

## Pantheon Report

Generated at 2018-09-07 22:52:23 (UTC).

Data path: Stanford on `eno1` (*remote*) → AWS California 1 on `ens5` (*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.stanford.edu` and have been applied to correct the timestamps in logs.

### System info:

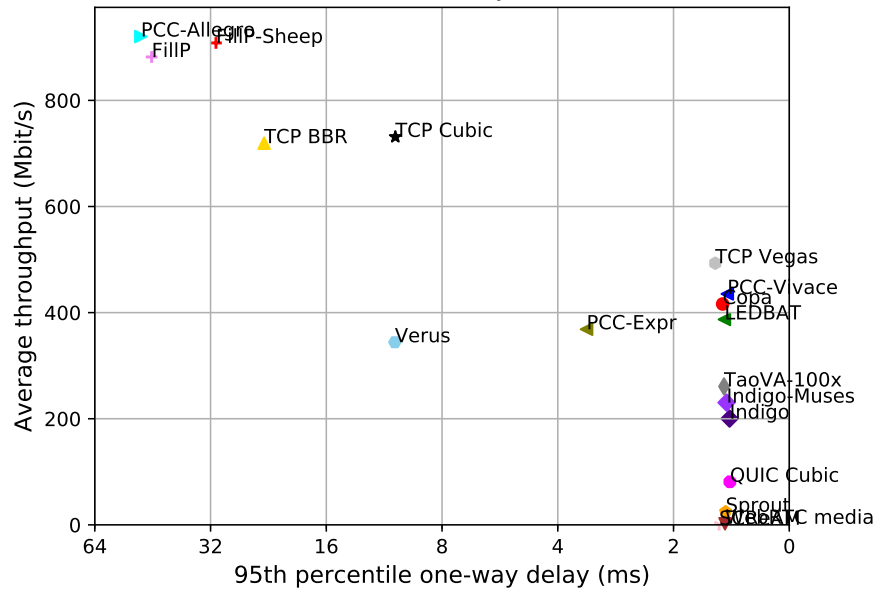
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

### Git summary:

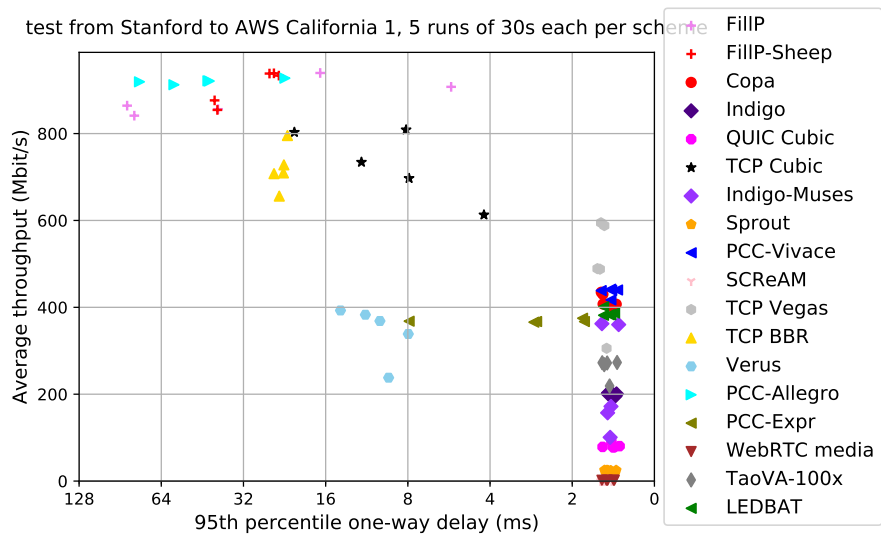
```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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 Stanford to AWS California 1, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



test from Stanford to AWS California 1, 5 runs of 30s each per 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      | 719.36                           | 23.22                               | 0.12                         |
| Copa         | 5      | 416.23                           | 1.15                                | 0.06                         |
| TCP Cubic    | 5      | 731.15                           | 10.58                               | 0.09                         |
| FillP        | 5      | 881.77                           | 45.54                               | 3.20                         |
| FillP-Sheep  | 5      | 908.24                           | 30.98                               | 1.12                         |
| Indigo       | 5      | 200.24                           | 1.03                                | 0.07                         |
| LEDBAT       | 5      | 387.16                           | 1.12                                | 0.07                         |
| Indigo-Muses | 5      | 230.45                           | 1.08                                | 0.06                         |
| PCC-Allegro  | 5      | 920.30                           | 48.57                               | 0.08                         |
| PCC-Expr     | 5      | 368.66                           | 3.37                                | 0.06                         |
| QUIC Cubic   | 5      | 81.21                            | 1.03                                | 0.06                         |
| SCReAM       | 5      | 0.22                             | 1.21                                | 0.13                         |
| Sprout       | 5      | 24.78                            | 1.10                                | 0.07                         |
| TaoVA-100x   | 5      | 260.86                           | 1.13                                | 0.06                         |
| TCP Vegas    | 5      | 493.07                           | 1.28                                | 0.06                         |
| Verus        | 5      | 344.18                           | 10.61                               | 0.06                         |
| PCC-Vivace   | 5      | 435.24                           | 1.07                                | 0.06                         |
| WebRTC media | 5      | 1.99                             | 1.11                                | 0.07                         |

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 19:37:50

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

Local clock offset: 3.503 ms

Remote clock offset: 2.225 ms

# Below is generated by plot.py at 2018-09-07 21:56:41

# Datalink statistics

-- Total of 1 flow:

Average throughput: 709.47 Mbit/s

95th percentile per-packet one-way delay: 22.847 ms

Loss rate: 0.15%

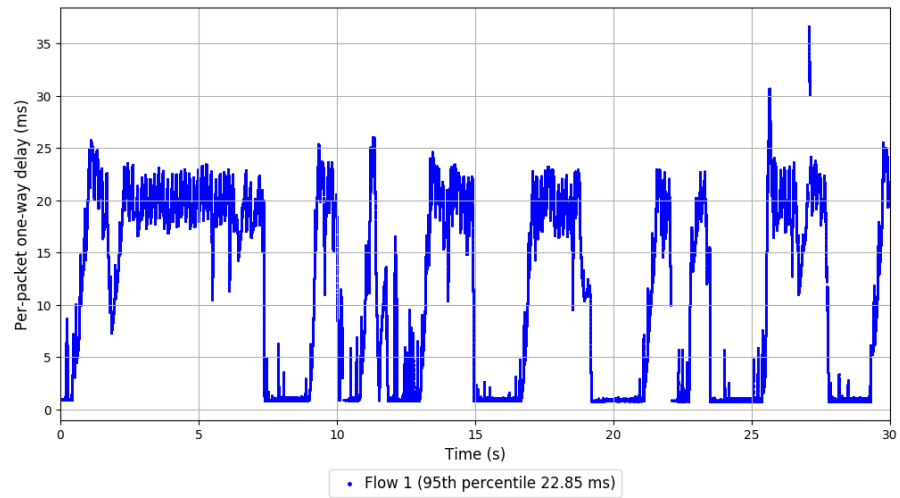
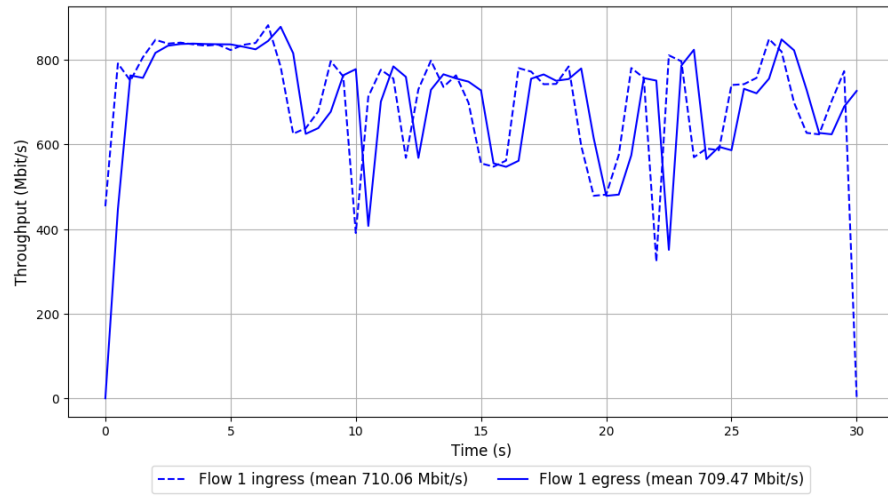
-- Flow 1:

Average throughput: 709.47 Mbit/s

95th percentile per-packet one-way delay: 22.847 ms

Loss rate: 0.15%

# Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-07 20:05:50

End at: 2018-09-07 20:06:20

Local clock offset: -0.268 ms

Remote clock offset: -0.96 ms

# Below is generated by plot.py at 2018-09-07 21:56:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 728.03 Mbit/s

95th percentile per-packet one-way delay: 22.758 ms

Loss rate: 0.15%

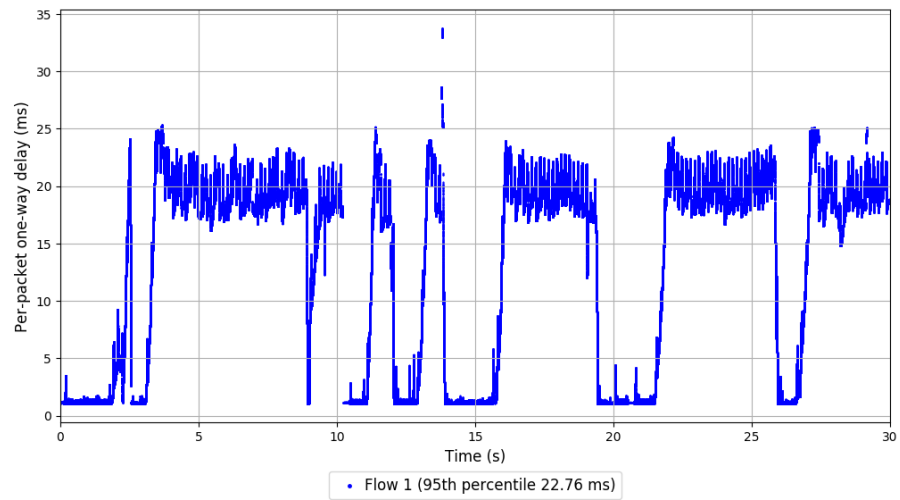
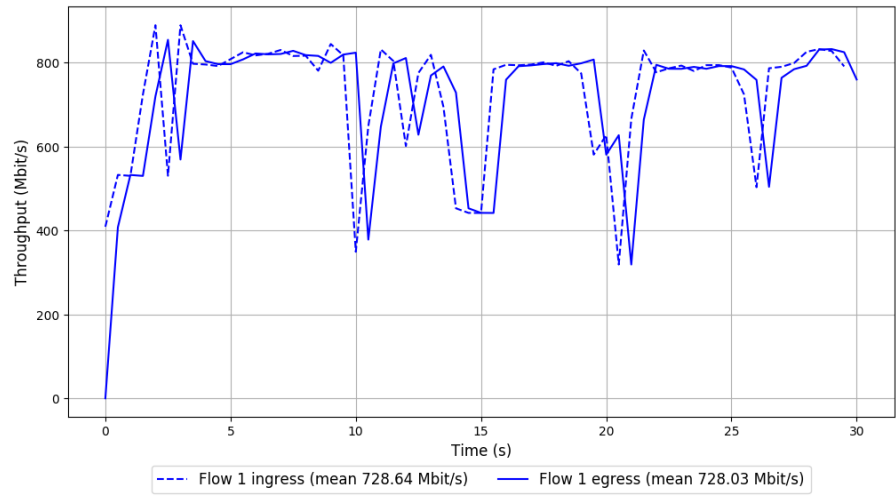
-- Flow 1:

Average throughput: 728.03 Mbit/s

95th percentile per-packet one-way delay: 22.758 ms

Loss rate: 0.15%

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





Run 3: Statistics of TCP BBR

Start at: 2018-09-07 20:33:46

End at: 2018-09-07 20:34:16

Local clock offset: -0.722 ms

Remote clock offset: -0.57 ms

# Below is generated by plot.py at 2018-09-07 21:57:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 795.47 Mbit/s

95th percentile per-packet one-way delay: 22.083 ms

Loss rate: 0.05%

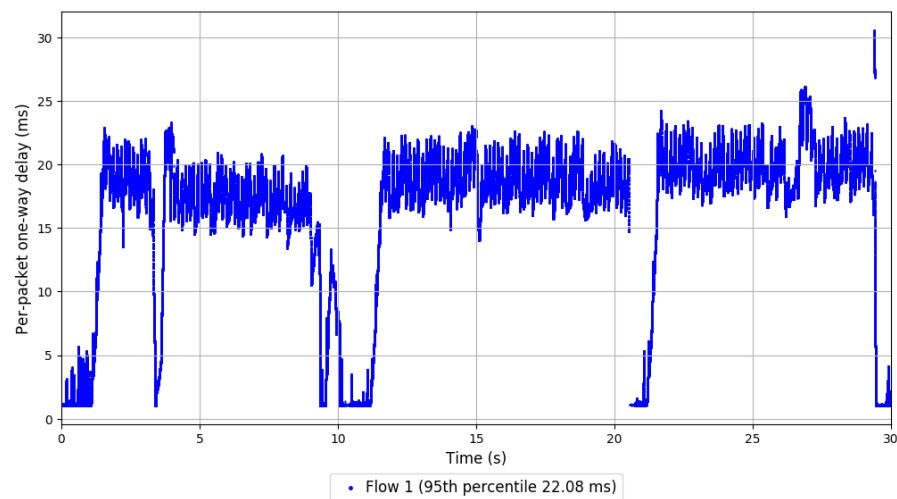
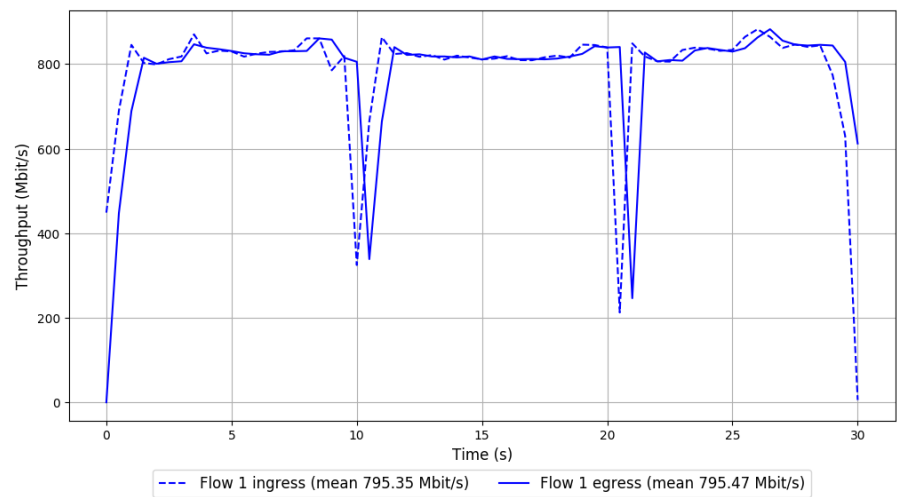
-- Flow 1:

Average throughput: 795.47 Mbit/s

95th percentile per-packet one-way delay: 22.083 ms

Loss rate: 0.05%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-07 21:01:53

End at: 2018-09-07 21:02:23

Local clock offset: 2.522 ms

Remote clock offset: -0.299 ms

# Below is generated by plot.py at 2018-09-07 21:57:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 656.08 Mbit/s

95th percentile per-packet one-way delay: 23.657 ms

Loss rate: 0.09%

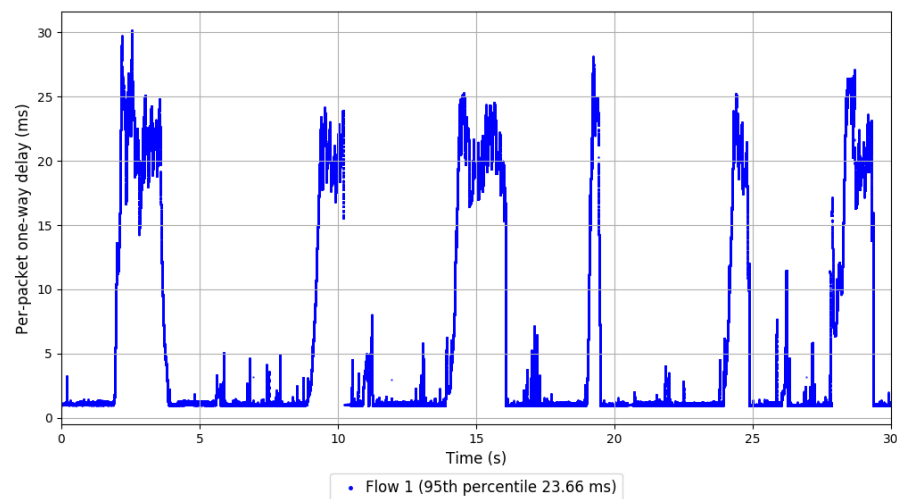
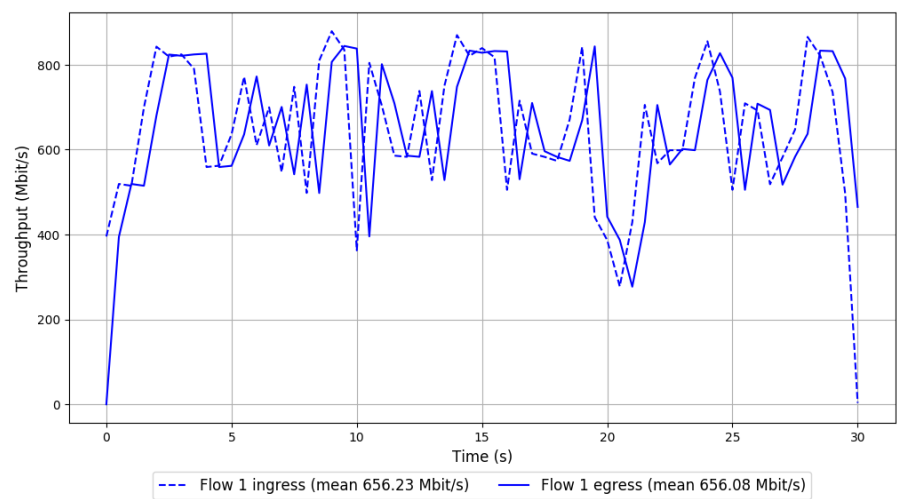
-- Flow 1:

Average throughput: 656.08 Mbit/s

95th percentile per-packet one-way delay: 23.657 ms

Loss rate: 0.09%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-07 21:29:58

End at: 2018-09-07 21:30:28

Local clock offset: 2.938 ms

Remote clock offset: 2.818 ms

# Below is generated by plot.py at 2018-09-07 21:57:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 707.76 Mbit/s

95th percentile per-packet one-way delay: 24.733 ms

Loss rate: 0.14%

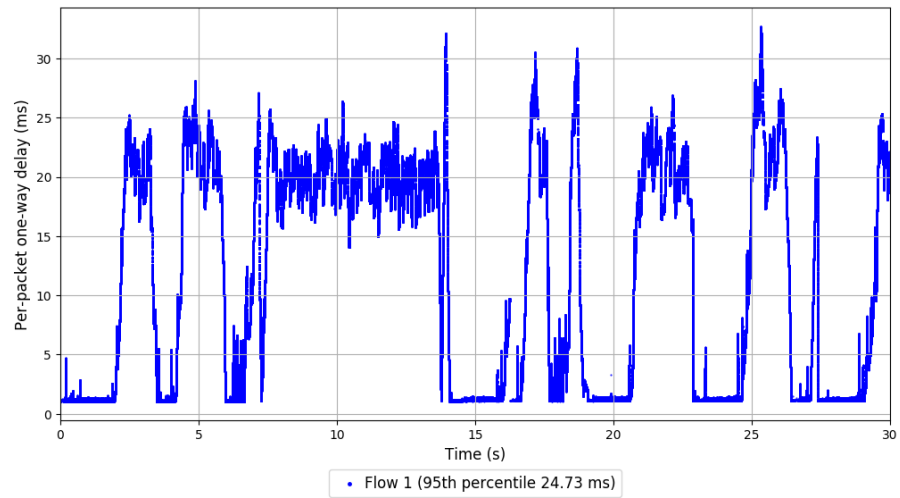
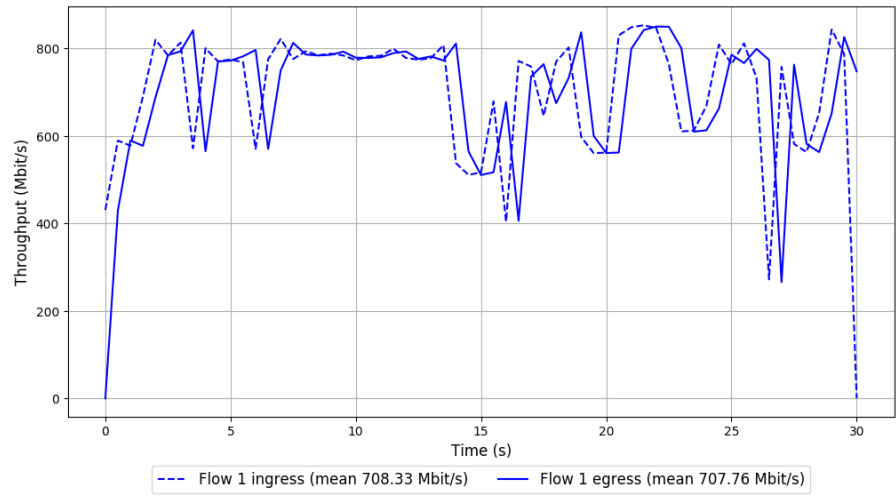
-- Flow 1:

Average throughput: 707.76 Mbit/s

95th percentile per-packet one-way delay: 24.733 ms

Loss rate: 0.14%

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



Run 1: Statistics of Copa

