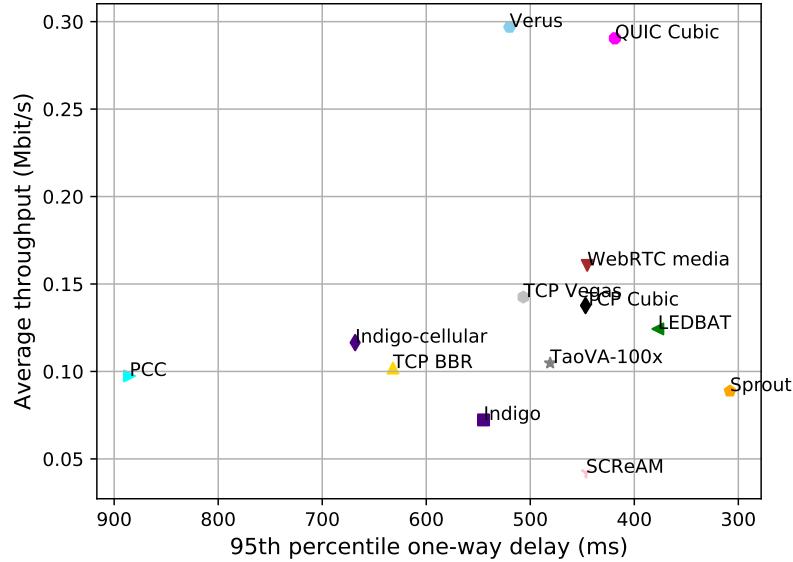


## Pantheon Report

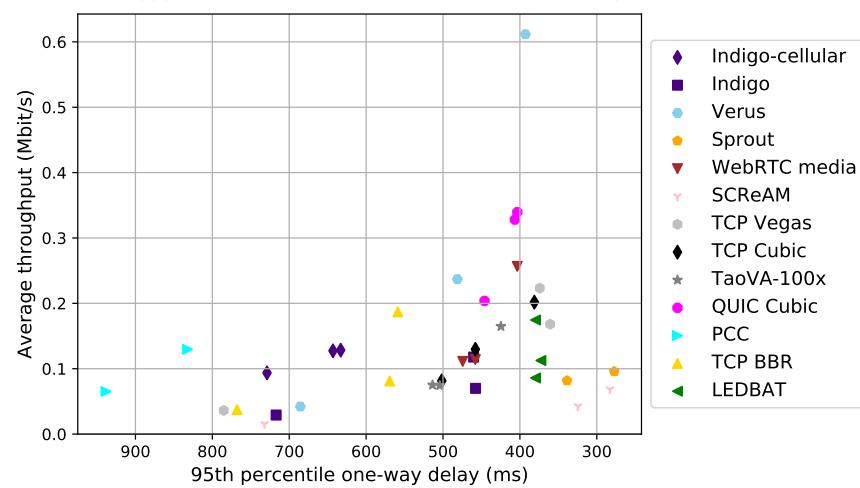
Generated at 2017-09-22 09:18:53 (UTC).  
Data path: India ppp0 (*remote*) → AWS India 1 Ethernet (*local*).  
Repeated the test of 13 congestion control schemes 3 times.  
Each test lasted for 30 seconds running 1 flow.  
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).  
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo\_fast**).  
NTP offsets were measured against **nets.org.sg** and have been applied to correct the timestamps in logs.

Git summary:  
branch: **indigos** @ 46c7c812d4acb71eea4f5fb0b03b3657cea3062f  
third\_party/calibrated\_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50  
M datagrump/sender.cc  
third\_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366  
third\_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55  
third\_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2  
third\_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89  
third\_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c  
third\_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5  
third\_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fabb936fdca204b80db  
third\_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda  
third\_party/koho\_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681  
M datagrump/sender.cc  
third\_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf  
third\_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4  
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 @ f1a14bffe749737437f61b1eaeb30b267cde681  
third\_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce  
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 India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme  
(mean of all runs by scheme)



test from India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme



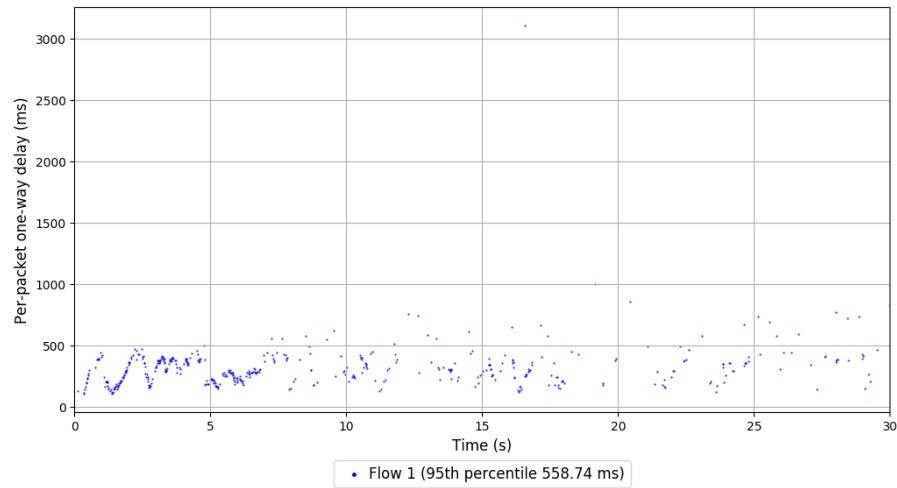
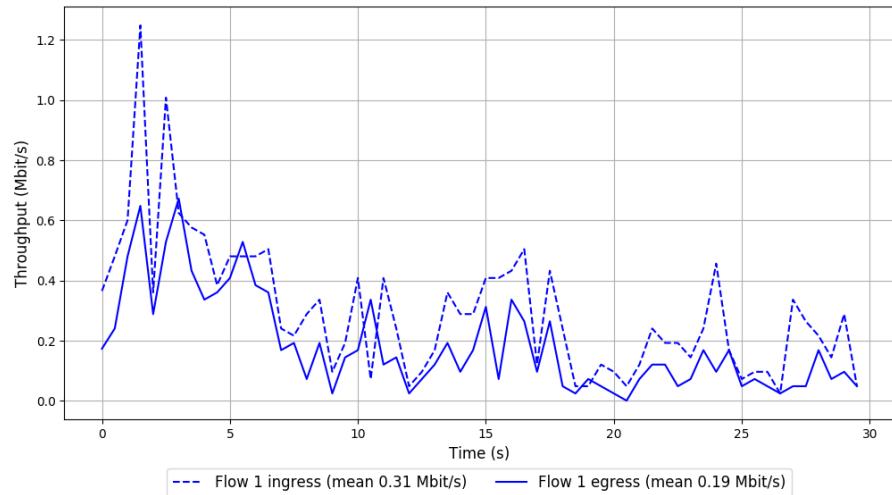
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.10	631.98	32.14
TCP Cubic	3	0.14	446.88	15.11
LEDBAT	3	0.12	377.38	9.65
PCC	2	0.10	885.20	99.53
QUIC Cubic	3	0.29	418.62	22.14
SCReAM	3	0.04	446.47	11.84
WebRTC media	3	0.16	445.26	34.44
Sprout	2	0.09	308.05	8.69
TaoVA-100x	3	0.10	480.87	89.87
TCP Vegas	3	0.14	506.65	14.00
Verus	3	0.30	519.88	37.29
Indigo	3	0.07	544.95	60.30
Indigo-cellular	3	0.12	668.34	46.42

Run 1: Statistics of TCP BBR

```
Start at: 2017-09-22 08:03:33
End at: 2017-09-22 08:04:03
Local clock offset: 1.067 ms
Remote clock offset: -3.411 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 558.741 ms
Loss rate: 38.40%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 558.741 ms
Loss rate: 38.40%
```

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

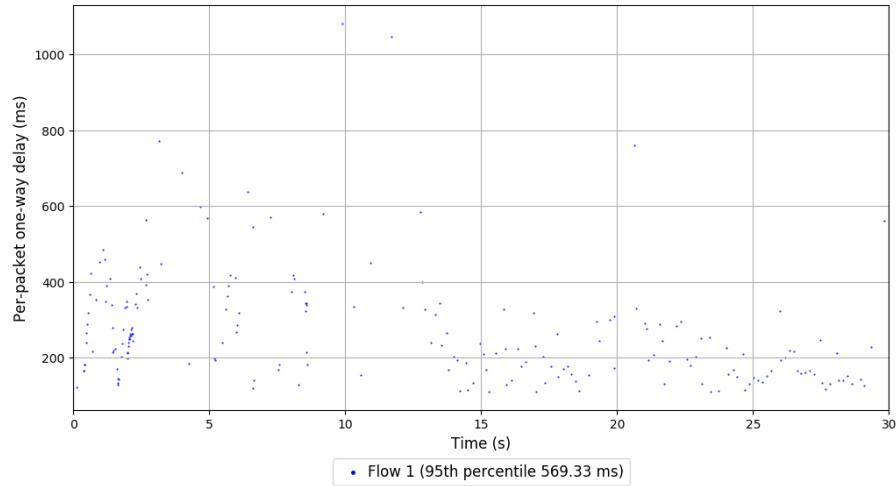
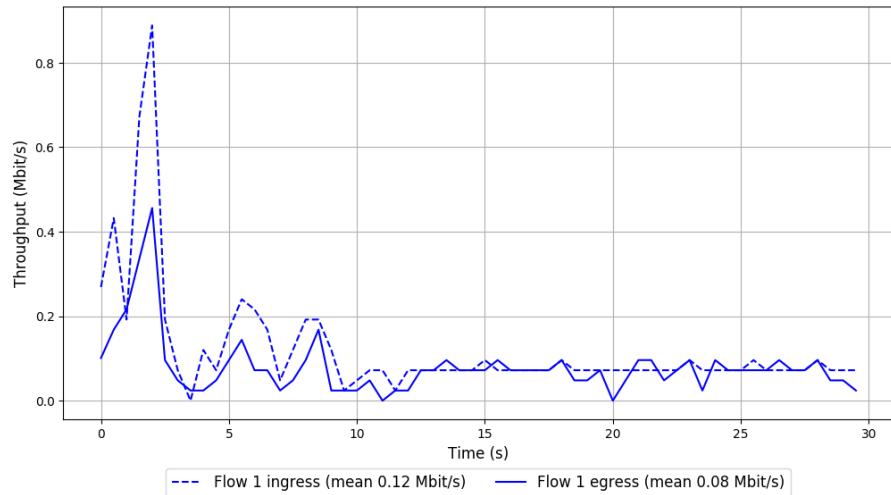


Run 2: Statistics of TCP BBR

```
Start at: 2017-09-22 08:17:41
End at: 2017-09-22 08:18:11
Local clock offset: 0.351 ms
Remote clock offset: -4.003 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 569.332 ms
Loss rate: 34.08%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 569.332 ms
Loss rate: 34.08%
```

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

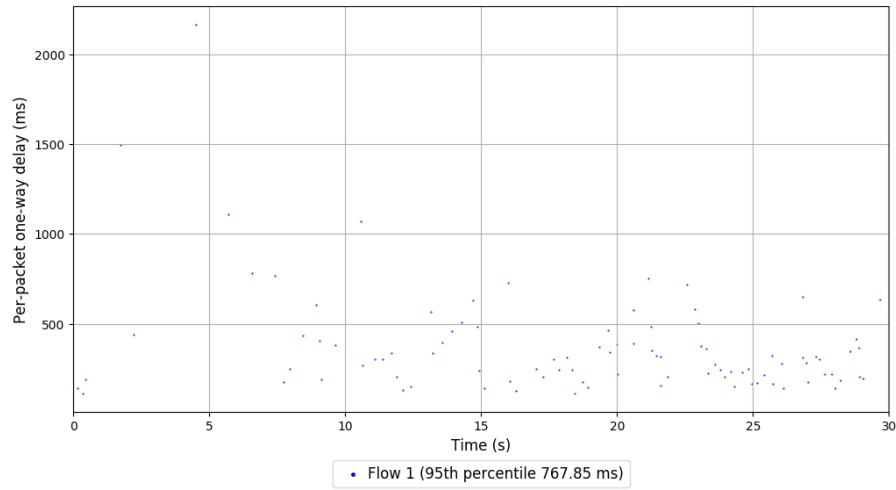
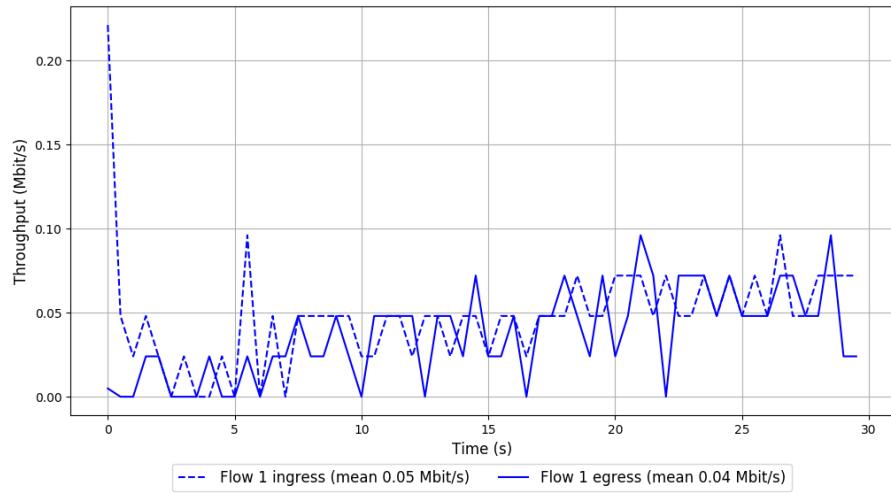


Run 3: Statistics of TCP BBR

```
Start at: 2017-09-22 08:31:58
End at: 2017-09-22 08:32:28
Local clock offset: -0.319 ms
Remote clock offset: 2.422 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 767.854 ms
Loss rate: 23.93%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 767.854 ms
Loss rate: 23.93%
```

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

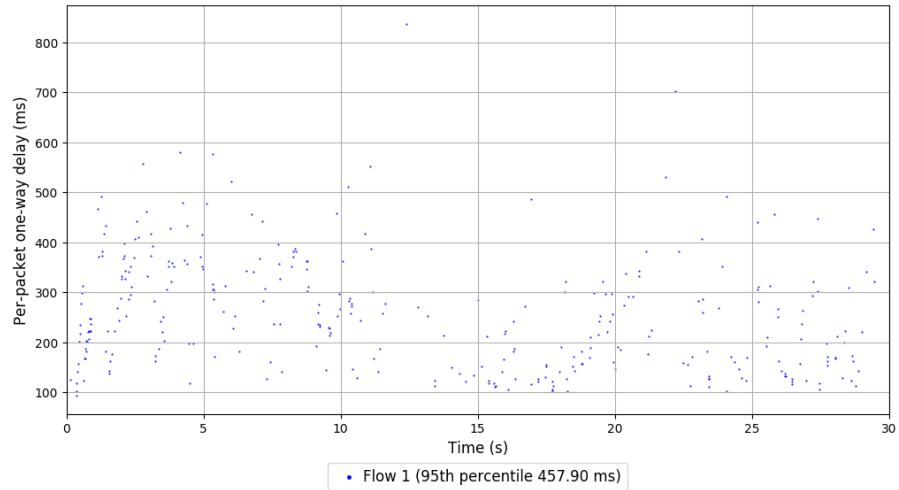
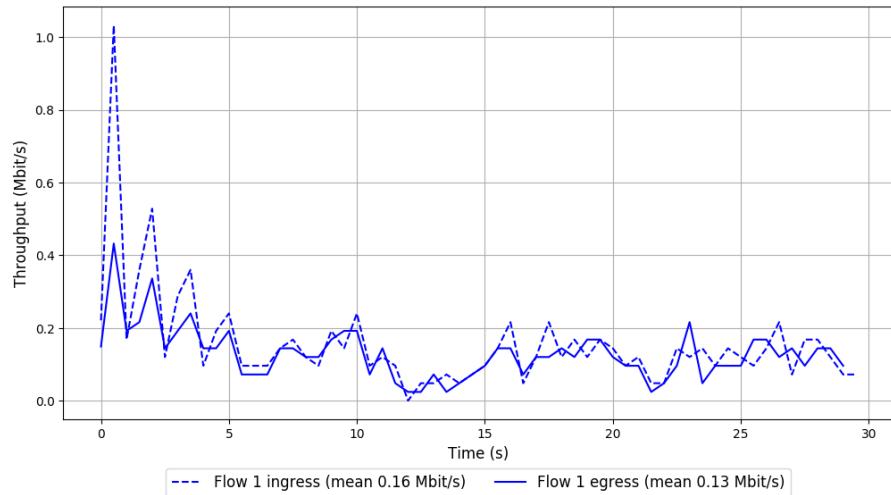


