Pantheon Report

Generated at 2018-11-15 23:51:43 (UTC).

Data path: GCE Tokyo on `ens4` (*remote*) →GCE Sydney on `ens4` (*local*).

Repeated the test of 18 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.
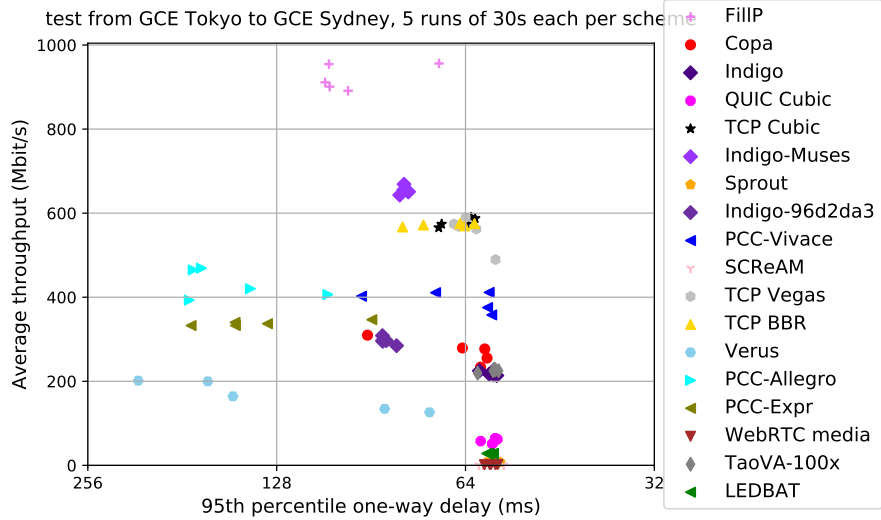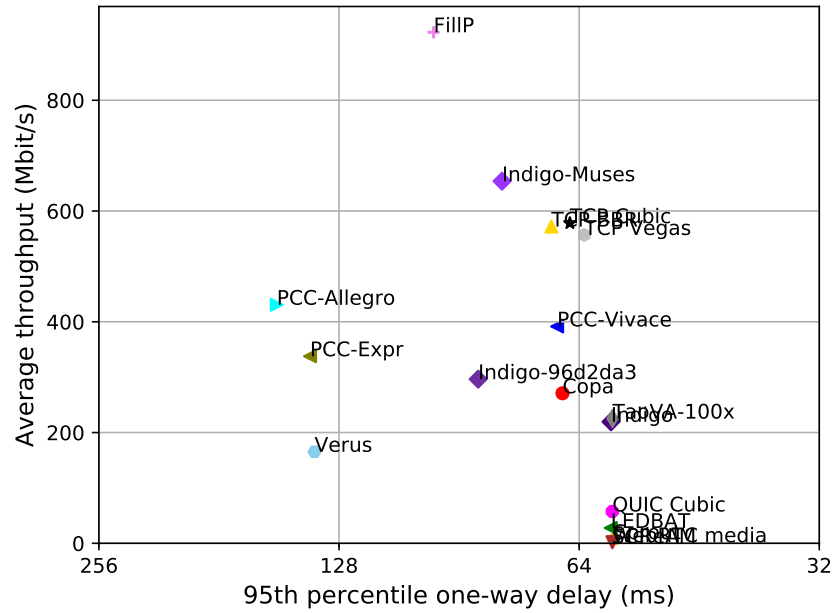
```
System info:
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE Tokyo to GCE Sydney, 5 runs of 30s each per scheme (mean of all runs by scheme)

test from GCE Tokyo to GCE Sydney, 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	571.92	69.35	0.39
Copa	5	270.95	67.15	0.38
TCP Cubic	5	578.14	65.74	0.41
FillP	5	922.80	97.42	0.94
Indigo	5	219.38	58.38	0.40
Indigo-96d2da3	5	296.43	85.66	0.30
LEDBAT	5	27.73	58.43	0.77
Indigo-Muses	5	653.86	79.96	0.43
PCC-Allegro	5	430.71	153.18	2.24
PCC-Expr	5	337.79	139.19	3.51
QUIC Cubic	5	57.51	58.16	0.63
SCReAM	5	0.22	58.26	0.39
Sprout	5	7.56	57.91	0.43
TaoVA-100x	5	225.19	58.13	0.40
TCP Vegas	5	556.83	63.05	0.36
Verus	5	165.27	137.39	1.77
PCC-Vivace	5	391.61	68.20	0.45
WebRTC media	5	1.97	58.14	0.51

```
Run 1: Statistics of TCP BBR

Start at: 2018-11-15 20:11:41
End at: 2018-11-15 20:12:11
Local clock offset: -1.013 ms
Remote clock offset: 1.19 ms

# Below is generated by plot.py at 2018-11-15 22:28:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.13 Mbit/s
95th percentile per-packet one-way delay: 61.927 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 575.13 Mbit/s
95th percentile per-packet one-way delay: 61.927 ms
Loss rate: 0.41%
```
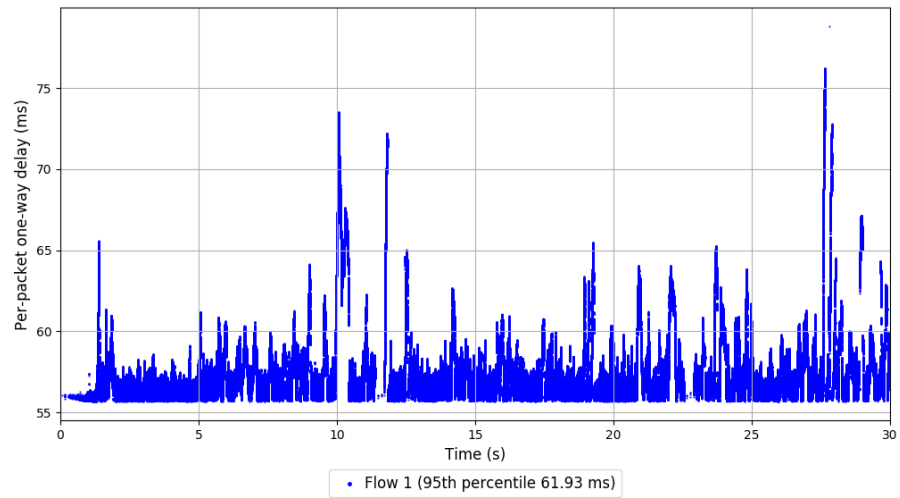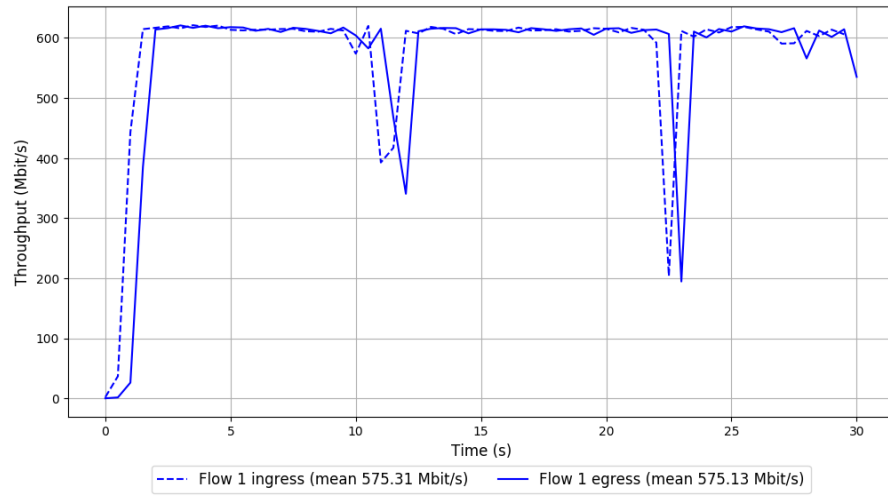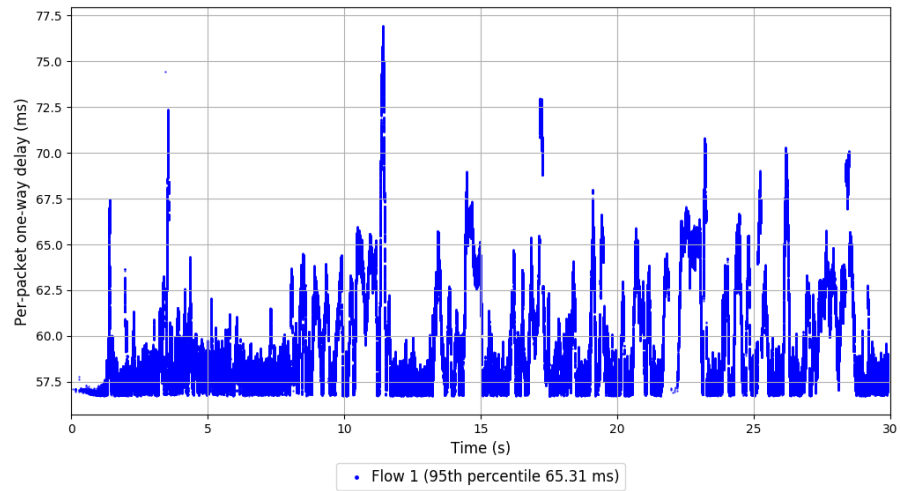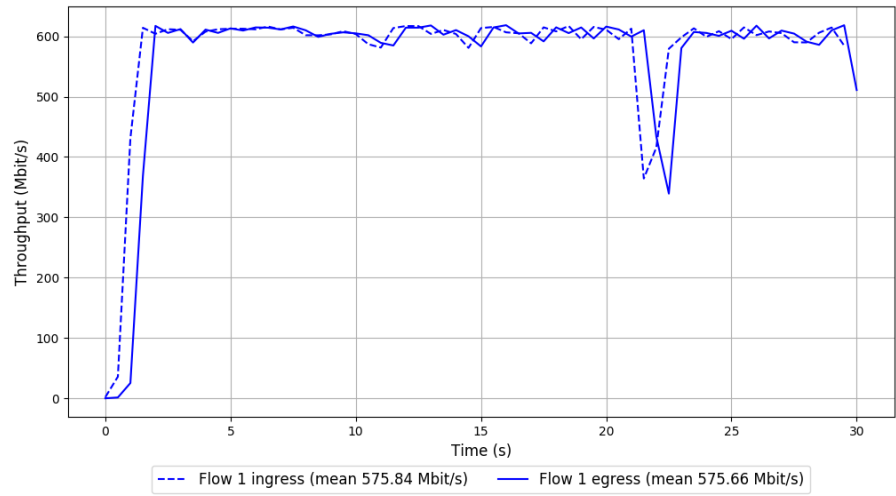
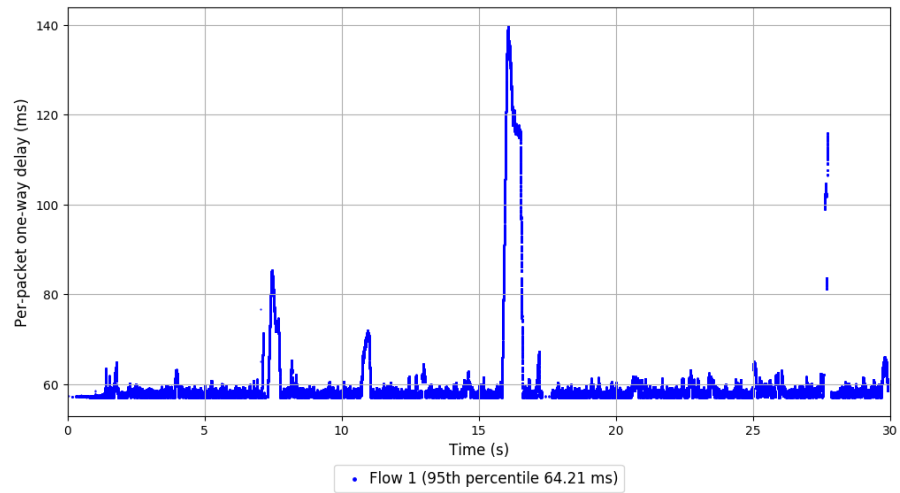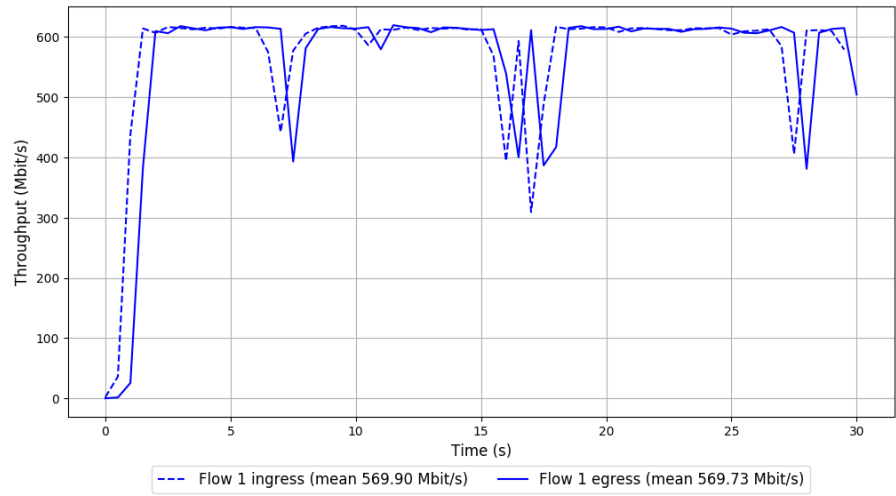# Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 575.31 Mbit/s)   Flow 1 egress (mean 575.13 Mbit/s)

Flow 1 (95th percentile 61.93 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-11-15 20:40:02
End at: 2018-11-15 20:40:32
Local clock offset: -1.339 ms
Remote clock offset: -0.012 ms


# Below is generated by plot.py at 2018-11-15 22:28:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 575.66 Mbit/s
95th percentile per-packet one-way delay: 65.309 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 575.66 Mbit/s
95th percentile per-packet one-way delay: 65.309 ms
Loss rate: 0.41%
```
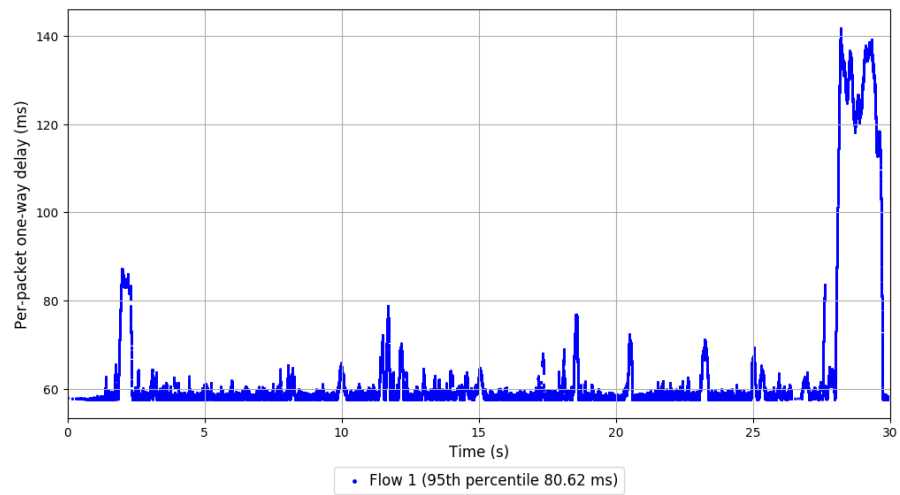
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-11-15 21:07:37
End at: 2018-11-15 21:08:07
Local clock offset: -0.166 ms
Remote clock offset: -0.125 ms

# Below is generated by plot.py at 2018-11-15 22:28:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 569.73 Mbit/s
95th percentile per-packet one-way delay: 64.211 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 569.73 Mbit/s
95th percentile per-packet one-way delay: 64.211 ms
Loss rate: 0.42%
```
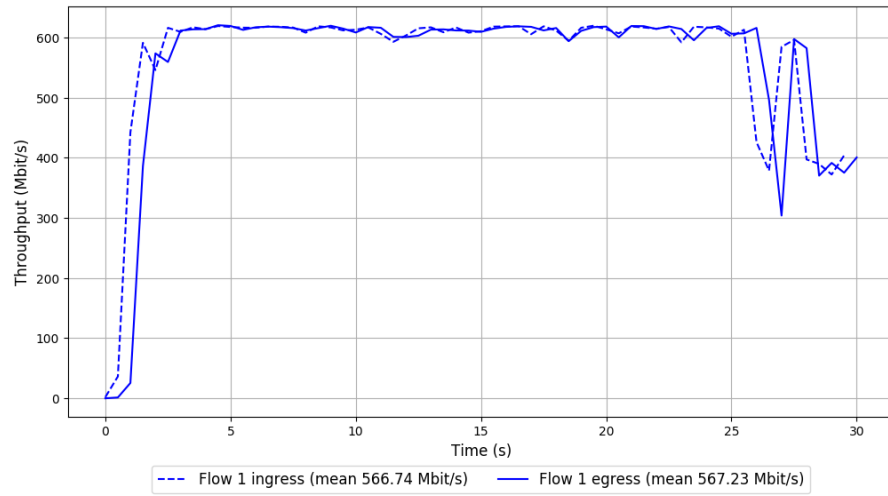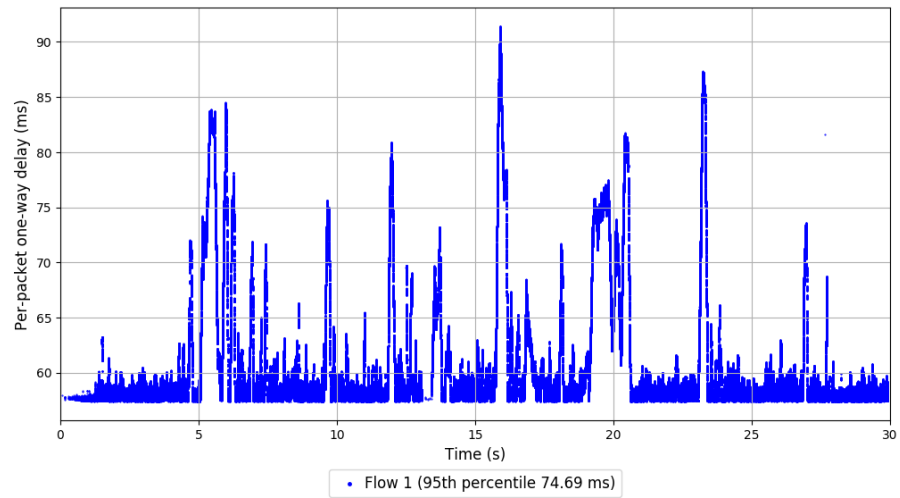
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 569.90 Mbit/s)   Flow 1 egress (mean 569.73 Mbit/s)

Flow 1 (95th percentile 64.21 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-11-15 21:35:33
End at: 2018-11-15 21:36:03
Local clock offset: 0.095 ms
Remote clock offset: -0.653 ms


# Below is generated by plot.py at 2018-11-15 22:28:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 567.23 Mbit/s
95th percentile per-packet one-way delay: 80.619 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 567.23 Mbit/s
95th percentile per-packet one-way delay: 80.619 ms
Loss rate: 0.30%
```
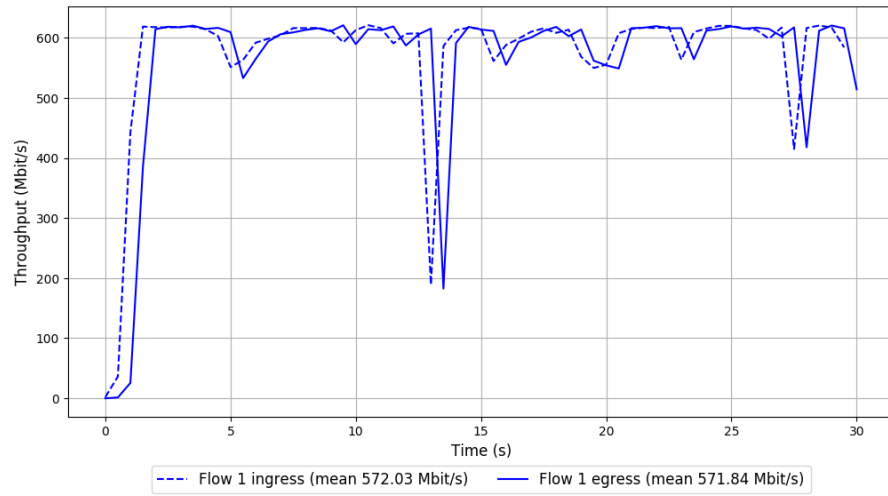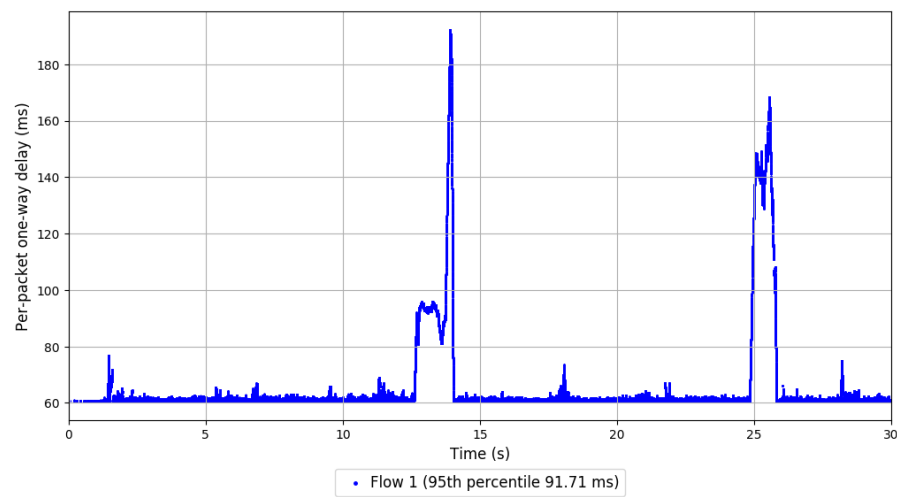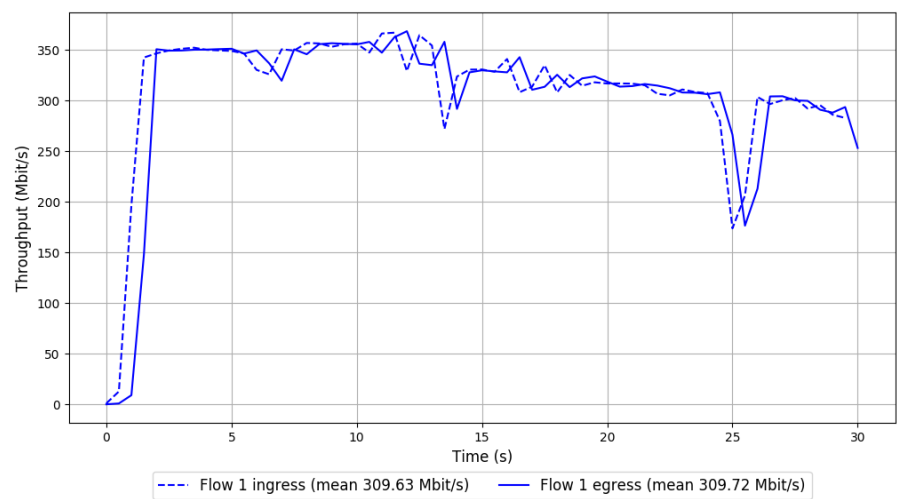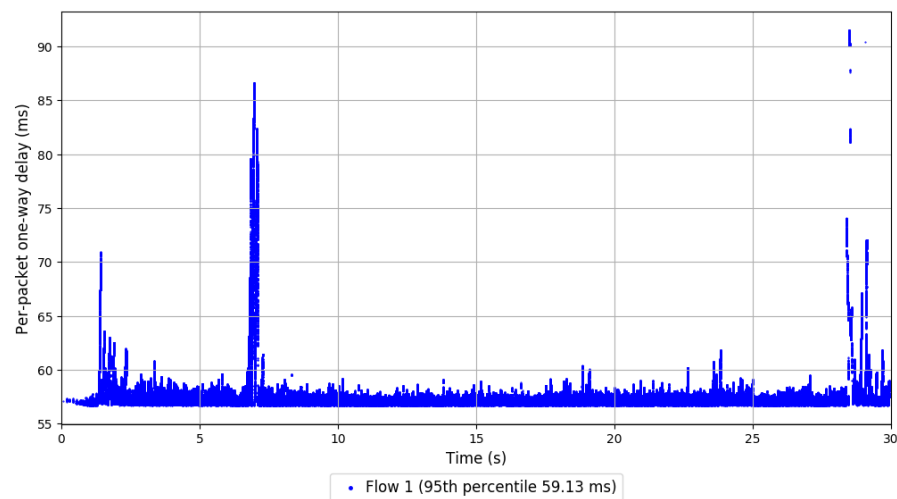
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 566.74 Mbit/s)　　Flow 1 egress (mean 567.23 Mbit/s)
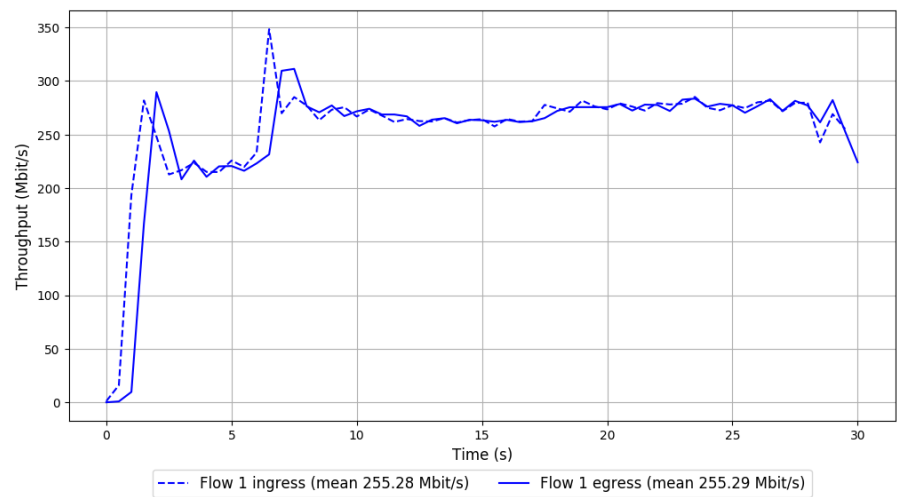

Flow 1 (95th percentile 80.62 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-11-15 22:03:39
End at: 2018-11-15 22:04:09
Local clock offset: 0.922 ms
Remote clock offset: 0.217 ms


# Below is generated by plot.py at 2018-11-15 22:28:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 571.84 Mbit/s
95th percentile per-packet one-way delay: 74.686 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 571.84 Mbit/s
95th percentile per-packet one-way delay: 74.686 ms
Loss rate: 0.42%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 572.03 Mbit/s)   Flow 1 egress (mean 571.84 Mbit/s)

• Flow 1 (95th percentile 74.69 ms)

```
Run 1: Statistics of Copa

Start at: 2018-11-15 19:47:18
End at: 2018-11-15 19:47:48
Local clock offset: -0.367 ms
Remote clock offset: 0.07 ms

# Below is generated by plot.py at 2018-11-15 22:28:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 309.72 Mbit/s
95th percentile per-packet one-way delay: 91.707 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 309.72 Mbit/s
95th percentile per-packet one-way delay: 91.707 ms
Loss rate: 0.36%
```
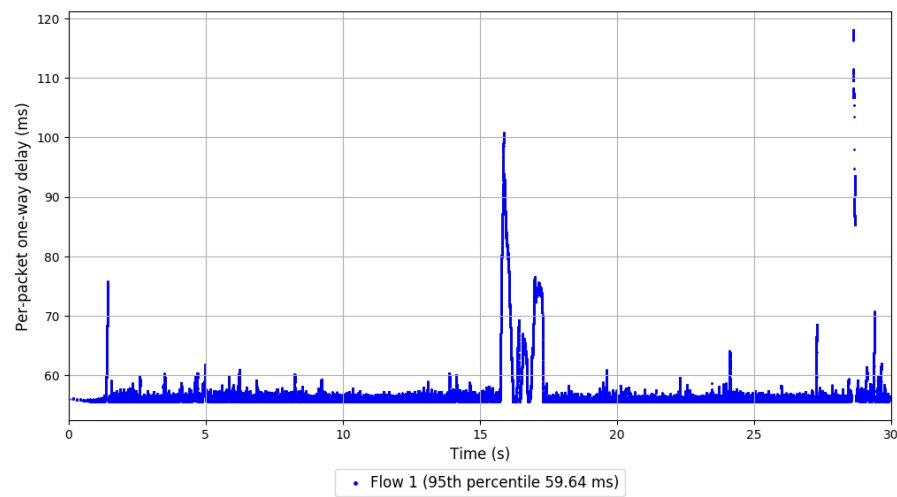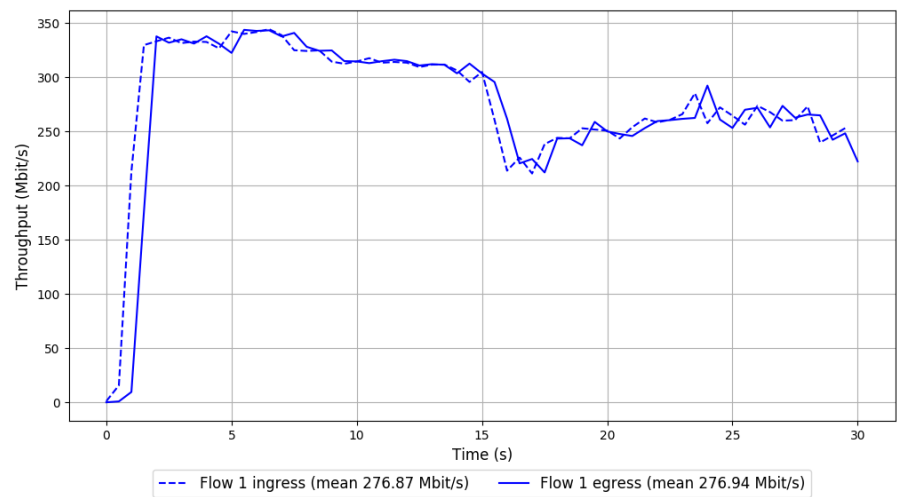
Run 1: Report of Copa — Data Link

- - - - Flow 1 ingress (mean 309.63 Mbit/s) ——— Flow 1 egress (mean 309.72 Mbit/s)

• Flow 1 (95th percentile 91.71 ms)

```
Run 2: Statistics of Copa

Start at: 2018-11-15 20:15:21
End at: 2018-11-15 20:15:51
Local clock offset: -1.253 ms
Remote clock offset: -0.197 ms


# Below is generated by plot.py at 2018-11-15 22:28:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 255.29 Mbit/s
95th percentile per-packet one-way delay: 59.133 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 255.29 Mbit/s
95th percentile per-packet one-way delay: 59.133 ms
Loss rate: 0.38%
```
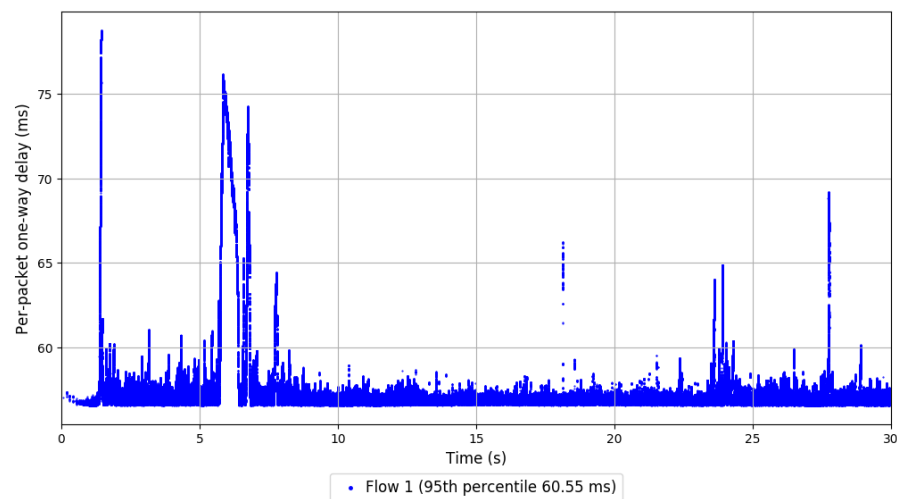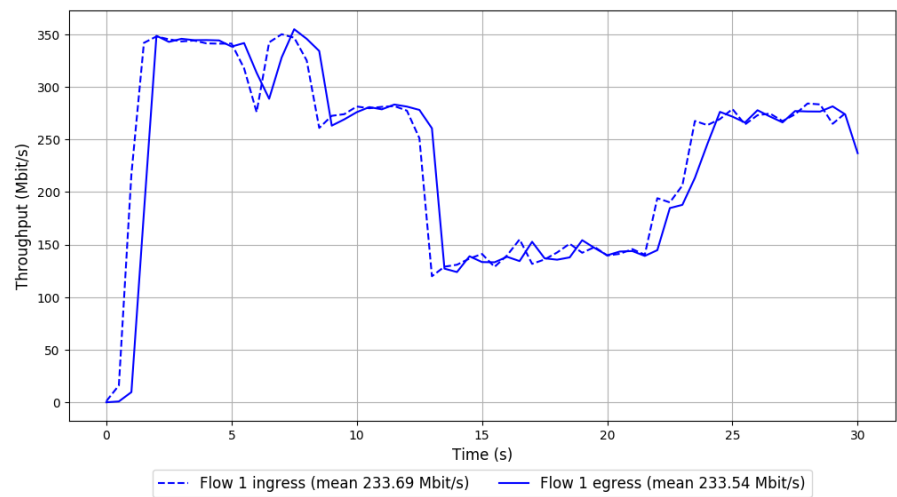
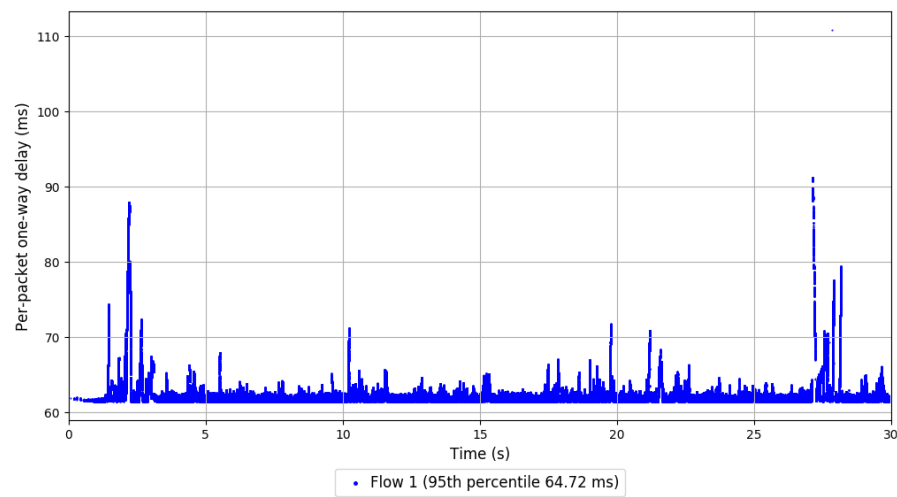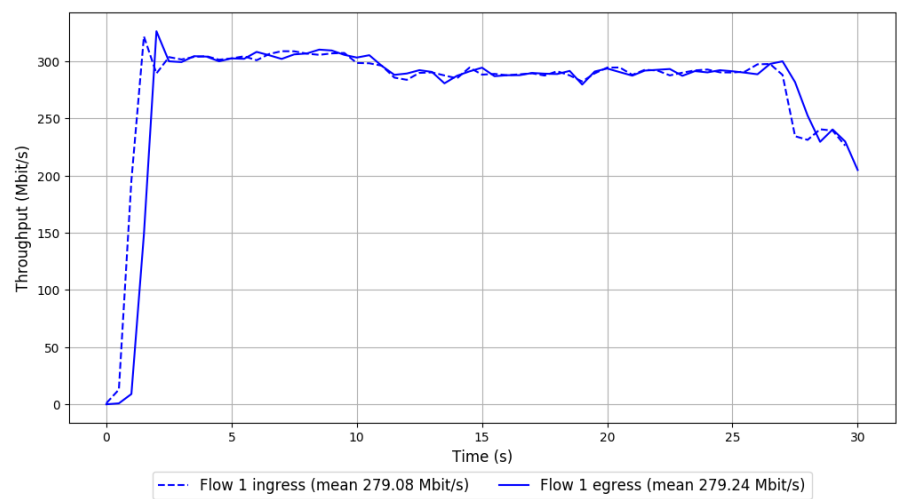Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 255.28 Mbit/s) ----   Flow 1 egress (mean 255.29 Mbit/s) ——

