Pantheon Report

Generated at 2018-11-30 05:56:14 (UTC).

Data path: AWS California 2 on `ens5` (*local*) →Mexico on `em1` (*remote*).

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.
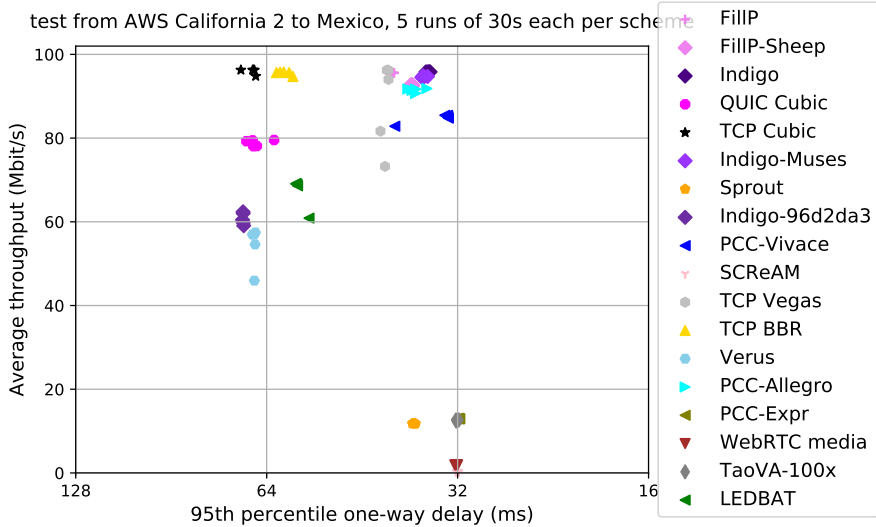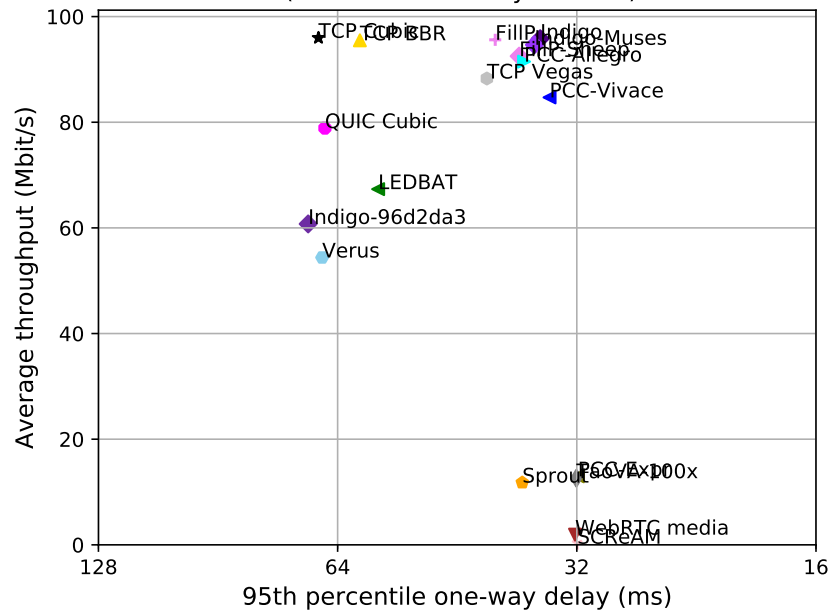
```
System info:
Linux 4.15.0-1027-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
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 AWS California 2 to Mexico, 5 runs of 30s each per scheme
(mean of all runs by scheme)

test from AWS California 2 to Mexico, 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	95.51	60.00	1.05
Copa	0	N/A	N/A	N/A
TCP Cubic	5	95.97	67.65	0.48
FillP	5	95.60	40.54	0.67
FillP-Sheep	5	92.51	37.82	0.63
Indigo	5	95.80	35.58	0.00
Indigo-96d2da3	5	60.75	69.70	58.81
LEDBAT	5	67.34	56.91	0.01
Indigo-Muses	5	94.66	36.19	0.29
PCC-Allegro	5	91.47	37.28	0.70
PCC-Expr	5	12.97	31.91	42.82
QUIC Cubic	5	78.89	66.40	1.82
SCReAM	5	0.21	31.96	0.00
Sprout	5	11.79	37.48	0.00
TaoVA-100x	5	12.62	32.04	73.79
TCP Vegas	5	88.28	41.53	0.30
Verus	5	54.39	66.94	21.13
PCC-Vivace	5	84.70	34.63	0.00
WebRTC media	5	1.93	32.17	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-11-30 04:03:08
End at: 2018-11-30 04:03:38
Local clock offset: 3.558 ms
Remote clock offset: -5.665 ms

# Below is generated by plot.py at 2018-11-30 05:47:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.66 Mbit/s
95th percentile per-packet one-way delay: 61.754 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 95.66 Mbit/s
95th percentile per-packet one-way delay: 61.754 ms
Loss rate: 1.24%
```
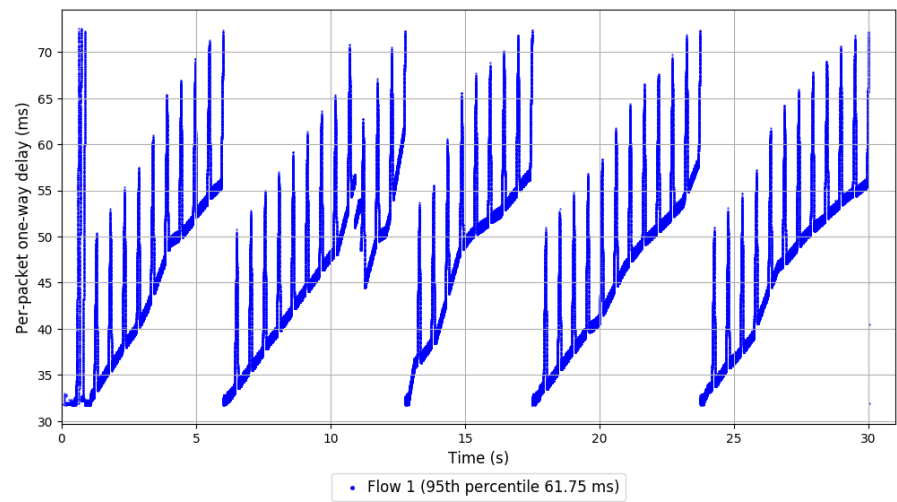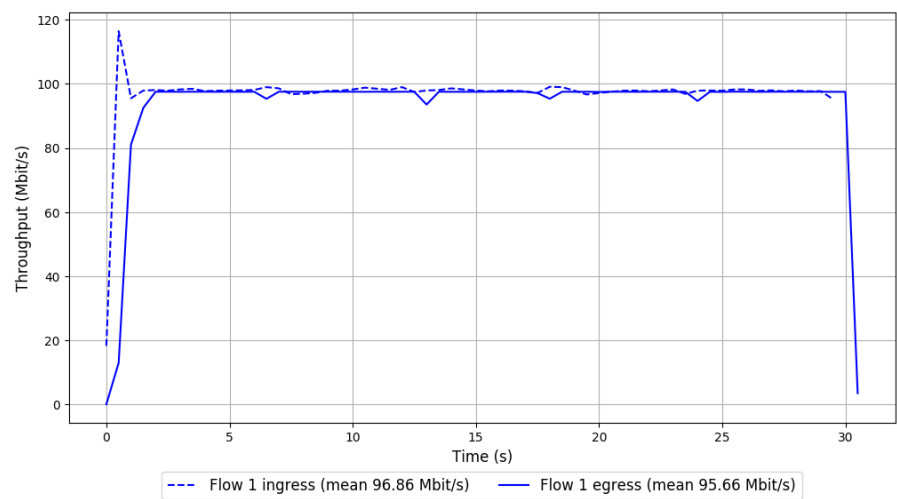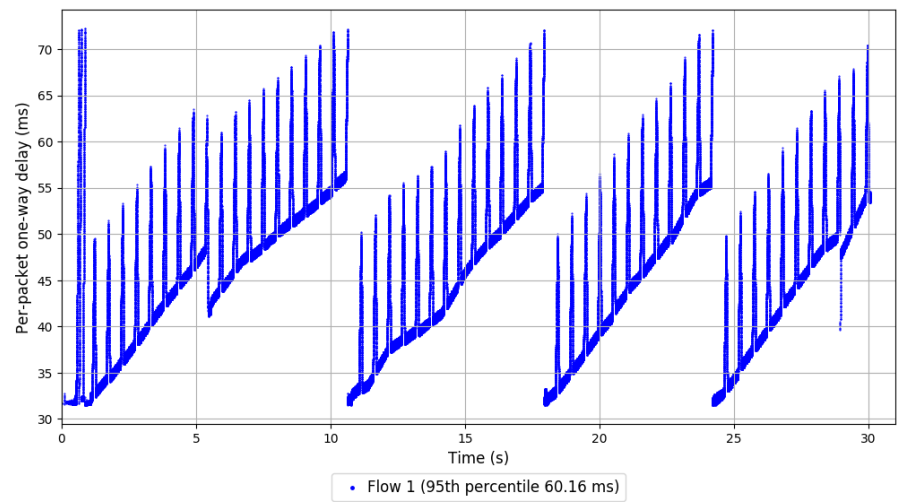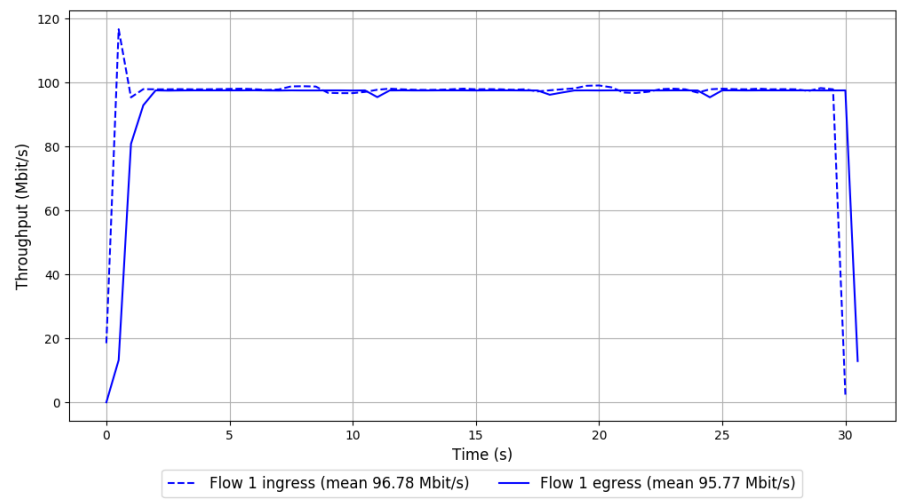
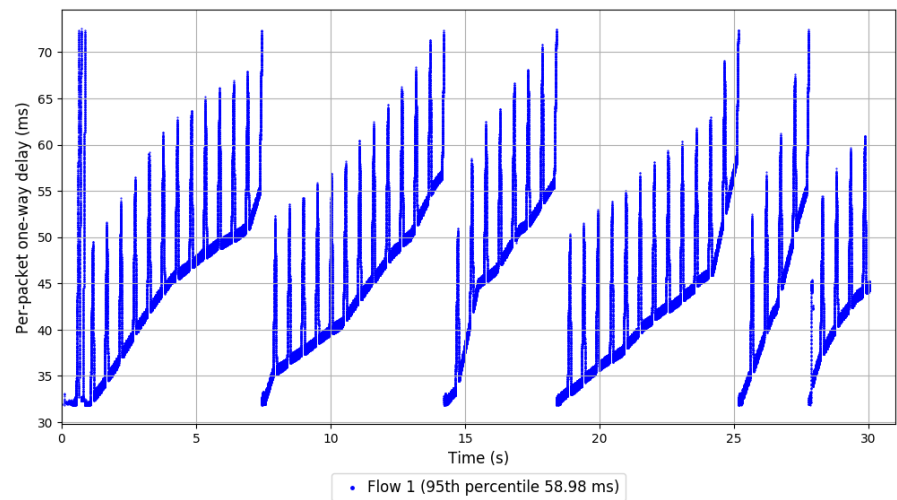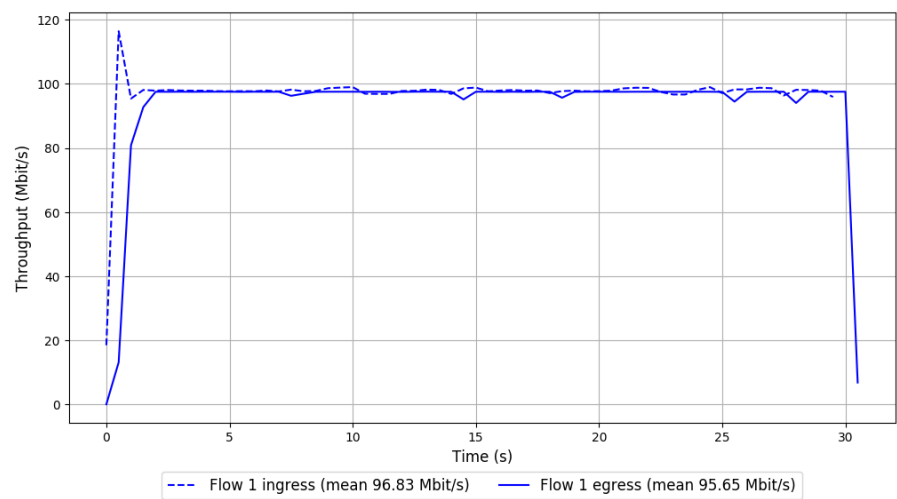Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-11-30 04:25:16
End at: 2018-11-30 04:25:46
Local clock offset: 0.973 ms
Remote clock offset: -5.786 ms


# Below is generated by plot.py at 2018-11-30 05:47:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 60.155 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 60.155 ms
Loss rate: 0.97%
```

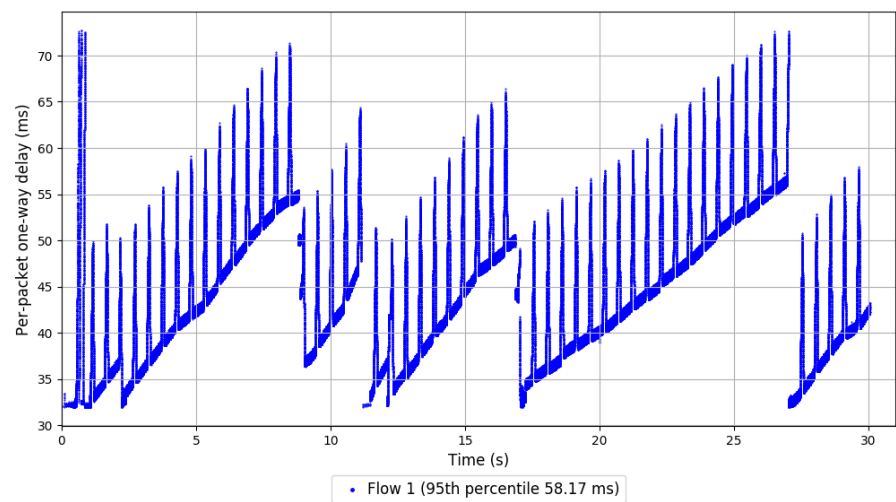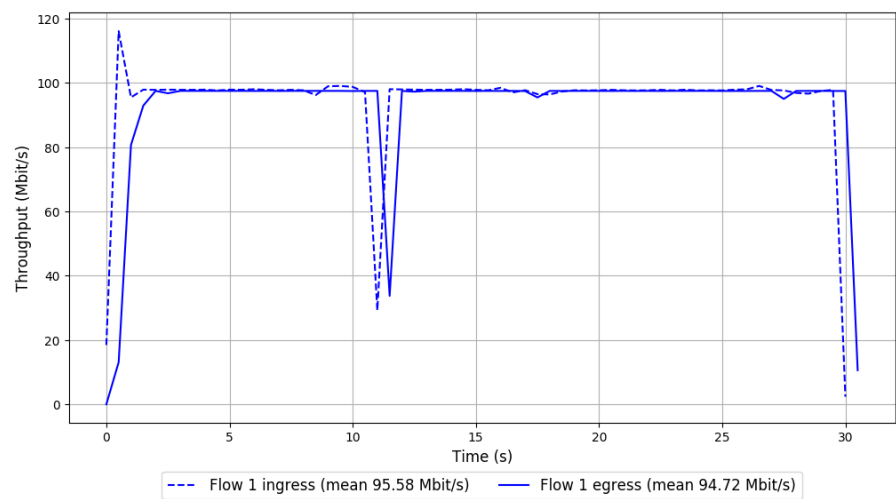Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-11-30 04:47:15
End at: 2018-11-30 04:47:45
Local clock offset: -0.415 ms
Remote clock offset: -5.314 ms

# Below is generated by plot.py at 2018-11-30 05:47:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.65 Mbit/s
95th percentile per-packet one-way delay: 58.978 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 95.65 Mbit/s
95th percentile per-packet one-way delay: 58.978 ms
Loss rate: 1.18%
```

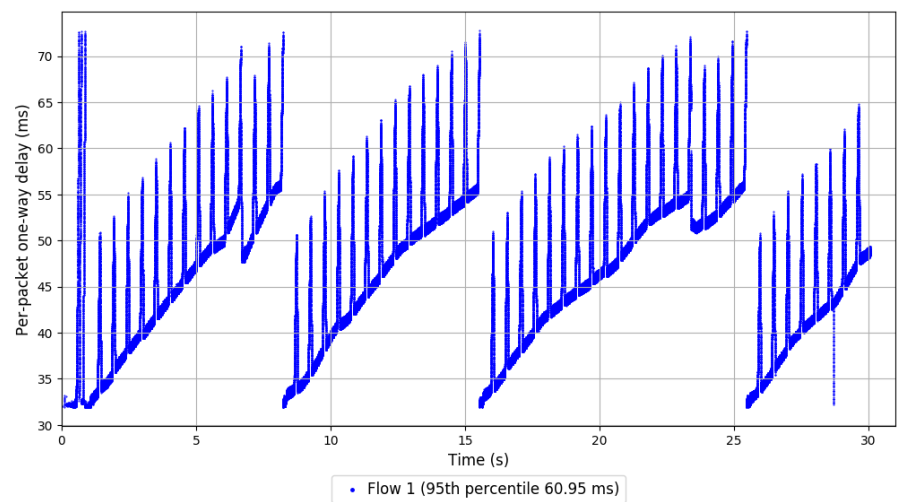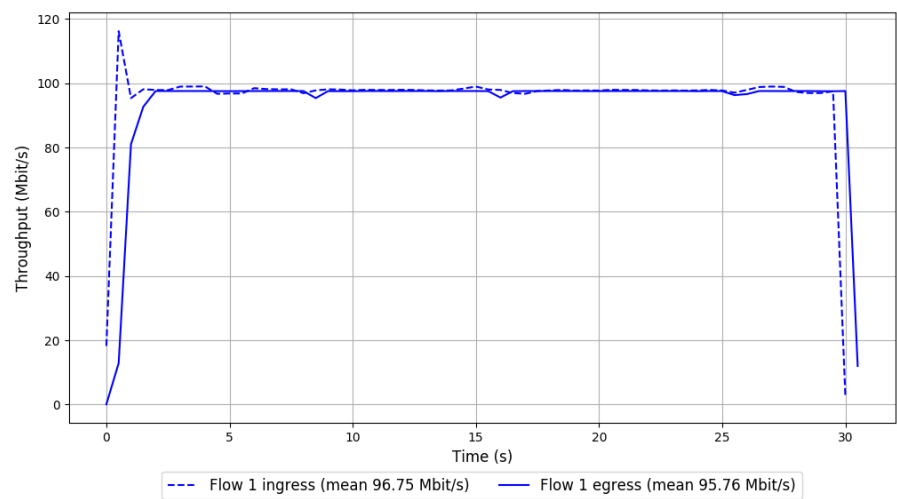# Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-11-30 05:09:45
End at: 2018-11-30 05:10:15
Local clock offset: -0.242 ms
Remote clock offset: -4.764 ms


# Below is generated by plot.py at 2018-11-30 05:47:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.72 Mbit/s
95th percentile per-packet one-way delay: 58.169 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 94.72 Mbit/s
95th percentile per-packet one-way delay: 58.169 ms
Loss rate: 0.87%
```

Run 4: Report of TCP BBR — Data Link
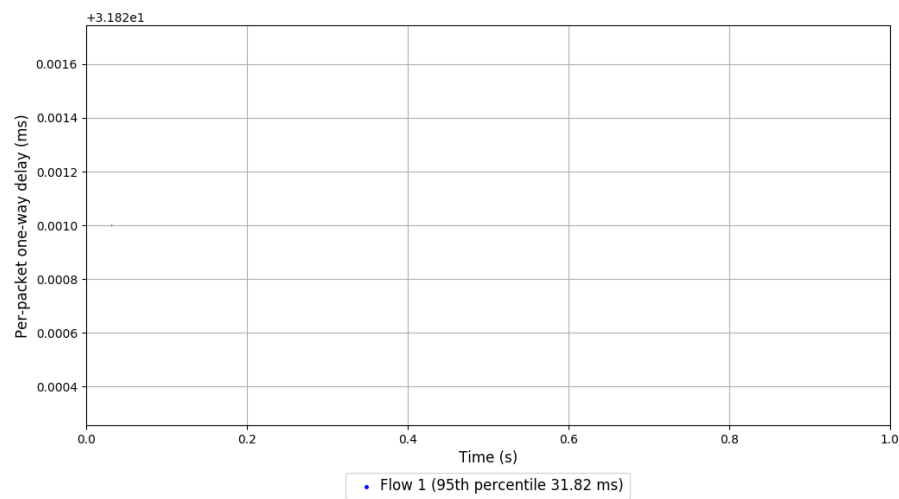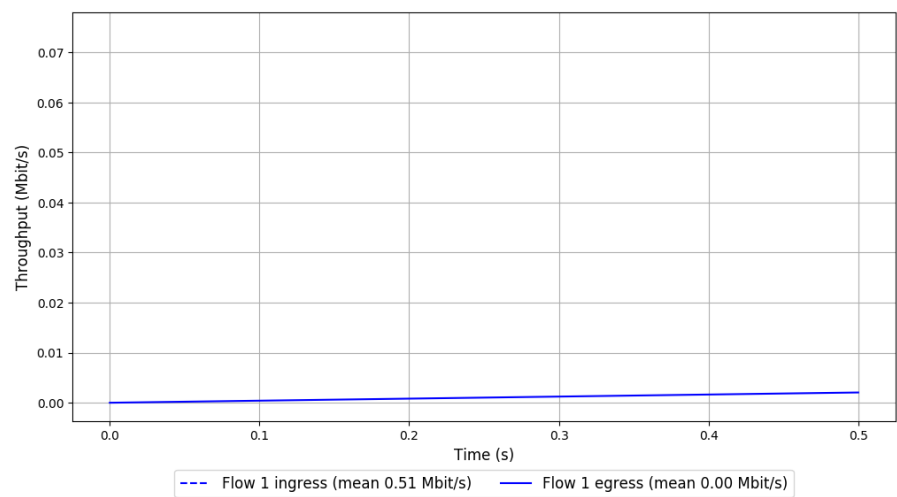
```
Run 5: Statistics of TCP BBR

Start at: 2018-11-30 05:31:48
End at: 2018-11-30 05:32:18
Local clock offset: -0.053 ms
Remote clock offset: -4.581 ms

# Below is generated by plot.py at 2018-11-30 05:47:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 60.948 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 60.948 ms
Loss rate: 0.97%
```

Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-11-30 04:05:27
End at: 2018-11-30 04:05:57
Local clock offset: 3.591 ms
Remote clock offset: -5.584 ms
```

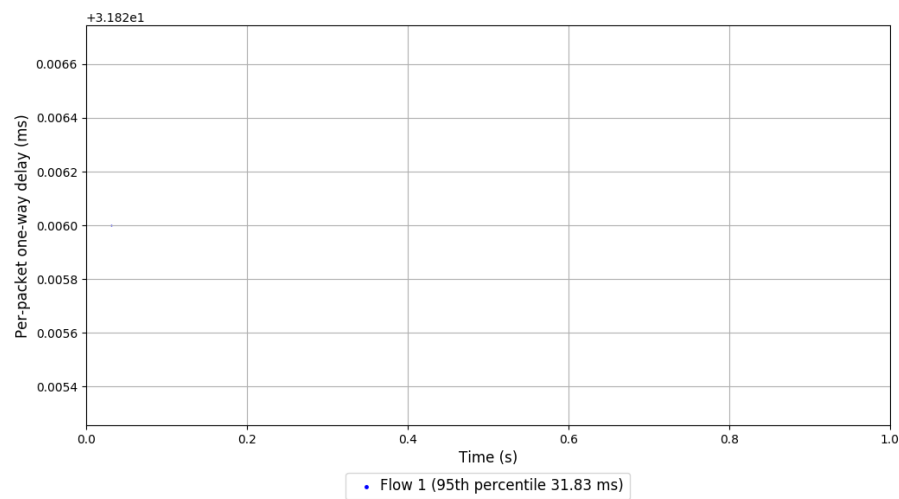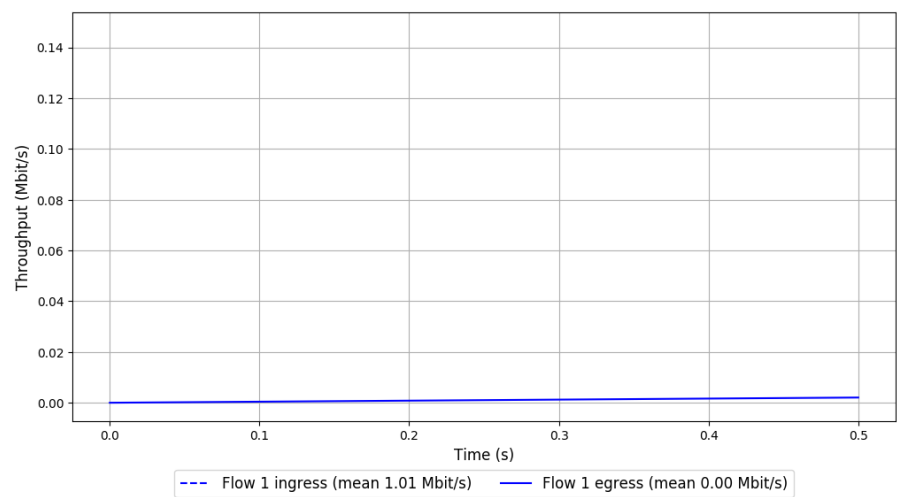## Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-11-30 04:27:36
End at: 2018-11-30 04:28:07
Local clock offset: 0.647 ms
Remote clock offset: -5.58 ms
```
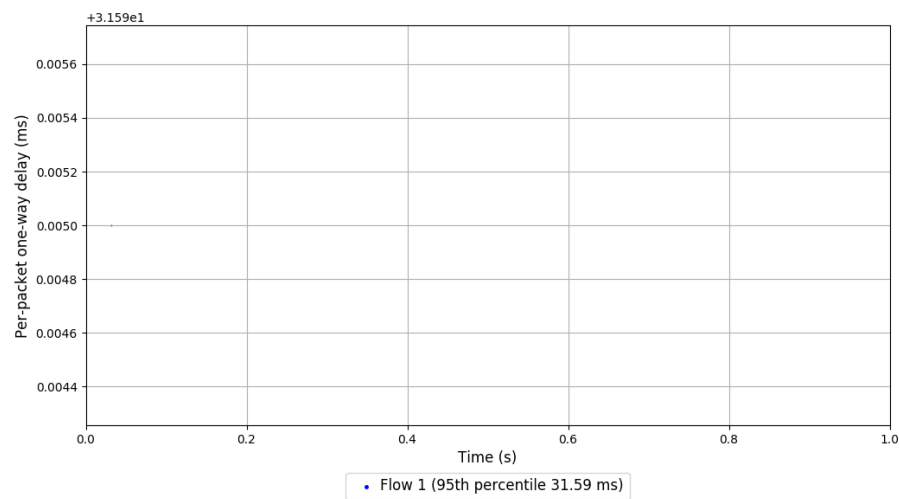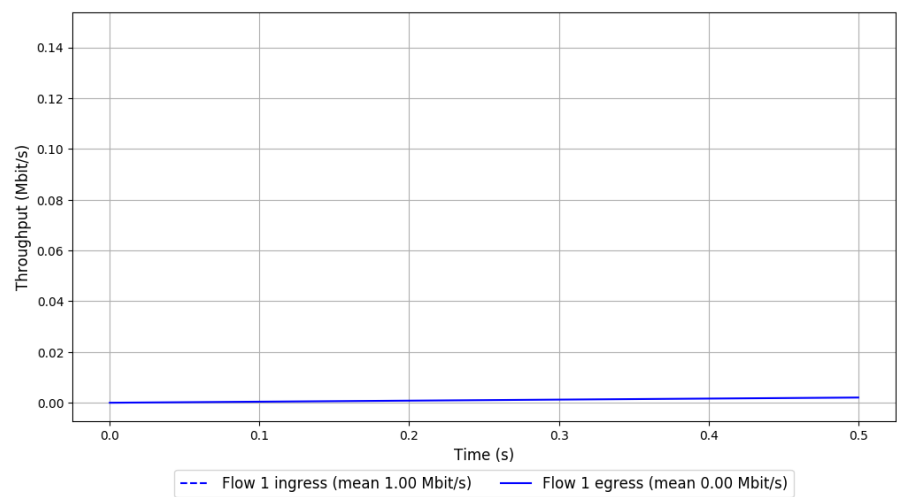
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 1.01 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 31.83 ms)

```
Run 3: Statistics of Copa

Start at: 2018-11-30 04:49:47
End at: 2018-11-30 04:50:17
Local clock offset: -0.303 ms
Remote clock offset: -5.473 ms
```
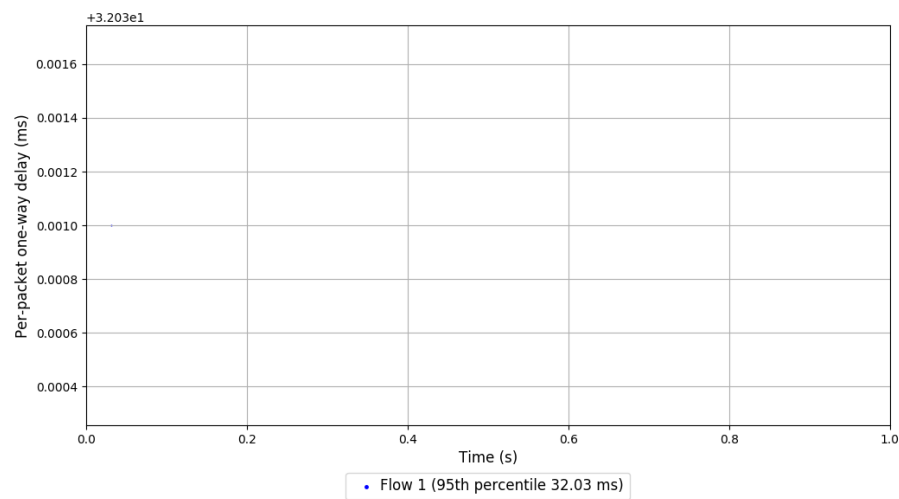
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 1.00 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 31.59 ms)
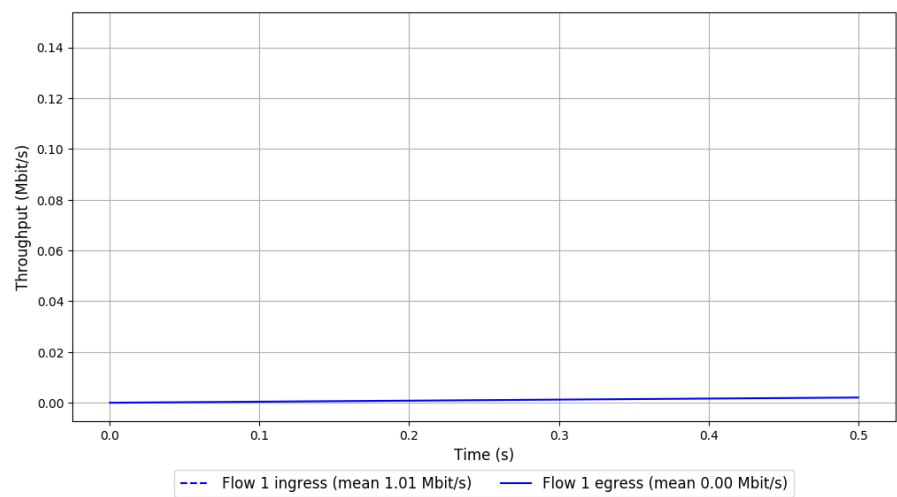
Run 4: Statistics of Copa

Start at: 2018-11-30 05:12:05
End at: 2018-11-30 05:12:35
Local clock offset: -0.271 ms
Remote clock offset: -4.779 ms

Run 4: Report of Copa — Data Link

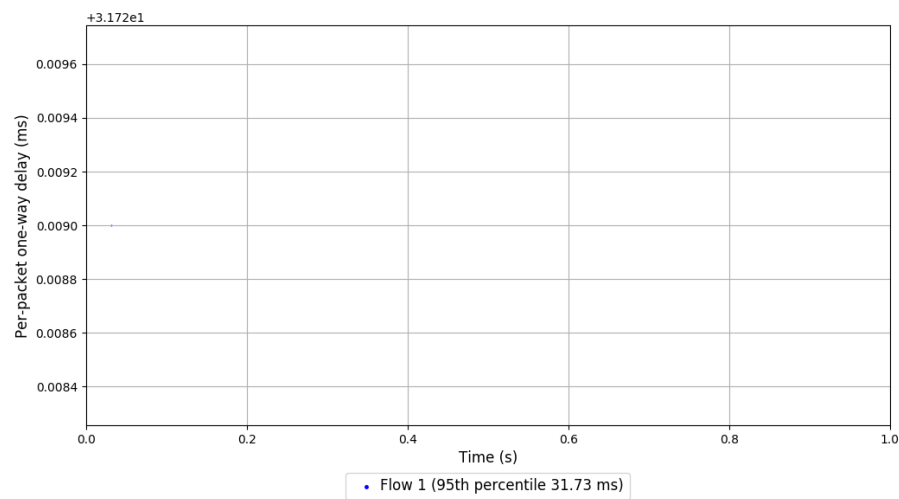Flow 1 ingress (mean 1.01 Mbit/s) ———— Flow 1 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 32.03 ms)
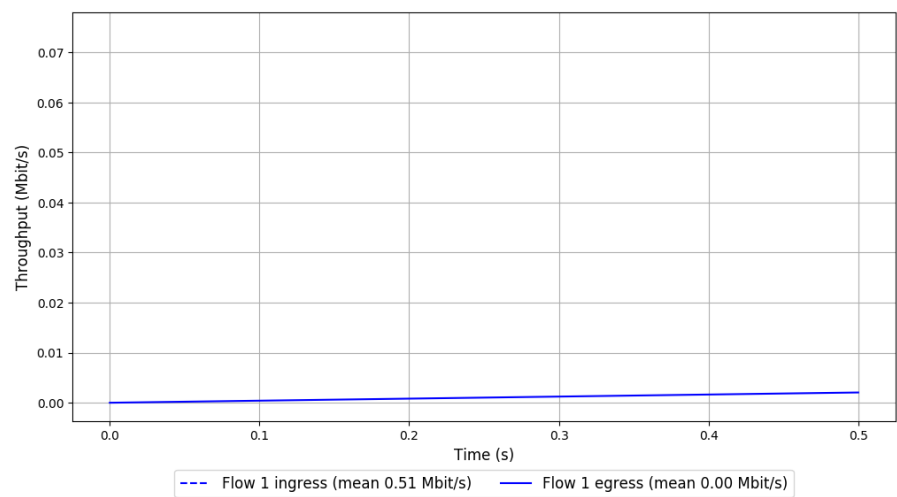
```
Run 5: Statistics of Copa

