

## Pantheon Report

Generated at 2018-09-06 16:21:31 (UTC).

Data path: Mexico on **em1** (*remote*) → AWS California 2 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.

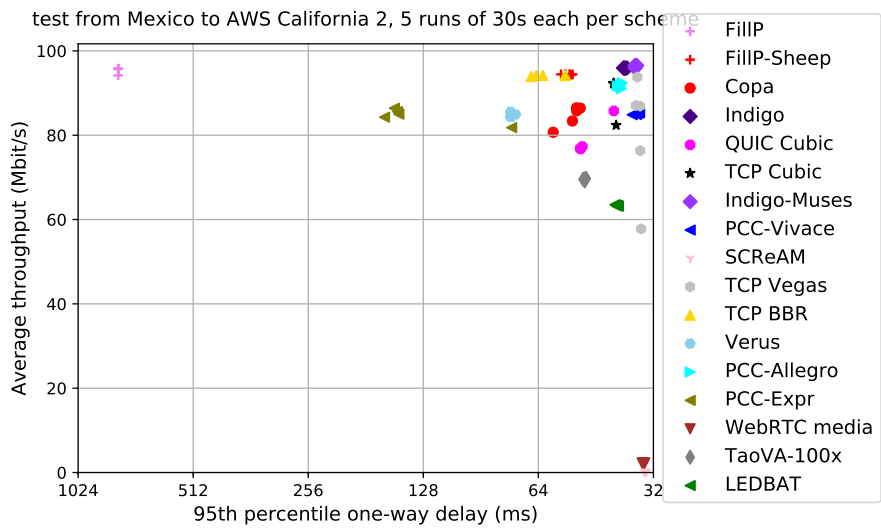
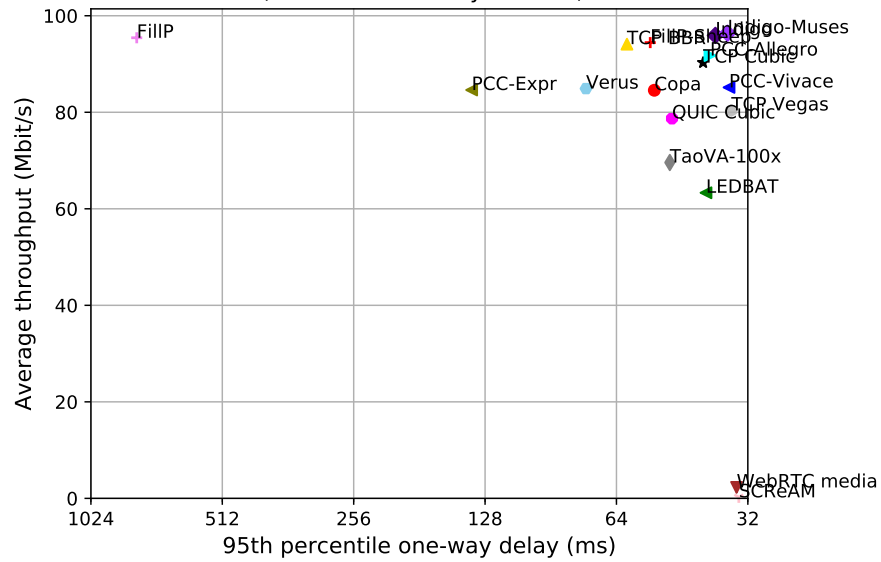
### System info:

```
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 @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740d4fe1771f813cd646339e1952
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-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from Mexico to AWS California 2, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



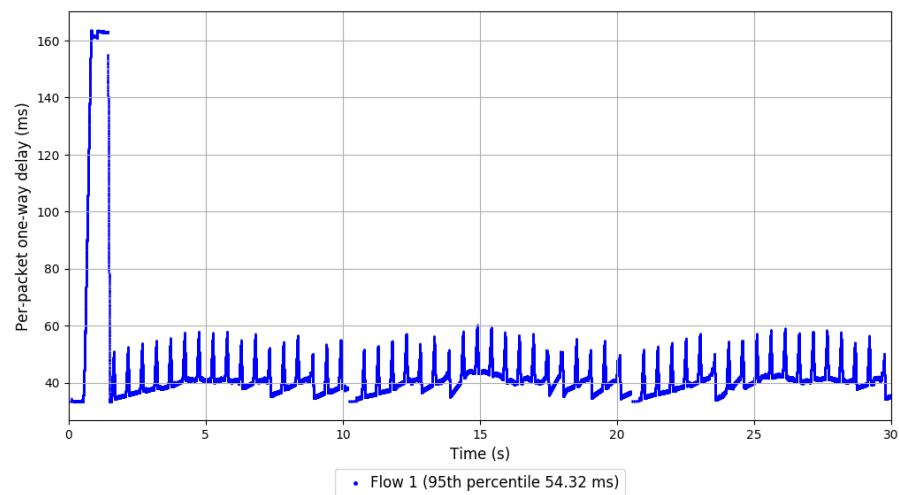
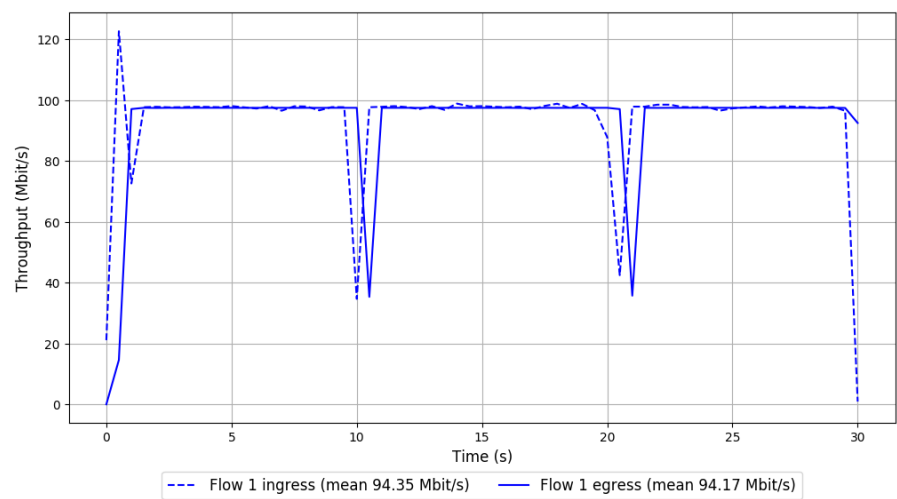
| scheme       | # runs | mean avg tput (Mbit/s)<br>flow 1 | mean 95th-%ile delay (ms)<br>flow 1 | mean loss rate (%)<br>flow 1 |
|--------------|--------|----------------------------------|-------------------------------------|------------------------------|
| TCP BBR      | 5      | 94.12                            | 60.55                               | 0.94                         |
| Copa         | 5      | 84.56                            | 52.41                               | 0.23                         |
| TCP Cubic    | 5      | 90.29                            | 40.52                               | 0.24                         |
| FillP        | 5      | 95.44                            | 804.12                              | 3.77                         |
| FillP-Sheep  | 5      | 94.43                            | 53.55                               | 0.97                         |
| Indigo       | 5      | 95.93                            | 37.98                               | 0.23                         |
| LEDBAT       | 5      | 63.32                            | 39.92                               | 0.20                         |
| Indigo-Muses | 5      | 96.38                            | 35.62                               | 0.22                         |
| PCC-Allegro  | 5      | 91.75                            | 39.07                               | 0.24                         |
| PCC-Expr     | 5      | 84.61                            | 137.42                              | 0.32                         |
| QUIC Cubic   | 5      | 78.72                            | 47.75                               | 0.26                         |
| SCReAM       | 5      | 0.21                             | 33.56                               | 0.21                         |
| Sprout       | 0      | N/A                              | N/A                                 | N/A                          |
| TaoVA-100x   | 5      | 69.59                            | 48.30                               | 0.27                         |
| TCP Vegas    | 5      | 80.37                            | 34.92                               | 0.28                         |
| Verus        | 5      | 84.91                            | 75.16                               | 0.48                         |
| PCC-Vivace   | 5      | 85.15                            | 35.35                               | 0.23                         |
| WebRTC media | 5      | 2.27                             | 33.96                               | 0.27                         |

Run 1: Statistics of TCP BBR

Start at: 2018-09-06 14:32:13  
End at: 2018-09-06 14:32:43  
Local clock offset: -2.926 ms  
Remote clock offset: -1.569 ms

# Below is generated by plot.py at 2018-09-06 16:10:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 94.17 Mbit/s  
95th percentile per-packet one-way delay: 54.318 ms  
Loss rate: 0.40%  
-- Flow 1:  
Average throughput: 94.17 Mbit/s  
95th percentile per-packet one-way delay: 54.318 ms  
Loss rate: 0.40%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-06 14:56:02

End at: 2018-09-06 14:56:32

Local clock offset: -0.756 ms

Remote clock offset: -0.7 ms

# Below is generated by plot.py at 2018-09-06 16:10:45

# Datalink statistics

-- Total of 1 flow:

Average throughput: 94.16 Mbit/s

95th percentile per-packet one-way delay: 54.502 ms

Loss rate: 0.43%

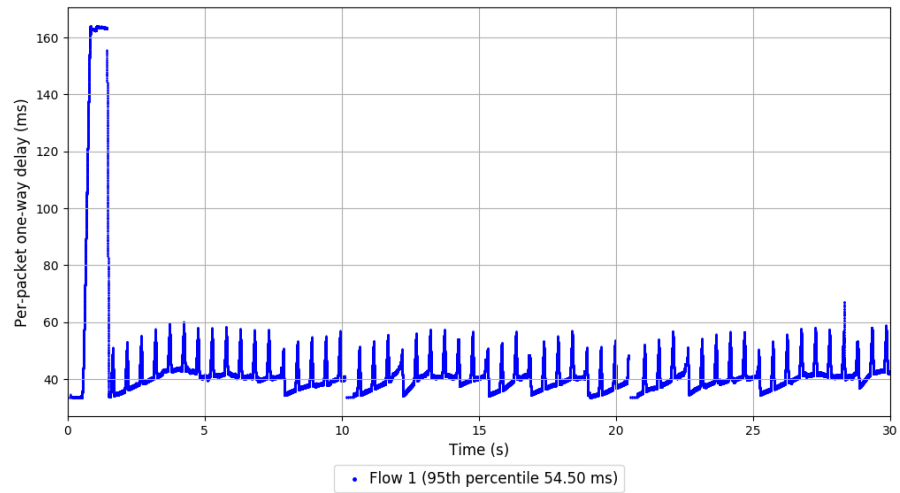
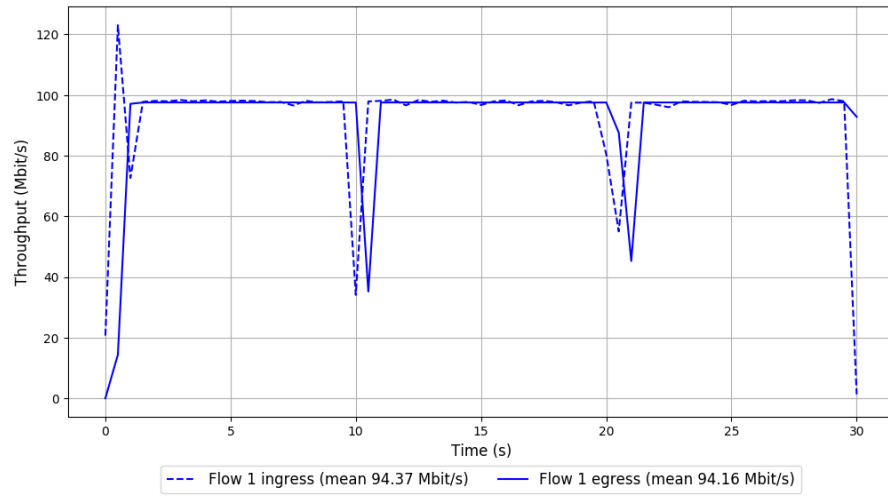
-- Flow 1:

Average throughput: 94.16 Mbit/s

95th percentile per-packet one-way delay: 54.502 ms

Loss rate: 0.43%

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



Run 3: Statistics of TCP BBR

Start at: 2018-09-06 15:19:49

End at: 2018-09-06 15:20:19

Local clock offset: -0.878 ms

Remote clock offset: 0.086 ms

# Below is generated by plot.py at 2018-09-06 16:10:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 64.801 ms

Loss rate: 1.15%

-- Flow 1:

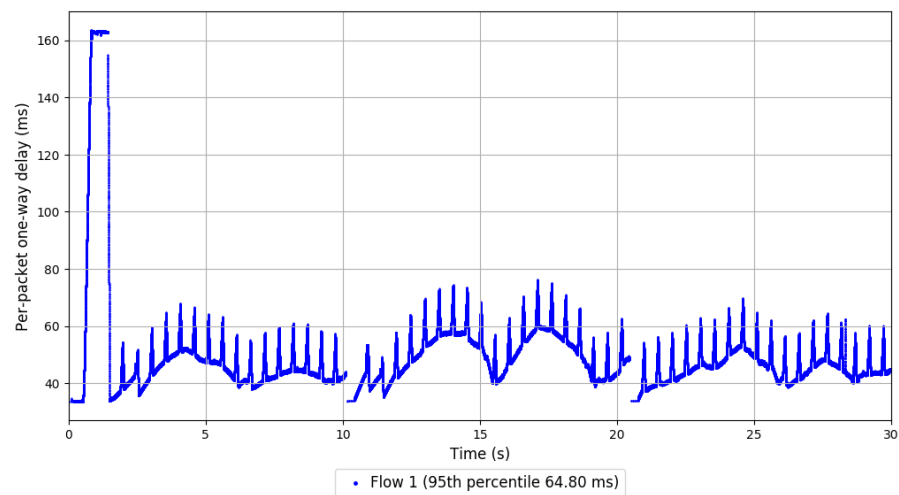
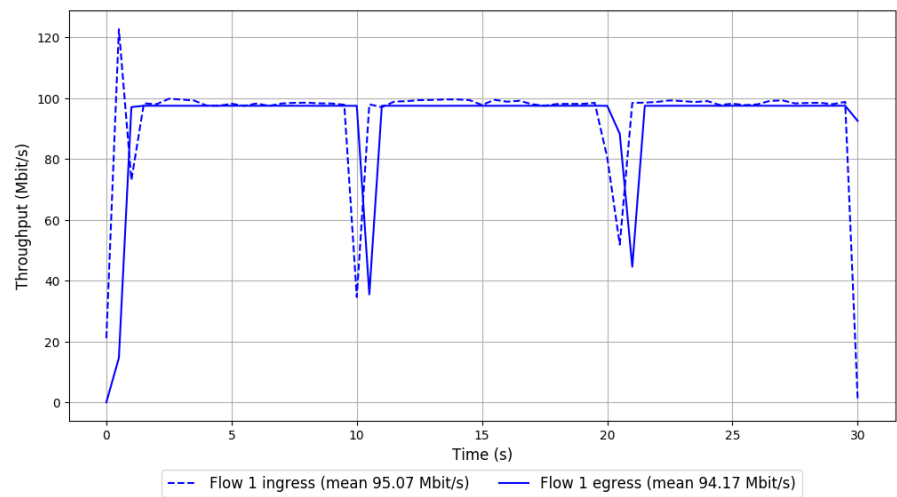
Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 64.801 ms

Loss rate: 1.15%



Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-06 15:43:37

End at: 2018-09-06 15:44:07

Local clock offset: -3.477 ms

Remote clock offset: 0.695 ms

# Below is generated by plot.py at 2018-09-06 16:10:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 62.316 ms

Loss rate: 1.17%

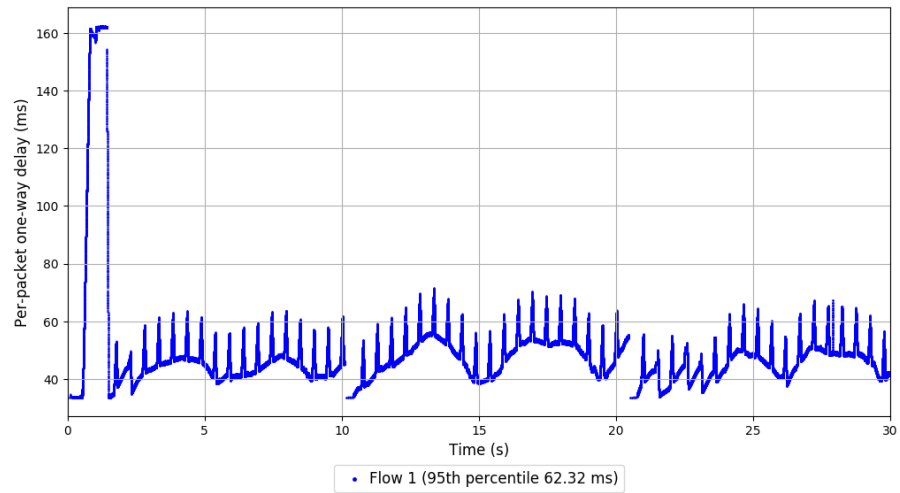
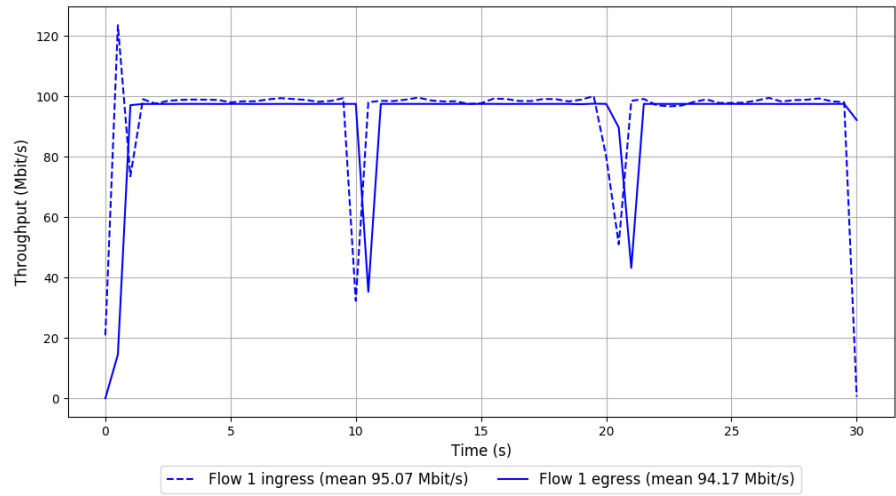
-- Flow 1:

Average throughput: 94.17 Mbit/s

95th percentile per-packet one-way delay: 62.316 ms

Loss rate: 1.17%

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



Run 5: Statistics of TCP BBR

Start at: 2018-09-06 16:07:28

End at: 2018-09-06 16:07:58

Local clock offset: 0.334 ms

Remote clock offset: 0.961 ms

# Below is generated by plot.py at 2018-09-06 16:10:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 93.92 Mbit/s

95th percentile per-packet one-way delay: 66.829 ms

Loss rate: 1.53%

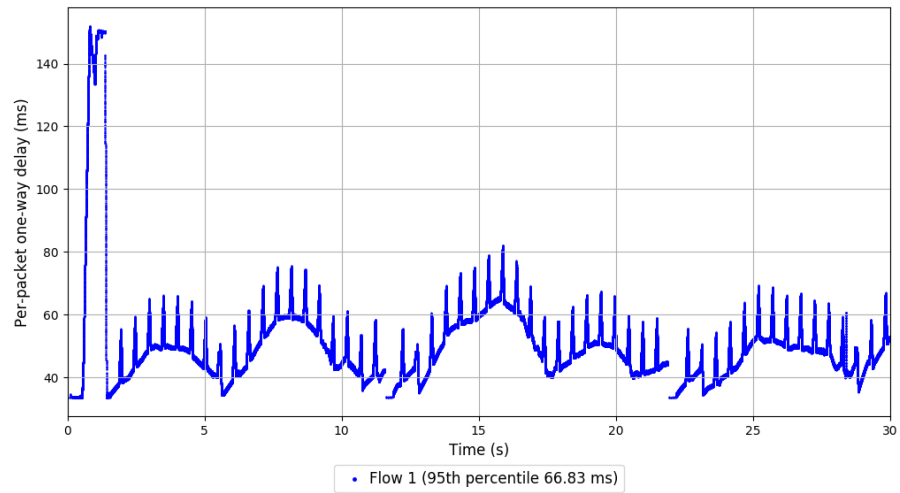
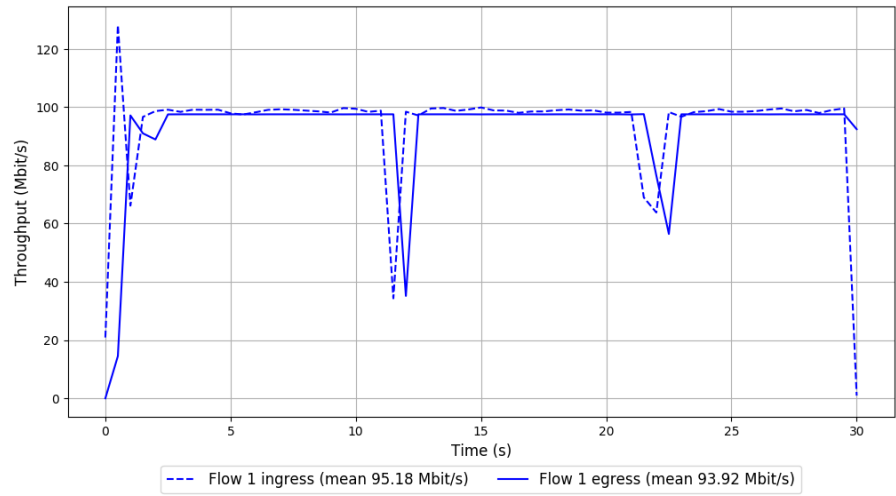
-- Flow 1:

Average throughput: 93.92 Mbit/s

95th percentile per-packet one-way delay: 66.829 ms

Loss rate: 1.53%

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

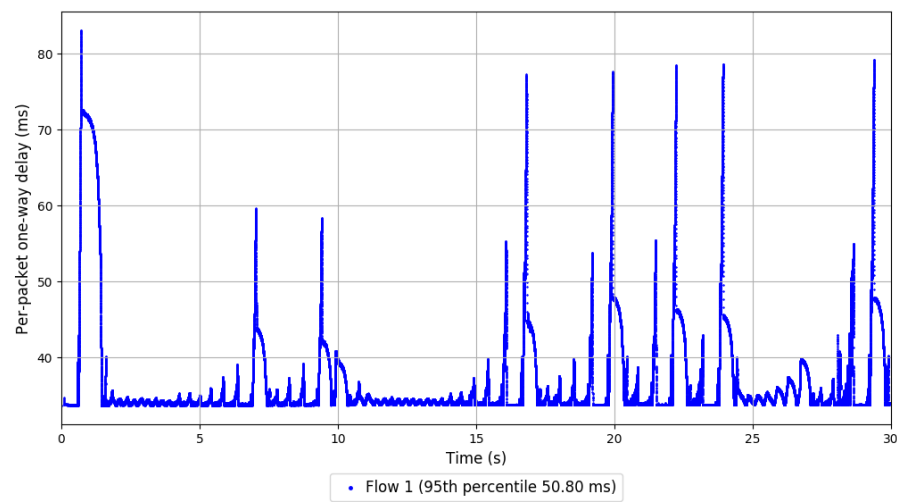
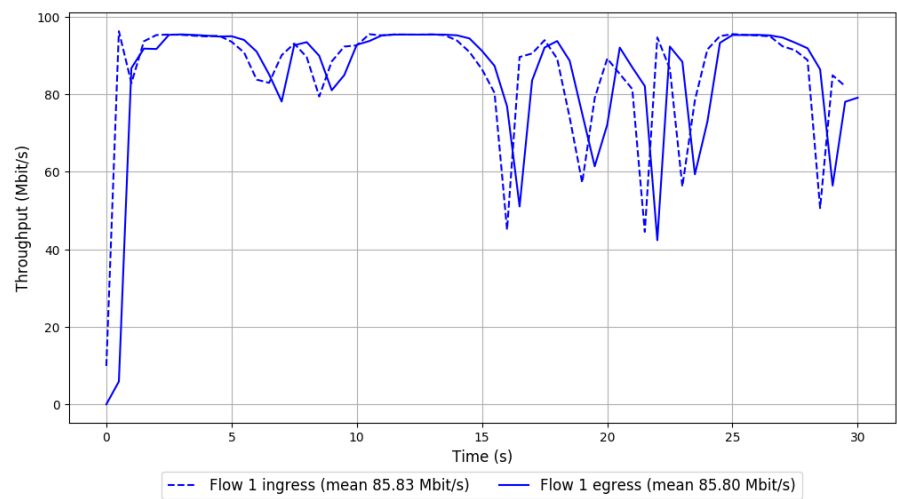


Run 1: Statistics of Copa

Start at: 2018-09-06 14:24:14  
End at: 2018-09-06 14:24:44  
Local clock offset: -2.063 ms  
Remote clock offset: -1.999 ms

# Below is generated by plot.py at 2018-09-06 16:11:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 85.80 Mbit/s  
95th percentile per-packet one-way delay: 50.802 ms  
Loss rate: 0.25%  
-- Flow 1:  
Average throughput: 85.80 Mbit/s  
95th percentile per-packet one-way delay: 50.802 ms  
Loss rate: 0.25%

Run 1: Report of Copa — Data Link



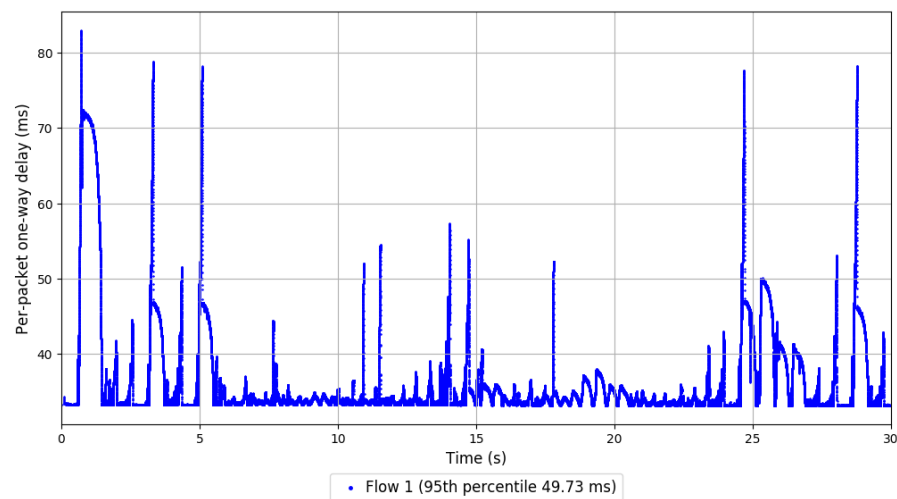
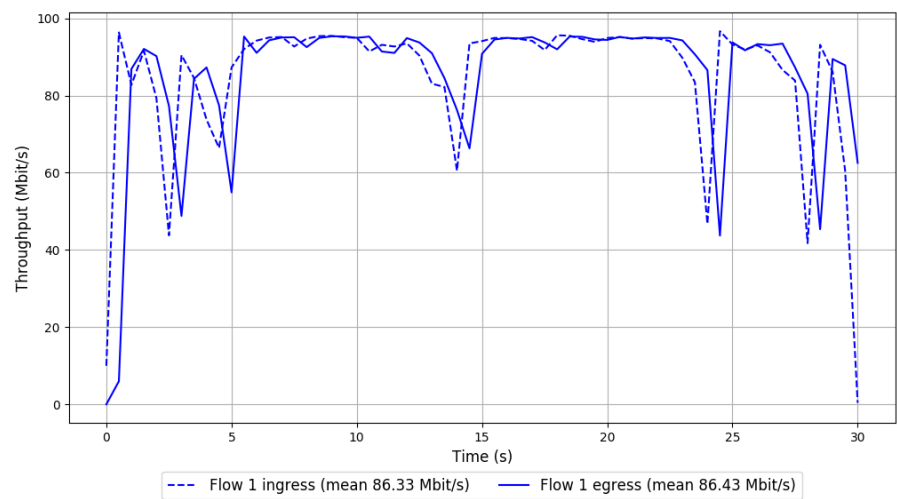
Run 2: Statistics of Copa

Start at: 2018-09-06 14:48:06  
End at: 2018-09-06 14:48:36  
Local clock offset: -2.674 ms  
Remote clock offset: -0.961 ms

# Below is generated by plot.py at 2018-09-06 16:11:36  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 86.43 Mbit/s  
95th percentile per-packet one-way delay: 49.735 ms  
Loss rate: 0.10%  
-- Flow 1:  
Average throughput: 86.43 Mbit/s  
95th percentile per-packet one-way delay: 49.735 ms  
Loss rate: 0.10%



Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-06 15:11:53

End at: 2018-09-06 15:12:23

Local clock offset: 0.368 ms

Remote clock offset: -0.18 ms

# Below is generated by plot.py at 2018-09-06 16:11:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 83.38 Mbit/s

95th percentile per-packet one-way delay: 52.120 ms

Loss rate: 0.27%

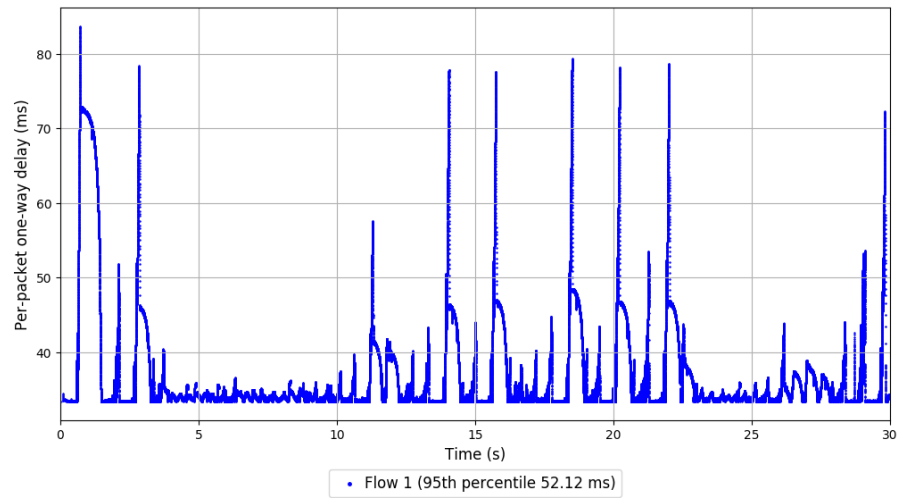
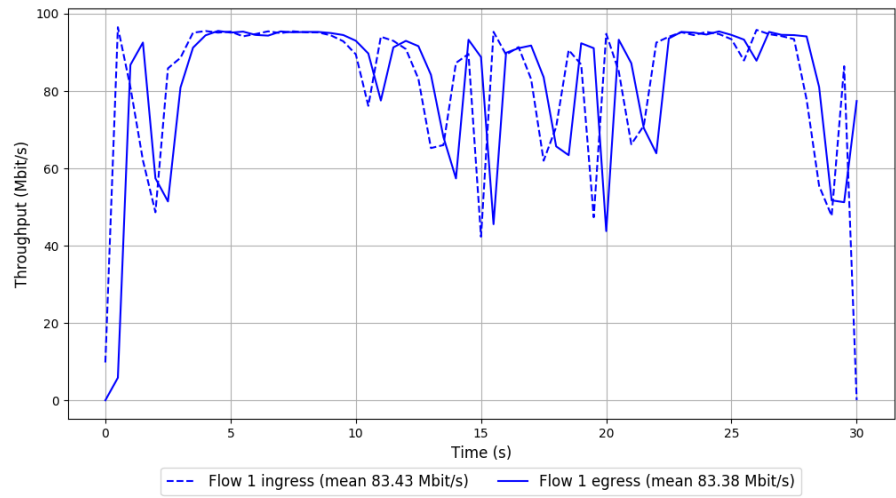
-- Flow 1:

Average throughput: 83.38 Mbit/s

95th percentile per-packet one-way delay: 52.120 ms

Loss rate: 0.27%

### Run 3: Report of Copa — Data Link

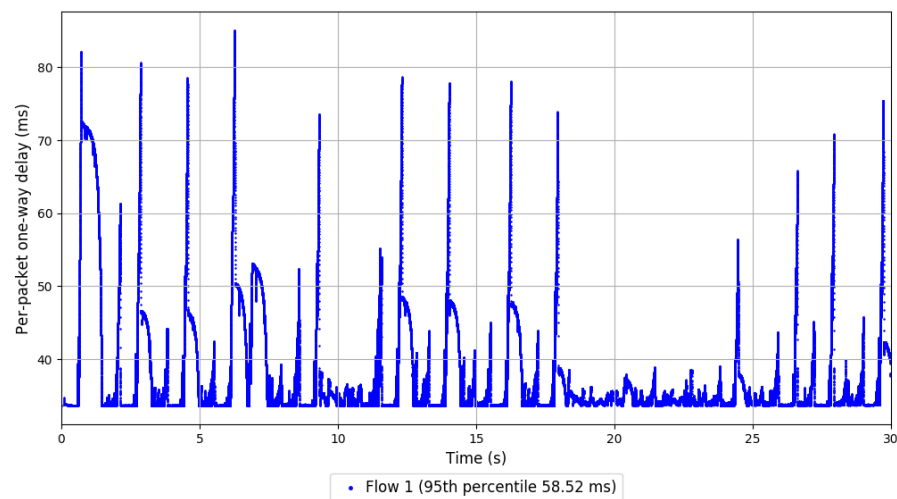
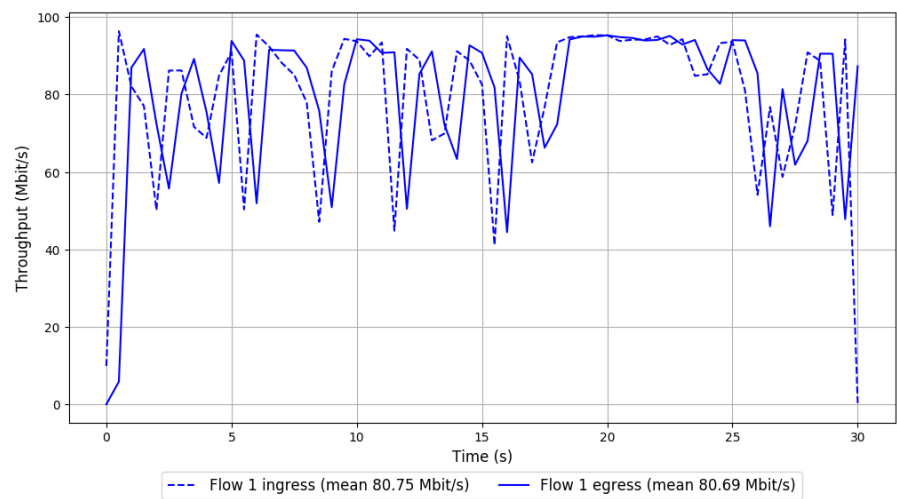


Run 4: Statistics of Copa

Start at: 2018-09-06 15:35:40  
End at: 2018-09-06 15:36:10  
Local clock offset: -3.017 ms  
Remote clock offset: 0.29 ms

# Below is generated by plot.py at 2018-09-06 16:12:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 80.69 Mbit/s  
95th percentile per-packet one-way delay: 58.520 ms  
Loss rate: 0.28%  
-- Flow 1:  
Average throughput: 80.69 Mbit/s  
95th percentile per-packet one-way delay: 58.520 ms  
Loss rate: 0.28%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-06 15:59:30

End at: 2018-09-06 16:00:01

Local clock offset: -0.249 ms

Remote clock offset: 0.855 ms

# Below is generated by plot.py at 2018-09-06 16:12:41

# Datalink statistics

-- Total of 1 flow:

Average throughput: 86.49 Mbit/s

95th percentile per-packet one-way delay: 50.865 ms

Loss rate: 0.26%

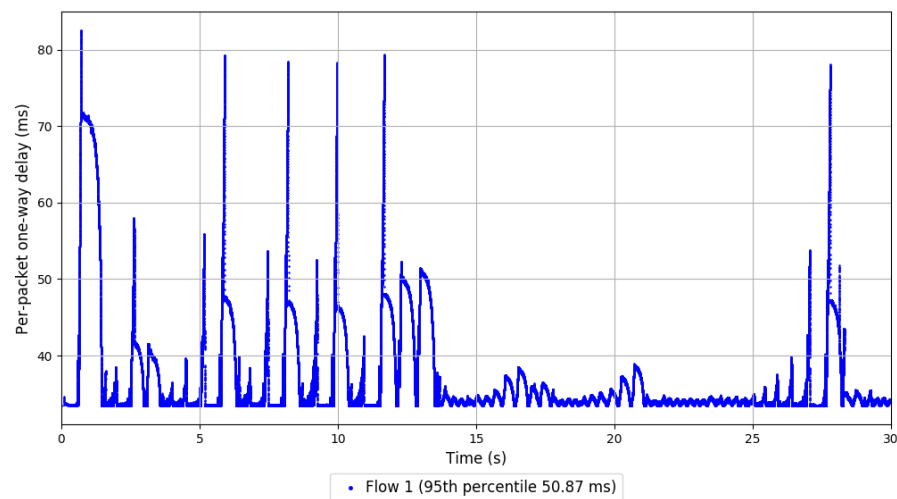
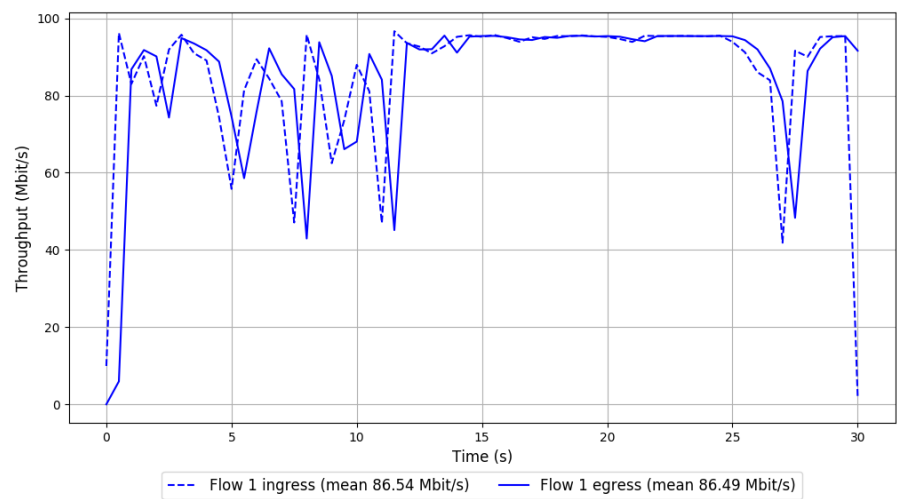
-- Flow 1:

Average throughput: 86.49 Mbit/s

95th percentile per-packet one-way delay: 50.865 ms

Loss rate: 0.26%

Run 5: Report of Copa — Data Link



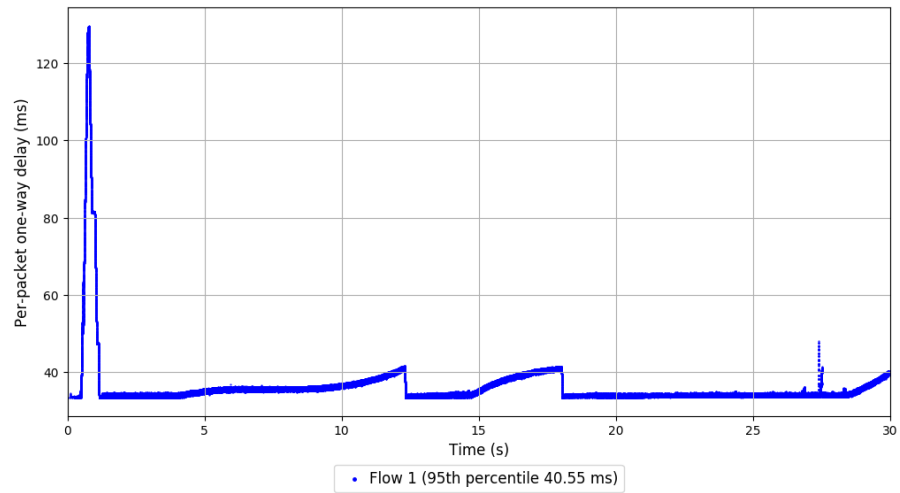
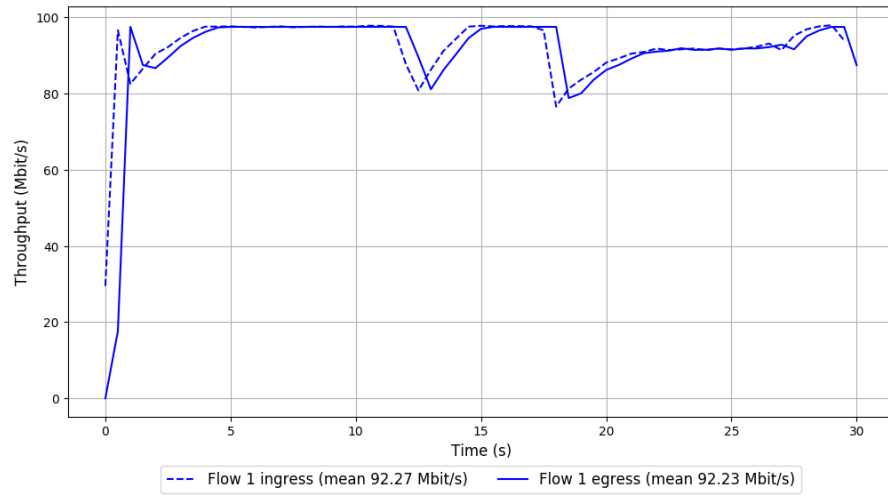
Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 14:29:37  
End at: 2018-09-06 14:30:07  
Local clock offset: -2.611 ms  
Remote clock offset: -1.725 ms

# Below is generated by plot.py at 2018-09-06 16:12:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 92.23 Mbit/s  
95th percentile per-packet one-way delay: 40.546 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 92.23 Mbit/s  
95th percentile per-packet one-way delay: 40.546 ms  
Loss rate: 0.26%



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

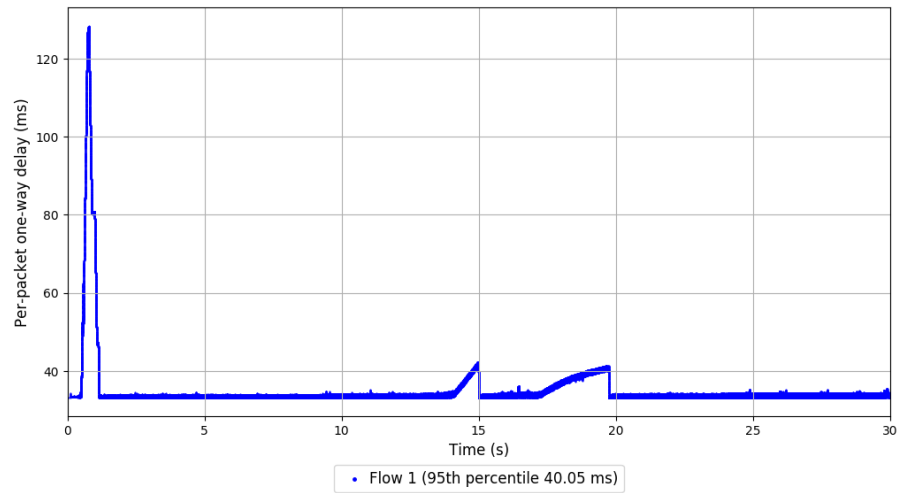
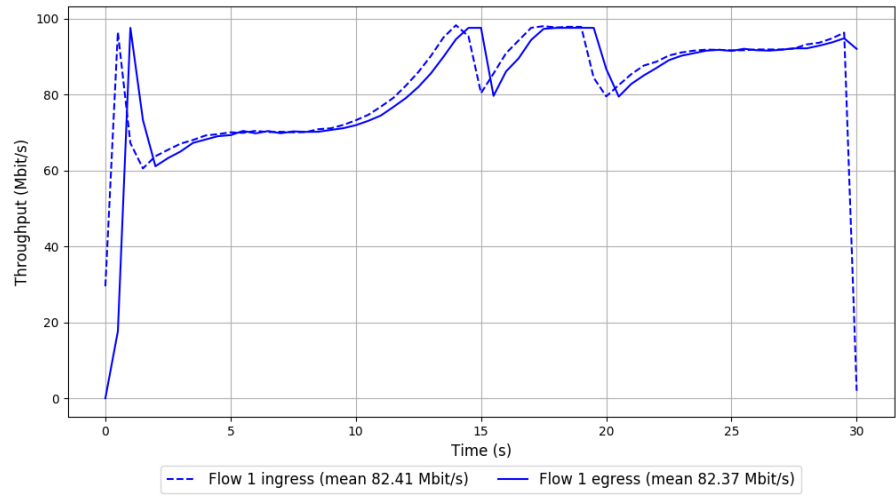


Run 2: Statistics of TCP Cubic

Start at: 2018-09-06 14:53:27  
End at: 2018-09-06 14:53:57  
Local clock offset: -1.235 ms  
Remote clock offset: -0.593 ms

# Below is generated by plot.py at 2018-09-06 16:12:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 82.37 Mbit/s  
95th percentile per-packet one-way delay: 40.051 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 82.37 Mbit/s  
95th percentile per-packet one-way delay: 40.051 ms  
Loss rate: 0.26%

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



Run 3: Statistics of TCP Cubic

Start at: 2018-09-06 15:17:14

End at: 2018-09-06 15:17:44

Local clock offset: -0.188 ms

Remote clock offset: 0.023 ms

# Below is generated by plot.py at 2018-09-06 16:12:41

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.19 Mbit/s

95th percentile per-packet one-way delay: 40.673 ms

Loss rate: 0.26%

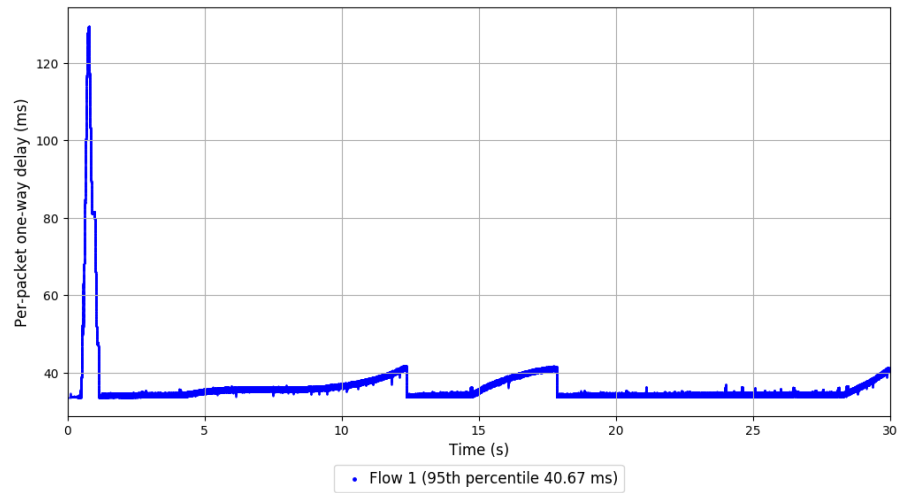
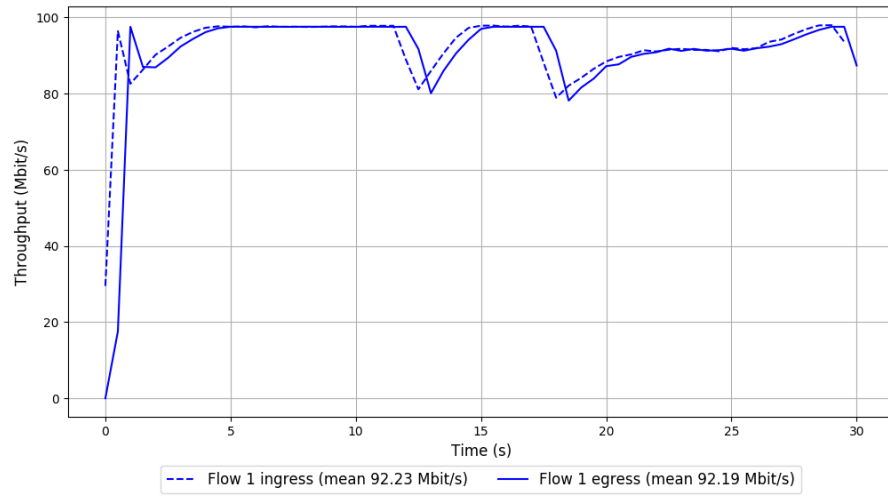
-- Flow 1:

Average throughput: 92.19 Mbit/s

95th percentile per-packet one-way delay: 40.673 ms

Loss rate: 0.26%

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



Run 4: Statistics of TCP Cubic

Start at: 2018-09-06 15:41:01

End at: 2018-09-06 15:41:31

Local clock offset: -3.342 ms

Remote clock offset: 0.634 ms

# Below is generated by plot.py at 2018-09-06 16:12:41

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.31 Mbit/s

95th percentile per-packet one-way delay: 40.698 ms

Loss rate: 0.18%

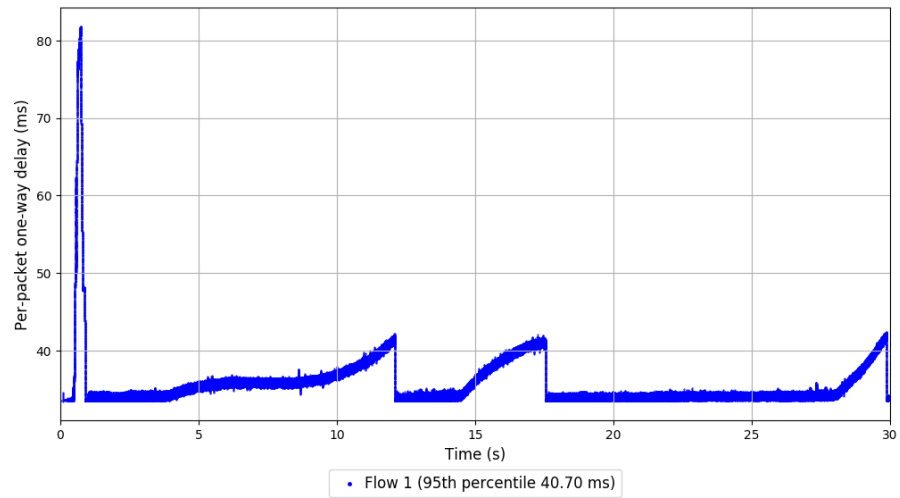
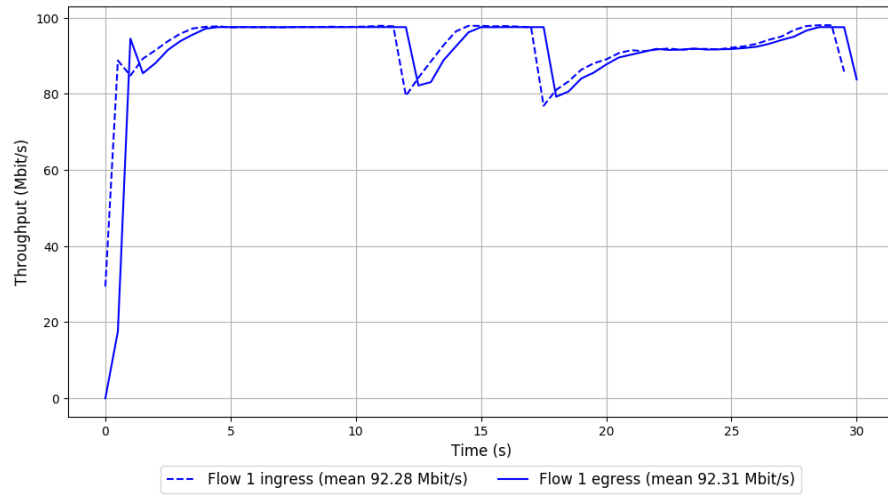
-- Flow 1:

Average throughput: 92.31 Mbit/s

95th percentile per-packet one-way delay: 40.698 ms

Loss rate: 0.18%

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



Run 5: Statistics of TCP Cubic

Start at: 2018-09-06 16:04:53

End at: 2018-09-06 16:05:23

Local clock offset: 0.186 ms

Remote clock offset: 0.909 ms

# Below is generated by plot.py at 2018-09-06 16:12:41

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.34 Mbit/s

95th percentile per-packet one-way delay: 40.637 ms

Loss rate: 0.26%

-- Flow 1:

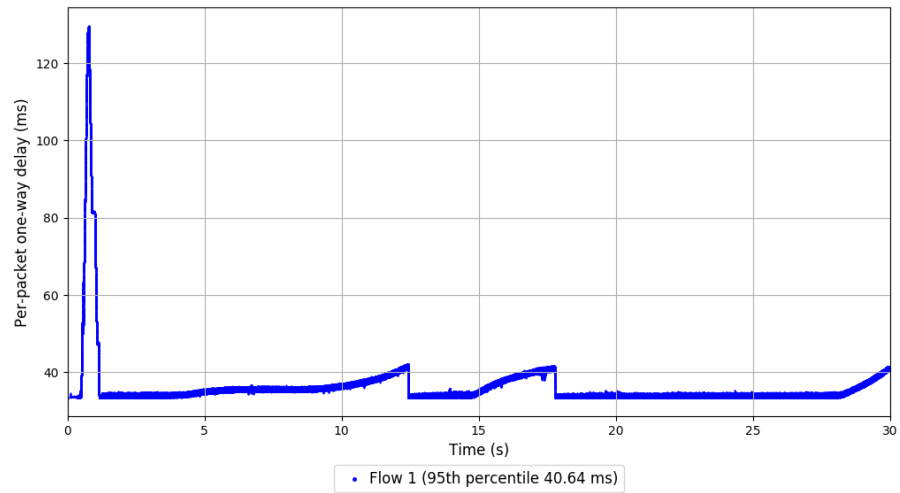
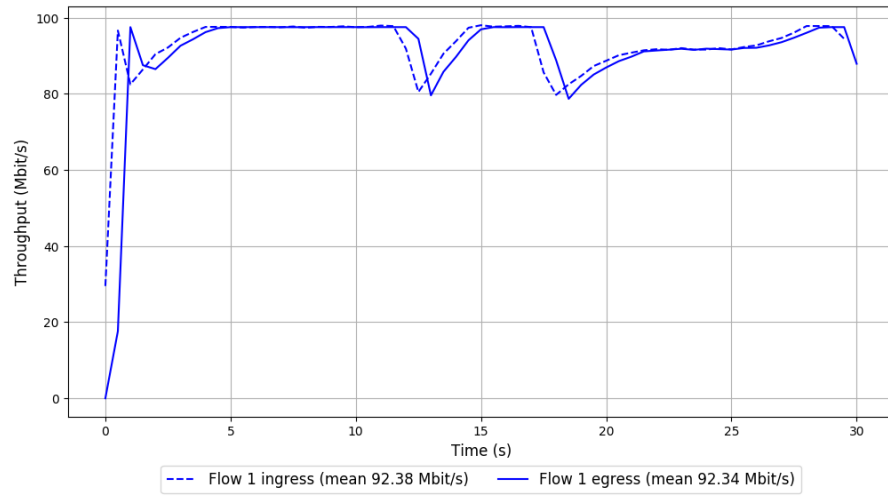
Average throughput: 92.34 Mbit/s

95th percentile per-packet one-way delay: 40.637 ms

Loss rate: 0.26%



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

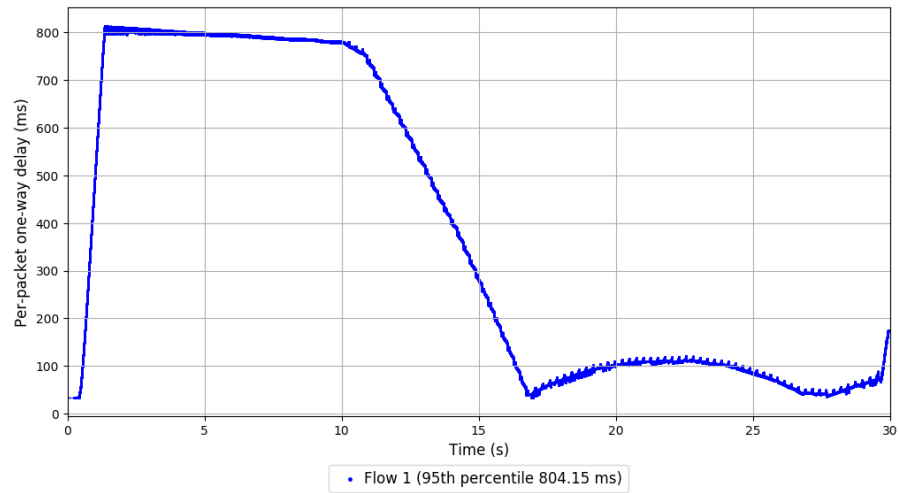
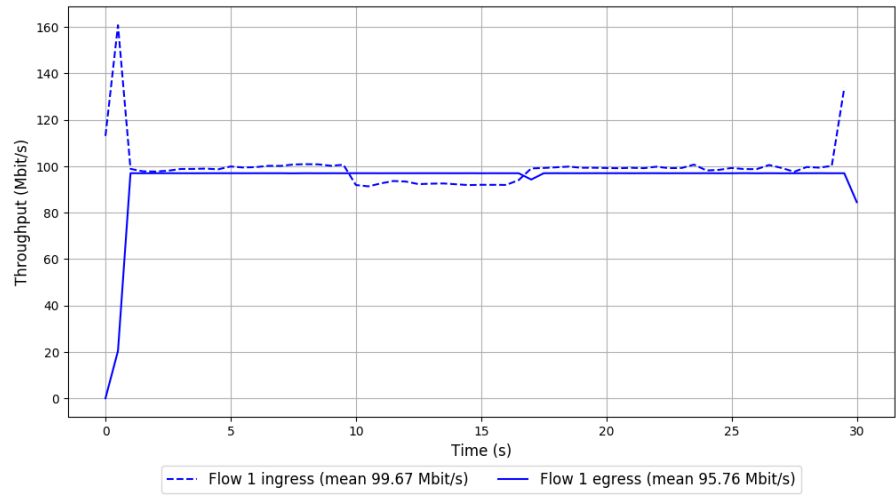


Run 1: Statistics of FillP

Start at: 2018-09-06 14:09:38  
End at: 2018-09-06 14:10:08  
Local clock offset: 0.144 ms  
Remote clock offset: -1.803 ms

# Below is generated by plot.py at 2018-09-06 16:13:03  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 95.76 Mbit/s  
95th percentile per-packet one-way delay: 804.154 ms  
Loss rate: 4.13%  
-- Flow 1:  
Average throughput: 95.76 Mbit/s  
95th percentile per-packet one-way delay: 804.154 ms  
Loss rate: 4.13%

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

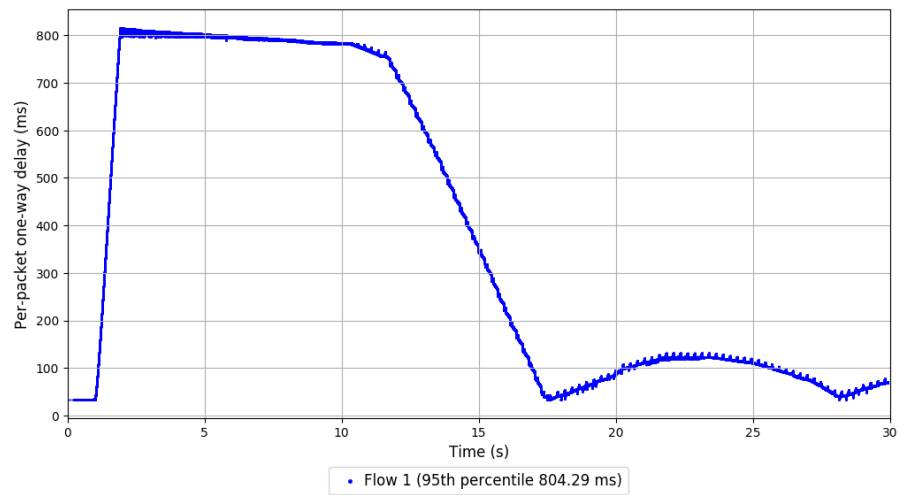
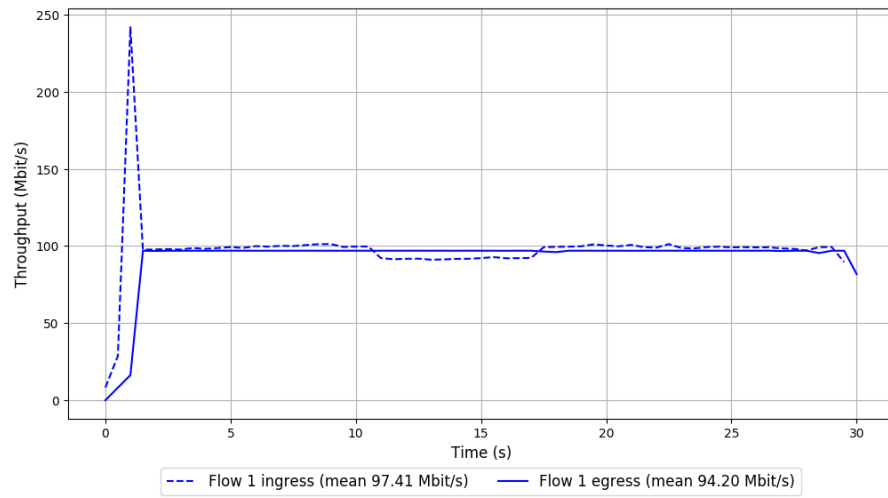


Run 2: Statistics of FillP

Start at: 2018-09-06 14:33:33  
End at: 2018-09-06 14:34:03  
Local clock offset: -2.962 ms  
Remote clock offset: -1.559 ms

# Below is generated by plot.py at 2018-09-06 16:13:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 94.20 Mbit/s  
95th percentile per-packet one-way delay: 804.292 ms  
Loss rate: 3.50%  
-- Flow 1:  
Average throughput: 94.20 Mbit/s  
95th percentile per-packet one-way delay: 804.292 ms  
Loss rate: 3.50%

## Run 2: Report of FillP — Data Link

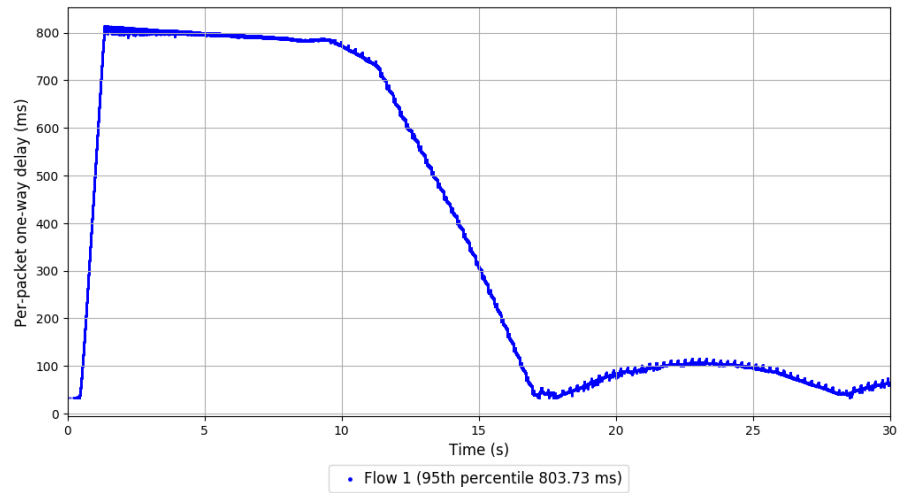
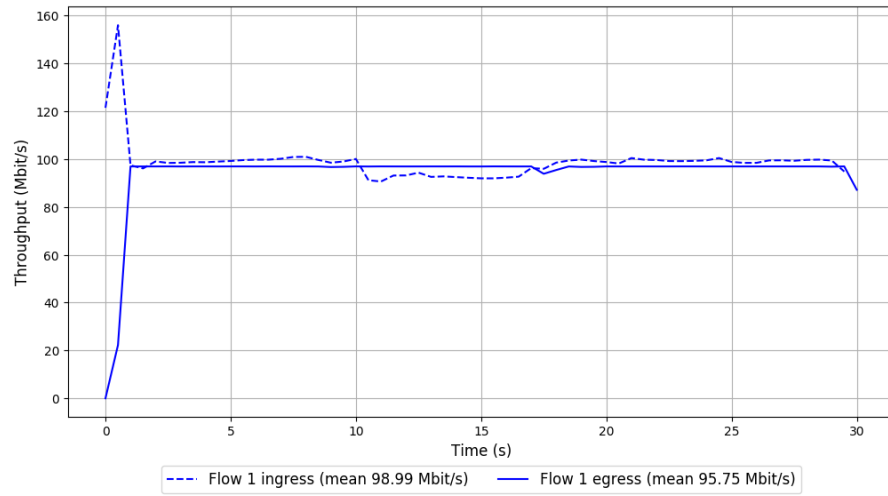


Run 3: Statistics of FillP

Start at: 2018-09-06 14:57:22  
End at: 2018-09-06 14:57:52  
Local clock offset: -0.588 ms  
Remote clock offset: -0.578 ms

# Below is generated by plot.py at 2018-09-06 16:13:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 95.75 Mbit/s  
95th percentile per-packet one-way delay: 803.731 ms  
Loss rate: 3.48%  
-- Flow 1:  
Average throughput: 95.75 Mbit/s  
95th percentile per-packet one-way delay: 803.731 ms  
Loss rate: 3.48%

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



Run 4: Statistics of FillP

Start at: 2018-09-06 15:21:09

End at: 2018-09-06 15:21:39

Local clock offset: -1.286 ms

Remote clock offset: 0.23 ms

# Below is generated by plot.py at 2018-09-06 16:13:16

# Datalink statistics

-- Total of 1 flow:

Average throughput: 95.78 Mbit/s

95th percentile per-packet one-way delay: 804.008 ms

Loss rate: 3.81%

-- Flow 1:

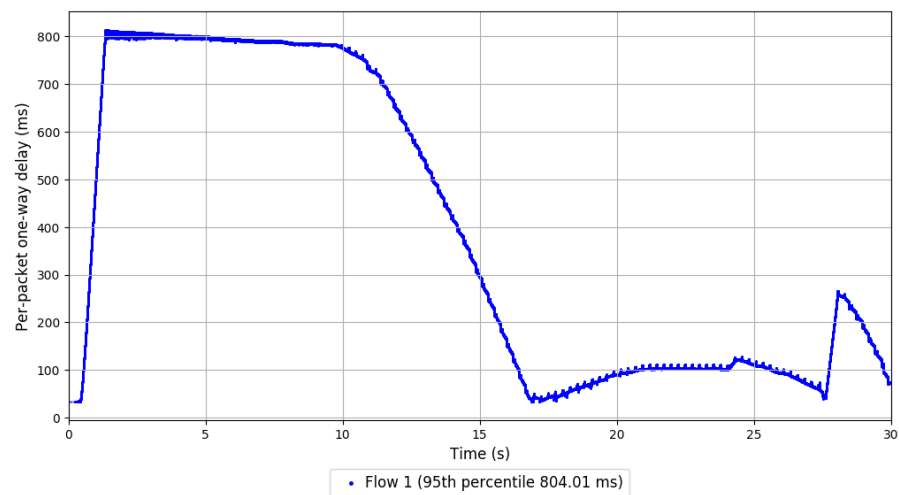
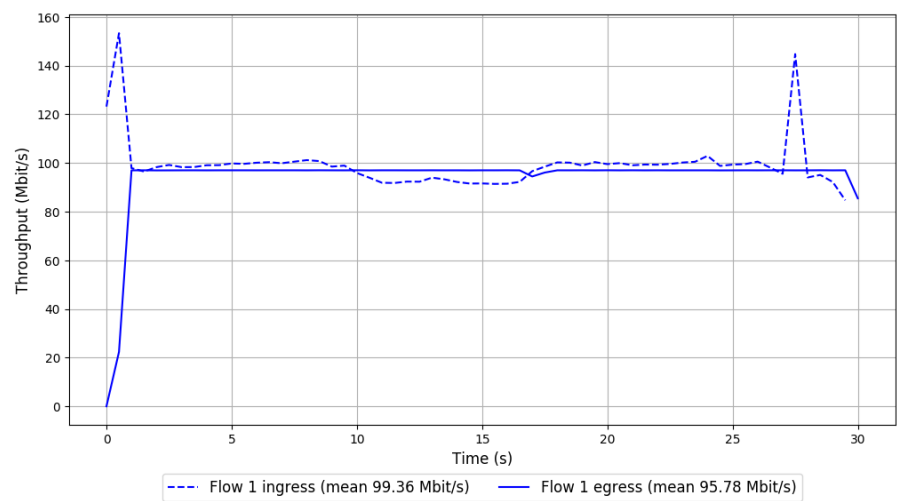
Average throughput: 95.78 Mbit/s

95th percentile per-packet one-way delay: 804.008 ms

Loss rate: 3.81%



Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-06 15:44:57

End at: 2018-09-06 15:45:28

Local clock offset: -3.624 ms

Remote clock offset: 0.643 ms

# Below is generated by plot.py at 2018-09-06 16:13:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 95.70 Mbit/s

95th percentile per-packet one-way delay: 804.391 ms

Loss rate: 3.93%

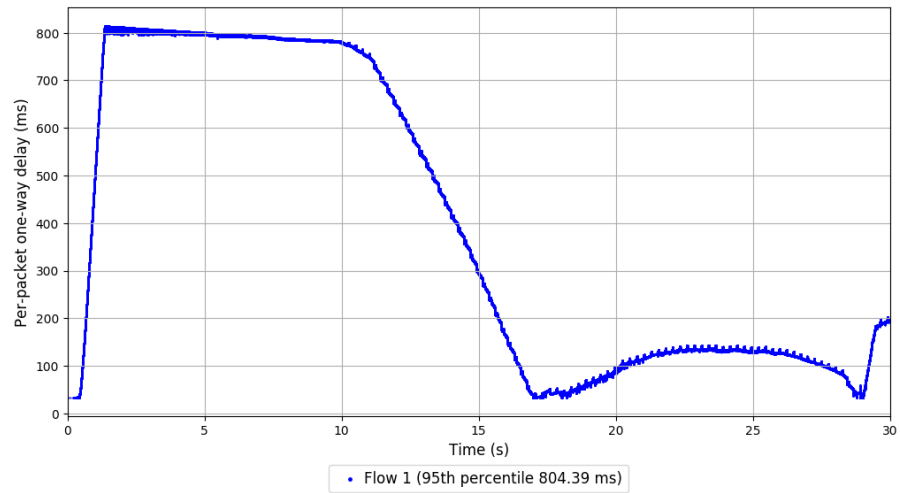
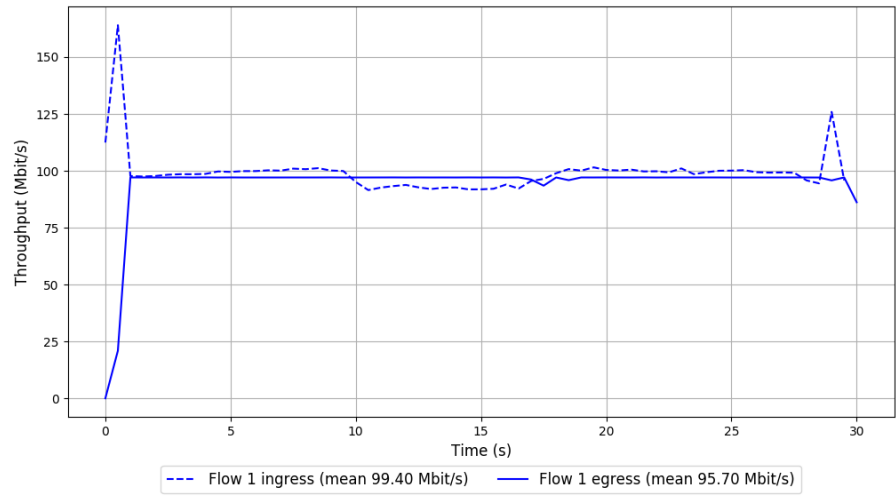
-- Flow 1:

Average throughput: 95.70 Mbit/s

95th percentile per-packet one-way delay: 804.391 ms

Loss rate: 3.93%

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

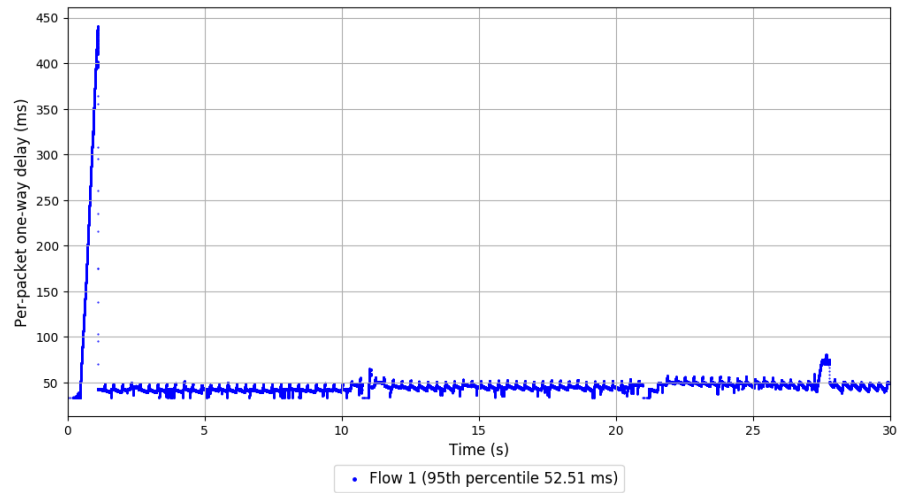
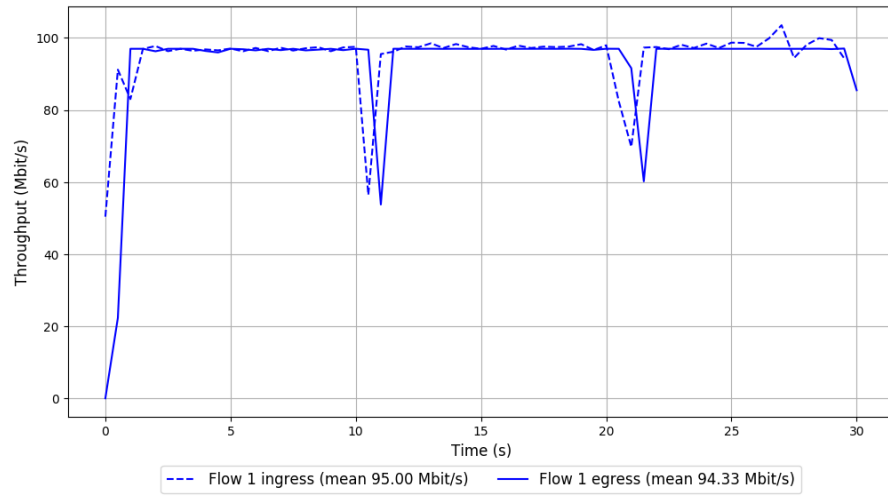


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-06 14:28:17  
End at: 2018-09-06 14:28:47  
Local clock offset: -2.579 ms  
Remote clock offset: -1.878 ms

# Below is generated by plot.py at 2018-09-06 16:13:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 94.33 Mbit/s  
95th percentile per-packet one-way delay: 52.508 ms  
Loss rate: 0.92%  
-- Flow 1:  
Average throughput: 94.33 Mbit/s  
95th percentile per-packet one-way delay: 52.508 ms  
Loss rate: 0.92%

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

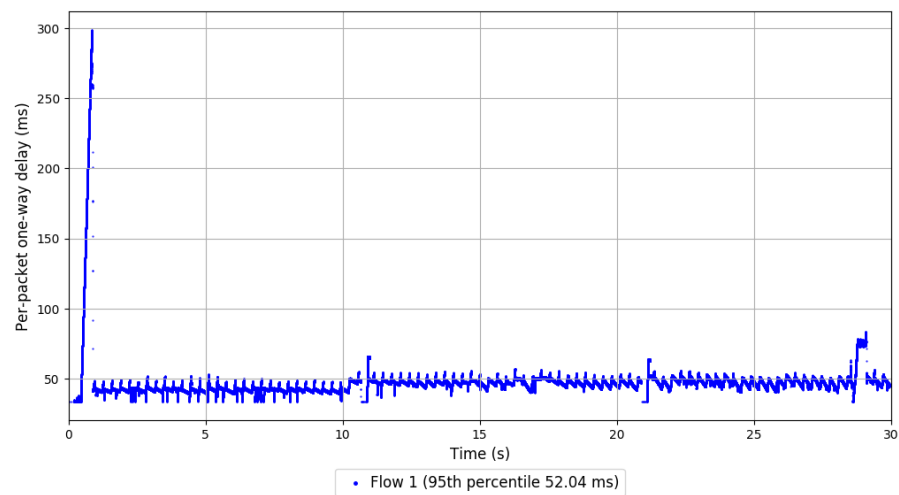
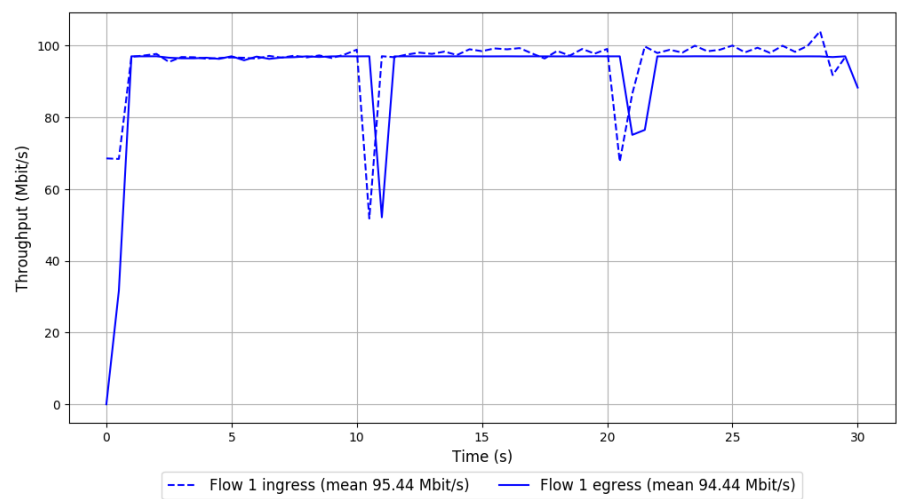


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-06 14:52:08  
End at: 2018-09-06 14:52:38  
Local clock offset: -1.495 ms  
Remote clock offset: -0.984 ms

# Below is generated by plot.py at 2018-09-06 16:14:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 94.44 Mbit/s  
95th percentile per-packet one-way delay: 52.041 ms  
Loss rate: 1.26%  
-- Flow 1:  
Average throughput: 94.44 Mbit/s  
95th percentile per-packet one-way delay: 52.041 ms  
Loss rate: 1.26%

Run 2: Report of FillP-Sheep — Data Link



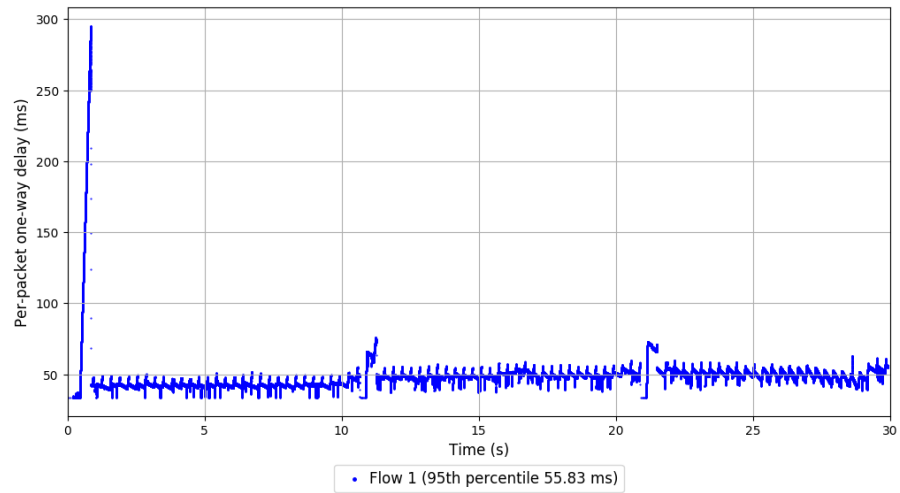
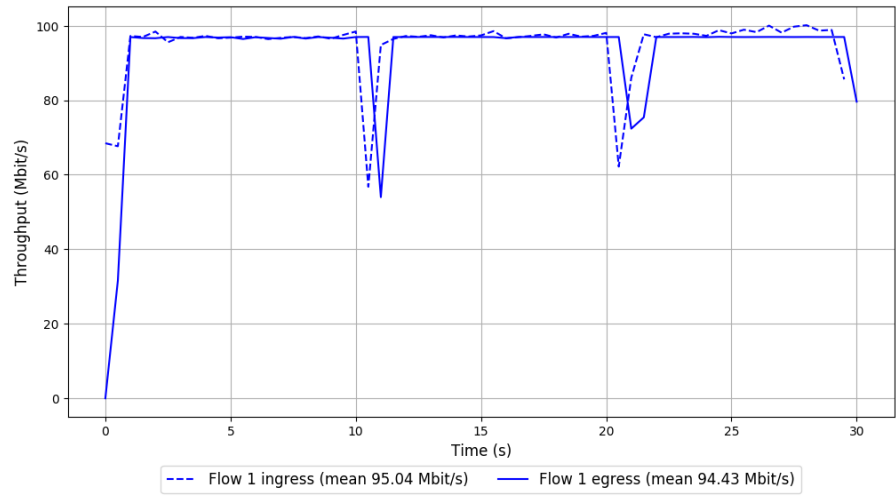
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-06 15:15:55  
End at: 2018-09-06 15:16:25  
Local clock offset: 0.283 ms  
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2018-09-06 16:14:03  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 94.43 Mbit/s  
95th percentile per-packet one-way delay: 55.827 ms  
Loss rate: 0.85%  
-- Flow 1:  
Average throughput: 94.43 Mbit/s  
95th percentile per-packet one-way delay: 55.827 ms  
Loss rate: 0.85%



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



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-06 15:39:42

End at: 2018-09-06 15:40:12

Local clock offset: -3.348 ms

Remote clock offset: 0.617 ms

# Below is generated by plot.py at 2018-09-06 16:14:24

# Datalink statistics

-- Total of 1 flow:

Average throughput: 94.49 Mbit/s

95th percentile per-packet one-way delay: 54.373 ms

Loss rate: 0.80%

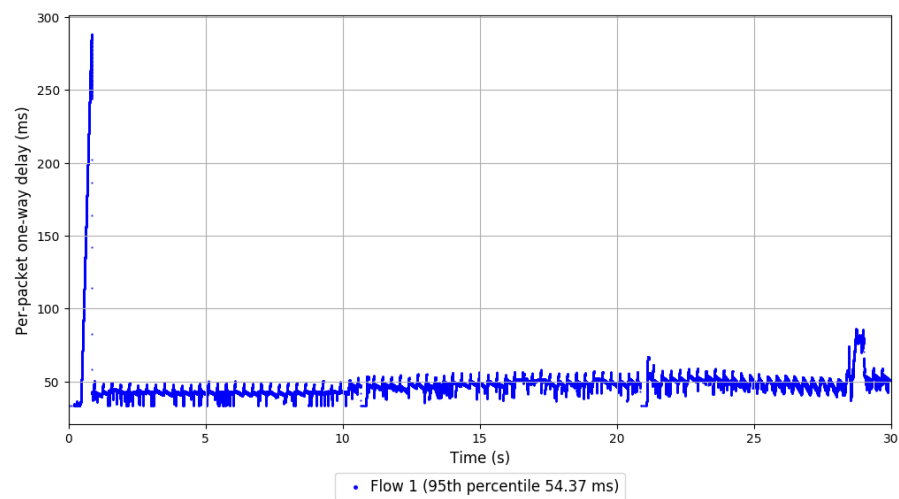
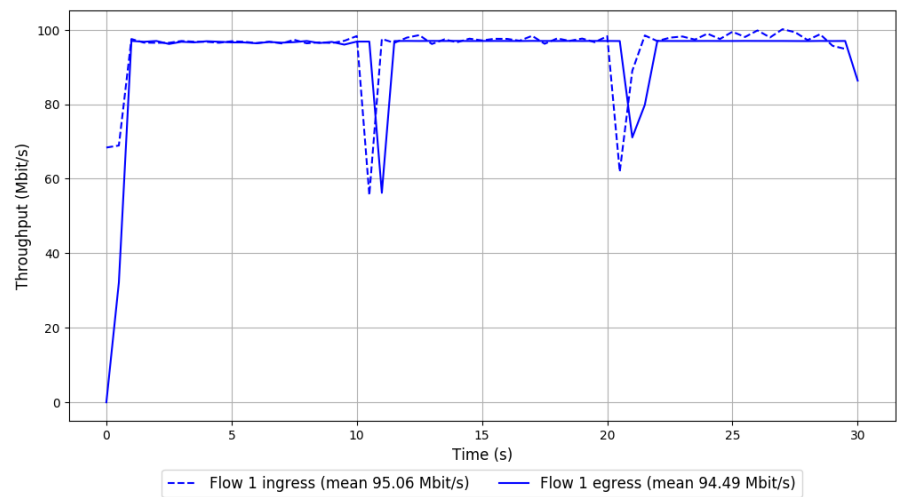
-- Flow 1:

Average throughput: 94.49 Mbit/s

95th percentile per-packet one-way delay: 54.373 ms

Loss rate: 0.80%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-06 16:03:33

End at: 2018-09-06 16:04:03

Local clock offset: 0.007 ms

Remote clock offset: 0.768 ms

# Below is generated by plot.py at 2018-09-06 16:14:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 94.48 Mbit/s

95th percentile per-packet one-way delay: 53.026 ms

Loss rate: 1.00%

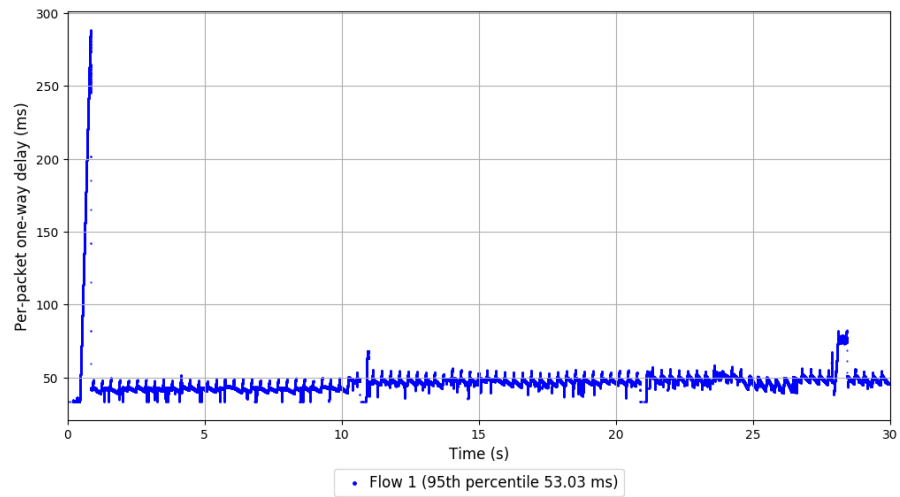
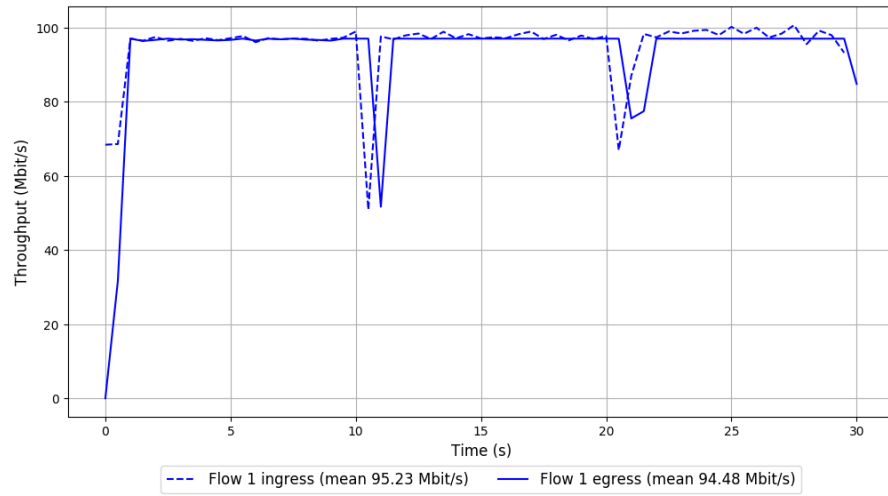
-- Flow 1:

Average throughput: 94.48 Mbit/s

95th percentile per-packet one-way delay: 53.026 ms

Loss rate: 1.00%

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

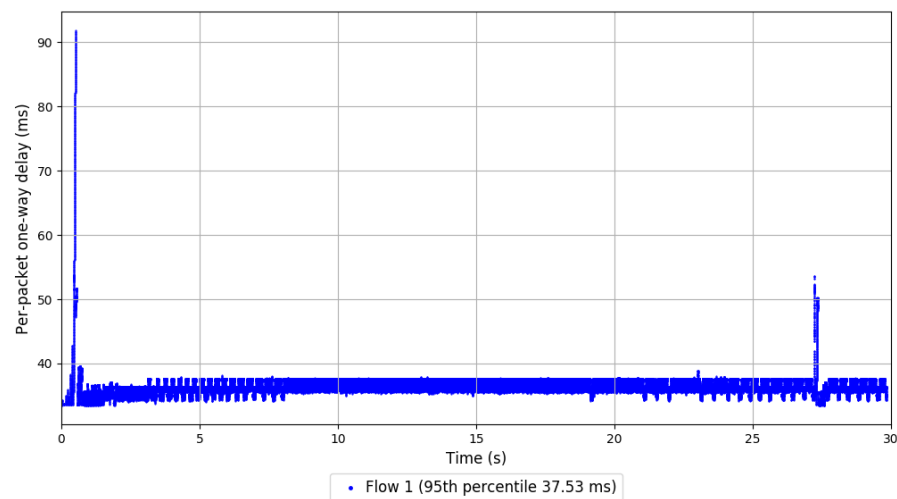
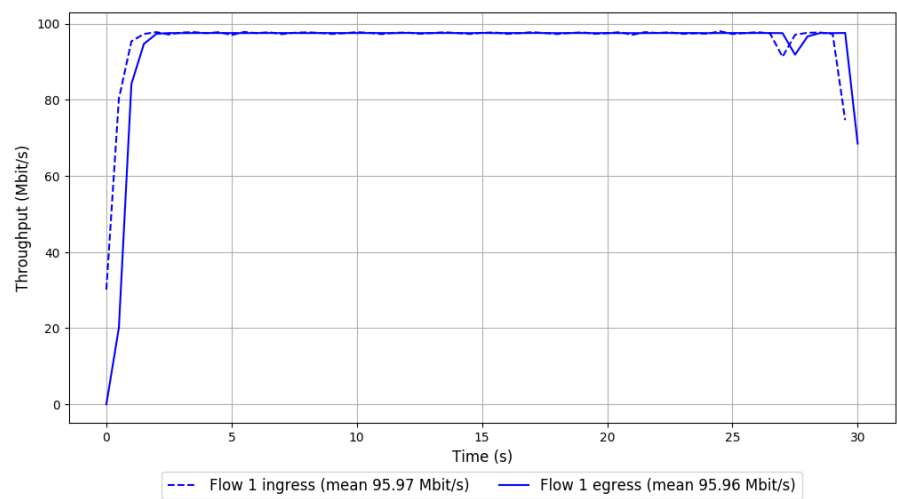


