

Pantheon Report

Generated at 2019-01-02 22:29:33 (UTC).
Data path: GCE Sydney on `ens4 (local)` → GCE Iowa on `ens4 (remote)`.
Repeated the test of 19 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

System info:

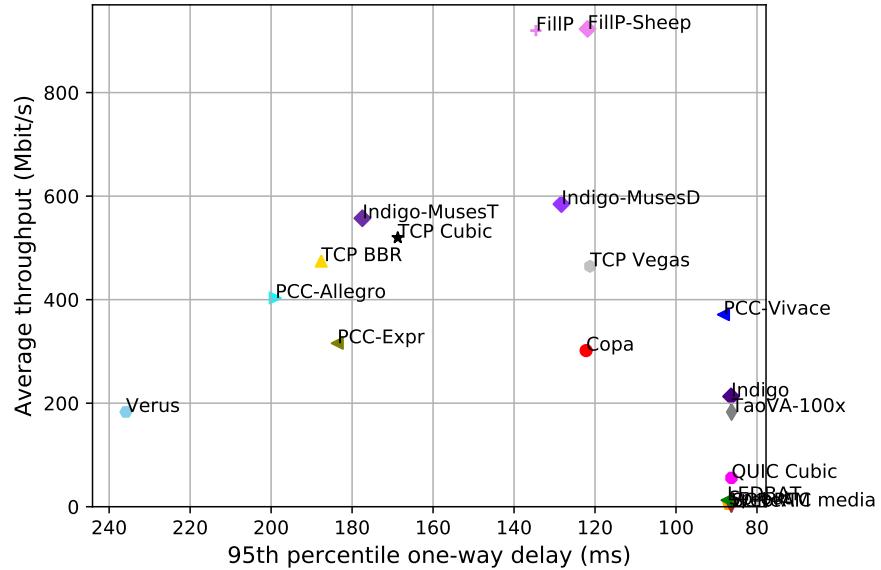
```
Linux 4.15.0-1025-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

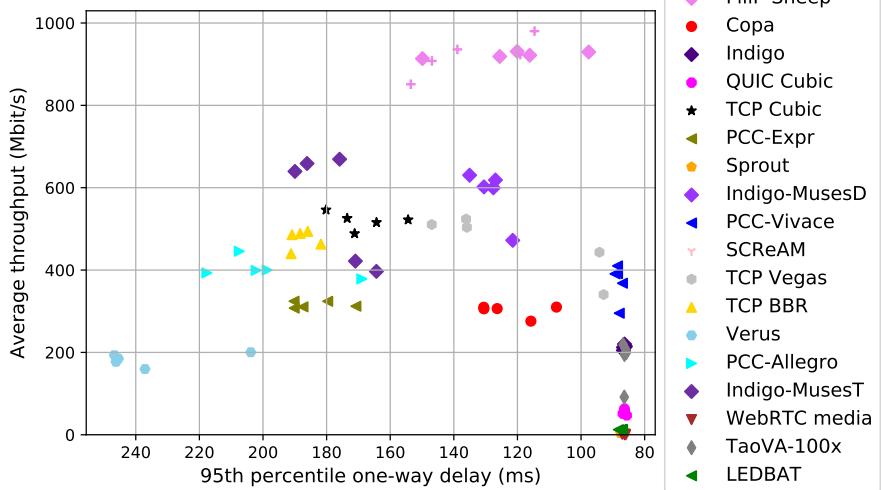
```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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 GCE Sydney to GCE Iowa, 5 runs of 30s each per scheme
(mean of all runs by scheme)



test from GCE Sydney to GCE Iowa, 5 runs of 30s each per scheme



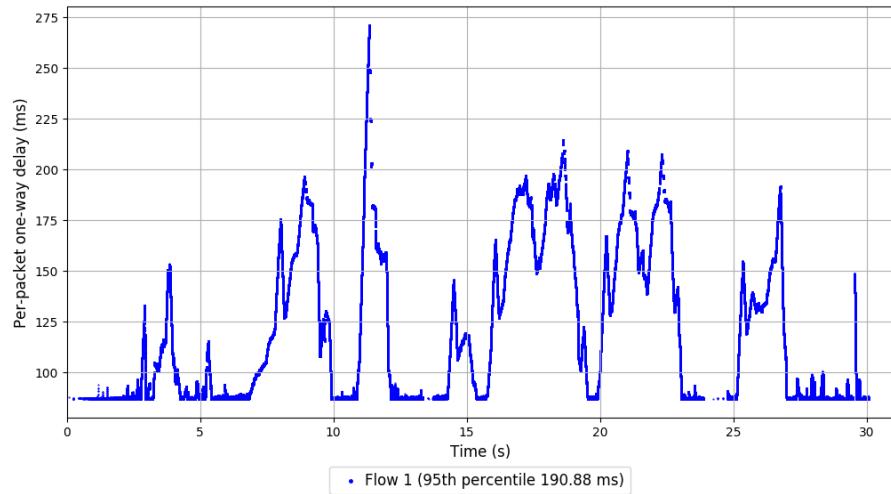
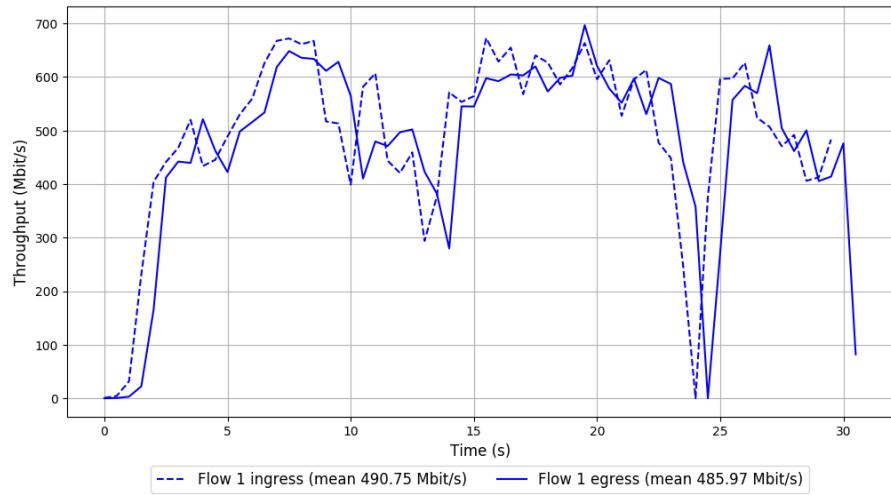
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	474.38	187.61	1.18
Copa	5	301.60	122.20	0.07
TCP Cubic	5	519.66	168.72	0.15
FillP	5	919.74	134.60	1.06
FillP-Sheep	5	922.92	121.84	0.66
Indigo	5	213.10	86.39	0.03
Indigo-MusesD	5	584.58	128.30	0.15
Indigo-MusesT	5	557.23	177.46	1.93
LEDBAT	5	12.57	87.40	0.00
PCC-Allegro	5	403.29	198.96	5.11
PCC-Expr	5	315.76	183.66	2.25
QUIC Cubic	5	55.75	86.31	0.00
SCReAM	5	0.22	86.28	0.00
Sprout	5	4.41	87.01	0.00
TaoVA-100x	5	182.93	86.27	3.12
TCP Vegas	5	464.40	121.21	0.17
Verus	5	183.05	235.86	7.25
PCC-Vivace	5	371.13	88.28	0.00
WebRTC media	5	0.67	86.33	0.00

Run 1: Statistics of TCP BBR

```
Start at: 2019-01-02 18:22:03
End at: 2019-01-02 18:22:33
Local clock offset: 19.005 ms
Remote clock offset: 20.966 ms

# Below is generated by plot.py at 2019-01-02 20:42:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 485.97 Mbit/s
95th percentile per-packet one-way delay: 190.878 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 485.97 Mbit/s
95th percentile per-packet one-way delay: 190.878 ms
Loss rate: 0.98%
```

Run 1: Report of TCP BBR — Data Link

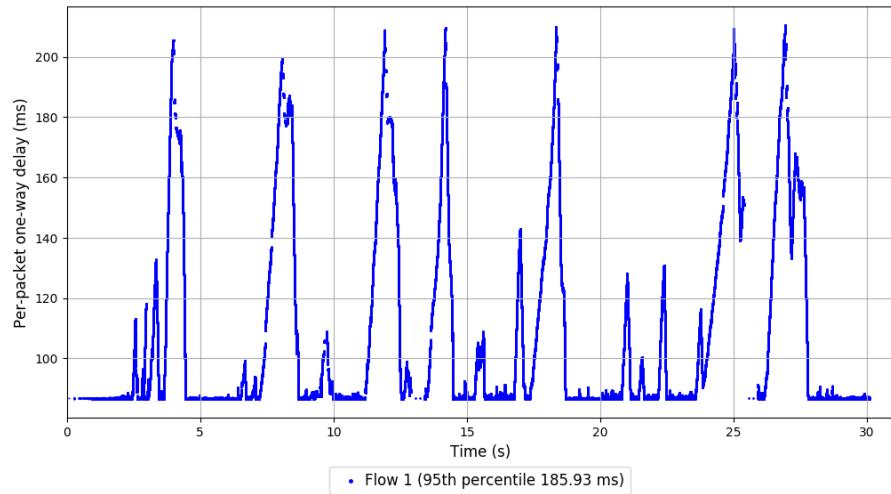
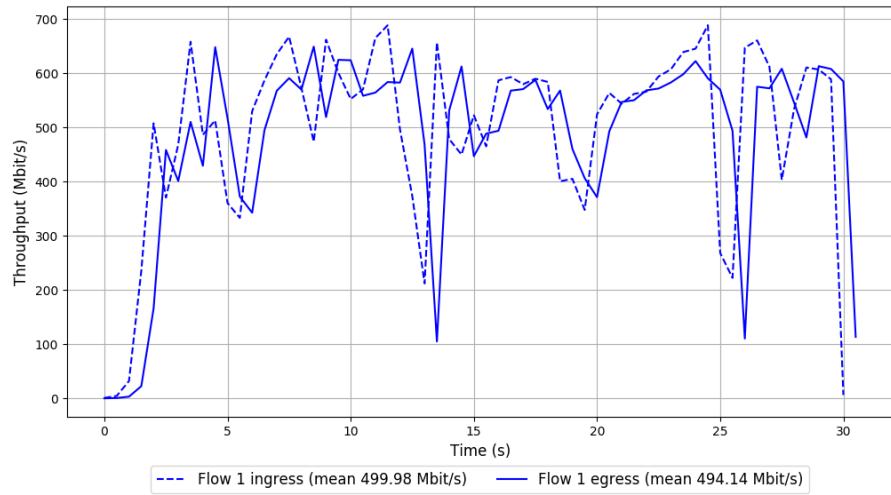


Run 2: Statistics of TCP BBR

```
Start at: 2019-01-02 18:50:38
End at: 2019-01-02 18:51:08
Local clock offset: 29.136 ms
Remote clock offset: 31.544 ms

# Below is generated by plot.py at 2019-01-02 20:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 494.14 Mbit/s
95th percentile per-packet one-way delay: 185.932 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 494.14 Mbit/s
95th percentile per-packet one-way delay: 185.932 ms
Loss rate: 1.17%
```

Run 2: Report of TCP BBR — Data Link

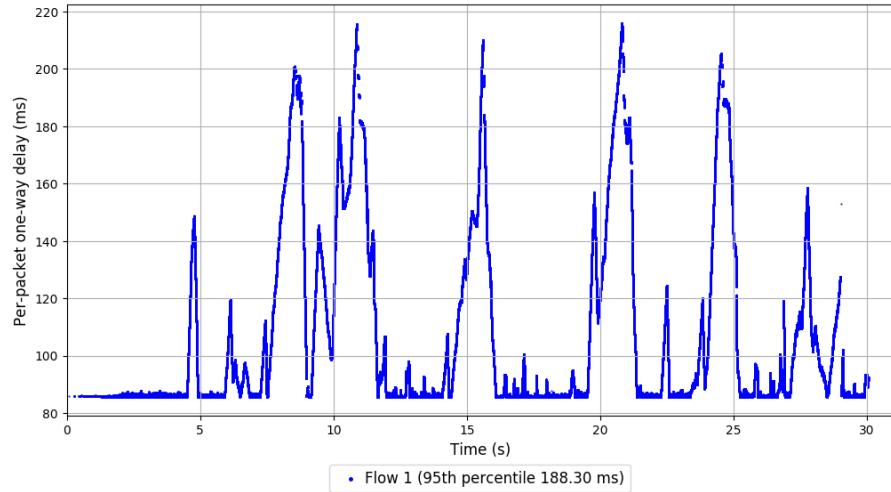
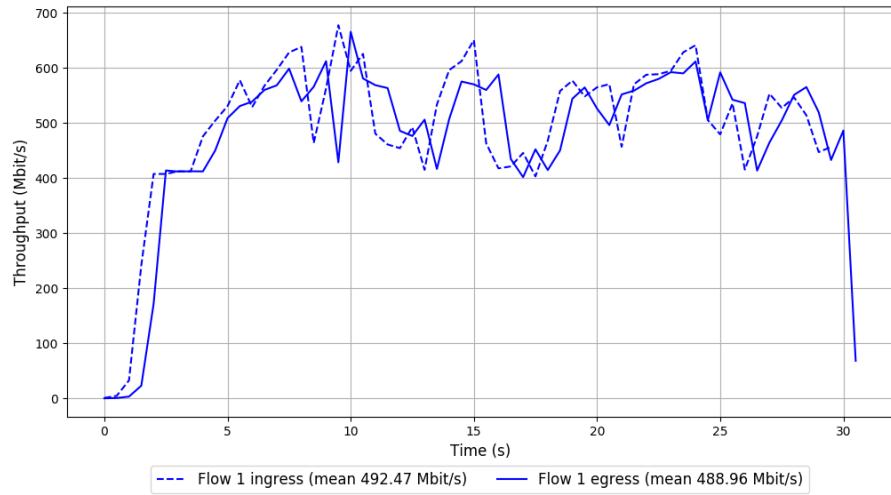


Run 3: Statistics of TCP BBR

```
Start at: 2019-01-02 19:18:41
End at: 2019-01-02 19:19:11
Local clock offset: 10.795 ms
Remote clock offset: 17.001 ms

# Below is generated by plot.py at 2019-01-02 20:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 488.96 Mbit/s
95th percentile per-packet one-way delay: 188.300 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 488.96 Mbit/s
95th percentile per-packet one-way delay: 188.300 ms
Loss rate: 0.71%
```

Run 3: Report of TCP BBR — Data Link

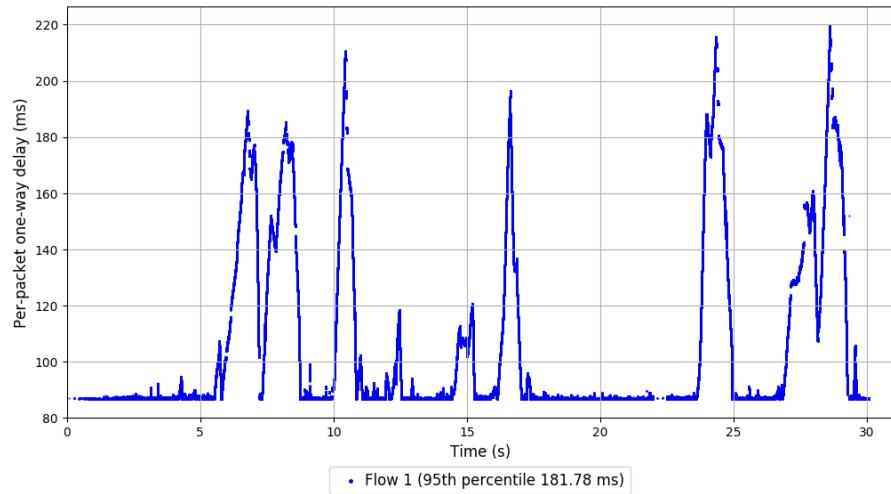
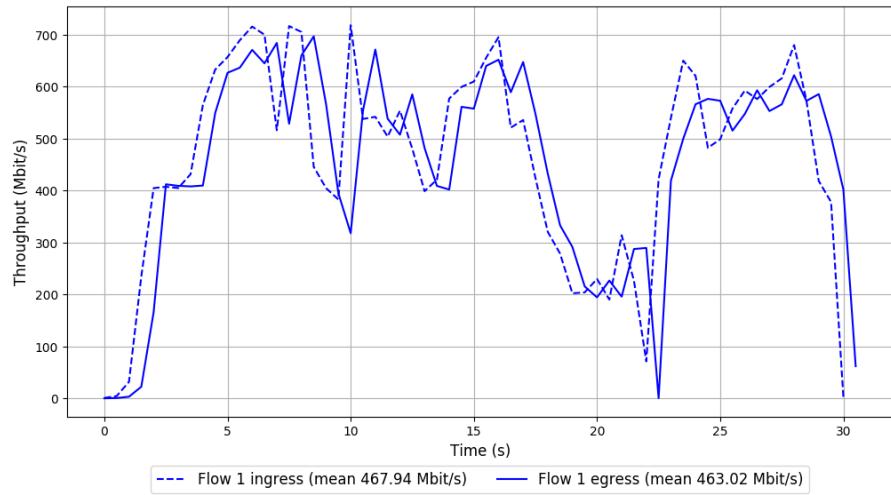


Run 4: Statistics of TCP BBR

```
Start at: 2019-01-02 19:46:49
End at: 2019-01-02 19:47:19
Local clock offset: 4.127 ms
Remote clock offset: 8.051 ms

# Below is generated by plot.py at 2019-01-02 20:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 463.02 Mbit/s
95th percentile per-packet one-way delay: 181.785 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 463.02 Mbit/s
95th percentile per-packet one-way delay: 181.785 ms
Loss rate: 1.05%
```

Run 4: Report of TCP BBR — Data Link

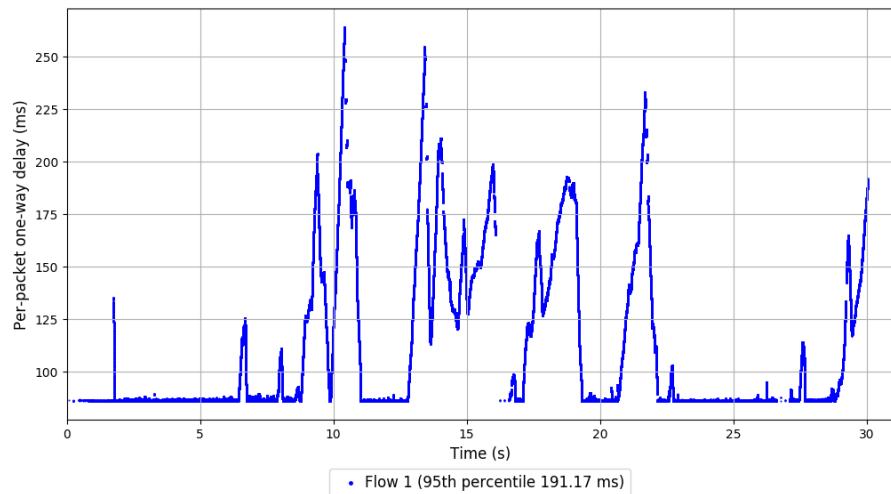
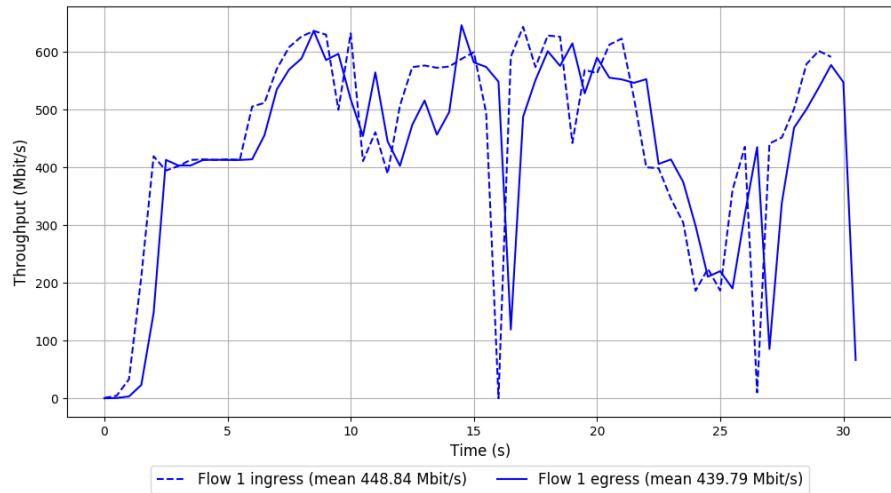


Run 5: Statistics of TCP BBR

```
Start at: 2019-01-02 20:15:30
End at: 2019-01-02 20:16:00
Local clock offset: 2.832 ms
Remote clock offset: 3.194 ms

# Below is generated by plot.py at 2019-01-02 20:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 439.79 Mbit/s
95th percentile per-packet one-way delay: 191.170 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 439.79 Mbit/s
95th percentile per-packet one-way delay: 191.170 ms
Loss rate: 2.01%
```

Run 5: Report of TCP BBR — Data Link

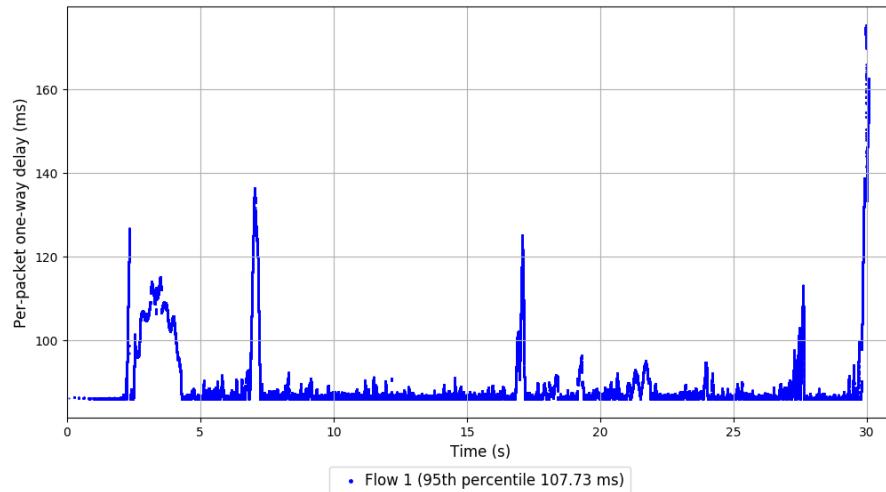
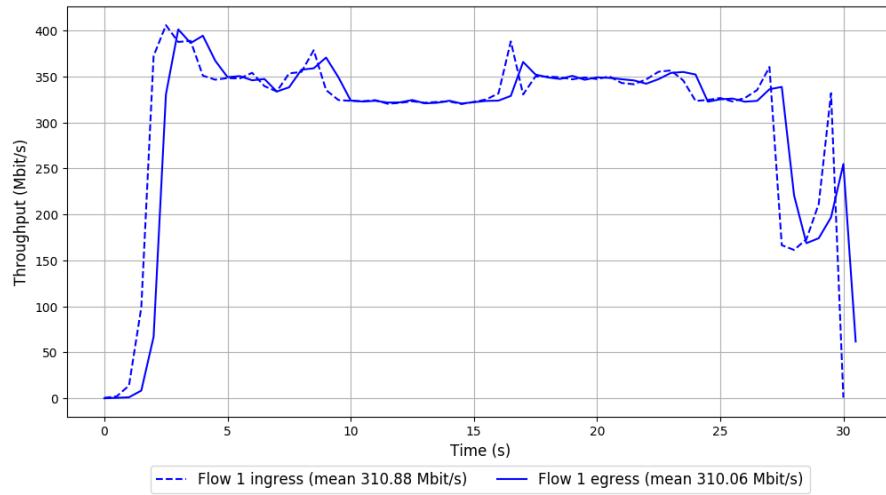


Run 1: Statistics of Copa

```
Start at: 2019-01-02 18:15:26
End at: 2019-01-02 18:15:56
Local clock offset: 14.009 ms
Remote clock offset: 14.791 ms

# Below is generated by plot.py at 2019-01-02 20:44:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 310.06 Mbit/s
95th percentile per-packet one-way delay: 107.733 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 310.06 Mbit/s
95th percentile per-packet one-way delay: 107.733 ms
Loss rate: 0.26%
```

Run 1: Report of Copa — Data Link

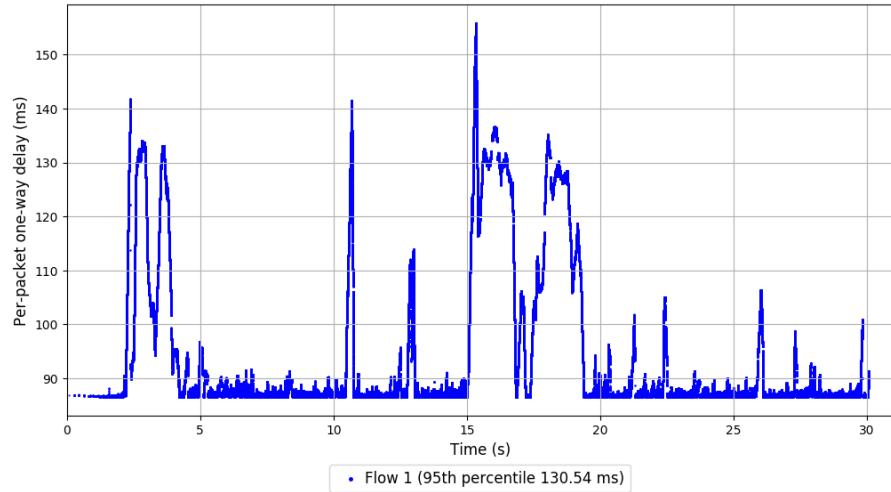
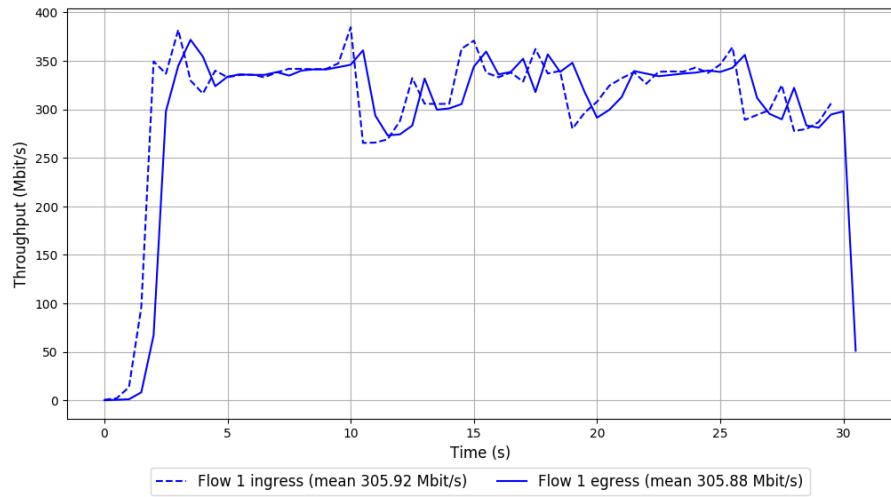


Run 2: Statistics of Copa

```
Start at: 2019-01-02 18:43:59
End at: 2019-01-02 18:44:29
Local clock offset: 23.382 ms
Remote clock offset: 25.366 ms

# Below is generated by plot.py at 2019-01-02 20:44:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 305.88 Mbit/s
95th percentile per-packet one-way delay: 130.539 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 305.88 Mbit/s
95th percentile per-packet one-way delay: 130.539 ms
Loss rate: 0.01%
```

Run 2: Report of Copa — Data Link

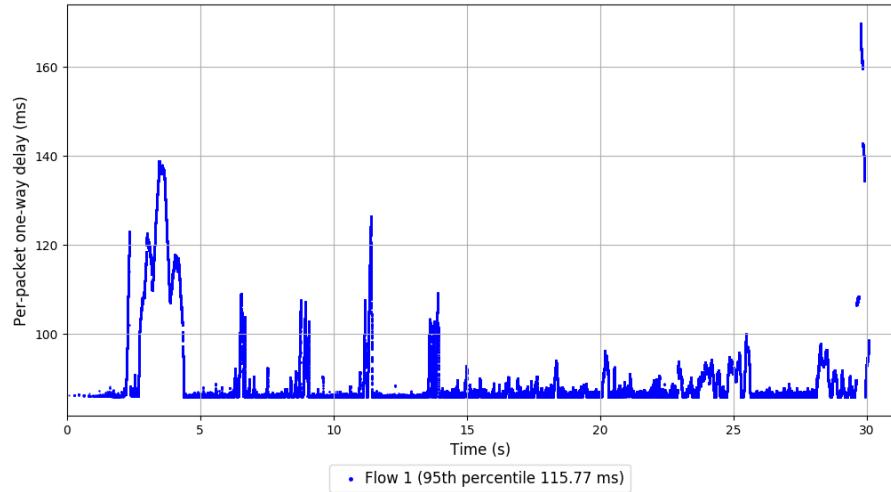
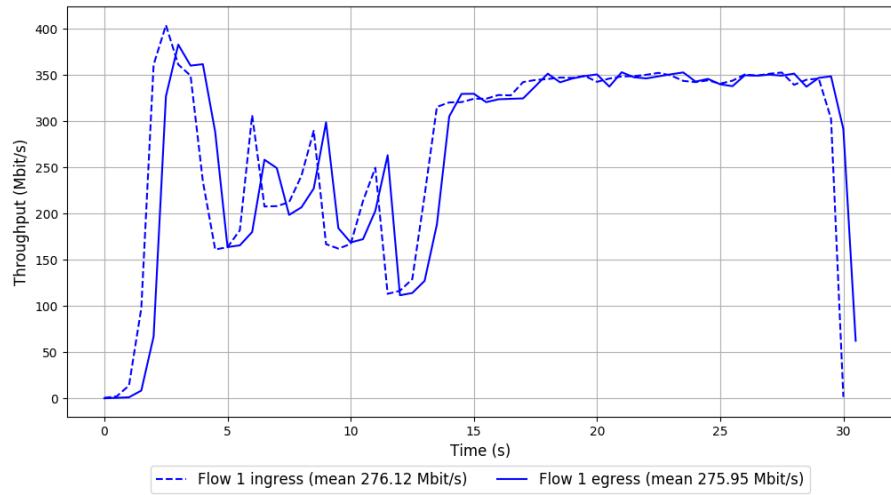


Run 3: Statistics of Copa

```
Start at: 2019-01-02 19:12:07
End at: 2019-01-02 19:12:37
Local clock offset: 15.954 ms
Remote clock offset: 20.302 ms

# Below is generated by plot.py at 2019-01-02 20:44:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 275.95 Mbit/s
95th percentile per-packet one-way delay: 115.772 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 275.95 Mbit/s
95th percentile per-packet one-way delay: 115.772 ms
Loss rate: 0.06%
```

Run 3: Report of Copa — Data Link

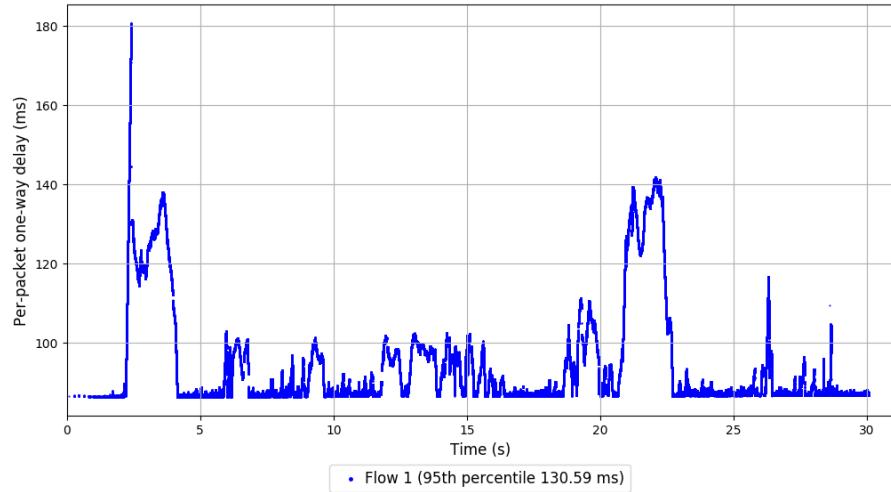
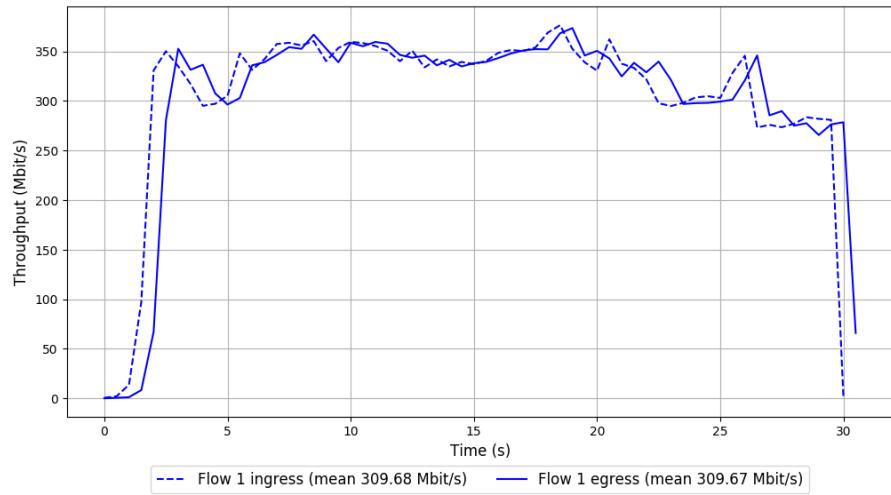


Run 4: Statistics of Copa

```
Start at: 2019-01-02 19:40:09
End at: 2019-01-02 19:40:39
Local clock offset: 7.461 ms
Remote clock offset: 14.822 ms

# Below is generated by plot.py at 2019-01-02 20:54:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 309.67 Mbit/s
95th percentile per-packet one-way delay: 130.589 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 309.67 Mbit/s
95th percentile per-packet one-way delay: 130.589 ms
Loss rate: 0.00%
```

Run 4: Report of Copa — Data Link

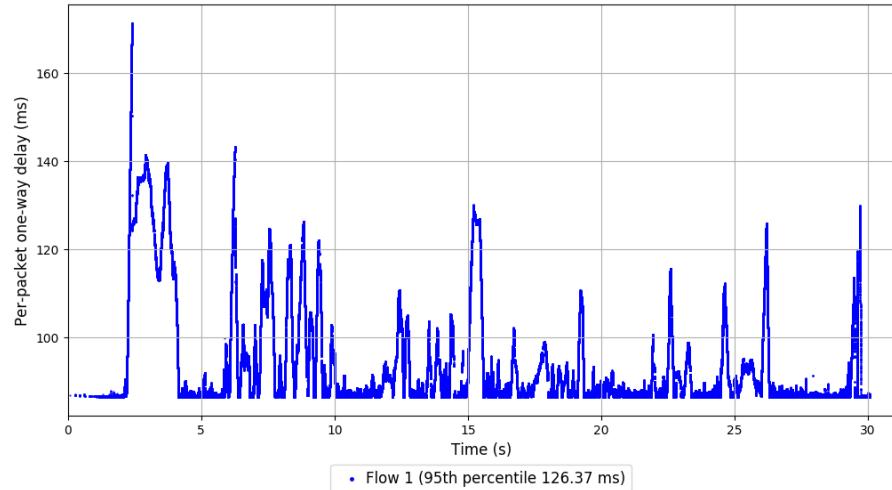
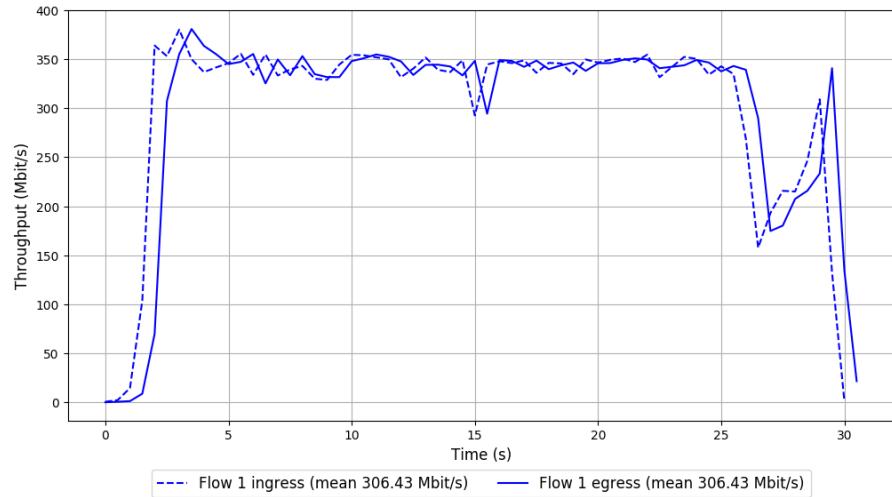


Run 5: Statistics of Copa

```
Start at: 2019-01-02 20:08:52
End at: 2019-01-02 20:09:22
Local clock offset: 4.313 ms
Remote clock offset: 5.021 ms

# Below is generated by plot.py at 2019-01-02 20:55:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 306.43 Mbit/s
95th percentile per-packet one-way delay: 126.371 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 306.43 Mbit/s
95th percentile per-packet one-way delay: 126.371 ms
Loss rate: 0.00%
```