Start at: 2018-11-30 05:34:10
End at: 2018-11-30 05:34:40
Local clock offset: -0.066 ms
Remote clock offset: -4.714 ms
```
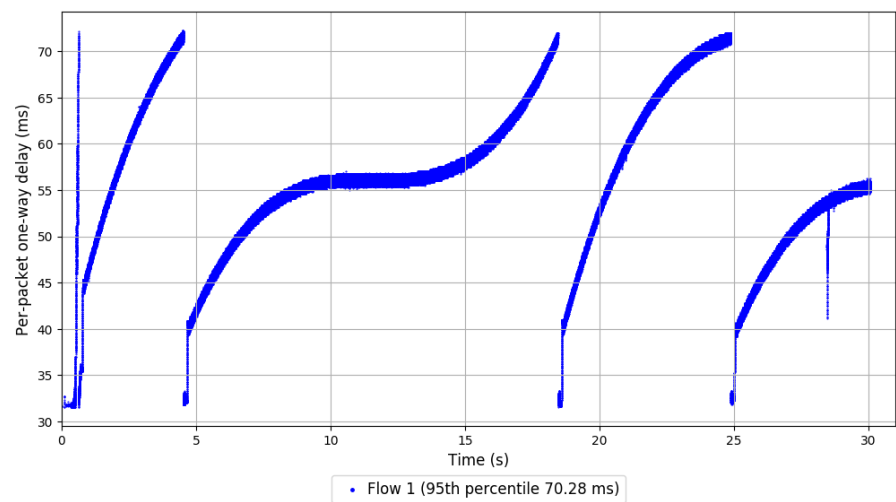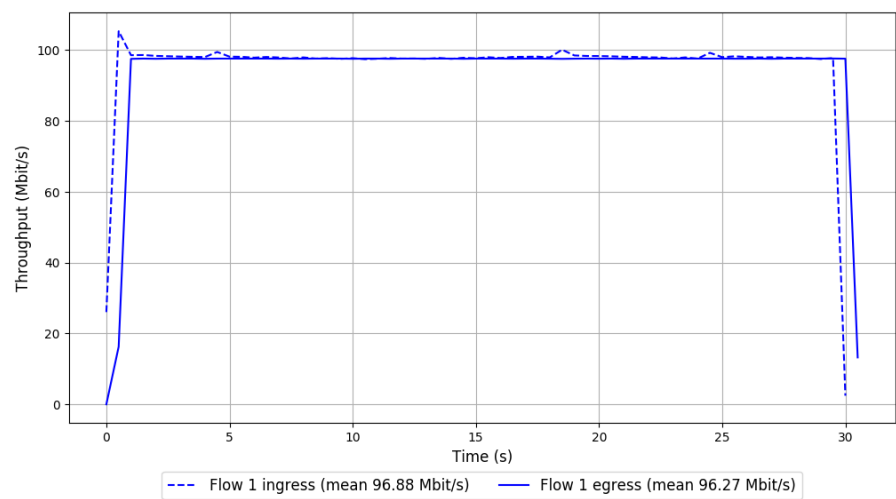
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-30 04:01:58
End at: 2018-11-30 04:02:28
Local clock offset: 3.54 ms
Remote clock offset: -5.792 ms


# Below is generated by plot.py at 2018-11-30 05:47:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 70.276 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 70.276 ms
Loss rate: 0.54%
```
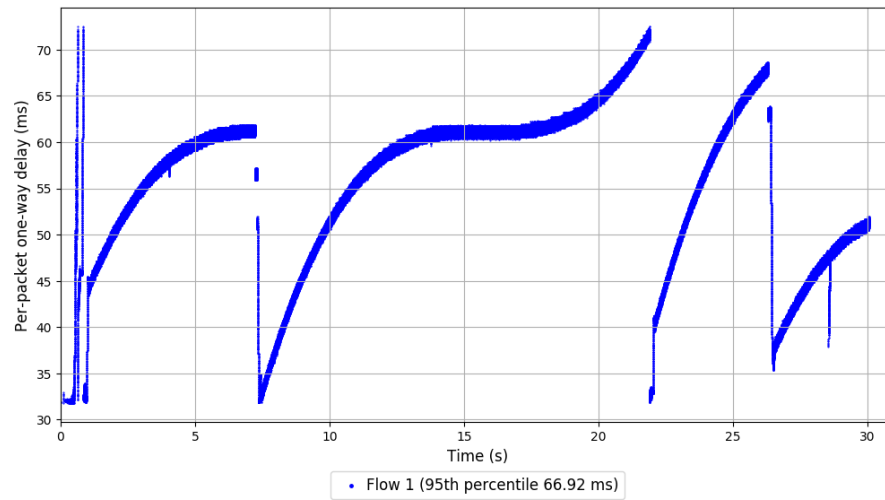
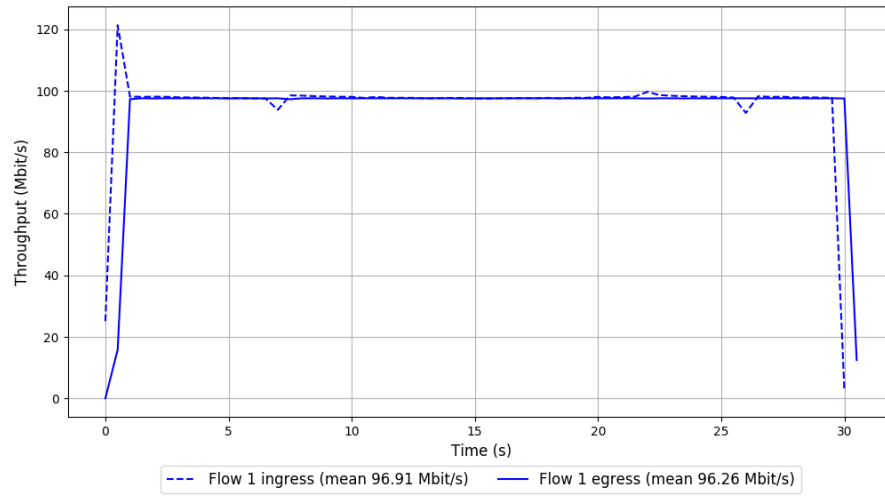Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-11-30 04:24:05
End at: 2018-11-30 04:24:35
Local clock offset: 1.143 ms
Remote clock offset: -5.581 ms


# Below is generated by plot.py at 2018-11-30 05:47:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 66.925 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 66.925 ms
Loss rate: 0.61%
```
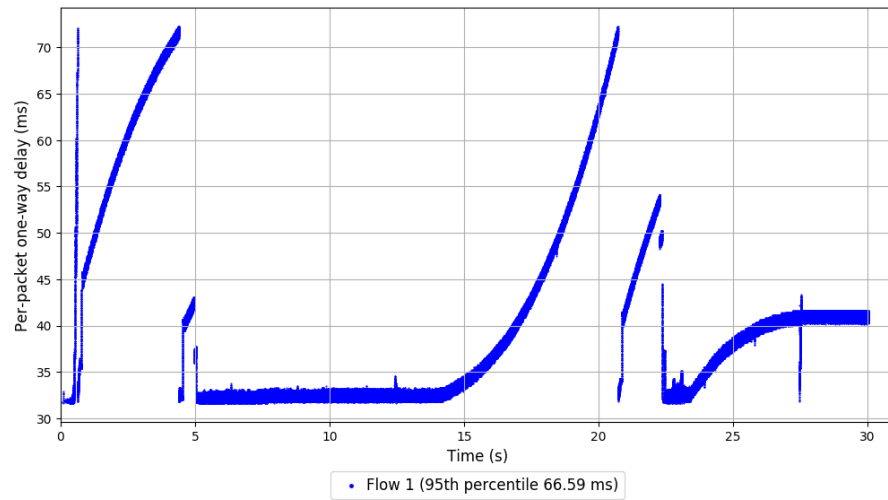
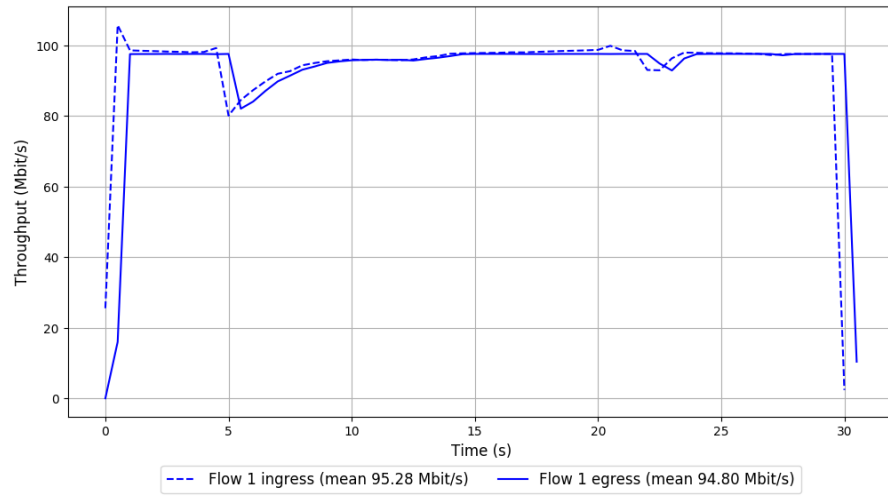Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-11-30 04:46:03
End at: 2018-11-30 04:46:33
Local clock offset: -0.499 ms
Remote clock offset: -5.567 ms


# Below is generated by plot.py at 2018-11-30 05:47:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 66.589 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 66.589 ms
Loss rate: 0.47%
```

Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 95.28 Mbit/s) --- Flow 1 egress (mean 94.80 Mbit/s)
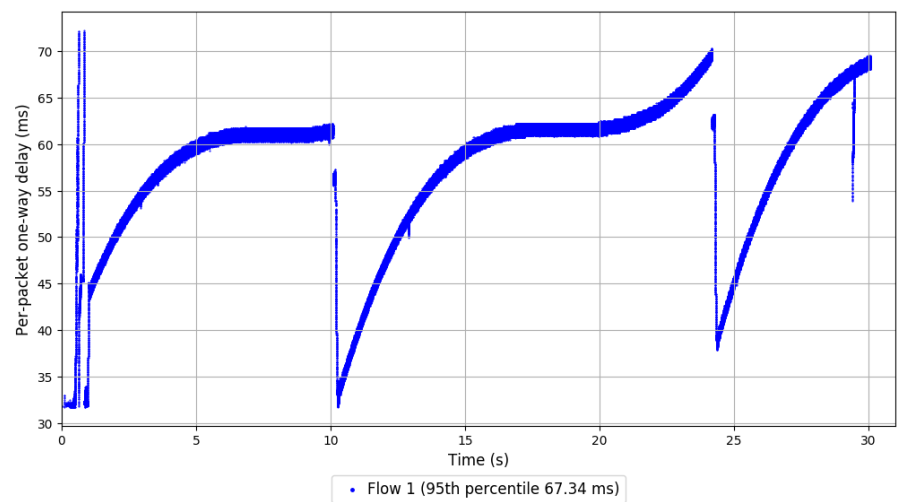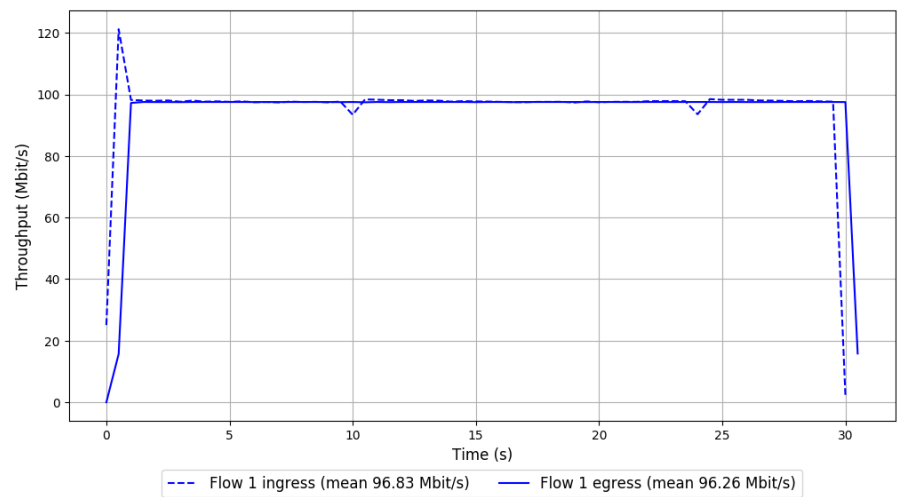

Flow 1 (95th percentile 66.59 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-11-30 05:08:35
End at: 2018-11-30 05:09:05
Local clock offset: -0.234 ms
Remote clock offset: -5.027 ms


# Below is generated by plot.py at 2018-11-30 05:48:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 67.344 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 67.344 ms
Loss rate: 0.47%
```
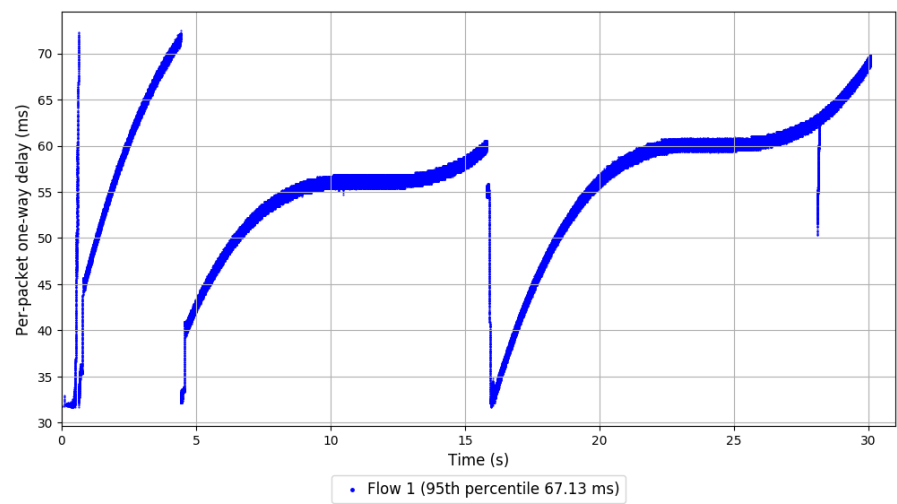
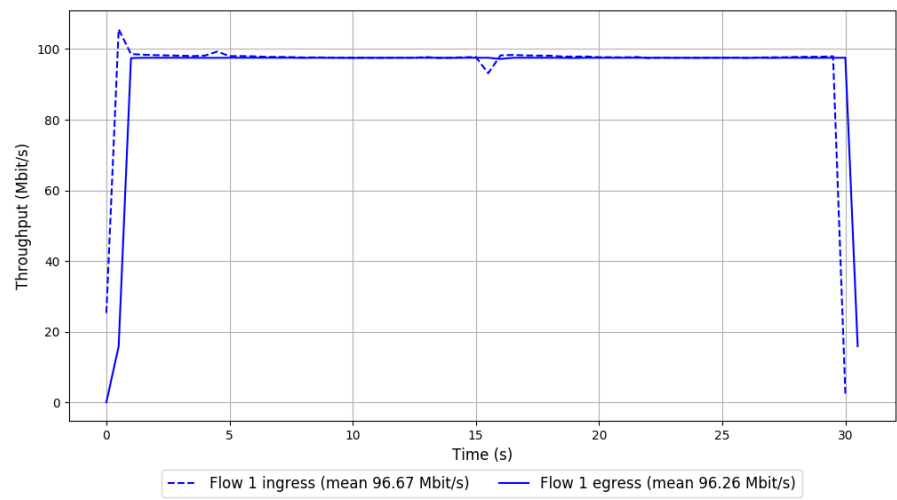Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-11-30 05:30:37
End at: 2018-11-30 05:31:07
Local clock offset: -0.062 ms
Remote clock offset: -4.831 ms


# Below is generated by plot.py at 2018-11-30 05:48:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 67.129 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 67.129 ms
Loss rate: 0.30%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 96.67 Mbit/s) ---- Flow 1 egress (mean 96.26 Mbit/s)

• Flow 1 (95th percentile 67.13 ms)

```
Run 1: Statistics of FillP

Start at: 2018-11-30 04:08:53
End at: 2018-11-30 04:09:24
Local clock offset: 3.6 ms
Remote clock offset: -5.577 ms


# Below is generated by plot.py at 2018-11-30 05:49:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 40.296 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 40.296 ms
Loss rate: 0.65%
```
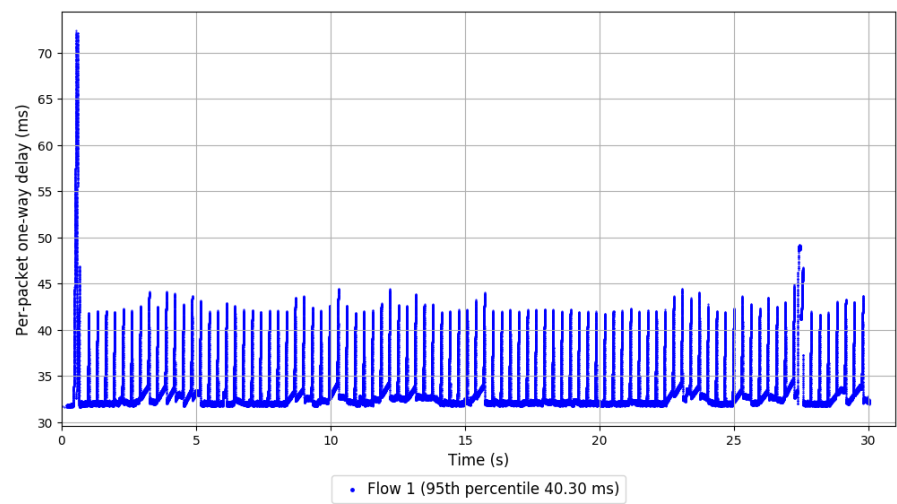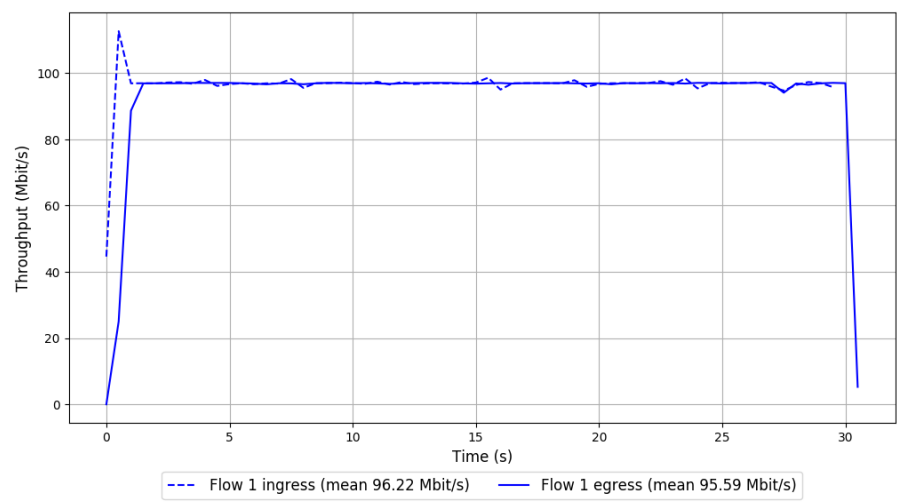
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 96.22 Mbit/s)   ——— Flow 1 egress (mean 95.59 Mbit/s)
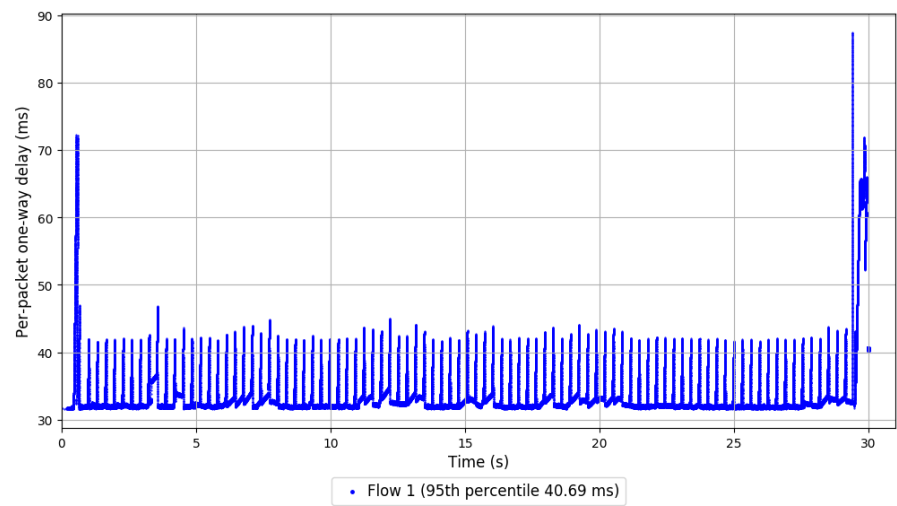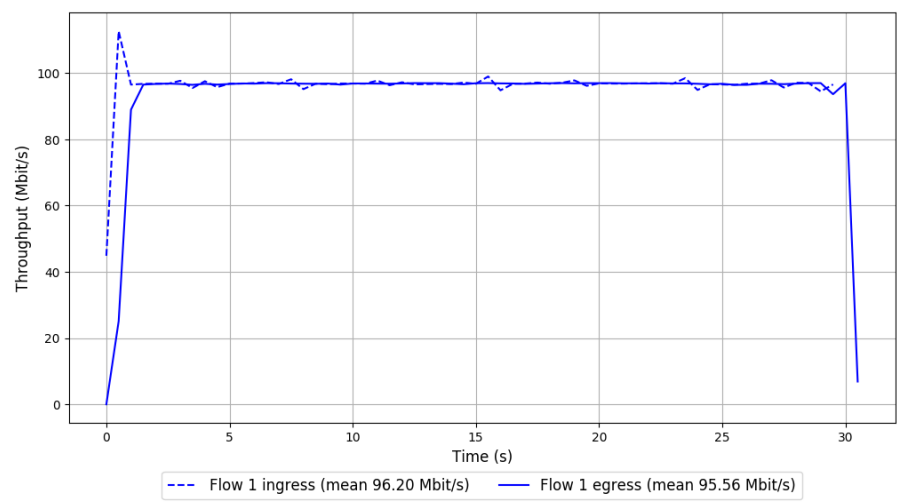

• Flow 1 (95th percentile 40.30 ms)

```
Run 2: Statistics of FillP

Start at: 2018-11-30 04:31:03
End at: 2018-11-30 04:31:33
Local clock offset: 0.299 ms
Remote clock offset: -5.607 ms

# Below is generated by plot.py at 2018-11-30 05:49:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.56 Mbit/s
95th percentile per-packet one-way delay: 40.692 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 95.56 Mbit/s
95th percentile per-packet one-way delay: 40.692 ms
Loss rate: 0.65%
```

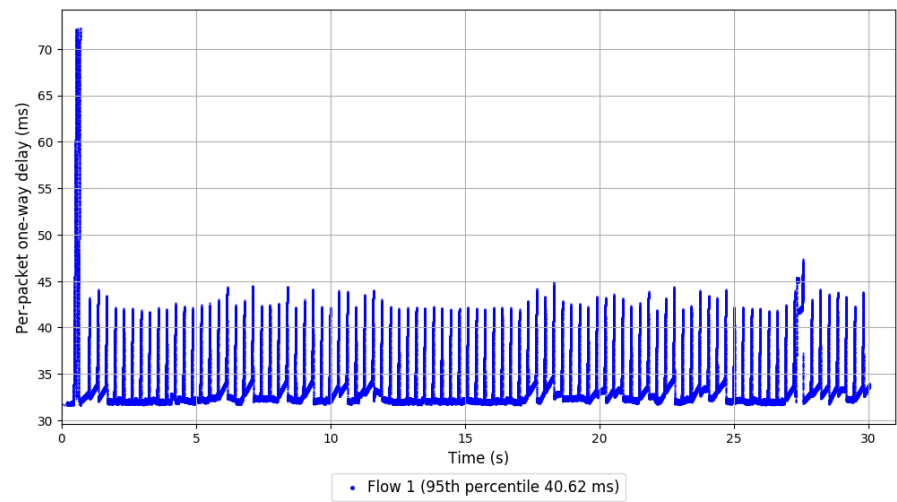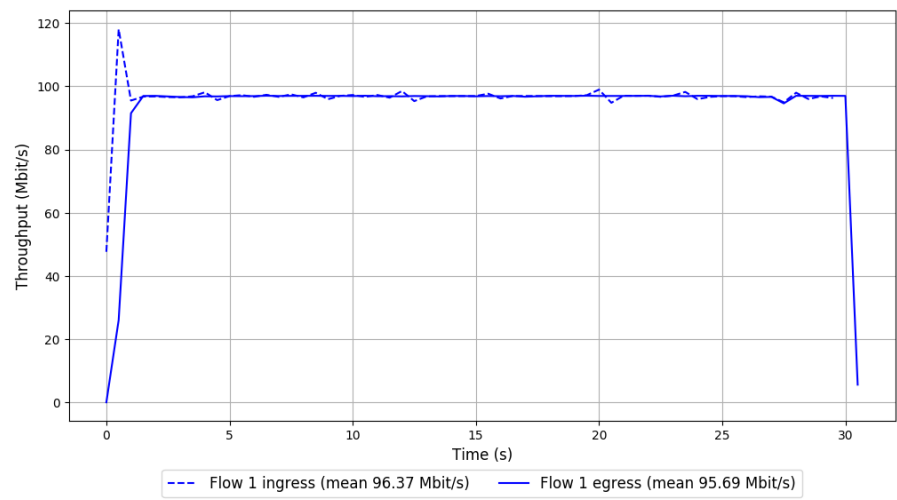Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-11-30 04:53:20
End at: 2018-11-30 04:53:50
Local clock offset: -0.21 ms
Remote clock offset: -5.212 ms


# Below is generated by plot.py at 2018-11-30 05:49:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 40.617 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 40.617 ms
Loss rate: 0.70%
```
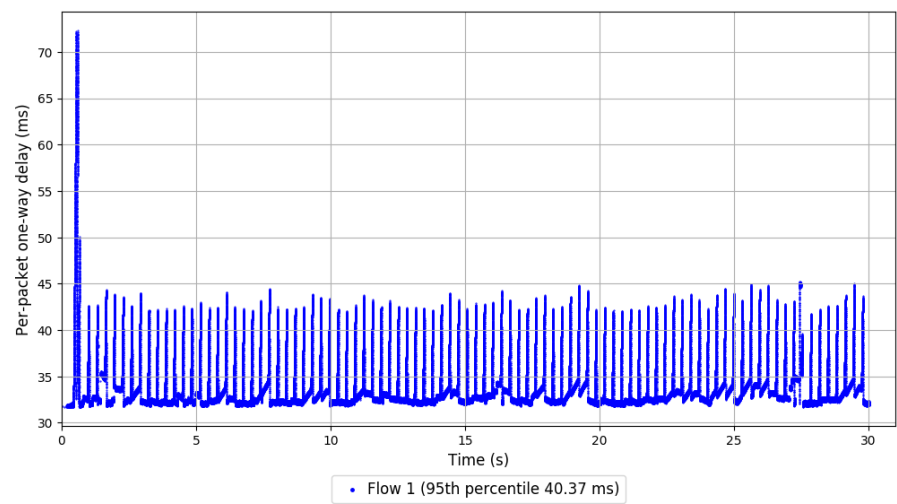
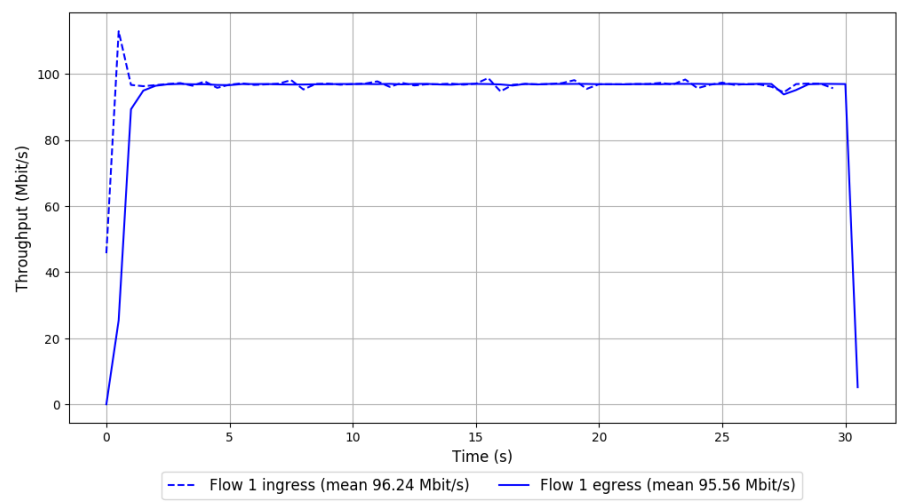## Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-11-30 05:15:32
End at: 2018-11-30 05:16:02
Local clock offset: -0.268 ms
Remote clock offset: -4.804 ms


# Below is generated by plot.py at 2018-11-30 05:49:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.56 Mbit/s
95th percentile per-packet one-way delay: 40.368 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 95.56 Mbit/s
95th percentile per-packet one-way delay: 40.368 ms
Loss rate: 0.71%
```

Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 96.24 Mbit/s)   Flow 1 egress (mean 95.56 Mbit/s)
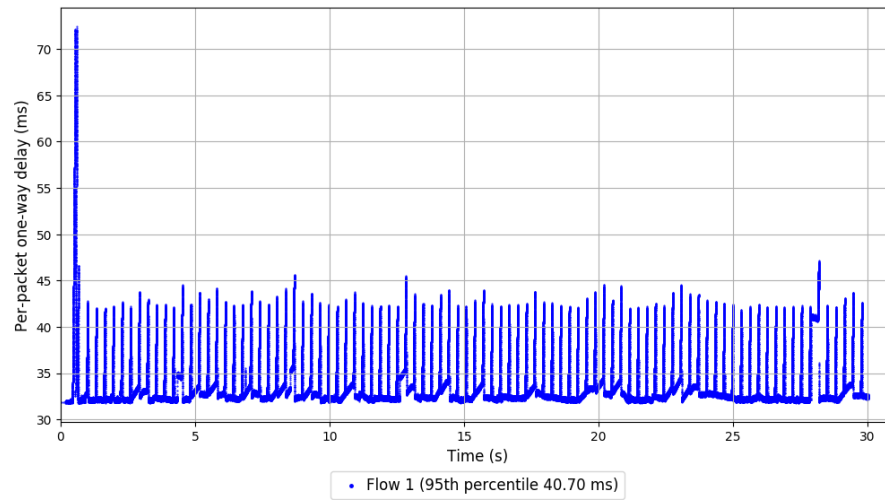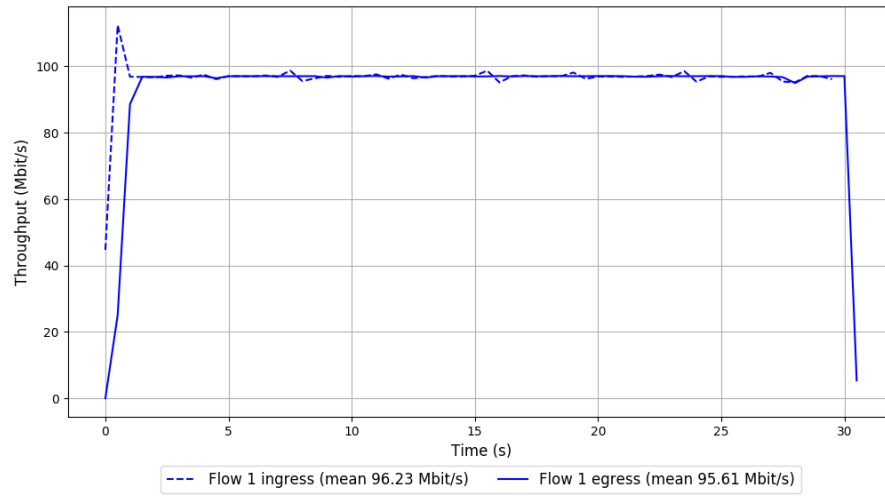

Flow 1 (95th percentile 40.37 ms)

```
Run 5: Statistics of FillP

Start at: 2018-11-30 05:37:37
End at: 2018-11-30 05:38:07
Local clock offset: -0.097 ms
Remote clock offset: -4.416 ms