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

End at: 2018-09-07 19:24:11

Local clock offset: 3.256 ms

Remote clock offset: 3.834 ms

# Below is generated by plot.py at 2018-09-07 21:57:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 430.03 Mbit/s

95th percentile per-packet one-way delay: 1.254 ms

Loss rate: 0.05%

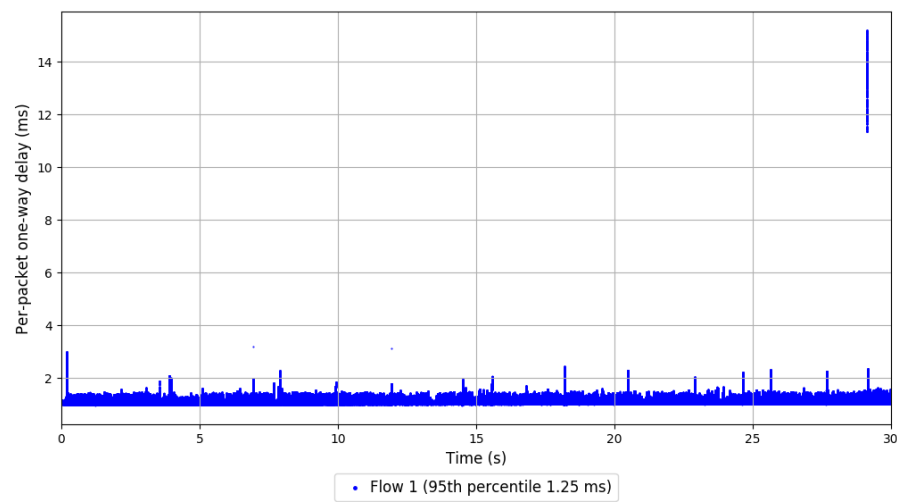
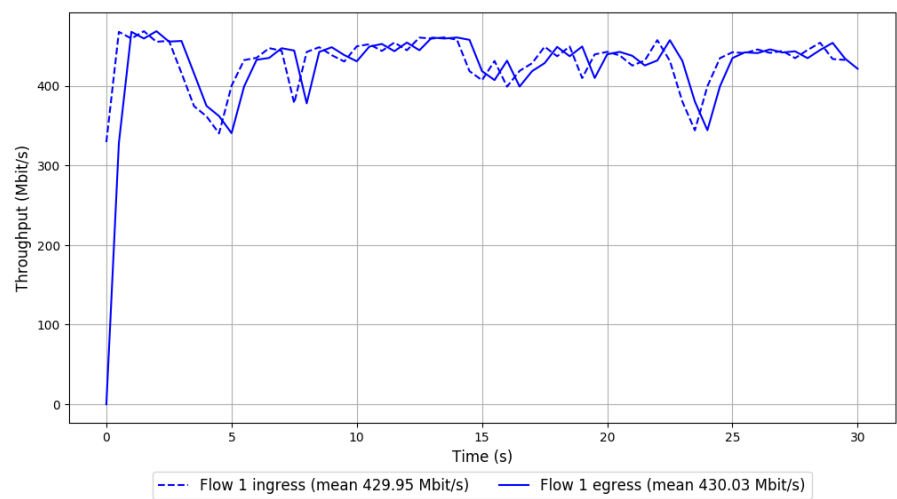
-- Flow 1:

Average throughput: 430.03 Mbit/s

95th percentile per-packet one-way delay: 1.254 ms

Loss rate: 0.05%

Run 1: Report of Copa — Data Link



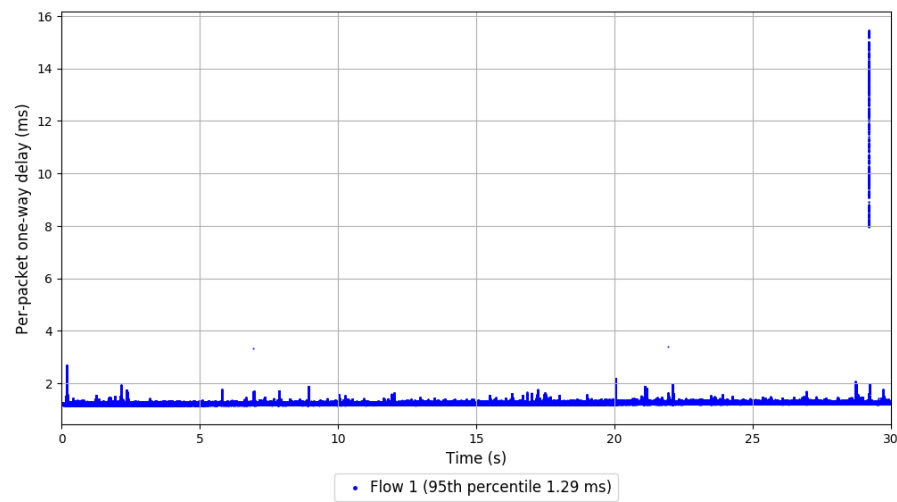
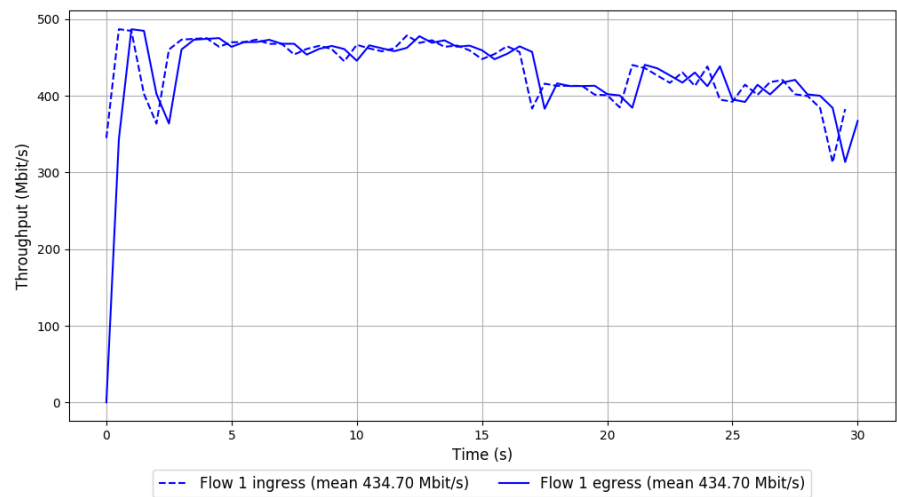


Run 2: Statistics of Copa

Start at: 2018-09-07 19:51:46  
End at: 2018-09-07 19:52:17  
Local clock offset: 1.468 ms  
Remote clock offset: -0.166 ms

# Below is generated by plot.py at 2018-09-07 21:57:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 434.70 Mbit/s  
95th percentile per-packet one-way delay: 1.293 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 434.70 Mbit/s  
95th percentile per-packet one-way delay: 1.293 ms  
Loss rate: 0.06%

Run 2: Report of Copa — Data Link

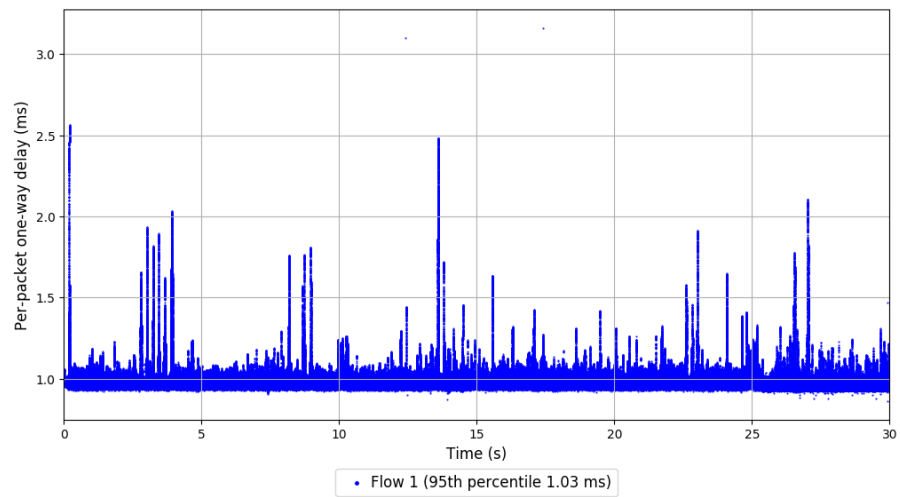
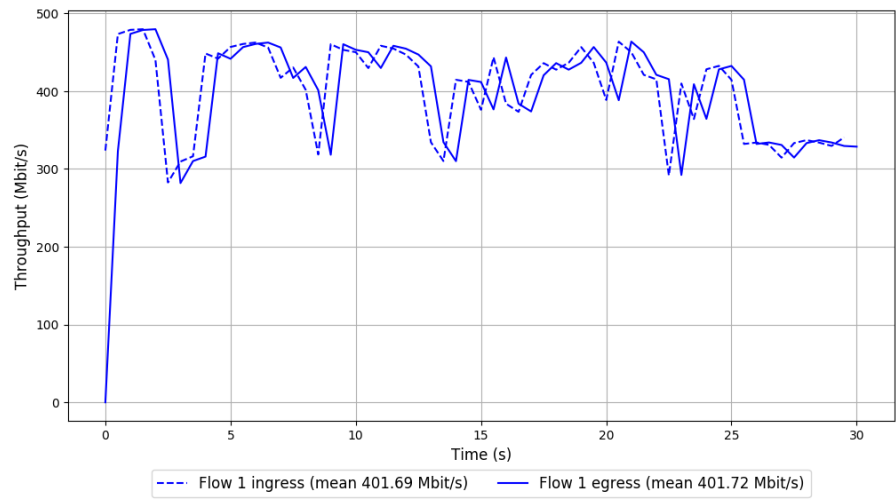


Run 3: Statistics of Copa

Start at: 2018-09-07 20:19:50  
End at: 2018-09-07 20:20:20  
Local clock offset: -0.692 ms  
Remote clock offset: -0.468 ms

# Below is generated by plot.py at 2018-09-07 21:57:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 401.72 Mbit/s  
95th percentile per-packet one-way delay: 1.031 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 401.72 Mbit/s  
95th percentile per-packet one-way delay: 1.031 ms  
Loss rate: 0.05%

### Run 3: Report of Copa — Data Link

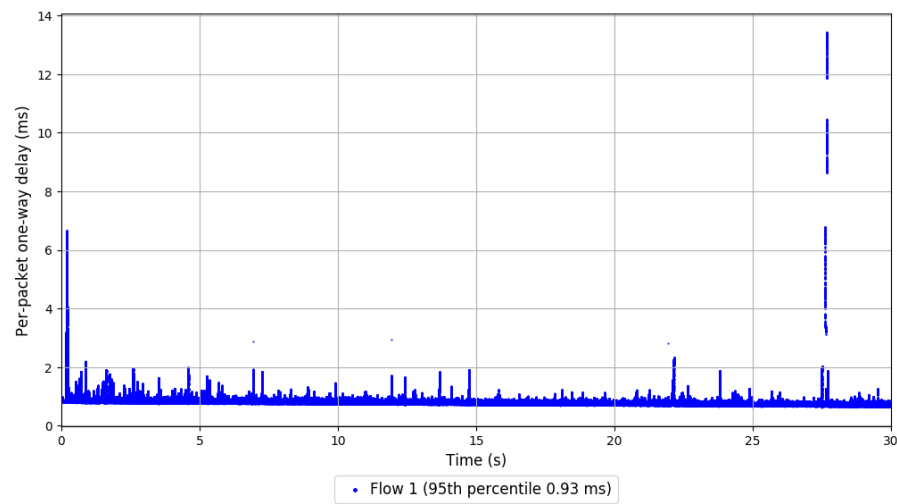
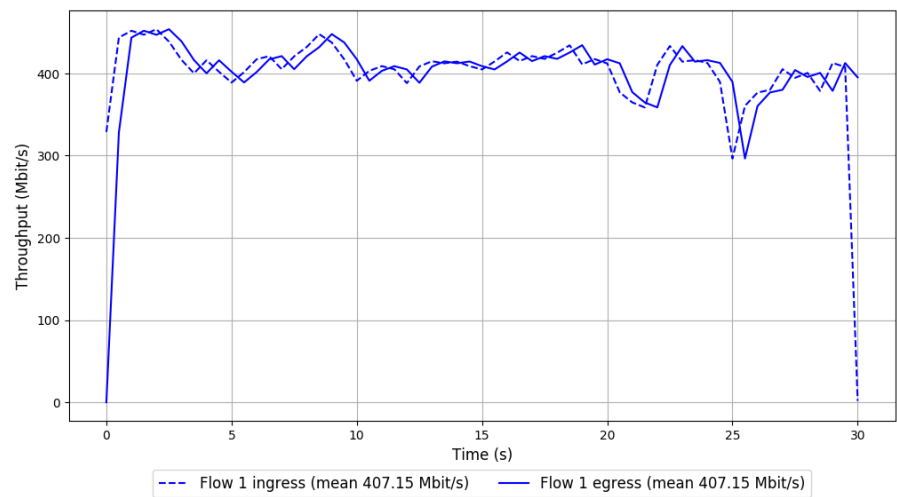


Run 4: Statistics of Copa

Start at: 2018-09-07 20:47:51  
End at: 2018-09-07 20:48:21  
Local clock offset: 0.131 ms  
Remote clock offset: -0.407 ms

# Below is generated by plot.py at 2018-09-07 22:04:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 407.15 Mbit/s  
95th percentile per-packet one-way delay: 0.930 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 407.15 Mbit/s  
95th percentile per-packet one-way delay: 0.930 ms  
Loss rate: 0.06%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-07 21:15:49

End at: 2018-09-07 21:16:19

Local clock offset: 3.111 ms

Remote clock offset: 0.172 ms

# Below is generated by plot.py at 2018-09-07 22:05:16

# Datalink statistics

-- Total of 1 flow:

Average throughput: 407.56 Mbit/s

95th percentile per-packet one-way delay: 1.249 ms

Loss rate: 0.07%

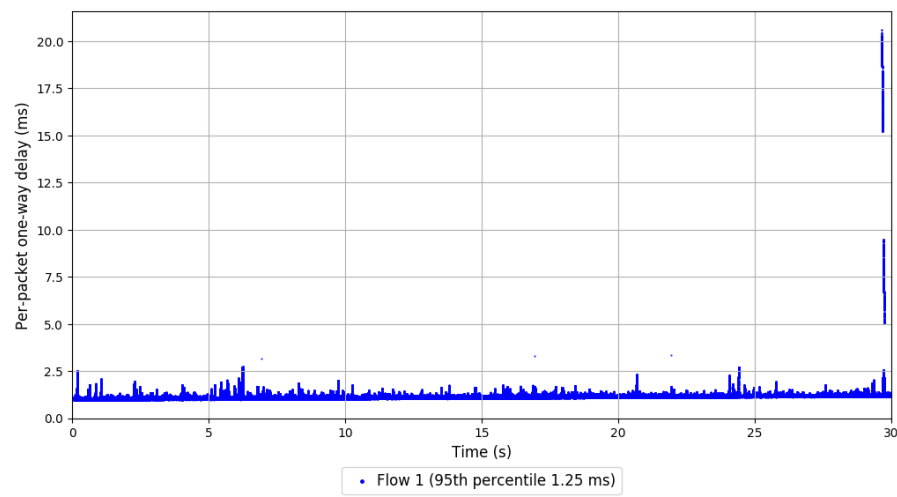
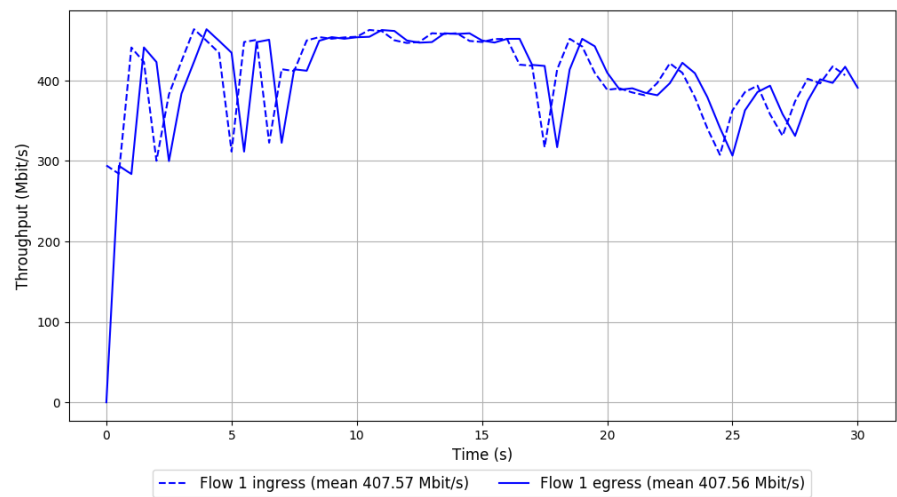
-- Flow 1:

Average throughput: 407.56 Mbit/s

95th percentile per-packet one-way delay: 1.249 ms

Loss rate: 0.07%

Run 5: Report of Copa — Data Link





Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 19:45:34

End at: 2018-09-07 19:46:04

Local clock offset: 3.44 ms

Remote clock offset: 0.542 ms

# Below is generated by plot.py at 2018-09-07 22:05:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 803.05 Mbit/s

95th percentile per-packet one-way delay: 20.827 ms

Loss rate: 0.09%

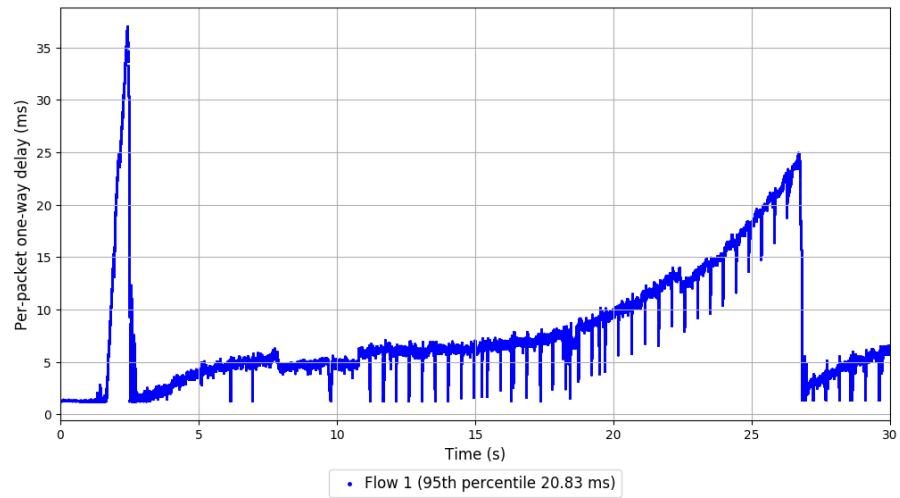
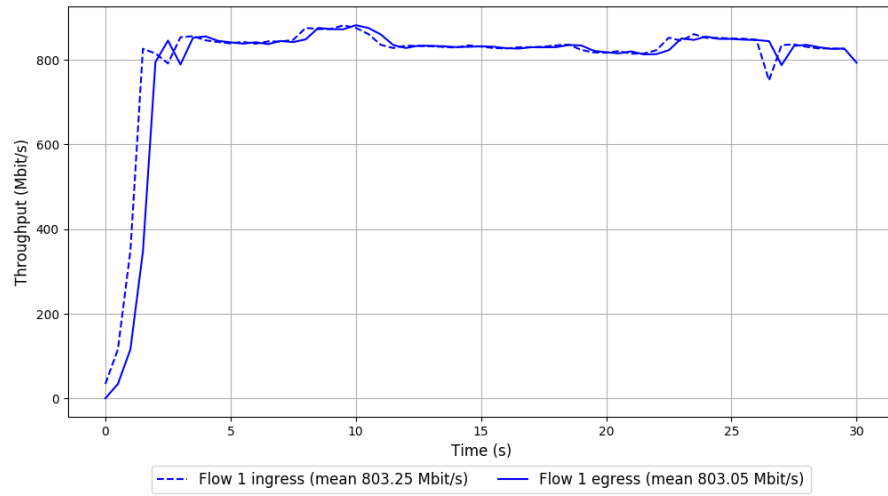
-- Flow 1:

Average throughput: 803.05 Mbit/s

95th percentile per-packet one-way delay: 20.827 ms

Loss rate: 0.09%

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

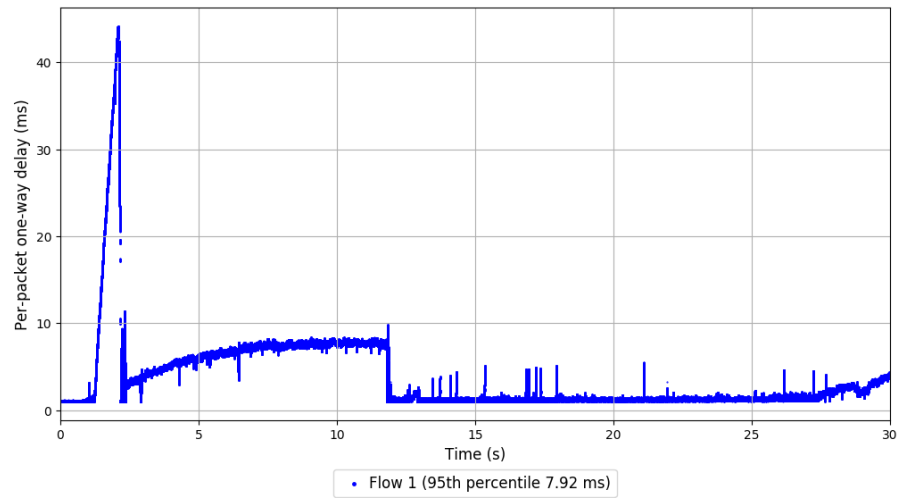
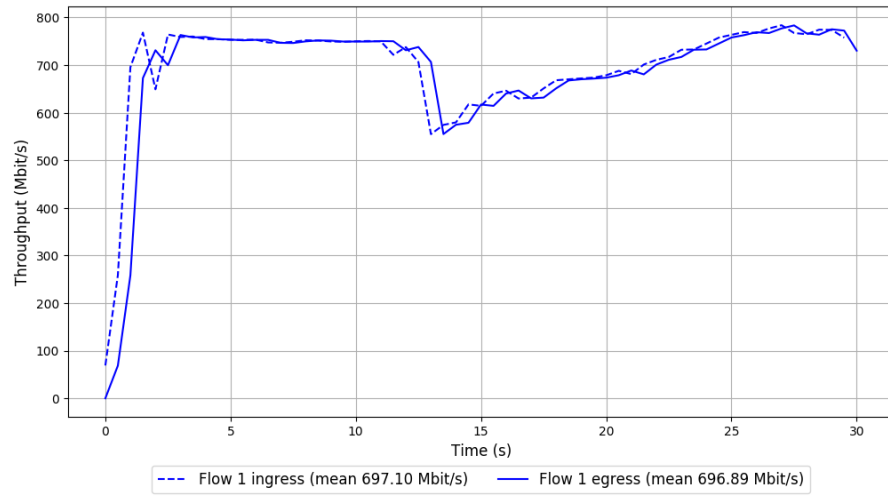


Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 20:13:34  
End at: 2018-09-07 20:14:04  
Local clock offset: -0.688 ms  
Remote clock offset: -0.537 ms

# Below is generated by plot.py at 2018-09-07 22:05:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 696.89 Mbit/s  
95th percentile per-packet one-way delay: 7.917 ms  
Loss rate: 0.09%  
-- Flow 1:  
Average throughput: 696.89 Mbit/s  
95th percentile per-packet one-way delay: 7.917 ms  
Loss rate: 0.09%

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

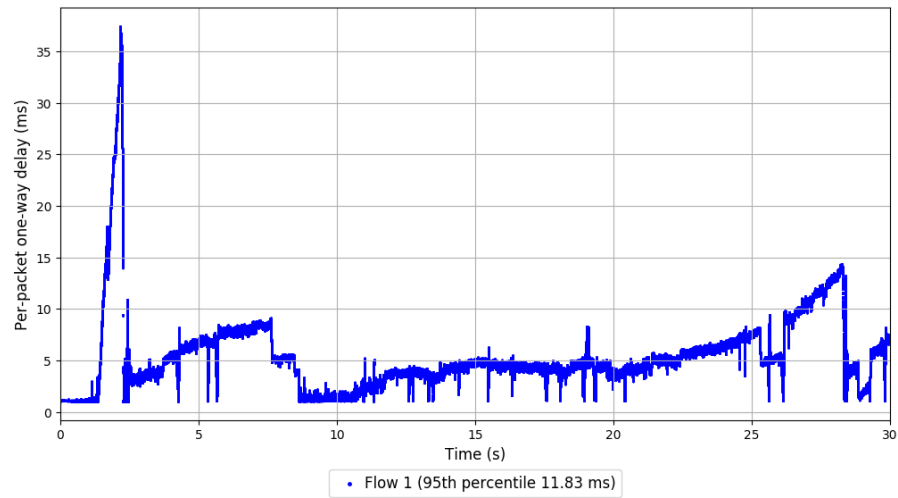
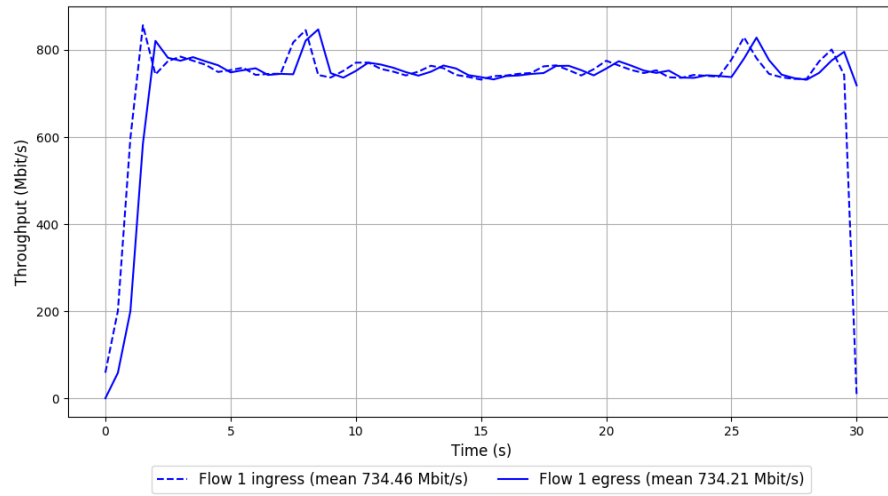


Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 20:41:35  
End at: 2018-09-07 20:42:05  
Local clock offset: -0.851 ms  
Remote clock offset: -0.601 ms

# Below is generated by plot.py at 2018-09-07 22:05:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 734.21 Mbit/s  
95th percentile per-packet one-way delay: 11.831 ms  
Loss rate: 0.09%  
-- Flow 1:  
Average throughput: 734.21 Mbit/s  
95th percentile per-packet one-way delay: 11.831 ms  
Loss rate: 0.09%

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

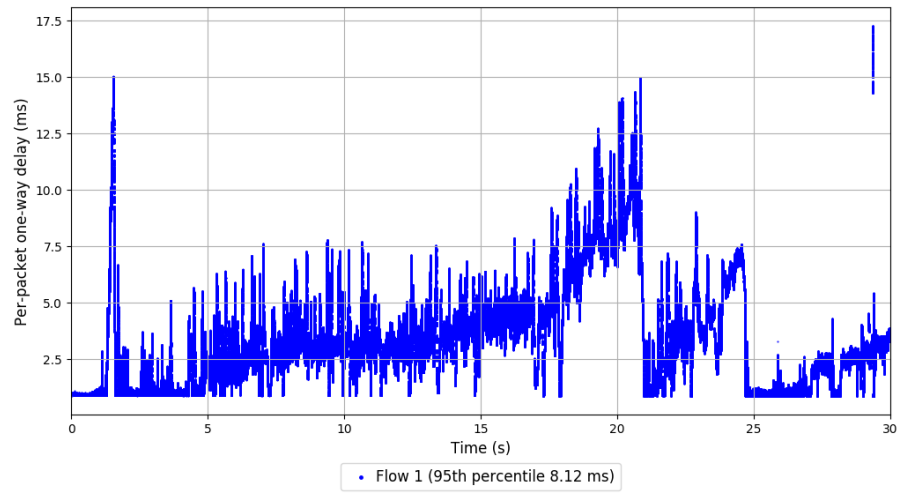
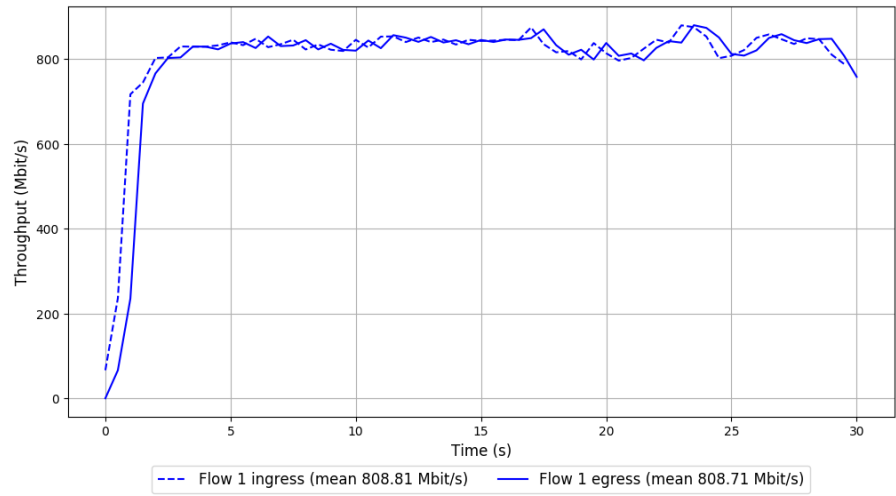


Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 21:09:29  
End at: 2018-09-07 21:09:59  
Local clock offset: 2.966 ms  
Remote clock offset: -0.201 ms

# Below is generated by plot.py at 2018-09-07 22:06:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 808.71 Mbit/s  
95th percentile per-packet one-way delay: 8.119 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 808.71 Mbit/s  
95th percentile per-packet one-way delay: 8.119 ms  
Loss rate: 0.07%

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





Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 21:37:41

End at: 2018-09-07 21:38:11

Local clock offset: 3.024 ms

Remote clock offset: 3.484 ms

# Below is generated by plot.py at 2018-09-07 22:06:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 612.88 Mbit/s

95th percentile per-packet one-way delay: 4.211 ms

Loss rate: 0.11%

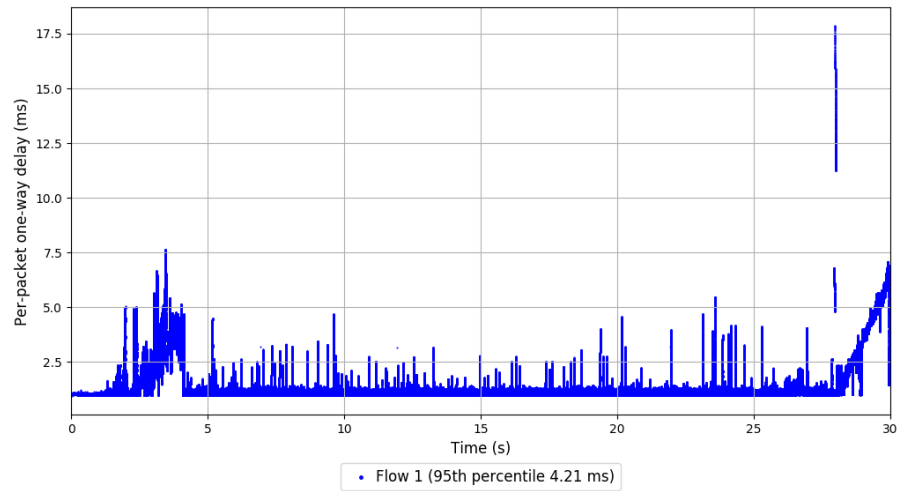
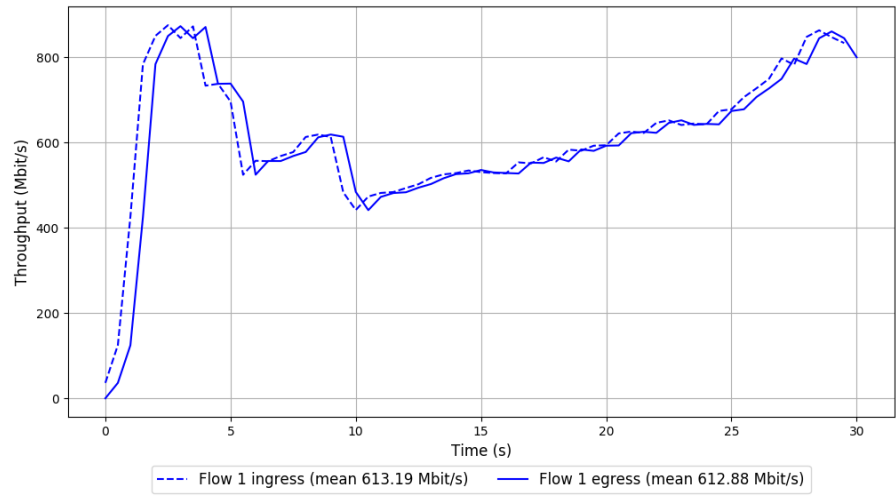
-- Flow 1:

Average throughput: 612.88 Mbit/s

95th percentile per-packet one-way delay: 4.211 ms

Loss rate: 0.11%

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

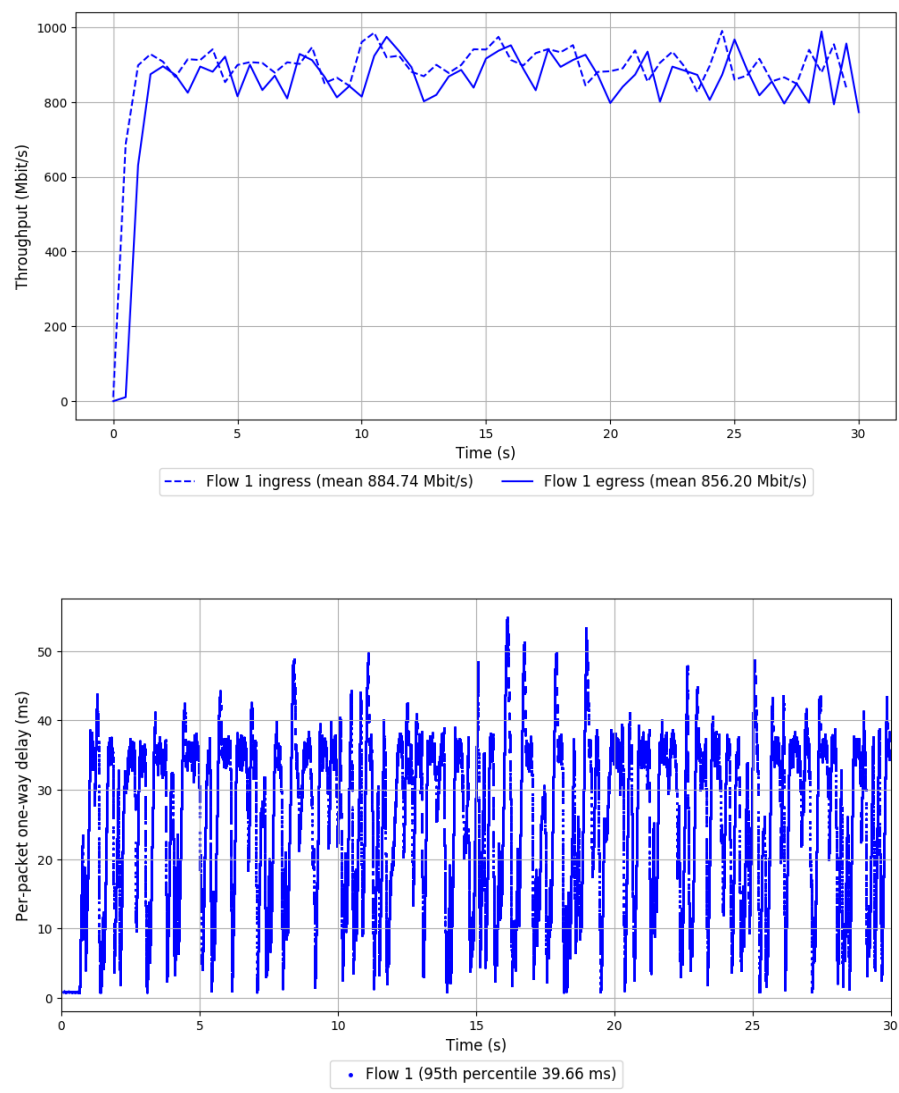