Run 5: Report of Copa — Data Link

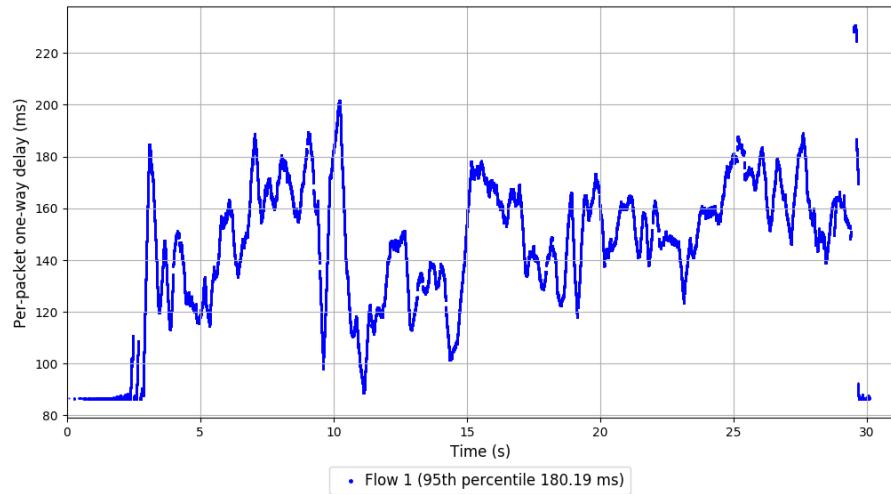
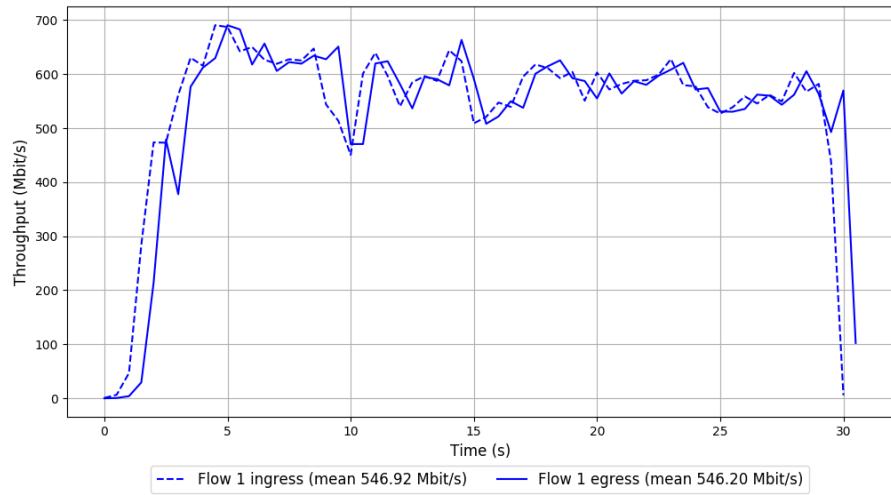


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2019-01-02 18:25:17
End at: 2019-01-02 18:25:47
Local clock offset: 23.686 ms
Remote clock offset: 25.688 ms

# Below is generated by plot.py at 2019-01-02 20:55:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 546.20 Mbit/s
95th percentile per-packet one-way delay: 180.190 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 546.20 Mbit/s
95th percentile per-packet one-way delay: 180.190 ms
Loss rate: 0.13%
```

Run 1: Report of TCP Cubic — Data Link

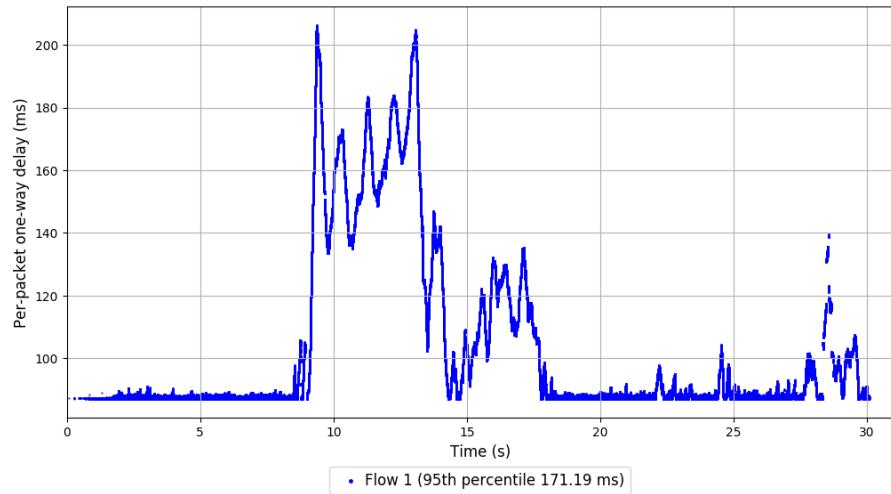
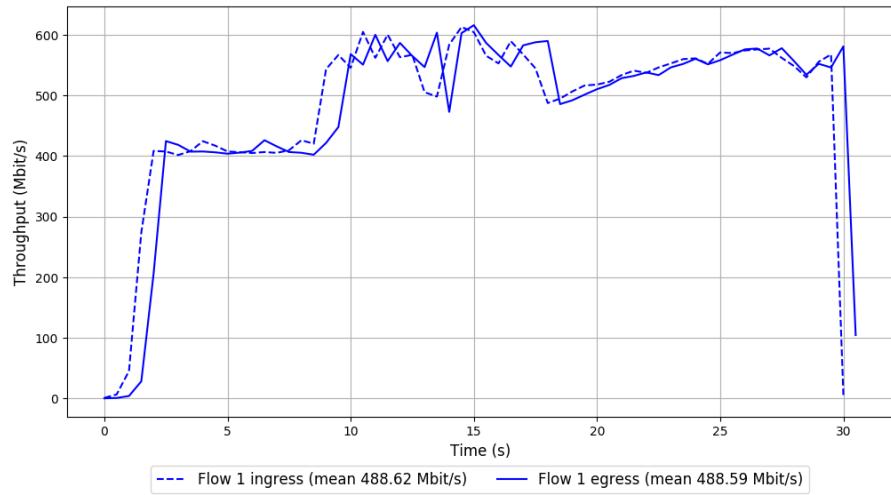


Run 2: Statistics of TCP Cubic

```
Start at: 2019-01-02 18:53:54
End at: 2019-01-02 18:54:24
Local clock offset: 32.079 ms
Remote clock offset: 35.014 ms

# Below is generated by plot.py at 2019-01-02 20:55:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 488.59 Mbit/s
95th percentile per-packet one-way delay: 171.189 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 488.59 Mbit/s
95th percentile per-packet one-way delay: 171.189 ms
Loss rate: 0.01%
```

Run 2: Report of TCP Cubic — Data Link

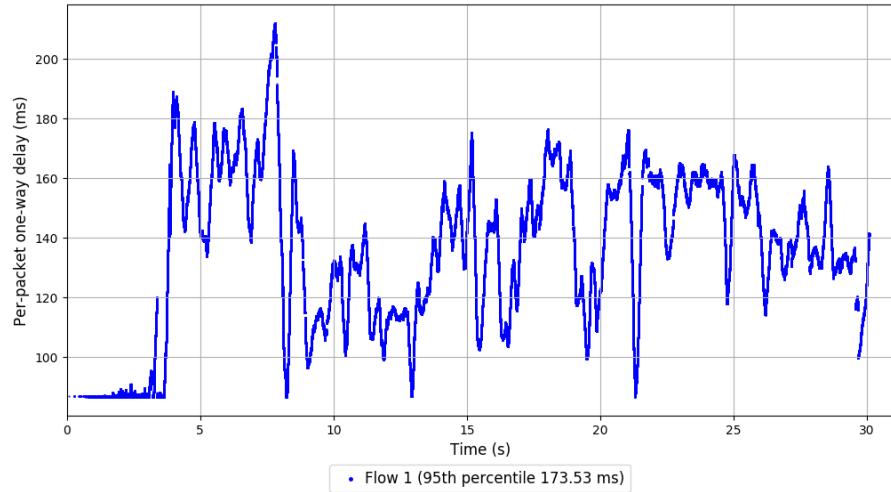
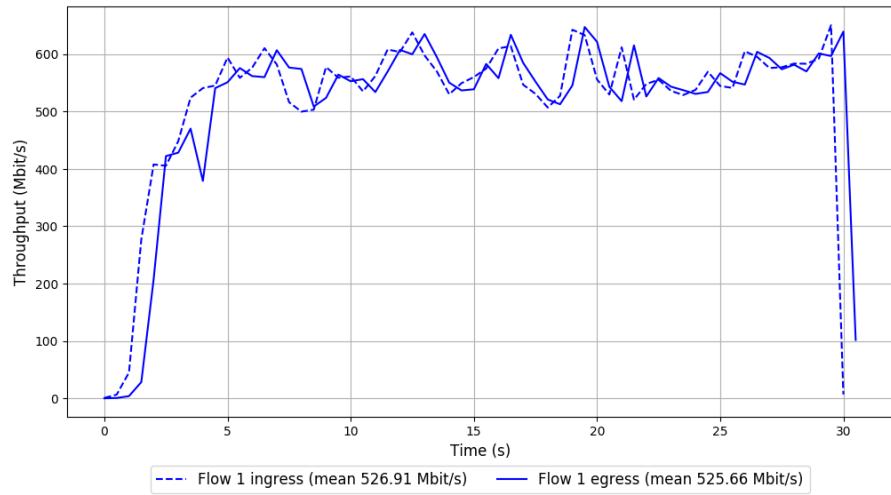


Run 3: Statistics of TCP Cubic

```
Start at: 2019-01-02 19:21:48
End at: 2019-01-02 19:22:18
Local clock offset: 9.611 ms
Remote clock offset: 17.009 ms

# Below is generated by plot.py at 2019-01-02 20:55:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 525.66 Mbit/s
95th percentile per-packet one-way delay: 173.529 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 525.66 Mbit/s
95th percentile per-packet one-way delay: 173.529 ms
Loss rate: 0.24%
```

Run 3: Report of TCP Cubic — Data Link

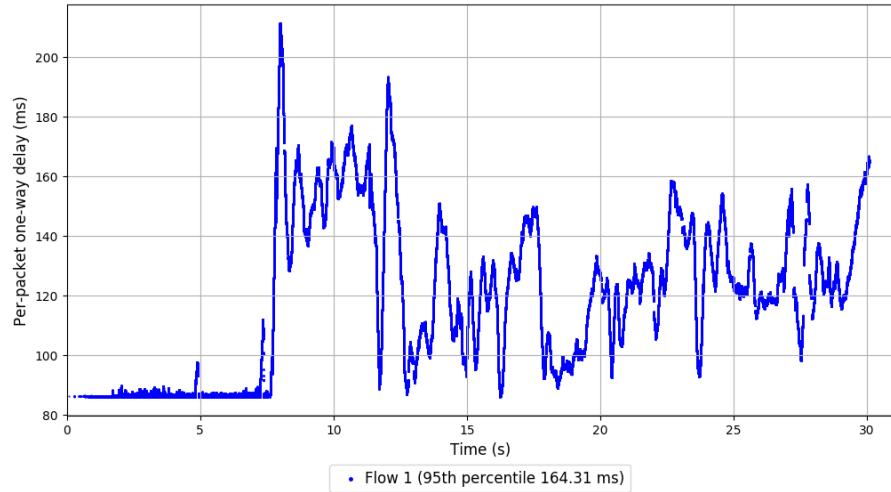
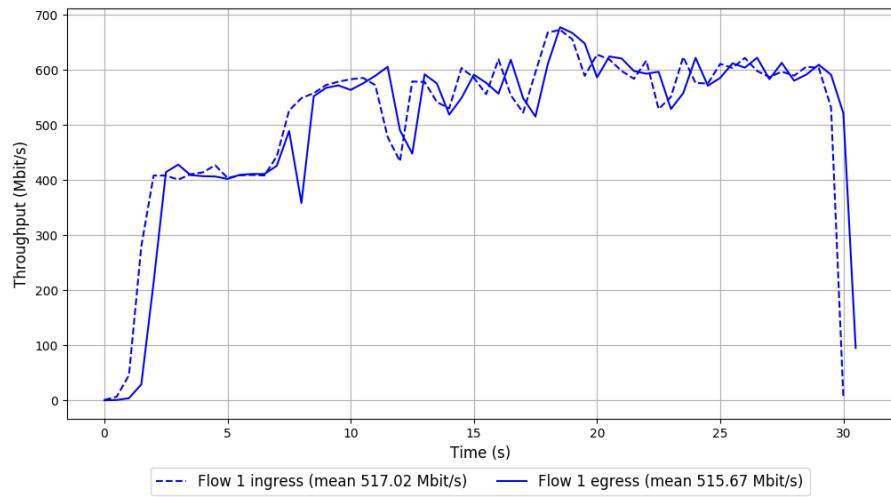


Run 4: Statistics of TCP Cubic

```
Start at: 2019-01-02 19:50:04
End at: 2019-01-02 19:50:34
Local clock offset: 4.374 ms
Remote clock offset: 6.418 ms

# Below is generated by plot.py at 2019-01-02 20:55:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 515.67 Mbit/s
95th percentile per-packet one-way delay: 164.309 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 515.67 Mbit/s
95th percentile per-packet one-way delay: 164.309 ms
Loss rate: 0.26%
```

Run 4: Report of TCP Cubic — Data Link

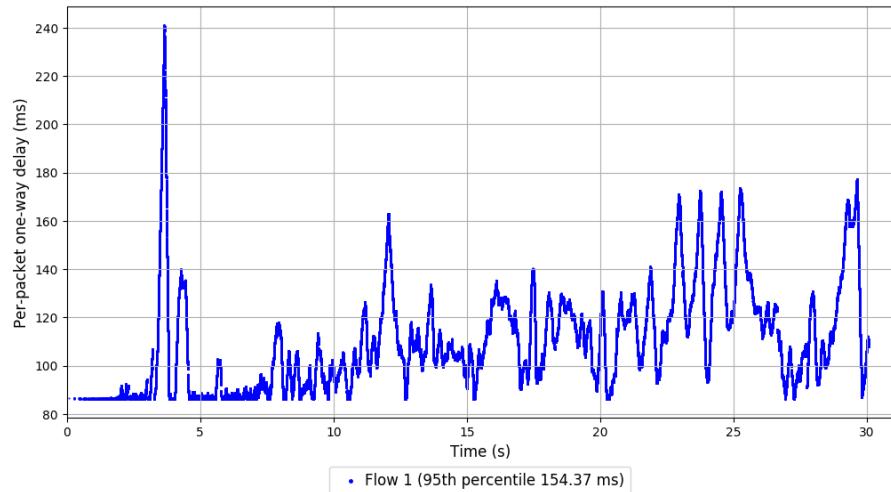
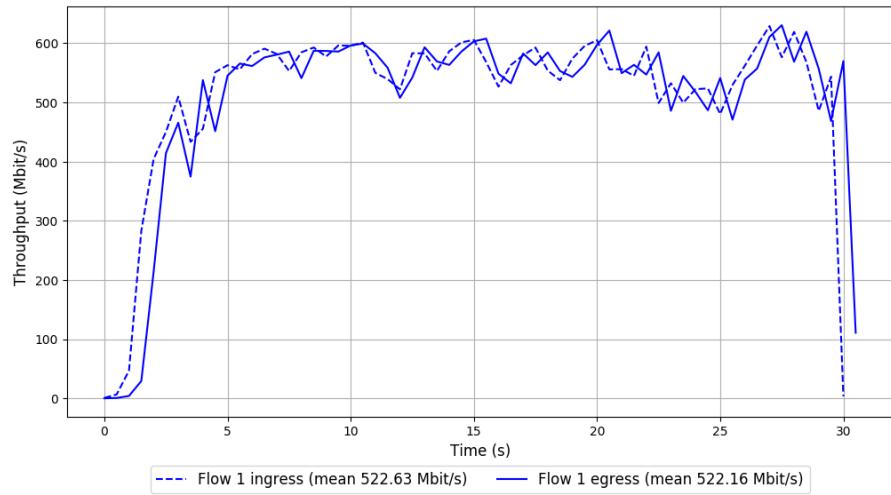


Run 5: Statistics of TCP Cubic

```
Start at: 2019-01-02 20:18:40
End at: 2019-01-02 20:19:10
Local clock offset: 2.251 ms
Remote clock offset: 2.49 ms

# Below is generated by plot.py at 2019-01-02 20:55:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 522.16 Mbit/s
95th percentile per-packet one-way delay: 154.367 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 522.16 Mbit/s
95th percentile per-packet one-way delay: 154.367 ms
Loss rate: 0.09%
```

Run 5: Report of TCP Cubic — Data Link

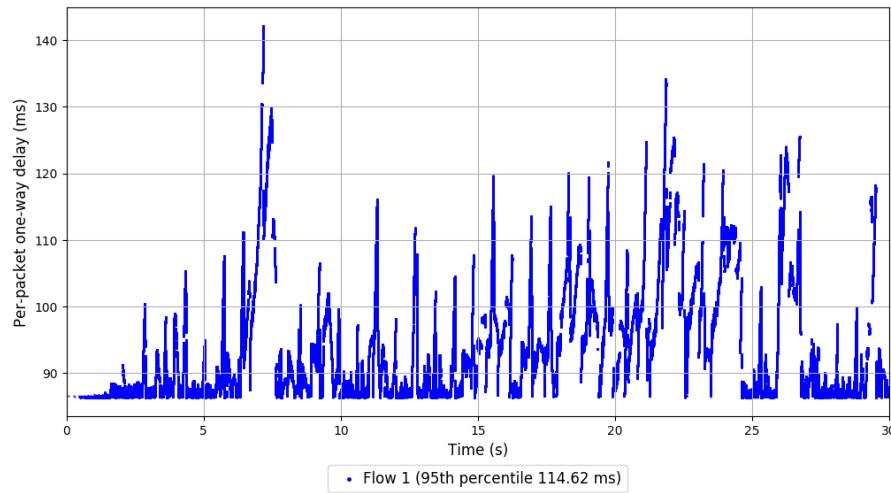
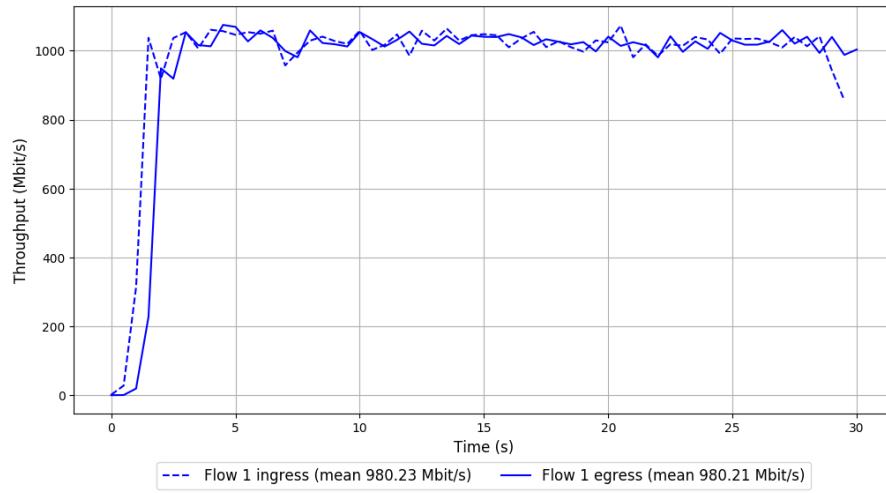


```
Run 1: Statistics of FillP

Start at: 2019-01-02 18:06:16
End at: 2019-01-02 18:06:46
Local clock offset: 10.69 ms
Remote clock offset: 10.921 ms

# Below is generated by plot.py at 2019-01-02 21:07:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 980.21 Mbit/s
95th percentile per-packet one-way delay: 114.623 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 980.21 Mbit/s
95th percentile per-packet one-way delay: 114.623 ms
Loss rate: 0.00%
```

Run 1: Report of FillP — Data Link

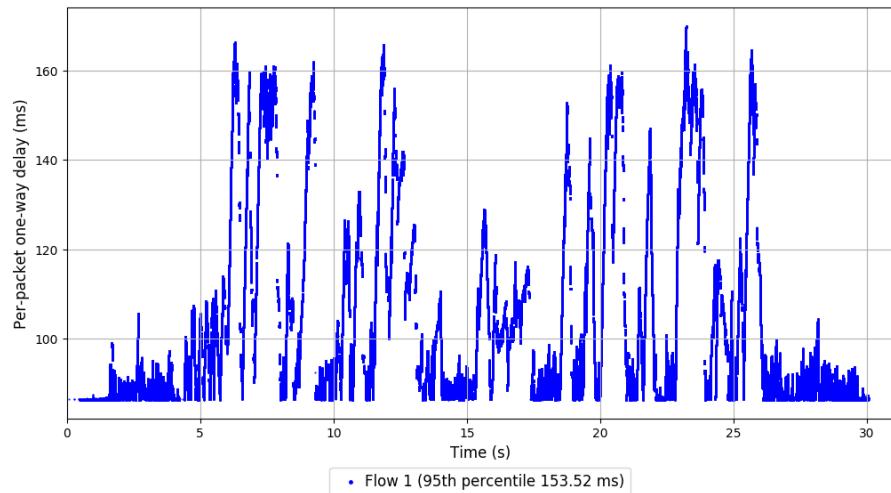
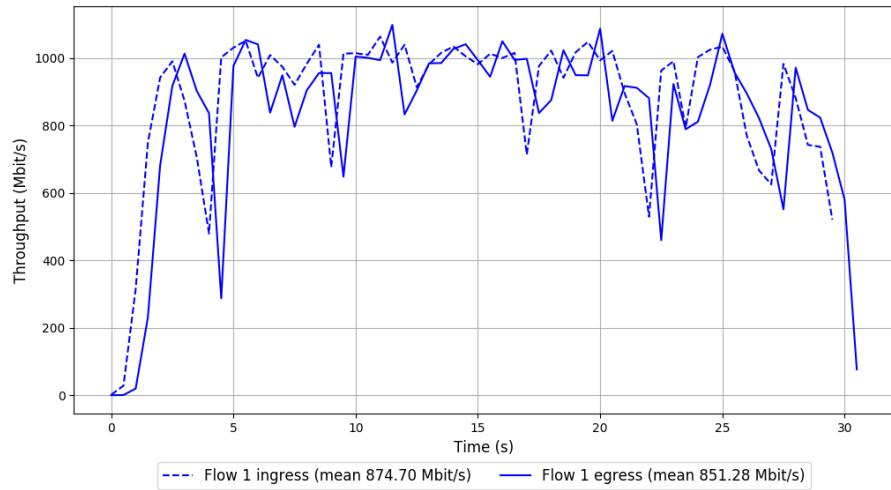


Run 2: Statistics of FillP

```
Start at: 2019-01-02 18:34:51
End at: 2019-01-02 18:35:21
Local clock offset: 20.638 ms
Remote clock offset: 22.388 ms

# Below is generated by plot.py at 2019-01-02 21:17:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 851.28 Mbit/s
95th percentile per-packet one-way delay: 153.520 ms
Loss rate: 2.68%
-- Flow 1:
Average throughput: 851.28 Mbit/s
95th percentile per-packet one-way delay: 153.520 ms
Loss rate: 2.68%
```

Run 2: Report of FillP — Data Link

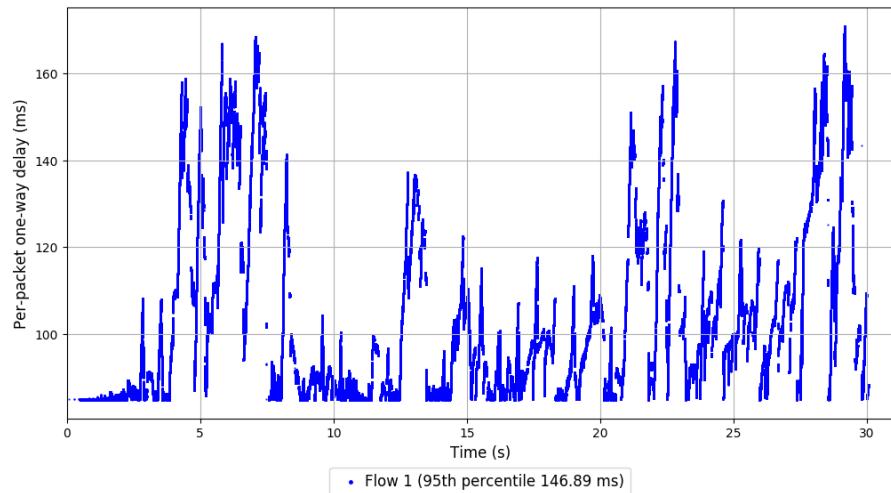
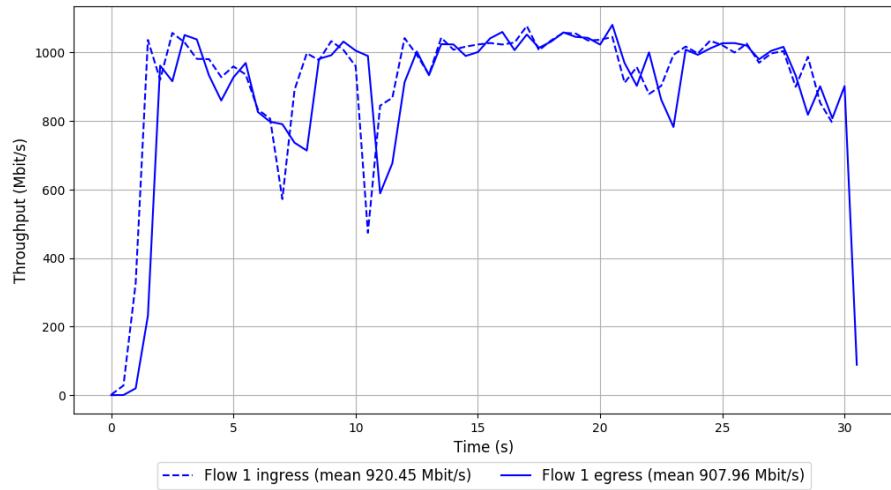


```
Run 3: Statistics of FillP
```

```
Start at: 2019-01-02 19:03:11
End at: 2019-01-02 19:03:41
Local clock offset: 37.996 ms
Remote clock offset: 40.379 ms

# Below is generated by plot.py at 2019-01-02 21:19:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 907.96 Mbit/s
95th percentile per-packet one-way delay: 146.888 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 907.96 Mbit/s
95th percentile per-packet one-way delay: 146.888 ms
Loss rate: 1.35%
```

Run 3: Report of FillP — Data Link

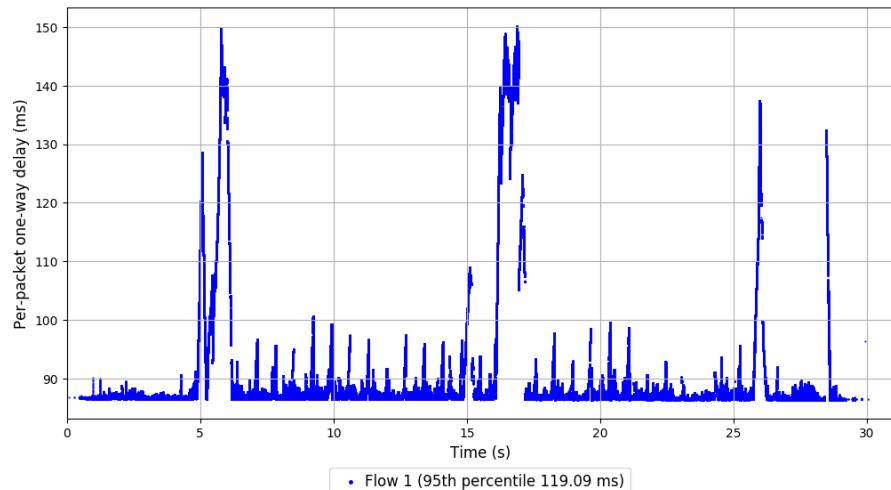
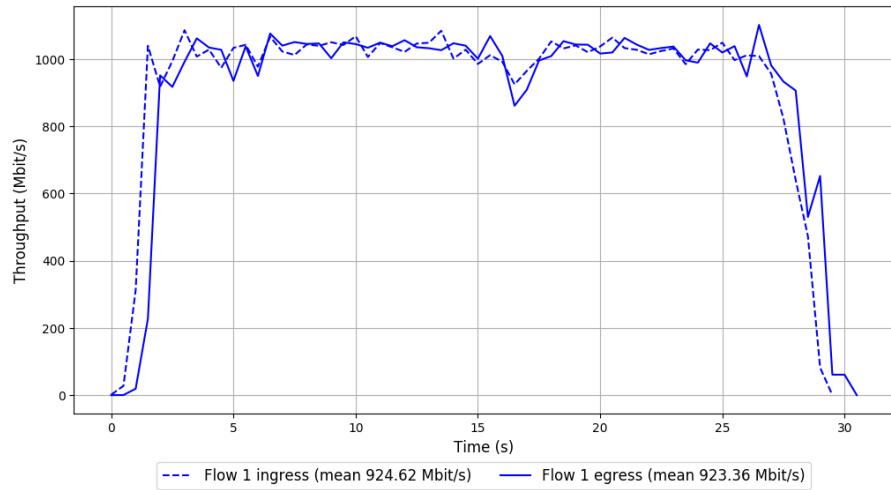


Run 4: Statistics of FillP

```
Start at: 2019-01-02 19:31:14
End at: 2019-01-02 19:31:44
Local clock offset: 9.48 ms
Remote clock offset: 20.136 ms

# Below is generated by plot.py at 2019-01-02 21:19:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 923.36 Mbit/s
95th percentile per-packet one-way delay: 119.088 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 923.36 Mbit/s
95th percentile per-packet one-way delay: 119.088 ms
Loss rate: 0.14%
```

Run 4: Report of FillP — Data Link

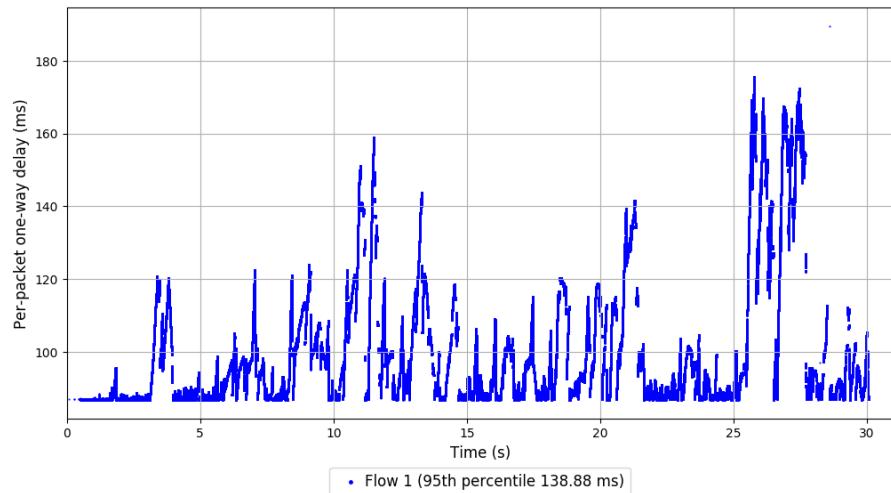
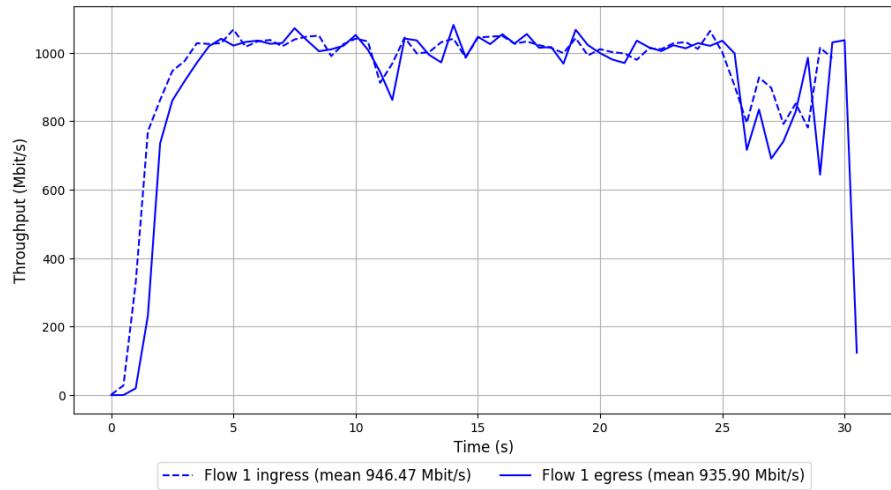


Run 5: Statistics of FillP

```
Start at: 2019-01-02 19:59:40
End at: 2019-01-02 20:00:10
Local clock offset: 3.392 ms
Remote clock offset: 4.712 ms

# Below is generated by plot.py at 2019-01-02 21:19:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 935.90 Mbit/s
95th percentile per-packet one-way delay: 138.878 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 935.90 Mbit/s
95th percentile per-packet one-way delay: 138.878 ms
Loss rate: 1.12%
```

Run 5: Report of FillP — Data Link

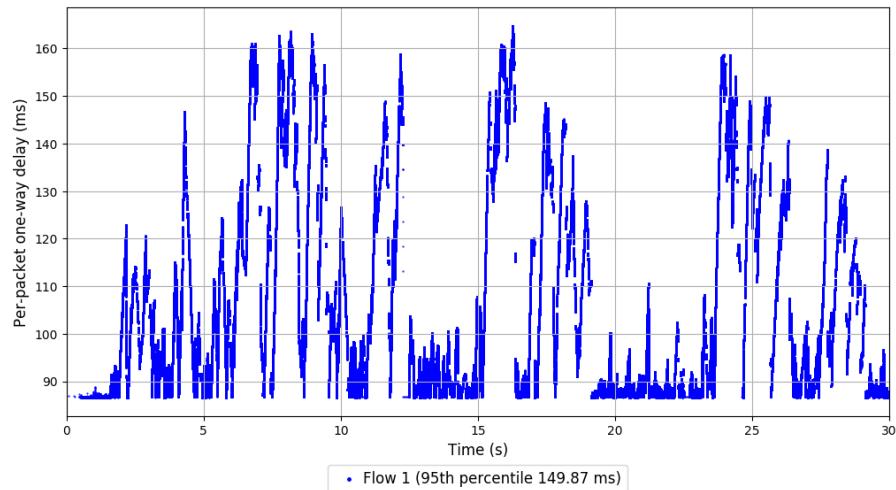
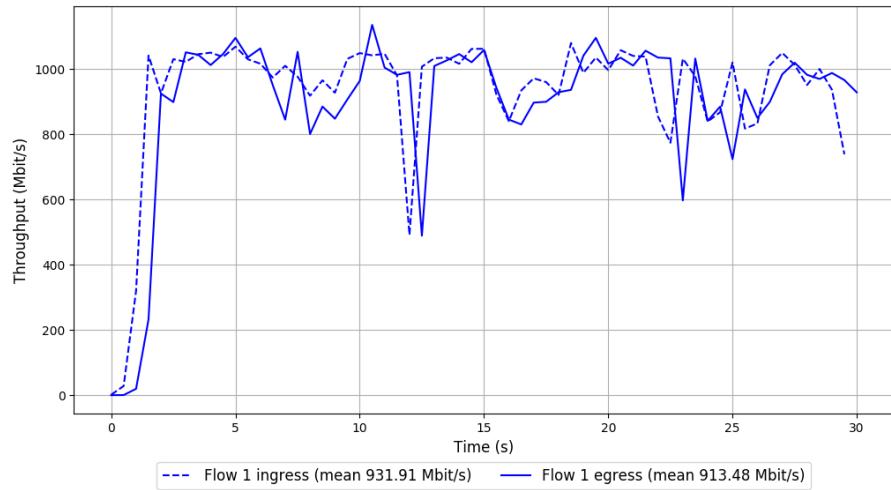


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2019-01-02 18:00:03
End at: 2019-01-02 18:00:33
Local clock offset: 6.463 ms
Remote clock offset: 7.331 ms

# Below is generated by plot.py at 2019-01-02 21:19:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 913.48 Mbit/s
95th percentile per-packet one-way delay: 149.865 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 913.48 Mbit/s
95th percentile per-packet one-way delay: 149.865 ms
Loss rate: 1.98%
```

Run 1: Report of FillP-Sheep — Data Link

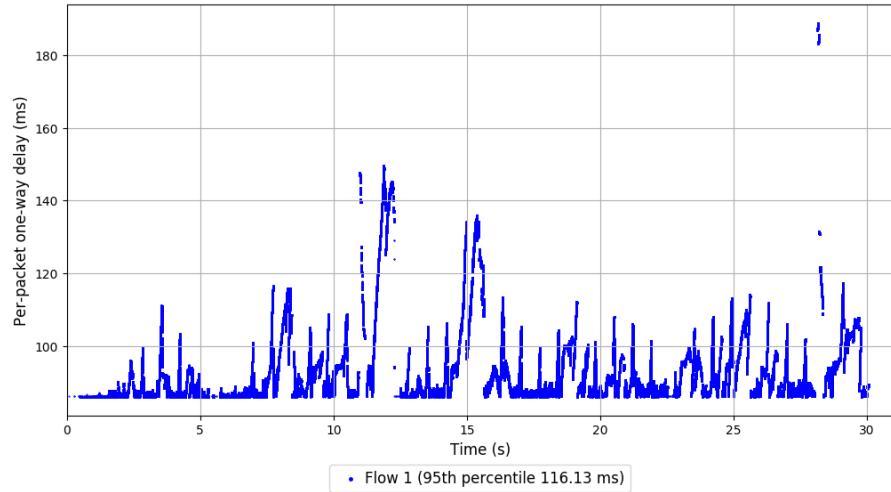
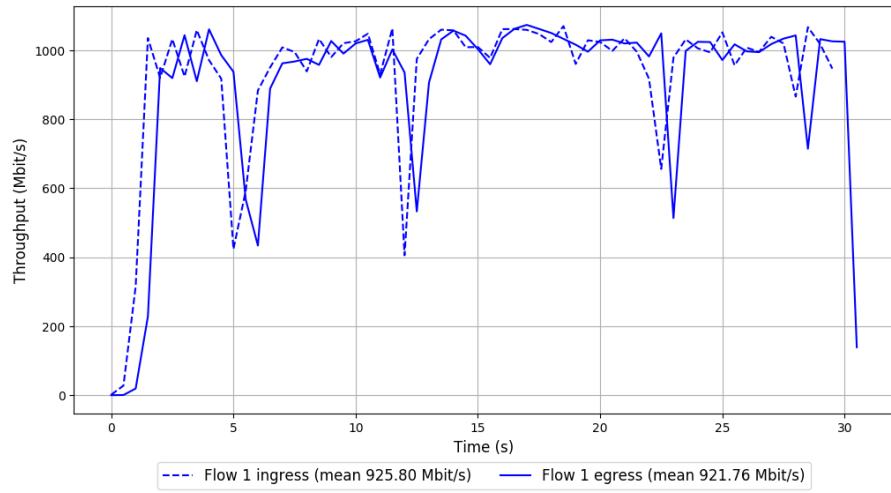


Run 2: Statistics of FillP-Sheep

```
Start at: 2019-01-02 18:28:32
End at: 2019-01-02 18:29:02
Local clock offset: 27.208 ms
Remote clock offset: 29.207 ms

# Below is generated by plot.py at 2019-01-02 21:19:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 921.76 Mbit/s
95th percentile per-packet one-way delay: 116.130 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 921.76 Mbit/s
95th percentile per-packet one-way delay: 116.130 ms
Loss rate: 0.43%
```

