

## Pantheon Report

Generated at 2018-11-02 20:36:15 (UTC).  
Data path: AWS Korea on `ens5` (*local*) → China on `eno1` (*remote*).  
Repeated the test of 18 congestion control schemes 5 times.  
Each test lasted for 30 seconds running 1 flow.  
NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

System info:

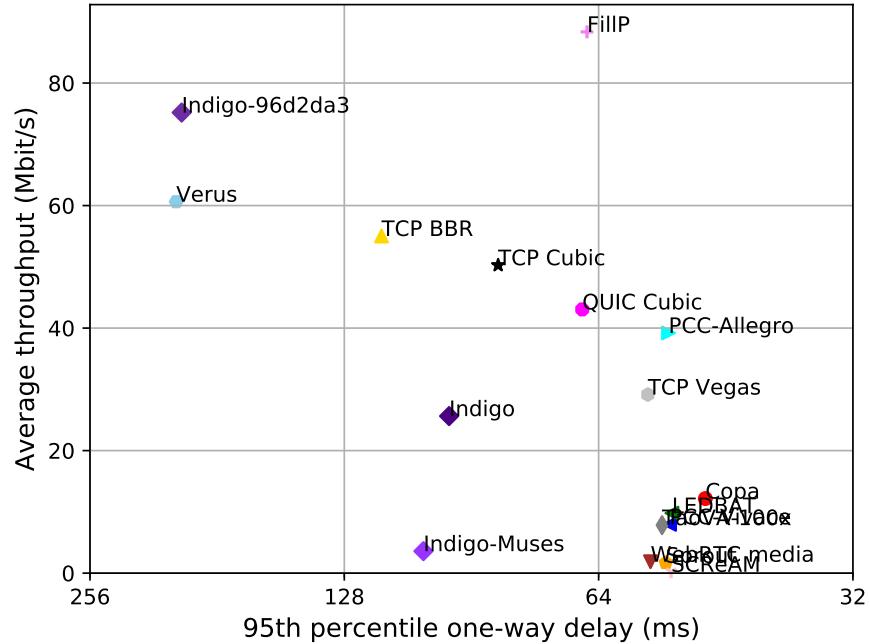
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

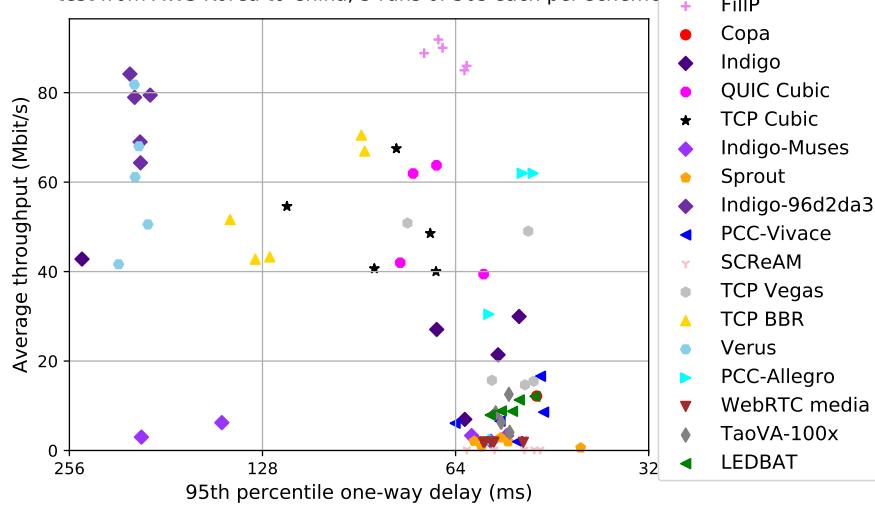
```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbfed0c6349ae986009b4fa8643c40a
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-quic @ 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 AWS Korea to China, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



test from AWS Korea to China, 5 runs of 30s each per scheme



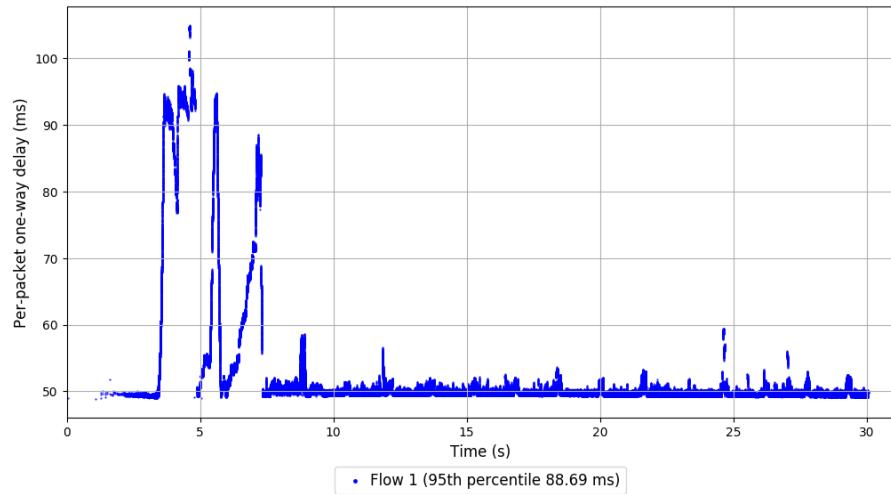
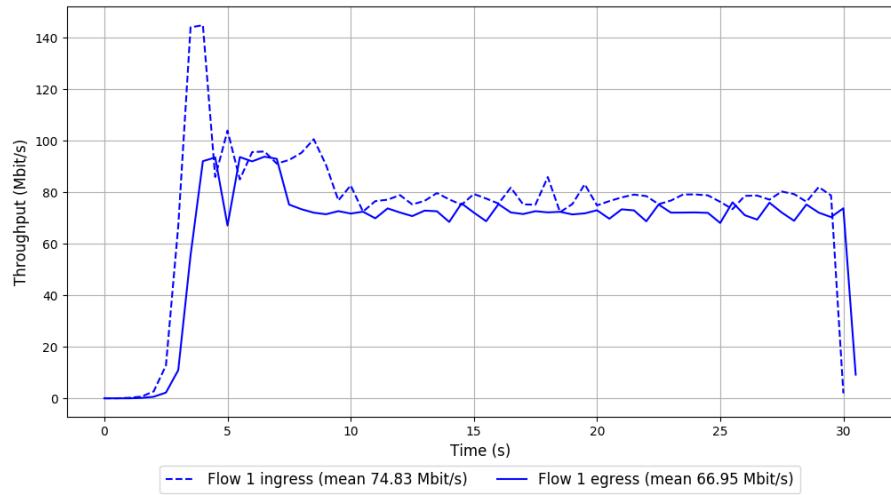
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	55.03	115.65	12.96
Copa	1	12.17	47.85	48.85
TCP Cubic	5	50.26	84.16	1.18
FillP	5	88.35	66.06	1.43
Indigo	5	25.64	96.20	3.98
Indigo-96d2da3	5	75.18	199.41	22.10
LEDBAT	5	9.79	52.42	0.00
Indigo-Muses	5	3.59	103.18	0.53
PCC-Allegro	4	39.20	52.89	1.72
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	5	43.05	66.92	0.00
SCReAM	5	0.22	52.52	0.00
Sprout	5	1.68	53.29	0.00
TaoVA-100x	4	7.84	53.84	10.86
TCP Vegas	5	29.15	55.96	0.36
Verus	5	60.62	202.41	26.29
PCC-Vivace	5	7.96	52.75	0.00
WebRTC media	5	1.86	55.56	0.00

Run 1: Statistics of TCP BBR

```
Start at: 2018-11-02 18:35:31
End at: 2018-11-02 18:36:02
Local clock offset: -35.947 ms
Remote clock offset: 8.879 ms

# Below is generated by plot.py at 2018-11-02 20:32:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.95 Mbit/s
95th percentile per-packet one-way delay: 88.694 ms
Loss rate: 10.53%
-- Flow 1:
Average throughput: 66.95 Mbit/s
95th percentile per-packet one-way delay: 88.694 ms
Loss rate: 10.53%
```

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

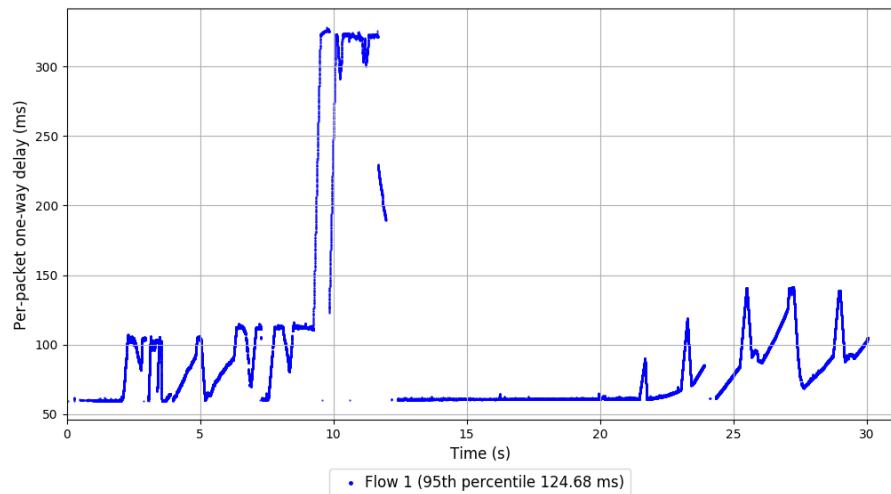
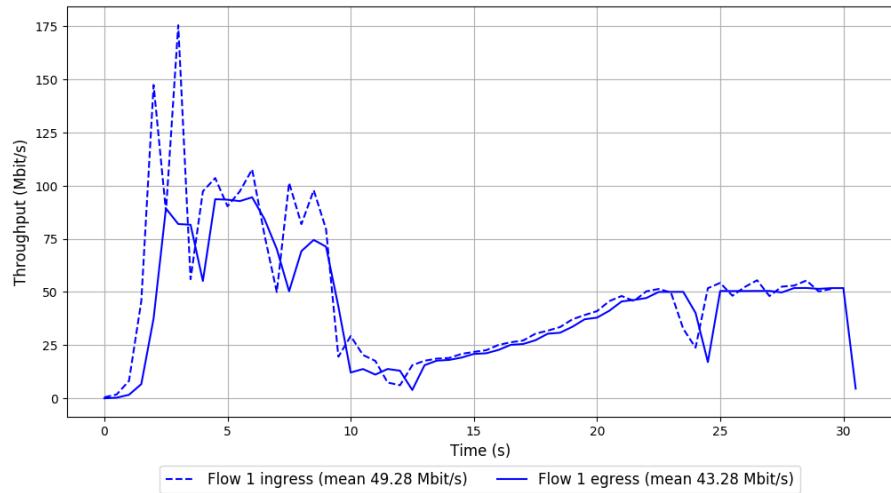


Run 2: Statistics of TCP BBR

```
Start at: 2018-11-02 19:07:20
End at: 2018-11-02 19:07:50
Local clock offset: -46.736 ms
Remote clock offset: 26.562 ms

# Below is generated by plot.py at 2018-11-02 20:32:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.28 Mbit/s
95th percentile per-packet one-way delay: 124.680 ms
Loss rate: 12.16%
-- Flow 1:
Average throughput: 43.28 Mbit/s
95th percentile per-packet one-way delay: 124.680 ms
Loss rate: 12.16%
```

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

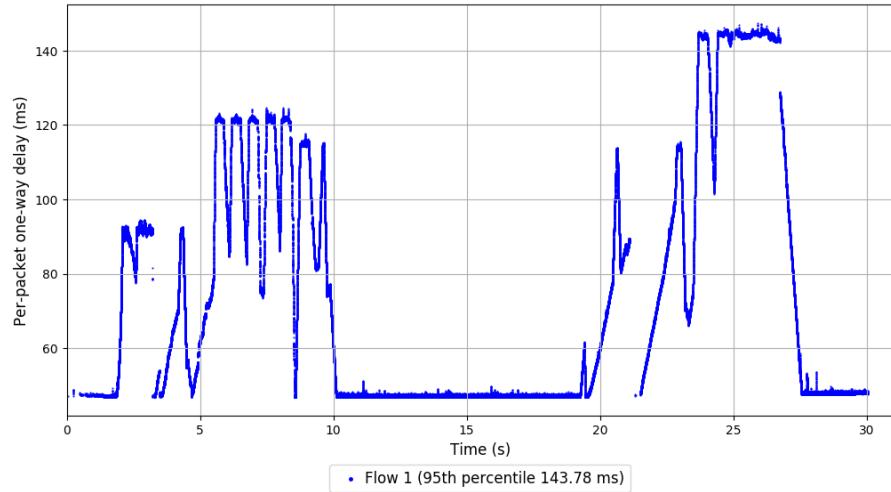
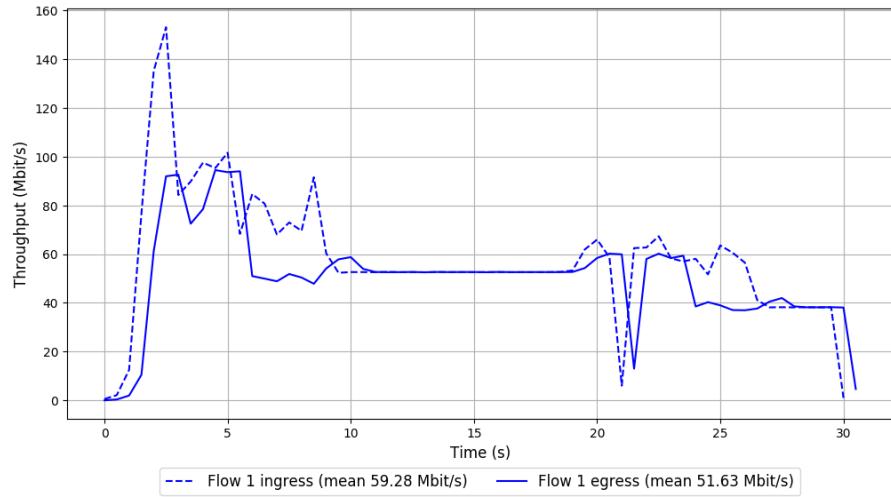


Run 3: Statistics of TCP BBR

```
Start at: 2018-11-02 19:33:42
End at: 2018-11-02 19:34:12
Local clock offset: -36.907 ms
Remote clock offset: -15.243 ms

# Below is generated by plot.py at 2018-11-02 20:32:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.63 Mbit/s
95th percentile per-packet one-way delay: 143.780 ms
Loss rate: 12.90%
-- Flow 1:
Average throughput: 51.63 Mbit/s
95th percentile per-packet one-way delay: 143.780 ms
Loss rate: 12.90%
```

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

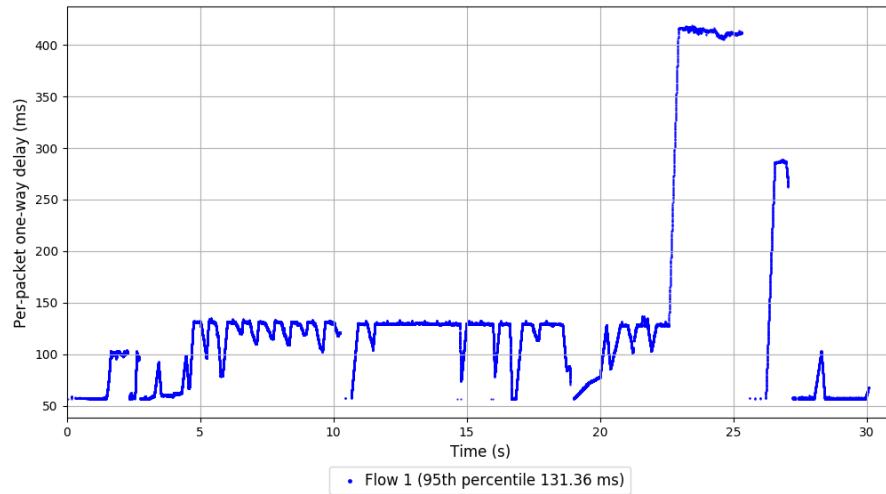
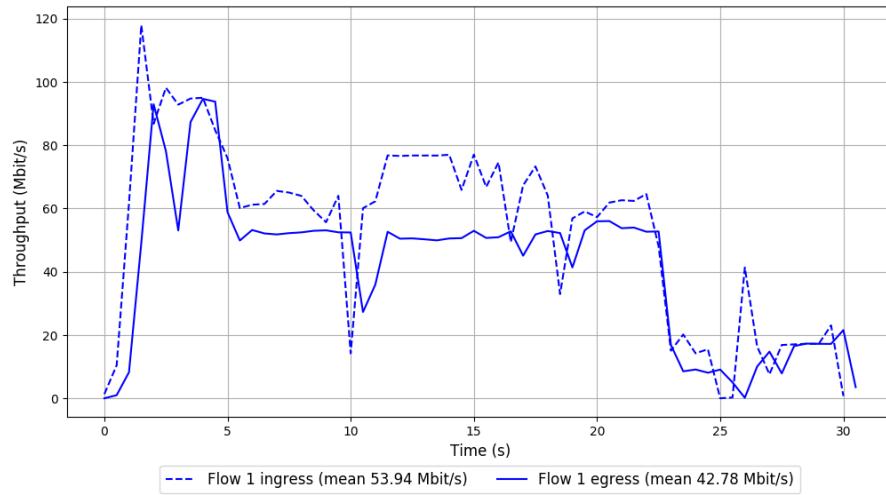


Run 4: Statistics of TCP BBR

```
Start at: 2018-11-02 19:58:28
End at: 2018-11-02 19:58:58
Local clock offset: -12.852 ms
Remote clock offset: -10.501 ms

# Below is generated by plot.py at 2018-11-02 20:32:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.78 Mbit/s
95th percentile per-packet one-way delay: 131.357 ms
Loss rate: 20.69%
-- Flow 1:
Average throughput: 42.78 Mbit/s
95th percentile per-packet one-way delay: 131.357 ms
Loss rate: 20.69%
```

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

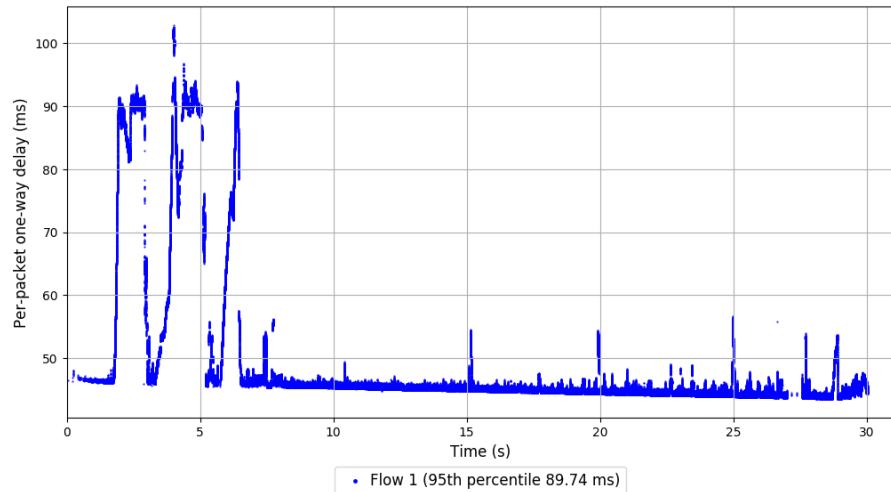
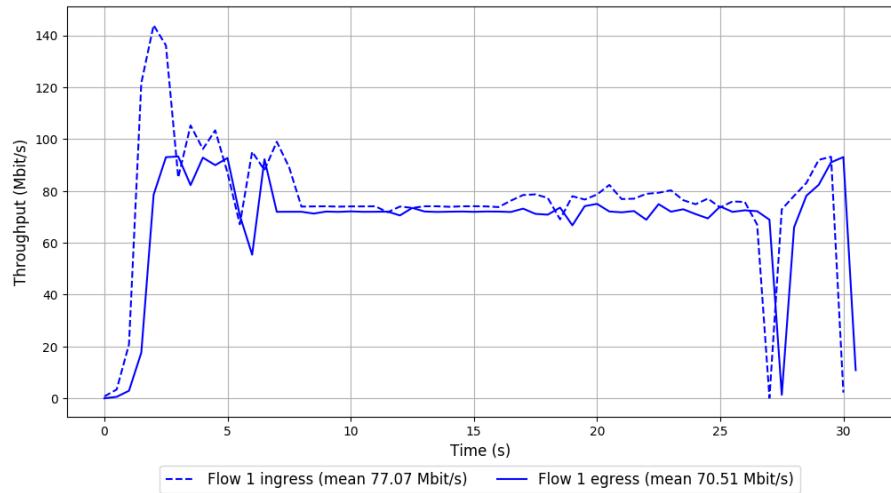


Run 5: Statistics of TCP BBR

```
Start at: 2018-11-02 20:21:28
End at: 2018-11-02 20:21:58
Local clock offset: -3.842 ms
Remote clock offset: 5.793 ms

# Below is generated by plot.py at 2018-11-02 20:32:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.51 Mbit/s
95th percentile per-packet one-way delay: 89.736 ms
Loss rate: 8.52%
-- Flow 1:
Average throughput: 70.51 Mbit/s
95th percentile per-packet one-way delay: 89.736 ms
Loss rate: 8.52%
```

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

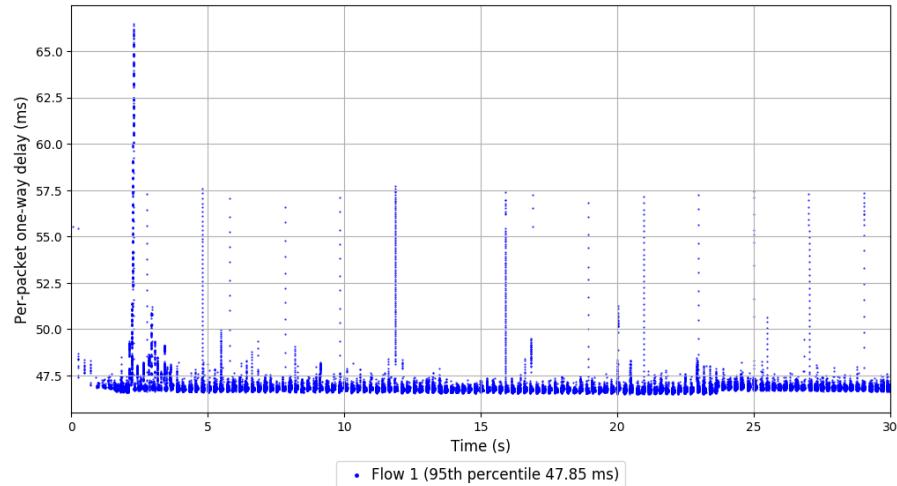
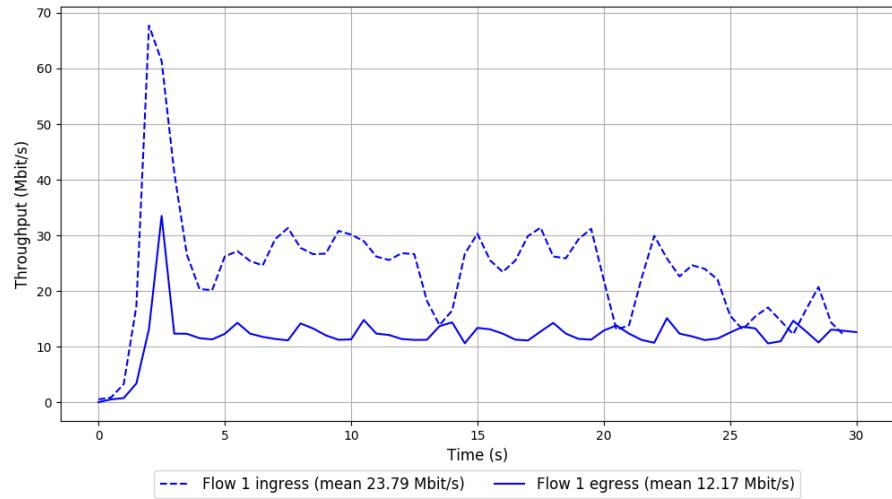


Run 1: Statistics of Copa

```
Start at: 2018-11-02 18:14:40
End at: 2018-11-02 18:15:10
Local clock offset: -16.585 ms
Remote clock offset: 28.731 ms

# Below is generated by plot.py at 2018-11-02 20:32:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.17 Mbit/s
95th percentile per-packet one-way delay: 47.847 ms
Loss rate: 48.85%
-- Flow 1:
Average throughput: 12.17 Mbit/s
95th percentile per-packet one-way delay: 47.847 ms
Loss rate: 48.85%
```

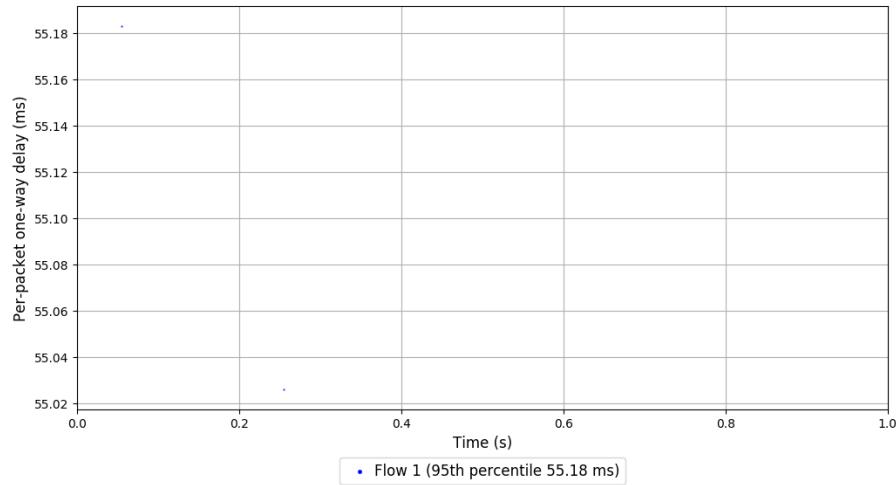
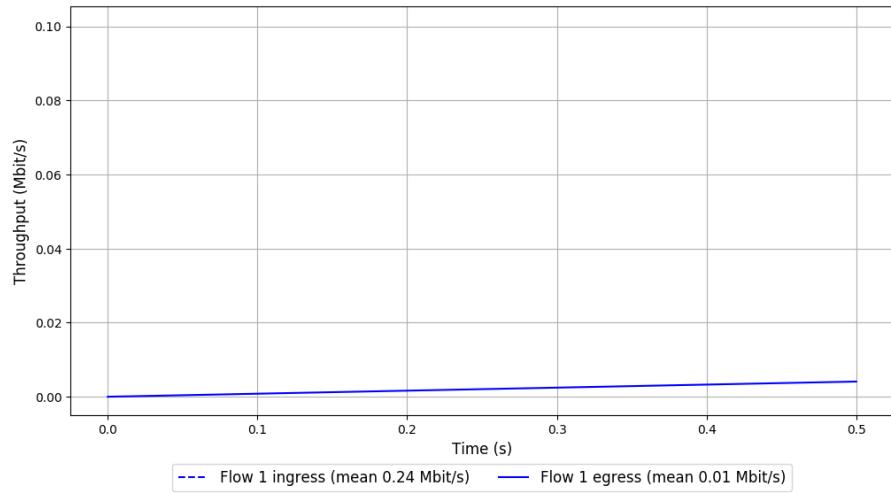
## Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-11-02 18:55:53  
End at: 2018-11-02 18:56:23  
Local clock offset: -44.515 ms  
Remote clock offset: 27.373 ms

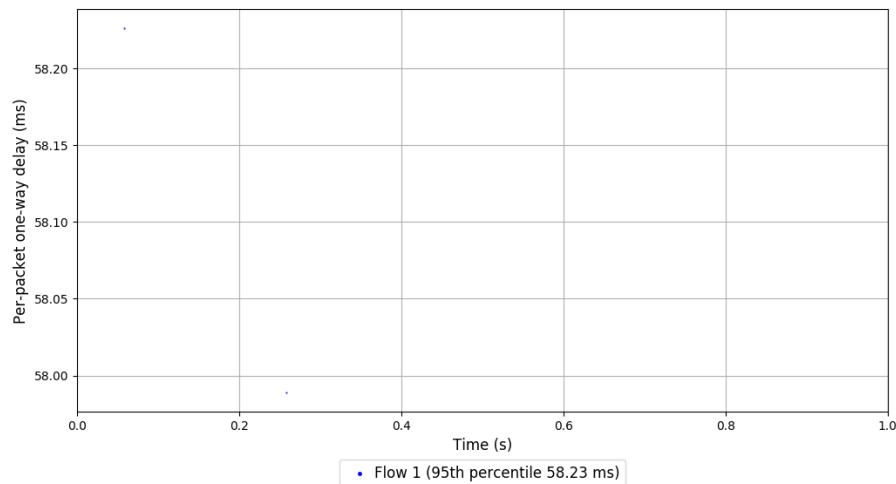
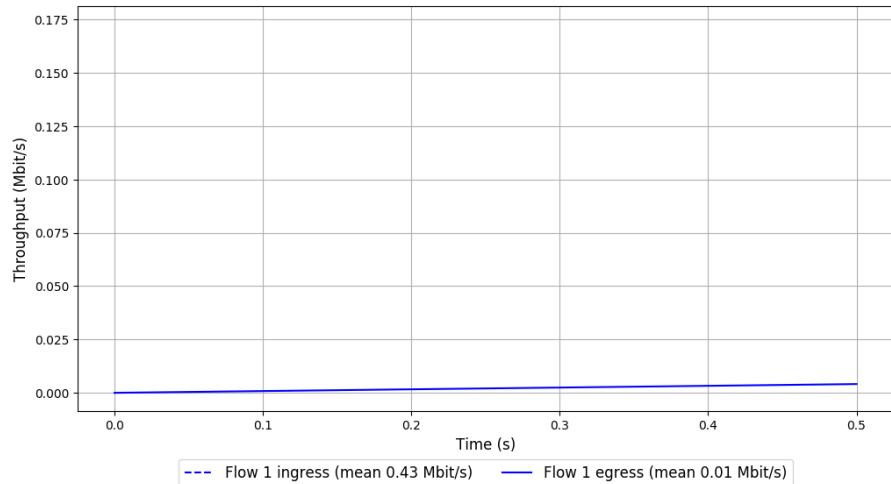
## Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-11-02 19:25:05  
End at: 2018-11-02 19:25:35  
Local clock offset: -29.855 ms  
Remote clock offset: -5.077 ms

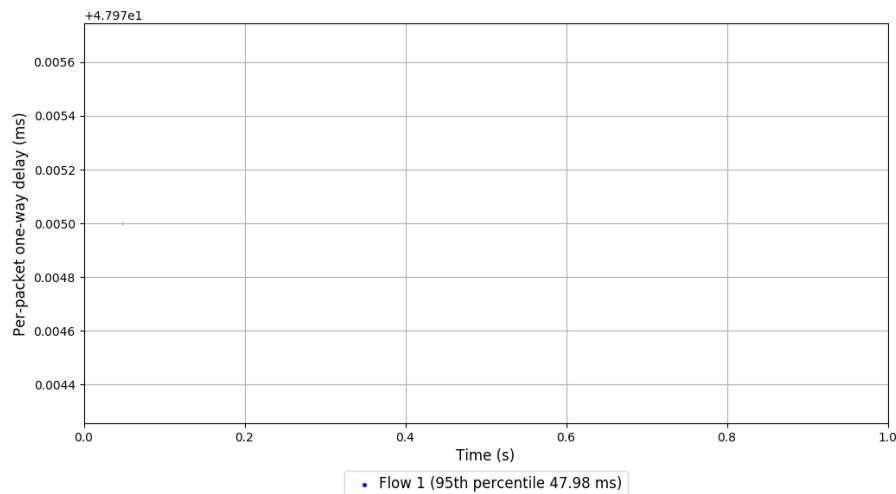
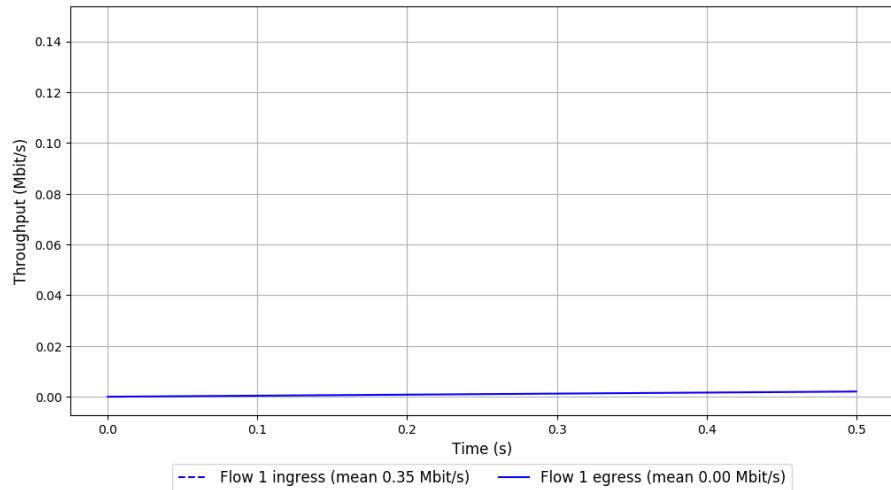
### Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-11-02 19:50:45  
End at: 2018-11-02 19:51:15  
Local clock offset: -11.858 ms  
Remote clock offset: -13.528 ms

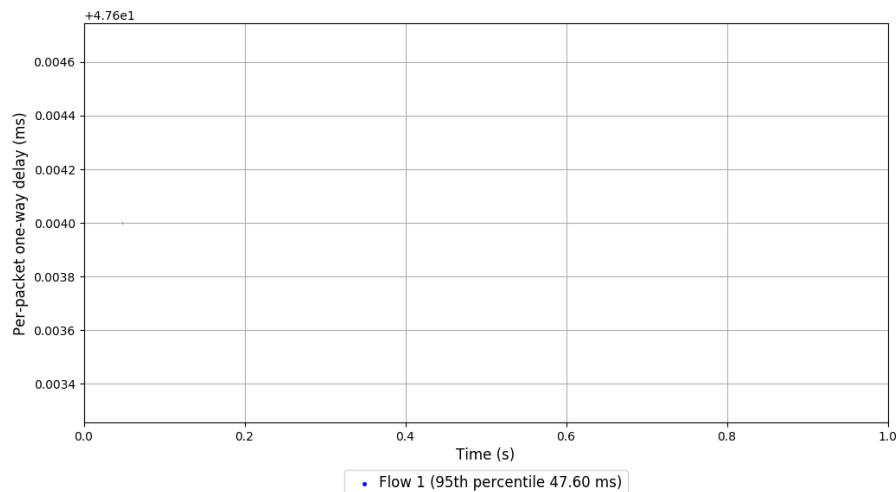
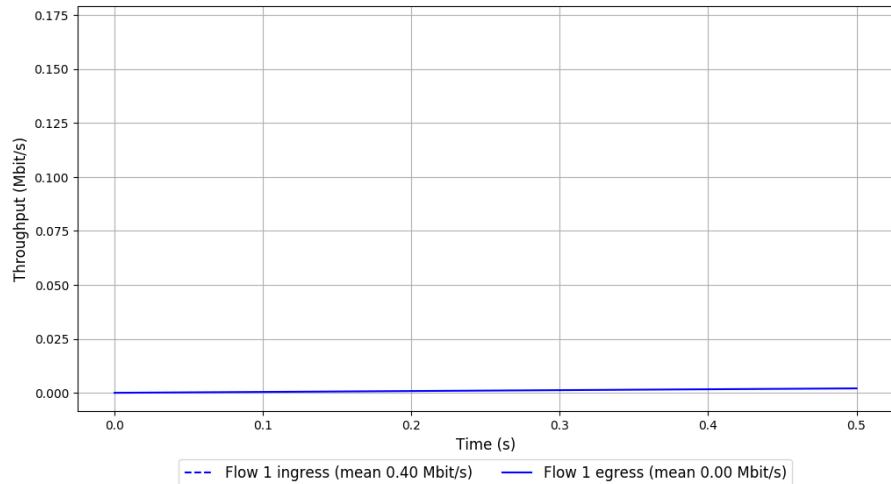
## Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-02 20:13:38  
End at: 2018-11-02 20:14:08  
Local clock offset: -5.216 ms  
Remote clock offset: -13.339 ms

## Run 5: Report of Copa — Data Link

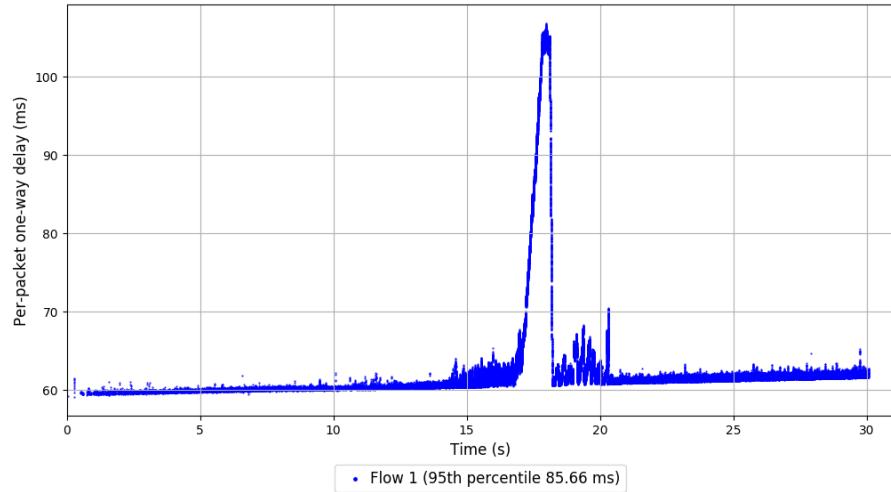
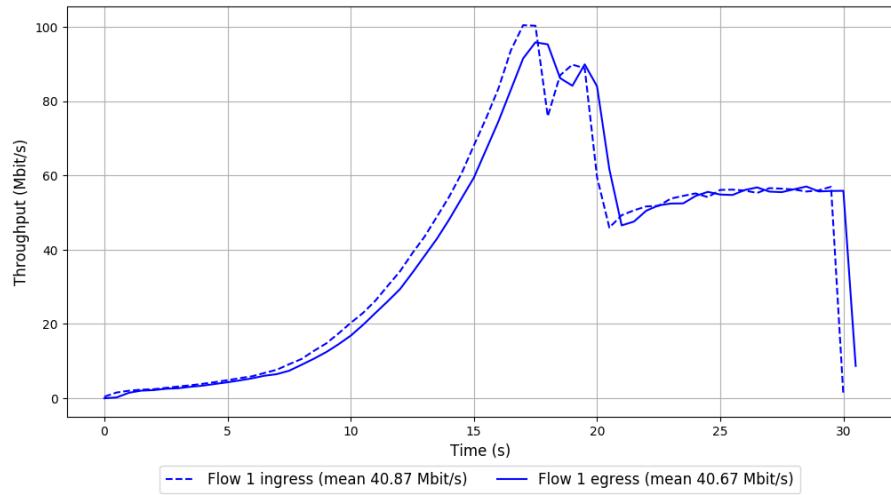


Run 1: Statistics of TCP Cubic