```
Run 1: Statistics of FillP

Start at: 2018-09-07 19:29:54
End at: 2018-09-07 19:30:24
Local clock offset: 3.279 ms
Remote clock offset: 4.412 ms

# Below is generated by plot.py at 2018-09-07 22:09:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 856.20 Mbit/s
95th percentile per-packet one-way delay: 39.660 ms
Loss rate: 3.29%
-- Flow 1:
Average throughput: 856.20 Mbit/s
95th percentile per-packet one-way delay: 39.660 ms
Loss rate: 3.29%
```

Run 1: Report of FillP — Data Link

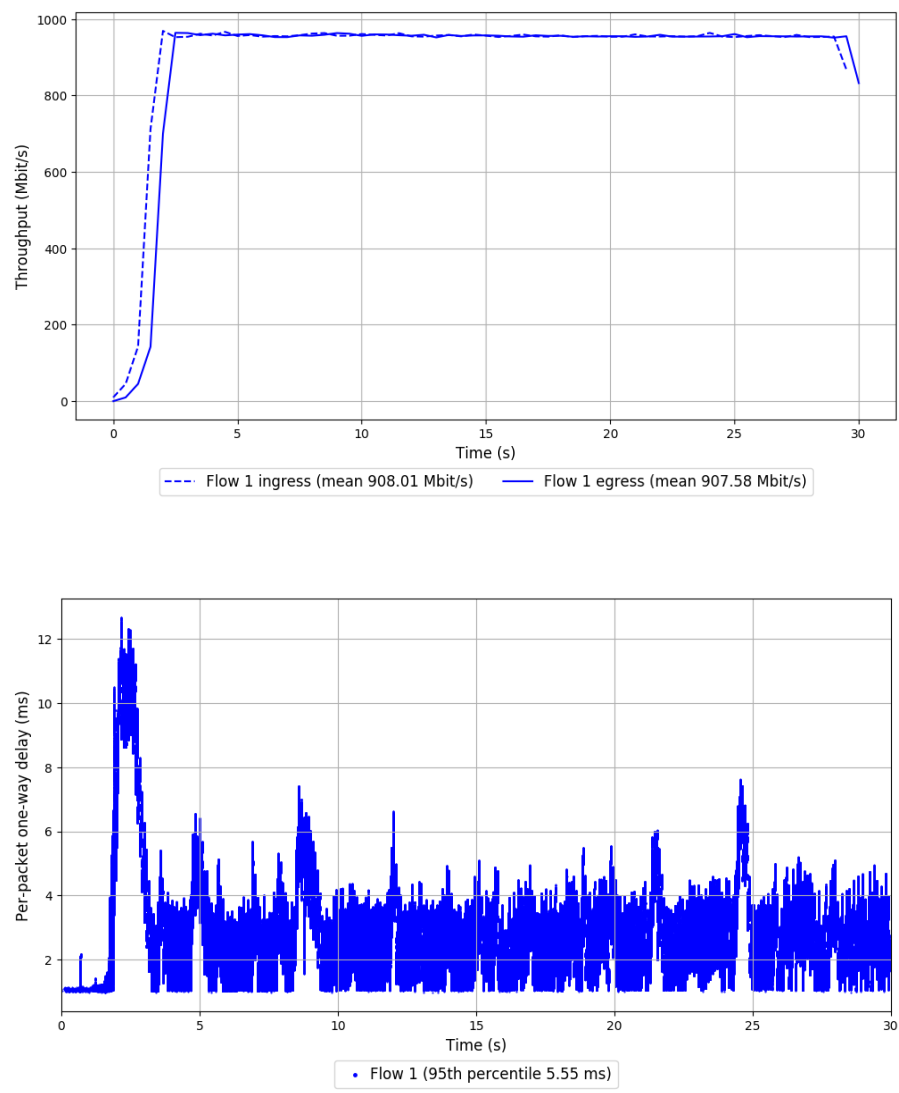


Run 2: Statistics of FillP

Start at: 2018-09-07 19:58:00  
End at: 2018-09-07 19:58:30  
Local clock offset: 0.398 ms  
Remote clock offset: -0.514 ms

# Below is generated by plot.py at 2018-09-07 22:17:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 907.58 Mbit/s  
95th percentile per-packet one-way delay: 5.553 ms  
Loss rate: 0.11%  
-- Flow 1:  
Average throughput: 907.58 Mbit/s  
95th percentile per-packet one-way delay: 5.553 ms  
Loss rate: 0.11%

Run 2: Report of FillP — Data Link

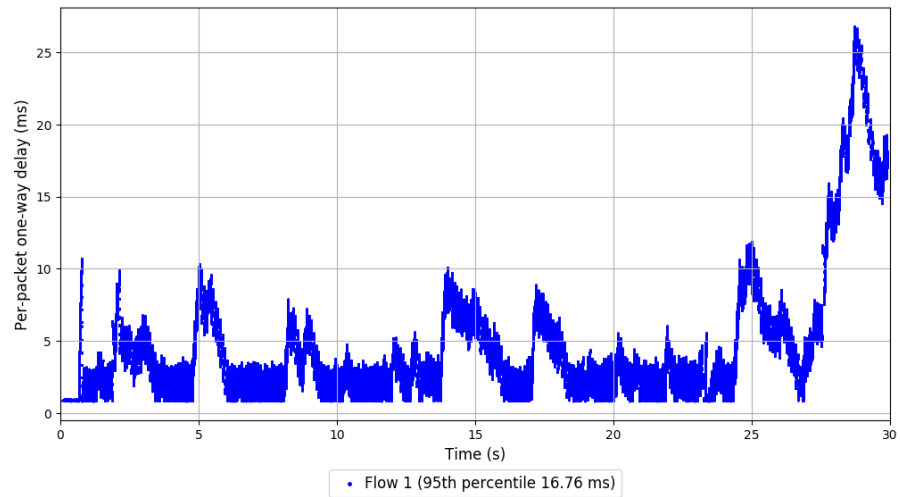
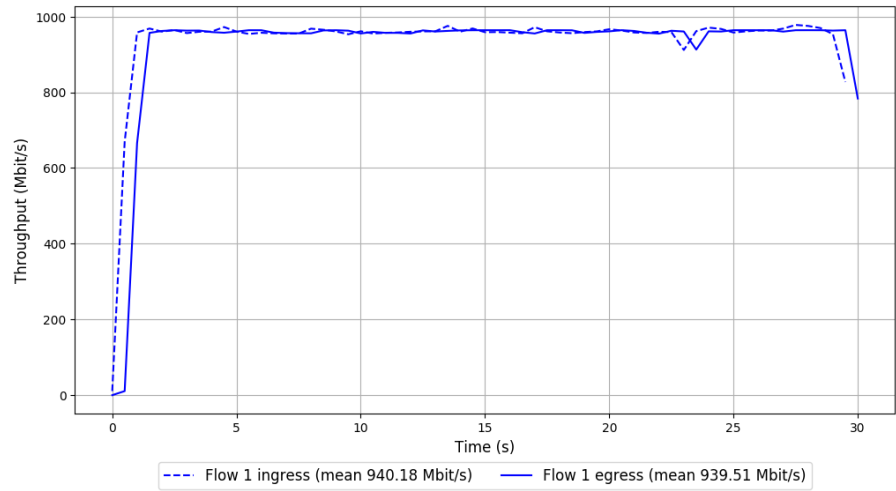


Run 3: Statistics of FillP

Start at: 2018-09-07 20:25:59  
End at: 2018-09-07 20:26:29  
Local clock offset: -0.687 ms  
Remote clock offset: -0.387 ms

# Below is generated by plot.py at 2018-09-07 22:17:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 939.51 Mbit/s  
95th percentile per-packet one-way delay: 16.758 ms  
Loss rate: 0.14%  
-- Flow 1:  
Average throughput: 939.51 Mbit/s  
95th percentile per-packet one-way delay: 16.758 ms  
Loss rate: 0.14%

### Run 3: Report of FillP — Data Link



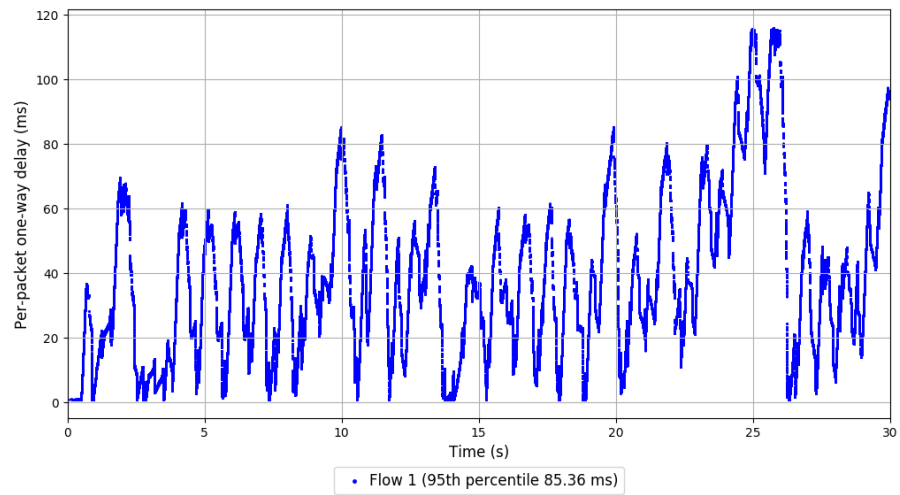
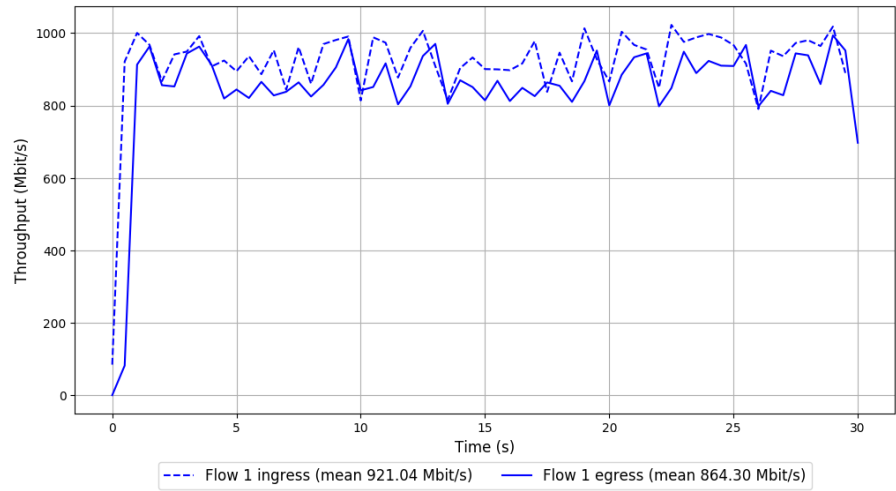


Run 4: Statistics of FillP

Start at: 2018-09-07 20:54:03  
End at: 2018-09-07 20:54:33  
Local clock offset: 1.638 ms  
Remote clock offset: -0.209 ms

# Below is generated by plot.py at 2018-09-07 22:17:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 864.30 Mbit/s  
95th percentile per-packet one-way delay: 85.361 ms  
Loss rate: 6.22%  
-- Flow 1:  
Average throughput: 864.30 Mbit/s  
95th percentile per-packet one-way delay: 85.361 ms  
Loss rate: 6.22%

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



Run 5: Statistics of FillP

Start at: 2018-09-07 21:22:01

End at: 2018-09-07 21:22:31

Local clock offset: 2.884 ms

Remote clock offset: 1.705 ms

# Below is generated by plot.py at 2018-09-07 22:17:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 841.24 Mbit/s

95th percentile per-packet one-way delay: 80.347 ms

Loss rate: 6.26%

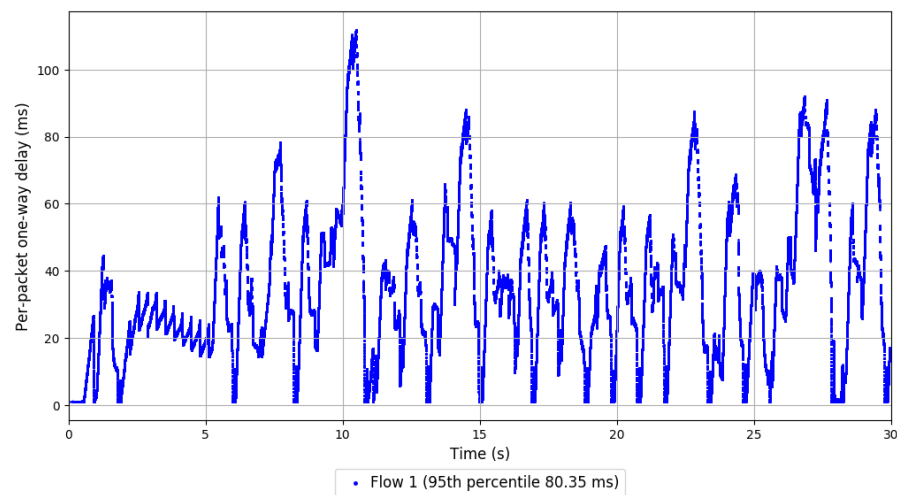
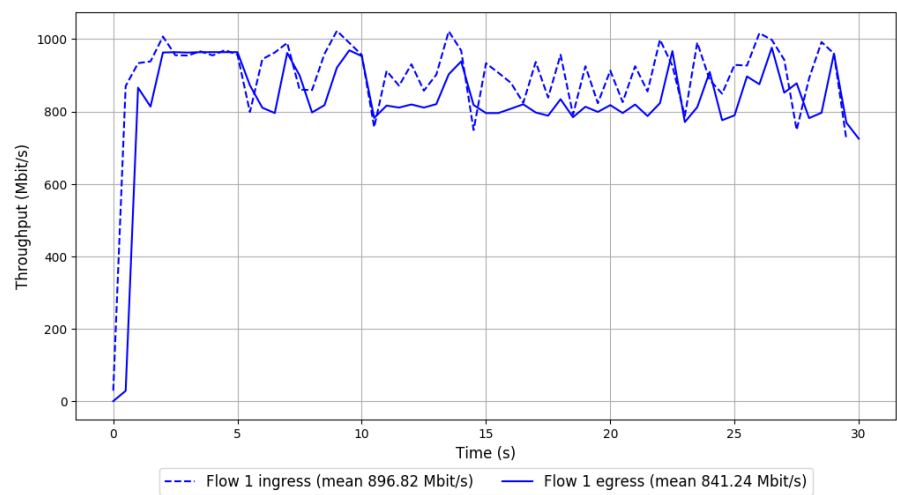
-- Flow 1:

Average throughput: 841.24 Mbit/s

95th percentile per-packet one-way delay: 80.347 ms

Loss rate: 6.26%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 19:36:06

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

Local clock offset: 3.465 ms

Remote clock offset: 2.794 ms

# Below is generated by plot.py at 2018-09-07 22:18:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 938.18 Mbit/s

95th percentile per-packet one-way delay: 25.697 ms

Loss rate: 0.59%

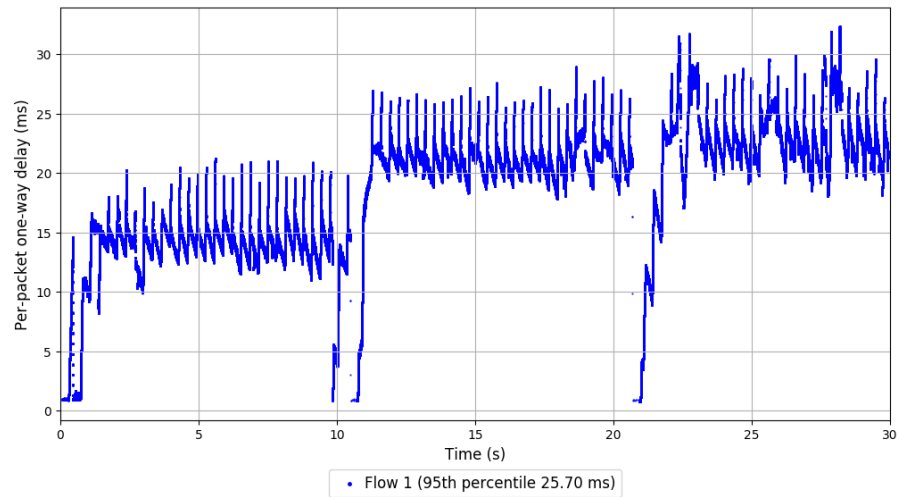
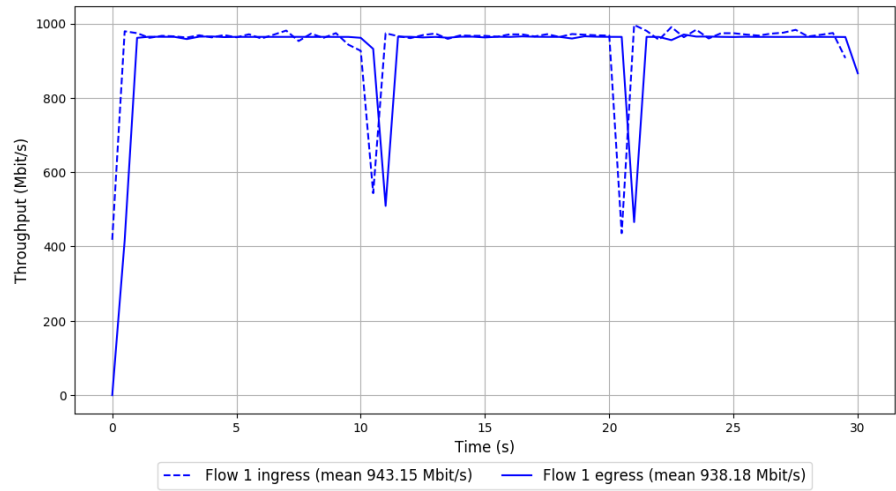
-- Flow 1:

Average throughput: 938.18 Mbit/s

95th percentile per-packet one-way delay: 25.697 ms

Loss rate: 0.59%

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



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 20:04:06

End at: 2018-09-07 20:04:36

Local clock offset: -0.236 ms

Remote clock offset: -0.84 ms

# Below is generated by plot.py at 2018-09-07 22:18:35

# Datalink statistics

-- Total of 1 flow:

Average throughput: 933.46 Mbit/s

95th percentile per-packet one-way delay: 23.749 ms

Loss rate: 0.55%

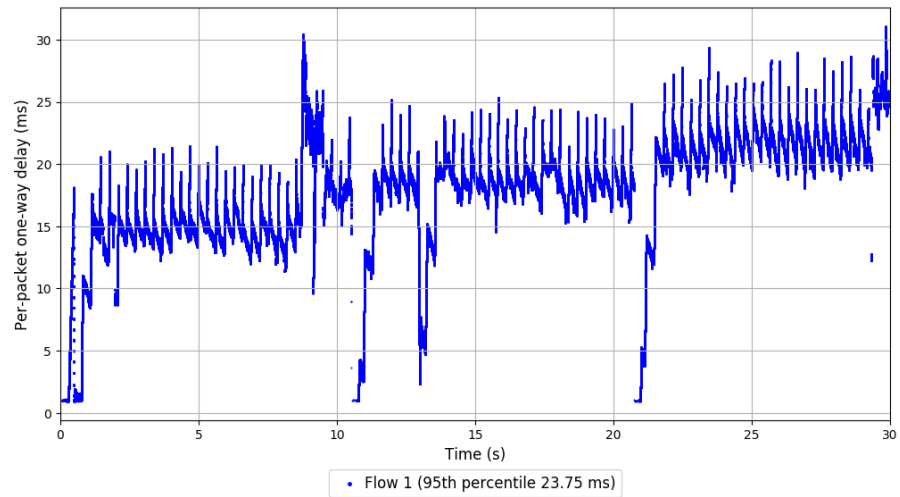
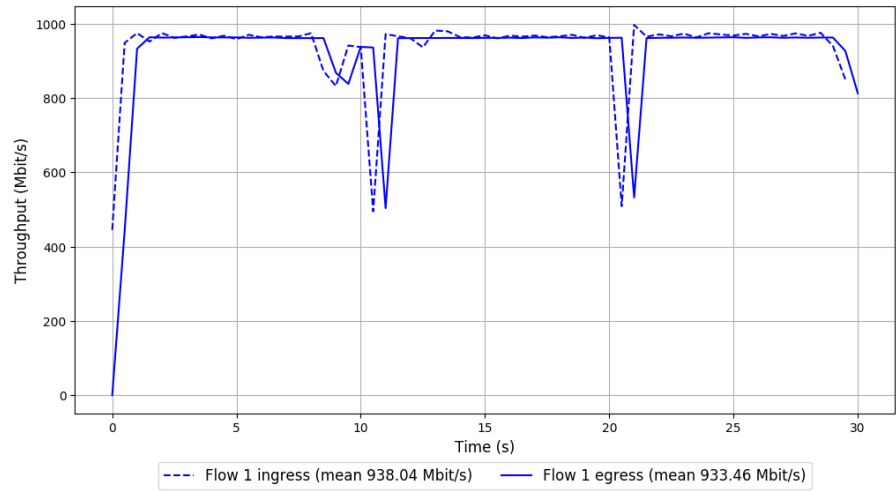
-- Flow 1:

Average throughput: 933.46 Mbit/s

95th percentile per-packet one-way delay: 23.749 ms

Loss rate: 0.55%

## Run 2: Report of FillP-Sheep — Data Link



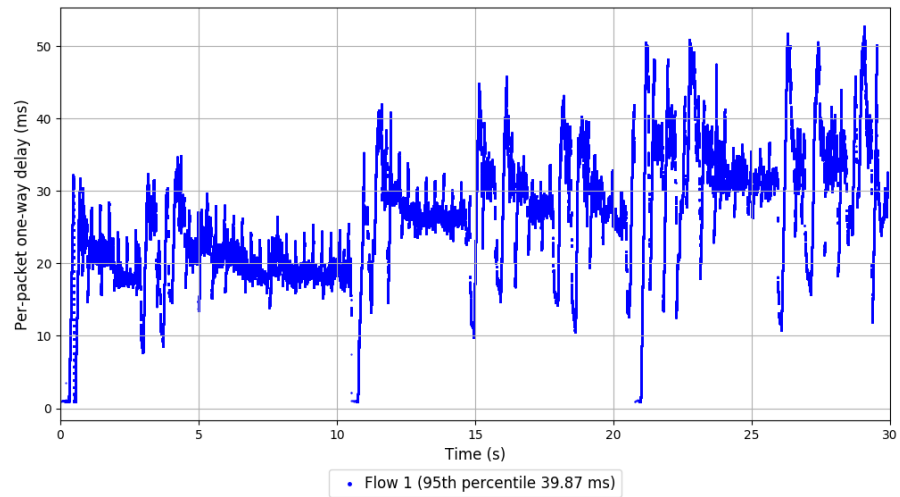
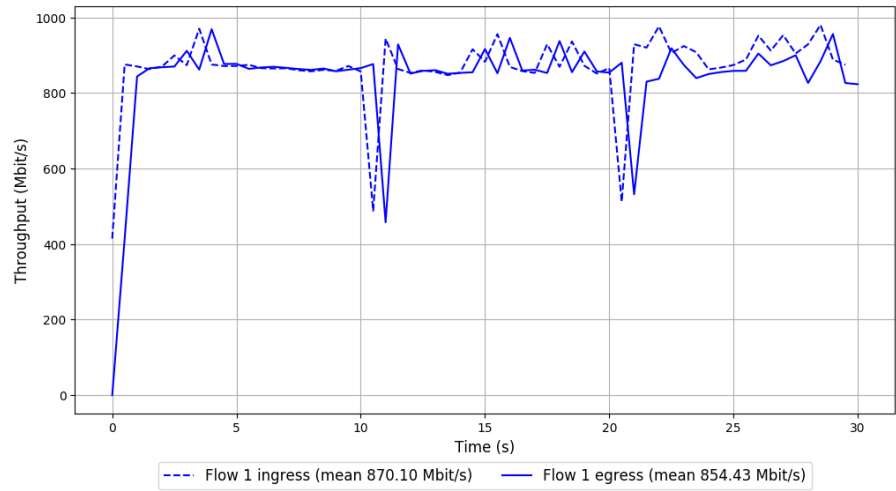


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 20:32:04  
End at: 2018-09-07 20:32:34  
Local clock offset: -0.672 ms  
Remote clock offset: -0.471 ms

# Below is generated by plot.py at 2018-09-07 22:18:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 854.43 Mbit/s  
95th percentile per-packet one-way delay: 39.873 ms  
Loss rate: 1.87%  
-- Flow 1:  
Average throughput: 854.43 Mbit/s  
95th percentile per-packet one-way delay: 39.873 ms  
Loss rate: 1.87%

### Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 21:00:09

End at: 2018-09-07 21:00:39

Local clock offset: 2.283 ms

Remote clock offset: -0.31 ms

# Below is generated by plot.py at 2018-09-07 22:23:09

# Datalink statistics

-- Total of 1 flow:

Average throughput: 876.44 Mbit/s

95th percentile per-packet one-way delay: 40.818 ms

Loss rate: 1.85%

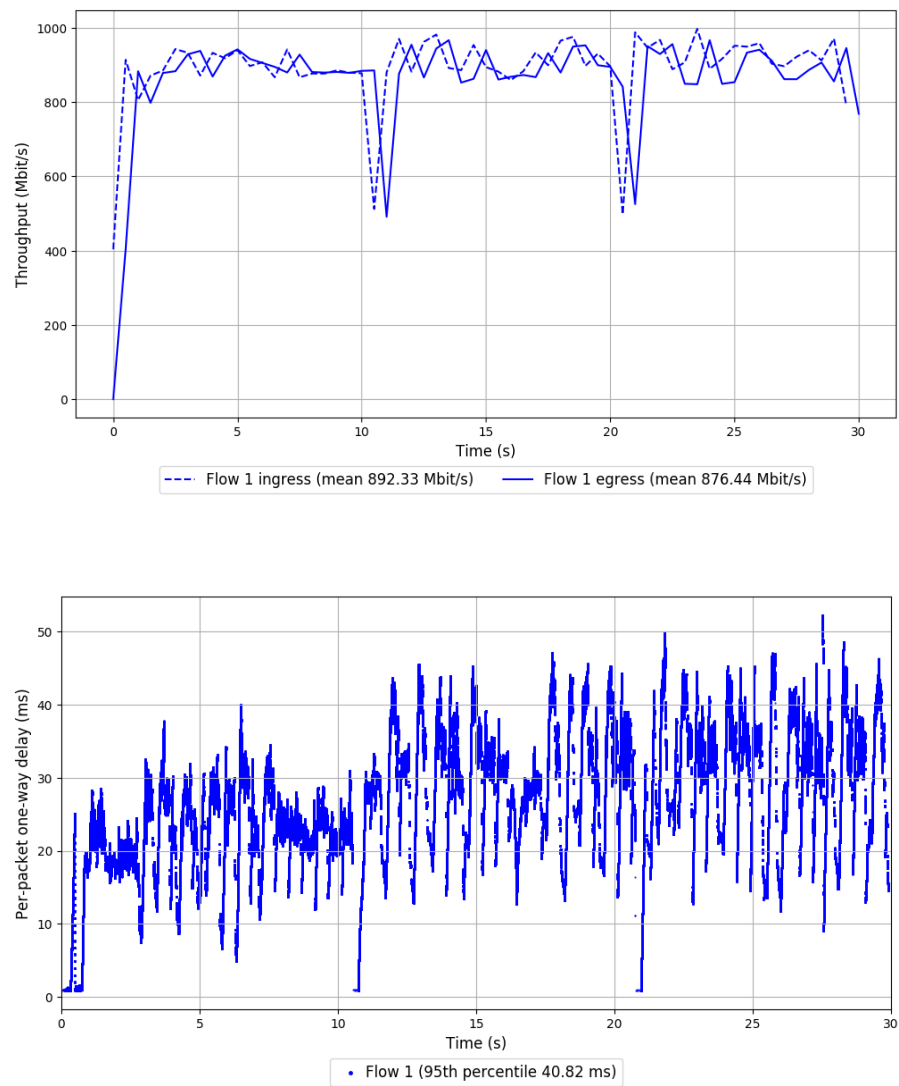
-- Flow 1:

Average throughput: 876.44 Mbit/s

95th percentile per-packet one-way delay: 40.818 ms

Loss rate: 1.85%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 21:28:13

End at: 2018-09-07 21:28:43

Local clock offset: 2.945 ms

Remote clock offset: 2.628 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 938.70 Mbit/s

95th percentile per-packet one-way delay: 24.753 ms

Loss rate: 0.72%

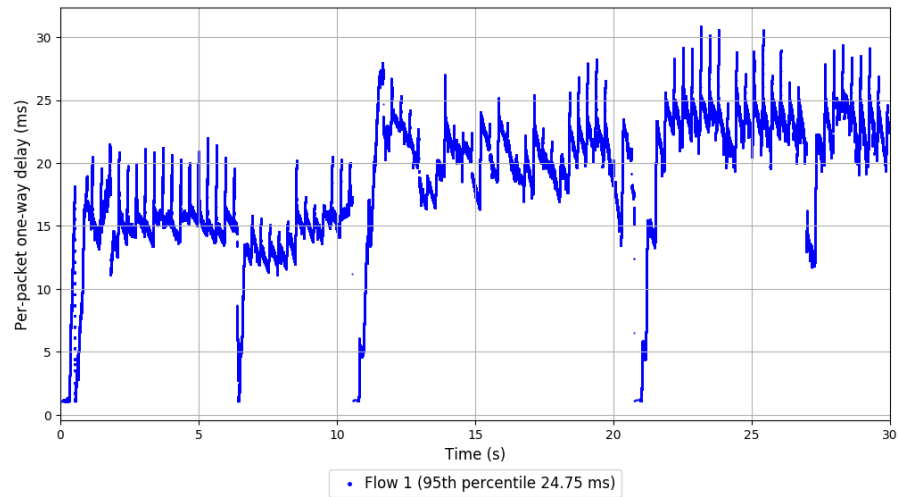
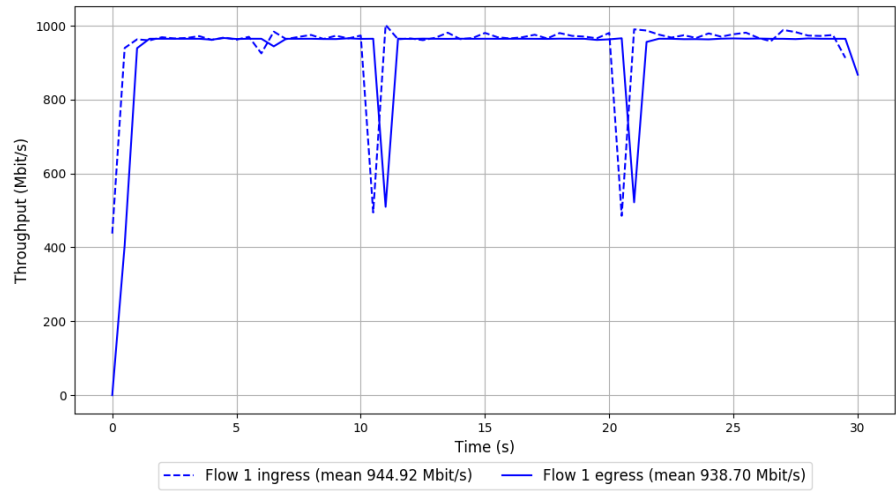
-- Flow 1:

Average throughput: 938.70 Mbit/s

95th percentile per-packet one-way delay: 24.753 ms

Loss rate: 0.72%

### Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2018-09-07 19:40:50

End at: 2018-09-07 19:41:20

Local clock offset: 3.563 ms

Remote clock offset: 1.41 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 195.21 Mbit/s

95th percentile per-packet one-way delay: 0.961 ms

Loss rate: 0.07%

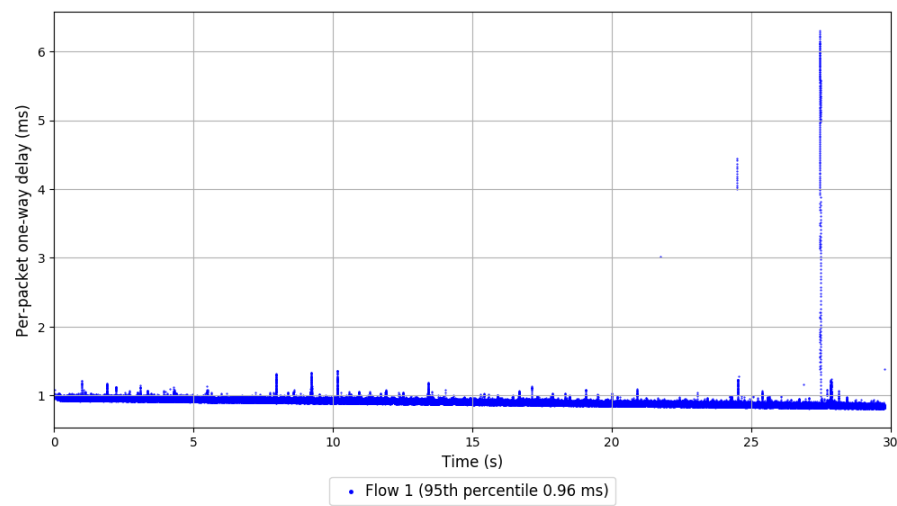
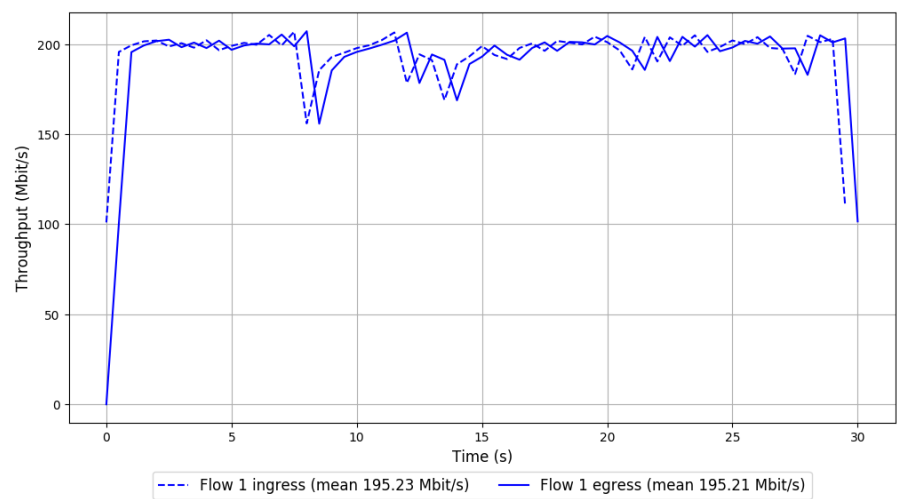
-- Flow 1:

Average throughput: 195.21 Mbit/s

95th percentile per-packet one-way delay: 0.961 ms

Loss rate: 0.07%

Run 1: Report of Indigo — Data Link



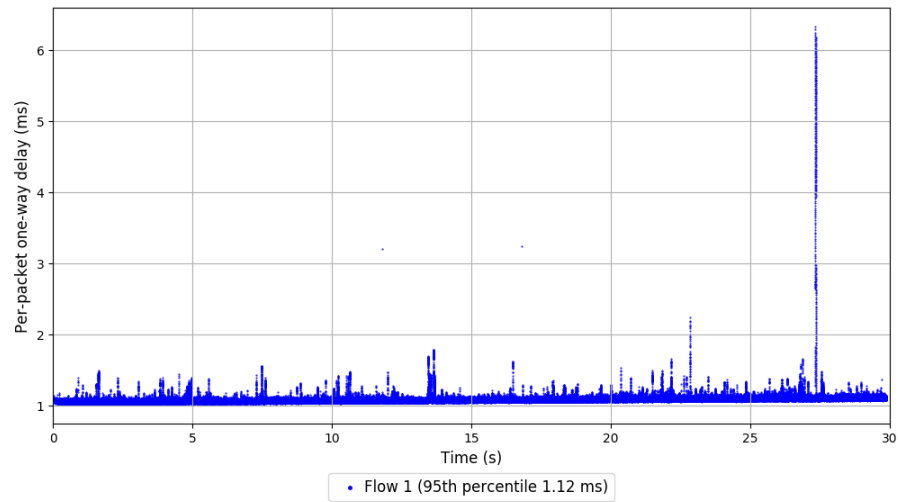
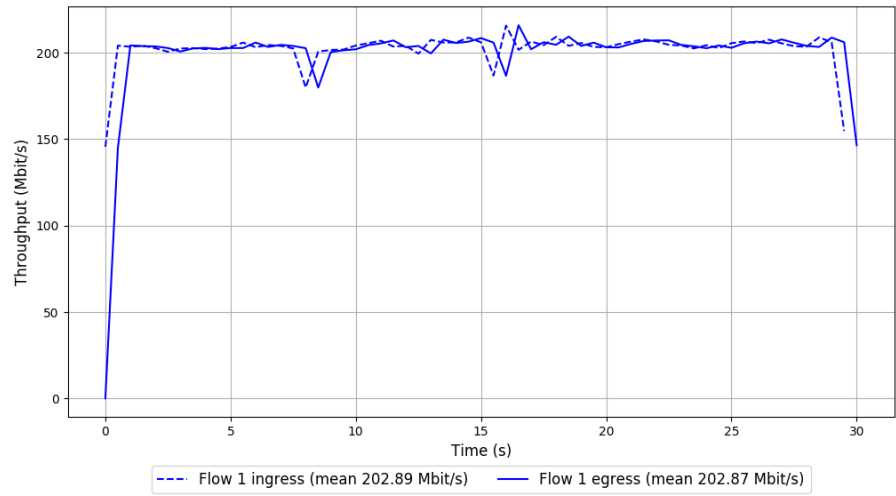


Run 2: Statistics of Indigo

Start at: 2018-09-07 20:08:51  
End at: 2018-09-07 20:09:21  
Local clock offset: -0.474 ms  
Remote clock offset: -0.753 ms

# Below is generated by plot.py at 2018-09-07 22:29:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 202.87 Mbit/s  
95th percentile per-packet one-way delay: 1.117 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 202.87 Mbit/s  
95th percentile per-packet one-way delay: 1.117 ms  
Loss rate: 0.07%

## Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-07 20:36:49

End at: 2018-09-07 20:37:19

Local clock offset: -0.859 ms

Remote clock offset: -0.53 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 200.70 Mbit/s

95th percentile per-packet one-way delay: 0.923 ms

Loss rate: 0.07%

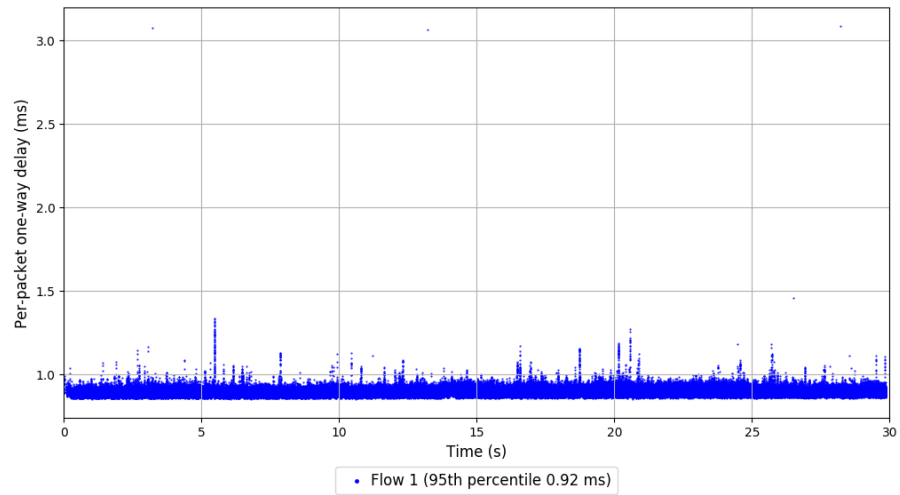
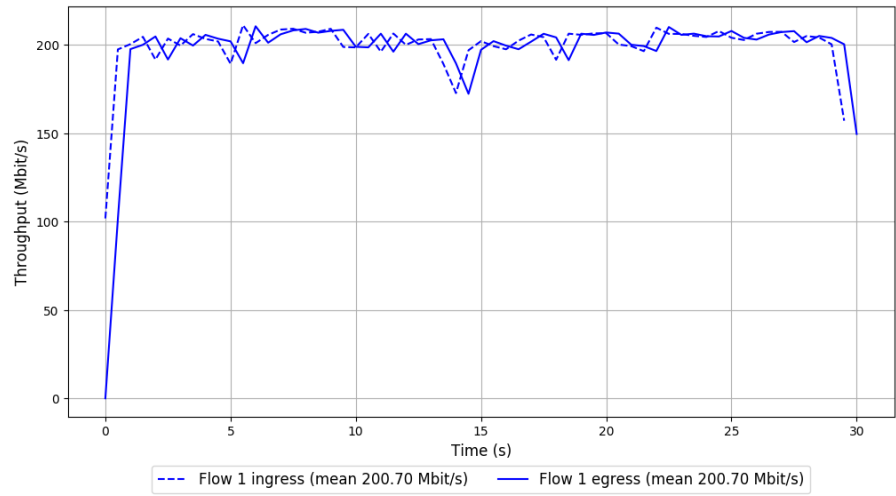
-- Flow 1:

Average throughput: 200.70 Mbit/s

95th percentile per-packet one-way delay: 0.923 ms

Loss rate: 0.07%

### Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-07 21:04:53

End at: 2018-09-07 21:05:23

Local clock offset: 2.714 ms

Remote clock offset: -0.322 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 201.51 Mbit/s

95th percentile per-packet one-way delay: 1.032 ms

Loss rate: 0.07%

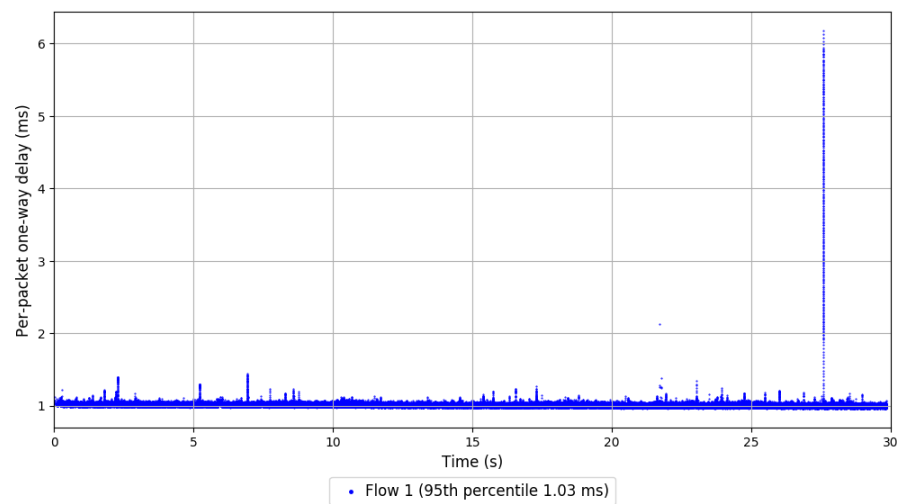
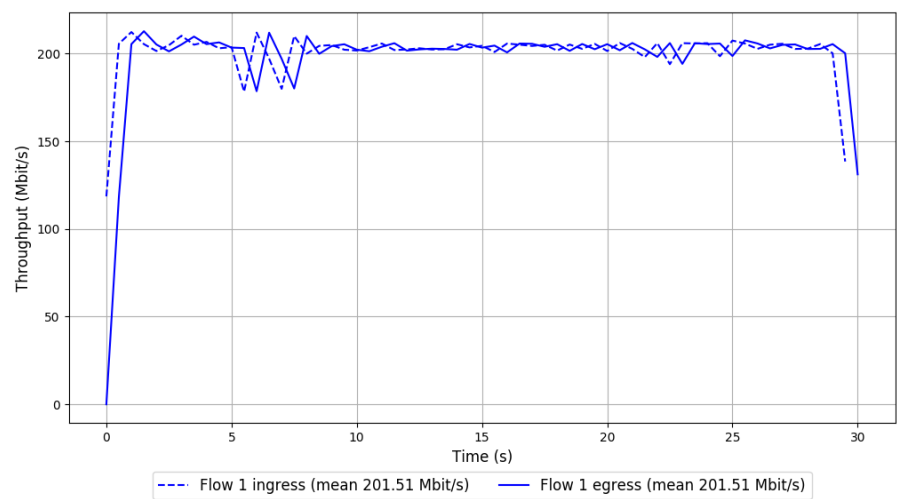
-- Flow 1:

Average throughput: 201.51 Mbit/s

95th percentile per-packet one-way delay: 1.032 ms

Loss rate: 0.07%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-07 21:32:58

End at: 2018-09-07 21:33:29

Local clock offset: 2.956 ms

Remote clock offset: 3.07 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 200.92 Mbit/s

95th percentile per-packet one-way delay: 1.124 ms

Loss rate: 0.07%

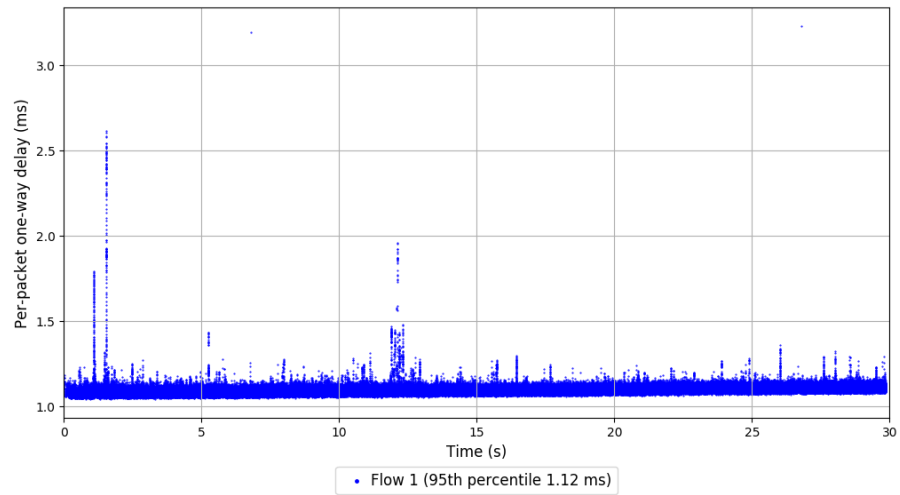
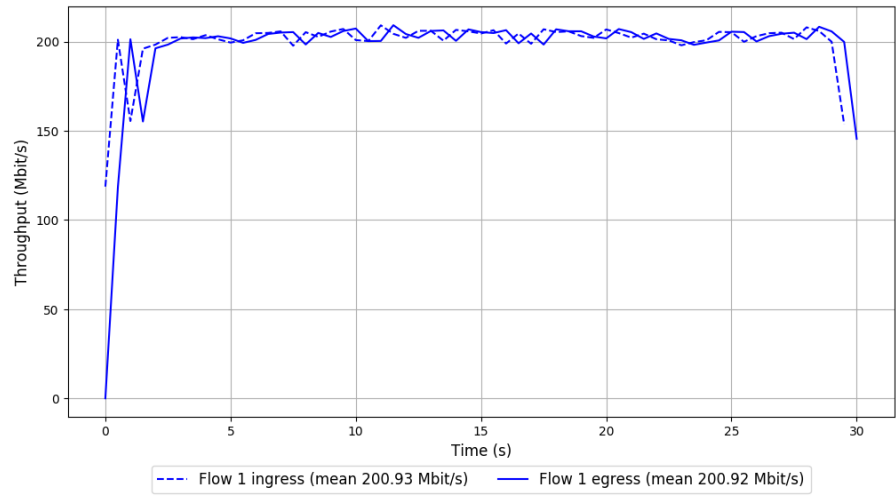
-- Flow 1:

Average throughput: 200.92 Mbit/s

95th percentile per-packet one-way delay: 1.124 ms

Loss rate: 0.07%

### Run 5: Report of Indigo — Data Link



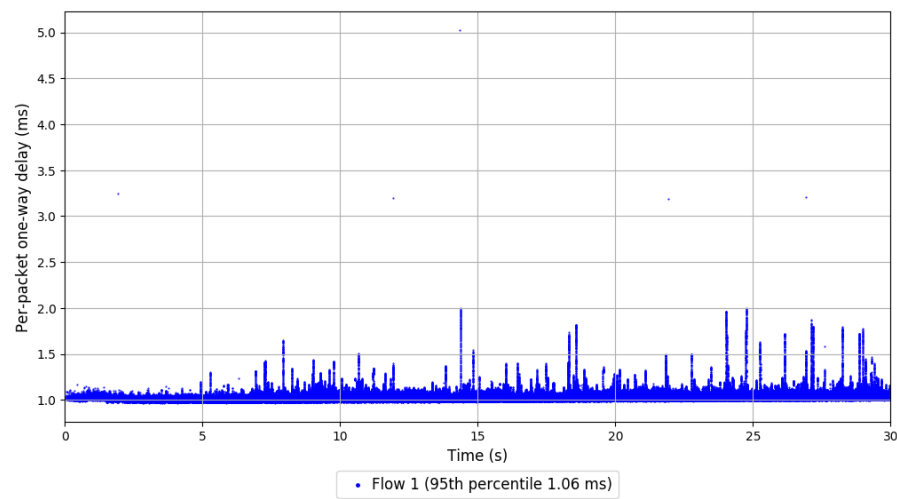
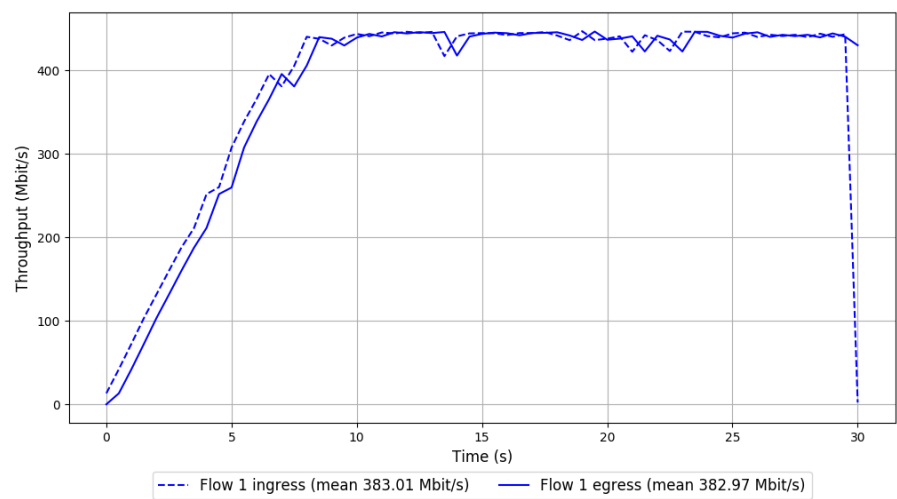


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 19:27:02
End at: 2018-09-07 19:27:32
Local clock offset: 3.267 ms
Remote clock offset: 4.085 ms

# Below is generated by plot.py at 2018-09-07 22:29:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 382.97 Mbit/s
95th percentile per-packet one-way delay: 1.060 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 382.97 Mbit/s
95th percentile per-packet one-way delay: 1.060 ms
Loss rate: 0.07%
```

Run 1: Report of LEDBAT — Data Link

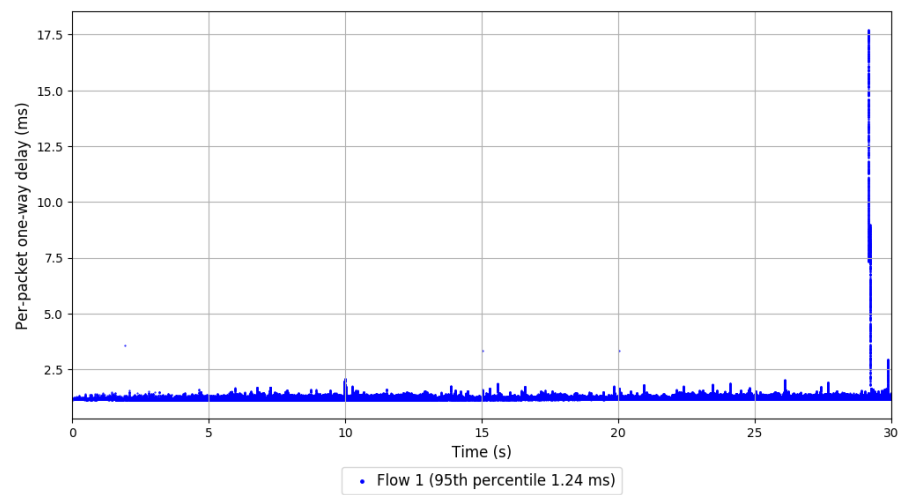
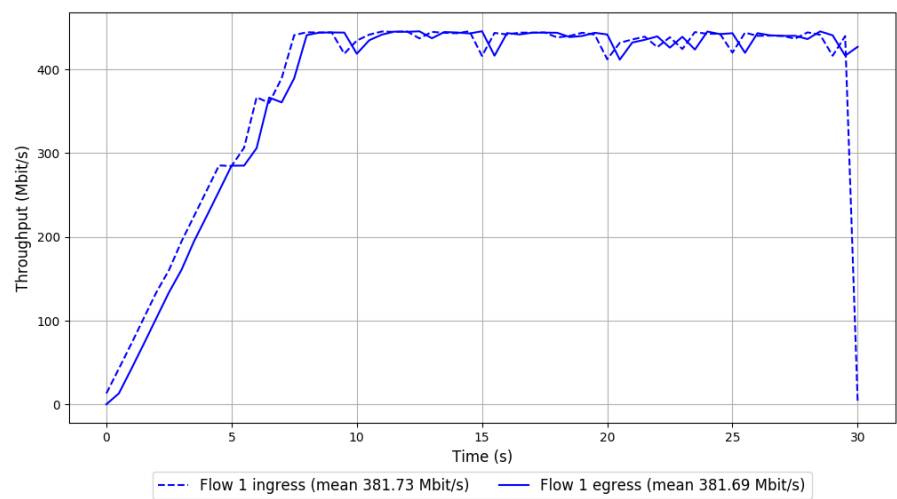


Run 2: Statistics of LEDBAT

Start at: 2018-09-07 19:55:07  
End at: 2018-09-07 19:55:37  
Local clock offset: 0.833 ms  
Remote clock offset: -0.383 ms

# Below is generated by plot.py at 2018-09-07 22:29:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 381.69 Mbit/s  
95th percentile per-packet one-way delay: 1.239 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 381.69 Mbit/s  
95th percentile per-packet one-way delay: 1.239 ms  
Loss rate: 0.07%