```
Run 1: Statistics of Indigo

Start at: 2018-09-06 14:10:58
End at: 2018-09-06 14:11:28
Local clock offset: 0.144 ms
Remote clock offset: -1.78 ms

# Below is generated by plot.py at 2018-09-06 16:14:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.96 Mbit/s
95th percentile per-packet one-way delay: 37.535 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.96 Mbit/s
95th percentile per-packet one-way delay: 37.535 ms
Loss rate: 0.23%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-06 14:34:52

End at: 2018-09-06 14:35:23

Local clock offset: -3.16 ms

Remote clock offset: -1.724 ms

# Below is generated by plot.py at 2018-09-06 16:14:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 95.94 Mbit/s

95th percentile per-packet one-way delay: 38.329 ms

Loss rate: 0.23%

-- Flow 1:

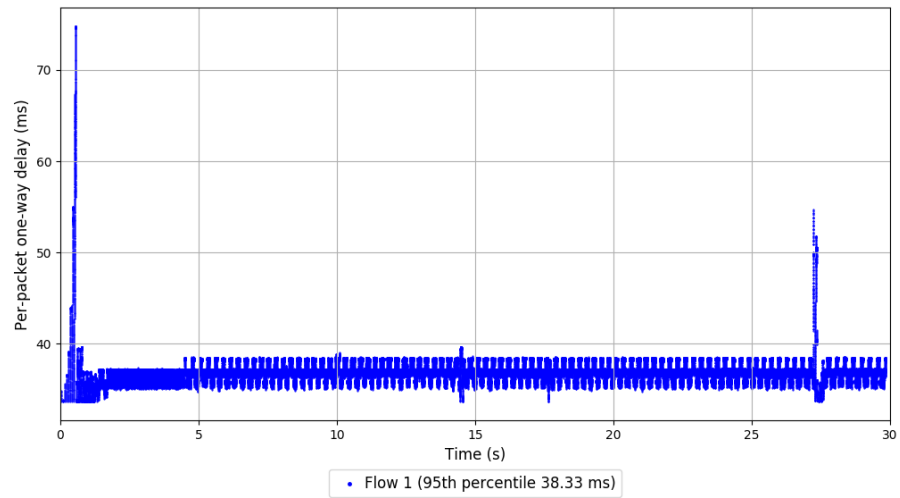
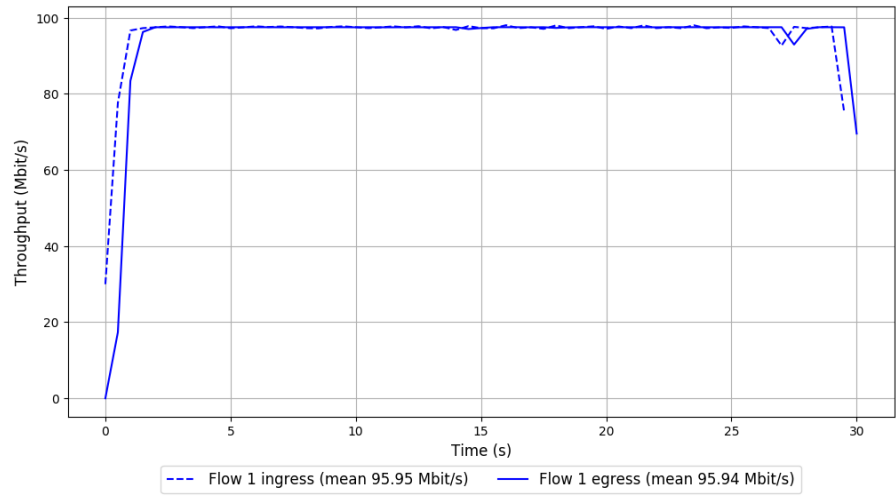
Average throughput: 95.94 Mbit/s

95th percentile per-packet one-way delay: 38.329 ms

Loss rate: 0.23%



## Run 2: Report of Indigo — Data Link

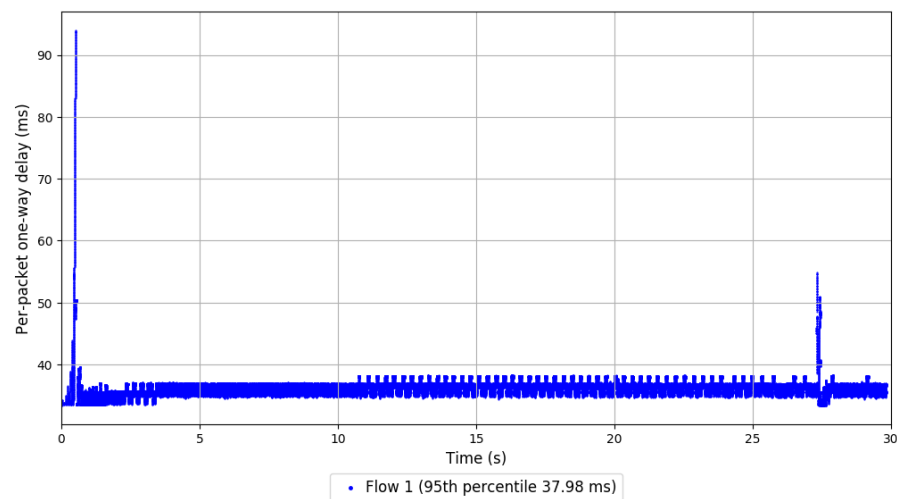
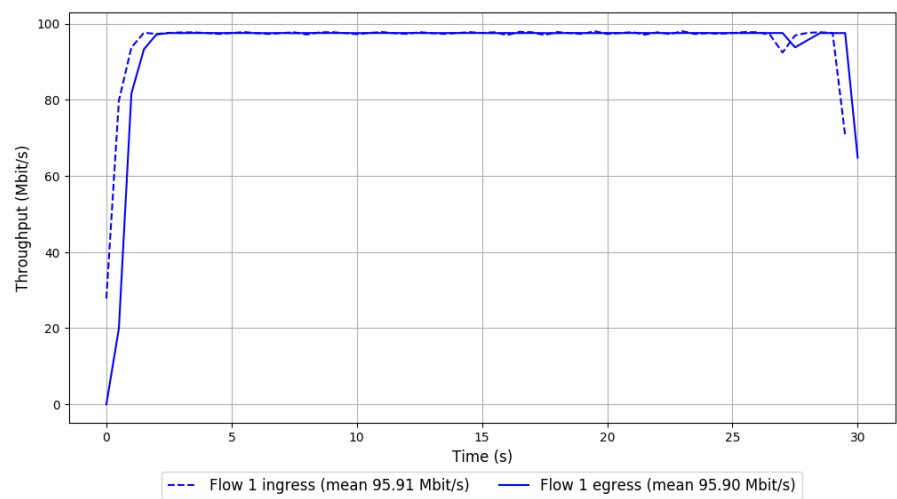


Run 3: Statistics of Indigo

Start at: 2018-09-06 14:58:42  
End at: 2018-09-06 14:59:12  
Local clock offset: -0.441 ms  
Remote clock offset: -0.601 ms

# Below is generated by plot.py at 2018-09-06 16:15:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 95.90 Mbit/s  
95th percentile per-packet one-way delay: 37.979 ms  
Loss rate: 0.22%  
-- Flow 1:  
Average throughput: 95.90 Mbit/s  
95th percentile per-packet one-way delay: 37.979 ms  
Loss rate: 0.22%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-06 15:22:29

End at: 2018-09-06 15:22:59

Local clock offset: -1.553 ms

Remote clock offset: 0.139 ms

# Below is generated by plot.py at 2018-09-06 16:15:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 95.92 Mbit/s

95th percentile per-packet one-way delay: 38.192 ms

Loss rate: 0.23%

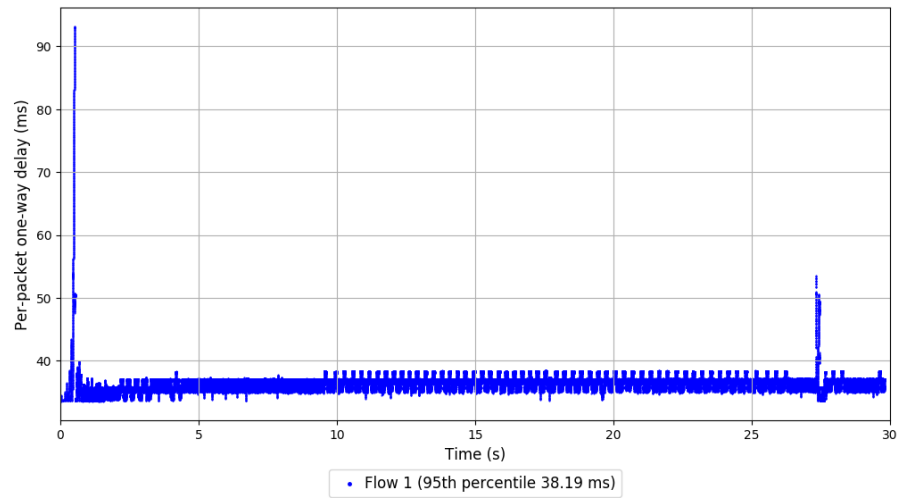
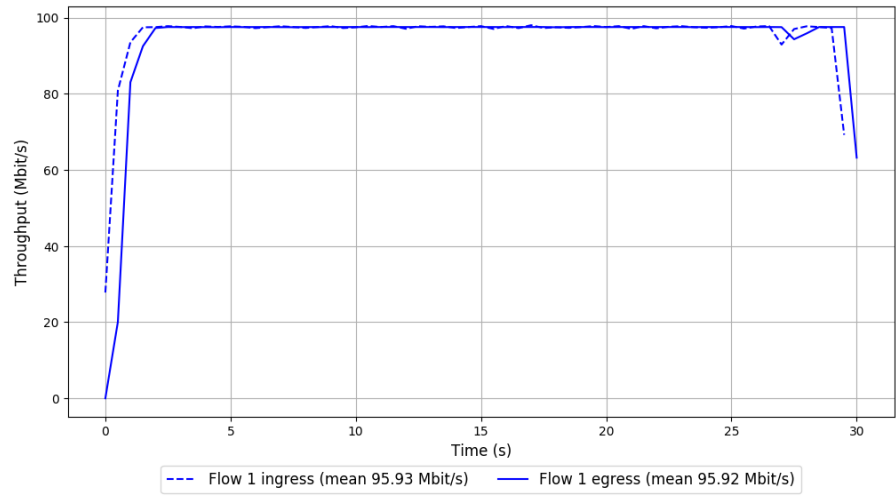
-- Flow 1:

Average throughput: 95.92 Mbit/s

95th percentile per-packet one-way delay: 38.192 ms

Loss rate: 0.23%

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



Run 5: Statistics of Indigo

Start at: 2018-09-06 15:46:17

End at: 2018-09-06 15:46:47

Local clock offset: -3.245 ms

Remote clock offset: 0.619 ms

# Below is generated by plot.py at 2018-09-06 16:15:15

# Datalink statistics

-- Total of 1 flow:

Average throughput: 95.92 Mbit/s

95th percentile per-packet one-way delay: 37.884 ms

Loss rate: 0.23%

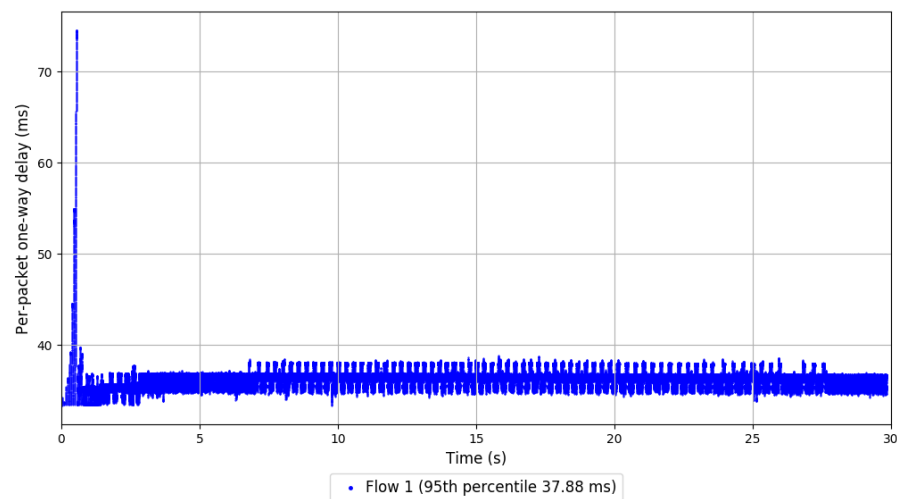
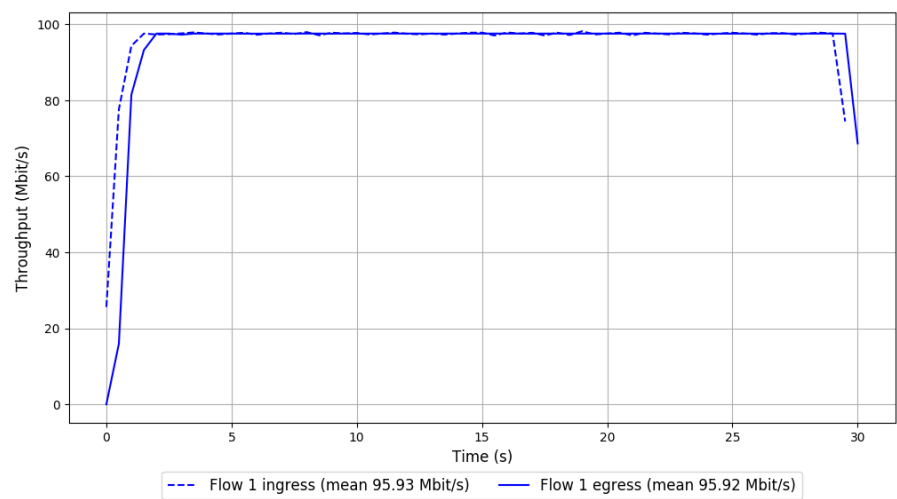
-- Flow 1:

Average throughput: 95.92 Mbit/s

95th percentile per-packet one-way delay: 37.884 ms

Loss rate: 0.23%

Run 5: Report of Indigo — Data Link



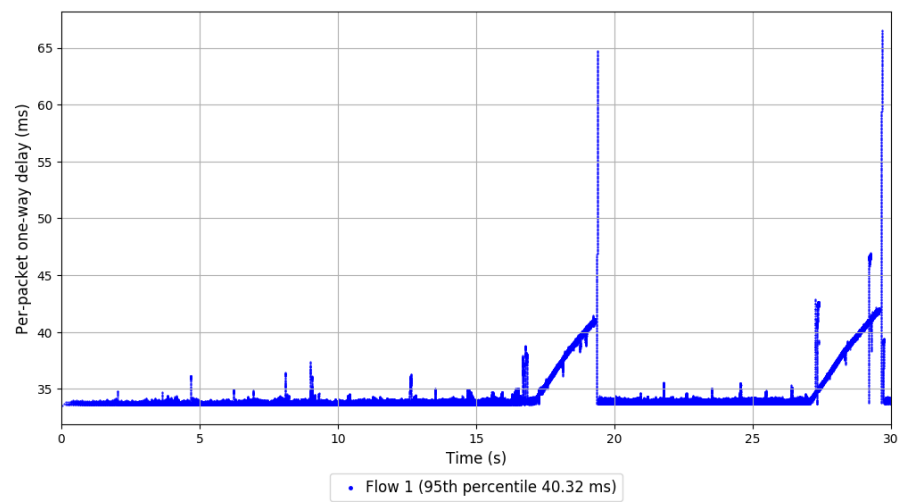
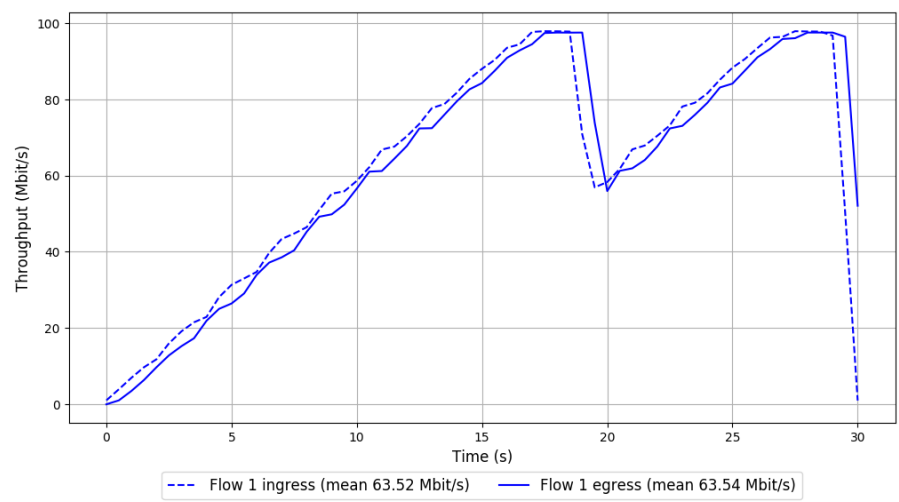
```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 14:14:54
End at: 2018-09-06 14:15:24
Local clock offset: 0.019 ms
Remote clock offset: -2.102 ms

# Below is generated by plot.py at 2018-09-06 16:15:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.54 Mbit/s
95th percentile per-packet one-way delay: 40.318 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 63.54 Mbit/s
95th percentile per-packet one-way delay: 40.318 ms
Loss rate: 0.19%
```



Run 1: Report of LEDBAT — Data Link

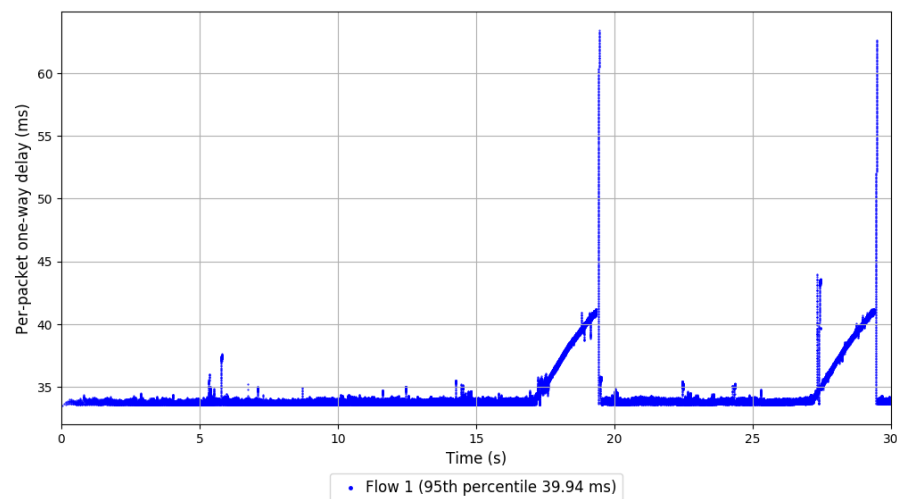
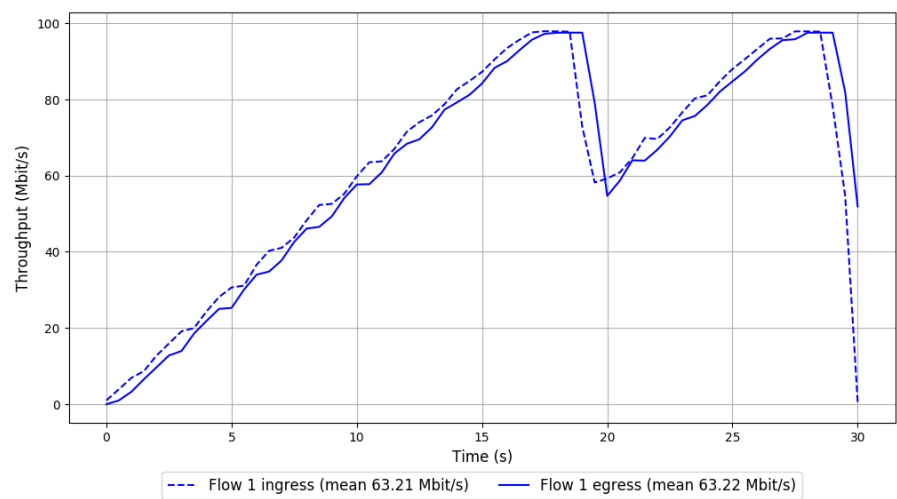


Run 2: Statistics of LEDBAT

Start at: 2018-09-06 14:38:48  
End at: 2018-09-06 14:39:18  
Local clock offset: -3.343 ms  
Remote clock offset: -1.377 ms

# Below is generated by plot.py at 2018-09-06 16:15:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 63.22 Mbit/s  
95th percentile per-packet one-way delay: 39.942 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 63.22 Mbit/s  
95th percentile per-packet one-way delay: 39.942 ms  
Loss rate: 0.20%