```
Start at: 2018-11-02 18:21:37
End at: 2018-11-02 18:22:07
Local clock offset: -35.908 ms
Remote clock offset: 21.741 ms

# Below is generated by plot.py at 2018-11-02 20:32:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.67 Mbit/s
95th percentile per-packet one-way delay: 85.661 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 40.67 Mbit/s
95th percentile per-packet one-way delay: 85.661 ms
Loss rate: 0.48%
```

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

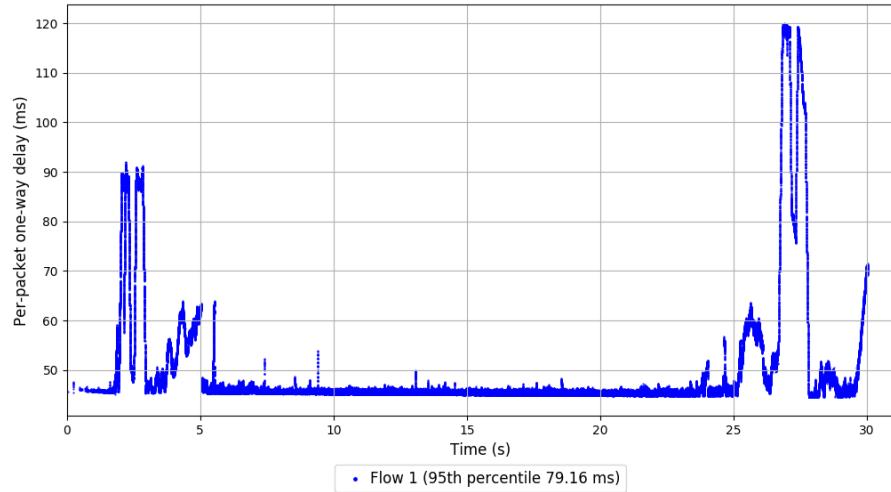
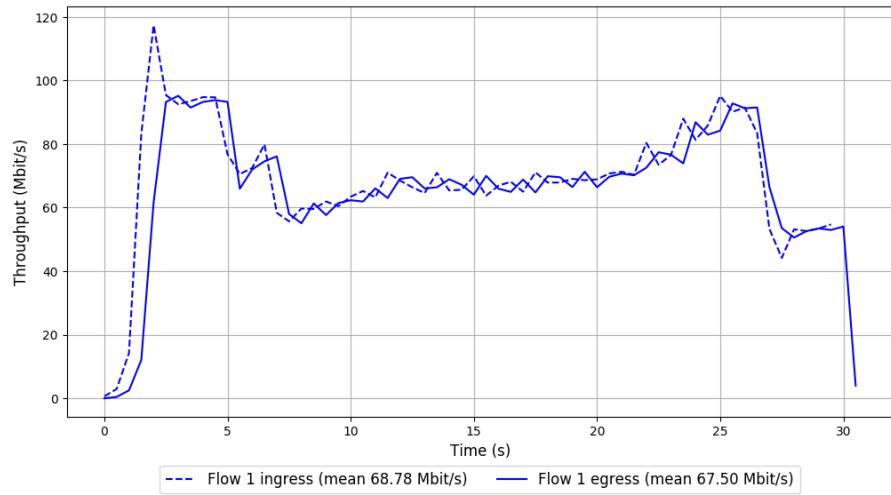


Run 2: Statistics of TCP Cubic

```
Start at: 2018-11-02 18:59:39
End at: 2018-11-02 19:00:09
Local clock offset: -51.392 ms
Remote clock offset: 26.721 ms

# Below is generated by plot.py at 2018-11-02 20:32:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.50 Mbit/s
95th percentile per-packet one-way delay: 79.159 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 67.50 Mbit/s
95th percentile per-packet one-way delay: 79.159 ms
Loss rate: 1.84%
```

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

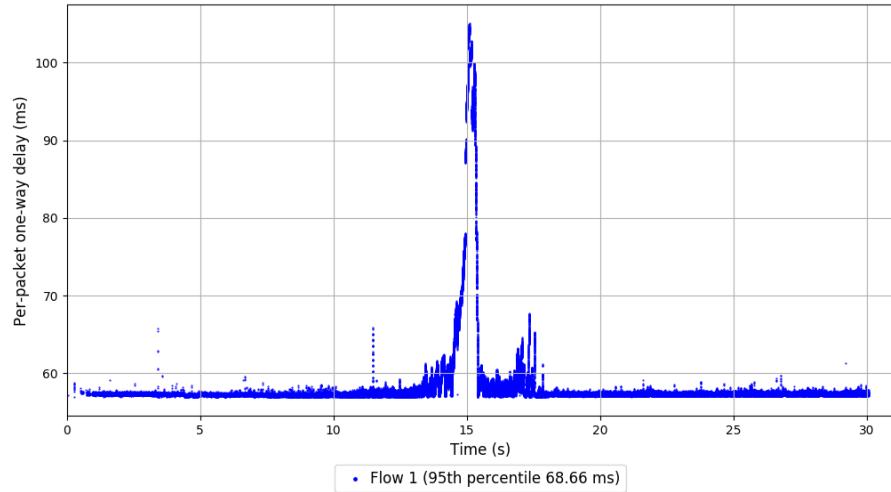
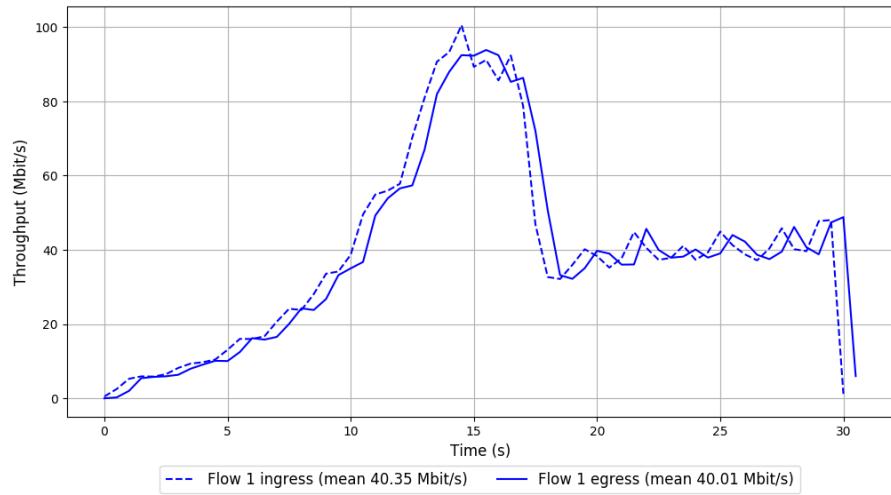


Run 3: Statistics of TCP Cubic

```
Start at: 2018-11-02 19:28:01
End at: 2018-11-02 19:28:31
Local clock offset: -32.225 ms
Remote clock offset: -9.798 ms

# Below is generated by plot.py at 2018-11-02 20:32:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.01 Mbit/s
95th percentile per-packet one-way delay: 68.662 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 40.01 Mbit/s
95th percentile per-packet one-way delay: 68.662 ms
Loss rate: 0.83%
```

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

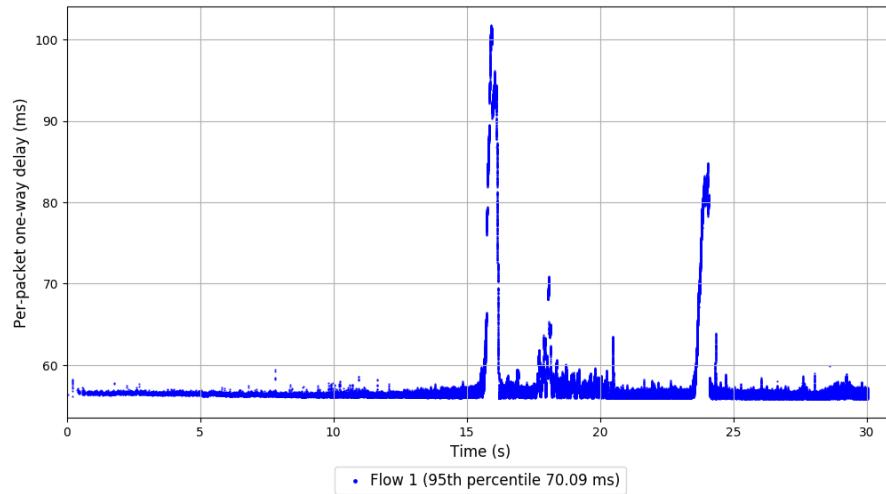
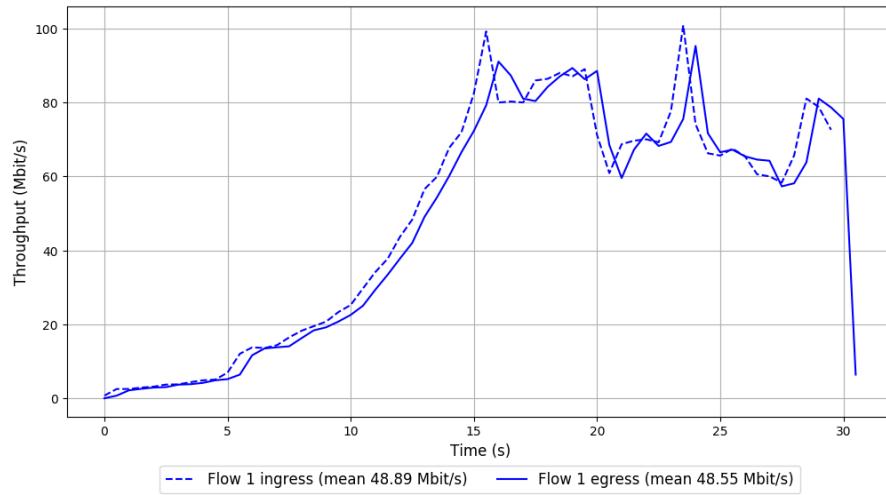


Run 4: Statistics of TCP Cubic

```
Start at: 2018-11-02 19:53:20
End at: 2018-11-02 19:53:50
Local clock offset: -11.788 ms
Remote clock offset: -12.066 ms

# Below is generated by plot.py at 2018-11-02 20:32:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.55 Mbit/s
95th percentile per-packet one-way delay: 70.088 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 48.55 Mbit/s
95th percentile per-packet one-way delay: 70.088 ms
Loss rate: 0.69%
```

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

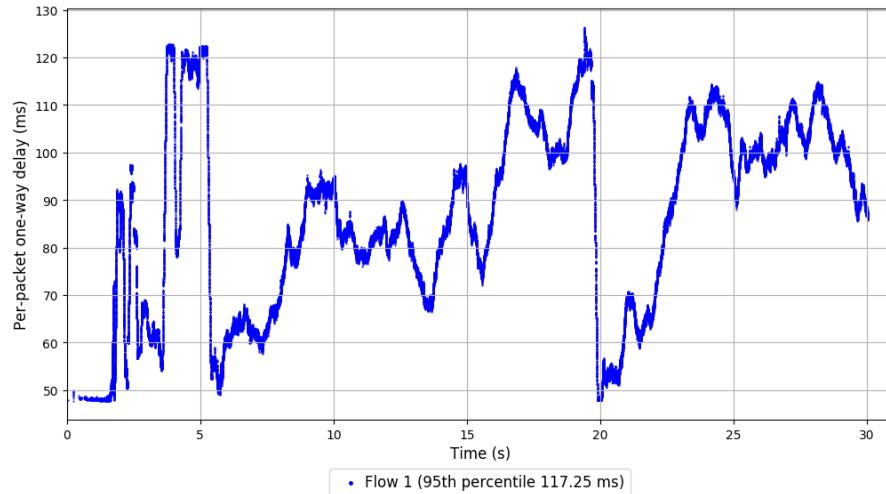
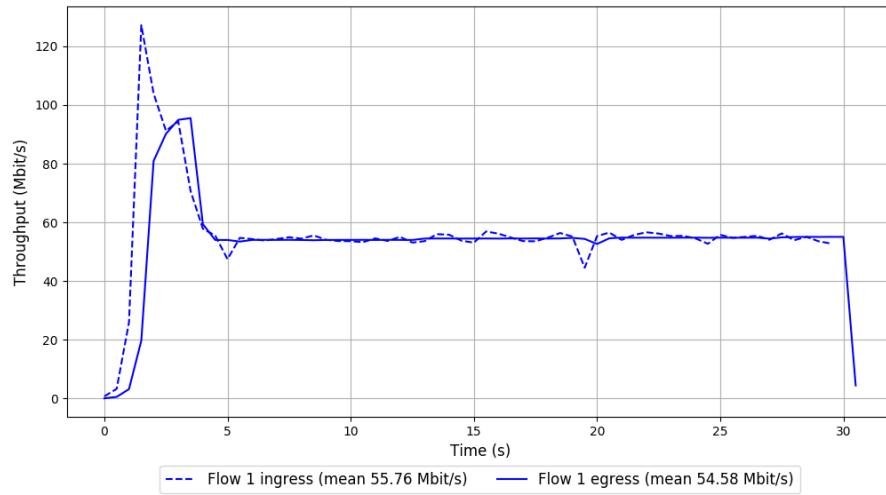


Run 5: Statistics of TCP Cubic

```
Start at: 2018-11-02 20:16:14
End at: 2018-11-02 20:16:44
Local clock offset: -4.214 ms
Remote clock offset: -14.249 ms

# Below is generated by plot.py at 2018-11-02 20:32:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.58 Mbit/s
95th percentile per-packet one-way delay: 117.248 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 54.58 Mbit/s
95th percentile per-packet one-way delay: 117.248 ms
Loss rate: 2.08%
```

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

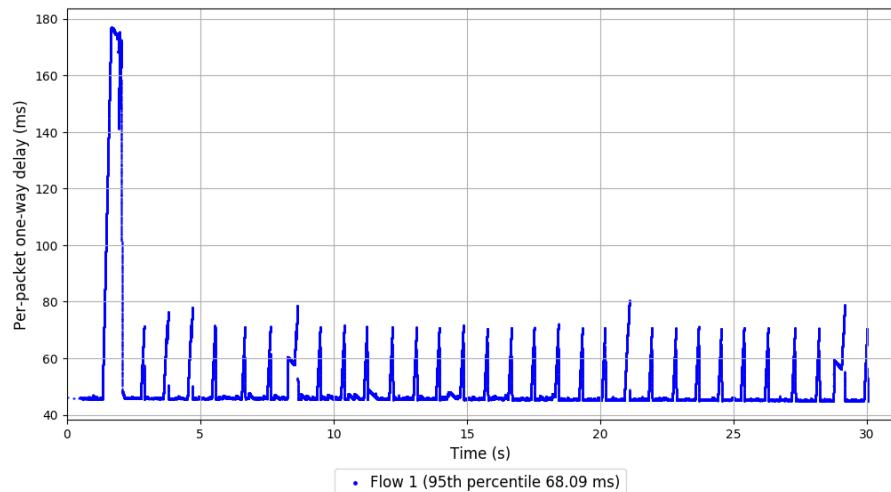
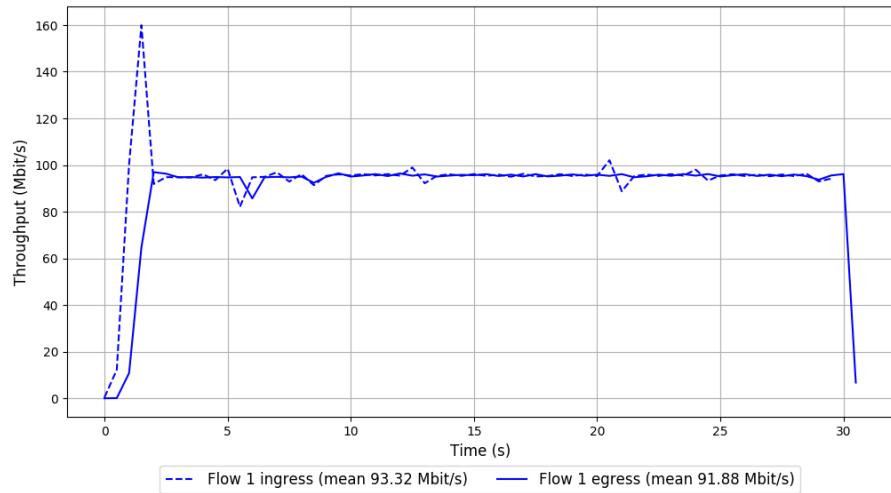


```
Run 1: Statistics of FillP
```

```
Start at: 2018-11-02 18:16:39
End at: 2018-11-02 18:17:09
Local clock offset: -20.208 ms
Remote clock offset: 26.458 ms

# Below is generated by plot.py at 2018-11-02 20:33:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.88 Mbit/s
95th percentile per-packet one-way delay: 68.090 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 91.88 Mbit/s
95th percentile per-packet one-way delay: 68.090 ms
Loss rate: 1.55%
```

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

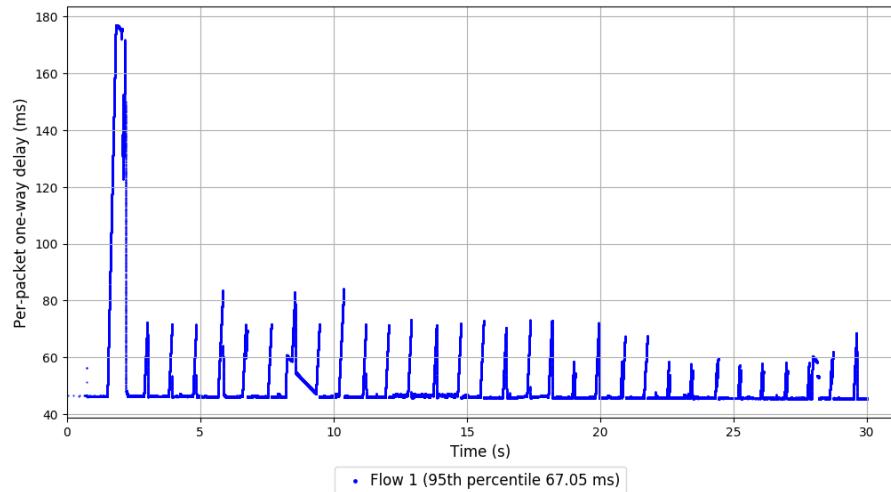
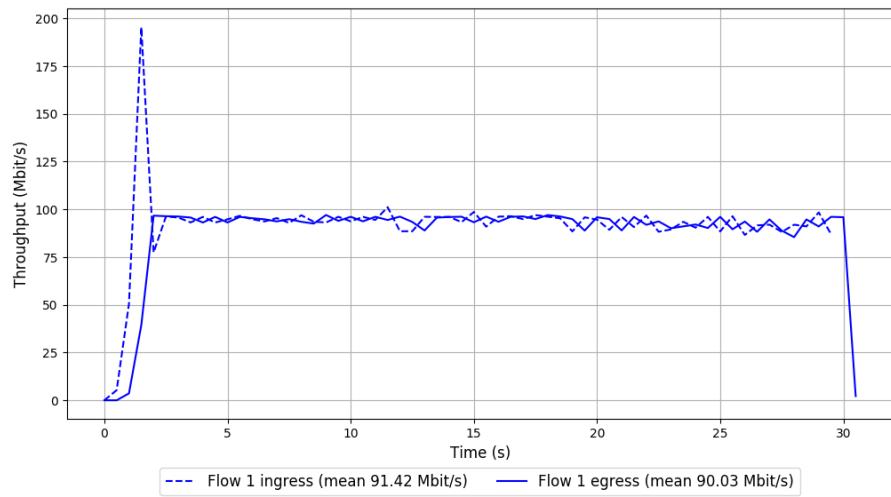


Run 2: Statistics of FillP

```
Start at: 2018-11-02 18:57:03
End at: 2018-11-02 18:57:33
Local clock offset: -47.015 ms
Remote clock offset: 27.013 ms

# Below is generated by plot.py at 2018-11-02 20:33:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.03 Mbit/s
95th percentile per-packet one-way delay: 67.051 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 90.03 Mbit/s
95th percentile per-packet one-way delay: 67.051 ms
Loss rate: 1.53%
```

## Run 2: Report of FillP — Data Link

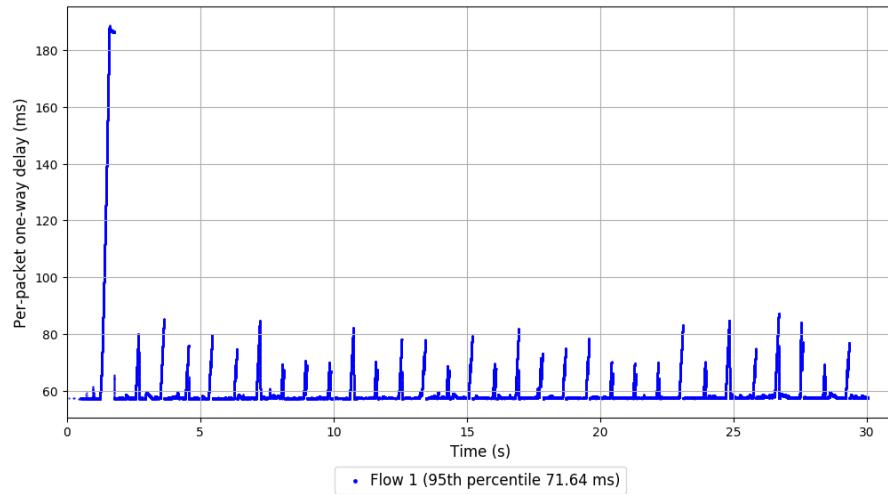
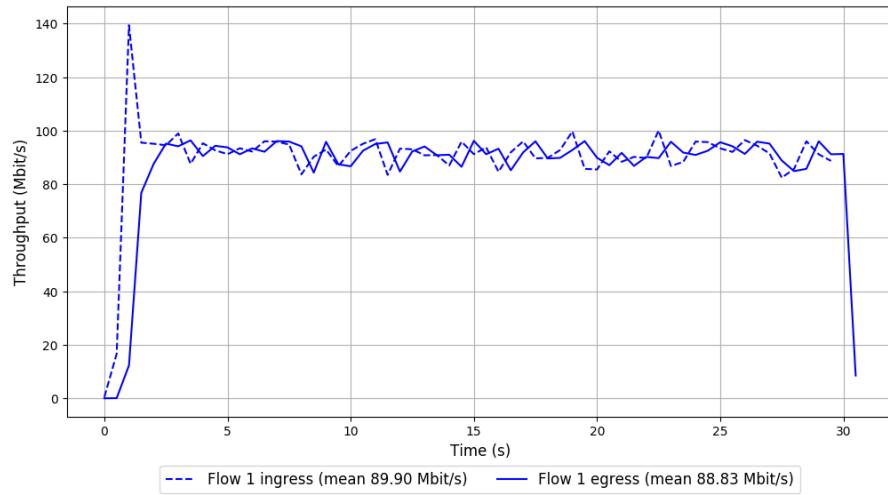


Run 3: Statistics of FillP

```
Start at: 2018-11-02 19:26:15
End at: 2018-11-02 19:26:45
Local clock offset: -30.915 ms
Remote clock offset: -6.878 ms

# Below is generated by plot.py at 2018-11-02 20:33:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.83 Mbit/s
95th percentile per-packet one-way delay: 71.645 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 88.83 Mbit/s
95th percentile per-packet one-way delay: 71.645 ms
Loss rate: 1.19%
```

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

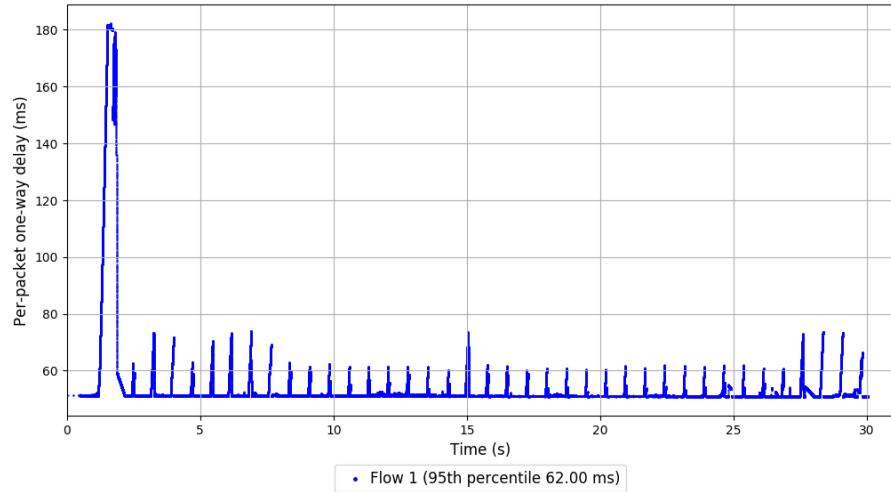
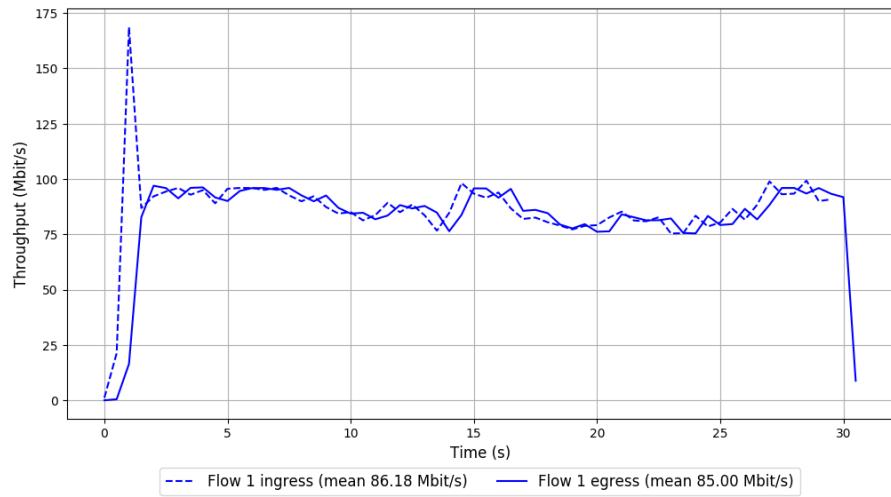


Run 4: Statistics of FillP

```
Start at: 2018-11-02 19:51:55
End at: 2018-11-02 19:52:25
Local clock offset: -11.769 ms
Remote clock offset: -9.444 ms

# Below is generated by plot.py at 2018-11-02 20:33:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.00 Mbit/s
95th percentile per-packet one-way delay: 61.996 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 85.00 Mbit/s
95th percentile per-packet one-way delay: 61.996 ms
Loss rate: 1.37%
```

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

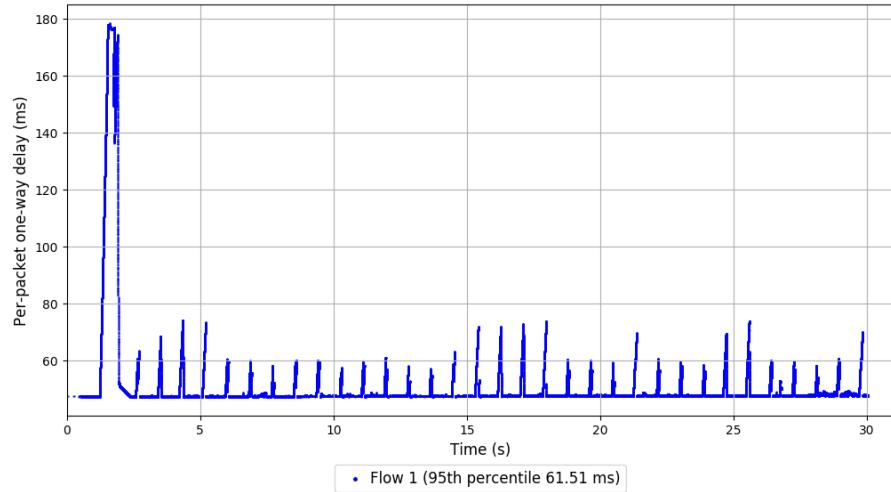
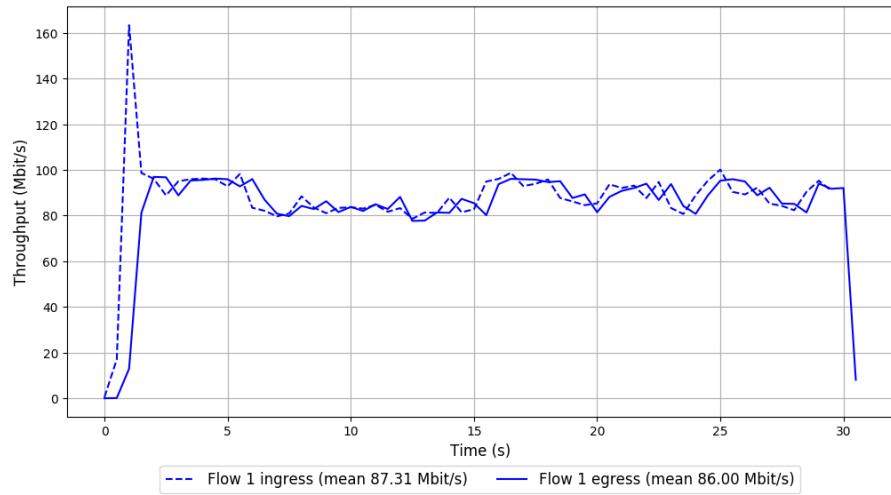


Run 5: Statistics of FillP

```
Start at: 2018-11-02 20:14:48
End at: 2018-11-02 20:15:18
Local clock offset: -4.646 ms
Remote clock offset: -13.774 ms

# Below is generated by plot.py at 2018-11-02 20:33:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.00 Mbit/s
95th percentile per-packet one-way delay: 61.510 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 86.00 Mbit/s
95th percentile per-packet one-way delay: 61.510 ms
Loss rate: 1.50%
```

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

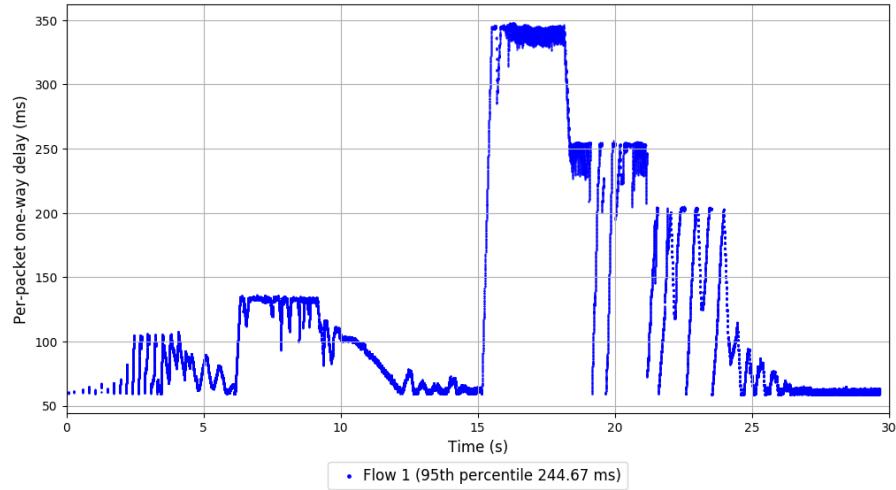
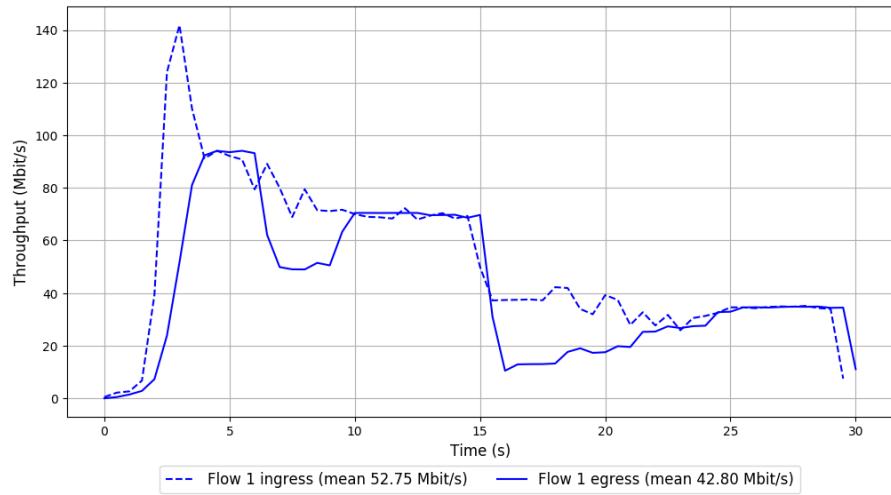


Run 1: Statistics of Indigo