Run 2: Report of LEDBAT — Data Link

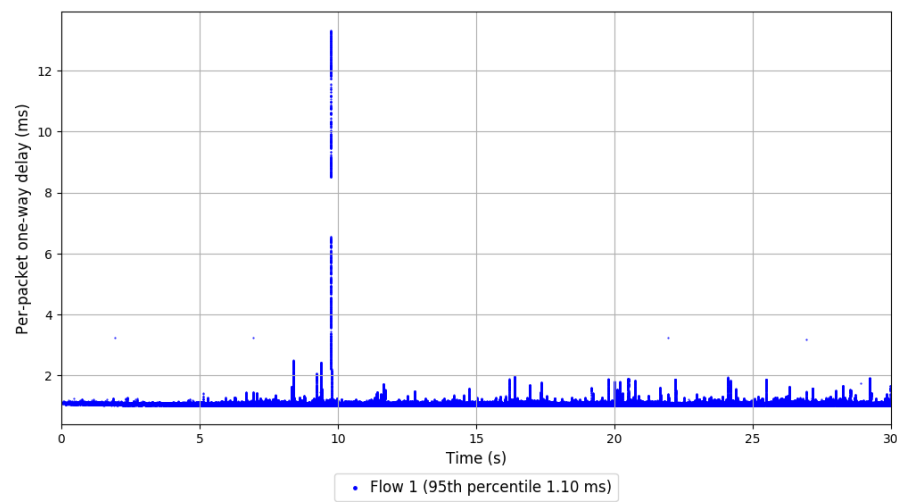
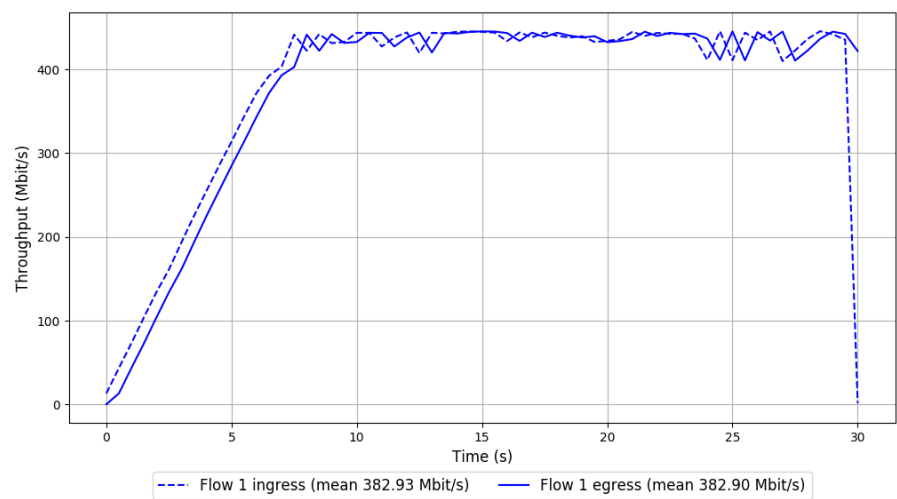


Run 3: Statistics of LEDBAT

Start at: 2018-09-07 20:23:06  
End at: 2018-09-07 20:23:36  
Local clock offset: -0.602 ms  
Remote clock offset: -0.451 ms

# Below is generated by plot.py at 2018-09-07 22:29:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 382.90 Mbit/s  
95th percentile per-packet one-way delay: 1.099 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 382.90 Mbit/s  
95th percentile per-packet one-way delay: 1.099 ms  
Loss rate: 0.07%

Run 3: Report of LEDBAT — Data Link

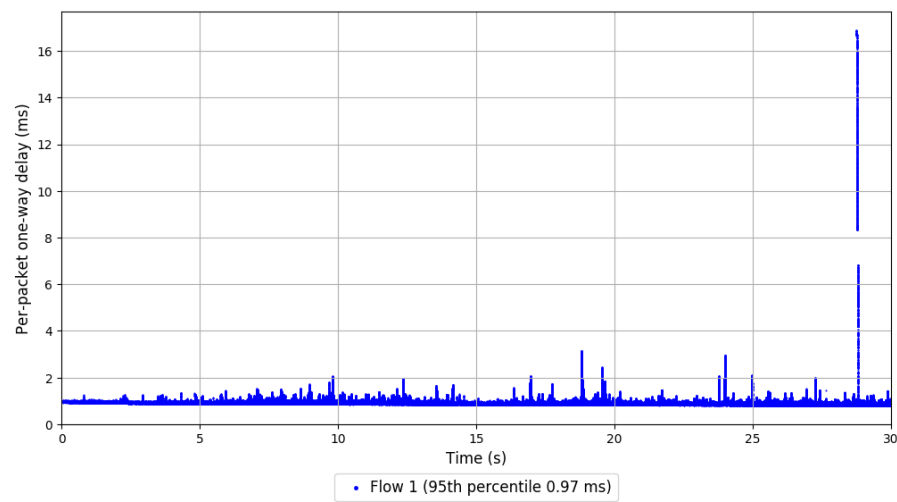
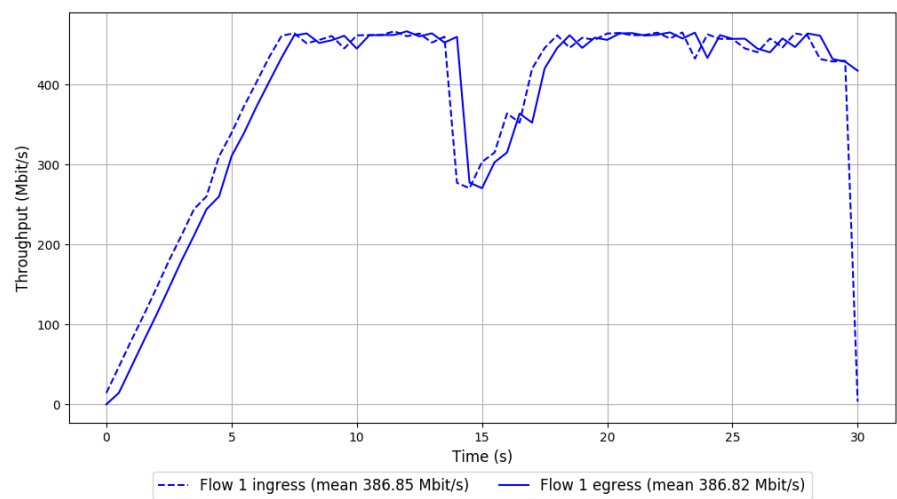


Run 4: Statistics of LEDBAT

Start at: 2018-09-07 20:51:10  
End at: 2018-09-07 20:51:40  
Local clock offset: 1.062 ms  
Remote clock offset: -0.356 ms

# Below is generated by plot.py at 2018-09-07 22:29:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 386.82 Mbit/s  
95th percentile per-packet one-way delay: 0.970 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 386.82 Mbit/s  
95th percentile per-packet one-way delay: 0.970 ms  
Loss rate: 0.07%

Run 4: Report of LEDBAT — Data Link





Run 5: Statistics of LEDBAT

Start at: 2018-09-07 21:19:08

End at: 2018-09-07 21:19:38

Local clock offset: 3.006 ms

Remote clock offset: 1.101 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 401.44 Mbit/s

95th percentile per-packet one-way delay: 1.236 ms

Loss rate: 0.07%

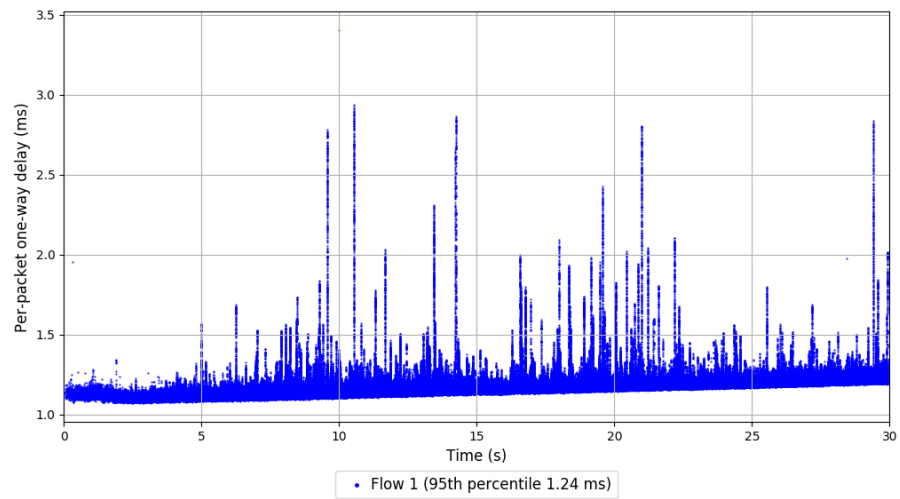
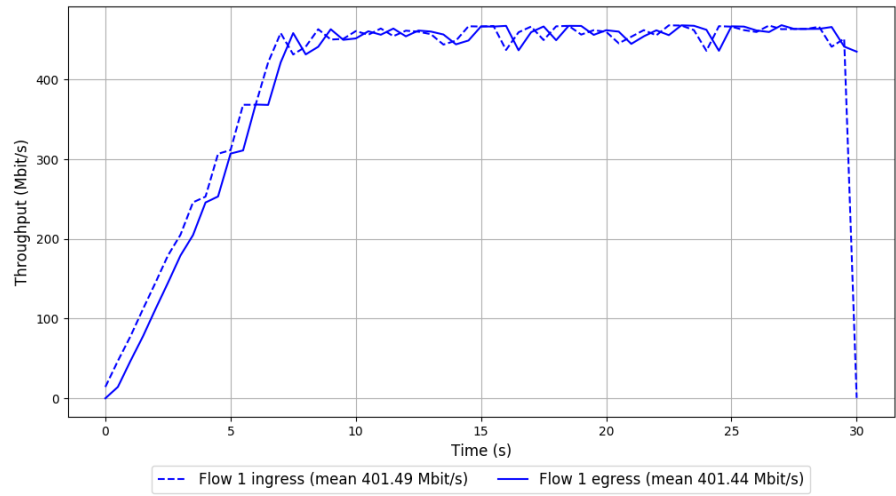
-- Flow 1:

Average throughput: 401.44 Mbit/s

95th percentile per-packet one-way delay: 1.236 ms

Loss rate: 0.07%

## Run 5: Report of LEDBAT — Data Link

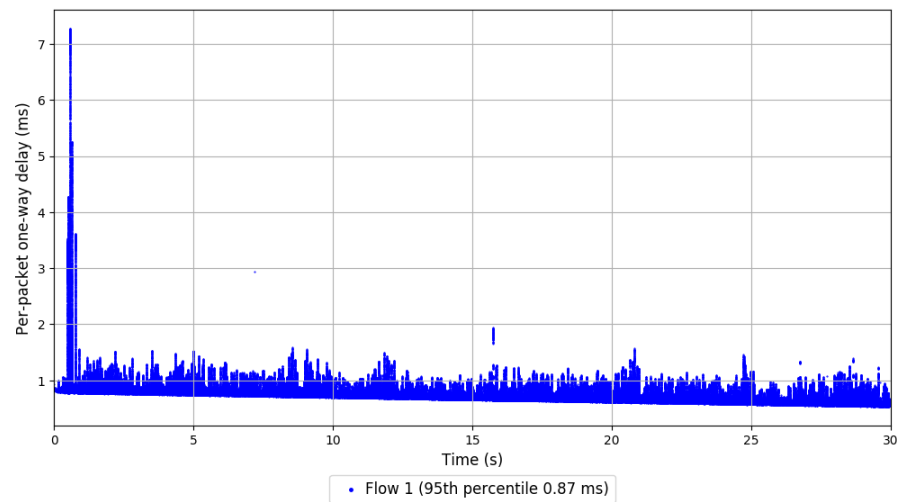
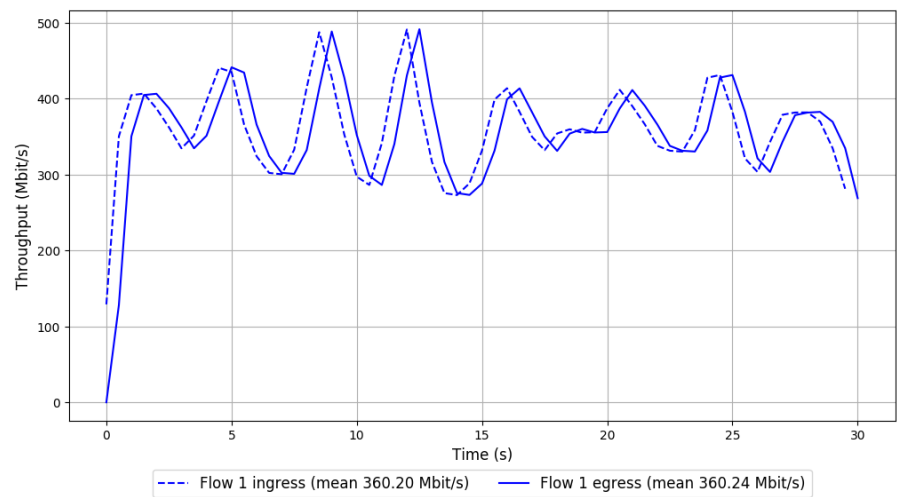


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 19:33:16
End at: 2018-09-07 19:33:46
Local clock offset: 3.329 ms
Remote clock offset: 4.081 ms

# Below is generated by plot.py at 2018-09-07 22:29:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 360.24 Mbit/s
95th percentile per-packet one-way delay: 0.870 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 360.24 Mbit/s
95th percentile per-packet one-way delay: 0.870 ms
Loss rate: 0.06%
```

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 20:01:23

End at: 2018-09-07 20:01:54

Local clock offset: 0.071 ms

Remote clock offset: -0.714 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 157.11 Mbit/s

95th percentile per-packet one-way delay: 1.139 ms

Loss rate: 0.05%

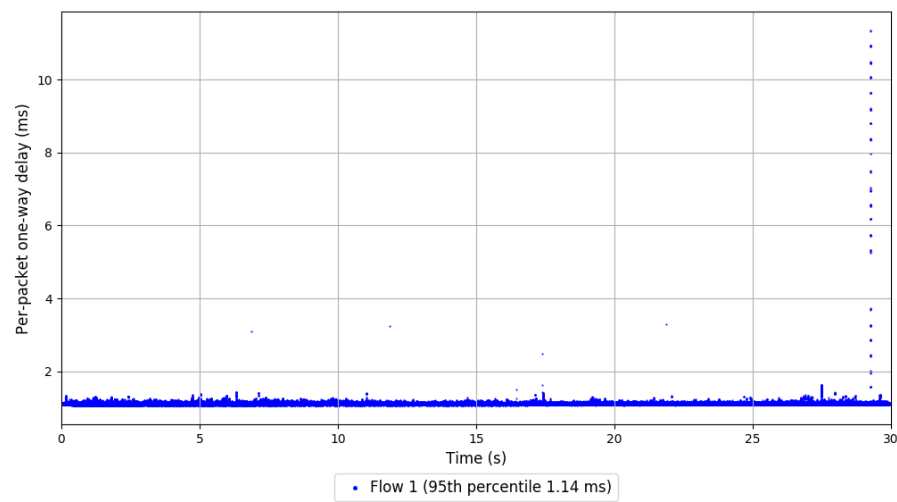
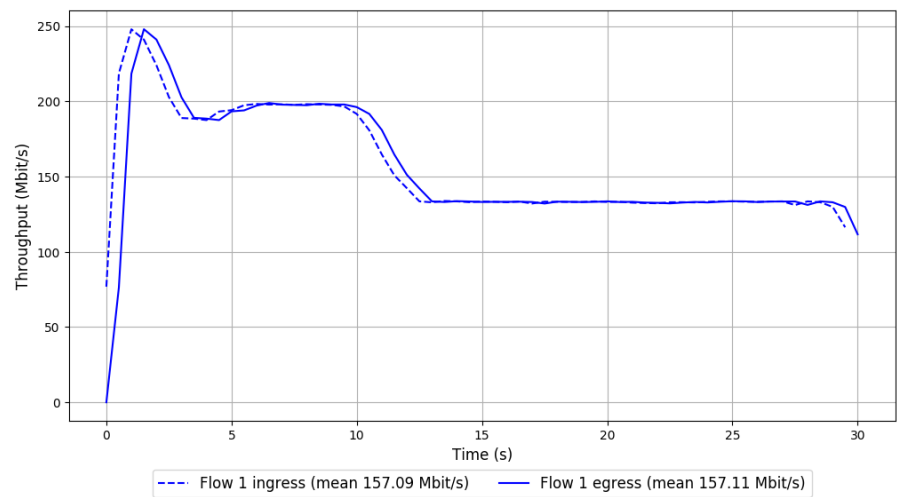
-- Flow 1:

Average throughput: 157.11 Mbit/s

95th percentile per-packet one-way delay: 1.139 ms

Loss rate: 0.05%

Run 2: Report of Indigo-Muses — Data Link

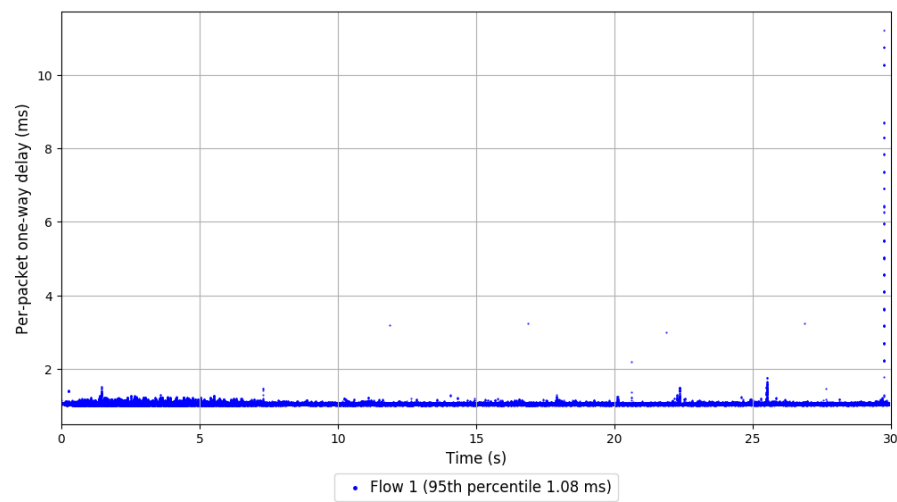
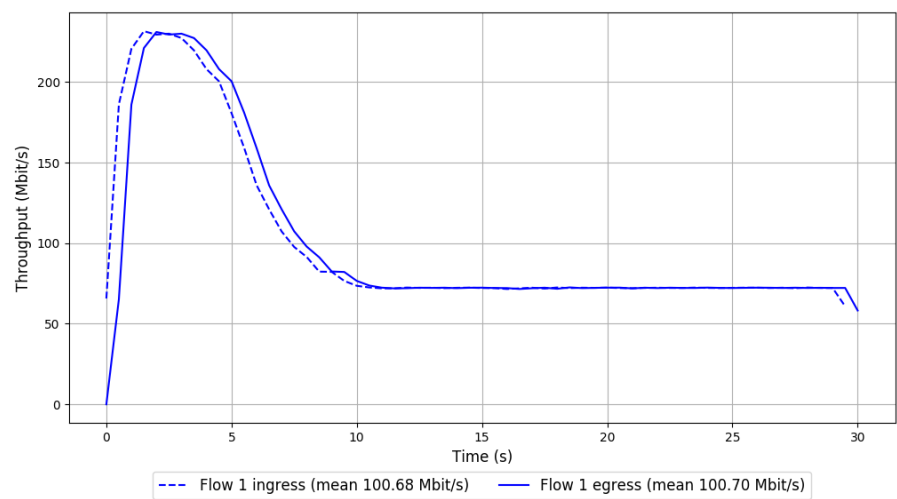


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 20:29:23  
End at: 2018-09-07 20:29:53  
Local clock offset: -0.648 ms  
Remote clock offset: -0.475 ms

# Below is generated by plot.py at 2018-09-07 22:29:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 100.70 Mbit/s  
95th percentile per-packet one-way delay: 1.077 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 100.70 Mbit/s  
95th percentile per-packet one-way delay: 1.077 ms  
Loss rate: 0.05%

Run 3: Report of Indigo-Muses — Data Link



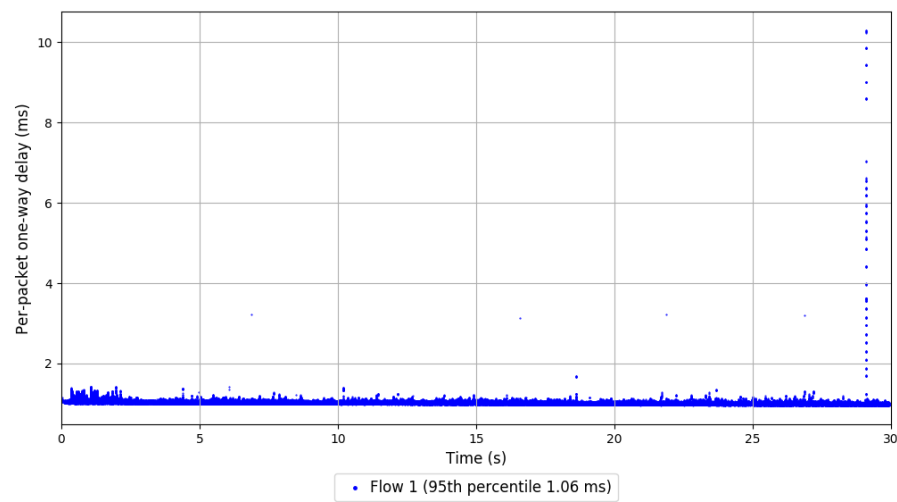
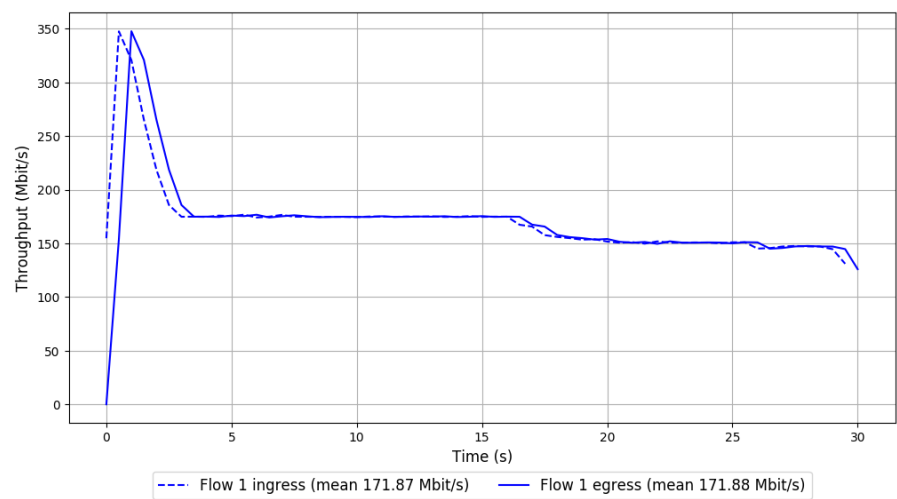


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 20:57:26  
End at: 2018-09-07 20:57:56  
Local clock offset: 2.103 ms  
Remote clock offset: -0.319 ms

# Below is generated by plot.py at 2018-09-07 22:29:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 171.88 Mbit/s  
95th percentile per-packet one-way delay: 1.057 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 171.88 Mbit/s  
95th percentile per-packet one-way delay: 1.057 ms  
Loss rate: 0.05%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 21:25:23

End at: 2018-09-07 21:25:53

Local clock offset: 2.939 ms

Remote clock offset: 2.269 ms

# Below is generated by plot.py at 2018-09-07 22:29:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 362.33 Mbit/s

95th percentile per-packet one-way delay: 1.278 ms

Loss rate: 0.07%

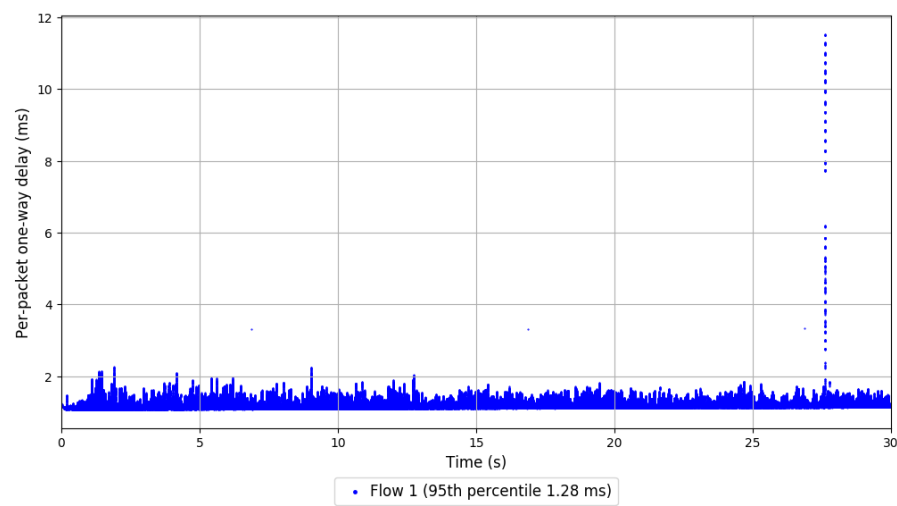
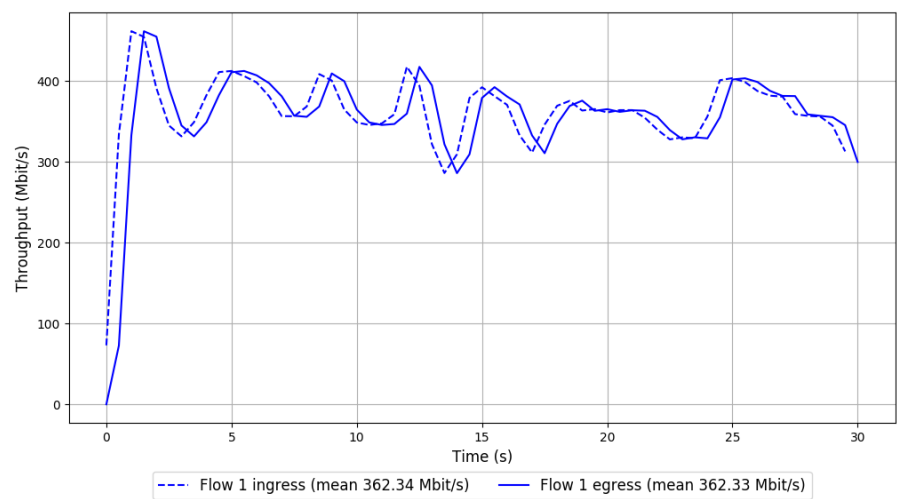
-- Flow 1:

Average throughput: 362.33 Mbit/s

95th percentile per-packet one-way delay: 1.278 ms

Loss rate: 0.07%

Run 5: Report of Indigo-Muses — Data Link

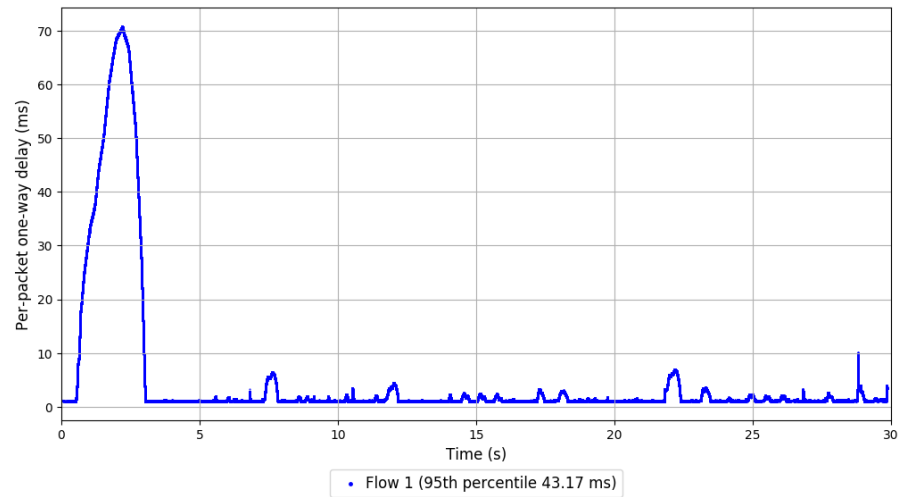
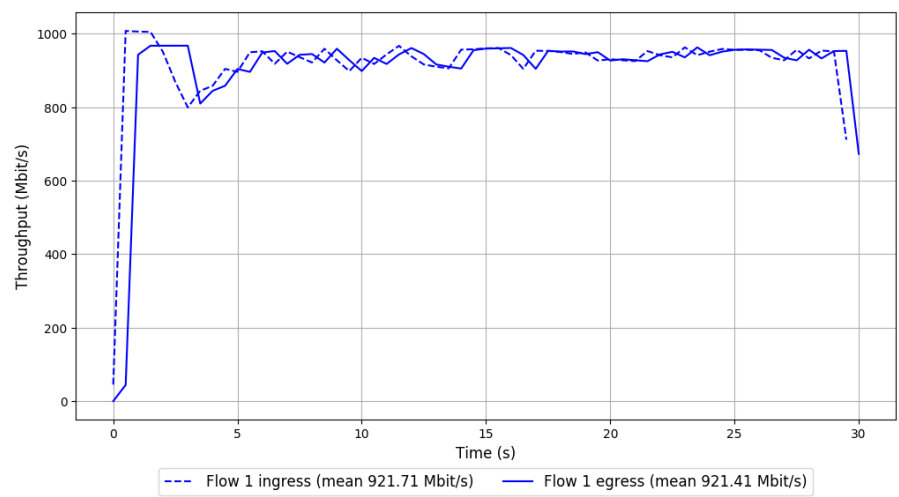


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 19:31:36
End at: 2018-09-07 19:32:06
Local clock offset: 3.382 ms
Remote clock offset: 4.418 ms

# Below is generated by plot.py at 2018-09-07 22:35:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 921.41 Mbit/s
95th percentile per-packet one-way delay: 43.175 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 921.41 Mbit/s
95th percentile per-packet one-way delay: 43.175 ms
Loss rate: 0.10%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 19:59:43

End at: 2018-09-07 20:00:13

Local clock offset: 0.22 ms

Remote clock offset: -0.683 ms

# Below is generated by plot.py at 2018-09-07 22:35:39

# Datalink statistics

-- Total of 1 flow:

Average throughput: 920.95 Mbit/s

95th percentile per-packet one-way delay: 42.692 ms

Loss rate: 0.07%

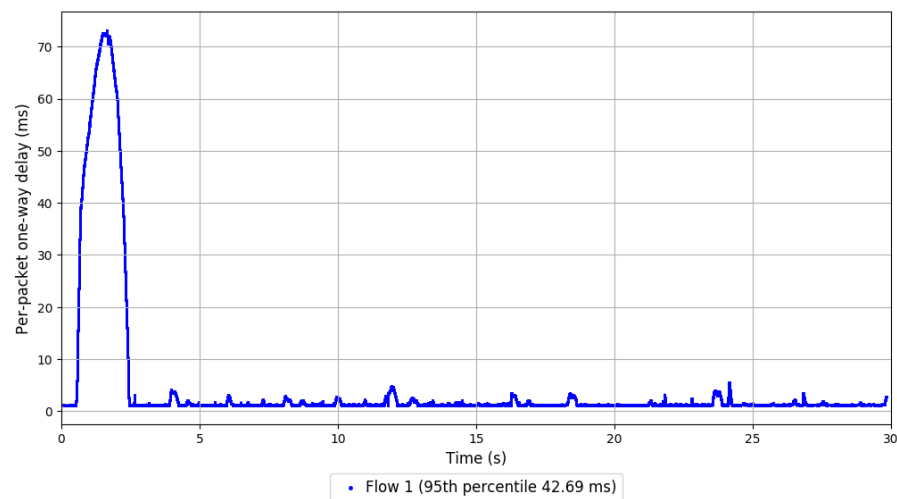
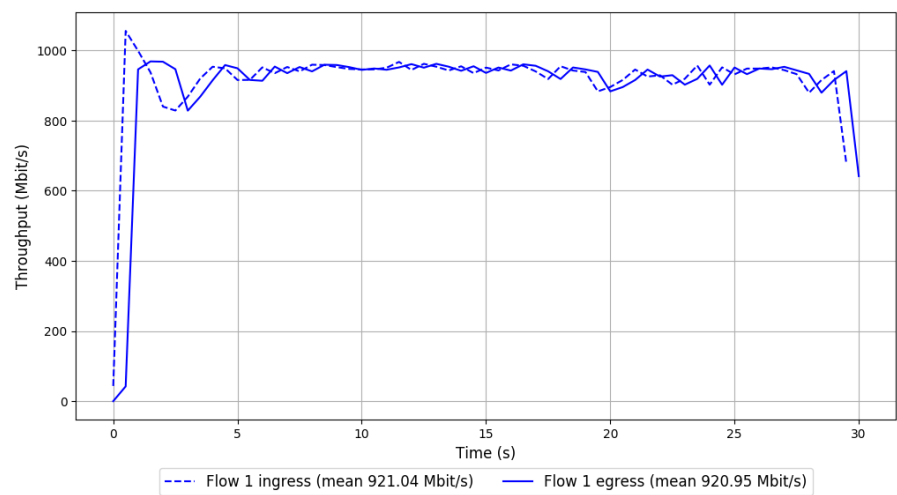
-- Flow 1:

Average throughput: 920.95 Mbit/s

95th percentile per-packet one-way delay: 42.692 ms

Loss rate: 0.07%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 20:27:43

End at: 2018-09-07 20:28:13

Local clock offset: -0.607 ms

Remote clock offset: -0.419 ms

# Below is generated by plot.py at 2018-09-07 22:35:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 912.45 Mbit/s

95th percentile per-packet one-way delay: 57.508 ms

Loss rate: 0.07%

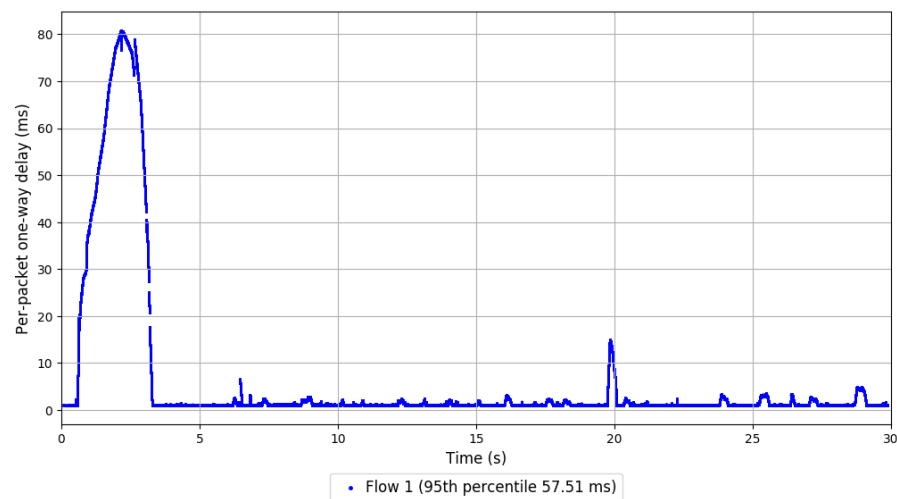
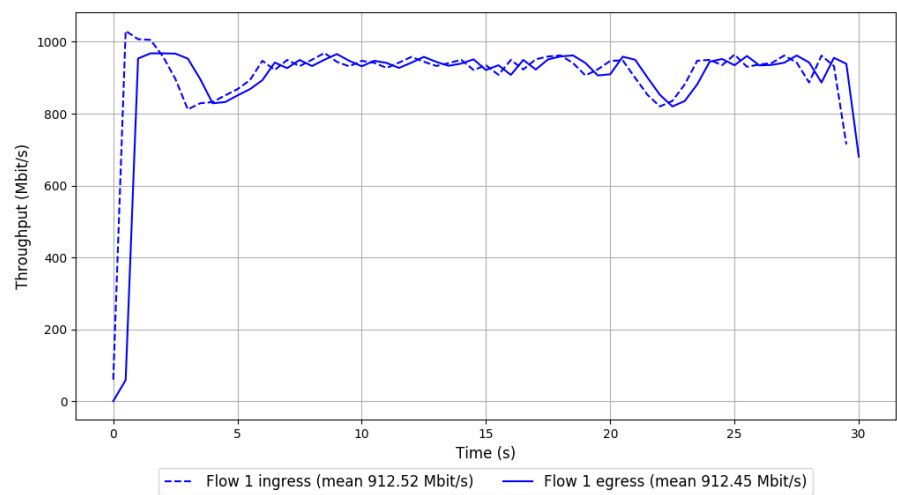
-- Flow 1:

Average throughput: 912.45 Mbit/s

95th percentile per-packet one-way delay: 57.508 ms

Loss rate: 0.07%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 20:55:46

End at: 2018-09-07 20:56:16

Local clock offset: 1.859 ms

Remote clock offset: -0.32 ms

# Below is generated by plot.py at 2018-09-07 22:36:08

# Datalink statistics

-- Total of 1 flow:

Average throughput: 919.16 Mbit/s

95th percentile per-packet one-way delay: 76.917 ms

Loss rate: 0.07%

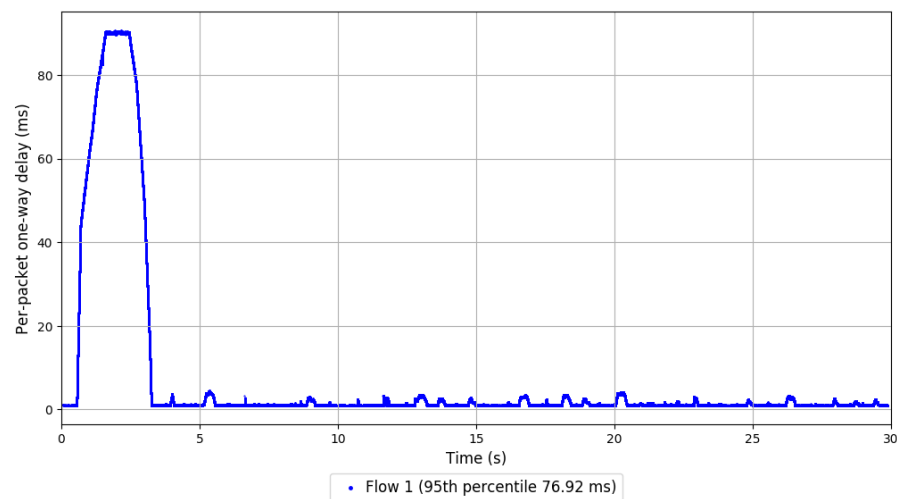
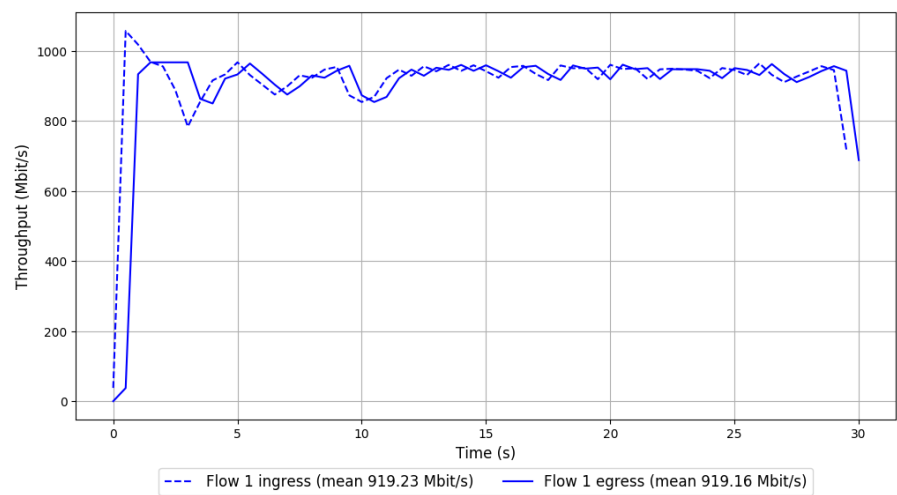
-- Flow 1:

Average throughput: 919.16 Mbit/s

95th percentile per-packet one-way delay: 76.917 ms

Loss rate: 0.07%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 21:23:43

End at: 2018-09-07 21:24:13

Local clock offset: 2.941 ms

Remote clock offset: 2.049 ms

# Below is generated by plot.py at 2018-09-07 22:37:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 927.51 Mbit/s

95th percentile per-packet one-way delay: 22.558 ms

Loss rate: 0.07%

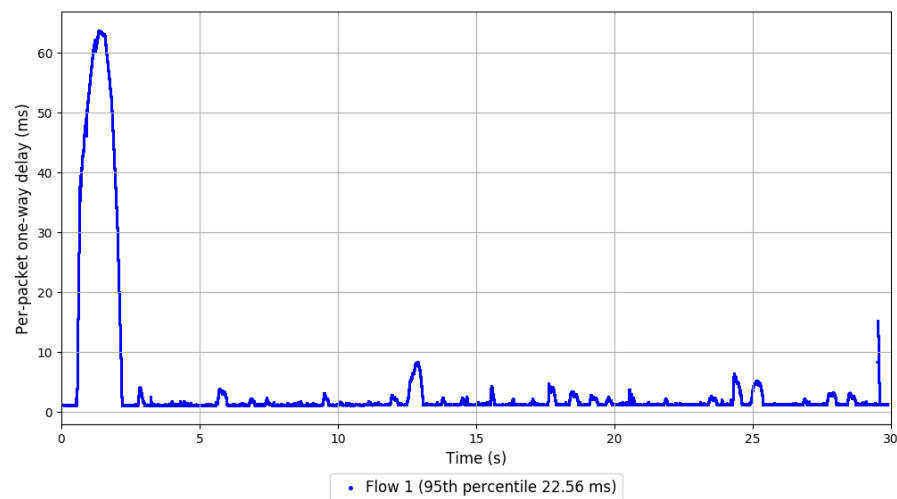
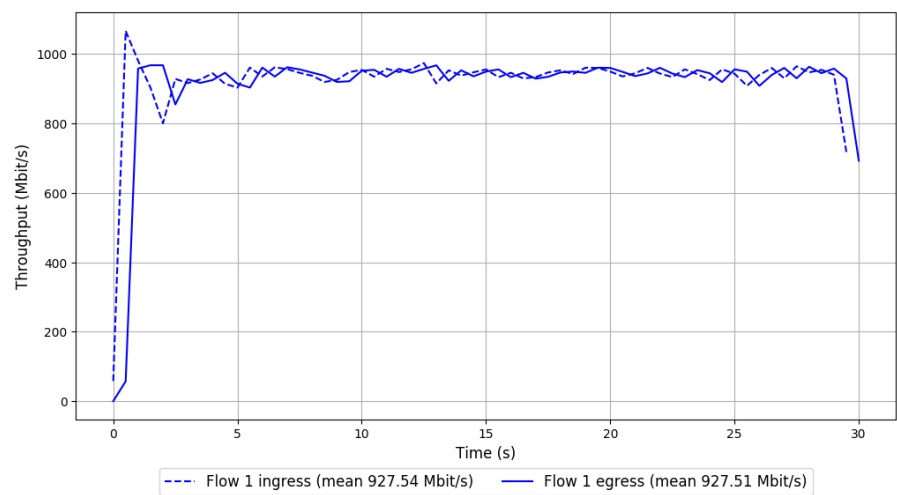
-- Flow 1:

Average throughput: 927.51 Mbit/s

95th percentile per-packet one-way delay: 22.558 ms

Loss rate: 0.07%

Run 5: Report of PCC-Allegro — Data Link

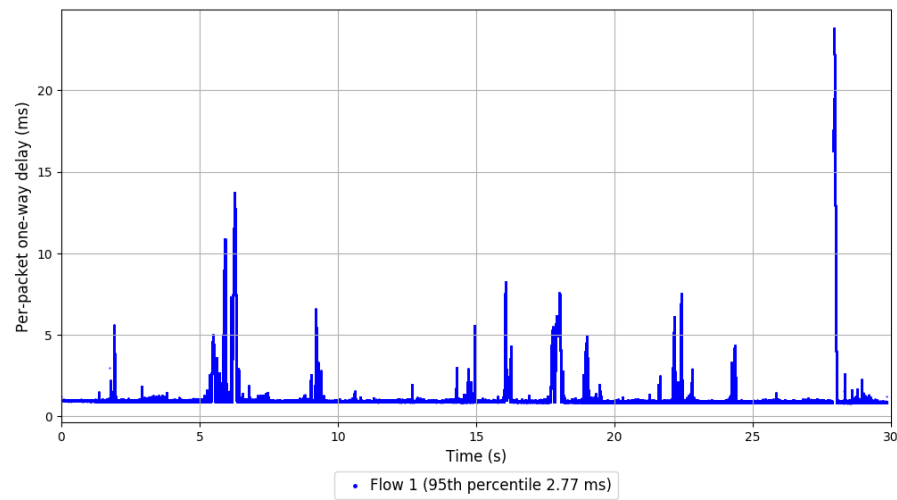
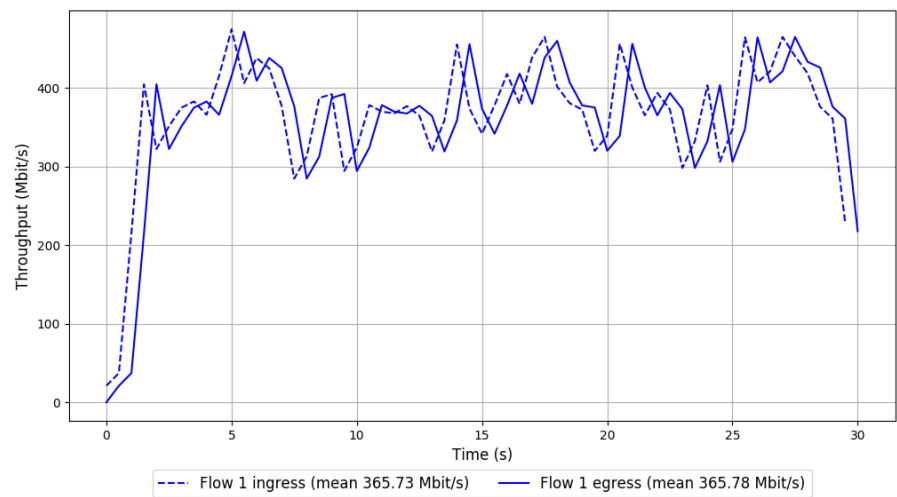


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 19:43:54
End at: 2018-09-07 19:44:24
Local clock offset: 3.57 ms
Remote clock offset: 0.777 ms

# Below is generated by plot.py at 2018-09-07 22:37:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 365.78 Mbit/s
95th percentile per-packet one-way delay: 2.765 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 365.78 Mbit/s
95th percentile per-packet one-way delay: 2.765 ms
Loss rate: 0.05%
```

