

Pantheon Report

Generated at 2019-01-03 08:02:38 (UTC).
Data path: Stanford on `eno1` (*remote*) → AWS California 1 on `ens5` (*local*).
Repeated the test of 19 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

System info:

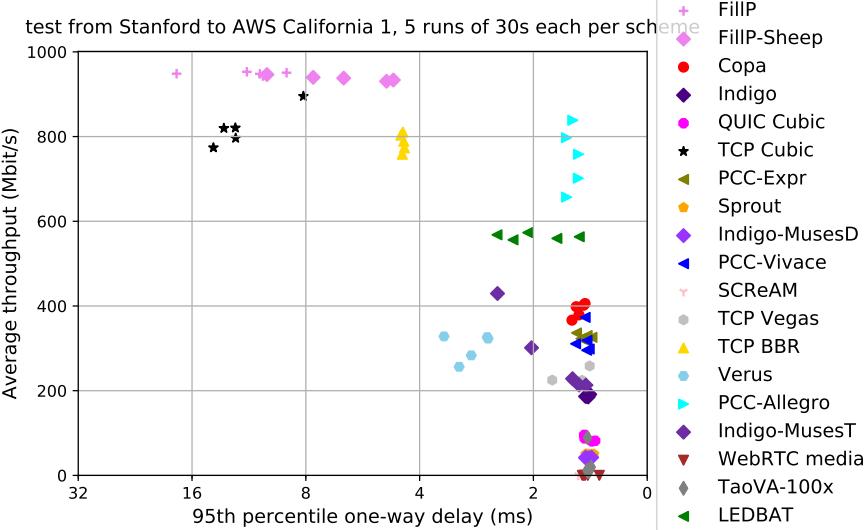
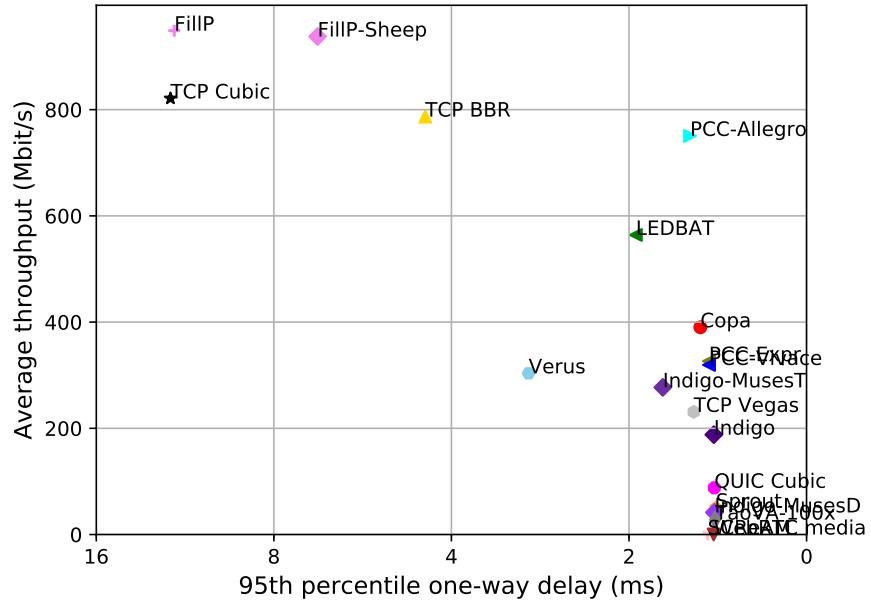
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbfed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
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 Stanford to AWS California 1, 5 runs of 30s each per scheme
(mean of all runs by scheme)



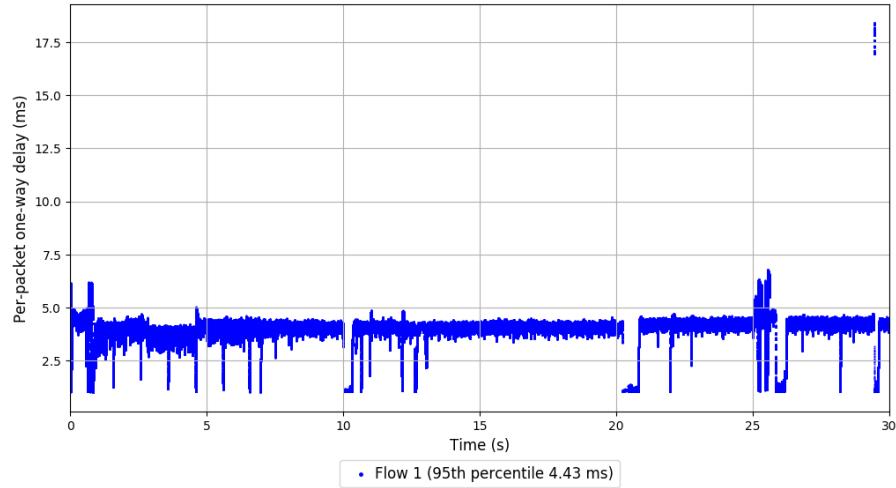
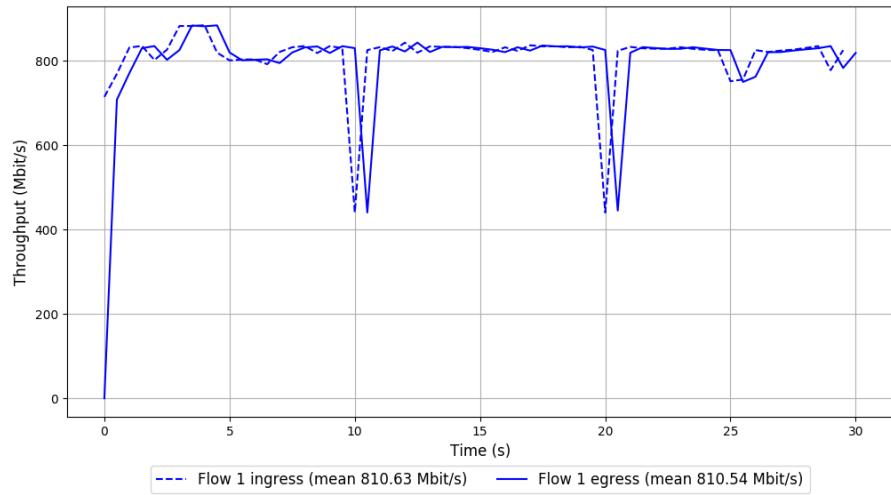
| scheme | # runs | mean avg tput (Mbit/s) flow 1 | mean 95th-%ile delay (ms) flow 1 | mean loss rate (%) flow 1 |
|---------------|--------|----------------------------------|-------------------------------------|------------------------------|
| TCP BBR | 5 | 786.90 | 4.43 | 0.02 |
| Copa | 5 | 390.26 | 1.20 | 0.01 |
| TCP Cubic | 5 | 821.09 | 11.98 | 0.03 |
| FillP | 5 | 948.66 | 11.80 | 0.02 |
| FillP-Sheep | 5 | 937.65 | 6.75 | 0.01 |
| Indigo | 5 | 188.08 | 1.04 | 0.01 |
| Indigo-MusesD | 5 | 41.67 | 1.04 | 0.01 |
| Indigo-MusesT | 5 | 277.10 | 1.62 | 0.01 |
| LEDBAT | 5 | 564.06 | 1.92 | 0.01 |
| PCC-Allegro | 5 | 750.50 | 1.31 | 0.01 |
| PCC-Expr | 5 | 326.43 | 1.10 | 0.01 |
| QUIC Cubic | 5 | 87.95 | 1.04 | 0.01 |
| SCReAM | 5 | 0.22 | 1.11 | 0.03 |
| Sprout | 5 | 50.25 | 1.02 | 0.01 |
| TaoVA-100x | 5 | 28.14 | 1.03 | 0.00 |
| TCP Vegas | 5 | 230.87 | 1.27 | 0.00 |
| Verus | 5 | 303.53 | 2.96 | 0.01 |
| PCC-Vivace | 5 | 319.31 | 1.10 | 0.01 |
| WebRTC media | 5 | 0.05 | 1.05 | 0.00 |

Run 1: Statistics of TCP BBR

```
Start at: 2019-01-03 04:50:52
End at: 2019-01-03 04:51:23
Local clock offset: -3.173 ms
Remote clock offset: -0.477 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 810.54 Mbit/s
95th percentile per-packet one-way delay: 4.428 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 810.54 Mbit/s
95th percentile per-packet one-way delay: 4.428 ms
Loss rate: 0.02%
```

Run 1: Report of TCP BBR — Data Link

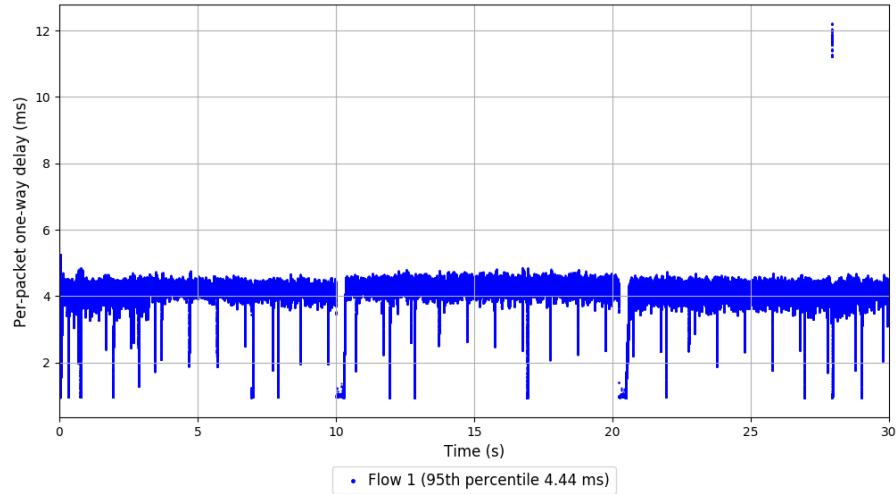
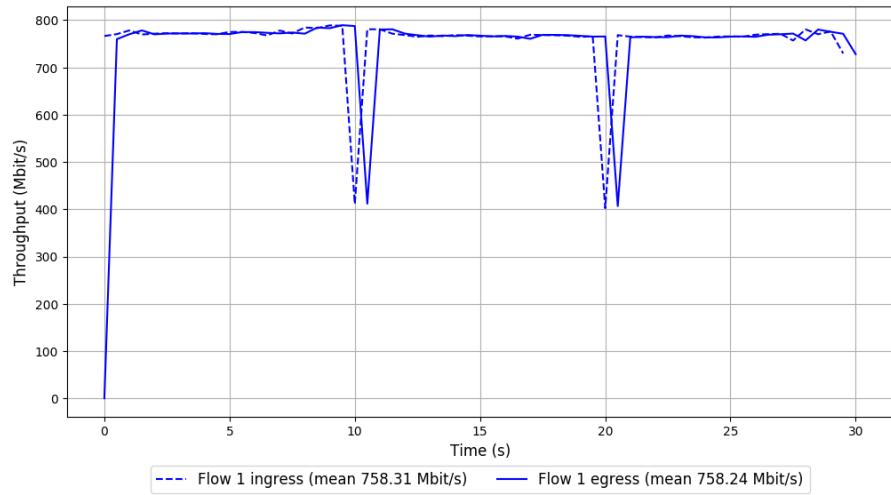


Run 2: Statistics of TCP BBR

```
Start at: 2019-01-03 05:17:52
End at: 2019-01-03 05:18:22
Local clock offset: 0.484 ms
Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 758.24 Mbit/s
95th percentile per-packet one-way delay: 4.444 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 758.24 Mbit/s
95th percentile per-packet one-way delay: 4.444 ms
Loss rate: 0.02%
```

Run 2: Report of TCP BBR — Data Link

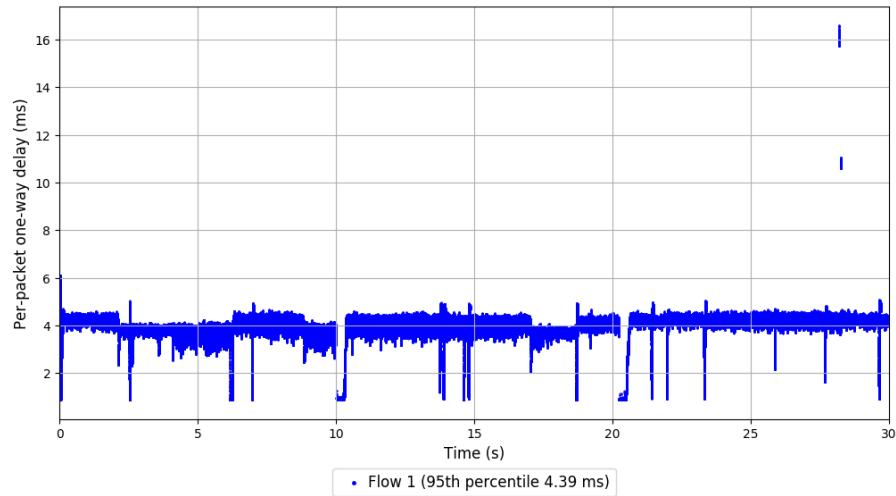
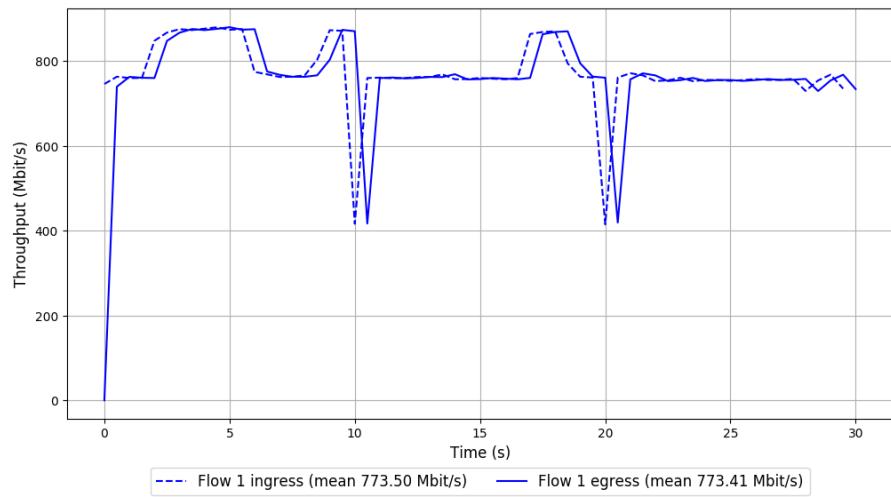


Run 3: Statistics of TCP BBR

```
Start at: 2019-01-03 05:44:55
End at: 2019-01-03 05:45:25
Local clock offset: 0.56 ms
Remote clock offset: 0.457 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 773.41 Mbit/s
95th percentile per-packet one-way delay: 4.387 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 773.41 Mbit/s
95th percentile per-packet one-way delay: 4.387 ms
Loss rate: 0.02%
```

Run 3: Report of TCP BBR — Data Link

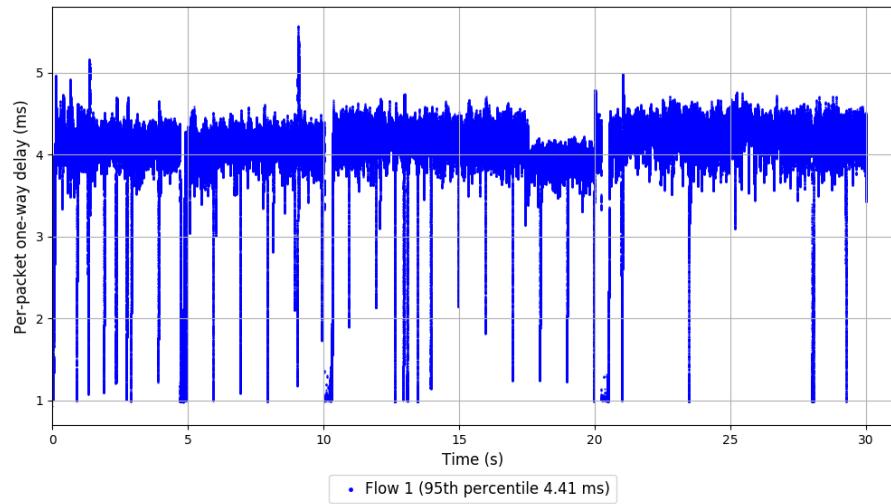
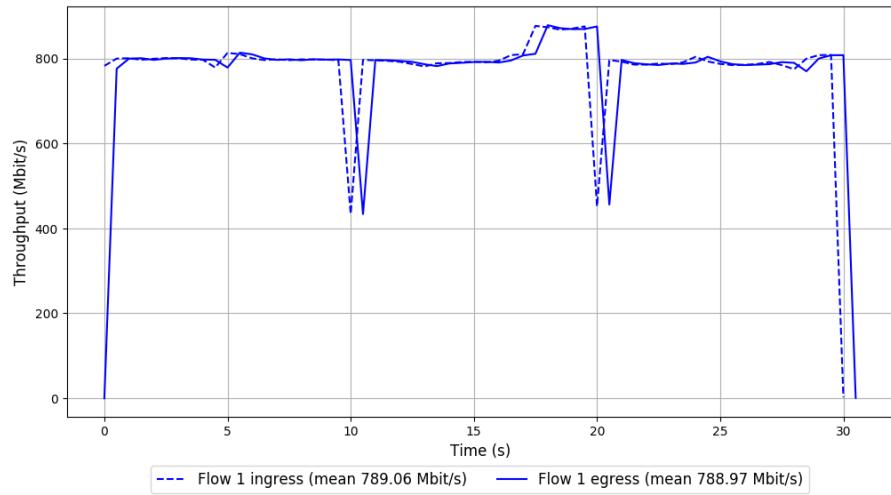


Run 4: Statistics of TCP BBR

```
Start at: 2019-01-03 06:11:52
End at: 2019-01-03 06:12:22
Local clock offset: 0.361 ms
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 788.97 Mbit/s
95th percentile per-packet one-way delay: 4.406 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 788.97 Mbit/s
95th percentile per-packet one-way delay: 4.406 ms
Loss rate: 0.02%
```

Run 4: Report of TCP BBR — Data Link

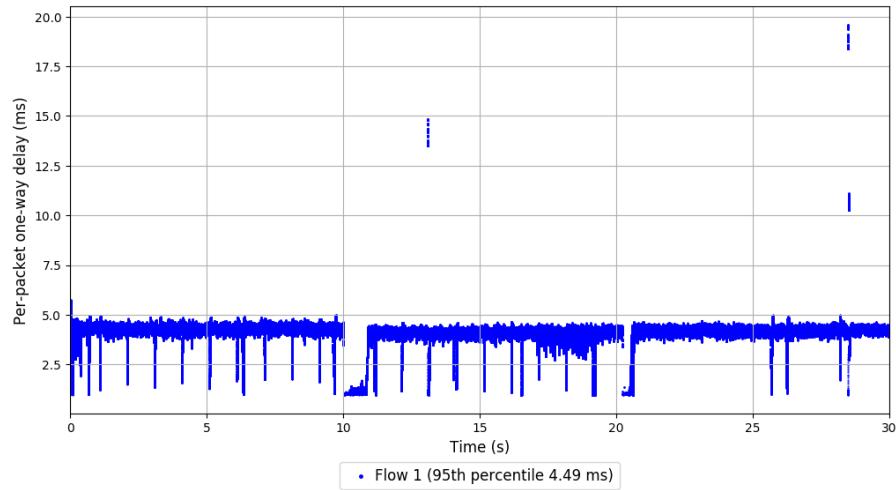
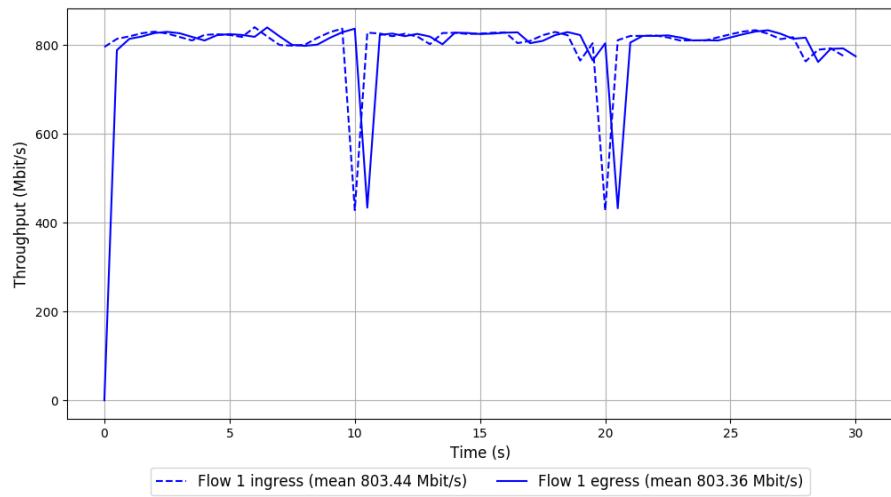


Run 5: Statistics of TCP BBR

```
Start at: 2019-01-03 06:39:05
End at: 2019-01-03 06:39:35
Local clock offset: 0.298 ms
Remote clock offset: -0.391 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 803.36 Mbit/s
95th percentile per-packet one-way delay: 4.485 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 803.36 Mbit/s
95th percentile per-packet one-way delay: 4.485 ms
Loss rate: 0.02%
```

Run 5: Report of TCP BBR — Data Link

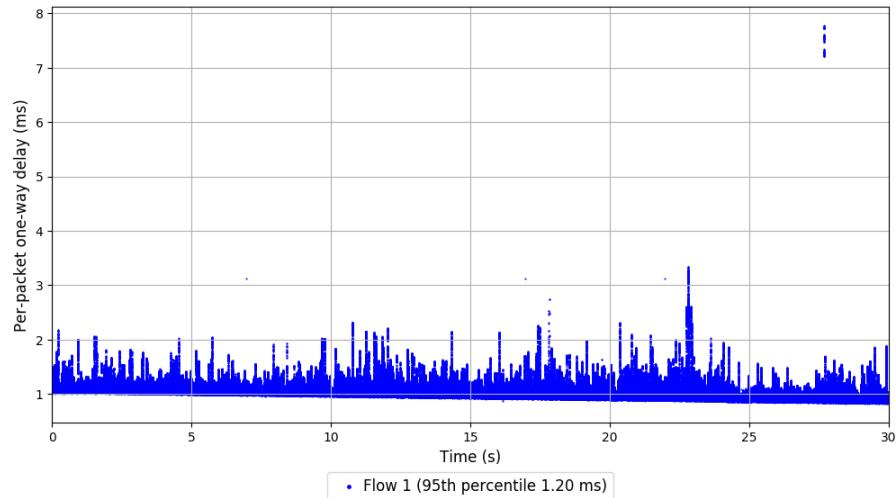
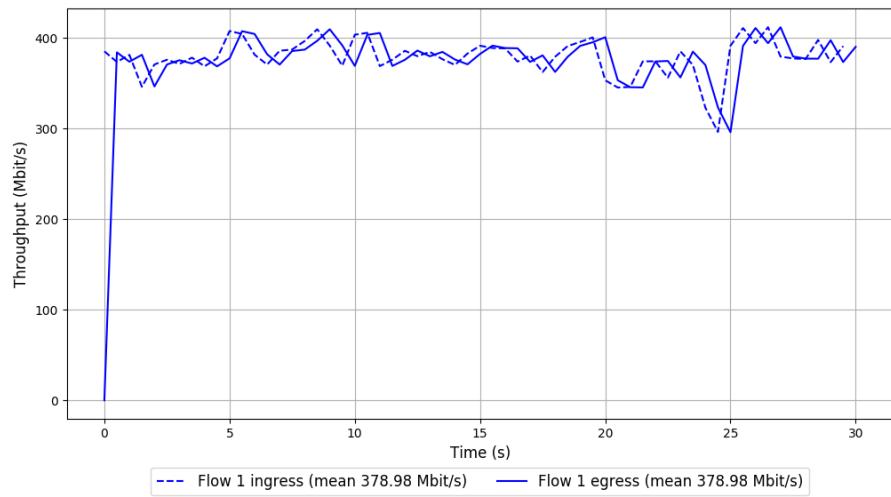


```
Run 1: Statistics of Copa
```

```
Start at: 2019-01-03 04:53:58
End at: 2019-01-03 04:54:28
Local clock offset: -3.308 ms
Remote clock offset: -0.388 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 378.98 Mbit/s
95th percentile per-packet one-way delay: 1.199 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 378.98 Mbit/s
95th percentile per-packet one-way delay: 1.199 ms
Loss rate: 0.01%
```

Run 1: Report of Copa — Data Link

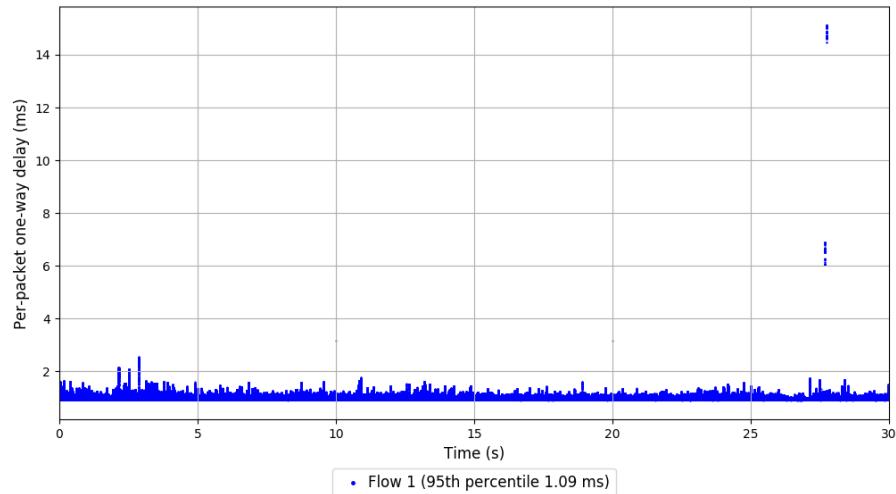
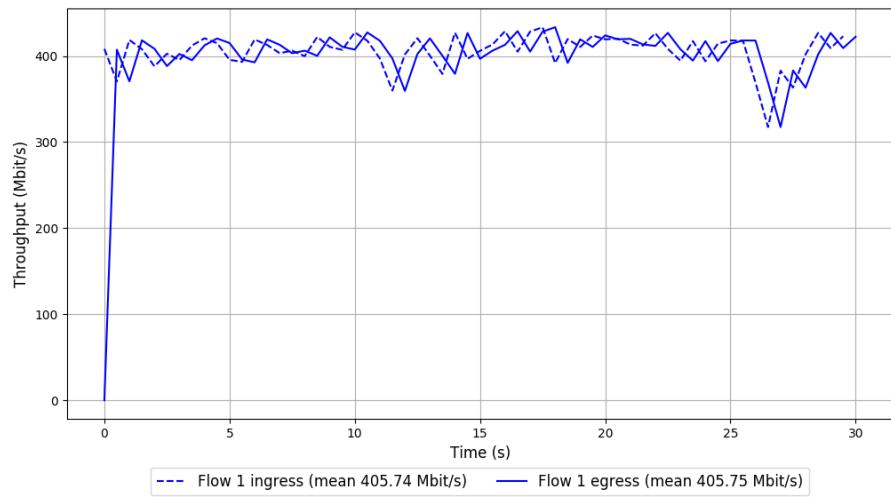


Run 2: Statistics of Copa

```
Start at: 2019-01-03 05:20:56
End at: 2019-01-03 05:21:26
Local clock offset: 0.628 ms
Remote clock offset: 0.084 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 405.75 Mbit/s
95th percentile per-packet one-way delay: 1.092 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 405.75 Mbit/s
95th percentile per-packet one-way delay: 1.092 ms
Loss rate: 0.01%
```

Run 2: Report of Copa — Data Link

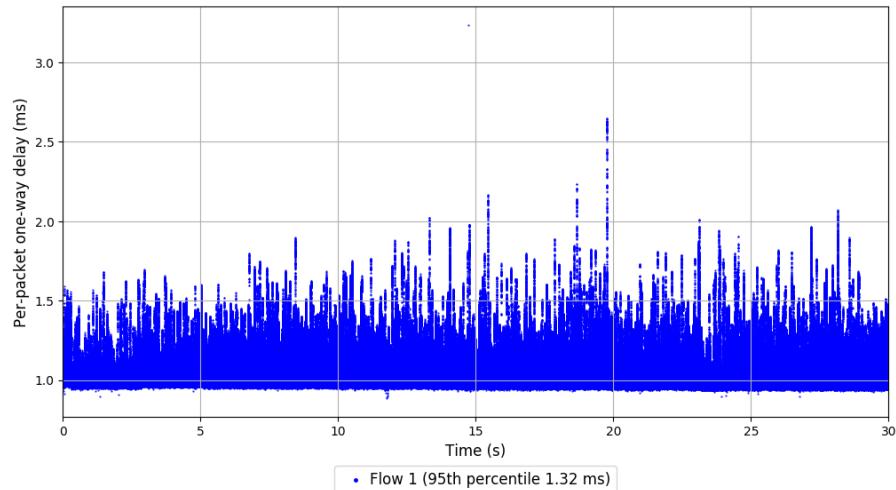
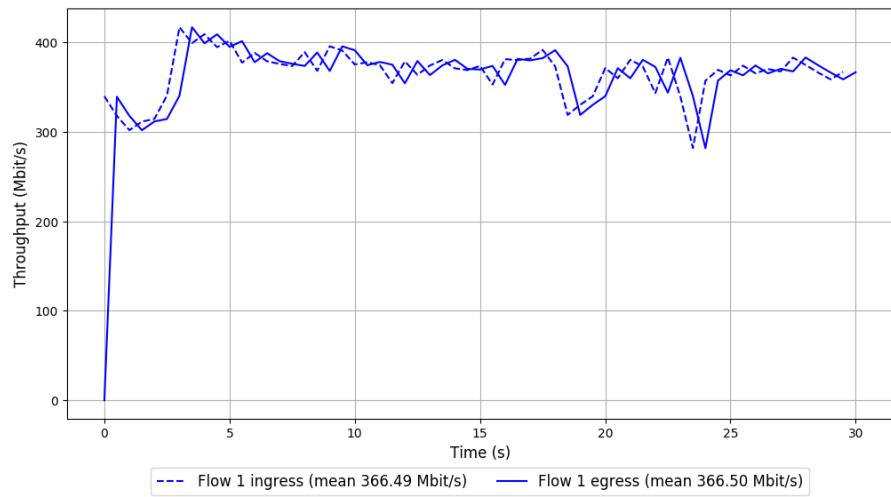


Run 3: Statistics of Copa

```
Start at: 2019-01-03 05:47:59
End at: 2019-01-03 05:48:29
Local clock offset: 0.59 ms
Remote clock offset: 0.299 ms

# Below is generated by plot.py at 2019-01-03 07:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 366.50 Mbit/s
95th percentile per-packet one-way delay: 1.322 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 366.50 Mbit/s
95th percentile per-packet one-way delay: 1.322 ms
Loss rate: 0.01%
```

Run 3: Report of Copa — Data Link

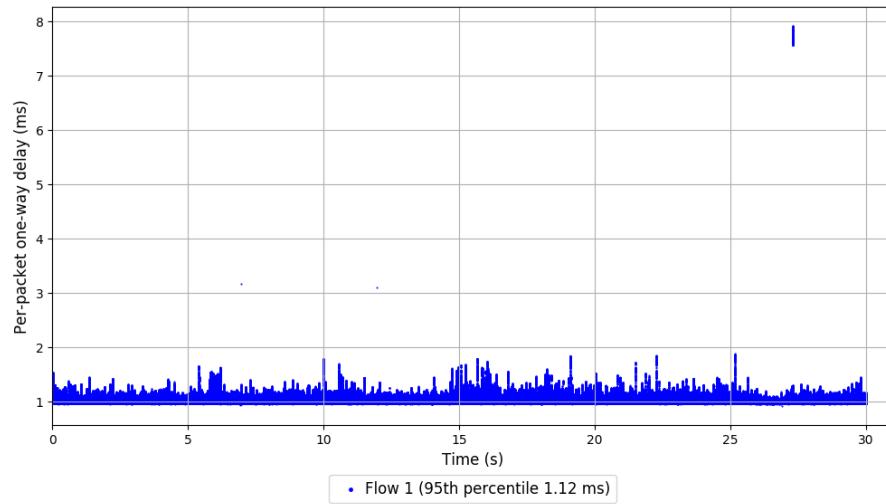
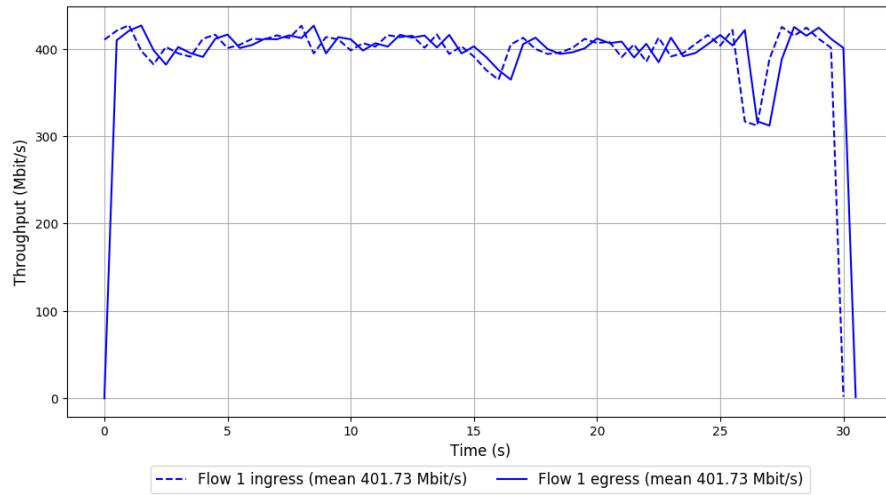


Run 4: Statistics of Copa

```
Start at: 2019-01-03 06:14:56
End at: 2019-01-03 06:15:26
Local clock offset: 0.372 ms
Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2019-01-03 07:24:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 401.73 Mbit/s
95th percentile per-packet one-way delay: 1.120 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 401.73 Mbit/s
95th percentile per-packet one-way delay: 1.120 ms
Loss rate: 0.01%
```

Run 4: Report of Copa — Data Link

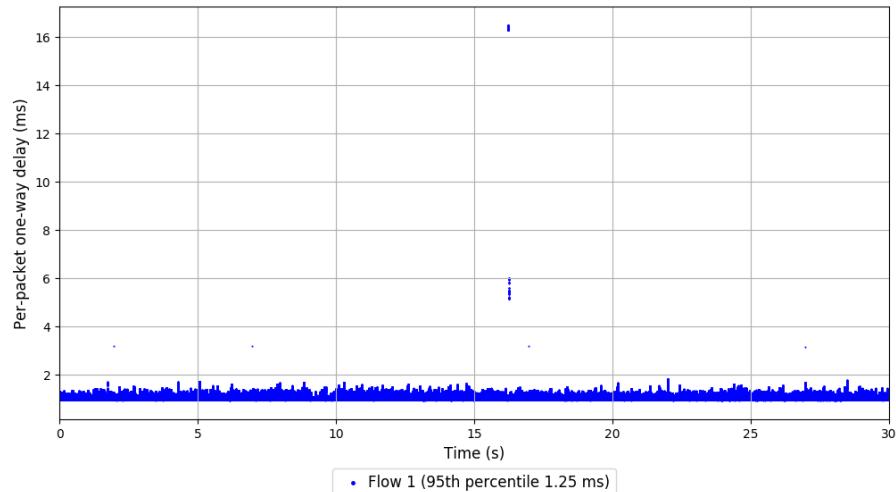
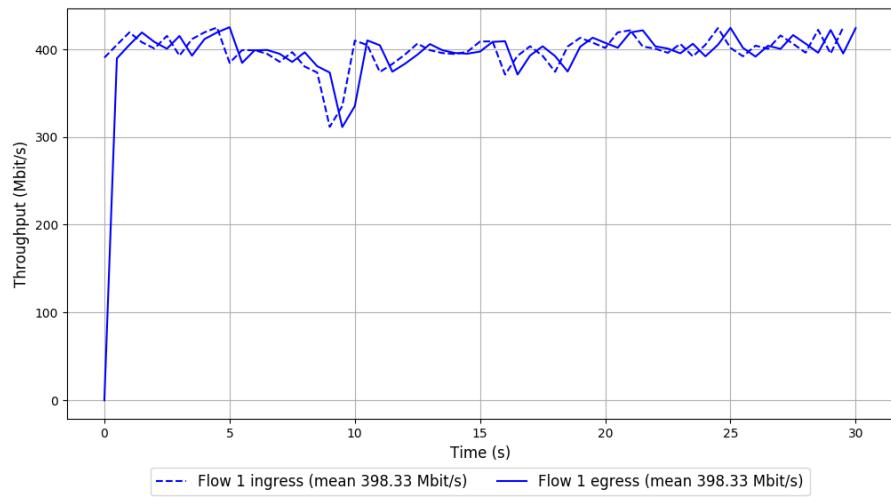


Run 5: Statistics of Copa

```
Start at: 2019-01-03 06:42:13
End at: 2019-01-03 06:42:43
Local clock offset: 0.326 ms
Remote clock offset: -0.387 ms

# Below is generated by plot.py at 2019-01-03 07:24:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 398.33 Mbit/s
95th percentile per-packet one-way delay: 1.248 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 398.33 Mbit/s
95th percentile per-packet one-way delay: 1.248 ms
Loss rate: 0.01%
```

