

## Pantheon Report

Generated at 2018-09-07 21:09:59 (UTC).

Data path: China on `eno1` (*remote*) → AWS Korea 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 `ntp.nict.jp` and have been applied to correct the timestamps in logs.

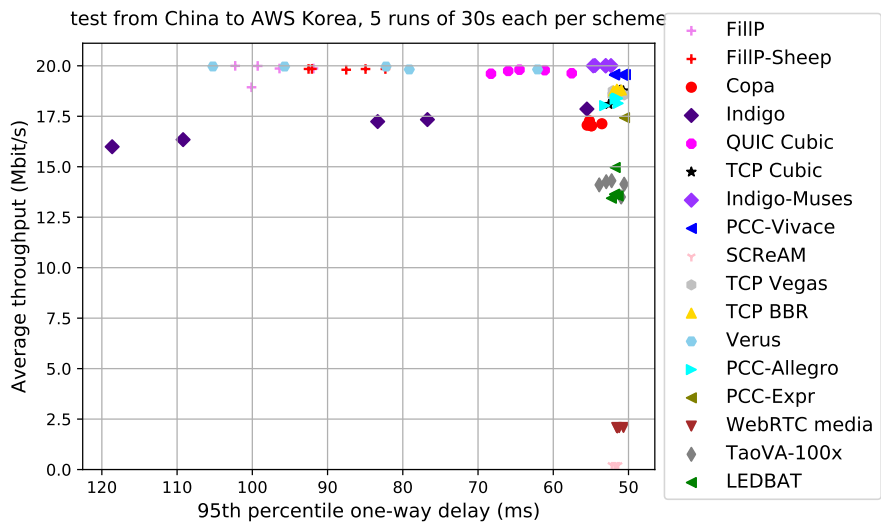
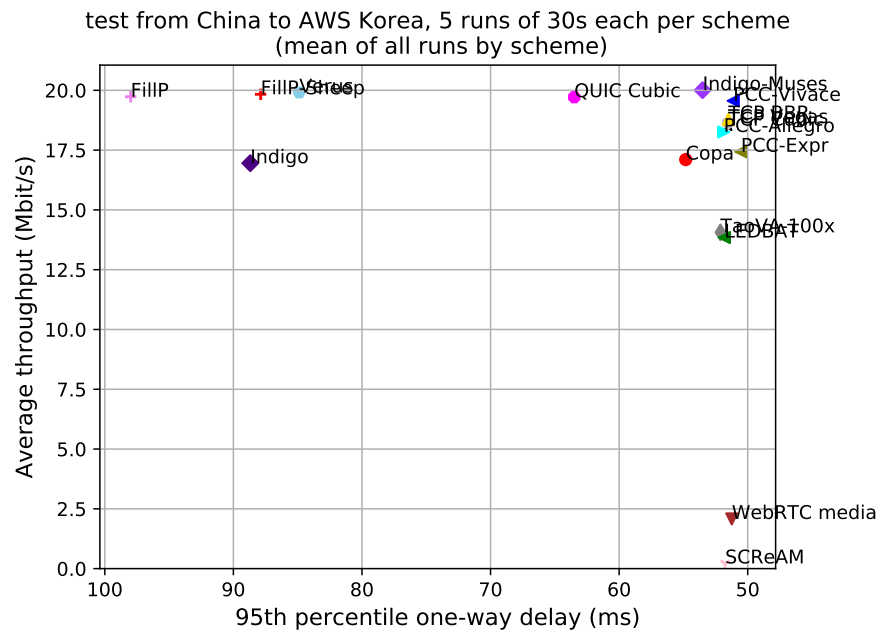
### System info:

```
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 @ d0153f8e594aa89e93b032143cedbdf90c077e64d
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



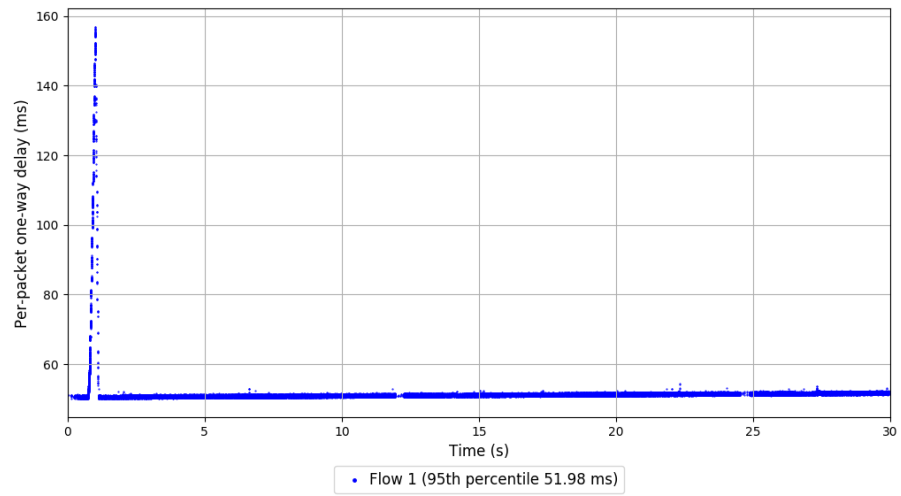
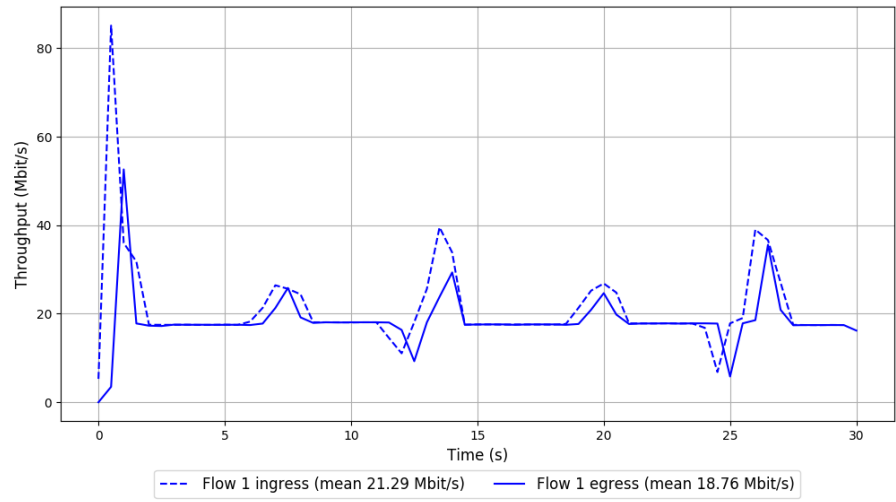
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	18.79	51.50	11.72
Copa	5	17.10	54.82	66.30
TCP Cubic	5	18.52	51.52	5.78
FillP	5	19.73	97.99	17.55
FillP-Sheep	5	19.83	87.88	22.55
Indigo	5	16.95	88.69	68.13
LEDBAT	5	13.84	51.82	1.08
Indigo-Muses	5	20.00	53.51	39.66
PCC-Allegro	5	18.26	51.87	32.55
PCC-Expr	1	17.43	50.53	60.30
QUIC Cubic	5	19.72	63.49	6.51
SCReAM	5	0.22	51.75	0.31
Sprout	0	N/A	N/A	N/A
TaoVA-100x	5	14.06	52.13	3.06
TCP Vegas	5	18.63	51.53	3.89
Verus	5	19.91	84.88	65.48
PCC-Vivace	5	19.56	51.13	4.96
WebRTC media	4	2.08	51.24	0.39

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 19:33:34  
End at: 2018-09-07 19:34:04  
Local clock offset: 6.96 ms  
Remote clock offset: -13.487 ms

# Below is generated by plot.py at 2018-09-07 21:06:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.76 Mbit/s  
95th percentile per-packet one-way delay: 51.982 ms  
Loss rate: 12.16%  
-- Flow 1:  
Average throughput: 18.76 Mbit/s  
95th percentile per-packet one-way delay: 51.982 ms  
Loss rate: 12.16%

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



Run 2: Statistics of TCP BBR

Start at: 2018-09-07 19:54:34

End at: 2018-09-07 19:55:04

Local clock offset: 6.268 ms

Remote clock offset: 8.36 ms

# Below is generated by plot.py at 2018-09-07 21:06:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 18.75 Mbit/s

95th percentile per-packet one-way delay: 51.635 ms

Loss rate: 11.54%

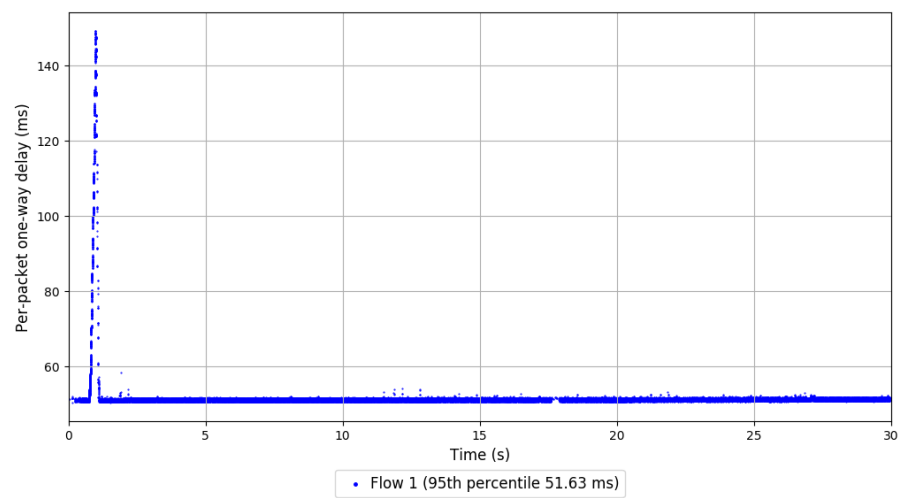
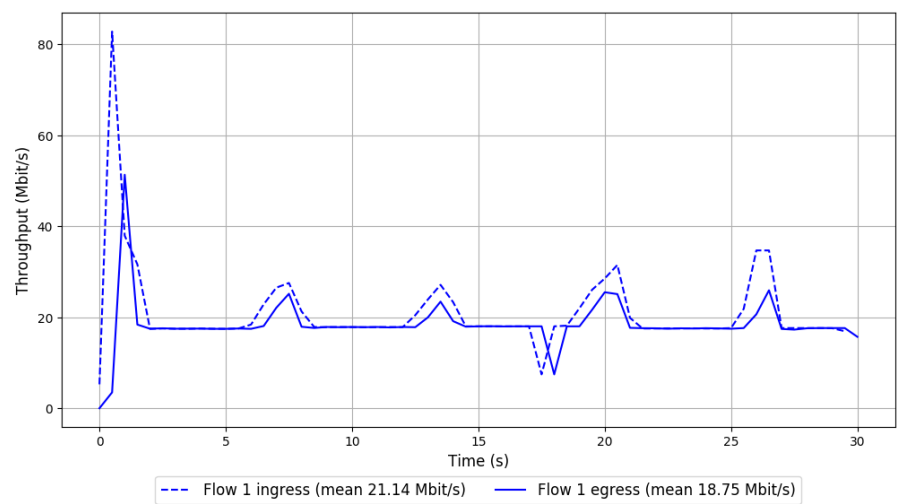
-- Flow 1:

Average throughput: 18.75 Mbit/s

95th percentile per-packet one-way delay: 51.635 ms

Loss rate: 11.54%

Run 2: Report of TCP BBR — Data Link



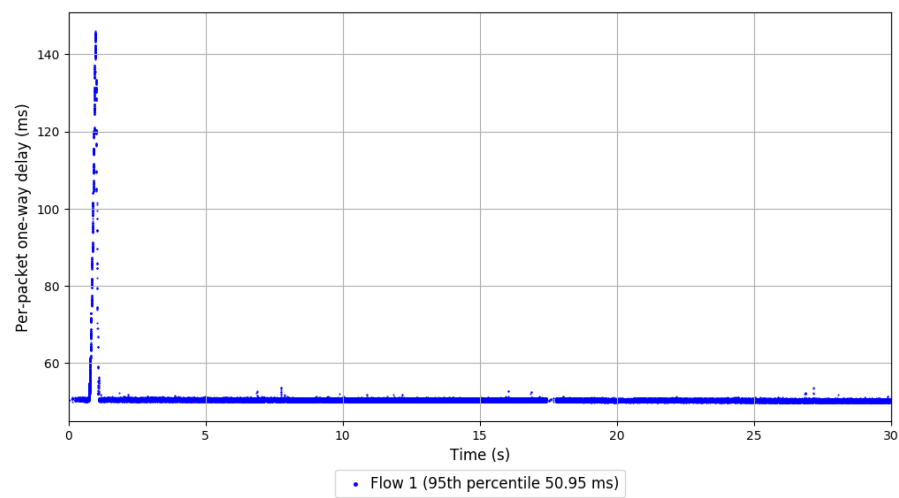
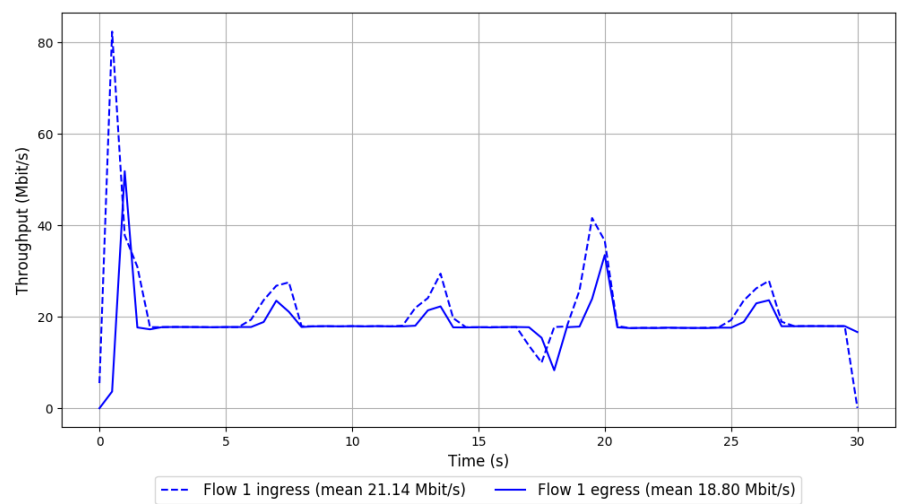


Run 3: Statistics of TCP BBR

Start at: 2018-09-07 20:15:29  
End at: 2018-09-07 20:15:59  
Local clock offset: 5.787 ms  
Remote clock offset: -4.454 ms

# Below is generated by plot.py at 2018-09-07 21:06:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.80 Mbit/s  
95th percentile per-packet one-way delay: 50.948 ms  
Loss rate: 11.33%  
-- Flow 1:  
Average throughput: 18.80 Mbit/s  
95th percentile per-packet one-way delay: 50.948 ms  
Loss rate: 11.33%

Run 3: Report of TCP BBR — Data Link

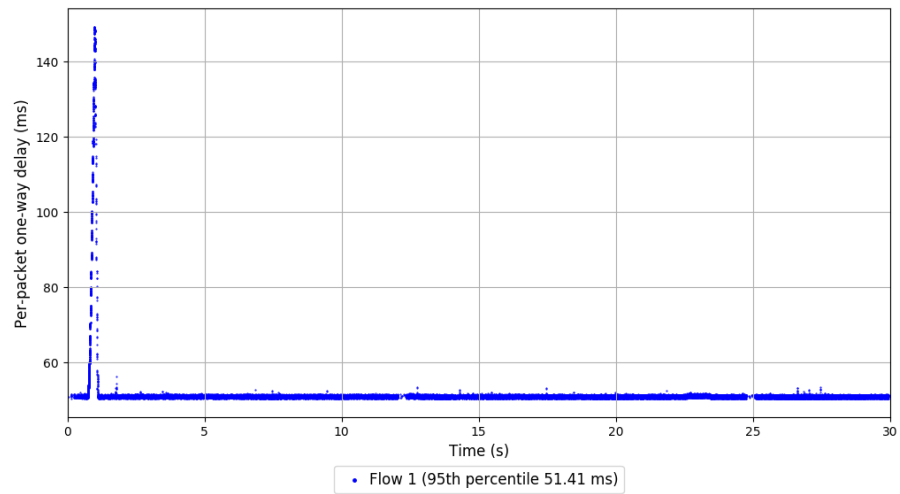
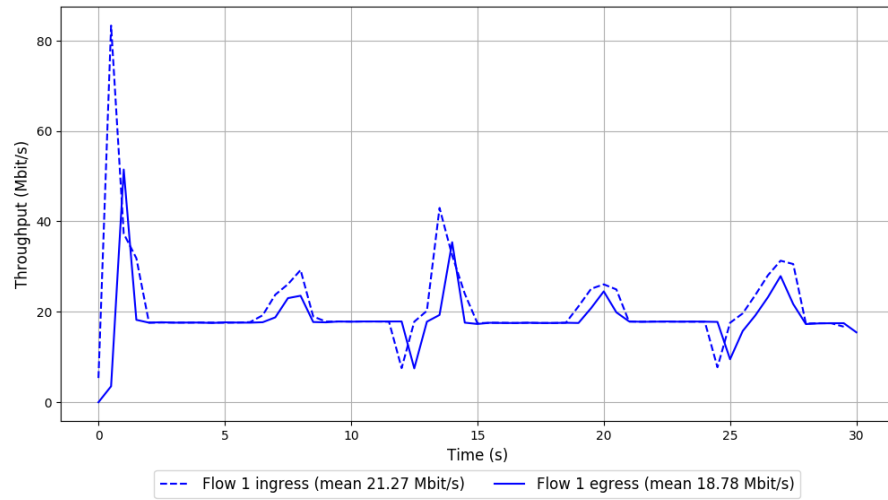


Run 4: Statistics of TCP BBR

Start at: 2018-09-07 20:37:48  
End at: 2018-09-07 20:38:18  
Local clock offset: 3.248 ms  
Remote clock offset: -14.126 ms

# Below is generated by plot.py at 2018-09-07 21:06:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.78 Mbit/s  
95th percentile per-packet one-way delay: 51.410 ms  
Loss rate: 11.99%  
-- Flow 1:  
Average throughput: 18.78 Mbit/s  
95th percentile per-packet one-way delay: 51.410 ms  
Loss rate: 11.99%

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

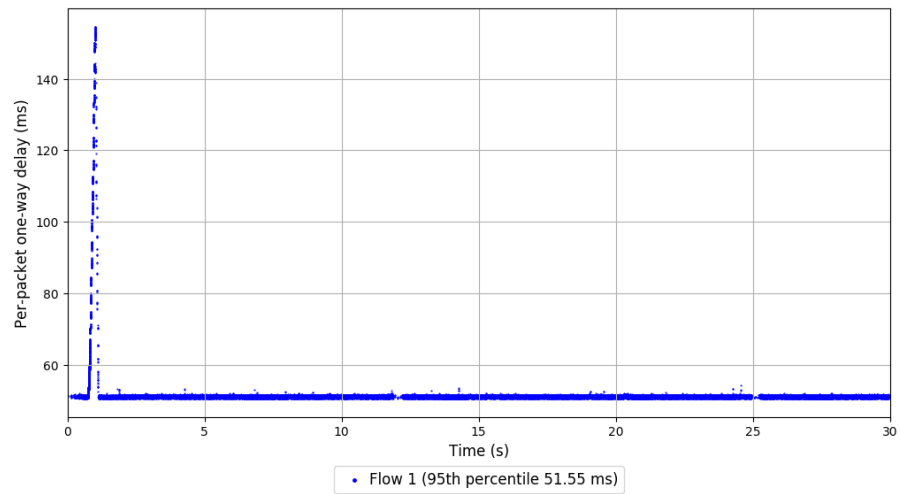
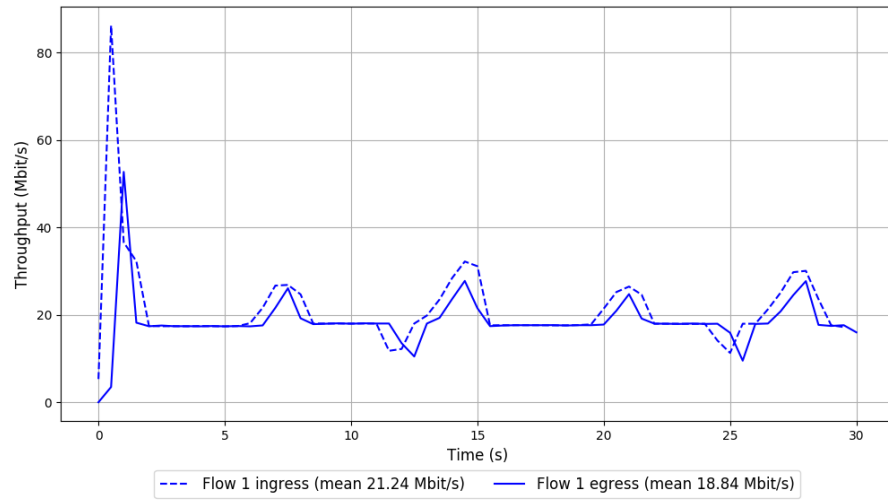


Run 5: Statistics of TCP BBR

Start at: 2018-09-07 20:58:41  
End at: 2018-09-07 20:59:11  
Local clock offset: 3.41 ms  
Remote clock offset: -12.39 ms

# Below is generated by plot.py at 2018-09-07 21:06:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.84 Mbit/s  
95th percentile per-packet one-way delay: 51.549 ms  
Loss rate: 11.56%  
-- Flow 1:  
Average throughput: 18.84 Mbit/s  
95th percentile per-packet one-way delay: 51.549 ms  
Loss rate: 11.56%

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



Run 1: Statistics of Copa

Start at: 2018-09-07 19:29:55  
End at: 2018-09-07 19:30:25  
Local clock offset: 6.637 ms  
Remote clock offset: -19.541 ms

# Below is generated by plot.py at 2018-09-07 21:07:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 17.06 Mbit/s

95th percentile per-packet one-way delay: 55.494 ms

Loss rate: 67.11%

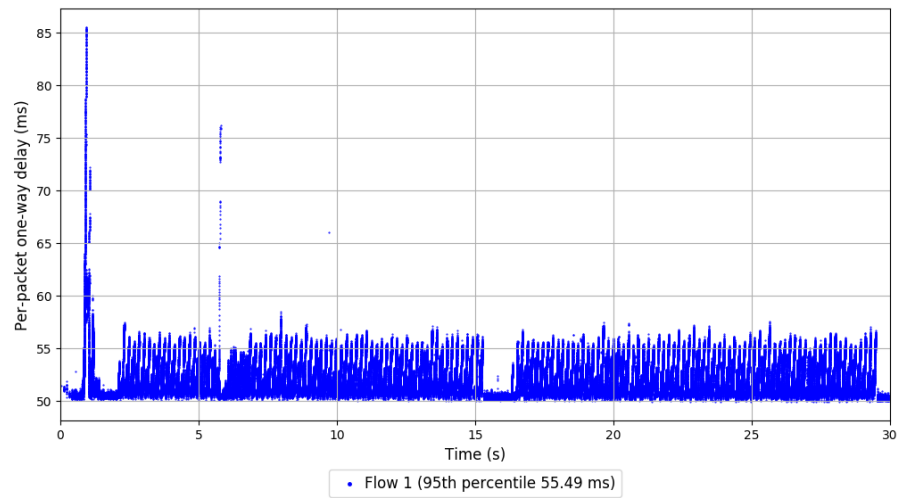
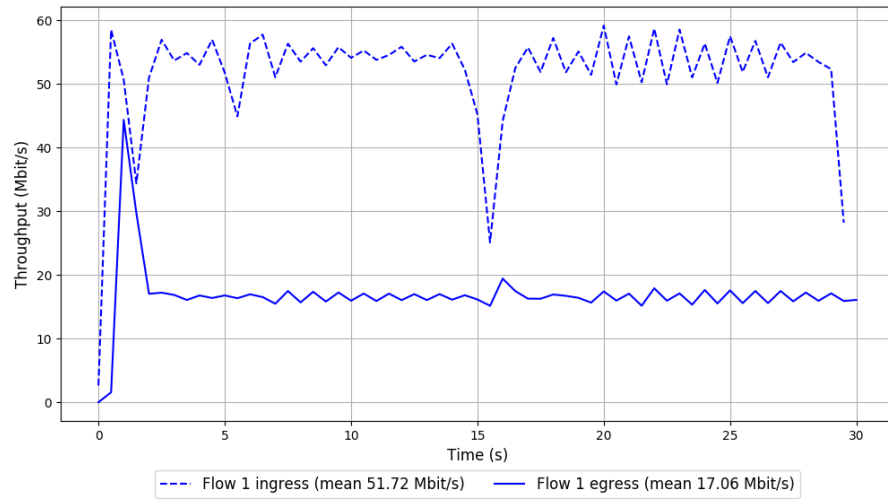
-- Flow 1:

Average throughput: 17.06 Mbit/s

95th percentile per-packet one-way delay: 55.494 ms

Loss rate: 67.11%

### Run 1: Report of Copa — Data Link



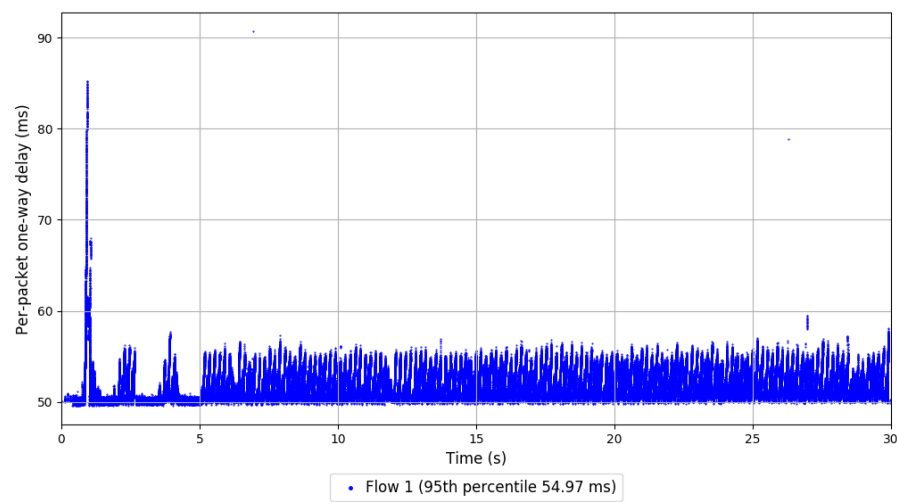
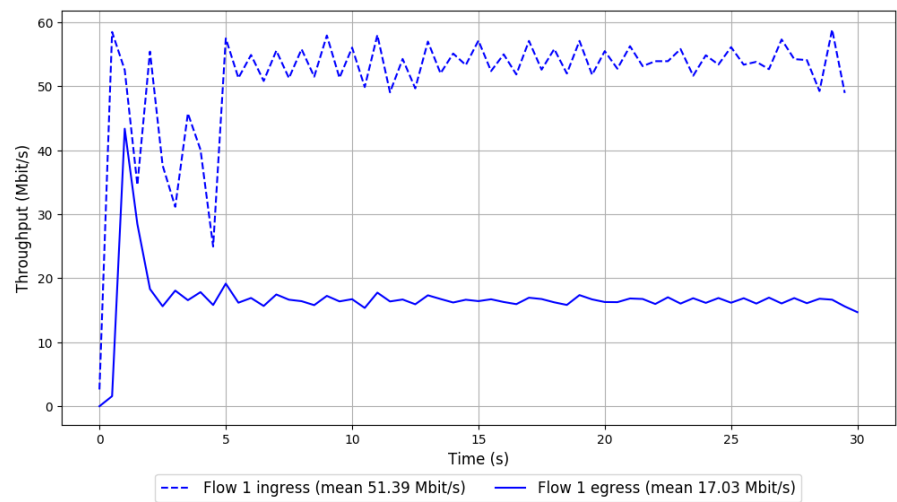


Run 2: Statistics of Copa

Start at: 2018-09-07 19:51:04  
End at: 2018-09-07 19:51:34  
Local clock offset: 6.658 ms  
Remote clock offset: 7.312 ms

# Below is generated by plot.py at 2018-09-07 21:07:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 17.03 Mbit/s  
95th percentile per-packet one-way delay: 54.966 ms  
Loss rate: 66.91%  
-- Flow 1:  
Average throughput: 17.03 Mbit/s  
95th percentile per-packet one-way delay: 54.966 ms  
Loss rate: 66.91%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-07 20:11:58

End at: 2018-09-07 20:12:28

Local clock offset: 6.043 ms

Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2018-09-07 21:07:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 17.13 Mbit/s

95th percentile per-packet one-way delay: 53.539 ms

Loss rate: 66.16%

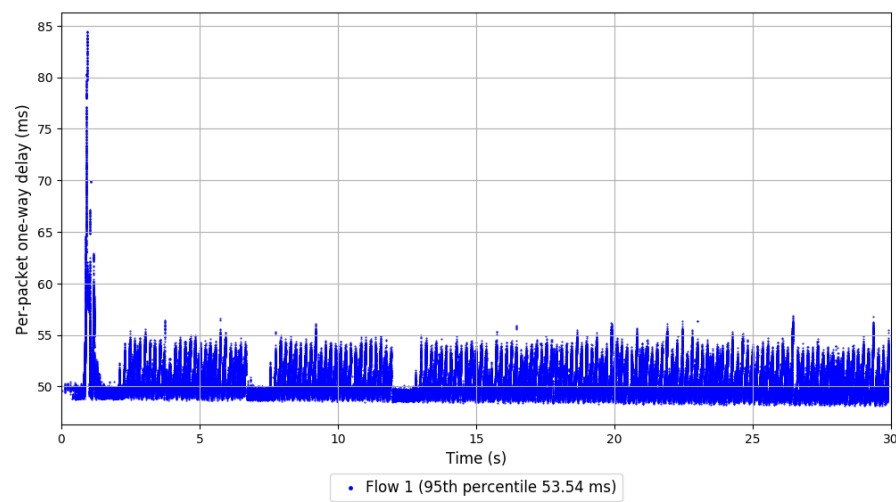
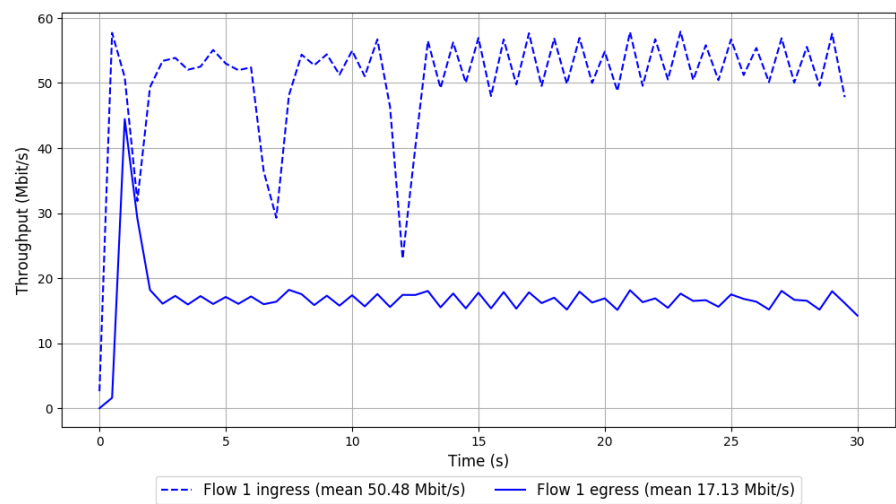
-- Flow 1:

Average throughput: 17.13 Mbit/s

95th percentile per-packet one-way delay: 53.539 ms

Loss rate: 66.16%

Run 3: Report of Copa — Data Link

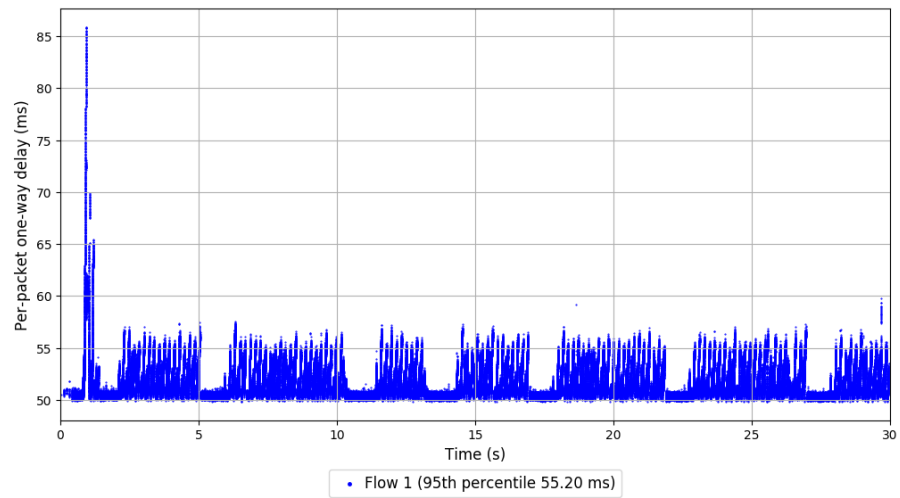
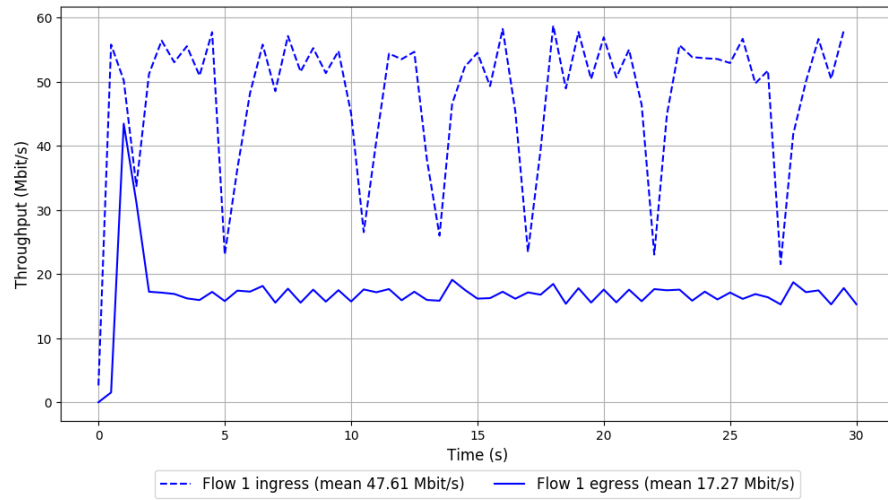


Run 4: Statistics of Copa

Start at: 2018-09-07 20:32:57  
End at: 2018-09-07 20:33:27  
Local clock offset: 3.242 ms  
Remote clock offset: -13.285 ms

# Below is generated by plot.py at 2018-09-07 21:07:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 17.27 Mbit/s  
95th percentile per-packet one-way delay: 55.195 ms  
Loss rate: 63.83%  
-- Flow 1:  
Average throughput: 17.27 Mbit/s  
95th percentile per-packet one-way delay: 55.195 ms  
Loss rate: 63.83%

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

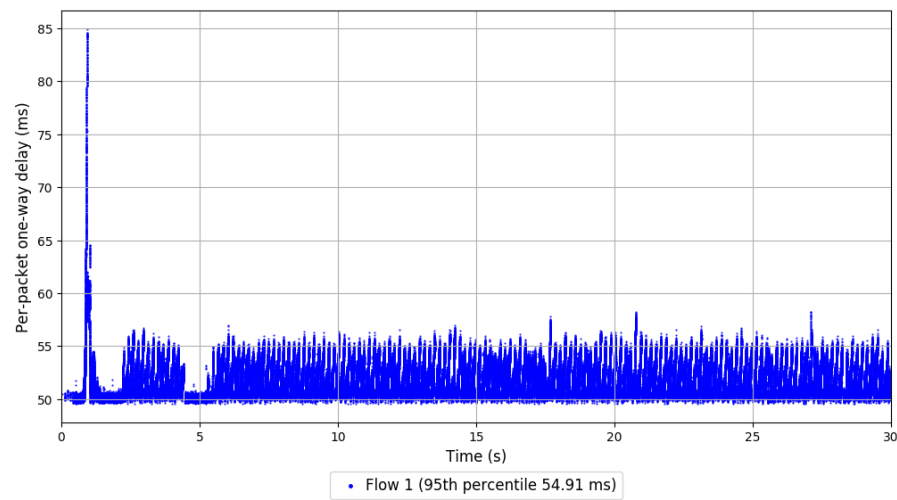
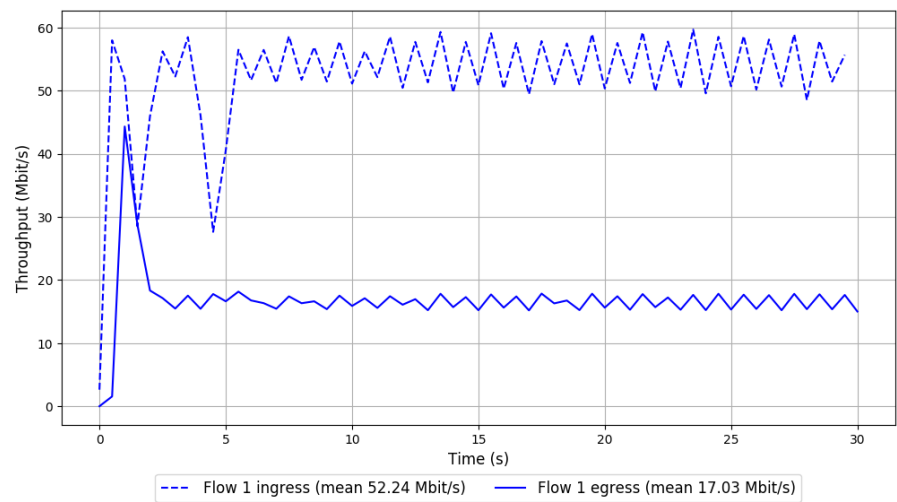


Run 5: Statistics of Copa

Start at: 2018-09-07 20:55:10  
End at: 2018-09-07 20:55:41  
Local clock offset: 3.16 ms  
Remote clock offset: -12.145 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 17.03 Mbit/s  
95th percentile per-packet one-way delay: 54.909 ms  
Loss rate: 67.50%  
-- Flow 1:  
Average throughput: 17.03 Mbit/s  
95th percentile per-packet one-way delay: 54.909 ms  
Loss rate: 67.50%

