

**Pantheon Summary** (Generated at Sun, 06 Aug 2017 09:58:43 +0000 with  
pantheon version a934ee3822380a12762347e6bc8bd1f3e836e73b)

Repeated the test of 15 congestion control schemes 3 times.

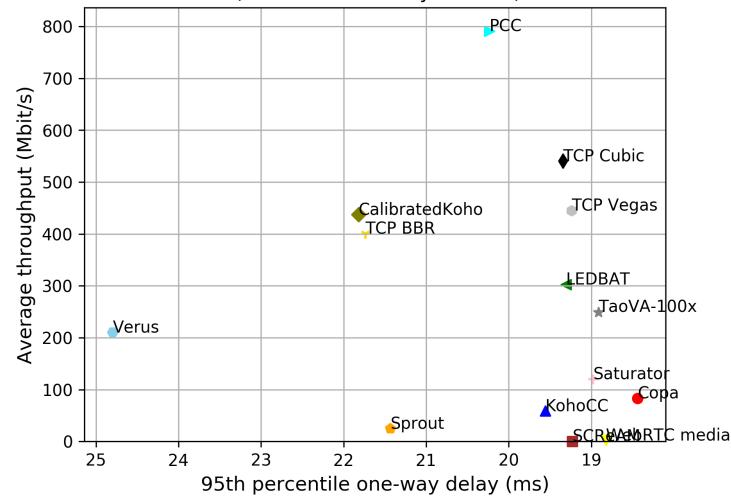
Each test lasted for 30 seconds running 1 flow.

Data path: AWS California 1 Ethernet (*local*) → Stanford Ethernet (*remote*).

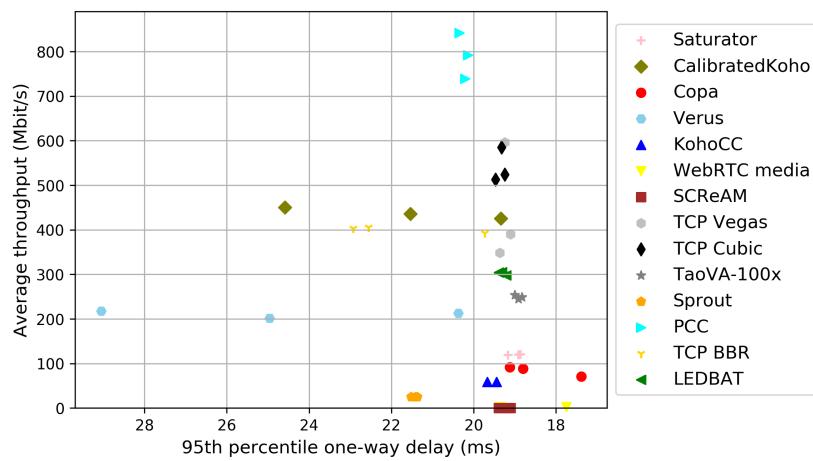
NTP offset measured against time.stanford.edu and has been applied to correct the timestamps in logs.

```
git branch: master @ a934ee3822380a12762347e6bc8bd1f3e836e73b
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
M datagrump/sender.cc
third_party/genericCC @ dae96123232f1bcb37725348fa2378691ce26725
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179aab4a906ce6bb7cf3cf
third_party/pantheon-stimuli @ fc73a85ca16c34366d1888dc8a0d0d88d4ebf2a7
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
M scripts/merge-tunnel-logs
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efef6e088d91066a9f023df375eee2665089ce
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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from AWS California 1 Ethernet to Stanford Ethernet, 3 runs of 30s each per scheme  
(mean of all runs by scheme)



test from AWS California 1 Ethernet to Stanford Ethernet, 3 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	3	400.33	21.74	0.00
CalibratedKoho	3	437.29	21.82	0.00
Copa	3	83.41	18.44	0.00
TCP Cubic	3	540.75	19.34	0.00
KohoCC	3	58.81	19.56	0.00
LEDBAT	3	302.46	19.31	0.00
PCC	3	791.01	20.23	0.07
QUIC Cubic	3	nan	nan	nan
Saturator	3	119.74	18.98	0.00
SCReAM	3	0.22	19.23	0.09
Sprout	3	24.76	21.43	0.00
TaoVA-100x	3	249.21	18.91	0.00
TCP Vegas	3	444.84	19.24	0.00
Verus	3	210.58	24.80	0.00
WebRTC media	3	2.34	18.82	0.00

Run 1: Statistics of TCP BBR

Start at: Sun, 06 Aug 2017 08:13:43 +0000

End at: Sun, 06 Aug 2017 08:14:13 +0000

Local clock offset: 1.174 ms

Remote clock offset: -1.809 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:47:21 +0000

# Datalink statistics

-- Total of 1 flow:

Average throughput: 403.03 Mbit/s

95th percentile per-packet one-way delay: 22.926 ms

Loss rate: 0.00%

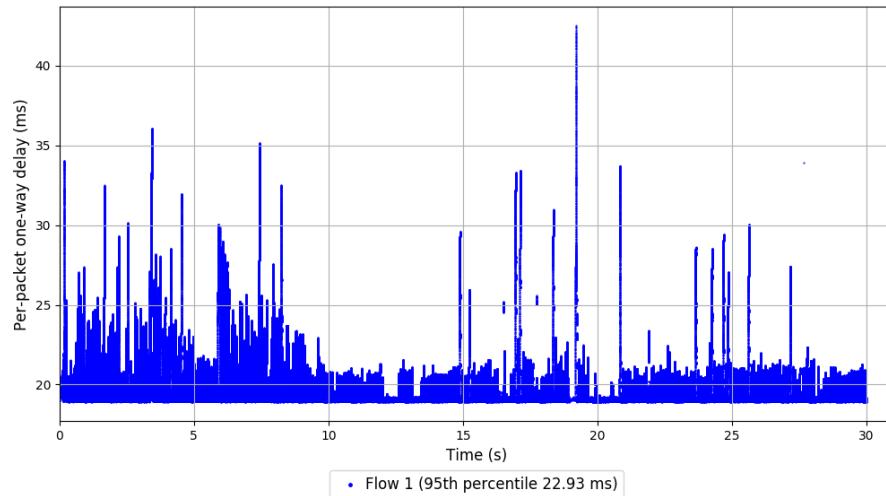
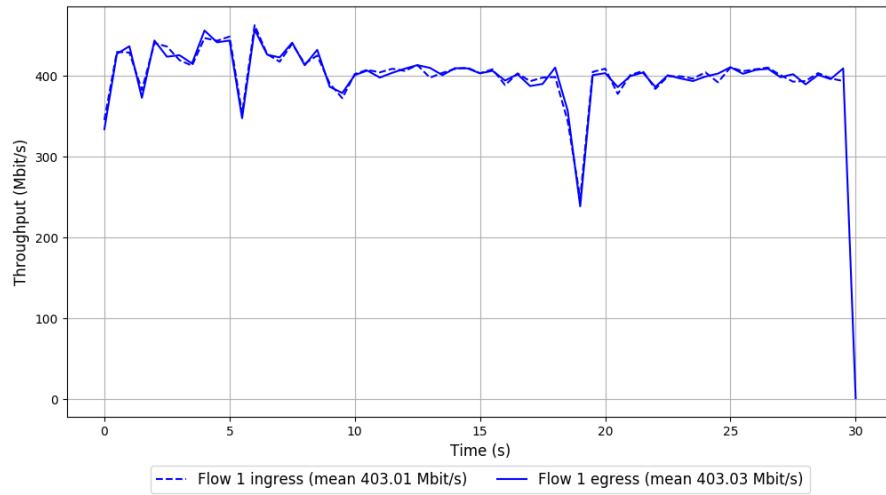
-- Flow 1:

Average throughput: 403.03 Mbit/s

95th percentile per-packet one-way delay: 22.926 ms

Loss rate: 0.00%

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

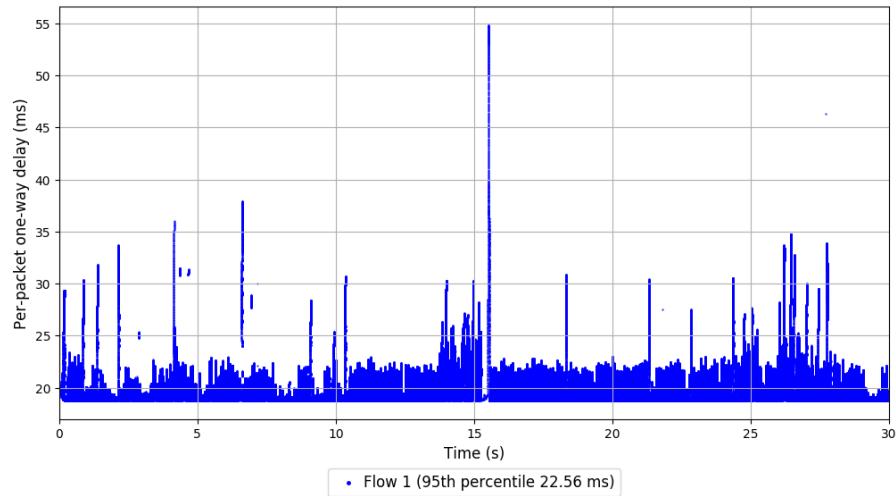
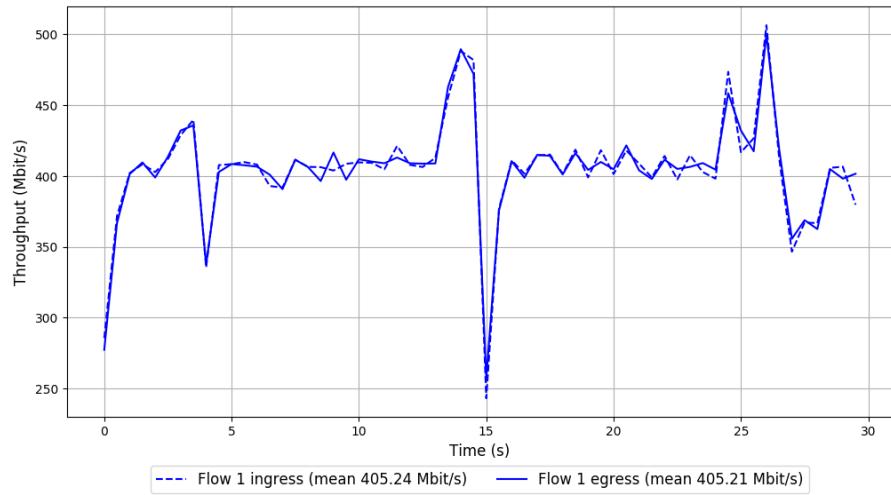


Run 2: Statistics of TCP BBR

```
Start at: Sun, 06 Aug 2017 08:34:27 +0000
End at: Sun, 06 Aug 2017 08:34:57 +0000
Local clock offset: 1.124 ms
Remote clock offset: -1.787 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:47:21 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 405.21 Mbit/s
95th percentile per-packet one-way delay: 22.557 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 405.21 Mbit/s
95th percentile per-packet one-way delay: 22.557 ms
Loss rate: 0.01%
```

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

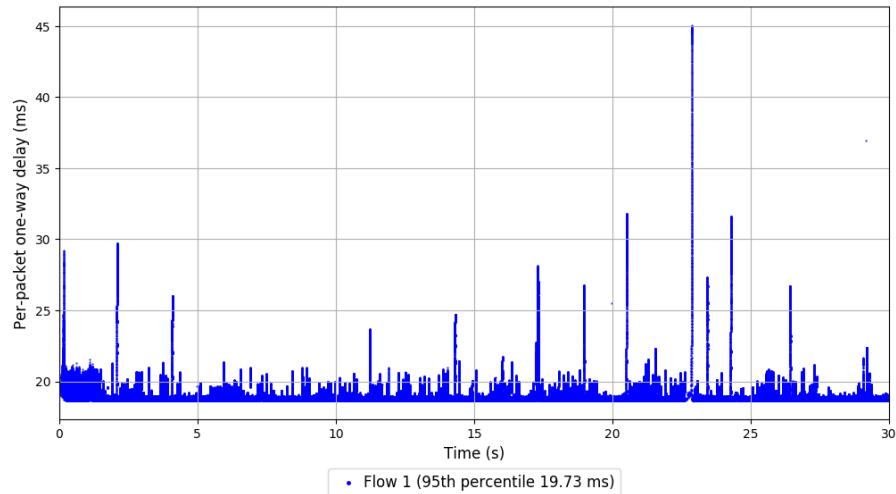
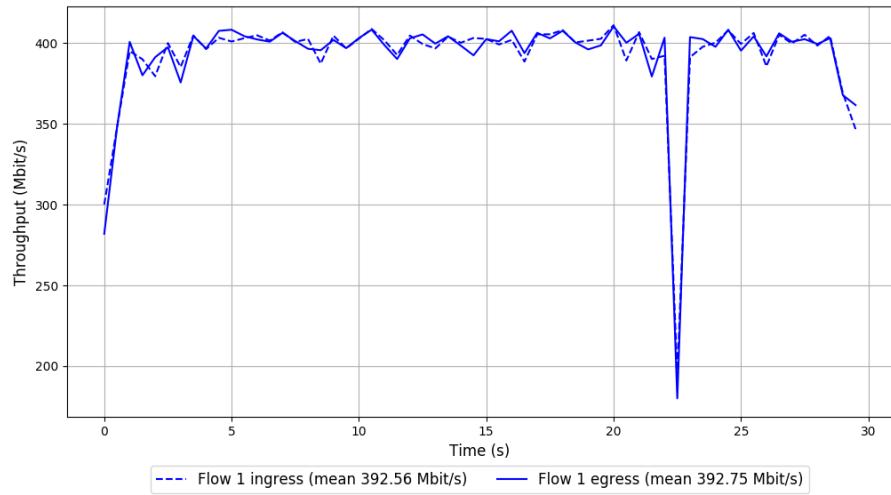


Run 3: Statistics of TCP BBR

```
Start at: Sun, 06 Aug 2017 08:55:09 +0000
End at: Sun, 06 Aug 2017 08:55:39 +0000
Local clock offset: 1.09 ms
Remote clock offset: -1.565 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:48:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 392.75 Mbit/s
95th percentile per-packet one-way delay: 19.733 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 392.75 Mbit/s
95th percentile per-packet one-way delay: 19.733 ms
Loss rate: 0.00%
```

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



```
Run 1: Statistics of CalibratedKoho
```

```
Start at: Sun, 06 Aug 2017 08:27:22 +0000
```

```
End at: Sun, 06 Aug 2017 08:27:52 +0000
```

```
Local clock offset: 1.129 ms
```

```
Remote clock offset: -1.803 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:48:15 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 436.08 Mbit/s
```

```
95th percentile per-packet one-way delay: 21.535 ms
```

```
Loss rate: 0.00%
```

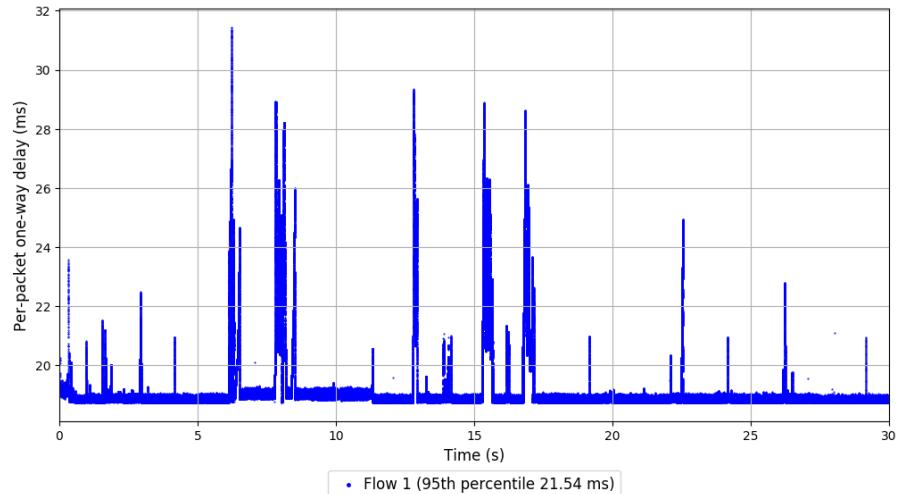
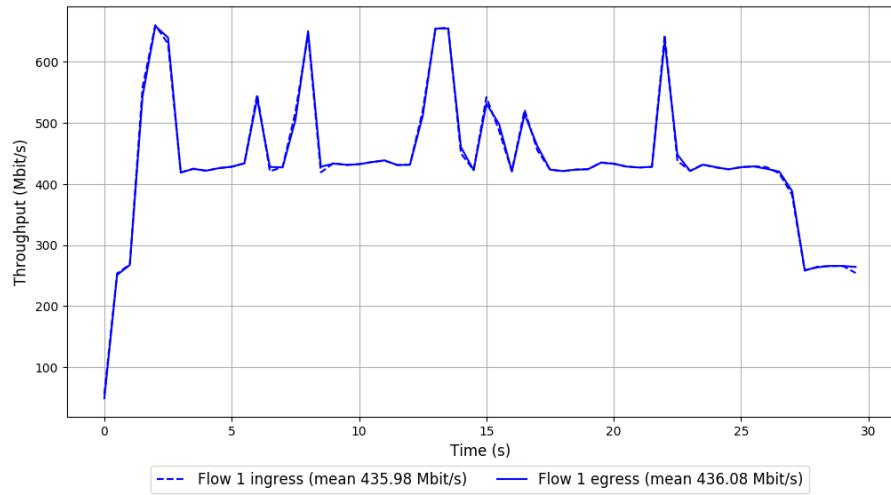
```
-- Flow 1:
```

```
Average throughput: 436.08 Mbit/s
```

```
95th percentile per-packet one-way delay: 21.535 ms
```

```
Loss rate: 0.00%
```

Run 1: Report of CalibratedKoho — Data Link



```
Run 2: Statistics of CalibratedKoho
```

```
Start at: Sun, 06 Aug 2017 08:48:03 +0000
```

```
End at: Sun, 06 Aug 2017 08:48:33 +0000
```

```
Local clock offset: 1.103 ms
```

```
Remote clock offset: -1.51 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:49:05 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 450.43 Mbit/s
```