Run 1: Report of PCC-Expr — Data Link



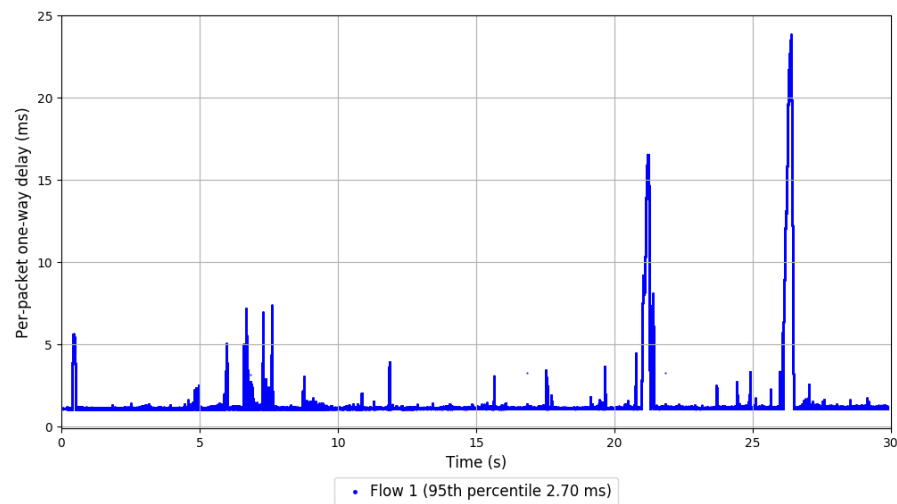
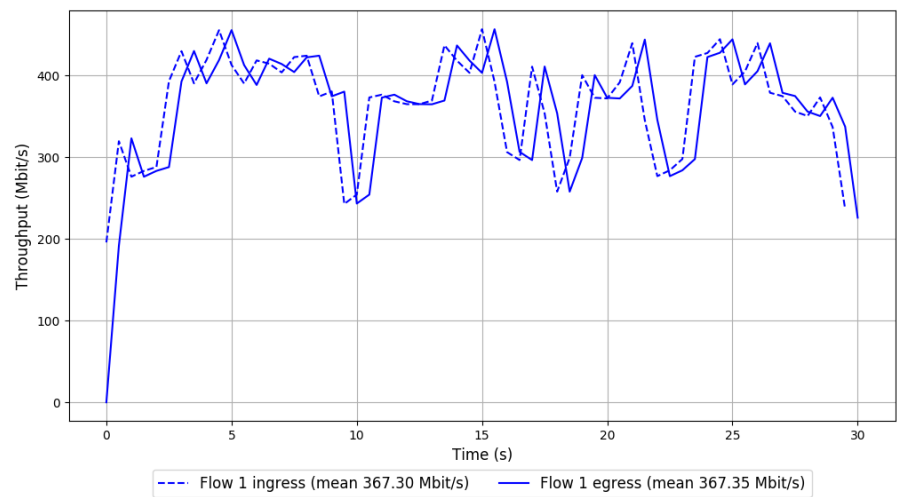


Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 20:11:53  
End at: 2018-09-07 20:12:23  
Local clock offset: -0.615 ms  
Remote clock offset: -0.645 ms

# Below is generated by plot.py at 2018-09-07 22:37:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 367.35 Mbit/s  
95th percentile per-packet one-way delay: 2.701 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 367.35 Mbit/s  
95th percentile per-packet one-way delay: 2.701 ms  
Loss rate: 0.05%

Run 2: Report of PCC-Expr — Data Link

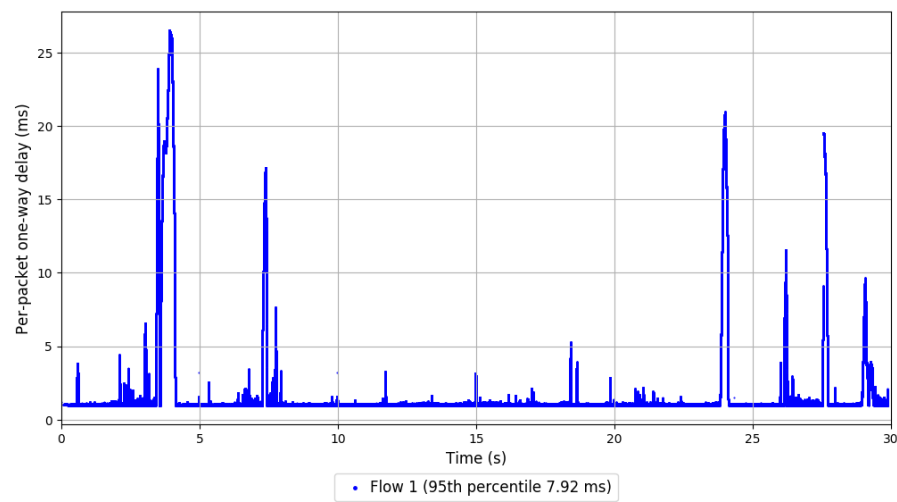
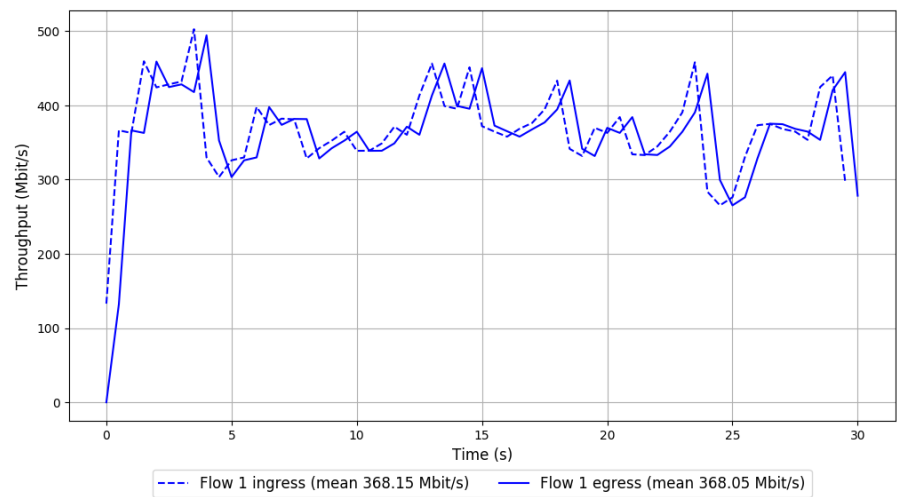


Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 20:39:54  
End at: 2018-09-07 20:40:24  
Local clock offset: -0.805 ms  
Remote clock offset: -0.575 ms

# Below is generated by plot.py at 2018-09-07 22:38:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 368.05 Mbit/s  
95th percentile per-packet one-way delay: 7.916 ms  
Loss rate: 0.09%  
-- Flow 1:  
Average throughput: 368.05 Mbit/s  
95th percentile per-packet one-way delay: 7.916 ms  
Loss rate: 0.09%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 21:07:48

End at: 2018-09-07 21:08:18

Local clock offset: 2.881 ms

Remote clock offset: -0.339 ms

# Below is generated by plot.py at 2018-09-07 22:42:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 367.23 Mbit/s

95th percentile per-packet one-way delay: 1.704 ms

Loss rate: 0.07%

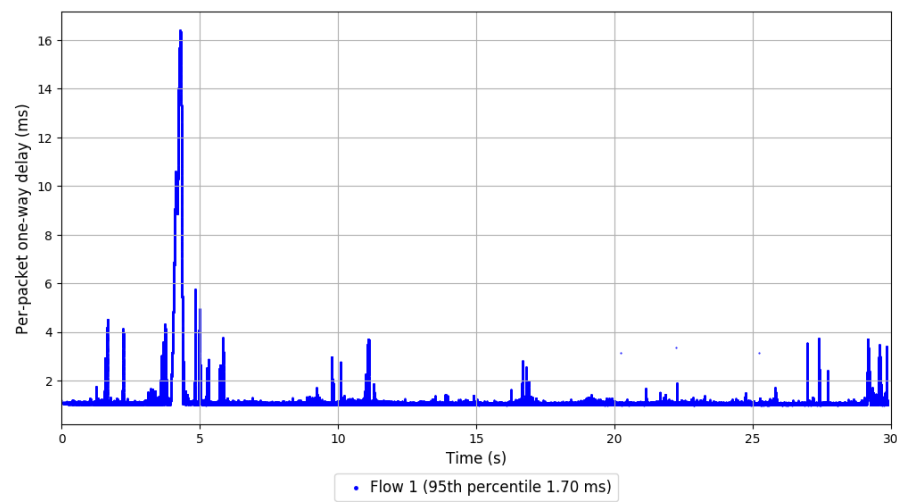
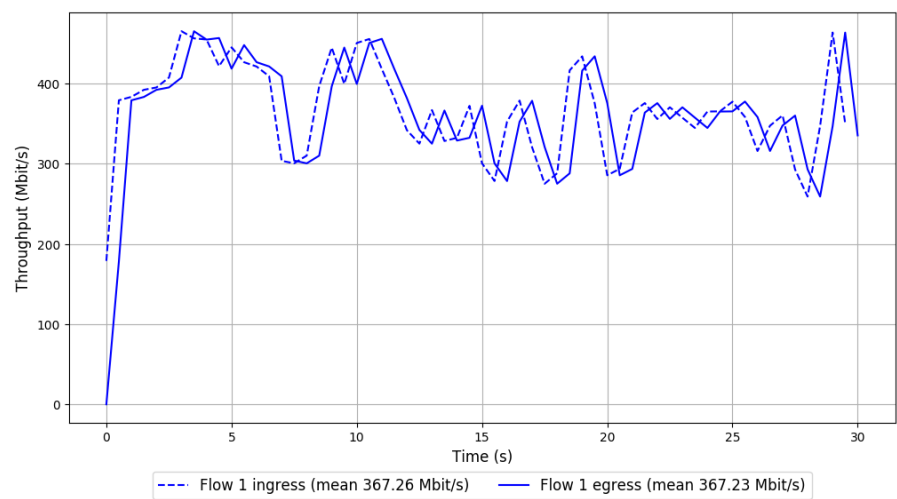
-- Flow 1:

Average throughput: 367.23 Mbit/s

95th percentile per-packet one-way delay: 1.704 ms

Loss rate: 0.07%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 21:36:00

End at: 2018-09-07 21:36:30

Local clock offset: 3.012 ms

Remote clock offset: 3.31 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 374.89 Mbit/s

95th percentile per-packet one-way delay: 1.749 ms

Loss rate: 0.06%

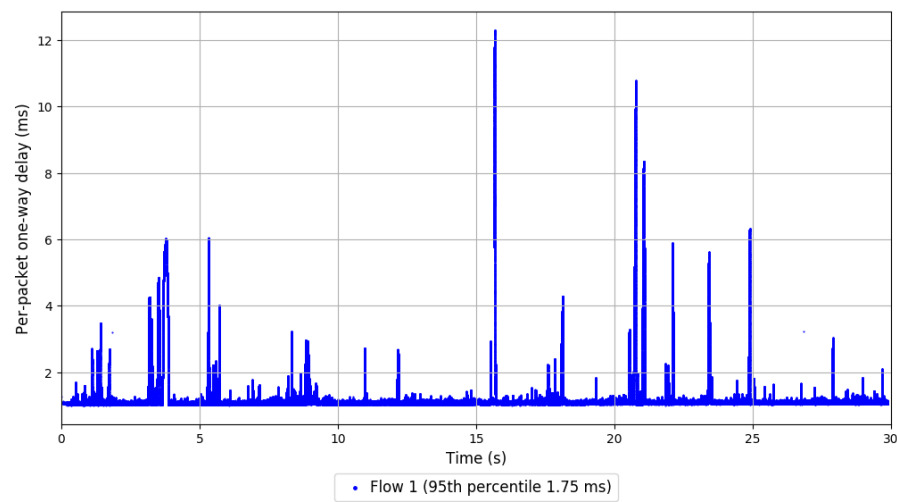
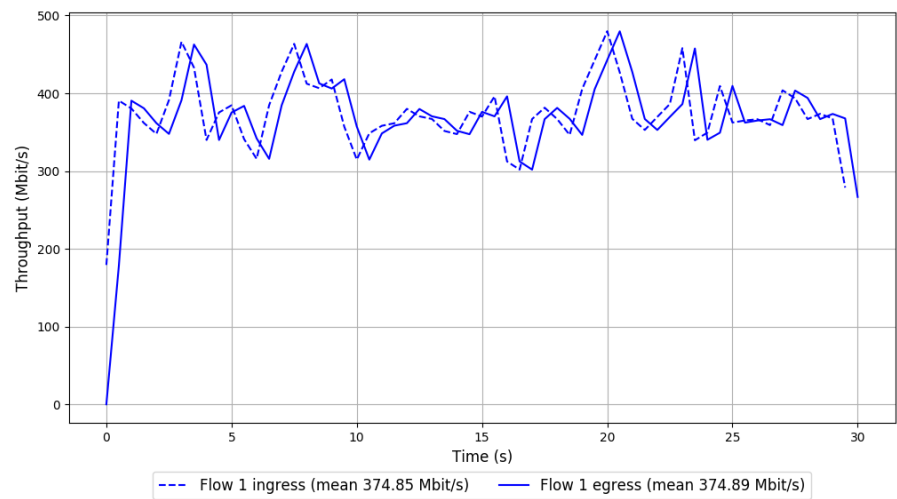
-- Flow 1:

Average throughput: 374.89 Mbit/s

95th percentile per-packet one-way delay: 1.749 ms

Loss rate: 0.06%

Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 19:20:45

End at: 2018-09-07 19:21:15

Local clock offset: 3.257 ms

Remote clock offset: 3.597 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 90.85 Mbit/s

95th percentile per-packet one-way delay: 1.047 ms

Loss rate: 0.07%

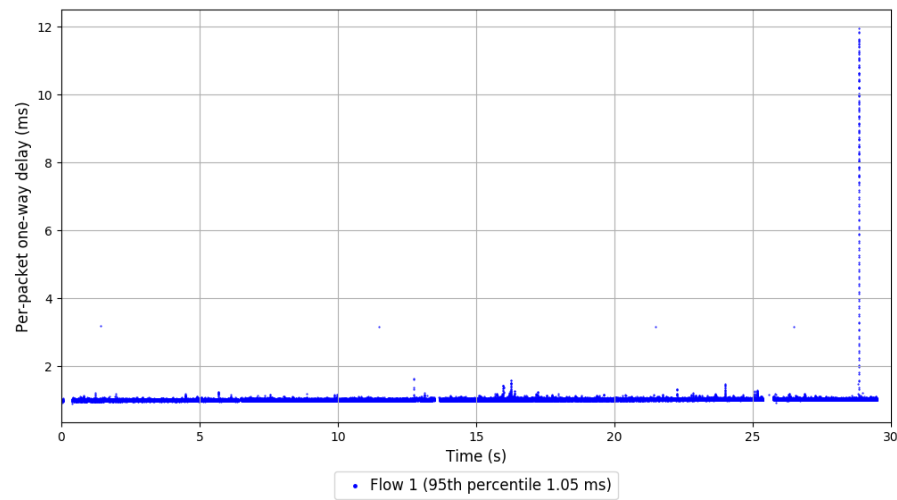
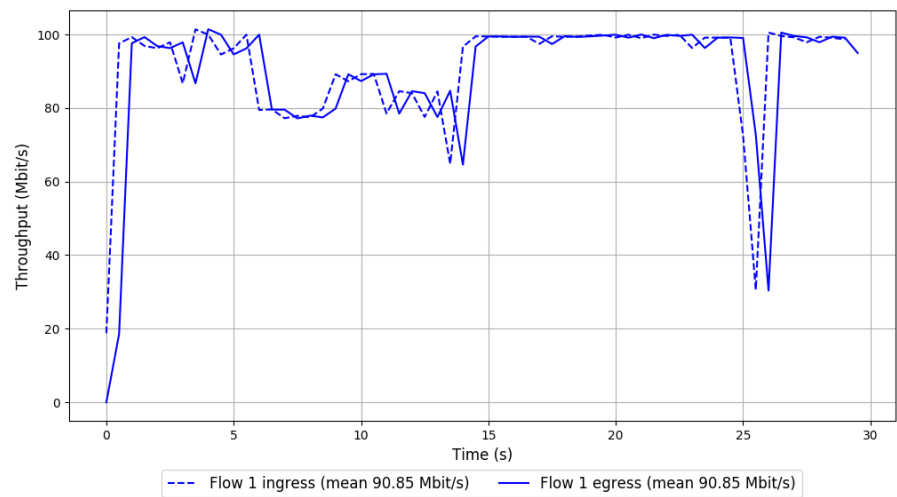
-- Flow 1:

Average throughput: 90.85 Mbit/s

95th percentile per-packet one-way delay: 1.047 ms

Loss rate: 0.07%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 19:48:57

End at: 2018-09-07 19:49:27

Local clock offset: 2.178 ms

Remote clock offset: 0.14 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 78.70 Mbit/s

95th percentile per-packet one-way delay: 1.261 ms

Loss rate: 0.07%

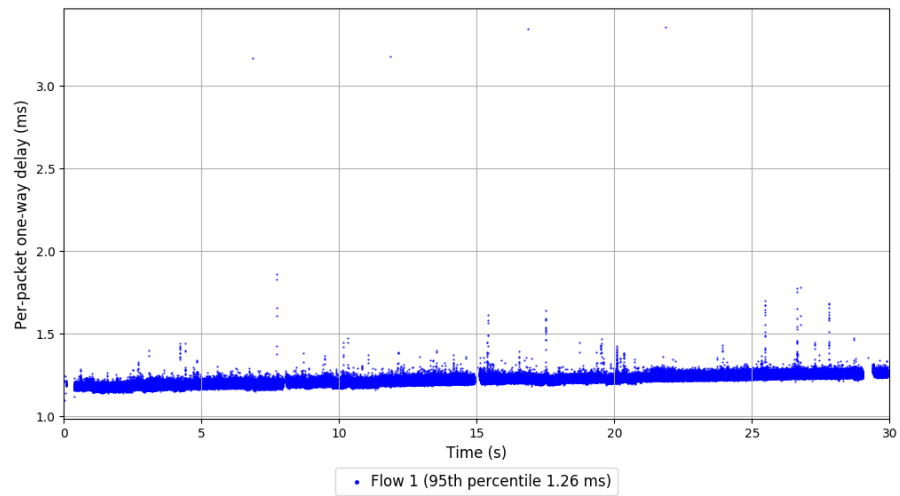
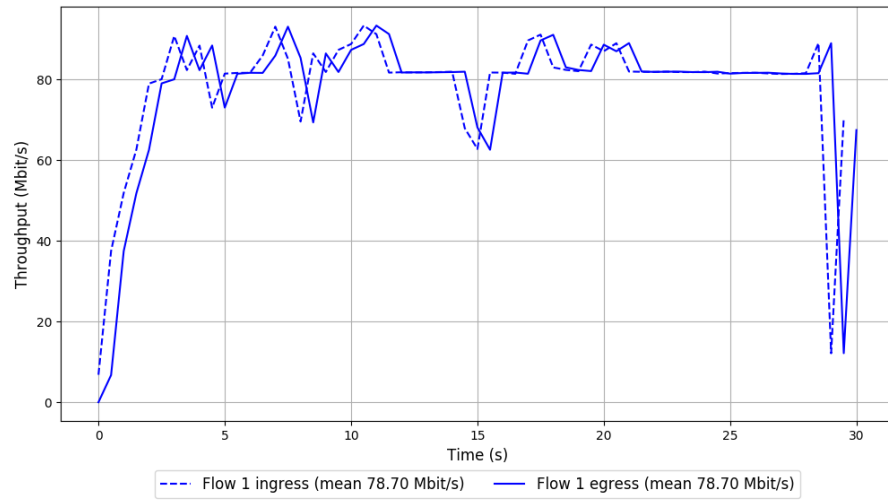
-- Flow 1:

Average throughput: 78.70 Mbit/s

95th percentile per-packet one-way delay: 1.261 ms

Loss rate: 0.07%

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



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 20:16:54

End at: 2018-09-07 20:17:24

Local clock offset: -0.688 ms

Remote clock offset: -0.43 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 77.50 Mbit/s

95th percentile per-packet one-way delay: 1.003 ms

Loss rate: 0.02%

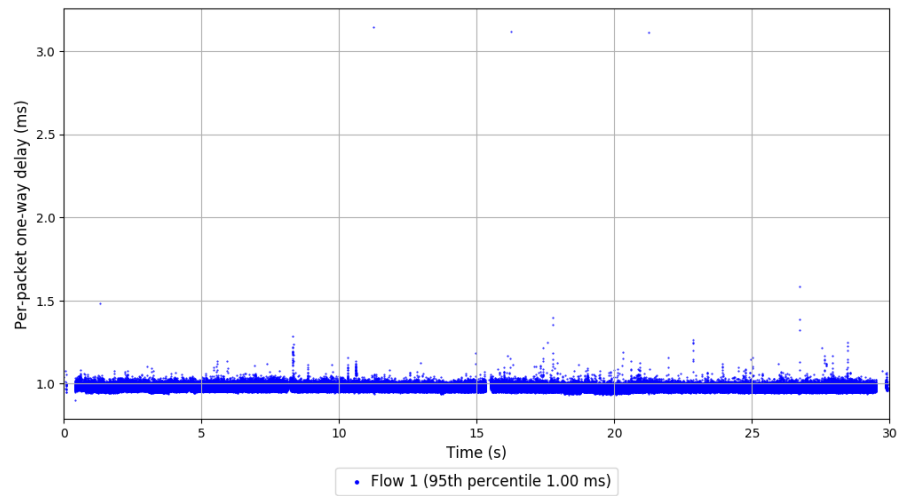
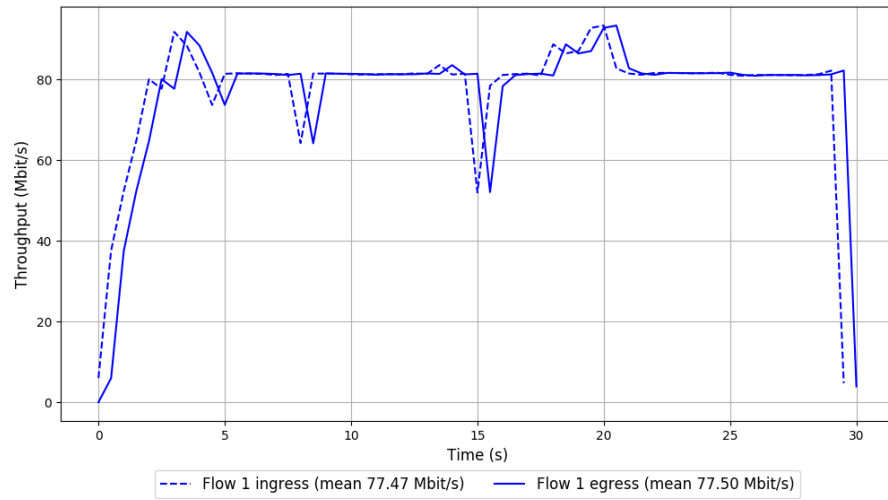
-- Flow 1:

Average throughput: 77.50 Mbit/s

95th percentile per-packet one-way delay: 1.003 ms

Loss rate: 0.02%

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



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 20:44:56

End at: 2018-09-07 20:45:26

Local clock offset: -0.881 ms

Remote clock offset: -0.495 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 80.47 Mbit/s

95th percentile per-packet one-way delay: 0.847 ms

Loss rate: 0.06%

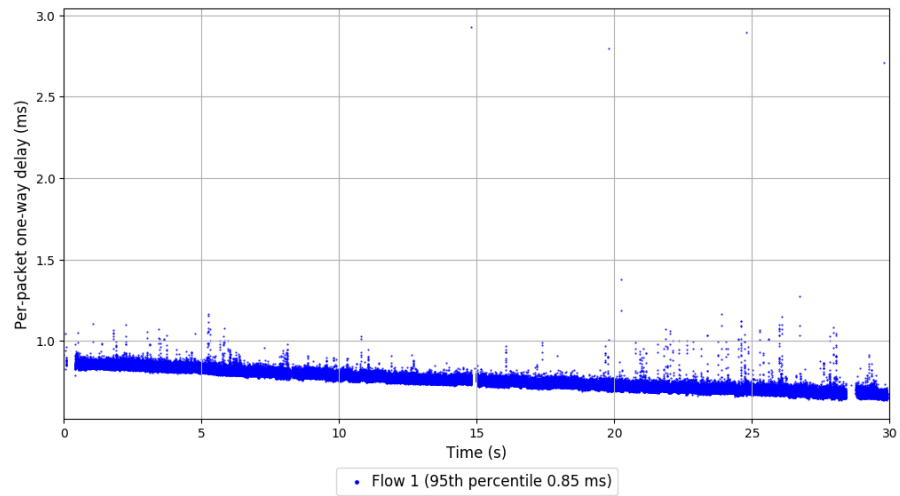
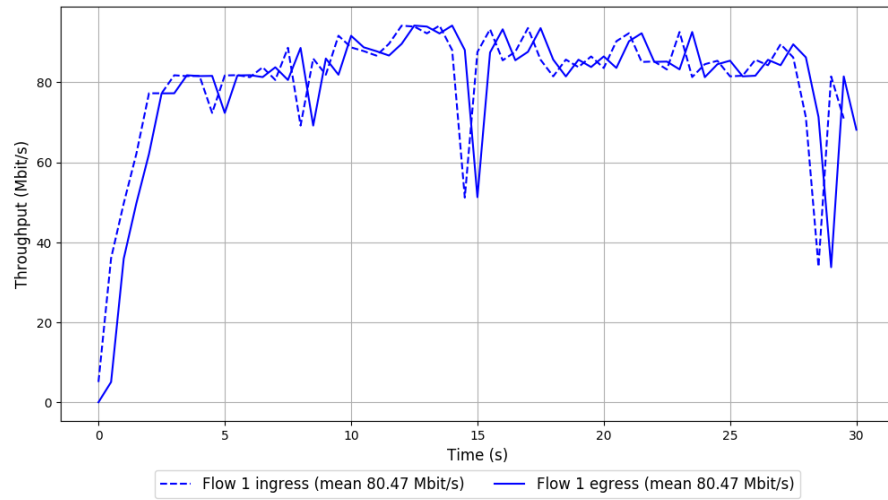
-- Flow 1:

Average throughput: 80.47 Mbit/s

95th percentile per-packet one-way delay: 0.847 ms

Loss rate: 0.06%

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





Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 21:12:52

End at: 2018-09-07 21:13:22

Local clock offset: 3.094 ms

Remote clock offset: -0.259 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 78.53 Mbit/s

95th percentile per-packet one-way delay: 0.973 ms

Loss rate: 0.08%

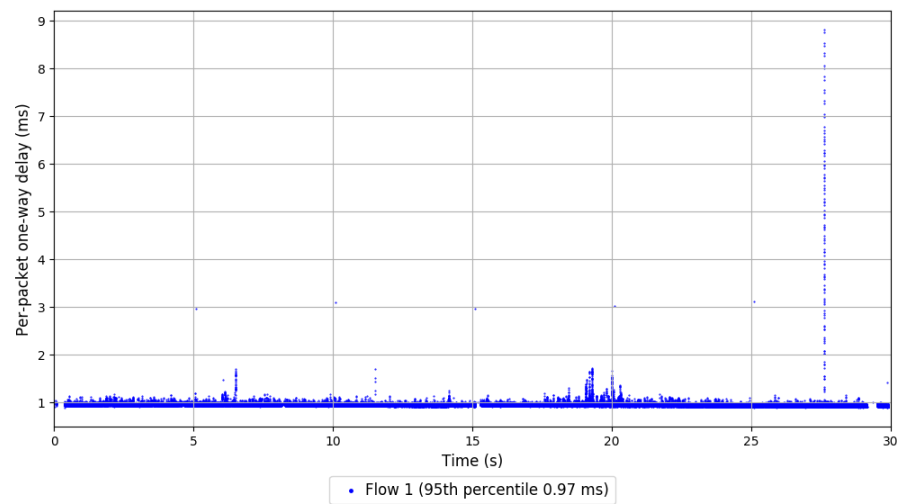
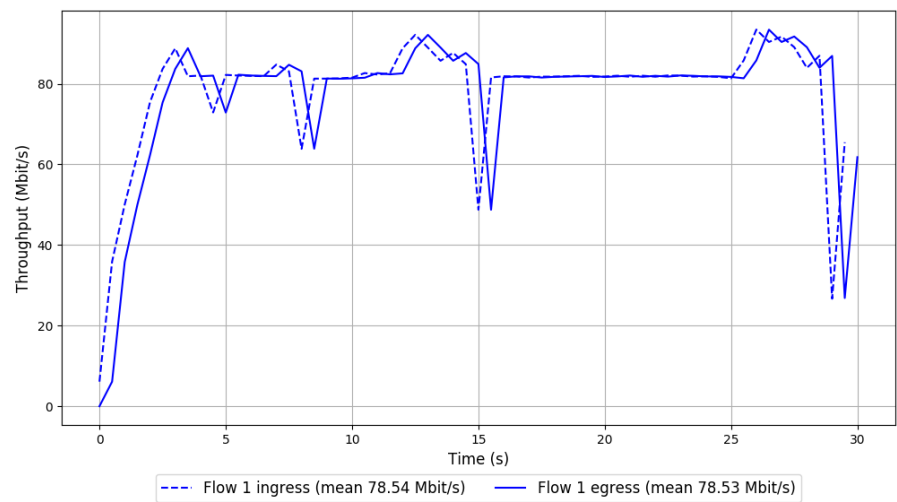
-- Flow 1:

Average throughput: 78.53 Mbit/s

95th percentile per-packet one-way delay: 0.973 ms

Loss rate: 0.08%

Run 5: Report of QUIC Cubic — Data Link

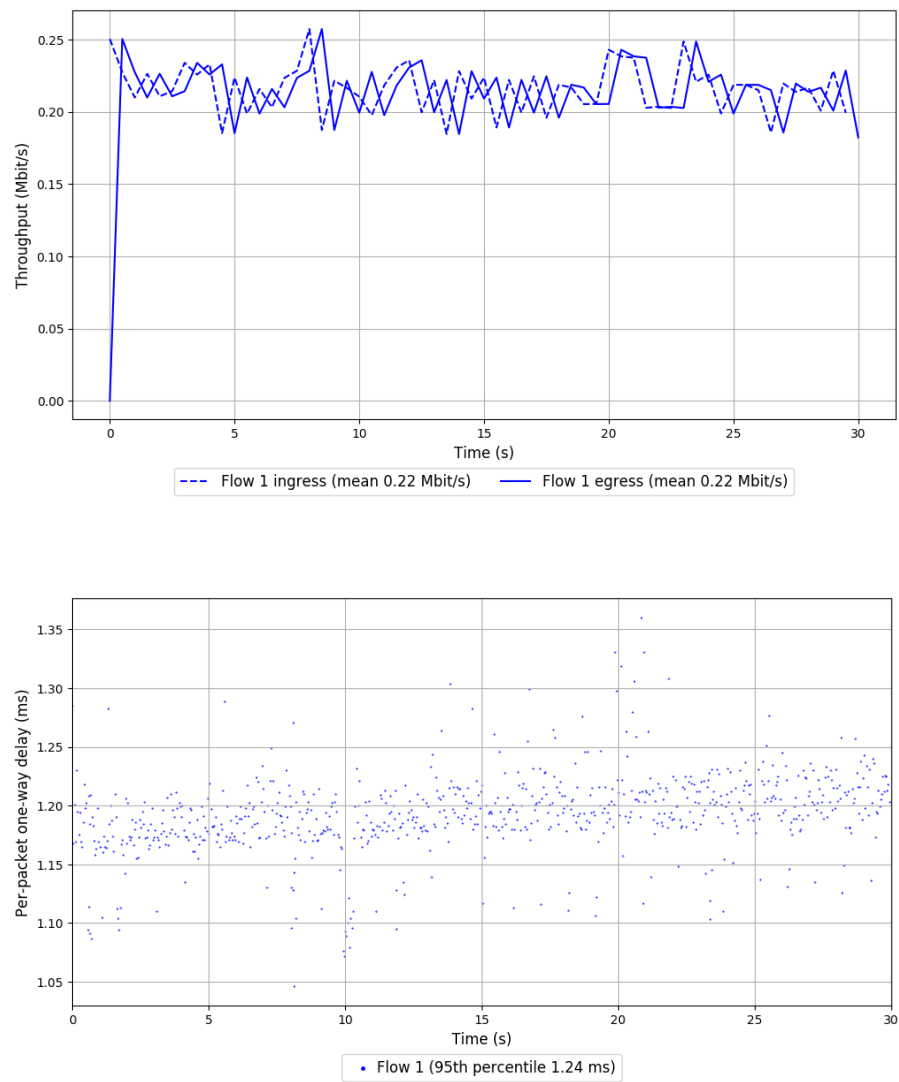


```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 19:28:36
End at: 2018-09-07 19:29:06
Local clock offset: 3.341 ms
Remote clock offset: 4.198 ms

# Below is generated by plot.py at 2018-09-07 22:43:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.238 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.238 ms
Loss rate: 0.13%
```

Run 1: Report of SCRaM — Data Link

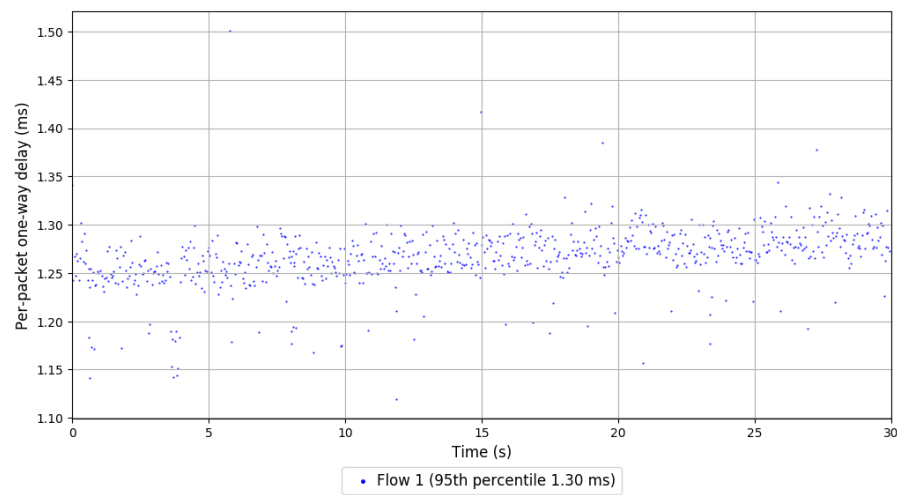
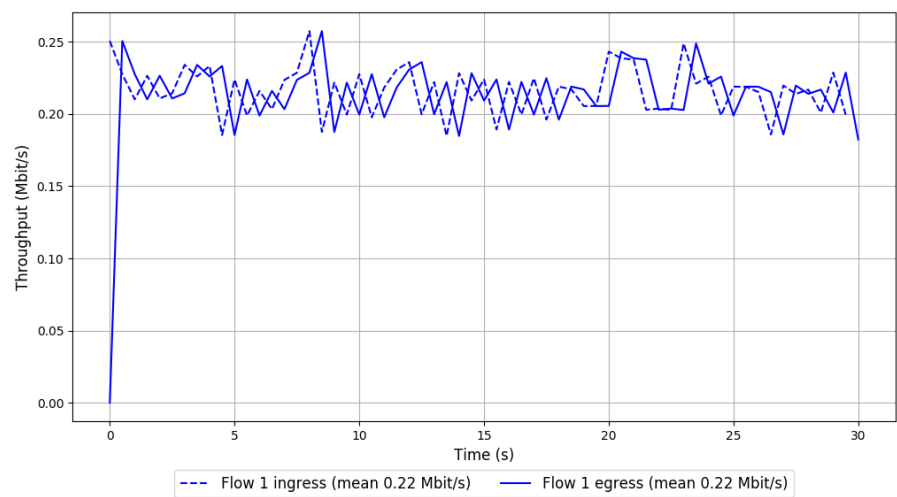


Run 2: Statistics of SCReAM

Start at: 2018-09-07 19:56:42  
End at: 2018-09-07 19:57:12  
Local clock offset: 0.6 ms  
Remote clock offset: -0.498 ms

# Below is generated by plot.py at 2018-09-07 22:43:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 1.304 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 1.304 ms  
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

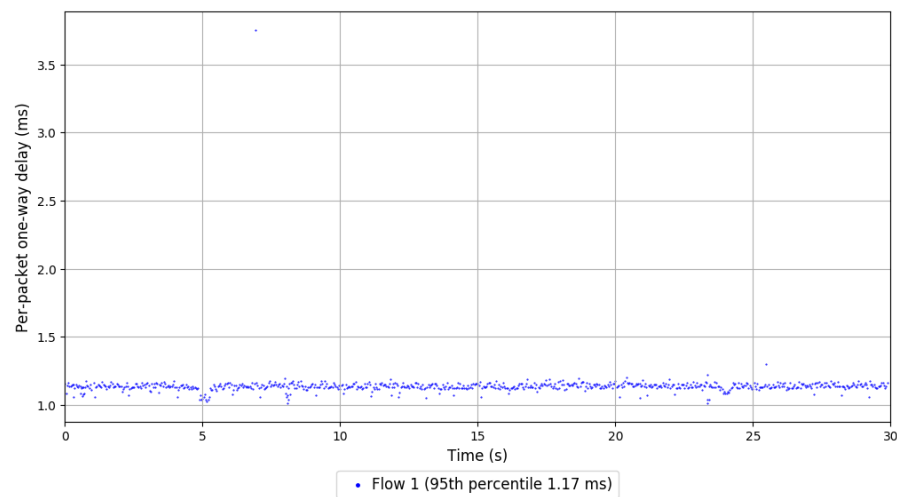
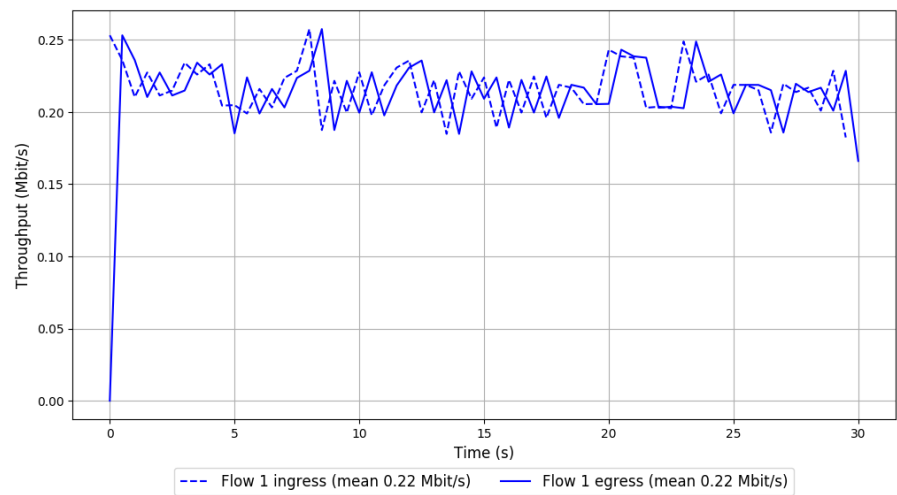


Run 3: Statistics of SCReAM

Start at: 2018-09-07 20:24:41  
End at: 2018-09-07 20:25:11  
Local clock offset: -0.618 ms  
Remote clock offset: -0.464 ms

# Below is generated by plot.py at 2018-09-07 22:43:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 1.169 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 1.169 ms  
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



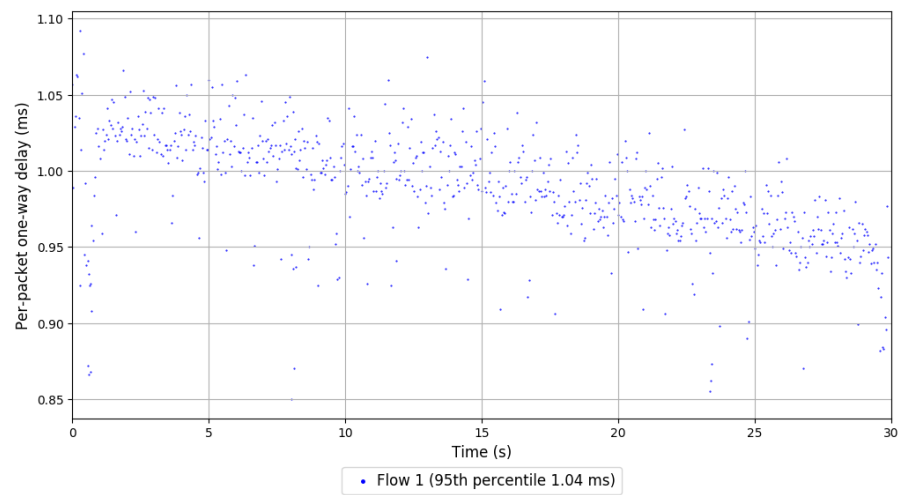
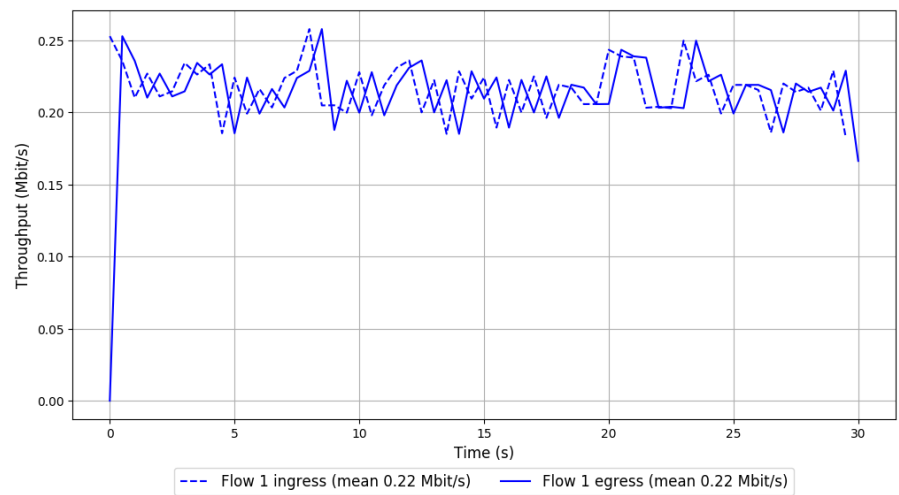


Run 4: Statistics of SCReAM

Start at: 2018-09-07 20:52:45  
End at: 2018-09-07 20:53:15  
Local clock offset: 1.386 ms  
Remote clock offset: -0.307 ms

# Below is generated by plot.py at 2018-09-07 22:43:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 1.041 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 1.041 ms  
Loss rate: 0.13%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-07 21:20:43

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

Local clock offset: 2.97 ms

Remote clock offset: 1.478 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.307 ms

Loss rate: 0.13%

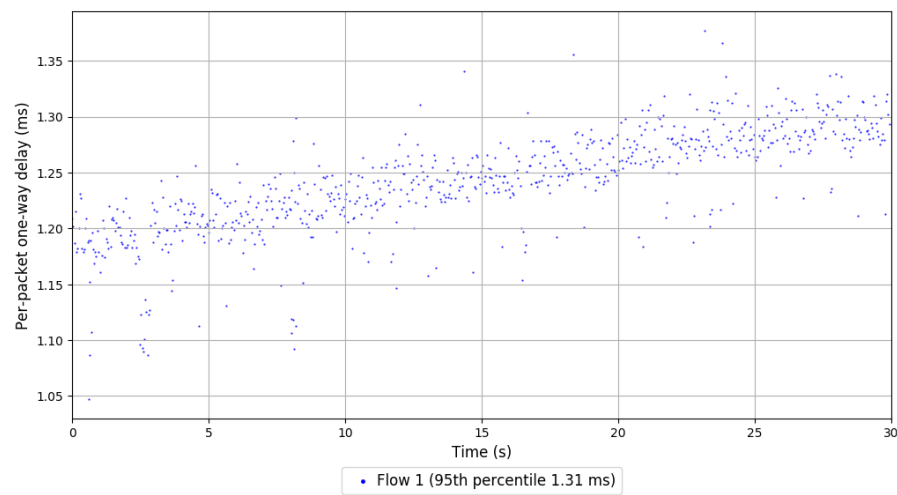
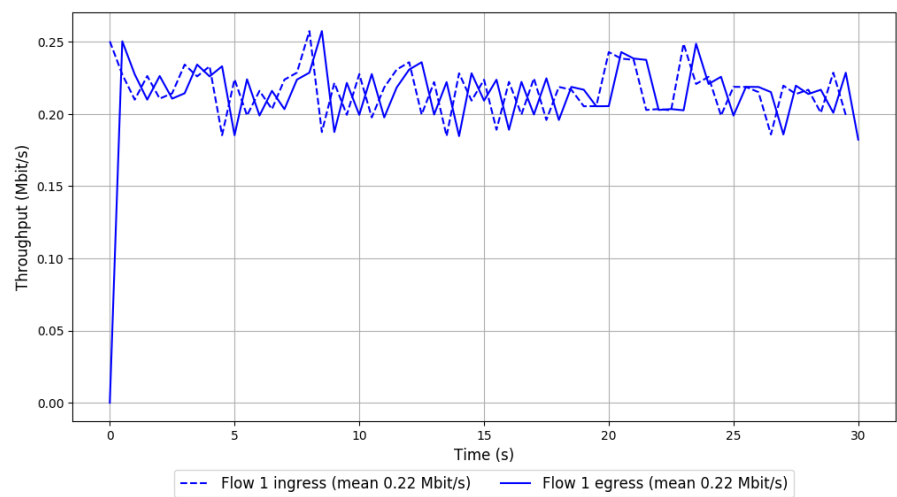
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.307 ms

Loss rate: 0.13%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-07 19:34:47

End at: 2018-09-07 19:35:17

Local clock offset: 3.444 ms

Remote clock offset: 3.354 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 24.90 Mbit/s

95th percentile per-packet one-way delay: 0.931 ms

Loss rate: 0.13%

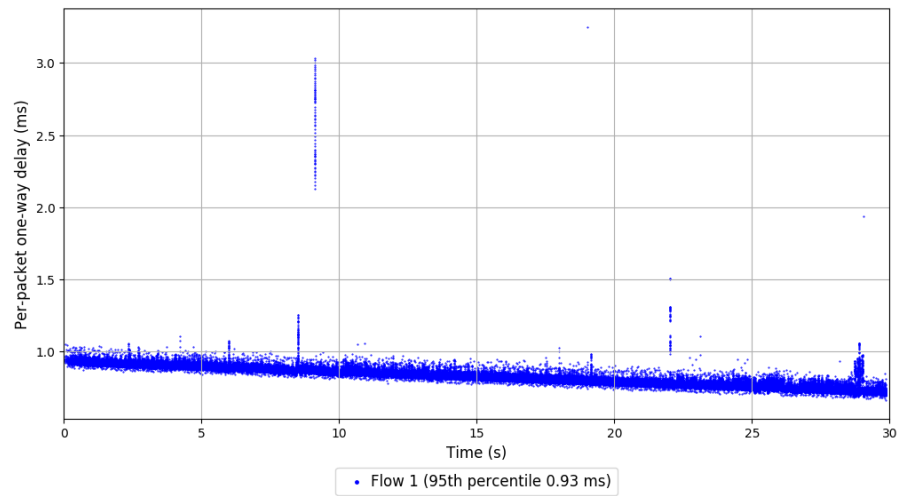
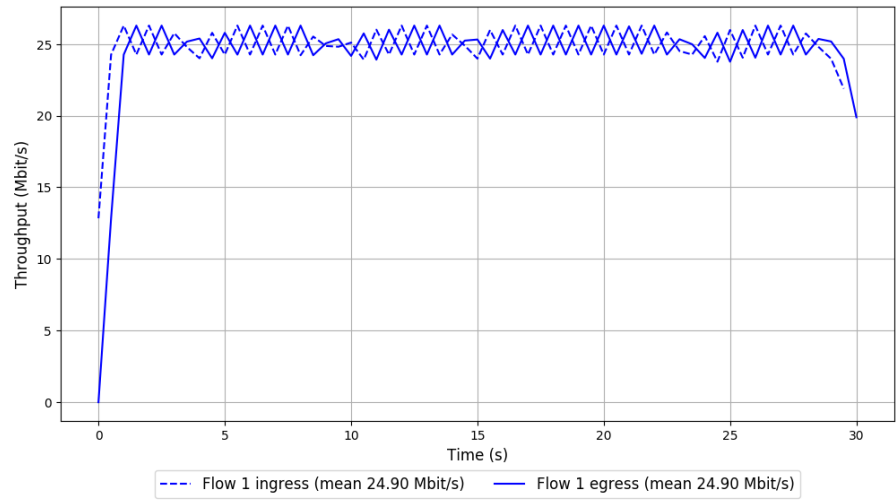
-- Flow 1:

Average throughput: 24.90 Mbit/s

95th percentile per-packet one-way delay: 0.931 ms

Loss rate: 0.13%

## Run 1: Report of Sprout — Data Link

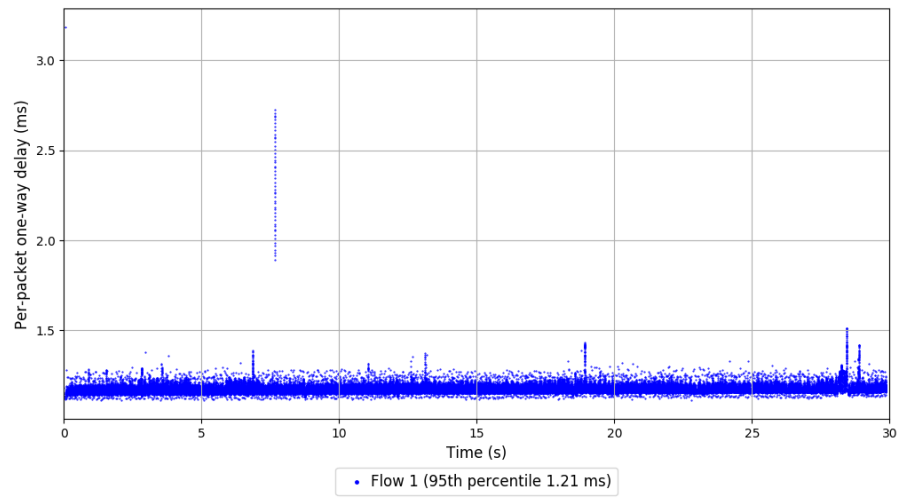
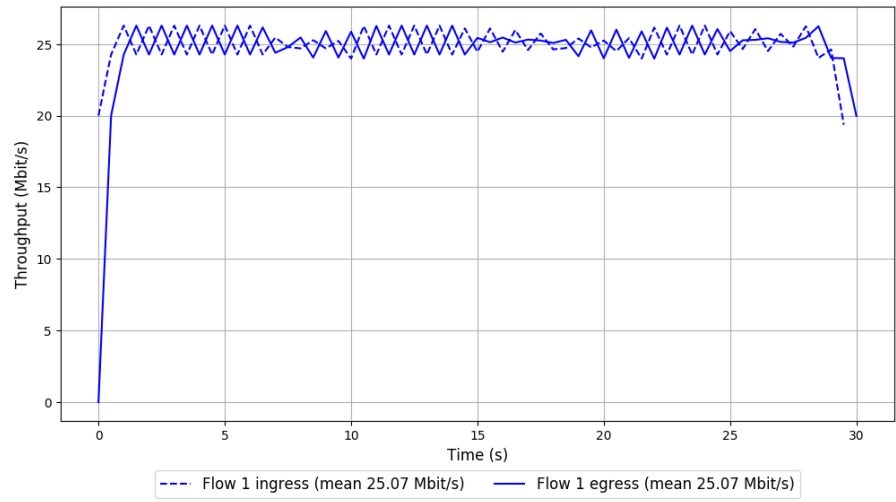


Run 2: Statistics of Sprout

Start at: 2018-09-07 20:02:47  
End at: 2018-09-07 20:03:17  
Local clock offset: -0.048 ms  
Remote clock offset: -0.838 ms

# Below is generated by plot.py at 2018-09-07 22:43:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 25.07 Mbit/s  
95th percentile per-packet one-way delay: 1.214 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 25.07 Mbit/s  
95th percentile per-packet one-way delay: 1.214 ms  
Loss rate: 0.00%

## Run 2: Report of Sprout — Data Link





Run 3: Statistics of Sprout

Start at: 2018-09-07 20:30:45

End at: 2018-09-07 20:31:15

Local clock offset: -0.658 ms

Remote clock offset: -0.53 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 24.92 Mbit/s

95th percentile per-packet one-way delay: 1.156 ms

Loss rate: 0.00%

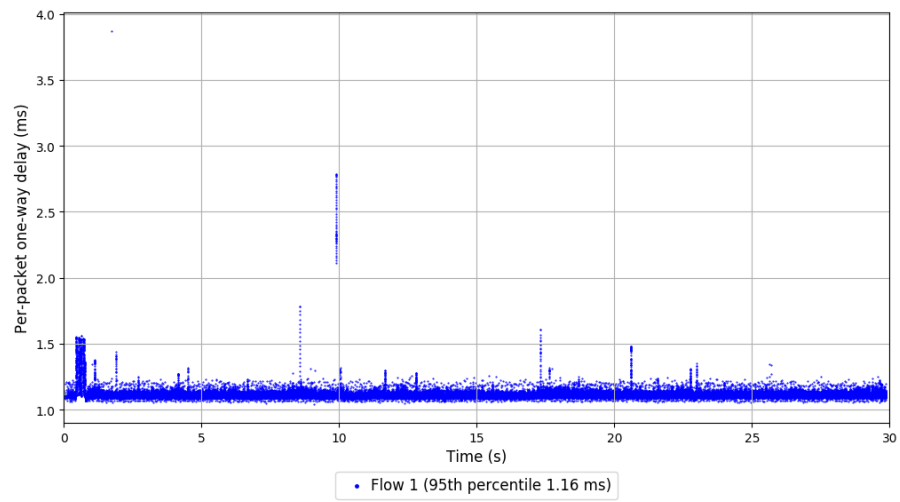
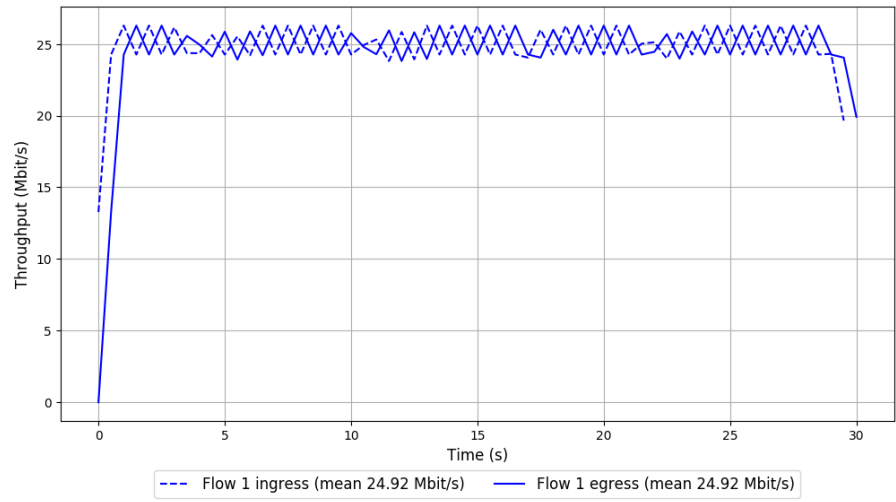
-- Flow 1:

Average throughput: 24.92 Mbit/s

95th percentile per-packet one-way delay: 1.156 ms

Loss rate: 0.00%

### Run 3: Report of Sprout — Data Link

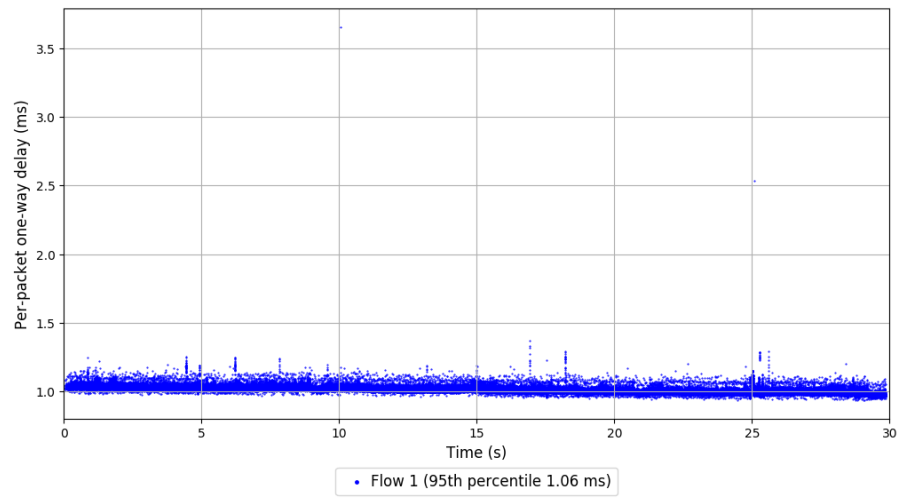
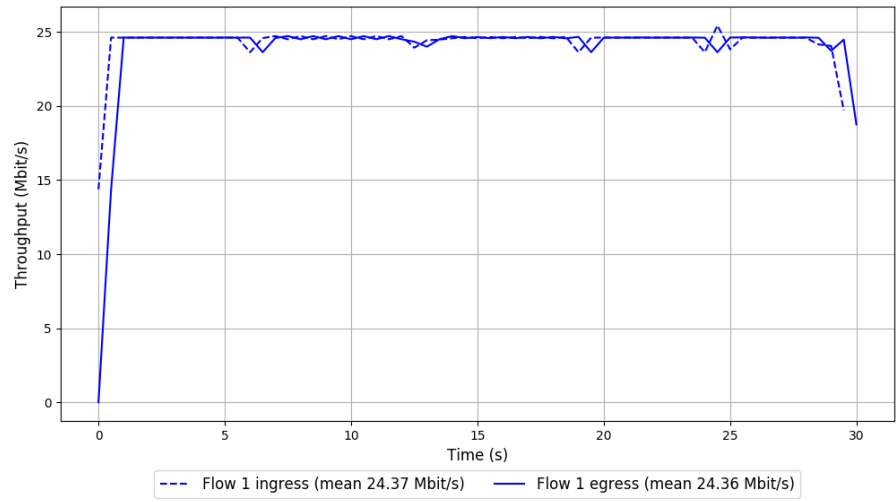


Run 4: Statistics of Sprout

Start at: 2018-09-07 20:58:50  
End at: 2018-09-07 20:59:20  
Local clock offset: 2.246 ms  
Remote clock offset: -0.309 ms

# Below is generated by plot.py at 2018-09-07 22:43:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 24.36 Mbit/s  
95th percentile per-packet one-way delay: 1.064 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 24.36 Mbit/s  
95th percentile per-packet one-way delay: 1.064 ms  
Loss rate: 0.06%

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



Run 5: Statistics of Sprout

Start at: 2018-09-07 21:26:54

End at: 2018-09-07 21:27:24

Local clock offset: 2.846 ms

Remote clock offset: 2.47 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 24.64 Mbit/s

95th percentile per-packet one-way delay: 1.133 ms

Loss rate: 0.14%

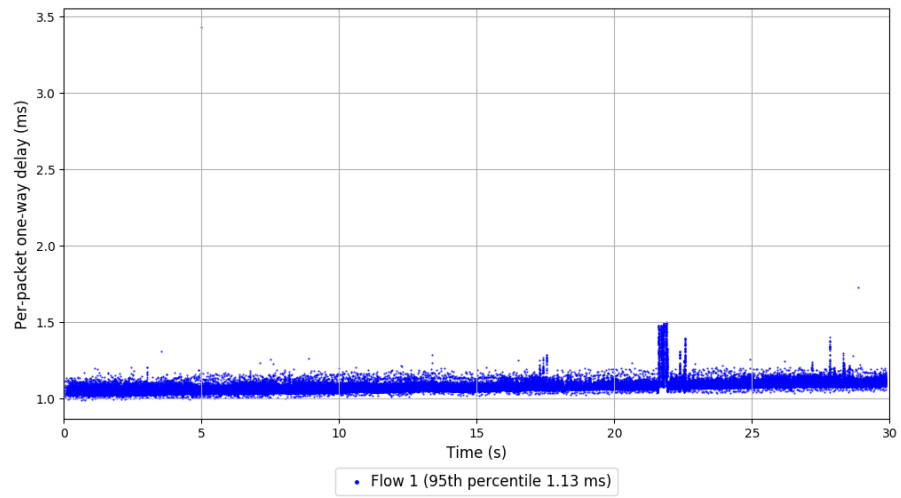
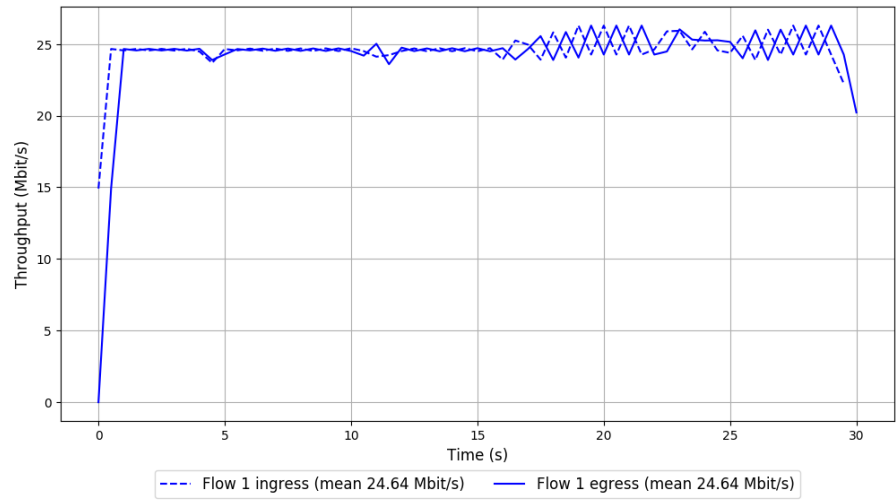
-- Flow 1:

Average throughput: 24.64 Mbit/s

95th percentile per-packet one-way delay: 1.133 ms

Loss rate: 0.14%

## Run 5: Report of Sprout — Data Link

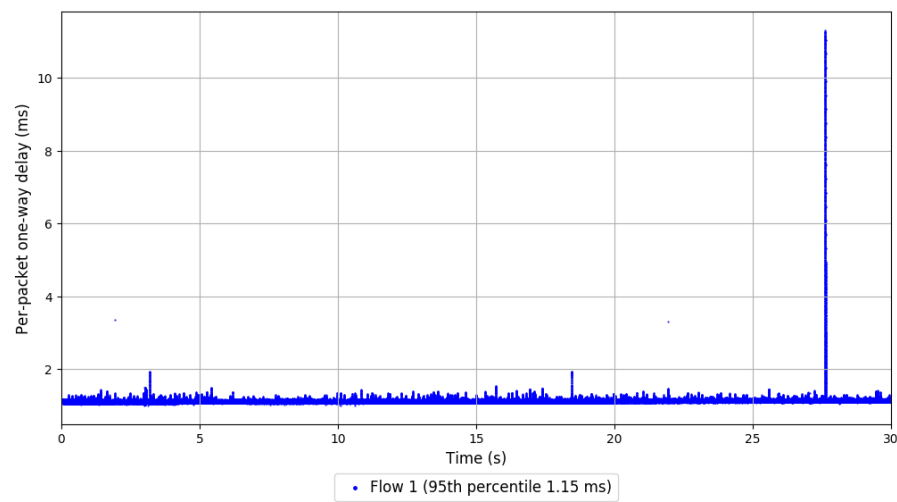
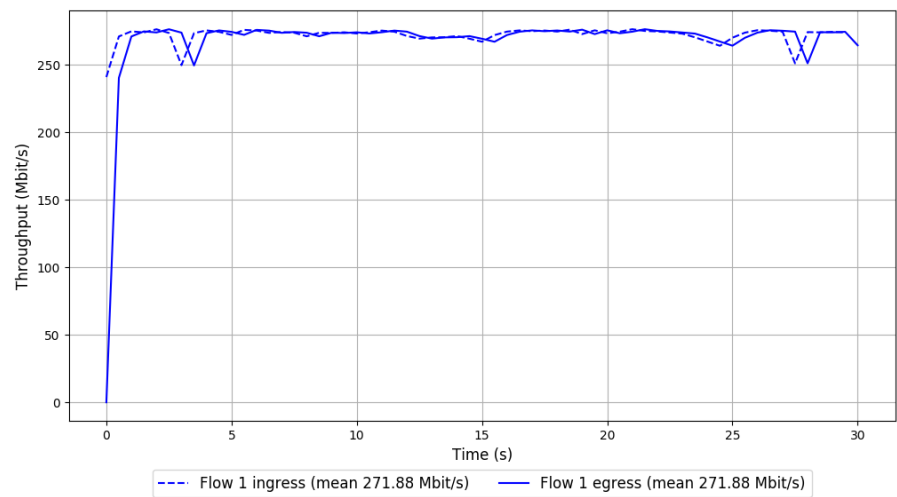


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 19:25:26
End at: 2018-09-07 19:25:56
Local clock offset: 3.34 ms
Remote clock offset: 3.961 ms