Run 5: Report of Copa — Data Link



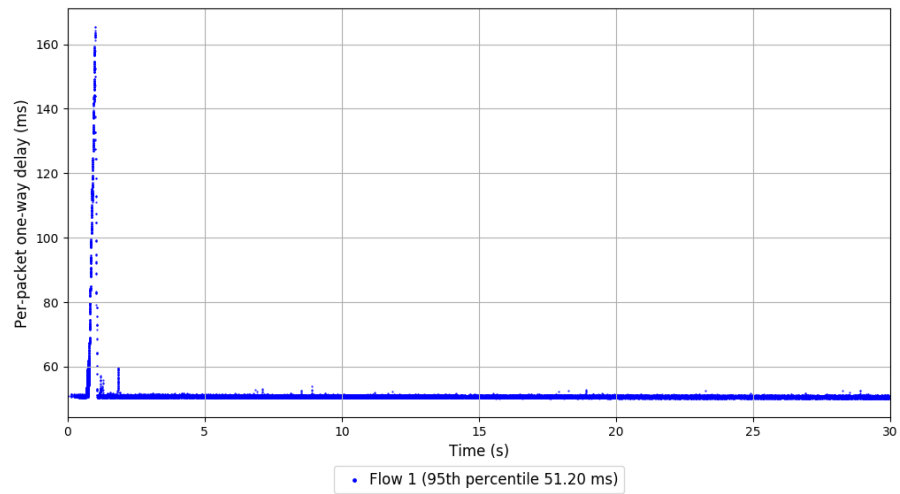
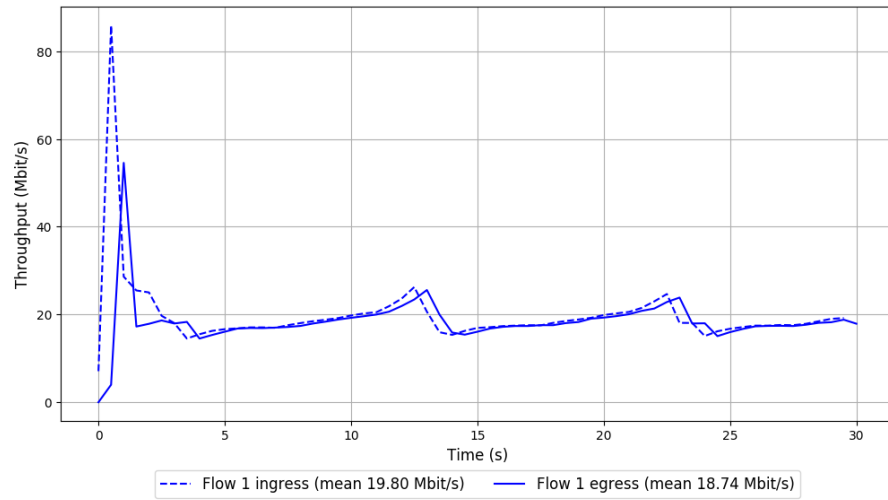


Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 19:24:07  
End at: 2018-09-07 19:24:37  
Local clock offset: 5.293 ms  
Remote clock offset: -17.746 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.74 Mbit/s  
95th percentile per-packet one-way delay: 51.202 ms  
Loss rate: 5.65%  
-- Flow 1:  
Average throughput: 18.74 Mbit/s  
95th percentile per-packet one-way delay: 51.202 ms  
Loss rate: 5.65%

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



Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 19:45:17

End at: 2018-09-07 19:45:47

Local clock offset: 8.014 ms

Remote clock offset: 2.718 ms

# Below is generated by plot.py at 2018-09-07 21:07:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 18.09 Mbit/s

95th percentile per-packet one-way delay: 52.603 ms

Loss rate: 5.81%

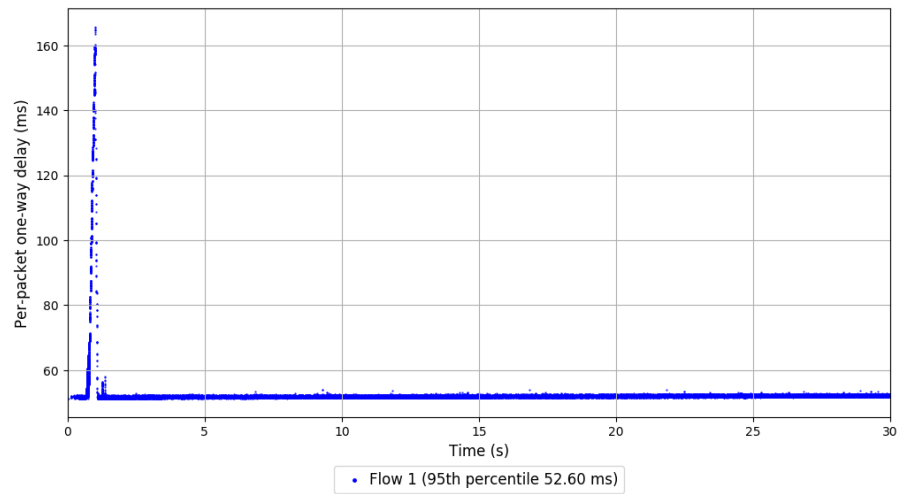
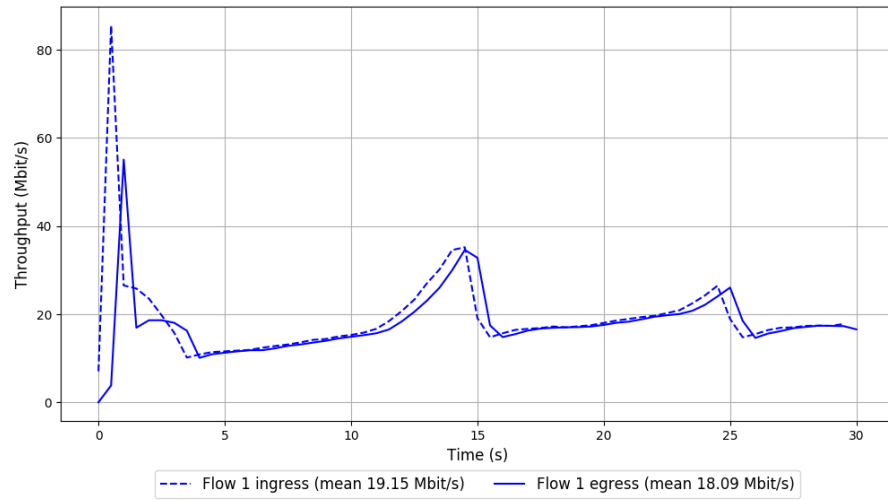
-- Flow 1:

Average throughput: 18.09 Mbit/s

95th percentile per-packet one-way delay: 52.603 ms

Loss rate: 5.81%

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

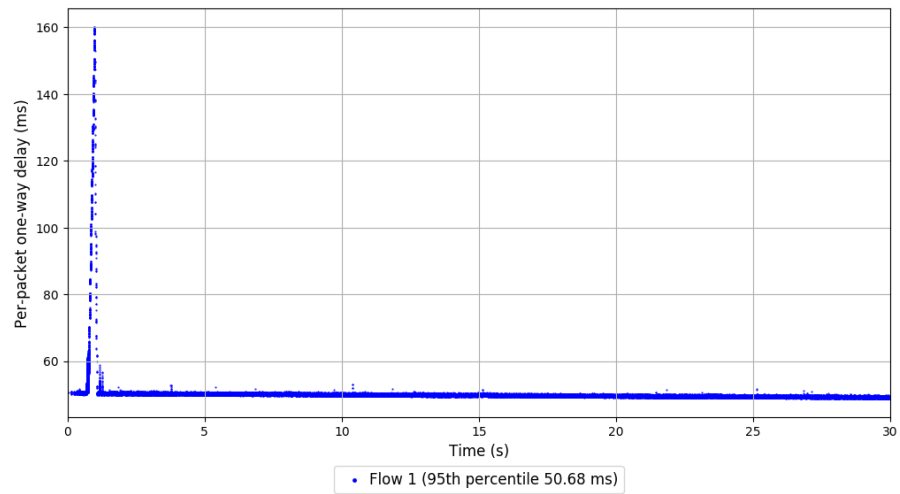
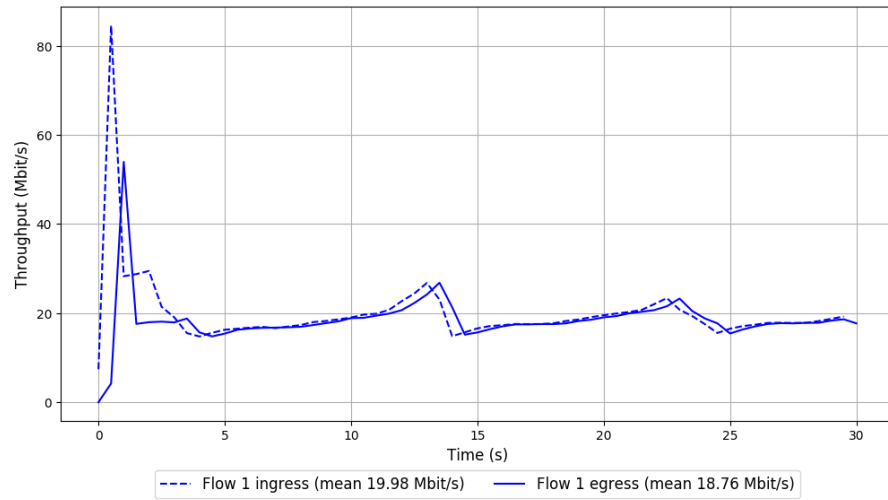


Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 20:06:11  
End at: 2018-09-07 20:06:41  
Local clock offset: 5.933 ms  
Remote clock offset: 10.505 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.76 Mbit/s  
95th percentile per-packet one-way delay: 50.683 ms  
Loss rate: 6.37%  
-- Flow 1:  
Average throughput: 18.76 Mbit/s  
95th percentile per-packet one-way delay: 50.683 ms  
Loss rate: 6.37%

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

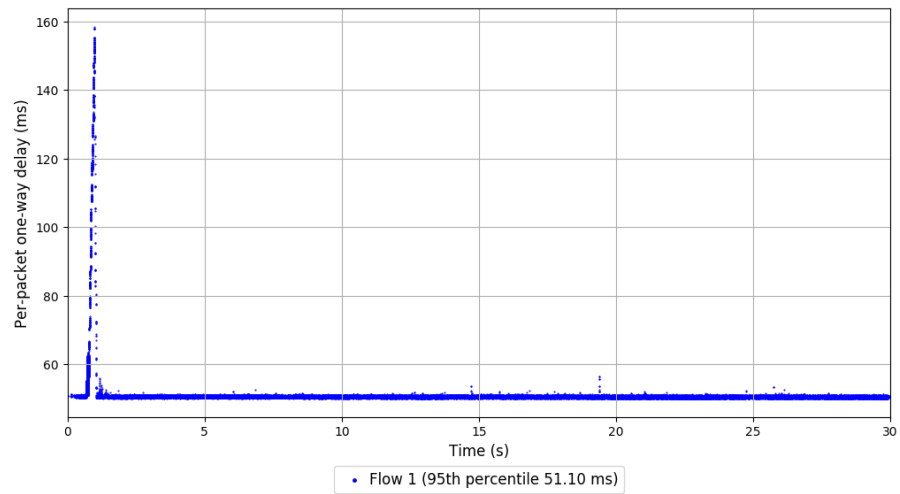
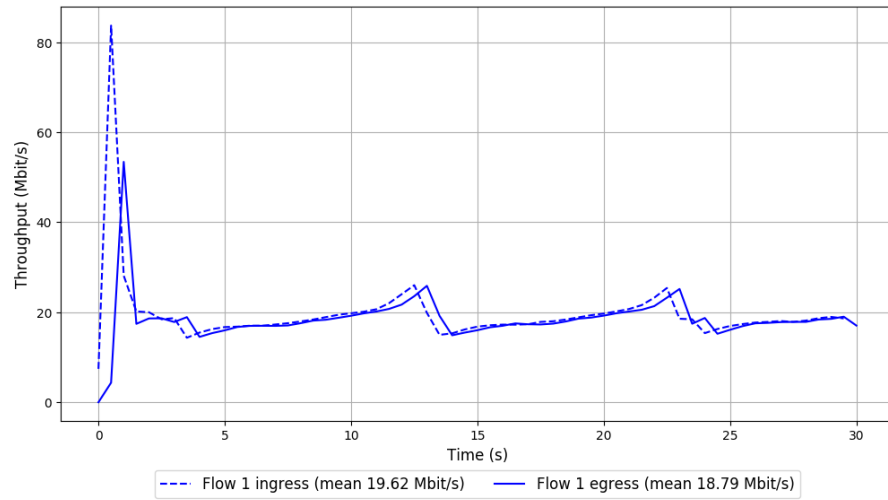


Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 20:27:00  
End at: 2018-09-07 20:27:30  
Local clock offset: 3.714 ms  
Remote clock offset: -11.323 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.79 Mbit/s  
95th percentile per-packet one-way delay: 51.102 ms  
Loss rate: 4.51%  
-- Flow 1:  
Average throughput: 18.79 Mbit/s  
95th percentile per-packet one-way delay: 51.102 ms  
Loss rate: 4.51%

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



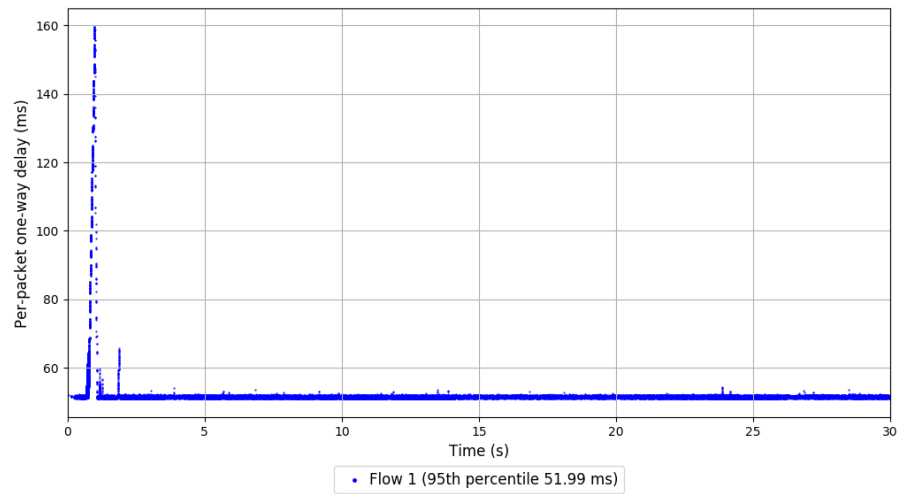
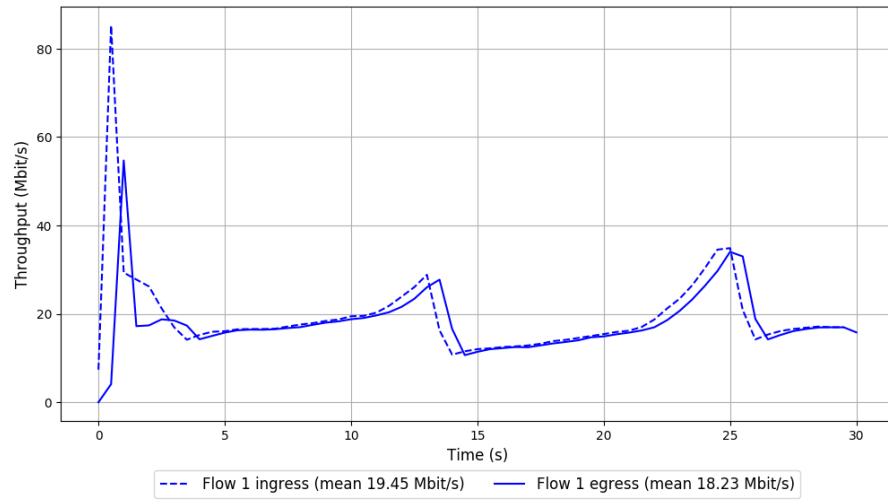


Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 20:49:22  
End at: 2018-09-07 20:49:52  
Local clock offset: 3.097 ms  
Remote clock offset: -13.228 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.23 Mbit/s  
95th percentile per-packet one-way delay: 51.990 ms  
Loss rate: 6.54%  
-- Flow 1:  
Average throughput: 18.23 Mbit/s  
95th percentile per-packet one-way delay: 51.990 ms  
Loss rate: 6.54%

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

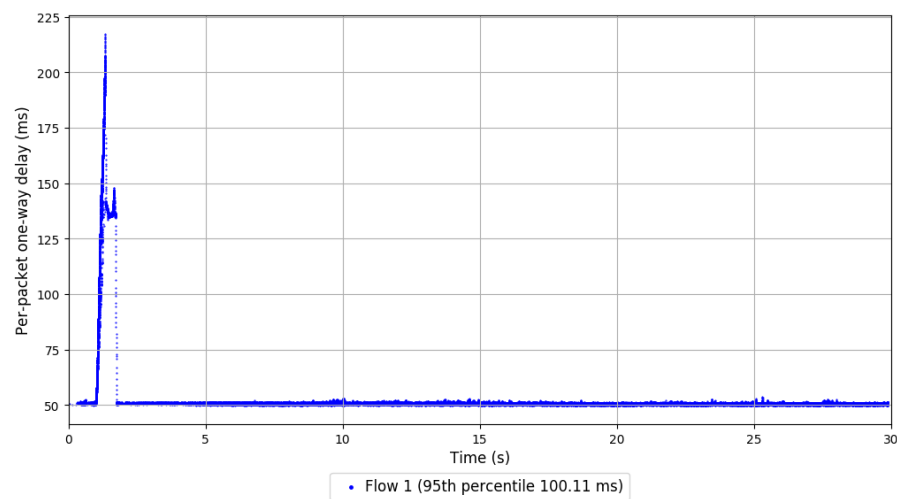
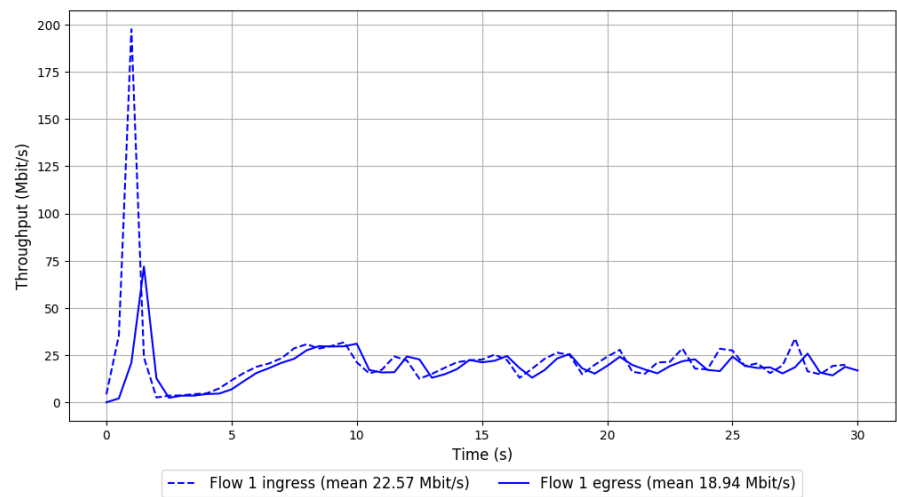


Run 1: Statistics of FillP

Start at: 2018-09-07 19:28:46  
End at: 2018-09-07 19:29:16  
Local clock offset: 6.416 ms  
Remote clock offset: -18.947 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.94 Mbit/s  
95th percentile per-packet one-way delay: 100.105 ms  
Loss rate: 16.33%  
-- Flow 1:  
Average throughput: 18.94 Mbit/s  
95th percentile per-packet one-way delay: 100.105 ms  
Loss rate: 16.33%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-07 19:49:55

End at: 2018-09-07 19:50:25

Local clock offset: 6.929 ms

Remote clock offset: 5.889 ms

# Below is generated by plot.py at 2018-09-07 21:07:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 20.00 Mbit/s

95th percentile per-packet one-way delay: 102.274 ms

Loss rate: 17.79%

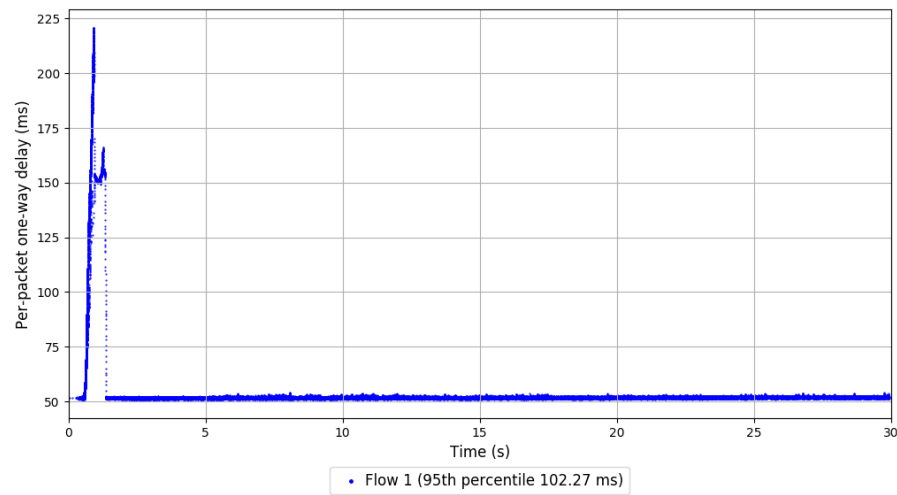
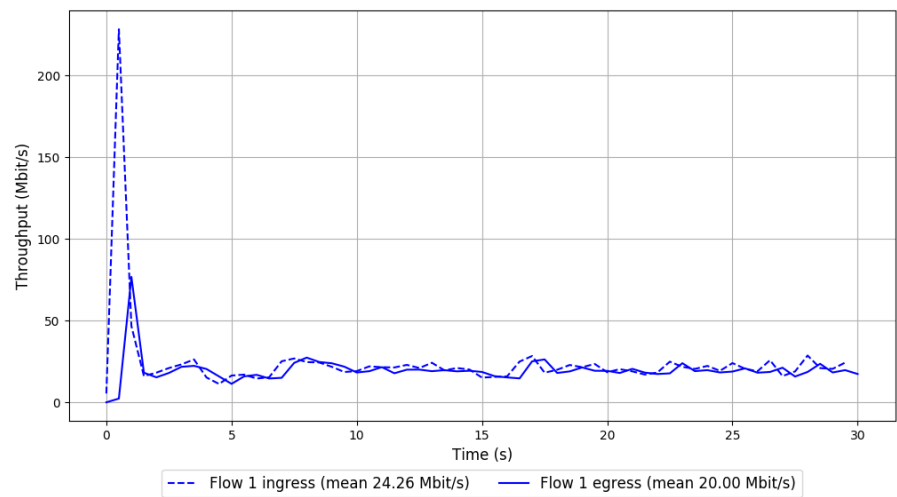
-- Flow 1:

Average throughput: 20.00 Mbit/s

95th percentile per-packet one-way delay: 102.274 ms

Loss rate: 17.79%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-07 20:10:49

End at: 2018-09-07 20:11:19

Local clock offset: 5.899 ms

Remote clock offset: 1.341 ms

# Below is generated by plot.py at 2018-09-07 21:07:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.87 Mbit/s

95th percentile per-packet one-way delay: 91.877 ms

Loss rate: 17.92%

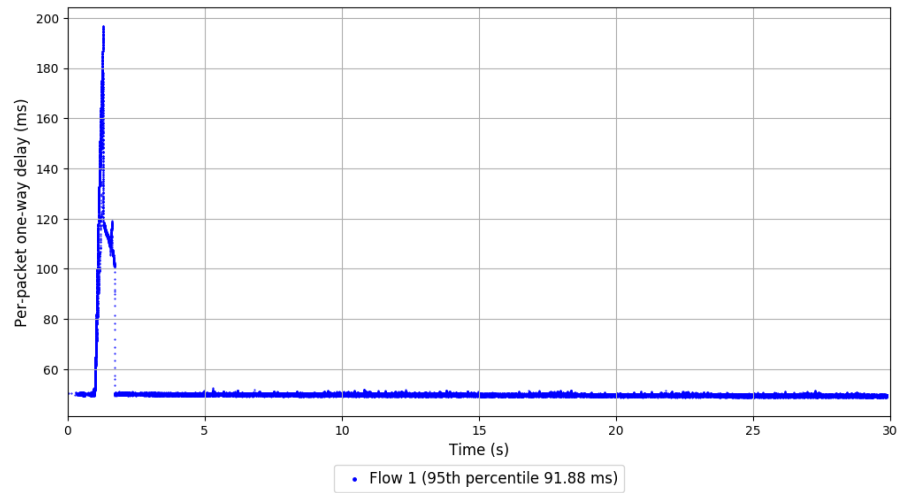
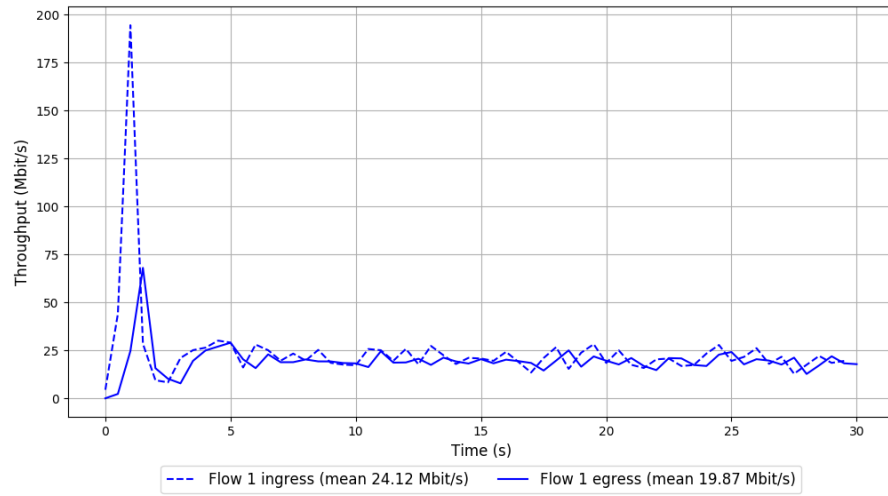
-- Flow 1:

Average throughput: 19.87 Mbit/s

95th percentile per-packet one-way delay: 91.877 ms

Loss rate: 17.92%

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



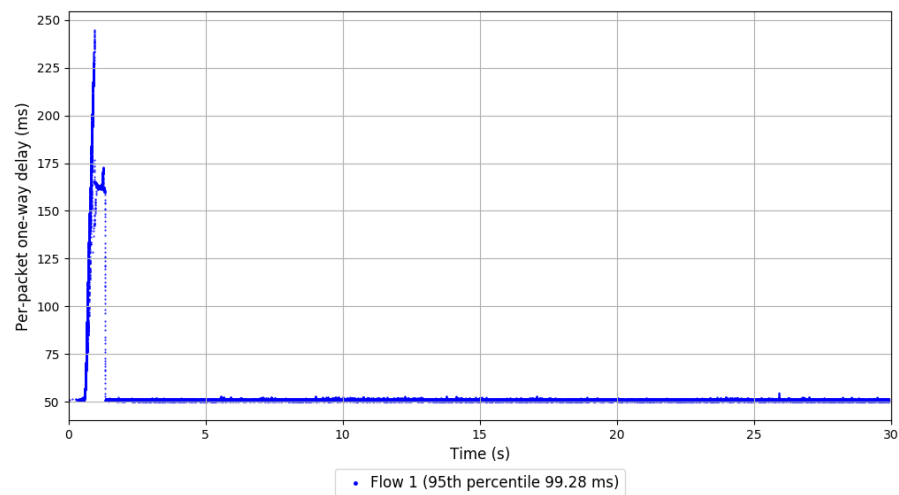
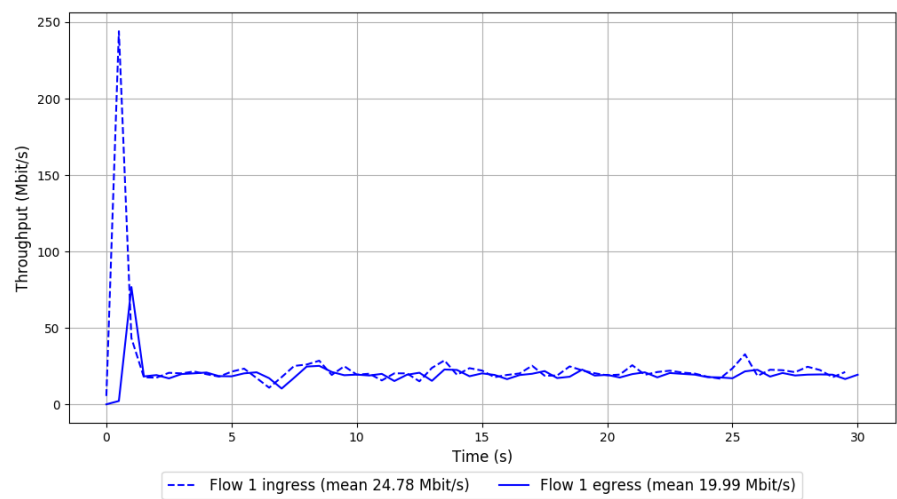


Run 4: Statistics of FillP

Start at: 2018-09-07 20:31:47  
End at: 2018-09-07 20:32:17  
Local clock offset: 3.297 ms  
Remote clock offset: -13.236 ms

# Below is generated by plot.py at 2018-09-07 21:07:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.99 Mbit/s  
95th percentile per-packet one-way delay: 99.285 ms  
Loss rate: 19.55%  
-- Flow 1:  
Average throughput: 19.99 Mbit/s  
95th percentile per-packet one-way delay: 99.285 ms  
Loss rate: 19.55%

Run 4: Report of FillP — Data Link

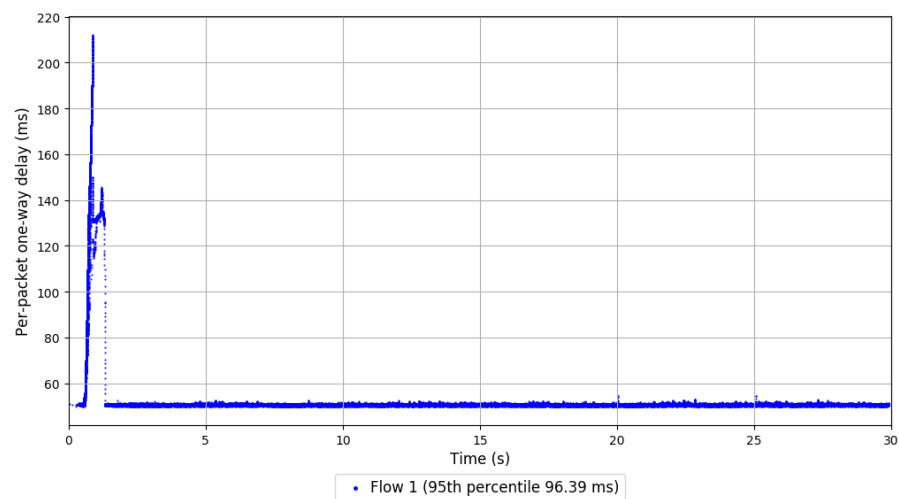
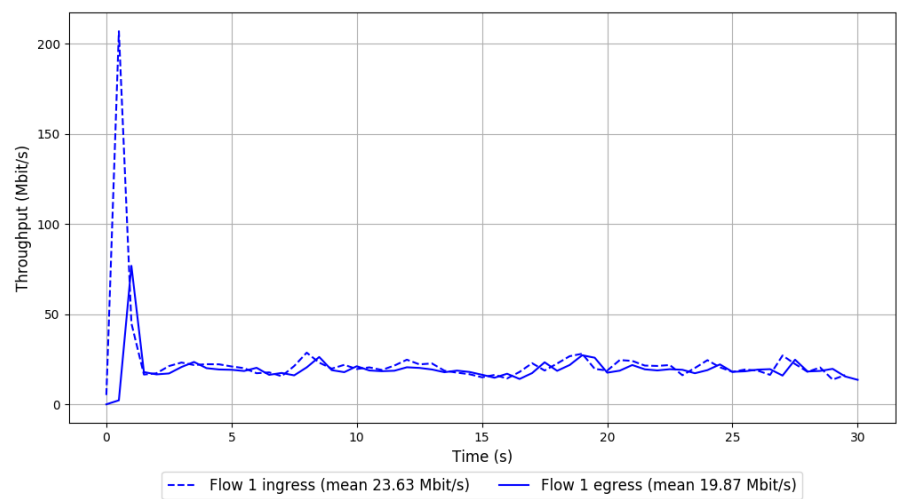


Run 5: Statistics of FillP

Start at: 2018-09-07 20:54:01  
End at: 2018-09-07 20:54:31  
Local clock offset: 3.362 ms  
Remote clock offset: -12.323 ms

# Below is generated by plot.py at 2018-09-07 21:07:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.87 Mbit/s  
95th percentile per-packet one-way delay: 96.391 ms  
Loss rate: 16.16%  
-- Flow 1:  
Average throughput: 19.87 Mbit/s  
95th percentile per-packet one-way delay: 96.391 ms  
Loss rate: 16.16%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 19:26:26

End at: 2018-09-07 19:26:56

Local clock offset: 5.754 ms

Remote clock offset: -18.141 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.84 Mbit/s

95th percentile per-packet one-way delay: 92.080 ms

Loss rate: 23.36%

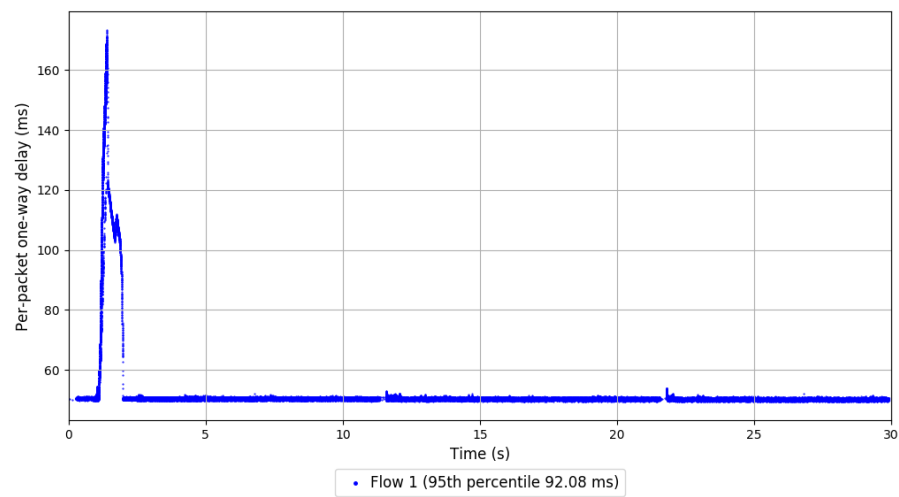
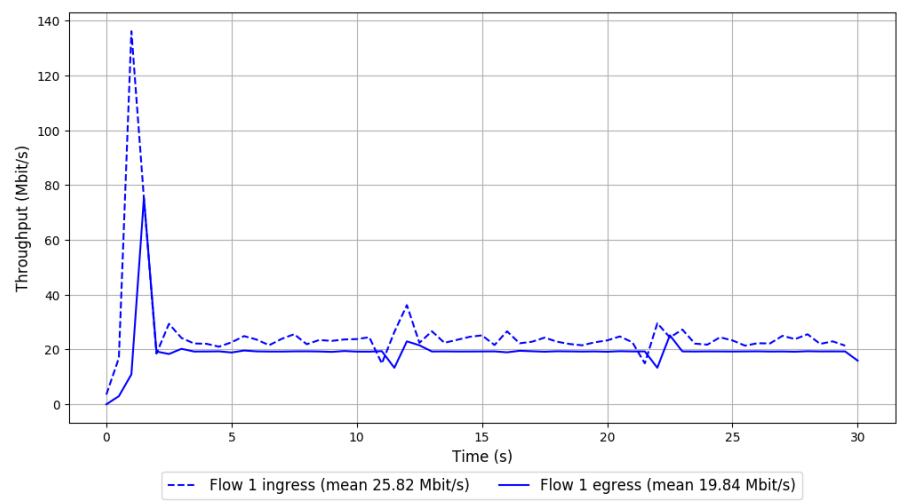
-- Flow 1:

Average throughput: 19.84 Mbit/s

95th percentile per-packet one-way delay: 92.080 ms

Loss rate: 23.36%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 19:47:35

End at: 2018-09-07 19:48:05

Local clock offset: 7.3 ms

Remote clock offset: 5.595 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.80 Mbit/s

95th percentile per-packet one-way delay: 87.520 ms

Loss rate: 22.83%

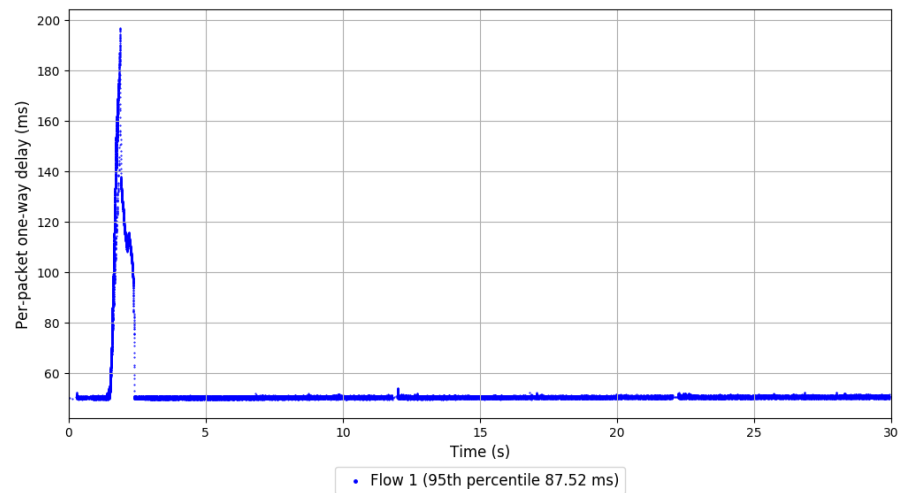
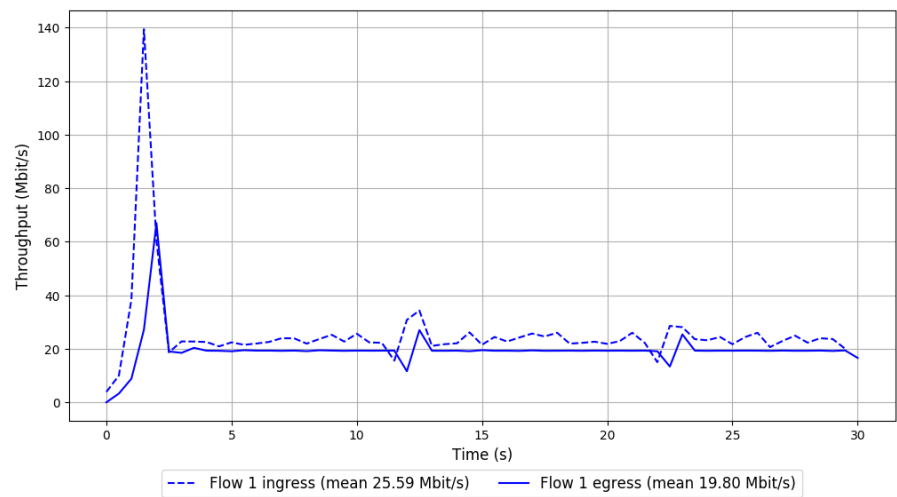
-- Flow 1:

Average throughput: 19.80 Mbit/s

95th percentile per-packet one-way delay: 87.520 ms

Loss rate: 22.83%

Run 2: Report of FillP-Sheep — Data Link





Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 20:08:30

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

Local clock offset: 5.928 ms

Remote clock offset: 4.948 ms