```
95th percentile per-packet one-way delay: 24.587 ms
```

```
Loss rate: 0.01%
```

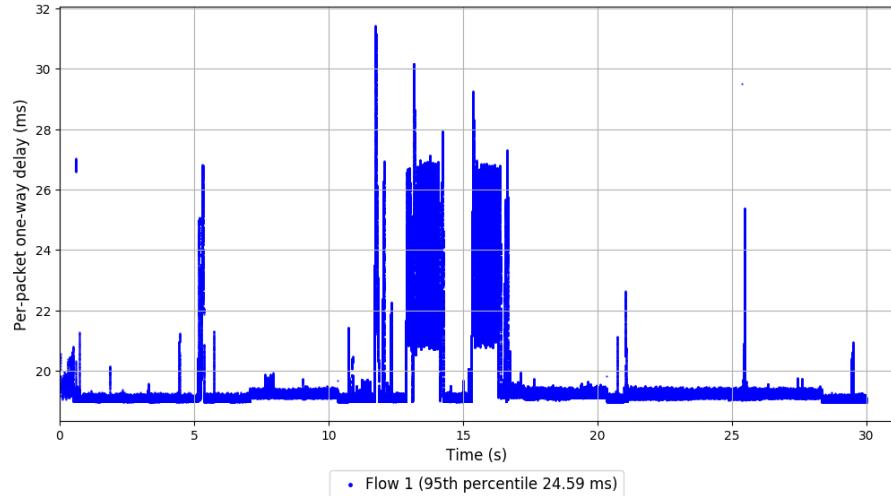
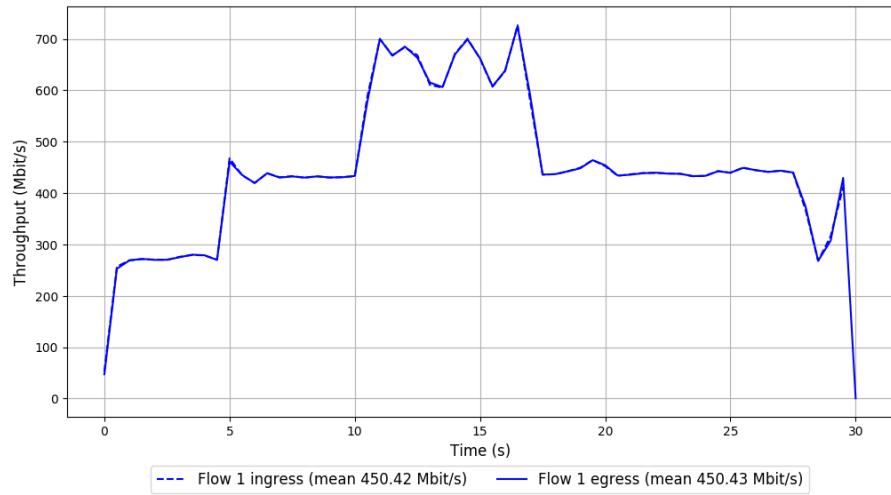
```
-- Flow 1:
```

```
Average throughput: 450.43 Mbit/s
```

```
95th percentile per-packet one-way delay: 24.587 ms
```

```
Loss rate: 0.01%
```

Run 2: Report of CalibratedKoho — Data Link



```
Run 3: Statistics of CalibratedKoho
```

```
Start at: Sun, 06 Aug 2017 09:08:43 +0000
```

```
End at: Sun, 06 Aug 2017 09:09:13 +0000
```

```
Local clock offset: 0.988 ms
```

```
Remote clock offset: -1.81 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:49:10 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 425.37 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.337 ms
```

```
Loss rate: 0.00%
```

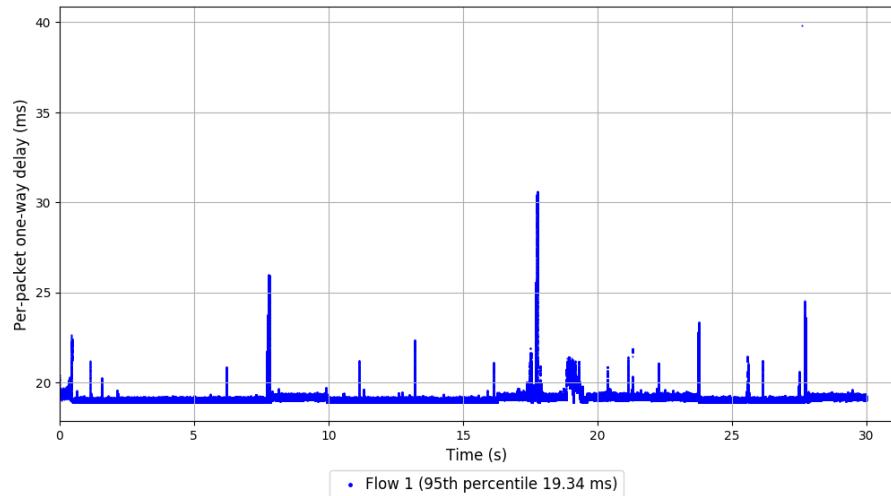
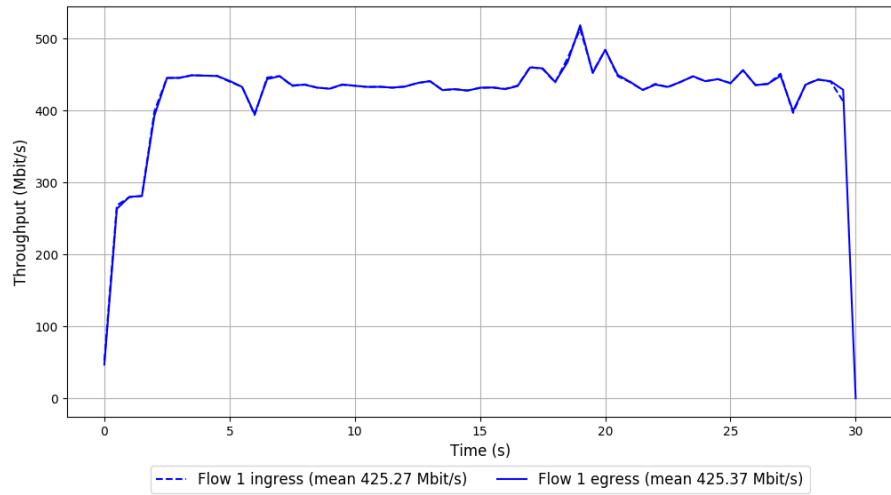
```
-- Flow 1:
```

```
Average throughput: 425.37 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.337 ms
```

```
Loss rate: 0.00%
```

Run 3: Report of CalibratedKoho — Data Link

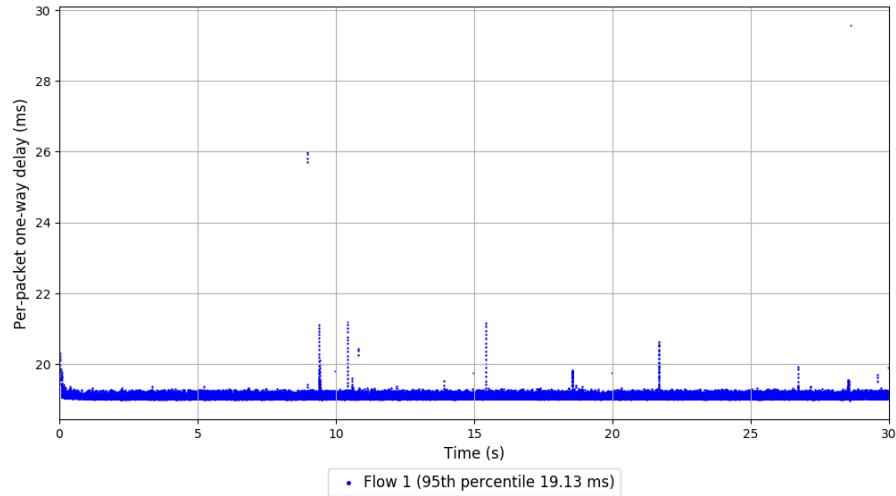
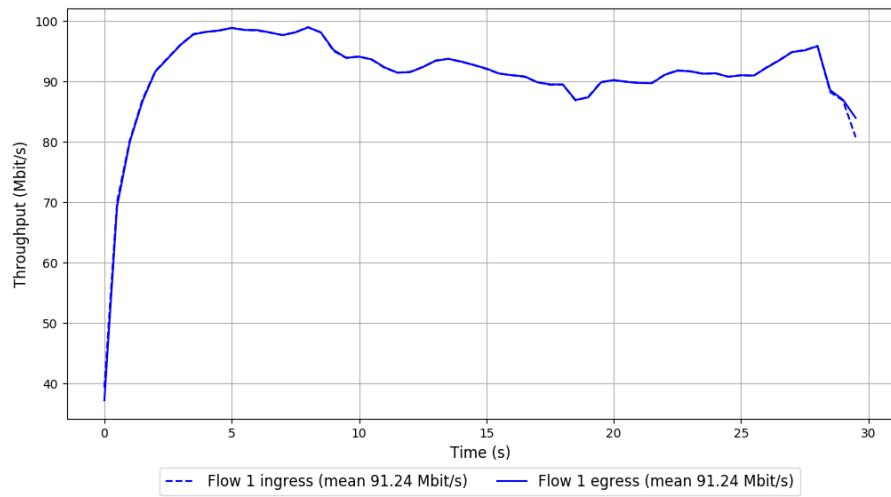


Run 1: Statistics of Copa

```
Start at: Sun, 06 Aug 2017 08:19:11 +0000
End at: Sun, 06 Aug 2017 08:19:41 +0000
Local clock offset: 1.125 ms
Remote clock offset: -1.778 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:49:27 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.24 Mbit/s
95th percentile per-packet one-way delay: 19.126 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.24 Mbit/s
95th percentile per-packet one-way delay: 19.126 ms
Loss rate: 0.00%
```

## Run 1: Report of Copa — Data Link

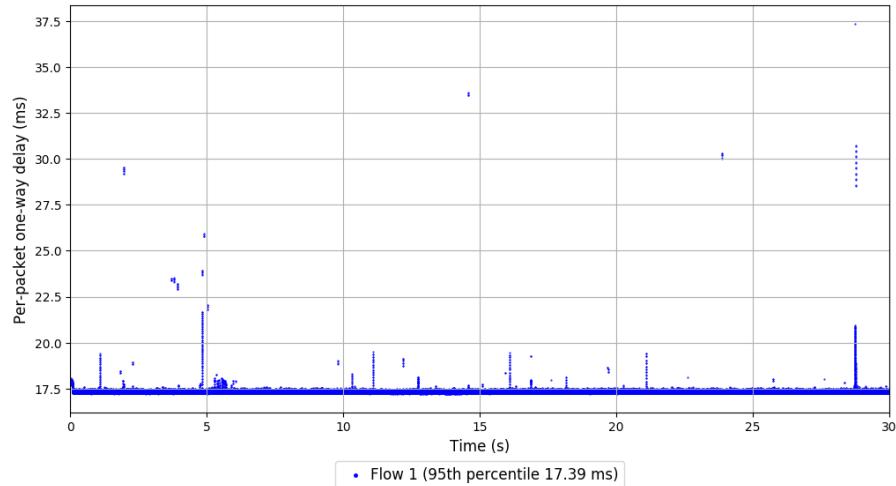
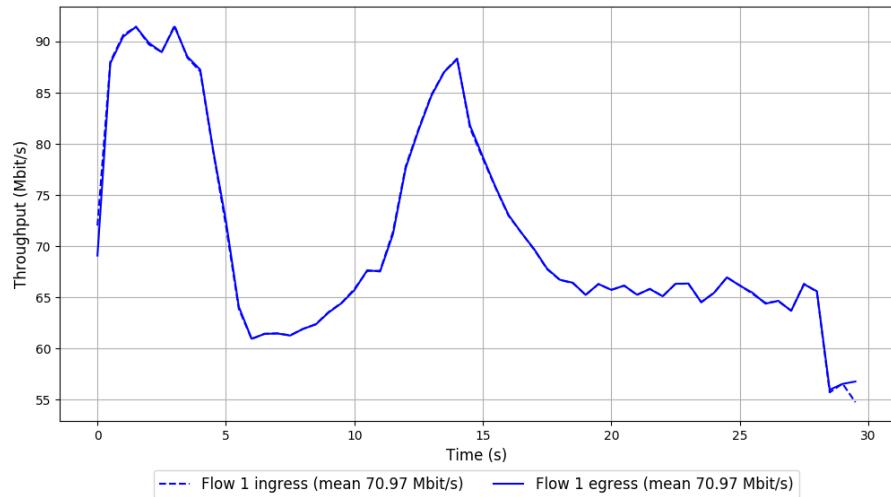


Run 2: Statistics of Copa

```
Start at: Sun, 06 Aug 2017 08:39:56 +0000
End at: Sun, 06 Aug 2017 08:40:26 +0000
Local clock offset: 1.224 ms
Remote clock offset: -1.68 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:49:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.97 Mbit/s
95th percentile per-packet one-way delay: 17.385 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.97 Mbit/s
95th percentile per-packet one-way delay: 17.385 ms
Loss rate: 0.00%
```

## Run 2: Report of Copa — Data Link

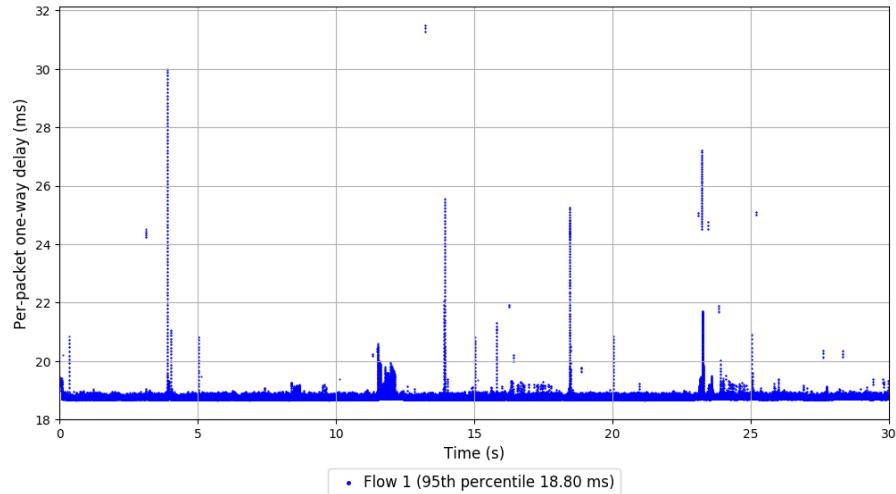
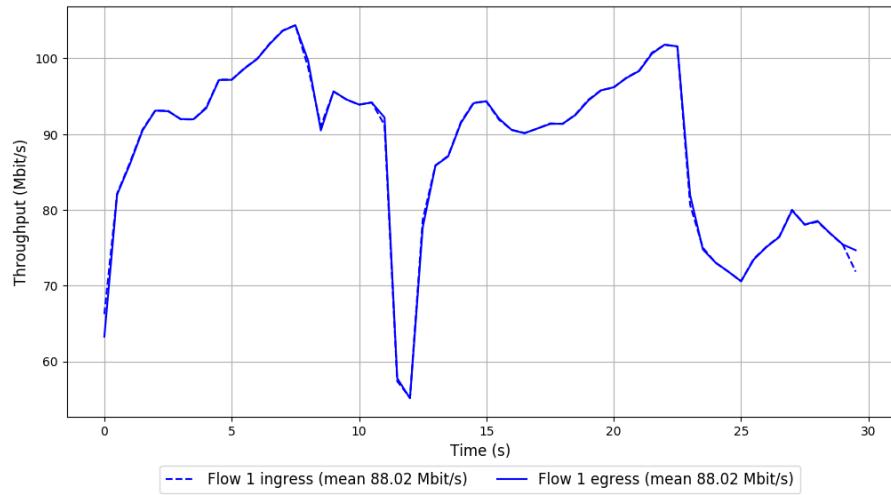


Run 3: Statistics of Copa

```
Start at: Sun, 06 Aug 2017 09:00:37 +0000
End at: Sun, 06 Aug 2017 09:01:07 +0000
Local clock offset: 1.056 ms
Remote clock offset: -1.66 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:49:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.02 Mbit/s
95th percentile per-packet one-way delay: 18.802 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 88.02 Mbit/s
95th percentile per-packet one-way delay: 18.802 ms
Loss rate: 0.00%
```

### Run 3: Report of Copa — Data Link



```
Run 1: Statistics of TCP Cubic
```

```
Start at: Sun, 06 Aug 2017 08:12:09 +0000
```

```
End at: Sun, 06 Aug 2017 08:12:39 +0000
```

```
Local clock offset: 1.073 ms
```

```
Remote clock offset: -1.802 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:50:21 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 512.94 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.466 ms
```

```
Loss rate: 0.00%
```

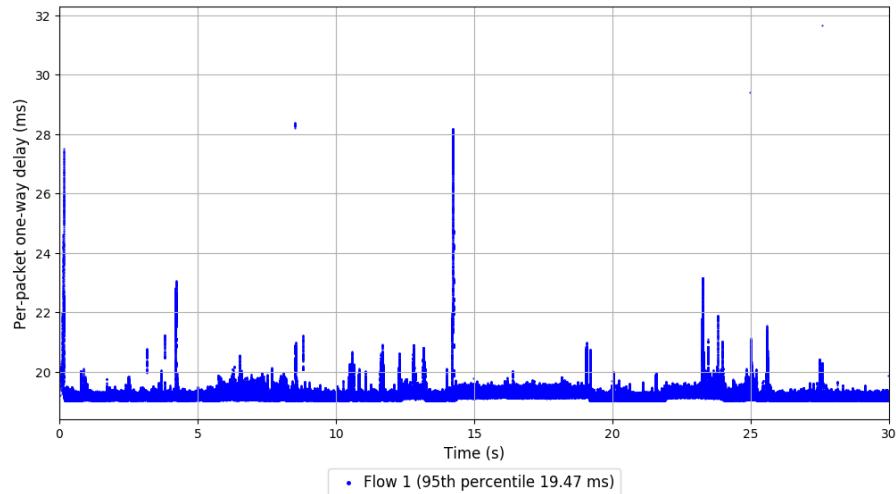
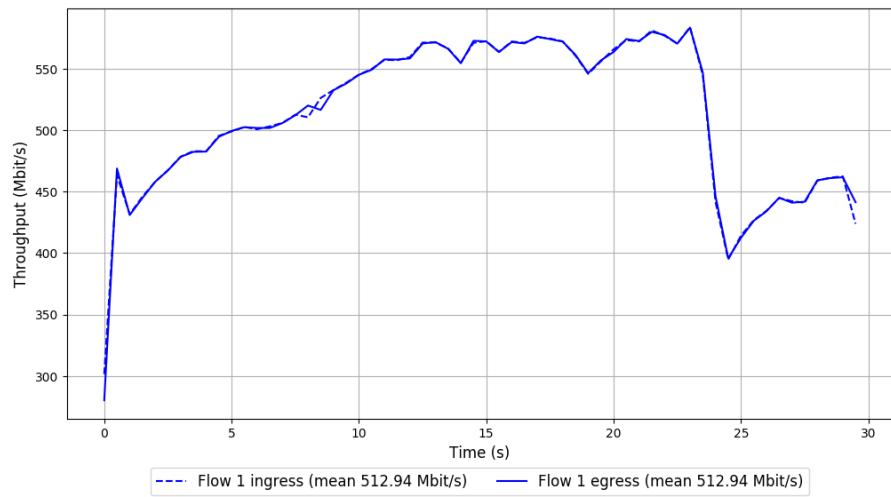
```
-- Flow 1:
```