Run 2: Report of FillP-Sheep — Data Link

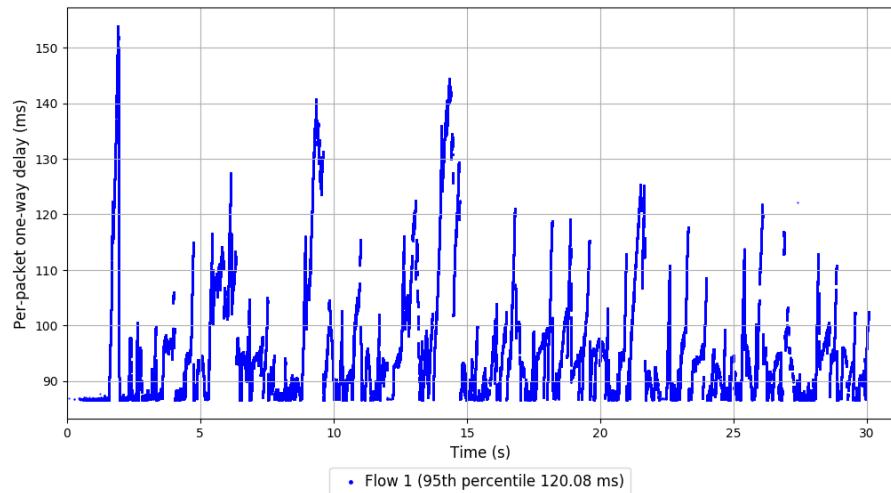
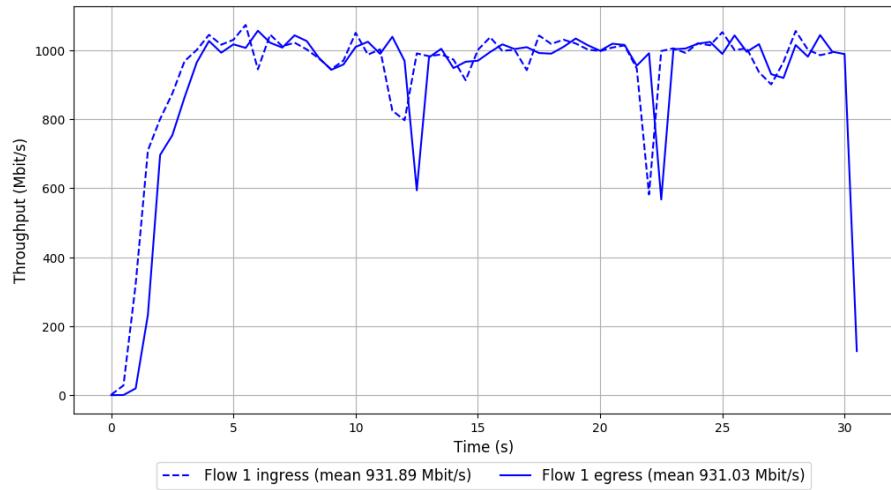


Run 3: Statistics of FillP-Sheep

```
Start at: 2019-01-02 18:57:05
End at: 2019-01-02 18:57:35
Local clock offset: 35.841 ms
Remote clock offset: 38.747 ms

# Below is generated by plot.py at 2019-01-02 21:21:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 931.03 Mbit/s
95th percentile per-packet one-way delay: 120.077 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 931.03 Mbit/s
95th percentile per-packet one-way delay: 120.077 ms
Loss rate: 0.09%
```

Run 3: Report of FillP-Sheep — Data Link

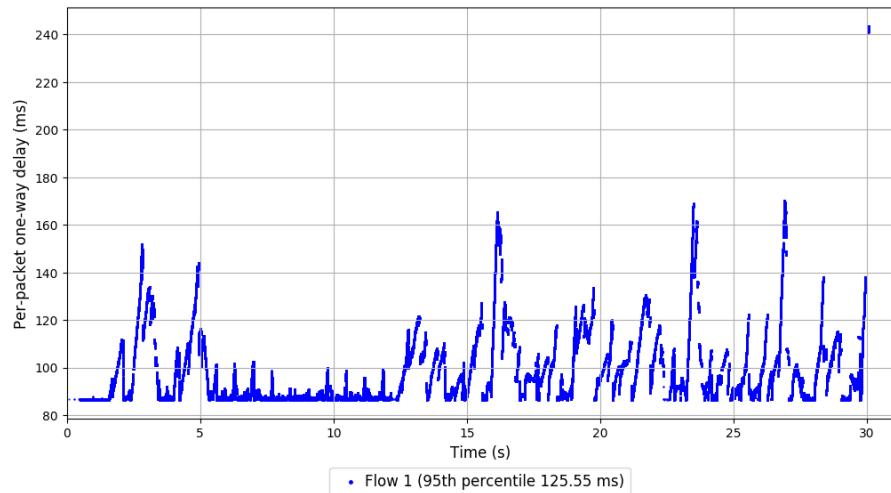
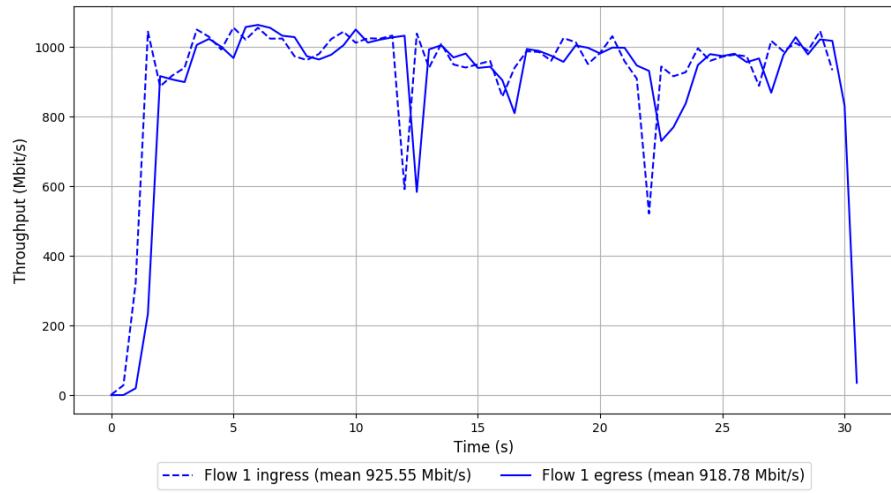


Run 4: Statistics of FillP-Sheep

```
Start at: 2019-01-02 19:25:05
End at: 2019-01-02 19:25:35
Local clock offset: 9.196 ms
Remote clock offset: 17.679 ms

# Below is generated by plot.py at 2019-01-02 21:35:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 918.78 Mbit/s
95th percentile per-packet one-way delay: 125.549 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 918.78 Mbit/s
95th percentile per-packet one-way delay: 125.549 ms
Loss rate: 0.79%
```

Run 4: Report of FillP-Sheep — Data Link

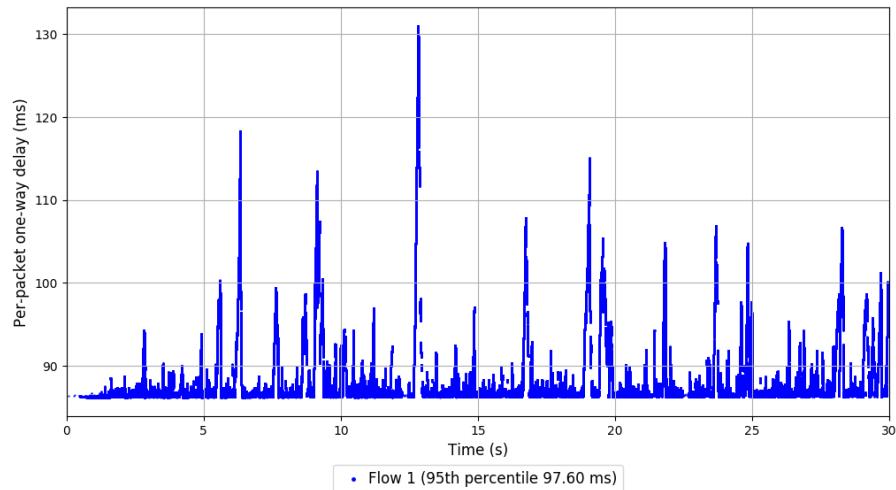
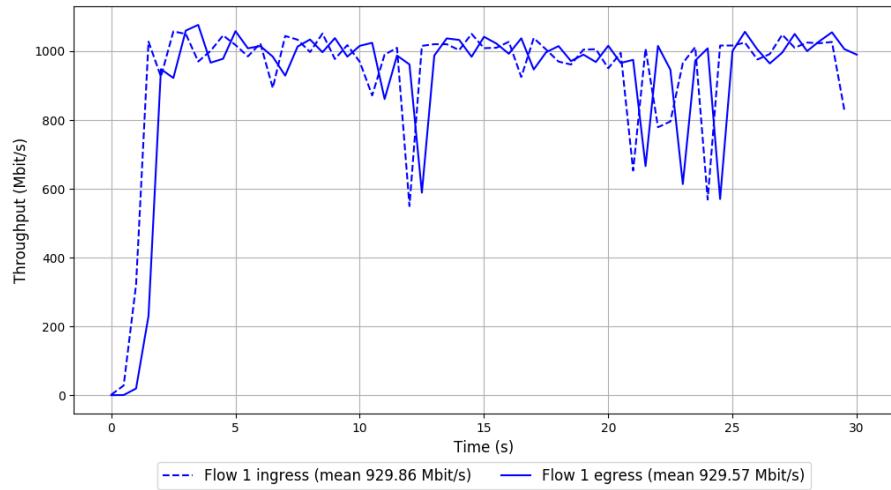


Run 5: Statistics of FillP-Sheep

```
Start at: 2019-01-02 19:53:16
End at: 2019-01-02 19:53:46
Local clock offset: 3.802 ms
Remote clock offset: 5.39 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 929.57 Mbit/s
95th percentile per-packet one-way delay: 97.599 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 929.57 Mbit/s
95th percentile per-packet one-way delay: 97.599 ms
Loss rate: 0.02%
```

Run 5: Report of FillP-Sheep — Data Link

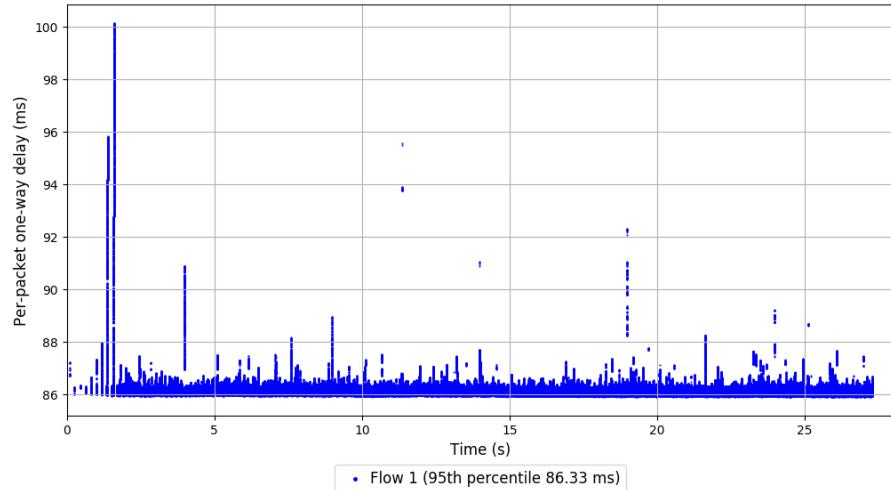
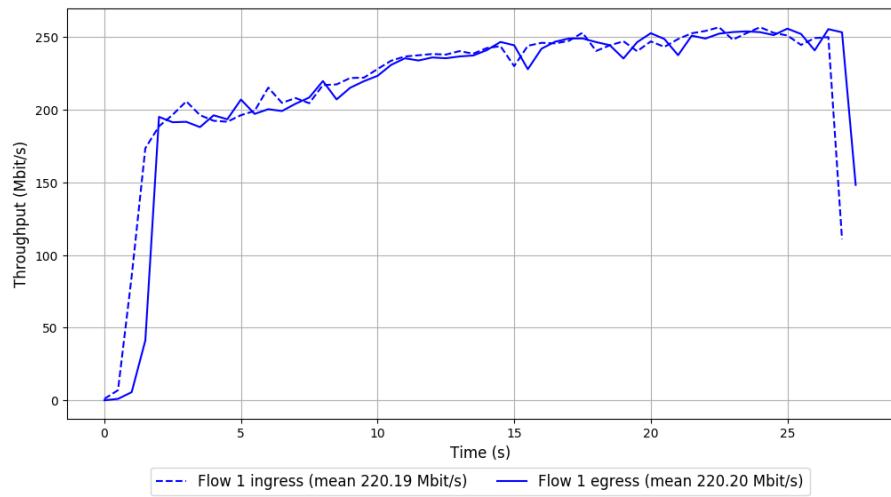


Run 1: Statistics of Indigo

```
Start at: 2019-01-02 18:20:35
End at: 2019-01-02 18:21:05
Local clock offset: 17.655 ms
Remote clock offset: 19.007 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.20 Mbit/s
95th percentile per-packet one-way delay: 86.335 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.20 Mbit/s
95th percentile per-packet one-way delay: 86.335 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

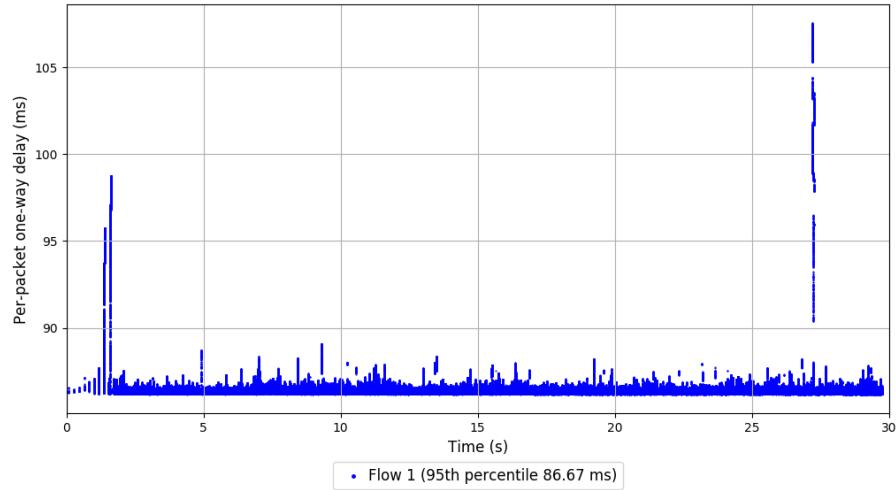
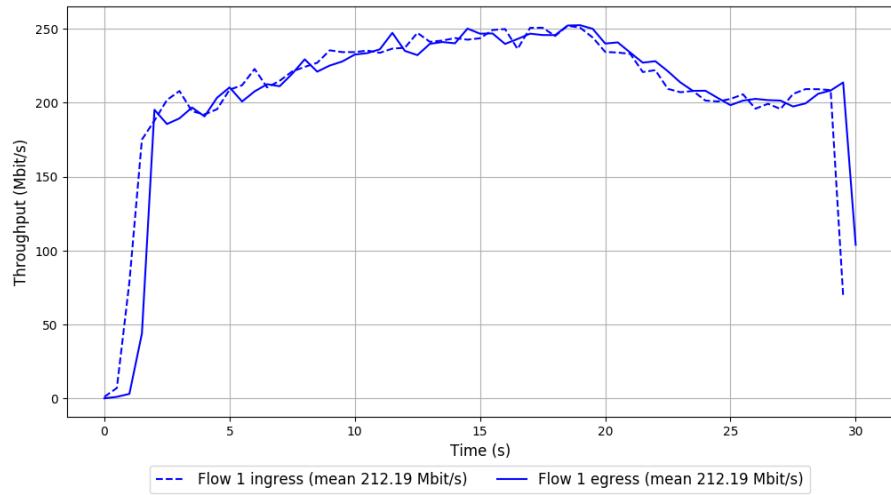


Run 2: Statistics of Indigo

```
Start at: 2019-01-02 18:49:08
End at: 2019-01-02 18:49:38
Local clock offset: 27.839 ms
Remote clock offset: 29.838 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 212.19 Mbit/s
95th percentile per-packet one-way delay: 86.667 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 212.19 Mbit/s
95th percentile per-packet one-way delay: 86.667 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

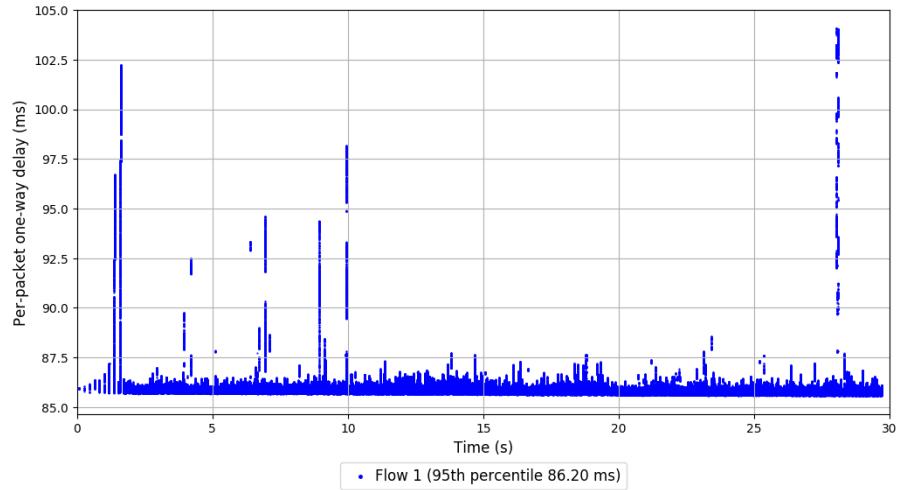
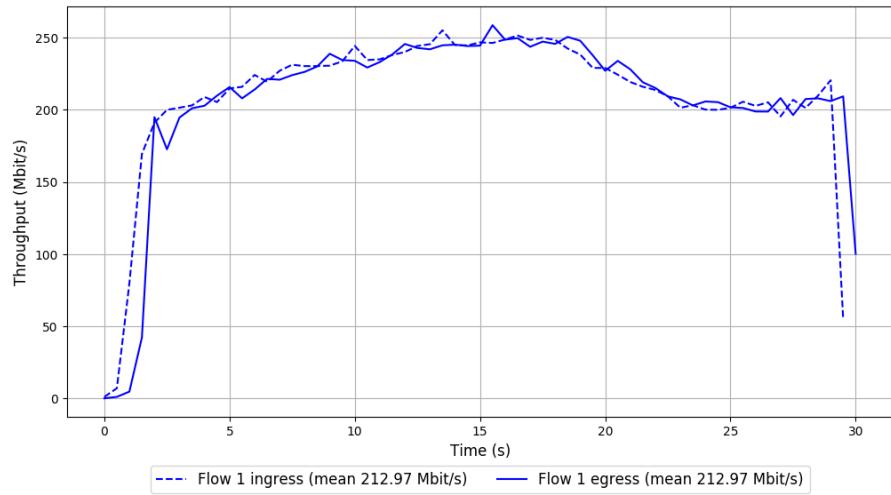


Run 3: Statistics of Indigo

```
Start at: 2019-01-02 19:17:12
End at: 2019-01-02 19:17:42
Local clock offset: 12.01 ms
Remote clock offset: 17.347 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 212.97 Mbit/s
95th percentile per-packet one-way delay: 86.200 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 212.97 Mbit/s
95th percentile per-packet one-way delay: 86.200 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

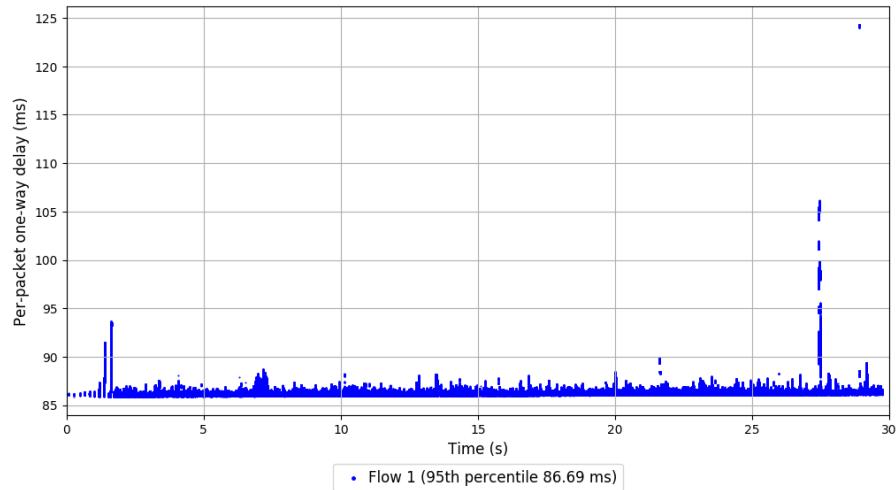
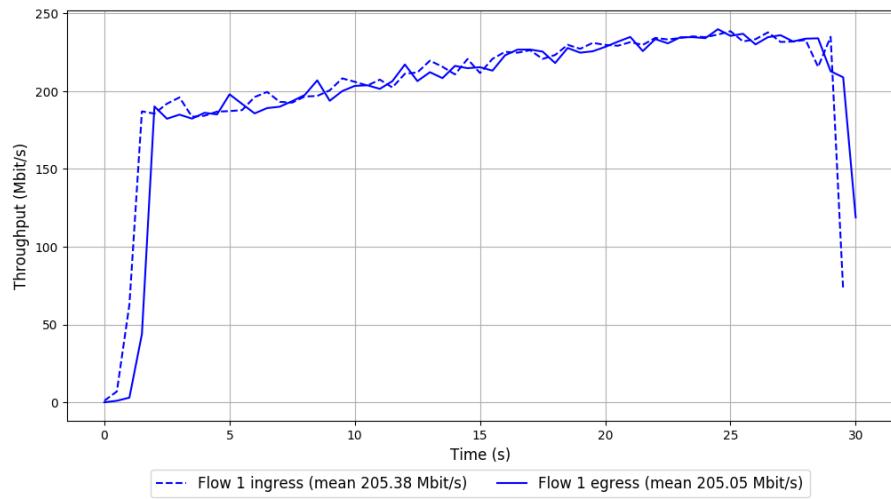


Run 4: Statistics of Indigo

```
Start at: 2019-01-02 19:45:20
End at: 2019-01-02 19:45:50
Local clock offset: 4.857 ms
Remote clock offset: 9.097 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 205.05 Mbit/s
95th percentile per-packet one-way delay: 86.689 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 205.05 Mbit/s
95th percentile per-packet one-way delay: 86.689 ms
Loss rate: 0.16%
```

Run 4: Report of Indigo — Data Link

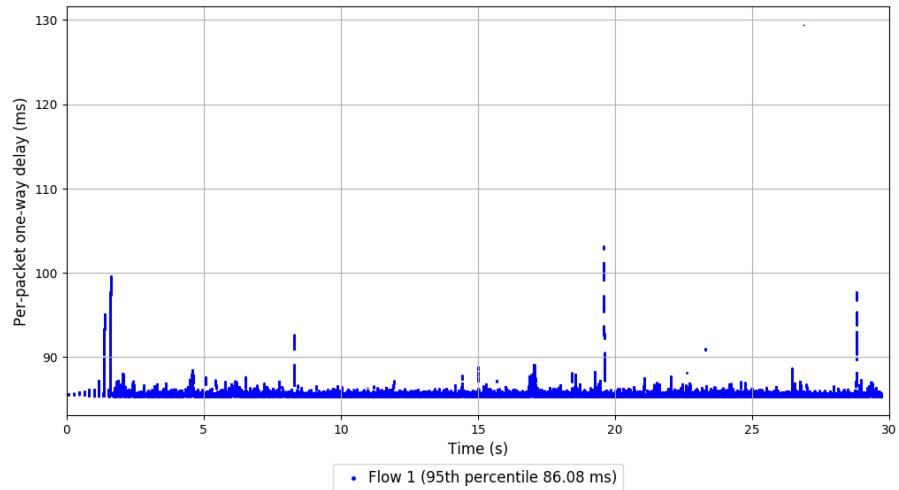
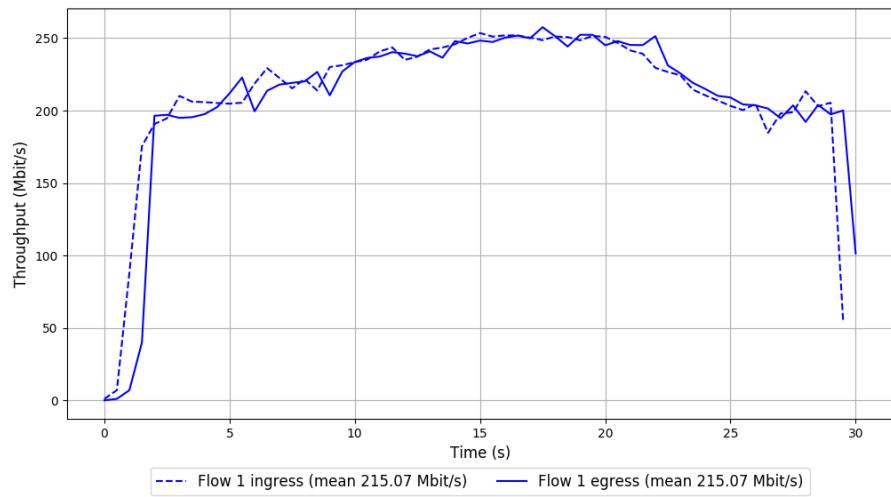


Run 5: Statistics of Indigo

```
Start at: 2019-01-02 20:14:01
End at: 2019-01-02 20:14:31
Local clock offset: 3.777 ms
Remote clock offset: 3.633 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 215.07 Mbit/s
95th percentile per-packet one-way delay: 86.076 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.07 Mbit/s
95th percentile per-packet one-way delay: 86.076 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link

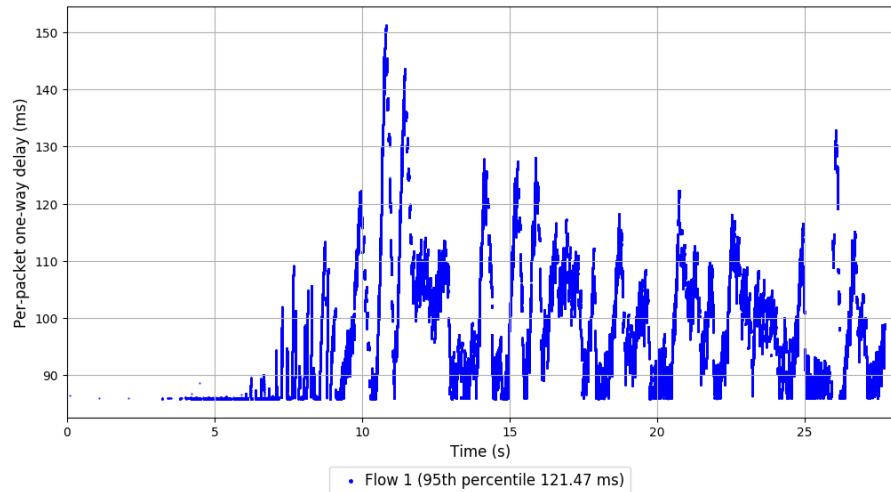
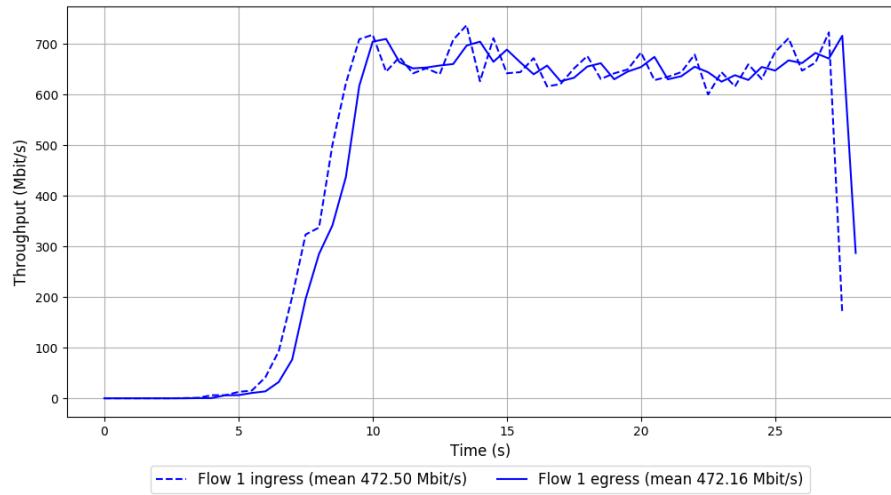


```
Run 1: Statistics of Indigo-MusesD
```

```
Start at: 2019-01-02 18:03:02
End at: 2019-01-02 18:03:32
Local clock offset: 10.463 ms
Remote clock offset: 11.392 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 472.16 Mbit/s
95th percentile per-packet one-way delay: 121.474 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 472.16 Mbit/s
95th percentile per-packet one-way delay: 121.474 ms
Loss rate: 0.07%
```

Run 1: Report of Indigo-MusesD — Data Link

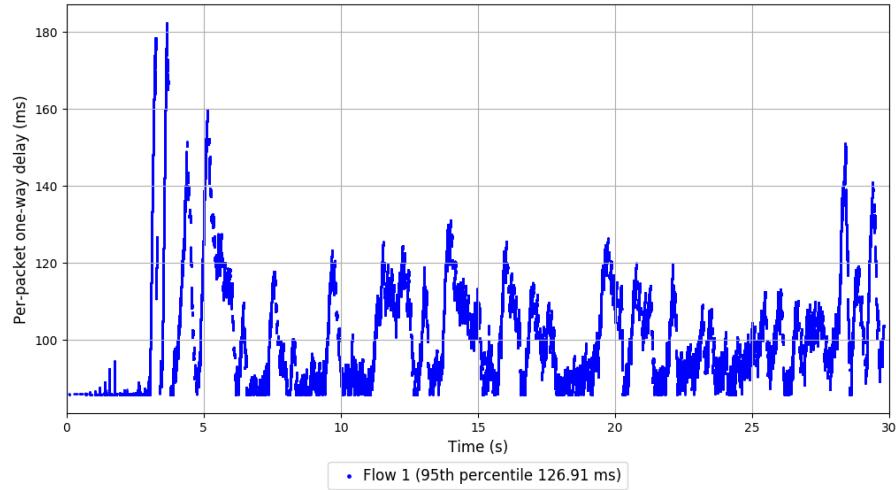
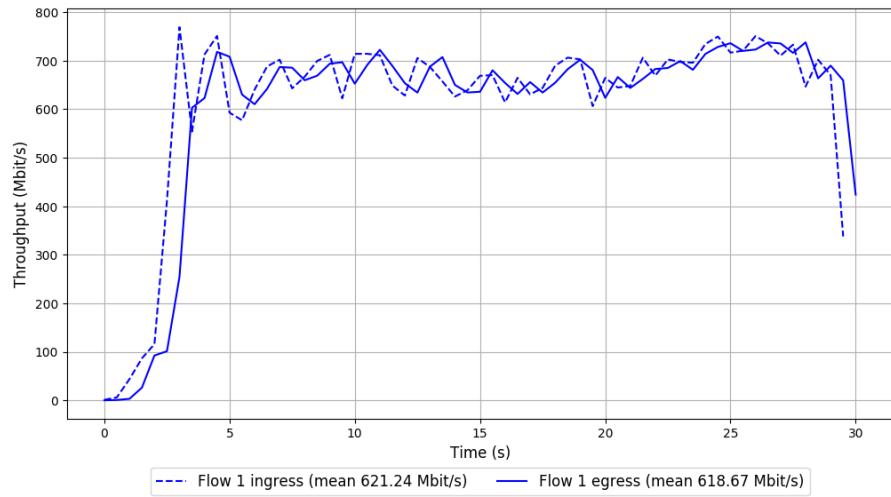


Run 2: Statistics of Indigo-MusesD

```
Start at: 2019-01-02 18:31:30
End at: 2019-01-02 18:32:00
Local clock offset: 23.443 ms
Remote clock offset: 24.661 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 618.67 Mbit/s
95th percentile per-packet one-way delay: 126.911 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 618.67 Mbit/s
95th percentile per-packet one-way delay: 126.911 ms
Loss rate: 0.52%
```

Run 2: Report of Indigo-MusesD — Data Link

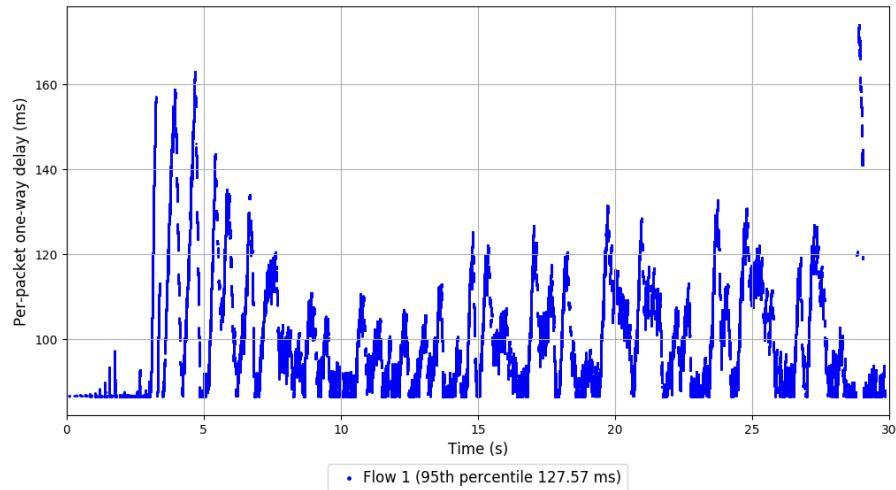
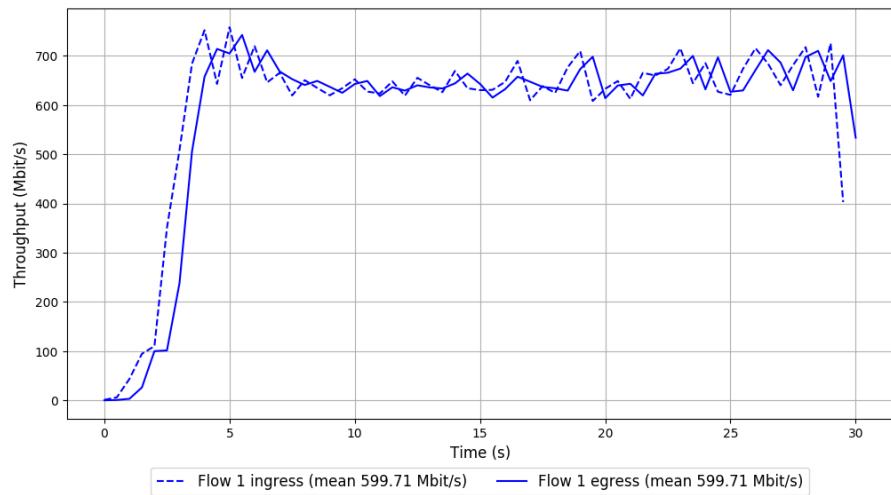


Run 3: Statistics of Indigo-MusesD

```
Start at: 2019-01-02 19:00:03
End at: 2019-01-02 19:00:33
Local clock offset: 39.271 ms
Remote clock offset: 42.374 ms

# Below is generated by plot.py at 2019-01-02 21:42:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 599.71 Mbit/s
95th percentile per-packet one-way delay: 127.573 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 599.71 Mbit/s
95th percentile per-packet one-way delay: 127.573 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-MusesD — Data Link

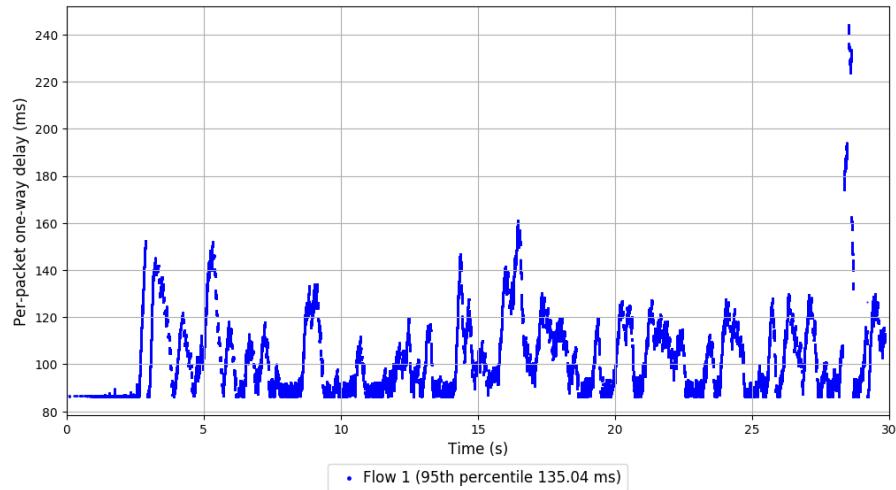
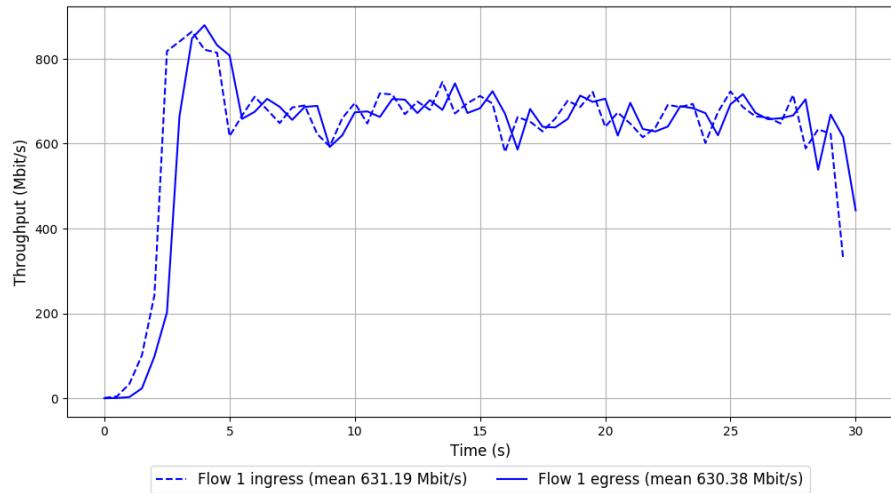


Run 4: Statistics of Indigo-MusesD

```
Start at: 2019-01-02 19:28:02
End at: 2019-01-02 19:28:33
Local clock offset: 9.227 ms
Remote clock offset: 18.688 ms