Run 5: Report of Copa — Data Link

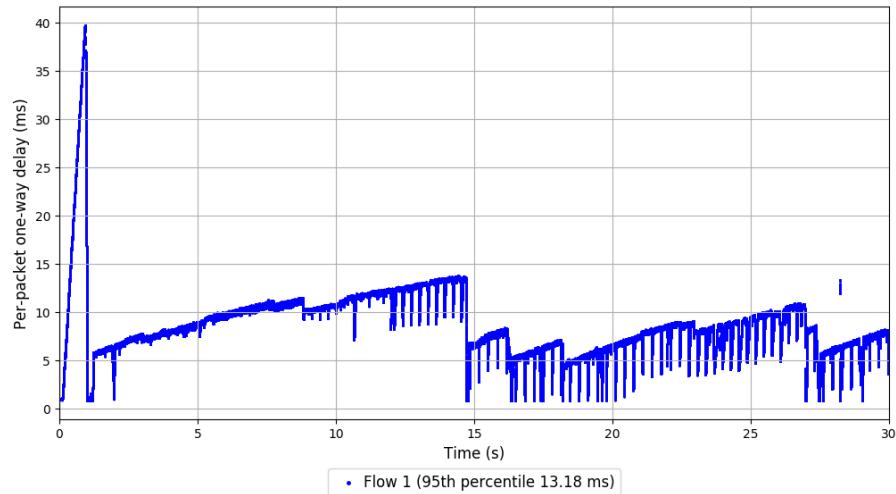
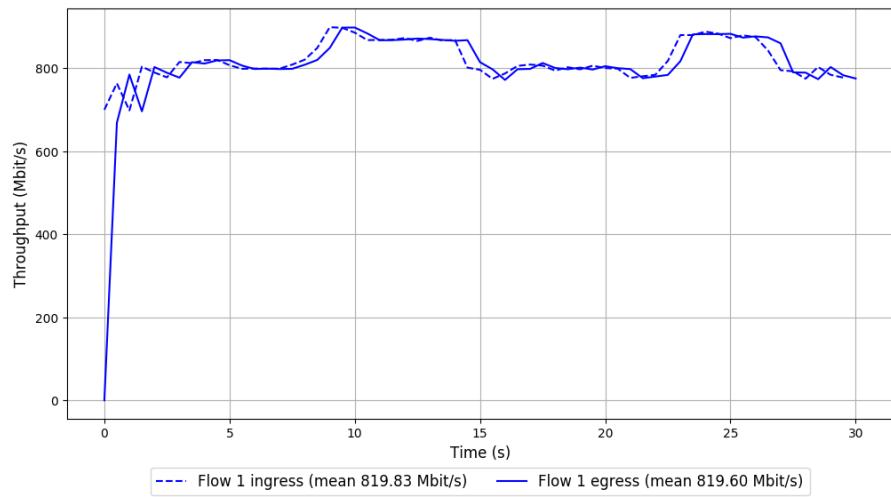


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2019-01-03 05:05:10
End at: 2019-01-03 05:05:40
Local clock offset: -0.631 ms
Remote clock offset: -0.226 ms

# Below is generated by plot.py at 2019-01-03 07:24:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 819.60 Mbit/s
95th percentile per-packet one-way delay: 13.178 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 819.60 Mbit/s
95th percentile per-packet one-way delay: 13.178 ms
Loss rate: 0.03%
```

Run 1: Report of TCP Cubic — Data Link

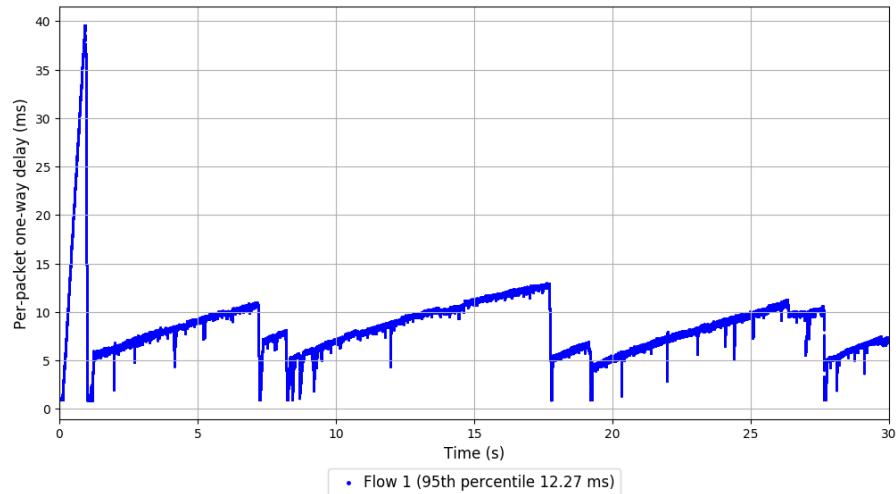
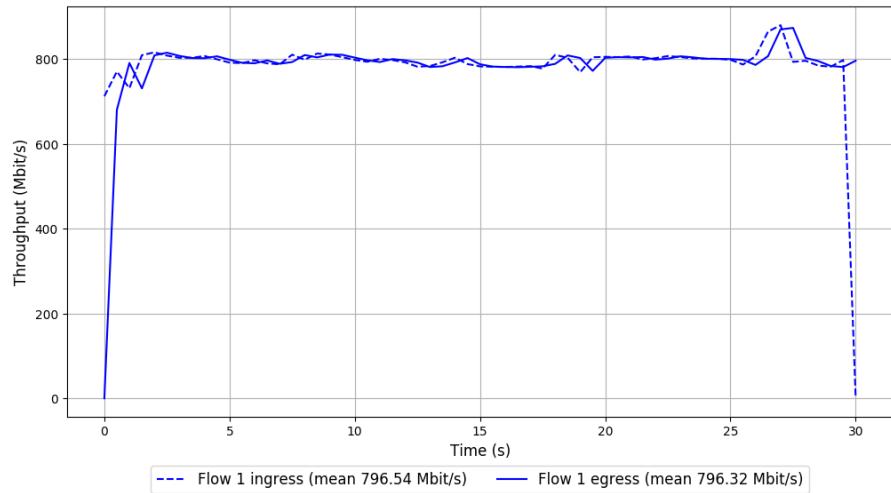


Run 2: Statistics of TCP Cubic

```
Start at: 2019-01-03 05:32:07
End at: 2019-01-03 05:32:37
Local clock offset: 0.565 ms
Remote clock offset: 0.271 ms

# Below is generated by plot.py at 2019-01-03 07:24:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 796.32 Mbit/s
95th percentile per-packet one-way delay: 12.265 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 796.32 Mbit/s
95th percentile per-packet one-way delay: 12.265 ms
Loss rate: 0.03%
```

Run 2: Report of TCP Cubic — Data Link

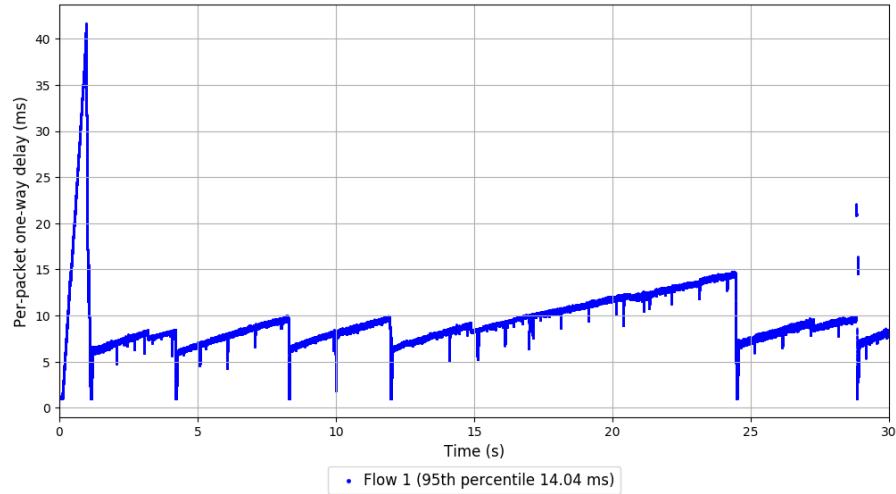
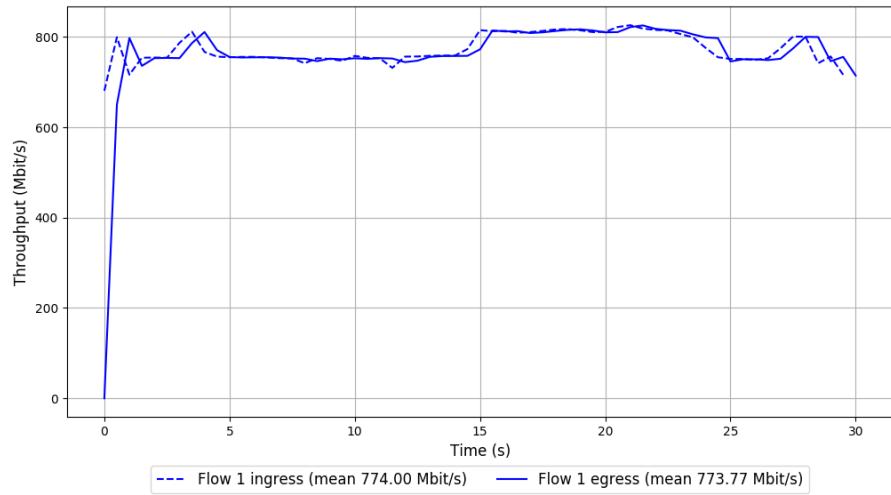


```
Run 3: Statistics of TCP Cubic
```

```
Start at: 2019-01-03 05:59:12
End at: 2019-01-03 05:59:42
Local clock offset: 0.512 ms
Remote clock offset: 0.049 ms

# Below is generated by plot.py at 2019-01-03 07:24:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 773.77 Mbit/s
95th percentile per-packet one-way delay: 14.045 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 773.77 Mbit/s
95th percentile per-packet one-way delay: 14.045 ms
Loss rate: 0.04%
```

Run 3: Report of TCP Cubic — Data Link

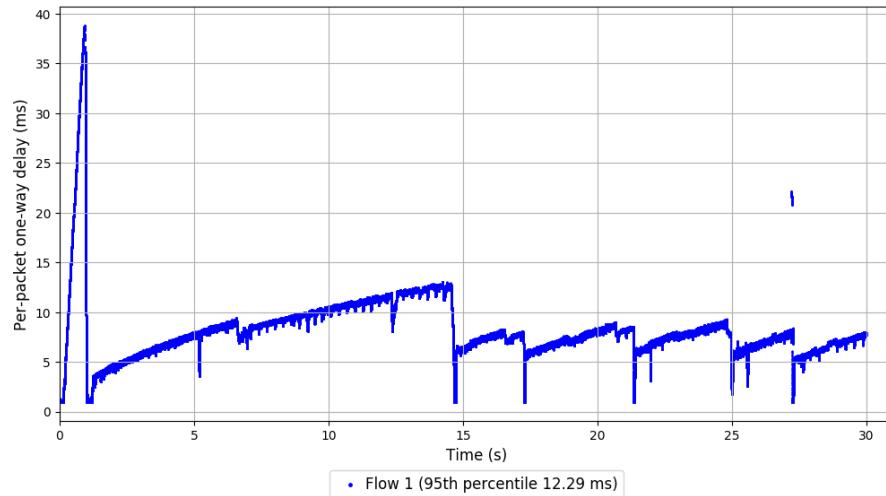
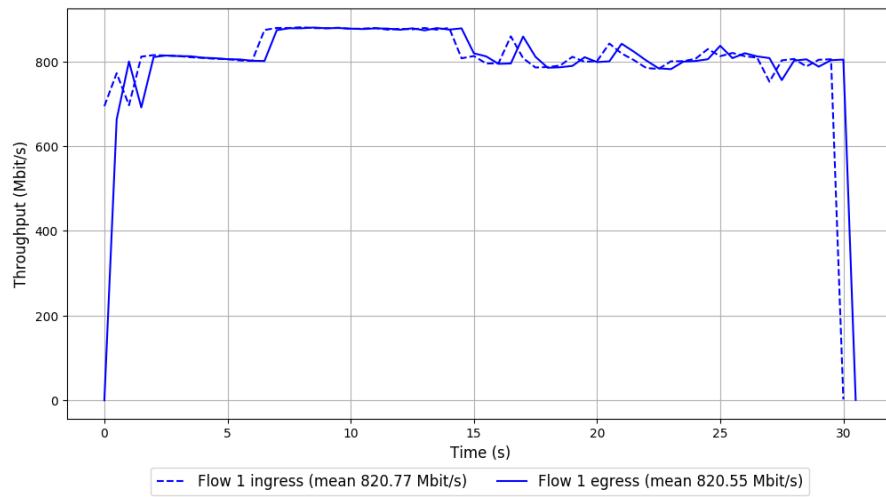


Run 4: Statistics of TCP Cubic

```
Start at: 2019-01-03 06:26:20
End at: 2019-01-03 06:26:50
Local clock offset: 0.355 ms
Remote clock offset: -0.187 ms

# Below is generated by plot.py at 2019-01-03 07:25:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 820.55 Mbit/s
95th percentile per-packet one-way delay: 12.286 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 820.55 Mbit/s
95th percentile per-packet one-way delay: 12.286 ms
Loss rate: 0.03%
```

Run 4: Report of TCP Cubic — Data Link

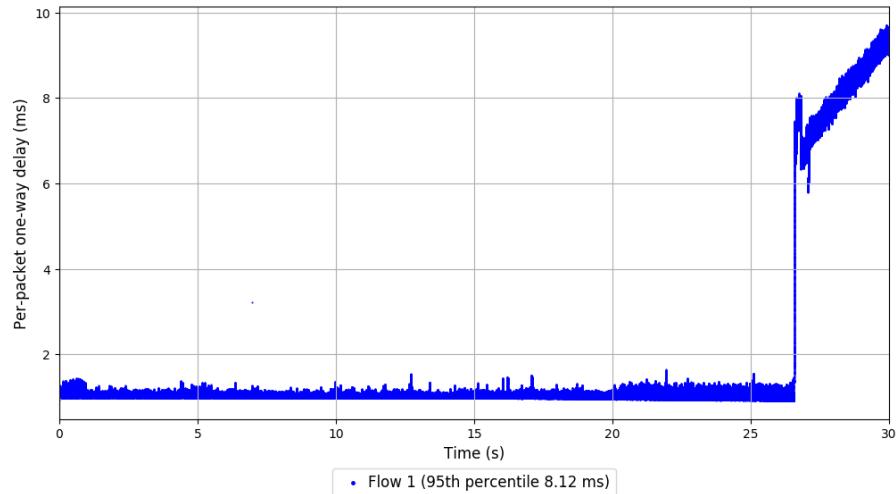
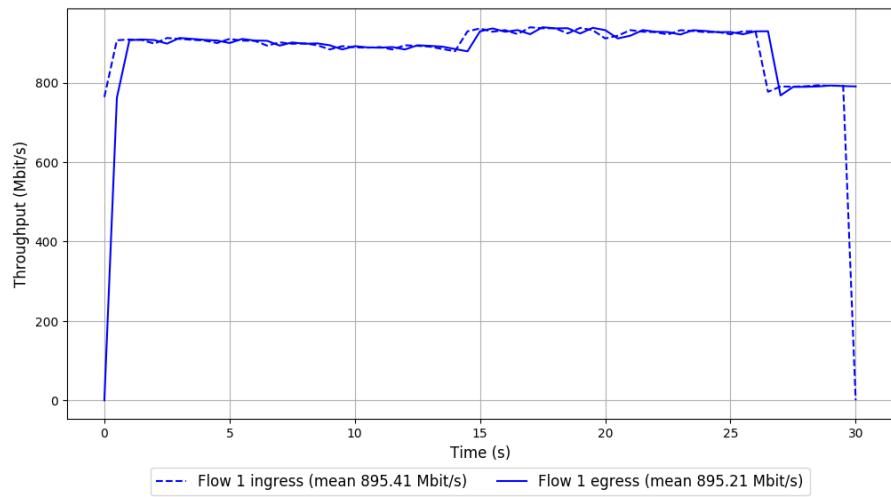


Run 5: Statistics of TCP Cubic

```
Start at: 2019-01-03 06:53:32
End at: 2019-01-03 06:54:02
Local clock offset: 0.408 ms
Remote clock offset: -0.493 ms

# Below is generated by plot.py at 2019-01-03 07:26:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 895.21 Mbit/s
95th percentile per-packet one-way delay: 8.119 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 895.21 Mbit/s
95th percentile per-packet one-way delay: 8.119 ms
Loss rate: 0.03%
```

Run 5: Report of TCP Cubic — Data Link

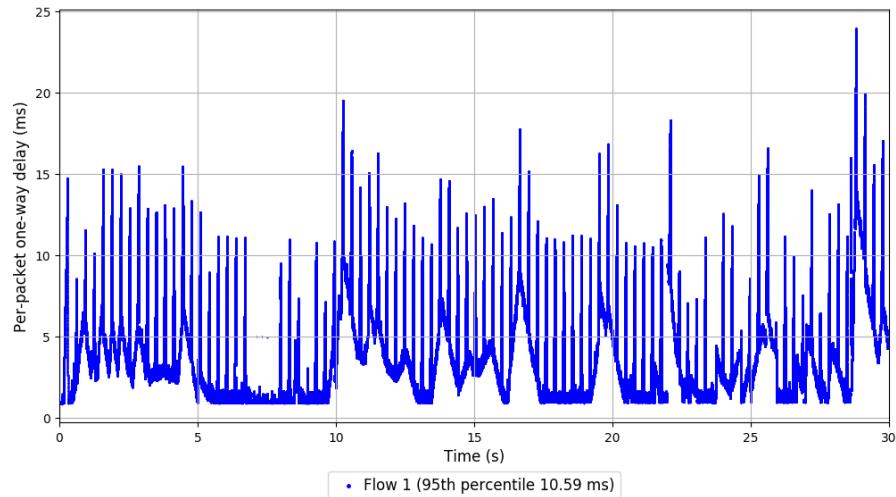
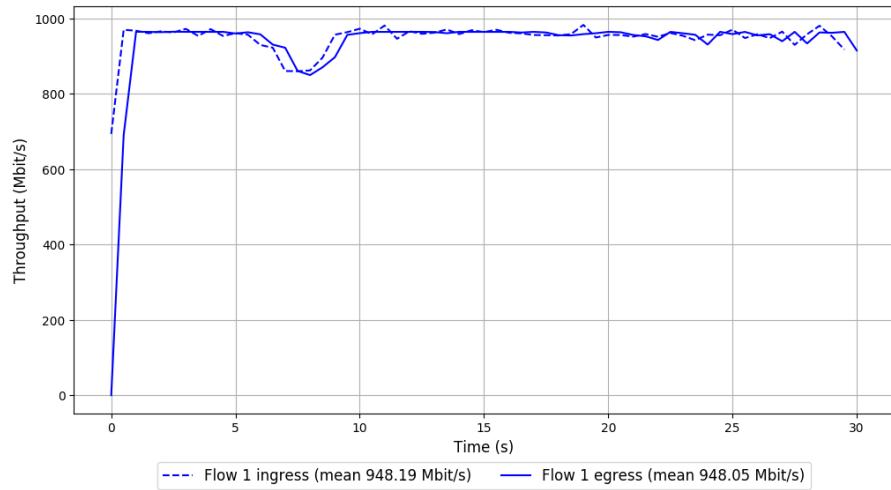


```
Run 1: Statistics of FillP

Start at: 2019-01-03 04:49:15
End at: 2019-01-03 04:49:45
Local clock offset: -3.103 ms
Remote clock offset: -0.436 ms

# Below is generated by plot.py at 2019-01-03 07:28:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 948.05 Mbit/s
95th percentile per-packet one-way delay: 10.586 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 948.05 Mbit/s
95th percentile per-packet one-way delay: 10.586 ms
Loss rate: 0.02%
```

Run 1: Report of FillP — Data Link

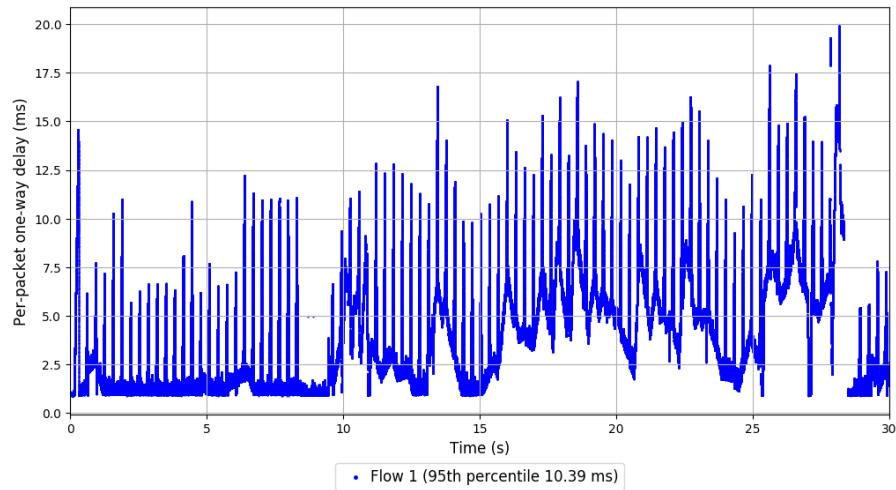
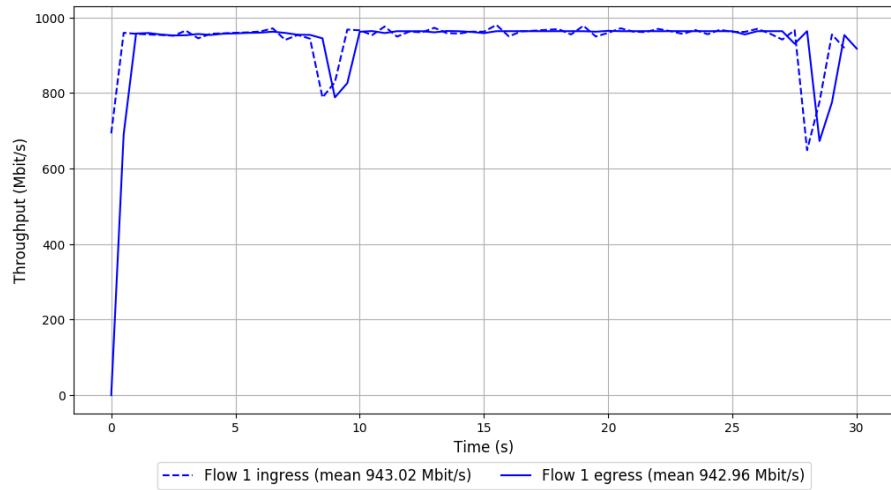


Run 2: Statistics of FillP

```
Start at: 2019-01-03 05:16:13
End at: 2019-01-03 05:16:43
Local clock offset: 0.388 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2019-01-03 07:36:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 942.96 Mbit/s
95th percentile per-packet one-way delay: 10.395 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 942.96 Mbit/s
95th percentile per-packet one-way delay: 10.395 ms
Loss rate: 0.01%
```

Run 2: Report of FillP — Data Link

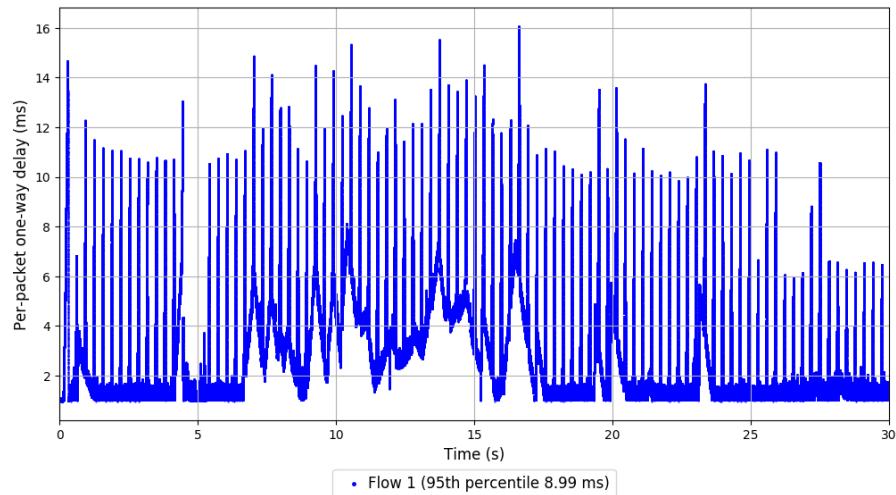
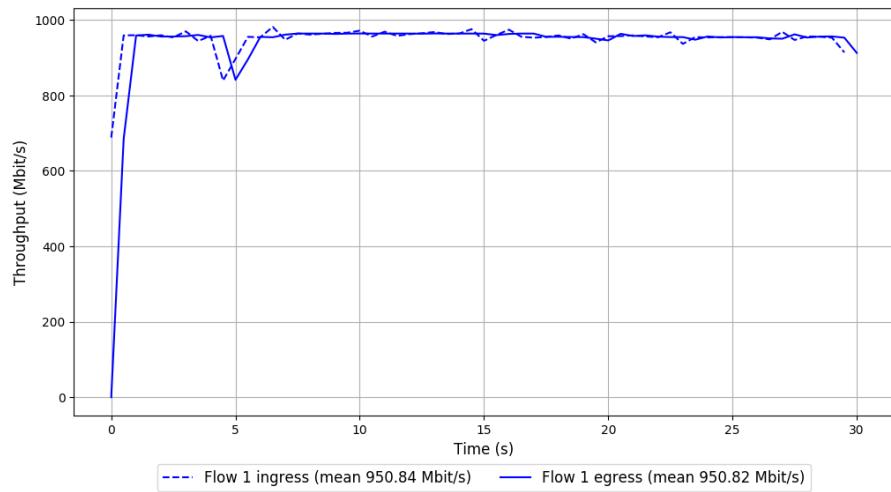


Run 3: Statistics of FillP

```
Start at: 2019-01-03 05:43:18
End at: 2019-01-03 05:43:48
Local clock offset: 0.565 ms
Remote clock offset: 0.3 ms

# Below is generated by plot.py at 2019-01-03 07:36:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 950.82 Mbit/s
95th percentile per-packet one-way delay: 8.994 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 950.82 Mbit/s
95th percentile per-packet one-way delay: 8.994 ms
Loss rate: 0.01%
```

Run 3: Report of FillP — Data Link

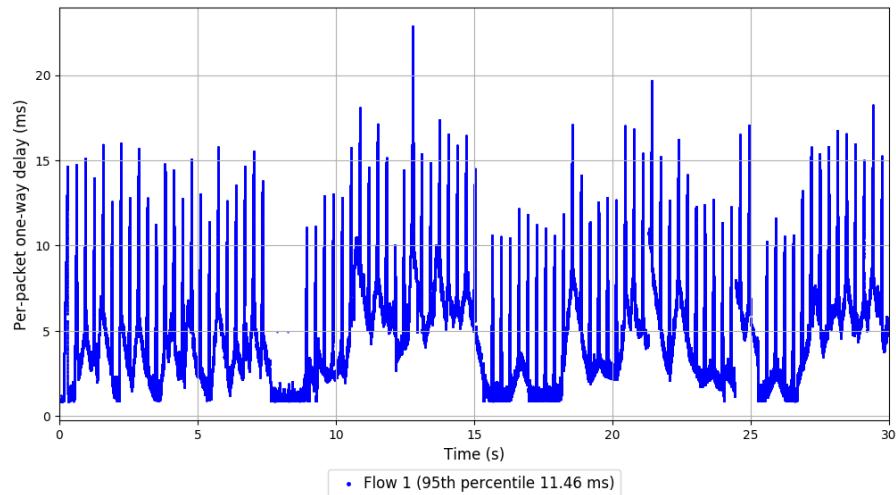
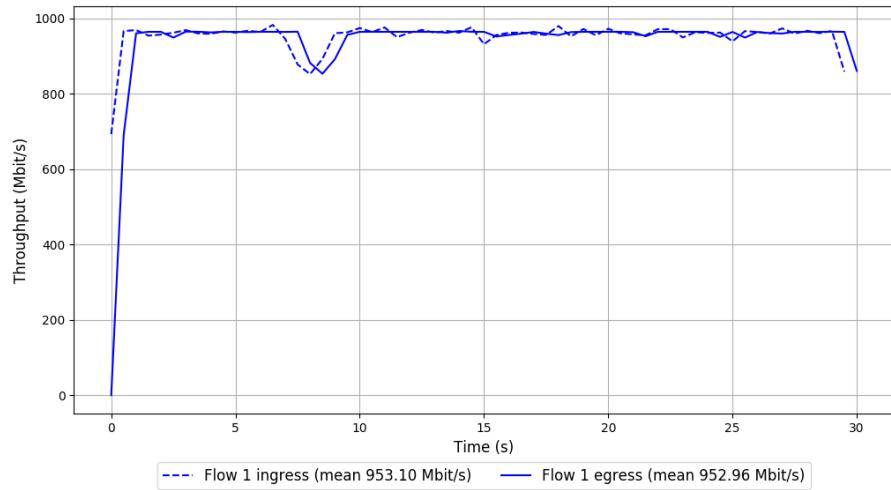


```
Run 4: Statistics of FillP
```

```
Start at: 2019-01-03 06:10:14
End at: 2019-01-03 06:10:44
Local clock offset: 0.358 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2019-01-03 07:36:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 952.96 Mbit/s
95th percentile per-packet one-way delay: 11.456 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 952.96 Mbit/s
95th percentile per-packet one-way delay: 11.456 ms
Loss rate: 0.02%
```

Run 4: Report of FillP — Data Link

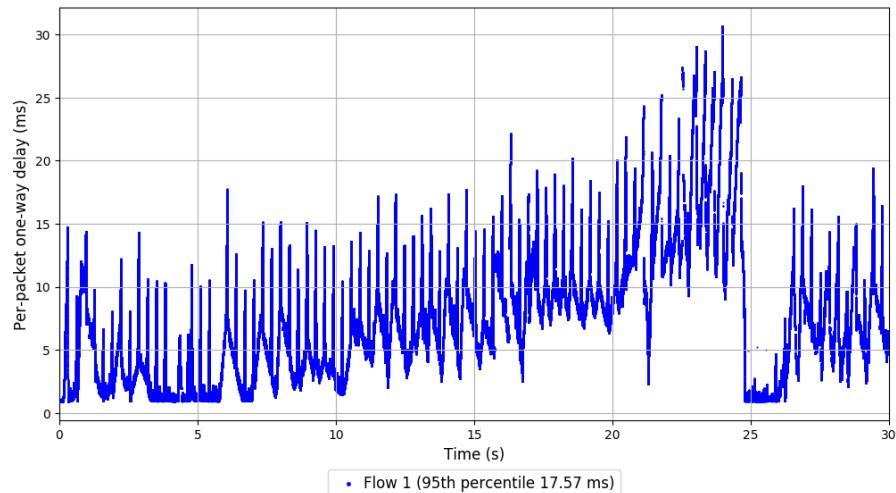
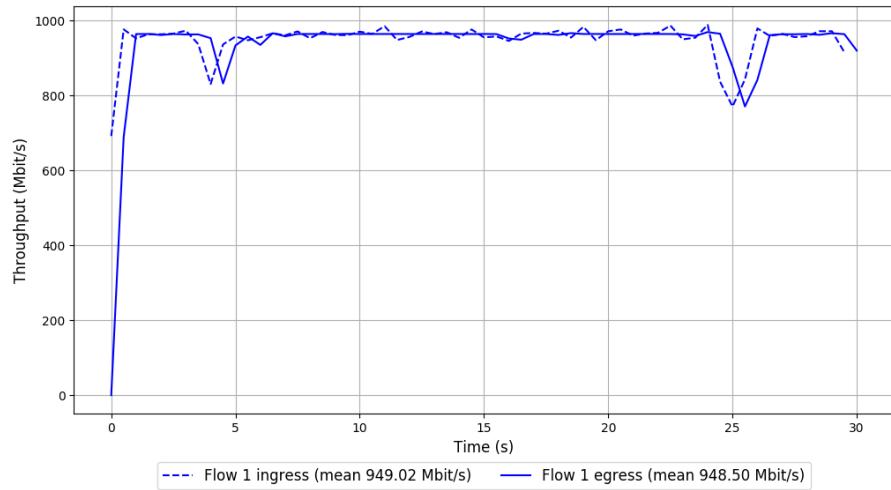


Run 5: Statistics of FillP

```
Start at: 2019-01-03 06:37:27
End at: 2019-01-03 06:37:57
Local clock offset: 0.299 ms
Remote clock offset: -0.351 ms

# Below is generated by plot.py at 2019-01-03 07:36:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 948.50 Mbit/s
95th percentile per-packet one-way delay: 17.575 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 948.50 Mbit/s
95th percentile per-packet one-way delay: 17.575 ms
Loss rate: 0.06%
```

Run 5: Report of FillP — Data Link

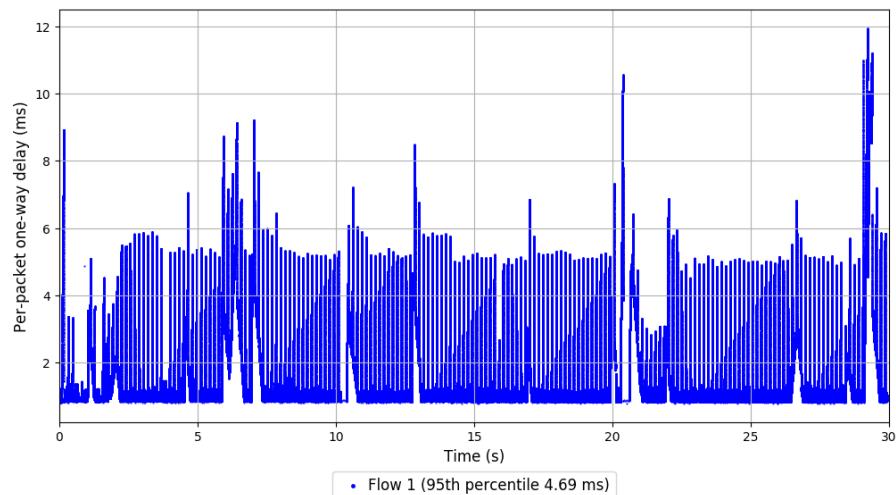
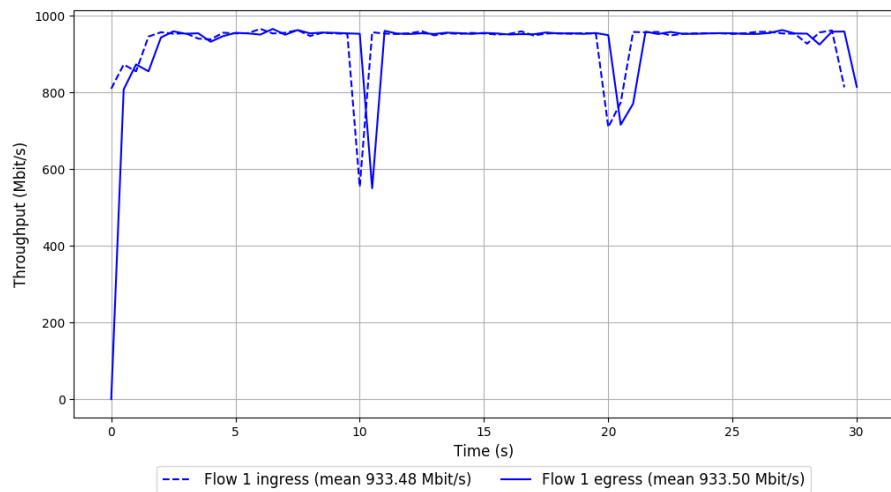


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2019-01-03 05:11:51
End at: 2019-01-03 05:12:21
Local clock offset: 0.088 ms
Remote clock offset: -0.104 ms

# Below is generated by plot.py at 2019-01-03 07:36:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 933.50 Mbit/s
95th percentile per-packet one-way delay: 4.694 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 933.50 Mbit/s
95th percentile per-packet one-way delay: 4.694 ms
Loss rate: 0.01%
```

Run 1: Report of FillP-Sheep — Data Link

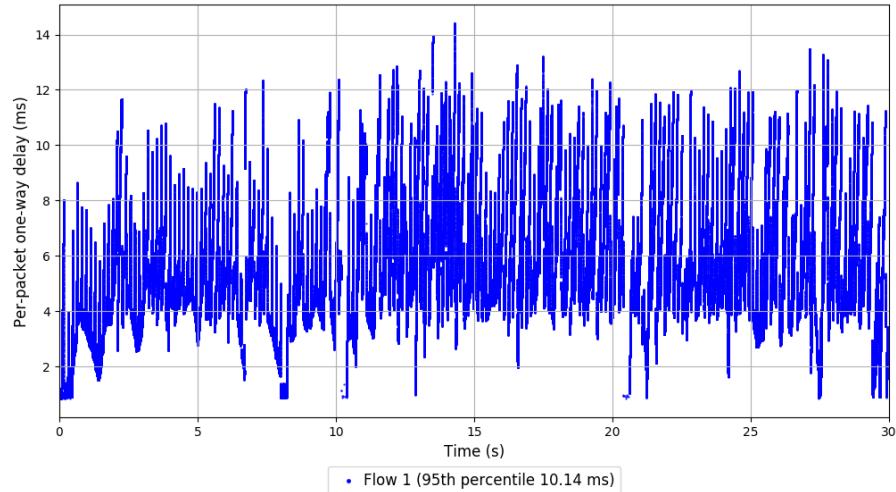
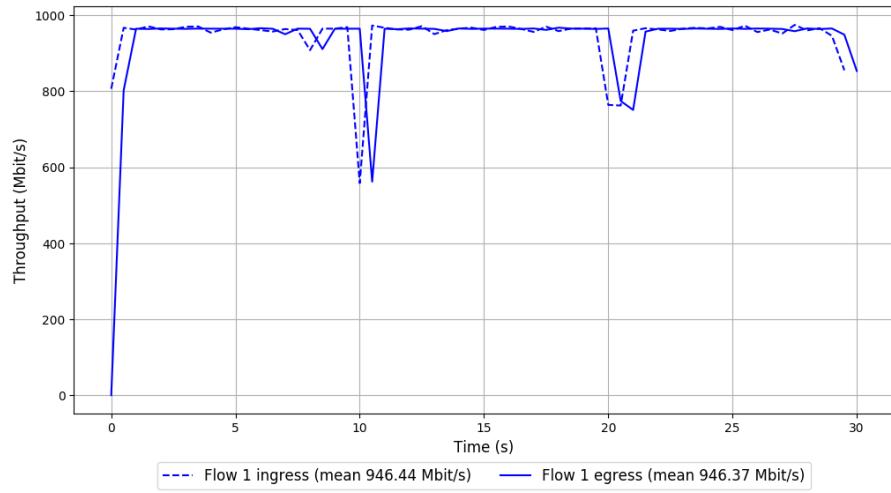


Run 2: Statistics of FillP-Sheep

```
Start at: 2019-01-03 05:38:53
End at: 2019-01-03 05:39:23
Local clock offset: 0.536 ms
Remote clock offset: 0.342 ms

# Below is generated by plot.py at 2019-01-03 07:37:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 946.37 Mbit/s
95th percentile per-packet one-way delay: 10.138 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 946.37 Mbit/s
95th percentile per-packet one-way delay: 10.138 ms
Loss rate: 0.02%
```

