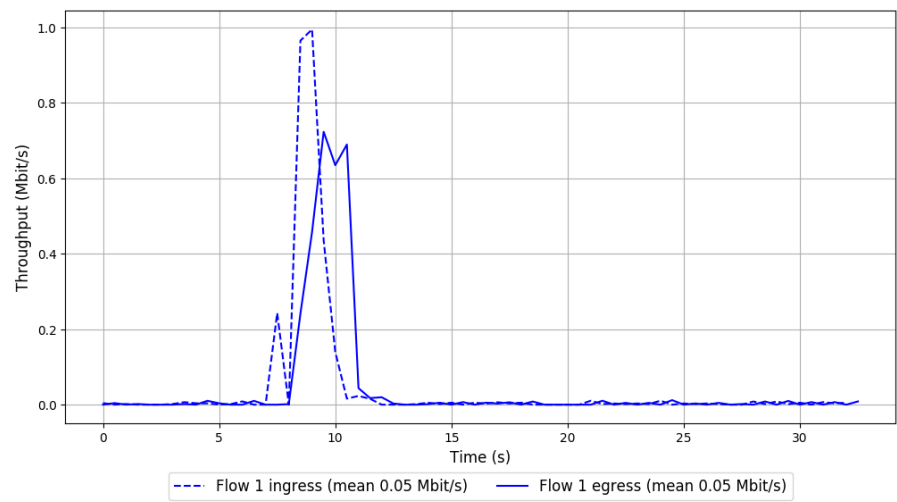


Run 2: Statistics of WebRTC media

Start at: 2019-01-17 05:40:45
End at: 2019-01-17 05:41:16
Local clock offset: -4.462 ms
Remote clock offset: 21.485 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 644.002 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 644.002 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-01-17 06:04:37
End at: 2019-01-17 06:05:08
Local clock offset: -5.128 ms
Remote clock offset: 25.643 ms

Below is generated by plot.py at 2019-01-17 06:22:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 560.581 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 560.581 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