# Below is generated by plot.py at 2018-11-30 05:49:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.61 Mbit/s
95th percentile per-packet one-way delay: 40.703 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 95.61 Mbit/s
95th percentile per-packet one-way delay: 40.703 ms
Loss rate: 0.64%
```
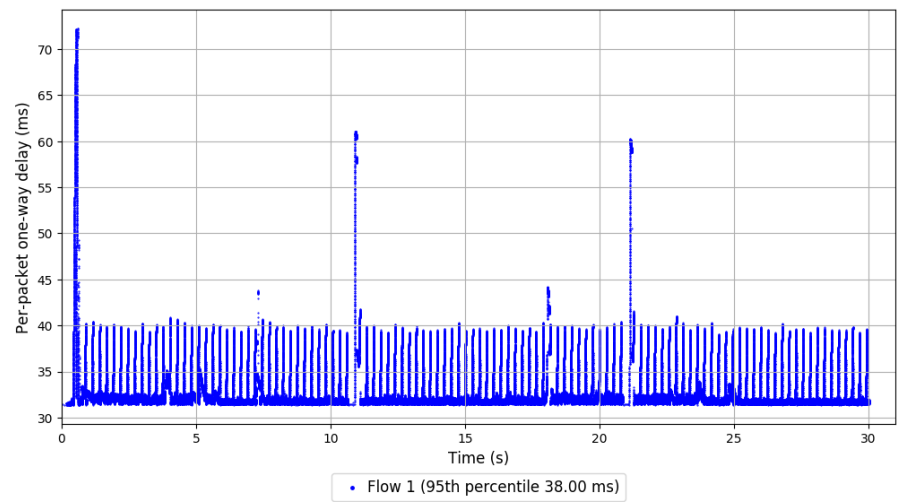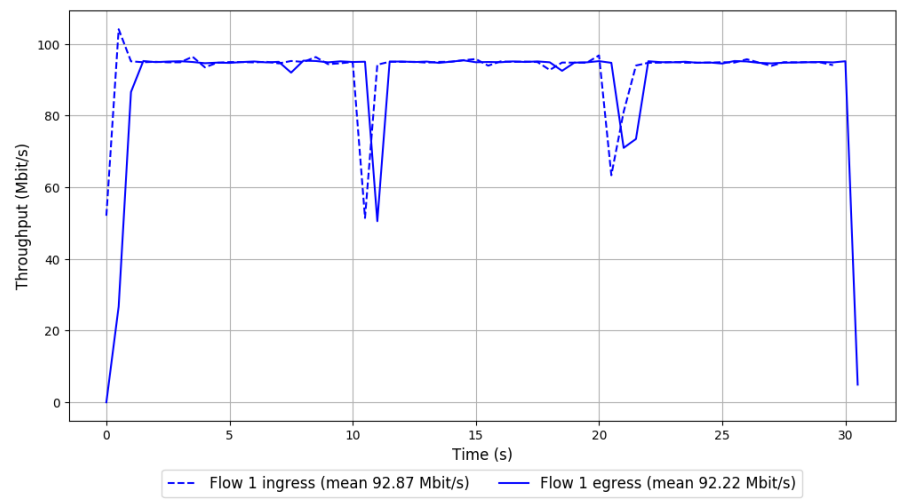
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-11-30 03:55:09
End at: 2018-11-30 03:55:39
Local clock offset: 3.573 ms
Remote clock offset: -5.921 ms


# Below is generated by plot.py at 2018-11-30 05:49:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.22 Mbit/s
95th percentile per-packet one-way delay: 38.001 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 92.22 Mbit/s
95th percentile per-packet one-way delay: 38.001 ms
Loss rate: 0.71%
```

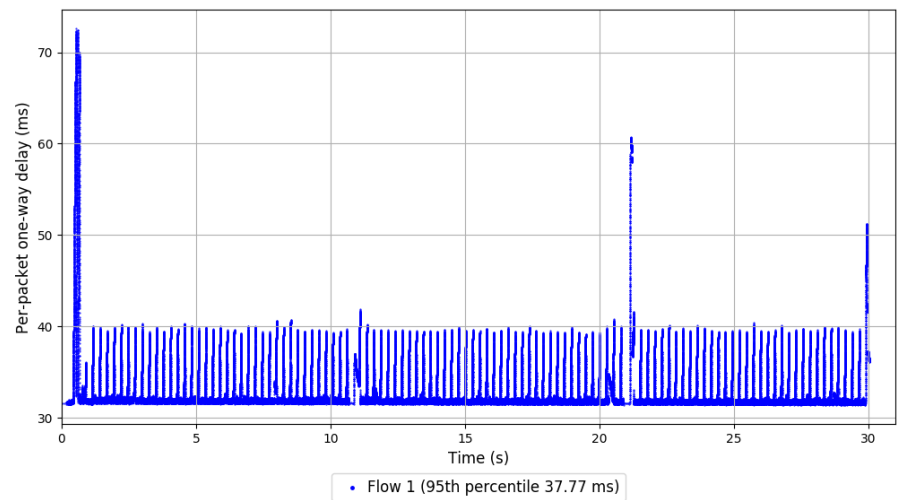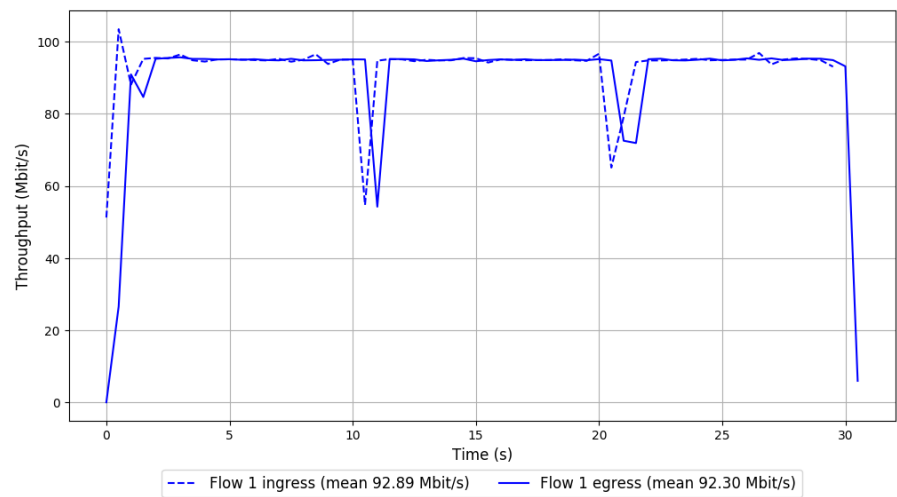Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-11-30 04:17:08
End at: 2018-11-30 04:17:38
Local clock offset: 2.864 ms
Remote clock offset: -5.548 ms


# Below is generated by plot.py at 2018-11-30 05:50:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.30 Mbit/s
95th percentile per-packet one-way delay: 37.765 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 92.30 Mbit/s
95th percentile per-packet one-way delay: 37.765 ms
Loss rate: 0.62%
```

Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-11-30 04:39:14
End at: 2018-11-30 04:39:44
Local clock offset: -0.309 ms
Remote clock offset: -5.532 ms

# Below is generated by plot.py at 2018-11-30 05:50:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.78 Mbit/s
95th percentile per-packet one-way delay: 37.714 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 92.78 Mbit/s
95th percentile per-packet one-way delay: 37.714 ms
Loss rate: 0.62%
```
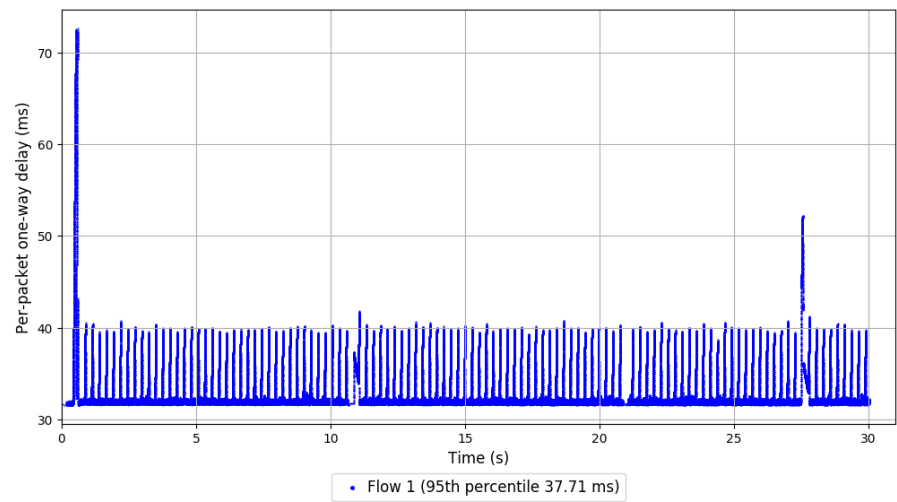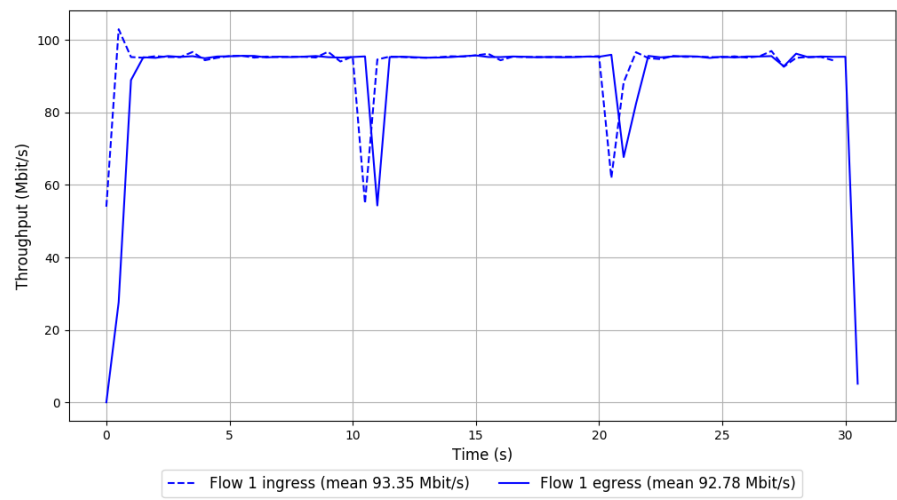
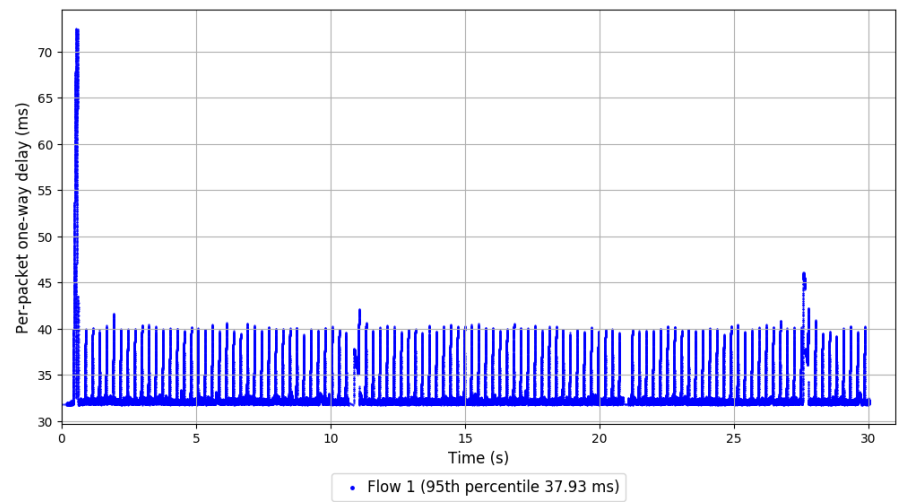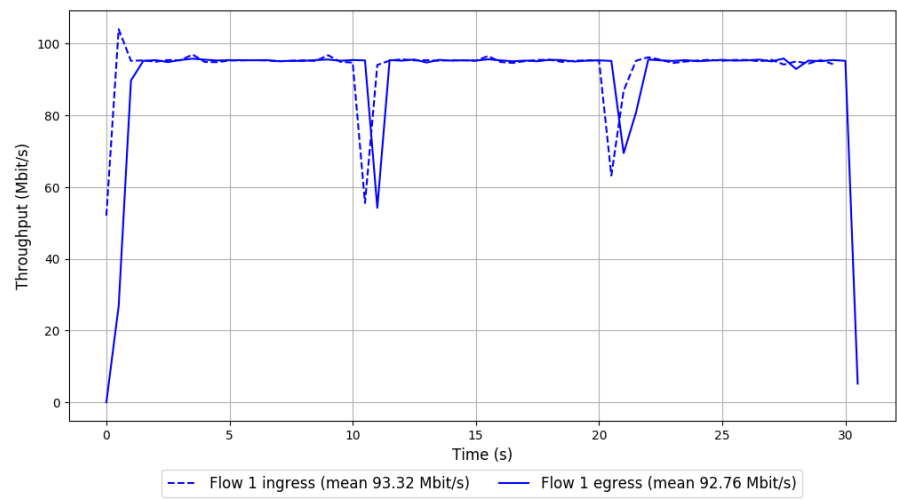Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-11-30 05:01:47
End at: 2018-11-30 05:02:17
Local clock offset: -0.147 ms
Remote clock offset: -4.865 ms


# Below is generated by plot.py at 2018-11-30 05:50:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.76 Mbit/s
95th percentile per-packet one-way delay: 37.928 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 92.76 Mbit/s
95th percentile per-packet one-way delay: 37.928 ms
Loss rate: 0.61%
```

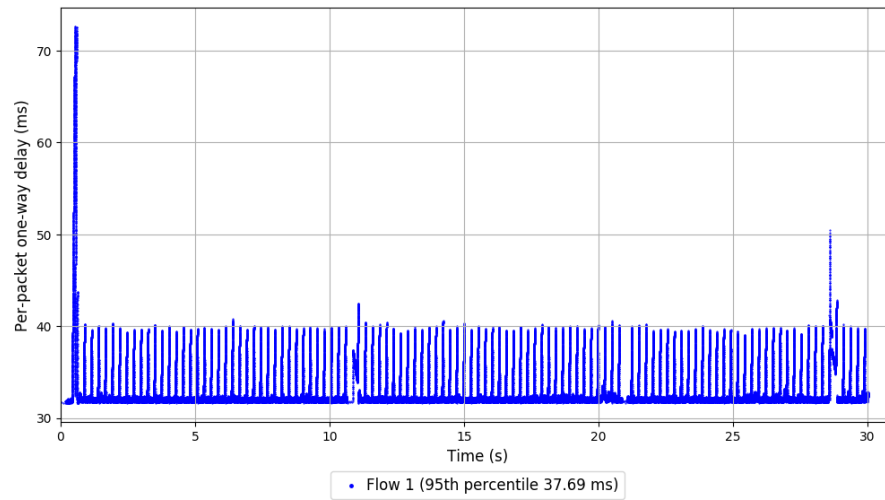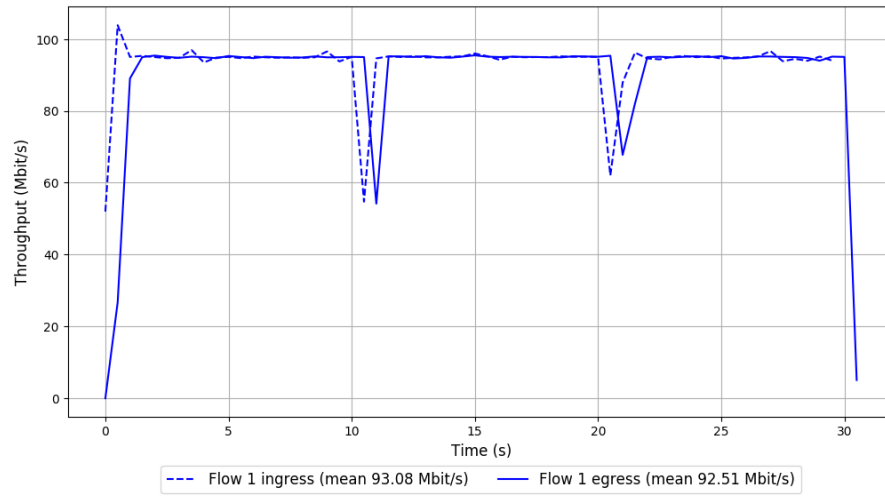# Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-11-30 05:23:42
End at: 2018-11-30 05:24:12
Local clock offset: -0.077 ms
Remote clock offset: -4.746 ms


# Below is generated by plot.py at 2018-11-30 05:50:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.51 Mbit/s
95th percentile per-packet one-way delay: 37.694 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 92.51 Mbit/s
95th percentile per-packet one-way delay: 37.694 ms
Loss rate: 0.61%
```

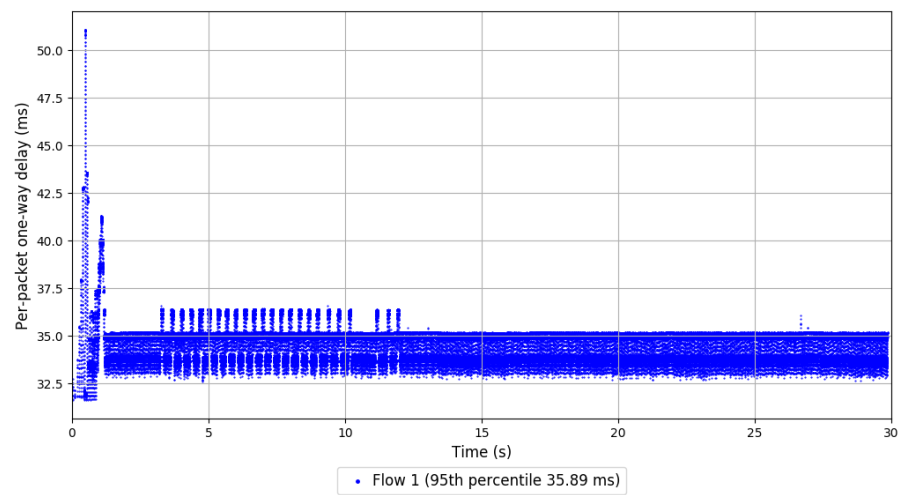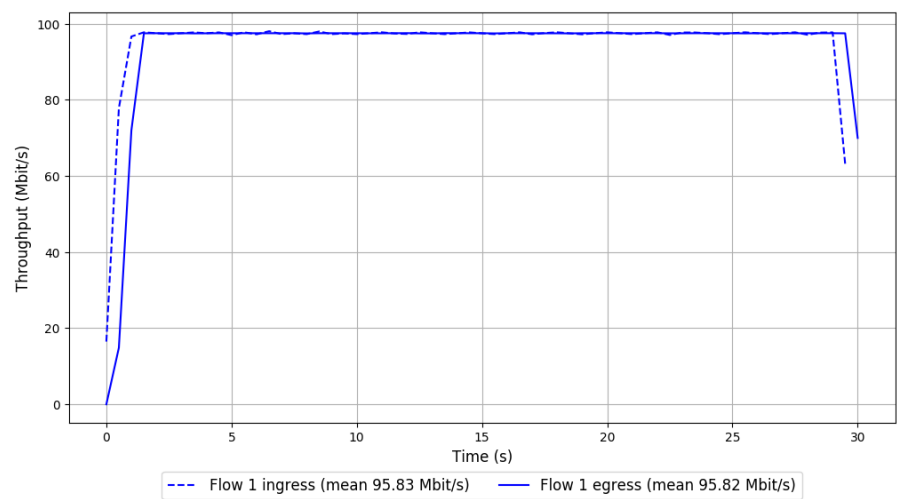Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-11-30 04:12:20
End at: 2018-11-30 04:12:50
Local clock offset: 3.664 ms
Remote clock offset: -5.76 ms


# Below is generated by plot.py at 2018-11-30 05:50:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.82 Mbit/s
95th percentile per-packet one-way delay: 35.893 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.82 Mbit/s
95th percentile per-packet one-way delay: 35.893 ms
Loss rate: 0.00%
```
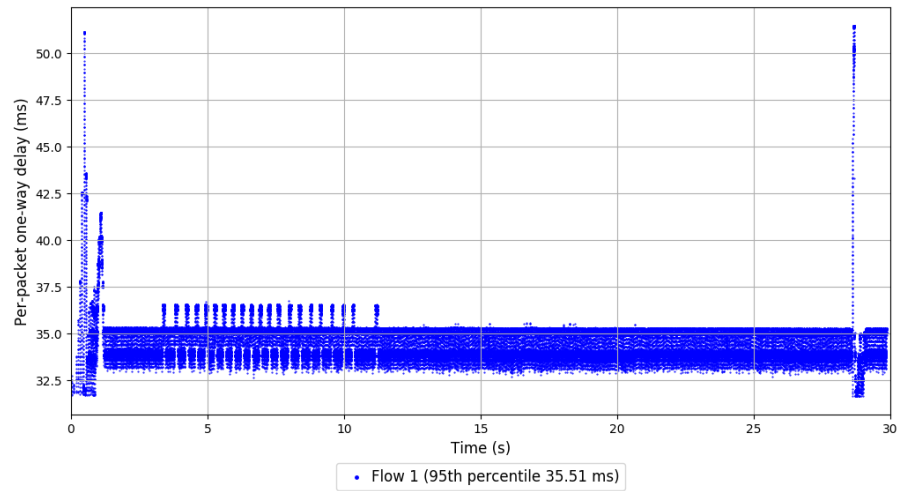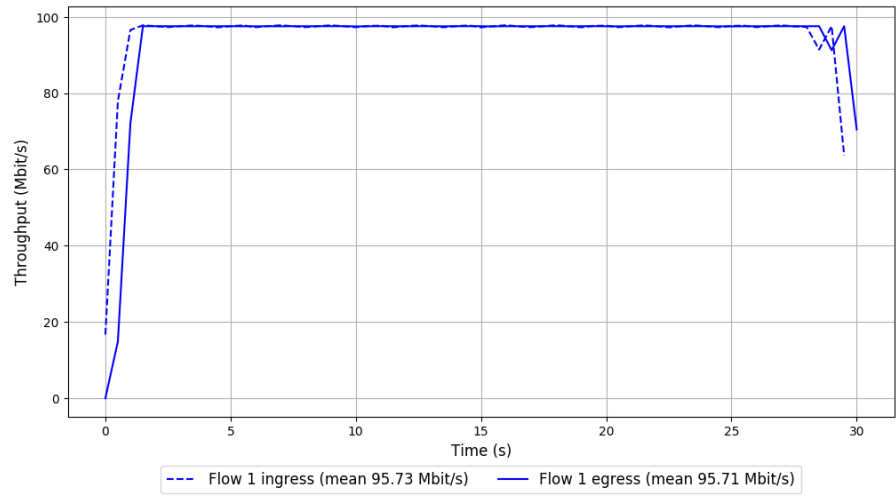
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-11-30 04:34:30
End at: 2018-11-30 04:35:00
Local clock offset: -0.009 ms
Remote clock offset: -5.716 ms


# Below is generated by plot.py at 2018-11-30 05:50:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.71 Mbit/s
95th percentile per-packet one-way delay: 35.514 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.71 Mbit/s
95th percentile per-packet one-way delay: 35.514 ms
Loss rate: 0.00%
```
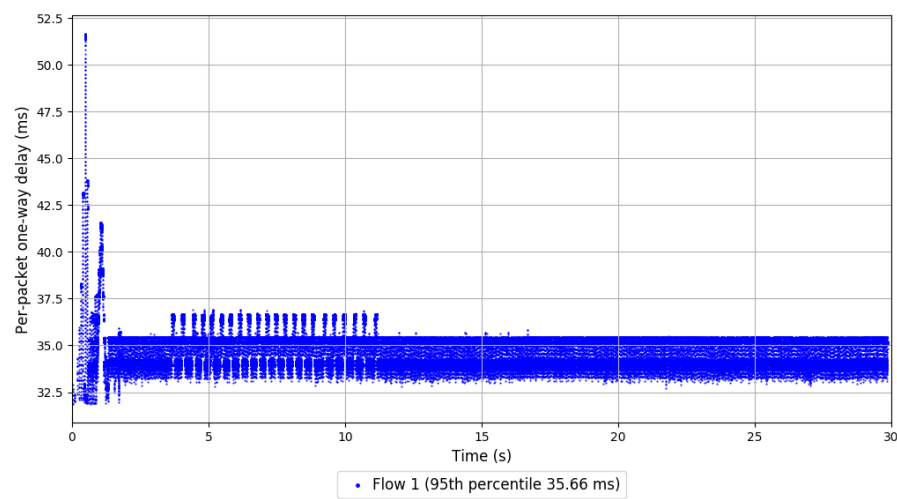
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-11-30 04:56:57
End at: 2018-11-30 04:57:27
Local clock offset: -0.176 ms
Remote clock offset: -5.044 ms


# Below is generated by plot.py at 2018-11-30 05:50:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 35.656 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 35.656 ms
Loss rate: 0.00%
```
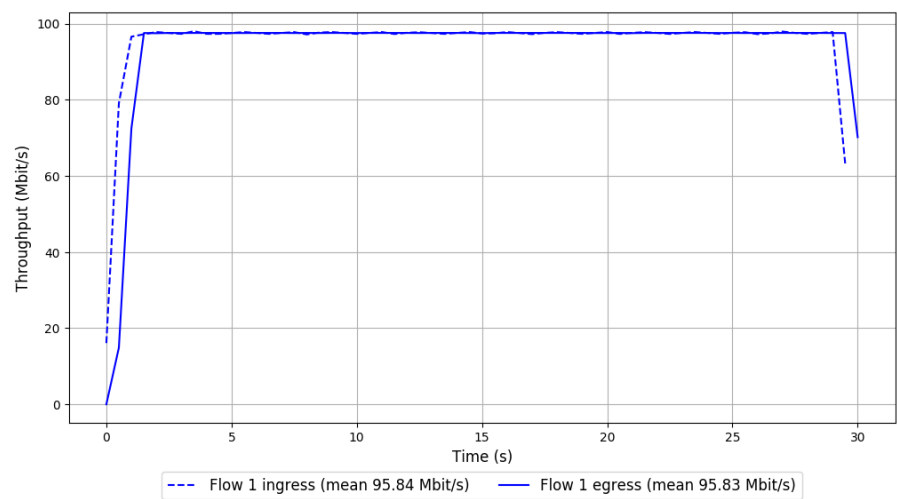
Run 3: Report of Indigo — Data Link

Flow 1 ingress (mean 95.84 Mbit/s)   Flow 1 egress (mean 95.83 Mbit/s)
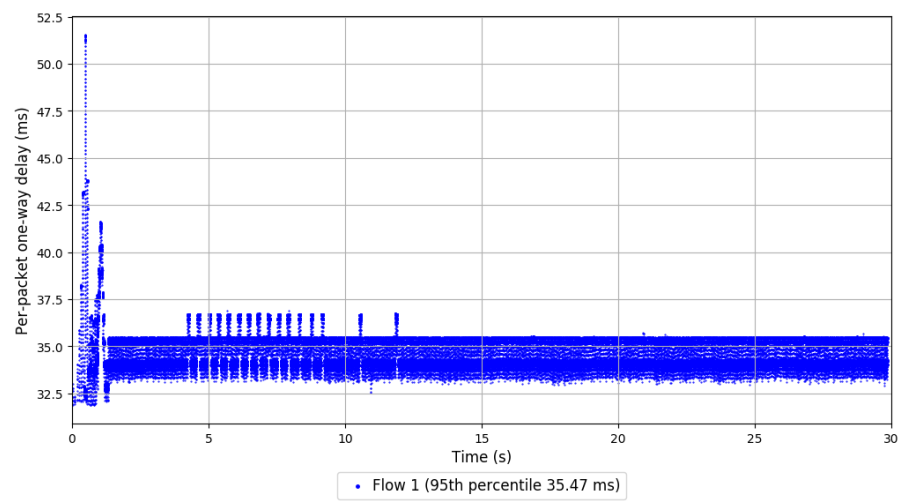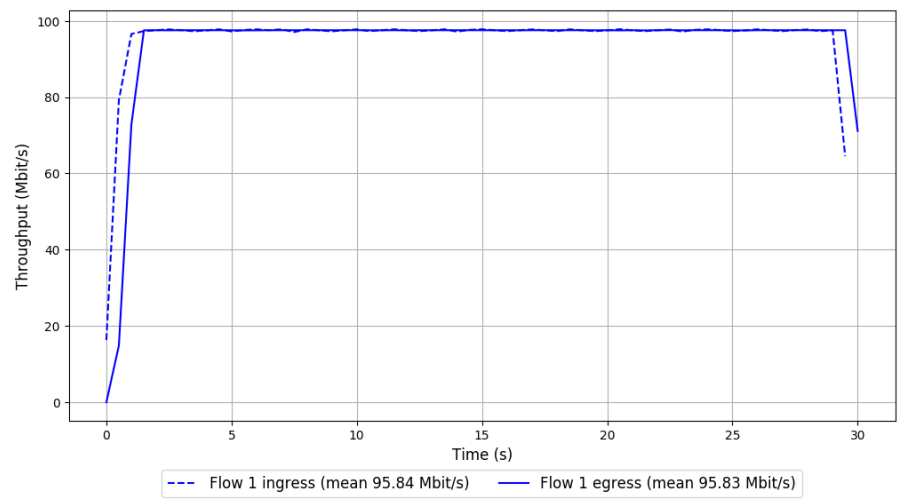

Flow 1 (95th percentile 35.66 ms)

```
Run 4: Statistics of Indigo

Start at: 2018-11-30 05:18:59
End at: 2018-11-30 05:19:29
Local clock offset: -0.17 ms
Remote clock offset: -4.727 ms


# Below is generated by plot.py at 2018-11-30 05:50:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 35.474 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 35.474 ms
Loss rate: 0.00%
```

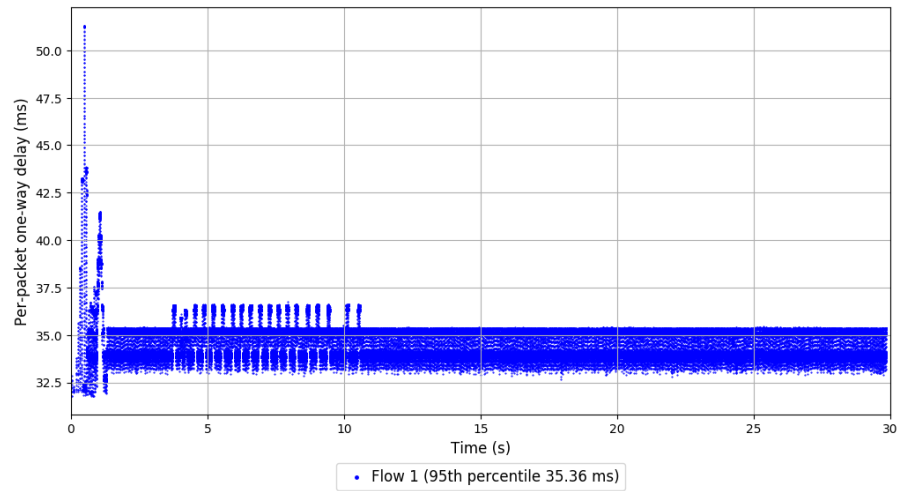## Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-11-30 05:41:04
End at: 2018-11-30 05:41:34
Local clock offset: -0.117 ms
Remote clock offset: -4.452 ms


# Below is generated by plot.py at 2018-11-30 05:51:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.82 Mbit/s
95th percentile per-packet one-way delay: 35.364 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.82 Mbit/s
95th percentile per-packet one-way delay: 35.364 ms
Loss rate: 0.00%
```
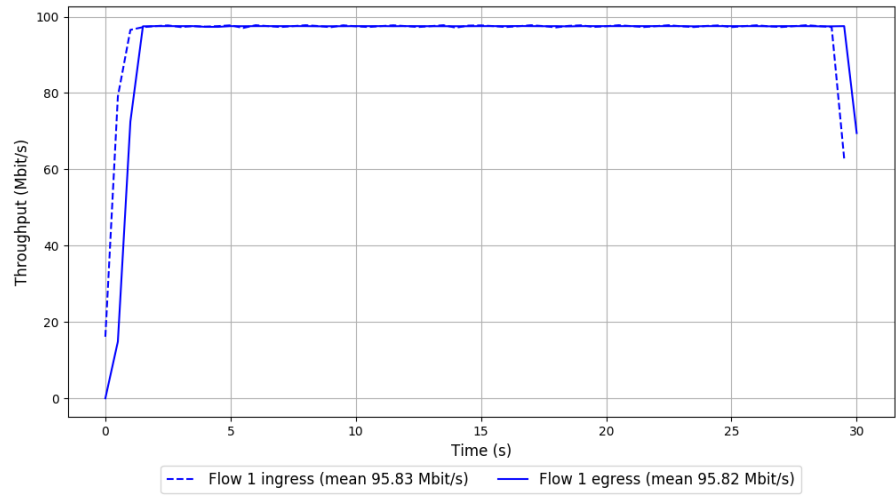
Run 5: Report of Indigo — Data Link

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

Start at: 2018-11-30 03:57:26
End at: 2018-11-30 03:57:56
Local clock offset: 3.537 ms
Remote clock offset: -5.691 ms