Run 2: Report of LEDBAT — Data Link

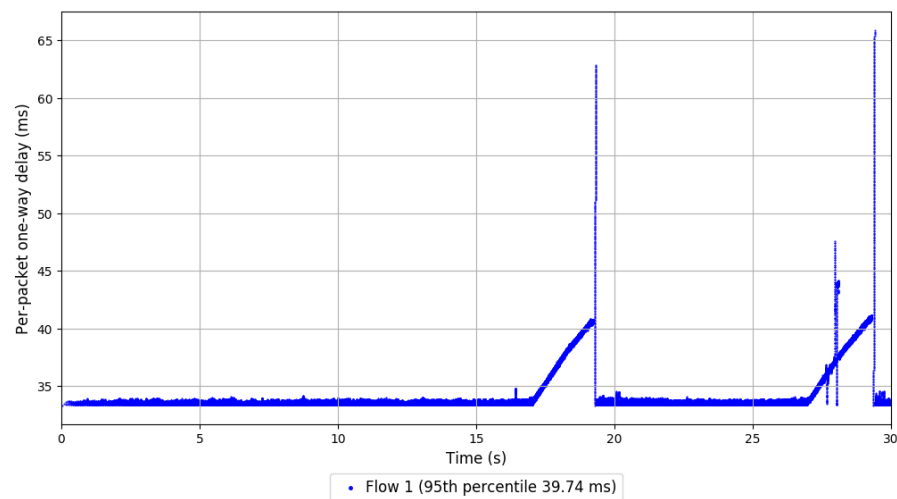
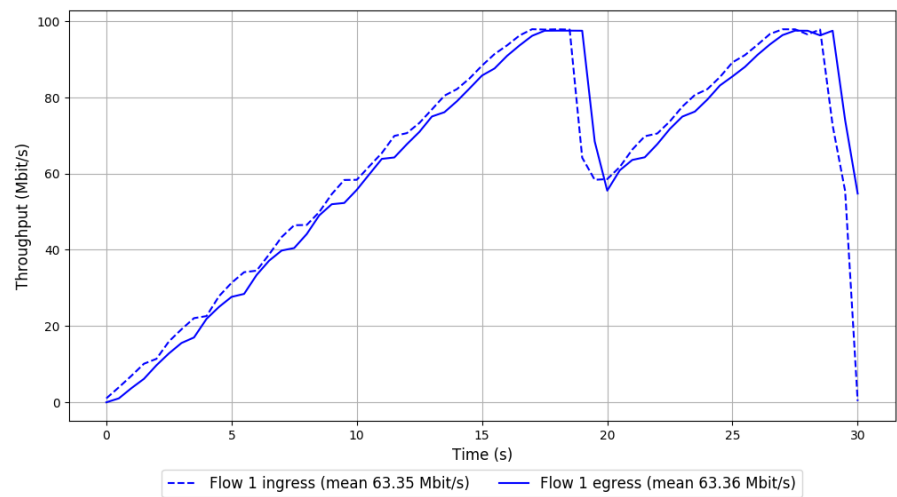


Run 3: Statistics of LEDBAT

Start at: 2018-09-06 15:02:37  
End at: 2018-09-06 15:03:07  
Local clock offset: -0.098 ms  
Remote clock offset: -0.436 ms

# Below is generated by plot.py at 2018-09-06 16:15:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 63.36 Mbit/s  
95th percentile per-packet one-way delay: 39.743 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 63.36 Mbit/s  
95th percentile per-packet one-way delay: 39.743 ms  
Loss rate: 0.20%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-06 15:26:24

End at: 2018-09-06 15:26:54

Local clock offset: -2.188 ms

Remote clock offset: 0.132 ms

# Below is generated by plot.py at 2018-09-06 16:15:18

# Datalink statistics

-- Total of 1 flow:

Average throughput: 63.33 Mbit/s

95th percentile per-packet one-way delay: 40.068 ms

Loss rate: 0.20%

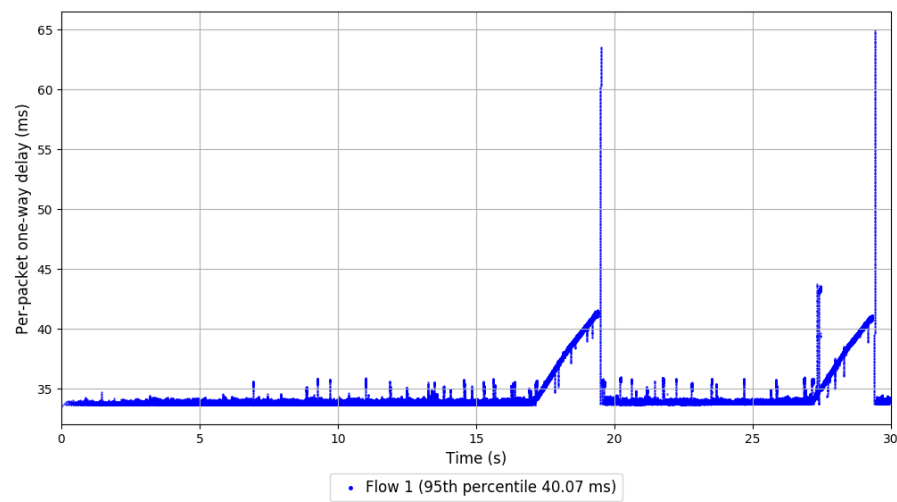
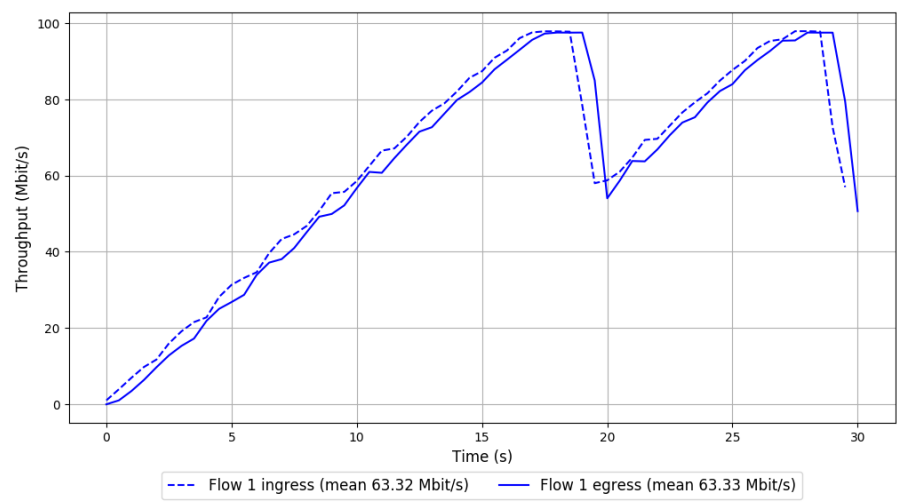
-- Flow 1:

Average throughput: 63.33 Mbit/s

95th percentile per-packet one-way delay: 40.068 ms

Loss rate: 0.20%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-06 15:50:13

End at: 2018-09-06 15:50:43

Local clock offset: -1.901 ms

Remote clock offset: 0.705 ms

# Below is generated by plot.py at 2018-09-06 16:15:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 63.17 Mbit/s

95th percentile per-packet one-way delay: 39.506 ms

Loss rate: 0.20%

-- Flow 1:

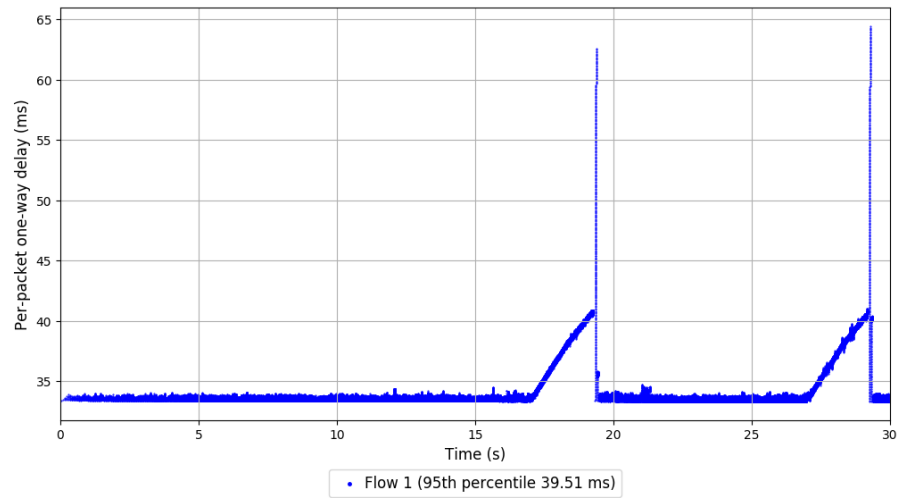
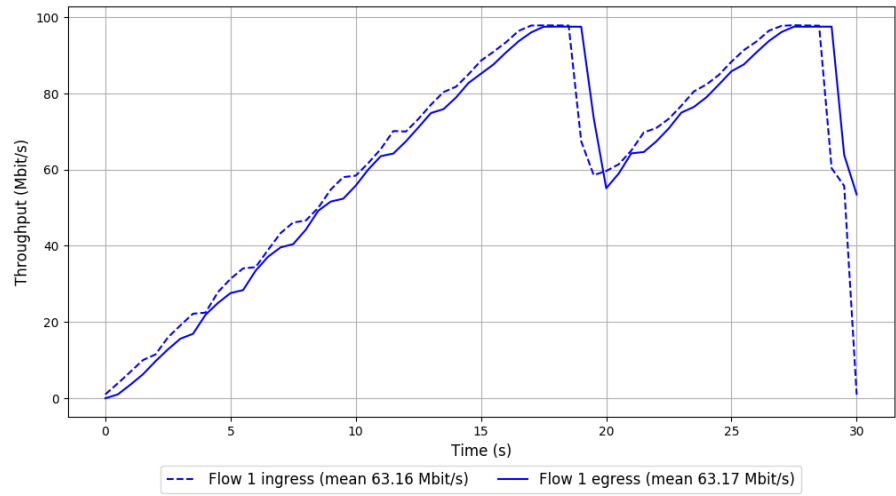
Average throughput: 63.17 Mbit/s

95th percentile per-packet one-way delay: 39.506 ms

Loss rate: 0.20%



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

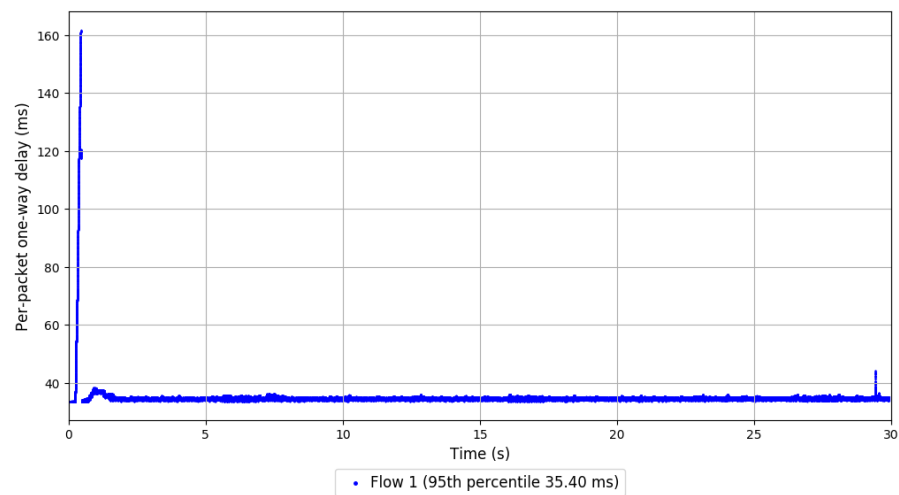
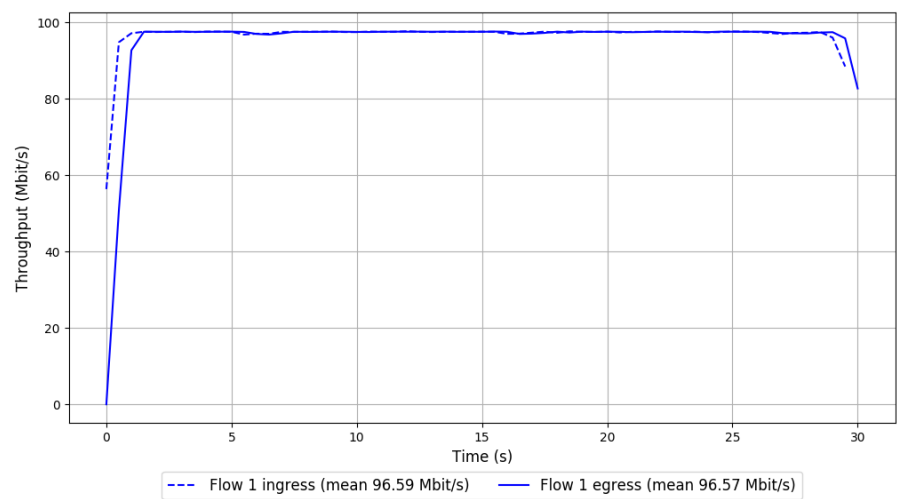


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-06 14:21:38
End at: 2018-09-06 14:22:08
Local clock offset: -1.523 ms
Remote clock offset: -1.846 ms