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2017-09-22 08:02:27
End at: 2017-09-22 08:02:57
Local clock offset: -2.636 ms
Remote clock offset: -0.903 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 457.904 ms
Loss rate: 18.71%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 457.904 ms
Loss rate: 18.71%
```

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

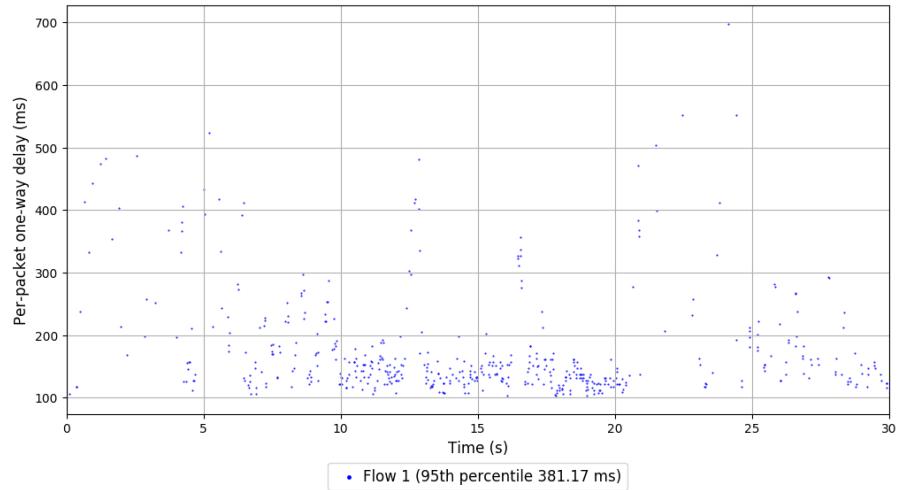
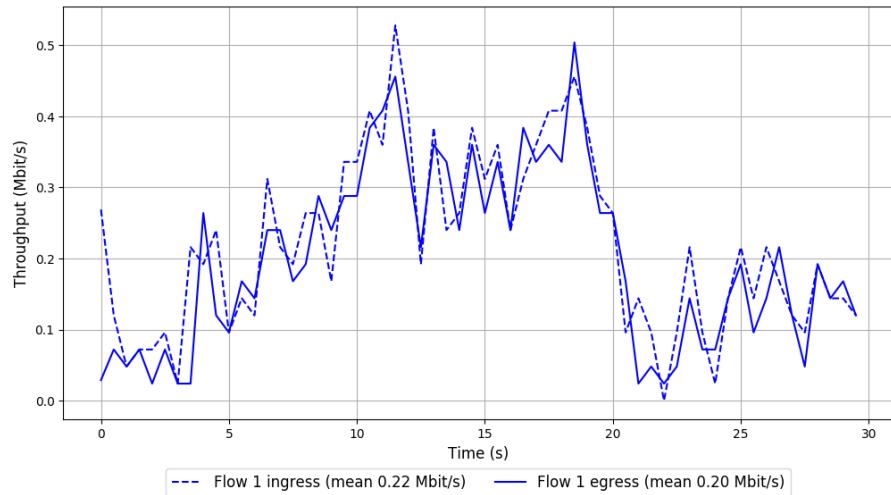


Run 2: Statistics of TCP Cubic

```
Start at: 2017-09-22 08:16:36
End at: 2017-09-22 08:17:06
Local clock offset: 0.925 ms
Remote clock offset: -2.001 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 381.172 ms
Loss rate: 9.07%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 381.172 ms
Loss rate: 9.07%
```

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

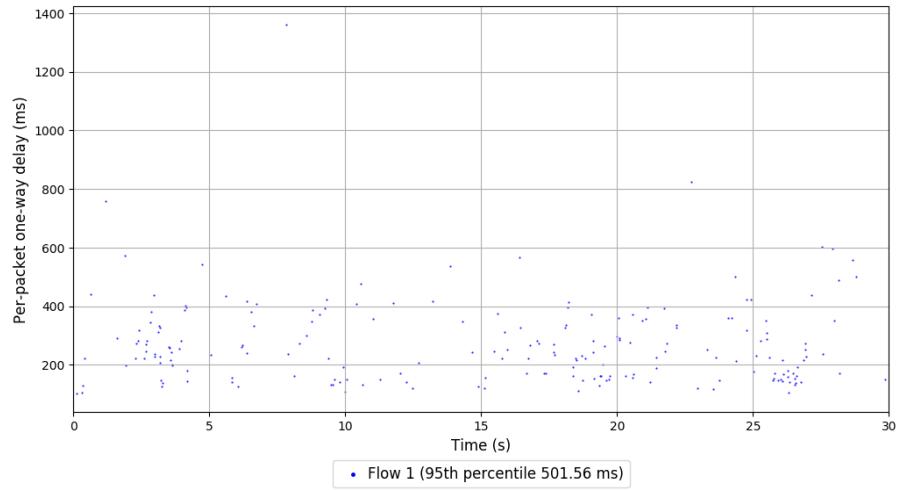
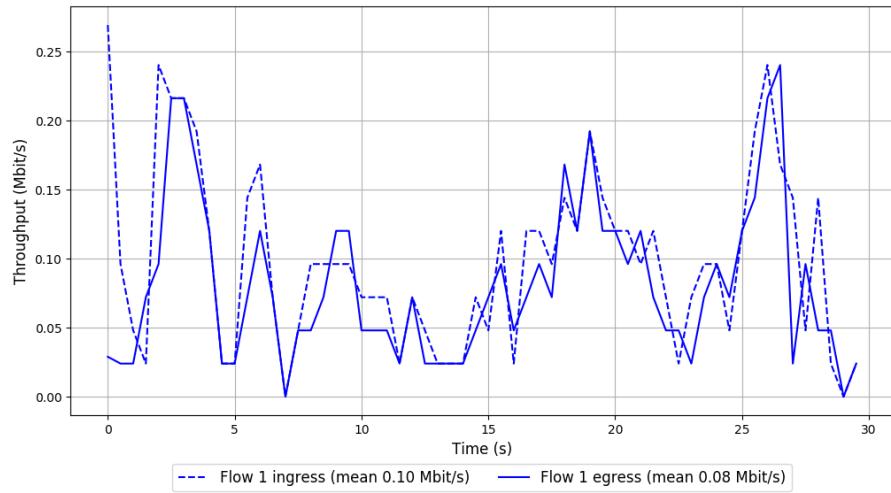


Run 3: Statistics of TCP Cubic

```
Start at: 2017-09-22 08:30:53
End at: 2017-09-22 08:31:23
Local clock offset: 0.318 ms
Remote clock offset: 1.443 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 501.564 ms
Loss rate: 17.54%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 501.564 ms
Loss rate: 17.54%
```

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

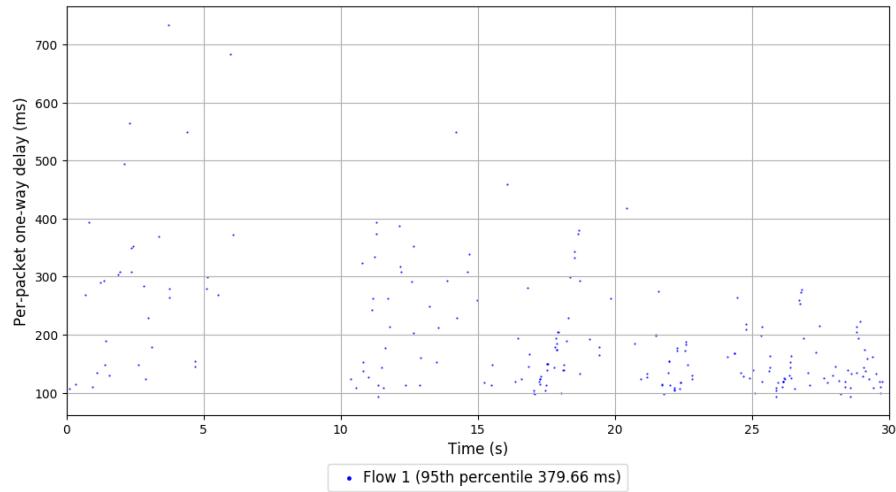
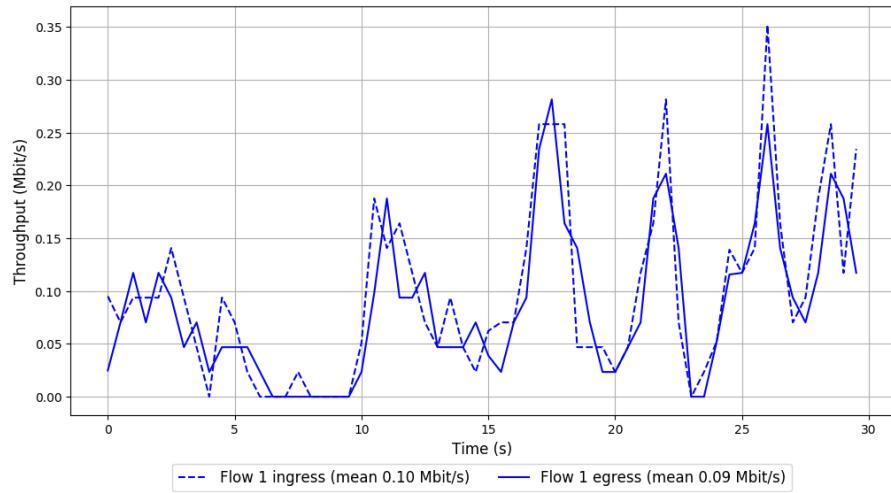


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2017-09-22 07:58:06
End at: 2017-09-22 07:58:36
Local clock offset: -0.648 ms
Remote clock offset: 3.593 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 379.656 ms
Loss rate: 12.14%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 379.656 ms
Loss rate: 12.14%
```

Run 1: Report of LEDBAT — Data Link

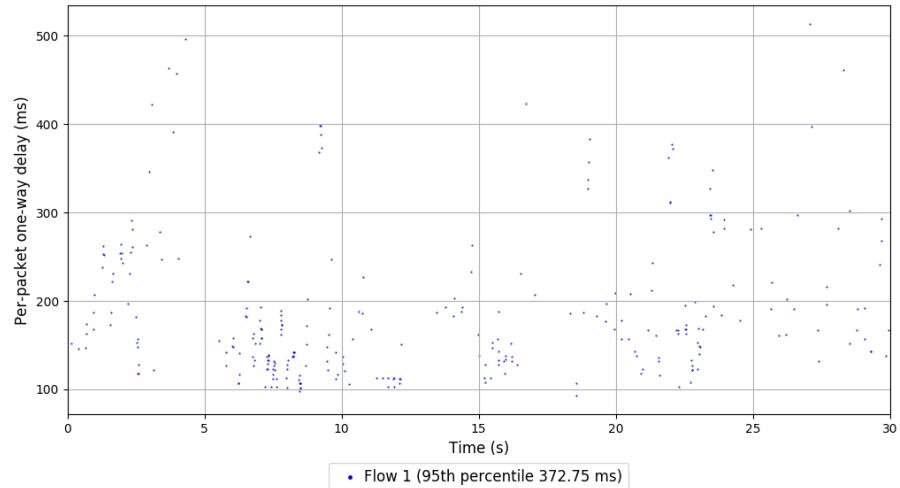
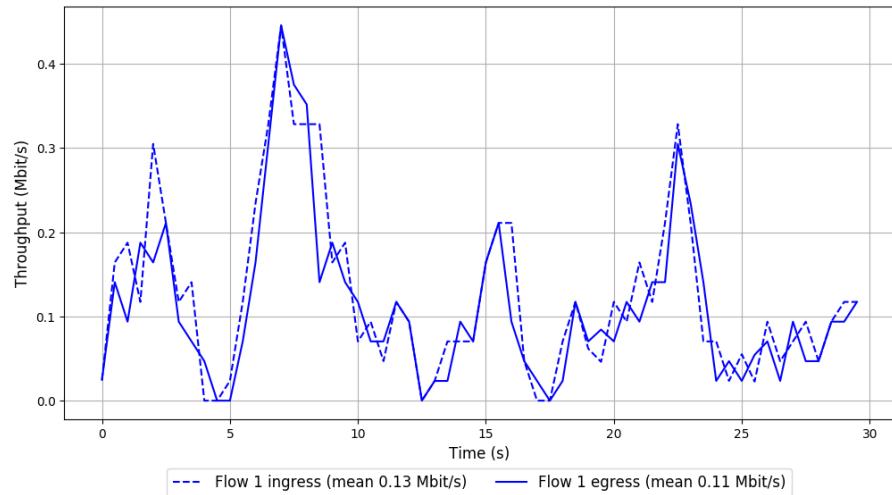


Run 2: Statistics of LEDBAT

```
Start at: 2017-09-22 08:12:15
End at: 2017-09-22 08:12:45
Local clock offset: -2.607 ms
Remote clock offset: 1.427 ms

# Below is generated by plot.py at 2017-09-22 09:18:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 372.748 ms
Loss rate: 10.63%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 372.748 ms
Loss rate: 10.63%
```