# Below is generated by plot.py at 2018-09-07 21:07:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.84 Mbit/s

95th percentile per-packet one-way delay: 82.314 ms

Loss rate: 20.37%

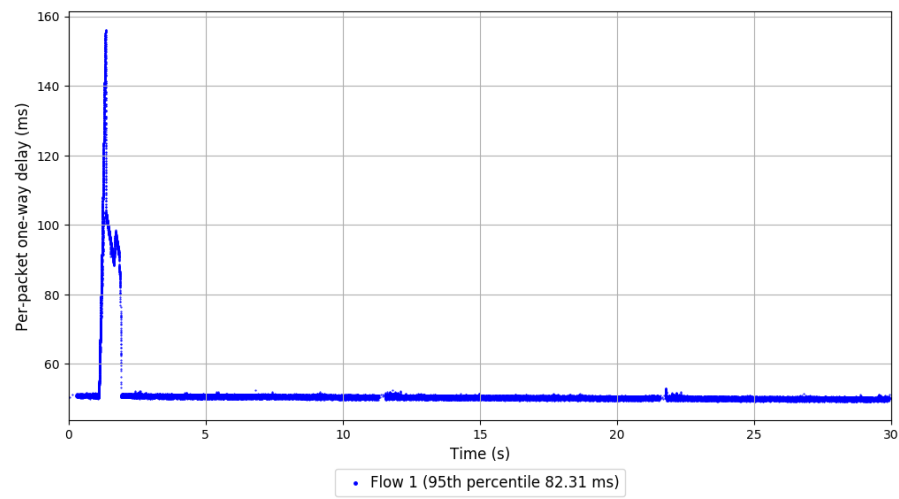
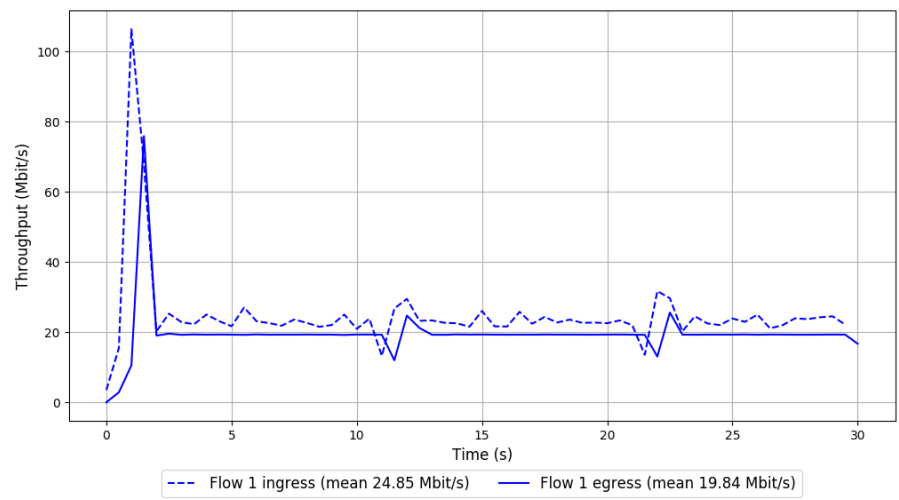
-- Flow 1:

Average throughput: 19.84 Mbit/s

95th percentile per-packet one-way delay: 82.314 ms

Loss rate: 20.37%

Run 3: Report of FillP-Sheep — Data Link

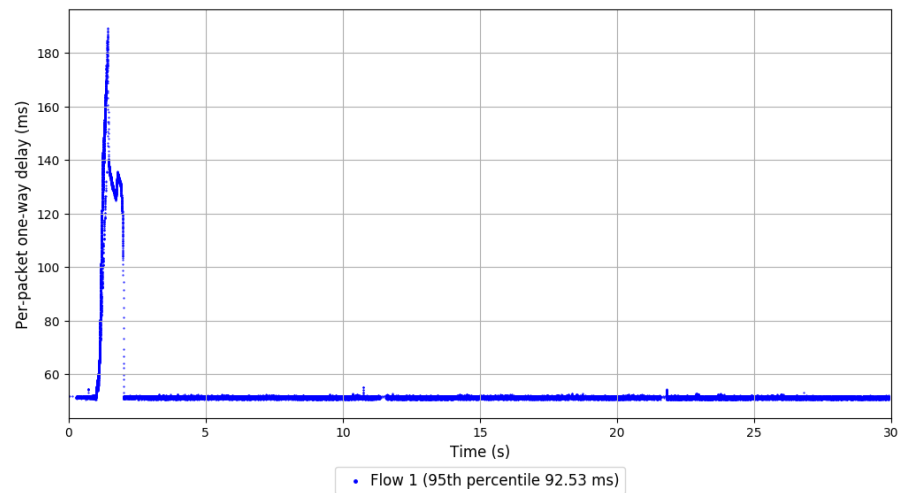
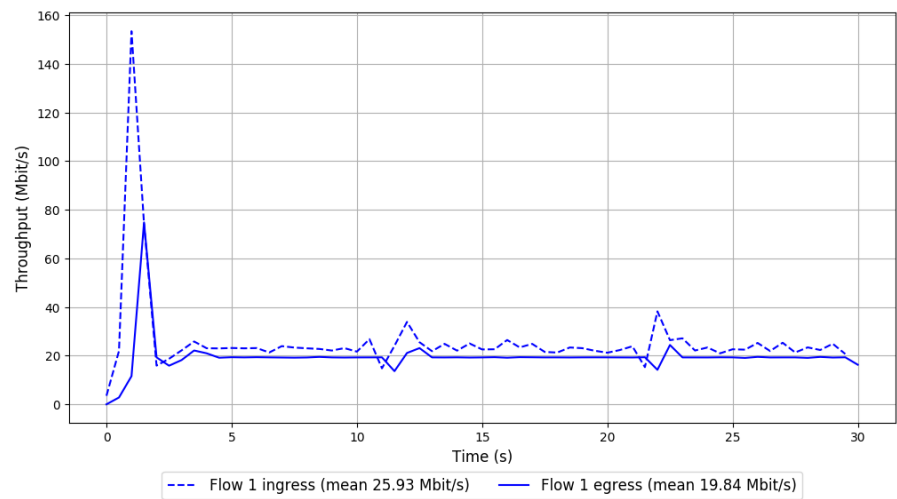


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 20:29:19  
End at: 2018-09-07 20:29:49  
Local clock offset: 3.478 ms  
Remote clock offset: -12.79 ms

# Below is generated by plot.py at 2018-09-07 21:07:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.84 Mbit/s  
95th percentile per-packet one-way delay: 92.527 ms  
Loss rate: 23.68%  
-- Flow 1:  
Average throughput: 19.84 Mbit/s  
95th percentile per-packet one-way delay: 92.527 ms  
Loss rate: 23.68%

Run 4: Report of FillP-Sheep — Data Link

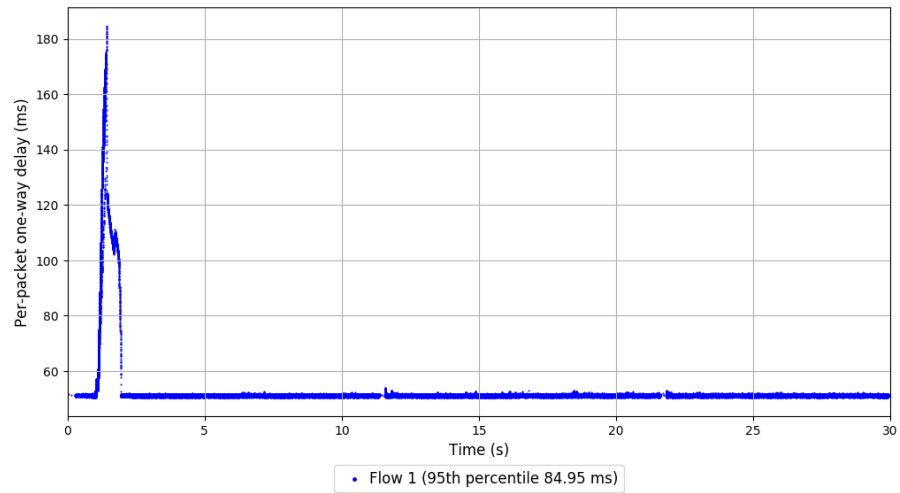
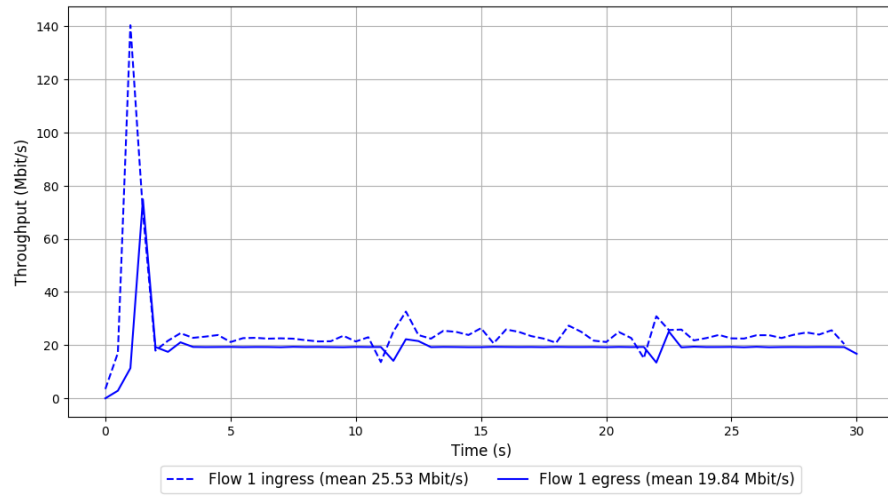


Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 20:51:41  
End at: 2018-09-07 20:52:11  
Local clock offset: 2.96 ms  
Remote clock offset: -12.88 ms

# Below is generated by plot.py at 2018-09-07 21:08:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.84 Mbit/s  
95th percentile per-packet one-way delay: 84.953 ms  
Loss rate: 22.52%  
-- Flow 1:  
Average throughput: 19.84 Mbit/s  
95th percentile per-packet one-way delay: 84.953 ms  
Loss rate: 22.52%

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

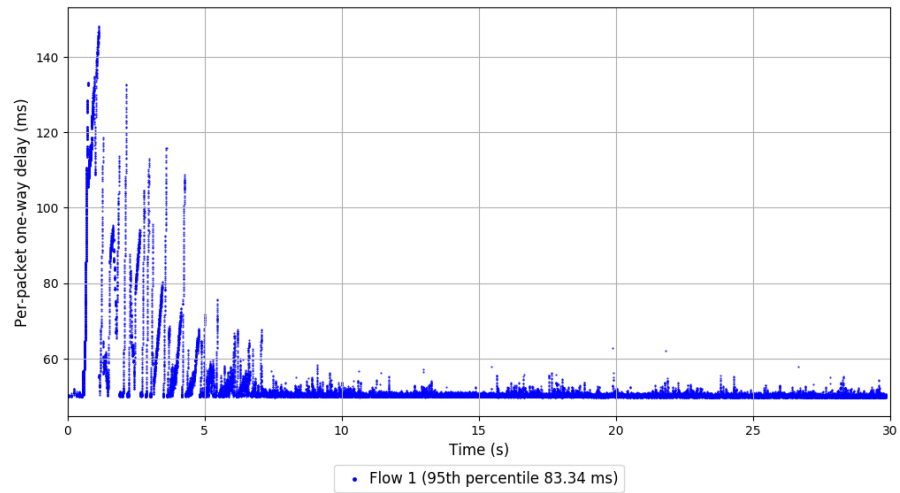
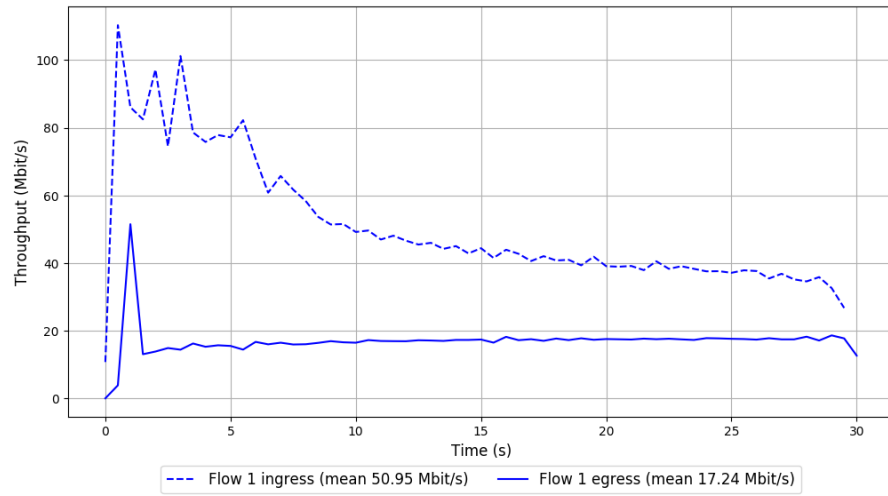


Run 1: Statistics of Indigo

Start at: 2018-09-07 19:22:56  
End at: 2018-09-07 19:23:26  
Local clock offset: 5.005 ms  
Remote clock offset: -16.966 ms

# Below is generated by plot.py at 2018-09-07 21:08:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 17.24 Mbit/s  
95th percentile per-packet one-way delay: 83.340 ms  
Loss rate: 66.27%  
-- Flow 1:  
Average throughput: 17.24 Mbit/s  
95th percentile per-packet one-way delay: 83.340 ms  
Loss rate: 66.27%

## Run 1: Report of Indigo — Data Link





Run 2: Statistics of Indigo

Start at: 2018-09-07 19:44:06

End at: 2018-09-07 19:44:36

Local clock offset: 8.062 ms

Remote clock offset: 1.82 ms

# Below is generated by plot.py at 2018-09-07 21:08:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 16.34 Mbit/s

95th percentile per-packet one-way delay: 109.200 ms

Loss rate: 75.48%

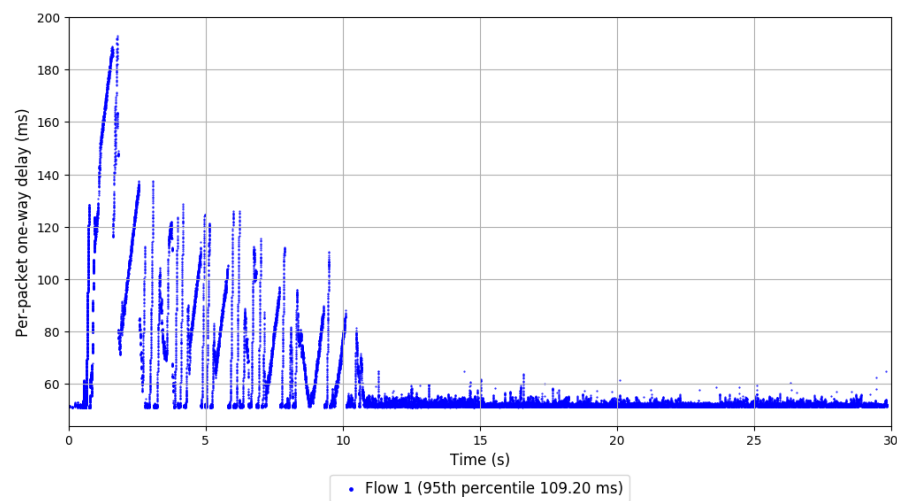
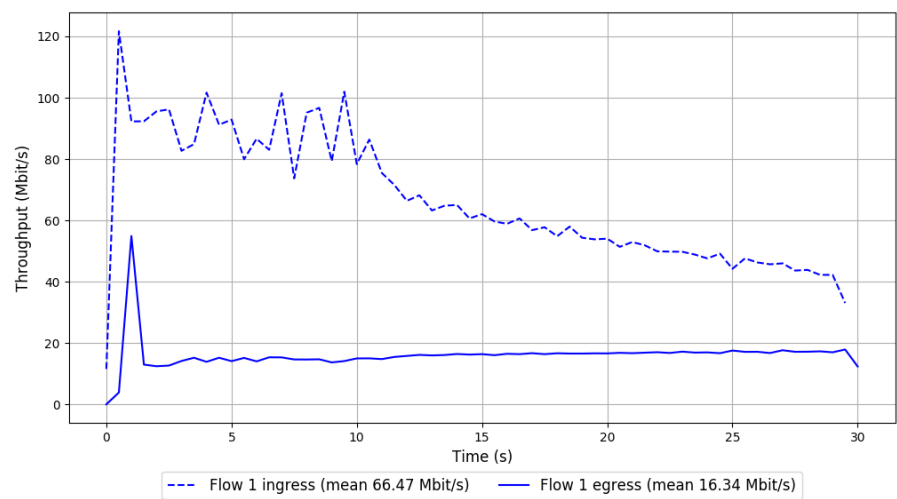
-- Flow 1:

Average throughput: 16.34 Mbit/s

95th percentile per-packet one-way delay: 109.200 ms

Loss rate: 75.48%

Run 2: Report of Indigo — Data Link

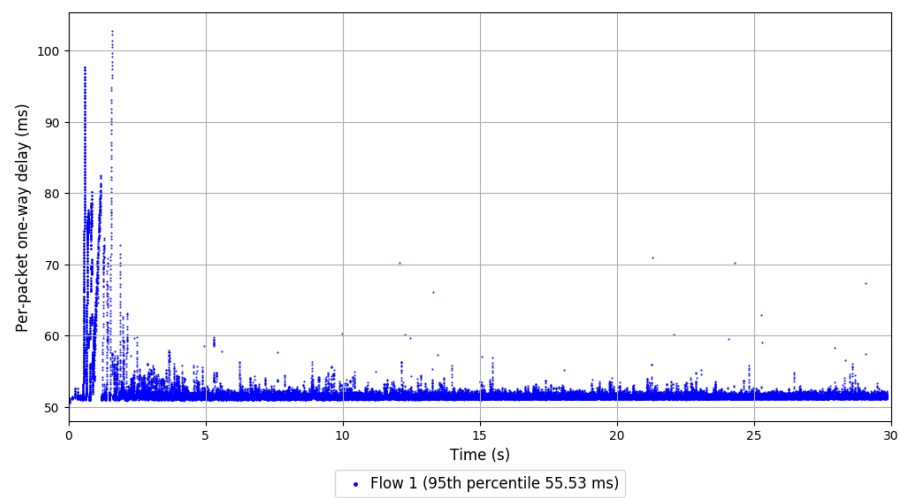
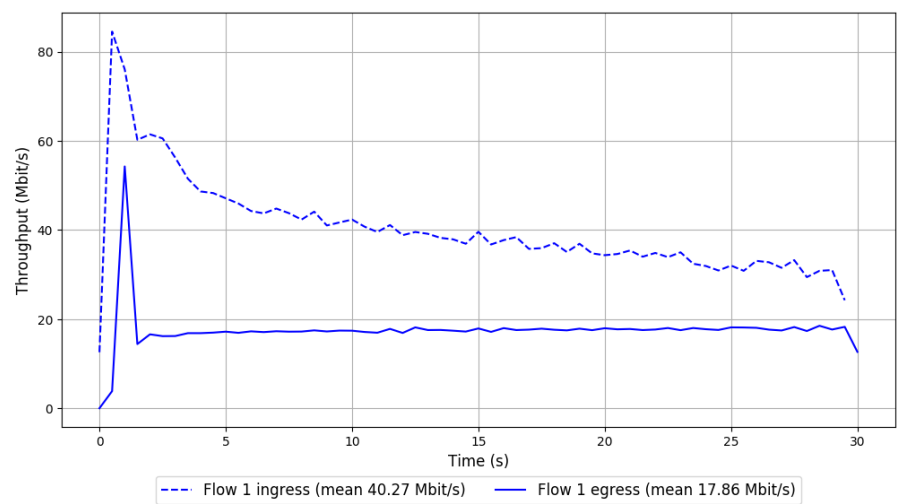


Run 3: Statistics of Indigo

Start at: 2018-09-07 20:04:52  
End at: 2018-09-07 20:05:22  
Local clock offset: 5.998 ms  
Remote clock offset: 11.262 ms

# Below is generated by plot.py at 2018-09-07 21:08:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 17.86 Mbit/s  
95th percentile per-packet one-way delay: 55.530 ms  
Loss rate: 55.79%  
-- Flow 1:  
Average throughput: 17.86 Mbit/s  
95th percentile per-packet one-way delay: 55.530 ms  
Loss rate: 55.79%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-07 20:25:49

End at: 2018-09-07 20:26:19

Local clock offset: 3.868 ms

Remote clock offset: -11.098 ms

# Below is generated by plot.py at 2018-09-07 21:08:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 17.34 Mbit/s

95th percentile per-packet one-way delay: 76.727 ms

Loss rate: 65.30%

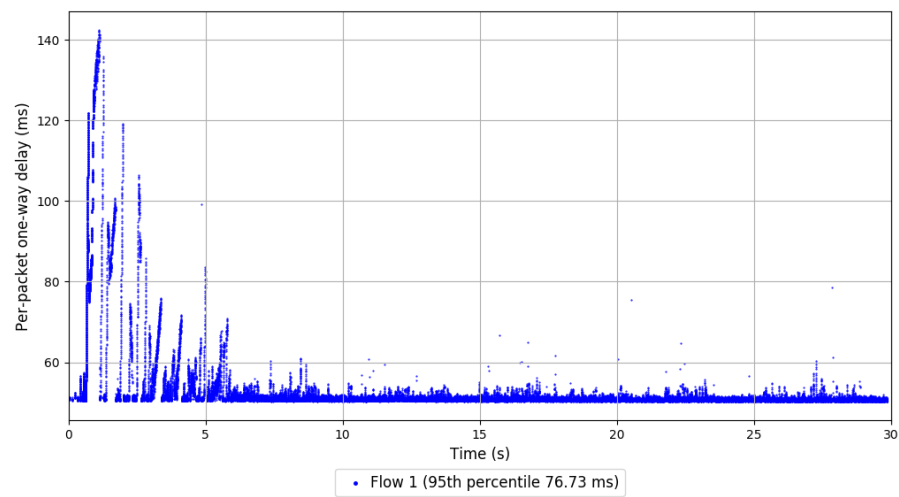
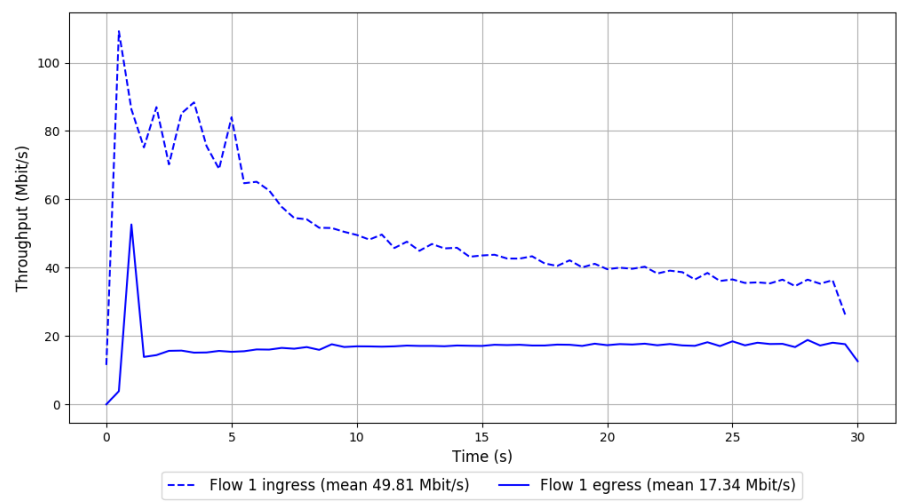
-- Flow 1:

Average throughput: 17.34 Mbit/s

95th percentile per-packet one-way delay: 76.727 ms

Loss rate: 65.30%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-07 20:48:11

End at: 2018-09-07 20:48:41

Local clock offset: 2.988 ms

Remote clock offset: -13.217 ms

# Below is generated by plot.py at 2018-09-07 21:08:17

# Datalink statistics

-- Total of 1 flow:

Average throughput: 15.99 Mbit/s

95th percentile per-packet one-way delay: 118.629 ms

Loss rate: 77.79%

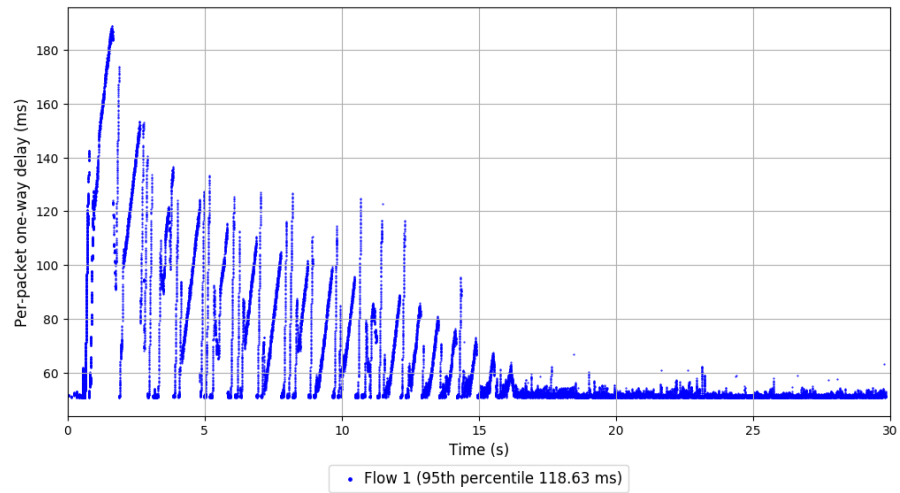
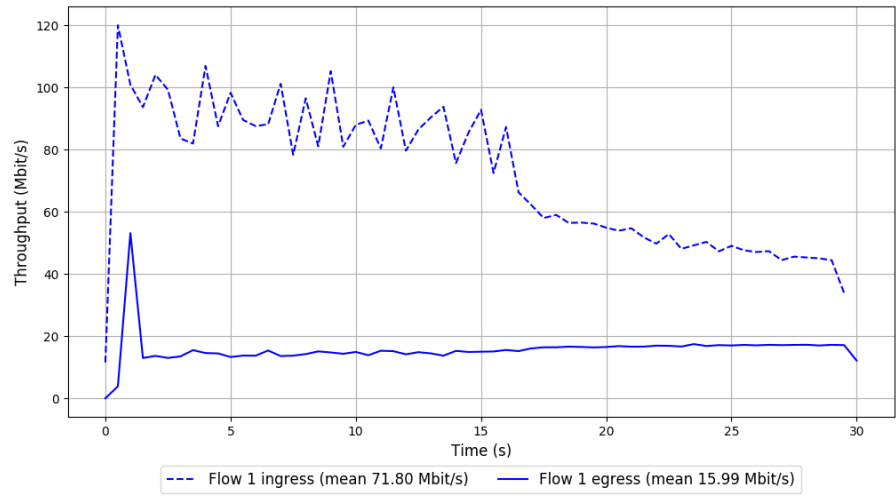
-- Flow 1:

Average throughput: 15.99 Mbit/s

95th percentile per-packet one-way delay: 118.629 ms

Loss rate: 77.79%

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



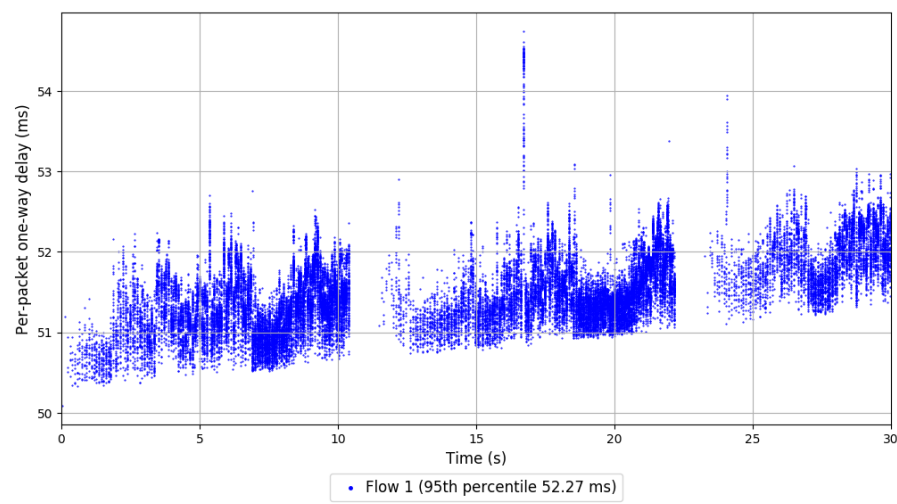
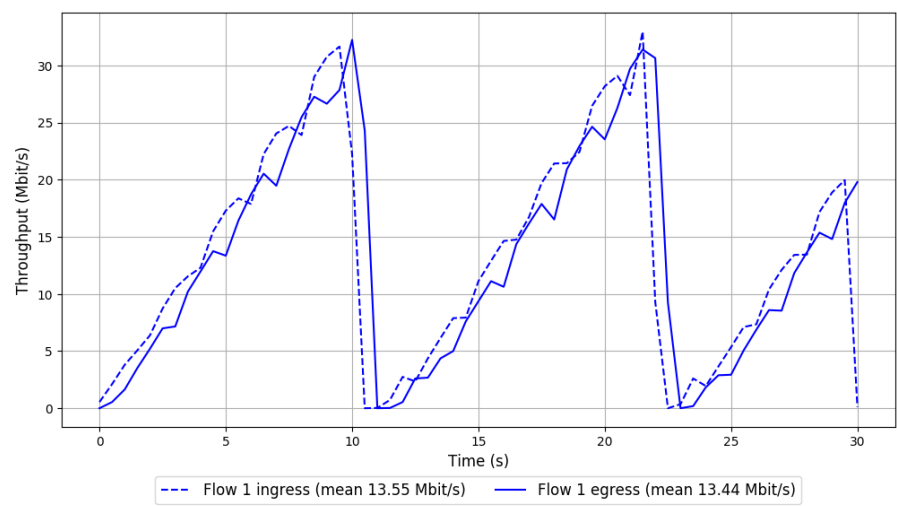


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 19:34:45
End at: 2018-09-07 19:35:15
Local clock offset: 7.014 ms
Remote clock offset: -10.816 ms

# Below is generated by plot.py at 2018-09-07 21:08:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.44 Mbit/s
95th percentile per-packet one-way delay: 52.273 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 13.44 Mbit/s
95th percentile per-packet one-way delay: 52.273 ms
Loss rate: 1.08%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-07 19:55:43

End at: 2018-09-07 19:56:13

Local clock offset: 6.24 ms

Remote clock offset: 9.292 ms

# Below is generated by plot.py at 2018-09-07 21:08:17

# Datalink statistics

-- Total of 1 flow:

Average throughput: 13.64 Mbit/s

95th percentile per-packet one-way delay: 51.852 ms

Loss rate: 1.09%

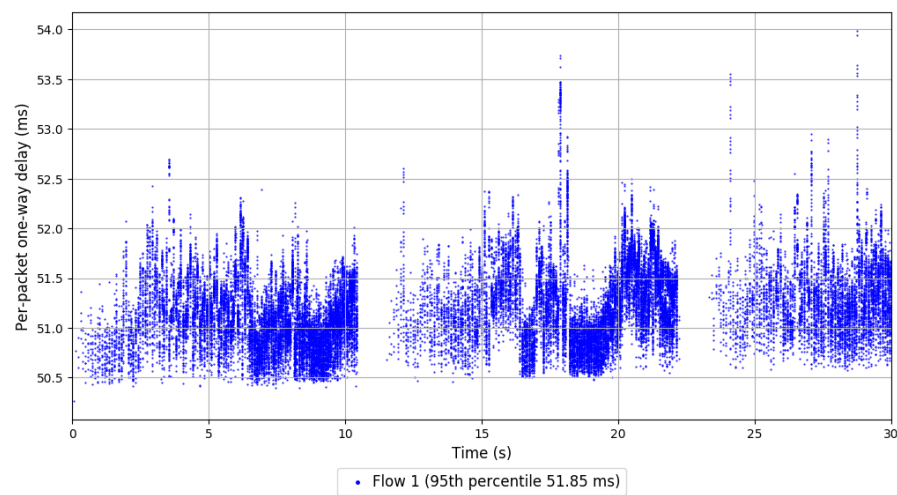
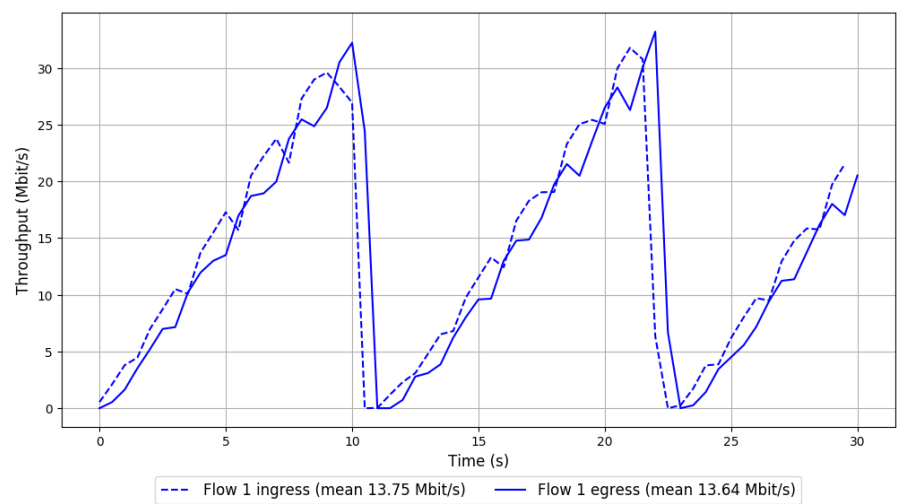
-- Flow 1:

Average throughput: 13.64 Mbit/s

95th percentile per-packet one-way delay: 51.852 ms

Loss rate: 1.09%

Run 2: Report of LEDBAT — Data Link

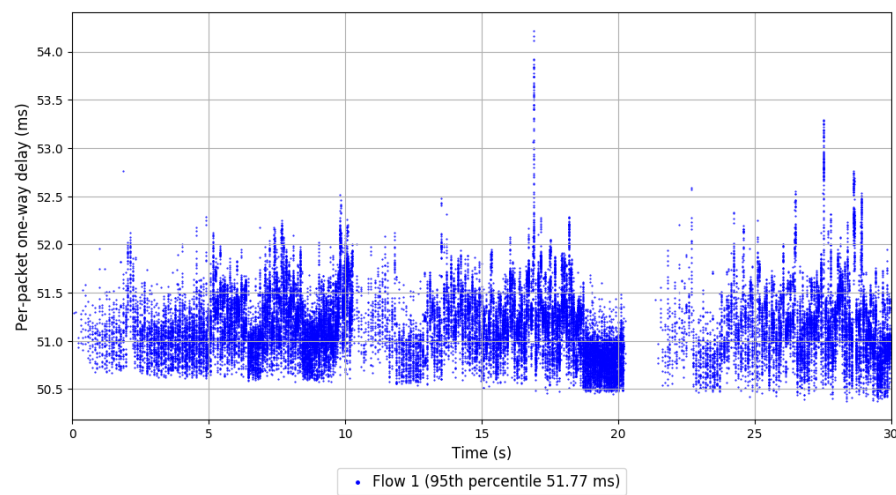
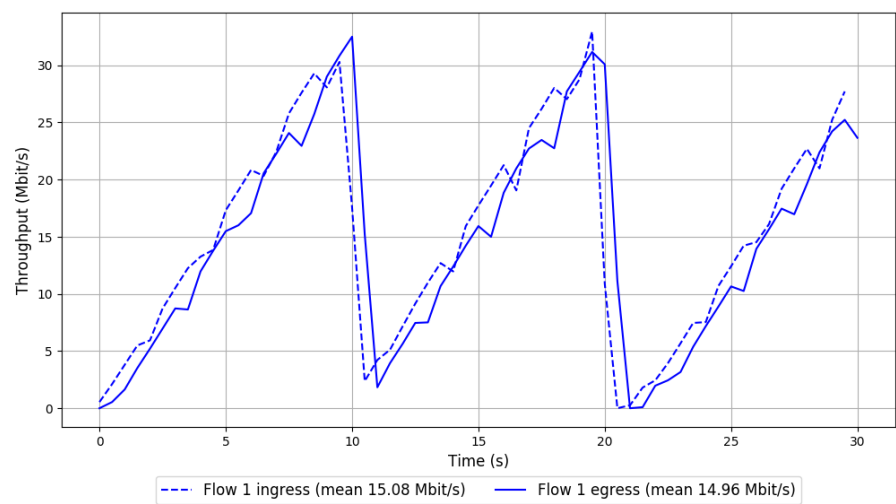


Run 3: Statistics of LEDBAT

Start at: 2018-09-07 20:16:38  
End at: 2018-09-07 20:17:08  
Local clock offset: 5.484 ms  
Remote clock offset: -5.714 ms

# Below is generated by plot.py at 2018-09-07 21:08:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 14.96 Mbit/s  
95th percentile per-packet one-way delay: 51.772 ms  
Loss rate: 1.07%  
-- Flow 1:  
Average throughput: 14.96 Mbit/s  
95th percentile per-packet one-way delay: 51.772 ms  
Loss rate: 1.07%

Run 3: Report of LEDBAT — Data Link

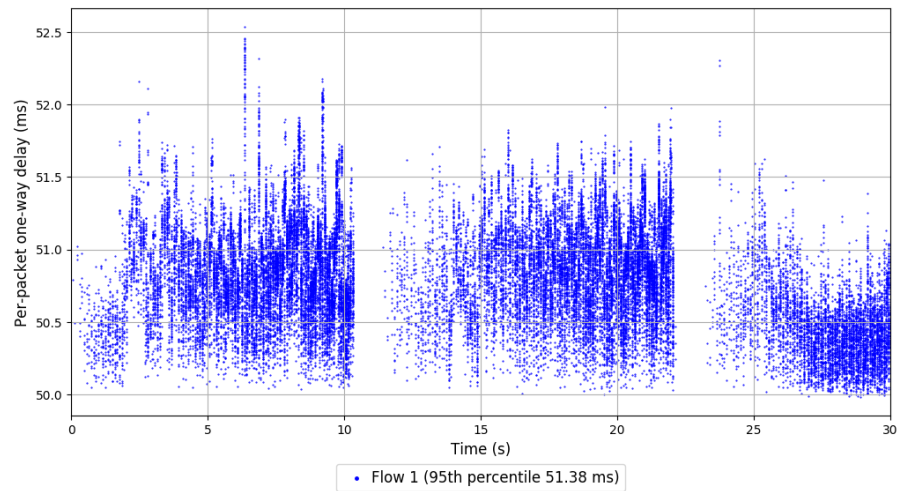
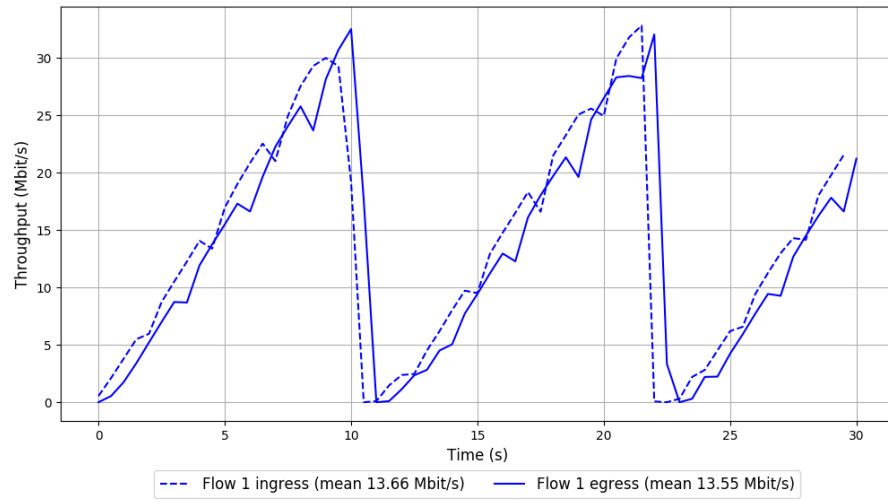


Run 4: Statistics of LEDBAT

Start at: 2018-09-07 20:38:58  
End at: 2018-09-07 20:39:28  
Local clock offset: 2.912 ms  
Remote clock offset: -14.324 ms

# Below is generated by plot.py at 2018-09-07 21:08:18  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 13.55 Mbit/s  
95th percentile per-packet one-way delay: 51.383 ms  
Loss rate: 1.09%  
-- Flow 1:  
Average throughput: 13.55 Mbit/s  
95th percentile per-packet one-way delay: 51.383 ms  
Loss rate: 1.09%

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



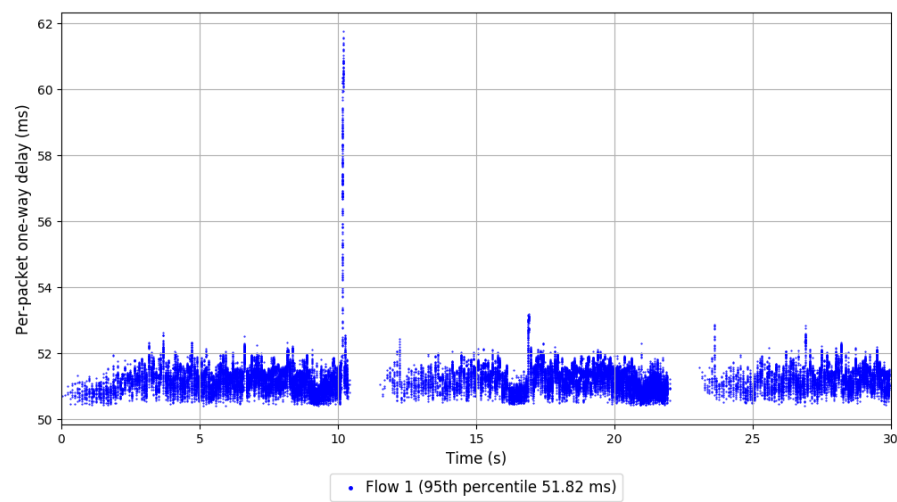