Run 2: Report of FillP-Sheep — Data Link

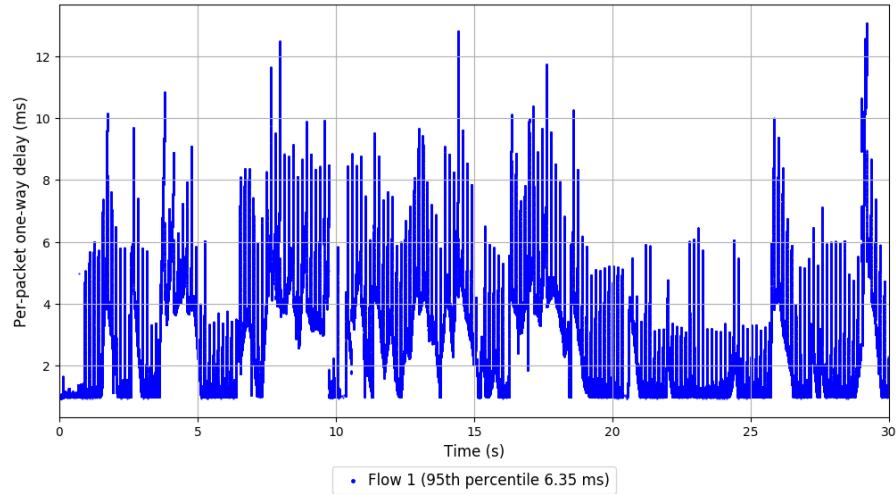
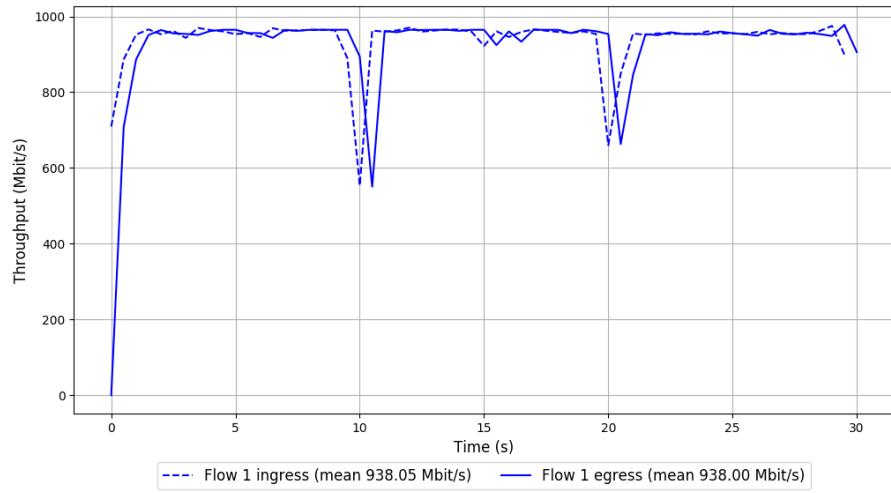


Run 3: Statistics of FillP-Sheep

```
Start at: 2019-01-03 06:05:52
End at: 2019-01-03 06:06:22
Local clock offset: 0.402 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2019-01-03 07:38:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 938.00 Mbit/s
95th percentile per-packet one-way delay: 6.352 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 938.00 Mbit/s
95th percentile per-packet one-way delay: 6.352 ms
Loss rate: 0.01%
```

Run 3: Report of FillP-Sheep — Data Link

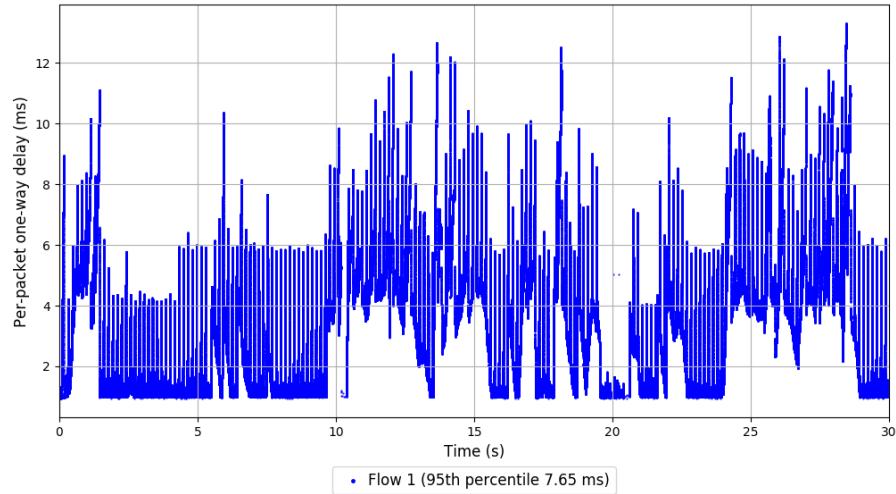
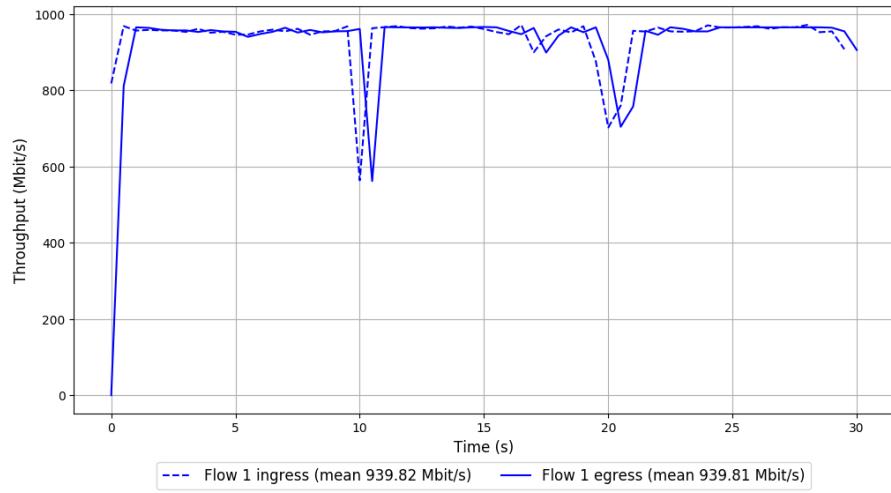


Run 4: Statistics of FillP-Sheep

```
Start at: 2019-01-03 06:33:02
End at: 2019-01-03 06:33:32
Local clock offset: 0.307 ms
Remote clock offset: -0.338 ms

# Below is generated by plot.py at 2019-01-03 07:41:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 939.81 Mbit/s
95th percentile per-packet one-way delay: 7.649 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 939.81 Mbit/s
95th percentile per-packet one-way delay: 7.649 ms
Loss rate: 0.01%
```

Run 4: Report of FillP-Sheep — Data Link

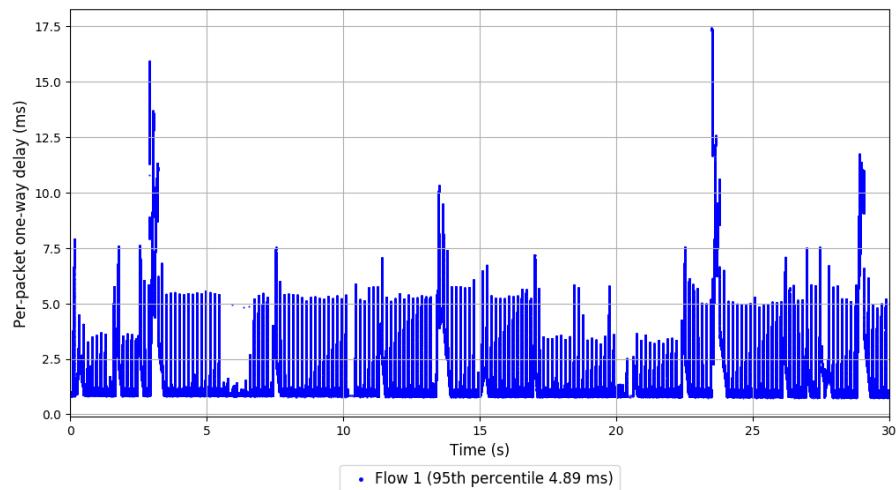
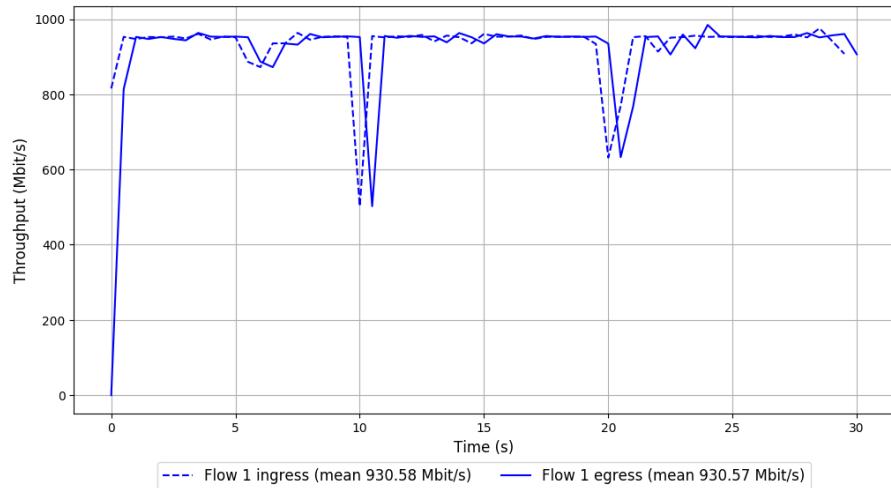


Run 5: Statistics of FillP-Sheep

```
Start at: 2019-01-03 07:00:16
End at: 2019-01-03 07:00:46
Local clock offset: 0.324 ms
Remote clock offset: -2.063 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 930.57 Mbit/s
95th percentile per-packet one-way delay: 4.893 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 930.57 Mbit/s
95th percentile per-packet one-way delay: 4.893 ms
Loss rate: 0.01%
```

Run 5: Report of FillP-Sheep — Data Link

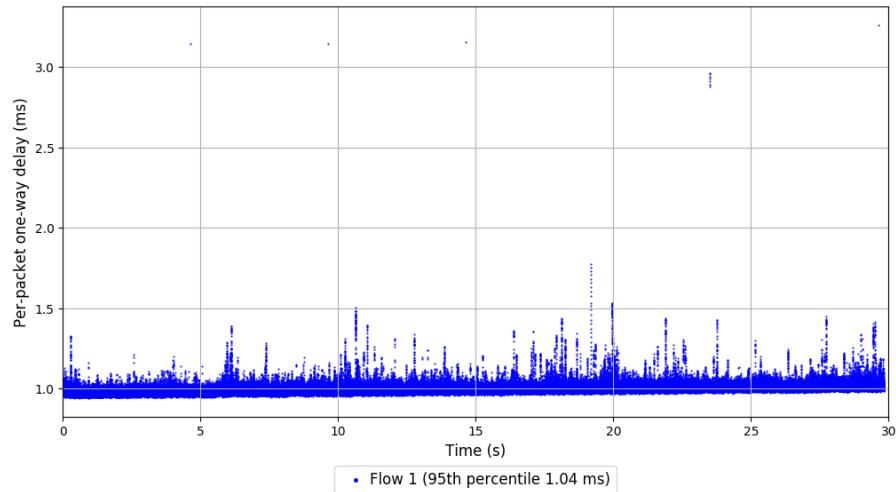
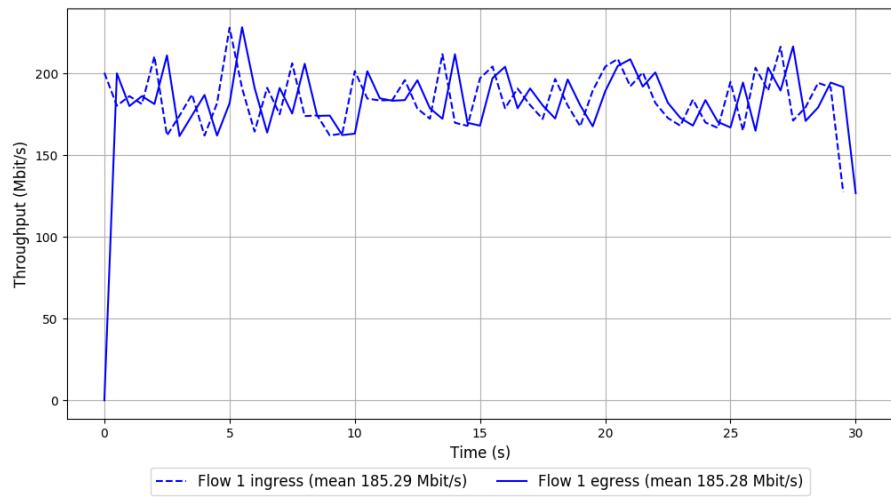


Run 1: Statistics of Indigo

```
Start at: 2019-01-03 04:46:28
End at: 2019-01-03 04:46:58
Local clock offset: -2.962 ms
Remote clock offset: -0.546 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 185.28 Mbit/s
95th percentile per-packet one-way delay: 1.037 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 185.28 Mbit/s
95th percentile per-packet one-way delay: 1.037 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo — Data Link

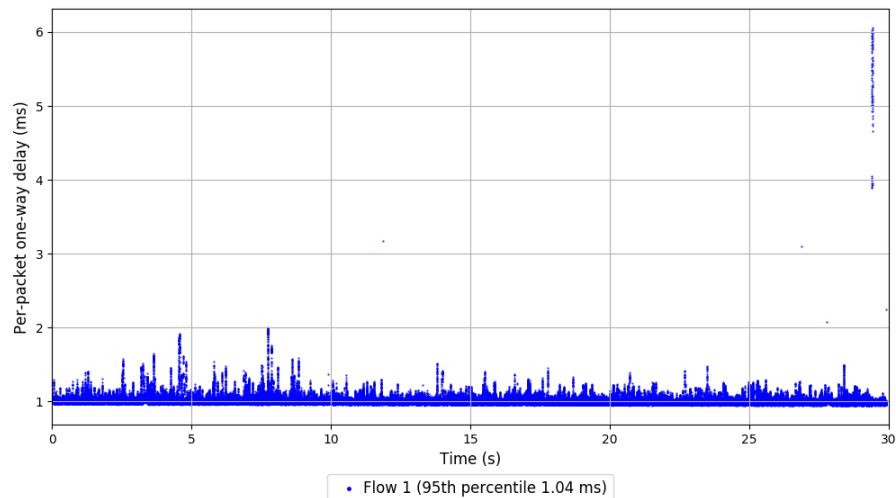
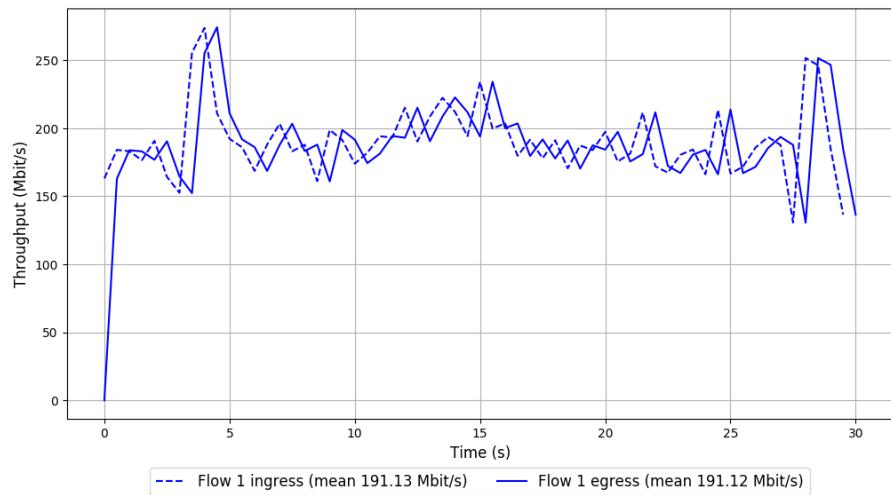


Run 2: Statistics of Indigo

```
Start at: 2019-01-03 05:13:29
End at: 2019-01-03 05:13:59
Local clock offset: 0.22 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 191.12 Mbit/s
95th percentile per-packet one-way delay: 1.039 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 191.12 Mbit/s
95th percentile per-packet one-way delay: 1.039 ms
Loss rate: 0.01%
```

Run 2: Report of Indigo — Data Link

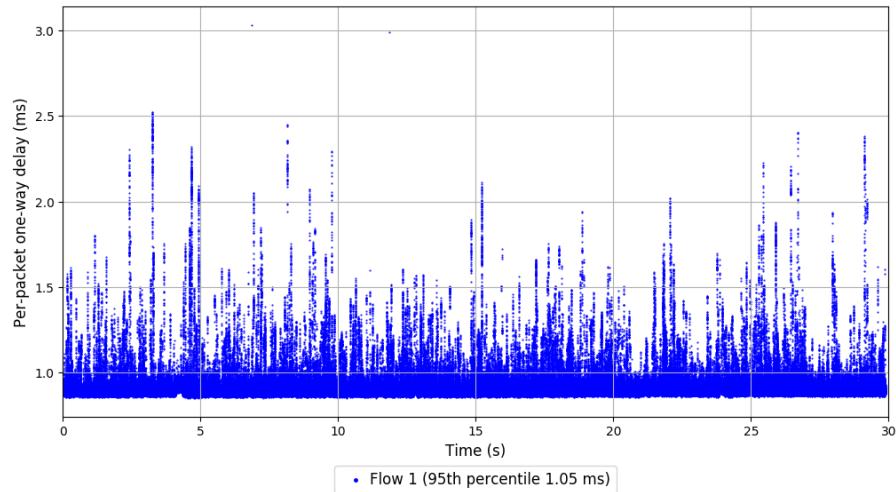
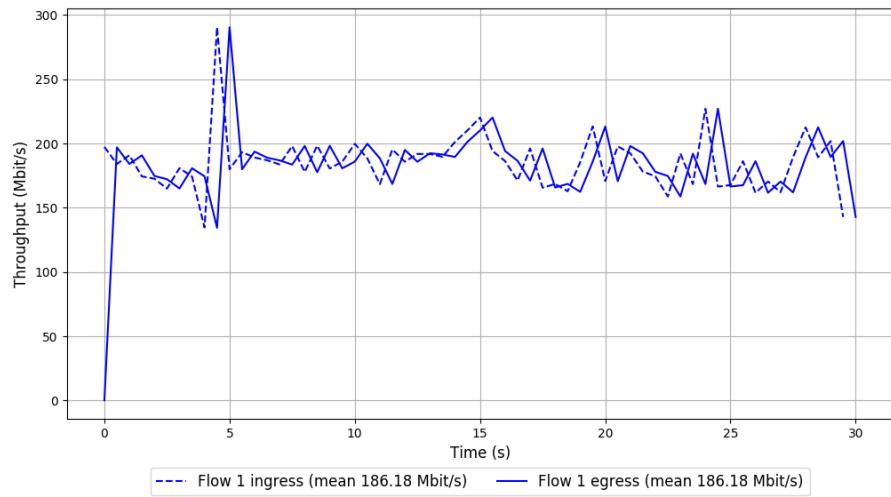


Run 3: Statistics of Indigo

```
Start at: 2019-01-03 05:40:30
End at: 2019-01-03 05:41:00
Local clock offset: 0.53 ms
Remote clock offset: 0.386 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.18 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 186.18 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

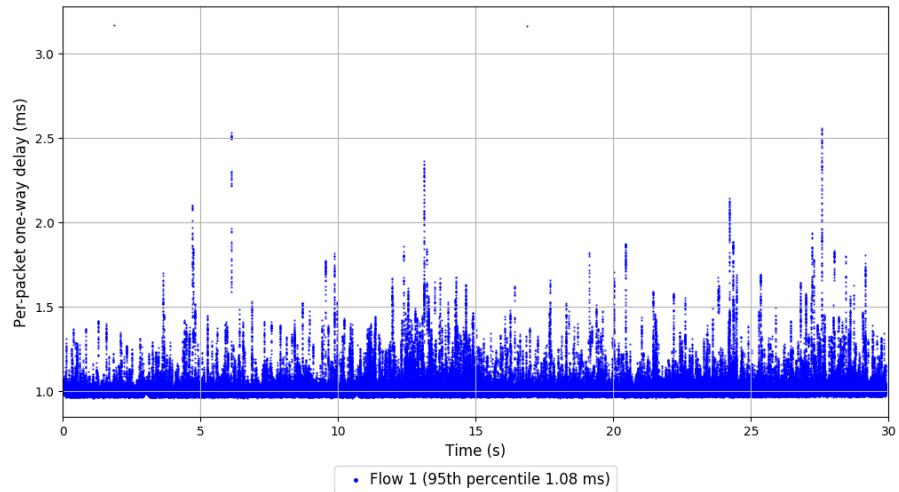
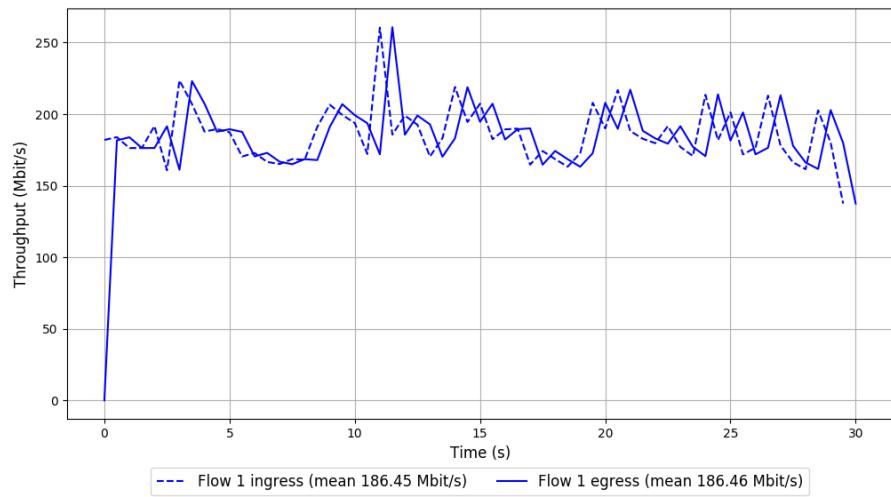


Run 4: Statistics of Indigo

```
Start at: 2019-01-03 06:07:29
End at: 2019-01-03 06:07:59
Local clock offset: 0.387 ms
Remote clock offset: -0.008 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.46 Mbit/s
95th percentile per-packet one-way delay: 1.083 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 186.46 Mbit/s
95th percentile per-packet one-way delay: 1.083 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo — Data Link

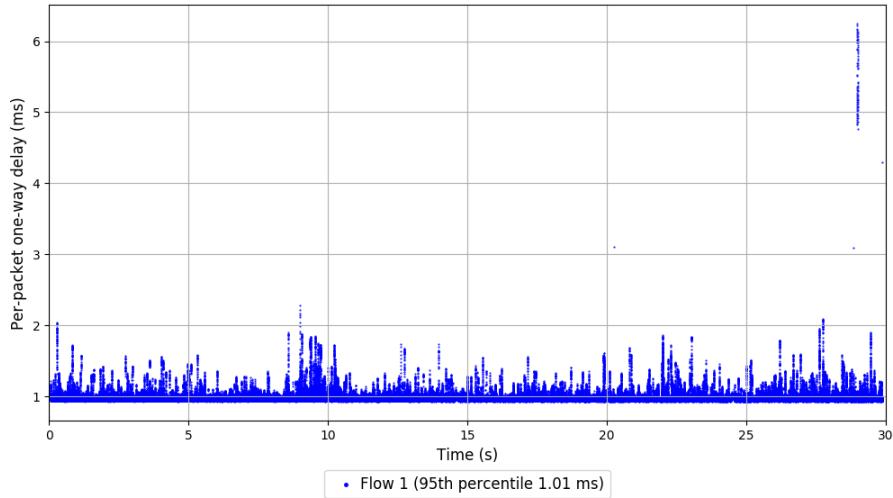
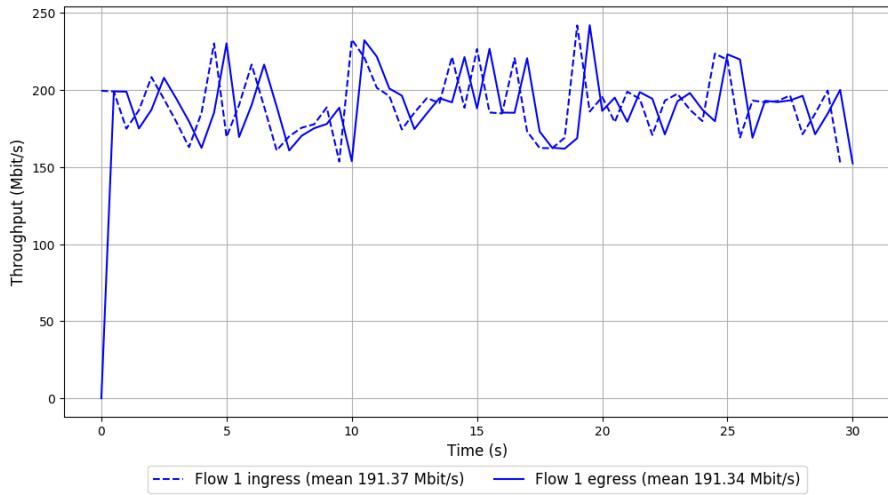


Run 5: Statistics of Indigo

```
Start at: 2019-01-03 06:34:40
End at: 2019-01-03 06:35:10
Local clock offset: 0.314 ms
Remote clock offset: -0.291 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 191.34 Mbit/s
95th percentile per-packet one-way delay: 1.010 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 191.34 Mbit/s
95th percentile per-packet one-way delay: 1.010 ms
Loss rate: 0.01%
```

Run 5: Report of Indigo — Data Link

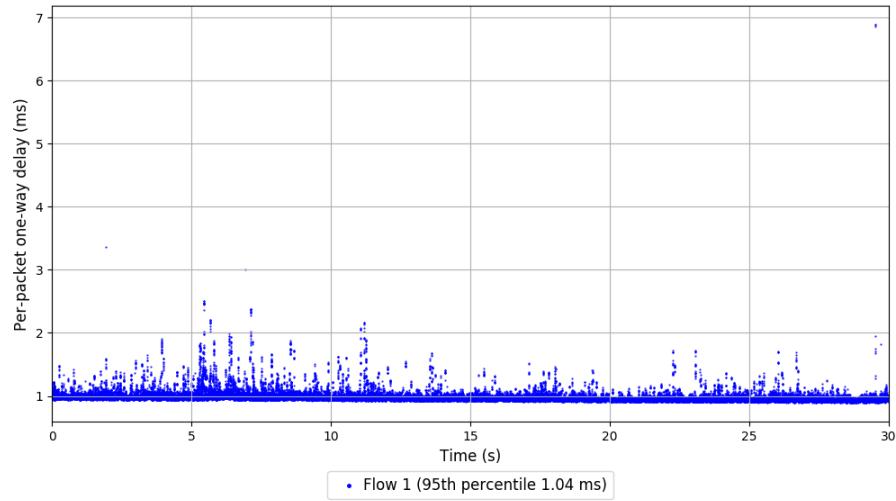
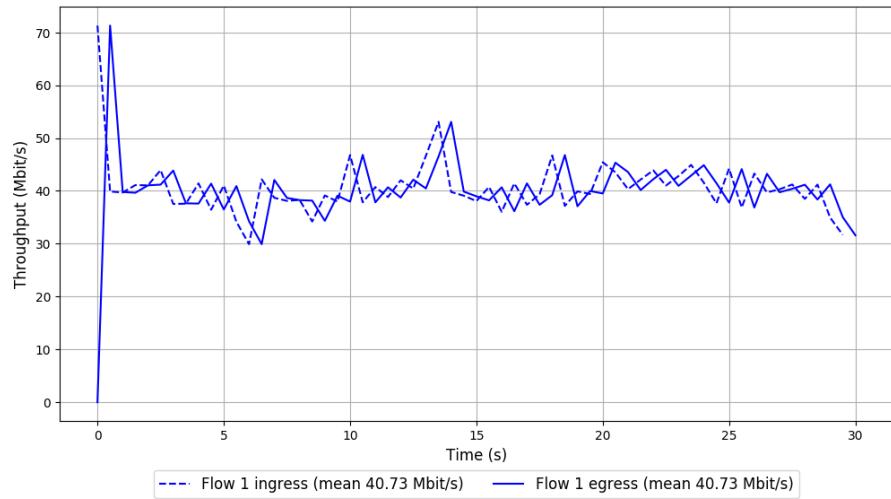


```
Run 1: Statistics of Indigo-MusesD
```

```
Start at: 2019-01-03 05:08:08
End at: 2019-01-03 05:08:39
Local clock offset: -0.247 ms
Remote clock offset: -0.189 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.73 Mbit/s
95th percentile per-packet one-way delay: 1.042 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 40.73 Mbit/s
95th percentile per-packet one-way delay: 1.042 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo-MusesD — Data Link

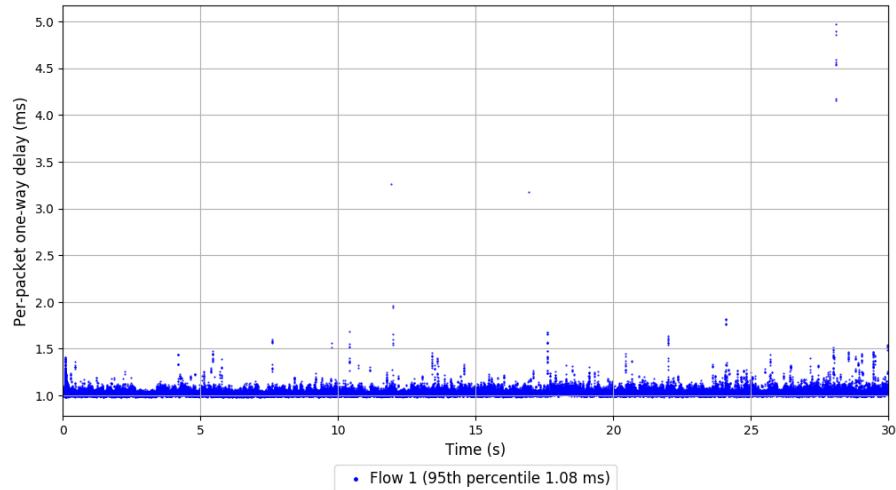
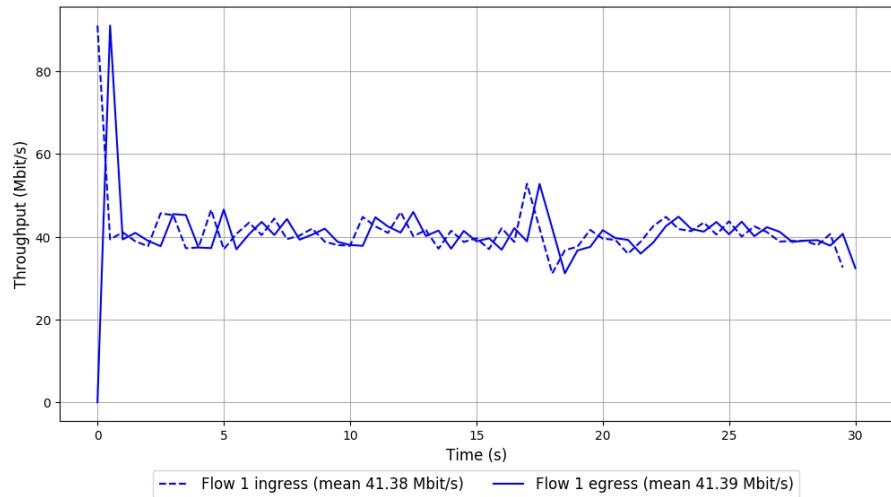


Run 2: Statistics of Indigo-MusesD

```
Start at: 2019-01-03 05:35:05
End at: 2019-01-03 05:35:35
Local clock offset: 0.547 ms
Remote clock offset: 0.222 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.39 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 41.39 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.01%
```

Run 2: Report of Indigo-MusesD — Data Link

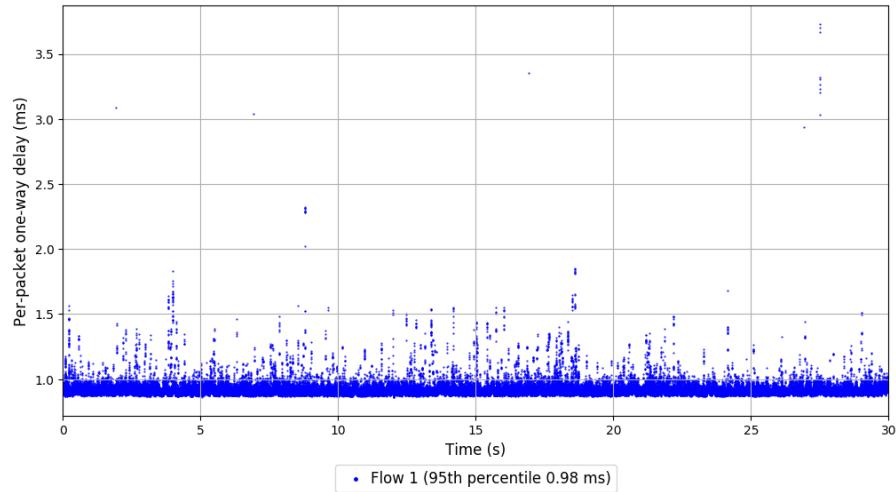
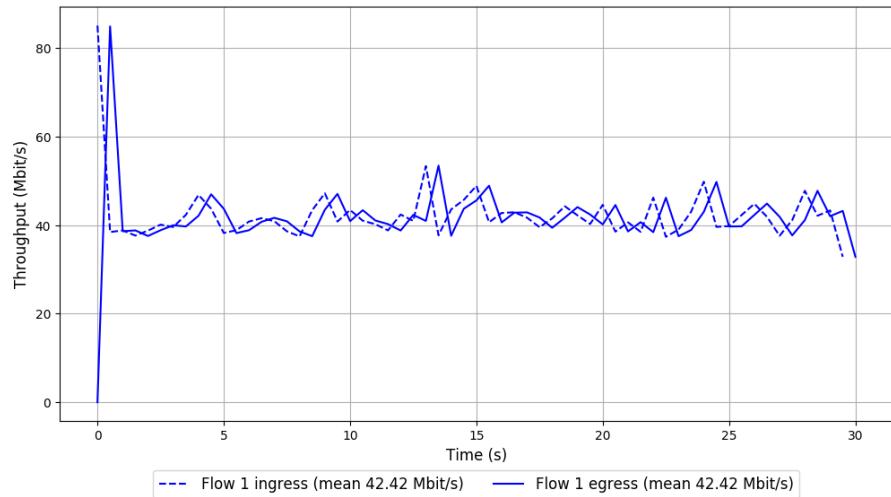


Run 3: Statistics of Indigo-MusesD

```
Start at: 2019-01-03 06:02:09
End at: 2019-01-03 06:02:39
Local clock offset: 0.424 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.42 Mbit/s
95th percentile per-packet one-way delay: 0.976 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 42.42 Mbit/s
95th percentile per-packet one-way delay: 0.976 ms
Loss rate: 0.01%
```

Run 3: Report of Indigo-MusesD — Data Link

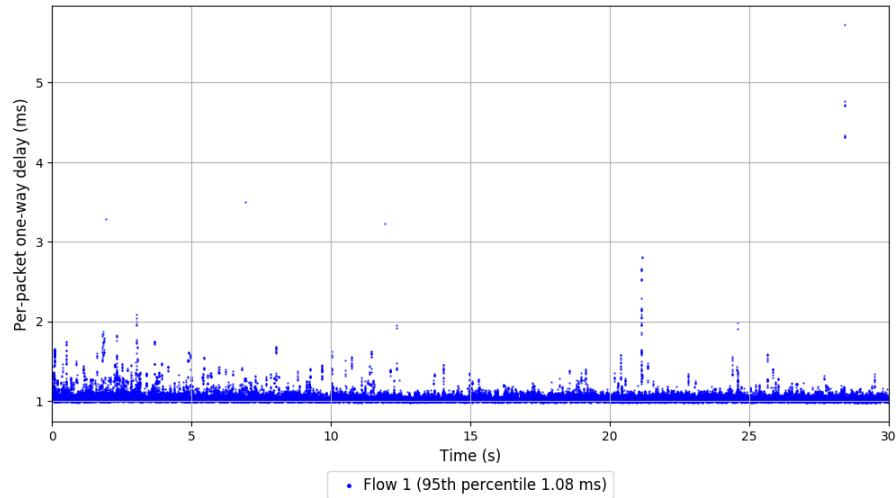
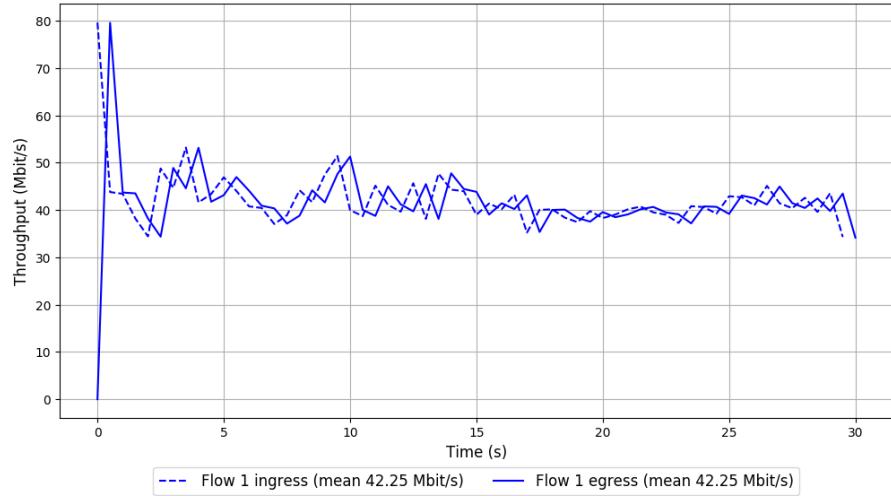


Run 4: Statistics of Indigo-MusesD

```
Start at: 2019-01-03 06:29:18
End at: 2019-01-03 06:29:48
Local clock offset: 0.335 ms
Remote clock offset: -0.259 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.25 Mbit/s
95th percentile per-packet one-way delay: 1.083 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 42.25 Mbit/s
95th percentile per-packet one-way delay: 1.083 ms
Loss rate: 0.01%
```