## Run 2: Report of LEDBAT — Data Link

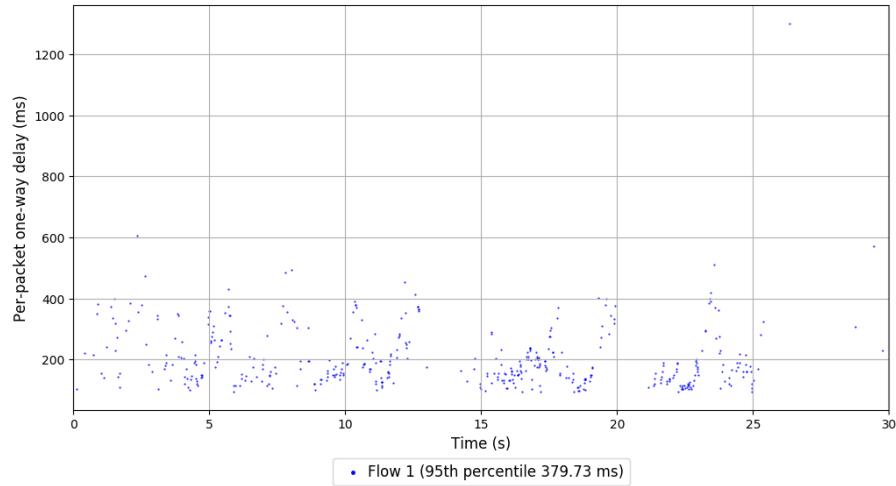
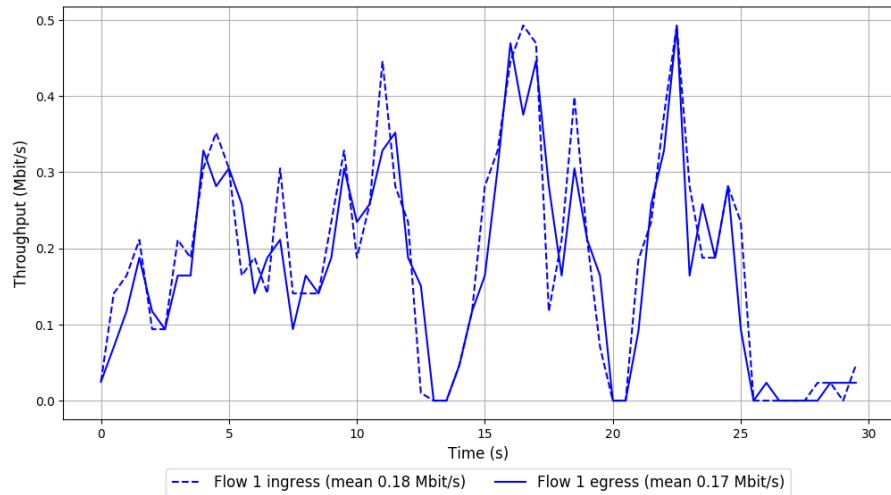


Run 3: Statistics of LEDBAT

```
Start at: 2017-09-22 08:26:33
End at: 2017-09-22 08:27:03
Local clock offset: -0.095 ms
Remote clock offset: 3.693 ms

# Below is generated by plot.py at 2017-09-22 09:18:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 379.733 ms
Loss rate: 6.17%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 379.733 ms
Loss rate: 6.17%
```

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

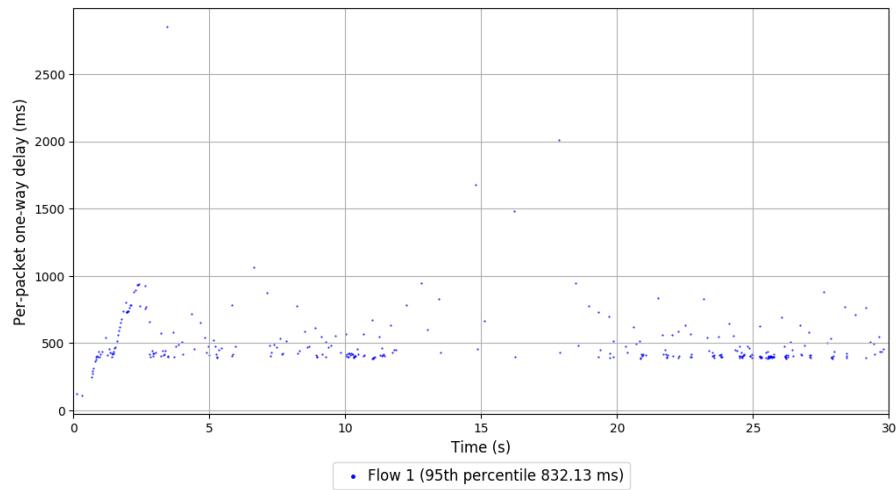
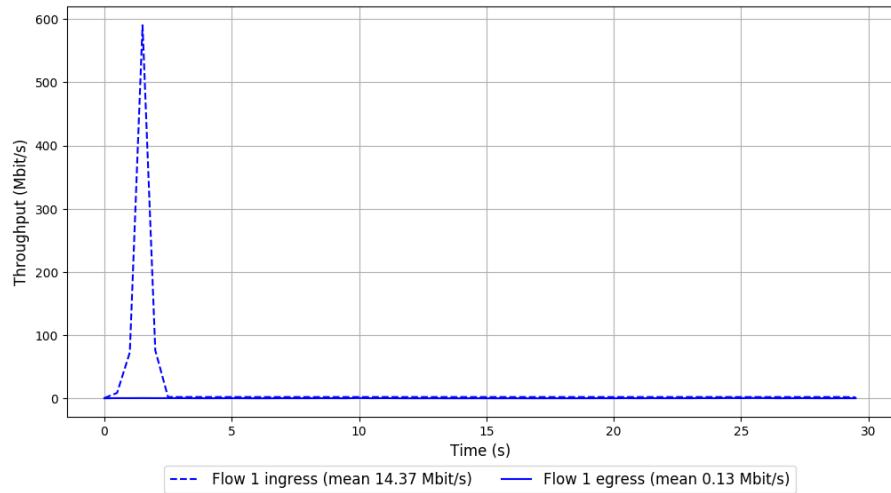


Run 1: Statistics of PCC

```
Start at: 2017-09-22 07:54:49
End at: 2017-09-22 07:55:19
Local clock offset: -1.478 ms
Remote clock offset: -3.505 ms

# Below is generated by plot.py at 2017-09-22 09:18:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 832.126 ms
Loss rate: 99.10%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 832.126 ms
Loss rate: 99.10%
```

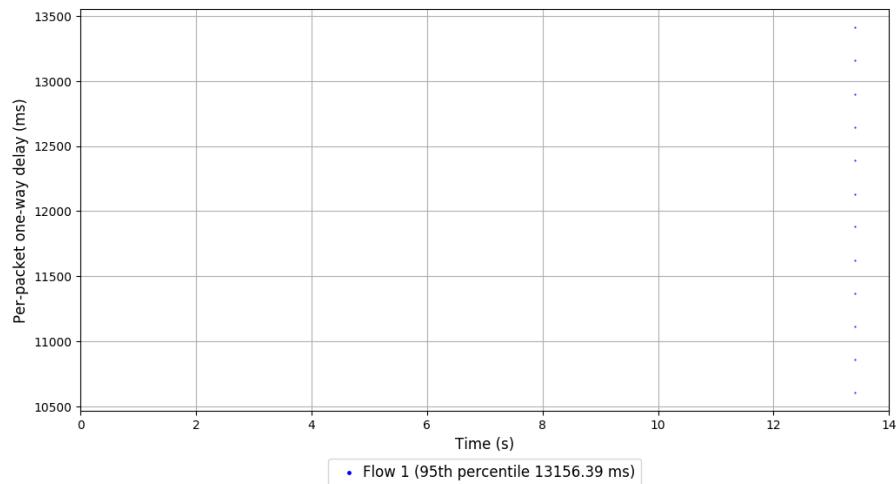
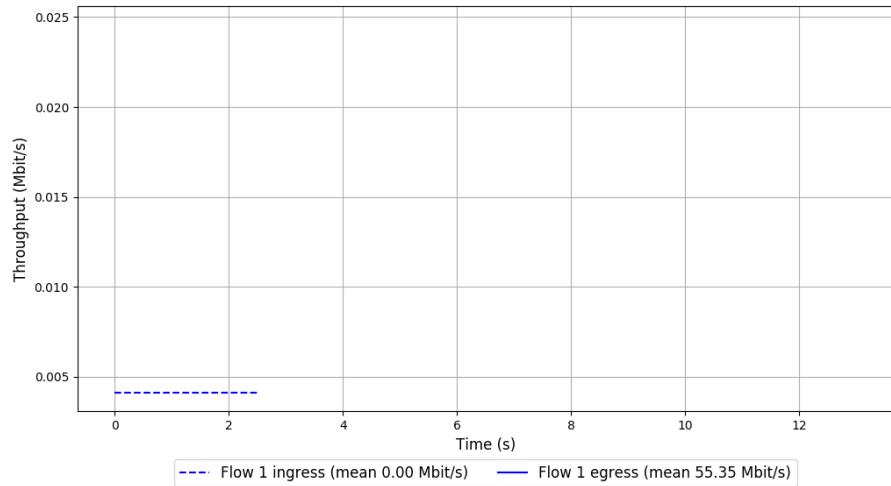
### Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

Start at: 2017-09-22 08:08:59  
End at: 2017-09-22 08:09:29  
Local clock offset: -1.776 ms  
Remote clock offset: -0.813 ms

## Run 2: Report of PCC — Data Link

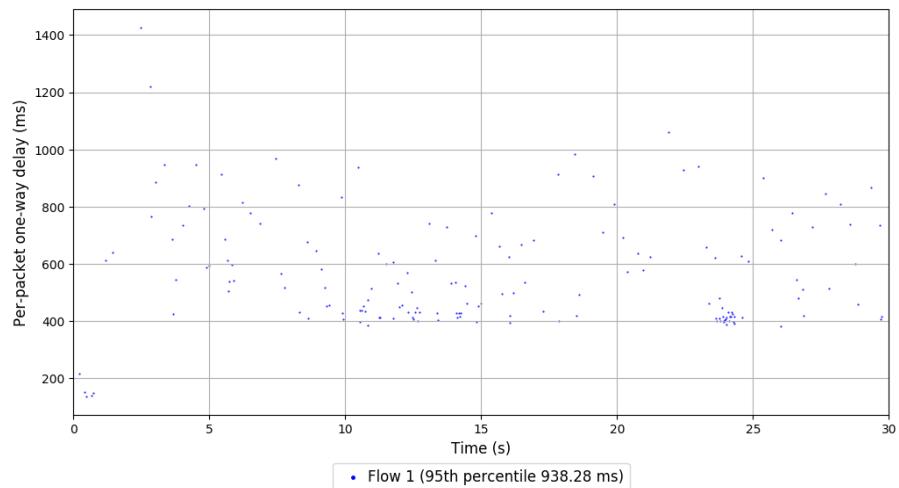
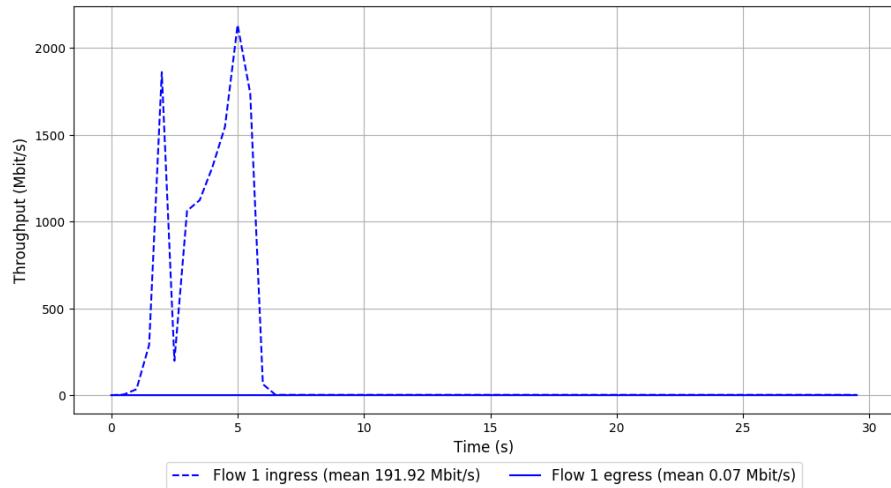


Run 3: Statistics of PCC

```
Start at: 2017-09-22 08:23:07
End at: 2017-09-22 08:23:37
Local clock offset: 0.305 ms
Remote clock offset: 3.656 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 938.276 ms
Loss rate: 99.97%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 938.276 ms
Loss rate: 99.97%
```

### Run 3: Report of PCC — Data Link

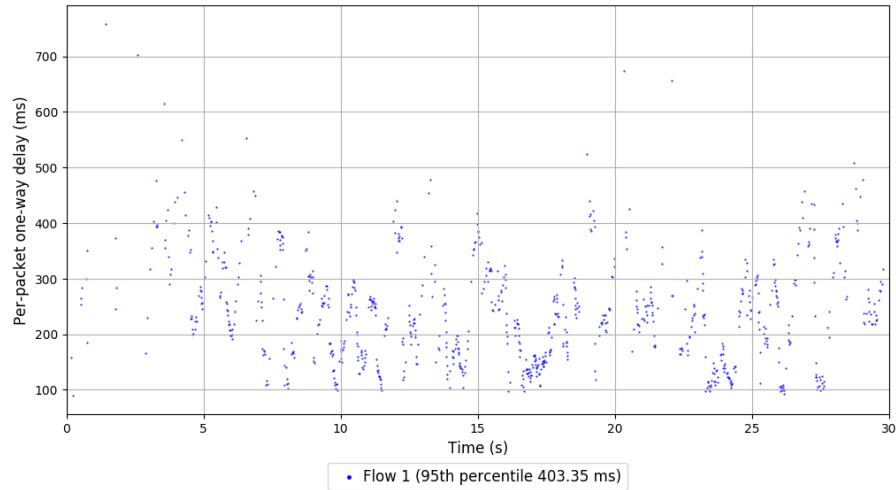
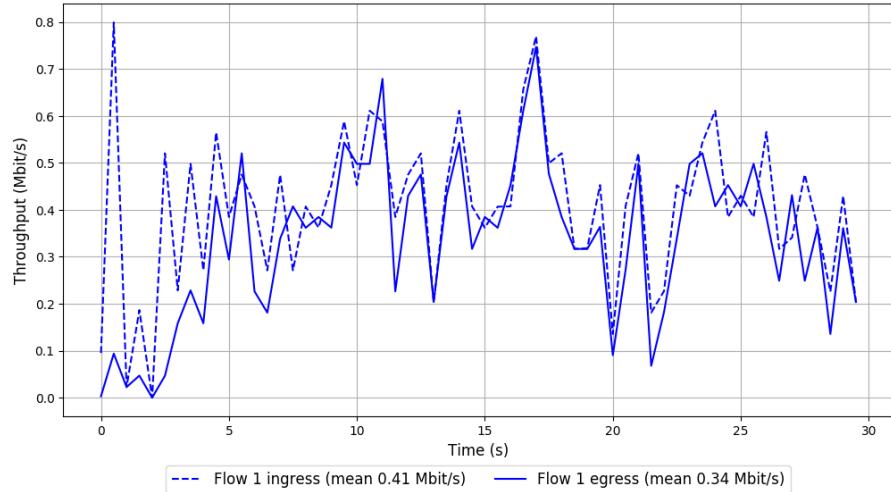