```
Start at: 2018-11-02 18:10:35
End at: 2018-11-02 18:11:05
Local clock offset: -8.414 ms
Remote clock offset: 39.352 ms

# Below is generated by plot.py at 2018-11-02 20:33:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.80 Mbit/s
95th percentile per-packet one-way delay: 244.670 ms
Loss rate: 18.86%
-- Flow 1:
Average throughput: 42.80 Mbit/s
95th percentile per-packet one-way delay: 244.670 ms
Loss rate: 18.86%
```

## Run 1: Report of Indigo — Data Link

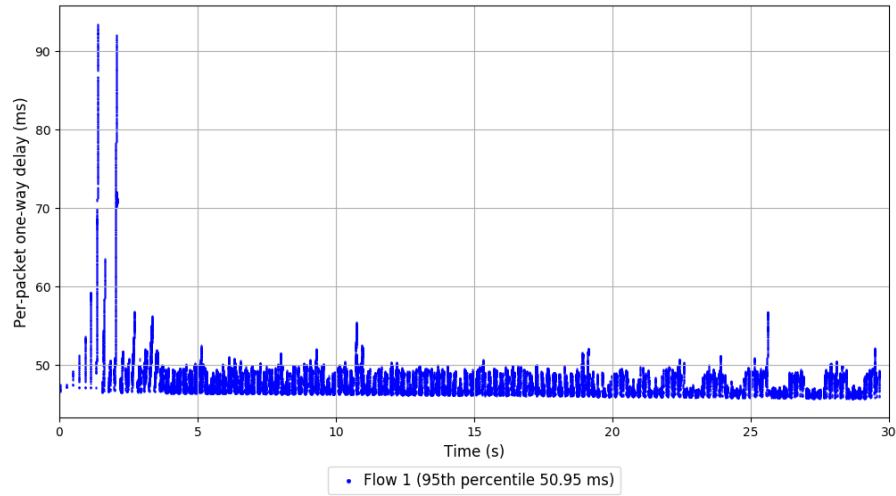
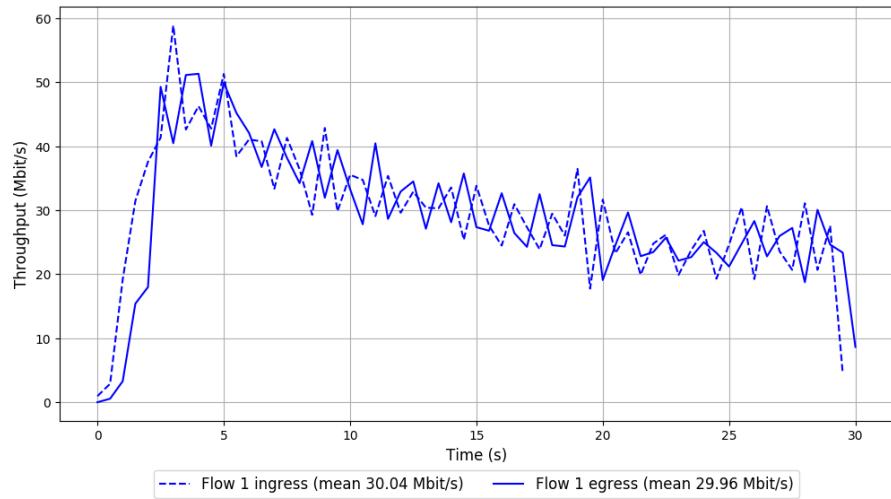


Run 2: Statistics of Indigo

```
Start at: 2018-11-02 18:53:52
End at: 2018-11-02 18:54:22
Local clock offset: -41.46 ms
Remote clock offset: 26.902 ms

# Below is generated by plot.py at 2018-11-02 20:33:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 29.96 Mbit/s
95th percentile per-packet one-way delay: 50.953 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 29.96 Mbit/s
95th percentile per-packet one-way delay: 50.953 ms
Loss rate: 0.25%
```

## Run 2: Report of Indigo — Data Link

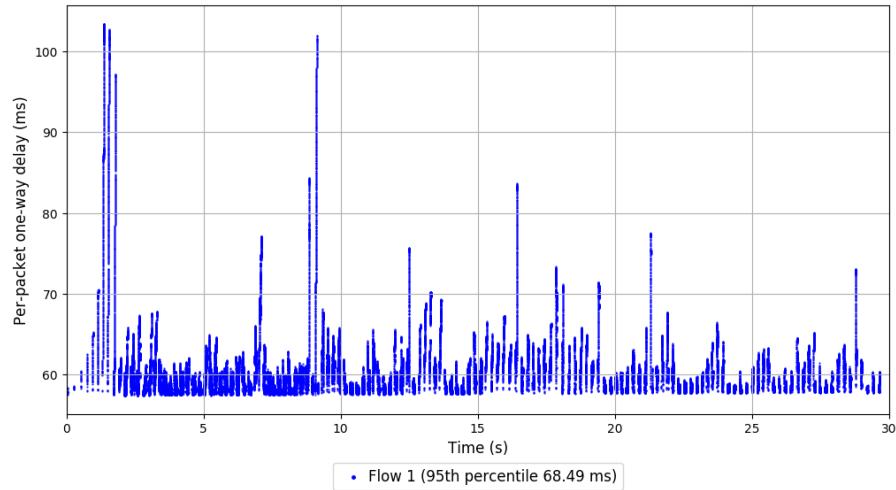
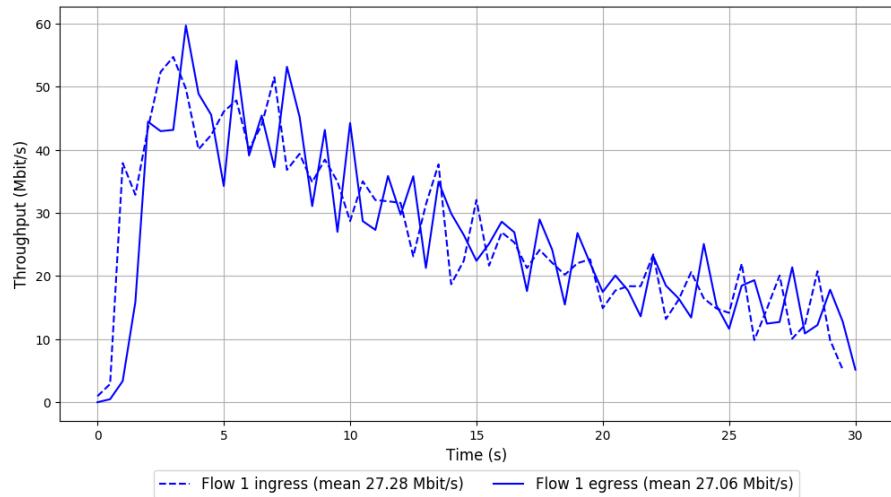


Run 3: Statistics of Indigo

```
Start at: 2018-11-02 19:23:42
End at: 2018-11-02 19:24:12
Local clock offset: -29.236 ms
Remote clock offset: -3.838 ms

# Below is generated by plot.py at 2018-11-02 20:33:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.06 Mbit/s
95th percentile per-packet one-way delay: 68.490 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 27.06 Mbit/s
95th percentile per-packet one-way delay: 68.490 ms
Loss rate: 0.78%
```

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

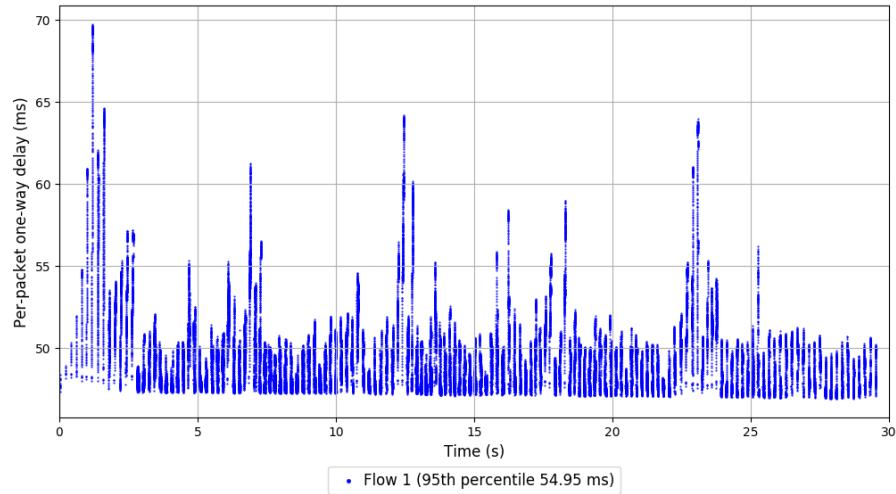
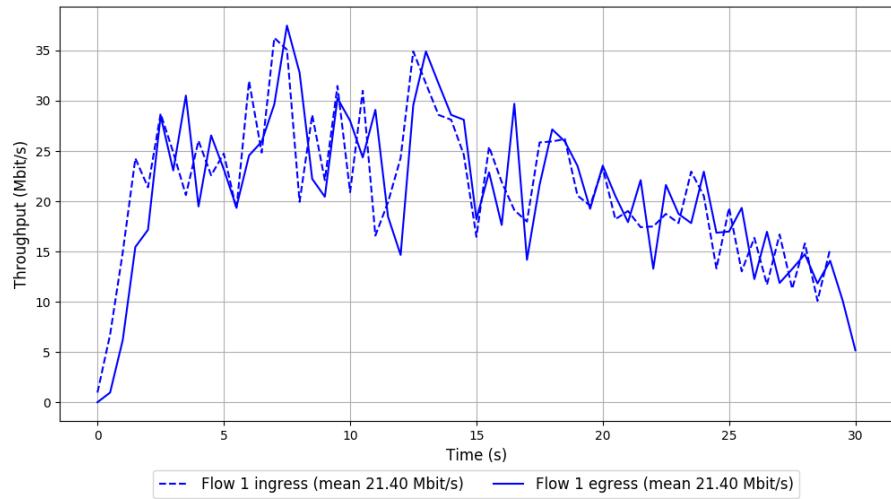


Run 4: Statistics of Indigo

```
Start at: 2018-11-02 19:49:29
End at: 2018-11-02 19:49:59
Local clock offset: -11.755 ms
Remote clock offset: -15.47 ms

# Below is generated by plot.py at 2018-11-02 20:33:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.40 Mbit/s
95th percentile per-packet one-way delay: 54.945 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 21.40 Mbit/s
95th percentile per-packet one-way delay: 54.945 ms
Loss rate: 0.00%
```

## Run 4: Report of Indigo — Data Link

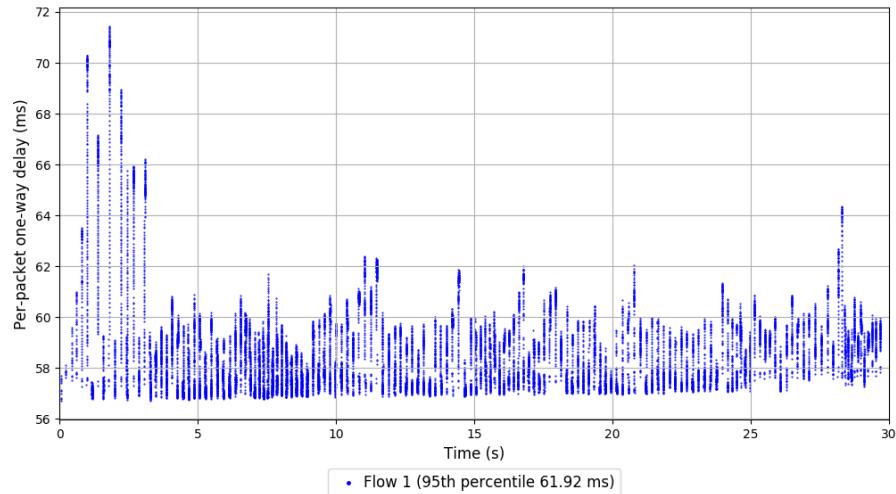
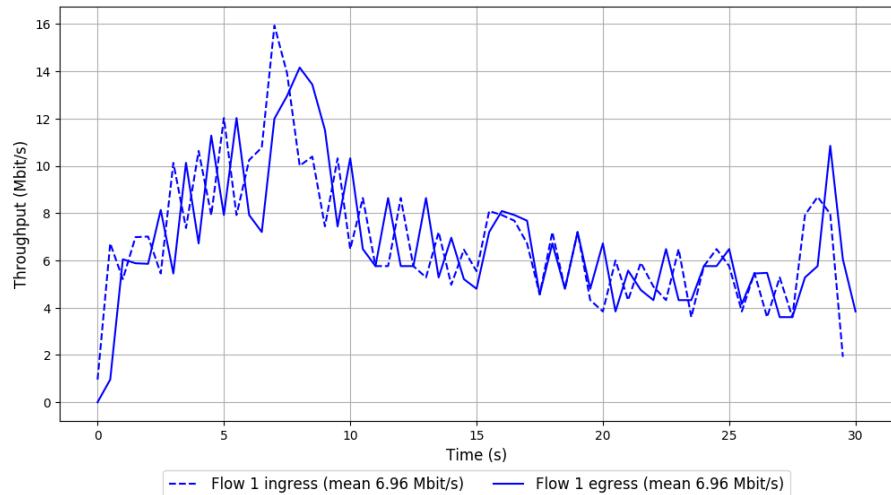


Run 5: Statistics of Indigo

```
Start at: 2018-11-02 20:12:26
End at: 2018-11-02 20:12:56
Local clock offset: -6.04 ms
Remote clock offset: -13.208 ms

# Below is generated by plot.py at 2018-11-02 20:33:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.96 Mbit/s
95th percentile per-packet one-way delay: 61.919 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.96 Mbit/s
95th percentile per-packet one-way delay: 61.919 ms
Loss rate: 0.00%
```

## Run 5: Report of Indigo — Data Link

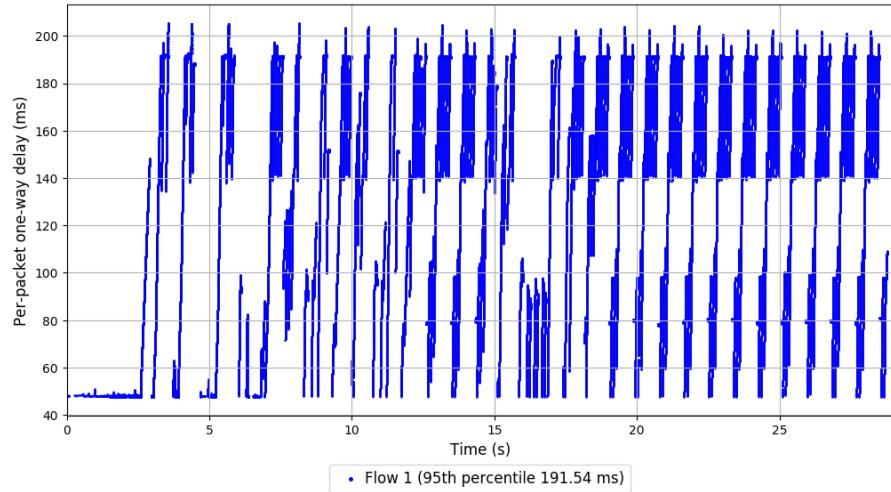
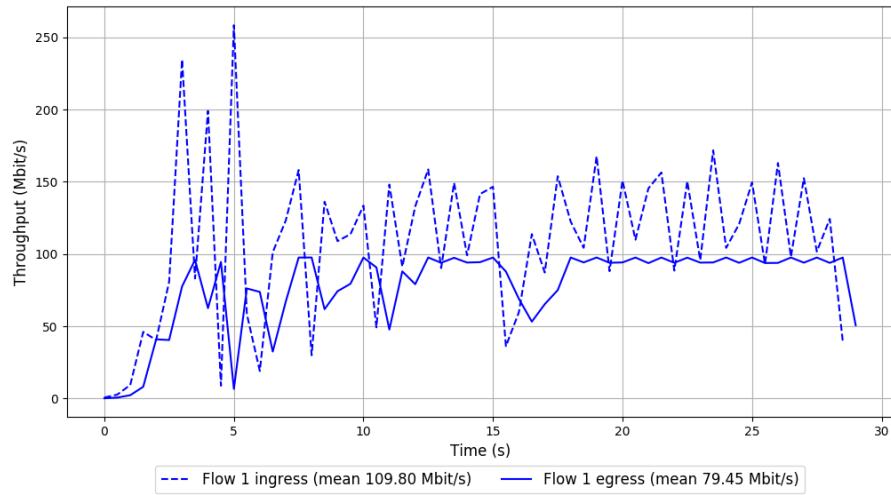


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-02 18:28:26
End at: 2018-11-02 18:28:56
Local clock offset: -27.54 ms
Remote clock offset: 15.068 ms
```

```
# Below is generated by plot.py at 2018-11-02 20:34:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.45 Mbit/s
95th percentile per-packet one-way delay: 191.544 ms
Loss rate: 27.48%
-- Flow 1:
Average throughput: 79.45 Mbit/s
95th percentile per-packet one-way delay: 191.544 ms
Loss rate: 27.48%
```

## Run 1: Report of Indigo-96d2da3 — Data Link

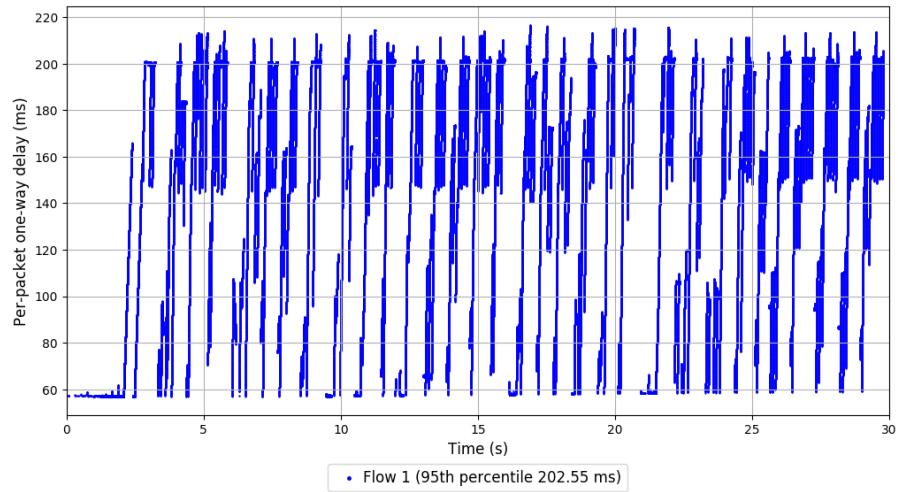
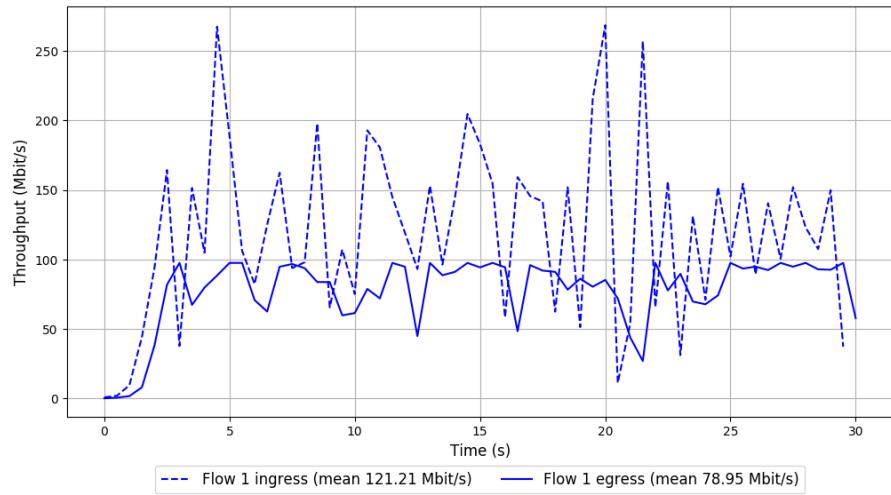


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 19:03:56
End at: 2018-11-02 19:04:26
Local clock offset: -60.296 ms
Remote clock offset: 27.167 ms

# Below is generated by plot.py at 2018-11-02 20:34:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.95 Mbit/s
95th percentile per-packet one-way delay: 202.549 ms
Loss rate: 34.63%
-- Flow 1:
Average throughput: 78.95 Mbit/s
95th percentile per-packet one-way delay: 202.549 ms
Loss rate: 34.63%
```

## Run 2: Report of Indigo-96d2da3 — Data Link

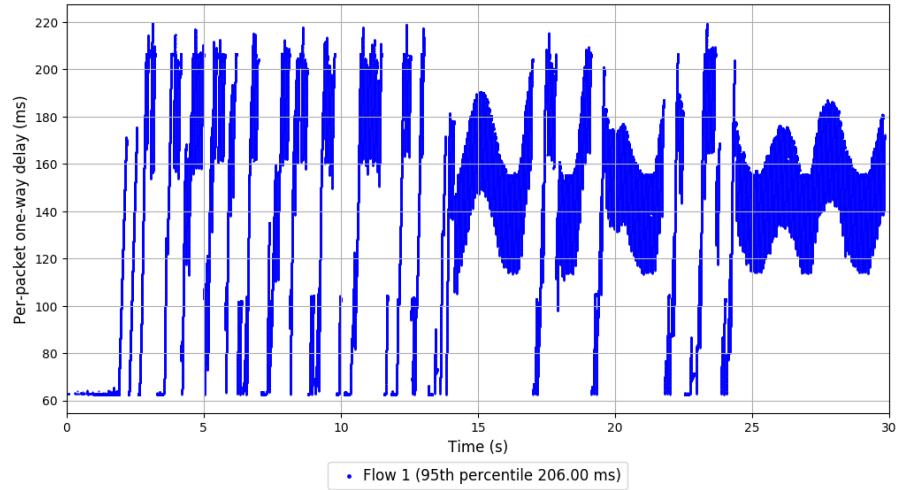
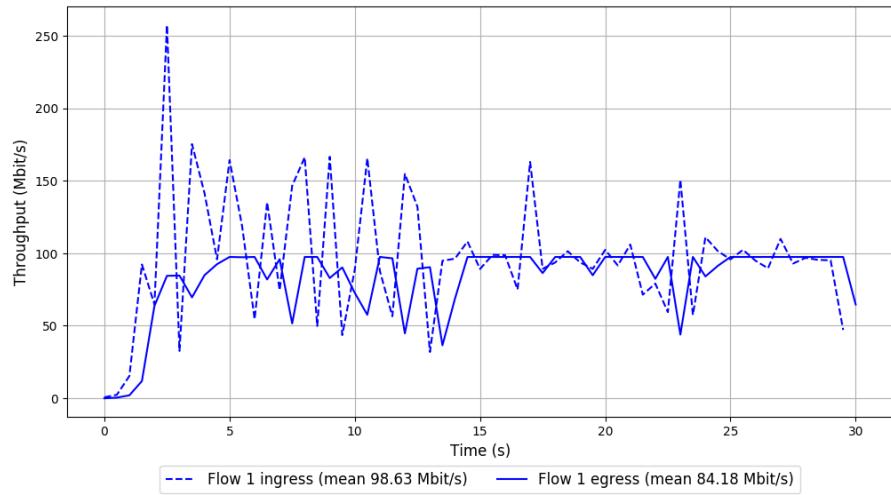


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 19:30:45
End at: 2018-11-02 19:31:15
Local clock offset: -48.005 ms
Remote clock offset: -11.455 ms

# Below is generated by plot.py at 2018-11-02 20:34:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.18 Mbit/s
95th percentile per-packet one-way delay: 206.005 ms
Loss rate: 14.44%
-- Flow 1:
Average throughput: 84.18 Mbit/s
95th percentile per-packet one-way delay: 206.005 ms
Loss rate: 14.44%
```

### Run 3: Report of Indigo-96d2da3 — Data Link

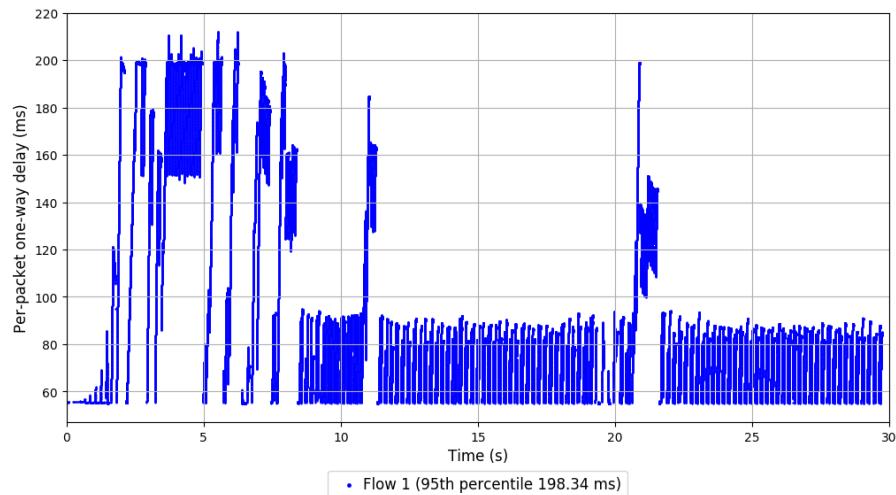
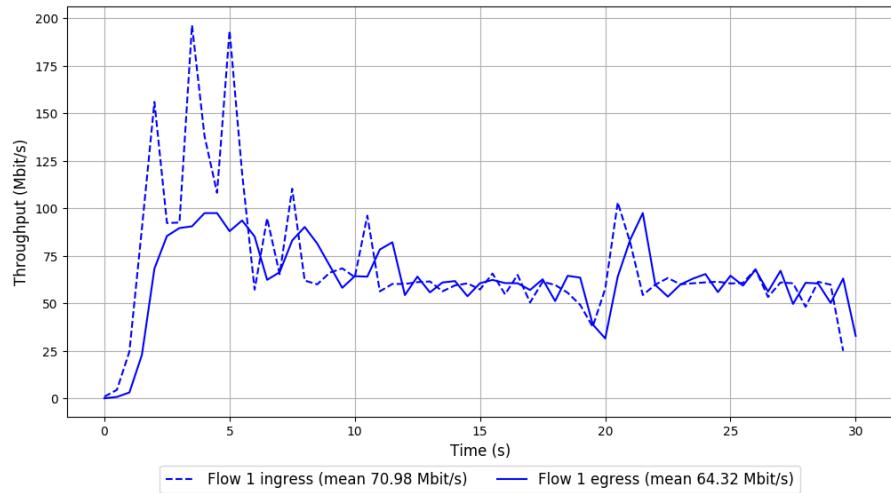


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 19:55:55
End at: 2018-11-02 19:56:25
Local clock offset: -11.937 ms
Remote clock offset: -11.581 ms

# Below is generated by plot.py at 2018-11-02 20:34:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.32 Mbit/s
95th percentile per-packet one-way delay: 198.339 ms
Loss rate: 9.29%
-- Flow 1:
Average throughput: 64.32 Mbit/s
95th percentile per-packet one-way delay: 198.339 ms
Loss rate: 9.29%
```

## Run 4: Report of Indigo-96d2da3 — Data Link

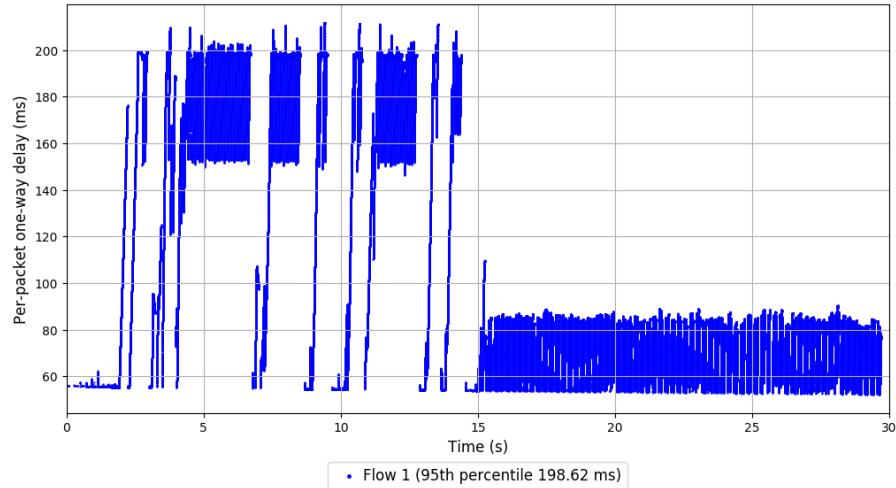
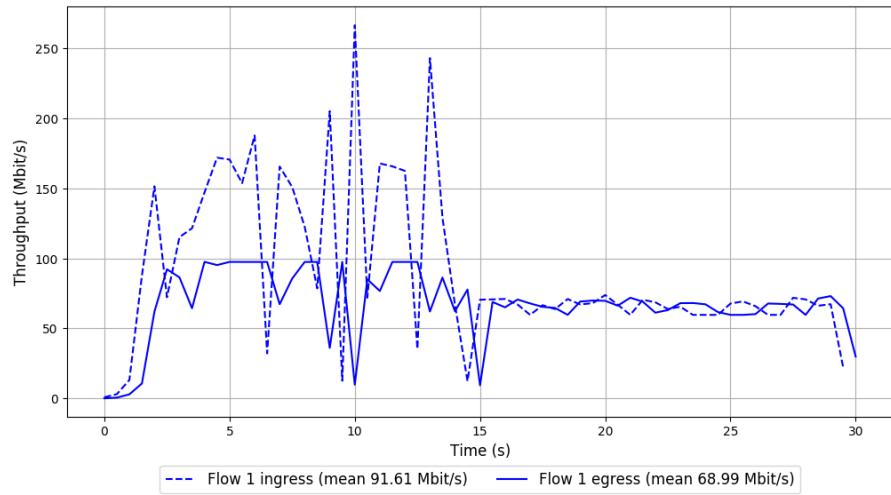


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 20:18:55
End at: 2018-11-02 20:19:25
Local clock offset: -3.77 ms
Remote clock offset: -9.946 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.99 Mbit/s
95th percentile per-packet one-way delay: 198.619 ms
Loss rate: 24.64%
-- Flow 1:
Average throughput: 68.99 Mbit/s
95th percentile per-packet one-way delay: 198.619 ms
Loss rate: 24.64%
```

Run 5: Report of Indigo-96d2da3 — Data Link

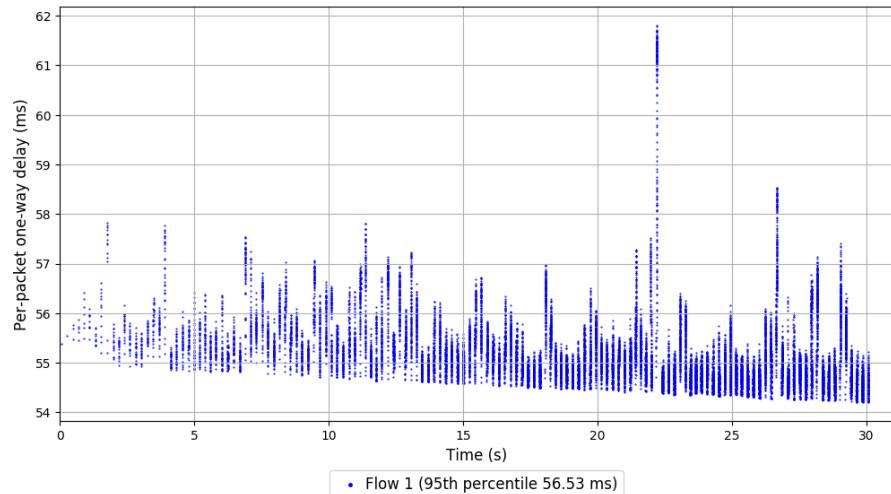
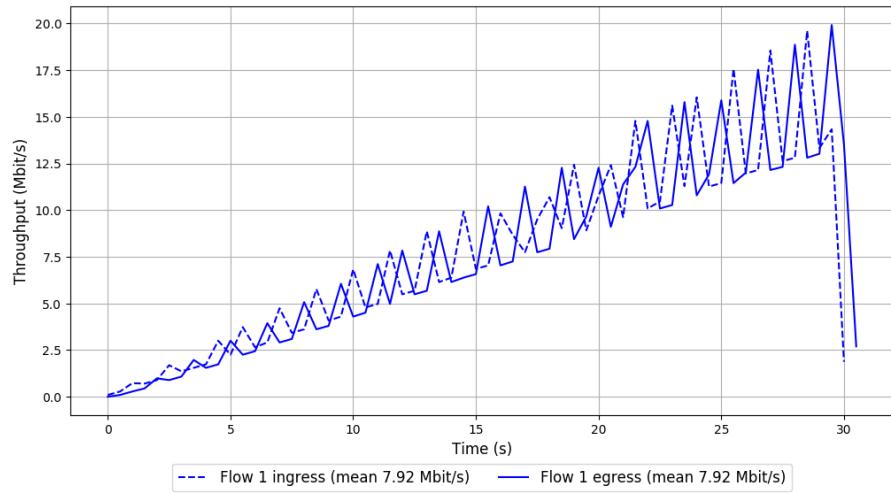


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-11-02 18:43:38
End at: 2018-11-02 18:44:08
Local clock offset: -29.594 ms
Remote clock offset: 22.136 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.92 Mbit/s
95th percentile per-packet one-way delay: 56.526 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.92 Mbit/s
95th percentile per-packet one-way delay: 56.526 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

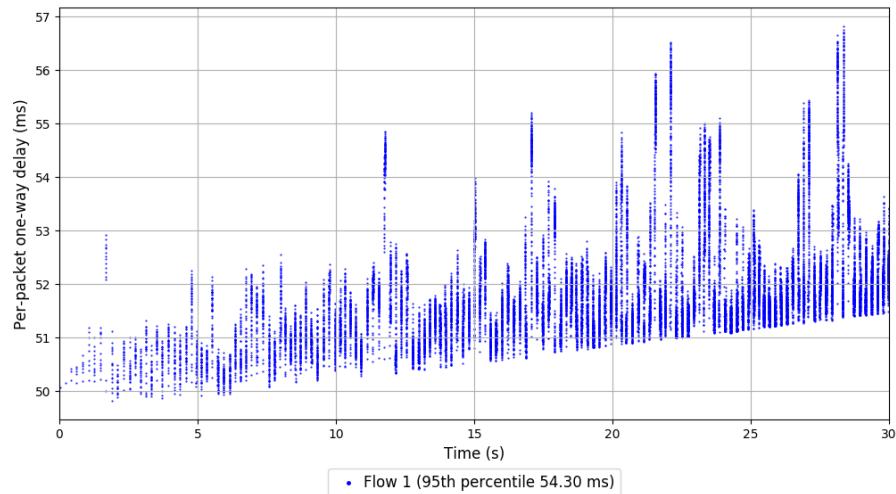
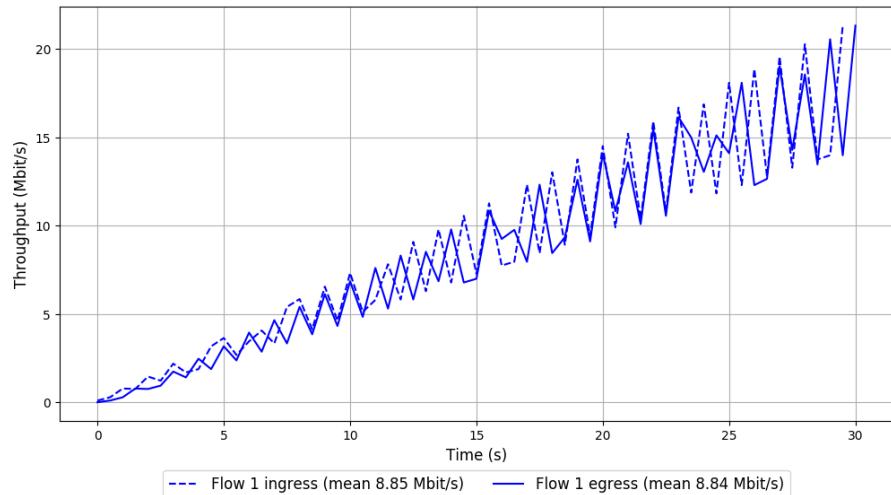