# Below is generated by plot.py at 2019-01-02 21:43:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 630.38 Mbit/s
95th percentile per-packet one-way delay: 135.042 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 630.38 Mbit/s
95th percentile per-packet one-way delay: 135.042 ms
Loss rate: 0.13%
```

Run 4: Report of Indigo-MusesD — Data Link

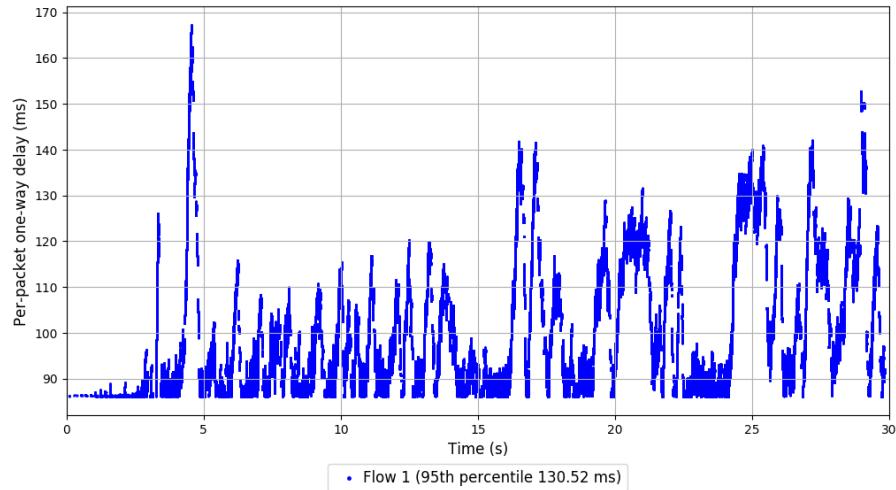
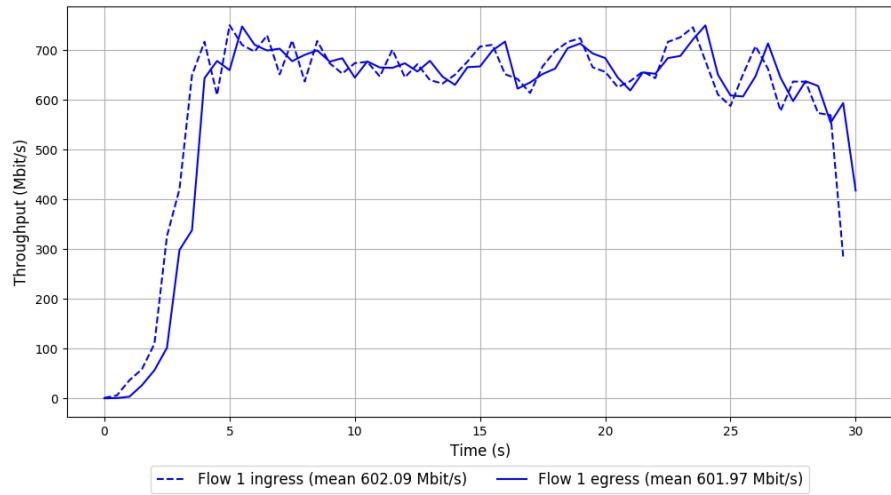


Run 5: Statistics of Indigo-MusesD

```
Start at: 2019-01-02 19:56:17
End at: 2019-01-02 19:56:47
Local clock offset: 3.493 ms
Remote clock offset: 4.937 ms

# Below is generated by plot.py at 2019-01-02 21:43:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 601.97 Mbit/s
95th percentile per-packet one-way delay: 130.523 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 601.97 Mbit/s
95th percentile per-packet one-way delay: 130.523 ms
Loss rate: 0.02%
```

Run 5: Report of Indigo-MusesD — Data Link

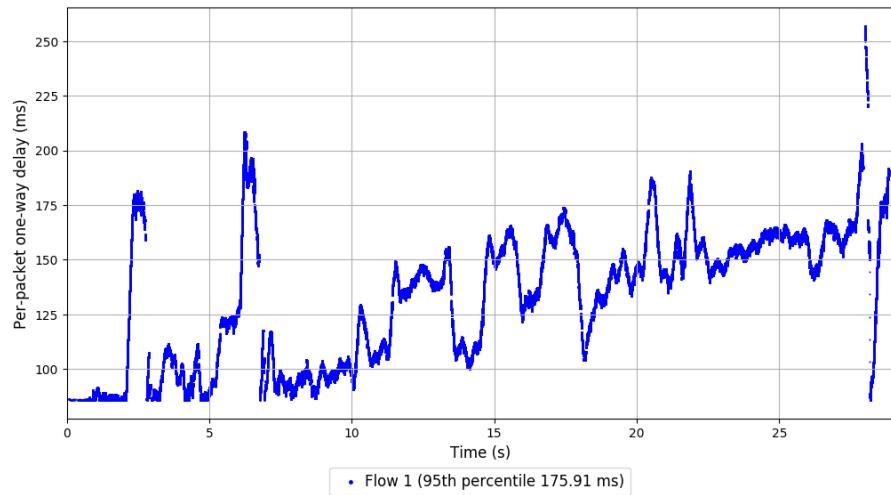
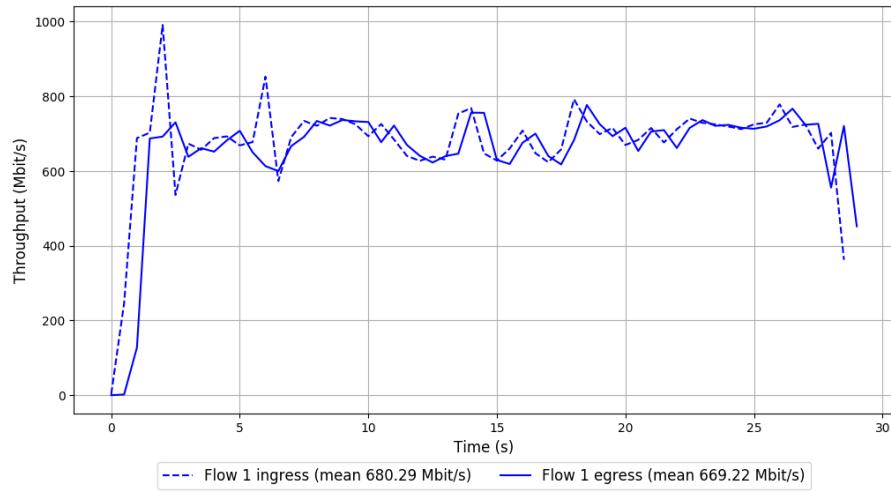


Run 1: Statistics of Indigo-MusesT

```
Start at: 2019-01-02 18:04:34
End at: 2019-01-02 18:05:04
Local clock offset: 9.215 ms
Remote clock offset: 9.82 ms

# Below is generated by plot.py at 2019-01-02 21:44:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 669.22 Mbit/s
95th percentile per-packet one-way delay: 175.907 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 669.22 Mbit/s
95th percentile per-packet one-way delay: 175.907 ms
Loss rate: 1.62%
```

Run 1: Report of Indigo-MusesT — Data Link

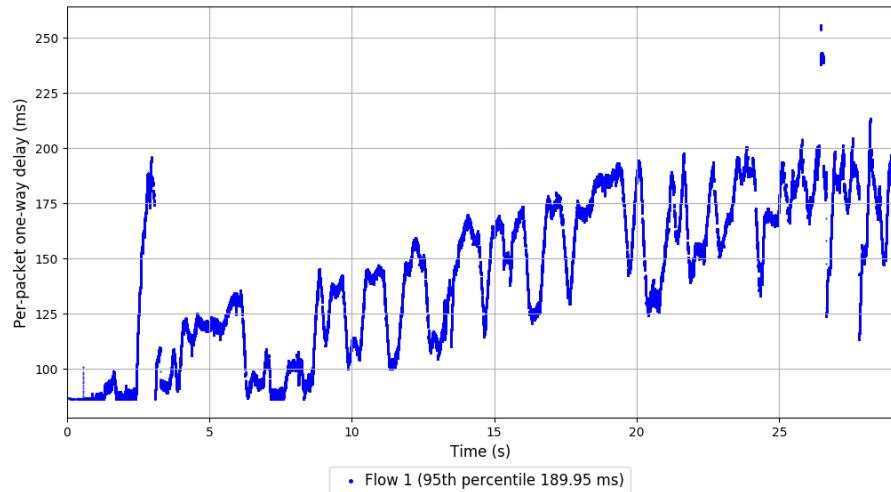
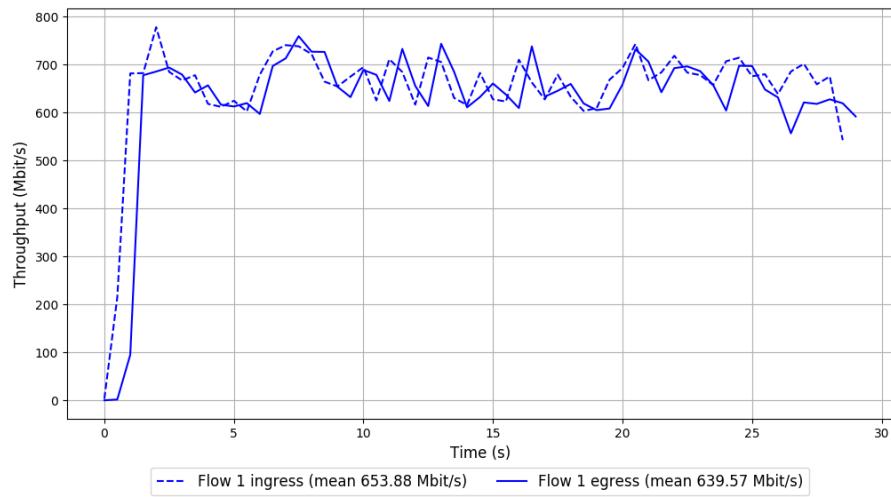


Run 2: Statistics of Indigo-MusesT

```
Start at: 2019-01-02 18:33:10
End at: 2019-01-02 18:33:40
Local clock offset: 21.225 ms
Remote clock offset: 23.202 ms

# Below is generated by plot.py at 2019-01-02 21:45:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 639.57 Mbit/s
95th percentile per-packet one-way delay: 189.948 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 639.57 Mbit/s
95th percentile per-packet one-way delay: 189.948 ms
Loss rate: 2.19%
```

Run 2: Report of Indigo-MusesT — Data Link

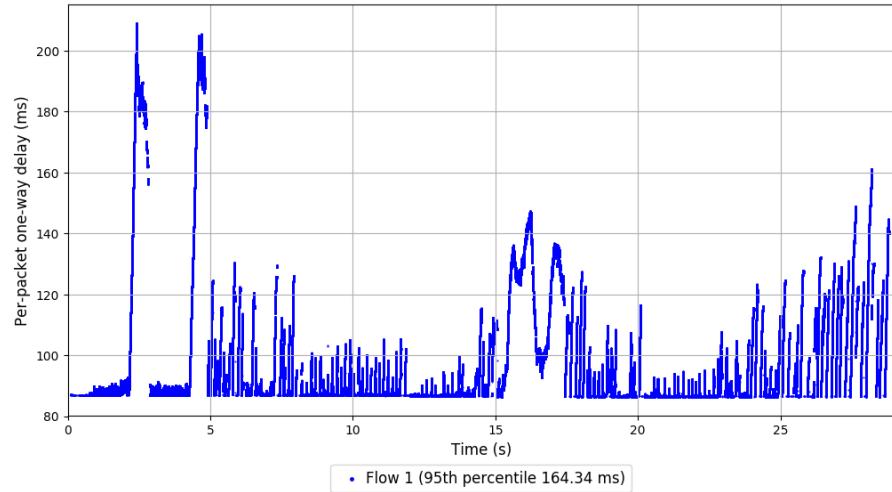
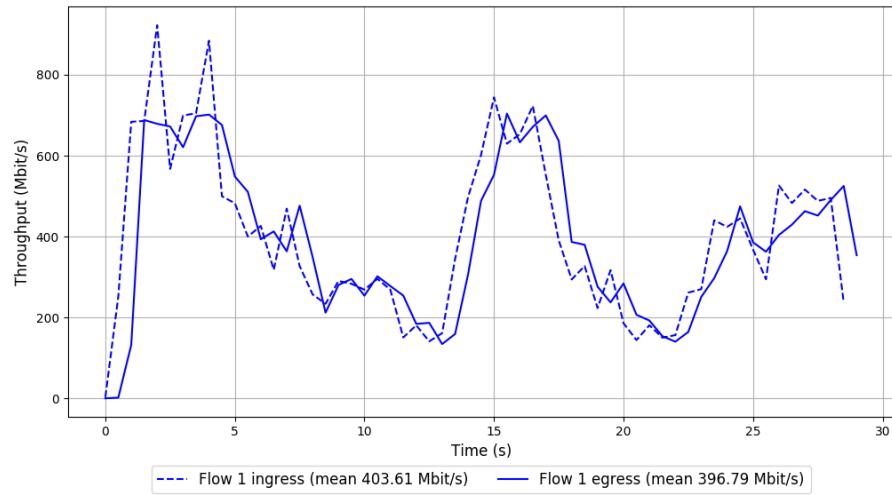


Run 3: Statistics of Indigo-MusesT

```
Start at: 2019-01-02 19:01:43
End at: 2019-01-02 19:02:13
Local clock offset: 40.713 ms
Remote clock offset: 44.161 ms

# Below is generated by plot.py at 2019-01-02 21:45:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 396.79 Mbit/s
95th percentile per-packet one-way delay: 164.341 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 396.79 Mbit/s
95th percentile per-packet one-way delay: 164.341 ms
Loss rate: 1.69%
```

Run 3: Report of Indigo-MusesT — Data Link

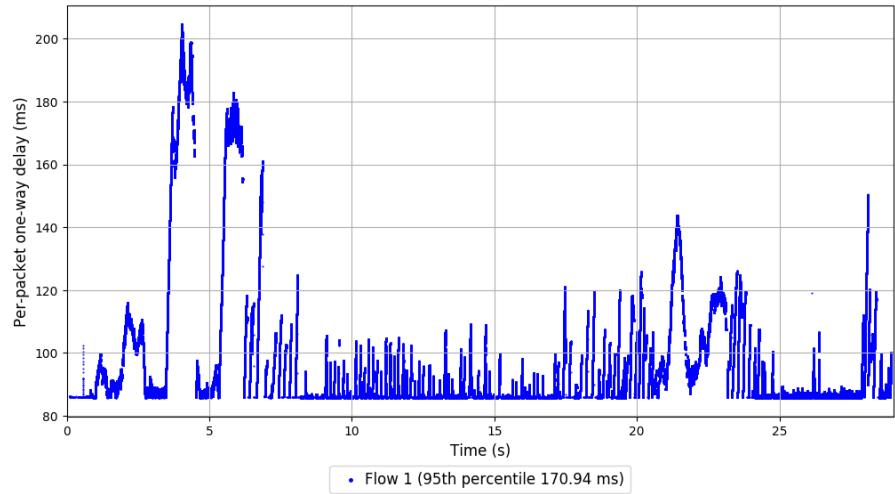
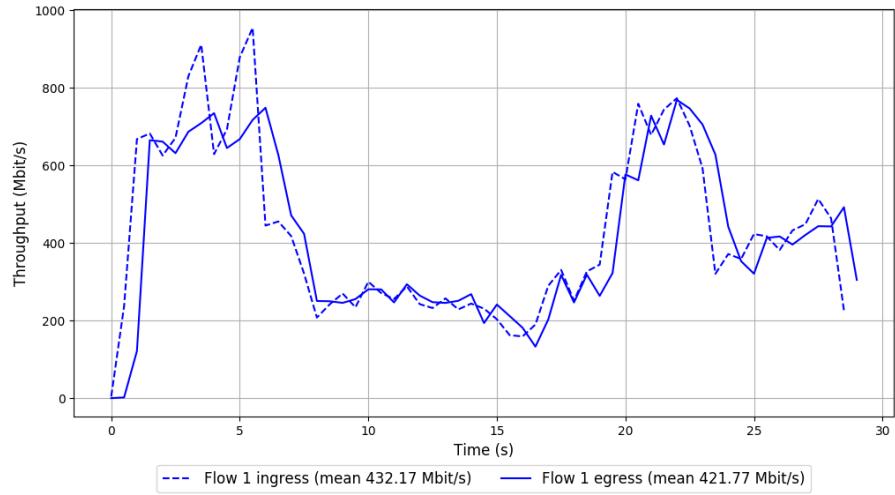


Run 4: Statistics of Indigo-MusesT

```
Start at: 2019-01-02 19:29:43
End at: 2019-01-02 19:30:13
Local clock offset: 9.977 ms
Remote clock offset: 19.424 ms

# Below is generated by plot.py at 2019-01-02 21:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 421.77 Mbit/s
95th percentile per-packet one-way delay: 170.943 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 421.77 Mbit/s
95th percentile per-packet one-way delay: 170.943 ms
Loss rate: 2.41%
```

Run 4: Report of Indigo-MusesT — Data Link

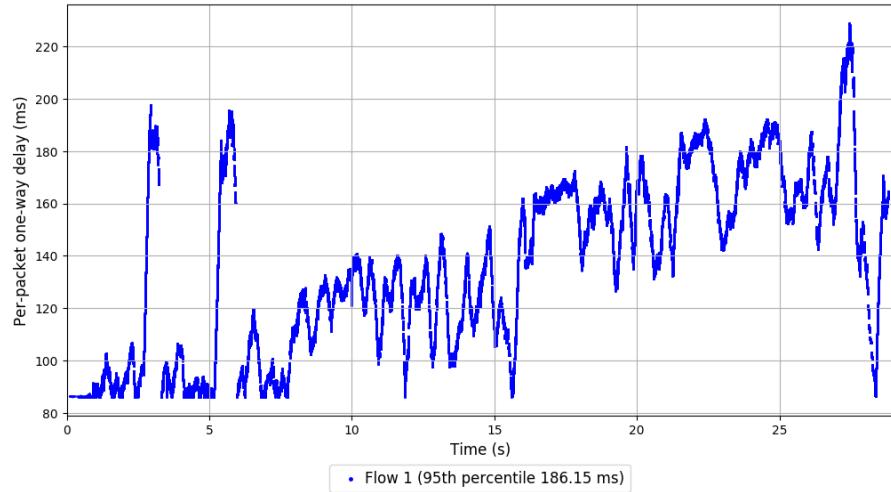
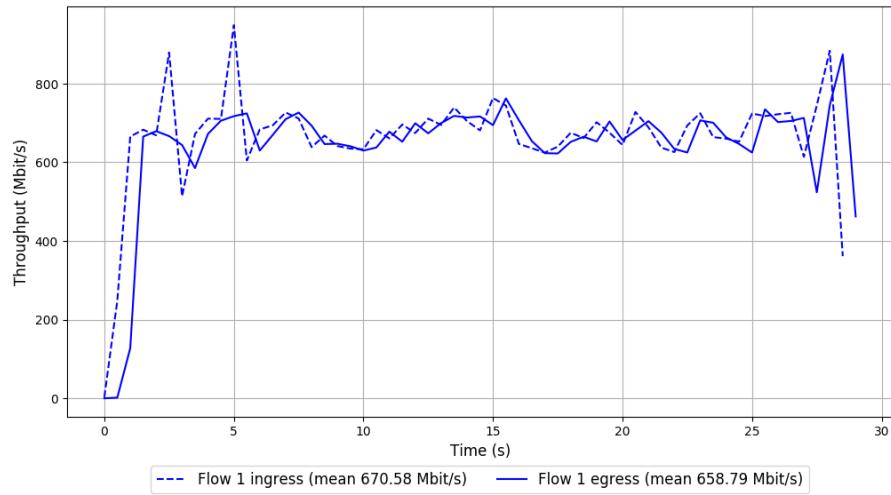


Run 5: Statistics of Indigo-MusesT

```
Start at: 2019-01-02 19:57:57
End at: 2019-01-02 19:58:27
Local clock offset: 3.766 ms
Remote clock offset: 4.788 ms

# Below is generated by plot.py at 2019-01-02 21:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 658.79 Mbit/s
95th percentile per-packet one-way delay: 186.145 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 658.79 Mbit/s
95th percentile per-packet one-way delay: 186.145 ms
Loss rate: 1.76%
```

Run 5: Report of Indigo-MusesT — Data Link

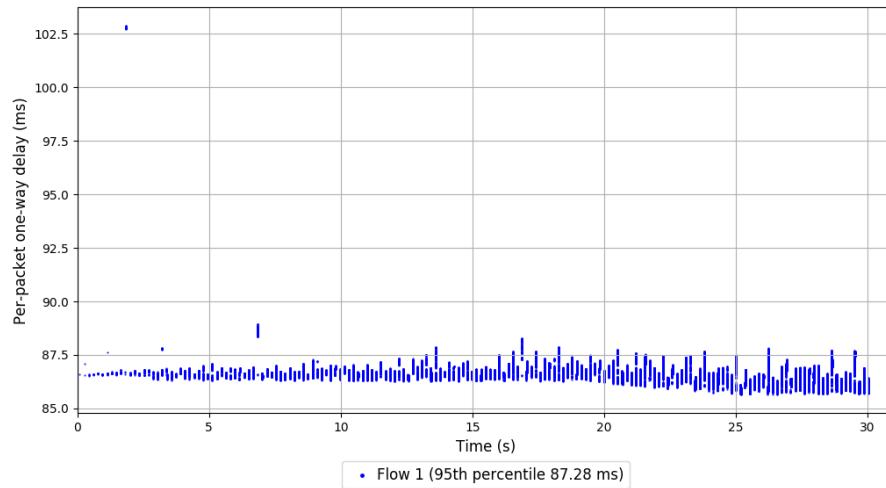
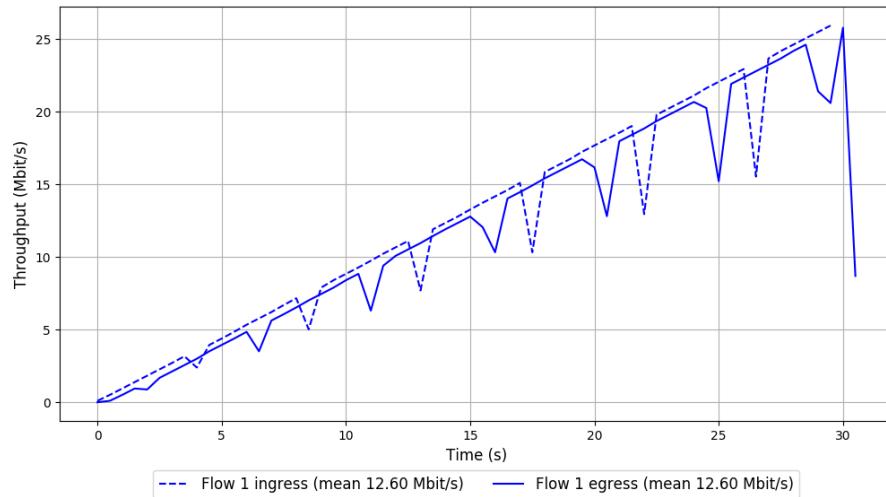


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2019-01-02 18:01:51
End at: 2019-01-02 18:02:21
Local clock offset: 10.852 ms
Remote clock offset: 12.065 ms

# Below is generated by plot.py at 2019-01-02 21:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 87.280 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 87.280 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

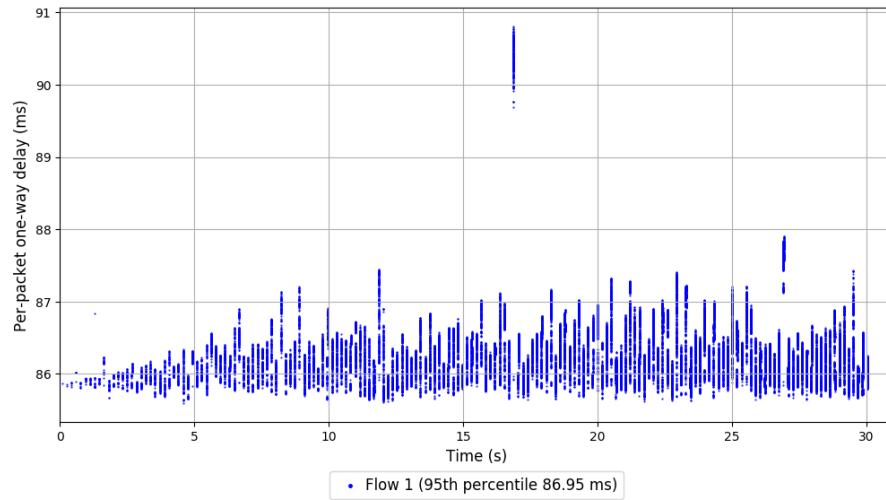
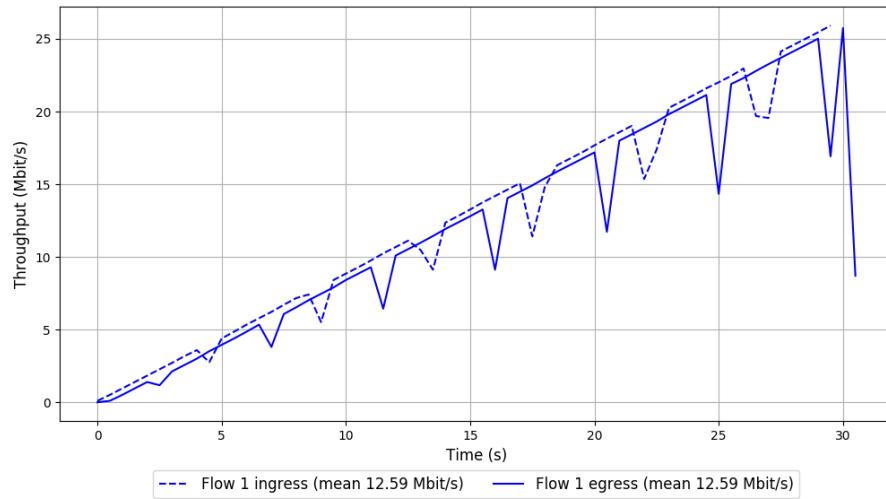


Run 2: Statistics of LEDBAT

```
Start at: 2019-01-02 18:30:19
End at: 2019-01-02 18:30:49
Local clock offset: 24.171 ms
Remote clock offset: 25.866 ms

# Below is generated by plot.py at 2019-01-02 21:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 86.954 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 86.954 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

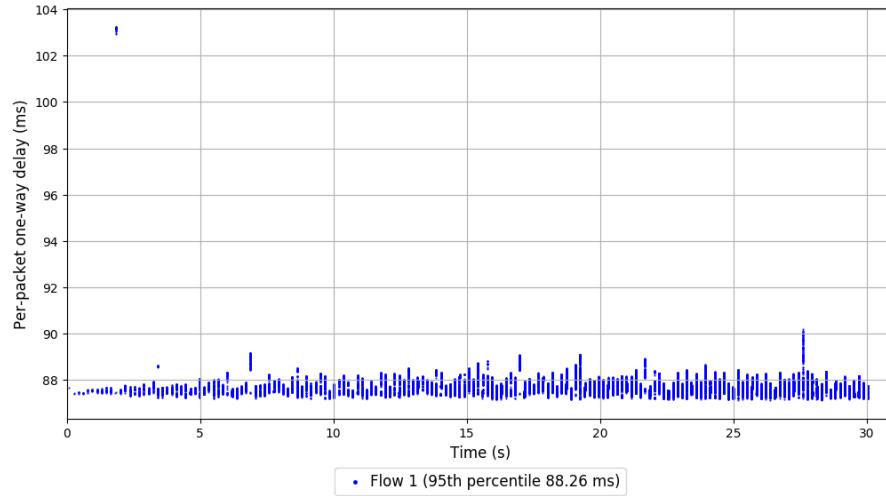
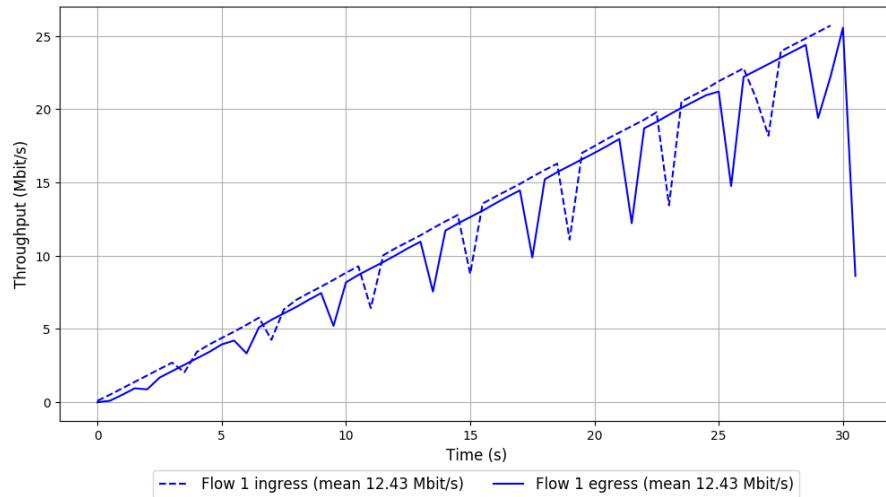


Run 3: Statistics of LEDBAT

```
Start at: 2019-01-02 18:58:53
End at: 2019-01-02 18:59:23
Local clock offset: 37.598 ms
Remote clock offset: 40.917 ms

# Below is generated by plot.py at 2019-01-02 21:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 88.257 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 88.257 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

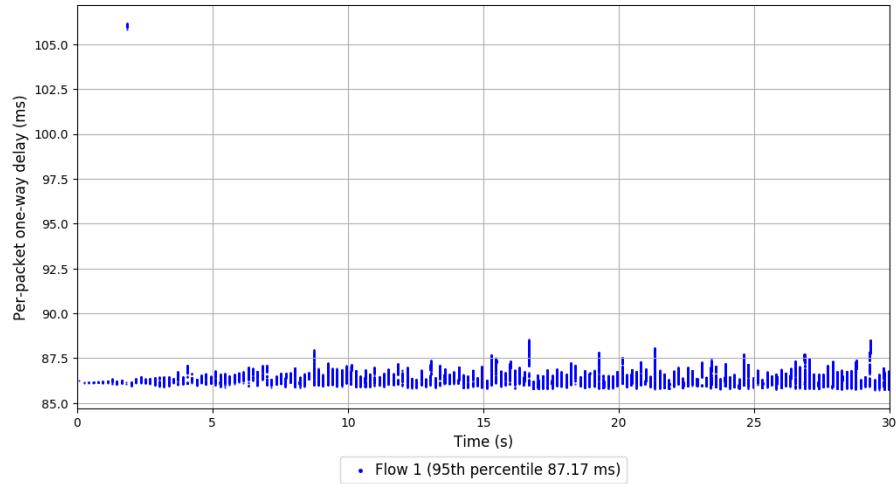
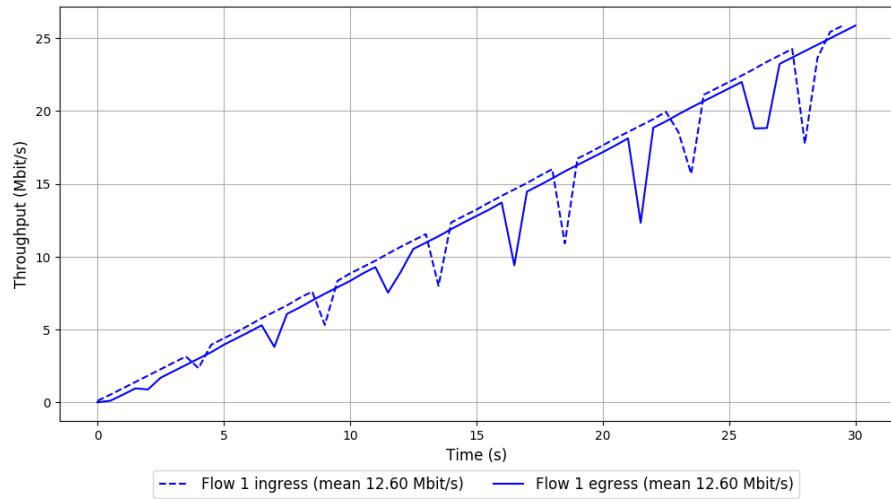


Run 4: Statistics of LEDBAT

```
Start at: 2019-01-02 19:26:52
End at: 2019-01-02 19:27:22
Local clock offset: 9.37 ms
Remote clock offset: 18.297 ms

# Below is generated by plot.py at 2019-01-02 21:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 87.173 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 87.173 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

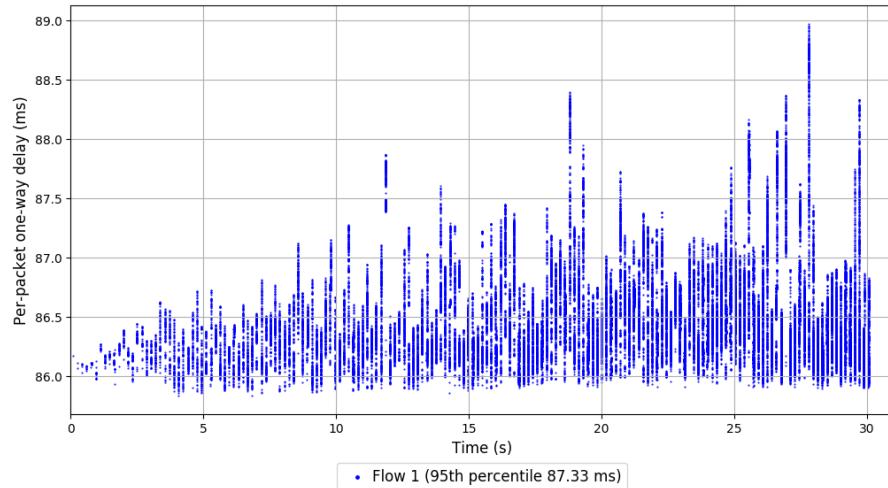
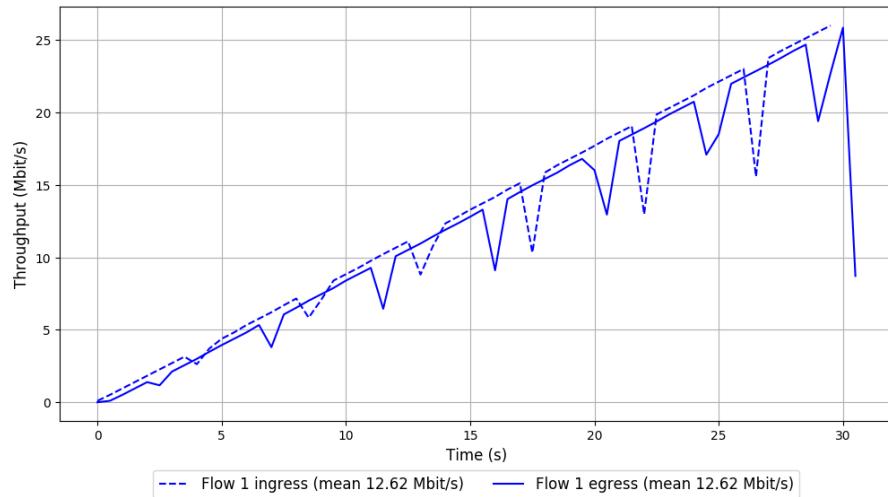


Run 5: Statistics of LEDBAT

```
Start at: 2019-01-02 19:55:06
End at: 2019-01-02 19:55:36
Local clock offset: 4.017 ms
Remote clock offset: 5.1 ms

# Below is generated by plot.py at 2019-01-02 21:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: 87.329 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: 87.329 ms
Loss rate: 0.00%
```

Run 5: Report of LEDBAT — Data Link

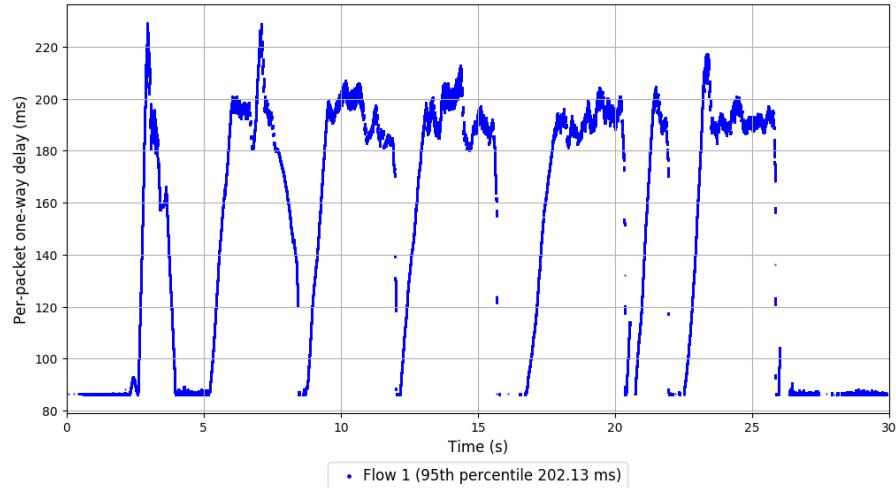
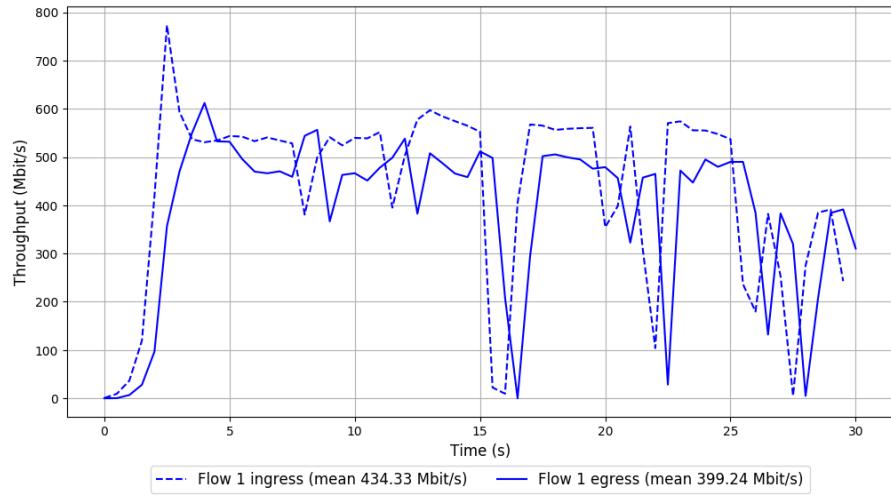


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2019-01-02 18:26:55
End at: 2019-01-02 18:27:25
Local clock offset: 26.309 ms
Remote clock offset: 28.174 ms

