

## Pantheon Report

Generated at 2018-09-07 21:48:29 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

### System info:

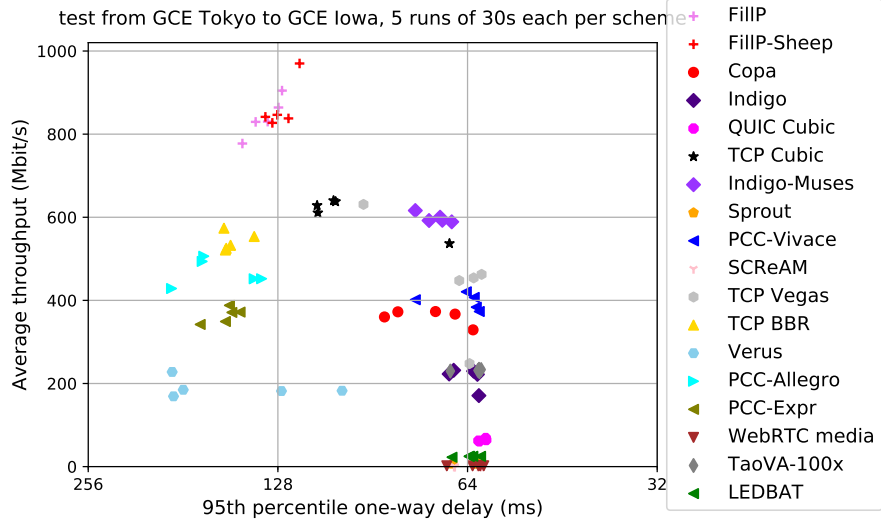
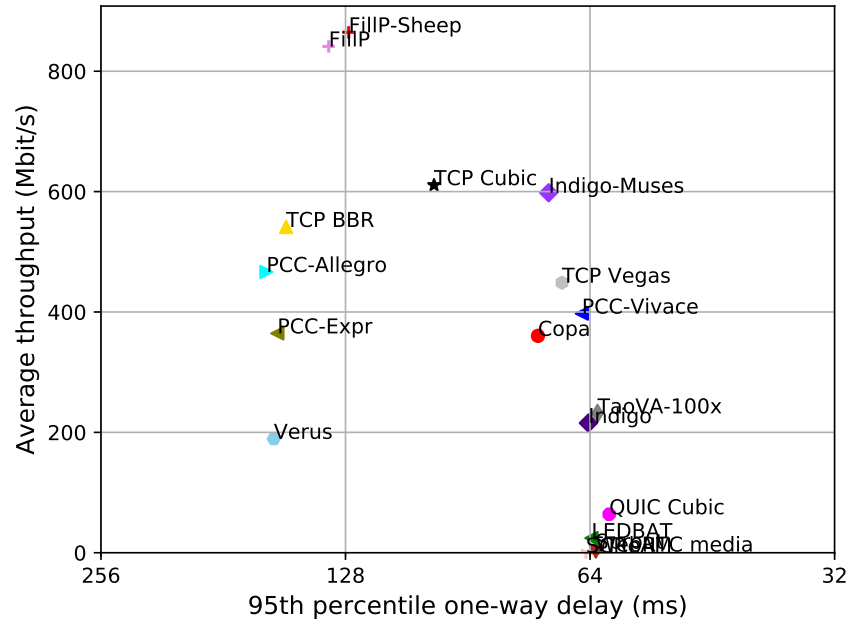
```
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651 381972
```