Run 2: Statistics of LEDBAT

```
Start at: 2018-11-02 19:13:05
End at: 2018-11-02 19:13:36
Local clock offset: -32.547 ms
Remote clock offset: 15.7 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.84 Mbit/s
95th percentile per-packet one-way delay: 54.297 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.84 Mbit/s
95th percentile per-packet one-way delay: 54.297 ms
Loss rate: 0.00%
```

## Run 2: Report of LEDBAT — Data Link

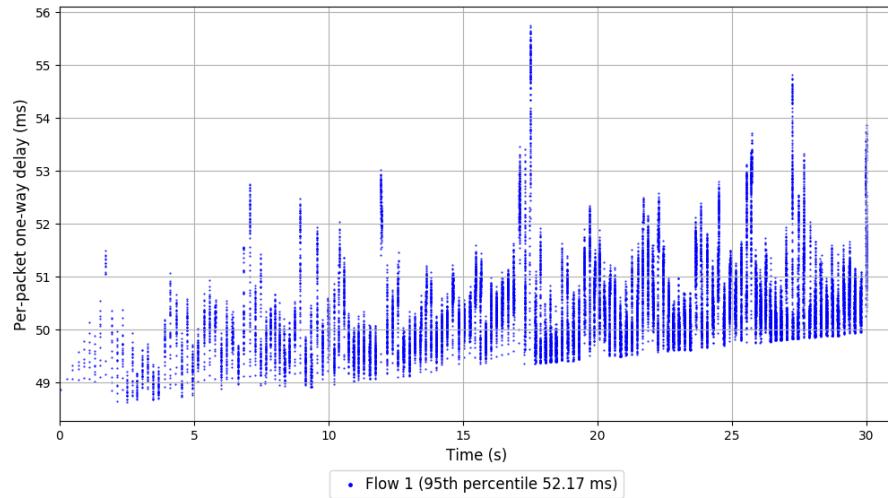
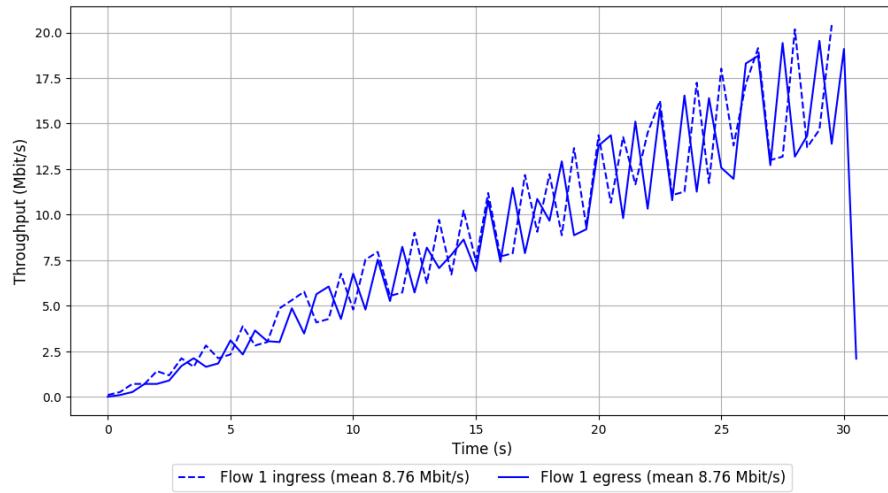


Run 3: Statistics of LEDBAT

```
Start at: 2018-11-02 19:39:02
End at: 2018-11-02 19:39:32
Local clock offset: -23.104 ms
Remote clock offset: -20.116 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.76 Mbit/s
95th percentile per-packet one-way delay: 52.174 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.76 Mbit/s
95th percentile per-packet one-way delay: 52.174 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

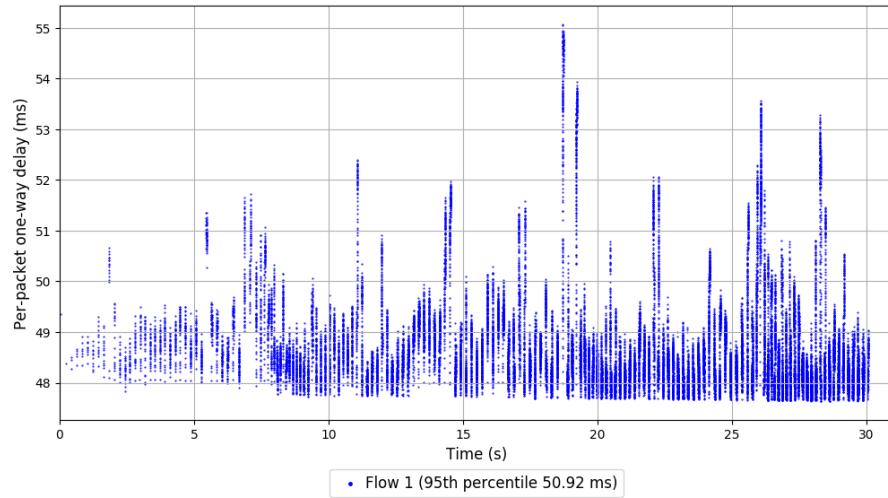
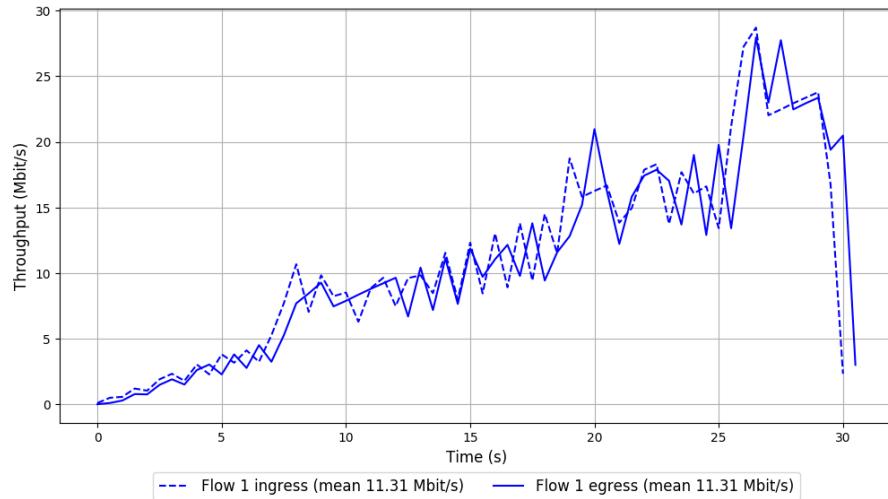


Run 4: Statistics of LEDBAT

```
Start at: 2018-11-02 20:03:22
End at: 2018-11-02 20:03:52
Local clock offset: -14.687 ms
Remote clock offset: -10.431 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.31 Mbit/s
95th percentile per-packet one-way delay: 50.924 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.31 Mbit/s
95th percentile per-packet one-way delay: 50.924 ms
Loss rate: 0.00%
```

## Run 4: Report of LEDBAT — Data Link

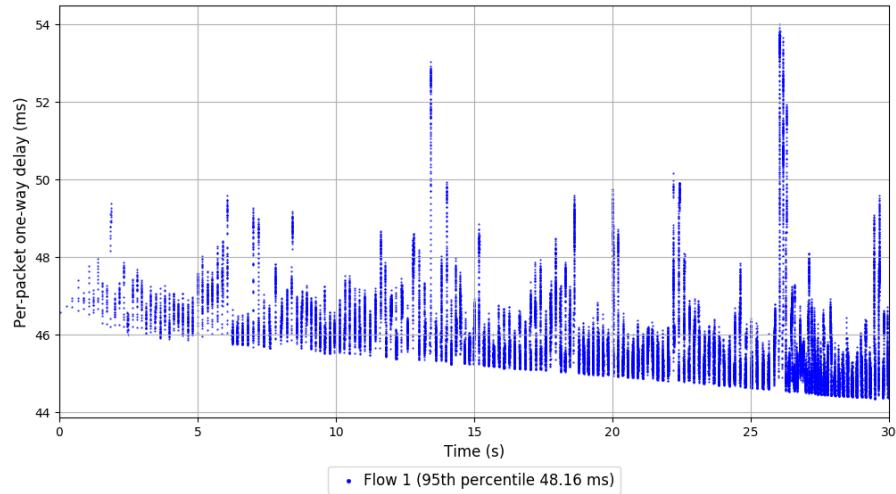
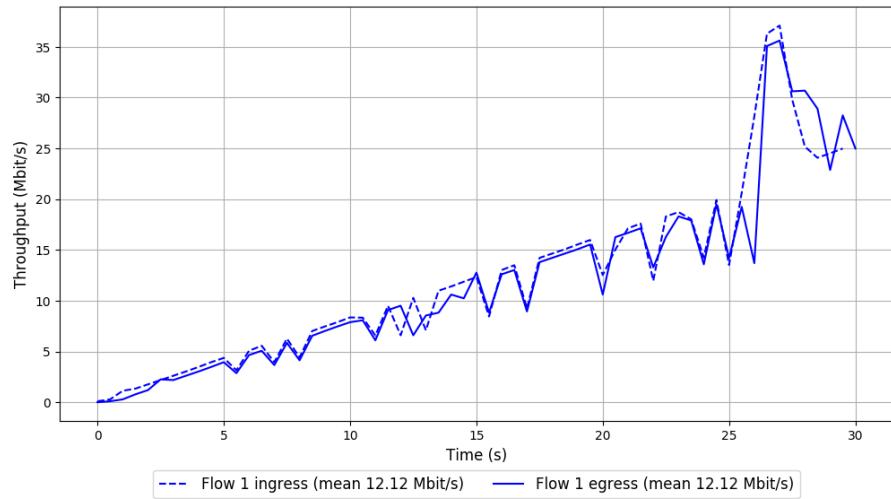


Run 5: Statistics of LEDBAT

```
Start at: 2018-11-02 20:26:29
End at: 2018-11-02 20:26:59
Local clock offset: -4.178 ms
Remote clock offset: 28.33 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 48.160 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 48.160 ms
Loss rate: 0.00%
```

Run 5: Report of LEDBAT — Data Link

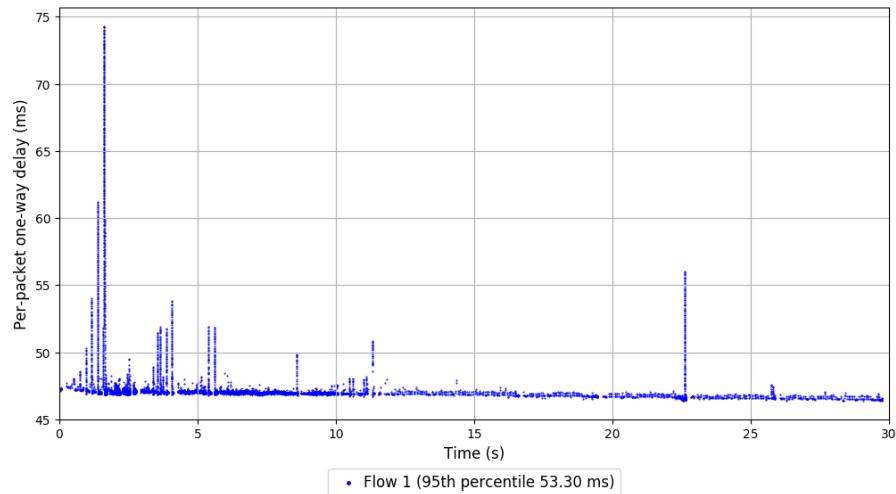
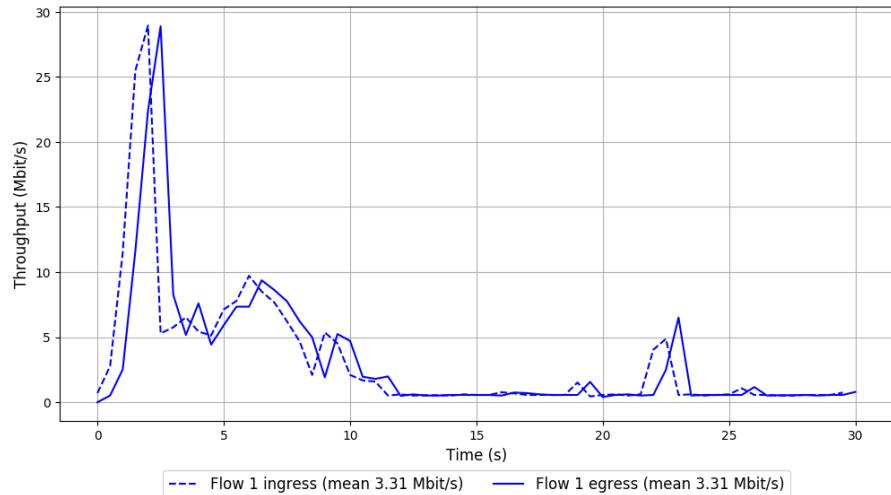


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-11-02 18:41:13
End at: 2018-11-02 18:41:43
Local clock offset: -29.267 ms
Remote clock offset: 19.406 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 53.295 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 53.295 ms
Loss rate: 0.00%
```

## Run 1: Report of Indigo-Muses — Data Link

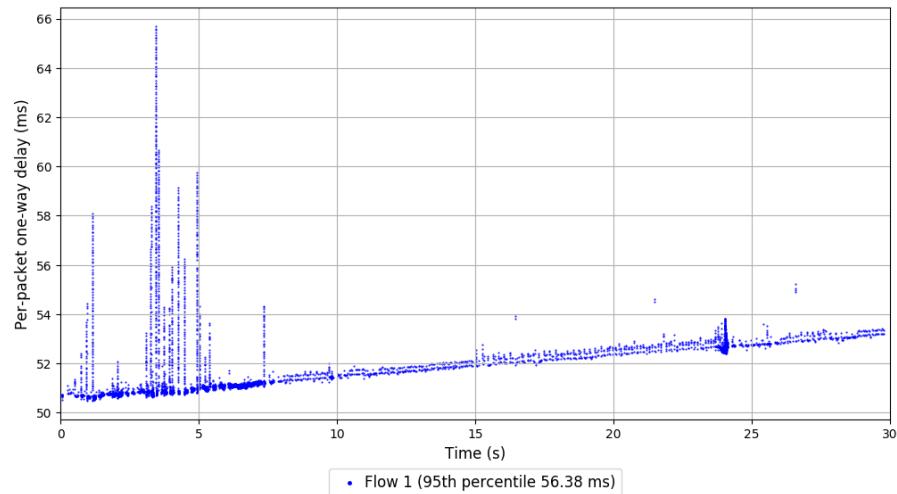
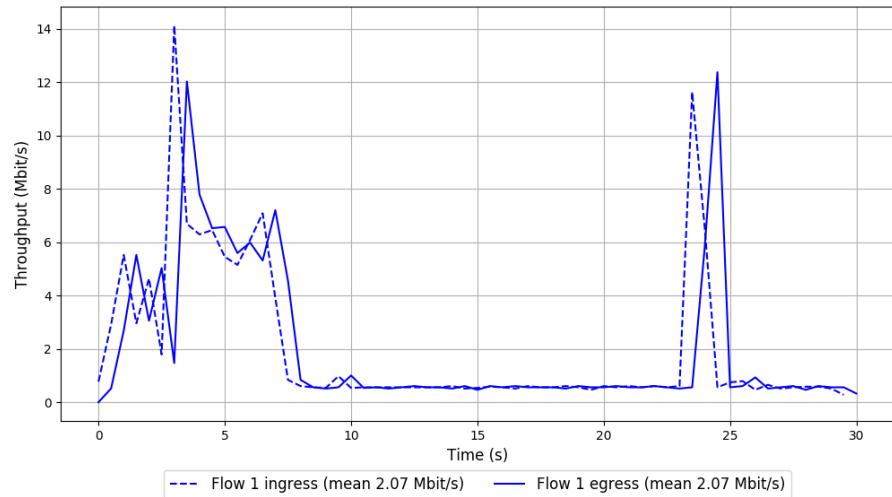


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-11-02 19:10:41
End at: 2018-11-02 19:11:11
Local clock offset: -36.489 ms
Remote clock offset: 23.698 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 56.377 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 56.377 ms
Loss rate: 0.00%
```

## Run 2: Report of Indigo-Muses — Data Link

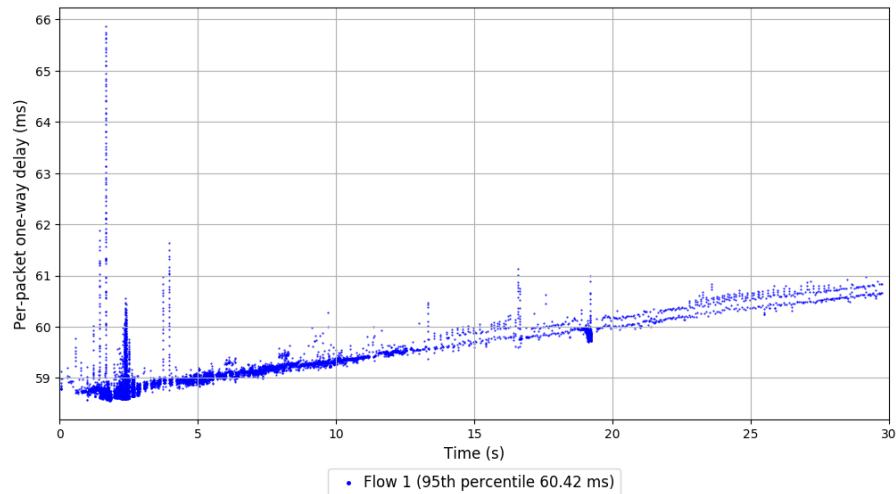
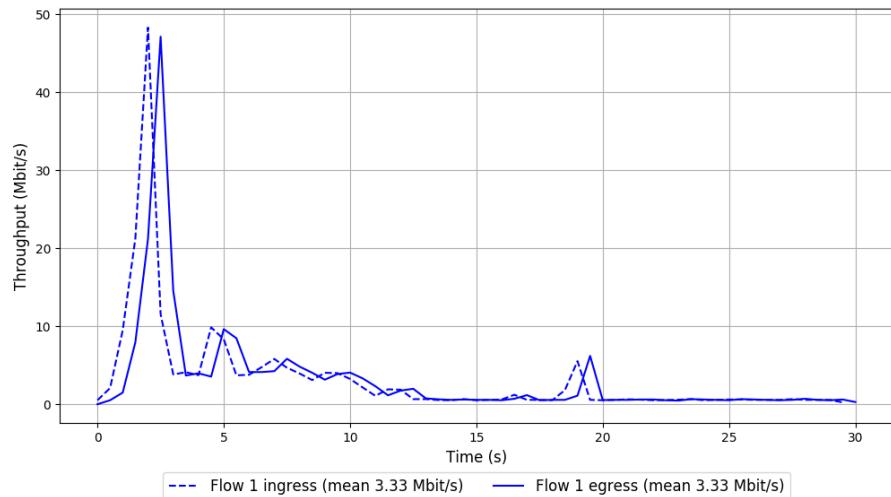


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-11-02 19:36:38
End at: 2018-11-02 19:37:08
Local clock offset: -29.64 ms
Remote clock offset: -16.982 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 60.424 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 60.424 ms
Loss rate: 0.00%
```

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

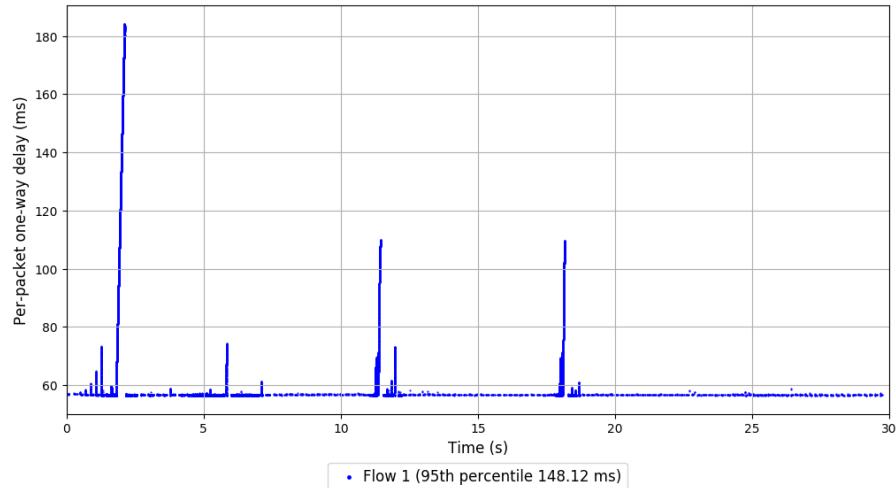
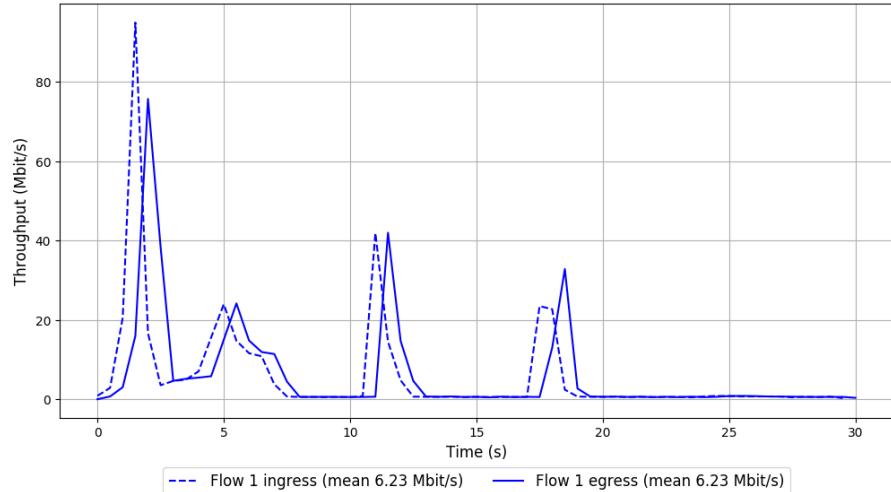


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-11-02 20:01:01
End at: 2018-11-02 20:01:31
Local clock offset: -13.612 ms
Remote clock offset: -10.158 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 148.118 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 148.118 ms
Loss rate: 0.00%
```

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

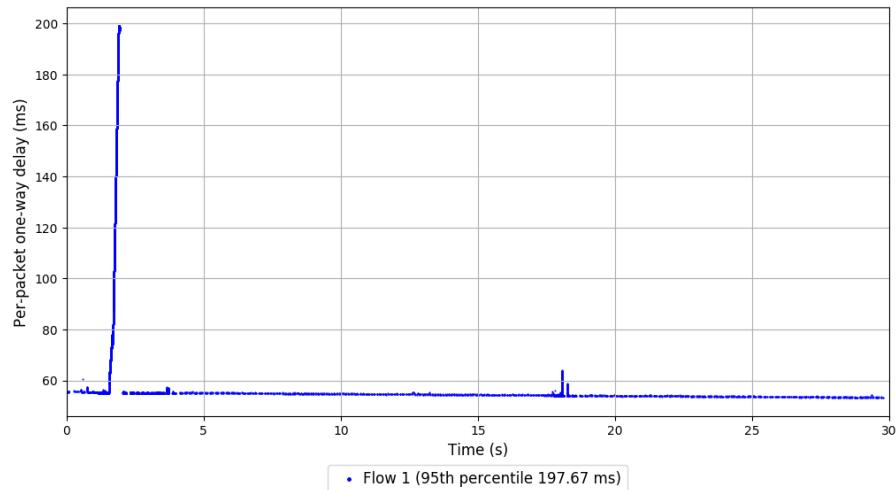
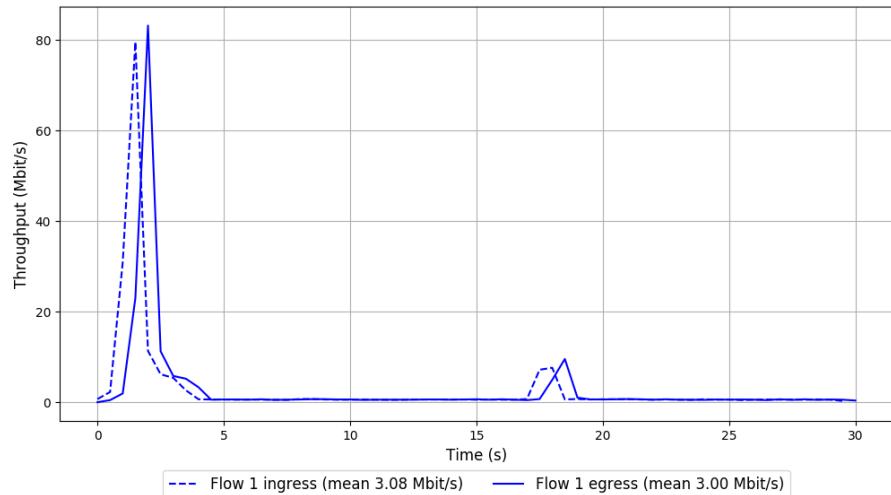


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-11-02 20:24:09
End at: 2018-11-02 20:24:39
Local clock offset: -3.936 ms
Remote clock offset: 19.817 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 197.669 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 197.669 ms
Loss rate: 2.63%
```

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

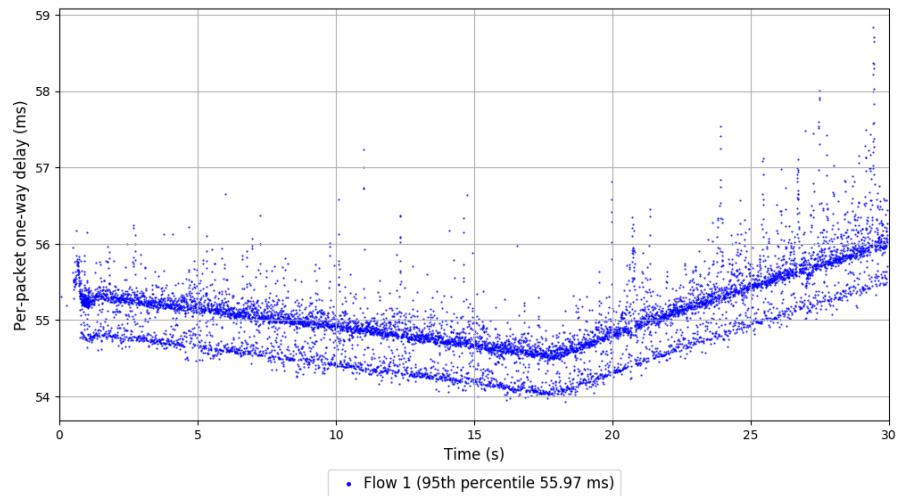
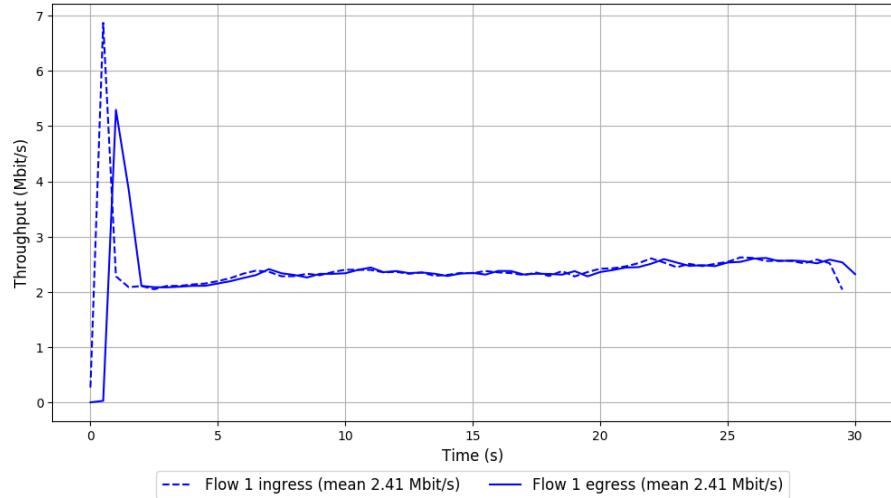


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-11-02 18:08:03
End at: 2018-11-02 18:08:33
Local clock offset: -6.382 ms
Remote clock offset: 40.765 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.41 Mbit/s
95th percentile per-packet one-way delay: 55.969 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.41 Mbit/s
95th percentile per-packet one-way delay: 55.969 ms
Loss rate: 0.00%
```

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

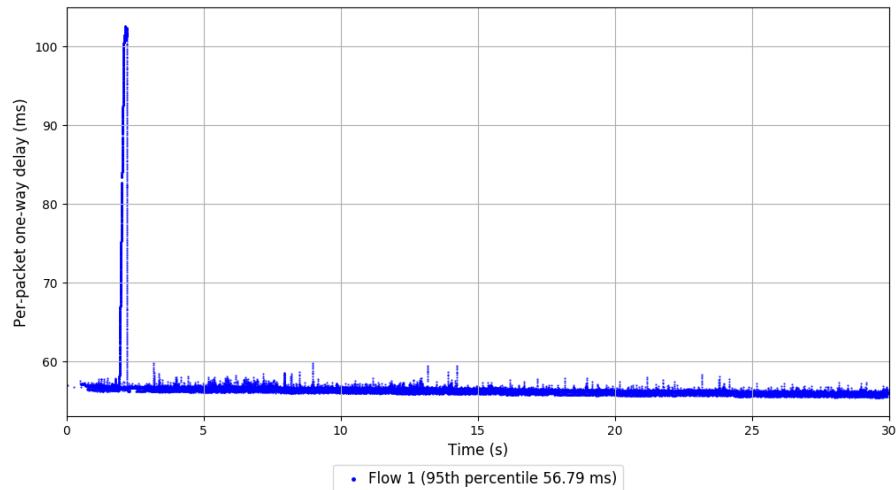
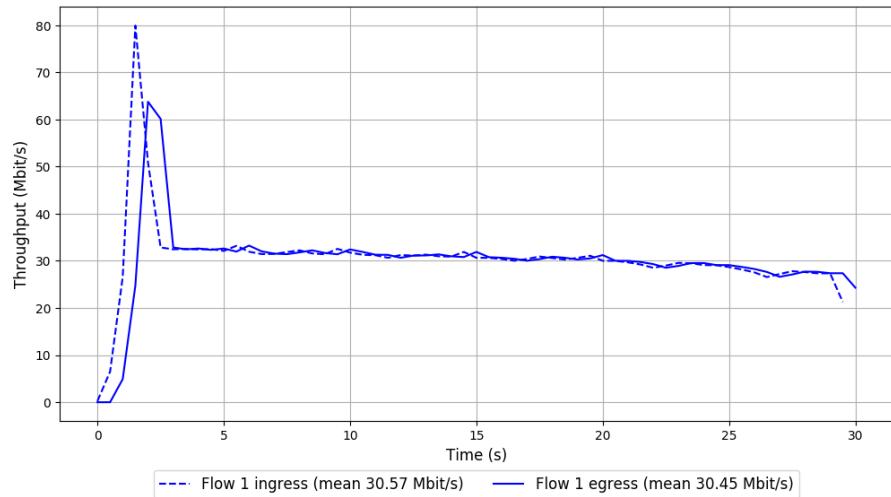


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-11-02 18:51:04
End at: 2018-11-02 18:51:34
Local clock offset: -37.044 ms
Remote clock offset: 27.65 ms

# Below is generated by plot.py at 2018-11-02 20:34:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 30.45 Mbit/s
95th percentile per-packet one-way delay: 56.794 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 30.45 Mbit/s
95th percentile per-packet one-way delay: 56.794 ms
Loss rate: 0.38%
```

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

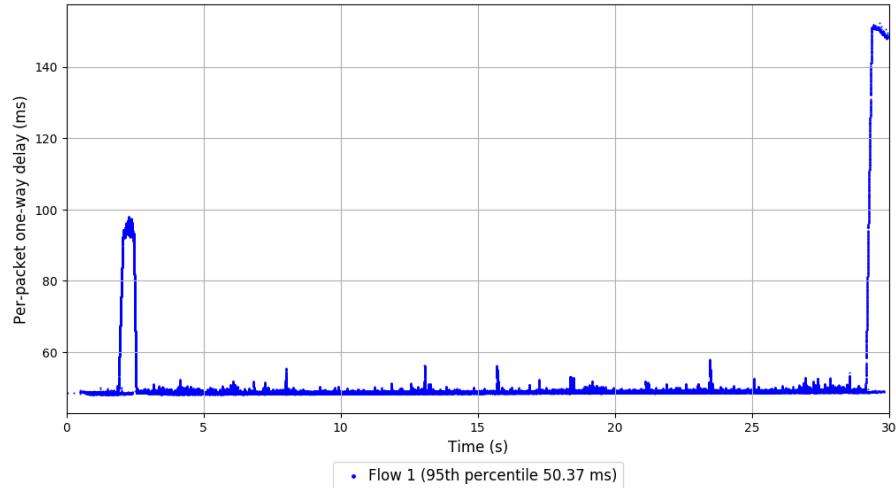
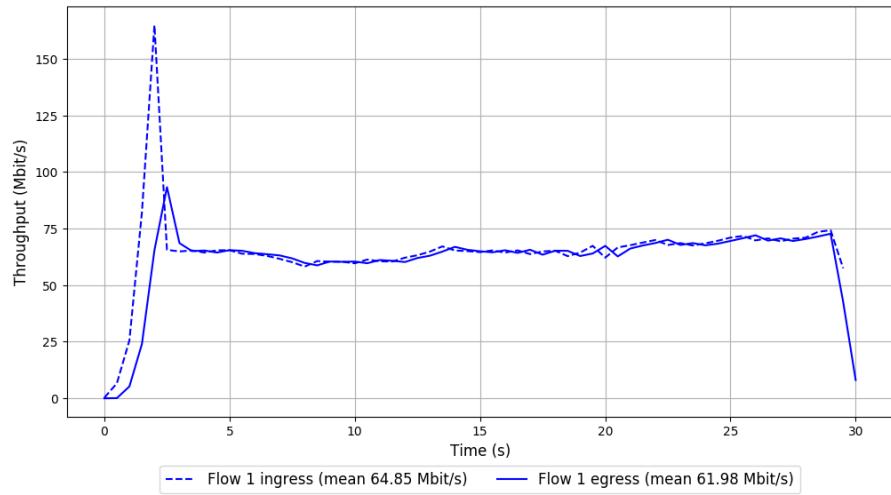


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-11-02 19:21:00
End at: 2018-11-02 19:21:30
Local clock offset: -28.132 ms
Remote clock offset: -0.159 ms