# Below is generated by plot.py at 2018-11-30 05:51:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.01 Mbit/s
95th percentile per-packet one-way delay: 69.689 ms
Loss rate: 58.02%
-- Flow 1:
Average throughput: 62.01 Mbit/s
95th percentile per-packet one-way delay: 69.689 ms
Loss rate: 58.02%
```
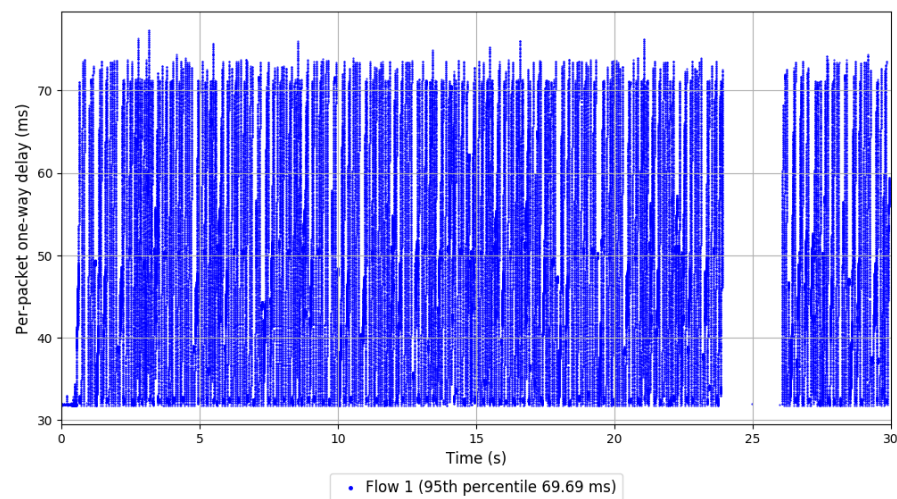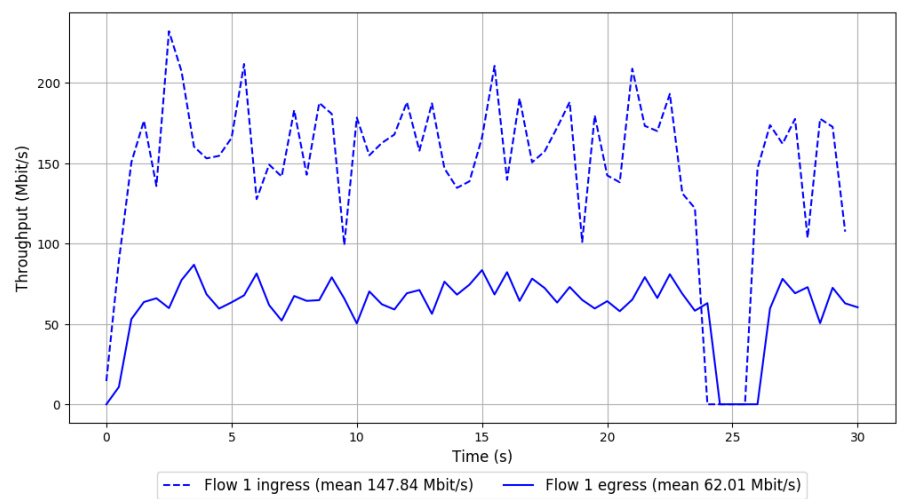
Run 1: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 147.84 Mbit/s)   Flow 1 egress (mean 62.01 Mbit/s)
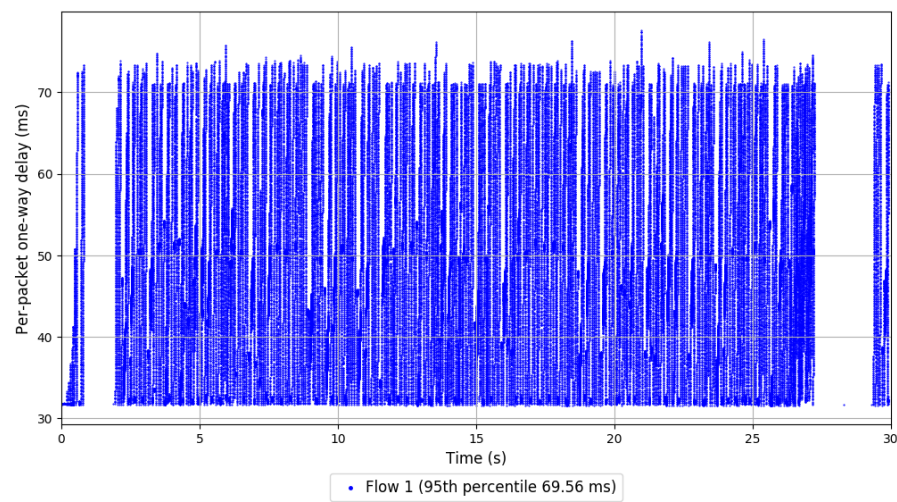

Flow 1 (95th percentile 69.69 ms)

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

Start at: 2018-11-30 04:19:25
End at: 2018-11-30 04:19:55
Local clock offset: 2.13 ms
Remote clock offset: -5.589 ms


# Below is generated by plot.py at 2018-11-30 05:51:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.07 Mbit/s
95th percentile per-packet one-way delay: 69.560 ms
Loss rate: 59.02%
-- Flow 1:
Average throughput: 59.07 Mbit/s
95th percentile per-packet one-way delay: 69.560 ms
Loss rate: 59.02%
```
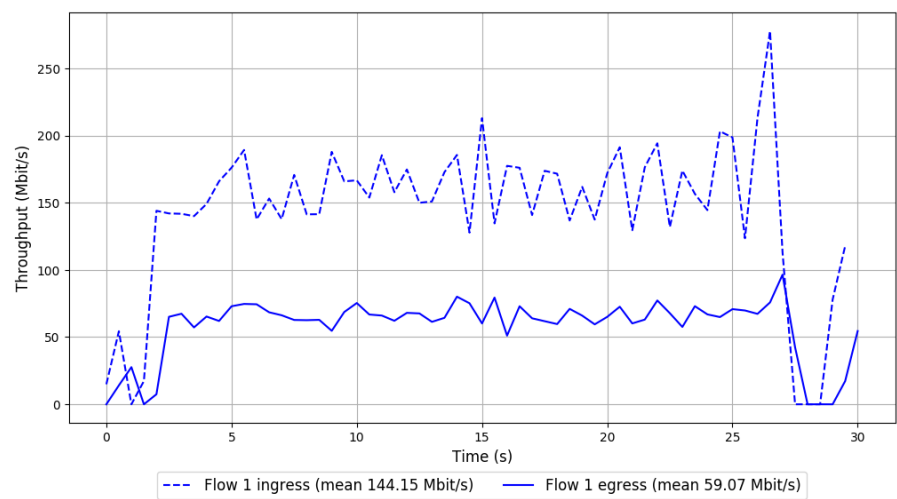
Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 144.15 Mbit/s) --- Flow 1 egress (mean 59.07 Mbit/s)

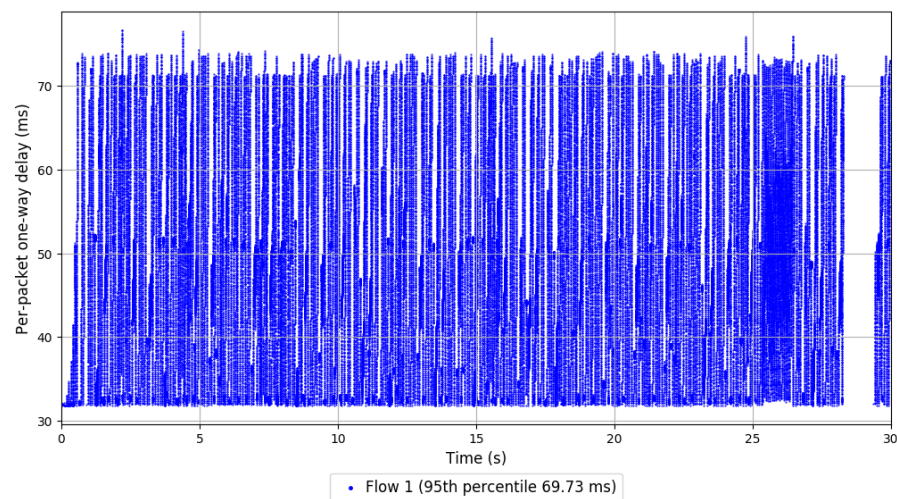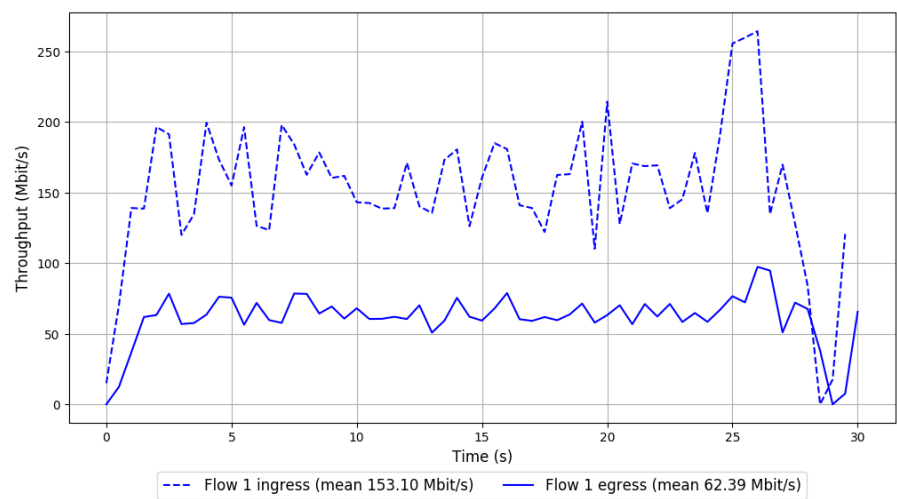

• Flow 1 (95th percentile 69.56 ms)

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

Start at: 2018-11-30 04:41:30
End at: 2018-11-30 04:42:01
Local clock offset: -0.409 ms
Remote clock offset: -5.344 ms


# Below is generated by plot.py at 2018-11-30 05:51:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.39 Mbit/s
95th percentile per-packet one-way delay: 69.728 ms
Loss rate: 59.21%
-- Flow 1:
Average throughput: 62.39 Mbit/s
95th percentile per-packet one-way delay: 69.728 ms
Loss rate: 59.21%
```

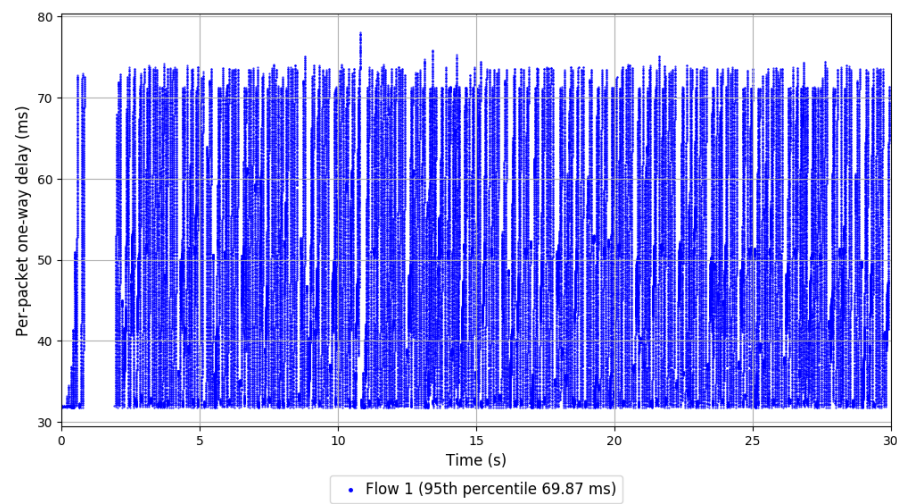Run 3: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-11-30 05:04:03
End at: 2018-11-30 05:04:33
Local clock offset: -0.173 ms
Remote clock offset: -4.934 ms


# Below is generated by plot.py at 2018-11-30 05:51:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.48 Mbit/s
95th percentile per-packet one-way delay: 69.867 ms
Loss rate: 59.31%
-- Flow 1:
Average throughput: 60.48 Mbit/s
95th percentile per-packet one-way delay: 69.867 ms
Loss rate: 59.31%
```
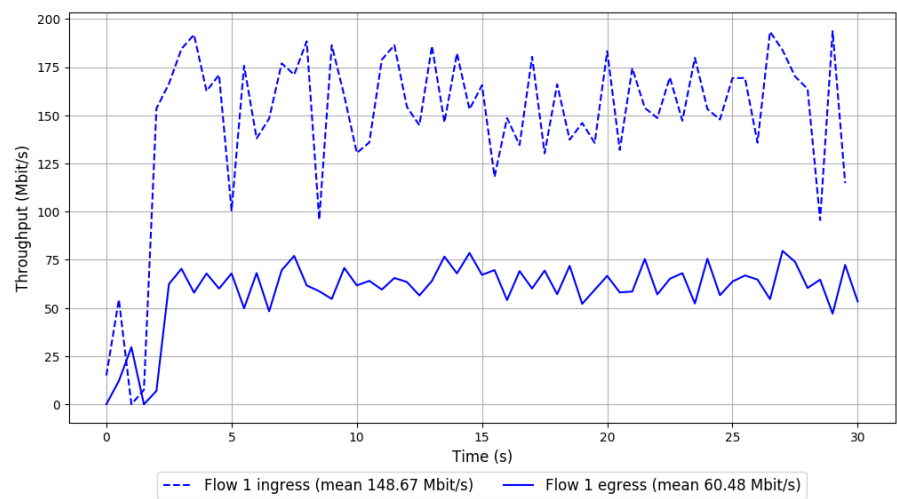
Run 4: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 148.67 Mbit/s) --- Flow 1 egress (mean 60.48 Mbit/s)
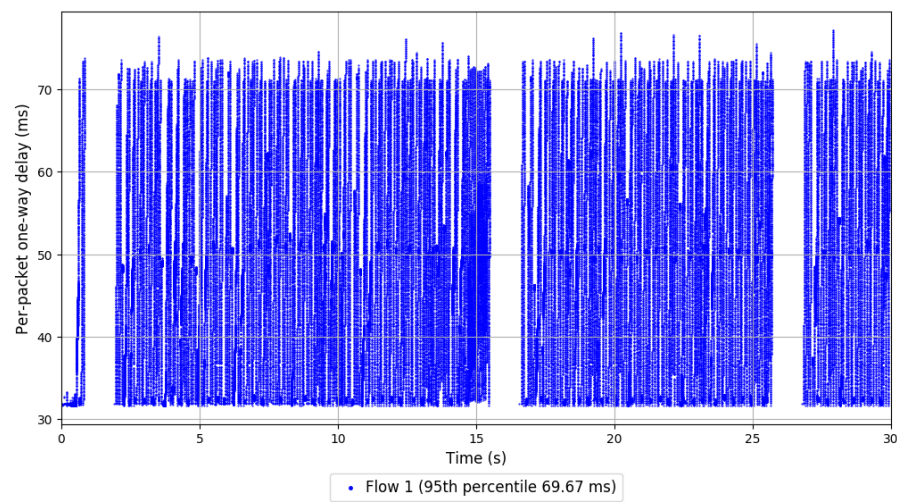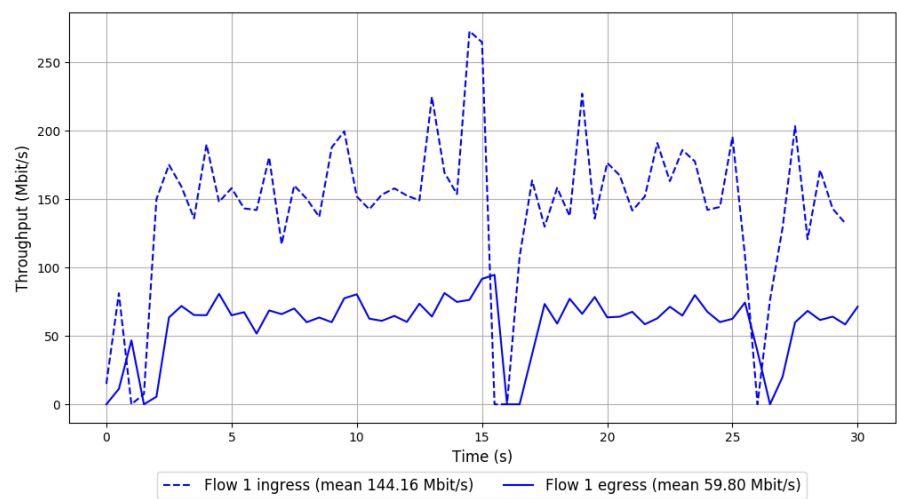

Flow 1 (95th percentile 69.87 ms)

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

Start at: 2018-11-30 05:25:58
End at: 2018-11-30 05:26:28
Local clock offset: -0.071 ms
Remote clock offset: -4.927 ms


# Below is generated by plot.py at 2018-11-30 05:51:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.80 Mbit/s
95th percentile per-packet one-way delay: 69.675 ms
Loss rate: 58.48%
-- Flow 1:
Average throughput: 59.80 Mbit/s
95th percentile per-packet one-way delay: 69.675 ms
Loss rate: 58.48%
```

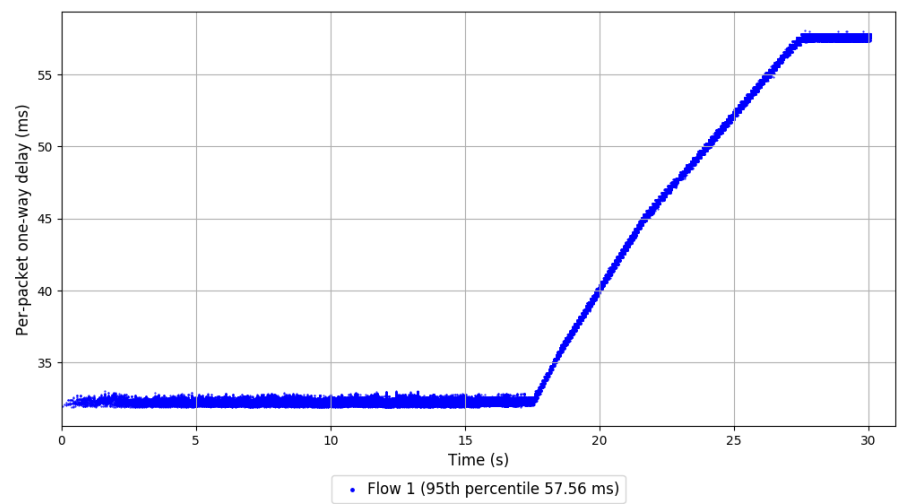Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-11-30 04:04:18
End at: 2018-11-30 04:04:48
Local clock offset: 3.559 ms
Remote clock offset: -5.473 ms

# Below is generated by plot.py at 2018-11-30 05:51:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.14 Mbit/s
95th percentile per-packet one-way delay: 57.564 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 69.14 Mbit/s
95th percentile per-packet one-way delay: 57.564 ms
Loss rate: 0.00%
```
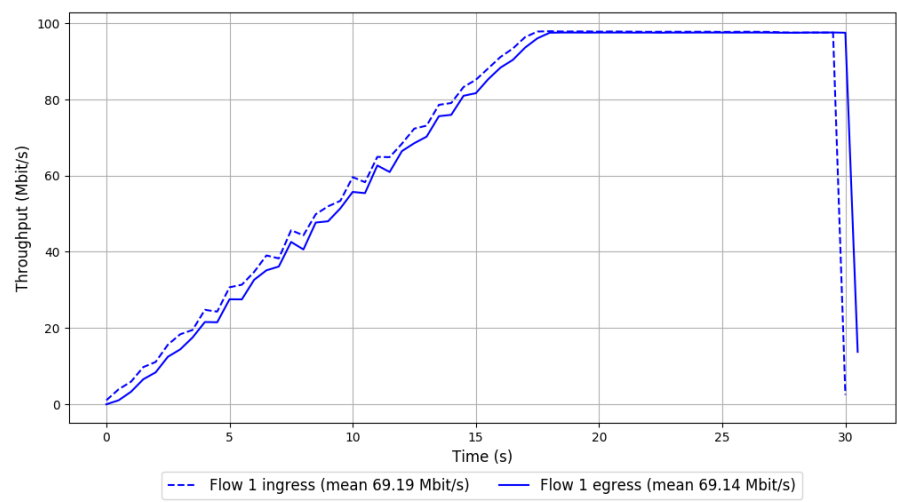
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-11-30 04:26:27
End at: 2018-11-30 04:26:57
Local clock offset: 0.8 ms
Remote clock offset: -5.688 ms


# Below is generated by plot.py at 2018-11-30 05:51:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.61 Mbit/s
95th percentile per-packet one-way delay: 57.213 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 68.61 Mbit/s
95th percentile per-packet one-way delay: 57.213 ms
Loss rate: 0.03%
```
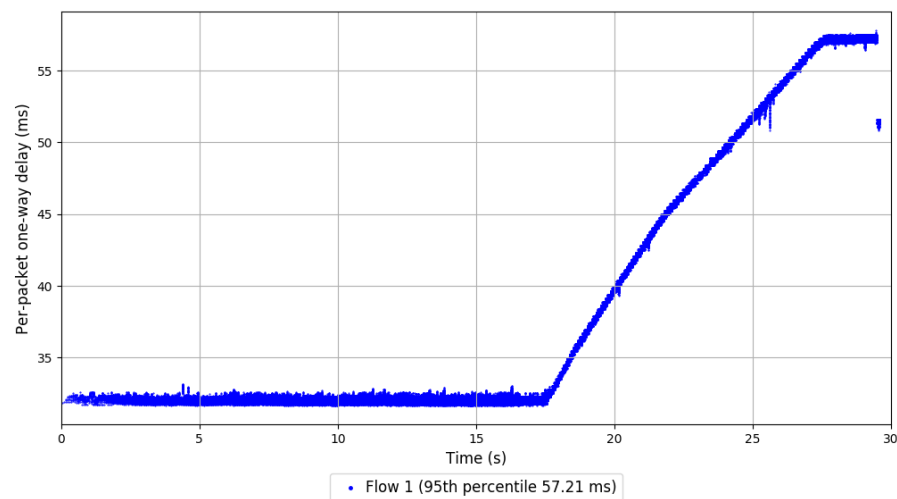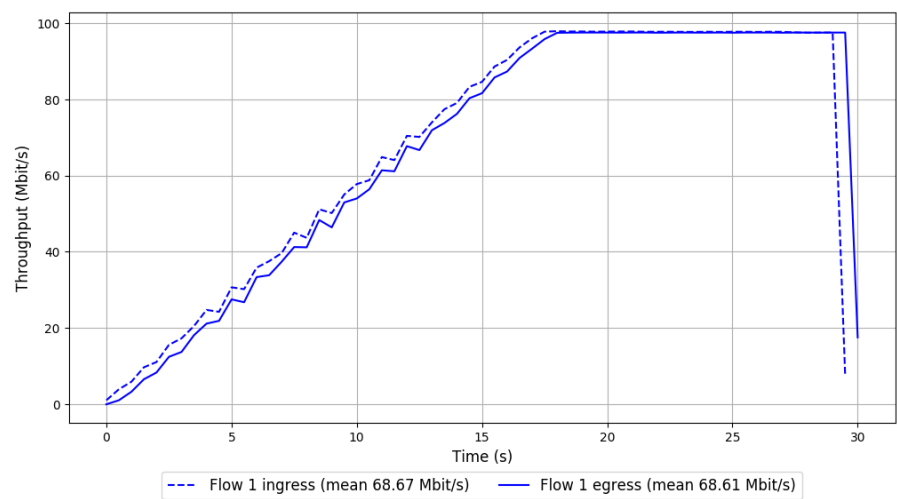
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 68.67 Mbit/s) ---- Flow 1 egress (mean 68.61 Mbit/s) ——

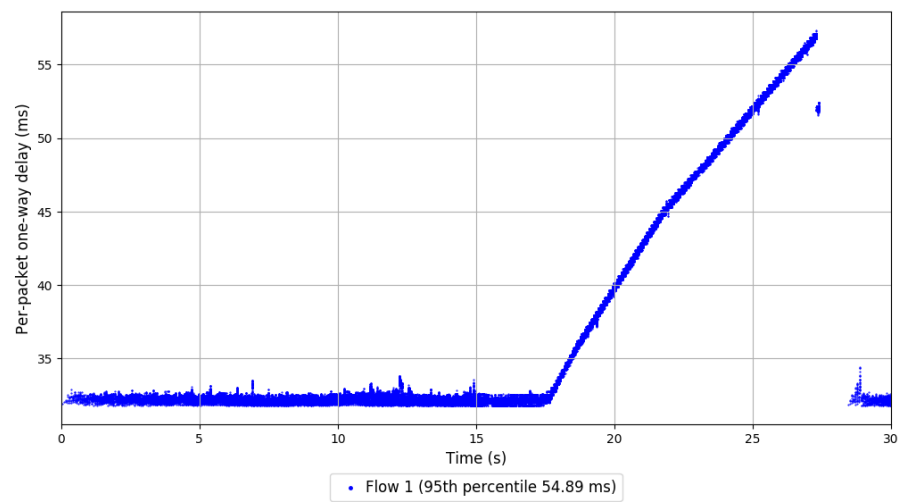

• Flow 1 (95th percentile 57.21 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-11-30 04:48:33
End at: 2018-11-30 04:49:03
Local clock offset: -0.352 ms
Remote clock offset: -5.264 ms


# Below is generated by plot.py at 2018-11-30 05:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.88 Mbit/s
95th percentile per-packet one-way delay: 54.887 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 60.88 Mbit/s
95th percentile per-packet one-way delay: 54.887 ms
Loss rate: 0.03%
```
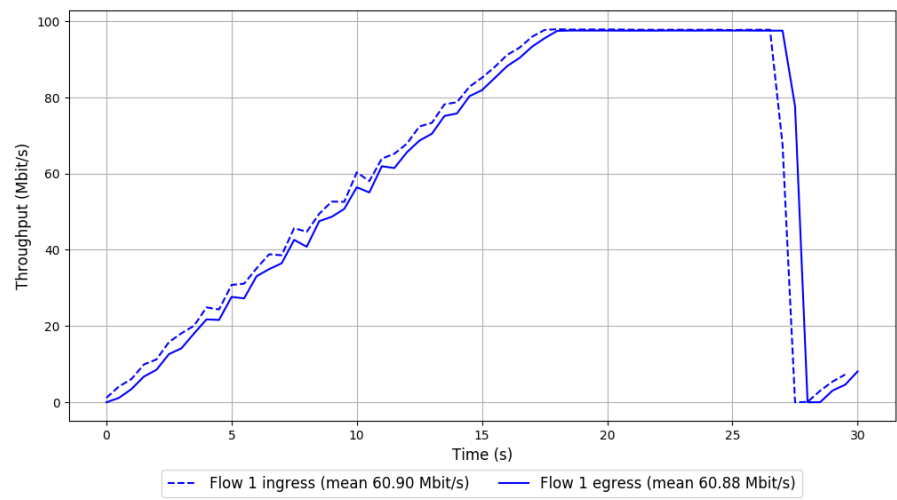
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 60.90 Mbit/s)   Flow 1 egress (mean 60.88 Mbit/s)
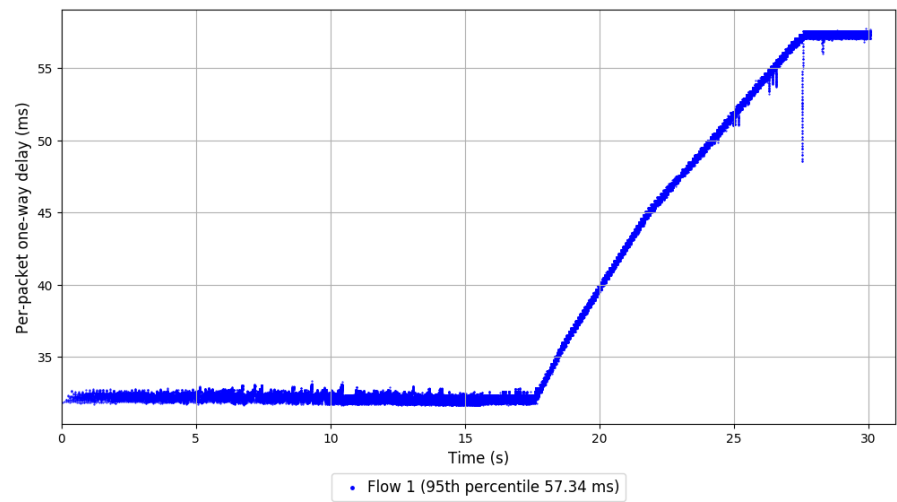

Flow 1 (95th percentile 54.89 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-11-30 05:10:55
End at: 2018-11-30 05:11:25
Local clock offset: -0.272 ms
Remote clock offset: -4.963 ms


# Below is generated by plot.py at 2018-11-30 05:52:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.03 Mbit/s
95th percentile per-packet one-way delay: 57.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 69.03 Mbit/s
95th percentile per-packet one-way delay: 57.344 ms
Loss rate: 0.00%
```
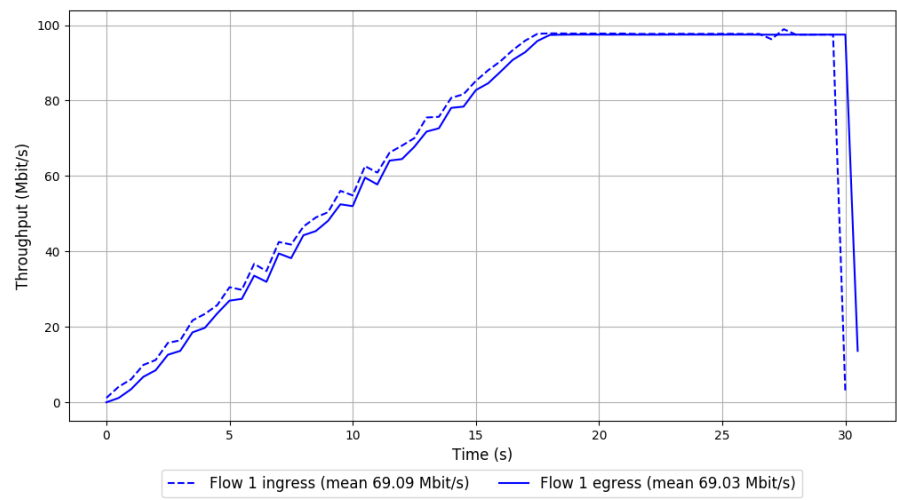
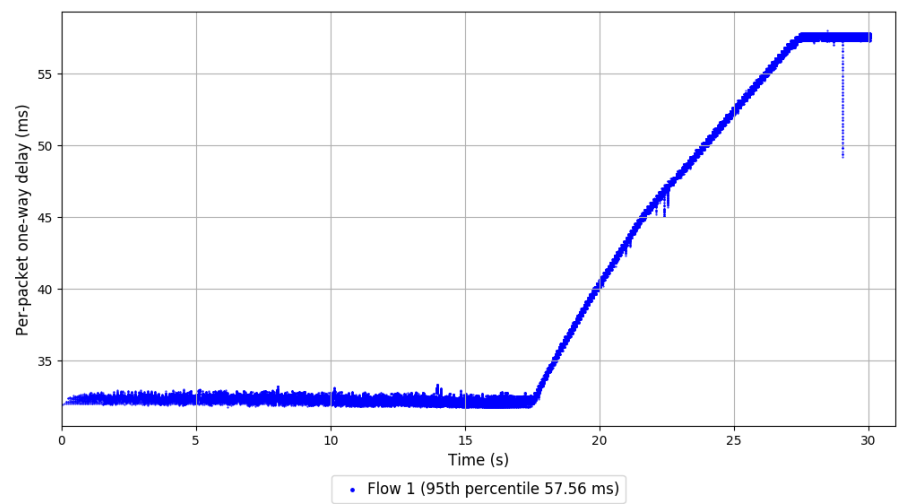## Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-11-30 05:33:00
End at: 2018-11-30 05:33:30
Local clock offset: -0.072 ms
Remote clock offset: -4.608 ms


# Below is generated by plot.py at 2018-11-30 05:52:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.03 Mbit/s
95th percentile per-packet one-way delay: 57.558 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 69.03 Mbit/s
95th percentile per-packet one-way delay: 57.558 ms
Loss rate: 0.00%
```
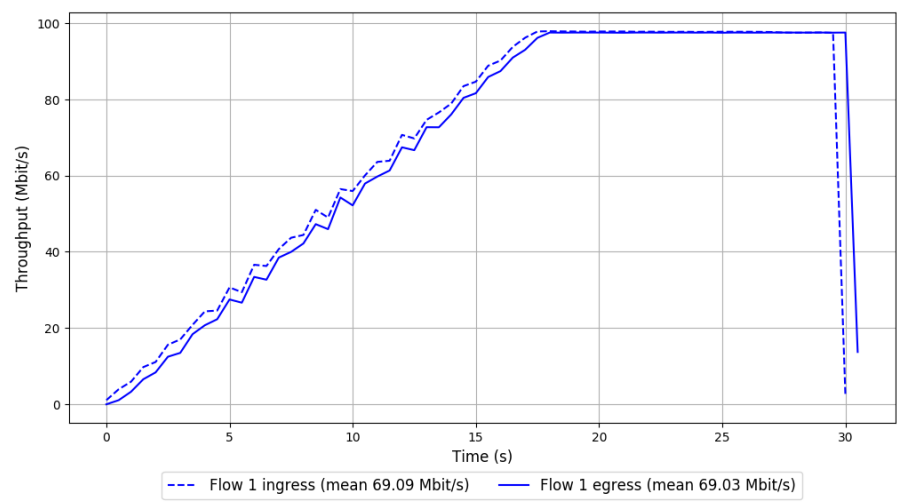
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 69.09 Mbit/s)   Flow 1 egress (mean 69.03 Mbit/s)

Flow 1 (95th percentile 57.56 ms)

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-30 04:06:33
End at: 2018-11-30 04:07:03
Local clock offset: 3.584 ms
Remote clock offset: -5.568 ms