# Below is generated by plot.py at 2018-09-06 16:16:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.57 Mbit/s
95th percentile per-packet one-way delay: 35.400 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 96.57 Mbit/s
95th percentile per-packet one-way delay: 35.400 ms
Loss rate: 0.23%
```

Run 1: Report of Indigo-Muses — Data Link

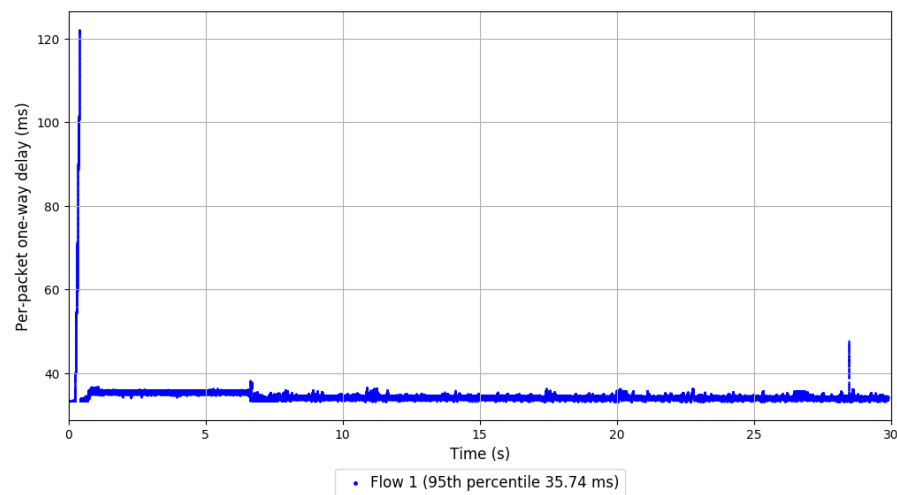
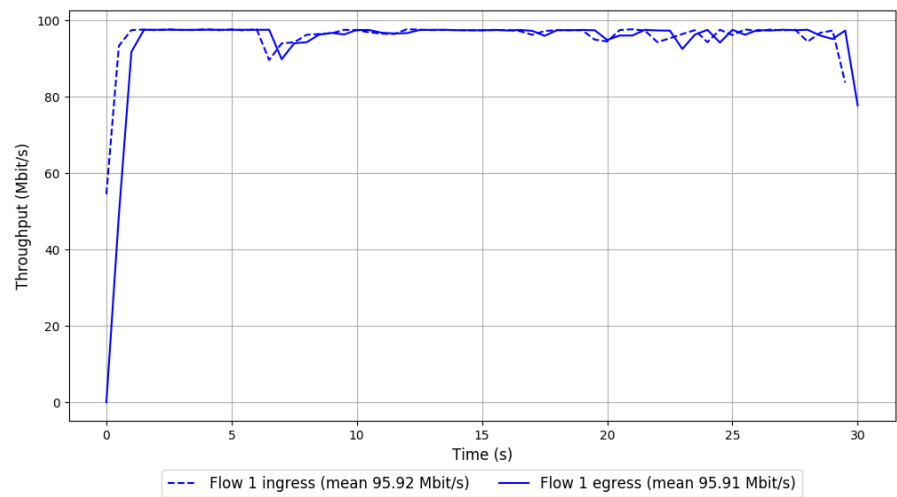


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-06 14:45:30  
End at: 2018-09-06 14:46:00  
Local clock offset: -3.714 ms  
Remote clock offset: -1.179 ms

# Below is generated by plot.py at 2018-09-06 16:16:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 95.91 Mbit/s  
95th percentile per-packet one-way delay: 35.738 ms  
Loss rate: 0.22%  
-- Flow 1:  
Average throughput: 95.91 Mbit/s  
95th percentile per-packet one-way delay: 35.738 ms  
Loss rate: 0.22%

Run 2: Report of Indigo-Muses — Data Link

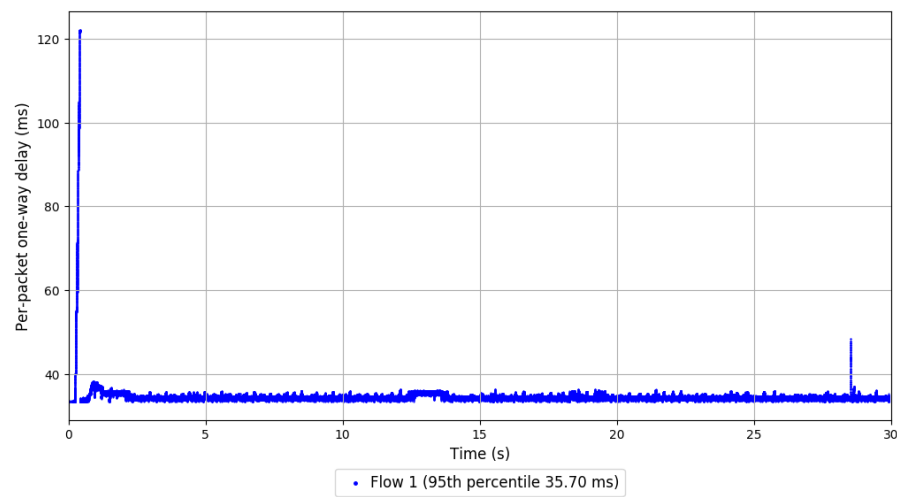
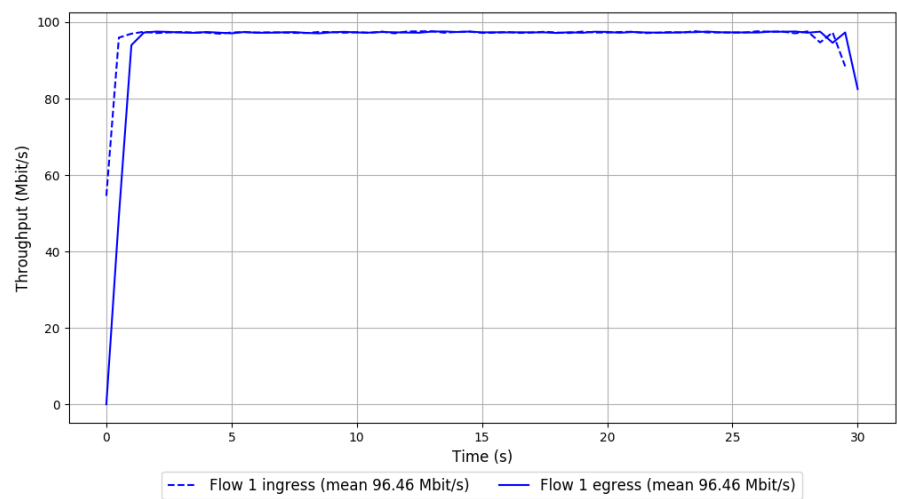


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-06 15:09:17  
End at: 2018-09-06 15:09:47  
Local clock offset: 0.256 ms  
Remote clock offset: -0.254 ms

# Below is generated by plot.py at 2018-09-06 16:16:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 96.46 Mbit/s  
95th percentile per-packet one-way delay: 35.697 ms  
Loss rate: 0.22%  
-- Flow 1:  
Average throughput: 96.46 Mbit/s  
95th percentile per-packet one-way delay: 35.697 ms  
Loss rate: 0.22%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-06 15:33:05

End at: 2018-09-06 15:33:35

Local clock offset: -2.815 ms

Remote clock offset: 0.404 ms

# Below is generated by plot.py at 2018-09-06 16:16:23

# Datalink statistics

-- Total of 1 flow:

Average throughput: 96.59 Mbit/s

95th percentile per-packet one-way delay: 35.727 ms

Loss rate: 0.22%

-- Flow 1:

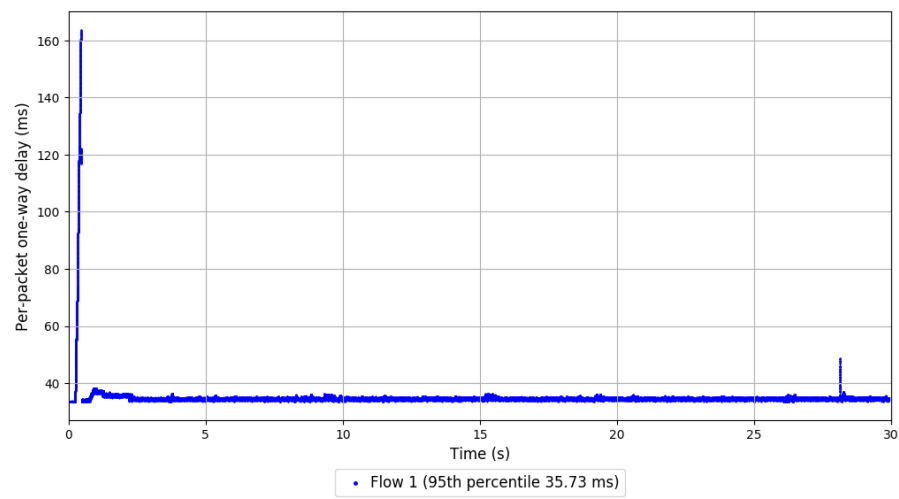
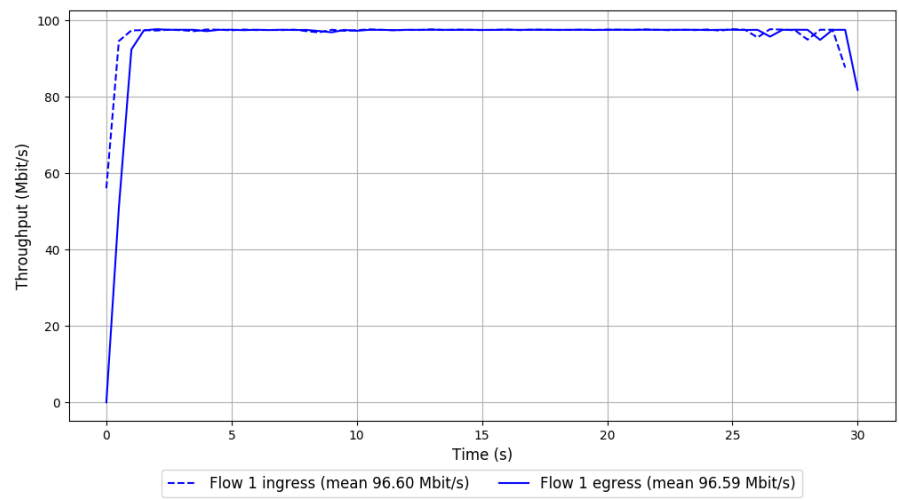
Average throughput: 96.59 Mbit/s

95th percentile per-packet one-way delay: 35.727 ms

Loss rate: 0.22%



Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-06 15:56:55

End at: 2018-09-06 15:57:25

Local clock offset: -0.573 ms

Remote clock offset: 0.797 ms

# Below is generated by plot.py at 2018-09-06 16:16:24

# Datalink statistics

-- Total of 1 flow:

Average throughput: 96.37 Mbit/s

95th percentile per-packet one-way delay: 35.531 ms

Loss rate: 0.22%

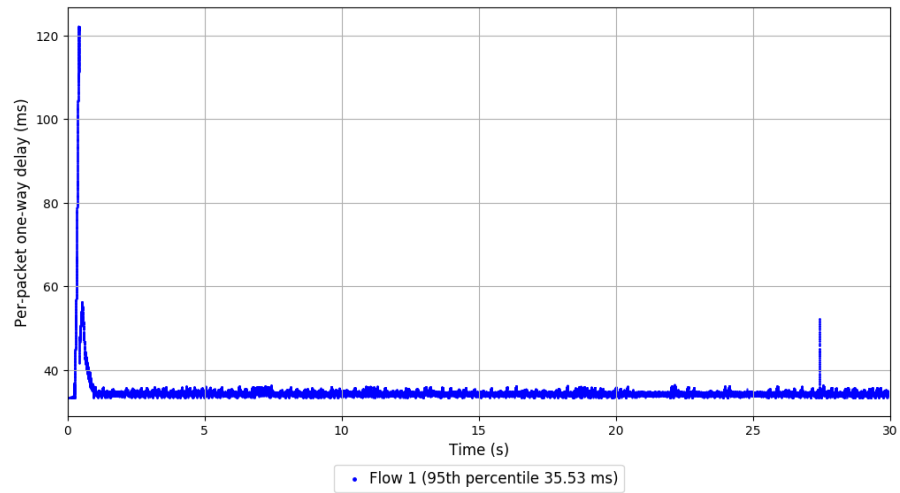
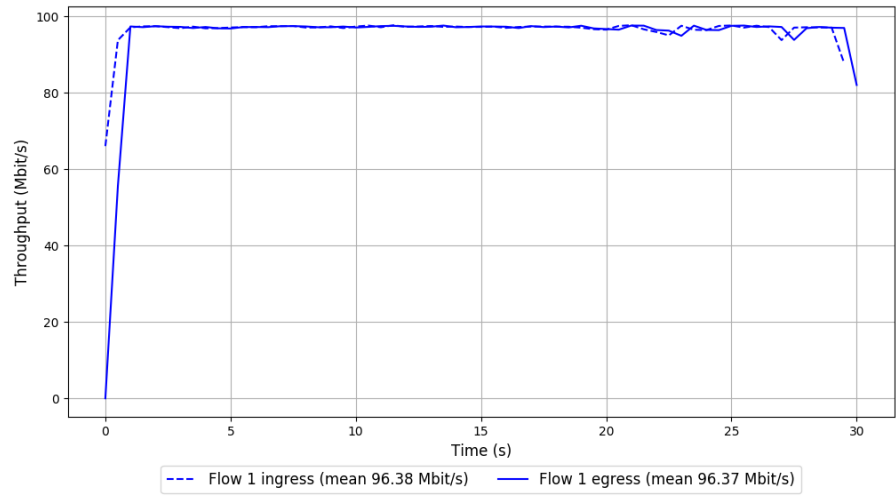
-- Flow 1:

Average throughput: 96.37 Mbit/s

95th percentile per-packet one-way delay: 35.531 ms

Loss rate: 0.22%

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

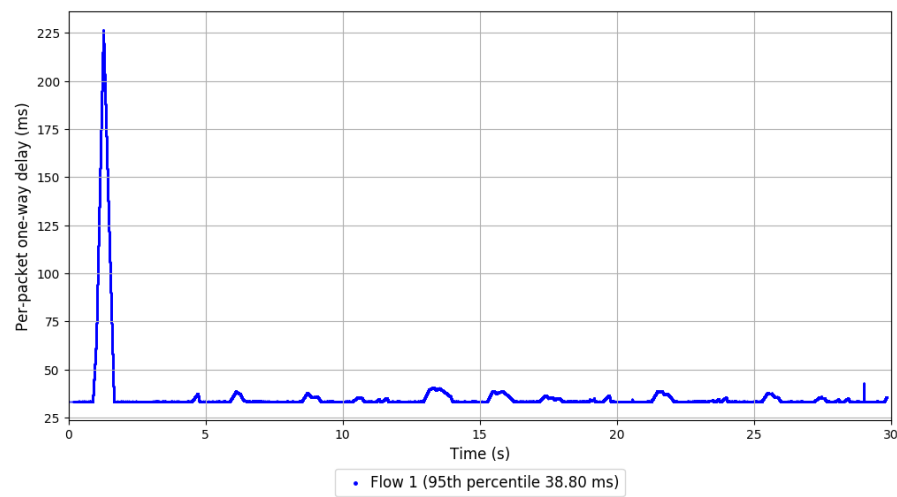
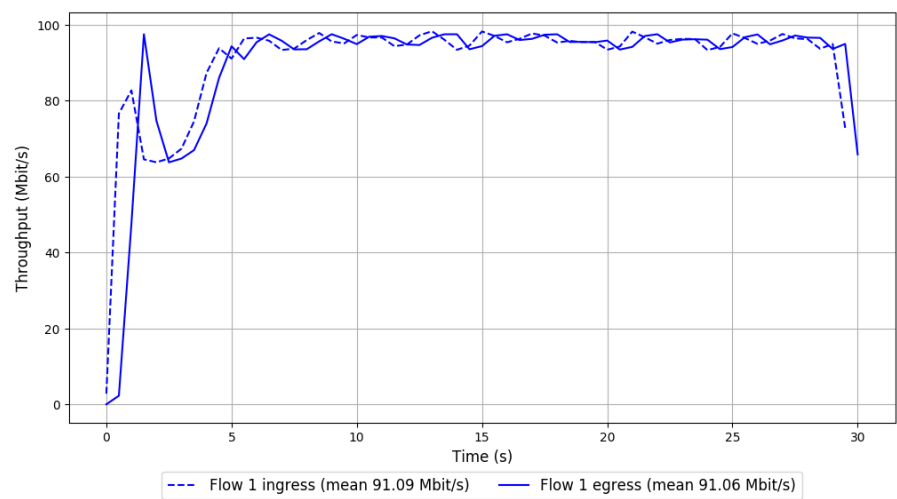


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 14:13:35
End at: 2018-09-06 14:14:05
Local clock offset: 0.131 ms
Remote clock offset: -1.828 ms

# Below is generated by plot.py at 2018-09-06 16:16:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.06 Mbit/s
95th percentile per-packet one-way delay: 38.804 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 91.06 Mbit/s
95th percentile per-packet one-way delay: 38.804 ms
Loss rate: 0.25%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-06 14:37:29

End at: 2018-09-06 14:37:59

Local clock offset: -3.263 ms

Remote clock offset: -1.425 ms

# Below is generated by plot.py at 2018-09-06 16:16:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.43 Mbit/s

95th percentile per-packet one-way delay: 38.612 ms

Loss rate: 0.23%

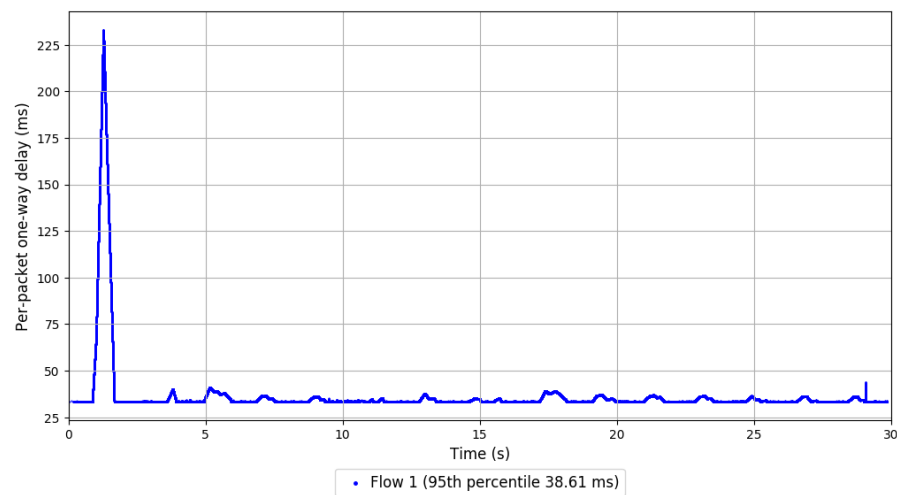
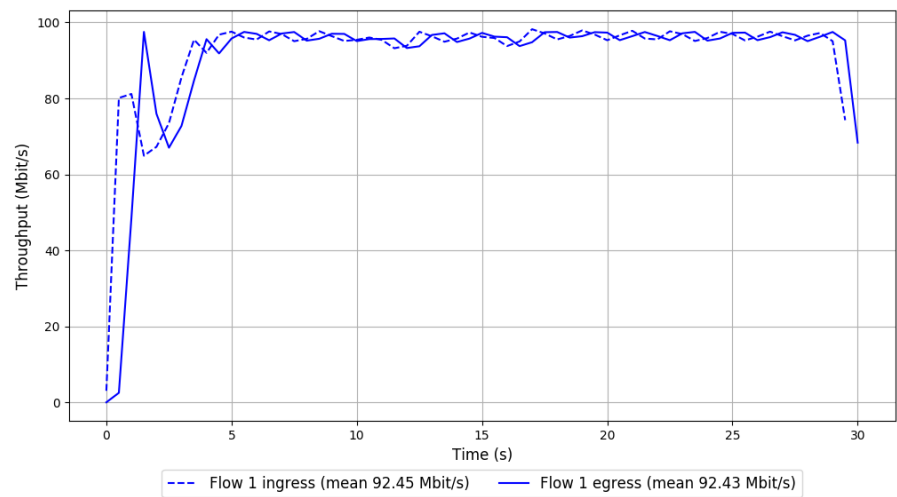
-- Flow 1:

Average throughput: 92.43 Mbit/s

95th percentile per-packet one-way delay: 38.612 ms

Loss rate: 0.23%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-06 15:01:18

End at: 2018-09-06 15:01:48

Local clock offset: -0.191 ms

Remote clock offset: -0.396 ms

# Below is generated by plot.py at 2018-09-06 16:16:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.72 Mbit/s

95th percentile per-packet one-way delay: 39.767 ms

Loss rate: 0.27%

-- Flow 1:

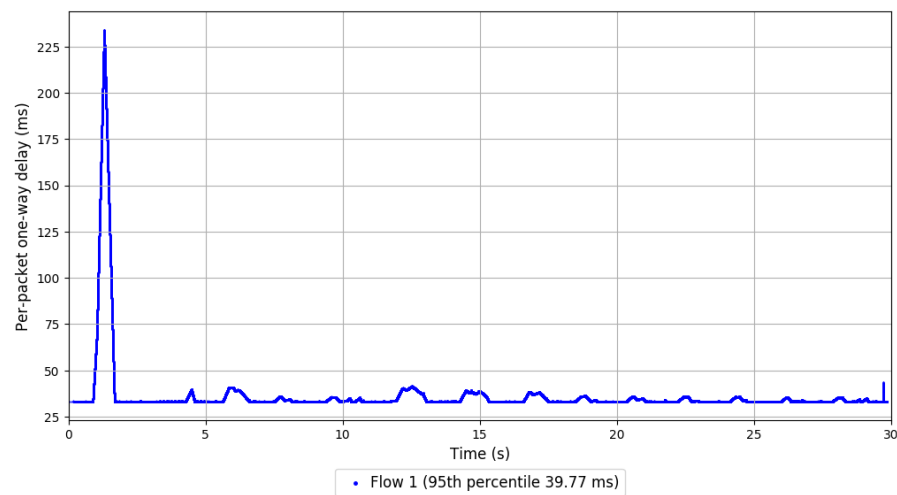
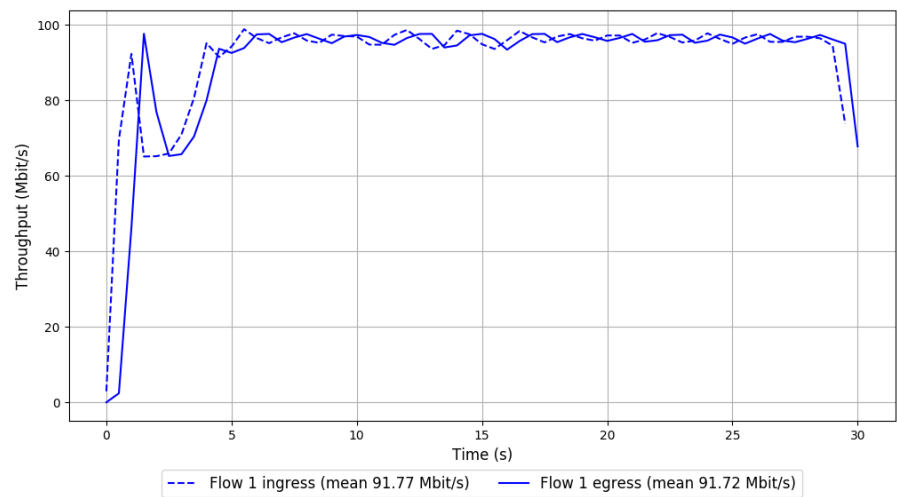
Average throughput: 91.72 Mbit/s

95th percentile per-packet one-way delay: 39.767 ms

Loss rate: 0.27%



Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-06 15:25:05

End at: 2018-09-06 15:25:35

Local clock offset: -1.998 ms

Remote clock offset: 0.213 ms

# Below is generated by plot.py at 2018-09-06 16:17:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.60 Mbit/s

95th percentile per-packet one-way delay: 39.153 ms

Loss rate: 0.24%

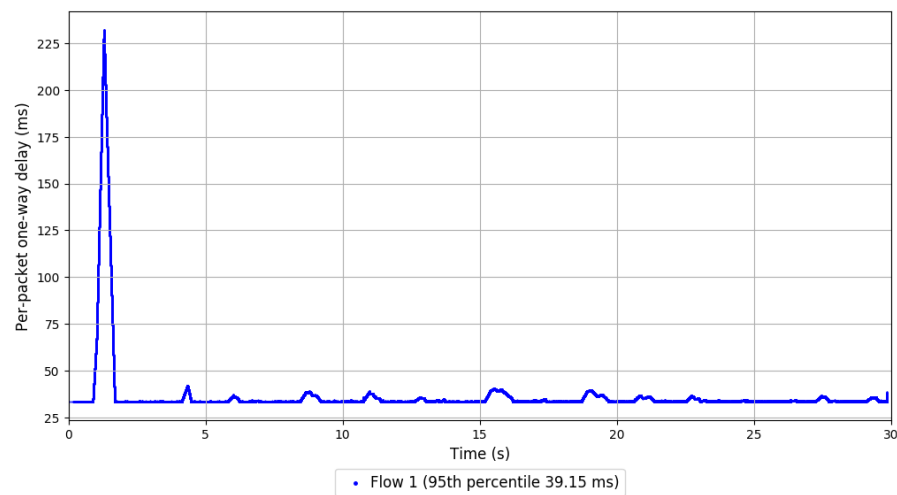
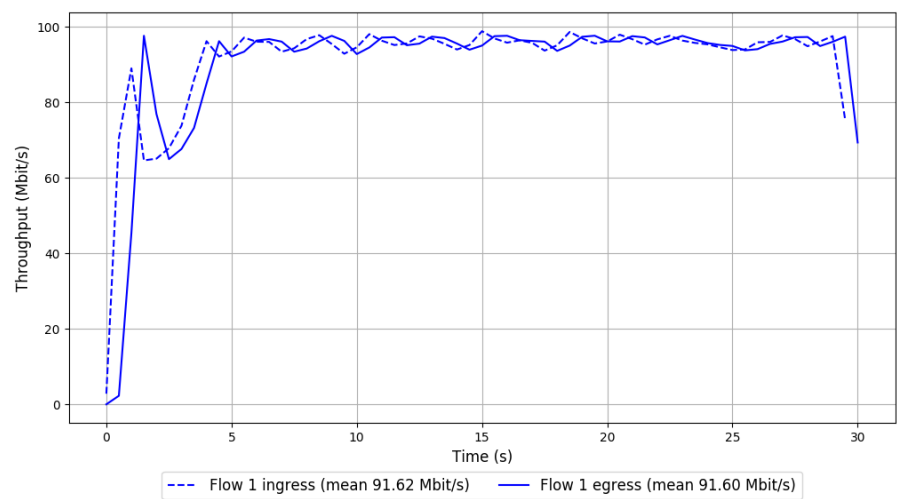
-- Flow 1:

Average throughput: 91.60 Mbit/s

95th percentile per-packet one-way delay: 39.153 ms

Loss rate: 0.24%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-06 15:48:54

End at: 2018-09-06 15:49:24

Local clock offset: -2.298 ms

Remote clock offset: 0.725 ms

# Below is generated by plot.py at 2018-09-06 16:17:17

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.95 Mbit/s

95th percentile per-packet one-way delay: 39.014 ms

Loss rate: 0.23%

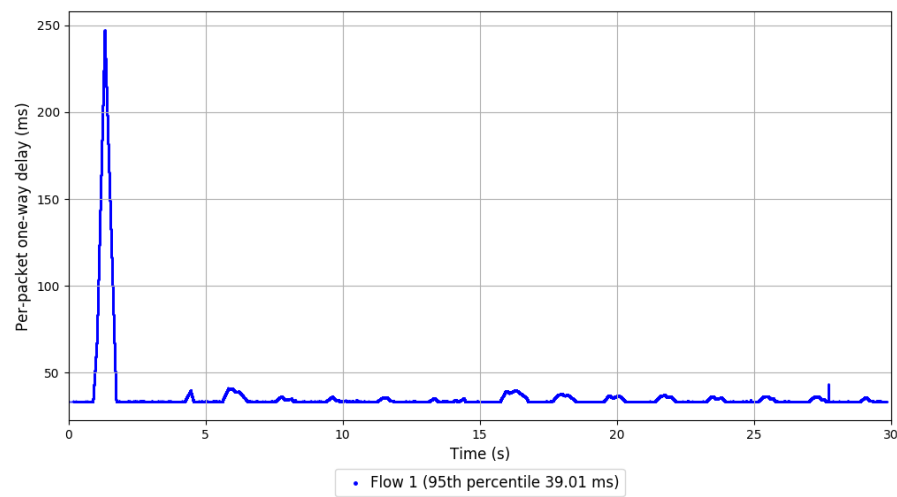
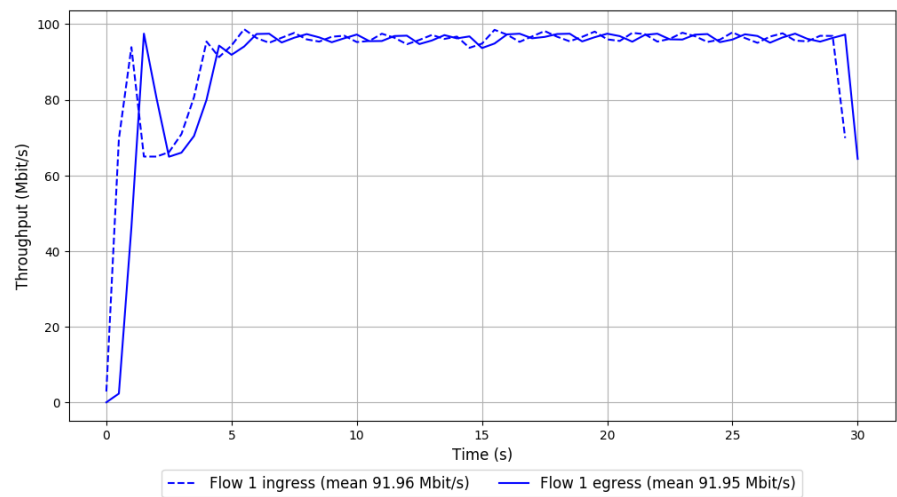
-- Flow 1:

Average throughput: 91.95 Mbit/s

95th percentile per-packet one-way delay: 39.014 ms

Loss rate: 0.23%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

Start at: 2018-09-06 14:16:14

End at: 2018-09-06 14:16:44

Local clock offset: -0.111 ms

Remote clock offset: -1.909 ms

# Below is generated by plot.py at 2018-09-06 16:18:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.60 Mbit/s

95th percentile per-packet one-way delay: 149.561 ms

Loss rate: 0.30%

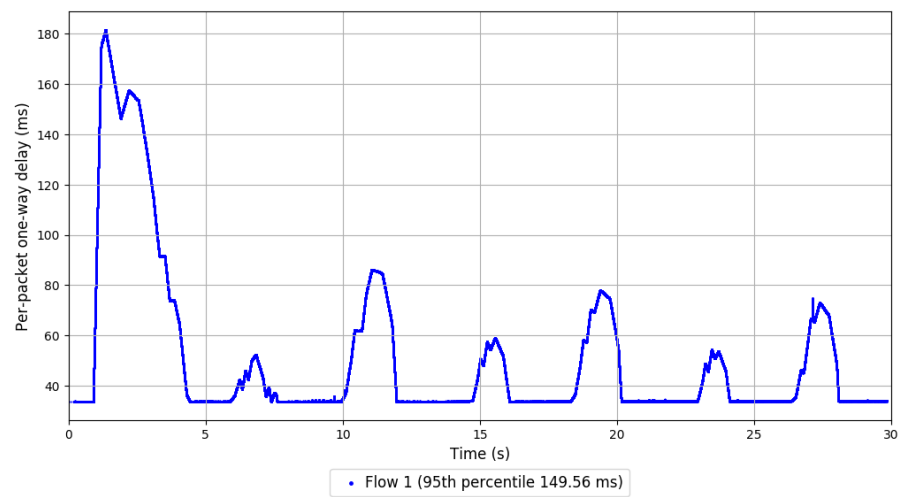
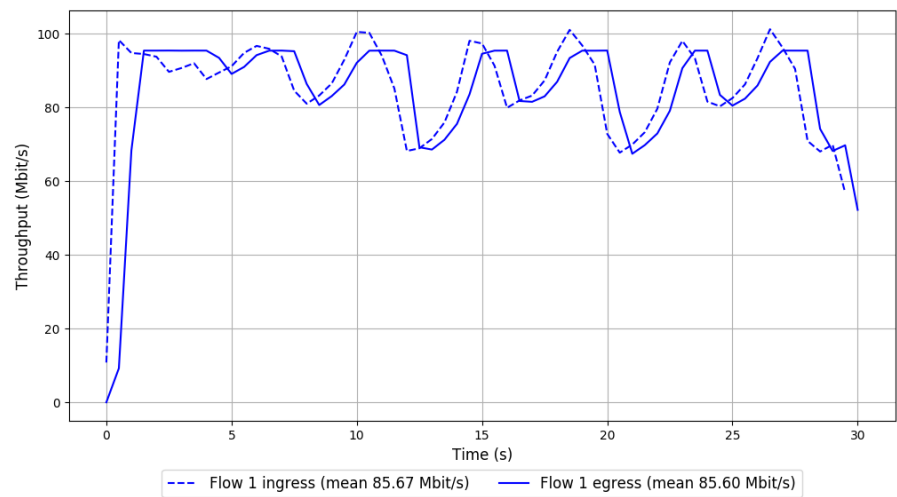
-- Flow 1:

Average throughput: 85.60 Mbit/s

95th percentile per-packet one-way delay: 149.561 ms

Loss rate: 0.30%

Run 1: Report of PCC-Expr — Data Link



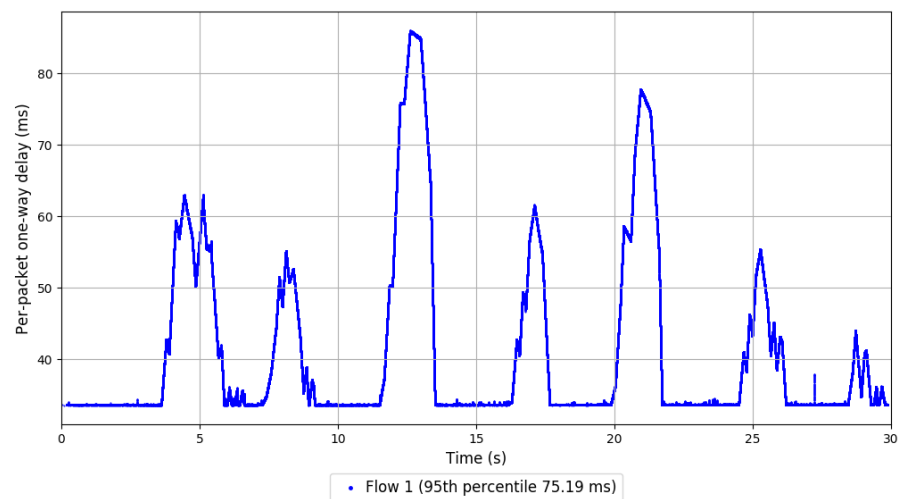
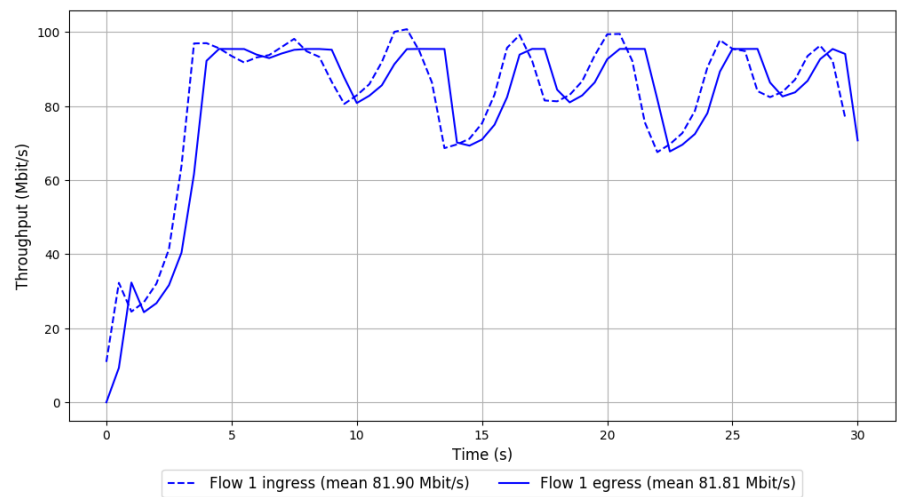
Run 2: Statistics of PCC-Expr

Start at: 2018-09-06 14:40:07  
End at: 2018-09-06 14:40:37  
Local clock offset: -3.427 ms  
Remote clock offset: -1.299 ms

# Below is generated by plot.py at 2018-09-06 16:18:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 81.81 Mbit/s  
95th percentile per-packet one-way delay: 75.191 ms  
Loss rate: 0.34%  
-- Flow 1:  
Average throughput: 81.81 Mbit/s  
95th percentile per-packet one-way delay: 75.191 ms  
Loss rate: 0.34%



Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-06 15:03:56

End at: 2018-09-06 15:04:26

Local clock offset: 0.001 ms

Remote clock offset: -0.632 ms

# Below is generated by plot.py at 2018-09-06 16:18:17

# Datalink statistics

-- Total of 1 flow:

Average throughput: 84.27 Mbit/s

95th percentile per-packet one-way delay: 161.673 ms

Loss rate: 0.32%

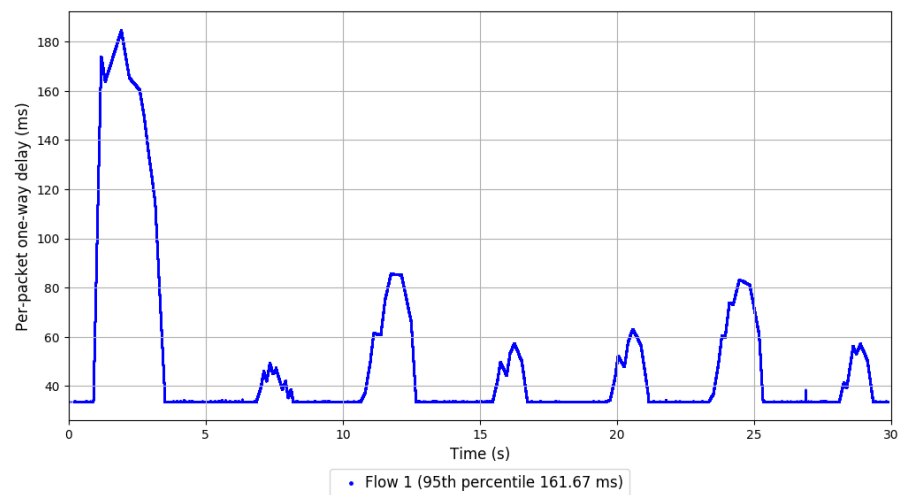
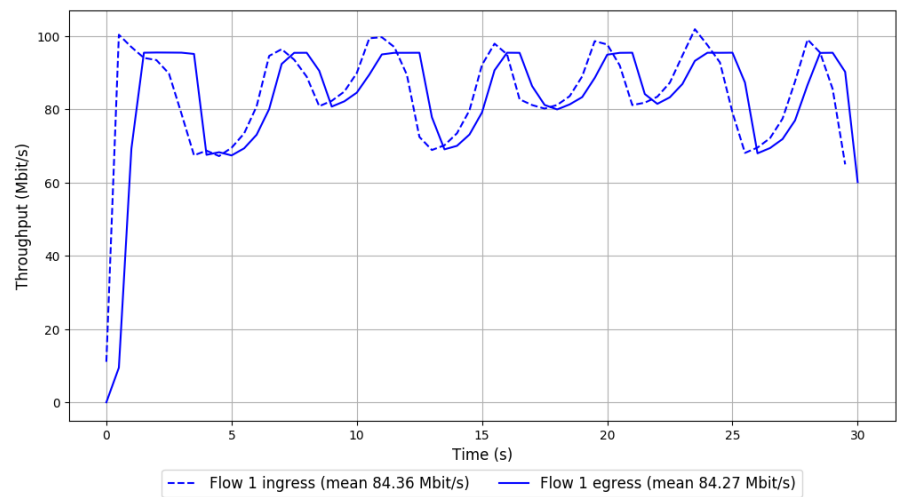
-- Flow 1:

Average throughput: 84.27 Mbit/s

95th percentile per-packet one-way delay: 161.673 ms

Loss rate: 0.32%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-06 15:27:43

End at: 2018-09-06 15:28:13

Local clock offset: -2.278 ms

Remote clock offset: 0.223 ms

# Below is generated by plot.py at 2018-09-06 16:18:24

# Datalink statistics

-- Total of 1 flow:

Average throughput: 86.41 Mbit/s

95th percentile per-packet one-way delay: 152.342 ms

Loss rate: 0.36%

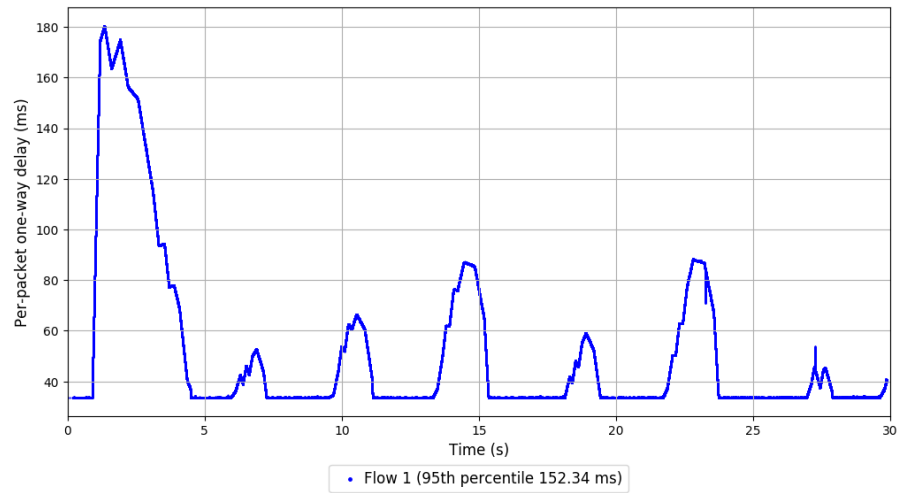
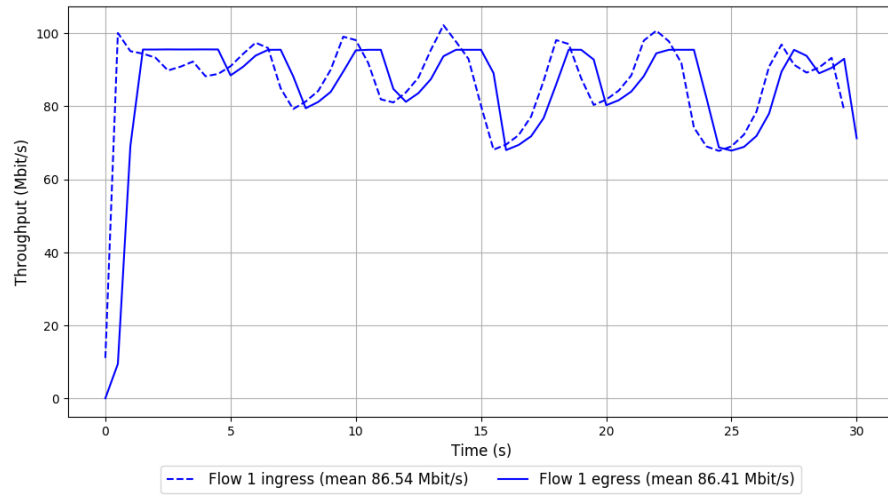
-- Flow 1:

Average throughput: 86.41 Mbit/s

95th percentile per-packet one-way delay: 152.342 ms

Loss rate: 0.36%

#### Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-06 15:51:32

End at: 2018-09-06 15:52:02

Local clock offset: -1.547 ms

Remote clock offset: 0.783 ms

# Below is generated by plot.py at 2018-09-06 16:18:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 84.98 Mbit/s

95th percentile per-packet one-way delay: 148.319 ms

Loss rate: 0.29%

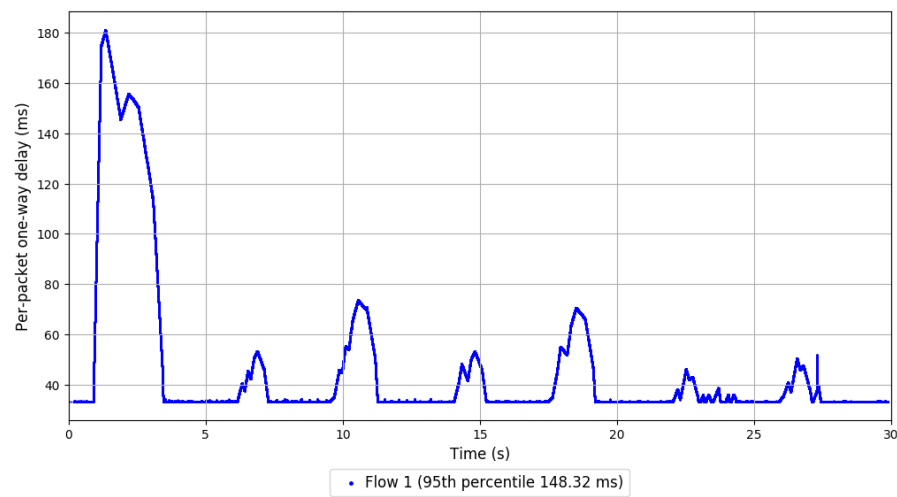
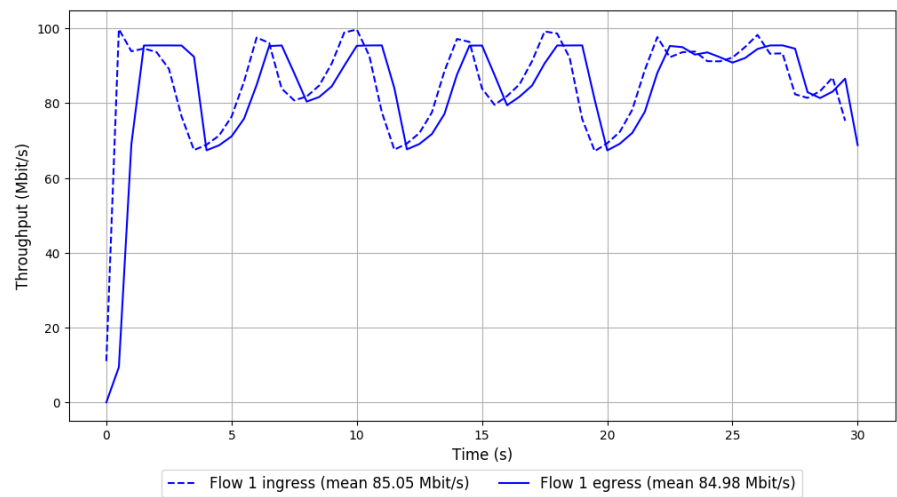
-- Flow 1:

Average throughput: 84.98 Mbit/s

95th percentile per-packet one-way delay: 148.319 ms

Loss rate: 0.29%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 14:25:37

End at: 2018-09-06 14:26:07

Local clock offset: -2.179 ms

Remote clock offset: -1.807 ms

# Below is generated by plot.py at 2018-09-06 16:18:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 77.33 Mbit/s

95th percentile per-packet one-way delay: 49.078 ms

Loss rate: 0.19%

-- Flow 1:

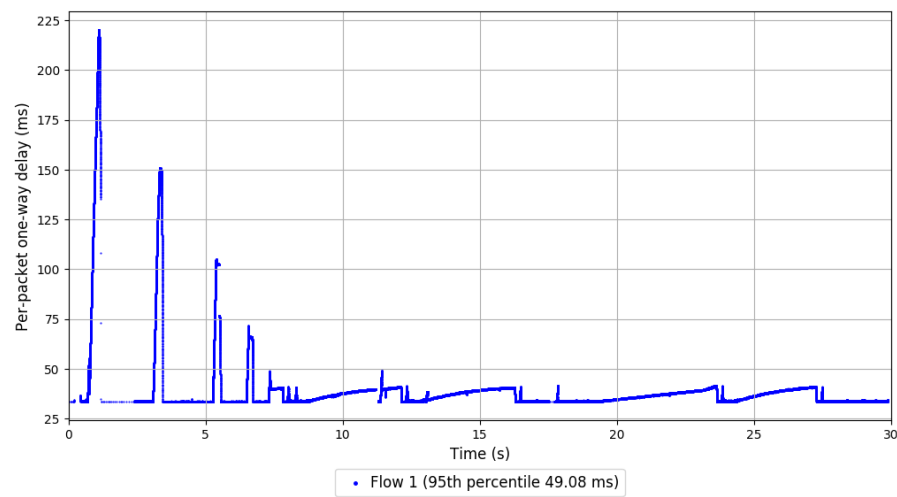
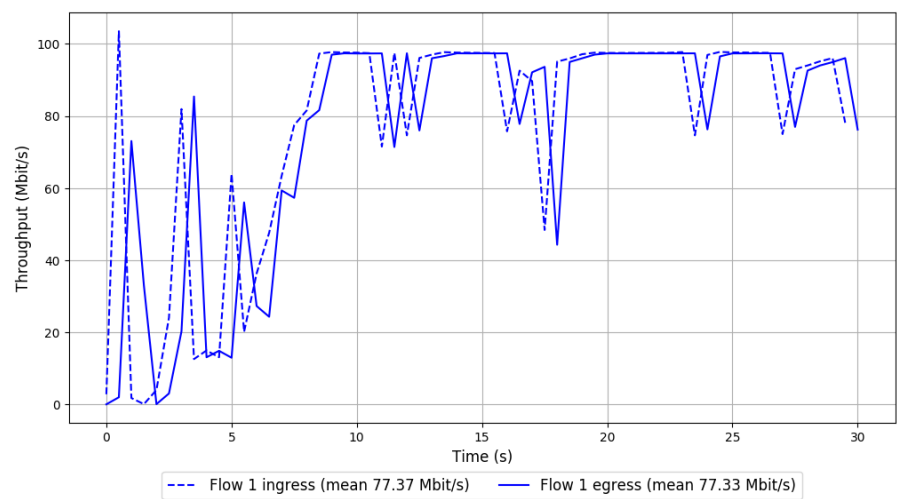
Average throughput: 77.33 Mbit/s

95th percentile per-packet one-way delay: 49.078 ms

Loss rate: 0.19%



Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-06 14:49:28

End at: 2018-09-06 14:49:58

Local clock offset: -2.221 ms

Remote clock offset: -1.107 ms

# Below is generated by plot.py at 2018-09-06 16:18:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.76 Mbit/s

95th percentile per-packet one-way delay: 40.621 ms

Loss rate: 0.27%

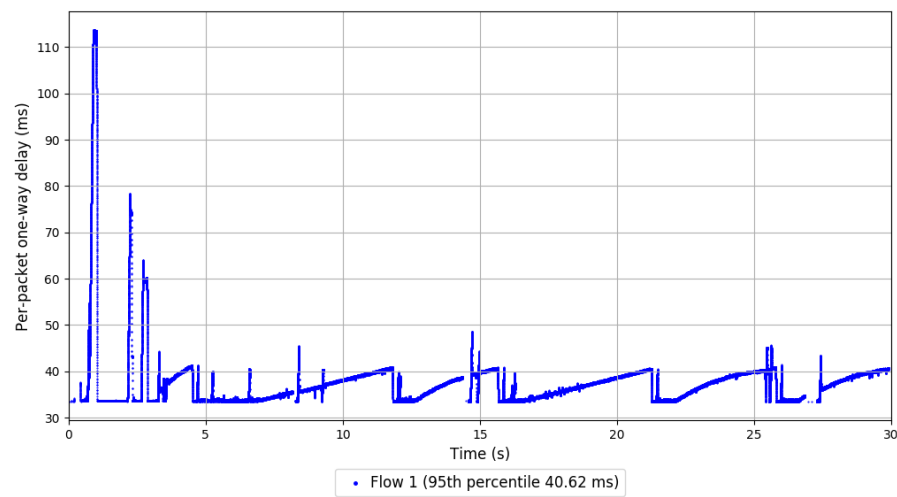
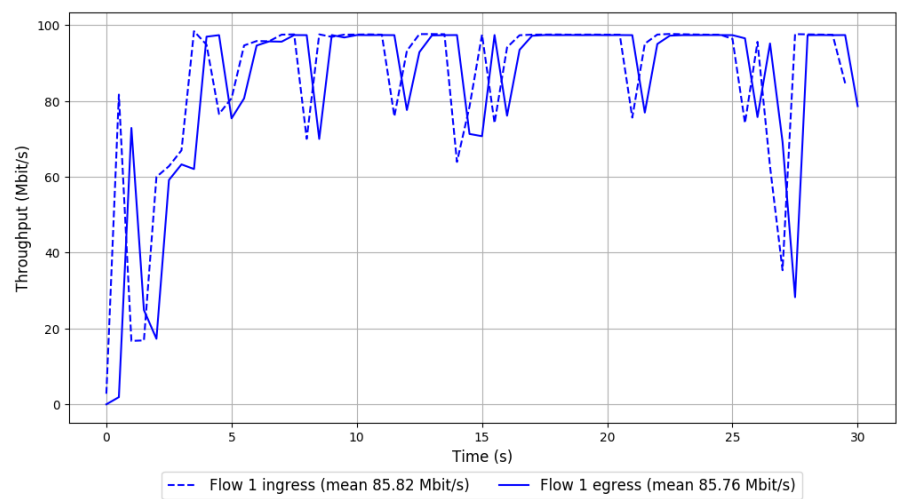
-- Flow 1:

Average throughput: 85.76 Mbit/s

95th percentile per-packet one-way delay: 40.621 ms

Loss rate: 0.27%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-06 15:13:15

End at: 2018-09-06 15:13:45

Local clock offset: 0.419 ms

Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2018-09-06 16:18:32

# Datalink statistics

-- Total of 1 flow:

Average throughput: 76.74 Mbit/s

95th percentile per-packet one-way delay: 49.607 ms

Loss rate: 0.27%

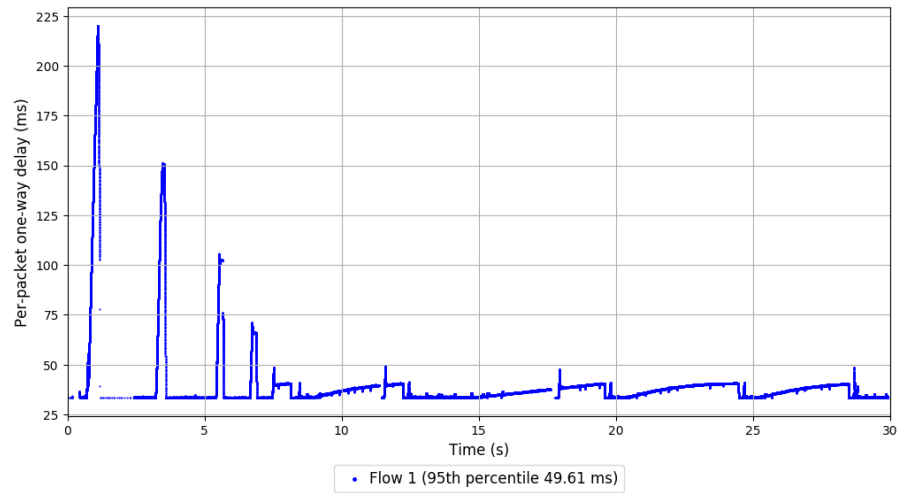
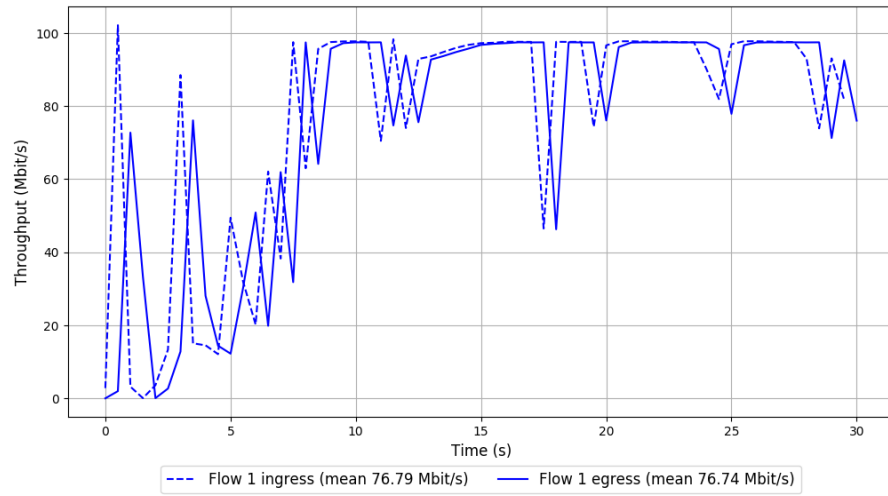
-- Flow 1:

Average throughput: 76.74 Mbit/s

95th percentile per-packet one-way delay: 49.607 ms

Loss rate: 0.27%

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



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-06 15:37:02

End at: 2018-09-06 15:37:32

Local clock offset: -3.192 ms

Remote clock offset: 0.608 ms

# Below is generated by plot.py at 2018-09-06 16:18:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 76.84 Mbit/s

95th percentile per-packet one-way delay: 49.736 ms

Loss rate: 0.28%

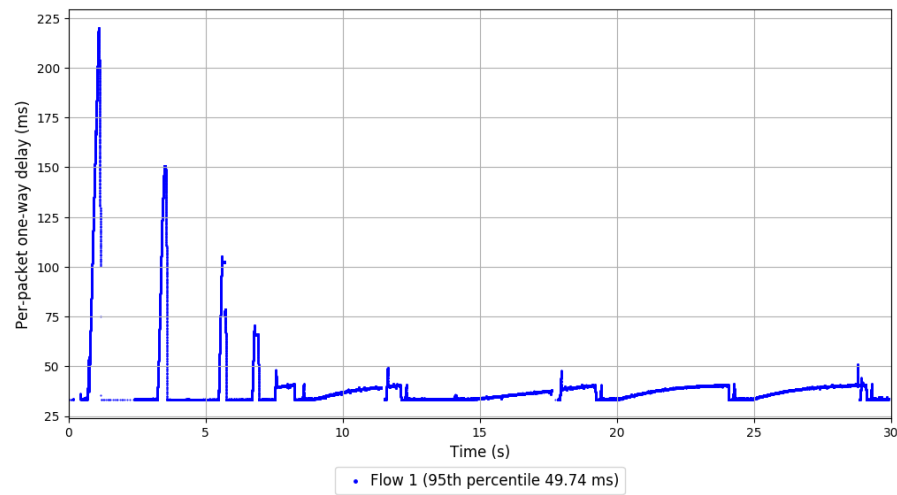
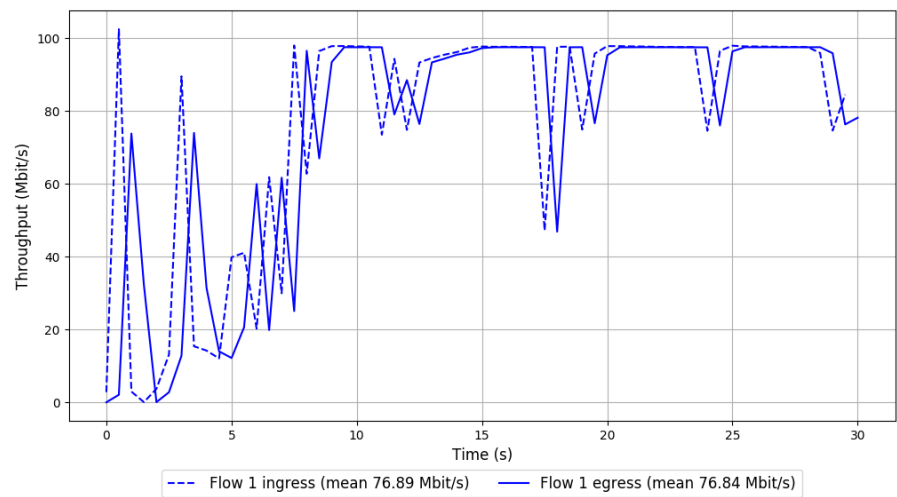
-- Flow 1:

Average throughput: 76.84 Mbit/s

95th percentile per-packet one-way delay: 49.736 ms

Loss rate: 0.28%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-06 16:00:53

End at: 2018-09-06 16:01:23

Local clock offset: -0.206 ms

Remote clock offset: 0.885 ms

# Below is generated by plot.py at 2018-09-06 16:19:03

# Datalink statistics

-- Total of 1 flow:

Average throughput: 76.92 Mbit/s

95th percentile per-packet one-way delay: 49.686 ms

Loss rate: 0.28%

-- Flow 1:

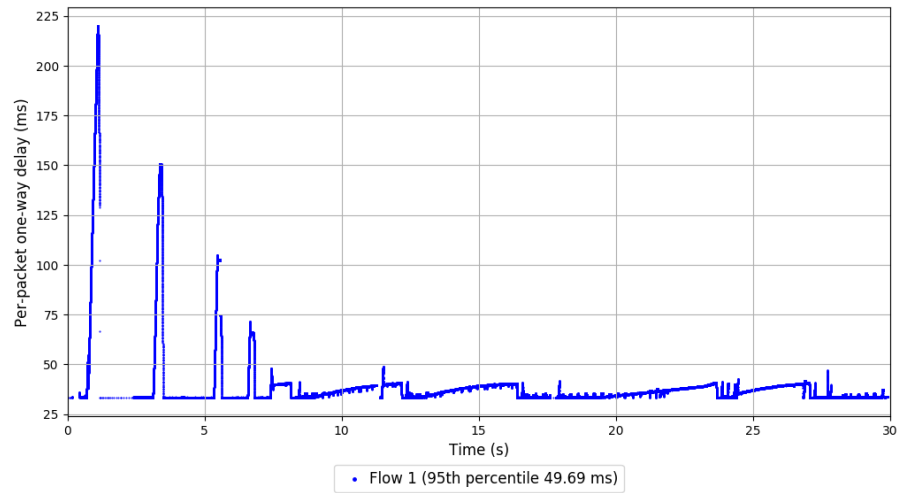
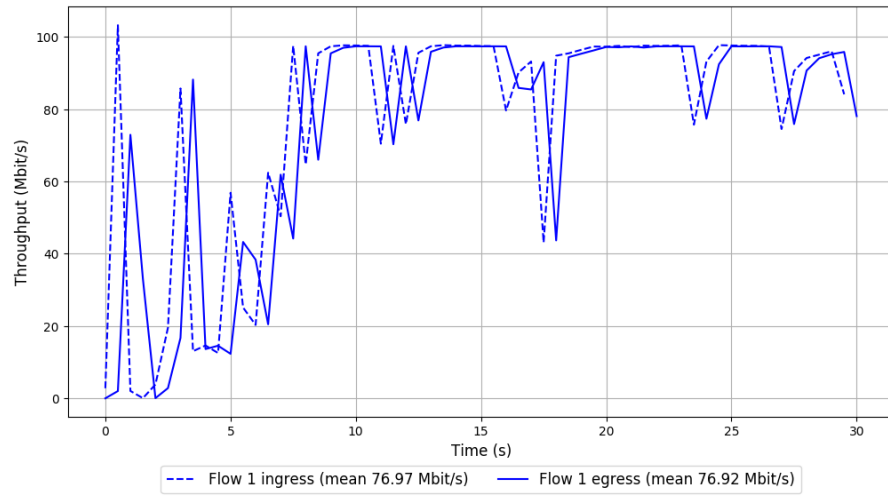
Average throughput: 76.92 Mbit/s

95th percentile per-packet one-way delay: 49.686 ms

Loss rate: 0.28%



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

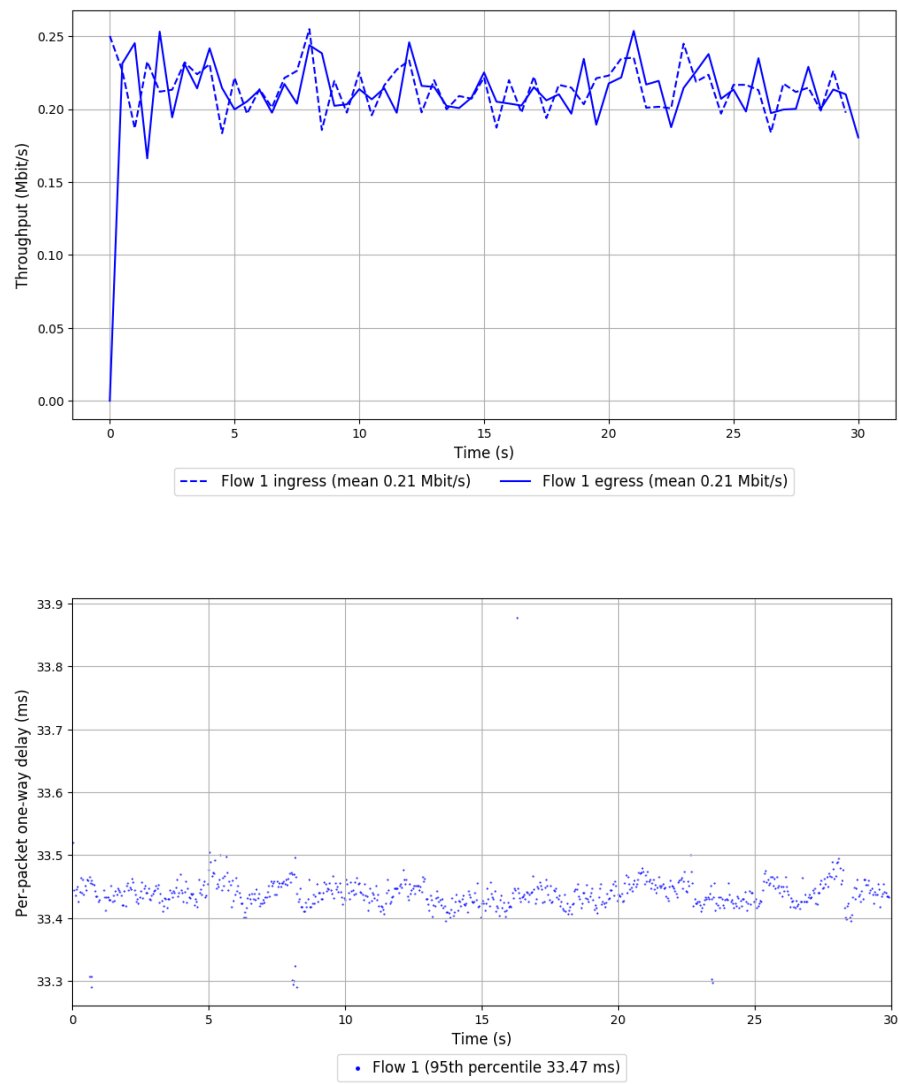