Run 4: Report of Indigo-MusesD — Data Link

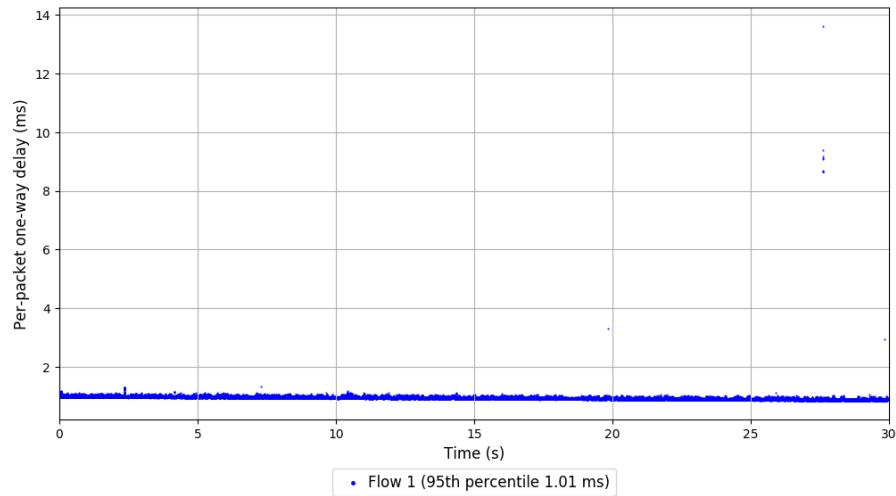
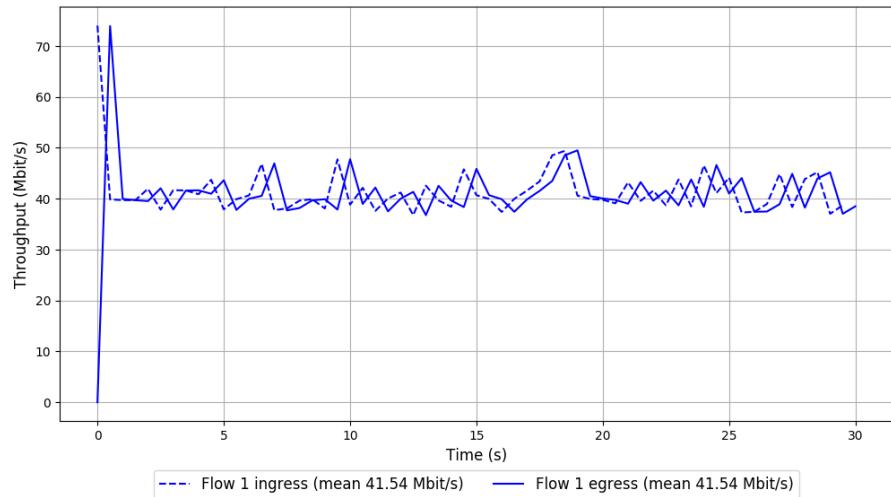


Run 5: Statistics of Indigo-MusesD

```
Start at: 2019-01-03 06:56:34
End at: 2019-01-03 06:57:04
Local clock offset: 0.372 ms
Remote clock offset: -1.303 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.54 Mbit/s
95th percentile per-packet one-way delay: 1.008 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 41.54 Mbit/s
95th percentile per-packet one-way delay: 1.008 ms
Loss rate: 0.01%
```

Run 5: Report of Indigo-MusesD — Data Link

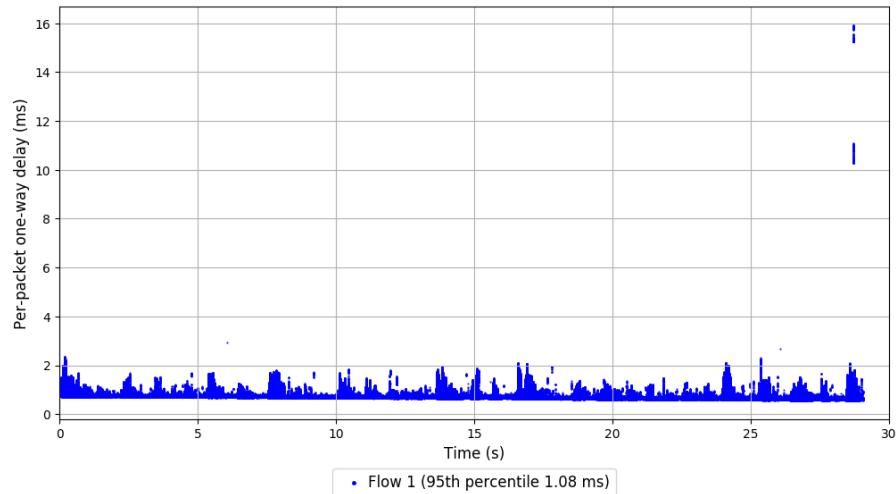
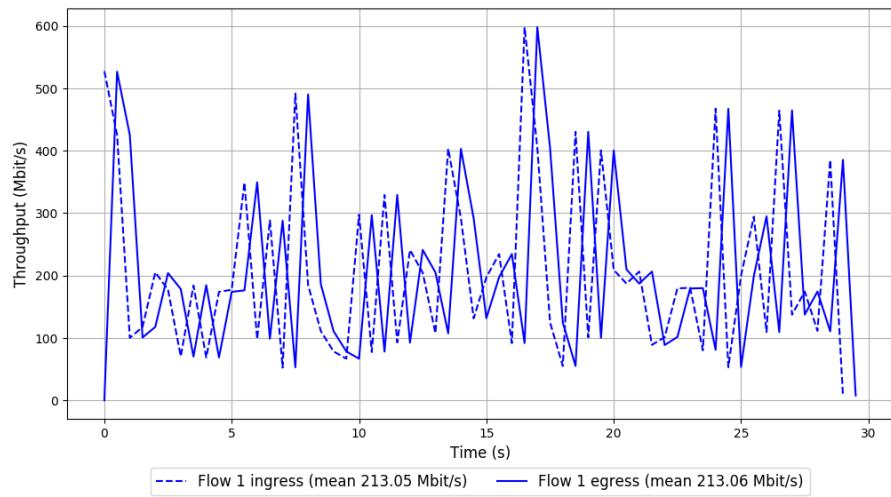


Run 1: Statistics of Indigo-MusesT

```
Start at: 2019-01-03 04:55:34
End at: 2019-01-03 04:56:04
Local clock offset: -2.972 ms
Remote clock offset: -0.339 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 213.06 Mbit/s
95th percentile per-packet one-way delay: 1.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 213.06 Mbit/s
95th percentile per-packet one-way delay: 1.077 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-MusesT — Data Link

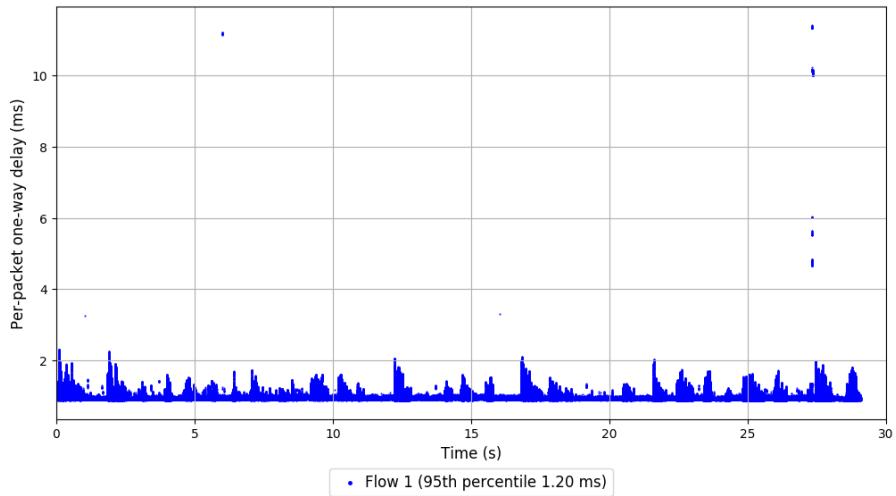
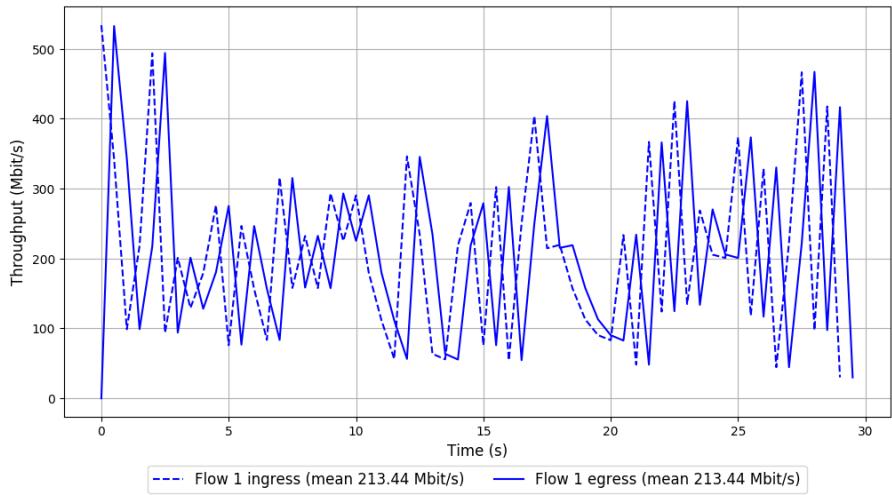


Run 2: Statistics of Indigo-MusesT

```
Start at: 2019-01-03 05:22:33
End at: 2019-01-03 05:23:03
Local clock offset: 0.682 ms
Remote clock offset: 0.154 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 213.44 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 213.44 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.01%
```

Run 2: Report of Indigo-MusesT — Data Link

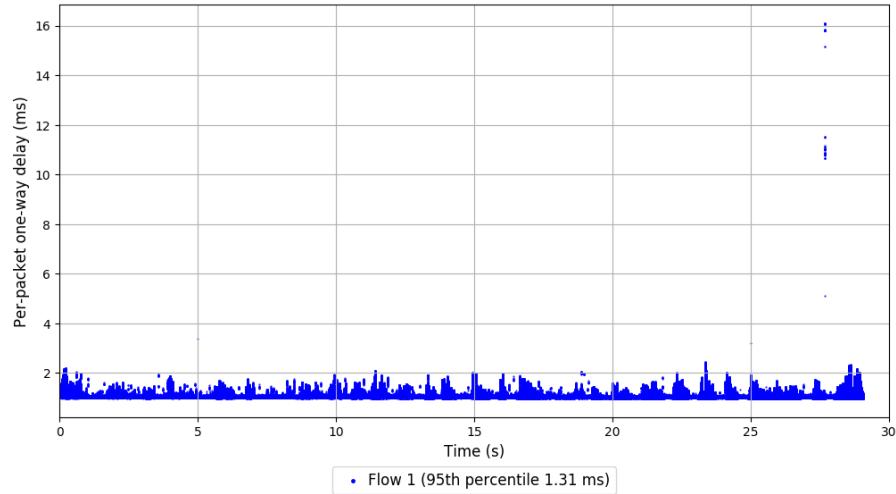
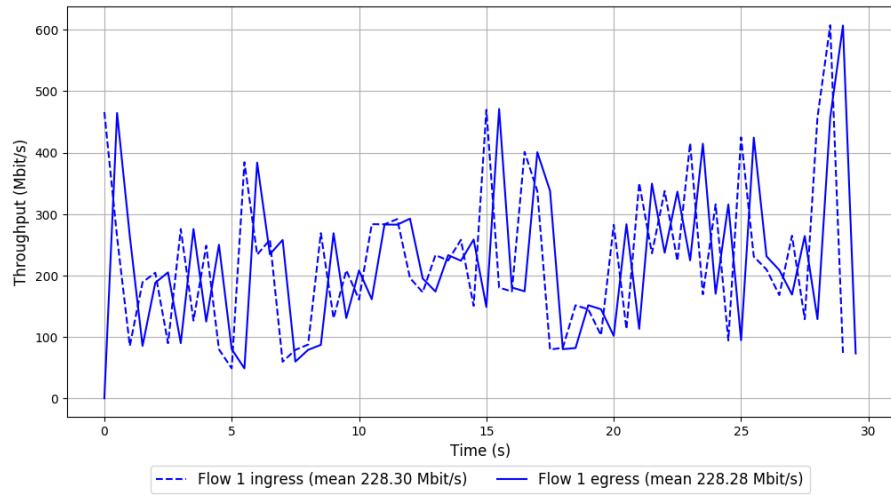


Run 3: Statistics of Indigo-MusesT

```
Start at: 2019-01-03 05:49:34
End at: 2019-01-03 05:50:04
Local clock offset: 0.613 ms
Remote clock offset: 0.228 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 228.28 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 228.28 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.02%
```

Run 3: Report of Indigo-MusesT — Data Link

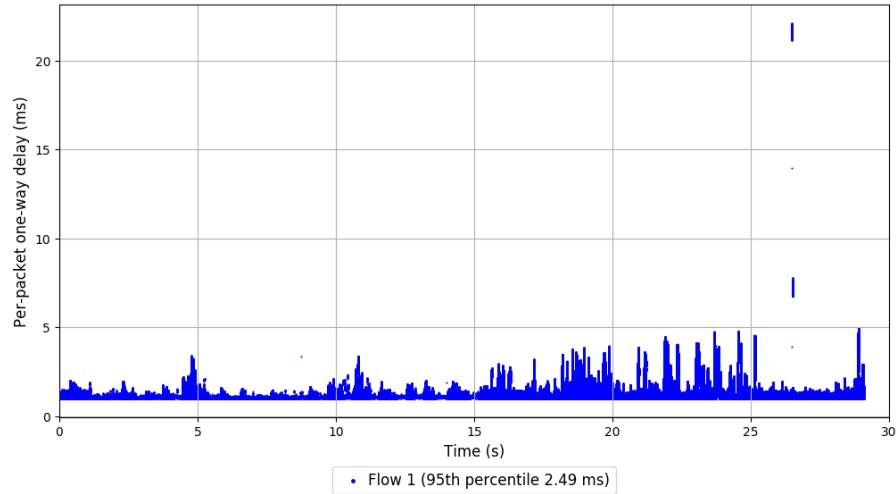
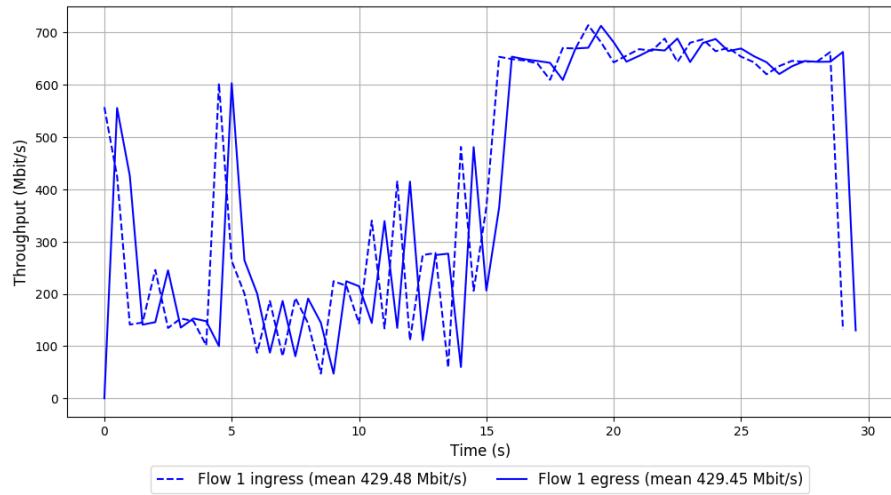


Run 4: Statistics of Indigo-MusesT

```
Start at: 2019-01-03 06:16:34
End at: 2019-01-03 06:17:04
Local clock offset: 0.359 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 429.45 Mbit/s
95th percentile per-packet one-way delay: 2.489 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 429.45 Mbit/s
95th percentile per-packet one-way delay: 2.489 ms
Loss rate: 0.01%
```

Run 4: Report of Indigo-MusesT — Data Link

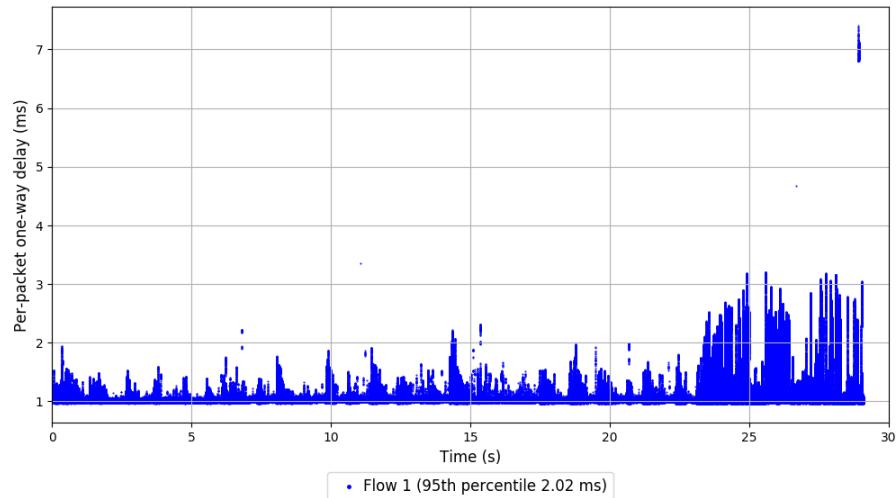
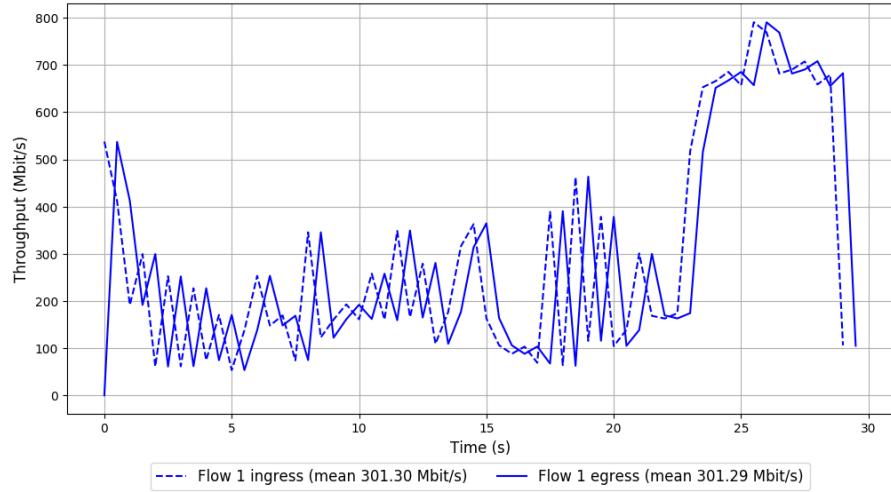


Run 5: Statistics of Indigo-MusesT

```
Start at: 2019-01-03 06:43:50
End at: 2019-01-03 06:44:20
Local clock offset: 0.334 ms
Remote clock offset: -0.385 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 301.29 Mbit/s
95th percentile per-packet one-way delay: 2.023 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 301.29 Mbit/s
95th percentile per-packet one-way delay: 2.023 ms
Loss rate: 0.01%
```

Run 5: Report of Indigo-MusesT — Data Link

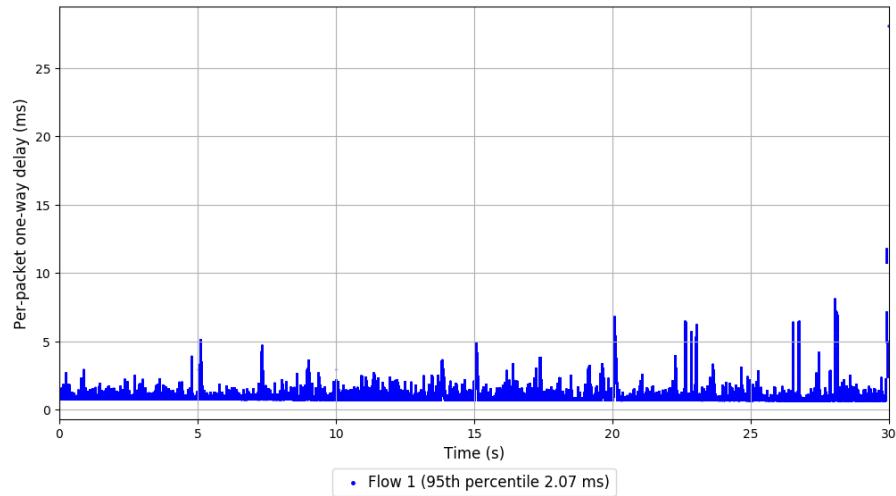
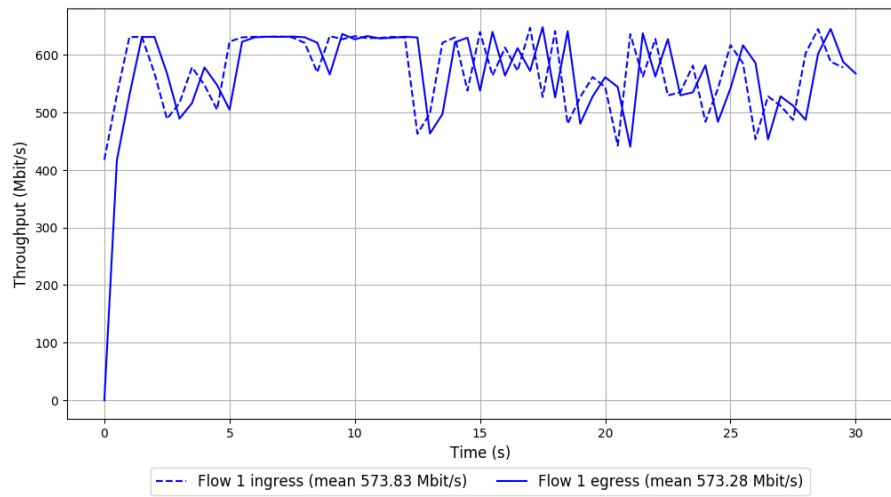


```
Run 1: Statistics of LEDBAT

Start at: 2019-01-03 04:59:20
End at: 2019-01-03 04:59:50
Local clock offset: -1.748 ms
Remote clock offset: -0.276 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 573.28 Mbit/s
95th percentile per-packet one-way delay: 2.070 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 573.28 Mbit/s
95th percentile per-packet one-way delay: 2.070 ms
Loss rate: 0.03%
```

Run 1: Report of LEDBAT — Data Link

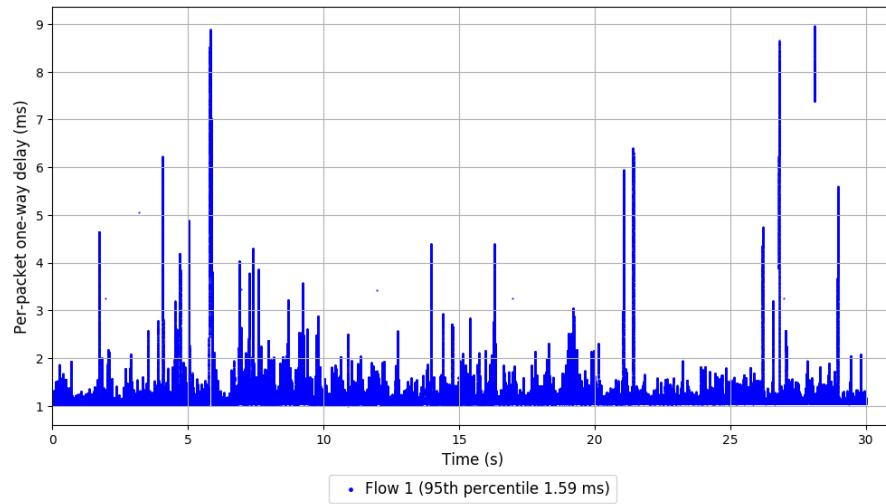
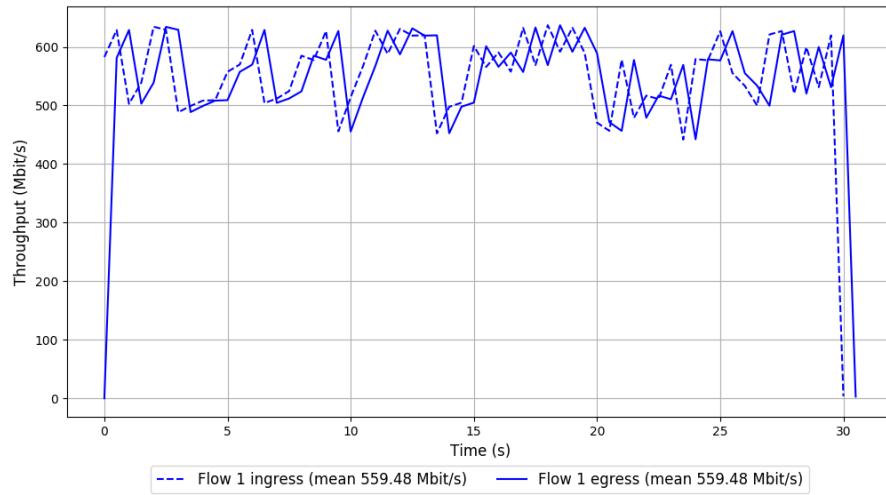


Run 2: Statistics of LEDBAT

```
Start at: 2019-01-03 05:26:19
End at: 2019-01-03 05:26:49
Local clock offset: 0.697 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 559.48 Mbit/s
95th percentile per-packet one-way delay: 1.588 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 559.48 Mbit/s
95th percentile per-packet one-way delay: 1.588 ms
Loss rate: 0.01%
```

Run 2: Report of LEDBAT — Data Link

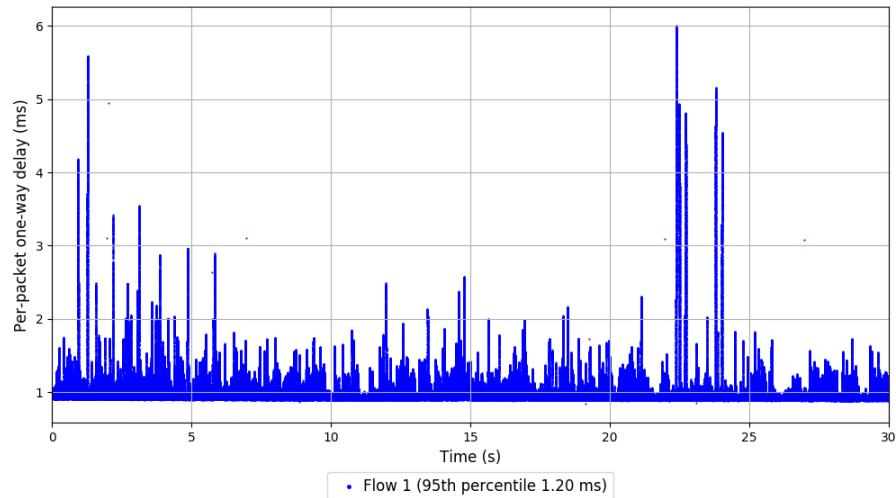
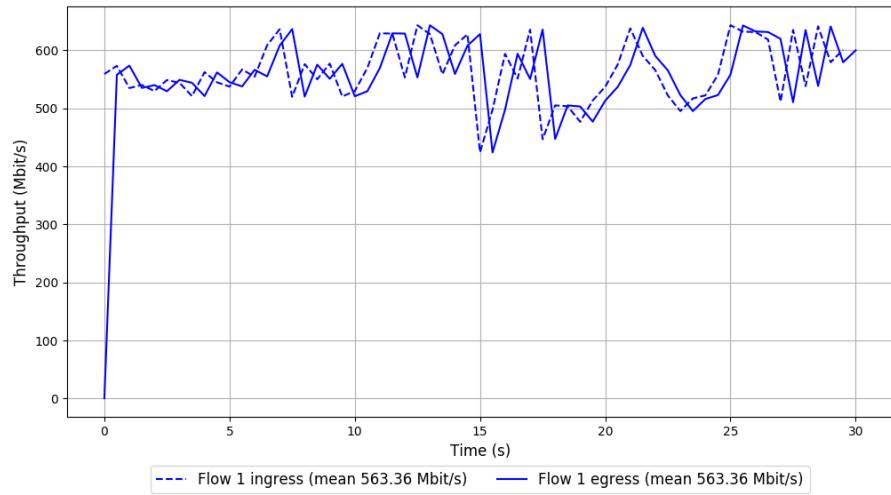


Run 3: Statistics of LEDBAT

```
Start at: 2019-01-03 05:53:20
End at: 2019-01-03 05:53:50
Local clock offset: 0.672 ms
Remote clock offset: 0.213 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 563.36 Mbit/s
95th percentile per-packet one-way delay: 1.195 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 563.36 Mbit/s
95th percentile per-packet one-way delay: 1.195 ms
Loss rate: 0.01%
```

Run 3: Report of LEDBAT — Data Link

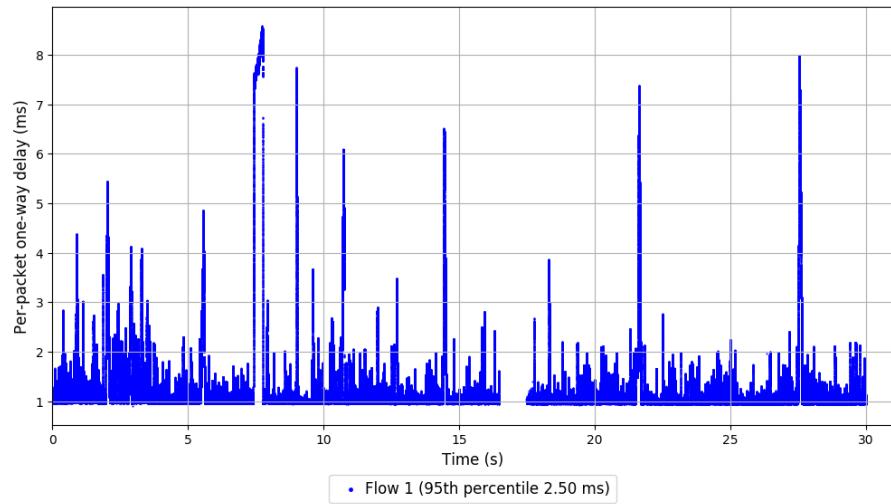
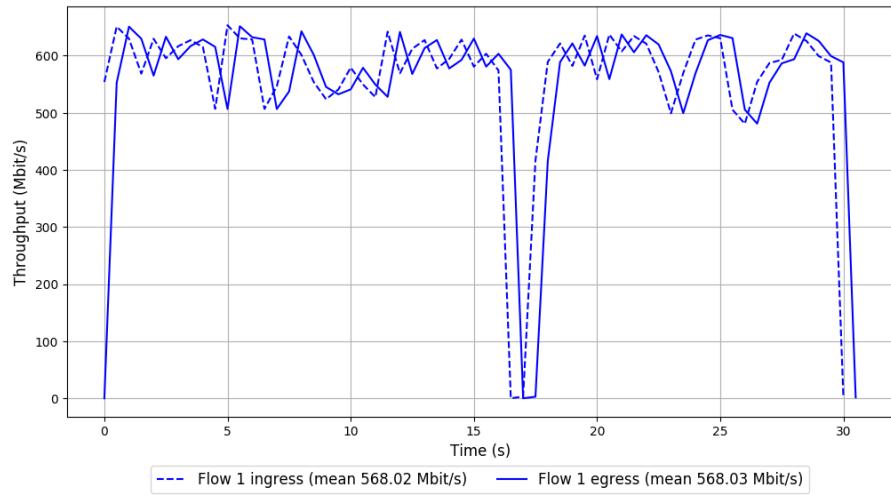


Run 4: Statistics of LEDBAT

```
Start at: 2019-01-03 06:20:26
End at: 2019-01-03 06:20:56
Local clock offset: 0.389 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2019-01-03 07:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 568.03 Mbit/s
95th percentile per-packet one-way delay: 2.497 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 568.03 Mbit/s
95th percentile per-packet one-way delay: 2.497 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

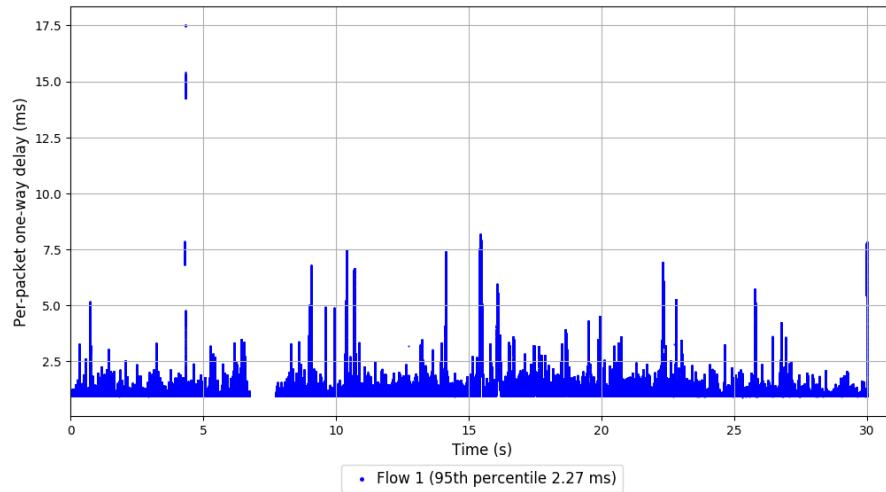
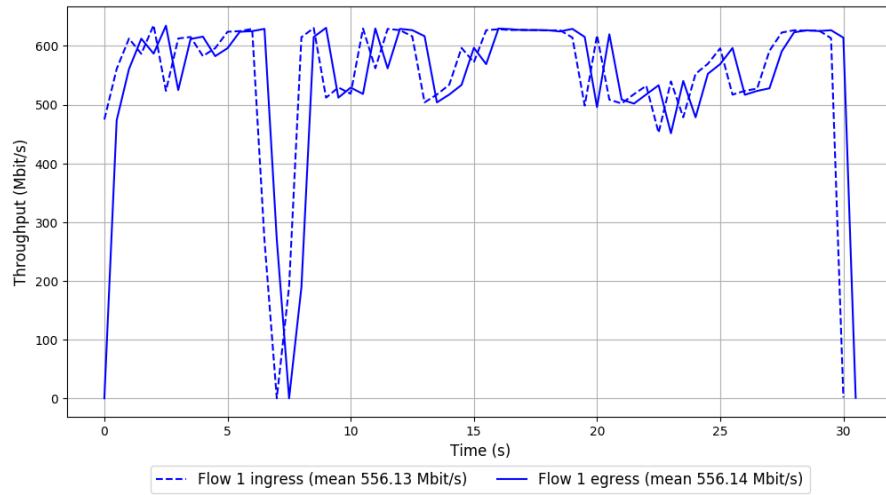


Run 5: Statistics of LEDBAT

```
Start at: 2019-01-03 06:47:39
End at: 2019-01-03 06:48:09
Local clock offset: 0.375 ms
Remote clock offset: -0.403 ms

# Below is generated by plot.py at 2019-01-03 07:48:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 556.14 Mbit/s
95th percentile per-packet one-way delay: 2.265 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 556.14 Mbit/s
95th percentile per-packet one-way delay: 2.265 ms
Loss rate: 0.00%
```

Run 5: Report of LEDBAT — Data Link

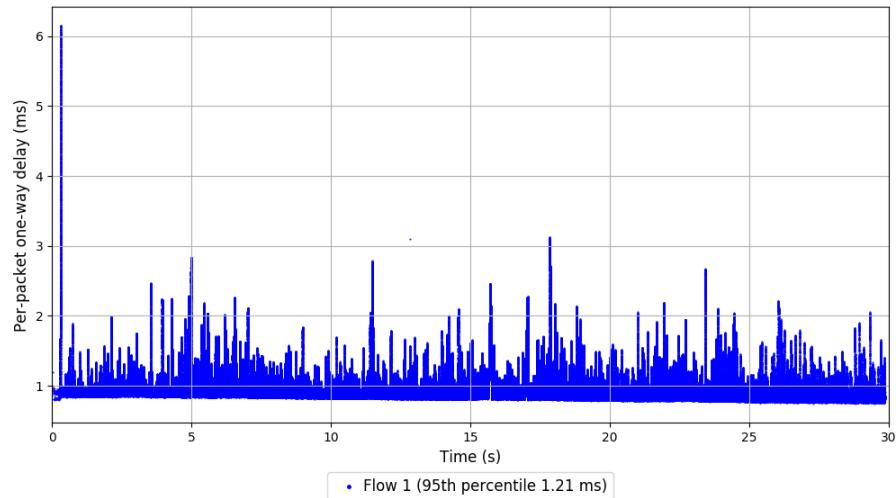
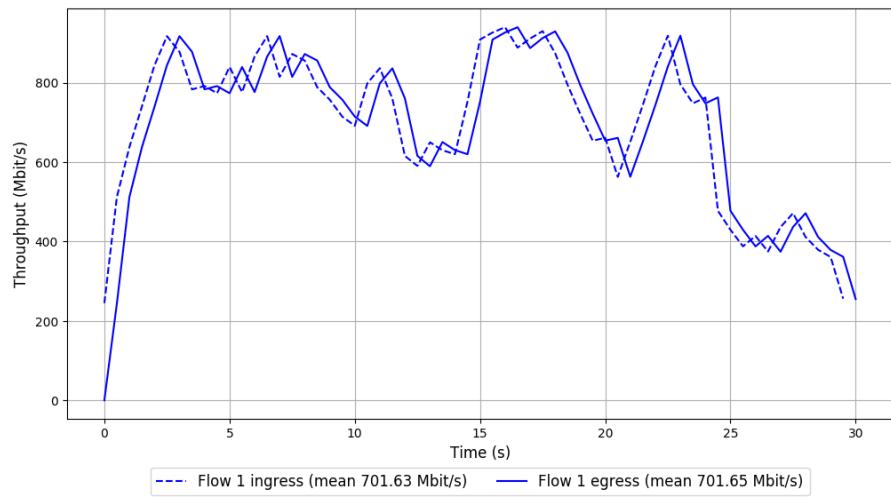


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2019-01-03 05:00:56
End at: 2019-01-03 05:01:26
Local clock offset: -1.34 ms
Remote clock offset: -0.26 ms