```
Average throughput: 512.94 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.466 ms
```

```
Loss rate: 0.00%
```

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

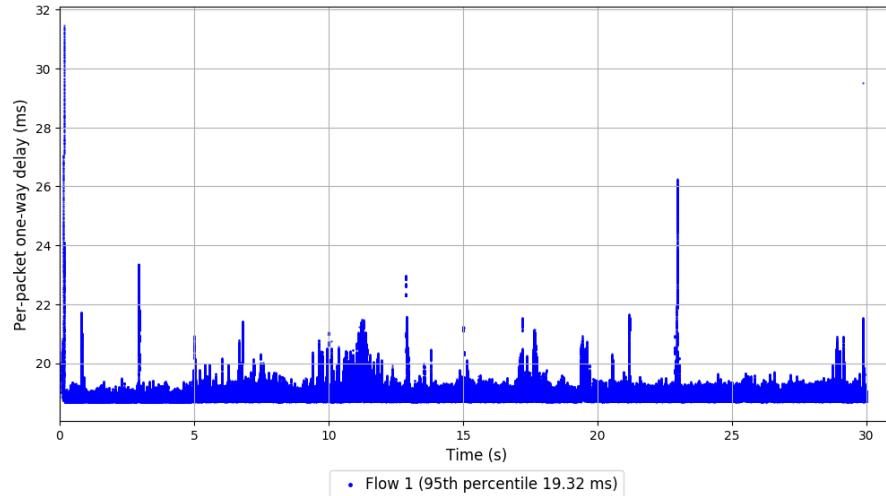
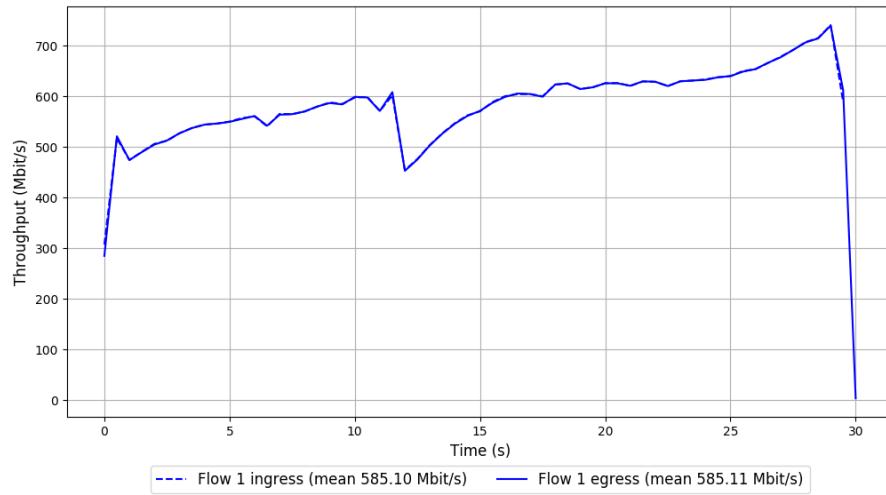


Run 2: Statistics of TCP Cubic

```
Start at: Sun, 06 Aug 2017 08:32:50 +0000
End at: Sun, 06 Aug 2017 08:33:20 +0000
Local clock offset: 1.222 ms
Remote clock offset: -1.773 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:50:54 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 585.11 Mbit/s
95th percentile per-packet one-way delay: 19.323 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 585.11 Mbit/s
95th percentile per-packet one-way delay: 19.323 ms
Loss rate: 0.00%
```

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

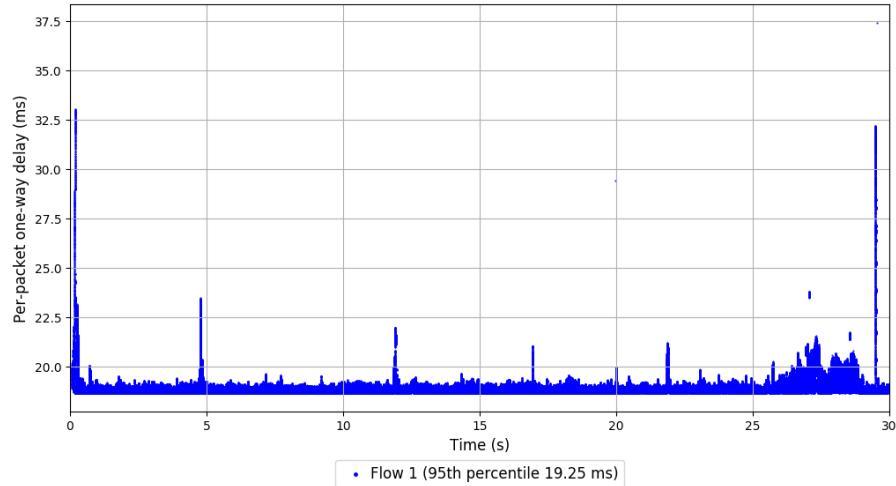
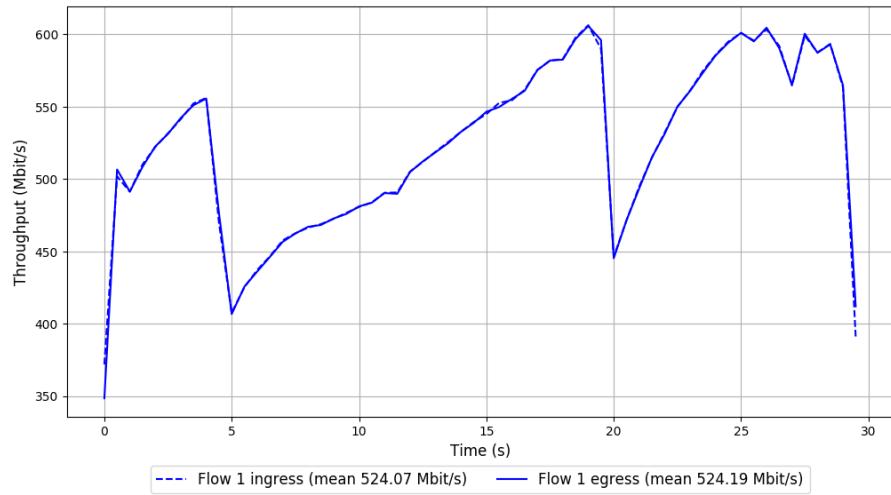


Run 3: Statistics of TCP Cubic

```
Start at: Sun, 06 Aug 2017 08:53:34 +0000
End at: Sun, 06 Aug 2017 08:54:04 +0000
Local clock offset: 1.083 ms
Remote clock offset: -1.55 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:51:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 524.19 Mbit/s
95th percentile per-packet one-way delay: 19.245 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 524.19 Mbit/s
95th percentile per-packet one-way delay: 19.245 ms
Loss rate: 0.00%
```

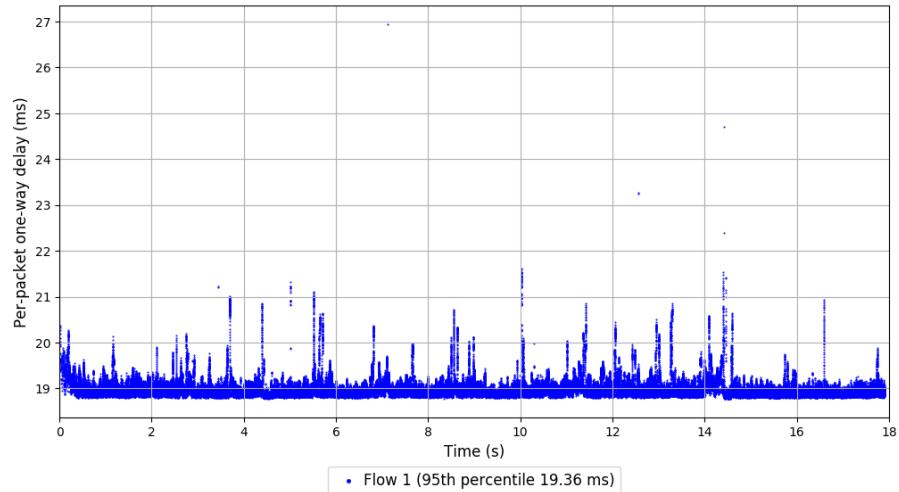
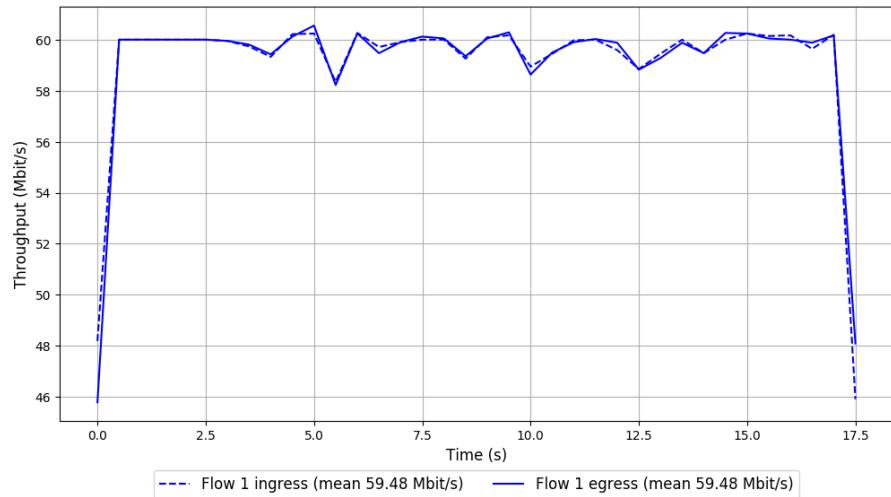
### Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of KohoCC

Start at: Sun, 06 Aug 2017 08:10:56 +0000  
End at: Sun, 06 Aug 2017 08:11:26 +0000  
Local clock offset: 1.075 ms  
Remote clock offset: -1.835 ms

## Run 1: Report of KohoCC — Data Link

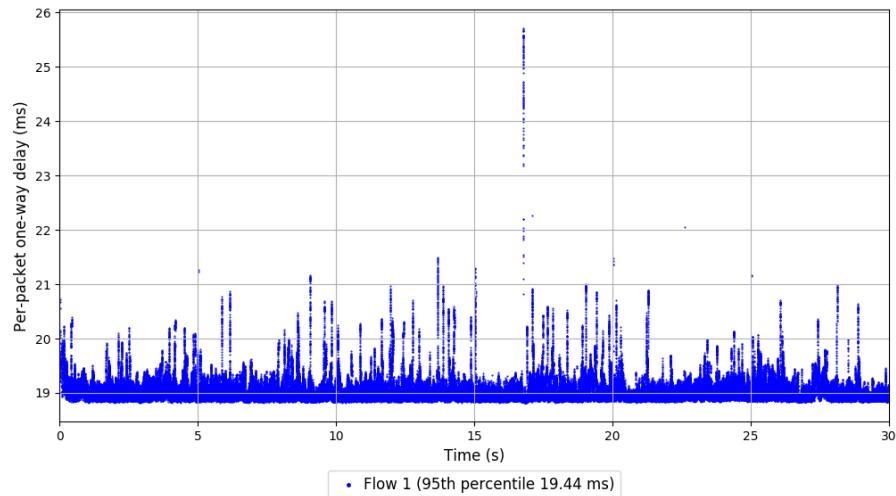
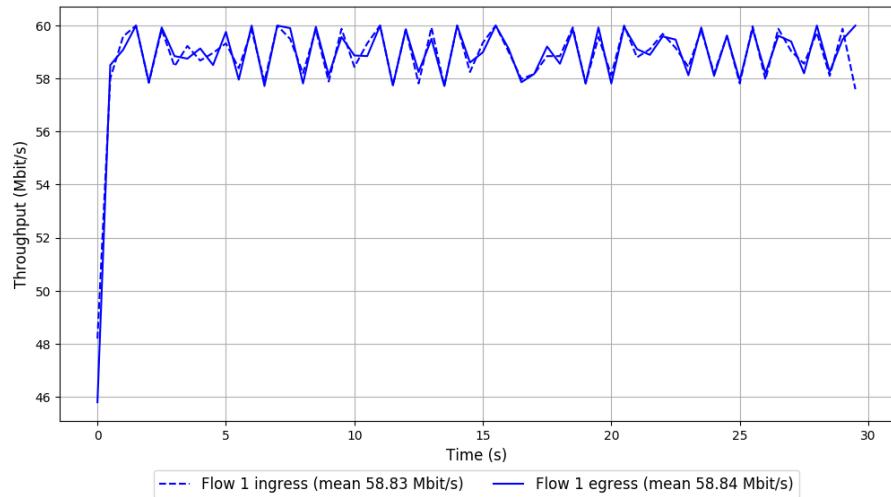


Run 2: Statistics of KohoCC

```
Start at: Sun, 06 Aug 2017 08:31:36 +0000
End at: Sun, 06 Aug 2017 08:32:06 +0000
Local clock offset: 1.211 ms
Remote clock offset: -1.851 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:51:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.84 Mbit/s
95th percentile per-packet one-way delay: 19.440 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.84 Mbit/s
95th percentile per-packet one-way delay: 19.440 ms
Loss rate: 0.00%
```

## Run 2: Report of KohoCC — Data Link

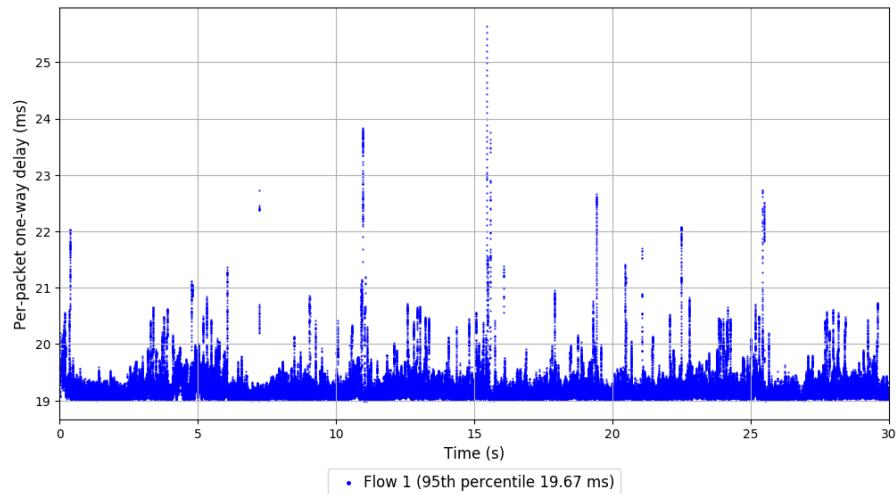
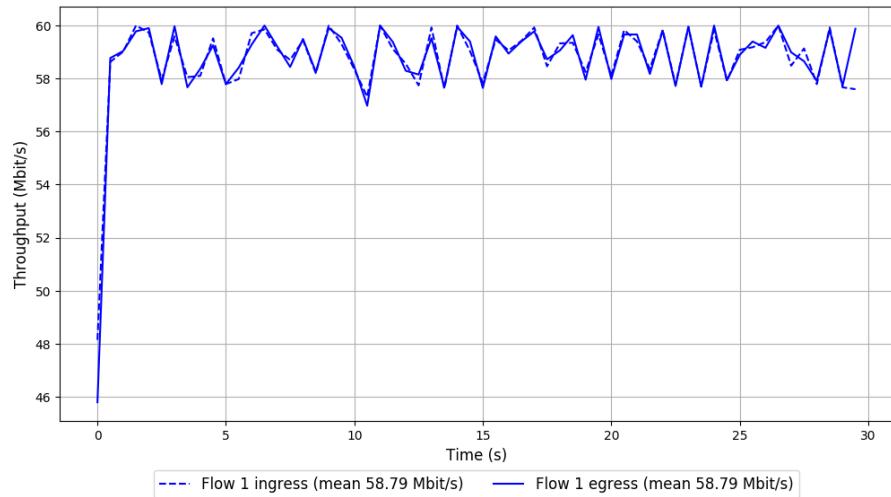


Run 3: Statistics of KohoCC

```
Start at: Sun, 06 Aug 2017 08:52:20 +0000
End at: Sun, 06 Aug 2017 08:52:50 +0000
Local clock offset: 1.092 ms
Remote clock offset: -1.421 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:51:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.79 Mbit/s
95th percentile per-packet one-way delay: 19.674 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.79 Mbit/s
95th percentile per-packet one-way delay: 19.674 ms
Loss rate: 0.00%
```

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

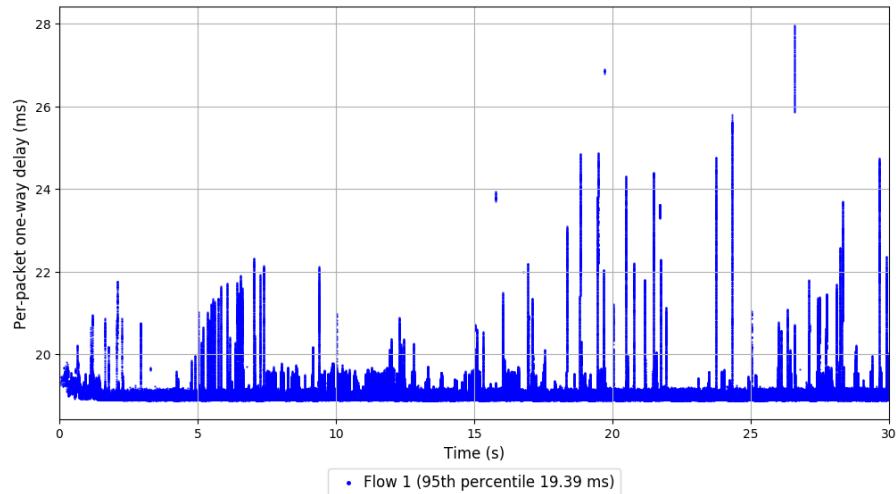
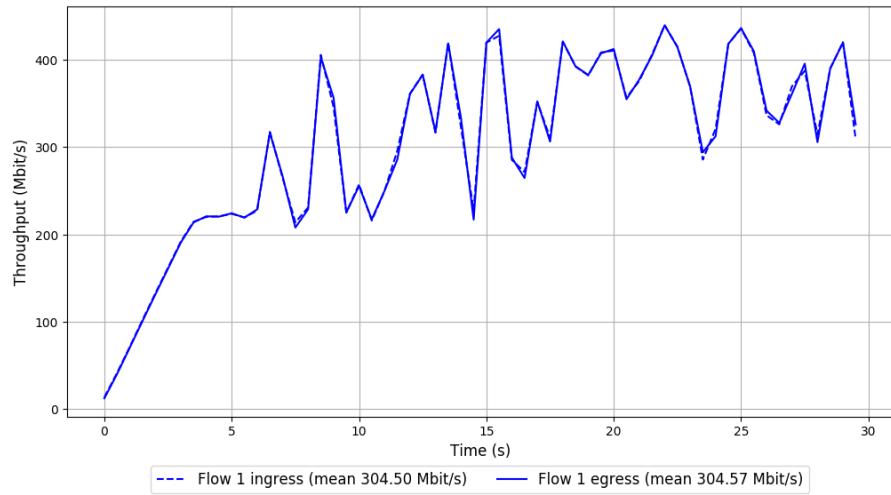


