

## Pantheon Report

Generated at 2018-12-12 09:26:52 (UTC).

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

Repeated the test of 19 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:

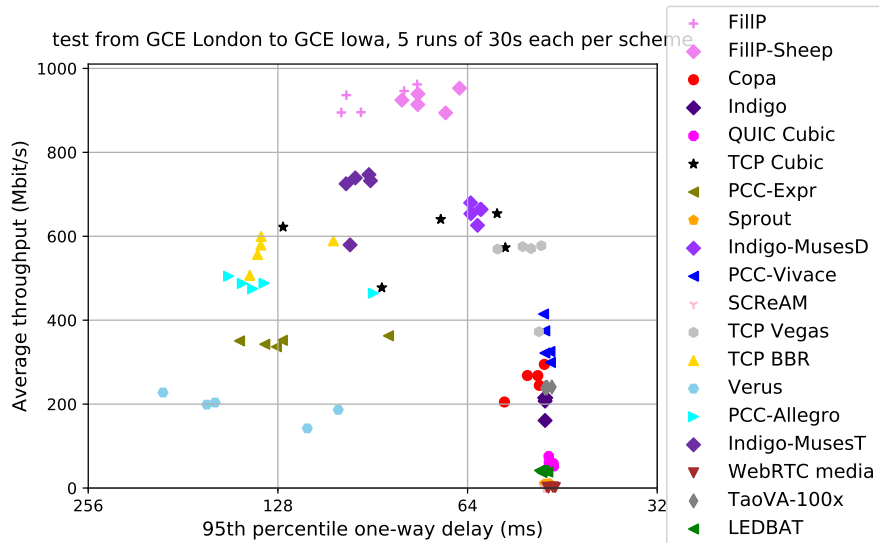
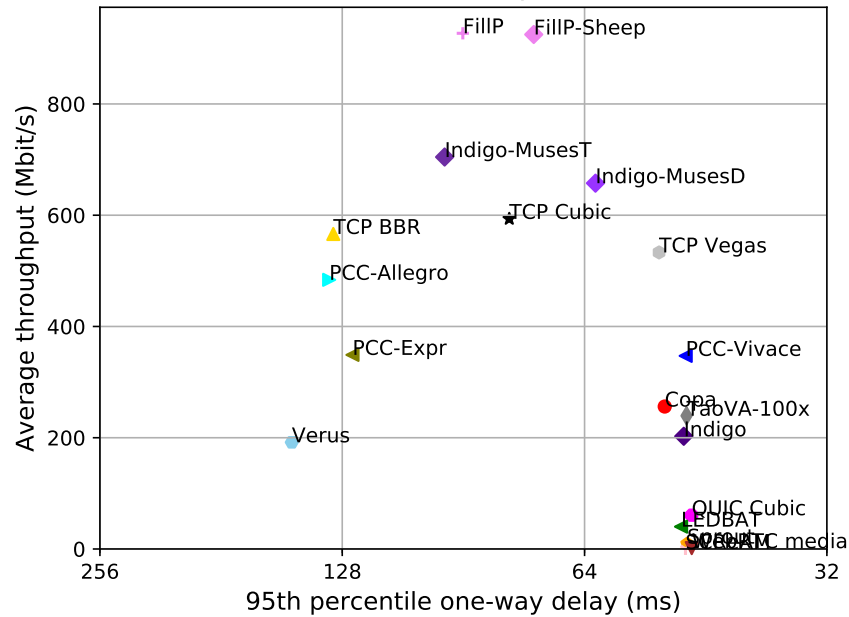
```
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfc58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
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 London to GCE Iowa, 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	566.31	131.32	0.43
Copa	5	256.08	50.89	0.00
TCP Cubic	5	593.42	79.39	0.05
FillP	5	927.01	90.66	0.30
FillP-Sheep	5	924.87	74.01	0.08
Indigo	5	202.59	48.19	0.00
Indigo-MusesD	5	657.58	62.04	0.01
Indigo-MusesT	5	704.59	95.51	0.08
LEDBAT	5	40.15	48.57	0.00
PCC-Allegro	5	483.88	132.86	0.71
PCC-Expr	5	348.92	124.32	1.66
QUIC Cubic	5	60.75	47.12	0.00
SCReAM	5	0.22	47.95	0.00
Sprout	5	9.62	47.73	0.00
TaoVA-100x	5	239.53	47.81	0.00
TCP Vegas	5	533.06	51.72	0.00
Verus	5	191.76	147.87	1.64
PCC-Vivace	5	347.15	47.93	0.05
WebRTC media	5	1.55	47.10	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-12-12 05:21:07

End at: 2018-12-12 05:21:37

Local clock offset: -0.04 ms

Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2018-12-12 07:43:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 589.28 Mbit/s

95th percentile per-packet one-way delay: 104.510 ms

Loss rate: 0.11%

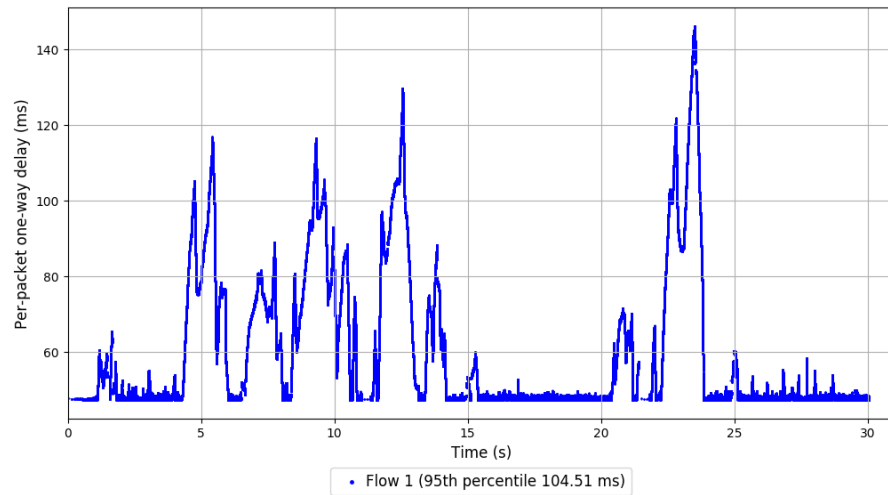
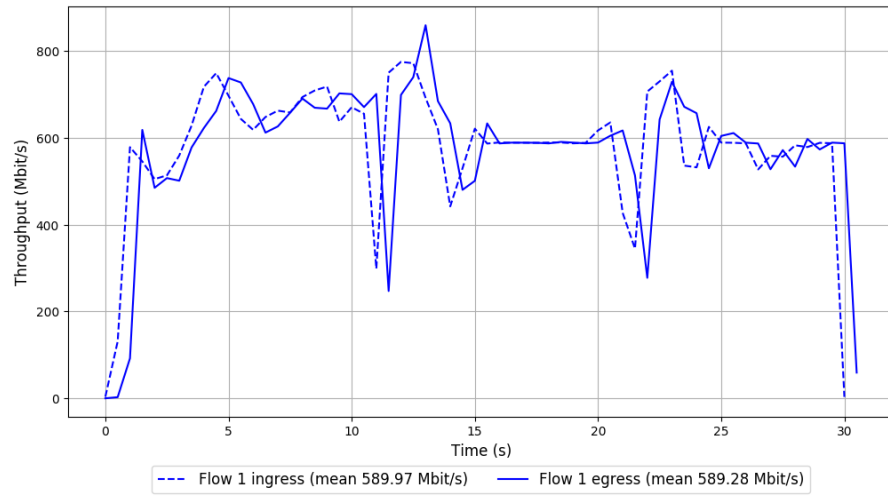
-- Flow 1:

Average throughput: 589.28 Mbit/s

95th percentile per-packet one-way delay: 104.510 ms

Loss rate: 0.11%

# Run 1: Report of TCP BBR — Data Link

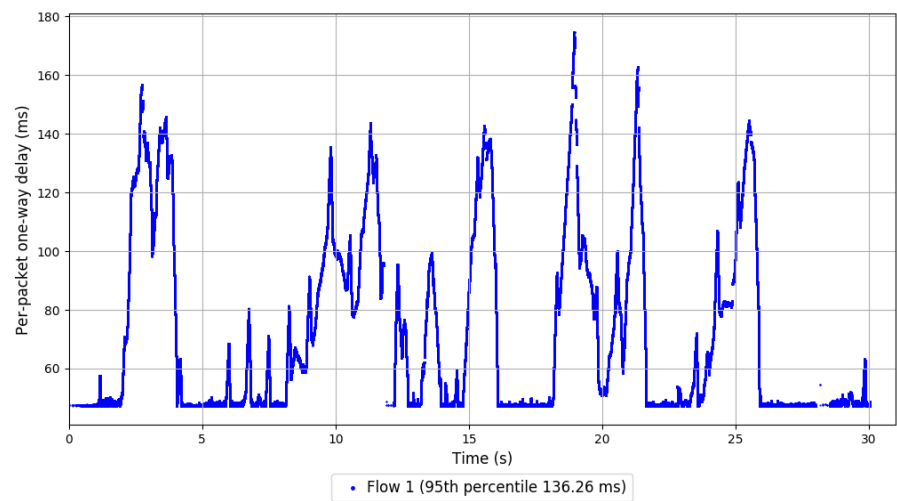
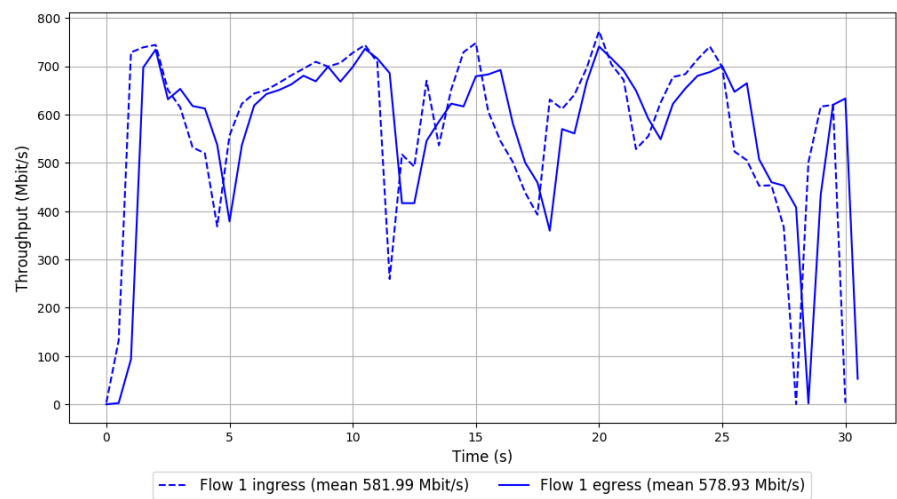


Run 2: Statistics of TCP BBR

Start at: 2018-12-12 05:49:15  
End at: 2018-12-12 05:49:45  
Local clock offset: -0.097 ms  
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2018-12-12 07:43:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 578.93 Mbit/s  
95th percentile per-packet one-way delay: 136.259 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 578.93 Mbit/s  
95th percentile per-packet one-way delay: 136.259 ms  
Loss rate: 0.52%

Run 2: Report of TCP BBR — Data Link





Run 3: Statistics of TCP BBR

Start at: 2018-12-12 06:18:37

End at: 2018-12-12 06:19:07

Local clock offset: -0.218 ms

Remote clock offset: 0.014 ms

# Below is generated by plot.py at 2018-12-12 07:43:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 599.64 Mbit/s

95th percentile per-packet one-way delay: 136.097 ms

Loss rate: 0.52%

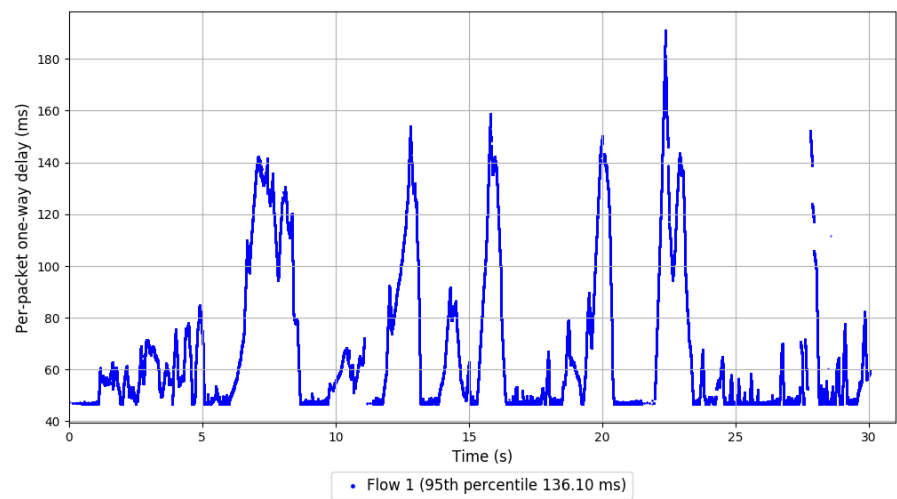
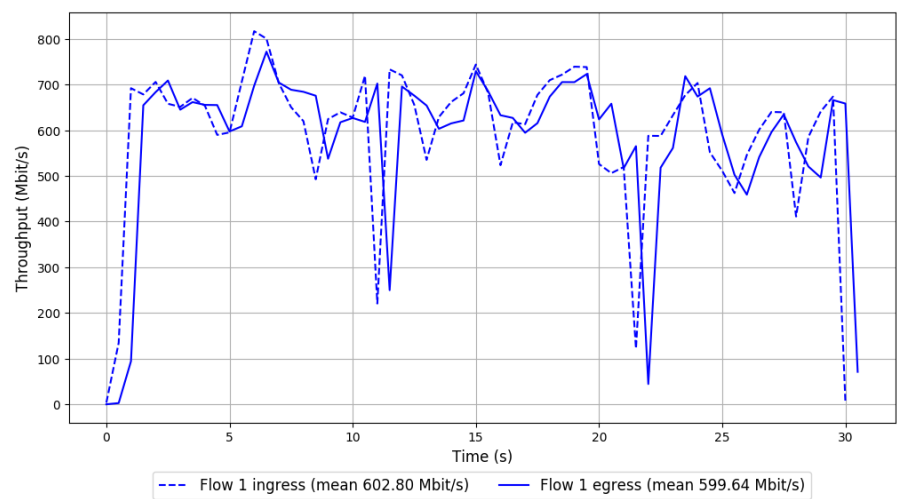
-- Flow 1:

Average throughput: 599.64 Mbit/s

95th percentile per-packet one-way delay: 136.097 ms

Loss rate: 0.52%

Run 3: Report of TCP BBR — Data Link

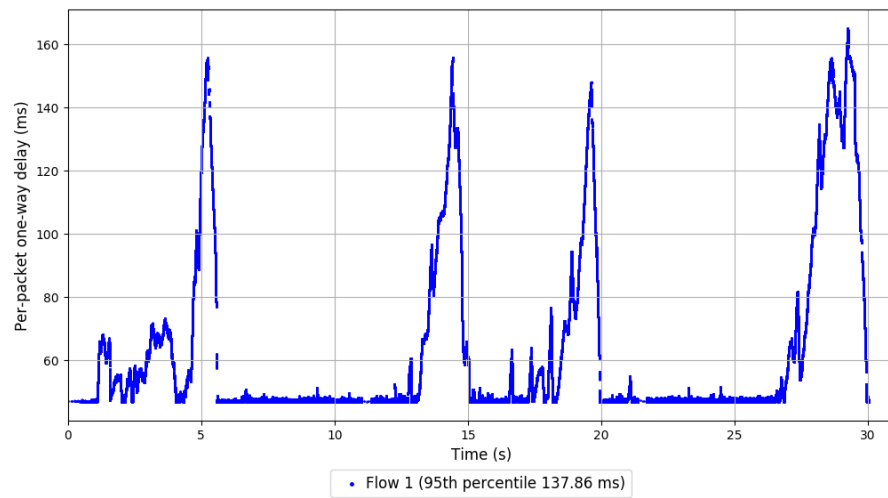
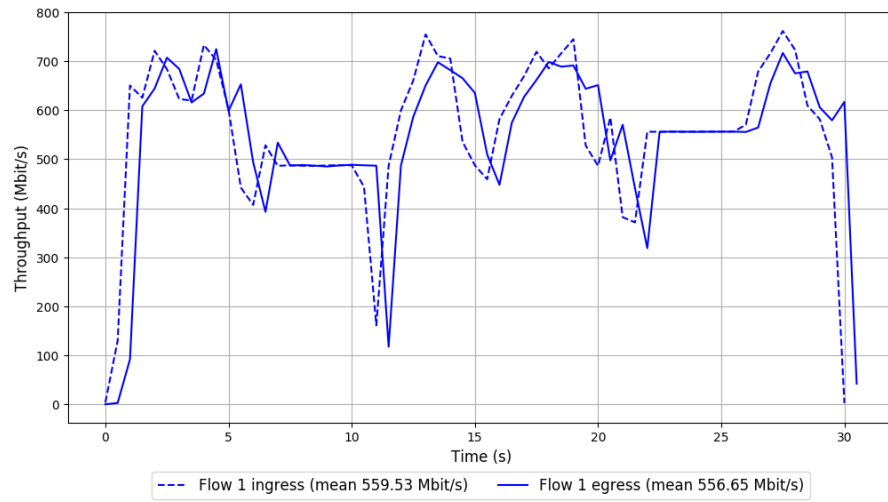


Run 4: Statistics of TCP BBR

Start at: 2018-12-12 06:47:01  
End at: 2018-12-12 06:47:31  
Local clock offset: 0.203 ms  
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-12-12 07:43:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 556.65 Mbit/s  
95th percentile per-packet one-way delay: 137.861 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 556.65 Mbit/s  
95th percentile per-packet one-way delay: 137.861 ms  
Loss rate: 0.52%

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

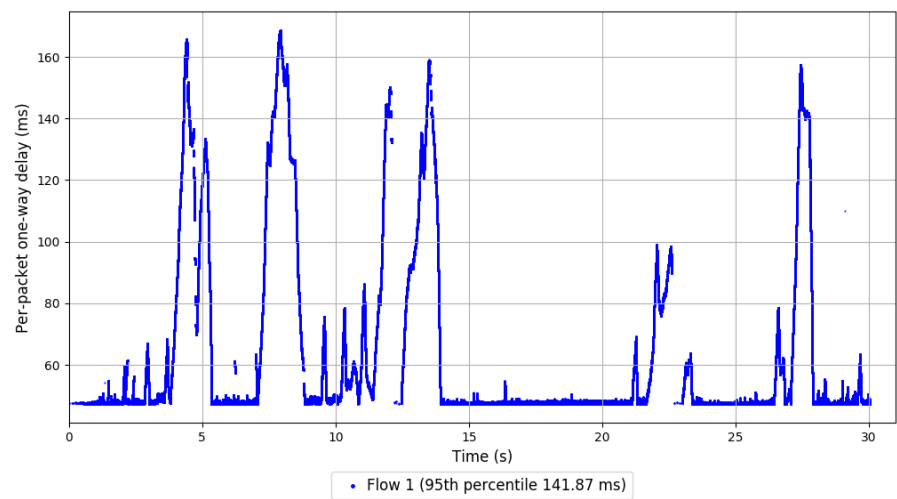
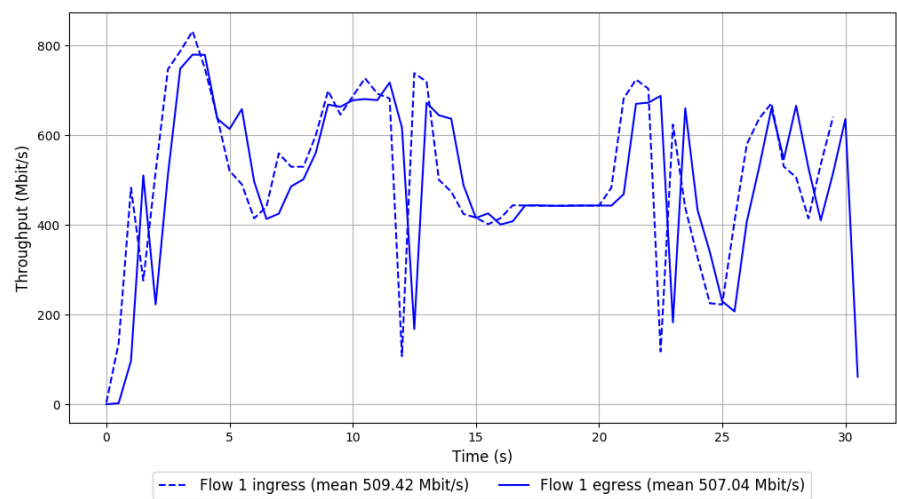


Run 5: Statistics of TCP BBR

Start at: 2018-12-12 07:15:32  
End at: 2018-12-12 07:16:02  
Local clock offset: -0.163 ms  
Remote clock offset: -0.158 ms

# Below is generated by plot.py at 2018-12-12 07:43:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 507.04 Mbit/s  
95th percentile per-packet one-way delay: 141.867 ms  
Loss rate: 0.47%  
-- Flow 1:  
Average throughput: 507.04 Mbit/s  
95th percentile per-packet one-way delay: 141.867 ms  
Loss rate: 0.47%

Run 5: Report of TCP BBR — Data Link

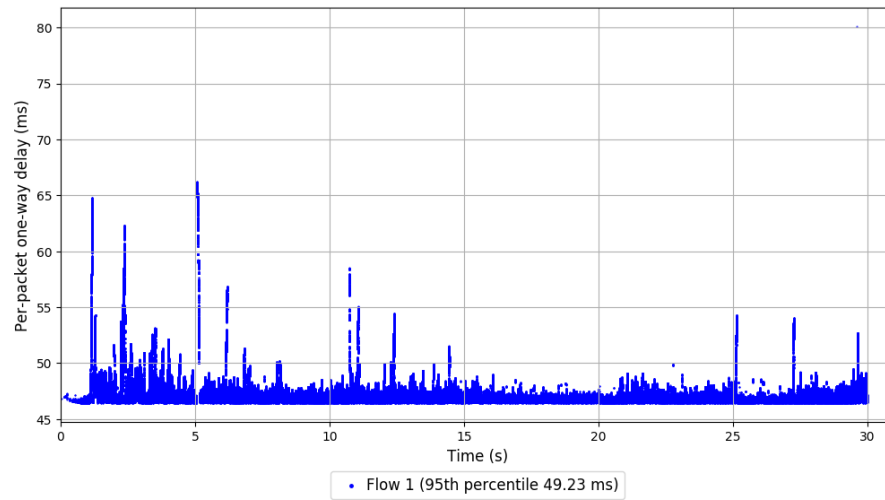
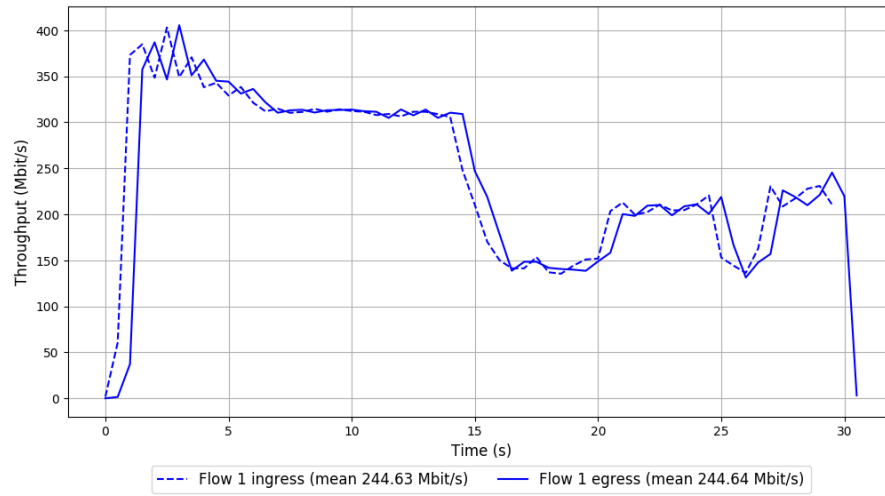


Run 1: Statistics of Copa

Start at: 2018-12-12 04:58:45  
End at: 2018-12-12 04:59:15  
Local clock offset: -0.007 ms  
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-12-12 07:43:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 244.64 Mbit/s  
95th percentile per-packet one-way delay: 49.235 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 244.64 Mbit/s  
95th percentile per-packet one-way delay: 49.235 ms  
Loss rate: 0.00%

## Run 1: Report of Copa — Data Link



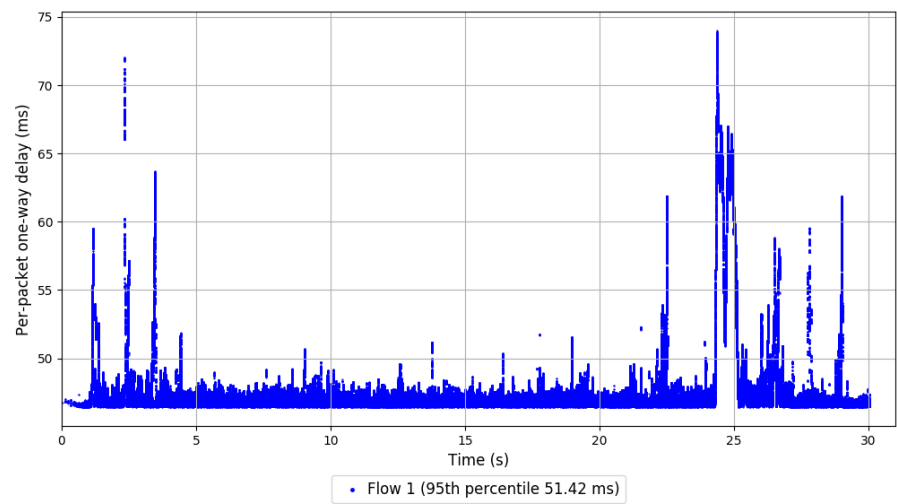
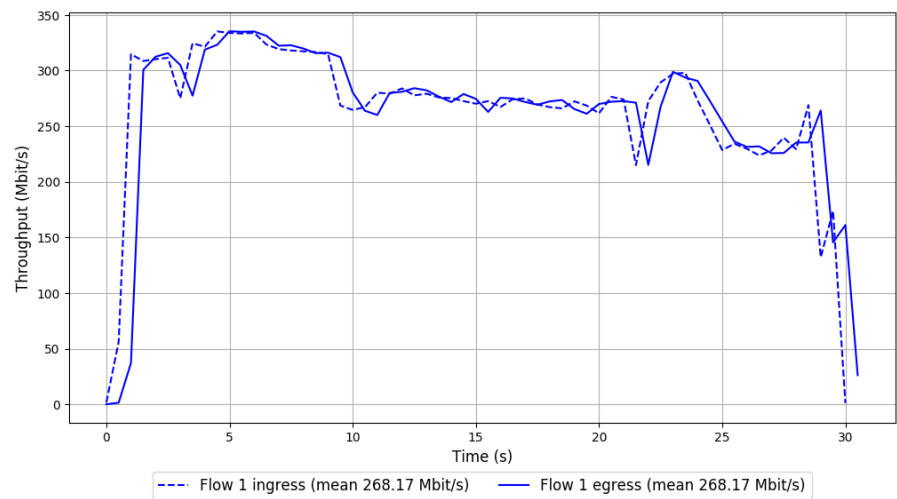


Run 2: Statistics of Copa

Start at: 2018-12-12 05:27:16  
End at: 2018-12-12 05:27:46  
Local clock offset: -0.076 ms  
Remote clock offset: -0.113 ms

# Below is generated by plot.py at 2018-12-12 07:43:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 268.17 Mbit/s  
95th percentile per-packet one-way delay: 51.423 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 268.17 Mbit/s  
95th percentile per-packet one-way delay: 51.423 ms  
Loss rate: 0.00%

Run 2: Report of Copa — Data Link

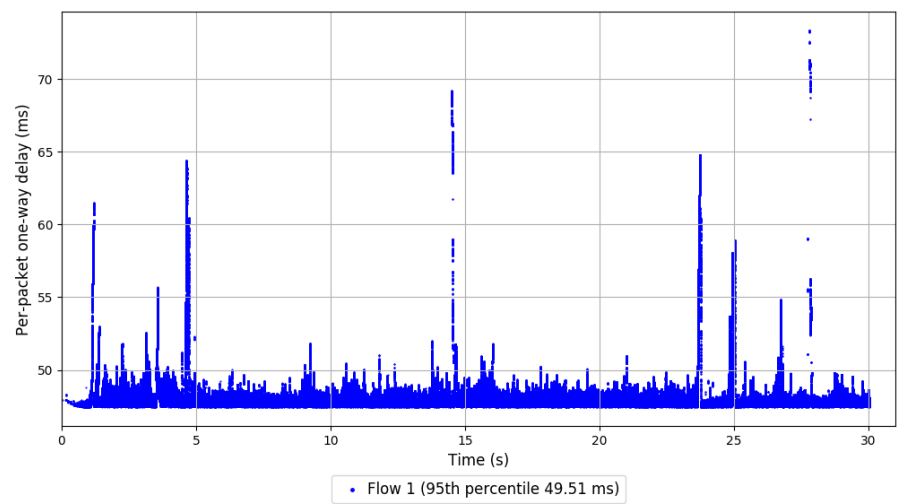
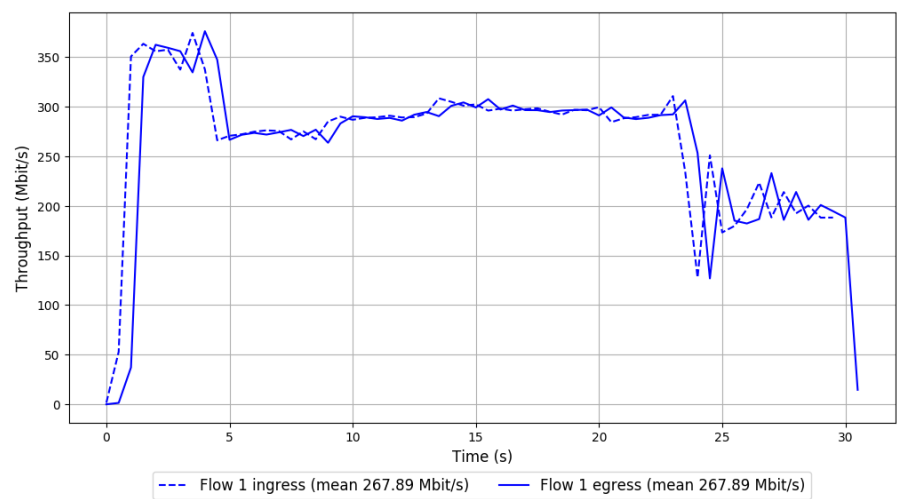


Run 3: Statistics of Copa

Start at: 2018-12-12 05:55:50  
End at: 2018-12-12 05:56:21  
Local clock offset: -0.434 ms  
Remote clock offset: -0.049 ms

# Below is generated by plot.py at 2018-12-12 07:43:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 267.89 Mbit/s  
95th percentile per-packet one-way delay: 49.509 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 267.89 Mbit/s  
95th percentile per-packet one-way delay: 49.509 ms  
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-12-12 06:24:38

End at: 2018-12-12 06:25:08

Local clock offset: -0.204 ms

Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-12-12 07:46:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 205.06 Mbit/s

95th percentile per-packet one-way delay: 55.929 ms

Loss rate: 0.00%

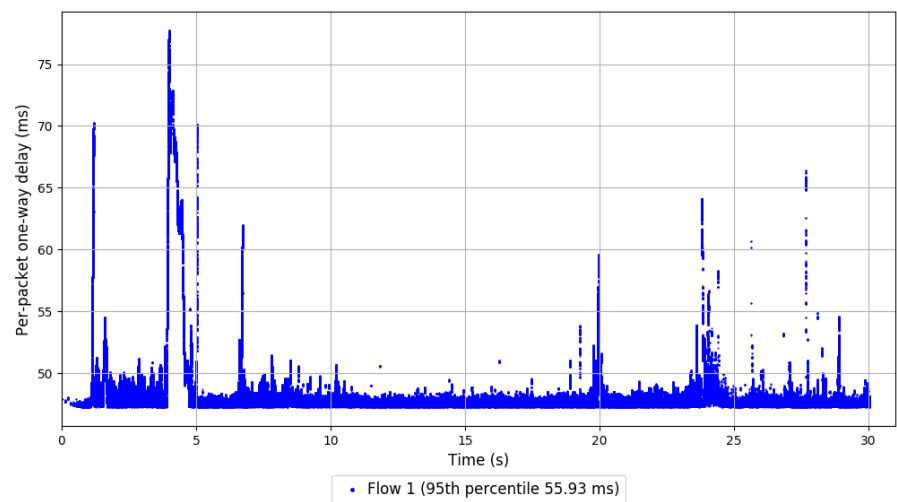
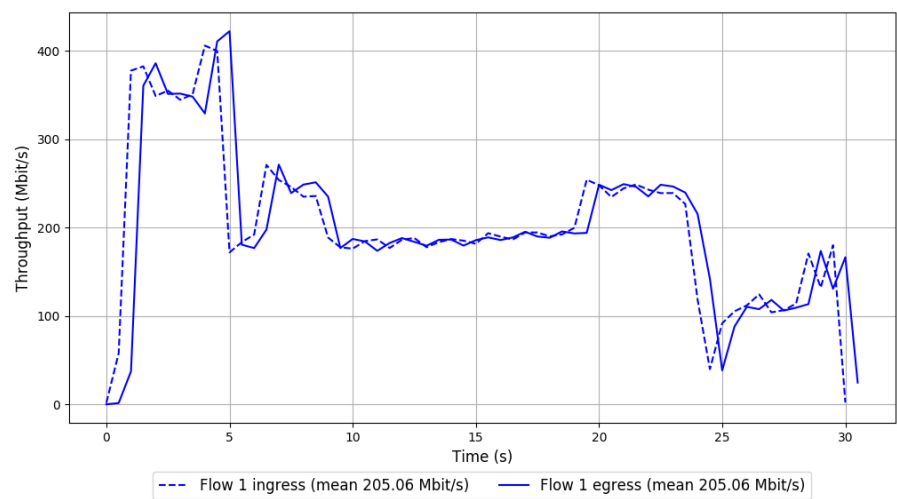
-- Flow 1:

Average throughput: 205.06 Mbit/s

95th percentile per-packet one-way delay: 55.929 ms

Loss rate: 0.00%

Run 4: Report of Copa — Data Link

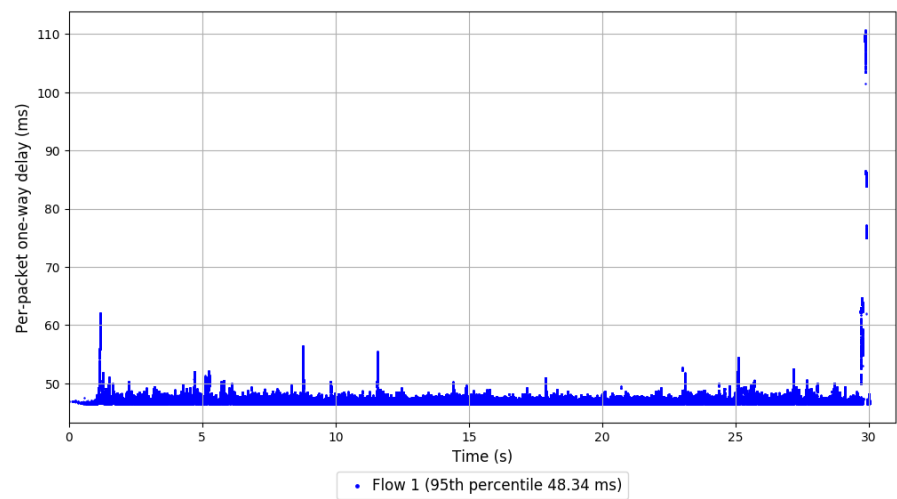
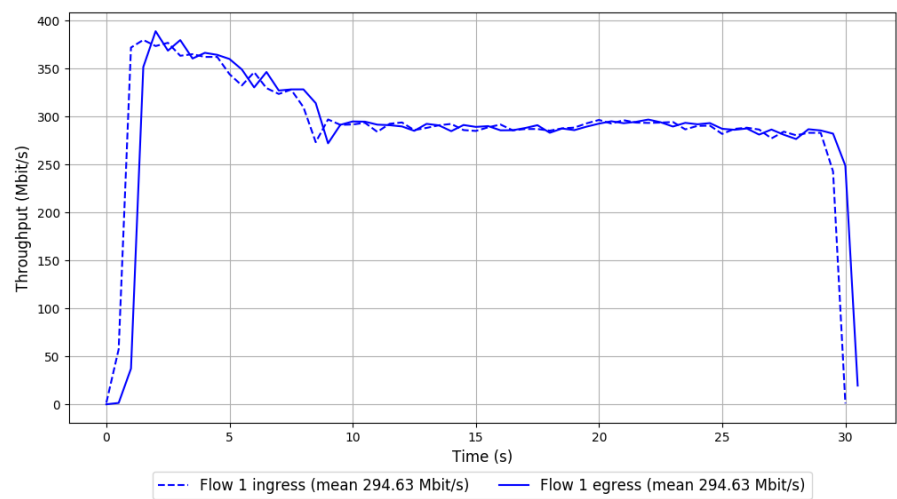


Run 5: Statistics of Copa

Start at: 2018-12-12 06:53:18  
End at: 2018-12-12 06:53:48  
Local clock offset: -0.184 ms  
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2018-12-12 07:52:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 294.63 Mbit/s  
95th percentile per-packet one-way delay: 48.340 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 294.63 Mbit/s  
95th percentile per-packet one-way delay: 48.340 ms  
Loss rate: 0.00%

Run 5: Report of Copa — Data Link



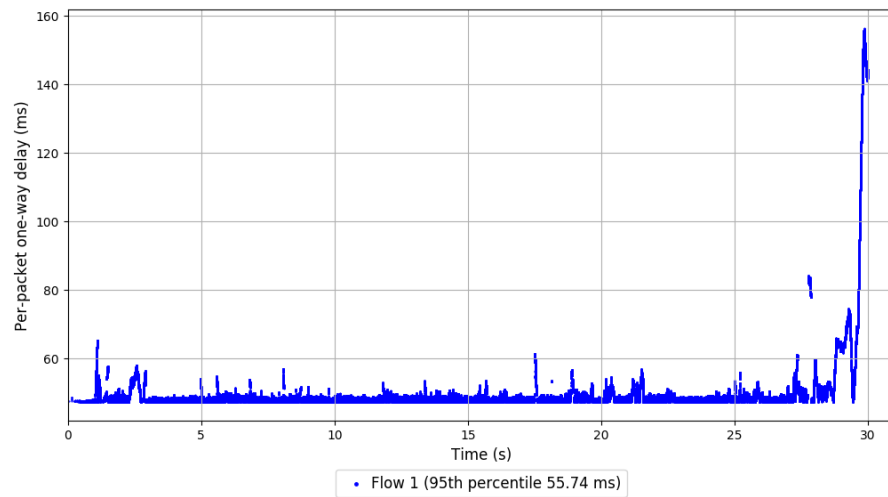
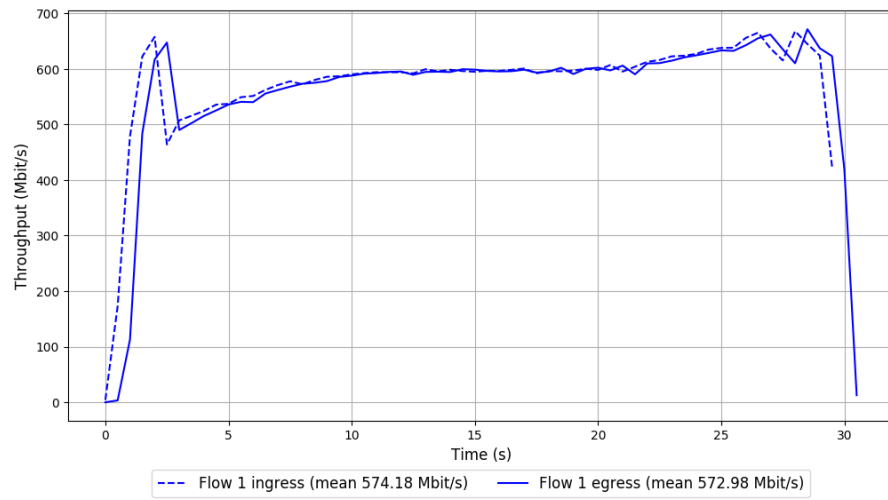


Run 1: Statistics of TCP Cubic

Start at: 2018-12-12 05:11:09  
End at: 2018-12-12 05:11:39  
Local clock offset: -0.072 ms  
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2018-12-12 07:53:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 572.98 Mbit/s  
95th percentile per-packet one-way delay: 55.739 ms  
Loss rate: 0.21%  
-- Flow 1:  
Average throughput: 572.98 Mbit/s  
95th percentile per-packet one-way delay: 55.739 ms  
Loss rate: 0.21%

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

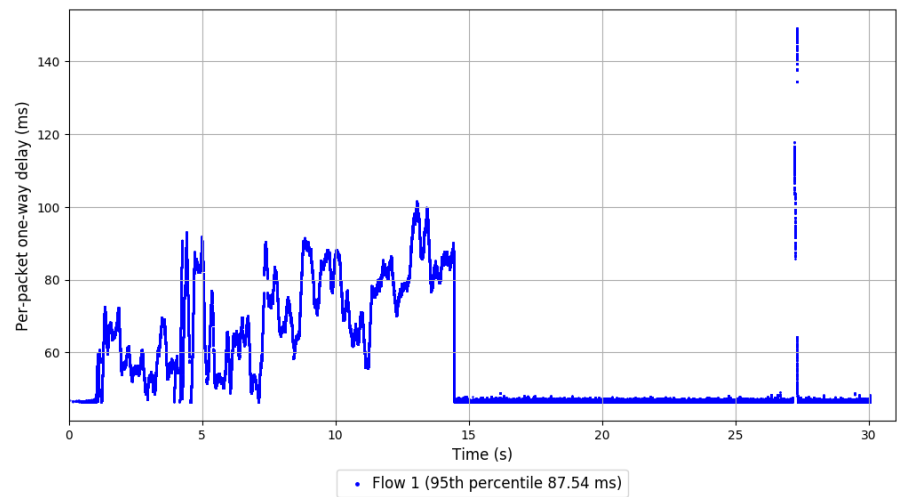
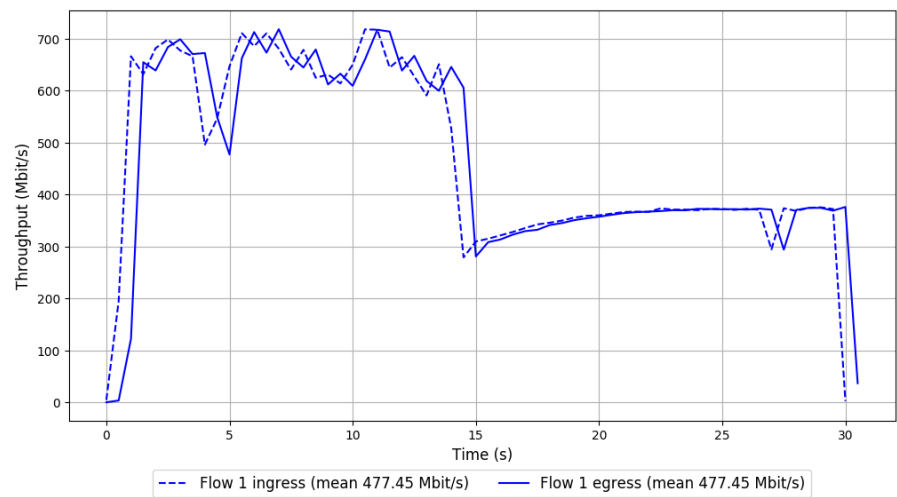


Run 2: Statistics of TCP Cubic

Start at: 2018-12-12 05:39:11  
End at: 2018-12-12 05:39:41  
Local clock offset: -0.052 ms  
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2018-12-12 07:53:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 477.45 Mbit/s  
95th percentile per-packet one-way delay: 87.541 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 477.45 Mbit/s  
95th percentile per-packet one-way delay: 87.541 ms  
Loss rate: 0.00%

Run 2: Report of TCP Cubic — Data Link

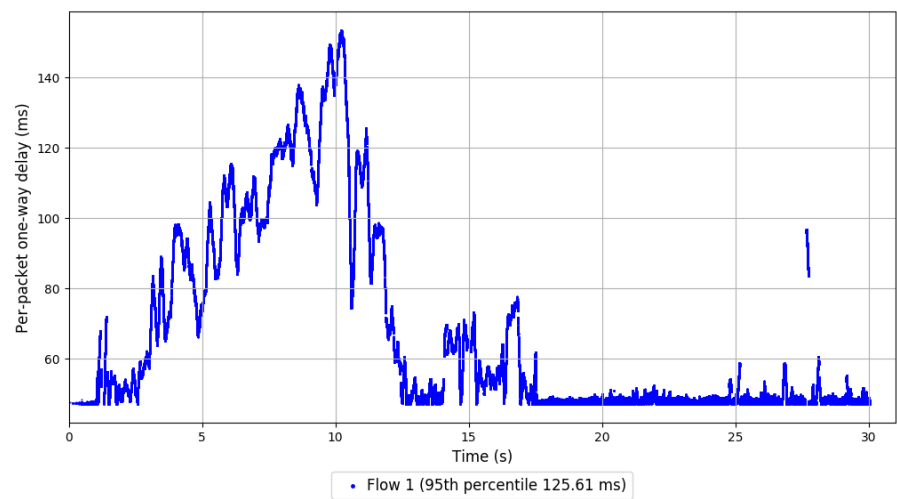
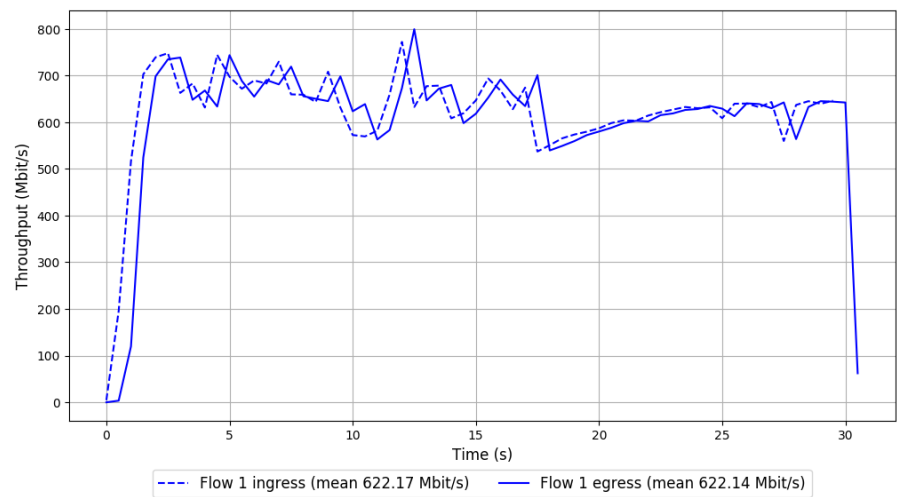


Run 3: Statistics of TCP Cubic

Start at: 2018-12-12 06:08:19  
End at: 2018-12-12 06:08:49  
Local clock offset: -0.071 ms  
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2018-12-12 07:54:26  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 622.14 Mbit/s  
95th percentile per-packet one-way delay: 125.607 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 622.14 Mbit/s  
95th percentile per-packet one-way delay: 125.607 ms  
Loss rate: 0.00%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-12-12 06:36:37

End at: 2018-12-12 06:37:07

Local clock offset: -0.222 ms

Remote clock offset: 0.032 ms

# Below is generated by plot.py at 2018-12-12 07:54:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 640.43 Mbit/s

95th percentile per-packet one-way delay: 70.595 ms

Loss rate: 0.05%

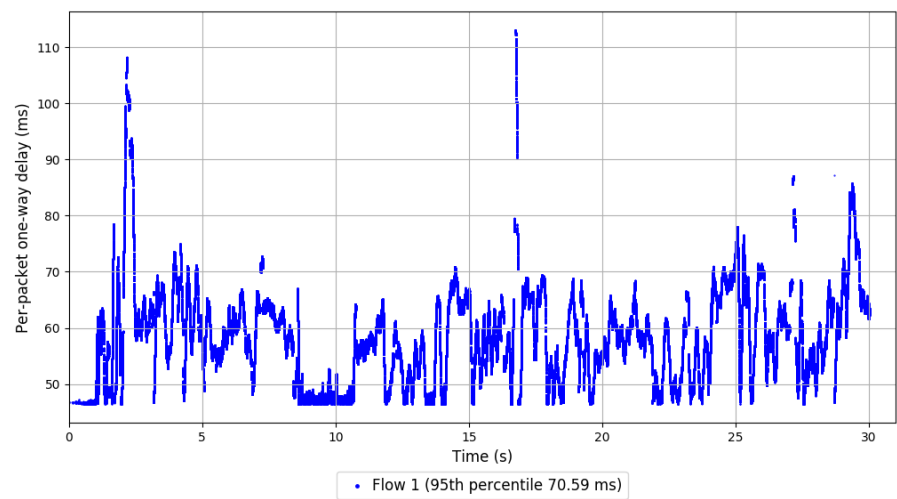
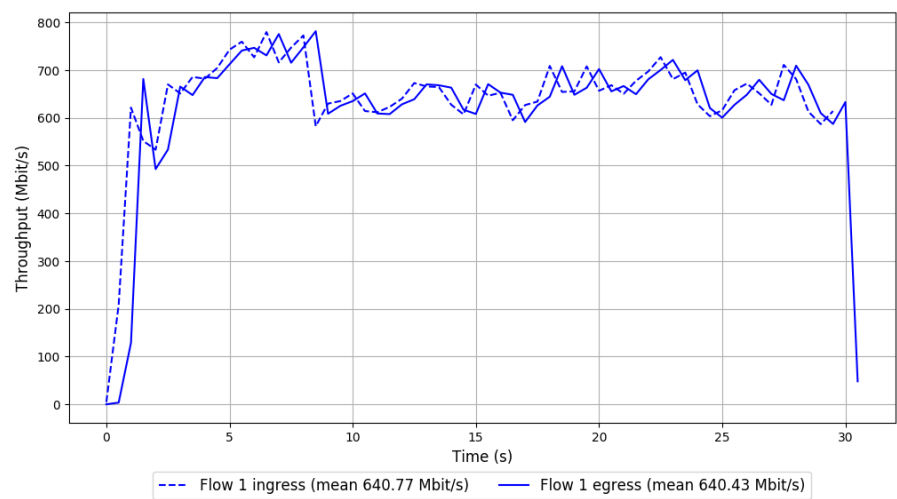
-- Flow 1:

Average throughput: 640.43 Mbit/s

95th percentile per-packet one-way delay: 70.595 ms

Loss rate: 0.05%

Run 4: Report of TCP Cubic — Data Link



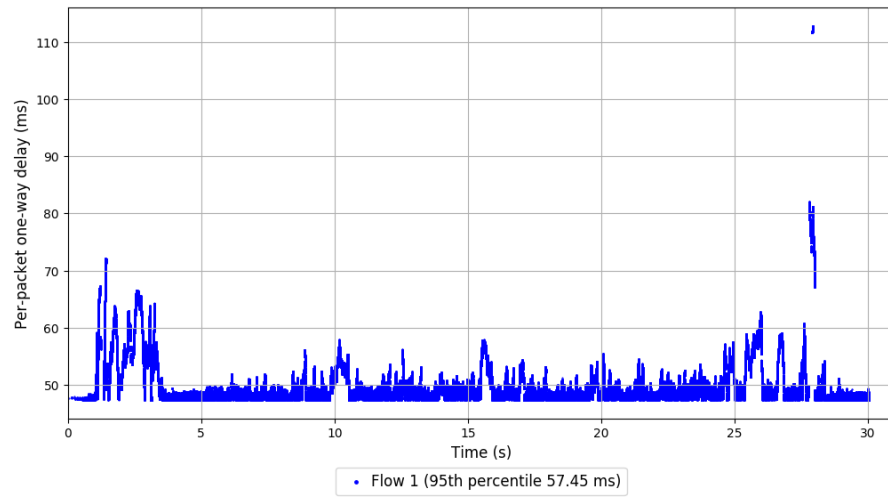
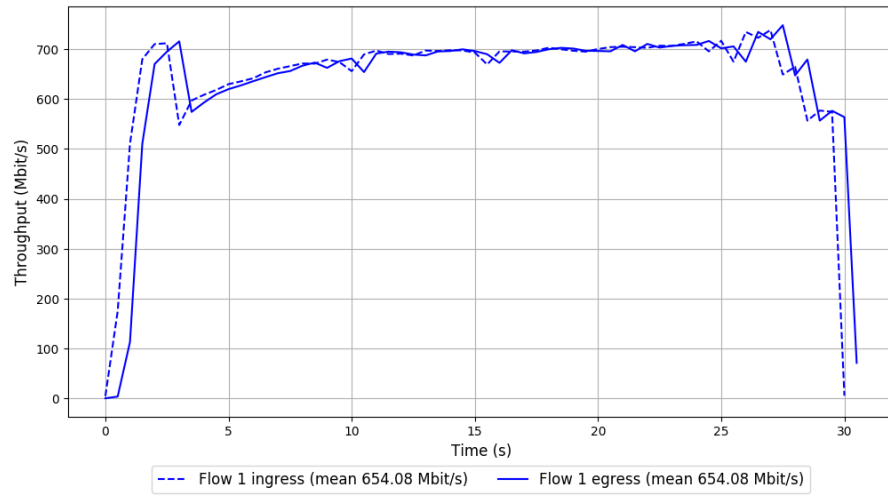


Run 5: Statistics of TCP Cubic

Start at: 2018-12-12 07:05:36  