# Below is generated by plot.py at 2019-01-03 07:49:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 701.65 Mbit/s
95th percentile per-packet one-way delay: 1.211 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 701.65 Mbit/s
95th percentile per-packet one-way delay: 1.211 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Allegro — Data Link

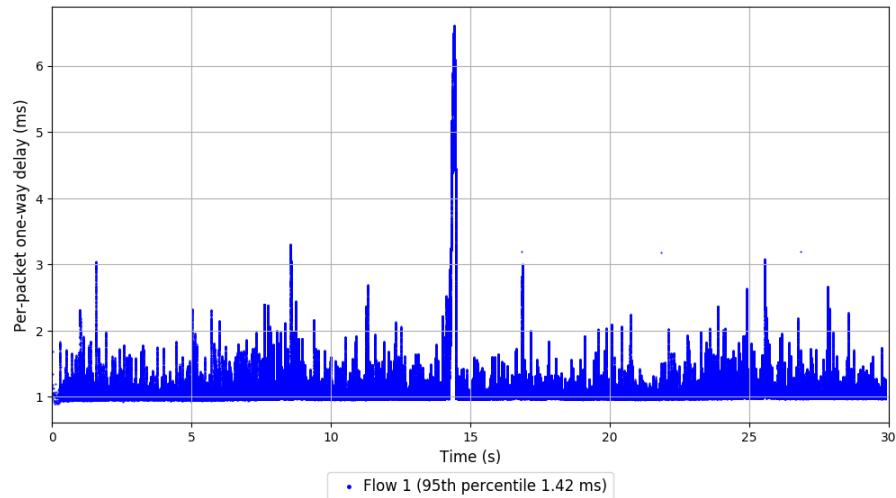
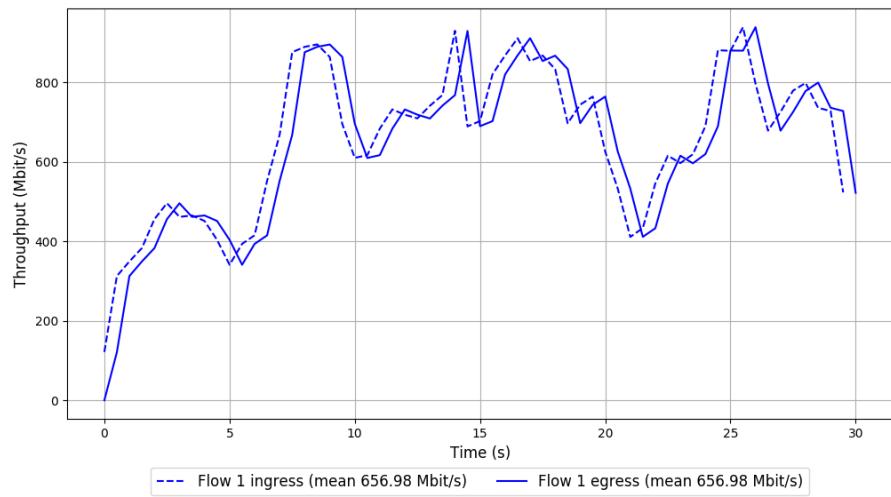


Run 2: Statistics of PCC-Allegro

```
Start at: 2019-01-03 05:27:54
End at: 2019-01-03 05:28:24
Local clock offset: 0.643 ms
Remote clock offset: 0.192 ms

# Below is generated by plot.py at 2019-01-03 07:50:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 656.98 Mbit/s
95th percentile per-packet one-way delay: 1.416 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 656.98 Mbit/s
95th percentile per-packet one-way delay: 1.416 ms
Loss rate: 0.01%
```

Run 2: Report of PCC-Allegro — Data Link

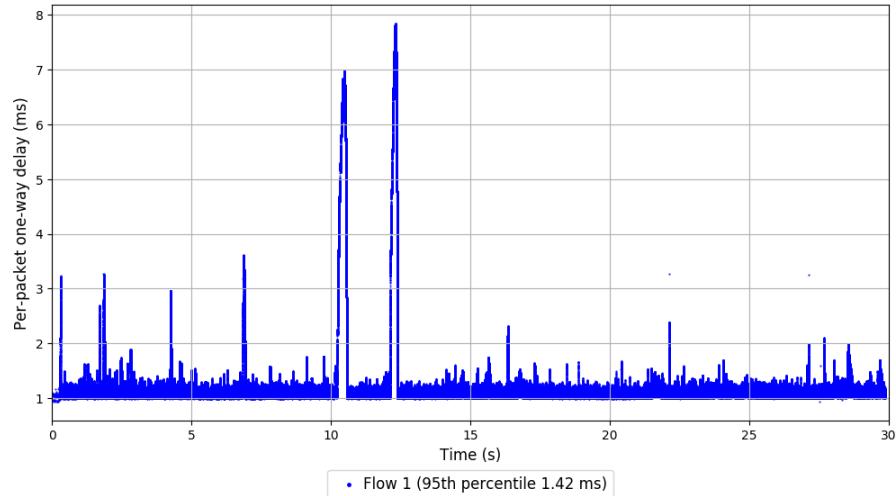
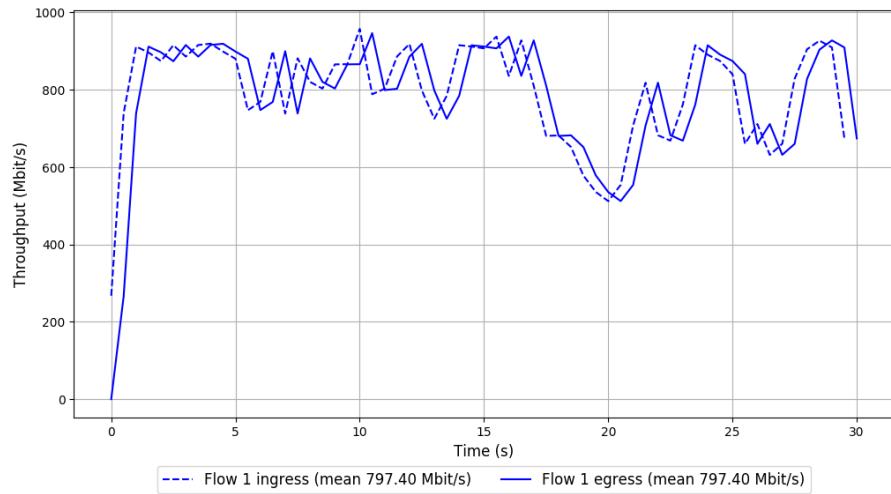


Run 3: Statistics of PCC-Allegro

```
Start at: 2019-01-03 05:54:56
End at: 2019-01-03 05:55:26
Local clock offset: 0.674 ms
Remote clock offset: 0.141 ms

# Below is generated by plot.py at 2019-01-03 07:54:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 797.40 Mbit/s
95th percentile per-packet one-way delay: 1.419 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 797.40 Mbit/s
95th percentile per-packet one-way delay: 1.419 ms
Loss rate: 0.01%
```

Run 3: Report of PCC-Allegro — Data Link

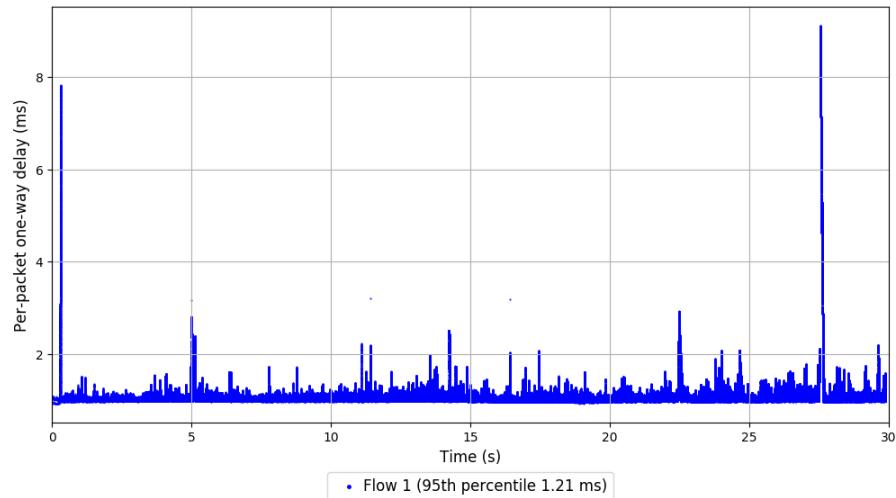
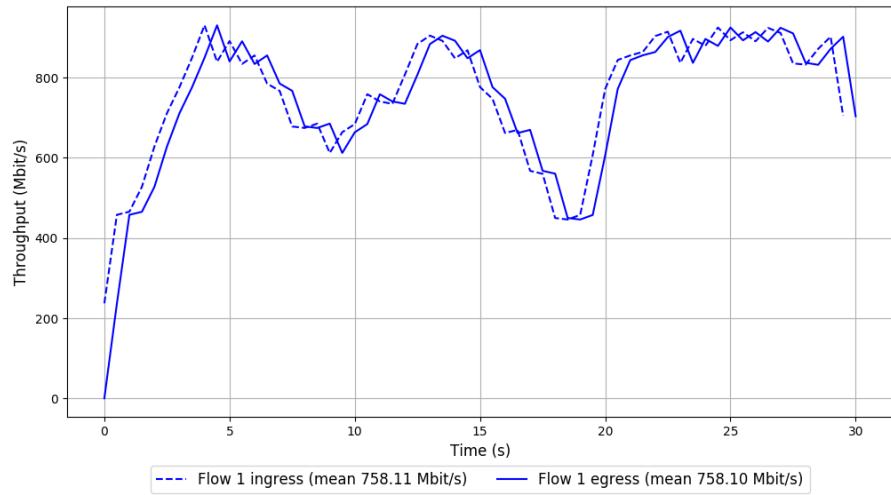


Run 4: Statistics of PCC-Allegro

```
Start at: 2019-01-03 06:22:03
End at: 2019-01-03 06:22:33
Local clock offset: 0.393 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-01-03 07:55:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 758.10 Mbit/s
95th percentile per-packet one-way delay: 1.207 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 758.10 Mbit/s
95th percentile per-packet one-way delay: 1.207 ms
Loss rate: 0.01%
```

Run 4: Report of PCC-Allegro — Data Link

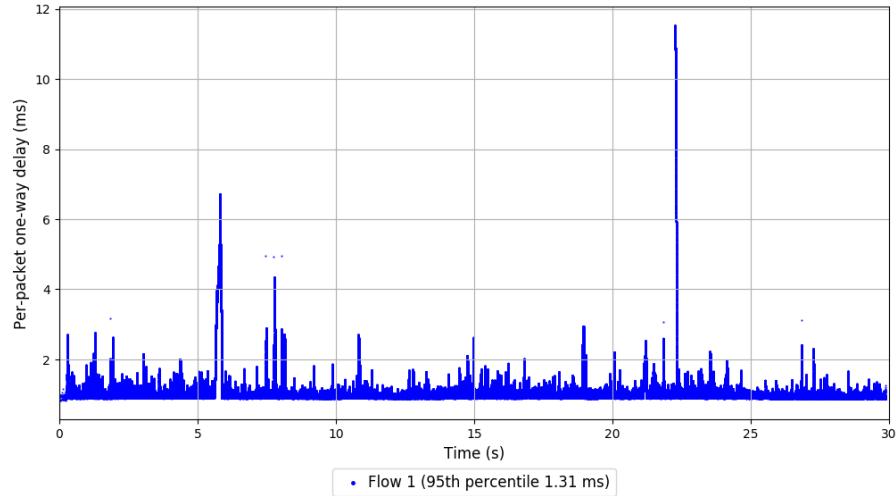
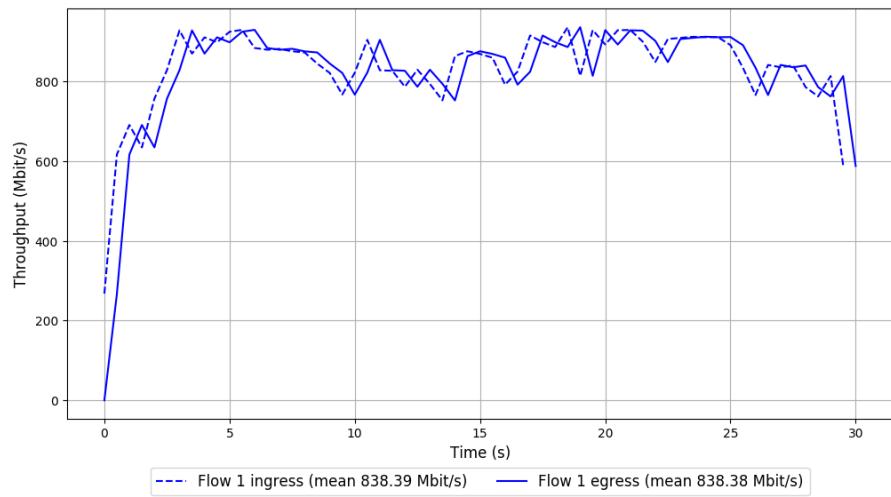


Run 5: Statistics of PCC-Allegro

```
Start at: 2019-01-03 06:49:15
End at: 2019-01-03 06:49:45
Local clock offset: 0.383 ms
Remote clock offset: -0.349 ms

# Below is generated by plot.py at 2019-01-03 07:56:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 838.38 Mbit/s
95th percentile per-packet one-way delay: 1.308 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 838.38 Mbit/s
95th percentile per-packet one-way delay: 1.308 ms
Loss rate: 0.01%
```

Run 5: Report of PCC-Allegro — Data Link

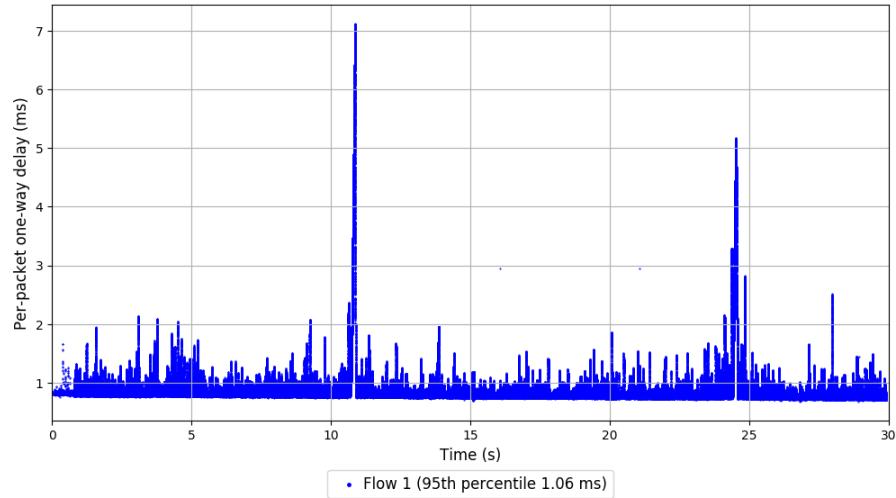
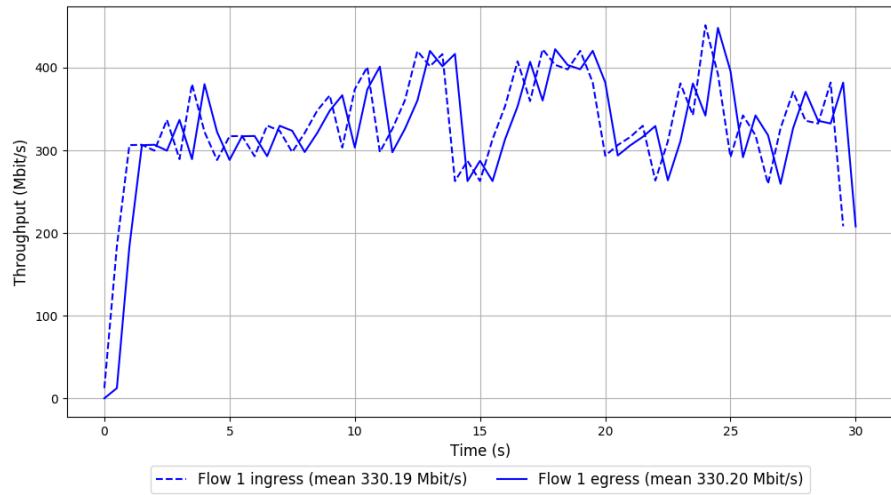


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2019-01-03 05:03:38
End at: 2019-01-03 05:04:08
Local clock offset: -0.868 ms
Remote clock offset: -0.156 ms

# Below is generated by plot.py at 2019-01-03 07:56:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 330.20 Mbit/s
95th percentile per-packet one-way delay: 1.056 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 330.20 Mbit/s
95th percentile per-packet one-way delay: 1.056 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Expr — Data Link

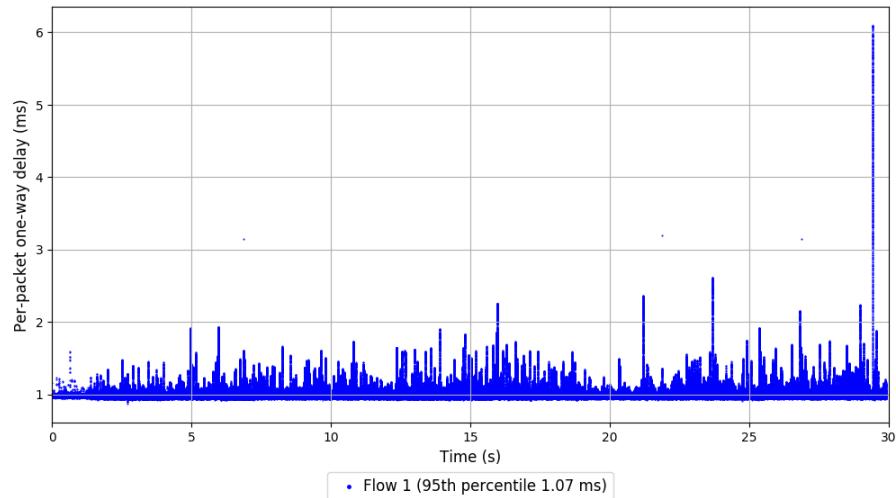
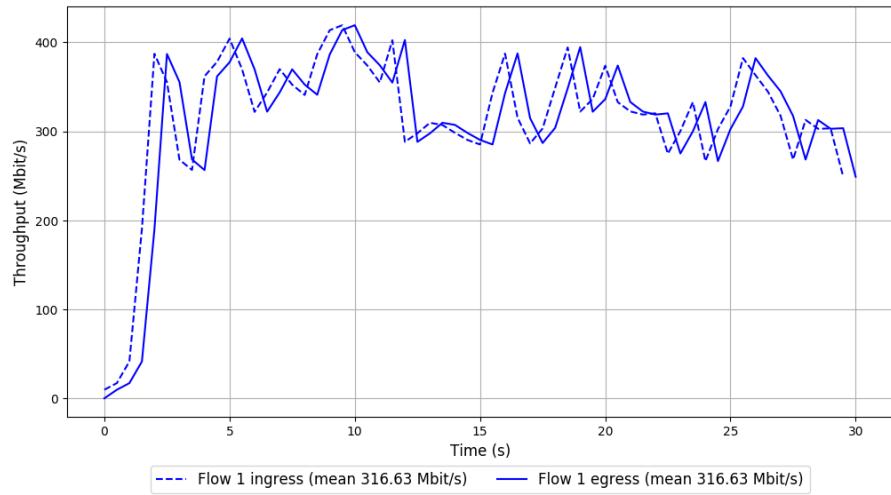


Run 2: Statistics of PCC-Expr

```
Start at: 2019-01-03 05:30:35
End at: 2019-01-03 05:31:05
Local clock offset: 0.591 ms
Remote clock offset: 0.247 ms

# Below is generated by plot.py at 2019-01-03 07:56:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 316.63 Mbit/s
95th percentile per-packet one-way delay: 1.069 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 316.63 Mbit/s
95th percentile per-packet one-way delay: 1.069 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Expr — Data Link

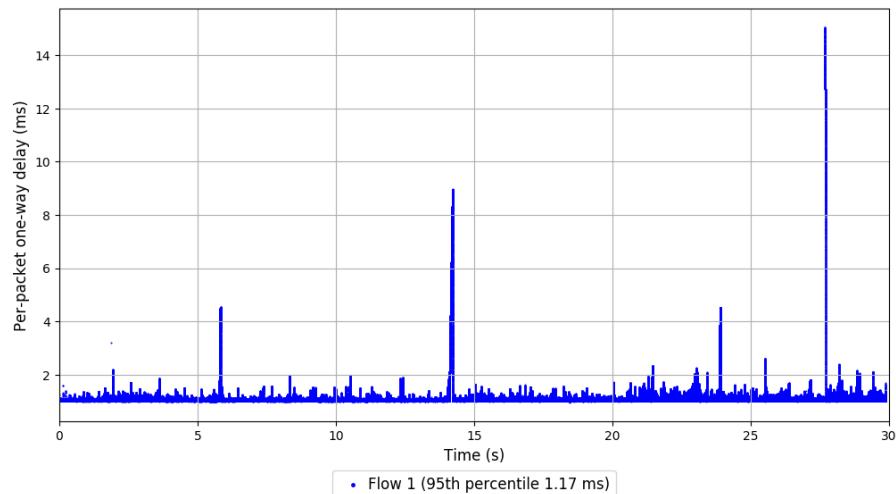
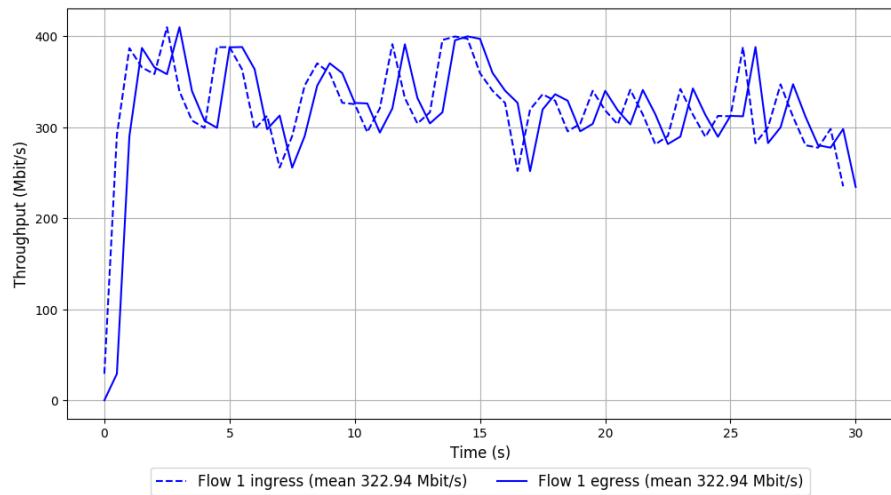


Run 3: Statistics of PCC-Expr

```
Start at: 2019-01-03 05:57:40
End at: 2019-01-03 05:58:10
Local clock offset: 0.57 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2019-01-03 07:56:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 322.94 Mbit/s
95th percentile per-packet one-way delay: 1.165 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 322.94 Mbit/s
95th percentile per-packet one-way delay: 1.165 ms
Loss rate: 0.01%
```

Run 3: Report of PCC-Expr — Data Link

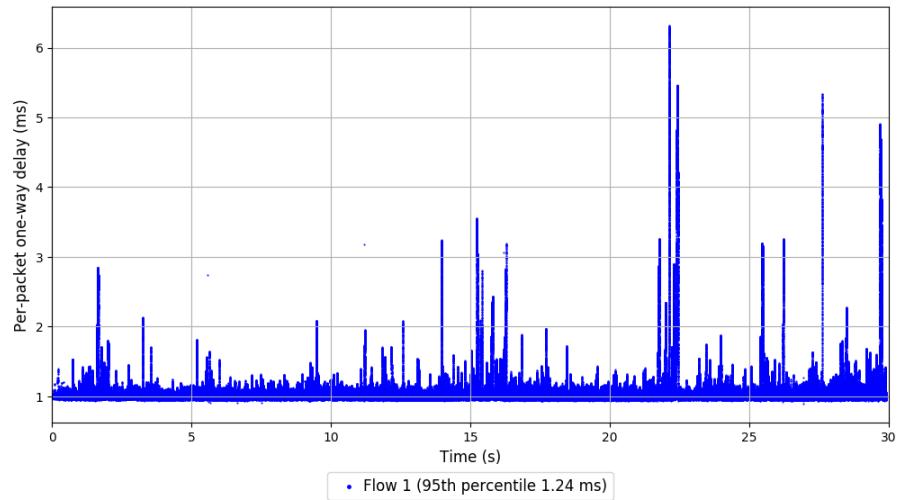
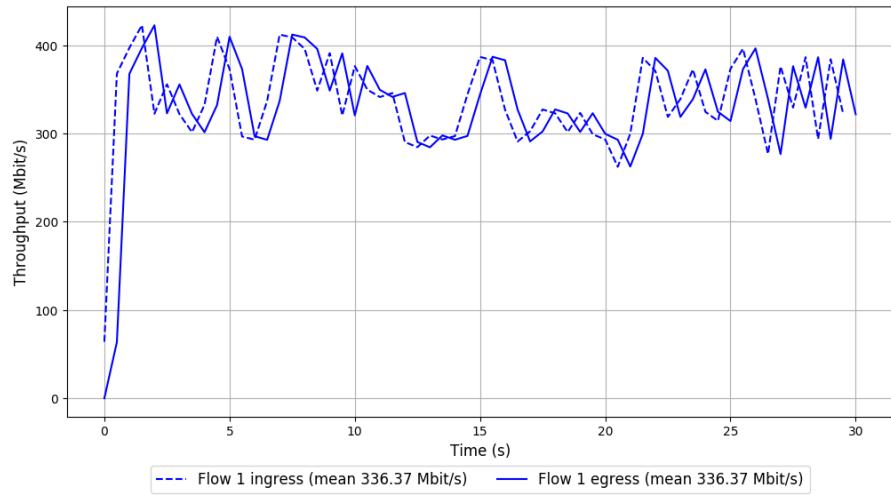


Run 4: Statistics of PCC-Expr

```
Start at: 2019-01-03 06:24:46
End at: 2019-01-03 06:25:16
Local clock offset: 0.383 ms
Remote clock offset: -0.143 ms

# Below is generated by plot.py at 2019-01-03 07:56:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 336.37 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 336.37 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.01%
```

Run 4: Report of PCC-Expr — Data Link

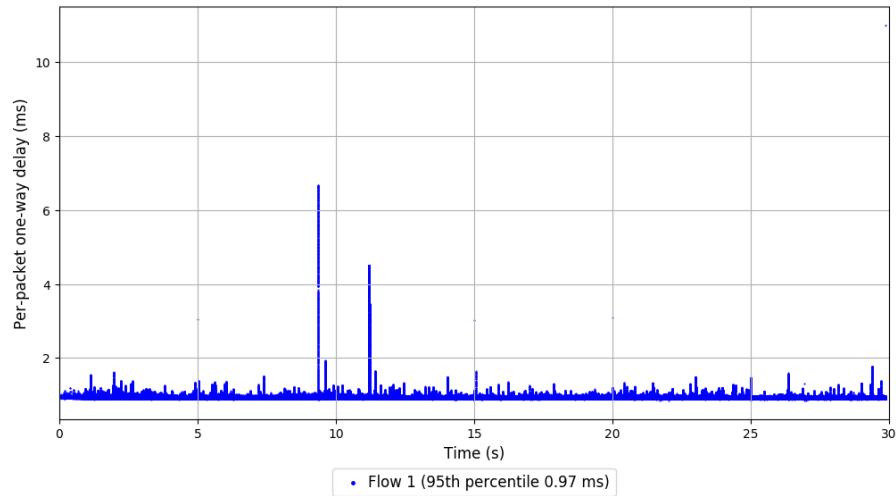
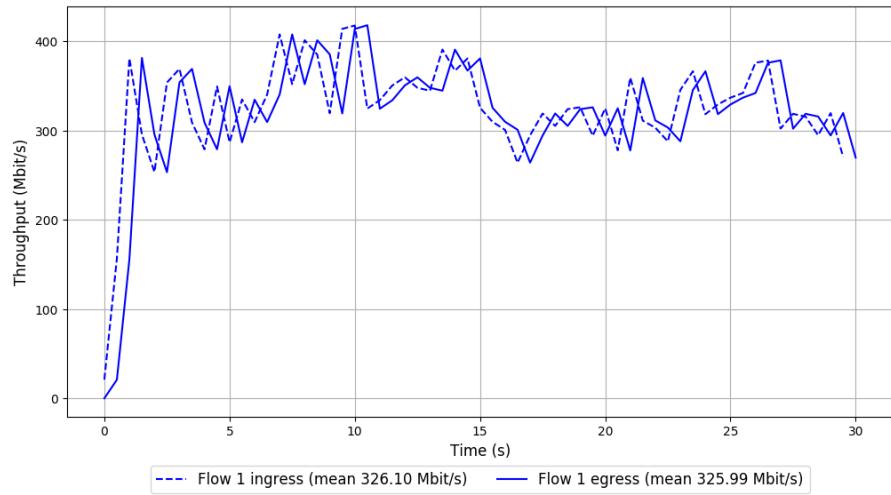


Run 5: Statistics of PCC-Expr

```
Start at: 2019-01-03 06:51:59
End at: 2019-01-03 06:52:29
Local clock offset: 0.404 ms
Remote clock offset: -0.385 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 325.99 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 325.99 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.01%
```

Run 5: Report of PCC-Expr — Data Link

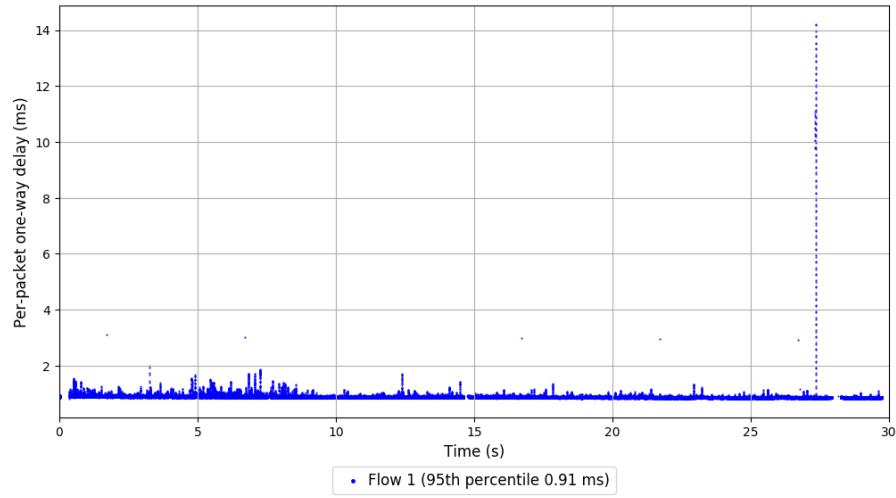
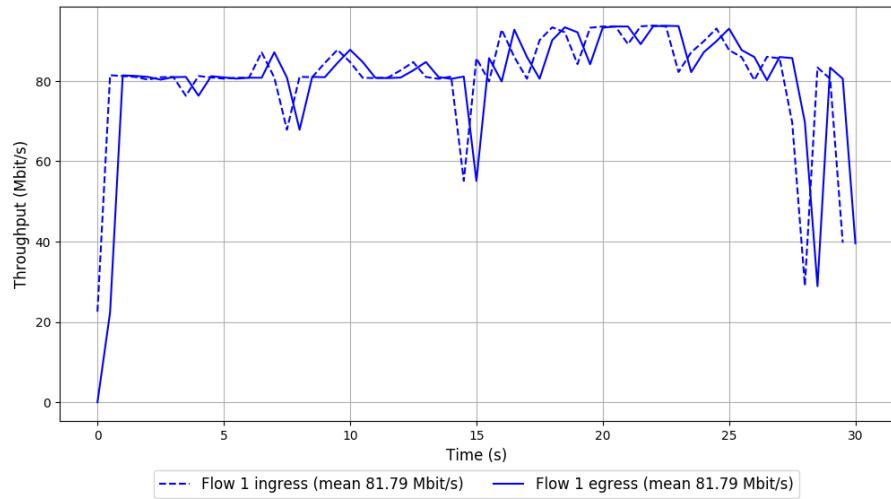


```
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-03 05:10:36
End at: 2019-01-03 05:11:06
Local clock offset: -0.007 ms
Remote clock offset: -0.112 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.79 Mbit/s
95th percentile per-packet one-way delay: 0.914 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 81.79 Mbit/s
95th percentile per-packet one-way delay: 0.914 ms
Loss rate: 0.01%
```

Run 1: Report of QUIC Cubic — Data Link

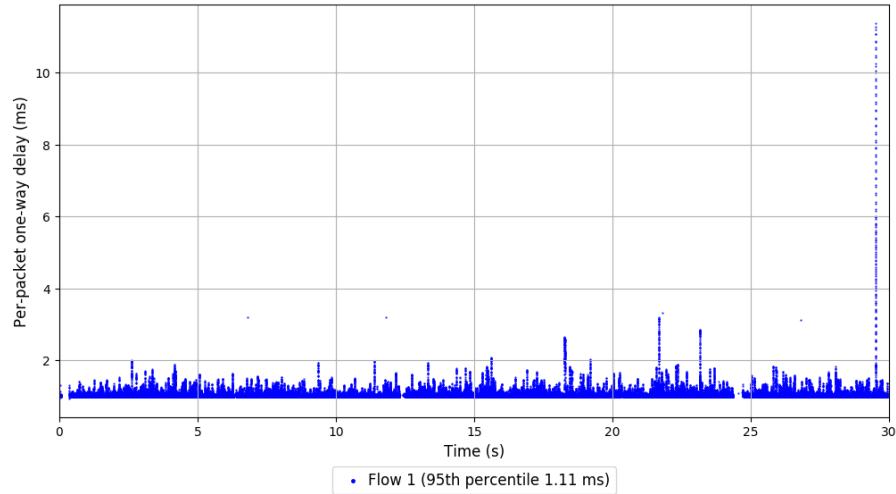
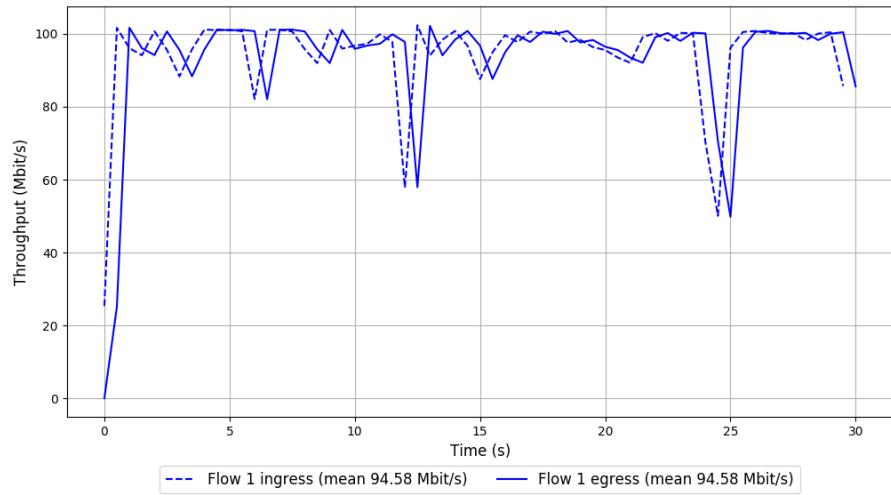


Run 2: Statistics of QUIC Cubic

```
Start at: 2019-01-03 05:37:37
End at: 2019-01-03 05:38:07
Local clock offset: 0.546 ms
Remote clock offset: 0.258 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 1.108 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 1.108 ms
Loss rate: 0.01%
```

Run 2: Report of QUIC Cubic — Data Link

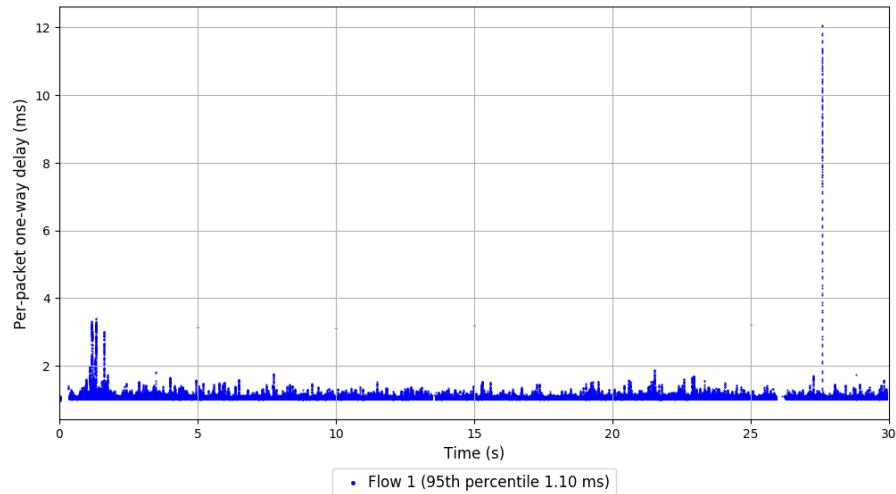
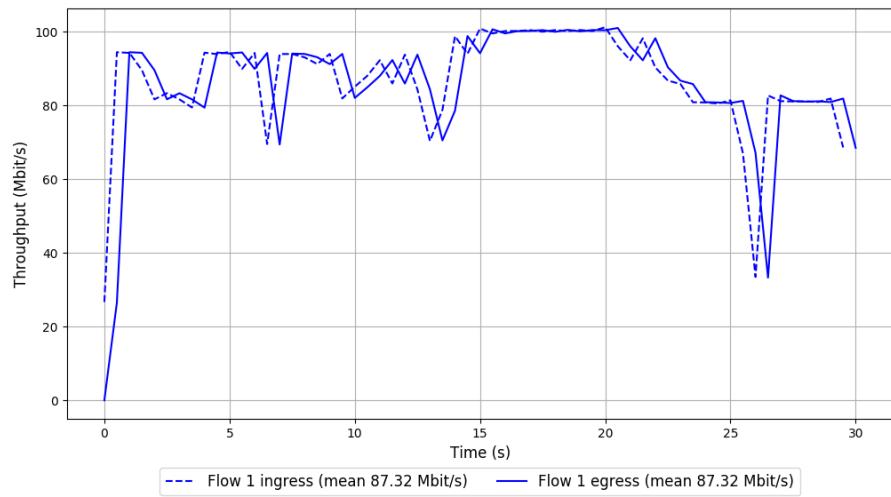


Run 3: Statistics of QUIC Cubic