```
Run 1: Statistics of LEDBAT
```

```
Start at: Sun, 06 Aug 2017 08:24:12 +0000
End at: Sun, 06 Aug 2017 08:24:42 +0000
Local clock offset: 1.243 ms
Remote clock offset: -1.765 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:51:56 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 304.57 Mbit/s
95th percentile per-packet one-way delay: 19.395 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 304.57 Mbit/s
95th percentile per-packet one-way delay: 19.395 ms
Loss rate: 0.00%
```

## Run 1: Report of LEDBAT — Data Link

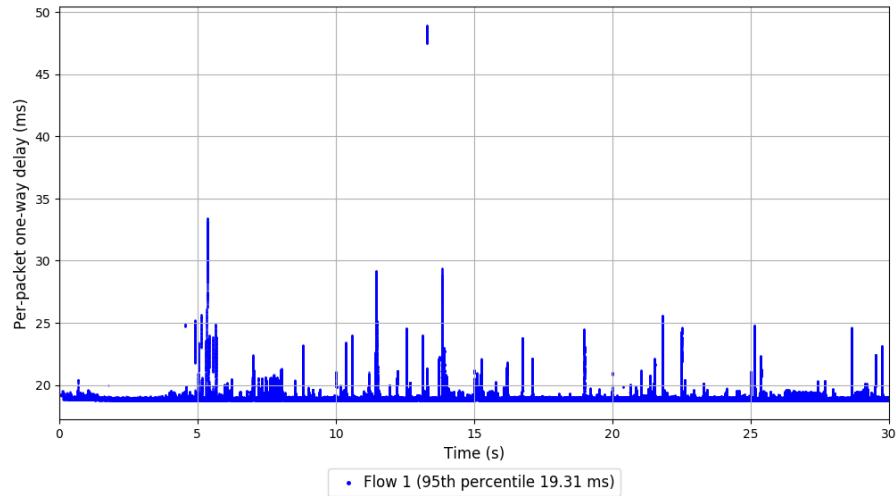
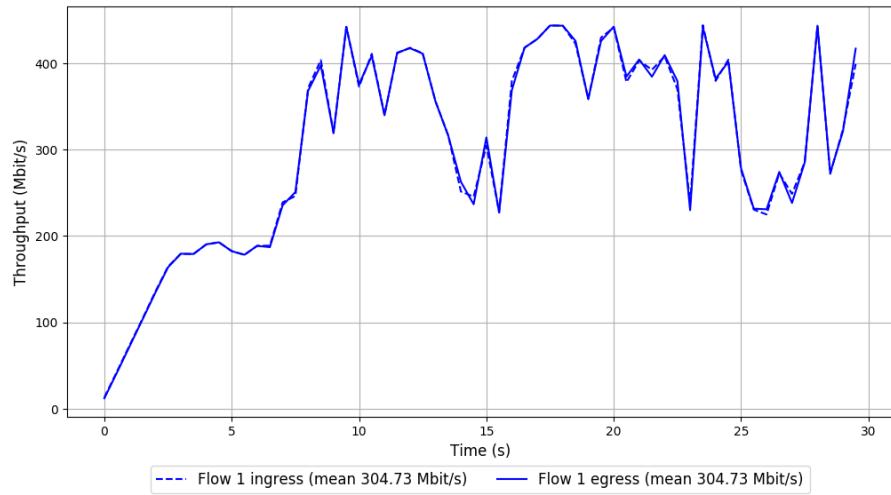


Run 2: Statistics of LEDBAT

```
Start at: Sun, 06 Aug 2017 08:44:56 +0000
End at: Sun, 06 Aug 2017 08:45:26 +0000
Local clock offset: 1.112 ms
Remote clock offset: -1.562 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:52:11 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 304.73 Mbit/s
95th percentile per-packet one-way delay: 19.311 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 304.73 Mbit/s
95th percentile per-packet one-way delay: 19.311 ms
Loss rate: 0.00%
```

## Run 2: Report of LEDBAT — Data Link

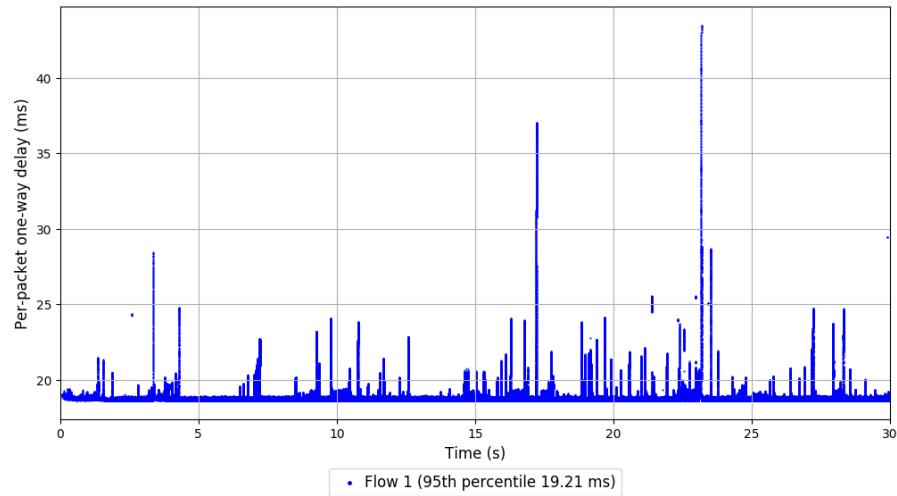
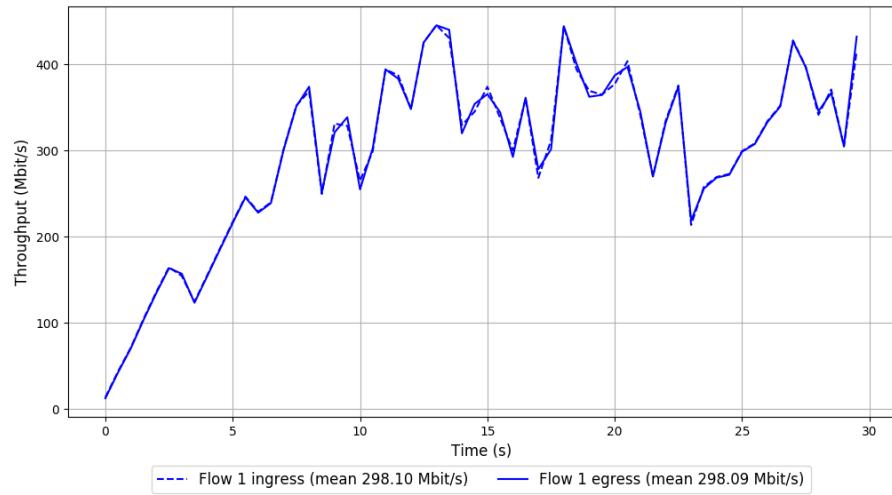


Run 3: Statistics of LEDBAT

```
Start at: Sun, 06 Aug 2017 09:05:39 +0000
End at: Sun, 06 Aug 2017 09:06:09 +0000
Local clock offset: 1.11 ms
Remote clock offset: -1.706 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:52:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 298.09 Mbit/s
95th percentile per-packet one-way delay: 19.209 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 298.09 Mbit/s
95th percentile per-packet one-way delay: 19.209 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link



```
Run 1: Statistics of PCC
```

```
Start at: Sun, 06 Aug 2017 08:25:41 +0000
```

```
End at: Sun, 06 Aug 2017 08:26:11 +0000
```

```
Local clock offset: 1.128 ms
```

```
Remote clock offset: -1.873 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:53:38 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 841.67 Mbit/s
```

```
95th percentile per-packet one-way delay: 20.349 ms
```

```
Loss rate: 0.12%
```

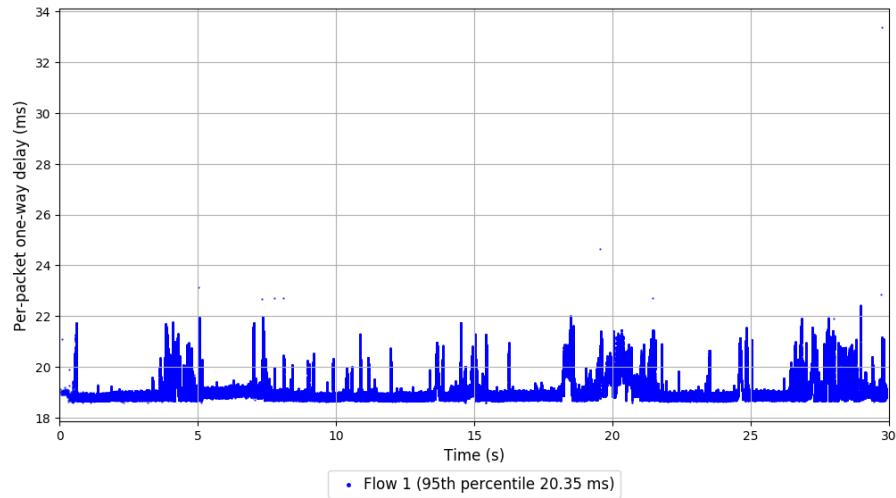
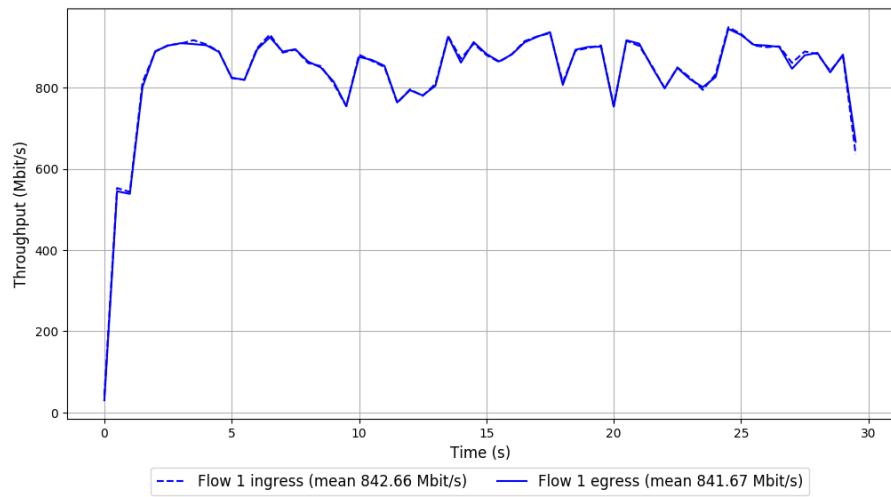
```
-- Flow 1:
```

```
Average throughput: 841.67 Mbit/s
```

```
95th percentile per-packet one-way delay: 20.349 ms
```

```
Loss rate: 0.12%
```

## Run 1: Report of PCC — Data Link

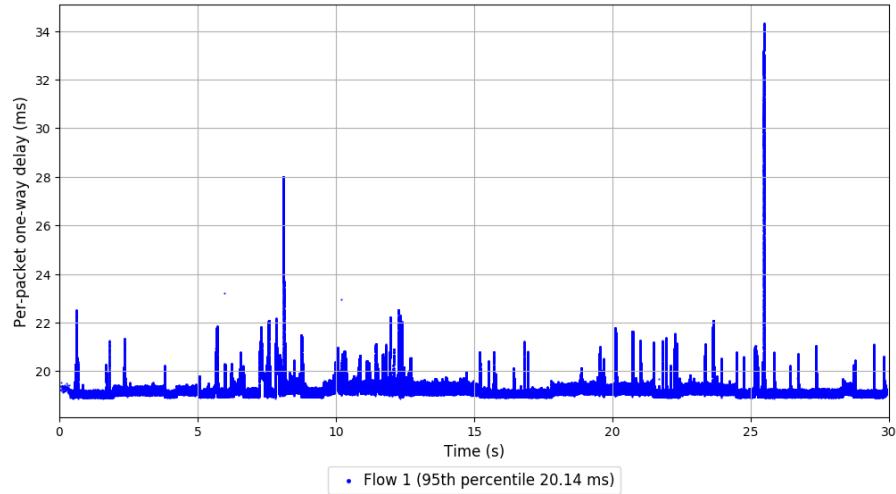
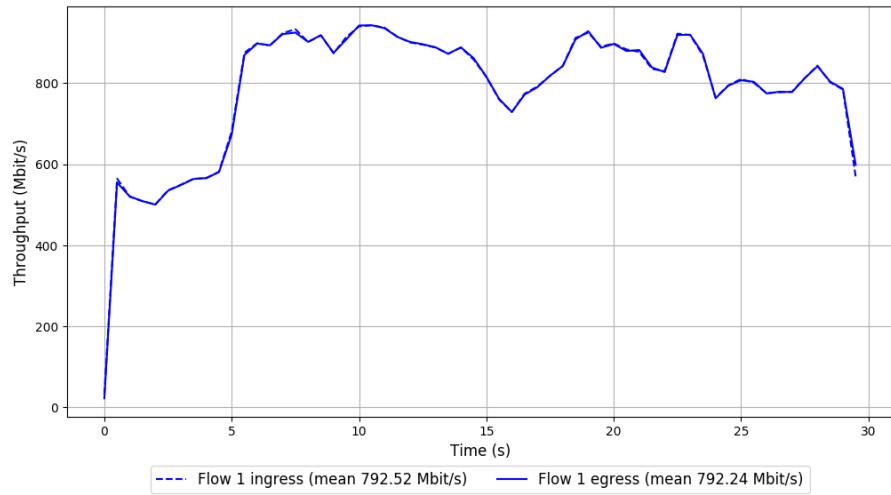


Run 2: Statistics of PCC

```
Start at: Sun, 06 Aug 2017 08:46:25 +0000
End at: Sun, 06 Aug 2017 08:46:55 +0000
Local clock offset: 1.1 ms
Remote clock offset: -1.567 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:54:14 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 792.24 Mbit/s
95th percentile per-packet one-way delay: 20.143 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 792.24 Mbit/s
95th percentile per-packet one-way delay: 20.143 ms
Loss rate: 0.04%
```

## Run 2: Report of PCC — Data Link

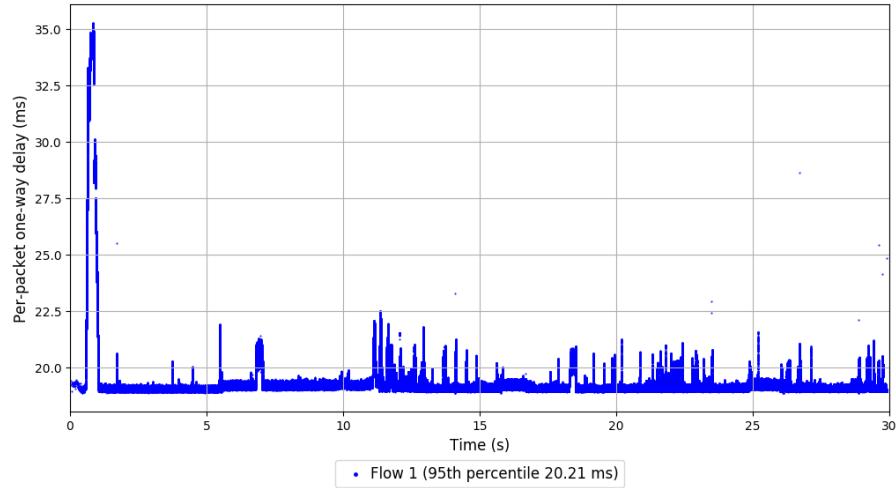
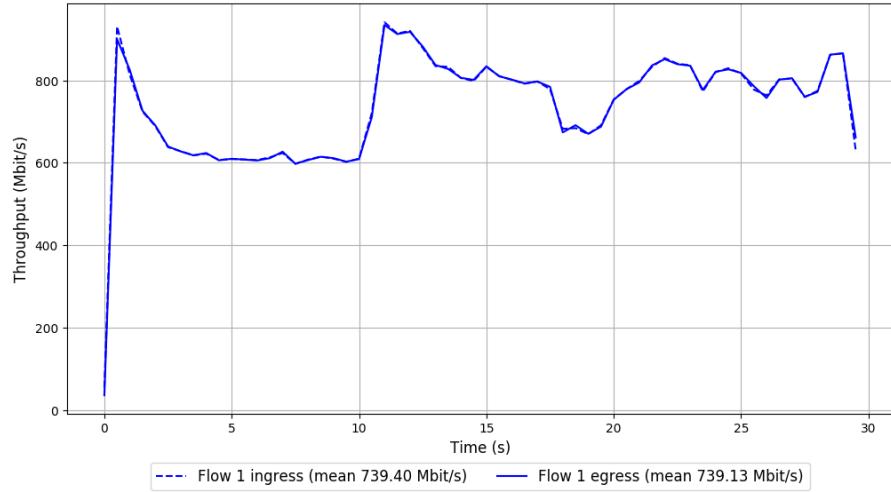


Run 3: Statistics of PCC

```
Start at: Sun, 06 Aug 2017 09:07:08 +0000
End at: Sun, 06 Aug 2017 09:07:38 +0000
Local clock offset: 1.027 ms
Remote clock offset: -1.741 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 739.13 Mbit/s
95th percentile per-packet one-way delay: 20.212 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 739.13 Mbit/s
95th percentile per-packet one-way delay: 20.212 ms
Loss rate: 0.04%
```

### Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

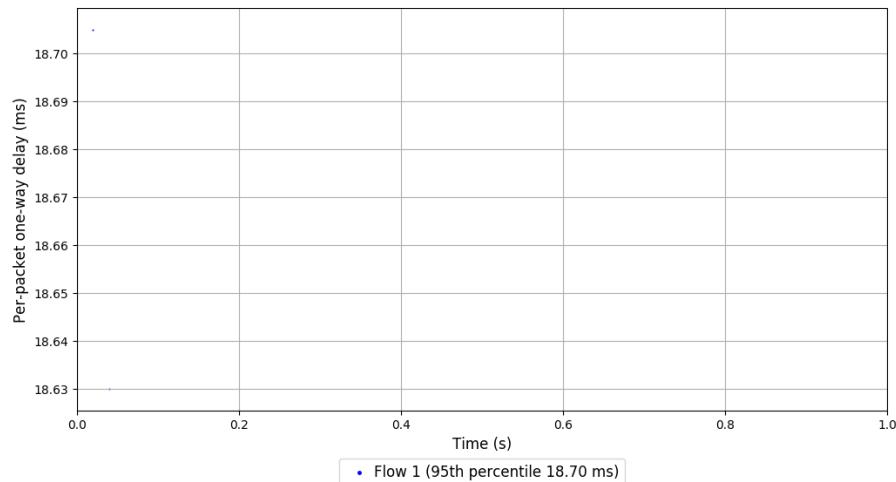
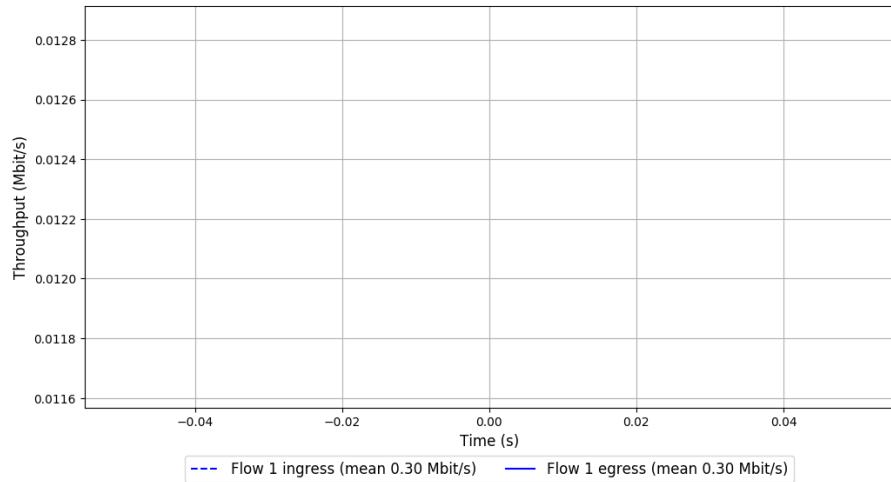
Start at: Sun, 06 Aug 2017 08:23:02 +0000

End at: Sun, 06 Aug 2017 08:23:32 +0000

Local clock offset: 1.22 ms

Remote clock offset: -1.861 ms

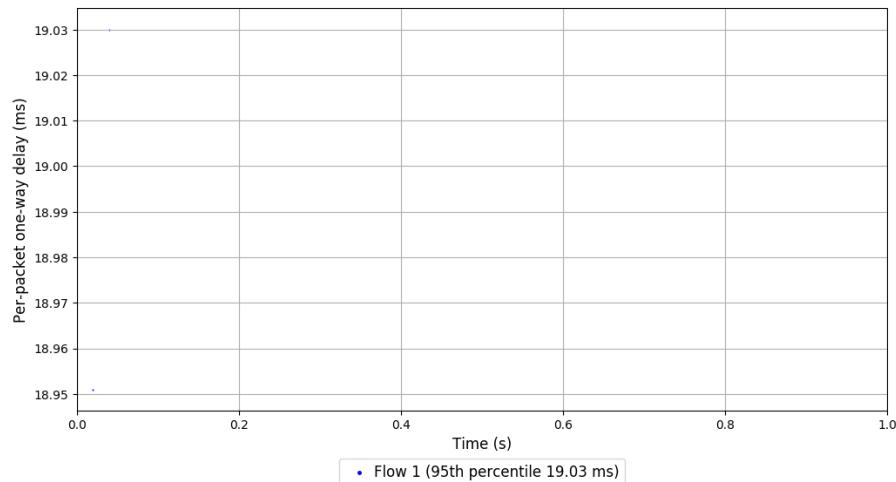
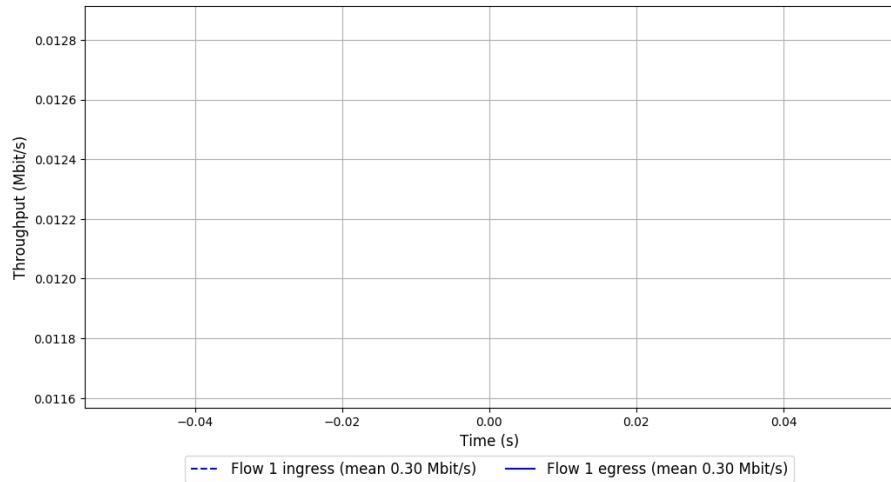
## Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: Sun, 06 Aug 2017 08:43:46 +0000  
End at: Sun, 06 Aug 2017 08:44:16 +0000  
Local clock offset: 1.138 ms  
Remote clock offset: -1.668 ms

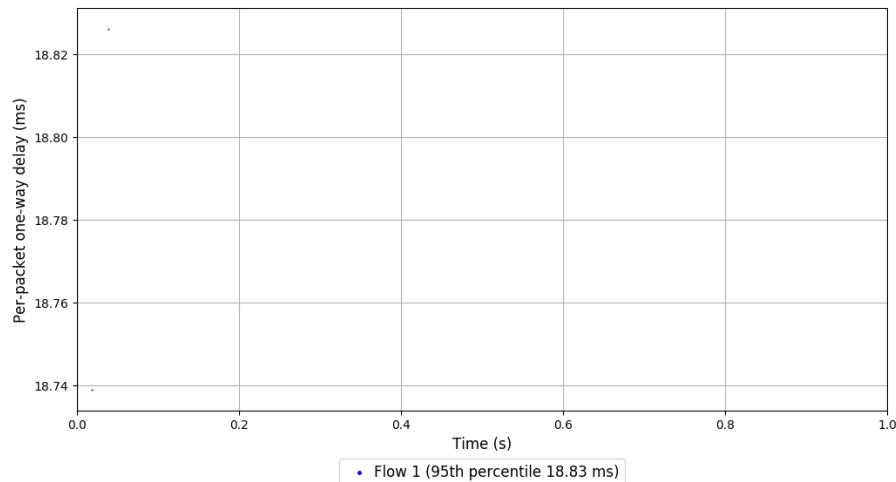
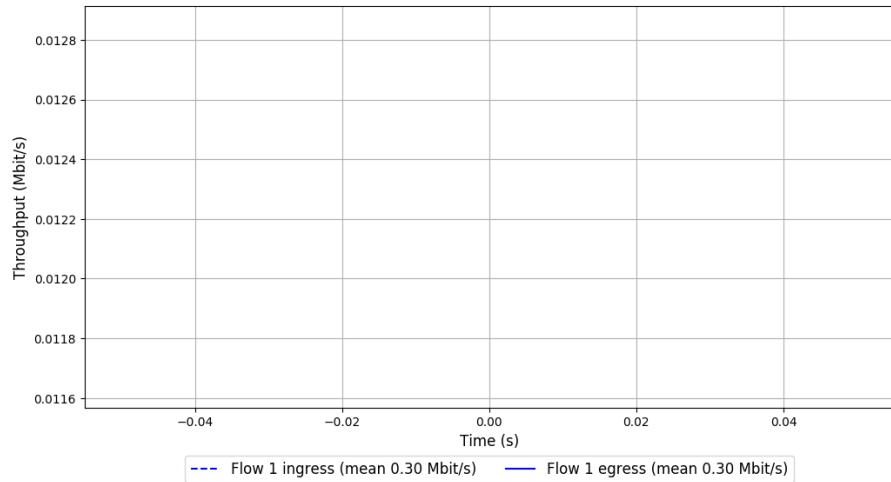
## Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: Sun, 06 Aug 2017 09:04:28 +0000  
End at: Sun, 06 Aug 2017 09:04:58 +0000  
Local clock offset: 1.113 ms  
Remote clock offset: -1.662 ms

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



```
Run 1: Statistics of Saturator
```

```
Start at: Sun, 06 Aug 2017 08:17:55 +0000
```

```
End at: Sun, 06 Aug 2017 08:18:25 +0000
```

```
Local clock offset: 1.089 ms
```

```
Remote clock offset: -1.88 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 118.78 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.170 ms
```

```
Loss rate: 0.00%
```

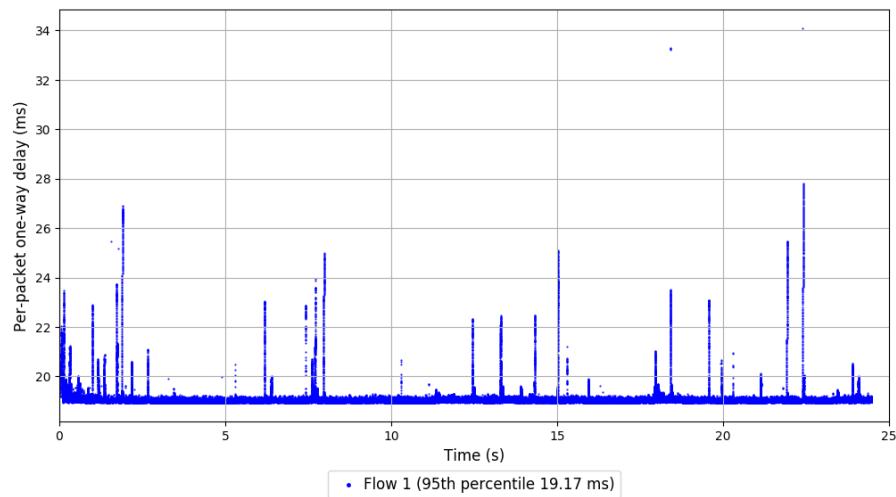
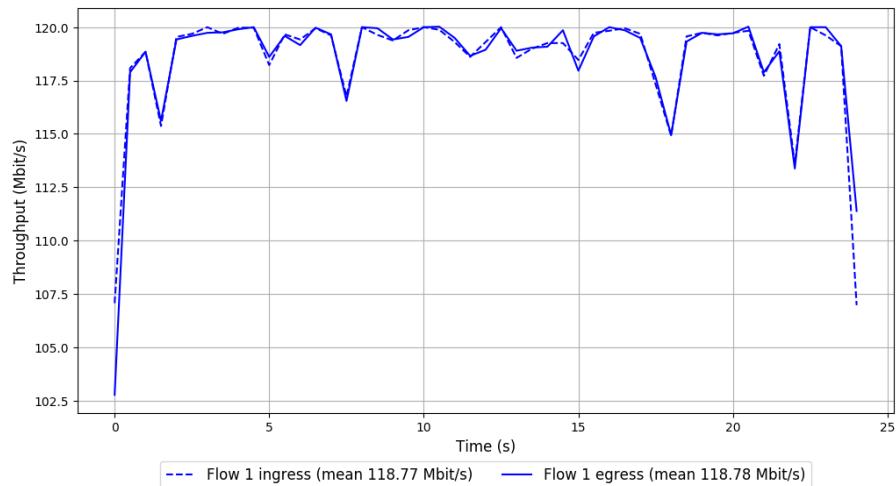
```
-- Flow 1:
```

```
Average throughput: 118.78 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.170 ms
```

```
Loss rate: 0.00%
```

Run 1: Report of Saturator — Data Link

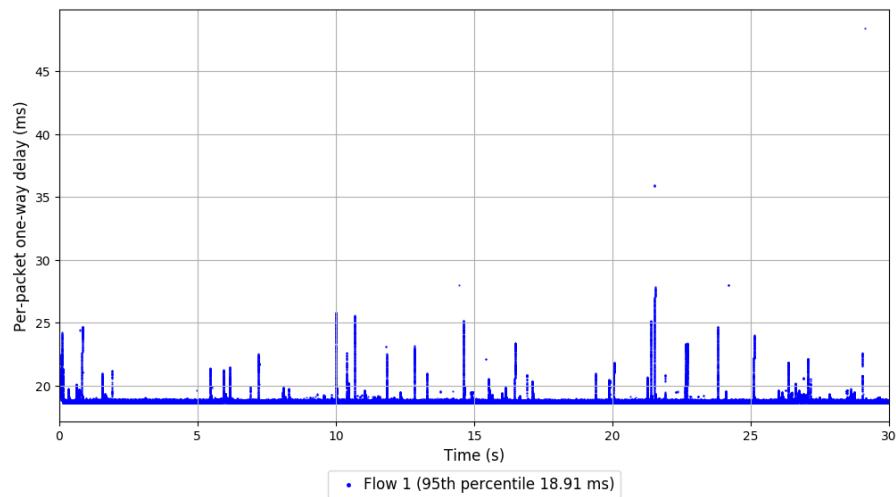
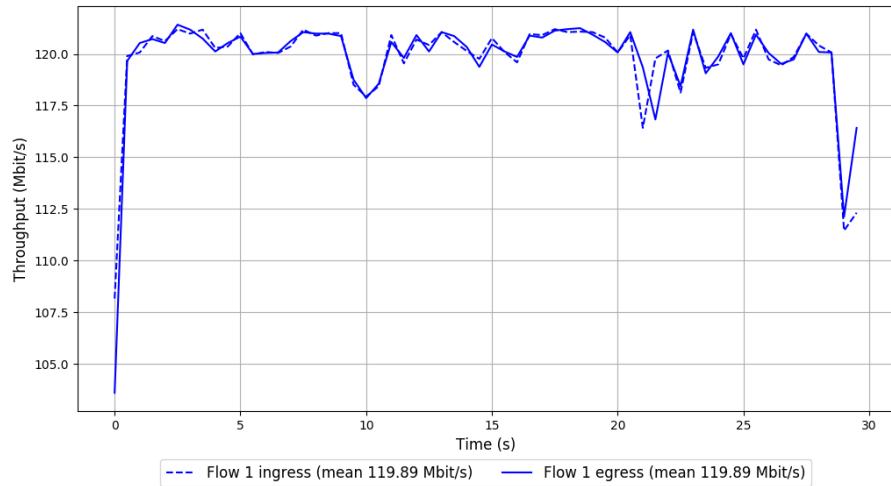


Run 2: Statistics of Saturator

```
Start at: Sun, 06 Aug 2017 08:38:39 +0000
End at: Sun, 06 Aug 2017 08:39:09 +0000
Local clock offset: 1.159 ms
Remote clock offset: -1.779 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 119.89 Mbit/s
95th percentile per-packet one-way delay: 18.912 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 119.89 Mbit/s
95th percentile per-packet one-way delay: 18.912 ms
Loss rate: 0.00%
```

Run 2: Report of Saturator — Data Link

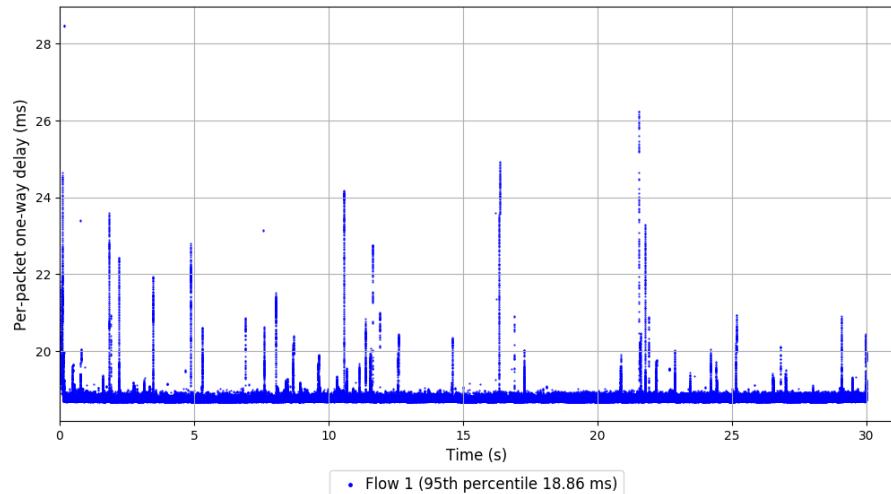
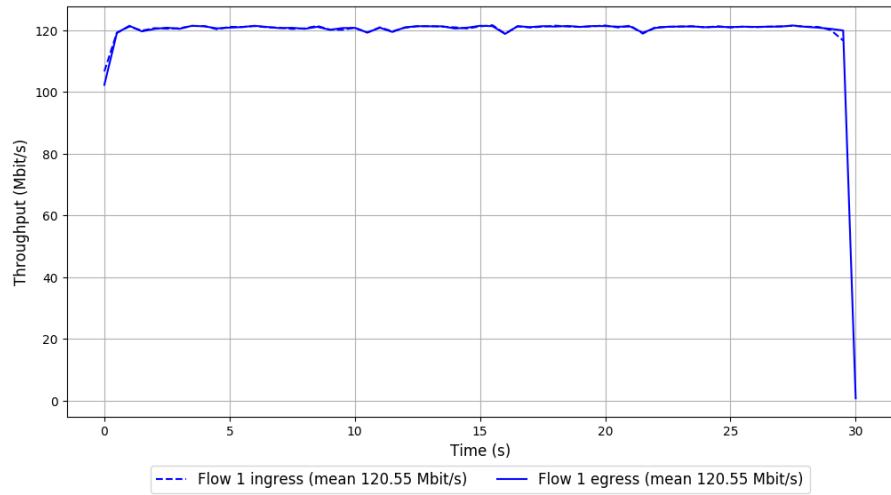


Run 3: Statistics of Saturator

```
Start at: Sun, 06 Aug 2017 08:59:19 +0000
End at: Sun, 06 Aug 2017 08:59:49 +0000
Local clock offset: 1.142 ms
Remote clock offset: -1.567 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 120.55 Mbit/s
95th percentile per-packet one-way delay: 18.858 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 120.55 Mbit/s
95th percentile per-packet one-way delay: 18.858 ms
Loss rate: 0.00%
```