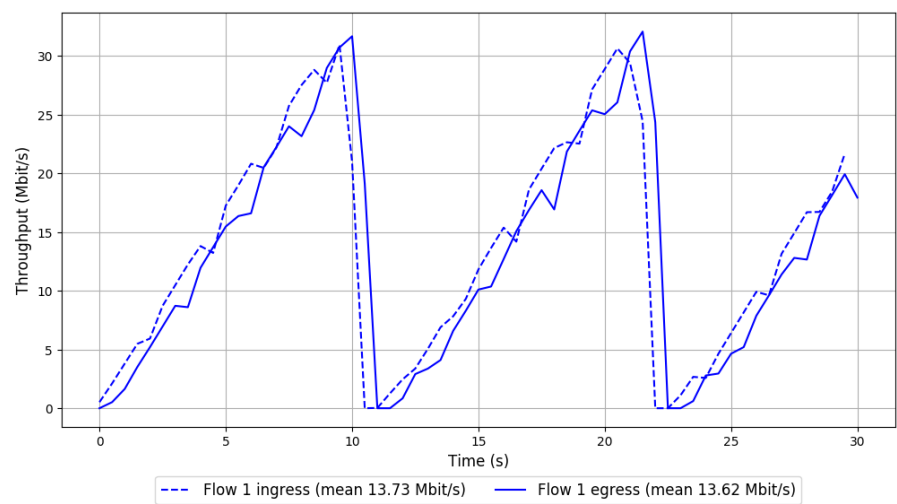


Run 5: Statistics of LEDBAT

Start at: 2018-09-07 20:59:51  
End at: 2018-09-07 21:00:21  
Local clock offset: 3.111 ms  
Remote clock offset: -12.492 ms

# Below is generated by plot.py at 2018-09-07 21:08:19  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 13.62 Mbit/s  
95th percentile per-packet one-way delay: 51.816 ms  
Loss rate: 1.09%  
-- Flow 1:  
Average throughput: 13.62 Mbit/s  
95th percentile per-packet one-way delay: 51.816 ms  
Loss rate: 1.09%

Run 5: Report of LEDBAT — Data Link

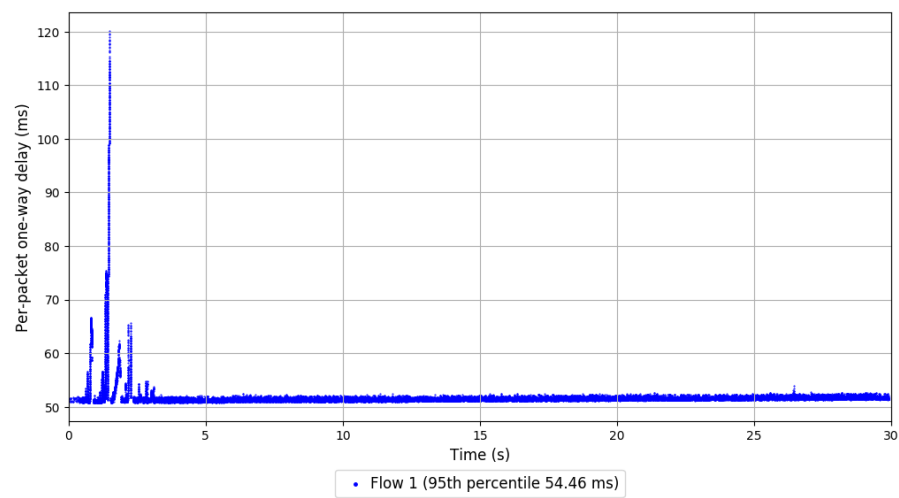
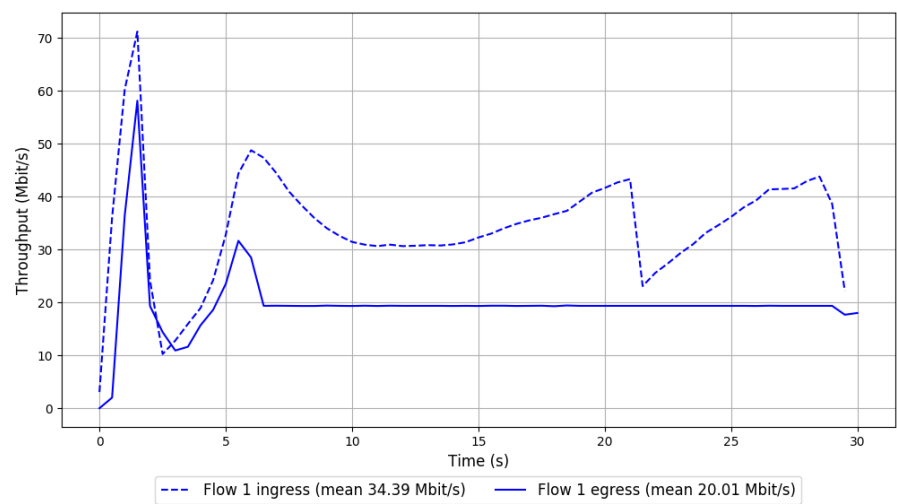


Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 19:39:24  
End at: 2018-09-07 19:39:54  
Local clock offset: 7.45 ms  
Remote clock offset: -3.356 ms

# Below is generated by plot.py at 2018-09-07 21:08:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 20.01 Mbit/s  
95th percentile per-packet one-way delay: 54.458 ms  
Loss rate: 41.97%  
-- Flow 1:  
Average throughput: 20.01 Mbit/s  
95th percentile per-packet one-way delay: 54.458 ms  
Loss rate: 41.97%

Run 1: Report of Indigo-Muses — Data Link

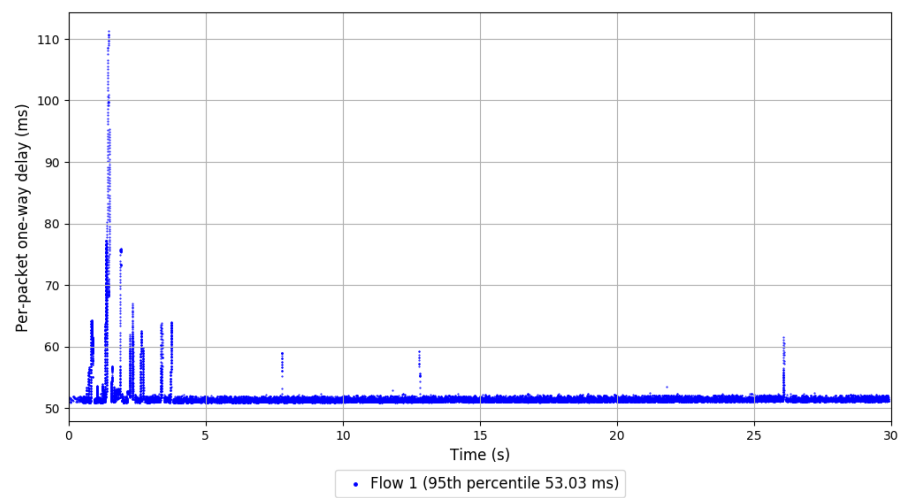
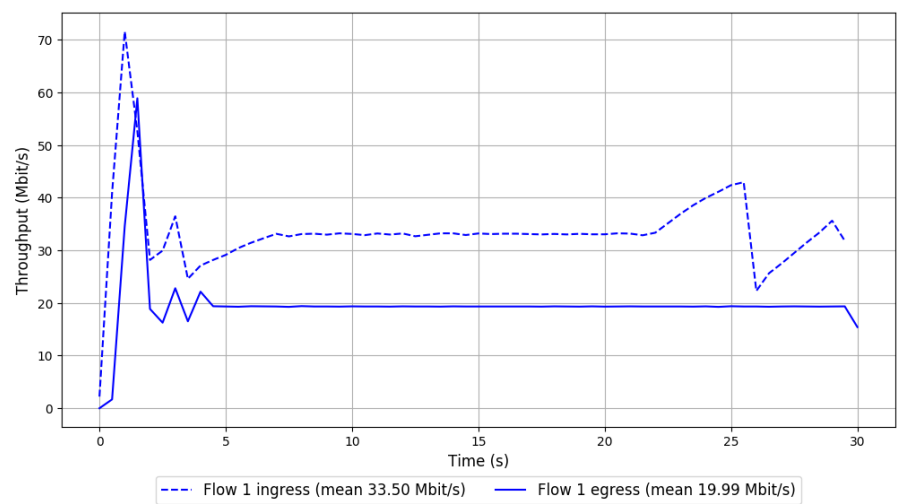


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 20:00:18  
End at: 2018-09-07 20:00:48  
Local clock offset: 6.243 ms  
Remote clock offset: 10.064 ms

# Below is generated by plot.py at 2018-09-07 21:08:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.99 Mbit/s  
95th percentile per-packet one-way delay: 53.033 ms  
Loss rate: 40.50%  
-- Flow 1:  
Average throughput: 19.99 Mbit/s  
95th percentile per-packet one-way delay: 53.033 ms  
Loss rate: 40.50%

Run 2: Report of Indigo-Muses — Data Link

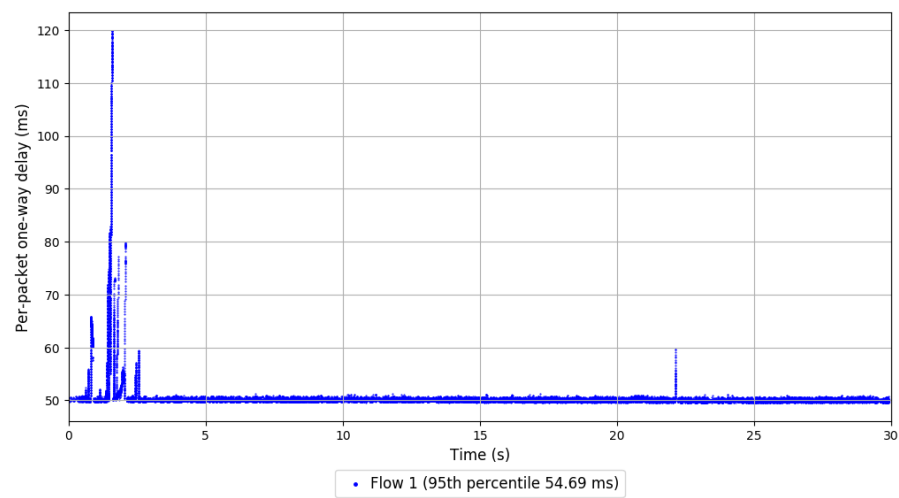
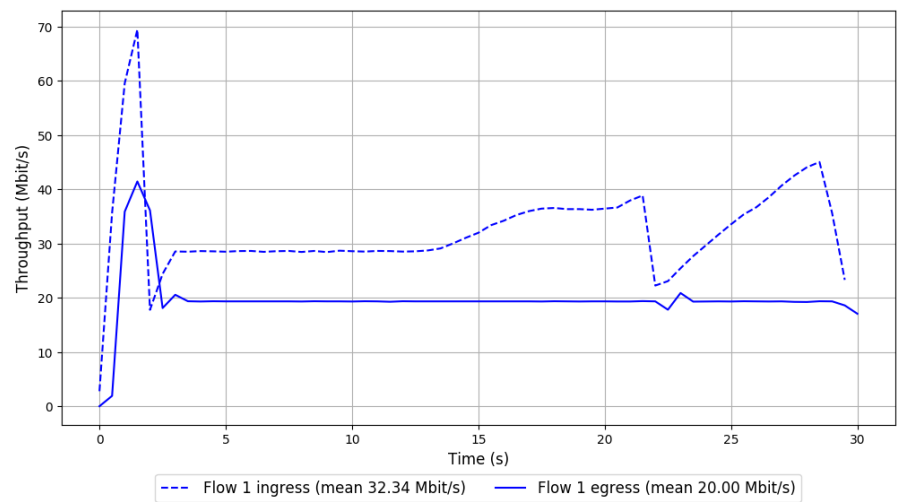


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 20:21:15  
End at: 2018-09-07 20:21:45  
Local clock offset: 4.528 ms  
Remote clock offset: -8.081 ms

# Below is generated by plot.py at 2018-09-07 21:08:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 20.00 Mbit/s  
95th percentile per-packet one-way delay: 54.694 ms  
Loss rate: 38.33%  
-- Flow 1:  
Average throughput: 20.00 Mbit/s  
95th percentile per-packet one-way delay: 54.694 ms  
Loss rate: 38.33%

Run 3: Report of Indigo-Muses — Data Link



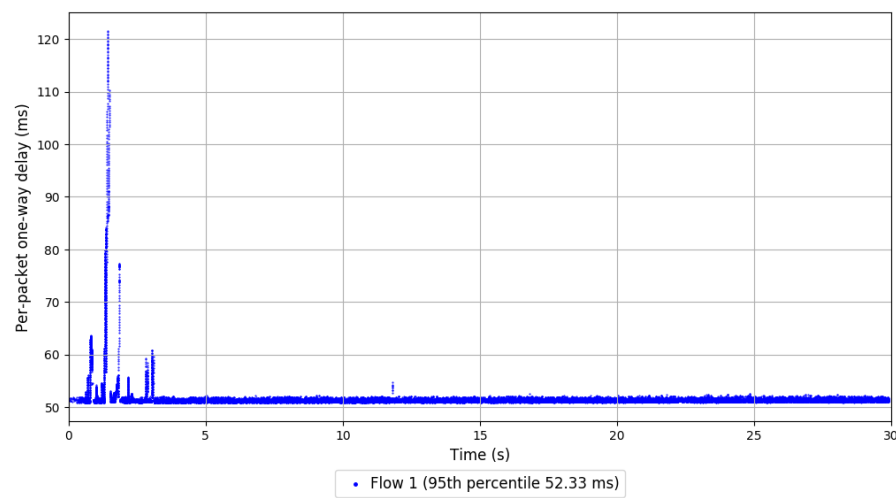
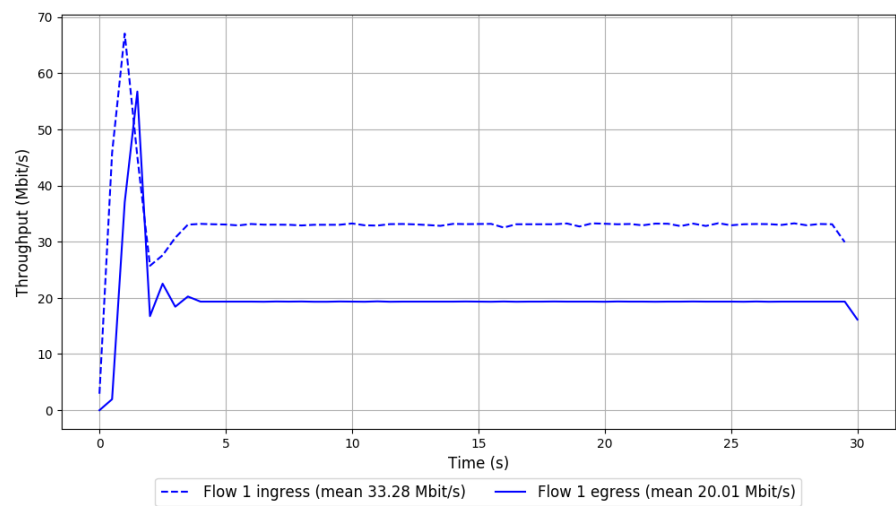


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 20:43:36  
End at: 2018-09-07 20:44:06  
Local clock offset: 2.845 ms  
Remote clock offset: -13.96 ms

# Below is generated by plot.py at 2018-09-07 21:08:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 20.01 Mbit/s  
95th percentile per-packet one-way delay: 52.325 ms  
Loss rate: 40.05%  
-- Flow 1:  
Average throughput: 20.01 Mbit/s  
95th percentile per-packet one-way delay: 52.325 ms  
Loss rate: 40.05%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 21:04:26

End at: 2018-09-07 21:04:56

Local clock offset: 3.2 ms

Remote clock offset: -12.941 ms

# Below is generated by plot.py at 2018-09-07 21:08:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 20.01 Mbit/s

95th percentile per-packet one-way delay: 53.028 ms

Loss rate: 37.43%

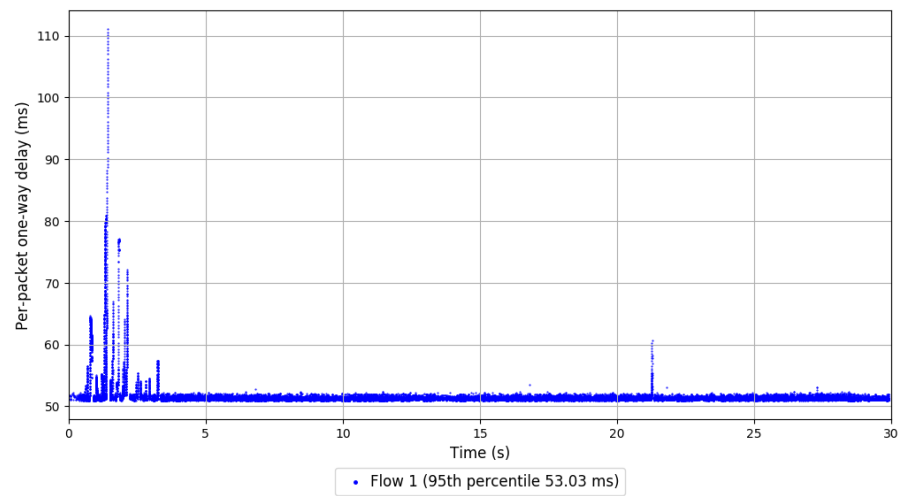
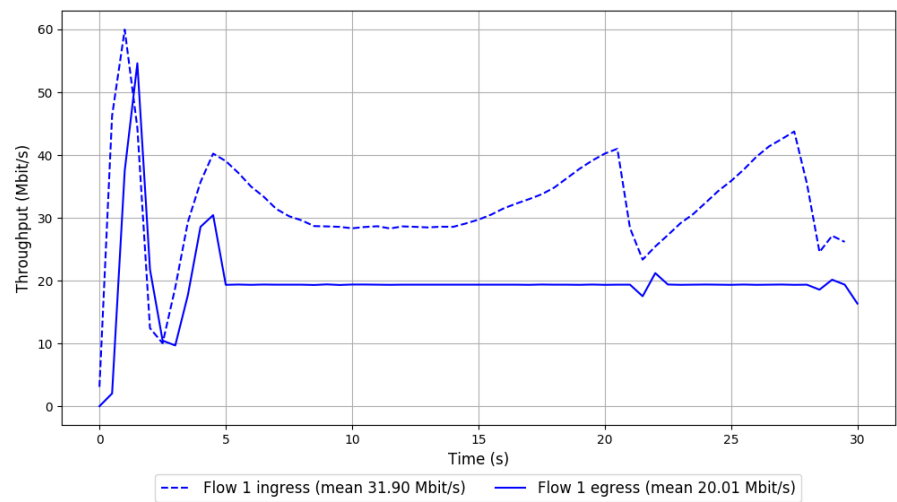
-- Flow 1:

Average throughput: 20.01 Mbit/s

95th percentile per-packet one-way delay: 53.028 ms

Loss rate: 37.43%

Run 5: Report of Indigo-Muses — Data Link

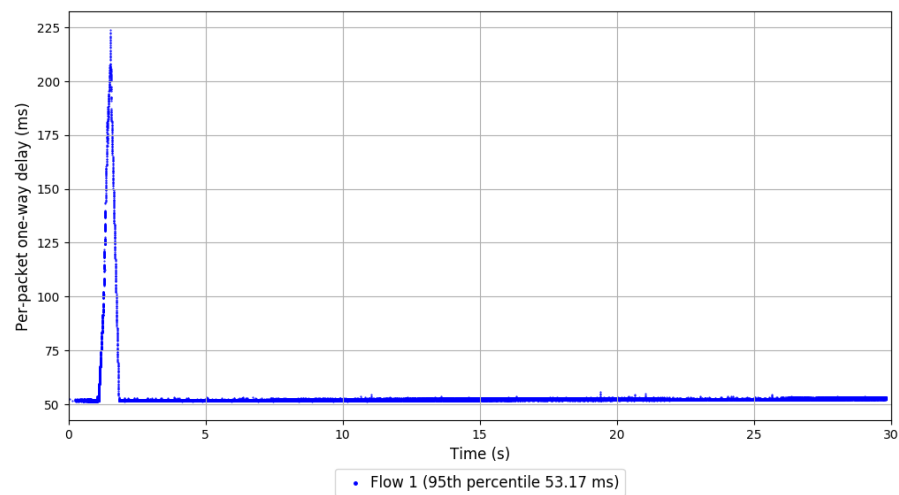
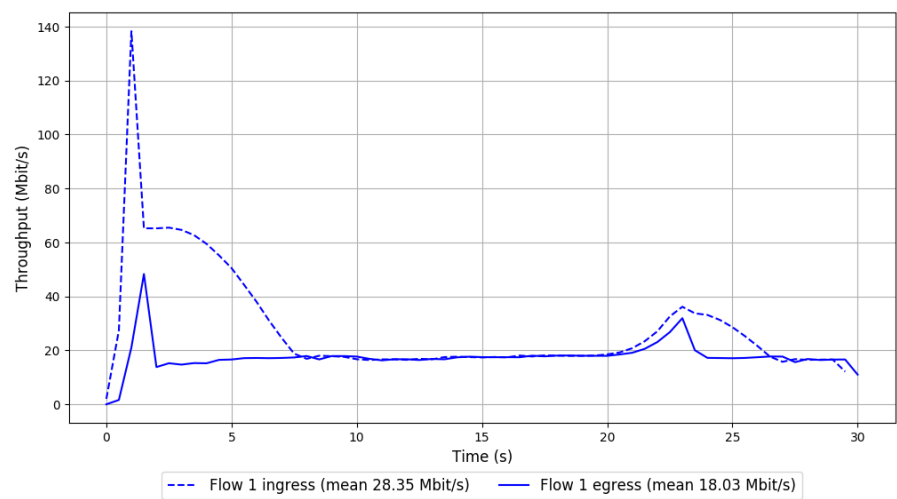


Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 19:35:55  
End at: 2018-09-07 19:36:25  
Local clock offset: 7.375 ms  
Remote clock offset: -9.535 ms

# Below is generated by plot.py at 2018-09-07 21:08:38  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.03 Mbit/s  
95th percentile per-packet one-way delay: 53.169 ms  
Loss rate: 36.59%  
-- Flow 1:  
Average throughput: 18.03 Mbit/s  
95th percentile per-packet one-way delay: 53.169 ms  
Loss rate: 36.59%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 19:56:52

End at: 2018-09-07 19:57:22

Local clock offset: 6.26 ms

Remote clock offset: 9.149 ms

# Below is generated by plot.py at 2018-09-07 21:08:38

# Datalink statistics

-- Total of 1 flow:

Average throughput: 18.34 Mbit/s

95th percentile per-packet one-way delay: 51.777 ms

Loss rate: 32.25%

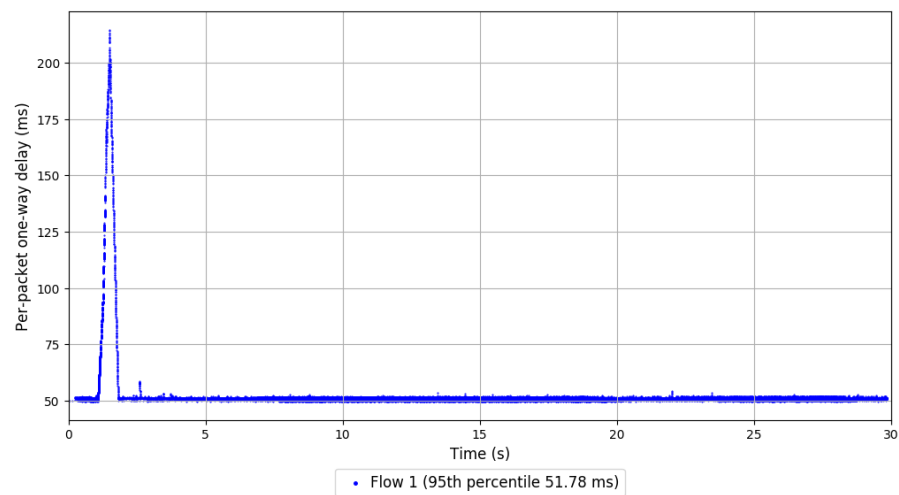
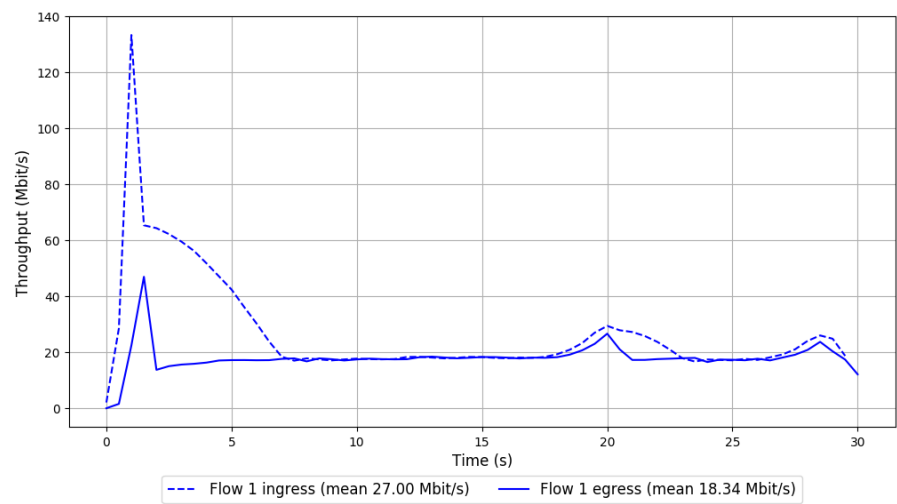
-- Flow 1:

Average throughput: 18.34 Mbit/s

95th percentile per-packet one-way delay: 51.777 ms

Loss rate: 32.25%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 20:17:48

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

Local clock offset: 5.404 ms

Remote clock offset: -6.623 ms

# Below is generated by plot.py at 2018-09-07 21:08:39

# Datalink statistics

-- Total of 1 flow:

Average throughput: 18.14 Mbit/s

95th percentile per-packet one-way delay: 51.371 ms

Loss rate: 31.34%

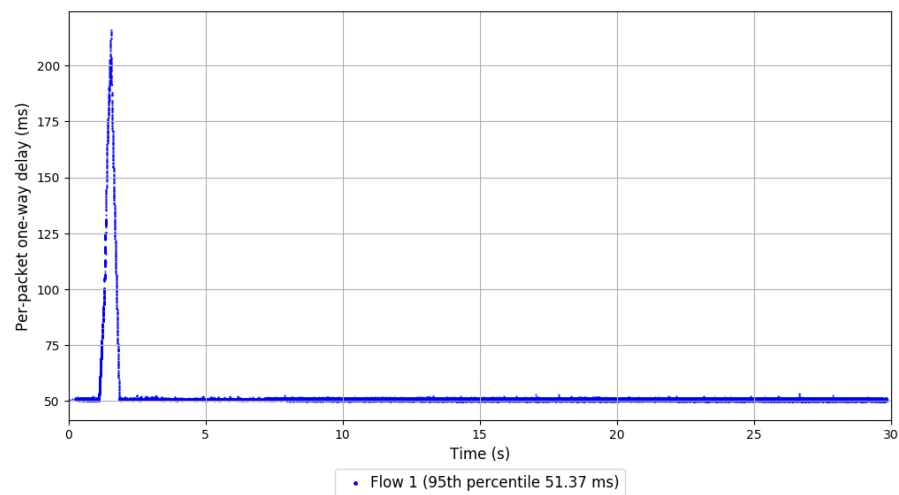
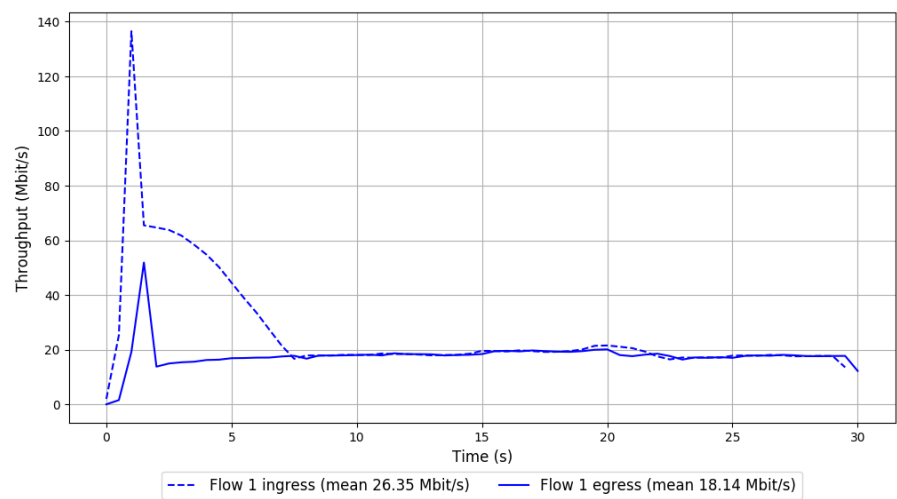
-- Flow 1:

Average throughput: 18.14 Mbit/s

95th percentile per-packet one-way delay: 51.371 ms

Loss rate: 31.34%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 20:40:08

End at: 2018-09-07 20:40:38

Local clock offset: 2.985 ms

Remote clock offset: -14.401 ms

# Below is generated by plot.py at 2018-09-07 21:08:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 18.38 Mbit/s

95th percentile per-packet one-way delay: 51.434 ms

Loss rate: 31.58%

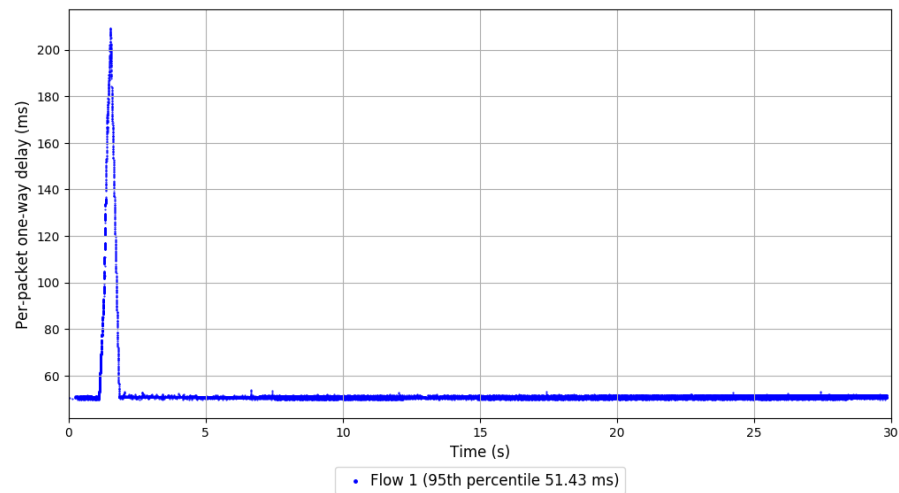
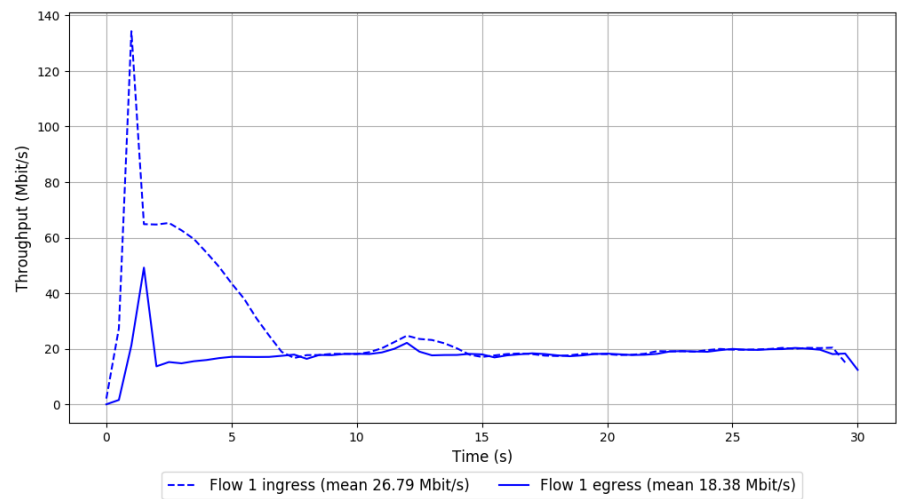
-- Flow 1:

Average throughput: 18.38 Mbit/s

95th percentile per-packet one-way delay: 51.434 ms

Loss rate: 31.58%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 21:01:00

End at: 2018-09-07 21:01:30

Local clock offset: 3.09 ms

Remote clock offset: -12.849 ms

# Below is generated by plot.py at 2018-09-07 21:08:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 18.39 Mbit/s

95th percentile per-packet one-way delay: 51.579 ms

Loss rate: 30.98%

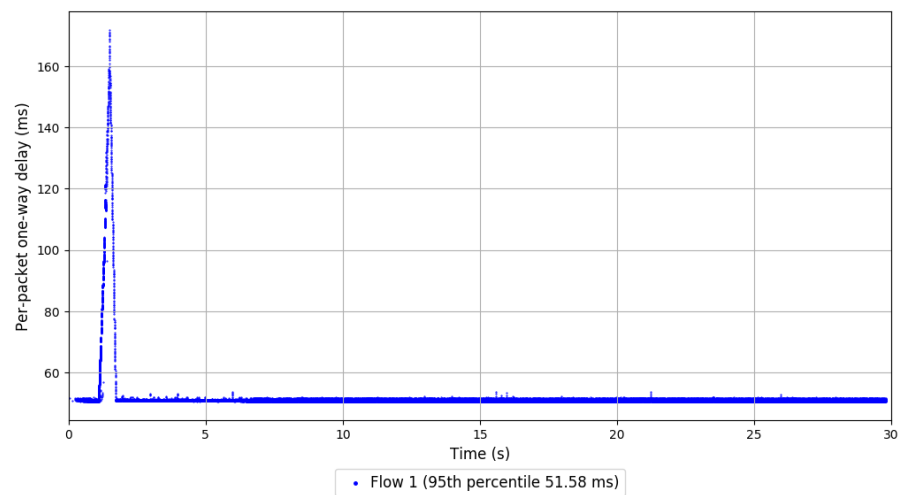
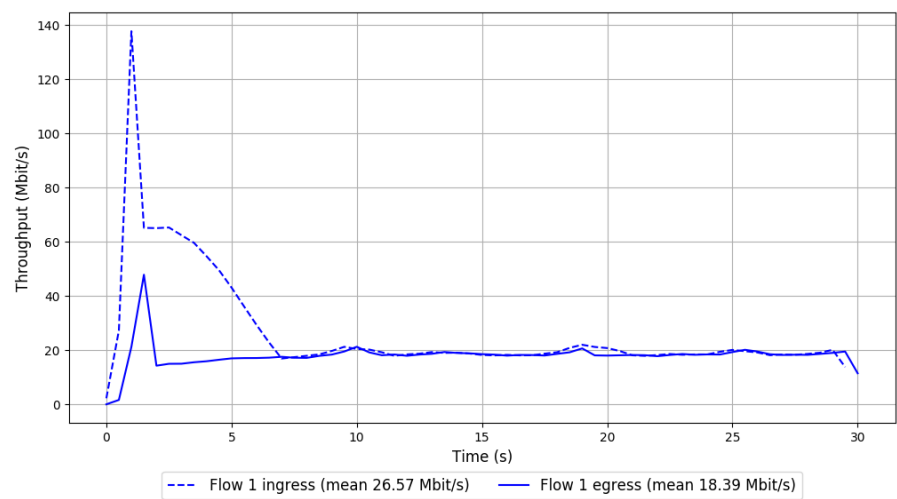
-- Flow 1:

Average throughput: 18.39 Mbit/s

95th percentile per-packet one-way delay: 51.579 ms

Loss rate: 30.98%

Run 5: Report of PCC-Allegro — Data Link

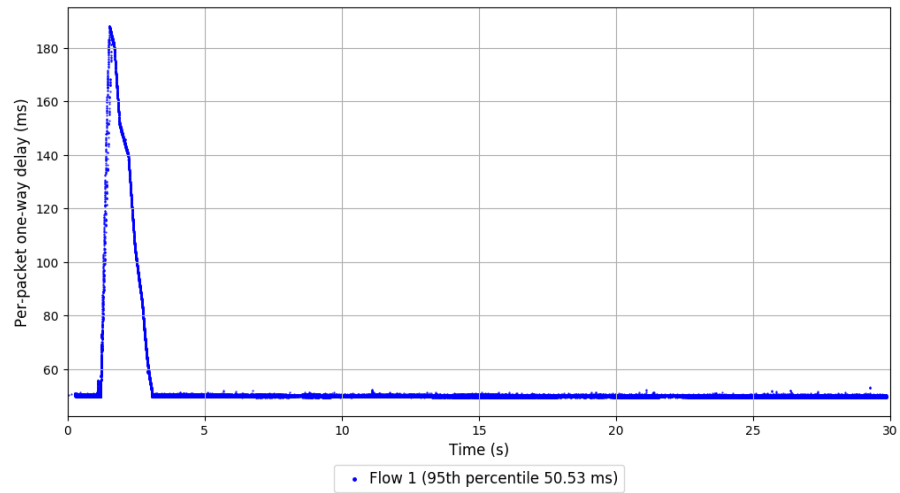
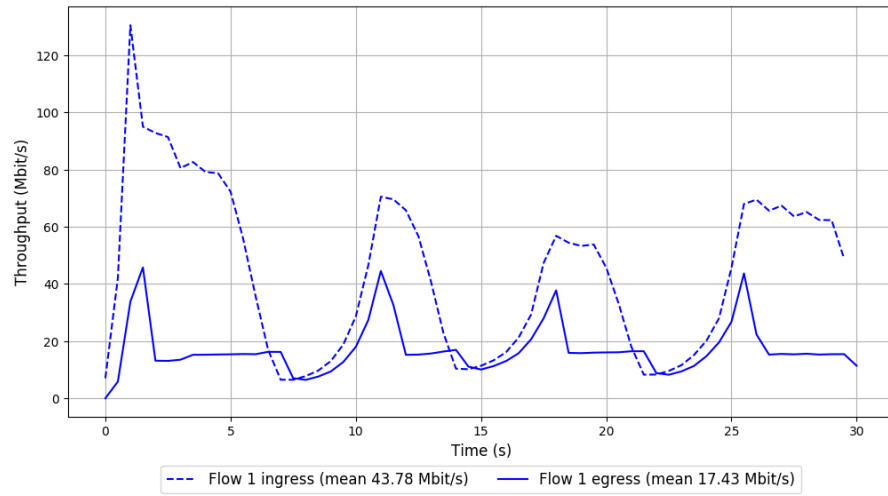


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 19:21:45
End at: 2018-09-07 19:22:15
Local clock offset: 4.777 ms
Remote clock offset: -16.673 ms

# Below is generated by plot.py at 2018-09-07 21:09:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 17.43 Mbit/s
95th percentile per-packet one-way delay: 50.532 ms
Loss rate: 60.30%
-- Flow 1:
Average throughput: 17.43 Mbit/s
95th percentile per-packet one-way delay: 50.532 ms
Loss rate: 60.30%
```