```
Start at: 2019-01-03 06:04:36
End at: 2019-01-03 06:05:06
Local clock offset: 0.404 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.32 Mbit/s
95th percentile per-packet one-way delay: 1.100 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 87.32 Mbit/s
95th percentile per-packet one-way delay: 1.100 ms
Loss rate: 0.01%
```

Run 3: Report of QUIC Cubic — Data Link

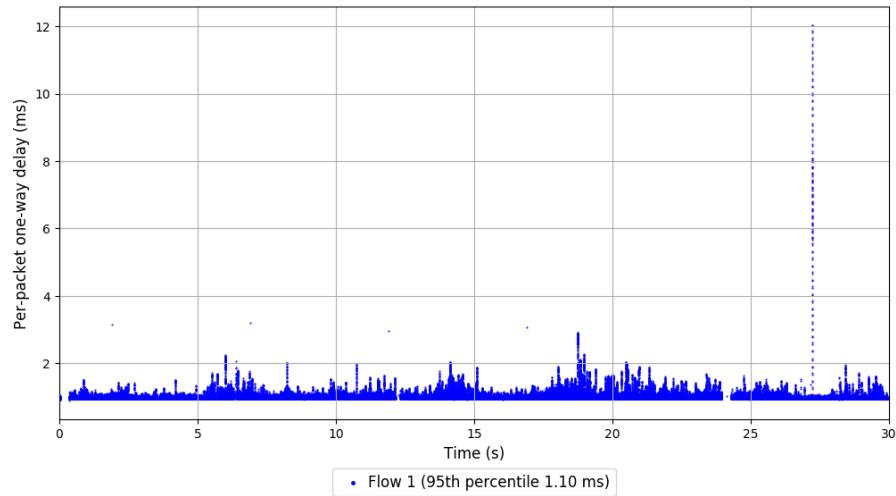
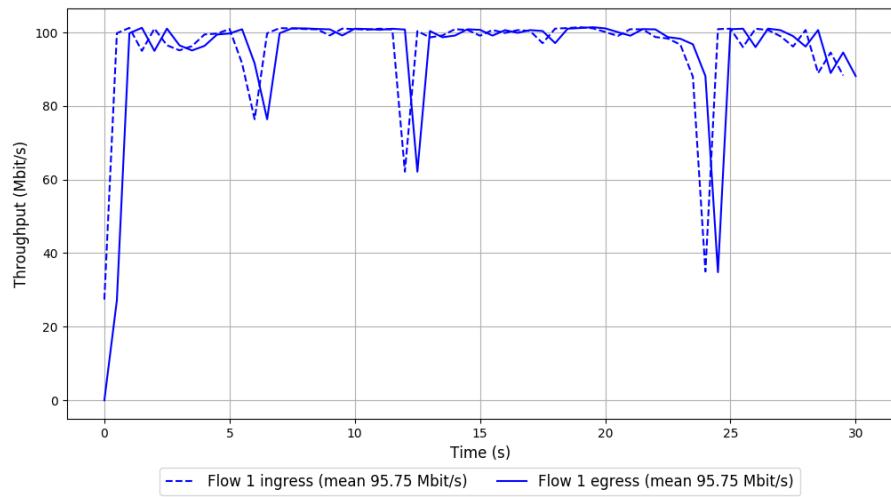


Run 4: Statistics of QUIC Cubic

```
Start at: 2019-01-03 06:31:46
End at: 2019-01-03 06:32:16
Local clock offset: 0.318 ms
Remote clock offset: -0.26 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.75 Mbit/s
95th percentile per-packet one-way delay: 1.102 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 95.75 Mbit/s
95th percentile per-packet one-way delay: 1.102 ms
Loss rate: 0.01%
```

Run 4: Report of QUIC Cubic — Data Link

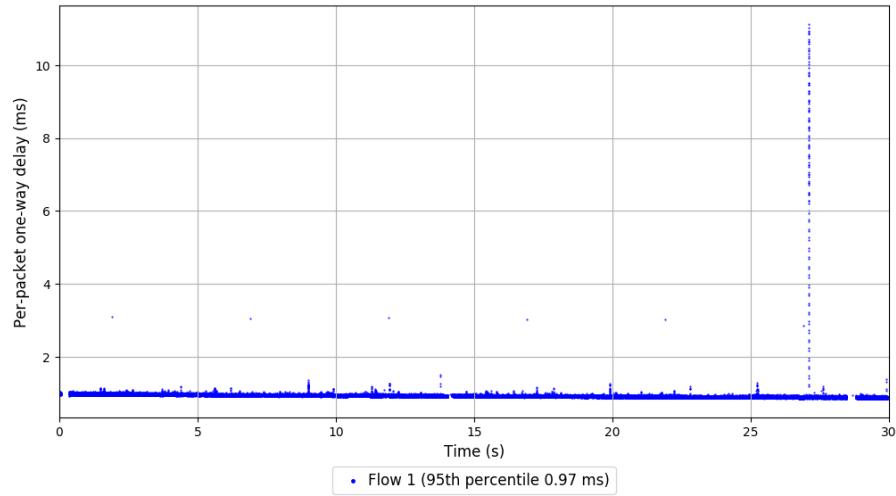
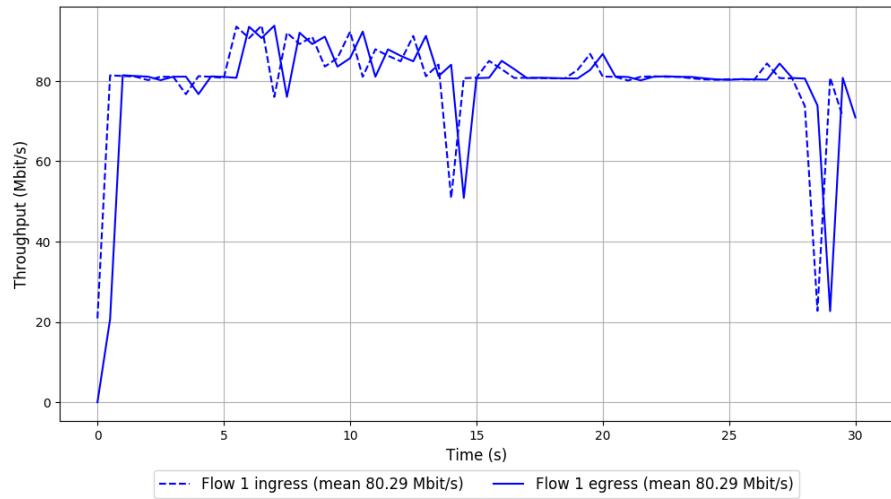


Run 5: Statistics of QUIC Cubic

```
Start at: 2019-01-03 06:59:01
End at: 2019-01-03 06:59:31
Local clock offset: 0.343 ms
Remote clock offset: -1.881 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.29 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 80.29 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.01%
```

Run 5: Report of QUIC Cubic — Data Link

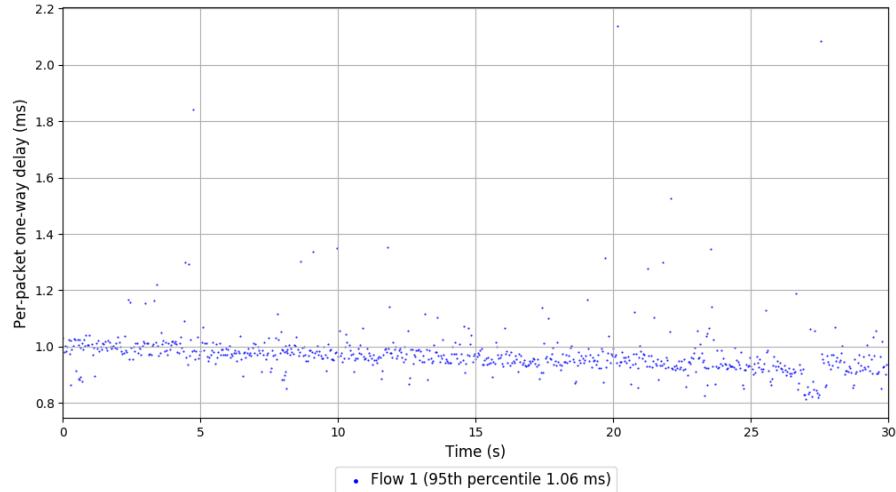
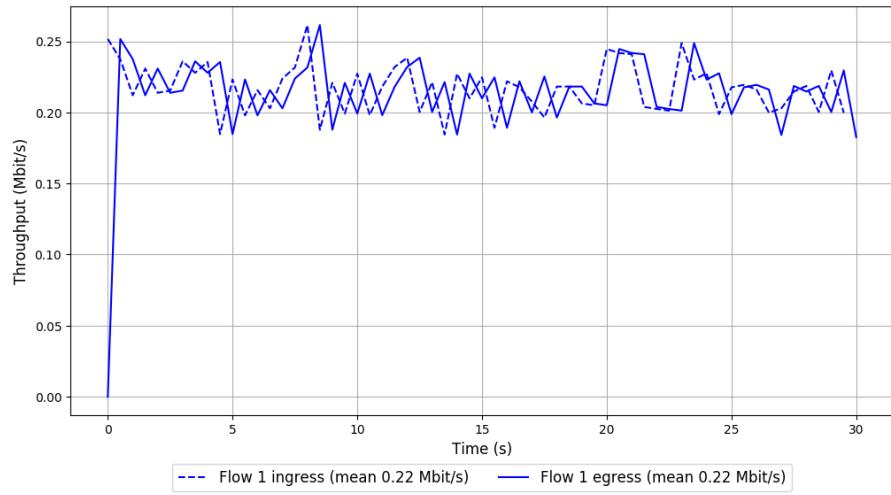


```
Run 1: Statistics of SCReAM

Start at: 2019-01-03 05:02:25
End at: 2019-01-03 05:02:55
Local clock offset: -1.062 ms
Remote clock offset: -0.248 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.064 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.064 ms
Loss rate: 0.13%
```

Run 1: Report of SCReAM — Data Link

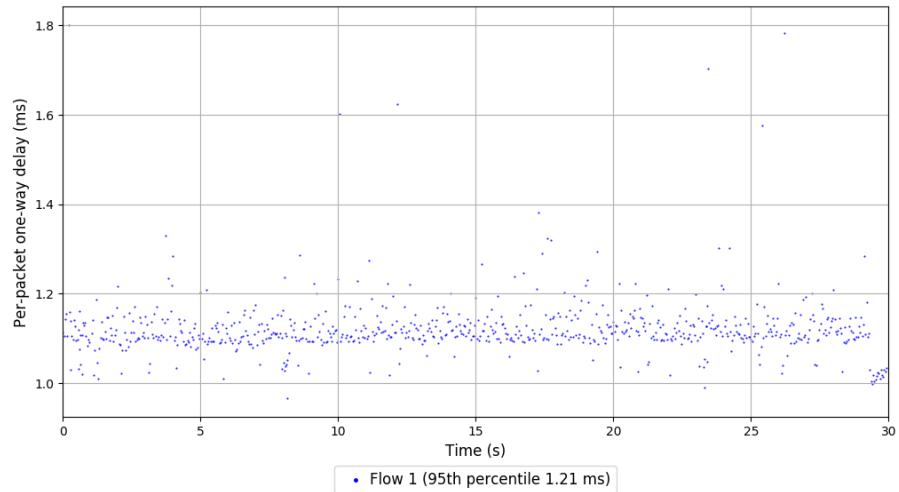
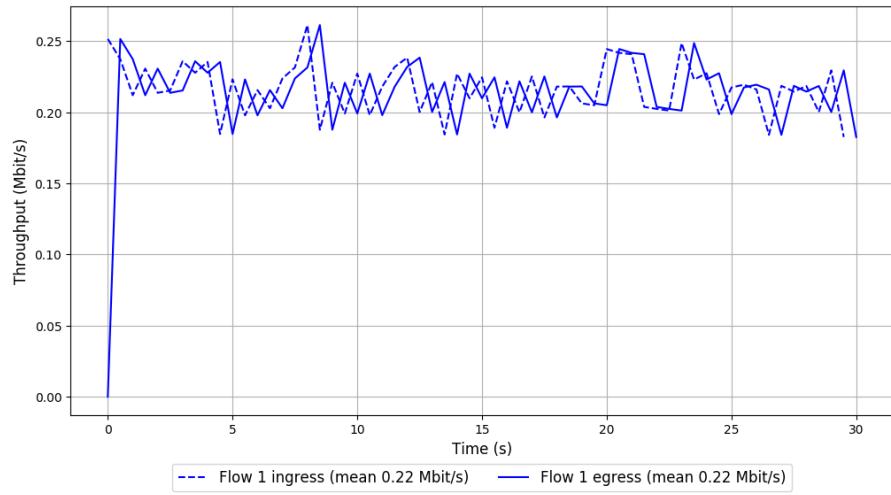


Run 2: Statistics of SCReAM

```
Start at: 2019-01-03 05:29:23
End at: 2019-01-03 05:29:53
Local clock offset: 0.609 ms
Remote clock offset: 0.185 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.210 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.210 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

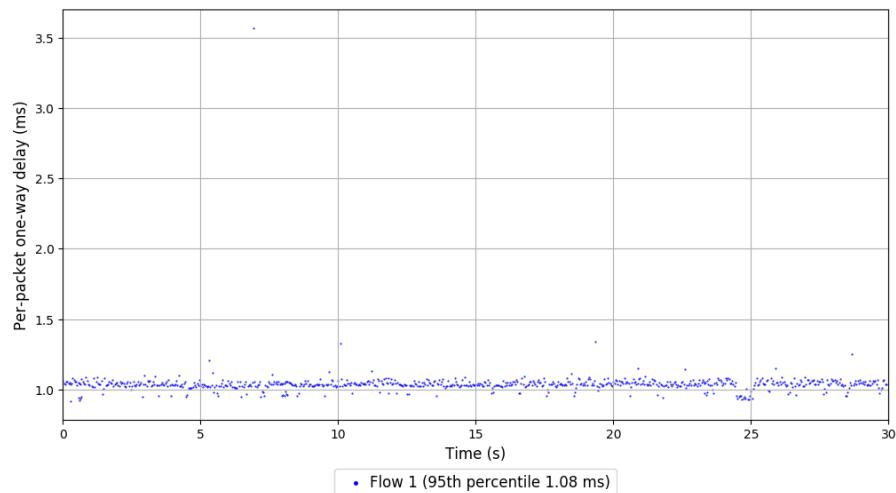
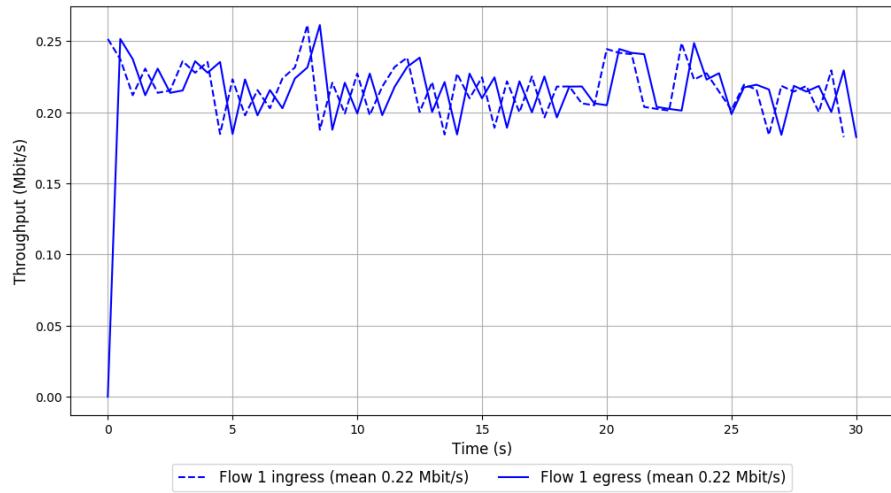


Run 3: Statistics of SCReAM

```
Start at: 2019-01-03 05:56:27
End at: 2019-01-03 05:56:57
Local clock offset: 0.609 ms
Remote clock offset: 0.181 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

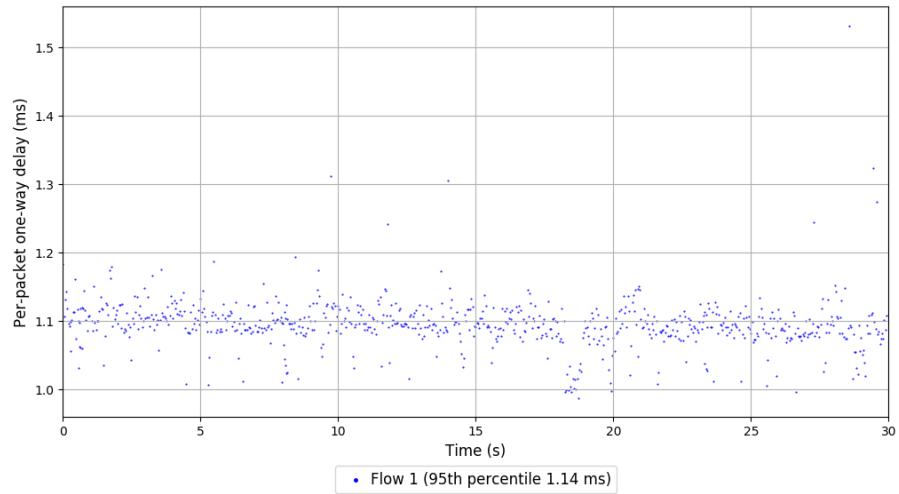
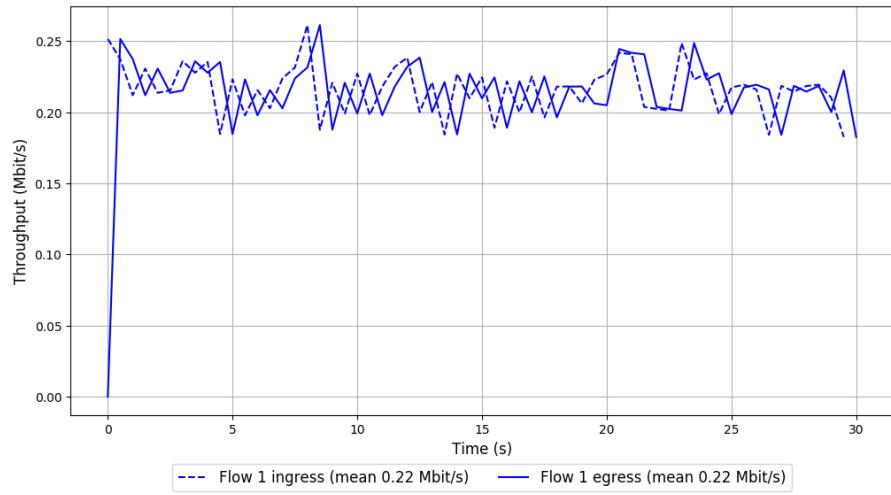


Run 4: Statistics of SCReAM

```
Start at: 2019-01-03 06:23:34
End at: 2019-01-03 06:24:04
Local clock offset: 0.397 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.139 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.139 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

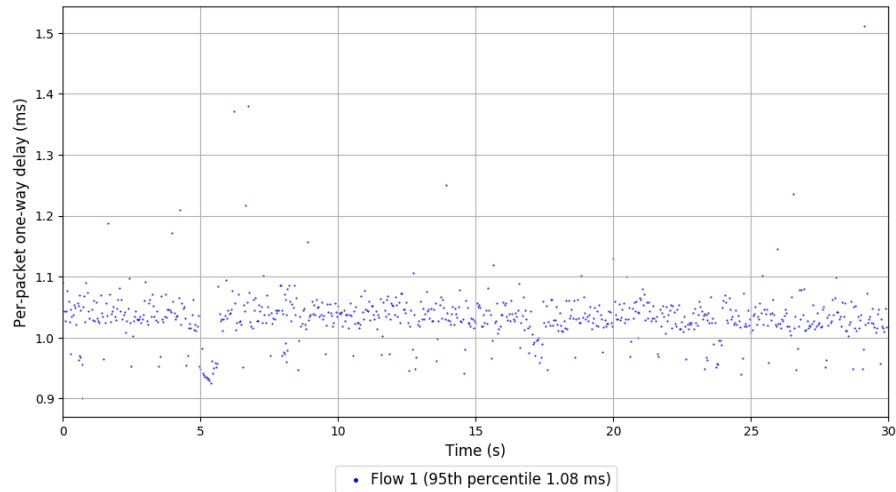
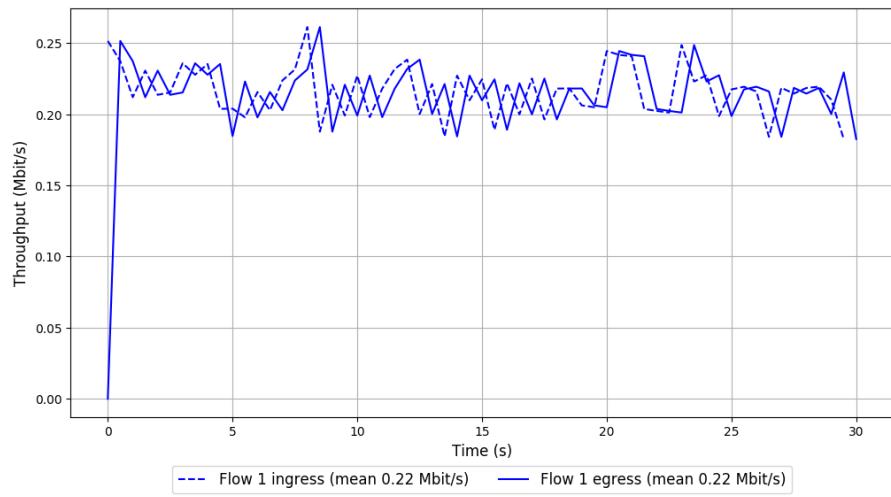


Run 5: Statistics of SCReAM

```
Start at: 2019-01-03 06:50:47
End at: 2019-01-03 06:51:17
Local clock offset: 0.389 ms
Remote clock offset: -0.402 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.077 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

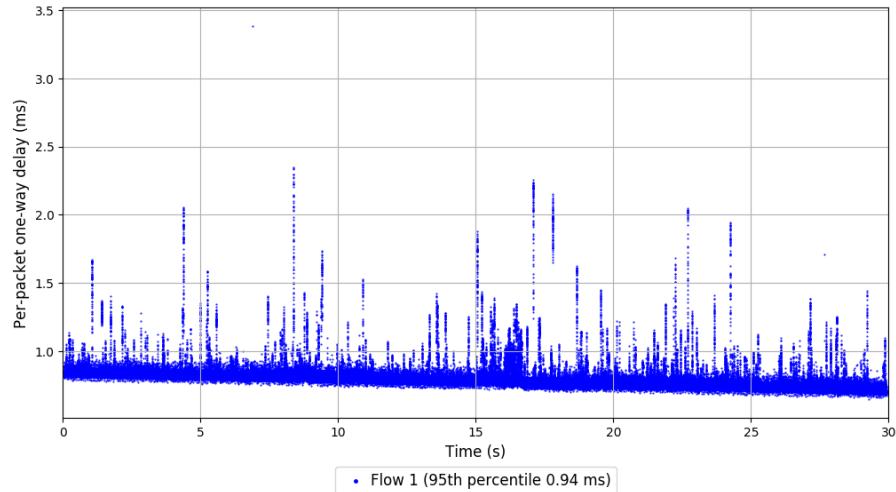
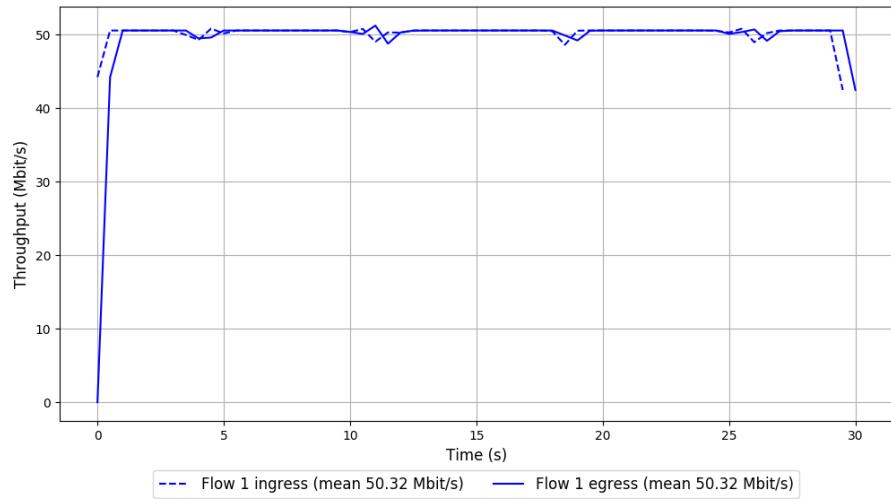


Run 1: Statistics of Sprout

```
Start at: 2019-01-03 04:58:06
End at: 2019-01-03 04:58:36
Local clock offset: -2.024 ms
Remote clock offset: -0.241 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.32 Mbit/s
95th percentile per-packet one-way delay: 0.935 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.32 Mbit/s
95th percentile per-packet one-way delay: 0.935 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

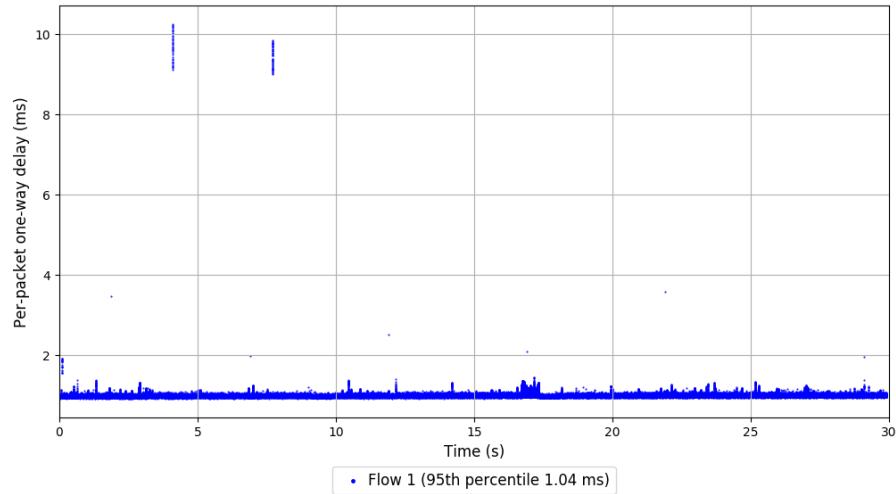
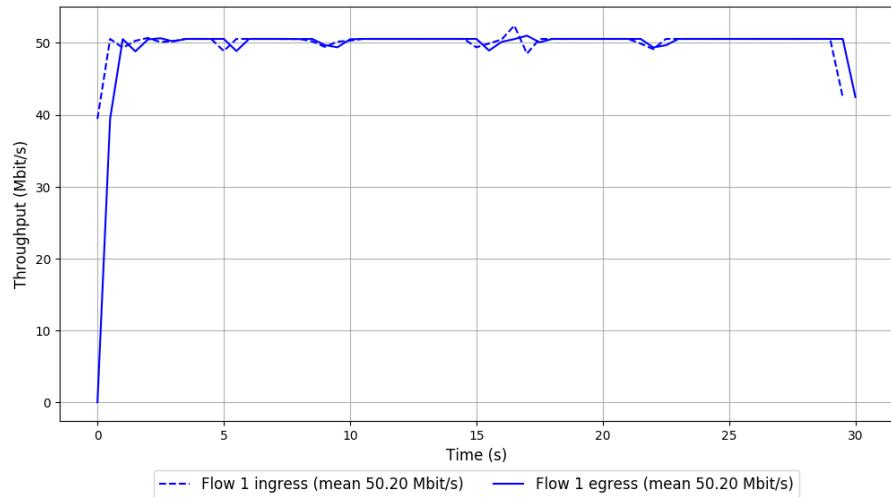


Run 2: Statistics of Sprout

```
Start at: 2019-01-03 05:25:05
End at: 2019-01-03 05:25:35
Local clock offset: 0.741 ms
Remote clock offset: 0.232 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 1.036 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 1.036 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

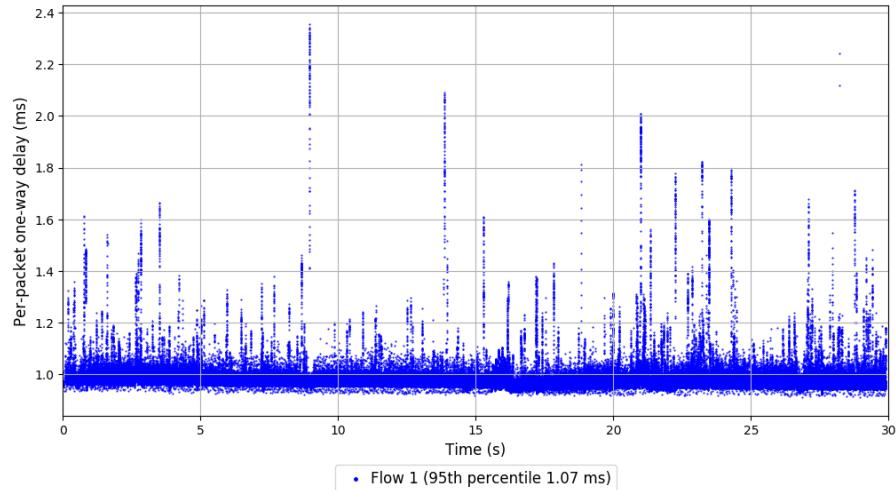
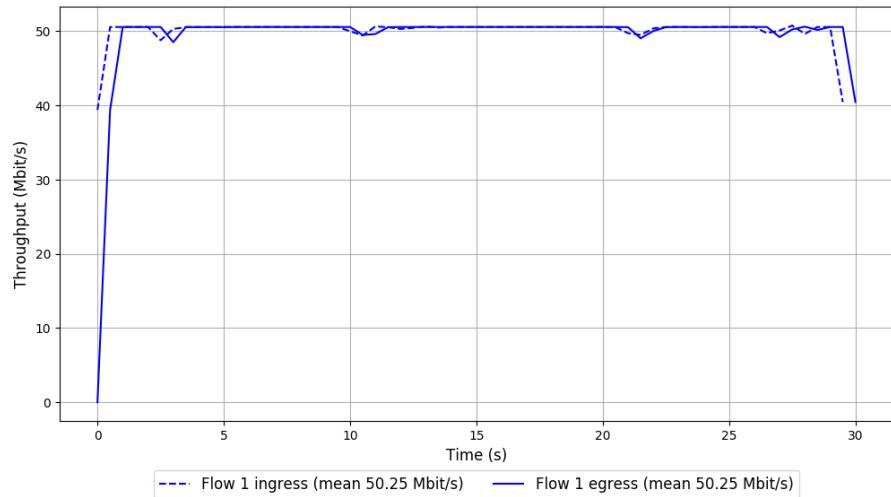


Run 3: Statistics of Sprout

```
Start at: 2019-01-03 05:52:06
End at: 2019-01-03 05:52:36
Local clock offset: 0.64 ms
Remote clock offset: 0.21 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.25 Mbit/s
95th percentile per-packet one-way delay: 1.075 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.25 Mbit/s
95th percentile per-packet one-way delay: 1.075 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

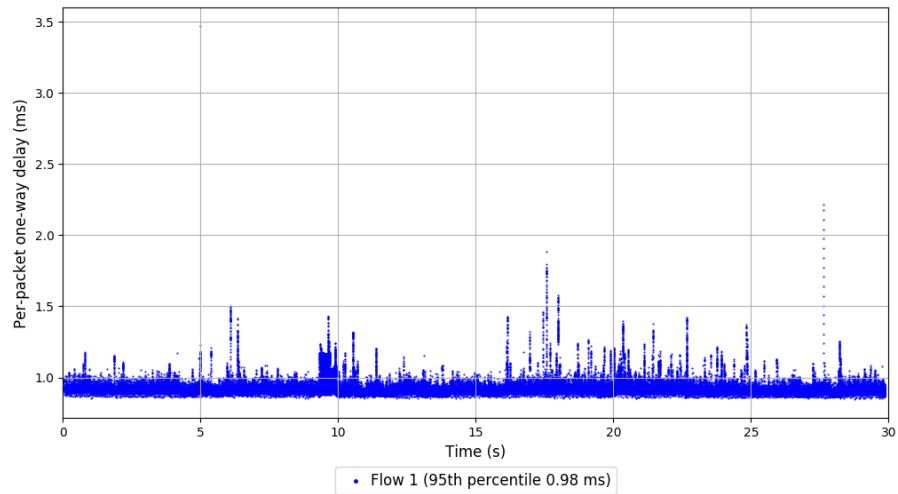
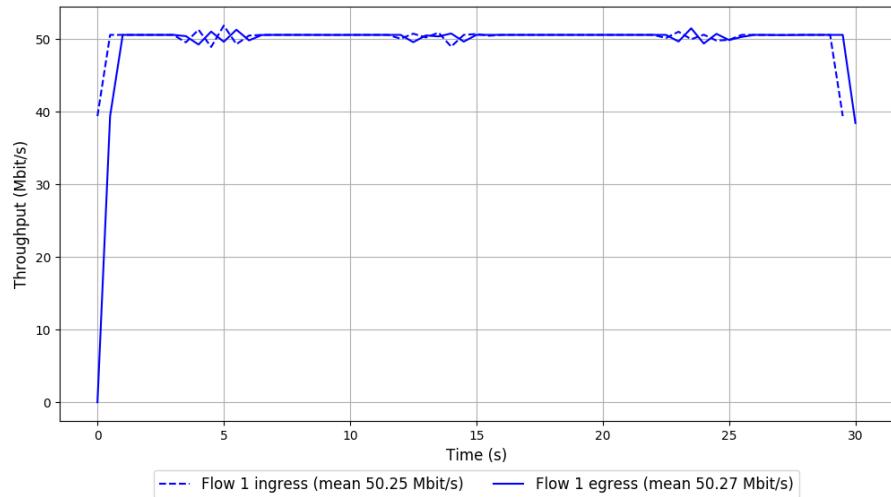


Run 4: Statistics of Sprout

```
Start at: 2019-01-03 06:19:12
End at: 2019-01-03 06:19:42
Local clock offset: 0.364 ms
Remote clock offset: 0.098 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 0.980 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 0.980 ms
Loss rate: 0.03%
```

Run 4: Report of Sprout — Data Link

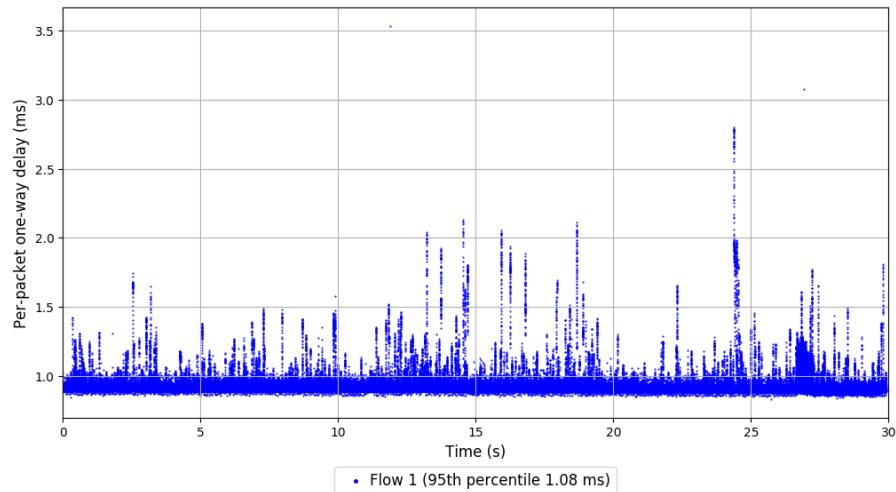
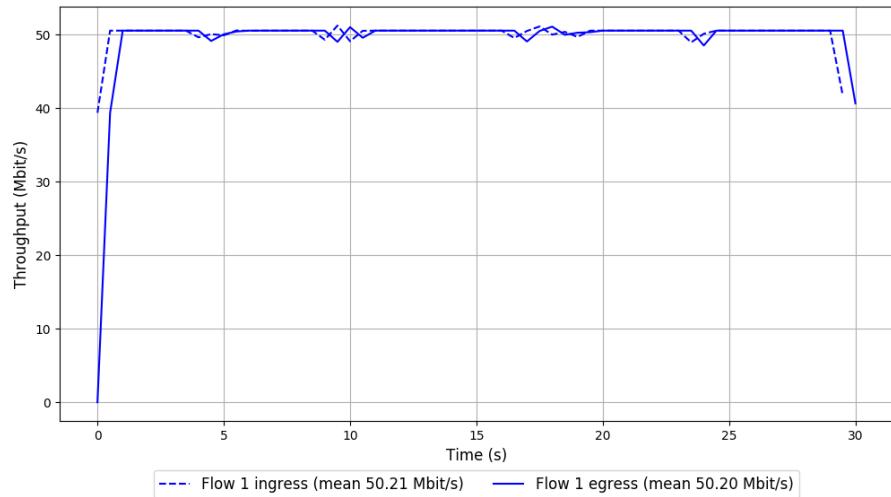


Run 5: Statistics of Sprout

```
Start at: 2019-01-03 06:46:25
End at: 2019-01-03 06:46:55
Local clock offset: 0.349 ms
Remote clock offset: -0.297 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.04%
```