End at: 2018-12-12 07:06:06  
Local clock offset: -0.109 ms  
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2018-12-12 07:55:24  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 654.08 Mbit/s  
95th percentile per-packet one-way delay: 57.448 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 654.08 Mbit/s  
95th percentile per-packet one-way delay: 57.448 ms  
Loss rate: 0.00%

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

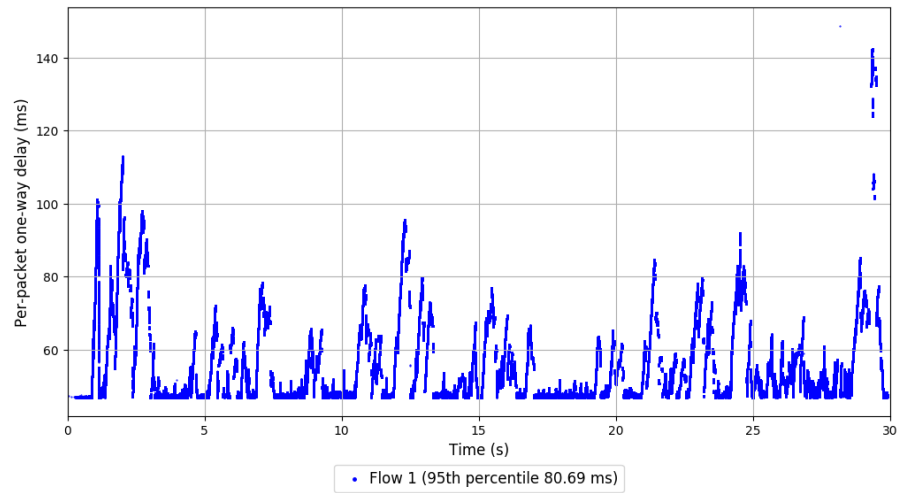
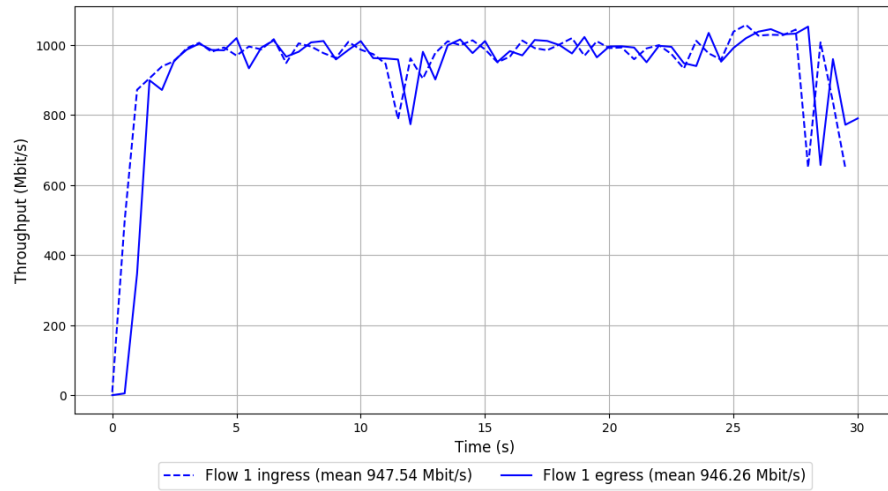


Run 1: Statistics of FillP

Start at: 2018-12-12 05:00:15  
End at: 2018-12-12 05:00:45  
Local clock offset: 0.328 ms  
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-12-12 08:03:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 946.26 Mbit/s  
95th percentile per-packet one-way delay: 80.691 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 946.26 Mbit/s  
95th percentile per-packet one-way delay: 80.691 ms  
Loss rate: 0.13%

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

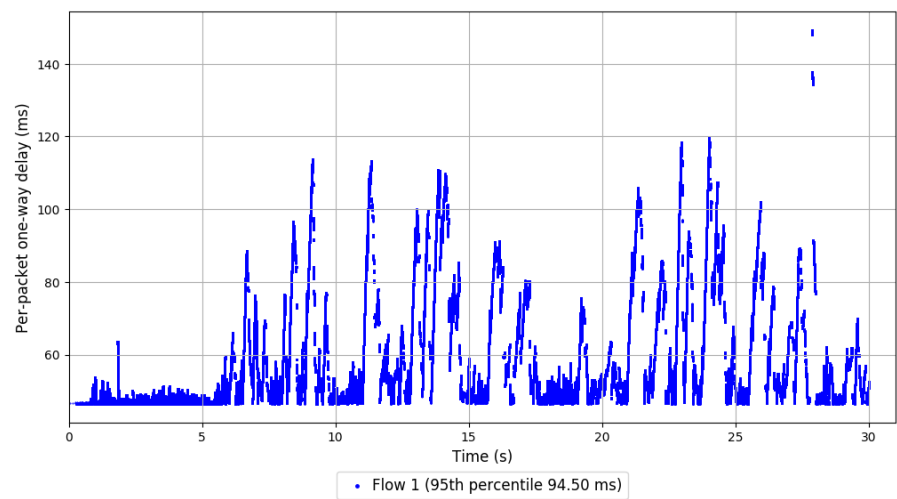
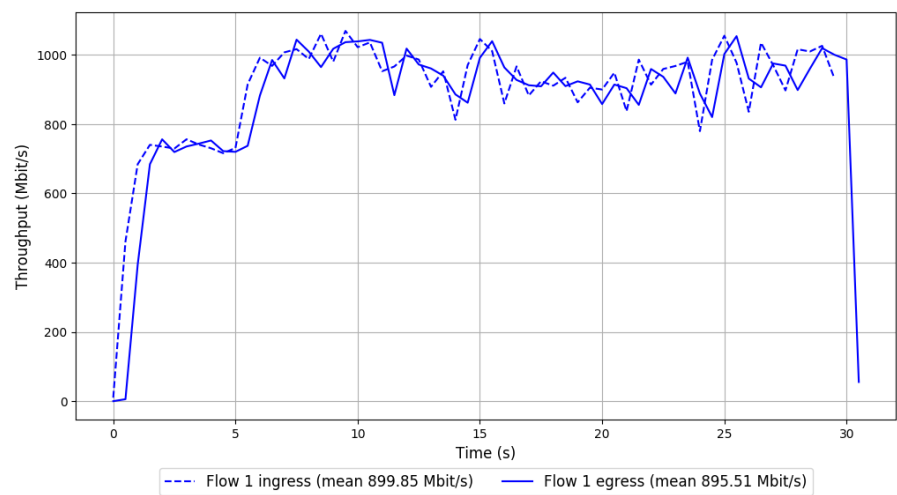


Run 2: Statistics of FillP

Start at: 2018-12-12 05:28:48  
End at: 2018-12-12 05:29:18  
Local clock offset: -0.078 ms  
Remote clock offset: -0.143 ms

# Below is generated by plot.py at 2018-12-12 08:09:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 895.51 Mbit/s  
95th percentile per-packet one-way delay: 94.503 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 895.51 Mbit/s  
95th percentile per-packet one-way delay: 94.503 ms  
Loss rate: 0.48%

Run 2: Report of FillP — Data Link

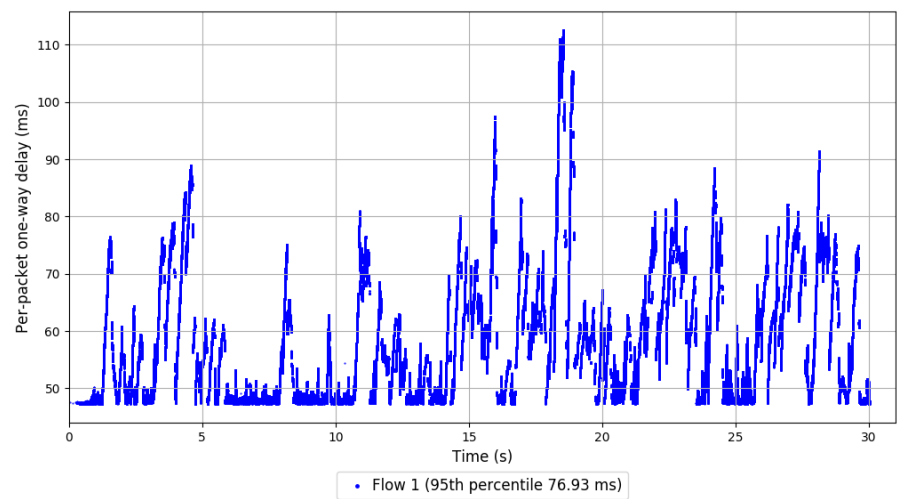
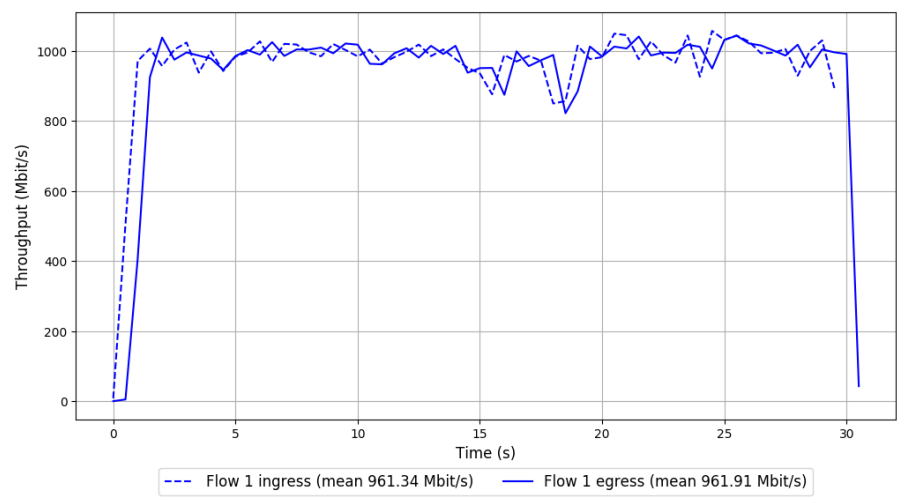


Run 3: Statistics of FillP

Start at: 2018-12-12 05:57:31  
End at: 2018-12-12 05:58:01  
Local clock offset: -0.053 ms  
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2018-12-12 08:15:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 961.91 Mbit/s  
95th percentile per-packet one-way delay: 76.932 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 961.91 Mbit/s  
95th percentile per-packet one-way delay: 76.932 ms  
Loss rate: 0.00%

Run 3: Report of FillP — Data Link





Run 4: Statistics of FillP

Start at: 2018-12-12 06:26:05

End at: 2018-12-12 06:26:35

Local clock offset: -0.187 ms

Remote clock offset: 0.022 ms

# Below is generated by plot.py at 2018-12-12 08:15:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 895.01 Mbit/s

95th percentile per-packet one-way delay: 101.509 ms

Loss rate: 0.68%

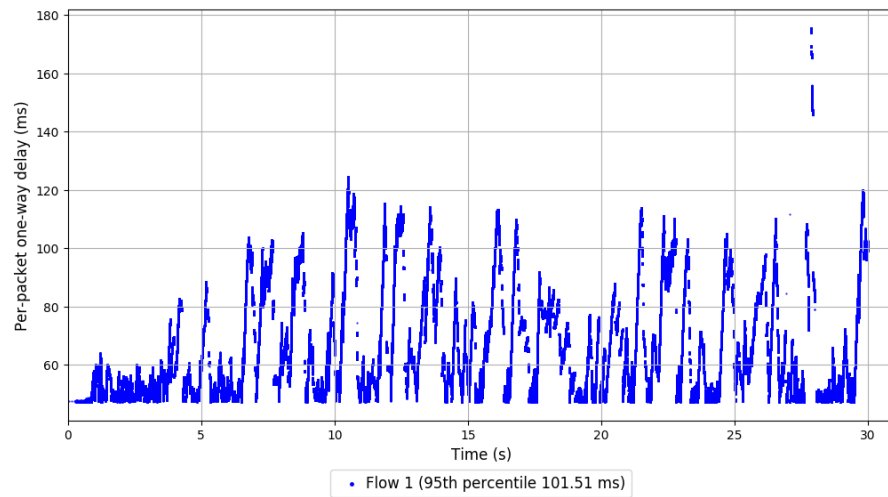
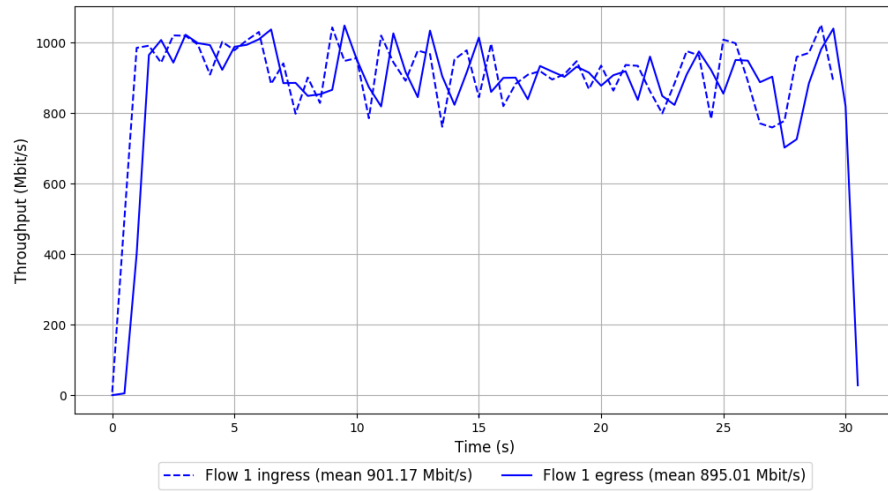
-- Flow 1:

Average throughput: 895.01 Mbit/s

95th percentile per-packet one-way delay: 101.509 ms

Loss rate: 0.68%

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

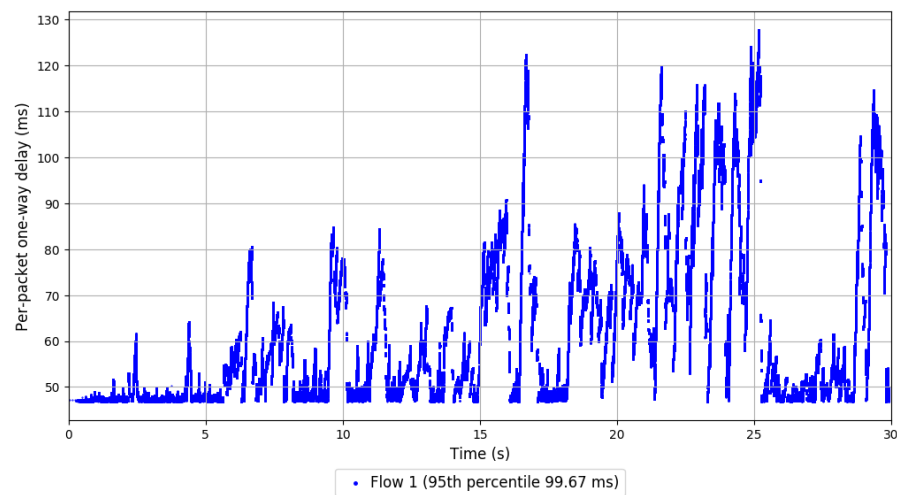
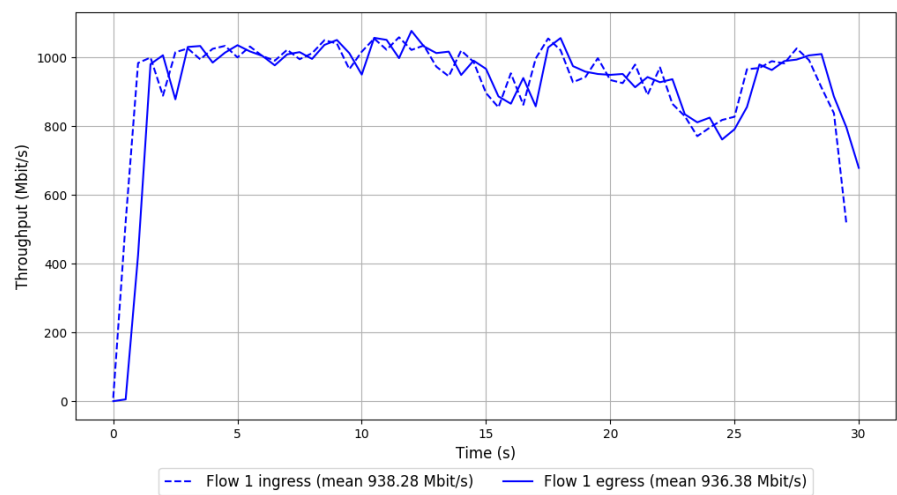


Run 5: Statistics of FillP

Start at: 2018-12-12 06:54:56  
End at: 2018-12-12 06:55:26  
Local clock offset: 0.241 ms  
Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2018-12-12 08:15:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 936.38 Mbit/s  
95th percentile per-packet one-way delay: 99.668 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 936.38 Mbit/s  
95th percentile per-packet one-way delay: 99.668 ms  
Loss rate: 0.20%

Run 5: Report of FillP — Data Link

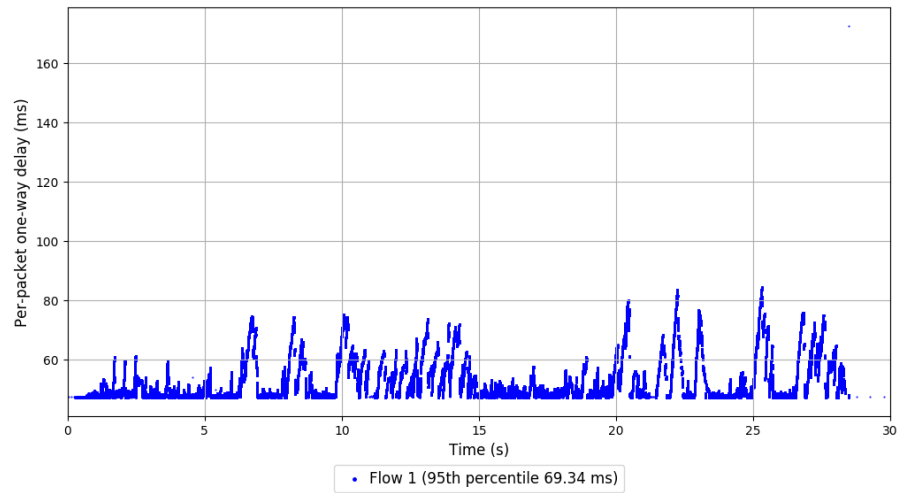
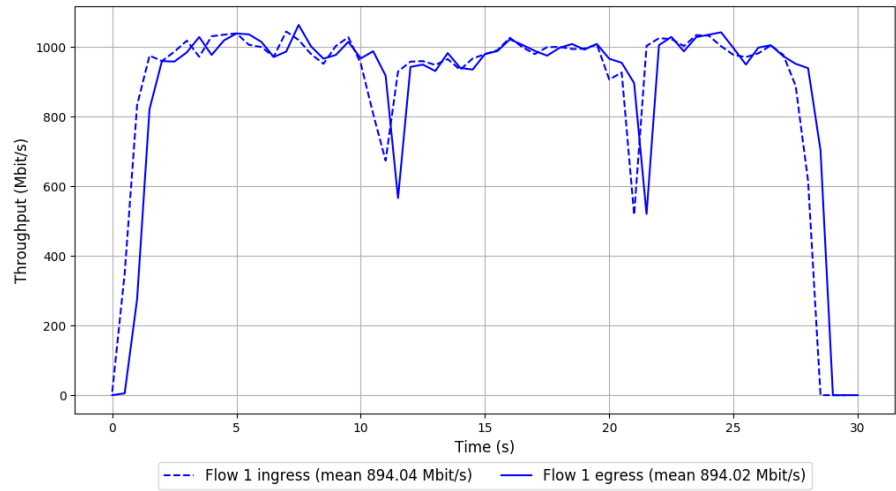


Run 1: Statistics of FillP-Sheep

Start at: 2018-12-12 05:15:28  
End at: 2018-12-12 05:15:58  
Local clock offset: -0.047 ms  
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-12-12 08:16:24  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 894.02 Mbit/s  
95th percentile per-packet one-way delay: 69.345 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 894.02 Mbit/s  
95th percentile per-packet one-way delay: 69.345 ms  
Loss rate: 0.00%

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

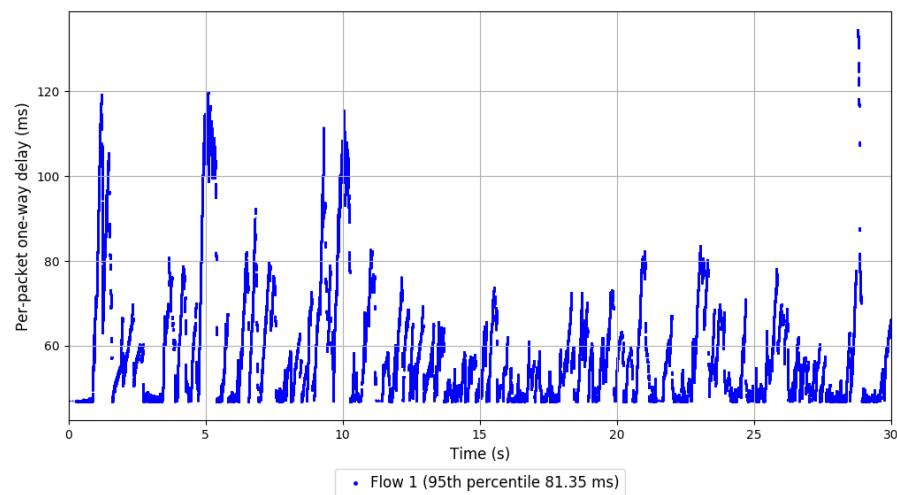
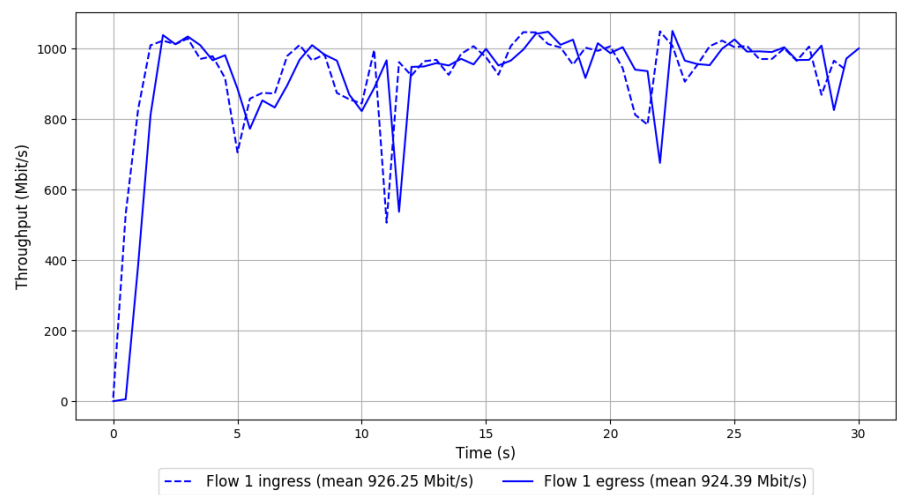


Run 2: Statistics of FillP-Sheep

Start at: 2018-12-12 05:43:31  
End at: 2018-12-12 05:44:01  
Local clock offset: 0.278 ms  
Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2018-12-12 08:17:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 924.39 Mbit/s  
95th percentile per-packet one-way delay: 81.349 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 924.39 Mbit/s  
95th percentile per-packet one-way delay: 81.349 ms  
Loss rate: 0.20%

Run 2: Report of FillP-Sheep — Data Link





Run 3: Statistics of FillP-Sheep

Start at: 2018-12-12 06:12:56

End at: 2018-12-12 06:13:26

Local clock offset: -0.164 ms

Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-12-12 08:18:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 952.93 Mbit/s

95th percentile per-packet one-way delay: 65.901 ms

Loss rate: 0.00%

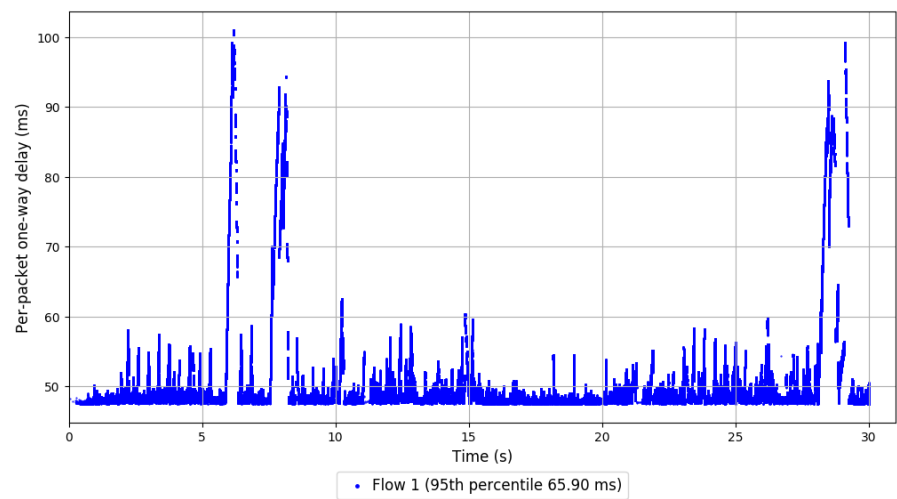
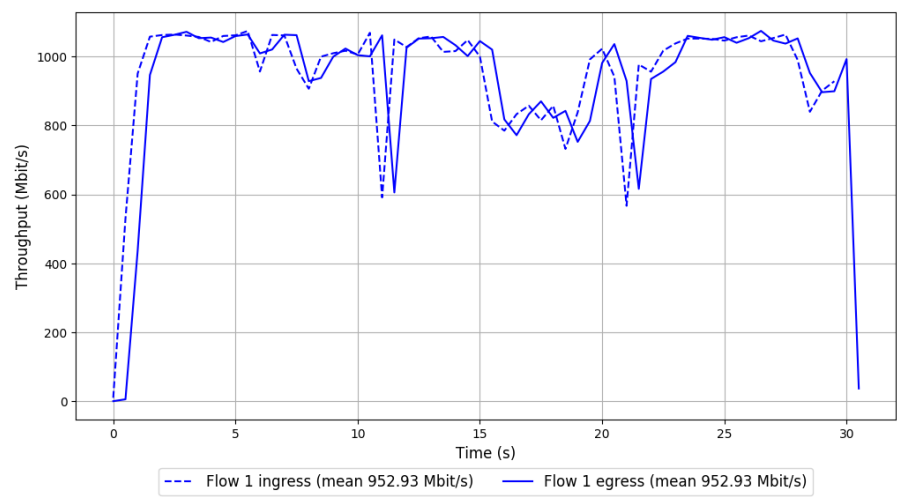
-- Flow 1:

Average throughput: 952.93 Mbit/s

95th percentile per-packet one-way delay: 65.901 ms

Loss rate: 0.00%

Run 3: Report of FillP-Sheep — Data Link

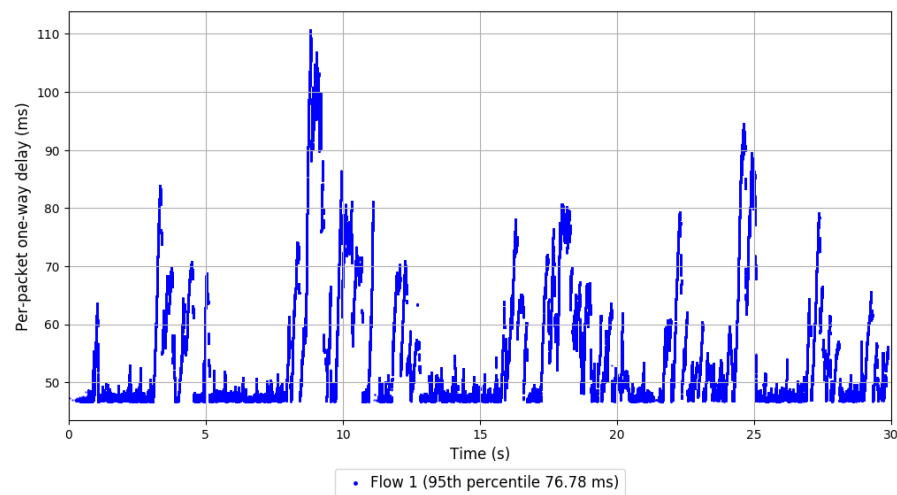
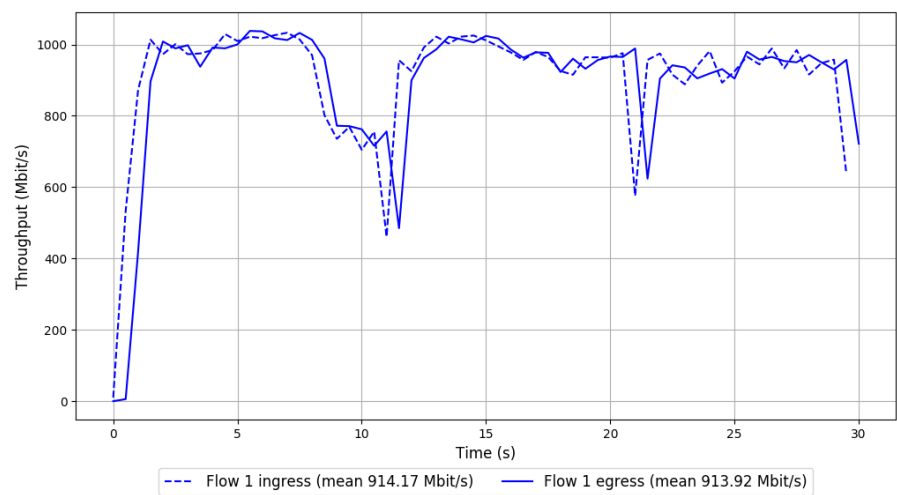


Run 4: Statistics of FillP-Sheep

Start at: 2018-12-12 06:41:13  
End at: 2018-12-12 06:41:43  
Local clock offset: -0.245 ms  
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2018-12-12 08:27:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 913.92 Mbit/s  
95th percentile per-packet one-way delay: 76.776 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 913.92 Mbit/s  
95th percentile per-packet one-way delay: 76.776 ms  
Loss rate: 0.02%

Run 4: Report of FillP-Sheep — Data Link

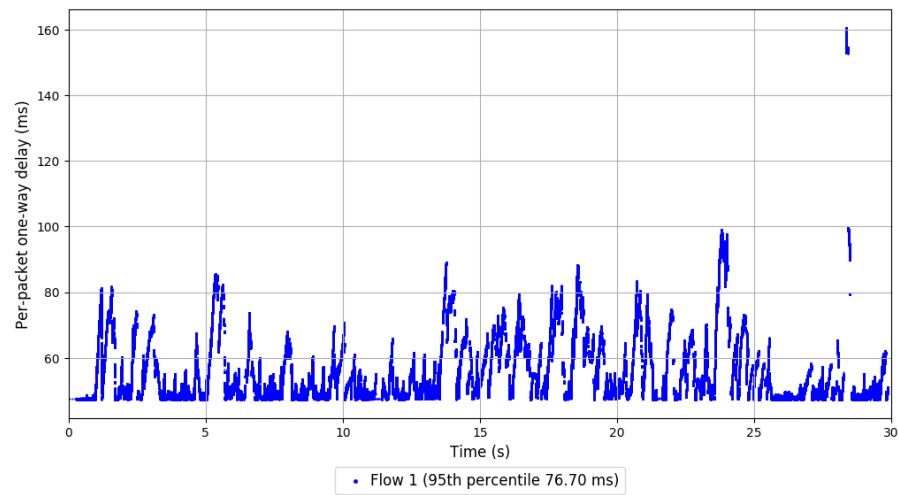
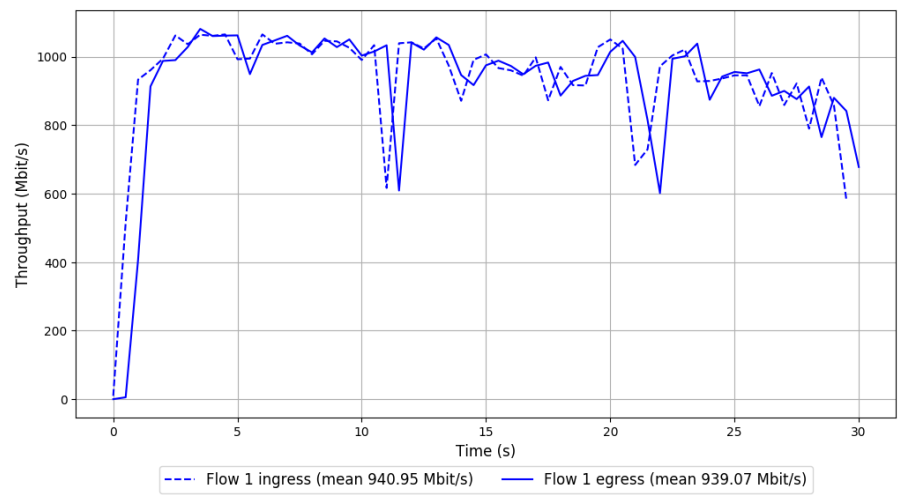


Run 5: Statistics of FillP-Sheep

Start at: 2018-12-12 07:09:52  
End at: 2018-12-12 07:10:22  
Local clock offset: -0.122 ms  
Remote clock offset: -0.177 ms

# Below is generated by plot.py at 2018-12-12 08:32:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 939.07 Mbit/s  
95th percentile per-packet one-way delay: 76.702 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 939.07 Mbit/s  
95th percentile per-packet one-way delay: 76.702 ms  
Loss rate: 0.20%

Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2018-12-12 04:57:22

End at: 2018-12-12 04:57:52

Local clock offset: 0.037 ms

Remote clock offset: -0.055 ms

# Below is generated by plot.py at 2018-12-12 08:32:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 160.99 Mbit/s

95th percentile per-packet one-way delay: 48.207 ms

Loss rate: 0.01%

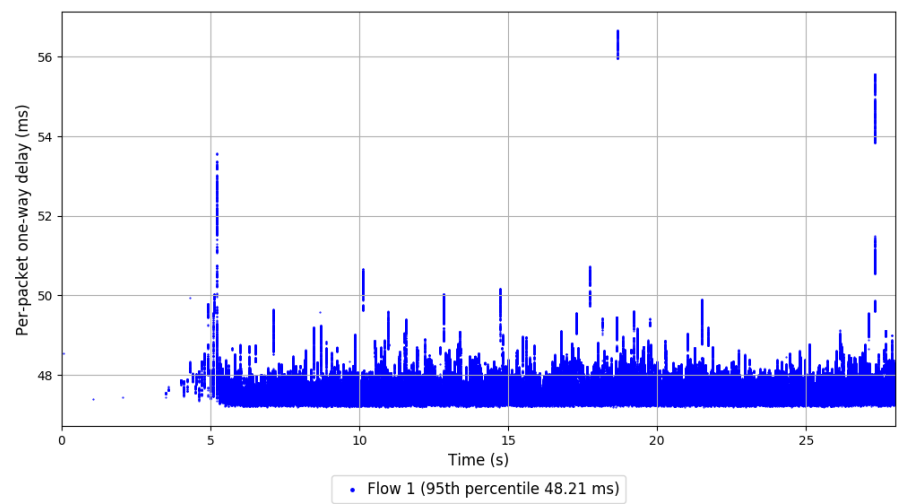
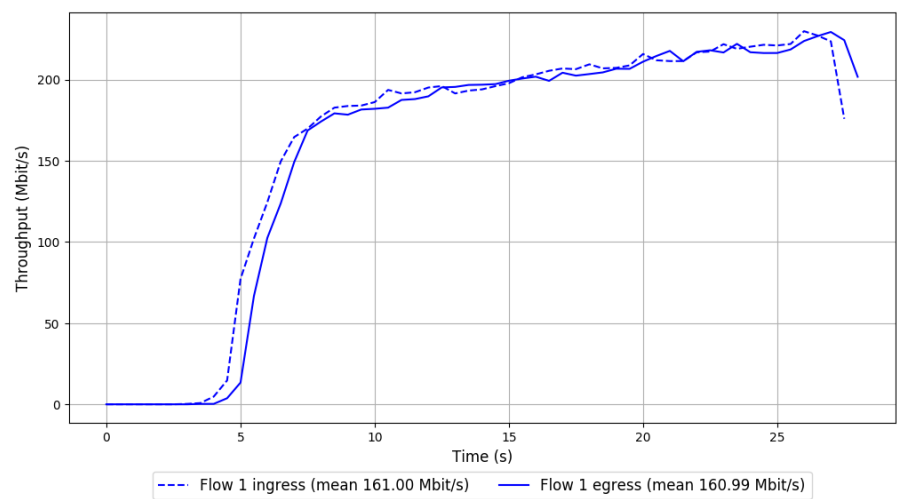
-- Flow 1:

Average throughput: 160.99 Mbit/s

95th percentile per-packet one-way delay: 48.207 ms

Loss rate: 0.01%

Run 1: Report of Indigo — Data Link



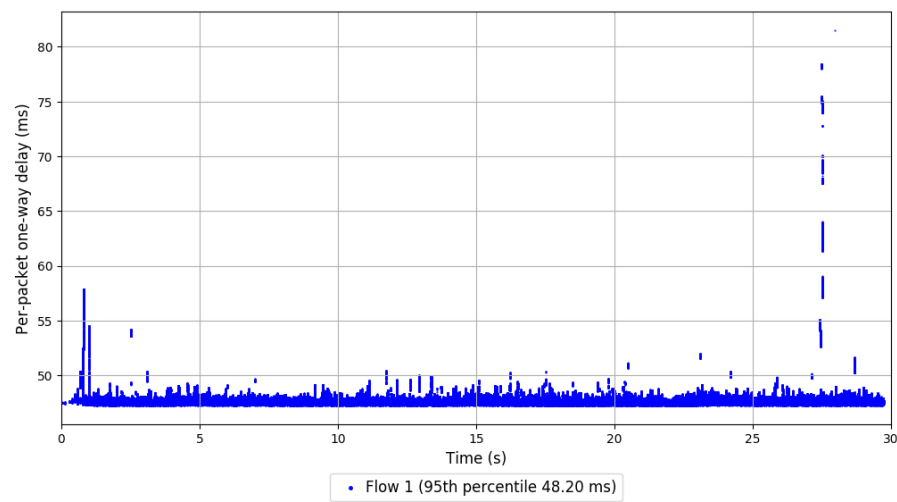
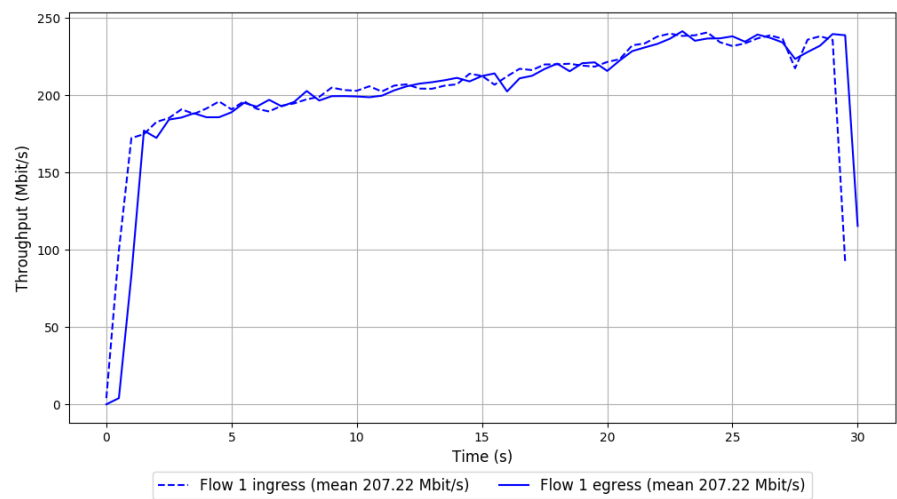


Run 2: Statistics of Indigo

Start at: 2018-12-12 05:25:50  
End at: 2018-12-12 05:26:21  
Local clock offset: -0.078 ms  
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2018-12-12 08:32:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 207.22 Mbit/s  
95th percentile per-packet one-way delay: 48.201 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 207.22 Mbit/s  
95th percentile per-packet one-way delay: 48.201 ms  
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link

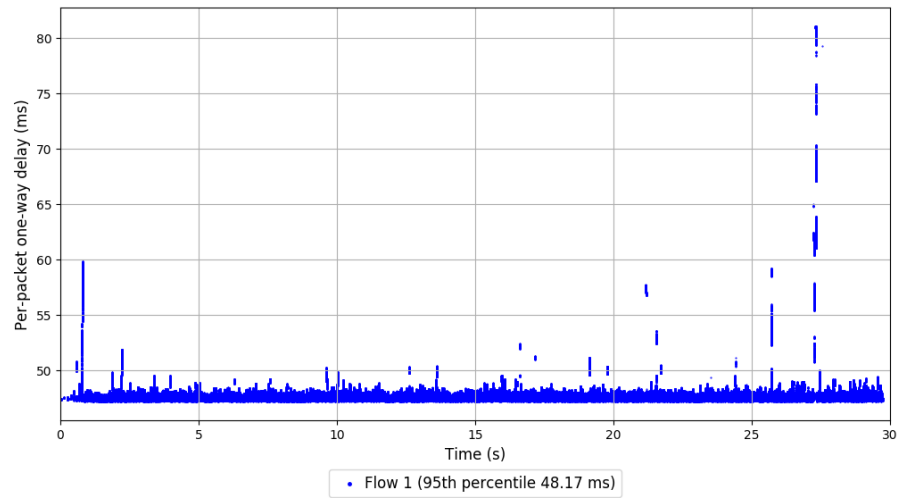
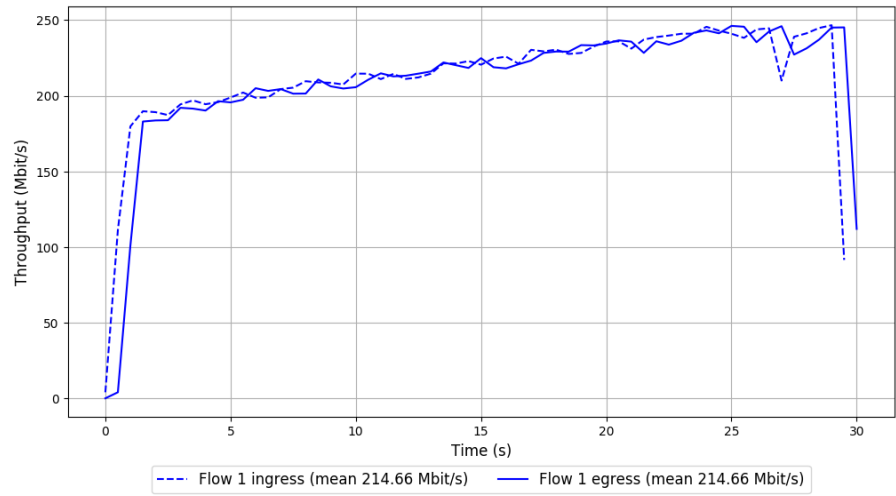


Run 3: Statistics of Indigo

Start at: 2018-12-12 05:54:16  
End at: 2018-12-12 05:54:46  
Local clock offset: -0.067 ms  
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2018-12-12 08:32:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 214.66 Mbit/s  
95th percentile per-packet one-way delay: 48.170 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 214.66 Mbit/s  
95th percentile per-packet one-way delay: 48.170 ms  
Loss rate: 0.00%

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



Run 4: Statistics of Indigo

Start at: 2018-12-12 06:23:11

End at: 2018-12-12 06:23:41

Local clock offset: -0.195 ms

Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-12-12 08:32:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 215.04 Mbit/s

95th percentile per-packet one-way delay: 48.272 ms

Loss rate: 0.00%

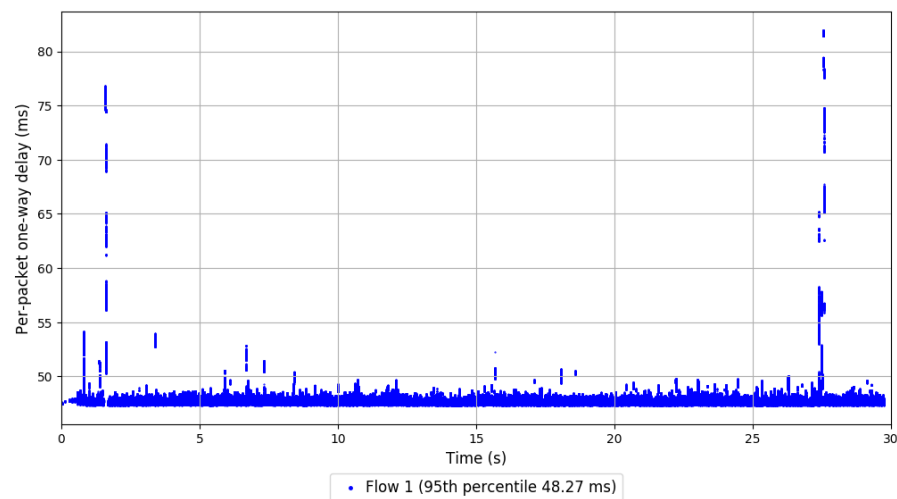
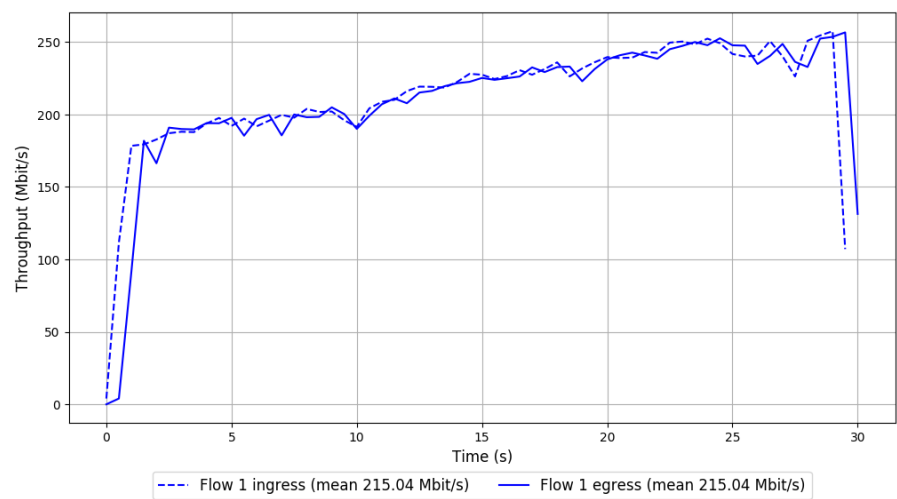
-- Flow 1:

Average throughput: 215.04 Mbit/s

95th percentile per-packet one-way delay: 48.272 ms

Loss rate: 0.00%

Run 4: Report of Indigo — Data Link

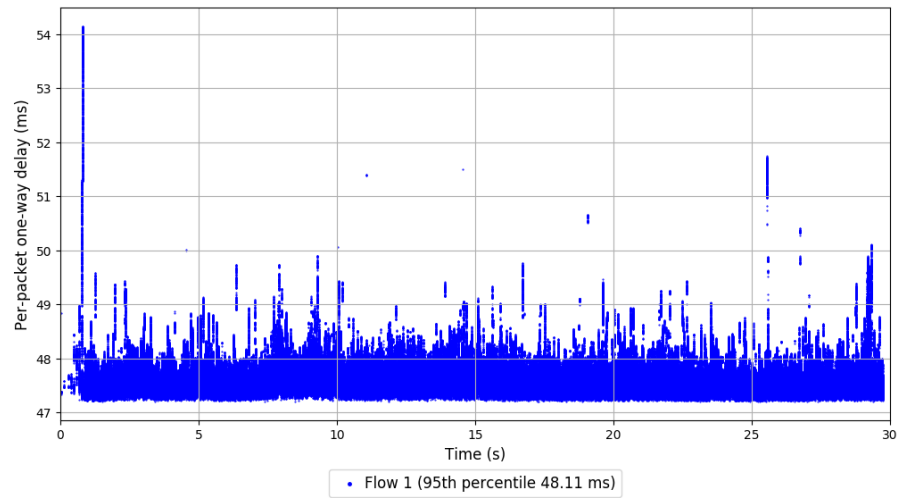
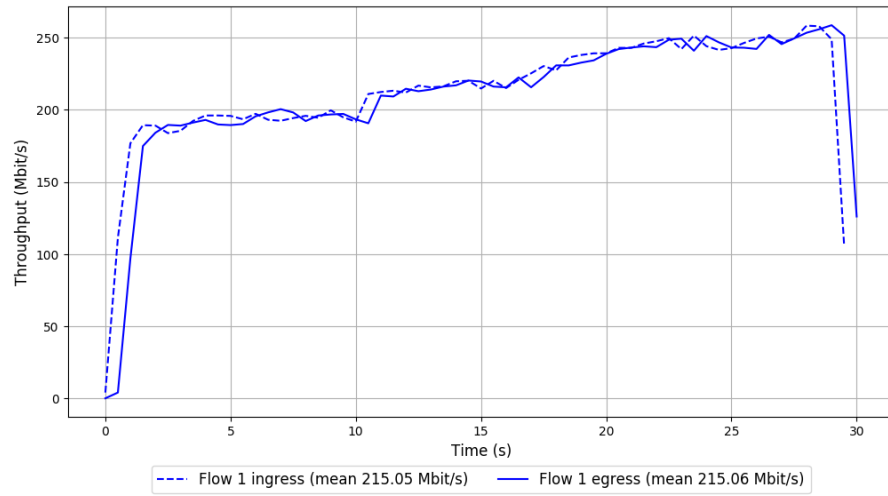


Run 5: Statistics of Indigo

Start at: 2018-12-12 06:51:50  
End at: 2018-12-12 06:52:20  
Local clock offset: -0.159 ms  
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2018-12-12 08:32:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 215.06 Mbit/s  
95th percentile per-packet one-way delay: 48.108 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 215.06 Mbit/s  
95th percentile per-packet one-way delay: 48.108 ms  
Loss rate: 0.00%

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



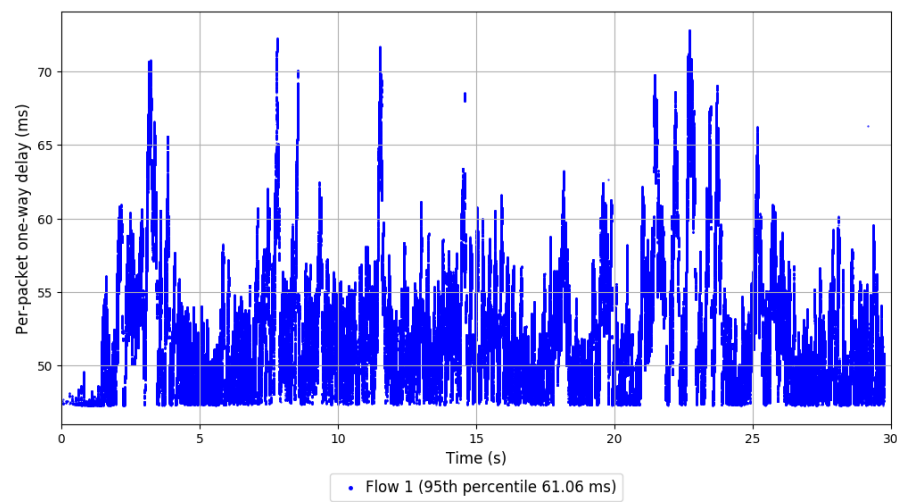
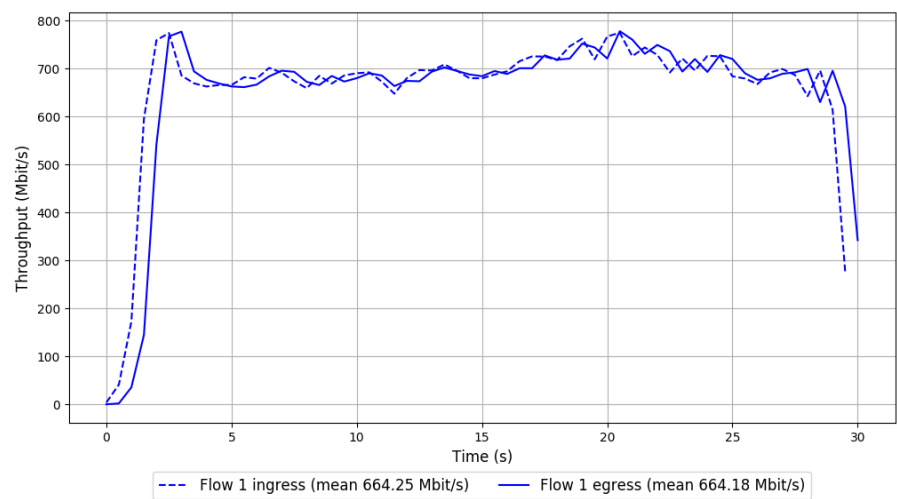