### Git summary:

```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
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 GCE Tokyo to GCE Iowa, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



| scheme       | # runs | mean avg tput (Mbit/s)<br>flow 1 | mean 95th-%ile delay (ms)<br>flow 1 | mean loss rate (%)<br>flow 1 |
|--------------|--------|----------------------------------|-------------------------------------|------------------------------|
| TCP BBR      | 5      | 541.28                           | 151.46                              | 1.20                         |
| Copa         | 5      | 360.35                           | 74.18                               | 0.43                         |
| TCP Cubic    | 5      | 610.74                           | 99.60                               | 0.50                         |
| FillP        | 5      | 841.19                           | 134.25                              | 4.18                         |
| FillP-Sheep  | 5      | 864.61                           | 126.85                              | 1.98                         |
| Indigo       | 5      | 215.46                           | 64.30                               | 0.46                         |
| LEDBAT       | 5      | 24.35                            | 63.75                               | 0.82                         |
| Indigo-Muses | 5      | 598.06                           | 71.97                               | 0.47                         |
| PCC-Allegro  | 5      | 466.52                           | 160.17                              | 4.43                         |
| PCC-Expr     | 5      | 364.42                           | 155.28                              | 3.32                         |
| QUIC Cubic   | 4      | 63.99                            | 60.62                               | 0.66                         |
| SCReAM       | 5      | 0.22                             | 64.75                               | 0.38                         |
| Sprout       | 5      | 6.83                             | 62.99                               | 0.43                         |
| TaoVA-100x   | 5      | 231.54                           | 62.66                               | 0.45                         |
| TCP Vegas    | 5      | 448.63                           | 69.30                               | 0.41                         |
| Verus        | 5      | 189.26                           | 156.86                              | 1.85                         |
| PCC-Vivace   | 5      | 397.27                           | 65.51                               | 0.49                         |
| WebRTC media | 5      | 1.94                             | 62.96                               | 0.47                         |

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 18:11:13

End at: 2018-09-07 18:11:43

Local clock offset: -0.102 ms

Remote clock offset: -1.47 ms

# Below is generated by plot.py at 2018-09-07 20:28:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 553.75 Mbit/s

95th percentile per-packet one-way delay: 139.569 ms

Loss rate: 0.94%

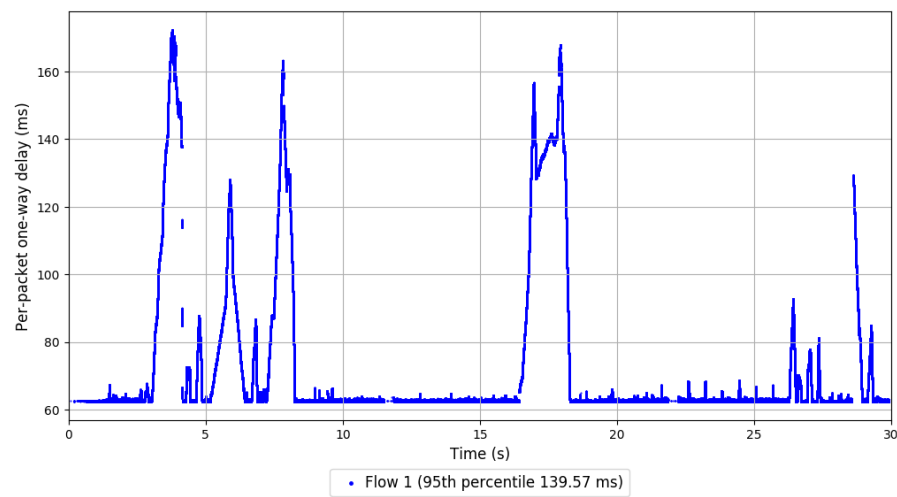
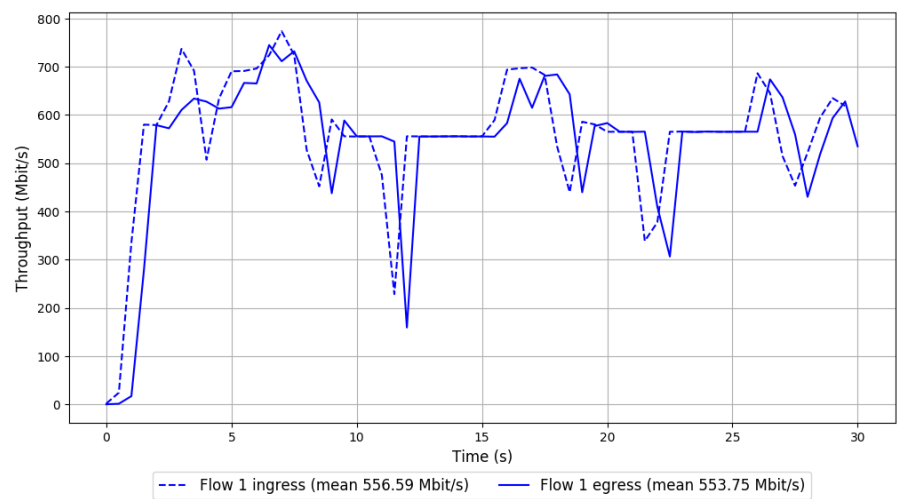
-- Flow 1:

Average throughput: 553.75 Mbit/s

95th percentile per-packet one-way delay: 139.569 ms

Loss rate: 0.94%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-07 18:37:27

End at: 2018-09-07 18:37:57

Local clock offset: -0.051 ms

Remote clock offset: 0.451 ms

# Below is generated by plot.py at 2018-09-07 20:28:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 525.24 Mbit/s

95th percentile per-packet one-way delay: 154.617 ms

Loss rate: 1.28%

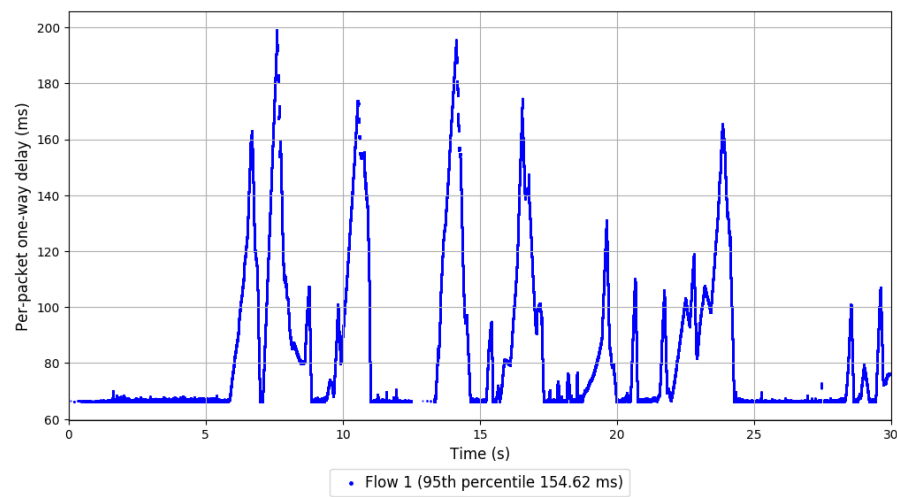
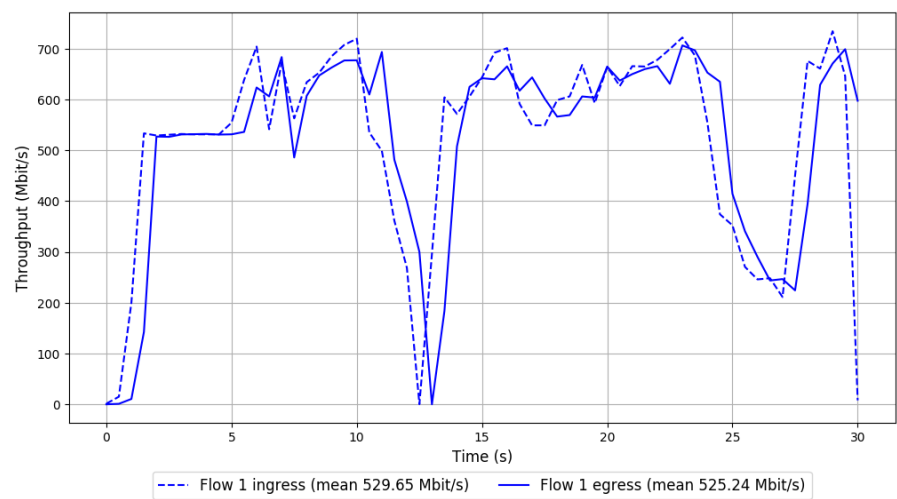
-- Flow 1:

Average throughput: 525.24 Mbit/s

95th percentile per-packet one-way delay: 154.617 ms

Loss rate: 1.28%

Run 2: Report of TCP BBR — Data Link



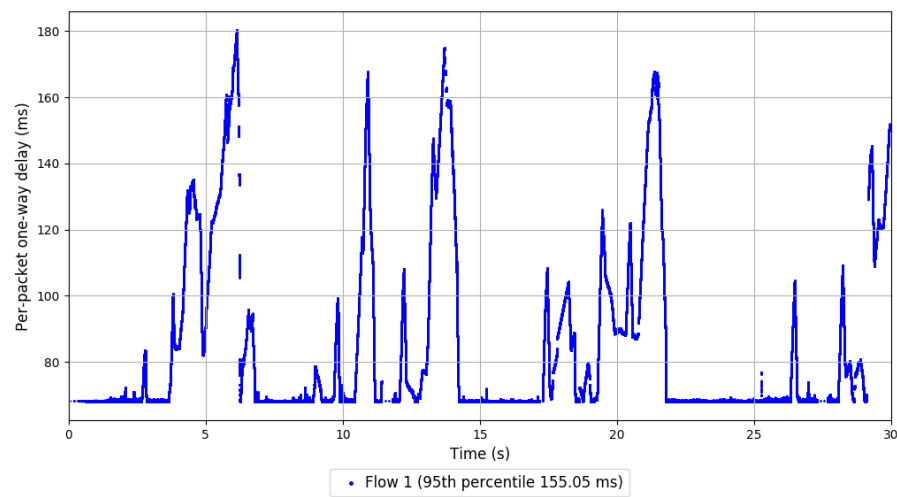
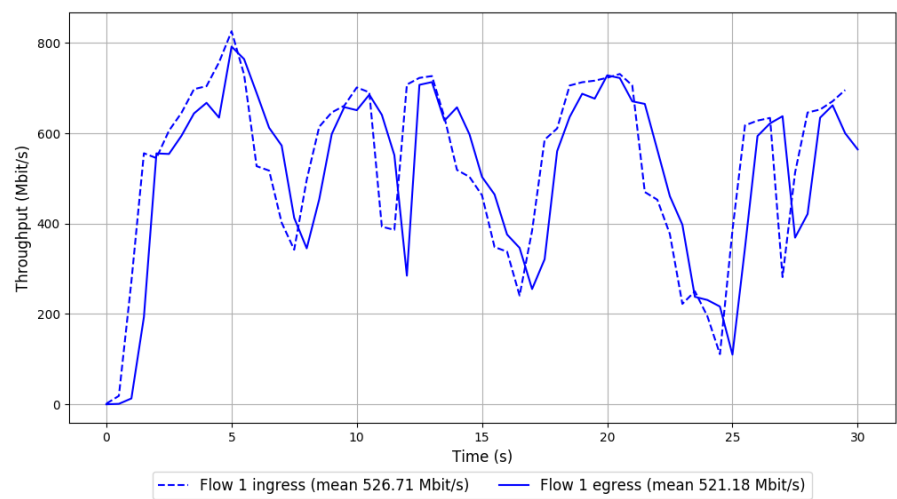


Run 3: Statistics of TCP BBR

Start at: 2018-09-07 19:03:38  
End at: 2018-09-07 19:04:08  
Local clock offset: -0.027 ms  
Remote clock offset: -1.436 ms

# Below is generated by plot.py at 2018-09-07 20:28:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 521.18 Mbit/s  
95th percentile per-packet one-way delay: 155.052 ms  
Loss rate: 1.47%  
-- Flow 1:  
Average throughput: 521.18 Mbit/s  
95th percentile per-packet one-way delay: 155.052 ms  
Loss rate: 1.47%

Run 3: Report of TCP BBR — Data Link

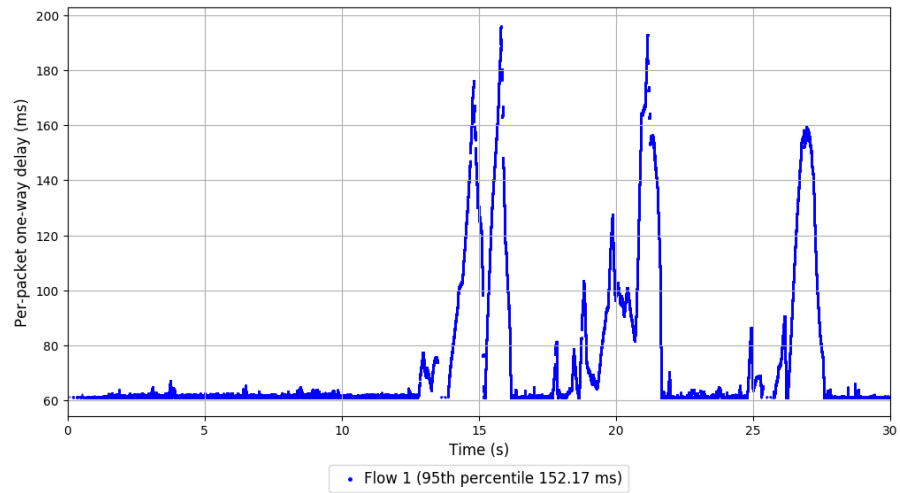
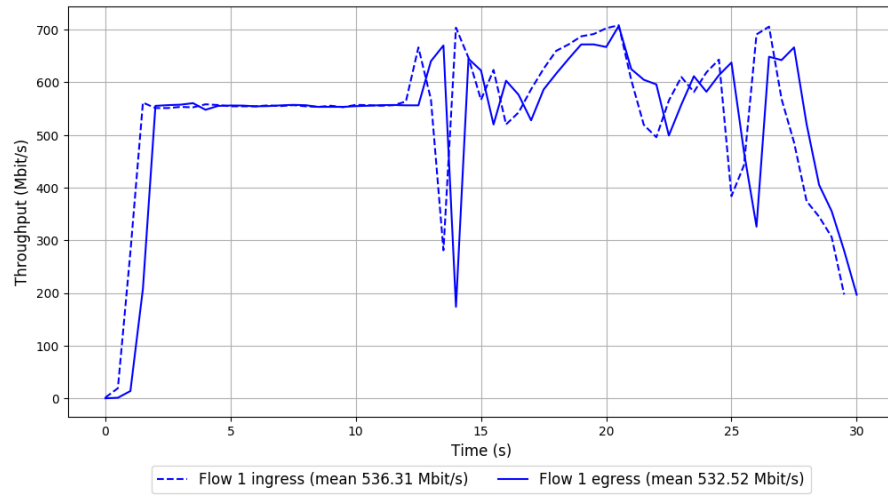


Run 4: Statistics of TCP BBR

Start at: 2018-09-07 19:29:30  
End at: 2018-09-07 19:30:00  
Local clock offset: -0.012 ms  
Remote clock offset: -0.379 ms

# Below is generated by plot.py at 2018-09-07 20:28:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 532.52 Mbit/s  
95th percentile per-packet one-way delay: 152.174 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 532.52 Mbit/s  
95th percentile per-packet one-way delay: 152.174 ms  
Loss rate: 0.89%

#### Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-07 19:55:48

End at: 2018-09-07 19:56:18

Local clock offset: 0.02 ms

Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2018-09-07 20:29:13

# Datalink statistics

-- Total of 1 flow:

Average throughput: 573.70 Mbit/s

95th percentile per-packet one-way delay: 155.898 ms

Loss rate: 1.41%

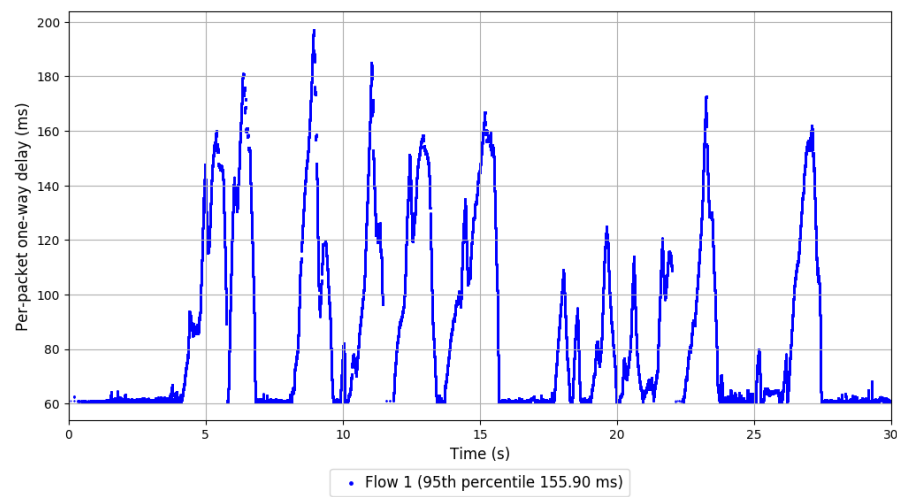
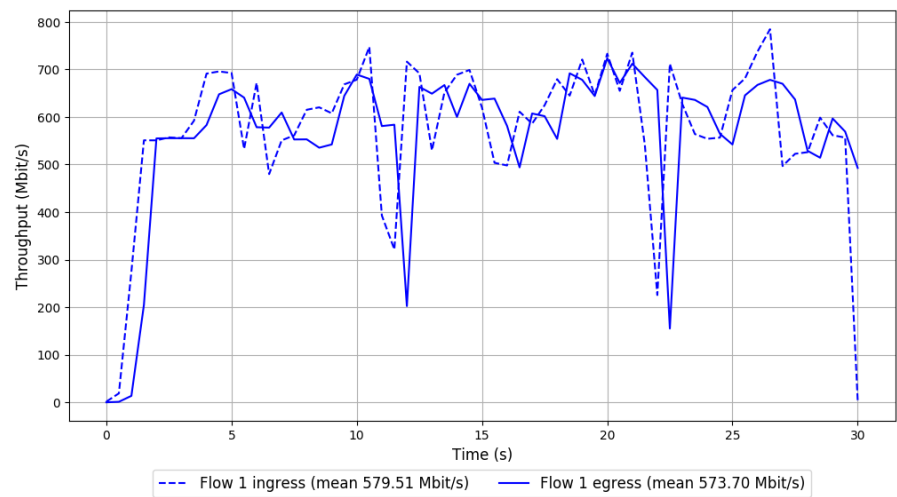
-- Flow 1:

Average throughput: 573.70 Mbit/s

95th percentile per-packet one-way delay: 155.898 ms

Loss rate: 1.41%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-07 18:00:43

End at: 2018-09-07 18:01:13

Local clock offset: -0.119 ms

Remote clock offset: 0.418 ms

# Below is generated by plot.py at 2018-09-07 20:29:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 329.08 Mbit/s

95th percentile per-packet one-way delay: 62.725 ms

Loss rate: 0.41%

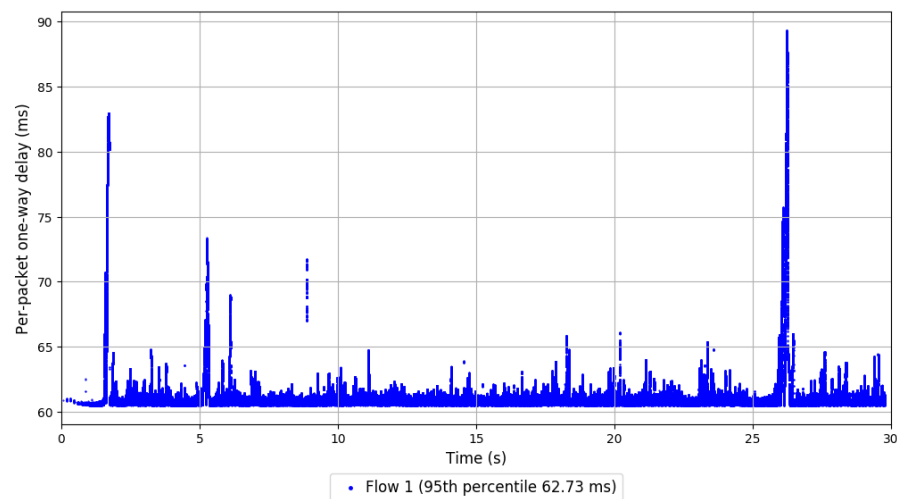
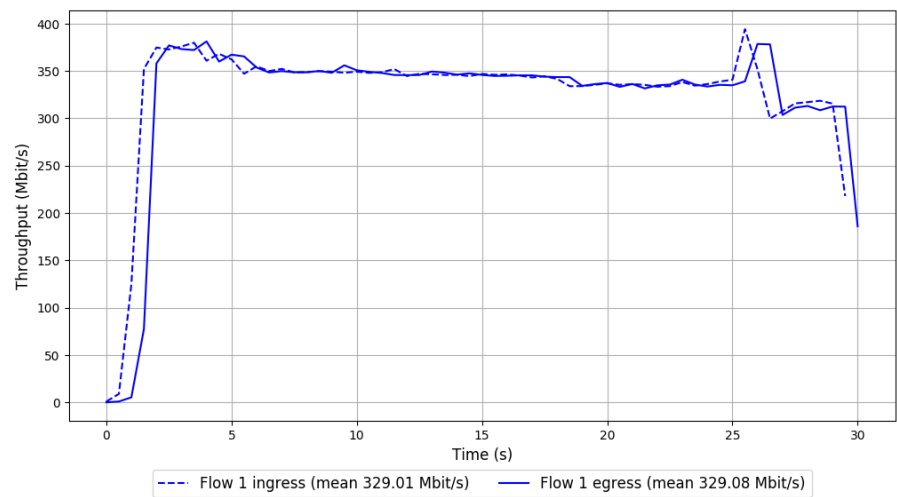
-- Flow 1:

Average throughput: 329.08 Mbit/s

95th percentile per-packet one-way delay: 62.725 ms

Loss rate: 0.41%

Run 1: Report of Copa — Data Link





Run 2: Statistics of Copa

Start at: 2018-09-07 18:26:49

End at: 2018-09-07 18:27:19

Local clock offset: -0.022 ms

Remote clock offset: 0.62 ms

# Below is generated by plot.py at 2018-09-07 20:30:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 366.94 Mbit/s

95th percentile per-packet one-way delay: 66.982 ms

Loss rate: 0.40%

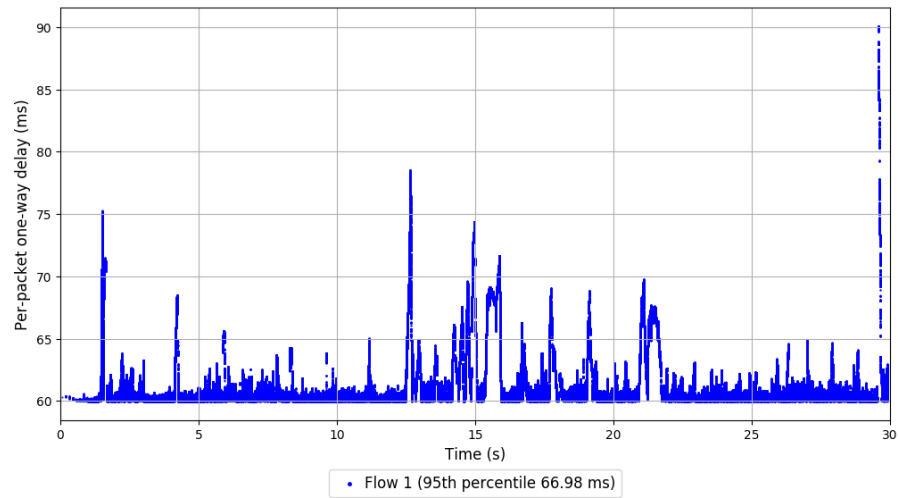
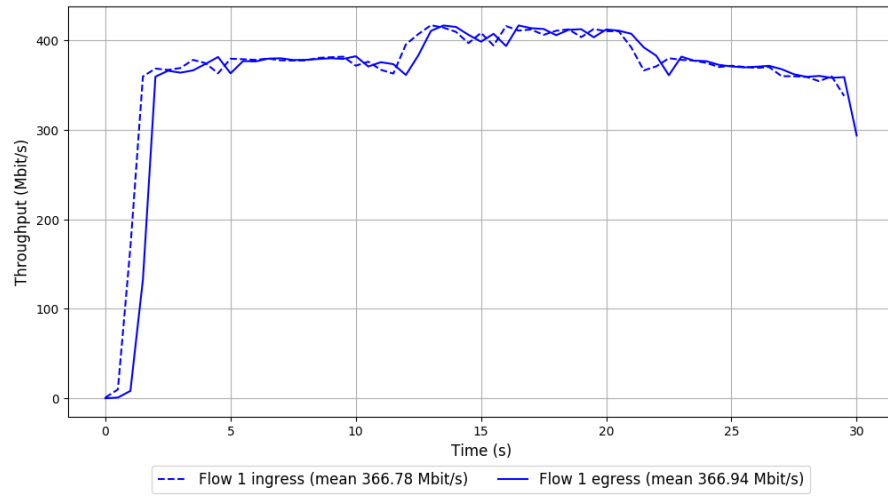
-- Flow 1:

Average throughput: 366.94 Mbit/s

95th percentile per-packet one-way delay: 66.982 ms

Loss rate: 0.40%

## Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-07 18:53:09

End at: 2018-09-07 18:53:39

Local clock offset: -0.051 ms

Remote clock offset: 1.211 ms

# Below is generated by plot.py at 2018-09-07 20:30:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 372.48 Mbit/s

95th percentile per-packet one-way delay: 82.564 ms

Loss rate: 0.45%

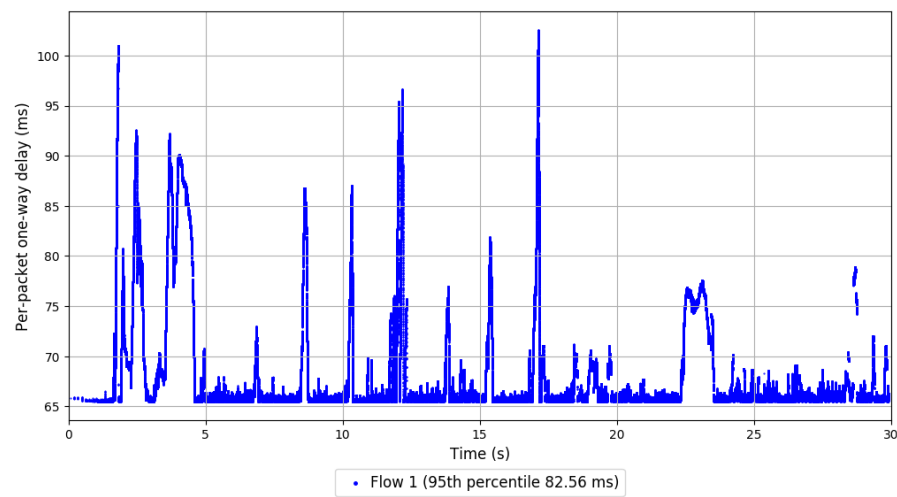
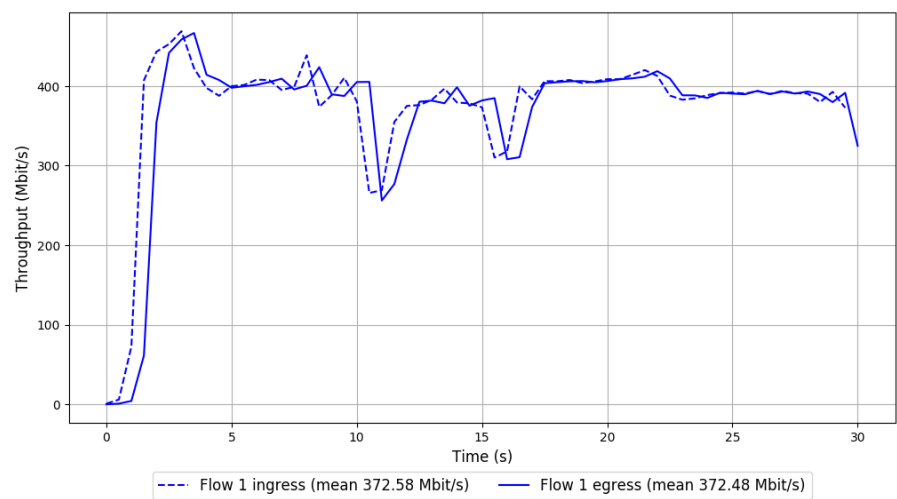
-- Flow 1:

Average throughput: 372.48 Mbit/s

95th percentile per-packet one-way delay: 82.564 ms

Loss rate: 0.45%

Run 3: Report of Copa — Data Link

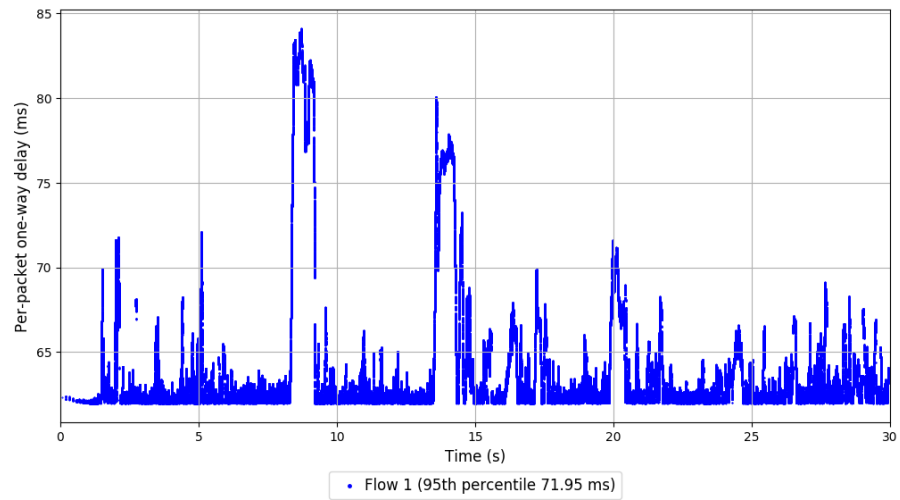
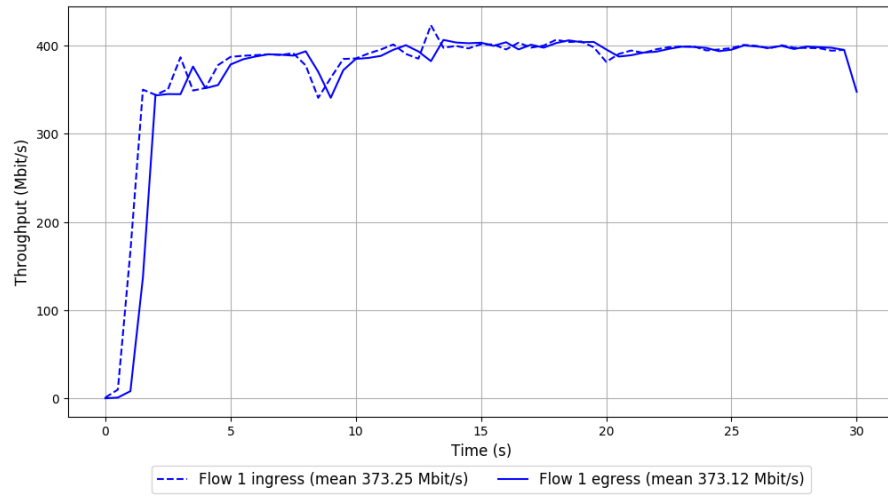


Run 4: Statistics of Copa

Start at: 2018-09-07 19:19:03  
End at: 2018-09-07 19:19:33  
Local clock offset: -0.038 ms  
Remote clock offset: -1.334 ms

# Below is generated by plot.py at 2018-09-07 20:39:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 373.12 Mbit/s  
95th percentile per-packet one-way delay: 71.949 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 373.12 Mbit/s  
95th percentile per-packet one-way delay: 71.949 ms  
Loss rate: 0.44%

#### Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-07 19:45:08

End at: 2018-09-07 19:45:38

Local clock offset: 0.019 ms

Remote clock offset: 0.549 ms

# Below is generated by plot.py at 2018-09-07 20:39:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 360.13 Mbit/s

95th percentile per-packet one-way delay: 86.705 ms

Loss rate: 0.46%

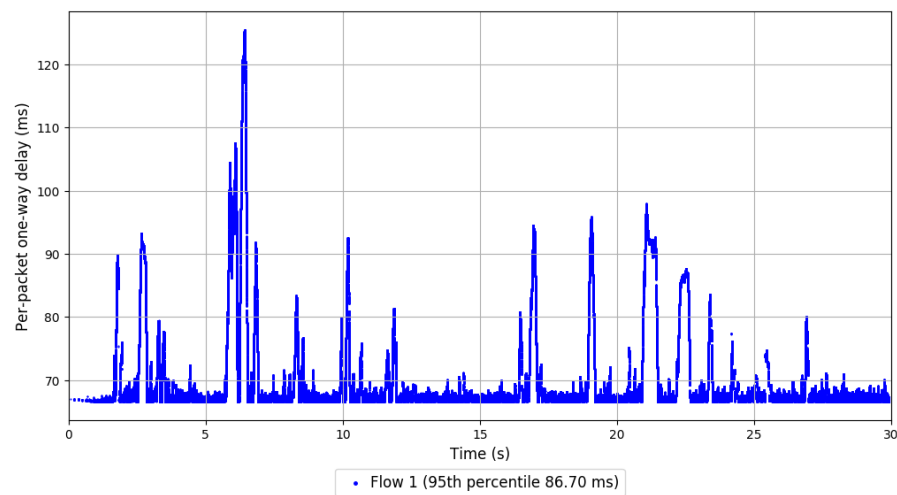
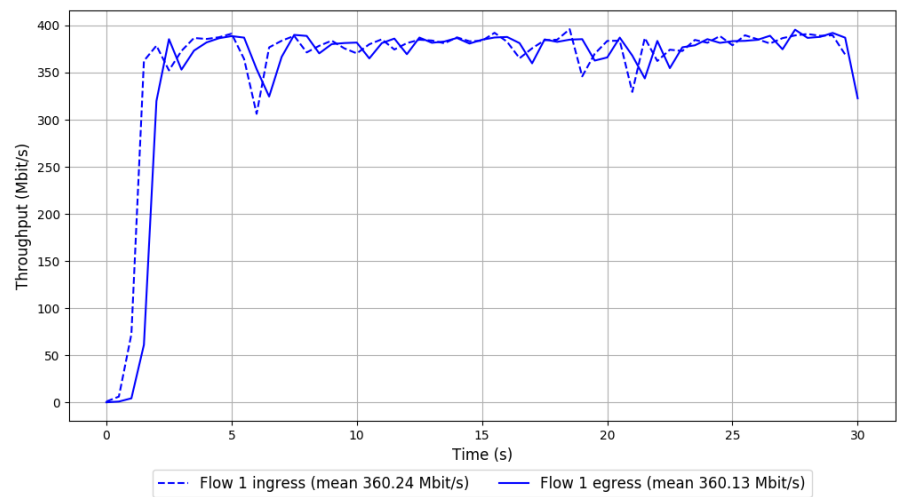
-- Flow 1:

Average throughput: 360.13 Mbit/s

95th percentile per-packet one-way delay: 86.705 ms

Loss rate: 0.46%

Run 5: Report of Copa — Data Link



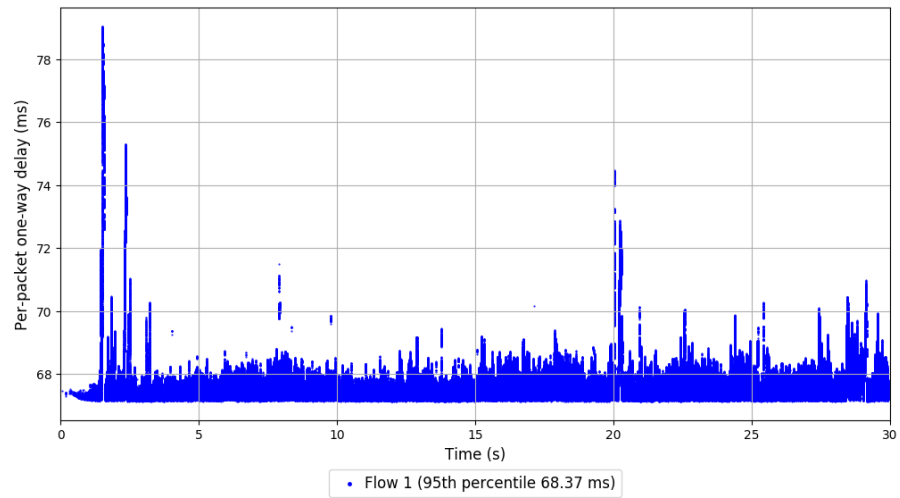
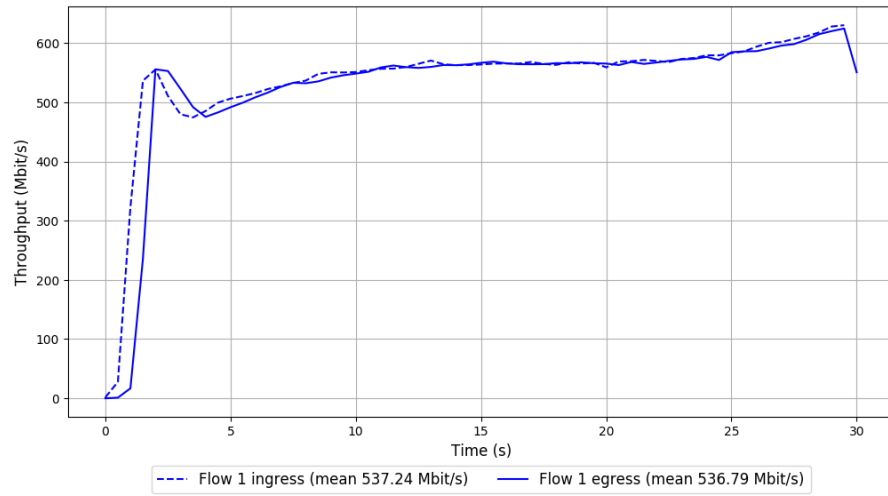


Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 17:59:09  
End at: 2018-09-07 17:59:39  
Local clock offset: -0.105 ms  
Remote clock offset: -0.464 ms

# Below is generated by plot.py at 2018-09-07 20:39:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 536.79 Mbit/s  
95th percentile per-packet one-way delay: 68.371 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 536.79 Mbit/s  
95th percentile per-packet one-way delay: 68.371 ms  
Loss rate: 0.51%

### Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 18:25:10

End at: 2018-09-07 18:25:40

Local clock offset: -0.083 ms

Remote clock offset: -0.2 ms

# Below is generated by plot.py at 2018-09-07 20:39:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 628.37 Mbit/s

95th percentile per-packet one-way delay: 110.901 ms

Loss rate: 0.44%

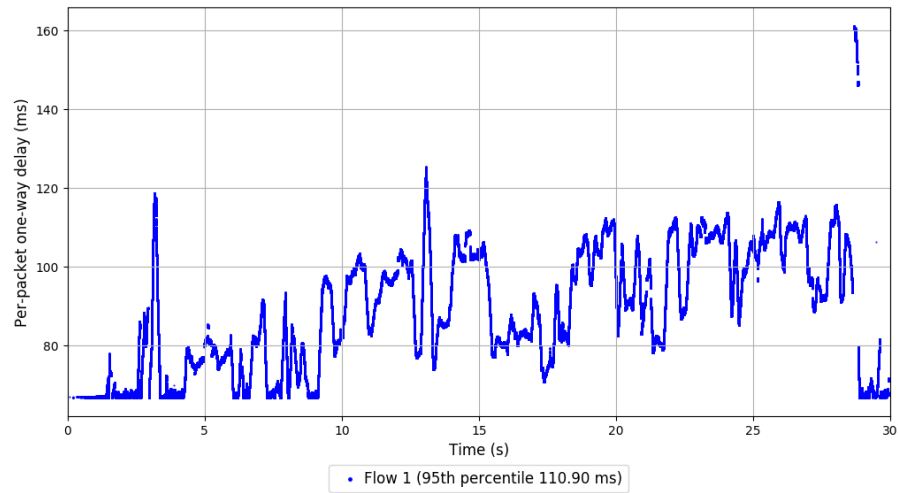
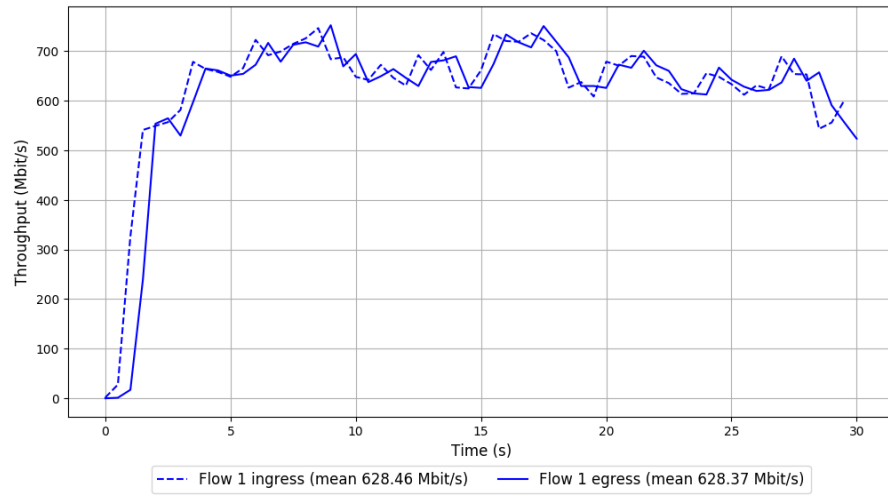
-- Flow 1:

Average throughput: 628.37 Mbit/s

95th percentile per-packet one-way delay: 110.901 ms

Loss rate: 0.44%

## Run 2: Report of TCP Cubic — Data Link

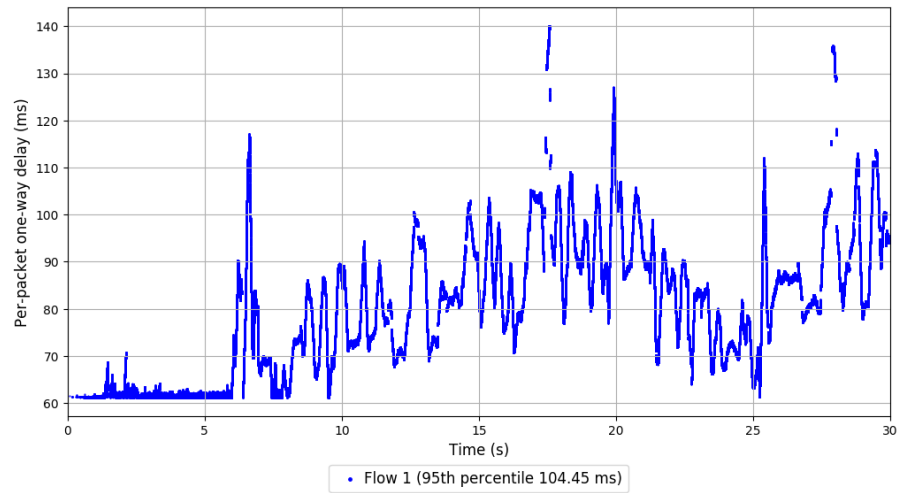
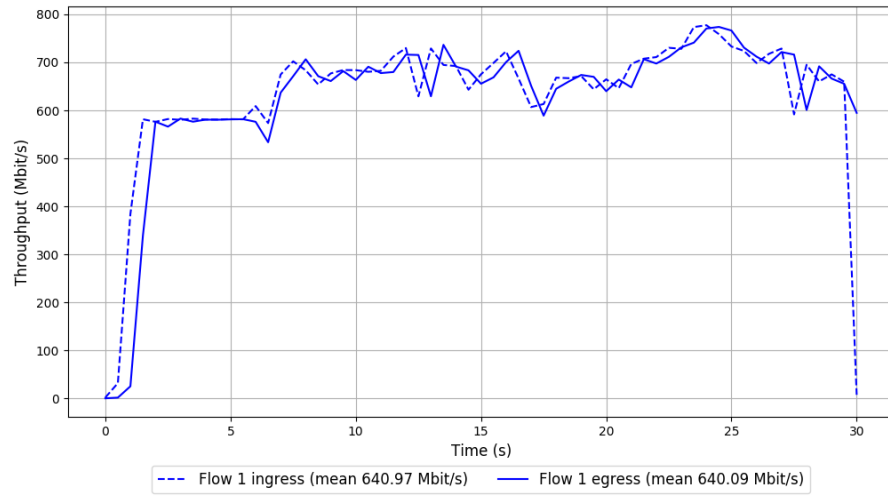


Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 18:51:31  
End at: 2018-09-07 18:52:01  
Local clock offset: -0.059 ms  
Remote clock offset: -0.258 ms

# Below is generated by plot.py at 2018-09-07 20:39:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 640.09 Mbit/s  
95th percentile per-packet one-way delay: 104.446 ms  
Loss rate: 0.55%  
-- Flow 1:  
Average throughput: 640.09 Mbit/s  
95th percentile per-packet one-way delay: 104.446 ms  
Loss rate: 0.55%

### Run 3: Report of TCP Cubic — Data Link

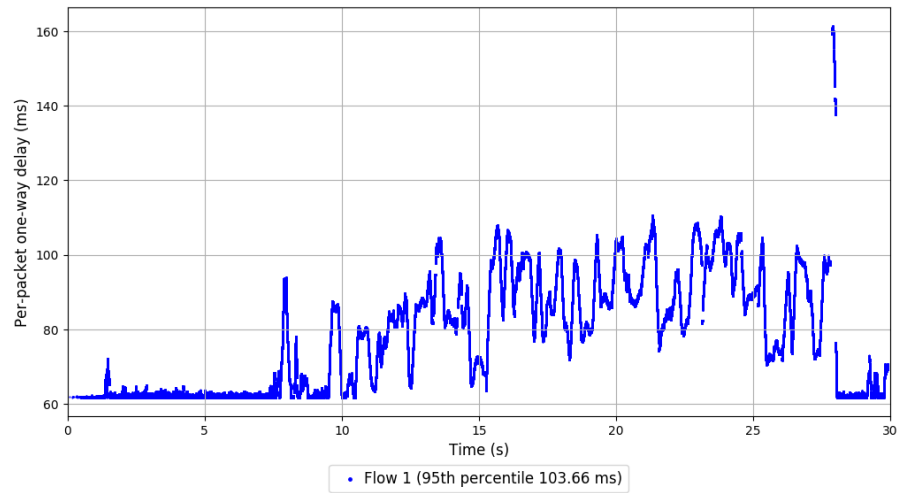