• Flow 1 (95th percentile 59.13 ms)

```
Run 3: Statistics of Copa

Start at: 2018-11-15 20:43:27
End at: 2018-11-15 20:43:57
Local clock offset: -1.445 ms
Remote clock offset: 1.347 ms


# Below is generated by plot.py at 2018-11-15 22:28:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 276.94 Mbit/s
95th percentile per-packet one-way delay: 59.636 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 276.94 Mbit/s
95th percentile per-packet one-way delay: 59.636 ms
Loss rate: 0.36%
```

Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-11-15 21:10:55
End at: 2018-11-15 21:11:25
Local clock offset: 0.34 ms
Remote clock offset: 0.405 ms


# Below is generated by plot.py at 2018-11-15 22:33:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 233.54 Mbit/s
95th percentile per-packet one-way delay: 60.554 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 233.54 Mbit/s
95th percentile per-packet one-way delay: 60.554 ms
Loss rate: 0.44%
```
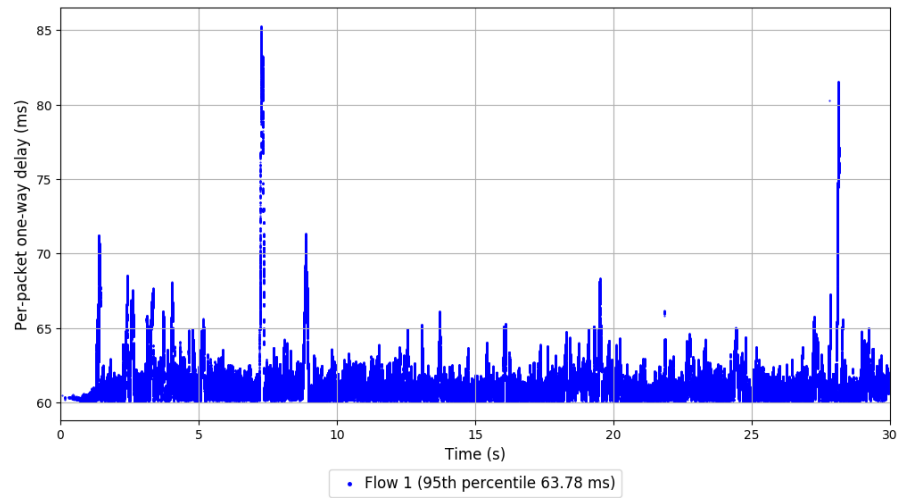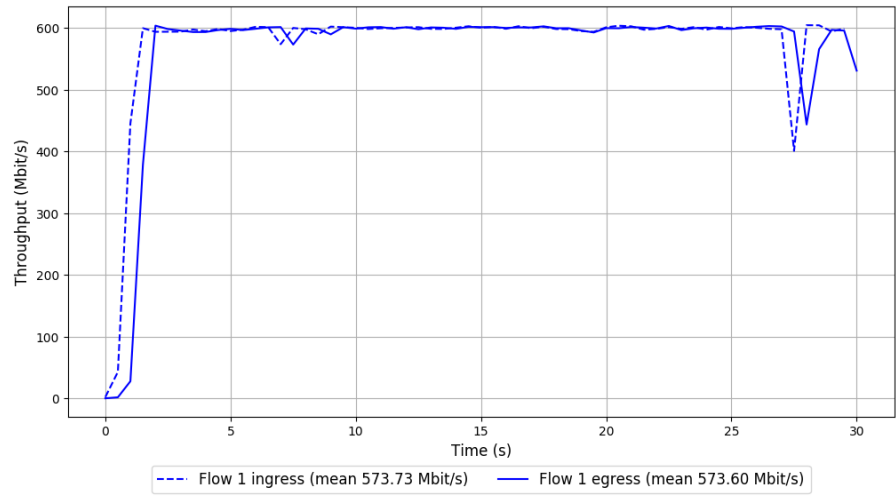
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 233.69 Mbit/s) — — —   Flow 1 egress (mean 233.54 Mbit/s)

Flow 1 (95th percentile 60.55 ms)

```
Run 5: Statistics of Copa

Start at: 2018-11-15 21:38:59
End at: 2018-11-15 21:39:29
Local clock offset: 0.735 ms
Remote clock offset: -0.606 ms


# Below is generated by plot.py at 2018-11-15 22:38:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 279.24 Mbit/s
95th percentile per-packet one-way delay: 64.725 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 279.24 Mbit/s
95th percentile per-packet one-way delay: 64.725 ms
Loss rate: 0.34%
```
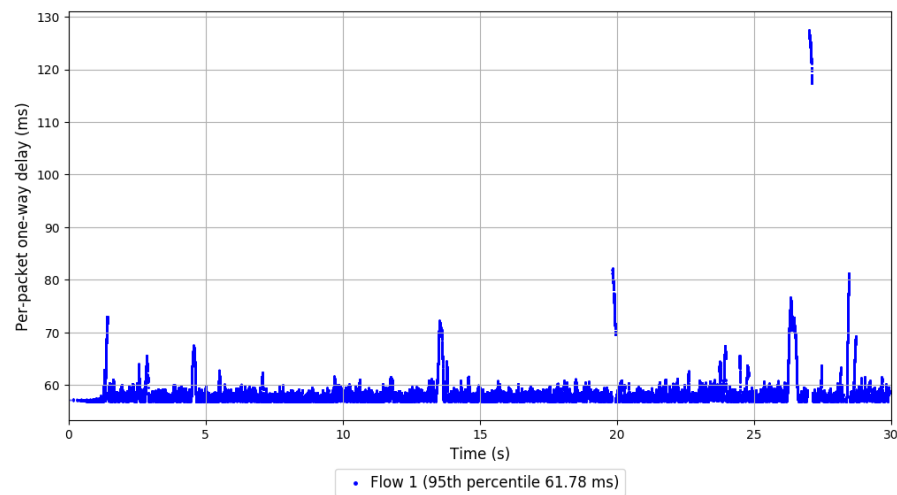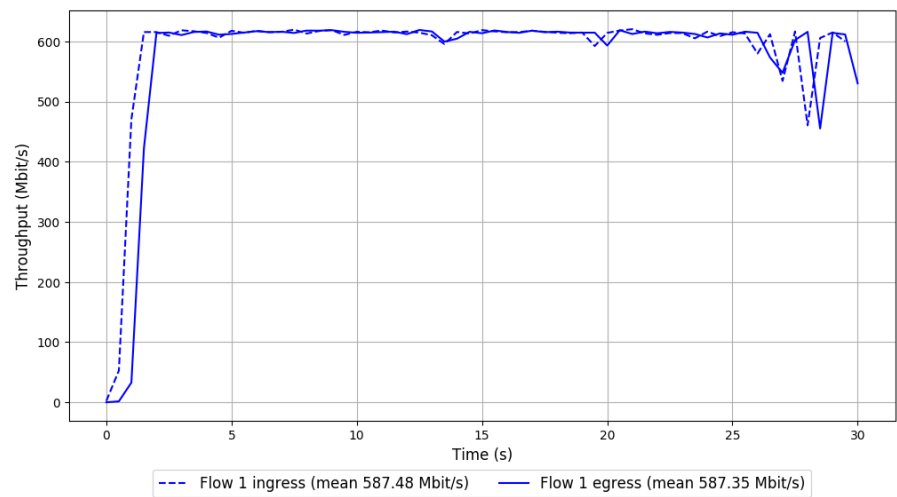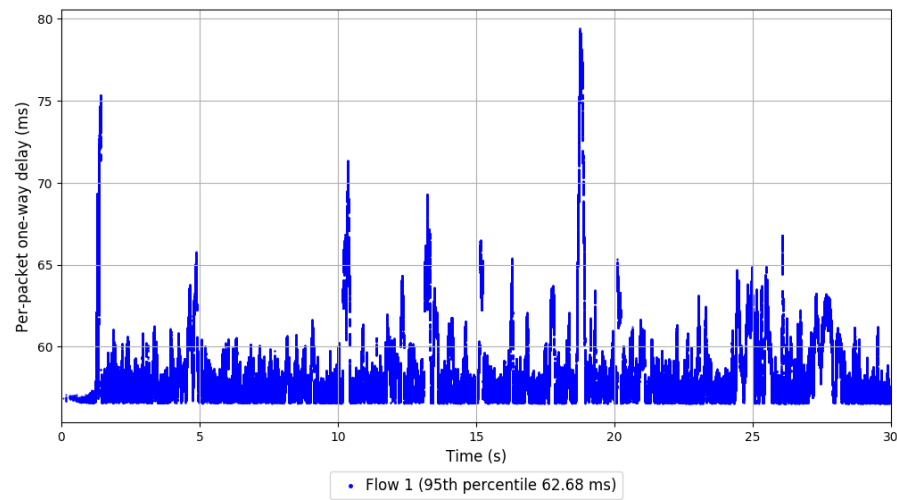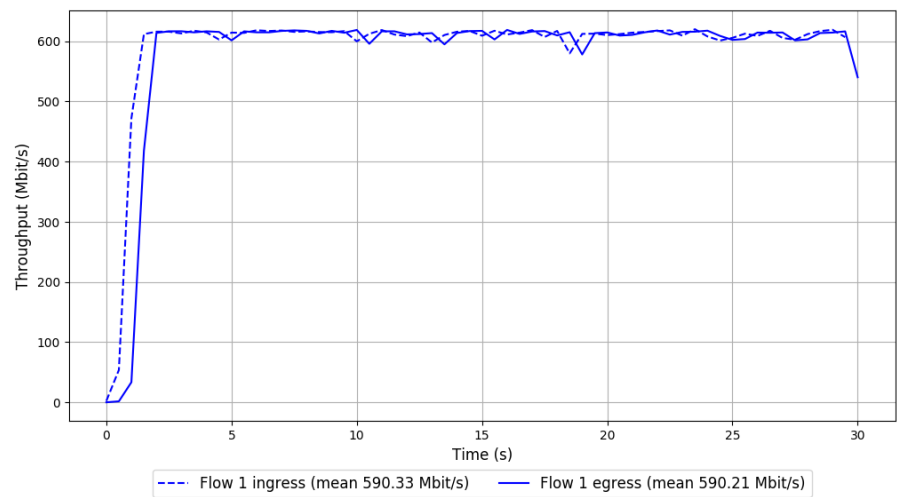
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 19:56:33
End at: 2018-11-15 19:57:03
Local clock offset: -0.859 ms
Remote clock offset: 0.043 ms


# Below is generated by plot.py at 2018-11-15 22:39:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 573.60 Mbit/s
95th percentile per-packet one-way delay: 63.778 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 573.60 Mbit/s
95th percentile per-packet one-way delay: 63.778 ms
Loss rate: 0.41%
```

Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 20:24:47
End at: 2018-11-15 20:25:17
Local clock offset: -0.799 ms
Remote clock offset: 0.324 ms


# Below is generated by plot.py at 2018-11-15 22:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 587.35 Mbit/s
95th percentile per-packet one-way delay: 61.779 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 587.35 Mbit/s
95th percentile per-packet one-way delay: 61.779 ms
Loss rate: 0.40%
```
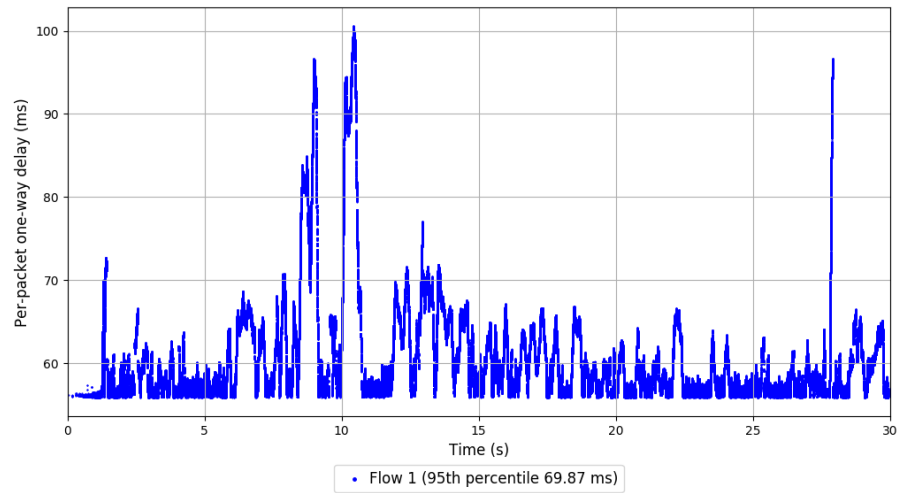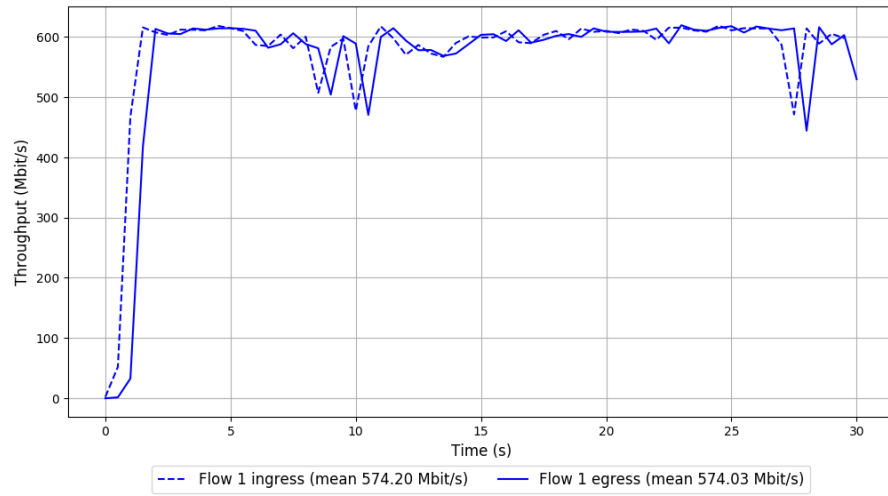
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 20:52:55
End at: 2018-11-15 20:53:25
Local clock offset: -0.923 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2018-11-15 22:39:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 590.21 Mbit/s
95th percentile per-packet one-way delay: 62.679 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 590.21 Mbit/s
95th percentile per-packet one-way delay: 62.679 ms
Loss rate: 0.40%
```
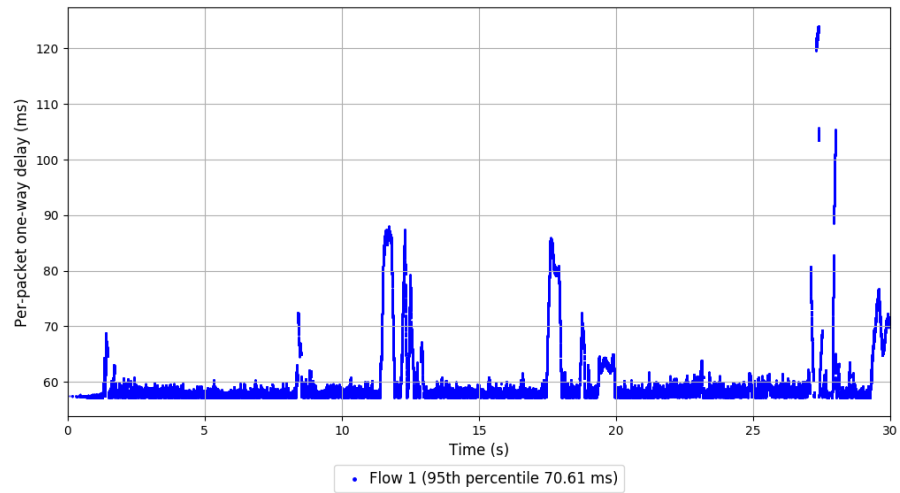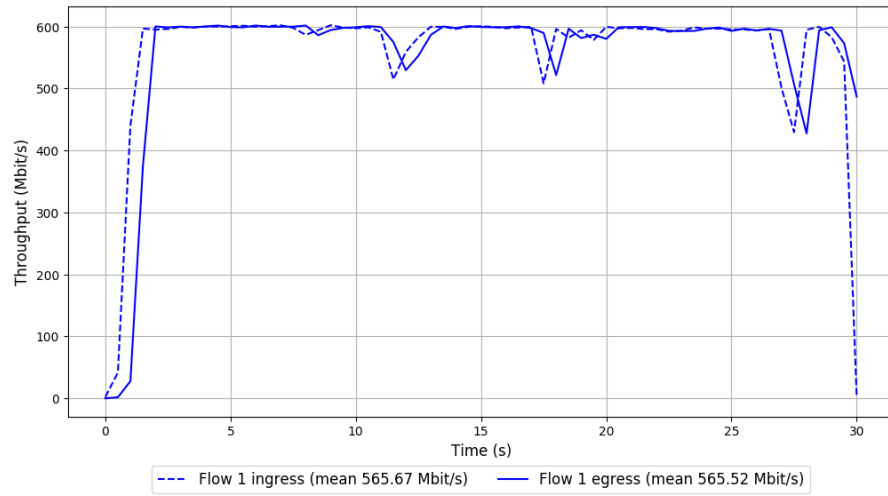
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 590.33 Mbit/s) ----   Flow 1 egress (mean 590.21 Mbit/s) ——

Flow 1 (95th percentile 62.68 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 21:20:19
End at: 2018-11-15 21:20:49
Local clock offset: -0.185 ms
Remote clock offset: 0.402 ms


# Below is generated by plot.py at 2018-11-15 22:39:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 574.03 Mbit/s
95th percentile per-packet one-way delay: 69.869 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 574.03 Mbit/s
95th percentile per-packet one-way delay: 69.869 ms
Loss rate: 0.41%
```
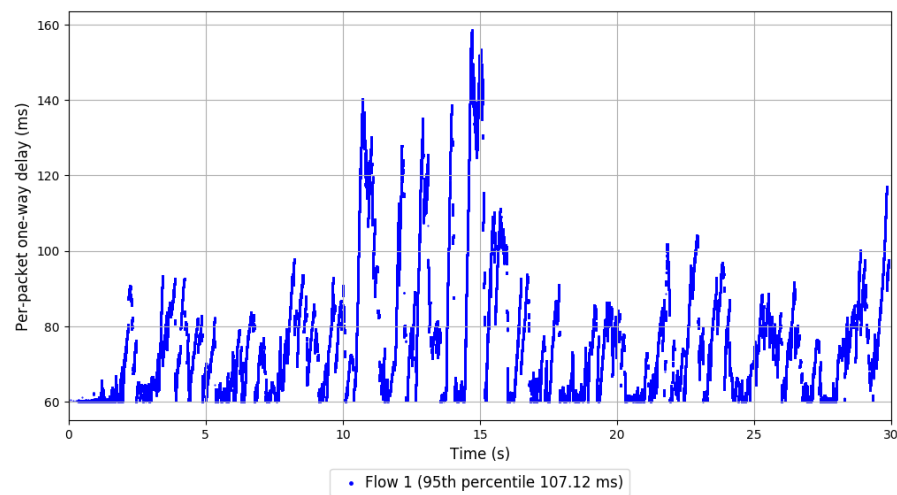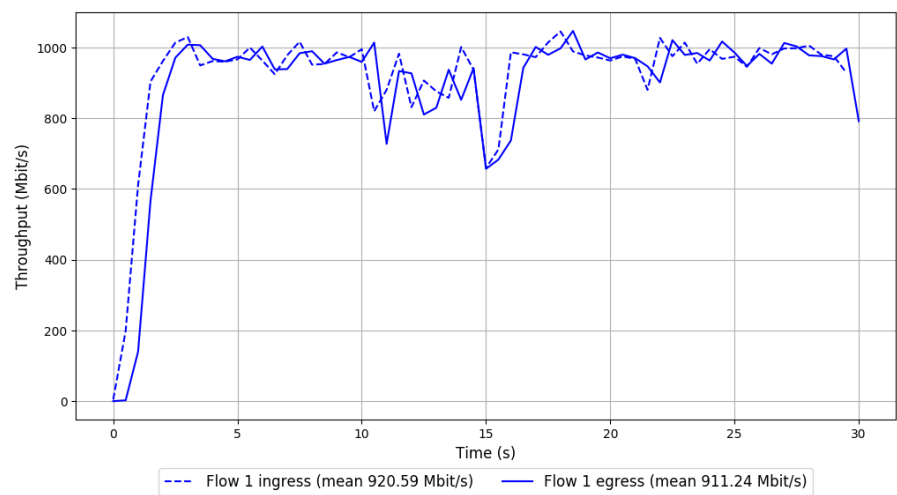
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 574.20 Mbit/s)   Flow 1 egress (mean 574.03 Mbit/s)

Flow 1 (95th percentile 69.87 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 21:48:30
End at: 2018-11-15 21:49:00
Local clock offset: 0.554 ms
Remote clock offset: 0.351 ms


# Below is generated by plot.py at 2018-11-15 22:39:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 565.52 Mbit/s
95th percentile per-packet one-way delay: 70.611 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 565.52 Mbit/s
95th percentile per-packet one-way delay: 70.611 ms
Loss rate: 0.41%
```
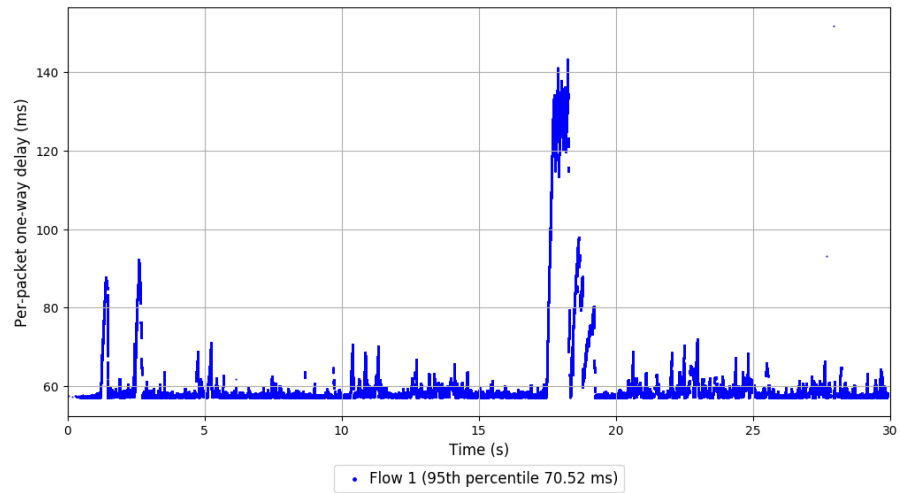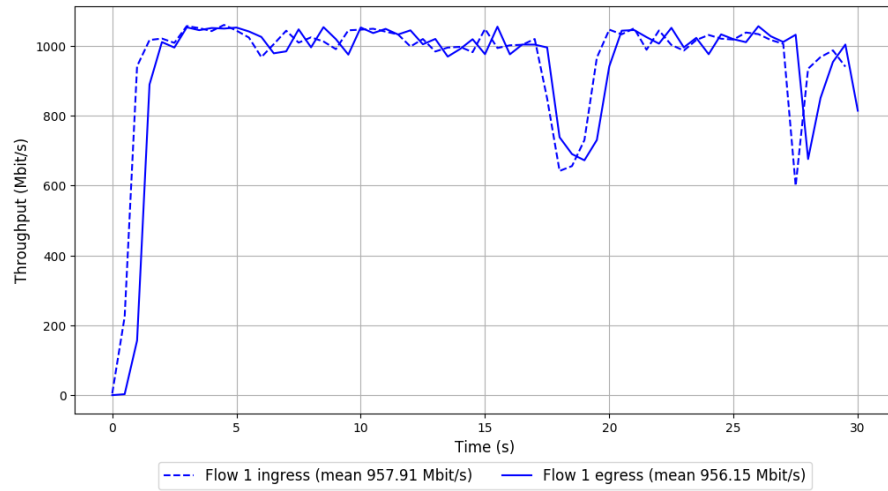
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-11-15 19:51:11
End at: 2018-11-15 19:51:41
Local clock offset: -0.771 ms
Remote clock offset: -0.12 ms


# Below is generated by plot.py at 2018-11-15 22:50:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 911.24 Mbit/s
95th percentile per-packet one-way delay: 107.120 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 911.24 Mbit/s
95th percentile per-packet one-way delay: 107.120 ms
Loss rate: 1.41%
```

Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 920.59 Mbit/s)   Flow 1 egress (mean 911.24 Mbit/s)

• Flow 1 (95th percentile 107.12 ms)

```
Run 2: Statistics of FillP

Start at: 2018-11-15 20:19:15
End at: 2018-11-15 20:19:45
Local clock offset: -1.535 ms
Remote clock offset: -0.204 ms


# Below is generated by plot.py at 2018-11-15 22:58:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 891.13 Mbit/s
95th percentile per-packet one-way delay: 98.476 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 891.13 Mbit/s
95th percentile per-packet one-way delay: 98.476 ms
Loss rate: 0.75%
```
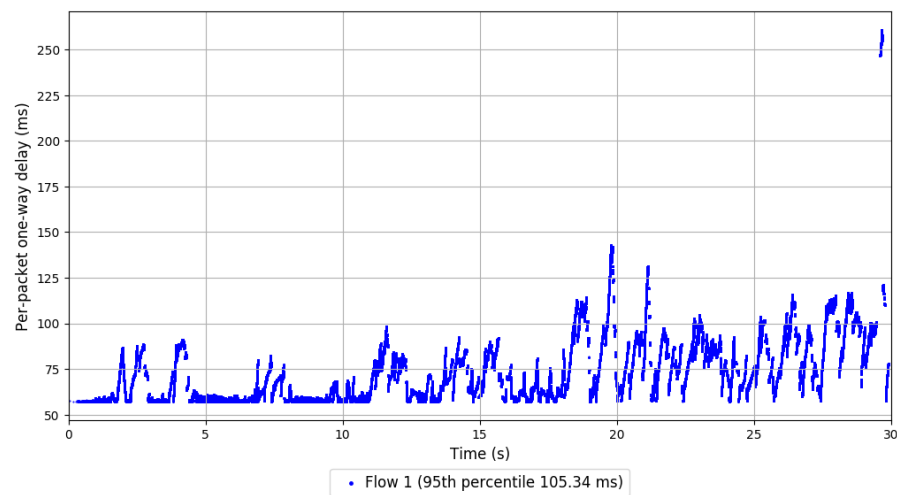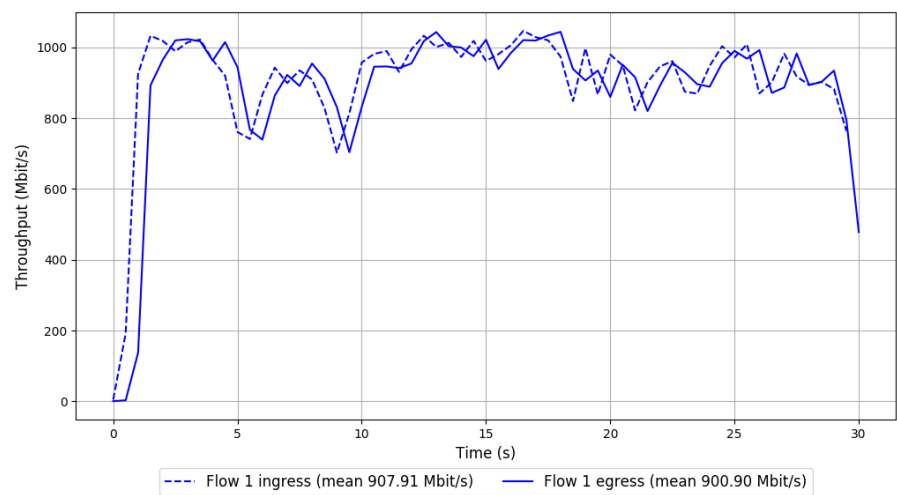
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 894.78 Mbit/s) ------ Flow 1 egress (mean 891.13 Mbit/s) ——

Flow 1 (95th percentile 98.48 ms)

```
Run 3: Statistics of FillP

Start at: 2018-11-15 20:47:26
End at: 2018-11-15 20:47:56
Local clock offset: -1.442 ms
Remote clock offset: -0.212 ms


# Below is generated by plot.py at 2018-11-15 23:02:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 956.15 Mbit/s
95th percentile per-packet one-way delay: 70.522 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 956.15 Mbit/s
95th percentile per-packet one-way delay: 70.522 ms
Loss rate: 0.57%
```
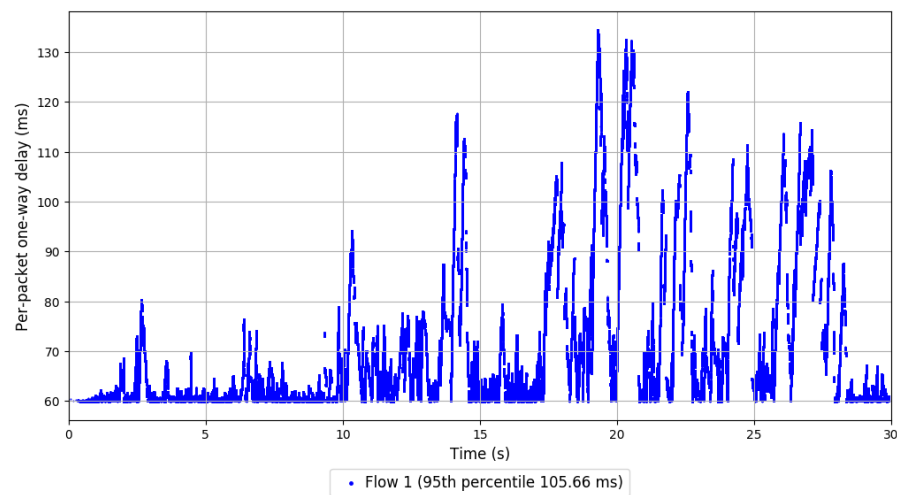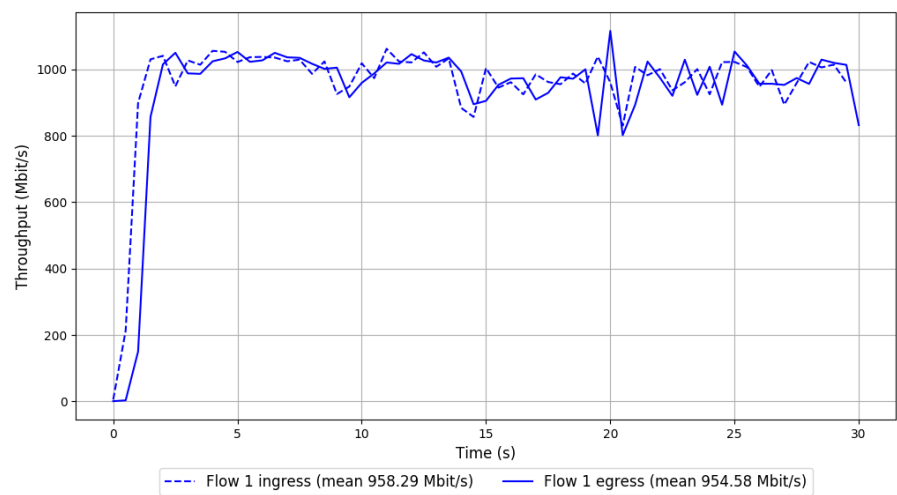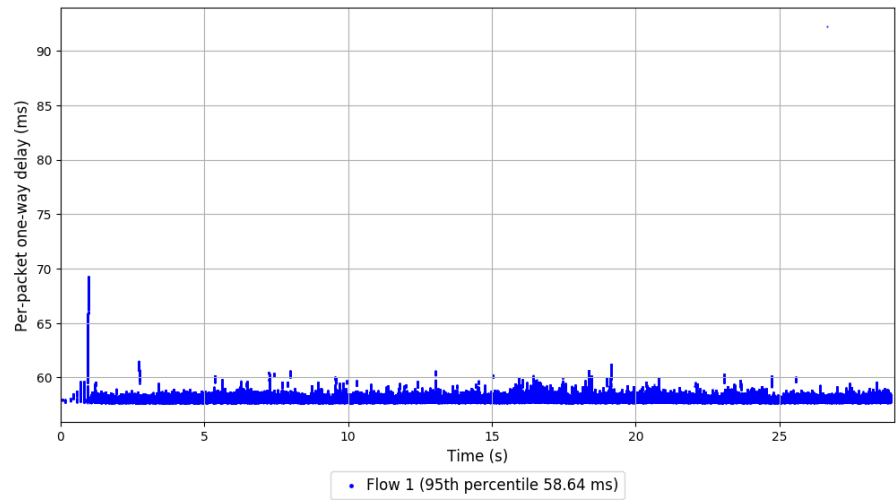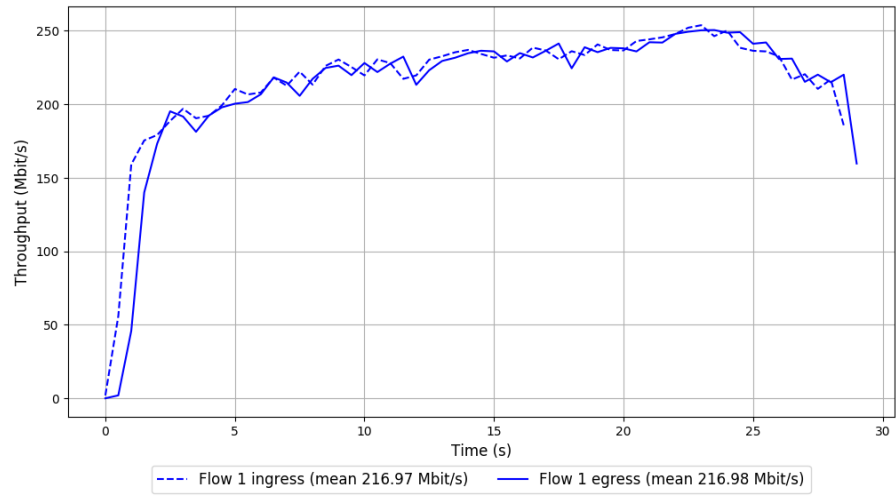
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-11-15 21:14:54
End at: 2018-11-15 21:15:24
Local clock offset: 0.162 ms
Remote clock offset: -0.4 ms


# Below is generated by plot.py at 2018-11-15 23:02:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 900.90 Mbit/s
95th percentile per-packet one-way delay: 105.341 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 900.90 Mbit/s
95th percentile per-packet one-way delay: 105.341 ms
Loss rate: 1.16%
```

Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 907.91 Mbit/s) -----   Flow 1 egress (mean 900.90 Mbit/s) ———

