

## Pantheon Report

Generated at 2018-09-08 07:16:32 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

### System info:

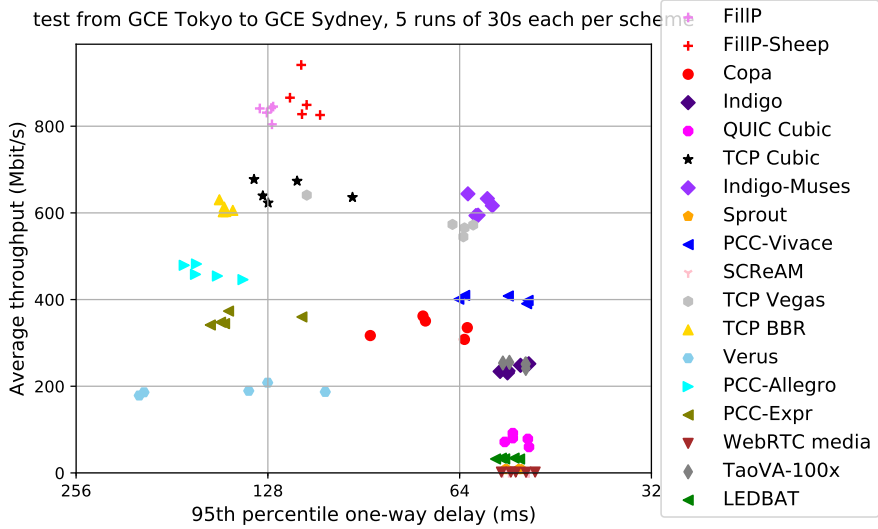
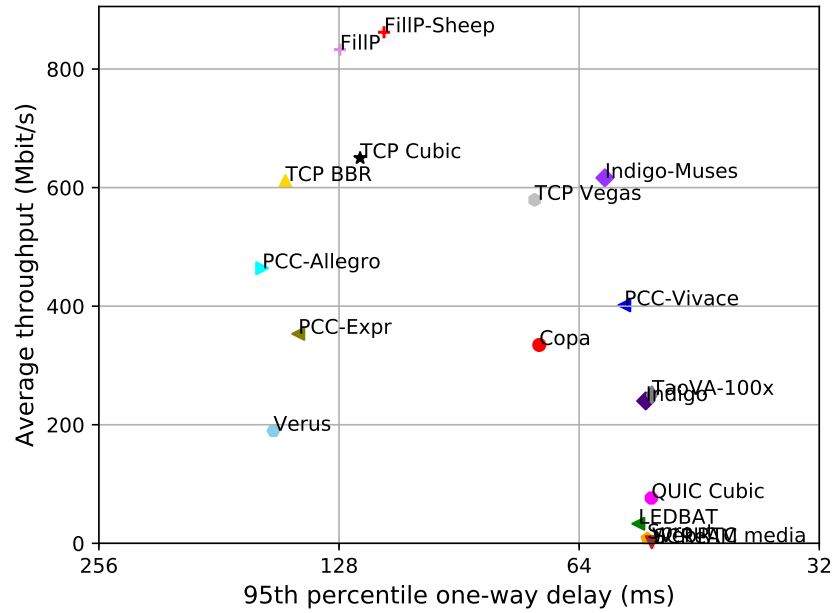
```
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651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

### Git summary:

```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd9f90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third\_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4  
third\_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE Tokyo to GCE Sydney, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



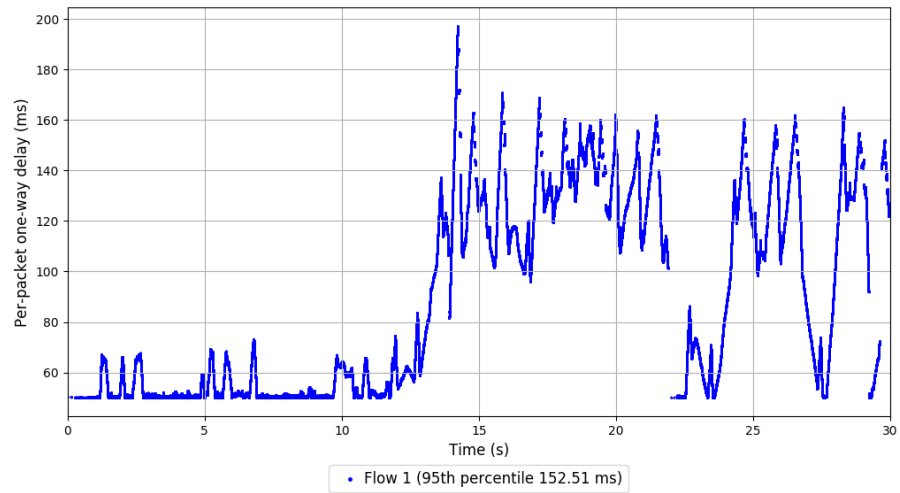
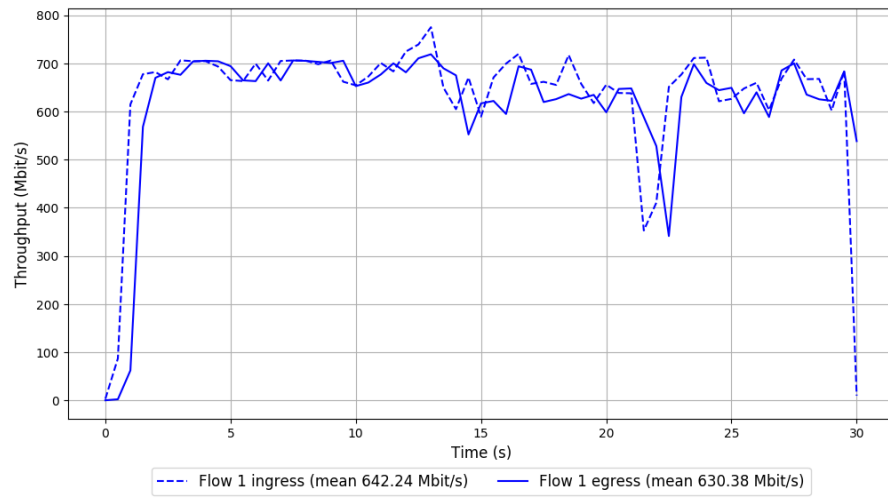
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	611.08	149.41	1.52
Copa	5	334.56	71.81	0.37
TCP Cubic	5	649.82	120.44	0.56
FillP	5	832.76	127.68	5.09
FillP-Sheep	5	862.00	112.40	0.90
Indigo	5	240.13	52.81	0.36
LEDBAT	5	32.97	53.95	0.57
Indigo-Muses	5	616.41	59.42	0.38
PCC-Allegro	5	463.94	159.75	2.73
PCC-Expr	5	353.37	143.99	4.07
QUIC Cubic	5	76.39	51.96	0.43
SCReAM	5	0.21	51.68	0.36
Sprout	5	8.15	52.58	0.33
TaoVA-100x	5	250.47	51.88	0.36
TCP Vegas	5	579.31	72.77	0.37
Verus	5	189.84	154.67	3.13
PCC-Vivace	5	401.46	56.19	0.39
WebRTC media	5	1.84	51.91	0.41

Run 1: Statistics of TCP BBR

Start at: 2018-09-08 03:43:31  
End at: 2018-09-08 03:44:01  
Local clock offset: -0.053 ms  
Remote clock offset: -0.215 ms

# Below is generated by plot.py at 2018-09-08 06:04:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 630.38 Mbit/s  
95th percentile per-packet one-way delay: 152.508 ms  
Loss rate: 2.19%  
-- Flow 1:  
Average throughput: 630.38 Mbit/s  
95th percentile per-packet one-way delay: 152.508 ms  
Loss rate: 2.19%

# Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-08 04:09:32

End at: 2018-09-08 04:10:02

Local clock offset: 0.022 ms

Remote clock offset: 0.006 ms

# Below is generated by plot.py at 2018-09-08 06:04:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 605.84 Mbit/s

95th percentile per-packet one-way delay: 145.289 ms

Loss rate: 1.75%

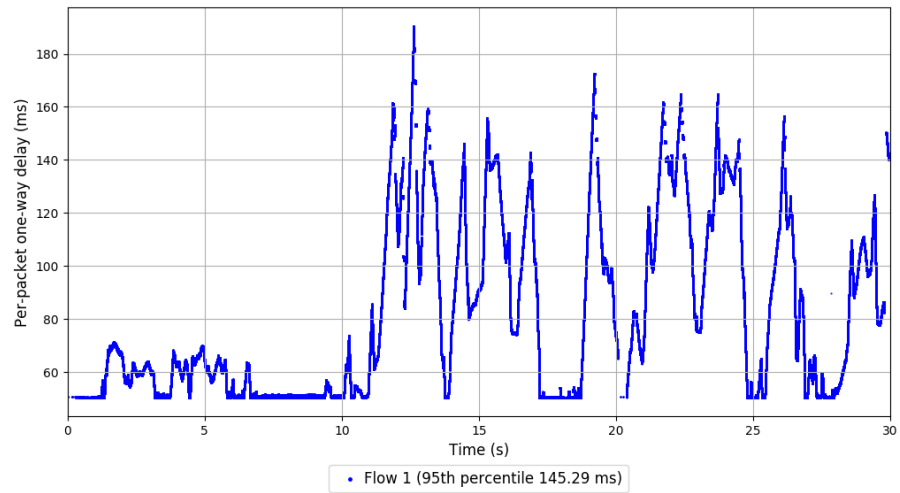
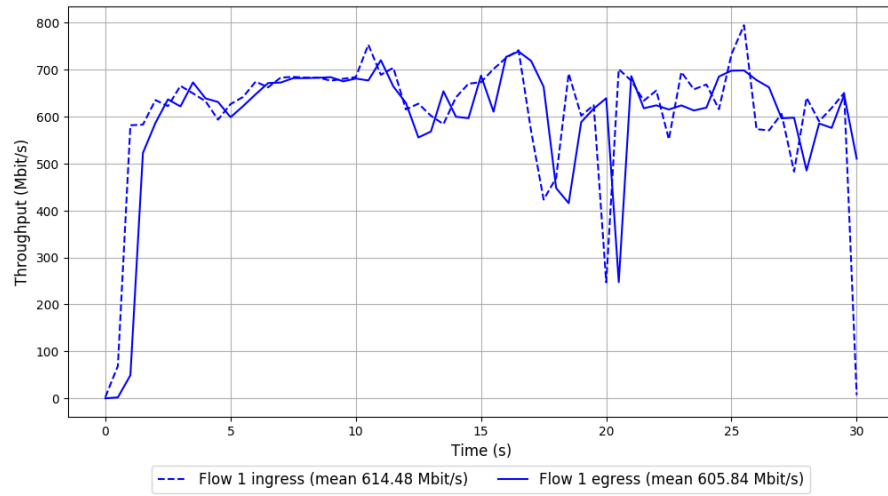
-- Flow 1:

Average throughput: 605.84 Mbit/s

95th percentile per-packet one-way delay: 145.289 ms

Loss rate: 1.75%

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





Run 3: Statistics of TCP BBR

Start at: 2018-09-08 04:35:26

End at: 2018-09-08 04:35:56

Local clock offset: 0.064 ms

Remote clock offset: 0.299 ms

# Below is generated by plot.py at 2018-09-08 06:04:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 603.18 Mbit/s

95th percentile per-packet one-way delay: 149.037 ms

Loss rate: 0.79%

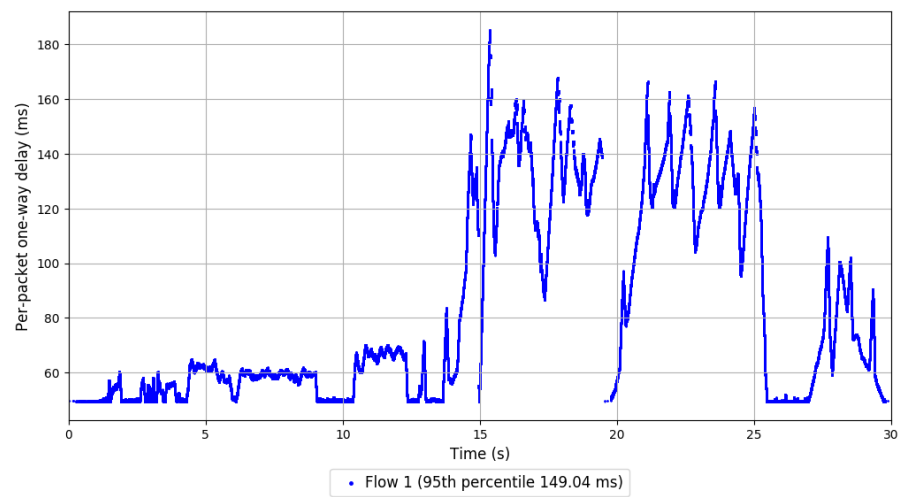
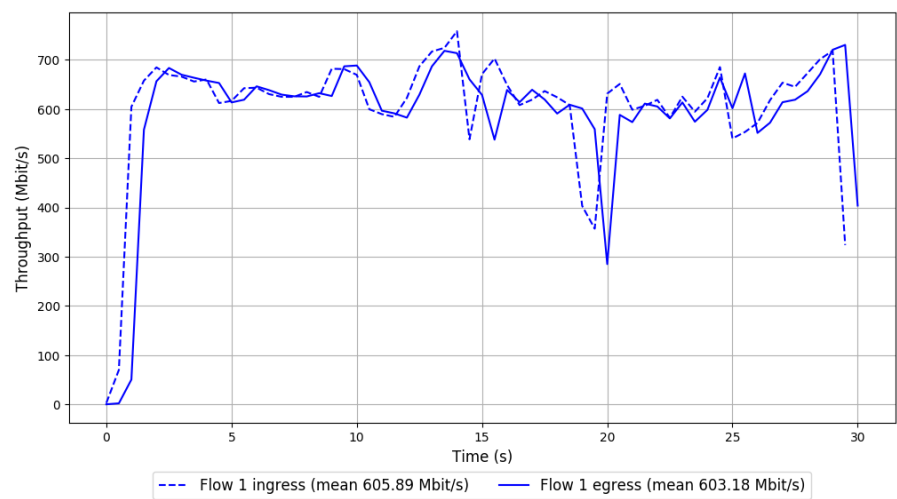
-- Flow 1:

Average throughput: 603.18 Mbit/s

95th percentile per-packet one-way delay: 149.037 ms

Loss rate: 0.79%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-08 05:01:32

End at: 2018-09-08 05:02:02

Local clock offset: 0.063 ms

Remote clock offset: -0.27 ms

# Below is generated by plot.py at 2018-09-08 06:04:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 613.36 Mbit/s

95th percentile per-packet one-way delay: 149.859 ms

Loss rate: 1.85%

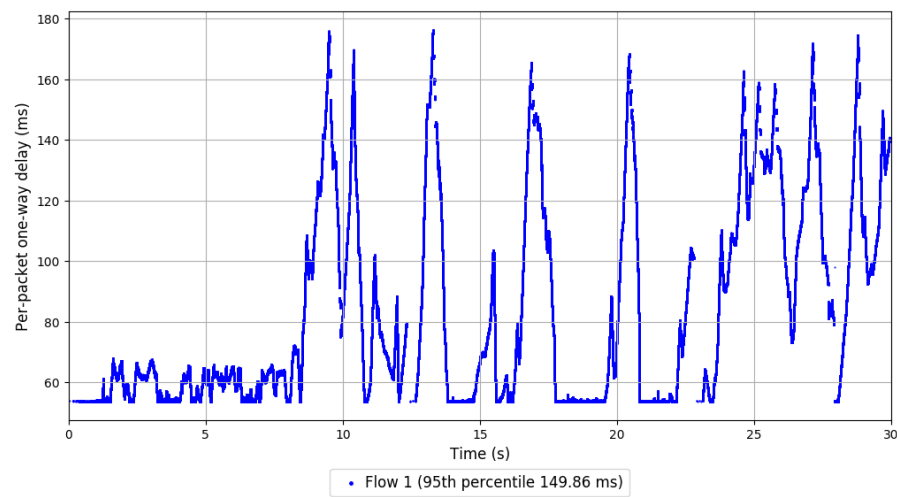
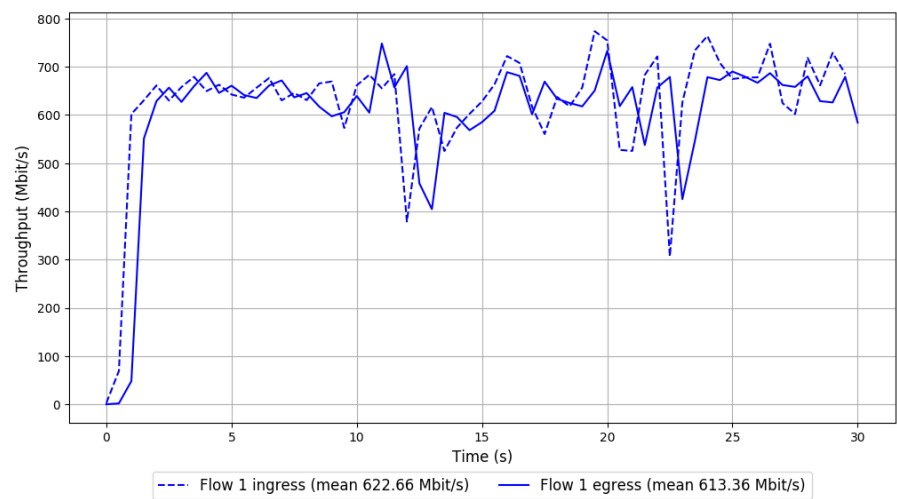
-- Flow 1:

Average throughput: 613.36 Mbit/s

95th percentile per-packet one-way delay: 149.859 ms

Loss rate: 1.85%

Run 4: Report of TCP BBR — Data Link

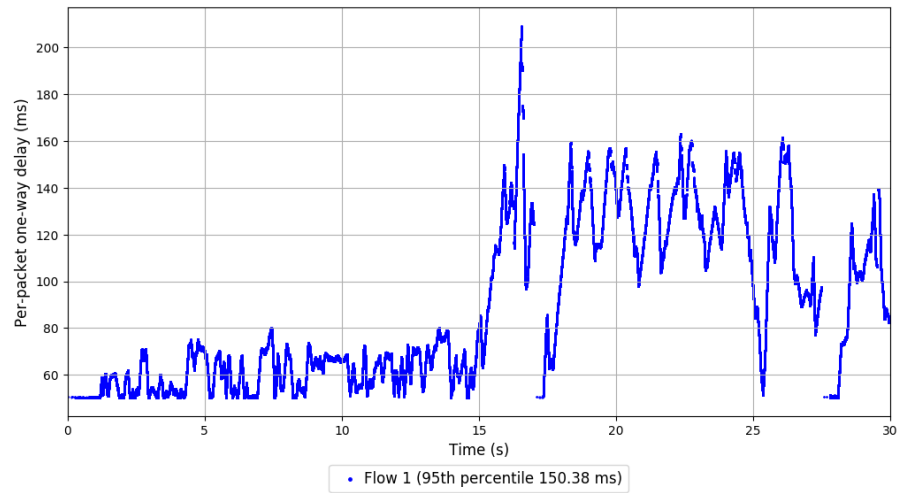
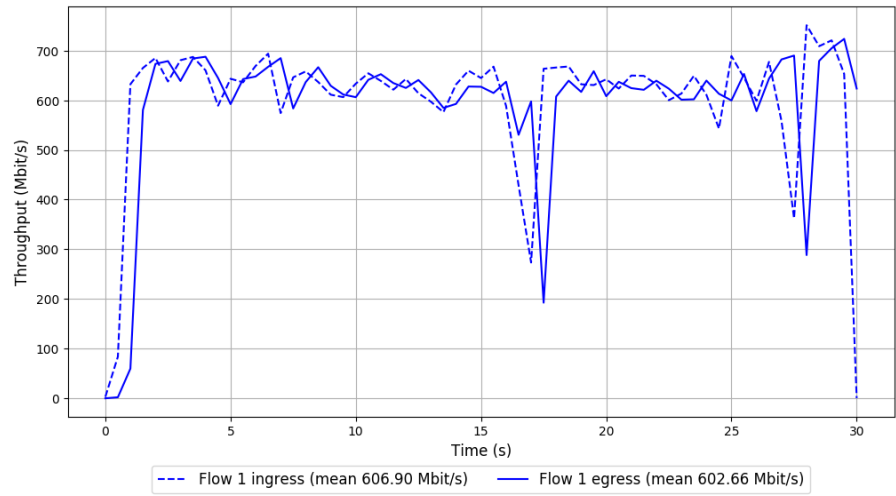


Run 5: Statistics of TCP BBR

Start at: 2018-09-08 05:27:40  
End at: 2018-09-08 05:28:10  
Local clock offset: -0.077 ms  
Remote clock offset: -0.388 ms

# Below is generated by plot.py at 2018-09-08 06:04:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 602.66 Mbit/s  
95th percentile per-packet one-way delay: 150.381 ms  
Loss rate: 1.04%  
-- Flow 1:  
Average throughput: 602.66 Mbit/s  
95th percentile per-packet one-way delay: 150.381 ms  
Loss rate: 1.04%

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



Run 1: Statistics of Copa

Start at: 2018-09-08 03:47:59

End at: 2018-09-08 03:48:29

Local clock offset: 0.147 ms

Remote clock offset: 1.085 ms

# Below is generated by plot.py at 2018-09-08 06:04:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 335.22 Mbit/s

95th percentile per-packet one-way delay: 62.254 ms

Loss rate: 0.39%

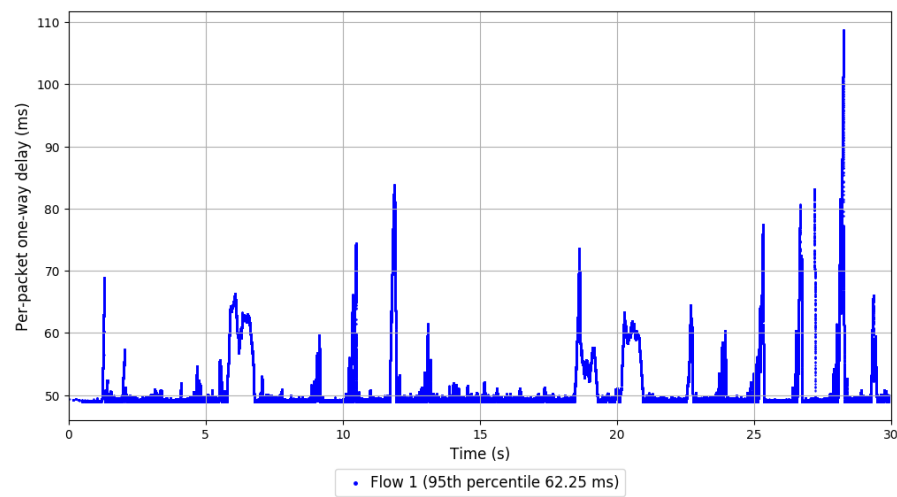
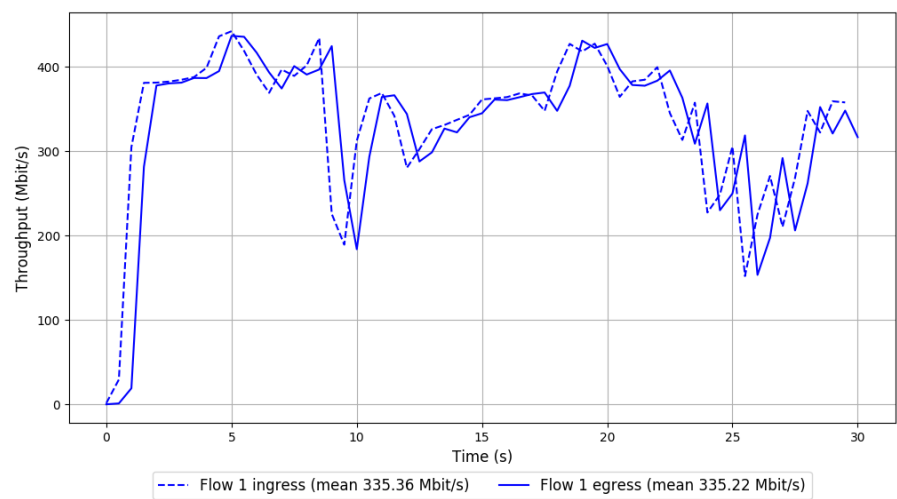
-- Flow 1:

Average throughput: 335.22 Mbit/s

95th percentile per-packet one-way delay: 62.254 ms

Loss rate: 0.39%

Run 1: Report of Copa — Data Link



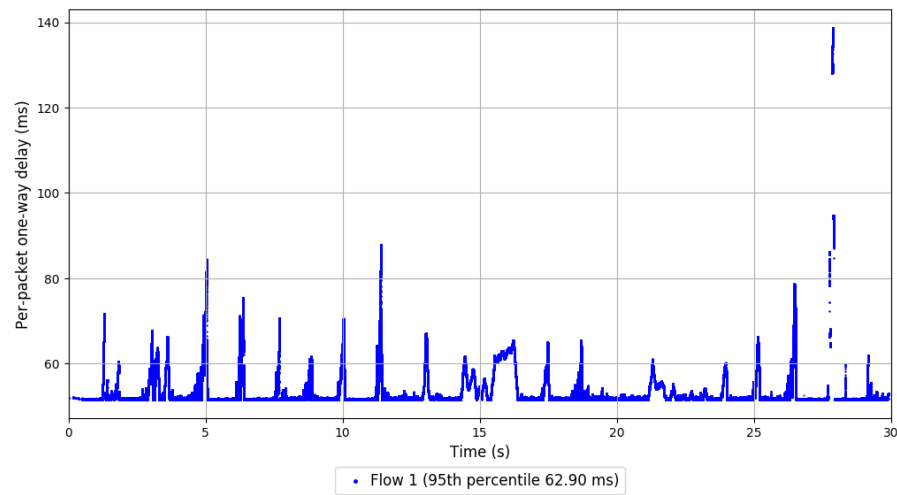
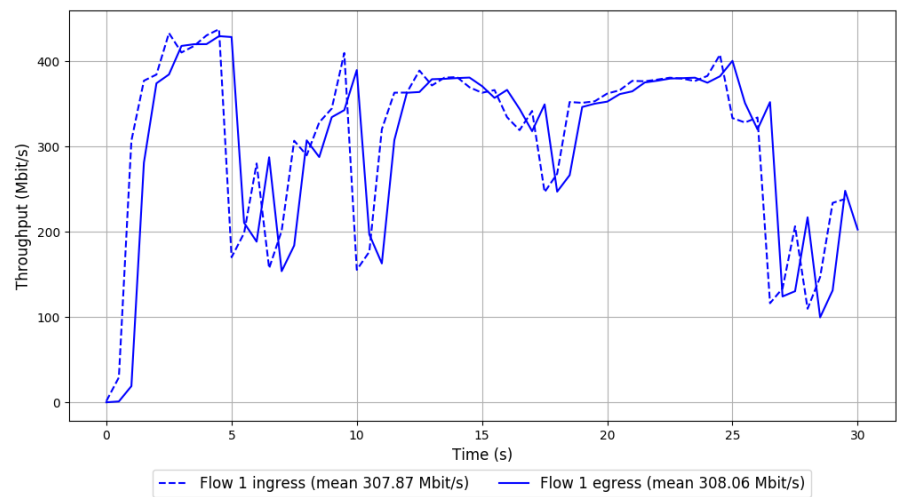


Run 2: Statistics of Copa

Start at: 2018-09-08 04:13:58  
End at: 2018-09-08 04:14:28  
Local clock offset: 0.11 ms  
Remote clock offset: -1.316 ms

# Below is generated by plot.py at 2018-09-08 06:04:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 308.06 Mbit/s  
95th percentile per-packet one-way delay: 62.903 ms  
Loss rate: 0.29%  
-- Flow 1:  
Average throughput: 308.06 Mbit/s  
95th percentile per-packet one-way delay: 62.903 ms  
Loss rate: 0.29%

Run 2: Report of Copa — Data Link

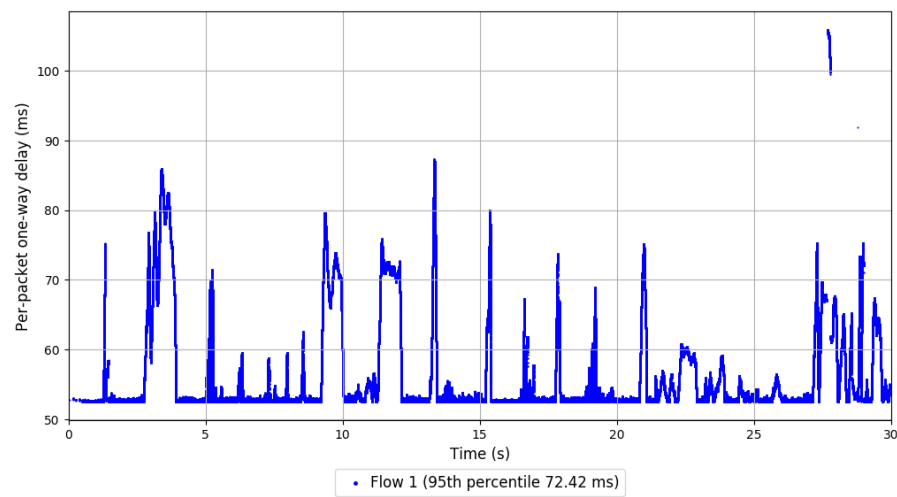
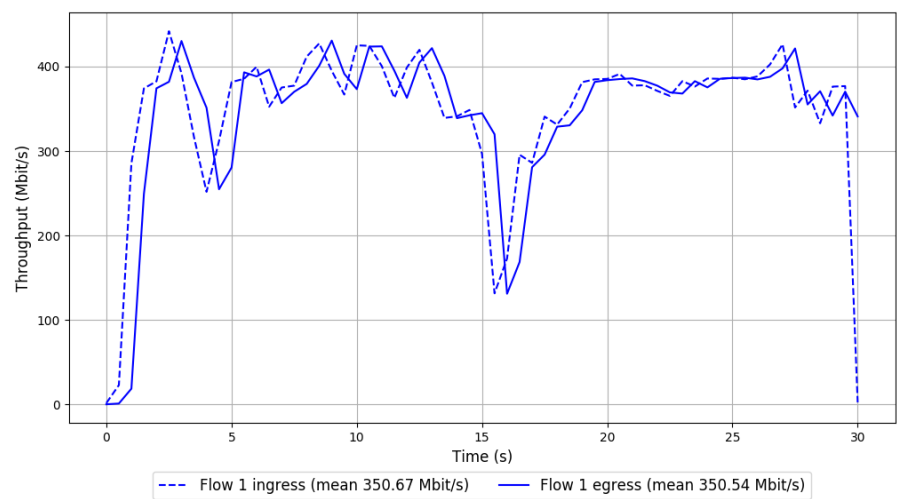


Run 3: Statistics of Copa

Start at: 2018-09-08 04:39:54  
End at: 2018-09-08 04:40:24  
Local clock offset: -0.214 ms  
Remote clock offset: -0.014 ms

# Below is generated by plot.py at 2018-09-08 06:04:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 350.54 Mbit/s  
95th percentile per-packet one-way delay: 72.422 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 350.54 Mbit/s  
95th percentile per-packet one-way delay: 72.422 ms  
Loss rate: 0.39%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-08 05:05:58

End at: 2018-09-08 05:06:28

Local clock offset: 0.084 ms

Remote clock offset: -0.25 ms

# Below is generated by plot.py at 2018-09-08 06:13:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 362.01 Mbit/s

95th percentile per-packet one-way delay: 73.069 ms

Loss rate: 0.37%

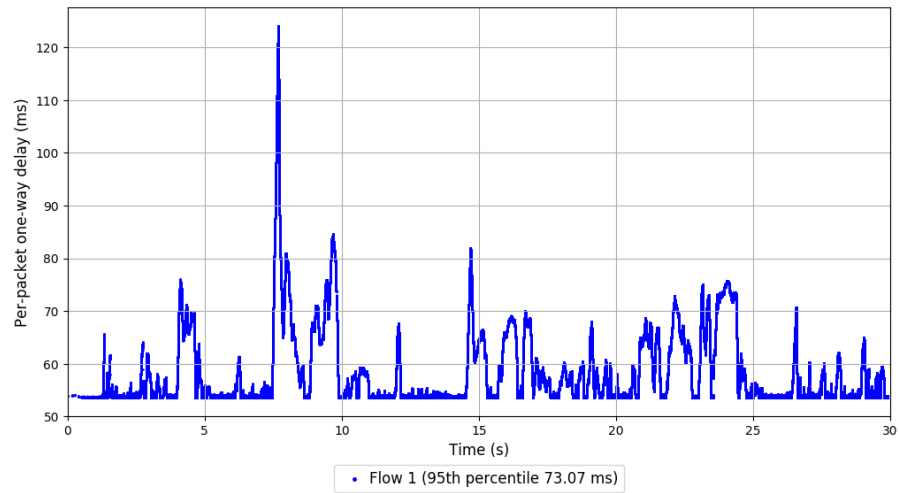
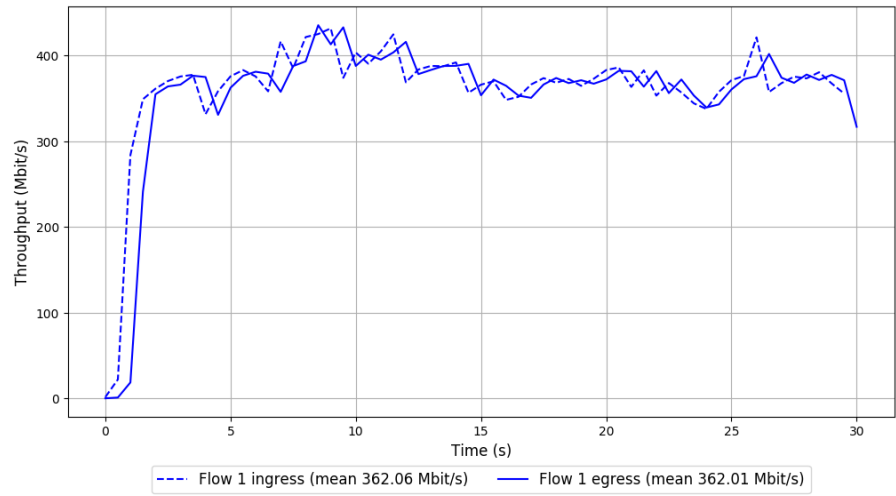
-- Flow 1:

Average throughput: 362.01 Mbit/s

95th percentile per-packet one-way delay: 73.069 ms

Loss rate: 0.37%

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

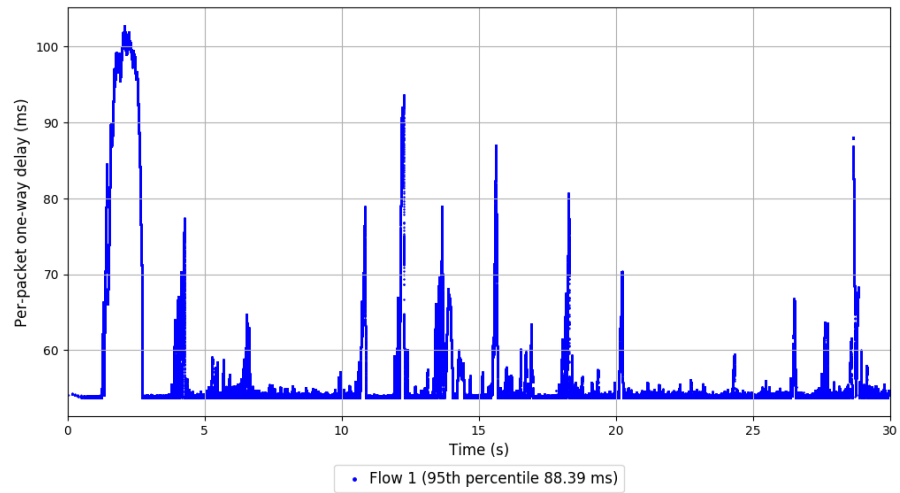
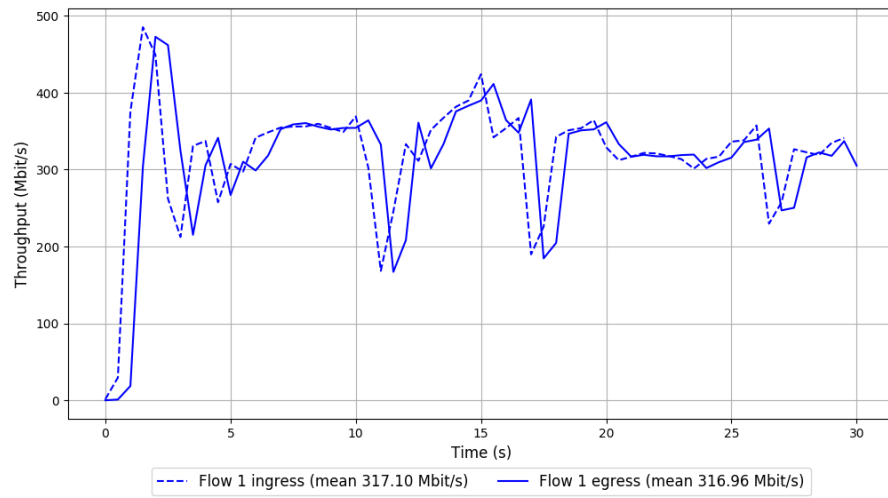


Run 5: Statistics of Copa

Start at: 2018-09-08 05:32:05  
End at: 2018-09-08 05:32:35  
Local clock offset: -0.067 ms  
Remote clock offset: -0.377 ms