```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-12 05:03:38
End at: 2018-12-12 05:04:08
Local clock offset: -0.053 ms
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-12-12 08:33:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 664.18 Mbit/s
95th percentile per-packet one-way delay: 61.065 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 664.18 Mbit/s
95th percentile per-packet one-way delay: 61.065 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-MusesD — Data Link

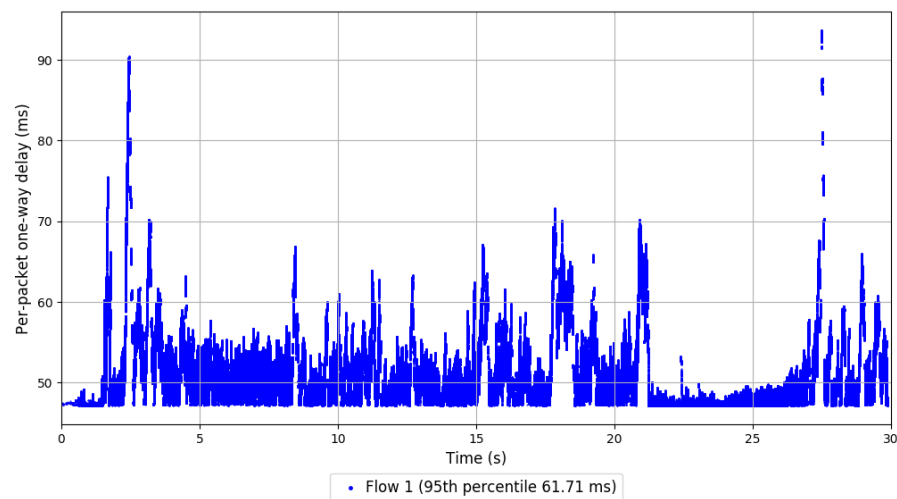
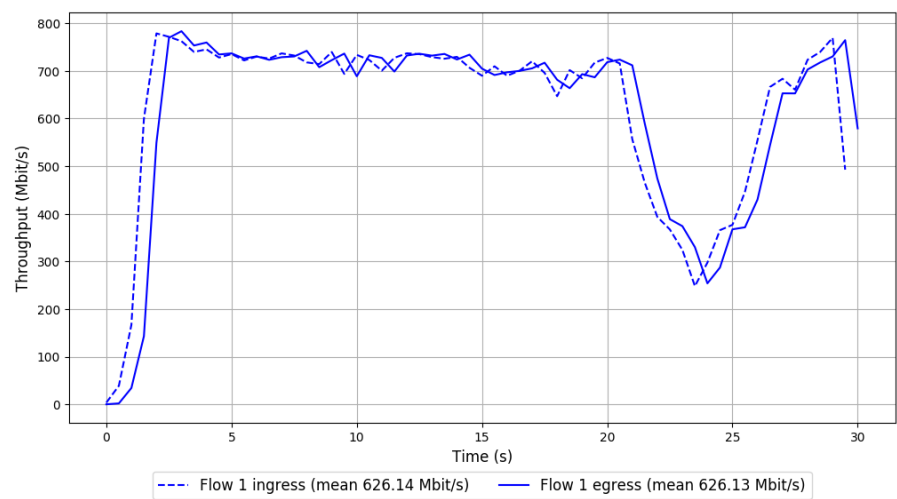


Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-12 05:32:10  
End at: 2018-12-12 05:32:40  
Local clock offset: -0.098 ms  
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2018-12-12 08:33:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 626.13 Mbit/s  
95th percentile per-packet one-way delay: 61.710 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 626.13 Mbit/s  
95th percentile per-packet one-way delay: 61.710 ms  
Loss rate: 0.00%

Run 2: Report of Indigo-MusesD — Data Link

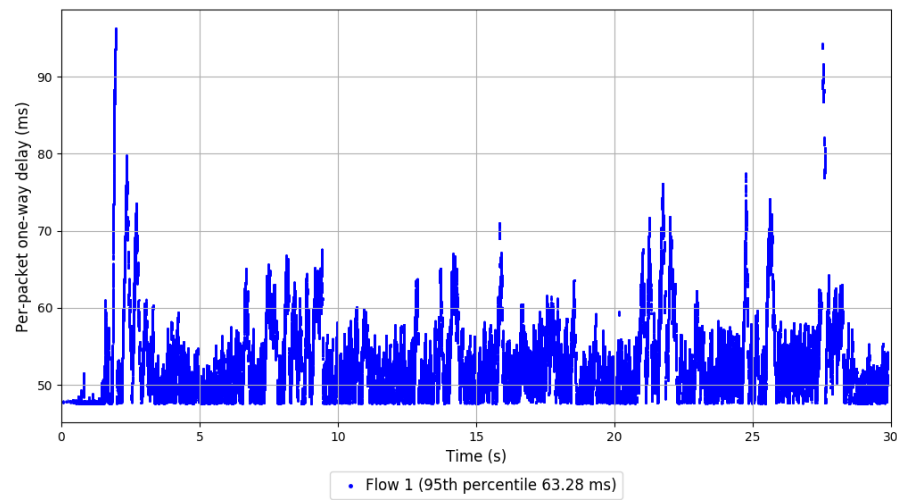
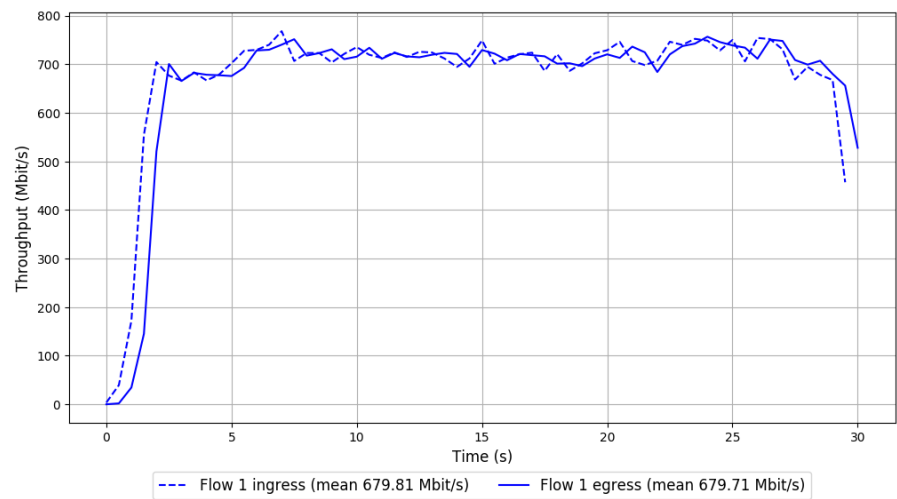


Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-12 06:01:05  
End at: 2018-12-12 06:01:35  
Local clock offset: -0.422 ms  
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-12-12 08:36:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 679.71 Mbit/s  
95th percentile per-packet one-way delay: 63.277 ms  
Loss rate: 0.01%  
-- Flow 1:  
Average throughput: 679.71 Mbit/s  
95th percentile per-packet one-way delay: 63.277 ms  
Loss rate: 0.01%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-12 06:29:25

End at: 2018-12-12 06:29:55

Local clock offset: -0.199 ms

Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2018-12-12 08:37:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 664.07 Mbit/s

95th percentile per-packet one-way delay: 60.897 ms

Loss rate: 0.01%

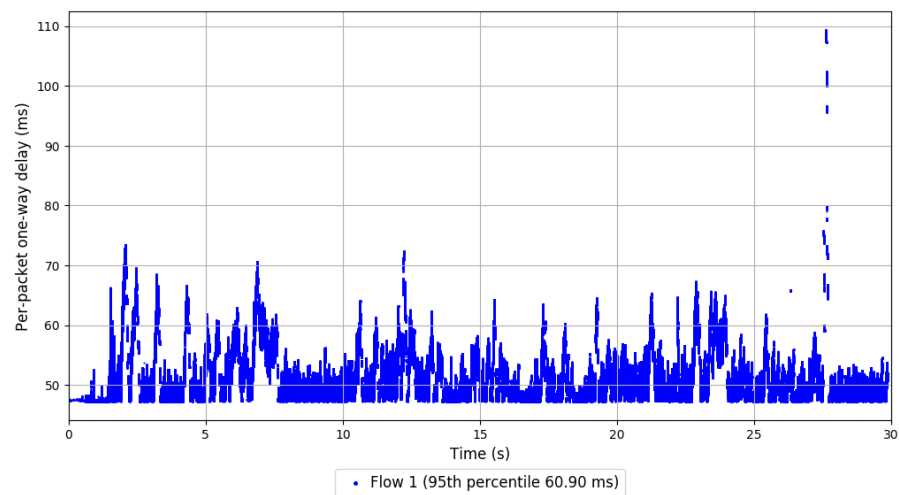
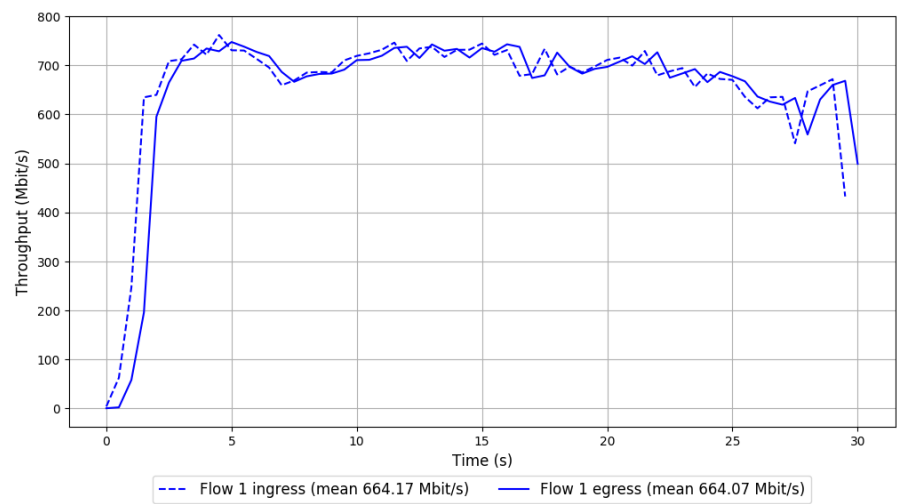
-- Flow 1:

Average throughput: 664.07 Mbit/s

95th percentile per-packet one-way delay: 60.897 ms

Loss rate: 0.01%

Run 4: Report of Indigo-MusesD — Data Link





Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-12 06:58:28

End at: 2018-12-12 06:58:58

Local clock offset: -0.147 ms

Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2018-12-12 08:38:15

# Datalink statistics

-- Total of 1 flow:

Average throughput: 653.79 Mbit/s

95th percentile per-packet one-way delay: 63.235 ms

Loss rate: 0.03%

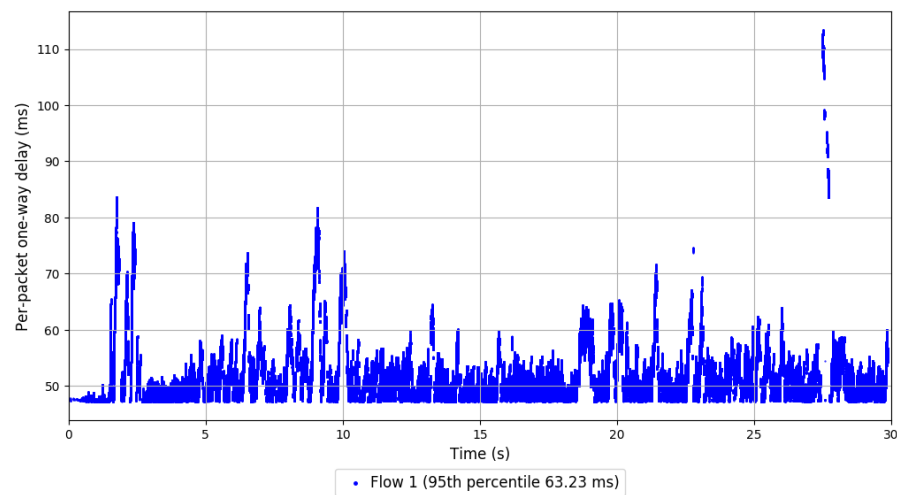
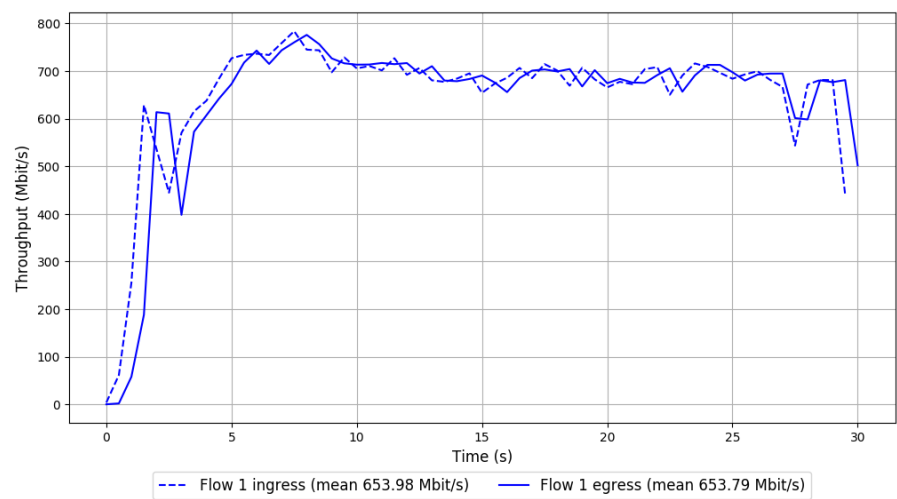
-- Flow 1:

Average throughput: 653.79 Mbit/s

95th percentile per-packet one-way delay: 63.235 ms

Loss rate: 0.03%

Run 5: Report of Indigo-MusesD — Data Link

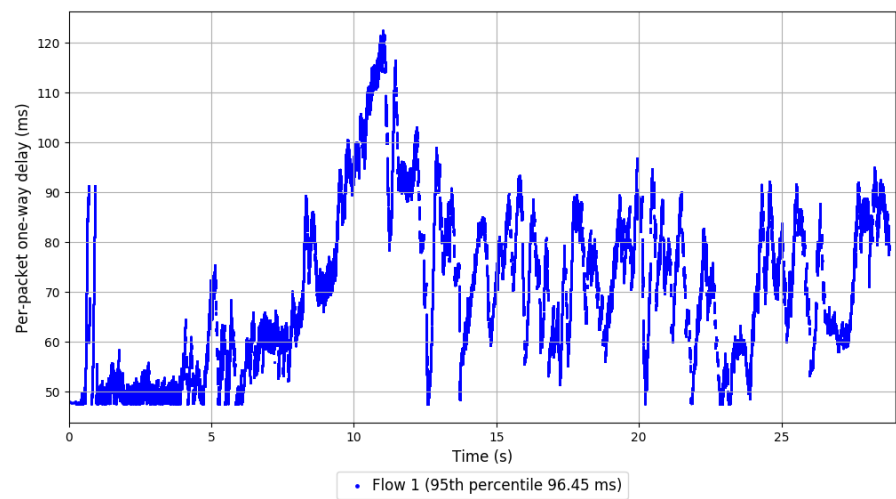
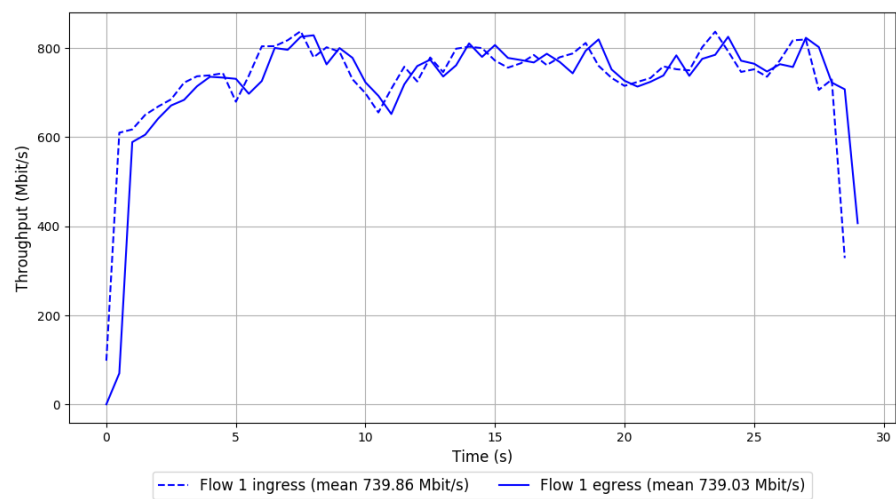


```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-12 05:18:18
End at: 2018-12-12 05:18:48
Local clock offset: -0.452 ms
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2018-12-12 08:41:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 739.03 Mbit/s
95th percentile per-packet one-way delay: 96.453 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 739.03 Mbit/s
95th percentile per-packet one-way delay: 96.453 ms
Loss rate: 0.11%
```

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-12 05:46:23

End at: 2018-12-12 05:46:53

Local clock offset: -0.128 ms

Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2018-12-12 08:44:18

# Datalink statistics

-- Total of 1 flow:

Average throughput: 746.94 Mbit/s

95th percentile per-packet one-way delay: 91.763 ms

Loss rate: 0.07%

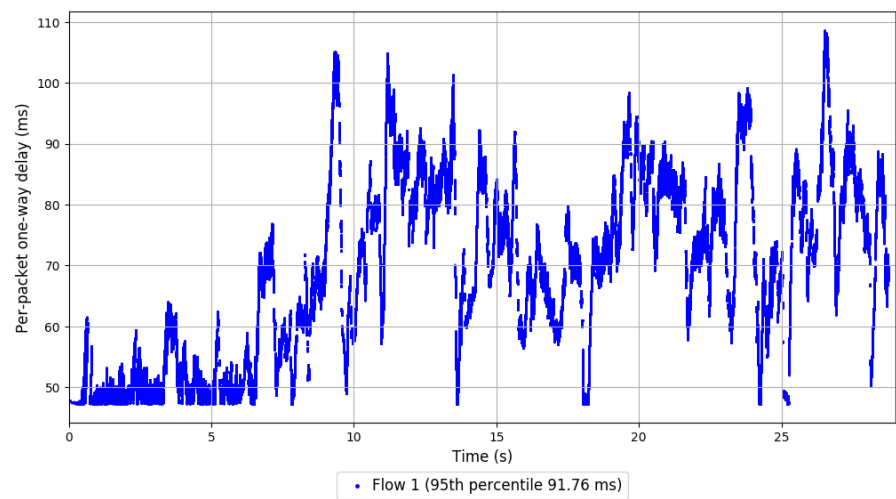
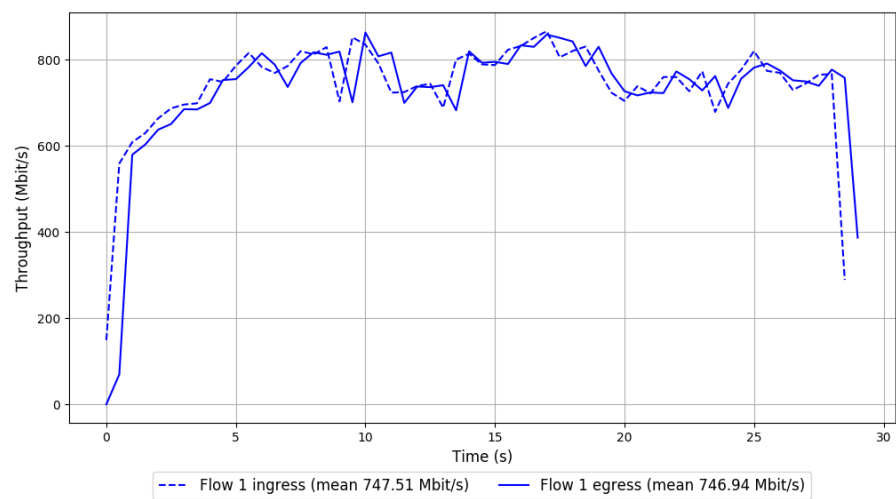
-- Flow 1:

Average throughput: 746.94 Mbit/s

95th percentile per-packet one-way delay: 91.763 ms

Loss rate: 0.07%

Run 2: Report of Indigo-MusesT — Data Link

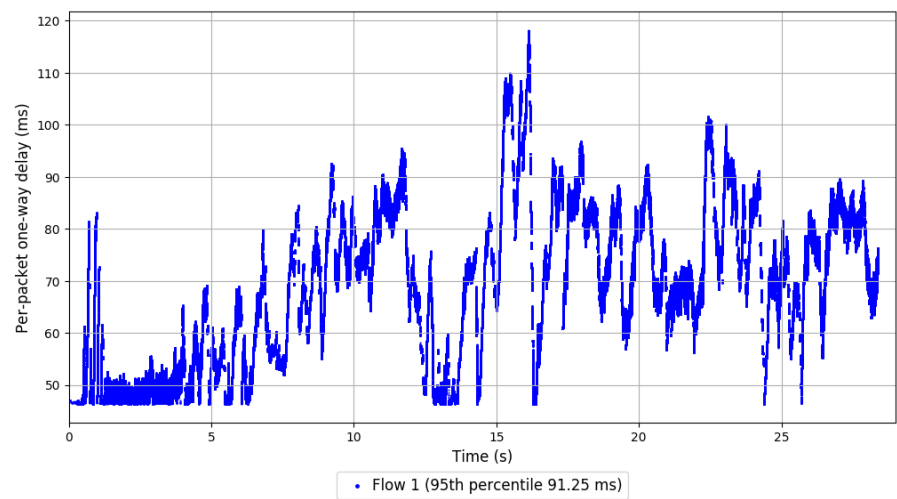
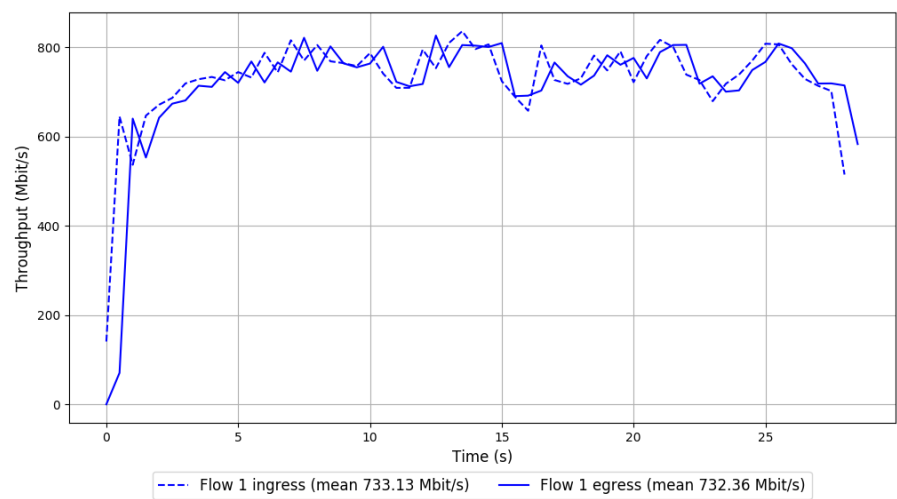


Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-12 06:15:48  
End at: 2018-12-12 06:16:18  
Local clock offset: -0.106 ms  
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 732.36 Mbit/s  
95th percentile per-packet one-way delay: 91.255 ms  
Loss rate: 0.10%  
-- Flow 1:  
Average throughput: 732.36 Mbit/s  
95th percentile per-packet one-way delay: 91.255 ms  
Loss rate: 0.10%

Run 3: Report of Indigo-MusesT — Data Link



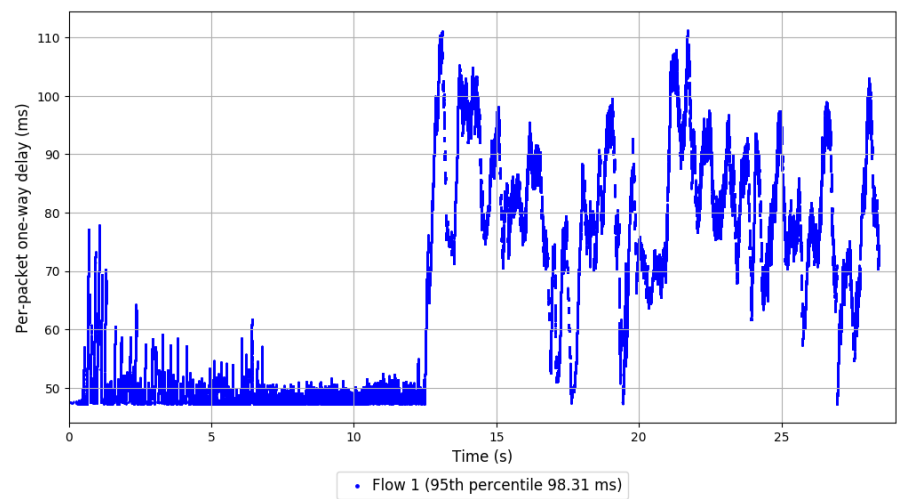
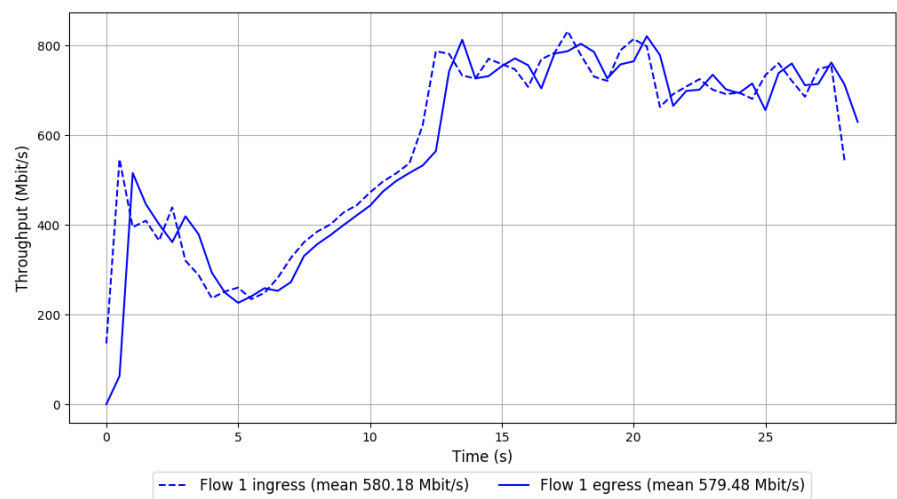


Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-12 06:44:12  
End at: 2018-12-12 06:44:42  
Local clock offset: -0.193 ms  
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 579.48 Mbit/s  
95th percentile per-packet one-way delay: 98.315 ms  
Loss rate: 0.12%  
-- Flow 1:  
Average throughput: 579.48 Mbit/s  
95th percentile per-packet one-way delay: 98.315 ms  
Loss rate: 0.12%

Run 4: Report of Indigo-MusesT — Data Link

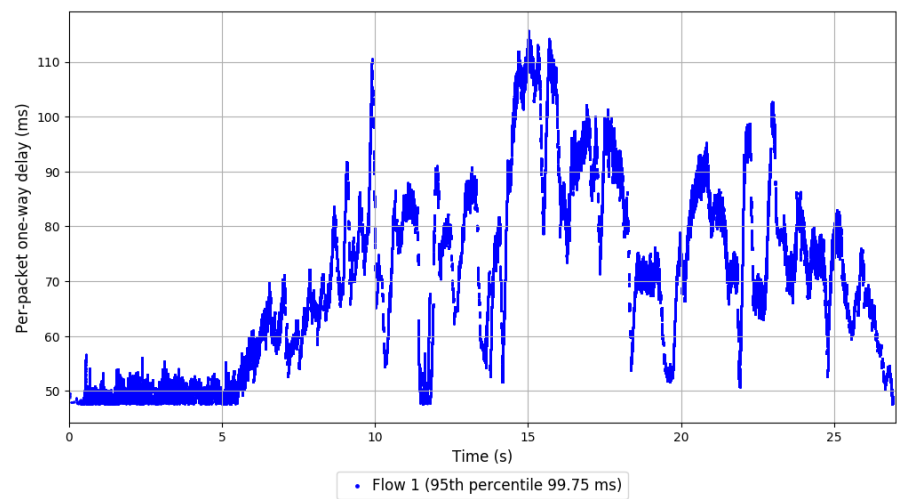
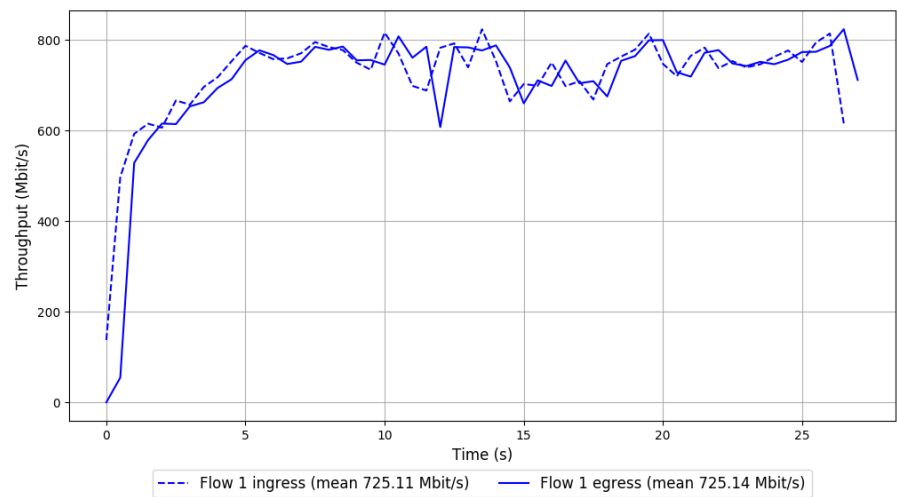


Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-12 07:12:45  
End at: 2018-12-12 07:13:15  
Local clock offset: -0.502 ms  
Remote clock offset: -0.156 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 725.14 Mbit/s  
95th percentile per-packet one-way delay: 99.745 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 725.14 Mbit/s  
95th percentile per-packet one-way delay: 99.745 ms  
Loss rate: 0.00%

Run 5: Report of Indigo-MusesT — Data Link

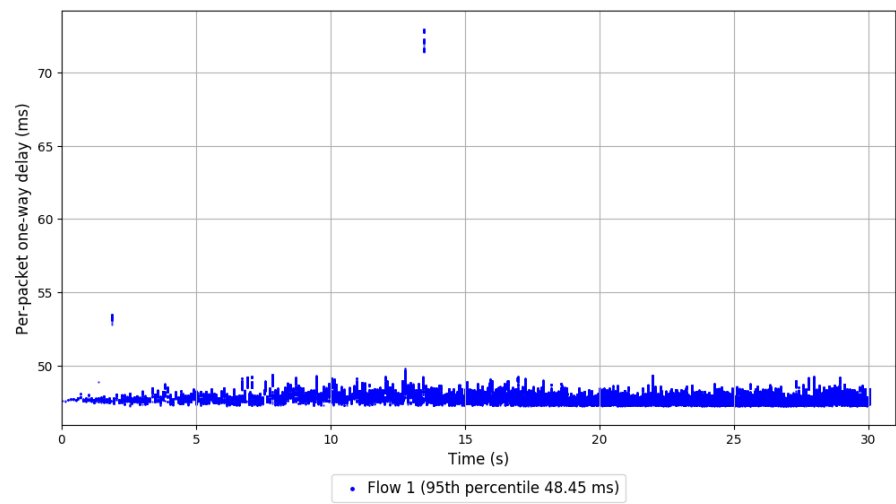
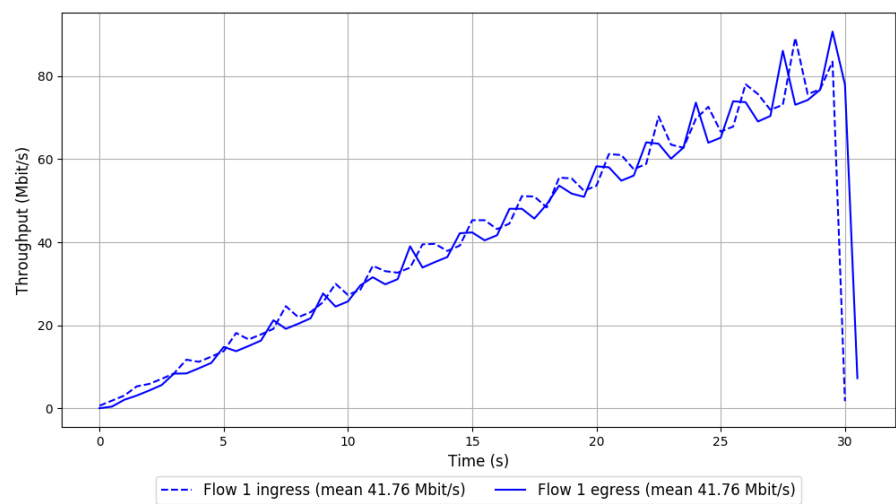


Run 1: Statistics of LEDBAT

Start at: 2018-12-12 05:07:29  
End at: 2018-12-12 05:07:59  
Local clock offset: -0.079 ms  
Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 41.76 Mbit/s  
95th percentile per-packet one-way delay: 48.448 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 41.76 Mbit/s  
95th percentile per-packet one-way delay: 48.448 ms  
Loss rate: 0.00%

Run 1: Report of LEDBAT — Data Link

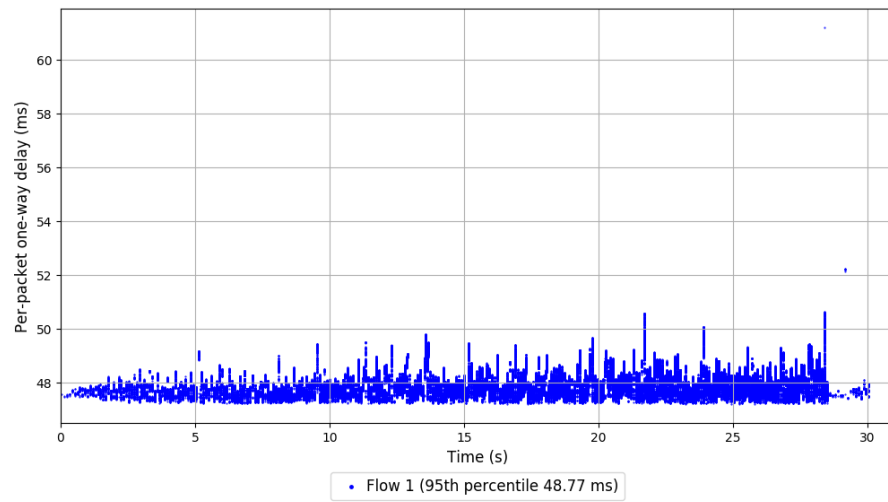
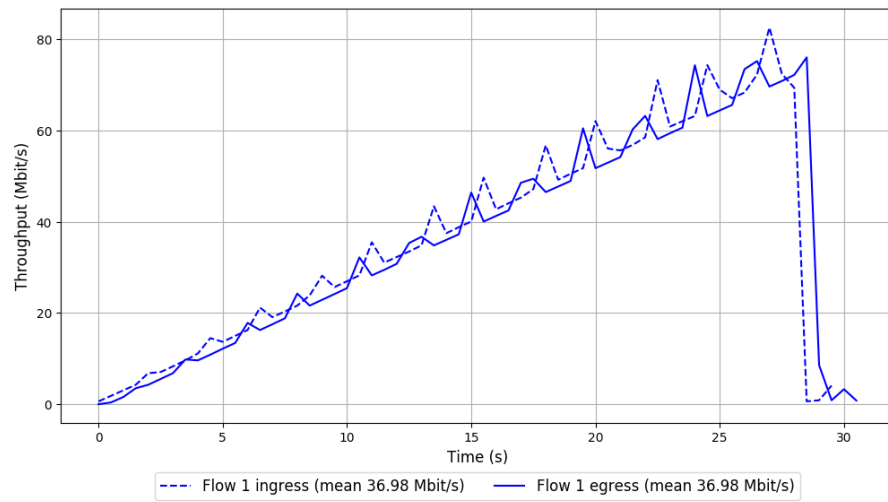


Run 2: Statistics of LEDBAT

Start at: 2018-12-12 05:35:28  
End at: 2018-12-12 05:35:58  
Local clock offset: -0.033 ms  
Remote clock offset: -0.129 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 36.98 Mbit/s  
95th percentile per-packet one-way delay: 48.769 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 36.98 Mbit/s  
95th percentile per-packet one-way delay: 48.769 ms  
Loss rate: 0.00%

## Run 2: Report of LEDBAT — Data Link



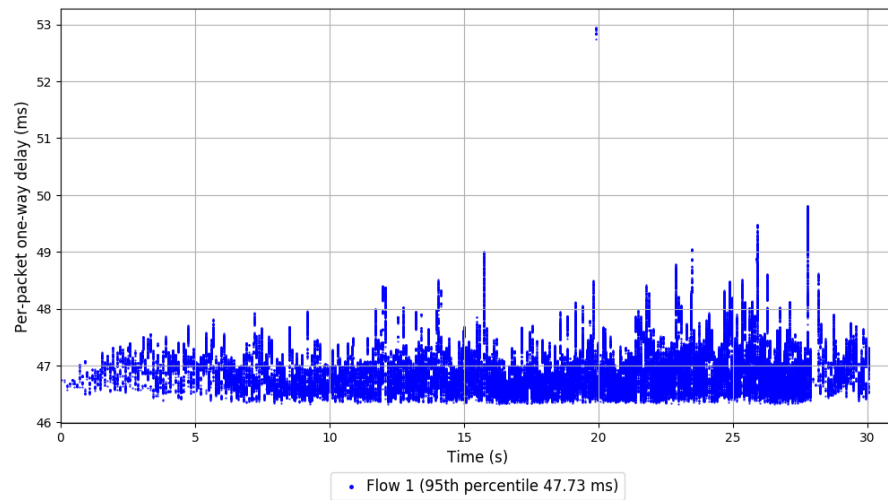
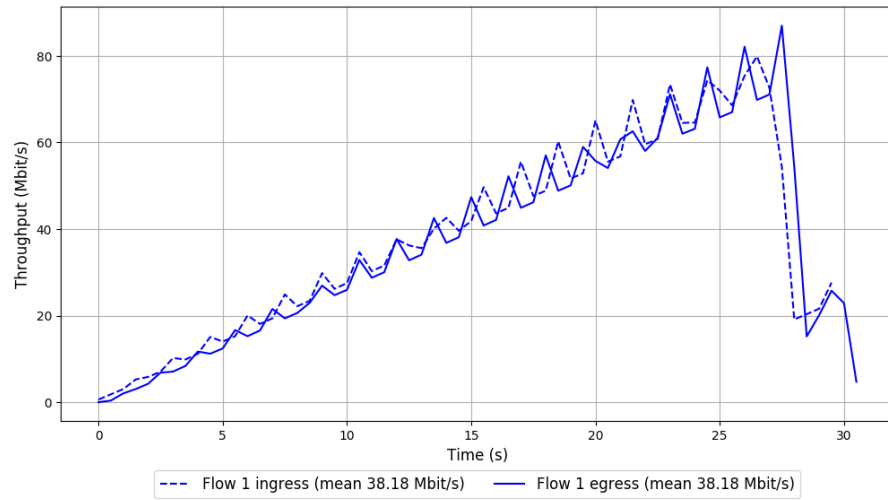


Run 3: Statistics of LEDBAT

Start at: 2018-12-12 06:04:30  
End at: 2018-12-12 06:05:00  
Local clock offset: -0.042 ms  
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 38.18 Mbit/s  
95th percentile per-packet one-way delay: 47.735 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 38.18 Mbit/s  
95th percentile per-packet one-way delay: 47.735 ms  
Loss rate: 0.00%

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



Run 4: Statistics of LEDBAT

Start at: 2018-12-12 06:32:45

End at: 2018-12-12 06:33:15

Local clock offset: -0.6 ms

Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2018-12-12 08:46:56

# Datalink statistics

-- Total of 1 flow:

Average throughput: 41.92 Mbit/s

95th percentile per-packet one-way delay: 49.191 ms

Loss rate: 0.00%

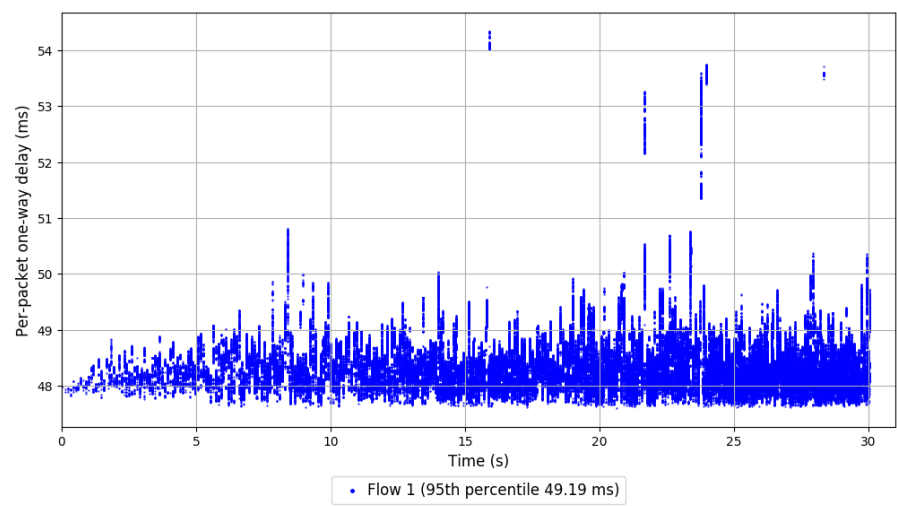
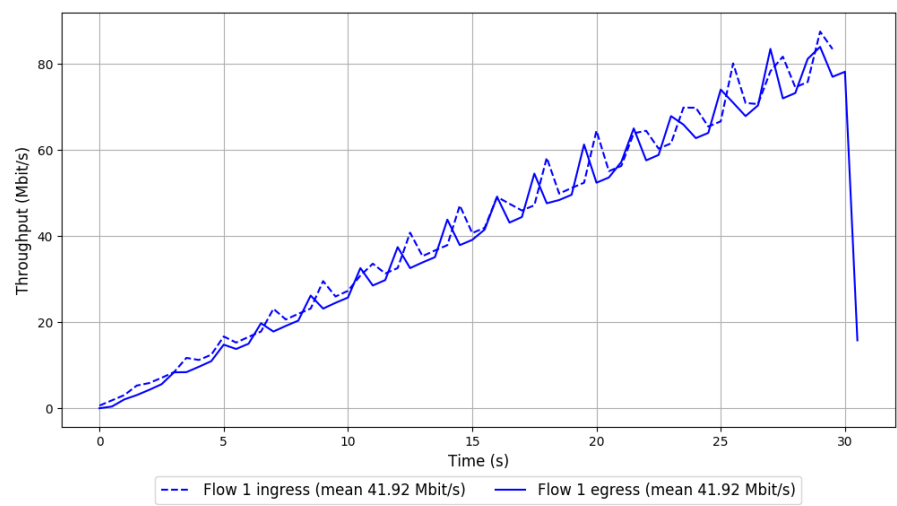
-- Flow 1:

Average throughput: 41.92 Mbit/s

95th percentile per-packet one-way delay: 49.191 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

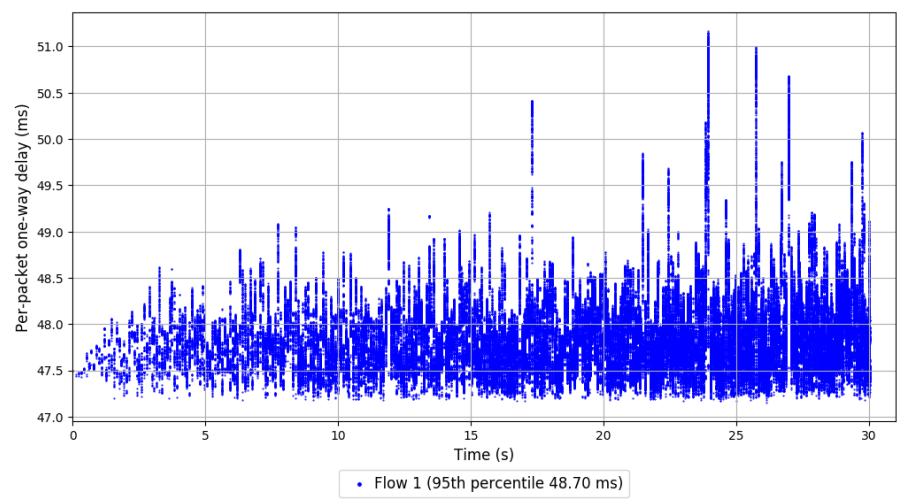
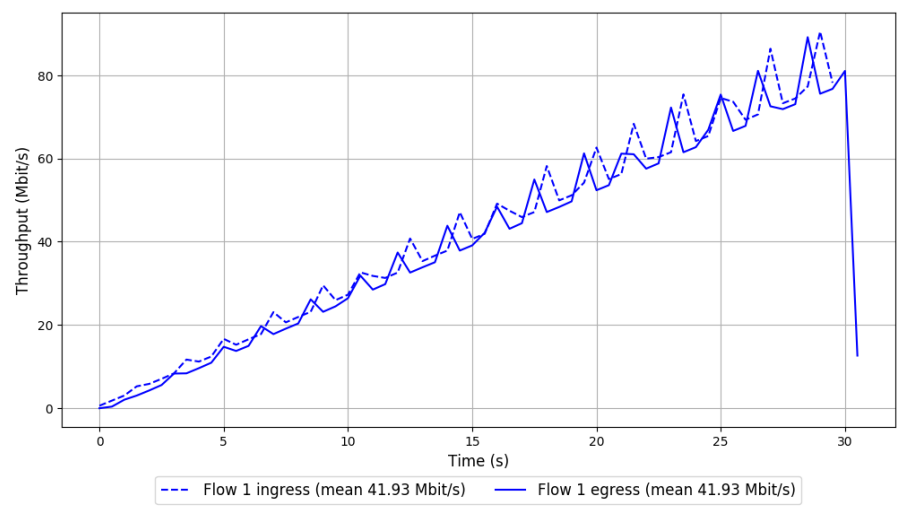


Run 5: Statistics of LEDBAT

Start at: 2018-12-12 07:01:51  
End at: 2018-12-12 07:02:21  
Local clock offset: -0.141 ms  
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-12-12 08:46:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 41.93 Mbit/s  
95th percentile per-packet one-way delay: 48.695 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 41.93 Mbit/s  
95th percentile per-packet one-way delay: 48.695 ms  
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

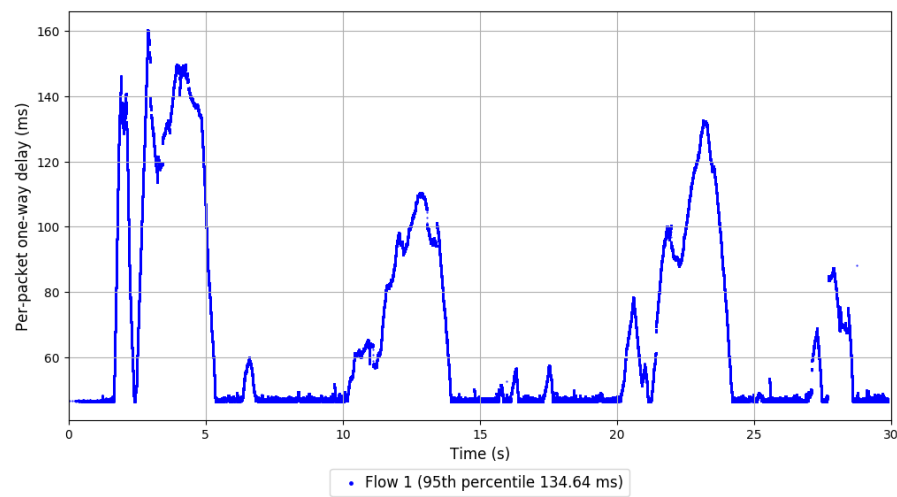
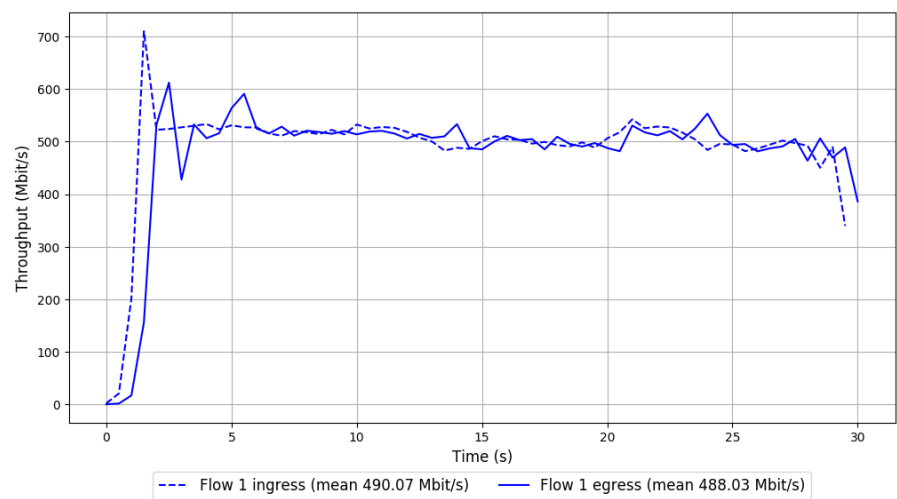