• Flow 1 (95th percentile 105.34 ms)

```
Run 5: Statistics of FillP

Start at: 2018-11-15 21:43:03
End at: 2018-11-15 21:43:33
Local clock offset: 0.371 ms
Remote clock offset: 0.519 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 954.58 Mbit/s
95th percentile per-packet one-way delay: 105.661 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 954.58 Mbit/s
95th percentile per-packet one-way delay: 105.661 ms
Loss rate: 0.81%
```
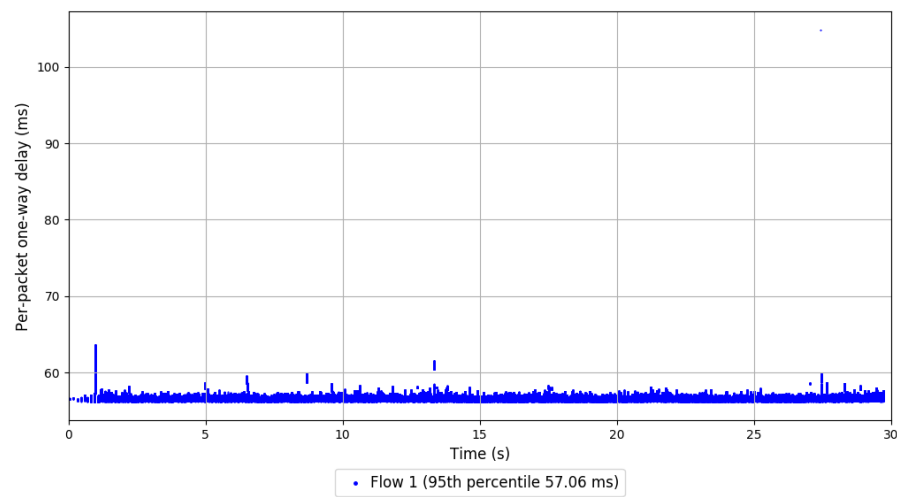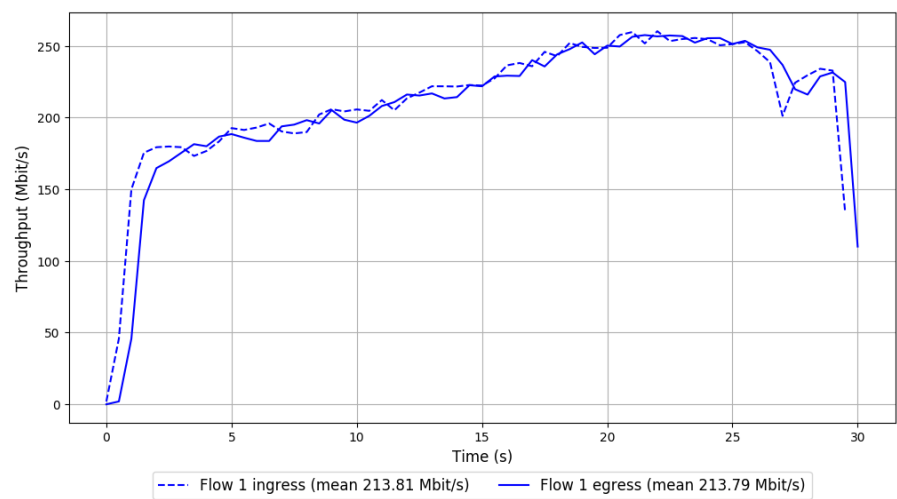
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-11-15 19:58:21
End at: 2018-11-15 19:58:51
Local clock offset: -0.726 ms
Remote clock offset: -0.681 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 216.98 Mbit/s
95th percentile per-packet one-way delay: 58.643 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 216.98 Mbit/s
95th percentile per-packet one-way delay: 58.643 ms
Loss rate: 0.39%
```
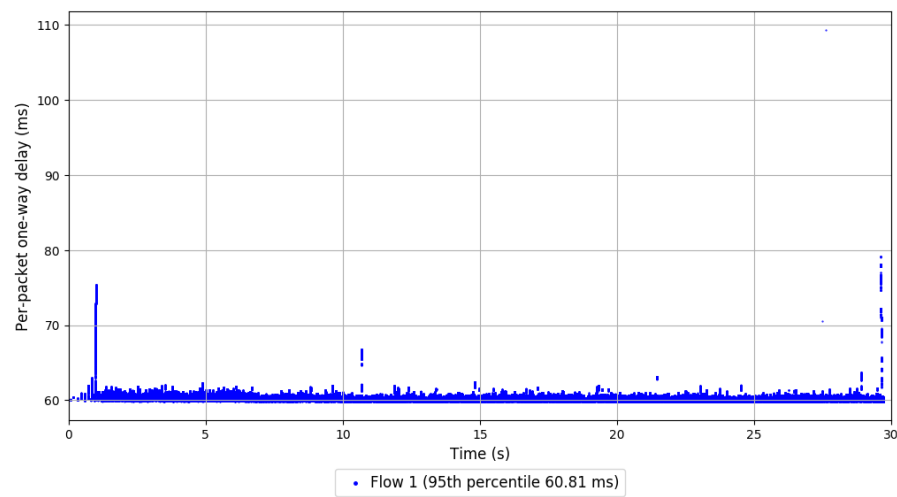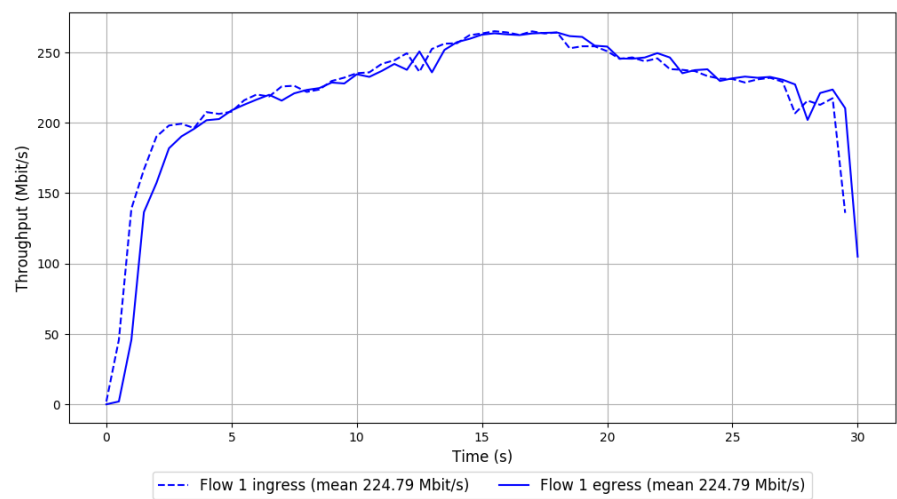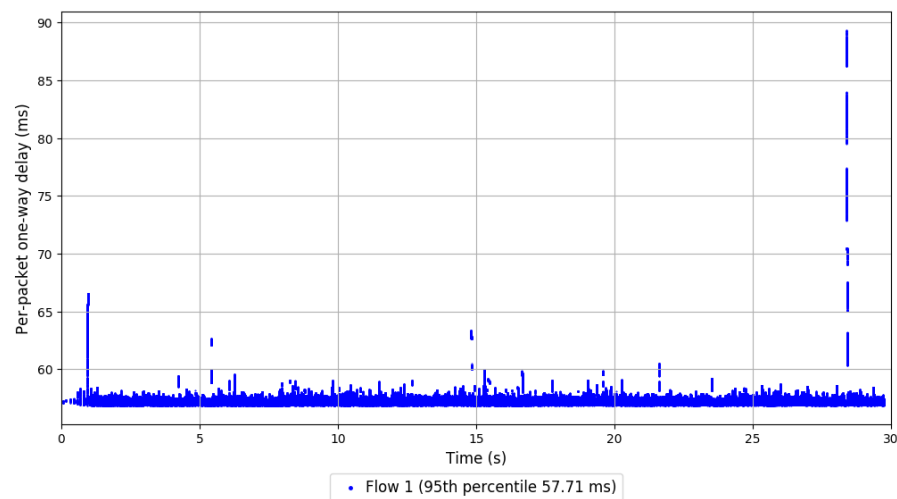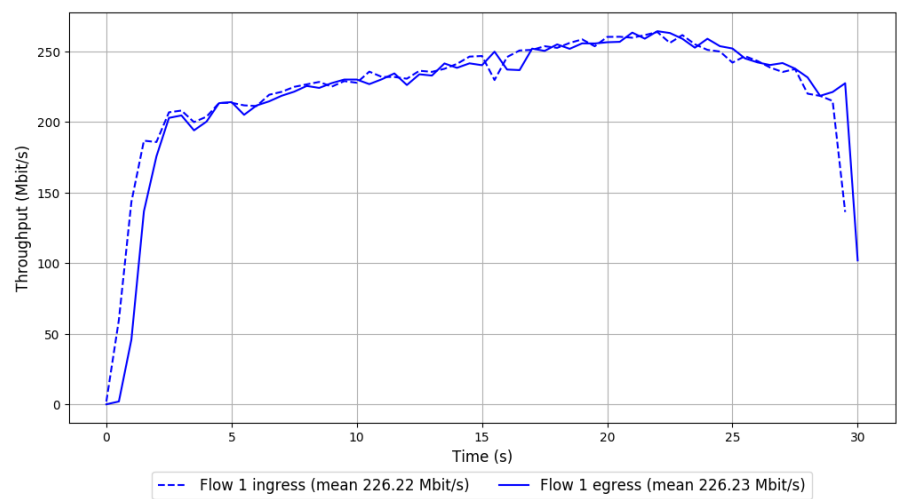
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-11-15 20:26:36
End at: 2018-11-15 20:27:06
Local clock offset: -1.17 ms
Remote clock offset: 0.461 ms

# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 213.79 Mbit/s
95th percentile per-packet one-way delay: 57.061 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 213.79 Mbit/s
95th percentile per-packet one-way delay: 57.061 ms
Loss rate: 0.43%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-11-15 20:54:34
End at: 2018-11-15 20:55:04
Local clock offset: -0.407 ms
Remote clock offset: 0.29 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.79 Mbit/s
95th percentile per-packet one-way delay: 60.809 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 224.79 Mbit/s
95th percentile per-packet one-way delay: 60.809 ms
Loss rate: 0.40%
```
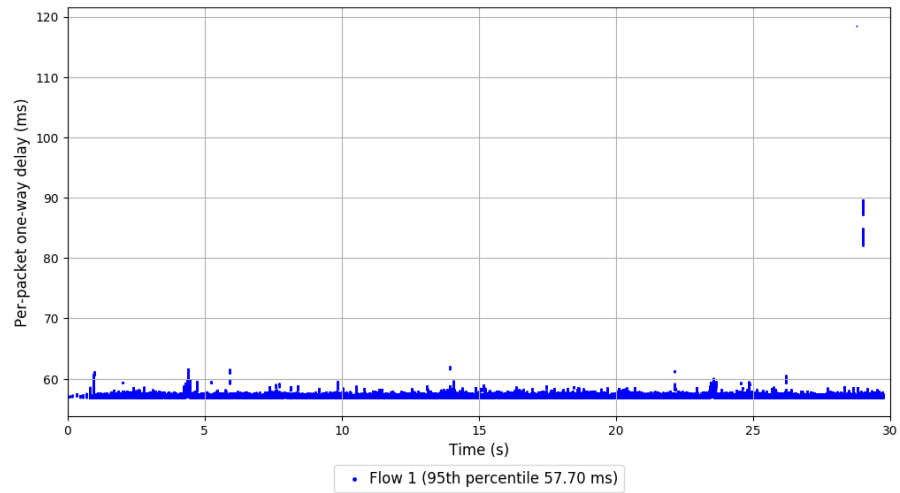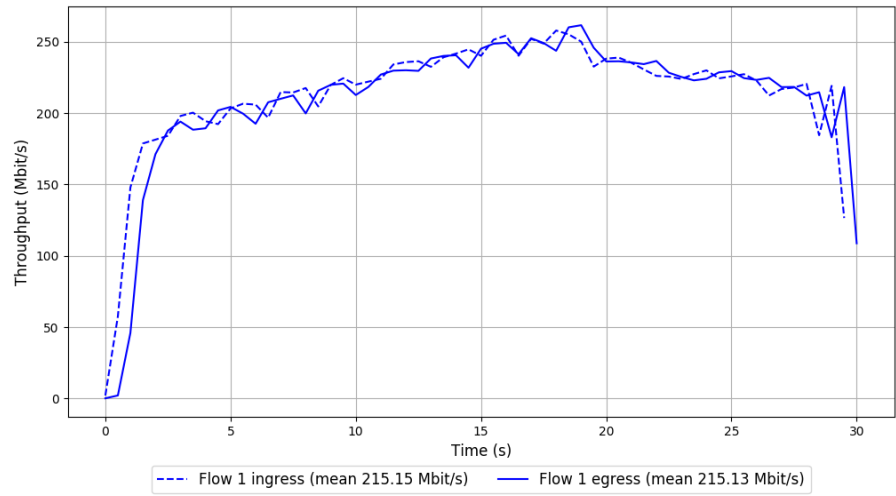
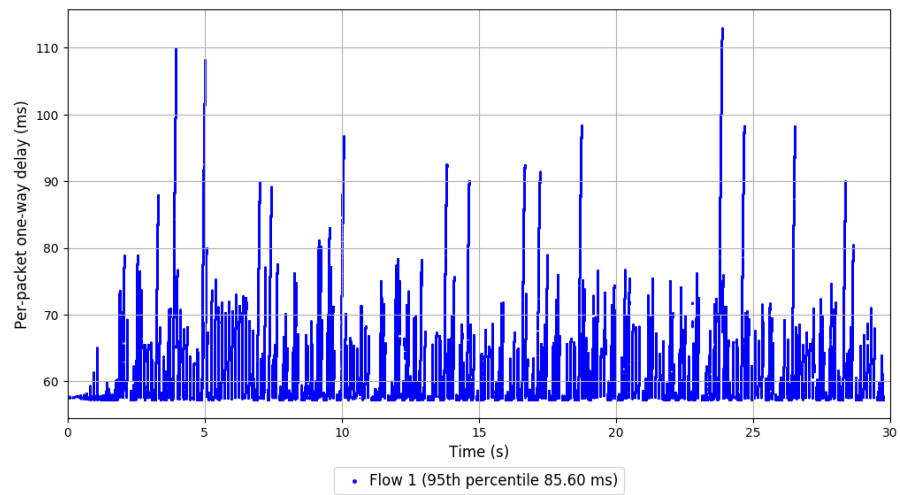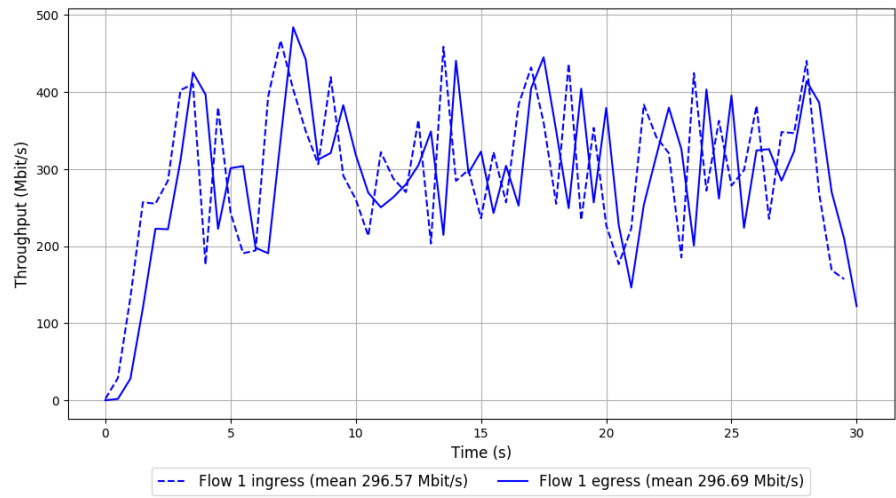Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-11-15 21:22:01
End at: 2018-11-15 21:22:31
Local clock offset: 0.544 ms
Remote clock offset: -0.072 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 226.23 Mbit/s
95th percentile per-packet one-way delay: 57.708 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 226.23 Mbit/s
95th percentile per-packet one-way delay: 57.708 ms
Loss rate: 0.38%
```
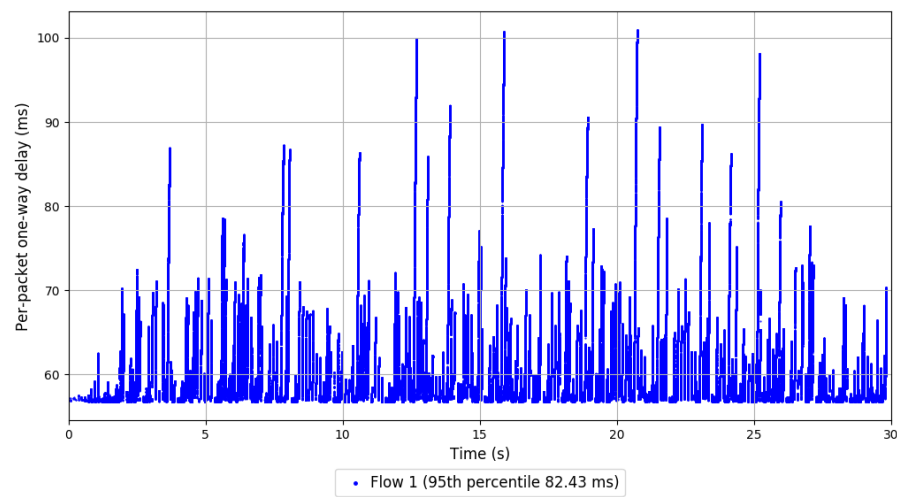
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-11-15 21:50:11
End at: 2018-11-15 21:50:41
Local clock offset: 0.33 ms
Remote clock offset: 0.544 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 215.13 Mbit/s
95th percentile per-packet one-way delay: 57.699 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 215.13 Mbit/s
95th percentile per-packet one-way delay: 57.699 ms
Loss rate: 0.40%
```
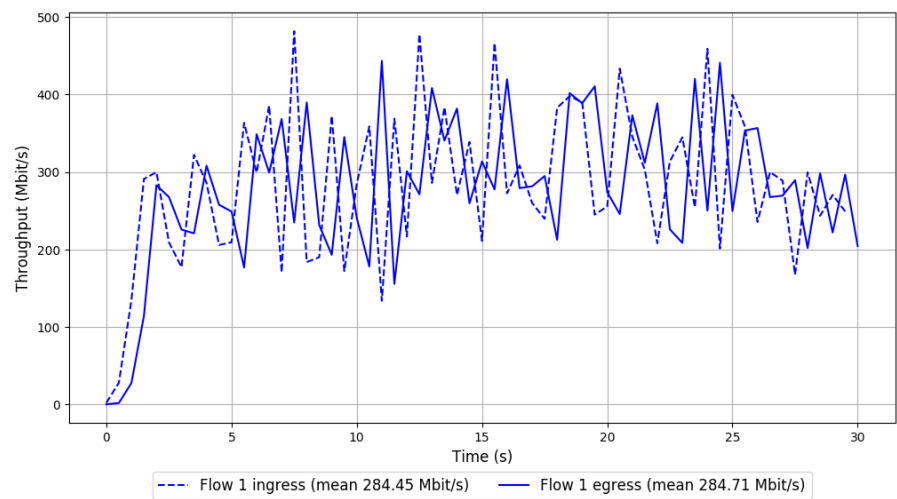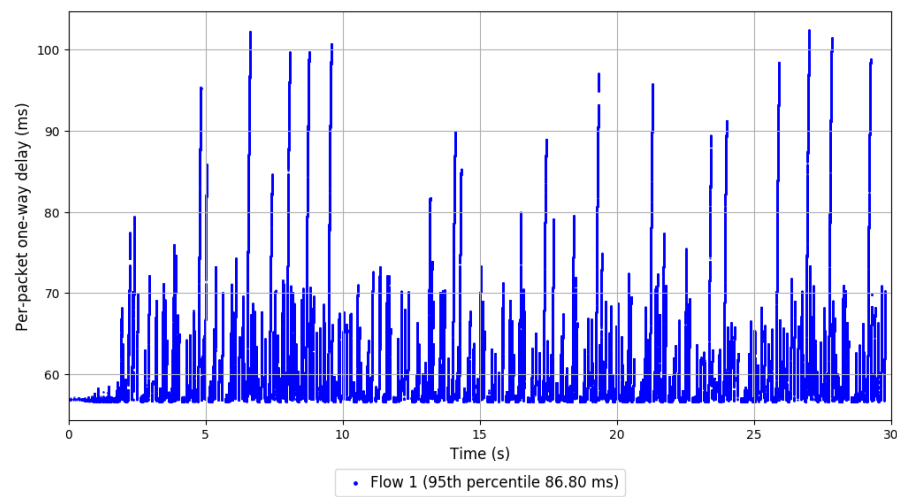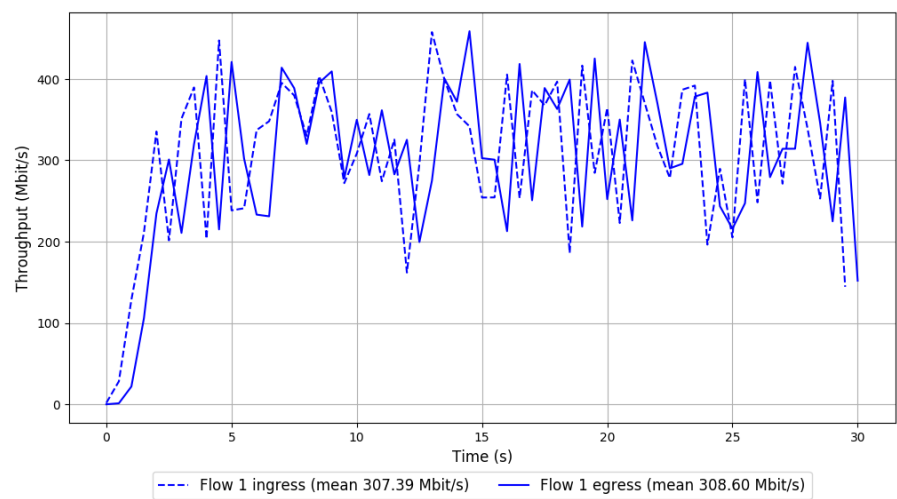
Run 5: Report of Indigo — Data Link

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

Start at: 2018-11-15 20:02:46
End at: 2018-11-15 20:03:16
Local clock offset: -0.527 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.69 Mbit/s
95th percentile per-packet one-way delay: 85.601 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 296.69 Mbit/s
95th percentile per-packet one-way delay: 85.601 ms
Loss rate: 0.27%
```
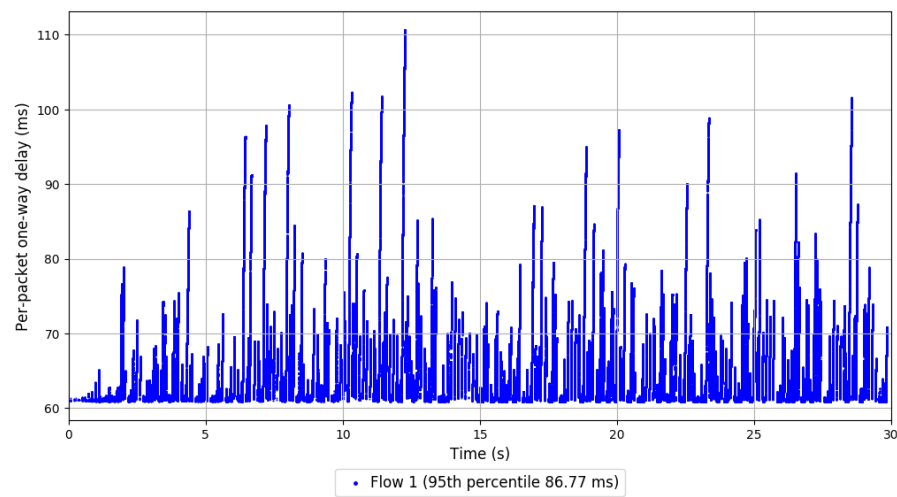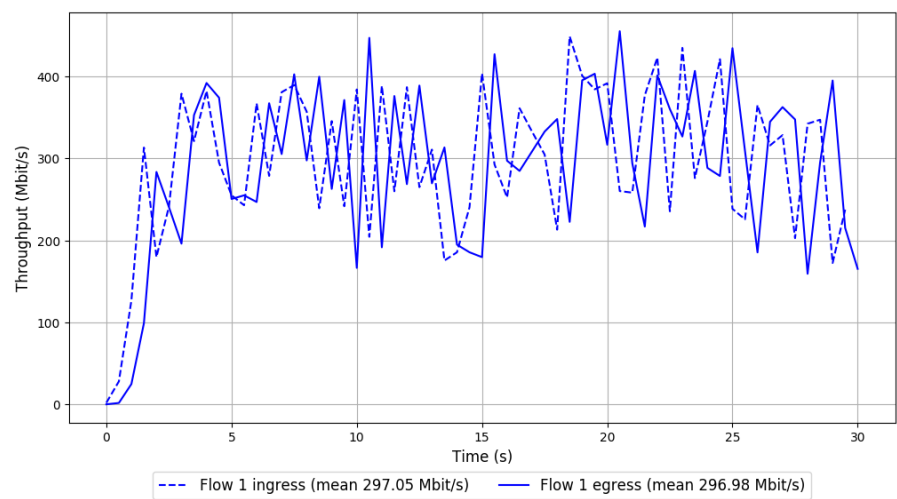
Run 1: Report of Indigo-96d2da3 — Data Link

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 20:31:10
End at: 2018-11-15 20:31:40
Local clock offset: -1.469 ms
Remote clock offset: -0.214 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 284.71 Mbit/s
95th percentile per-packet one-way delay: 82.428 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 284.71 Mbit/s
95th percentile per-packet one-way delay: 82.428 ms
Loss rate: 0.33%
```

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

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-15 20:58:53
End at: 2018-11-15 20:59:23
Local clock offset: -0.566 ms
Remote clock offset: -0.238 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 308.60 Mbit/s
95th percentile per-packet one-way delay: 86.796 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 308.60 Mbit/s
95th percentile per-packet one-way delay: 86.796 ms
Loss rate: 0.25%
```
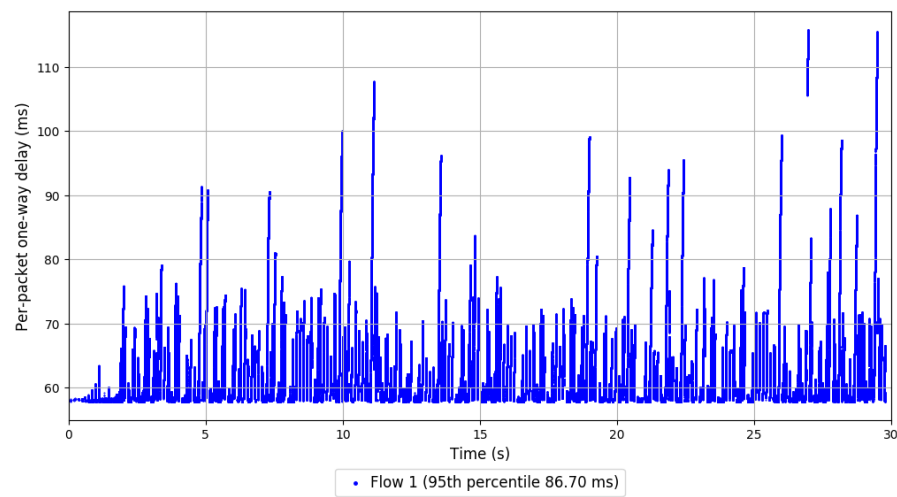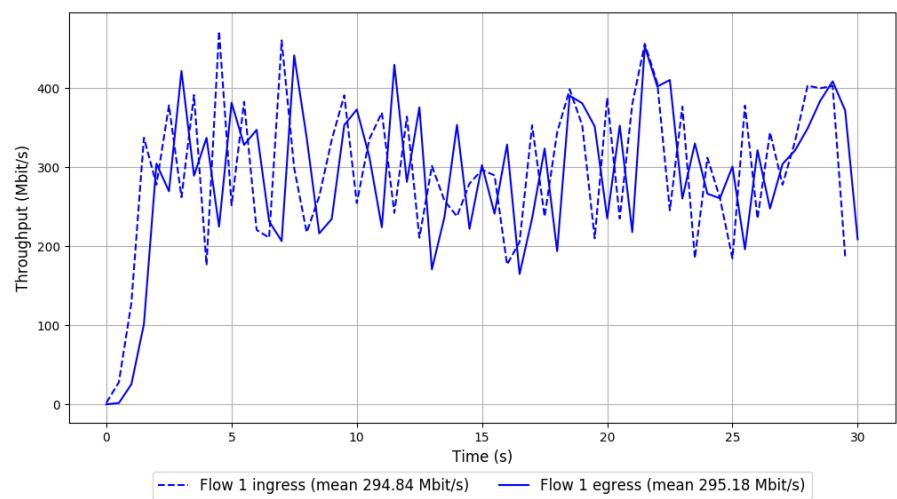
Run 3: Report of Indigo-96d2da3 — Data Link

```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 21:26:40
End at: 2018-11-15 21:27:10
Local clock offset: 0.657 ms
Remote clock offset: -0.068 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.98 Mbit/s
95th percentile per-packet one-way delay: 86.767 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 296.98 Mbit/s
95th percentile per-packet one-way delay: 86.767 ms
Loss rate: 0.42%
```
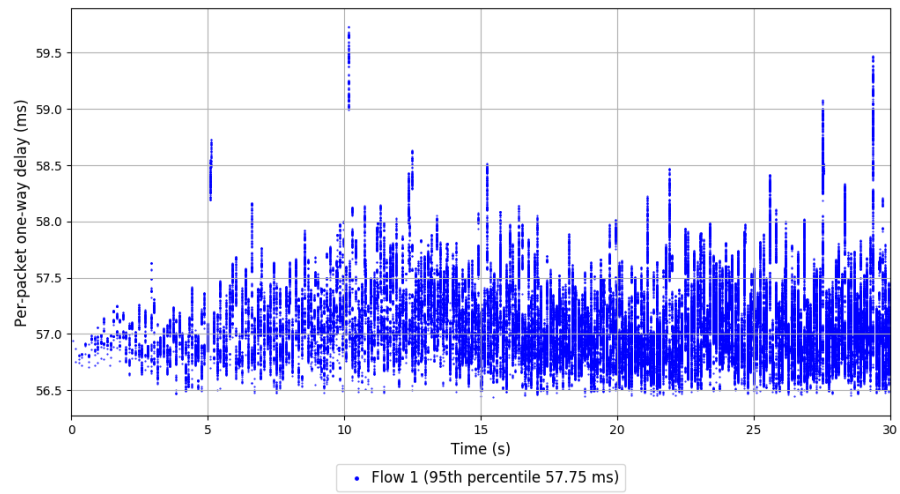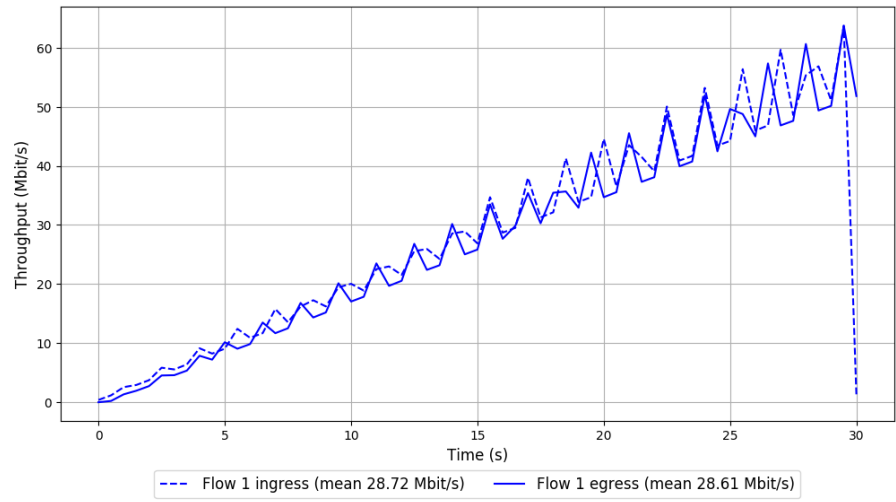
Run 4: Report of Indigo-96d2da3 — Data Link

```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 21:54:37
End at: 2018-11-15 21:55:07
Local clock offset: 0.488 ms
Remote clock offset: -0.388 ms


# Below is generated by plot.py at 2018-11-15 23:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 295.18 Mbit/s
95th percentile per-packet one-way delay: 86.705 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 295.18 Mbit/s
95th percentile per-packet one-way delay: 86.705 ms
Loss rate: 0.25%
```

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

```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 19:59:55
End at: 2018-11-15 20:00:25
Local clock offset: -1.148 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-11-15 23:03:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.61 Mbit/s
95th percentile per-packet one-way delay: 57.754 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 28.61 Mbit/s
95th percentile per-packet one-way delay: 57.754 ms
Loss rate: 0.76%
```
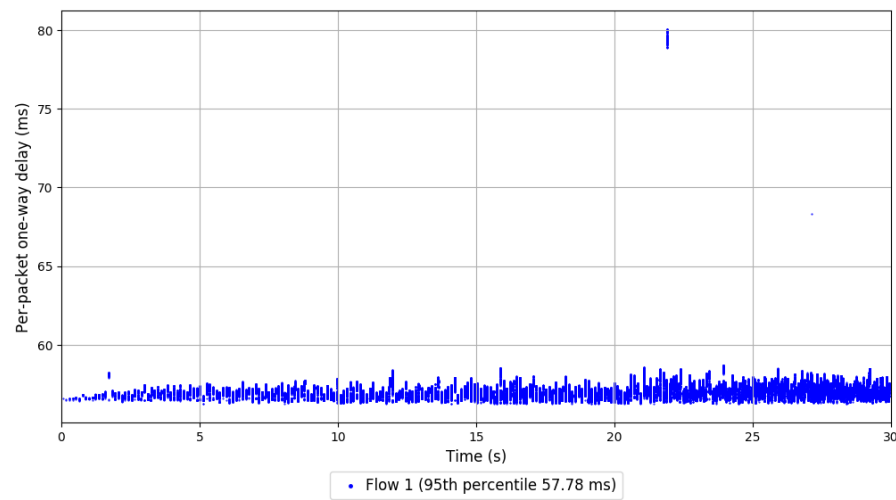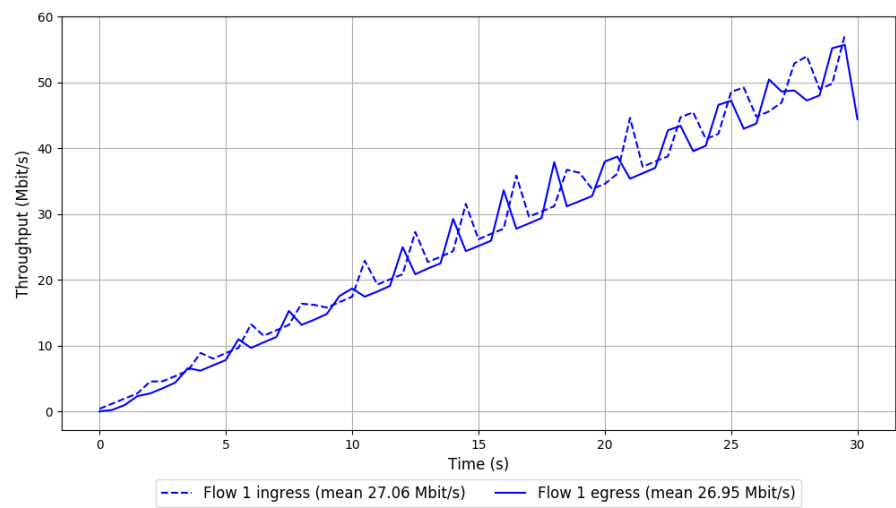
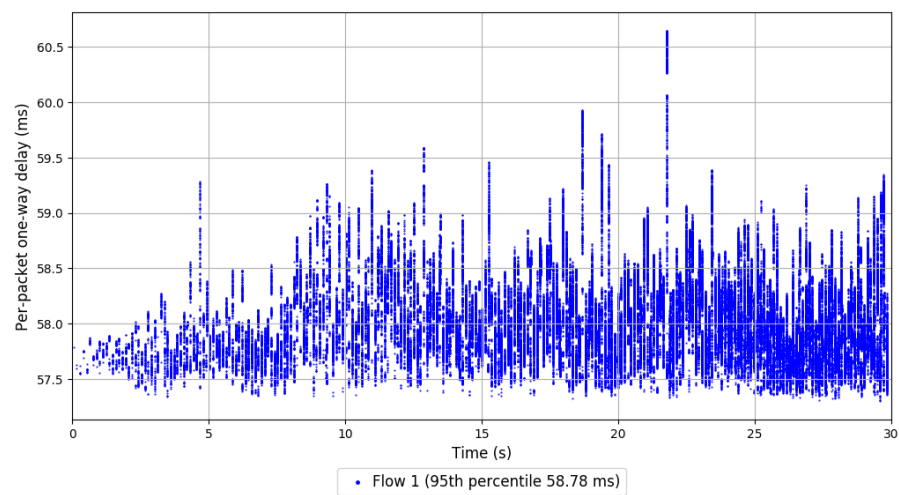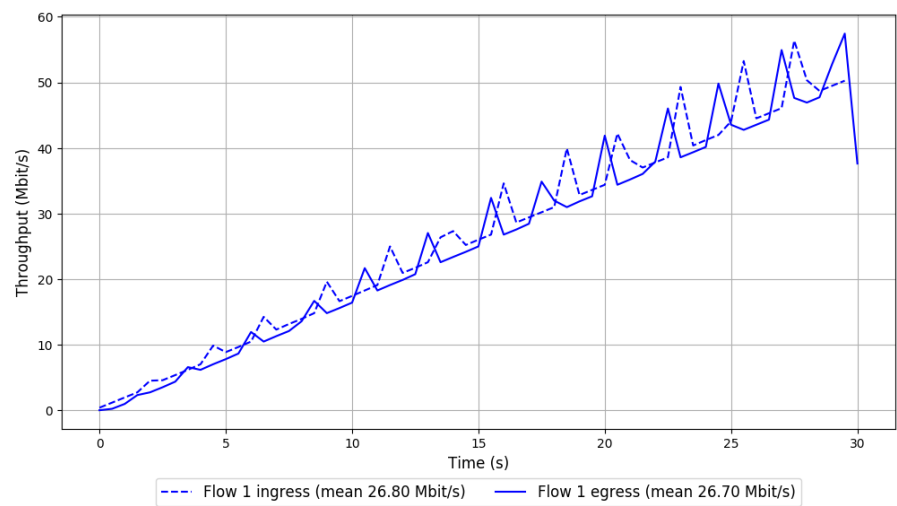Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-11-15 20:28:13
End at: 2018-11-15 20:28:43
Local clock offset: -1.212 ms
Remote clock offset: 0.367 ms


# Below is generated by plot.py at 2018-11-15 23:03:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.95 Mbit/s
95th percentile per-packet one-way delay: 57.781 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 26.95 Mbit/s
95th percentile per-packet one-way delay: 57.781 ms
Loss rate: 0.78%
```