```
Run 1: Statistics of SCReAM

Start at: 2018-09-06 14:12:19
End at: 2018-09-06 14:12:49
Local clock offset: 0.043 ms
Remote clock offset: -1.843 ms

# Below is generated by plot.py at 2018-09-06 16:19:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.468 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.468 ms
Loss rate: 0.26%
```

Run 1: Report of SReAM — Data Link

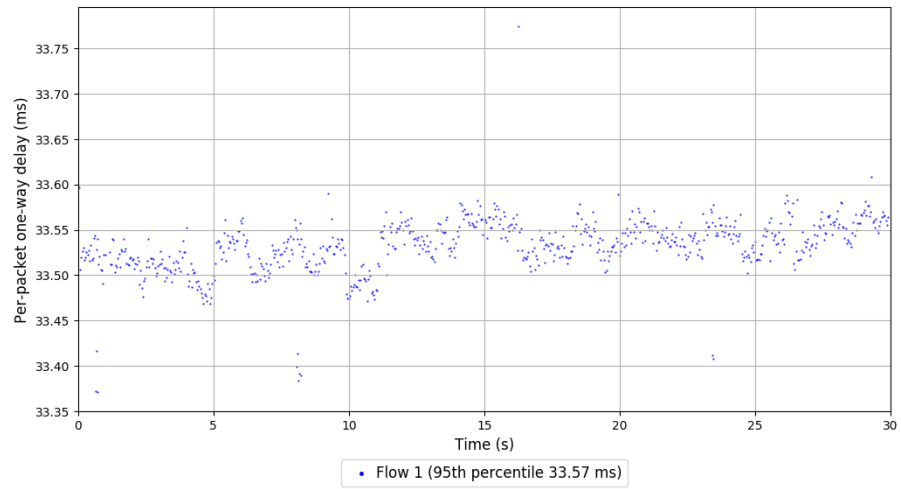
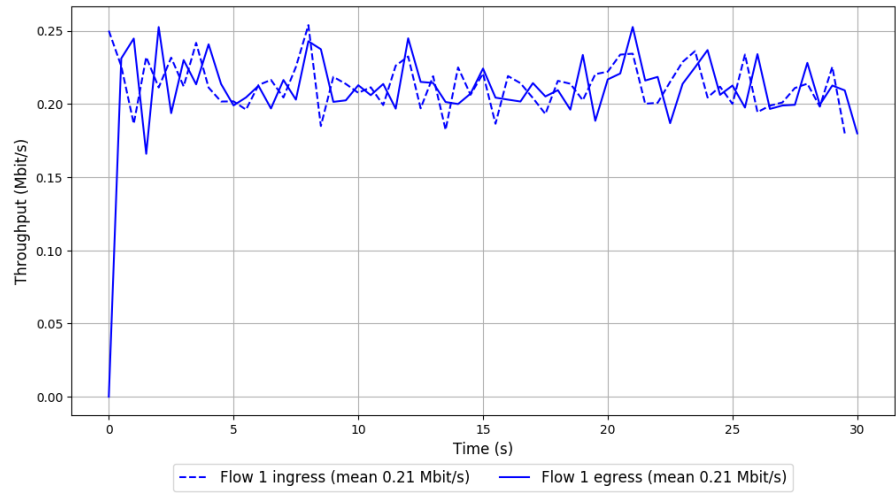


Run 2: Statistics of SCReAM

Start at: 2018-09-06 14:36:13  
End at: 2018-09-06 14:36:43  
Local clock offset: -3.168 ms  
Remote clock offset: -1.422 ms

# Below is generated by plot.py at 2018-09-06 16:19:03  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 33.570 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 33.570 ms  
Loss rate: 0.13%

## Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-06 15:00:02

End at: 2018-09-06 15:00:32

Local clock offset: -0.412 ms

Remote clock offset: -0.58 ms

# Below is generated by plot.py at 2018-09-06 16:19:03

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.359 ms

Loss rate: 0.26%

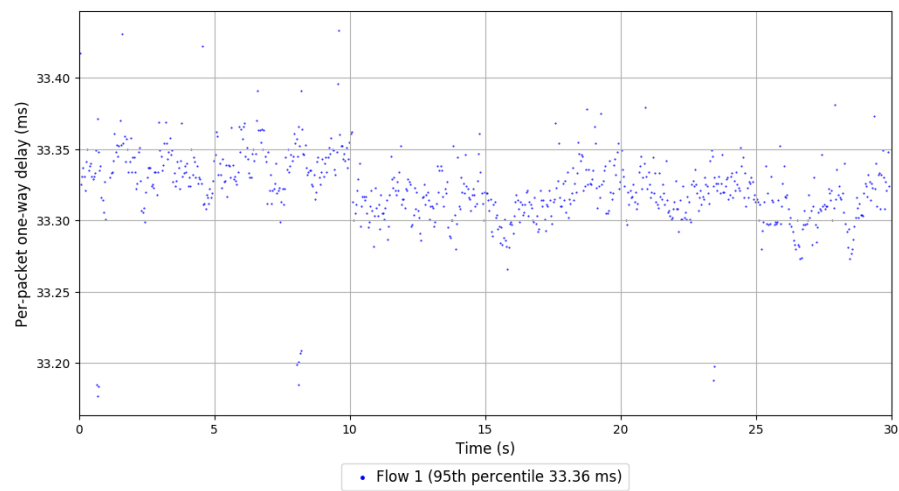
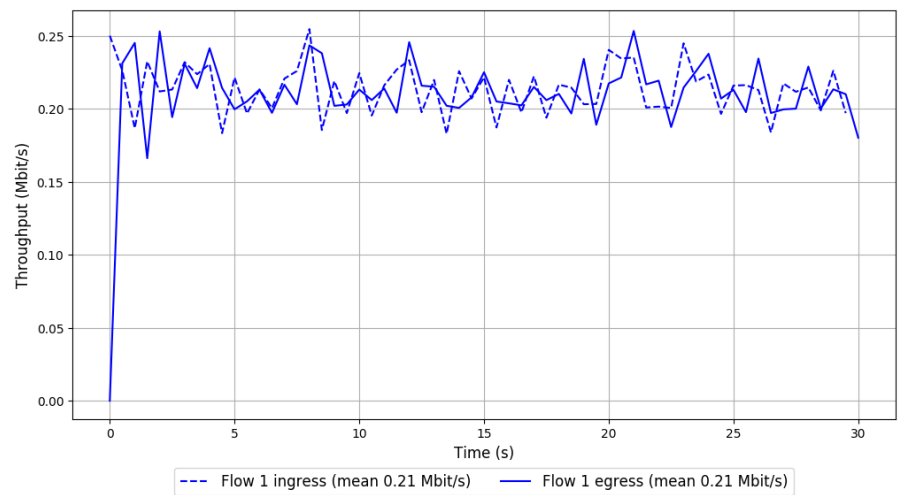
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.359 ms

Loss rate: 0.26%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-09-06 15:23:50

End at: 2018-09-06 15:24:20

Local clock offset: -1.714 ms

Remote clock offset: 0.058 ms

# Below is generated by plot.py at 2018-09-06 16:19:03

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.857 ms

Loss rate: 0.26%

-- Flow 1:

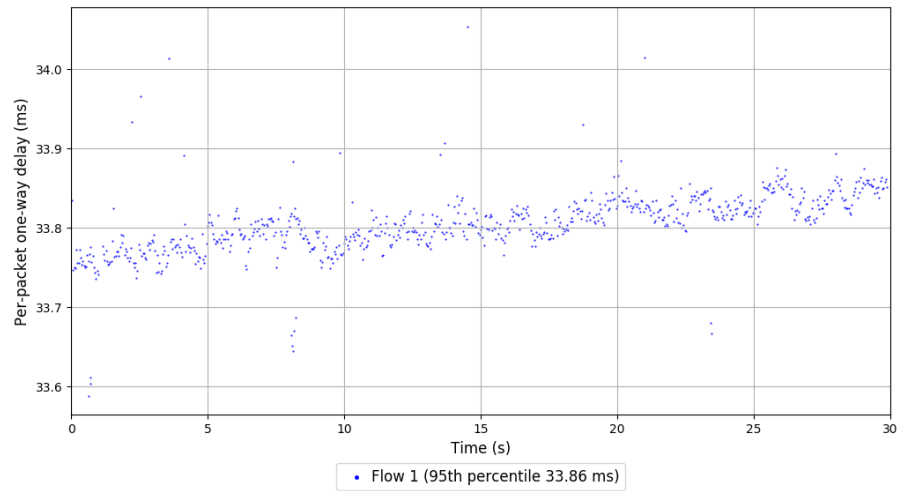
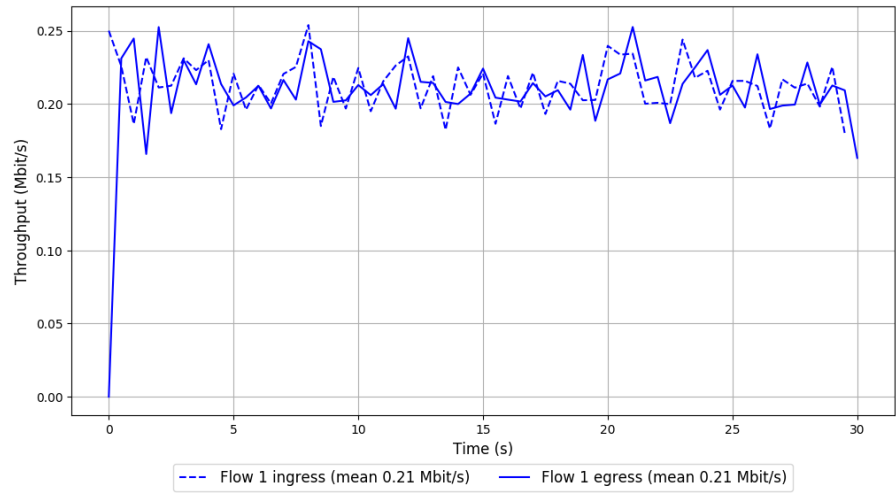
Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.857 ms

Loss rate: 0.26%



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



Run 5: Statistics of SCReAM

Start at: 2018-09-06 15:47:38

End at: 2018-09-06 15:48:08

Local clock offset: -2.765 ms

Remote clock offset: 0.493 ms

# Below is generated by plot.py at 2018-09-06 16:19:03

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.535 ms

Loss rate: 0.13%

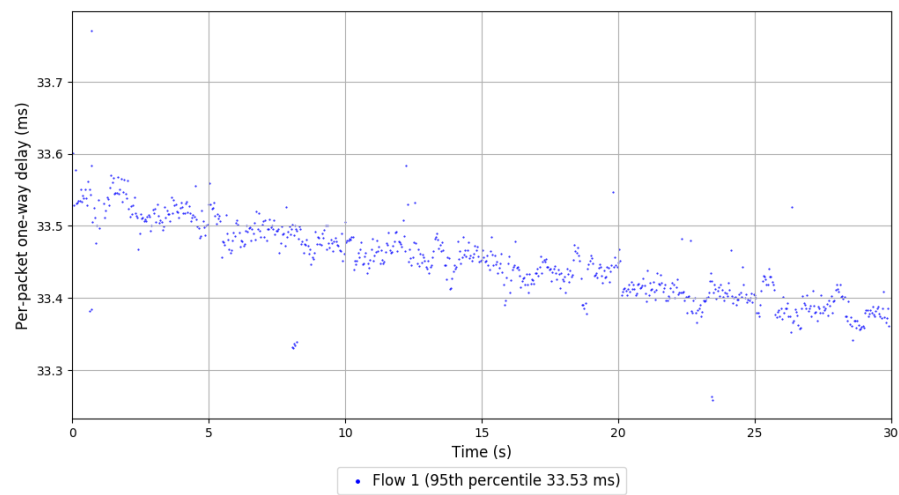
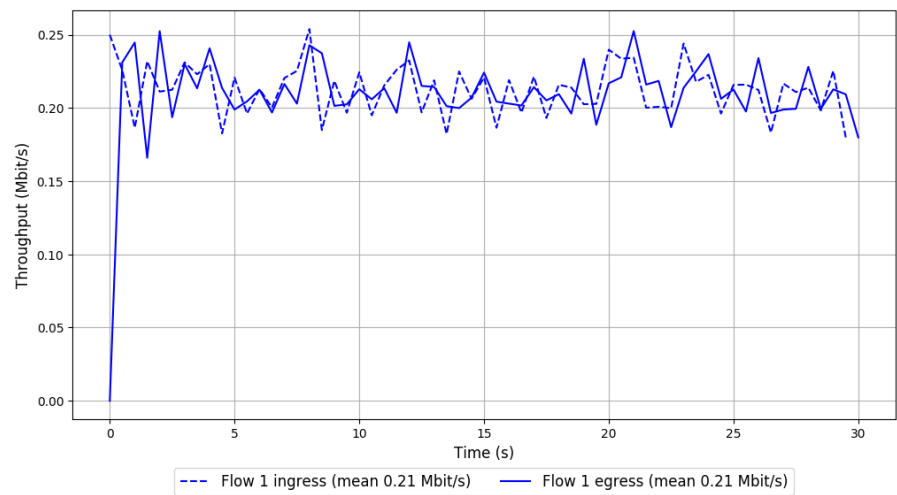
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 33.535 ms

Loss rate: 0.13%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

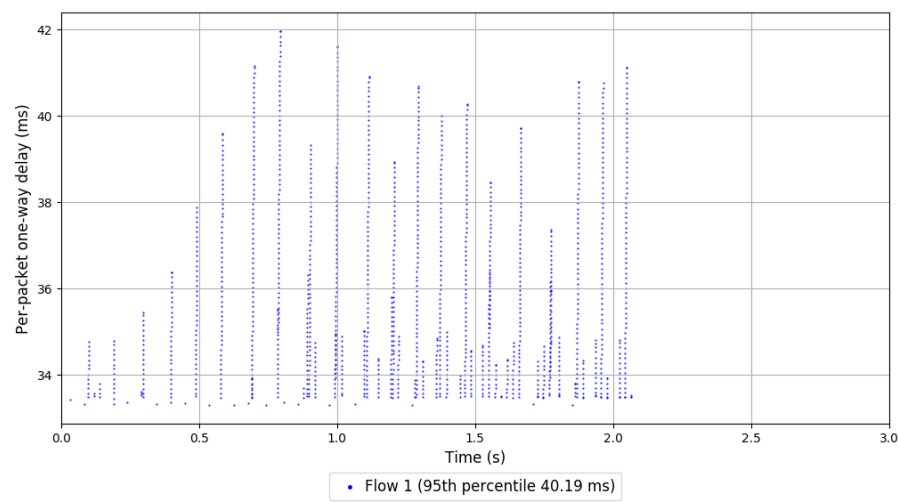
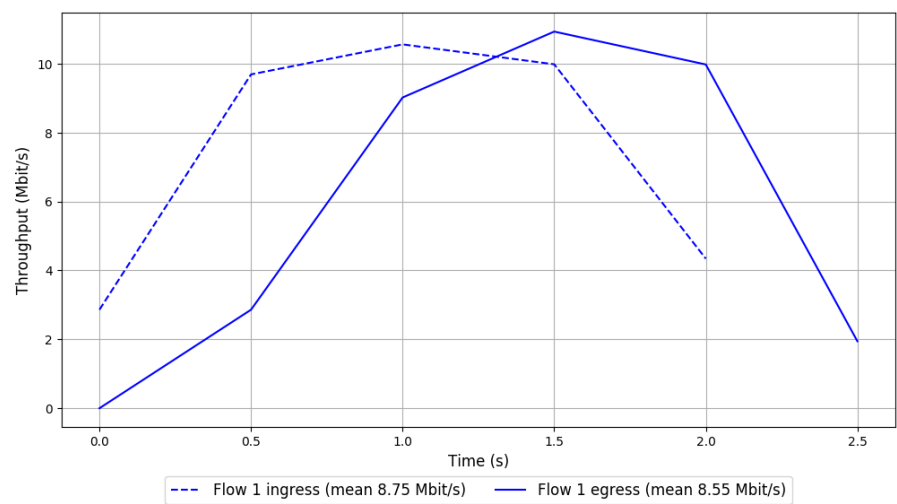
Start at: 2018-09-06 14:22:58

End at: 2018-09-06 14:23:28

Local clock offset: -1.859 ms

Remote clock offset: -1.825 ms

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

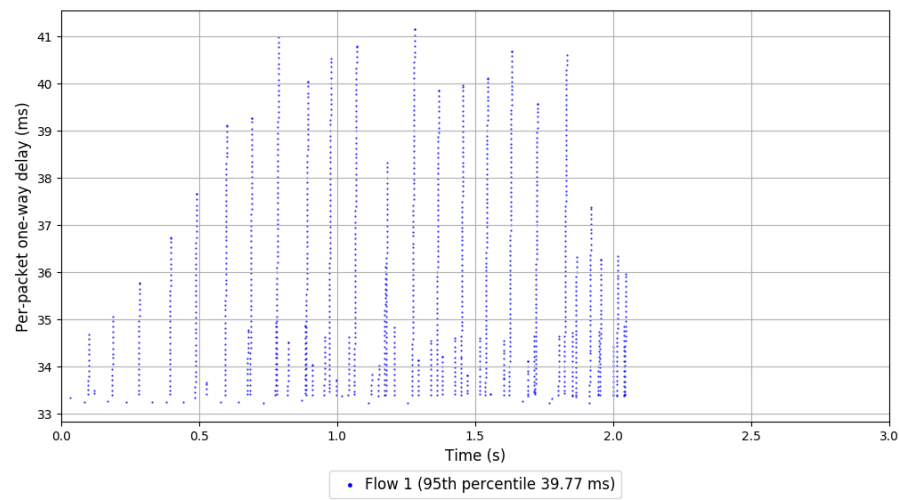
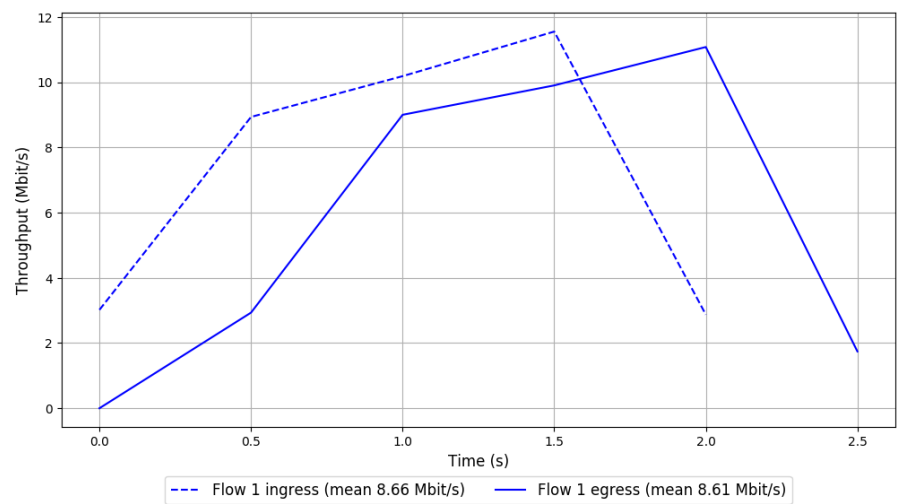
Start at: 2018-09-06 14:46:50

End at: 2018-09-06 14:47:20

Local clock offset: -3.189 ms

Remote clock offset: -1.186 ms

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-09-06 15:10:38

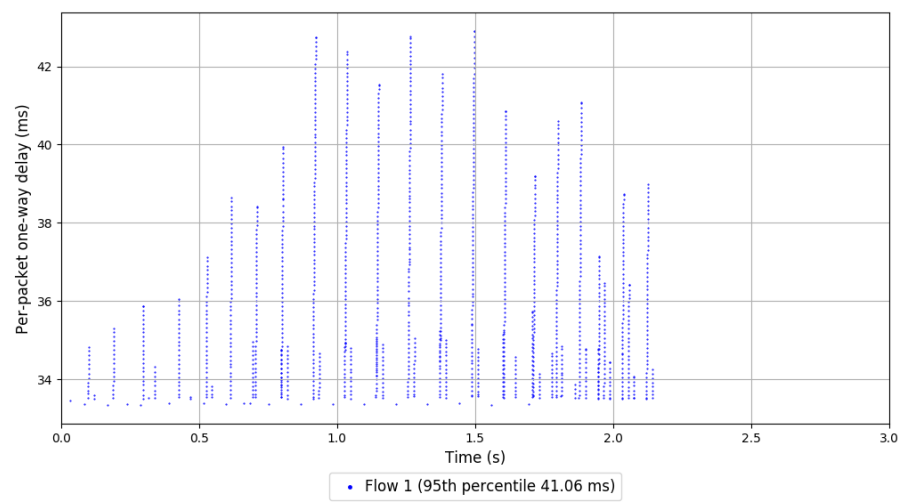
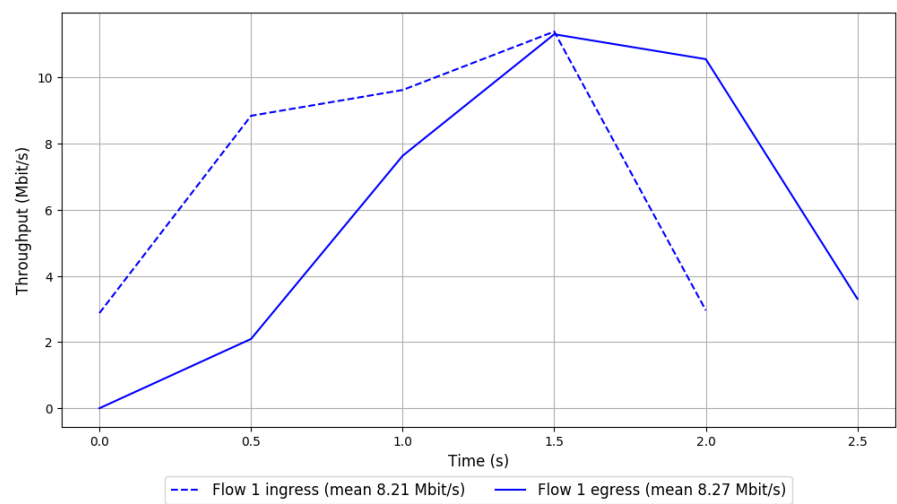
End at: 2018-09-06 15:11:08

Local clock offset: 0.321 ms

Remote clock offset: -0.283 ms



Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

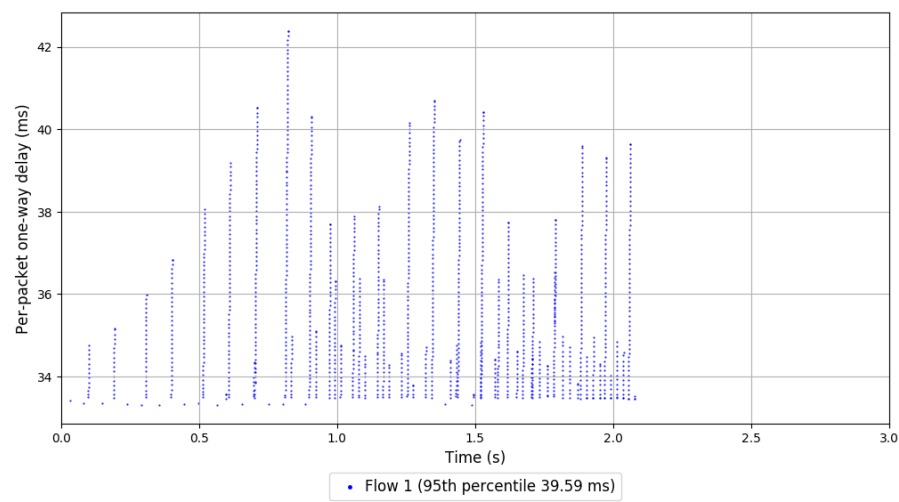
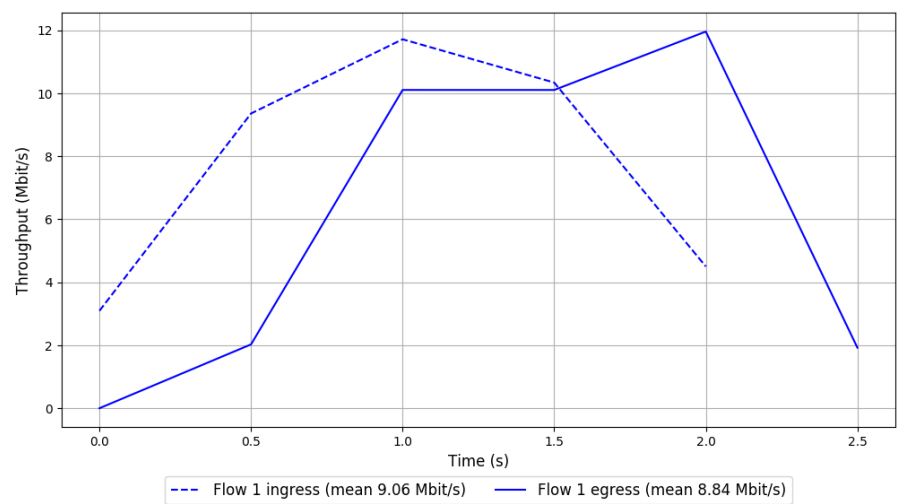
Start at: 2018-09-06 15:34:24

End at: 2018-09-06 15:34:54

Local clock offset: -3.024 ms

Remote clock offset: 0.529 ms

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

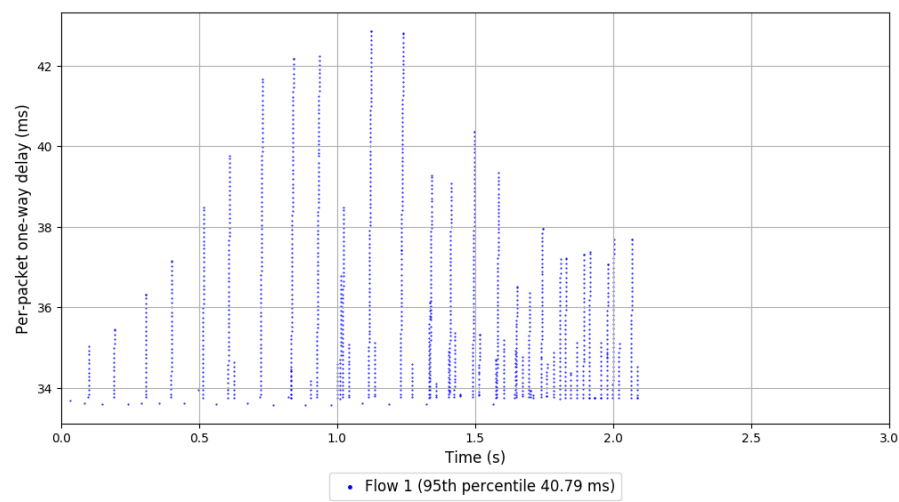
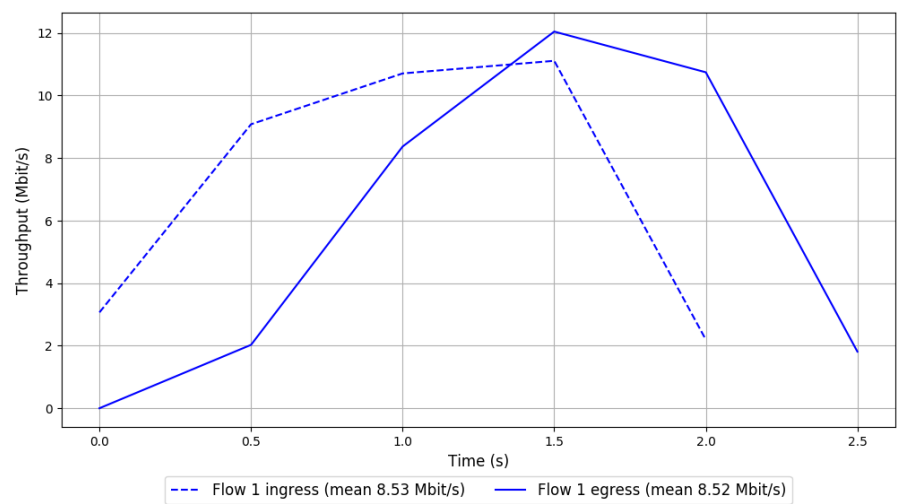
Start at: 2018-09-06 15:58:15

End at: 2018-09-06 15:58:45

Local clock offset: -0.387 ms

Remote clock offset: 0.601 ms

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-06 14:26:56

End at: 2018-09-06 14:27:26

Local clock offset: -2.349 ms

Remote clock offset: -1.719 ms

# Below is generated by plot.py at 2018-09-06 16:19:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 69.74 Mbit/s

95th percentile per-packet one-way delay: 48.118 ms

Loss rate: 0.23%

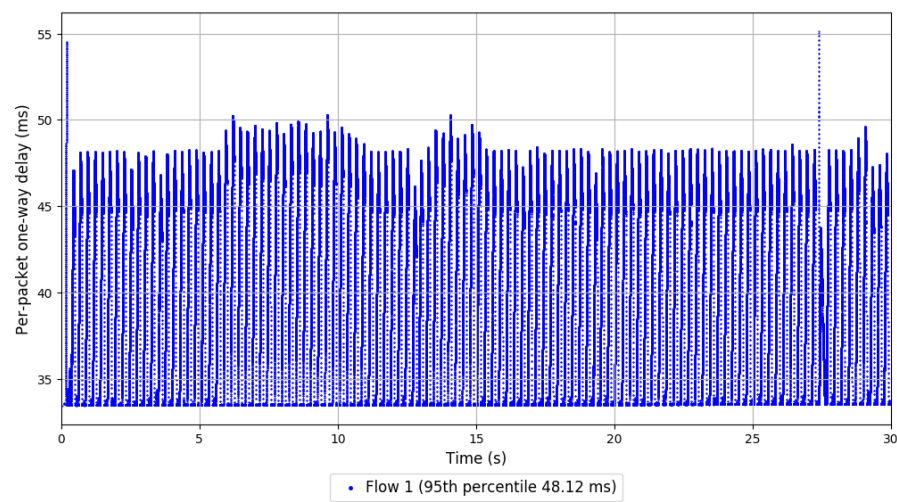
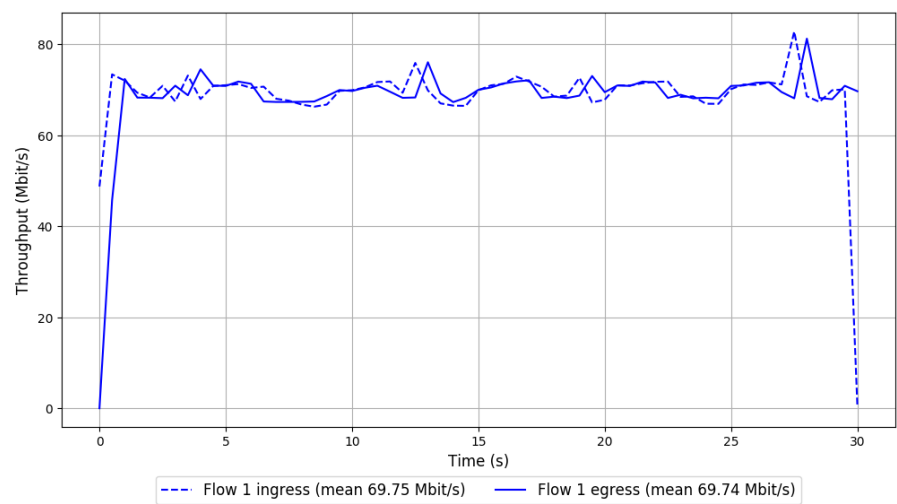
-- Flow 1:

Average throughput: 69.74 Mbit/s

95th percentile per-packet one-way delay: 48.118 ms

Loss rate: 0.23%

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



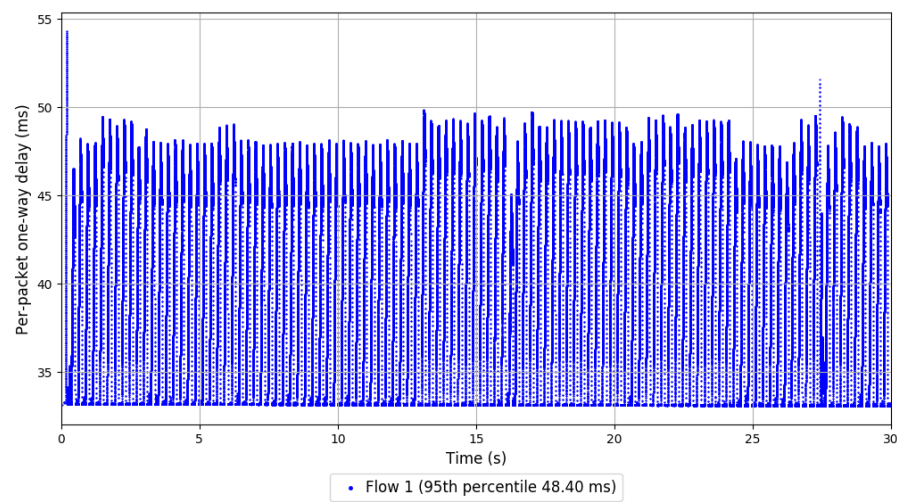
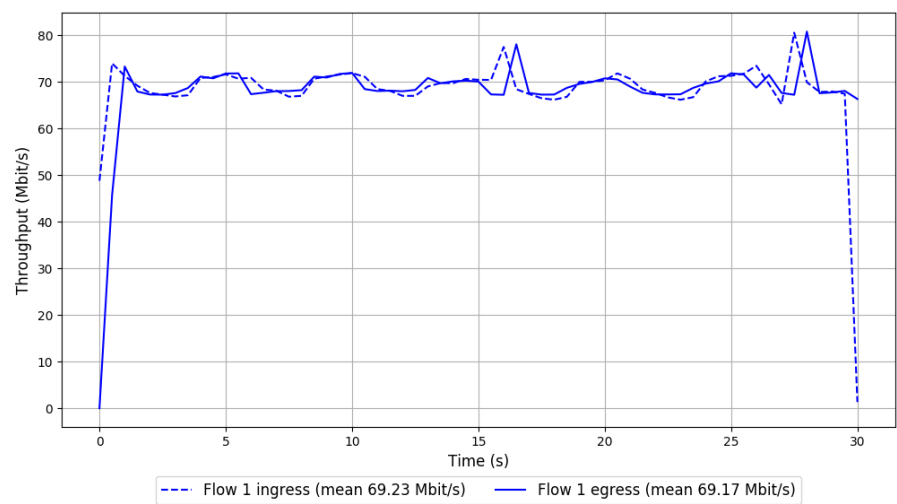
Run 2: Statistics of TaoVA-100x

Start at: 2018-09-06 14:50:48  
End at: 2018-09-06 14:51:18  
Local clock offset: -1.835 ms  
Remote clock offset: -0.699 ms

# Below is generated by plot.py at 2018-09-06 16:19:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 69.17 Mbit/s  
95th percentile per-packet one-way delay: 48.404 ms  
Loss rate: 0.30%  
-- Flow 1:  
Average throughput: 69.17 Mbit/s  
95th percentile per-packet one-way delay: 48.404 ms  
Loss rate: 0.30%



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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-06 15:14:34

End at: 2018-09-06 15:15:04

Local clock offset: 0.475 ms

Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-09-06 16:19:53

# Datalink statistics

-- Total of 1 flow:

Average throughput: 69.76 Mbit/s

95th percentile per-packet one-way delay: 48.105 ms

Loss rate: 0.38%

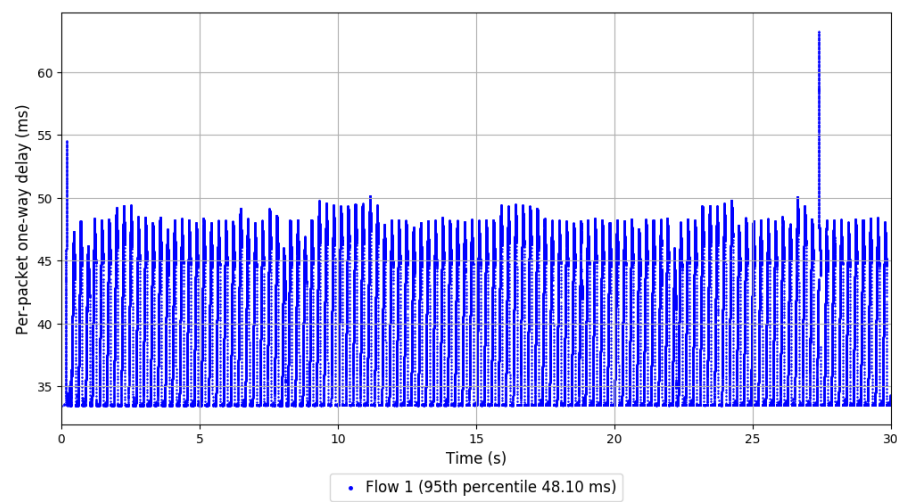
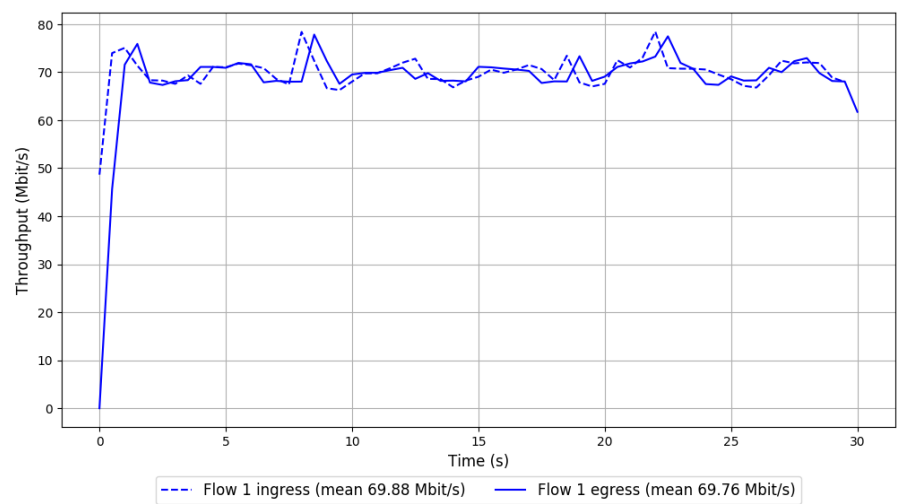
-- Flow 1:

Average throughput: 69.76 Mbit/s

95th percentile per-packet one-way delay: 48.105 ms

Loss rate: 0.38%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-06 15:38:21

End at: 2018-09-06 15:38:51

Local clock offset: -3.268 ms

Remote clock offset: 0.335 ms

# Below is generated by plot.py at 2018-09-06 16:19:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 69.54 Mbit/s

95th percentile per-packet one-way delay: 48.881 ms

Loss rate: 0.32%

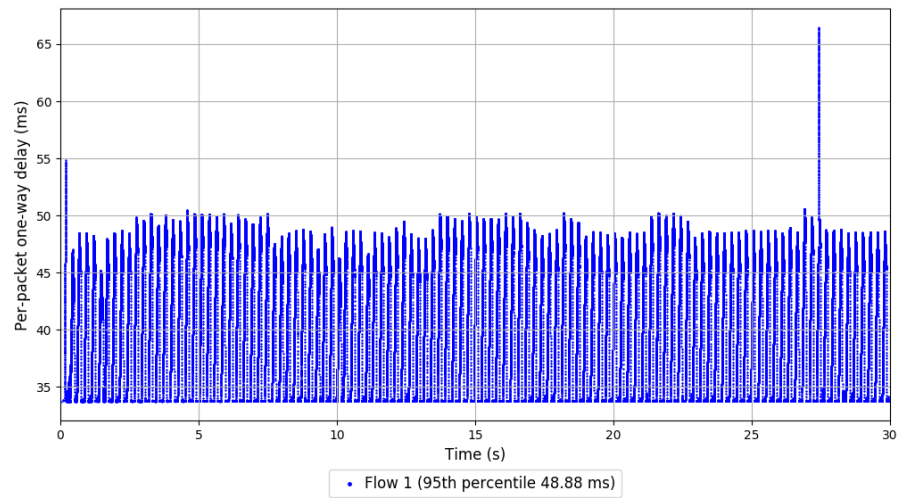
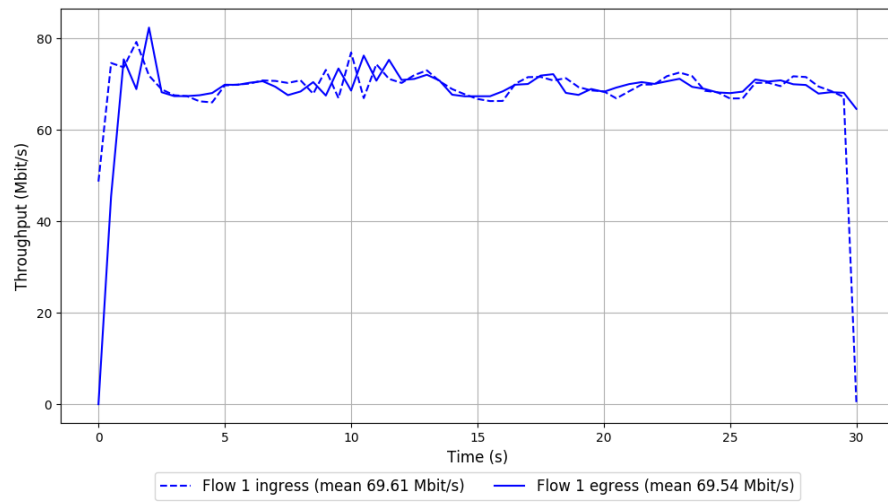
-- Flow 1:

Average throughput: 69.54 Mbit/s

95th percentile per-packet one-way delay: 48.881 ms

Loss rate: 0.32%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-06 16:02:12

End at: 2018-09-06 16:02:42

Local clock offset: -0.016 ms

Remote clock offset: 0.888 ms

# Below is generated by plot.py at 2018-09-06 16:19:59

# Datalink statistics

-- Total of 1 flow:

Average throughput: 69.74 Mbit/s

95th percentile per-packet one-way delay: 47.988 ms

Loss rate: 0.14%

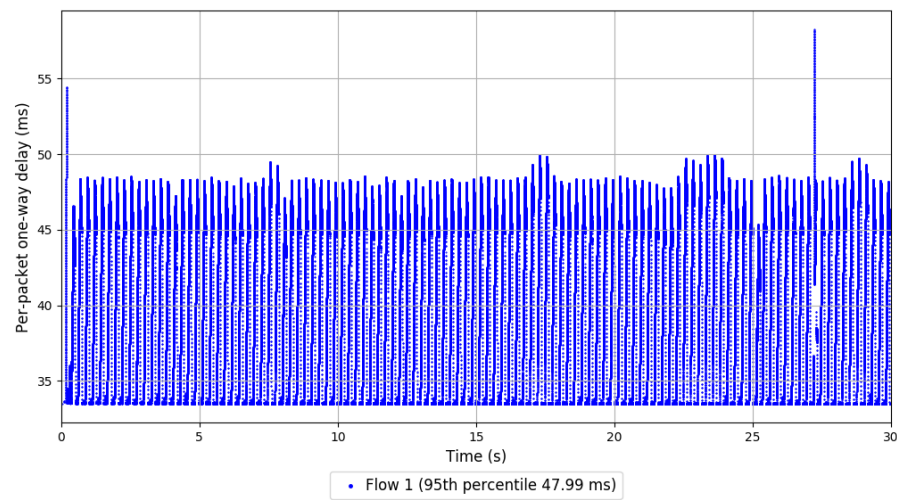
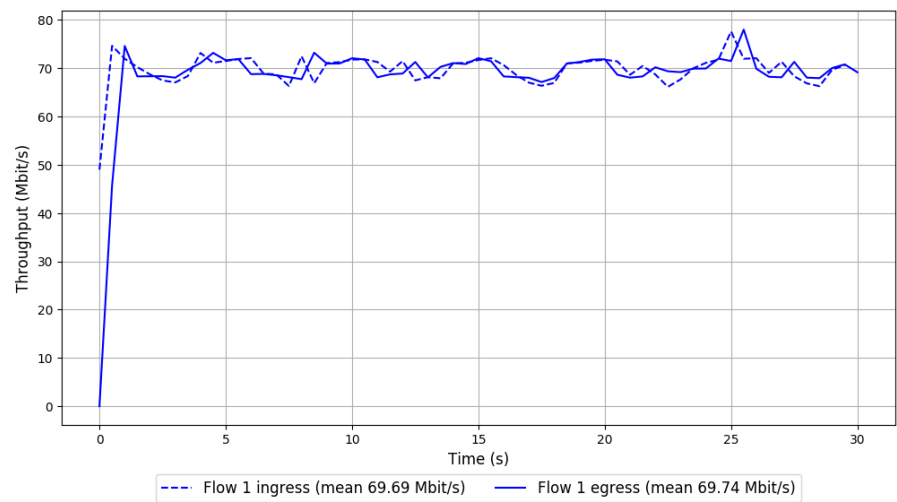
-- Flow 1:

Average throughput: 69.74 Mbit/s

95th percentile per-packet one-way delay: 47.988 ms

Loss rate: 0.14%

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



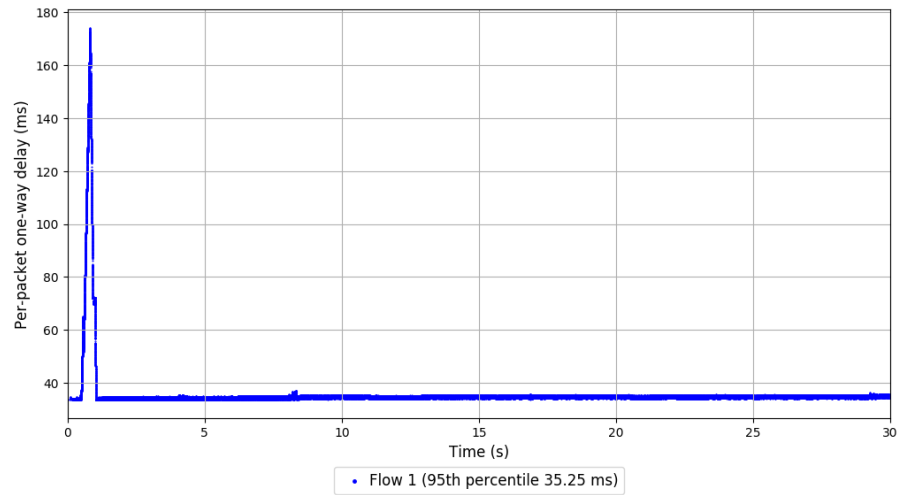
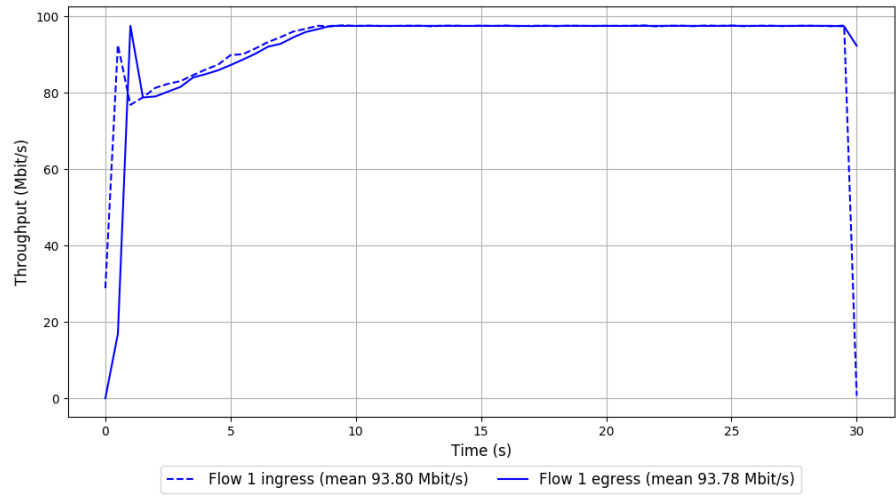
Run 1: Statistics of TCP Vegas

Start at: 2018-09-06 14:17:36  
End at: 2018-09-06 14:18:06  
Local clock offset: -0.624 ms  
Remote clock offset: -2.058 ms

# Below is generated by plot.py at 2018-09-06 16:19:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.78 Mbit/s  
95th percentile per-packet one-way delay: 35.250 ms  
Loss rate: 0.23%  
-- Flow 1:  
Average throughput: 93.78 Mbit/s  
95th percentile per-packet one-way delay: 35.250 ms  
Loss rate: 0.23%



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

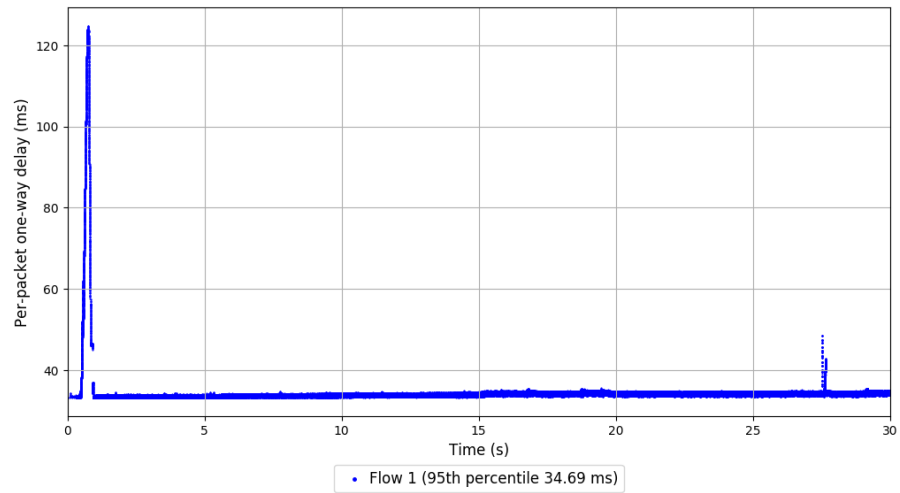
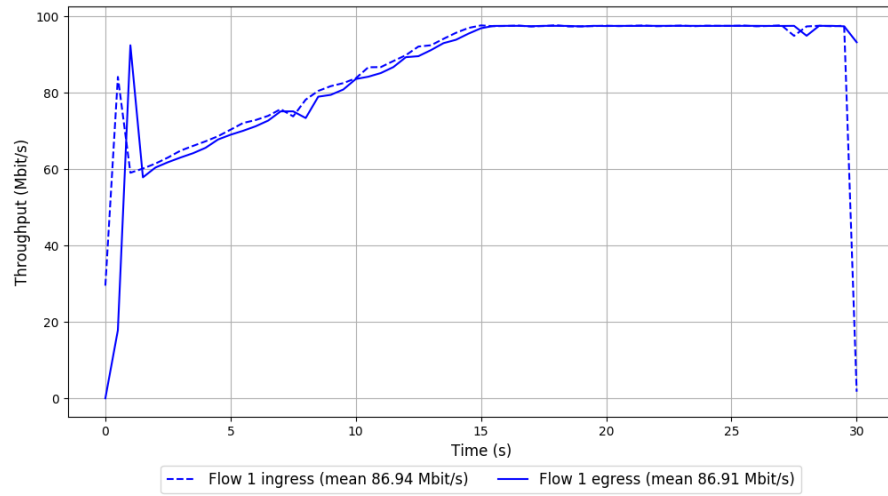


Run 2: Statistics of TCP Vegas

Start at: 2018-09-06 14:41:29  
End at: 2018-09-06 14:41:59  
Local clock offset: -3.596 ms  
Remote clock offset: -1.051 ms

# Below is generated by plot.py at 2018-09-06 16:19:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 86.91 Mbit/s  
95th percentile per-packet one-way delay: 34.685 ms  
Loss rate: 0.25%  
-- Flow 1:  
Average throughput: 86.91 Mbit/s  
95th percentile per-packet one-way delay: 34.685 ms  
Loss rate: 0.25%

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



Run 3: Statistics of TCP Vegas

Start at: 2018-09-06 15:05:18

End at: 2018-09-06 15:05:48

Local clock offset: 0.081 ms