# Below is generated by plot.py at 2019-01-02 22:00:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 399.24 Mbit/s
95th percentile per-packet one-way delay: 202.135 ms
Loss rate: 8.18%
-- Flow 1:
Average throughput: 399.24 Mbit/s
95th percentile per-packet one-way delay: 202.135 ms
Loss rate: 8.18%
```

Run 1: Report of PCC-Allegro — Data Link

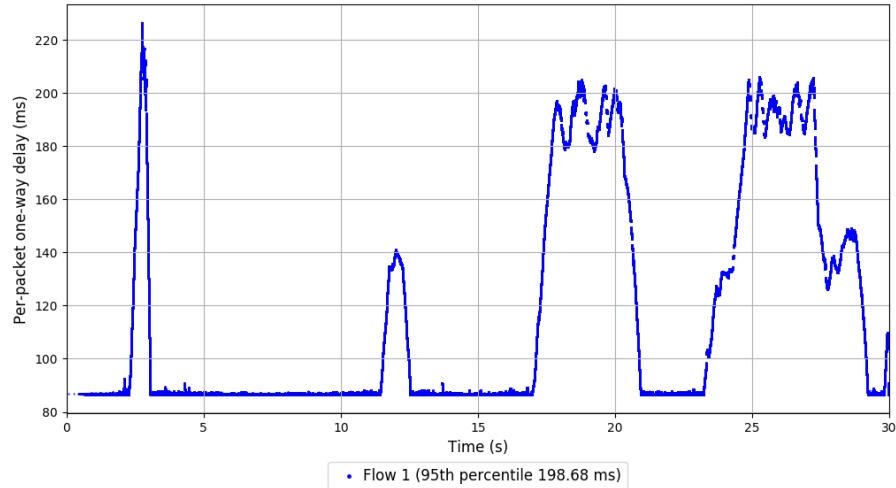
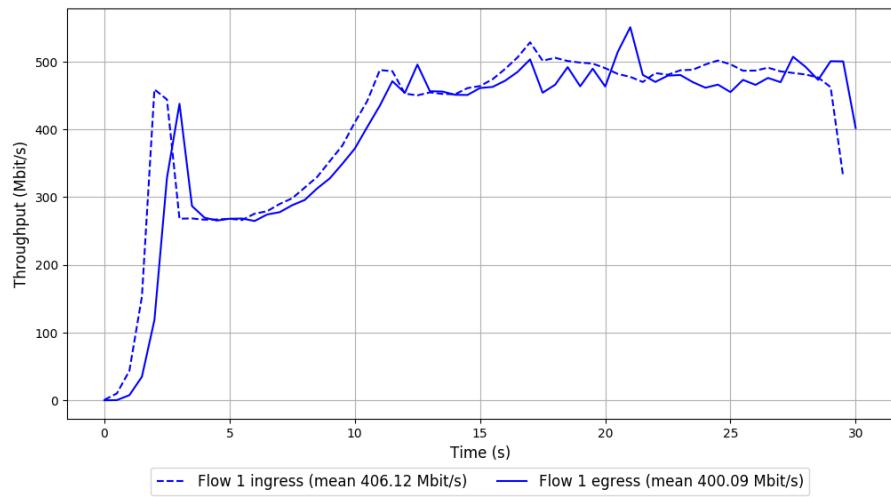


Run 2: Statistics of PCC-Allegro

```
Start at: 2019-01-02 18:55:29
End at: 2019-01-02 18:55:59
Local clock offset: 34.278 ms
Remote clock offset: 36.914 ms

# Below is generated by plot.py at 2019-01-02 22:00:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 400.09 Mbit/s
95th percentile per-packet one-way delay: 198.679 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 400.09 Mbit/s
95th percentile per-packet one-way delay: 198.679 ms
Loss rate: 1.49%
```

Run 2: Report of PCC-Allegro — Data Link

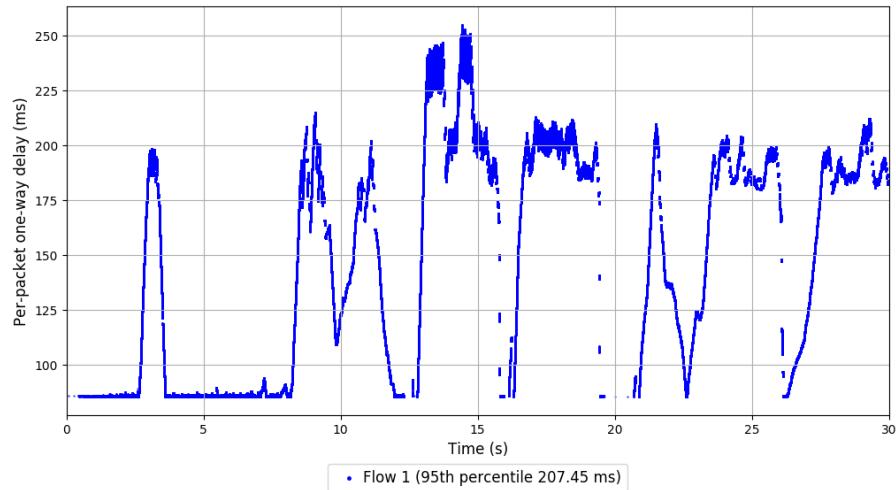
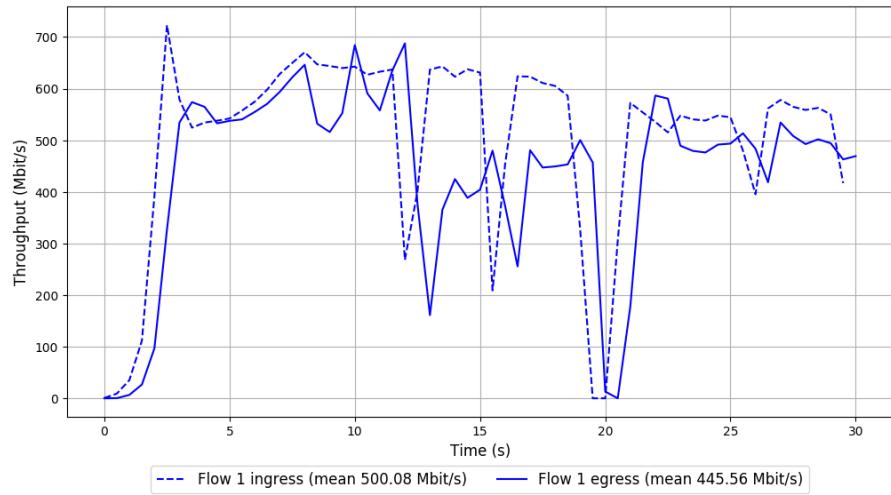


Run 3: Statistics of PCC-Allegro

```
Start at: 2019-01-02 19:23:24
End at: 2019-01-02 19:23:54
Local clock offset: 10.03 ms
Remote clock offset: 17.317 ms

# Below is generated by plot.py at 2019-01-02 22:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 445.56 Mbit/s
95th percentile per-packet one-way delay: 207.454 ms
Loss rate: 10.90%
-- Flow 1:
Average throughput: 445.56 Mbit/s
95th percentile per-packet one-way delay: 207.454 ms
Loss rate: 10.90%
```

Run 3: Report of PCC-Allegro — Data Link

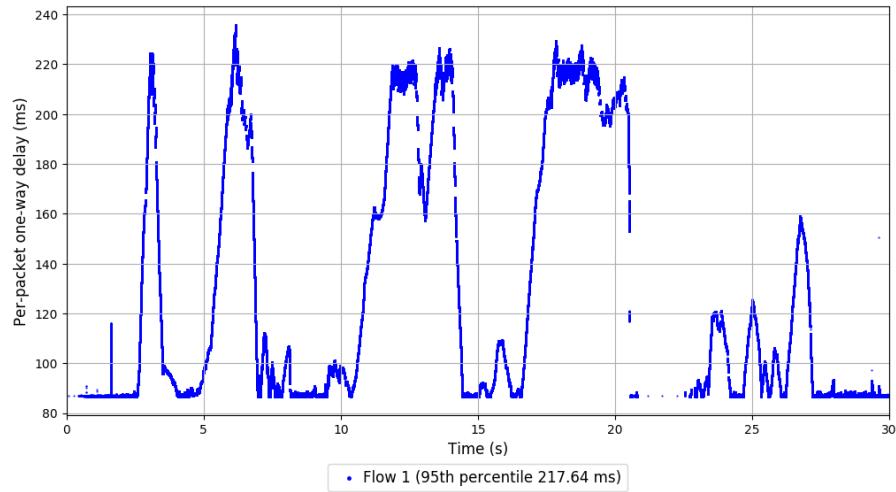
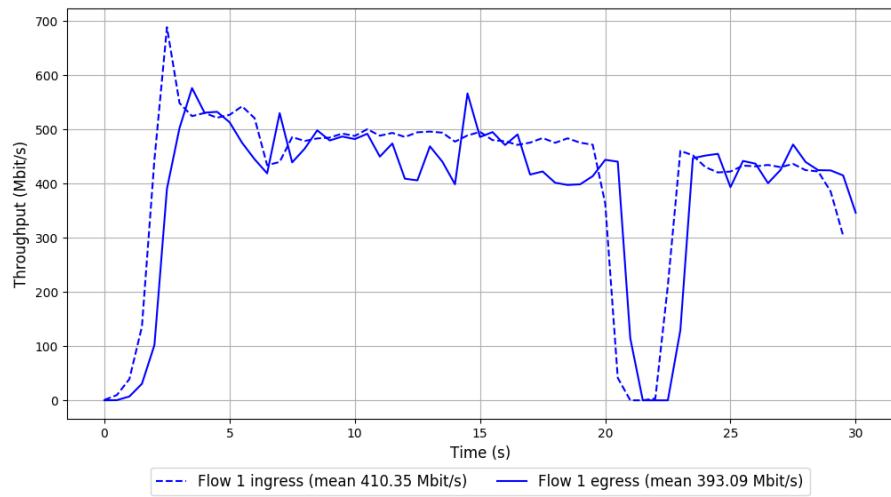


Run 4: Statistics of PCC-Allegro

```
Start at: 2019-01-02 19:51:39
End at: 2019-01-02 19:52:09
Local clock offset: 3.741 ms
Remote clock offset: 5.862 ms

# Below is generated by plot.py at 2019-01-02 22:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 393.09 Mbit/s
95th percentile per-packet one-way delay: 217.637 ms
Loss rate: 4.21%
-- Flow 1:
Average throughput: 393.09 Mbit/s
95th percentile per-packet one-way delay: 217.637 ms
Loss rate: 4.21%
```

Run 4: Report of PCC-Allegro — Data Link

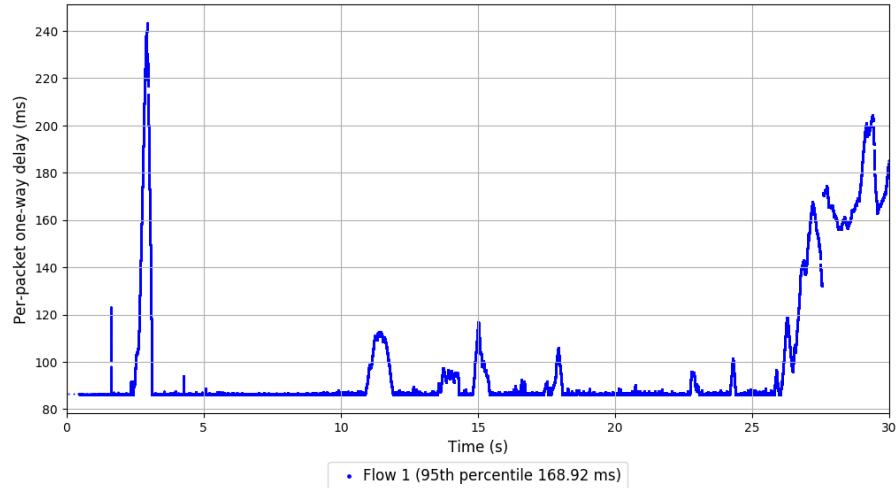
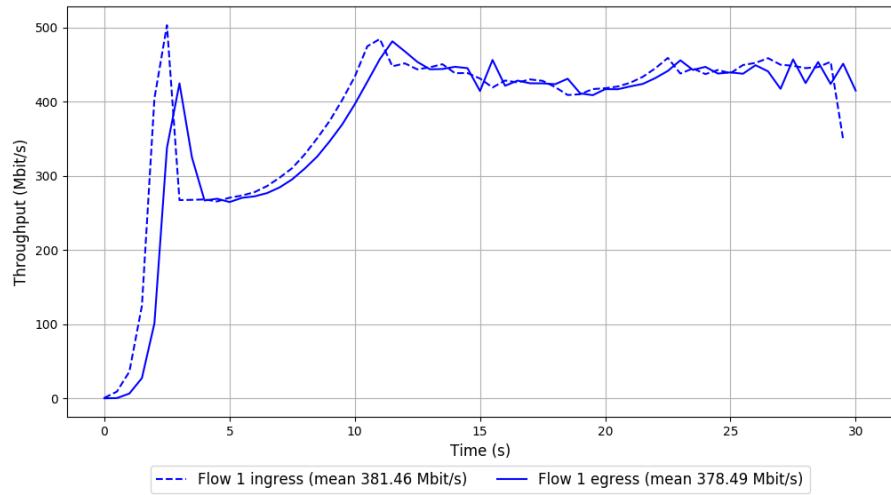


Run 5: Statistics of PCC-Allegro

```
Start at: 2019-01-02 20:20:16
End at: 2019-01-02 20:20:46
Local clock offset: 2.074 ms
Remote clock offset: 2.235 ms

# Below is generated by plot.py at 2019-01-02 22:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 378.49 Mbit/s
95th percentile per-packet one-way delay: 168.916 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 378.49 Mbit/s
95th percentile per-packet one-way delay: 168.916 ms
Loss rate: 0.77%
```

Run 5: Report of PCC-Allegro — Data Link

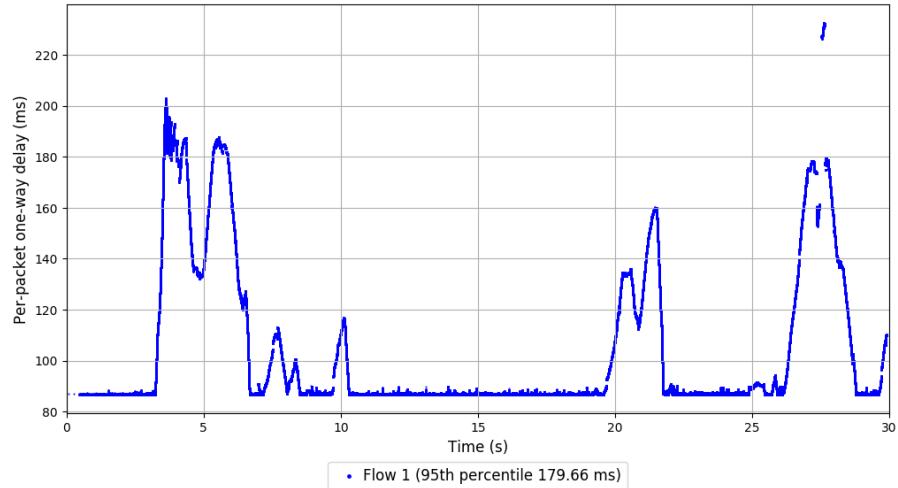
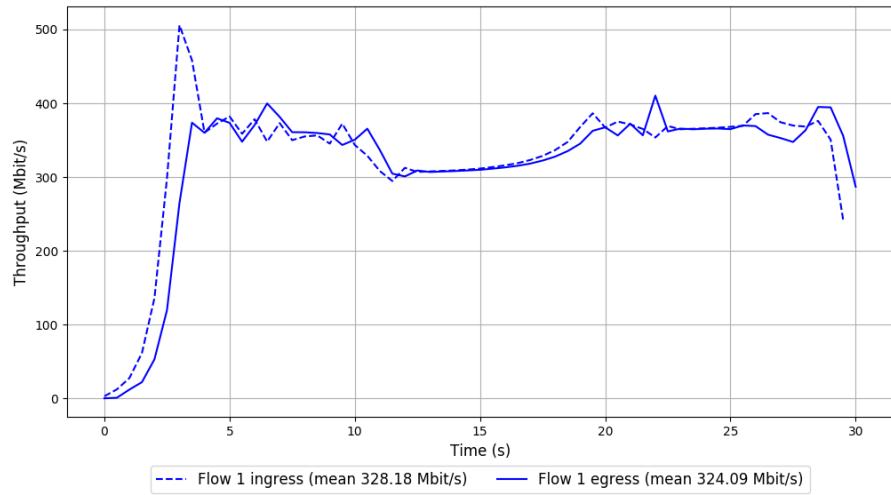


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2019-01-02 18:08:05
End at: 2019-01-02 18:08:35
Local clock offset: 12.436 ms
Remote clock offset: 13.963 ms

# Below is generated by plot.py at 2019-01-02 22:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.09 Mbit/s
95th percentile per-packet one-way delay: 179.661 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 324.09 Mbit/s
95th percentile per-packet one-way delay: 179.661 ms
Loss rate: 1.25%
```

Run 1: Report of PCC-Expr — Data Link

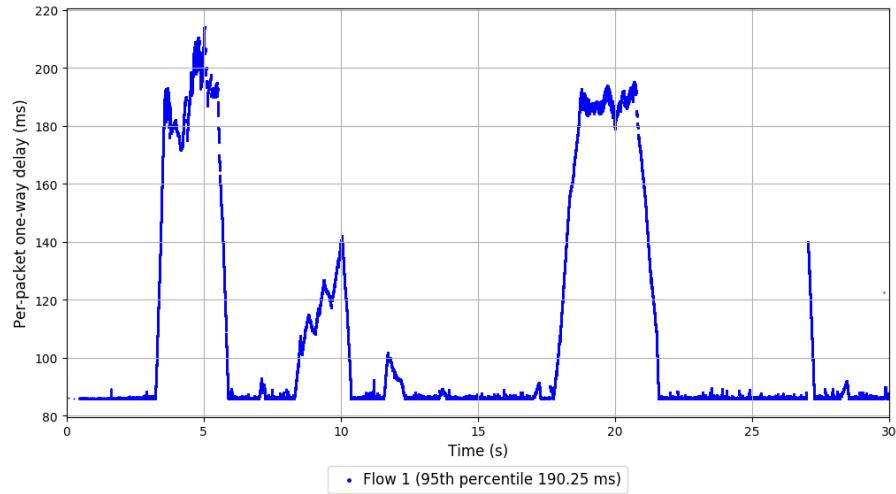
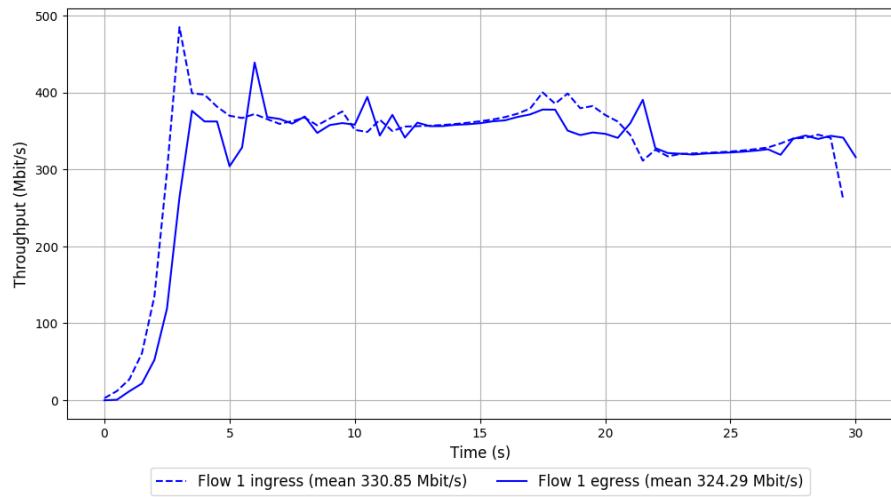


Run 2: Statistics of PCC-Expr

```
Start at: 2019-01-02 18:36:38
End at: 2019-01-02 18:37:08
Local clock offset: 20.514 ms
Remote clock offset: 22.186 ms

# Below is generated by plot.py at 2019-01-02 22:04:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.29 Mbit/s
95th percentile per-packet one-way delay: 190.245 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 324.29 Mbit/s
95th percentile per-packet one-way delay: 190.245 ms
Loss rate: 2.00%
```

Run 2: Report of PCC-Expr — Data Link

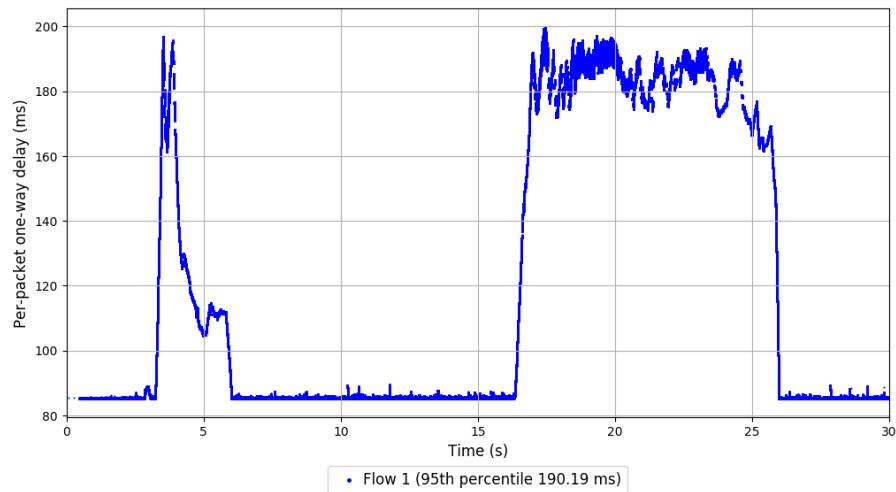
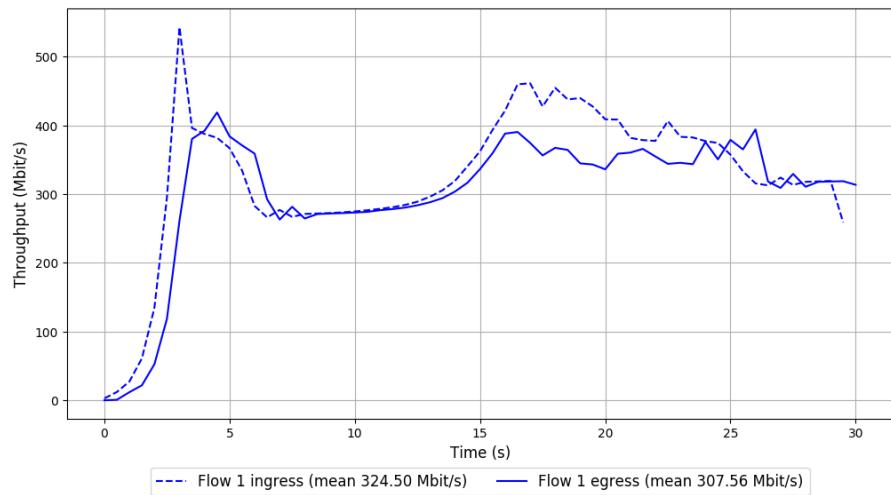


Run 3: Statistics of PCC-Expr

```
Start at: 2019-01-02 19:04:59
End at: 2019-01-02 19:05:29
Local clock offset: 31.37 ms
Remote clock offset: 33.764 ms

# Below is generated by plot.py at 2019-01-02 22:09:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 307.56 Mbit/s
95th percentile per-packet one-way delay: 190.189 ms
Loss rate: 5.22%
-- Flow 1:
Average throughput: 307.56 Mbit/s
95th percentile per-packet one-way delay: 190.189 ms
Loss rate: 5.22%
```

Run 3: Report of PCC-Expr — Data Link

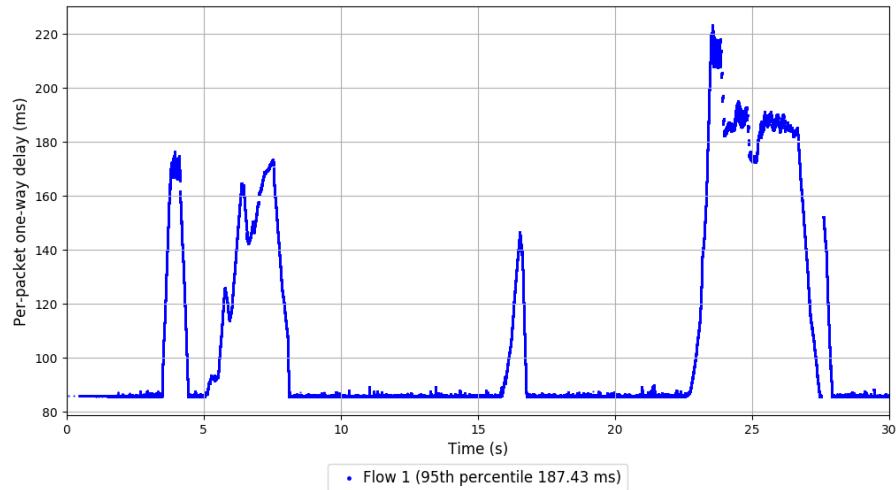
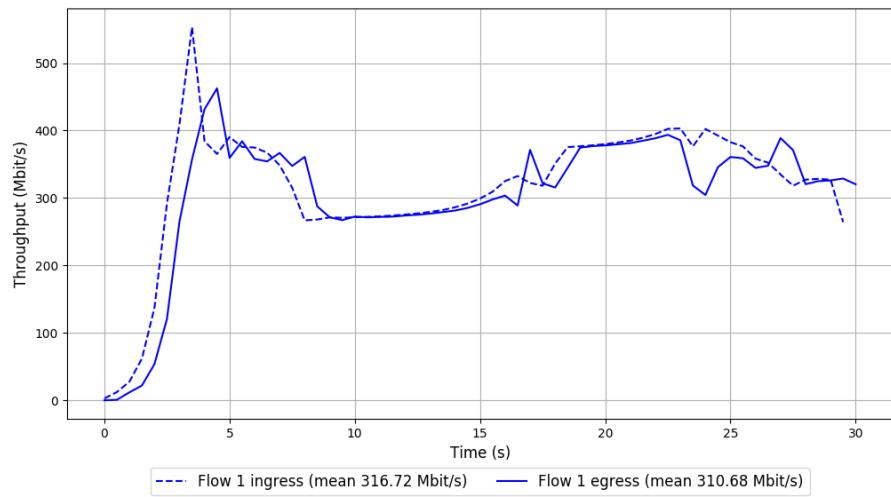


Run 4: Statistics of PCC-Expr

```
Start at: 2019-01-02 19:33:02
End at: 2019-01-02 19:33:32
Local clock offset: 9.98 ms
Remote clock offset: 20.947 ms

# Below is generated by plot.py at 2019-01-02 22:12:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 310.68 Mbit/s
95th percentile per-packet one-way delay: 187.428 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 310.68 Mbit/s
95th percentile per-packet one-way delay: 187.428 ms
Loss rate: 1.91%
```

Run 4: Report of PCC-Expr — Data Link

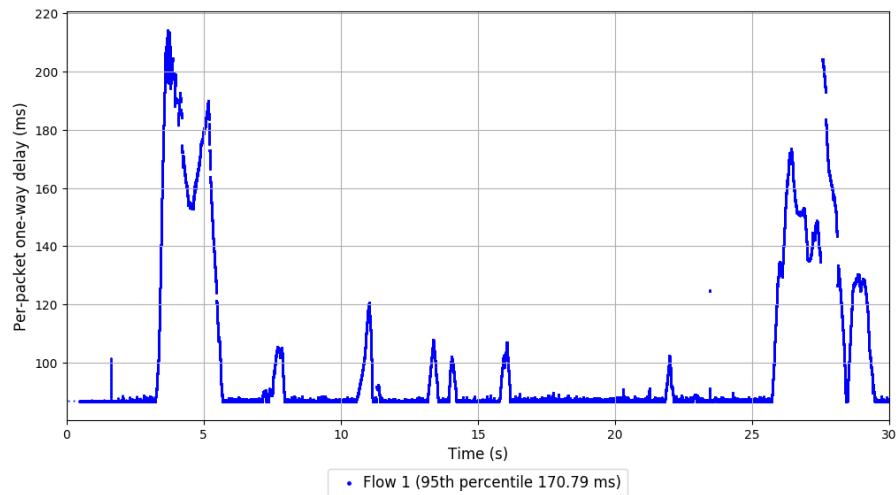
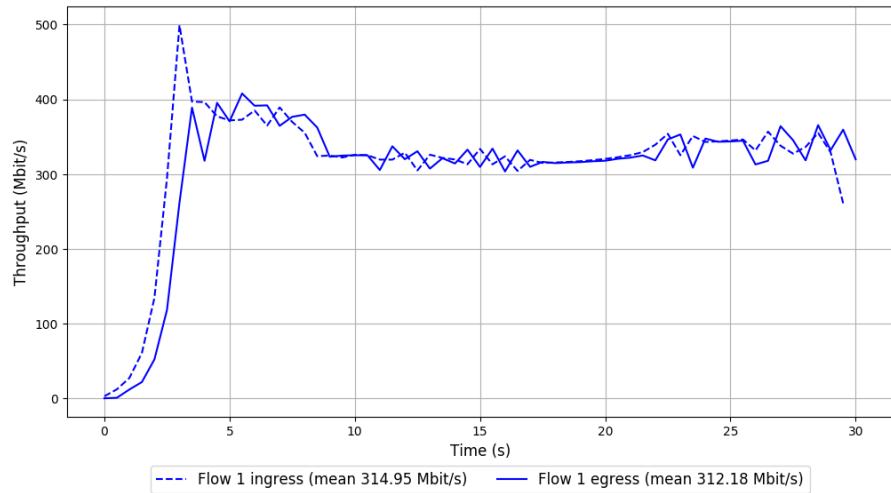


Run 5: Statistics of PCC-Expr

```
Start at: 2019-01-02 20:01:30
End at: 2019-01-02 20:02:00
Local clock offset: 3.895 ms
Remote clock offset: 4.708 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 312.18 Mbit/s
95th percentile per-packet one-way delay: 170.794 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 312.18 Mbit/s
95th percentile per-packet one-way delay: 170.794 ms
Loss rate: 0.88%
```

Run 5: Report of PCC-Expr — Data Link

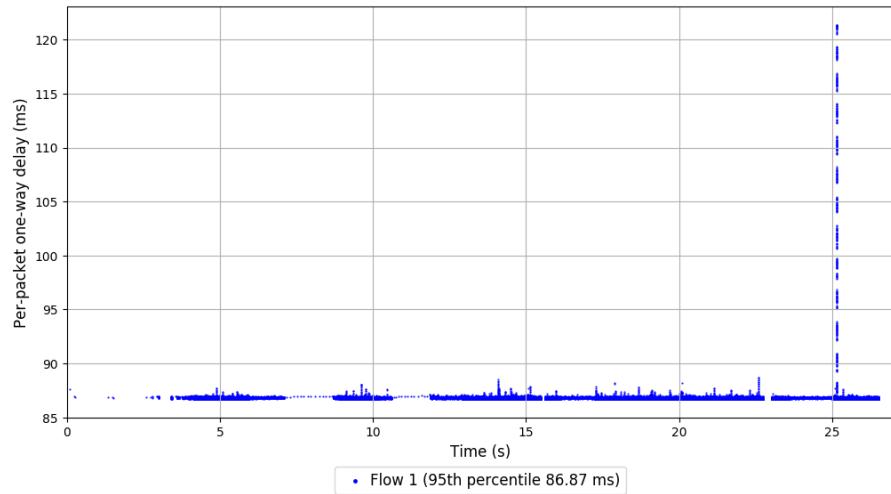
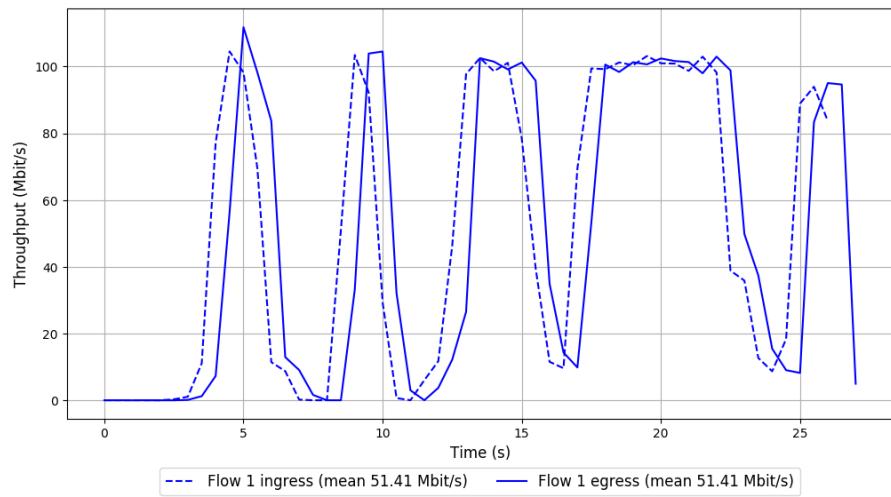


Run 1: Statistics of QUIC Cubic

```
Start at: 2019-01-02 18:17:05
End at: 2019-01-02 18:17:35
Local clock offset: 13.81 ms
Remote clock offset: 15.438 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.41 Mbit/s
95th percentile per-packet one-way delay: 86.870 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 51.41 Mbit/s
95th percentile per-packet one-way delay: 86.870 ms
Loss rate: 0.00%
```

Run 1: Report of QUIC Cubic — Data Link

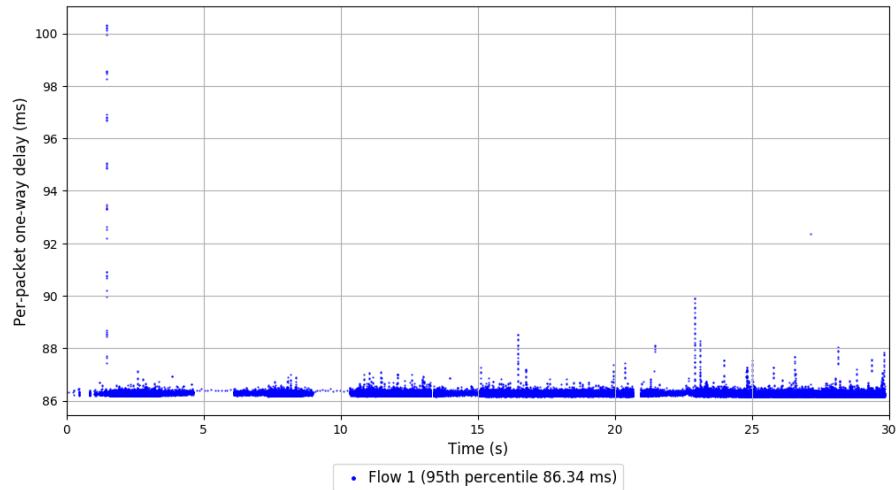
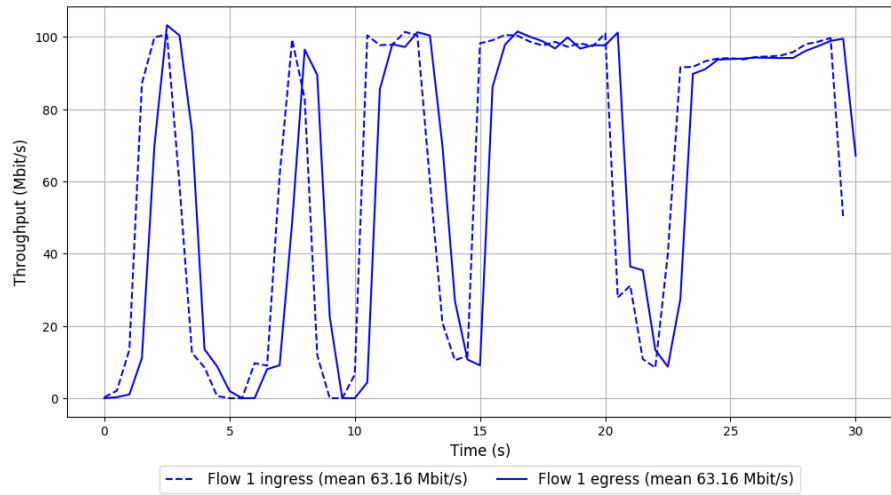


Run 2: Statistics of QUIC Cubic

```
Start at: 2019-01-02 18:45:38
End at: 2019-01-02 18:46:08
Local clock offset: 24.889 ms
Remote clock offset: 26.584 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.16 Mbit/s
95th percentile per-packet one-way delay: 86.341 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.16 Mbit/s
95th percentile per-packet one-way delay: 86.341 ms
Loss rate: 0.00%
```

Run 2: Report of QUIC Cubic — Data Link

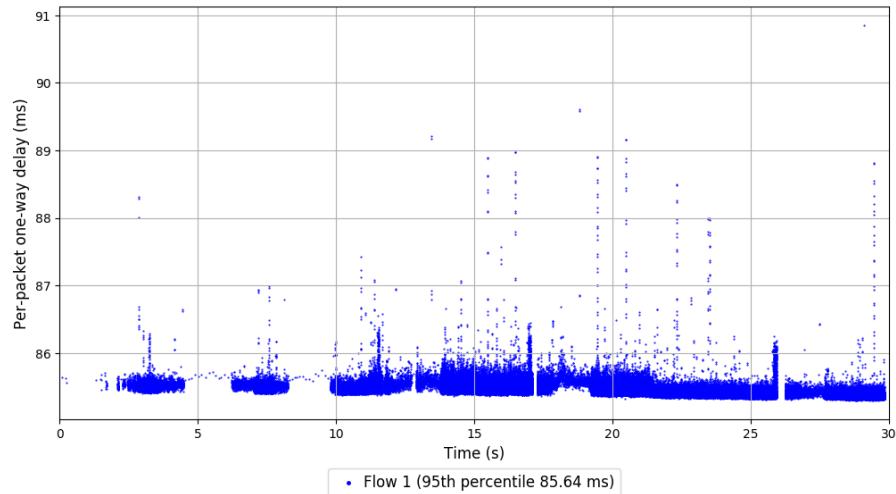
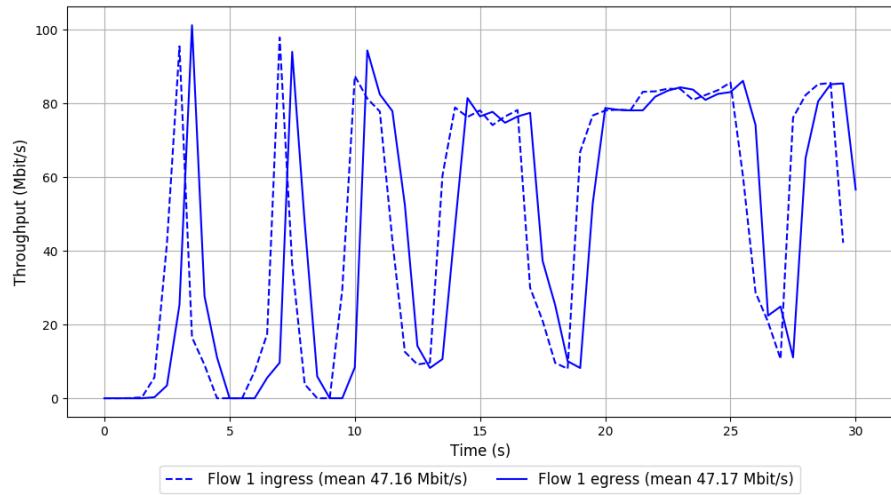