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





Run 2: Statistics of PCC-Expr

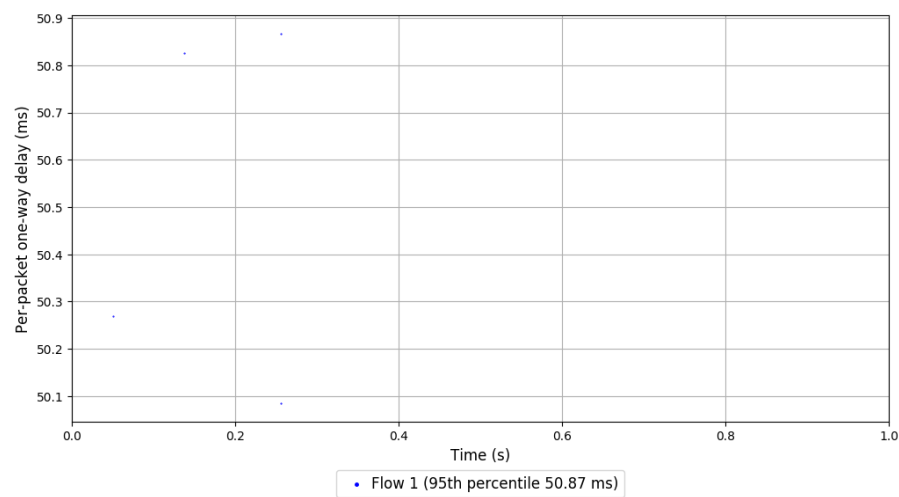
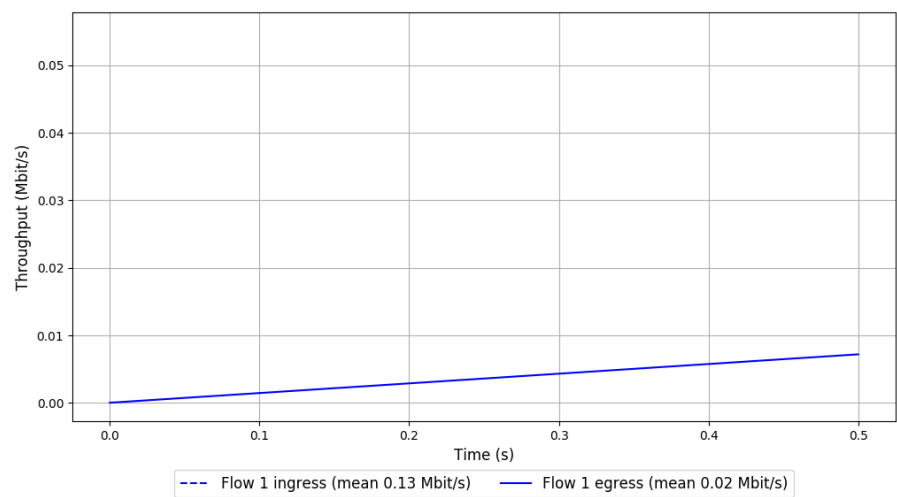
Start at: 2018-09-07 19:42:59

End at: 2018-09-07 19:43:29

Local clock offset: 7.772 ms

Remote clock offset: 1.108 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

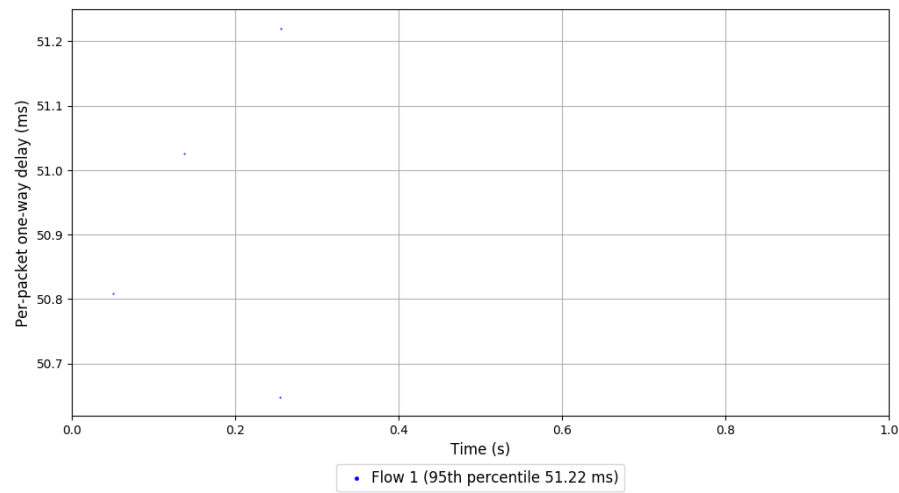
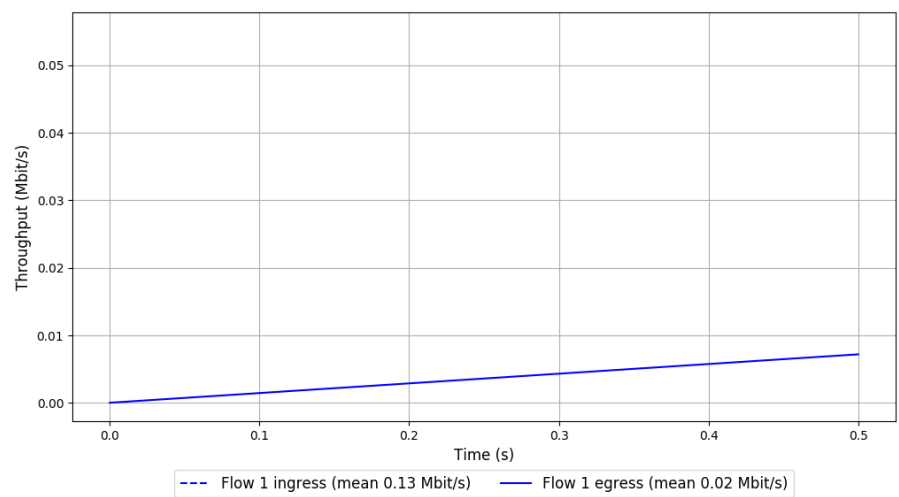
Start at: 2018-09-07 20:03:45

End at: 2018-09-07 20:04:15

Local clock offset: 5.941 ms

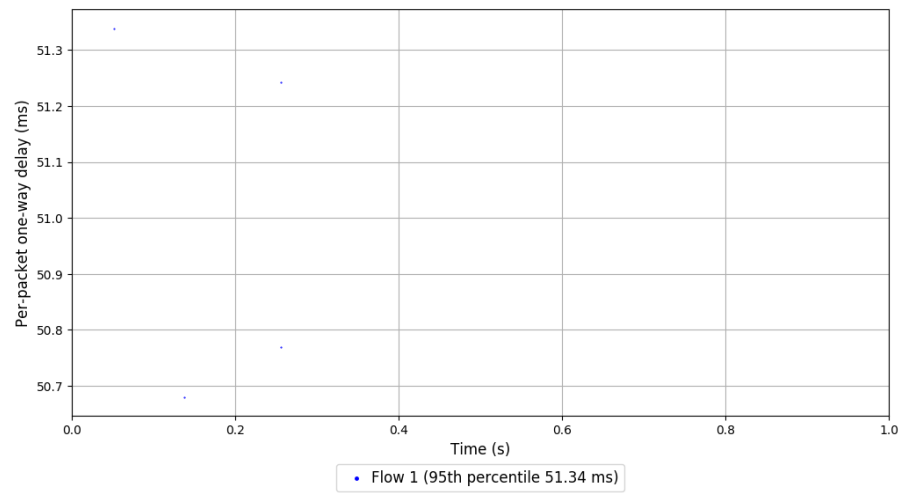
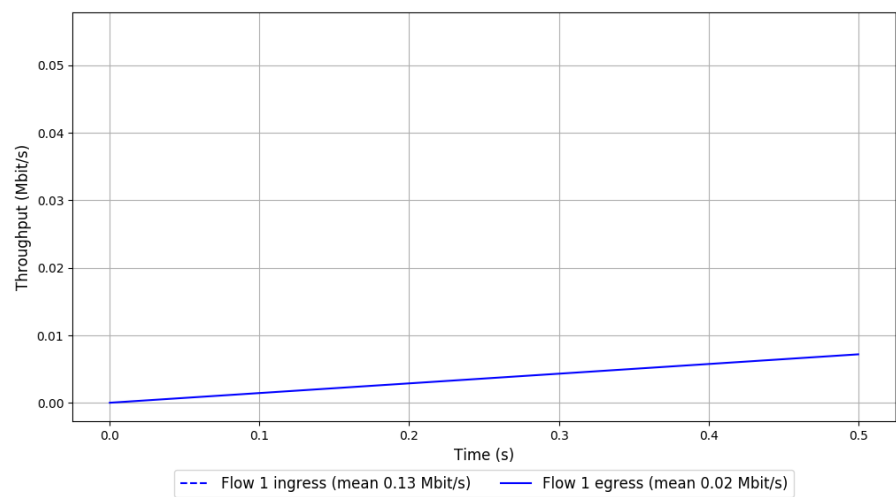
Remote clock offset: 11.155 ms

Run 3: Report of PCC-Expr — Data Link



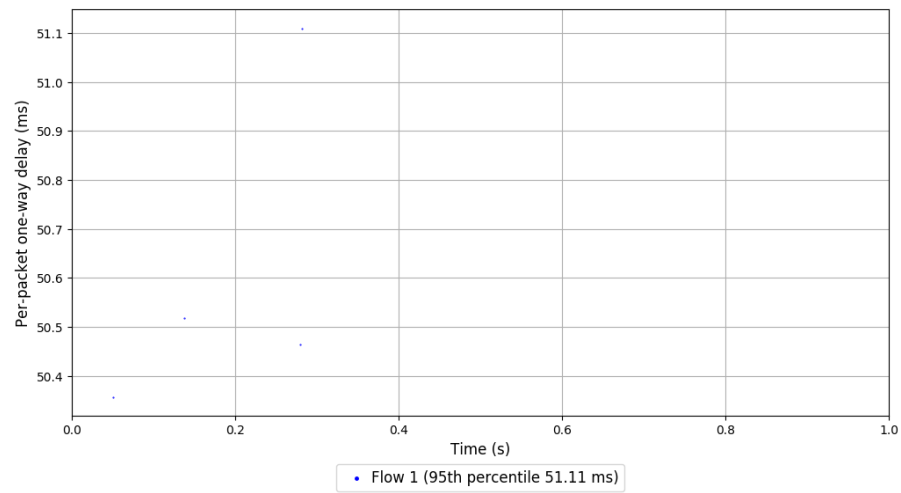
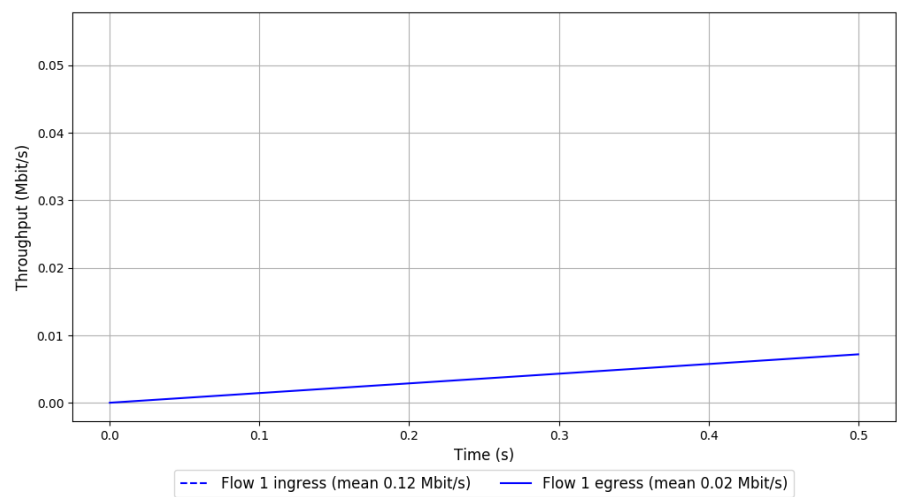
Run 4: Statistics of PCC-Expr  
  
Start at: 2018-09-07 20:24:42  
End at: 2018-09-07 20:25:12  
Local clock offset: 4.011 ms  
Remote clock offset: -10.762 ms

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr  
  
Start at: 2018-09-07 20:47:04  
End at: 2018-09-07 20:47:34  
Local clock offset: 2.93 ms  
Remote clock offset: -12.649 ms

Run 5: Report of PCC-Expr — Data Link



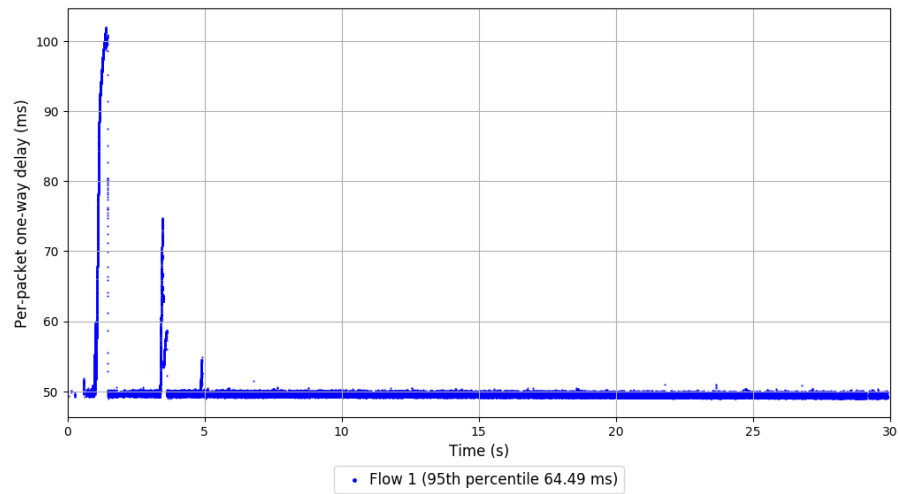
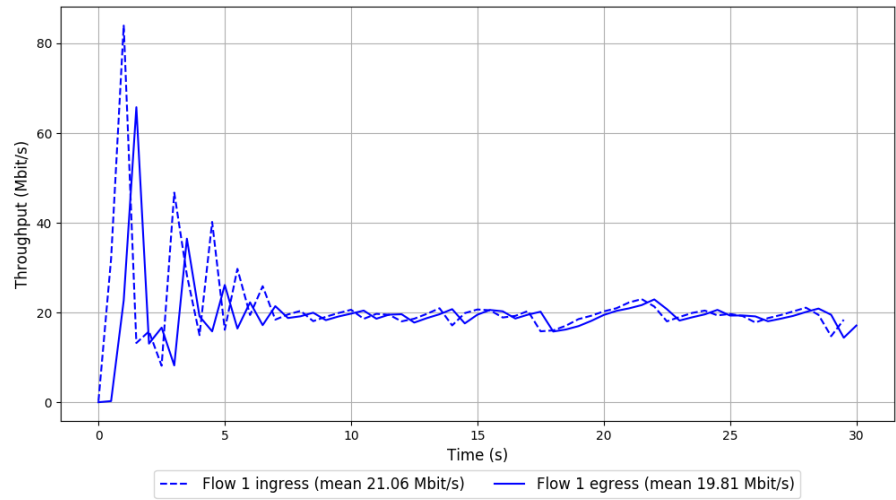


Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 19:27:36  
End at: 2018-09-07 19:28:06  
Local clock offset: 5.99 ms  
Remote clock offset: -18.649 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.81 Mbit/s  
95th percentile per-packet one-way delay: 64.489 ms  
Loss rate: 6.21%  
-- Flow 1:  
Average throughput: 19.81 Mbit/s  
95th percentile per-packet one-way delay: 64.489 ms  
Loss rate: 6.21%

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



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 19:48:45

End at: 2018-09-07 19:49:15

Local clock offset: 6.962 ms

Remote clock offset: 5.729 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.78 Mbit/s

95th percentile per-packet one-way delay: 61.140 ms

Loss rate: 6.16%

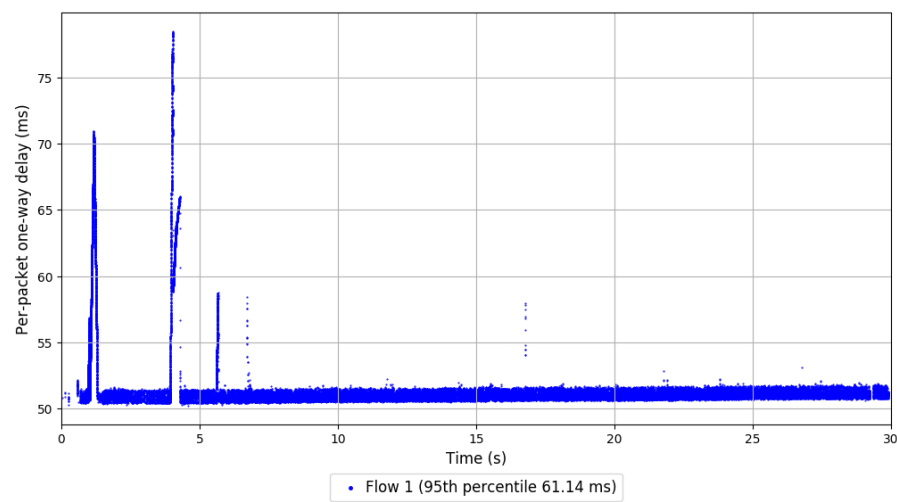
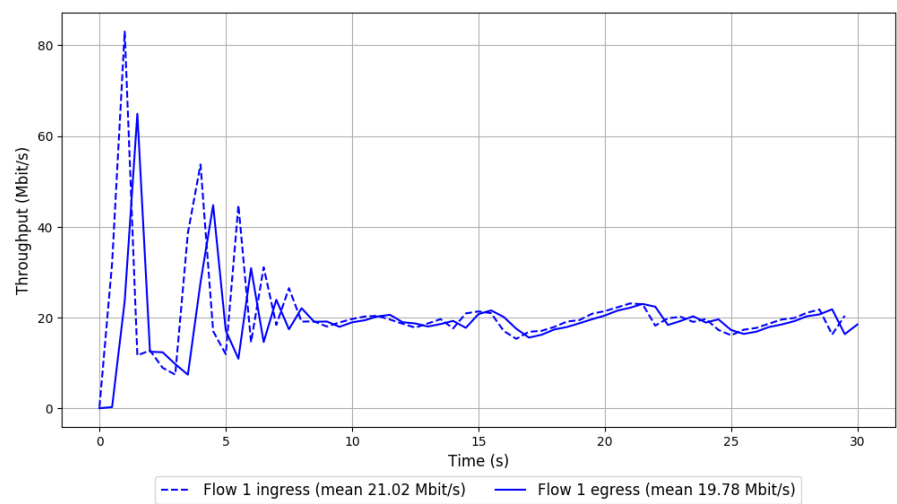
-- Flow 1:

Average throughput: 19.78 Mbit/s

95th percentile per-packet one-way delay: 61.140 ms

Loss rate: 6.16%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 20:09:40

End at: 2018-09-07 20:10:10

Local clock offset: 5.831 ms

Remote clock offset: 3.725 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.63 Mbit/s

95th percentile per-packet one-way delay: 57.545 ms

Loss rate: 6.76%

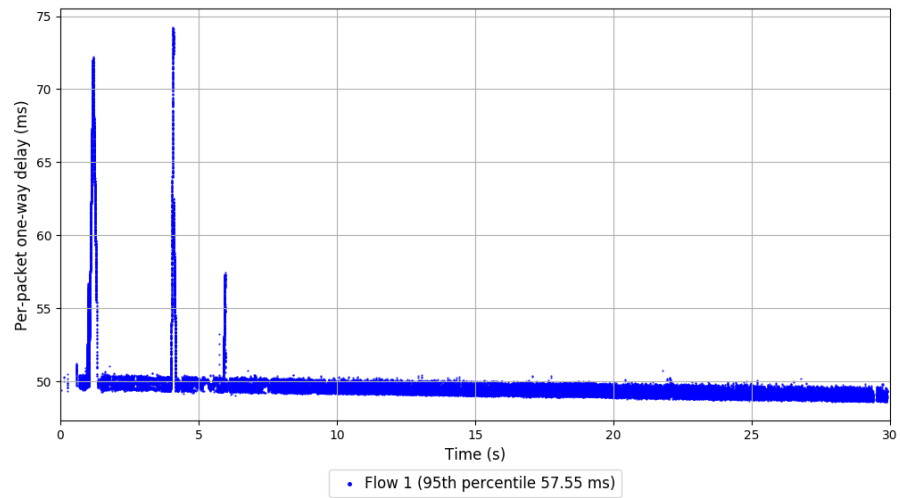
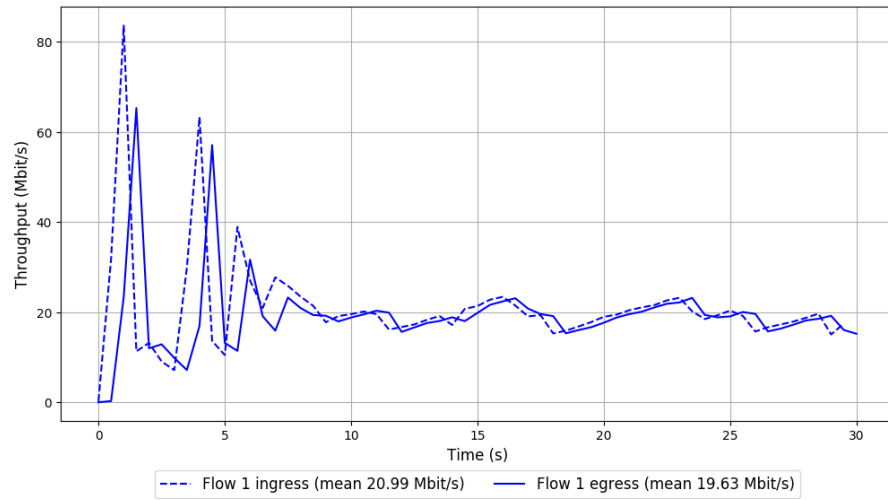
-- Flow 1:

Average throughput: 19.63 Mbit/s

95th percentile per-packet one-way delay: 57.545 ms

Loss rate: 6.76%

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

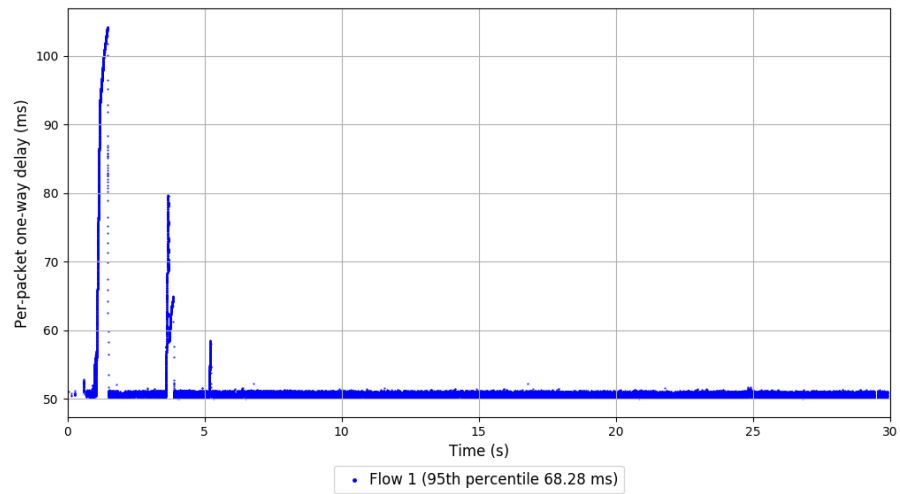
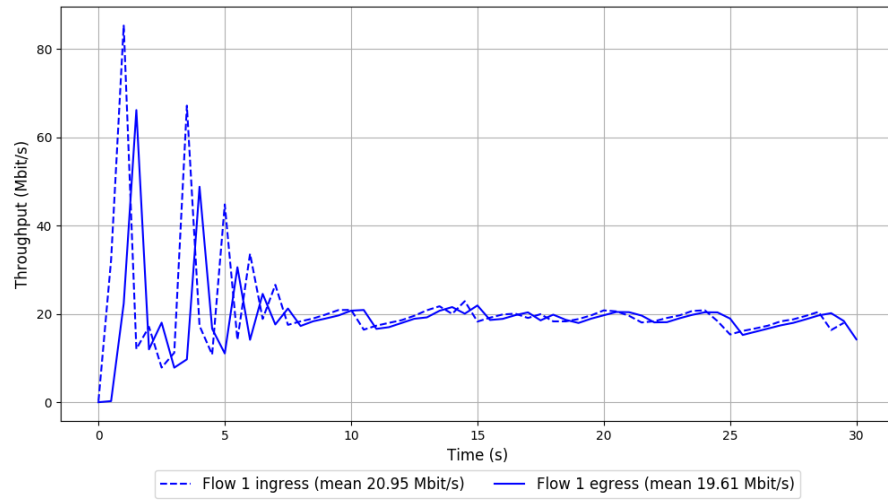


Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 20:30:37  
End at: 2018-09-07 20:31:07  
Local clock offset: 3.47 ms  
Remote clock offset: -12.418 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.61 Mbit/s  
95th percentile per-packet one-way delay: 68.278 ms  
Loss rate: 6.69%  
-- Flow 1:  
Average throughput: 19.61 Mbit/s  
95th percentile per-packet one-way delay: 68.278 ms  
Loss rate: 6.69%

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



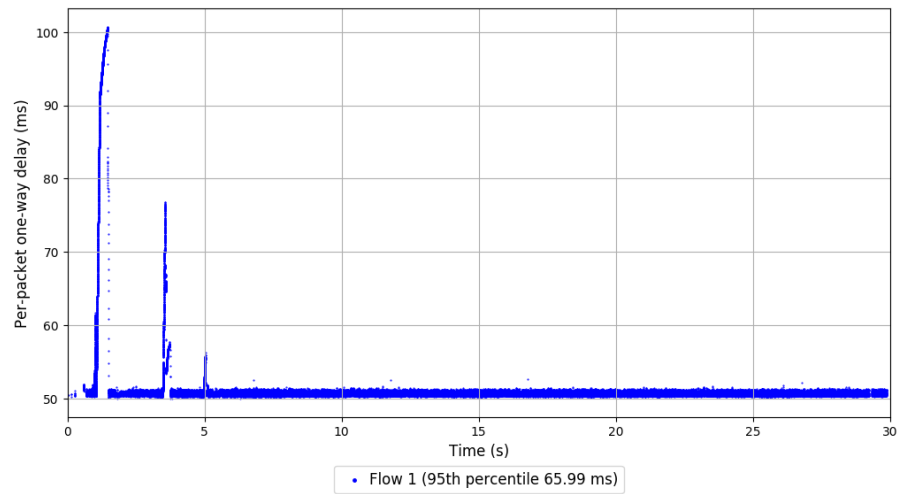
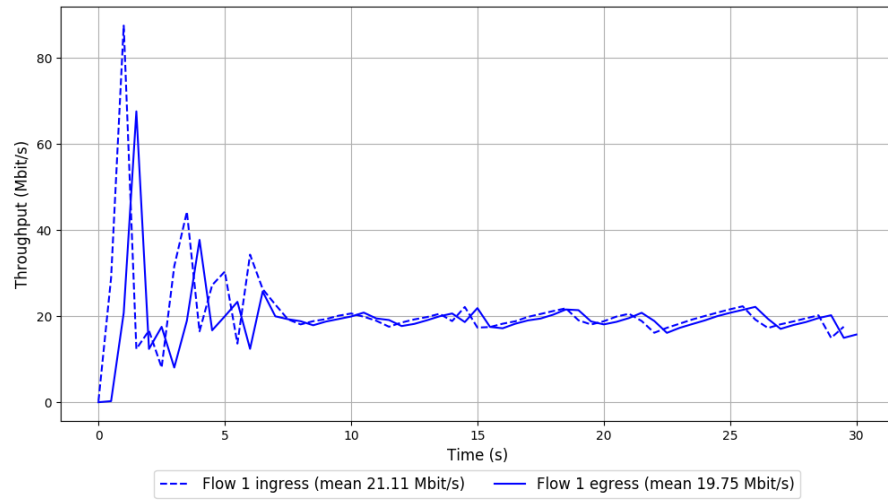


Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 20:52:51  
End at: 2018-09-07 20:53:21  
Local clock offset: 3.075 ms  
Remote clock offset: -12.399 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.75 Mbit/s  
95th percentile per-packet one-way delay: 65.992 ms  
Loss rate: 6.74%  
-- Flow 1:  
Average throughput: 19.75 Mbit/s  
95th percentile per-packet one-way delay: 65.992 ms  
Loss rate: 6.74%

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

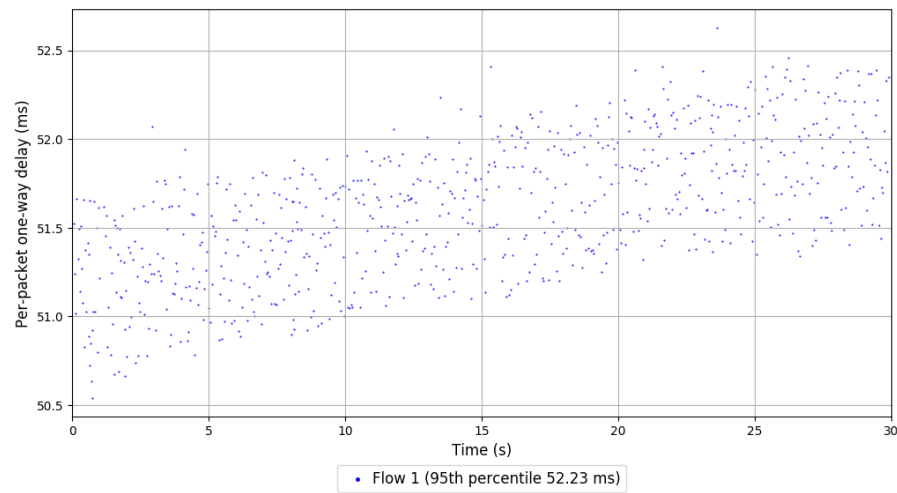
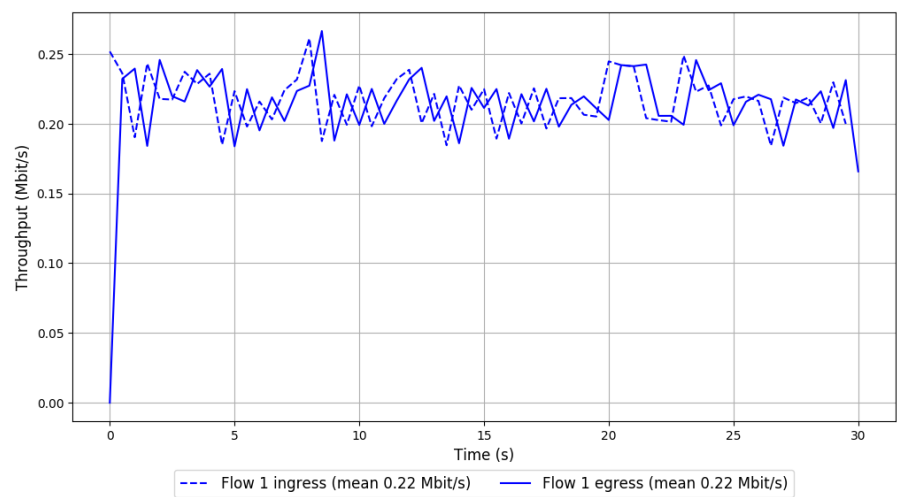


```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 19:37:05
End at: 2018-09-07 19:37:35
Local clock offset: 7.271 ms
Remote clock offset: -7.269 ms

# Below is generated by plot.py at 2018-09-07 21:09:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.226 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.226 ms
Loss rate: 0.39%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-07 19:58:01

End at: 2018-09-07 19:58:31

Local clock offset: 6.29 ms

Remote clock offset: 9.957 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 51.697 ms

Loss rate: 0.39%

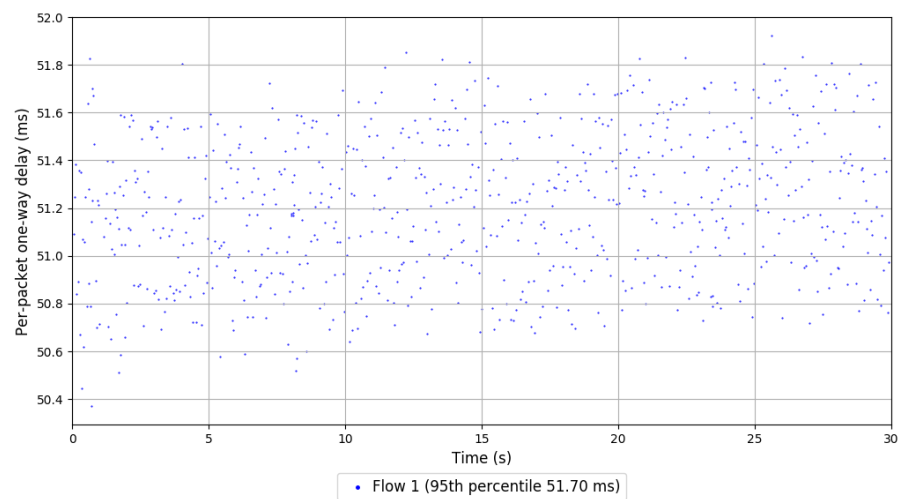
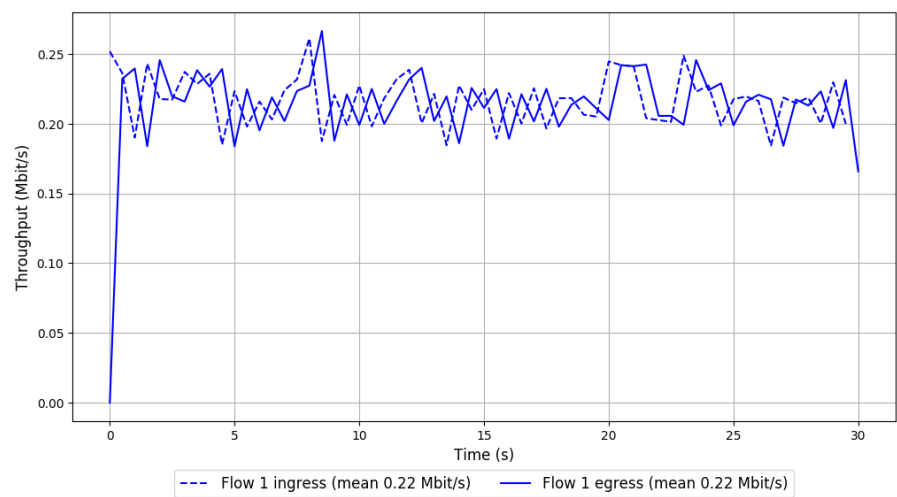
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 51.697 ms

Loss rate: 0.39%

Run 2: Report of SReAM — Data Link

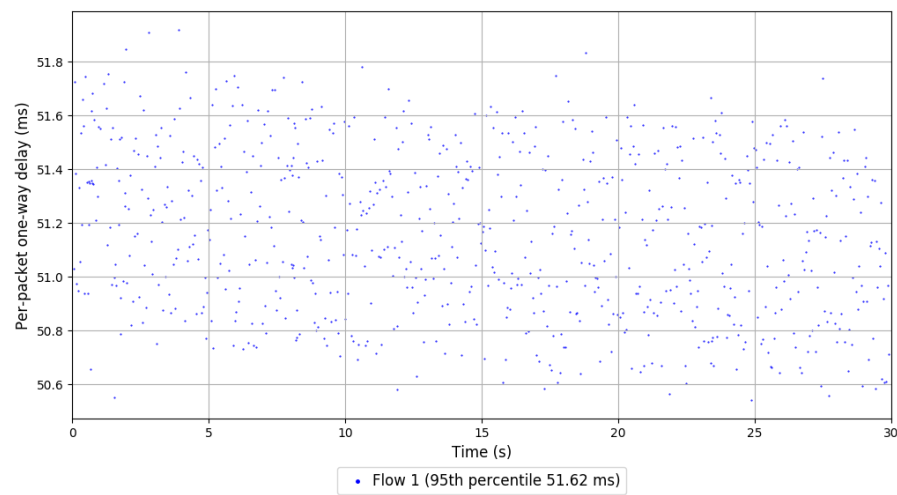
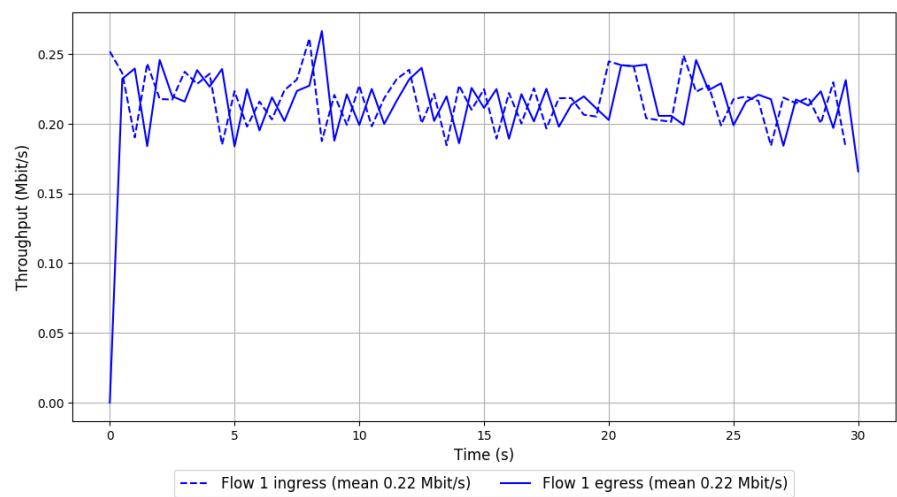


Run 3: Statistics of SCReAM

Start at: 2018-09-07 20:18:57  
End at: 2018-09-07 20:19:27  
Local clock offset: 4.993 ms  
Remote clock offset: -7.945 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 51.620 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 51.620 ms  
Loss rate: 0.26%

Run 3: Report of SReAM — Data Link



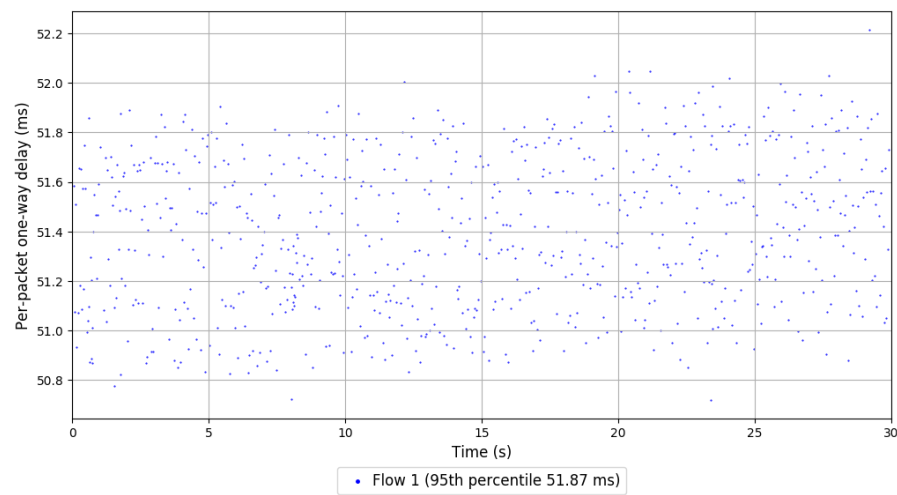
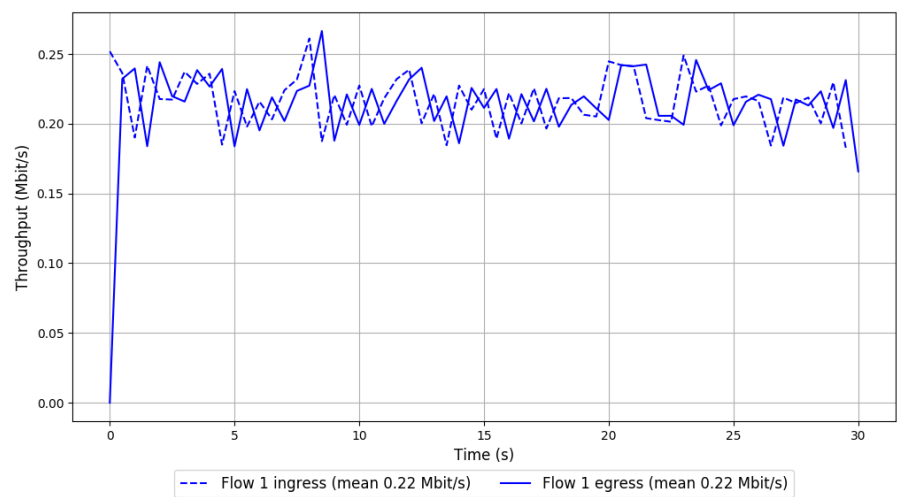


Run 4: Statistics of SCReAM

Start at: 2018-09-07 20:41:18  
End at: 2018-09-07 20:41:48  
Local clock offset: 2.998 ms  
Remote clock offset: -14.075 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 51.865 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 51.865 ms  
Loss rate: 0.26%

Run 4: Report of SReAM — Data Link

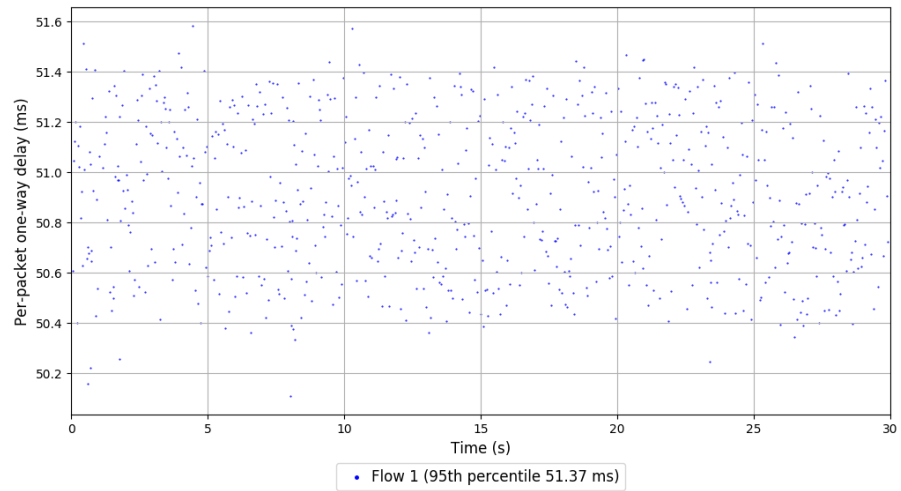
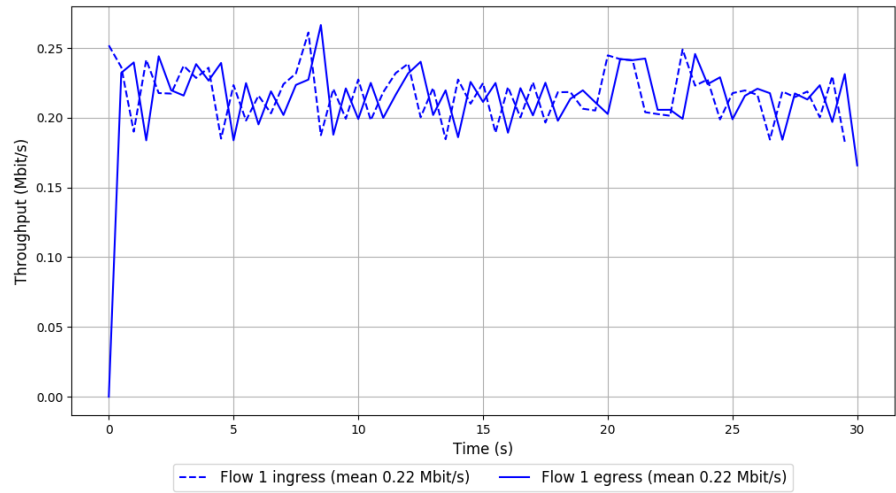


Run 5: Statistics of SCReAM

Start at: 2018-09-07 21:02:09  
End at: 2018-09-07 21:02:39  
Local clock offset: 3.018 ms  
Remote clock offset: -12.338 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 51.366 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 51.366 ms  
Loss rate: 0.26%

## Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

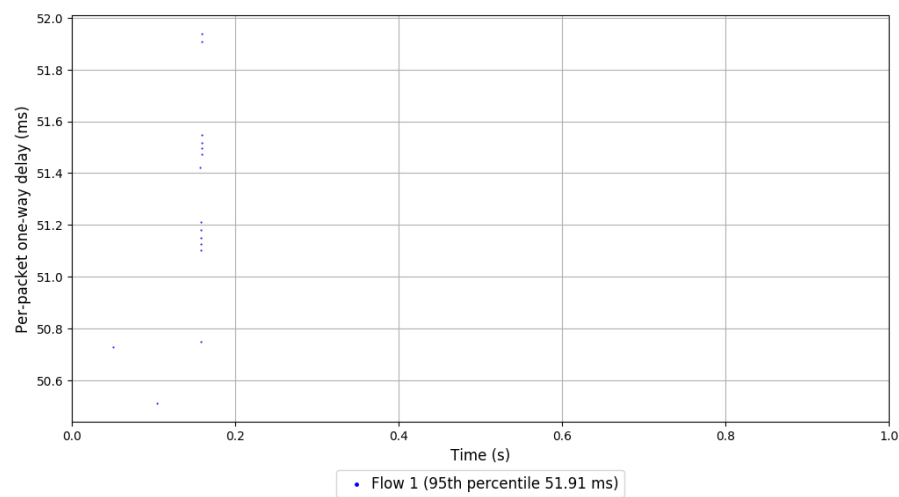
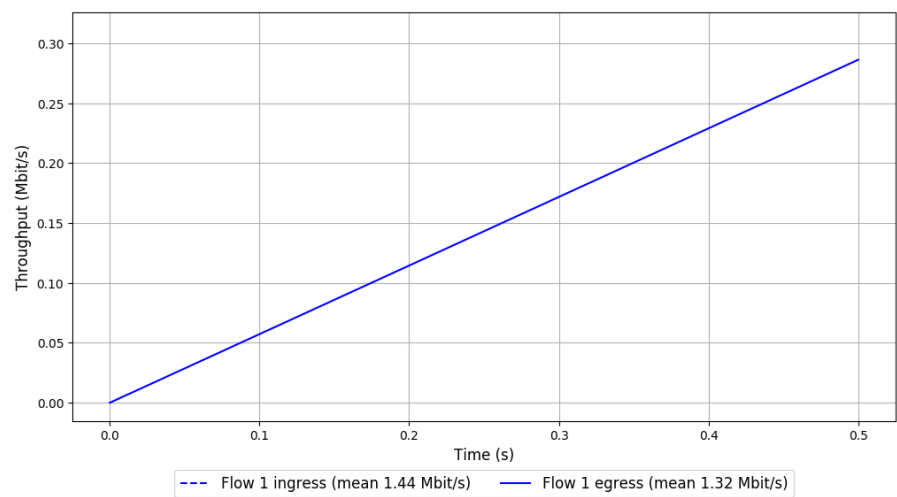
Start at: 2018-09-07 19:32:26

End at: 2018-09-07 19:32:57

Local clock offset: 6.638 ms

Remote clock offset: -16.992 ms

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

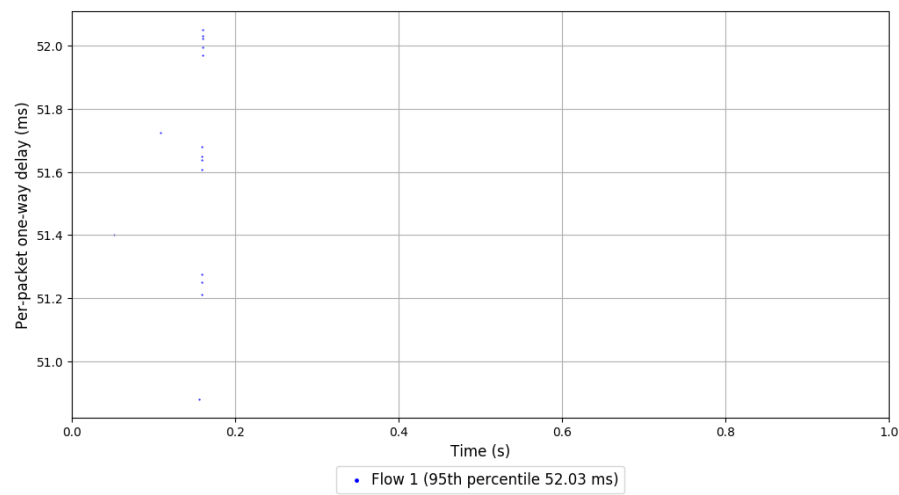
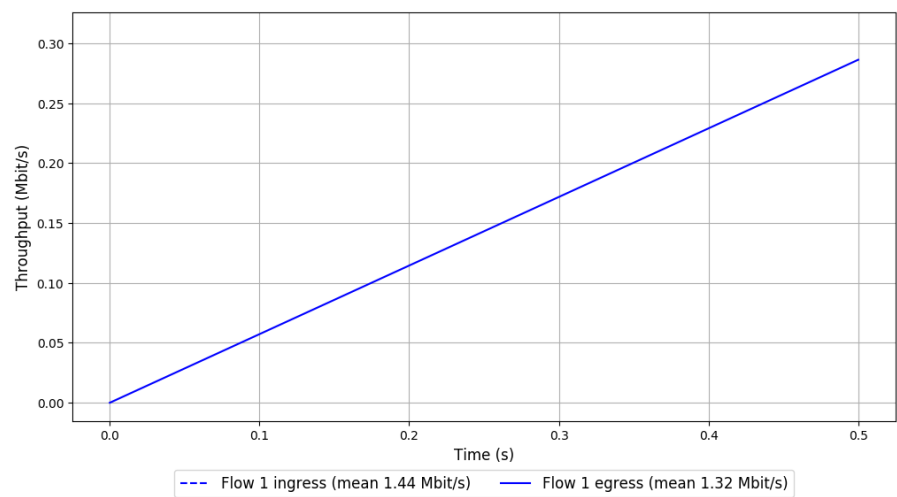
Start at: 2018-09-07 19:53:27

End at: 2018-09-07 19:53:57

Local clock offset: 6.605 ms

Remote clock offset: 7.77 ms

Run 2: Report of Sprout — Data Link





Run 3: Statistics of Sprout

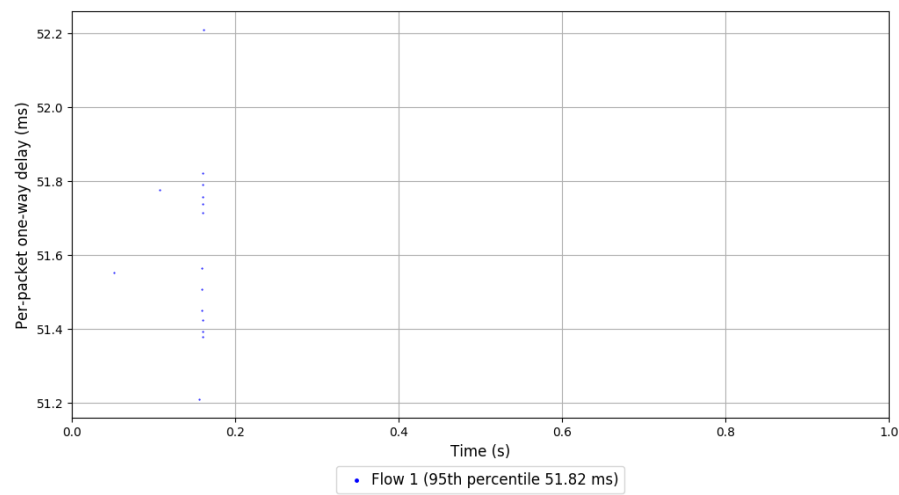
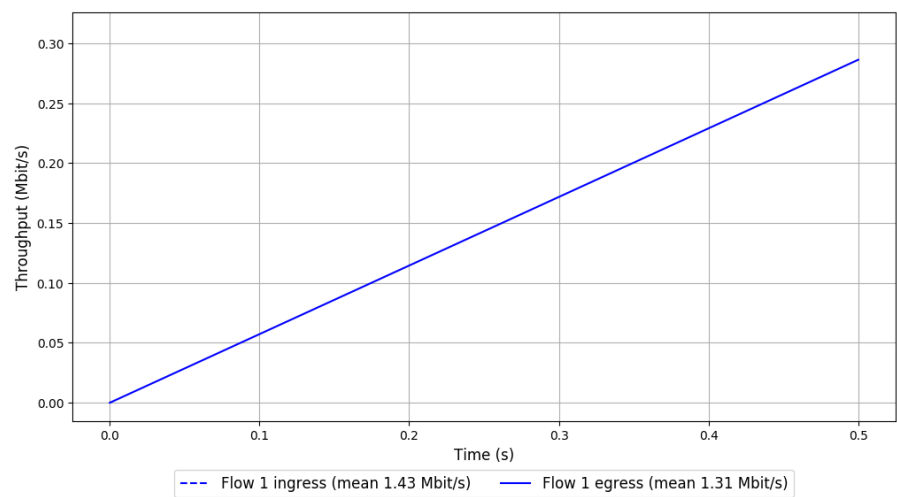
Start at: 2018-09-07 20:14:22

End at: 2018-09-07 20:14:52

Local clock offset: 5.922 ms

Remote clock offset: -3.969 ms

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

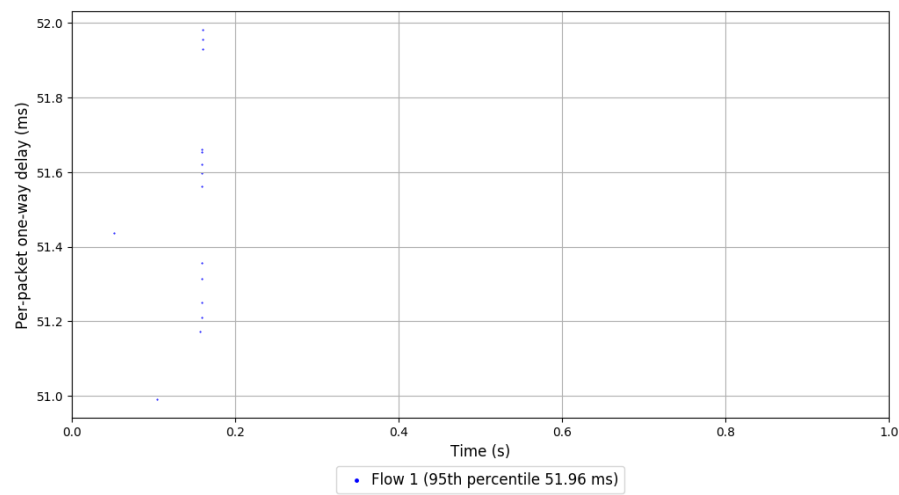
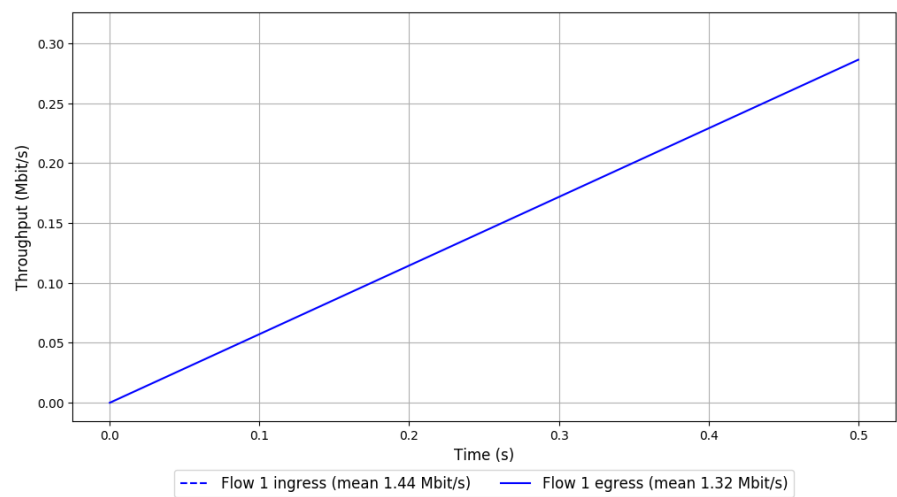
Start at: 2018-09-07 20:36:41

End at: 2018-09-07 20:37:11

Local clock offset: 3.104 ms

Remote clock offset: -14.474 ms

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

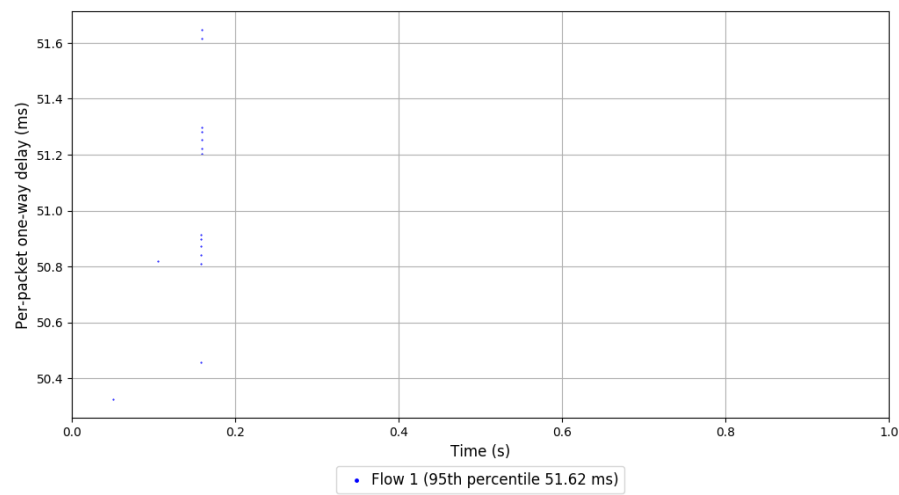
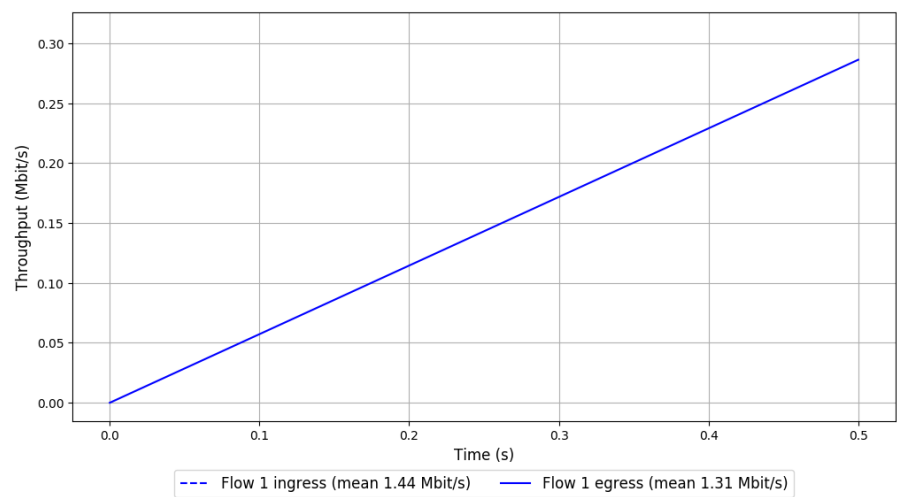
Start at: 2018-09-07 20:57:34

End at: 2018-09-07 20:58:04

Local clock offset: 3.171 ms

Remote clock offset: -12.137 ms

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

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

End at: 2018-09-07 19:38:43

Local clock offset: 7.48 ms

Remote clock offset: -4.97 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 14.26 Mbit/s

95th percentile per-packet one-way delay: 52.958 ms

Loss rate: 3.40%

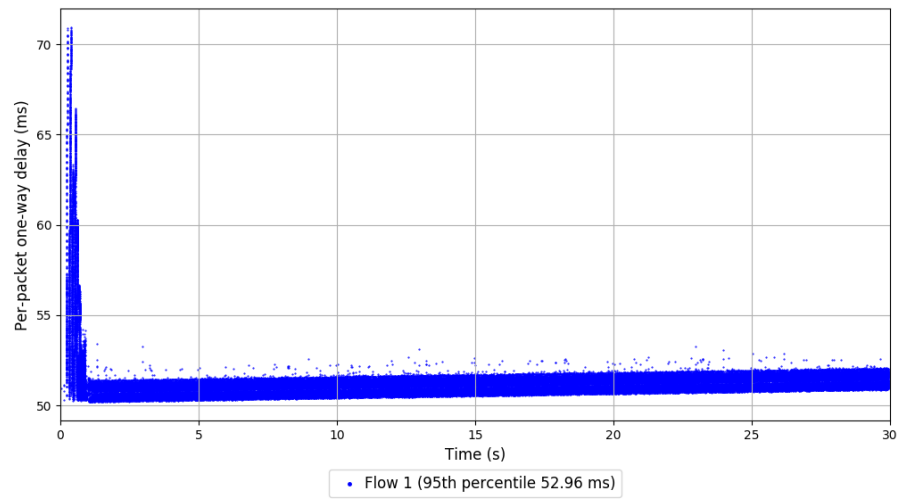
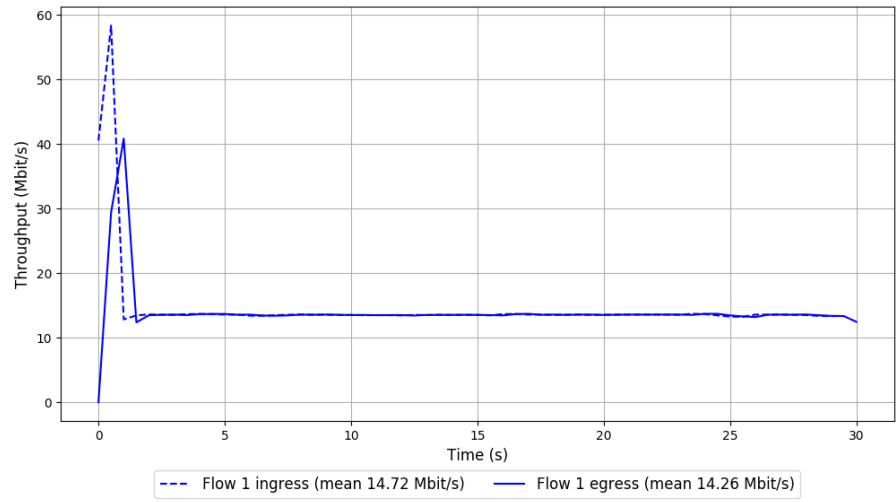
-- Flow 1:

Average throughput: 14.26 Mbit/s

95th percentile per-packet one-way delay: 52.958 ms

Loss rate: 3.40%

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





Run 2: Statistics of TaoVA-100x

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

End at: 2018-09-07 19:59:39

Local clock offset: 6.042 ms

Remote clock offset: 9.491 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 14.10 Mbit/s

95th percentile per-packet one-way delay: 53.888 ms

Loss rate: 5.04%

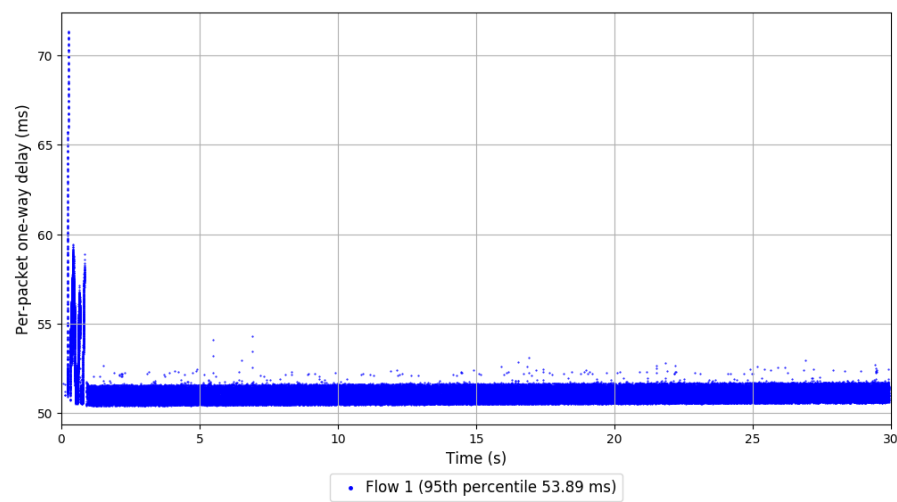
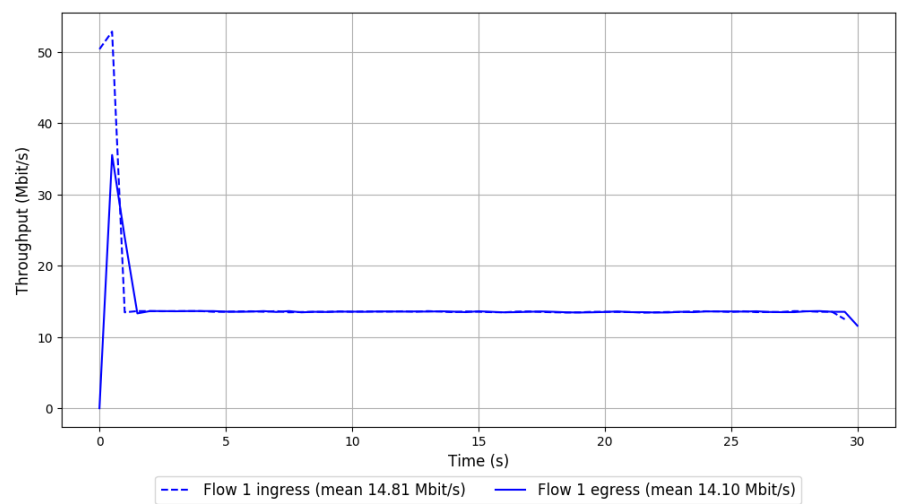
-- Flow 1:

Average throughput: 14.10 Mbit/s

95th percentile per-packet one-way delay: 53.888 ms

Loss rate: 5.04%

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



Run 3: Statistics of TaoVA-100x

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

End at: 2018-09-07 20:20:35

Local clock offset: 4.494 ms

Remote clock offset: -7.672 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 14.13 Mbit/s

95th percentile per-packet one-way delay: 50.575 ms

Loss rate: 3.11%

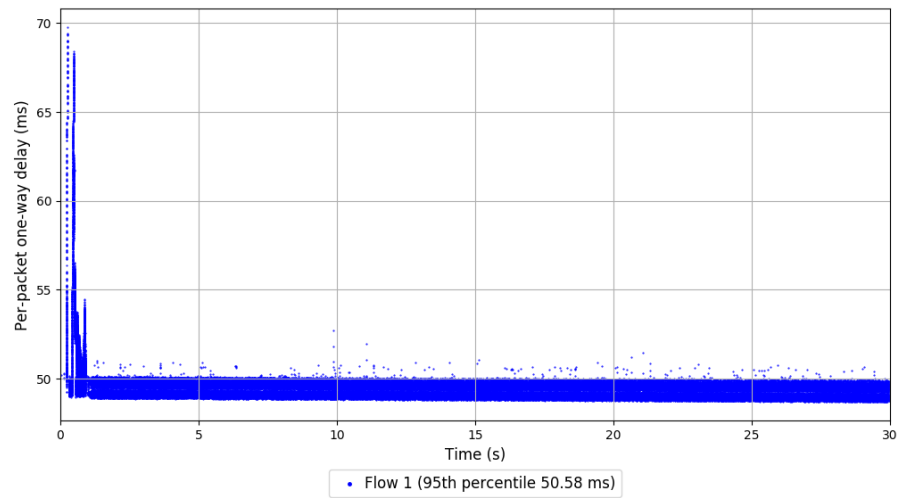
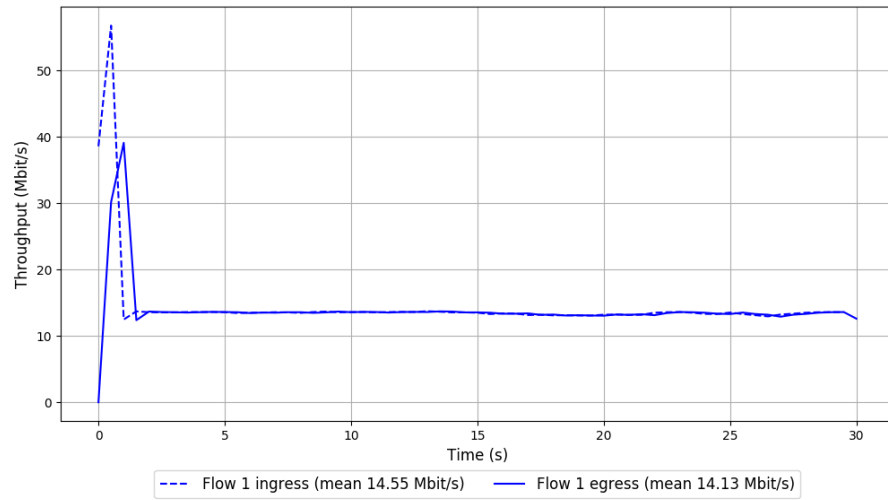
-- Flow 1:

Average throughput: 14.13 Mbit/s

95th percentile per-packet one-way delay: 50.575 ms

Loss rate: 3.11%

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

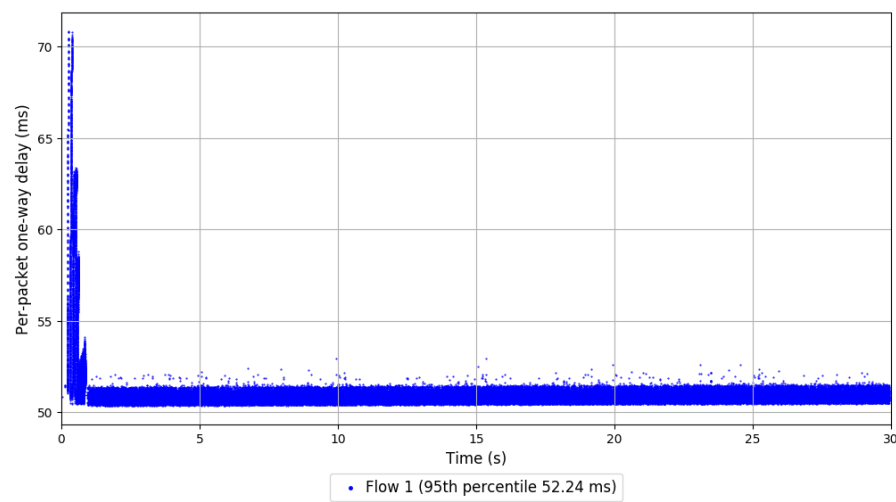
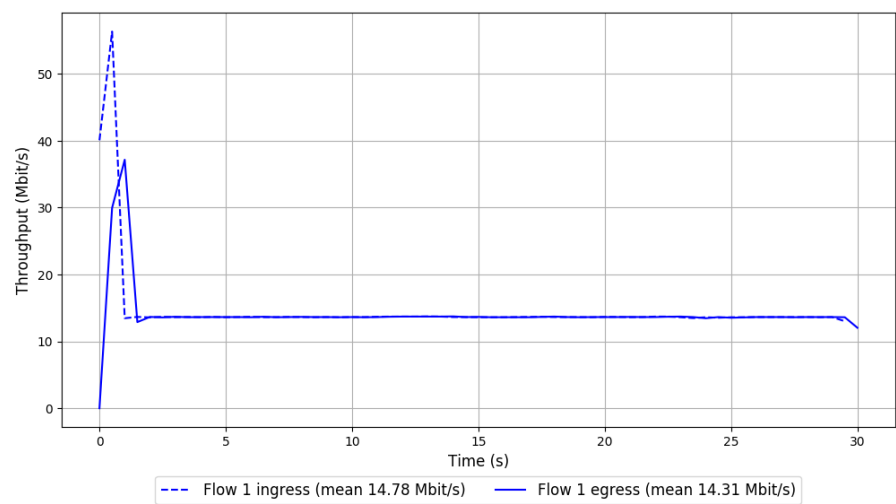


Run 4: Statistics of TaoVA-100x

Start at: 2018-09-07 20:42:26  
End at: 2018-09-07 20:42:56  