Run 5: Report of Sprout — Data Link

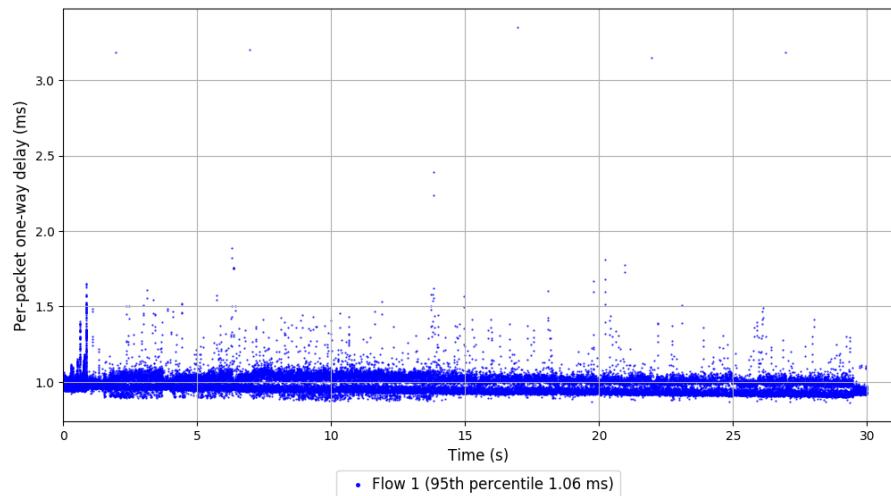
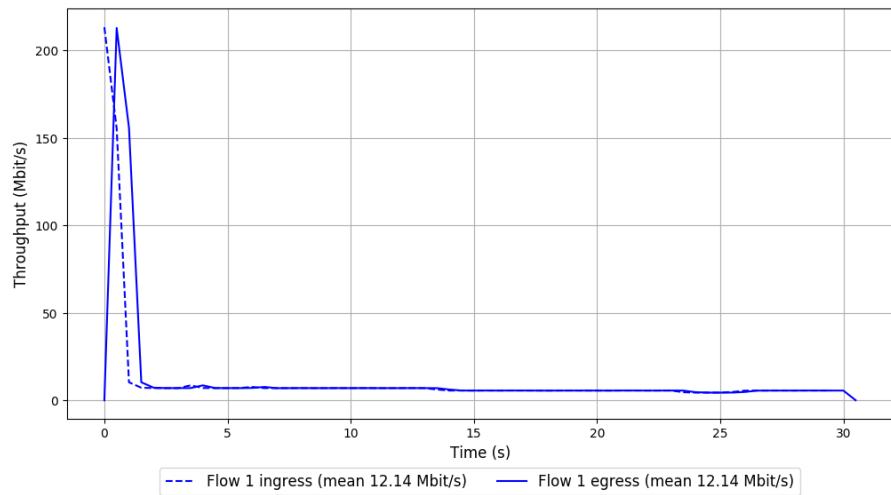


Run 1: Statistics of TaoVA-100x

```
Start at: 2019-01-03 05:09:22
End at: 2019-01-03 05:09:52
Local clock offset: -0.124 ms
Remote clock offset: -0.208 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.14 Mbit/s
95th percentile per-packet one-way delay: 1.057 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.14 Mbit/s
95th percentile per-packet one-way delay: 1.057 ms
Loss rate: 0.00%
```

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

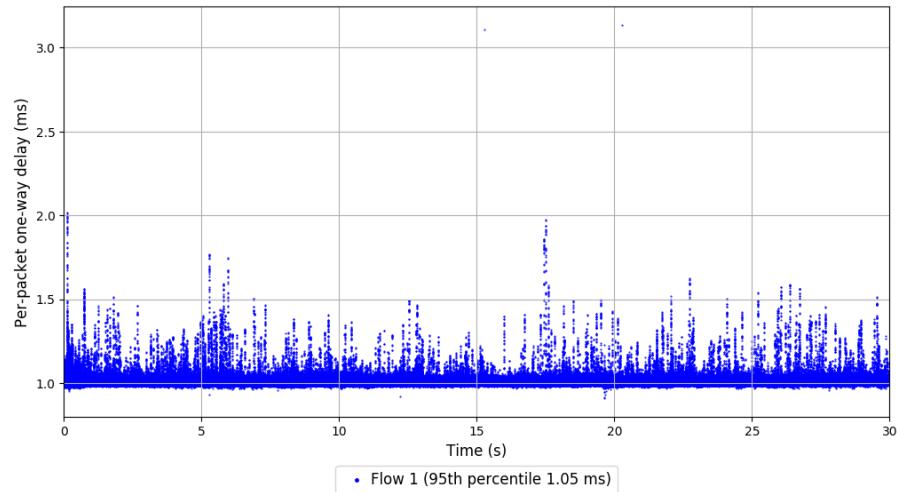
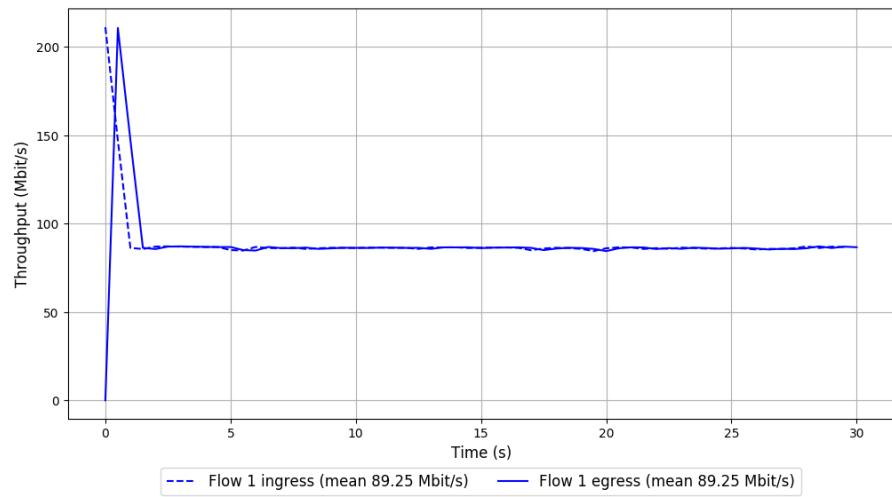


Run 2: Statistics of TaoVA-100x

```
Start at: 2019-01-03 05:36:19
End at: 2019-01-03 05:36:49
Local clock offset: 0.534 ms
Remote clock offset: 0.236 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.25 Mbit/s
95th percentile per-packet one-way delay: 1.048 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 89.25 Mbit/s
95th percentile per-packet one-way delay: 1.048 ms
Loss rate: 0.01%
```

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

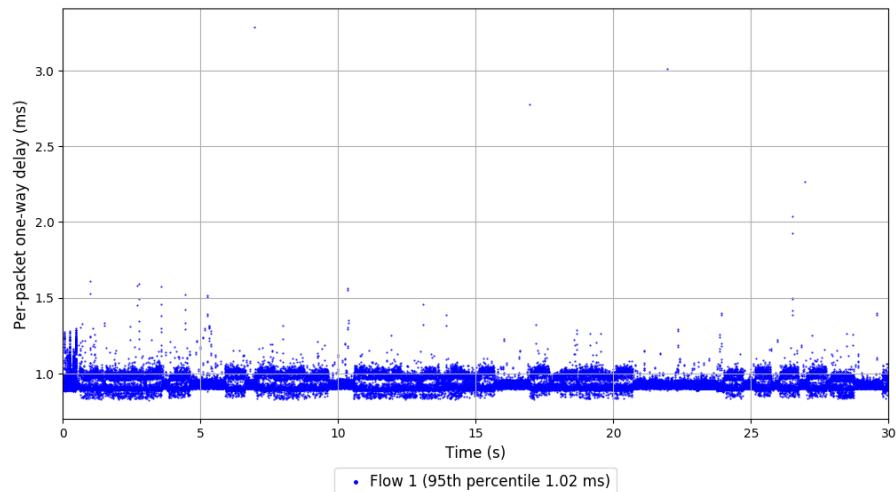
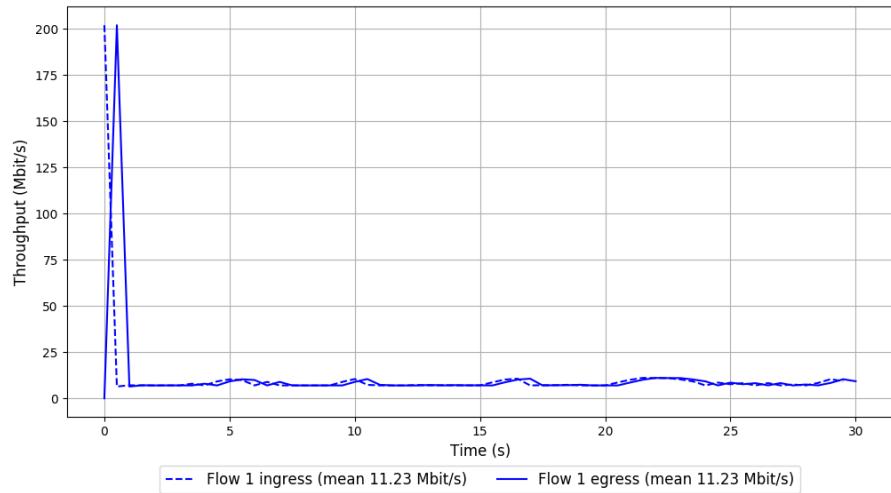


Run 3: Statistics of TaoVA-100x

```
Start at: 2019-01-03 06:03:23
End at: 2019-01-03 06:03:53
Local clock offset: 0.432 ms
Remote clock offset: 0.121 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.23 Mbit/s
95th percentile per-packet one-way delay: 1.019 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.23 Mbit/s
95th percentile per-packet one-way delay: 1.019 ms
Loss rate: 0.00%
```

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

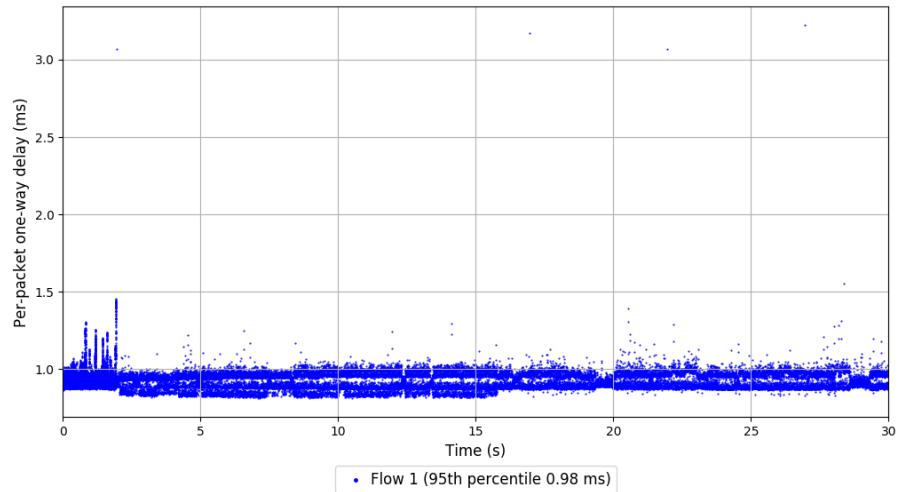
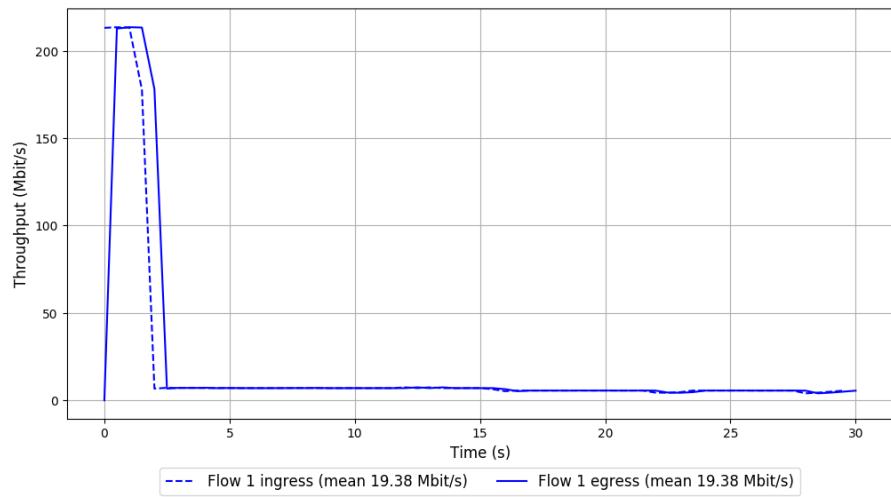


Run 4: Statistics of TaoVA-100x

```
Start at: 2019-01-03 06:30:32
End at: 2019-01-03 06:31:02
Local clock offset: 0.318 ms
Remote clock offset: -0.193 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.38 Mbit/s
95th percentile per-packet one-way delay: 0.985 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 19.38 Mbit/s
95th percentile per-packet one-way delay: 0.985 ms
Loss rate: 0.00%
```

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

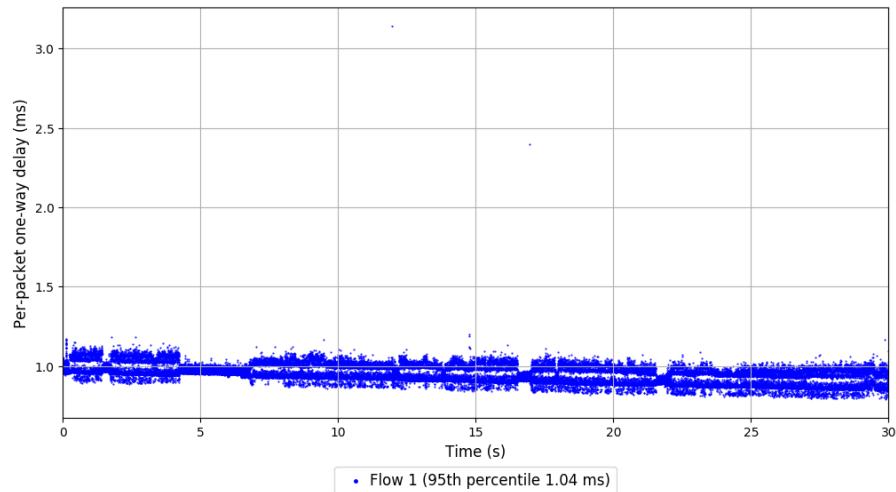
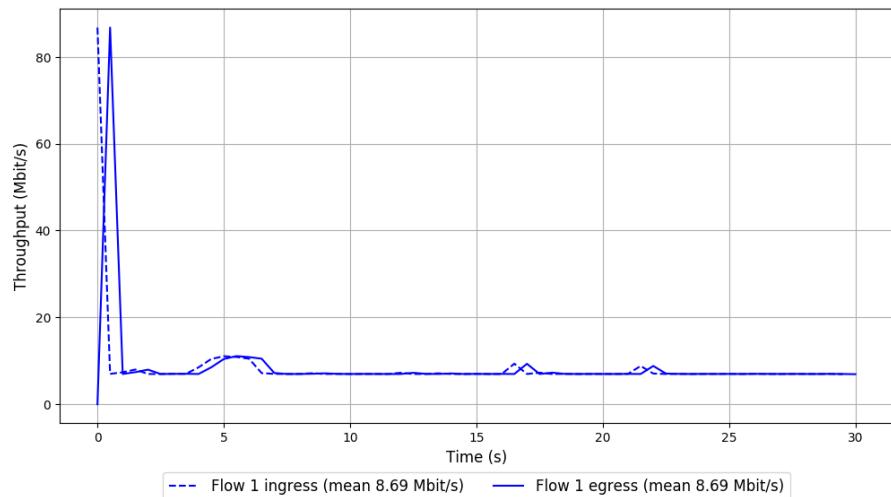


Run 5: Statistics of TaoVA-100x

```
Start at: 2019-01-03 06:57:48
End at: 2019-01-03 06:58:18
Local clock offset: 0.351 ms
Remote clock offset: -1.615 ms

# Below is generated by plot.py at 2019-01-03 07:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 1.042 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 1.042 ms
Loss rate: 0.00%
```

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

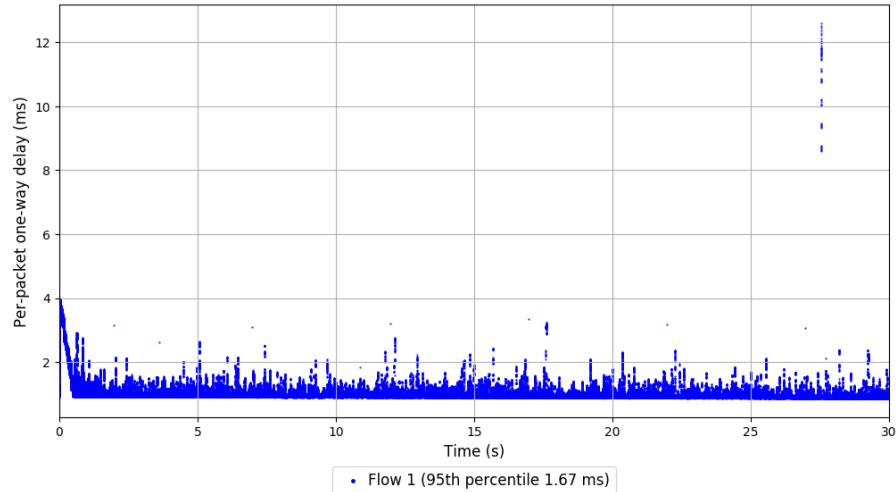
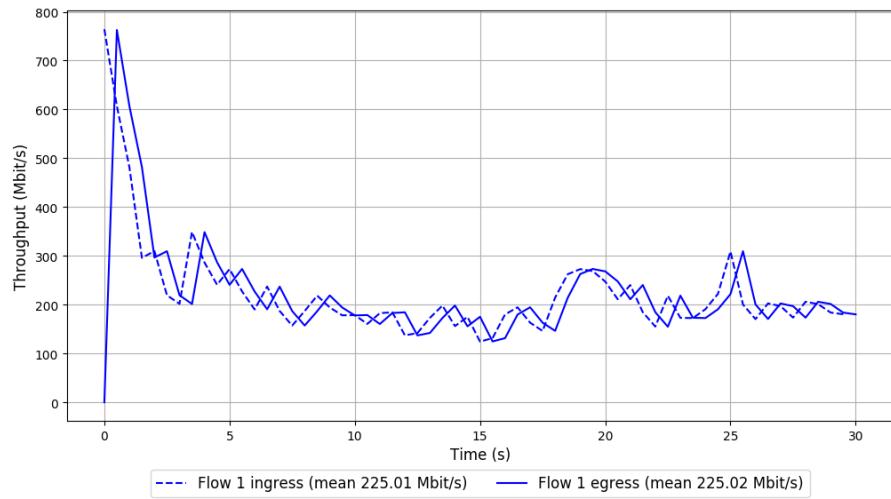


Run 1: Statistics of TCP Vegas

```
Start at: 2019-01-03 05:06:49
End at: 2019-01-03 05:07:19
Local clock offset: -0.425 ms
Remote clock offset: -0.203 ms

# Below is generated by plot.py at 2019-01-03 07:58:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.02 Mbit/s
95th percentile per-packet one-way delay: 1.669 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 225.02 Mbit/s
95th percentile per-packet one-way delay: 1.669 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

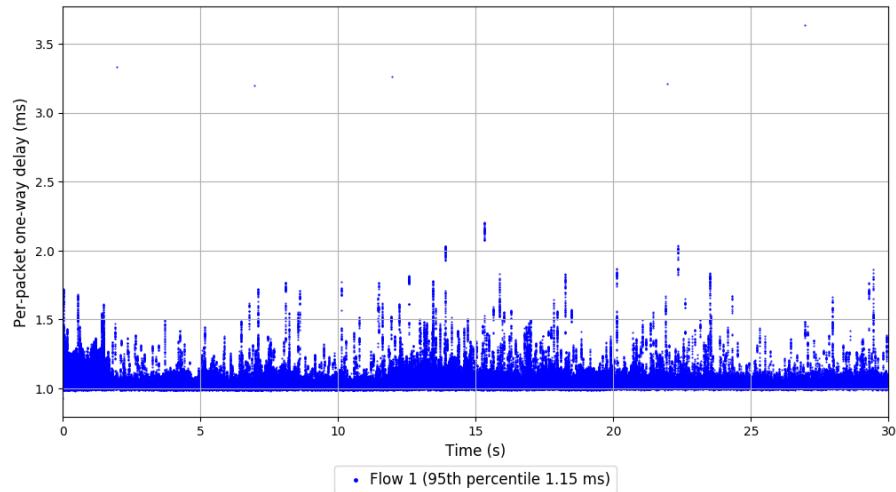
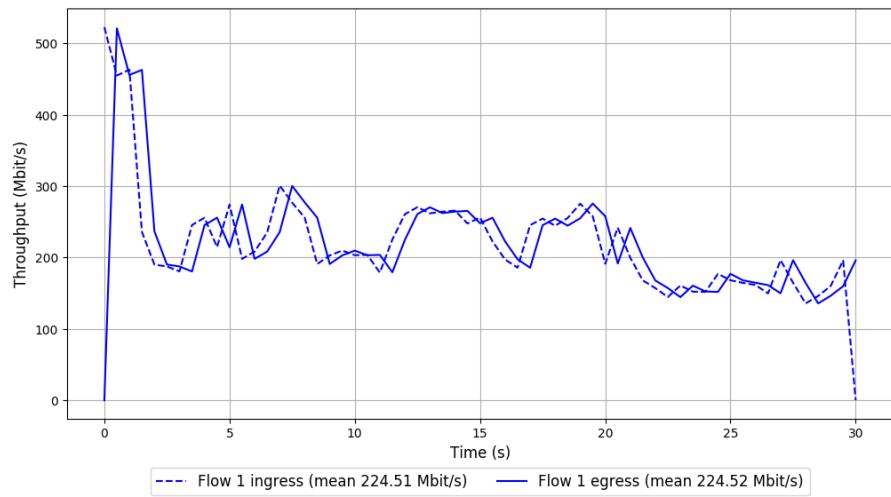


Run 2: Statistics of TCP Vegas

```
Start at: 2019-01-03 05:33:45
End at: 2019-01-03 05:34:15
Local clock offset: 0.565 ms
Remote clock offset: 0.227 ms

# Below is generated by plot.py at 2019-01-03 07:58:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.52 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 224.52 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Vegas — Data Link

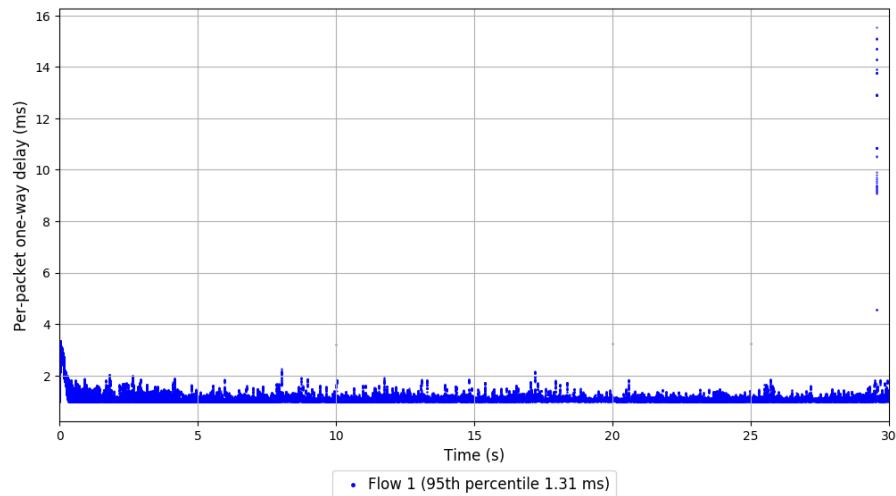
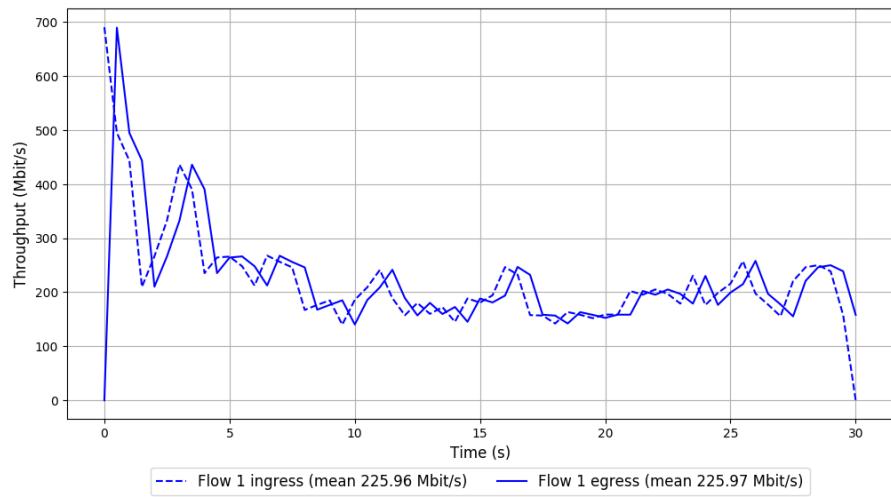


Run 3: Statistics of TCP Vegas

```
Start at: 2019-01-03 06:00:49
End at: 2019-01-03 06:01:19
Local clock offset: 0.48 ms
Remote clock offset: 0.066 ms

# Below is generated by plot.py at 2019-01-03 07:58:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.97 Mbit/s
95th percentile per-packet one-way delay: 1.314 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 225.97 Mbit/s
95th percentile per-packet one-way delay: 1.314 ms
Loss rate: 0.00%
```

Run 3: Report of TCP Vegas — Data Link

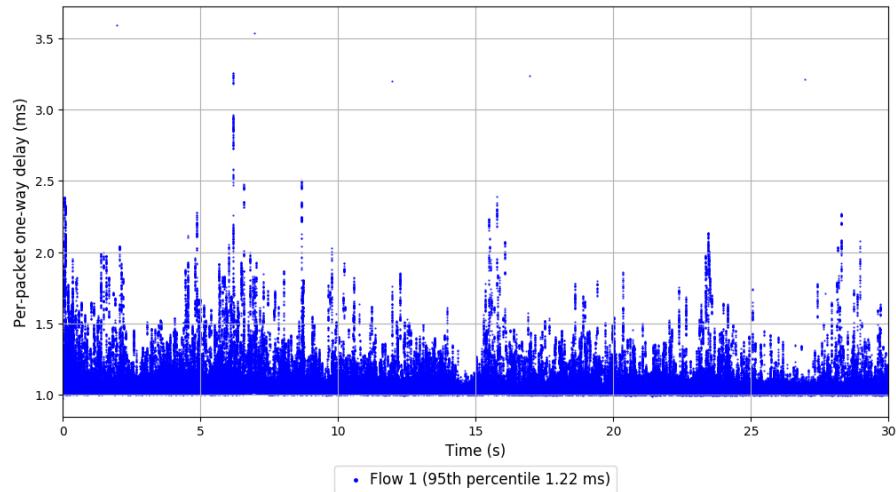
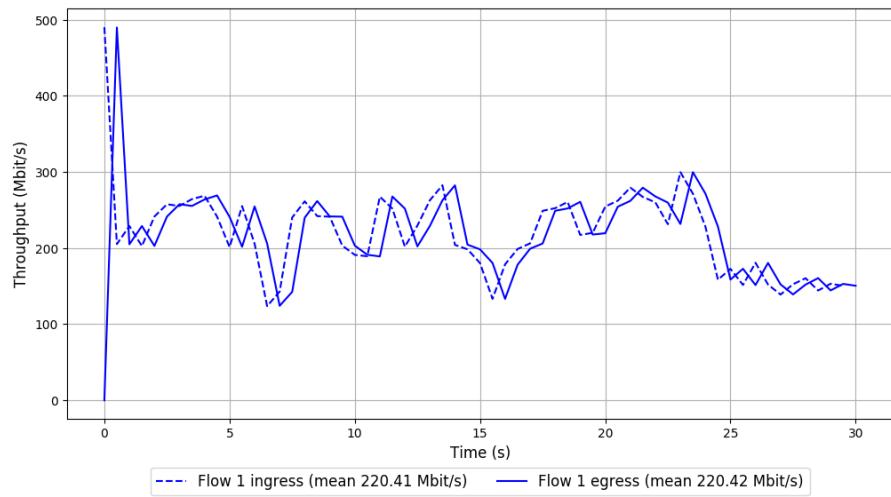


Run 4: Statistics of TCP Vegas

```
Start at: 2019-01-03 06:27:59
End at: 2019-01-03 06:28:29
Local clock offset: 0.341 ms
Remote clock offset: -0.241 ms

# Below is generated by plot.py at 2019-01-03 07:58:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.42 Mbit/s
95th percentile per-packet one-way delay: 1.215 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.42 Mbit/s
95th percentile per-packet one-way delay: 1.215 ms
Loss rate: 0.00%
```

Run 4: Report of TCP Vegas — Data Link

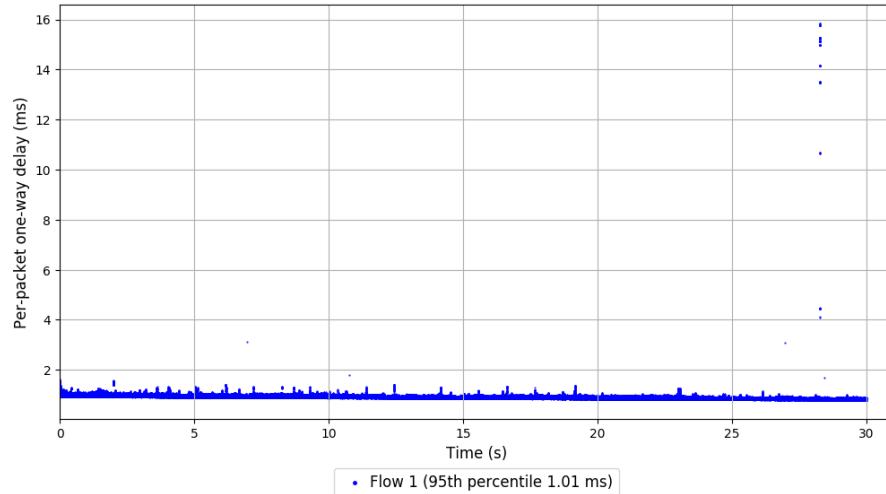
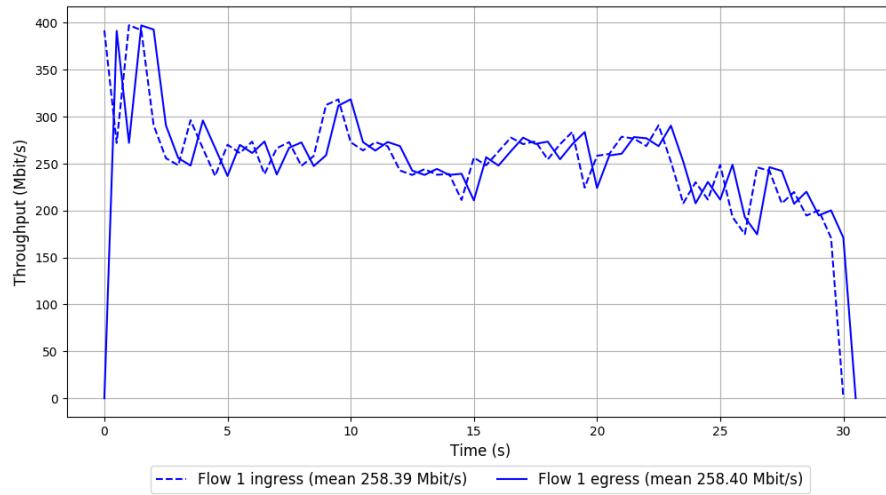


Run 5: Statistics of TCP Vegas

```
Start at: 2019-01-03 06:55:13
End at: 2019-01-03 06:55:43
Local clock offset: 0.407 ms
Remote clock offset: -0.869 ms

# Below is generated by plot.py at 2019-01-03 07:59:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 258.40 Mbit/s
95th percentile per-packet one-way delay: 1.011 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 258.40 Mbit/s
95th percentile per-packet one-way delay: 1.011 ms
Loss rate: 0.00%
```

Run 5: Report of TCP Vegas — Data Link

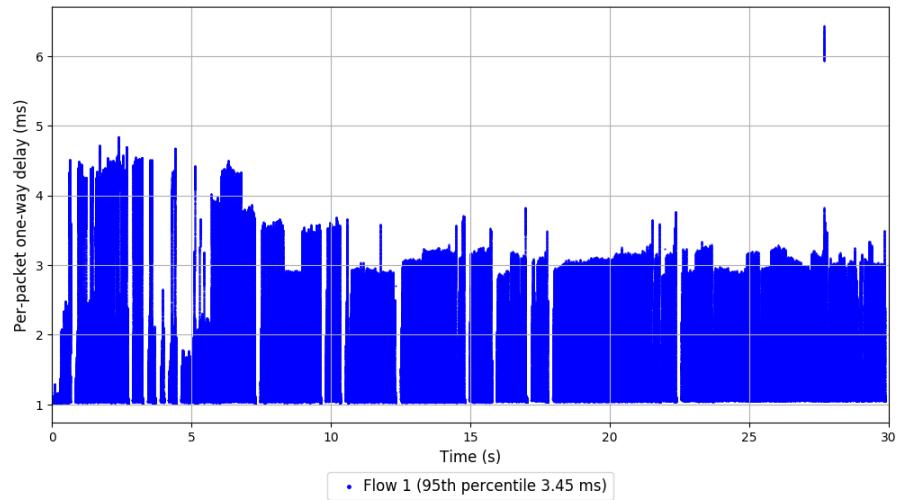
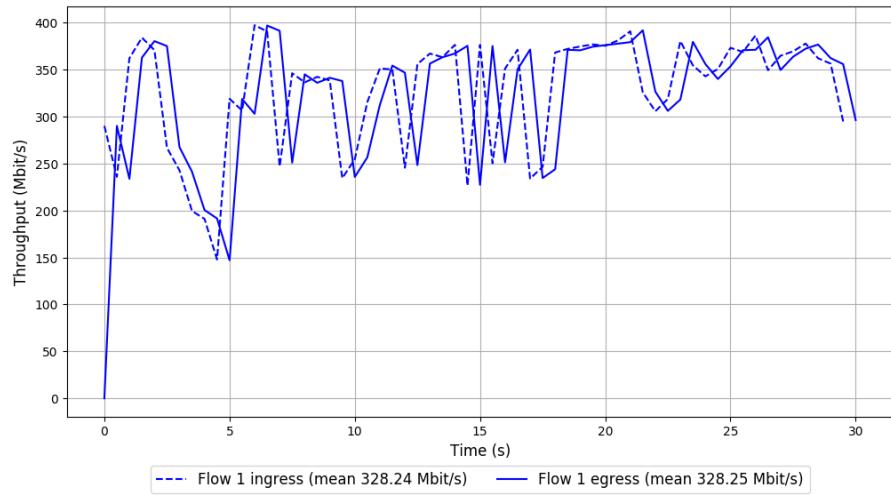


Run 1: Statistics of Verus

```
Start at: 2019-01-03 04:47:48
End at: 2019-01-03 04:48:18
Local clock offset: -3.033 ms
Remote clock offset: -0.563 ms

# Below is generated by plot.py at 2019-01-03 08:00:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 328.25 Mbit/s
95th percentile per-packet one-way delay: 3.447 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 328.25 Mbit/s
95th percentile per-packet one-way delay: 3.447 ms
Loss rate: 0.00%
```

Run 1: Report of Verus — Data Link

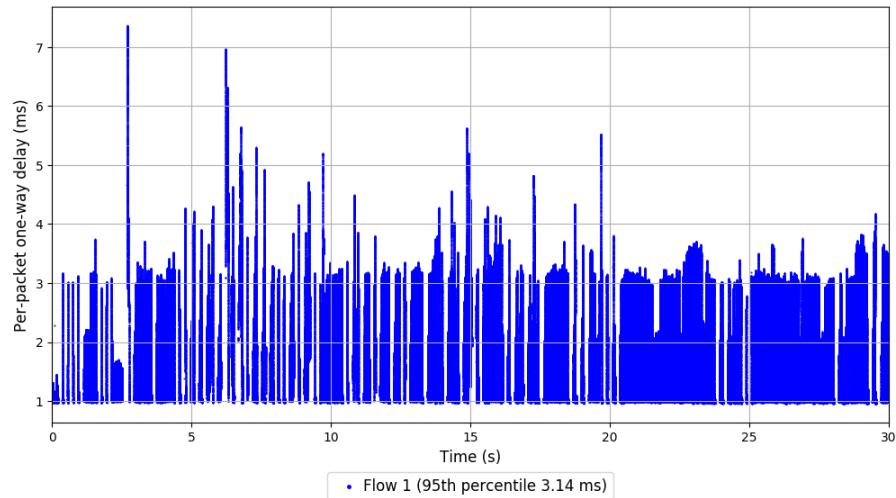
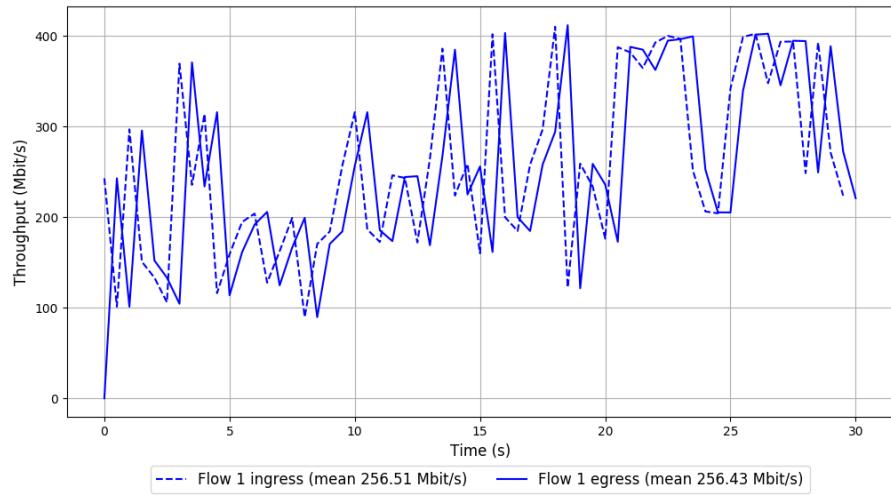


Run 2: Statistics of Verus

```
Start at: 2019-01-03 05:14:50
End at: 2019-01-03 05:15:20
Local clock offset: 0.322 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2019-01-03 08:00:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 256.43 Mbit/s
95th percentile per-packet one-way delay: 3.144 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 256.43 Mbit/s
95th percentile per-packet one-way delay: 3.144 ms
Loss rate: 0.04%
```