Run 3: Statistics of QUIC Cubic

```
Start at: 2019-01-02 19:13:43
End at: 2019-01-02 19:14:13
Local clock offset: 14.381 ms
Remote clock offset: 19.016 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.17 Mbit/s
95th percentile per-packet one-way delay: 85.636 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 47.17 Mbit/s
95th percentile per-packet one-way delay: 85.636 ms
Loss rate: 0.00%
```

Run 3: Report of QUIC Cubic — Data Link

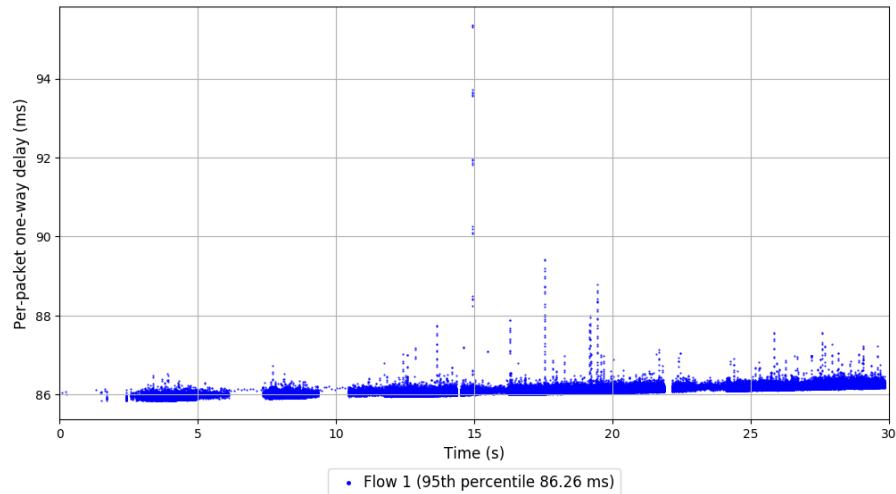
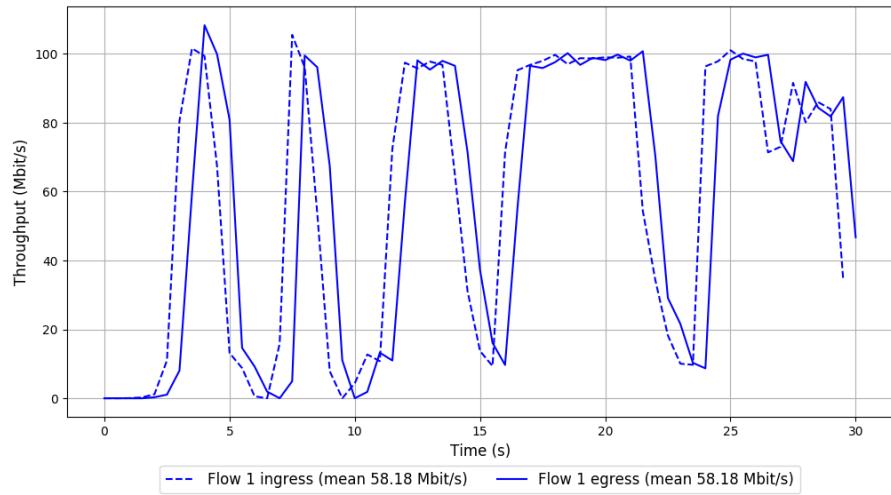


Run 4: Statistics of QUIC Cubic

```
Start at: 2019-01-02 19:41:49
End at: 2019-01-02 19:42:19
Local clock offset: 6.398 ms
Remote clock offset: 12.726 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.18 Mbit/s
95th percentile per-packet one-way delay: 86.259 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.18 Mbit/s
95th percentile per-packet one-way delay: 86.259 ms
Loss rate: 0.00%
```

Run 4: Report of QUIC Cubic — Data Link

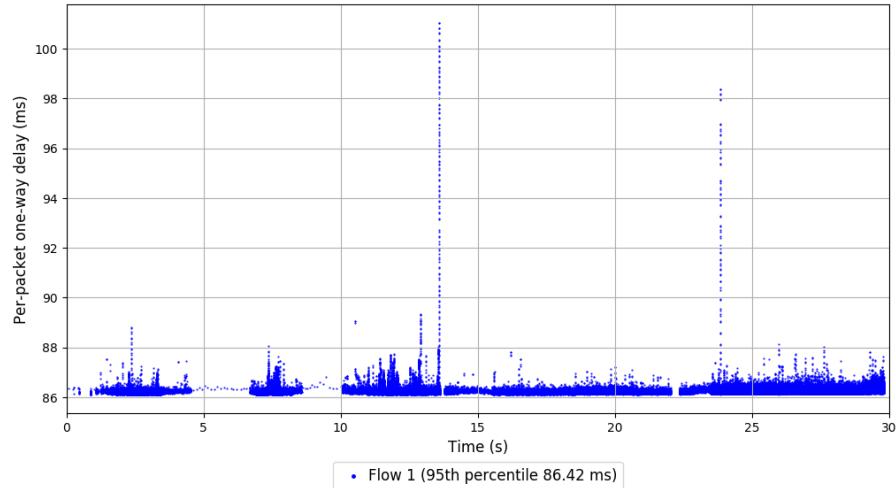
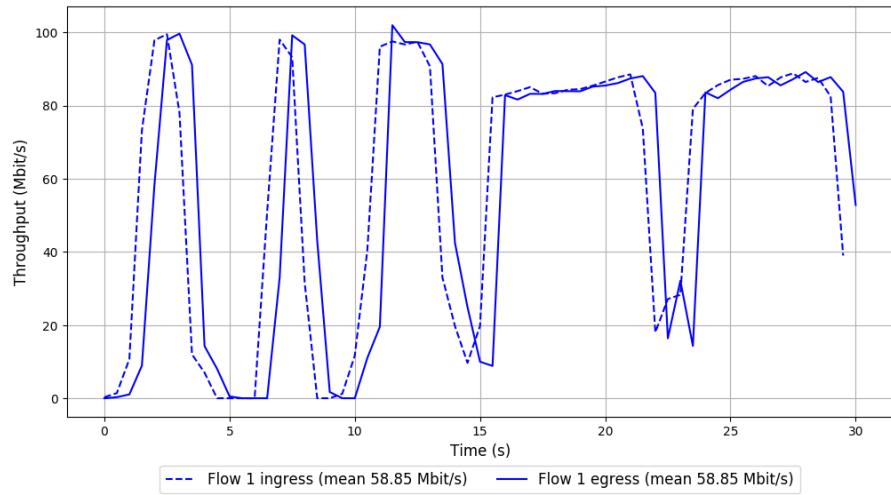


Run 5: Statistics of QUIC Cubic

```
Start at: 2019-01-02 20:10:31
End at: 2019-01-02 20:11:01
Local clock offset: 4.772 ms
Remote clock offset: 5.139 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.85 Mbit/s
95th percentile per-packet one-way delay: 86.423 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.85 Mbit/s
95th percentile per-packet one-way delay: 86.423 ms
Loss rate: 0.00%
```

Run 5: Report of QUIC Cubic — Data Link

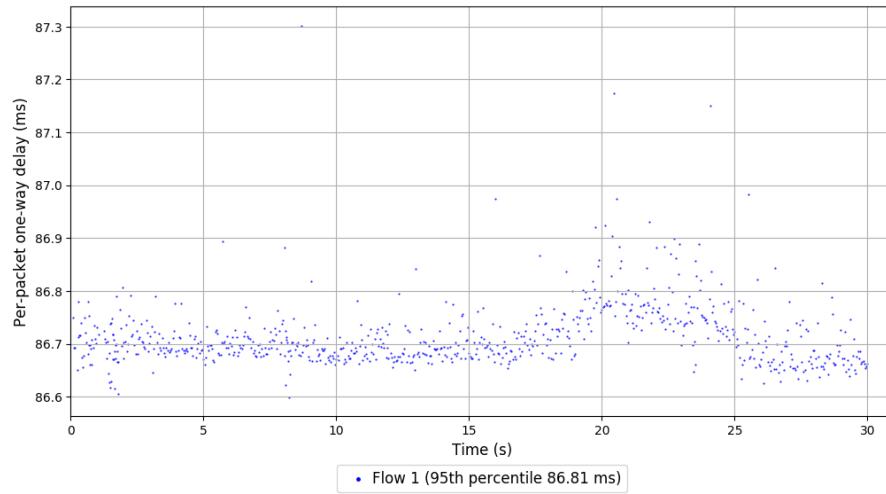
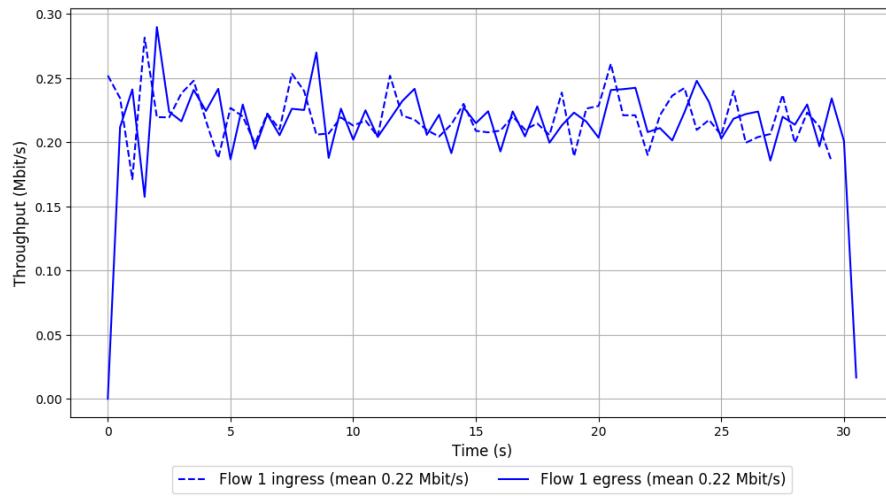


```
Run 1: Statistics of SCReAM

Start at: 2019-01-02 18:19:26
End at: 2019-01-02 18:19:56
Local clock offset: 16.203 ms
Remote clock offset: 17.531 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.814 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.814 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

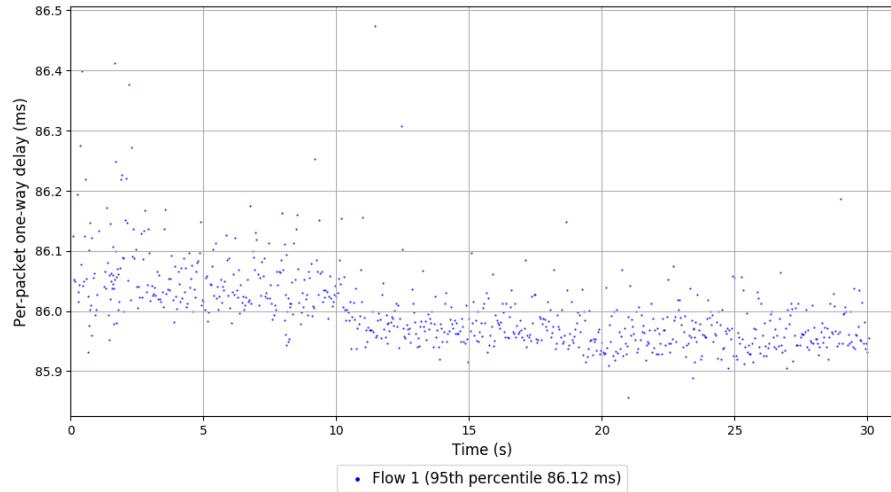
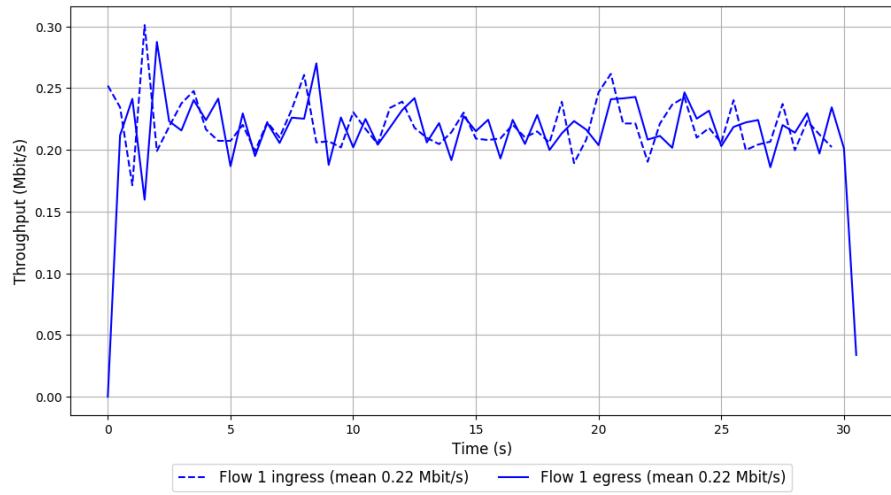


Run 2: Statistics of SCReAM

```
Start at: 2019-01-02 18:47:59
End at: 2019-01-02 18:48:29
Local clock offset: 26.972 ms
Remote clock offset: 28.833 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.125 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.125 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

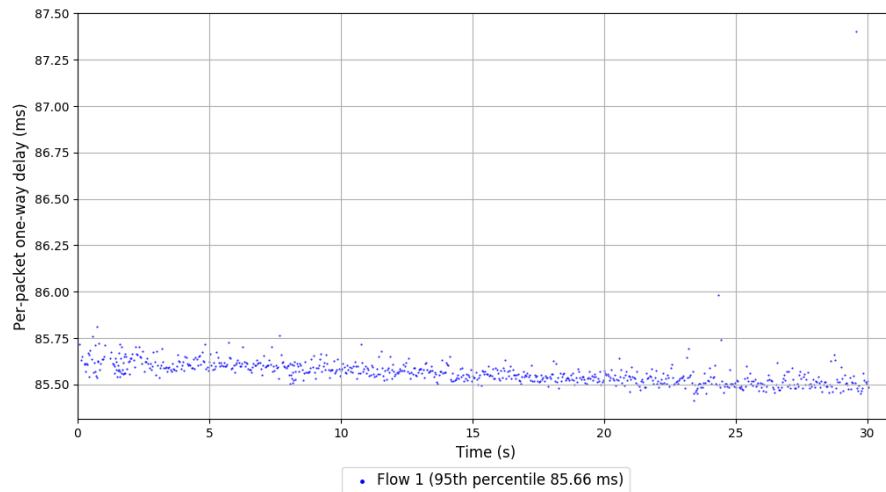
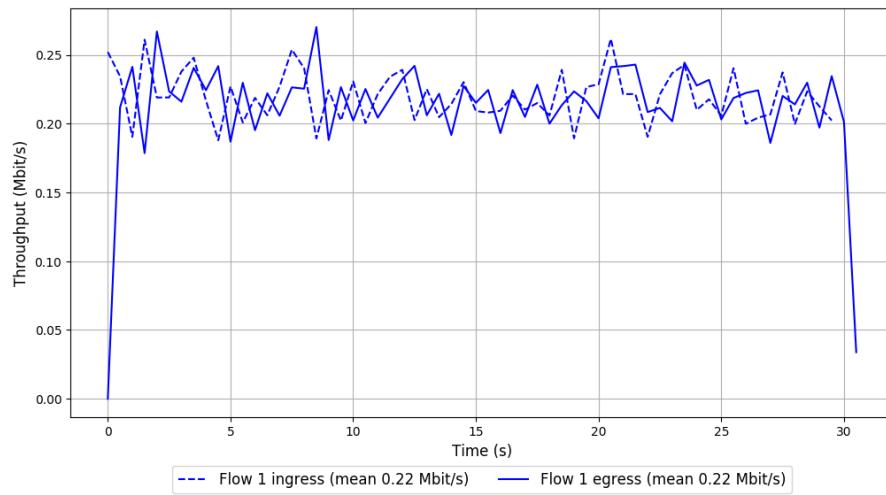


Run 3: Statistics of SCReAM

```
Start at: 2019-01-02 19:16:03
End at: 2019-01-02 19:16:33
Local clock offset: 12.443 ms
Remote clock offset: 17.679 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.659 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.659 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

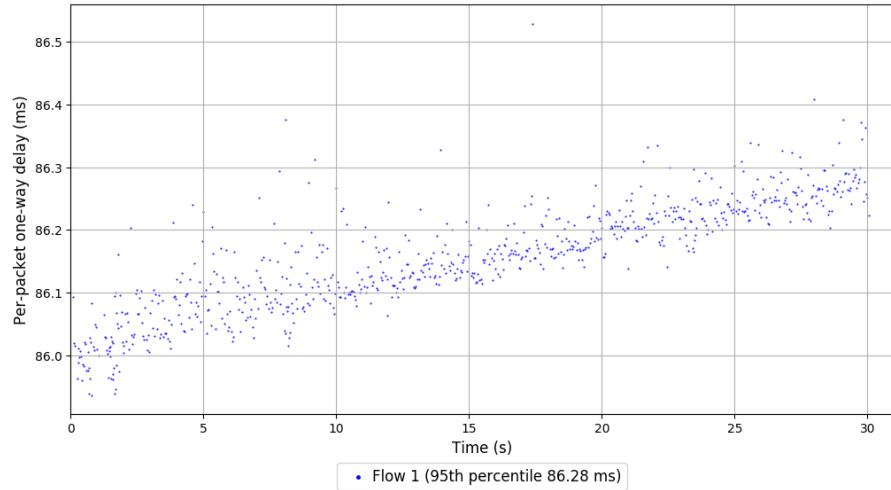
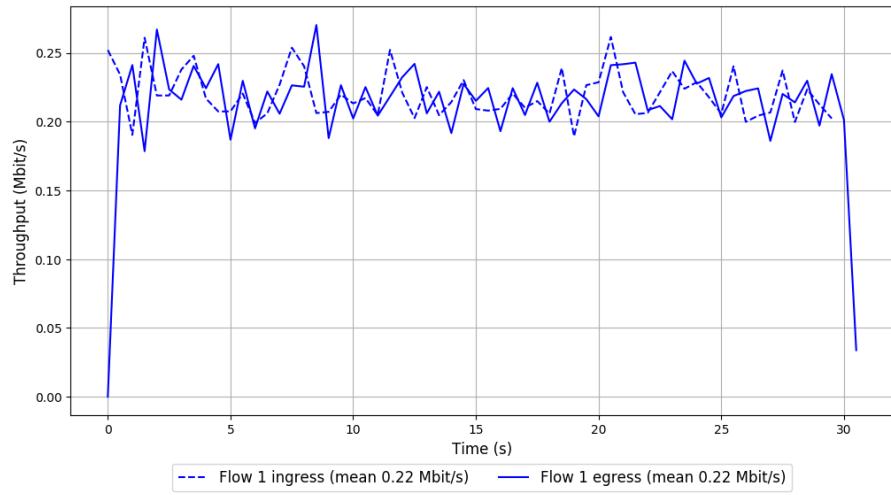


Run 4: Statistics of SCReAM

```
Start at: 2019-01-02 19:44:11
End at: 2019-01-02 19:44:41
Local clock offset: 5.271 ms
Remote clock offset: 10.083 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.284 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.284 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

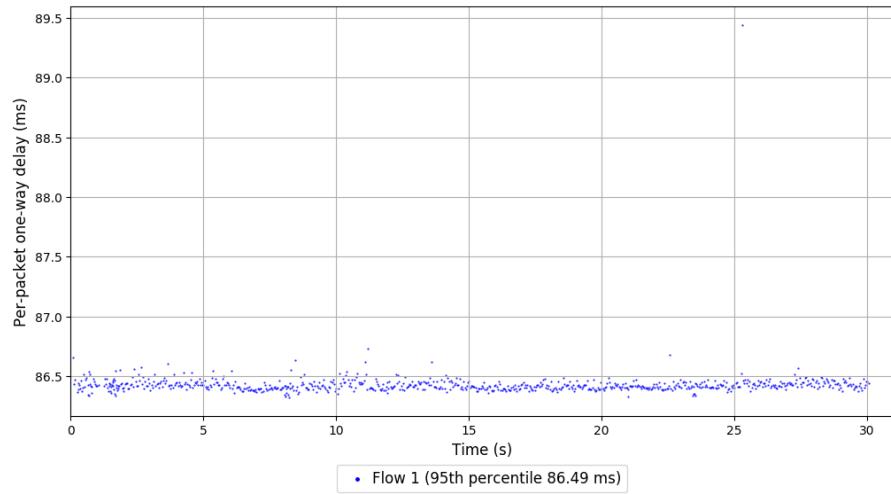
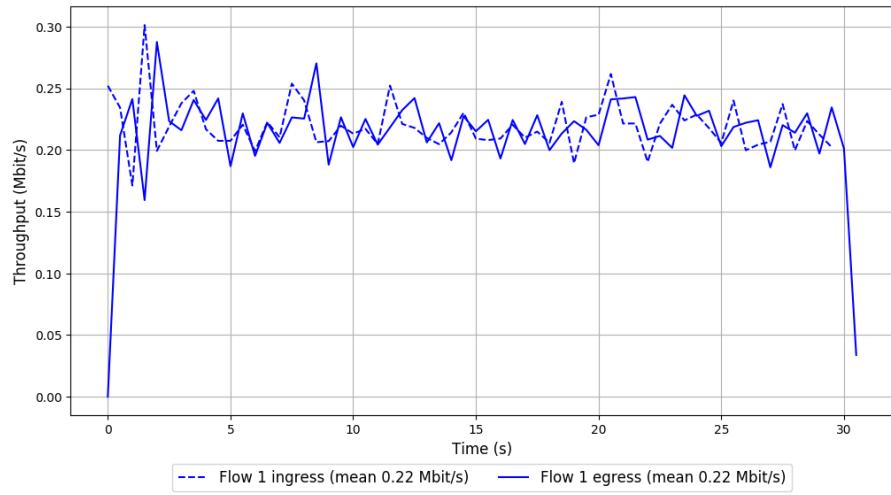


Run 5: Statistics of SCReAM

```
Start at: 2019-01-02 20:12:52
End at: 2019-01-02 20:13:22
Local clock offset: 3.357 ms
Remote clock offset: 4.065 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.493 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.493 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

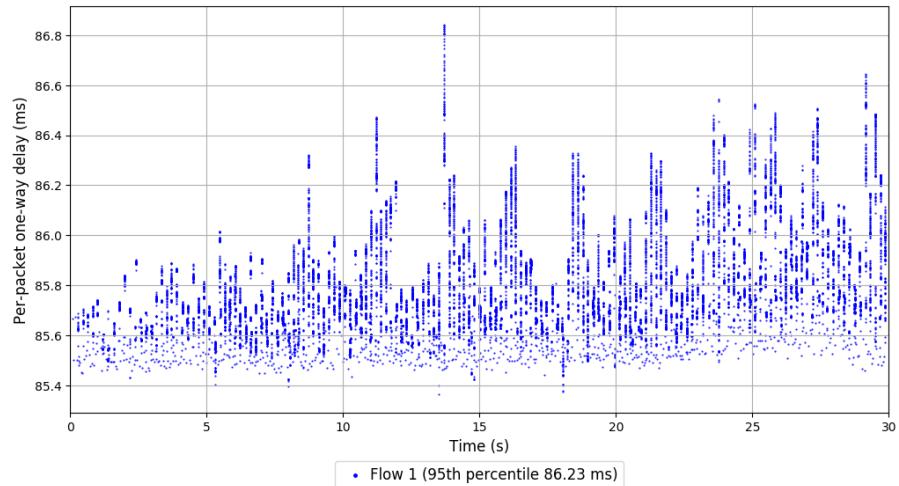
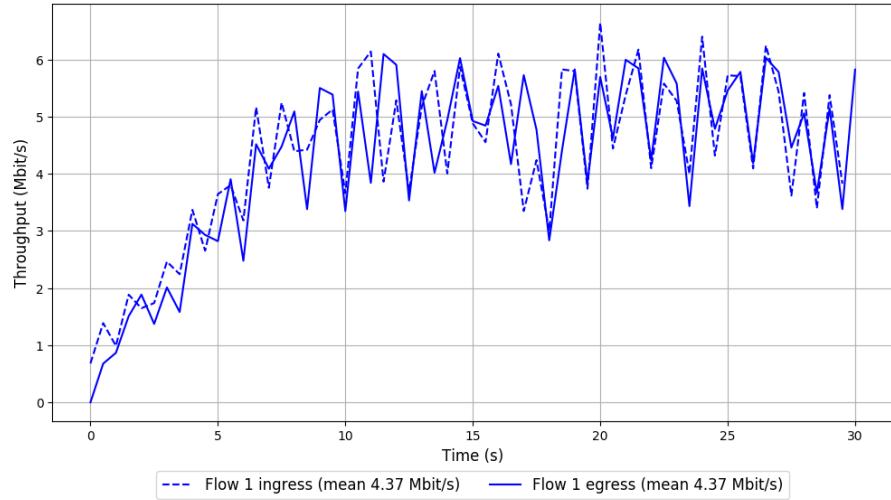


Run 1: Statistics of Sprout

```
Start at: 2019-01-02 18:14:16
End at: 2019-01-02 18:14:46
Local clock offset: 14.521 ms
Remote clock offset: 15.012 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.37 Mbit/s
95th percentile per-packet one-way delay: 86.232 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.37 Mbit/s
95th percentile per-packet one-way delay: 86.232 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

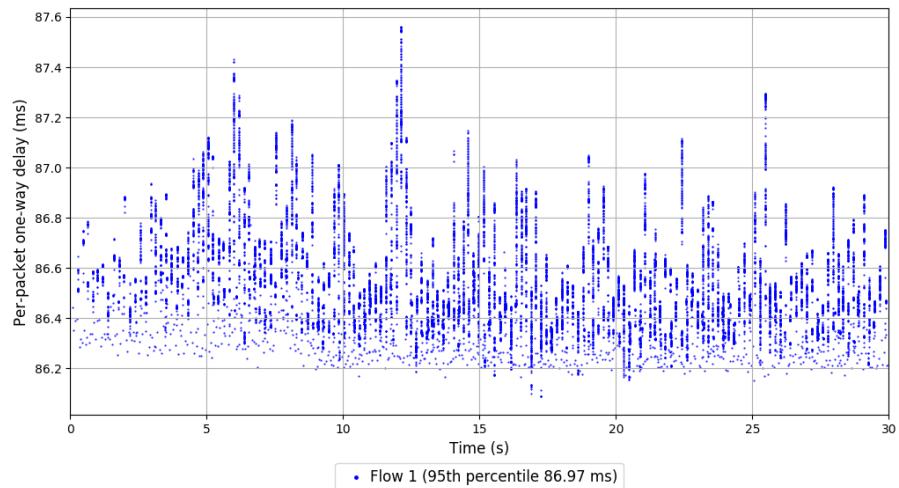
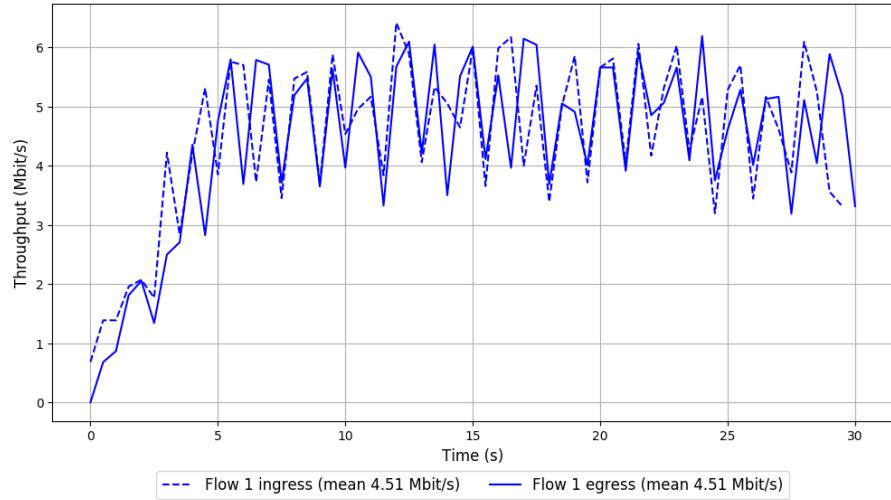


Run 2: Statistics of Sprout

```
Start at: 2019-01-02 18:42:49
End at: 2019-01-02 18:43:19
Local clock offset: 22.613 ms
Remote clock offset: 24.493 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.51 Mbit/s
95th percentile per-packet one-way delay: 86.973 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.51 Mbit/s
95th percentile per-packet one-way delay: 86.973 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

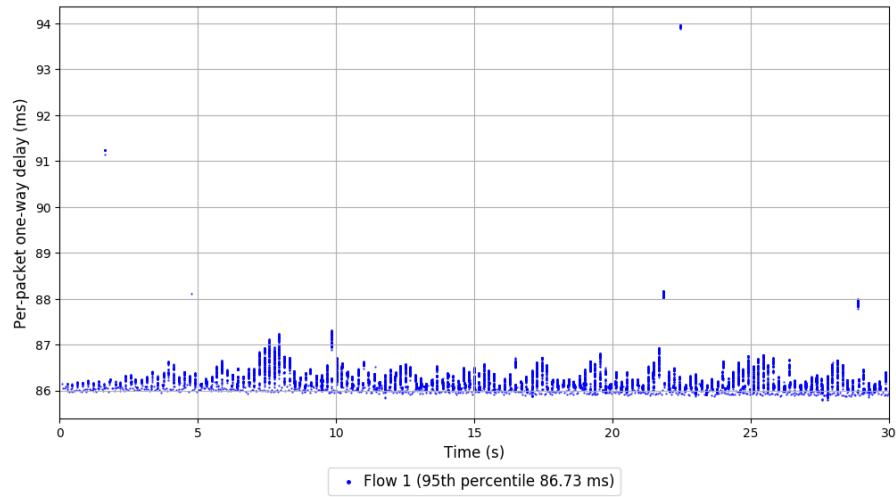
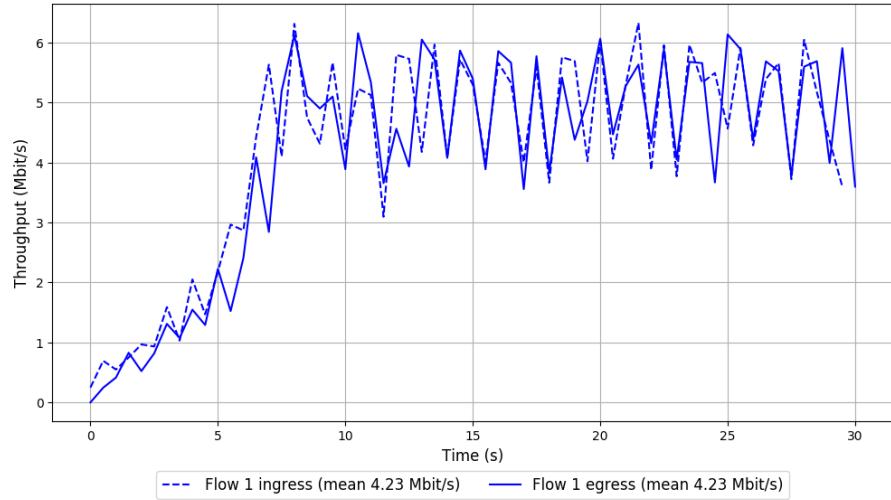


Run 3: Statistics of Sprout

```
Start at: 2019-01-02 19:10:57
End at: 2019-01-02 19:11:27
Local clock offset: 17.098 ms
Remote clock offset: 21.502 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 86.728 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 86.728 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

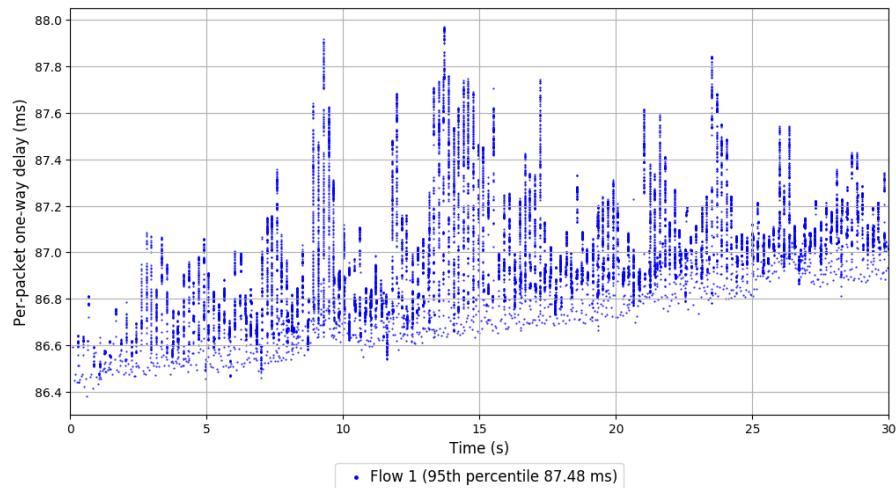
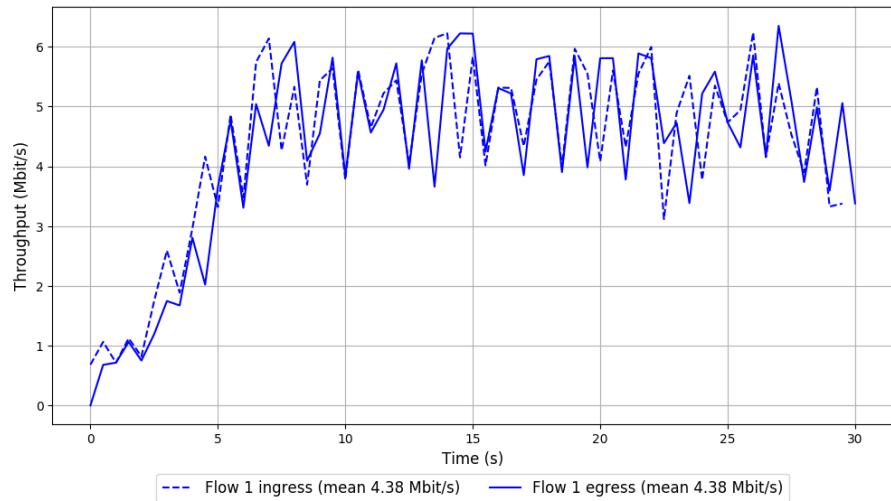


Run 4: Statistics of Sprout

```
Start at: 2019-01-02 19:38:59
End at: 2019-01-02 19:39:29
Local clock offset: 7.815 ms
Remote clock offset: 16.938 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.38 Mbit/s
95th percentile per-packet one-way delay: 87.483 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.38 Mbit/s
95th percentile per-packet one-way delay: 87.483 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

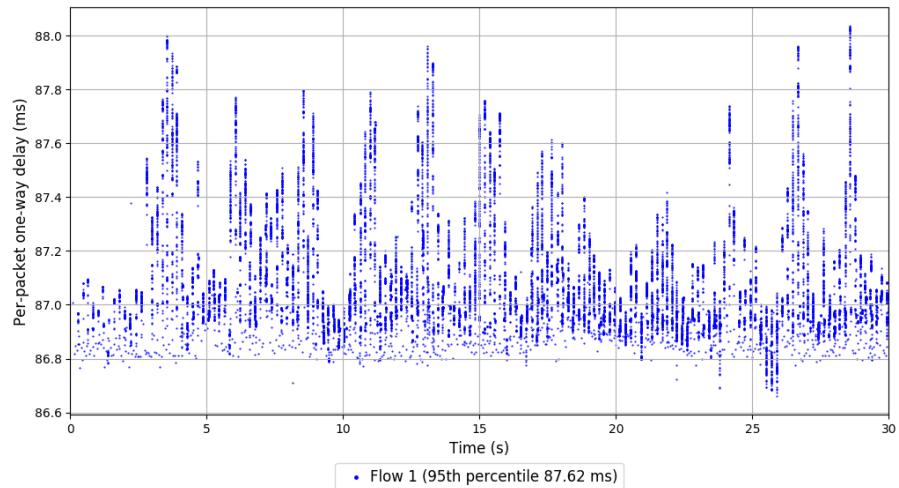
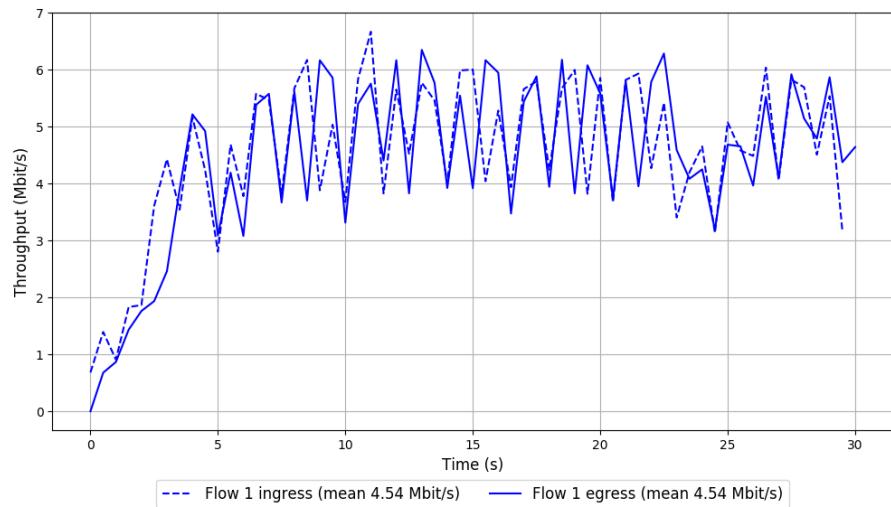


Run 5: Statistics of Sprout

```
Start at: 2019-01-02 20:07:43
End at: 2019-01-02 20:08:13
Local clock offset: 4.412 ms
Remote clock offset: 4.959 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.54 Mbit/s
95th percentile per-packet one-way delay: 87.617 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.54 Mbit/s
95th percentile per-packet one-way delay: 87.617 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