# Below is generated by plot.py at 2018-09-08 06:13:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 316.96 Mbit/s  
95th percentile per-packet one-way delay: 88.394 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 316.96 Mbit/s  
95th percentile per-packet one-way delay: 88.394 ms  
Loss rate: 0.39%

### Run 5: Report of Copa — Data Link



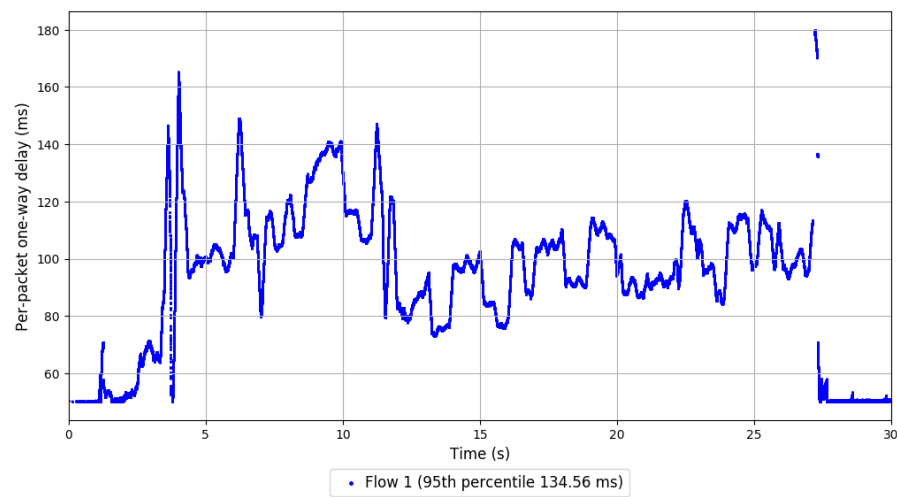
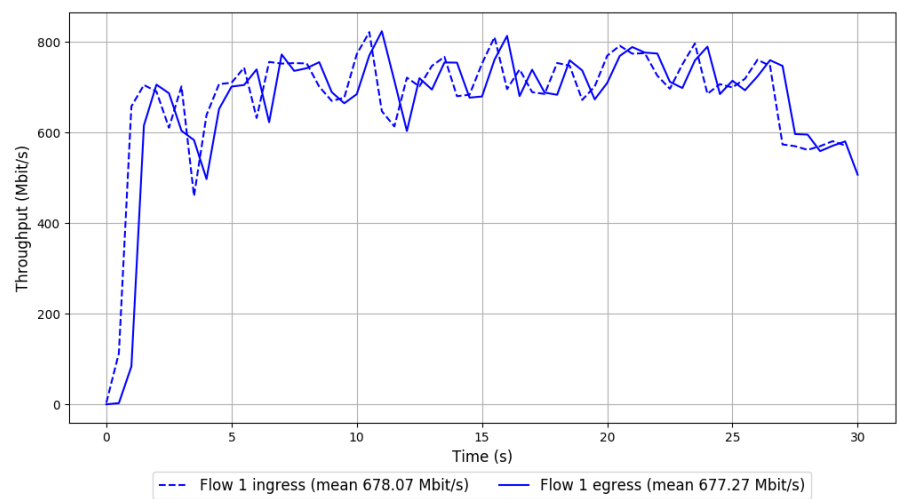


Run 1: Statistics of TCP Cubic

Start at: 2018-09-08 03:40:15  
End at: 2018-09-08 03:40:45  
Local clock offset: 0.076 ms  
Remote clock offset: -0.125 ms

# Below is generated by plot.py at 2018-09-08 06:14:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 677.27 Mbit/s  
95th percentile per-packet one-way delay: 134.562 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 677.27 Mbit/s  
95th percentile per-packet one-way delay: 134.562 ms  
Loss rate: 0.45%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-08 04:06:19

End at: 2018-09-08 04:06:49

Local clock offset: 0.165 ms

Remote clock offset: 0.988 ms

# Below is generated by plot.py at 2018-09-08 06:14:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 623.08 Mbit/s

95th percentile per-packet one-way delay: 127.864 ms

Loss rate: 0.58%

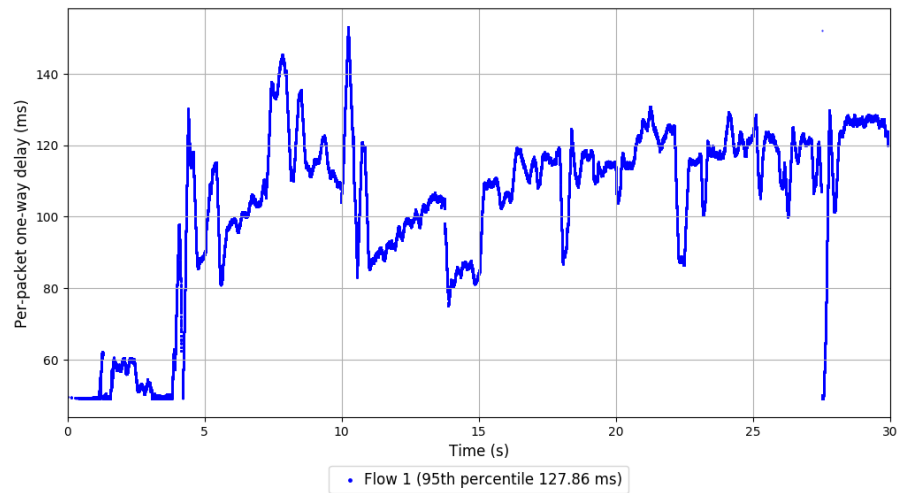
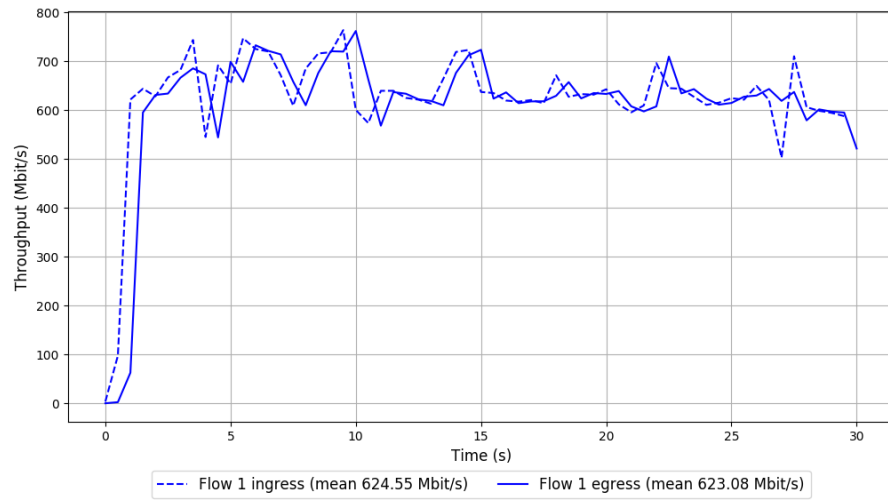
-- Flow 1:

Average throughput: 623.08 Mbit/s

95th percentile per-packet one-way delay: 127.864 ms

Loss rate: 0.58%

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

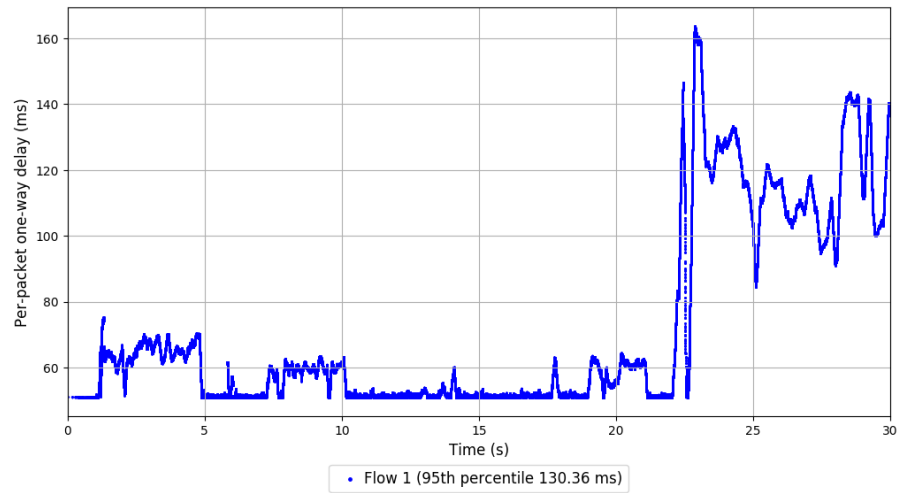
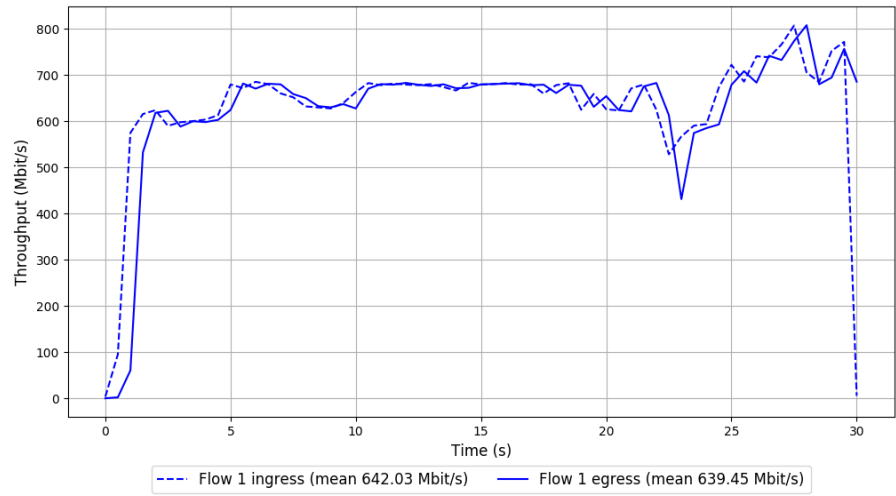


Run 3: Statistics of TCP Cubic

Start at: 2018-09-08 04:32:13  
End at: 2018-09-08 04:32:43  
Local clock offset: 0.092 ms  
Remote clock offset: -0.675 ms

# Below is generated by plot.py at 2018-09-08 06:14:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 639.45 Mbit/s  
95th percentile per-packet one-way delay: 130.357 ms  
Loss rate: 0.75%  
-- Flow 1:  
Average throughput: 639.45 Mbit/s  
95th percentile per-packet one-way delay: 130.357 ms  
Loss rate: 0.75%

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

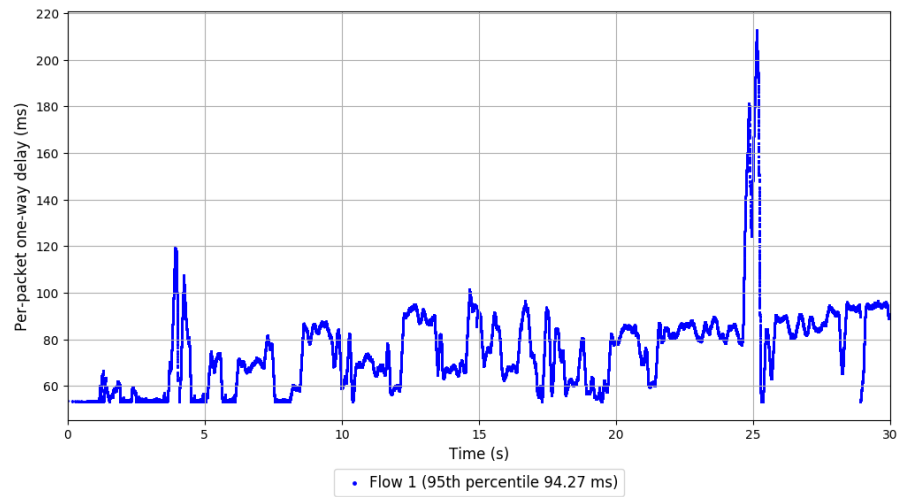
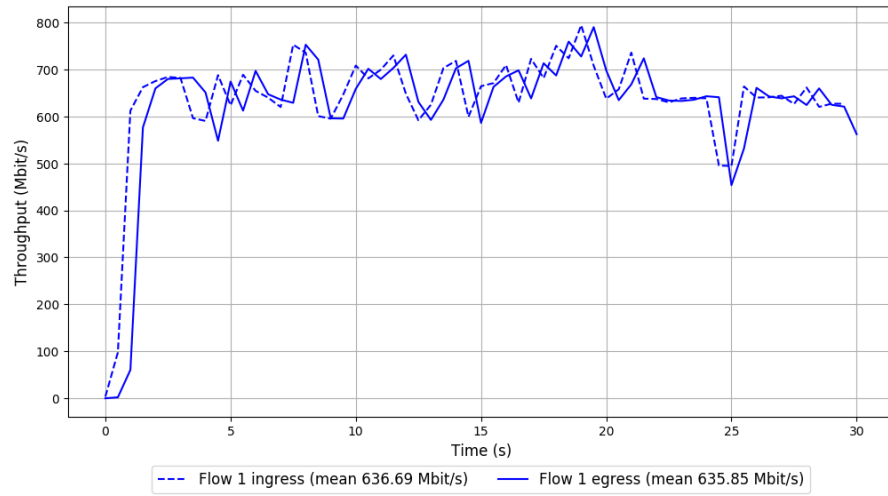


Run 4: Statistics of TCP Cubic

Start at: 2018-09-08 04:58:18  
End at: 2018-09-08 04:58:48  
Local clock offset: -0.101 ms  
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-09-08 06:14:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 635.85 Mbit/s  
95th percentile per-packet one-way delay: 94.269 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 635.85 Mbit/s  
95th percentile per-packet one-way delay: 94.269 ms  
Loss rate: 0.48%

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



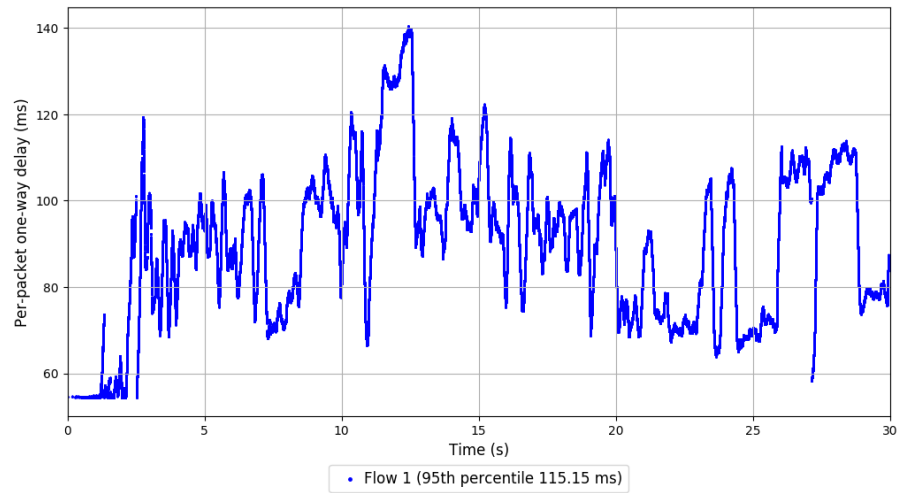
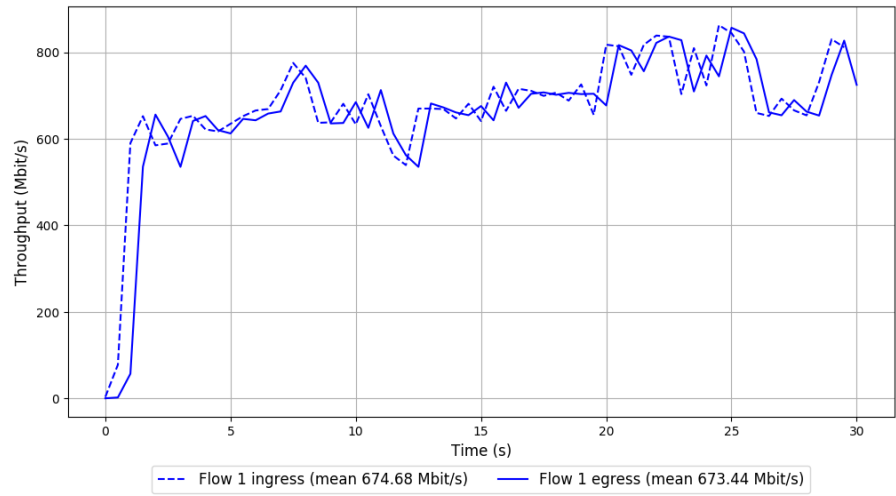


Run 5: Statistics of TCP Cubic

Start at: 2018-09-08 05:24:24  
End at: 2018-09-08 05:24:54  
Local clock offset: 0.044 ms  
Remote clock offset: -1.629 ms

# Below is generated by plot.py at 2018-09-08 06:14:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 673.44 Mbit/s  
95th percentile per-packet one-way delay: 115.153 ms  
Loss rate: 0.54%  
-- Flow 1:  
Average throughput: 673.44 Mbit/s  
95th percentile per-packet one-way delay: 115.153 ms  
Loss rate: 0.54%

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

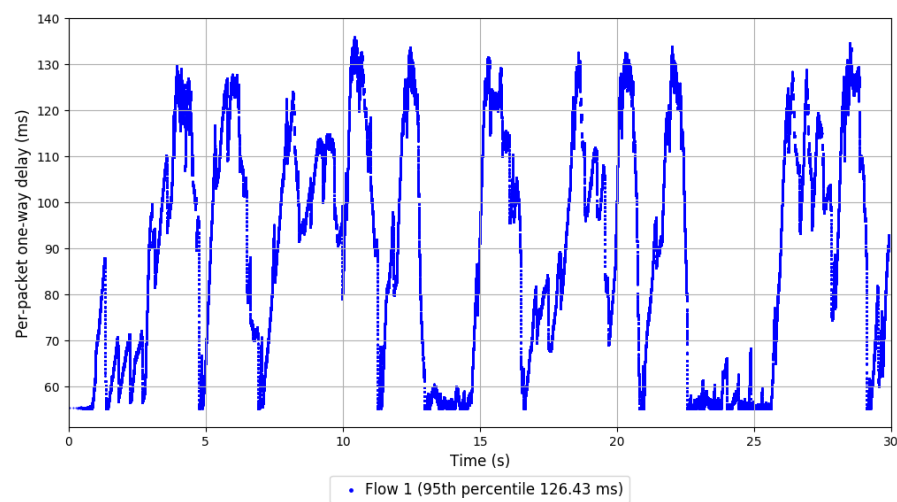
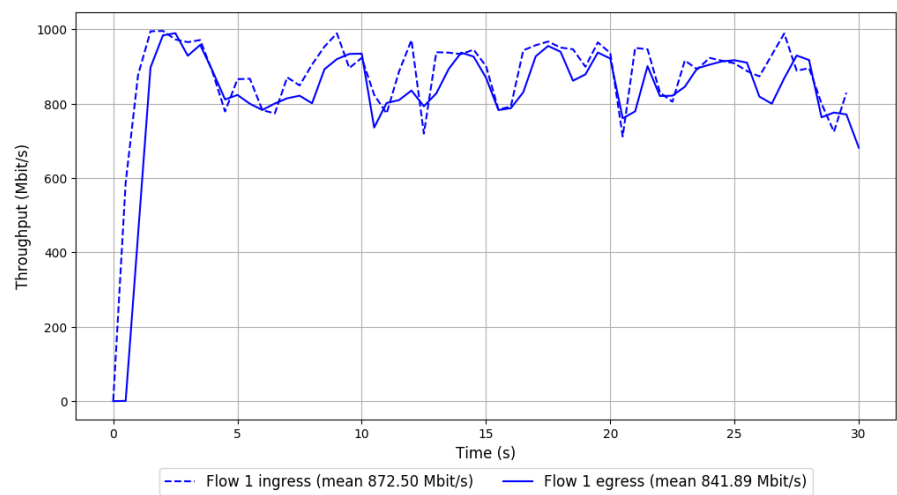


Run 1: Statistics of FillP

Start at: 2018-09-08 03:56:45  
End at: 2018-09-08 03:57:15  
Local clock offset: 0.146 ms  
Remote clock offset: -1.658 ms

# Below is generated by plot.py at 2018-09-08 06:19:35  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 841.89 Mbit/s  
95th percentile per-packet one-way delay: 126.427 ms  
Loss rate: 3.86%  
-- Flow 1:  
Average throughput: 841.89 Mbit/s  
95th percentile per-packet one-way delay: 126.427 ms  
Loss rate: 3.86%

Run 1: Report of FillP — Data Link

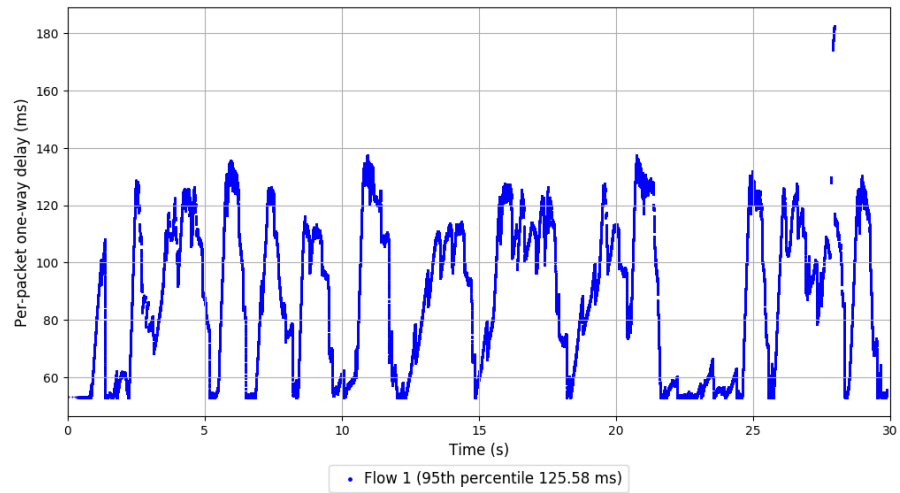
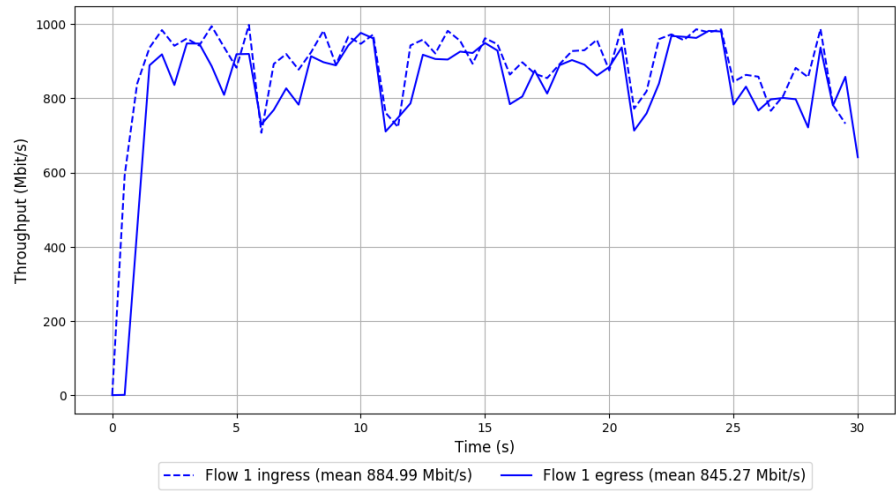


Run 2: Statistics of FillP

Start at: 2018-09-08 04:22:42  
End at: 2018-09-08 04:23:12  
Local clock offset: -0.283 ms  
Remote clock offset: -0.188 ms

# Below is generated by plot.py at 2018-09-08 06:28:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 845.27 Mbit/s  
95th percentile per-packet one-way delay: 125.575 ms  
Loss rate: 4.83%  
-- Flow 1:  
Average throughput: 845.27 Mbit/s  
95th percentile per-packet one-way delay: 125.575 ms  
Loss rate: 4.83%

## Run 2: Report of FillP — Data Link

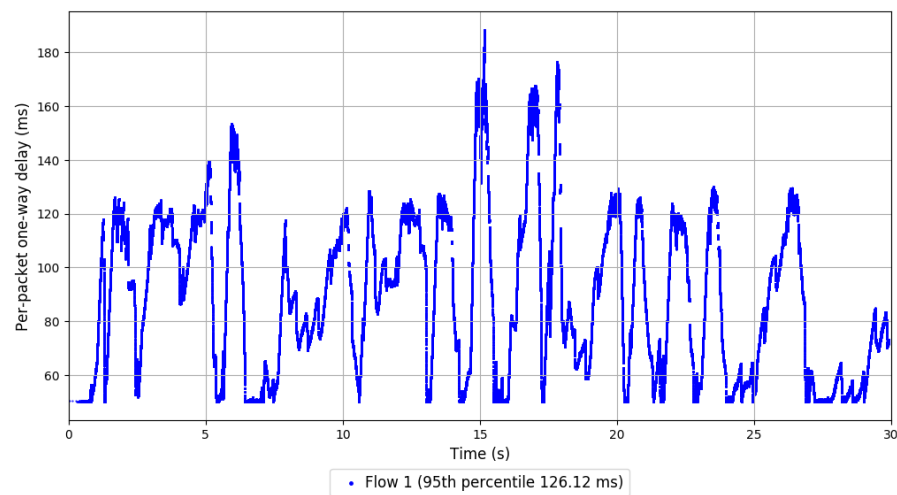
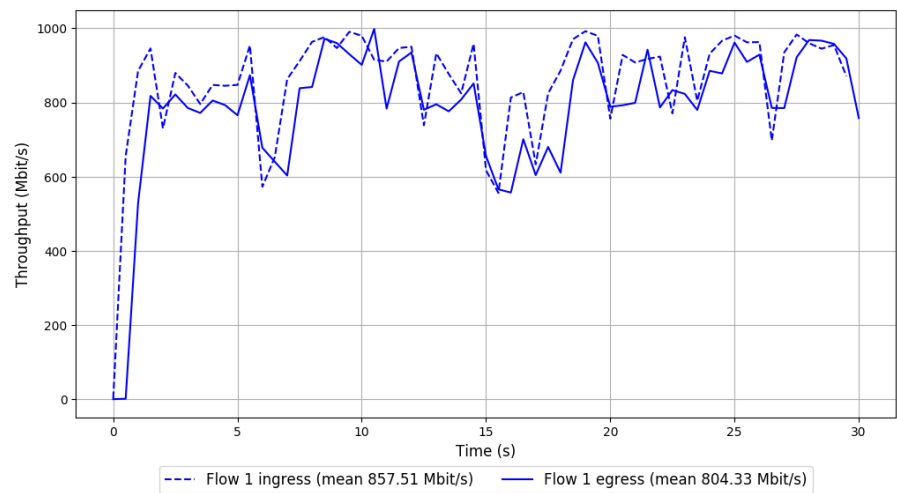


Run 3: Statistics of FillP

Start at: 2018-09-08 04:48:44  
End at: 2018-09-08 04:49:14  
Local clock offset: -0.012 ms  
Remote clock offset: -0.559 ms

# Below is generated by plot.py at 2018-09-08 06:28:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 804.33 Mbit/s  
95th percentile per-packet one-way delay: 126.124 ms  
Loss rate: 6.53%  
-- Flow 1:  
Average throughput: 804.33 Mbit/s  
95th percentile per-packet one-way delay: 126.124 ms  
Loss rate: 6.53%

Run 3: Report of FillP — Data Link



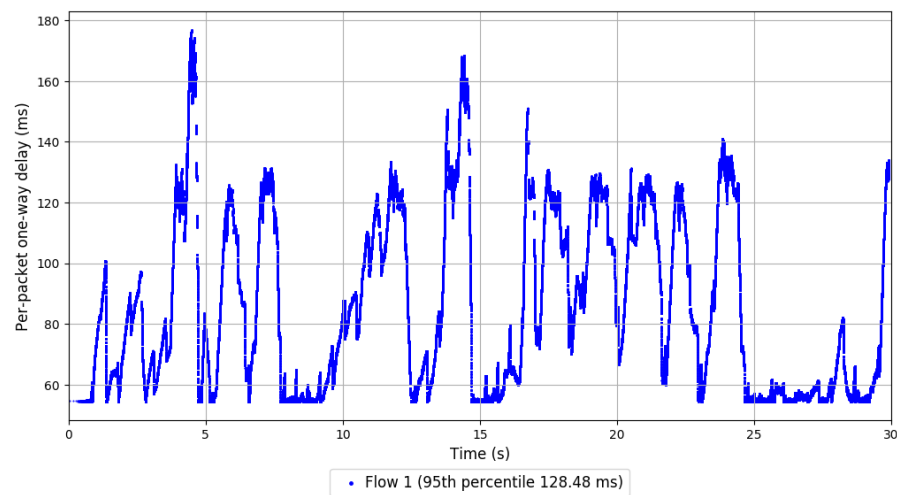
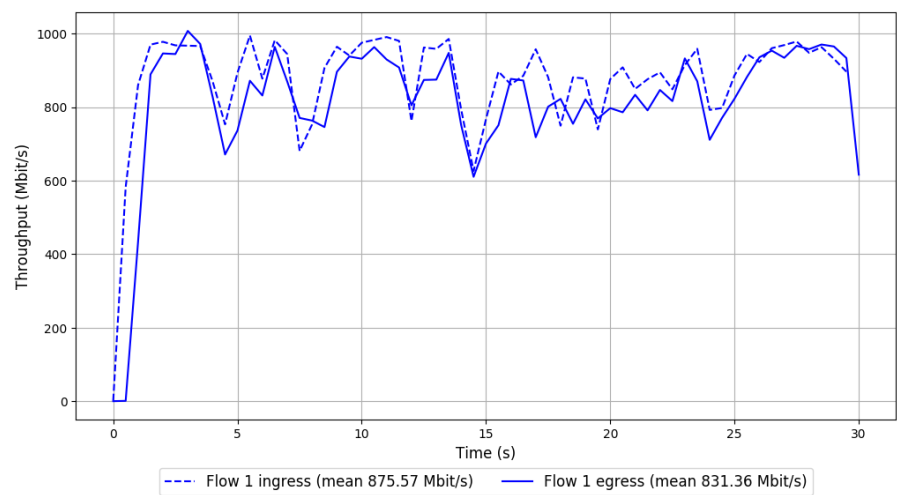


Run 4: Statistics of FillP

Start at: 2018-09-08 05:14:51  
End at: 2018-09-08 05:15:21  
Local clock offset: -0.112 ms  
Remote clock offset: -1.267 ms

# Below is generated by plot.py at 2018-09-08 06:29:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 831.36 Mbit/s  
95th percentile per-packet one-way delay: 128.477 ms  
Loss rate: 5.39%  
-- Flow 1:  
Average throughput: 831.36 Mbit/s  
95th percentile per-packet one-way delay: 128.477 ms  
Loss rate: 5.39%

Run 4: Report of FillP — Data Link

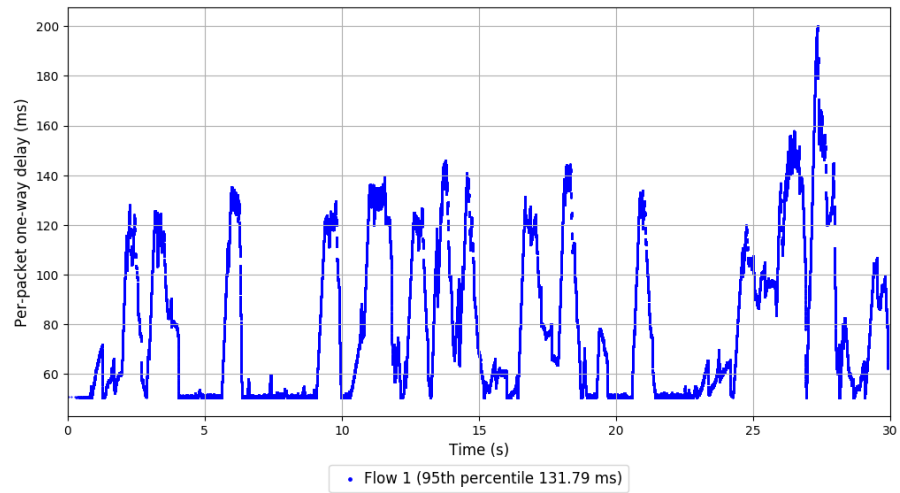
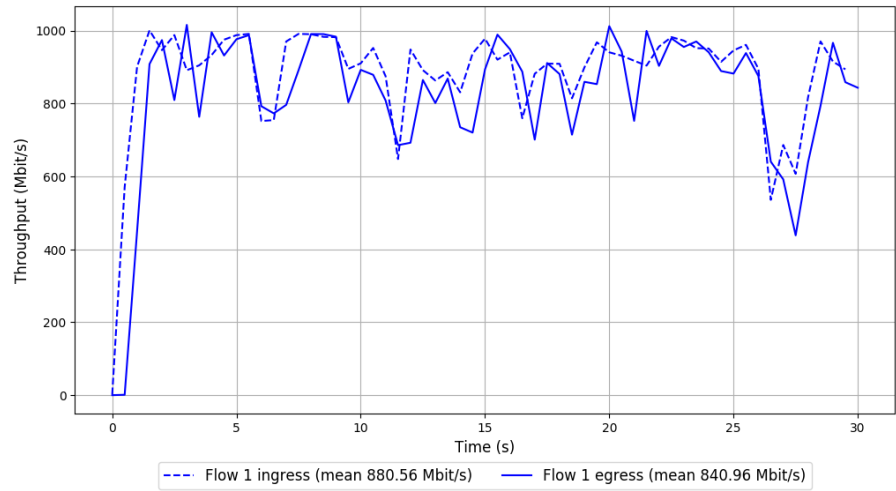


Run 5: Statistics of FillP

Start at: 2018-09-08 05:40:51  
End at: 2018-09-08 05:41:21  
Local clock offset: 0.025 ms  
Remote clock offset: -0.549 ms

# Below is generated by plot.py at 2018-09-08 06:29:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 840.96 Mbit/s  
95th percentile per-packet one-way delay: 131.788 ms  
Loss rate: 4.83%  
-- Flow 1:  
Average throughput: 840.96 Mbit/s  
95th percentile per-packet one-way delay: 131.788 ms  
Loss rate: 4.83%

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



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-08 03:46:19

End at: 2018-09-08 03:46:49

Local clock offset: 0.181 ms

Remote clock offset: 1.138 ms

# Below is generated by plot.py at 2018-09-08 06:29:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 849.20 Mbit/s

95th percentile per-packet one-way delay: 111.263 ms

Loss rate: 0.80%

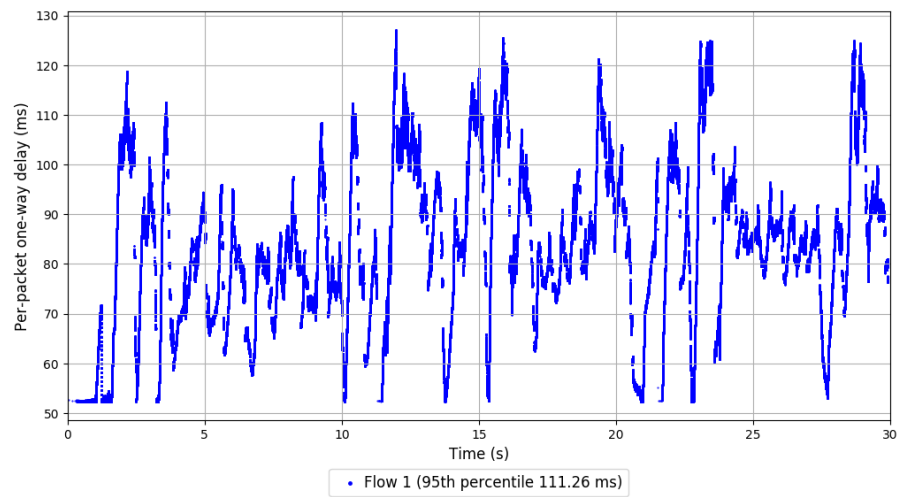
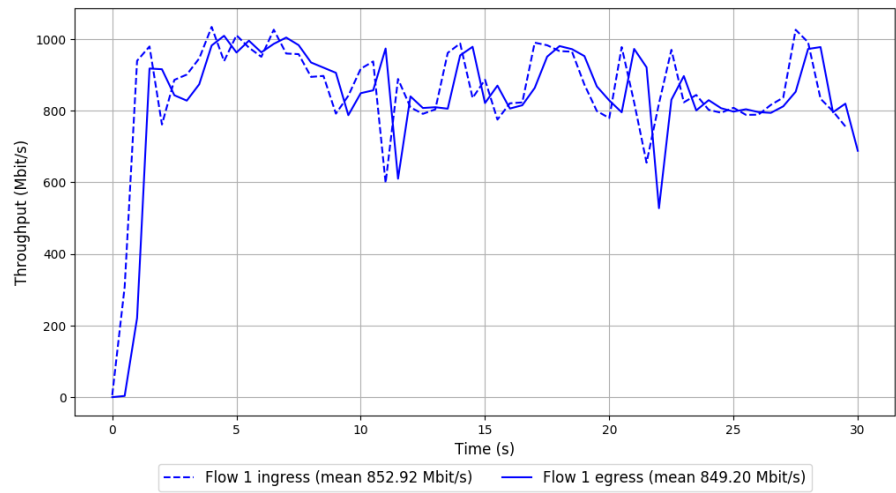
-- Flow 1:

Average throughput: 849.20 Mbit/s

95th percentile per-packet one-way delay: 111.263 ms

Loss rate: 0.80%

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



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-08 04:12:20

End at: 2018-09-08 04:12:50

Local clock offset: -0.092 ms

Remote clock offset: 0.029 ms

# Below is generated by plot.py at 2018-09-08 06:29:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 825.85 Mbit/s

95th percentile per-packet one-way delay: 105.984 ms

Loss rate: 0.64%

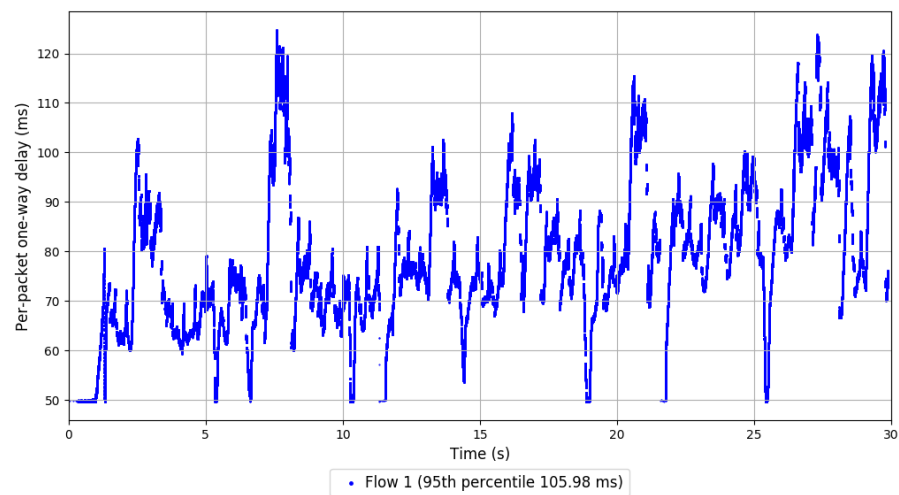
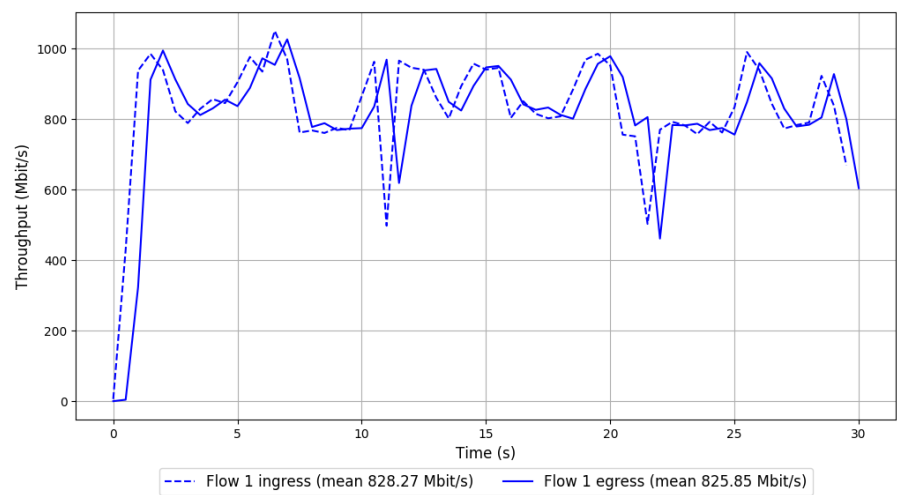
-- Flow 1:

Average throughput: 825.85 Mbit/s

95th percentile per-packet one-way delay: 105.984 ms

Loss rate: 0.64%

Run 2: Report of FillP-Sheep — Data Link



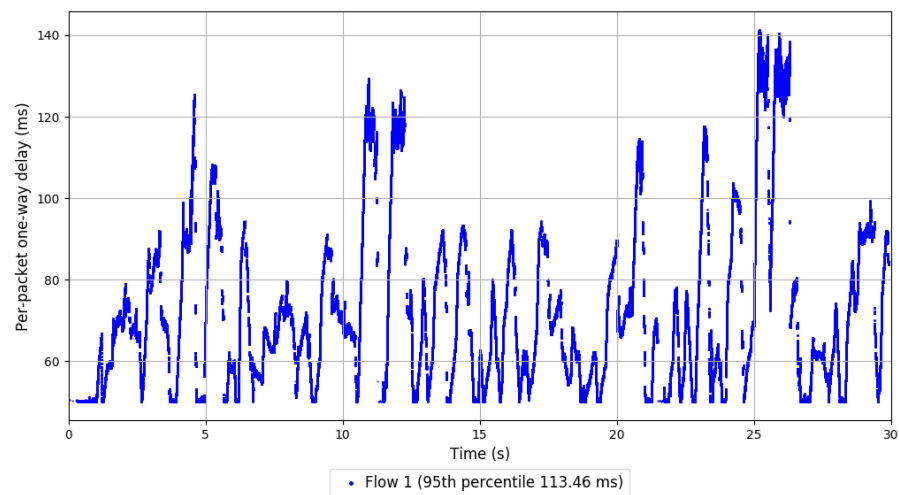
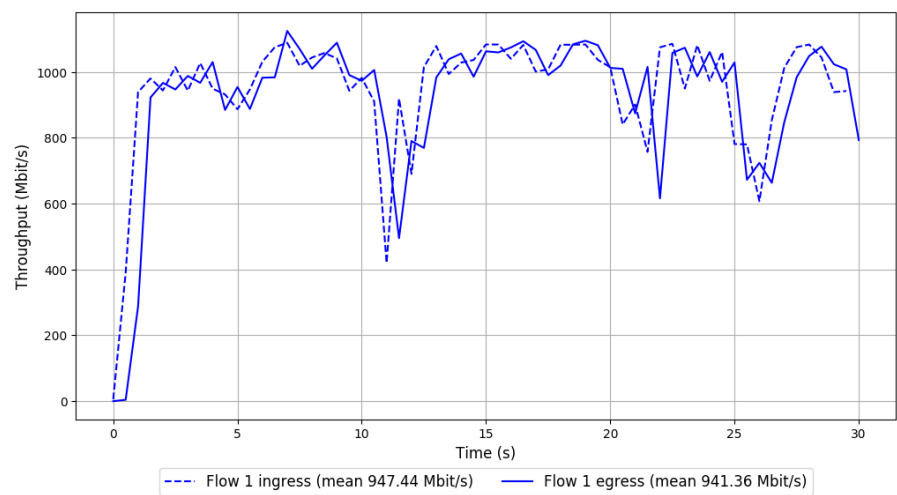


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-08 04:38:11  
End at: 2018-09-08 04:38:41  
Local clock offset: 0.088 ms  
Remote clock offset: -0.333 ms

# Below is generated by plot.py at 2018-09-08 06:32:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 941.36 Mbit/s  
95th percentile per-packet one-way delay: 113.462 ms  
Loss rate: 0.99%  
-- Flow 1:  
Average throughput: 941.36 Mbit/s  
95th percentile per-packet one-way delay: 113.462 ms  
Loss rate: 0.99%

Run 3: Report of FillP-Sheep — Data Link

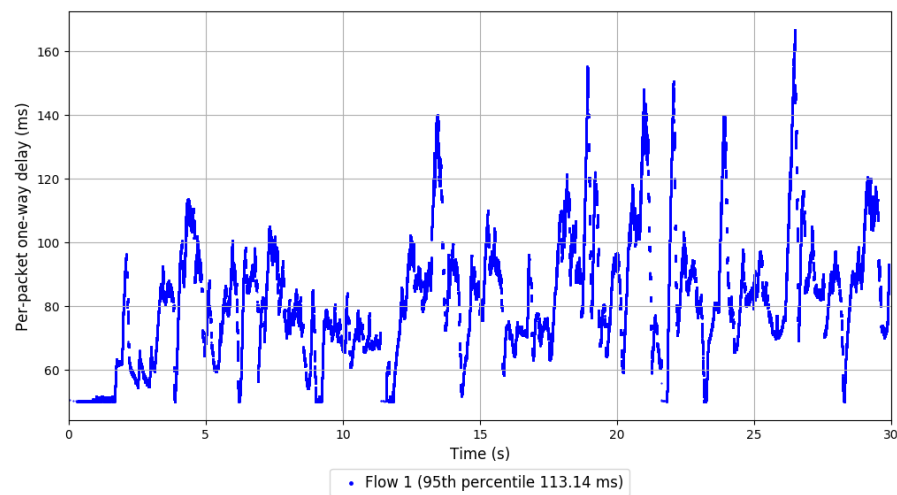
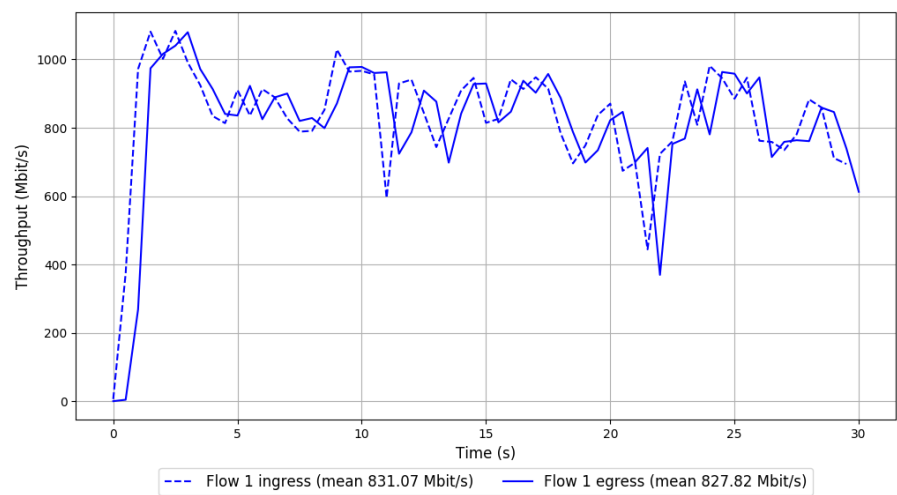


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-08 05:04:20  
End at: 2018-09-08 05:04:50  
Local clock offset: -0.148 ms  
Remote clock offset: -0.265 ms

# Below is generated by plot.py at 2018-09-08 06:36:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 827.82 Mbit/s  
95th percentile per-packet one-way delay: 113.144 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 827.82 Mbit/s  
95th percentile per-packet one-way delay: 113.144 ms  
Loss rate: 0.73%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-08 05:30:26

End at: 2018-09-08 05:30:56

Local clock offset: 0.075 ms

Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-09-08 06:44:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 865.76 Mbit/s

95th percentile per-packet one-way delay: 118.170 ms

Loss rate: 1.36%

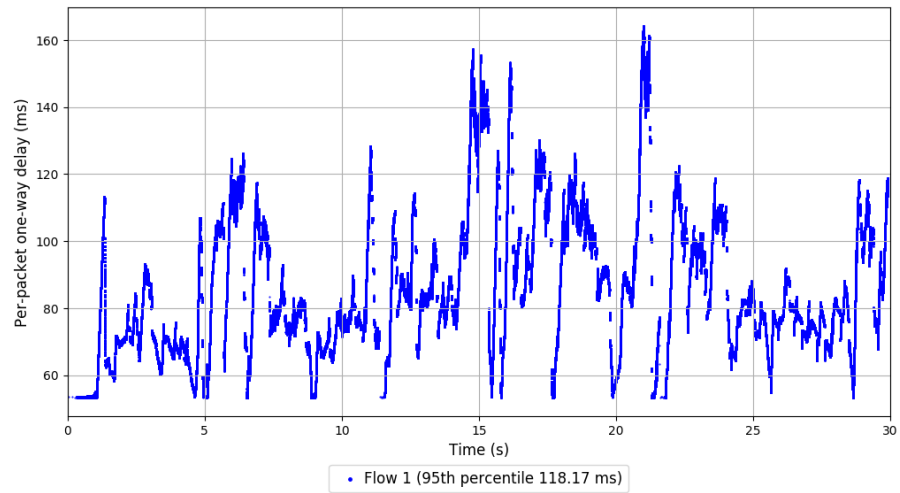
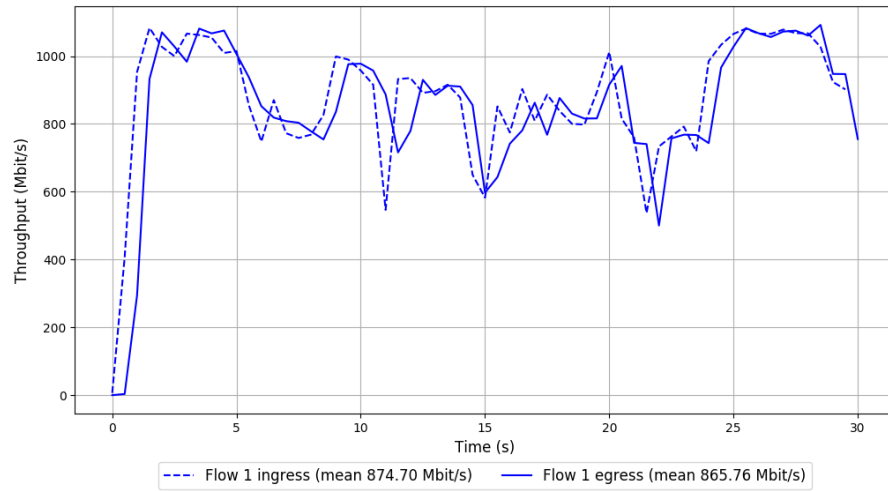
-- Flow 1:

Average throughput: 865.76 Mbit/s

95th percentile per-packet one-way delay: 118.170 ms

Loss rate: 1.36%

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

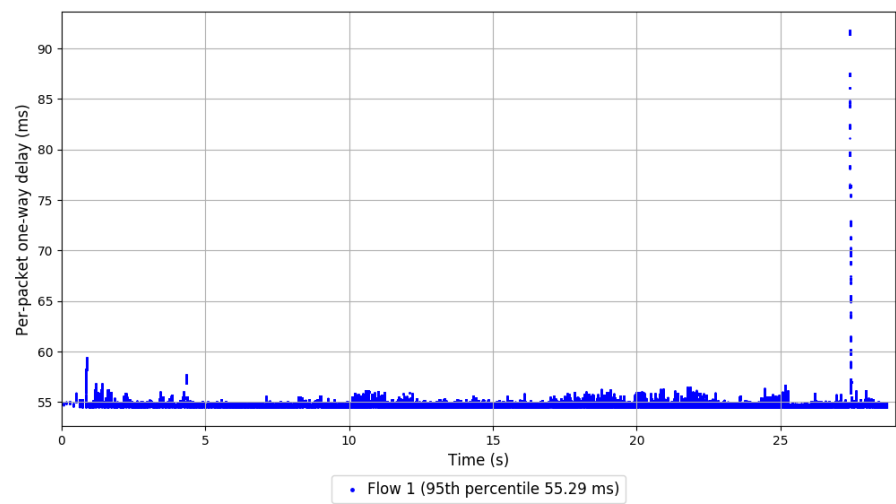
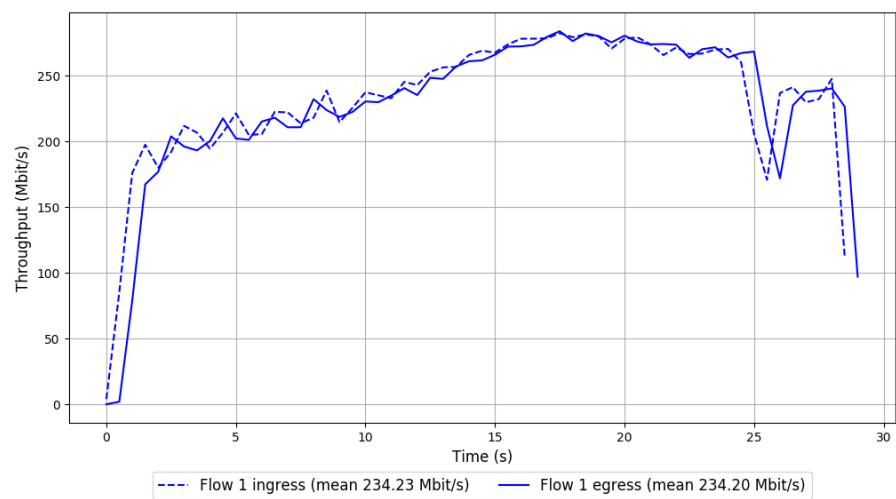


Run 1: Statistics of Indigo

Start at: 2018-09-08 03:34:37  
End at: 2018-09-08 03:35:07  
Local clock offset: 0.022 ms  
Remote clock offset: -1.231 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 234.20 Mbit/s  
95th percentile per-packet one-way delay: 55.291 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 234.20 Mbit/s  
95th percentile per-packet one-way delay: 55.291 ms  
Loss rate: 0.38%

Run 1: Report of Indigo — Data Link



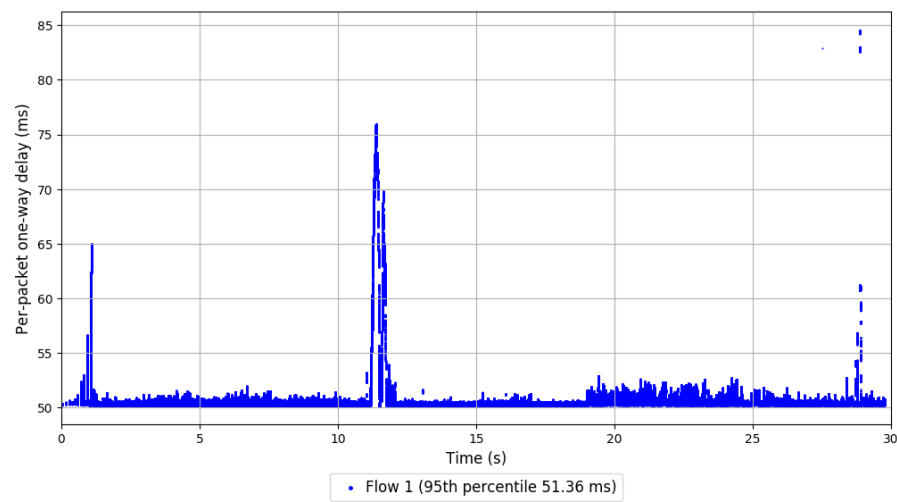
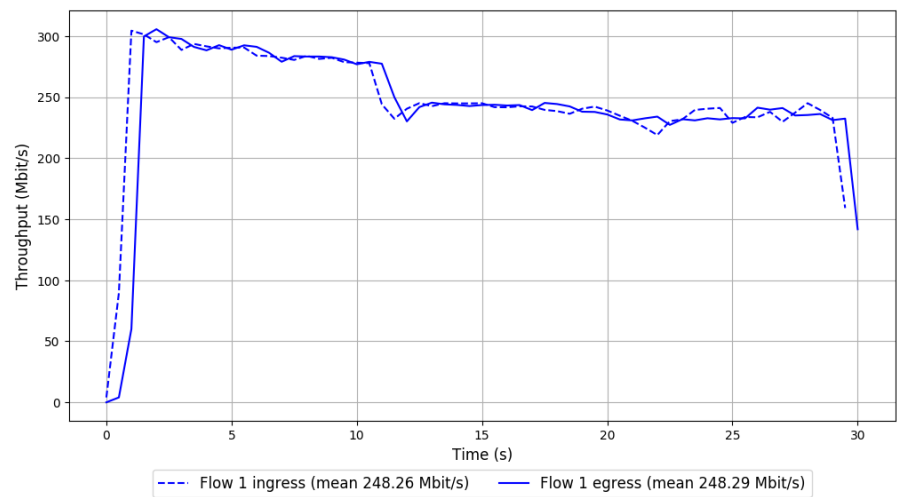


Run 2: Statistics of Indigo

Start at: 2018-09-08 04:00:39  
End at: 2018-09-08 04:01:09  
Local clock offset: 0.152 ms  
Remote clock offset: -0.275 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 248.29 Mbit/s  
95th percentile per-packet one-way delay: 51.360 ms  
Loss rate: 0.33%  
-- Flow 1:  
Average throughput: 248.29 Mbit/s  
95th percentile per-packet one-way delay: 51.360 ms  
Loss rate: 0.33%

Run 2: Report of Indigo — Data Link

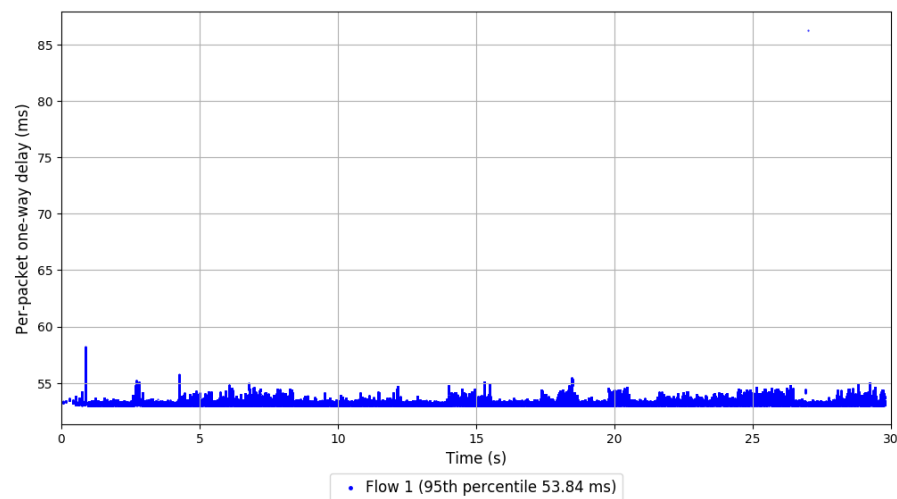
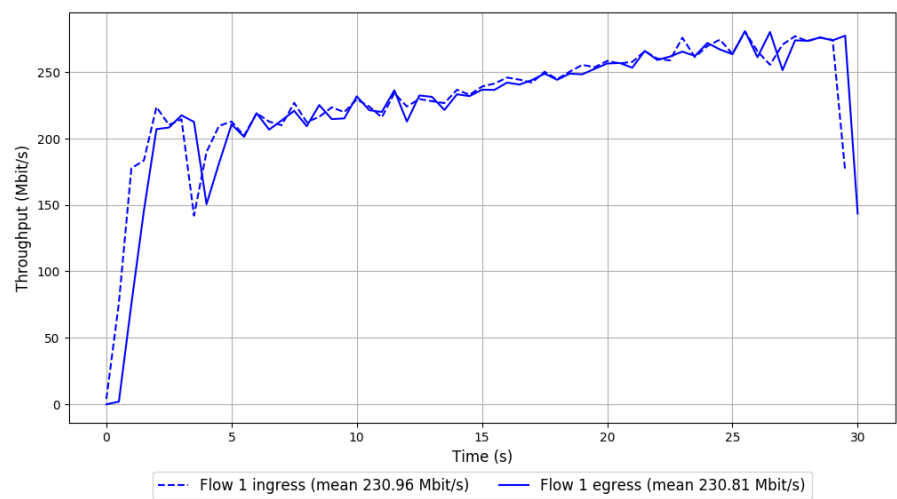


Run 3: Statistics of Indigo

Start at: 2018-09-08 04:26:37  
End at: 2018-09-08 04:27:07  
Local clock offset: 0.081 ms  
Remote clock offset: -0.252 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 230.81 Mbit/s  
95th percentile per-packet one-way delay: 53.839 ms  
Loss rate: 0.42%  
-- Flow 1:  
Average throughput: 230.81 Mbit/s  
95th percentile per-packet one-way delay: 53.839 ms  
Loss rate: 0.42%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-08 04:52:36

End at: 2018-09-08 04:53:06

Local clock offset: -0.105 ms

Remote clock offset: 0.104 ms

# Below is generated by plot.py at 2018-09-08 06:44:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 235.42 Mbit/s

95th percentile per-packet one-way delay: 53.727 ms

Loss rate: 0.38%

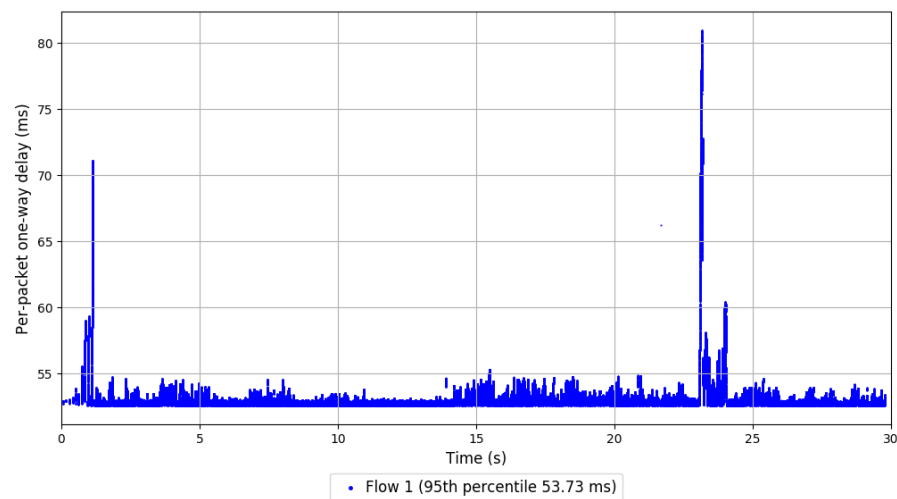
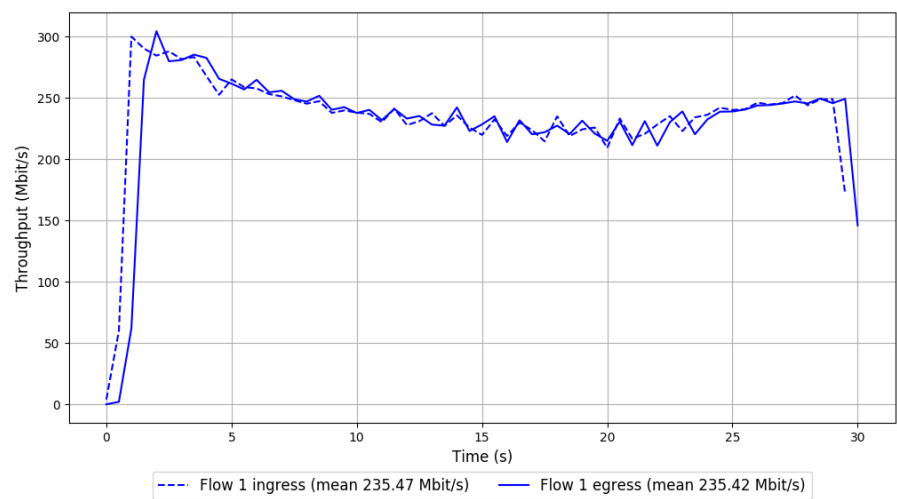
-- Flow 1:

Average throughput: 235.42 Mbit/s

95th percentile per-packet one-way delay: 53.727 ms

Loss rate: 0.38%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-08 05:18:44

End at: 2018-09-08 05:19:14

Local clock offset: -0.183 ms

Remote clock offset: 0.948 ms

# Below is generated by plot.py at 2018-09-08 06:44:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 251.91 Mbit/s

95th percentile per-packet one-way delay: 49.846 ms

Loss rate: 0.30%

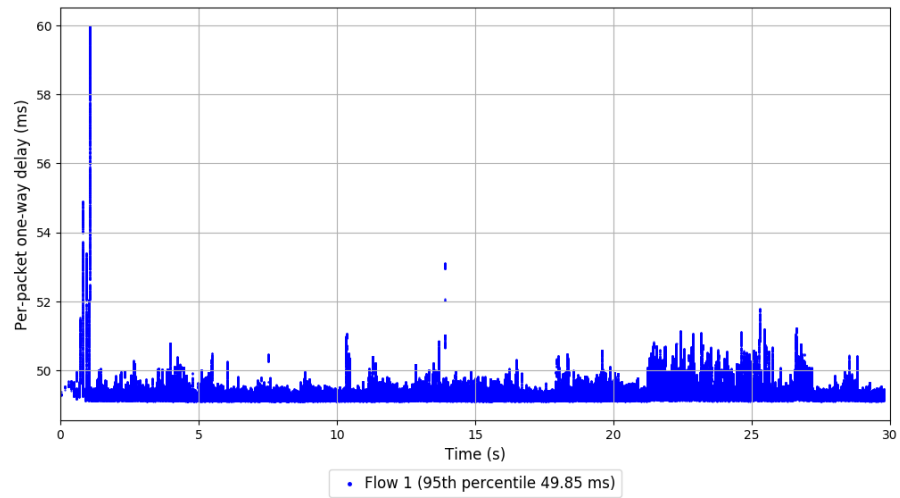
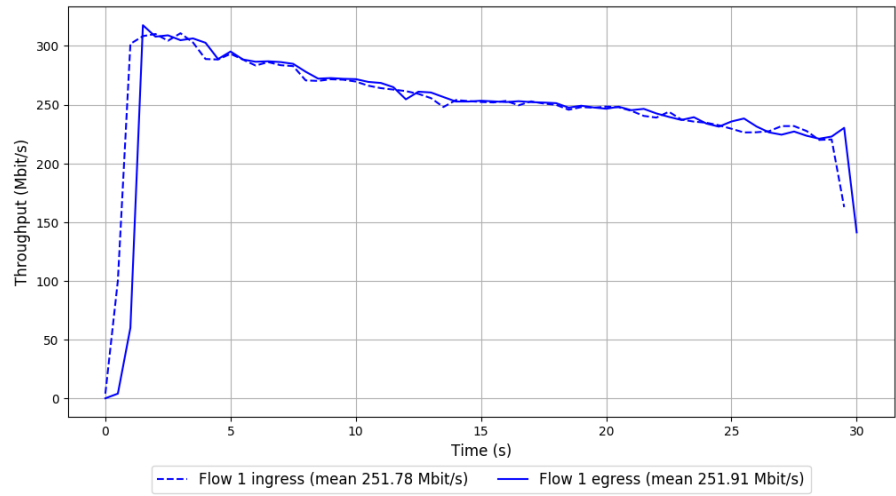
-- Flow 1:

Average throughput: 251.91 Mbit/s

95th percentile per-packet one-way delay: 49.846 ms

Loss rate: 0.30%

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



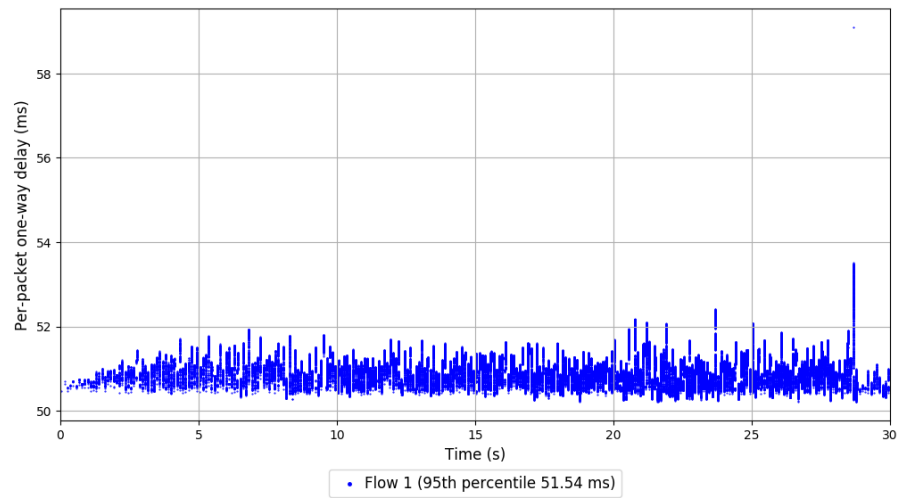
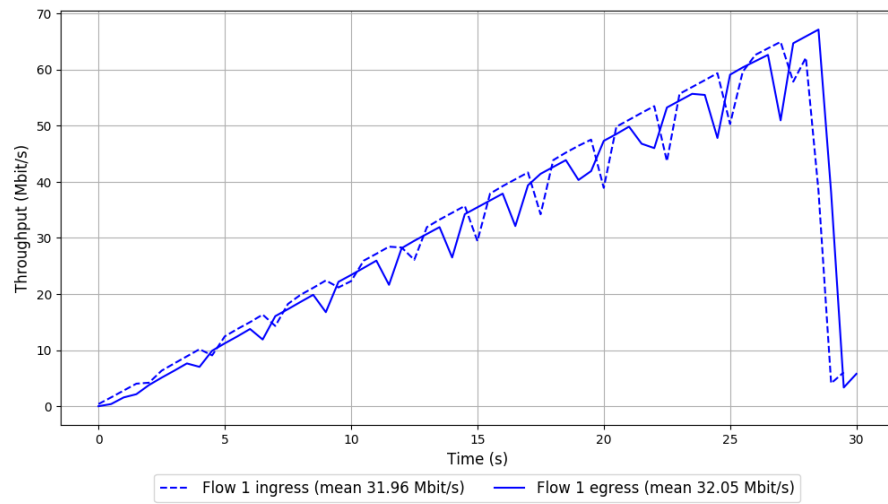


Run 1: Statistics of LEDBAT

Start at: 2018-09-08 03:37:32  
End at: 2018-09-08 03:38:03  
Local clock offset: 0.195 ms  
Remote clock offset: -0.389 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 32.05 Mbit/s  
95th percentile per-packet one-way delay: 51.537 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 32.05 Mbit/s  
95th percentile per-packet one-way delay: 51.537 ms  
Loss rate: 0.07%

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

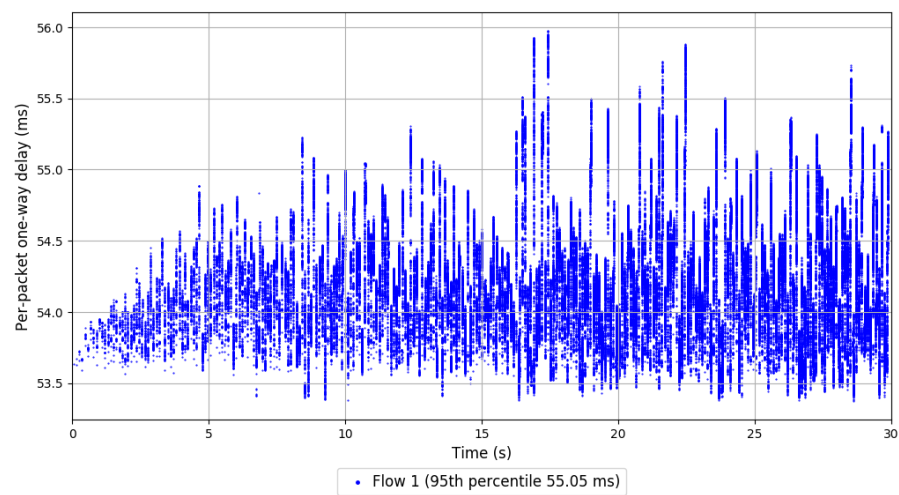
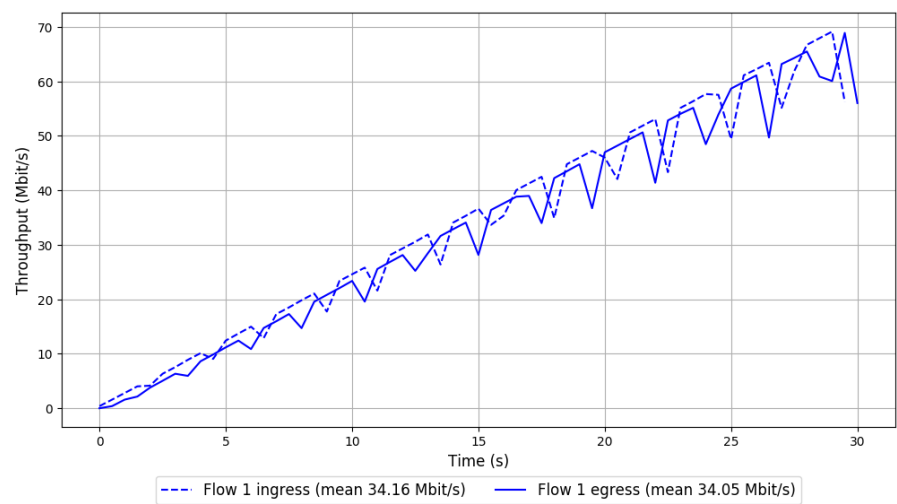


Run 2: Statistics of LEDBAT

Start at: 2018-09-08 04:03:37  
End at: 2018-09-08 04:04:07  
Local clock offset: -0.083 ms  
Remote clock offset: -0.217 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 34.05 Mbit/s  
95th percentile per-packet one-way delay: 55.055 ms  
Loss rate: 0.69%  
-- Flow 1:  
Average throughput: 34.05 Mbit/s  
95th percentile per-packet one-way delay: 55.055 ms  
Loss rate: 0.69%

Run 2: Report of LEDBAT — Data Link

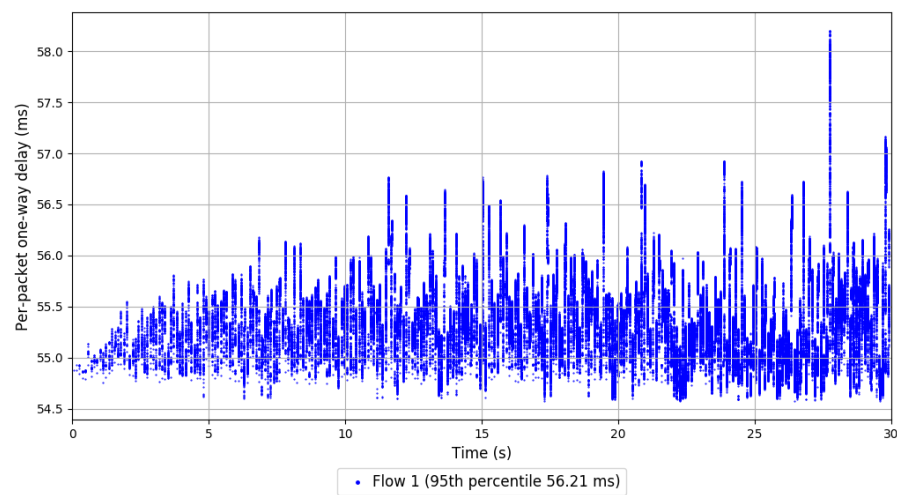
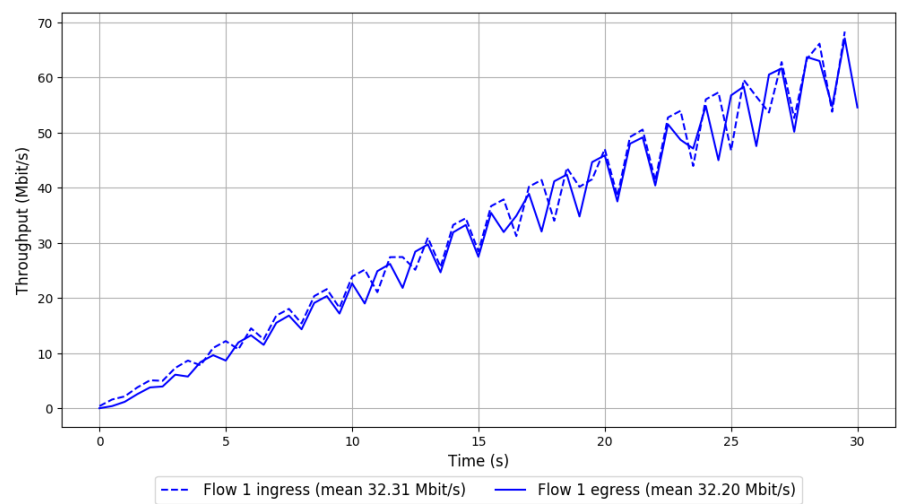