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2017-09-22 07:55:55
End at: 2017-09-22 07:56:25
Local clock offset: 2.129 ms
Remote clock offset: 1.95 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 403.349 ms
Loss rate: 17.24%
-- Flow 1:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 403.349 ms
Loss rate: 17.24%
```

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

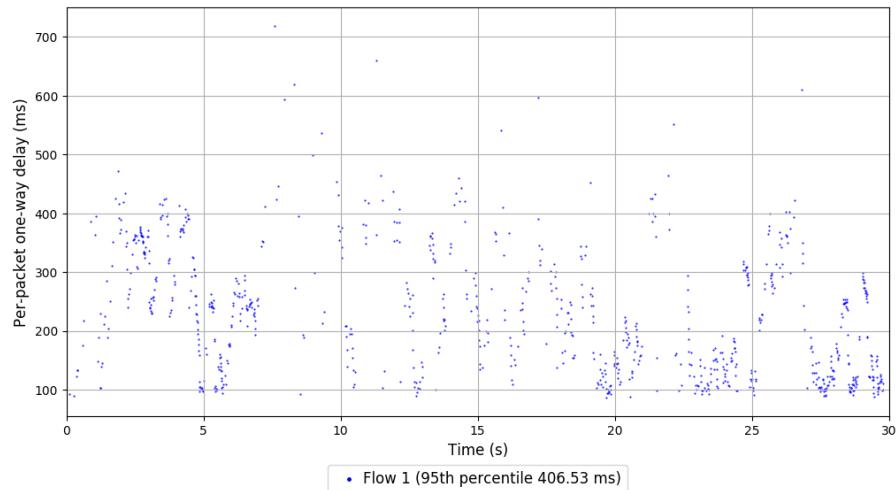
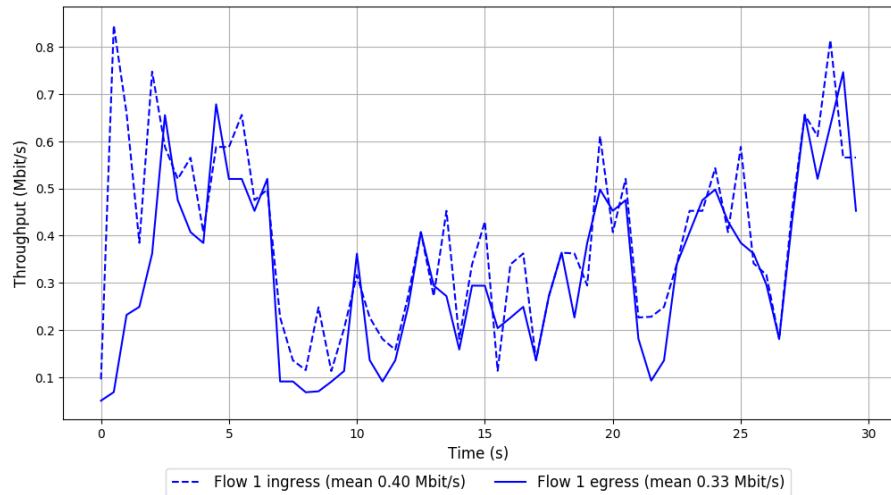


Run 2: Statistics of QUIC Cubic

```
Start at: 2017-09-22 08:10:04
End at: 2017-09-22 08:10:34
Local clock offset: -1.124 ms
Remote clock offset: 4.014 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 406.529 ms
Loss rate: 17.62%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 406.529 ms
Loss rate: 17.62%
```

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

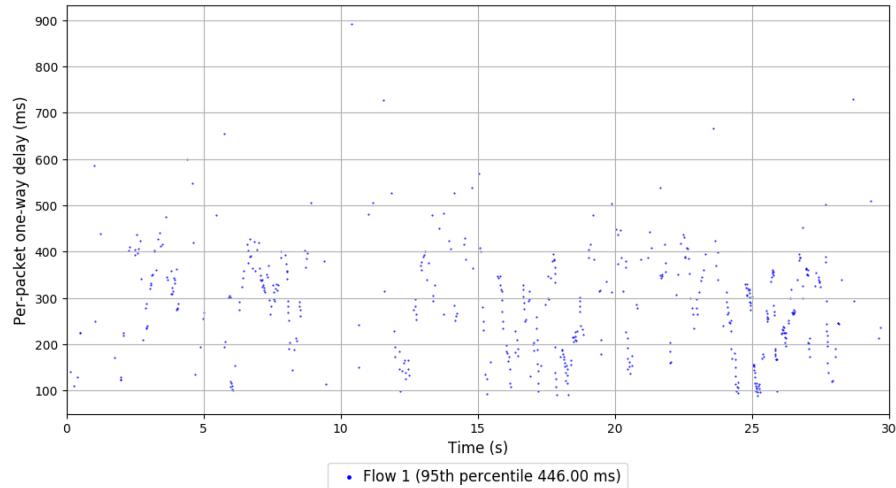
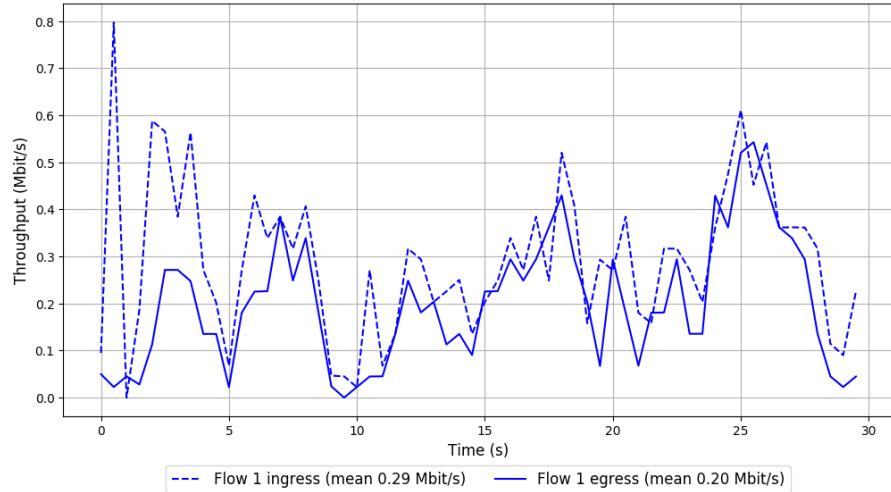


Run 3: Statistics of QUIC Cubic

```
Start at: 2017-09-22 08:24:22
End at: 2017-09-22 08:24:52
Local clock offset: -0.067 ms
Remote clock offset: 7.636 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 445.995 ms
Loss rate: 31.55%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 445.995 ms
Loss rate: 31.55%
```

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

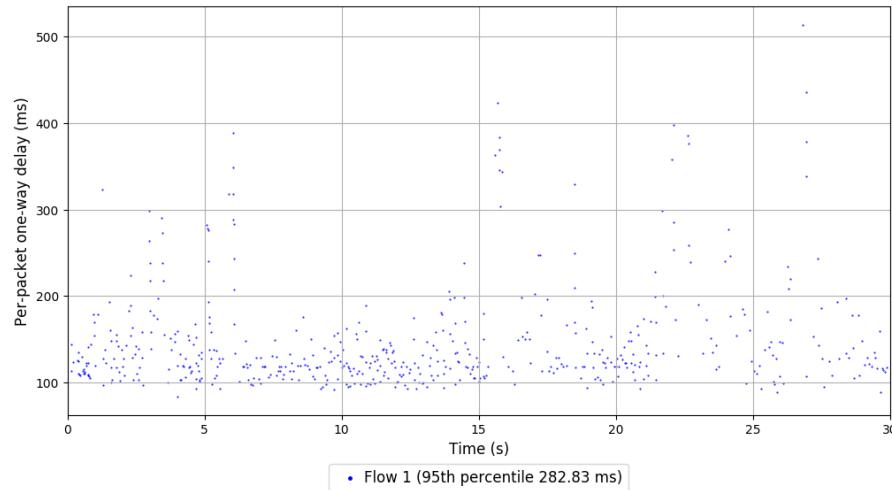
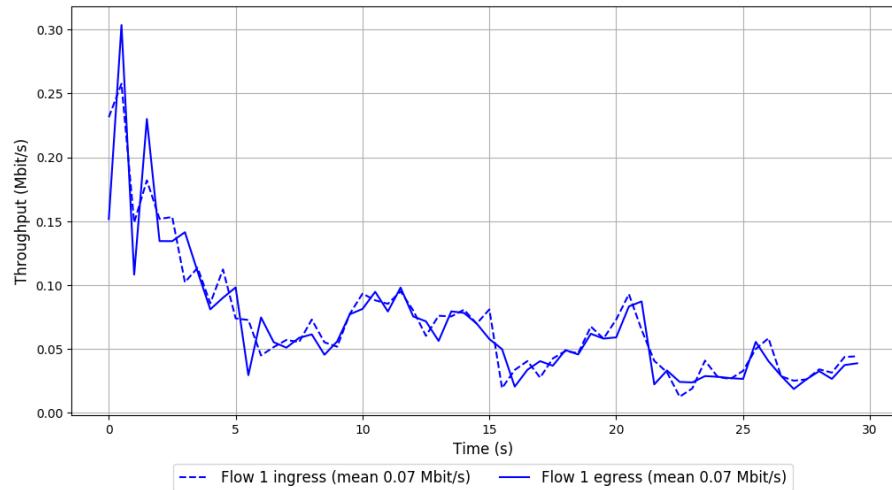


```
Run 1: Statistics of SCReAM
```

```
Start at: 2017-09-22 08:01:22
End at: 2017-09-22 08:01:52
Local clock offset: -2.93 ms
Remote clock offset: 0.961 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 282.827 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 282.827 ms
Loss rate: 3.49%
```

## Run 1: Report of SCReAM — Data Link

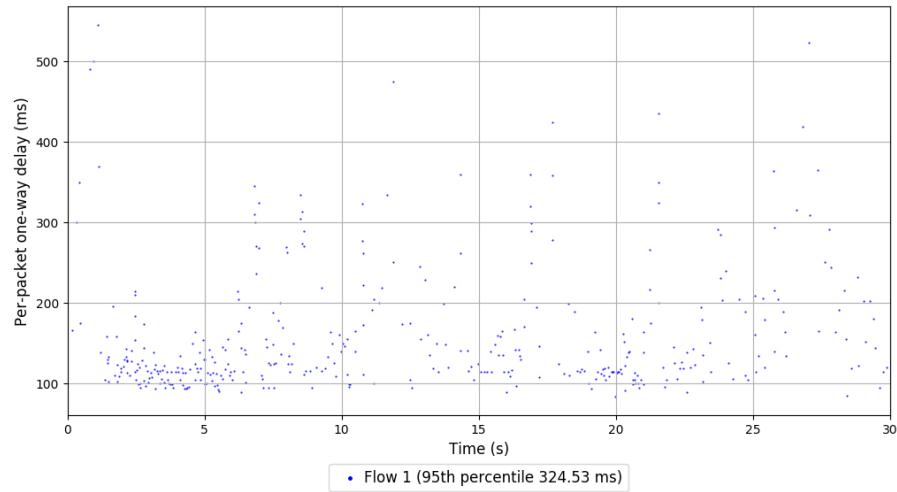
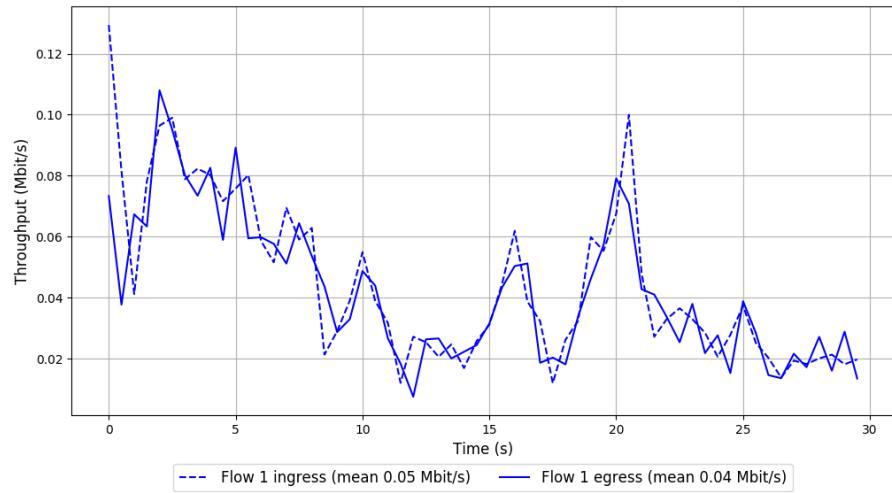


Run 2: Statistics of SCReAM

```
Start at: 2017-09-22 08:15:31
End at: 2017-09-22 08:16:01
Local clock offset: -1.624 ms
Remote clock offset: 2.869 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 324.533 ms
Loss rate: 6.03%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 324.533 ms
Loss rate: 6.03%
```

## Run 2: Report of SCReAM — Data Link

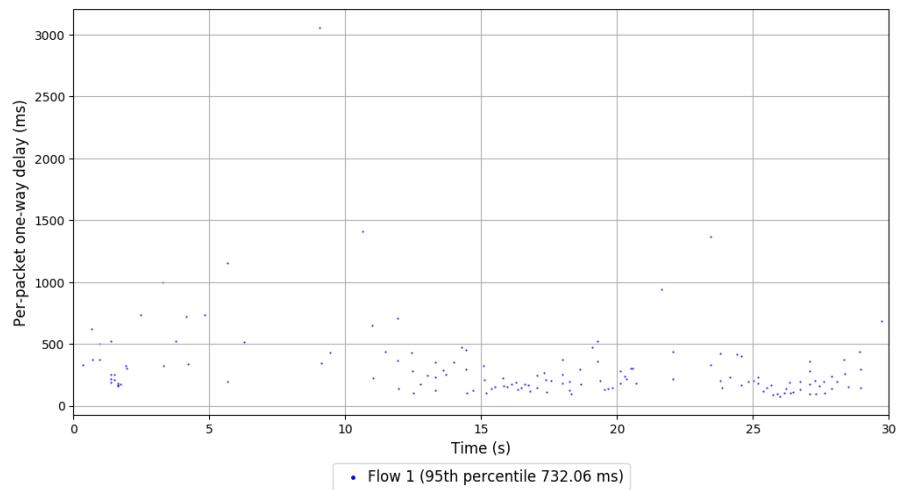
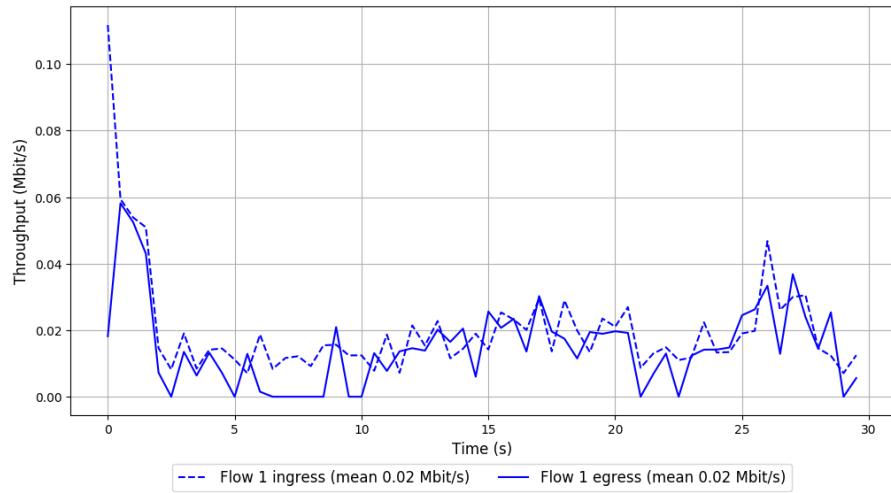


Run 3: Statistics of SCReAM