Local clock offset: 2.886 ms  
Remote clock offset: -14.088 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 14.31 Mbit/s  
95th percentile per-packet one-way delay: 52.244 ms  
Loss rate: 3.48%  
-- Flow 1:  
Average throughput: 14.31 Mbit/s  
95th percentile per-packet one-way delay: 52.244 ms  
Loss rate: 3.48%

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

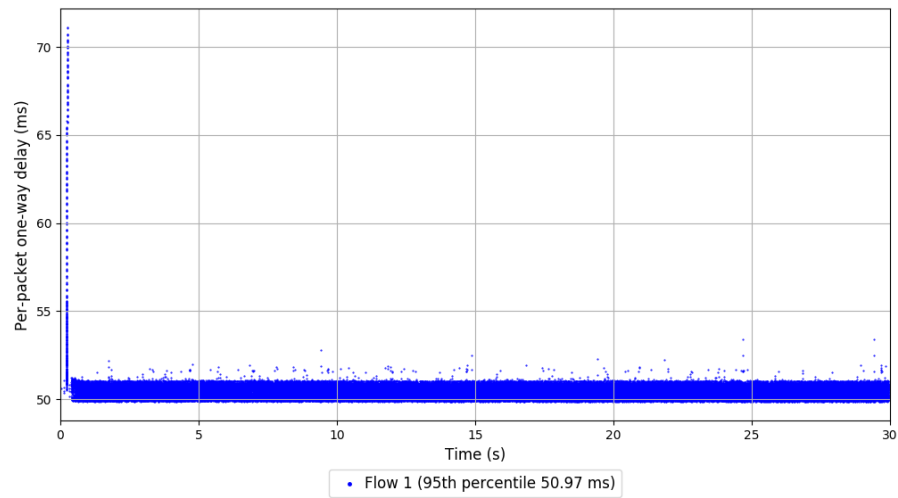
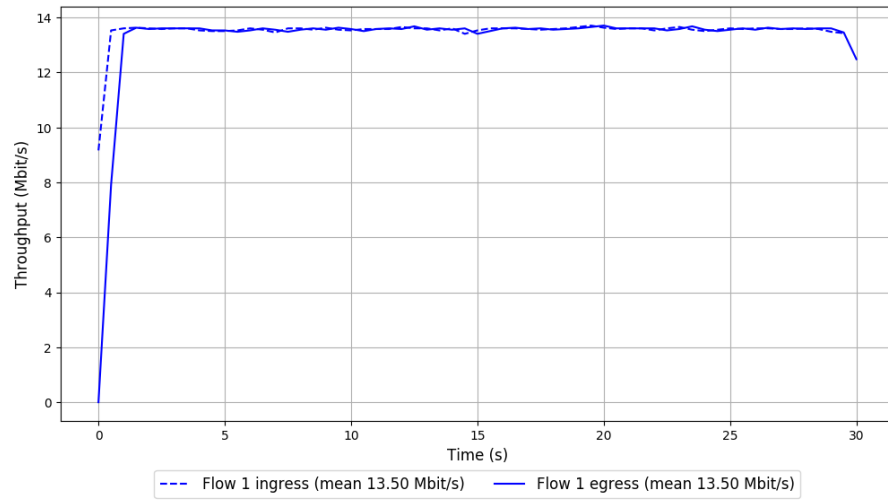


Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 21:03:16  
End at: 2018-09-07 21:03:46  
Local clock offset: 3.408 ms  
Remote clock offset: -12.428 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 13.50 Mbit/s  
95th percentile per-packet one-way delay: 50.971 ms  
Loss rate: 0.29%  
-- Flow 1:  
Average throughput: 13.50 Mbit/s  
95th percentile per-packet one-way delay: 50.971 ms  
Loss rate: 0.29%

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



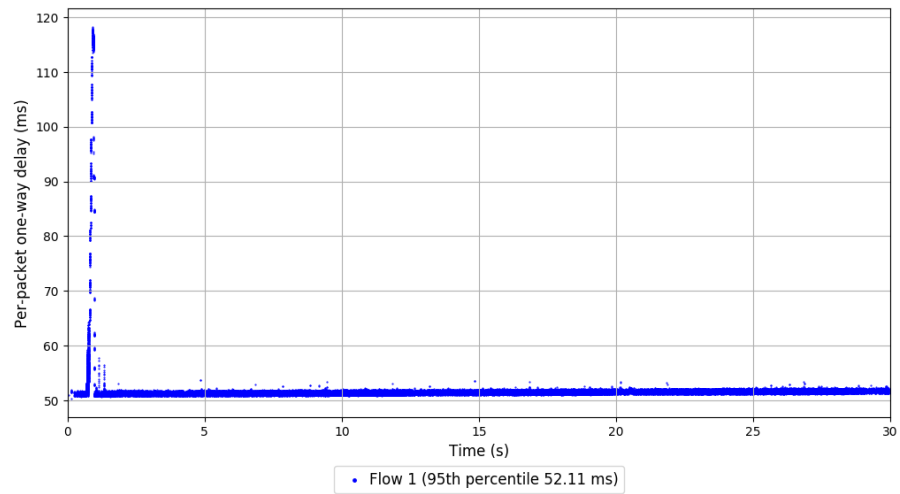
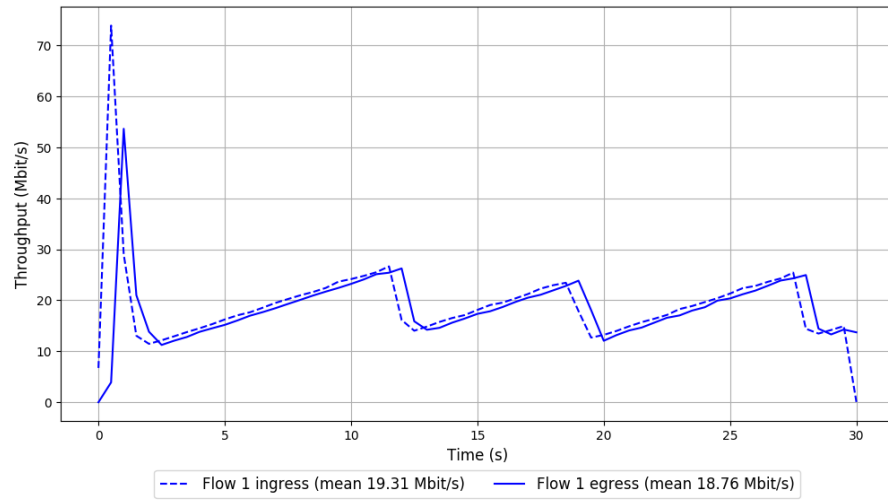


Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 19:40:41  
End at: 2018-09-07 19:41:11  
Local clock offset: 7.839 ms  
Remote clock offset: -1.407 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.76 Mbit/s  
95th percentile per-packet one-way delay: 52.107 ms  
Loss rate: 3.11%  
-- Flow 1:  
Average throughput: 18.76 Mbit/s  
95th percentile per-packet one-way delay: 52.107 ms  
Loss rate: 3.11%

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

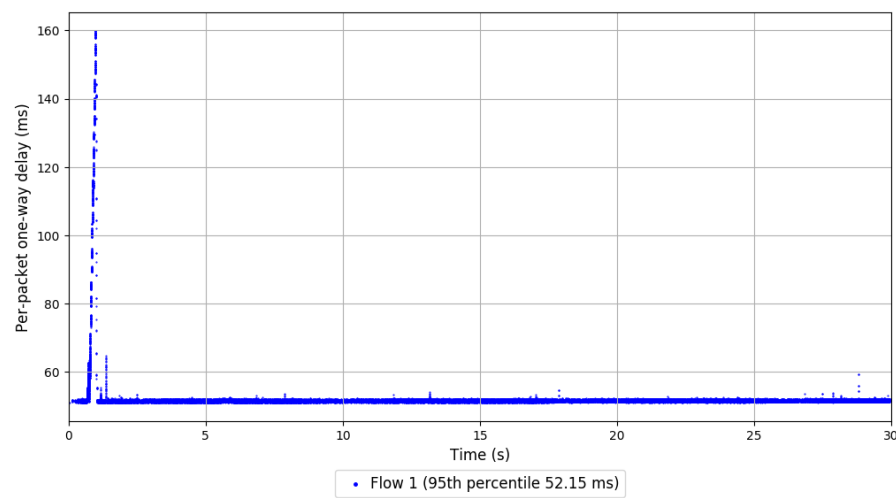
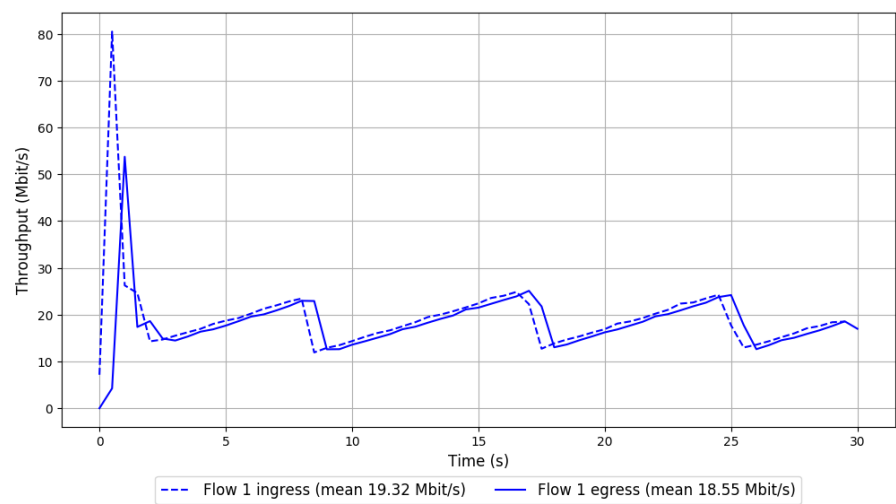


Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 20:01:28  
End at: 2018-09-07 20:01:58  
Local clock offset: 6.144 ms  
Remote clock offset: 10.279 ms

# Below is generated by plot.py at 2018-09-07 21:09:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.55 Mbit/s  
95th percentile per-packet one-way delay: 52.148 ms  
Loss rate: 4.29%  
-- Flow 1:  
Average throughput: 18.55 Mbit/s  
95th percentile per-packet one-way delay: 52.148 ms  
Loss rate: 4.29%

Run 2: Report of TCP Vegas — Data Link

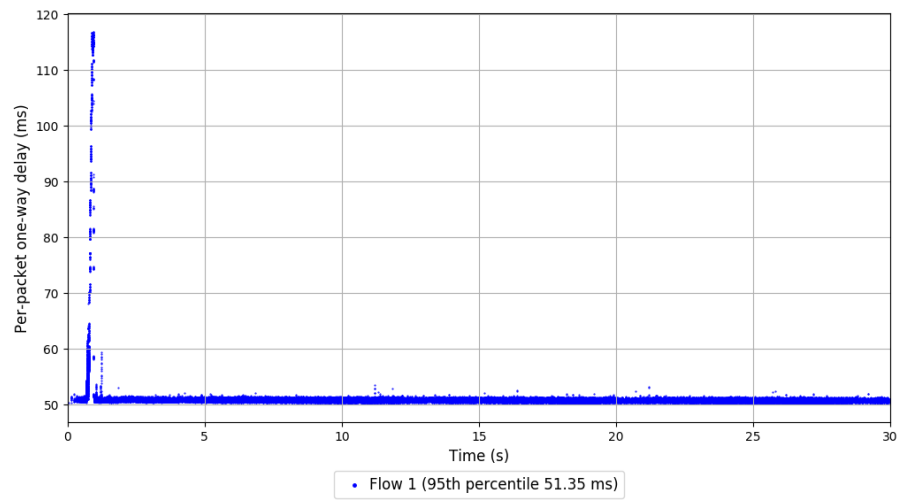
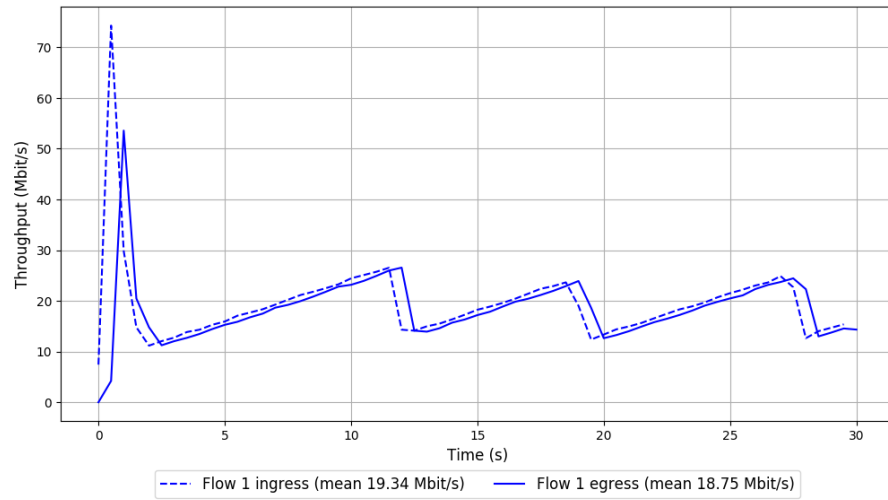


Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 20:22:25  
End at: 2018-09-07 20:22:55  
Local clock offset: 4.304 ms  
Remote clock offset: -9.688 ms

# Below is generated by plot.py at 2018-09-07 21:09:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.75 Mbit/s  
95th percentile per-packet one-way delay: 51.355 ms  
Loss rate: 3.34%  
-- Flow 1:  
Average throughput: 18.75 Mbit/s  
95th percentile per-packet one-way delay: 51.355 ms  
Loss rate: 3.34%

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

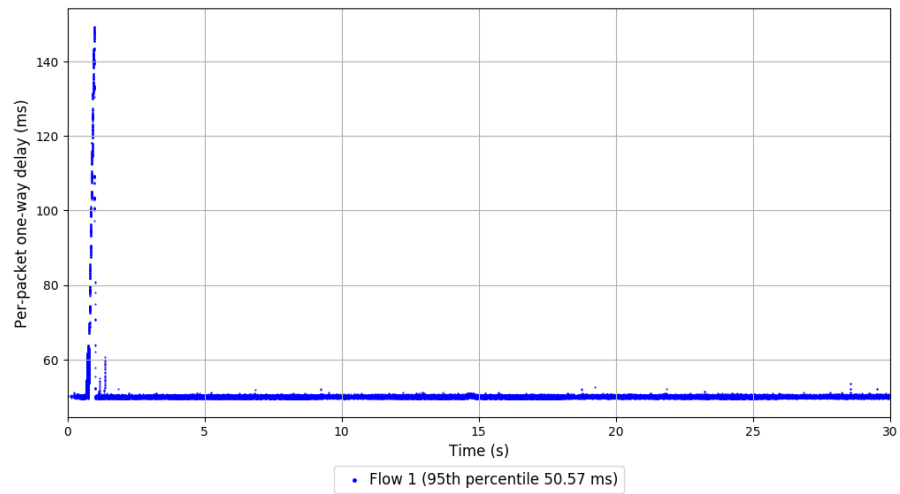
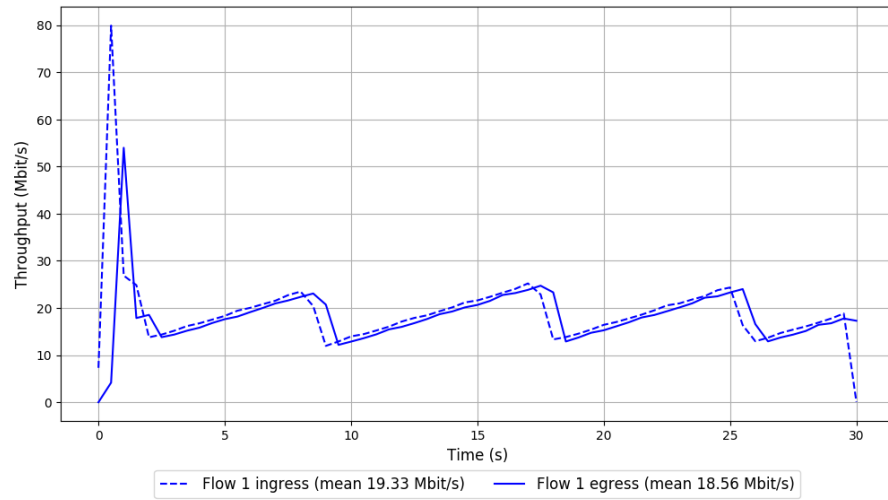


Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 20:44:46  
End at: 2018-09-07 20:45:17  
Local clock offset: 2.784 ms  
Remote clock offset: -12.512 ms

# Below is generated by plot.py at 2018-09-07 21:09:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.56 Mbit/s  
95th percentile per-packet one-way delay: 50.574 ms  
Loss rate: 4.30%  
-- Flow 1:  
Average throughput: 18.56 Mbit/s  
95th percentile per-packet one-way delay: 50.574 ms  
Loss rate: 4.30%

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



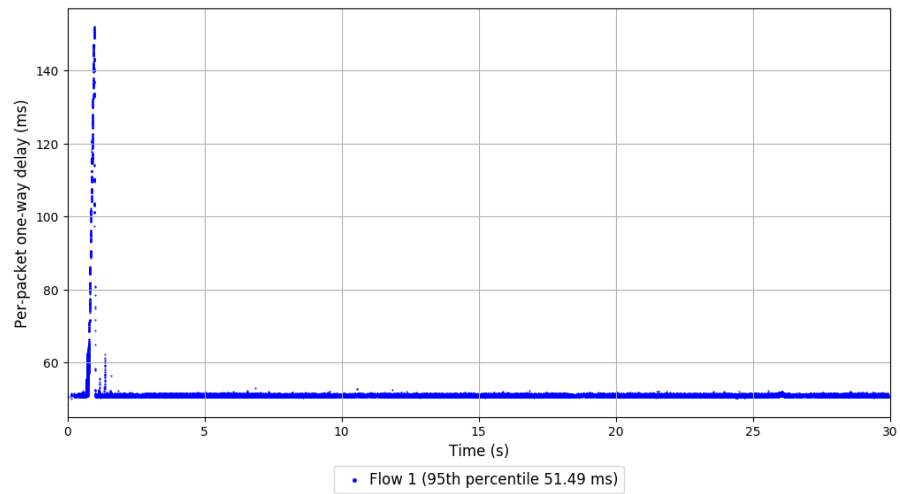
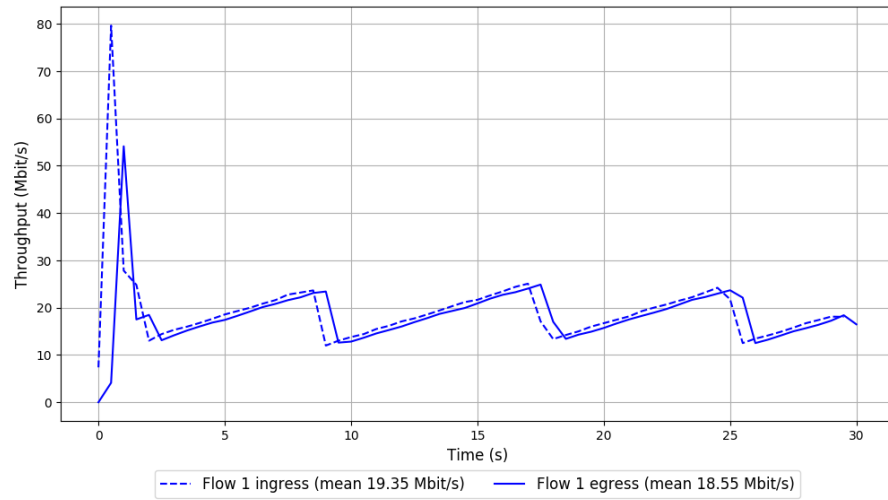


Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 21:05:35  
End at: 2018-09-07 21:06:05  
Local clock offset: 3.169 ms  
Remote clock offset: -12.74 ms

# Below is generated by plot.py at 2018-09-07 21:09:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 18.55 Mbit/s  
95th percentile per-packet one-way delay: 51.487 ms  
Loss rate: 4.41%  
-- Flow 1:  
Average throughput: 18.55 Mbit/s  
95th percentile per-packet one-way delay: 51.487 ms  
Loss rate: 4.41%

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

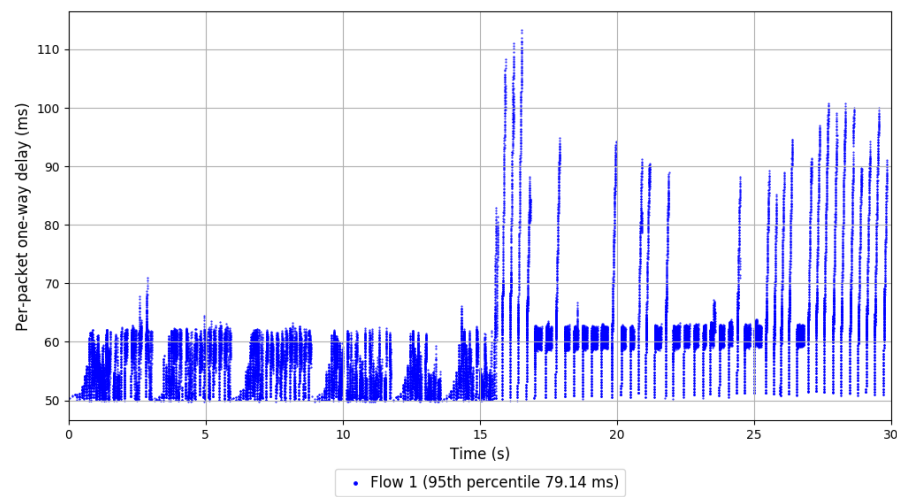
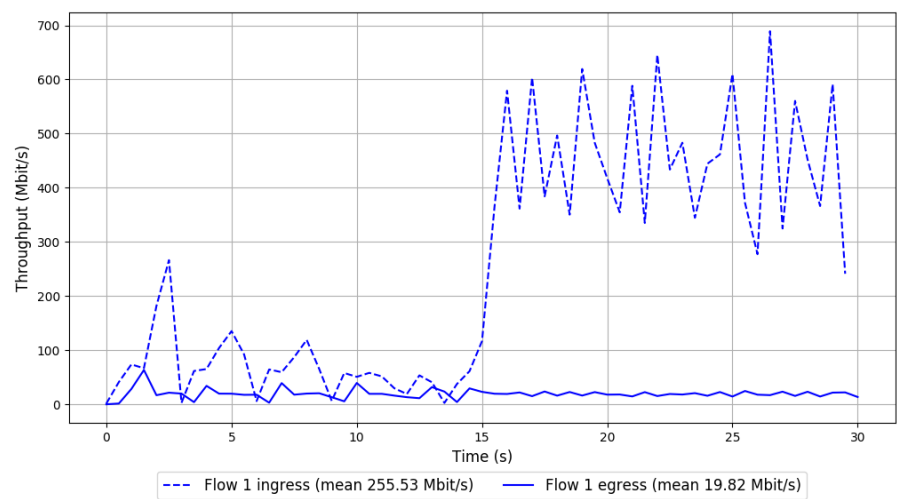


Run 1: Statistics of Verus

Start at: 2018-09-07 19:31:08  
End at: 2018-09-07 19:31:38  
Local clock offset: 6.665 ms  
Remote clock offset: -19.635 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.82 Mbit/s  
95th percentile per-packet one-way delay: 79.137 ms  
Loss rate: 92.29%  
-- Flow 1:  
Average throughput: 19.82 Mbit/s  
95th percentile per-packet one-way delay: 79.137 ms  
Loss rate: 92.29%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-07 19:52:16

End at: 2018-09-07 19:52:46

Local clock offset: 6.615 ms

Remote clock offset: 7.167 ms

# Below is generated by plot.py at 2018-09-07 21:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.96 Mbit/s

95th percentile per-packet one-way delay: 82.227 ms

Loss rate: 46.66%

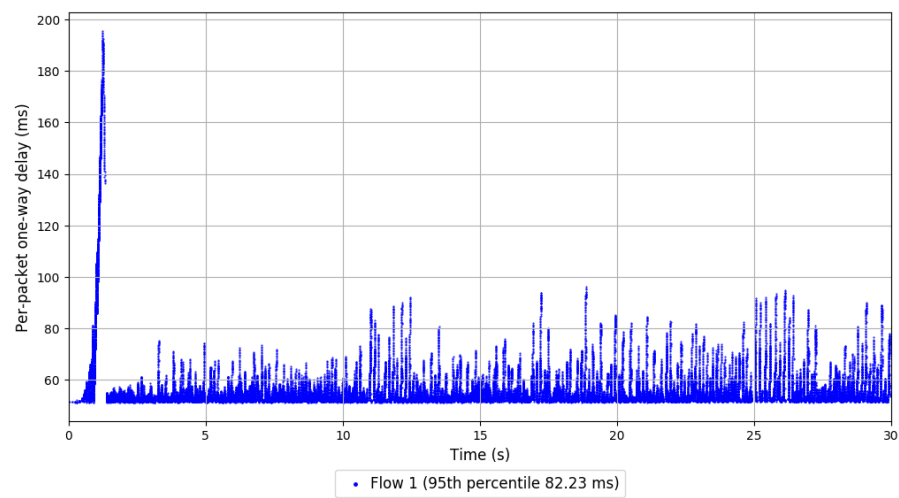
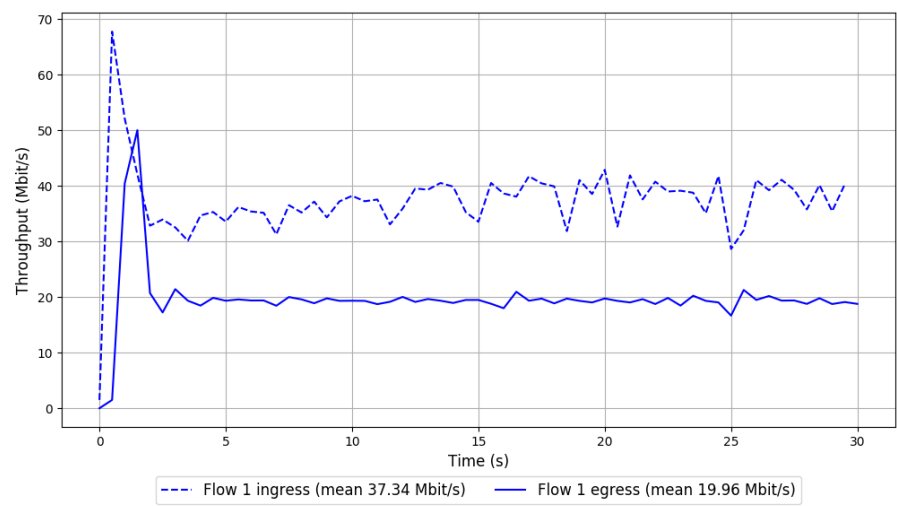
-- Flow 1:

Average throughput: 19.96 Mbit/s

95th percentile per-packet one-way delay: 82.227 ms

Loss rate: 46.66%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-07 20:13:10

End at: 2018-09-07 20:13:40

Local clock offset: 5.903 ms

Remote clock offset: 1.558 ms

# Below is generated by plot.py at 2018-09-07 21:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.97 Mbit/s

95th percentile per-packet one-way delay: 105.241 ms

Loss rate: 60.45%

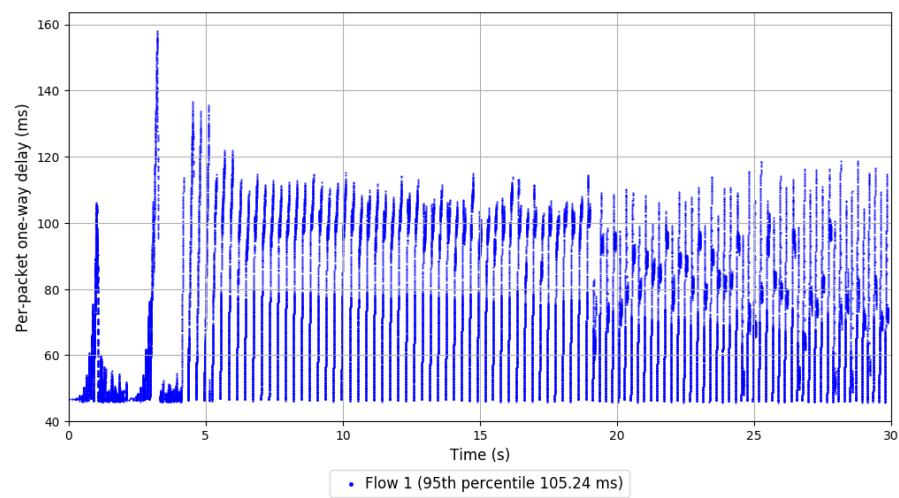
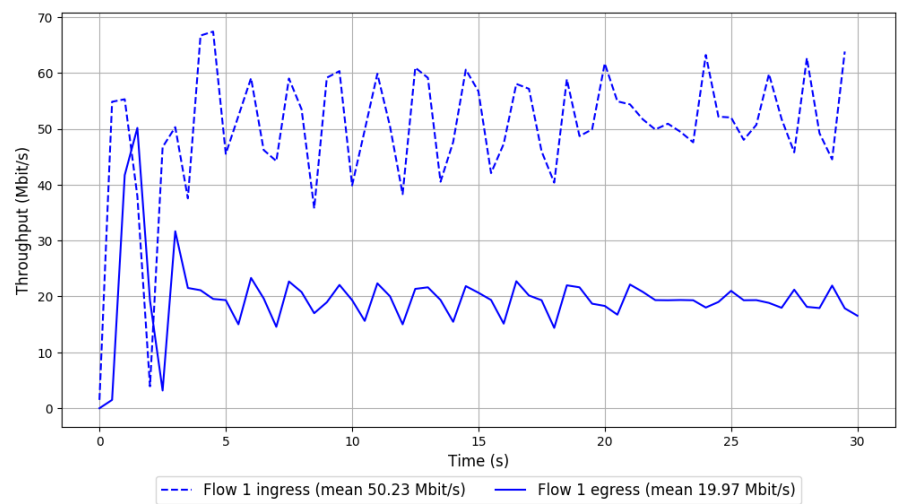
-- Flow 1:

Average throughput: 19.97 Mbit/s

95th percentile per-packet one-way delay: 105.241 ms

Loss rate: 60.45%

Run 3: Report of Verus — Data Link



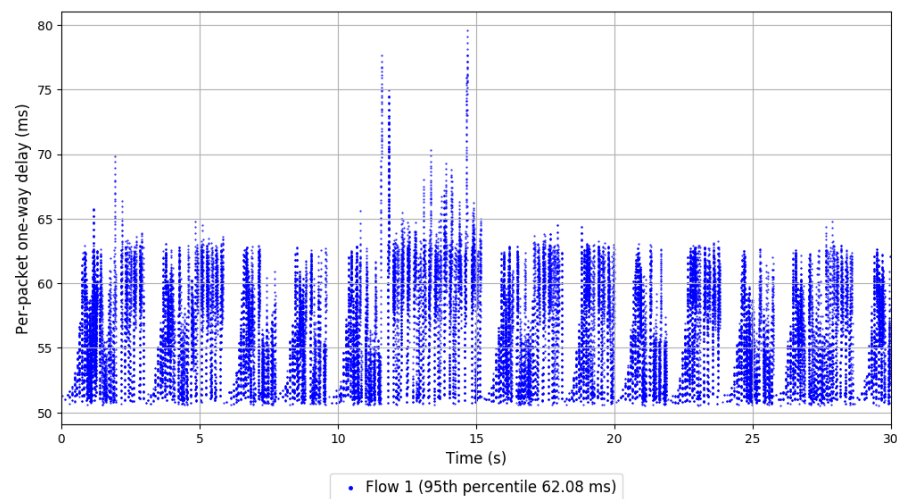
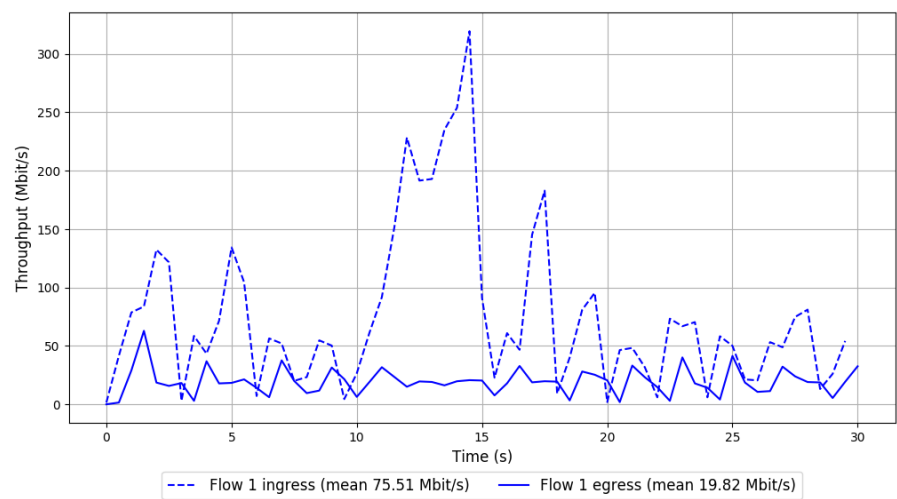


Run 4: Statistics of Verus

Start at: 2018-09-07 20:35:30  
End at: 2018-09-07 20:36:00  
Local clock offset: 3.426 ms  