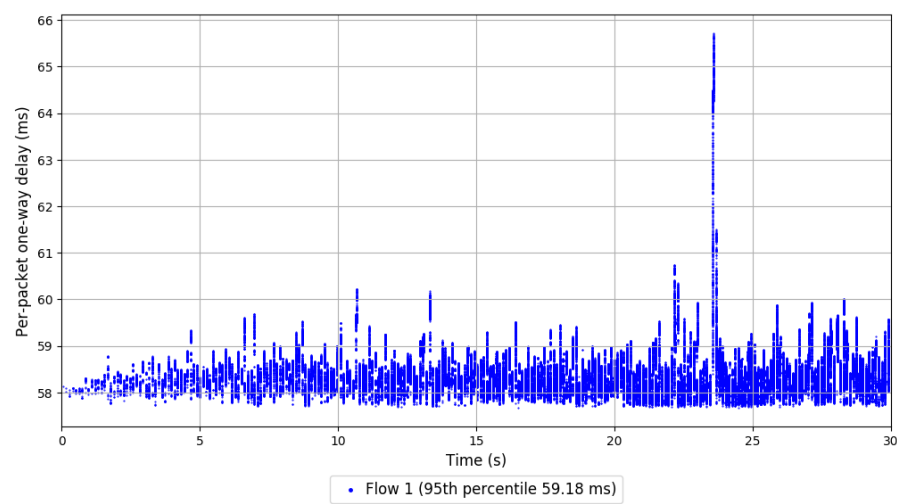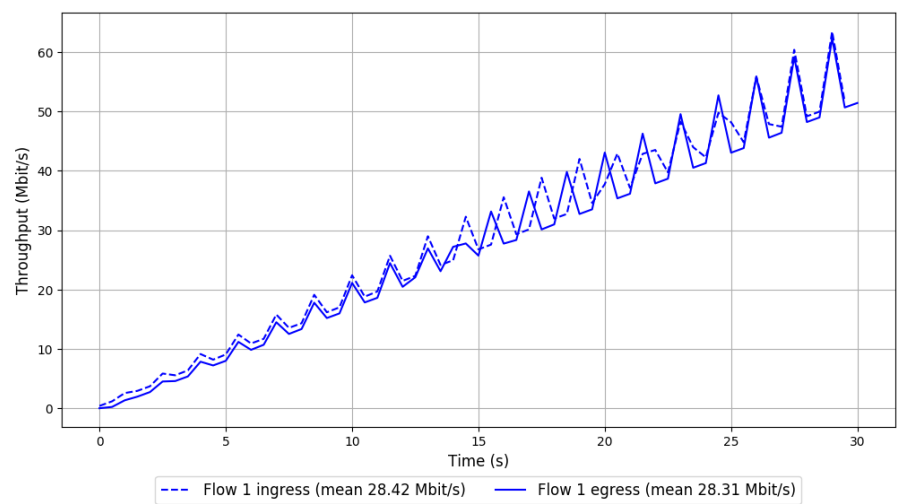Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-11-15 20:56:04
End at: 2018-11-15 20:56:34
Local clock offset: -0.779 ms
Remote clock offset: -0.847 ms


# Below is generated by plot.py at 2018-11-15 23:03:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.70 Mbit/s
95th percentile per-packet one-way delay: 58.780 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 26.70 Mbit/s
95th percentile per-packet one-way delay: 58.780 ms
Loss rate: 0.79%
```

Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 26.80 Mbit/s) ----- Flow 1 egress (mean 26.70 Mbit/s) ——

Flow 1 (95th percentile 58.78 ms) •

```
Run 4: Statistics of LEDBAT

Start at: 2018-11-15 21:23:34
End at: 2018-11-15 21:24:04
Local clock offset: 0.515 ms
Remote clock offset: -0.726 ms


# Below is generated by plot.py at 2018-11-15 23:03:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.31 Mbit/s
95th percentile per-packet one-way delay: 59.181 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 28.31 Mbit/s
95th percentile per-packet one-way delay: 59.181 ms
Loss rate: 0.76%
```
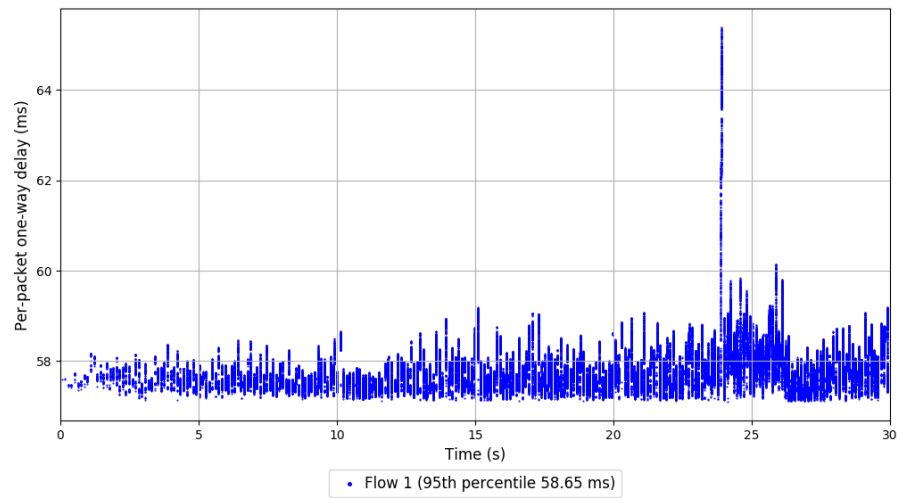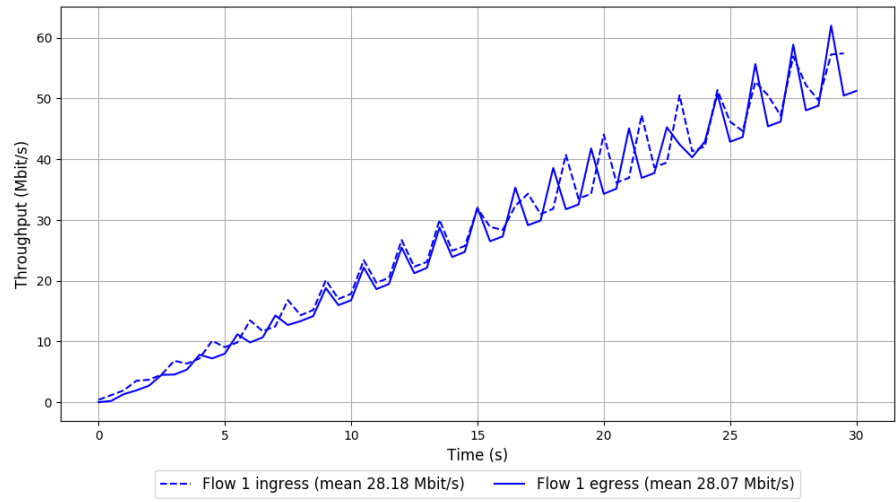
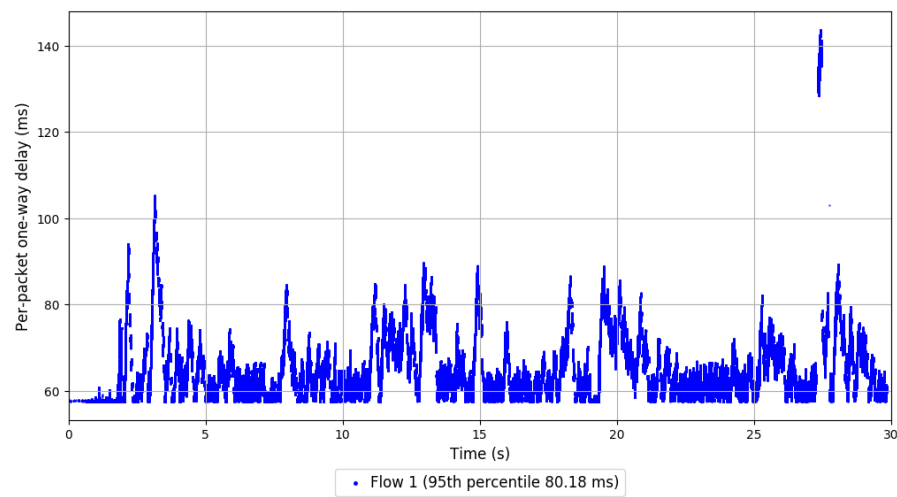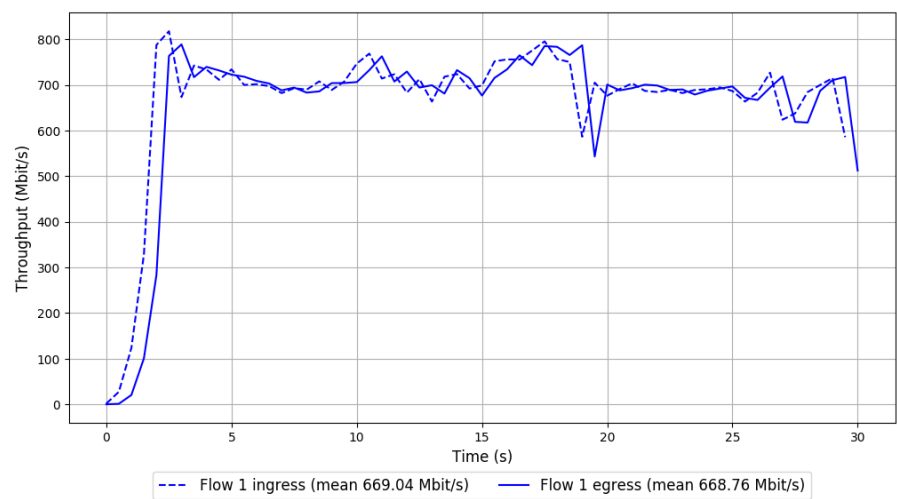Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 28.42 Mbit/s)   Flow 1 egress (mean 28.31 Mbit/s)

Flow 1 (95th percentile 59.18 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-11-15 21:51:43
End at: 2018-11-15 21:52:13
Local clock offset: 0.403 ms
Remote clock offset: 0.277 ms


# Below is generated by plot.py at 2018-11-15 23:03:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.07 Mbit/s
95th percentile per-packet one-way delay: 58.646 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 28.07 Mbit/s
95th percentile per-packet one-way delay: 58.646 ms
Loss rate: 0.77%
```

Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 20:05:38
End at: 2018-11-15 20:06:08
Local clock offset: -1.002 ms
Remote clock offset: -0.667 ms

# Below is generated by plot.py at 2018-11-15 23:12:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 668.76 Mbit/s
95th percentile per-packet one-way delay: 80.183 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 668.76 Mbit/s
95th percentile per-packet one-way delay: 80.183 ms
Loss rate: 0.43%
```
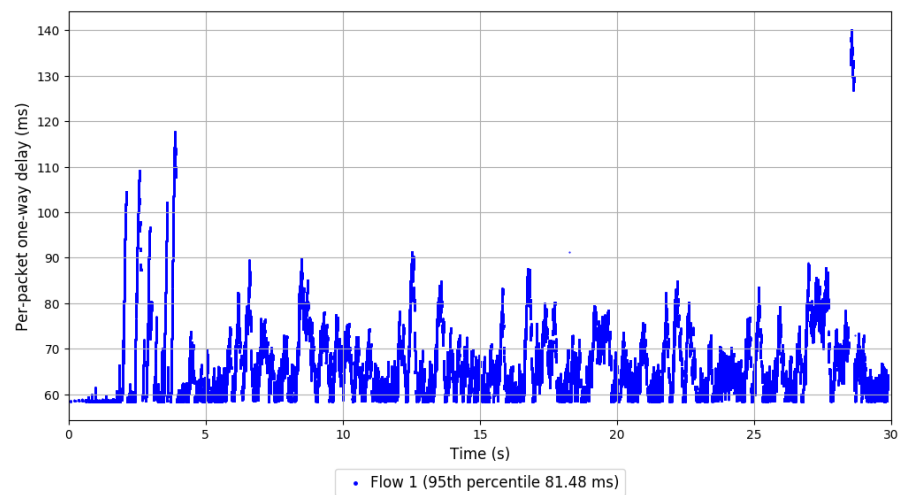
Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 20:34:02
End at: 2018-11-15 20:34:32
Local clock offset: -1.459 ms
Remote clock offset: 1.205 ms


# Below is generated by plot.py at 2018-11-15 23:12:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 642.99 Mbit/s
95th percentile per-packet one-way delay: 81.480 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 642.99 Mbit/s
95th percentile per-packet one-way delay: 81.480 ms
Loss rate: 0.46%
```
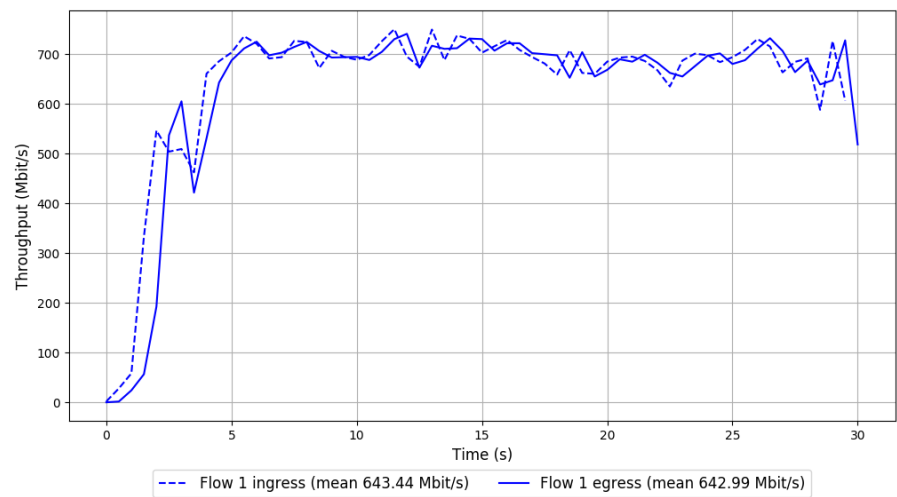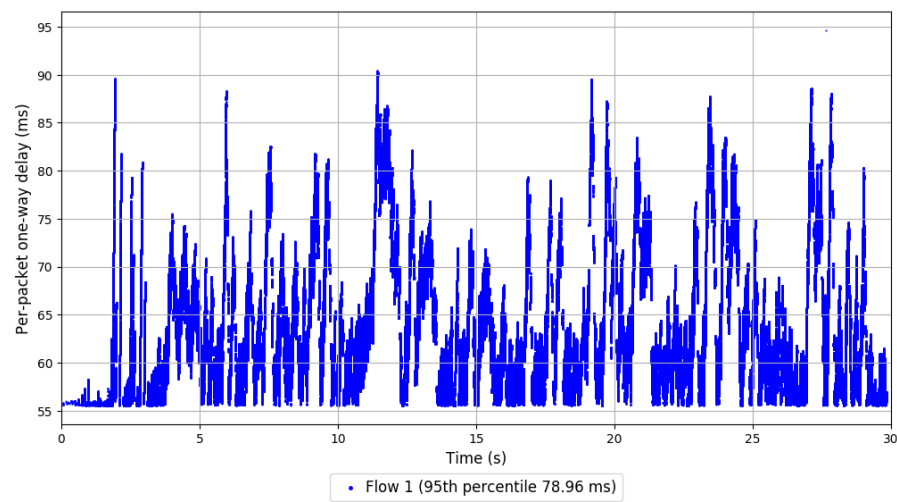
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 21:01:46
End at: 2018-11-15 21:02:16
Local clock offset: -0.219 ms
Remote clock offset: 1.134 ms


# Below is generated by plot.py at 2018-11-15 23:14:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 650.70 Mbit/s
95th percentile per-packet one-way delay: 78.962 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 650.70 Mbit/s
95th percentile per-packet one-way delay: 78.962 ms
Loss rate: 0.44%
```
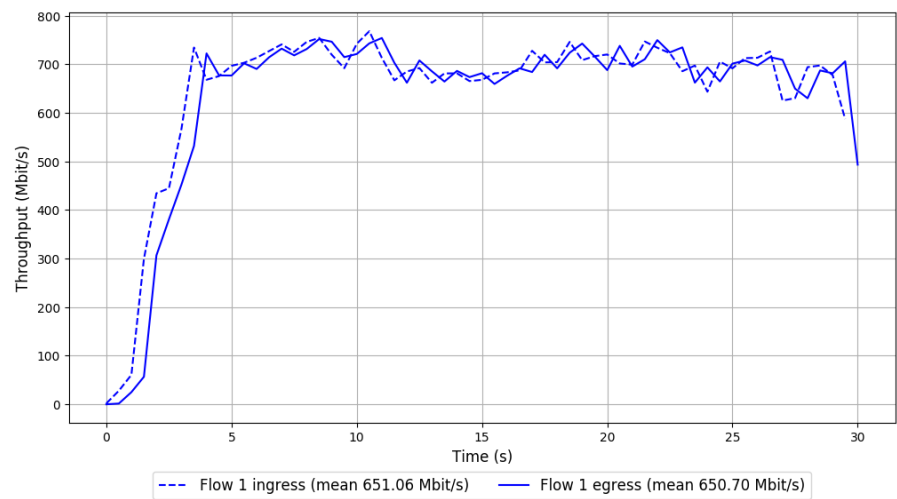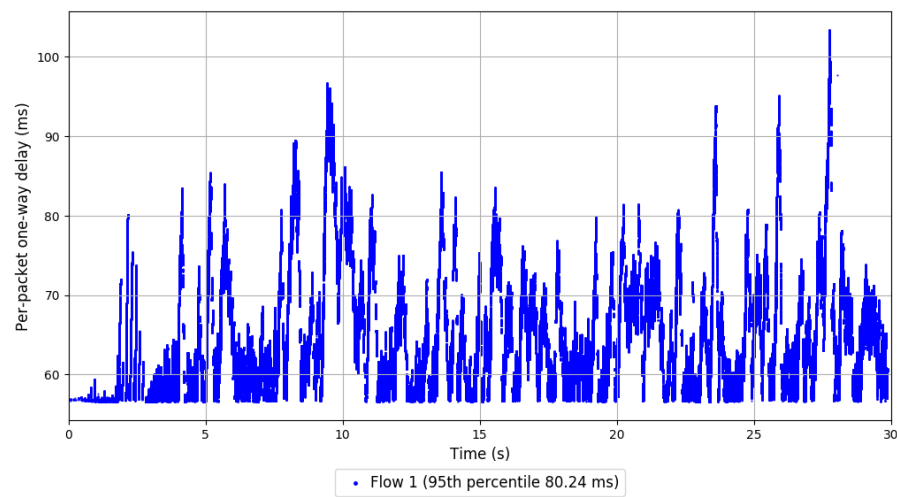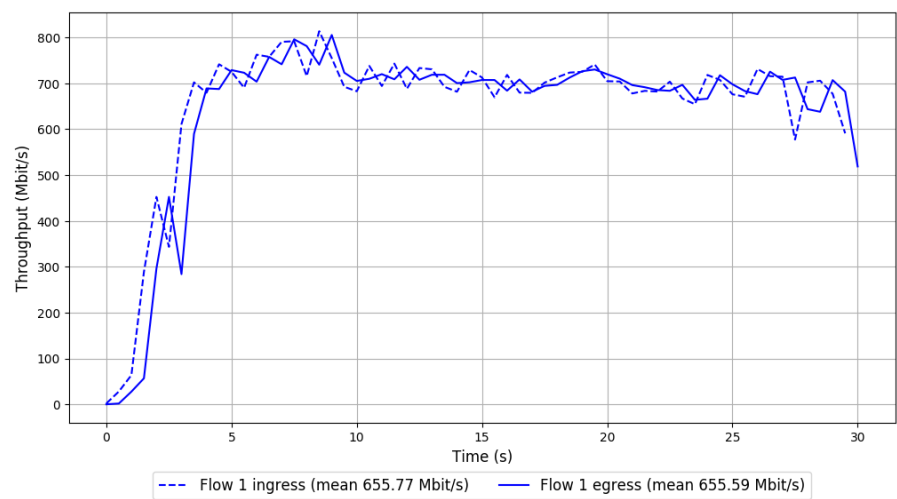
Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 651.06 Mbit/s)   Flow 1 egress (mean 650.70 Mbit/s)

• Flow 1 (95th percentile 78.96 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 21:29:28
End at: 2018-11-15 21:29:58
Local clock offset: 0.048 ms
Remote clock offset: 0.175 ms


# Below is generated by plot.py at 2018-11-15 23:14:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 655.59 Mbit/s
95th percentile per-packet one-way delay: 80.236 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 655.59 Mbit/s
95th percentile per-packet one-way delay: 80.236 ms
Loss rate: 0.41%
```
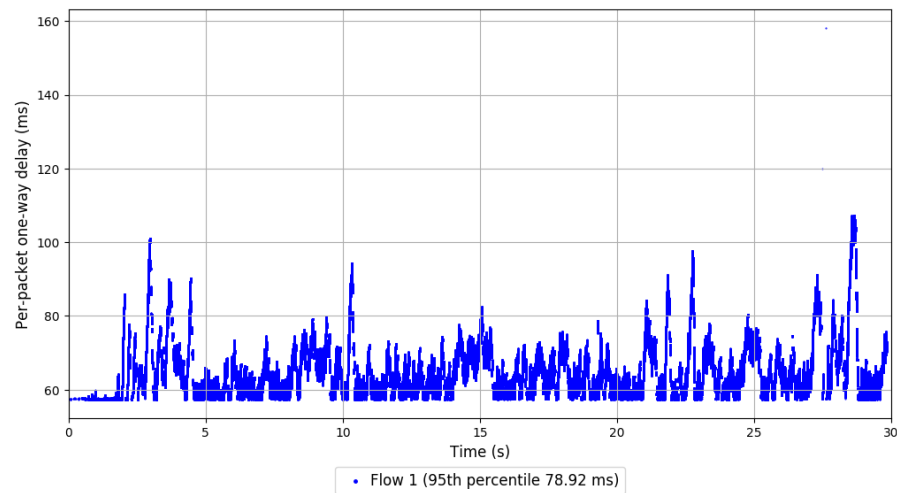
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 21:57:35
End at: 2018-11-15 21:58:06
Local clock offset: 0.468 ms
Remote clock offset: 0.258 ms


# Below is generated by plot.py at 2018-11-15 23:14:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 651.26 Mbit/s
95th percentile per-packet one-way delay: 78.917 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 651.26 Mbit/s
95th percentile per-packet one-way delay: 78.917 ms
Loss rate: 0.43%
```
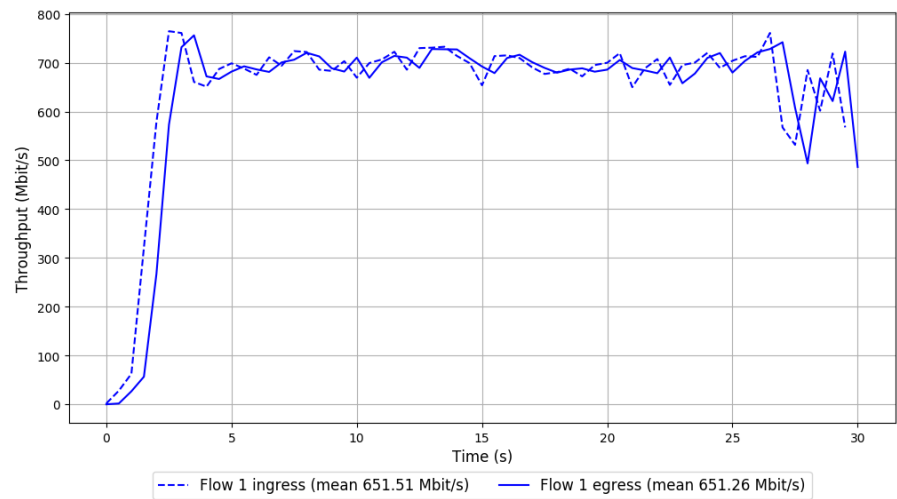
Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 19:54:46
End at: 2018-11-15 19:55:16
Local clock offset: -0.68 ms
Remote clock offset: 1.114 ms


# Below is generated by plot.py at 2018-11-15 23:18:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 406.26 Mbit/s
95th percentile per-packet one-way delay: 106.075 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 406.26 Mbit/s
95th percentile per-packet one-way delay: 106.075 ms
Loss rate: 0.46%
```
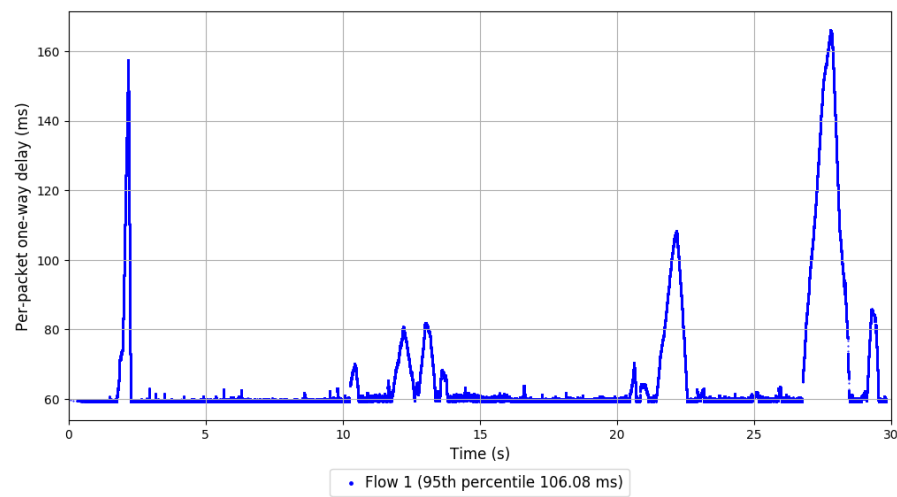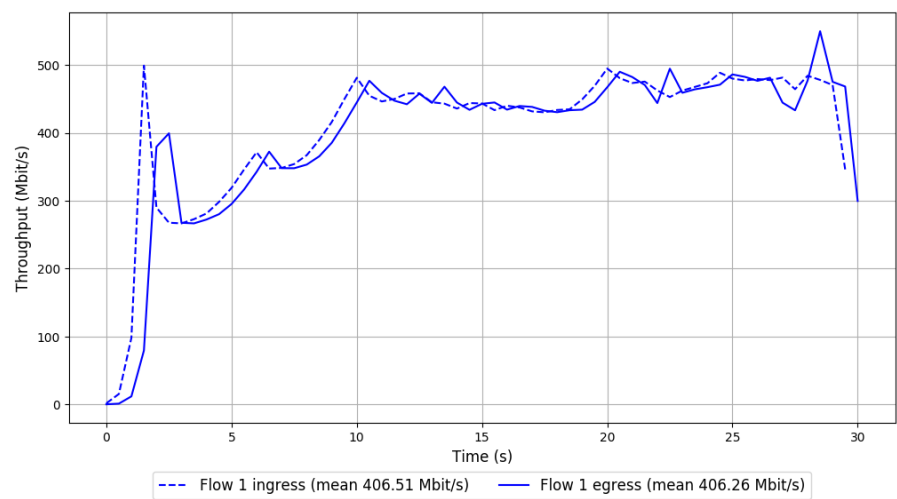
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 20:22:49
End at: 2018-11-15 20:23:19
Local clock offset: -1.2 ms
Remote clock offset: -0.919 ms


# Below is generated by plot.py at 2018-11-15 23:19:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 464.99 Mbit/s
95th percentile per-packet one-way delay: 173.870 ms
Loss rate: 5.04%
-- Flow 1:
Average throughput: 464.99 Mbit/s
95th percentile per-packet one-way delay: 173.870 ms
Loss rate: 5.04%
```
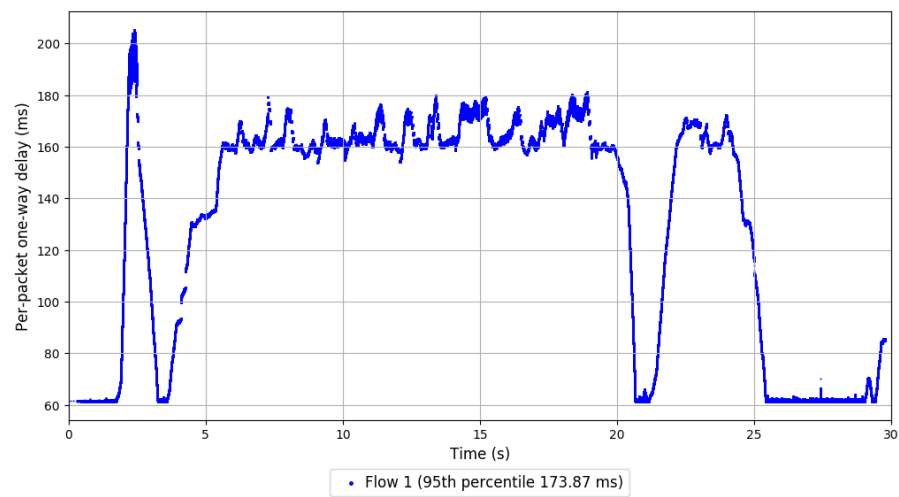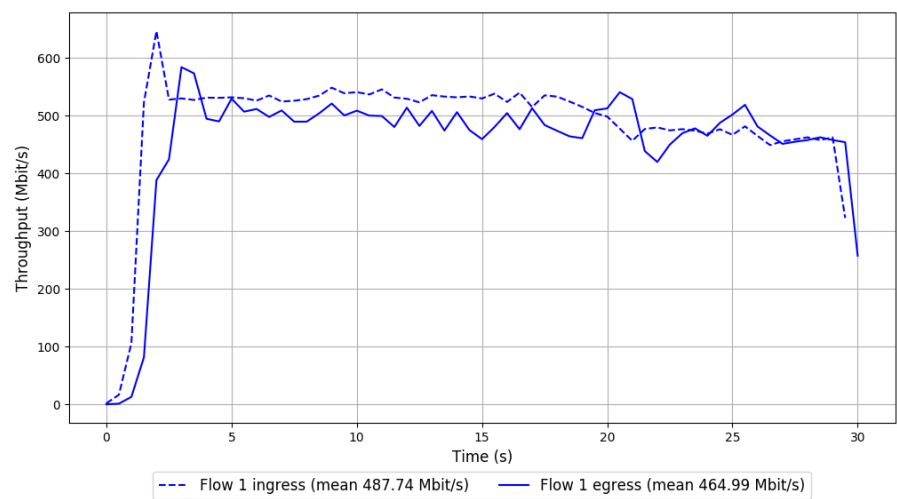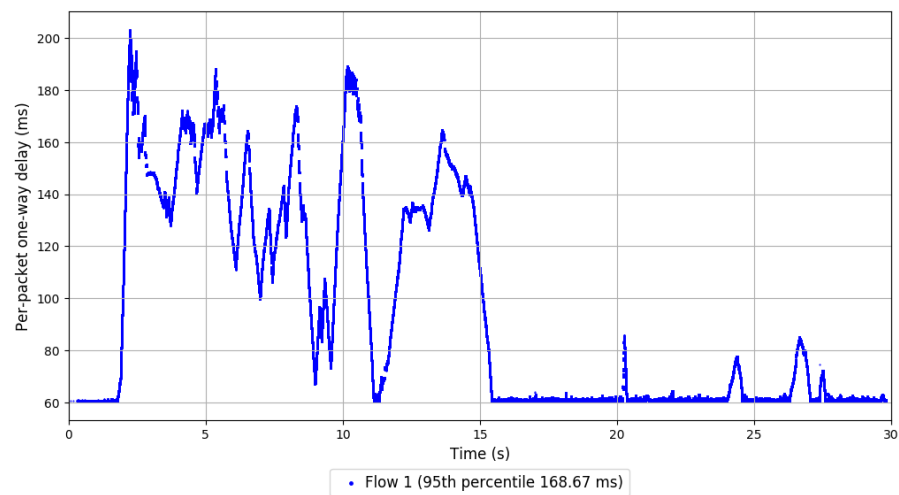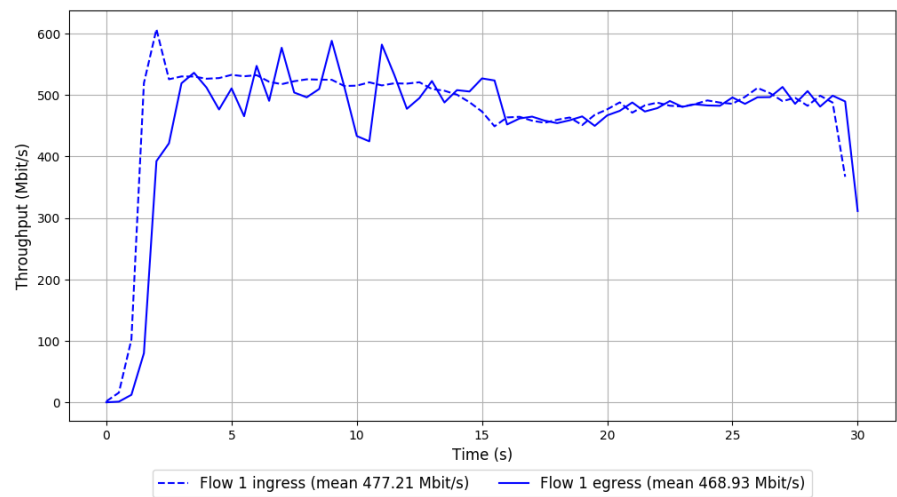
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 20:51:13
End at: 2018-11-15 20:51:43
Local clock offset: -0.512 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2018-11-15 23:20:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 468.93 Mbit/s
95th percentile per-packet one-way delay: 168.674 ms
Loss rate: 2.12%
-- Flow 1:
Average throughput: 468.93 Mbit/s
95th percentile per-packet one-way delay: 168.674 ms
Loss rate: 2.12%
```
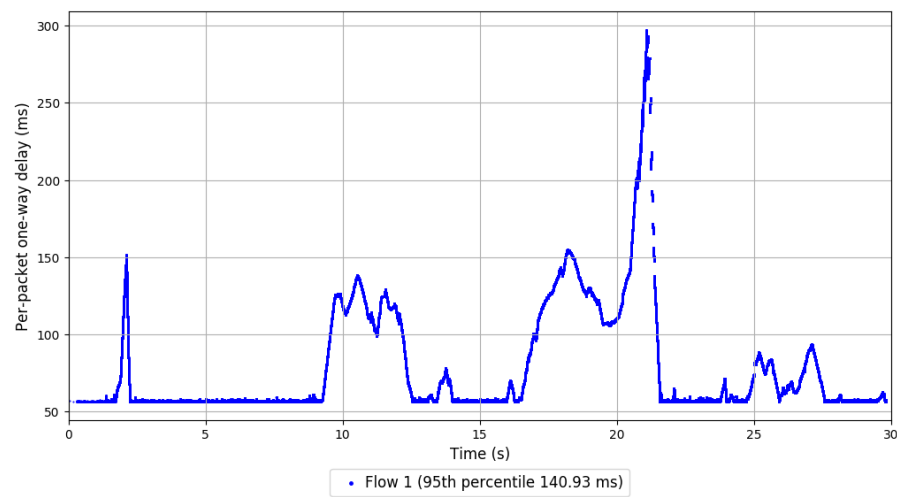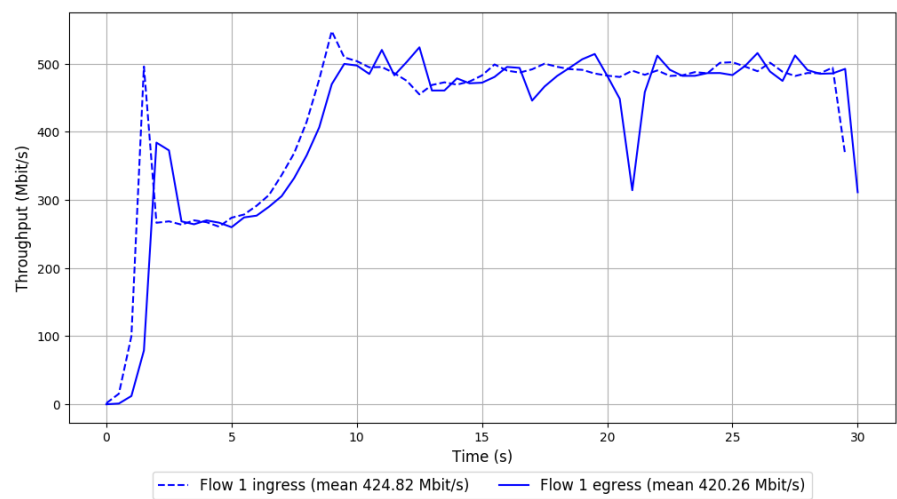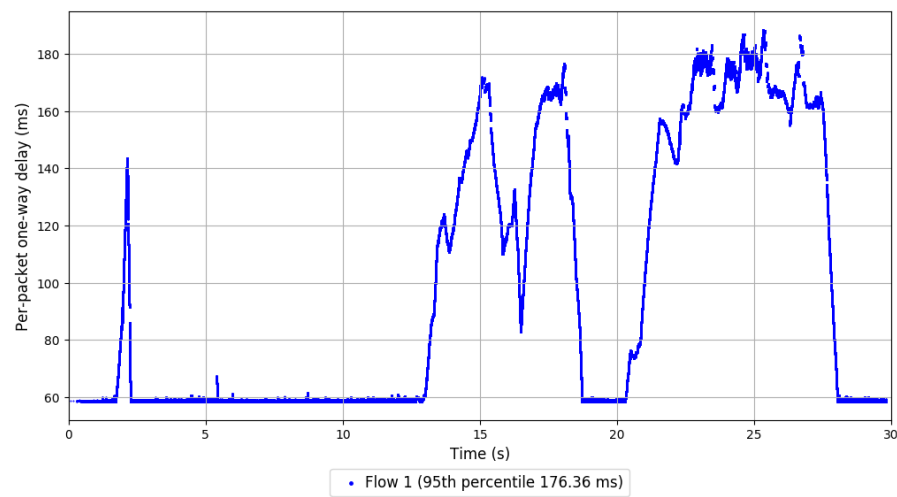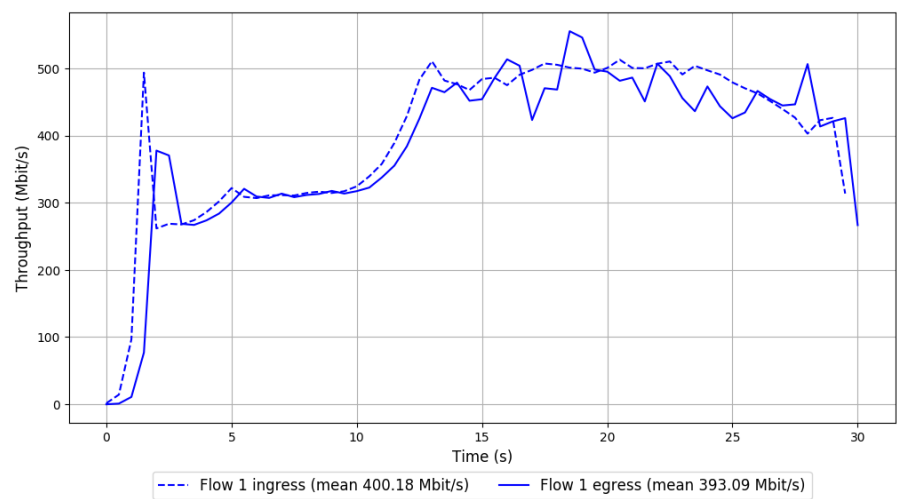
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 477.21 Mbit/s)   Flow 1 egress (mean 468.93 Mbit/s)