Remote clock offset: -0.46 ms

# Below is generated by plot.py at 2018-09-06 16:19:59

# Datalink statistics

-- Total of 1 flow:

Average throughput: 57.79 Mbit/s

95th percentile per-packet one-way delay: 34.457 ms

Loss rate: 0.37%

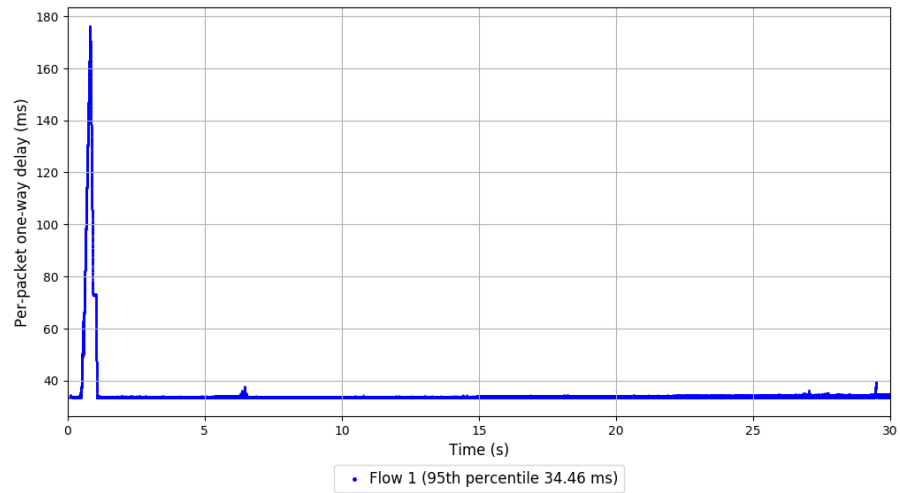
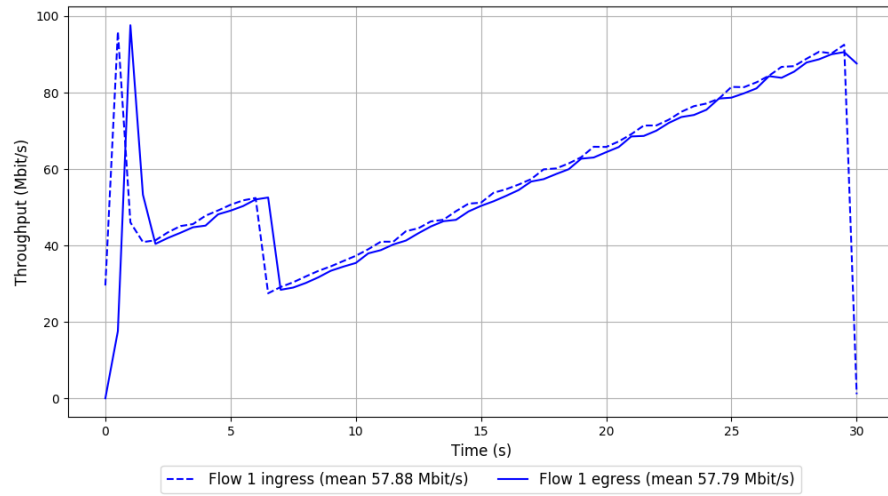
-- Flow 1:

Average throughput: 57.79 Mbit/s

95th percentile per-packet one-way delay: 34.457 ms

Loss rate: 0.37%

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



Run 4: Statistics of TCP Vegas

Start at: 2018-09-06 15:29:05

End at: 2018-09-06 15:29:35

Local clock offset: -2.464 ms

Remote clock offset: 0.328 ms

# Below is generated by plot.py at 2018-09-06 16:20:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.06 Mbit/s

95th percentile per-packet one-way delay: 35.572 ms

Loss rate: 0.24%

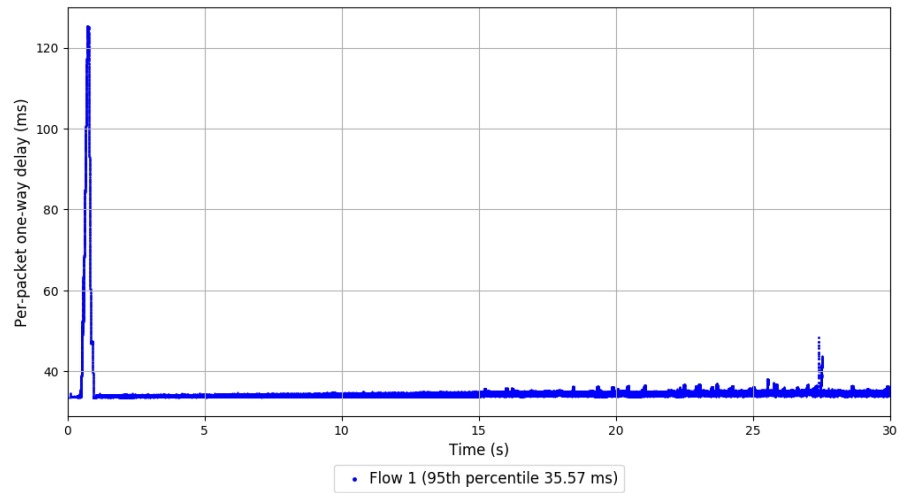
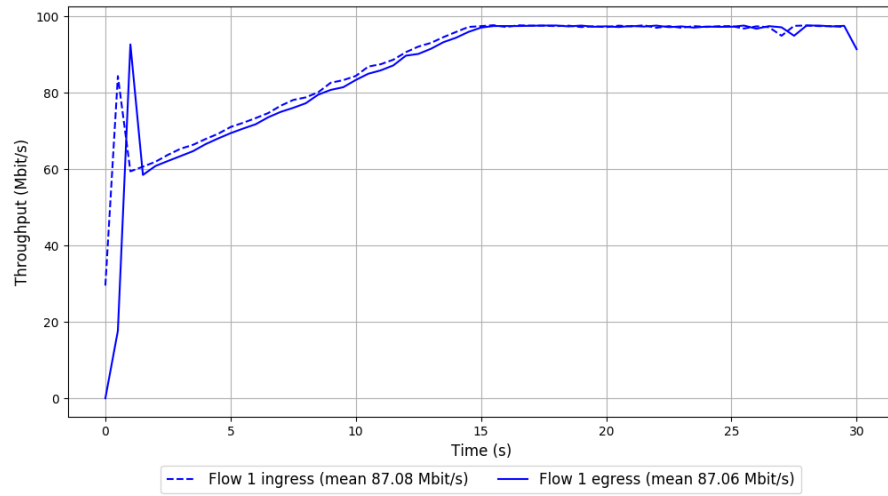
-- Flow 1:

Average throughput: 87.06 Mbit/s

95th percentile per-packet one-way delay: 35.572 ms

Loss rate: 0.24%

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



Run 5: Statistics of TCP Vegas

Start at: 2018-09-06 15:52:55

End at: 2018-09-06 15:53:25

Local clock offset: -1.351 ms

Remote clock offset: 0.747 ms

# Below is generated by plot.py at 2018-09-06 16:20:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 76.33 Mbit/s

95th percentile per-packet one-way delay: 34.635 ms

Loss rate: 0.29%

-- Flow 1:

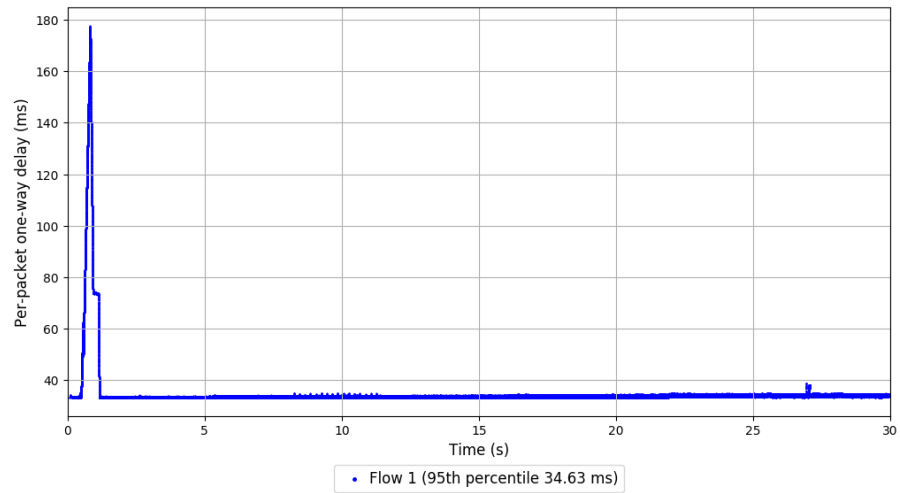
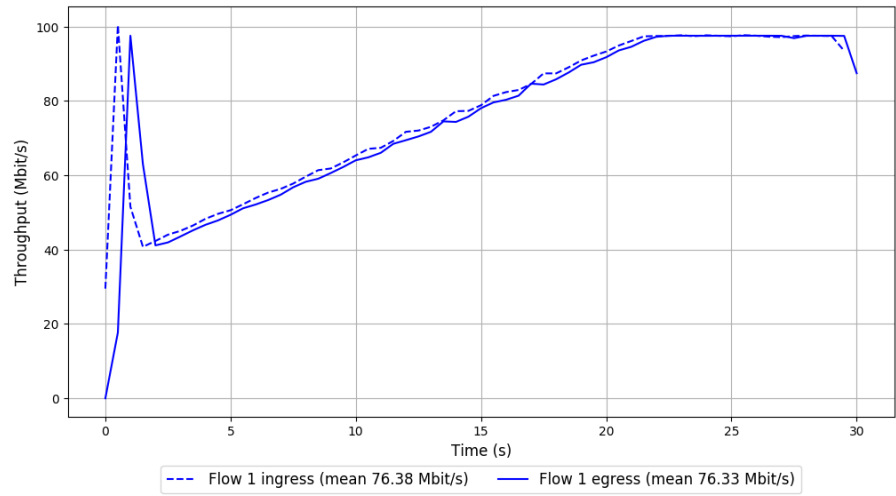
Average throughput: 76.33 Mbit/s

95th percentile per-packet one-way delay: 34.635 ms

Loss rate: 0.29%



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

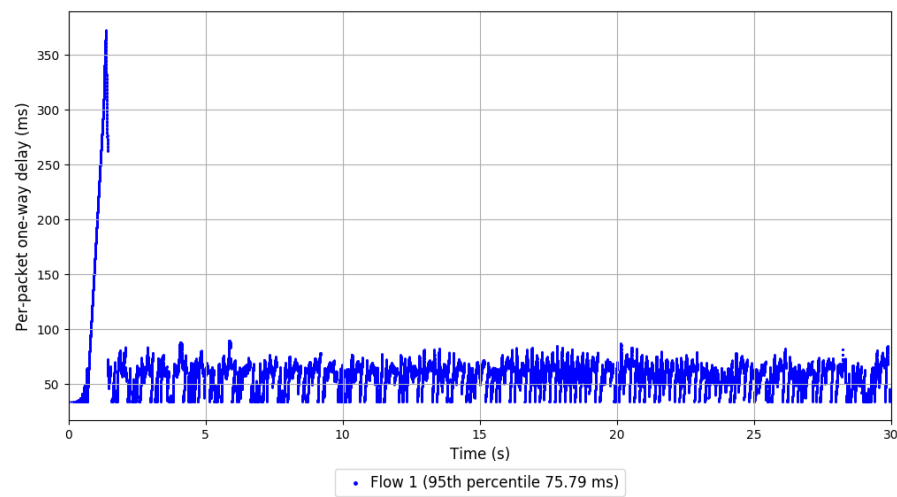
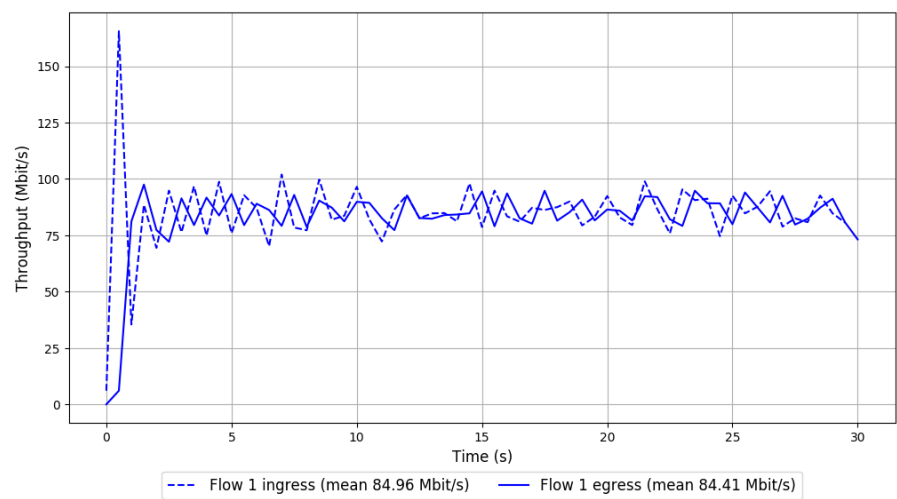


Run 1: Statistics of Verus

Start at: 2018-09-06 14:20:17  
End at: 2018-09-06 14:20:47  
Local clock offset: -1.247 ms  
Remote clock offset: -1.828 ms

# Below is generated by plot.py at 2018-09-06 16:20:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 84.41 Mbit/s  
95th percentile per-packet one-way delay: 75.790 ms  
Loss rate: 0.84%  
-- Flow 1:  
Average throughput: 84.41 Mbit/s  
95th percentile per-packet one-way delay: 75.790 ms  
Loss rate: 0.84%

Run 1: Report of Verus — Data Link

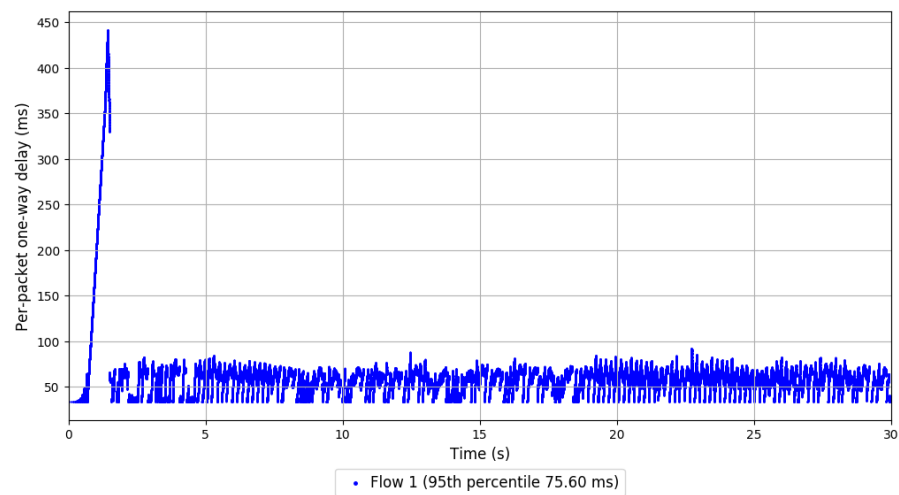
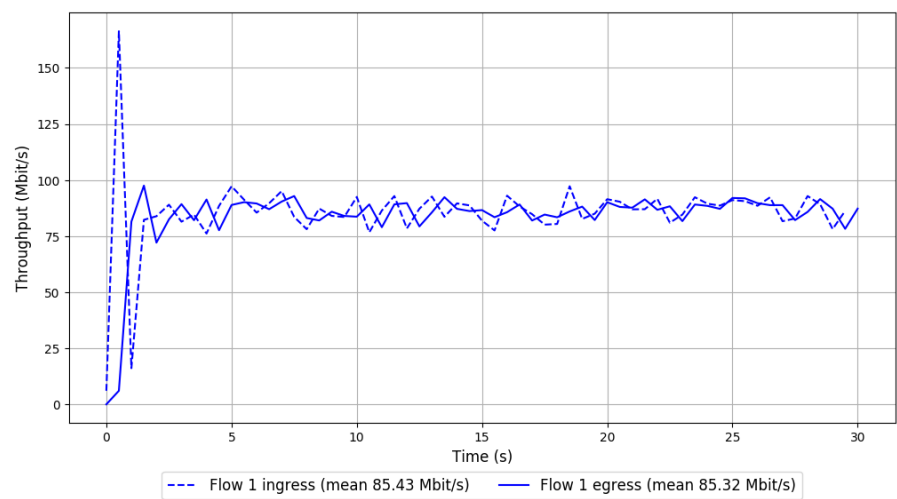


Run 2: Statistics of Verus

Start at: 2018-09-06 14:44:10  
End at: 2018-09-06 14:44:40  
Local clock offset: -3.633 ms  
Remote clock offset: -1.119 ms

# Below is generated by plot.py at 2018-09-06 16:20:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 85.32 Mbit/s  
95th percentile per-packet one-way delay: 75.602 ms  
Loss rate: 0.34%  
-- Flow 1:  
Average throughput: 85.32 Mbit/s  
95th percentile per-packet one-way delay: 75.602 ms  
Loss rate: 0.34%

Run 2: Report of Verus — Data Link

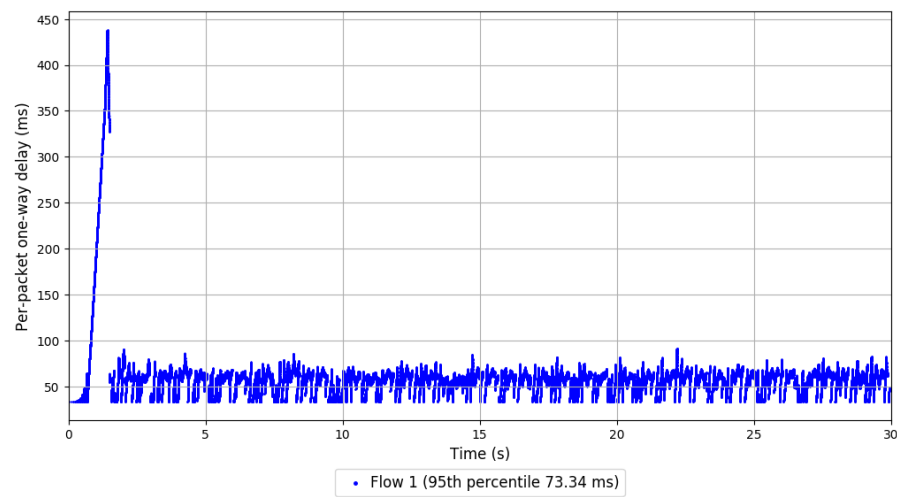
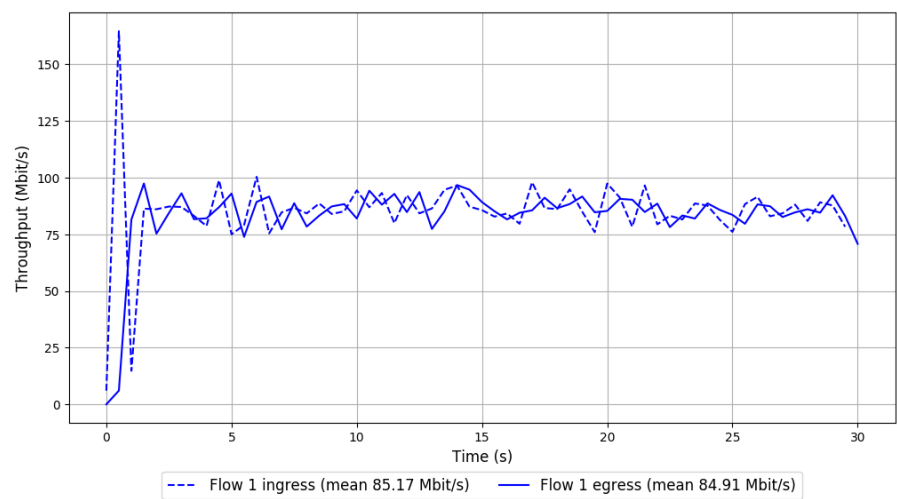


Run 3: Statistics of Verus

Start at: 2018-09-06 15:07:57  
End at: 2018-09-06 15:08:27  
Local clock offset: 0.208 ms  
Remote clock offset: -0.322 ms

# Below is generated by plot.py at 2018-09-06 16:20:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 84.91 Mbit/s  
95th percentile per-packet one-way delay: 73.340 ms  
Loss rate: 0.50%  
-- Flow 1:  
Average throughput: 84.91 Mbit/s  
95th percentile per-packet one-way delay: 73.340 ms  
Loss rate: 0.50%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-06 15:31:45

End at: 2018-09-06 15:32:15

Local clock offset: -2.691 ms

Remote clock offset: 0.285 ms

# Below is generated by plot.py at 2018-09-06 16:20:57

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.58 Mbit/s

95th percentile per-packet one-way delay: 75.707 ms

Loss rate: 0.27%

-- Flow 1:

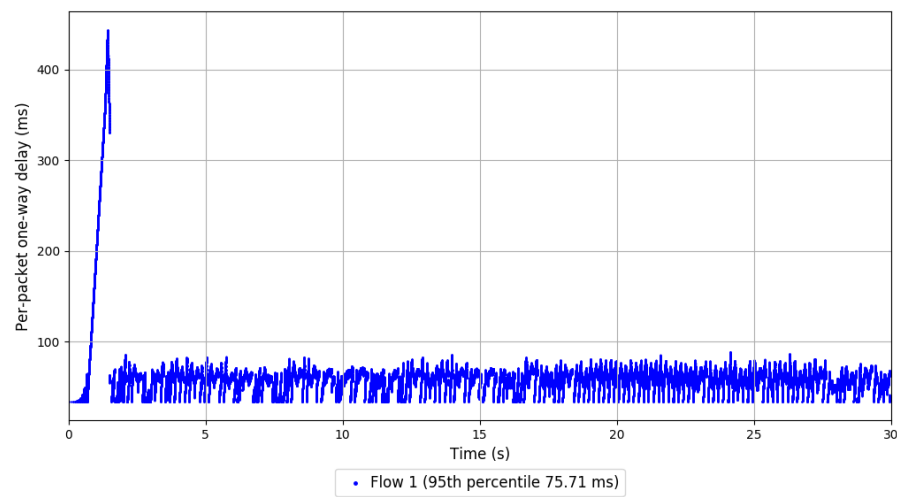
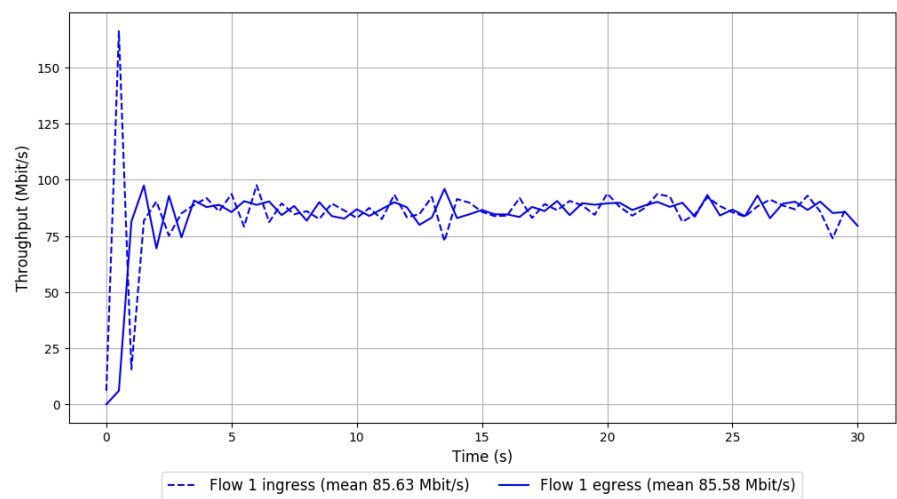
Average throughput: 85.58 Mbit/s

95th percentile per-packet one-way delay: 75.707 ms

Loss rate: 0.27%



Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-06 15:55:34

End at: 2018-09-06 15:56:04

Local clock offset: -0.755 ms

Remote clock offset: 0.585 ms

# Below is generated by plot.py at 2018-09-06 16:20:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 84.32 Mbit/s

95th percentile per-packet one-way delay: 75.350 ms

Loss rate: 0.45%

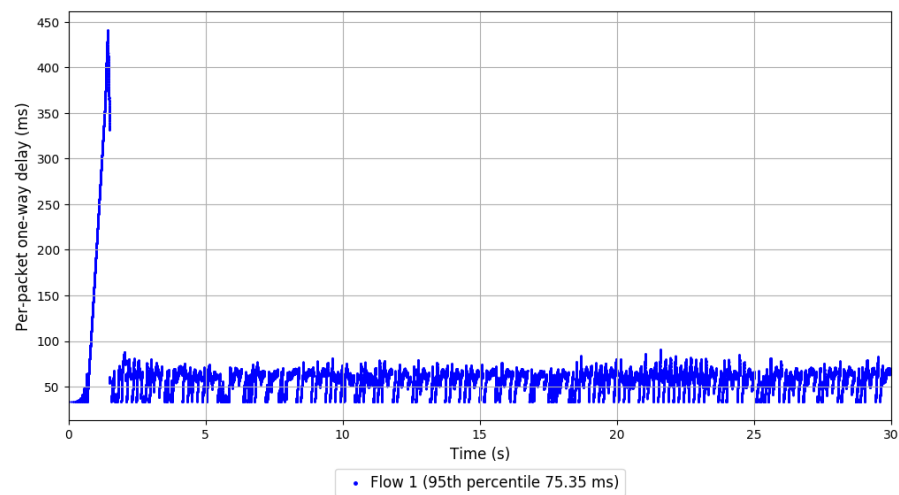
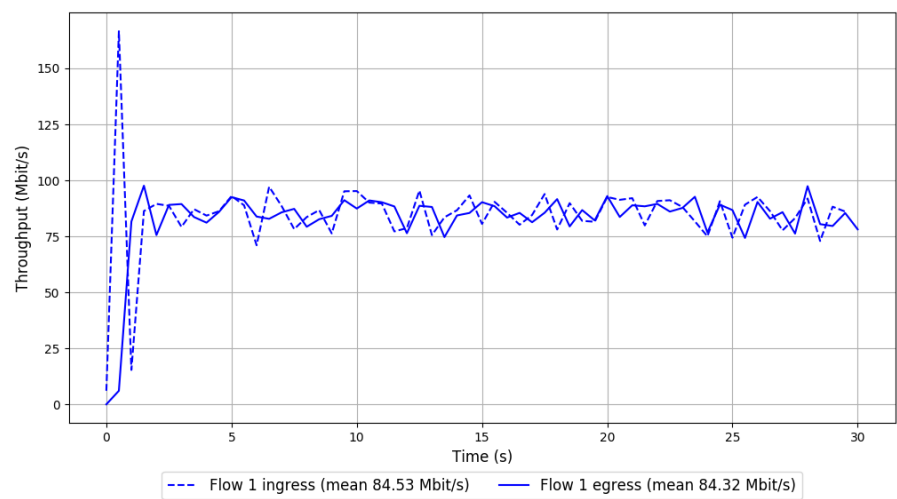
-- Flow 1:

Average throughput: 84.32 Mbit/s

95th percentile per-packet one-way delay: 75.350 ms

Loss rate: 0.45%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-06 14:18:56

End at: 2018-09-06 14:19:26

Local clock offset: -0.981 ms

Remote clock offset: -2.035 ms

# Below is generated by plot.py at 2018-09-06 16:21:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.25 Mbit/s

95th percentile per-packet one-way delay: 35.010 ms

Loss rate: 0.23%

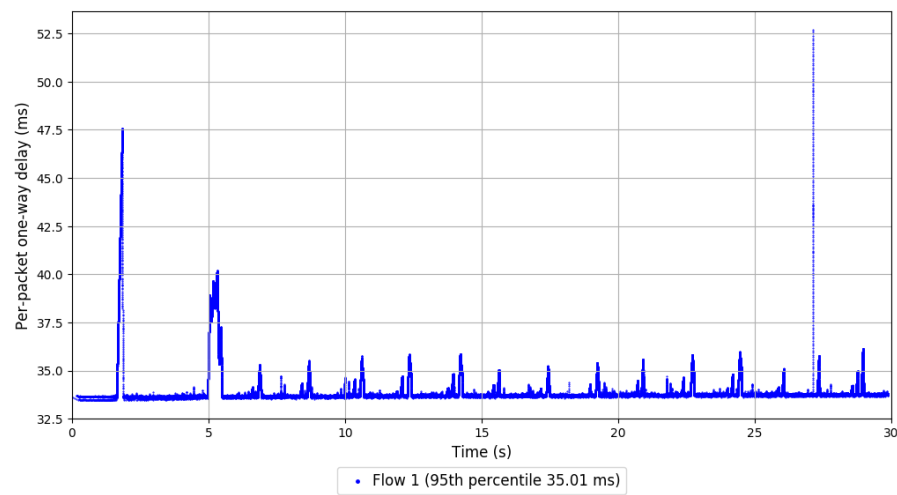
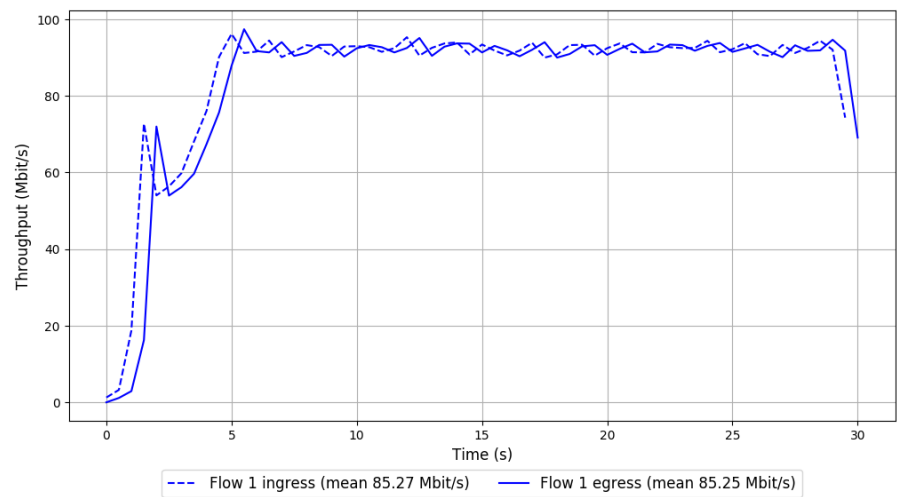
-- Flow 1:

Average throughput: 85.25 Mbit/s

95th percentile per-packet one-way delay: 35.010 ms

Loss rate: 0.23%

Run 1: Report of PCC-Vivace — Data Link

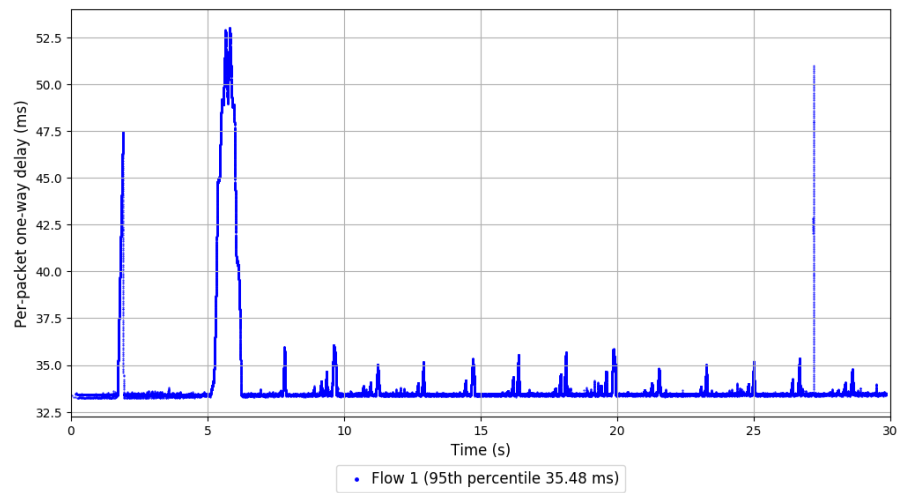
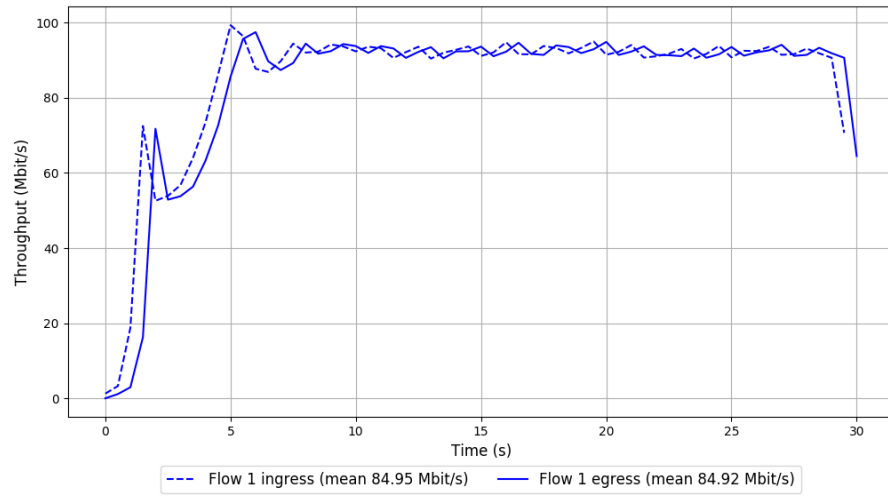


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-06 14:42:49  
End at: 2018-09-06 14:43:19  
Local clock offset: -3.66 ms  
Remote clock offset: -1.125 ms

# Below is generated by plot.py at 2018-09-06 16:21:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 84.92 Mbit/s  
95th percentile per-packet one-way delay: 35.479 ms  
Loss rate: 0.25%  
-- Flow 1:  
Average throughput: 84.92 Mbit/s  
95th percentile per-packet one-way delay: 35.479 ms  
Loss rate: 0.25%

## Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-06 15:06:37

End at: 2018-09-06 15:07:07

Local clock offset: 0.069 ms

Remote clock offset: -0.527 ms

# Below is generated by plot.py at 2018-09-06 16:21:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 84.86 Mbit/s

95th percentile per-packet one-way delay: 36.366 ms

Loss rate: 0.24%

-- Flow 1:

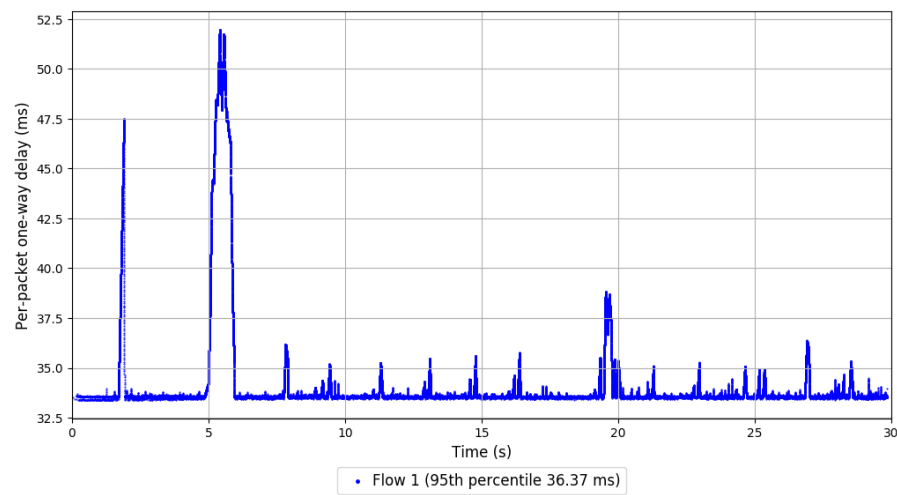
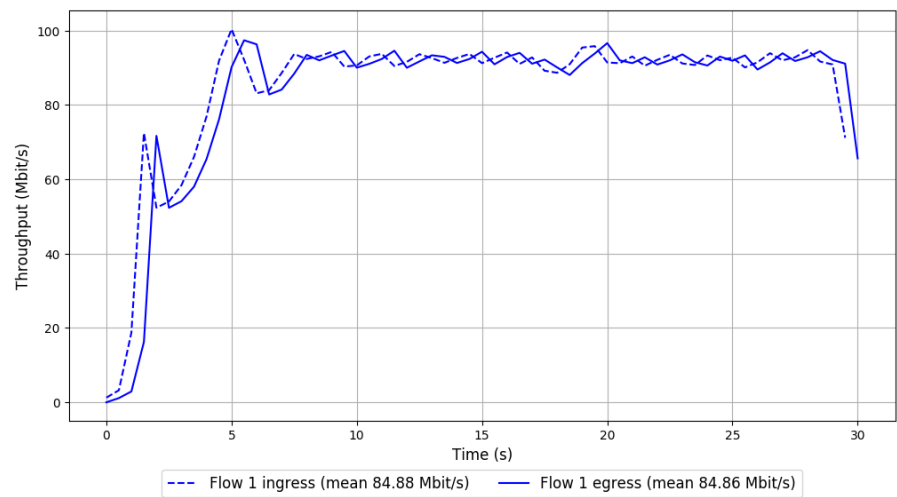
Average throughput: 84.86 Mbit/s

95th percentile per-packet one-way delay: 36.366 ms

Loss rate: 0.24%



Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-06 15:30:24

End at: 2018-09-06 15:30:54

Local clock offset: -2.651 ms

Remote clock offset: 0.15 ms

# Below is generated by plot.py at 2018-09-06 16:21:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.31 Mbit/s

95th percentile per-packet one-way delay: 35.099 ms

Loss rate: 0.22%

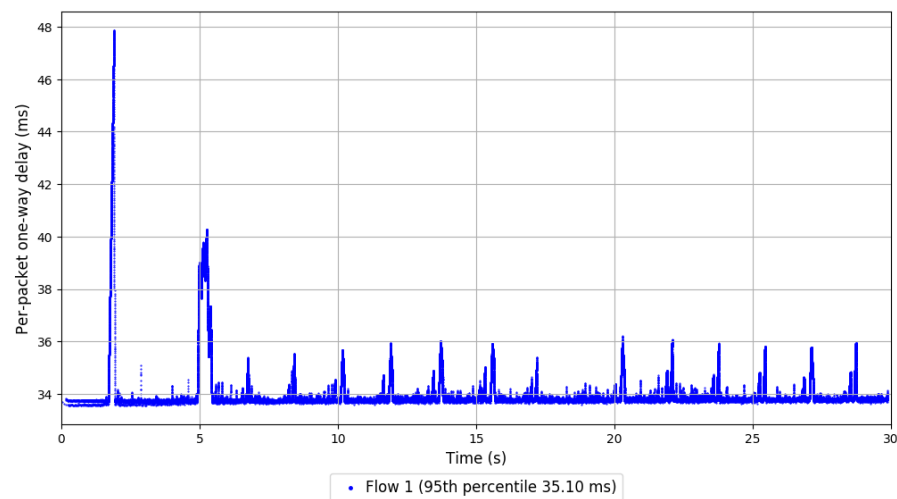
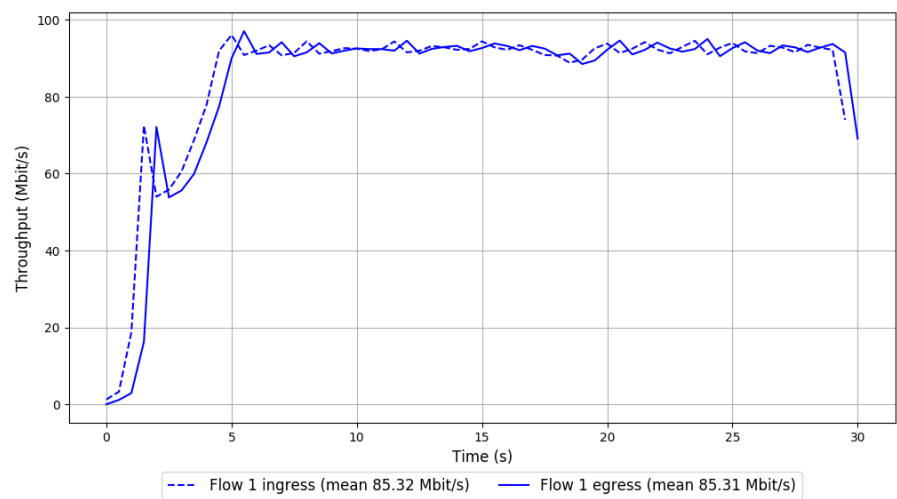
-- Flow 1:

Average throughput: 85.31 Mbit/s

95th percentile per-packet one-way delay: 35.099 ms

Loss rate: 0.22%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-06 15:54:13

End at: 2018-09-06 15:54:43

Local clock offset: -0.984 ms

Remote clock offset: 0.551 ms

# Below is generated by plot.py at 2018-09-06 16:21:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.40 Mbit/s

95th percentile per-packet one-way delay: 34.781 ms

Loss rate: 0.22%

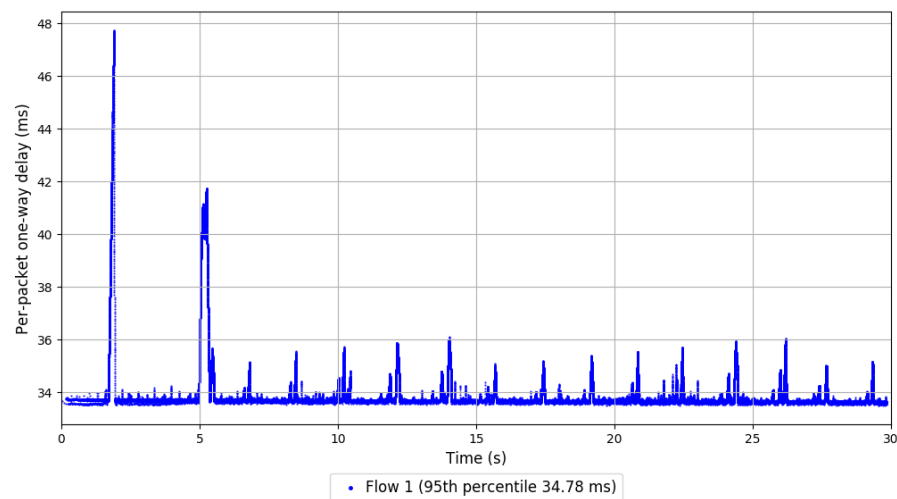
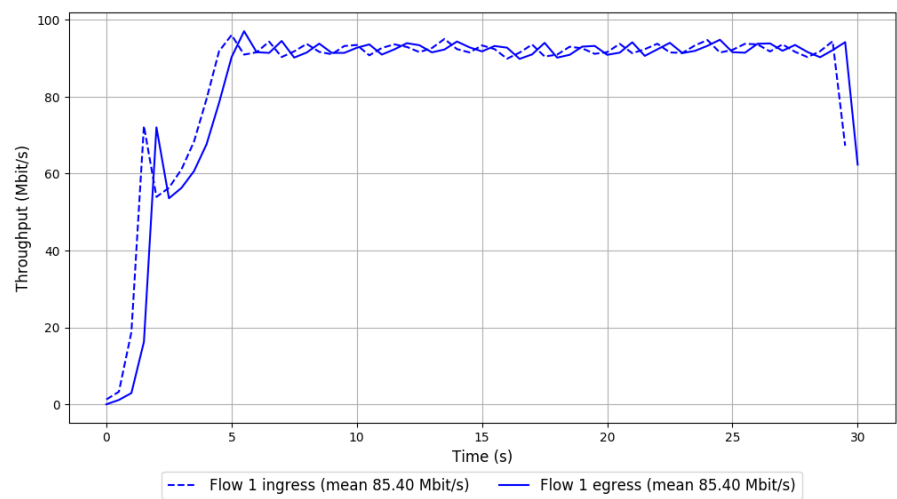
-- Flow 1:

Average throughput: 85.40 Mbit/s

95th percentile per-packet one-way delay: 34.781 ms

Loss rate: 0.22%

Run 5: Report of PCC-Vivace — Data Link

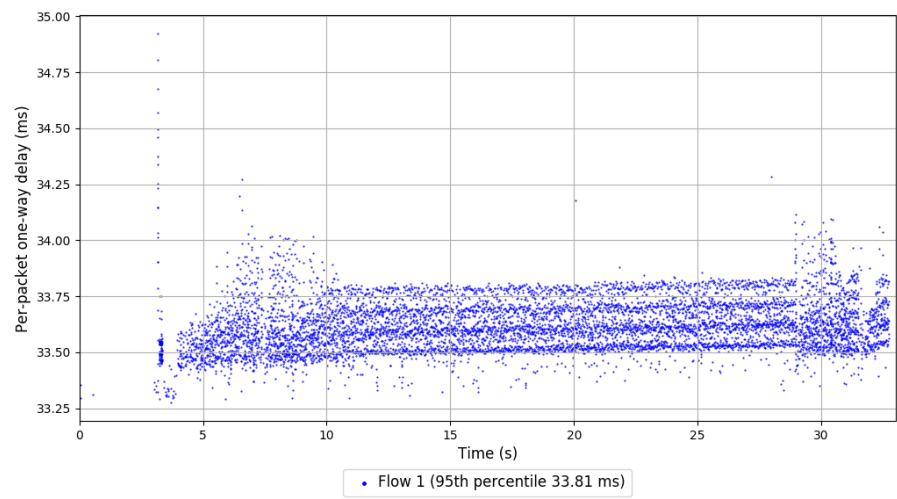
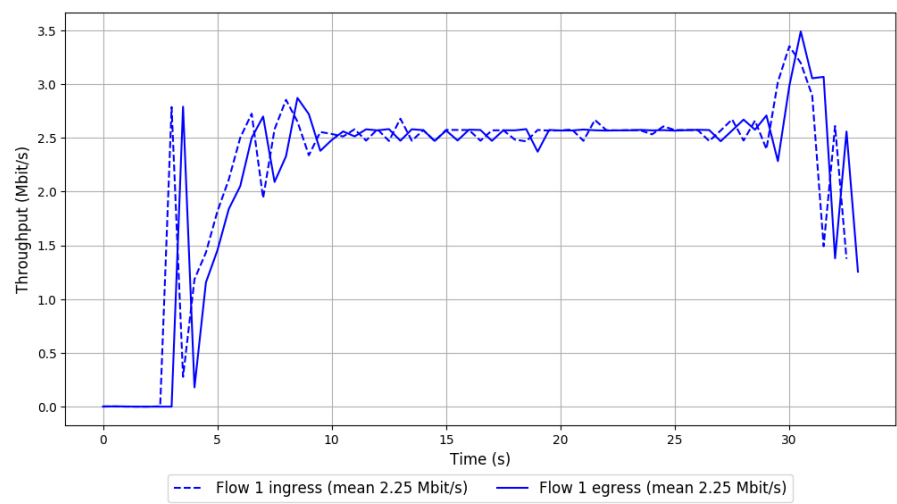


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-06 14:30:57
End at: 2018-09-06 14:31:27
Local clock offset: -2.823 ms
Remote clock offset: -1.618 ms

# Below is generated by plot.py at 2018-09-06 16:21:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 33.808 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 33.808 ms
Loss rate: 0.21%
```