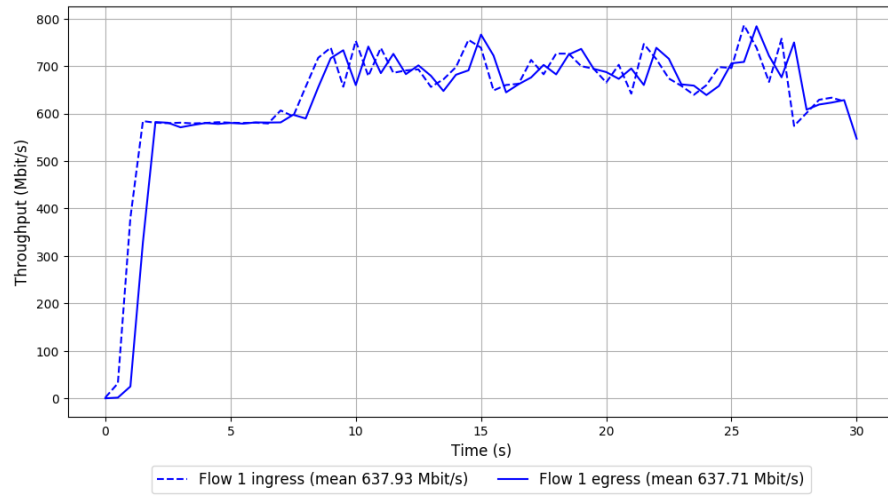


Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 19:17:25  
End at: 2018-09-07 19:17:55  
Local clock offset: -0.049 ms  
Remote clock offset: -0.709 ms

# Below is generated by plot.py at 2018-09-07 20:40:08  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 637.71 Mbit/s  
95th percentile per-packet one-way delay: 103.660 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 637.71 Mbit/s  
95th percentile per-packet one-way delay: 103.660 ms  
Loss rate: 0.44%

#### Run 4: Report of TCP Cubic — Data Link



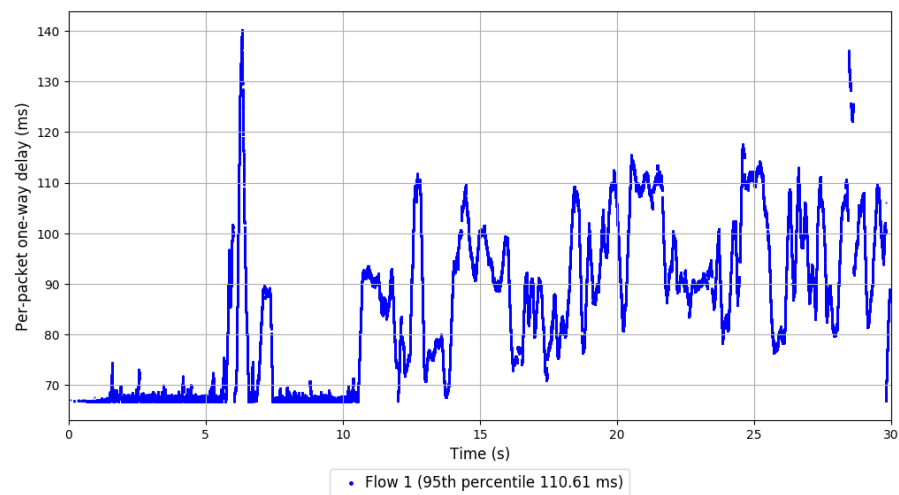
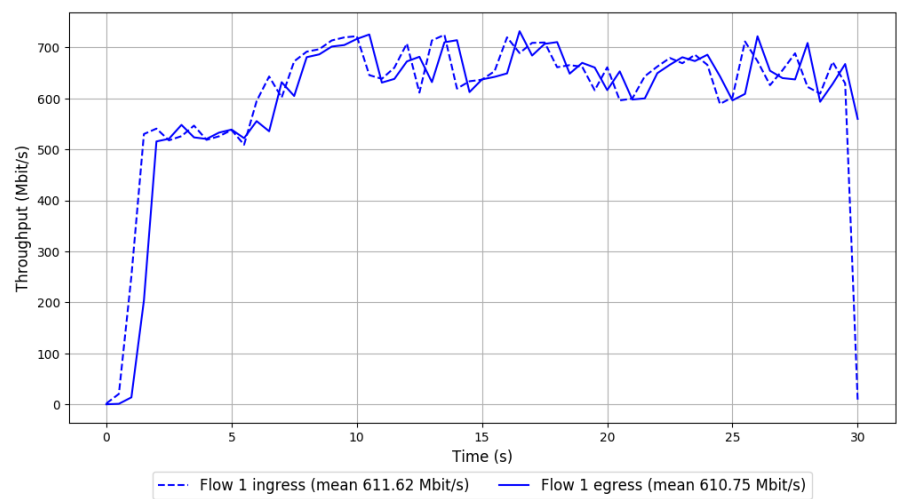


Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 19:43:31  
End at: 2018-09-07 19:44:01  
Local clock offset: -0.014 ms  
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-09-07 20:40:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 610.75 Mbit/s  
95th percentile per-packet one-way delay: 110.606 ms  
Loss rate: 0.57%  
-- Flow 1:  
Average throughput: 610.75 Mbit/s  
95th percentile per-packet one-way delay: 110.606 ms  
Loss rate: 0.57%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-07 18:09:31

End at: 2018-09-07 18:10:01

Local clock offset: -0.105 ms

Remote clock offset: 1.05 ms

# Below is generated by plot.py at 2018-09-07 20:47:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 864.11 Mbit/s

95th percentile per-packet one-way delay: 127.726 ms

Loss rate: 3.46%

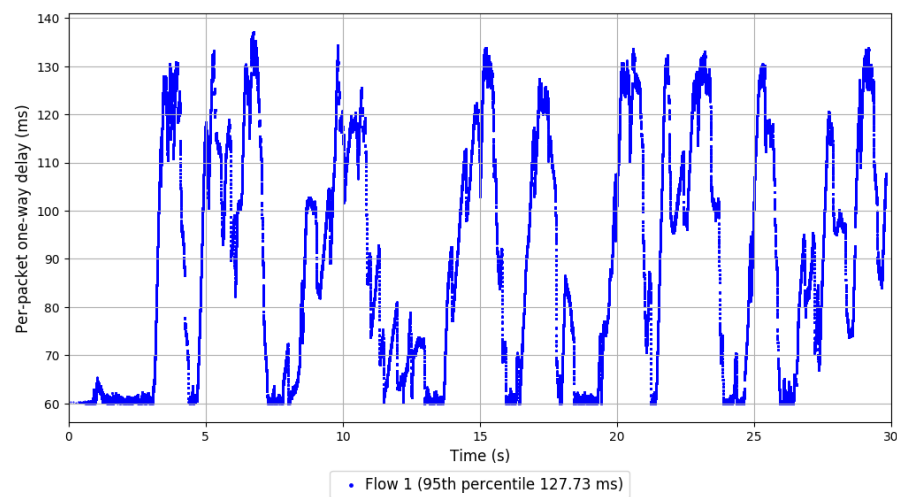
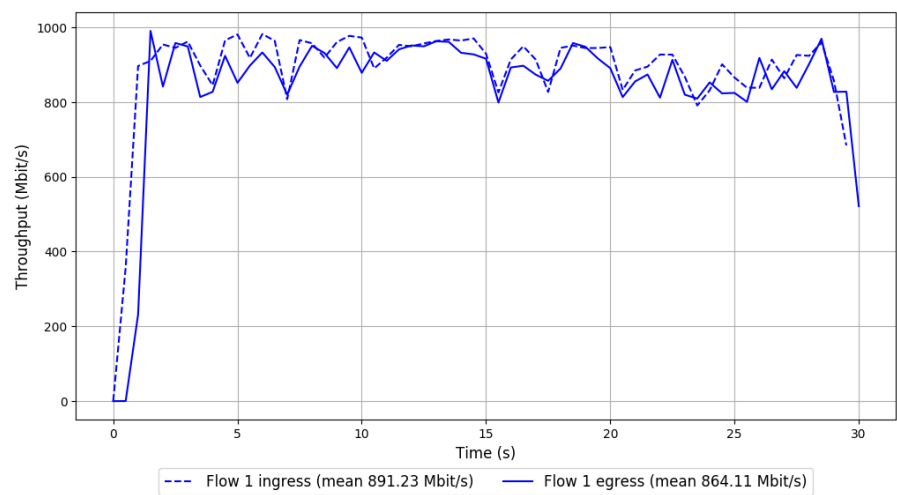
-- Flow 1:

Average throughput: 864.11 Mbit/s

95th percentile per-packet one-way delay: 127.726 ms

Loss rate: 3.46%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-07 18:35:42

End at: 2018-09-07 18:36:12

Local clock offset: -0.064 ms

Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2018-09-07 20:56:24

# Datalink statistics

-- Total of 1 flow:

Average throughput: 904.76 Mbit/s

95th percentile per-packet one-way delay: 126.077 ms

Loss rate: 1.44%

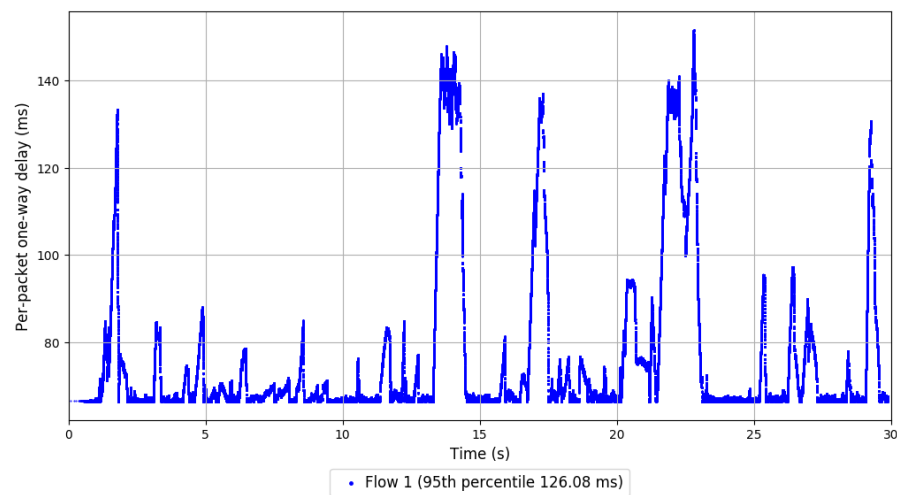
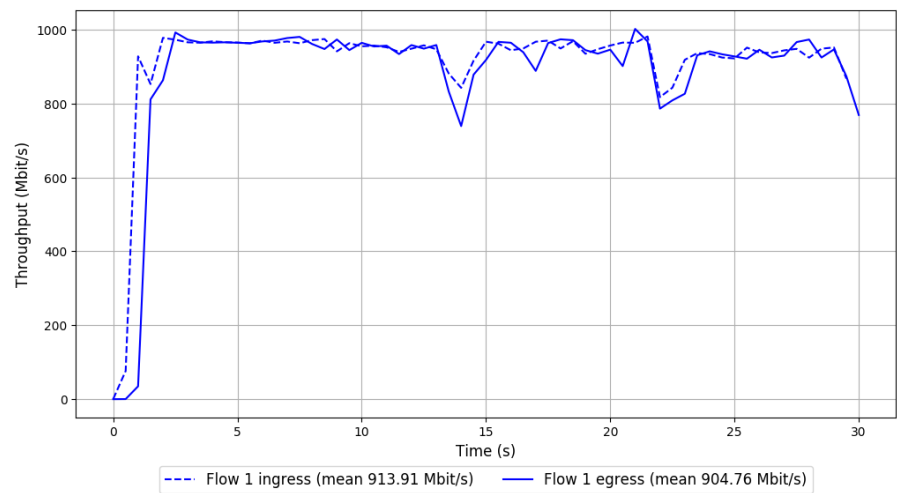
-- Flow 1:

Average throughput: 904.76 Mbit/s

95th percentile per-packet one-way delay: 126.077 ms

Loss rate: 1.44%

Run 2: Report of FillP — Data Link

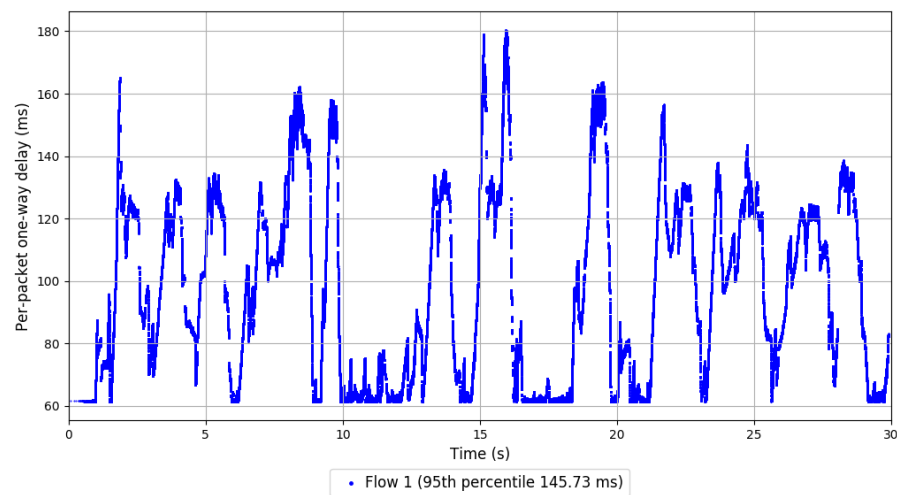
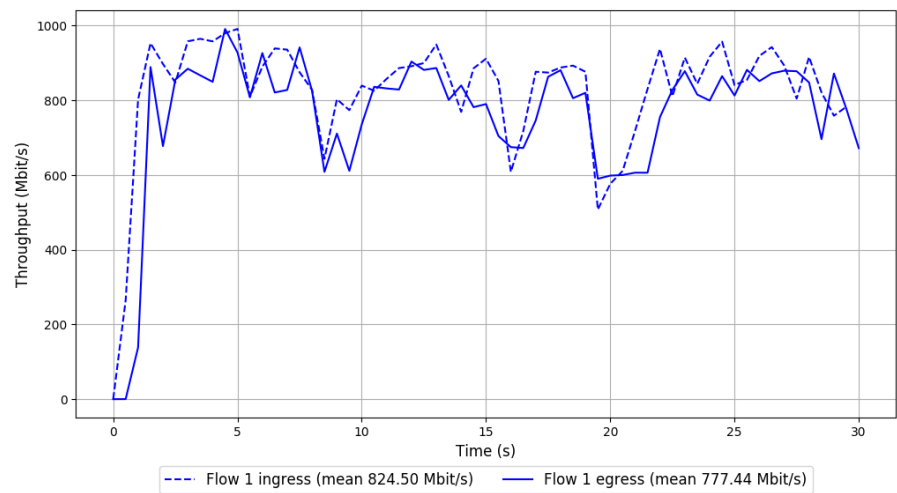


Run 3: Statistics of FillP

Start at: 2018-09-07 19:02:00  
End at: 2018-09-07 19:02:30  
Local clock offset: -0.047 ms  
Remote clock offset: -0.472 ms

# Below is generated by plot.py at 2018-09-07 20:56:24  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 777.44 Mbit/s  
95th percentile per-packet one-way delay: 145.728 ms  
Loss rate: 6.09%  
-- Flow 1:  
Average throughput: 777.44 Mbit/s  
95th percentile per-packet one-way delay: 145.728 ms  
Loss rate: 6.09%

Run 3: Report of FillP — Data Link





Run 4: Statistics of FillP

Start at: 2018-09-07 19:27:50

End at: 2018-09-07 19:28:20

Local clock offset: 0.017 ms

Remote clock offset: 0.097 ms

# Below is generated by plot.py at 2018-09-07 20:56:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 829.51 Mbit/s

95th percentile per-packet one-way delay: 138.837 ms

Loss rate: 5.39%

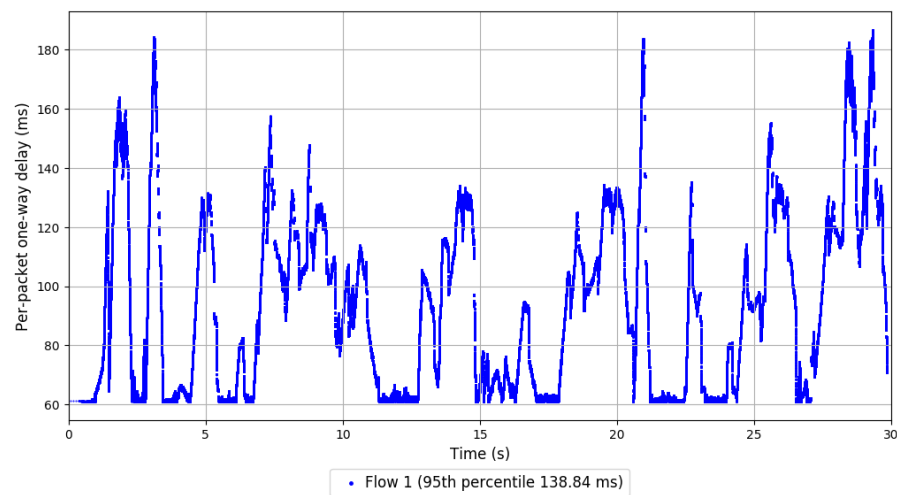
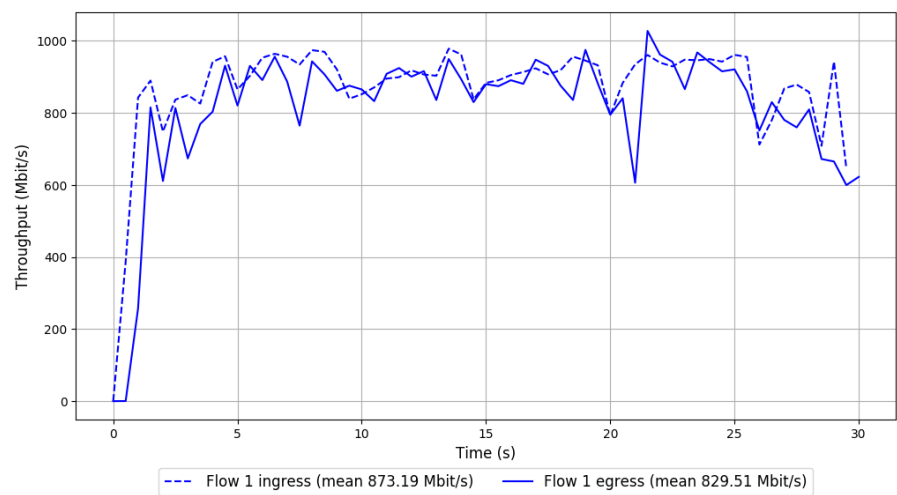
-- Flow 1:

Average throughput: 829.51 Mbit/s

95th percentile per-packet one-way delay: 138.837 ms

Loss rate: 5.39%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-07 19:54:08

End at: 2018-09-07 19:54:38

Local clock offset: -0.02 ms

Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-09-07 20:57:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 830.13 Mbit/s

95th percentile per-packet one-way delay: 132.864 ms

Loss rate: 4.54%

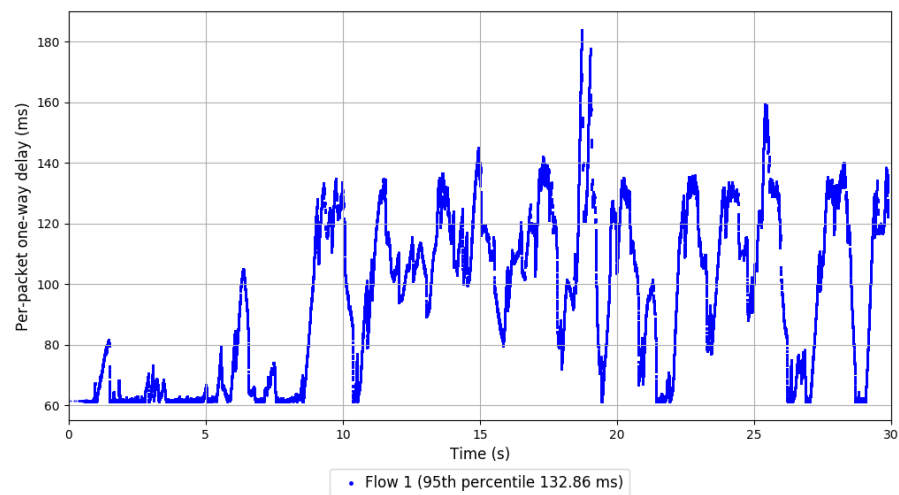
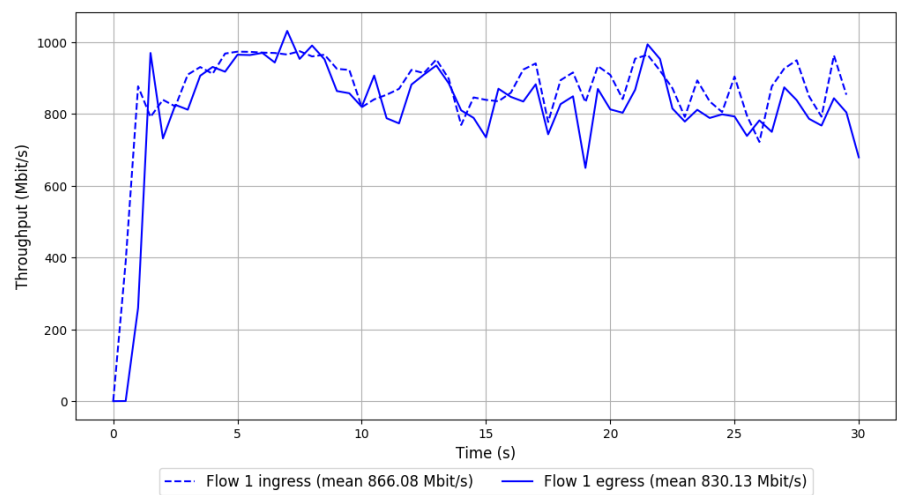
-- Flow 1:

Average throughput: 830.13 Mbit/s

95th percentile per-packet one-way delay: 132.864 ms

Loss rate: 4.54%

Run 5: Report of FillP — Data Link

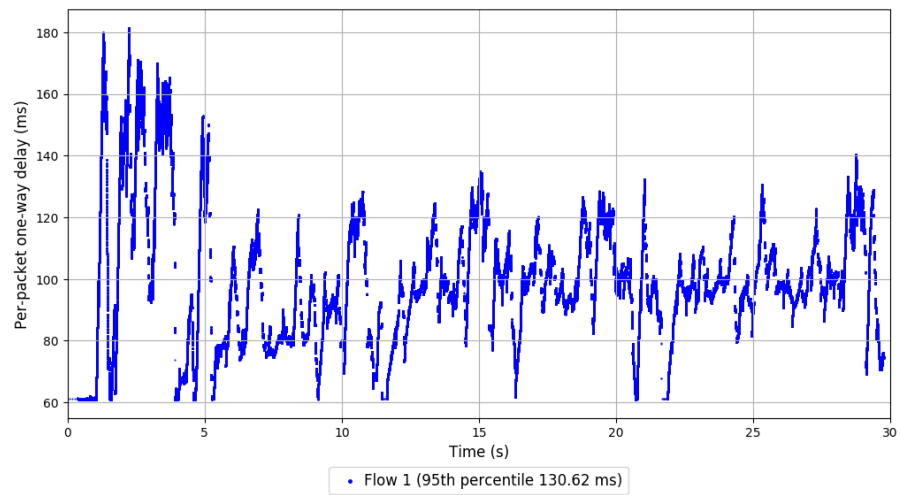
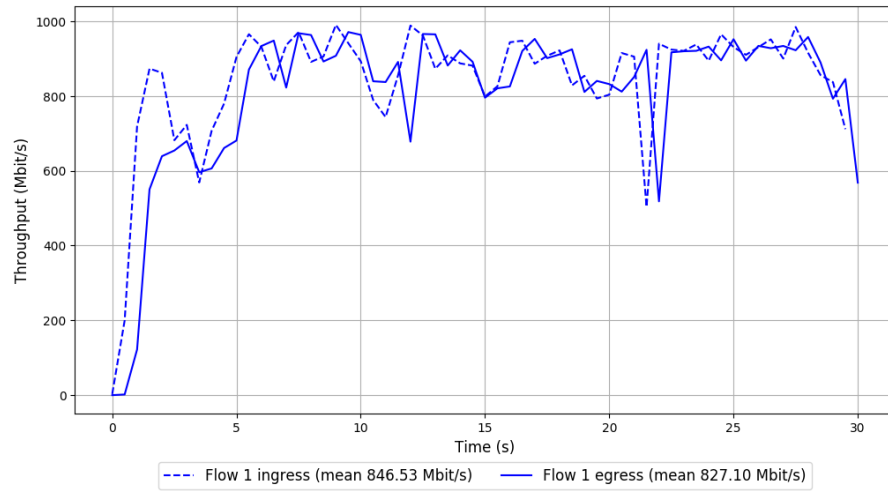


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 18:03:56  
End at: 2018-09-07 18:04:26  
Local clock offset: -0.083 ms  
Remote clock offset: -0.235 ms

# Below is generated by plot.py at 2018-09-07 20:57:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 827.10 Mbit/s  
95th percentile per-packet one-way delay: 130.617 ms  
Loss rate: 2.72%  
-- Flow 1:  
Average throughput: 827.10 Mbit/s  
95th percentile per-packet one-way delay: 130.617 ms  
Loss rate: 2.72%

### Run 1: Report of FillP-Sheep — Data Link

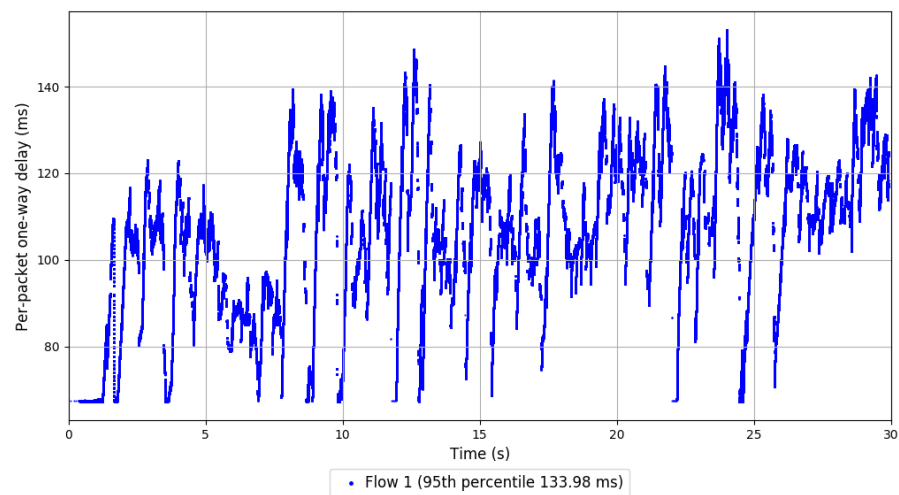
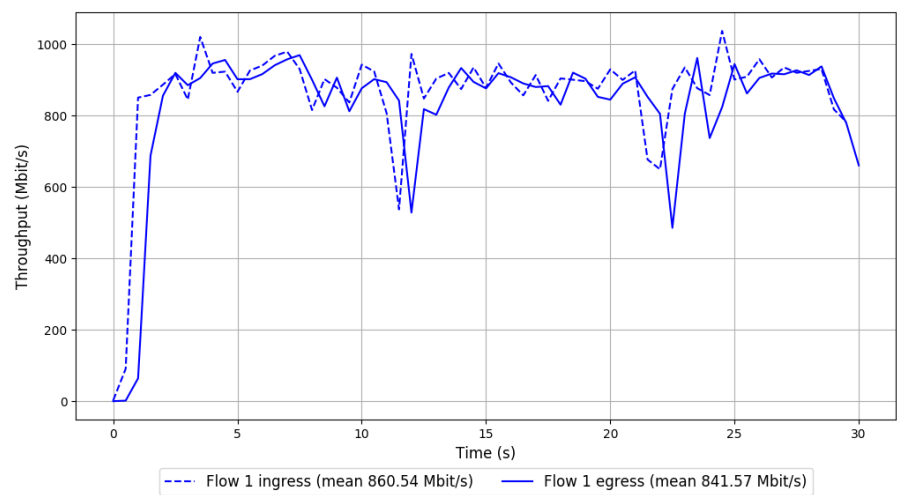


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 18:30:09  
End at: 2018-09-07 18:30:39  
Local clock offset: -0.057 ms  
Remote clock offset: -0.735 ms

# Below is generated by plot.py at 2018-09-07 20:57:35  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 841.57 Mbit/s  
95th percentile per-packet one-way delay: 133.980 ms  
Loss rate: 2.64%  
-- Flow 1:  
Average throughput: 841.57 Mbit/s  
95th percentile per-packet one-way delay: 133.980 ms  
Loss rate: 2.64%

Run 2: Report of FillP-Sheep — Data Link



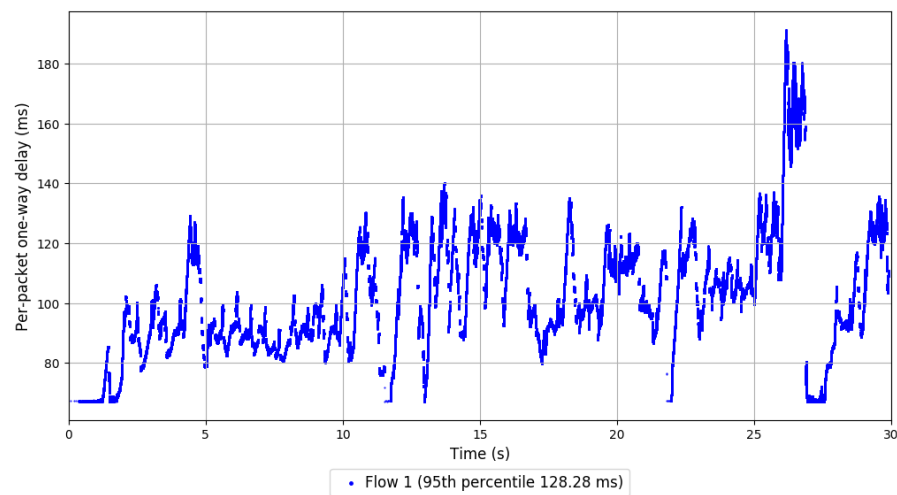
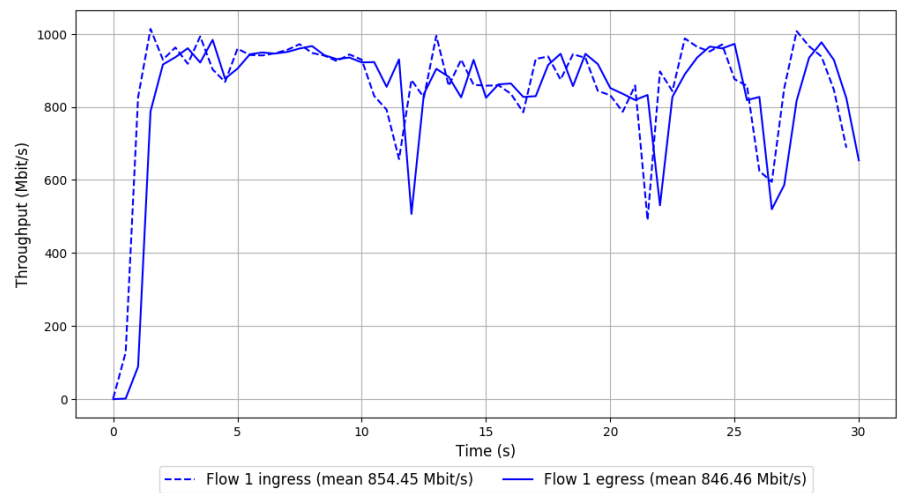


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 18:56:24  
End at: 2018-09-07 18:56:55  
Local clock offset: -0.072 ms  
Remote clock offset: -0.391 ms

# Below is generated by plot.py at 2018-09-07 20:58:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 846.46 Mbit/s  
95th percentile per-packet one-way delay: 128.284 ms  
Loss rate: 1.36%  
-- Flow 1:  
Average throughput: 846.46 Mbit/s  
95th percentile per-packet one-way delay: 128.284 ms  
Loss rate: 1.36%

Run 3: Report of FillP-Sheep — Data Link

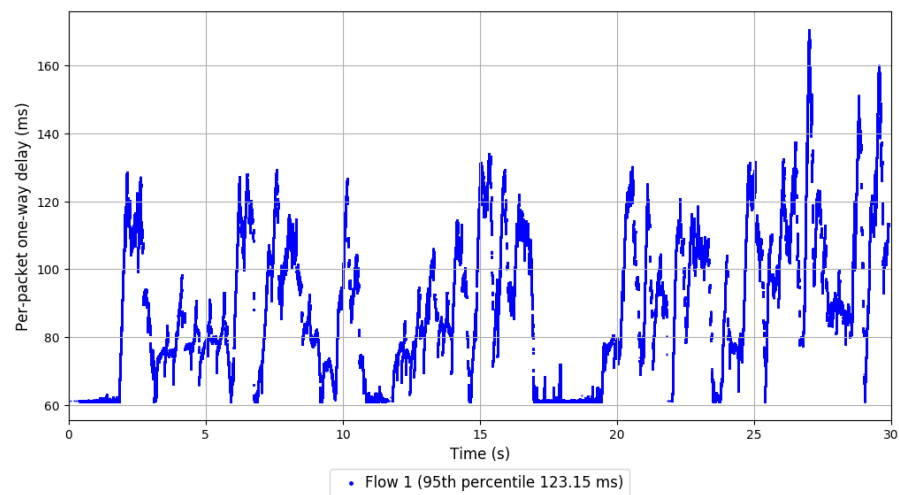
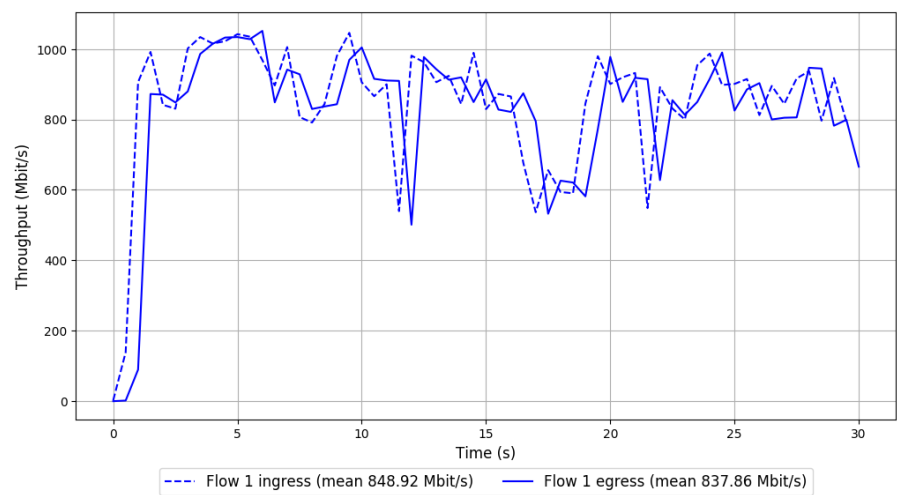


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 19:22:18  
End at: 2018-09-07 19:22:49  
Local clock offset: -0.025 ms  
Remote clock offset: -0.287 ms

# Below is generated by plot.py at 2018-09-07 21:06:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 837.86 Mbit/s  
95th percentile per-packet one-way delay: 123.146 ms  
Loss rate: 1.71%  
-- Flow 1:  
Average throughput: 837.86 Mbit/s  
95th percentile per-packet one-way delay: 123.146 ms  
Loss rate: 1.71%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 19:48:28

End at: 2018-09-07 19:48:58

Local clock offset: -0.005 ms

Remote clock offset: 0.487 ms

# Below is generated by plot.py at 2018-09-07 21:15:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 970.06 Mbit/s

95th percentile per-packet one-way delay: 118.246 ms

Loss rate: 1.49%

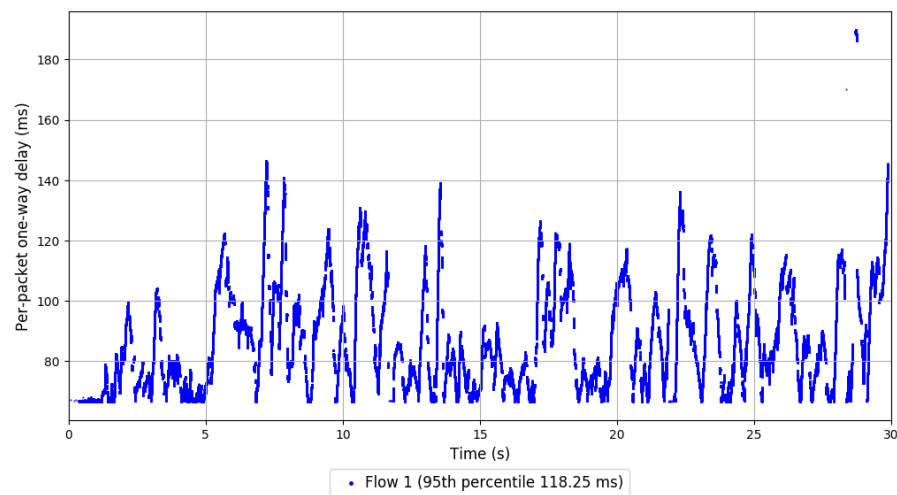
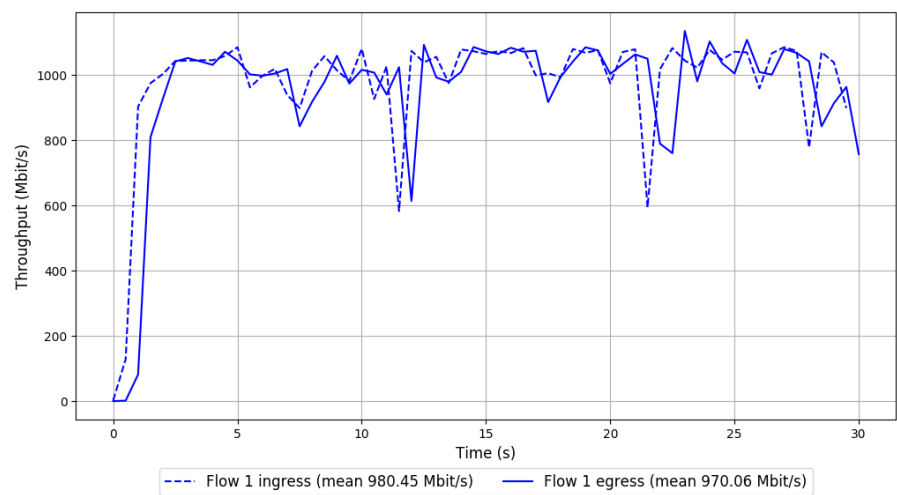
-- Flow 1:

Average throughput: 970.06 Mbit/s

95th percentile per-packet one-way delay: 118.246 ms

Loss rate: 1.49%

Run 5: Report of FillP-Sheep — Data Link

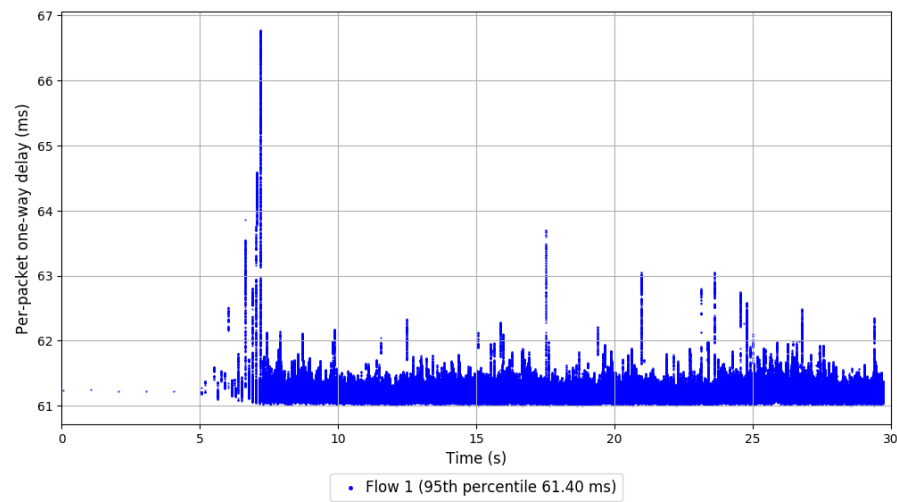
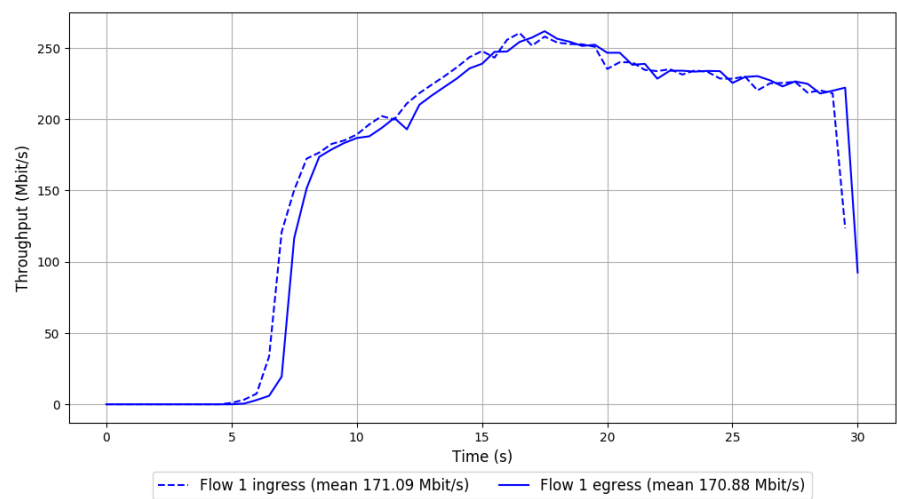


Run 1: Statistics of Indigo

Start at: 2018-09-07 18:13:55  
End at: 2018-09-07 18:14:25  
Local clock offset: -0.108 ms  
Remote clock offset: -0.214 ms

# Below is generated by plot.py at 2018-09-07 21:15:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 170.88 Mbit/s  
95th percentile per-packet one-way delay: 61.400 ms  
Loss rate: 0.54%  
-- Flow 1:  
Average throughput: 170.88 Mbit/s  
95th percentile per-packet one-way delay: 61.400 ms  
Loss rate: 0.54%

Run 1: Report of Indigo — Data Link



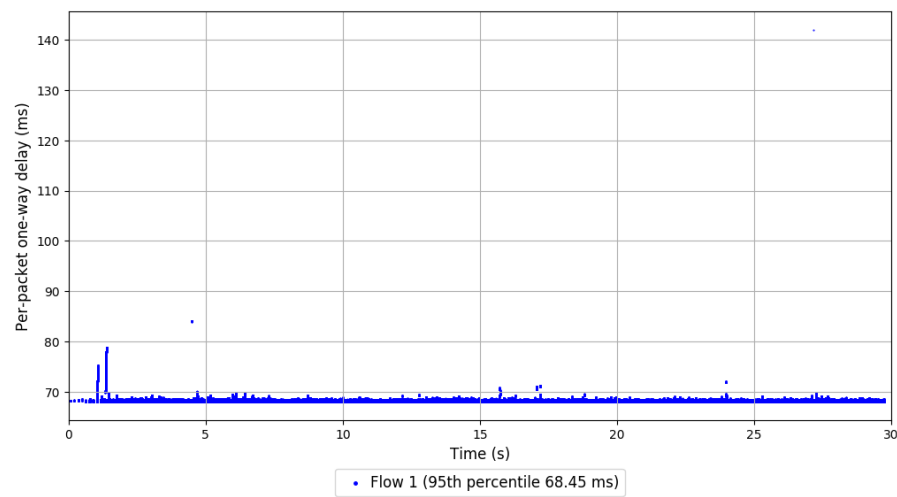
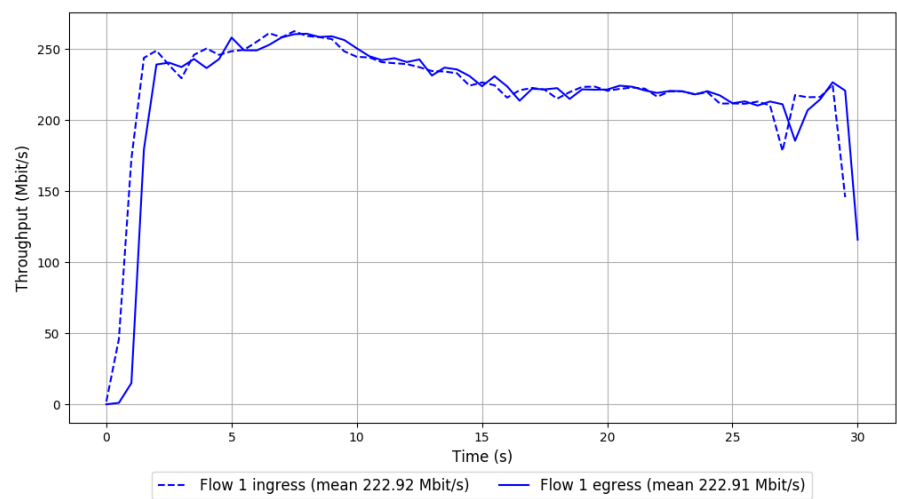


Run 2: Statistics of Indigo

Start at: 2018-09-07 18:40:08  
End at: 2018-09-07 18:40:38  
Local clock offset: -0.045 ms  
Remote clock offset: -1.494 ms

# Below is generated by plot.py at 2018-09-07 21:15:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 222.91 Mbit/s  
95th percentile per-packet one-way delay: 68.448 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 222.91 Mbit/s  
95th percentile per-packet one-way delay: 68.448 ms  
Loss rate: 0.44%

Run 2: Report of Indigo — Data Link

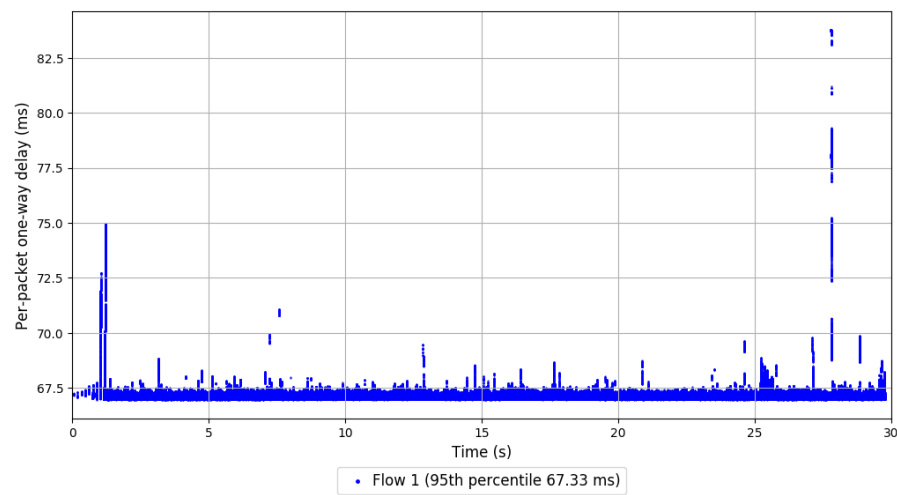
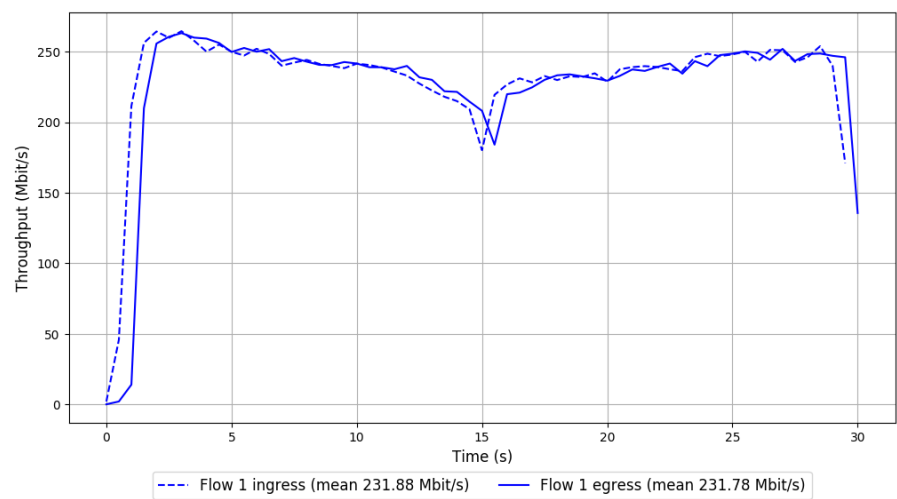


Run 3: Statistics of Indigo

Start at: 2018-09-07 19:06:19  
End at: 2018-09-07 19:06:49  
Local clock offset: -0.031 ms  
Remote clock offset: -0.192 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 231.78 Mbit/s  
95th percentile per-packet one-way delay: 67.327 ms  
Loss rate: 0.47%  
-- Flow 1:  
Average throughput: 231.78 Mbit/s  
95th percentile per-packet one-way delay: 67.327 ms  
Loss rate: 0.47%

Run 3: Report of Indigo — Data Link

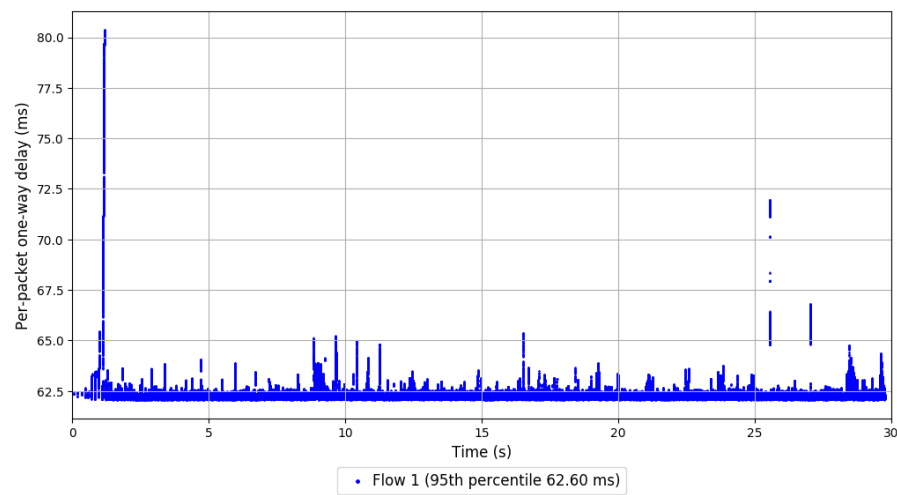
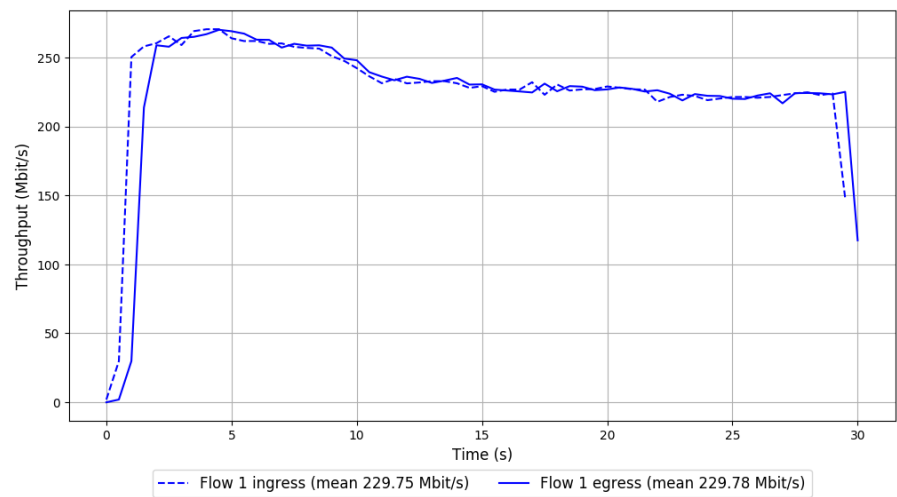


Run 4: Statistics of Indigo

Start at: 2018-09-07 19:32:11  
End at: 2018-09-07 19:32:41  
Local clock offset: -0.016 ms  
Remote clock offset: -1.144 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 229.78 Mbit/s  
95th percentile per-packet one-way delay: 62.605 ms  
Loss rate: 0.40%  
-- Flow 1:  
Average throughput: 229.78 Mbit/s  
95th percentile per-packet one-way delay: 62.605 ms  
Loss rate: 0.40%

Run 4: Report of Indigo — Data Link

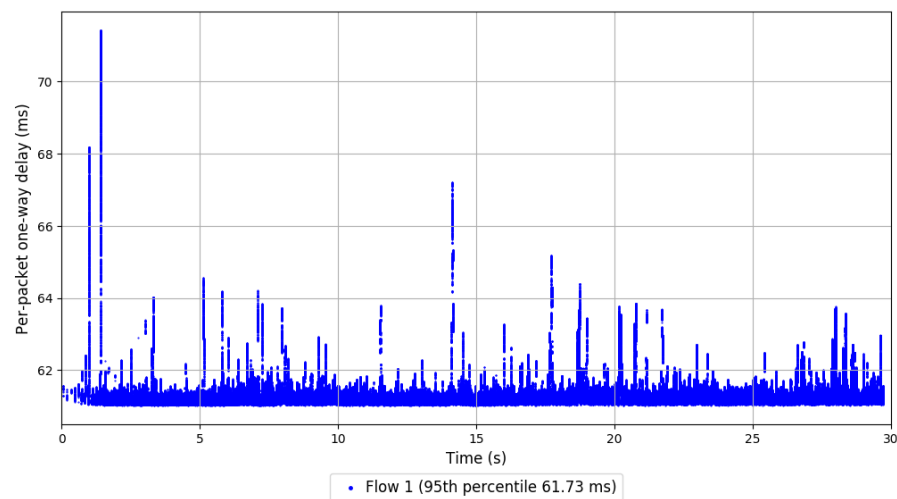
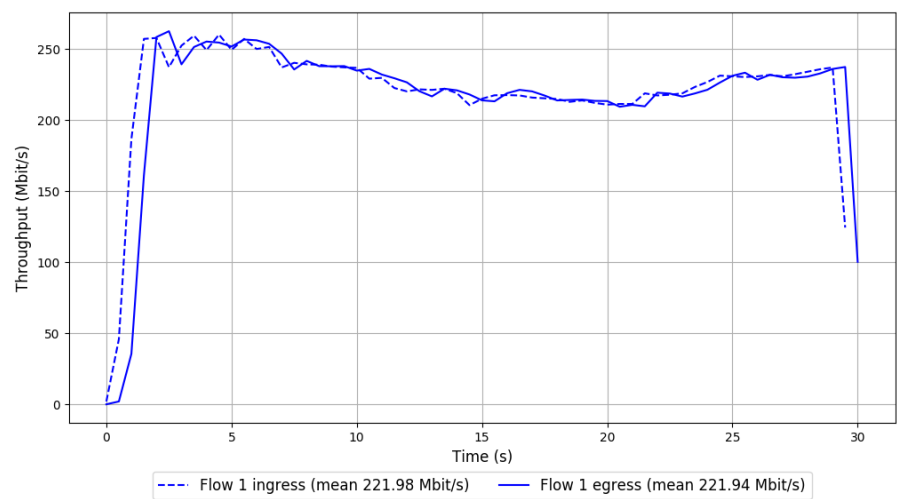


Run 5: Statistics of Indigo

Start at: 2018-09-07 19:58:33  
End at: 2018-09-07 19:59:03  
Local clock offset: -0.007 ms  
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 221.94 Mbit/s  
95th percentile per-packet one-way delay: 61.735 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 221.94 Mbit/s  
95th percentile per-packet one-way delay: 61.735 ms  
Loss rate: 0.43%

Run 5: Report of Indigo — Data Link



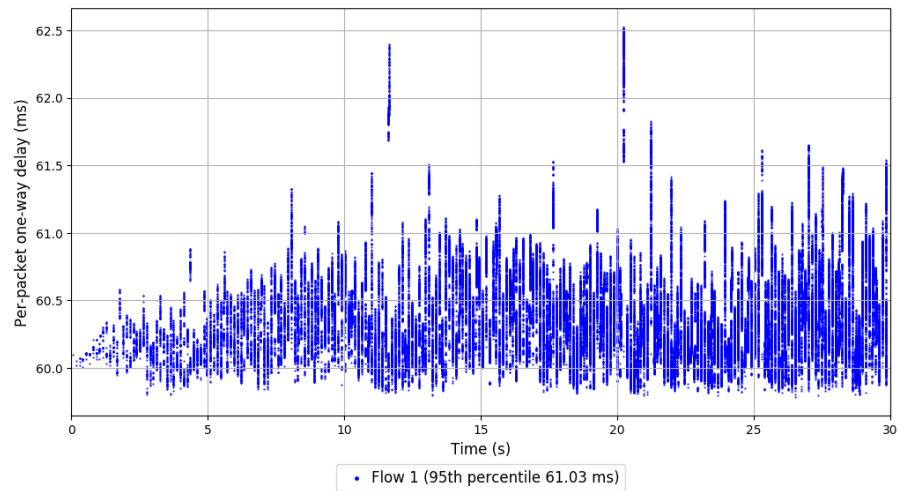
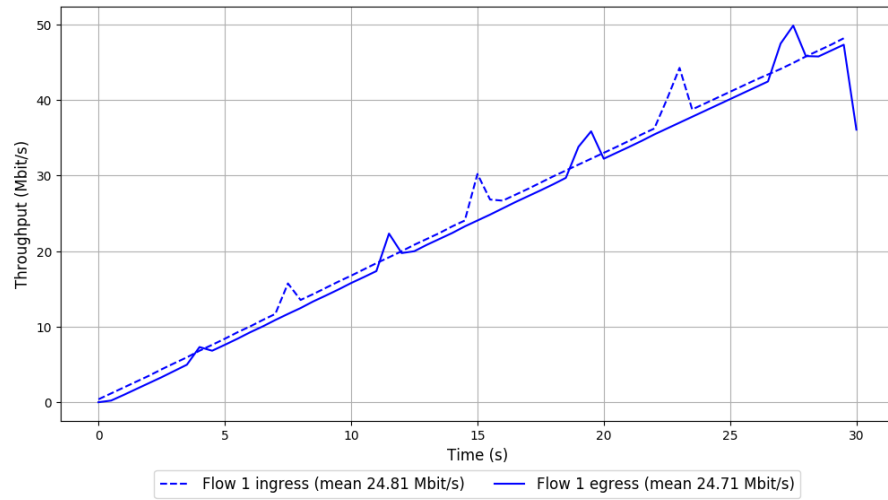


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 18:21:22
End at: 2018-09-07 18:21:52
Local clock offset: -0.087 ms
Remote clock offset: 1.062 ms

# Below is generated by plot.py at 2018-09-07 21:15:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.71 Mbit/s
95th percentile per-packet one-way delay: 61.027 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 24.71 Mbit/s
95th percentile per-packet one-way delay: 61.027 ms
Loss rate: 0.82%
```

### Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-07 18:47:43

End at: 2018-09-07 18:48:13

Local clock offset: -0.096 ms

Remote clock offset: 0.02 ms

# Below is generated by plot.py at 2018-09-07 21:15:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 22.56 Mbit/s

95th percentile per-packet one-way delay: 67.746 ms

Loss rate: 0.85%

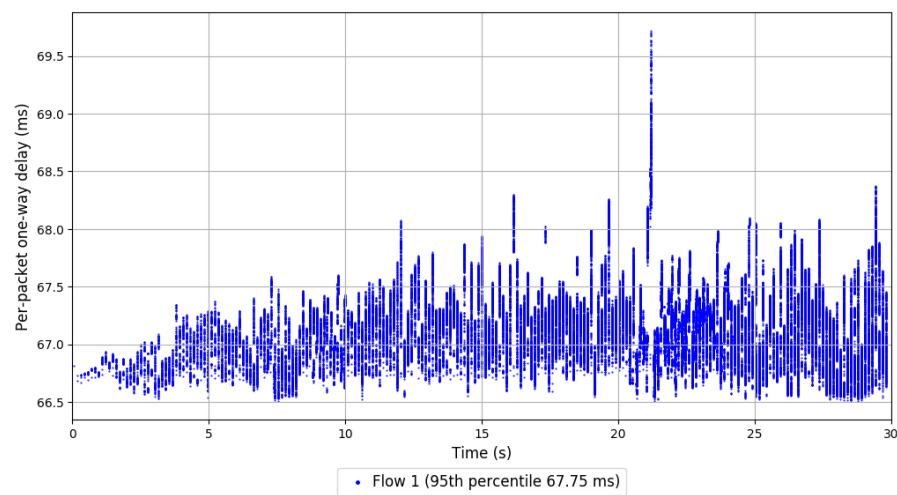
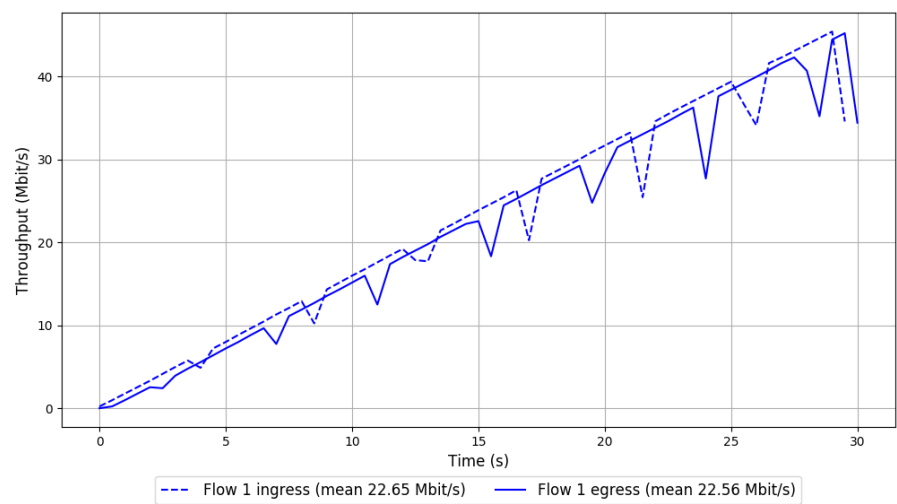
-- Flow 1:

Average throughput: 22.56 Mbit/s

95th percentile per-packet one-way delay: 67.746 ms

Loss rate: 0.85%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-07 19:13:38