Flow 1 (95th percentile 168.67 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 21:18:27
End at: 2018-11-15 21:18:57
Local clock offset: 0.547 ms
Remote clock offset: 0.391 ms


# Below is generated by plot.py at 2018-11-15 23:29:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 420.26 Mbit/s
95th percentile per-packet one-way delay: 140.927 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 420.26 Mbit/s
95th percentile per-packet one-way delay: 140.927 ms
Loss rate: 1.45%
```
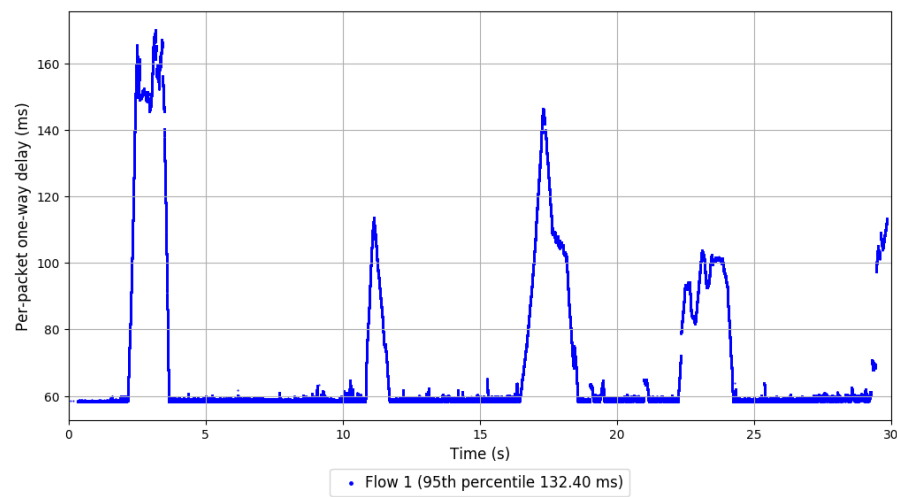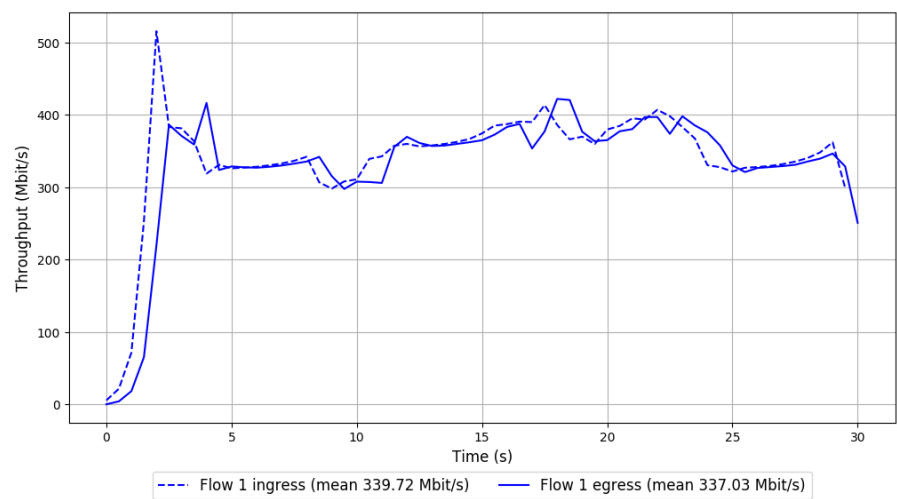
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 424.82 Mbit/s)   Flow 1 egress (mean 420.26 Mbit/s)

• Flow 1 (95th percentile 140.93 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 21:46:51
End at: 2018-11-15 21:47:21
Local clock offset: 0.622 ms
Remote clock offset: -1.278 ms


# Below is generated by plot.py at 2018-11-15 23:29:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 393.09 Mbit/s
95th percentile per-packet one-way delay: 176.361 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 393.09 Mbit/s
95th percentile per-packet one-way delay: 176.361 ms
Loss rate: 2.15%
```

Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 400.18 Mbit/s)   Flow 1 egress (mean 393.09 Mbit/s)
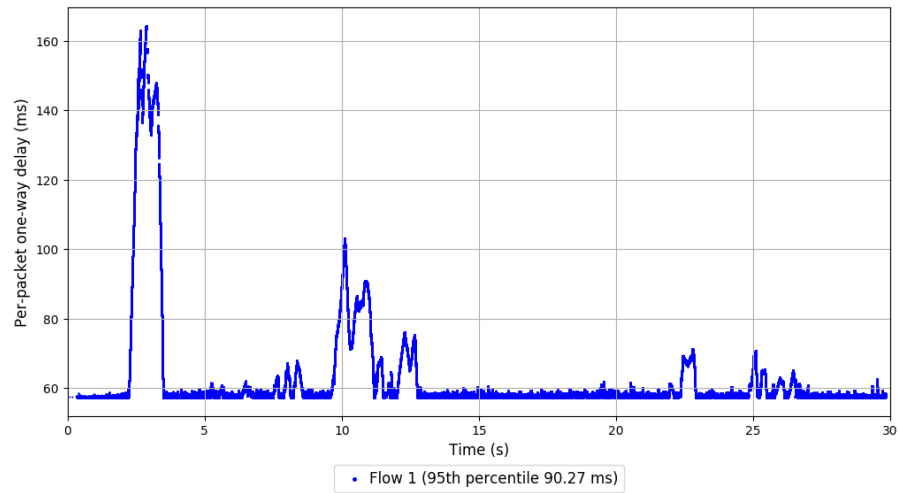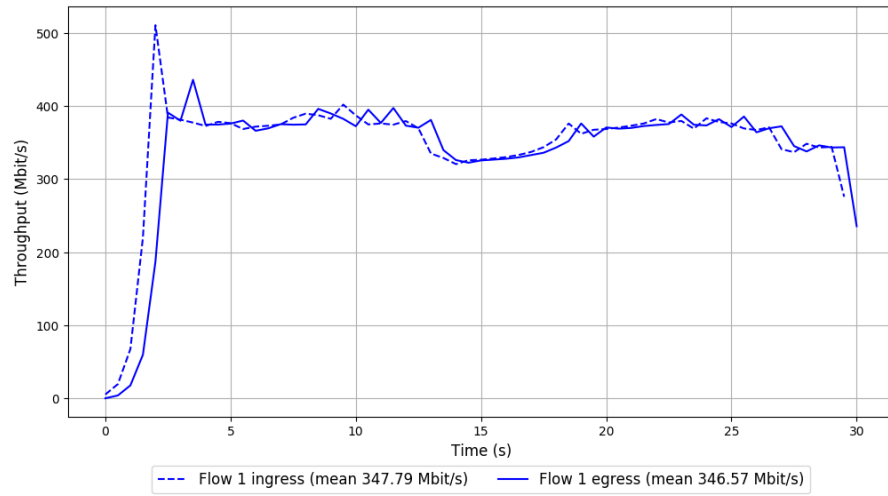

• Flow 1 (95th percentile 176.36 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 20:09:48
End at: 2018-11-15 20:10:18
Local clock offset: -0.758 ms
Remote clock offset: -1.293 ms


# Below is generated by plot.py at 2018-11-15 23:29:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 337.03 Mbit/s
95th percentile per-packet one-way delay: 132.395 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 337.03 Mbit/s
95th percentile per-packet one-way delay: 132.395 ms
Loss rate: 1.17%
```
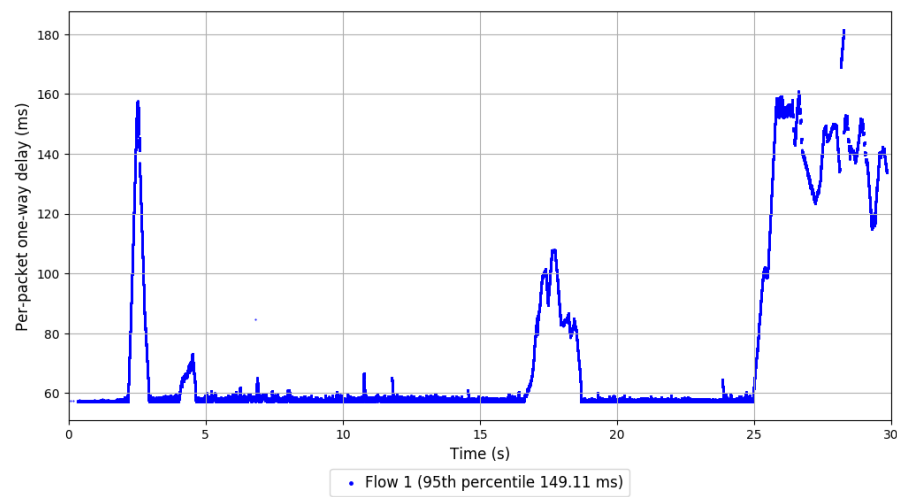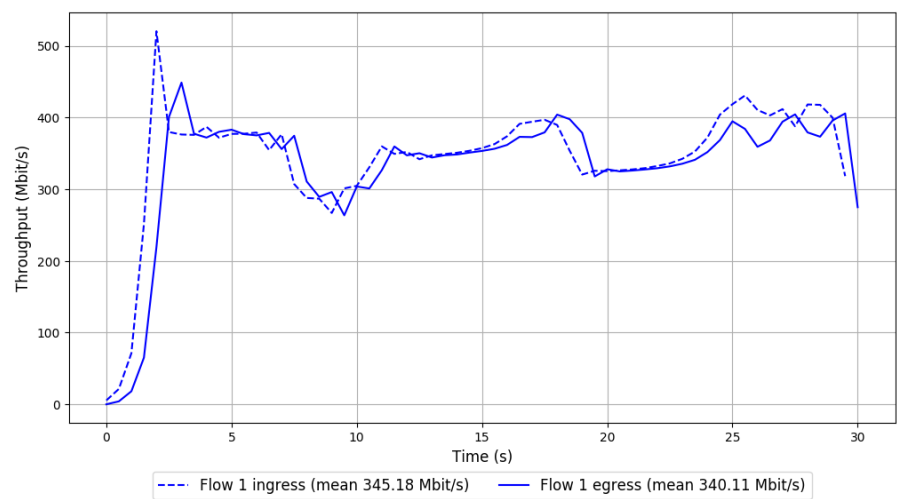
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 20:38:12
End at: 2018-11-15 20:38:42
Local clock offset: -1.331 ms
Remote clock offset: -0.207 ms


# Below is generated by plot.py at 2018-11-15 23:29:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 346.57 Mbit/s
95th percentile per-packet one-way delay: 90.271 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 346.57 Mbit/s
95th percentile per-packet one-way delay: 90.271 ms
Loss rate: 0.74%
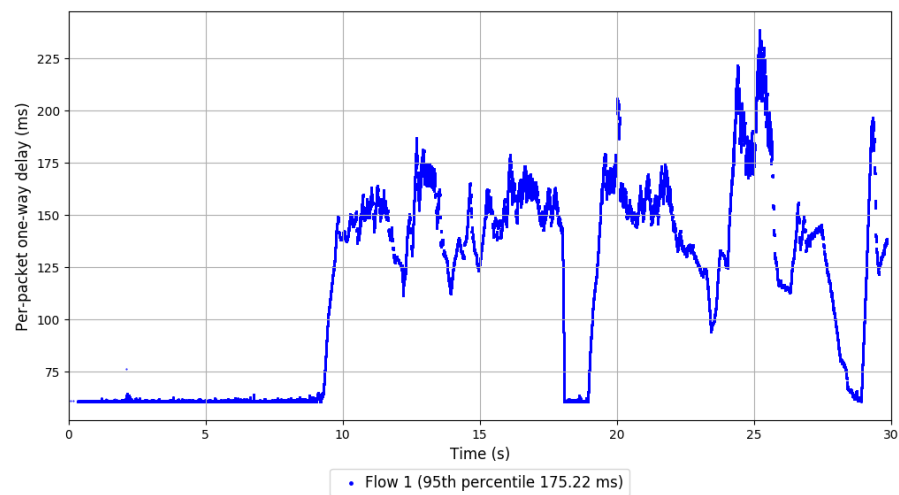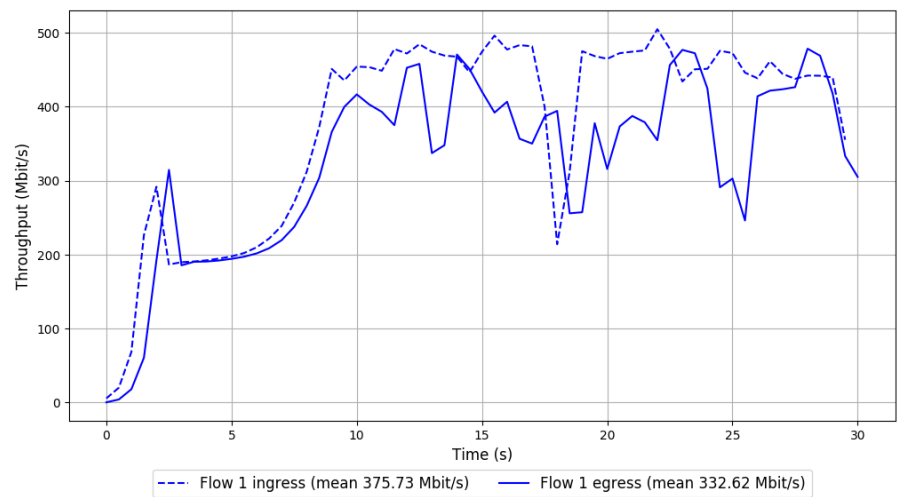```

Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 21:05:53
End at: 2018-11-15 21:06:23
Local clock offset: -0.034 ms
Remote clock offset: -0.125 ms


# Below is generated by plot.py at 2018-11-15 23:29:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.11 Mbit/s
95th percentile per-packet one-way delay: 149.114 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 340.11 Mbit/s
95th percentile per-packet one-way delay: 149.114 ms
Loss rate: 1.85%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 345.18 Mbit/s) —— Flow 1 egress (mean 340.11 Mbit/s)

• Flow 1 (95th percentile 149.11 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 21:33:45
End at: 2018-11-15 21:34:15
Local clock offset: 0.269 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2018-11-15 23:31:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 332.62 Mbit/s
95th percentile per-packet one-way delay: 175.216 ms
Loss rate: 11.83%
-- Flow 1:
Average throughput: 332.62 Mbit/s
95th percentile per-packet one-way delay: 175.216 ms
Loss rate: 11.83%
```
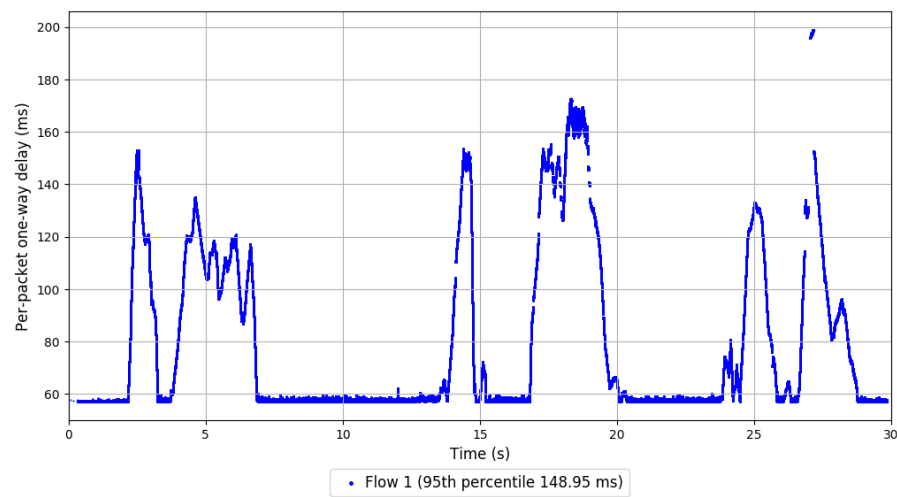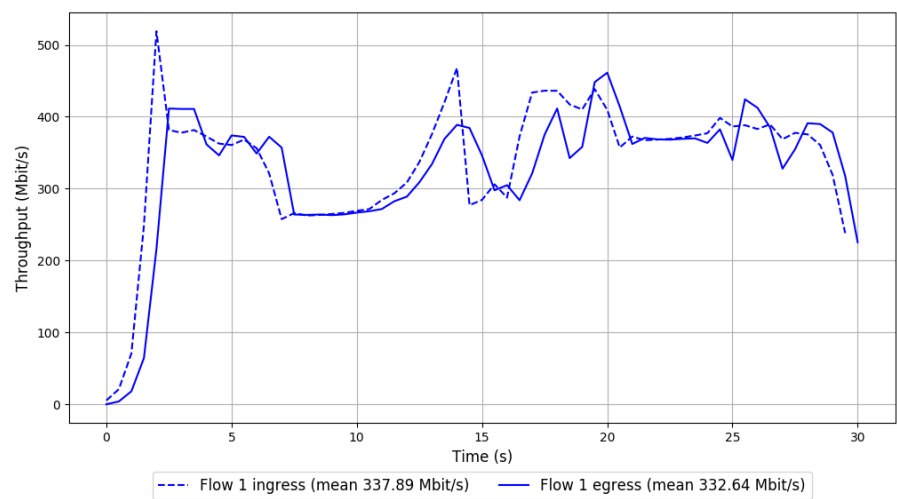
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 375.73 Mbit/s)   Flow 1 egress (mean 332.62 Mbit/s)

Flow 1 (95th percentile 175.22 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 22:01:50
End at: 2018-11-15 22:02:20
Local clock offset: 0.489 ms
Remote clock offset: 0.269 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 332.64 Mbit/s
95th percentile per-packet one-way delay: 148.949 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 332.64 Mbit/s
95th percentile per-packet one-way delay: 148.949 ms
Loss rate: 1.94%
```
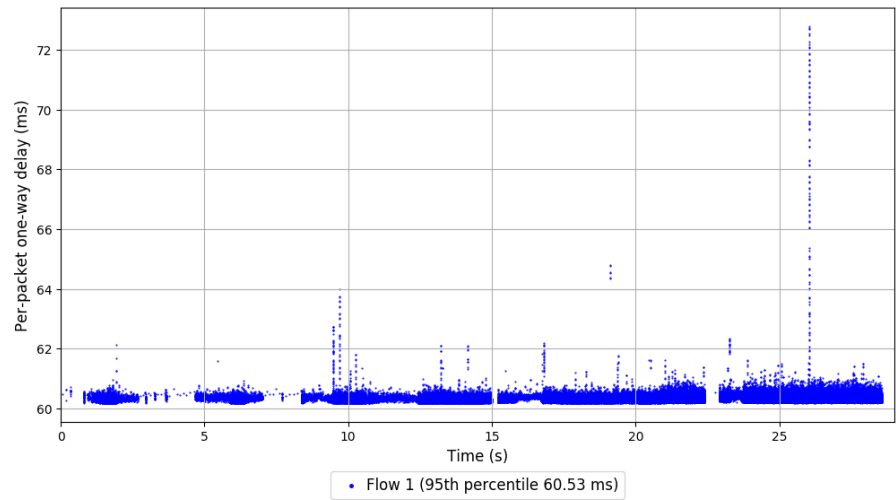
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 20:07:27
End at: 2018-11-15 20:07:57
Local clock offset: -0.95 ms
Remote clock offset: 0.033 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.67 Mbit/s
95th percentile per-packet one-way delay: 60.535 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 57.67 Mbit/s
95th percentile per-packet one-way delay: 60.535 ms
Loss rate: 0.62%
```
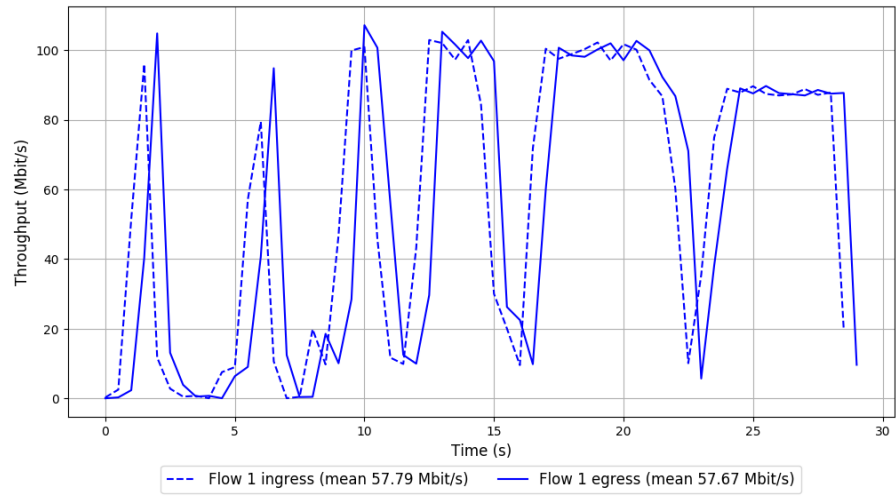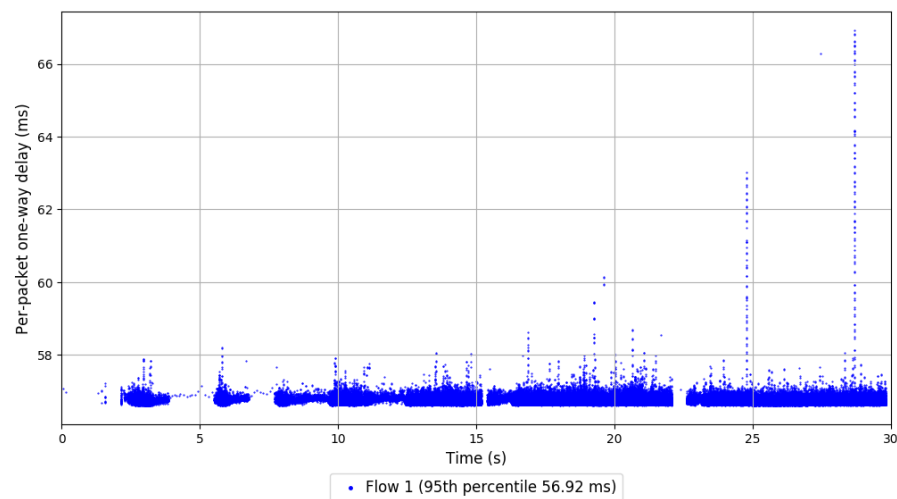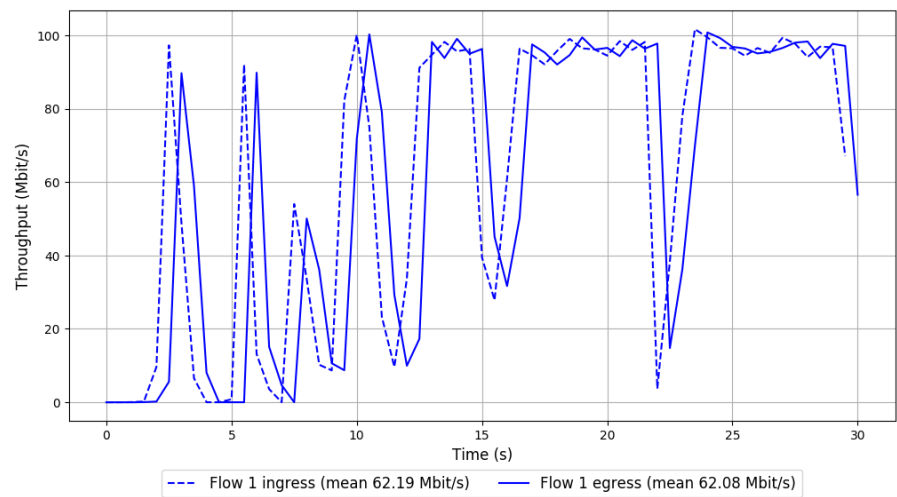
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 20:35:51
End at: 2018-11-15 20:36:21
Local clock offset: -1.378 ms
Remote clock offset: -0.229 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.08 Mbit/s
95th percentile per-packet one-way delay: 56.923 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 62.08 Mbit/s
95th percentile per-packet one-way delay: 56.923 ms
Loss rate: 0.56%
```

Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 21:03:32
End at: 2018-11-15 21:04:02
Local clock offset: 0.113 ms
Remote clock offset: -0.836 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.98 Mbit/s
95th percentile per-packet one-way delay: 58.014 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 50.98 Mbit/s
95th percentile per-packet one-way delay: 58.014 ms
Loss rate: 0.72%
```
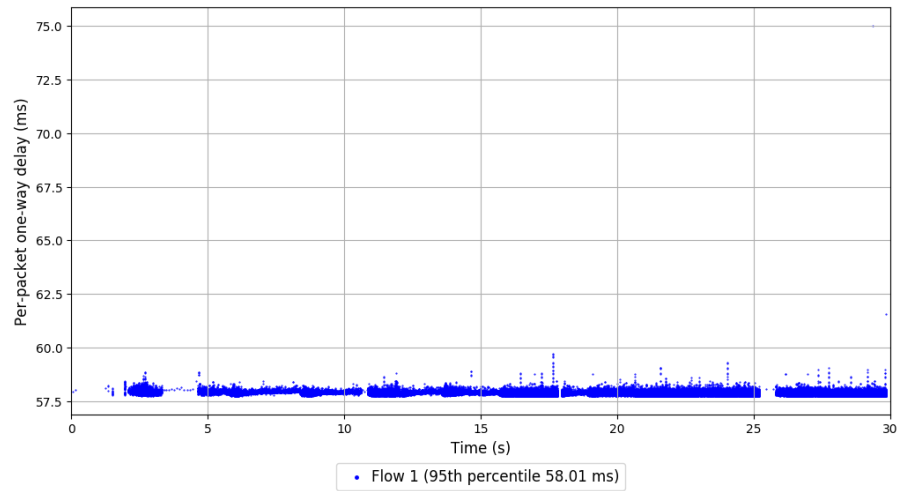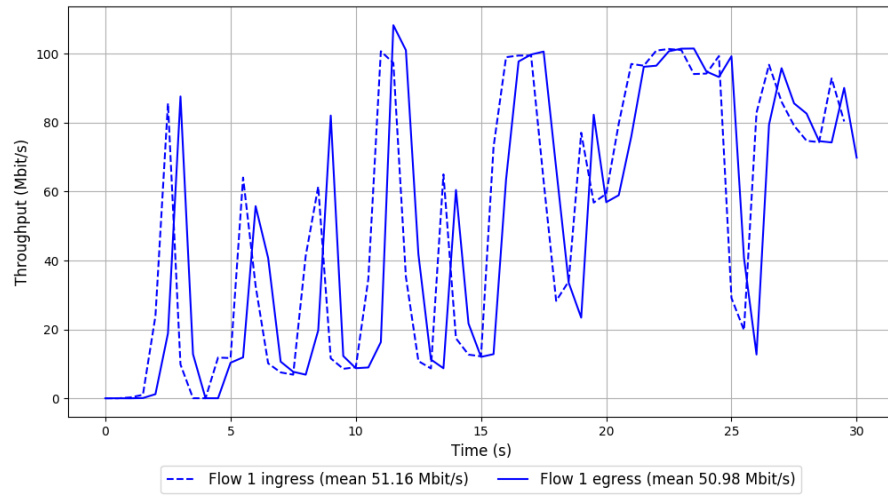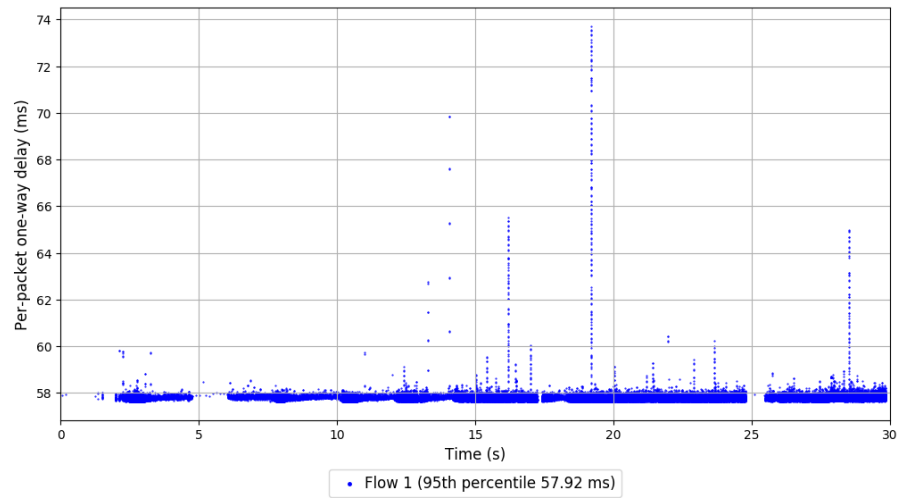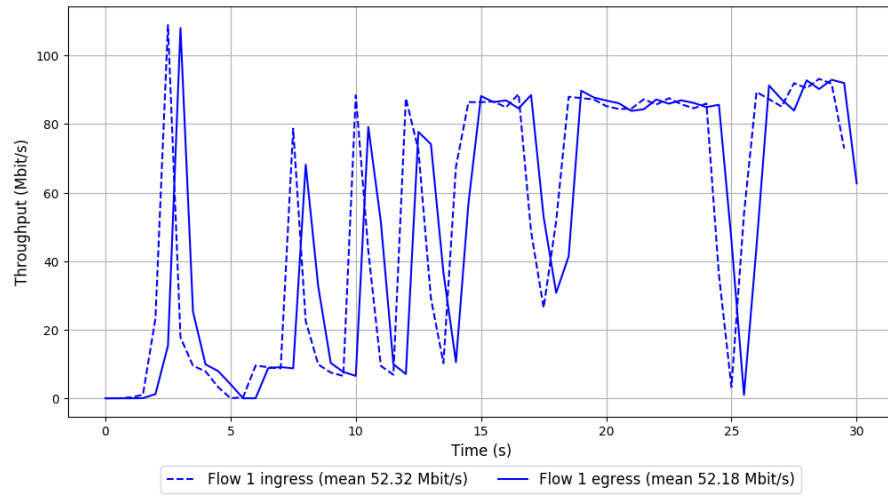
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 21:31:24
End at: 2018-11-15 21:31:54
Local clock offset: 0.272 ms
Remote clock offset: -0.68 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.18 Mbit/s
95th percentile per-packet one-way delay: 57.924 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 52.18 Mbit/s
95th percentile per-packet one-way delay: 57.924 ms
Loss rate: 0.67%
```
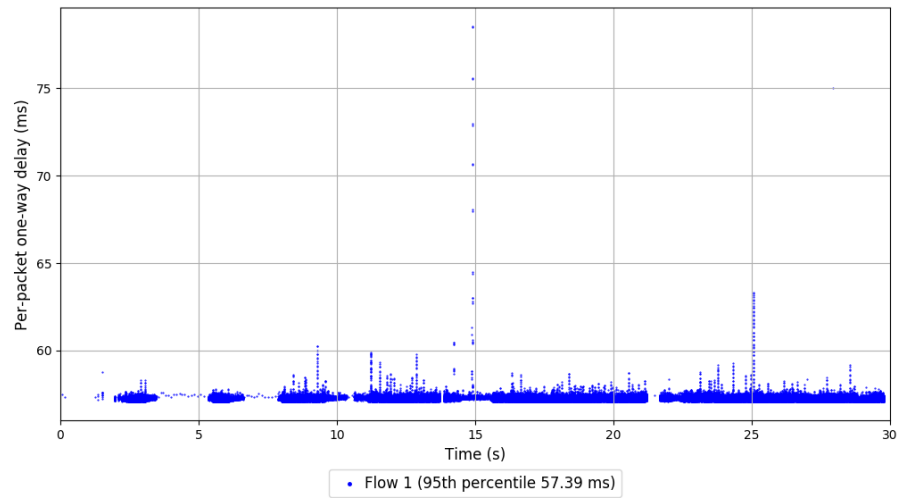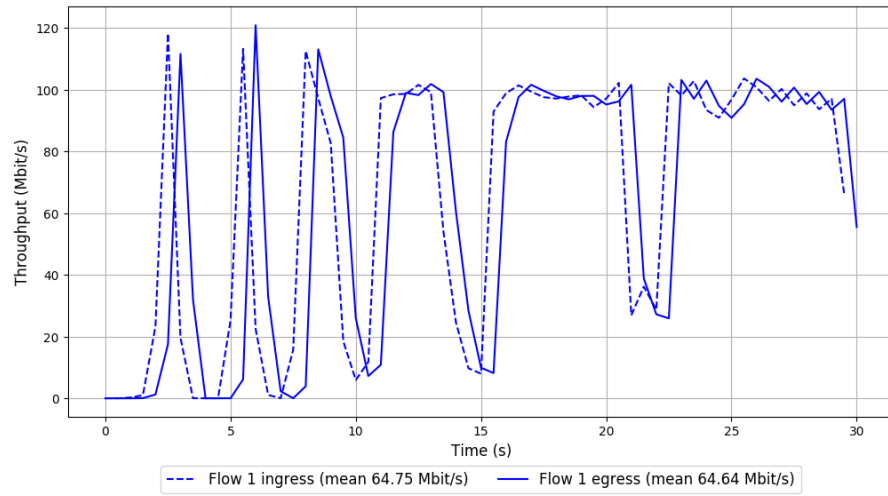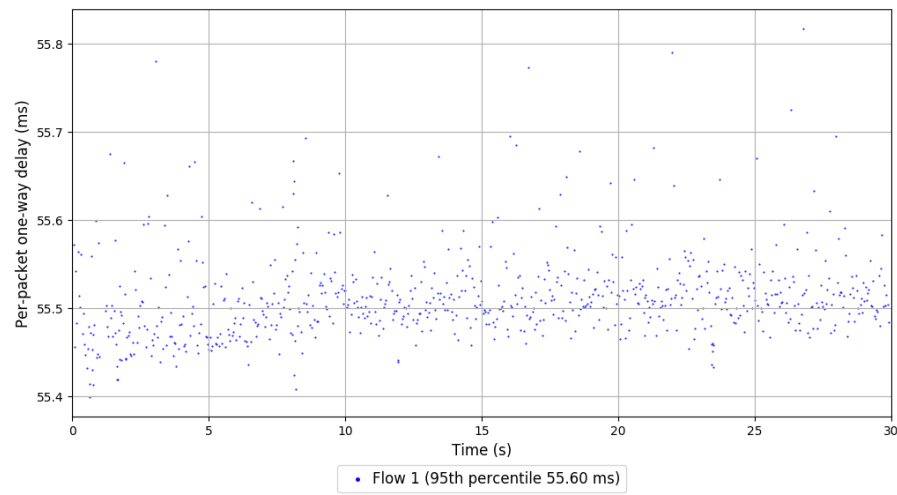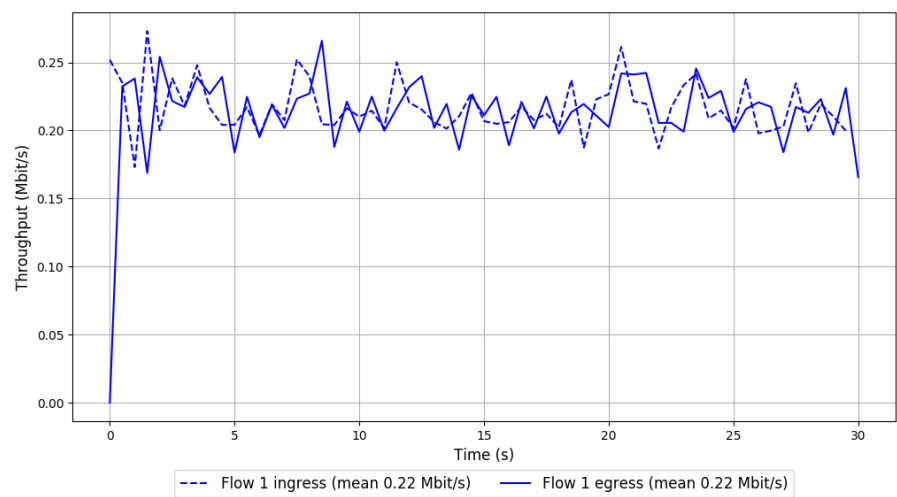
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 52.32 Mbit/s) Flow 1 egress (mean 52.18 Mbit/s)

Flow 1 (95th percentile 57.92 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 21:59:28
End at: 2018-11-15 21:59:58
Local clock offset: 0.866 ms
Remote clock offset: 0.415 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.64 Mbit/s
95th percentile per-packet one-way delay: 57.387 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 64.64 Mbit/s
95th percentile per-packet one-way delay: 57.387 ms
Loss rate: 0.56%
```
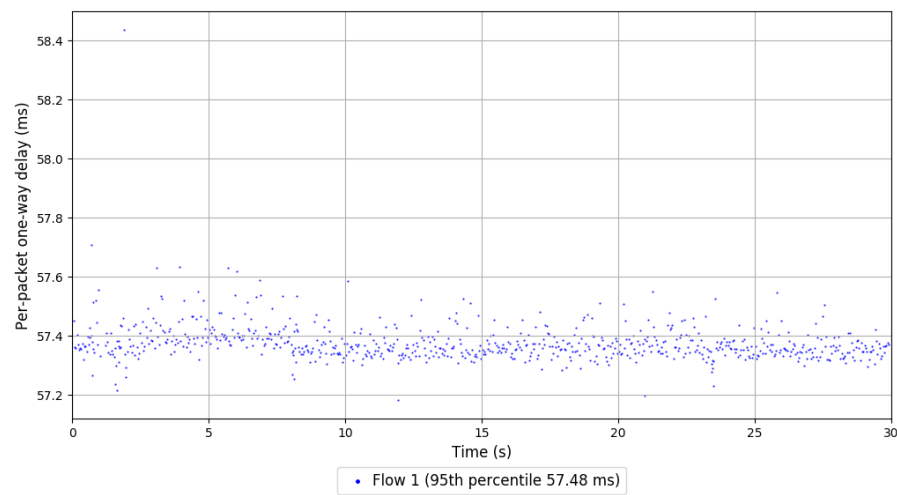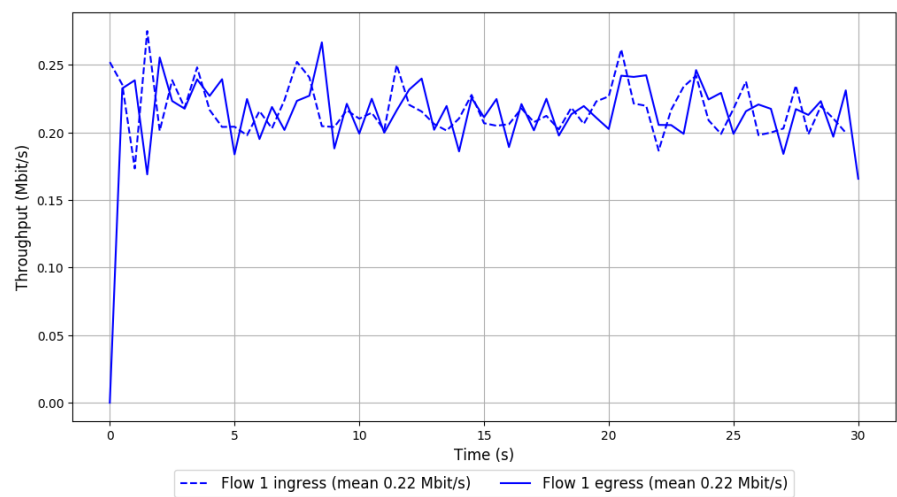
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-11-15 19:48:54
End at: 2018-11-15 19:49:25
Local clock offset: -1.127 ms
Remote clock offset: 1.234 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.599 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.599 ms
Loss rate: 0.39%
```
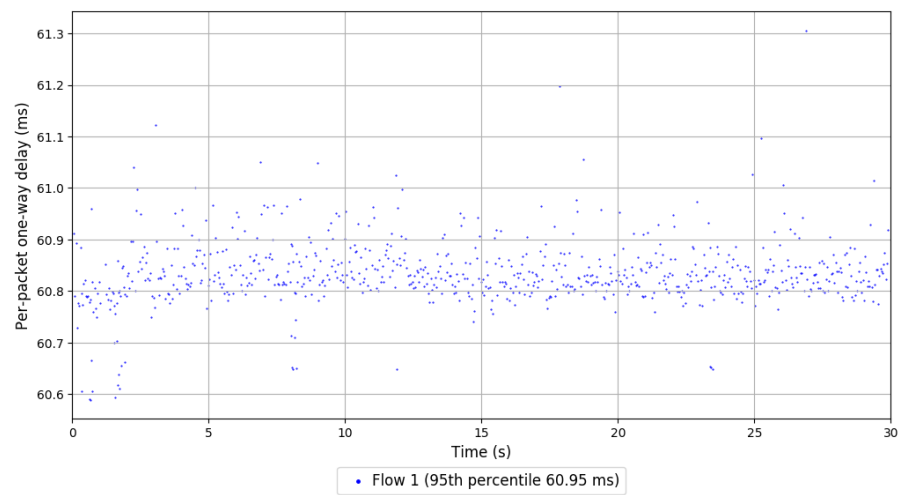
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-11-15 20:16:59
End at: 2018-11-15 20:17:29
Local clock offset: -1.104 ms
Remote clock offset: -0.157 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.476 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.476 ms
Loss rate: 0.39%
```

Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s) — — —   Flow 1 egress (mean 0.22 Mbit/s) ———

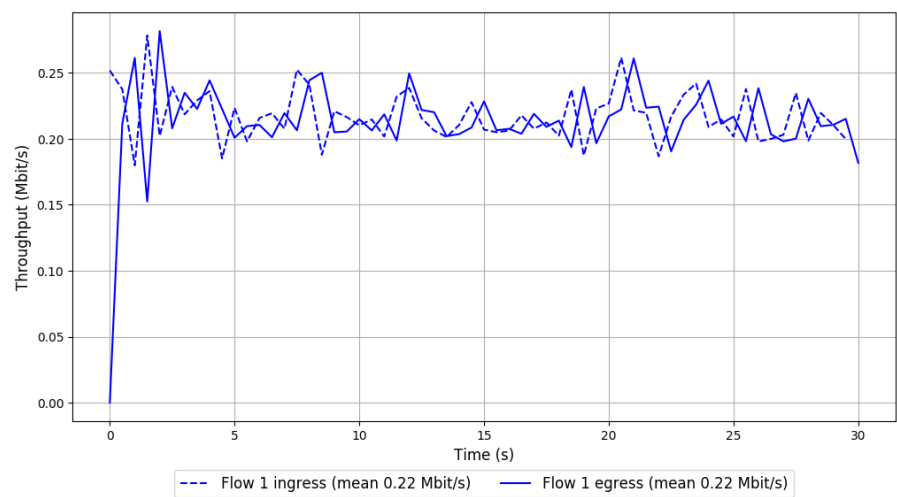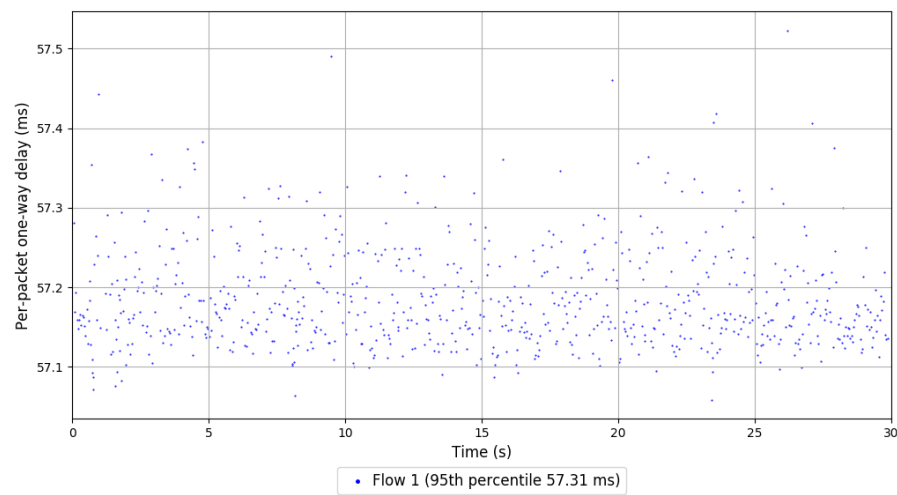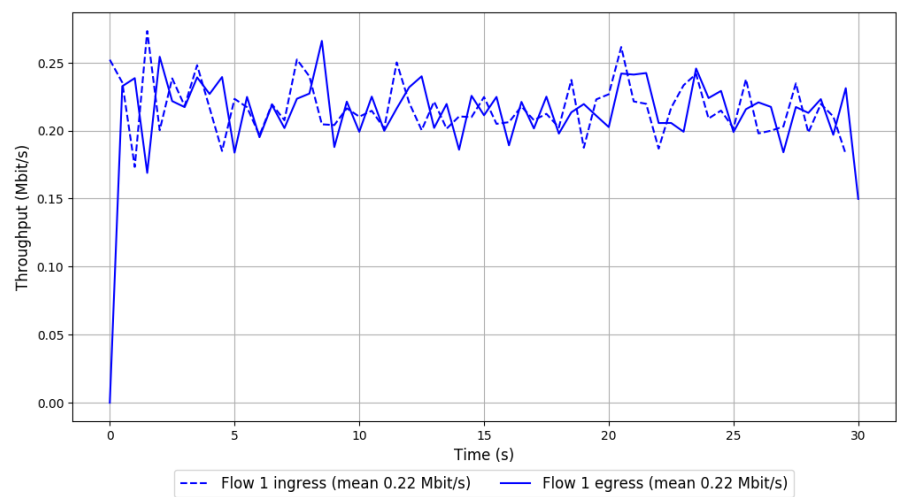

• Flow 1 (95th percentile 57.48 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-11-15 20:45:10
End at: 2018-11-15 20:45:40
Local clock offset: -1.428 ms
Remote clock offset: -0.214 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.951 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.951 ms
Loss rate: 0.39%
```

Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-11-15 21:12:38
End at: 2018-11-15 21:13:08
Local clock offset: 0.081 ms
Remote clock offset: -0.223 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.312 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.312 ms
Loss rate: 0.38%
```
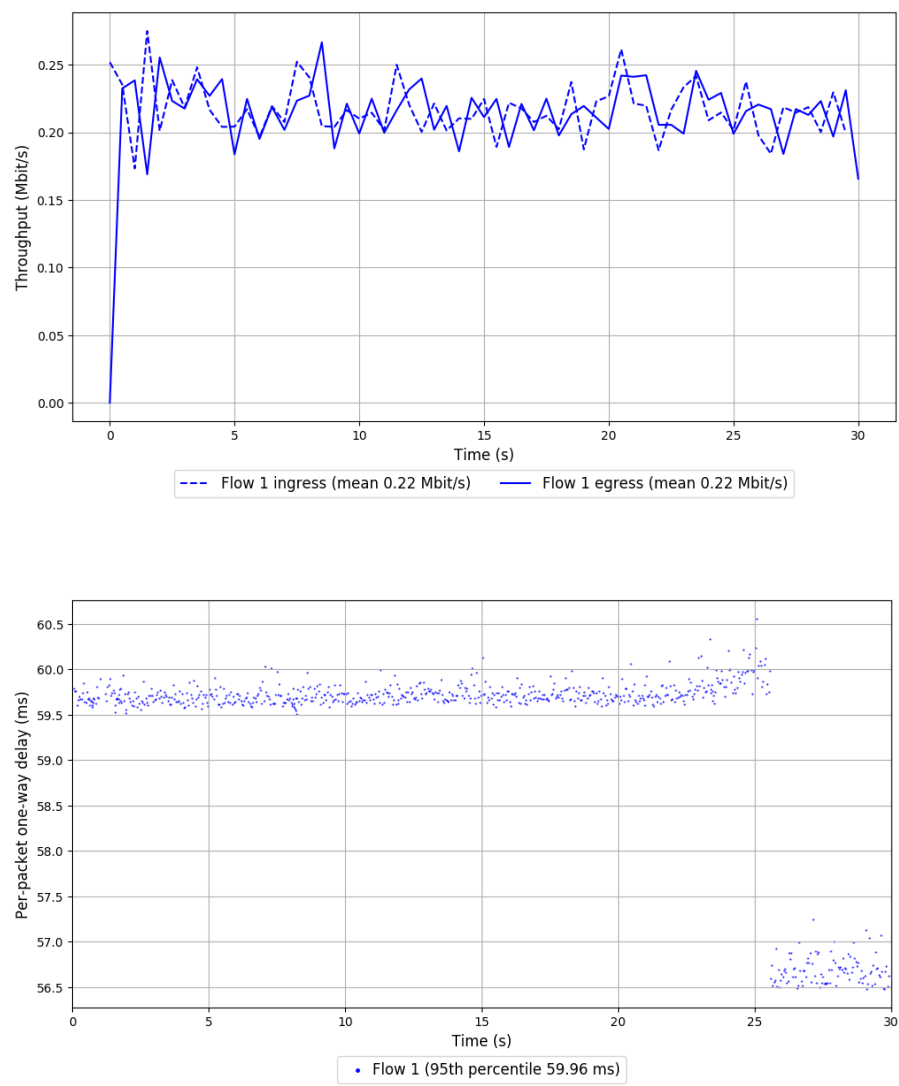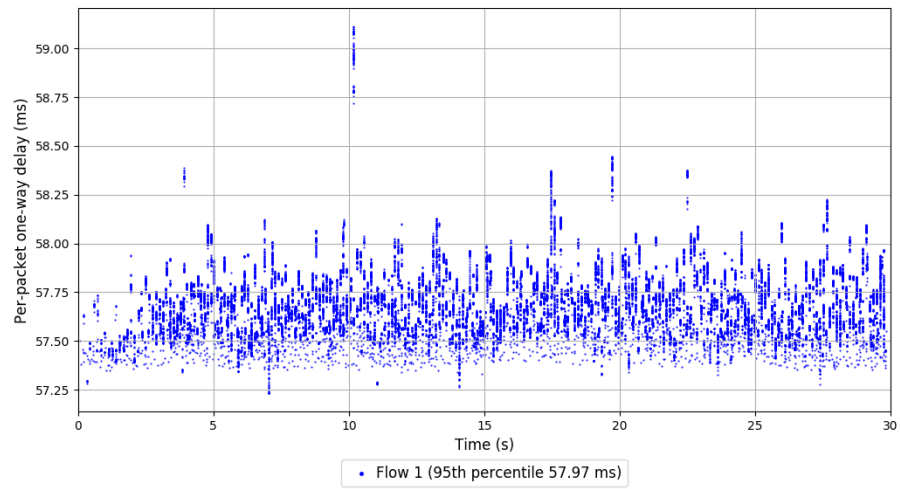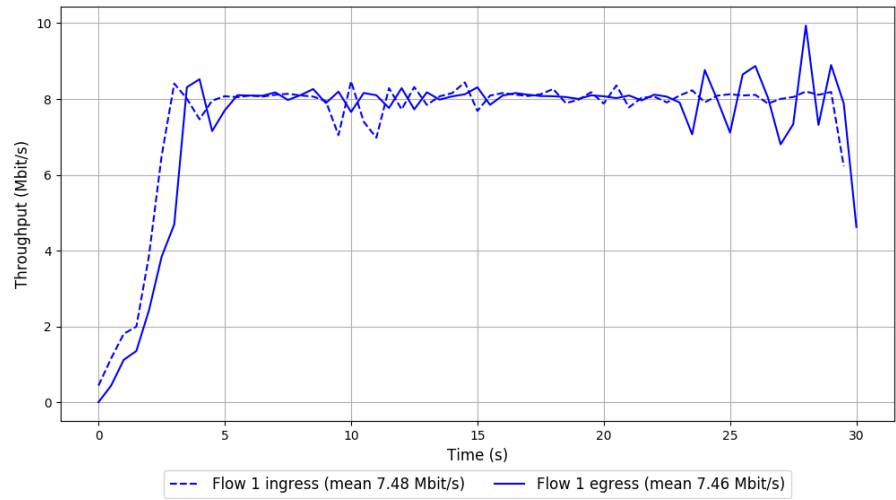
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-11-15 21:40:47
End at: 2018-11-15 21:41:17
Local clock offset: 0.258 ms
Remote clock offset: 0.692 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.961 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.961 ms
Loss rate: 0.39%
```

Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-11-15 20:08:39
End at: 2018-11-15 20:09:09
Local clock offset: -1.252 ms
Remote clock offset: -0.175 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 57.967 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 57.967 ms
Loss rate: 0.46%
```
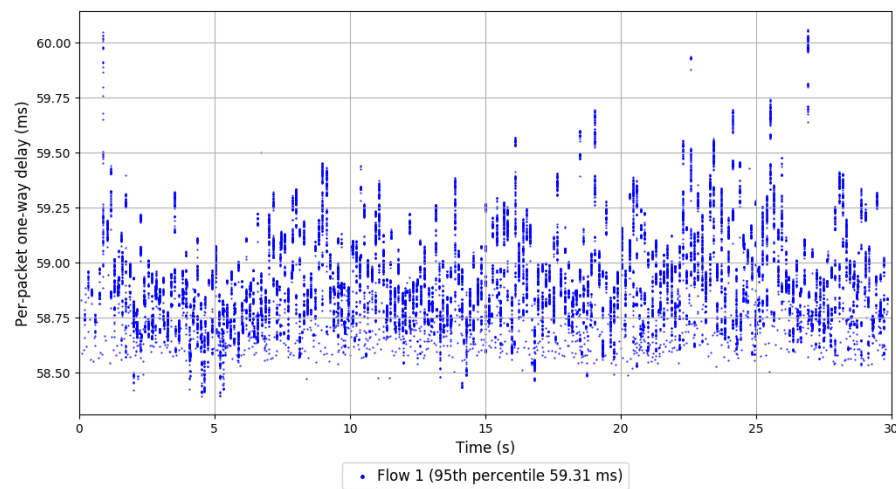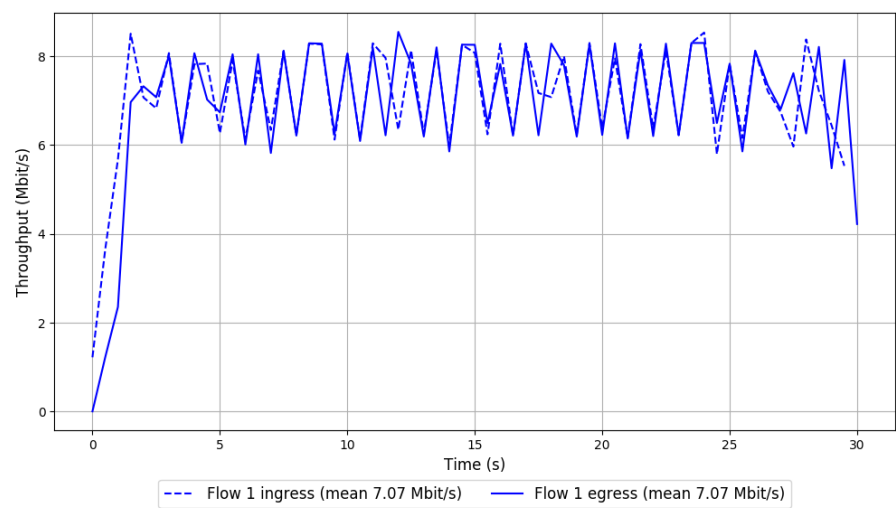
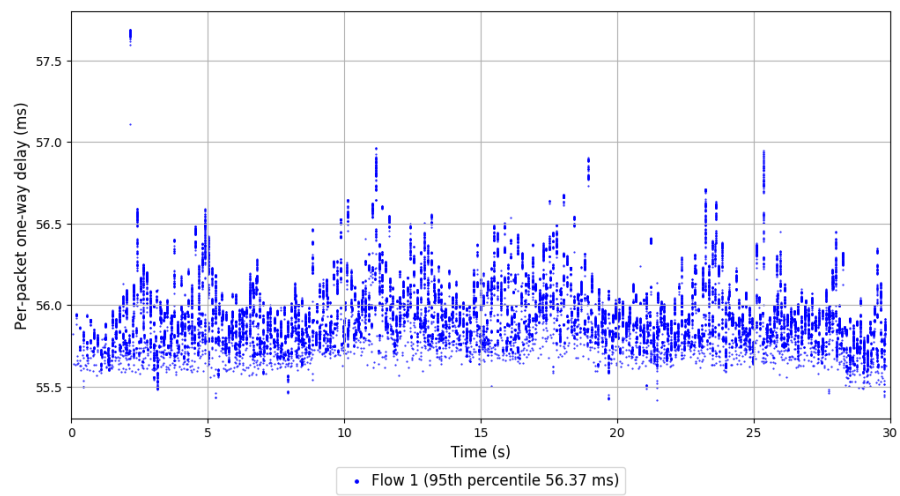Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-11-15 20:37:03
End at: 2018-11-15 20:37:33
Local clock offset: -1.763 ms
Remote clock offset: 1.296 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 59.309 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 59.309 ms
Loss rate: 0.41%
```

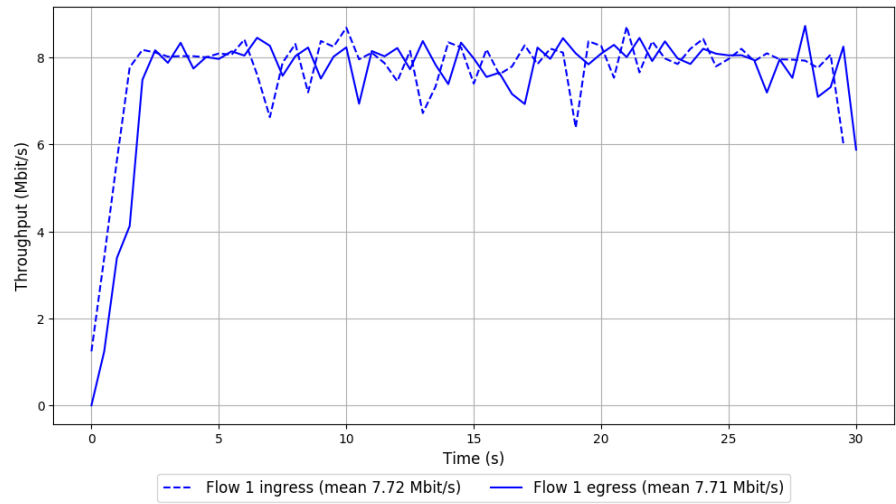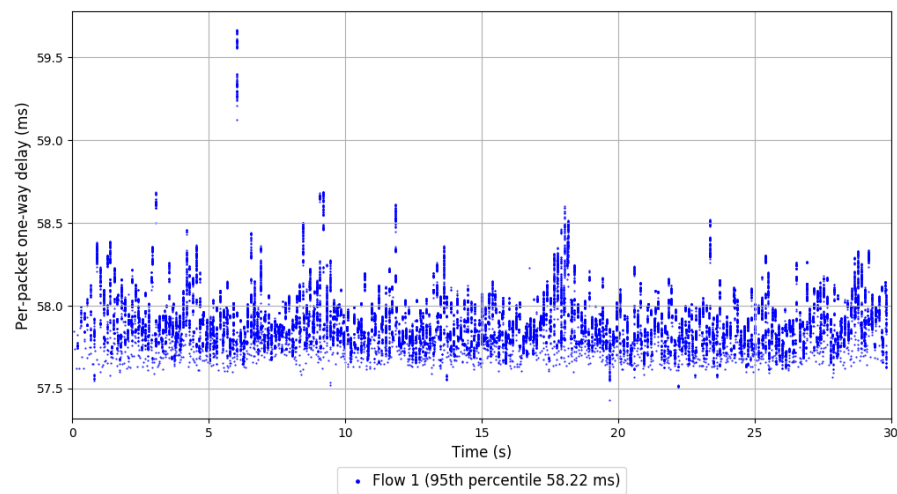Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-11-15 21:04:44
End at: 2018-11-15 21:05:14
Local clock offset: -0.116 ms
Remote clock offset: 1.238 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.71 Mbit/s
95th percentile per-packet one-way delay: 56.369 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 7.71 Mbit/s
95th percentile per-packet one-way delay: 56.369 ms
Loss rate: 0.43%
```

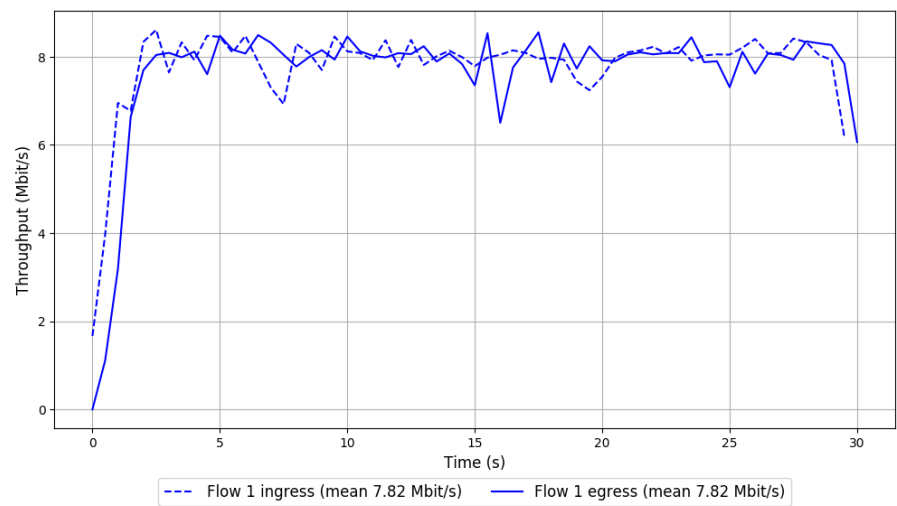Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-11-15 21:32:36
End at: 2018-11-15 21:33:06
Local clock offset: -0.137 ms
Remote clock offset: -0.595 ms

# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 58.223 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 58.223 ms
Loss rate: 0.43%
```
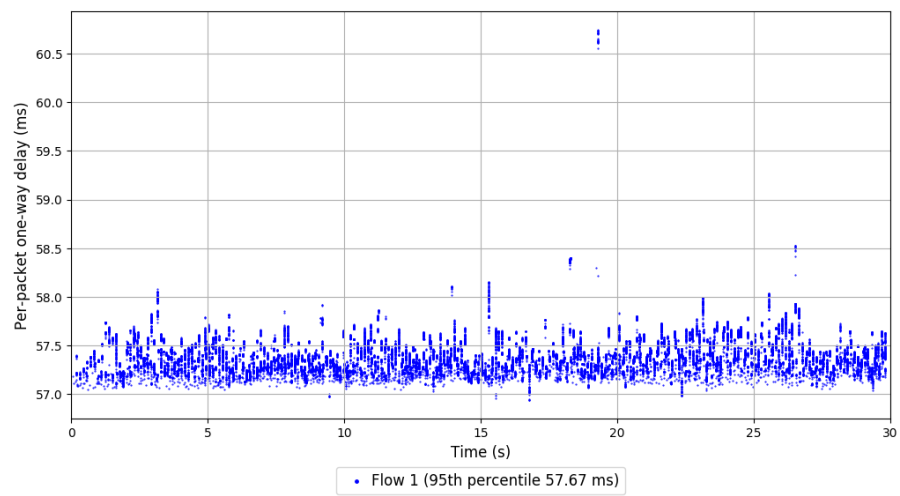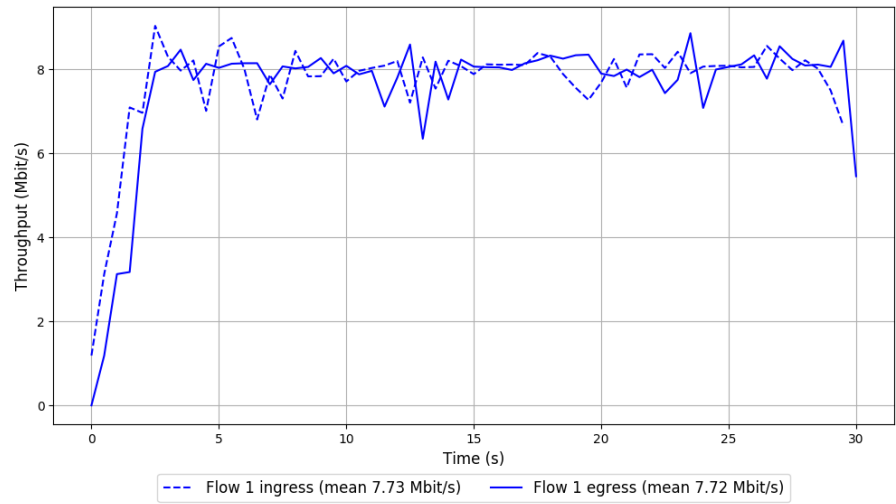
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-11-15 22:00:41
End at: 2018-11-15 22:01:11
Local clock offset: 0.41 ms
Remote clock offset: 0.356 ms


# Below is generated by plot.py at 2018-11-15 23:32:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 57.672 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 57.672 ms
Loss rate: 0.43%
```

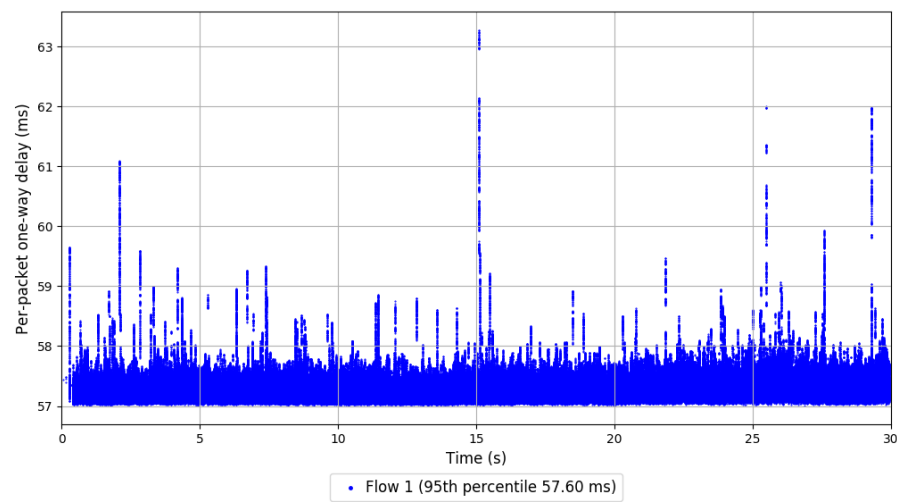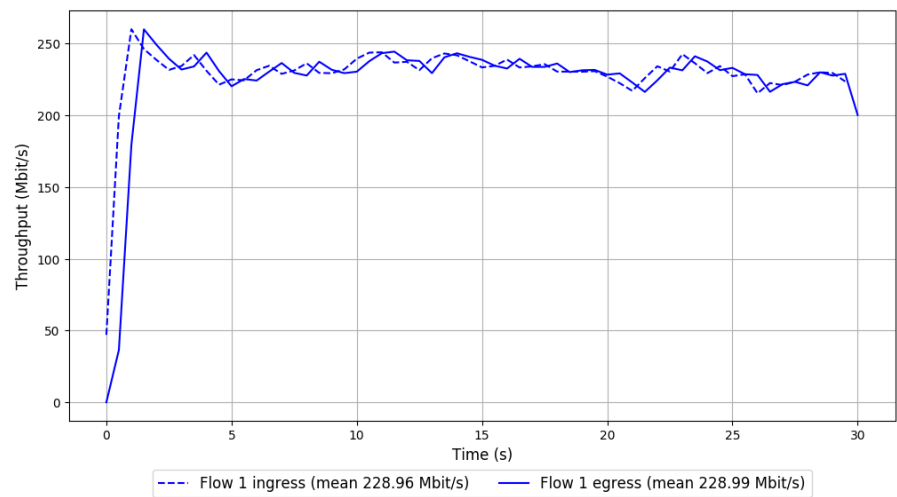## Run 5: Report of Sprout — Data Link

```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 20:13:45
End at: 2018-11-15 20:14:15
Local clock offset: -0.766 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2018-11-15 23:36:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 228.99 Mbit/s
95th percentile per-packet one-way delay: 57.597 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 228.99 Mbit/s
95th percentile per-packet one-way delay: 57.597 ms
Loss rate: 0.37%
```
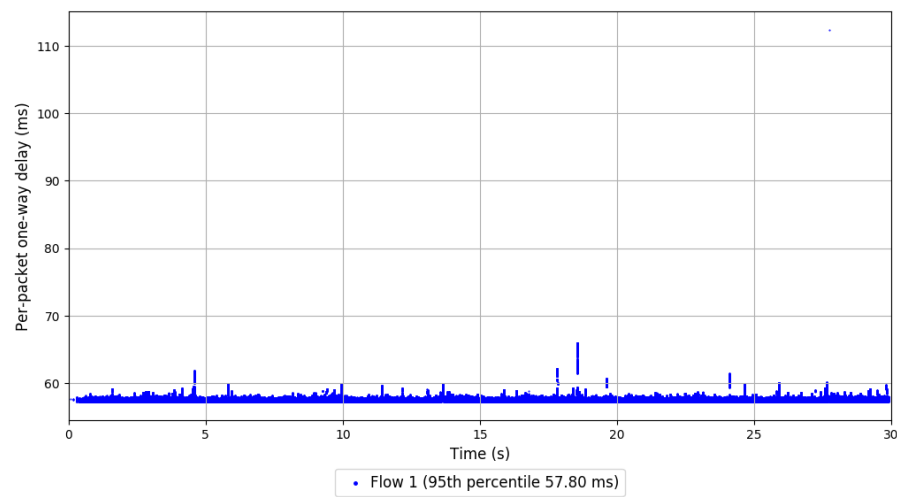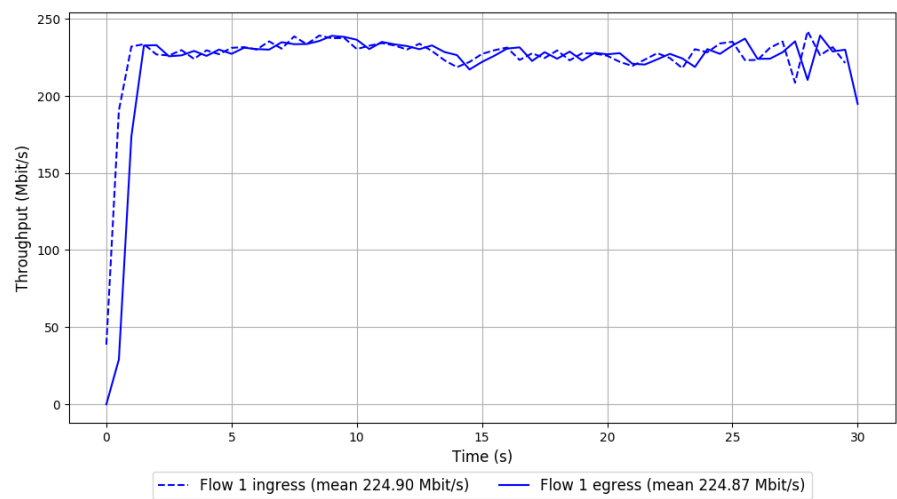
Run 1: Report of TaoVA-100x — Data Link

```
Run 2: Statistics of TaoVA-100x

Start at: 2018-11-15 20:41:51
End at: 2018-11-15 20:42:21
Local clock offset: -0.949 ms
Remote clock offset: -0.155 ms


# Below is generated by plot.py at 2018-11-15 23:36:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.87 Mbit/s
95th percentile per-packet one-way delay: 57.805 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 224.87 Mbit/s
95th percentile per-packet one-way delay: 57.805 ms
Loss rate: 0.40%
```