```
Start at: 2017-09-22 08:29:48
End at: 2017-09-22 08:30:18
Local clock offset: -5.876 ms
Remote clock offset: 1.591 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 732.059 ms
Loss rate: 26.00%
-- Flow 1:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 732.059 ms
Loss rate: 26.00%
```

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

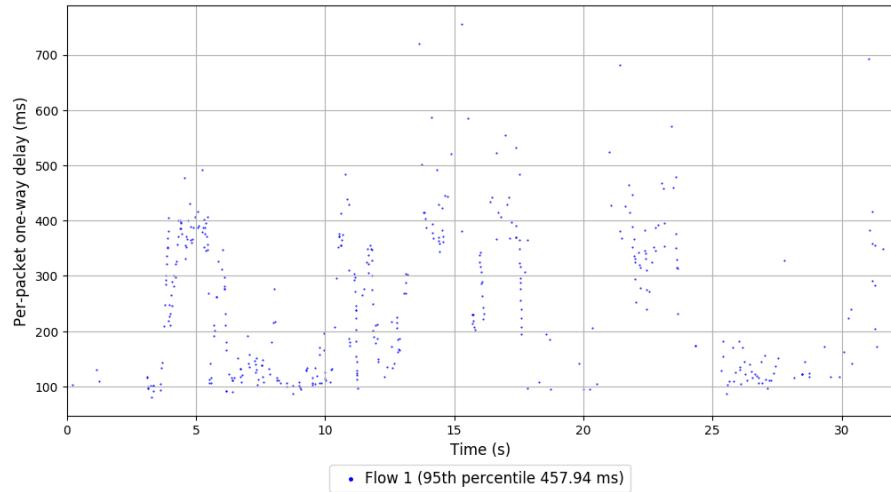
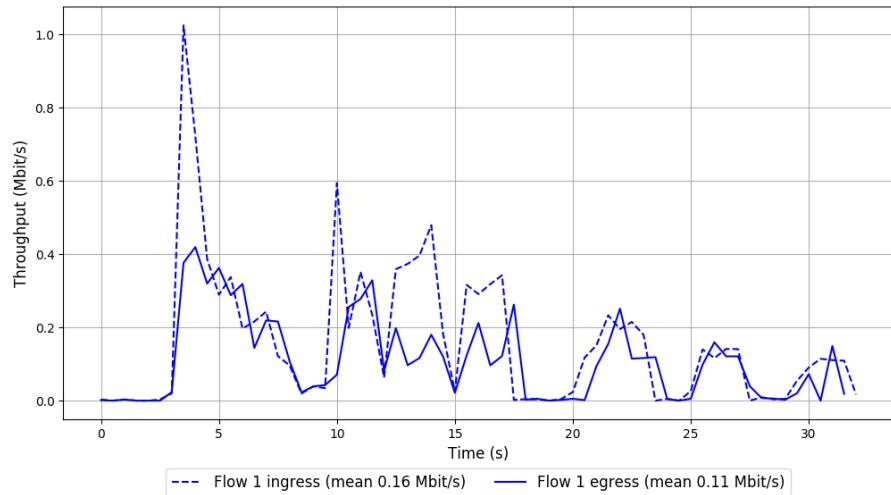


```
Run 1: Statistics of WebRTC media
```

```
Start at: 2017-09-22 07:57:01
End at: 2017-09-22 07:57:31
Local clock offset: 0.841 ms
Remote clock offset: 3.538 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 457.942 ms
Loss rate: 31.76%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 457.942 ms
Loss rate: 31.76%
```

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

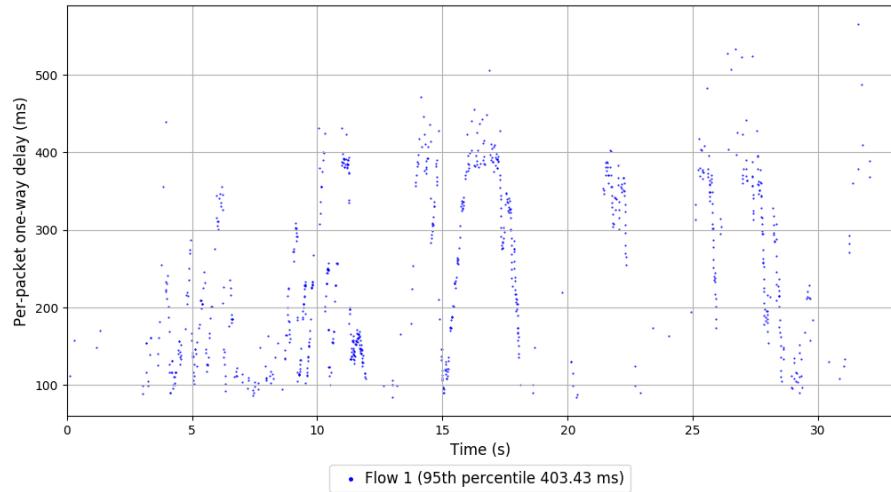
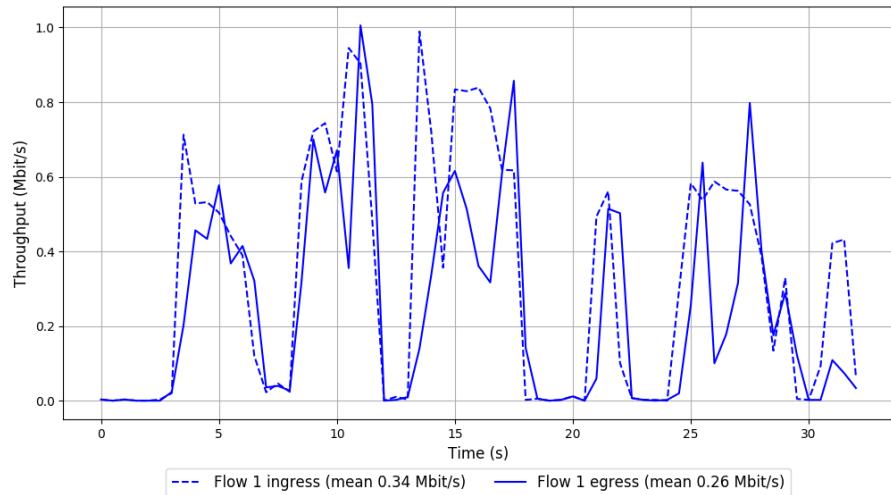


Run 2: Statistics of WebRTC media

```
Start at: 2017-09-22 08:11:10
End at: 2017-09-22 08:11:40
Local clock offset: -2.662 ms
Remote clock offset: 1.371 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 403.431 ms
Loss rate: 24.35%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 403.431 ms
Loss rate: 24.35%
```

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

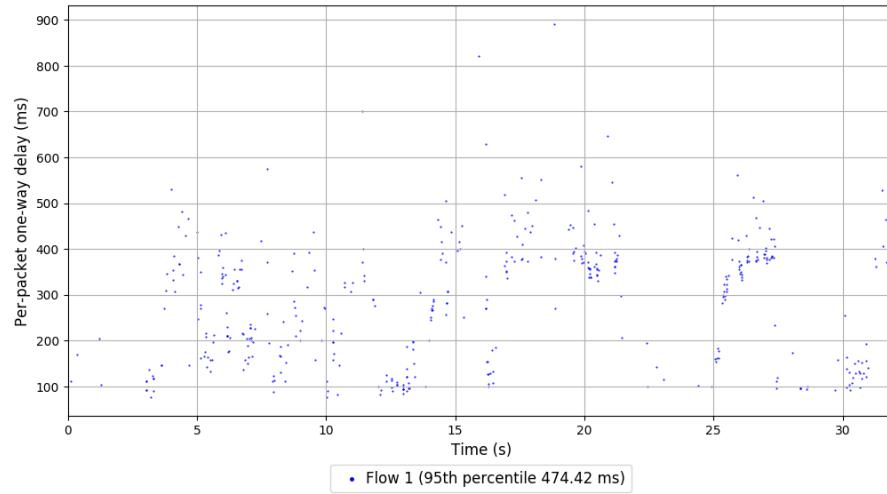
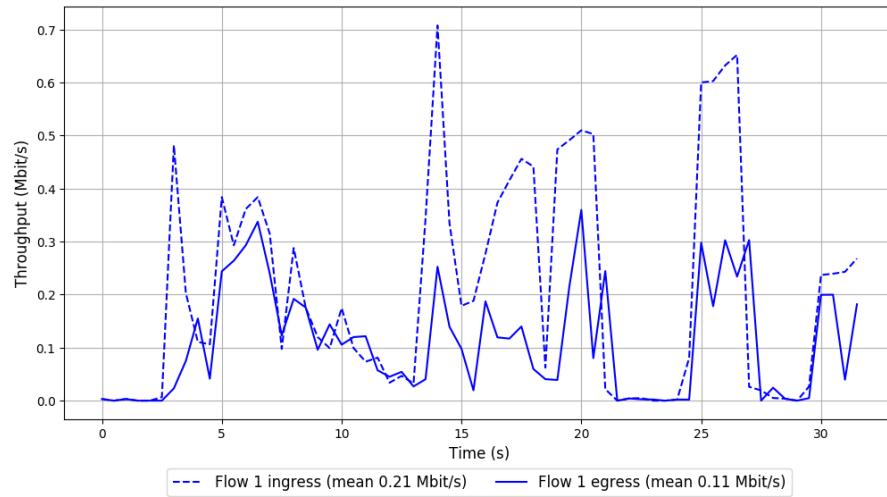


Run 3: Statistics of WebRTC media

```
Start at: 2017-09-22 08:25:28
End at: 2017-09-22 08:25:58
Local clock offset: -2.029 ms
Remote clock offset: 6.321 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 474.417 ms
Loss rate: 47.20%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 474.417 ms
Loss rate: 47.20%
```

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

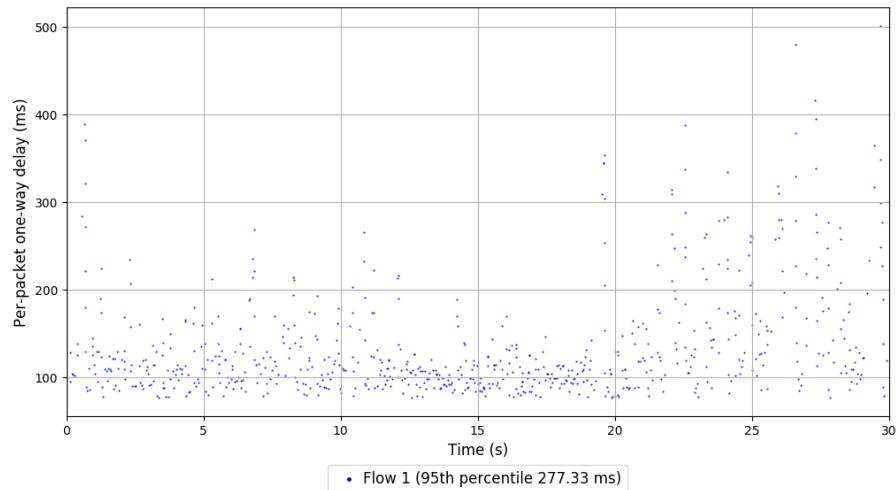
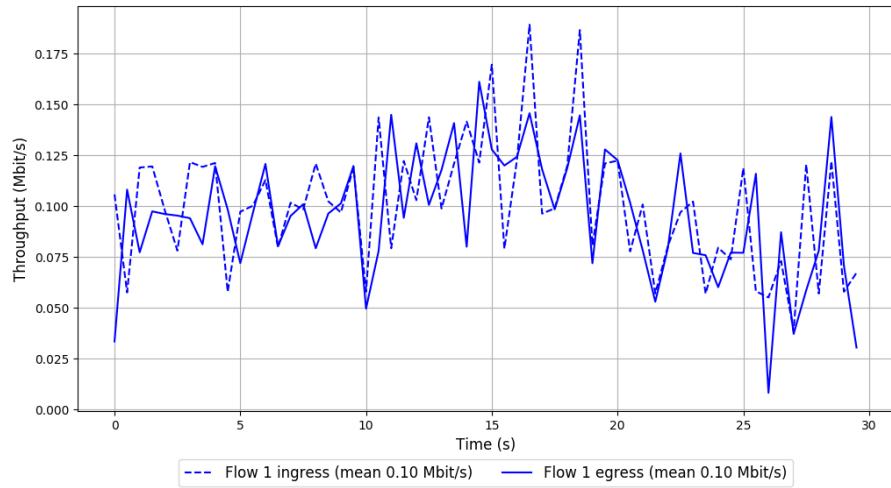


Run 1: Statistics of Sprout

```
Start at: 2017-09-22 08:05:44
End at: 2017-09-22 08:06:14
Local clock offset: -2.578 ms
Remote clock offset: 5.794 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 277.331 ms
Loss rate: 5.36%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 277.331 ms
Loss rate: 5.36%
```

## Run 1: Report of Sprout — Data Link

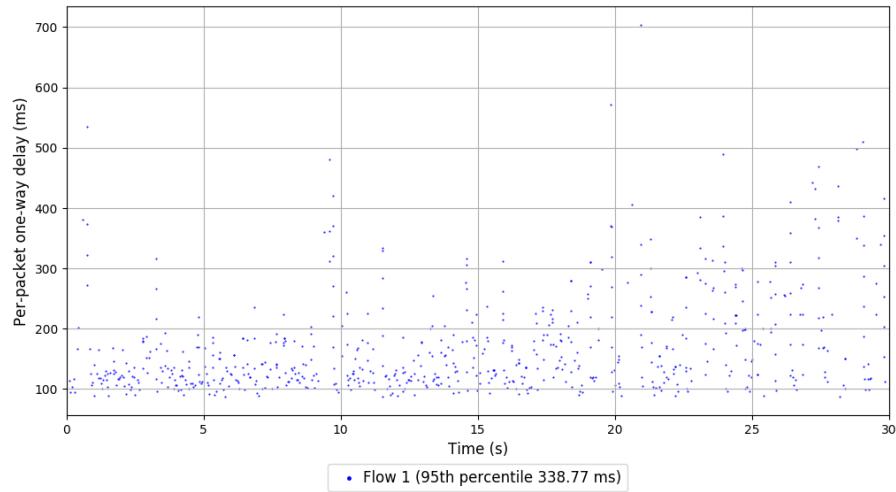
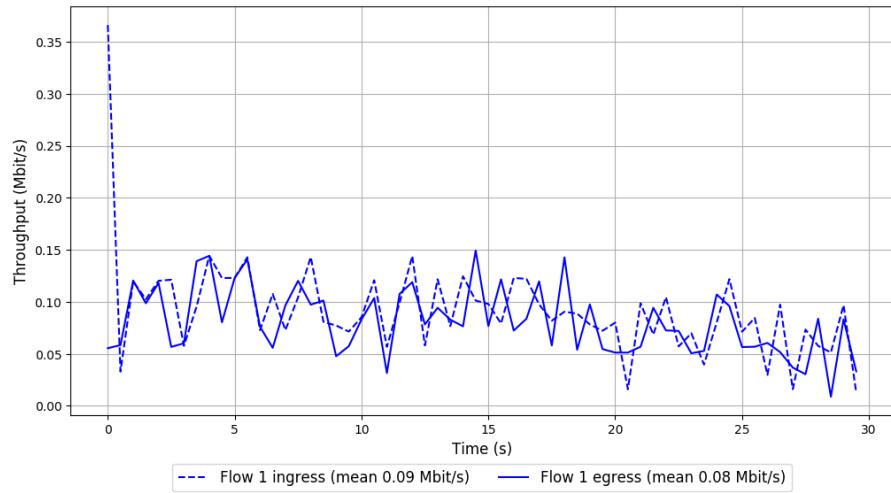


Run 2: Statistics of Sprout