End at: 2018-09-07 19:14:08

Local clock offset: -0.001 ms

Remote clock offset: -0.63 ms

# Below is generated by plot.py at 2018-09-07 21:15:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 24.89 Mbit/s

95th percentile per-packet one-way delay: 62.775 ms

Loss rate: 0.81%

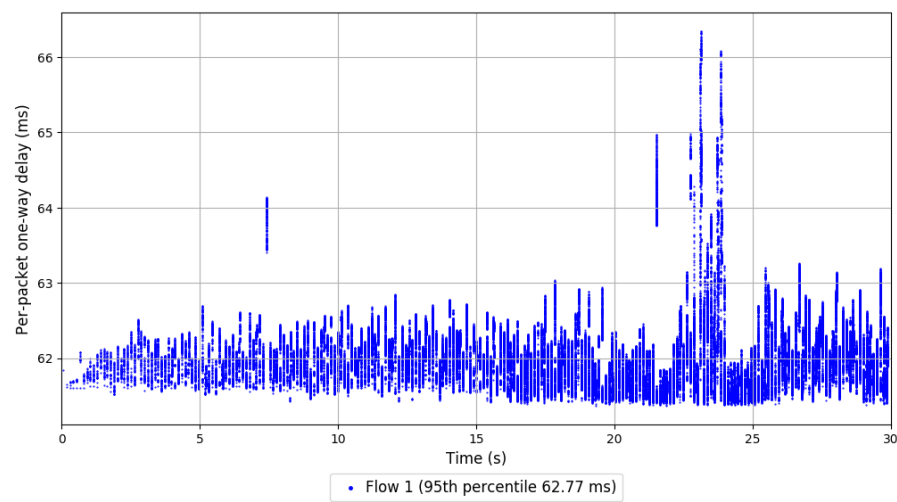
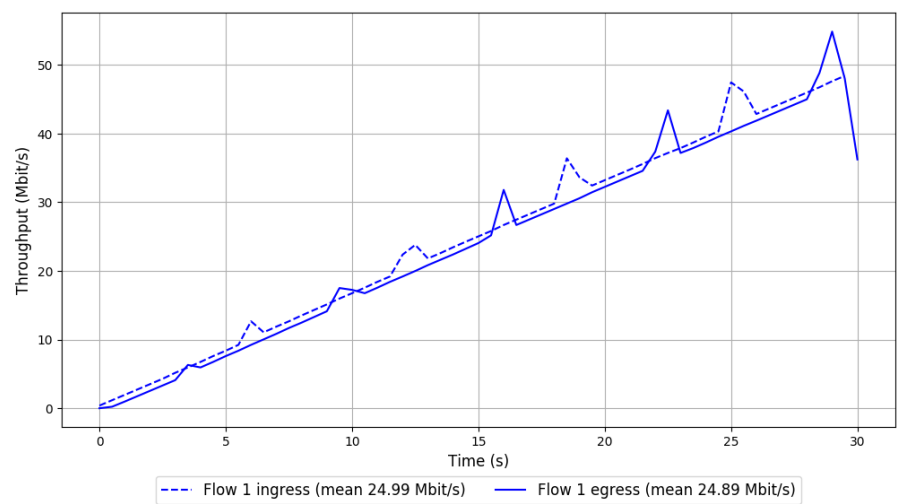
-- Flow 1:

Average throughput: 24.89 Mbit/s

95th percentile per-packet one-way delay: 62.775 ms

Loss rate: 0.81%

Run 3: Report of LEDBAT — Data Link

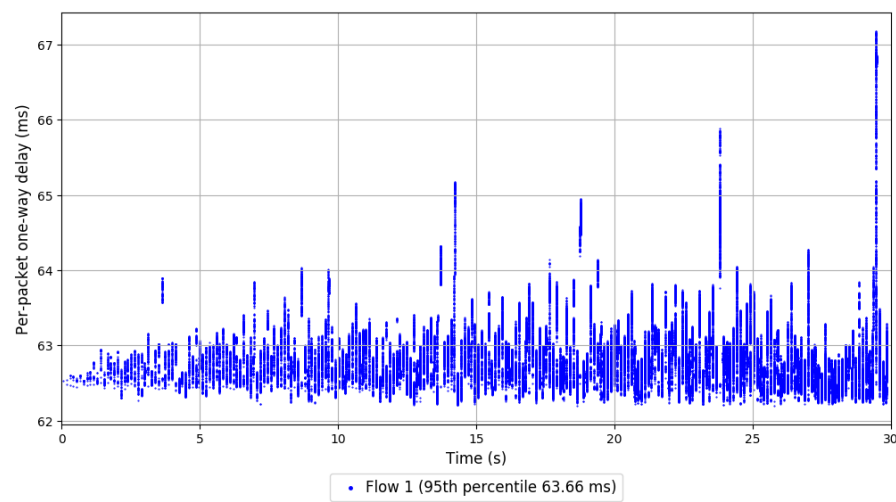
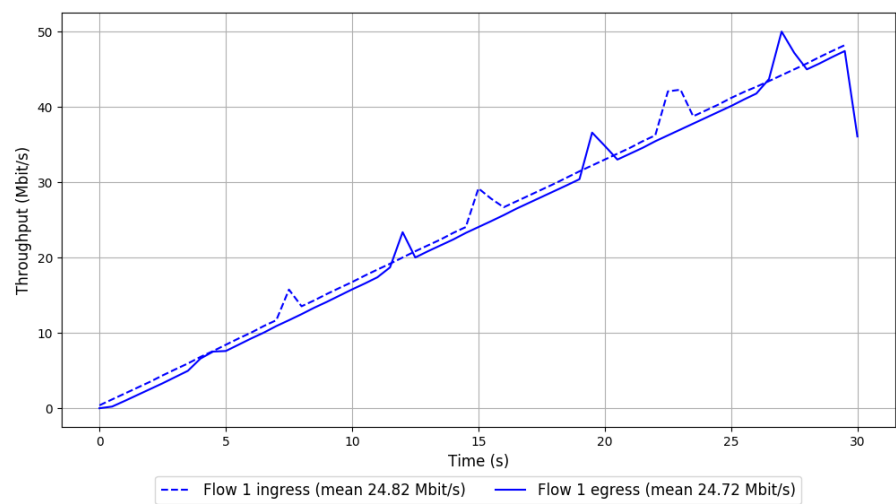


Run 4: Statistics of LEDBAT

Start at: 2018-09-07 19:39:44  
End at: 2018-09-07 19:40:14  
Local clock offset: 0.03 ms  
Remote clock offset: -1.223 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 24.72 Mbit/s  
95th percentile per-packet one-way delay: 63.662 ms  
Loss rate: 0.82%  
-- Flow 1:  
Average throughput: 24.72 Mbit/s  
95th percentile per-packet one-way delay: 63.662 ms  
Loss rate: 0.82%

Run 4: Report of LEDBAT — Data Link



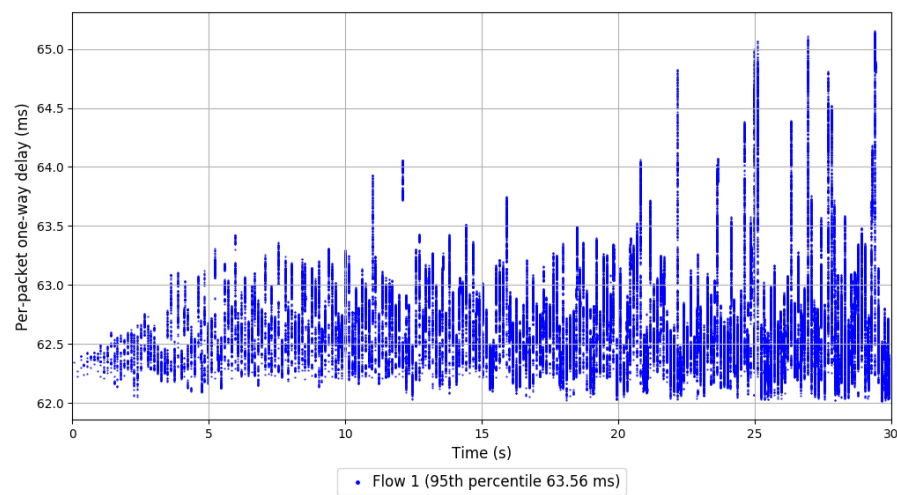
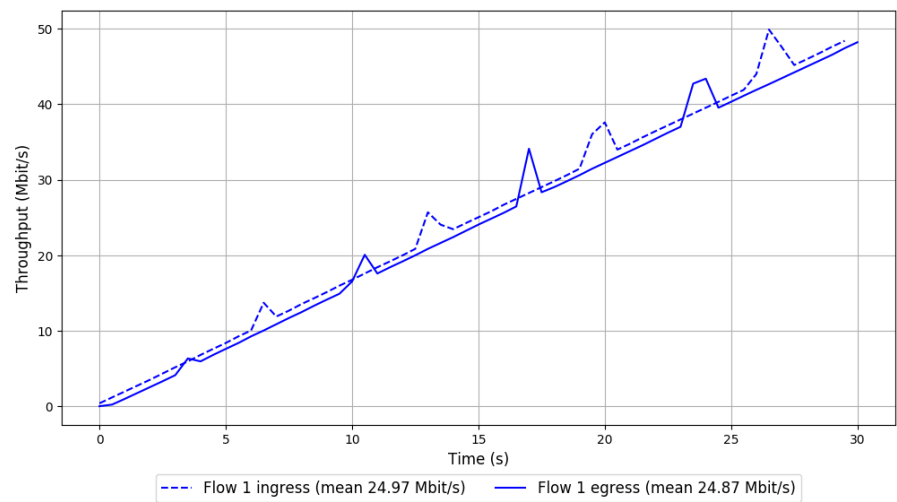


Run 5: Statistics of LEDBAT

Start at: 2018-09-07 20:06:08  
End at: 2018-09-07 20:06:38  
Local clock offset: 0.006 ms  
Remote clock offset: -1.155 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 24.87 Mbit/s  
95th percentile per-packet one-way delay: 63.557 ms  
Loss rate: 0.81%  
-- Flow 1:  
Average throughput: 24.87 Mbit/s  
95th percentile per-packet one-way delay: 63.557 ms  
Loss rate: 0.81%

Run 5: Report of LEDBAT — Data Link

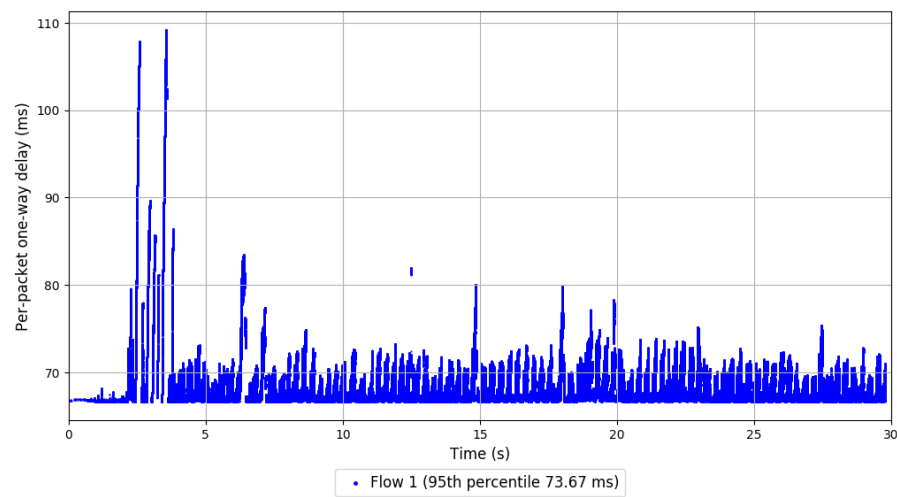
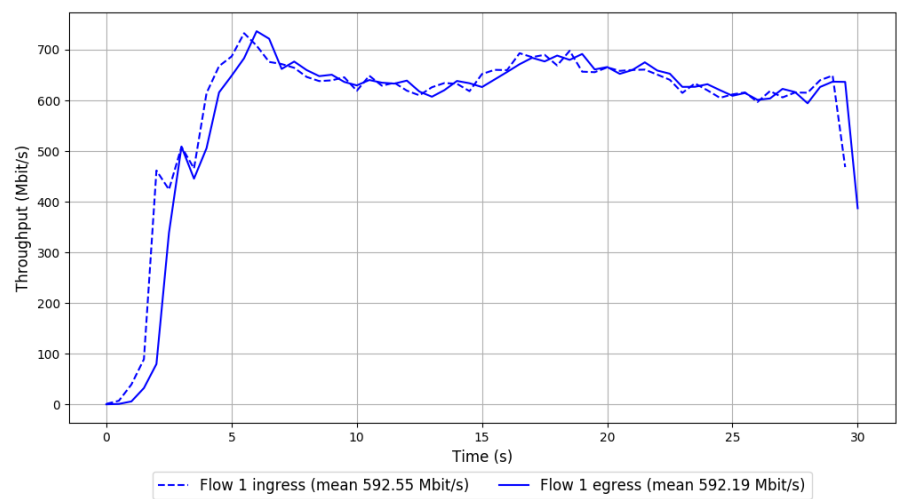