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

Flow 1 ingress (mean 224.90 Mbit/s) ----   Flow 1 egress (mean 224.87 Mbit/s) ——
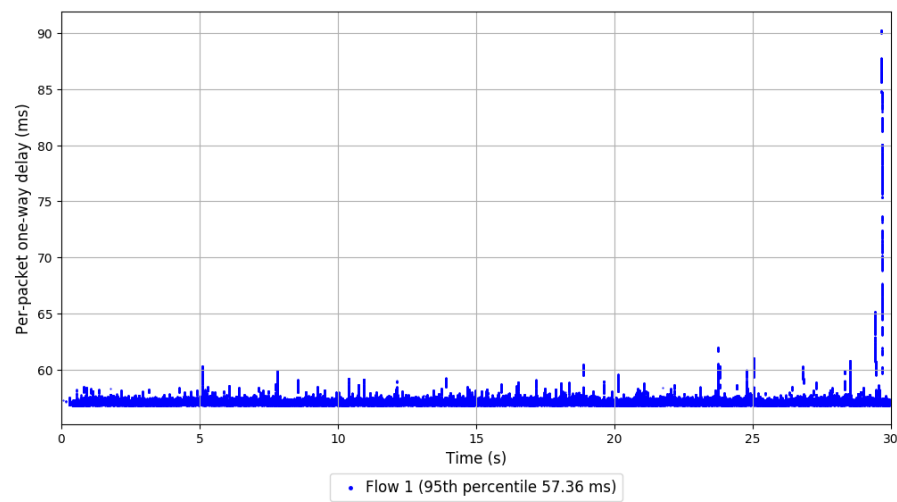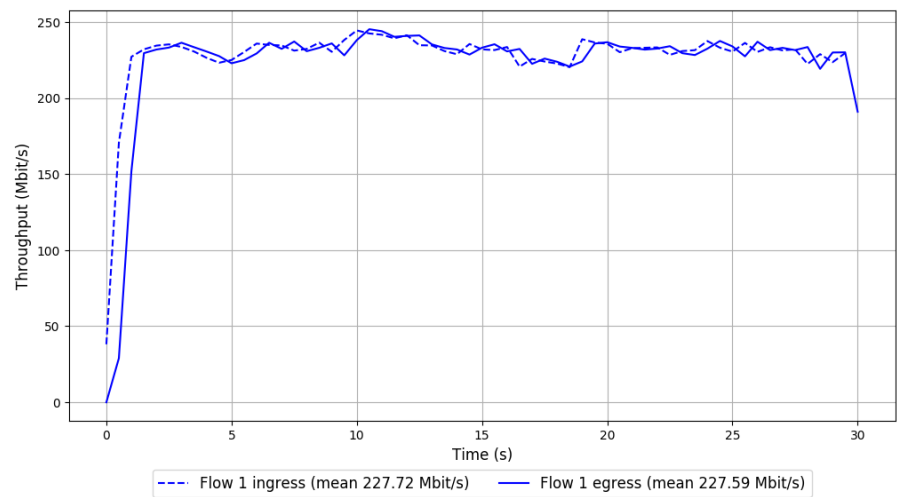

• Flow 1 (95th percentile 57.80 ms)

```
Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 21:09:19
End at: 2018-11-15 21:09:49
Local clock offset: -0.089 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-11-15 23:37:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 227.59 Mbit/s
95th percentile per-packet one-way delay: 57.358 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 227.59 Mbit/s
95th percentile per-packet one-way delay: 57.358 ms
Loss rate: 0.44%
```

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

```
Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 21:37:23
End at: 2018-11-15 21:37:53
Local clock offset: 0.694 ms
Remote clock offset: 0.007 ms


# Below is generated by plot.py at 2018-11-15 23:37:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.39 Mbit/s
95th percentile per-packet one-way delay: 61.209 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 219.39 Mbit/s
95th percentile per-packet one-way delay: 61.209 ms
Loss rate: 0.40%
```
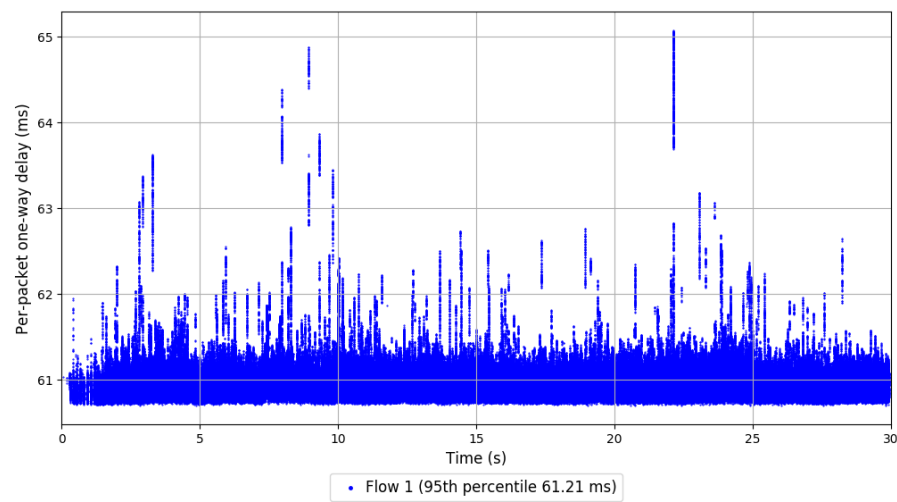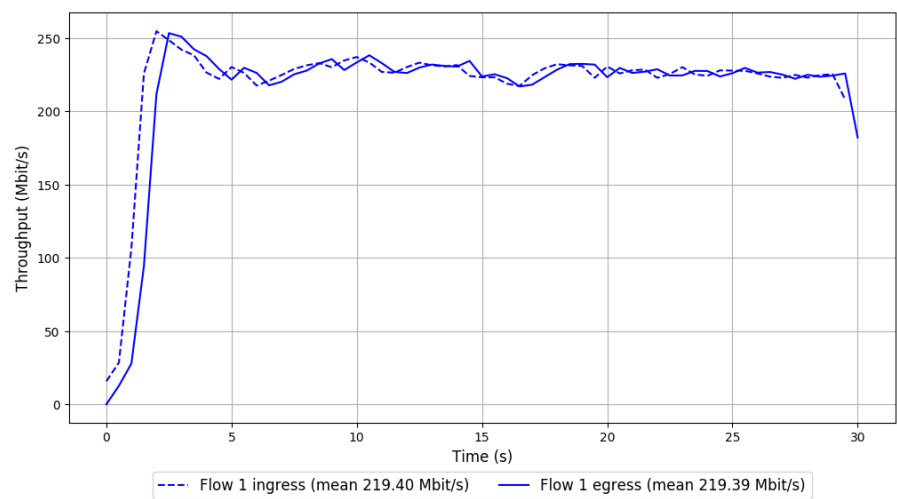
Run 4: Report of TaoVA-100x — Data Link

```
Run 5: Statistics of TaoVA-100x

Start at: 2018-11-15 22:05:27
End at: 2018-11-15 22:05:57
Local clock offset: 0.124 ms
Remote clock offset: 0.429 ms


# Below is generated by plot.py at 2018-11-15 23:37:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.11 Mbit/s
95th percentile per-packet one-way delay: 56.690 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 225.11 Mbit/s
95th percentile per-packet one-way delay: 56.690 ms
Loss rate: 0.40%
```
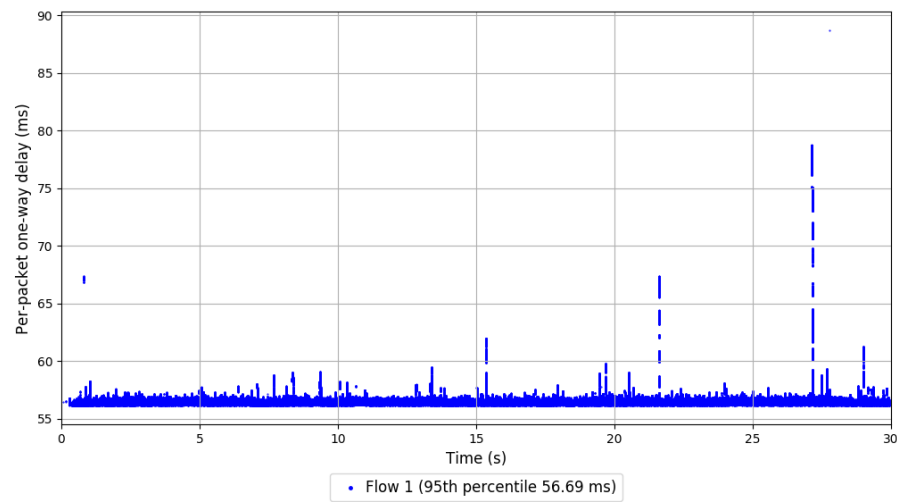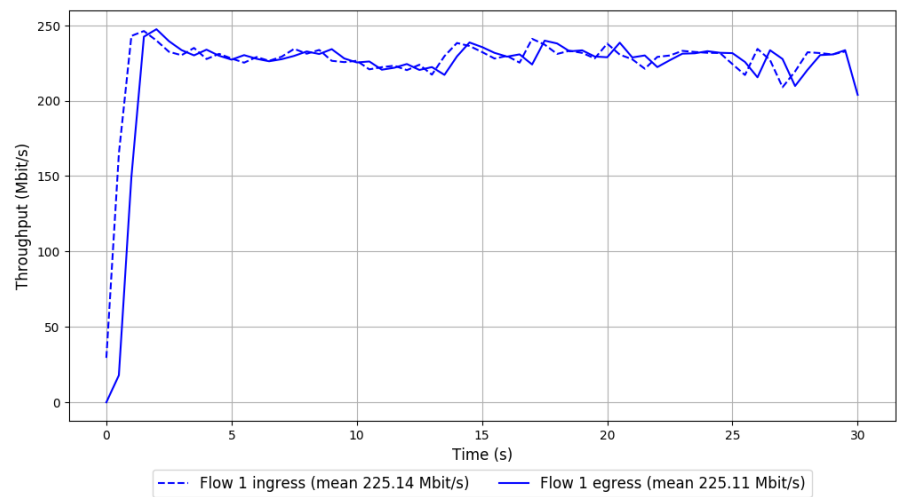
Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 20:01:06
End at: 2018-11-15 20:01:36
Local clock offset: -1.149 ms
Remote clock offset: 0.466 ms


# Below is generated by plot.py at 2018-11-15 23:38:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 489.51 Mbit/s
95th percentile per-packet one-way delay: 57.329 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 489.51 Mbit/s
95th percentile per-packet one-way delay: 57.329 ms
Loss rate: 0.40%
```
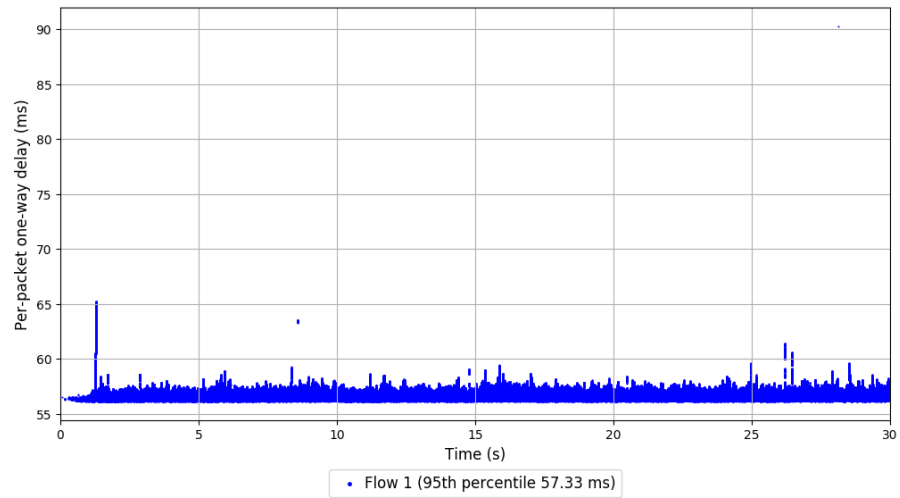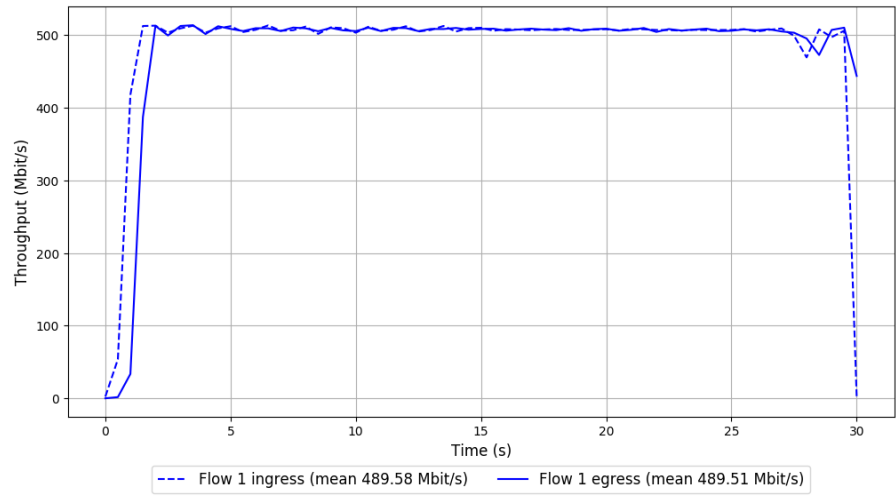
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 20:29:25
End at: 2018-11-15 20:29:55
Local clock offset: -1.0 ms
Remote clock offset: 0.004 ms


# Below is generated by plot.py at 2018-11-15 23:43:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 562.21 Mbit/s
95th percentile per-packet one-way delay: 61.515 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 562.21 Mbit/s
95th percentile per-packet one-way delay: 61.515 ms
Loss rate: 0.33%
```
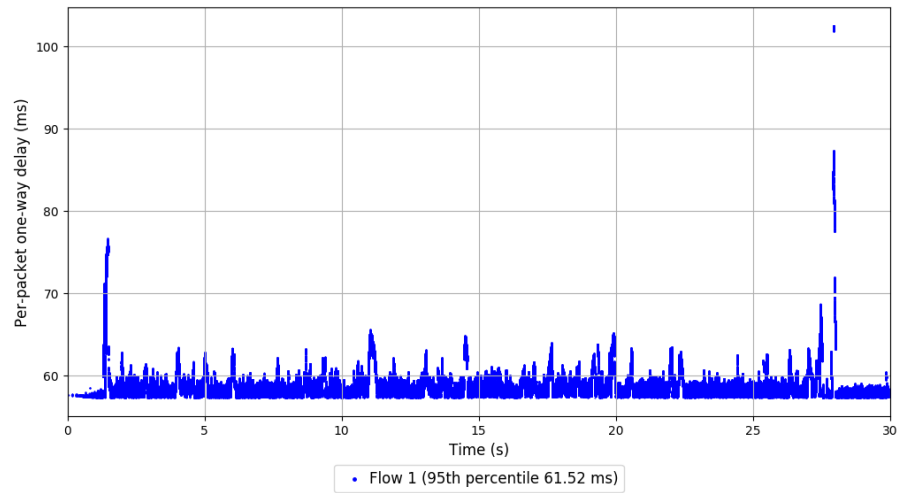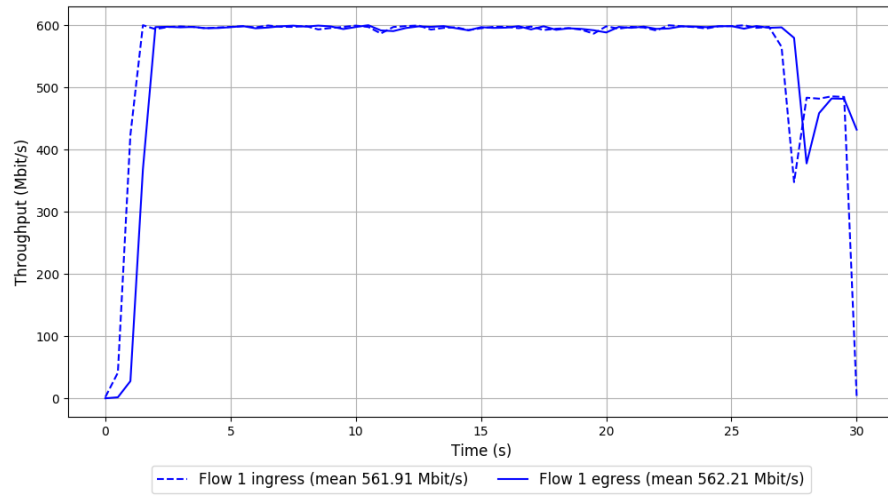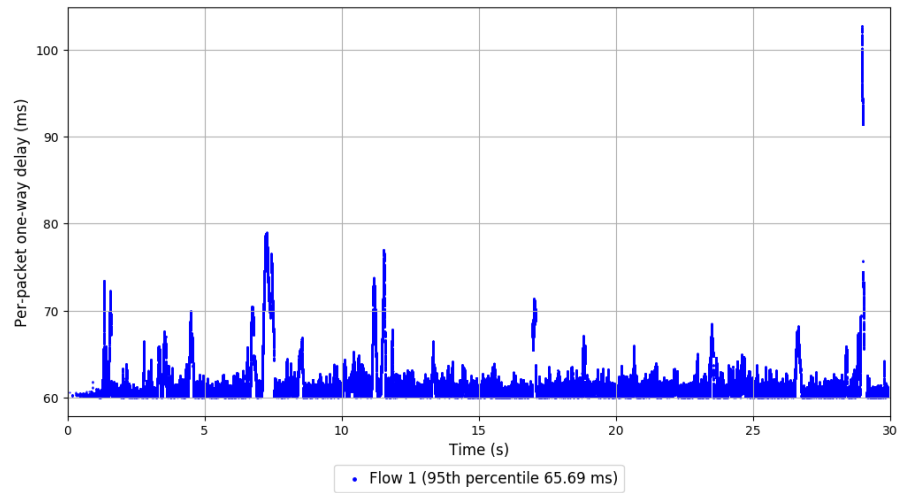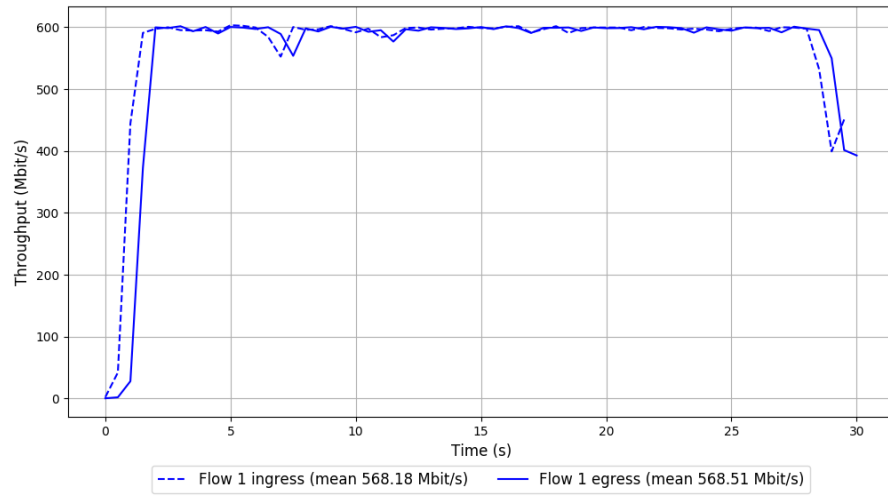
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 20:57:14
End at: 2018-11-15 20:57:44
Local clock offset: -0.823 ms
Remote clock offset: -0.355 ms


# Below is generated by plot.py at 2018-11-15 23:45:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 568.51 Mbit/s
95th percentile per-packet one-way delay: 65.688 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 568.51 Mbit/s
95th percentile per-packet one-way delay: 65.688 ms
Loss rate: 0.34%
```
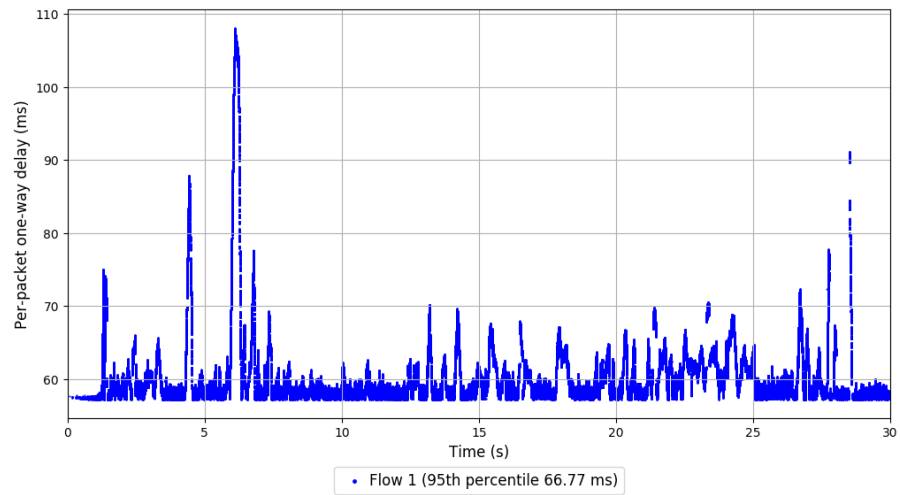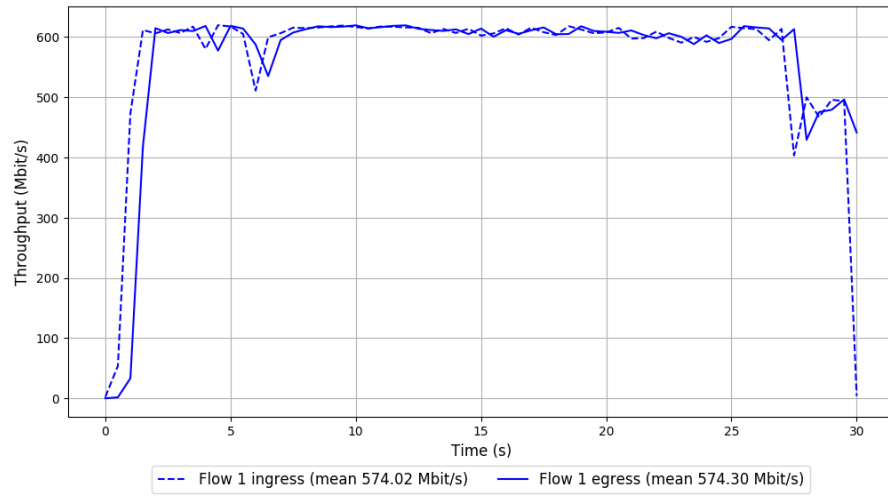
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 21:24:46
End at: 2018-11-15 21:25:16
Local clock offset: 0.227 ms
Remote clock offset: -0.282 ms


# Below is generated by plot.py at 2018-11-15 23:48:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 574.30 Mbit/s
95th percentile per-packet one-way delay: 66.768 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 574.30 Mbit/s
95th percentile per-packet one-way delay: 66.768 ms
Loss rate: 0.33%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 574.02 Mbit/s)   Flow 1 egress (mean 574.30 Mbit/s)

Flow 1 (95th percentile 66.77 ms)

152

```
Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 21:52:54
End at: 2018-11-15 21:53:24
Local clock offset: 0.064 ms
Remote clock offset: 0.097 ms


# Below is generated by plot.py at 2018-11-15 23:49:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 589.62 Mbit/s
95th percentile per-packet one-way delay: 63.961 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 589.62 Mbit/s
95th percentile per-packet one-way delay: 63.961 ms
Loss rate: 0.40%
```
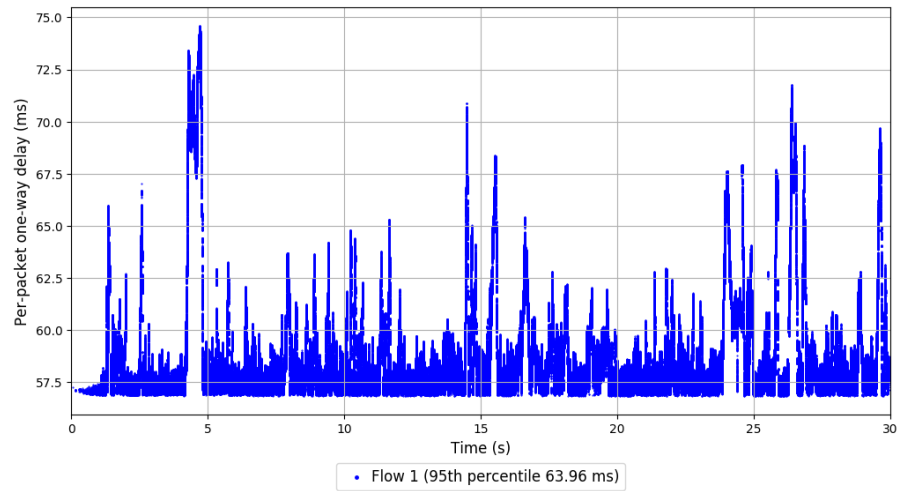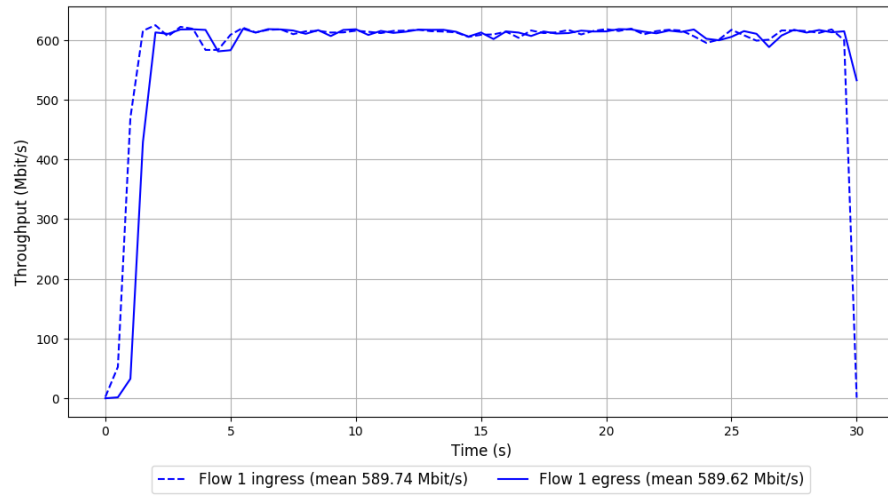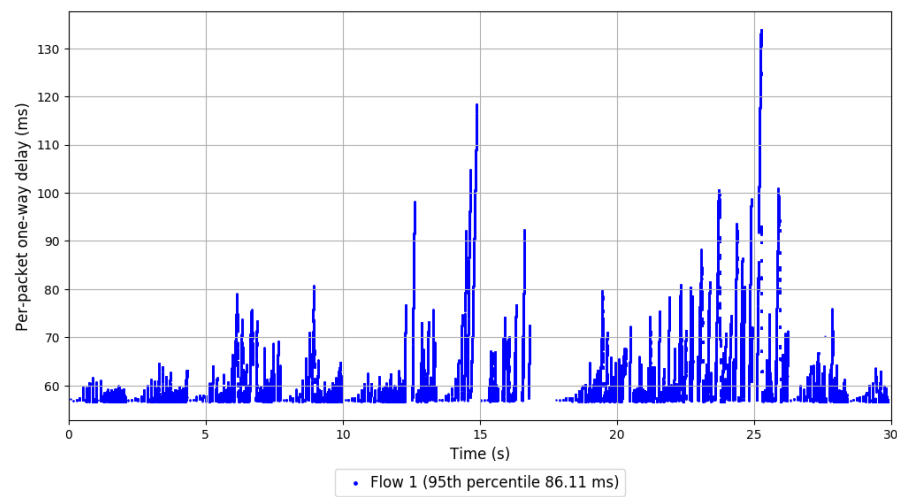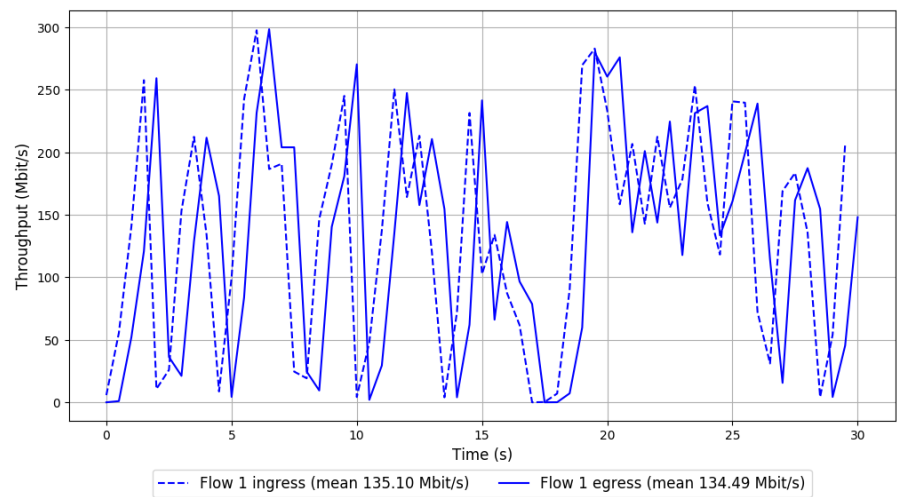
Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-11-15 20:04:14
End at: 2018-11-15 20:04:44
Local clock offset: -1.217 ms
Remote clock offset: -0.091 ms


# Below is generated by plot.py at 2018-11-15 23:49:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 134.49 Mbit/s
95th percentile per-packet one-way delay: 86.112 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 134.49 Mbit/s
95th percentile per-packet one-way delay: 86.112 ms
Loss rate: 0.83%
```

Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-11-15 20:32:36
End at: 2018-11-15 20:33:06
Local clock offset: -1.102 ms
Remote clock offset: 1.086 ms


# Below is generated by plot.py at 2018-11-15 23:49:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 164.30 Mbit/s
95th percentile per-packet one-way delay: 150.271 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 164.30 Mbit/s
95th percentile per-packet one-way delay: 150.271 ms
Loss rate: 0.03%
```
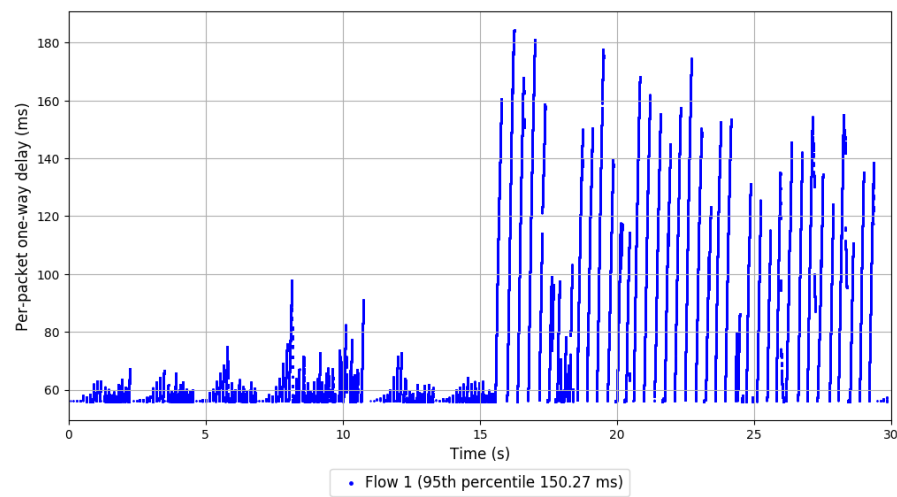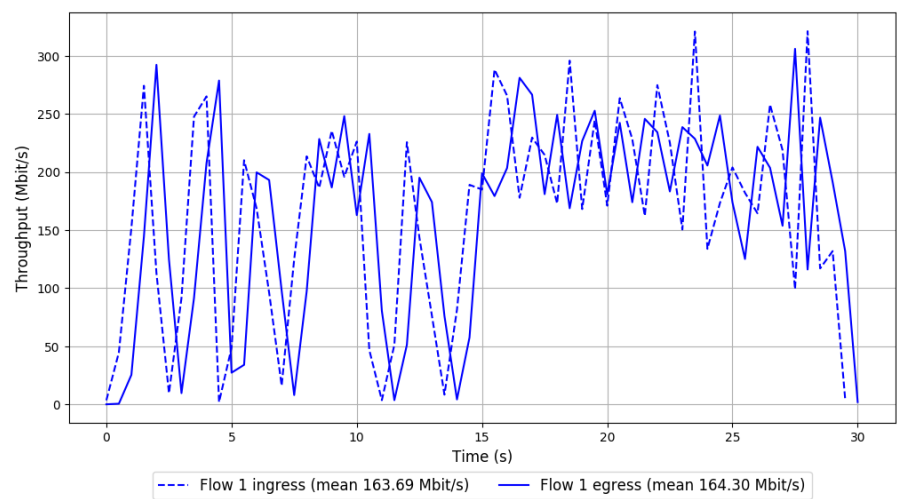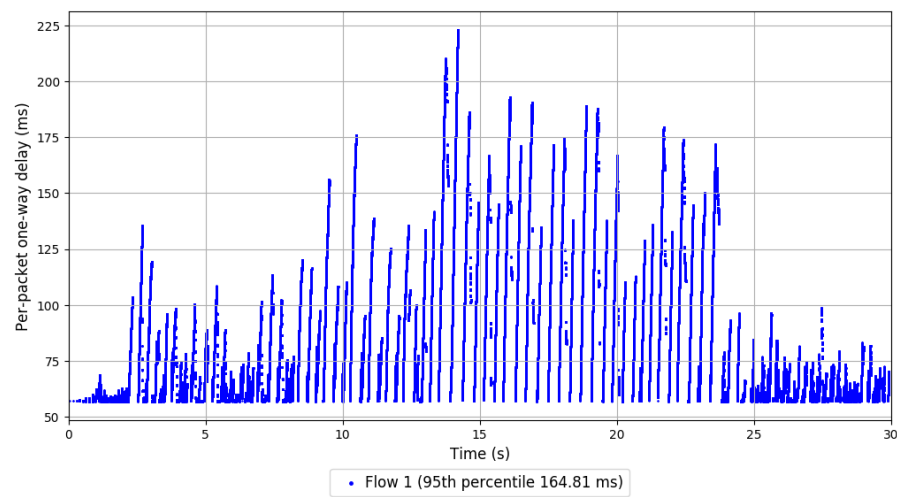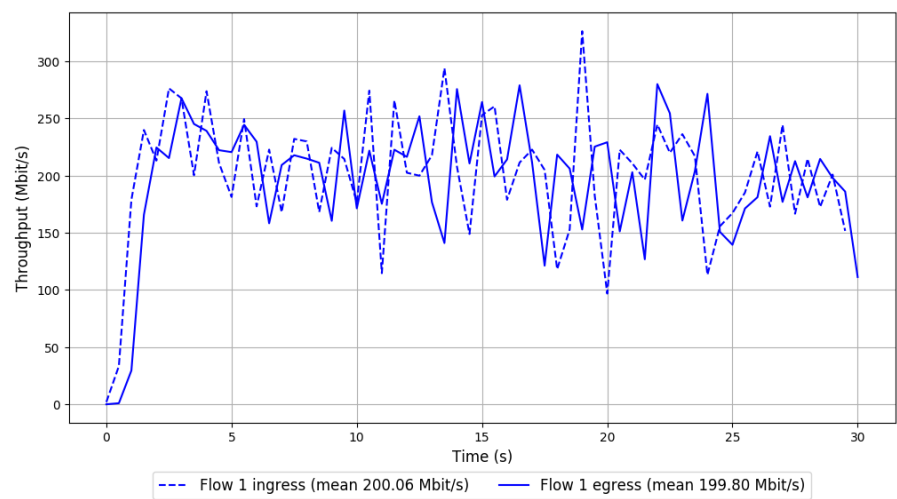
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-11-15 21:00:17
End at: 2018-11-15 21:00:47
Local clock offset: -0.679 ms
Remote clock offset: -0.351 ms


# Below is generated by plot.py at 2018-11-15 23:49:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 199.80 Mbit/s
95th percentile per-packet one-way delay: 164.812 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 199.80 Mbit/s
95th percentile per-packet one-way delay: 164.812 ms
Loss rate: 0.47%
```
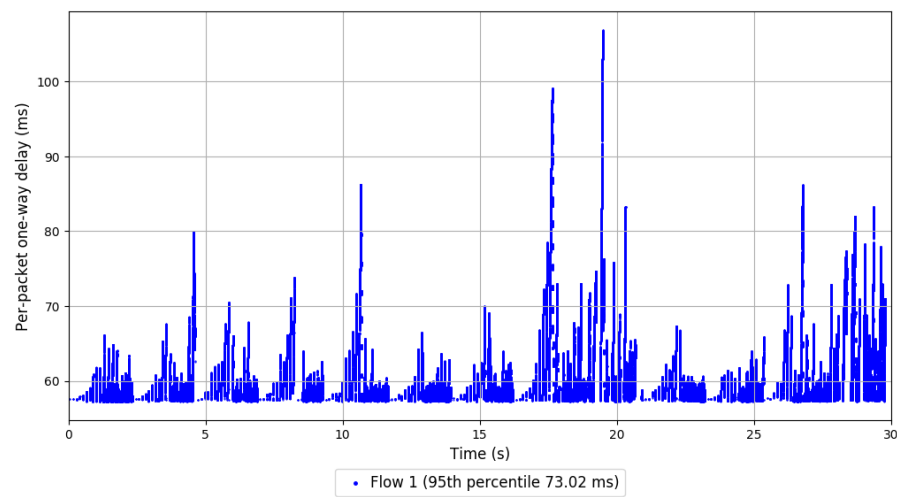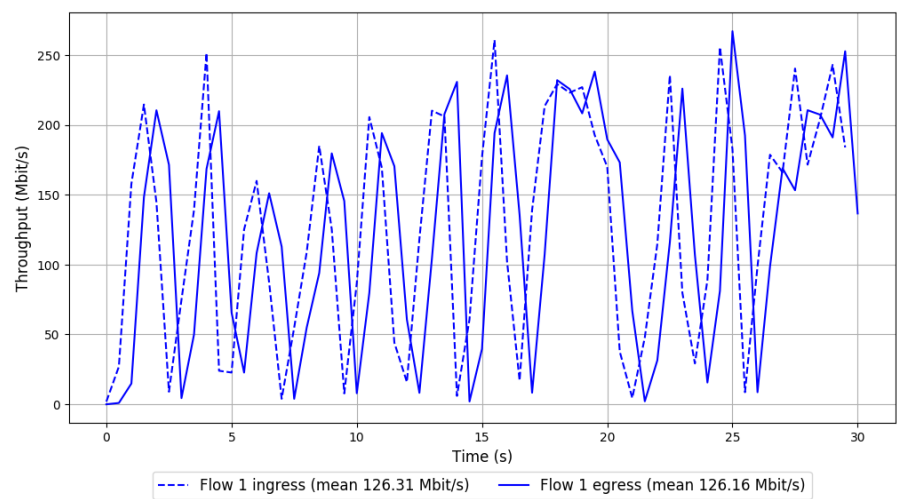
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-11-15 21:28:06
End at: 2018-11-15 21:28:36
Local clock offset: 0.29 ms
Remote clock offset: -0.264 ms