# Below is generated by plot.py at 2018-11-30 05:52:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.90 Mbit/s
95th percentile per-packet one-way delay: 36.257 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 94.90 Mbit/s
95th percentile per-packet one-way delay: 36.257 ms
Loss rate: 0.07%
```
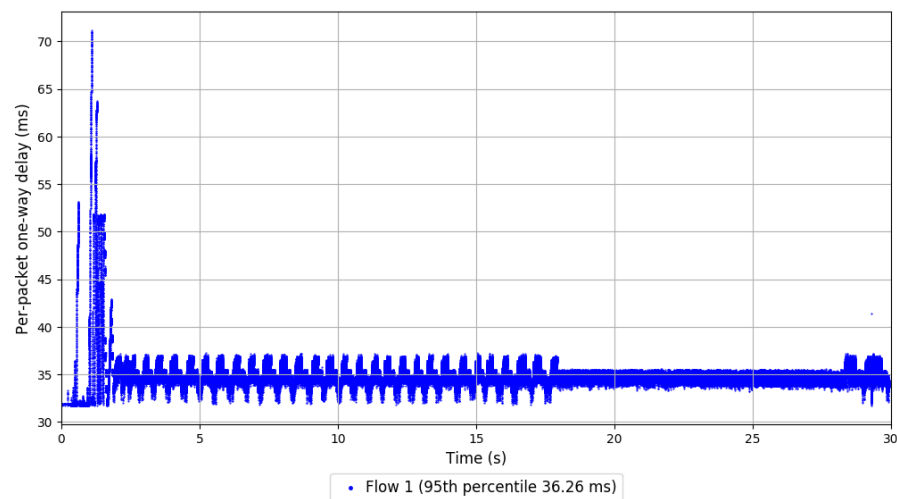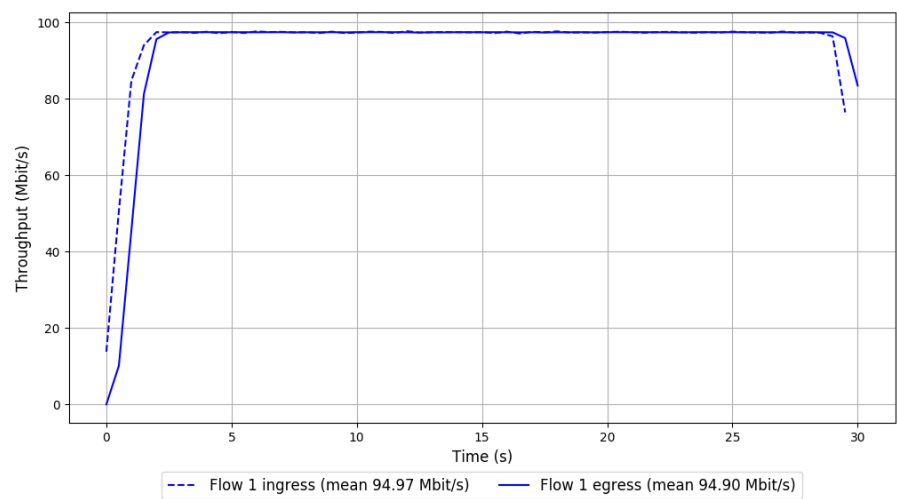
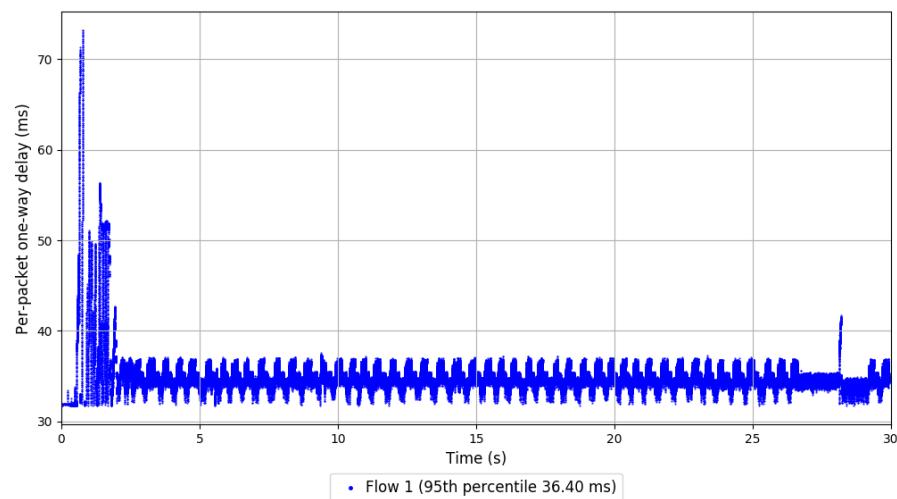Run 1: Report of Indigo-Muses — Data Link

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```
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-30 04:28:42
End at: 2018-11-30 04:29:12
Local clock offset: 0.505 ms
Remote clock offset: -5.598 ms


# Below is generated by plot.py at 2018-11-30 05:52:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.51 Mbit/s
95th percentile per-packet one-way delay: 36.400 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 94.51 Mbit/s
95th percentile per-packet one-way delay: 36.400 ms
Loss rate: 0.41%
```

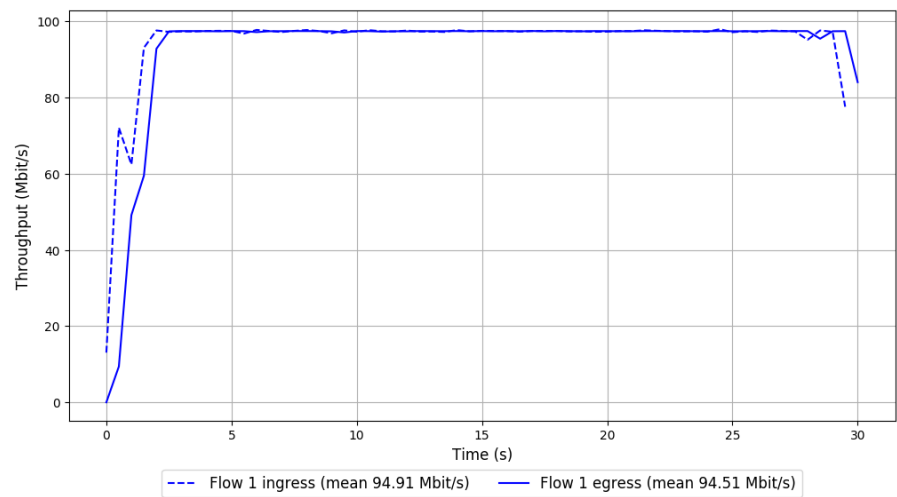Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-30 04:50:53
End at: 2018-11-30 04:51:23
Local clock offset: -0.263 ms
Remote clock offset: -5.293 ms


# Below is generated by plot.py at 2018-11-30 05:52:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.53 Mbit/s
95th percentile per-packet one-way delay: 36.414 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 94.53 Mbit/s
95th percentile per-packet one-way delay: 36.414 ms
Loss rate: 0.41%
```
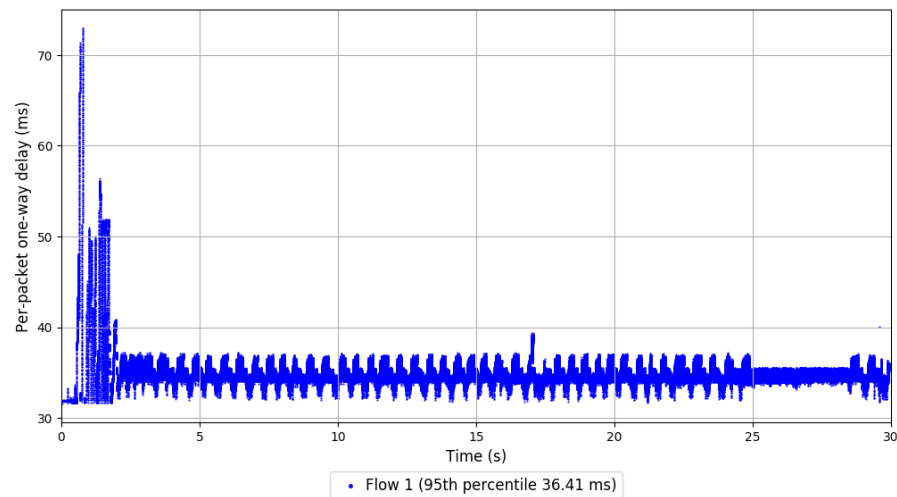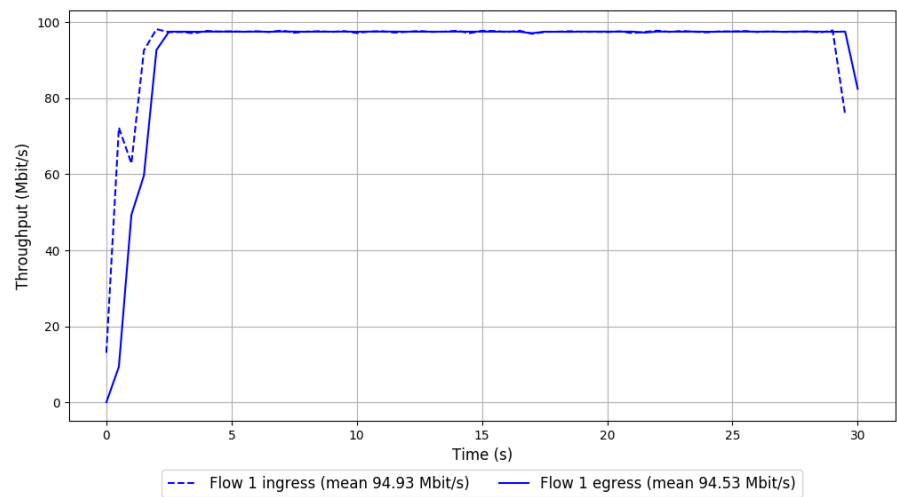
Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-30 05:13:11
End at: 2018-11-30 05:13:41
Local clock offset: -0.285 ms
Remote clock offset: -5.013 ms


# Below is generated by plot.py at 2018-11-30 05:52:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.73 Mbit/s
95th percentile per-packet one-way delay: 35.686 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 94.73 Mbit/s
95th percentile per-packet one-way delay: 35.686 ms
Loss rate: 0.43%
```

Run 4: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 95.15 Mbit/s) --- Flow 1 egress (mean 94.73 Mbit/s)
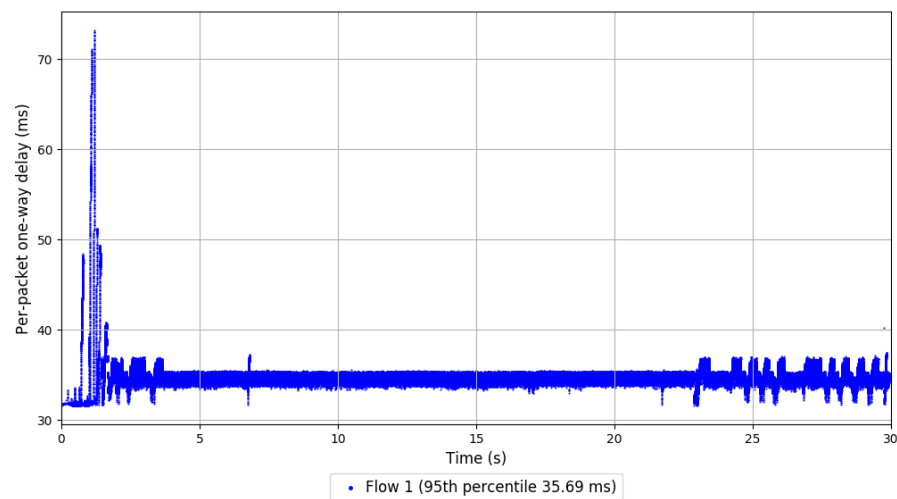

Flow 1 (95th percentile 35.69 ms)

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-30 05:35:16
End at: 2018-11-30 05:35:46
Local clock offset: -0.076 ms
Remote clock offset: -4.557 ms


# Below is generated by plot.py at 2018-11-30 05:52:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.61 Mbit/s
95th percentile per-packet one-way delay: 36.168 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 94.61 Mbit/s
95th percentile per-packet one-way delay: 36.168 ms
Loss rate: 0.11%
```
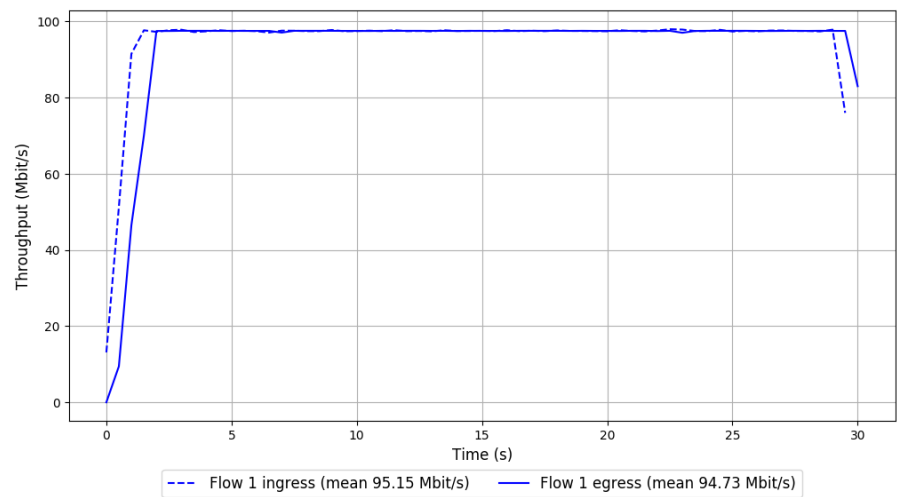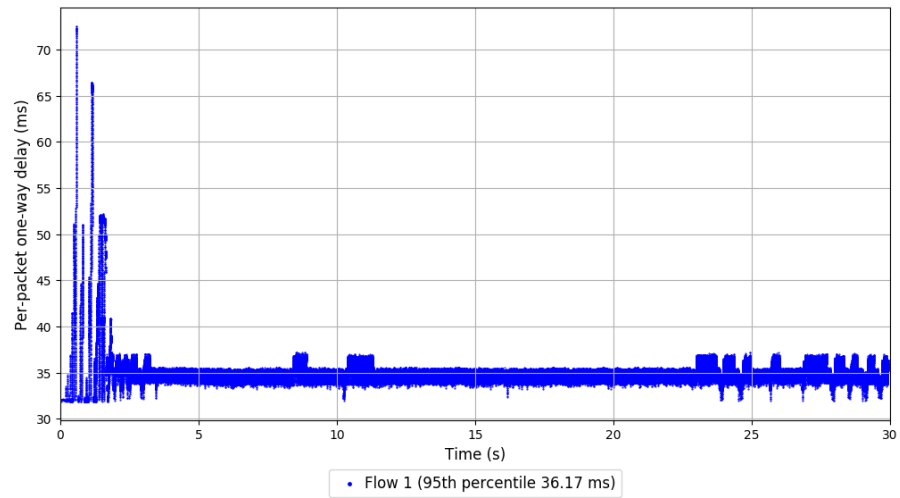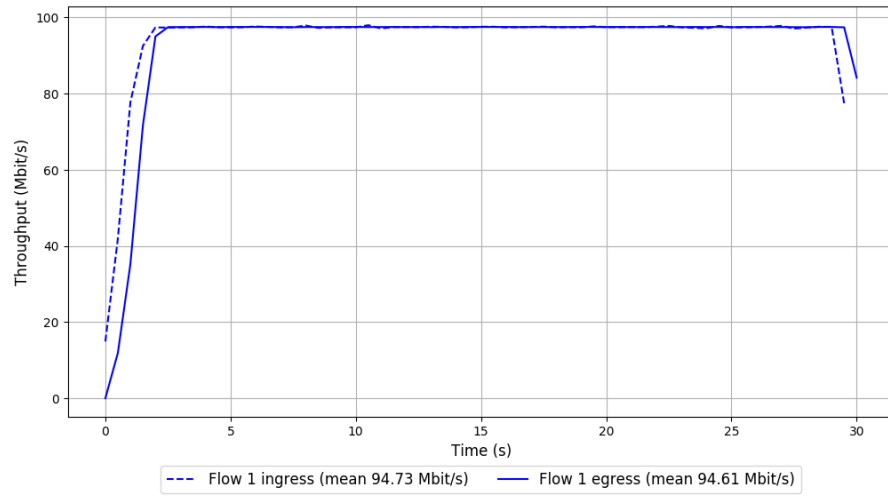
Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 94.73 Mbit/s) —— Flow 1 egress (mean 94.61 Mbit/s)

• Flow 1 (95th percentile 36.17 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-30 04:11:10
End at: 2018-11-30 04:11:41
Local clock offset: 3.655 ms
Remote clock offset: -5.501 ms

# Below is generated by plot.py at 2018-11-30 05:53:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 37.251 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 37.251 ms
Loss rate: 0.71%
```
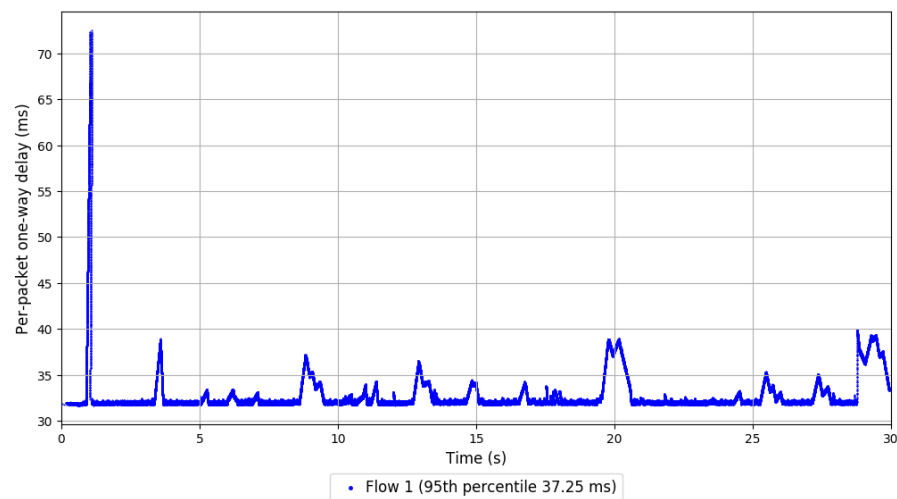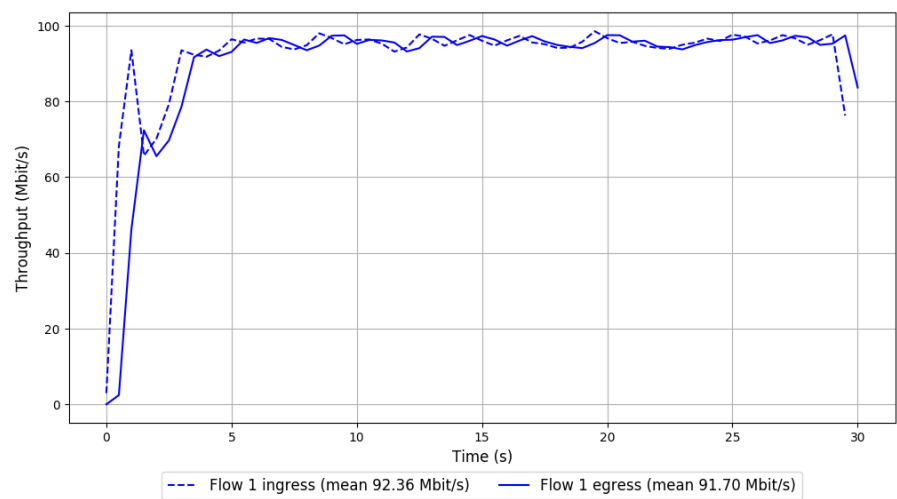
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-30 04:33:21
End at: 2018-11-30 04:33:51
Local clock offset: 0.073 ms
Remote clock offset: -5.703 ms


# Below is generated by plot.py at 2018-11-30 05:53:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.41 Mbit/s
95th percentile per-packet one-way delay: 37.757 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 91.41 Mbit/s
95th percentile per-packet one-way delay: 37.757 ms
Loss rate: 0.65%
```
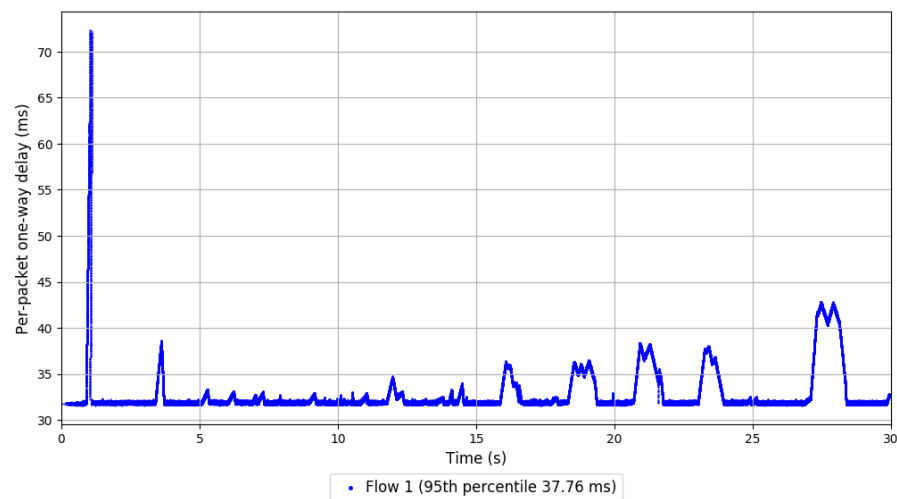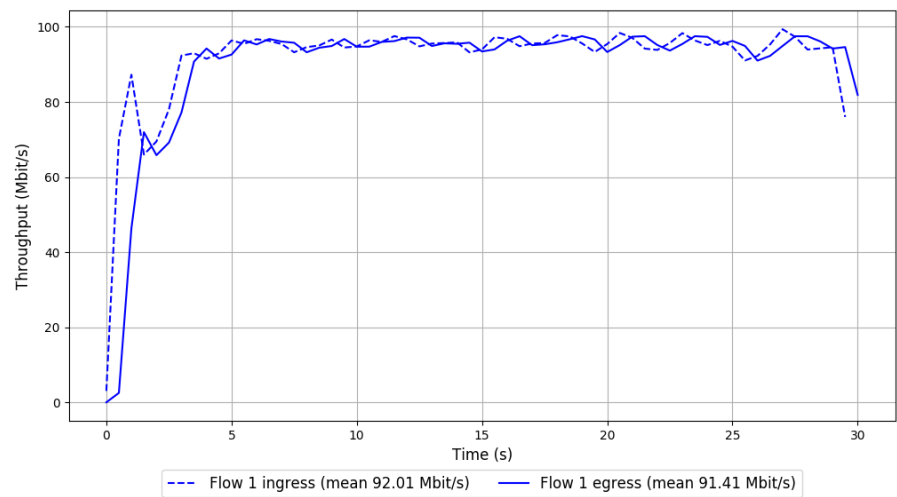
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-30 04:55:45
End at: 2018-11-30 04:56:15
Local clock offset: -0.171 ms
Remote clock offset: -4.99 ms

# Below is generated by plot.py at 2018-11-30 05:53:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.84 Mbit/s
95th percentile per-packet one-way delay: 35.776 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 91.84 Mbit/s
95th percentile per-packet one-way delay: 35.776 ms
Loss rate: 0.69%
```
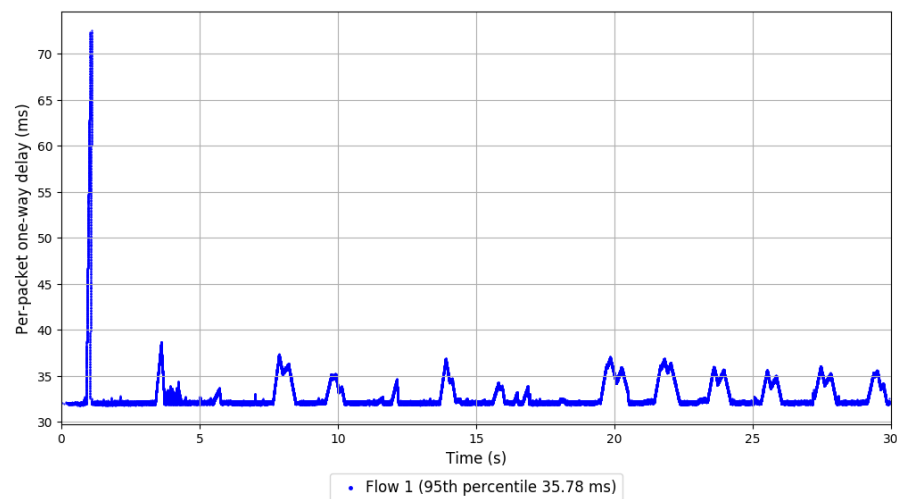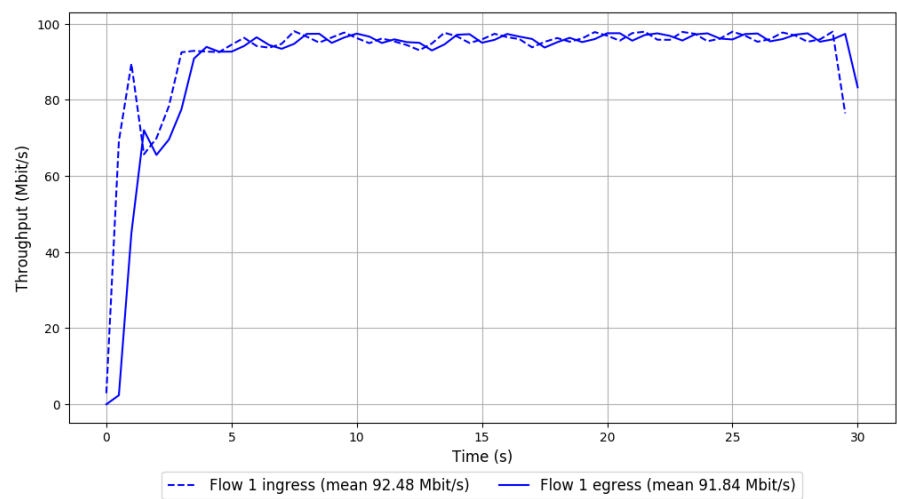
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 92.48 Mbit/s)   Flow 1 egress (mean 91.84 Mbit/s)

· Flow 1 (95th percentile 35.78 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-30 05:17:49
End at: 2018-11-30 05:18:19
Local clock offset: -0.173 ms
Remote clock offset: -4.785 ms


# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.73 Mbit/s
95th percentile per-packet one-way delay: 38.335 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 91.73 Mbit/s
95th percentile per-packet one-way delay: 38.335 ms
Loss rate: 0.74%
```
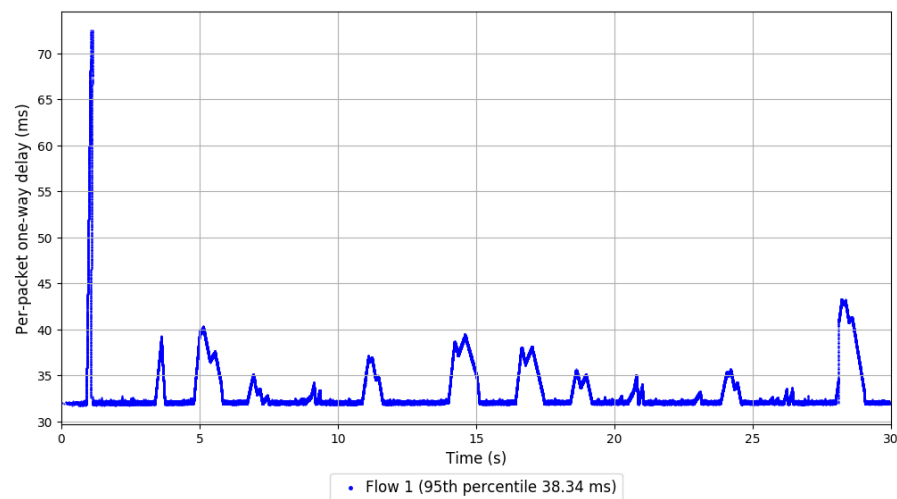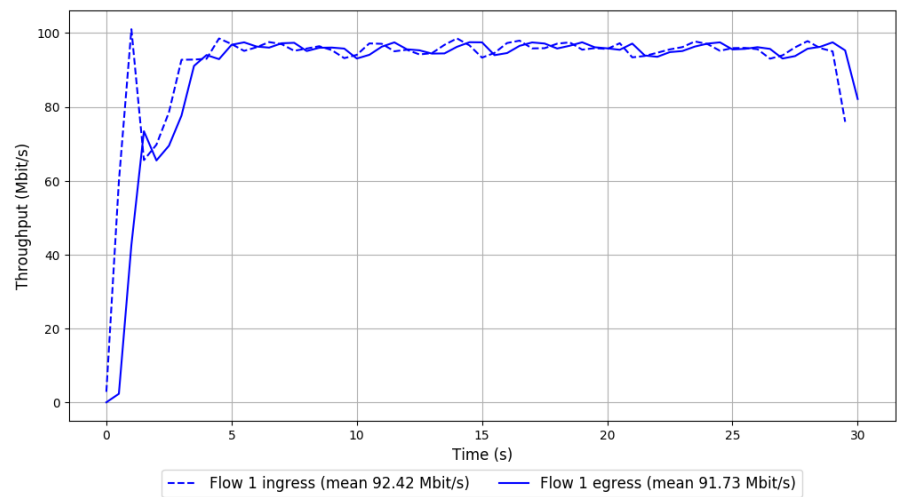
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 92.42 Mbit/s) --- Flow 1 egress (mean 91.73 Mbit/s)

Flow 1 (95th percentile 38.34 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-30 05:39:54
End at: 2018-11-30 05:40:24
Local clock offset: -0.128 ms
Remote clock offset: -4.433 ms


# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.68 Mbit/s
95th percentile per-packet one-way delay: 37.277 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 90.68 Mbit/s
95th percentile per-packet one-way delay: 37.277 ms
Loss rate: 0.71%
```
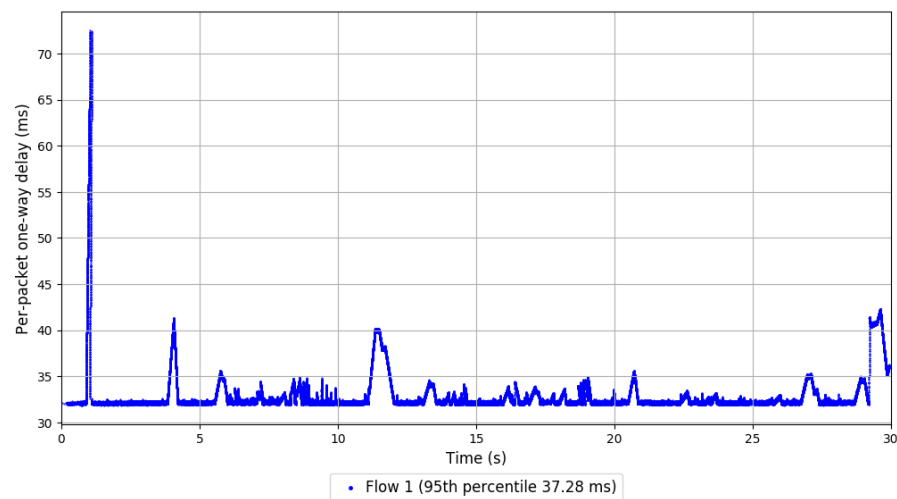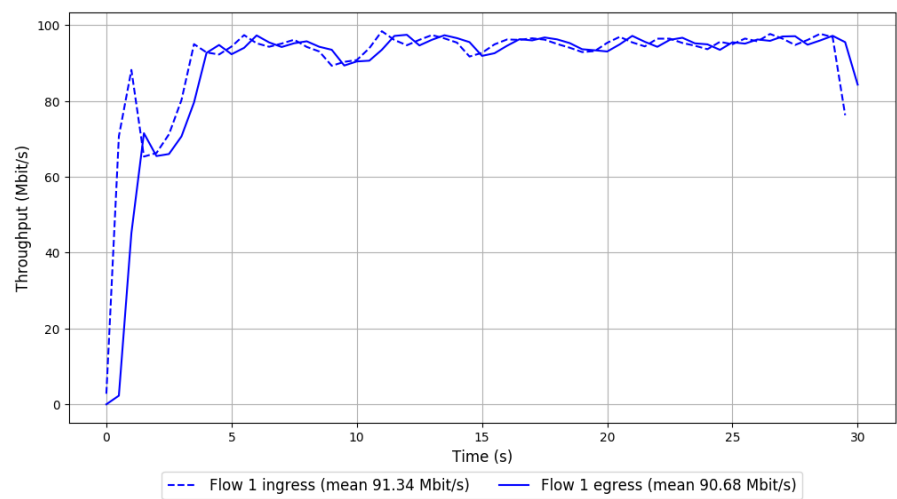
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 91.34 Mbit/s)   Flow 1 egress (mean 90.68 Mbit/s)
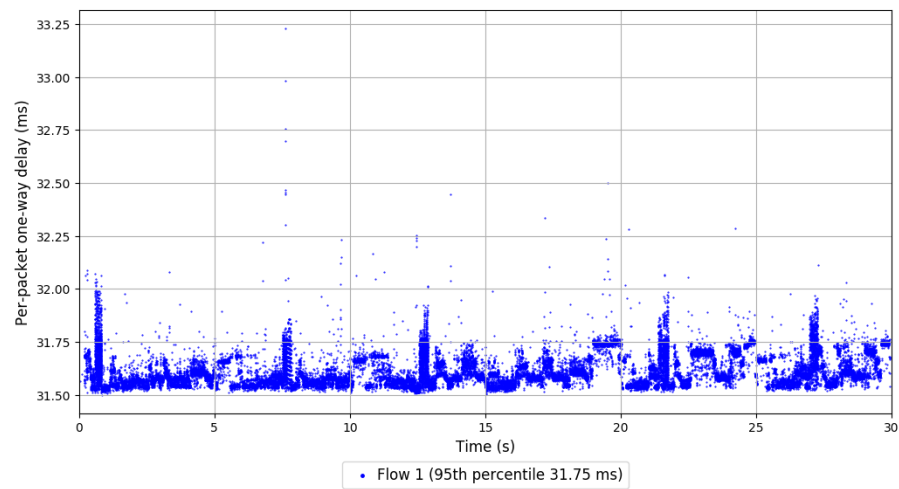

Flow 1 (95th percentile 37.28 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-30 04:10:03
End at: 2018-11-30 04:10:33
Local clock offset: 3.63 ms
Remote clock offset: -5.78 ms

# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 31.748 ms
Loss rate: 50.93%
-- Flow 1:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 31.748 ms
Loss rate: 50.93%
```
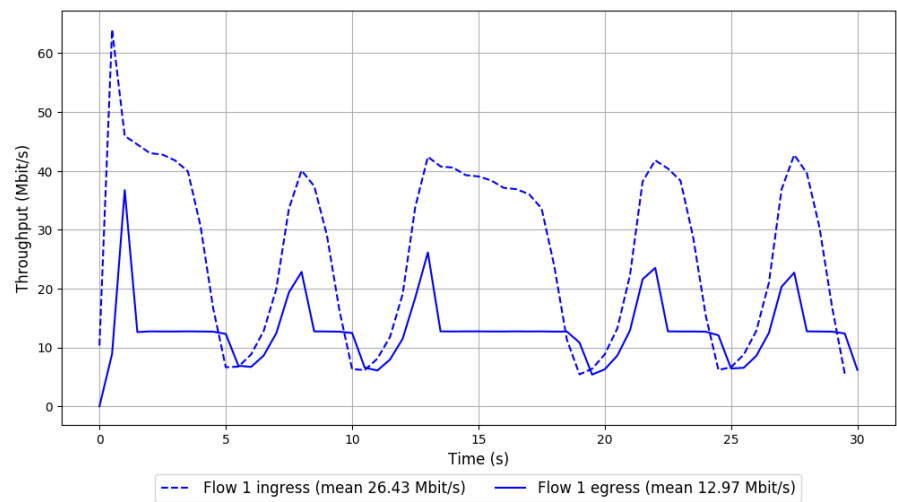
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-30 04:32:14
End at: 2018-11-30 04:32:44
Local clock offset: 0.178 ms
Remote clock offset: -5.619 ms


# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.918 ms
Loss rate: 47.30%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.918 ms
Loss rate: 47.30%
```
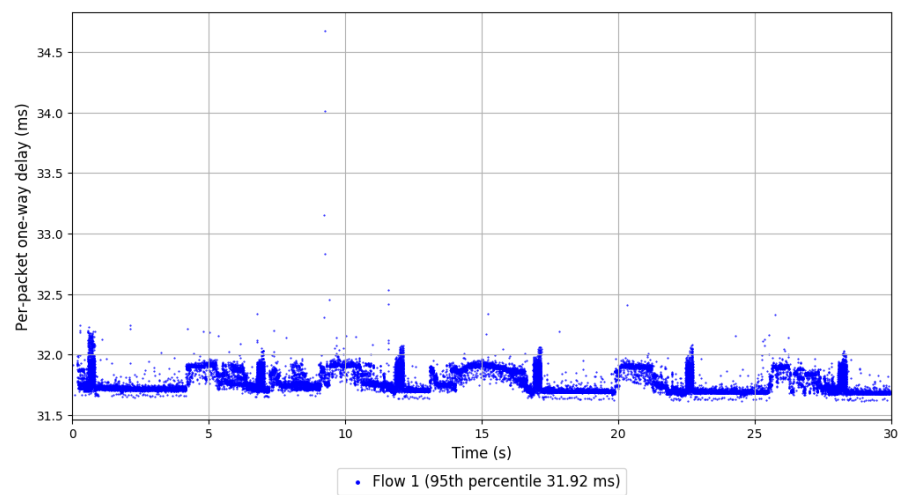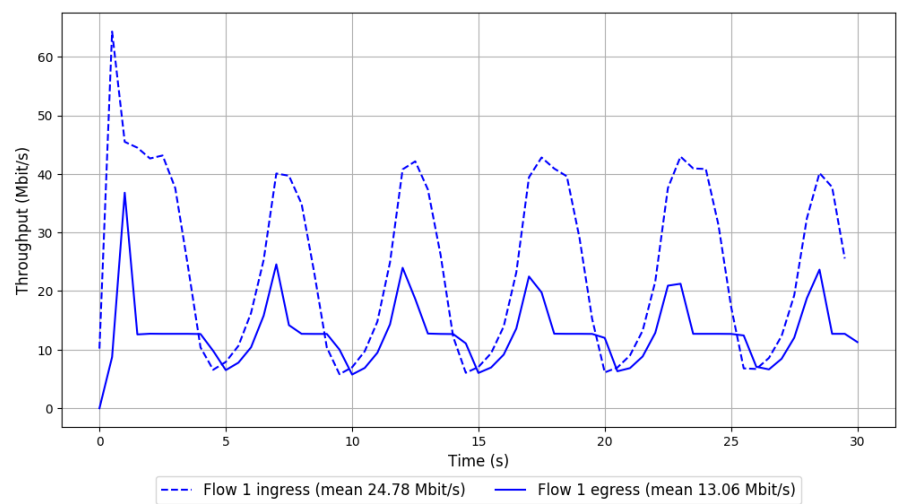
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 24.78 Mbit/s)   Flow 1 egress (mean 13.06 Mbit/s)
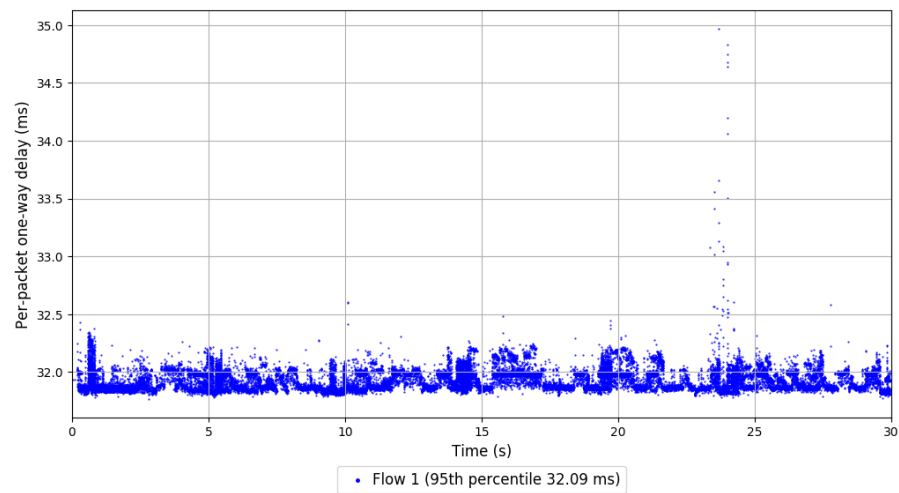

Flow 1 (95th percentile 31.92 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-11-30 04:54:37
End at: 2018-11-30 04:55:07
Local clock offset: -0.207 ms
Remote clock offset: -5.067 ms


# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 32.093 ms
Loss rate: 34.58%
-- Flow 1:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 32.093 ms
Loss rate: 34.58%
```

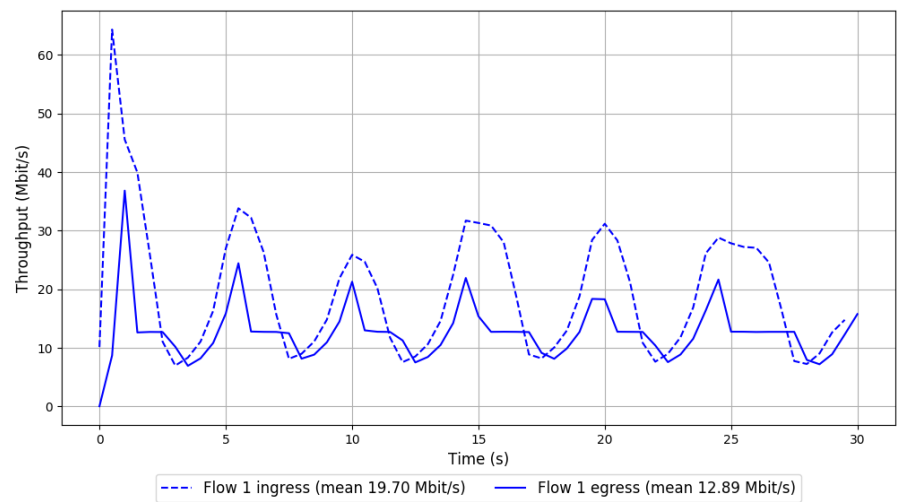## Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-11-30 05:16:42
End at: 2018-11-30 05:17:12
Local clock offset: -0.224 ms
Remote clock offset: -4.963 ms

# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.88 Mbit/s
95th percentile per-packet one-way delay: 31.836 ms
Loss rate: 37.40%
-- Flow 1:
Average throughput: 12.88 Mbit/s
95th percentile per-packet one-way delay: 31.836 ms
Loss rate: 37.40%
```

Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 20.57 Mbit/s)   Flow 1 egress (mean 12.88 Mbit/s)
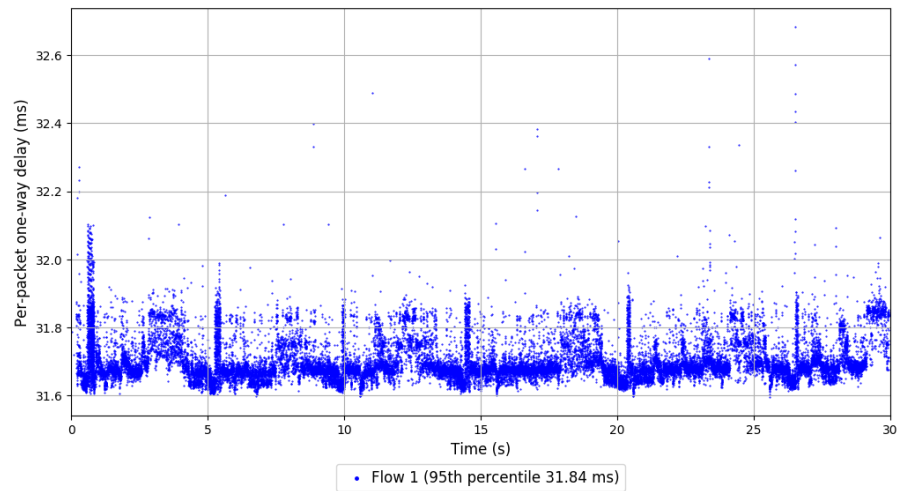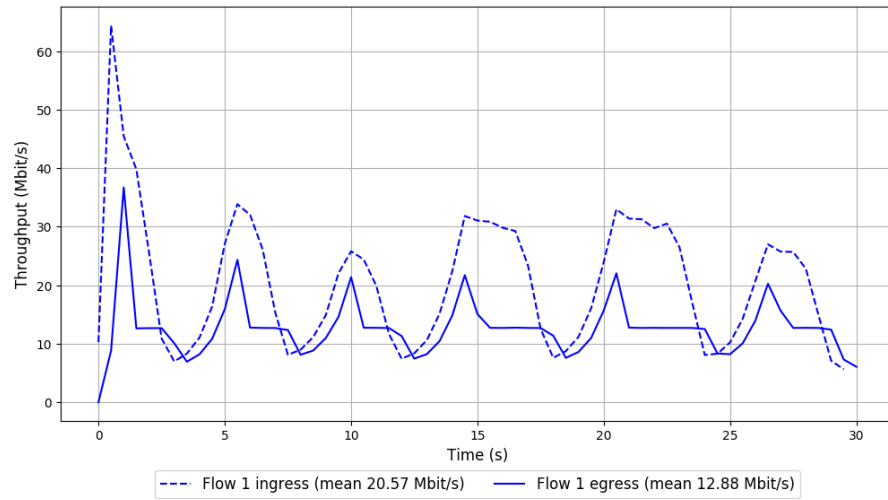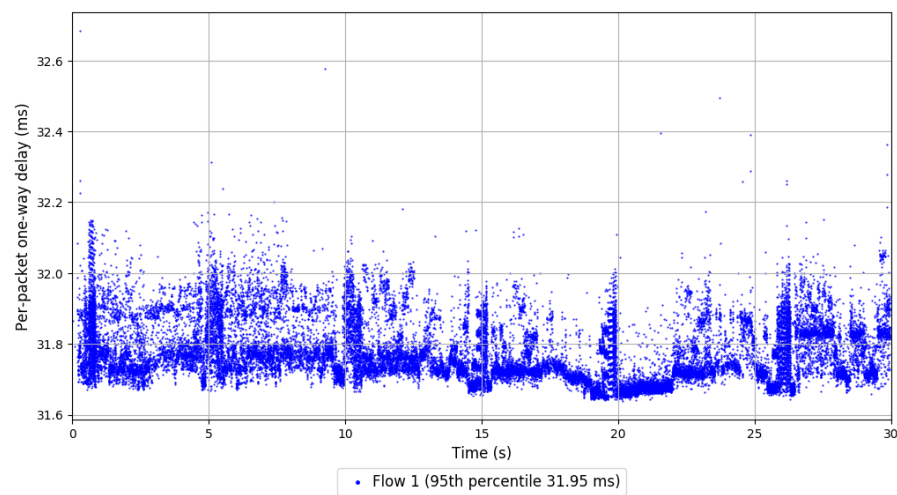

Flow 1 (95th percentile 31.84 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-11-30 05:38:47
End at: 2018-11-30 05:39:17
Local clock offset: -0.123 ms
Remote clock offset: -4.637 ms


# Below is generated by plot.py at 2018-11-30 05:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.949 ms
Loss rate: 43.90%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.949 ms
Loss rate: 43.90%
```
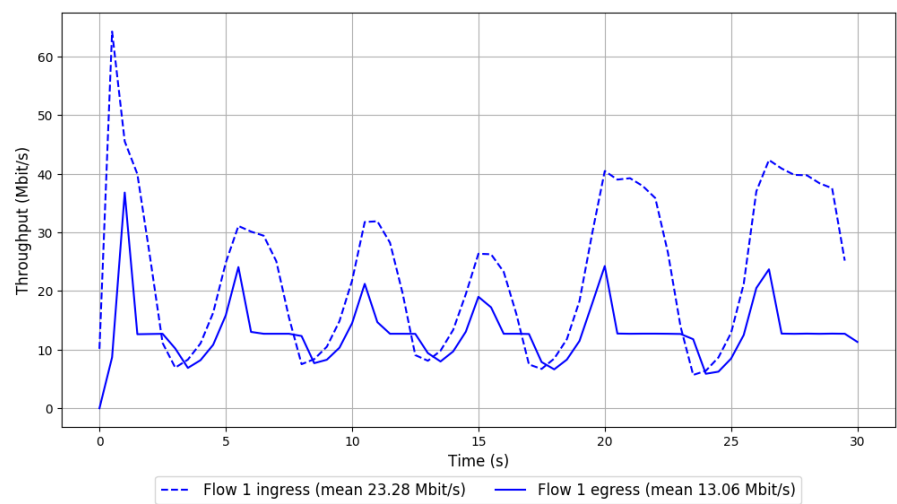
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 23.28 Mbit/s) —— Flow 1 egress (mean 13.06 Mbit/s)

• Flow 1 (95th percentile 31.95 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-30 03:58:36
End at: 2018-11-30 03:59:06
Local clock offset: 3.533 ms
Remote clock offset: -5.672 ms


# Below is generated by plot.py at 2018-11-30 05:53:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.11 Mbit/s
95th percentile per-packet one-way delay: 66.322 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 78.11 Mbit/s
95th percentile per-packet one-way delay: 66.322 ms
Loss rate: 1.87%
```
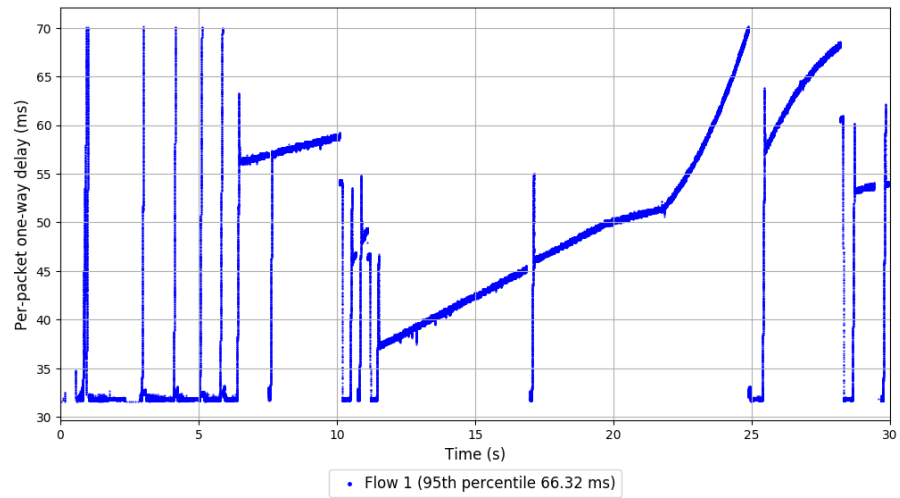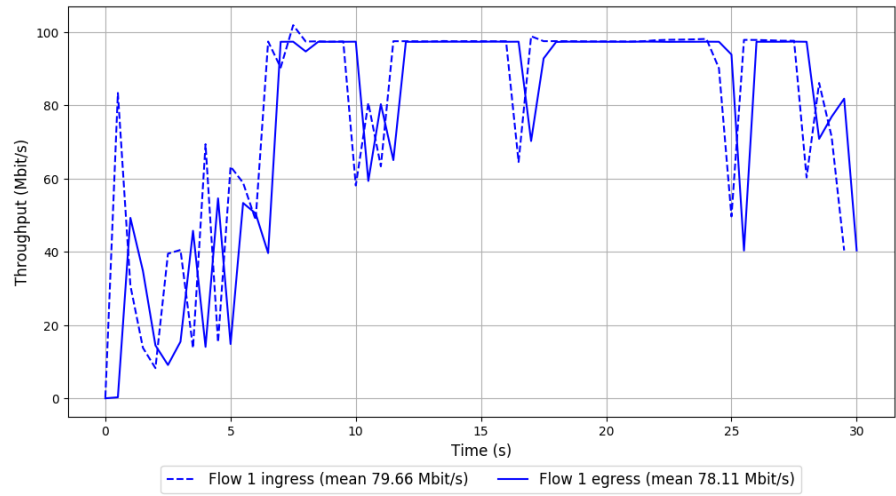
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 79.66 Mbit/s) --- Flow 1 egress (mean 78.11 Mbit/s)

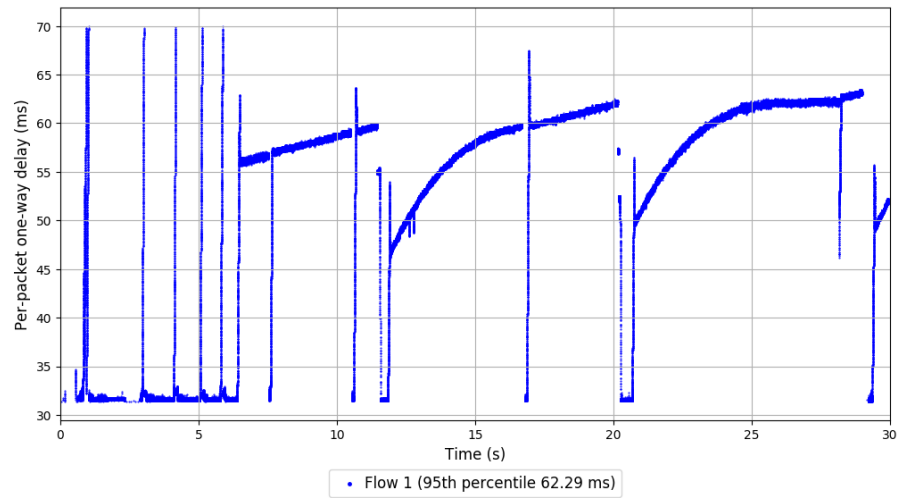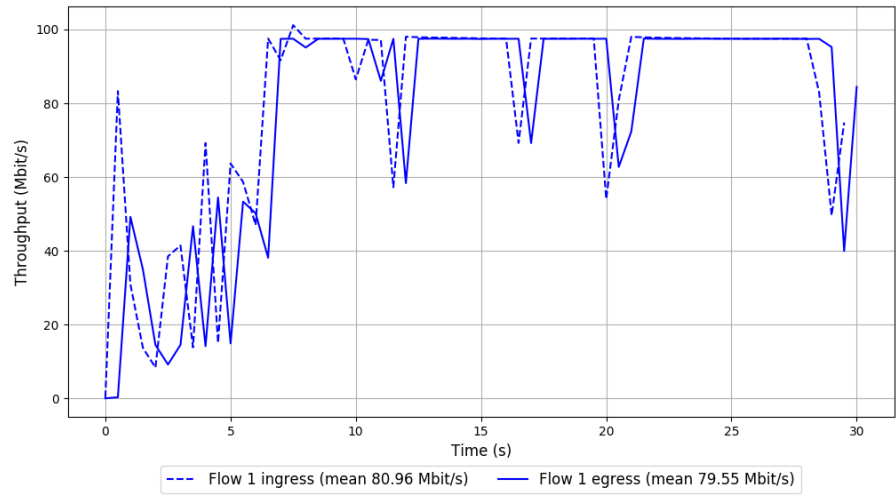

• Flow 1 (95th percentile 66.32 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-30 04:20:40
End at: 2018-11-30 04:21:10
Local clock offset: 1.847 ms
Remote clock offset: -5.724 ms


# Below is generated by plot.py at 2018-11-30 05:54:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.55 Mbit/s
95th percentile per-packet one-way delay: 62.293 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 79.55 Mbit/s
95th percentile per-packet one-way delay: 62.293 ms
Loss rate: 1.68%
```

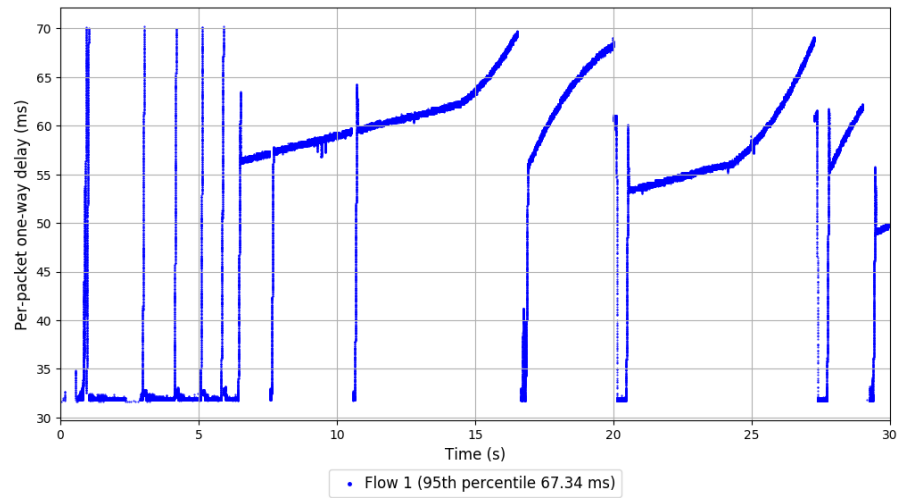Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-30 04:42:41
End at: 2018-11-30 04:43:11
Local clock offset: -0.451 ms
Remote clock offset: -5.334 ms


# Below is generated by plot.py at 2018-11-30 05:54:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.46 Mbit/s
95th percentile per-packet one-way delay: 67.343 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 79.46 Mbit/s
95th percentile per-packet one-way delay: 67.343 ms
Loss rate: 1.70%
```
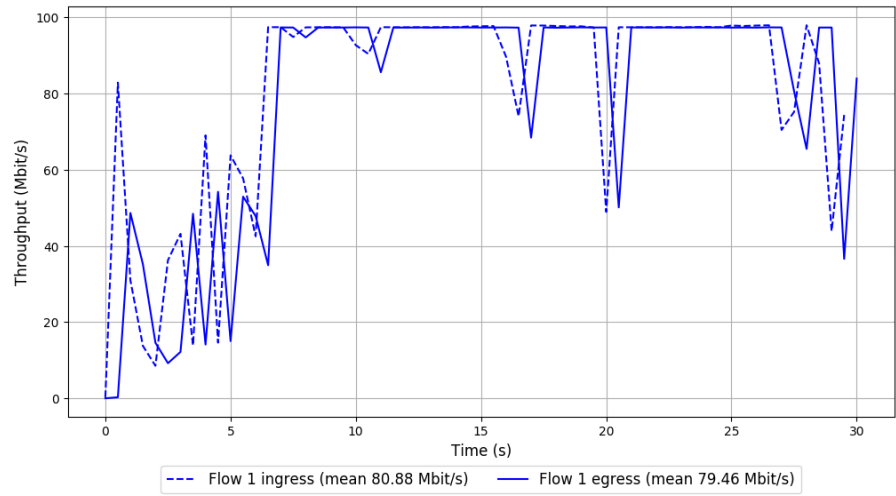
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-30 05:05:13
End at: 2018-11-30 05:05:43
Local clock offset: -0.177 ms
Remote clock offset: -5.049 ms


# Below is generated by plot.py at 2018-11-30 05:54:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.07 Mbit/s
95th percentile per-packet one-way delay: 67.162 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 78.07 Mbit/s
95th percentile per-packet one-way delay: 67.162 ms
Loss rate: 1.91%
```
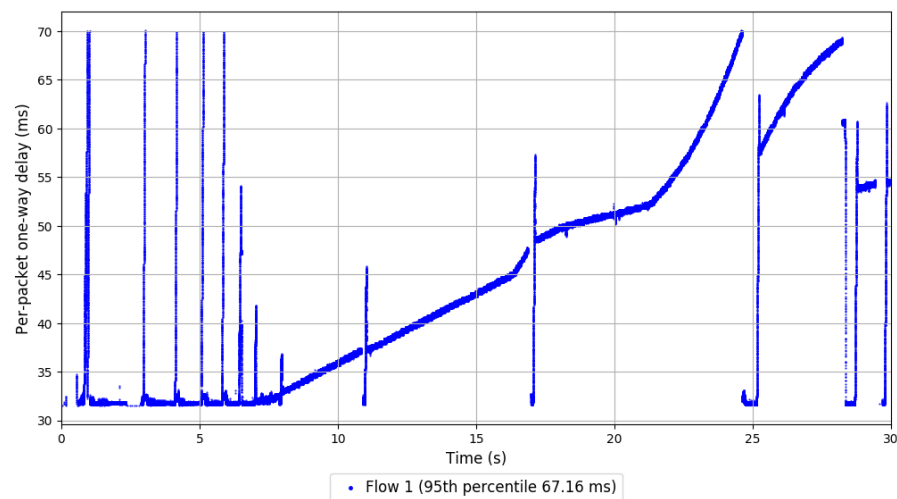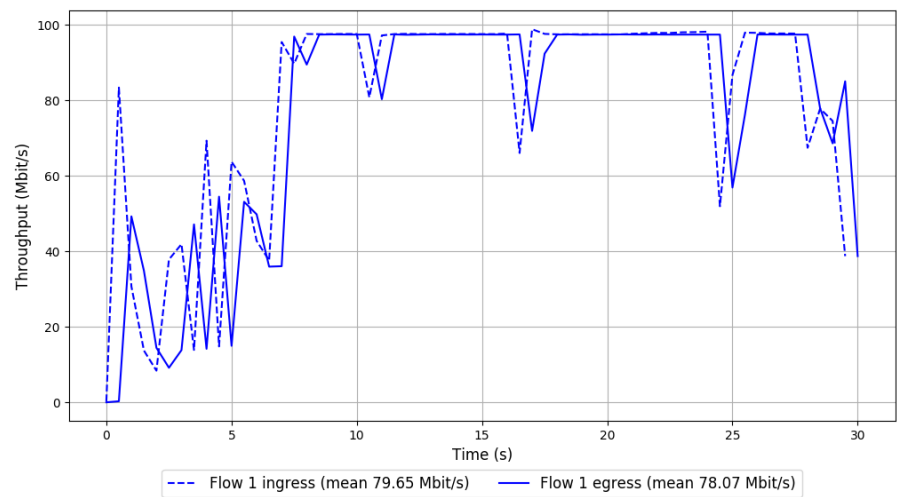
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 79.65 Mbit/s) --- Flow 1 egress (mean 78.07 Mbit/s)

• Flow 1 (95th percentile 67.16 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-30 05:27:14
End at: 2018-11-30 05:27:44
Local clock offset: -0.061 ms
Remote clock offset: -4.653 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.26 Mbit/s
95th percentile per-packet one-way delay: 68.898 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 79.26 Mbit/s
95th percentile per-packet one-way delay: 68.898 ms
Loss rate: 1.93%
```
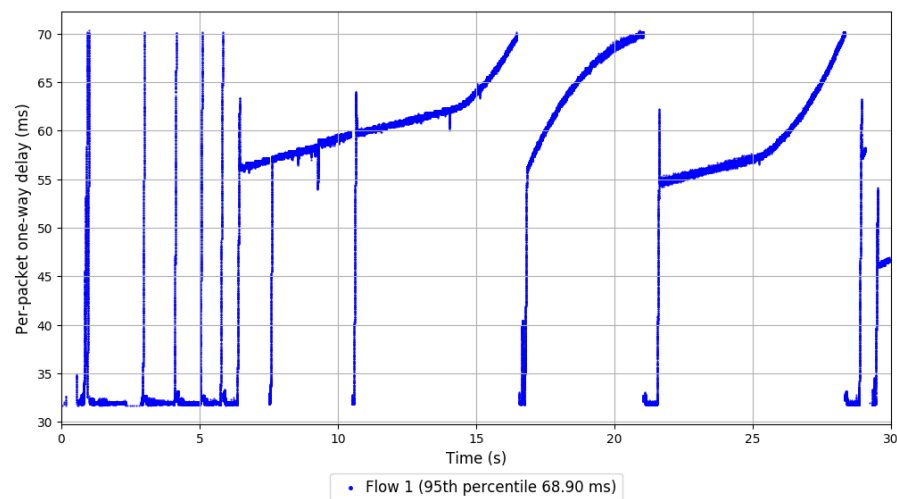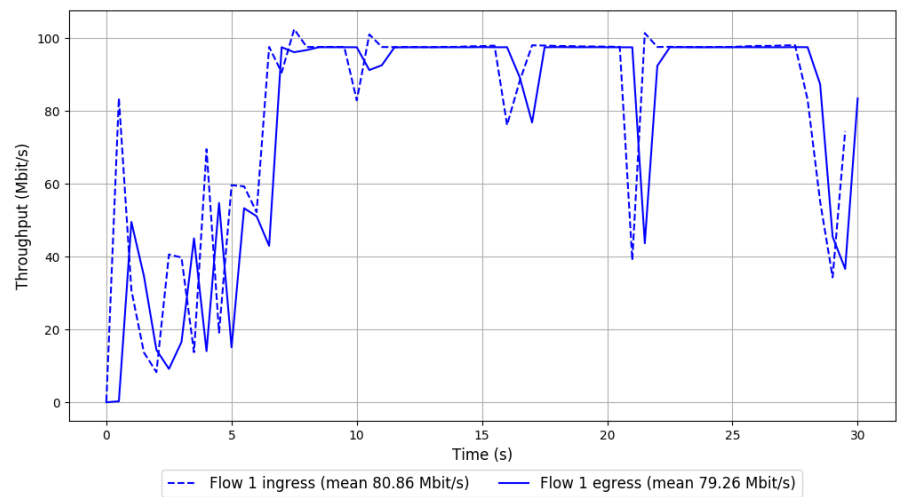
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-11-30 03:59:46
End at: 2018-11-30 04:00:16
Local clock offset: 3.541 ms
Remote clock offset: -5.6 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.933 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.933 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-11-30 04:21:53
End at: 2018-11-30 04:22:23
Local clock offset: 1.58 ms
Remote clock offset: -5.519 ms

# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.934 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.934 ms
Loss rate: 0.00%
```
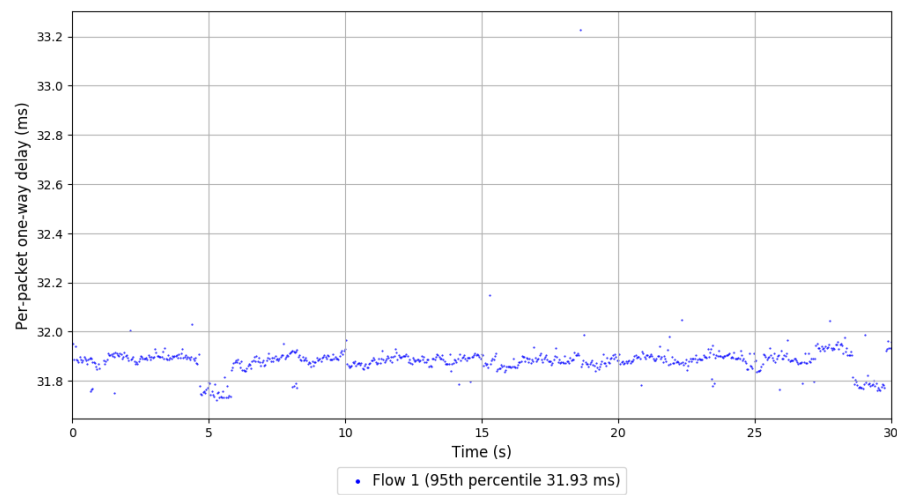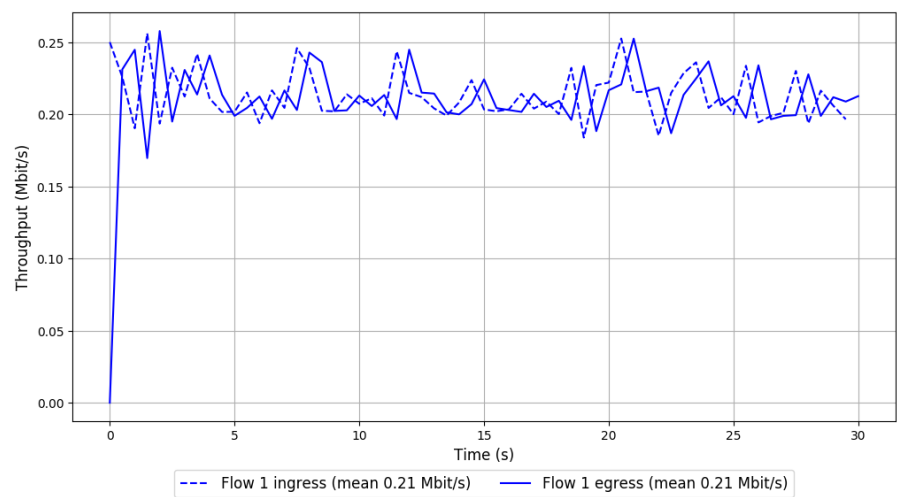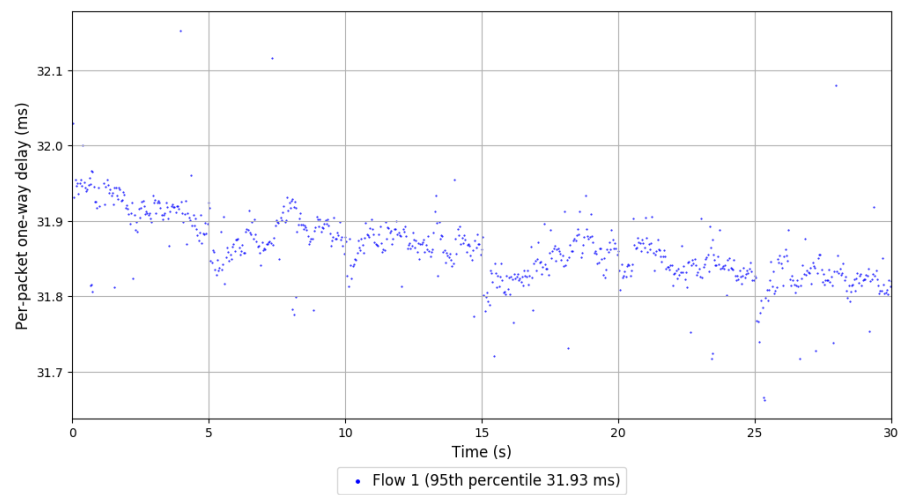
Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) --- Flow 1 egress (mean 0.21 Mbit/s)

Flow 1 (95th percentile 31.93 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-11-30 04:43:52
End at: 2018-11-30 04:44:22
Local clock offset: -0.521 ms
Remote clock offset: -5.404 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.883 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.883 ms
Loss rate: 0.00%
```