```
Start at: 2017-09-22 08:19:51
End at: 2017-09-22 08:20:21
Local clock offset: 0.235 ms
Remote clock offset: -4.247 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 338.768 ms
Loss rate: 12.02%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 338.768 ms
Loss rate: 12.02%
```

## Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

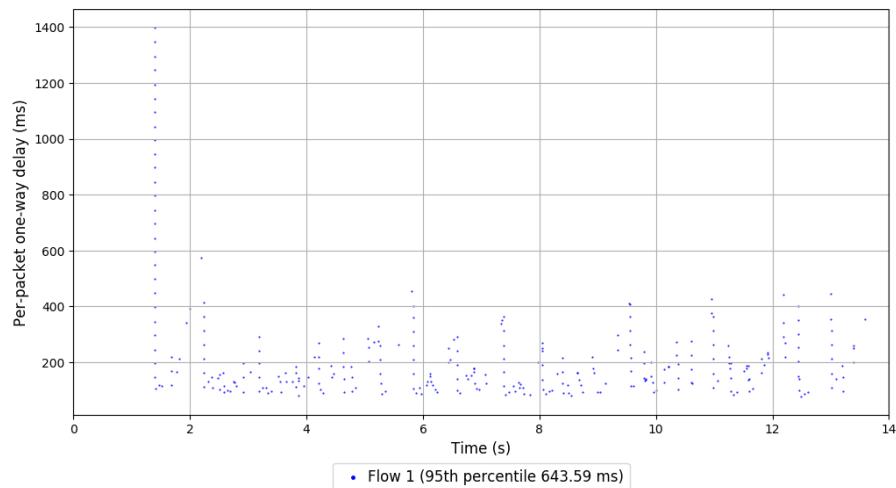
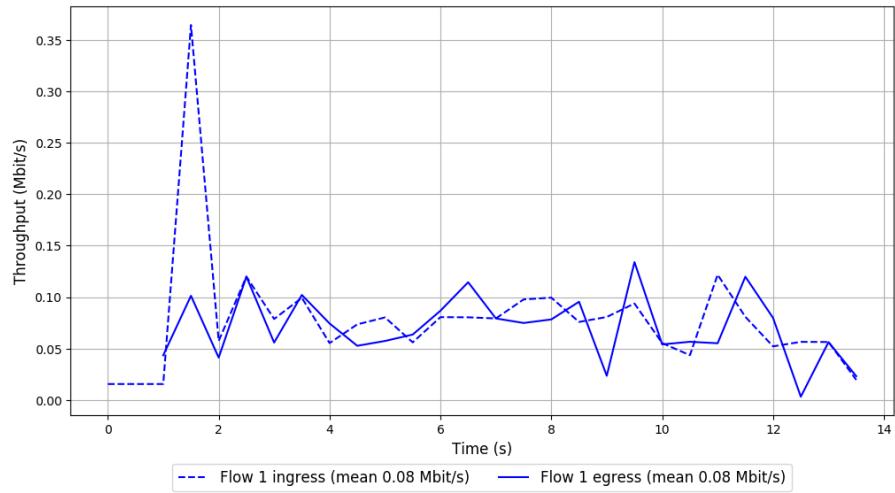
Start at: 2017-09-22 08:34:09

End at: 2017-09-22 08:34:39

Local clock offset: 0.54 ms

Remote clock offset: 3.758 ms

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

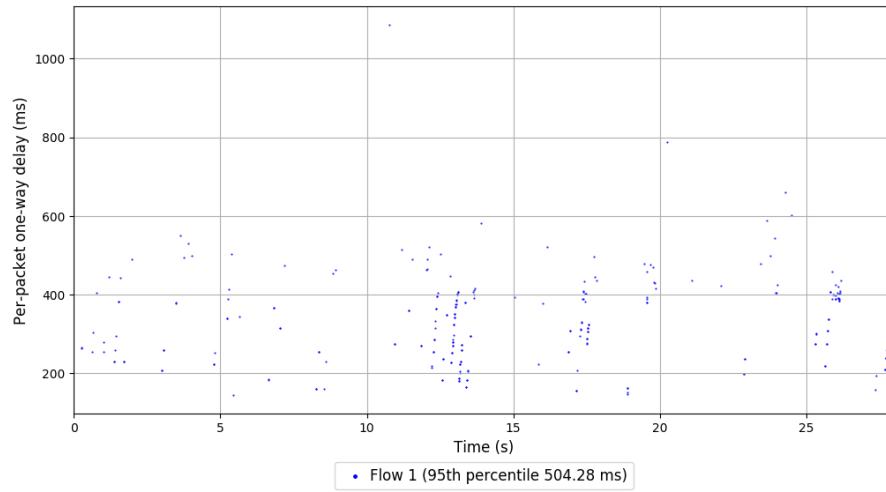
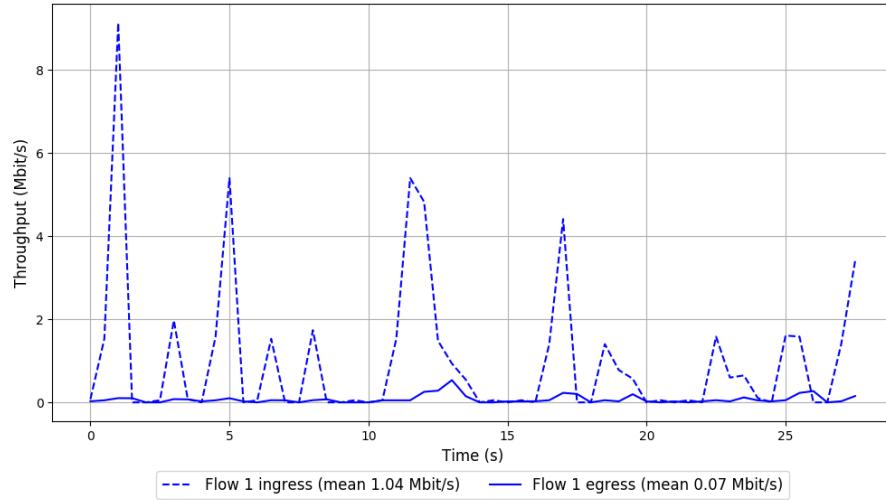


Run 1: Statistics of TaoVA-100x

```
Start at: 2017-09-22 08:04:38
End at: 2017-09-22 08:05:08
Local clock offset: 0.922 ms
Remote clock offset: -6.952 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 504.283 ms
Loss rate: 92.86%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 504.283 ms
Loss rate: 92.86%
```

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

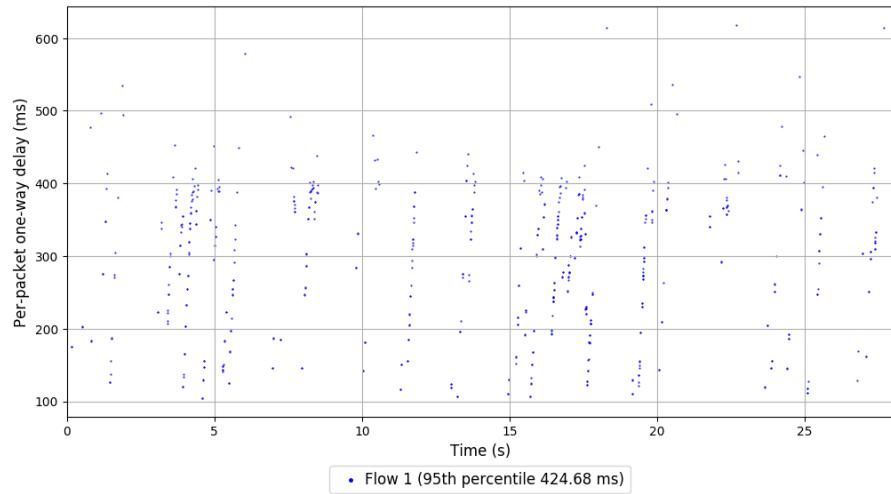
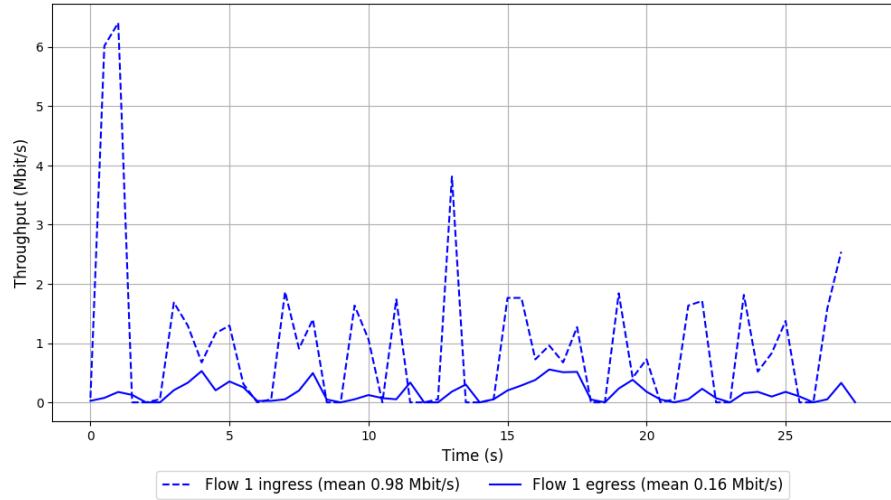


Run 2: Statistics of TaoVA-100x

```
Start at: 2017-09-22 08:18:46
End at: 2017-09-22 08:19:16
Local clock offset: -1.983 ms
Remote clock offset: 3.229 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 424.680 ms
Loss rate: 83.13%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 424.680 ms
Loss rate: 83.13%
```

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

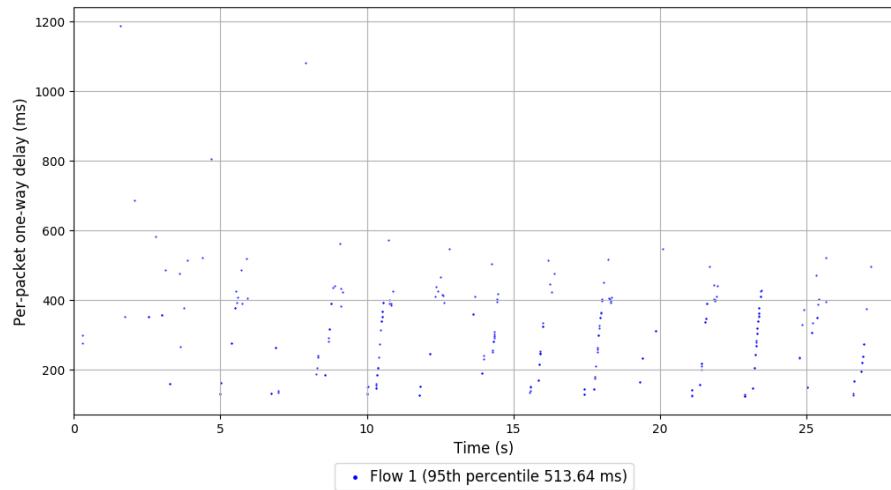
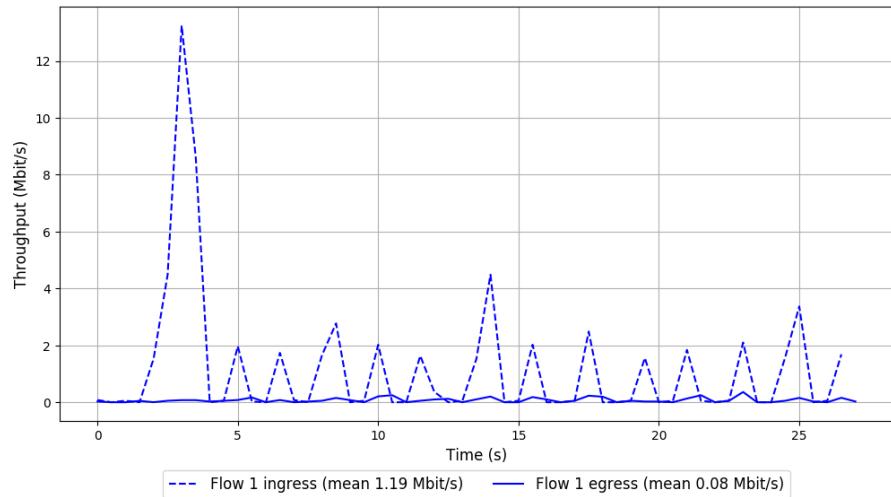


Run 3: Statistics of TaoVA-100x

```
Start at: 2017-09-22 08:33:03
End at: 2017-09-22 08:33:33
Local clock offset: 0.488 ms
Remote clock offset: 1.796 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 513.638 ms
Loss rate: 93.62%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 513.638 ms
Loss rate: 93.62%
```

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

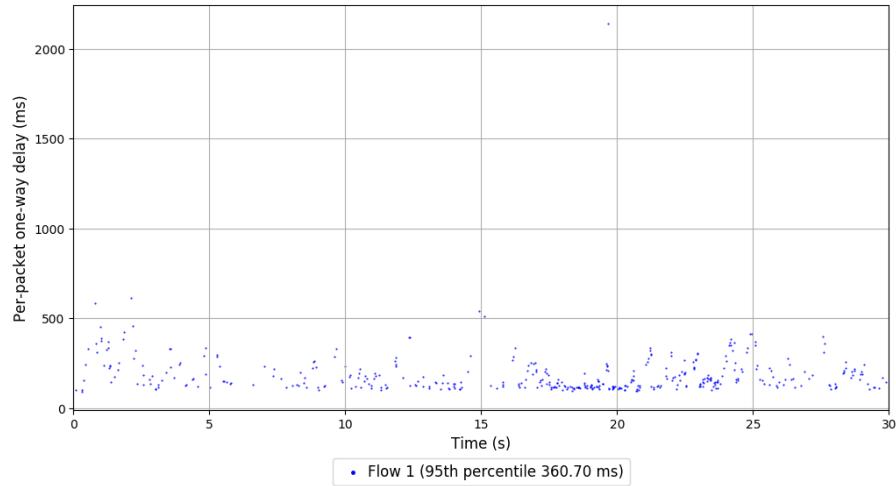
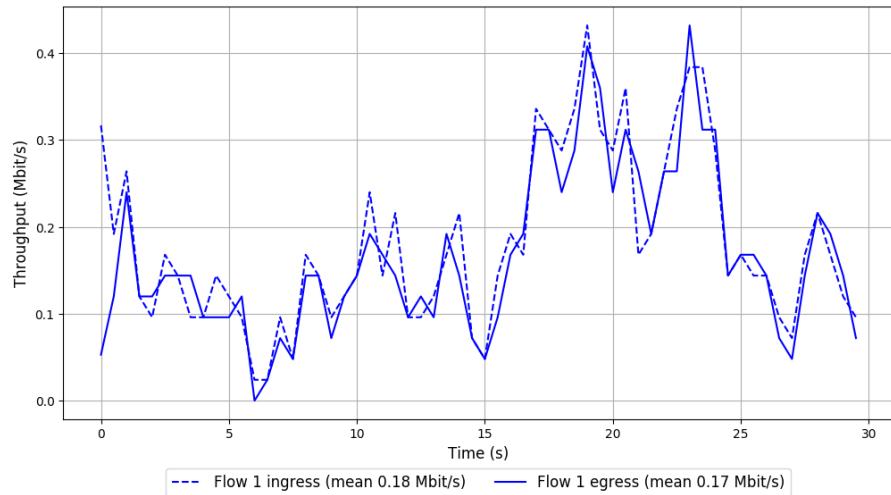


Run 1: Statistics of TCP Vegas