# Below is generated by plot.py at 2018-09-07 22:43:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 271.88 Mbit/s
95th percentile per-packet one-way delay: 1.149 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 271.88 Mbit/s
95th percentile per-packet one-way delay: 1.149 ms
Loss rate: 0.06%
```

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





Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 19:53:32

End at: 2018-09-07 19:54:02

Local clock offset: 1.137 ms

Remote clock offset: -0.3 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 272.44 Mbit/s

95th percentile per-packet one-way delay: 1.270 ms

Loss rate: 0.07%

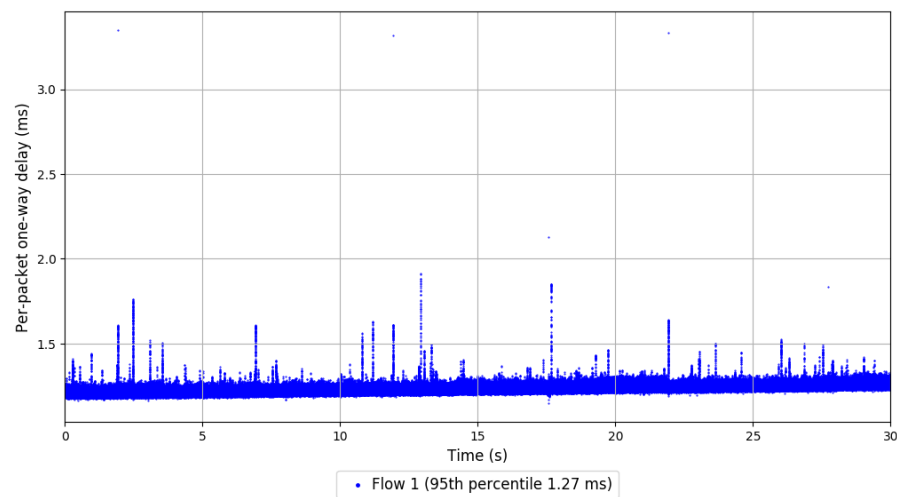
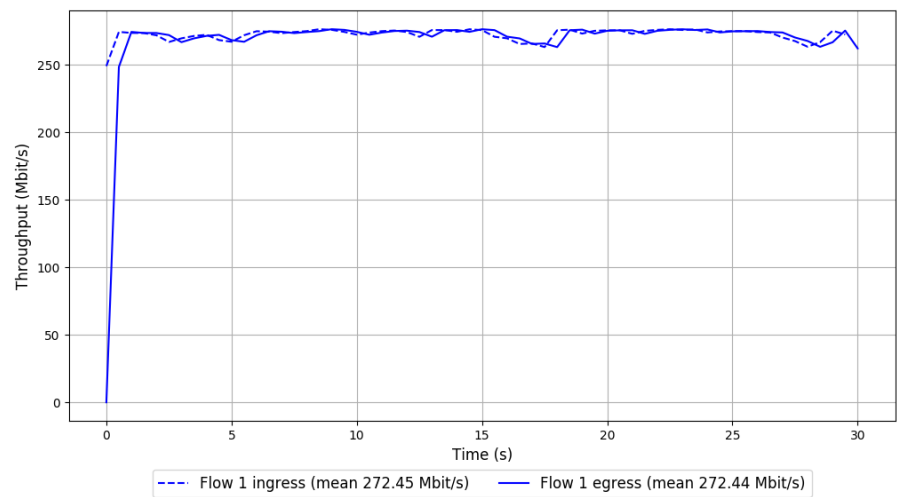
-- Flow 1:

Average throughput: 272.44 Mbit/s

95th percentile per-packet one-way delay: 1.270 ms

Loss rate: 0.07%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 20:21:34

End at: 2018-09-07 20:22:04

Local clock offset: -0.583 ms

Remote clock offset: -0.459 ms

# Below is generated by plot.py at 2018-09-07 22:43:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 218.98 Mbit/s

95th percentile per-packet one-way delay: 1.091 ms

Loss rate: 0.06%

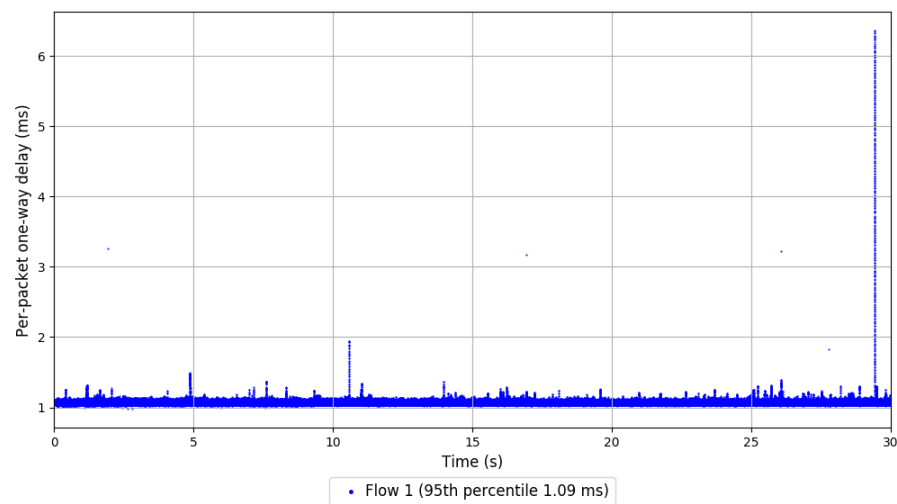
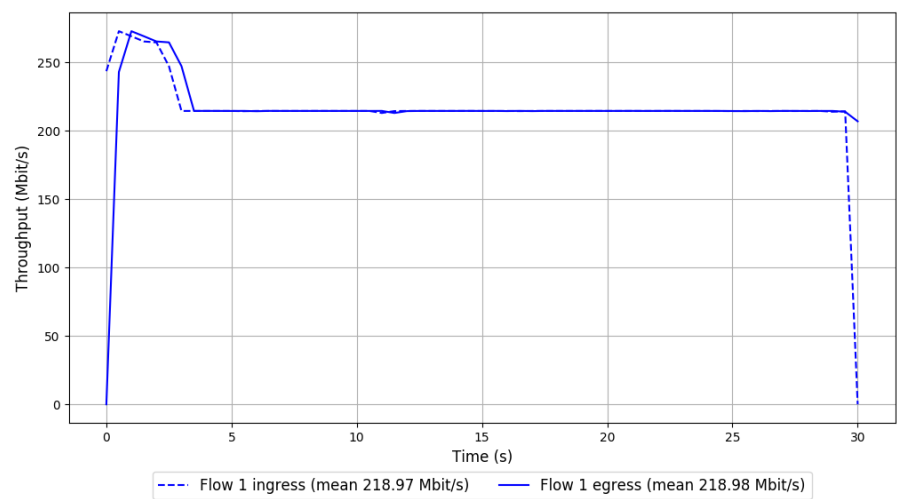
-- Flow 1:

Average throughput: 218.98 Mbit/s

95th percentile per-packet one-way delay: 1.091 ms

Loss rate: 0.06%

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

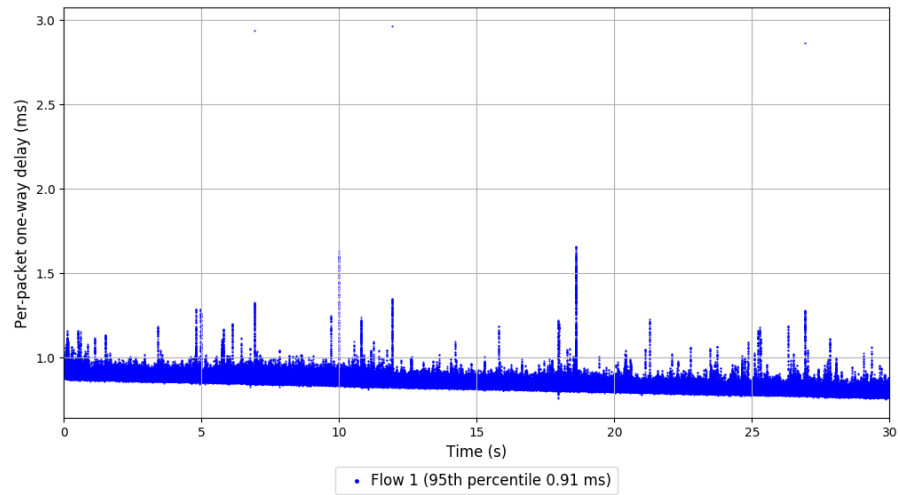
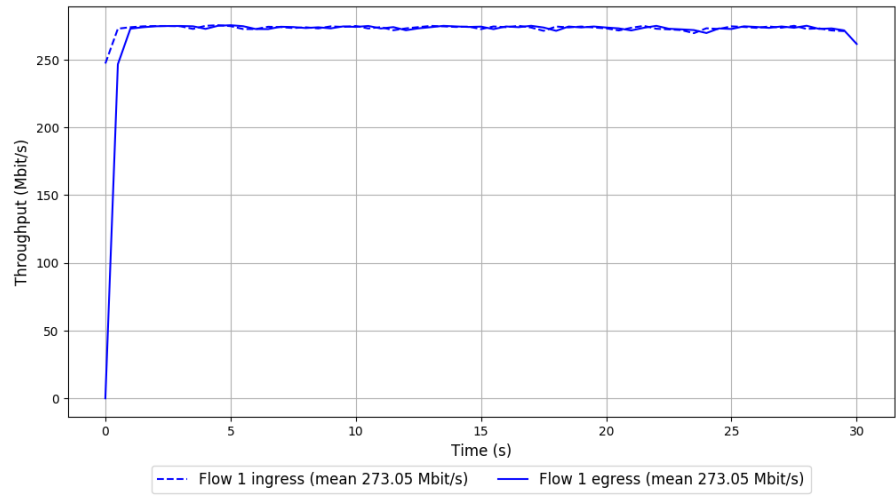


Run 4: Statistics of TaoVA-100x

Start at: 2018-09-07 20:49:35  
End at: 2018-09-07 20:50:05  
Local clock offset: 0.68 ms  
Remote clock offset: -0.366 ms

# Below is generated by plot.py at 2018-09-07 22:43:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 273.05 Mbit/s  
95th percentile per-packet one-way delay: 0.908 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 273.05 Mbit/s  
95th percentile per-packet one-way delay: 0.908 ms  
Loss rate: 0.06%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 21:17:33

End at: 2018-09-07 21:18:03

Local clock offset: 2.97 ms

Remote clock offset: 0.61 ms

# Below is generated by plot.py at 2018-09-07 22:43:45

# Datalink statistics

-- Total of 1 flow:

Average throughput: 267.93 Mbit/s

95th percentile per-packet one-way delay: 1.221 ms

Loss rate: 0.07%

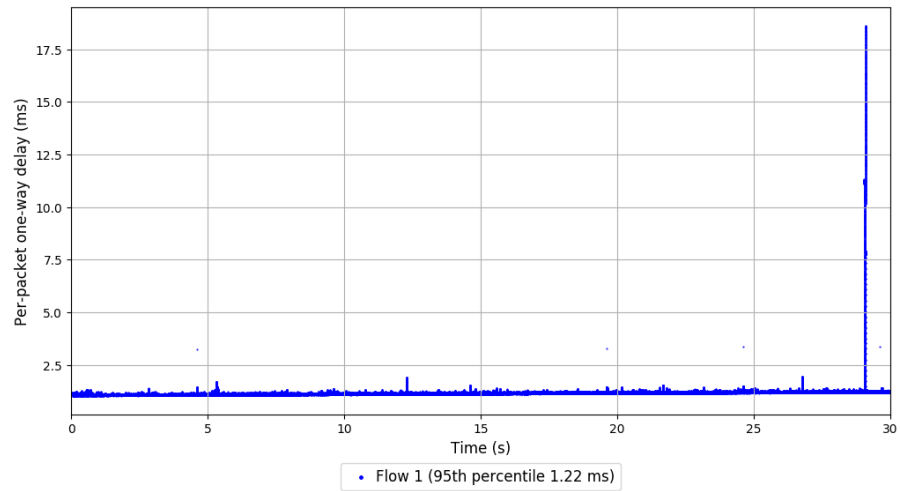
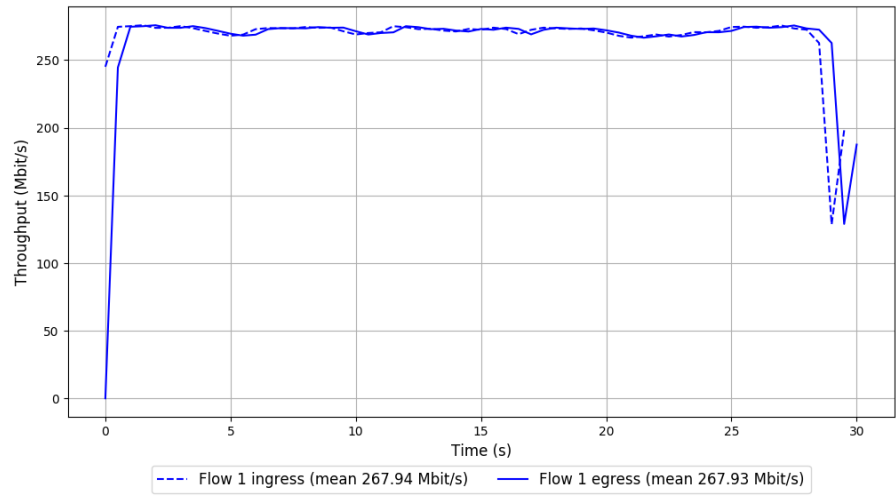
-- Flow 1:

Average throughput: 267.93 Mbit/s

95th percentile per-packet one-way delay: 1.221 ms

Loss rate: 0.07%

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





Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 19:42:16

End at: 2018-09-07 19:42:46

Local clock offset: 3.623 ms

Remote clock offset: 1.099 ms

# Below is generated by plot.py at 2018-09-07 22:45:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 588.17 Mbit/s

95th percentile per-packet one-way delay: 1.218 ms

Loss rate: 0.07%

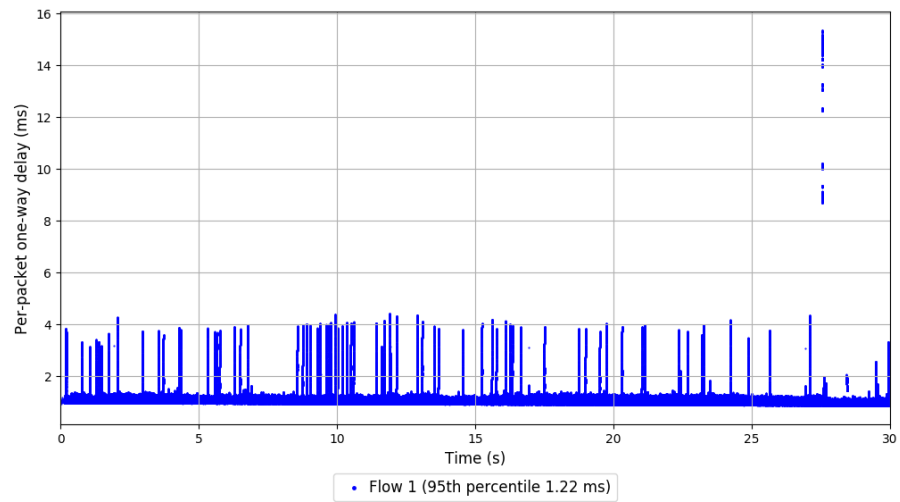
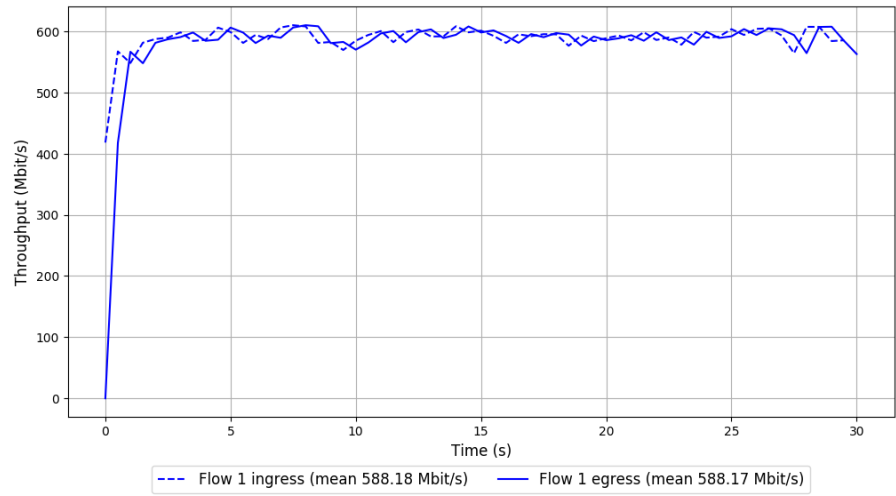
-- Flow 1:

Average throughput: 588.17 Mbit/s

95th percentile per-packet one-way delay: 1.218 ms

Loss rate: 0.07%

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

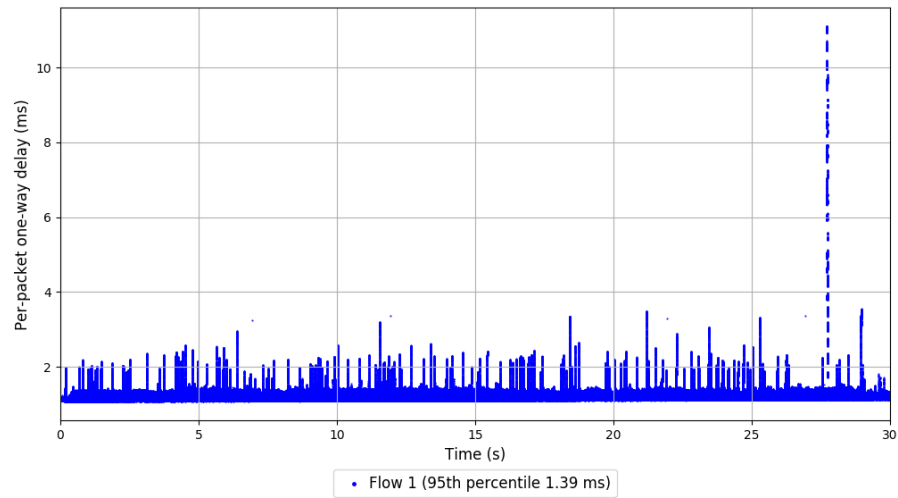
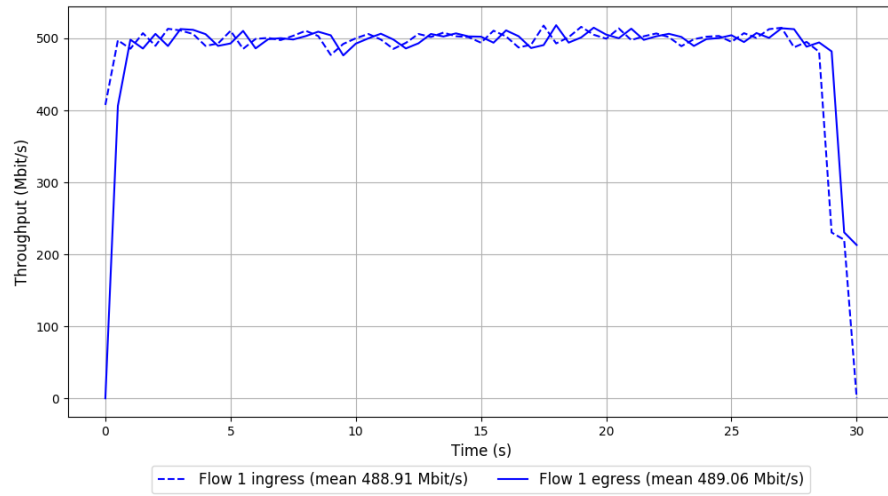


Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 20:10:19  
End at: 2018-09-07 20:10:49  
Local clock offset: -0.521 ms  
Remote clock offset: -0.721 ms

# Below is generated by plot.py at 2018-09-07 22:48:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 489.06 Mbit/s  
95th percentile per-packet one-way delay: 1.387 ms  
Loss rate: 0.03%  
-- Flow 1:  
Average throughput: 489.06 Mbit/s  
95th percentile per-packet one-way delay: 1.387 ms  
Loss rate: 0.03%

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

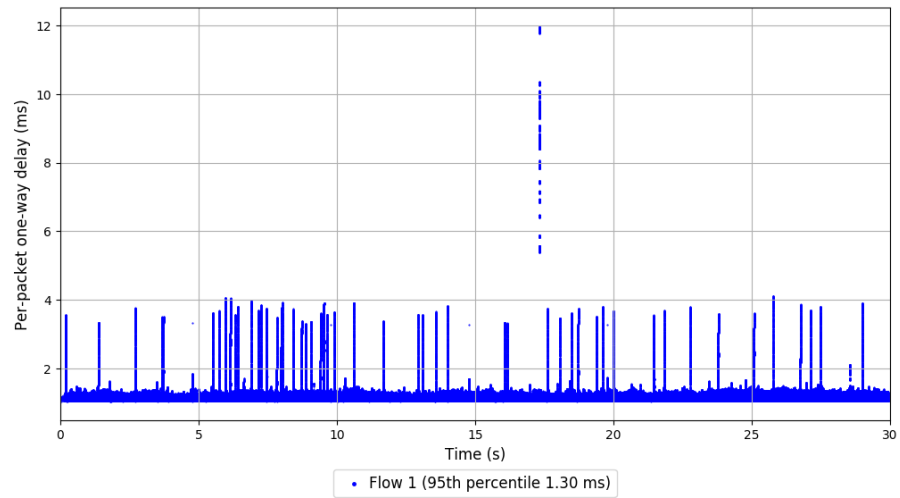
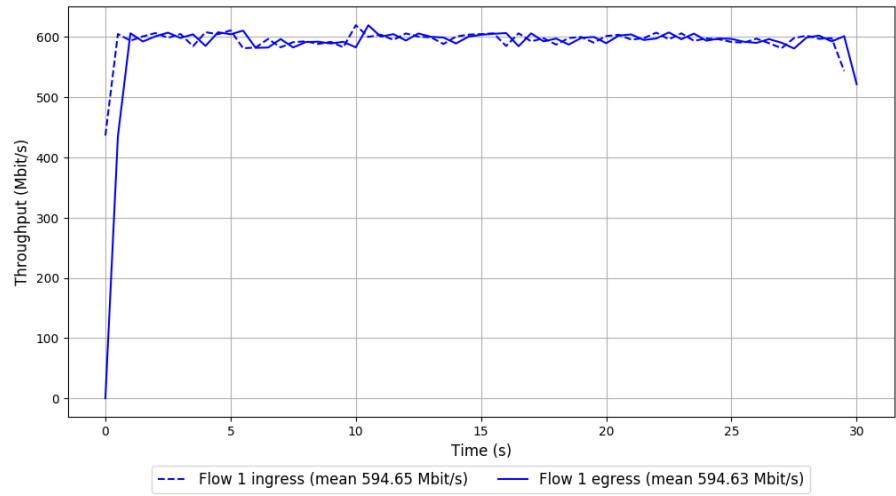


Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 20:38:16  
End at: 2018-09-07 20:38:46  
Local clock offset: -0.788 ms  
Remote clock offset: -0.641 ms

# Below is generated by plot.py at 2018-09-07 22:49:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 594.63 Mbit/s  
95th percentile per-packet one-way delay: 1.300 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 594.63 Mbit/s  
95th percentile per-packet one-way delay: 1.300 ms  
Loss rate: 0.07%

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

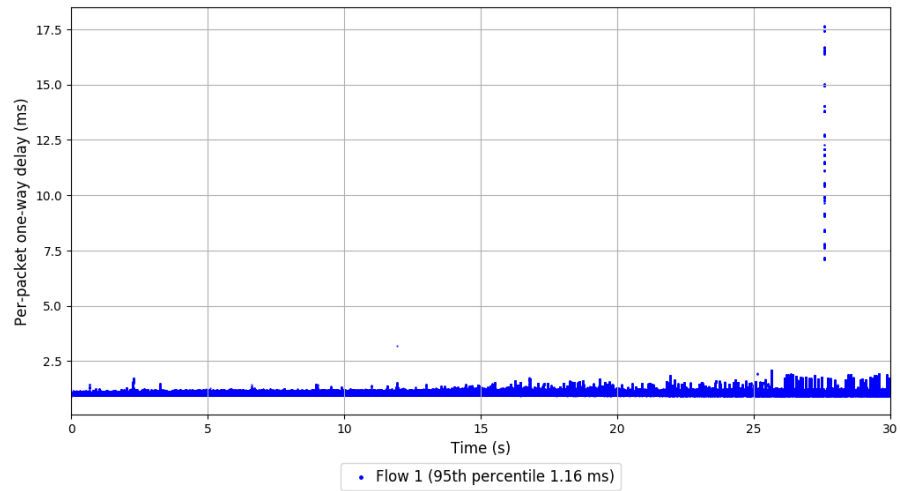
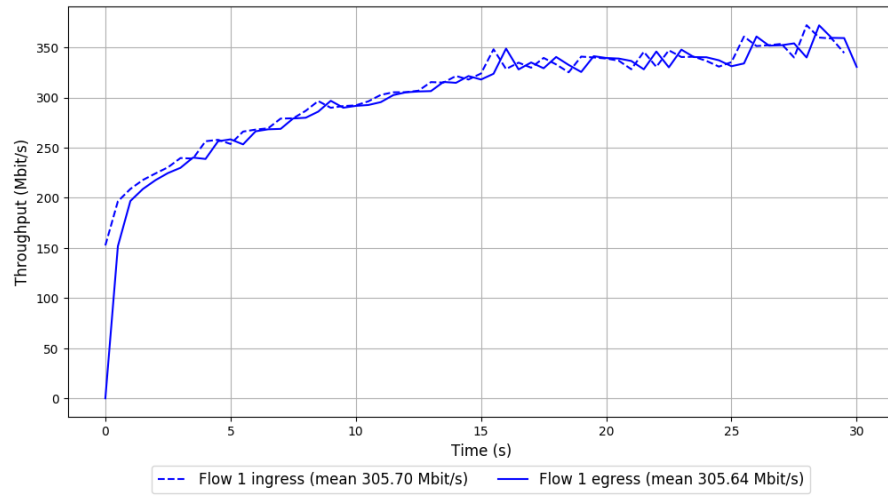


Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 21:06:20  
End at: 2018-09-07 21:06:50  
Local clock offset: 2.822 ms  
Remote clock offset: -0.252 ms

# Below is generated by plot.py at 2018-09-07 22:49:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 305.64 Mbit/s  
95th percentile per-packet one-way delay: 1.164 ms  
Loss rate: 0.08%  
-- Flow 1:  
Average throughput: 305.64 Mbit/s  
95th percentile per-packet one-way delay: 1.164 ms  
Loss rate: 0.08%

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





Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 21:34:26

End at: 2018-09-07 21:34:56

Local clock offset: 2.891 ms

Remote clock offset: 3.197 ms

# Below is generated by plot.py at 2018-09-07 22:49:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 487.87 Mbit/s

95th percentile per-packet one-way delay: 1.326 ms

Loss rate: 0.06%

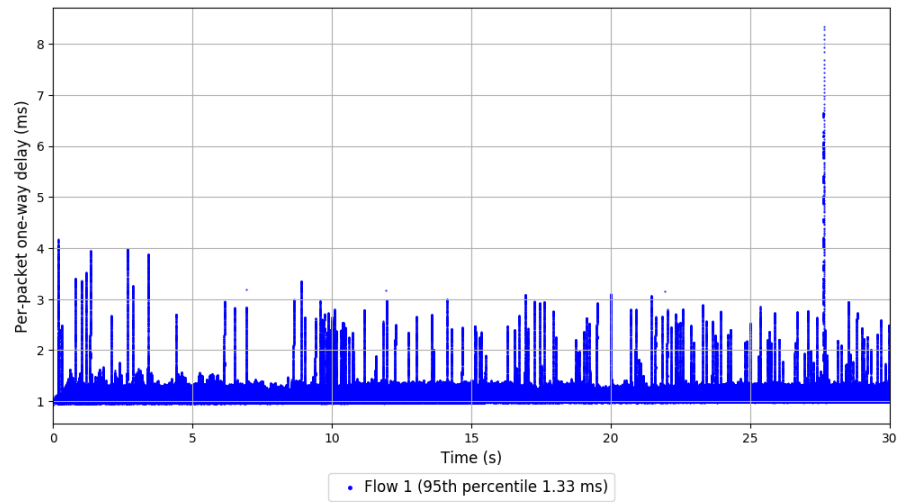
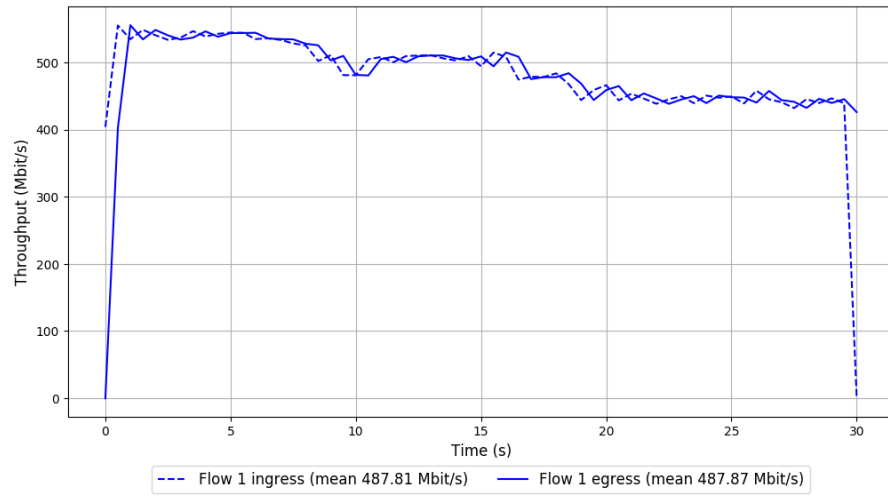
-- Flow 1:

Average throughput: 487.87 Mbit/s

95th percentile per-packet one-way delay: 1.326 ms

Loss rate: 0.06%

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



Run 1: Statistics of Verus

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

End at: 2018-09-07 19:22:37

Local clock offset: 3.337 ms

Remote clock offset: 3.742 ms

# Below is generated by plot.py at 2018-09-07 22:49:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 368.56 Mbit/s

95th percentile per-packet one-way delay: 10.125 ms

Loss rate: 0.00%

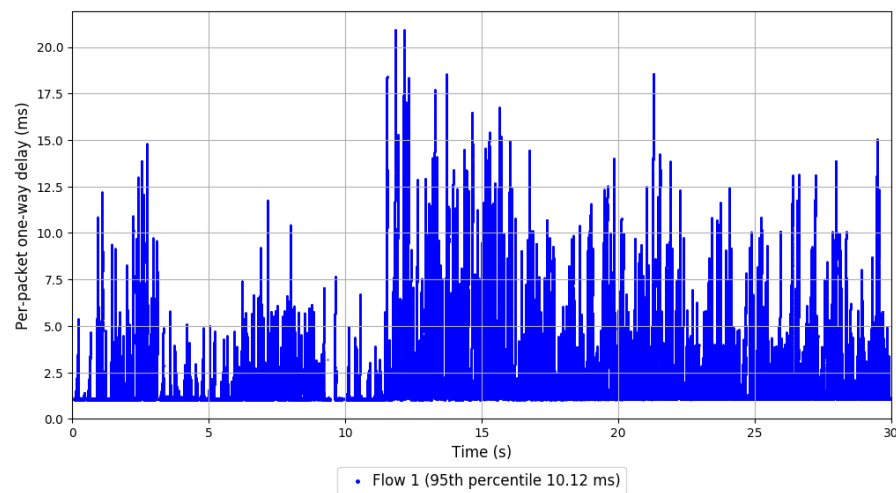
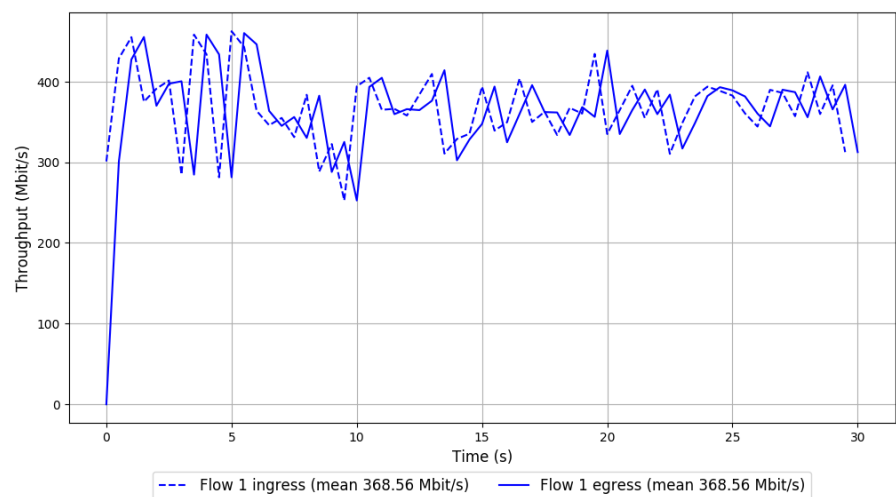
-- Flow 1:

Average throughput: 368.56 Mbit/s

95th percentile per-packet one-way delay: 10.125 ms

Loss rate: 0.00%

Run 1: Report of Verus — Data Link

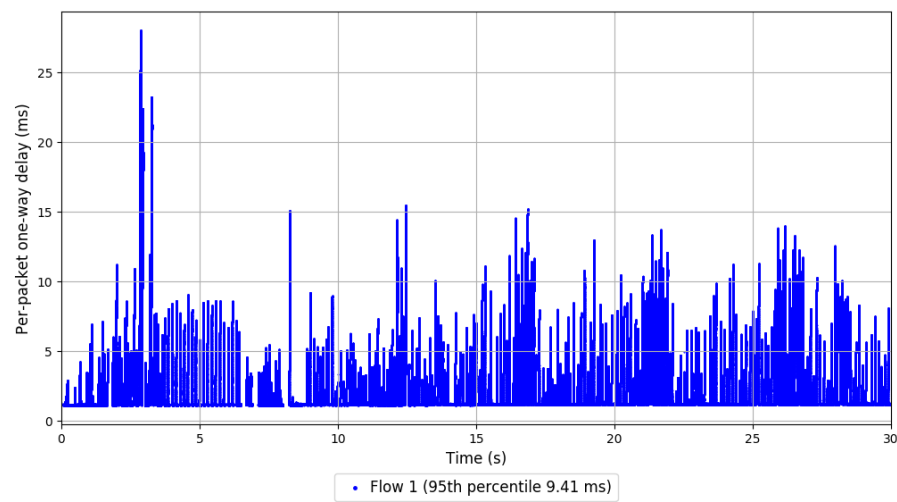
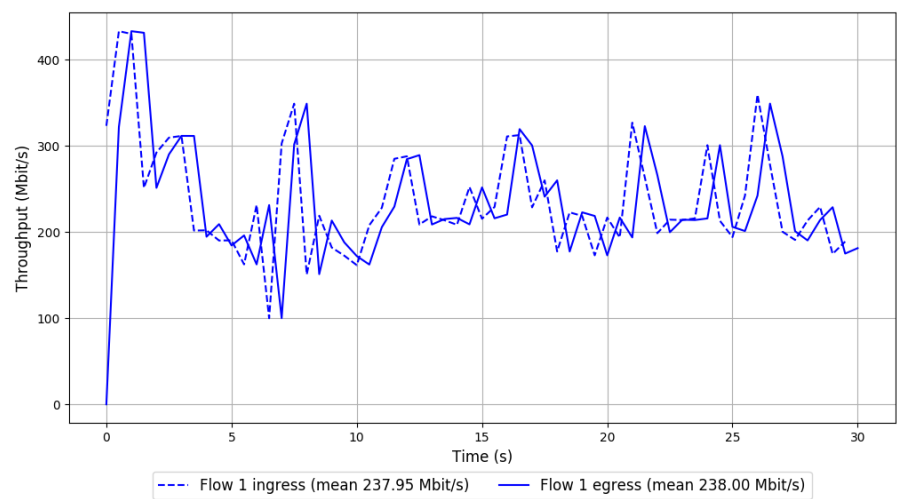


Run 2: Statistics of Verus

Start at: 2018-09-07 19:50:18  
End at: 2018-09-07 19:50:48  
Local clock offset: 1.768 ms  
Remote clock offset: -0.026 ms

# Below is generated by plot.py at 2018-09-07 22:49:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 238.00 Mbit/s  
95th percentile per-packet one-way delay: 9.408 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 238.00 Mbit/s  
95th percentile per-packet one-way delay: 9.408 ms  
Loss rate: 0.05%

Run 2: Report of Verus — Data Link

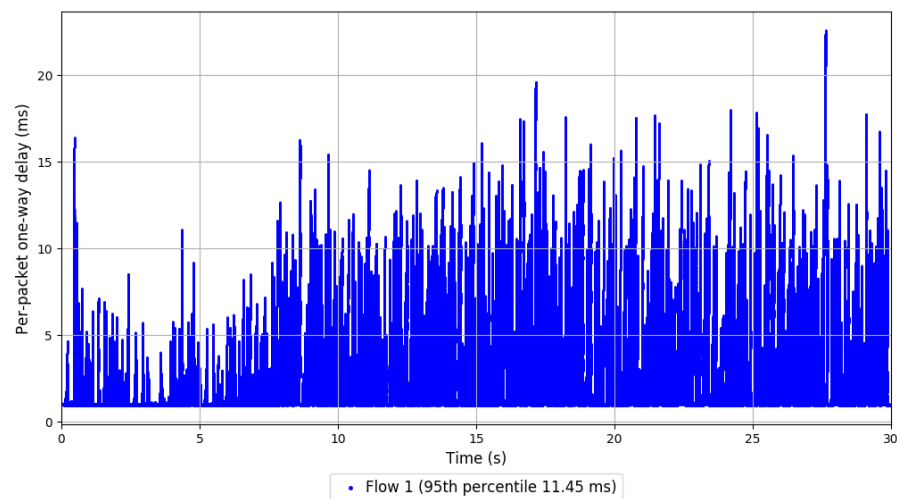
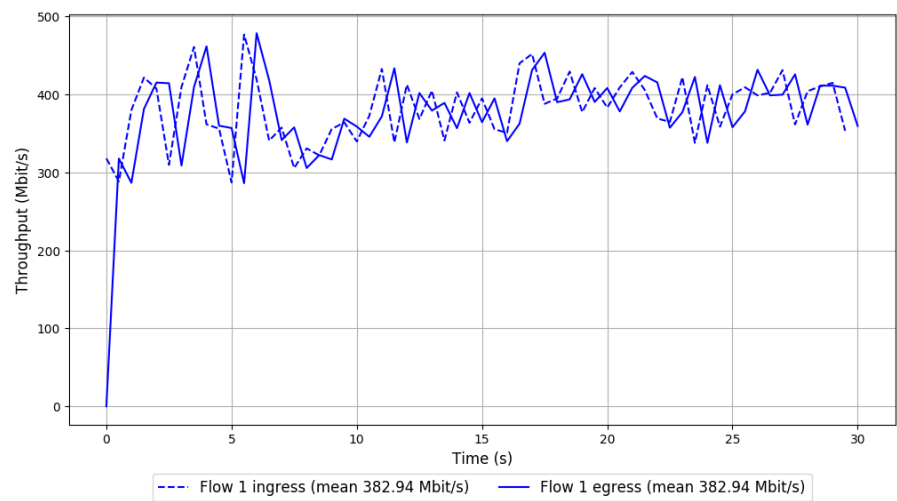


Run 3: Statistics of Verus

Start at: 2018-09-07 20:18:15  
End at: 2018-09-07 20:18:45  
Local clock offset: -0.724 ms  