Run 3: Statistics of LEDBAT

Start at: 2018-09-08 04:29:31  
End at: 2018-09-08 04:30:01  
Local clock offset: 0.06 ms  
Remote clock offset: -1.265 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 32.20 Mbit/s  
95th percentile per-packet one-way delay: 56.212 ms  
Loss rate: 0.71%  
-- Flow 1:  
Average throughput: 32.20 Mbit/s  
95th percentile per-packet one-way delay: 56.212 ms  
Loss rate: 0.71%

Run 3: Report of LEDBAT — Data Link

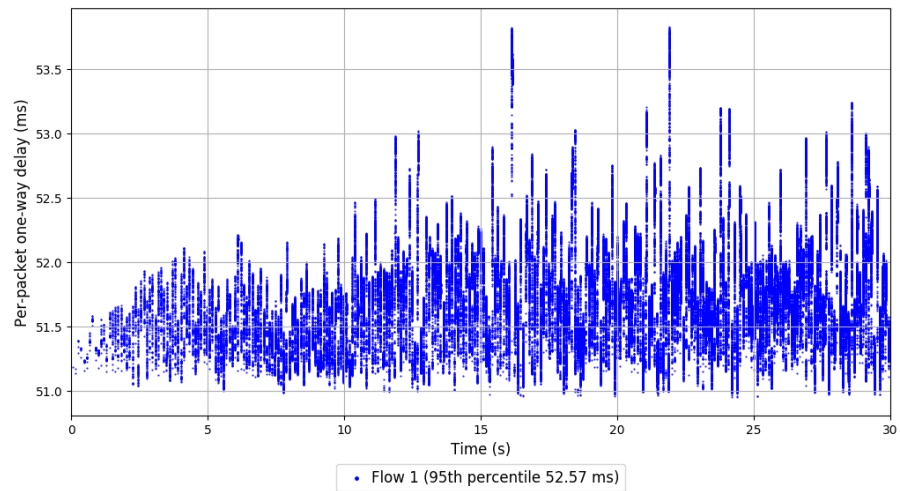
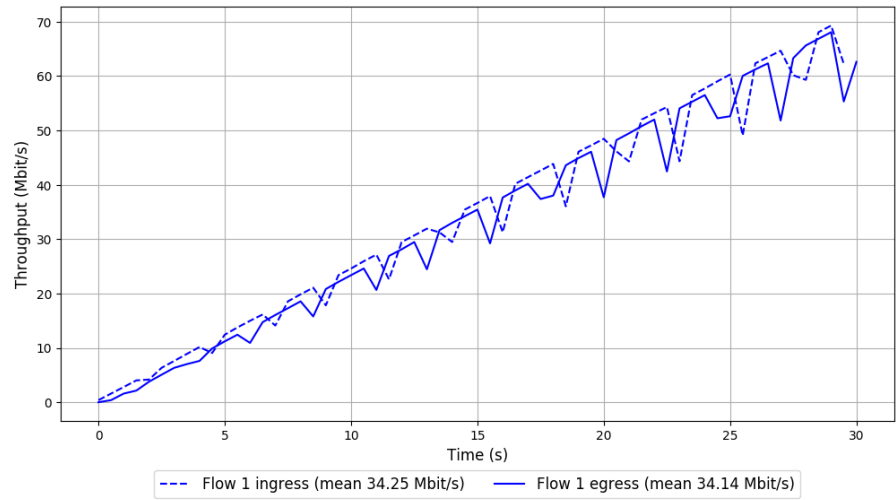


Run 4: Statistics of LEDBAT

Start at: 2018-09-08 04:55:32  
End at: 2018-09-08 04:56:02  
Local clock offset: -0.014 ms  
Remote clock offset: -0.756 ms

# Below is generated by plot.py at 2018-09-08 06:44:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 34.14 Mbit/s  
95th percentile per-packet one-way delay: 52.568 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 34.14 Mbit/s  
95th percentile per-packet one-way delay: 52.568 ms  
Loss rate: 0.66%

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





Run 5: Statistics of LEDBAT

Start at: 2018-09-08 05:21:41

End at: 2018-09-08 05:22:11

Local clock offset: -0.024 ms

Remote clock offset: 0.596 ms

# Below is generated by plot.py at 2018-09-08 06:44:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 32.39 Mbit/s

95th percentile per-packet one-way delay: 54.386 ms

Loss rate: 0.71%

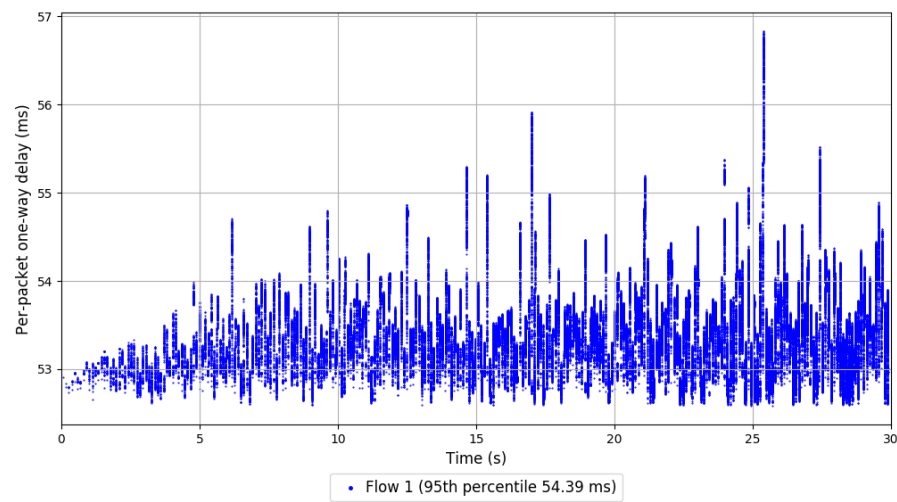
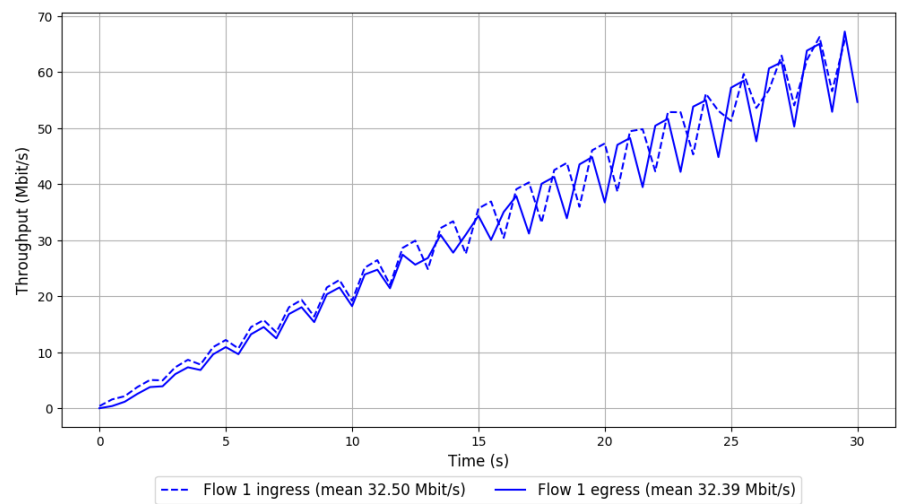
-- Flow 1:

Average throughput: 32.39 Mbit/s

95th percentile per-packet one-way delay: 54.386 ms

Loss rate: 0.71%

Run 5: Report of LEDBAT — Data Link

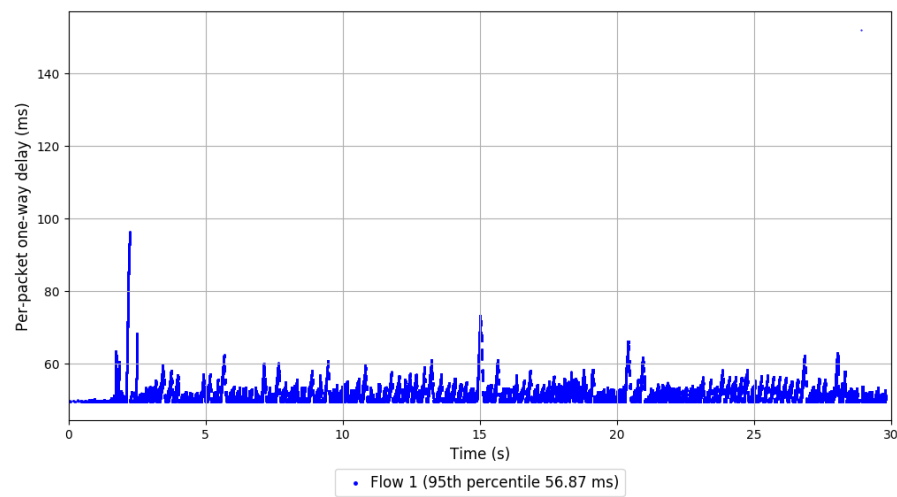
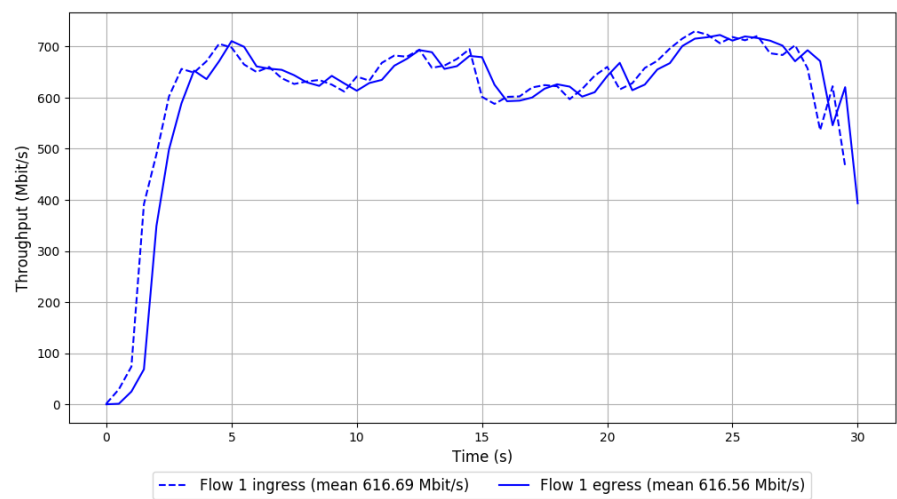


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-08 03:52:04
End at: 2018-09-08 03:52:34
Local clock offset: 0.012 ms
Remote clock offset: 0.454 ms

# Below is generated by plot.py at 2018-09-08 06:44:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 616.56 Mbit/s
95th percentile per-packet one-way delay: 56.873 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 616.56 Mbit/s
95th percentile per-packet one-way delay: 56.873 ms
Loss rate: 0.37%
```

Run 1: Report of Indigo-Muses — Data Link

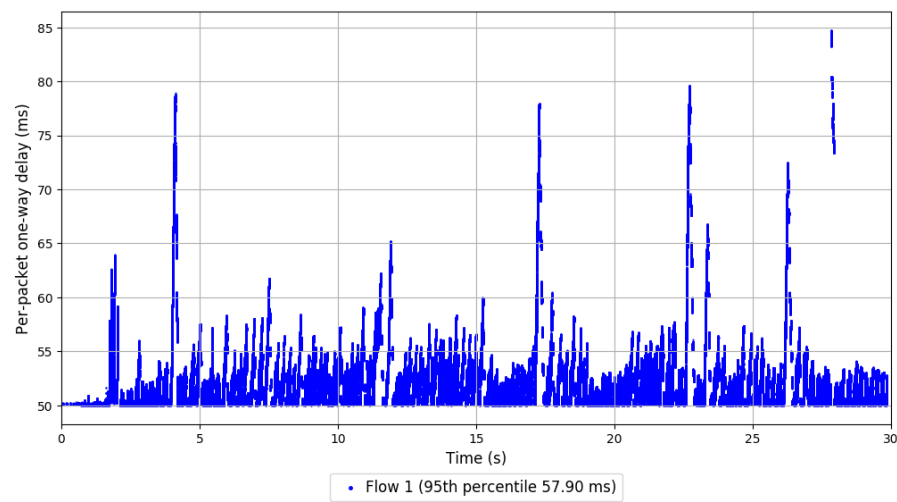
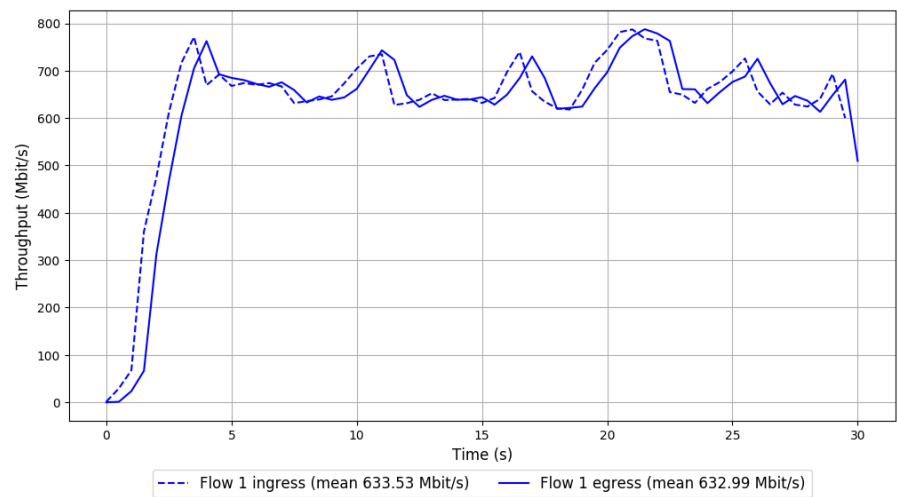


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-08 04:18:01  
End at: 2018-09-08 04:18:31  
Local clock offset: -0.058 ms  
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2018-09-08 06:44:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 632.99 Mbit/s  
95th percentile per-packet one-way delay: 57.901 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 632.99 Mbit/s  
95th percentile per-packet one-way delay: 57.901 ms  
Loss rate: 0.43%

Run 2: Report of Indigo-Muses — Data Link

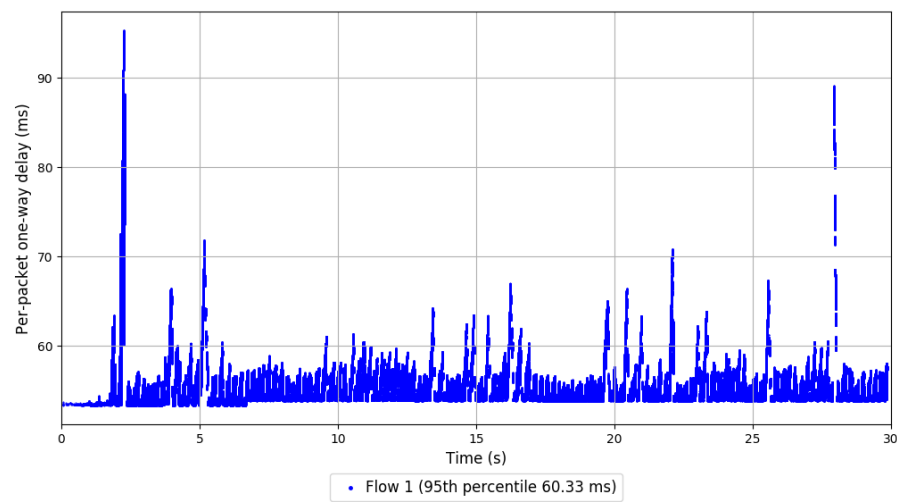
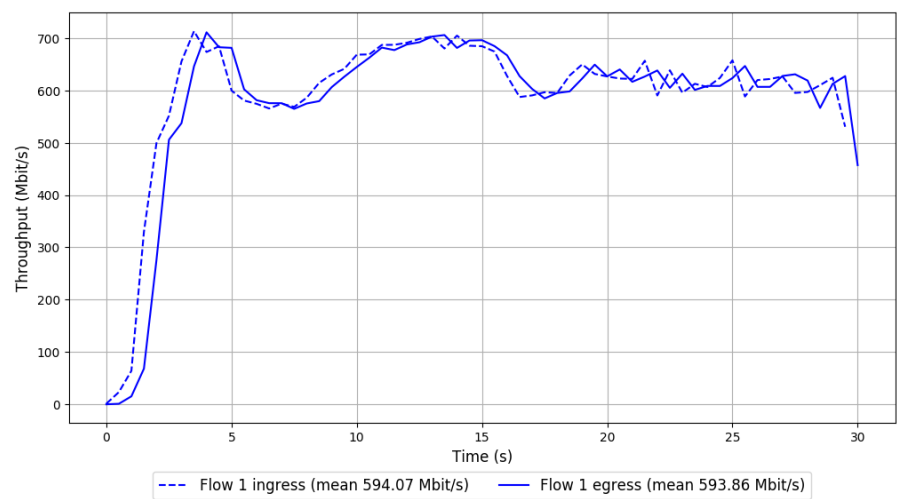


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-08 04:44:02  
End at: 2018-09-08 04:44:32  
Local clock offset: -0.019 ms  
Remote clock offset: -0.307 ms

# Below is generated by plot.py at 2018-09-08 06:44:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 593.86 Mbit/s  
95th percentile per-packet one-way delay: 60.332 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 593.86 Mbit/s  
95th percentile per-packet one-way delay: 60.332 ms  
Loss rate: 0.39%

Run 3: Report of Indigo-Muses — Data Link



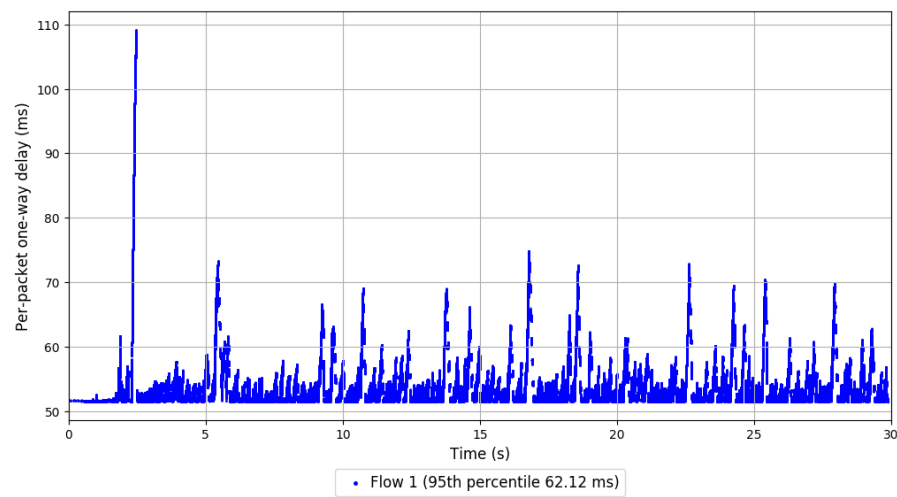
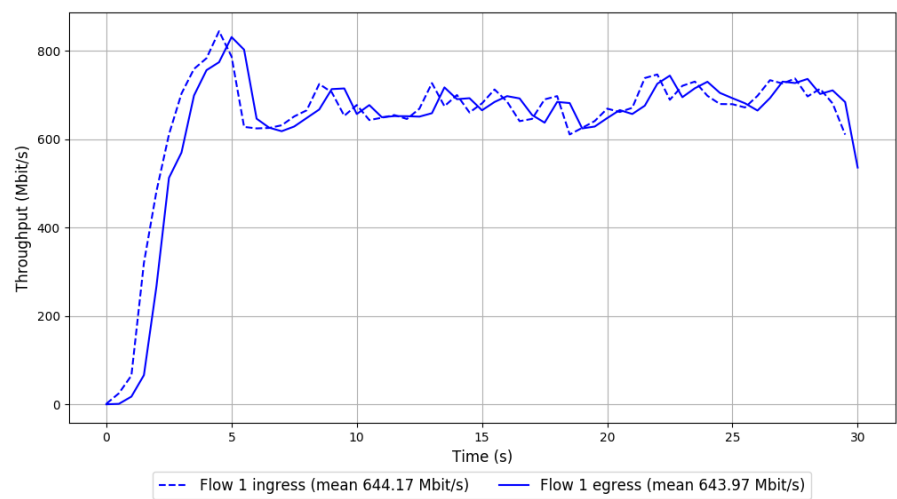


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-08 05:10:05  
End at: 2018-09-08 05:10:35  
Local clock offset: 0.006 ms  
Remote clock offset: -1.083 ms

# Below is generated by plot.py at 2018-09-08 06:45:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 643.97 Mbit/s  
95th percentile per-packet one-way delay: 62.116 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 643.97 Mbit/s  
95th percentile per-packet one-way delay: 62.116 ms  
Loss rate: 0.38%

Run 4: Report of Indigo-Muses — Data Link

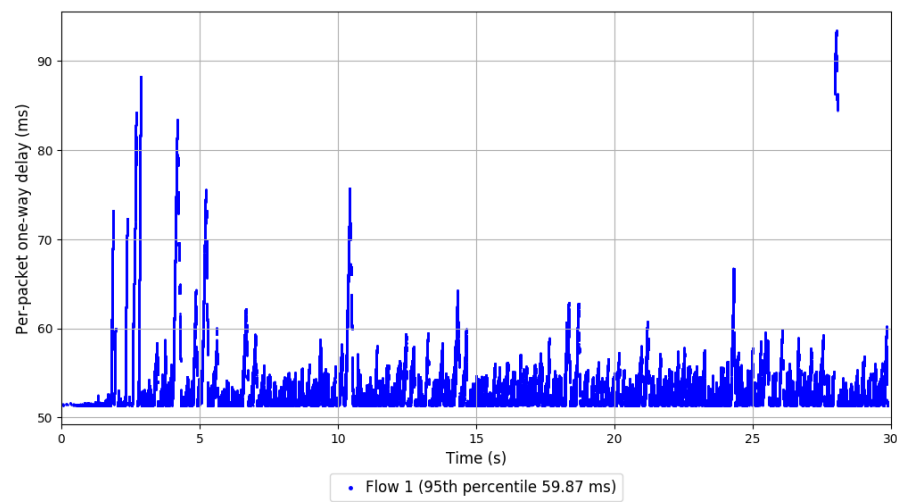
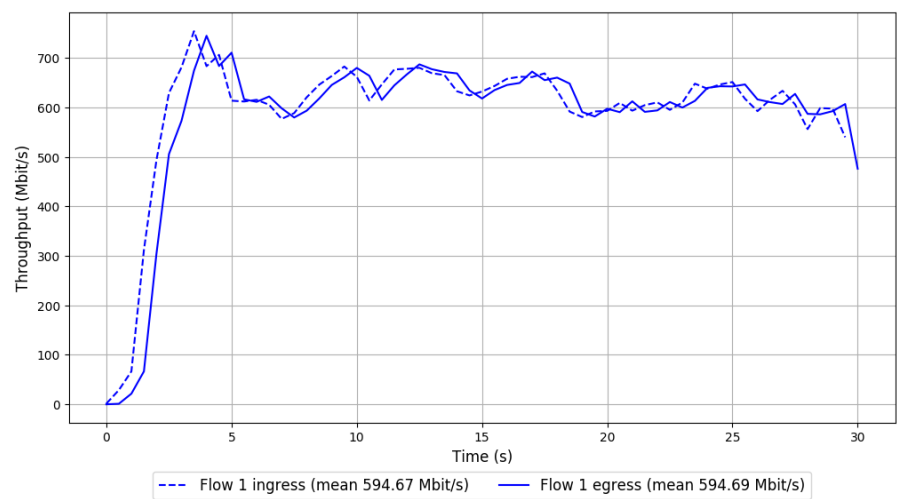


Run 5: Statistics of Indigo-Muses

Start at: 2018-09-08 05:36:09  
End at: 2018-09-08 05:36:39  
Local clock offset: 0.104 ms  
Remote clock offset: -1.399 ms

# Below is generated by plot.py at 2018-09-08 06:45:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 594.69 Mbit/s  
95th percentile per-packet one-way delay: 59.869 ms  
Loss rate: 0.34%  
-- Flow 1:  
Average throughput: 594.69 Mbit/s  
95th percentile per-packet one-way delay: 59.869 ms  
Loss rate: 0.34%

Run 5: Report of Indigo-Muses — Data Link

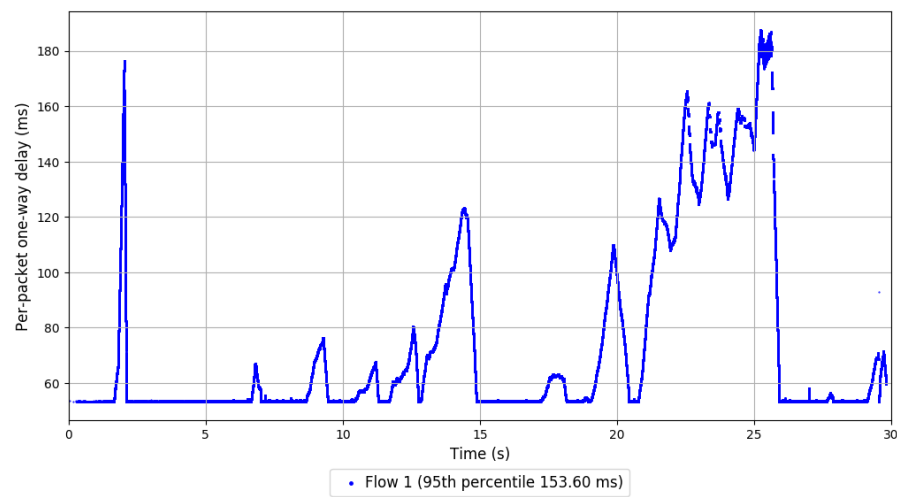
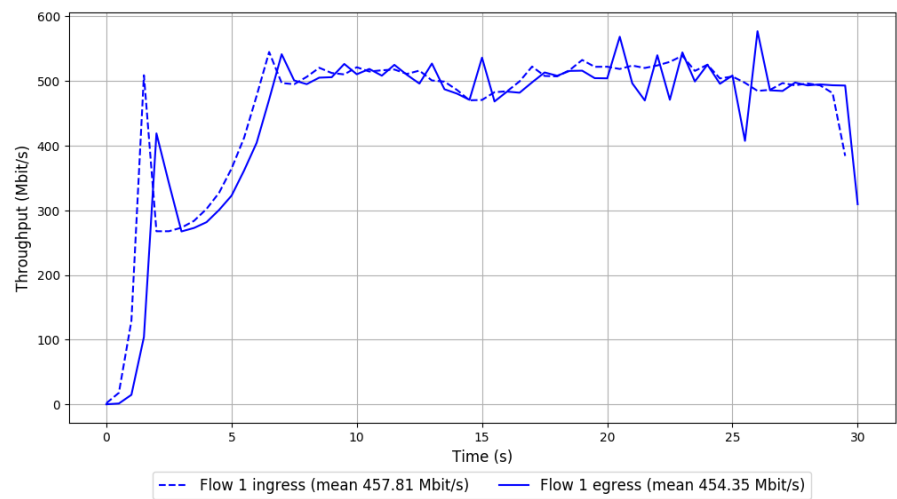


Run 1: Statistics of PCC-Allegro

Start at: 2018-09-08 03:55:11  
End at: 2018-09-08 03:55:41  
Local clock offset: -0.048 ms  
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2018-09-08 06:49:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 454.35 Mbit/s  
95th percentile per-packet one-way delay: 153.600 ms  
Loss rate: 1.11%  
-- Flow 1:  
Average throughput: 454.35 Mbit/s  
95th percentile per-packet one-way delay: 153.600 ms  
Loss rate: 1.11%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-08 04:21:09

End at: 2018-09-08 04:21:39

Local clock offset: 0.085 ms

Remote clock offset: 0.604 ms

# Below is generated by plot.py at 2018-09-08 06:49:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 446.02 Mbit/s

95th percentile per-packet one-way delay: 140.037 ms

Loss rate: 0.77%

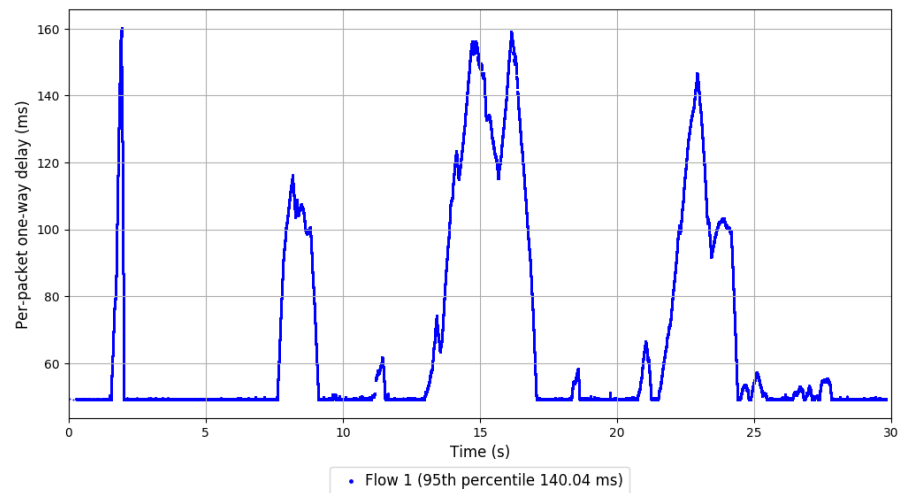
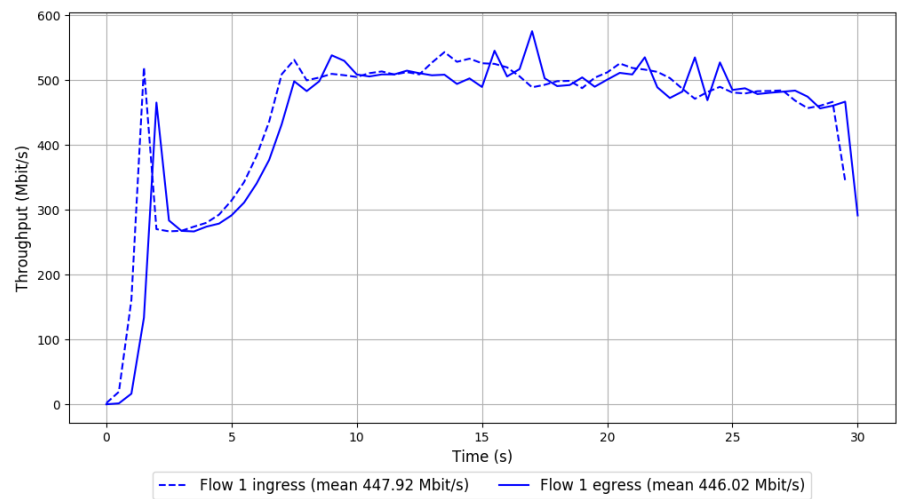
-- Flow 1:

Average throughput: 446.02 Mbit/s

95th percentile per-packet one-way delay: 140.037 ms

Loss rate: 0.77%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-09-08 04:47:08

End at: 2018-09-08 04:47:38

Local clock offset: 0.006 ms

Remote clock offset: 0.233 ms

# Below is generated by plot.py at 2018-09-08 06:59:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 482.09 Mbit/s

95th percentile per-packet one-way delay: 165.683 ms

Loss rate: 4.09%

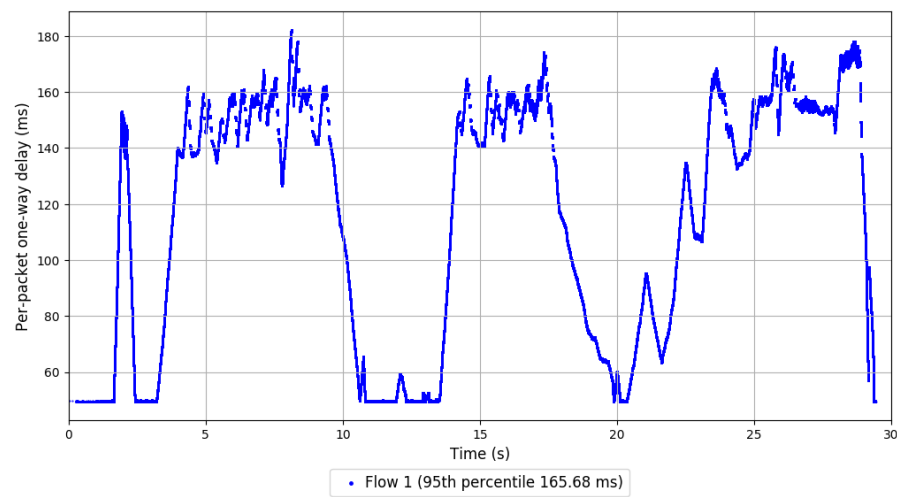
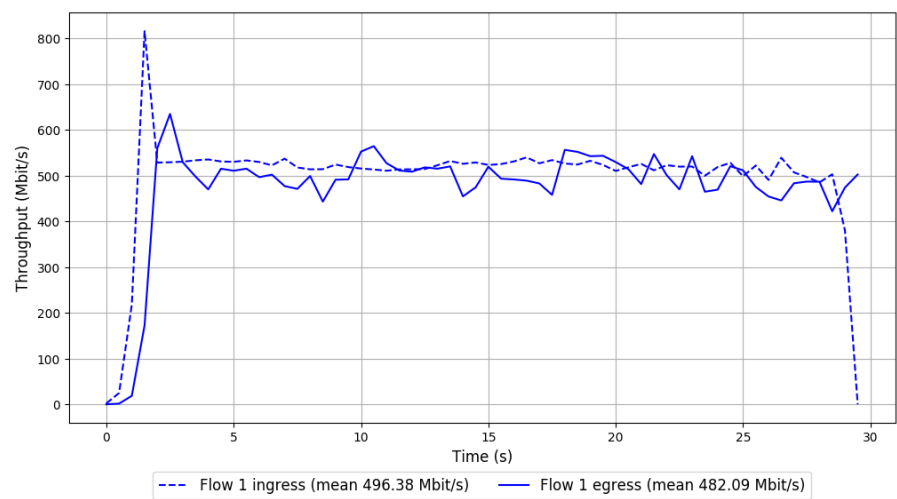
-- Flow 1:

Average throughput: 482.09 Mbit/s

95th percentile per-packet one-way delay: 165.683 ms

Loss rate: 4.09%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-08 05:13:15

End at: 2018-09-08 05:13:45

Local clock offset: 0.044 ms

Remote clock offset: -0.605 ms

# Below is generated by plot.py at 2018-09-08 06:59:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 458.13 Mbit/s

95th percentile per-packet one-way delay: 166.268 ms

Loss rate: 3.59%

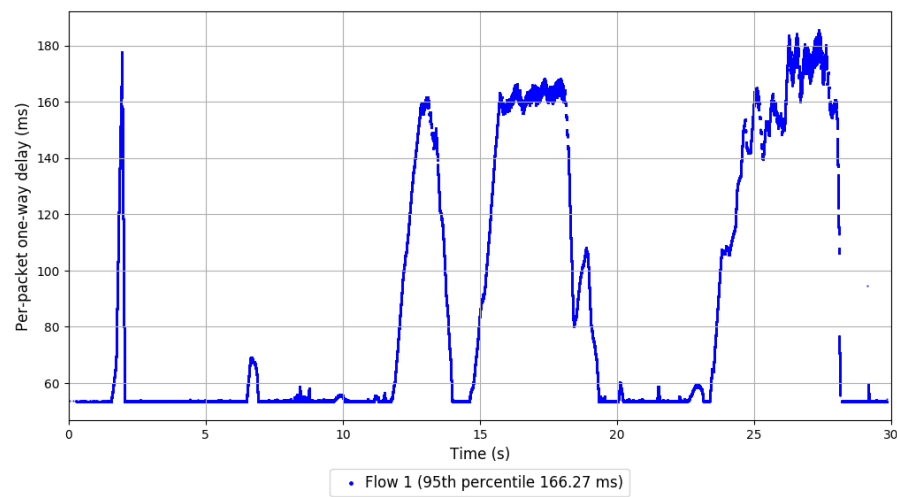
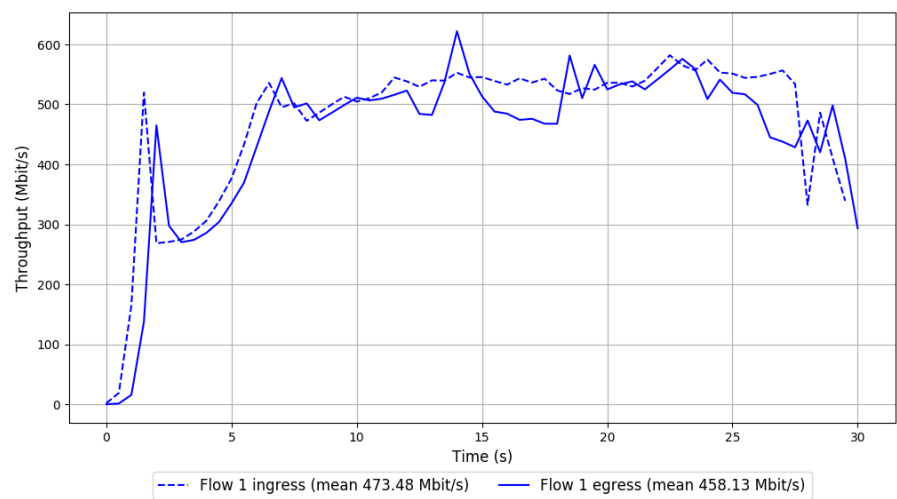
-- Flow 1:

Average throughput: 458.13 Mbit/s

95th percentile per-packet one-way delay: 166.268 ms

Loss rate: 3.59%

Run 4: Report of PCC-Allegro — Data Link

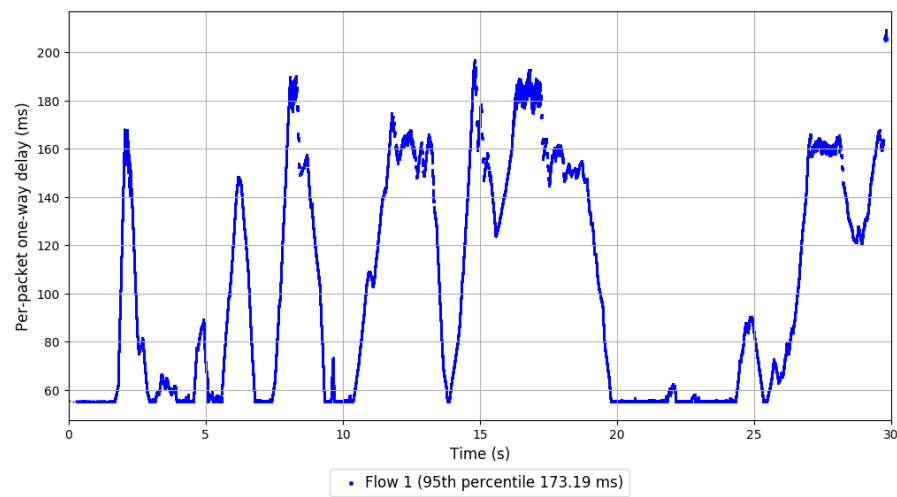
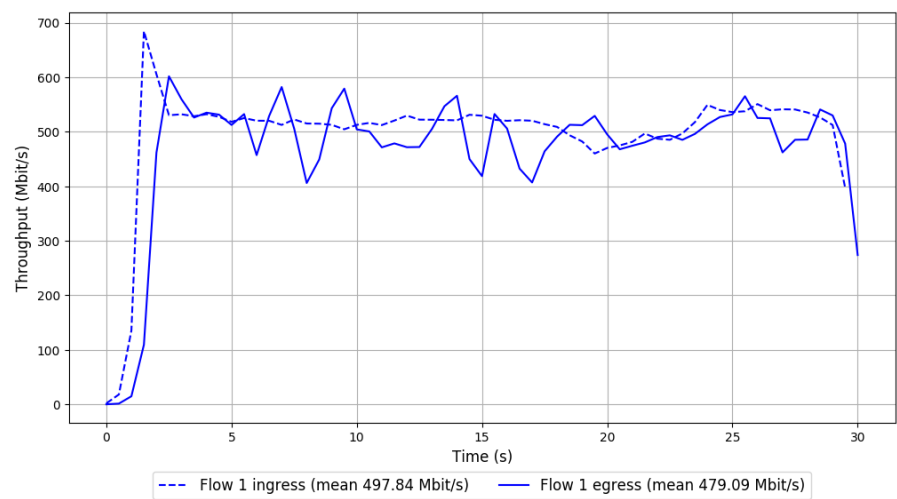


Run 5: Statistics of PCC-Allegro

Start at: 2018-09-08 05:39:15  
End at: 2018-09-08 05:39:45  
Local clock offset: 0.232 ms  
Remote clock offset: -1.439 ms

# Below is generated by plot.py at 2018-09-08 06:59:18  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 479.09 Mbit/s  
95th percentile per-packet one-way delay: 173.187 ms  
Loss rate: 4.11%  
-- Flow 1:  
Average throughput: 479.09 Mbit/s  
95th percentile per-packet one-way delay: 173.187 ms  
Loss rate: 4.11%

Run 5: Report of PCC-Allegro — Data Link

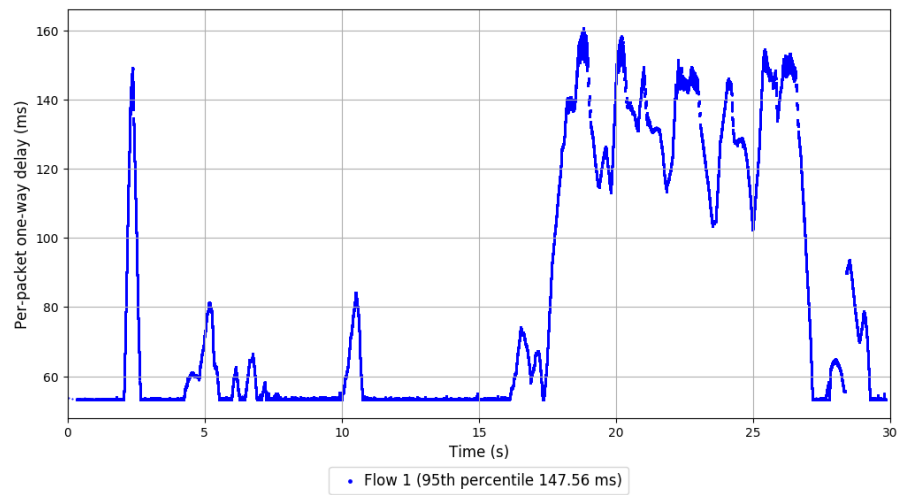
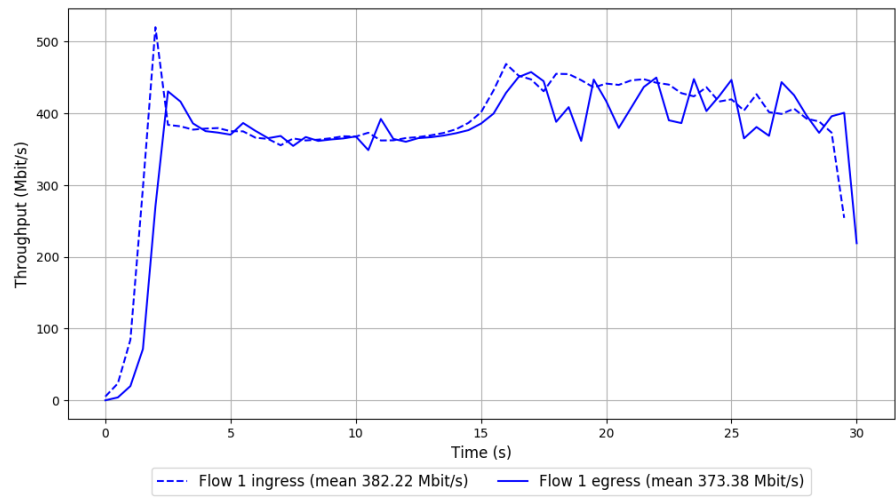


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-08 03:41:53
End at: 2018-09-08 03:42:23
Local clock offset: 0.046 ms
Remote clock offset: 0.034 ms

# Below is generated by plot.py at 2018-09-08 06:59:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 373.38 Mbit/s
95th percentile per-packet one-way delay: 147.564 ms
Loss rate: 2.67%
-- Flow 1:
Average throughput: 373.38 Mbit/s
95th percentile per-packet one-way delay: 147.564 ms
Loss rate: 2.67%
```