```
Start at: 2017-09-22 08:00:17
End at: 2017-09-22 08:00:47
Local clock offset: 0.094 ms
Remote clock offset: 3.85 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 360.703 ms
Loss rate: 7.74%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 360.703 ms
Loss rate: 7.74%
```

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

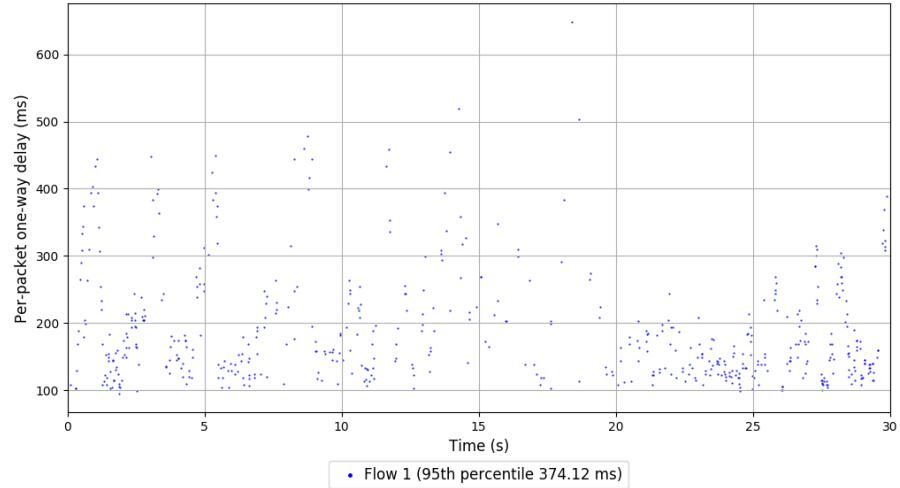
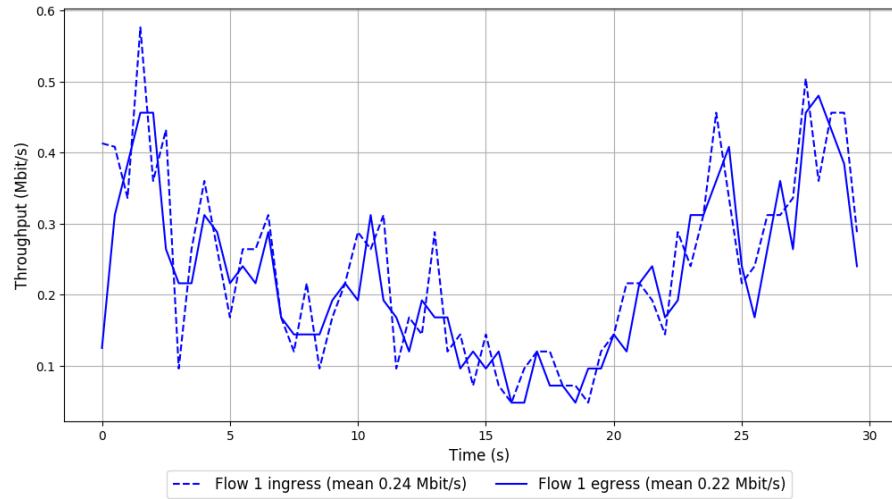


Run 2: Statistics of TCP Vegas

```
Start at: 2017-09-22 08:14:25
End at: 2017-09-22 08:14:56
Local clock offset: -1.721 ms
Remote clock offset: -2.218 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 374.122 ms
Loss rate: 7.20%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 374.122 ms
Loss rate: 7.20%
```

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

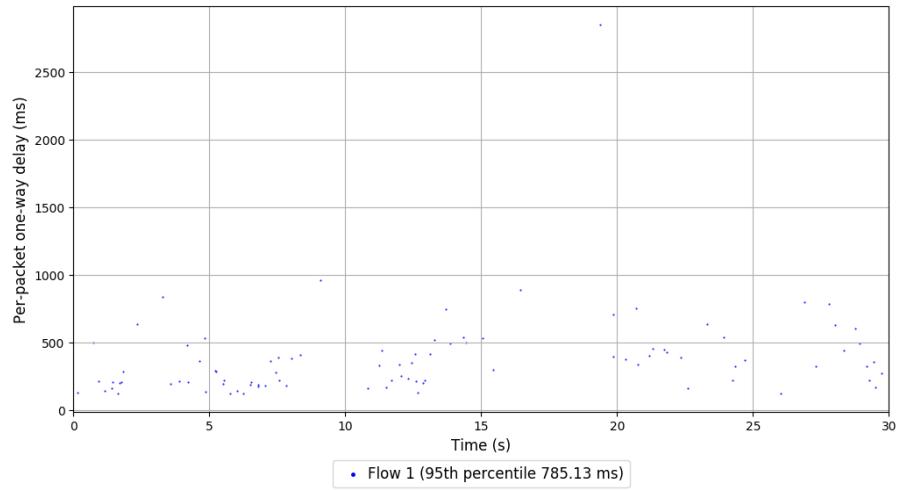
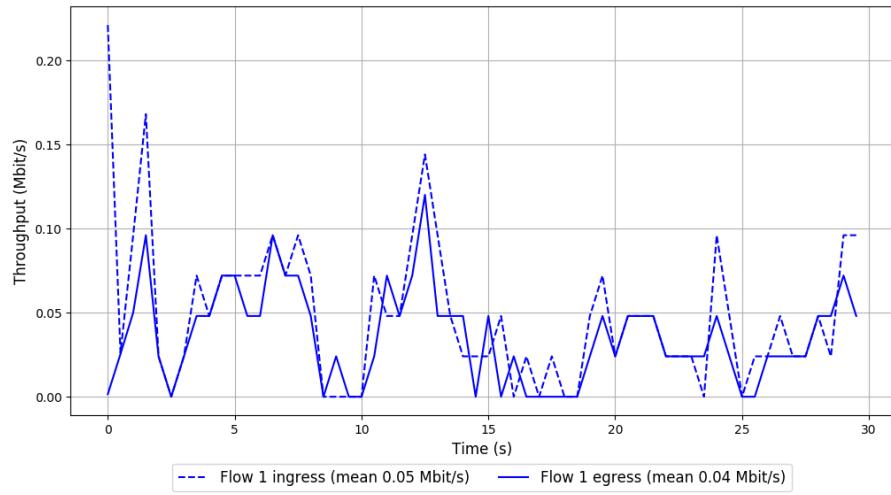


Run 3: Statistics of TCP Vegas

```
Start at: 2017-09-22 08:28:42
End at: 2017-09-22 08:29:12
Local clock offset: 0.151 ms
Remote clock offset: -5.97 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 785.129 ms
Loss rate: 27.05%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 785.129 ms
Loss rate: 27.05%
```

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

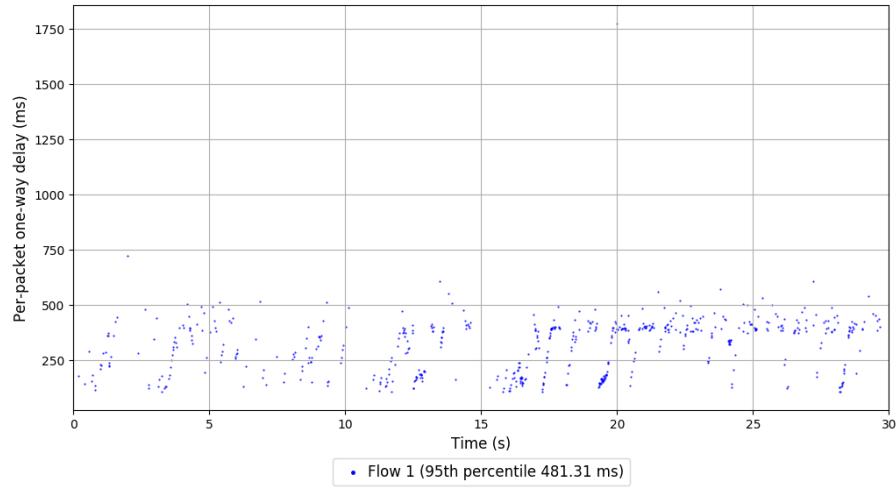
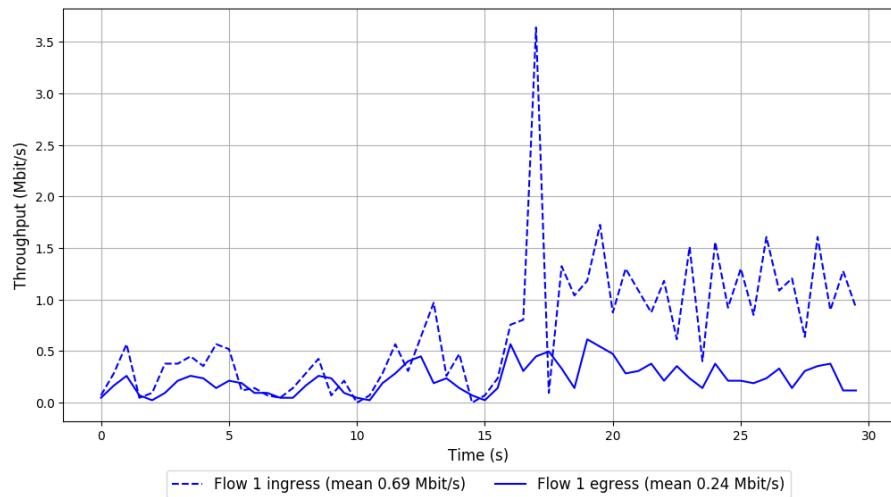


Run 1: Statistics of Verus

```
Start at: 2017-09-22 07:59:12
End at: 2017-09-22 07:59:42
Local clock offset: -1.516 ms
Remote clock offset: 2.171 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 481.315 ms
Loss rate: 66.25%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 481.315 ms
Loss rate: 66.25%
```

## Run 1: Report of Verus — Data Link

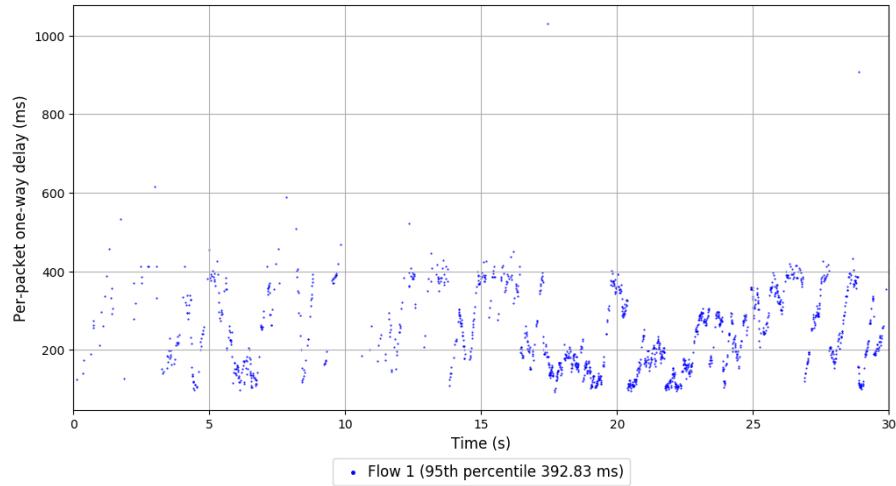
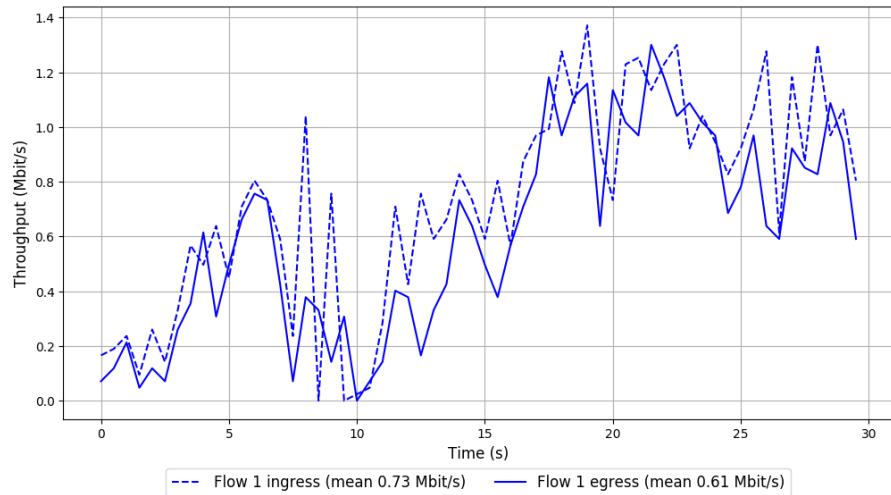


Run 2: Statistics of Verus

```
Start at: 2017-09-22 08:13:20
End at: 2017-09-22 08:13:50
Local clock offset: -2.07 ms
Remote clock offset: 1.74 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 392.835 ms
Loss rate: 16.58%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 392.835 ms
Loss rate: 16.58%
```

## Run 2: Report of Verus — Data Link

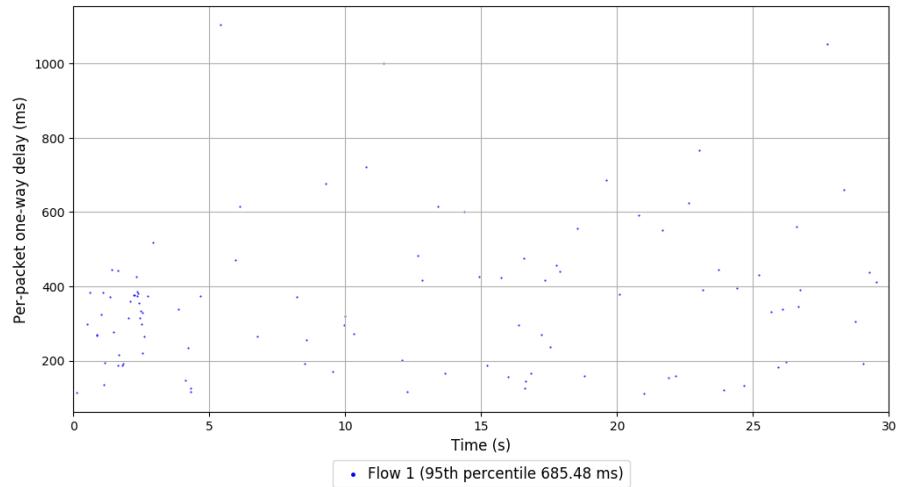
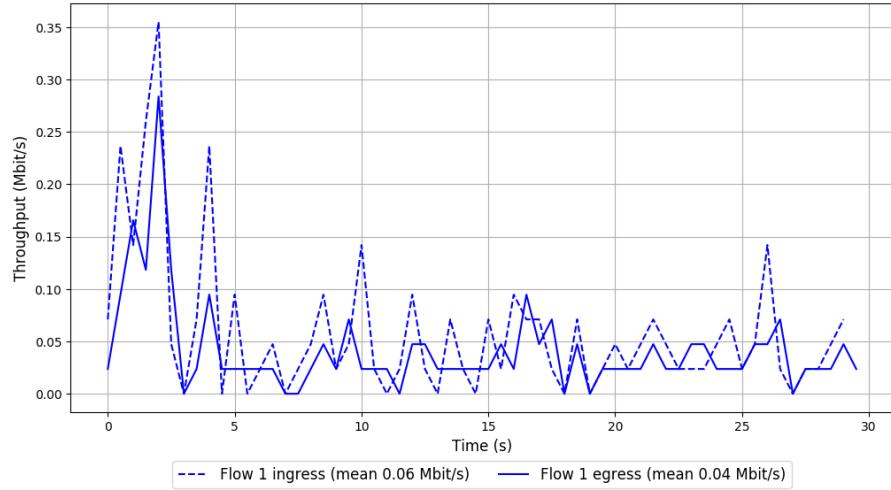


Run 3: Statistics of Verus