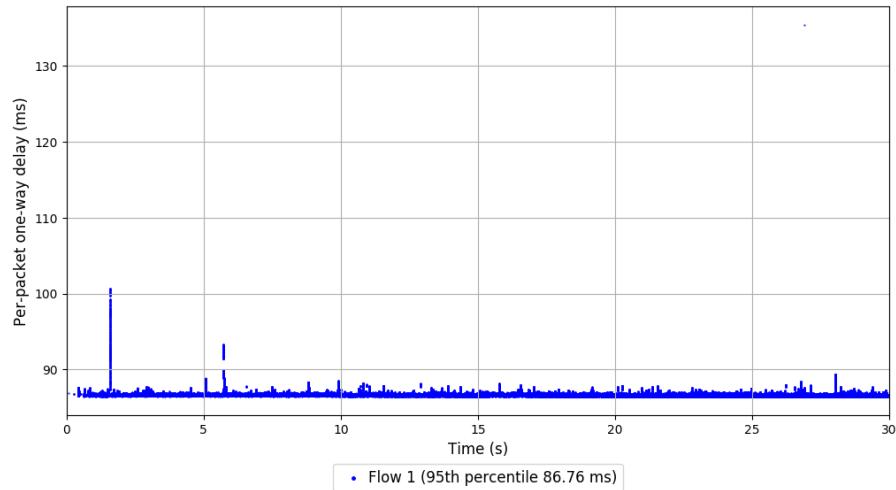
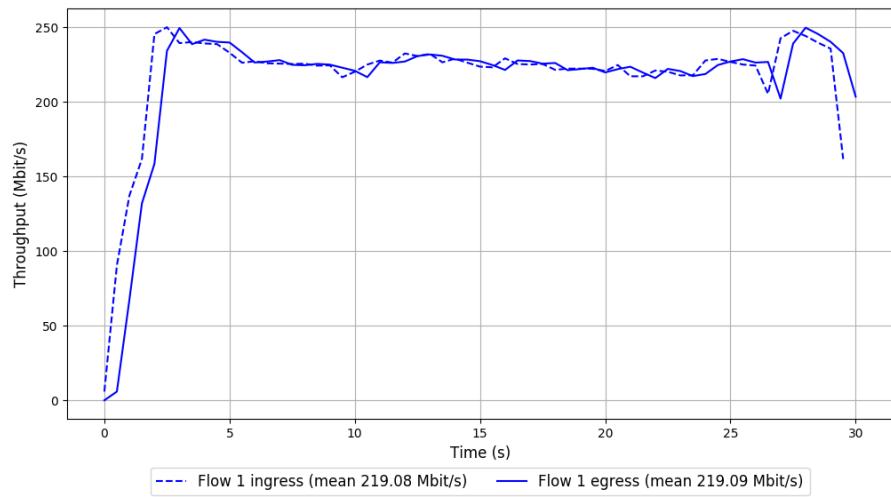


Run 1: Statistics of TaoVA-100x

```
Start at: 2019-01-02 18:09:45
End at: 2019-01-02 18:10:15
Local clock offset: 15.965 ms
Remote clock offset: 17.095 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.09 Mbit/s
95th percentile per-packet one-way delay: 86.762 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 219.09 Mbit/s
95th percentile per-packet one-way delay: 86.762 ms
Loss rate: 0.00%
```

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

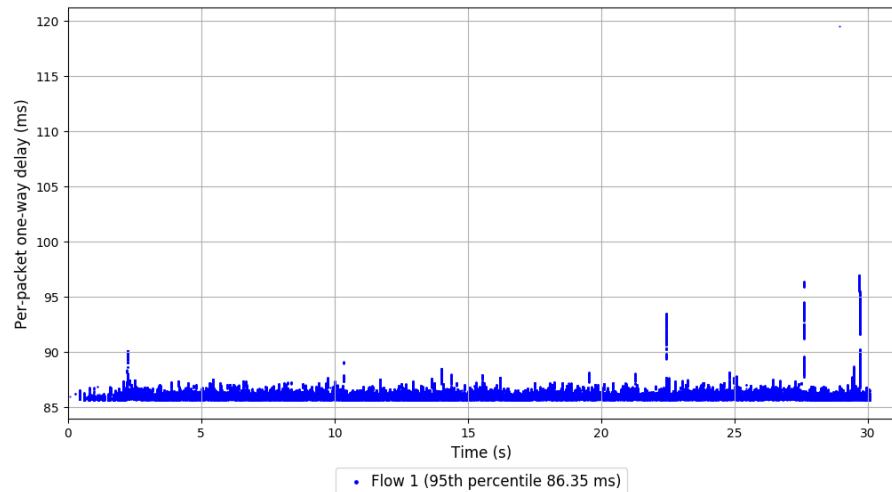
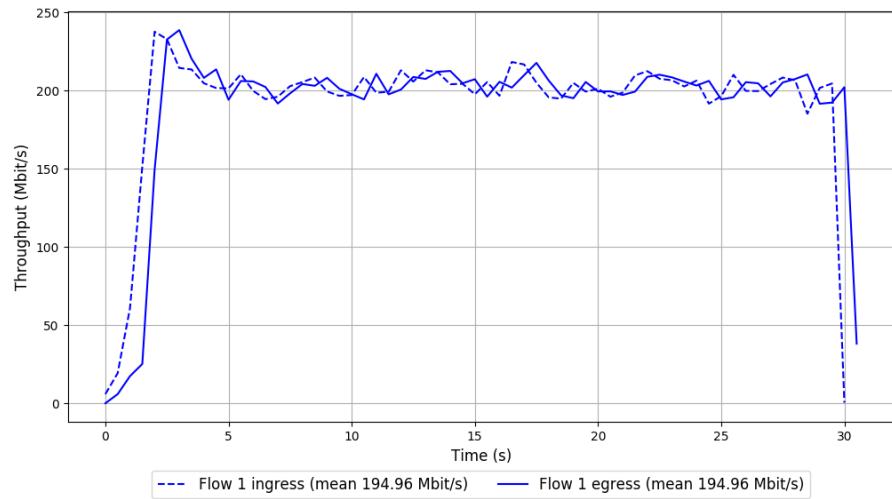


Run 2: Statistics of TaoVA-100x

```
Start at: 2019-01-02 18:38:17
End at: 2019-01-02 18:38:47
Local clock offset: 21.148 ms
Remote clock offset: 22.372 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 194.96 Mbit/s
95th percentile per-packet one-way delay: 86.348 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 194.96 Mbit/s
95th percentile per-packet one-way delay: 86.348 ms
Loss rate: 0.00%
```

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

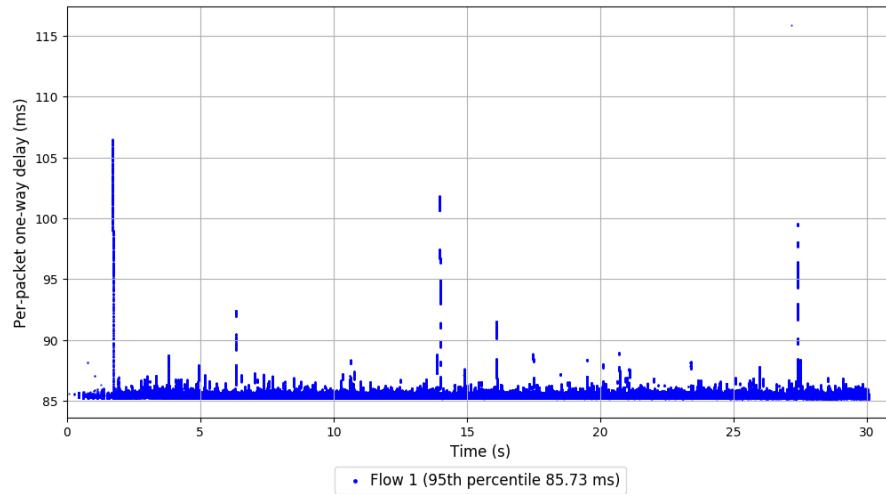
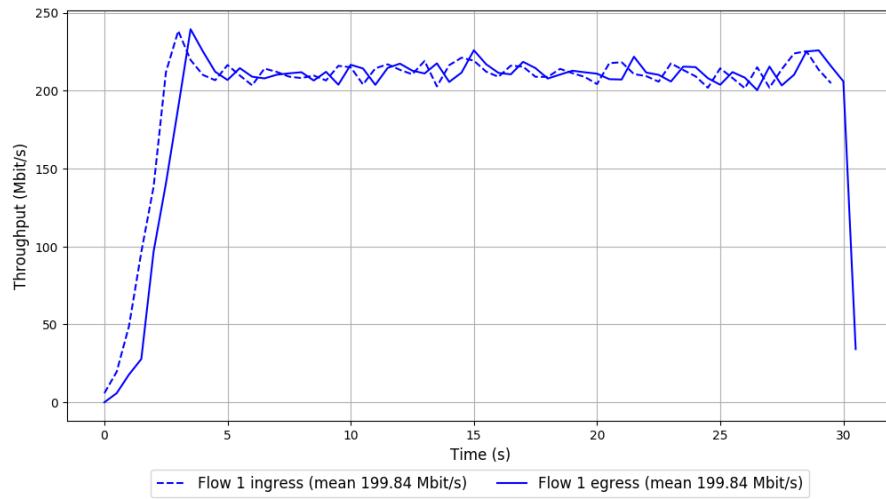


Run 3: Statistics of TaoVA-100x

```
Start at: 2019-01-02 19:06:37
End at: 2019-01-02 19:07:07
Local clock offset: 26.721 ms
Remote clock offset: 29.473 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 199.84 Mbit/s
95th percentile per-packet one-way delay: 85.733 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.84 Mbit/s
95th percentile per-packet one-way delay: 85.733 ms
Loss rate: 0.00%
```

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

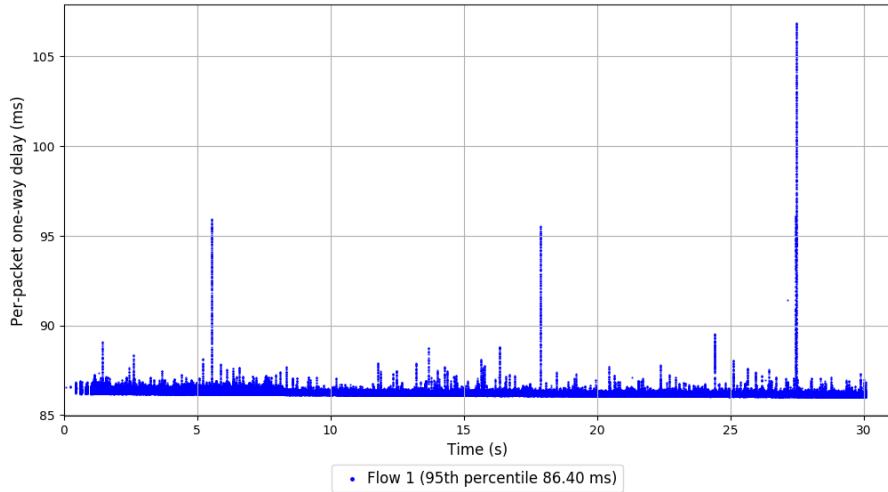
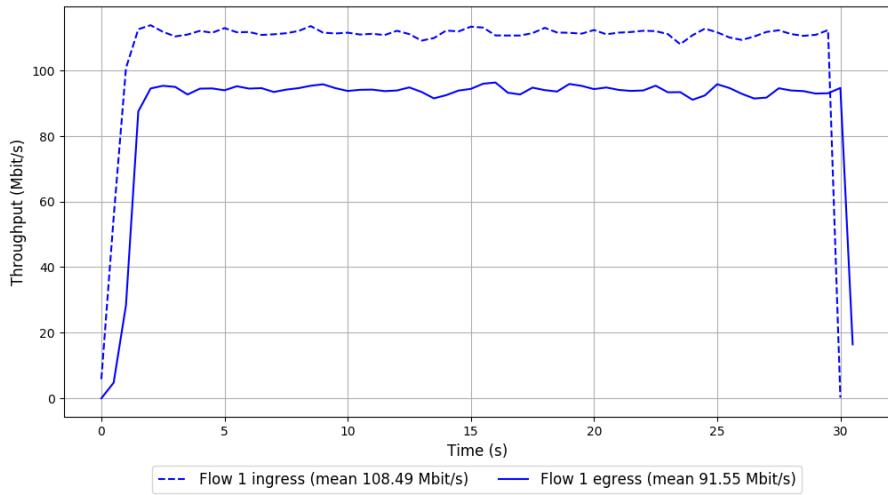


Run 4: Statistics of TaoVA-100x

```
Start at: 2019-01-02 19:34:40
End at: 2019-01-02 19:35:10
Local clock offset: 10.443 ms
Remote clock offset: 21.849 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.55 Mbit/s
95th percentile per-packet one-way delay: 86.399 ms
Loss rate: 15.62%
-- Flow 1:
Average throughput: 91.55 Mbit/s
95th percentile per-packet one-way delay: 86.399 ms
Loss rate: 15.62%
```

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

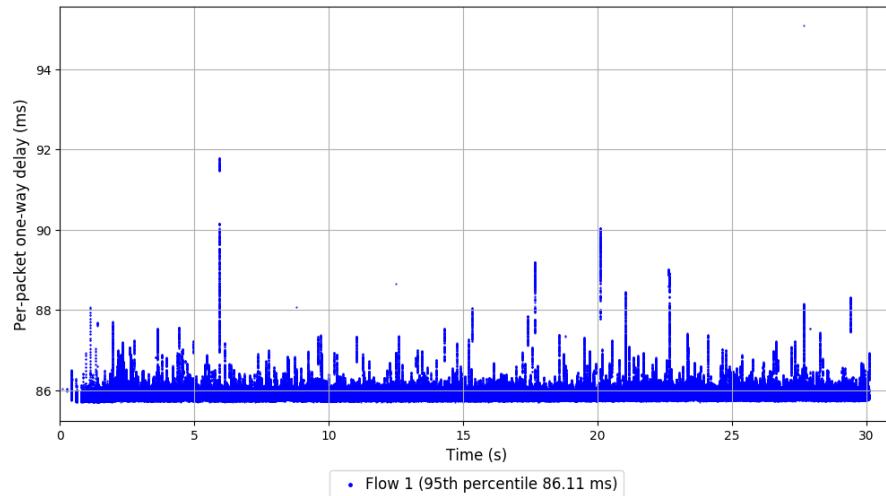
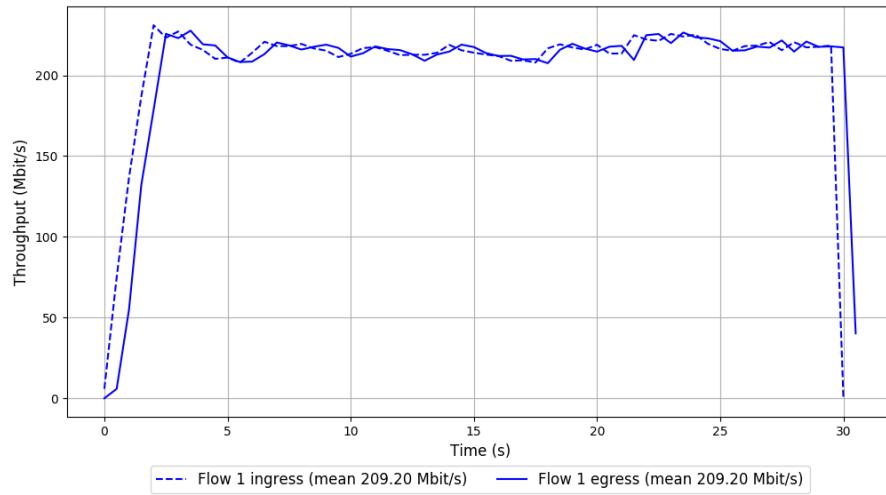


Run 5: Statistics of TaoVA-100x

```
Start at: 2019-01-02 20:03:09
End at: 2019-01-02 20:03:39
Local clock offset: 4.171 ms
Remote clock offset: 4.719 ms

# Below is generated by plot.py at 2019-01-02 22:13:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 209.20 Mbit/s
95th percentile per-packet one-way delay: 86.108 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 209.20 Mbit/s
95th percentile per-packet one-way delay: 86.108 ms
Loss rate: 0.00%
```

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

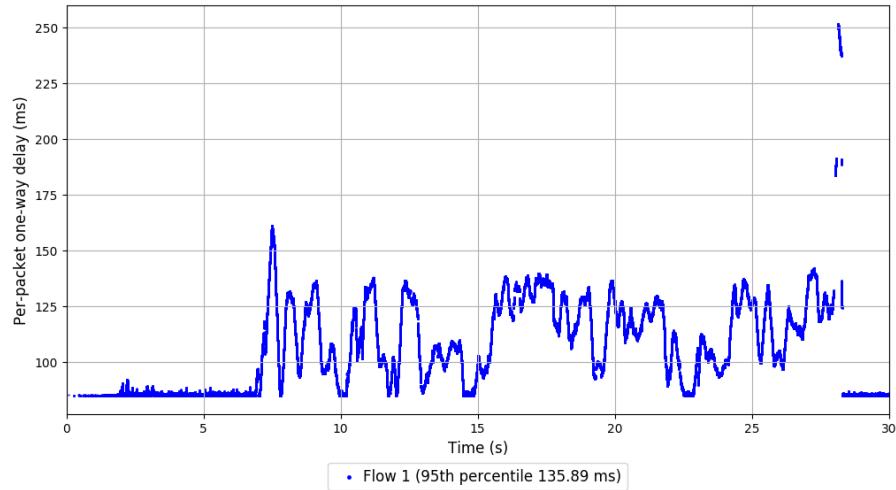
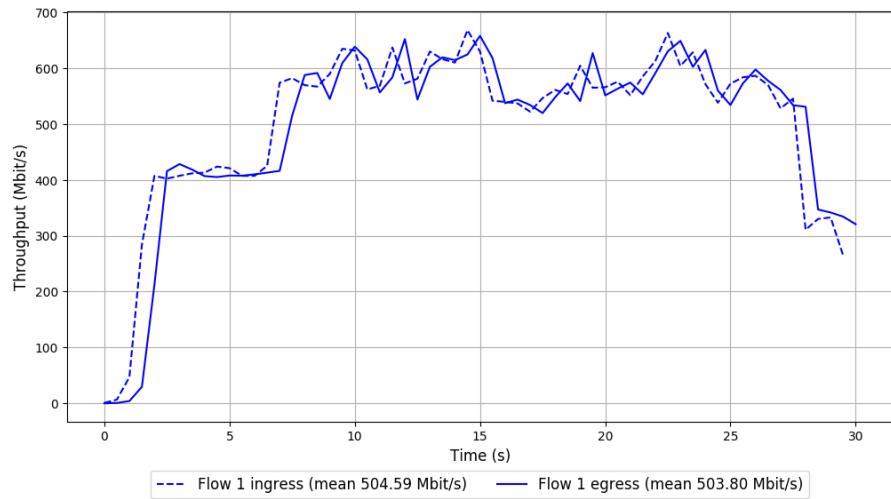


Run 1: Statistics of TCP Vegas

```
Start at: 2019-01-02 18:11:15
End at: 2019-01-02 18:11:45
Local clock offset: 18.814 ms
Remote clock offset: 19.124 ms

# Below is generated by plot.py at 2019-01-02 22:20:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 503.80 Mbit/s
95th percentile per-packet one-way delay: 135.887 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 503.80 Mbit/s
95th percentile per-packet one-way delay: 135.887 ms
Loss rate: 0.16%
```

Run 1: Report of TCP Vegas — Data Link

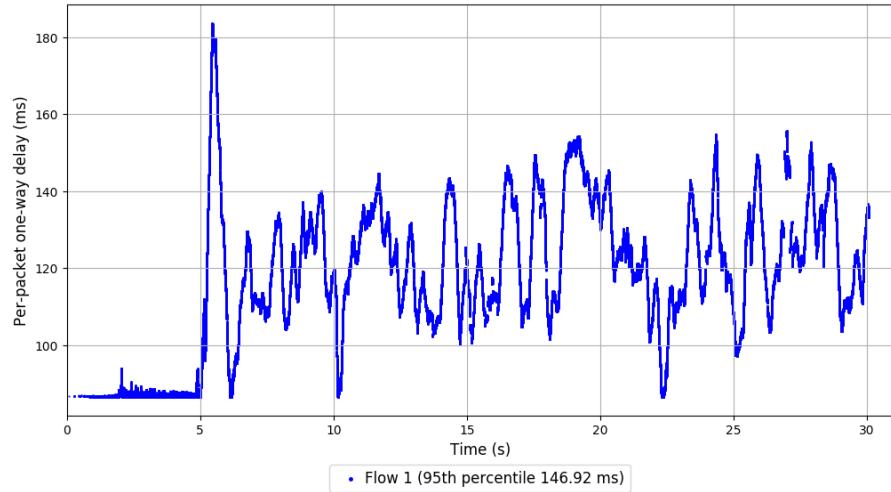
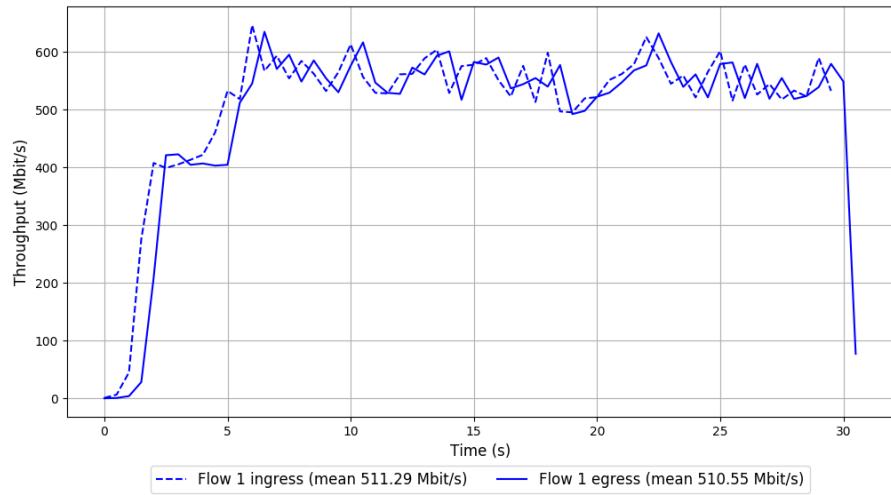


Run 2: Statistics of TCP Vegas

```
Start at: 2019-01-02 18:39:45
End at: 2019-01-02 18:40:15
Local clock offset: 21.299 ms
Remote clock offset: 22.872 ms

# Below is generated by plot.py at 2019-01-02 22:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 510.55 Mbit/s
95th percentile per-packet one-way delay: 146.924 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 510.55 Mbit/s
95th percentile per-packet one-way delay: 146.924 ms
Loss rate: 0.14%
```

Run 2: Report of TCP Vegas — Data Link

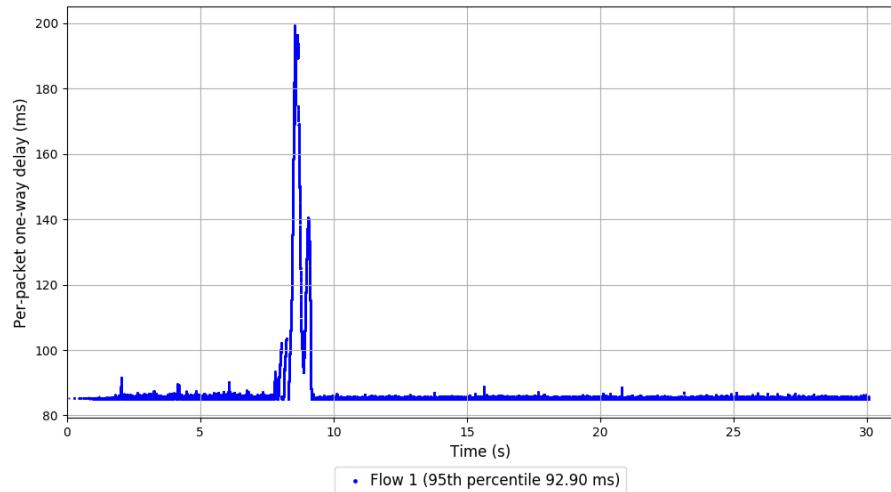
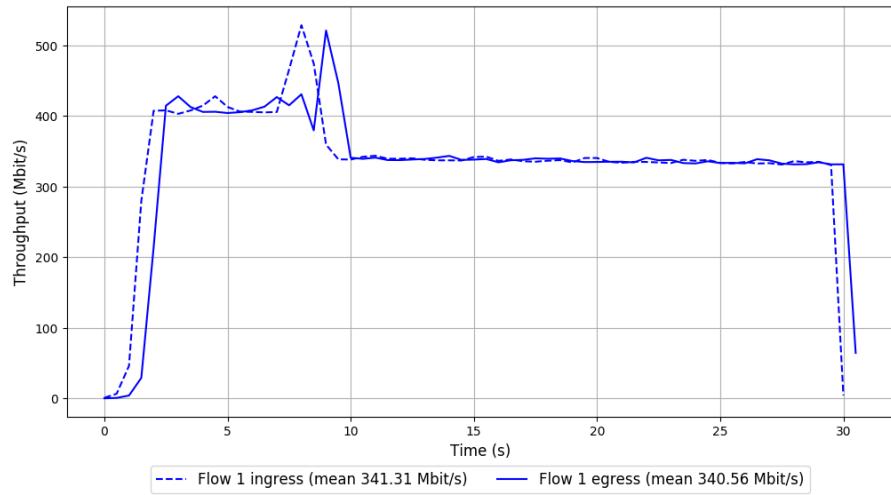


Run 3: Statistics of TCP Vegas

```
Start at: 2019-01-02 19:08:05
End at: 2019-01-02 19:08:35
Local clock offset: 23.514 ms
Remote clock offset: 26.201 ms

# Below is generated by plot.py at 2019-01-02 22:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.56 Mbit/s
95th percentile per-packet one-way delay: 92.904 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 340.56 Mbit/s
95th percentile per-packet one-way delay: 92.904 ms
Loss rate: 0.22%
```

Run 3: Report of TCP Vegas — Data Link

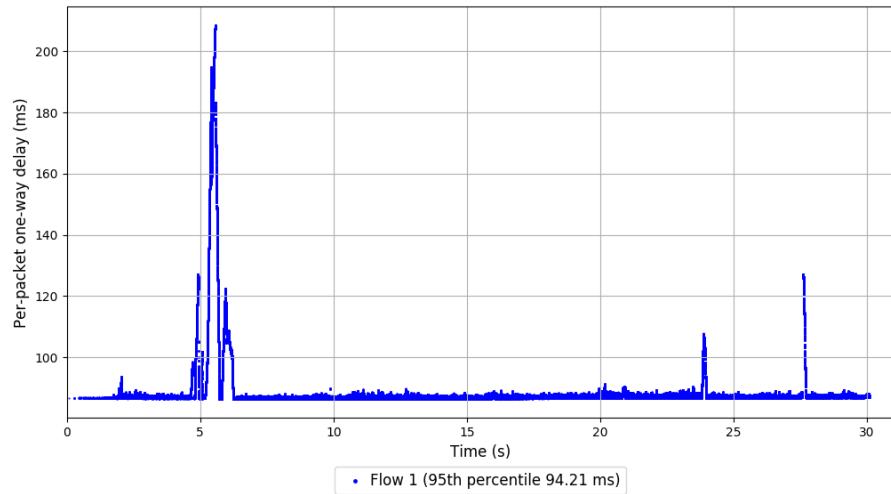
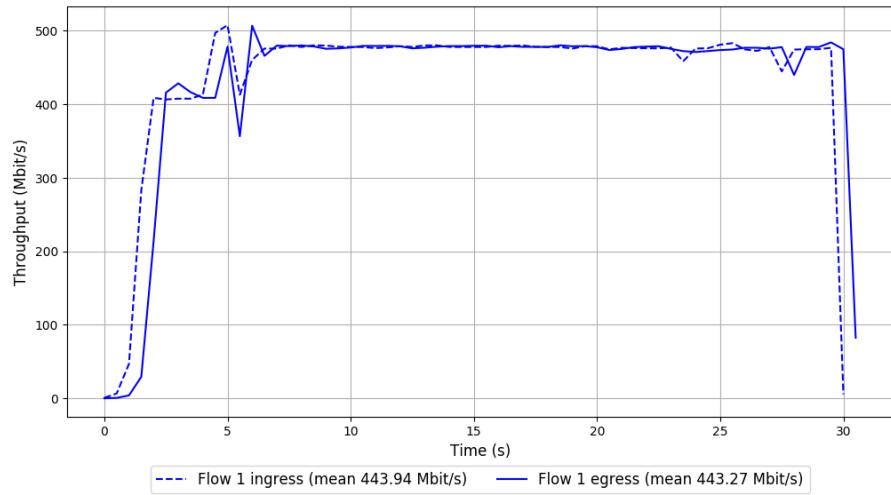


Run 4: Statistics of TCP Vegas

```
Start at: 2019-01-02 19:35:59
End at: 2019-01-02 19:36:29
Local clock offset: 10.221 ms
Remote clock offset: 22.486 ms

# Below is generated by plot.py at 2019-01-02 22:22:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 443.27 Mbit/s
95th percentile per-packet one-way delay: 94.212 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 443.27 Mbit/s
95th percentile per-packet one-way delay: 94.212 ms
Loss rate: 0.15%
```

Run 4: Report of TCP Vegas — Data Link

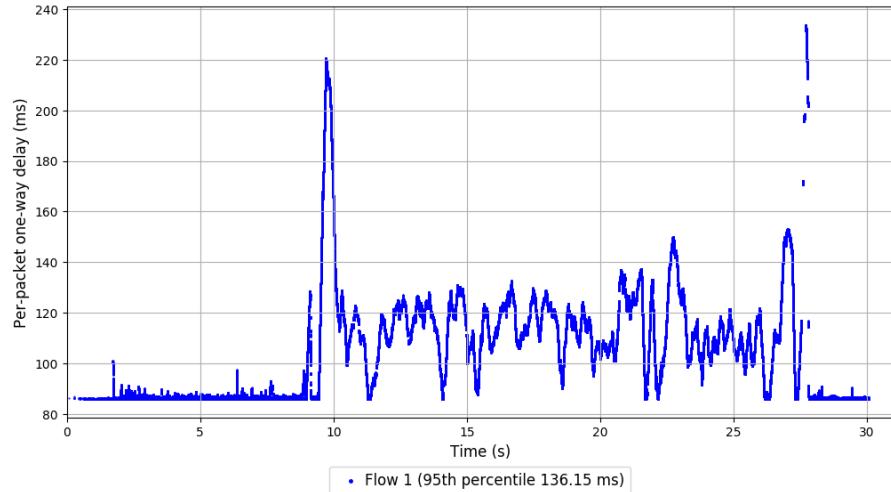
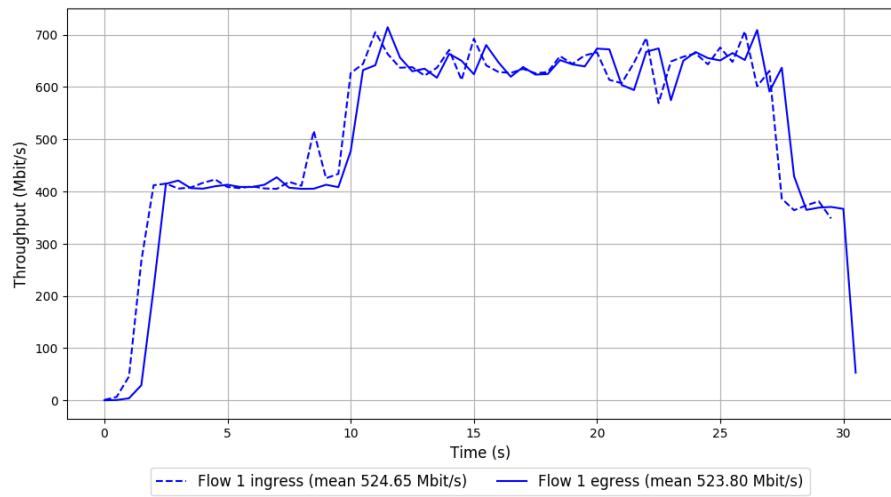


Run 5: Statistics of TCP Vegas

```
Start at: 2019-01-02 20:04:39
End at: 2019-01-02 20:05:09
Local clock offset: 4.516 ms
Remote clock offset: 4.768 ms

# Below is generated by plot.py at 2019-01-02 22:24:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 523.80 Mbit/s
95th percentile per-packet one-way delay: 136.146 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 523.80 Mbit/s
95th percentile per-packet one-way delay: 136.146 ms
Loss rate: 0.16%
```

Run 5: Report of TCP Vegas — Data Link

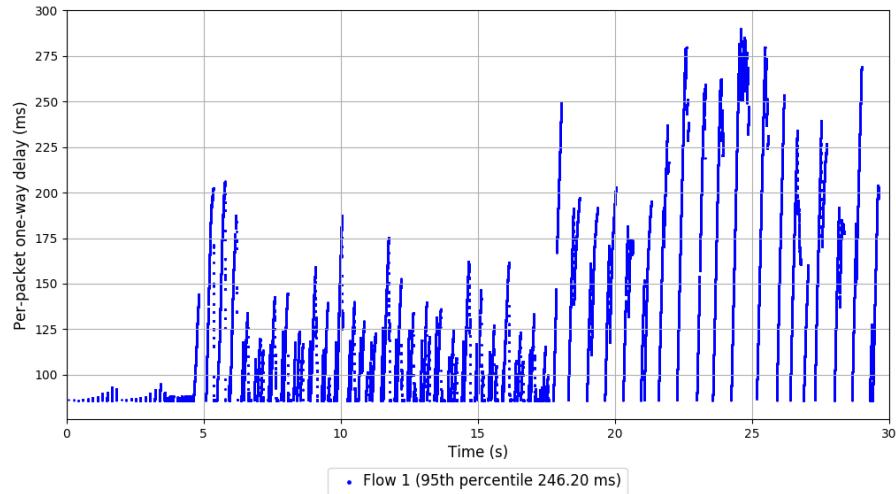
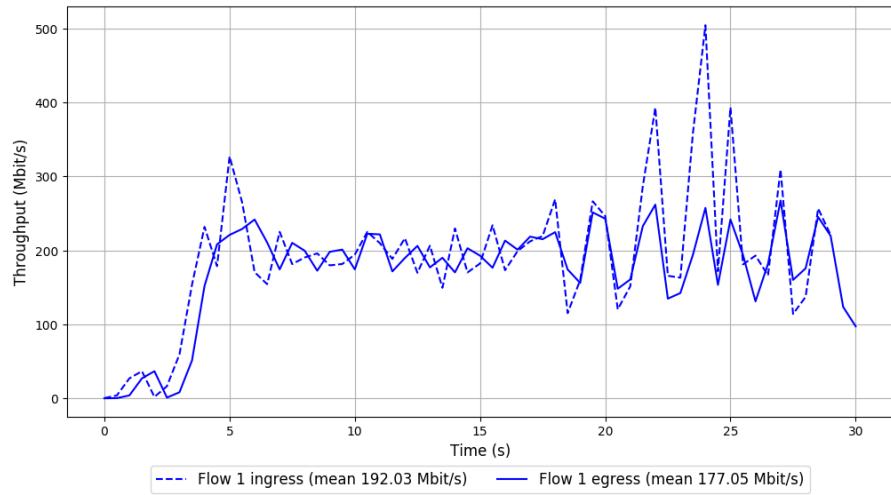


Run 1: Statistics of Verus

```
Start at: 2019-01-02 18:12:50
End at: 2019-01-02 18:13:20
Local clock offset: 15.259 ms
Remote clock offset: 16.222 ms

# Below is generated by plot.py at 2019-01-02 22:24:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 177.05 Mbit/s
95th percentile per-packet one-way delay: 246.197 ms
Loss rate: 7.45%
-- Flow 1:
Average throughput: 177.05 Mbit/s
95th percentile per-packet one-way delay: 246.197 ms
Loss rate: 7.45%
```

Run 1: Report of Verus — Data Link

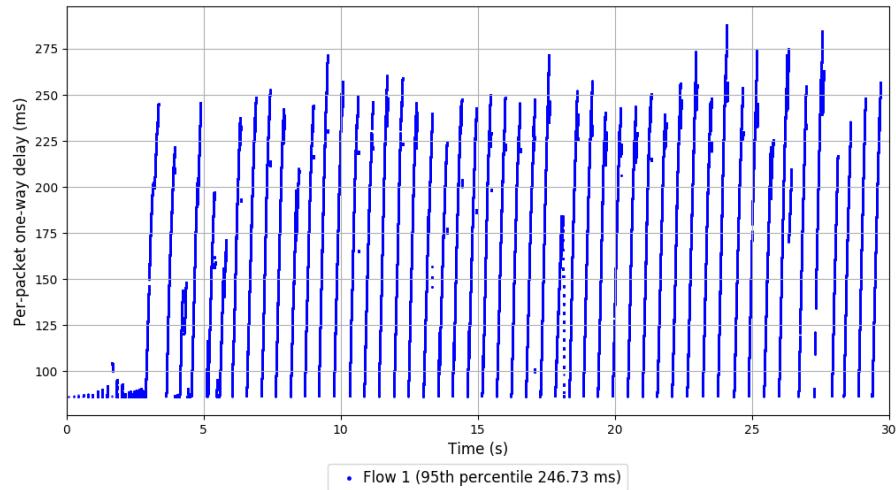
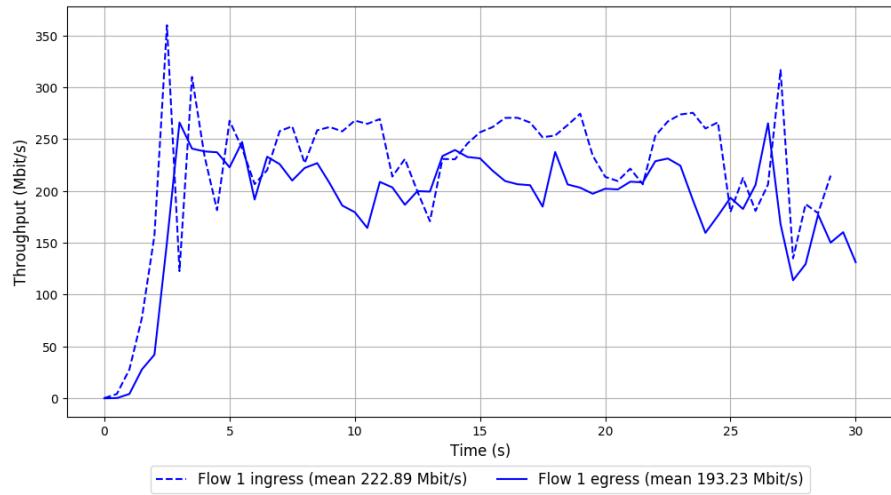


Run 2: Statistics of Verus

```
Start at: 2019-01-02 18:41:21
End at: 2019-01-02 18:41:51
Local clock offset: 21.849 ms
Remote clock offset: 23.613 ms

# Below is generated by plot.py at 2019-01-02 22:24:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 193.23 Mbit/s
95th percentile per-packet one-way delay: 246.732 ms
Loss rate: 12.81%
-- Flow 1:
Average throughput: 193.23 Mbit/s
95th percentile per-packet one-way delay: 246.732 ms
Loss rate: 12.81%
```