# Below is generated by plot.py at 2018-11-15 23:49:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 126.16 Mbit/s
95th percentile per-packet one-way delay: 73.024 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 126.16 Mbit/s
95th percentile per-packet one-way delay: 73.024 ms
Loss rate: 0.89%
```

Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-11-15 21:56:02
End at: 2018-11-15 21:56:32
Local clock offset: 0.399 ms
Remote clock offset: 0.265 ms

# Below is generated by plot.py at 2018-11-15 23:49:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 201.59 Mbit/s
95th percentile per-packet one-way delay: 212.709 ms
Loss rate: 6.63%
-- Flow 1:
Average throughput: 201.59 Mbit/s
95th percentile per-packet one-way delay: 212.709 ms
Loss rate: 6.63%
```
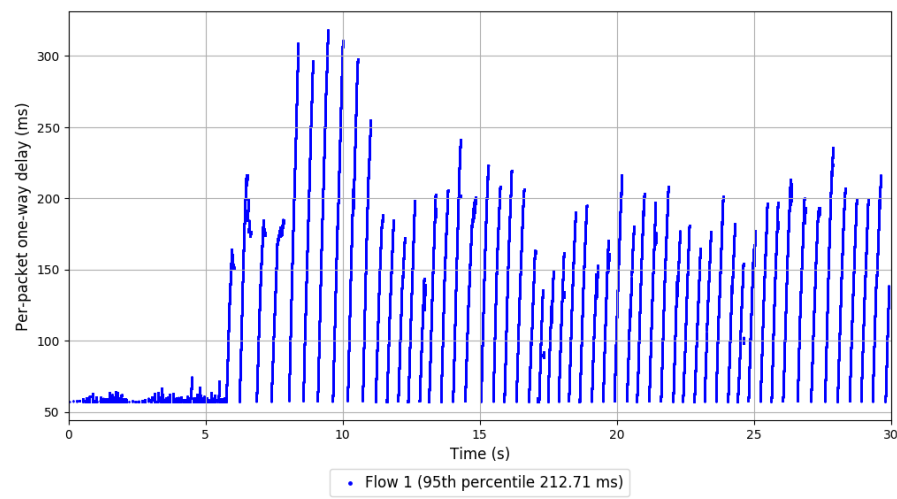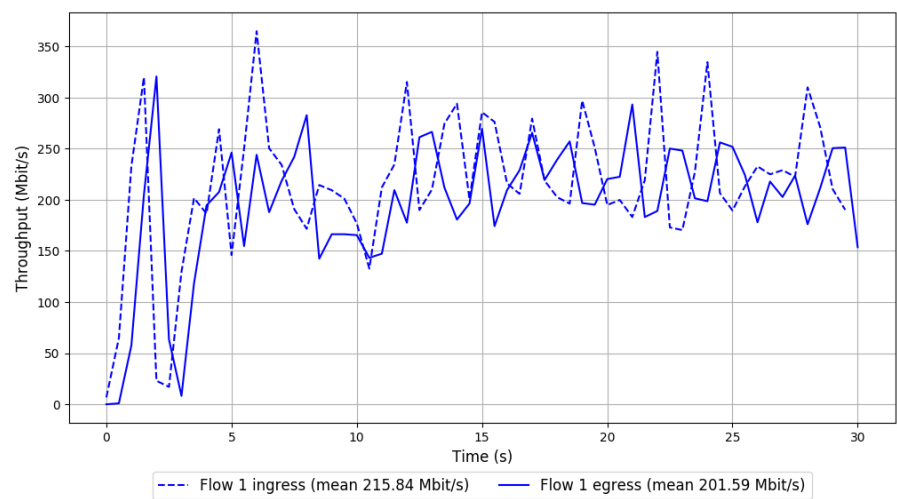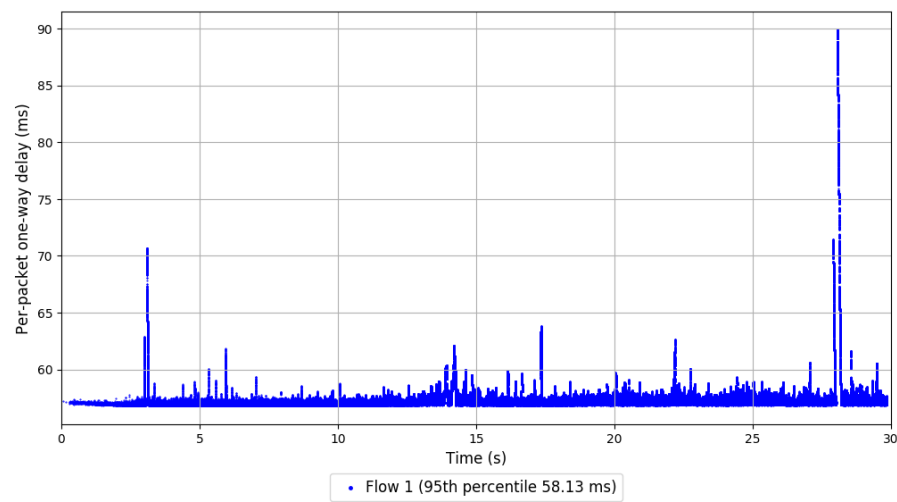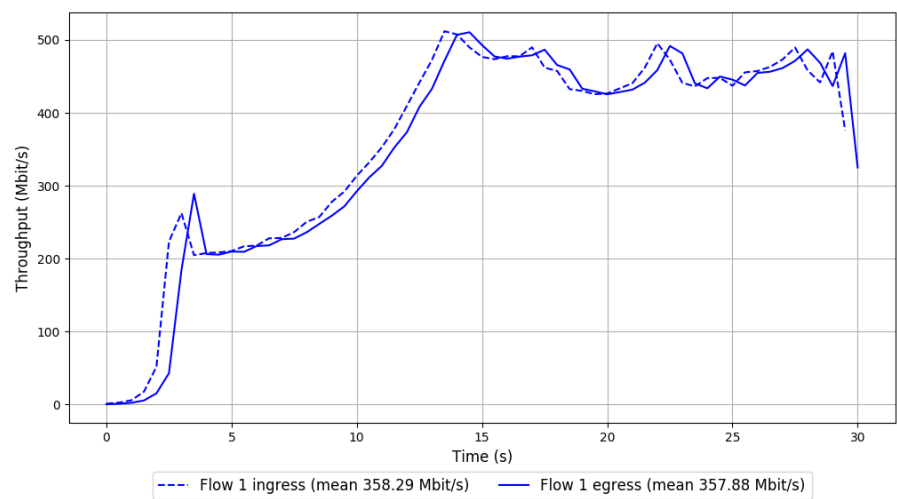
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 19:53:03
End at: 2018-11-15 19:53:33
Local clock offset: -0.829 ms
Remote clock offset: -0.043 ms


# Below is generated by plot.py at 2018-11-15 23:50:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 357.88 Mbit/s
95th percentile per-packet one-way delay: 58.131 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 357.88 Mbit/s
95th percentile per-packet one-way delay: 58.131 ms
Loss rate: 0.50%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 358.29 Mbit/s)   Flow 1 egress (mean 357.88 Mbit/s)
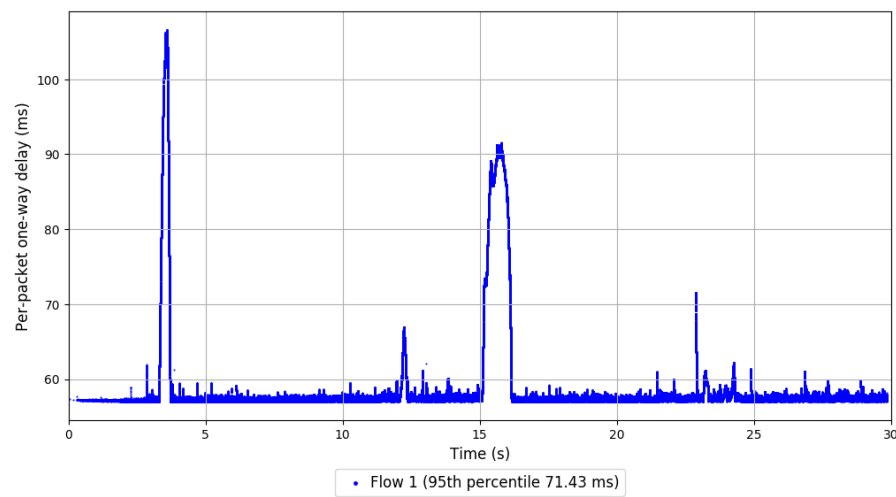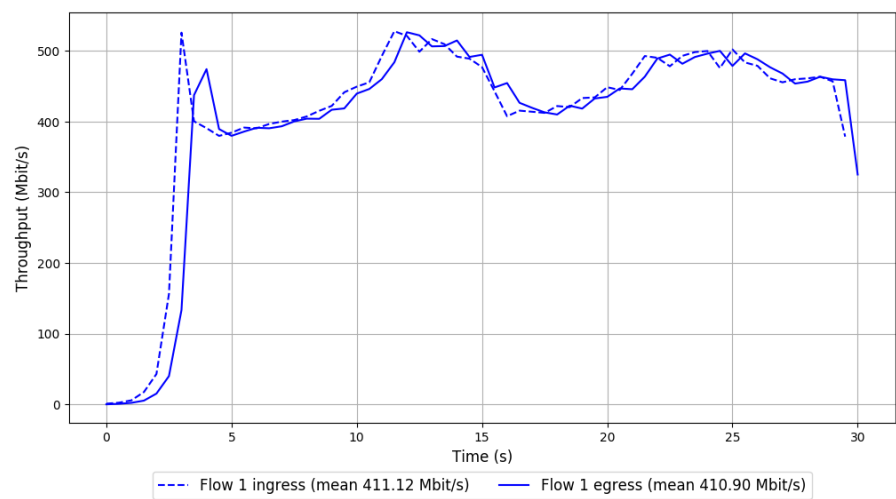

Flow 1 (95th percentile 58.13 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 20:21:06
End at: 2018-11-15 20:21:36
Local clock offset: -1.194 ms
Remote clock offset: -0.333 ms


# Below is generated by plot.py at 2018-11-15 23:51:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 410.90 Mbit/s
95th percentile per-packet one-way delay: 71.430 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 410.90 Mbit/s
95th percentile per-packet one-way delay: 71.430 ms
Loss rate: 0.43%
```

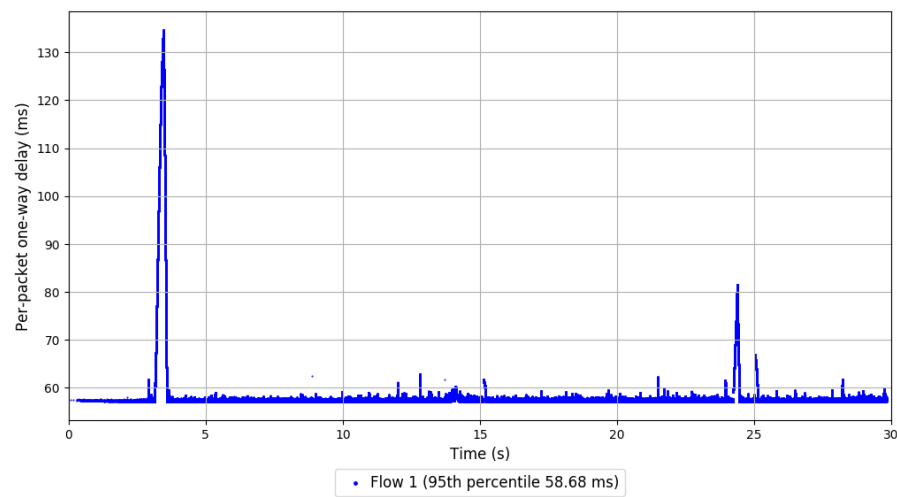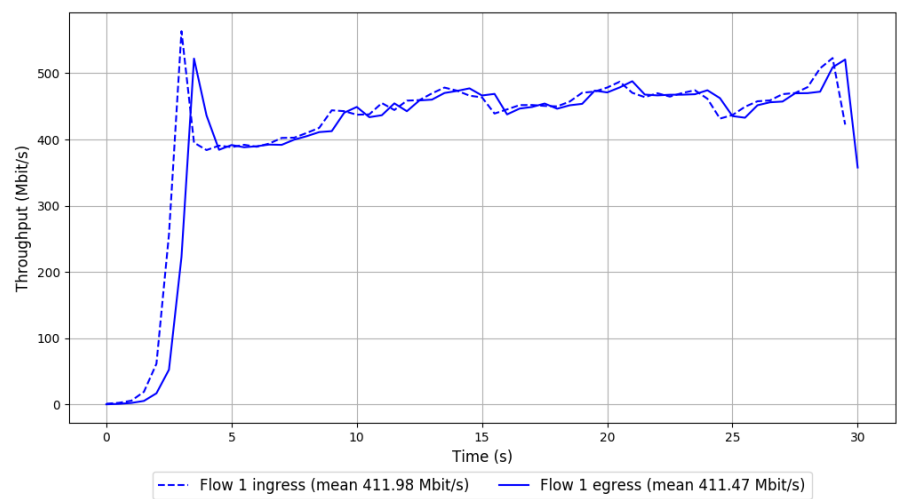Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 20:49:32
End at: 2018-11-15 20:50:02
Local clock offset: -1.141 ms
Remote clock offset: -0.274 ms


# Below is generated by plot.py at 2018-11-15 23:51:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 411.47 Mbit/s
95th percentile per-packet one-way delay: 58.680 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 411.47 Mbit/s
95th percentile per-packet one-way delay: 58.680 ms
Loss rate: 0.51%
```

Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 21:16:48
End at: 2018-11-15 21:17:18
Local clock offset: -0.06 ms
Remote clock offset: -0.343 ms


# Below is generated by plot.py at 2018-11-15 23:51:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 375.45 Mbit/s
95th percentile per-packet one-way delay: 59.023 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 375.45 Mbit/s
95th percentile per-packet one-way delay: 59.023 ms
Loss rate: 0.46%
```
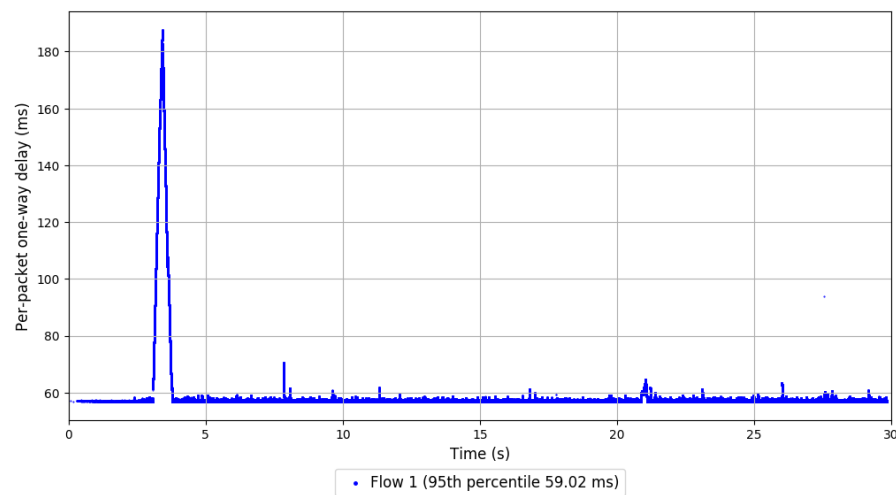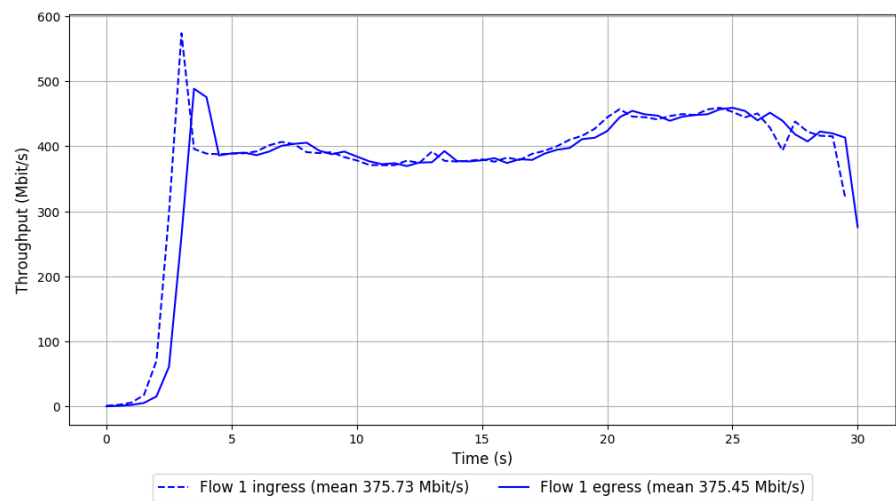
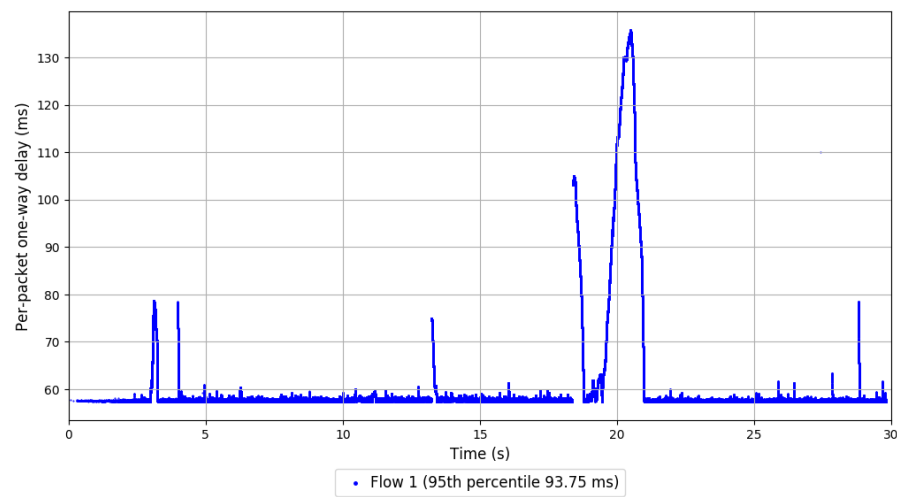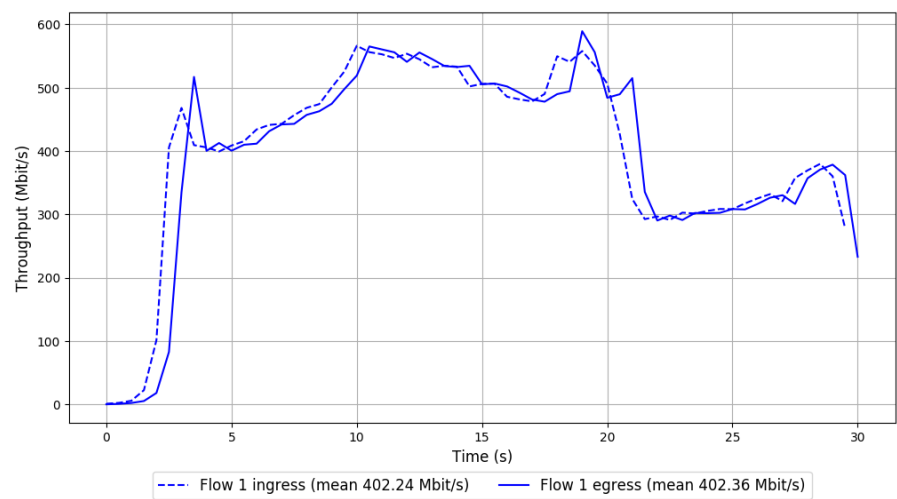Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 21:45:10
End at: 2018-11-15 21:45:40
Local clock offset: 0.587 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2018-11-15 23:51:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 402.36 Mbit/s
95th percentile per-packet one-way delay: 93.754 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 402.36 Mbit/s
95th percentile per-packet one-way delay: 93.754 ms
Loss rate: 0.36%
```

Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 19:50:03
End at: 2018-11-15 19:50:33
Local clock offset: -0.995 ms
Remote clock offset: 0.419 ms


# Below is generated by plot.py at 2018-11-15 23:51:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 59.701 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 59.701 ms
Loss rate: 0.64%
```
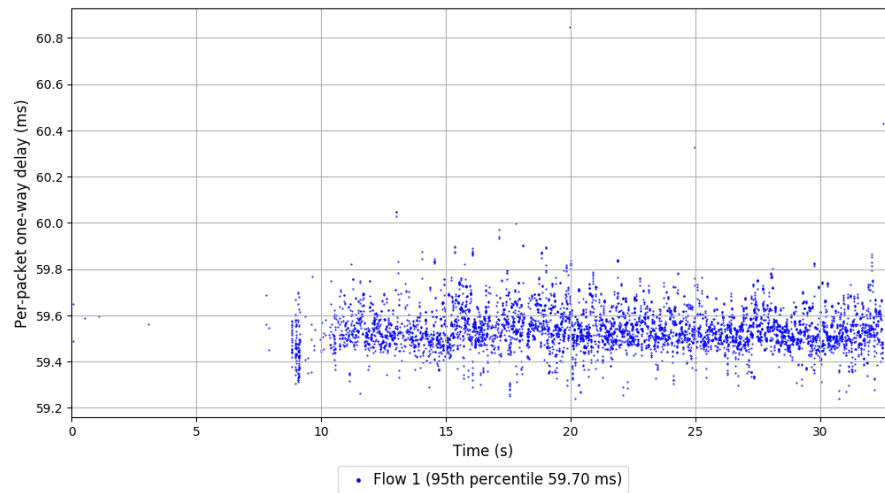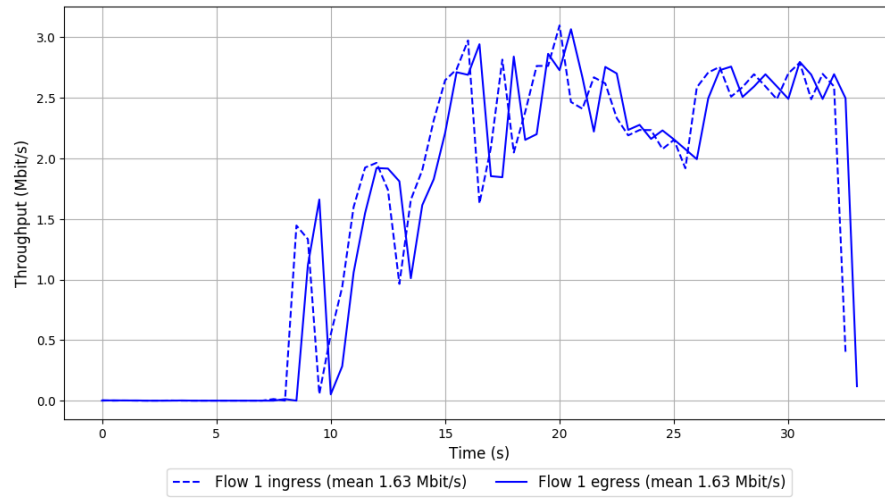
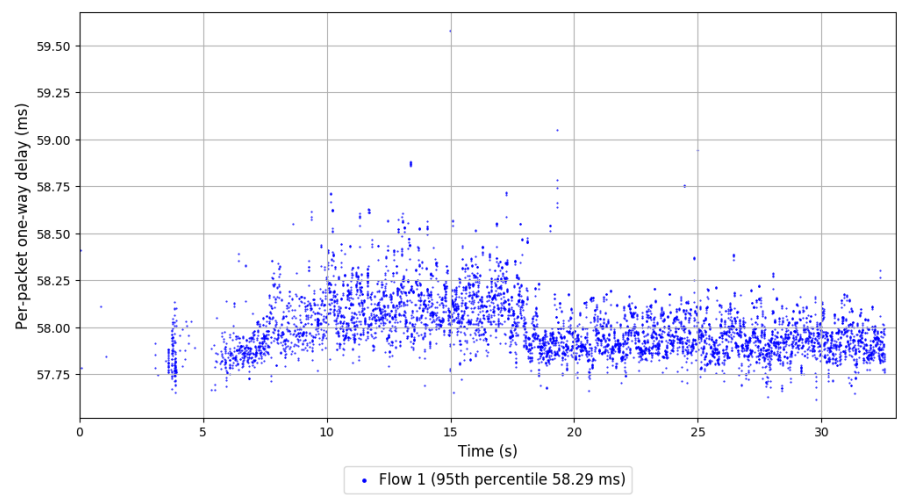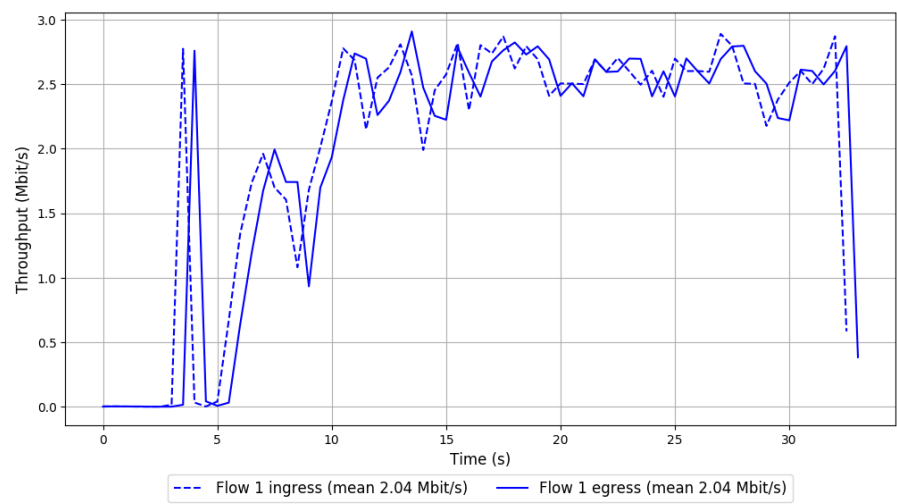Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-11-15 20:18:07
End at: 2018-11-15 20:18:37
Local clock offset: -0.838 ms
Remote clock offset: -0.401 ms


# Below is generated by plot.py at 2018-11-15 23:51:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 58.289 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 58.289 ms
Loss rate: 0.44%
```

Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-11-15 20:46:18
End at: 2018-11-15 20:46:48
Local clock offset: -1.223 ms
Remote clock offset: -0.93 ms


# Below is generated by plot.py at 2018-11-15 23:51:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 58.558 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 58.558 ms
Loss rate: 0.45%
```
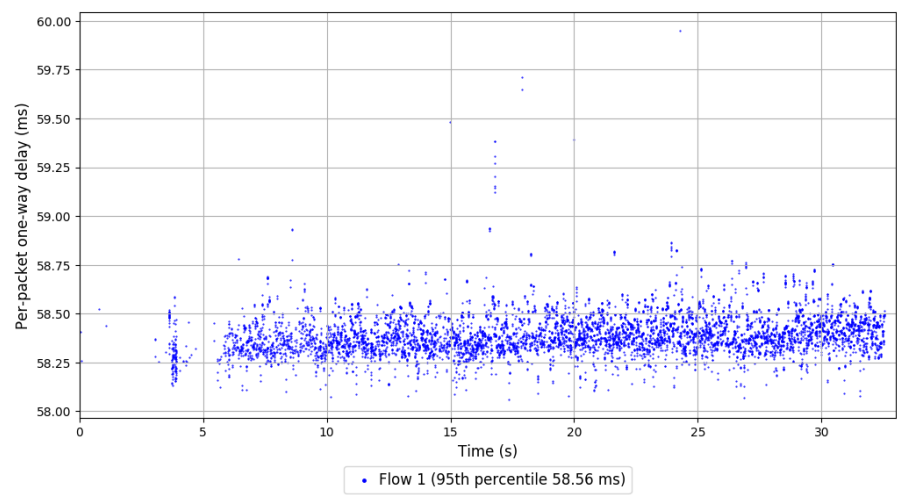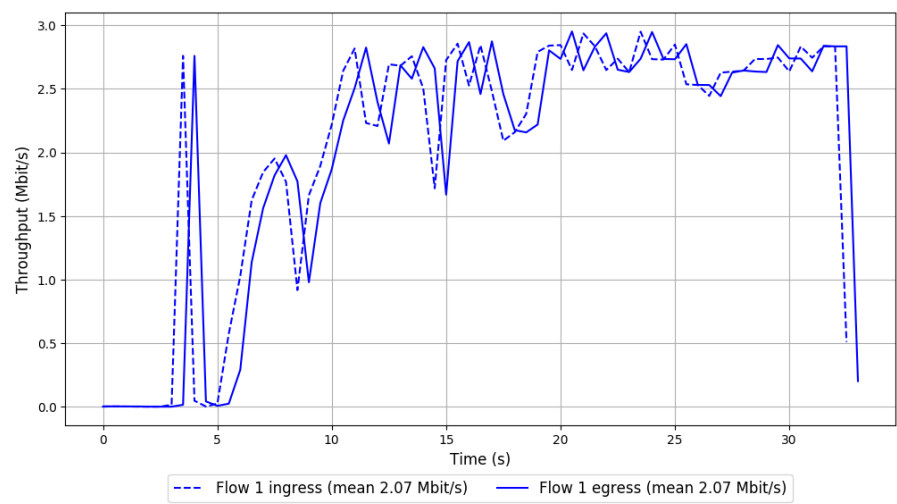
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-11-15 21:13:46
End at: 2018-11-15 21:14:16
Local clock offset: 0.534 ms
Remote clock offset: 0.502 ms


# Below is generated by plot.py at 2018-11-15 23:51:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 57.317 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 57.317 ms
Loss rate: 0.44%
```
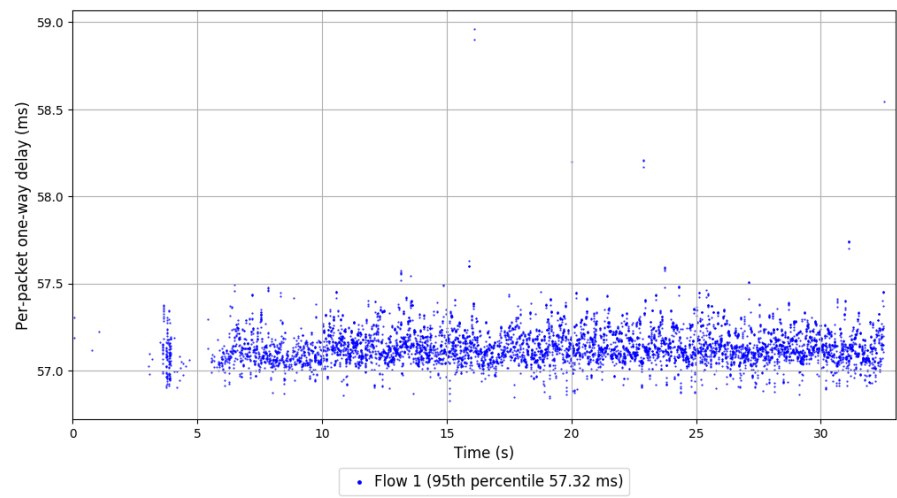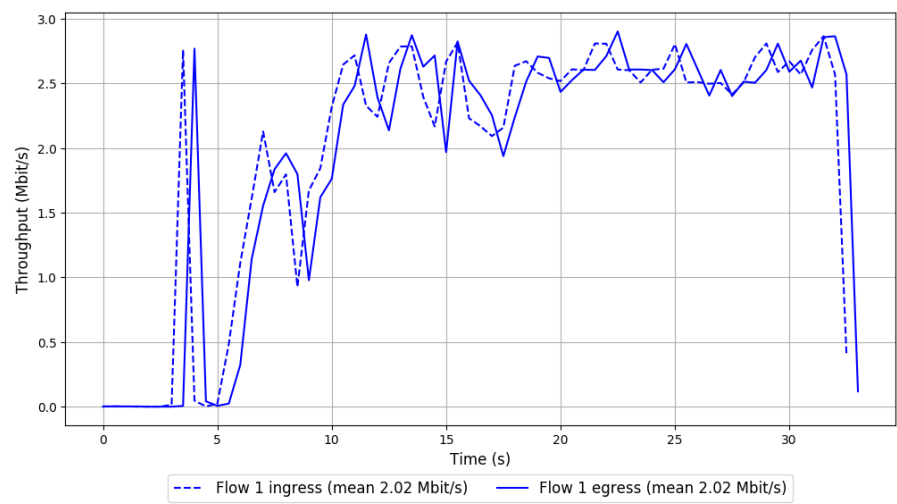
Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.02 Mbit/s)   Flow 1 egress (mean 2.02 Mbit/s)

· Flow 1 (95th percentile 57.32 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-11-15 21:41:55
End at: 2018-11-15 21:42:25
Local clock offset: 0.323 ms
Remote clock offset: 0.907 ms


# Below is generated by plot.py at 2018-11-15 23:51:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 56.848 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 56.848 ms
Loss rate: 0.59%
```

Run 5: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.08 Mbit/s)   Flow 1 egress (mean 2.08 Mbit/s)

Flow 1 (95th percentile 56.85 ms)