# Below is generated by plot.py at 2018-11-02 20:35:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.98 Mbit/s
95th percentile per-packet one-way delay: 50.368 ms
Loss rate: 4.40%
-- Flow 1:
Average throughput: 61.98 Mbit/s
95th percentile per-packet one-way delay: 50.368 ms
Loss rate: 4.40%
```

### Run 3: Report of PCC-Allegro — Data Link

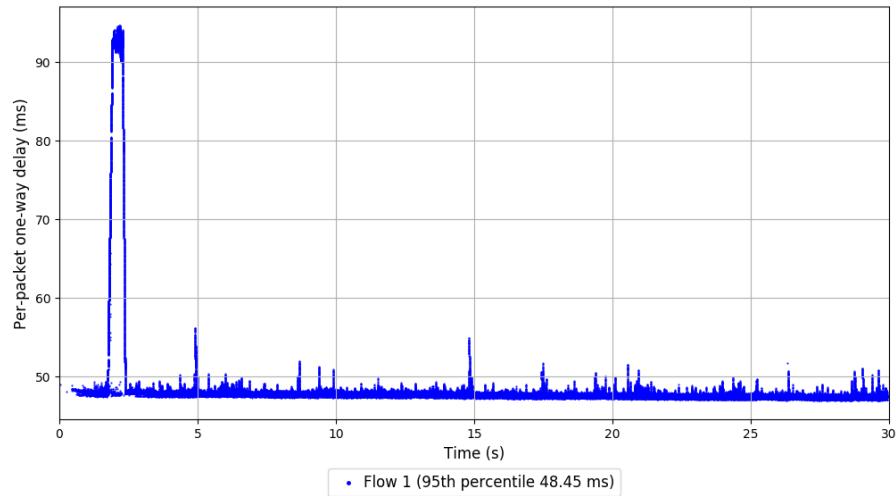
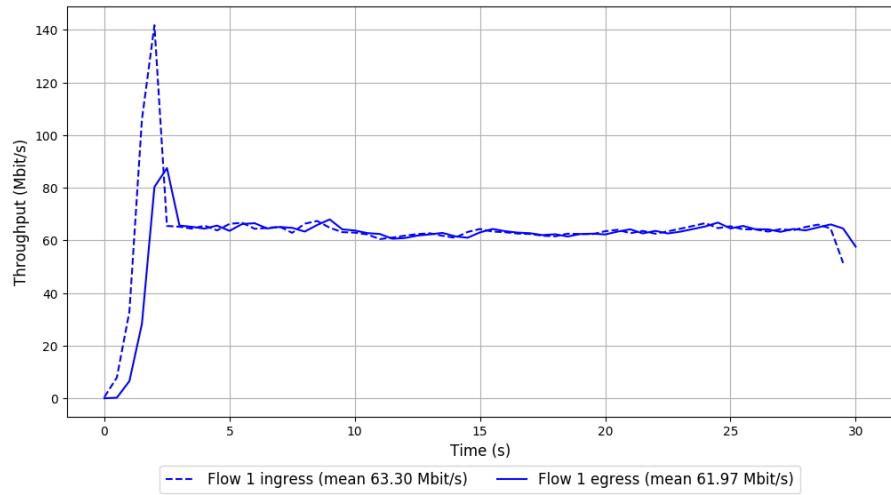


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-11-02 19:46:58
End at: 2018-11-02 19:47:28
Local clock offset: -12.968 ms
Remote clock offset: -18.659 ms

# Below is generated by plot.py at 2018-11-02 20:35:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.97 Mbit/s
95th percentile per-packet one-way delay: 48.446 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 61.97 Mbit/s
95th percentile per-packet one-way delay: 48.446 ms
Loss rate: 2.11%
```

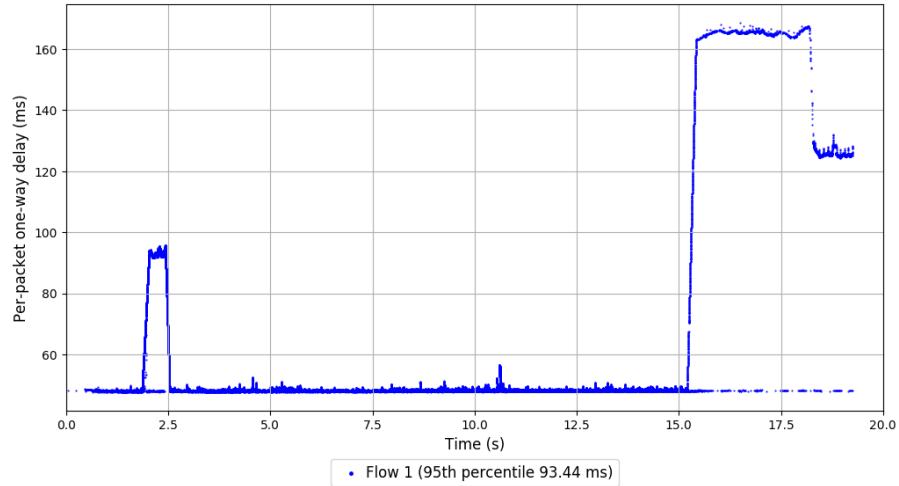
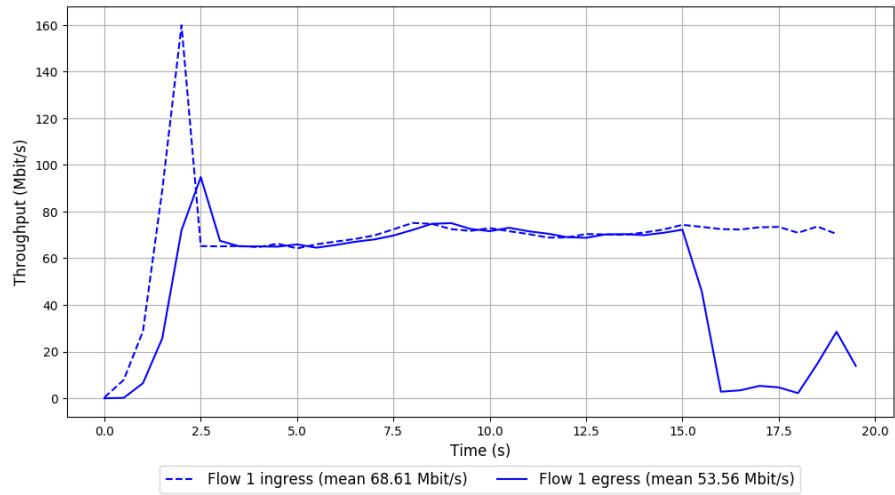
## Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-02 20:09:59  
End at: 2018-11-02 20:10:29  
Local clock offset: -7.714 ms  
Remote clock offset: -12.526 ms

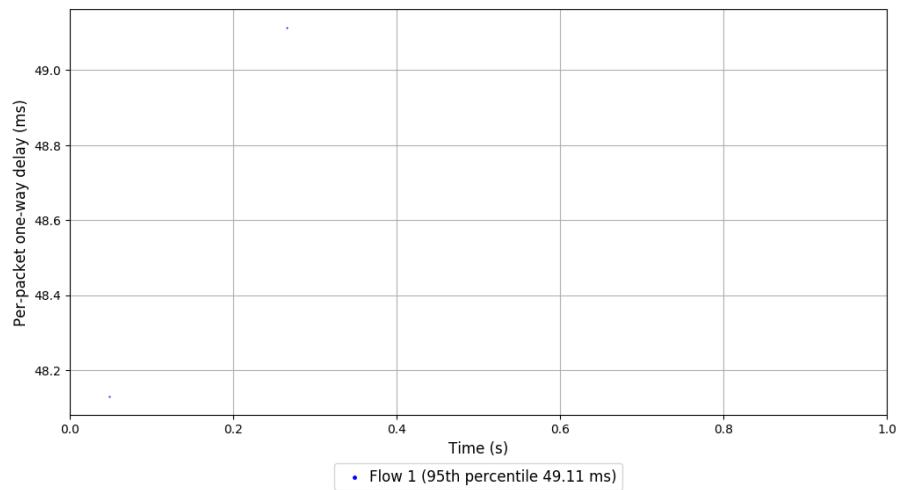
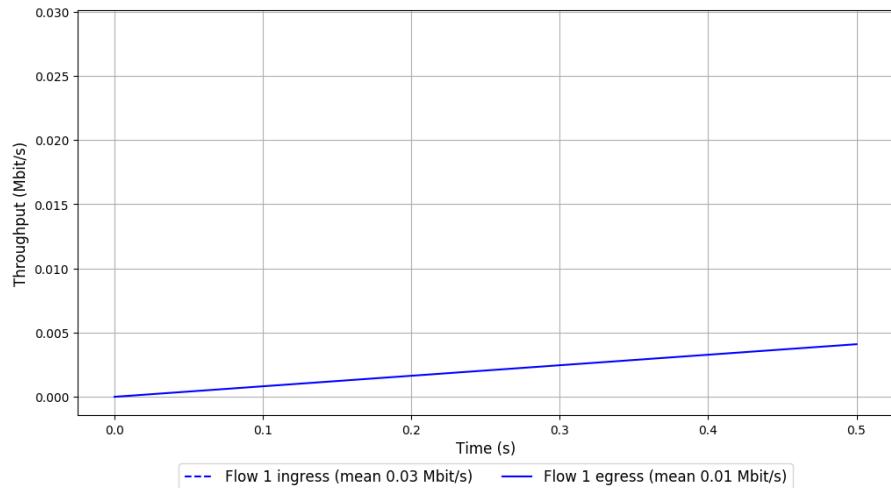
## Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

Start at: 2018-11-02 18:42:27  
End at: 2018-11-02 18:42:57  
Local clock offset: -29.227 ms  
Remote clock offset: 22.0 ms

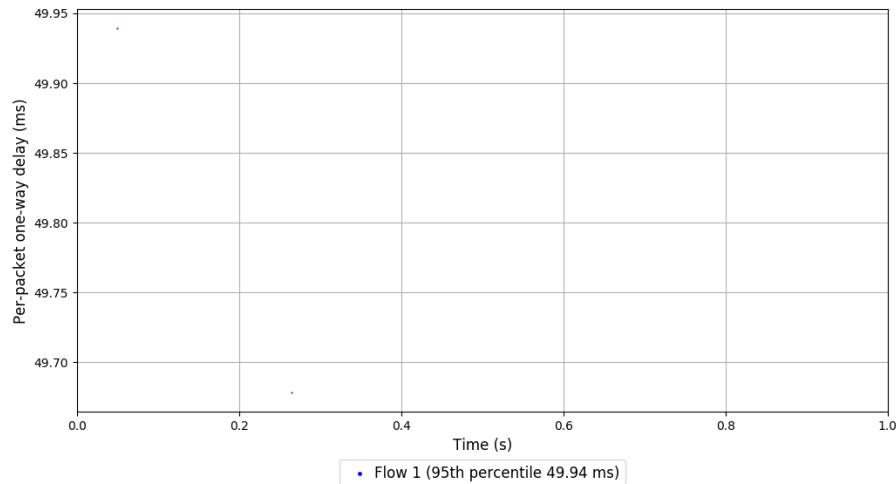
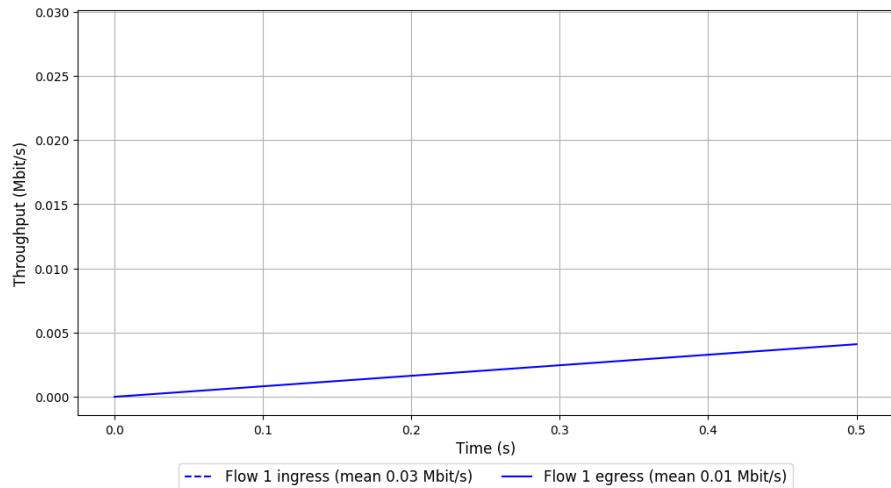
## Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-11-02 19:11:55  
End at: 2018-11-02 19:12:25  
Local clock offset: -33.871 ms  
Remote clock offset: 19.137 ms

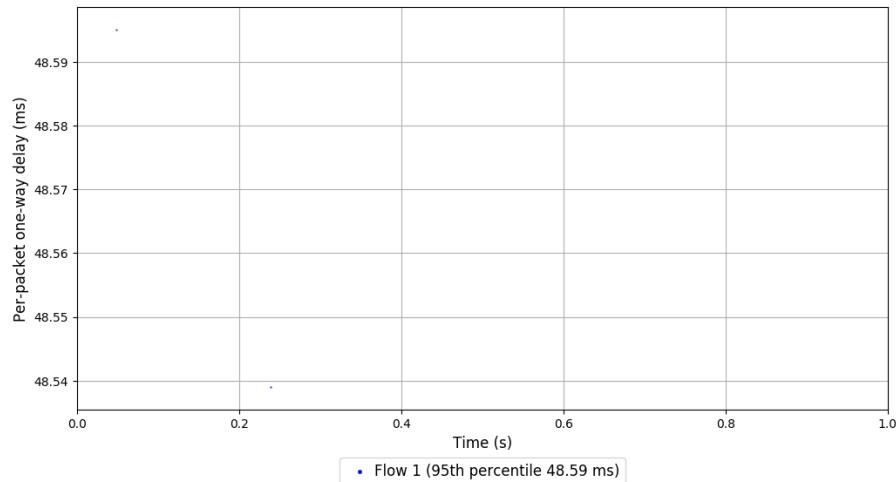
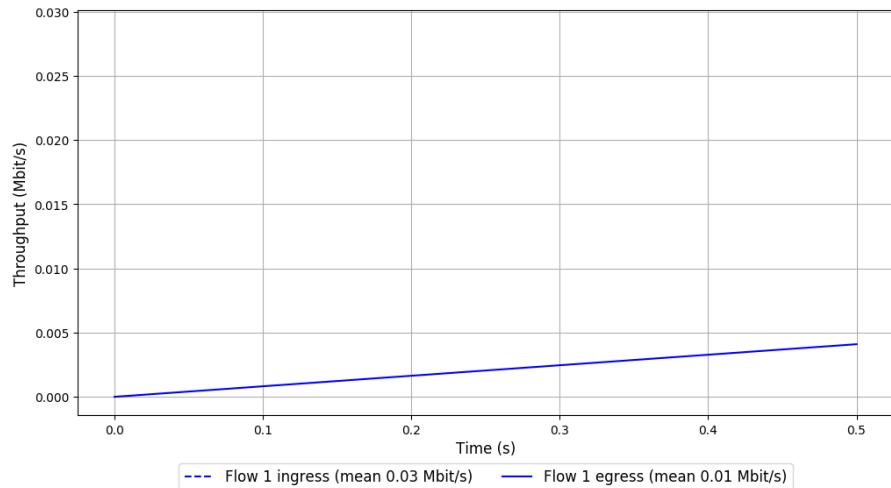
## Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-11-02 19:37:52  
End at: 2018-11-02 19:38:22  
Local clock offset: -25.992 ms  
Remote clock offset: -19.412 ms

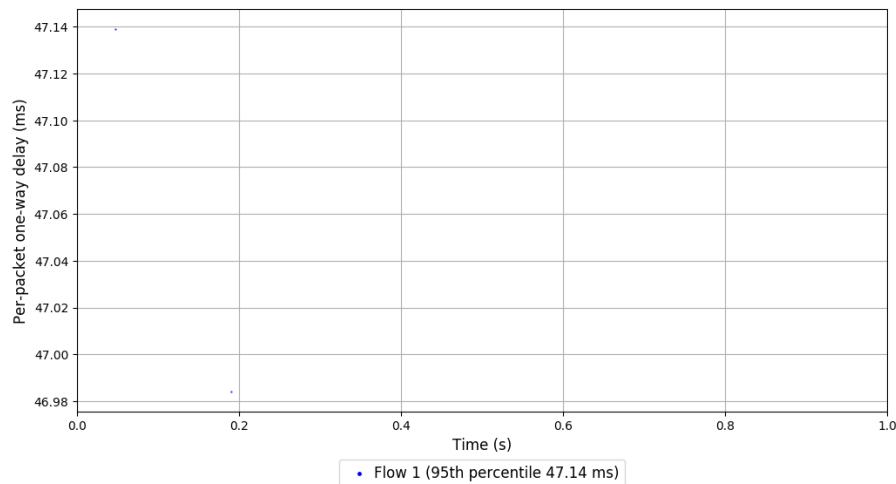
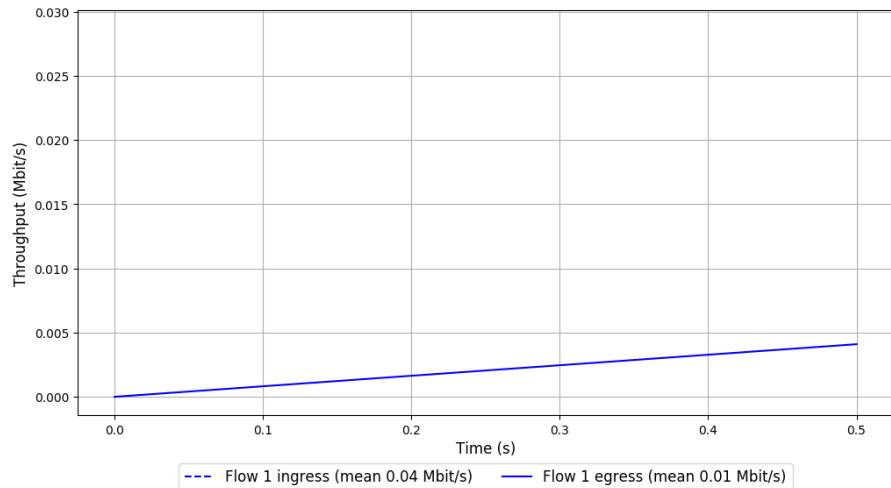
### Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-11-02 20:02:13  
End at: 2018-11-02 20:02:43  
Local clock offset: -13.996 ms  
Remote clock offset: -10.862 ms

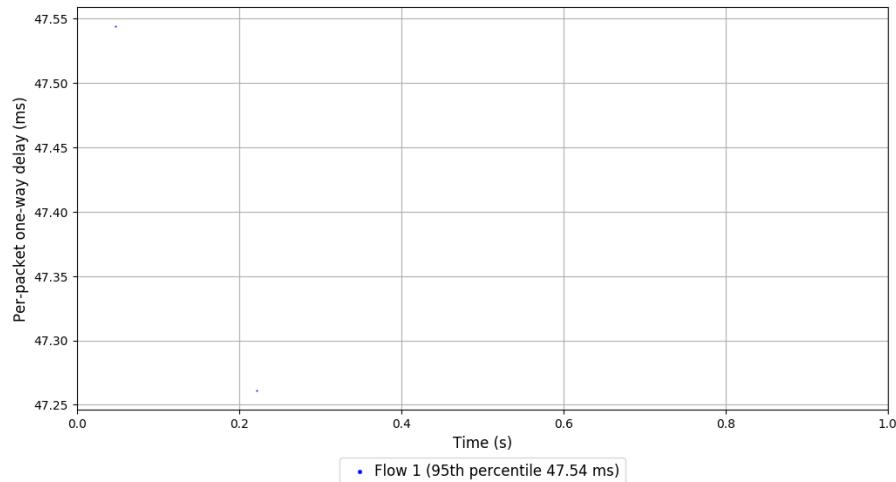
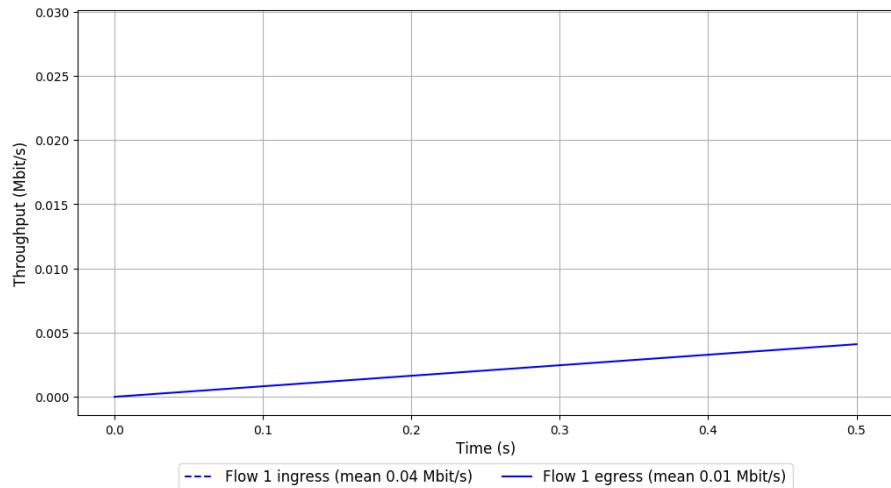
## Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-11-02 20:25:19  
End at: 2018-11-02 20:25:49  
Local clock offset: -4.035 ms  
Remote clock offset: 24.843 ms

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

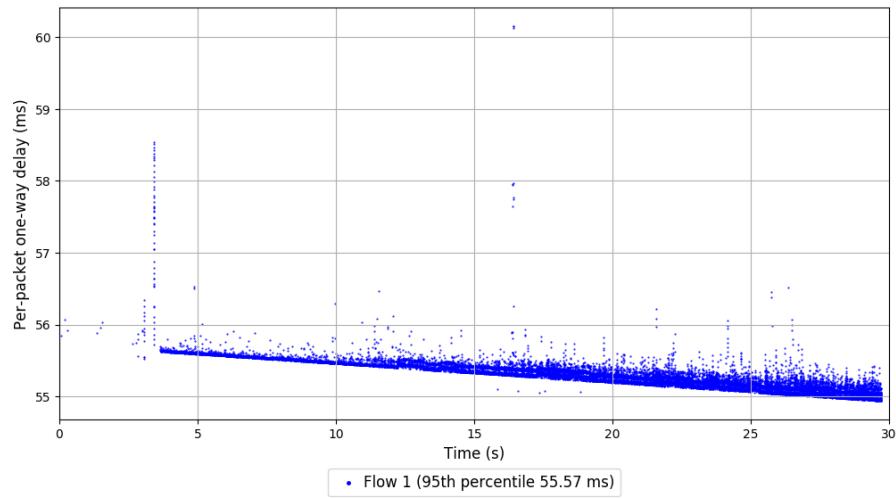
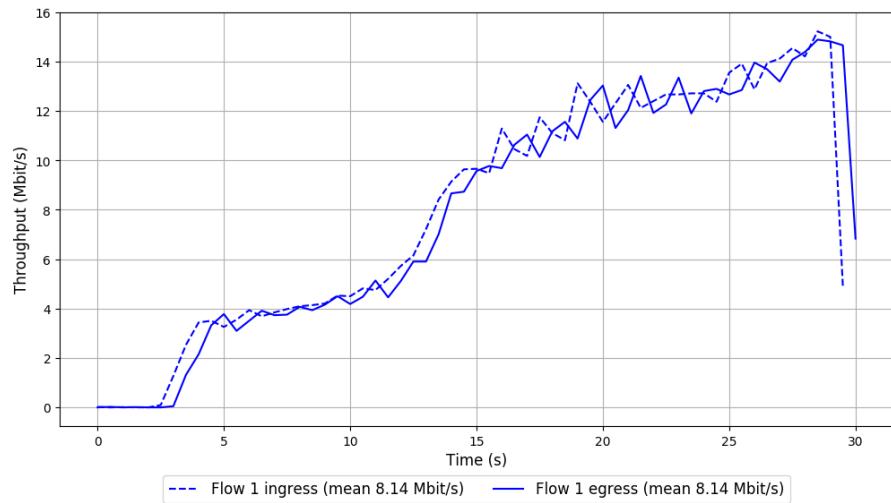


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-11-02 18:44:58
End at: 2018-11-02 18:45:28
Local clock offset: -30.354 ms
Remote clock offset: 24.191 ms

# Below is generated by plot.py at 2018-11-02 20:35:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 55.569 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 55.569 ms
Loss rate: 0.00%
```

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

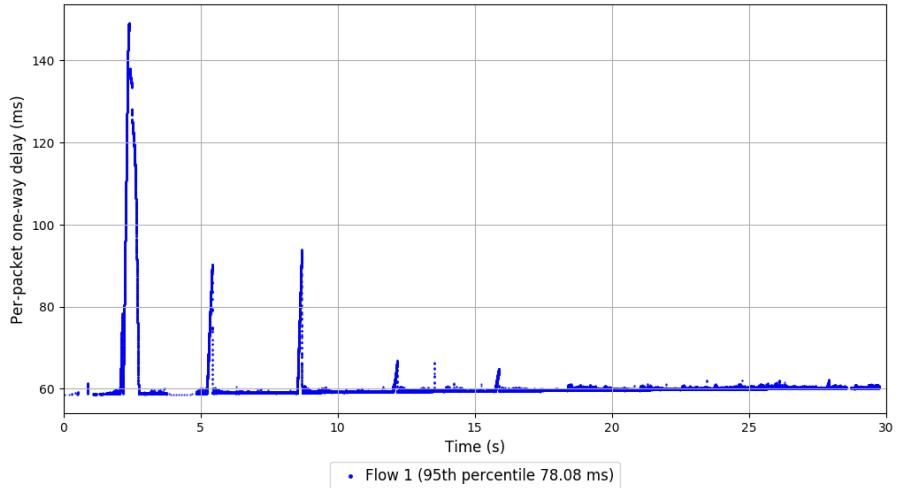
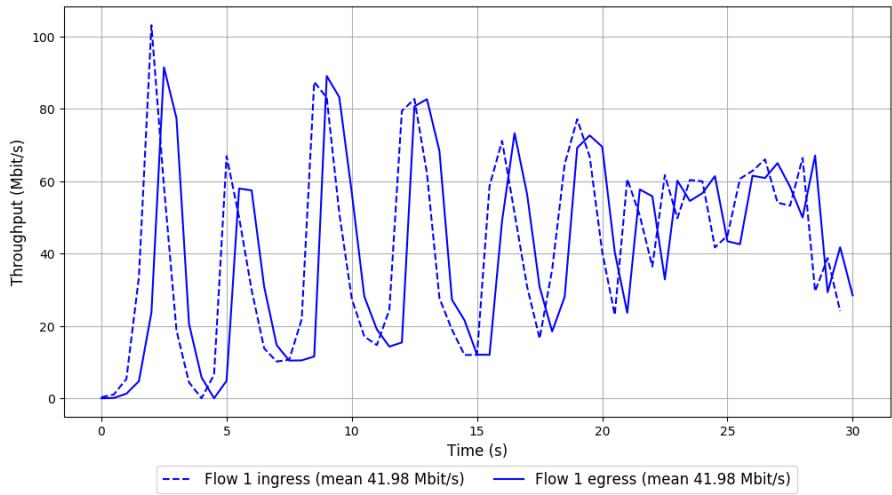


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-11-02 19:14:23
End at: 2018-11-02 19:14:53
Local clock offset: -30.468 ms
Remote clock offset: 13.017 ms

# Below is generated by plot.py at 2018-11-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.98 Mbit/s
95th percentile per-packet one-way delay: 78.076 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.98 Mbit/s
95th percentile per-packet one-way delay: 78.076 ms
Loss rate: 0.00%
```

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

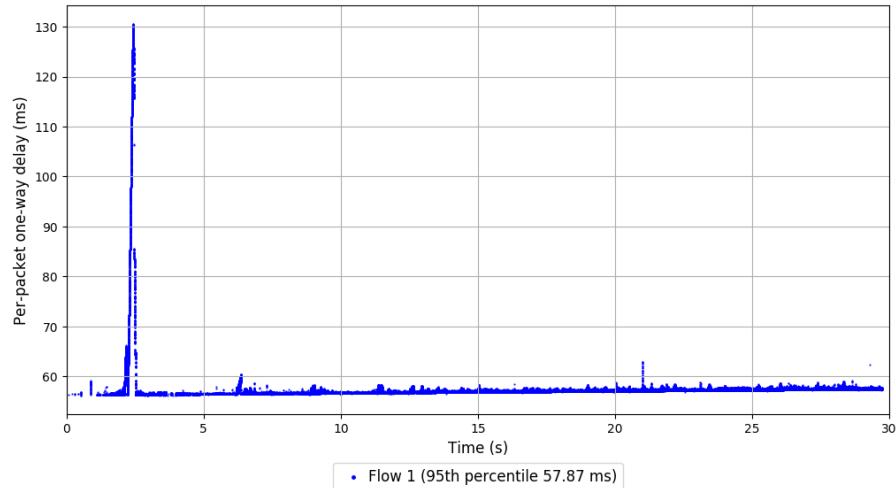
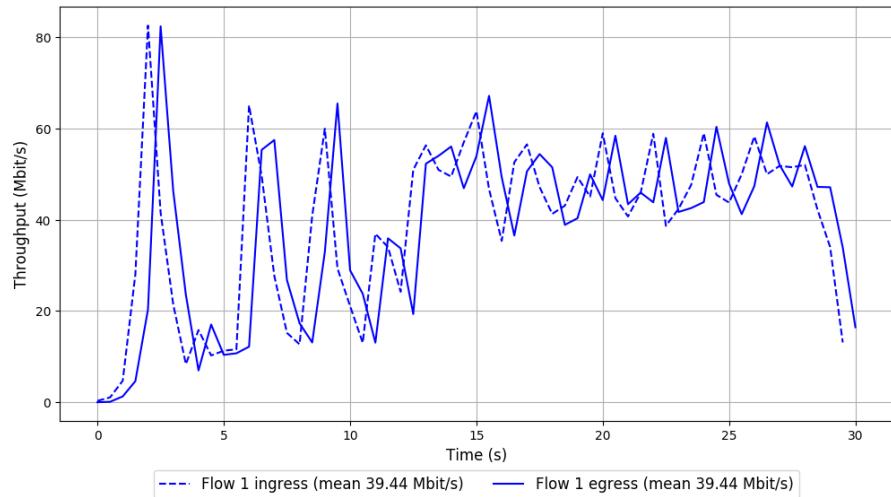


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-11-02 19:40:30
End at: 2018-11-02 19:41:00
Local clock offset: -19.963 ms
Remote clock offset: -21.935 ms

# Below is generated by plot.py at 2018-11-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.44 Mbit/s
95th percentile per-packet one-way delay: 57.874 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 39.44 Mbit/s
95th percentile per-packet one-way delay: 57.874 ms
Loss rate: 0.00%
```

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

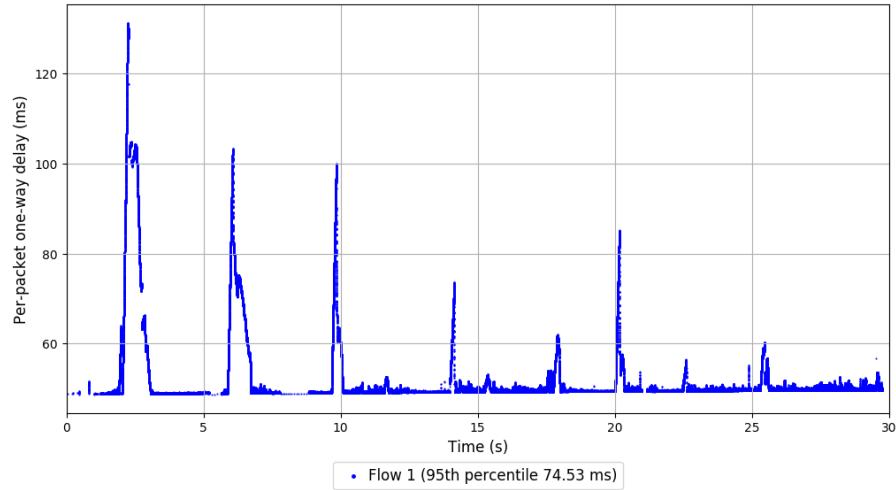
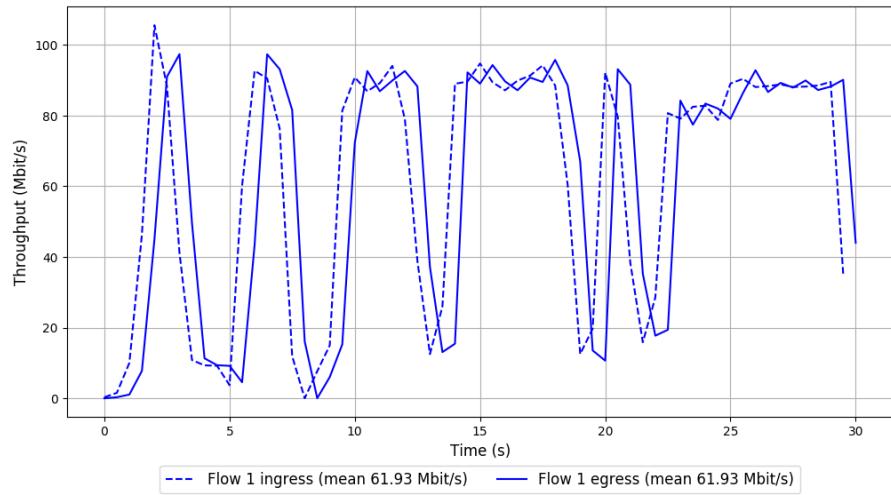


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-11-02 20:04:36
End at: 2018-11-02 20:05:06
Local clock offset: -15.173 ms
Remote clock offset: -10.249 ms

# Below is generated by plot.py at 2018-11-02 20:35:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.93 Mbit/s
95th percentile per-packet one-way delay: 74.534 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 61.93 Mbit/s
95th percentile per-packet one-way delay: 74.534 ms
Loss rate: 0.00%
```

Run 4: Report of QUIC Cubic — Data Link

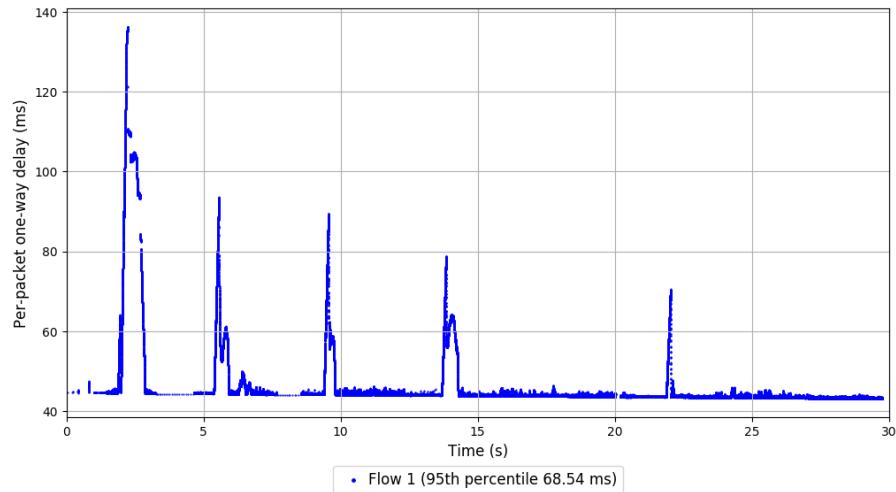
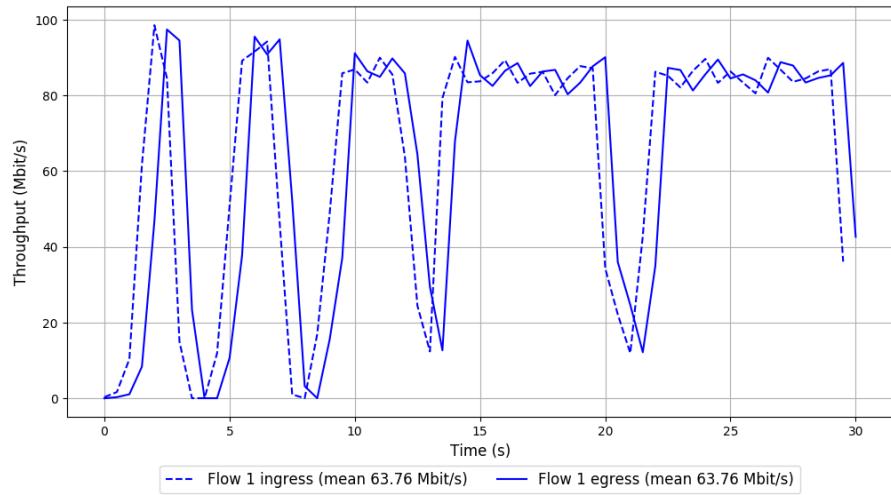