Run 2: Report of Verus — Data Link

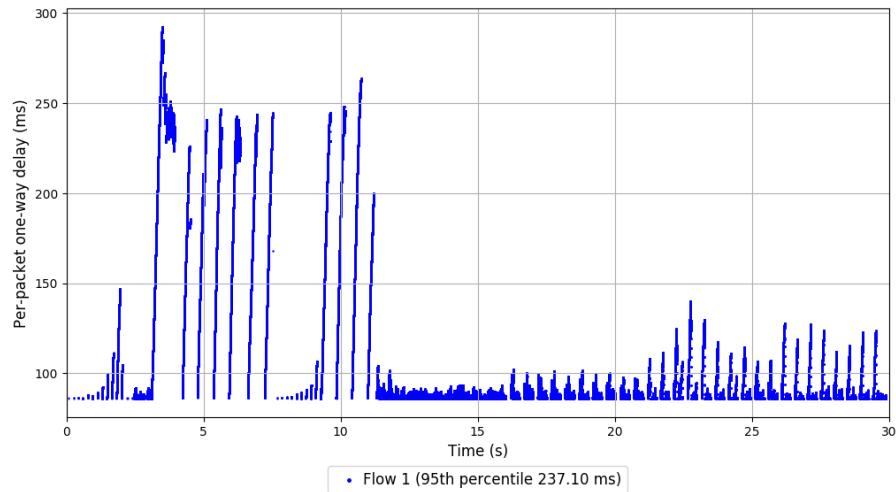
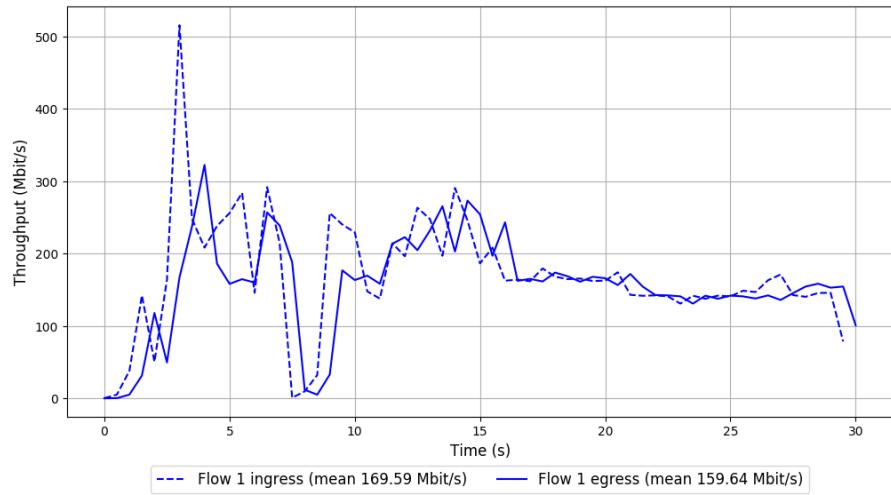


Run 3: Statistics of Verus

```
Start at: 2019-01-02 19:09:33
End at: 2019-01-02 19:10:03
Local clock offset: 19.913 ms
Remote clock offset: 23.722 ms

# Below is generated by plot.py at 2019-01-02 22:24:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 159.64 Mbit/s
95th percentile per-packet one-way delay: 237.101 ms
Loss rate: 5.87%
-- Flow 1:
Average throughput: 159.64 Mbit/s
95th percentile per-packet one-way delay: 237.101 ms
Loss rate: 5.87%
```

Run 3: Report of Verus — Data Link

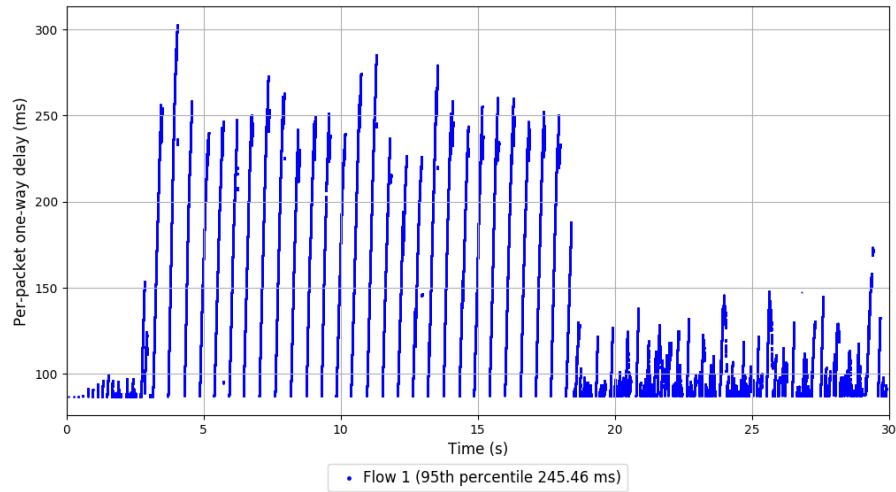
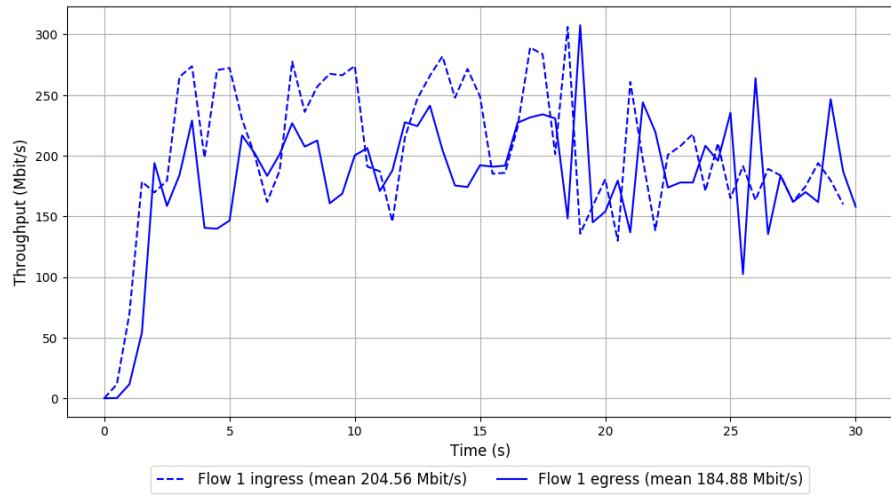


Run 4: Statistics of Verus

```
Start at: 2019-01-02 19:37:31
End at: 2019-01-02 19:38:01
Local clock offset: 9.095 ms
Remote clock offset: 20.019 ms

# Below is generated by plot.py at 2019-01-02 22:27:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.88 Mbit/s
95th percentile per-packet one-way delay: 245.455 ms
Loss rate: 9.61%
-- Flow 1:
Average throughput: 184.88 Mbit/s
95th percentile per-packet one-way delay: 245.455 ms
Loss rate: 9.61%
```

Run 4: Report of Verus — Data Link

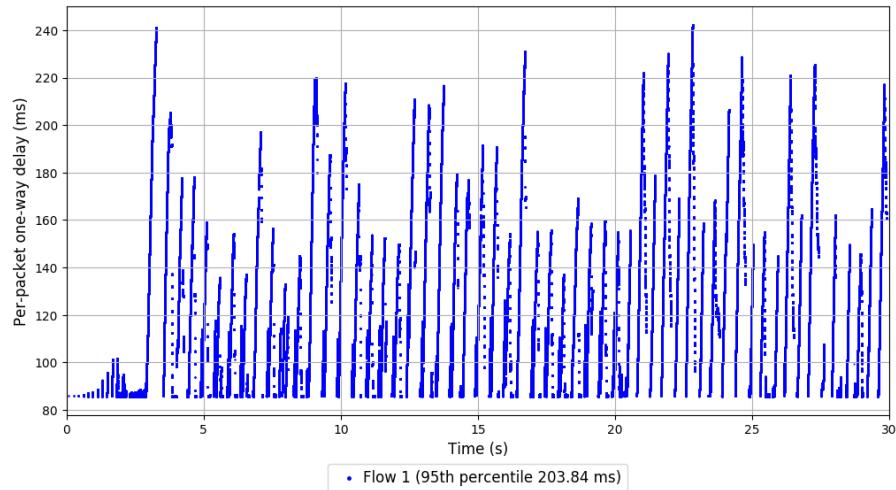
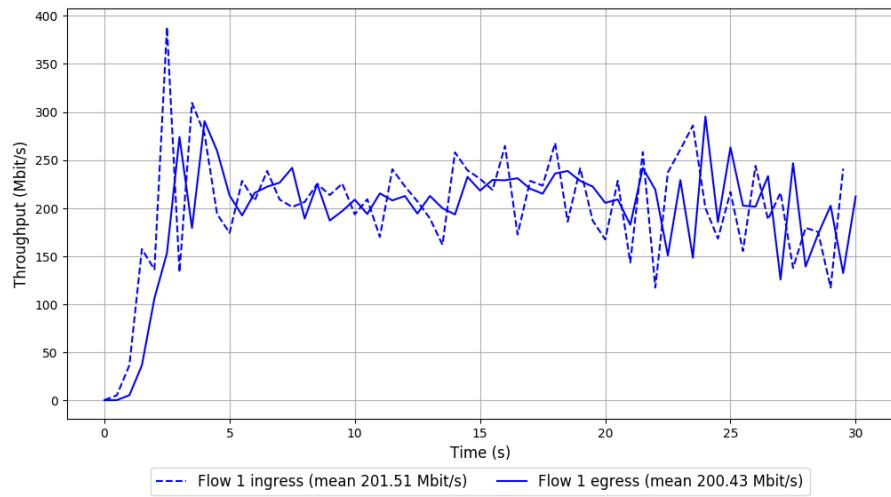


Run 5: Statistics of Verus

```
Start at: 2019-01-02 20:06:14
End at: 2019-01-02 20:06:44
Local clock offset: 4.532 ms
Remote clock offset: 4.842 ms

# Below is generated by plot.py at 2019-01-02 22:28:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 200.43 Mbit/s
95th percentile per-packet one-way delay: 203.835 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 200.43 Mbit/s
95th percentile per-packet one-way delay: 203.835 ms
Loss rate: 0.53%
```

Run 5: Report of Verus — Data Link

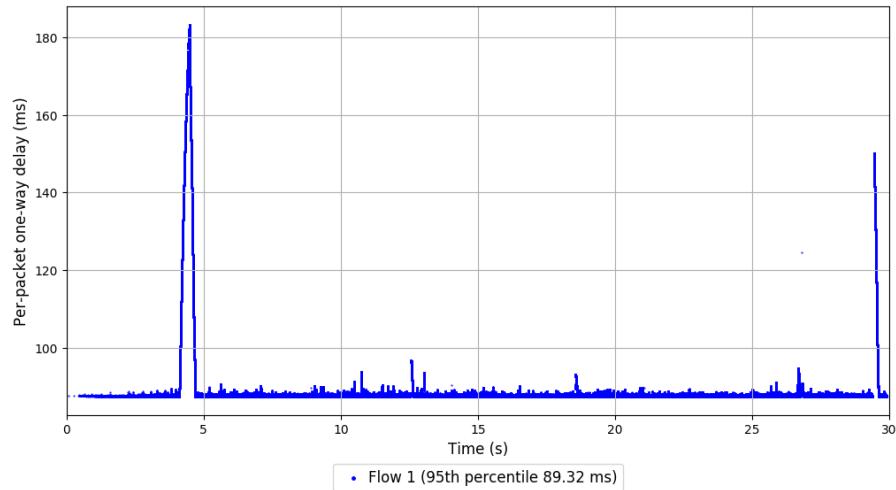
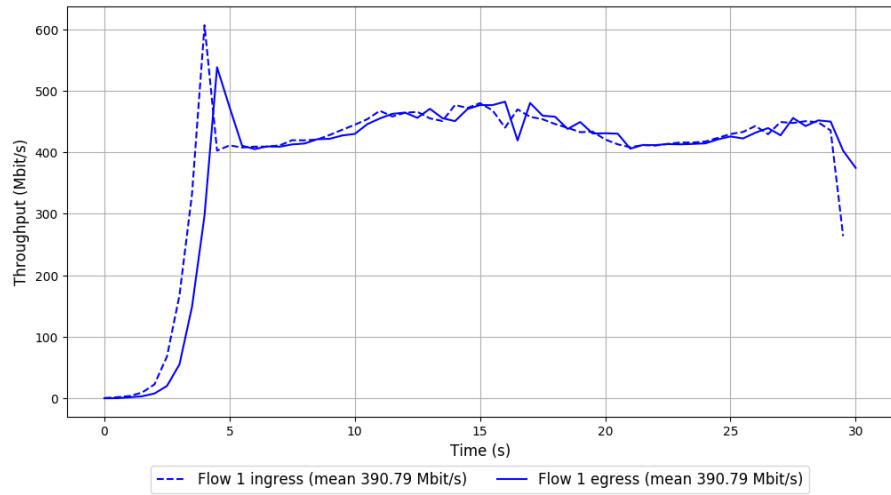


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2019-01-02 18:23:41
End at: 2019-01-02 18:24:11
Local clock offset: 21.006 ms
Remote clock offset: 23.358 ms

# Below is generated by plot.py at 2019-01-02 22:29:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 390.79 Mbit/s
95th percentile per-packet one-way delay: 89.322 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 390.79 Mbit/s
95th percentile per-packet one-way delay: 89.322 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

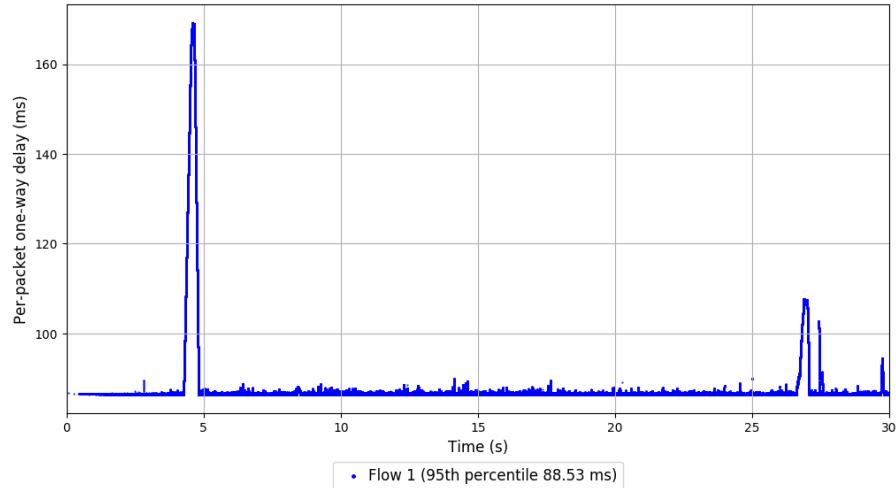
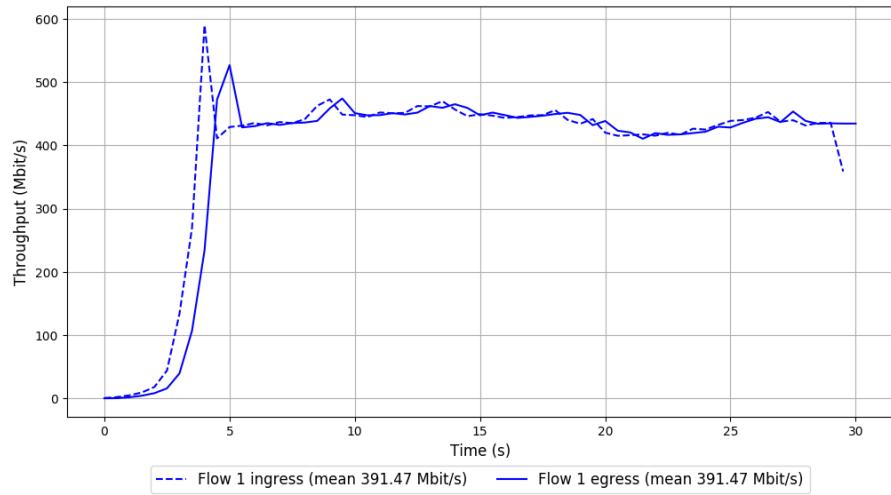


Run 2: Statistics of PCC-Vivace

```
Start at: 2019-01-02 18:52:17
End at: 2019-01-02 18:52:47
Local clock offset: 30.815 ms
Remote clock offset: 33.193 ms

# Below is generated by plot.py at 2019-01-02 22:29:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 391.47 Mbit/s
95th percentile per-packet one-way delay: 88.534 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 391.47 Mbit/s
95th percentile per-packet one-way delay: 88.534 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link

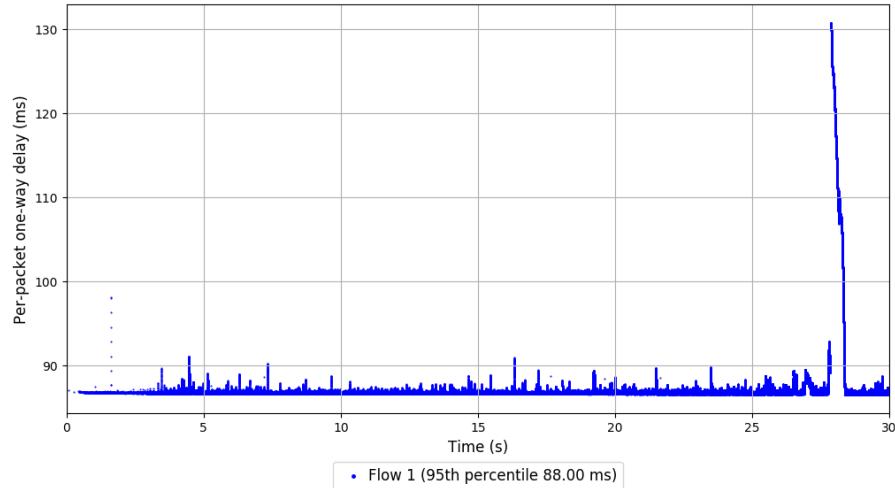
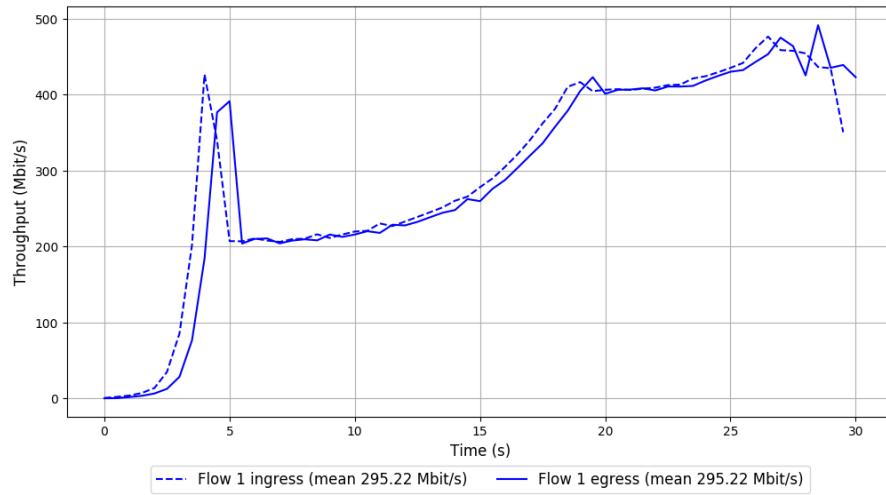


Run 3: Statistics of PCC-Vivace

```
Start at: 2019-01-02 19:20:18
End at: 2019-01-02 19:20:48
Local clock offset: 9.897 ms
Remote clock offset: 16.916 ms

# Below is generated by plot.py at 2019-01-02 22:29:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 295.22 Mbit/s
95th percentile per-packet one-way delay: 87.997 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 295.22 Mbit/s
95th percentile per-packet one-way delay: 87.997 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link

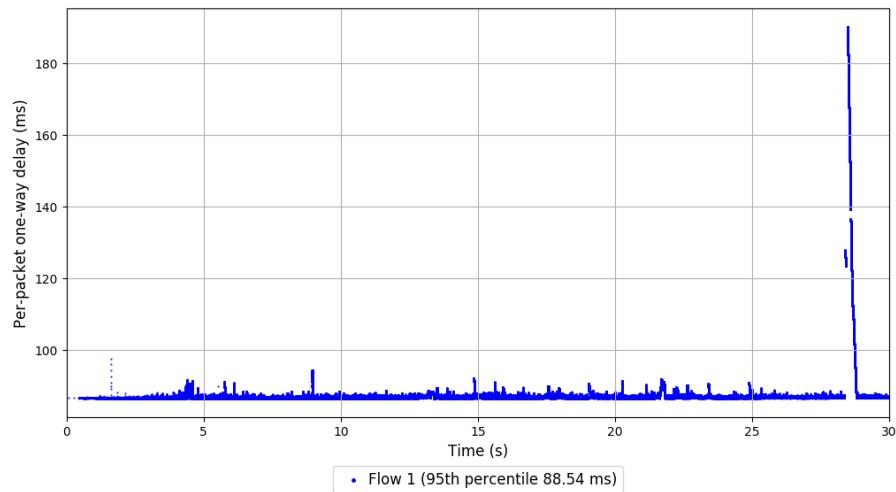
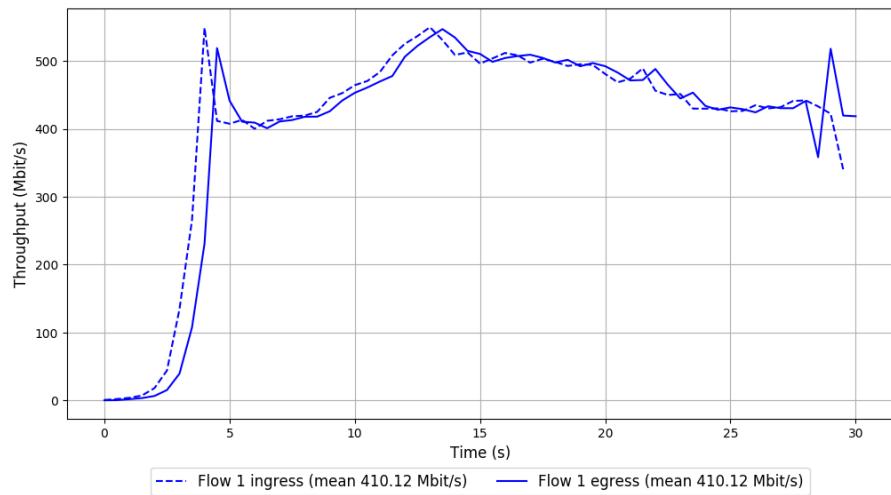


Run 4: Statistics of PCC-Vivace

```
Start at: 2019-01-02 19:48:26
End at: 2019-01-02 19:48:56
Local clock offset: 4.12 ms
Remote clock offset: 7.16 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 410.12 Mbit/s
95th percentile per-packet one-way delay: 88.541 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 410.12 Mbit/s
95th percentile per-packet one-way delay: 88.541 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

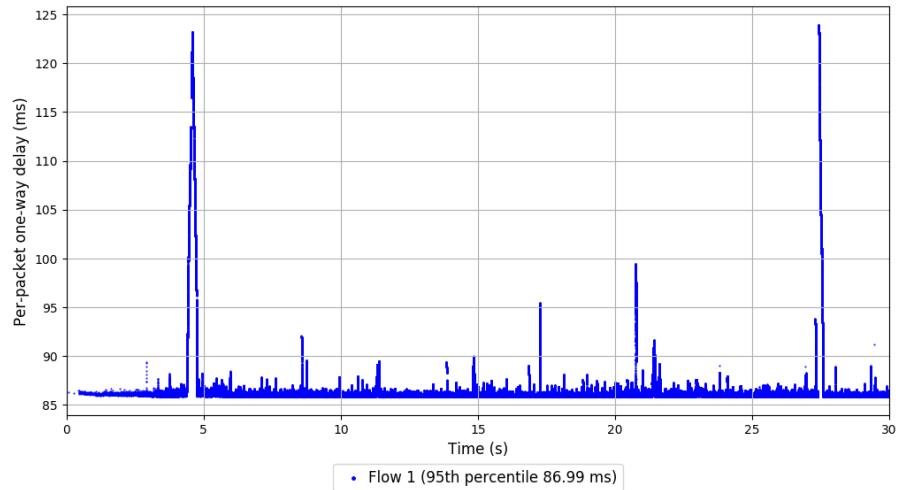
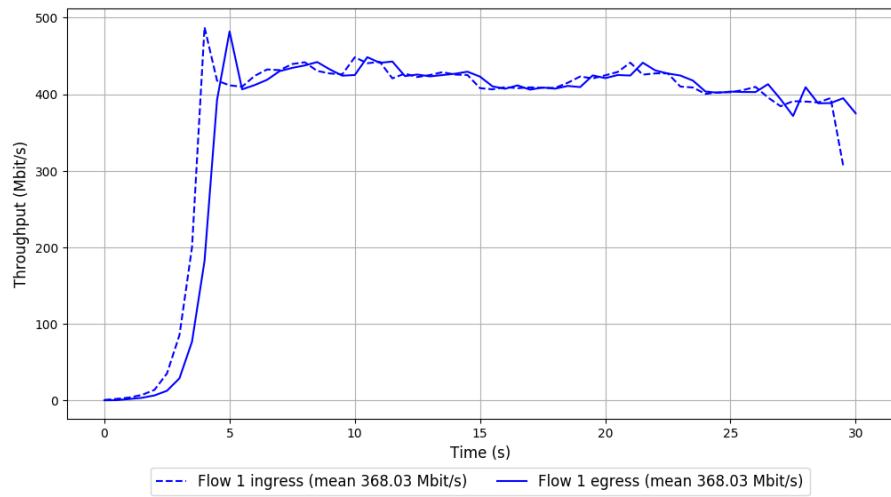


Run 5: Statistics of PCC-Vivace

```
Start at: 2019-01-02 20:17:05
End at: 2019-01-02 20:17:35
Local clock offset: 2.48 ms
Remote clock offset: 2.8 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 368.03 Mbit/s
95th percentile per-packet one-way delay: 86.990 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 368.03 Mbit/s
95th percentile per-packet one-way delay: 86.990 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

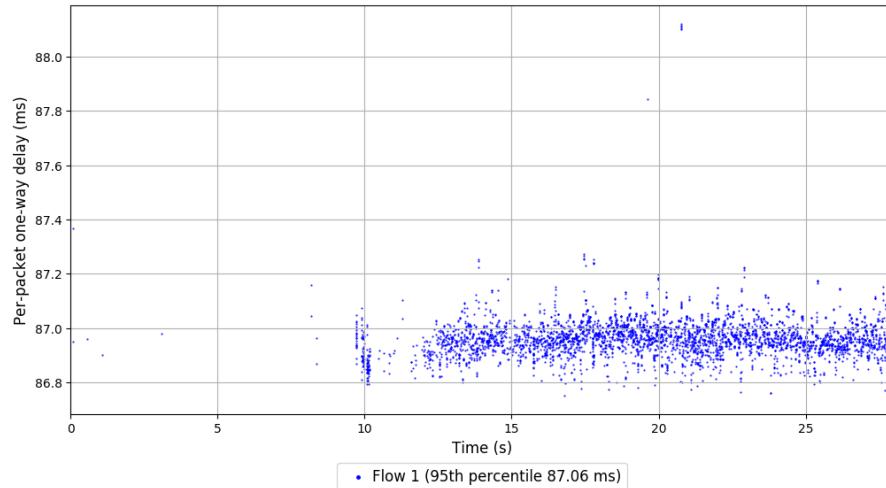
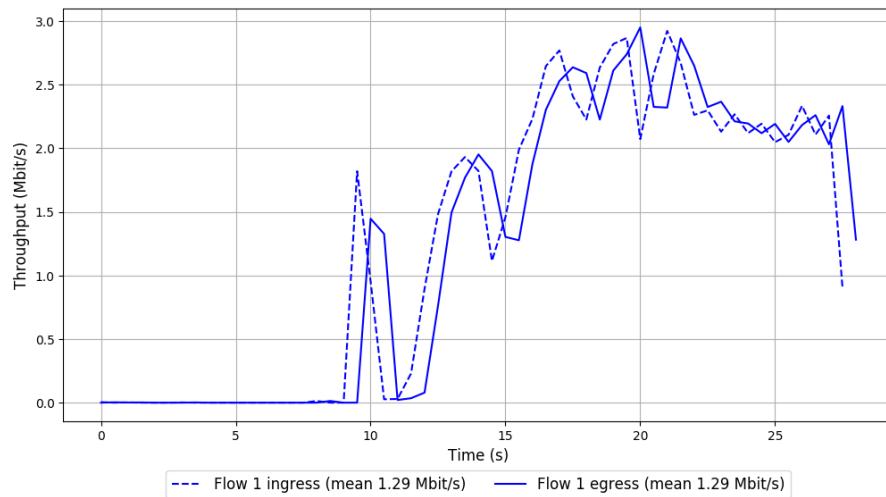


```
Run 1: Statistics of WebRTC media

Start at: 2019-01-02 18:18:17
End at: 2019-01-02 18:18:47
Local clock offset: 14.663 ms
Remote clock offset: 16.335 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 87.060 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 87.060 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

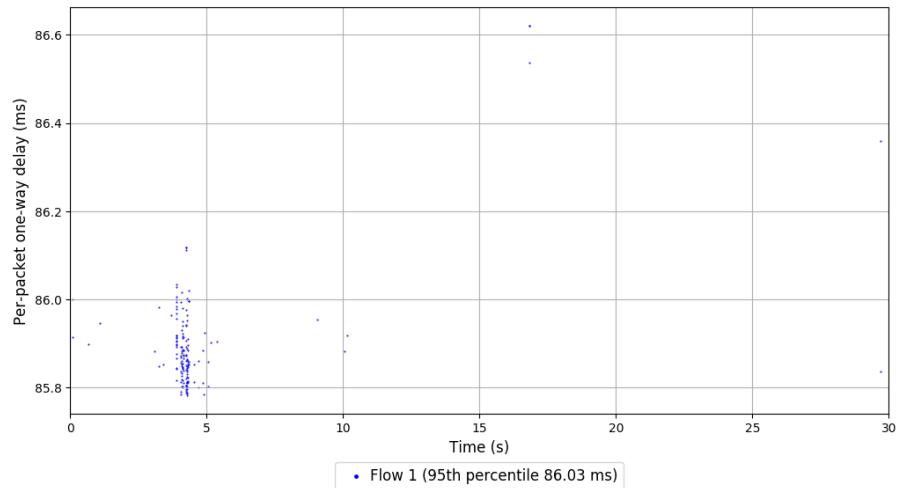
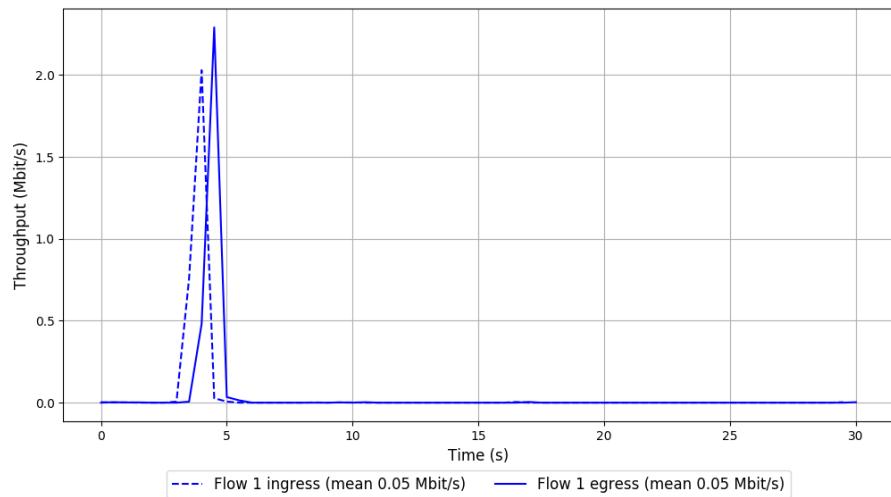


Run 2: Statistics of WebRTC media

```
Start at: 2019-01-02 18:46:51
End at: 2019-01-02 18:47:21
Local clock offset: 26.041 ms
Remote clock offset: 27.759 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.027 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

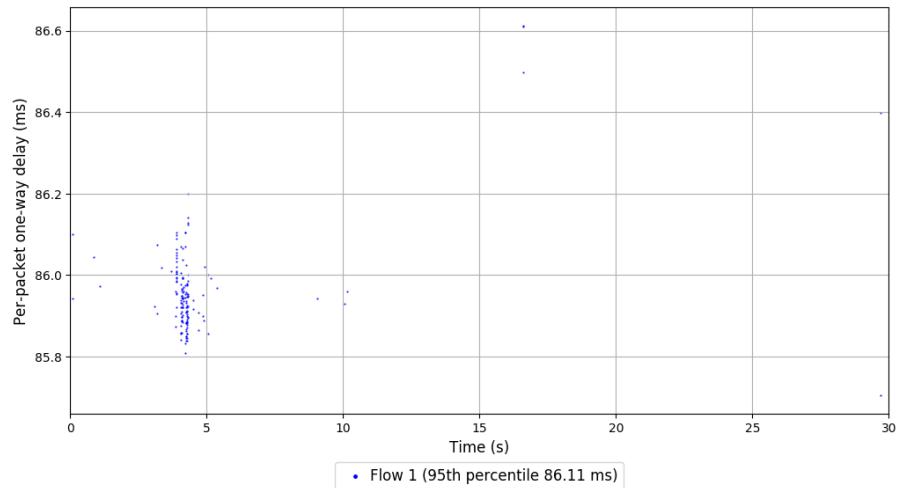
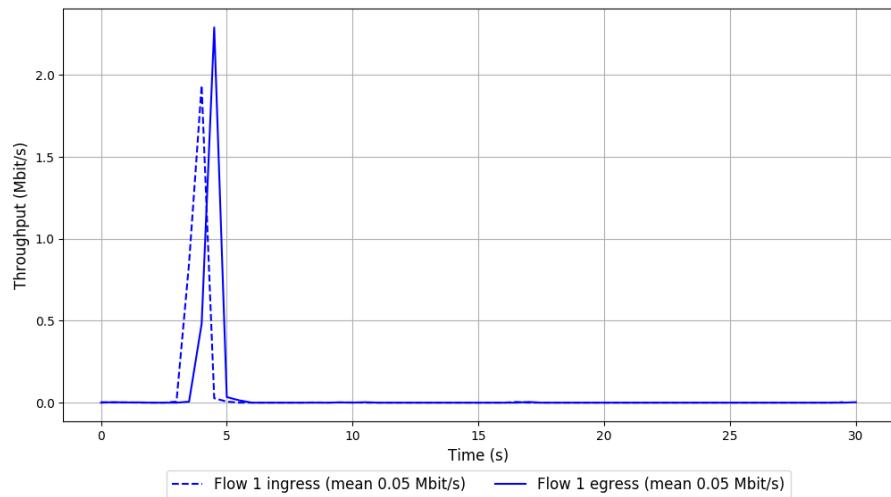


Run 3: Statistics of WebRTC media

```
Start at: 2019-01-02 19:14:55
End at: 2019-01-02 19:15:25
Local clock offset: 13.384 ms
Remote clock offset: 18.237 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.105 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.105 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

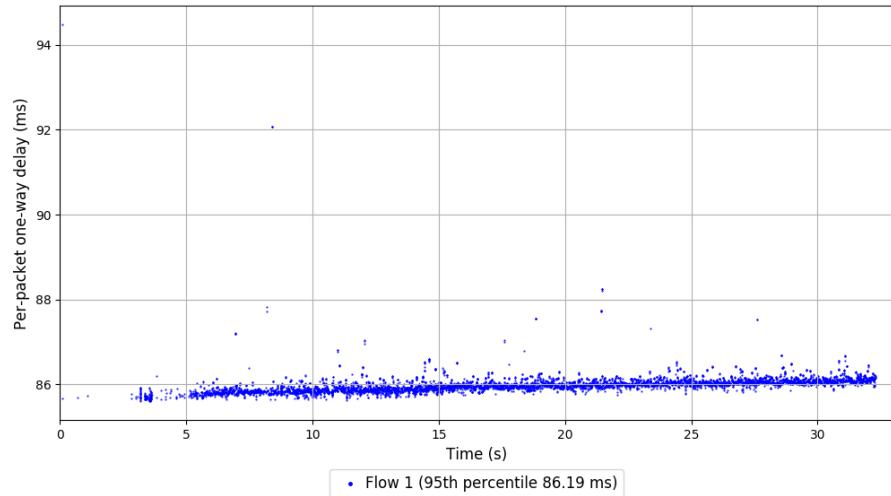
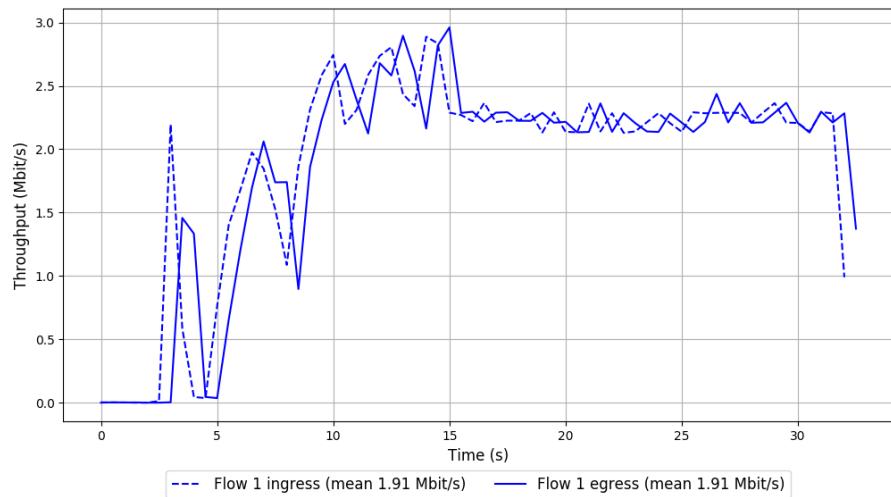


Run 4: Statistics of WebRTC media

```
Start at: 2019-01-02 19:43:02
End at: 2019-01-02 19:43:32
Local clock offset: 6.23 ms
Remote clock offset: 11.143 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 86.189 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 86.189 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2019-01-02 20:11:44
End at: 2019-01-02 20:12:14
Local clock offset: 4.086 ms
Remote clock offset: 4.578 ms

# Below is generated by plot.py at 2019-01-02 22:29:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.267 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.267 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