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-12 05:05:38
End at: 2018-12-12 05:06:08
Local clock offset: -0.003 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2018-12-12 09:00:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 488.03 Mbit/s
95th percentile per-packet one-way delay: 134.637 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 488.03 Mbit/s
95th percentile per-packet one-way delay: 134.637 ms
Loss rate: 0.42%
```

Run 1: Report of PCC-Allegro — Data Link





Run 2: Statistics of PCC-Allegro

Start at: 2018-12-12 05:33:49

End at: 2018-12-12 05:34:19

Local clock offset: -0.055 ms

Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-12-12 09:00:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 464.33 Mbit/s

95th percentile per-packet one-way delay: 90.275 ms

Loss rate: 0.23%

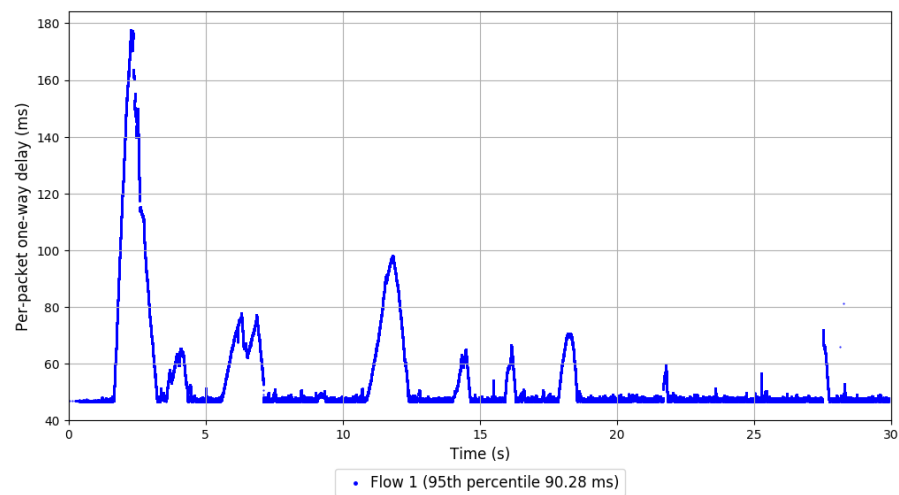
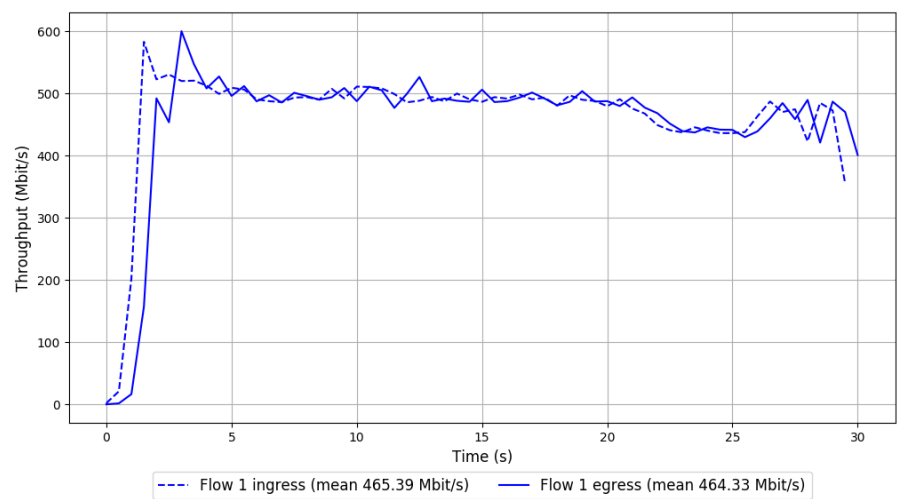
-- Flow 1:

Average throughput: 464.33 Mbit/s

95th percentile per-packet one-way delay: 90.275 ms

Loss rate: 0.23%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-12 06:02:47

End at: 2018-12-12 06:03:17

Local clock offset: -0.057 ms

Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2018-12-12 09:00:57

# Datalink statistics

-- Total of 1 flow:

Average throughput: 487.53 Mbit/s

95th percentile per-packet one-way delay: 145.752 ms

Loss rate: 0.87%

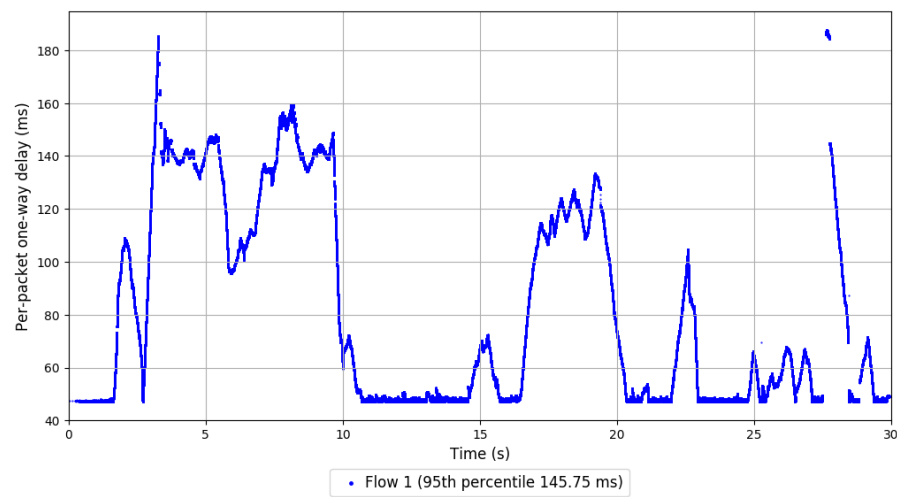
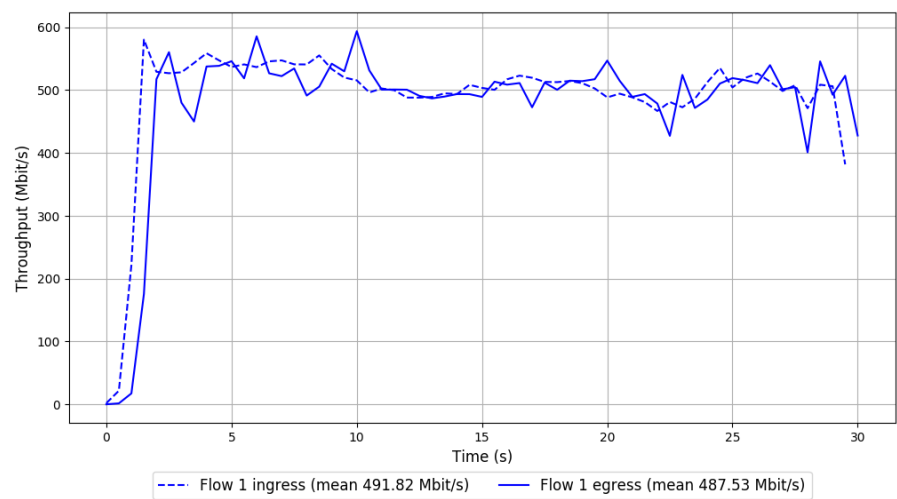
-- Flow 1:

Average throughput: 487.53 Mbit/s

95th percentile per-packet one-way delay: 145.752 ms

Loss rate: 0.87%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-12-12 06:31:05

End at: 2018-12-12 06:31:35

Local clock offset: -0.215 ms

Remote clock offset: 0.019 ms

# Below is generated by plot.py at 2018-12-12 09:01:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 504.71 Mbit/s

95th percentile per-packet one-way delay: 153.289 ms

Loss rate: 1.67%

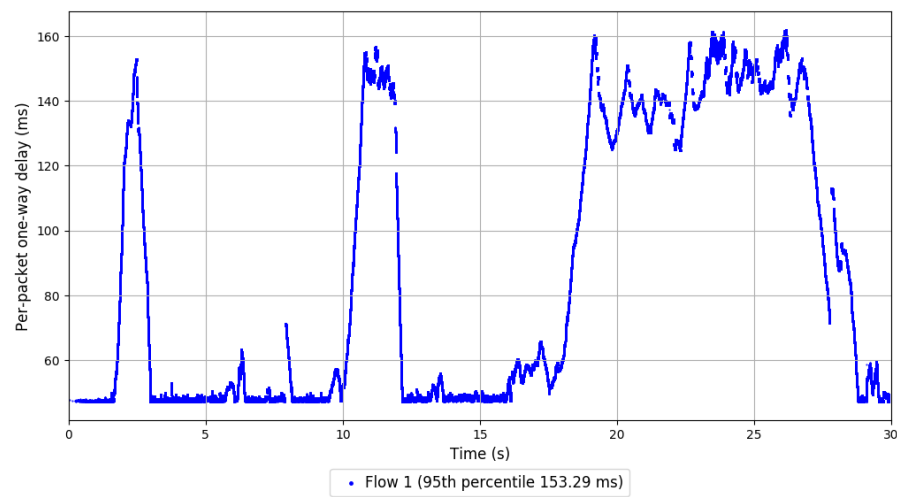
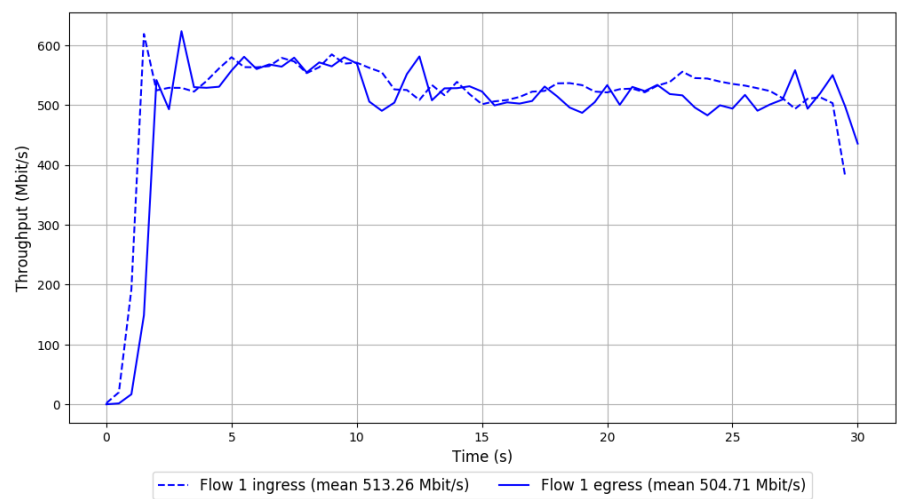
-- Flow 1:

Average throughput: 504.71 Mbit/s

95th percentile per-packet one-way delay: 153.289 ms

Loss rate: 1.67%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-12-12 07:00:12

End at: 2018-12-12 07:00:42

Local clock offset: -0.125 ms

Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2018-12-12 09:03:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 474.81 Mbit/s

95th percentile per-packet one-way delay: 140.366 ms

Loss rate: 0.37%

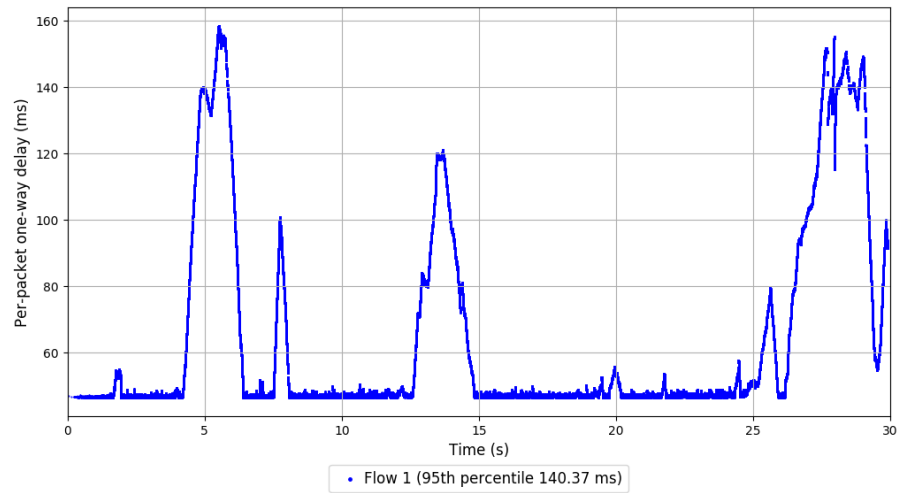
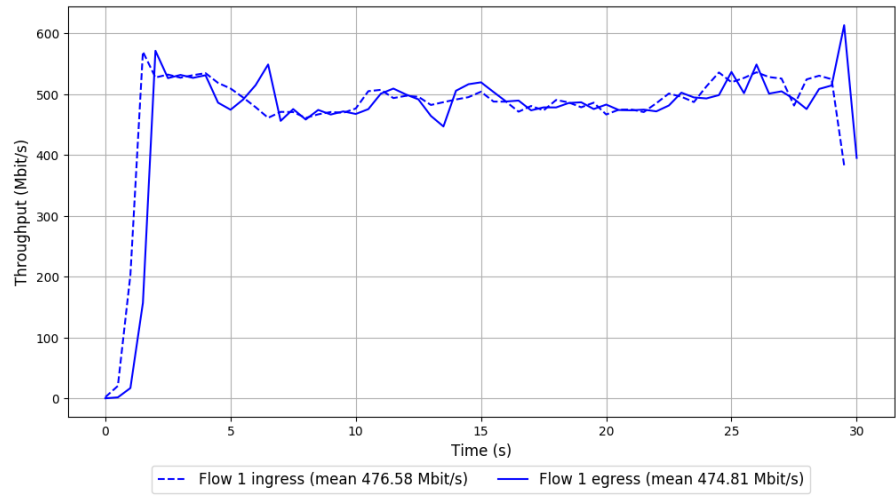
-- Flow 1:

Average throughput: 474.81 Mbit/s

95th percentile per-packet one-way delay: 140.366 ms

Loss rate: 0.37%

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



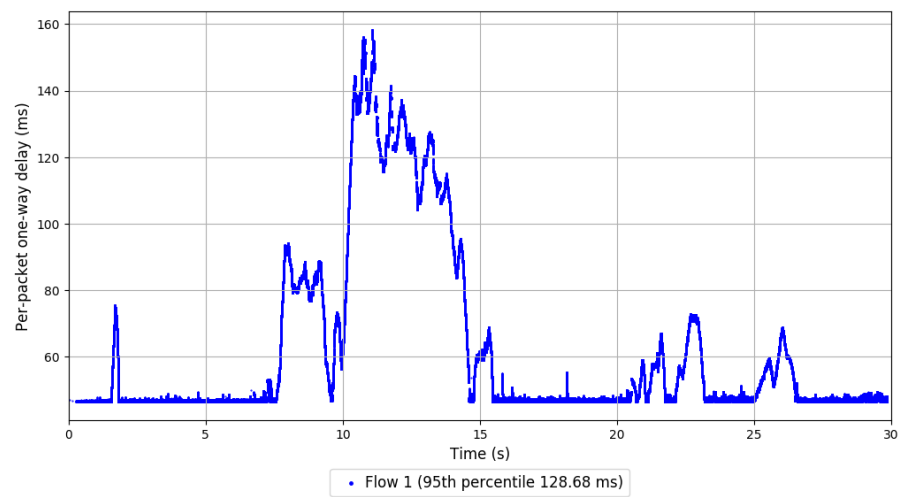
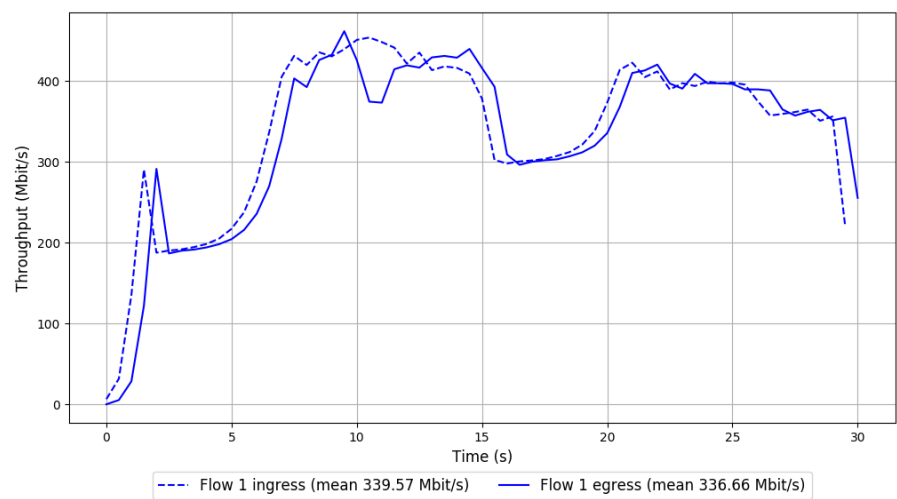