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



```
Run 1: Statistics of SCReAM
```

```
Start at: Sun, 06 Aug 2017 08:21:52 +0000
```

```
End at: Sun, 06 Aug 2017 08:22:22 +0000
```

```
Local clock offset: 1.145 ms
```

```
Remote clock offset: -1.81 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 0.22 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.196 ms
```

```
Loss rate: 0.00%
```

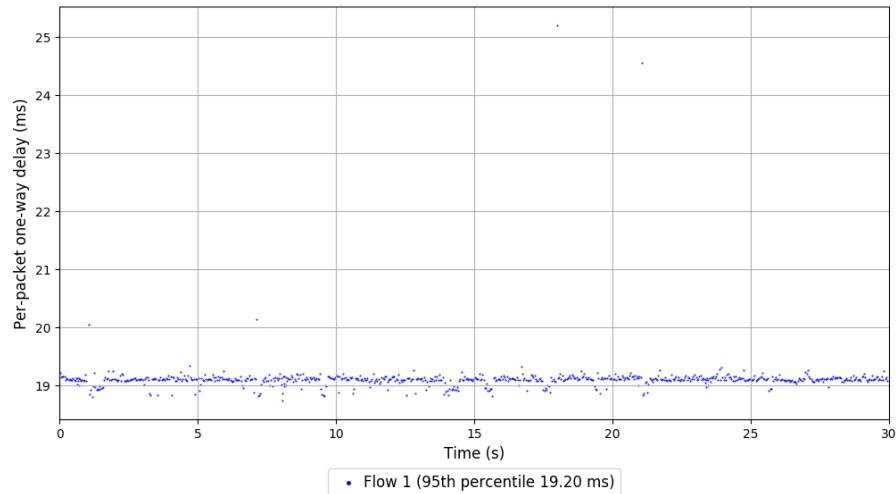
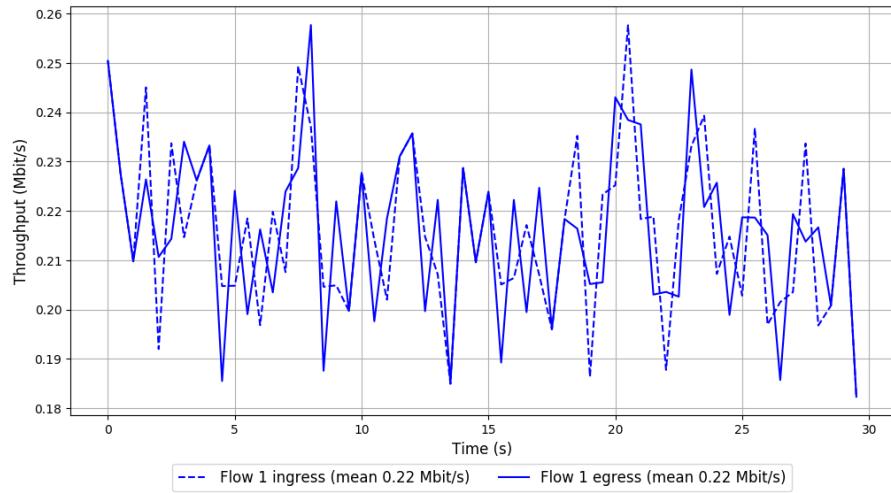
```
-- Flow 1:
```

```
Average throughput: 0.22 Mbit/s
```

```
95th percentile per-packet one-way delay: 19.196 ms
```

```
Loss rate: 0.00%
```

## Run 1: Report of SCReAM — Data Link

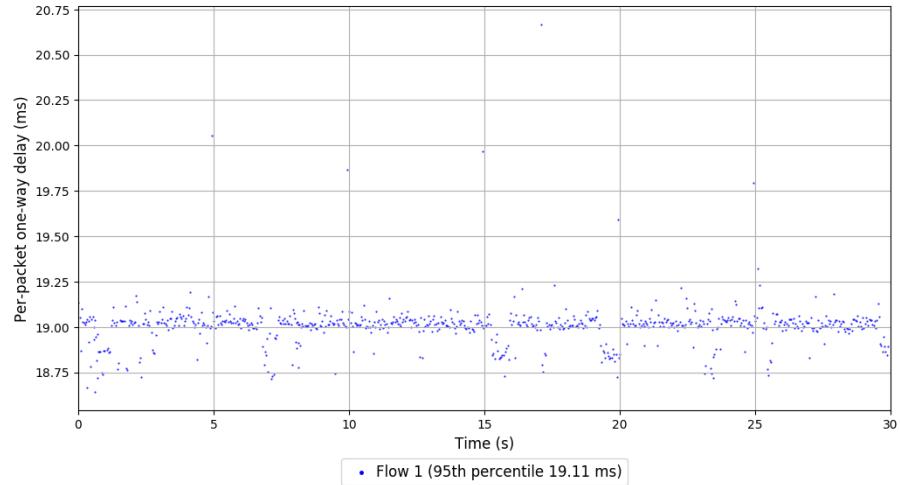
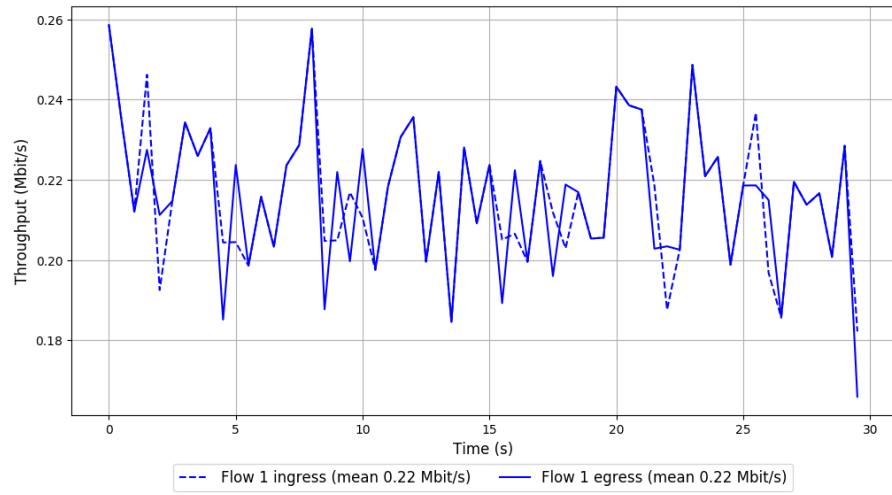


Run 2: Statistics of SCReAM

```
Start at: Sun, 06 Aug 2017 08:42:36 +0000
End at: Sun, 06 Aug 2017 08:43:06 +0000
Local clock offset: 1.213 ms
Remote clock offset: -1.648 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.105 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.105 ms
Loss rate: 0.13%
```

## Run 2: Report of SCReAM — Data Link

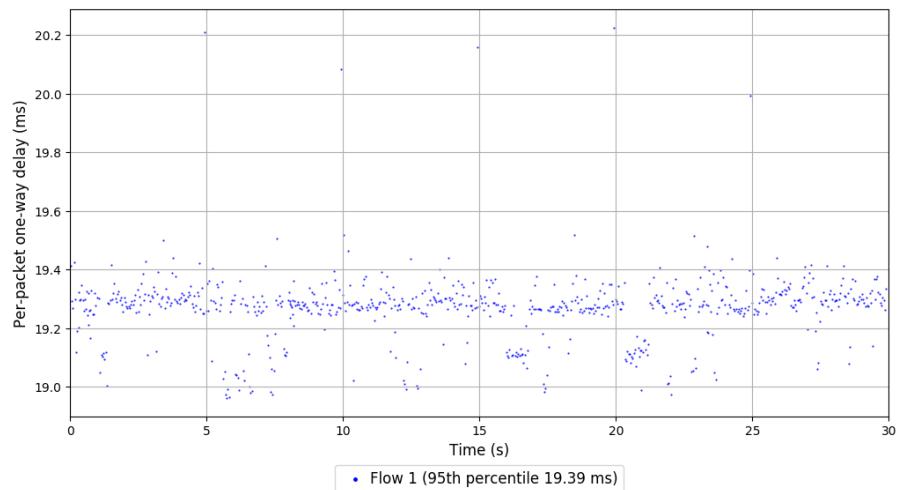
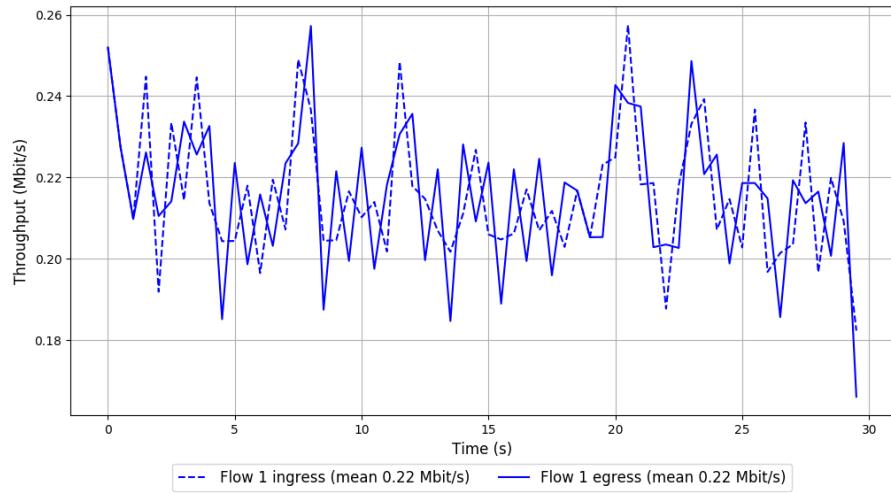


Run 3: Statistics of SCReAM

```
Start at: Sun, 06 Aug 2017 09:03:18 +0000
End at: Sun, 06 Aug 2017 09:03:48 +0000
Local clock offset: 1.054 ms
Remote clock offset: -1.697 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.388 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 19.388 ms
Loss rate: 0.13%
```

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

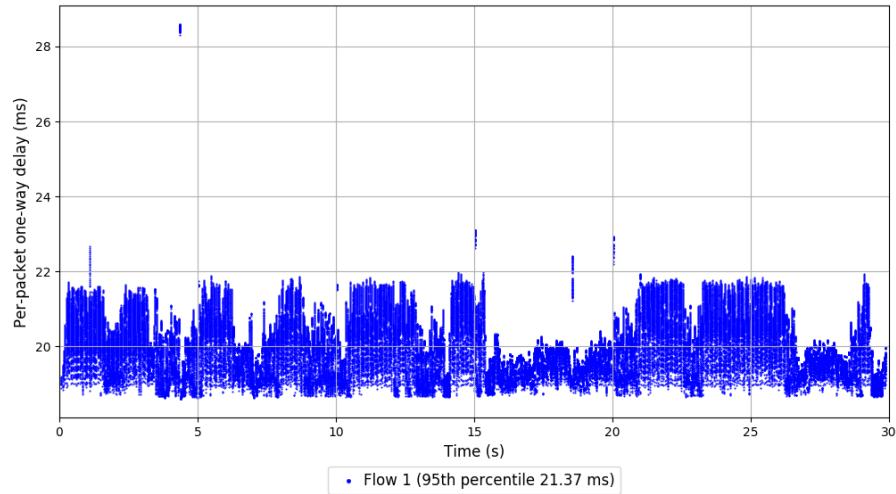
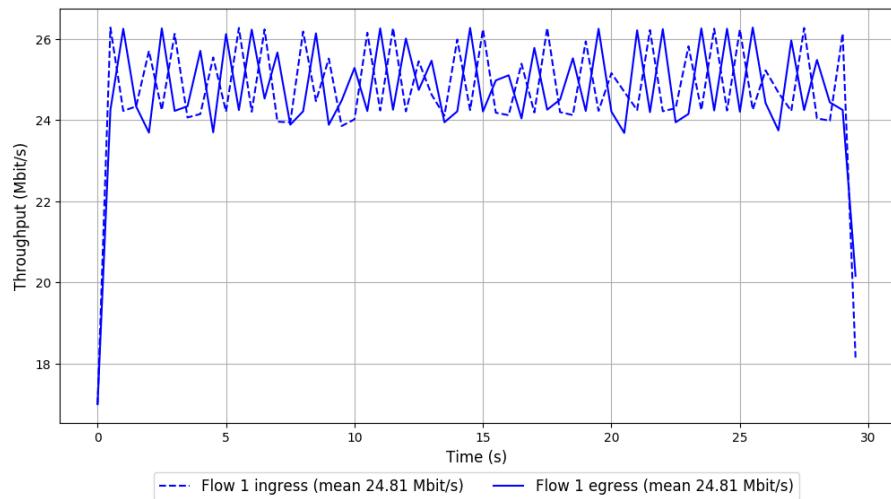


Run 1: Statistics of Sprout

```
Start at: Sun, 06 Aug 2017 08:09:45 +0000
End at: Sun, 06 Aug 2017 08:10:15 +0000
Local clock offset: 1.144 ms
Remote clock offset: -1.965 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.81 Mbit/s
95th percentile per-packet one-way delay: 21.371 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.81 Mbit/s
95th percentile per-packet one-way delay: 21.371 ms
Loss rate: 0.00%
```

## Run 1: Report of Sprout — Data Link

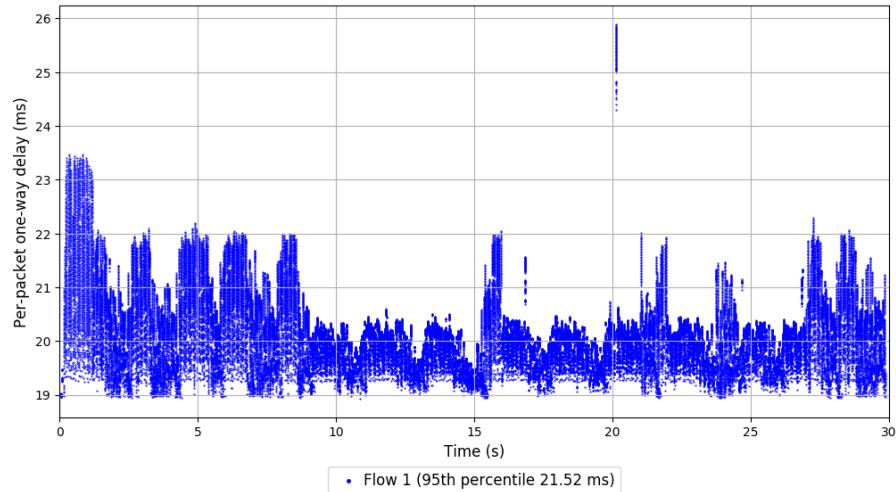
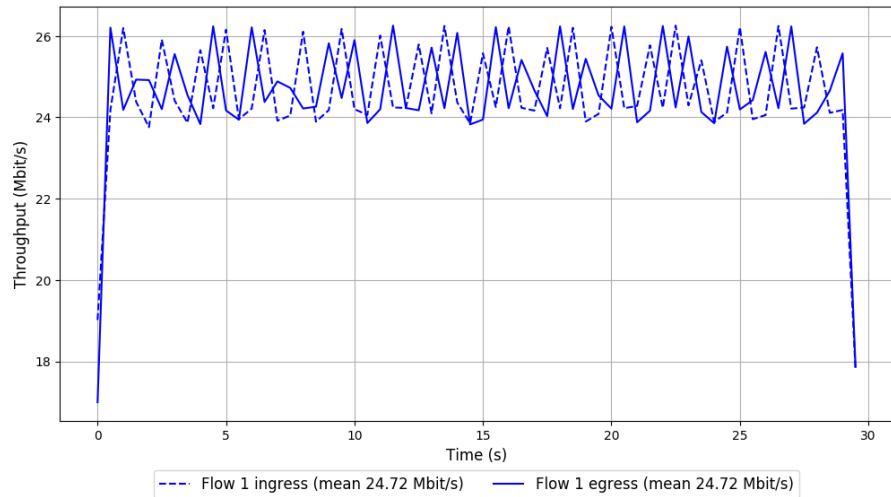


Run 2: Statistics of Sprout

```
Start at: Sun, 06 Aug 2017 08:30:25 +0000
End at: Sun, 06 Aug 2017 08:30:55 +0000
Local clock offset: 1.15 ms
Remote clock offset: -1.847 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.72 Mbit/s
95th percentile per-packet one-way delay: 21.516 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.72 Mbit/s
95th percentile per-packet one-way delay: 21.516 ms
Loss rate: 0.00%
```

## Run 2: Report of Sprout — Data Link

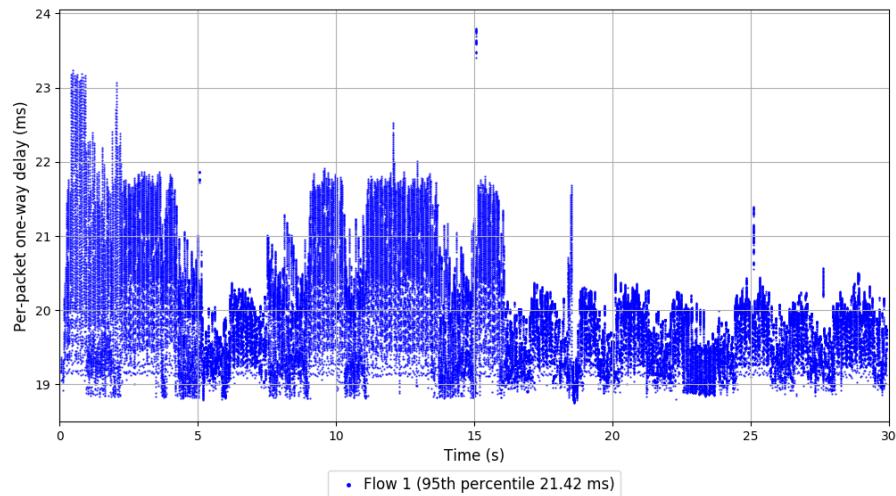
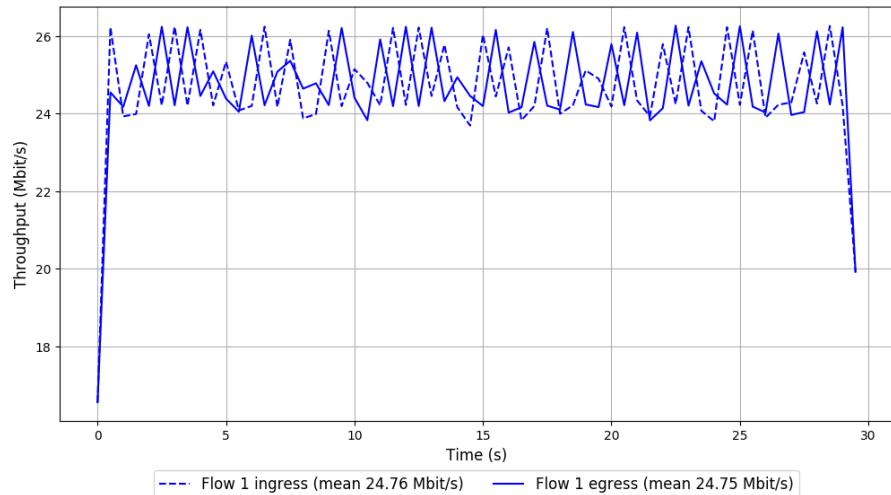