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-11-02 20:28:35
End at: 2018-11-02 20:29:05
Local clock offset: -4.409 ms
Remote clock offset: 33.396 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.76 Mbit/s
95th percentile per-packet one-way delay: 68.541 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.76 Mbit/s
95th percentile per-packet one-way delay: 68.541 ms
Loss rate: 0.00%
```

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

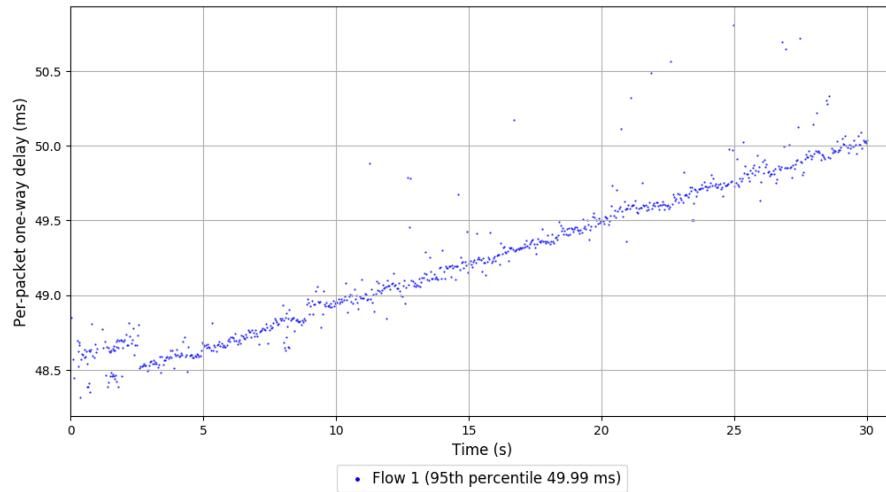
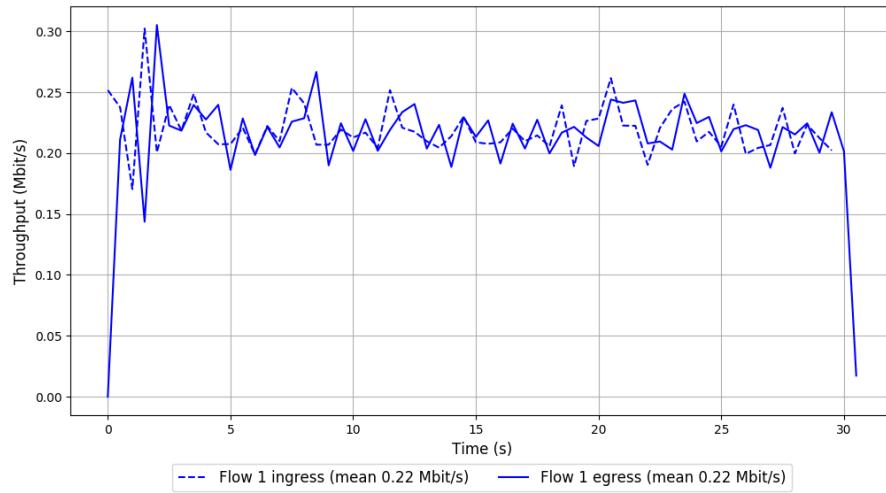


Run 1: Statistics of SCReAM

```
Start at: 2018-11-02 18:34:19
End at: 2018-11-02 18:34:49
Local clock offset: -37.841 ms
Remote clock offset: 9.929 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.993 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.993 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

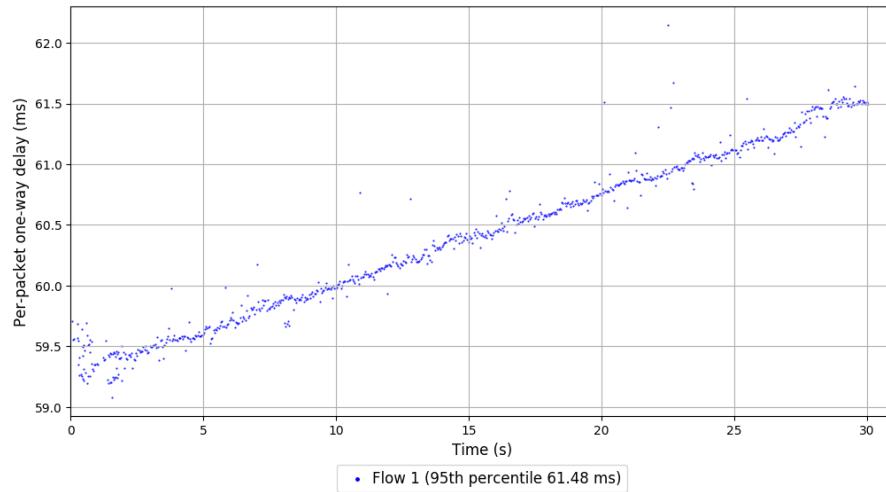
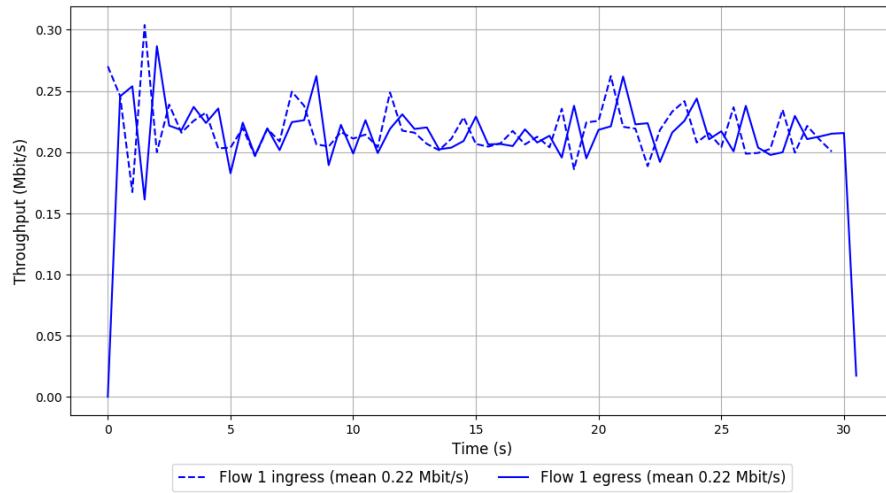


Run 2: Statistics of SCReAM

```
Start at: 2018-11-02 19:06:09
End at: 2018-11-02 19:06:39
Local clock offset: -52.235 ms
Remote clock offset: 25.861 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.477 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.477 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

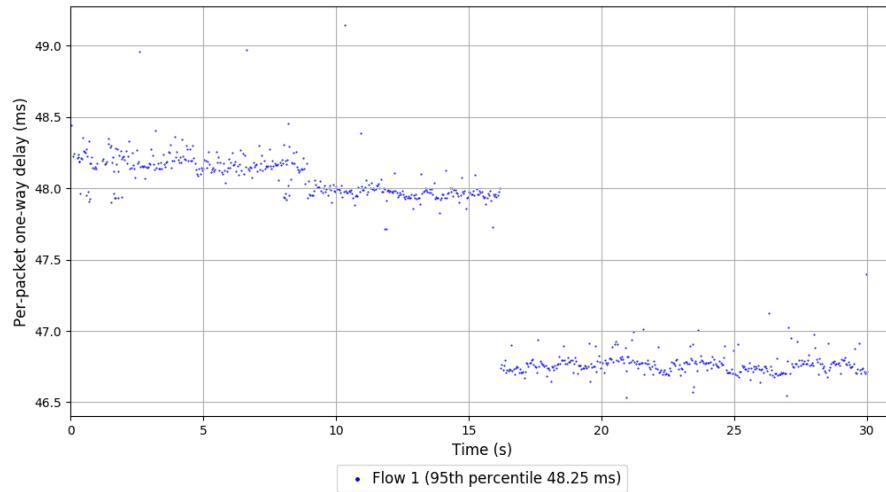
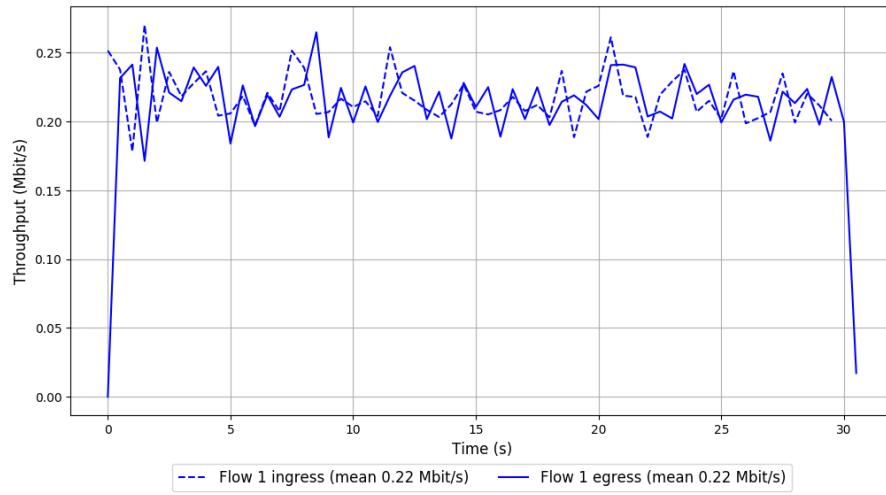


Run 3: Statistics of SCReAM

```
Start at: 2018-11-02 19:32:31
End at: 2018-11-02 19:33:01
Local clock offset: -35.899 ms
Remote clock offset: -14.345 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.254 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.254 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

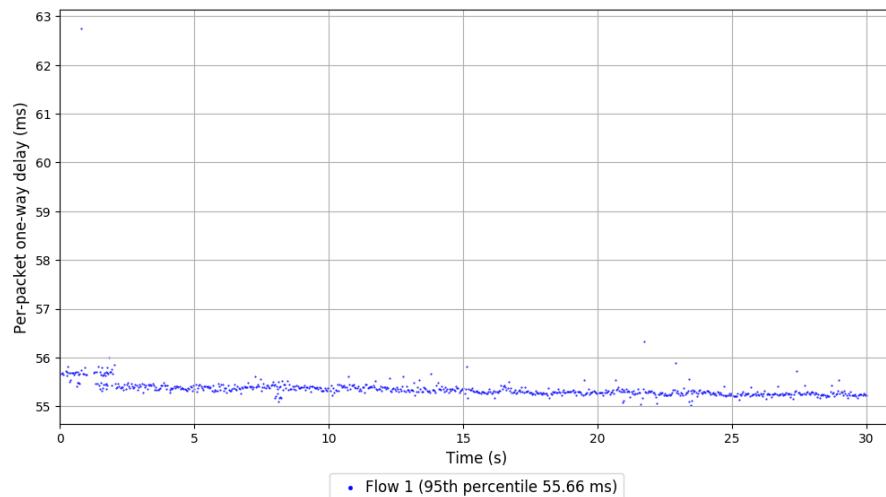
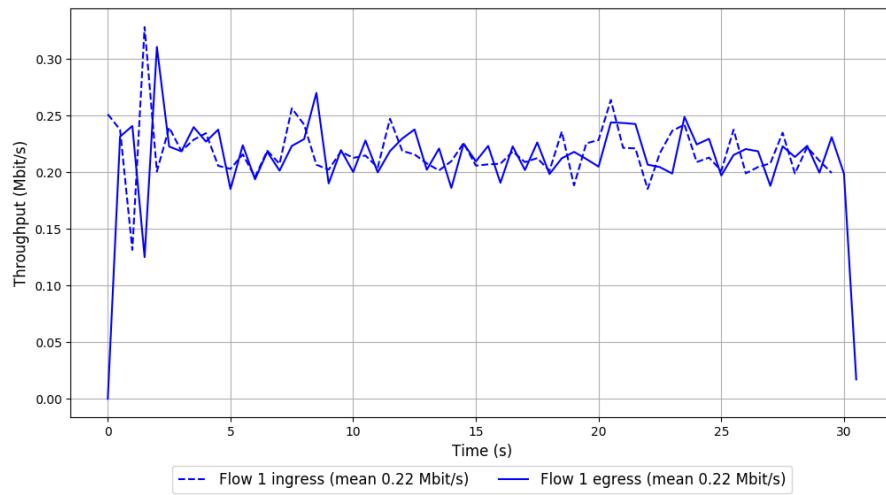


Run 4: Statistics of SCReAM

```
Start at: 2018-11-02 19:57:18
End at: 2018-11-02 19:57:48
Local clock offset: -12.264 ms
Remote clock offset: -11.251 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.661 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.661 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

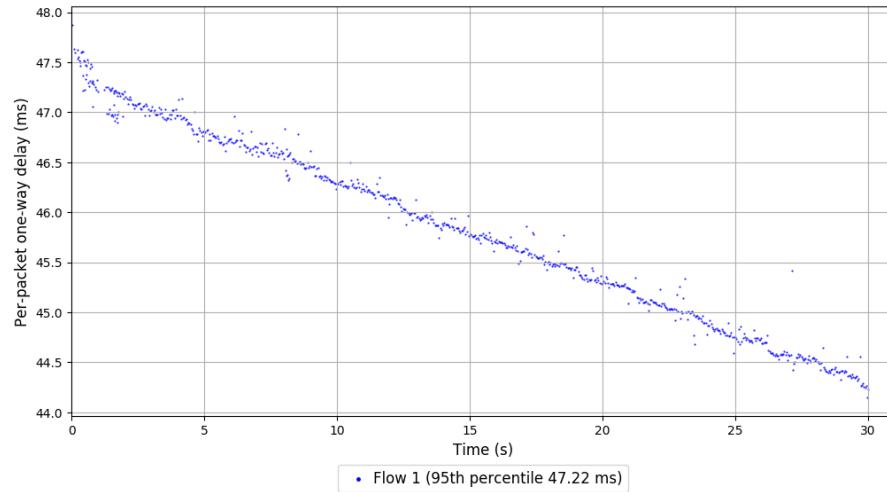
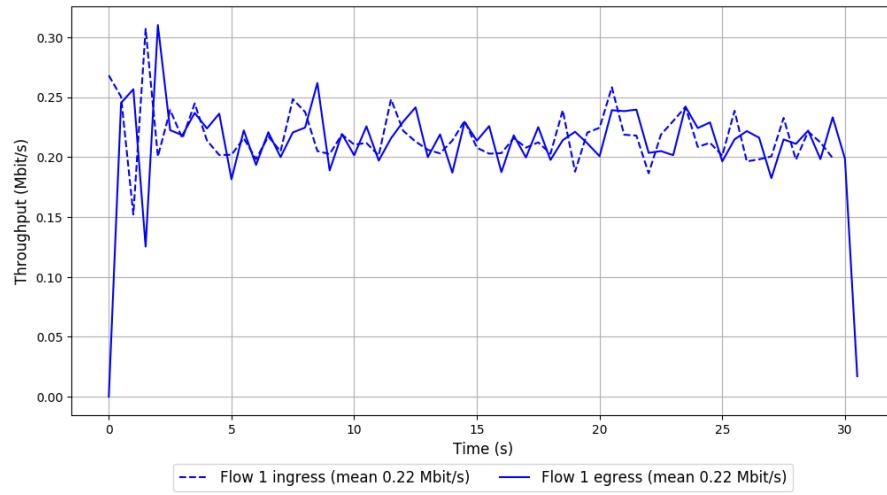


Run 5: Statistics of SCReAM

```
Start at: 2018-11-02 20:20:18
End at: 2018-11-02 20:20:48
Local clock offset: -3.701 ms
Remote clock offset: 0.173 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.224 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

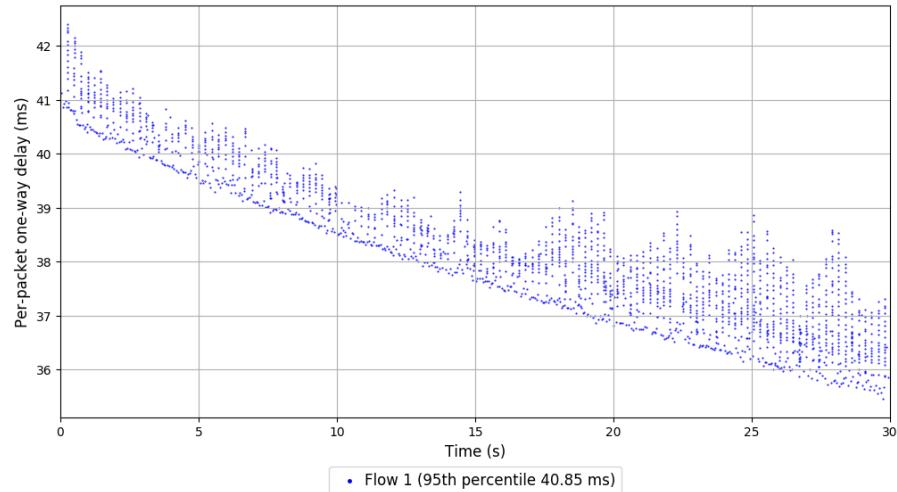
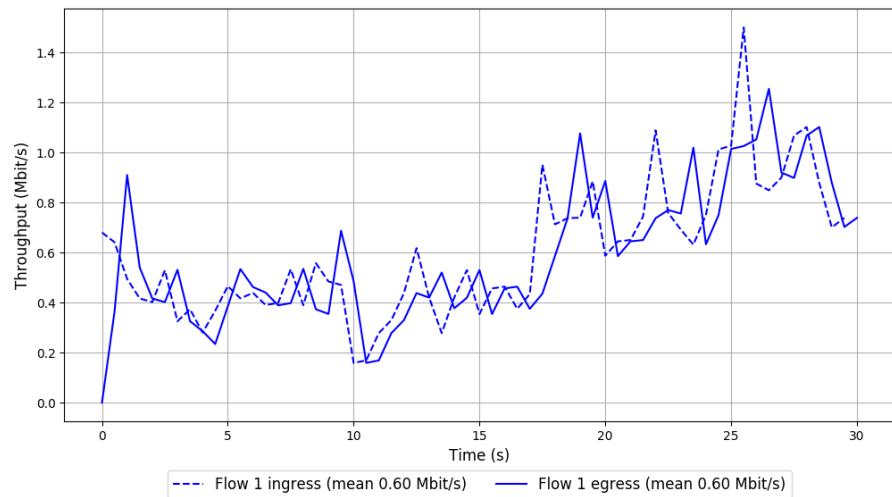


Run 1: Statistics of Sprout

```
Start at: 2018-11-02 18:05:39
End at: 2018-11-02 18:06:10
Local clock offset: 5.633 ms
Remote clock offset: 50.17 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 40.846 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 40.846 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

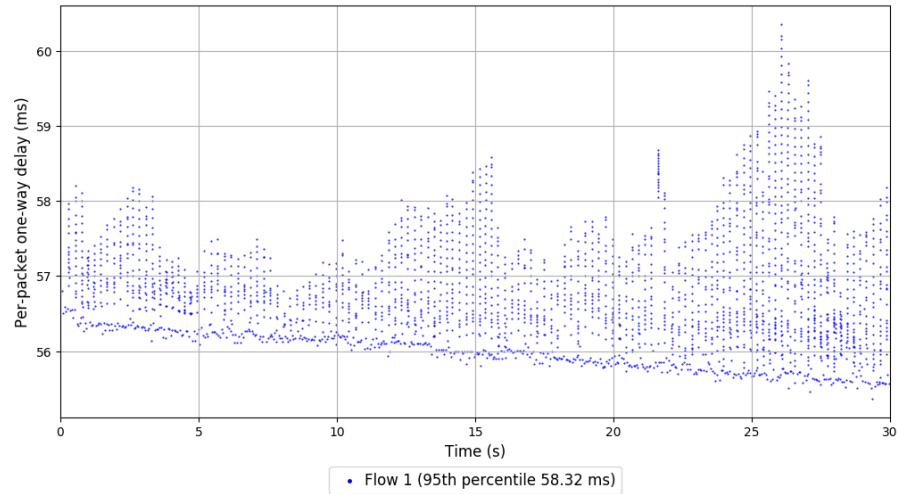
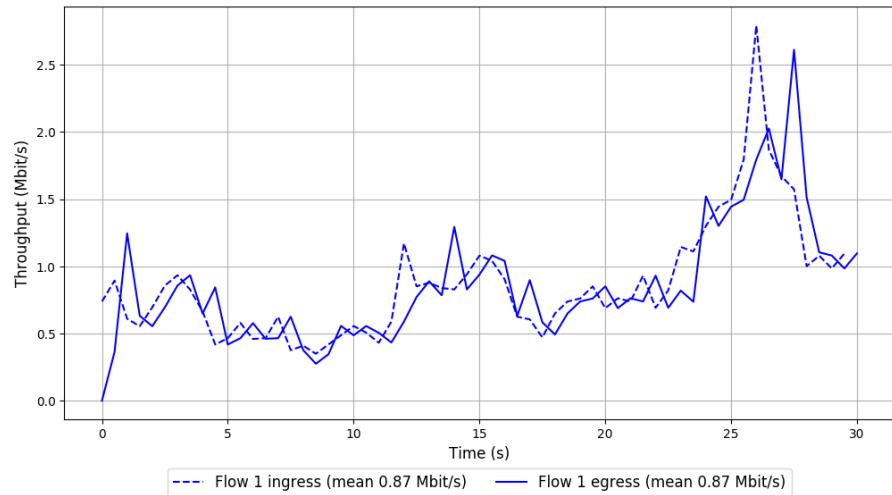


Run 2: Statistics of Sprout

```
Start at: 2018-11-02 18:48:27
End at: 2018-11-02 18:48:57
Local clock offset: -33.605 ms
Remote clock offset: 26.805 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 58.320 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 58.320 ms
Loss rate: 0.00%
```

## Run 2: Report of Sprout — Data Link

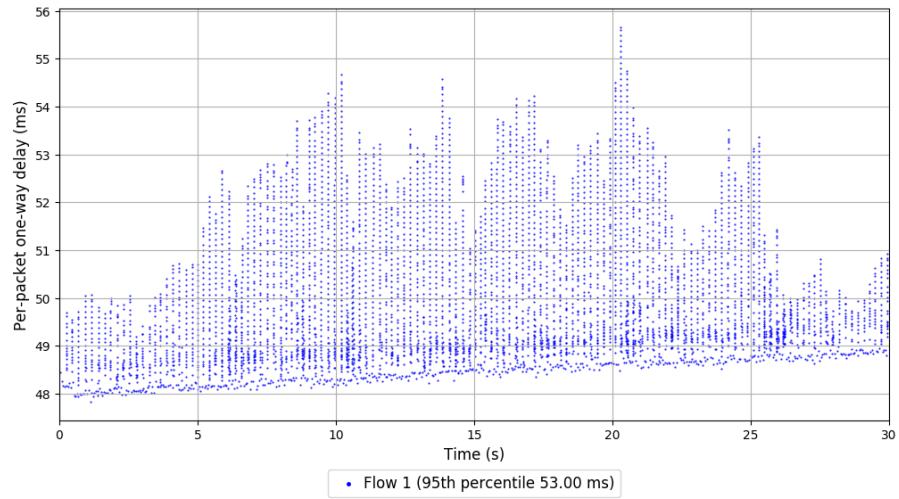
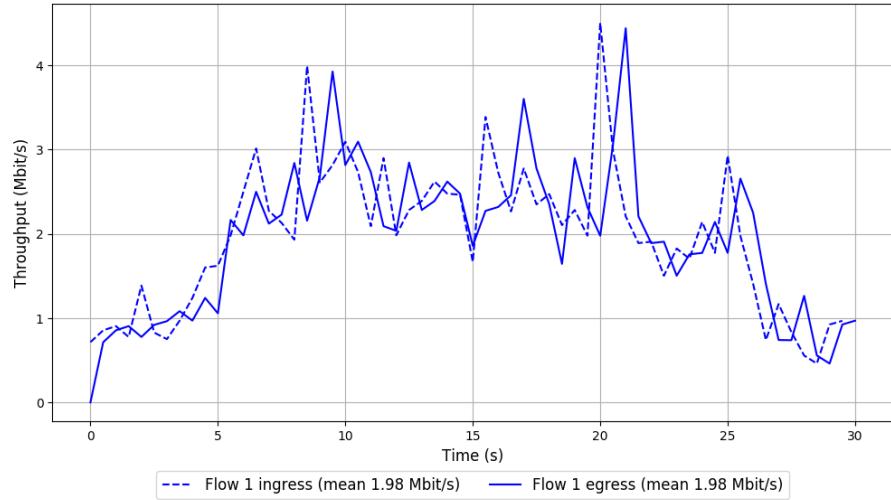


Run 3: Statistics of Sprout

```
Start at: 2018-11-02 19:18:32
End at: 2018-11-02 19:19:03
Local clock offset: -28.148 ms
Remote clock offset: 3.38 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 52.997 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 52.997 ms
Loss rate: 0.00%
```

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

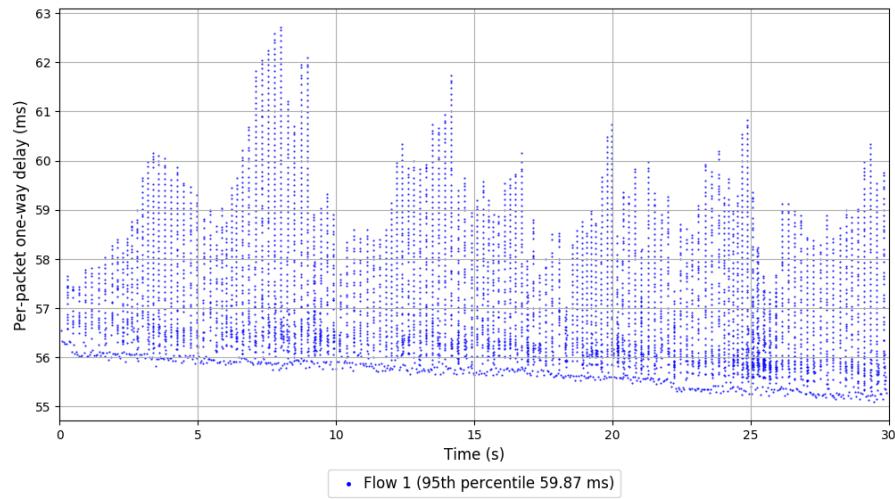
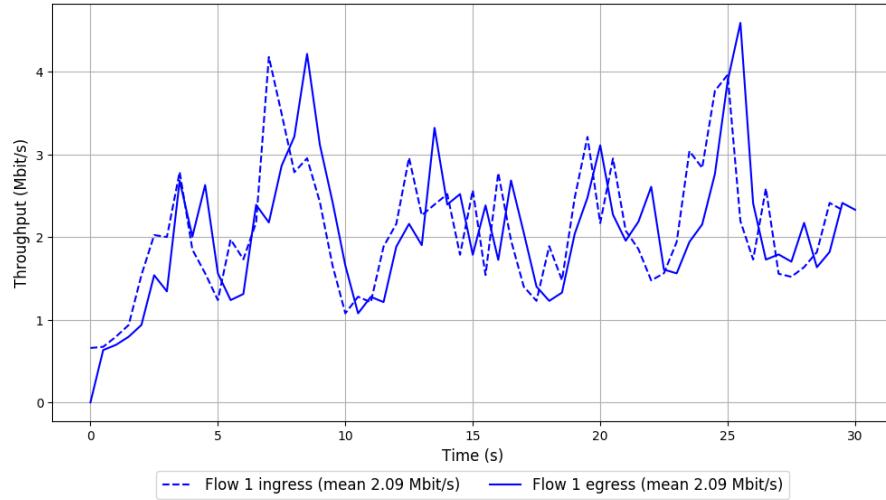


Run 4: Statistics of Sprout

```
Start at: 2018-11-02 19:44:31
End at: 2018-11-02 19:45:01
Local clock offset: -14.554 ms
Remote clock offset: -23.731 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 59.866 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 59.866 ms
Loss rate: 0.00%
```

## Run 4: Report of Sprout — Data Link

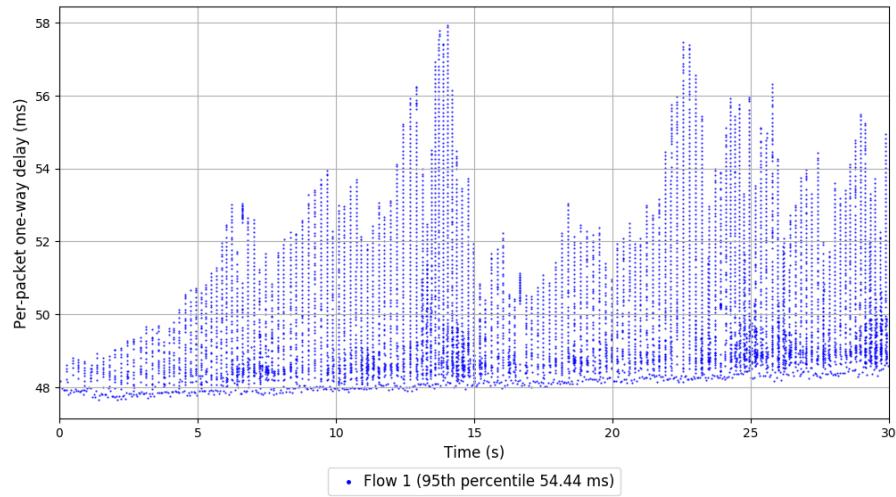
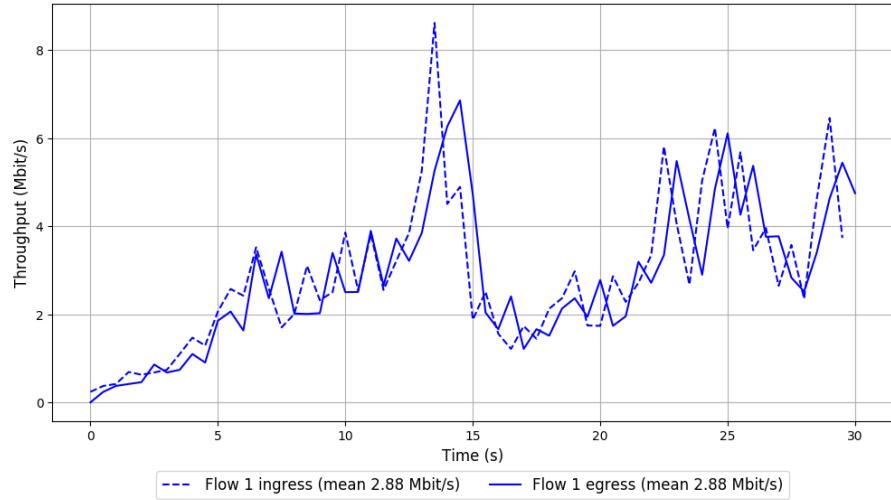


Run 5: Statistics of Sprout

```
Start at: 2018-11-02 20:07:36
End at: 2018-11-02 20:08:06
Local clock offset: -10.191 ms
Remote clock offset: -11.659 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 54.437 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 54.437 ms
Loss rate: 0.00%
```

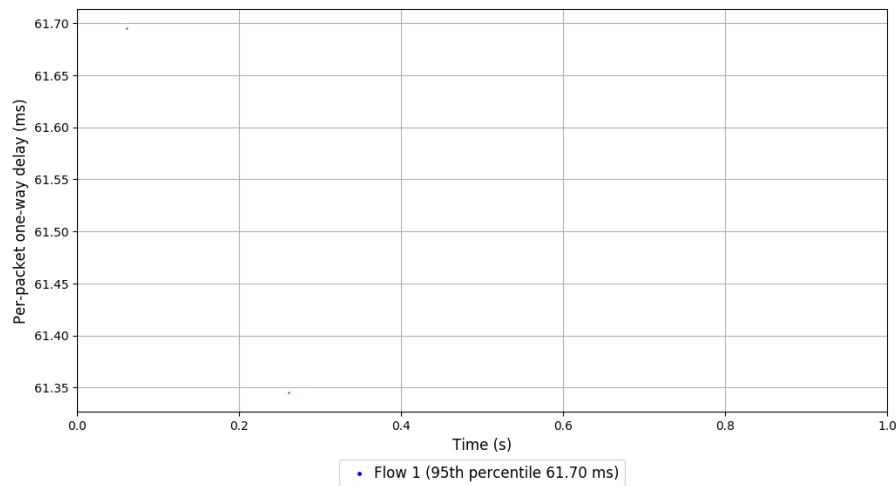
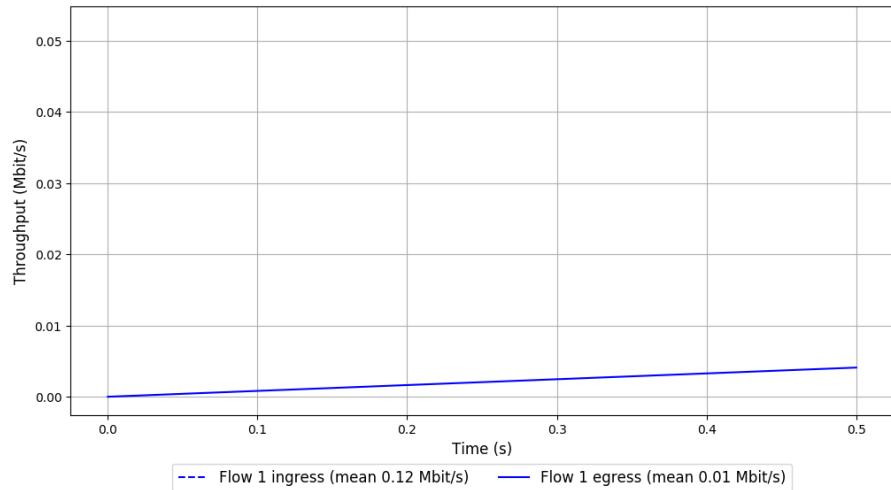
## Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-11-02 18:06:52  
End at: 2018-11-02 18:07:22  
Local clock offset: -9.06 ms  
Remote clock offset: 43.529 ms

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

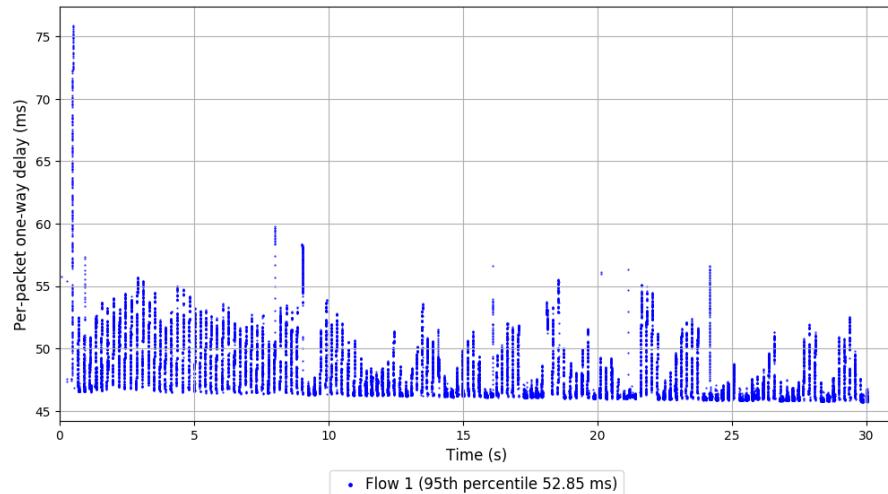
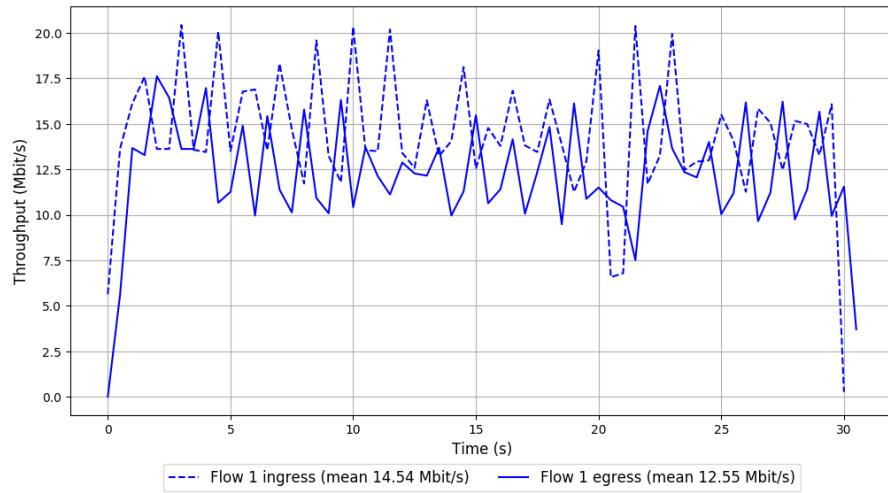


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-11-02 18:49:39
End at: 2018-11-02 18:50:09
Local clock offset: -35.103 ms
Remote clock offset: 26.347 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 52.855 ms
Loss rate: 13.70%
-- Flow 1:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 52.855 ms
Loss rate: 13.70%
```