Run 2: Report of Verus — Data Link

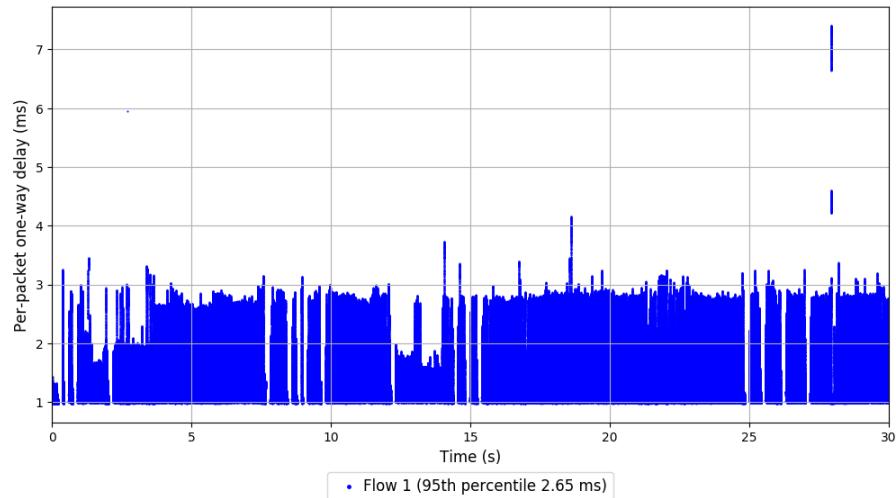
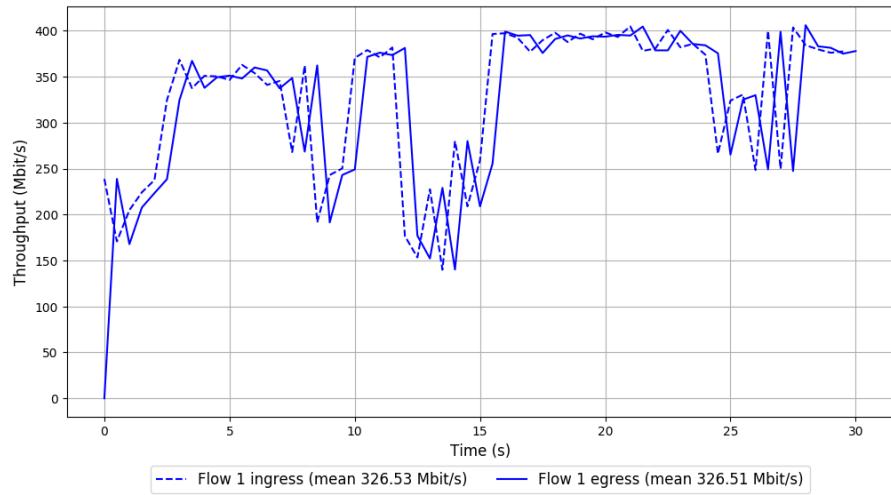


Run 3: Statistics of Verus

```
Start at: 2019-01-03 05:41:51
End at: 2019-01-03 05:42:21
Local clock offset: 0.544 ms
Remote clock offset: 0.311 ms

# Below is generated by plot.py at 2019-01-03 08:01:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 326.51 Mbit/s
95th percentile per-packet one-way delay: 2.650 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 326.51 Mbit/s
95th percentile per-packet one-way delay: 2.650 ms
Loss rate: 0.01%
```

Run 3: Report of Verus — Data Link

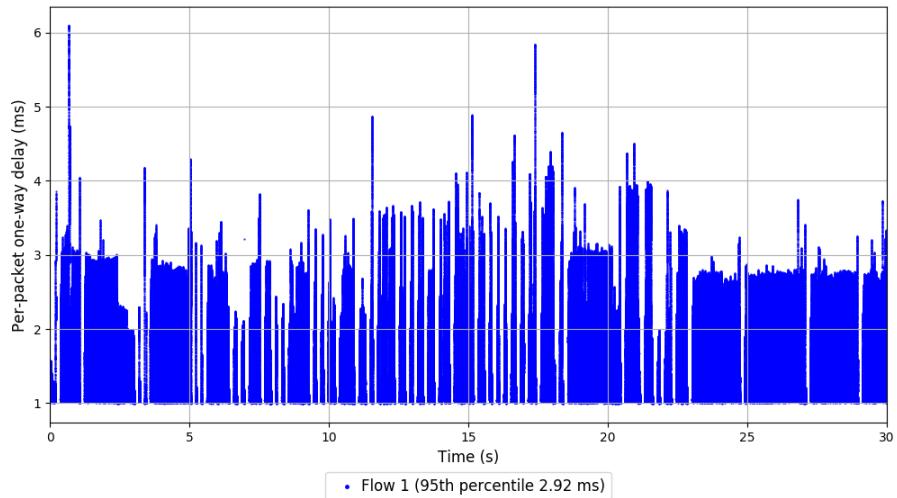
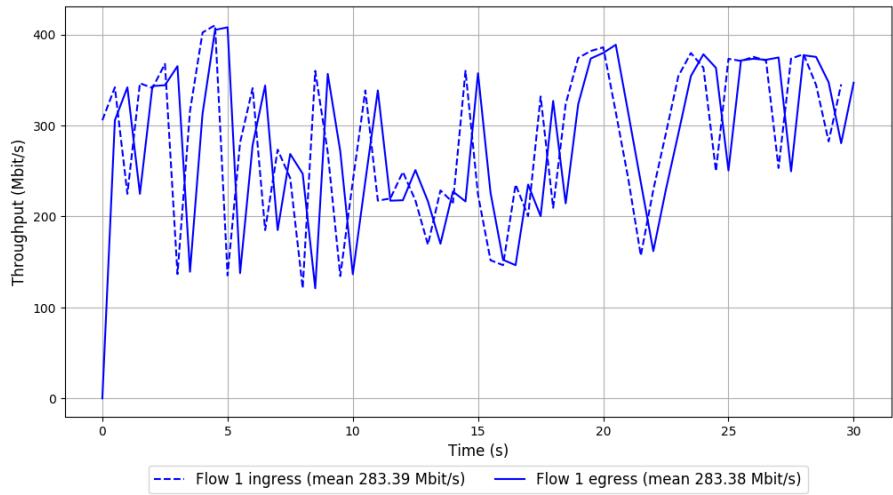


Run 4: Statistics of Verus

```
Start at: 2019-01-03 06:08:49
End at: 2019-01-03 06:09:19
Local clock offset: 0.372 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2019-01-03 08:01:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 283.38 Mbit/s
95th percentile per-packet one-way delay: 2.920 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 283.38 Mbit/s
95th percentile per-packet one-way delay: 2.920 ms
Loss rate: 0.00%
```

Run 4: Report of Verus — Data Link

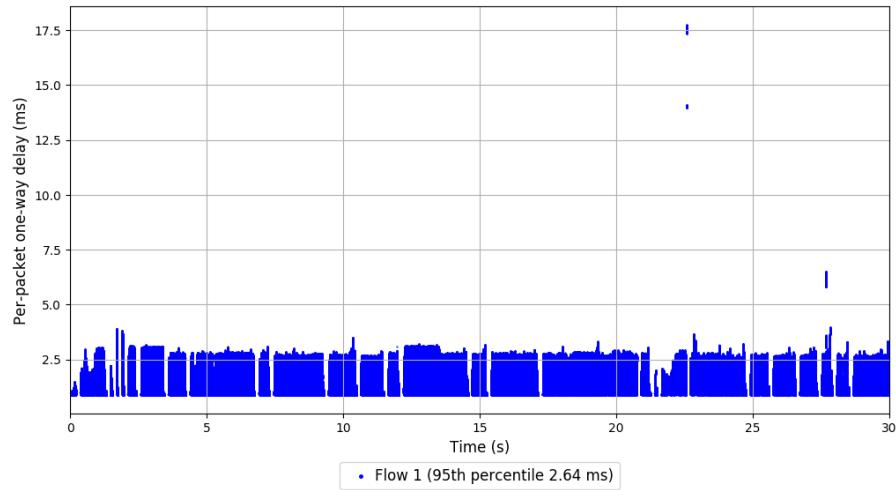
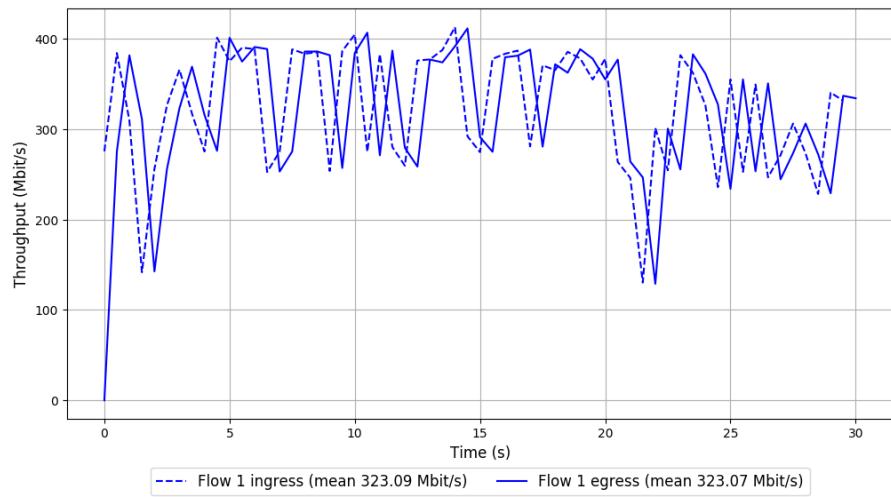


Run 5: Statistics of Verus

```
Start at: 2019-01-03 06:36:00
End at: 2019-01-03 06:36:30
Local clock offset: 0.302 ms
Remote clock offset: -0.247 ms

# Below is generated by plot.py at 2019-01-03 08:01:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 323.07 Mbit/s
95th percentile per-packet one-way delay: 2.636 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 323.07 Mbit/s
95th percentile per-packet one-way delay: 2.636 ms
Loss rate: 0.00%
```

Run 5: Report of Verus — Data Link

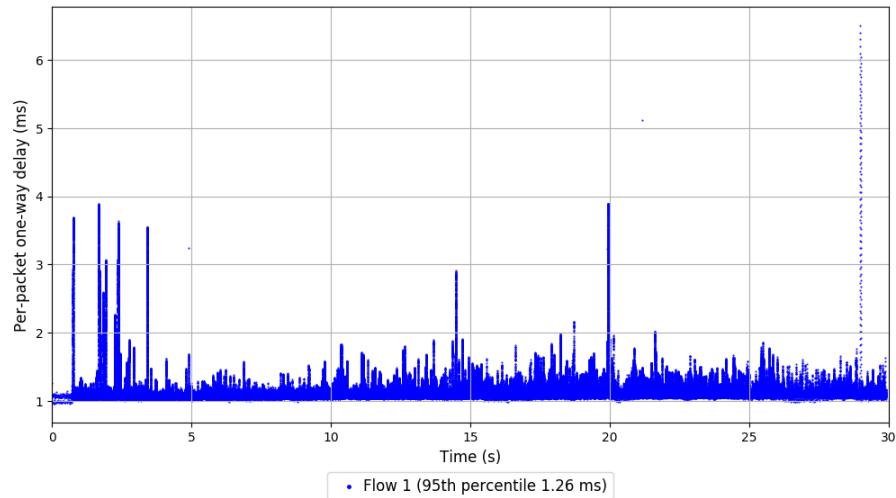
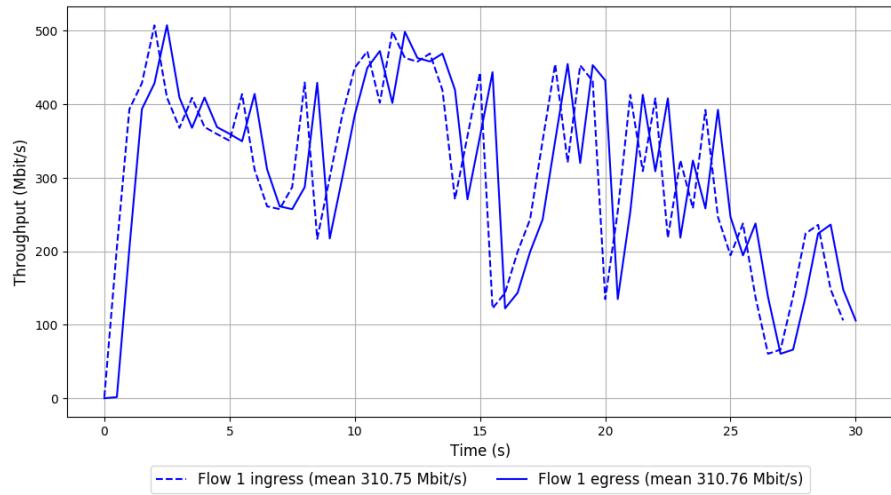


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2019-01-03 04:52:31
End at: 2019-01-03 04:53:01
Local clock offset: -3.266 ms
Remote clock offset: -0.447 ms

# Below is generated by plot.py at 2019-01-03 08:02:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 310.76 Mbit/s
95th percentile per-packet one-way delay: 1.259 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 310.76 Mbit/s
95th percentile per-packet one-way delay: 1.259 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

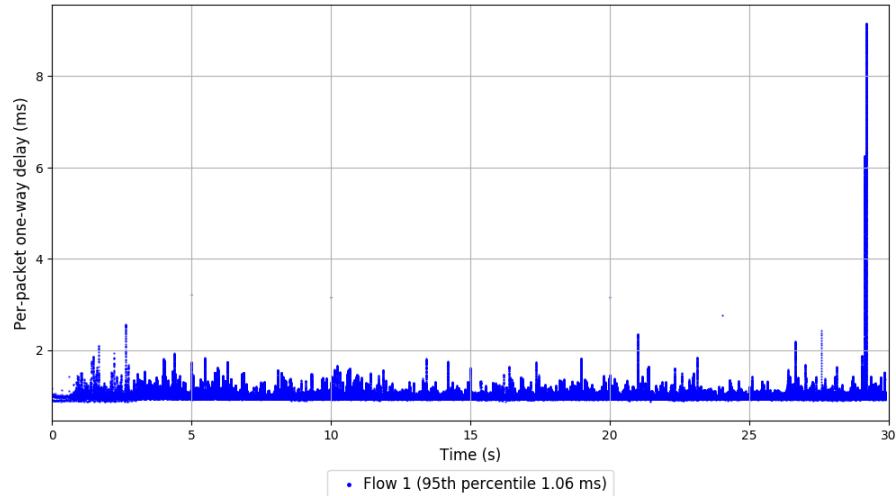
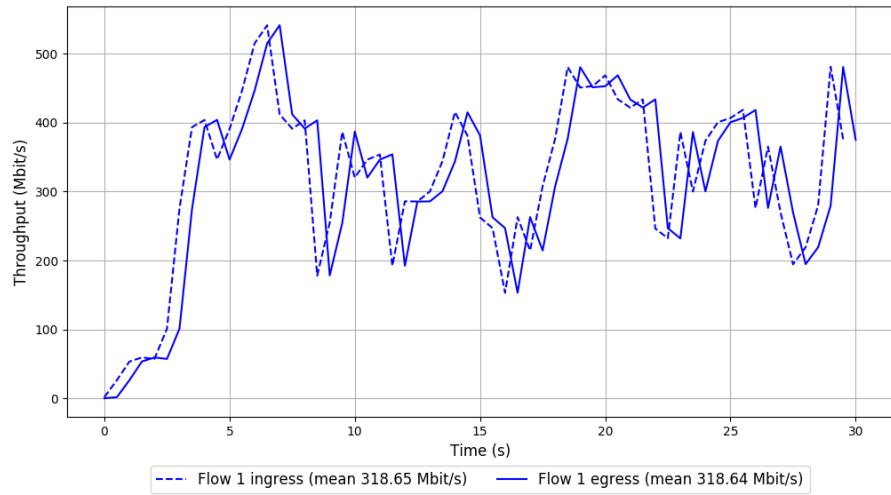


Run 2: Statistics of PCC-Vivace

```
Start at: 2019-01-03 05:19:28
End at: 2019-01-03 05:19:58
Local clock offset: 0.567 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2019-01-03 08:02:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 318.64 Mbit/s
95th percentile per-packet one-way delay: 1.058 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 318.64 Mbit/s
95th percentile per-packet one-way delay: 1.058 ms
Loss rate: 0.01%
```

Run 2: Report of PCC-Vivace — Data Link

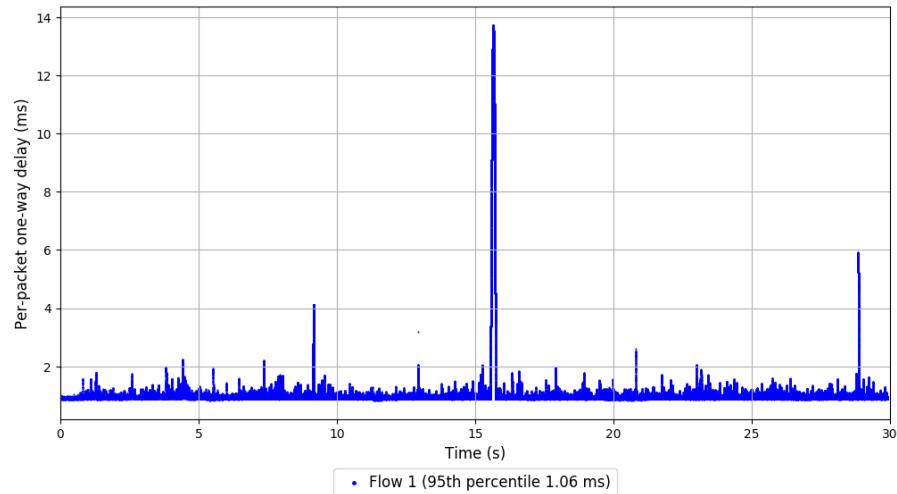
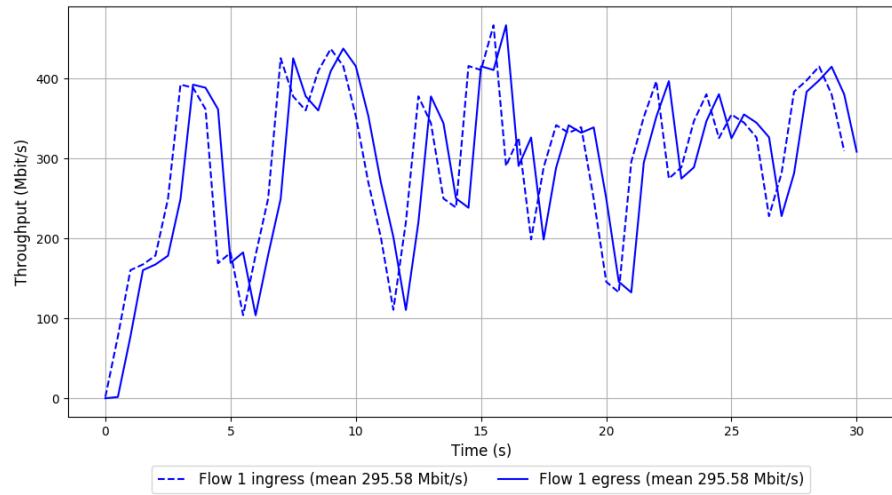


Run 3: Statistics of PCC-Vivace

```
Start at: 2019-01-03 05:46:33
End at: 2019-01-03 05:47:03
Local clock offset: 0.566 ms
Remote clock offset: 0.381 ms

# Below is generated by plot.py at 2019-01-03 08:02:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 295.58 Mbit/s
95th percentile per-packet one-way delay: 1.065 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 295.58 Mbit/s
95th percentile per-packet one-way delay: 1.065 ms
Loss rate: 0.01%
```

Run 3: Report of PCC-Vivace — Data Link

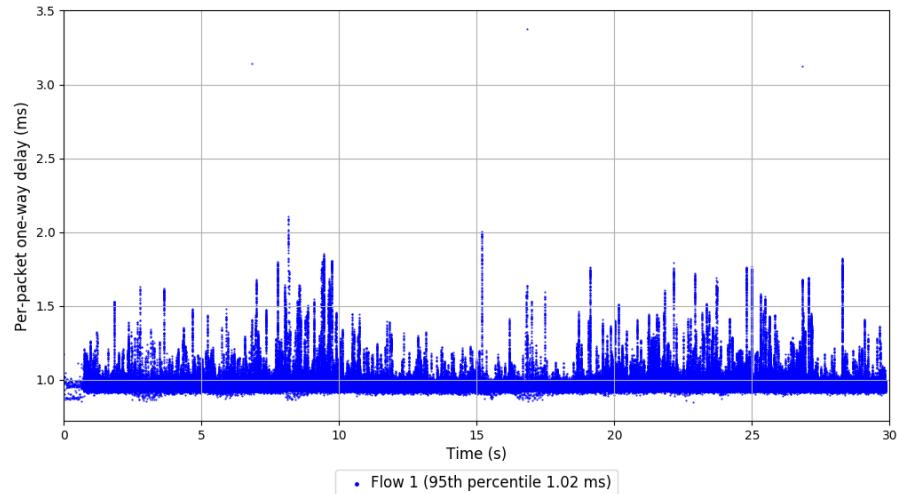
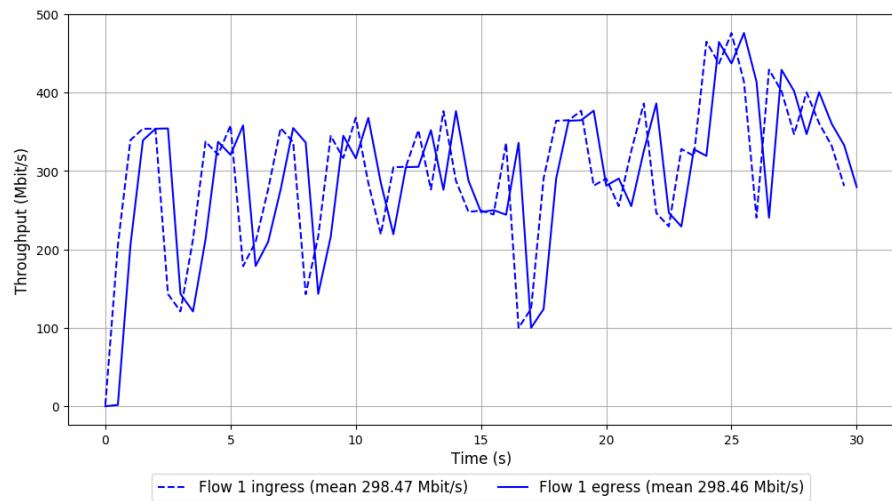


Run 4: Statistics of PCC-Vivace

```
Start at: 2019-01-03 06:13:29
End at: 2019-01-03 06:13:59
Local clock offset: 0.358 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2019-01-03 08:02:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 298.46 Mbit/s
95th percentile per-packet one-way delay: 1.020 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 298.46 Mbit/s
95th percentile per-packet one-way delay: 1.020 ms
Loss rate: 0.01%
```

Run 4: Report of PCC-Vivace — Data Link

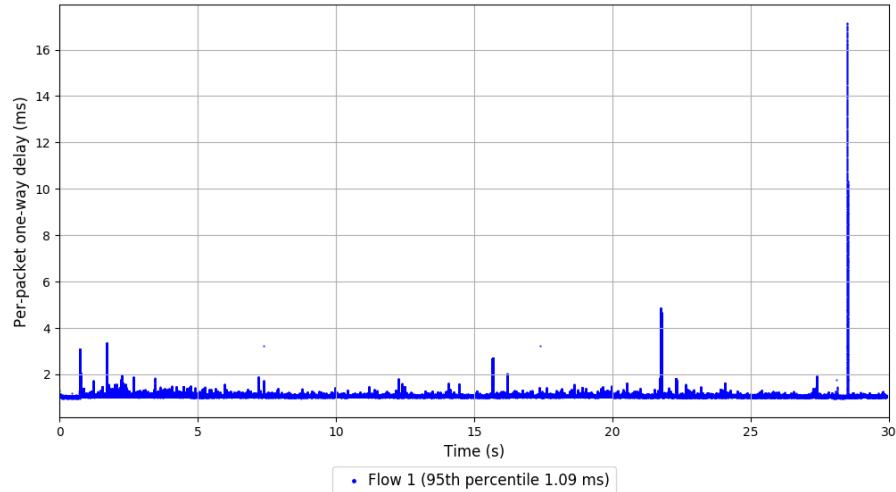
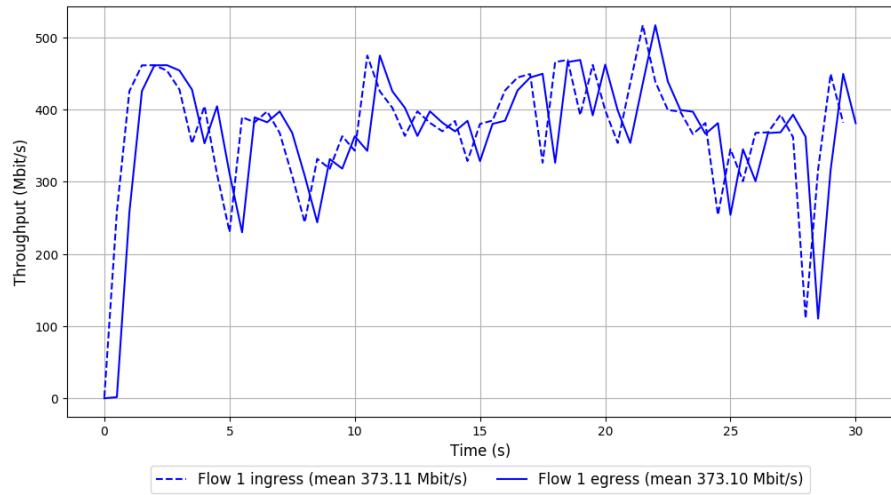


Run 5: Statistics of PCC-Vivace

```
Start at: 2019-01-03 06:40:43
End at: 2019-01-03 06:41:13
Local clock offset: 0.317 ms
Remote clock offset: -0.407 ms

# Below is generated by plot.py at 2019-01-03 08:02:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 373.10 Mbit/s
95th percentile per-packet one-way delay: 1.091 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 373.10 Mbit/s
95th percentile per-packet one-way delay: 1.091 ms
Loss rate: 0.01%
```

Run 5: Report of PCC-Vivace — Data Link

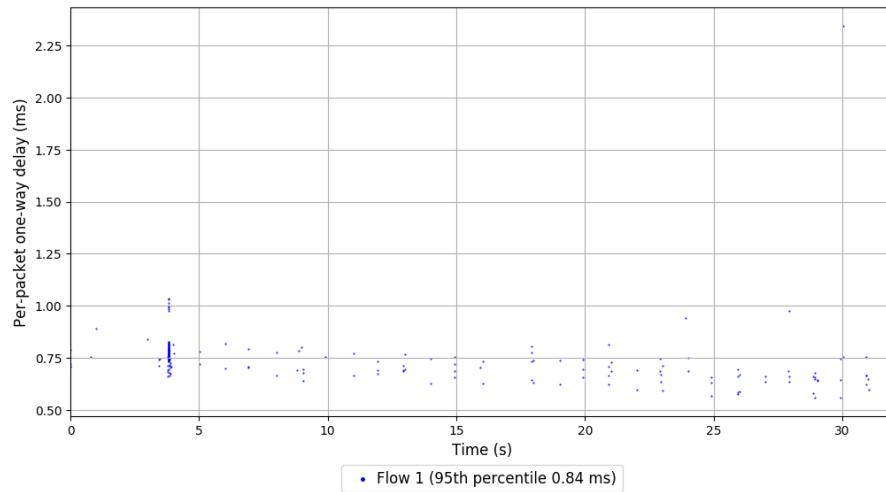
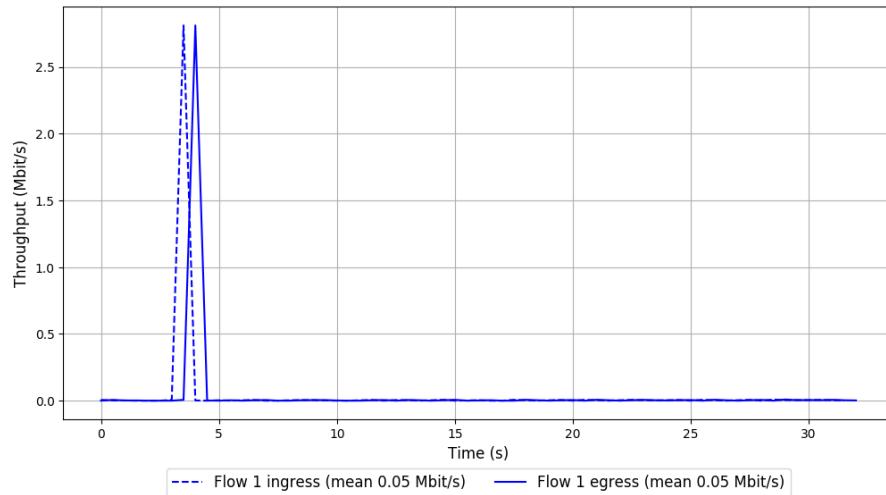


```
Run 1: Statistics of WebRTC media

Start at: 2019-01-03 04:56:53
End at: 2019-01-03 04:57:23
Local clock offset: -2.436 ms
Remote clock offset: -0.242 ms

# Below is generated by plot.py at 2019-01-03 08:02:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 0.841 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 0.841 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

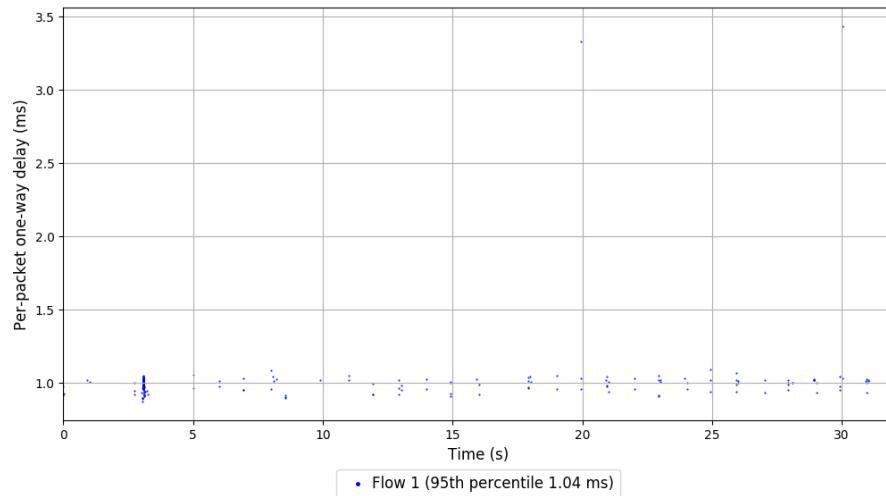
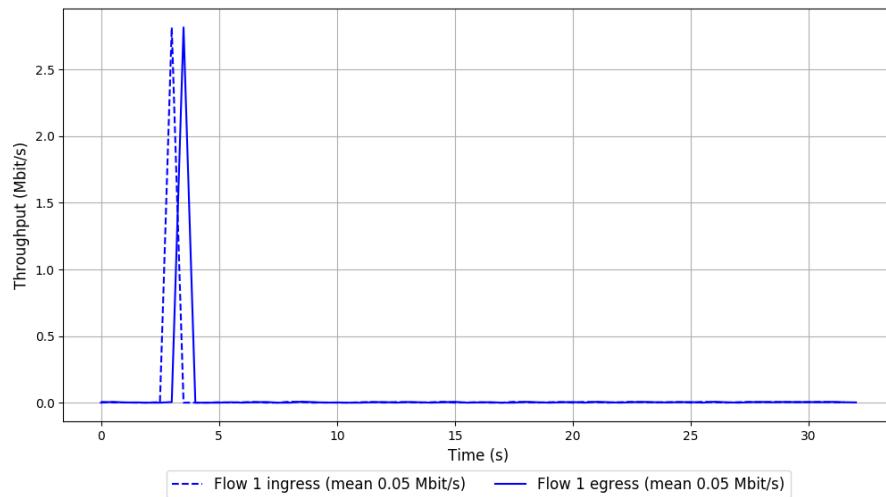


Run 2: Statistics of WebRTC media

```
Start at: 2019-01-03 05:23:53
End at: 2019-01-03 05:24:23
Local clock offset: 0.727 ms
Remote clock offset: 0.128 ms

# Below is generated by plot.py at 2019-01-03 08:02:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.044 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.044 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

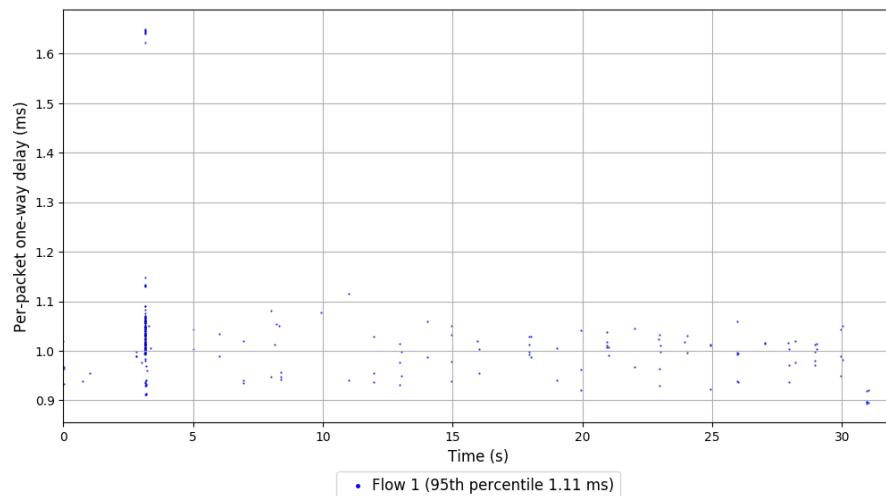
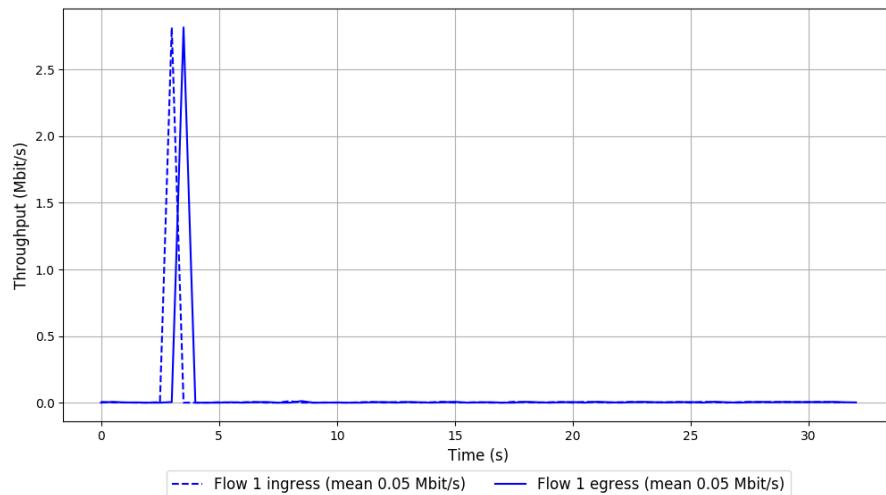


Run 3: Statistics of WebRTC media

```
Start at: 2019-01-03 05:50:54
End at: 2019-01-03 05:51:24
Local clock offset: 0.626 ms
Remote clock offset: 0.204 ms

# Below is generated by plot.py at 2019-01-03 08:02:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

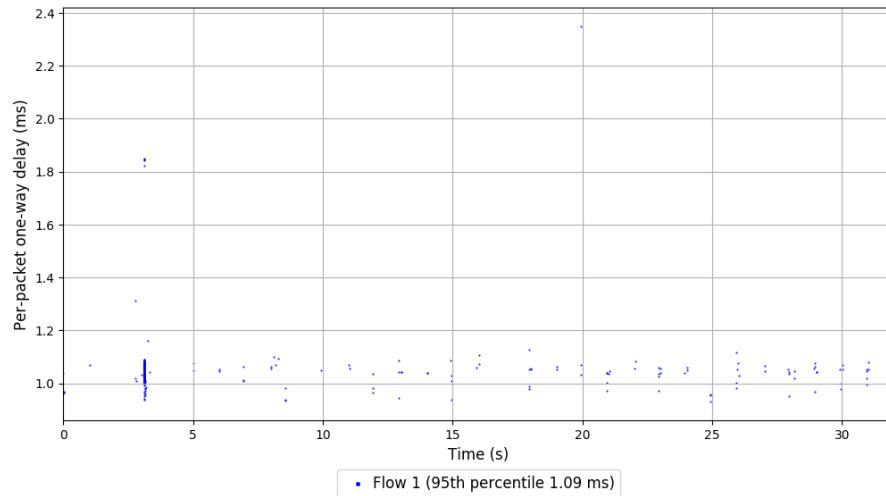
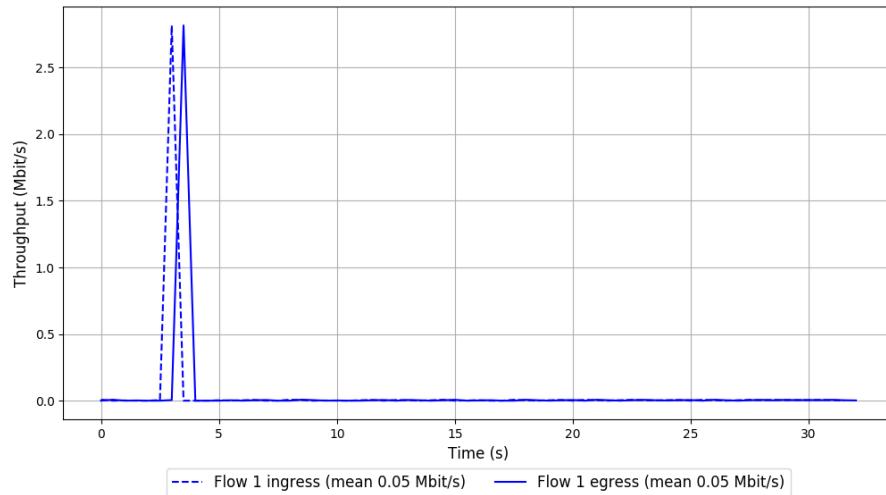


Run 4: Statistics of WebRTC media

```
Start at: 2019-01-03 06:18:00
End at: 2019-01-03 06:18:30
Local clock offset: 0.377 ms
Remote clock offset: -0.003 ms

# Below is generated by plot.py at 2019-01-03 08:02:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.094 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.094 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2019-01-03 06:45:12
End at: 2019-01-03 06:45:42
Local clock offset: 0.356 ms
Remote clock offset: -0.414 ms

# Below is generated by plot.py at 2019-01-03 08:02:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.139 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.139 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