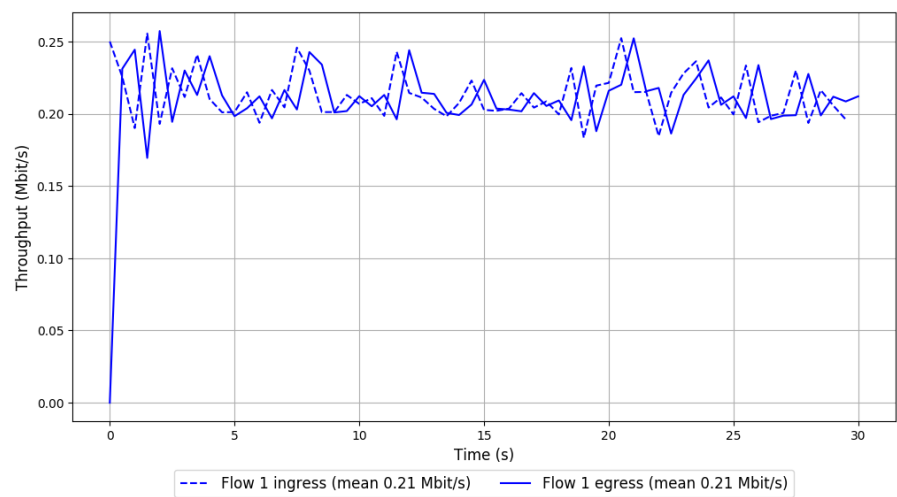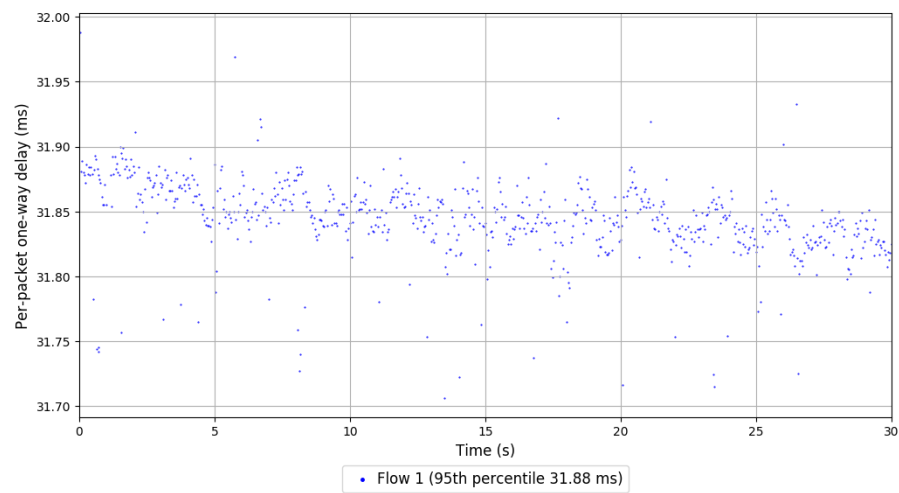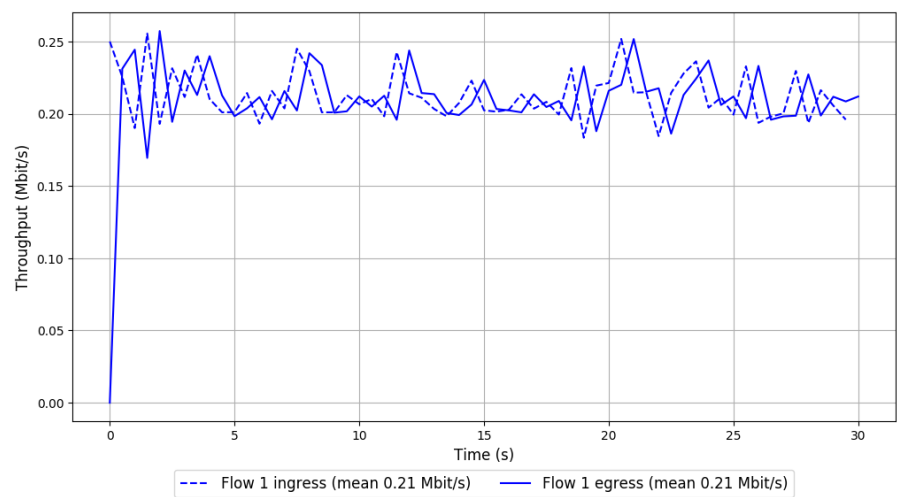Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) —— Flow 1 egress (mean 0.21 Mbit/s)

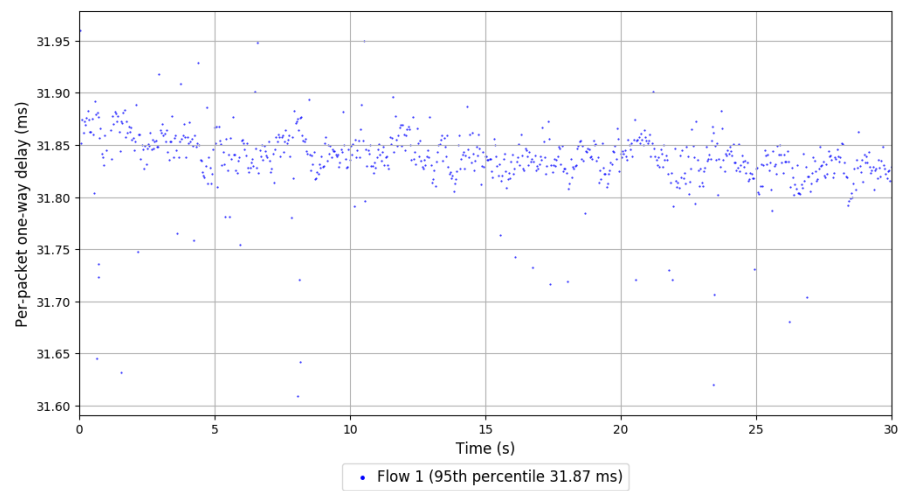

• Flow 1 (95th percentile 31.88 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-11-30 05:06:23
End at: 2018-11-30 05:06:53
Local clock offset: -0.198 ms
Remote clock offset: -5.052 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.874 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.874 ms
Loss rate: 0.00%
```

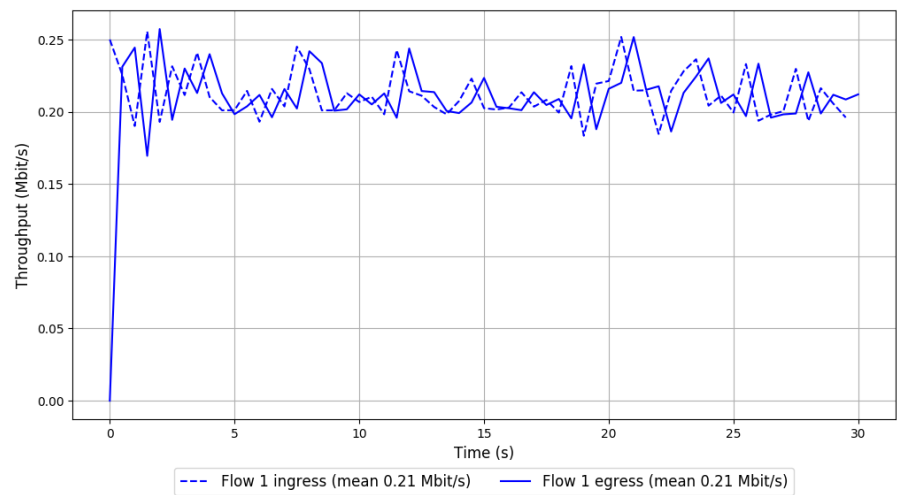# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-11-30 05:28:25
End at: 2018-11-30 05:28:55
Local clock offset: -0.054 ms
Remote clock offset: -4.559 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 32.190 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 32.190 ms
Loss rate: 0.00%
```
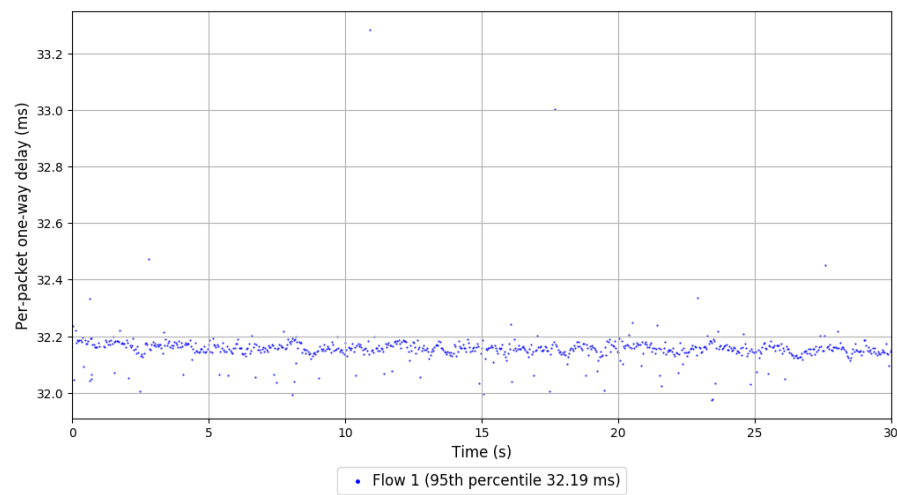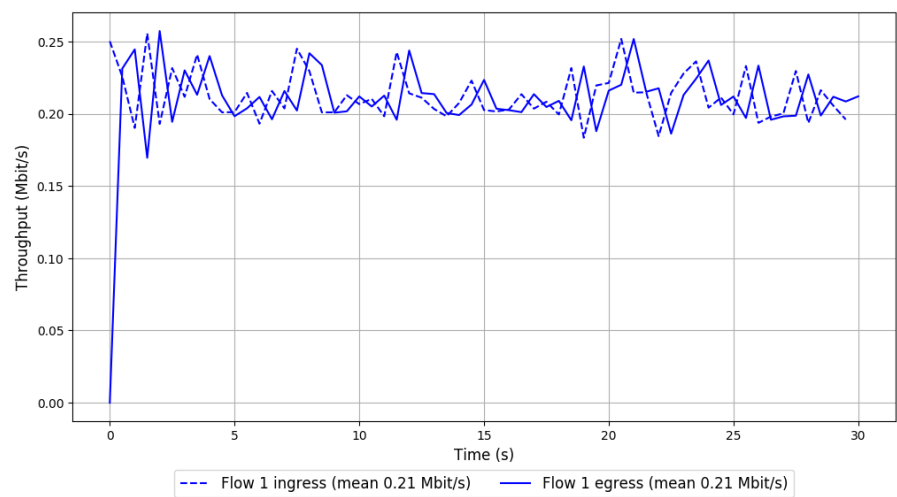
Run 5: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   Flow 1 egress (mean 0.21 Mbit/s)
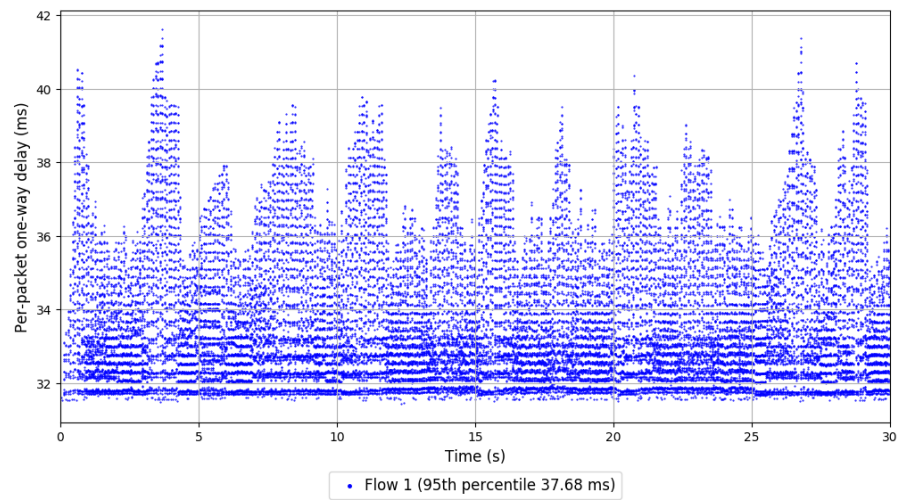

Flow 1 (95th percentile 32.19 ms)

```
Run 1: Statistics of Sprout

Start at: 2018-11-30 03:56:19
End at: 2018-11-30 03:56:49
Local clock offset: 3.553 ms
Remote clock offset: -5.875 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 37.682 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 37.682 ms
Loss rate: 0.00%
```
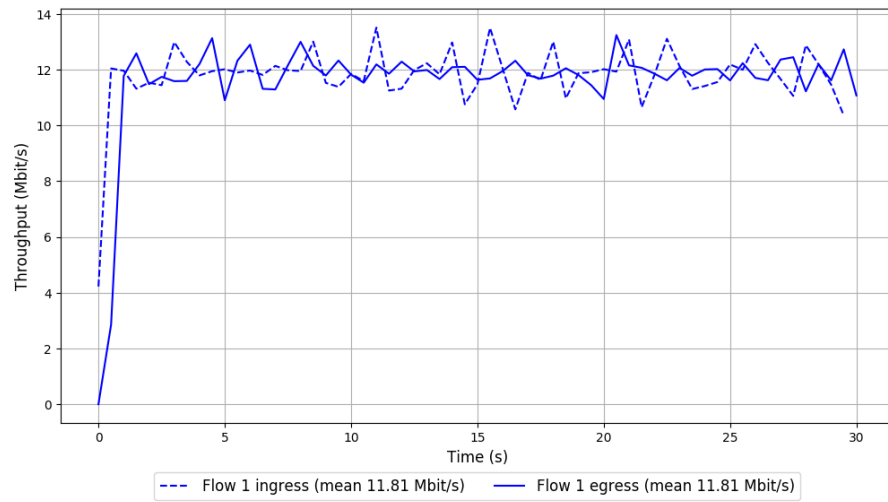
Run 1: Report of Sprout — Data Link

Flow 1 ingress (mean 11.81 Mbit/s) --- Flow 1 egress (mean 11.81 Mbit/s)

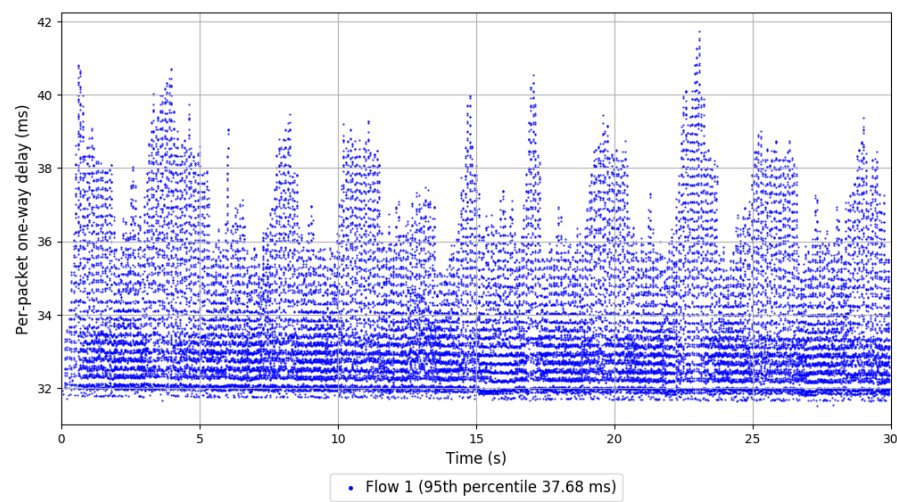

• Flow 1 (95th percentile 37.68 ms)

```
Run 2: Statistics of Sprout

Start at: 2018-11-30 04:18:17
End at: 2018-11-30 04:18:48
Local clock offset: 2.484 ms
Remote clock offset: -5.441 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 37.683 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 37.683 ms
Loss rate: 0.00%
```
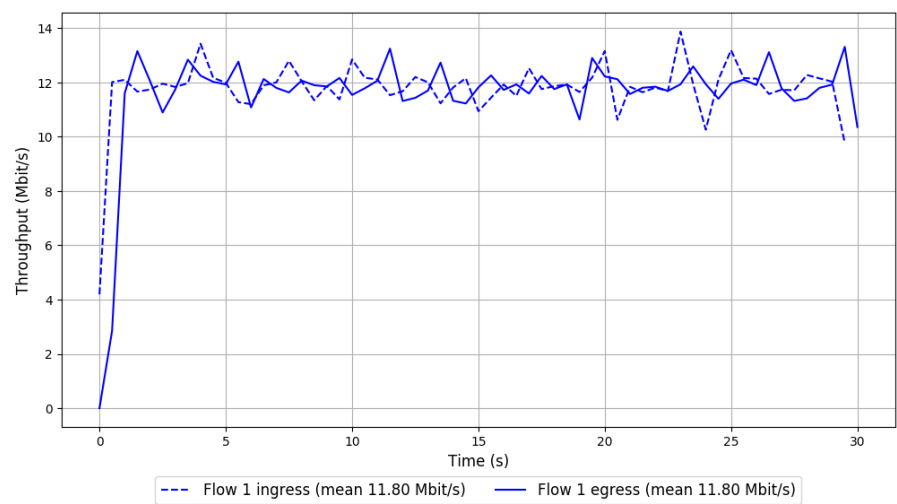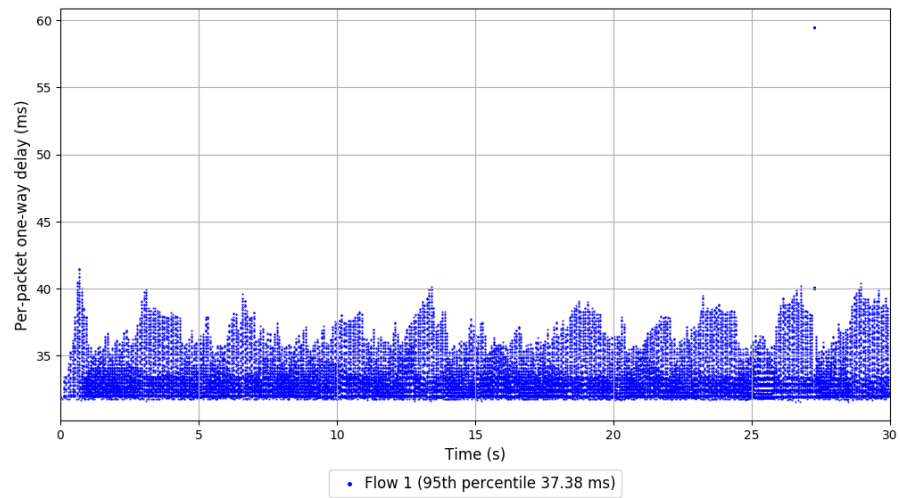
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-11-30 04:40:24
End at: 2018-11-30 04:40:54
Local clock offset: -0.358 ms
Remote clock offset: -5.544 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 37.378 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 37.378 ms
Loss rate: 0.00%
```
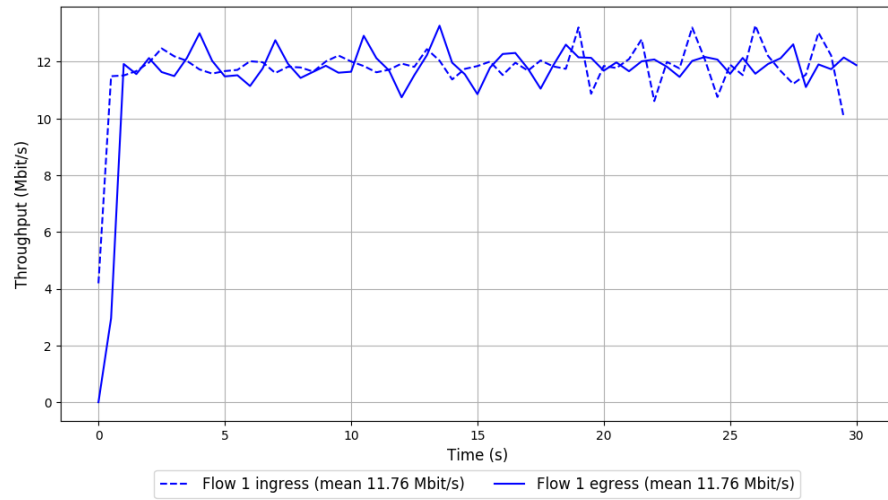
Run 3: Report of Sprout — Data Link

Flow 1 ingress (mean 11.76 Mbit/s) --- Flow 1 egress (mean 11.76 Mbit/s)

• Flow 1 (95th percentile 37.38 ms)

```
Run 4: Statistics of Sprout

Start at: 2018-11-30 05:02:57
End at: 2018-11-30 05:03:27
Local clock offset: -0.189 ms
Remote clock offset: -5.12 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 37.371 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 37.371 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-11-30 05:24:52
End at: 2018-11-30 05:25:22
Local clock offset: -0.057 ms
Remote clock offset: -4.786 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 37.283 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 37.283 ms
Loss rate: 0.00%
```
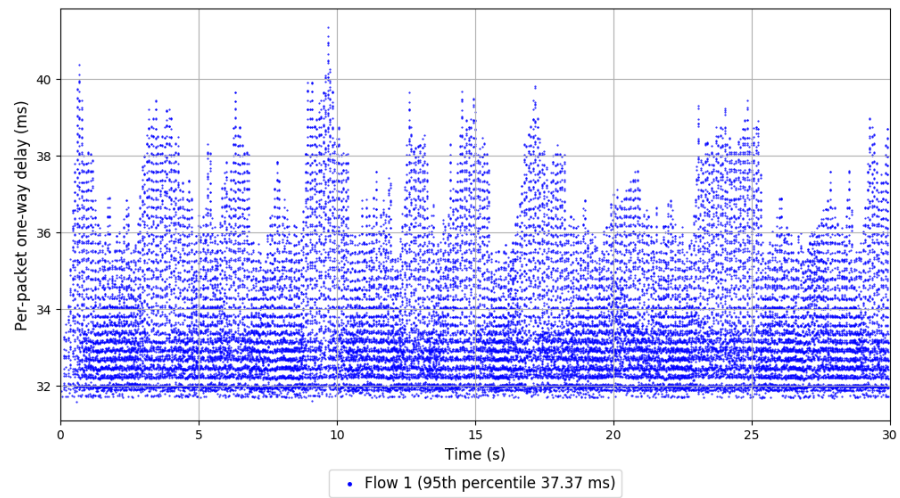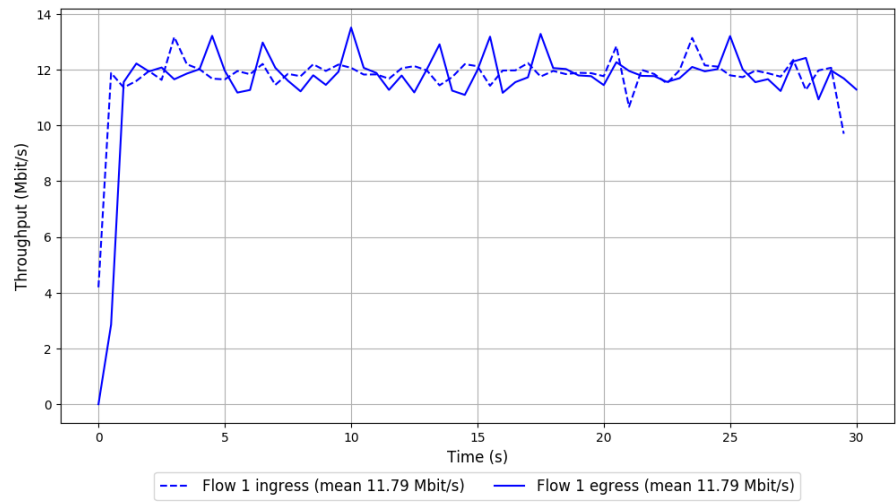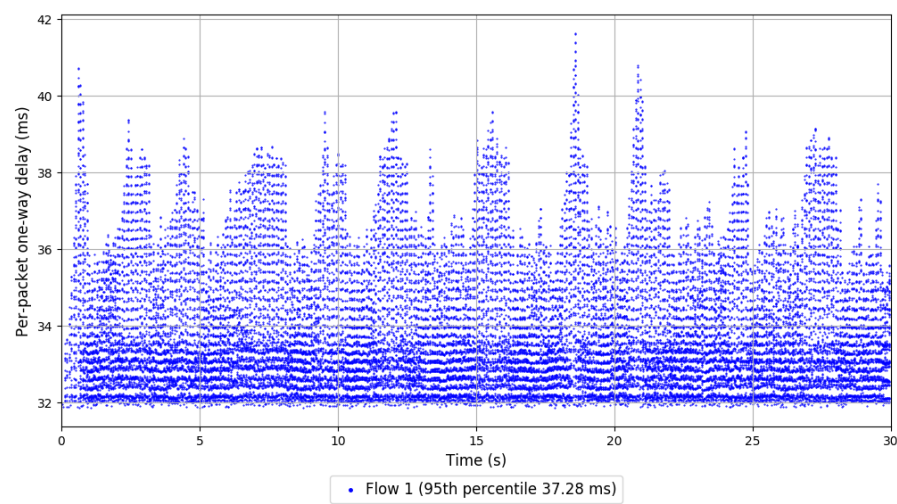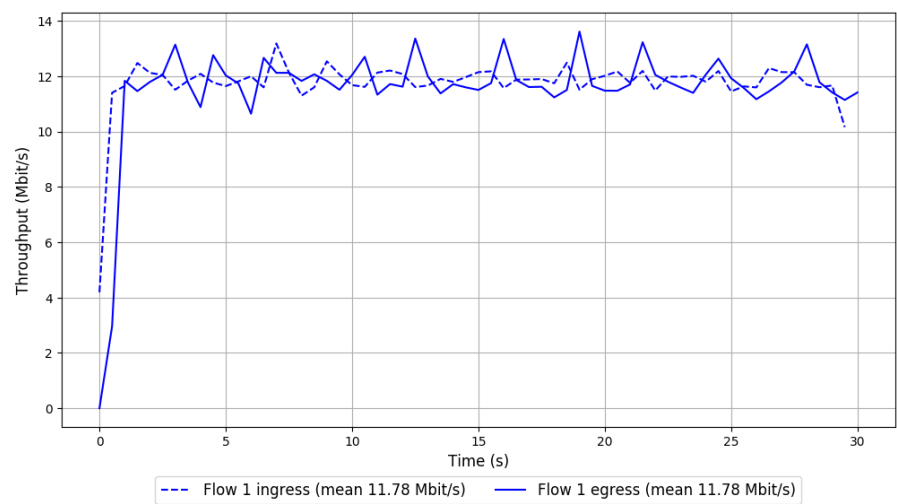
Run 5: Report of Sprout — Data Link

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

Start at: 2018-11-30 04:13:36
End at: 2018-11-30 04:14:06
Local clock offset: 3.696 ms
Remote clock offset: -5.524 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 31.954 ms
Loss rate: 77.48%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 31.954 ms
Loss rate: 77.48%
```
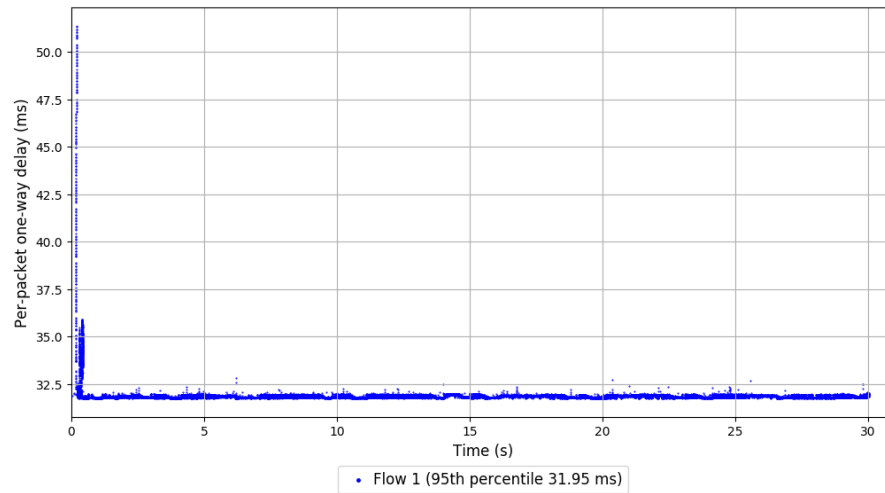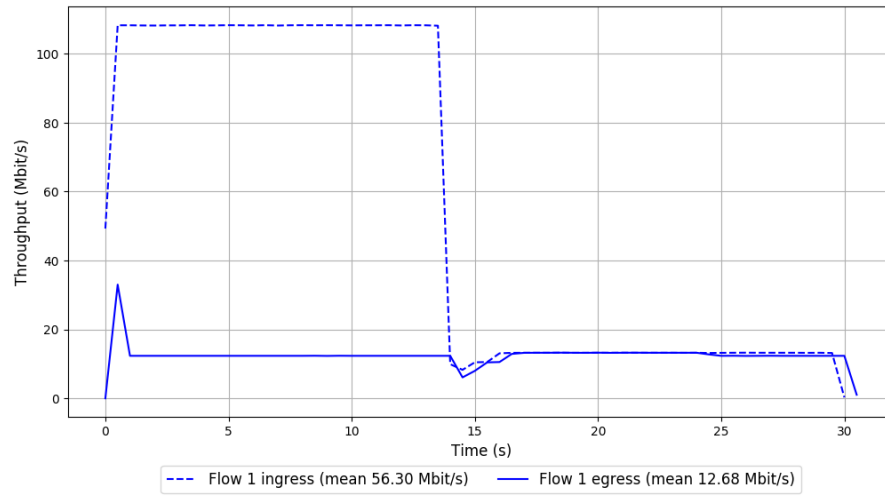
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 56.30 Mbit/s)   Flow 1 egress (mean 12.68 Mbit/s)

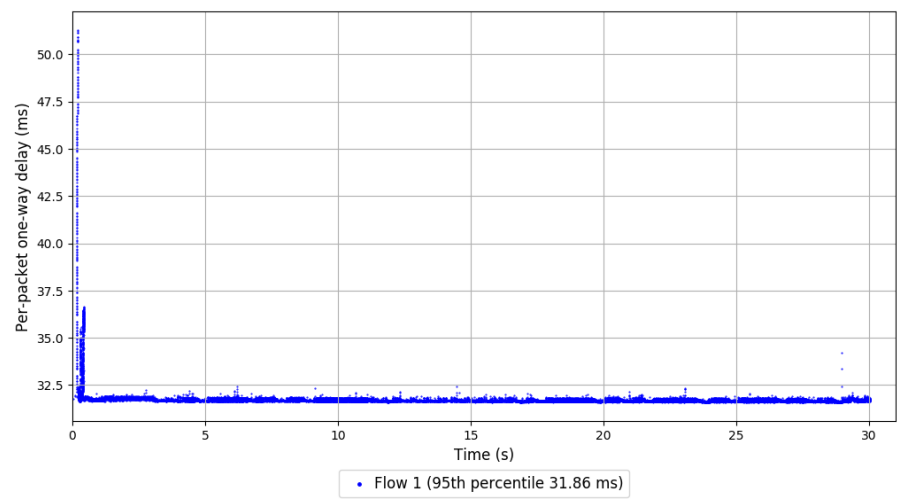

• Flow 1 (95th percentile 31.95 ms)