Remote clock offset: -14.029 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.82 Mbit/s  
95th percentile per-packet one-way delay: 62.083 ms  
Loss rate: 73.78%  
-- Flow 1:  
Average throughput: 19.82 Mbit/s  
95th percentile per-packet one-way delay: 62.083 ms  
Loss rate: 73.78%

Run 4: Report of Verus — Data Link

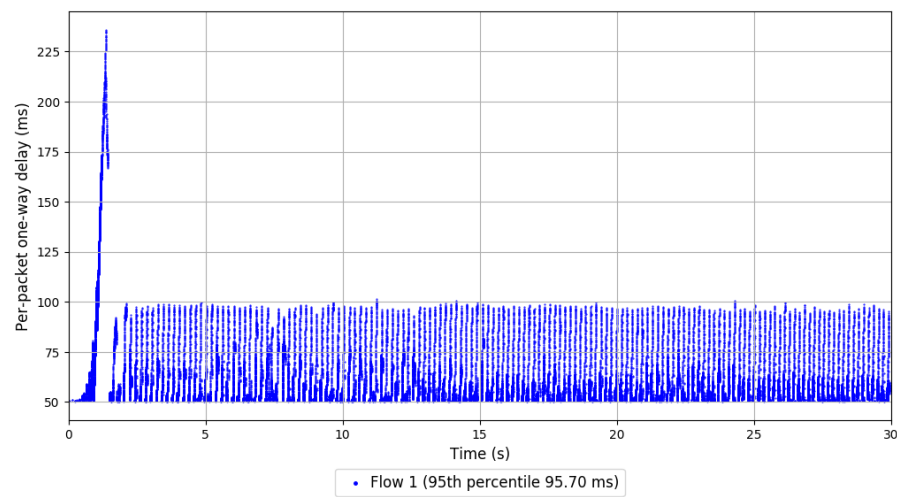
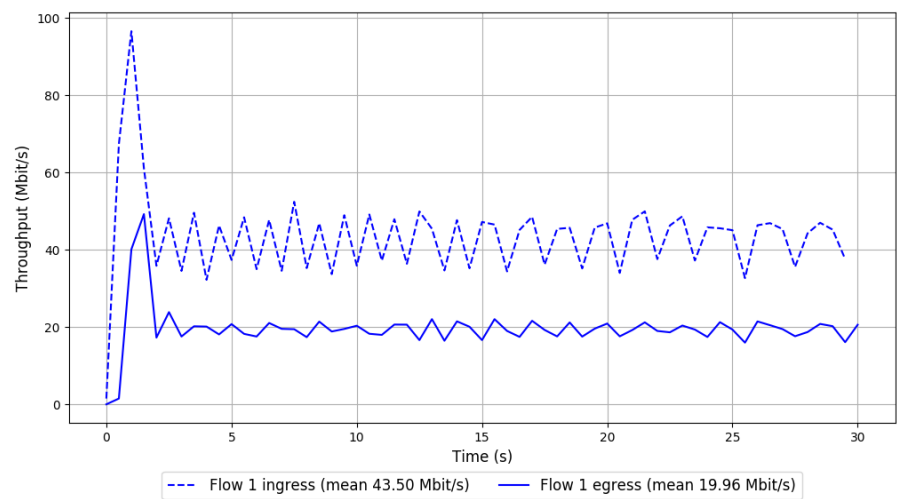


Run 5: Statistics of Verus

Start at: 2018-09-07 20:56:23  
End at: 2018-09-07 20:56:53  
Local clock offset: 3.171 ms  
Remote clock offset: -12.201 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.96 Mbit/s  
95th percentile per-packet one-way delay: 95.705 ms  
Loss rate: 54.23%  
-- Flow 1:  
Average throughput: 19.96 Mbit/s  
95th percentile per-packet one-way delay: 95.705 ms  
Loss rate: 54.23%

Run 5: Report of Verus — Data Link

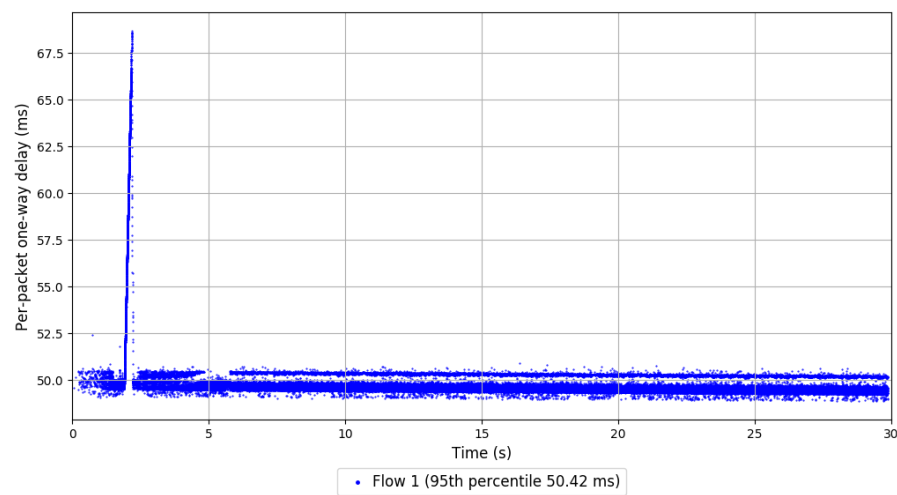
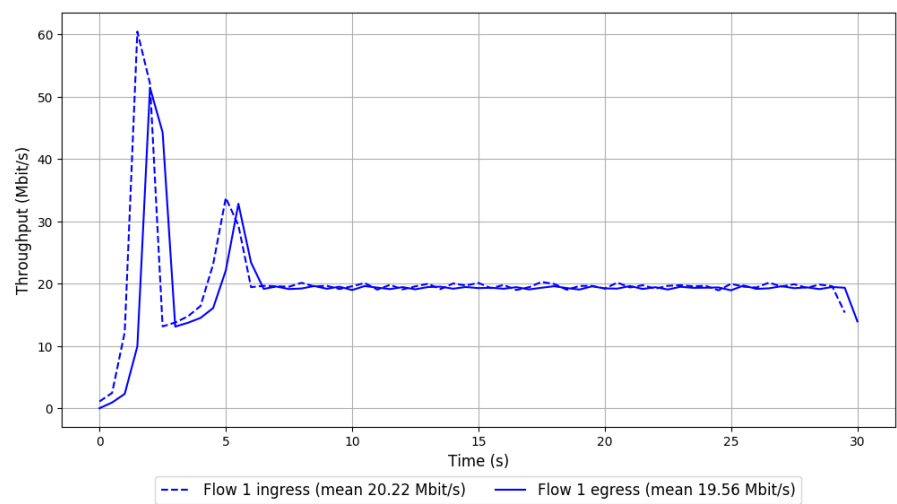


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 19:25:16  
End at: 2018-09-07 19:25:46  
Local clock offset: 5.719 ms  
Remote clock offset: -17.582 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.56 Mbit/s  
95th percentile per-packet one-way delay: 50.416 ms  
Loss rate: 3.51%  
-- Flow 1:  
Average throughput: 19.56 Mbit/s  
95th percentile per-packet one-way delay: 50.416 ms  
Loss rate: 3.51%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 19:46:26

End at: 2018-09-07 19:46:56

Local clock offset: 7.652 ms

Remote clock offset: 4.263 ms

# Below is generated by plot.py at 2018-09-07 21:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.58 Mbit/s

95th percentile per-packet one-way delay: 51.821 ms

Loss rate: 3.64%

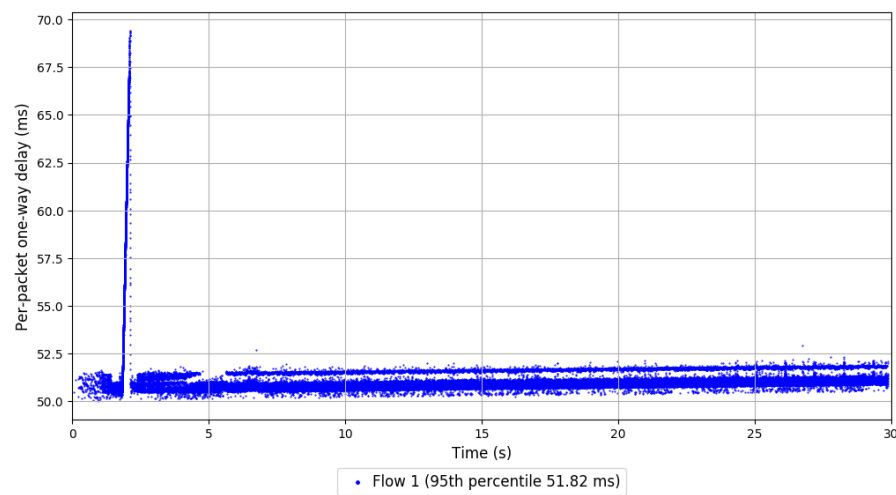
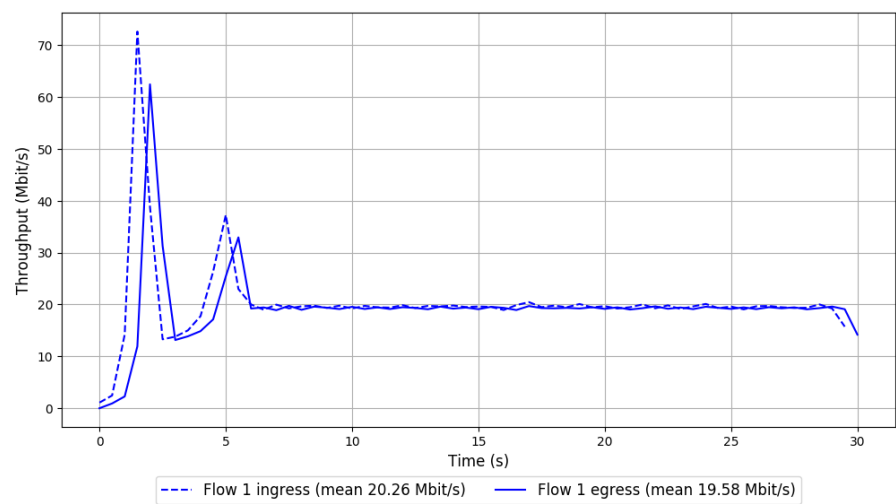
-- Flow 1:

Average throughput: 19.58 Mbit/s

95th percentile per-packet one-way delay: 51.821 ms

Loss rate: 3.64%

Run 2: Report of PCC-Vivace — Data Link





Run 3: Statistics of PCC-Vivace

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

End at: 2018-09-07 20:07:50

Local clock offset: 5.98 ms

Remote clock offset: 7.764 ms

# Below is generated by plot.py at 2018-09-07 21:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 19.53 Mbit/s

95th percentile per-packet one-way delay: 50.765 ms

Loss rate: 8.90%

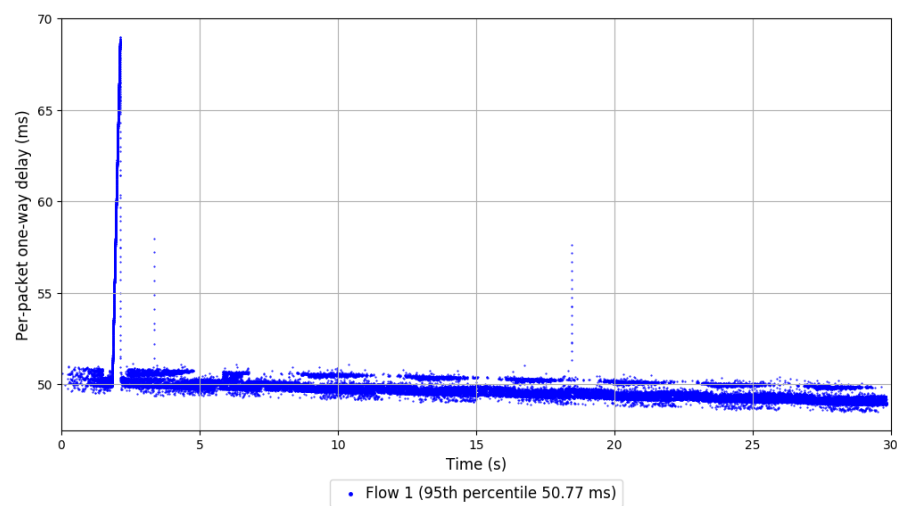
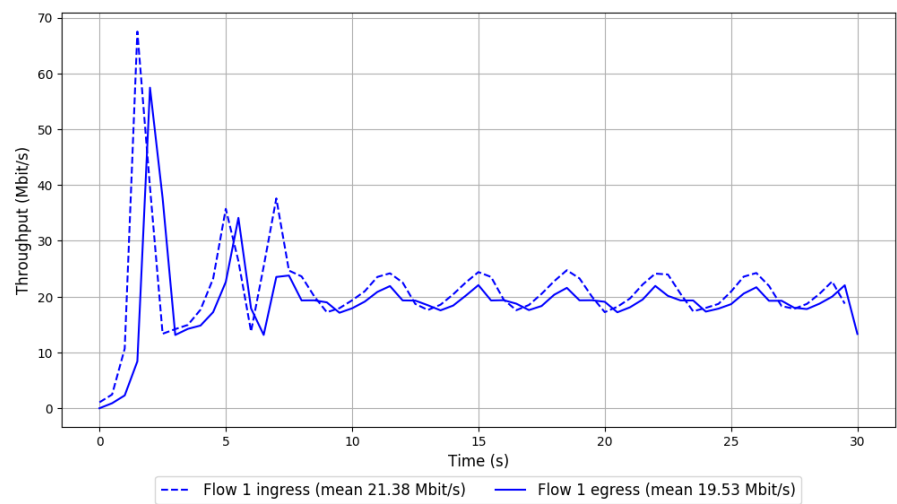
-- Flow 1:

Average throughput: 19.53 Mbit/s

95th percentile per-packet one-way delay: 50.765 ms

Loss rate: 8.90%

Run 3: Report of PCC-Vivace — Data Link

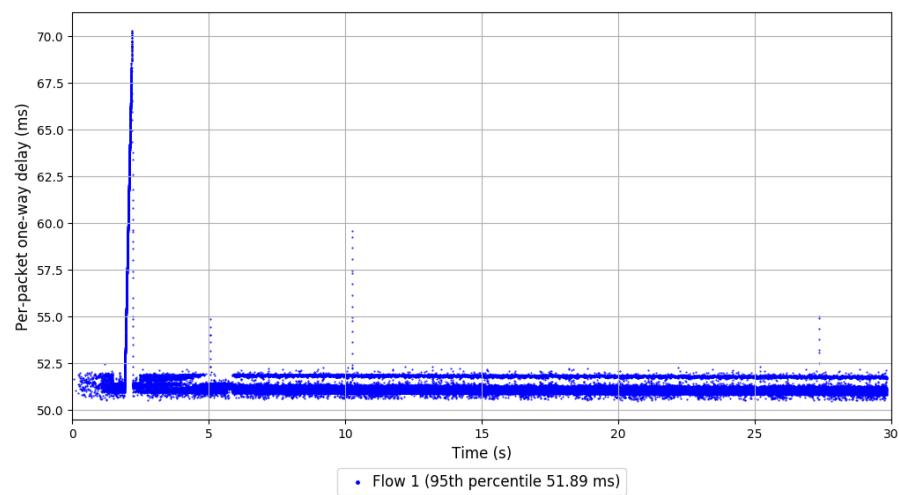
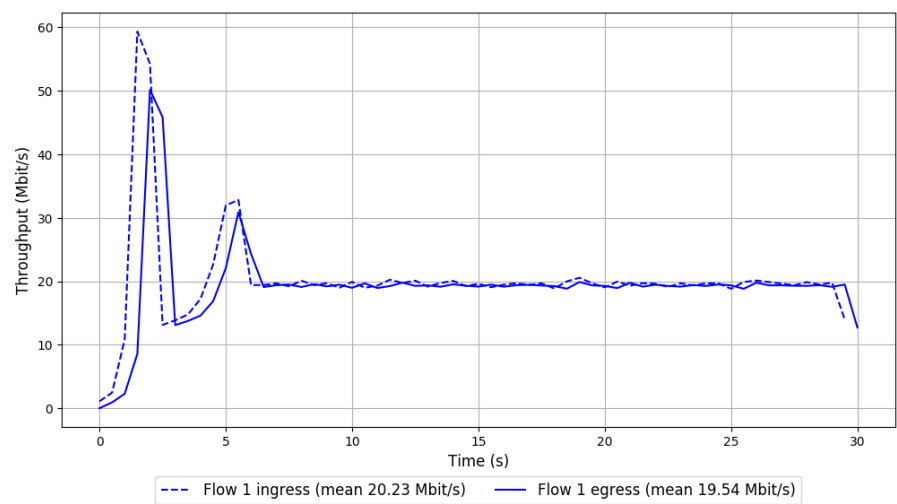


Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 20:28:09  
End at: 2018-09-07 20:28:39  
Local clock offset: 3.779 ms  
Remote clock offset: -12.12 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.54 Mbit/s  
95th percentile per-packet one-way delay: 51.886 ms  
Loss rate: 3.68%  
-- Flow 1:  
Average throughput: 19.54 Mbit/s  
95th percentile per-packet one-way delay: 51.886 ms  
Loss rate: 3.68%

Run 4: Report of PCC-Vivace — Data Link

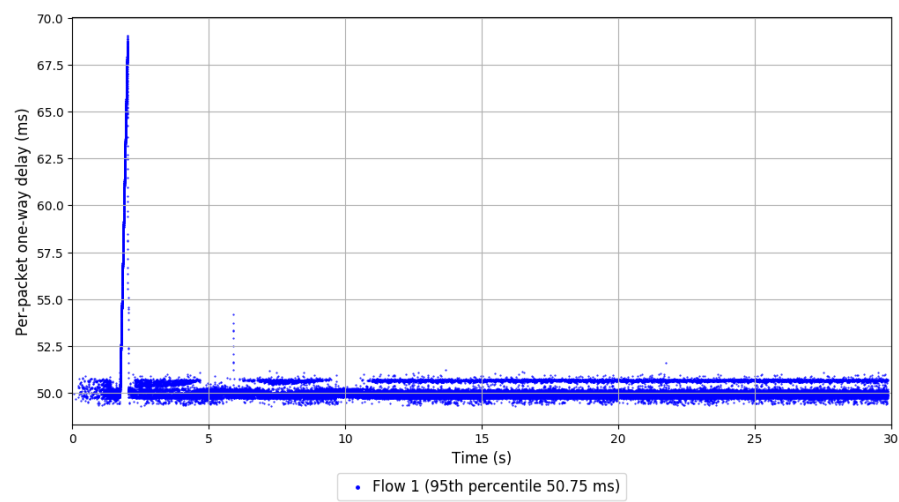
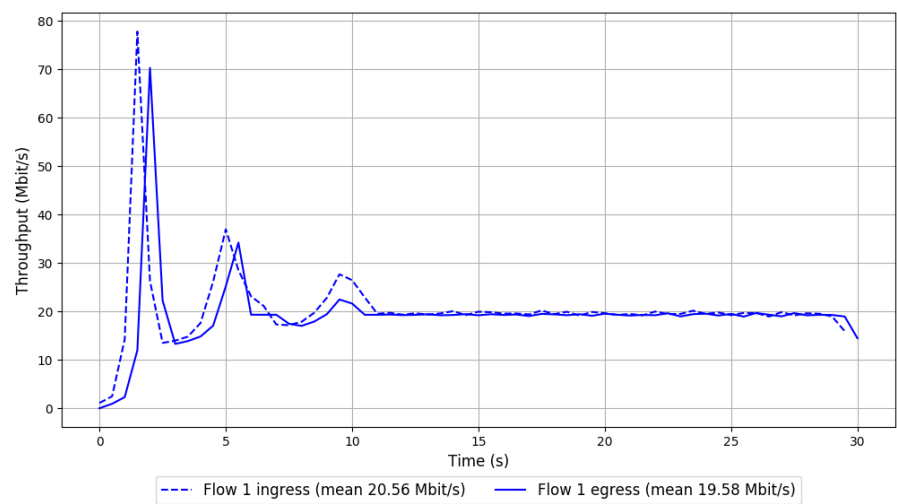


Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 20:50:31  
End at: 2018-09-07 20:51:01  
Local clock offset: 3.078 ms  
Remote clock offset: -11.802 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.58 Mbit/s  
95th percentile per-packet one-way delay: 50.748 ms  
Loss rate: 5.05%  
-- Flow 1:  
Average throughput: 19.58 Mbit/s  
95th percentile per-packet one-way delay: 50.748 ms  
Loss rate: 5.05%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

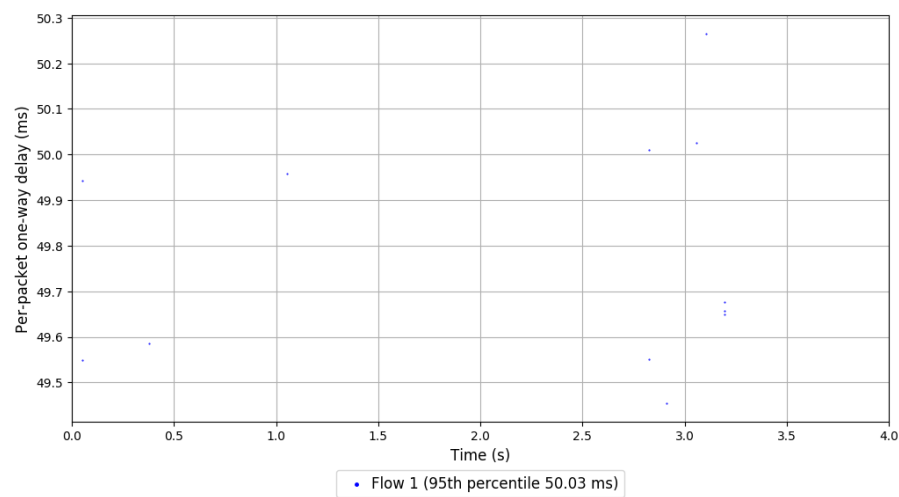
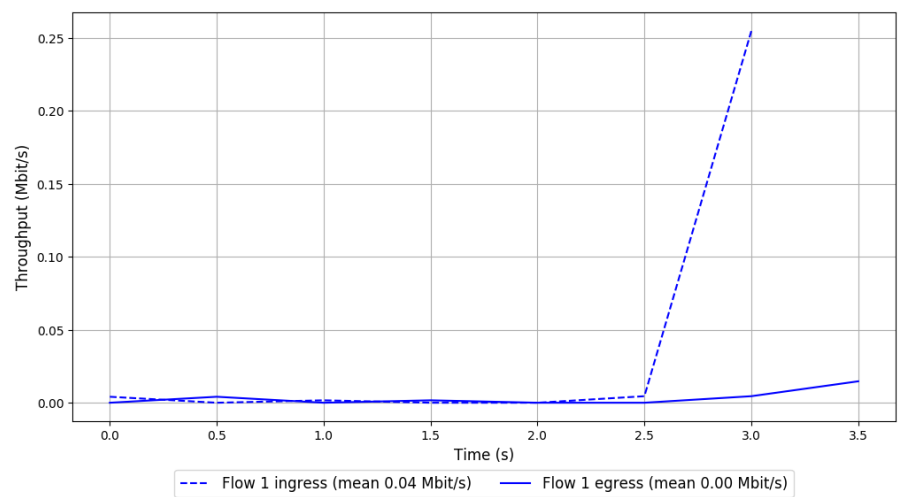
Start at: 2018-09-07 19:20:37

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

Local clock offset: 4.0 ms

Remote clock offset: -15.954 ms

Run 1: Report of WebRTC media — Data Link





Run 2: Statistics of WebRTC media

Start at: 2018-09-07 19:41:50

End at: 2018-09-07 19:42:20

Local clock offset: 7.712 ms

Remote clock offset: 0.12 ms

# Below is generated by plot.py at 2018-09-07 21:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 51.563 ms

Loss rate: 0.37%

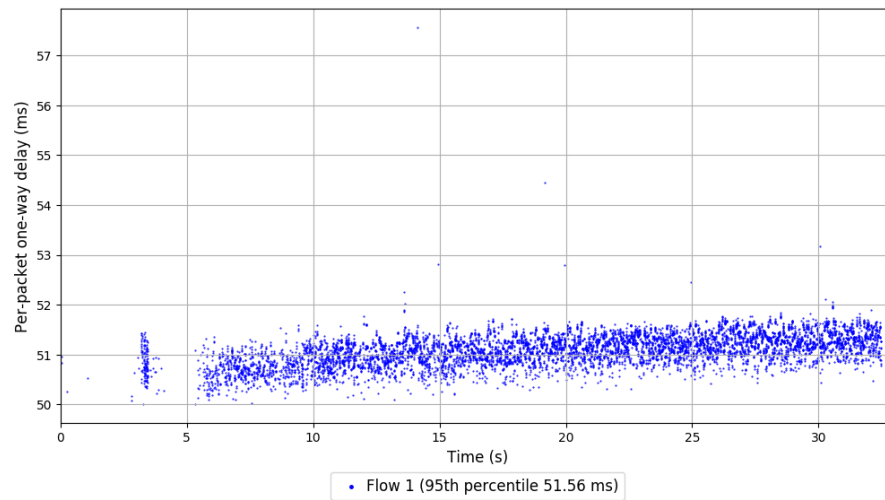
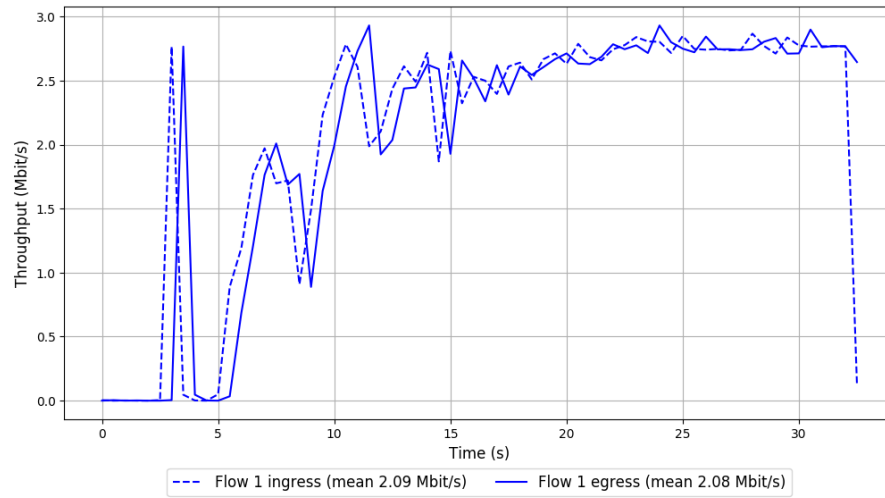
-- Flow 1:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 51.563 ms

Loss rate: 0.37%

## Run 2: Report of WebRTC media — Data Link

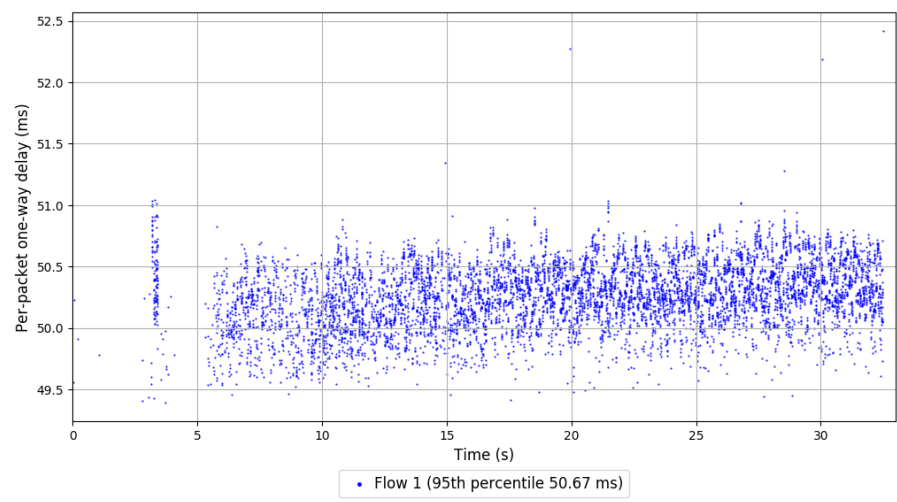
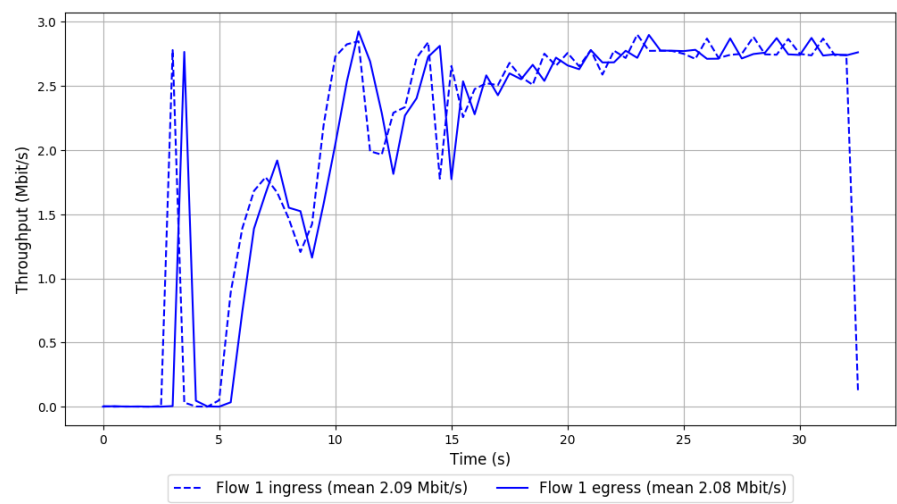


Run 3: Statistics of WebRTC media

Start at: 2018-09-07 20:02:37  
End at: 2018-09-07 20:03:07  
Local clock offset: 5.98 ms  
Remote clock offset: 11.592 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 50.669 ms  
Loss rate: 0.36%  
-- Flow 1:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 50.669 ms  
Loss rate: 0.36%

Run 3: Report of WebRTC media — Data Link

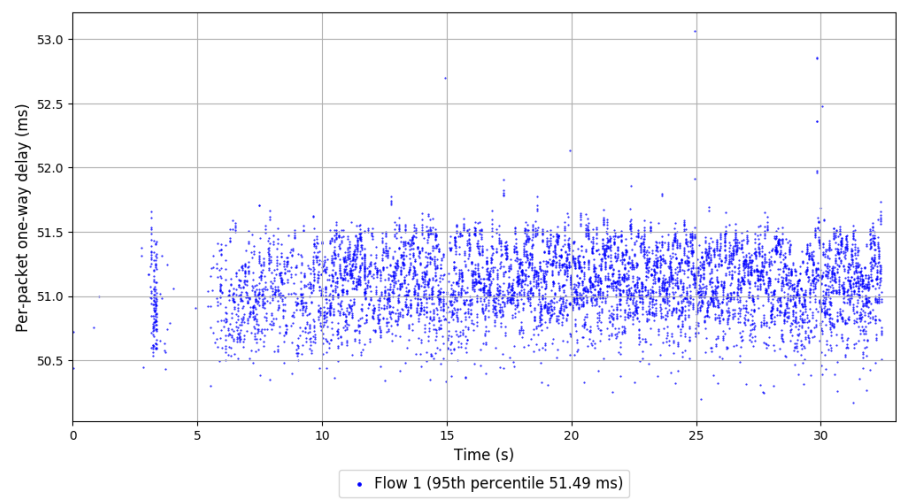
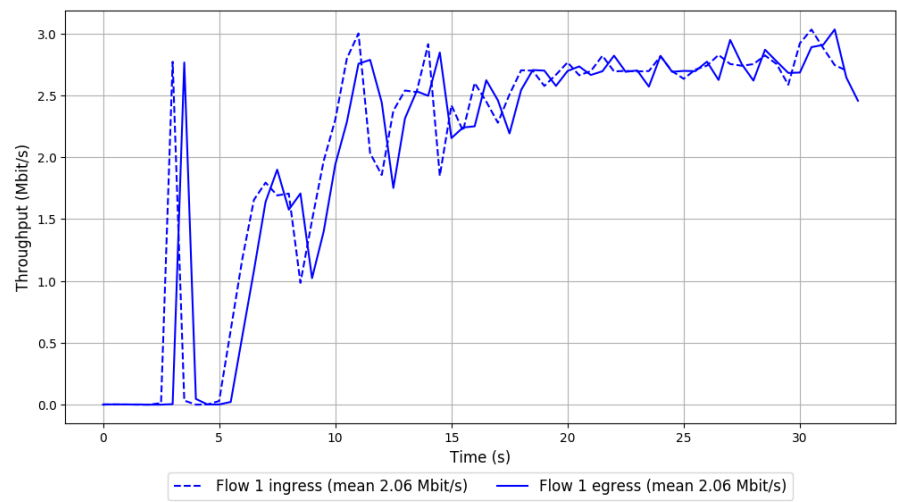


Run 4: Statistics of WebRTC media

Start at: 2018-09-07 20:23:34  
End at: 2018-09-07 20:24:04  
Local clock offset: 4.175 ms  
Remote clock offset: -10.171 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.06 Mbit/s  
95th percentile per-packet one-way delay: 51.487 ms  
Loss rate: 0.46%  
-- Flow 1:  
Average throughput: 2.06 Mbit/s  
95th percentile per-packet one-way delay: 51.487 ms  
Loss rate: 0.46%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-07 20:45:56  
End at: 2018-09-07 20:46:26  
Local clock offset: 2.859 ms  
Remote clock offset: -12.988 ms

# Below is generated by plot.py at 2018-09-07 21:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 51.241 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 51.241 ms  
Loss rate: 0.37%

Run 5: Report of WebRTC media — Data Link