Run 3: Statistics of Sprout

```
Start at: Sun, 06 Aug 2017 08:51:10 +0000
End at: Sun, 06 Aug 2017 08:51:40 +0000
Local clock offset: 1.098 ms
Remote clock offset: -1.444 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.75 Mbit/s
95th percentile per-packet one-way delay: 21.416 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.75 Mbit/s
95th percentile per-packet one-way delay: 21.416 ms
Loss rate: 0.00%
```

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



Run 1: Statistics of TaoVA-100x

Start at: Sun, 06 Aug 2017 08:16:26 +0000

End at: Sun, 06 Aug 2017 08:16:56 +0000

Local clock offset: 1.172 ms

Remote clock offset: -1.889 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:55:58 +0000

# Datalink statistics

-- Total of 1 flow:

Average throughput: 253.69 Mbit/s

95th percentile per-packet one-way delay: 19.000 ms

Loss rate: 0.01%

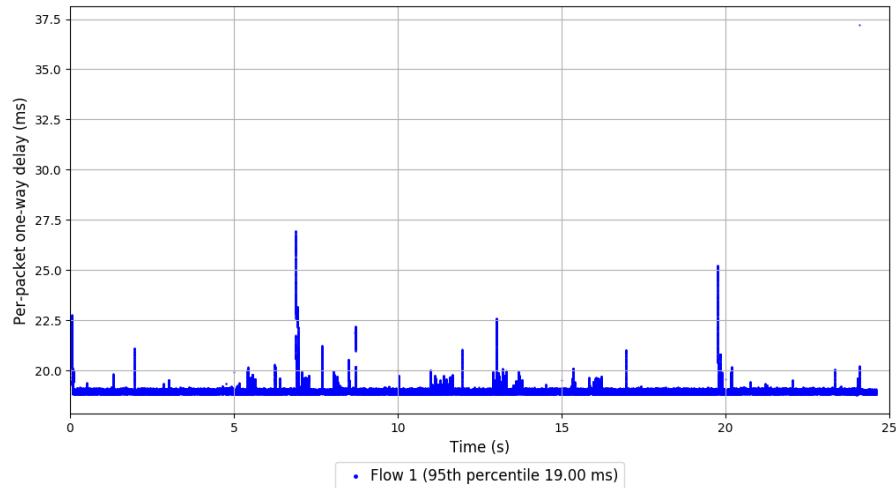
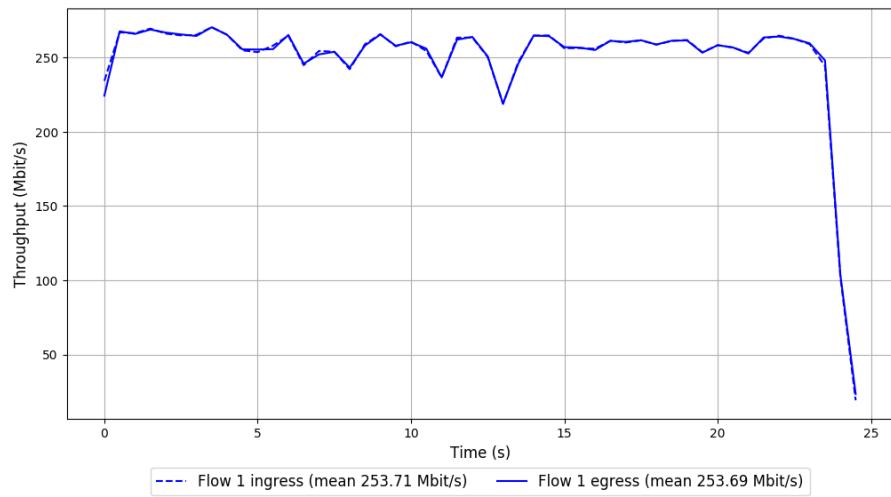
-- Flow 1:

Average throughput: 253.69 Mbit/s

95th percentile per-packet one-way delay: 19.000 ms

Loss rate: 0.01%

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



Run 2: Statistics of TaoVA-100x

Start at: Sun, 06 Aug 2017 08:37:11 +0000

End at: Sun, 06 Aug 2017 08:37:41 +0000

Local clock offset: 1.143 ms

Remote clock offset: -1.822 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:56:19 +0000

# Datalink statistics

-- Total of 1 flow:

Average throughput: 249.13 Mbit/s

95th percentile per-packet one-way delay: 18.830 ms

Loss rate: 0.00%

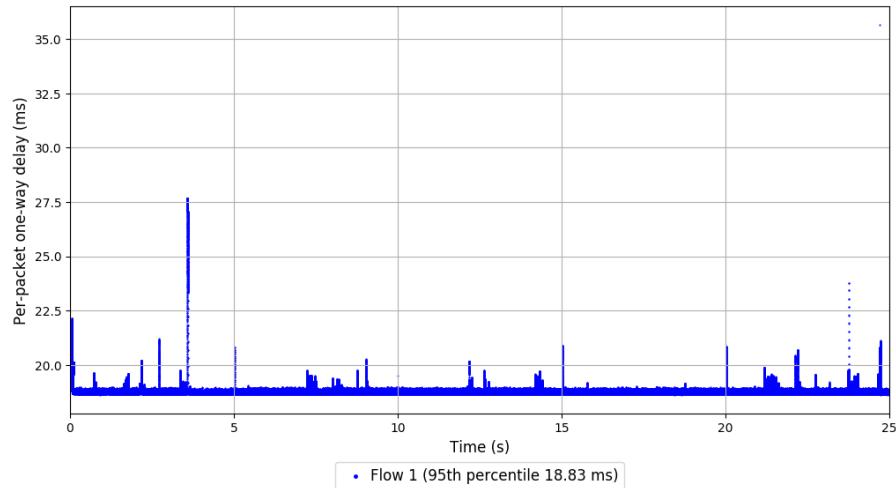
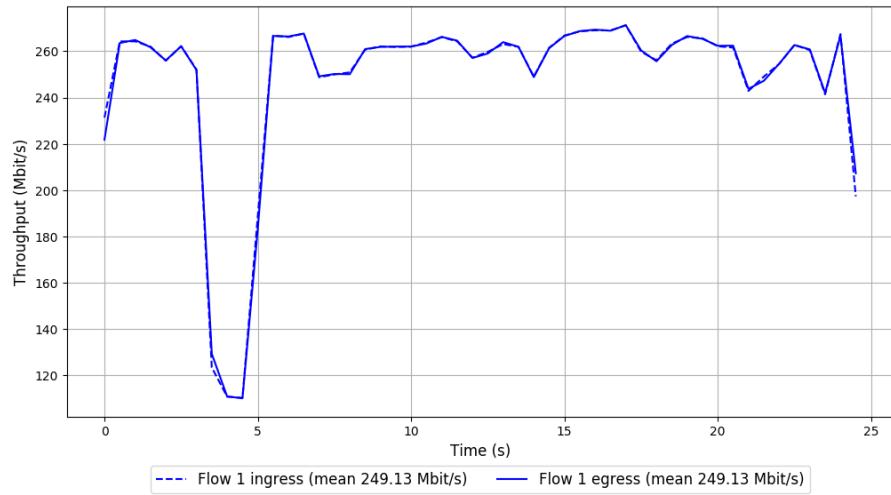
-- Flow 1:

Average throughput: 249.13 Mbit/s

95th percentile per-packet one-way delay: 18.830 ms

Loss rate: 0.00%

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

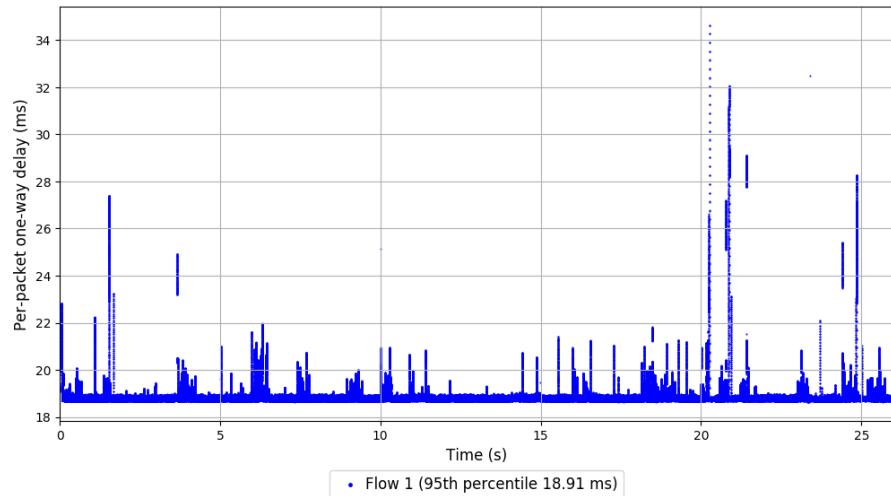
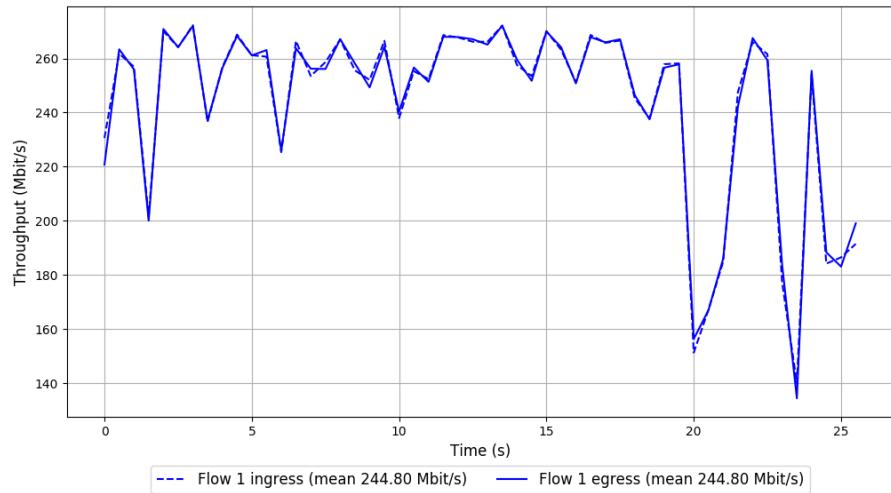


Run 3: Statistics of TaoVA-100x

```
Start at: Sun, 06 Aug 2017 08:57:51 +0000
End at: Sun, 06 Aug 2017 08:58:21 +0000
Local clock offset: 1.063 ms
Remote clock offset: -1.628 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:56:48 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 244.80 Mbit/s
95th percentile per-packet one-way delay: 18.912 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 244.80 Mbit/s
95th percentile per-packet one-way delay: 18.912 ms
Loss rate: 0.00%
```

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

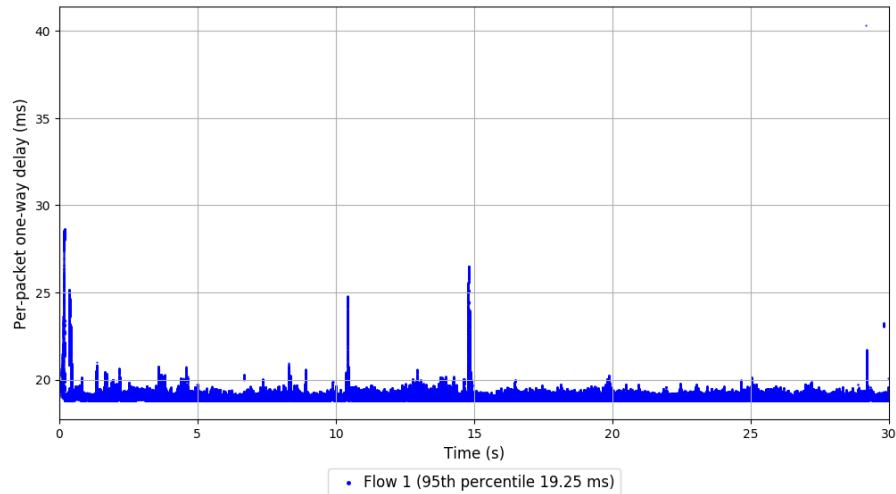
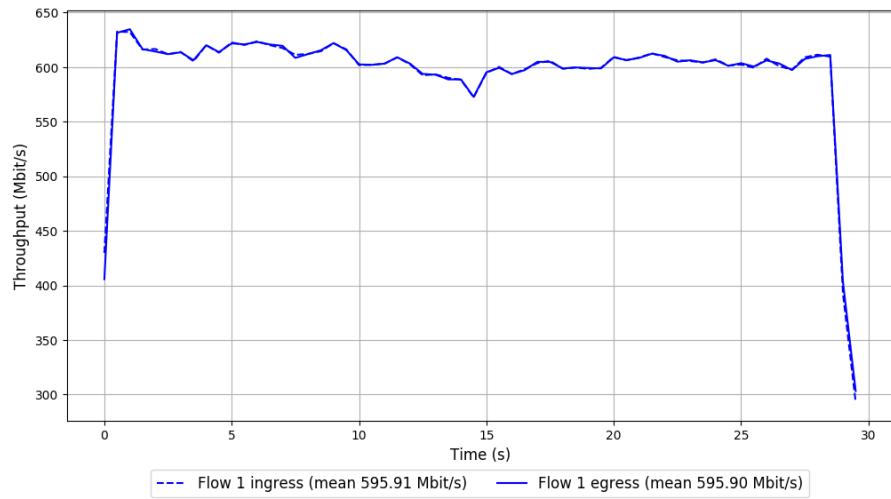


Run 1: Statistics of TCP Vegas

```
Start at: Sun, 06 Aug 2017 08:08:07 +0000
End at: Sun, 06 Aug 2017 08:08:37 +0000
Local clock offset: 1.177 ms
Remote clock offset: -1.993 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:57:35 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.90 Mbit/s
95th percentile per-packet one-way delay: 19.245 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 595.90 Mbit/s
95th percentile per-packet one-way delay: 19.245 ms
Loss rate: 0.00%
```

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

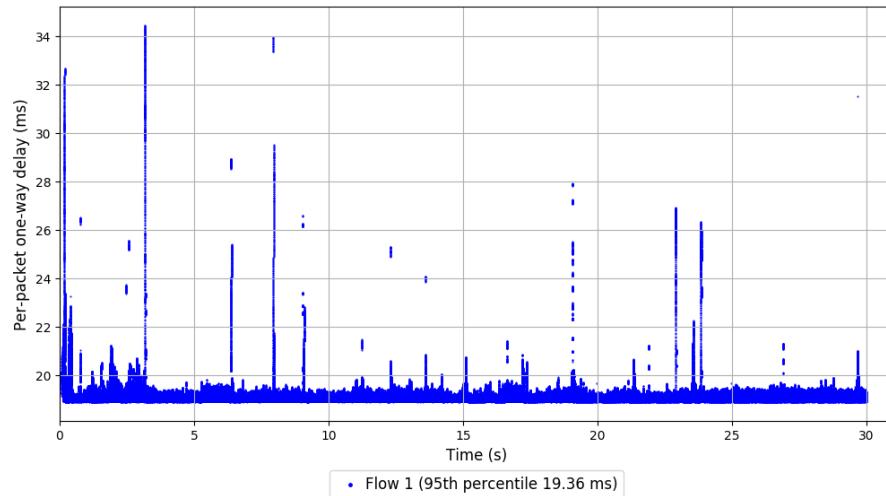
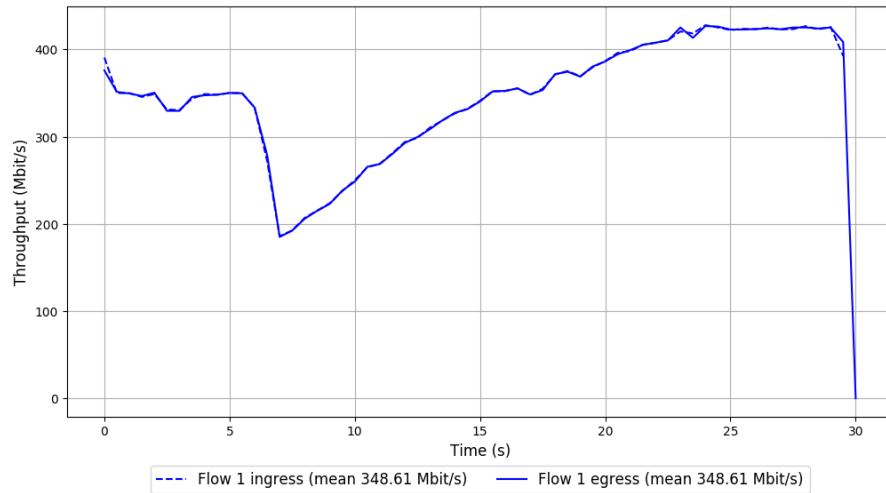


Run 2: Statistics of TCP Vegas

```
Start at: Sun, 06 Aug 2017 08:28:59 +0000
End at: Sun, 06 Aug 2017 08:29:29 +0000
Local clock offset: 1.141 ms
Remote clock offset: -1.845 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:57:38 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 348.61 Mbit/s
95th percentile per-packet one-way delay: 19.363 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 348.61 Mbit/s
95th percentile per-packet one-way delay: 19.363 ms
Loss rate: 0.00%
```