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 18:16:52
End at: 2018-09-07 18:17:22
Local clock offset: -0.081 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2018-09-07 21:15:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 592.19 Mbit/s
95th percentile per-packet one-way delay: 73.668 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 592.19 Mbit/s
95th percentile per-packet one-way delay: 73.668 ms
Loss rate: 0.50%
```

Run 1: Report of Indigo-Muses — Data Link

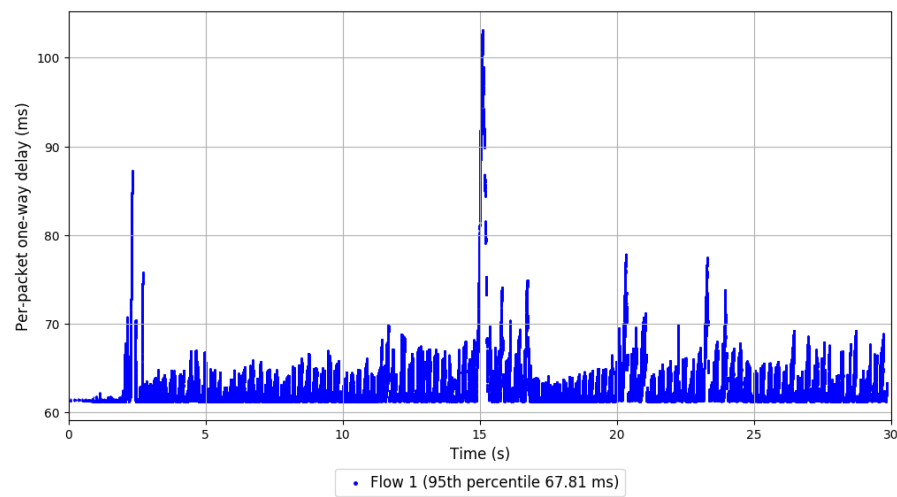
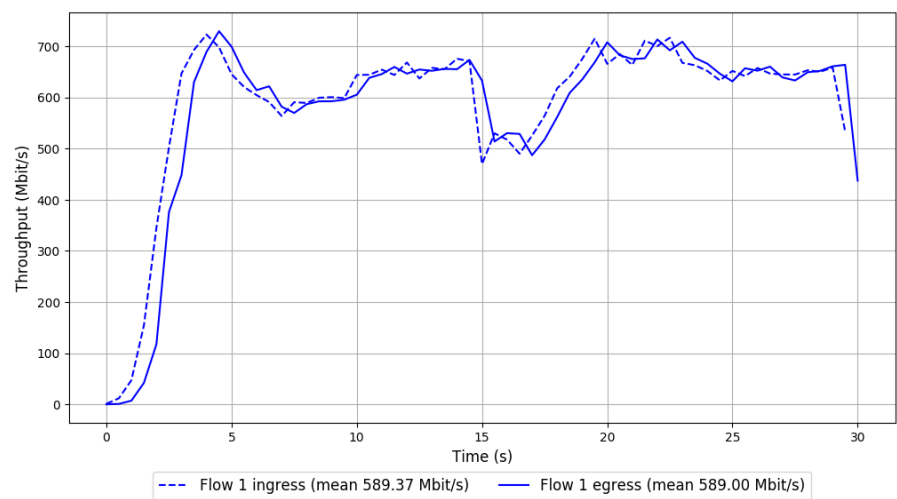


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 18:43:09  
End at: 2018-09-07 18:43:39  
Local clock offset: -0.093 ms  
Remote clock offset: -0.382 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 589.00 Mbit/s  
95th percentile per-packet one-way delay: 67.809 ms  
Loss rate: 0.47%  
-- Flow 1:  
Average throughput: 589.00 Mbit/s  
95th percentile per-packet one-way delay: 67.809 ms  
Loss rate: 0.47%

Run 2: Report of Indigo-Muses — Data Link

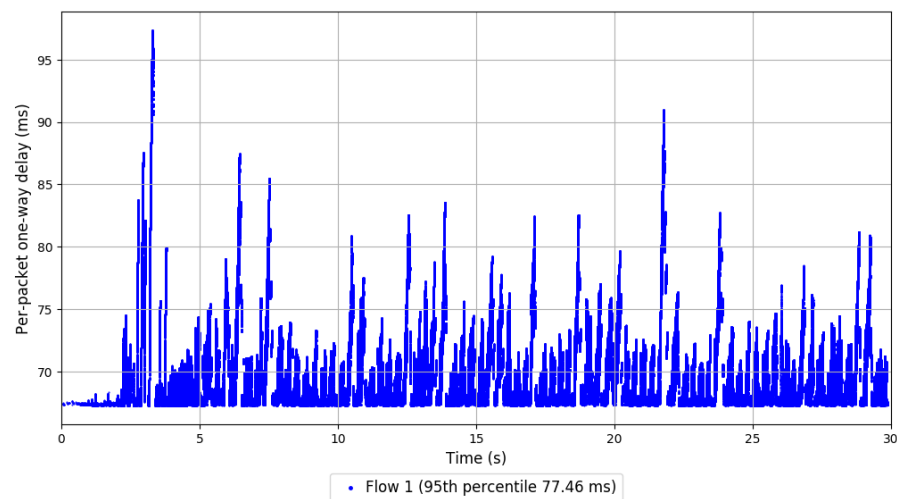
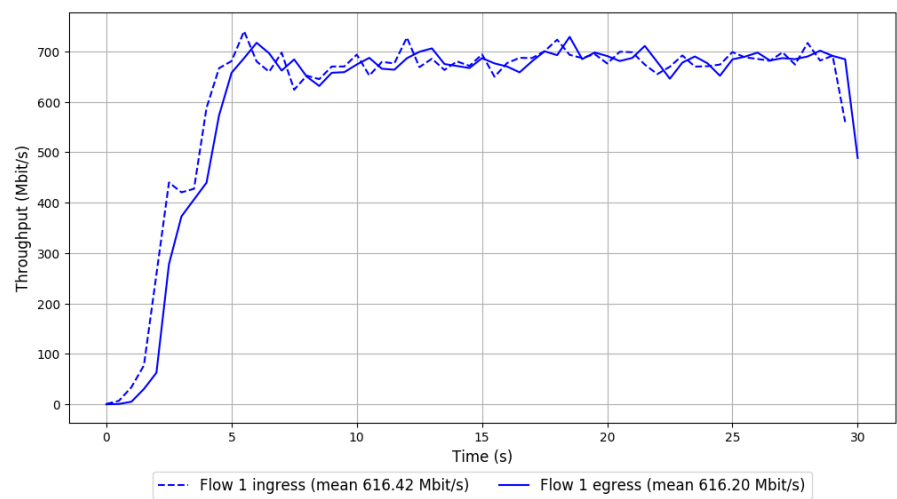


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 19:09:18  
End at: 2018-09-07 19:09:48  
Local clock offset: -0.034 ms  
Remote clock offset: -0.682 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 616.20 Mbit/s  
95th percentile per-packet one-way delay: 77.460 ms  
Loss rate: 0.46%  
-- Flow 1:  
Average throughput: 616.20 Mbit/s  
95th percentile per-packet one-way delay: 77.460 ms  
Loss rate: 0.46%

Run 3: Report of Indigo-Muses — Data Link



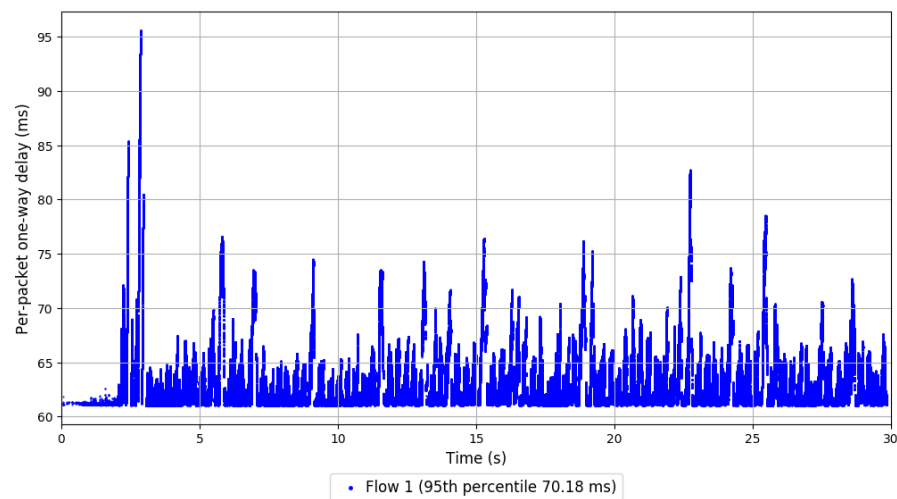
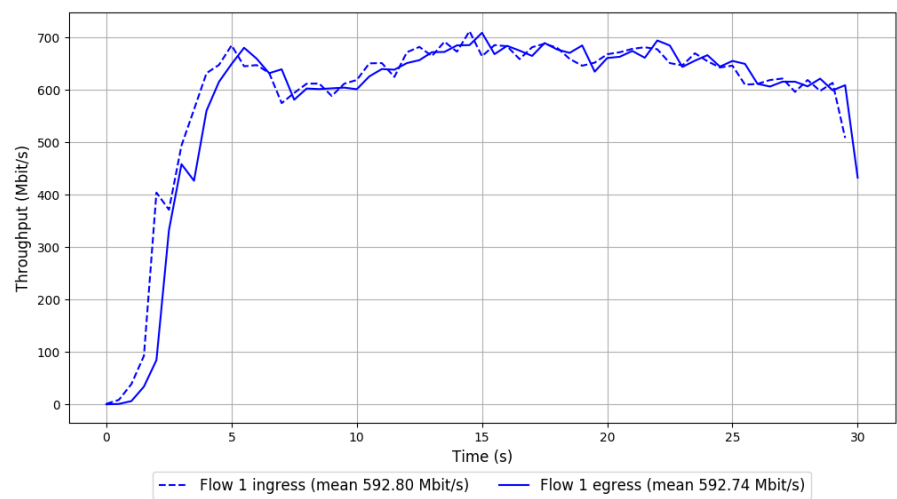


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 19:35:15  
End at: 2018-09-07 19:35:45  
Local clock offset: 0.007 ms  
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 592.74 Mbit/s  
95th percentile per-packet one-way delay: 70.179 ms  
Loss rate: 0.42%  
-- Flow 1:  
Average throughput: 592.74 Mbit/s  
95th percentile per-packet one-way delay: 70.179 ms  
Loss rate: 0.42%

Run 4: Report of Indigo-Muses — Data Link

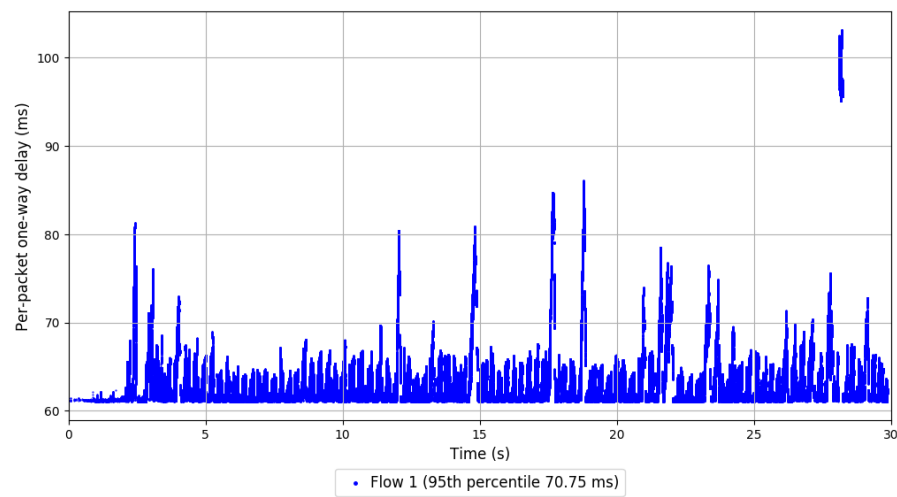
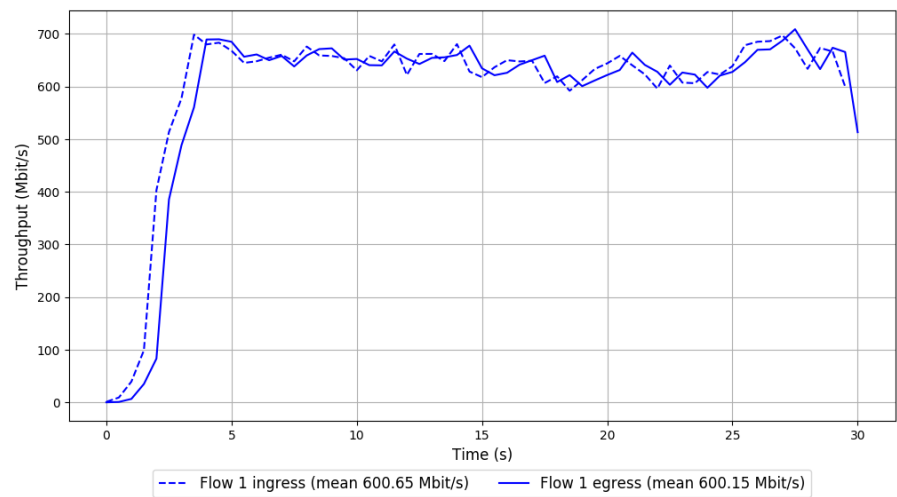


Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 20:01:32  
End at: 2018-09-07 20:02:02  
Local clock offset: -0.007 ms  
Remote clock offset: -0.118 ms

# Below is generated by plot.py at 2018-09-07 21:15:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 600.15 Mbit/s  
95th percentile per-packet one-way delay: 70.755 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 600.15 Mbit/s  
95th percentile per-packet one-way delay: 70.755 ms  
Loss rate: 0.48%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 18:02:20

End at: 2018-09-07 18:02:50

Local clock offset: -0.117 ms

Remote clock offset: -1.207 ms

# Below is generated by plot.py at 2018-09-07 21:19:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 452.10 Mbit/s

95th percentile per-packet one-way delay: 135.849 ms

Loss rate: 1.28%

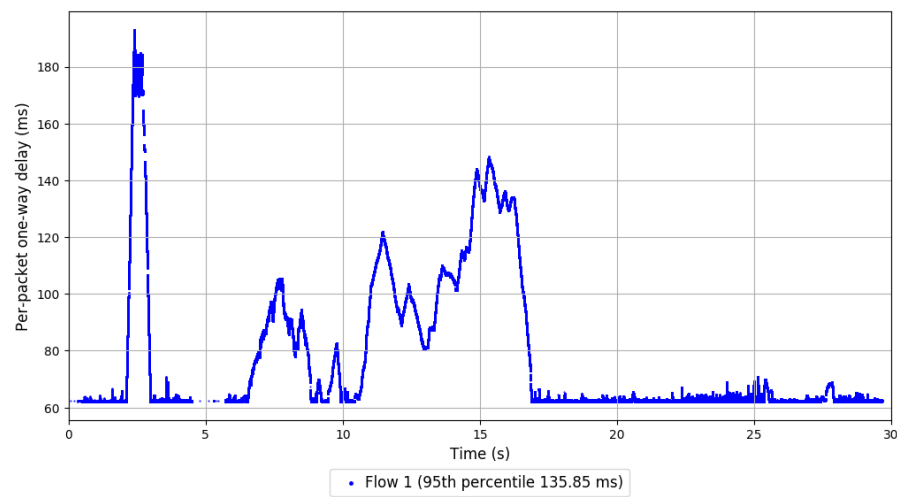
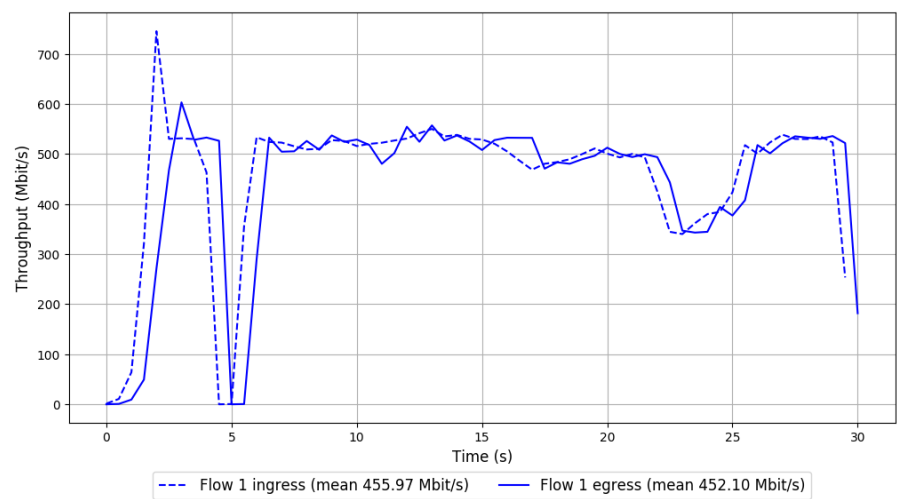
-- Flow 1:

Average throughput: 452.10 Mbit/s

95th percentile per-packet one-way delay: 135.849 ms

Loss rate: 1.28%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 18:28:29

End at: 2018-09-07 18:28:59

Local clock offset: -0.041 ms

Remote clock offset: 0.578 ms

# Below is generated by plot.py at 2018-09-07 21:24:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 493.71 Mbit/s

95th percentile per-packet one-way delay: 168.785 ms

Loss rate: 2.23%

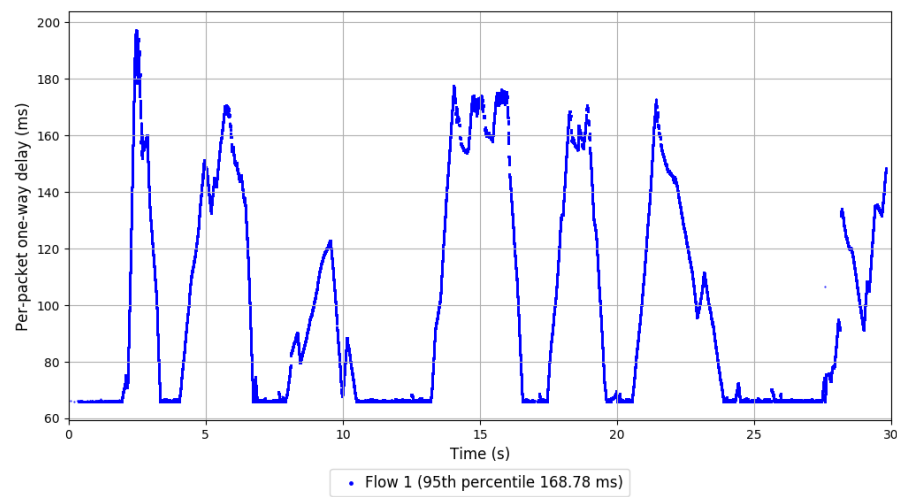
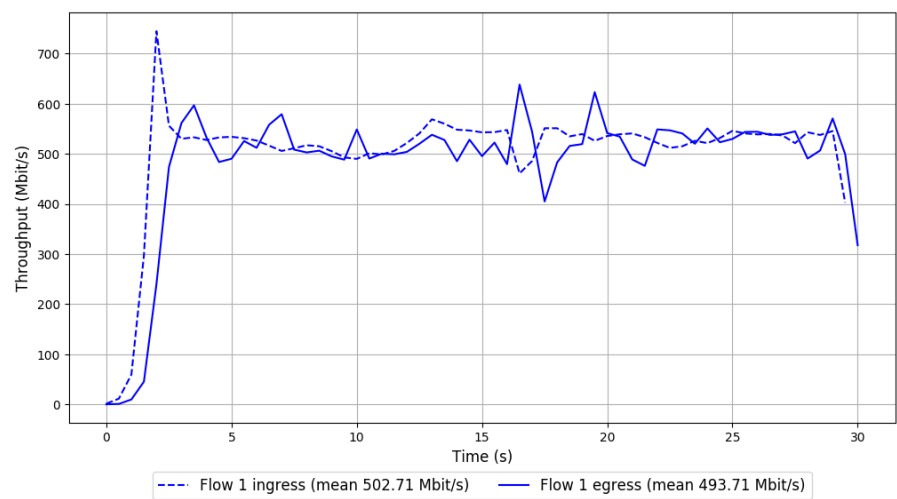
-- Flow 1:

Average throughput: 493.71 Mbit/s

95th percentile per-packet one-way delay: 168.785 ms

Loss rate: 2.23%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 18:54:49

End at: 2018-09-07 18:55:19

Local clock offset: -0.034 ms

Remote clock offset: 0.036 ms

# Below is generated by plot.py at 2018-09-07 21:27:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 451.99 Mbit/s

95th percentile per-packet one-way delay: 139.585 ms

Loss rate: 1.61%

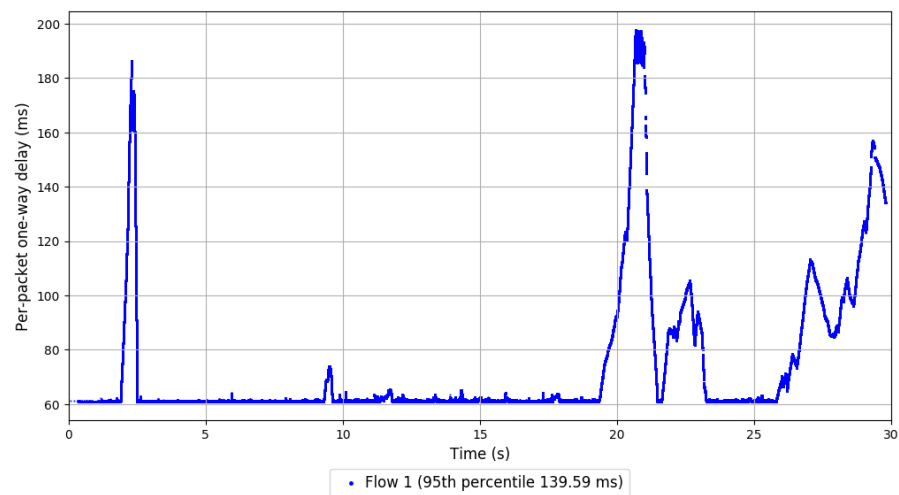
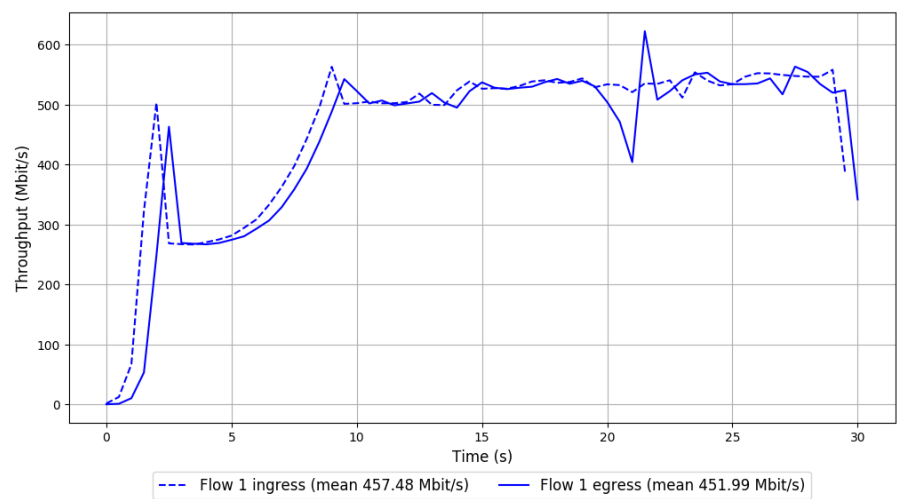
-- Flow 1:

Average throughput: 451.99 Mbit/s

95th percentile per-packet one-way delay: 139.585 ms

Loss rate: 1.61%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 19:20:43

End at: 2018-09-07 19:21:13

Local clock offset: -0.021 ms

Remote clock offset: 0.536 ms

# Below is generated by plot.py at 2018-09-07 21:27:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 428.55 Mbit/s

95th percentile per-packet one-way delay: 188.793 ms

Loss rate: 11.07%

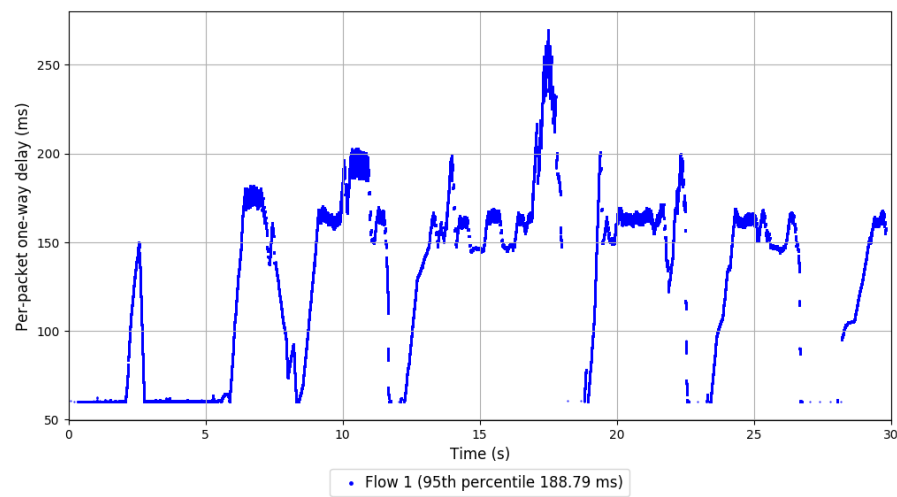
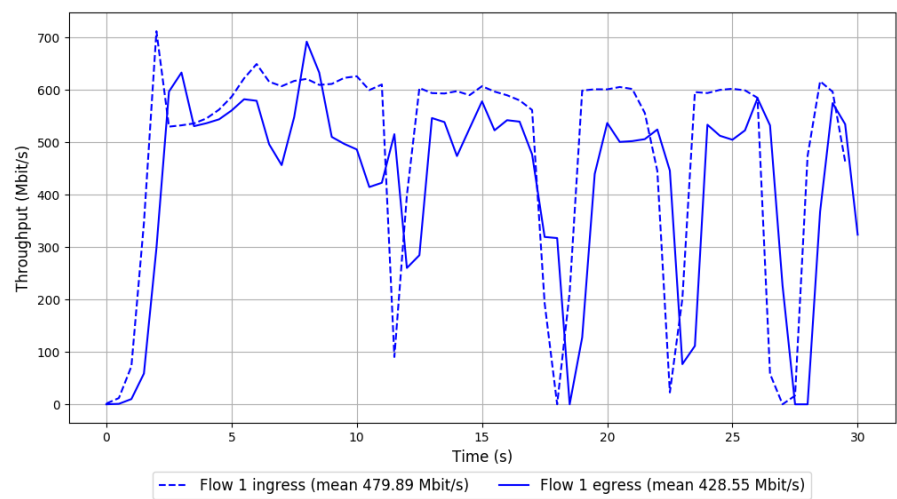
-- Flow 1:

Average throughput: 428.55 Mbit/s

95th percentile per-packet one-way delay: 188.793 ms

Loss rate: 11.07%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 19:46:48

End at: 2018-09-07 19:47:18

Local clock offset: -0.007 ms

Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2018-09-07 21:31:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 506.27 Mbit/s

95th percentile per-packet one-way delay: 167.817 ms

Loss rate: 5.94%

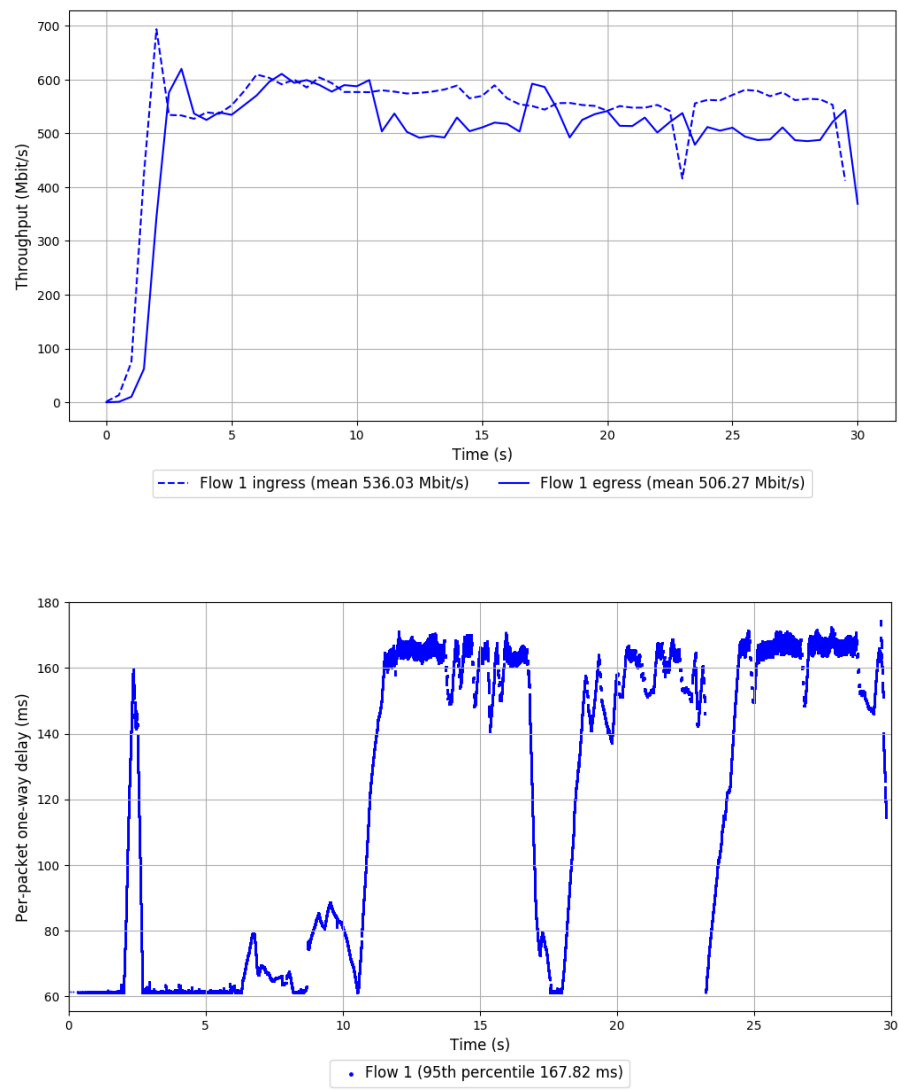
-- Flow 1:

Average throughput: 506.27 Mbit/s

95th percentile per-packet one-way delay: 167.817 ms

Loss rate: 5.94%

Run 5: Report of PCC-Allegro — Data Link

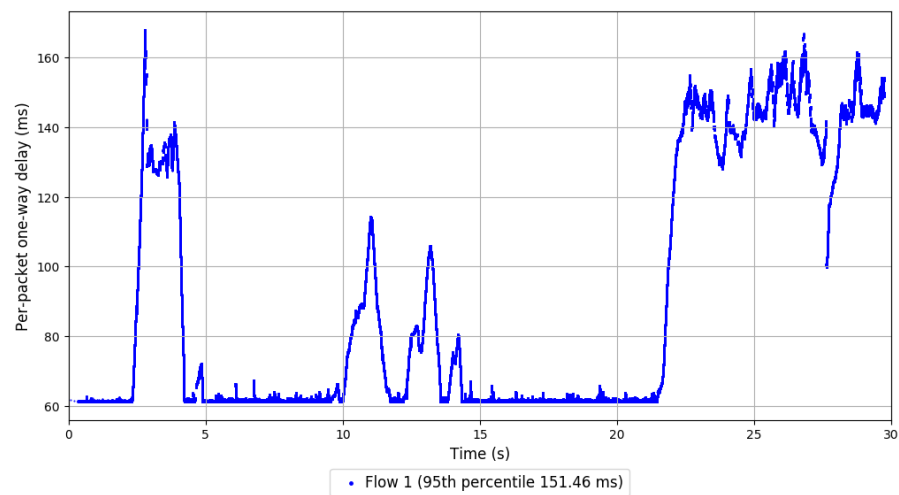
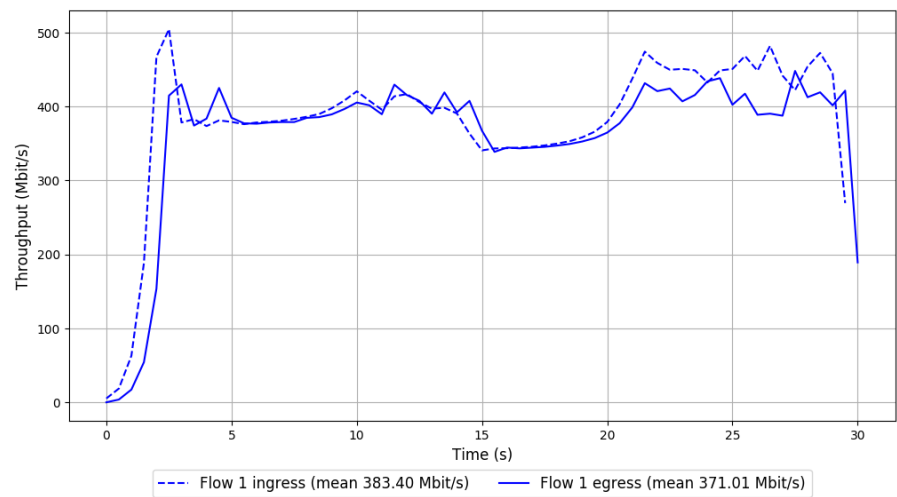


Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 18:07:51  
End at: 2018-09-07 18:08:21  
Local clock offset: -0.094 ms  
Remote clock offset: -0.207 ms

# Below is generated by plot.py at 2018-09-07 21:31:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 371.01 Mbit/s  
95th percentile per-packet one-way delay: 151.463 ms  
Loss rate: 3.65%  
-- Flow 1:  
Average throughput: 371.01 Mbit/s  
95th percentile per-packet one-way delay: 151.463 ms  
Loss rate: 3.65%

Run 1: Report of PCC-Expr — Data Link





Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 18:34:04

End at: 2018-09-07 18:34:34

Local clock offset: -0.059 ms

Remote clock offset: 0.083 ms

# Below is generated by plot.py at 2018-09-07 21:31:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 349.17 Mbit/s

95th percentile per-packet one-way delay: 155.073 ms

Loss rate: 1.34%

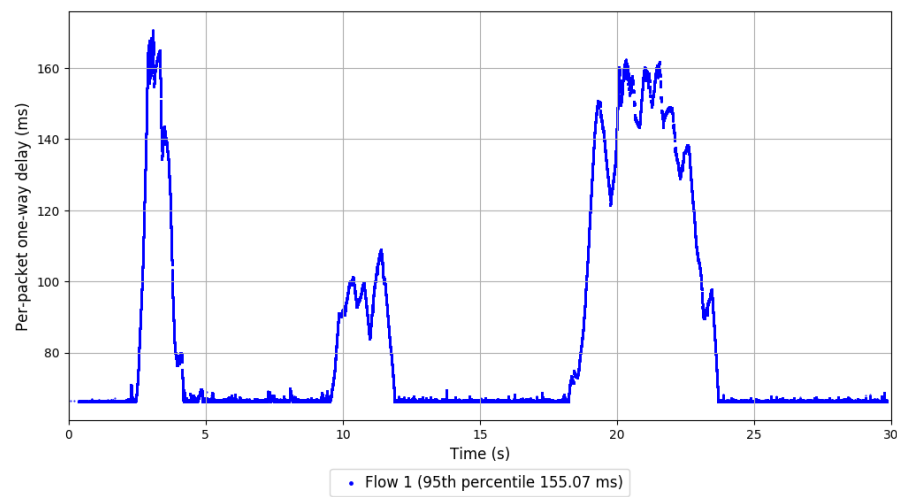
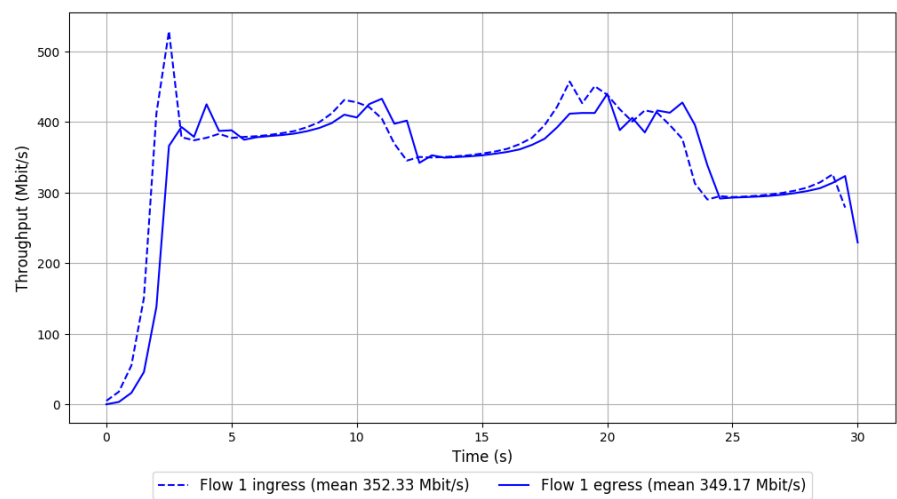
-- Flow 1:

Average throughput: 349.17 Mbit/s

95th percentile per-packet one-way delay: 155.073 ms

Loss rate: 1.34%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 19:00:19

End at: 2018-09-07 19:00:49

Local clock offset: -0.034 ms

Remote clock offset: 0.444 ms

# Below is generated by plot.py at 2018-09-07 21:31:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 388.01 Mbit/s

95th percentile per-packet one-way delay: 152.825 ms

Loss rate: 5.92%

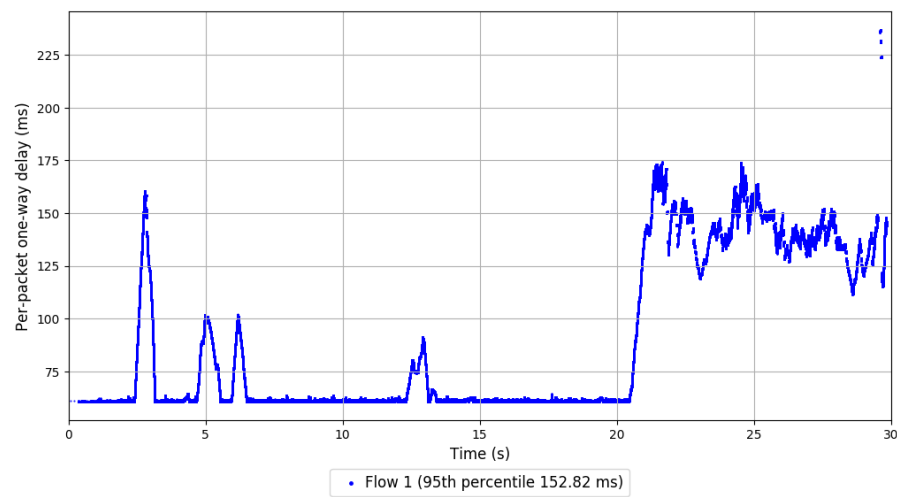
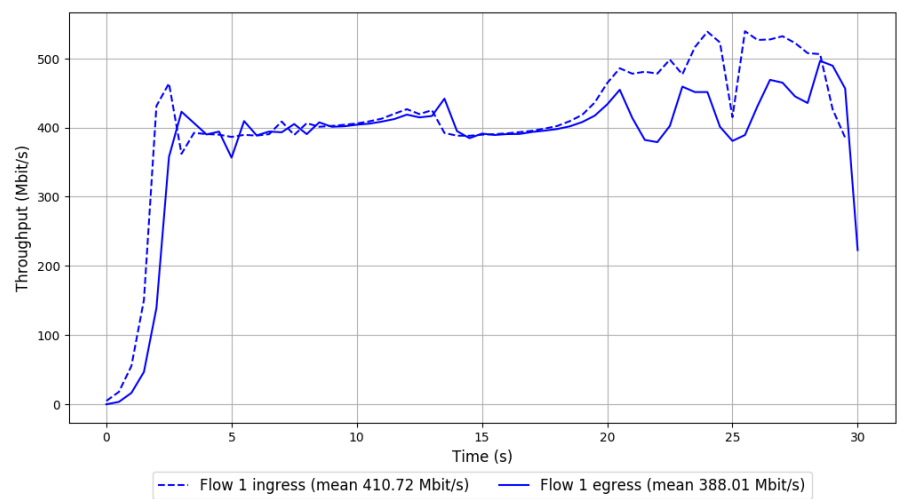
-- Flow 1:

Average throughput: 388.01 Mbit/s

95th percentile per-packet one-way delay: 152.825 ms

Loss rate: 5.92%

Run 3: Report of PCC-Expr — Data Link

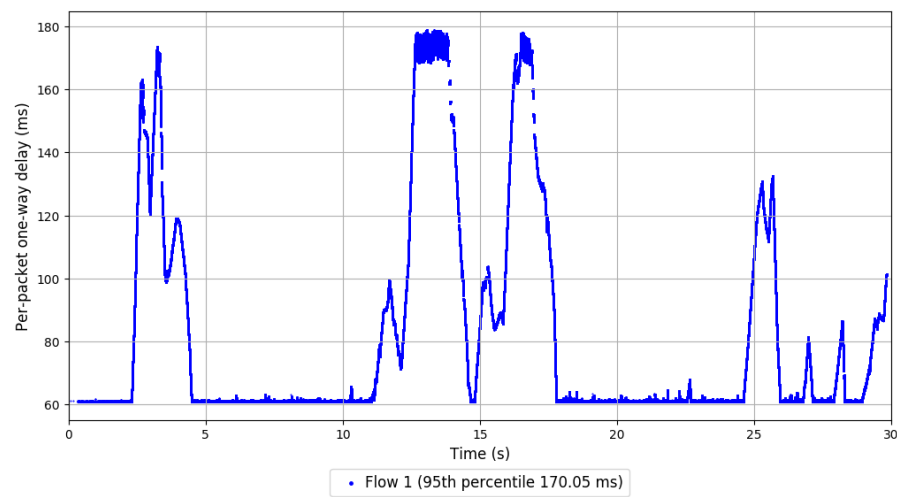
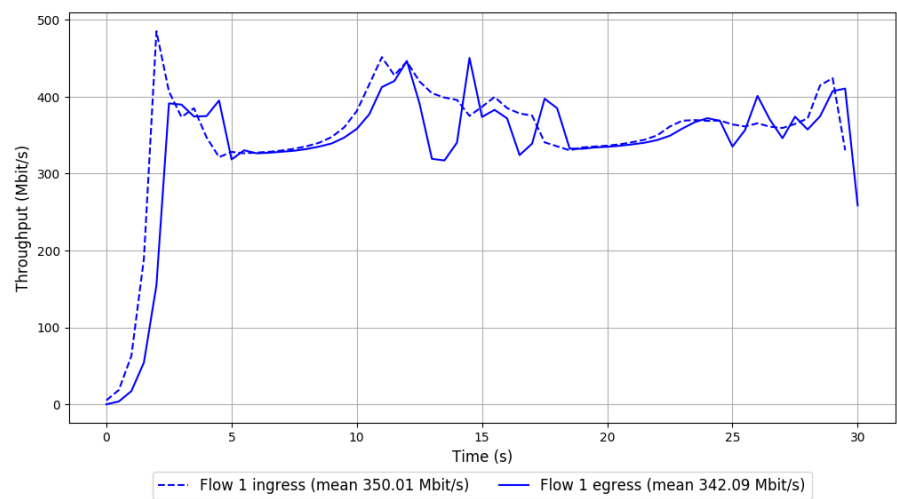


Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 19:26:13  
End at: 2018-09-07 19:26:43  
Local clock offset: -0.004 ms  
Remote clock offset: -0.038 ms

# Below is generated by plot.py at 2018-09-07 21:31:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 342.09 Mbit/s  
95th percentile per-packet one-way delay: 170.050 ms  
Loss rate: 2.66%  
-- Flow 1:  
Average throughput: 342.09 Mbit/s  
95th percentile per-packet one-way delay: 170.050 ms  
Loss rate: 2.66%

Run 4: Report of PCC-Expr — Data Link

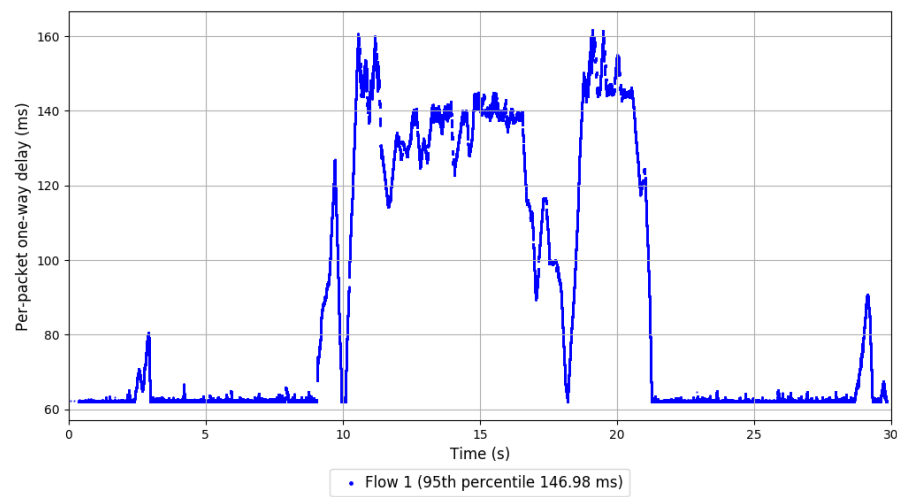
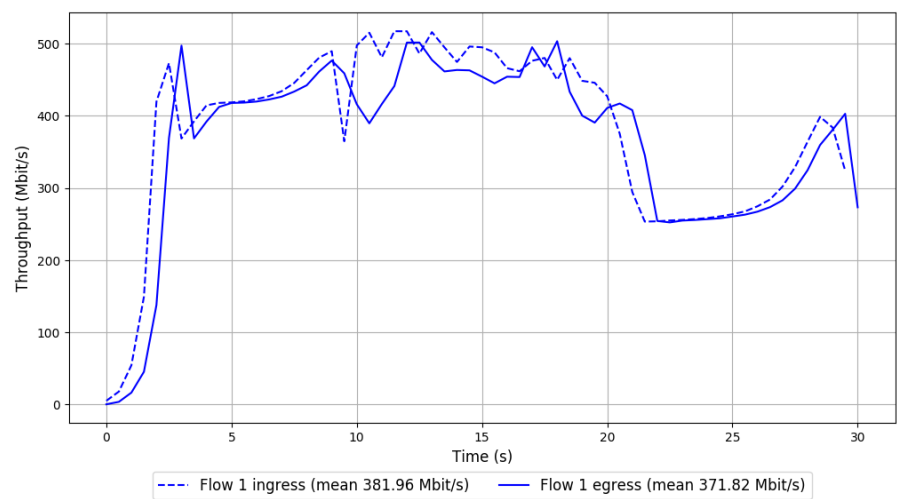


Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 19:52:28  
End at: 2018-09-07 19:52:58  
Local clock offset: -0.024 ms  
Remote clock offset: -1.163 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 371.82 Mbit/s  
95th percentile per-packet one-way delay: 146.980 ms  
Loss rate: 3.05%  
-- Flow 1:  
Average throughput: 371.82 Mbit/s  
95th percentile per-packet one-way delay: 146.980 ms  
Loss rate: 3.05%

Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

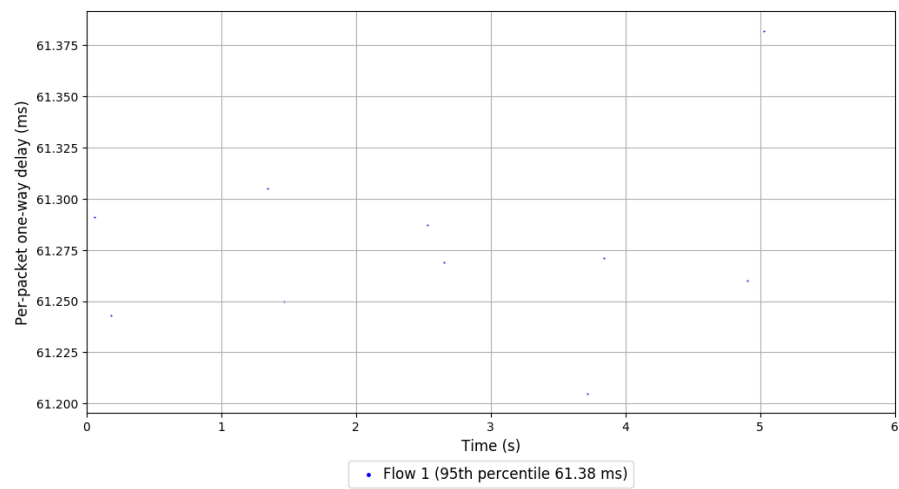
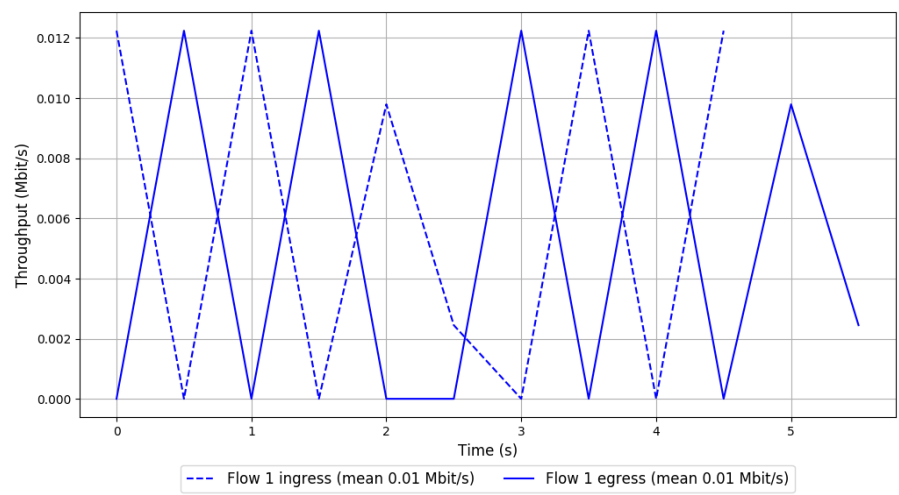
Start at: 2018-09-07 17:58:03

End at: 2018-09-07 17:58:33

Local clock offset: -0.115 ms

Remote clock offset: -0.121 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 18:24:00

End at: 2018-09-07 18:24:30

Local clock offset: -0.073 ms

Remote clock offset: 0.928 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 64.10 Mbit/s

95th percentile per-packet one-way delay: 59.782 ms

Loss rate: 0.72%

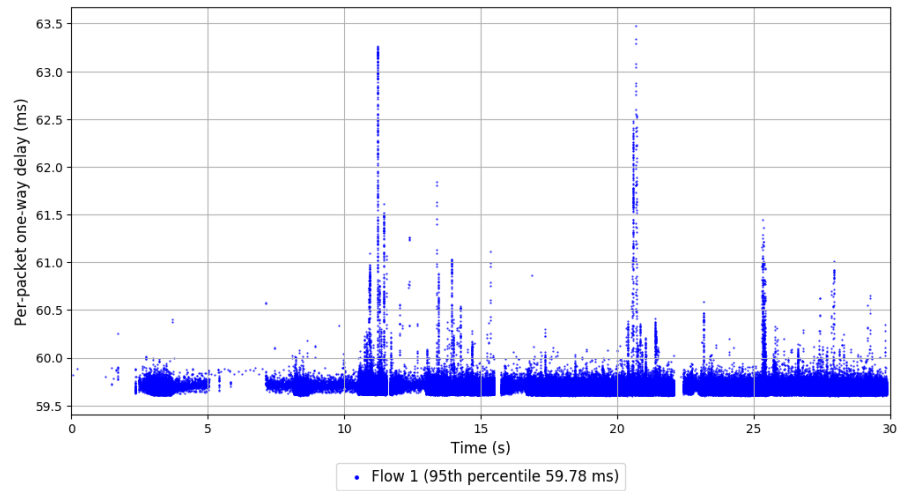
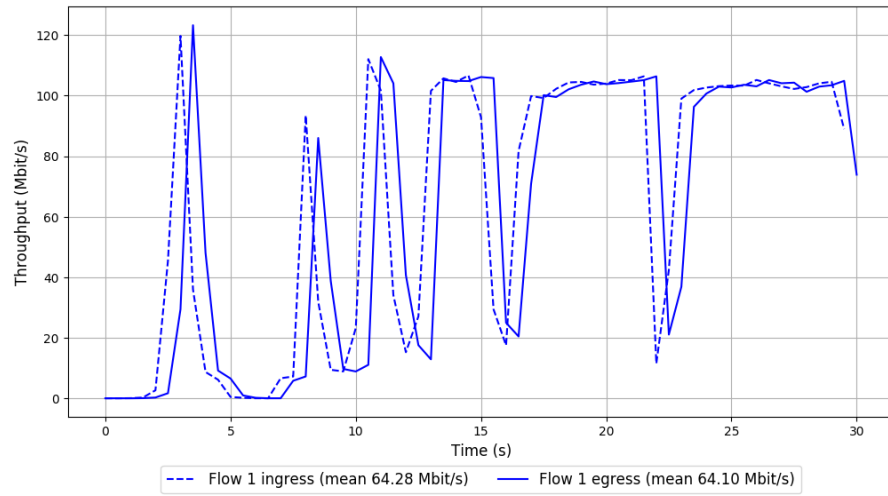
-- Flow 1:

Average throughput: 64.10 Mbit/s

95th percentile per-packet one-way delay: 59.782 ms

Loss rate: 0.72%

## Run 2: Report of QUIC Cubic — Data Link

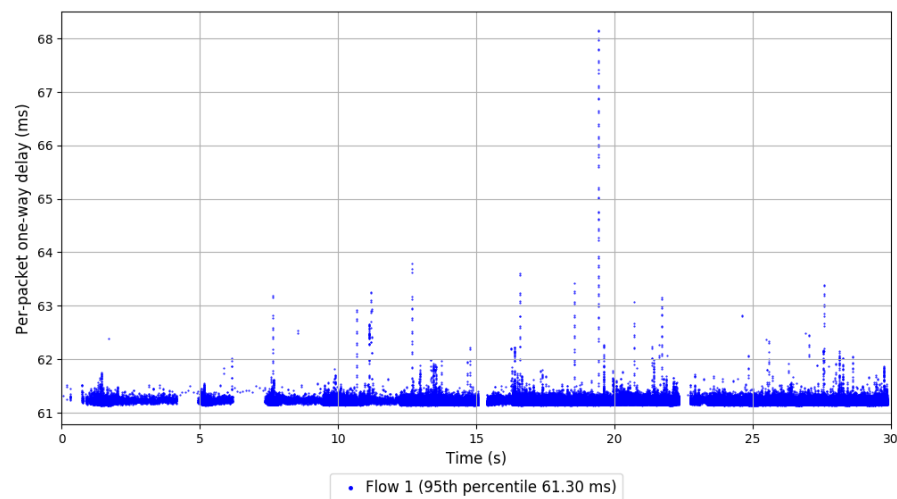
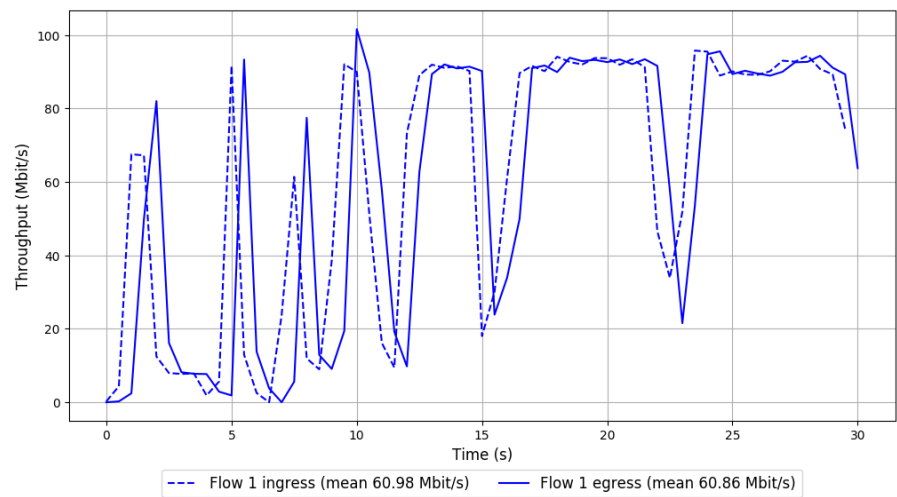


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 18:50:21  
End at: 2018-09-07 18:50:51  
Local clock offset: -0.041 ms  
Remote clock offset: -0.223 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 60.86 Mbit/s  
95th percentile per-packet one-way delay: 61.305 ms  
Loss rate: 0.60%  
-- Flow 1:  
Average throughput: 60.86 Mbit/s  
95th percentile per-packet one-way delay: 61.305 ms  
Loss rate: 0.60%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 19:16:15

End at: 2018-09-07 19:16:45

Local clock offset: 0.003 ms

Remote clock offset: 0.93 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 68.67 Mbit/s

95th percentile per-packet one-way delay: 59.891 ms

Loss rate: 0.64%

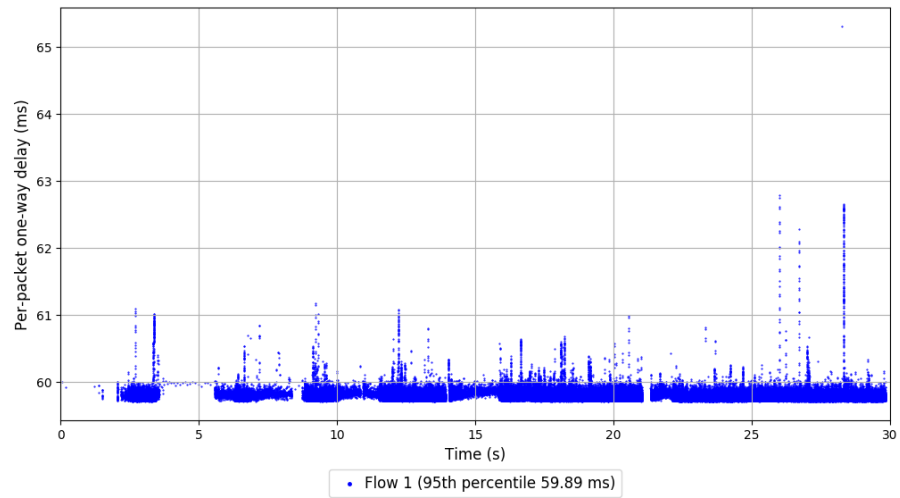
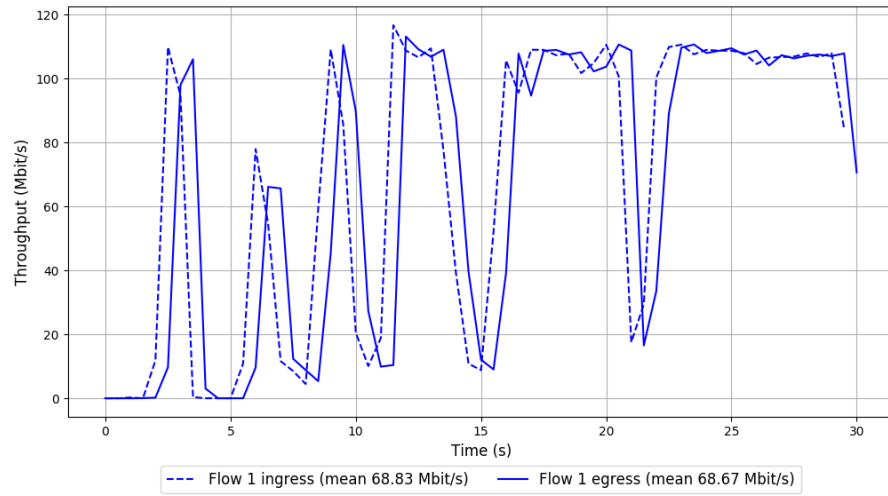
-- Flow 1:

Average throughput: 68.67 Mbit/s

95th percentile per-packet one-way delay: 59.891 ms

Loss rate: 0.64%

#### Run 4: Report of QUIC Cubic — Data Link



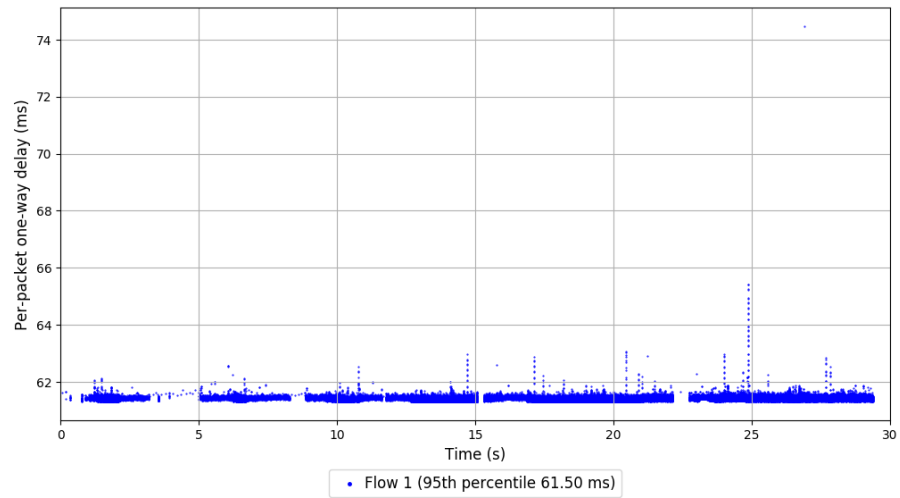
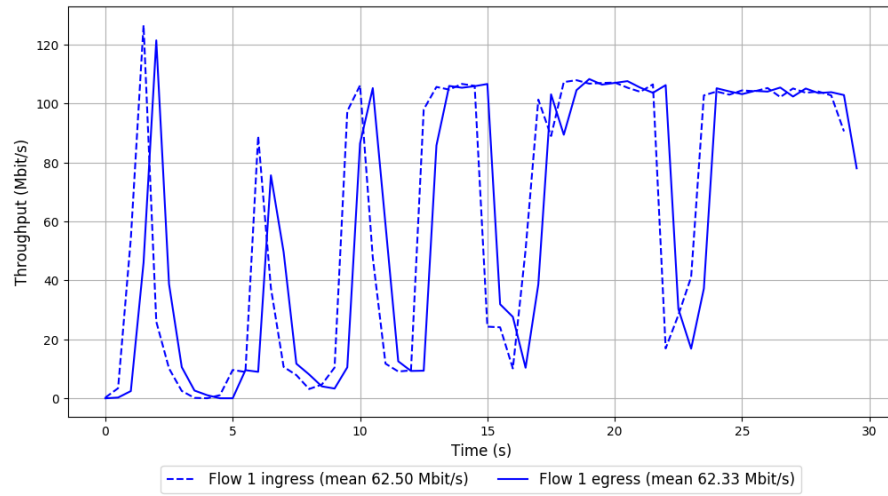


Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 19:42:21  
End at: 2018-09-07 19:42:51  
Local clock offset: -0.001 ms  
Remote clock offset: -0.371 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 62.33 Mbit/s  
95th percentile per-packet one-way delay: 61.501 ms  
Loss rate: 0.69%  
-- Flow 1:  
Average throughput: 62.33 Mbit/s  
95th percentile per-packet one-way delay: 61.501 ms  
Loss rate: 0.69%

### Run 5: Report of QUIC Cubic — Data Link

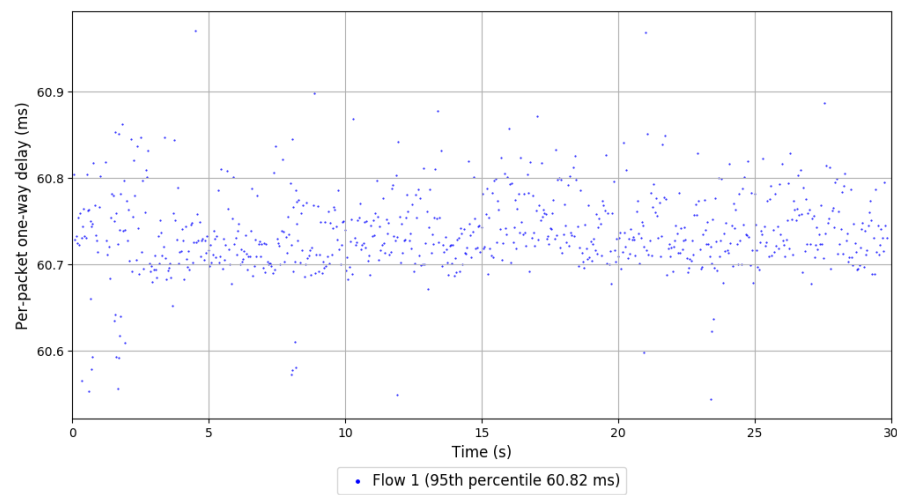
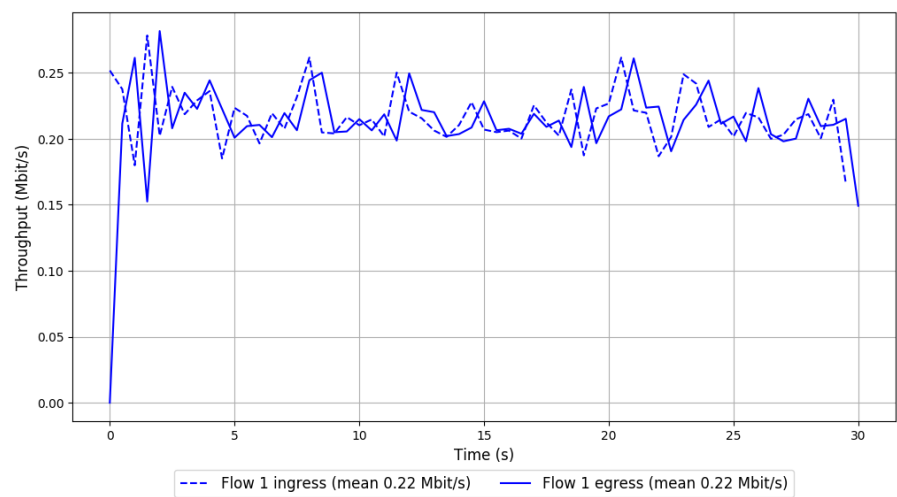