```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-12 05:02:02
End at: 2018-12-12 05:02:32
Local clock offset: 0.009 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2018-12-12 09:03:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 336.66 Mbit/s
95th percentile per-packet one-way delay: 128.679 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 336.66 Mbit/s
95th percentile per-packet one-way delay: 128.679 ms
Loss rate: 0.86%
```

Run 1: Report of PCC-Expr — Data Link

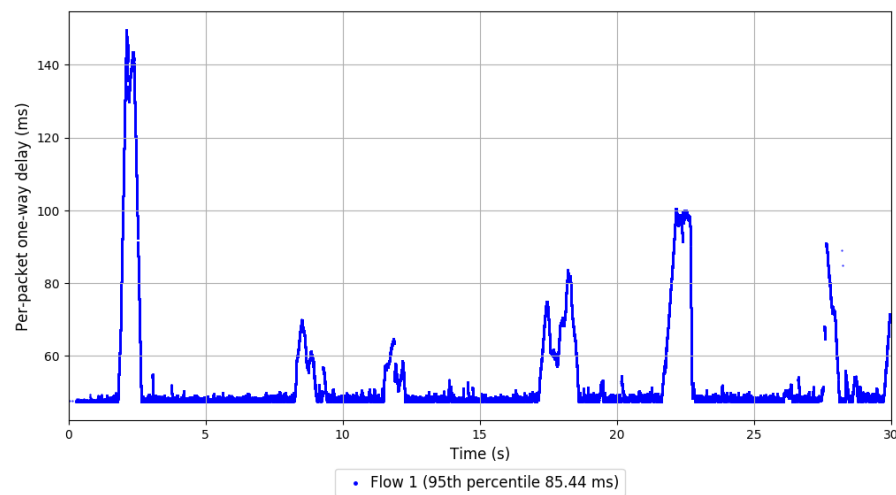
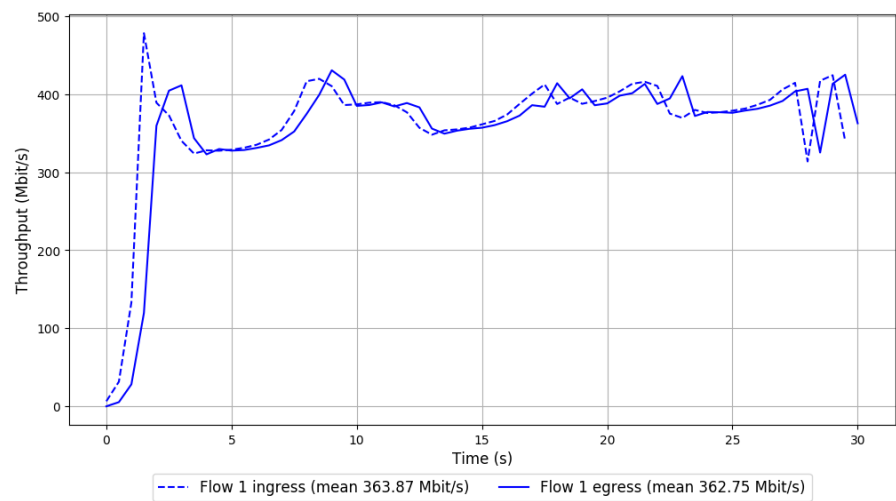


Run 2: Statistics of PCC-Expr

Start at: 2018-12-12 05:30:31  
End at: 2018-12-12 05:31:01  
Local clock offset: -0.113 ms  
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2018-12-12 09:03:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 362.75 Mbit/s  
95th percentile per-packet one-way delay: 85.439 ms  
Loss rate: 0.30%  
-- Flow 1:  
Average throughput: 362.75 Mbit/s  
95th percentile per-packet one-way delay: 85.439 ms  
Loss rate: 0.30%

Run 2: Report of PCC-Expr — Data Link

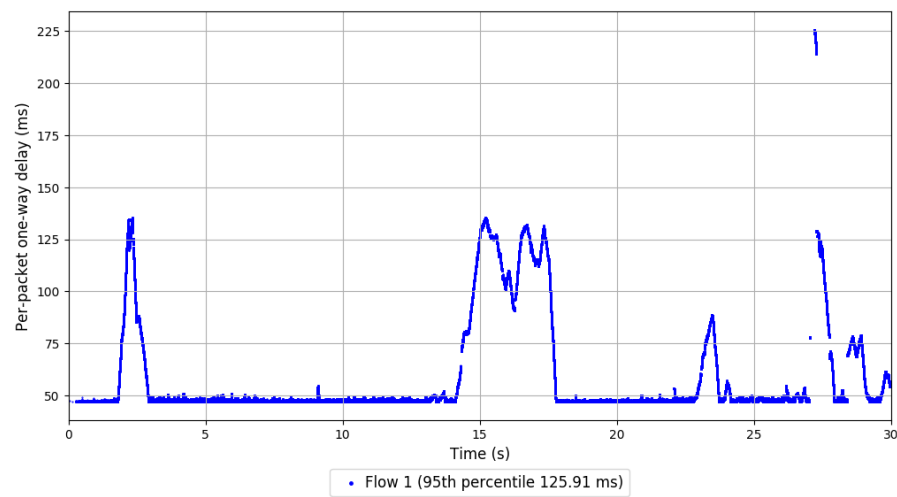
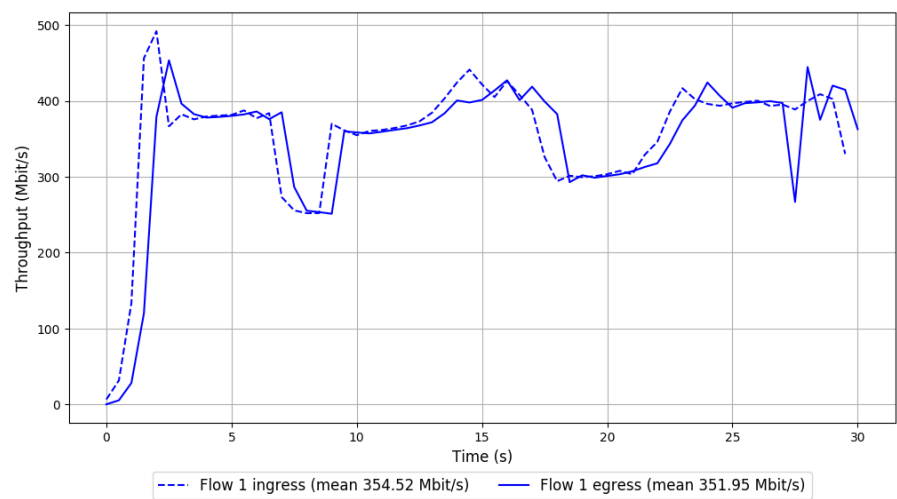


Run 3: Statistics of PCC-Expr

Start at: 2018-12-12 05:59:24  
End at: 2018-12-12 05:59:54  
Local clock offset: -0.095 ms  
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2018-12-12 09:03:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 351.95 Mbit/s  
95th percentile per-packet one-way delay: 125.914 ms  
Loss rate: 0.72%  
-- Flow 1:  
Average throughput: 351.95 Mbit/s  
95th percentile per-packet one-way delay: 125.914 ms  
Loss rate: 0.72%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-12-12 06:27:47

End at: 2018-12-12 06:28:17

Local clock offset: -0.182 ms

Remote clock offset: 0.035 ms

# Below is generated by plot.py at 2018-12-12 09:11:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 350.62 Mbit/s

95th percentile per-packet one-way delay: 147.261 ms

Loss rate: 5.02%

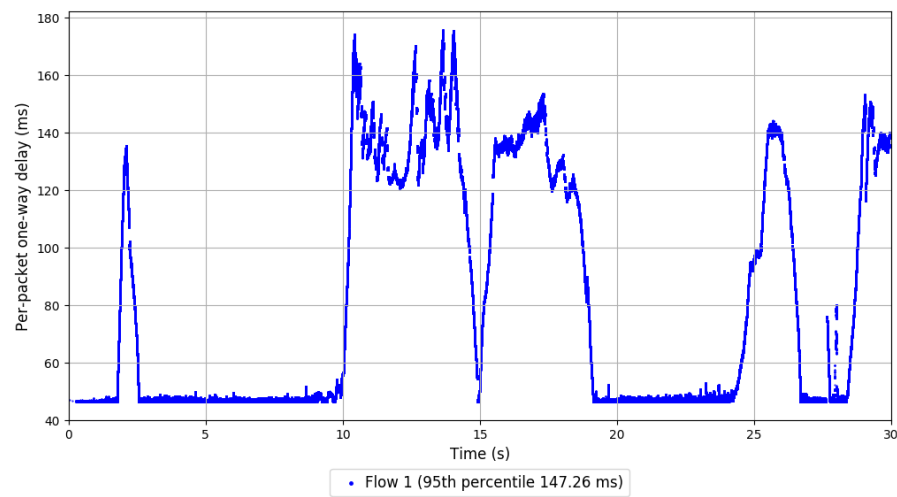
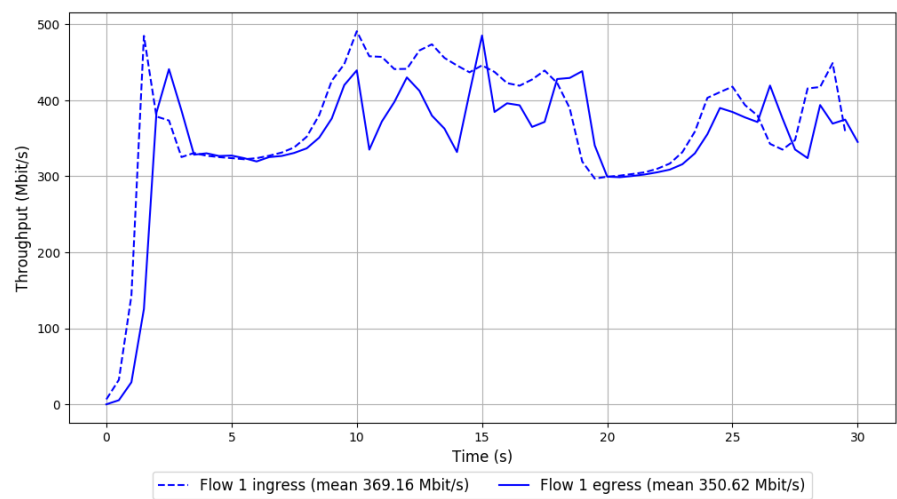
-- Flow 1:

Average throughput: 350.62 Mbit/s

95th percentile per-packet one-way delay: 147.261 ms

Loss rate: 5.02%

Run 4: Report of PCC-Expr — Data Link



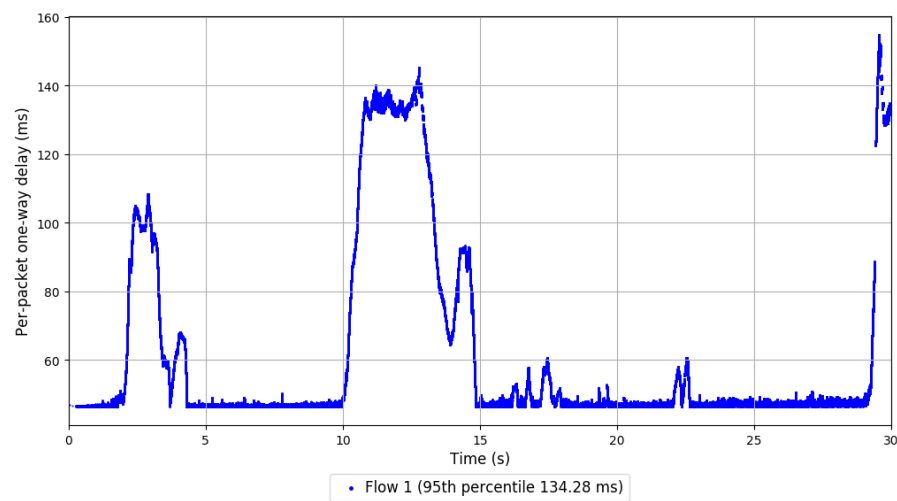
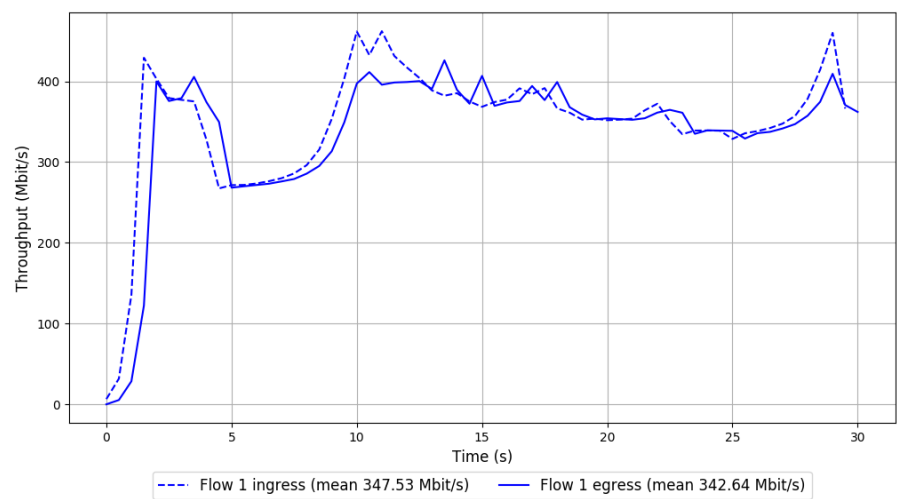


Run 5: Statistics of PCC-Expr

Start at: 2018-12-12 06:56:45  
End at: 2018-12-12 06:57:15  
Local clock offset: -0.148 ms  
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-12-12 09:12:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 342.64 Mbit/s  
95th percentile per-packet one-way delay: 134.282 ms  
Loss rate: 1.40%  
-- Flow 1:  
Average throughput: 342.64 Mbit/s  
95th percentile per-packet one-way delay: 134.282 ms  
Loss rate: 1.40%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-12-12 05:14:18

End at: 2018-12-12 05:14:48

Local clock offset: -0.064 ms

Remote clock offset: -0.098 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 52.00 Mbit/s

95th percentile per-packet one-way delay: 46.695 ms

Loss rate: 0.00%

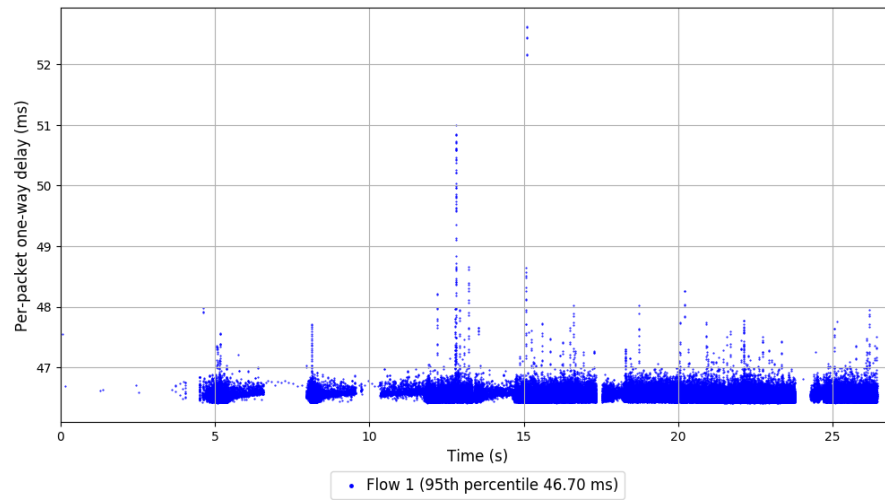
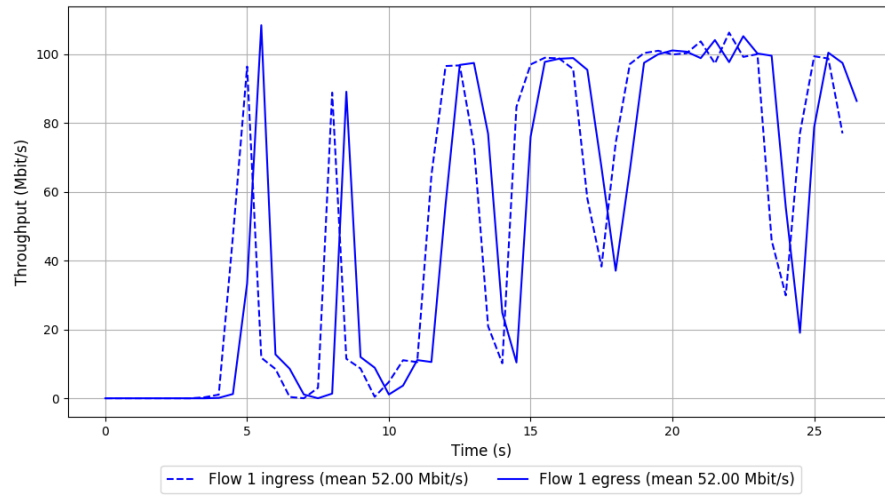
-- Flow 1:

Average throughput: 52.00 Mbit/s

95th percentile per-packet one-way delay: 46.695 ms

Loss rate: 0.00%

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

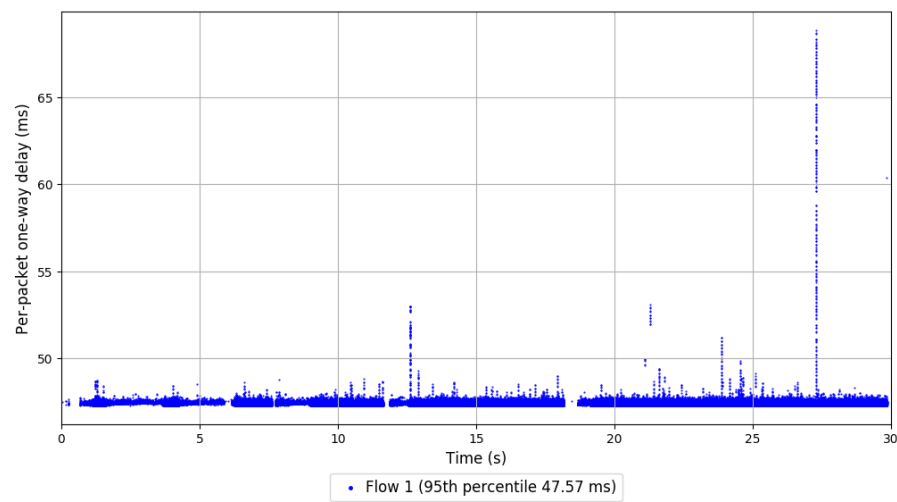
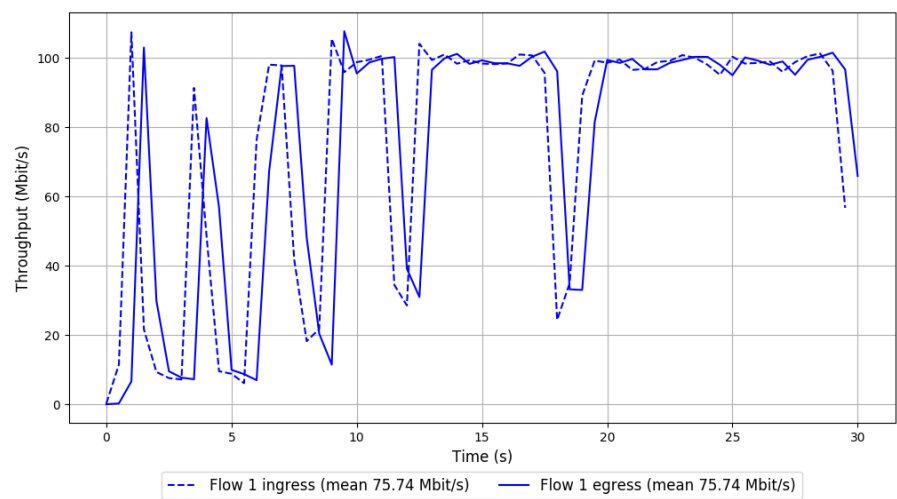


Run 2: Statistics of QUIC Cubic

Start at: 2018-12-12 05:42:19  
End at: 2018-12-12 05:42:49  
Local clock offset: -0.099 ms  
Remote clock offset: -0.039 ms

# Below is generated by plot.py at 2018-12-12 09:12:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 75.74 Mbit/s  
95th percentile per-packet one-way delay: 47.571 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 75.74 Mbit/s  
95th percentile per-packet one-way delay: 47.571 ms  
Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-12 06:11:45

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

Local clock offset: -0.106 ms

Remote clock offset: 0.01 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 56.22 Mbit/s

95th percentile per-packet one-way delay: 47.021 ms

Loss rate: 0.00%

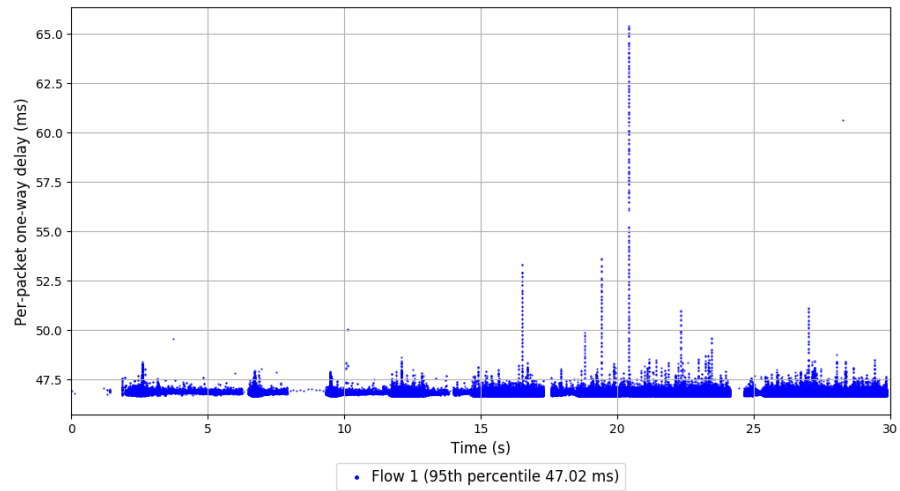
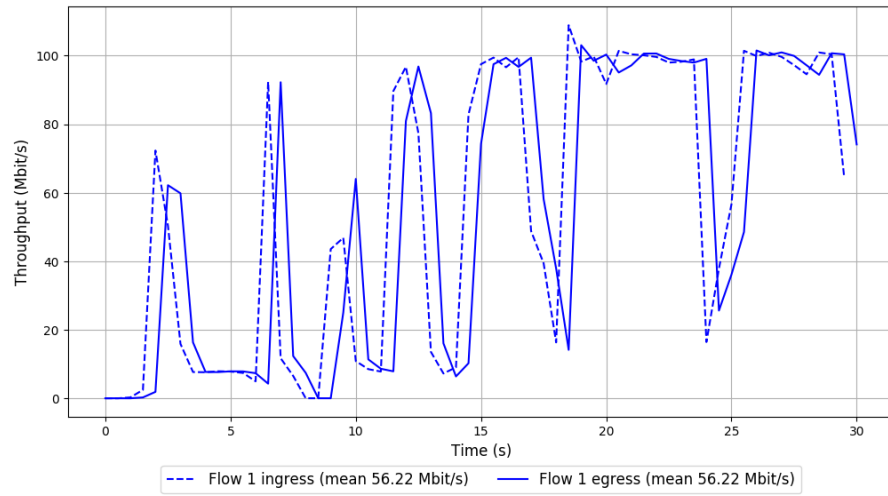
-- Flow 1:

Average throughput: 56.22 Mbit/s

95th percentile per-packet one-way delay: 47.021 ms

Loss rate: 0.00%

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





Run 4: Statistics of QUIC Cubic

Start at: 2018-12-12 06:40:01

End at: 2018-12-12 06:40:31

Local clock offset: -0.223 ms

Remote clock offset: 0.037 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 60.94 Mbit/s

95th percentile per-packet one-way delay: 47.537 ms

Loss rate: 0.00%

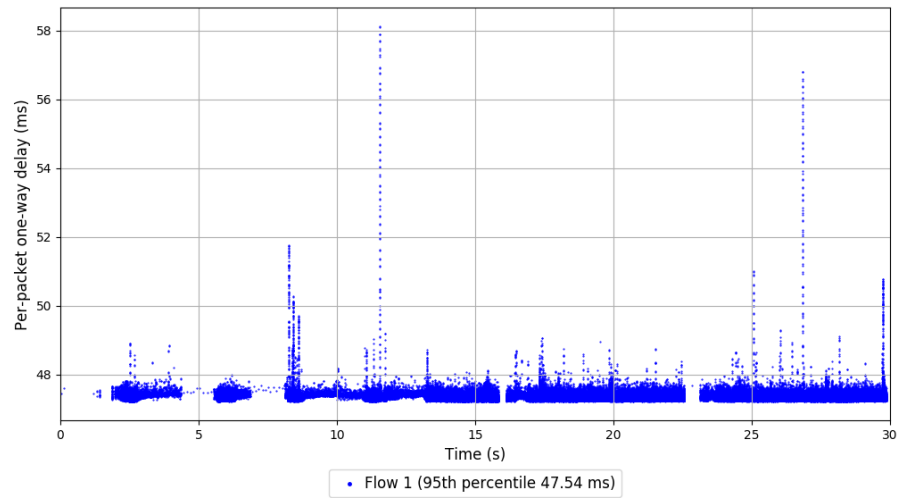
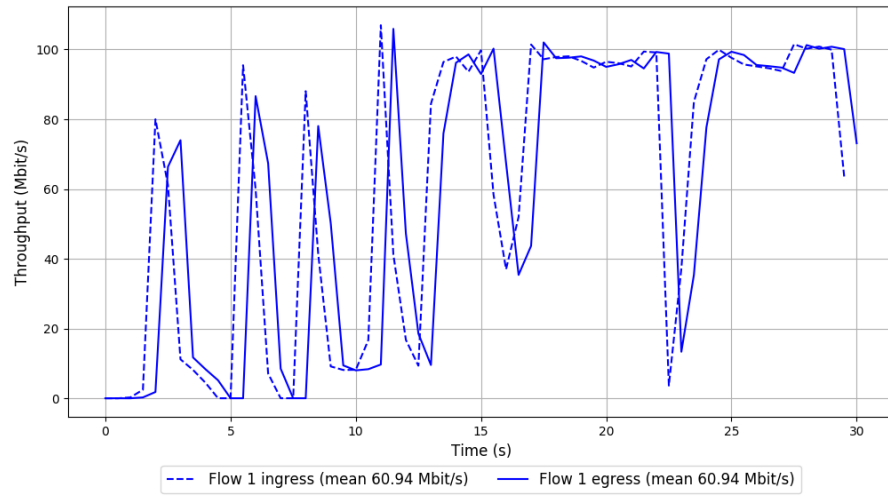
-- Flow 1:

Average throughput: 60.94 Mbit/s

95th percentile per-packet one-way delay: 47.537 ms

Loss rate: 0.00%

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

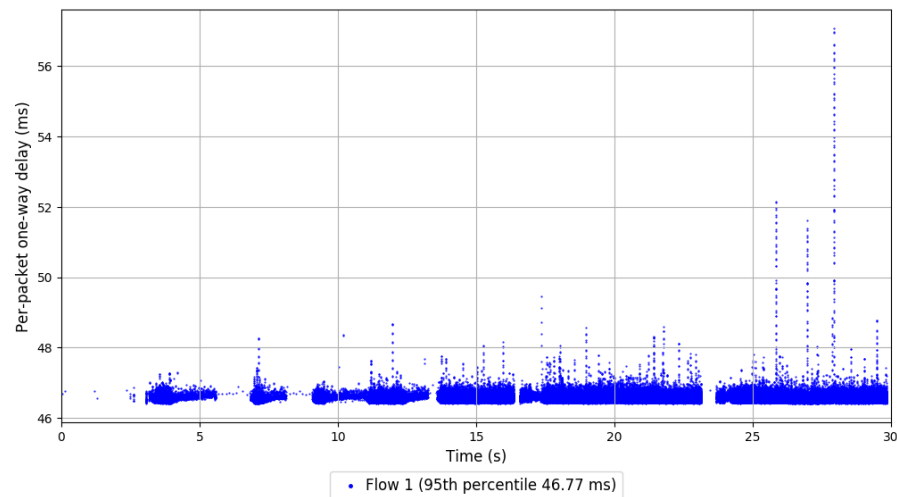
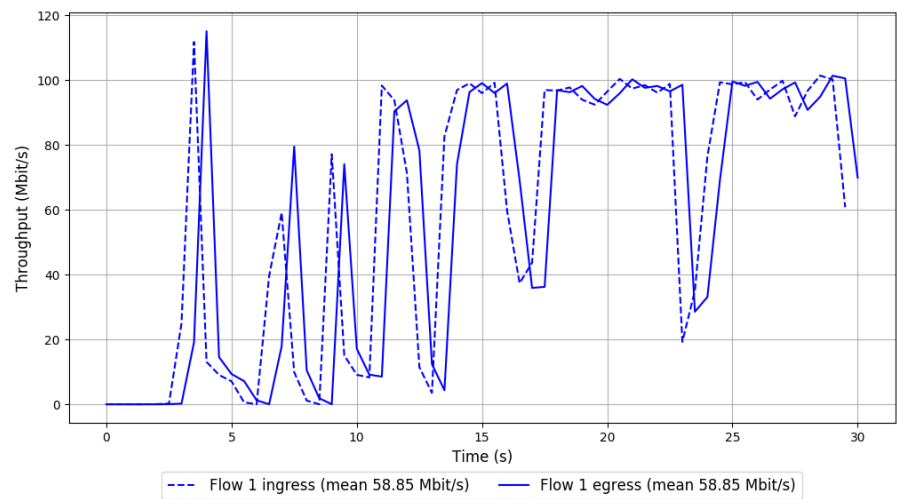


Run 5: Statistics of QUIC Cubic

Start at: 2018-12-12 07:08:41  
End at: 2018-12-12 07:09:11  
Local clock offset: -0.135 ms  
Remote clock offset: -0.162 ms

# Below is generated by plot.py at 2018-12-12 09:12:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 58.85 Mbit/s  
95th percentile per-packet one-way delay: 46.768 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 58.85 Mbit/s  
95th percentile per-packet one-way delay: 46.768 ms  
Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

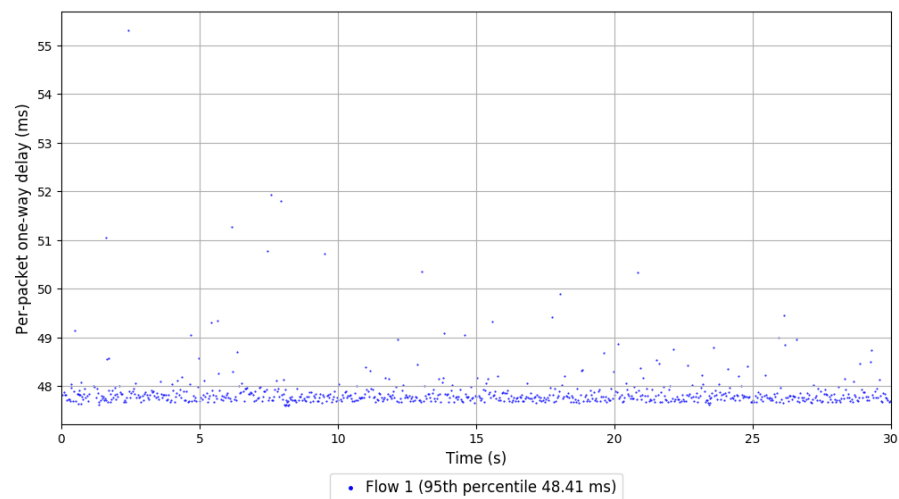
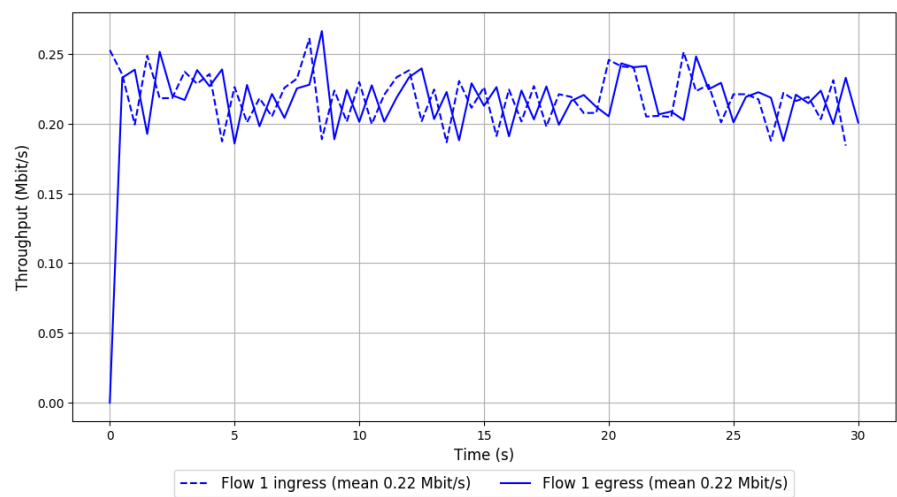


Run 1: Statistics of SCReAM

Start at: 2018-12-12 05:10:02  
End at: 2018-12-12 05:10:32  
Local clock offset: -0.049 ms  
Remote clock offset: -0.133 ms

# Below is generated by plot.py at 2018-12-12 09:12:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 48.413 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 48.413 ms  
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link

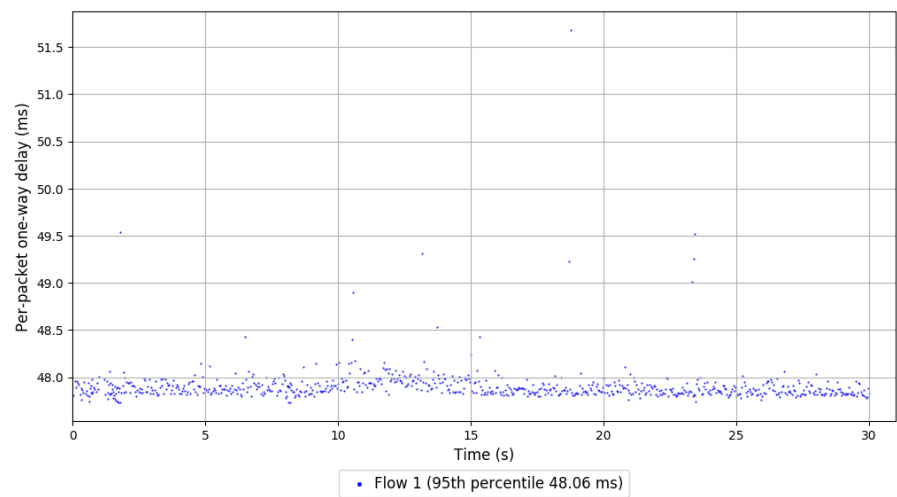
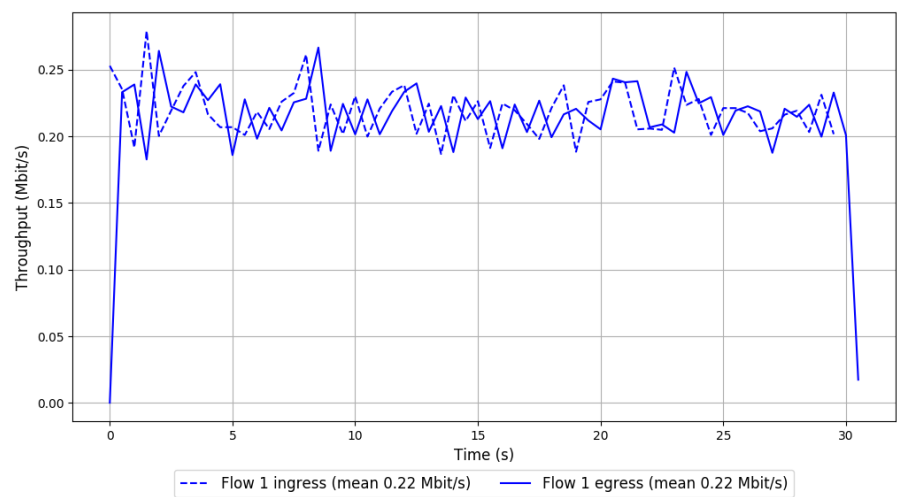


Run 2: Statistics of SCReAM

Start at: 2018-12-12 05:38:04  
End at: 2018-12-12 05:38:34  
Local clock offset: -0.078 ms  
Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 48.059 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 48.059 ms  
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



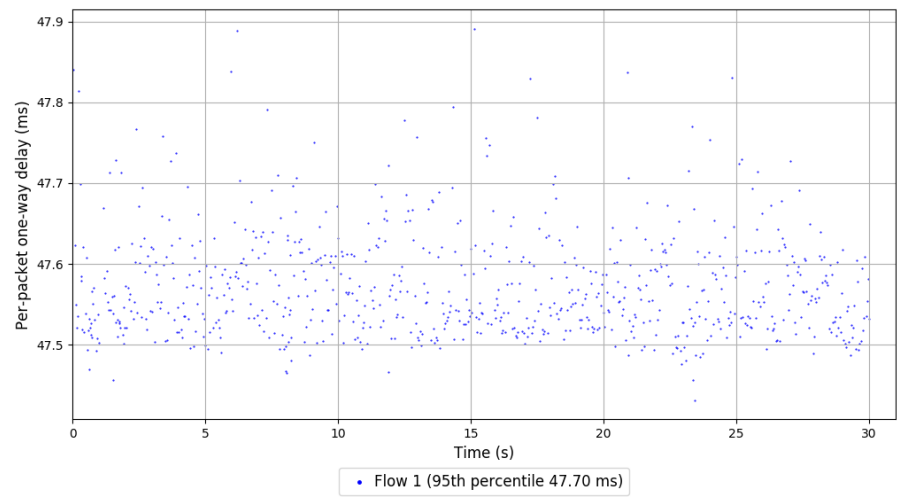
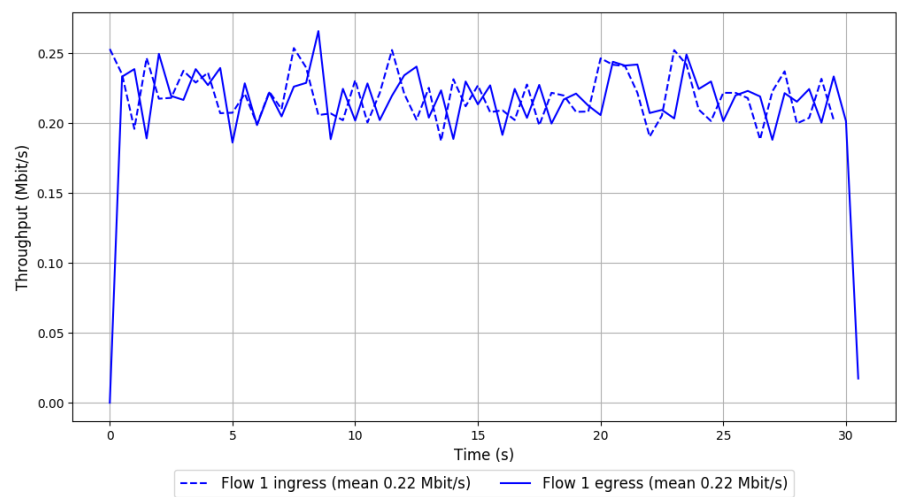


Run 3: Statistics of SCReAM

Start at: 2018-12-12 06:07:12  
End at: 2018-12-12 06:07:42  
Local clock offset: -0.065 ms  
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 47.699 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 47.699 ms  
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-12-12 06:35:29

End at: 2018-12-12 06:35:59

Local clock offset: -0.597 ms

Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-12-12 09:12:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 48.027 ms

Loss rate: 0.00%

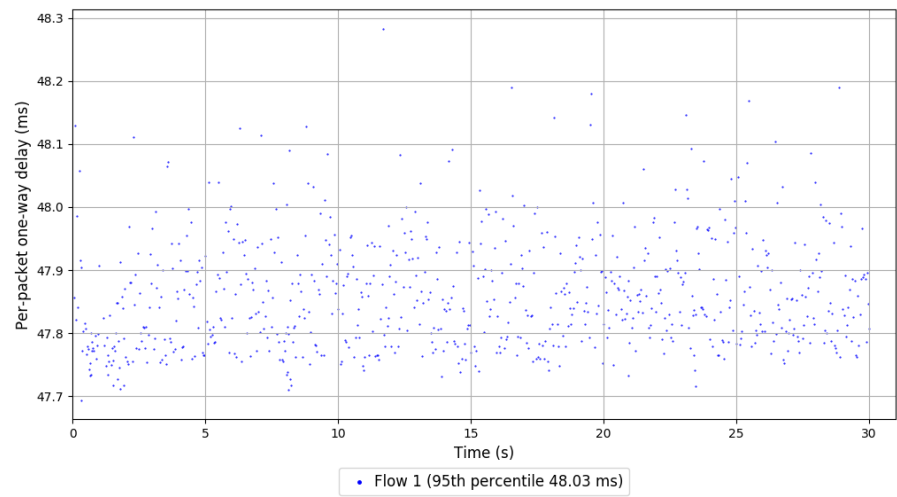
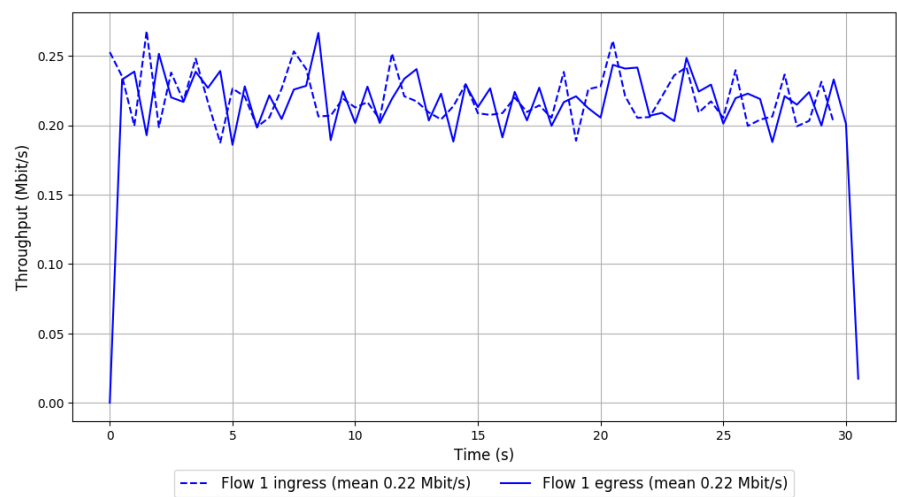
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 48.027 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link

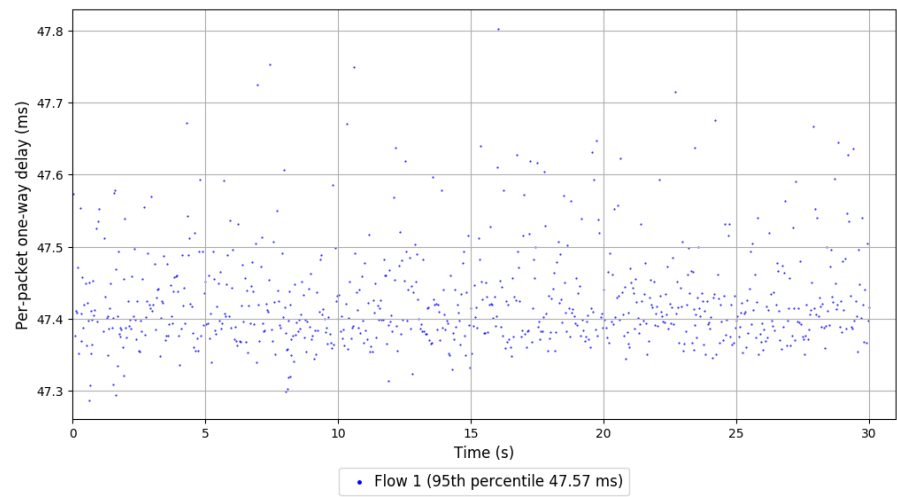
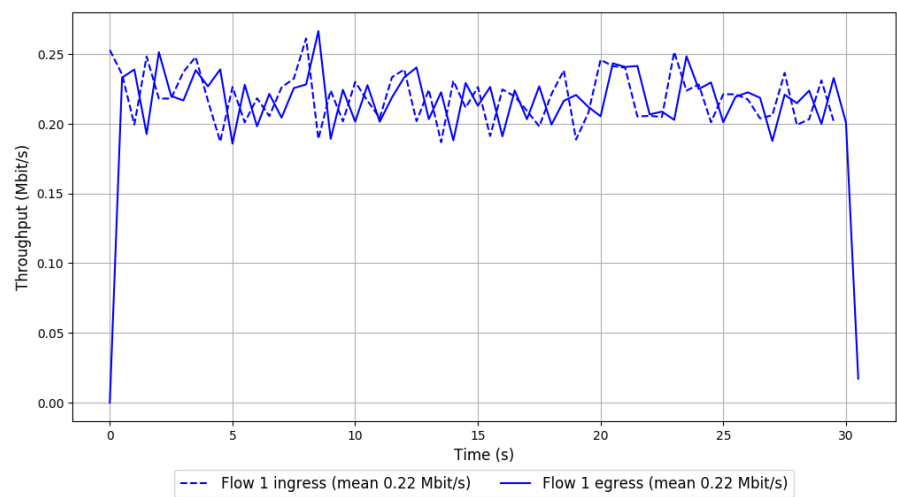


Run 5: Statistics of SCReAM

Start at: 2018-12-12 07:04:28  
End at: 2018-12-12 07:04:58  
Local clock offset: -0.092 ms  
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 47.572 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 47.572 ms  
Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

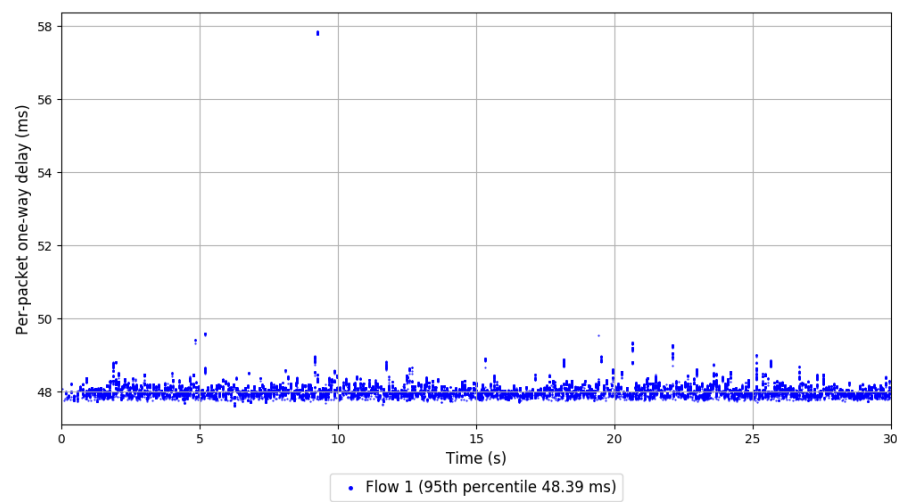
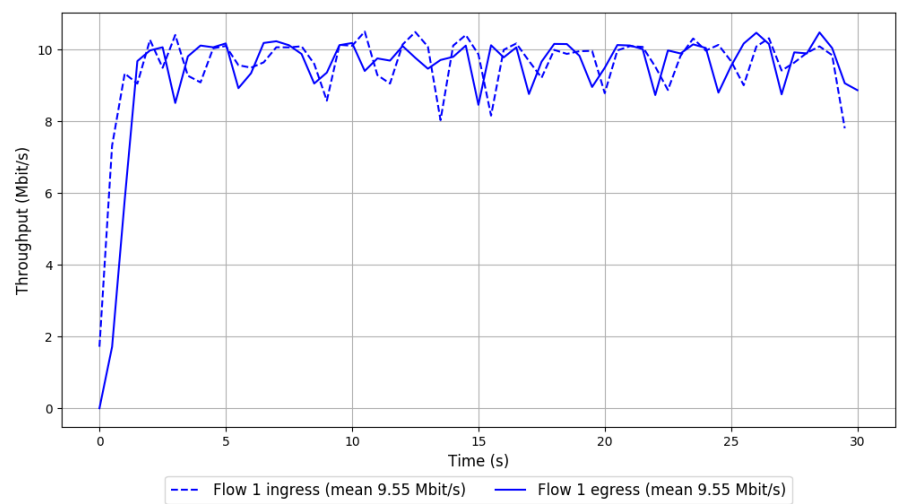


Run 1: Statistics of Sprout

Start at: 2018-12-12 05:19:59  
End at: 2018-12-12 05:20:29  
Local clock offset: -0.114 ms  
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 9.55 Mbit/s  
95th percentile per-packet one-way delay: 48.388 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 9.55 Mbit/s  
95th percentile per-packet one-way delay: 48.388 ms  
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