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





Run 2: Statistics of PCC-Expr

Start at: 2018-09-08 04:07:54

End at: 2018-09-08 04:08:24

Local clock offset: 0.16 ms

Remote clock offset: -0.23 ms

# Below is generated by plot.py at 2018-09-08 06:59:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 347.73 Mbit/s

95th percentile per-packet one-way delay: 151.888 ms

Loss rate: 5.91%

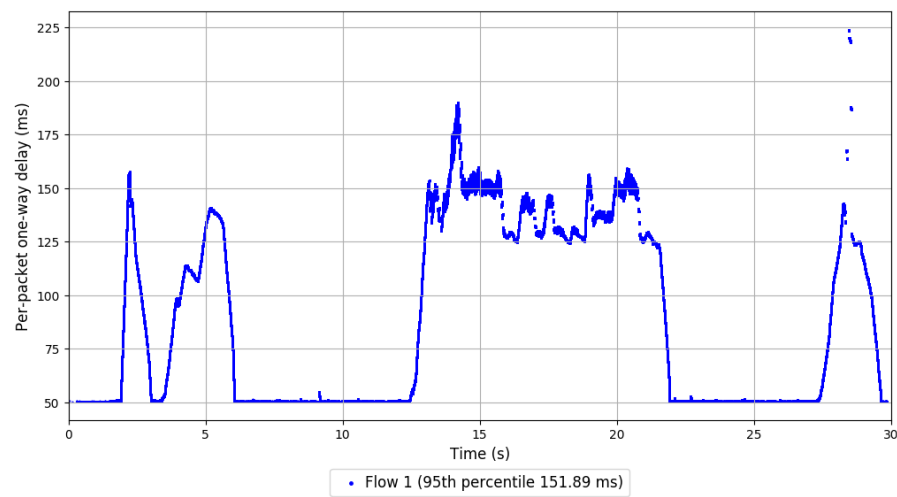
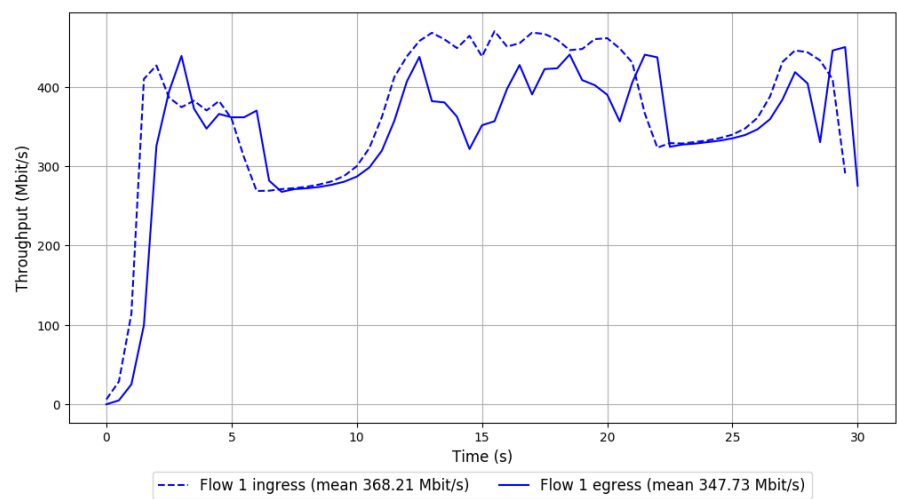
-- Flow 1:

Average throughput: 347.73 Mbit/s

95th percentile per-packet one-way delay: 151.888 ms

Loss rate: 5.91%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-08 04:33:50

End at: 2018-09-08 04:34:20

Local clock offset: -0.048 ms

Remote clock offset: 0.16 ms

# Below is generated by plot.py at 2018-09-08 06:59:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 344.53 Mbit/s

95th percentile per-packet one-way delay: 149.702 ms

Loss rate: 2.09%

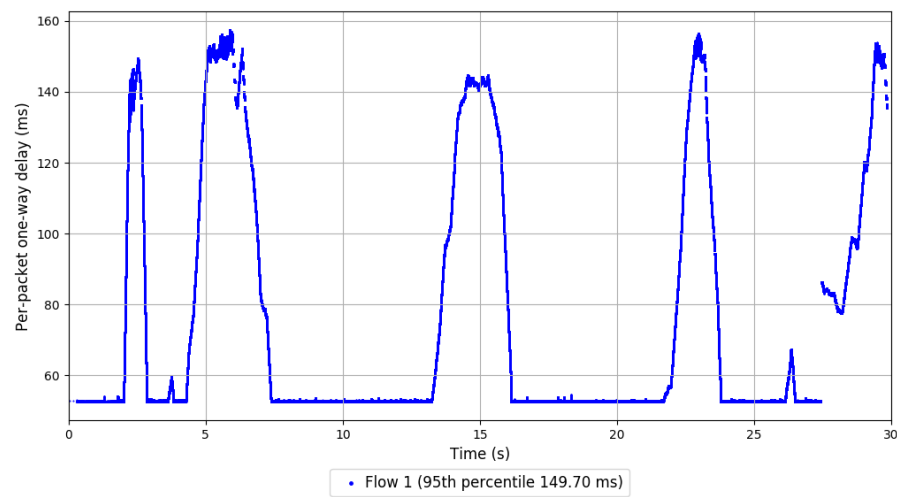
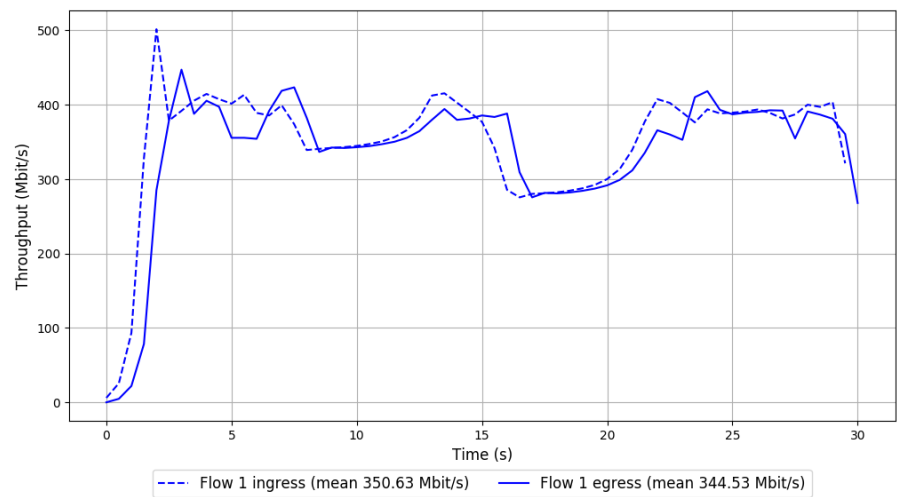
-- Flow 1:

Average throughput: 344.53 Mbit/s

95th percentile per-packet one-way delay: 149.702 ms

Loss rate: 2.09%

Run 3: Report of PCC-Expr — Data Link

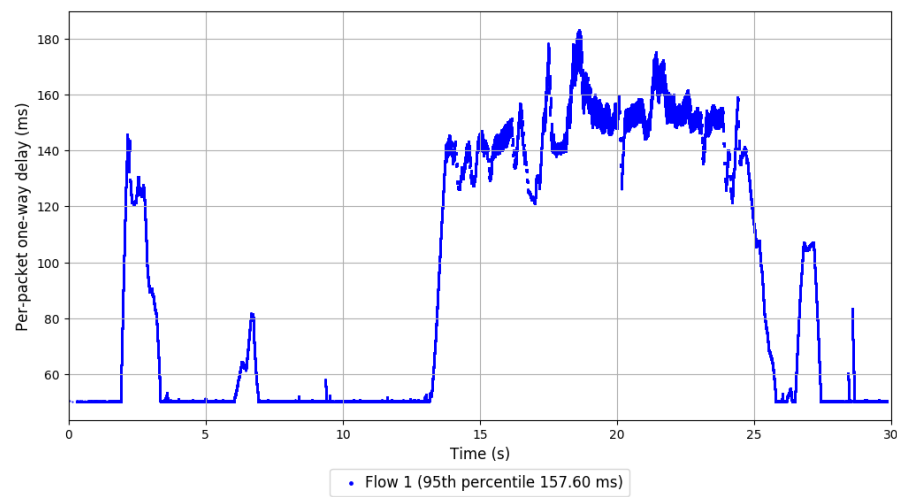
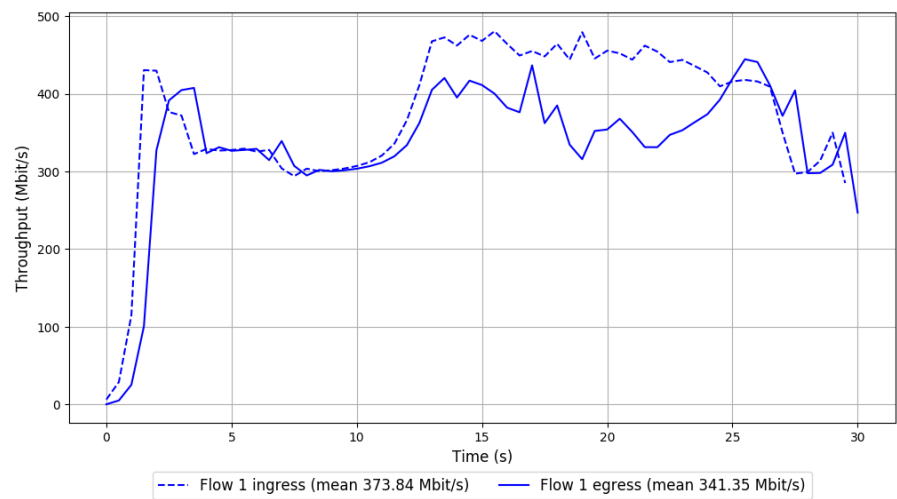


Run 4: Statistics of PCC-Expr

Start at: 2018-09-08 04:59:55  
End at: 2018-09-08 05:00:25  
Local clock offset: 0.065 ms  
Remote clock offset: -0.168 ms

# Below is generated by plot.py at 2018-09-08 07:00:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 341.35 Mbit/s  
95th percentile per-packet one-way delay: 157.602 ms  
Loss rate: 9.01%  
-- Flow 1:  
Average throughput: 341.35 Mbit/s  
95th percentile per-packet one-way delay: 157.602 ms  
Loss rate: 9.01%

Run 4: Report of PCC-Expr — Data Link

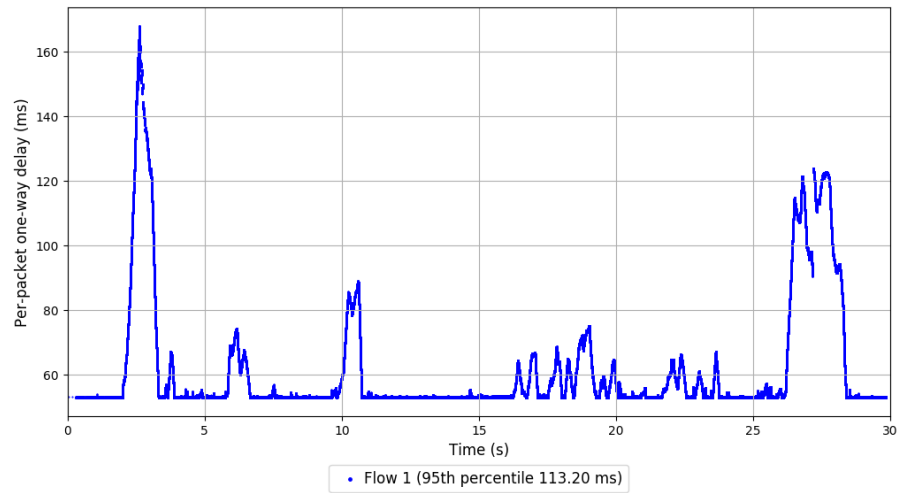
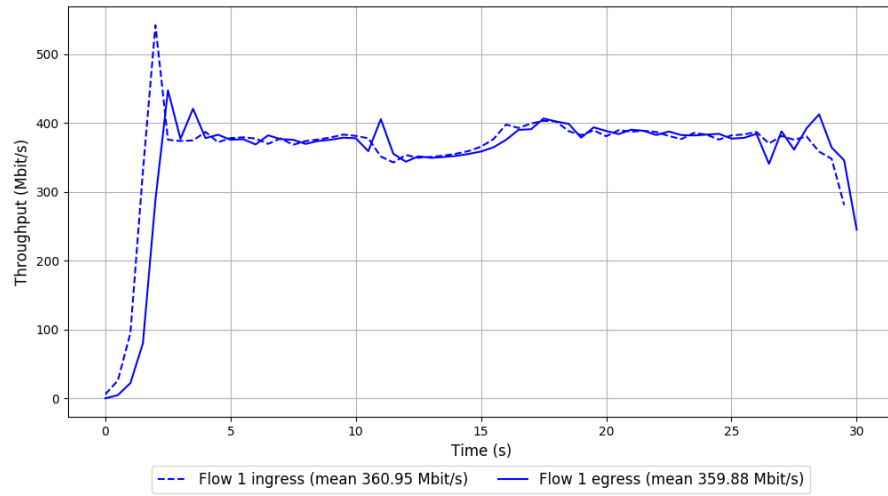


Run 5: Statistics of PCC-Expr

Start at: 2018-09-08 05:26:03  
End at: 2018-09-08 05:26:33  
Local clock offset: 0.028 ms  
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 359.88 Mbit/s  
95th percentile per-packet one-way delay: 113.196 ms  
Loss rate: 0.65%  
-- Flow 1:  
Average throughput: 359.88 Mbit/s  
95th percentile per-packet one-way delay: 113.196 ms  
Loss rate: 0.65%

## Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

Start at: 2018-09-08 03:45:09

End at: 2018-09-08 03:45:39

Local clock offset: 0.058 ms

Remote clock offset: 0.029 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 78.43 Mbit/s

95th percentile per-packet one-way delay: 50.017 ms

Loss rate: 0.55%

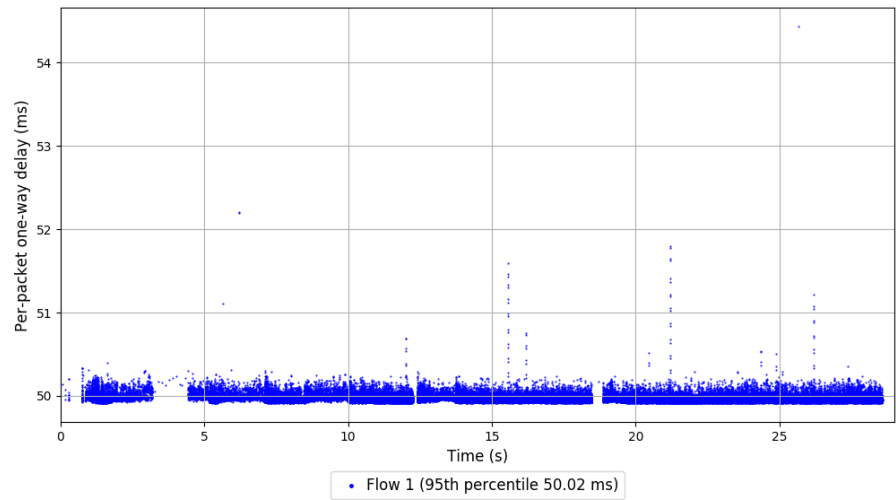
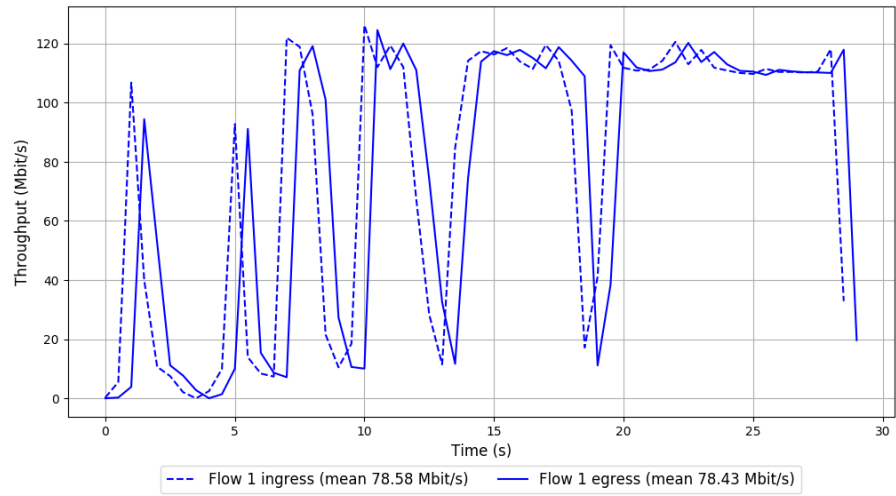
-- Flow 1:

Average throughput: 78.43 Mbit/s

95th percentile per-packet one-way delay: 50.017 ms

Loss rate: 0.55%

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



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-08 04:11:08

End at: 2018-09-08 04:11:39

Local clock offset: 0.189 ms

Remote clock offset: 0.146 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.80 Mbit/s

95th percentile per-packet one-way delay: 52.808 ms

Loss rate: 0.42%

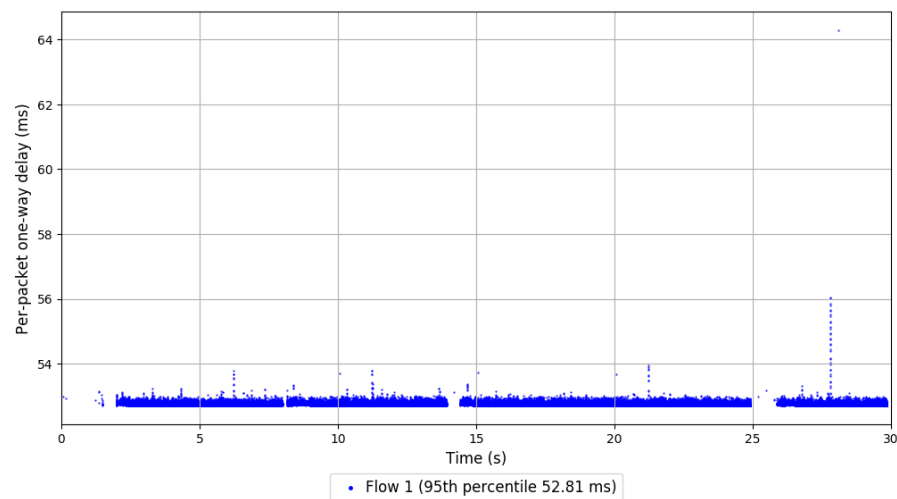
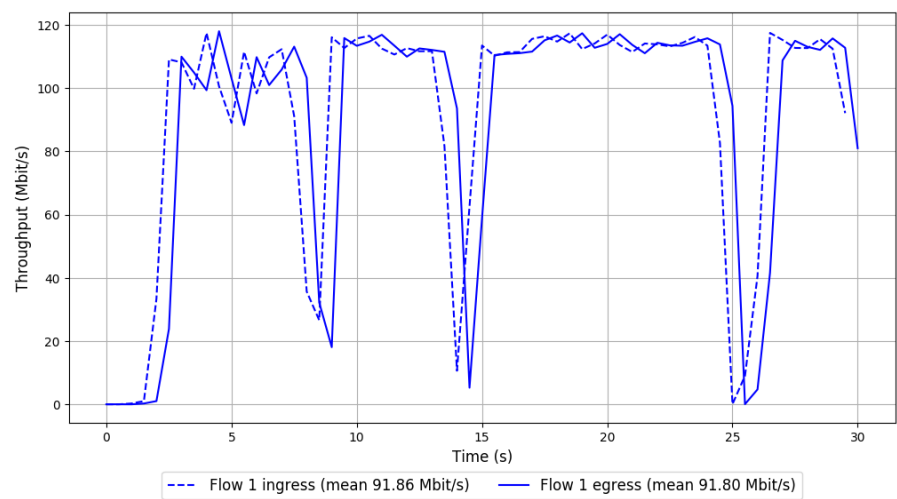
-- Flow 1:

Average throughput: 91.80 Mbit/s

95th percentile per-packet one-way delay: 52.808 ms

Loss rate: 0.42%

Run 2: Report of QUIC Cubic — Data Link

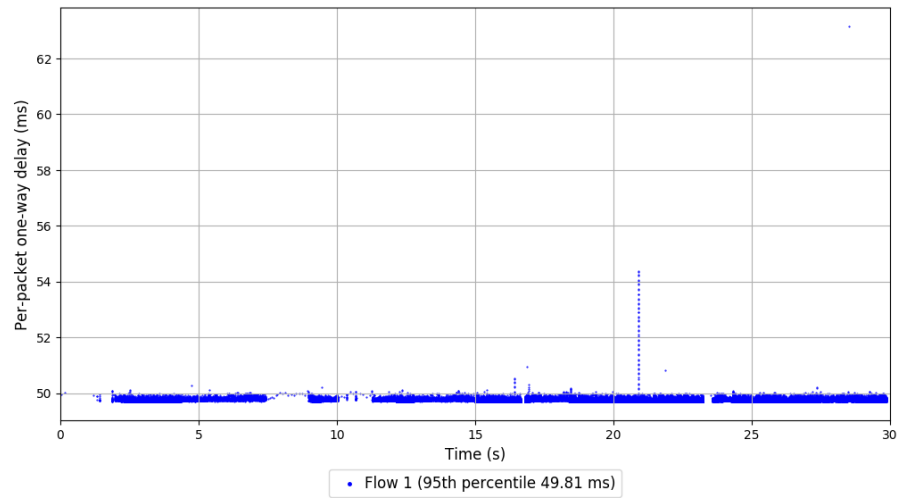
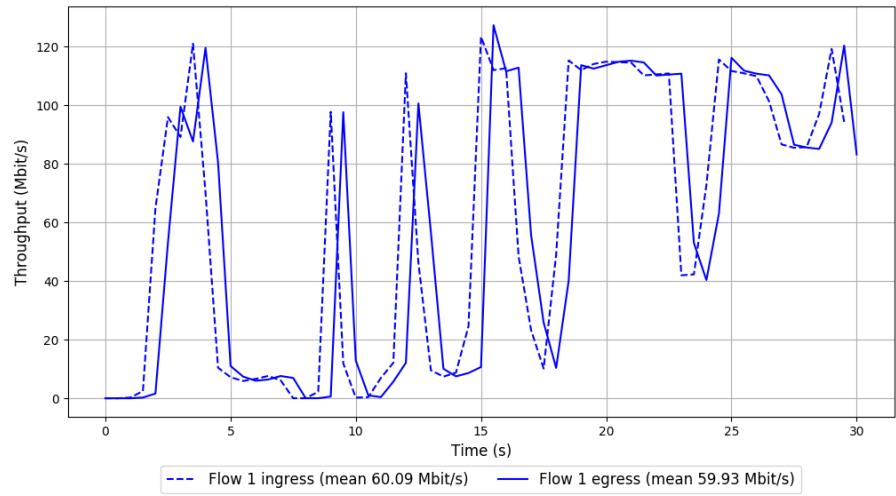


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-08 04:37:01  
End at: 2018-09-08 04:37:32  
Local clock offset: -0.04 ms  
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 59.93 Mbit/s  
95th percentile per-packet one-way delay: 49.809 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 59.93 Mbit/s  
95th percentile per-packet one-way delay: 49.809 ms  
Loss rate: 0.61%

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

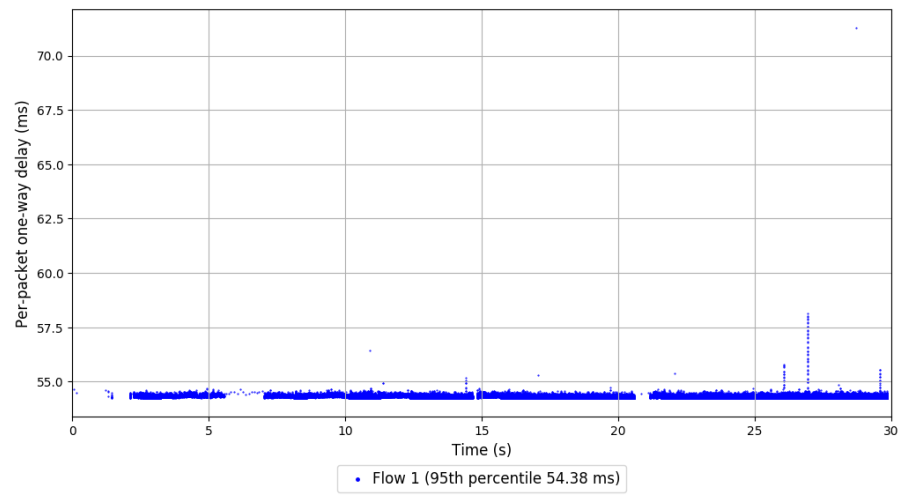
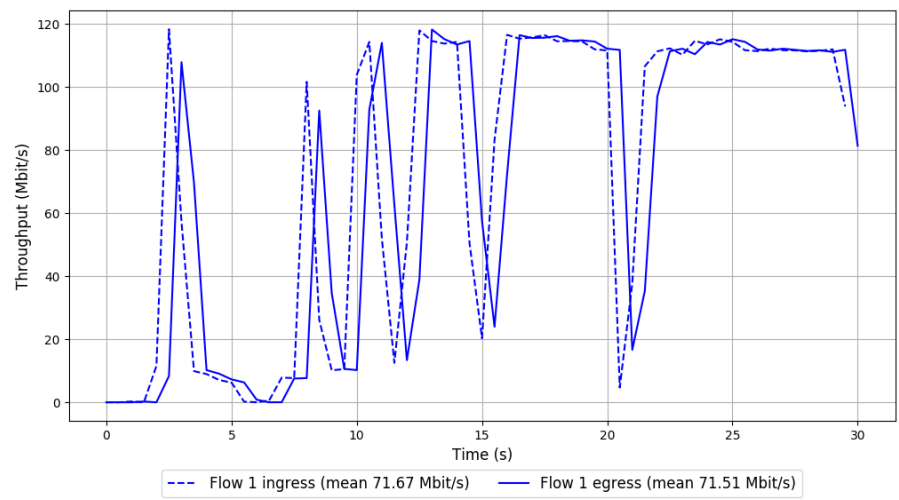


Run 4: Statistics of QUIC Cubic

Start at: 2018-09-08 05:03:10  
End at: 2018-09-08 05:03:40  
Local clock offset: -0.022 ms  
Remote clock offset: -0.985 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 71.51 Mbit/s  
95th percentile per-packet one-way delay: 54.375 ms  
Loss rate: 0.57%  
-- Flow 1:  
Average throughput: 71.51 Mbit/s  
95th percentile per-packet one-way delay: 54.375 ms  
Loss rate: 0.57%

Run 4: Report of QUIC Cubic — Data Link





Run 5: Statistics of QUIC Cubic

Start at: 2018-09-08 05:29:15

End at: 2018-09-08 05:29:45

Local clock offset: 0.304 ms

Remote clock offset: 0.444 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 80.29 Mbit/s

95th percentile per-packet one-way delay: 52.815 ms

Loss rate: 0.00%

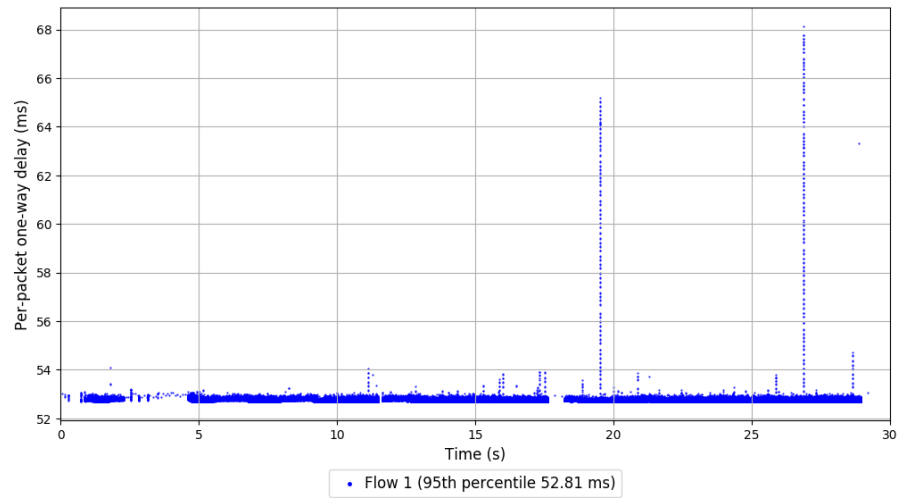
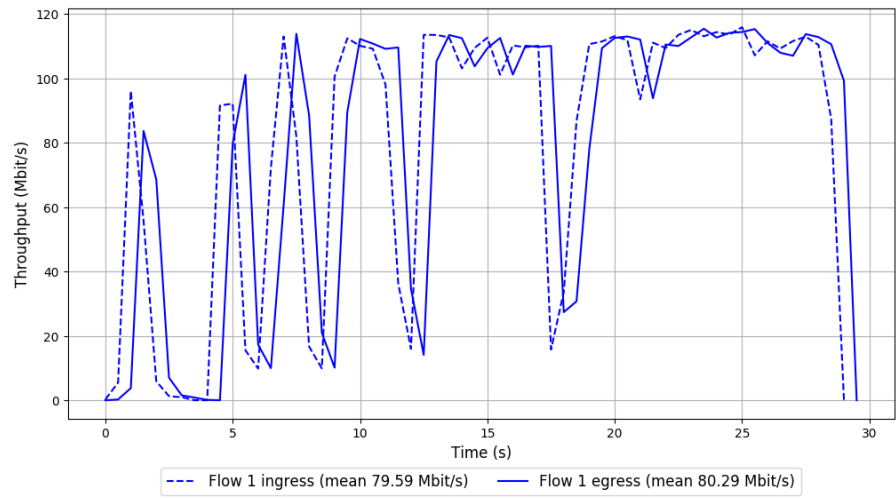
-- Flow 1:

Average throughput: 80.29 Mbit/s

95th percentile per-packet one-way delay: 52.815 ms

Loss rate: 0.00%

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

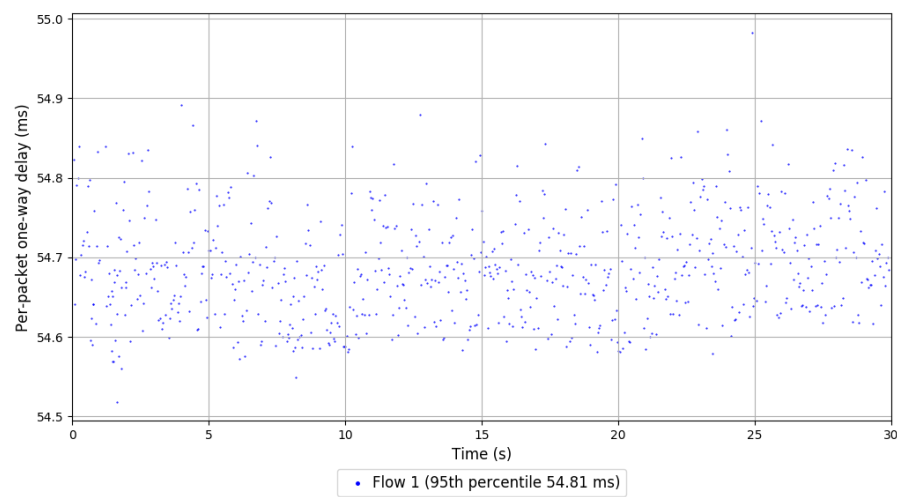
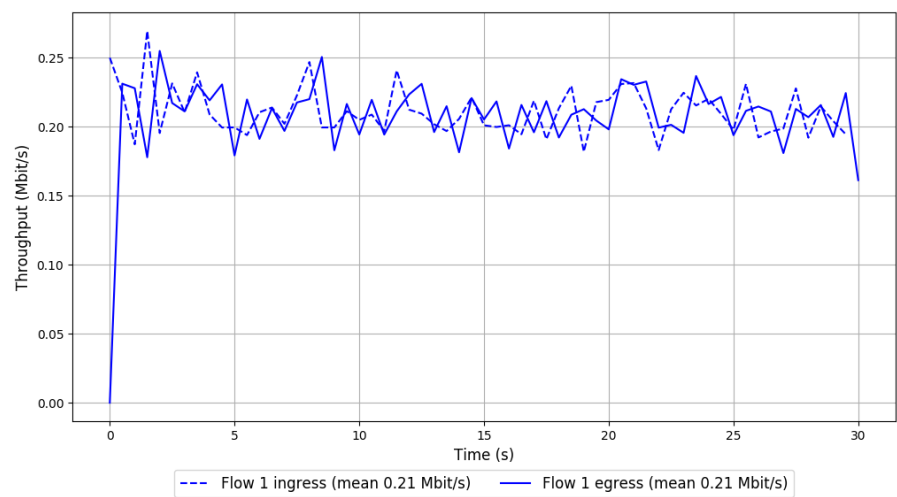


```
Run 1: Statistics of SCReAM

Start at: 2018-09-08 03:49:34
End at: 2018-09-08 03:50:04
Local clock offset: 0.184 ms
Remote clock offset: -0.901 ms

# Below is generated by plot.py at 2018-09-08 07:00:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.808 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.808 ms
Loss rate: 0.39%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-09-08 04:15:31

End at: 2018-09-08 04:16:01

Local clock offset: -0.085 ms

Remote clock offset: 0.195 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 49.856 ms

Loss rate: 0.38%

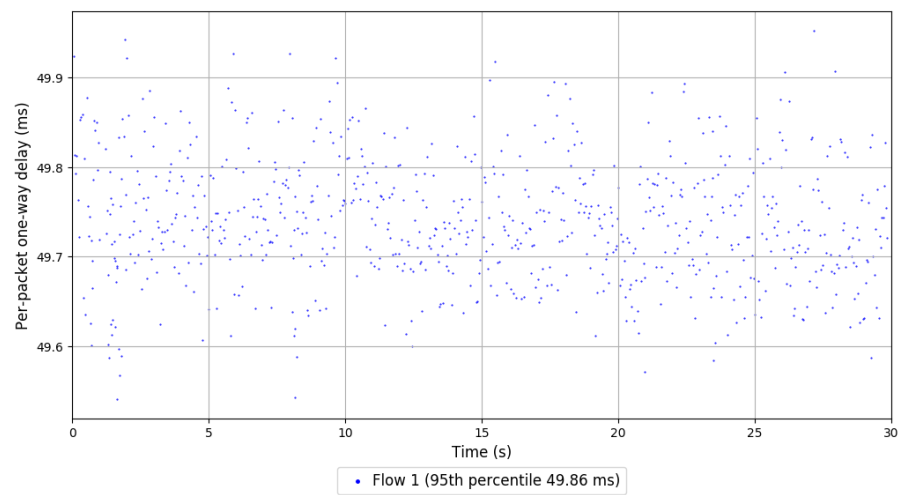
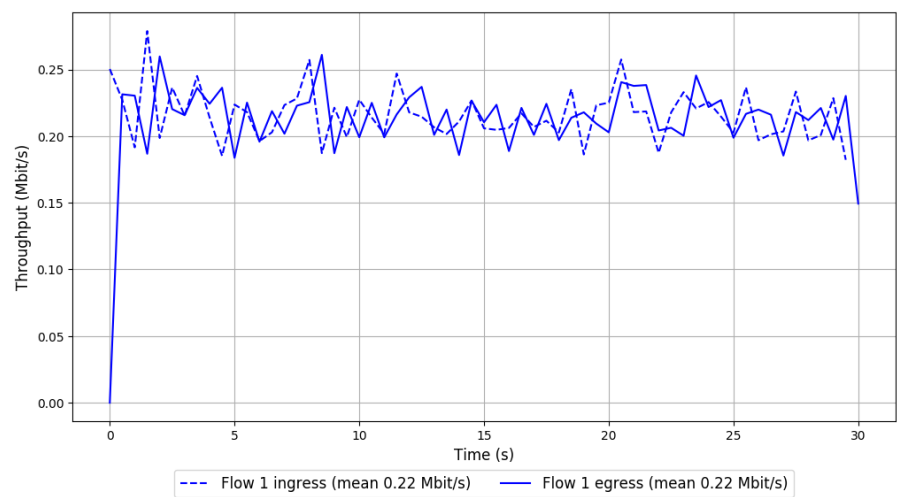
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 49.856 ms

Loss rate: 0.38%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-09-08 04:41:30

End at: 2018-09-08 04:42:00

Local clock offset: -0.089 ms

Remote clock offset: 0.156 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.545 ms

Loss rate: 0.38%

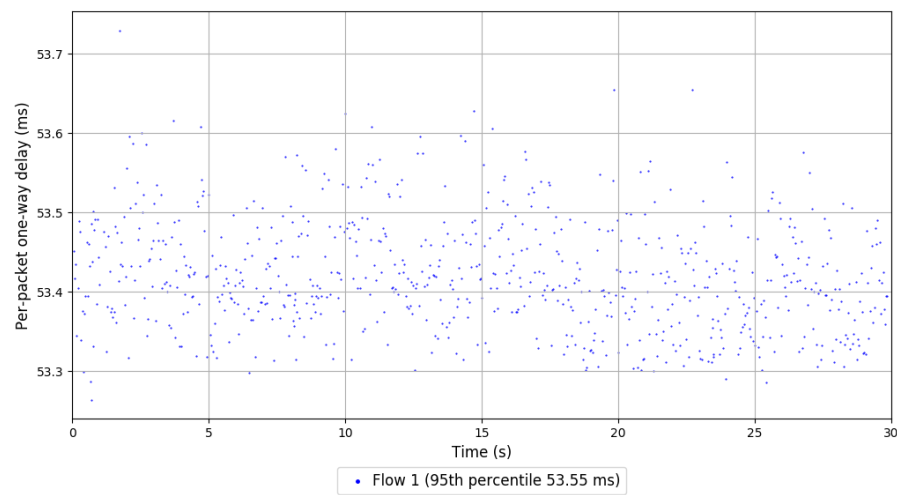
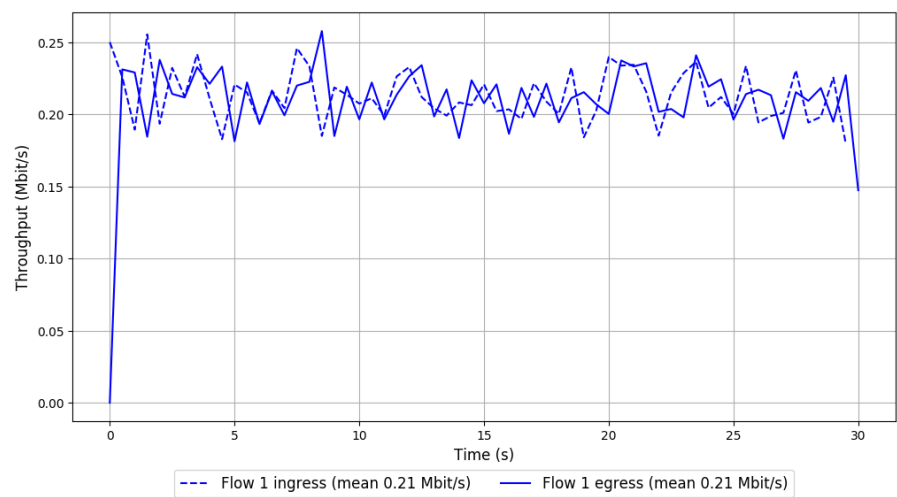
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.545 ms

Loss rate: 0.38%

Run 3: Report of SReAM — Data Link



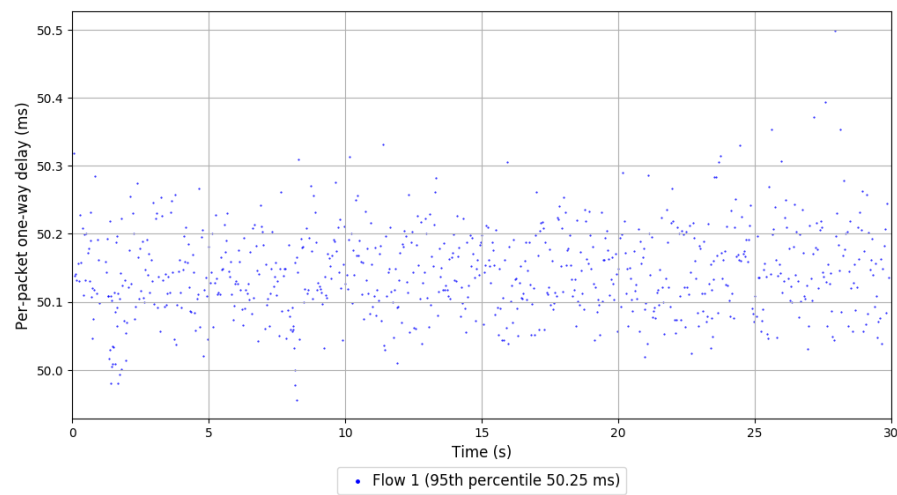
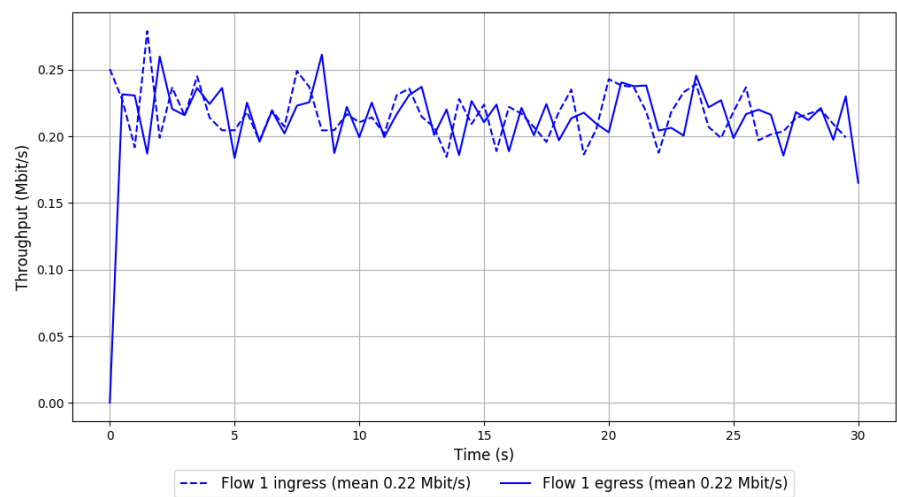


Run 4: Statistics of SCReAM

Start at: 2018-09-08 05:07:36  
End at: 2018-09-08 05:08:06  
Local clock offset: 0.044 ms  
Remote clock offset: -0.297 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 50.253 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 50.253 ms  
Loss rate: 0.39%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-08 05:33:39

End at: 2018-09-08 05:34:09

Local clock offset: -0.116 ms

Remote clock offset: 0.194 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 49.926 ms

Loss rate: 0.26%

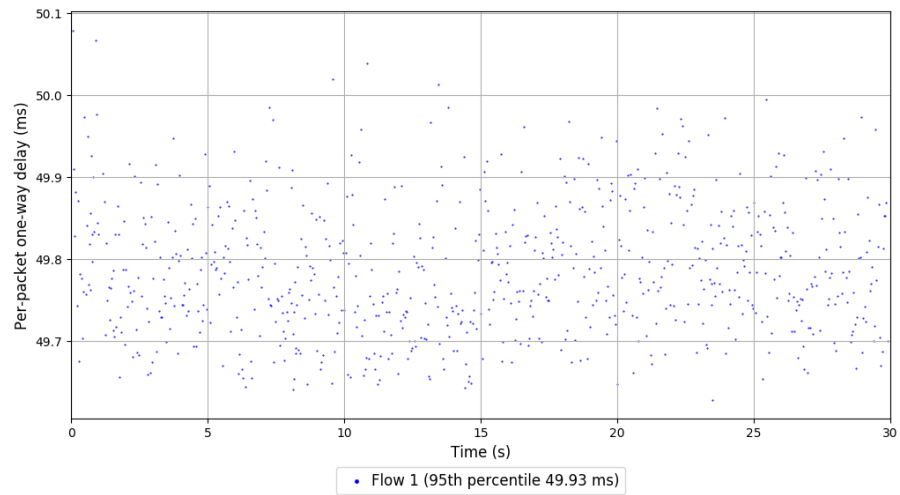
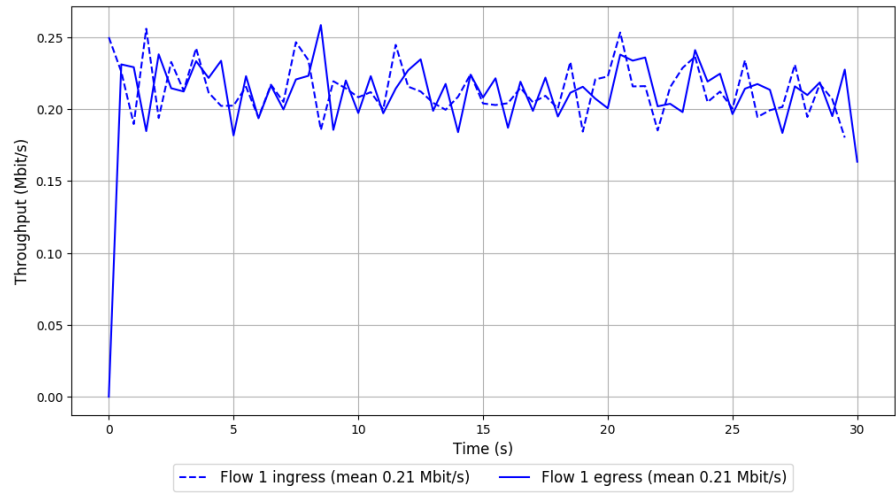
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 49.926 ms

Loss rate: 0.26%

## Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-08 03:58:25

End at: 2018-09-08 03:58:55

Local clock offset: -0.102 ms

Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-09-08 07:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 8.06 Mbit/s

95th percentile per-packet one-way delay: 53.911 ms

Loss rate: 0.35%

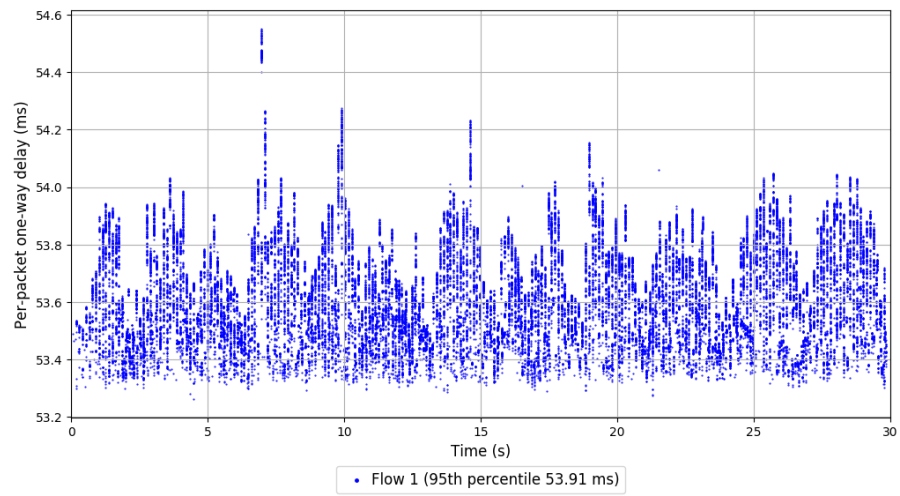
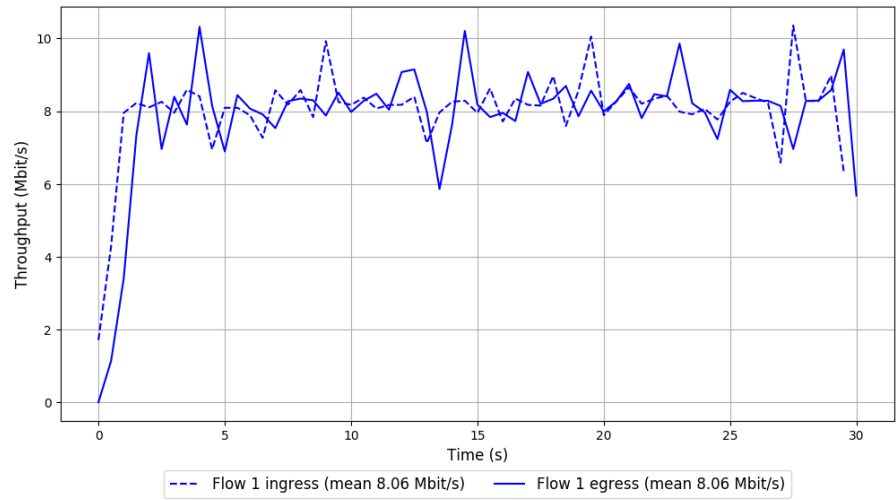
-- Flow 1:

Average throughput: 8.06 Mbit/s

95th percentile per-packet one-way delay: 53.911 ms

Loss rate: 0.35%

# Run 1: Report of Sprout — Data Link

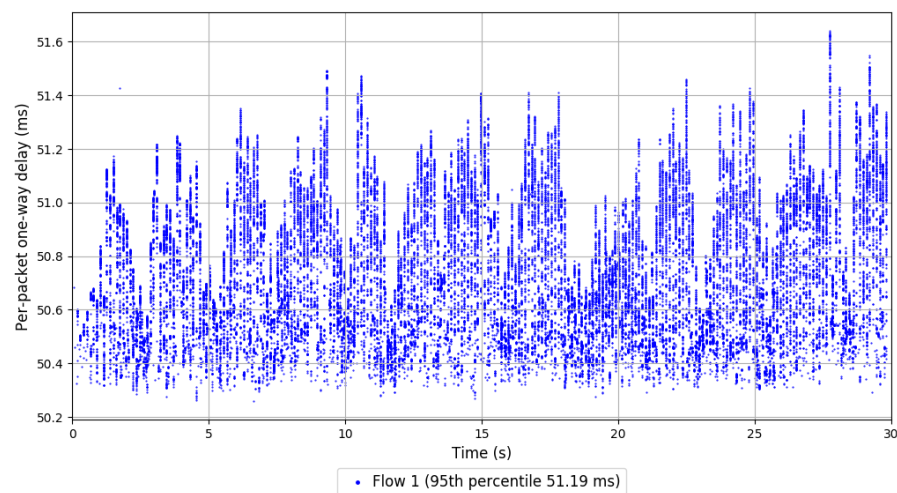
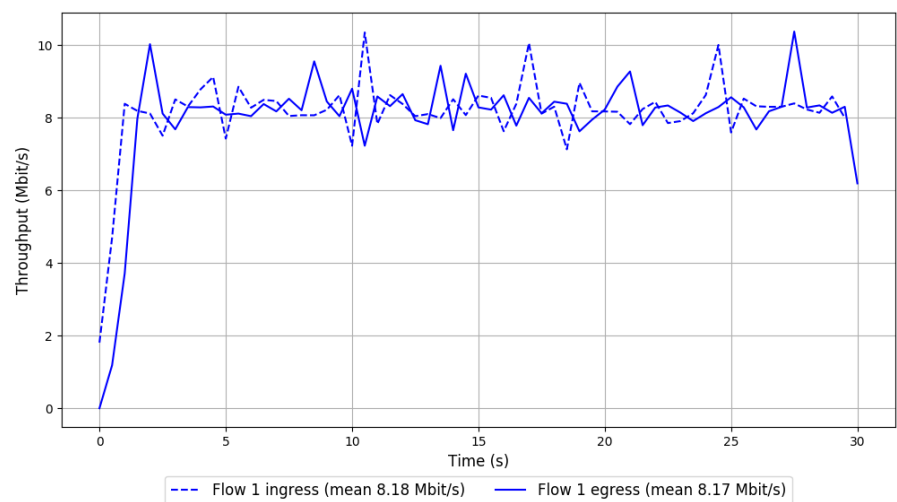


Run 2: Statistics of Sprout

Start at: 2018-09-08 04:24:23  
End at: 2018-09-08 04:24:53  
Local clock offset: -0.297 ms  
Remote clock offset: -0.974 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 8.17 Mbit/s  
95th percentile per-packet one-way delay: 51.189 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 8.17 Mbit/s  
95th percentile per-packet one-way delay: 51.189 ms  
Loss rate: 0.43%

Run 2: Report of Sprout — Data Link



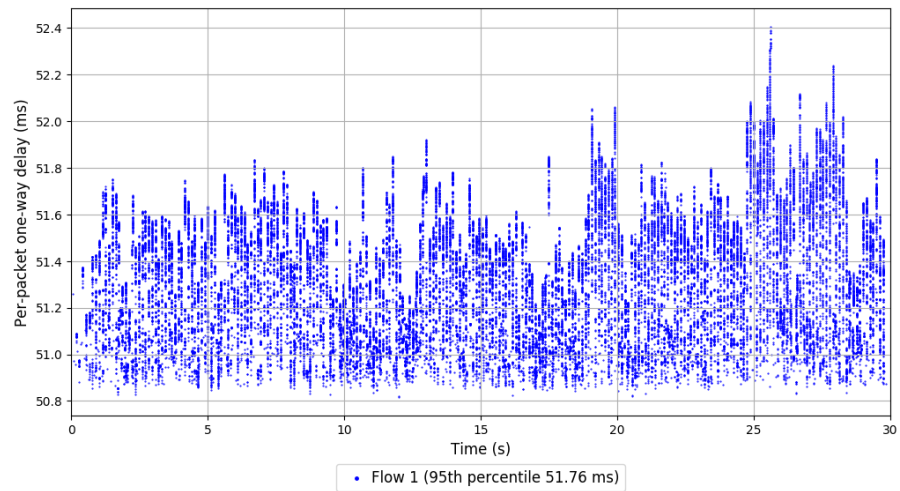
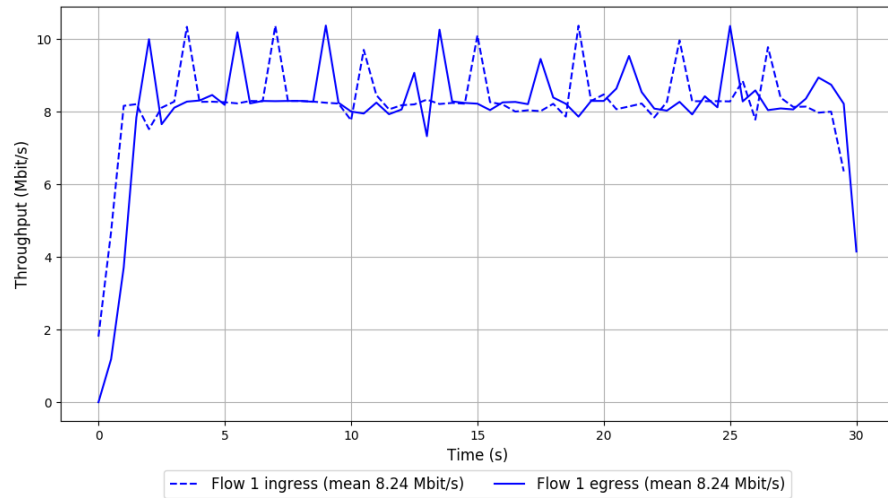


Run 3: Statistics of Sprout

Start at: 2018-09-08 04:50:22  
End at: 2018-09-08 04:50:52  
Local clock offset: 0.116 ms  
Remote clock offset: -0.351 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 8.24 Mbit/s  
95th percentile per-packet one-way delay: 51.755 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 8.24 Mbit/s  
95th percentile per-packet one-way delay: 51.755 ms  
Loss rate: 0.45%

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

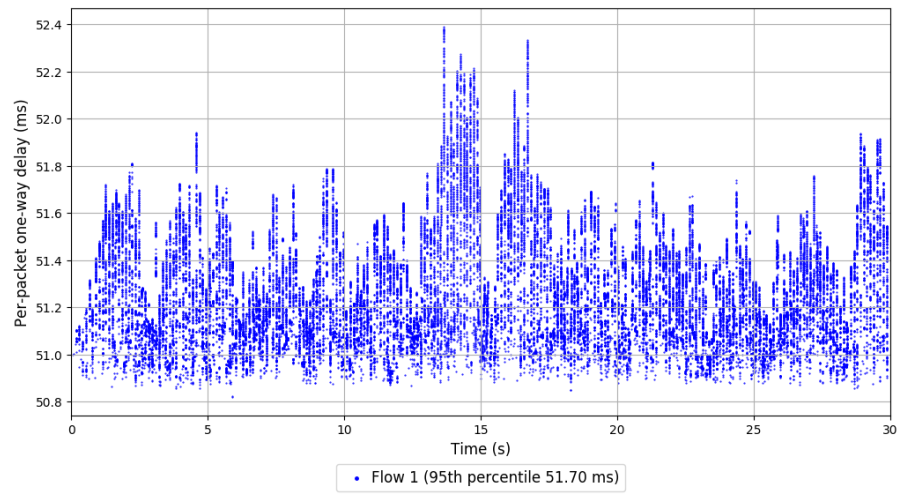
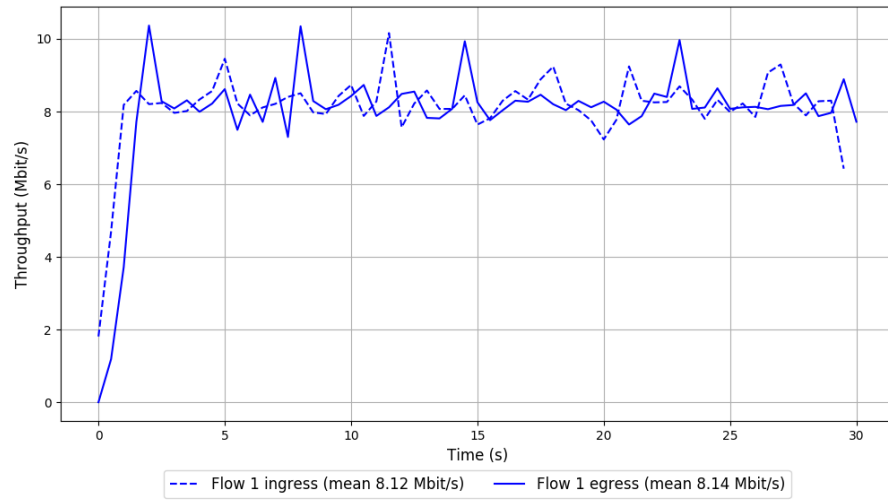


Run 4: Statistics of Sprout

Start at: 2018-09-08 05:16:30  
End at: 2018-09-08 05:17:00  
Local clock offset: -0.174 ms  
Remote clock offset: -1.381 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 8.14 Mbit/s  
95th percentile per-packet one-way delay: 51.703 ms  
Loss rate: 0.04%  
-- Flow 1:  
Average throughput: 8.14 Mbit/s  
95th percentile per-packet one-way delay: 51.703 ms  
Loss rate: 0.04%

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

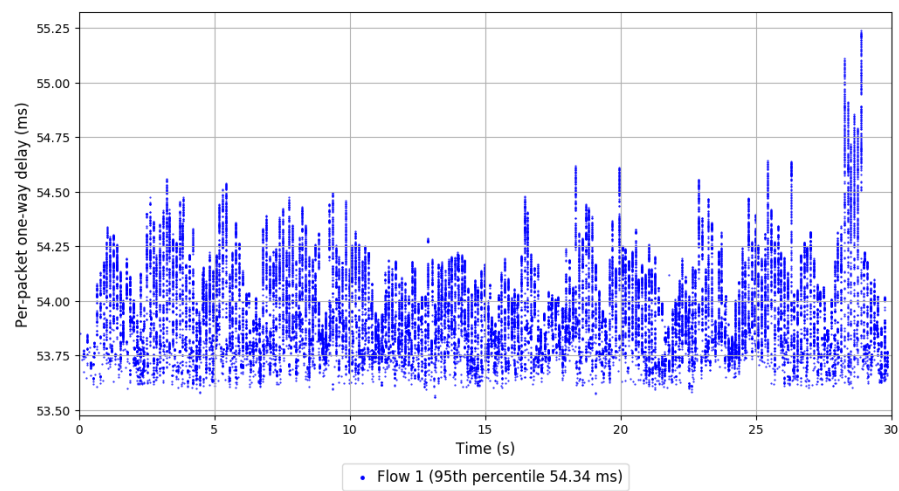
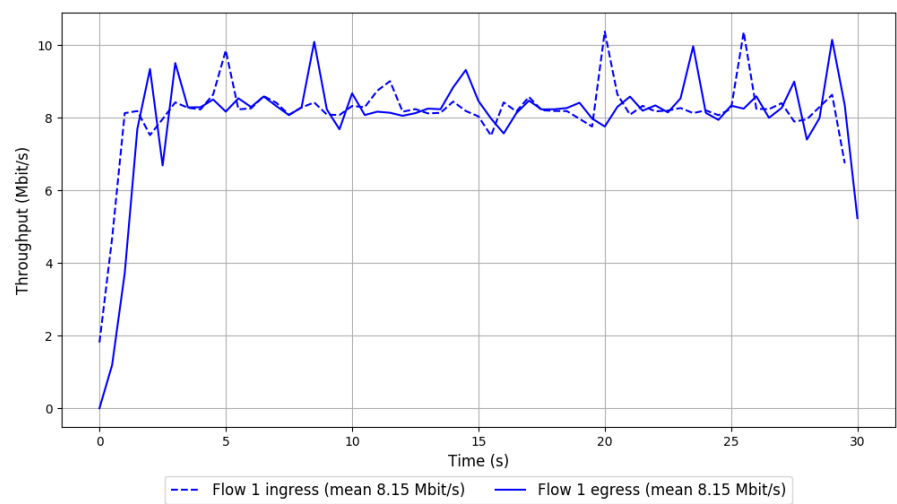


Run 5: Statistics of Sprout

Start at: 2018-09-08 05:42:31  
End at: 2018-09-08 05:43:01  
Local clock offset: -0.001 ms  
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-09-08 07:00:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 8.15 Mbit/s  
95th percentile per-packet one-way delay: 54.338 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 8.15 Mbit/s  
95th percentile per-packet one-way delay: 54.338 ms  
Loss rate: 0.37%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-08 03:36:04

End at: 2018-09-08 03:36:34

Local clock offset: -0.011 ms

Remote clock offset: -0.624 ms

# Below is generated by plot.py at 2018-09-08 07:04:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 255.17 Mbit/s

95th percentile per-packet one-way delay: 53.460 ms

Loss rate: 0.30%

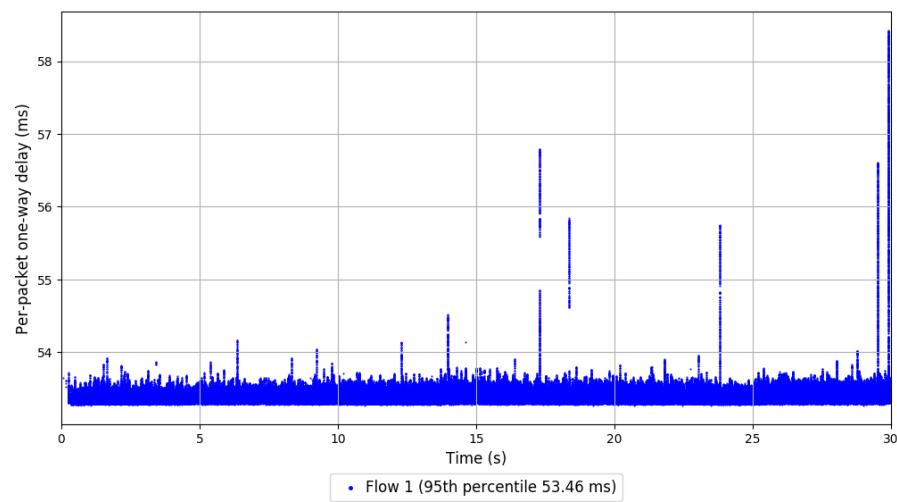
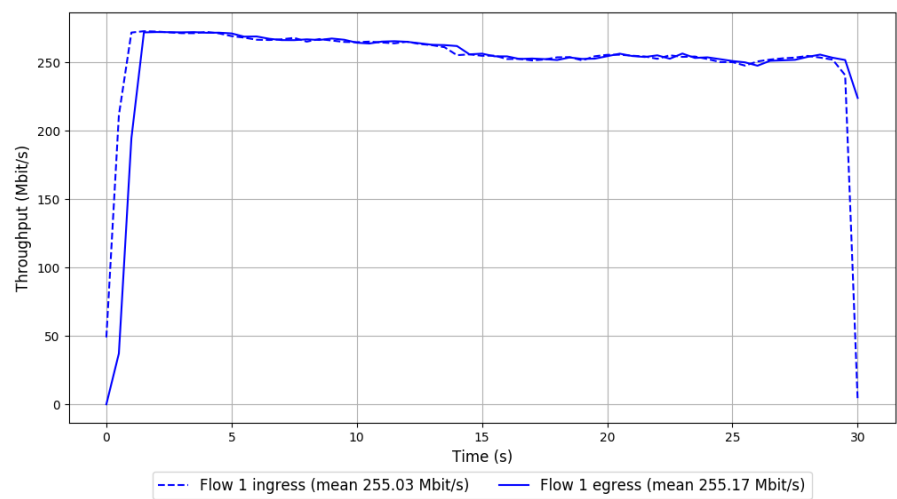
-- Flow 1:

Average throughput: 255.17 Mbit/s

95th percentile per-packet one-way delay: 53.460 ms

Loss rate: 0.30%

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



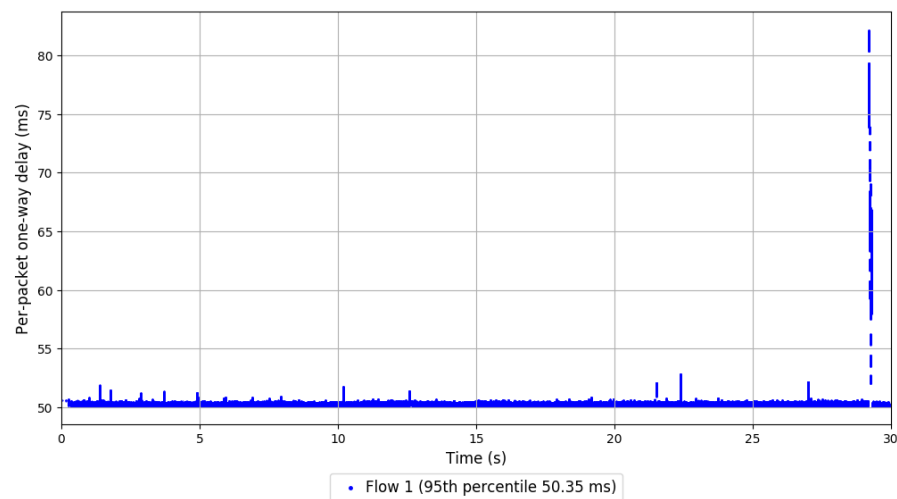
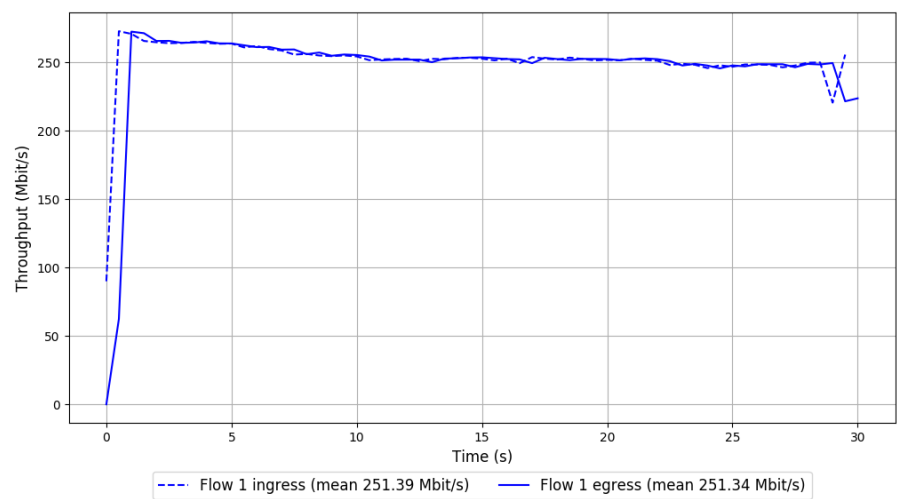


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-08 04:02:07  
End at: 2018-09-08 04:02:37  
Local clock offset: -0.094 ms  
Remote clock offset: -0.227 ms

# Below is generated by plot.py at 2018-09-08 07:05:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 251.34 Mbit/s  
95th percentile per-packet one-way delay: 50.355 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 251.34 Mbit/s  
95th percentile per-packet one-way delay: 50.355 ms  
Loss rate: 0.37%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-08 04:28:03

End at: 2018-09-08 04:28:33

Local clock offset: 0.185 ms

Remote clock offset: -0.354 ms

# Below is generated by plot.py at 2018-09-08 07:05:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 241.07 Mbit/s

95th percentile per-packet one-way delay: 50.388 ms