```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 18:06:44
End at: 2018-09-07 18:07:14
Local clock offset: -0.097 ms
Remote clock offset: 0.414 ms

# Below is generated by plot.py at 2018-09-07 21:36:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.818 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.818 ms
Loss rate: 0.38%
```

Run 1: Report of SReAM — Data Link

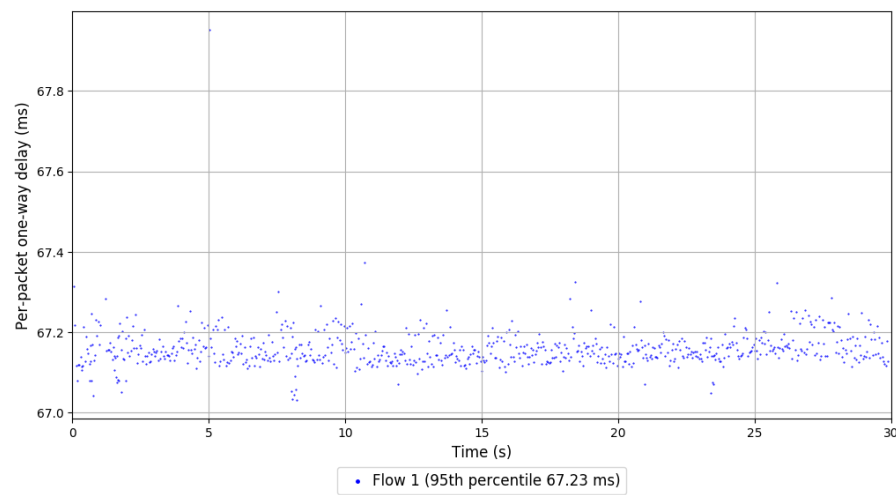
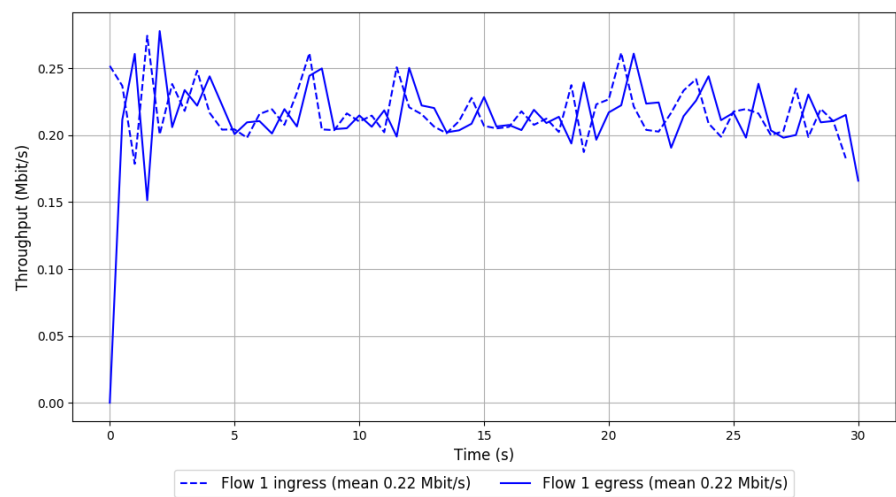


Run 2: Statistics of SCReAM

Start at: 2018-09-07 18:32:57  
End at: 2018-09-07 18:33:27  
Local clock offset: -0.102 ms  
Remote clock offset: -0.461 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 67.231 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 67.231 ms  
Loss rate: 0.38%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-07 18:59:12

End at: 2018-09-07 18:59:42

Local clock offset: -0.027 ms

Remote clock offset: -0.46 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.617 ms

Loss rate: 0.38%

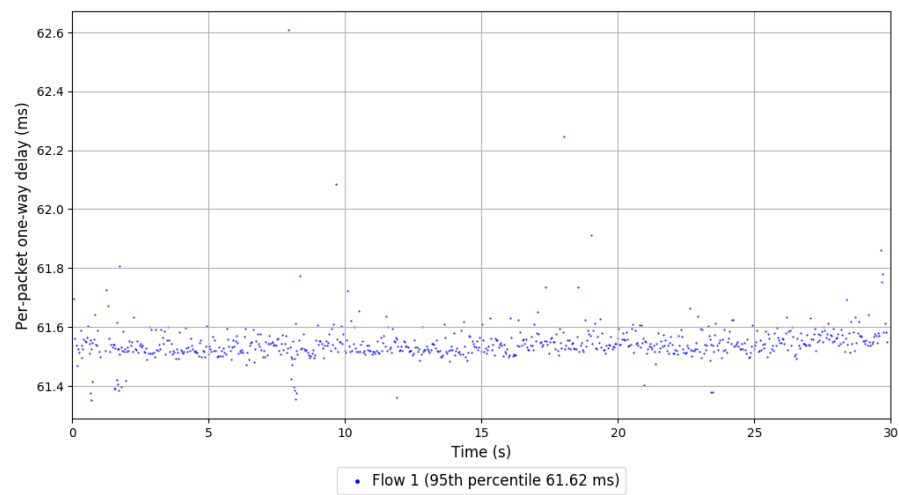
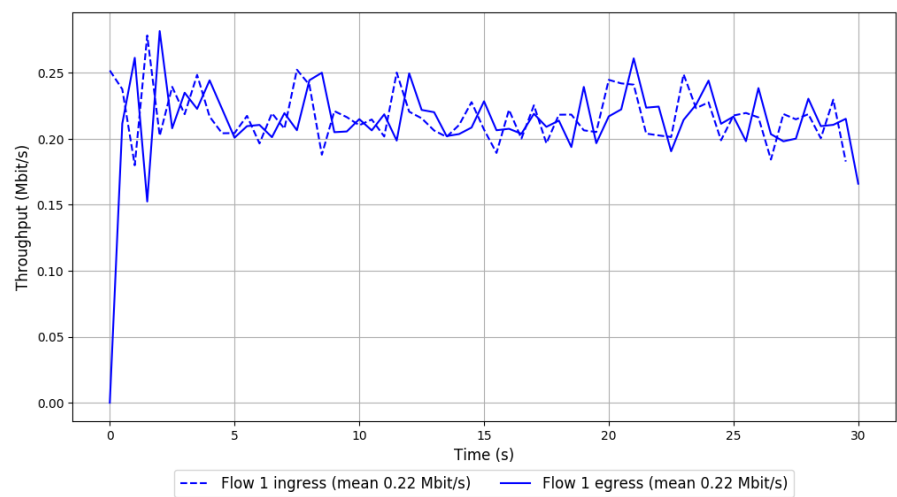
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.617 ms

Loss rate: 0.38%

Run 3: Report of SReAM — Data Link





Run 4: Statistics of SCReAM

Start at: 2018-09-07 19:25:06

End at: 2018-09-07 19:25:36

Local clock offset: 0.01 ms

Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 67.034 ms

Loss rate: 0.38%

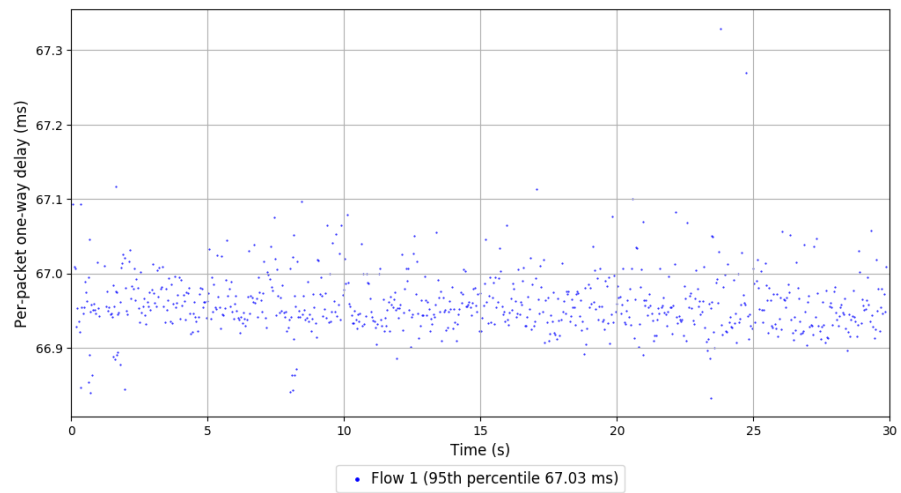
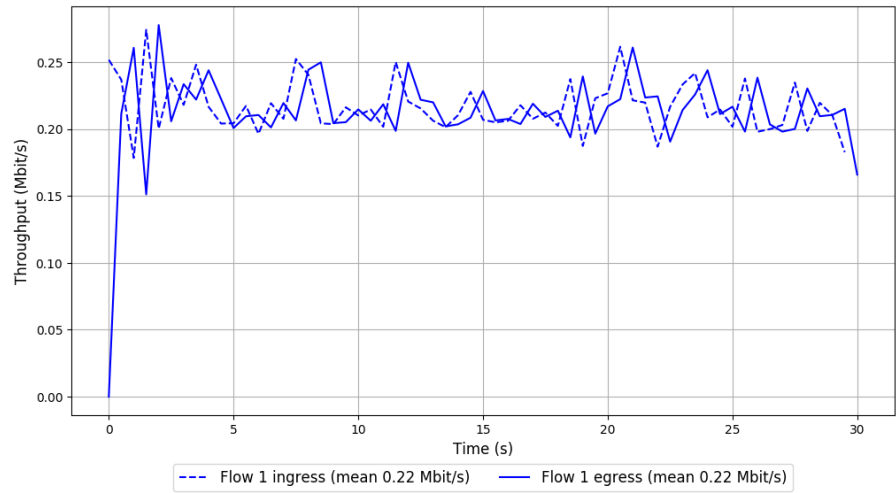
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 67.034 ms

Loss rate: 0.38%

#### Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-07 19:51:22

End at: 2018-09-07 19:51:52

Local clock offset: -0.003 ms

Remote clock offset: -0.4 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 67.050 ms

Loss rate: 0.38%

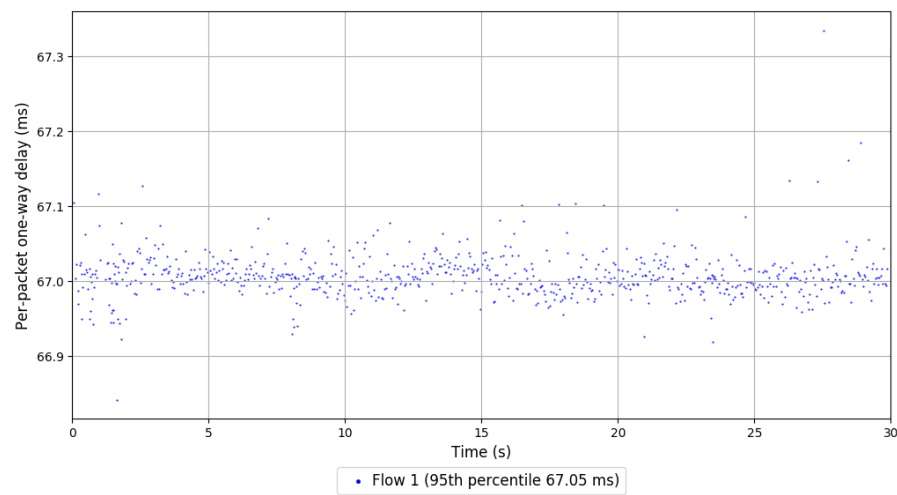
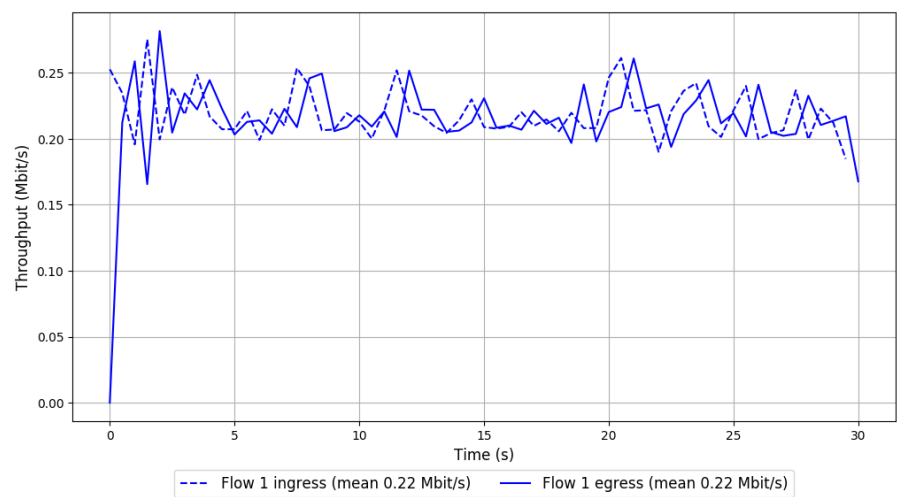
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 67.050 ms

Loss rate: 0.38%

Run 5: Report of SReAM — Data Link

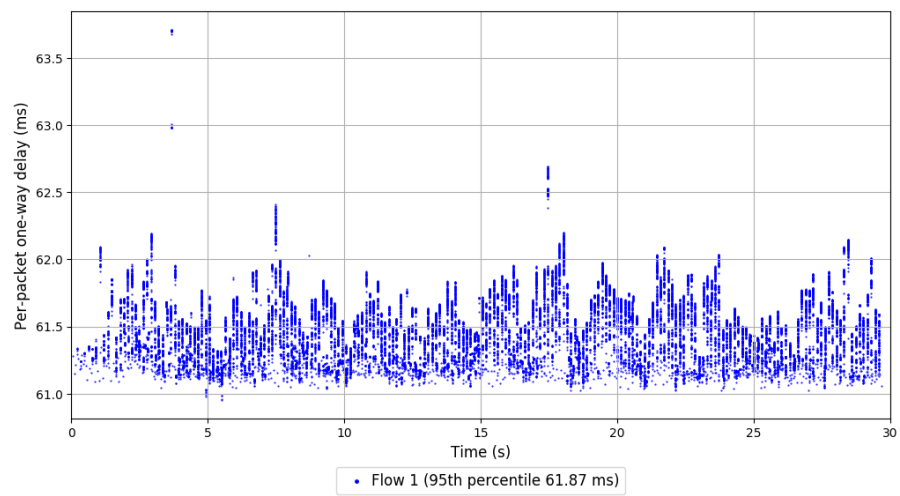
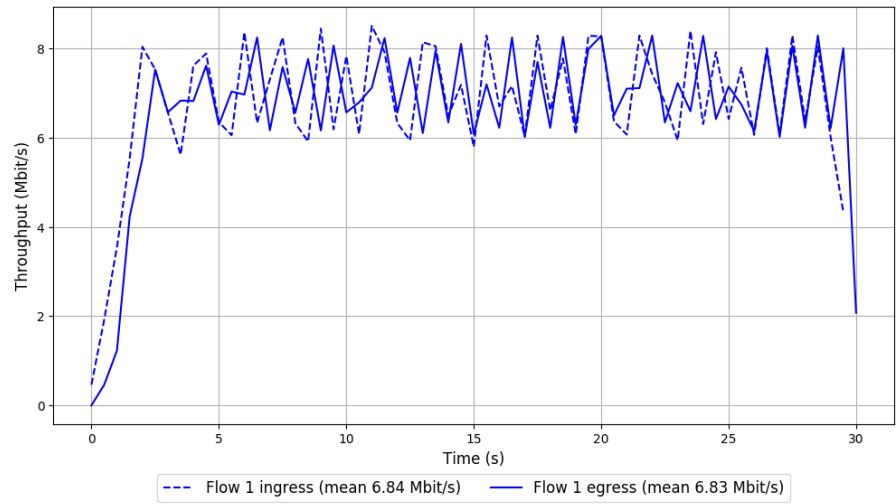


Run 1: Statistics of Sprout

Start at: 2018-09-07 18:05:36  
End at: 2018-09-07 18:06:06  
Local clock offset: -0.097 ms  
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.83 Mbit/s  
95th percentile per-packet one-way delay: 61.874 ms  
Loss rate: 0.56%  
-- Flow 1:  
Average throughput: 6.83 Mbit/s  
95th percentile per-packet one-way delay: 61.874 ms  
Loss rate: 0.56%

# Run 1: Report of Sprout — Data Link

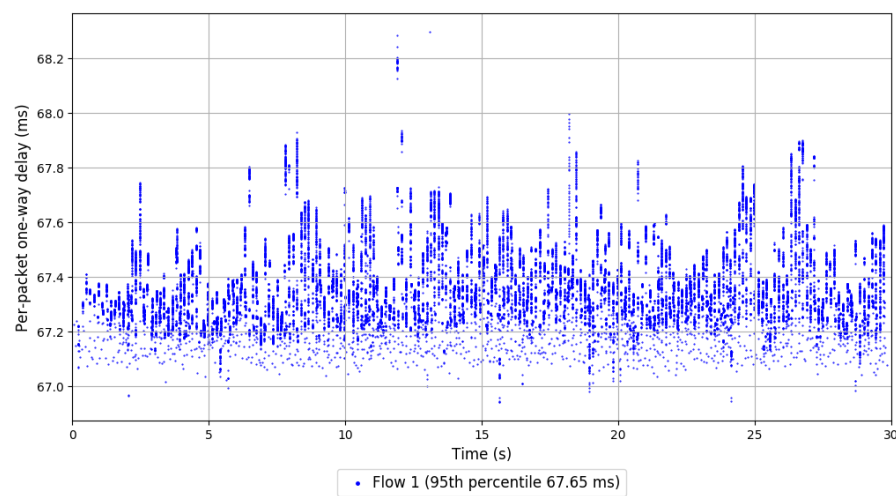
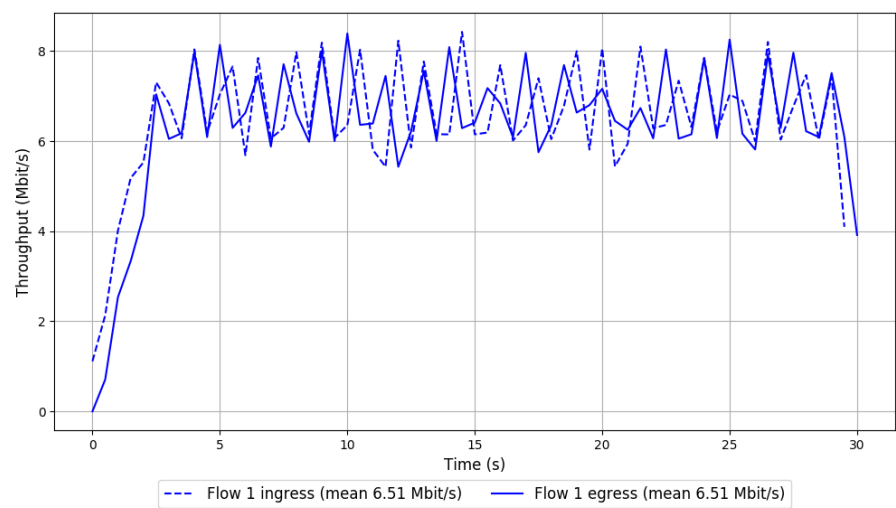


Run 2: Statistics of Sprout

Start at: 2018-09-07 18:31:50  
End at: 2018-09-07 18:32:20  
Local clock offset: -0.084 ms  
Remote clock offset: -0.214 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.51 Mbit/s  
95th percentile per-packet one-way delay: 67.654 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 6.51 Mbit/s  
95th percentile per-packet one-way delay: 67.654 ms  
Loss rate: 0.51%

Run 2: Report of Sprout — Data Link





Run 3: Statistics of Sprout

Start at: 2018-09-07 18:58:04

End at: 2018-09-07 18:58:34

Local clock offset: -0.021 ms

Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.93 Mbit/s

95th percentile per-packet one-way delay: 61.962 ms

Loss rate: 0.54%

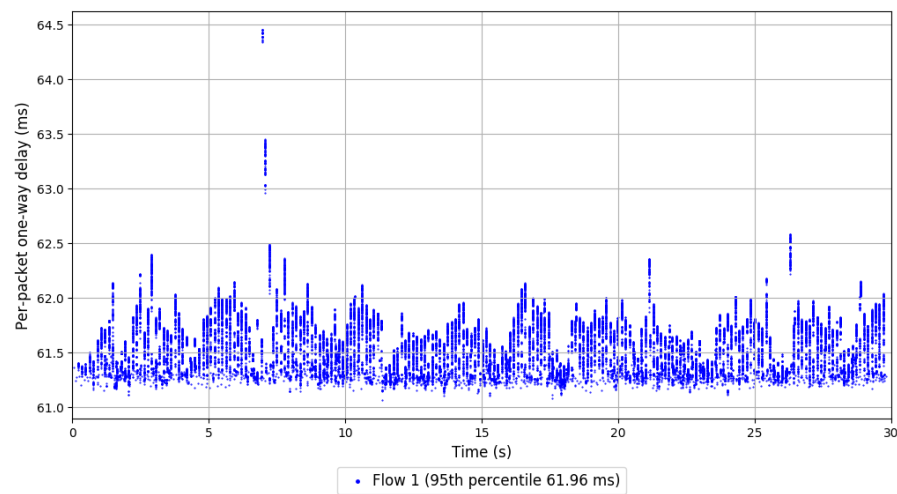
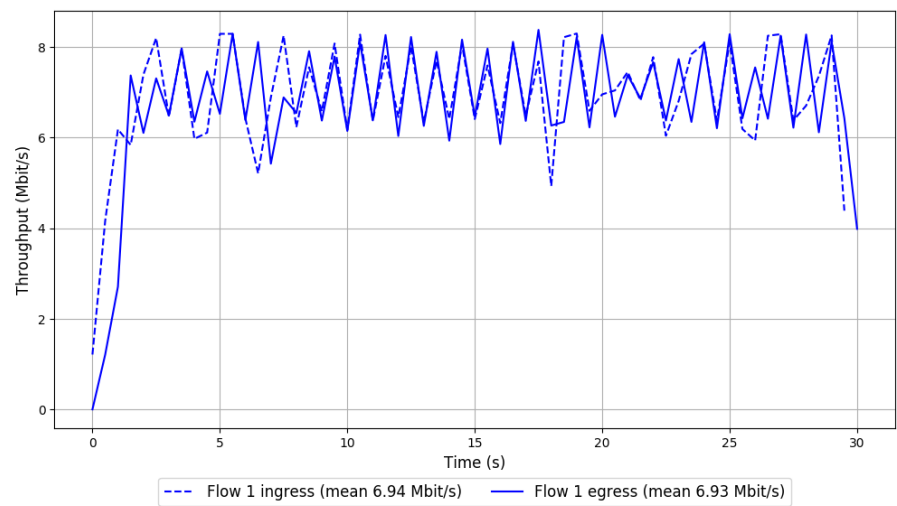
-- Flow 1:

Average throughput: 6.93 Mbit/s

95th percentile per-packet one-way delay: 61.962 ms

Loss rate: 0.54%

Run 3: Report of Sprout — Data Link

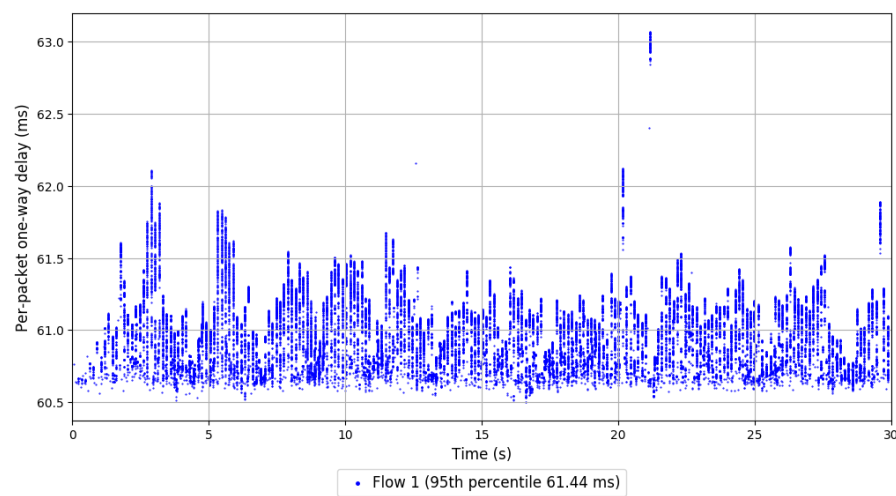
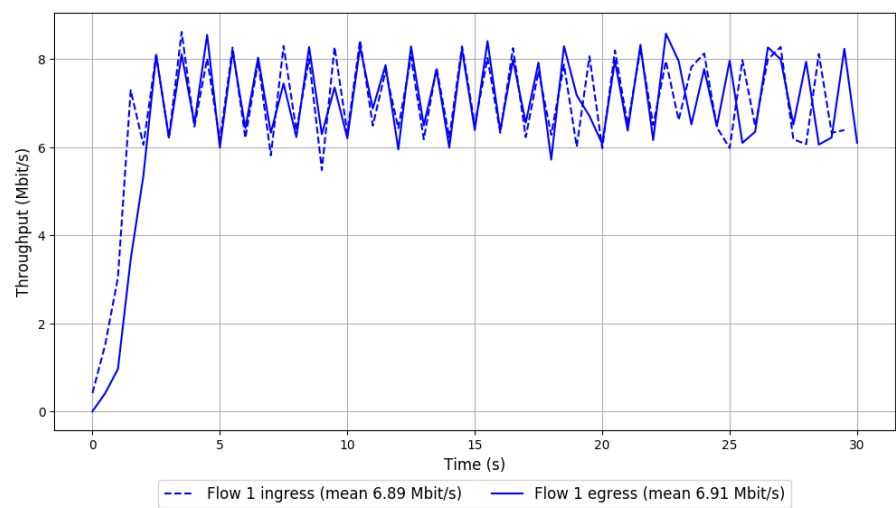


Run 4: Statistics of Sprout

Start at: 2018-09-07 19:23:59  
End at: 2018-09-07 19:24:29  
Local clock offset: -0.038 ms  
Remote clock offset: 0.481 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.91 Mbit/s  
95th percentile per-packet one-way delay: 61.436 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 6.91 Mbit/s  
95th percentile per-packet one-way delay: 61.436 ms  
Loss rate: 0.07%

Run 4: Report of Sprout — Data Link

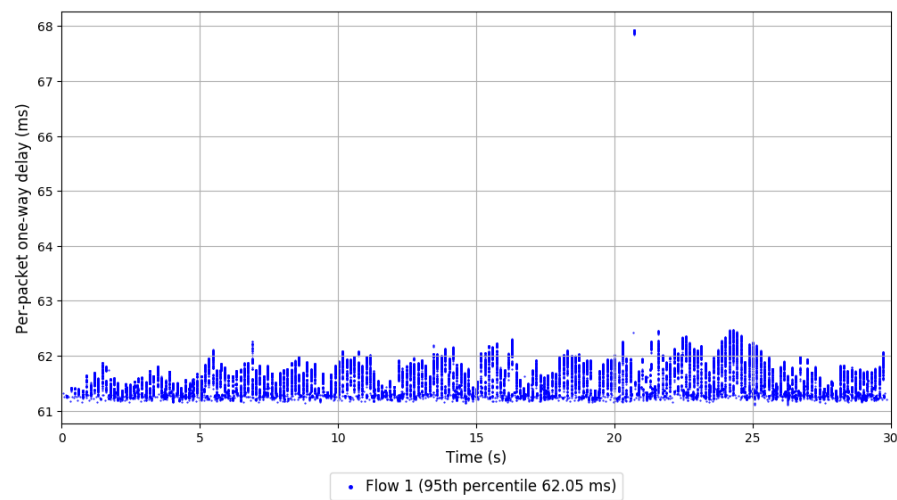
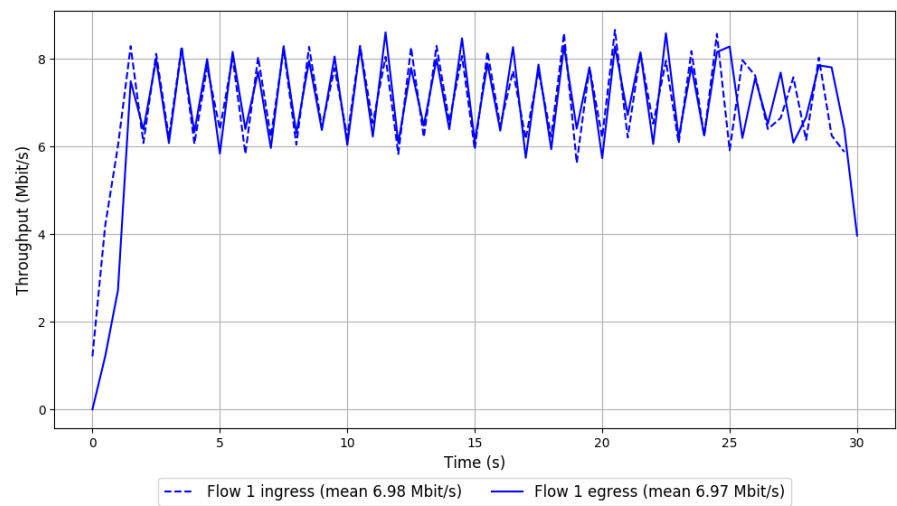


Run 5: Statistics of Sprout

Start at: 2018-09-07 19:50:14  
End at: 2018-09-07 19:50:44  
Local clock offset: 0.01 ms  
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.97 Mbit/s  
95th percentile per-packet one-way delay: 62.047 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 6.97 Mbit/s  
95th percentile per-packet one-way delay: 62.047 ms  
Loss rate: 0.48%

Run 5: Report of Sprout — Data Link

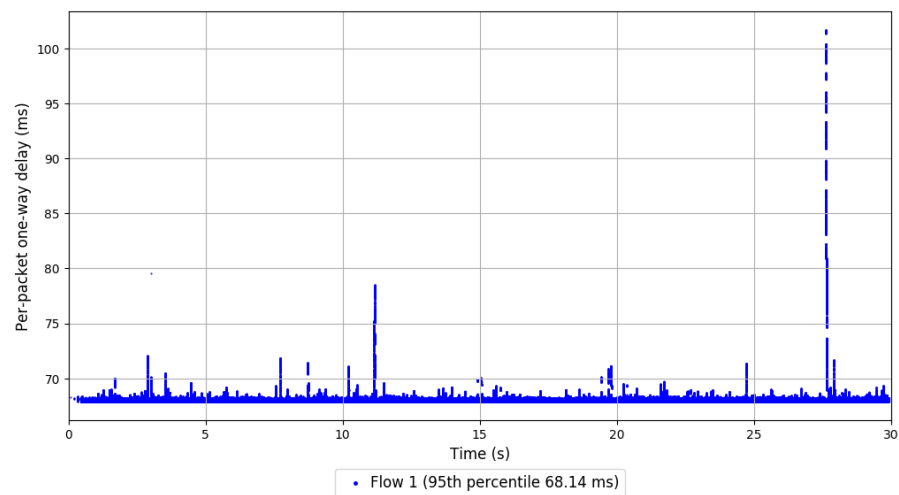
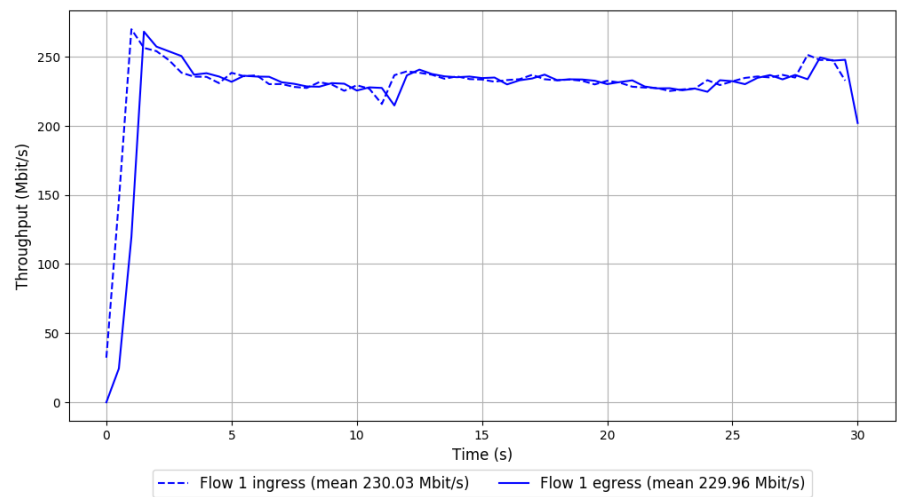


Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 18:22:32  
End at: 2018-09-07 18:23:02  
Local clock offset: -0.068 ms  
Remote clock offset: -1.254 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 229.96 Mbit/s  
95th percentile per-packet one-way delay: 68.144 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 229.96 Mbit/s  
95th percentile per-packet one-way delay: 68.144 ms  
Loss rate: 0.48%

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



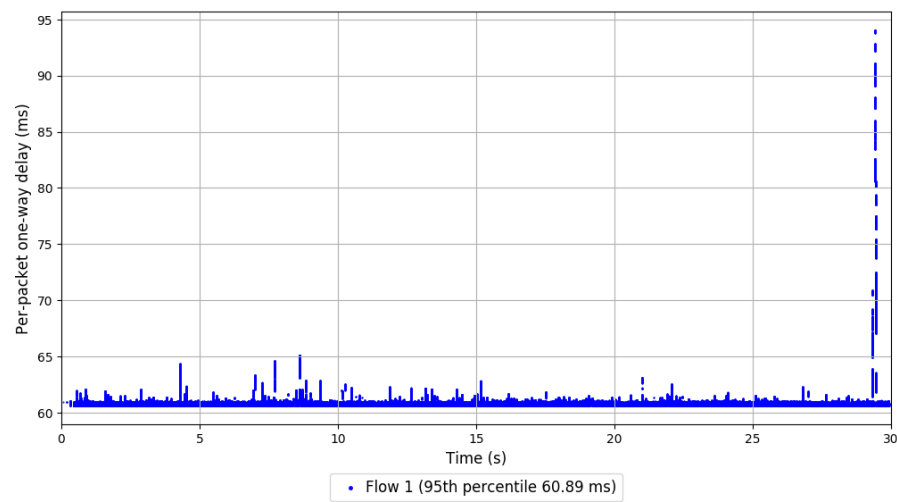
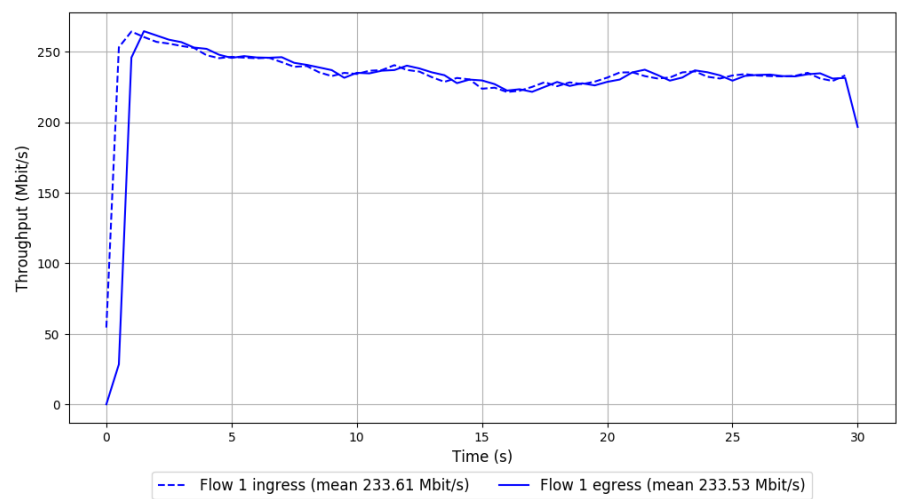


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 18:48:53  
End at: 2018-09-07 18:49:23  
Local clock offset: -0.058 ms  
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2018-09-07 21:36:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 233.53 Mbit/s  
95th percentile per-packet one-way delay: 60.892 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 233.53 Mbit/s  
95th percentile per-packet one-way delay: 60.892 ms  
Loss rate: 0.44%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 19:14:47

End at: 2018-09-07 19:15:17

Local clock offset: -0.016 ms

Remote clock offset: -0.15 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 228.41 Mbit/s

95th percentile per-packet one-way delay: 61.298 ms

Loss rate: 0.44%

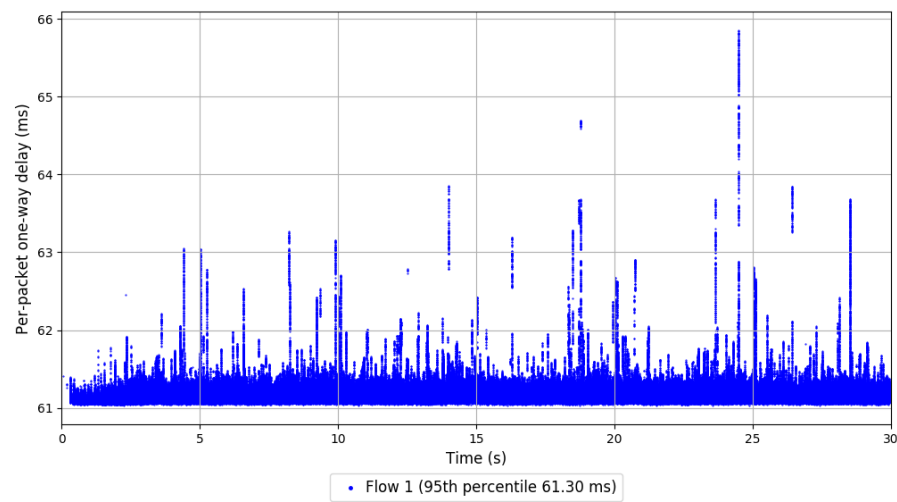
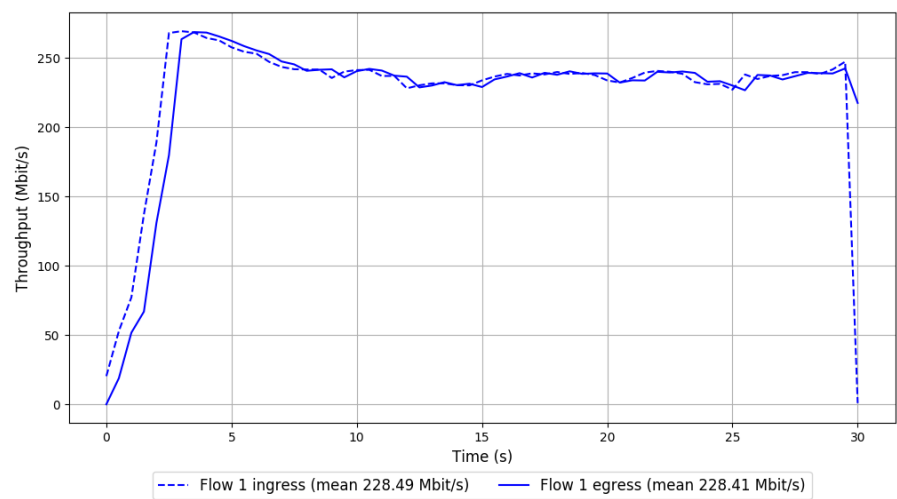
-- Flow 1:

Average throughput: 228.41 Mbit/s

95th percentile per-packet one-way delay: 61.298 ms

Loss rate: 0.44%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-07 19:40:53

End at: 2018-09-07 19:41:23

Local clock offset: 0.0 ms

Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 231.58 Mbit/s

95th percentile per-packet one-way delay: 61.605 ms

Loss rate: 0.43%

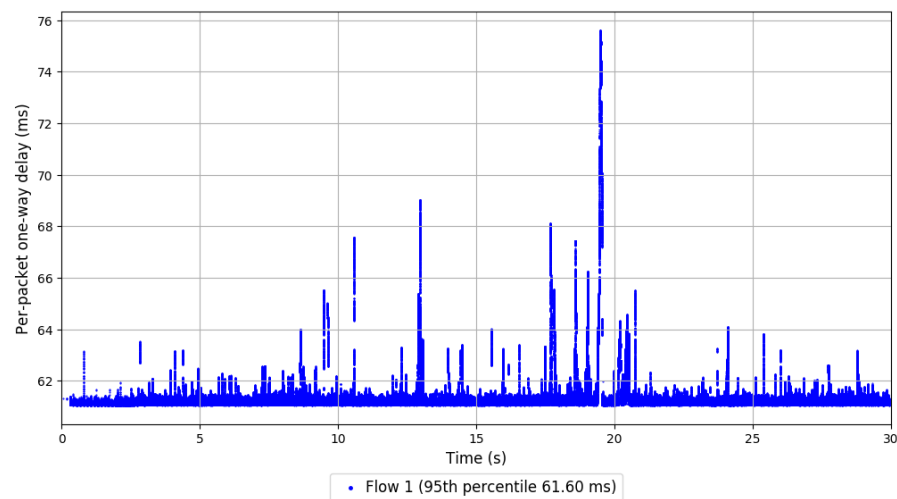
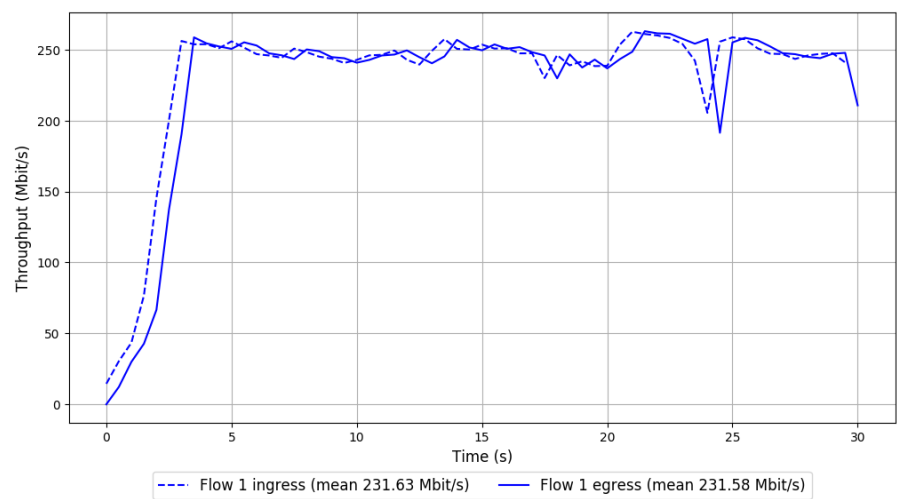
-- Flow 1:

Average throughput: 231.58 Mbit/s

95th percentile per-packet one-way delay: 61.605 ms

Loss rate: 0.43%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 20:07:17

End at: 2018-09-07 20:07:47

Local clock offset: 0.004 ms

Remote clock offset: -0.166 ms

# Below is generated by plot.py at 2018-09-07 21:36:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 234.24 Mbit/s

95th percentile per-packet one-way delay: 61.373 ms

Loss rate: 0.46%

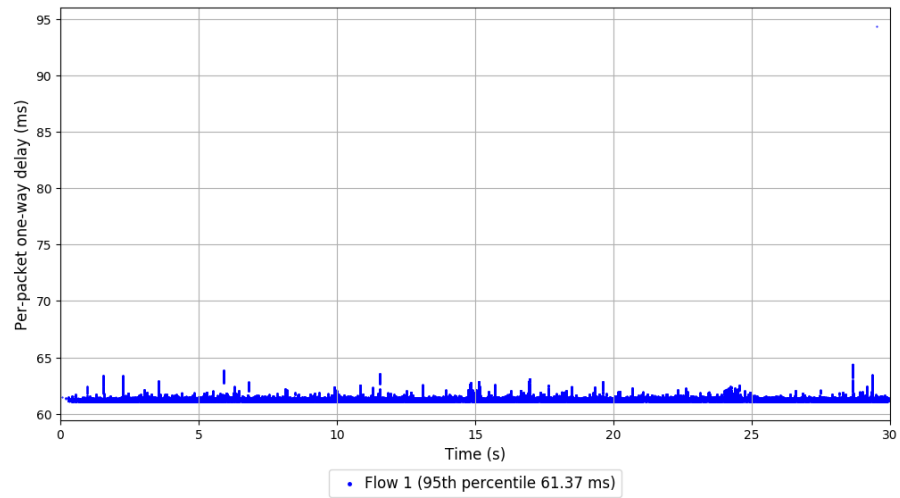
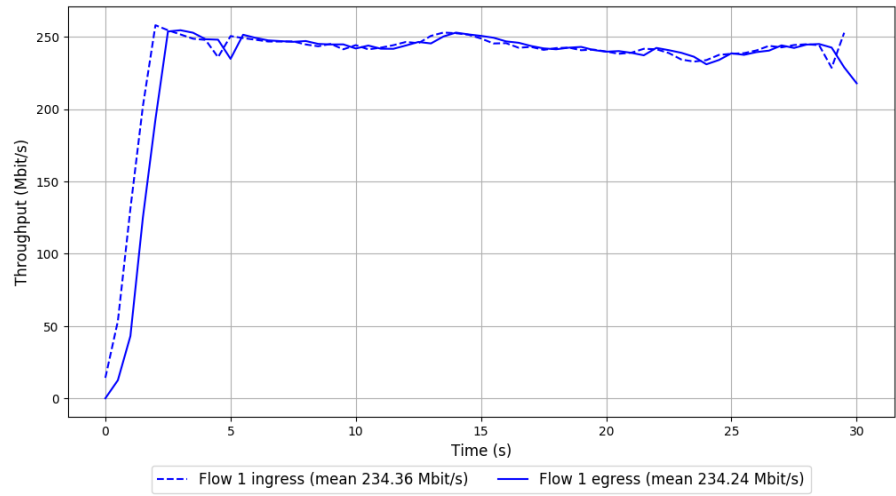
-- Flow 1:

Average throughput: 234.24 Mbit/s

95th percentile per-packet one-way delay: 61.373 ms

Loss rate: 0.46%

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





Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 18:18:28

End at: 2018-09-07 18:18:58

Local clock offset: -0.101 ms

Remote clock offset: 1.174 ms

# Below is generated by plot.py at 2018-09-07 21:39:24

# Datalink statistics

-- Total of 1 flow:

Average throughput: 462.57 Mbit/s

95th percentile per-packet one-way delay: 60.795 ms

Loss rate: 0.42%

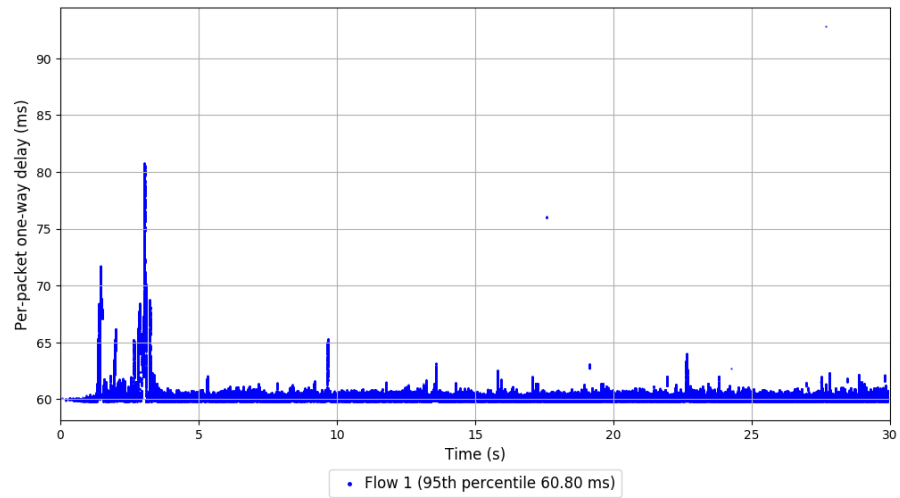
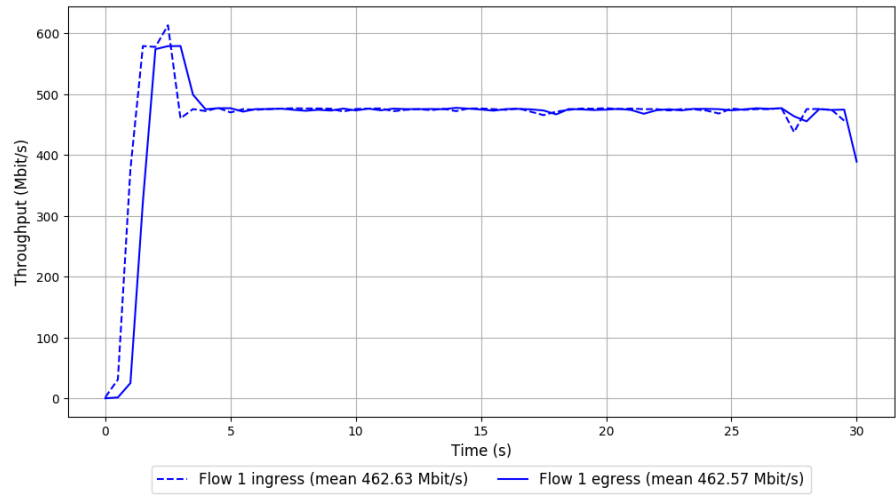
-- Flow 1:

Average throughput: 462.57 Mbit/s

95th percentile per-packet one-way delay: 60.795 ms

Loss rate: 0.42%

## Run 1: Report of TCP Vegas — Data Link

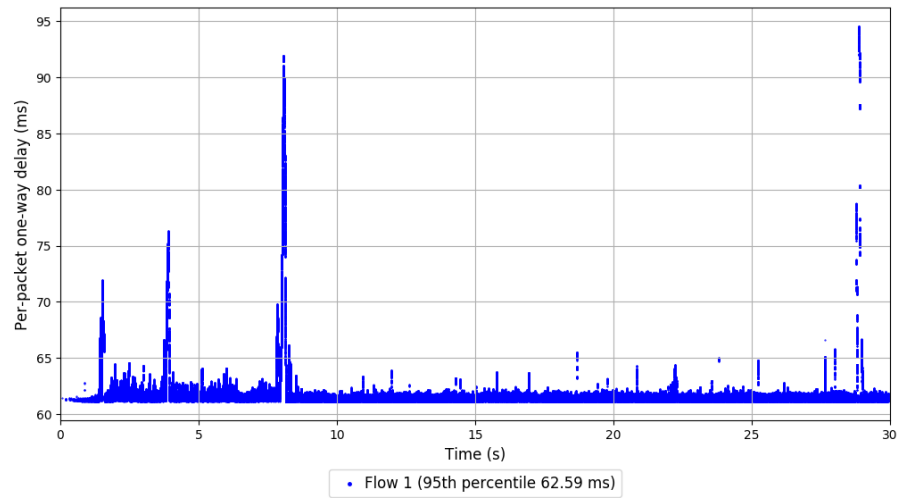
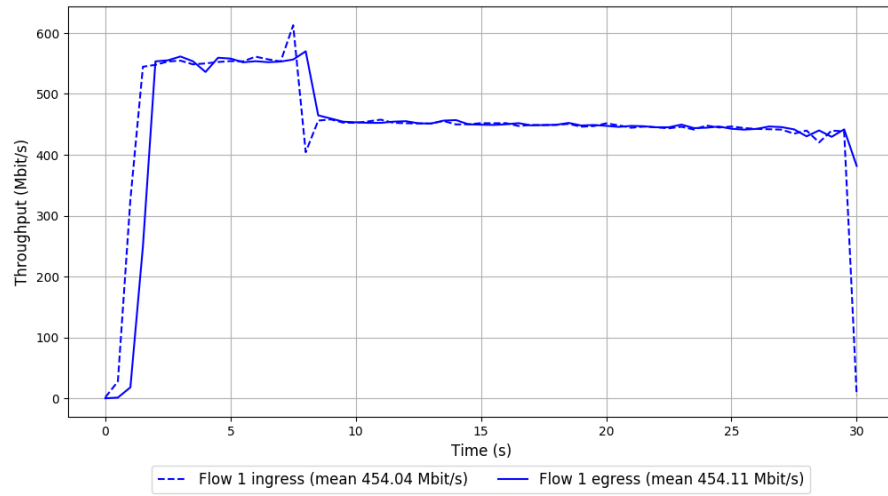


Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 18:44:45  
End at: 2018-09-07 18:45:15  
Local clock offset: -0.029 ms  
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2018-09-07 21:39:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 454.11 Mbit/s  
95th percentile per-packet one-way delay: 62.587 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 454.11 Mbit/s  
95th percentile per-packet one-way delay: 62.587 ms  
Loss rate: 0.39%

## Run 2: Report of TCP Vegas — Data Link

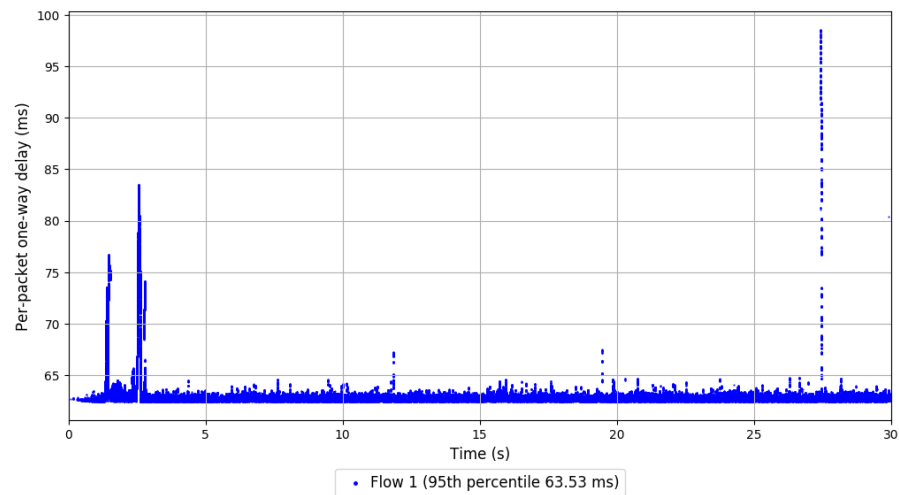
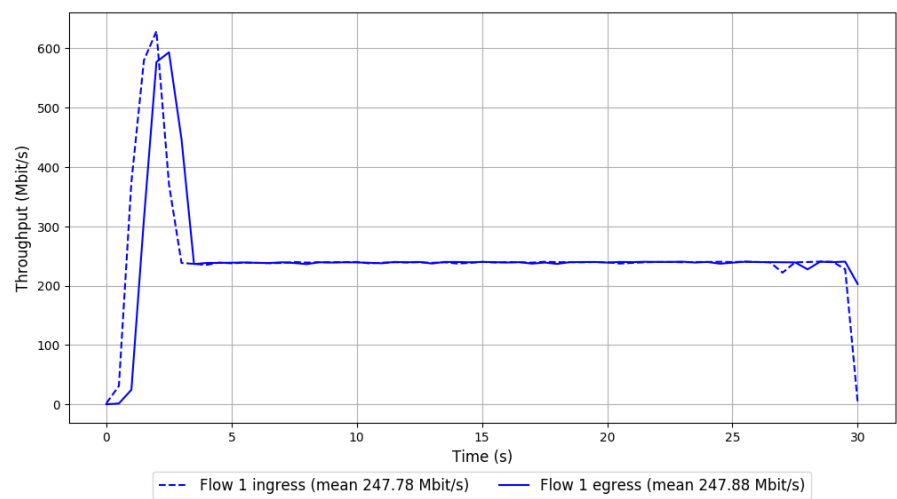


Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 19:10:55  
End at: 2018-09-07 19:11:25  
Local clock offset: -0.028 ms  
Remote clock offset: -1.438 ms

# Below is generated by plot.py at 2018-09-07 21:39:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 247.88 Mbit/s  
95th percentile per-packet one-way delay: 63.532 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 247.88 Mbit/s  
95th percentile per-packet one-way delay: 63.532 ms  
Loss rate: 0.37%

Run 3: Report of TCP Vegas — Data Link

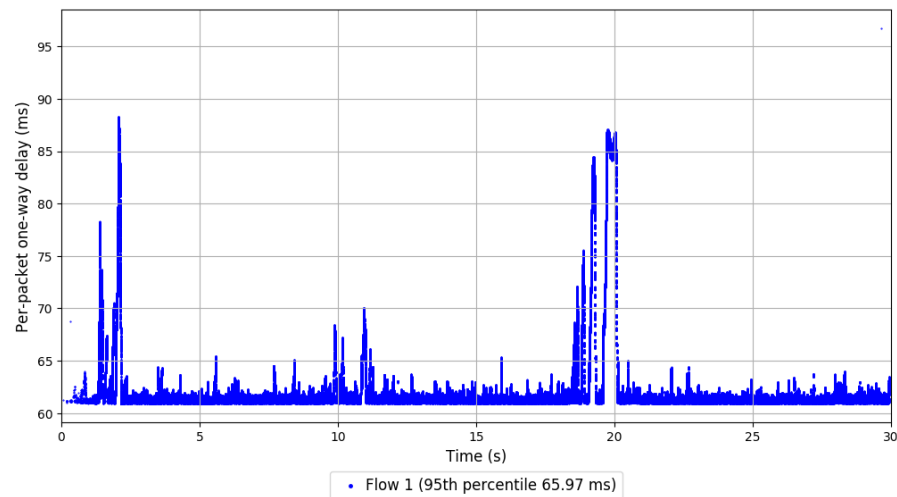
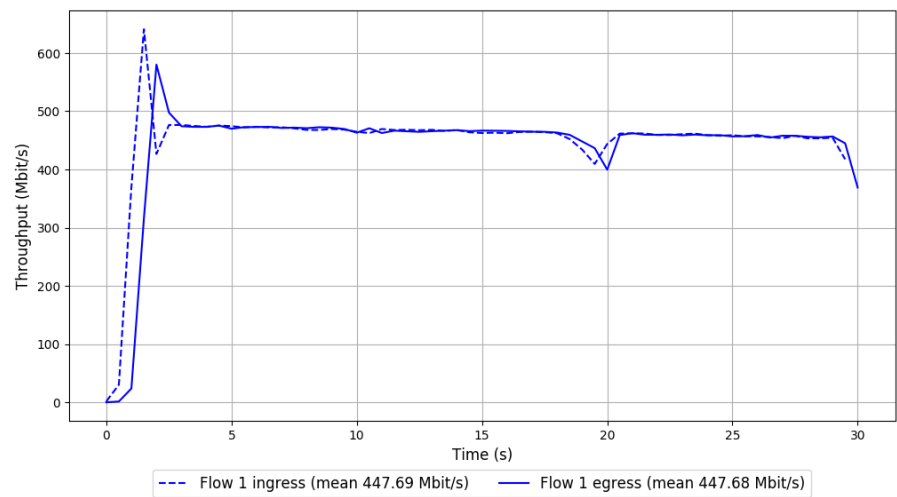


Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 19:36:51  
End at: 2018-09-07 19:37:21  
Local clock offset: -0.002 ms  
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-09-07 21:43:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 447.68 Mbit/s  