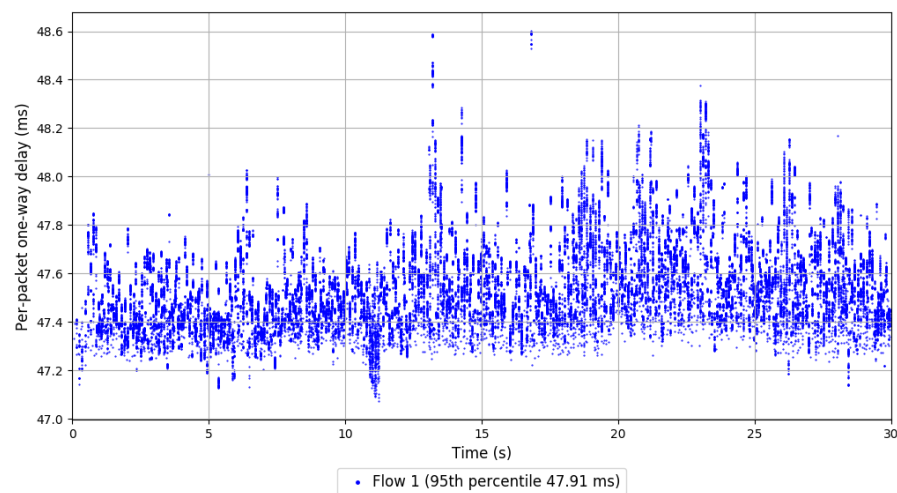
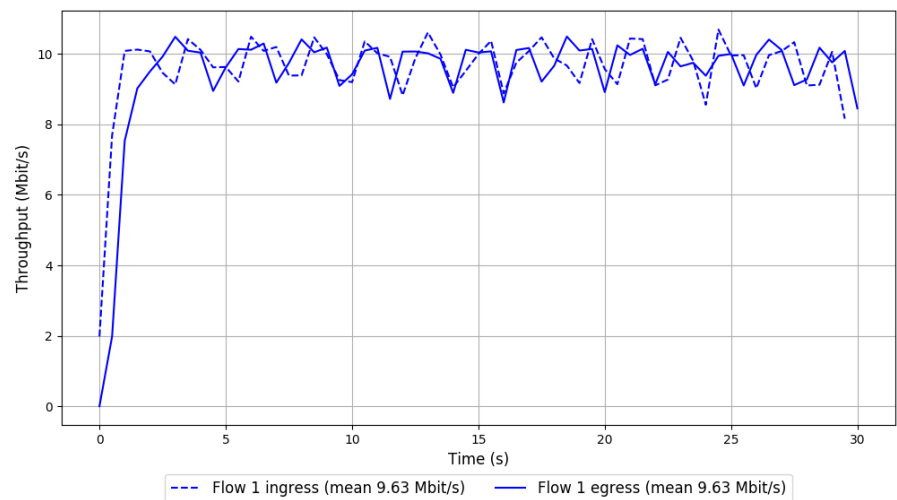


Run 2: Statistics of Sprout

Start at: 2018-12-12 05:48:06  
End at: 2018-12-12 05:48:36  
Local clock offset: -0.072 ms  
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 9.63 Mbit/s  
95th percentile per-packet one-way delay: 47.910 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 9.63 Mbit/s  
95th percentile per-packet one-way delay: 47.910 ms  
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-12-12 06:17:28

End at: 2018-12-12 06:17:58

Local clock offset: -0.18 ms

Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-12-12 09:12:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 9.65 Mbit/s

95th percentile per-packet one-way delay: 47.299 ms

Loss rate: 0.00%

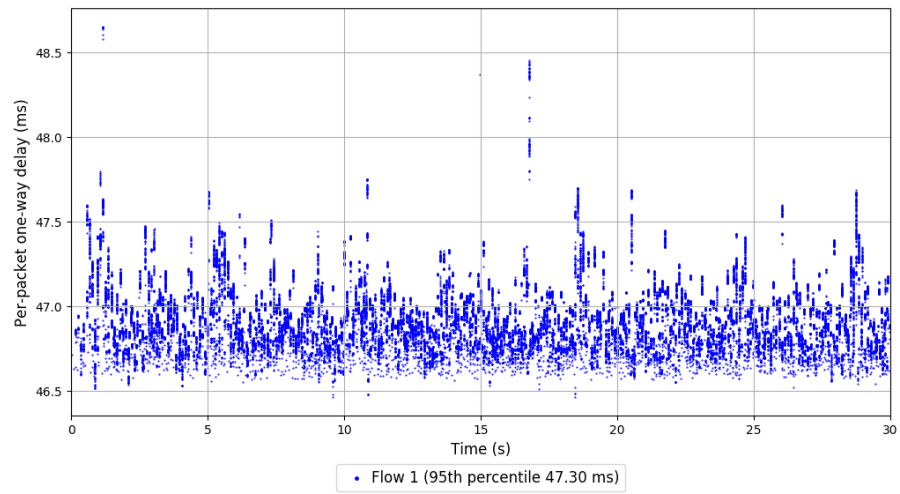
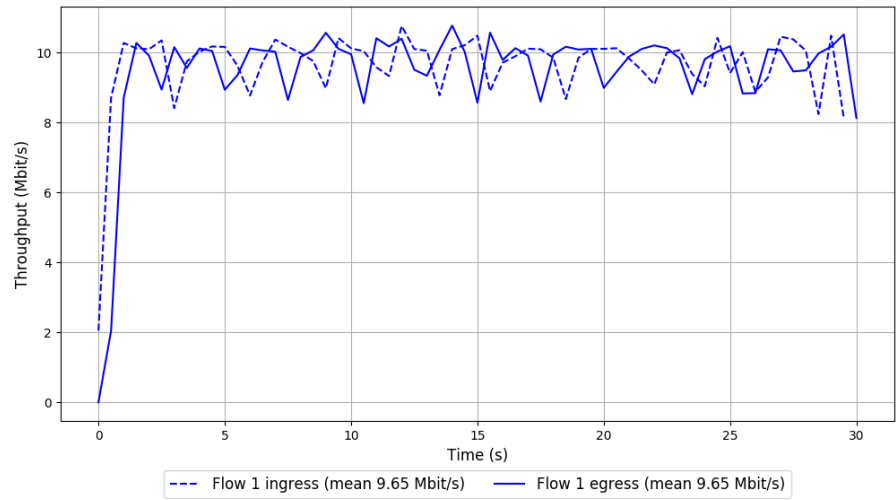
-- Flow 1:

Average throughput: 9.65 Mbit/s

95th percentile per-packet one-way delay: 47.299 ms

Loss rate: 0.00%

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

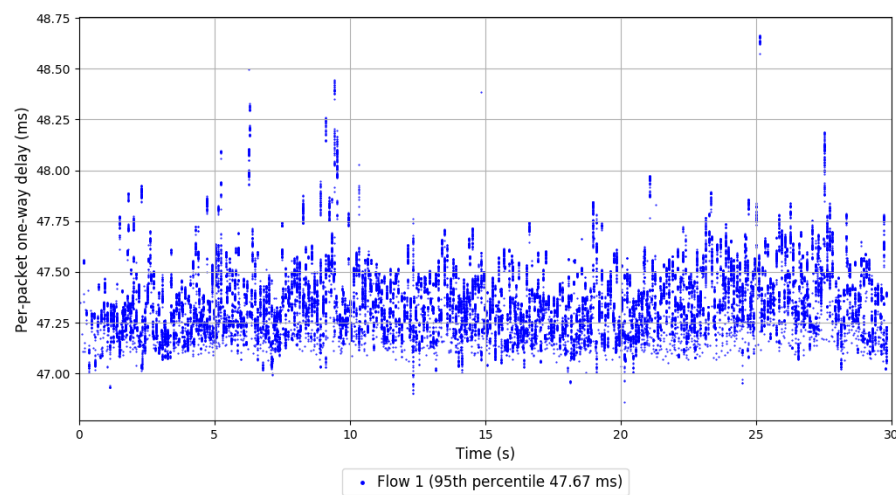
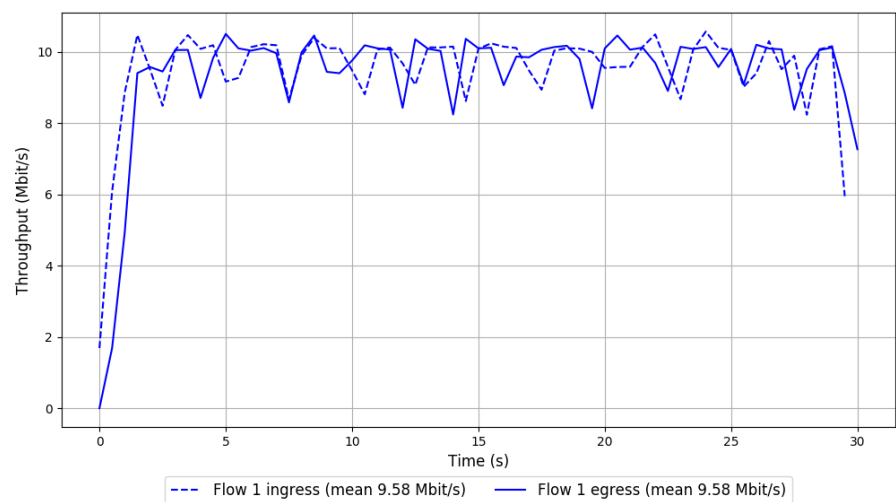


Run 4: Statistics of Sprout

Start at: 2018-12-12 06:45:52  
End at: 2018-12-12 06:46:22  
Local clock offset: 0.193 ms  
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 9.58 Mbit/s  
95th percentile per-packet one-way delay: 47.667 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 9.58 Mbit/s  
95th percentile per-packet one-way delay: 47.667 ms  
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link

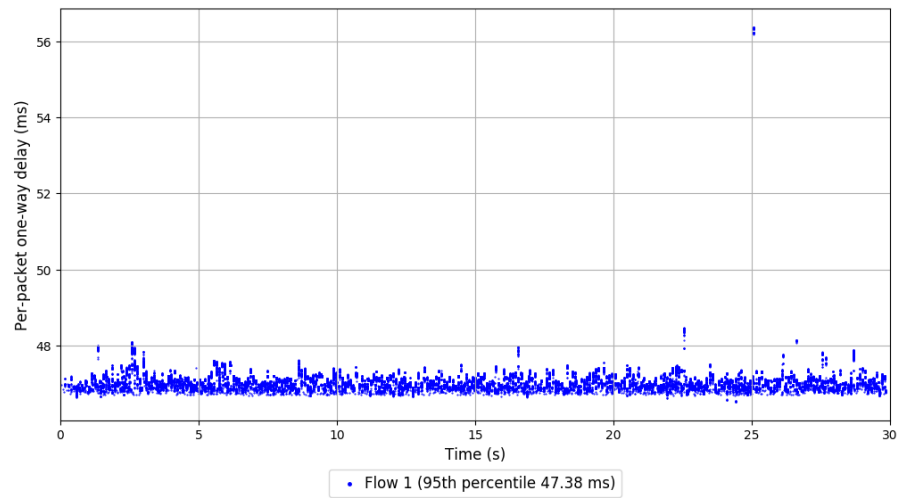
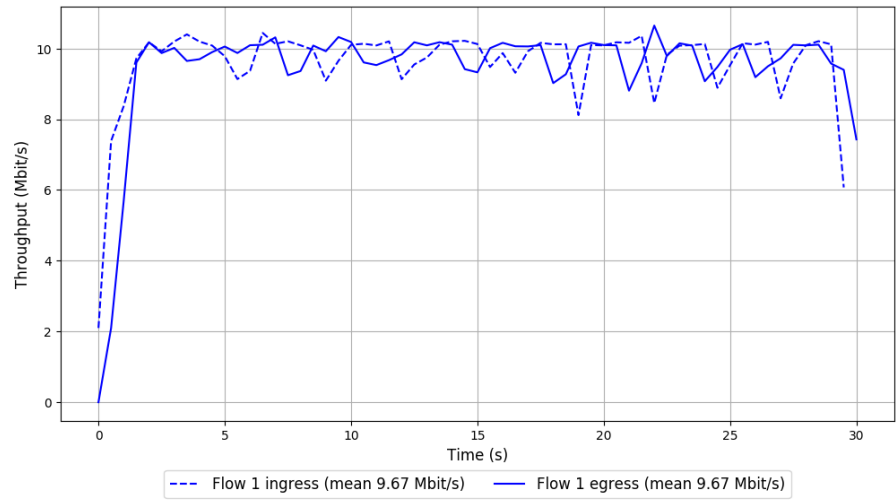


Run 5: Statistics of Sprout

Start at: 2018-12-12 07:14:23  
End at: 2018-12-12 07:14:53  
Local clock offset: -0.133 ms  
Remote clock offset: -0.112 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 9.67 Mbit/s  
95th percentile per-packet one-way delay: 47.375 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 9.67 Mbit/s  
95th percentile per-packet one-way delay: 47.375 ms  
Loss rate: 0.00%

## Run 5: Report of Sprout — Data Link



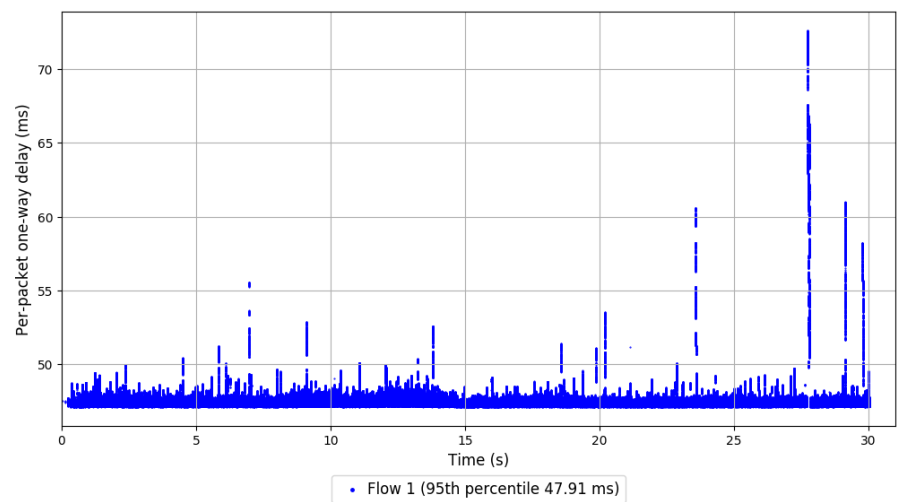
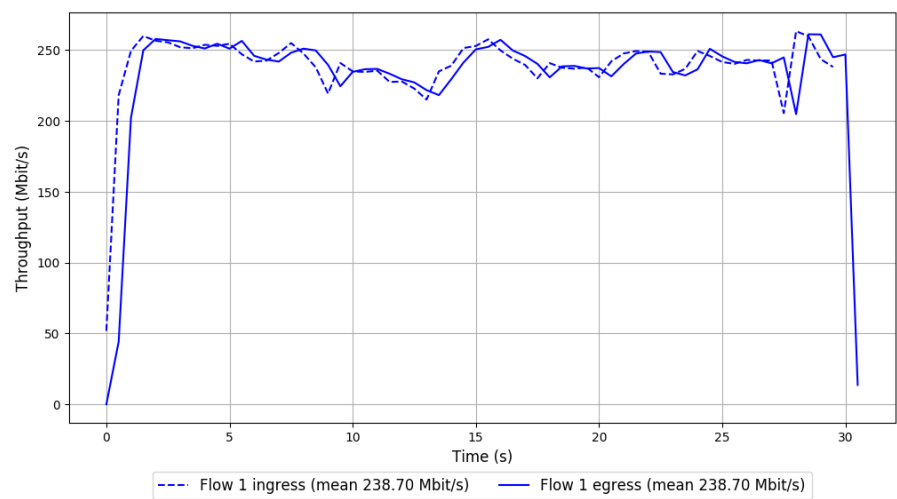


Run 1: Statistics of TaoVA-100x

Start at: 2018-12-12 05:22:46  
End at: 2018-12-12 05:23:16  
Local clock offset: -0.108 ms  
Remote clock offset: -0.118 ms

# Below is generated by plot.py at 2018-12-12 09:12:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 238.70 Mbit/s  
95th percentile per-packet one-way delay: 47.910 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 238.70 Mbit/s  
95th percentile per-packet one-way delay: 47.910 ms  
Loss rate: 0.00%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-12-12 05:51:00

End at: 2018-12-12 05:51:30

Local clock offset: -0.124 ms

Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2018-12-12 09:12:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 240.14 Mbit/s

95th percentile per-packet one-way delay: 47.836 ms

Loss rate: 0.00%

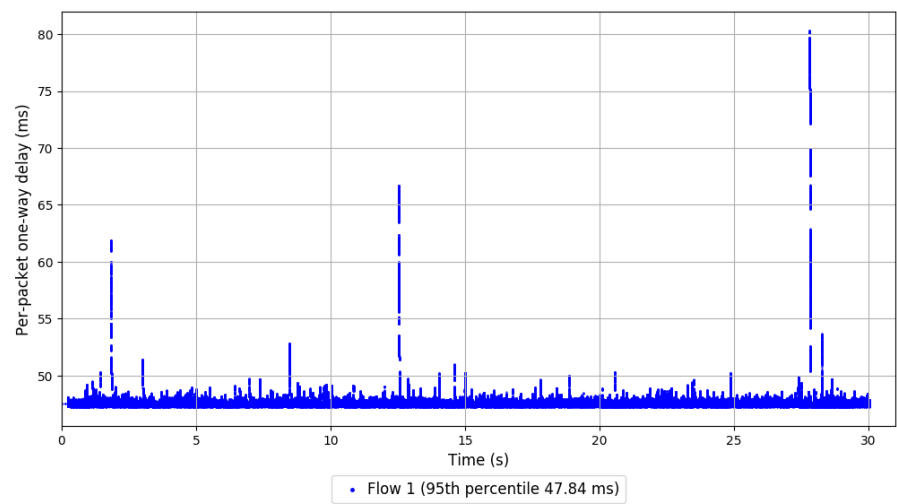
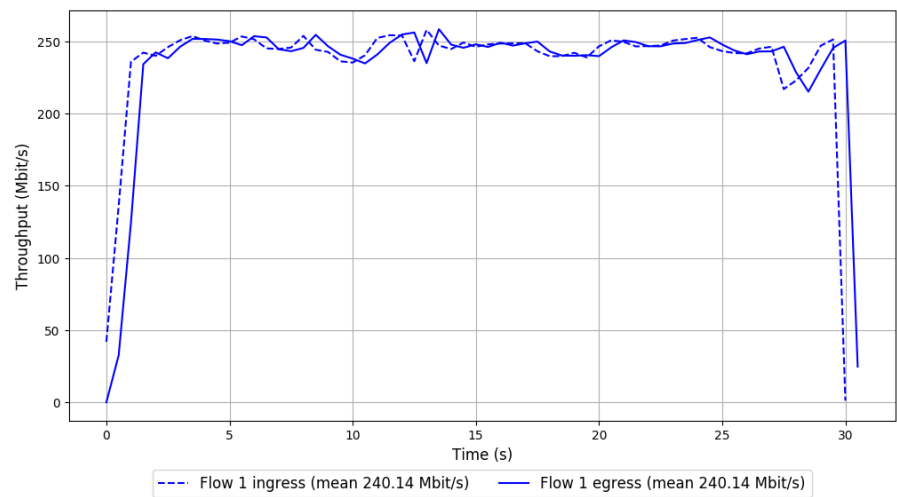
-- Flow 1:

Average throughput: 240.14 Mbit/s

95th percentile per-packet one-way delay: 47.836 ms

Loss rate: 0.00%

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

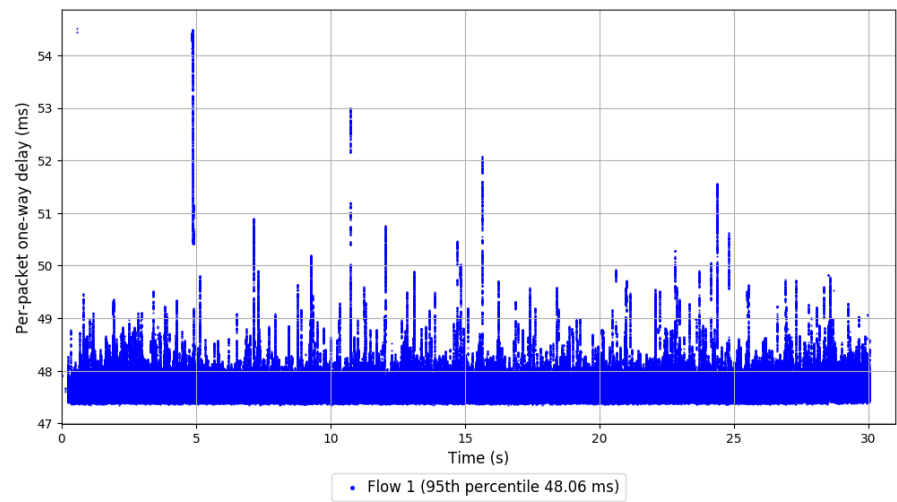
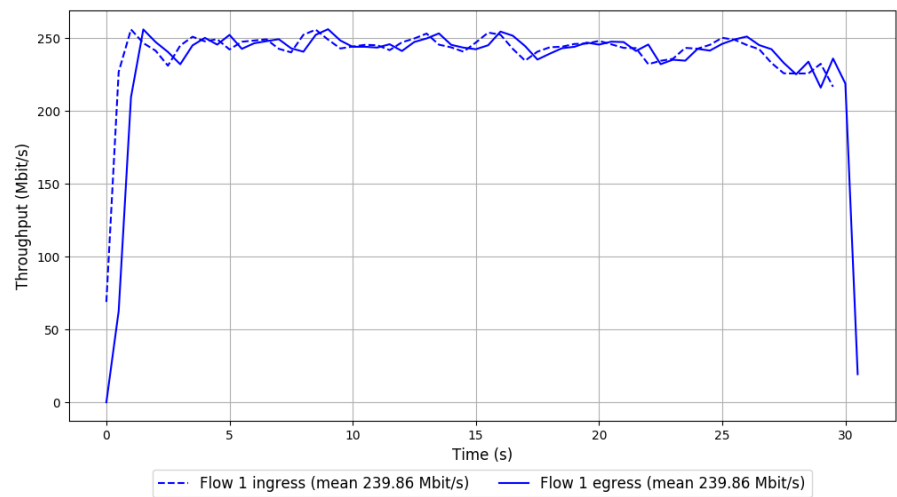


Run 3: Statistics of TaoVA-100x

Start at: 2018-12-12 06:20:16  
End at: 2018-12-12 06:20:46  
Local clock offset: -0.205 ms  
Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2018-12-12 09:12:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 239.86 Mbit/s  
95th percentile per-packet one-way delay: 48.065 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 239.86 Mbit/s  
95th percentile per-packet one-way delay: 48.065 ms  
Loss rate: 0.00%

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

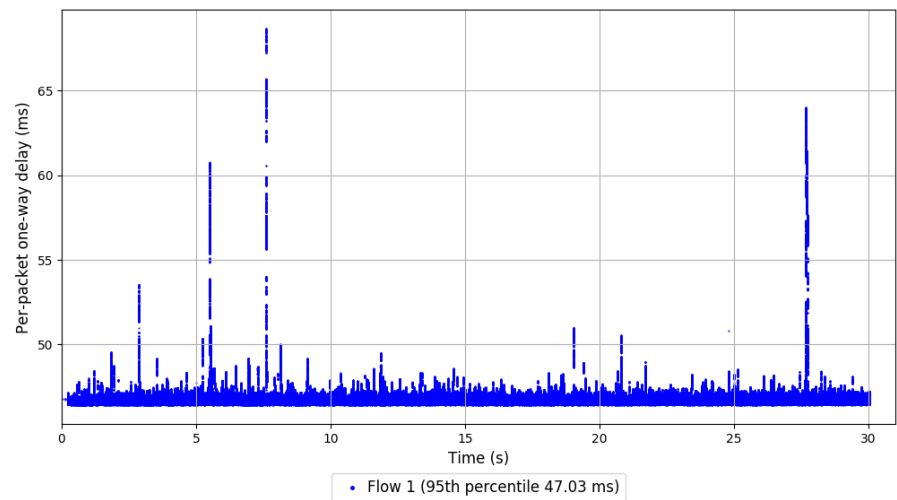
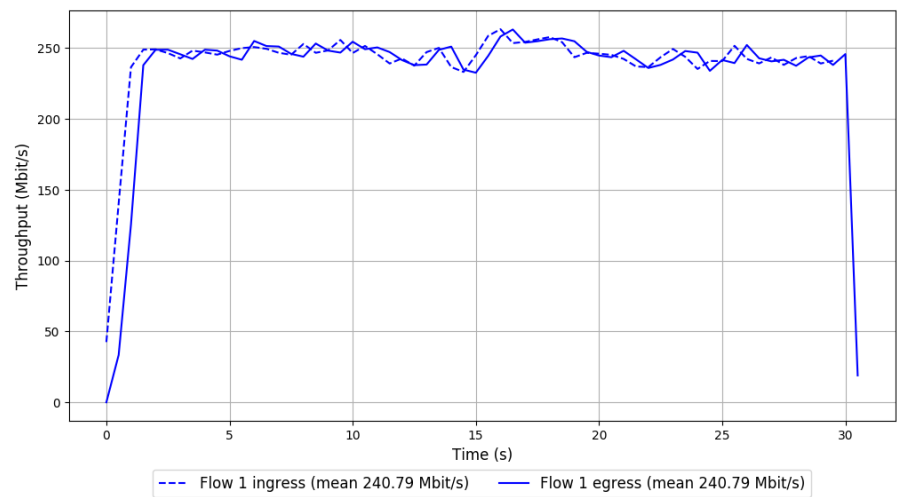


Run 4: Statistics of TaoVA-100x

Start at: 2018-12-12 06:48:39  
End at: 2018-12-12 06:49:09  
Local clock offset: -0.192 ms  
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-12-12 09:12:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 240.79 Mbit/s  
95th percentile per-packet one-way delay: 47.027 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 240.79 Mbit/s  
95th percentile per-packet one-way delay: 47.027 ms  
Loss rate: 0.00%

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



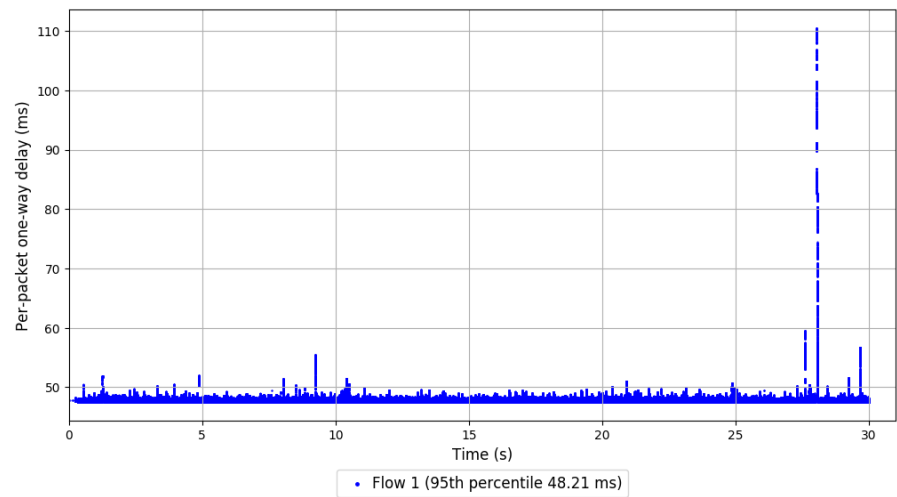
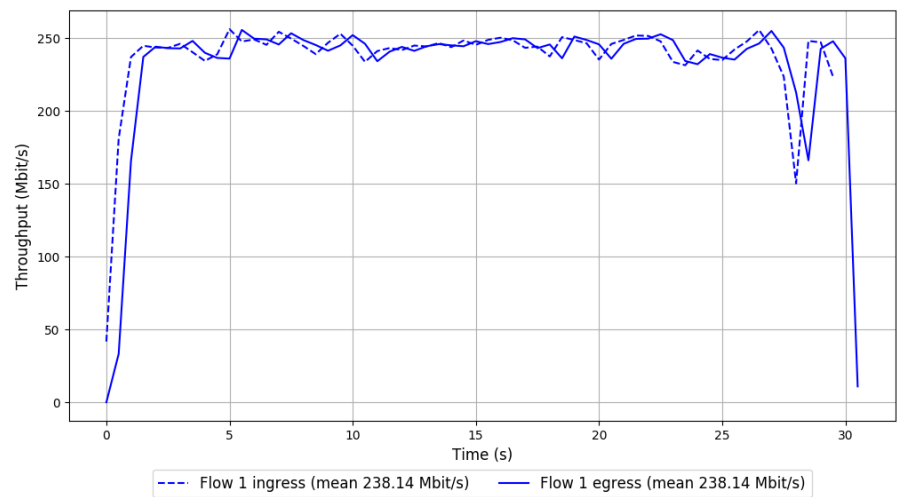


Run 5: Statistics of TaoVA-100x

Start at: 2018-12-12 07:17:07  
End at: 2018-12-12 07:17:37  
Local clock offset: -0.159 ms  
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2018-12-12 09:12:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 238.14 Mbit/s  
95th percentile per-packet one-way delay: 48.207 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 238.14 Mbit/s  
95th percentile per-packet one-way delay: 48.207 ms  
Loss rate: 0.00%

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

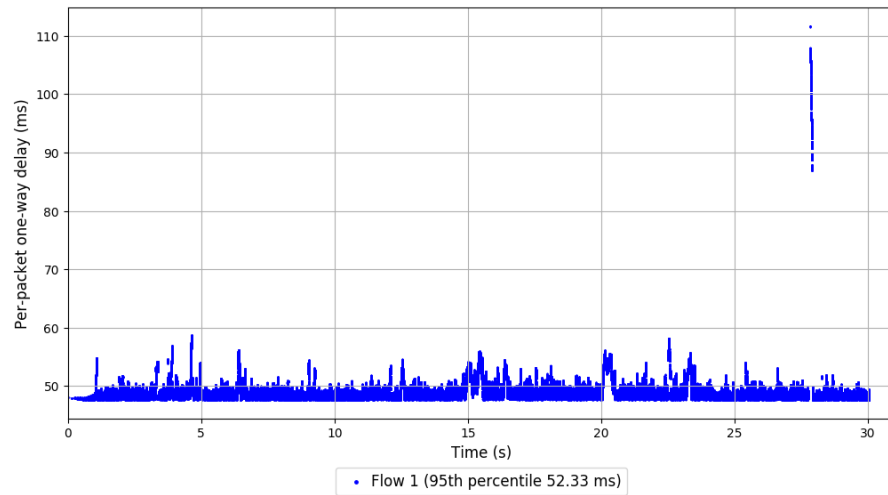
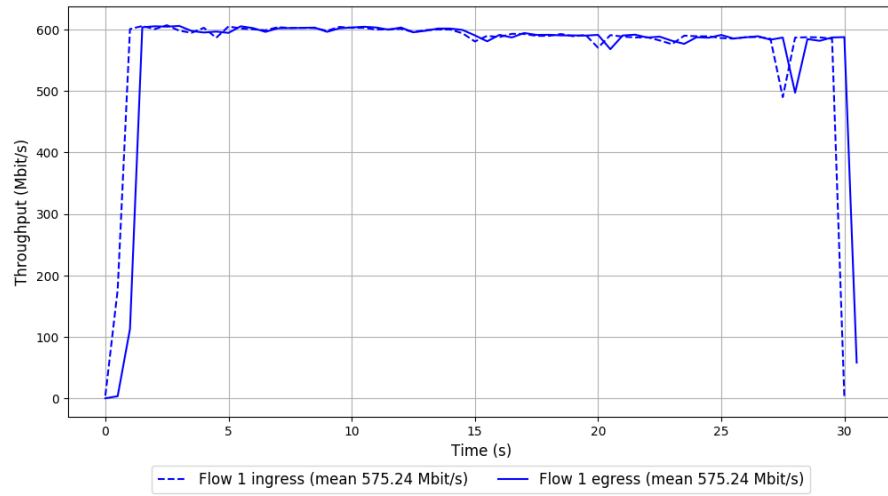


Run 1: Statistics of TCP Vegas

Start at: 2018-12-12 05:24:15  
End at: 2018-12-12 05:24:45  
Local clock offset: -0.453 ms  
Remote clock offset: -0.149 ms

# Below is generated by plot.py at 2018-12-12 09:14:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 575.24 Mbit/s  
95th percentile per-packet one-way delay: 52.330 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 575.24 Mbit/s  
95th percentile per-packet one-way delay: 52.330 ms  
Loss rate: 0.00%

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

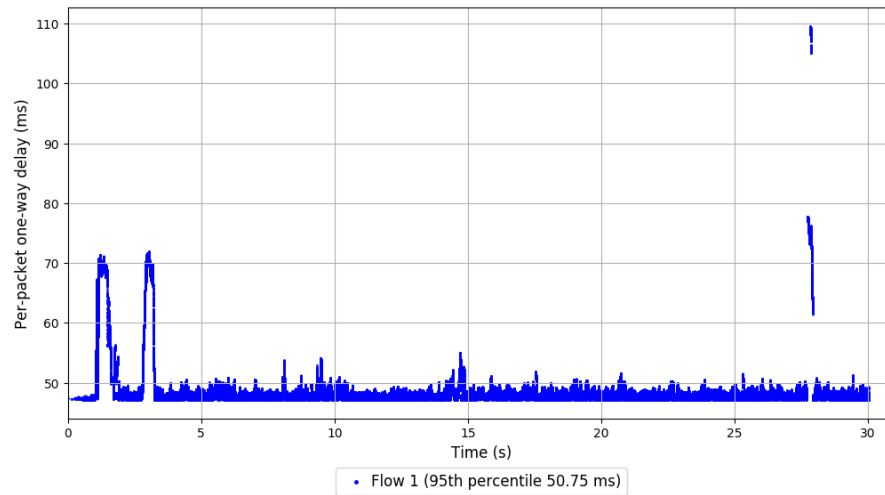
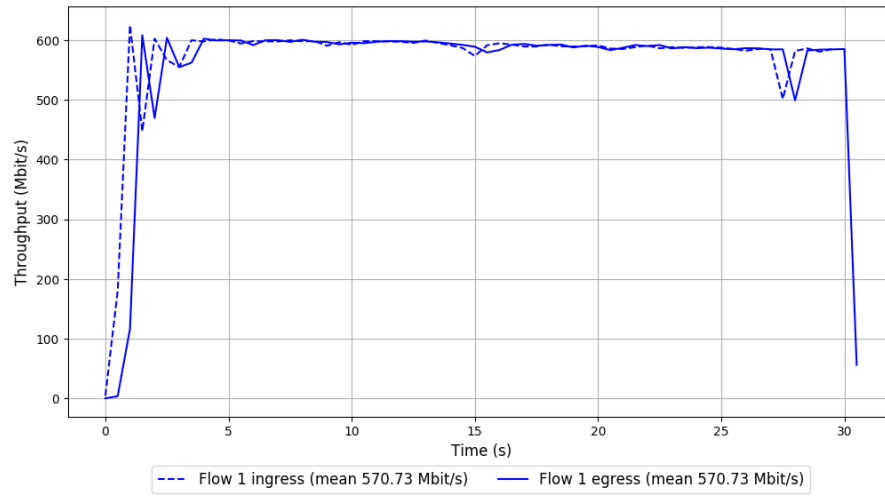


Run 2: Statistics of TCP Vegas

Start at: 2018-12-12 05:52:34  
End at: 2018-12-12 05:53:04  
Local clock offset: -0.051 ms  
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2018-12-12 09:22:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 570.73 Mbit/s  
95th percentile per-packet one-way delay: 50.754 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 570.73 Mbit/s  
95th percentile per-packet one-way delay: 50.754 ms  
Loss rate: 0.00%

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

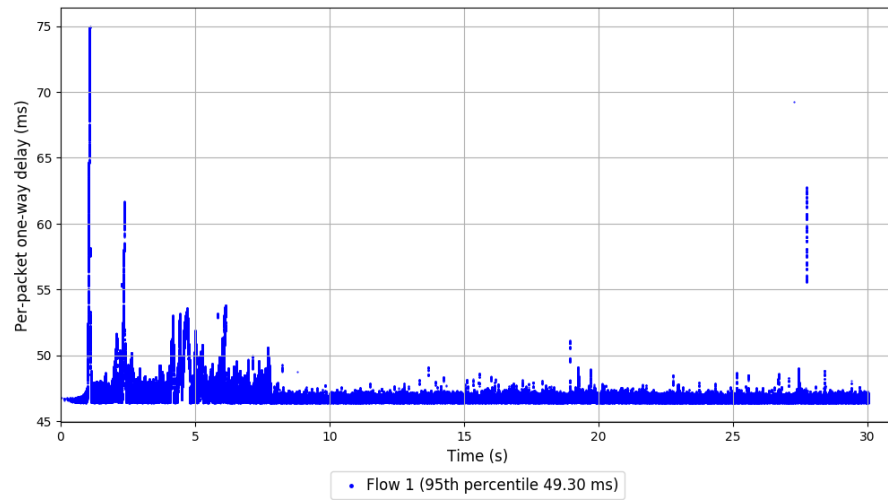
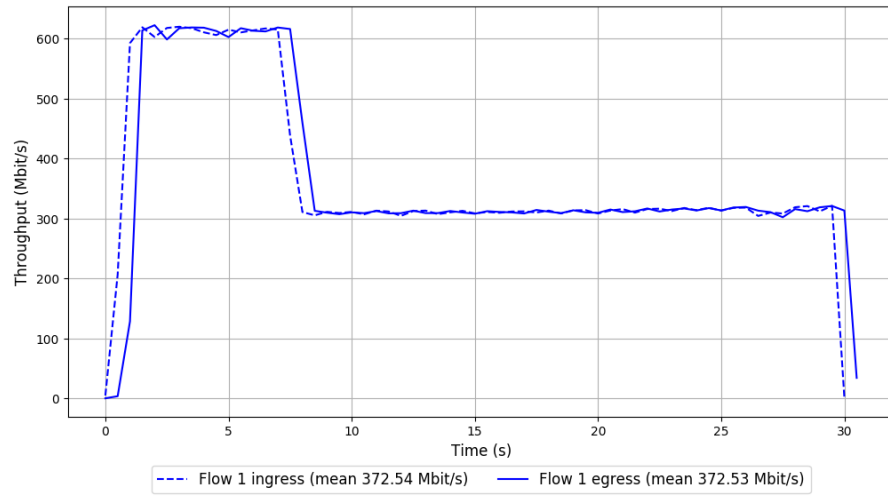


Run 3: Statistics of TCP Vegas

Start at: 2018-12-12 06:21:46  
End at: 2018-12-12 06:22:16  
Local clock offset: -0.152 ms  
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-12-12 09:22:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 372.53 Mbit/s  
95th percentile per-packet one-way delay: 49.303 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 372.53 Mbit/s  
95th percentile per-packet one-way delay: 49.303 ms  
Loss rate: 0.00%

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



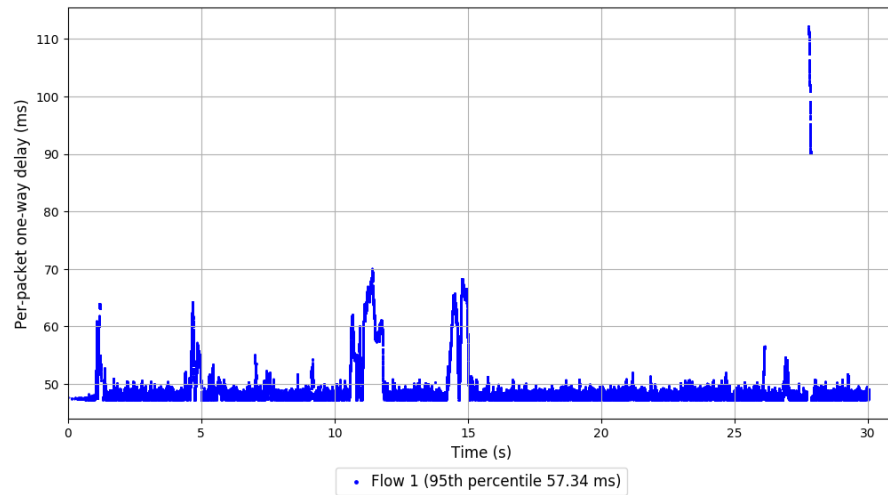
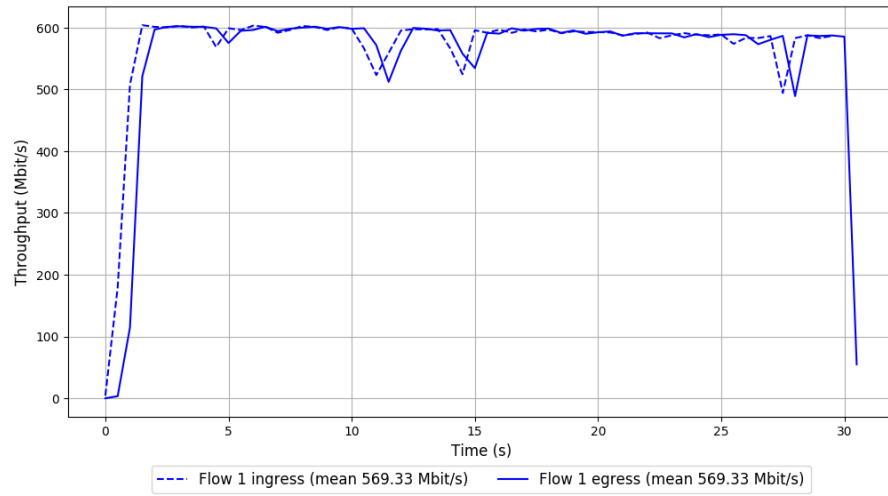


Run 4: Statistics of TCP Vegas

Start at: 2018-12-12 06:50:12  
End at: 2018-12-12 06:50:42  
Local clock offset: -0.196 ms  
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2018-12-12 09:23:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 569.33 Mbit/s  
95th percentile per-packet one-way delay: 57.338 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 569.33 Mbit/s  
95th percentile per-packet one-way delay: 57.338 ms  
Loss rate: 0.00%

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

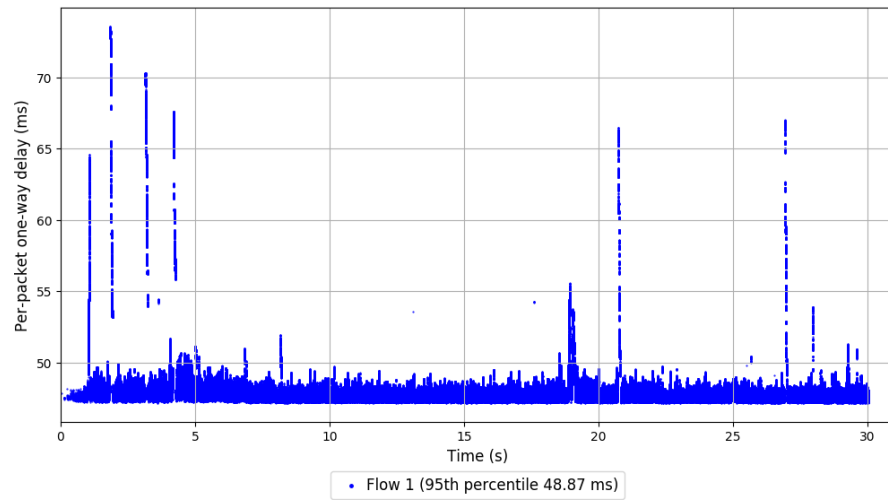
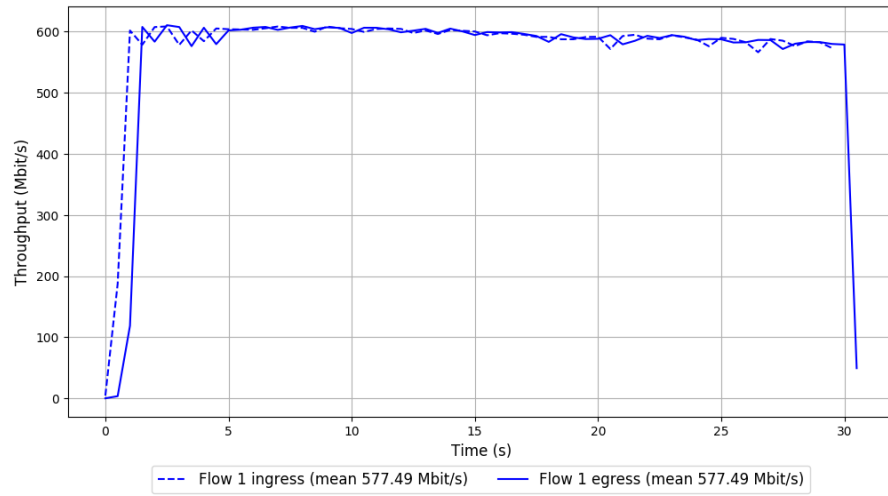


Run 5: Statistics of TCP Vegas

Start at: 2018-12-12 07:18:37  
End at: 2018-12-12 07:19:07  
Local clock offset: -0.165 ms  
Remote clock offset: -0.104 ms

# Below is generated by plot.py at 2018-12-12 09:23:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 577.49 Mbit/s  
95th percentile per-packet one-way delay: 48.873 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 577.49 Mbit/s  
95th percentile per-packet one-way delay: 48.873 ms  
Loss rate: 0.00%

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

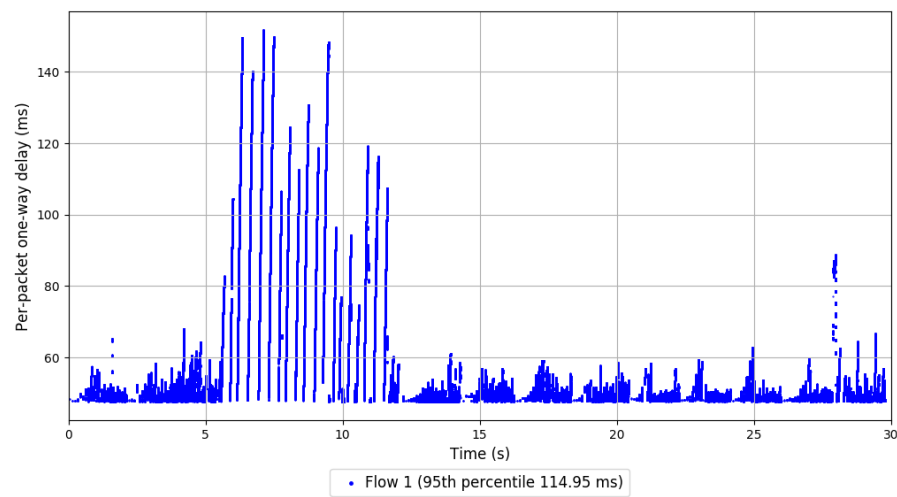
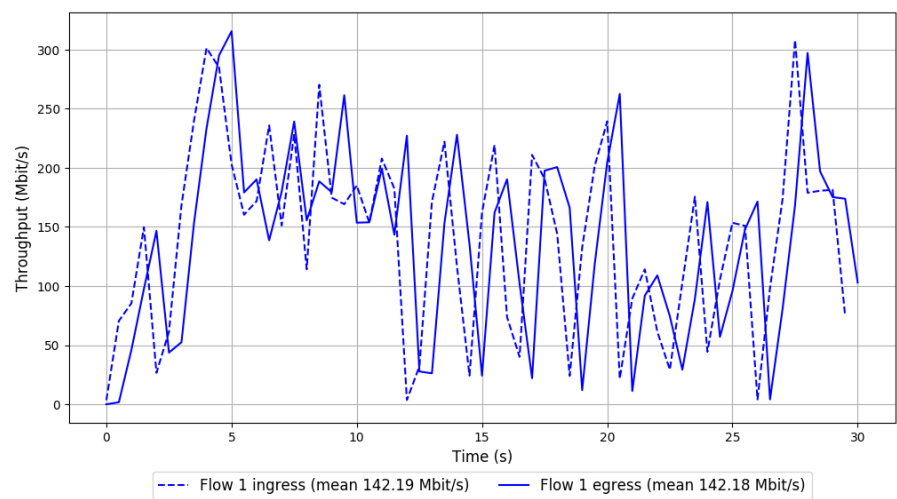


Run 1: Statistics of Verus

Start at: 2018-12-12 05:08:40  