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

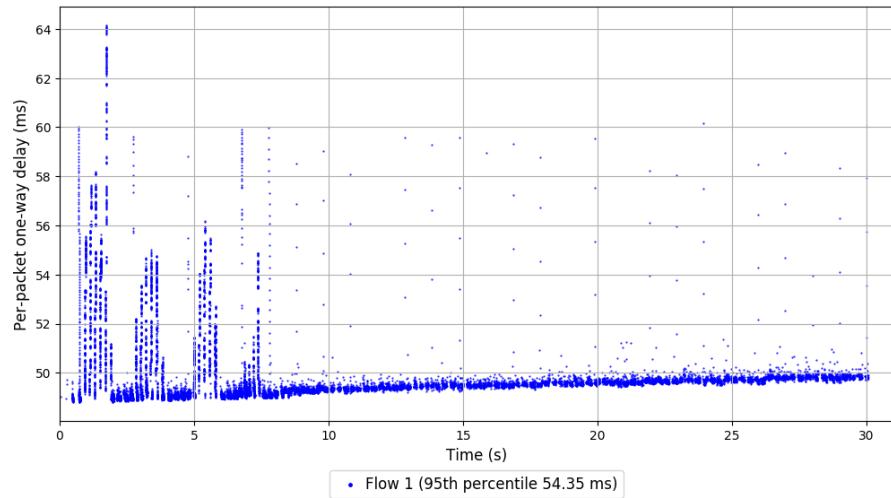
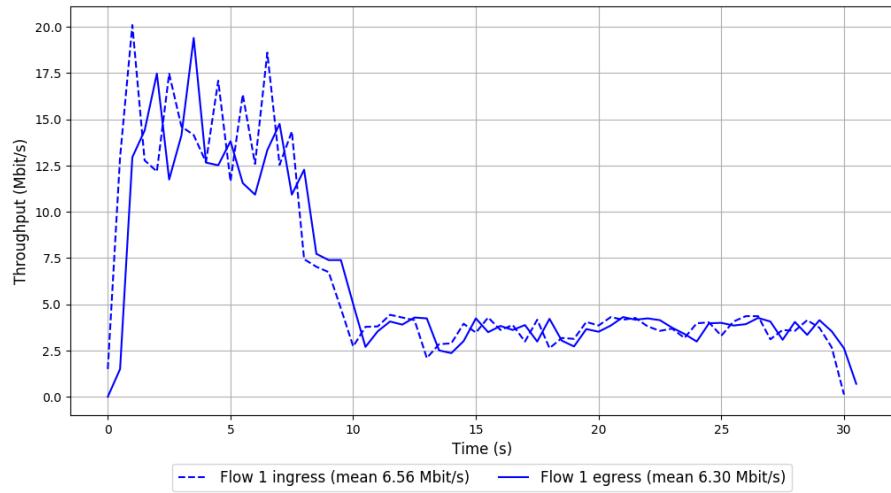


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-11-02 19:19:45
End at: 2018-11-02 19:20:15
Local clock offset: -28.003 ms
Remote clock offset: 1.909 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.30 Mbit/s
95th percentile per-packet one-way delay: 54.351 ms
Loss rate: 3.99%
-- Flow 1:
Average throughput: 6.30 Mbit/s
95th percentile per-packet one-way delay: 54.351 ms
Loss rate: 3.99%
```

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

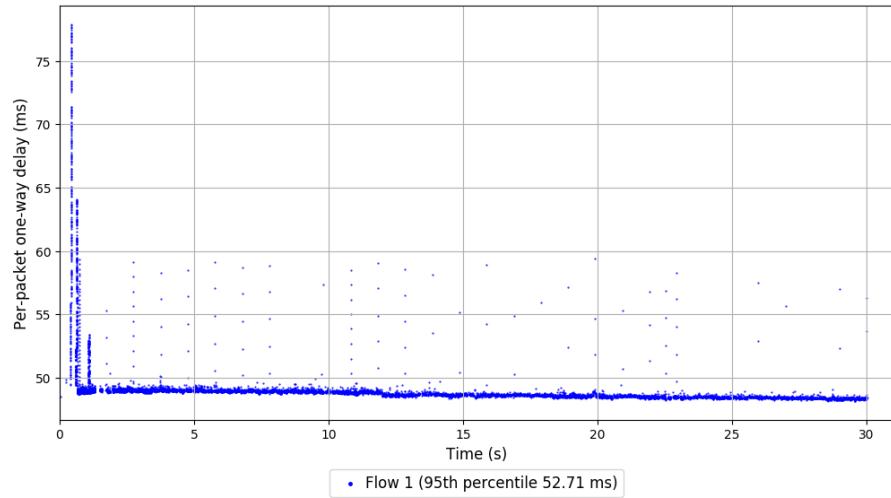
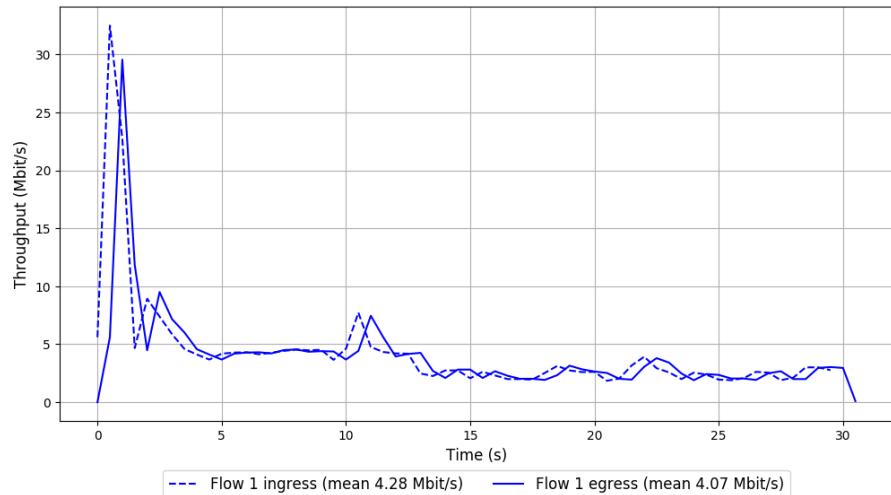


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-11-02 19:45:44
End at: 2018-11-02 19:46:14
Local clock offset: -13.62 ms
Remote clock offset: -20.1 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 52.713 ms
Loss rate: 5.08%
-- Flow 1:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 52.713 ms
Loss rate: 5.08%
```

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

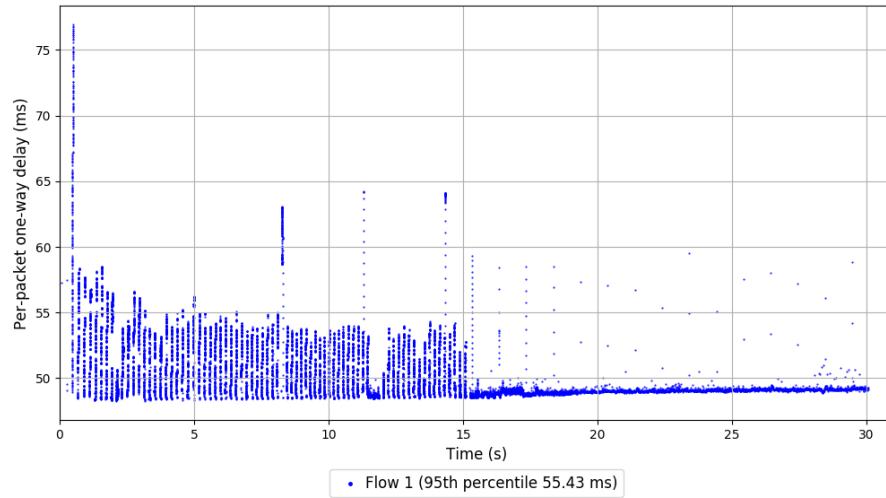
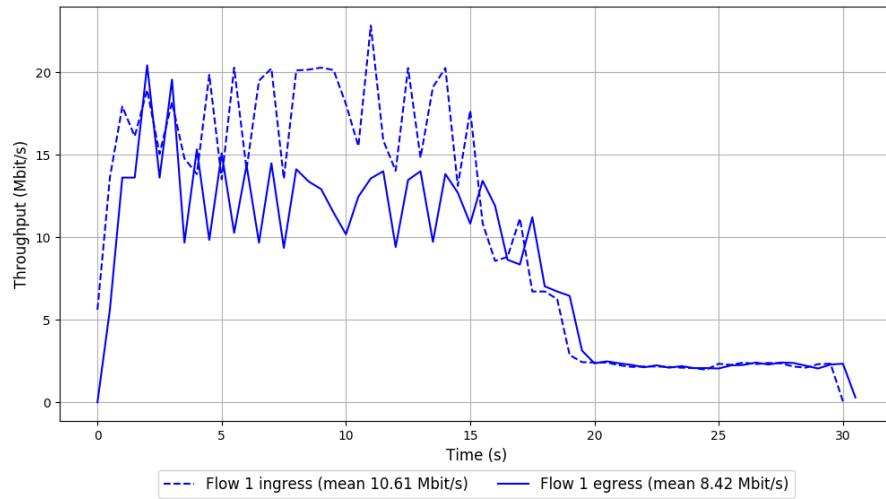


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-11-02 20:08:46
End at: 2018-11-02 20:09:16
Local clock offset: -8.584 ms
Remote clock offset: -11.699 ms

# Below is generated by plot.py at 2018-11-02 20:35:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.42 Mbit/s
95th percentile per-packet one-way delay: 55.431 ms
Loss rate: 20.68%
-- Flow 1:
Average throughput: 8.42 Mbit/s
95th percentile per-packet one-way delay: 55.431 ms
Loss rate: 20.68%
```

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

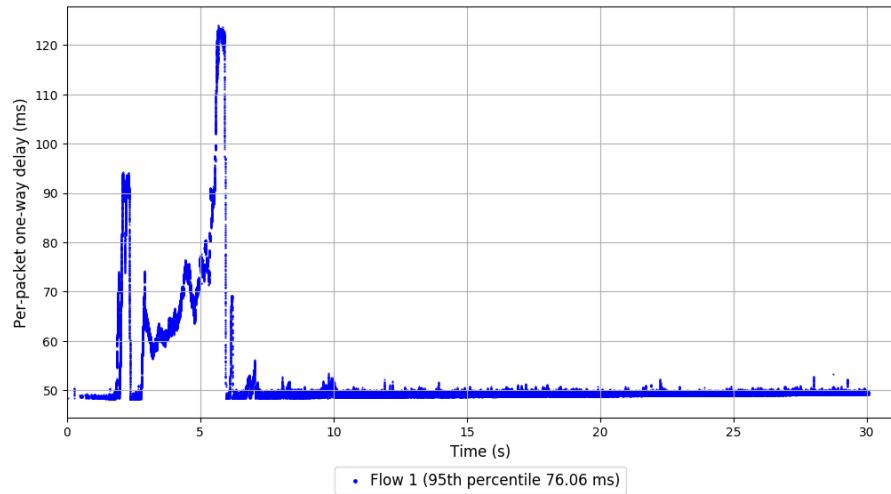
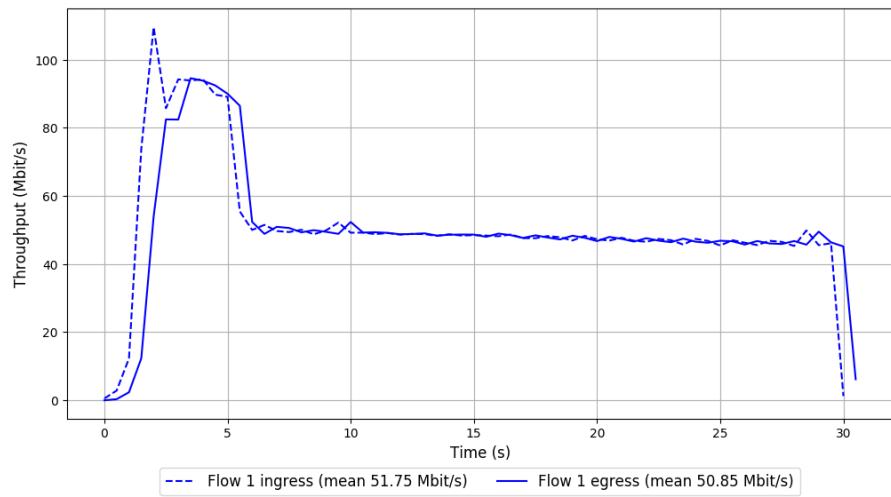


Run 1: Statistics of TCP Vegas

```
Start at: 2018-11-02 18:24:15
End at: 2018-11-02 18:24:45
Local clock offset: -28.125 ms
Remote clock offset: 18.102 ms

# Below is generated by plot.py at 2018-11-02 20:35:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.85 Mbit/s
95th percentile per-packet one-way delay: 76.061 ms
Loss rate: 1.74%
-- Flow 1:
Average throughput: 50.85 Mbit/s
95th percentile per-packet one-way delay: 76.061 ms
Loss rate: 1.74%
```

Run 1: Report of TCP Vegas — Data Link

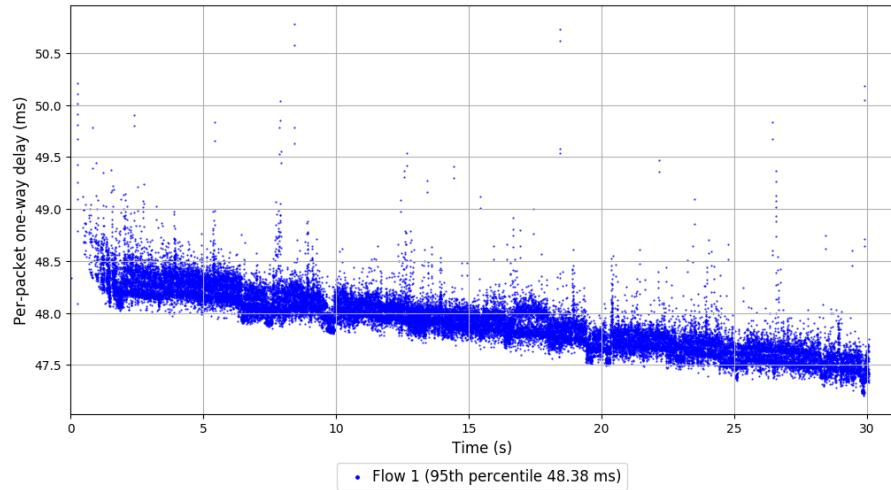
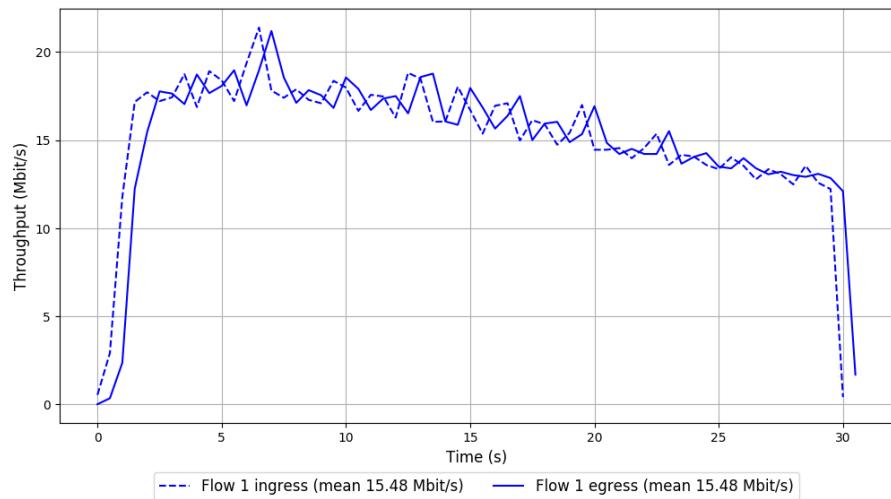


Run 2: Statistics of TCP Vegas

```
Start at: 2018-11-02 19:02:29
End at: 2018-11-02 19:02:59
Local clock offset: -57.436 ms
Remote clock offset: 27.067 ms

# Below is generated by plot.py at 2018-11-02 20:35:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.48 Mbit/s
95th percentile per-packet one-way delay: 48.380 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.48 Mbit/s
95th percentile per-packet one-way delay: 48.380 ms
Loss rate: 0.00%
```

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

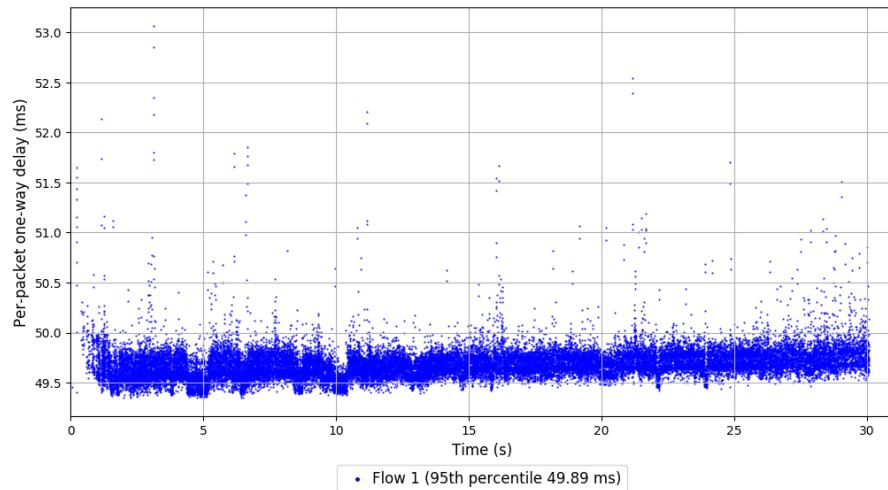
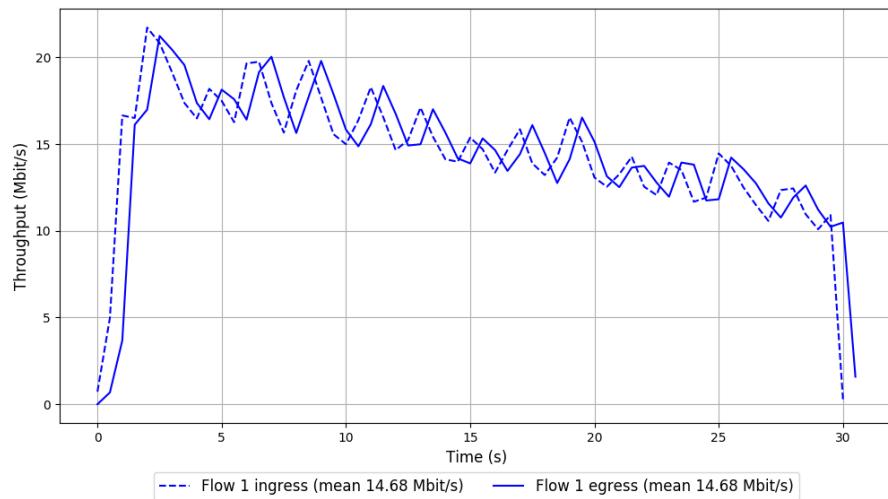


Run 3: Statistics of TCP Vegas

```
Start at: 2018-11-02 19:29:27
End at: 2018-11-02 19:29:57
Local clock offset: -32.841 ms
Remote clock offset: -9.661 ms

# Below is generated by plot.py at 2018-11-02 20:35:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.68 Mbit/s
95th percentile per-packet one-way delay: 49.890 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 14.68 Mbit/s
95th percentile per-packet one-way delay: 49.890 ms
Loss rate: 0.00%
```

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

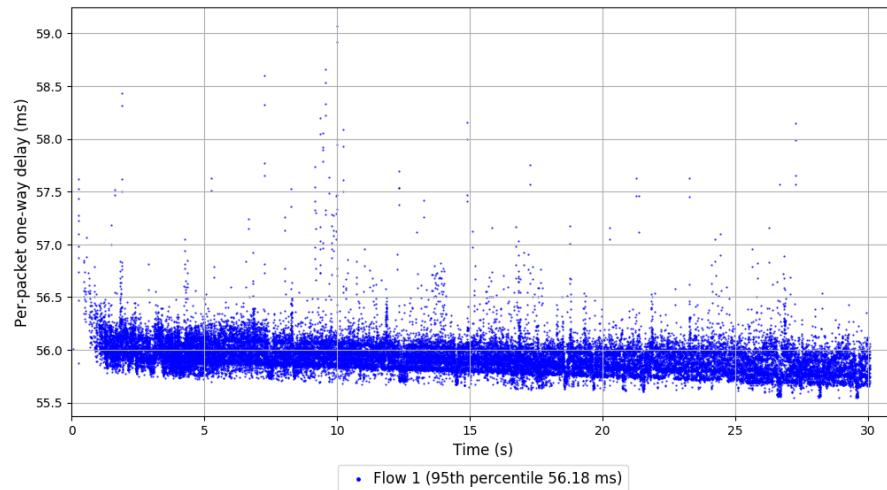
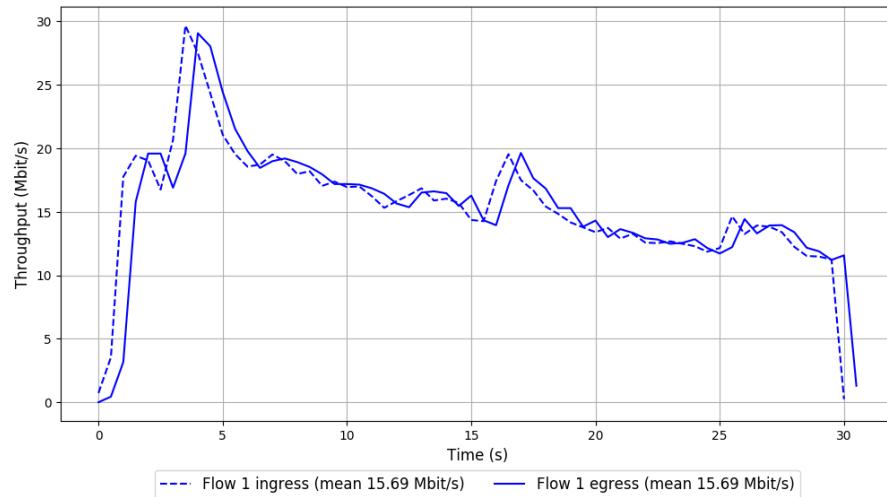


Run 4: Statistics of TCP Vegas

```
Start at: 2018-11-02 19:54:41
End at: 2018-11-02 19:55:11
Local clock offset: -11.586 ms
Remote clock offset: -11.795 ms

# Below is generated by plot.py at 2018-11-02 20:35:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.69 Mbit/s
95th percentile per-packet one-way delay: 56.183 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.69 Mbit/s
95th percentile per-packet one-way delay: 56.183 ms
Loss rate: 0.00%
```

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

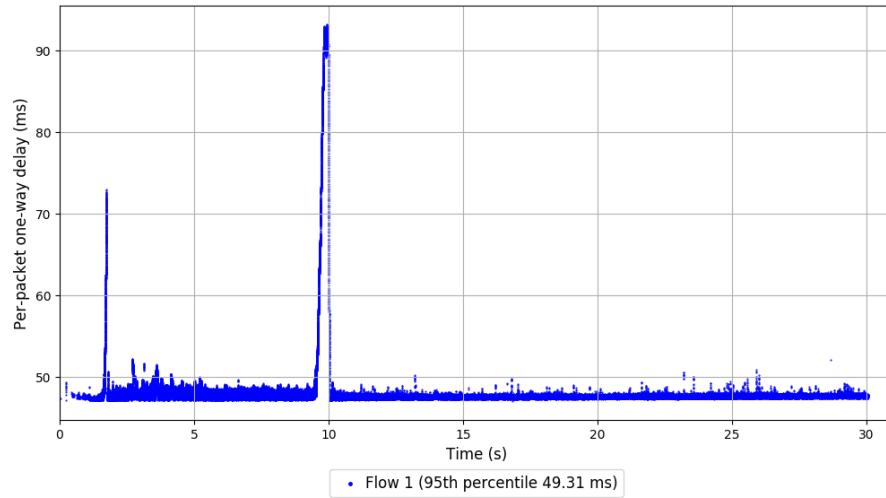
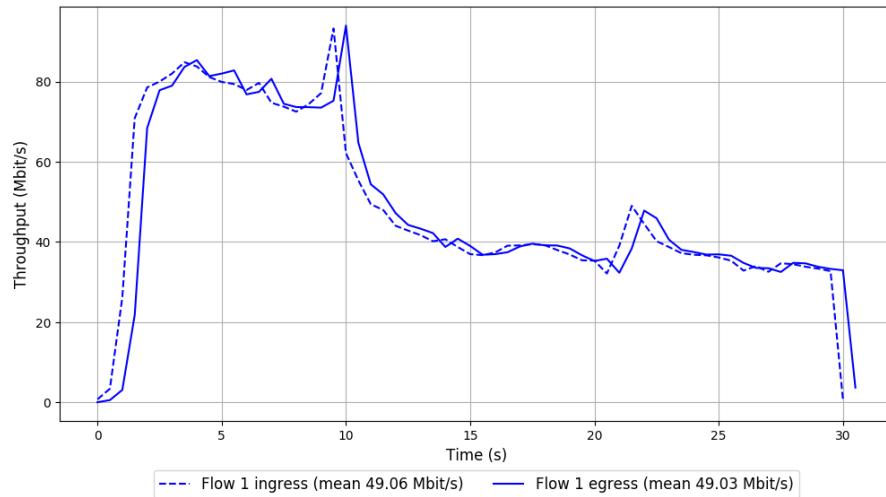


Run 5: Statistics of TCP Vegas

```
Start at: 2018-11-02 20:17:35
End at: 2018-11-02 20:18:05
Local clock offset: -4.006 ms
Remote clock offset: -15.262 ms

# Below is generated by plot.py at 2018-11-02 20:35:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.03 Mbit/s
95th percentile per-packet one-way delay: 49.311 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 49.03 Mbit/s
95th percentile per-packet one-way delay: 49.311 ms
Loss rate: 0.05%
```

Run 5: Report of TCP Vegas — Data Link

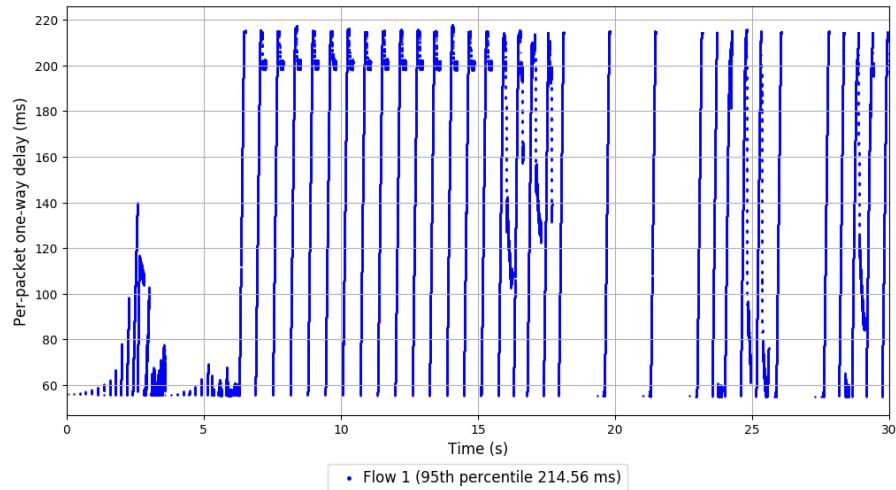
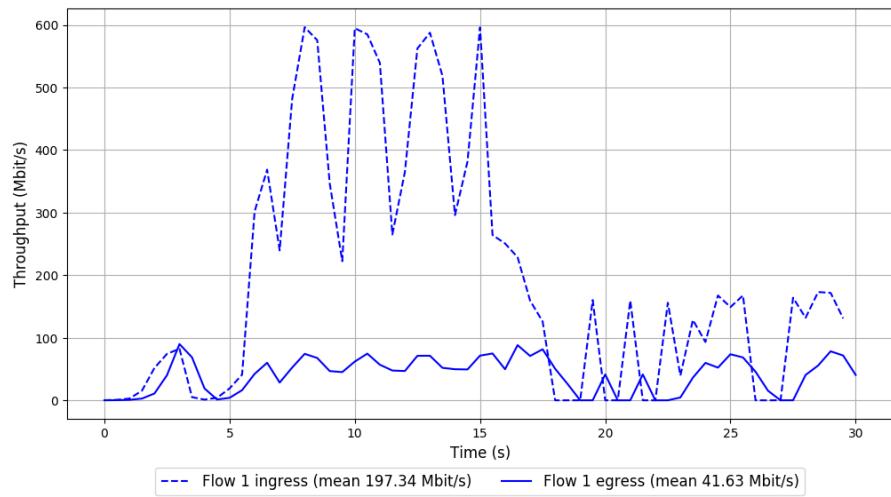


Run 1: Statistics of Verus

```
Start at: 2018-11-02 18:46:21
End at: 2018-11-02 18:46:51
Local clock offset: -31.562 ms
Remote clock offset: 24.647 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.63 Mbit/s
95th percentile per-packet one-way delay: 214.558 ms
Loss rate: 78.80%
-- Flow 1:
Average throughput: 41.63 Mbit/s
95th percentile per-packet one-way delay: 214.558 ms
Loss rate: 78.80%
```

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

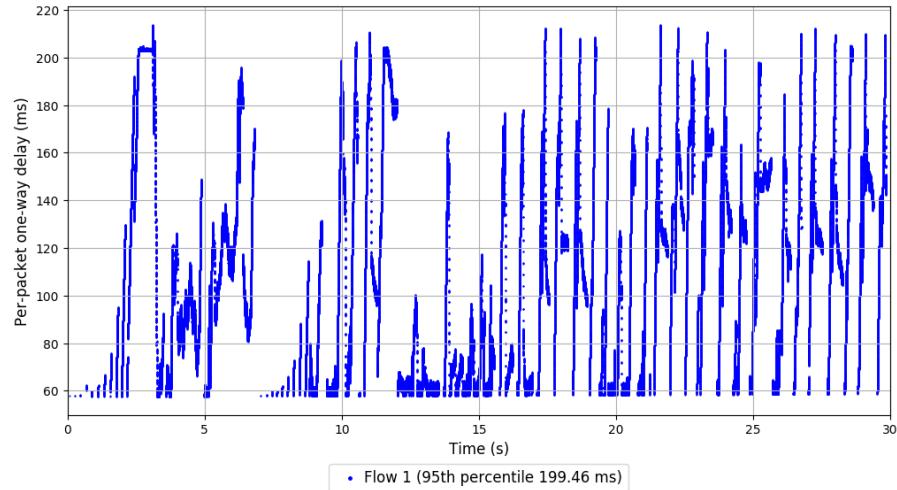
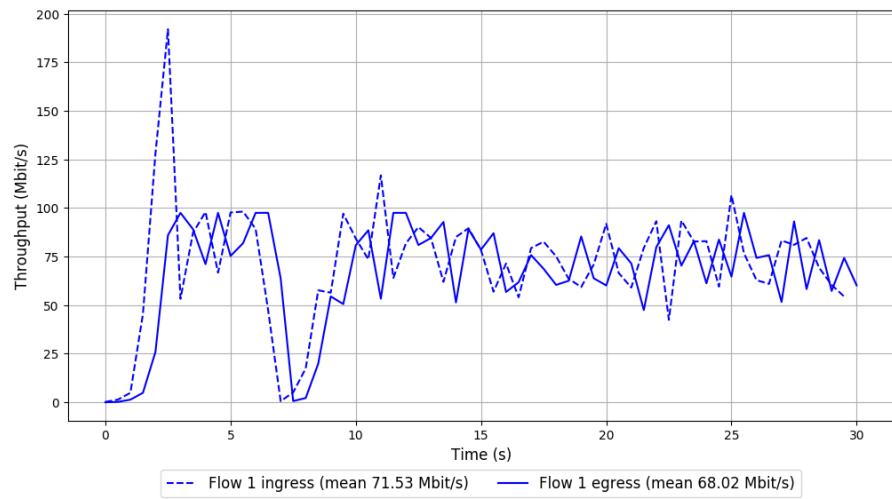


Run 2: Statistics of Verus

```
Start at: 2018-11-02 19:15:54
End at: 2018-11-02 19:16:24
Local clock offset: -29.466 ms
Remote clock offset: 8.655 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.02 Mbit/s
95th percentile per-packet one-way delay: 199.463 ms
Loss rate: 4.84%
-- Flow 1:
Average throughput: 68.02 Mbit/s
95th percentile per-packet one-way delay: 199.463 ms
Loss rate: 4.84%
```

## Run 2: Report of Verus — Data Link

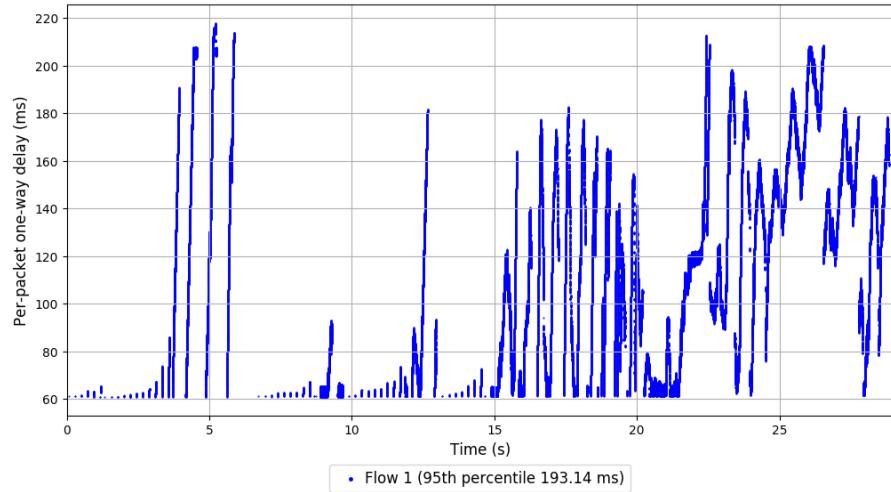
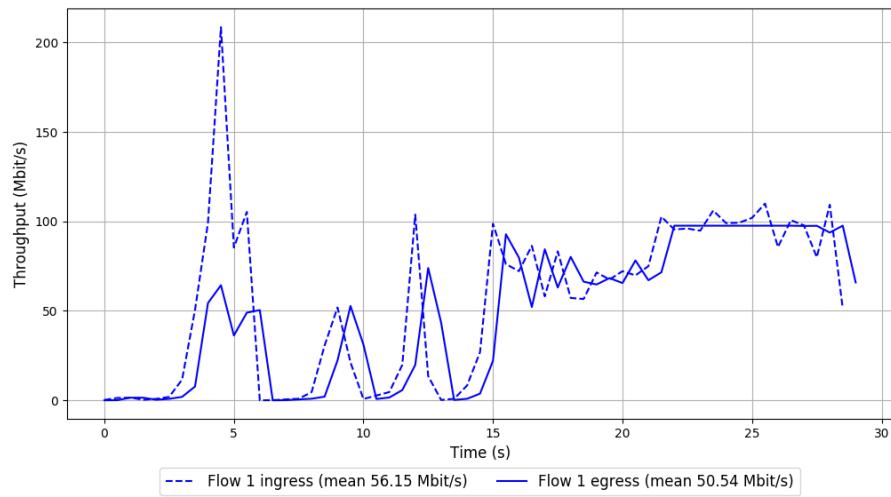


Run 3: Statistics of Verus