95th percentile per-packet one-way delay: 65.969 ms  
Loss rate: 0.41%  
-- Flow 1:  
Average throughput: 447.68 Mbit/s  
95th percentile per-packet one-way delay: 65.969 ms  
Loss rate: 0.41%

Run 4: Report of TCP Vegas — Data Link



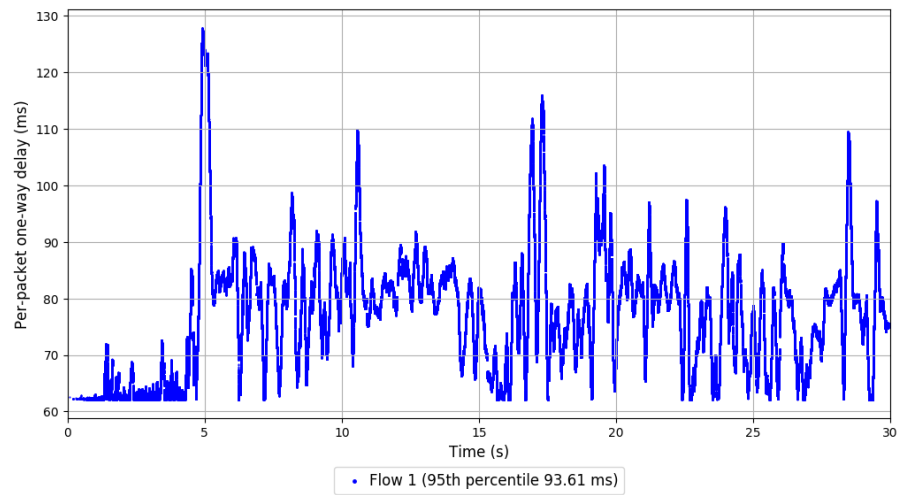
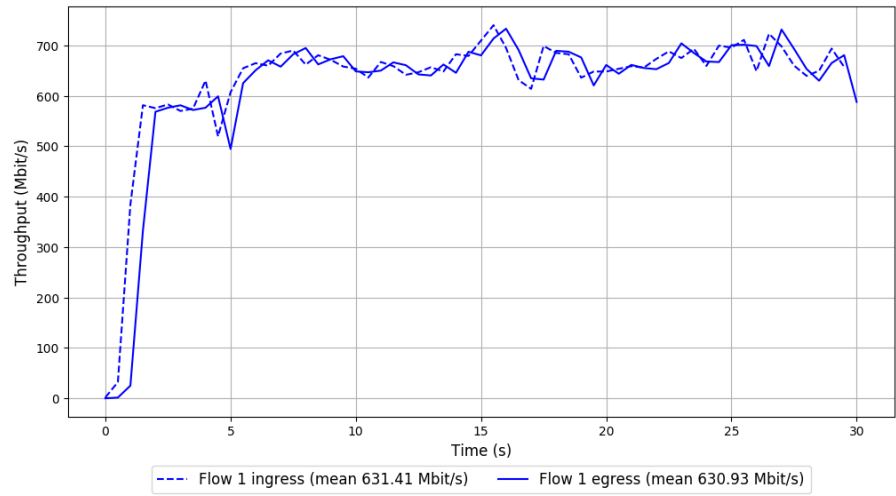


Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 20:03:07  
End at: 2018-09-07 20:03:37  
Local clock offset: 0.028 ms  
Remote clock offset: -1.136 ms

# Below is generated by plot.py at 2018-09-07 21:46:35  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 630.93 Mbit/s  
95th percentile per-packet one-way delay: 93.610 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 630.93 Mbit/s  
95th percentile per-packet one-way delay: 93.610 ms  
Loss rate: 0.48%

### Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-07 18:19:58

End at: 2018-09-07 18:20:28

Local clock offset: -0.085 ms

Remote clock offset: 0.871 ms

# Below is generated by plot.py at 2018-09-07 21:46:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 181.89 Mbit/s

95th percentile per-packet one-way delay: 126.341 ms

Loss rate: 0.43%

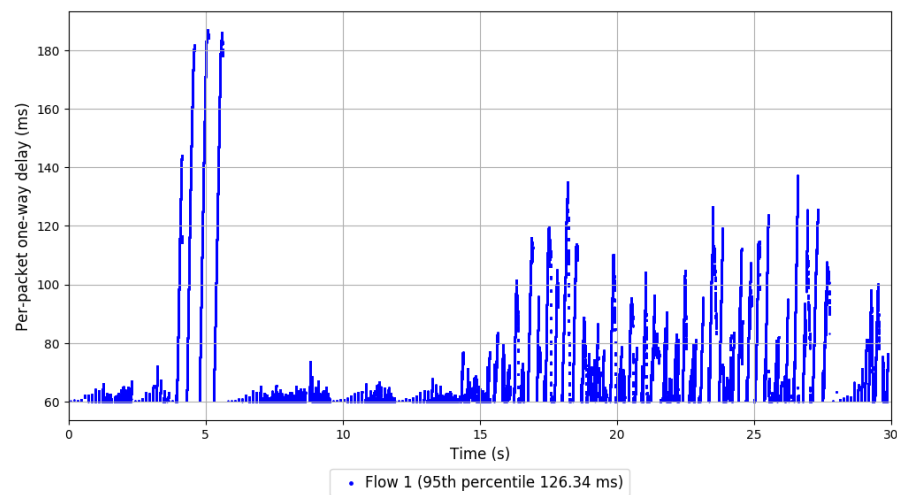
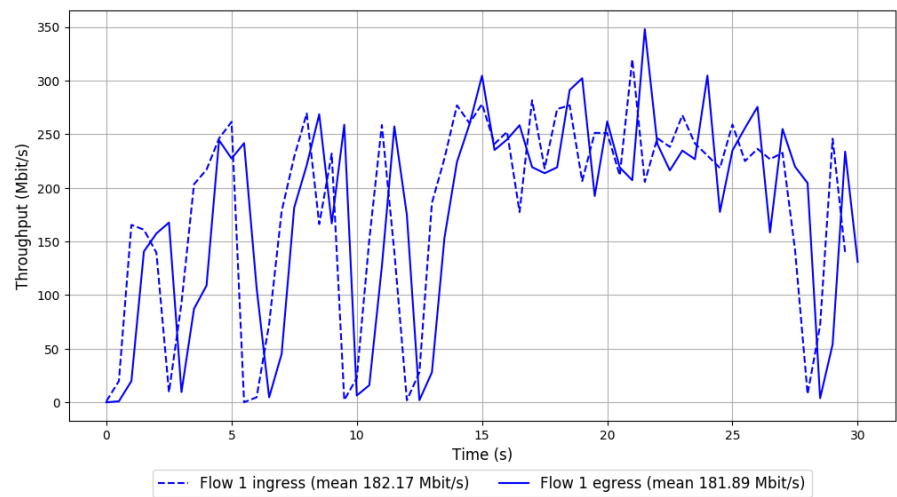
-- Flow 1:

Average throughput: 181.89 Mbit/s

95th percentile per-packet one-way delay: 126.341 ms

Loss rate: 0.43%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-07 18:46:14

End at: 2018-09-07 18:46:44

Local clock offset: -0.056 ms

Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2018-09-07 21:46:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 227.80 Mbit/s

95th percentile per-packet one-way delay: 188.372 ms

Loss rate: 3.52%

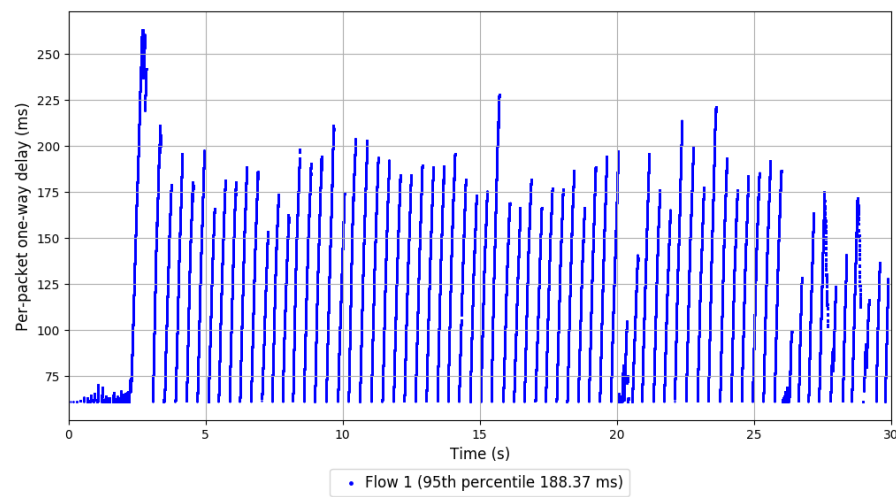
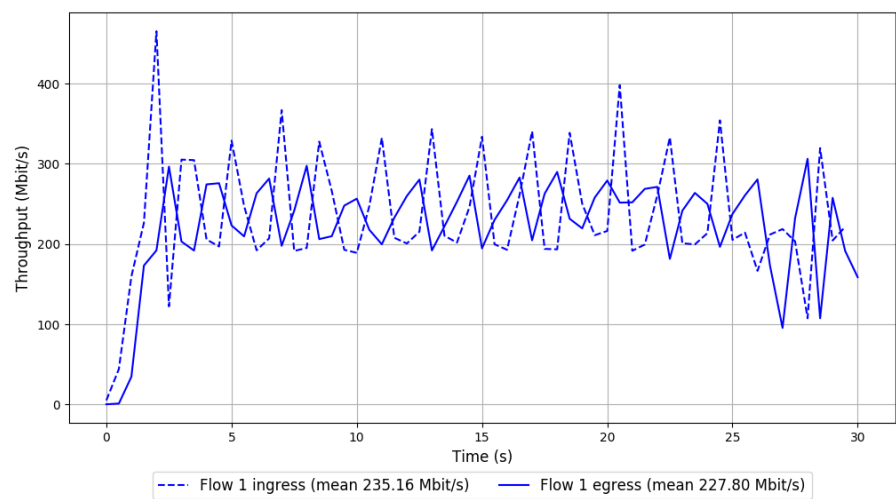
-- Flow 1:

Average throughput: 227.80 Mbit/s

95th percentile per-packet one-way delay: 188.372 ms

Loss rate: 3.52%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-07 19:12:14

End at: 2018-09-07 19:12:44

Local clock offset: -0.029 ms

Remote clock offset: 0.174 ms

# Below is generated by plot.py at 2018-09-07 21:46:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 169.16 Mbit/s

95th percentile per-packet one-way delay: 187.444 ms

Loss rate: 3.08%

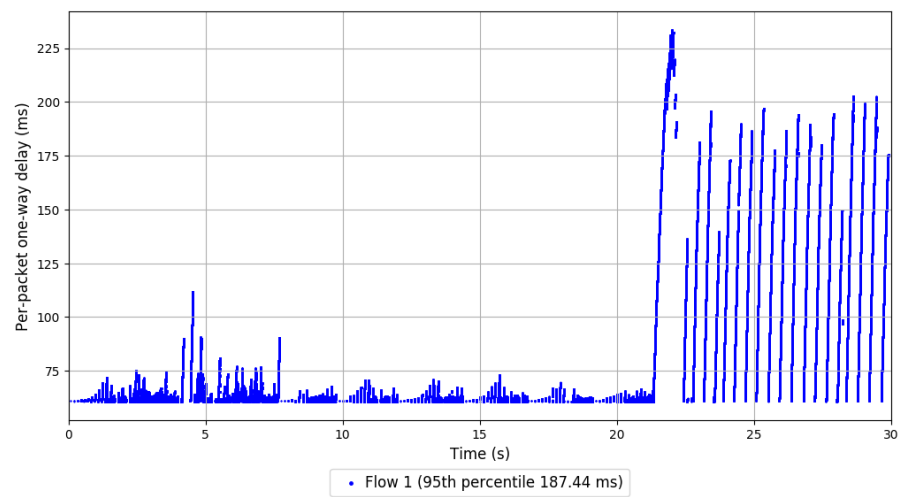
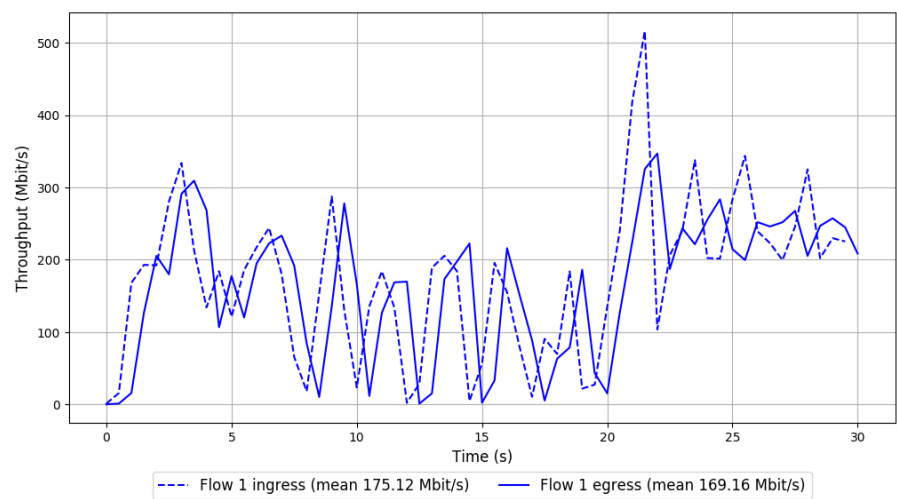
-- Flow 1:

Average throughput: 169.16 Mbit/s

95th percentile per-packet one-way delay: 187.444 ms

Loss rate: 3.08%

Run 3: Report of Verus — Data Link





Run 4: Statistics of Verus

Start at: 2018-09-07 19:38:20

End at: 2018-09-07 19:38:50

Local clock offset: 0.012 ms

Remote clock offset: -1.29 ms

# Below is generated by plot.py at 2018-09-07 21:46:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 184.86 Mbit/s

95th percentile per-packet one-way delay: 180.891 ms

Loss rate: 1.72%

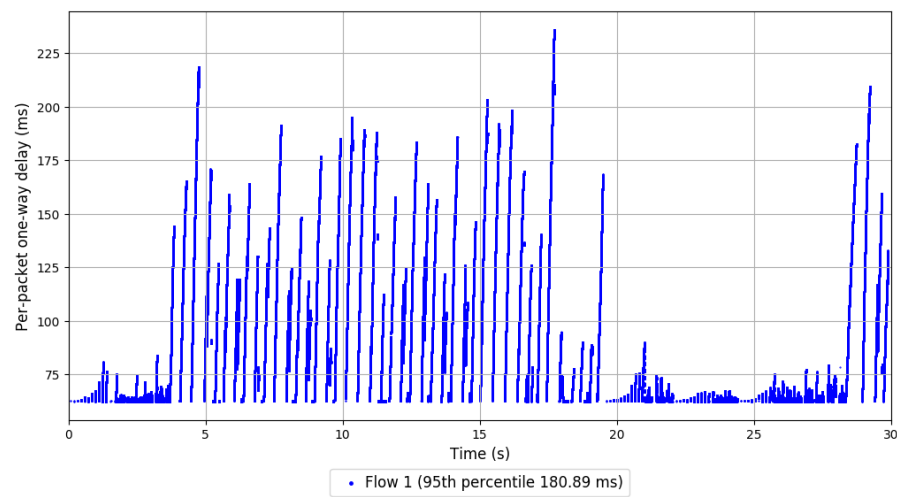
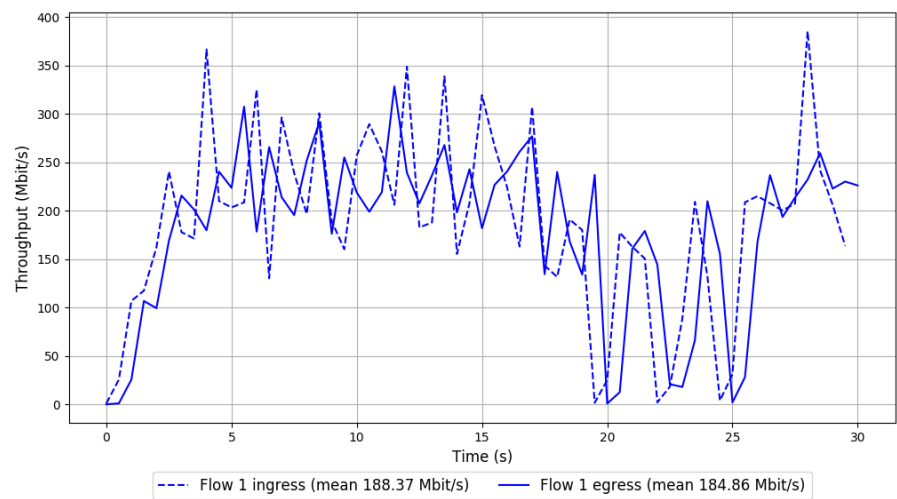
-- Flow 1:

Average throughput: 184.86 Mbit/s

95th percentile per-packet one-way delay: 180.891 ms

Loss rate: 1.72%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-07 20:04:44

End at: 2018-09-07 20:05:14

Local clock offset: 0.001 ms

Remote clock offset: 1.16 ms

# Below is generated by plot.py at 2018-09-07 21:46:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 182.58 Mbit/s

95th percentile per-packet one-way delay: 101.235 ms

Loss rate: 0.52%

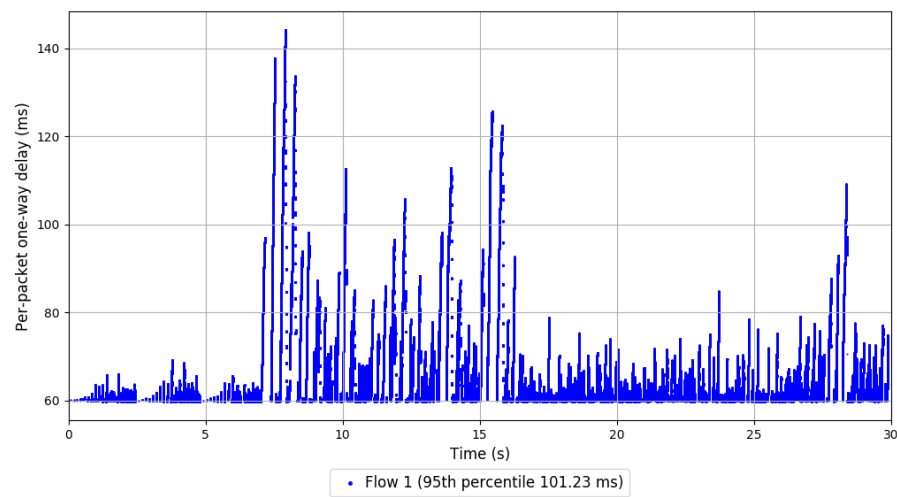
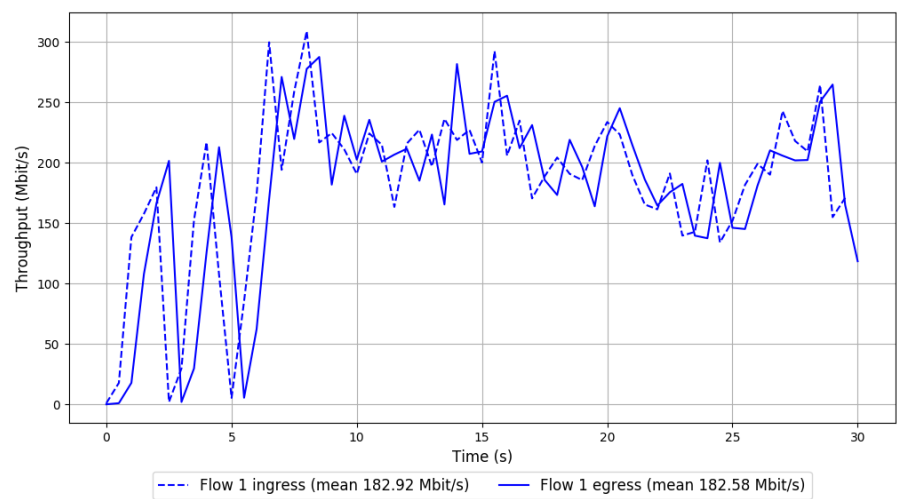
-- Flow 1:

Average throughput: 182.58 Mbit/s

95th percentile per-packet one-way delay: 101.235 ms

Loss rate: 0.52%

Run 5: Report of Verus — Data Link

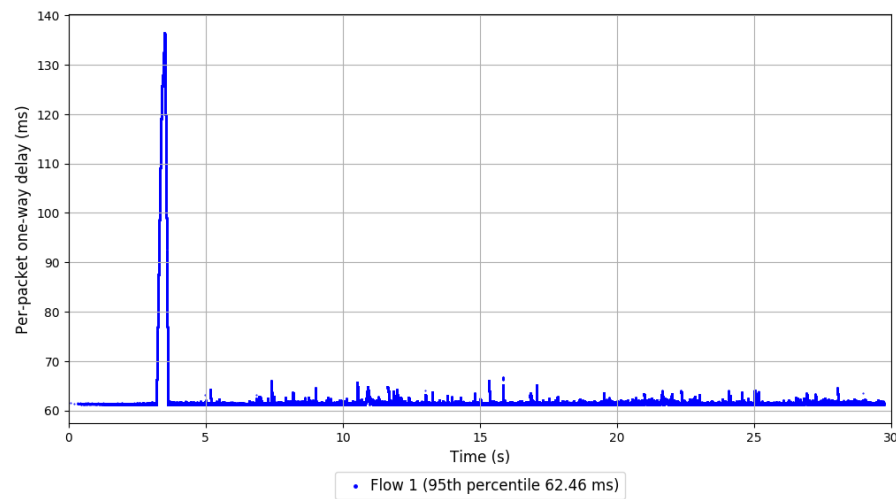
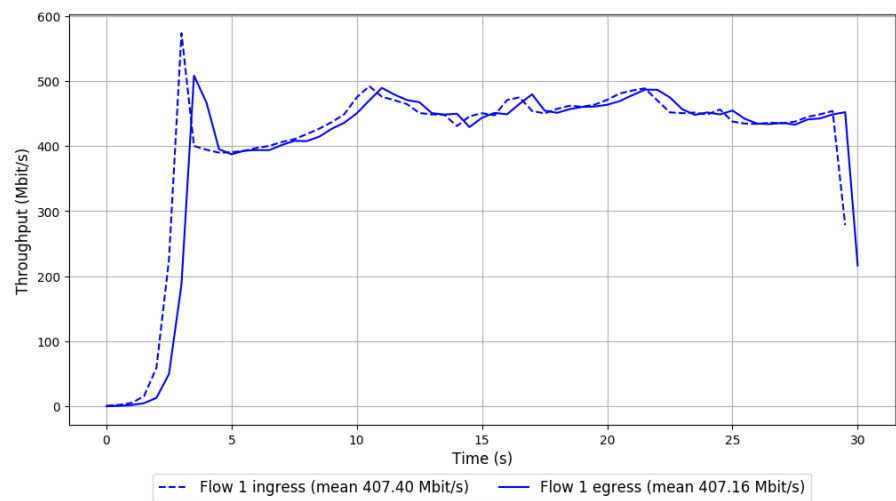


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 18:15:18  
End at: 2018-09-07 18:15:48  
Local clock offset: -0.079 ms  
Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2018-09-07 21:46:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 407.16 Mbit/s  
95th percentile per-packet one-way delay: 62.461 ms  
Loss rate: 0.49%  
-- Flow 1:  
Average throughput: 407.16 Mbit/s  
95th percentile per-packet one-way delay: 62.461 ms  
Loss rate: 0.49%

Run 1: Report of PCC-Vivace — Data Link

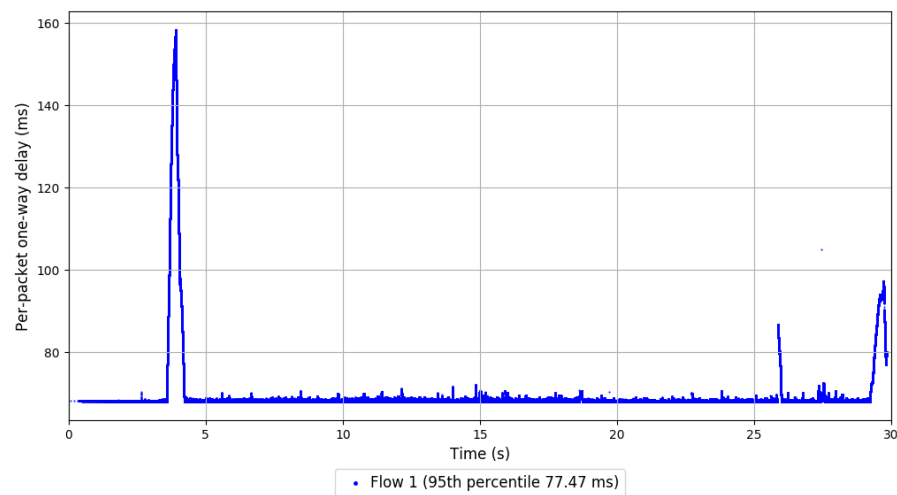
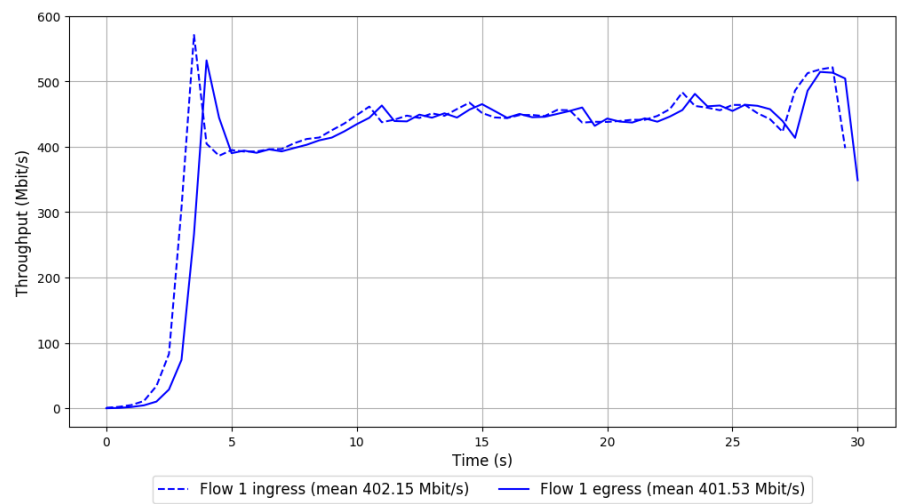


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 18:41:36  
End at: 2018-09-07 18:42:06  
Local clock offset: -0.004 ms  
Remote clock offset: -1.509 ms

# Below is generated by plot.py at 2018-09-07 21:48:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 401.53 Mbit/s  
95th percentile per-packet one-way delay: 77.471 ms  
Loss rate: 0.58%  
-- Flow 1:  
Average throughput: 401.53 Mbit/s  
95th percentile per-packet one-way delay: 77.471 ms  
Loss rate: 0.58%

Run 2: Report of PCC-Vivace — Data Link



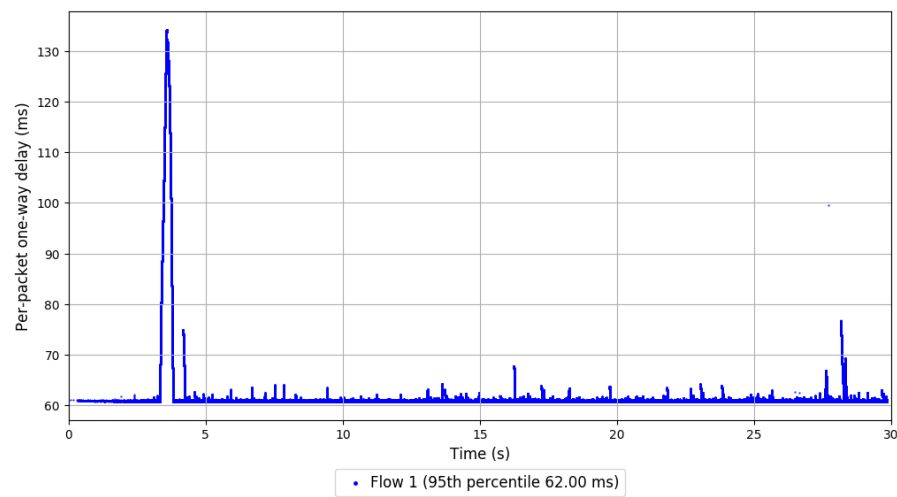
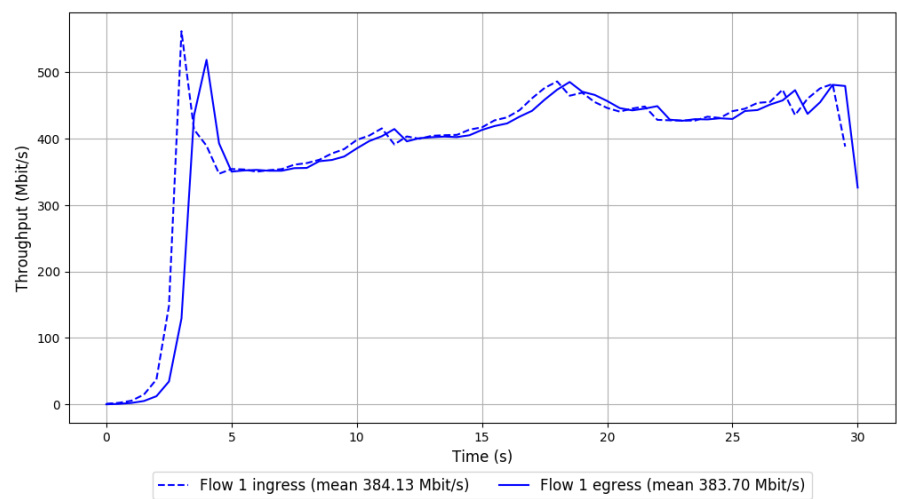


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 19:07:47  
End at: 2018-09-07 19:08:17  
Local clock offset: -0.073 ms  
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2018-09-07 21:48:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 383.70 Mbit/s  
95th percentile per-packet one-way delay: 61.997 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 383.70 Mbit/s  
95th percentile per-packet one-way delay: 61.997 ms  
Loss rate: 0.52%

Run 3: Report of PCC-Vivace — Data Link

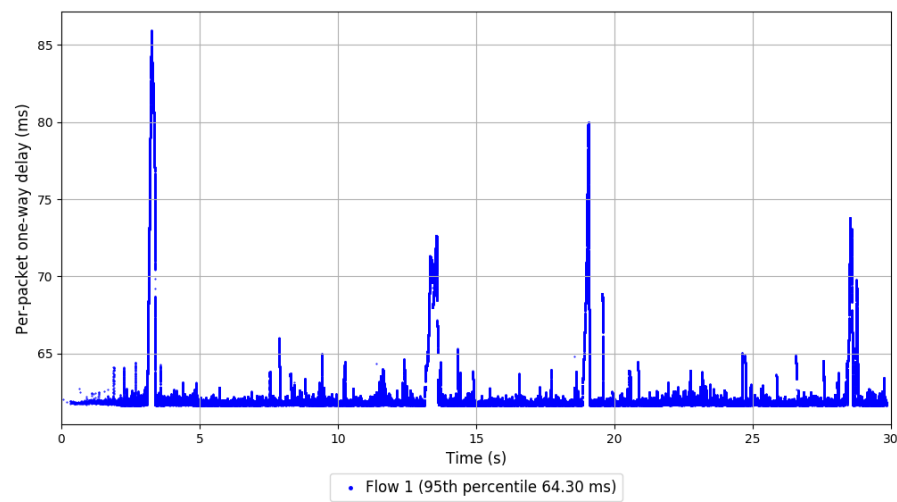
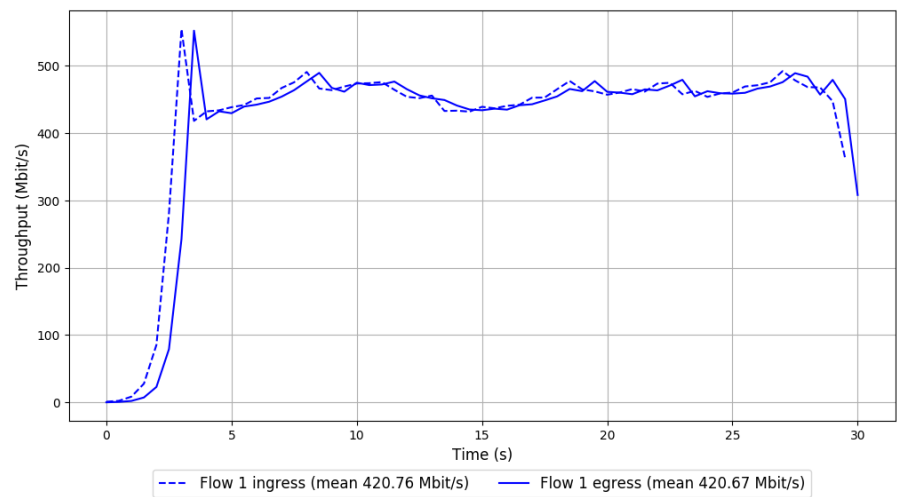


Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 19:33:39  
End at: 2018-09-07 19:34:09  
Local clock offset: -0.098 ms  
Remote clock offset: -0.788 ms

# Below is generated by plot.py at 2018-09-07 21:48:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 420.67 Mbit/s  
95th percentile per-packet one-way delay: 64.295 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 420.67 Mbit/s  
95th percentile per-packet one-way delay: 64.295 ms  
Loss rate: 0.43%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 20:00:01

End at: 2018-09-07 20:00:31

Local clock offset: 0.009 ms

Remote clock offset: 0.629 ms

# Below is generated by plot.py at 2018-09-07 21:48:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 373.28 Mbit/s

95th percentile per-packet one-way delay: 61.323 ms

Loss rate: 0.45%

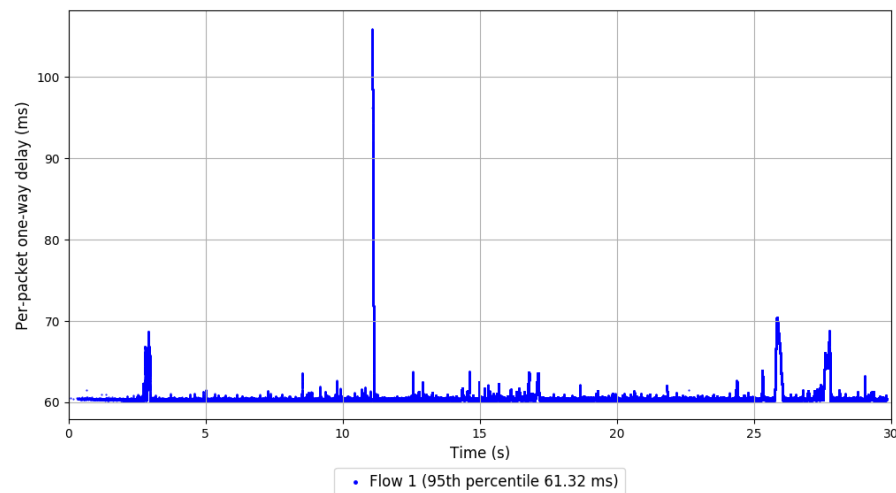
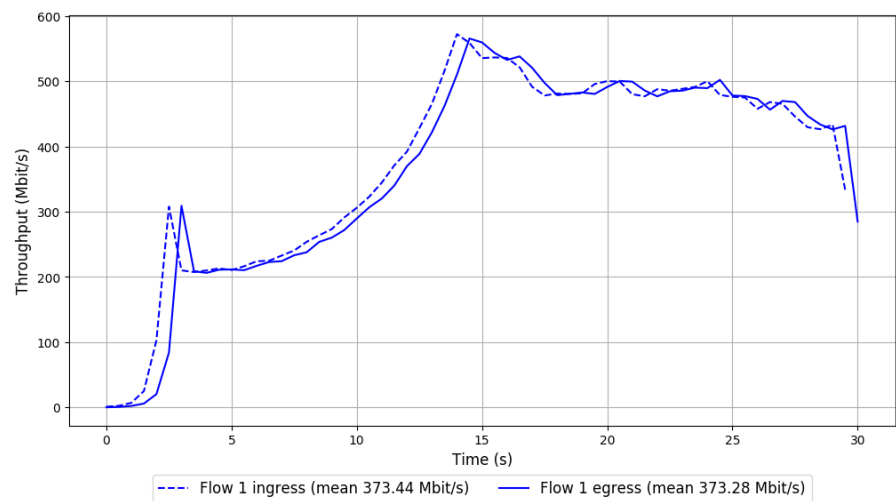
-- Flow 1:

Average throughput: 373.28 Mbit/s

95th percentile per-packet one-way delay: 61.323 ms

Loss rate: 0.45%

Run 5: Report of PCC-Vivace — Data Link

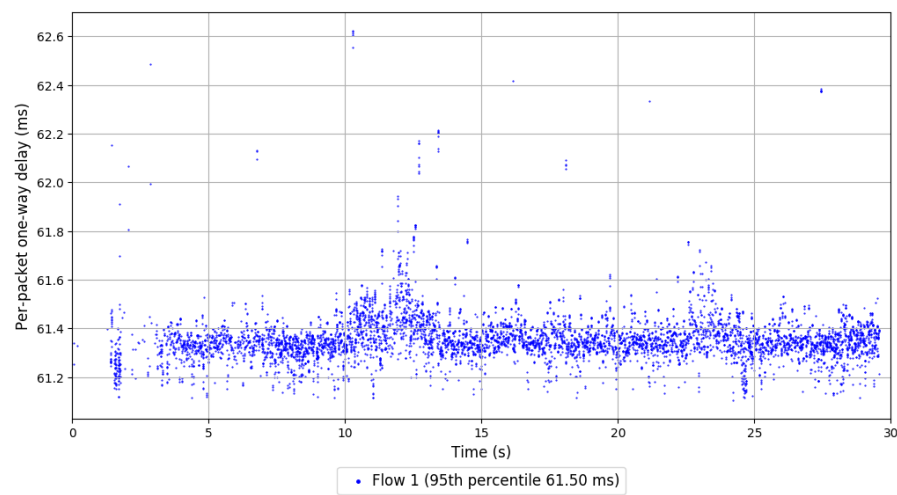
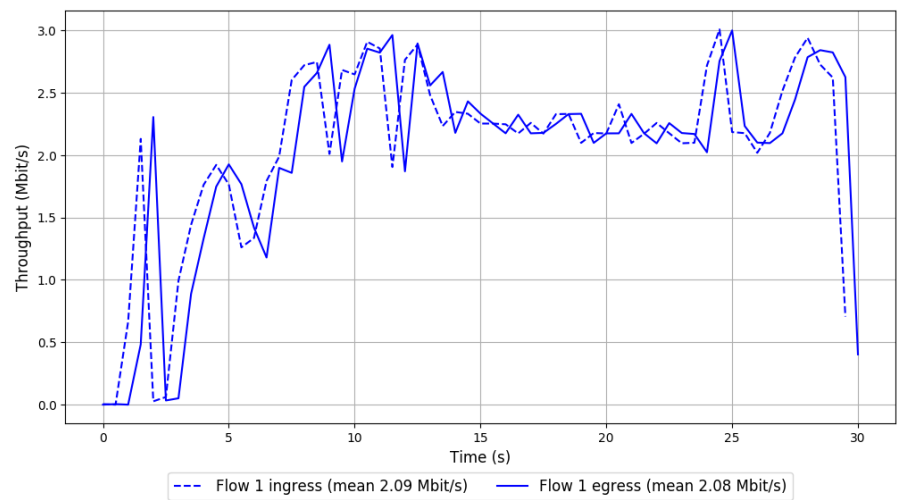


Run 1: Statistics of WebRTC media

Start at: 2018-09-07 18:12:48  
End at: 2018-09-07 18:13:18  
Local clock offset: -0.134 ms  
Remote clock offset: -0.242 ms

# Below is generated by plot.py at 2018-09-07 21:48:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 61.503 ms  
Loss rate: 0.49%  
-- Flow 1:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 61.503 ms  
Loss rate: 0.49%

Run 1: Report of WebRTC media — Data Link





Run 2: Statistics of WebRTC media

Start at: 2018-09-07 18:39:01

End at: 2018-09-07 18:39:31

Local clock offset: -0.046 ms

Remote clock offset: 0.933 ms

# Below is generated by plot.py at 2018-09-07 21:48:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 60.326 ms

Loss rate: 0.48%

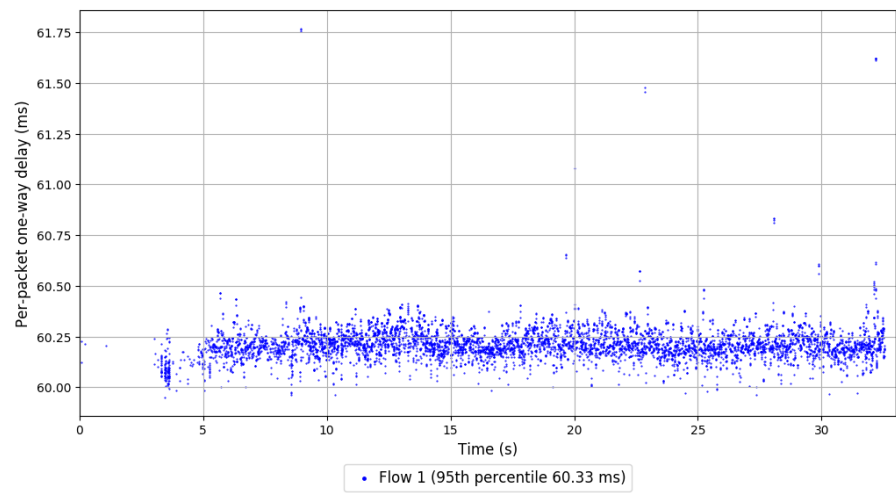
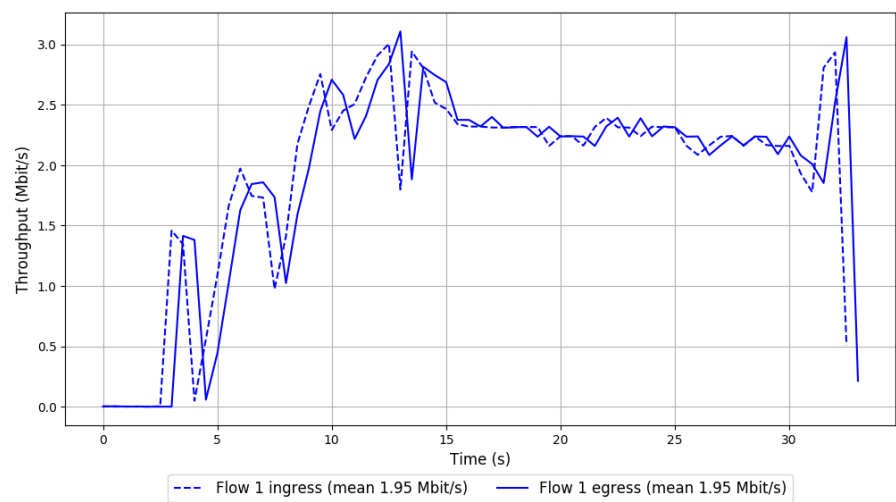
-- Flow 1:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 60.326 ms

Loss rate: 0.48%

Run 2: Report of WebRTC media — Data Link

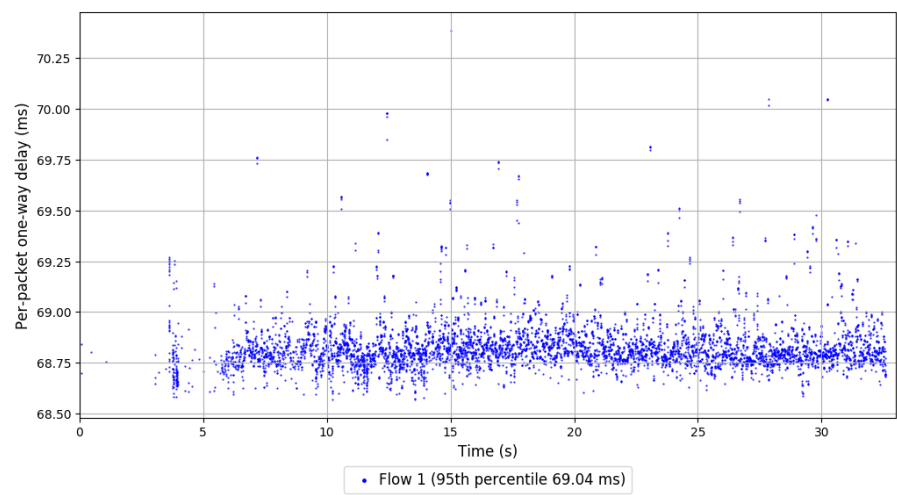
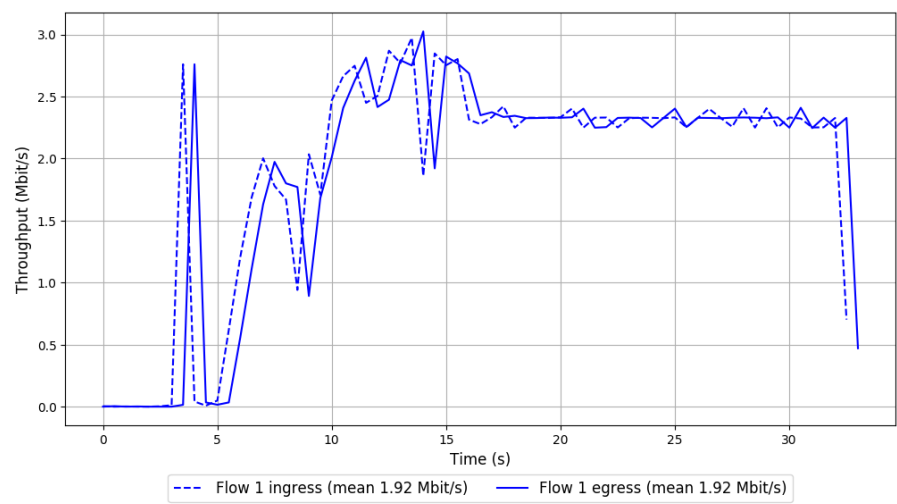


Run 3: Statistics of WebRTC media

Start at: 2018-09-07 19:05:12  
End at: 2018-09-07 19:05:42  
Local clock offset: -0.006 ms  
Remote clock offset: -1.522 ms

# Below is generated by plot.py at 2018-09-07 21:48:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.92 Mbit/s  
95th percentile per-packet one-way delay: 69.043 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 1.92 Mbit/s  
95th percentile per-packet one-way delay: 69.043 ms  
Loss rate: 0.43%

Run 3: Report of WebRTC media — Data Link

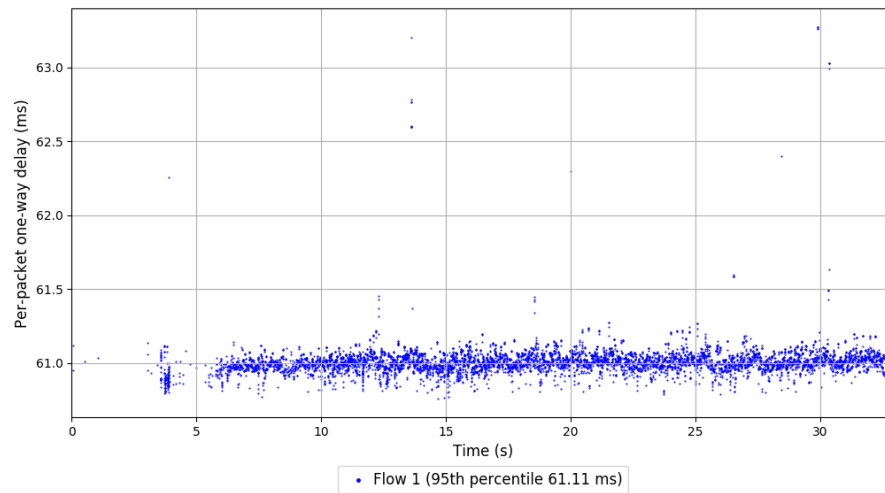
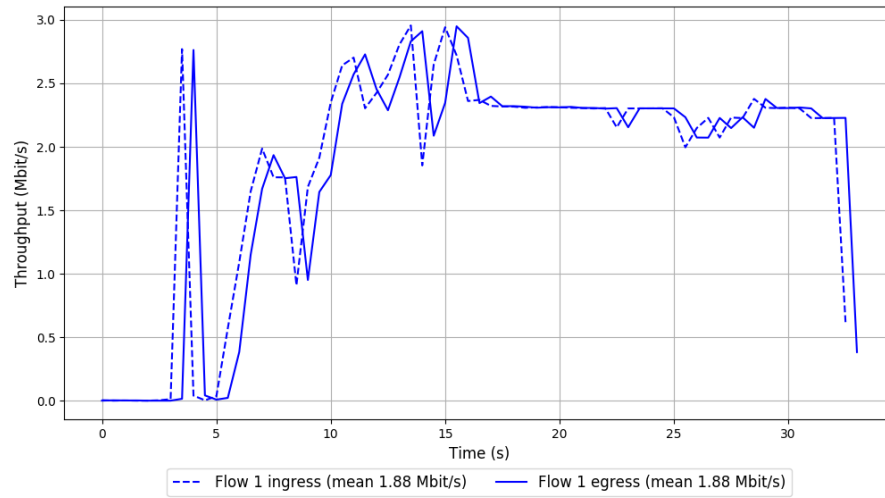


Run 4: Statistics of WebRTC media

Start at: 2018-09-07 19:31:04  
End at: 2018-09-07 19:31:34  
Local clock offset: -0.026 ms  
Remote clock offset: -0.076 ms

# Below is generated by plot.py at 2018-09-07 21:48:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.88 Mbit/s  
95th percentile per-packet one-way delay: 61.109 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 1.88 Mbit/s  
95th percentile per-packet one-way delay: 61.109 ms  
Loss rate: 0.44%

#### Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-07 19:57:26  
End at: 2018-09-07 19:57:56  
Local clock offset: 0.002 ms  
Remote clock offset: -1.355 ms

# Below is generated by plot.py at 2018-09-07 21:48:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.88 Mbit/s  
95th percentile per-packet one-way delay: 62.833 ms  
Loss rate: 0.50%  
-- Flow 1:  
Average throughput: 1.88 Mbit/s  
95th percentile per-packet one-way delay: 62.833 ms  
Loss rate: 0.50%

### Run 5: Report of WebRTC media — Data Link