Remote clock offset: -0.467 ms

# Below is generated by plot.py at 2018-09-07 22:49:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 382.94 Mbit/s  
95th percentile per-packet one-way delay: 11.446 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 382.94 Mbit/s  
95th percentile per-packet one-way delay: 11.446 ms  
Loss rate: 0.00%

Run 3: Report of Verus — Data Link



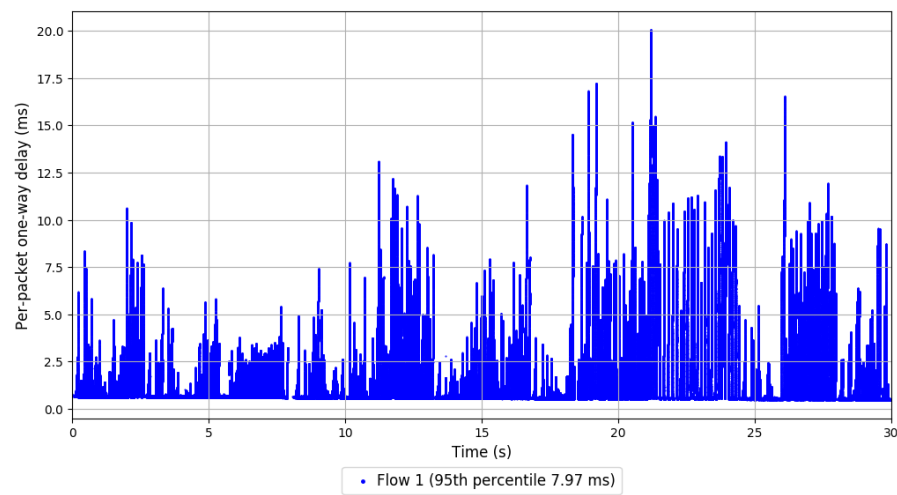
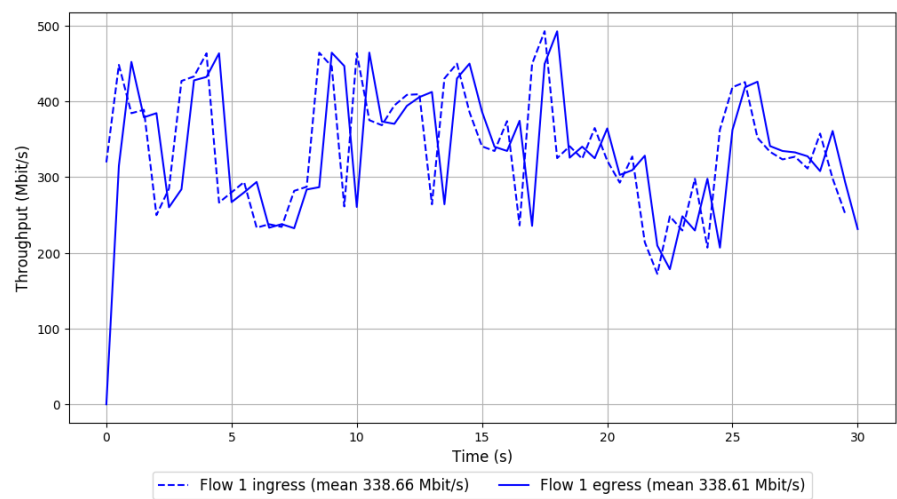


Run 4: Statistics of Verus

Start at: 2018-09-07 20:46:17  
End at: 2018-09-07 20:46:47  
Local clock offset: -0.447 ms  
Remote clock offset: -0.349 ms

# Below is generated by plot.py at 2018-09-07 22:50:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 338.61 Mbit/s  
95th percentile per-packet one-way delay: 7.969 ms  
Loss rate: 0.12%  
-- Flow 1:  
Average throughput: 338.61 Mbit/s  
95th percentile per-packet one-way delay: 7.969 ms  
Loss rate: 0.12%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-07 21:14:13

End at: 2018-09-07 21:14:43

Local clock offset: 3.061 ms

Remote clock offset: -0.36 ms

# Below is generated by plot.py at 2018-09-07 22:50:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 392.78 Mbit/s

95th percentile per-packet one-way delay: 14.119 ms

Loss rate: 0.15%

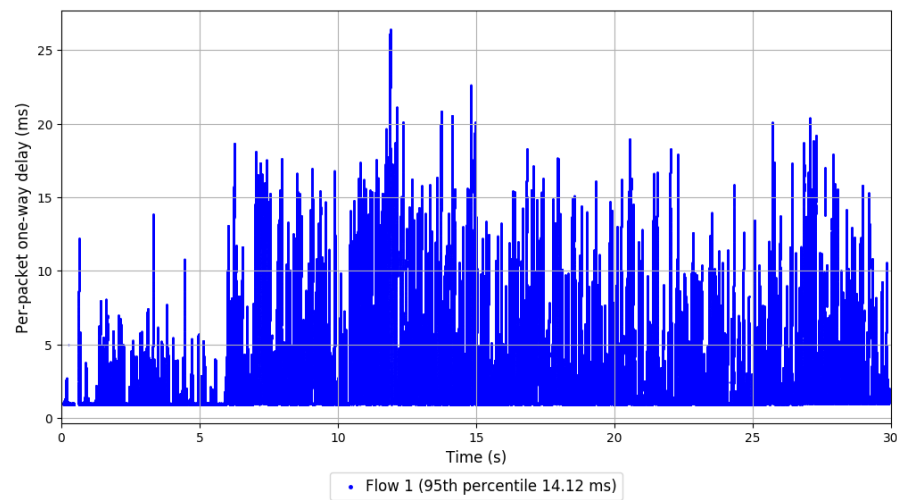
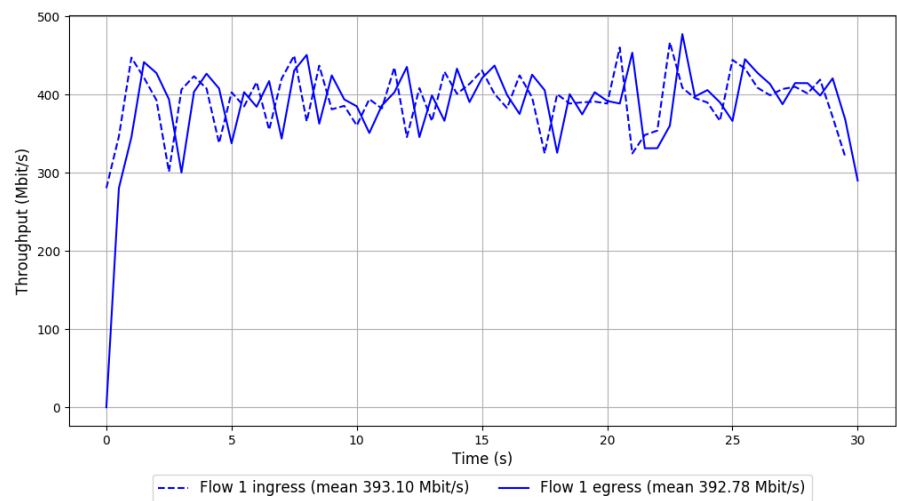
-- Flow 1:

Average throughput: 392.78 Mbit/s

95th percentile per-packet one-way delay: 14.119 ms

Loss rate: 0.15%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

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

End at: 2018-09-07 19:47:49

Local clock offset: 2.675 ms

Remote clock offset: 0.271 ms

# Below is generated by plot.py at 2018-09-07 22:51:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 438.56 Mbit/s

95th percentile per-packet one-way delay: 1.296 ms

Loss rate: 0.06%

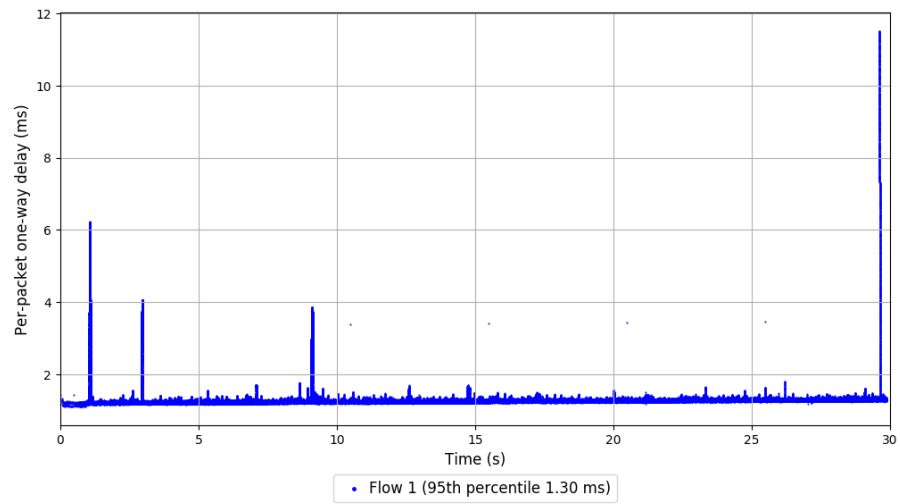
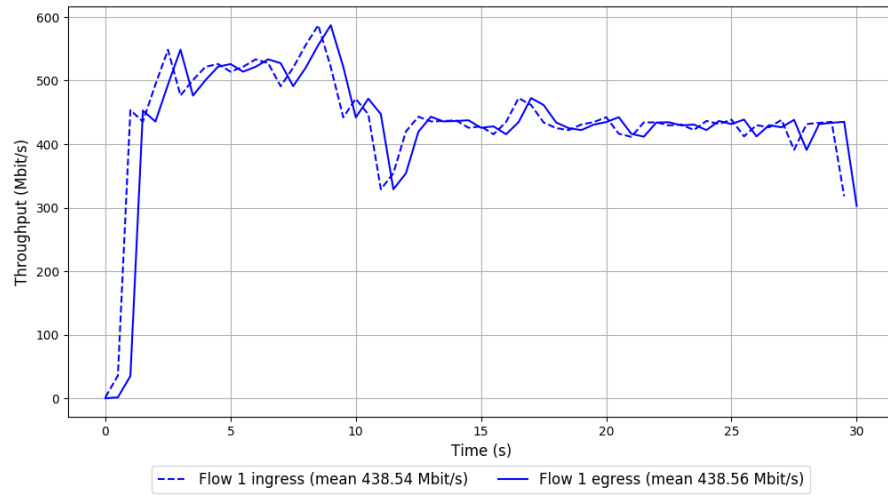
-- Flow 1:

Average throughput: 438.56 Mbit/s

95th percentile per-packet one-way delay: 1.296 ms

Loss rate: 0.06%

# Run 1: Report of PCC-Vivace — Data Link

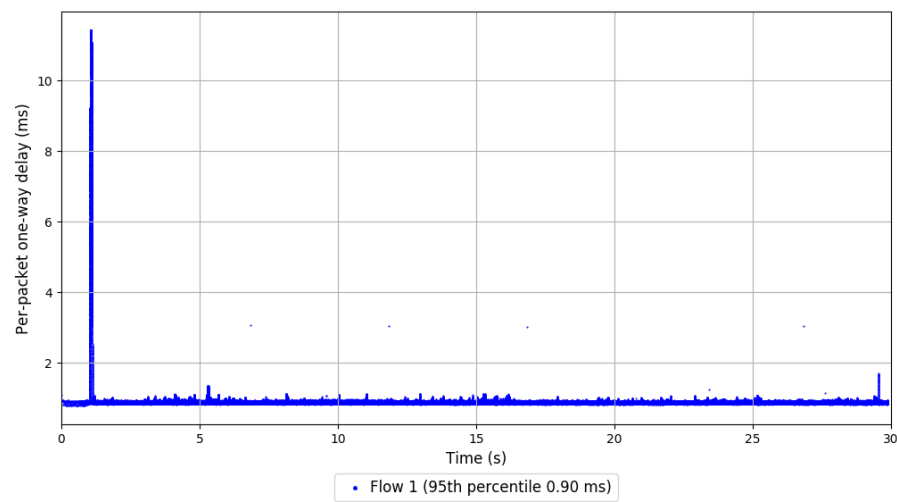
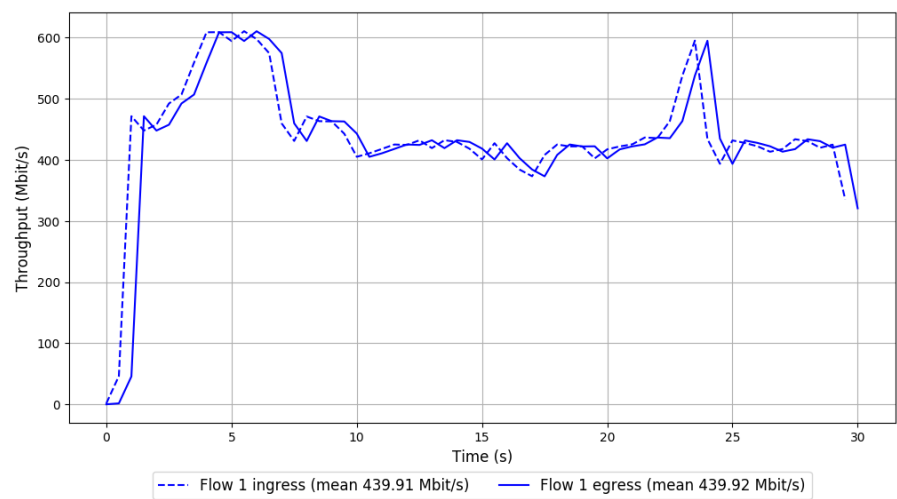


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 20:15:15  
End at: 2018-09-07 20:15:45  
Local clock offset: -0.846 ms  
Remote clock offset: -0.477 ms

# Below is generated by plot.py at 2018-09-07 22:52:07  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 439.92 Mbit/s  
95th percentile per-packet one-way delay: 0.897 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 439.92 Mbit/s  
95th percentile per-packet one-way delay: 0.897 ms  
Loss rate: 0.06%

Run 2: Report of PCC-Vivace — Data Link



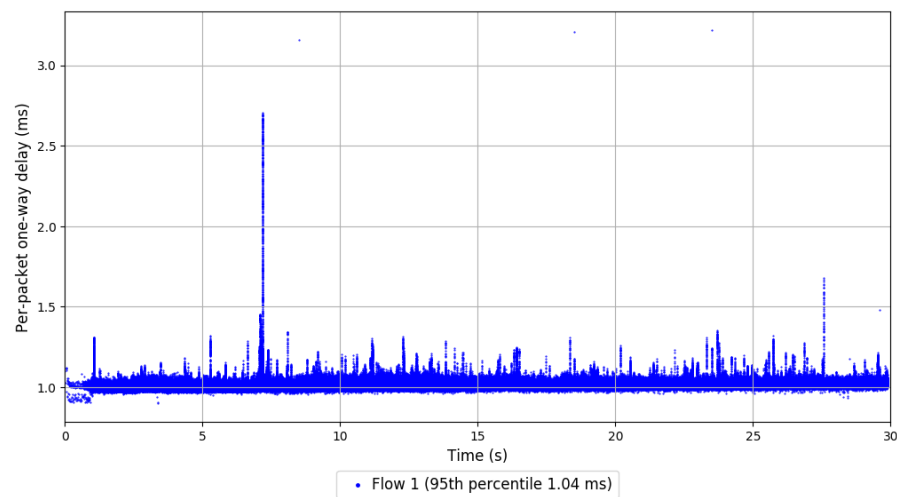
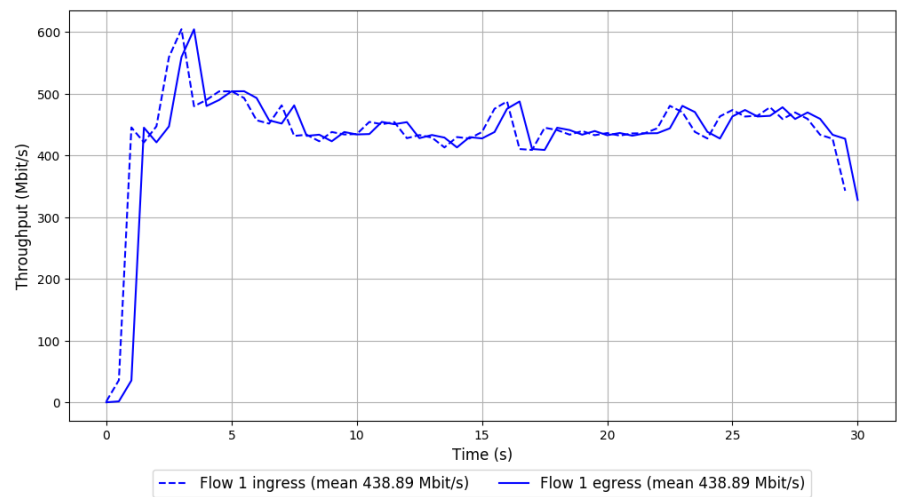


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 20:43:17  
End at: 2018-09-07 20:43:47  
Local clock offset: -0.882 ms  
Remote clock offset: -0.478 ms

# Below is generated by plot.py at 2018-09-07 22:52:08  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 438.89 Mbit/s  
95th percentile per-packet one-way delay: 1.040 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 438.89 Mbit/s  
95th percentile per-packet one-way delay: 1.040 ms  
Loss rate: 0.06%

Run 3: Report of PCC-Vivace — Data Link

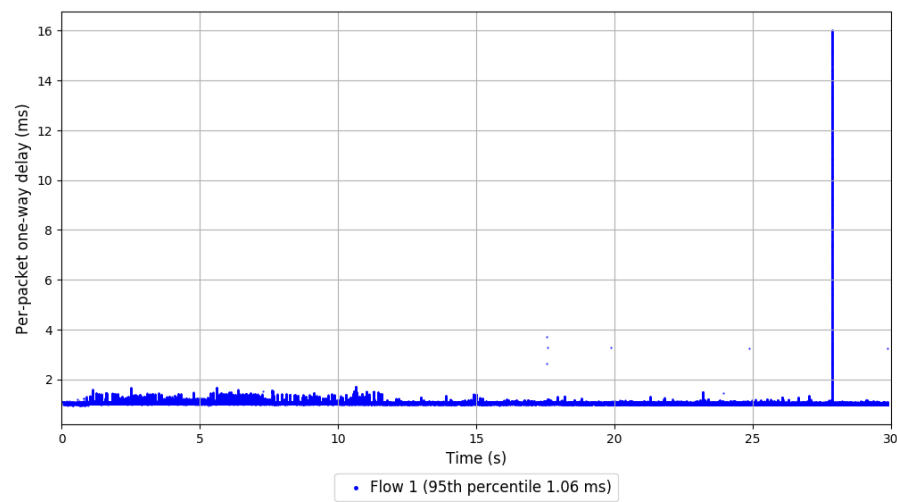
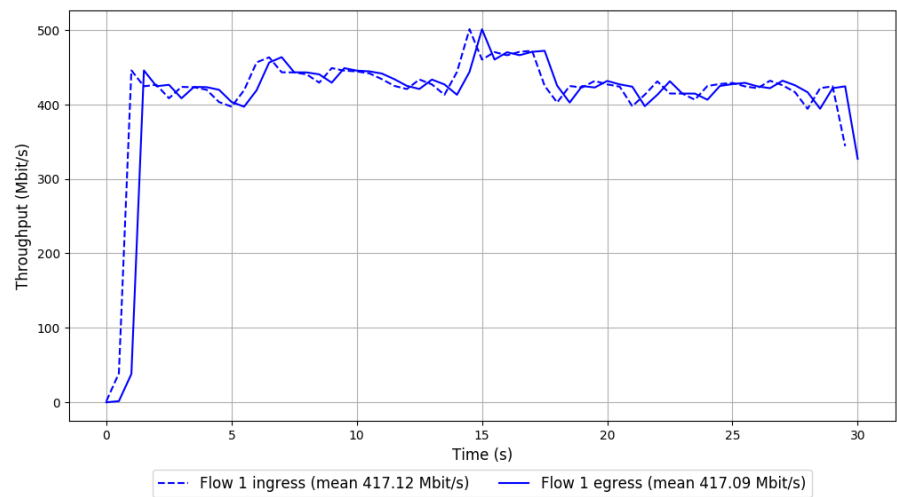


Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 21:11:14  
End at: 2018-09-07 21:11:44  
Local clock offset: 3.05 ms  
Remote clock offset: -0.322 ms

# Below is generated by plot.py at 2018-09-07 22:52:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 417.09 Mbit/s  
95th percentile per-packet one-way delay: 1.059 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 417.09 Mbit/s  
95th percentile per-packet one-way delay: 1.059 ms  
Loss rate: 0.07%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 21:39:19

End at: 2018-09-07 21:39:50

Local clock offset: 3.051 ms

Remote clock offset: 3.55 ms

# Below is generated by plot.py at 2018-09-07 22:52:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 441.76 Mbit/s

95th percentile per-packet one-way delay: 1.063 ms

Loss rate: 0.06%

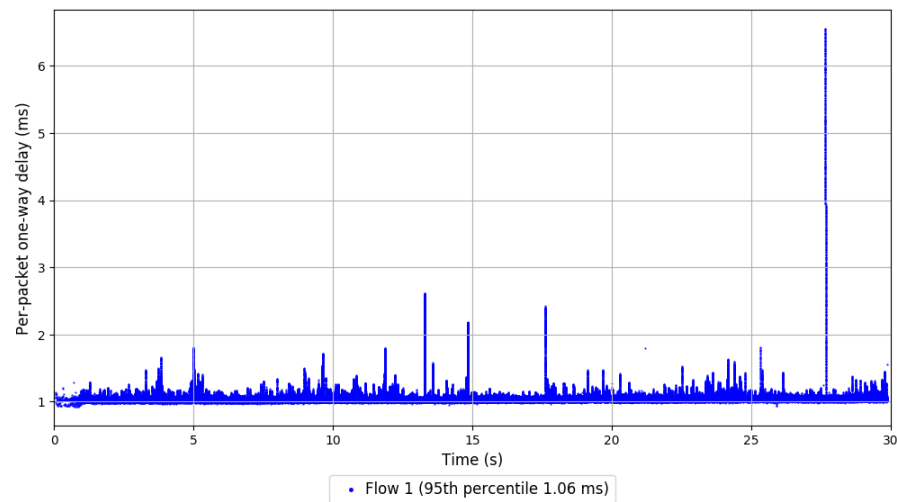
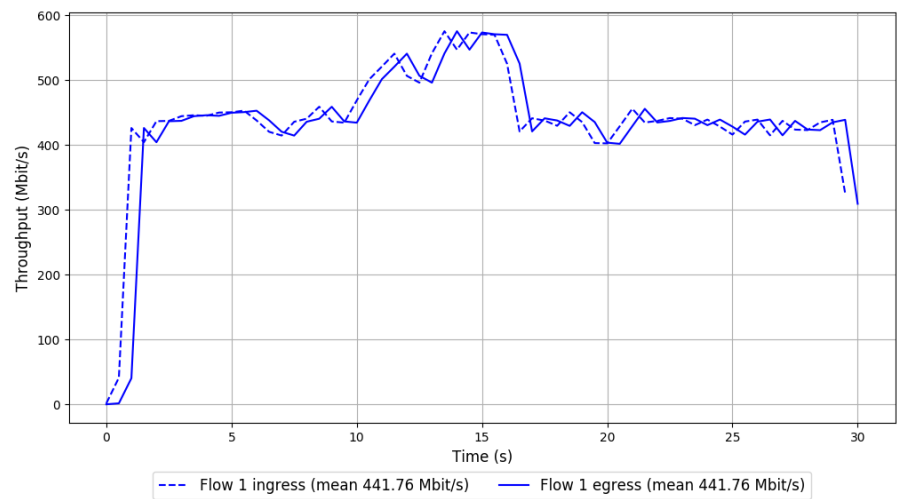
-- Flow 1:

Average throughput: 441.76 Mbit/s

95th percentile per-packet one-way delay: 1.063 ms

Loss rate: 0.06%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-07 19:39:31

End at: 2018-09-07 19:40:01

Local clock offset: 3.459 ms

Remote clock offset: 1.677 ms

# Below is generated by plot.py at 2018-09-07 22:52:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 0.977 ms

Loss rate: 0.07%

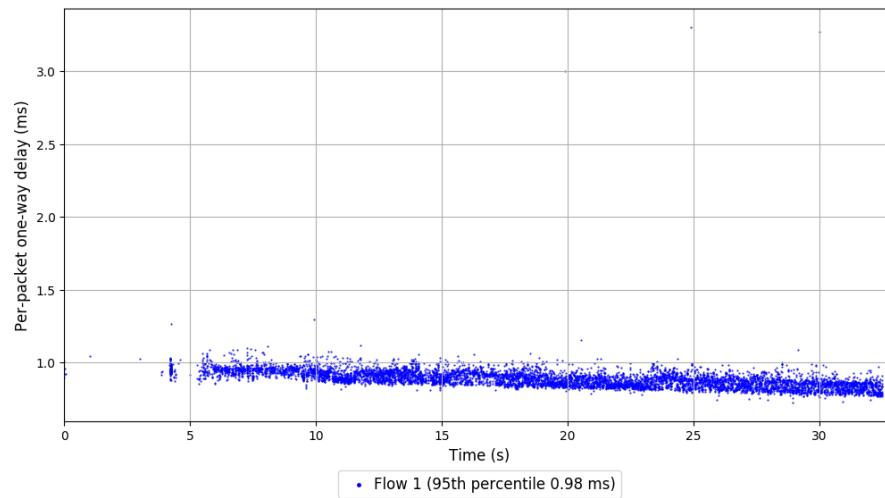
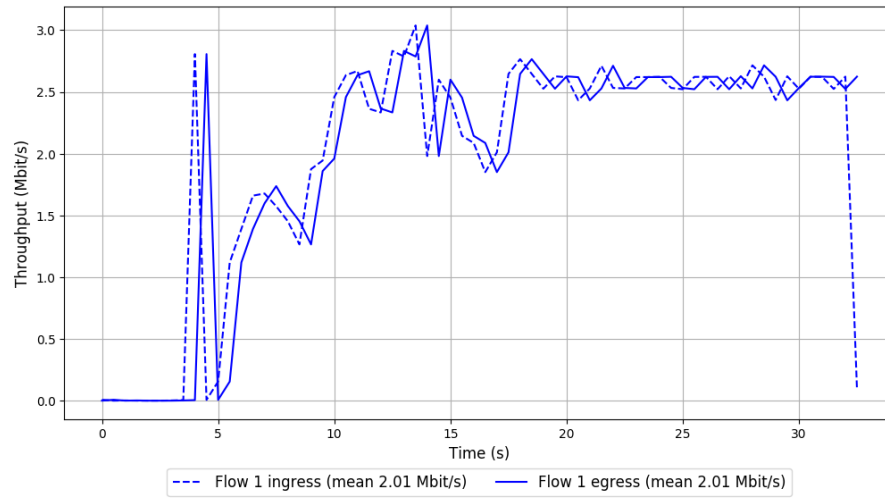
-- Flow 1:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 0.977 ms

Loss rate: 0.07%

# Run 1: Report of WebRTC media — Data Link



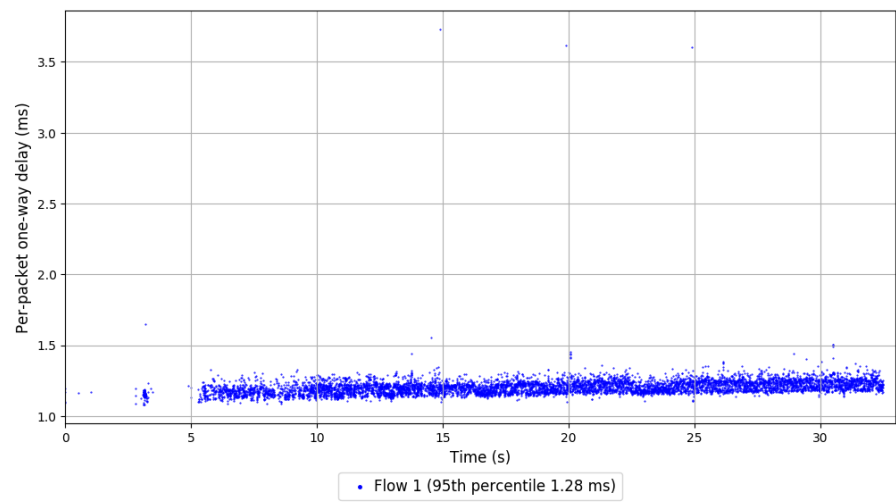
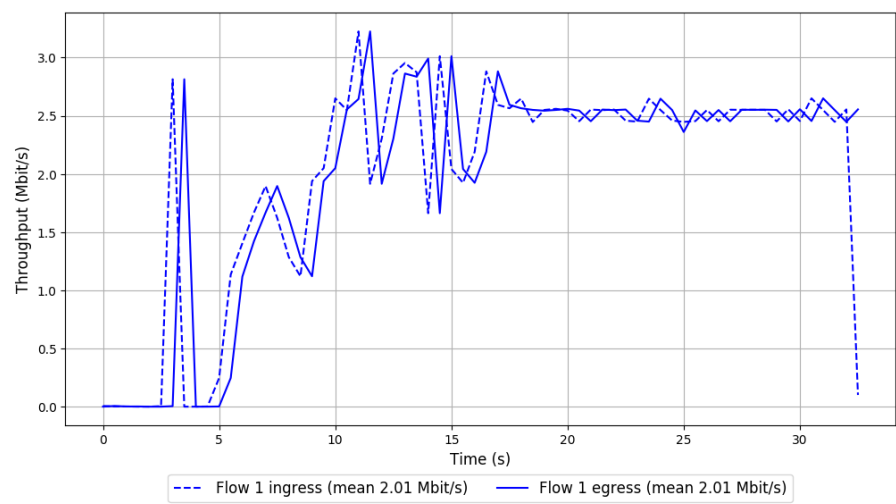


Run 2: Statistics of WebRTC media

Start at: 2018-09-07 20:07:33  
End at: 2018-09-07 20:08:03  
Local clock offset: -0.368 ms  
Remote clock offset: -0.924 ms

# Below is generated by plot.py at 2018-09-07 22:52:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.01 Mbit/s  
95th percentile per-packet one-way delay: 1.277 ms  
Loss rate: 0.08%  
-- Flow 1:  
Average throughput: 2.01 Mbit/s  
95th percentile per-packet one-way delay: 1.277 ms  
Loss rate: 0.08%

Run 2: Report of WebRTC media — Data Link

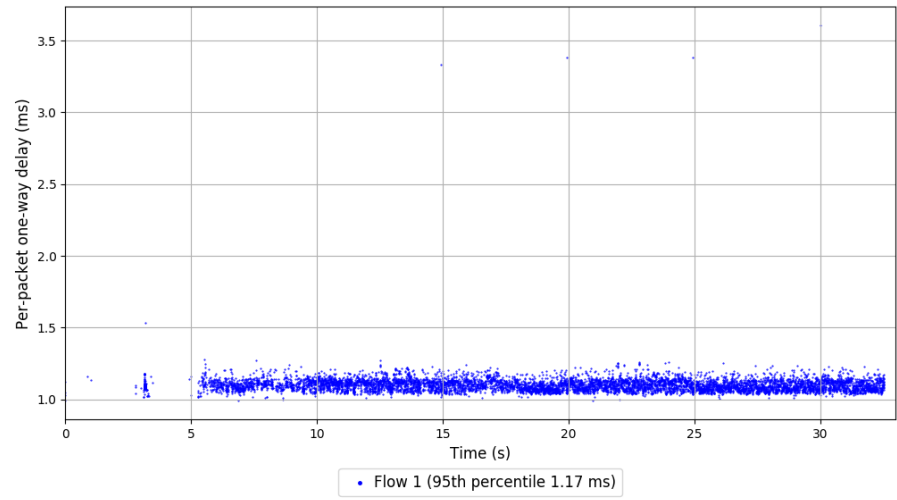
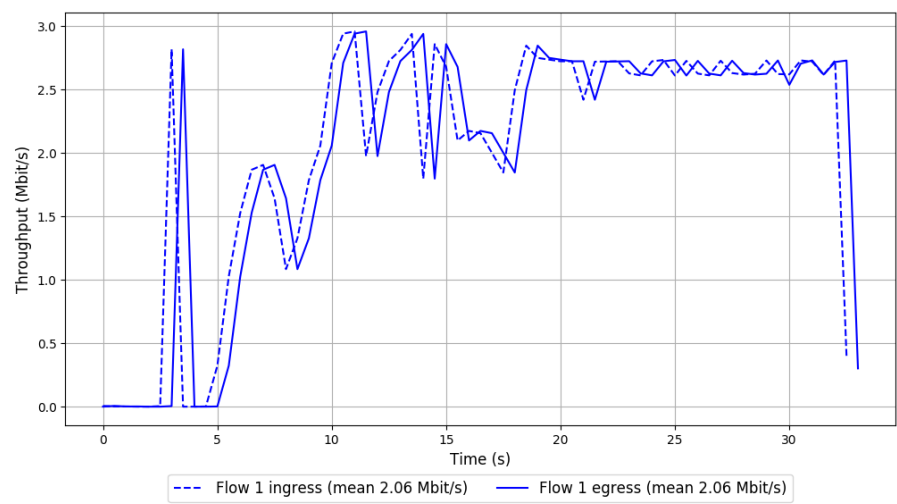


Run 3: Statistics of WebRTC media

Start at: 2018-09-07 20:35:31  
End at: 2018-09-07 20:36:01  
Local clock offset: -0.749 ms  
Remote clock offset: -0.603 ms

# Below is generated by plot.py at 2018-09-07 22:52:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.06 Mbit/s  
95th percentile per-packet one-way delay: 1.167 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 2.06 Mbit/s  
95th percentile per-packet one-way delay: 1.167 ms  
Loss rate: 0.07%

Run 3: Report of WebRTC media — Data Link

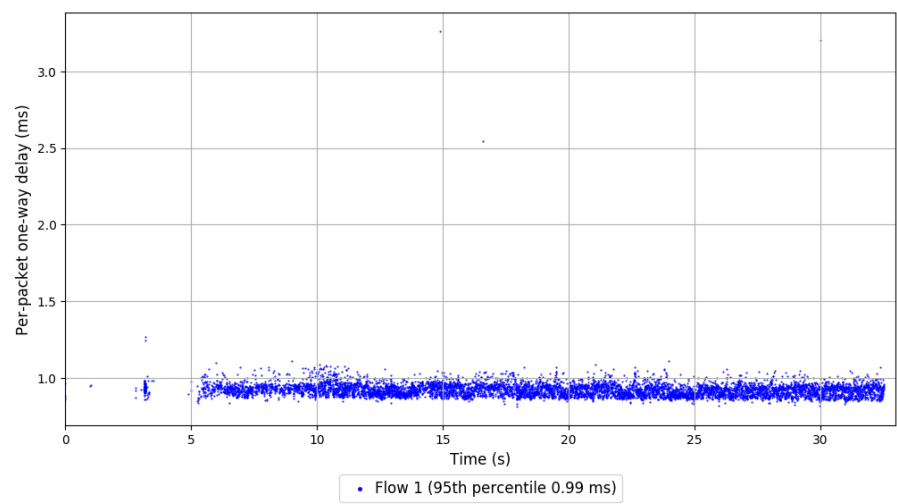
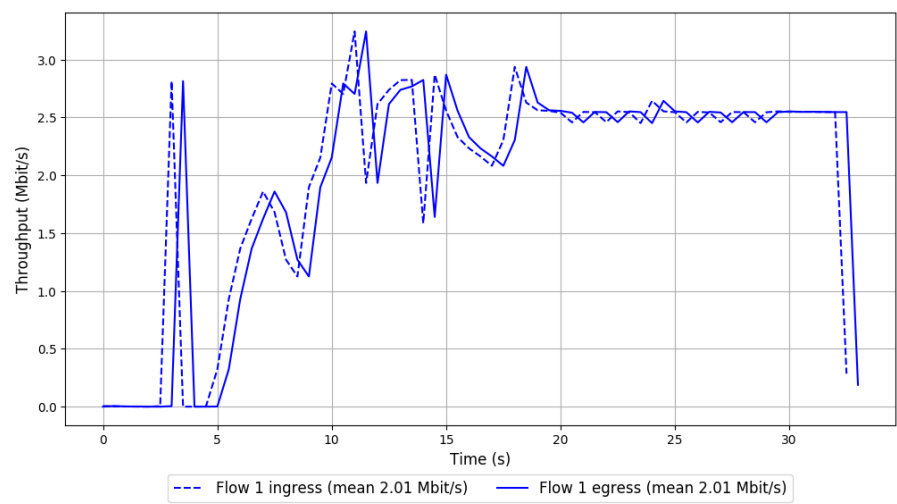


Run 4: Statistics of WebRTC media

Start at: 2018-09-07 21:03:34  
End at: 2018-09-07 21:04:04  
Local clock offset: 2.641 ms  
Remote clock offset: -0.213 ms

# Below is generated by plot.py at 2018-09-07 22:52:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.01 Mbit/s  
95th percentile per-packet one-way delay: 0.991 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 2.01 Mbit/s  
95th percentile per-packet one-way delay: 0.991 ms  
Loss rate: 0.07%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-07 21:31:40

End at: 2018-09-07 21:32:10

Local clock offset: 2.955 ms

Remote clock offset: 3.025 ms

# Below is generated by plot.py at 2018-09-07 22:52:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 1.141 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 1.141 ms

Loss rate: 0.08%

Run 5: Report of WebRTC media — Data Link