```
Start at: 2018-11-02 19:42:59
End at: 2018-11-02 19:43:29
Local clock offset: -16.531 ms
Remote clock offset: -19.794 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.54 Mbit/s
95th percentile per-packet one-way delay: 193.142 ms
Loss rate: 9.91%
-- Flow 1:
Average throughput: 50.54 Mbit/s
95th percentile per-packet one-way delay: 193.142 ms
Loss rate: 9.91%
```

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

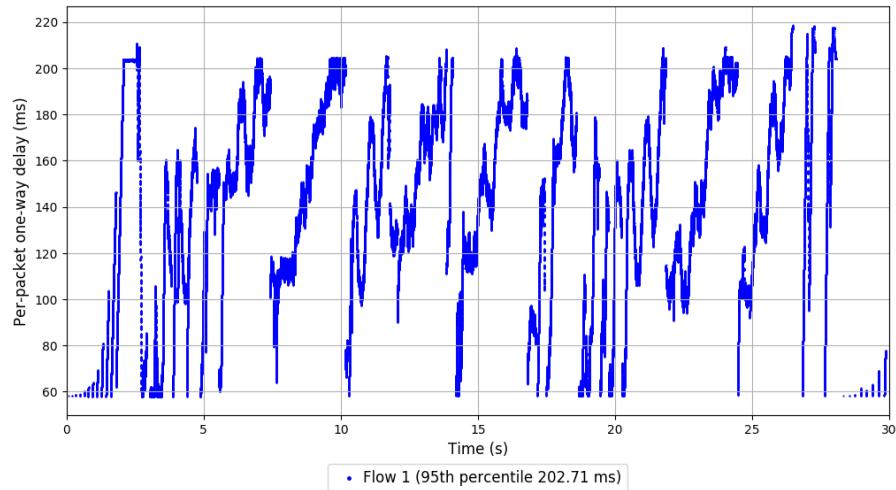
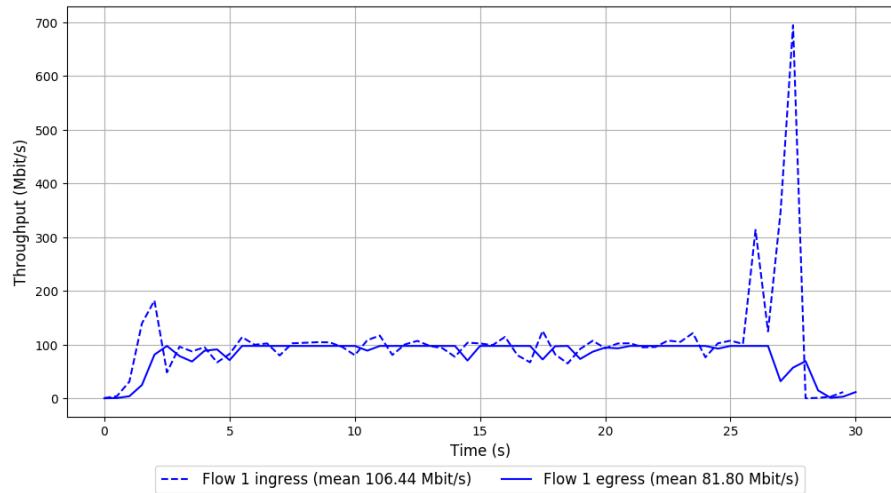


Run 4: Statistics of Verus

```
Start at: 2018-11-02 20:06:04
End at: 2018-11-02 20:06:34
Local clock offset: -12.293 ms
Remote clock offset: -10.524 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.80 Mbit/s
95th percentile per-packet one-way delay: 202.708 ms
Loss rate: 23.10%
-- Flow 1:
Average throughput: 81.80 Mbit/s
95th percentile per-packet one-way delay: 202.708 ms
Loss rate: 23.10%
```

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

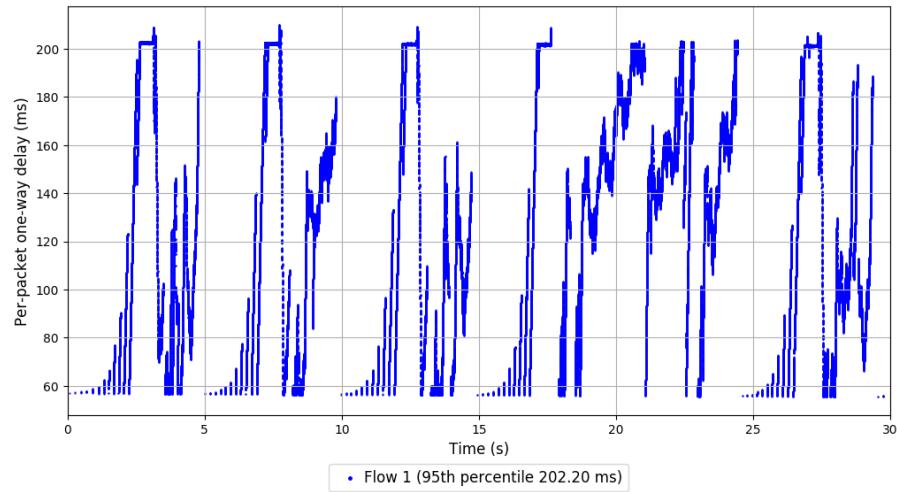
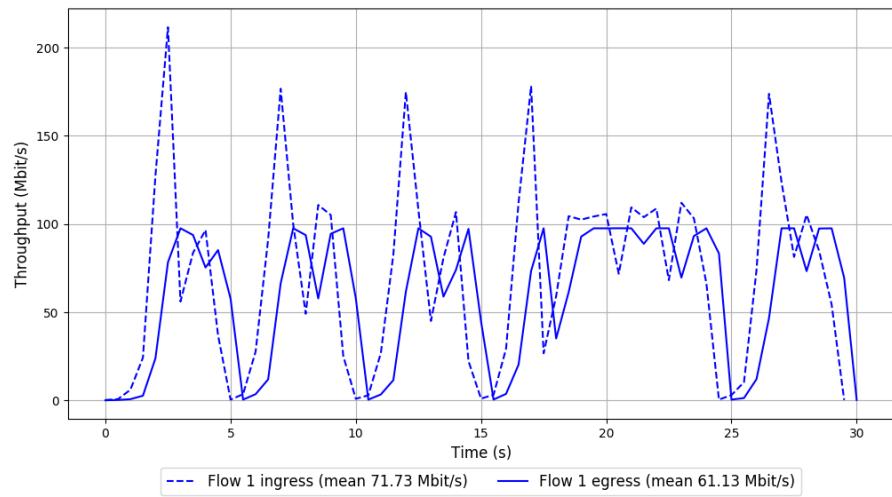


Run 5: Statistics of Verus

```
Start at: 2018-11-02 20:30:01
End at: 2018-11-02 20:30:31
Local clock offset: -5.016 ms
Remote clock offset: 40.626 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.13 Mbit/s
95th percentile per-packet one-way delay: 202.197 ms
Loss rate: 14.78%
-- Flow 1:
Average throughput: 61.13 Mbit/s
95th percentile per-packet one-way delay: 202.197 ms
Loss rate: 14.78%
```

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

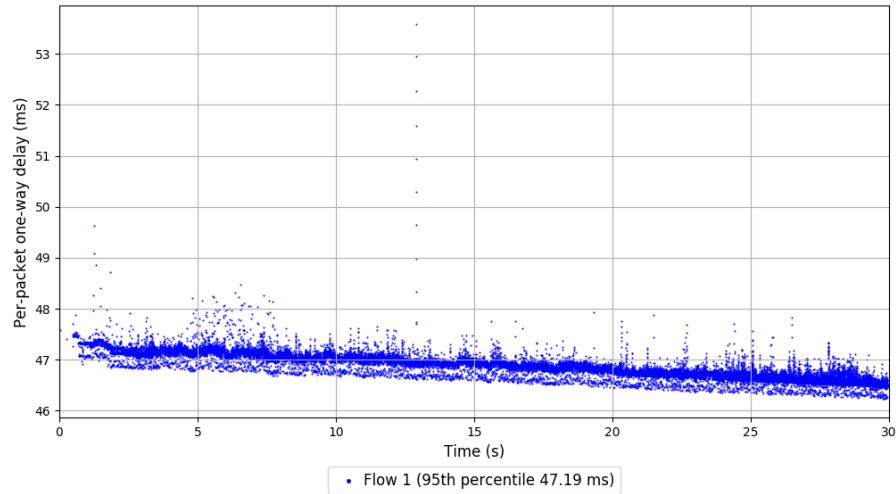
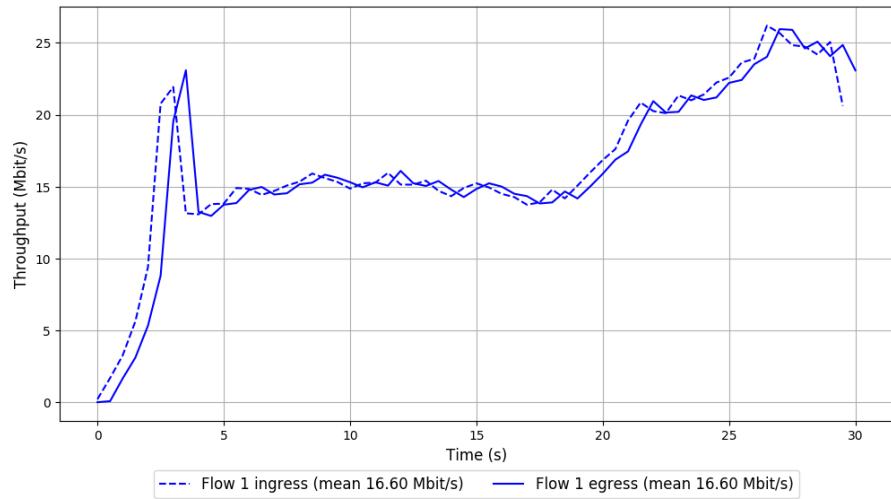


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-11-02 18:39:19
End at: 2018-11-02 18:39:49
Local clock offset: -30.065 ms
Remote clock offset: 16.766 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.60 Mbit/s
95th percentile per-packet one-way delay: 47.191 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 16.60 Mbit/s
95th percentile per-packet one-way delay: 47.191 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

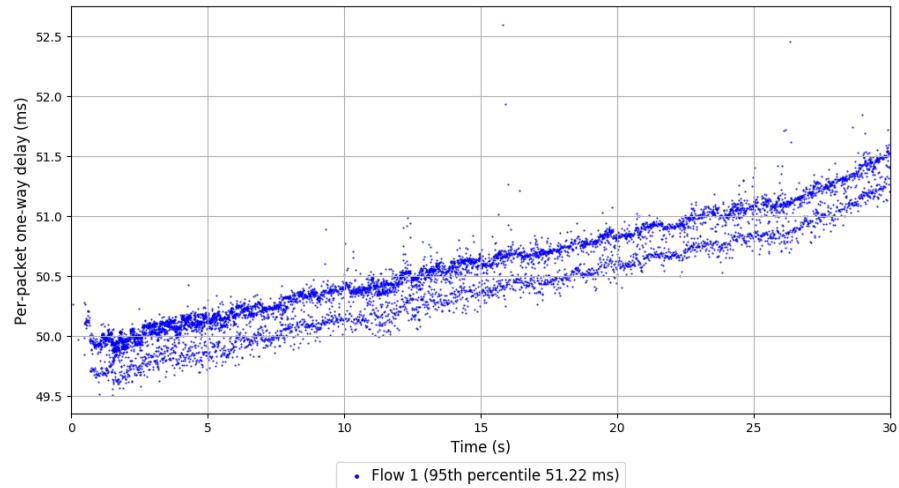
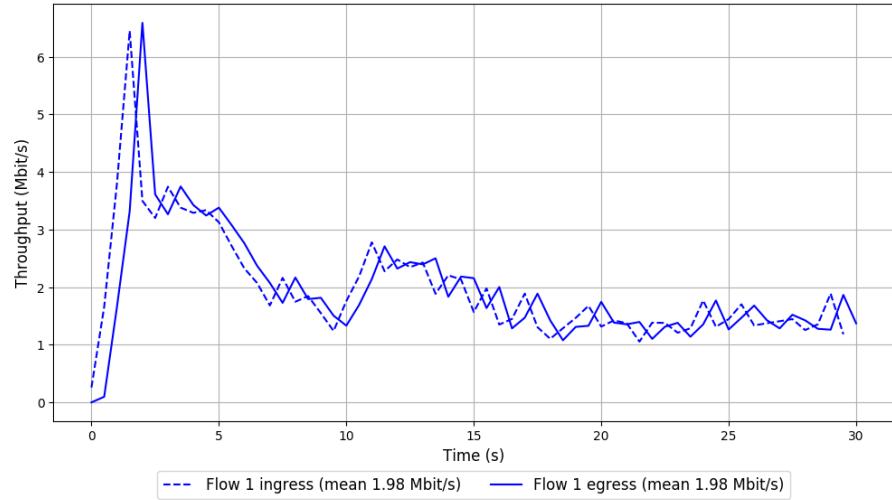


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-11-02 19:09:26
End at: 2018-11-02 19:09:56
Local clock offset: -40.082 ms
Remote clock offset: 25.38 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 51.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 51.224 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link

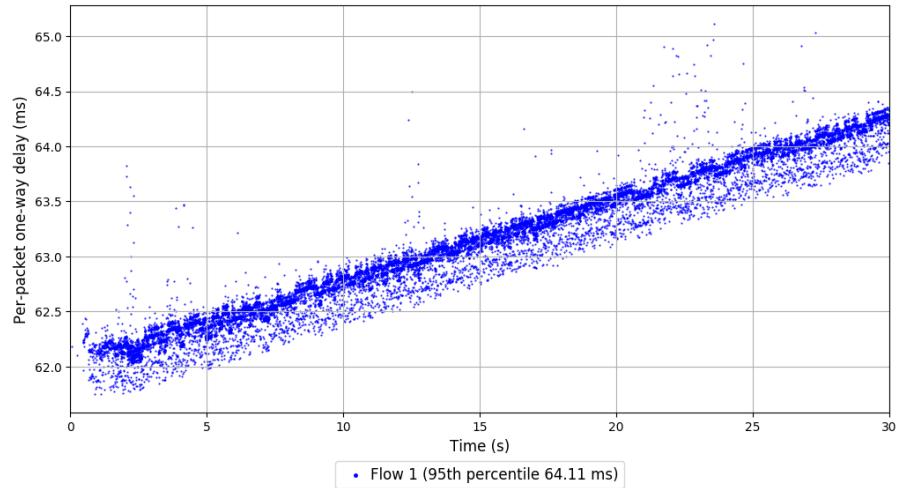
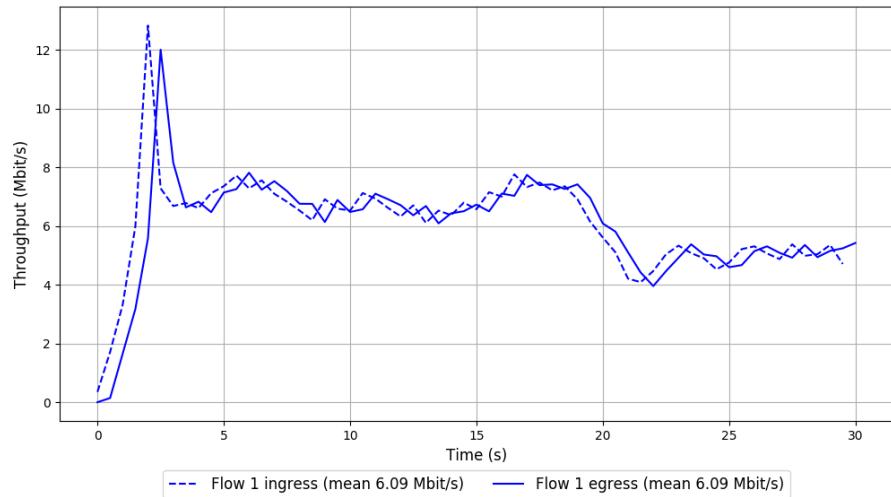


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-11-02 19:35:24
End at: 2018-11-02 19:35:54
Local clock offset: -33.783 ms
Remote clock offset: -12.546 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.09 Mbit/s
95th percentile per-packet one-way delay: 64.114 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.09 Mbit/s
95th percentile per-packet one-way delay: 64.114 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link

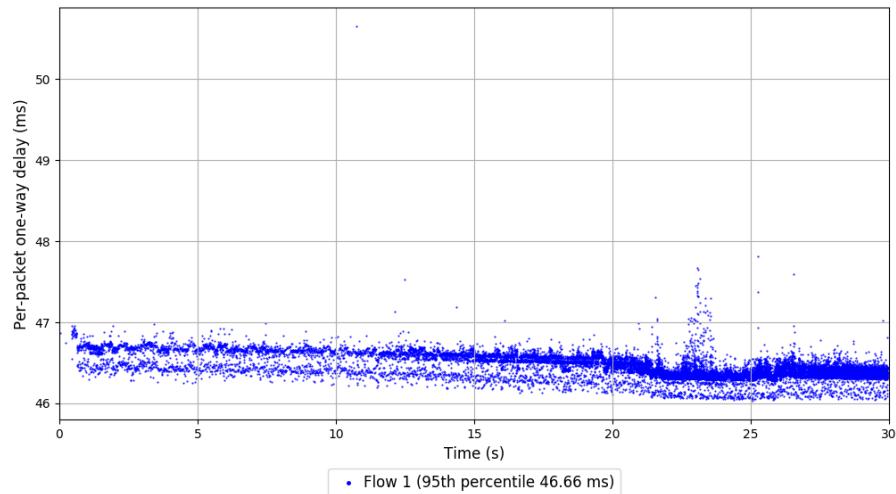
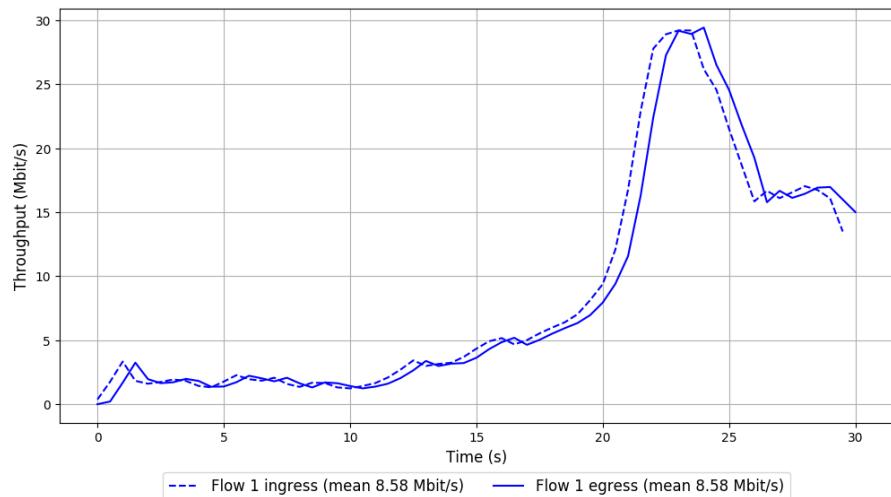


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-11-02 19:59:48
End at: 2018-11-02 20:00:18
Local clock offset: -13.061 ms
Remote clock offset: -10.729 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 46.662 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 46.662 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

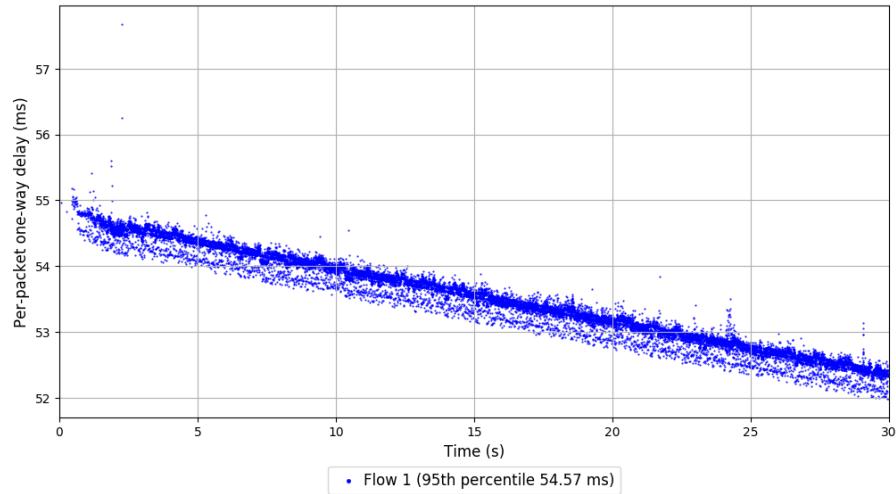
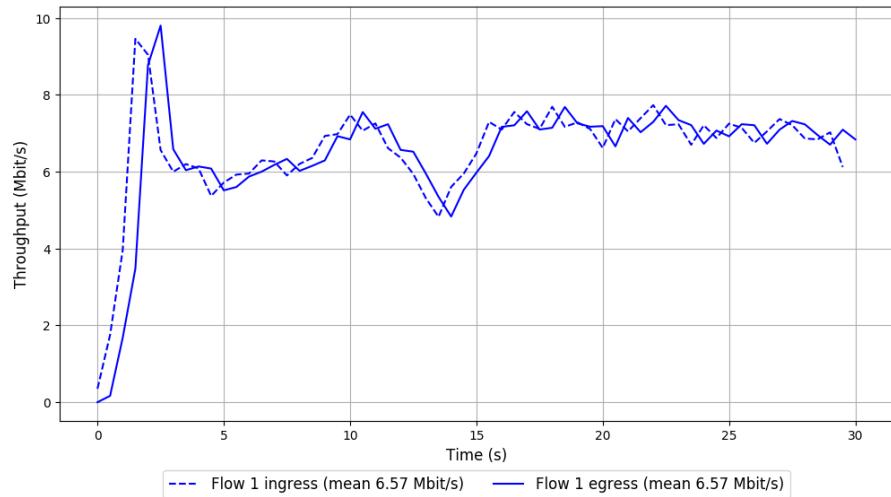


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-11-02 20:22:56
End at: 2018-11-02 20:23:26
Local clock offset: -3.711 ms
Remote clock offset: 13.23 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.57 Mbit/s
95th percentile per-packet one-way delay: 54.567 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.57 Mbit/s
95th percentile per-packet one-way delay: 54.567 ms
Loss rate: 0.00%
```

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

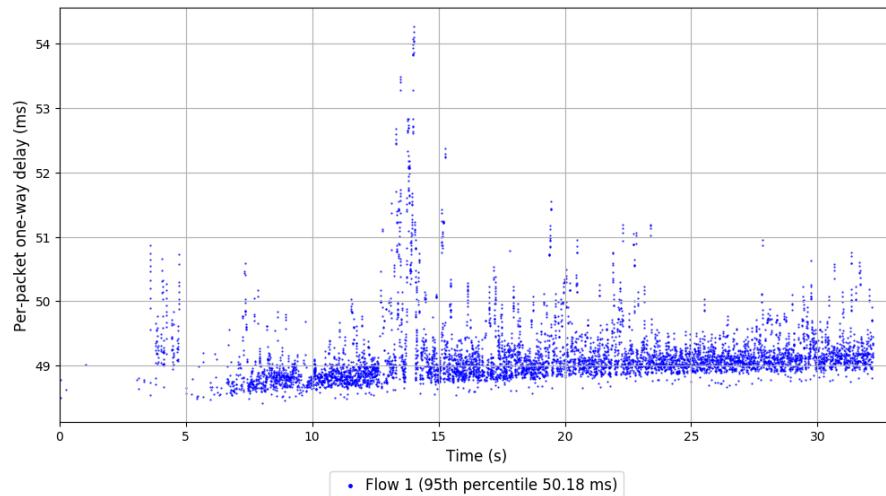
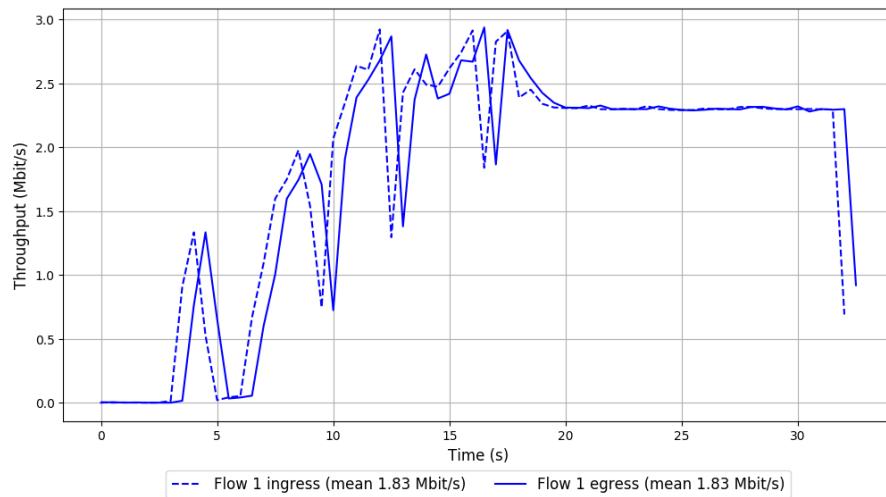


```
Run 1: Statistics of WebRTC media
```

```
Start at: 2018-11-02 18:09:18
End at: 2018-11-02 18:09:48
Local clock offset: -7.738 ms
Remote clock offset: 38.237 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 50.178 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 50.178 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

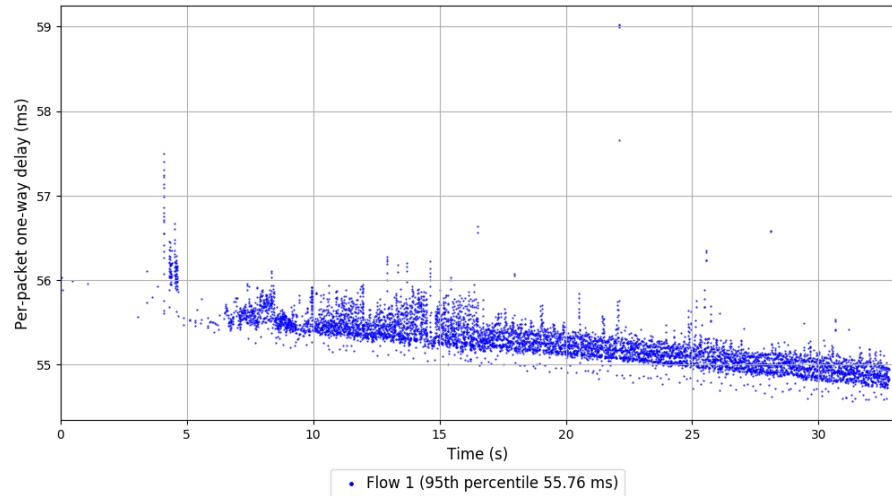
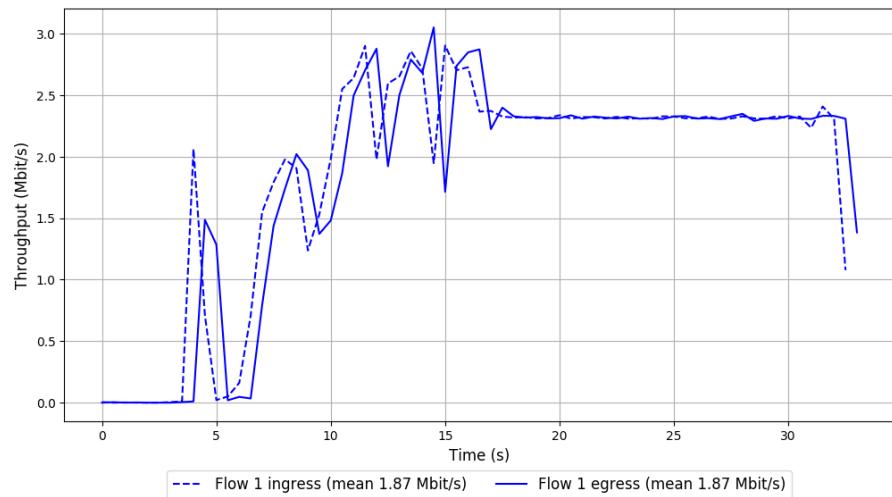


Run 2: Statistics of WebRTC media

```
Start at: 2018-11-02 18:52:40
End at: 2018-11-02 18:53:10
Local clock offset: -39.434 ms
Remote clock offset: 27.75 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 55.758 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 55.758 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

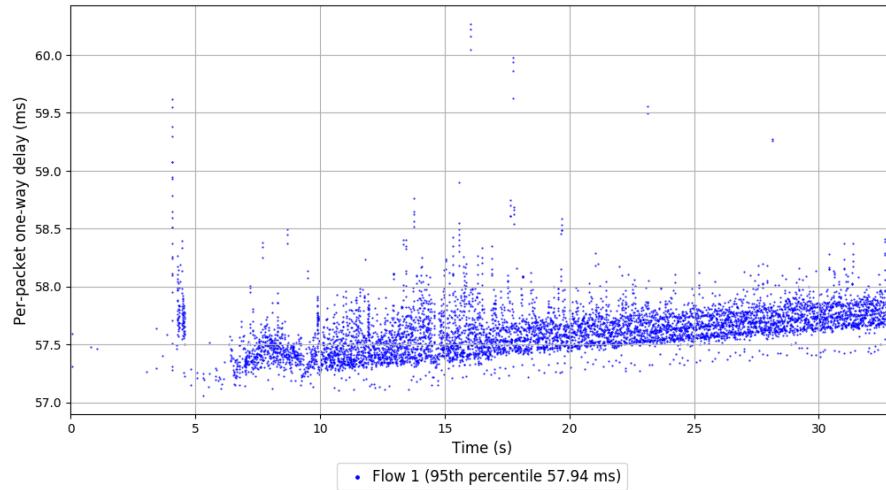
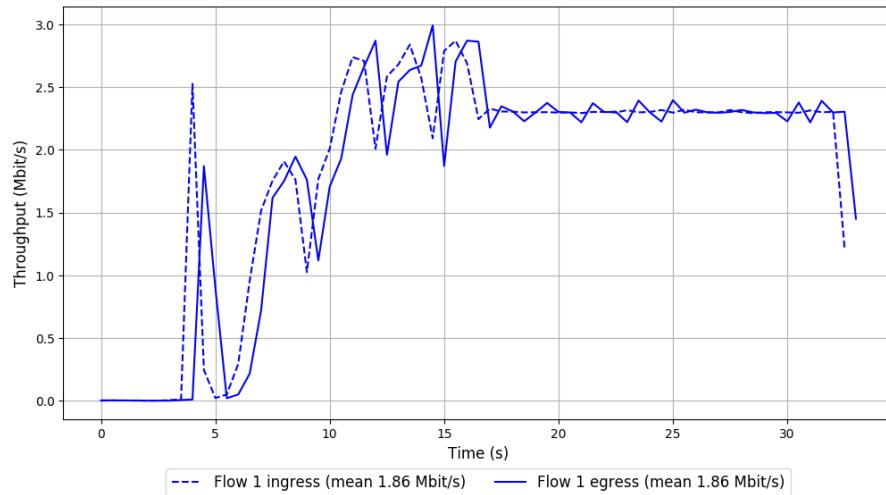


Run 3: Statistics of WebRTC media

```
Start at: 2018-11-02 19:22:29
End at: 2018-11-02 19:22:59
Local clock offset: -28.737 ms
Remote clock offset: -2.411 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 57.943 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 57.943 ms
Loss rate: 0.00%
```

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

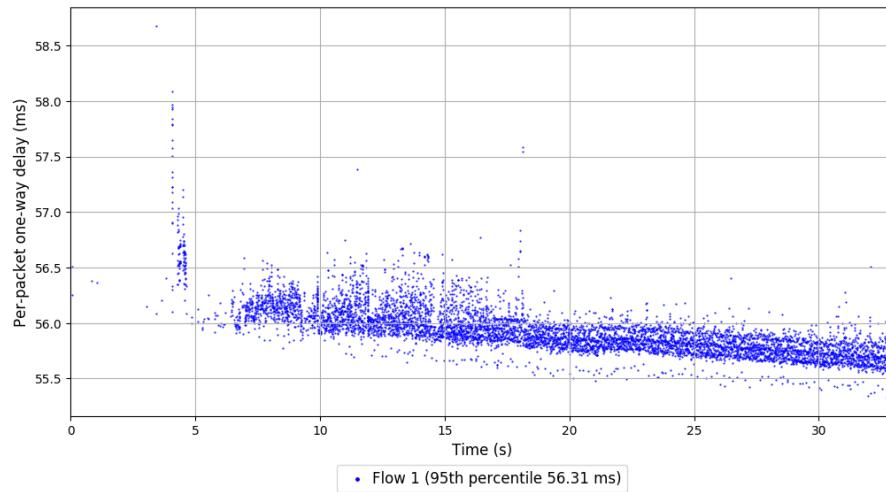
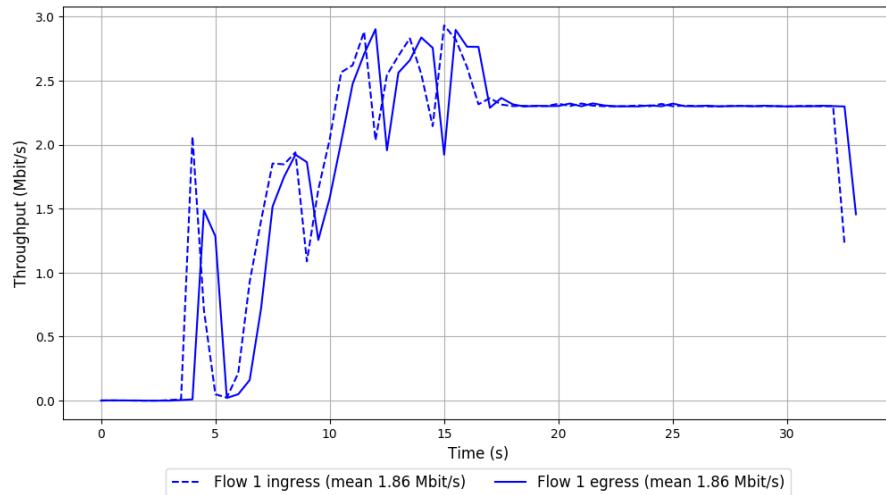


Run 4: Statistics of WebRTC media

```
Start at: 2018-11-02 19:48:19
End at: 2018-11-02 19:48:49
Local clock offset: -12.292 ms
Remote clock offset: -16.631 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 56.313 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 56.313 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-11-02 20:11:15
End at: 2018-11-02 20:11:45
Local clock offset: -6.77 ms
Remote clock offset: -12.293 ms

# Below is generated by plot.py at 2018-11-02 20:36:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 57.620 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 57.620 ms
Loss rate: 0.00%
```

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