Loss rate: 0.39%

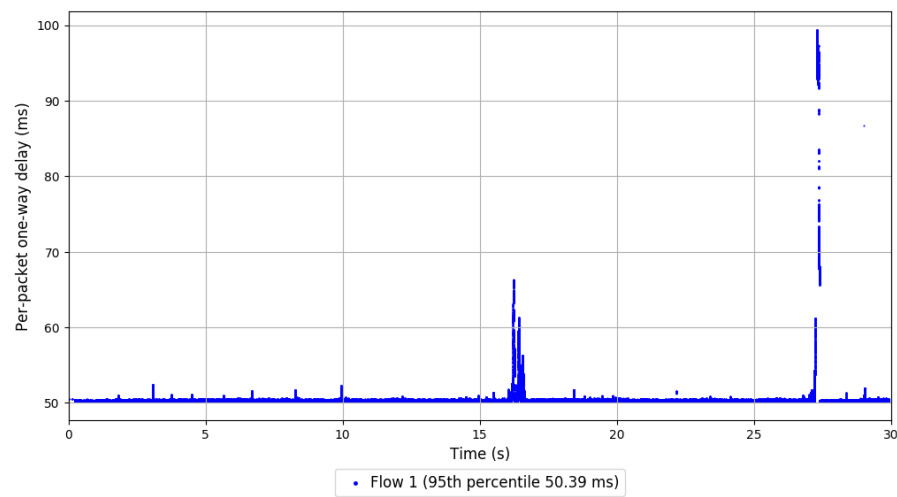
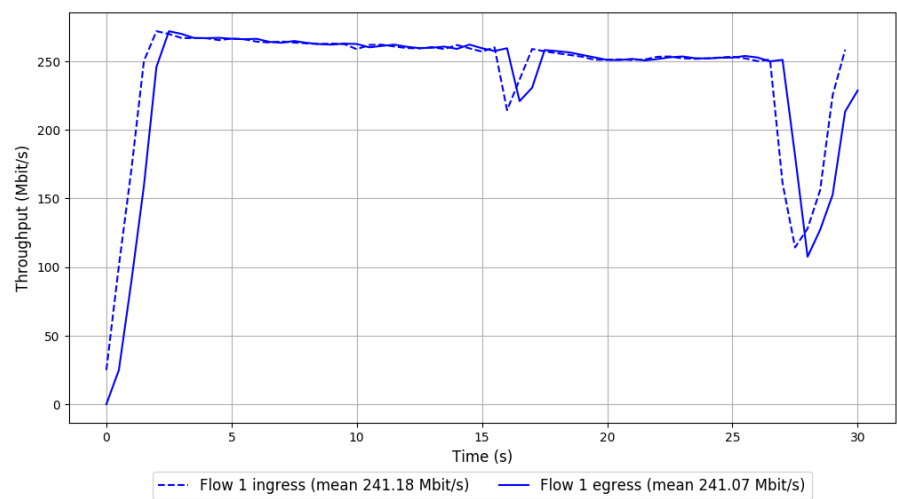
-- Flow 1:

Average throughput: 241.07 Mbit/s

95th percentile per-packet one-way delay: 50.388 ms

Loss rate: 0.39%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-08 04:54:03

End at: 2018-09-08 04:54:33

Local clock offset: 0.063 ms

Remote clock offset: -1.69 ms

# Below is generated by plot.py at 2018-09-08 07:05:38

# Datalink statistics

-- Total of 1 flow:

Average throughput: 253.59 Mbit/s

95th percentile per-packet one-way delay: 54.743 ms

Loss rate: 0.38%

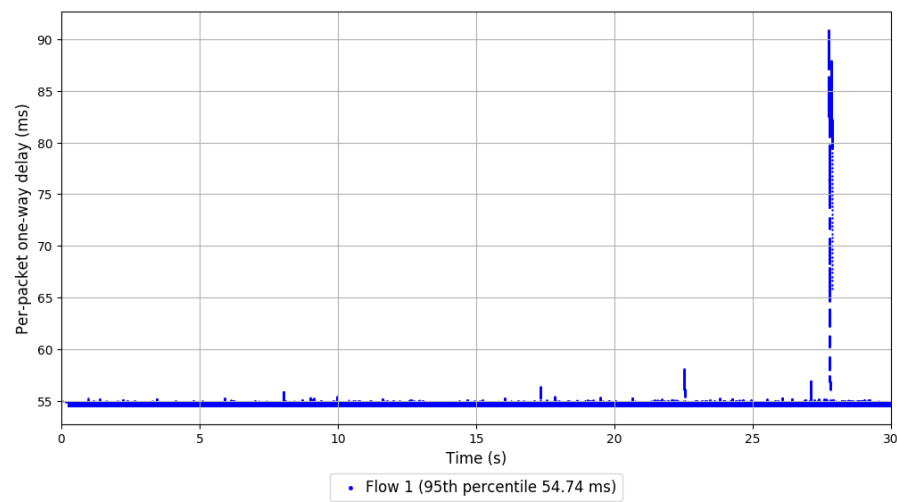
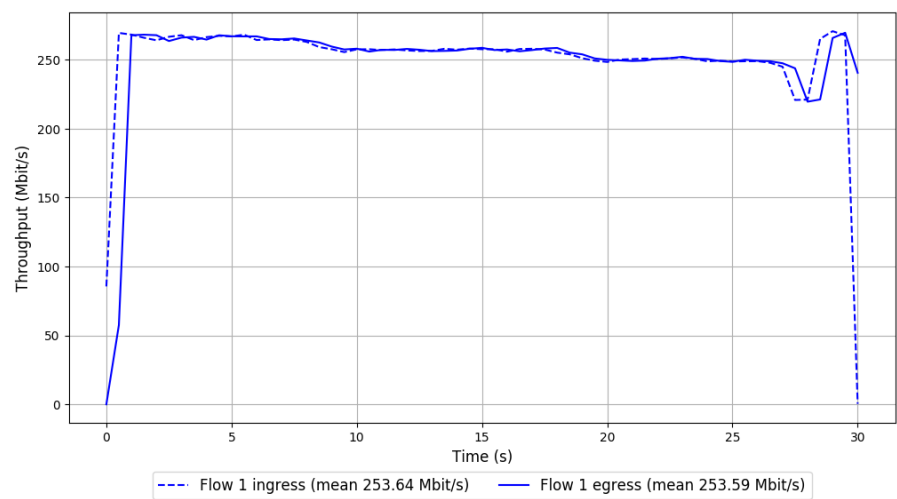
-- Flow 1:

Average throughput: 253.59 Mbit/s

95th percentile per-packet one-way delay: 54.743 ms

Loss rate: 0.38%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-08 05:20:12

End at: 2018-09-08 05:20:43

Local clock offset: 0.067 ms

Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2018-09-08 07:05:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 251.19 Mbit/s

95th percentile per-packet one-way delay: 50.456 ms

Loss rate: 0.34%

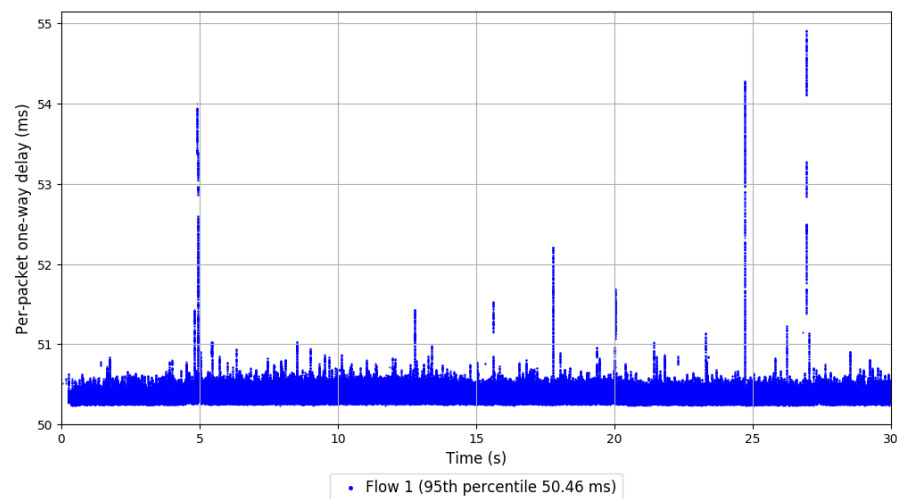
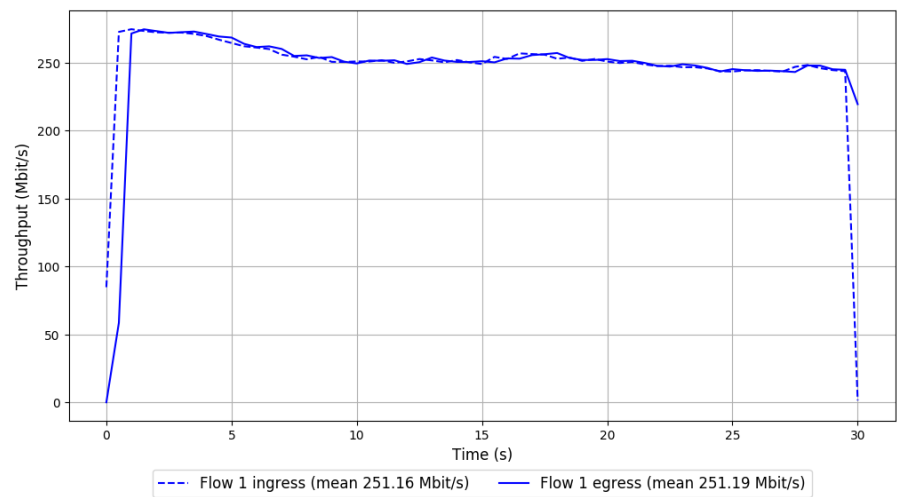
-- Flow 1:

Average throughput: 251.19 Mbit/s

95th percentile per-packet one-way delay: 50.456 ms

Loss rate: 0.34%

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



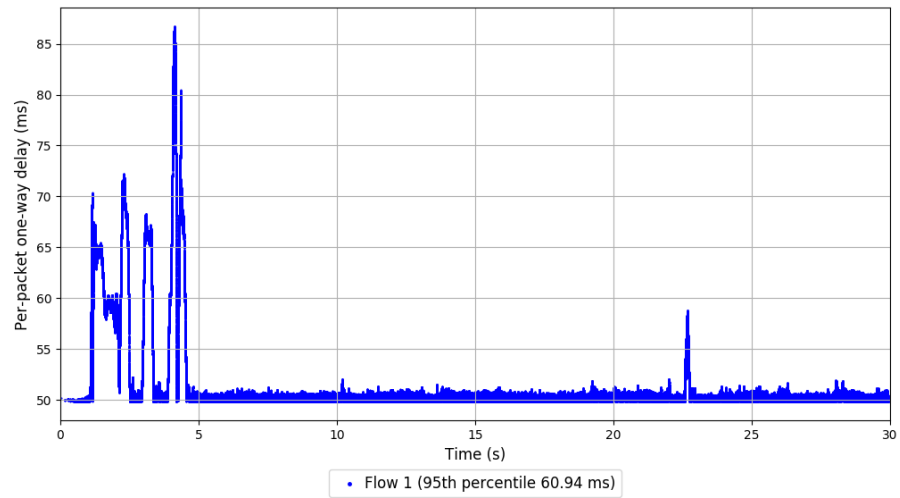
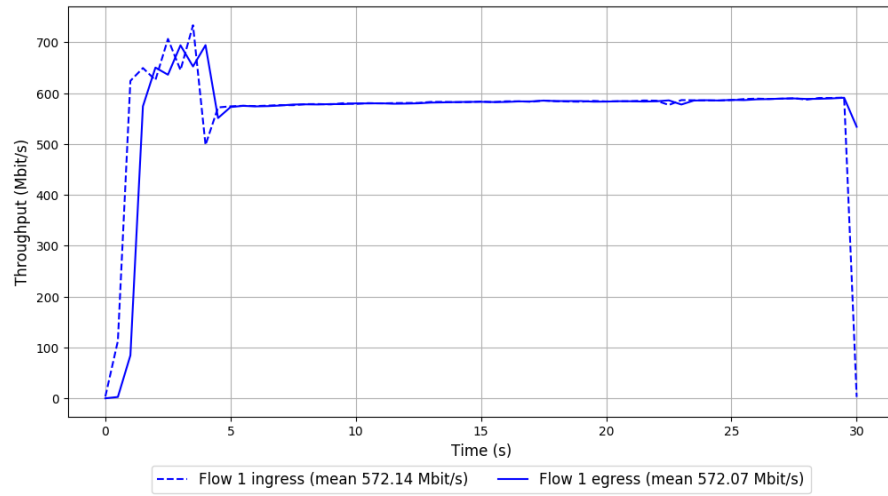


Run 1: Statistics of TCP Vegas

Start at: 2018-09-08 03:38:42  
End at: 2018-09-08 03:39:12  
Local clock offset: 0.078 ms  
Remote clock offset: -0.126 ms

# Below is generated by plot.py at 2018-09-08 07:07:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 572.07 Mbit/s  
95th percentile per-packet one-way delay: 60.941 ms  
Loss rate: 0.35%  
-- Flow 1:  
Average throughput: 572.07 Mbit/s  
95th percentile per-packet one-way delay: 60.941 ms  
Loss rate: 0.35%

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



Run 2: Statistics of TCP Vegas

Start at: 2018-09-08 04:04:46

End at: 2018-09-08 04:05:16

Local clock offset: -0.164 ms

Remote clock offset: 1.101 ms

# Below is generated by plot.py at 2018-09-08 07:08:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 573.40 Mbit/s

95th percentile per-packet one-way delay: 65.674 ms

Loss rate: 0.34%

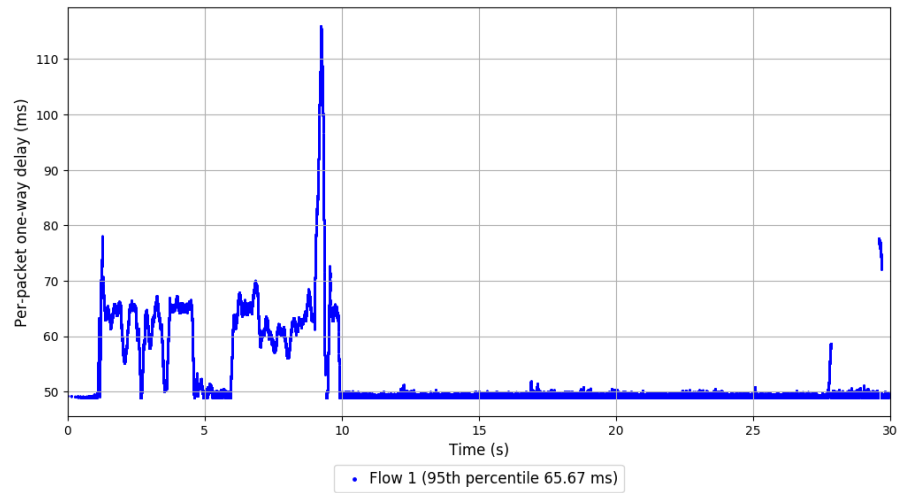
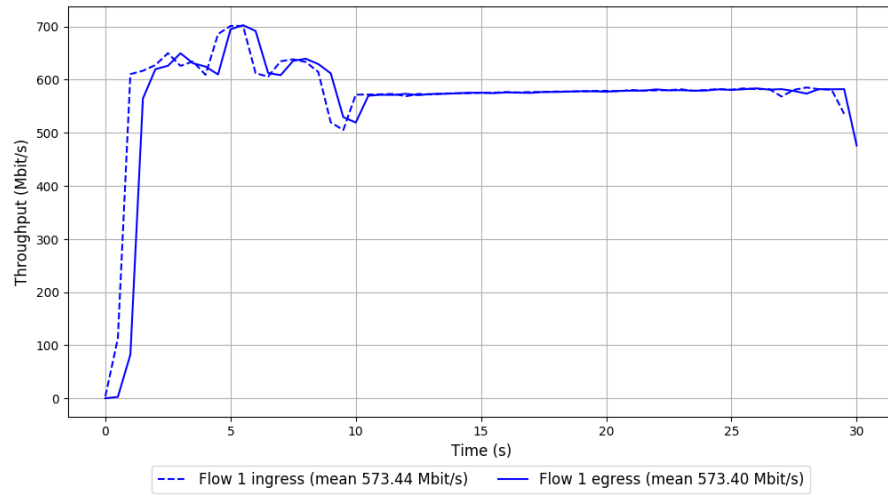
-- Flow 1:

Average throughput: 573.40 Mbit/s

95th percentile per-packet one-way delay: 65.674 ms

Loss rate: 0.34%

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

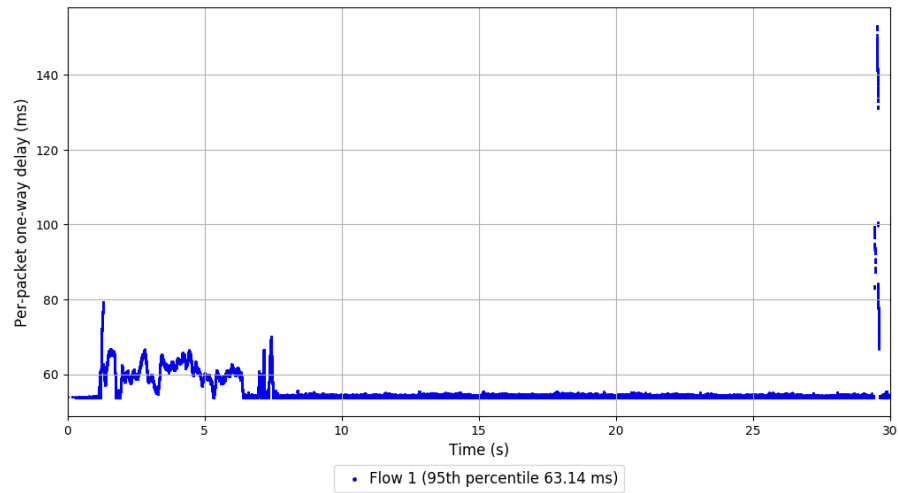
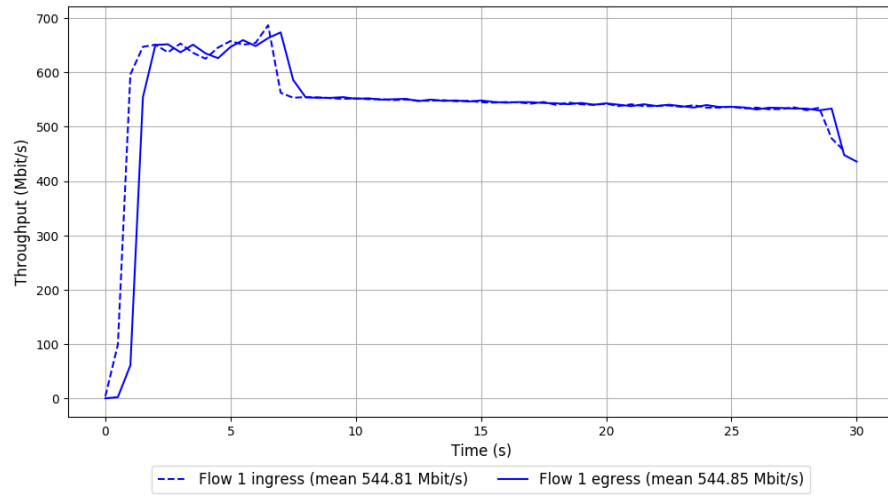


Run 3: Statistics of TCP Vegas

Start at: 2018-09-08 04:30:41  
End at: 2018-09-08 04:31:11  
Local clock offset: 0.148 ms  
Remote clock offset: -0.282 ms

# Below is generated by plot.py at 2018-09-08 07:09:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 544.85 Mbit/s  
95th percentile per-packet one-way delay: 63.144 ms  
Loss rate: 0.34%  
-- Flow 1:  
Average throughput: 544.85 Mbit/s  
95th percentile per-packet one-way delay: 63.144 ms  
Loss rate: 0.34%

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

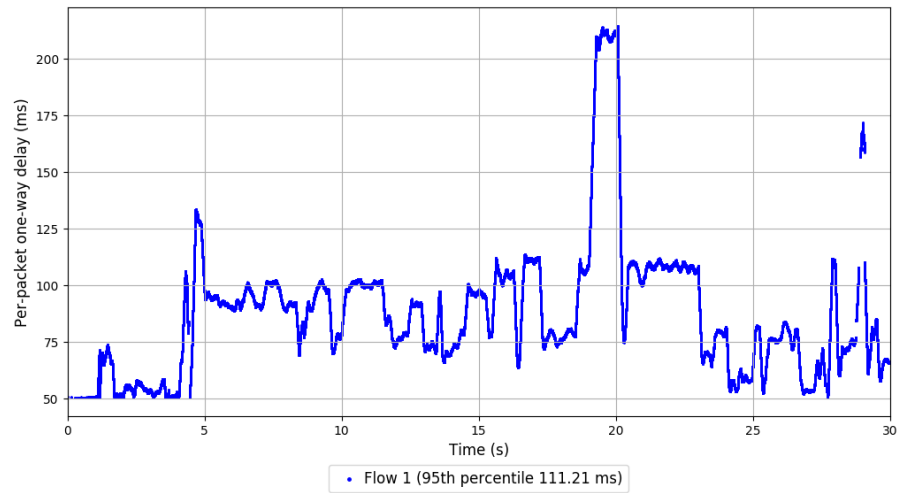
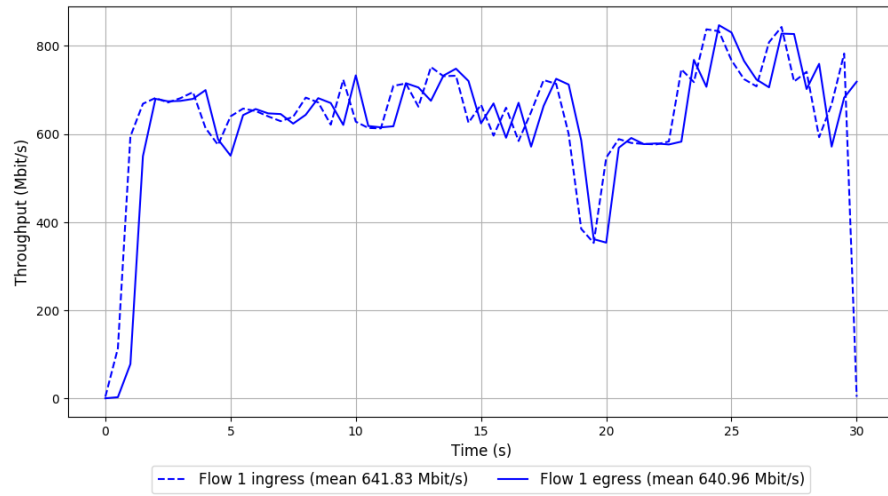


Run 4: Statistics of TCP Vegas

Start at: 2018-09-08 04:56:42  
End at: 2018-09-08 04:57:12  
Local clock offset: -0.326 ms  
Remote clock offset: -0.488 ms

# Below is generated by plot.py at 2018-09-08 07:14:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 640.96 Mbit/s  
95th percentile per-packet one-way delay: 111.208 ms  
Loss rate: 0.47%  
-- Flow 1:  
Average throughput: 640.96 Mbit/s  
95th percentile per-packet one-way delay: 111.208 ms  
Loss rate: 0.47%

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





Run 5: Statistics of TCP Vegas

Start at: 2018-09-08 05:22:51

End at: 2018-09-08 05:23:21

Local clock offset: 0.286 ms

Remote clock offset: 0.224 ms

# Below is generated by plot.py at 2018-09-08 07:14:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 565.26 Mbit/s

95th percentile per-packet one-way delay: 62.886 ms

Loss rate: 0.34%

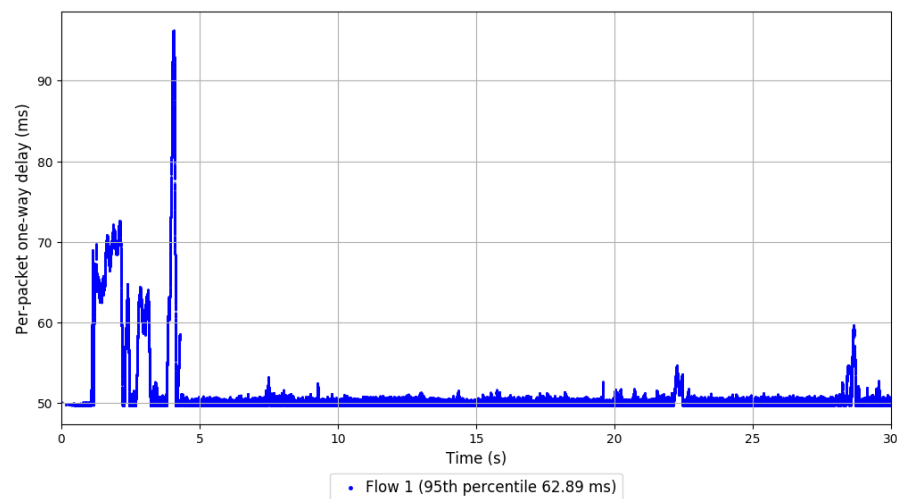
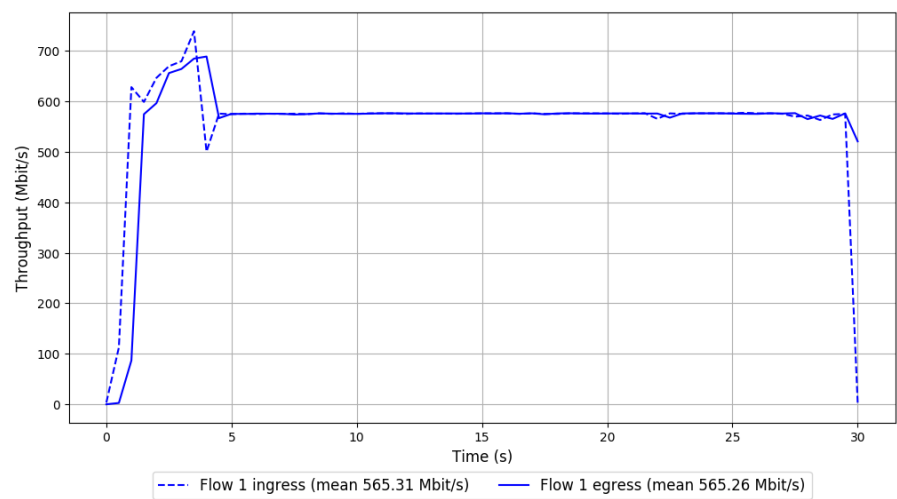
-- Flow 1:

Average throughput: 565.26 Mbit/s

95th percentile per-packet one-way delay: 62.886 ms

Loss rate: 0.34%

Run 5: Report of TCP Vegas — Data Link

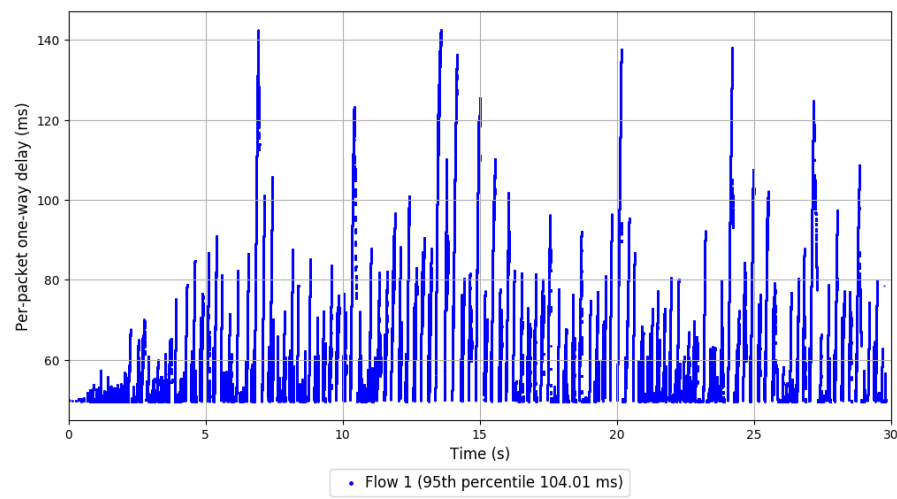
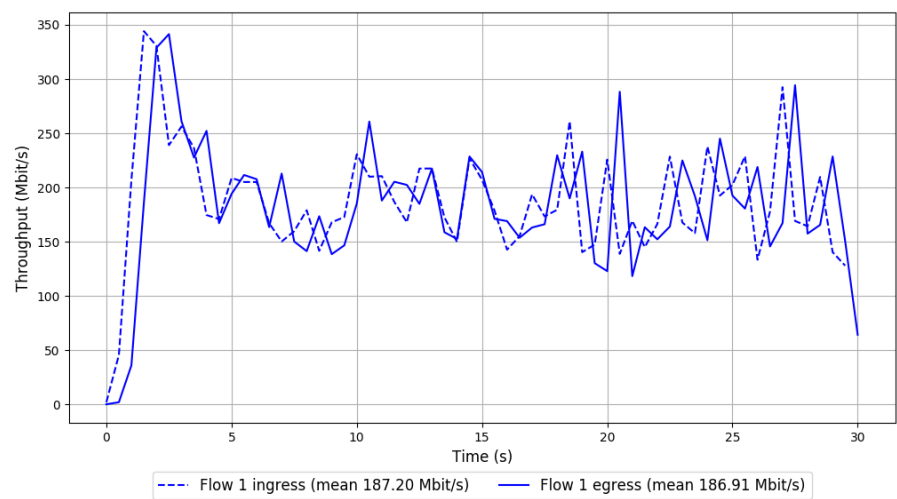


Run 1: Statistics of Verus

Start at: 2018-09-08 03:50:41  
End at: 2018-09-08 03:51:11  
Local clock offset: -0.175 ms  
Remote clock offset: -0.138 ms

# Below is generated by plot.py at 2018-09-08 07:14:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 186.91 Mbit/s  
95th percentile per-packet one-way delay: 104.014 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 186.91 Mbit/s  
95th percentile per-packet one-way delay: 104.014 ms  
Loss rate: 0.66%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-08 04:16:38

End at: 2018-09-08 04:17:08

Local clock offset: -0.31 ms

Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2018-09-08 07:14:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 189.44 Mbit/s

95th percentile per-packet one-way delay: 137.164 ms

Loss rate: 1.24%

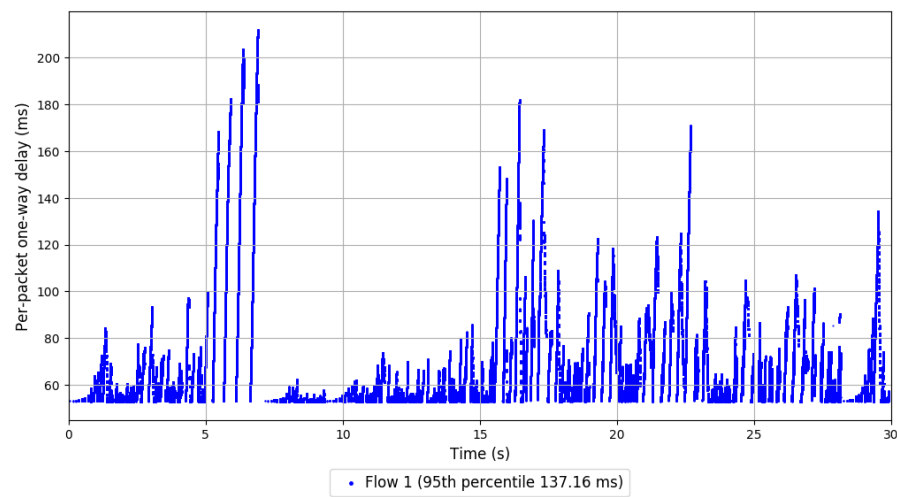
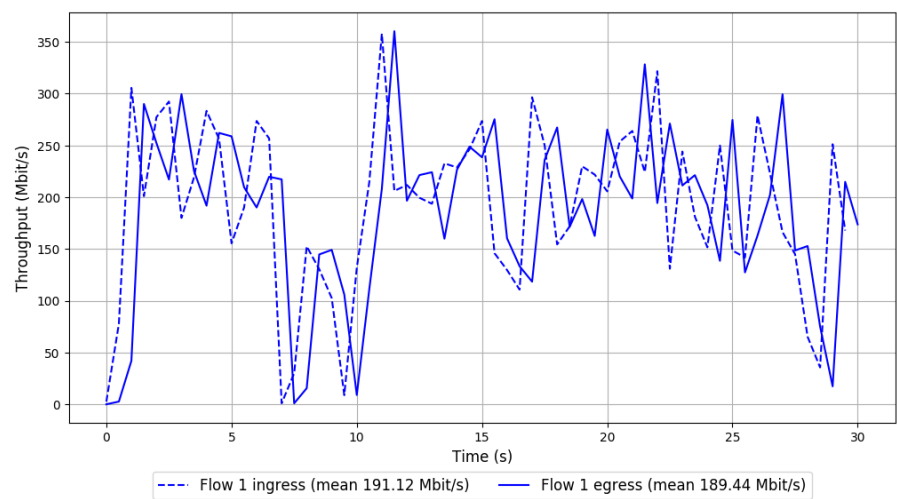
-- Flow 1:

Average throughput: 189.44 Mbit/s

95th percentile per-packet one-way delay: 137.164 ms

Loss rate: 1.24%

Run 2: Report of Verus — Data Link

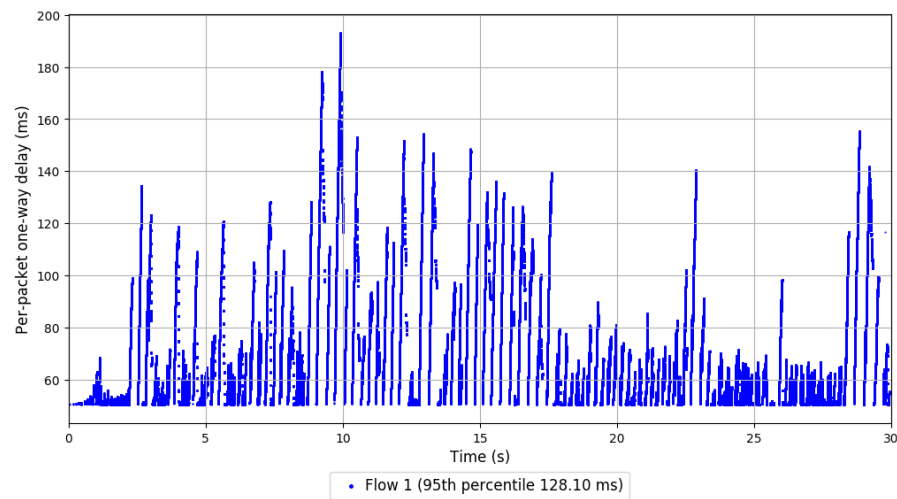
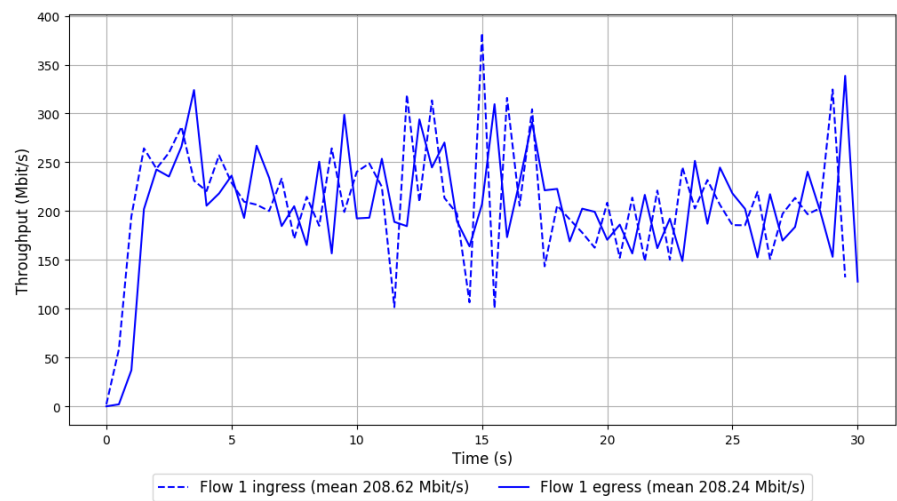


Run 3: Statistics of Verus

Start at: 2018-09-08 04:42:37  
End at: 2018-09-08 04:43:07  
Local clock offset: 0.079 ms  
Remote clock offset: -0.221 ms

# Below is generated by plot.py at 2018-09-08 07:14:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 208.24 Mbit/s  
95th percentile per-packet one-way delay: 128.097 ms  
Loss rate: 0.32%  
-- Flow 1:  
Average throughput: 208.24 Mbit/s  
95th percentile per-packet one-way delay: 128.097 ms  
Loss rate: 0.32%

Run 3: Report of Verus — Data Link



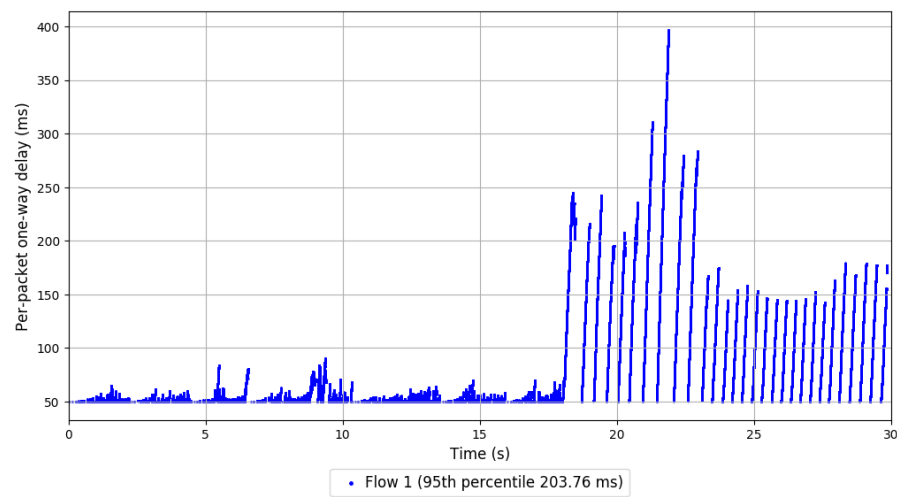
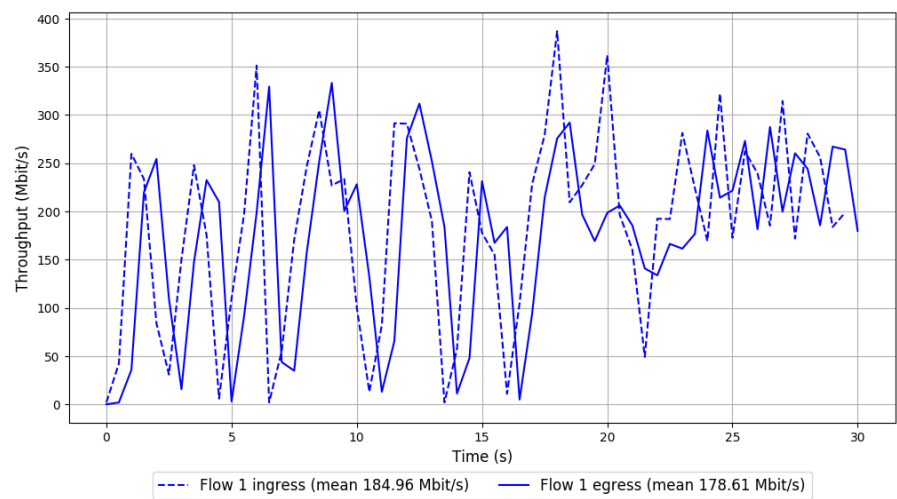


Run 4: Statistics of Verus

Start at: 2018-09-08 05:08:43  
End at: 2018-09-08 05:09:13  
Local clock offset: 0.096 ms  
Remote clock offset: -0.117 ms