End at: 2018-12-12 05:09:10  
Local clock offset: -0.056 ms  
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-12-12 09:23:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 142.18 Mbit/s  
95th percentile per-packet one-way delay: 114.947 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 142.18 Mbit/s  
95th percentile per-packet one-way delay: 114.947 ms  
Loss rate: 0.00%

Run 1: Report of Verus — Data Link

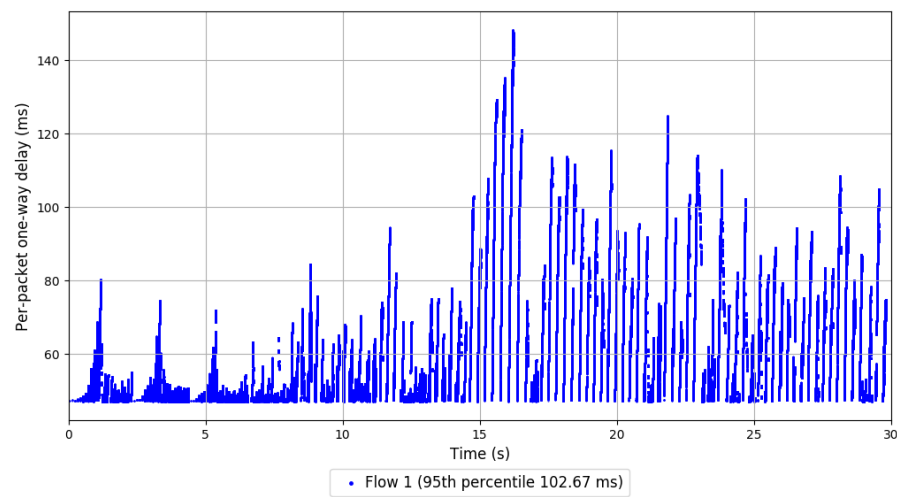
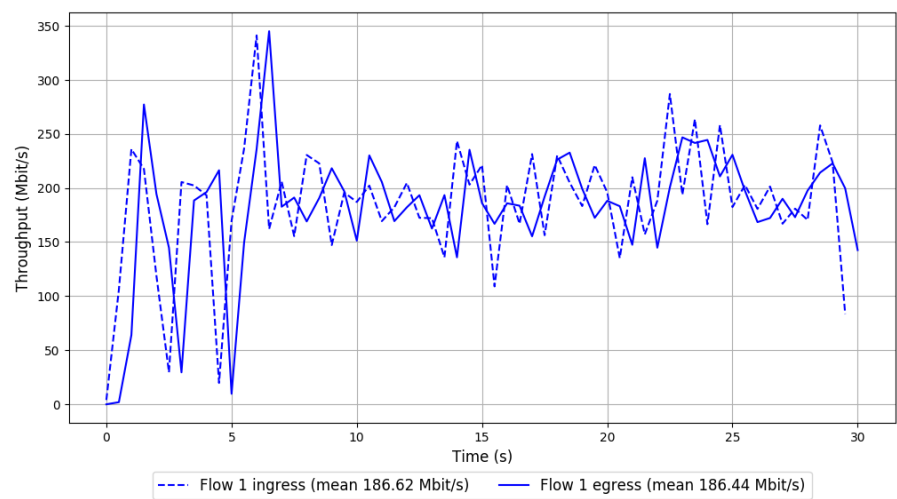


Run 2: Statistics of Verus

Start at: 2018-12-12 05:36:39  
End at: 2018-12-12 05:37:09  
Local clock offset: -0.054 ms  
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2018-12-12 09:23:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 186.44 Mbit/s  
95th percentile per-packet one-way delay: 102.665 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 186.44 Mbit/s  
95th percentile per-packet one-way delay: 102.665 ms  
Loss rate: 0.00%

Run 2: Report of Verus — Data Link



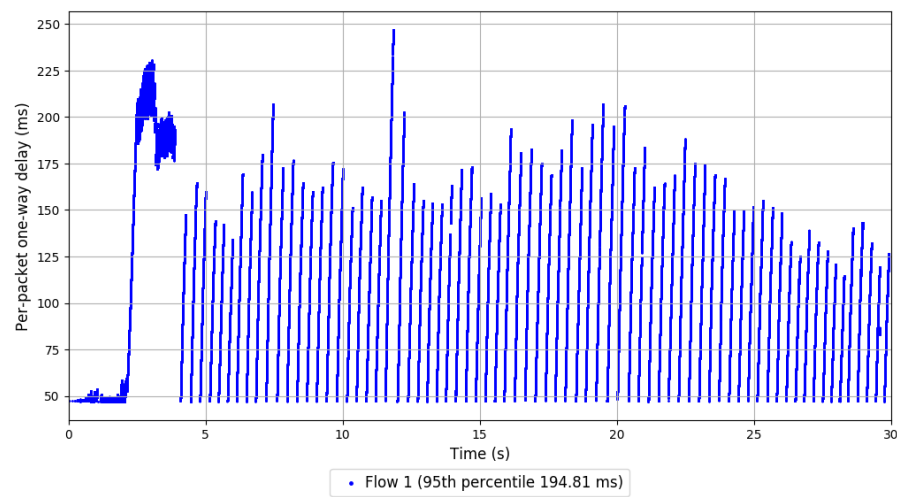
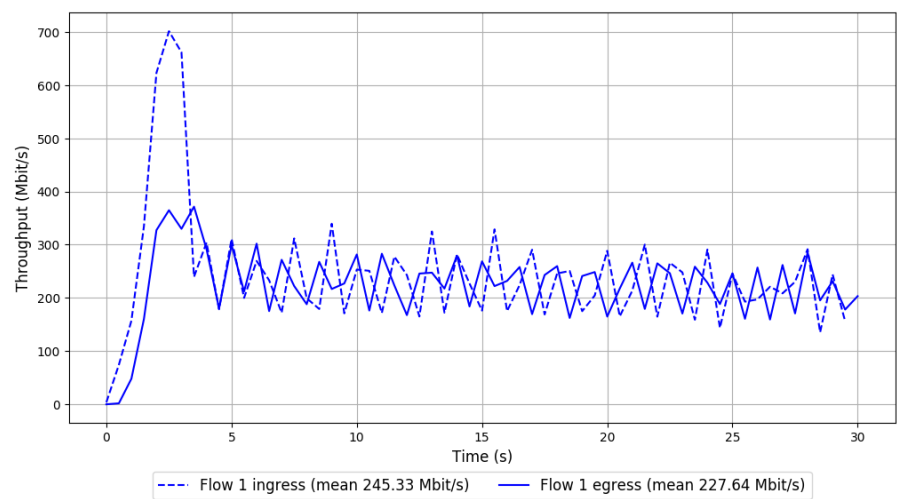


Run 3: Statistics of Verus

Start at: 2018-12-12 06:05:42  
End at: 2018-12-12 06:06:12  
Local clock offset: 0.311 ms  
Remote clock offset: -0.043 ms

# Below is generated by plot.py at 2018-12-12 09:23:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 227.64 Mbit/s  
95th percentile per-packet one-way delay: 194.806 ms  
Loss rate: 7.03%  
-- Flow 1:  
Average throughput: 227.64 Mbit/s  
95th percentile per-packet one-way delay: 194.806 ms  
Loss rate: 7.03%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-12-12 06:33:58

End at: 2018-12-12 06:34:28

Local clock offset: -0.226 ms

Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2018-12-12 09:23:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 198.76 Mbit/s

95th percentile per-packet one-way delay: 165.950 ms

Loss rate: 0.94%

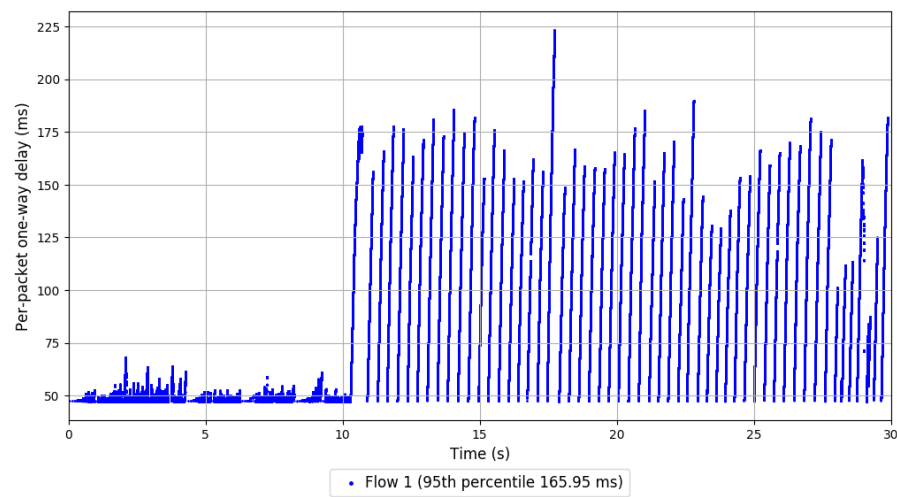
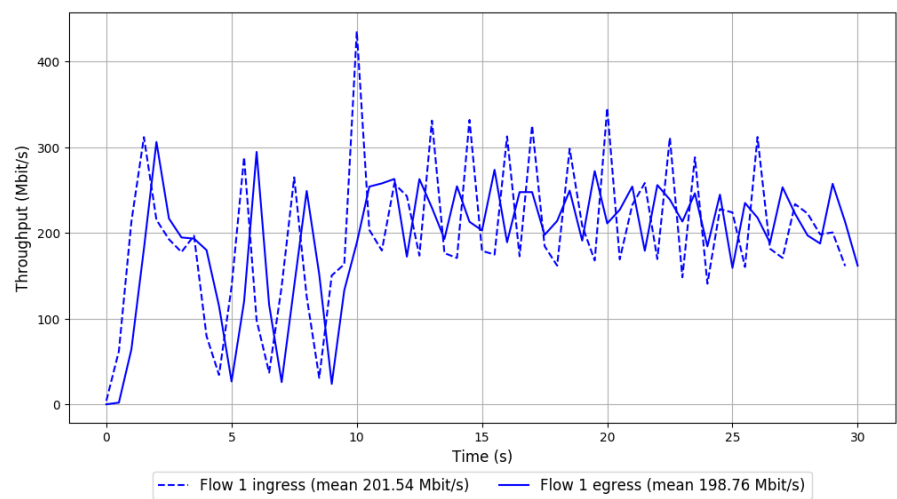
-- Flow 1:

Average throughput: 198.76 Mbit/s

95th percentile per-packet one-way delay: 165.950 ms

Loss rate: 0.94%

Run 4: Report of Verus — Data Link

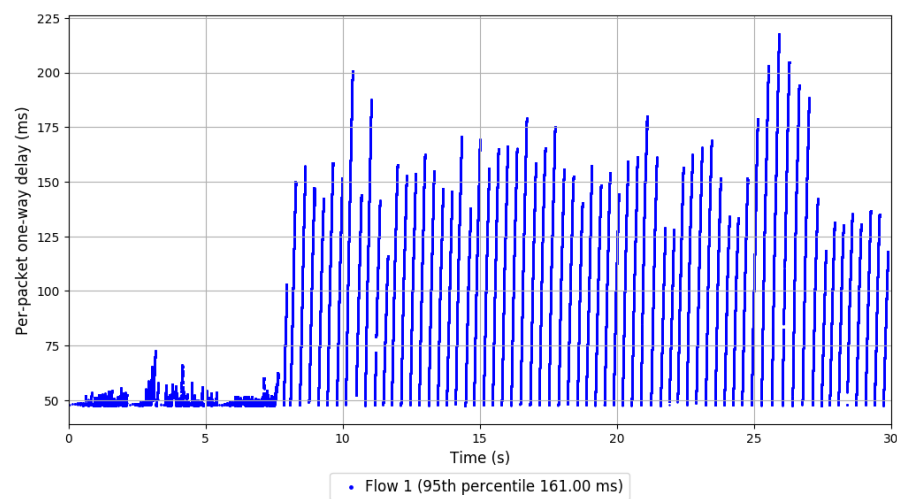
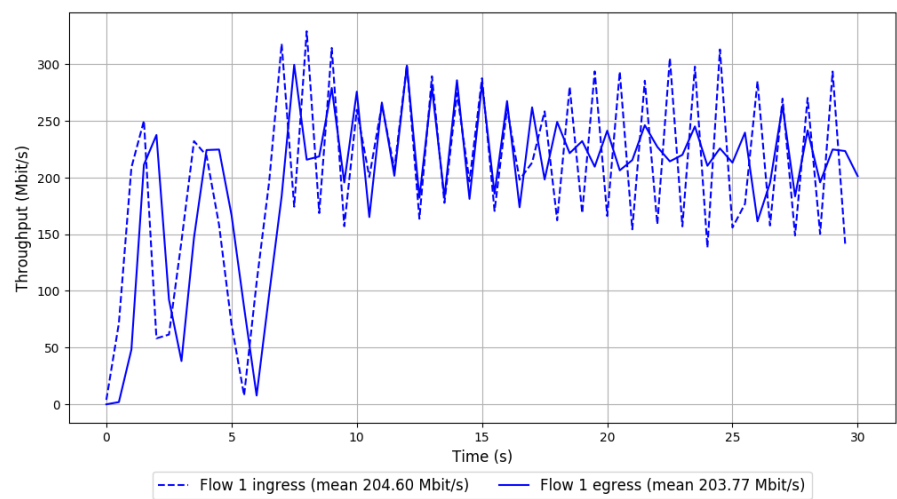


Run 5: Statistics of Verus

Start at: 2018-12-12 07:03:02  
End at: 2018-12-12 07:03:32  
Local clock offset: -0.136 ms  
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-12-12 09:24:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 203.77 Mbit/s  
95th percentile per-packet one-way delay: 160.998 ms  
Loss rate: 0.21%  
-- Flow 1:  
Average throughput: 203.77 Mbit/s  
95th percentile per-packet one-way delay: 160.998 ms  
Loss rate: 0.21%

Run 5: Report of Verus — Data Link

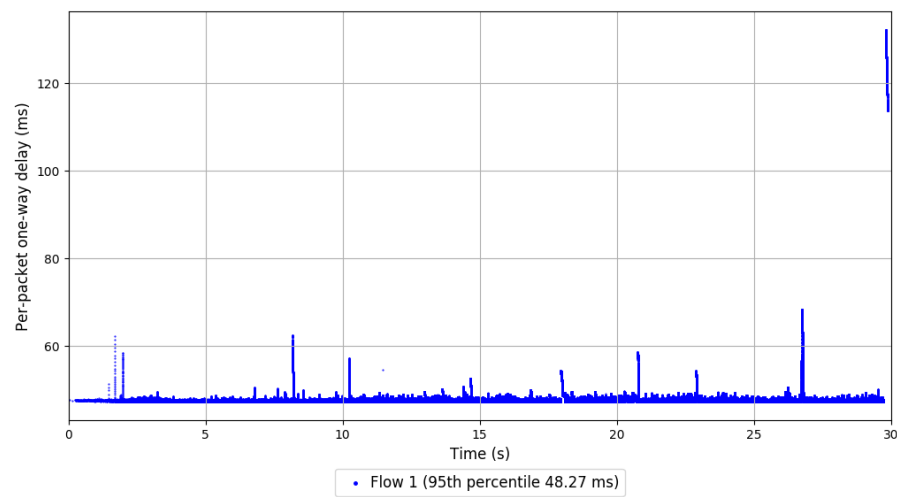
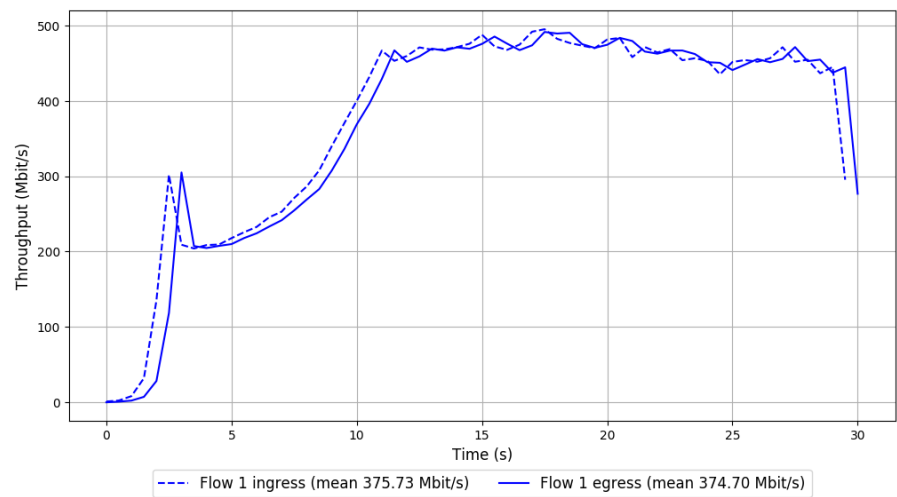


Run 1: Statistics of PCC-Vivace

Start at: 2018-12-12 05:12:45  
End at: 2018-12-12 05:13:15  
Local clock offset: -0.084 ms  
Remote clock offset: -0.153 ms

# Below is generated by plot.py at 2018-12-12 09:26:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 374.70 Mbit/s  
95th percentile per-packet one-way delay: 48.266 ms  
Loss rate: 0.27%  
-- Flow 1:  
Average throughput: 374.70 Mbit/s  
95th percentile per-packet one-way delay: 48.266 ms  
Loss rate: 0.27%

Run 1: Report of PCC-Vivace — Data Link





Run 2: Statistics of PCC-Vivace

Start at: 2018-12-12 05:40:44

End at: 2018-12-12 05:41:14

Local clock offset: -0.094 ms

Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-12-12 09:26:32

# Datalink statistics

-- Total of 1 flow:

Average throughput: 414.65 Mbit/s

95th percentile per-packet one-way delay: 48.480 ms

Loss rate: 0.00%

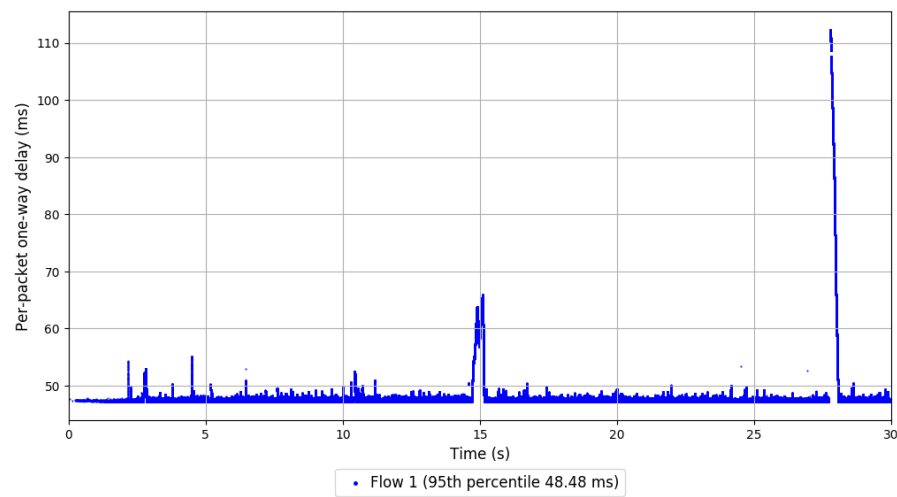
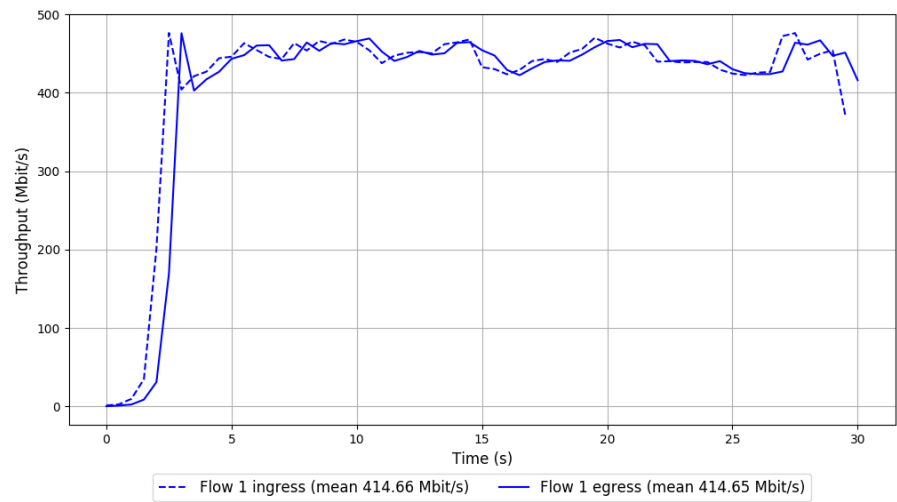
-- Flow 1:

Average throughput: 414.65 Mbit/s

95th percentile per-packet one-way delay: 48.480 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-12-12 06:10:01

End at: 2018-12-12 06:10:31

Local clock offset: -0.036 ms

Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2018-12-12 09:26:32

# Datalink statistics

-- Total of 1 flow:

Average throughput: 321.66 Mbit/s

95th percentile per-packet one-way delay: 48.248 ms

Loss rate: 0.00%

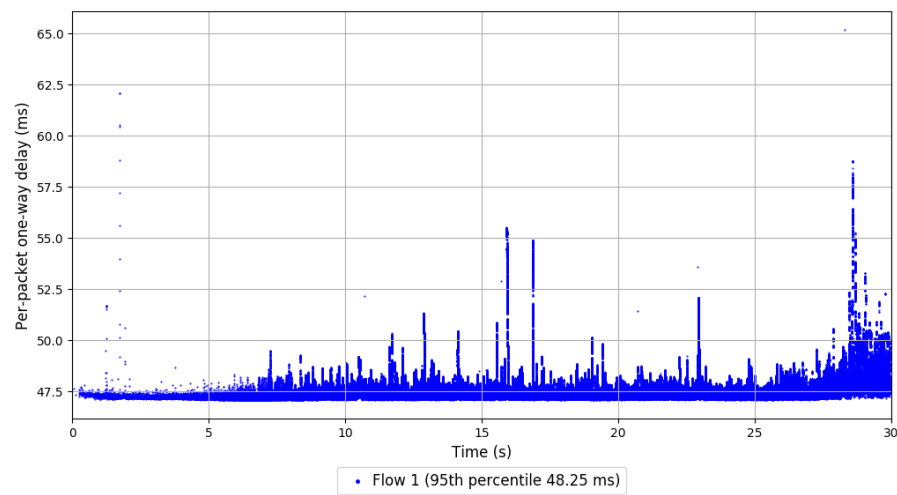
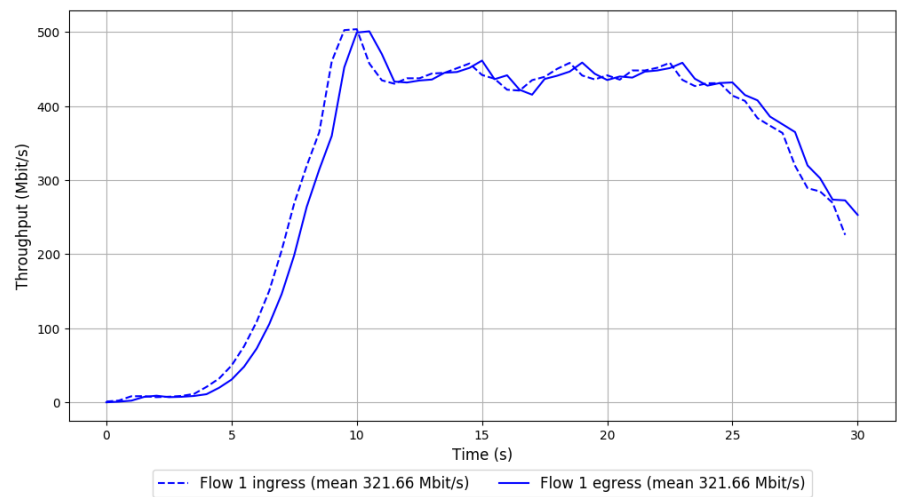
-- Flow 1:

Average throughput: 321.66 Mbit/s

95th percentile per-packet one-way delay: 48.248 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-12-12 06:38:26

End at: 2018-12-12 06:38:56

Local clock offset: -0.217 ms

Remote clock offset: 0.049 ms

# Below is generated by plot.py at 2018-12-12 09:26:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 325.38 Mbit/s

95th percentile per-packet one-way delay: 47.368 ms

Loss rate: 0.00%

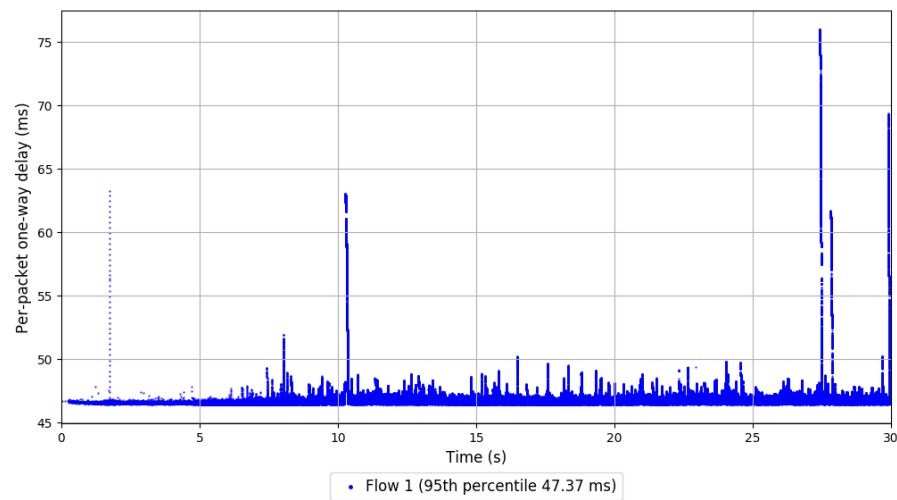
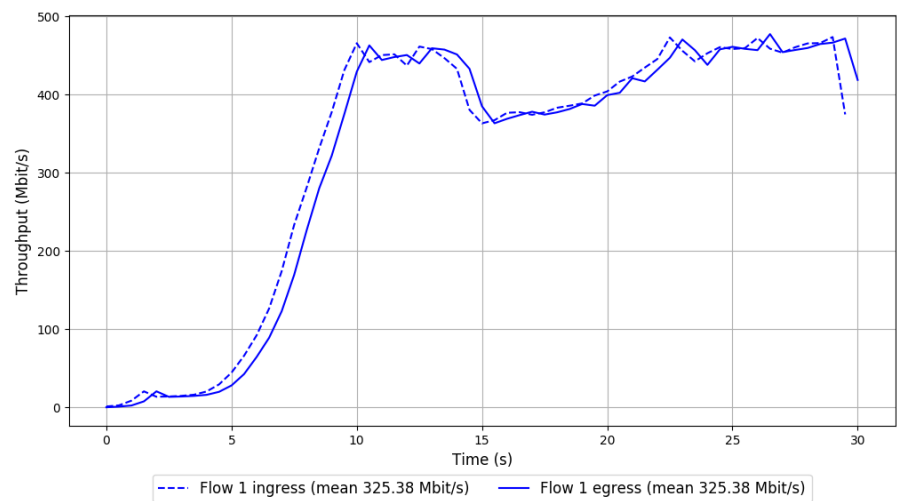
-- Flow 1:

Average throughput: 325.38 Mbit/s

95th percentile per-packet one-way delay: 47.368 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link

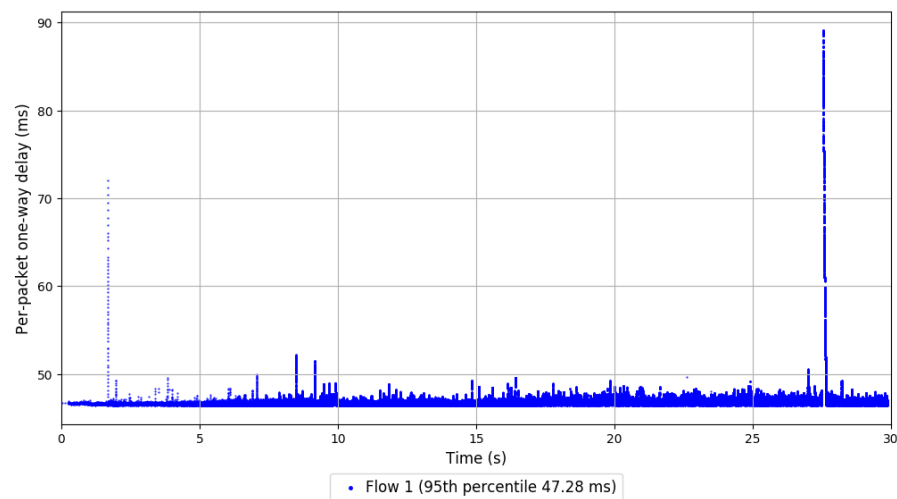
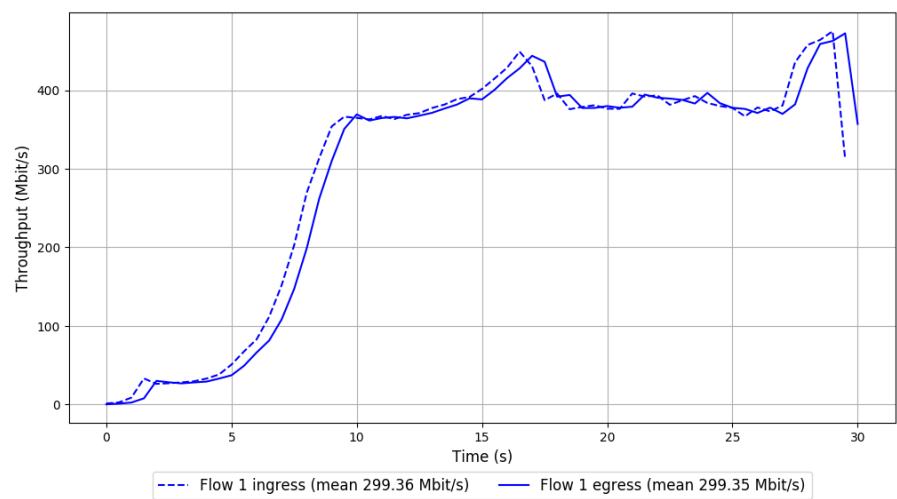


Run 5: Statistics of PCC-Vivace

Start at: 2018-12-12 07:07:13  
End at: 2018-12-12 07:07:43  
Local clock offset: -0.121 ms  
Remote clock offset: -0.129 ms

# Below is generated by plot.py at 2018-12-12 09:26:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 299.35 Mbit/s  
95th percentile per-packet one-way delay: 47.283 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 299.35 Mbit/s  
95th percentile per-packet one-way delay: 47.283 ms  
Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link



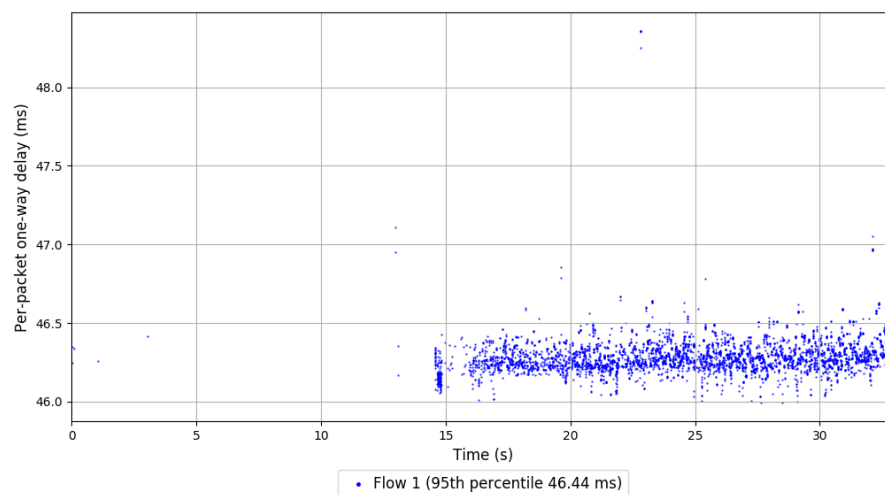
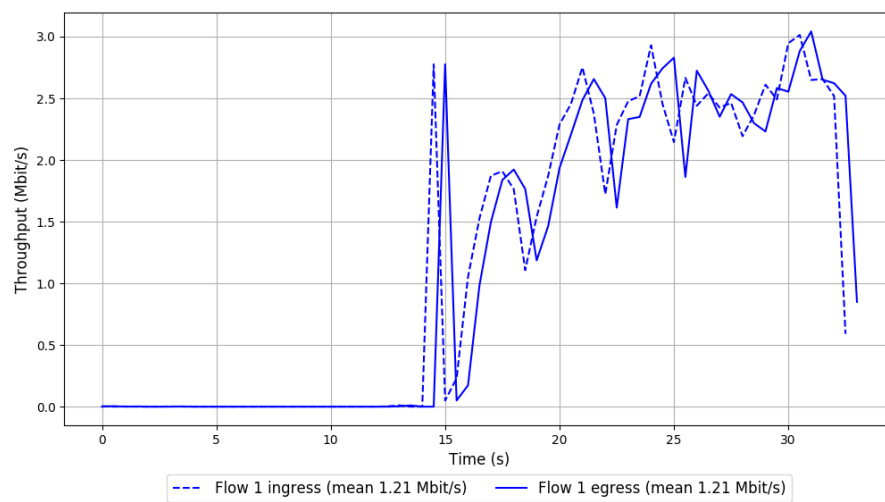


Run 1: Statistics of WebRTC media

Start at: 2018-12-12 05:17:10  
End at: 2018-12-12 05:17:40  
Local clock offset: 0.298 ms  
Remote clock offset: -0.132 ms

# Below is generated by plot.py at 2018-12-12 09:26:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.21 Mbit/s  
95th percentile per-packet one-way delay: 46.438 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.21 Mbit/s  
95th percentile per-packet one-way delay: 46.438 ms  
Loss rate: 0.00%

# Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-12-12 05:45:15

End at: 2018-12-12 05:45:45

Local clock offset: -0.129 ms

Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2018-12-12 09:26:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 47.872 ms

Loss rate: 0.00%

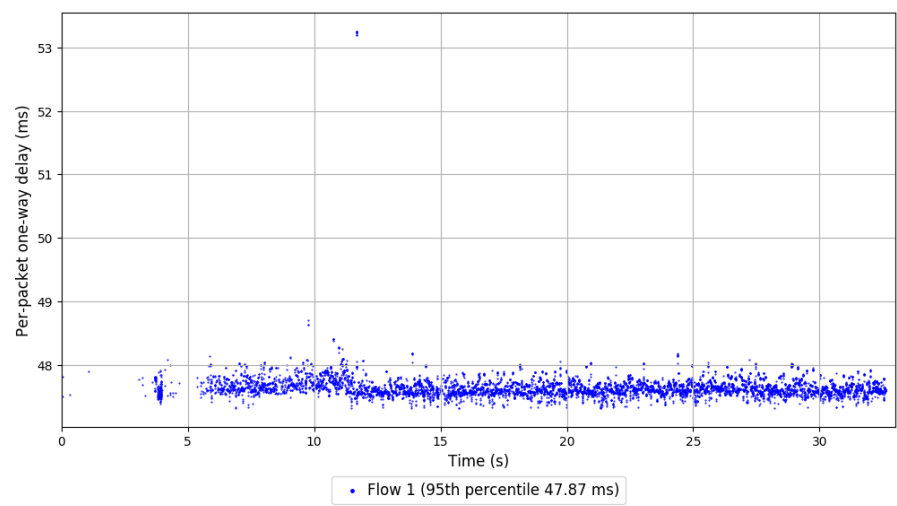
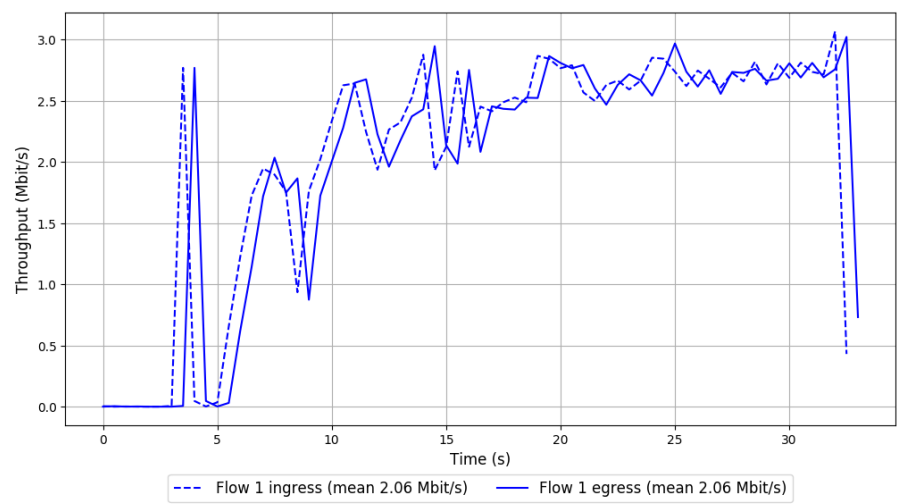
-- Flow 1:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 47.872 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

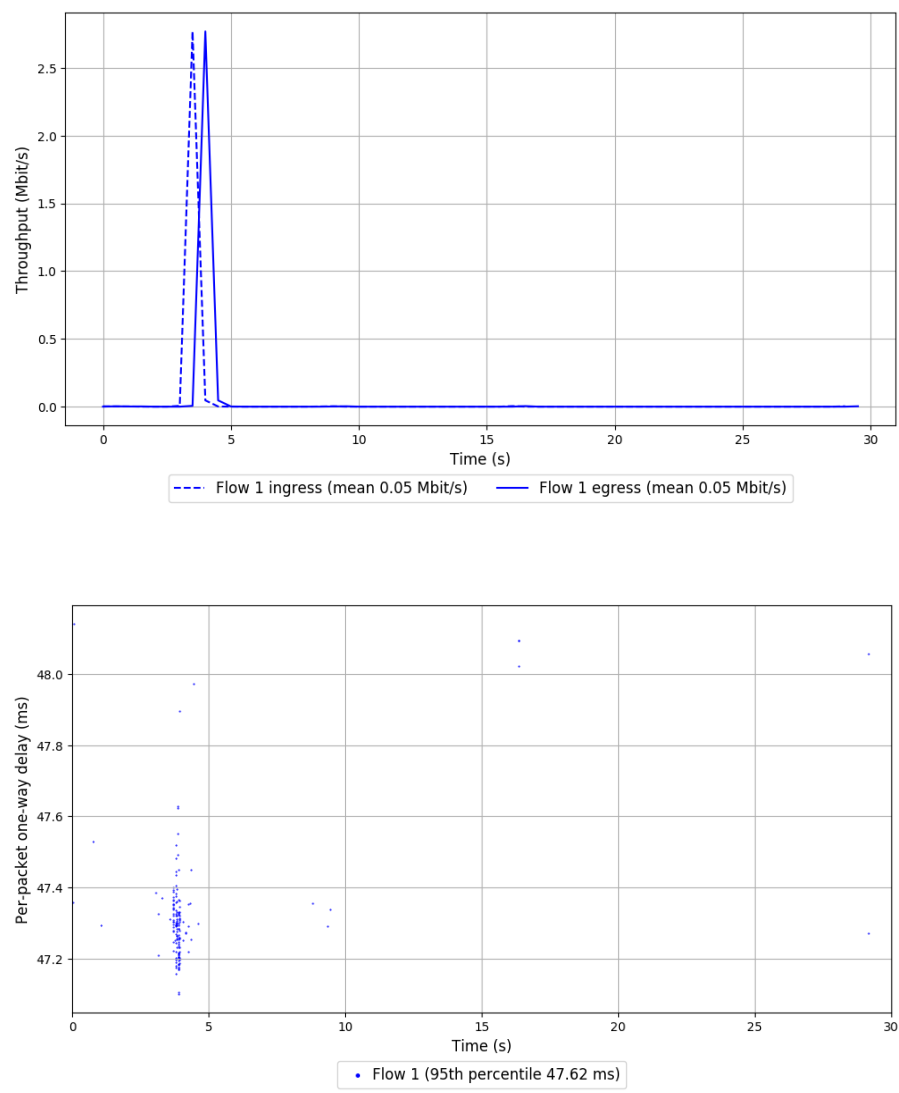


Run 3: Statistics of WebRTC media

Start at: 2018-12-12 06:14:41  
End at: 2018-12-12 06:15:11  
Local clock offset: -0.139 ms  
Remote clock offset: -0.043 ms

# Below is generated by plot.py at 2018-12-12 09:26:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 47.623 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 47.623 ms  
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

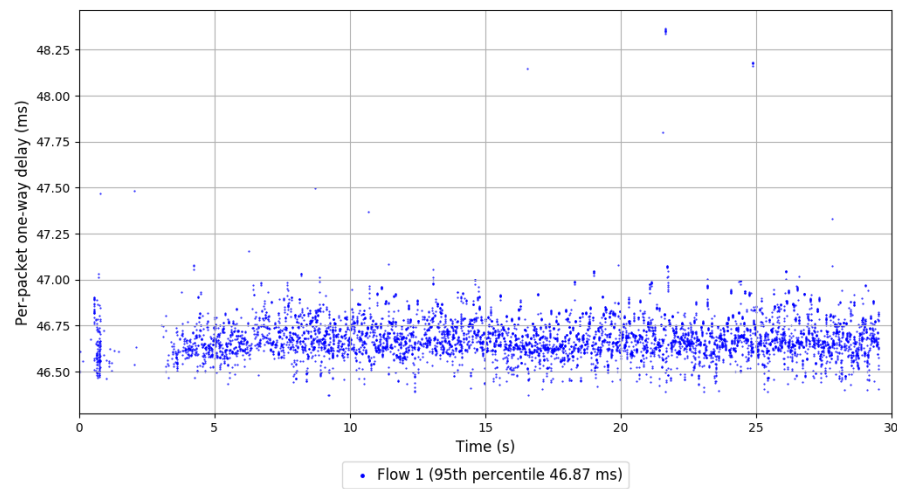
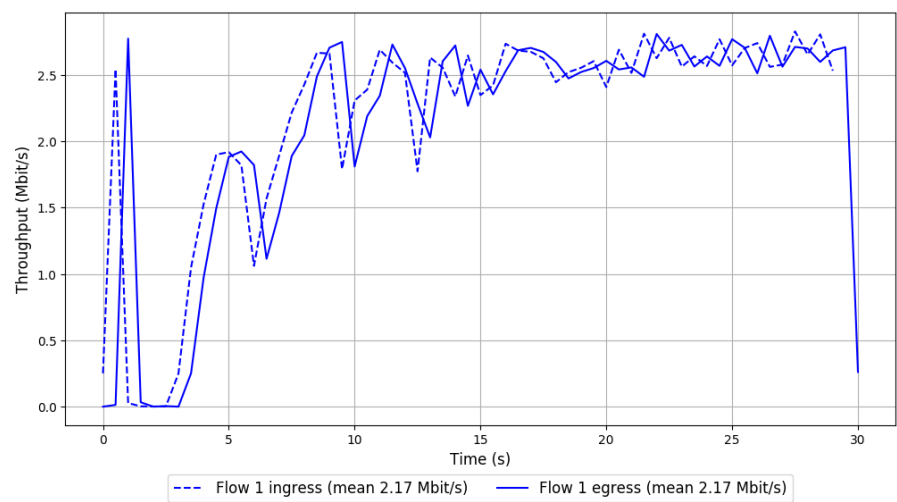


Run 4: Statistics of WebRTC media

Start at: 2018-12-12 06:43:04  
End at: 2018-12-12 06:43:34  
Local clock offset: -0.225 ms  
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2018-12-12 09:26:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.17 Mbit/s  
95th percentile per-packet one-way delay: 46.870 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.17 Mbit/s  
95th percentile per-packet one-way delay: 46.870 ms  
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link





Run 5: Statistics of WebRTC media

Start at: 2018-12-12 07:11:37  
End at: 2018-12-12 07:12:07  
Local clock offset: 0.205 ms  
Remote clock offset: -0.135 ms

# Below is generated by plot.py at 2018-12-12 09:26:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.28 Mbit/s  
95th percentile per-packet one-way delay: 46.716 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.28 Mbit/s  
95th percentile per-packet one-way delay: 46.716 ms  
Loss rate: 0.00%

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