```
Start at: 2017-09-22 08:27:38
End at: 2017-09-22 08:28:08
Local clock offset: 0.339 ms
Remote clock offset: 3.455 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 685.483 ms
Loss rate: 29.05%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 685.483 ms
Loss rate: 29.05%
```

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

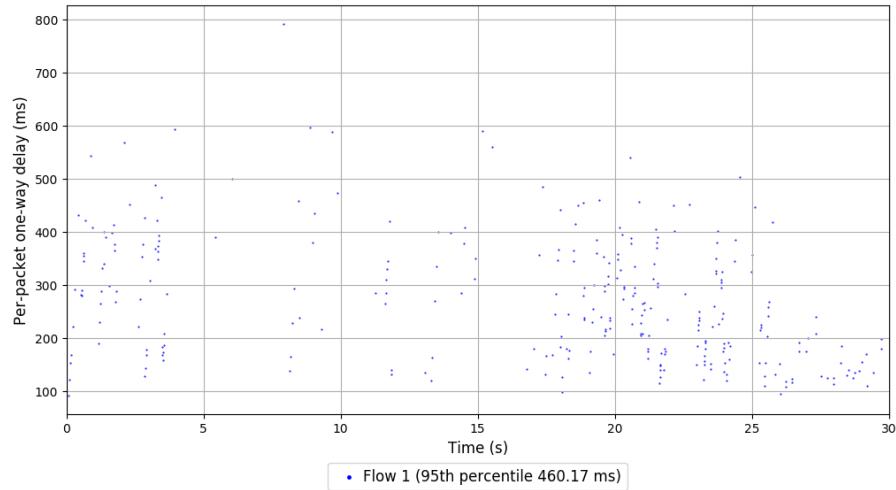
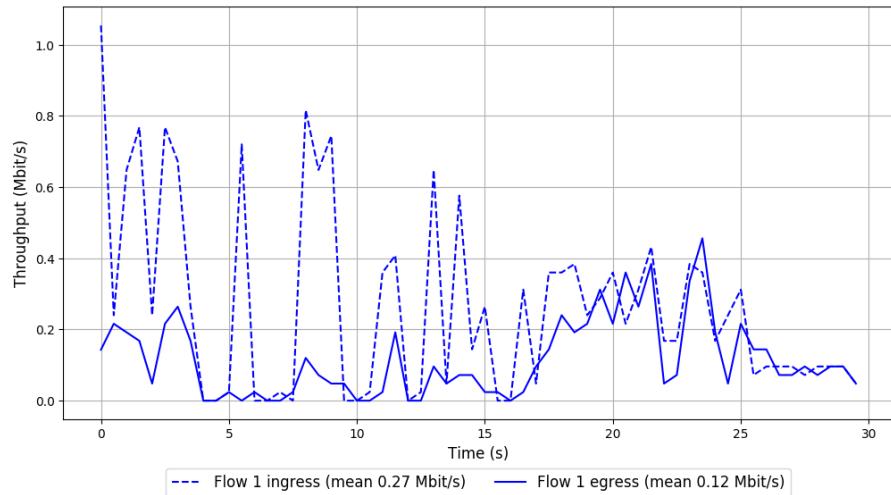


Run 1: Statistics of Indigo

```
Start at: 2017-09-22 07:53:43
End at: 2017-09-22 07:54:13
Local clock offset: -0.539 ms
Remote clock offset: 0.883 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 460.174 ms
Loss rate: 56.37%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 460.174 ms
Loss rate: 56.37%
```

## Run 1: Report of Indigo — Data Link

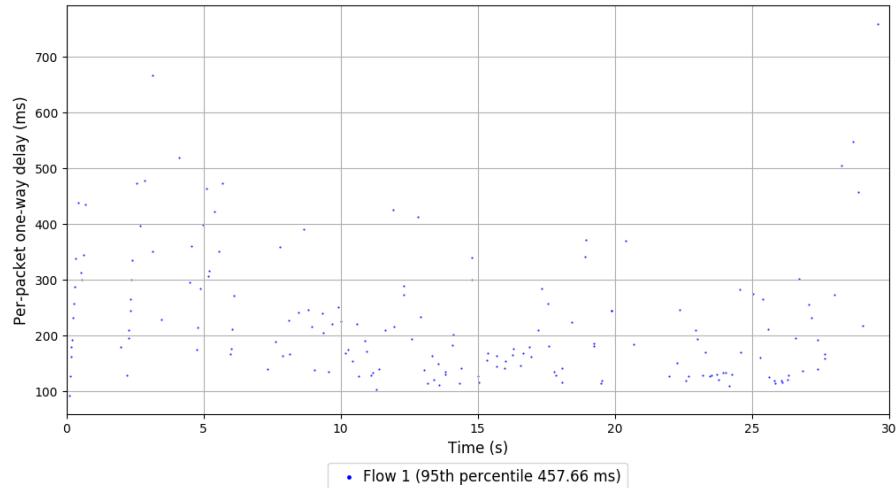
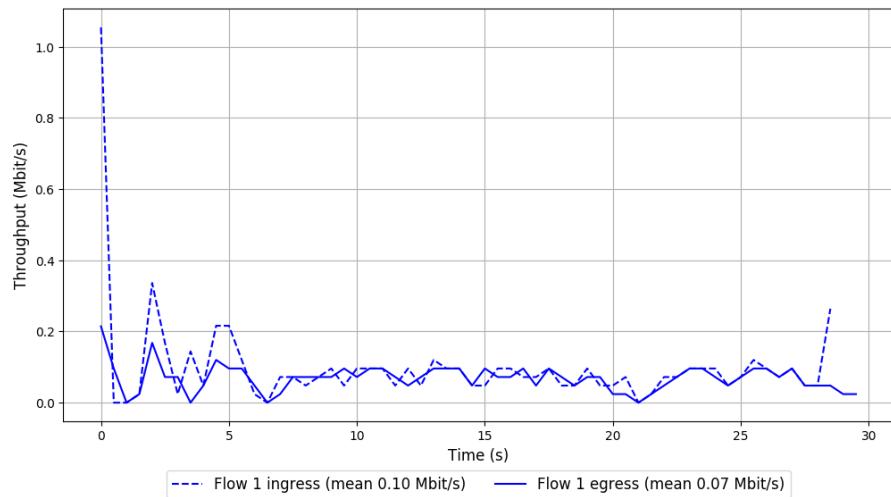


Run 2: Statistics of Indigo

```
Start at: 2017-09-22 08:07:54
End at: 2017-09-22 08:08:24
Local clock offset: -2.724 ms
Remote clock offset: -2.574 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 457.663 ms
Loss rate: 28.64%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 457.663 ms
Loss rate: 28.64%
```

## Run 2: Report of Indigo — Data Link

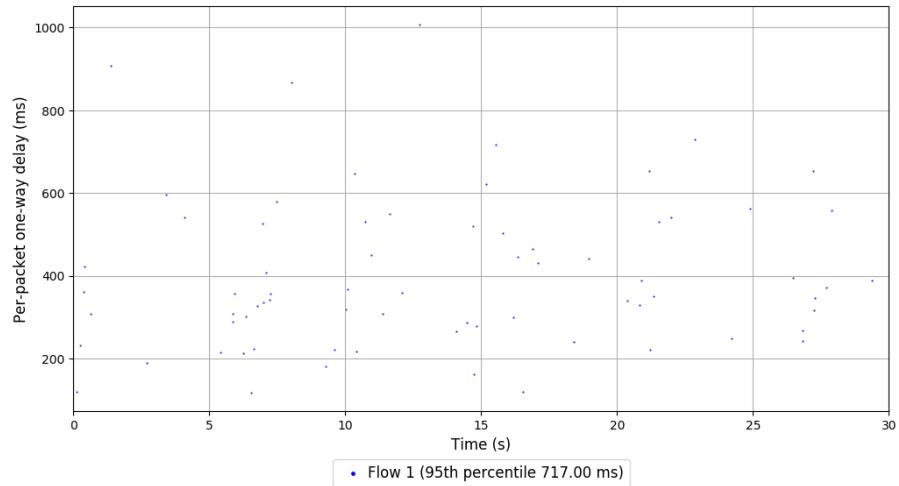
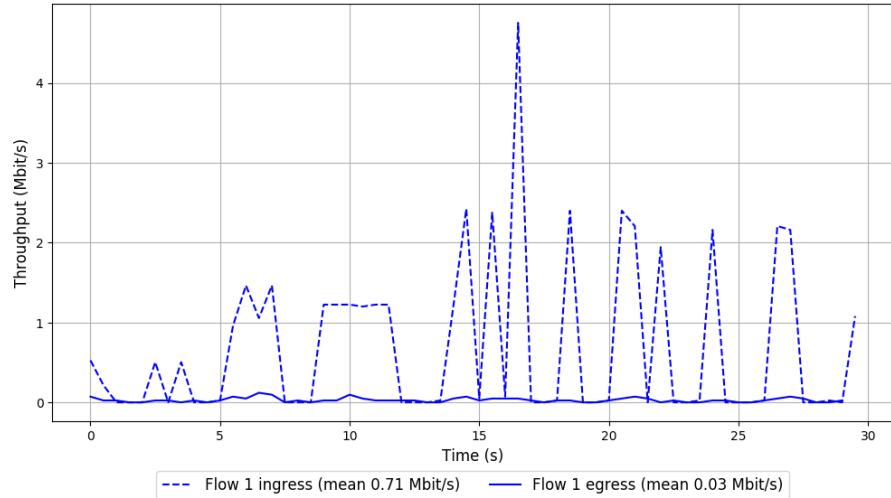


Run 3: Statistics of Indigo

```
Start at: 2017-09-22 08:22:02
End at: 2017-09-22 08:22:32
Local clock offset: -0.351 ms
Remote clock offset: -3.666 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 717.002 ms
Loss rate: 95.90%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 717.002 ms
Loss rate: 95.90%
```

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

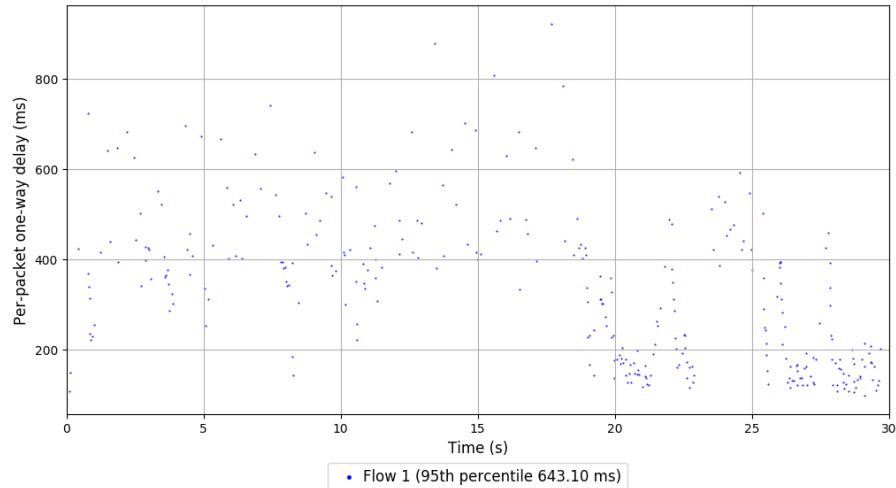
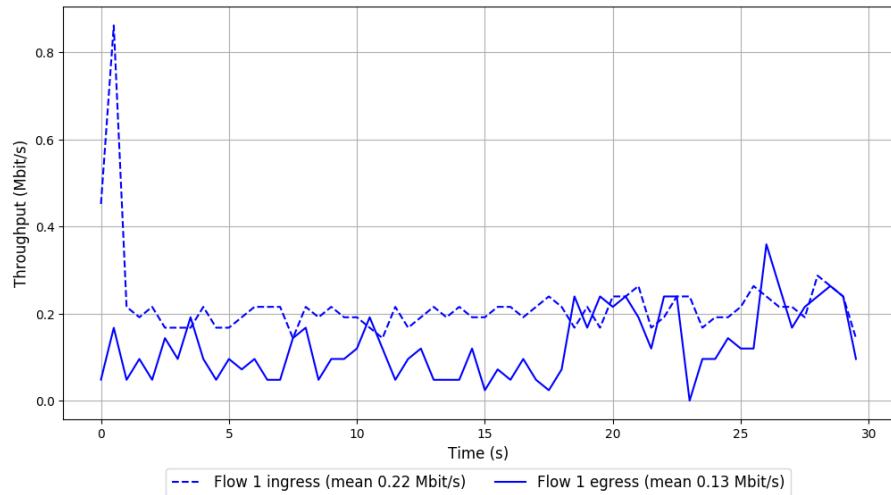


Run 1: Statistics of Indigo-cellular

```
Start at: 2017-09-22 08:06:49
End at: 2017-09-22 08:07:19
Local clock offset: -0.023 ms
Remote clock offset: -0.504 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 643.098 ms
Loss rate: 42.50%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 643.098 ms
Loss rate: 42.50%
```

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

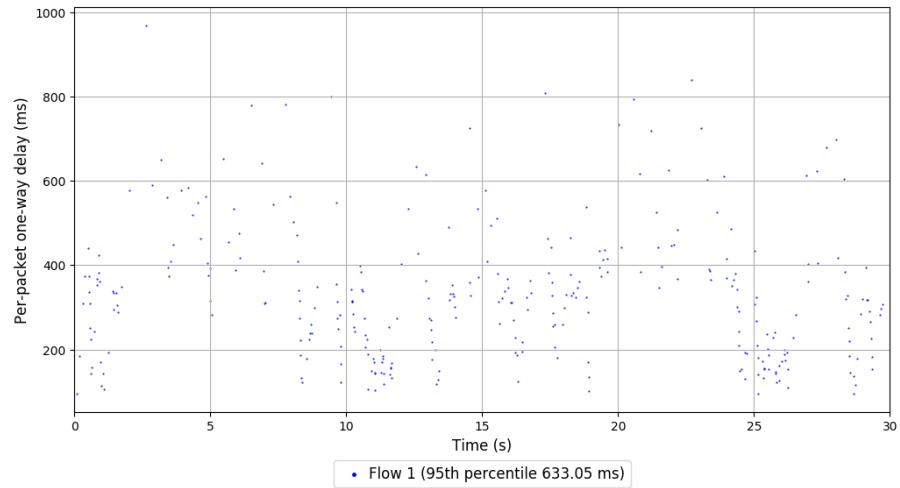
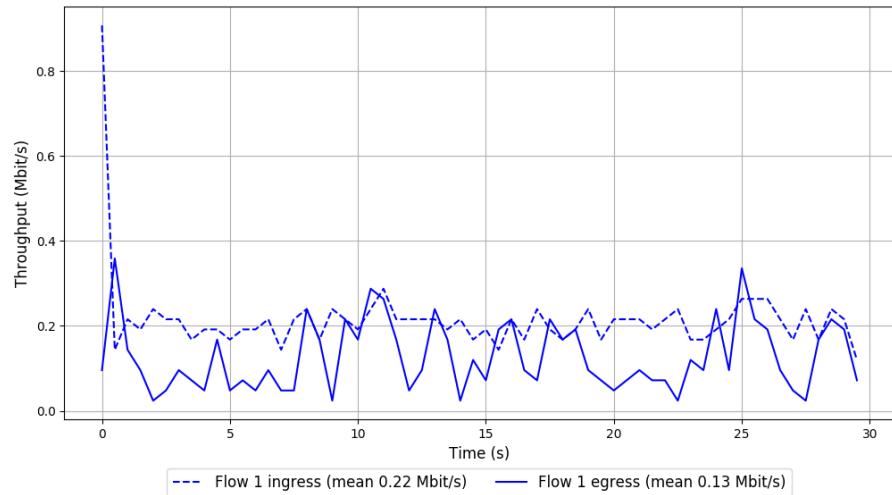


Run 2: Statistics of Indigo-cellular

```
Start at: 2017-09-22 08:20:57
End at: 2017-09-22 08:21:27
Local clock offset: -1.631 ms
Remote clock offset: 4.303 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 633.047 ms
Loss rate: 41.10%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 633.047 ms
Loss rate: 41.10%
```

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



Run 3: Statistics of Indigo-cellular

```
Start at: 2017-09-22 08:35:15
End at: 2017-09-22 08:35:45
Local clock offset: 0.58 ms
Remote clock offset: -4.149 ms

# Below is generated by plot.py at 2017-09-22 09:18:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 728.868 ms
Loss rate: 55.65%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 728.868 ms
Loss rate: 55.65%
```

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