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

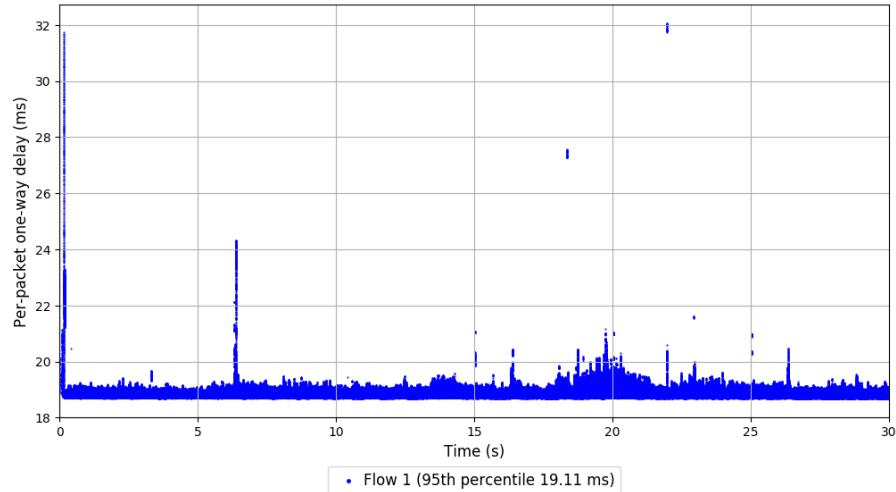
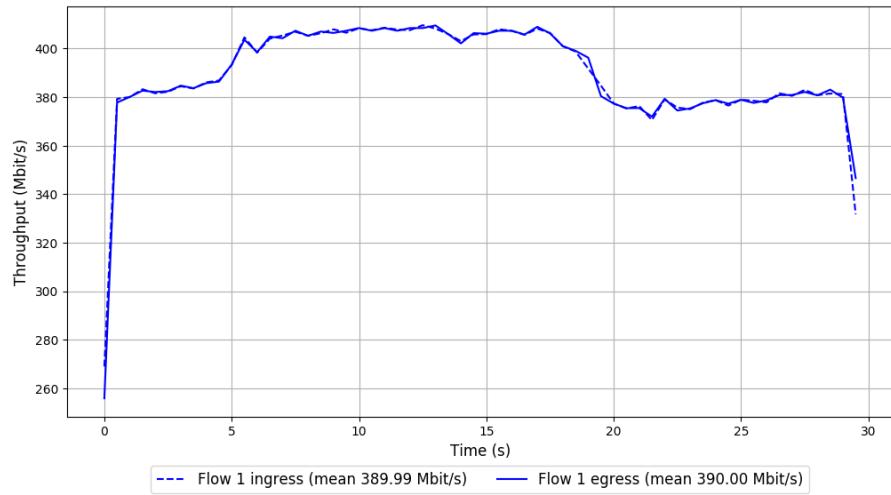


Run 3: Statistics of TCP Vegas

```
Start at: Sun, 06 Aug 2017 08:49:41 +0000
End at: Sun, 06 Aug 2017 08:50:11 +0000
Local clock offset: 1.181 ms
Remote clock offset: -1.444 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:19 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 390.00 Mbit/s
95th percentile per-packet one-way delay: 19.107 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 390.00 Mbit/s
95th percentile per-packet one-way delay: 19.107 ms
Loss rate: 0.00%
```

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

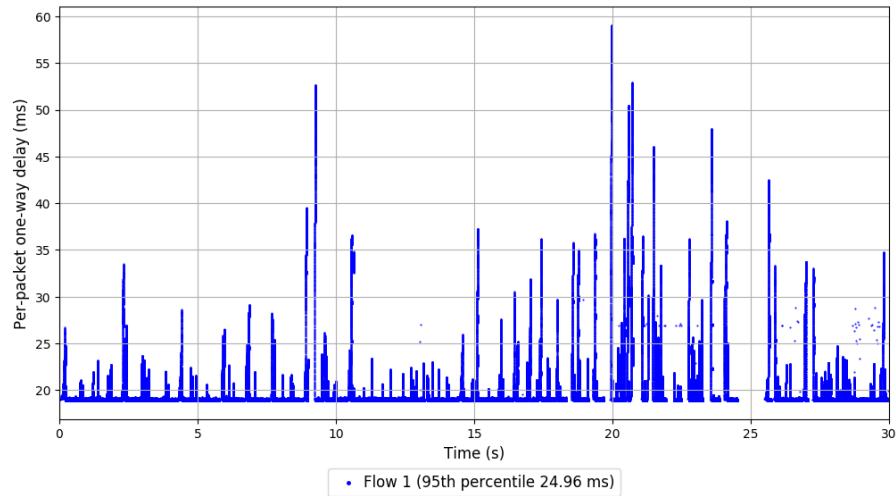
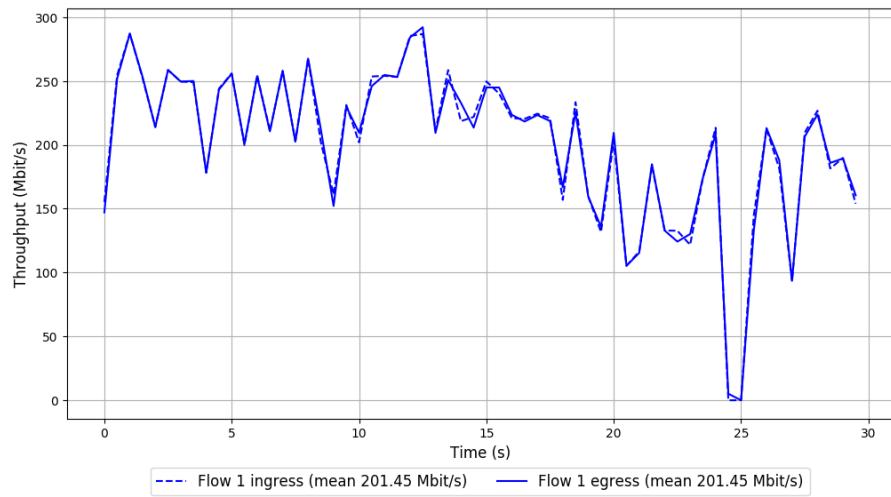


Run 1: Statistics of Verus

```
Start at: Sun, 06 Aug 2017 08:20:29 +0000
End at: Sun, 06 Aug 2017 08:20:59 +0000
Local clock offset: 1.197 ms
Remote clock offset: -1.838 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:19 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 201.45 Mbit/s
95th percentile per-packet one-way delay: 24.964 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 201.45 Mbit/s
95th percentile per-packet one-way delay: 24.964 ms
Loss rate: 0.00%
```

Run 1: Report of Verus — Data Link

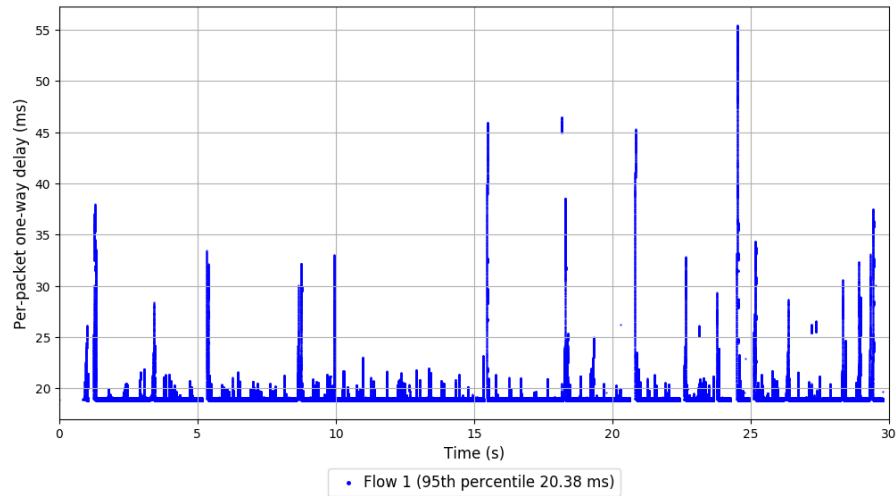
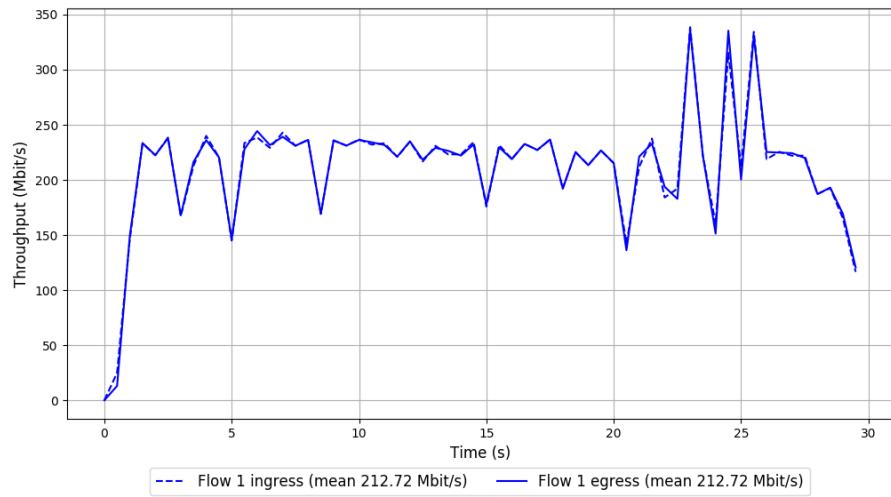


Run 2: Statistics of Verus

```
Start at: Sun, 06 Aug 2017 08:41:12 +0000
End at: Sun, 06 Aug 2017 08:41:42 +0000
Local clock offset: 1.21 ms
Remote clock offset: -1.722 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 212.72 Mbit/s
95th percentile per-packet one-way delay: 20.377 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 212.72 Mbit/s
95th percentile per-packet one-way delay: 20.377 ms
Loss rate: 0.00%
```

## Run 2: Report of Verus — Data Link

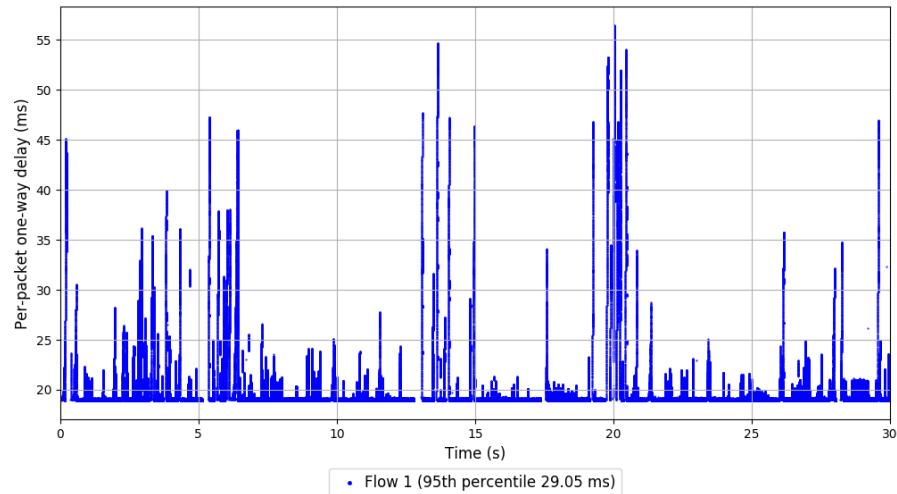
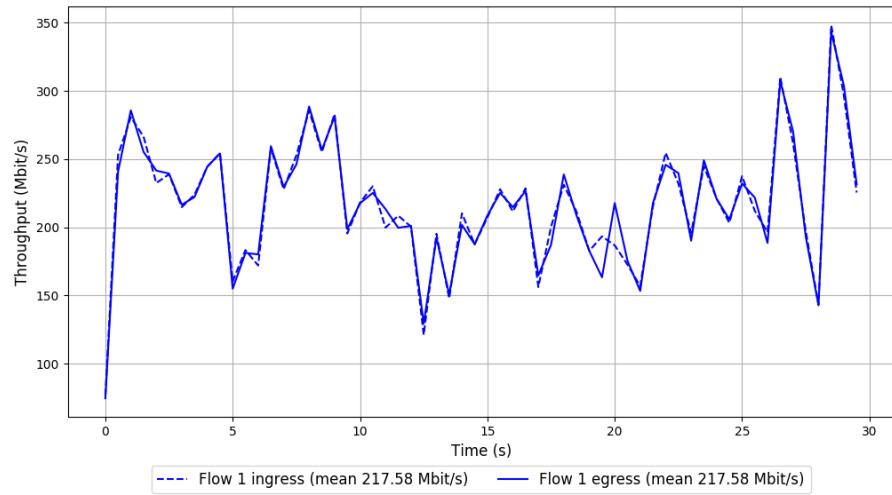


Run 3: Statistics of Verus

```
Start at: Sun, 06 Aug 2017 09:01:55 +0000
End at: Sun, 06 Aug 2017 09:02:25 +0000
Local clock offset: 1.152 ms
Remote clock offset: -1.598 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 217.58 Mbit/s
95th percentile per-packet one-way delay: 29.050 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 217.58 Mbit/s
95th percentile per-packet one-way delay: 29.050 ms
Loss rate: 0.00%
```

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

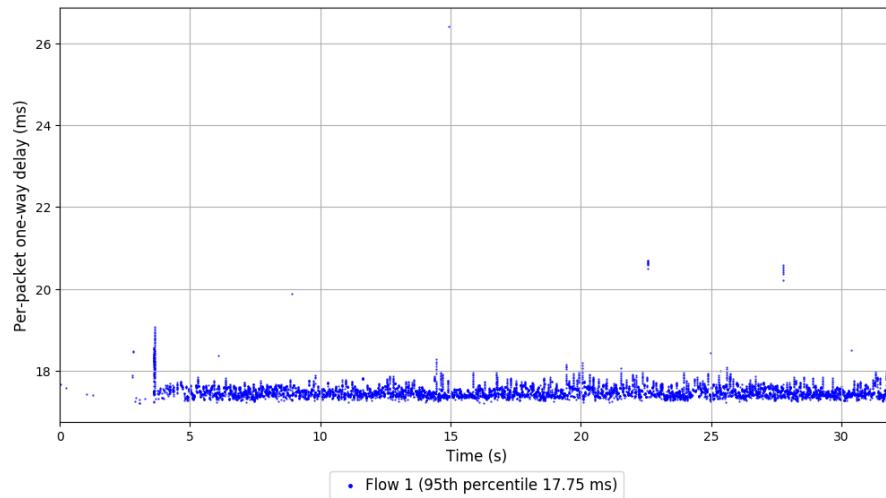
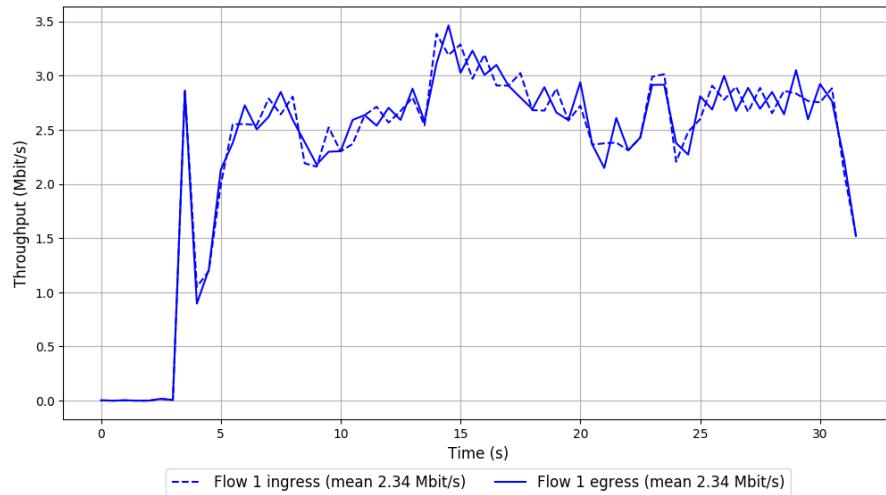


```
Run 1: Statistics of WebRTC media

Start at: Sun, 06 Aug 2017 08:15:16 +0000
End at: Sun, 06 Aug 2017 08:15:46 +0000
Local clock offset: 1.102 ms
Remote clock offset: -1.897 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 17.750 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 17.750 ms
Loss rate: 0.00%
```

### Run 1: Report of WebRTC media — Data Link

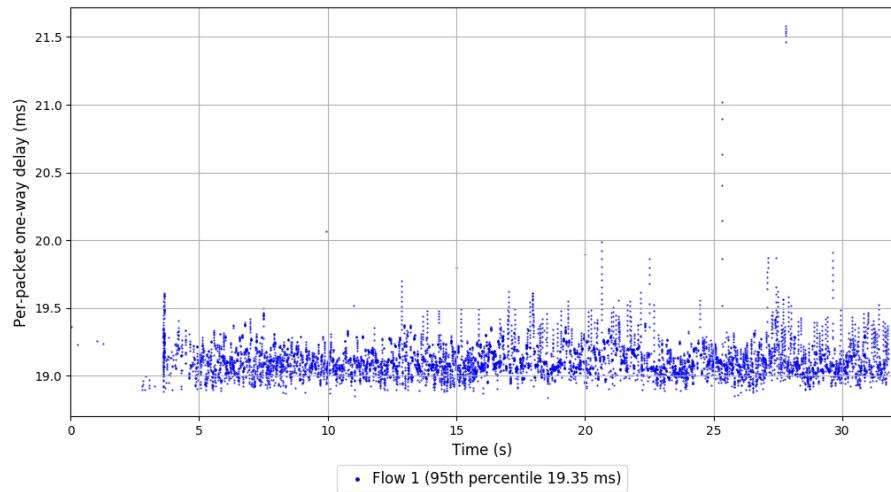
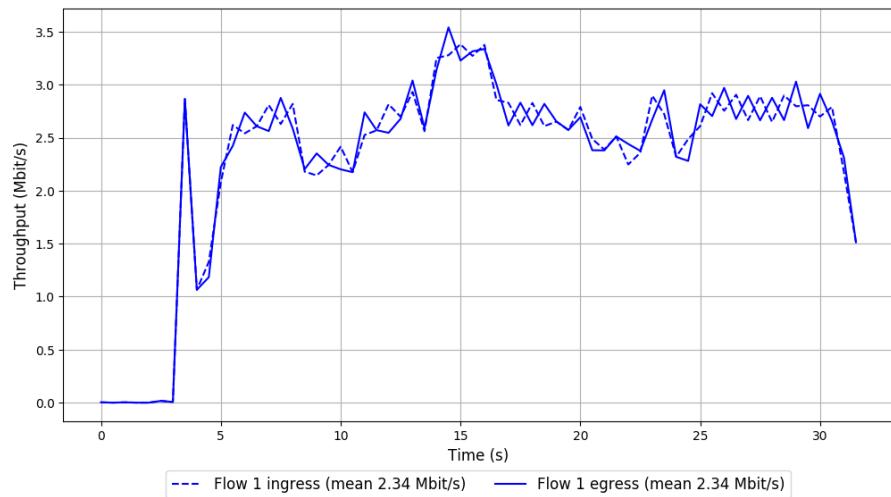


Run 2: Statistics of WebRTC media

```
Start at: Sun, 06 Aug 2017 08:36:00 +0000
End at: Sun, 06 Aug 2017 08:36:30 +0000
Local clock offset: 1.136 ms
Remote clock offset: -1.855 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 19.354 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 19.354 ms
Loss rate: 0.00%
```

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



```
Run 3: Statistics of WebRTC media

Start at: Sun, 06 Aug 2017 08:56:40 +0000
End at: Sun, 06 Aug 2017 08:57:10 +0000
Local clock offset: 1.162 ms
Remote clock offset: -1.522 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:58:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 19.371 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 19.371 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