# Below is generated by plot.py at 2018-09-08 07:14:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 178.61 Mbit/s  
95th percentile per-packet one-way delay: 203.759 ms  
Loss rate: 3.90%  
-- Flow 1:  
Average throughput: 178.61 Mbit/s  
95th percentile per-packet one-way delay: 203.759 ms  
Loss rate: 3.90%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-08 05:34:45

End at: 2018-09-08 05:35:15

Local clock offset: -0.135 ms

Remote clock offset: 0.106 ms

# Below is generated by plot.py at 2018-09-08 07:14:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 186.02 Mbit/s

95th percentile per-packet one-way delay: 200.298 ms

Loss rate: 9.51%

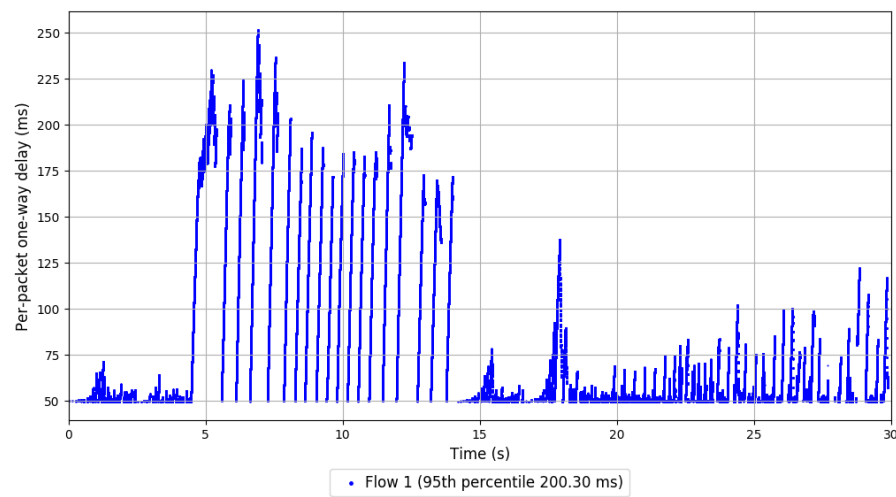
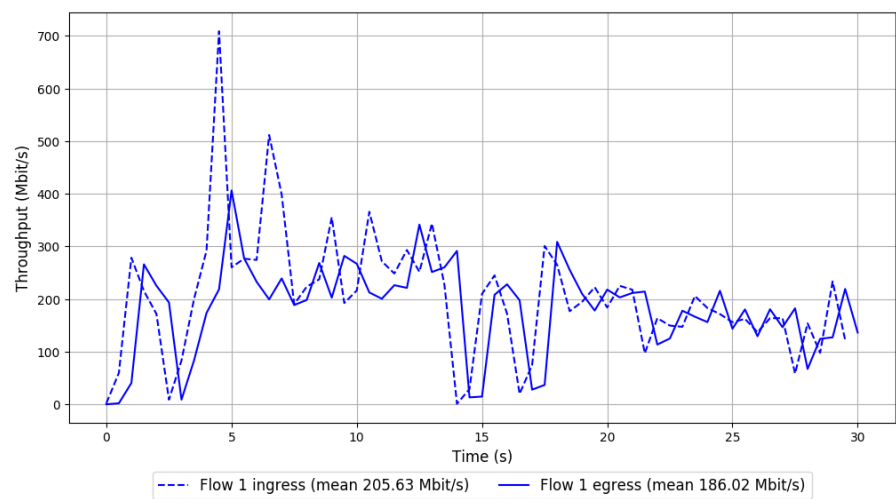
-- Flow 1:

Average throughput: 186.02 Mbit/s

95th percentile per-packet one-way delay: 200.298 ms

Loss rate: 9.51%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-08 03:53:39

End at: 2018-09-08 03:54:09

Local clock offset: 0.137 ms

Remote clock offset: -0.914 ms

# Below is generated by plot.py at 2018-09-08 07:15:32

# Datalink statistics

-- Total of 1 flow:

Average throughput: 409.60 Mbit/s

95th percentile per-packet one-way delay: 62.847 ms

Loss rate: 0.40%

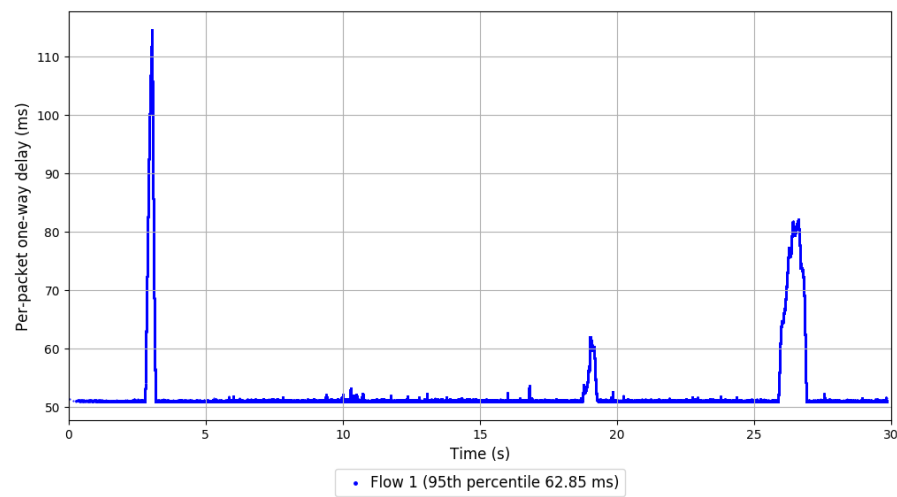
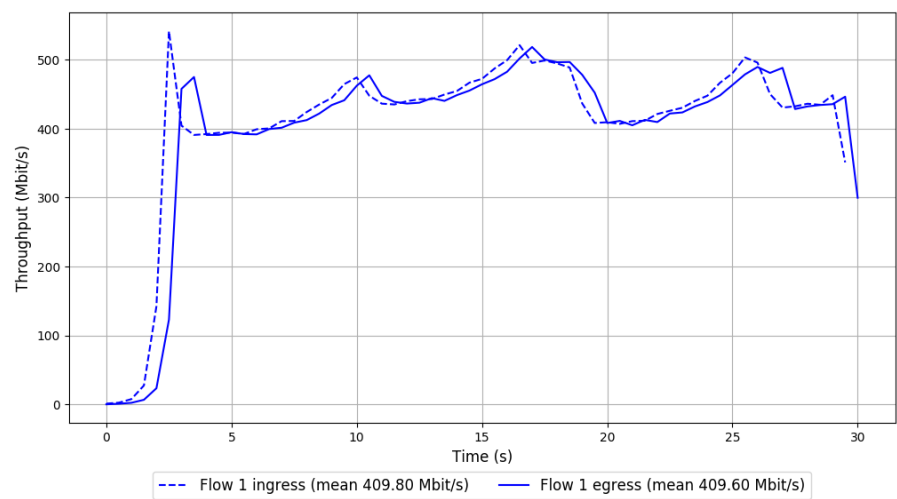
-- Flow 1:

Average throughput: 409.60 Mbit/s

95th percentile per-packet one-way delay: 62.847 ms

Loss rate: 0.40%

Run 1: Report of PCC-Vivace — Data Link

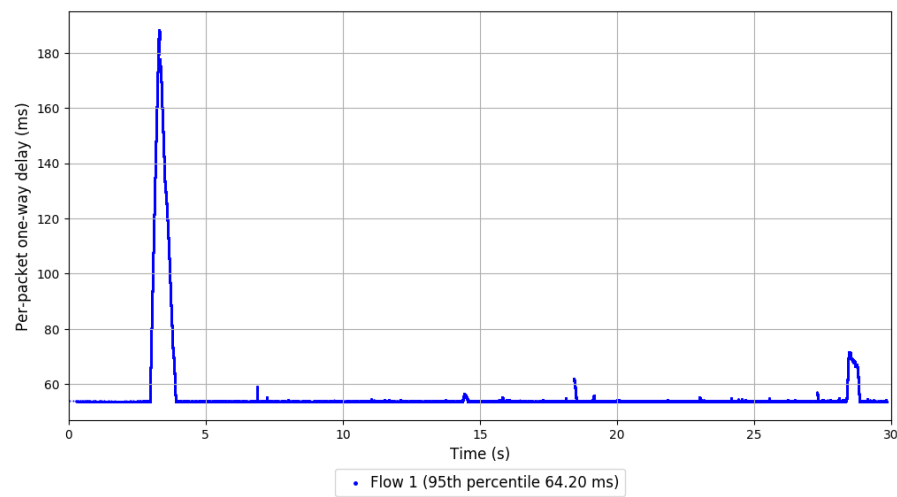
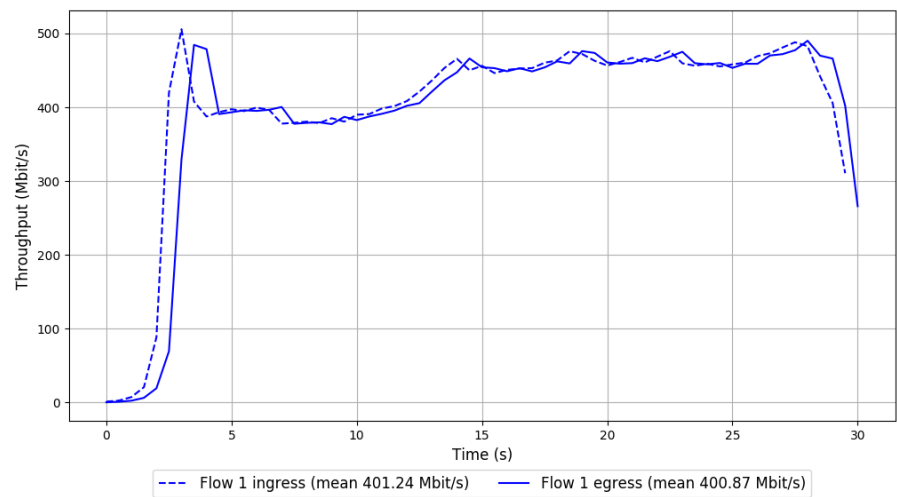


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-08 04:19:37  
End at: 2018-09-08 04:20:07  
Local clock offset: -0.044 ms  
Remote clock offset: -0.725 ms

# Below is generated by plot.py at 2018-09-08 07:16:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 400.87 Mbit/s  
95th percentile per-packet one-way delay: 64.196 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 400.87 Mbit/s  
95th percentile per-packet one-way delay: 64.196 ms  
Loss rate: 0.45%

Run 2: Report of PCC-Vivace — Data Link





Run 3: Statistics of PCC-Vivace

Start at: 2018-09-08 04:45:36

End at: 2018-09-08 04:46:06

Local clock offset: -0.125 ms

Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-09-08 07:16:09

# Datalink statistics

-- Total of 1 flow:

Average throughput: 398.09 Mbit/s

95th percentile per-packet one-way delay: 49.981 ms

Loss rate: 0.37%

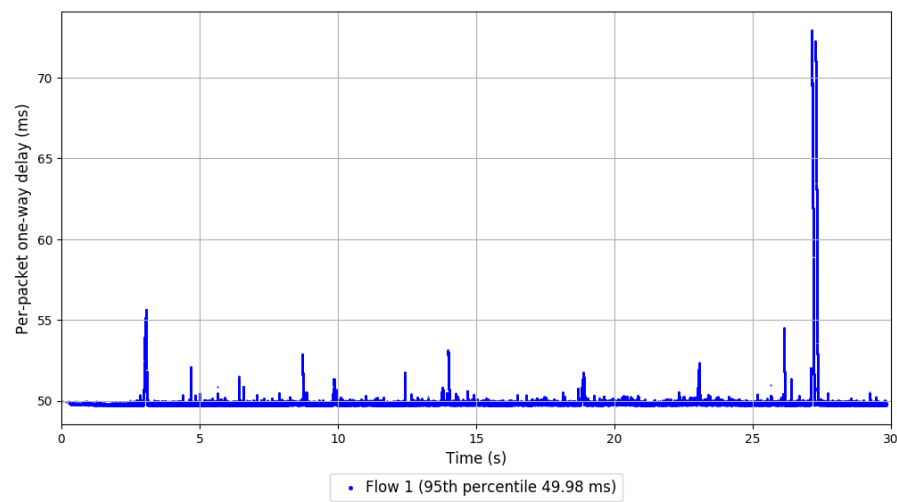
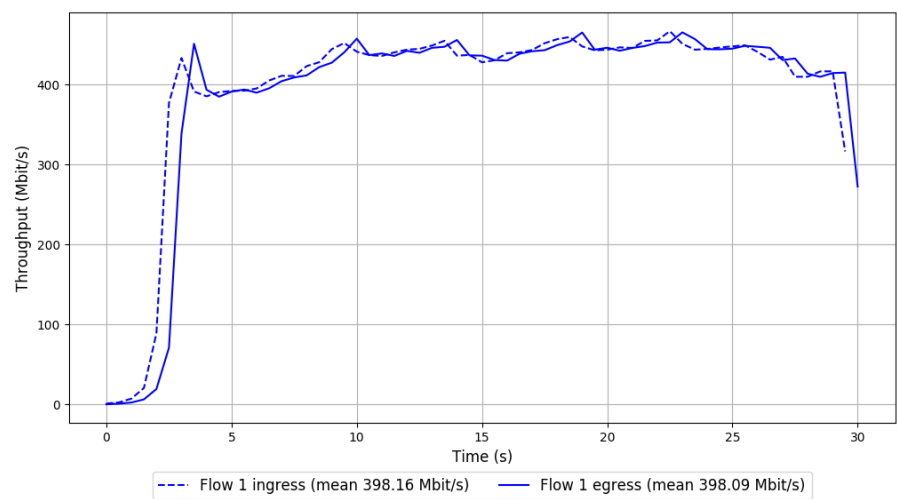
-- Flow 1:

Average throughput: 398.09 Mbit/s

95th percentile per-packet one-way delay: 49.981 ms

Loss rate: 0.37%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-08 05:11:43

End at: 2018-09-08 05:12:13

Local clock offset: 0.165 ms

Remote clock offset: 0.071 ms

# Below is generated by plot.py at 2018-09-08 07:16:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 408.24 Mbit/s

95th percentile per-packet one-way delay: 53.683 ms

Loss rate: 0.39%

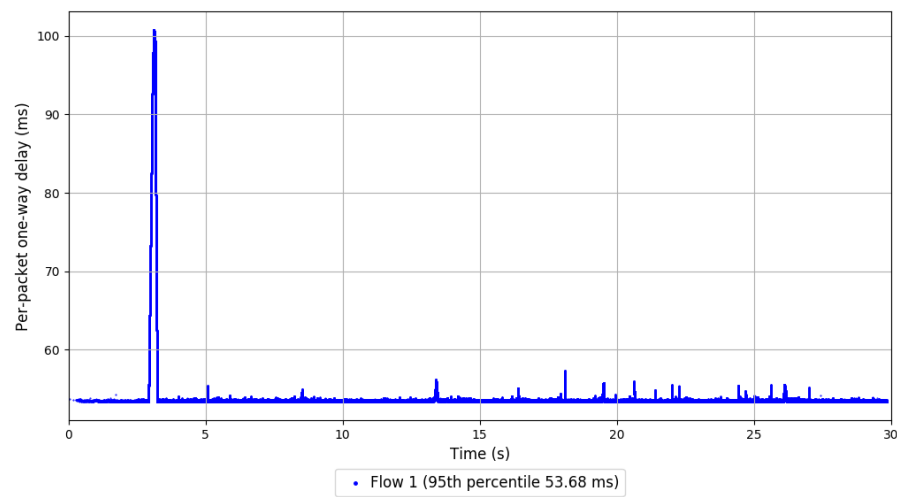
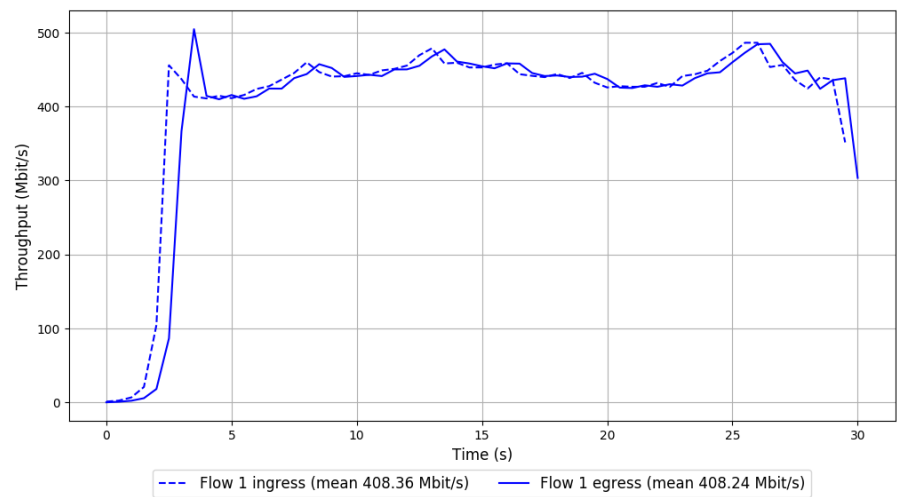
-- Flow 1:

Average throughput: 408.24 Mbit/s

95th percentile per-packet one-way delay: 53.683 ms

Loss rate: 0.39%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-08 05:37:43

End at: 2018-09-08 05:38:13

Local clock offset: -0.074 ms

Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2018-09-08 07:16:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 390.48 Mbit/s

95th percentile per-packet one-way delay: 50.241 ms

Loss rate: 0.35%

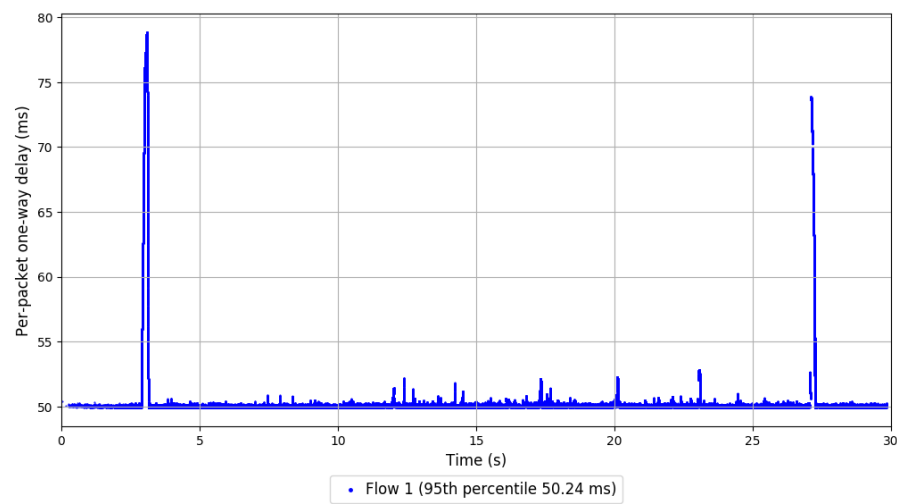
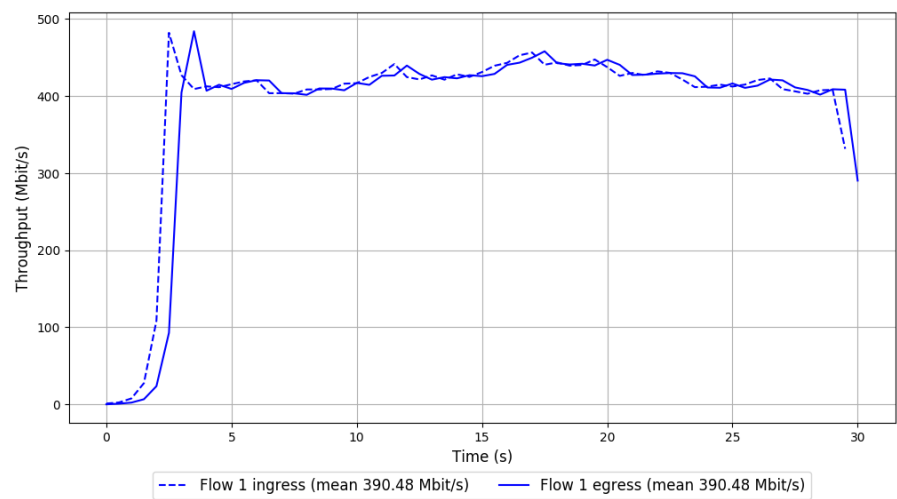
-- Flow 1:

Average throughput: 390.48 Mbit/s

95th percentile per-packet one-way delay: 50.241 ms

Loss rate: 0.35%

Run 5: Report of PCC-Vivace — Data Link

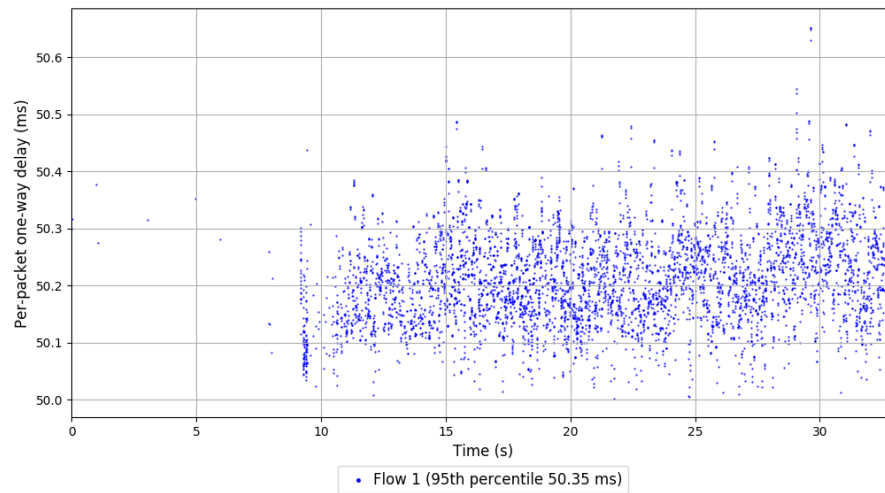
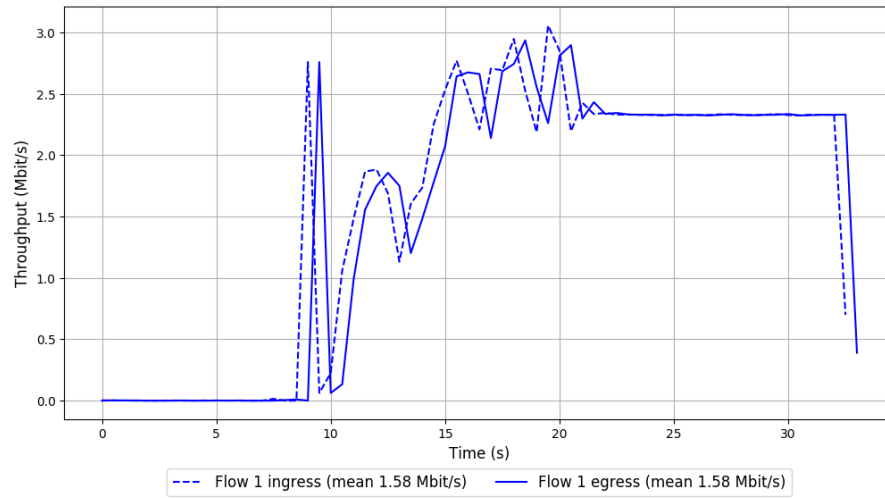


Run 1: Statistics of WebRTC media

Start at: 2018-09-08 03:59:32  
End at: 2018-09-08 04:00:02  
Local clock offset: -0.045 ms  
Remote clock offset: -0.166 ms

# Below is generated by plot.py at 2018-09-08 07:16:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.58 Mbit/s  
95th percentile per-packet one-way delay: 50.349 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 1.58 Mbit/s  
95th percentile per-packet one-way delay: 50.349 ms  
Loss rate: 0.52%

# Run 1: Report of WebRTC media — Data Link





Run 2: Statistics of WebRTC media

Start at: 2018-09-08 04:25:30

End at: 2018-09-08 04:26:00

Local clock offset: 0.071 ms

Remote clock offset: 1.346 ms

# Below is generated by plot.py at 2018-09-08 07:16:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 48.715 ms

Loss rate: 0.41%

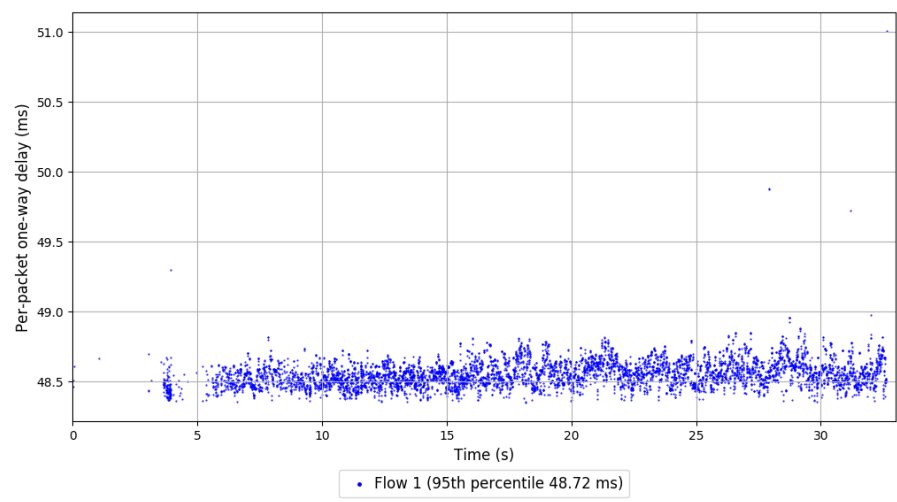
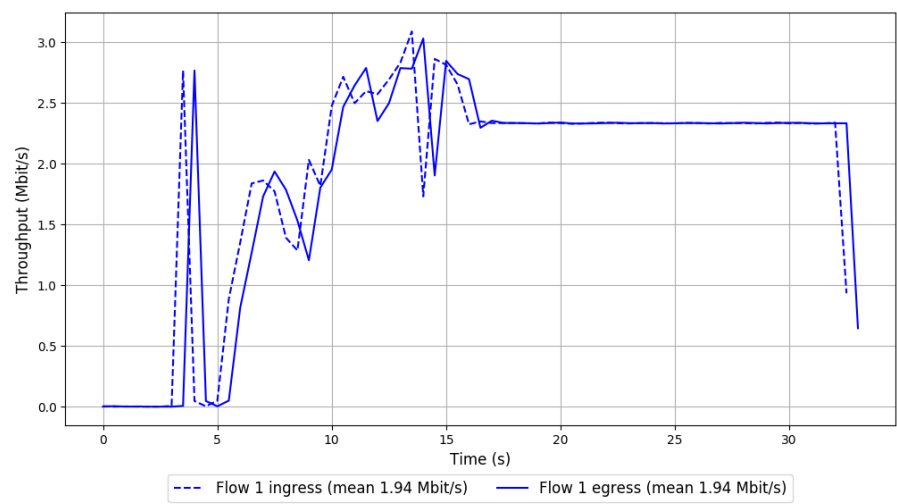
-- Flow 1:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 48.715 ms

Loss rate: 0.41%

Run 2: Report of WebRTC media — Data Link

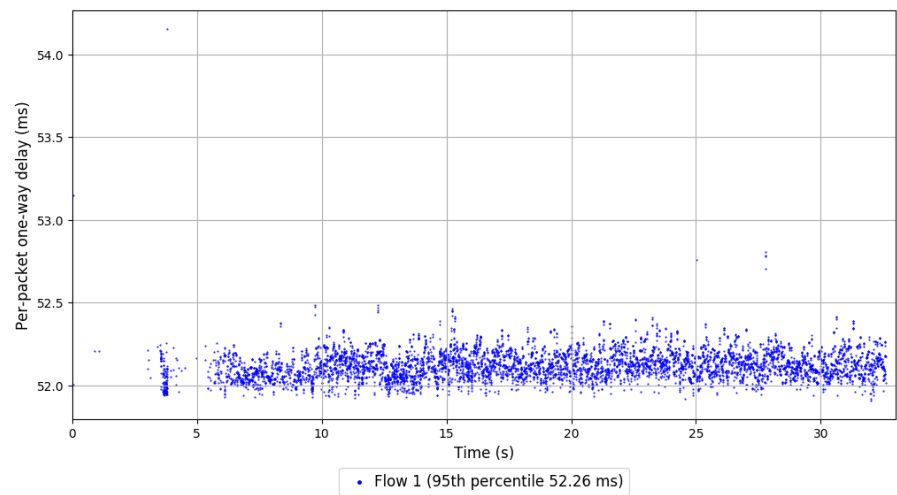
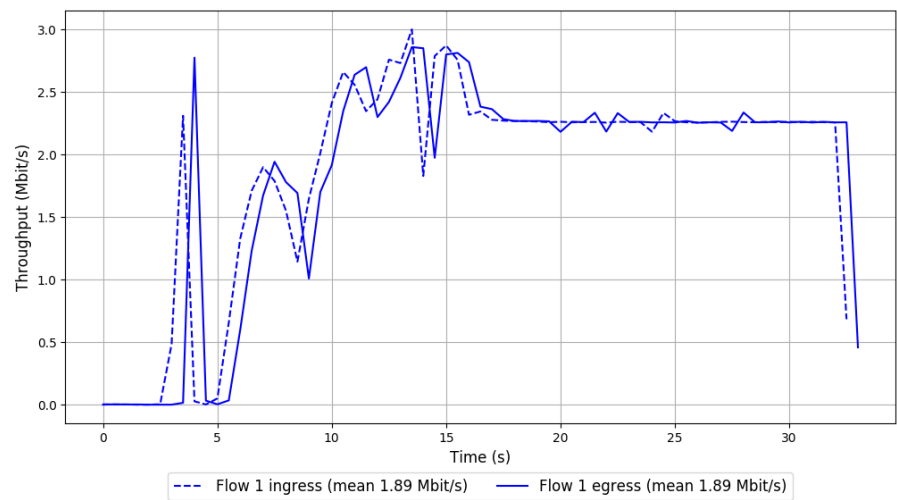


Run 3: Statistics of WebRTC media

Start at: 2018-09-08 04:51:30  
End at: 2018-09-08 04:52:00  
Local clock offset: -0.059 ms  
Remote clock offset: -1.646 ms

# Below is generated by plot.py at 2018-09-08 07:16:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.89 Mbit/s  
95th percentile per-packet one-way delay: 52.262 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 1.89 Mbit/s  
95th percentile per-packet one-way delay: 52.262 ms  
Loss rate: 0.37%

Run 3: Report of WebRTC media — Data Link

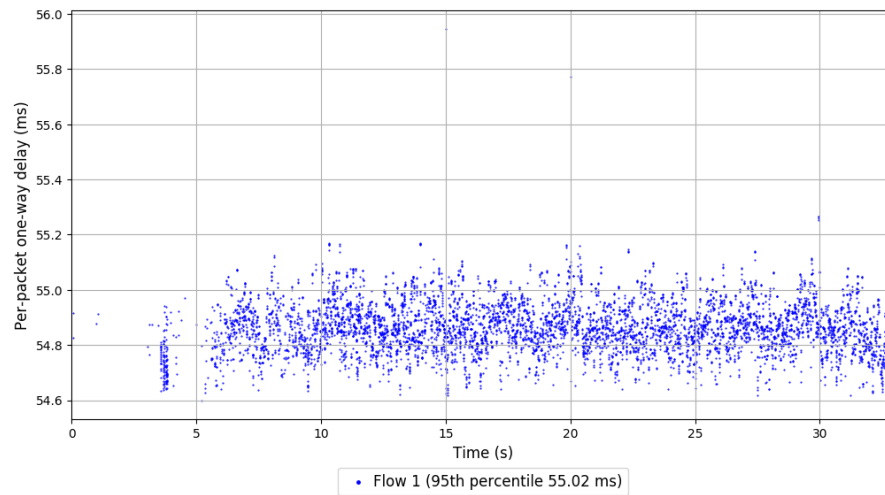
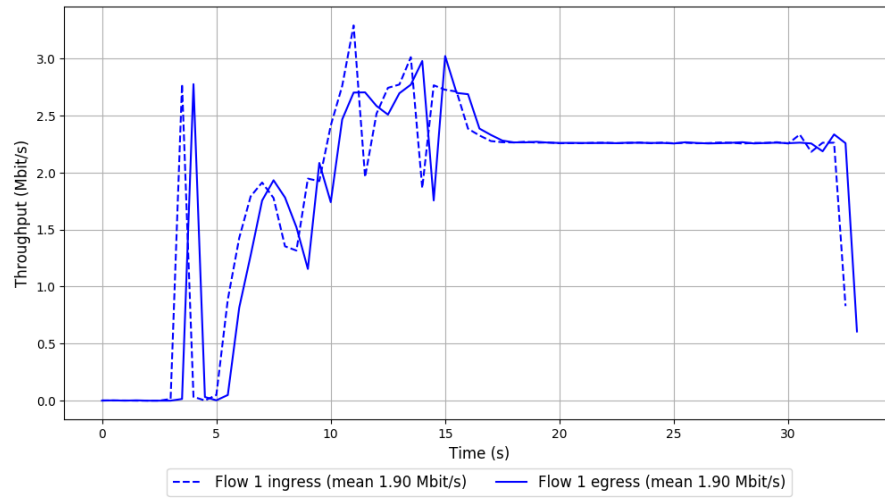


Run 4: Statistics of WebRTC media

Start at: 2018-09-08 05:17:37  
End at: 2018-09-08 05:18:07  
Local clock offset: -0.051 ms  
Remote clock offset: -1.387 ms

# Below is generated by plot.py at 2018-09-08 07:16:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.90 Mbit/s  
95th percentile per-packet one-way delay: 55.023 ms  
Loss rate: 0.36%  
-- Flow 1:  
Average throughput: 1.90 Mbit/s  
95th percentile per-packet one-way delay: 55.023 ms  
Loss rate: 0.36%

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



Run 5: Statistics of WebRTC media

Start at: 2018-09-08 05:43:38

End at: 2018-09-08 05:44:08

Local clock offset: 0.064 ms

Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2018-09-08 07:16:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 53.187 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 53.187 ms

Loss rate: 0.37%

# Run 5: Report of WebRTC media — Data Link