Run 1: Report of WebRTC media — Data Link



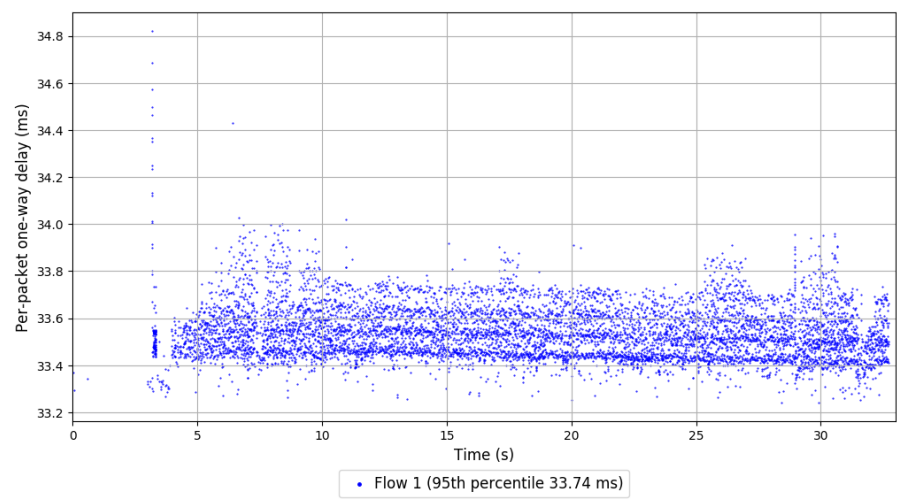
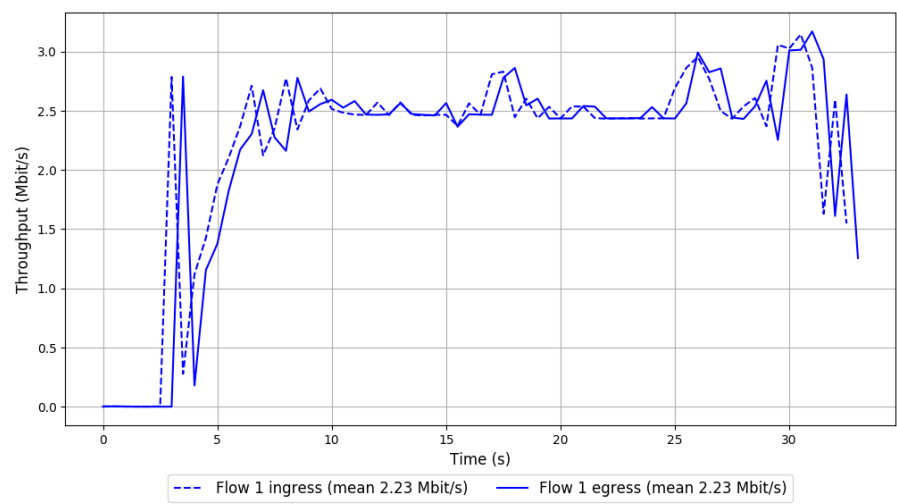
Run 2: Statistics of WebRTC media

Start at: 2018-09-06 14:54:46  
End at: 2018-09-06 14:55:16  
Local clock offset: -1.0 ms  
Remote clock offset: -0.731 ms

# Below is generated by plot.py at 2018-09-06 16:21:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.23 Mbit/s  
95th percentile per-packet one-way delay: 33.736 ms  
Loss rate: 0.27%  
-- Flow 1:  
Average throughput: 2.23 Mbit/s  
95th percentile per-packet one-way delay: 33.736 ms  
Loss rate: 0.27%



Run 2: Report of WebRTC media — Data Link

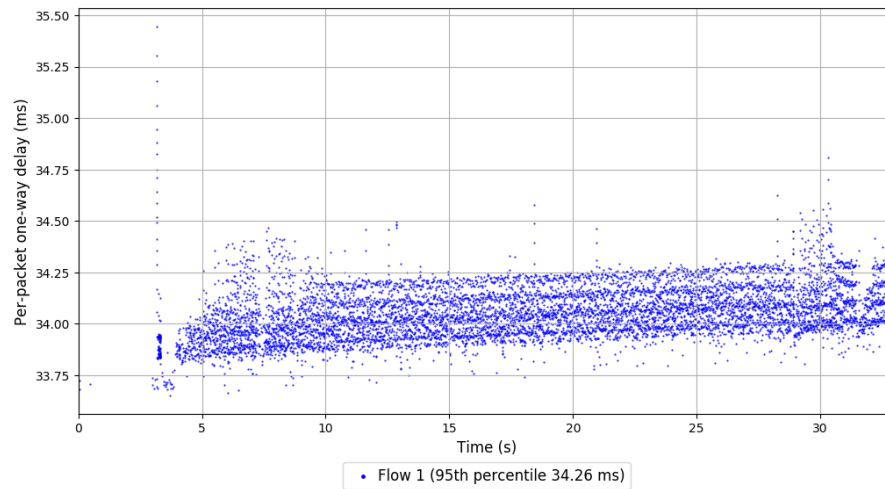
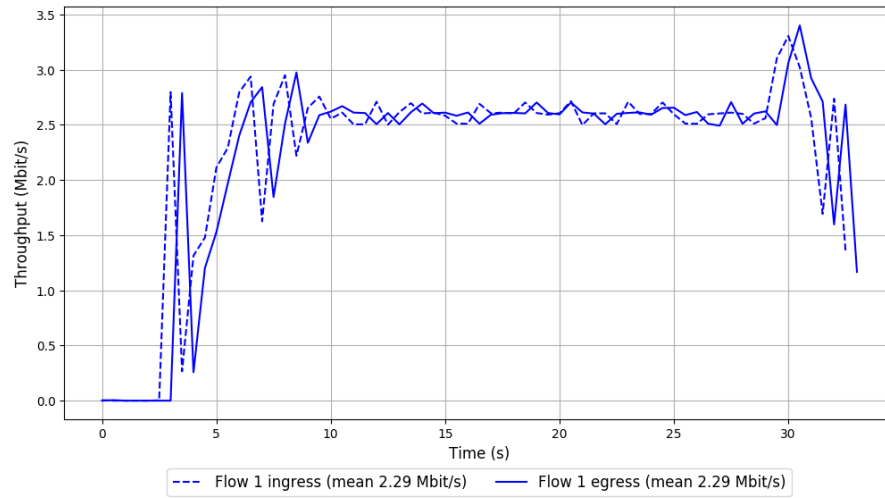


Run 3: Statistics of WebRTC media

Start at: 2018-09-06 15:18:33  
End at: 2018-09-06 15:19:03  
Local clock offset: -0.533 ms  
Remote clock offset: -0.129 ms

# Below is generated by plot.py at 2018-09-06 16:21:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.29 Mbit/s  
95th percentile per-packet one-way delay: 34.262 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 2.29 Mbit/s  
95th percentile per-packet one-way delay: 34.262 ms  
Loss rate: 0.26%

### Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-06 15:42:20

End at: 2018-09-06 15:42:50

Local clock offset: -3.399 ms

Remote clock offset: 0.698 ms

# Below is generated by plot.py at 2018-09-06 16:21:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.29 Mbit/s

95th percentile per-packet one-way delay: 33.968 ms

Loss rate: 0.33%

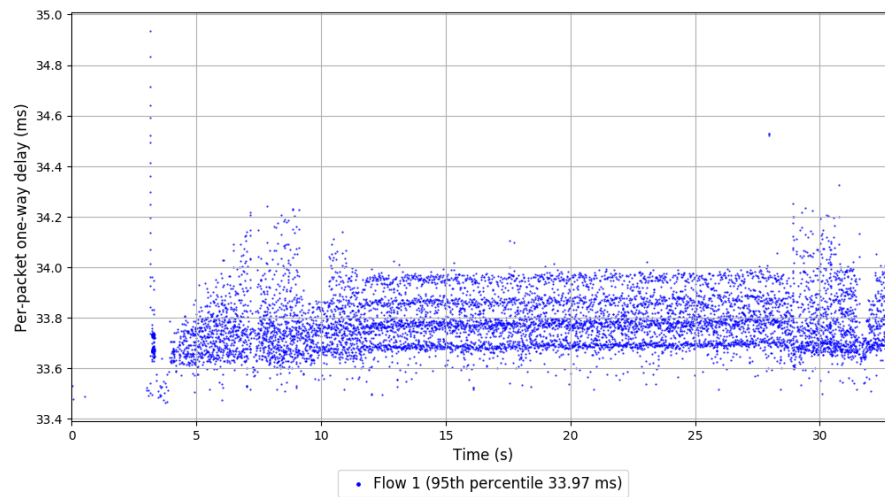
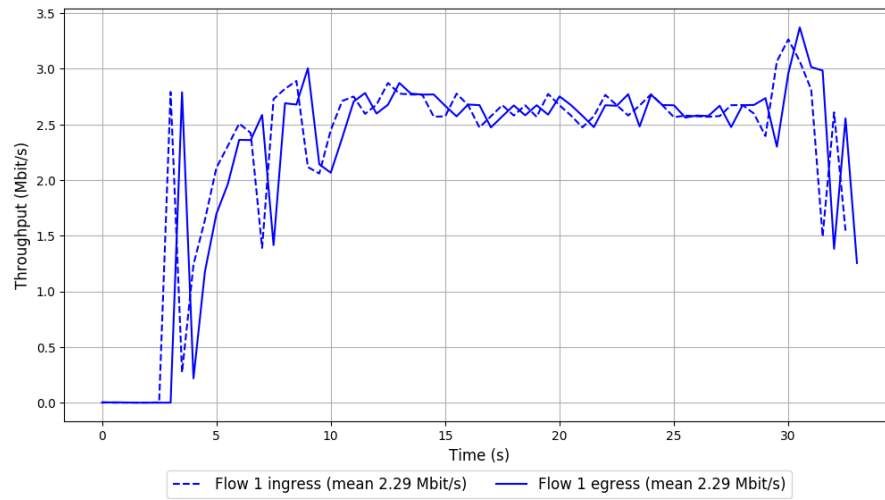
-- Flow 1:

Average throughput: 2.29 Mbit/s

95th percentile per-packet one-way delay: 33.968 ms

Loss rate: 0.33%

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



Run 5: Statistics of WebRTC media

Start at: 2018-09-06 16:06:12

End at: 2018-09-06 16:06:42

Local clock offset: 0.288 ms

Remote clock offset: 0.787 ms

# Below is generated by plot.py at 2018-09-06 16:21:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 34.033 ms

Loss rate: 0.26%

-- Flow 1:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 34.033 ms

Loss rate: 0.26%

Run 5: Report of WebRTC media — Data Link