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

Start at: 2018-11-30 04:35:43
End at: 2018-11-30 04:36:13
Local clock offset: -0.078 ms
Remote clock offset: -5.688 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 31.856 ms
Loss rate: 63.32%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 31.856 ms
Loss rate: 63.32%
```
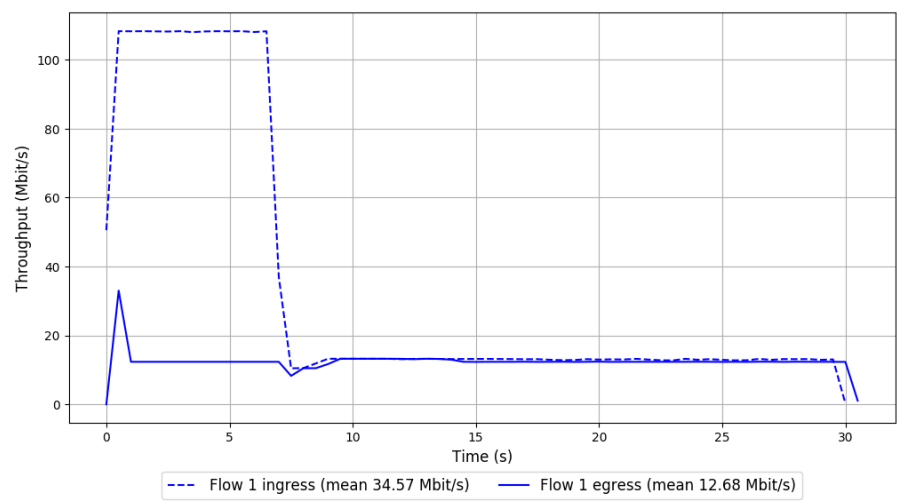
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-11-30 04:58:13
End at: 2018-11-30 04:58:43
Local clock offset: -0.17 ms
Remote clock offset: -4.879 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.38 Mbit/s
95th percentile per-packet one-way delay: 32.166 ms
Loss rate: 77.83%
-- Flow 1:
Average throughput: 12.38 Mbit/s
95th percentile per-packet one-way delay: 32.166 ms
Loss rate: 77.83%
```
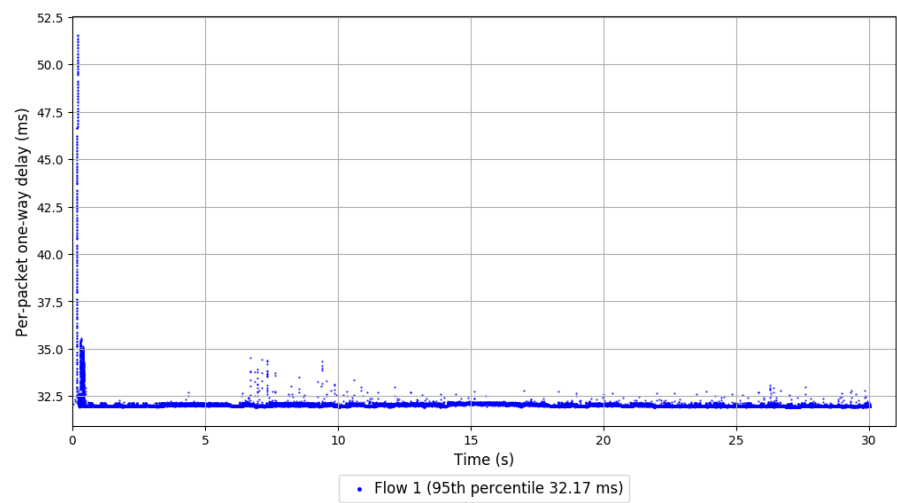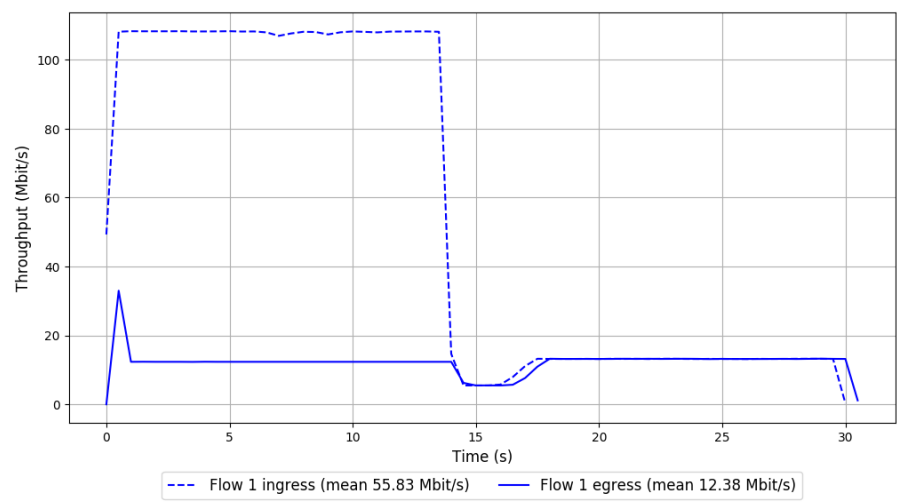
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.83 Mbit/s)   Flow 1 egress (mean 12.38 Mbit/s)
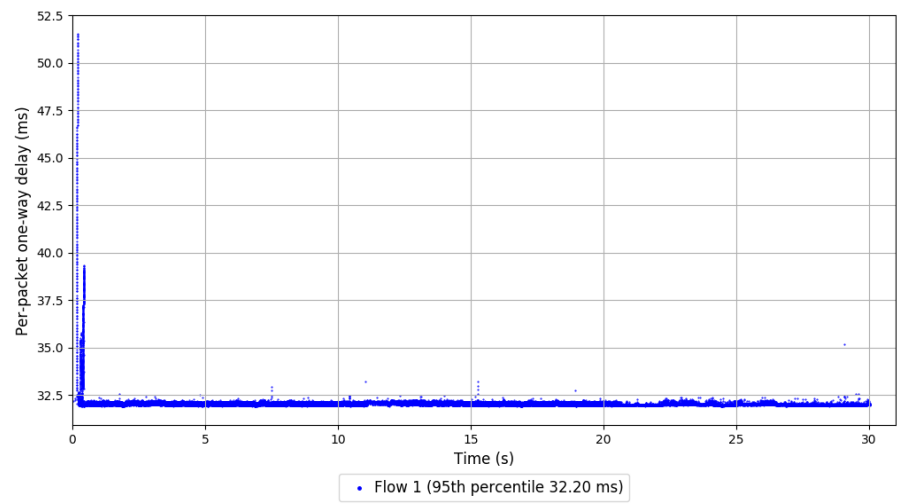

Flow 1 (95th percentile 32.17 ms)

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

Start at: 2018-11-30 05:20:12
End at: 2018-11-30 05:20:42
Local clock offset: -0.146 ms
Remote clock offset: -4.648 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 32.201 ms
Loss rate: 72.90%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 32.201 ms
Loss rate: 72.90%
```

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

Flow 1 ingress (mean 46.79 Mbit/s)   Flow 1 egress (mean 12.68 Mbit/s)
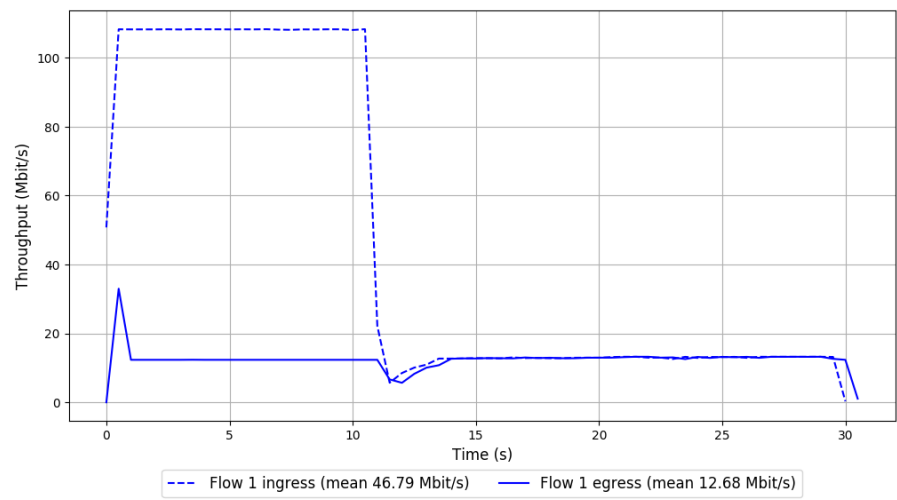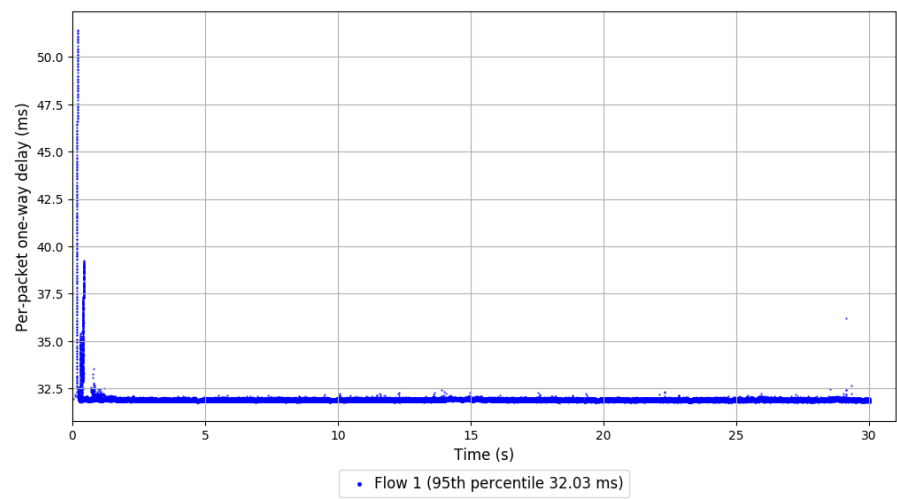

Flow 1 (95th percentile 32.20 ms)

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

Start at: 2018-11-30 05:42:18
End at: 2018-11-30 05:42:48
Local clock offset: -0.132 ms
Remote clock offset: -4.429 ms


# Below is generated by plot.py at 2018-11-30 05:54:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 32.031 ms
Loss rate: 77.41%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 32.031 ms
Loss rate: 77.41%
```
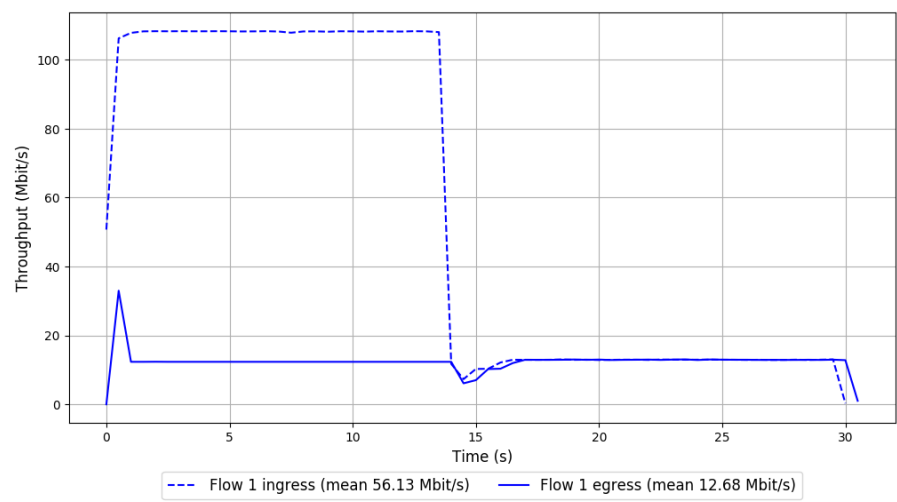
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 56.13 Mbit/s)   Flow 1 egress (mean 12.68 Mbit/s)
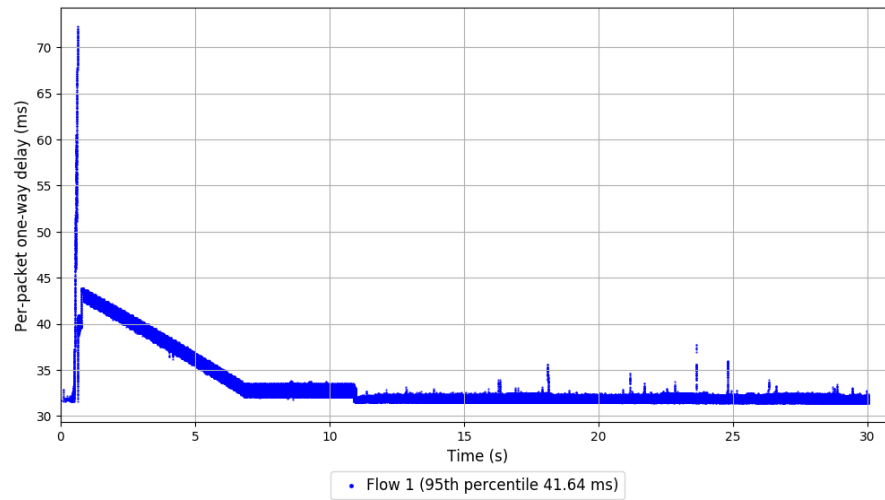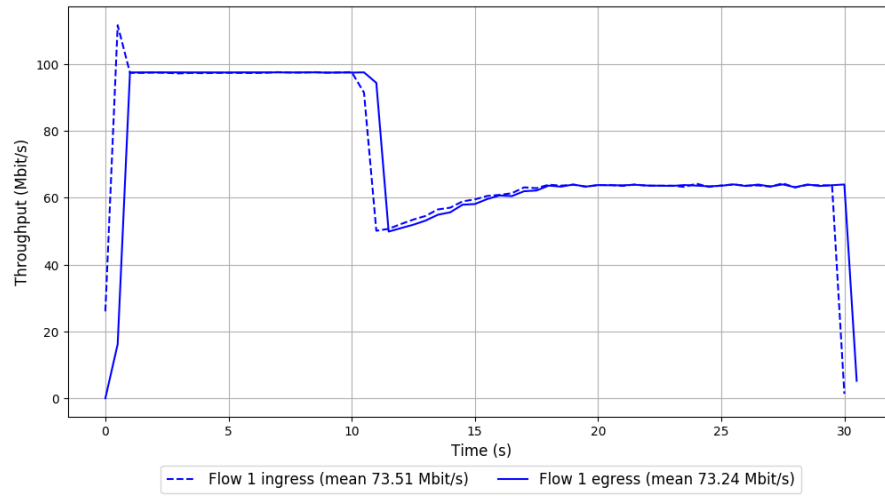

Flow 1 (95th percentile 32.03 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-11-30 04:14:44
End at: 2018-11-30 04:15:14
Local clock offset: 3.719 ms
Remote clock offset: -5.561 ms


# Below is generated by plot.py at 2018-11-30 05:55:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.24 Mbit/s
95th percentile per-packet one-way delay: 41.643 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 73.24 Mbit/s
95th percentile per-packet one-way delay: 41.643 ms
Loss rate: 0.37%
```

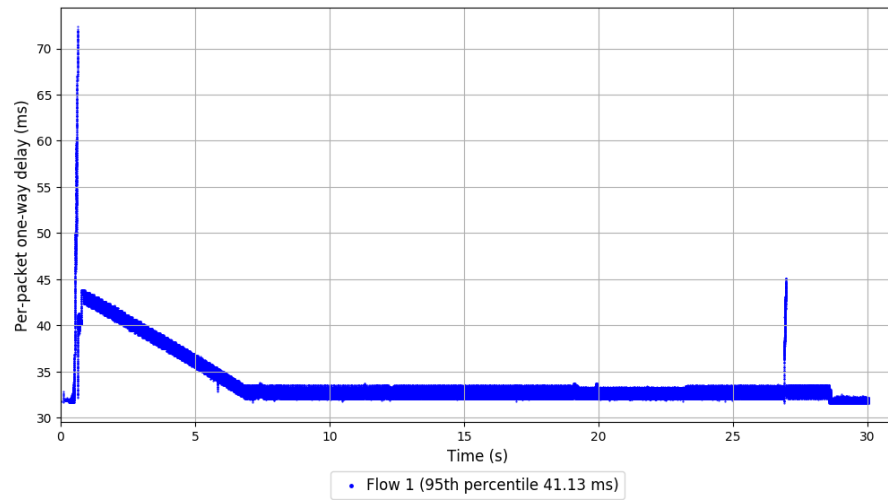Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-11-30 04:36:51
End at: 2018-11-30 04:37:21
Local clock offset: -0.128 ms
Remote clock offset: -5.731 ms


# Below is generated by plot.py at 2018-11-30 05:55:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.02 Mbit/s
95th percentile per-packet one-way delay: 41.126 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 94.02 Mbit/s
95th percentile per-packet one-way delay: 41.126 ms
Loss rate: 0.28%
```

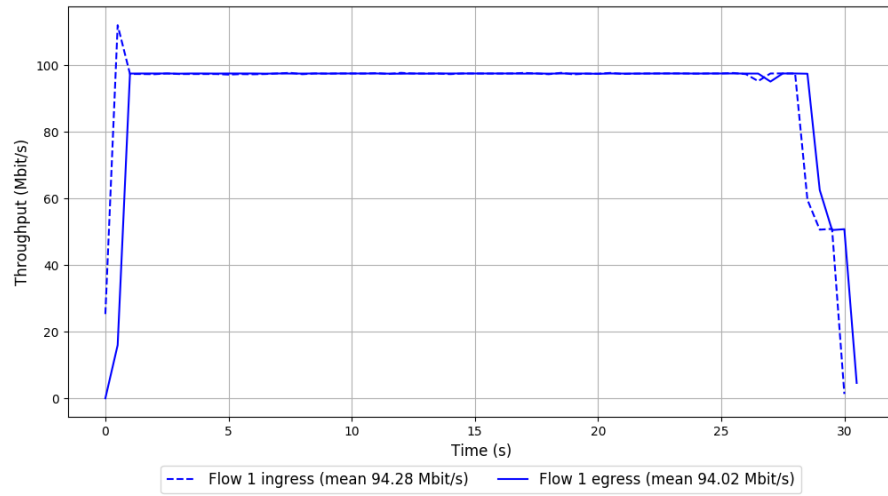Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-11-30 04:59:21
End at: 2018-11-30 04:59:51
Local clock offset: -0.169 ms
Remote clock offset: -4.987 ms


# Below is generated by plot.py at 2018-11-30 05:55:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.66 Mbit/s
95th percentile per-packet one-way delay: 42.341 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 81.66 Mbit/s
95th percentile per-packet one-way delay: 42.341 ms
Loss rate: 0.32%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 81.92 Mbit/s)   Flow 1 egress (mean 81.66 Mbit/s)
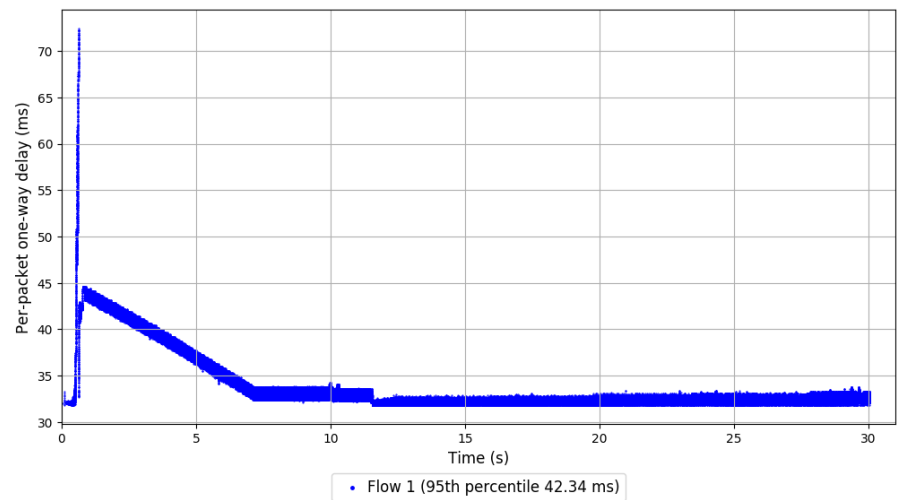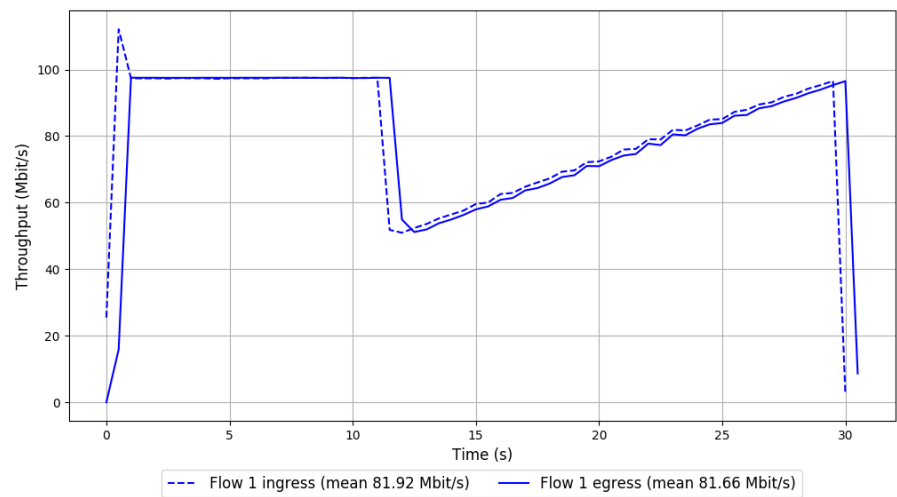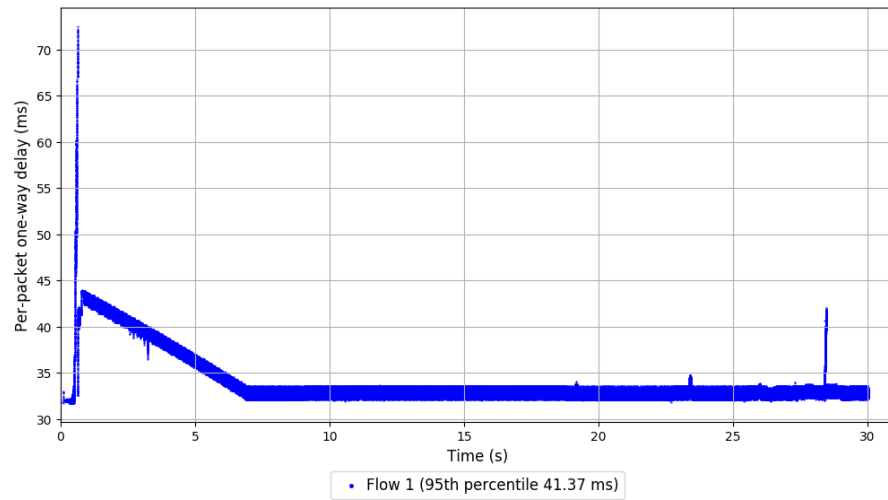

Flow 1 (95th percentile 42.34 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-11-30 05:21:19
End at: 2018-11-30 05:21:49
Local clock offset: -0.12 ms
Remote clock offset: -4.918 ms


# Below is generated by plot.py at 2018-11-30 05:55:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 41.368 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 41.368 ms
Loss rate: 0.27%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 96.50 Mbit/s) ——— Flow 1 egress (mean 96.23 Mbit/s)
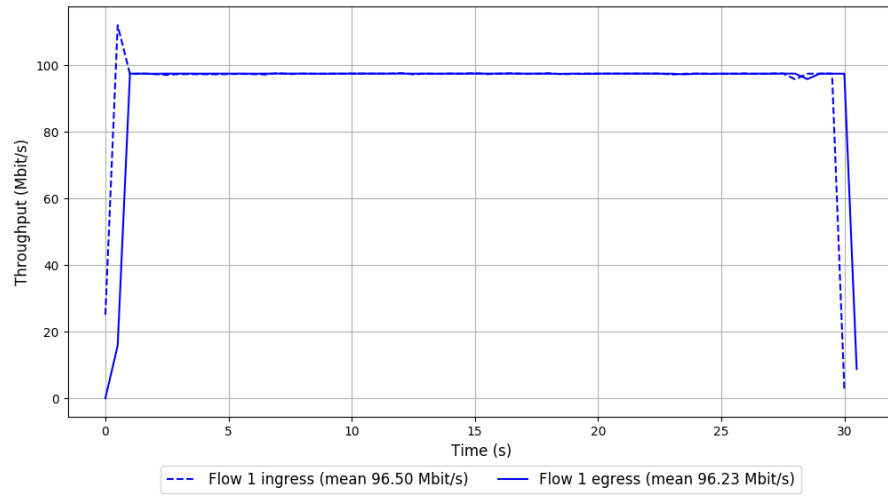
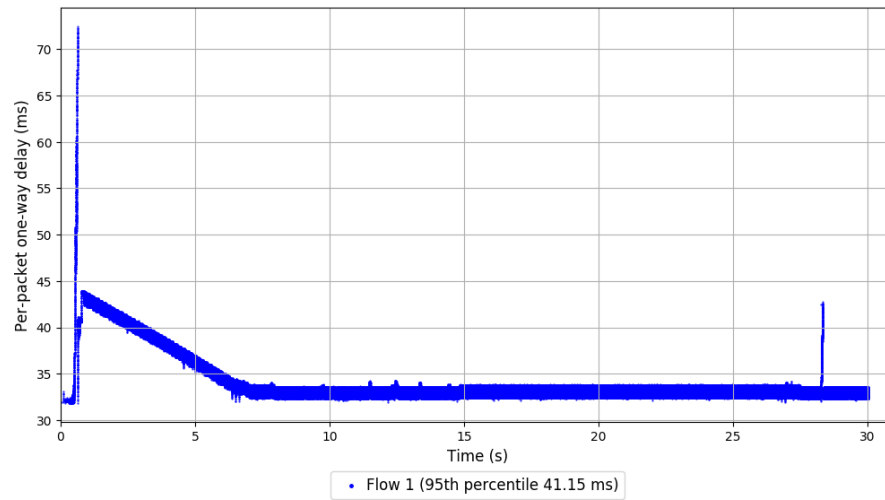

• Flow 1 (95th percentile 41.37 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-11-30 05:43:25
End at: 2018-11-30 05:43:55
Local clock offset: -0.154 ms
Remote clock offset: -4.384 ms


# Below is generated by plot.py at 2018-11-30 05:55:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 41.154 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 41.154 ms
Loss rate: 0.27%
```
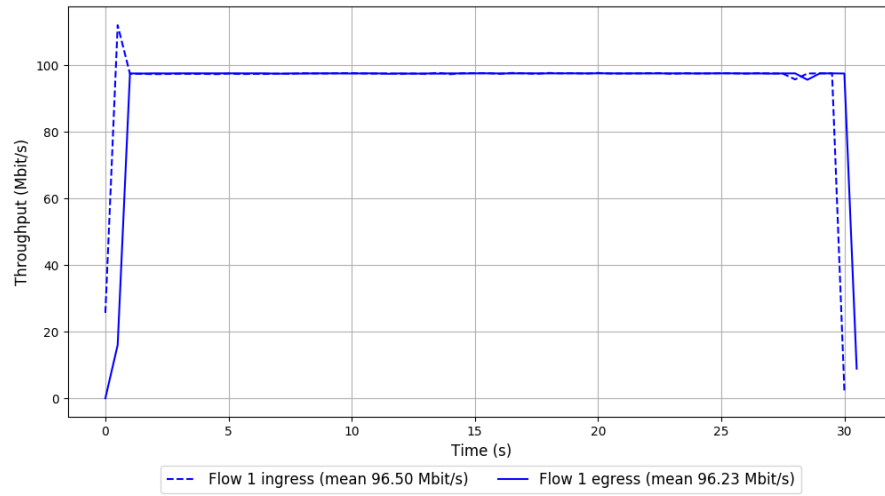
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 96.50 Mbit/s)   Flow 1 egress (mean 96.23 Mbit/s)
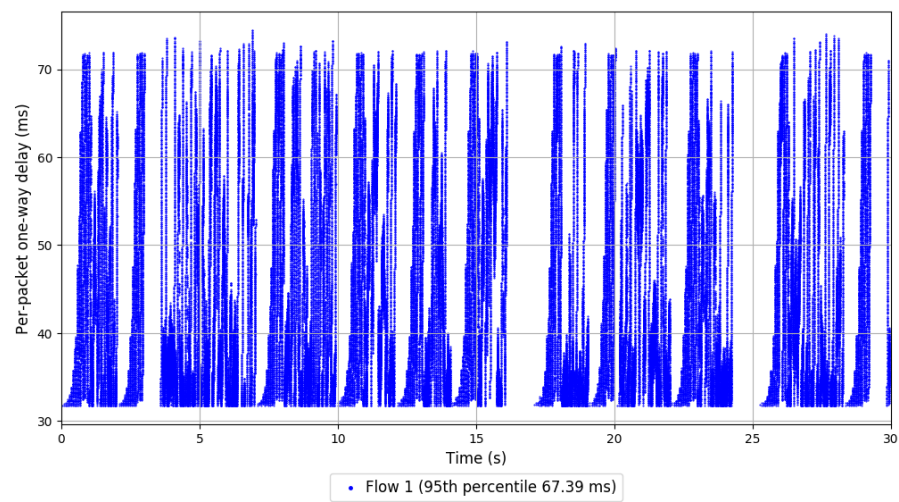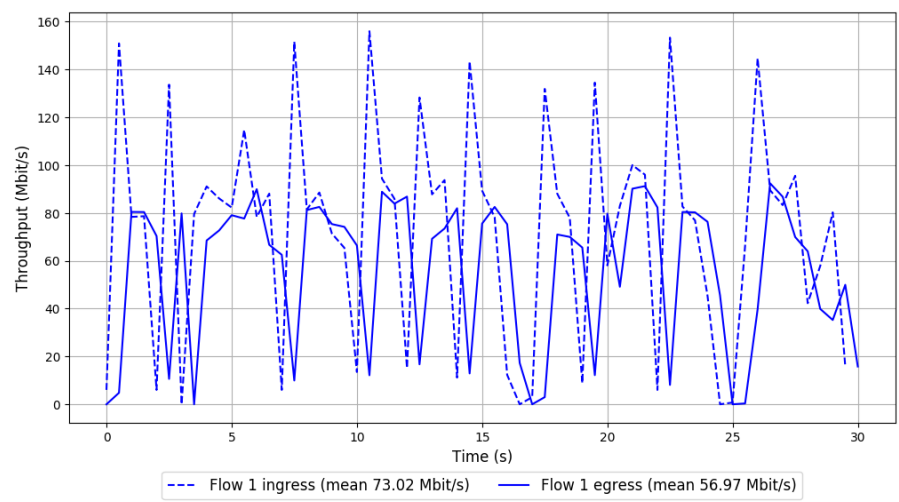

Flow 1 (95th percentile 41.15 ms)

```
Run 1: Statistics of Verus

Start at: 2018-11-30 04:07:44
End at: 2018-11-30 04:08:14
Local clock offset: 3.617 ms
Remote clock offset: -5.538 ms


# Below is generated by plot.py at 2018-11-30 05:55:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.97 Mbit/s
95th percentile per-packet one-way delay: 67.385 ms
Loss rate: 21.98%
-- Flow 1:
Average throughput: 56.97 Mbit/s
95th percentile per-packet one-way delay: 67.385 ms
Loss rate: 21.98%
```

Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-11-30 04:29:53
End at: 2018-11-30 04:30:23
Local clock offset: 0.391 ms
Remote clock offset: -5.63 ms


# Below is generated by plot.py at 2018-11-30 05:55:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.94 Mbit/s
95th percentile per-packet one-way delay: 66.921 ms
Loss rate: 20.37%
-- Flow 1:
Average throughput: 45.94 Mbit/s
95th percentile per-packet one-way delay: 66.921 ms
Loss rate: 20.37%
```
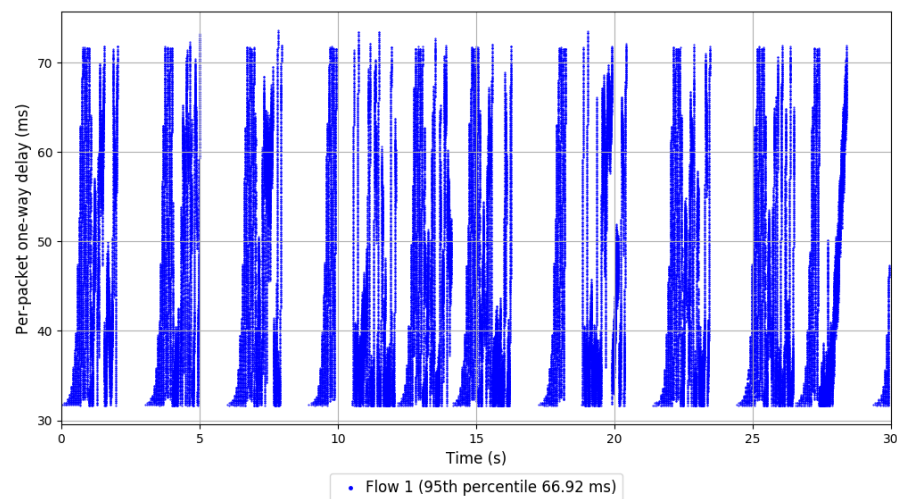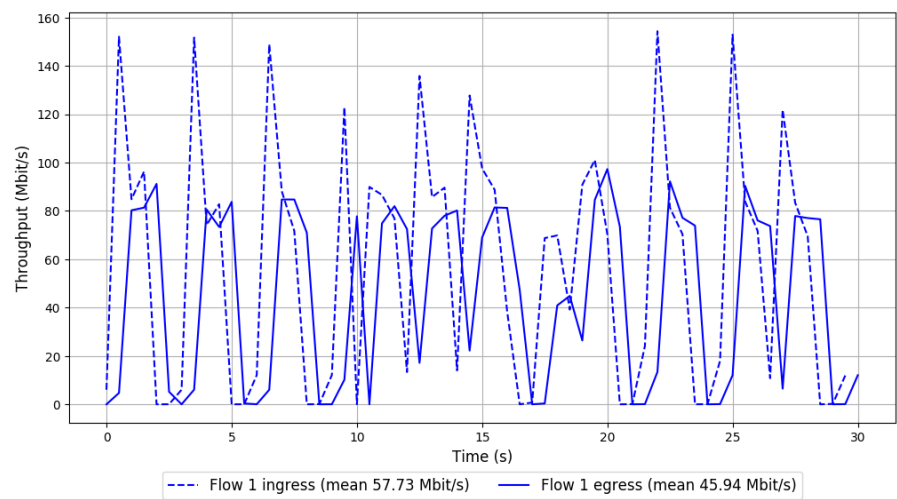
Run 2: Report of Verus — Data Link

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```
Run 3: Statistics of Verus

Start at: 2018-11-30 04:52:08
End at: 2018-11-30 04:52:38
Local clock offset: -0.2 ms
Remote clock offset: -5.41 ms


# Below is generated by plot.py at 2018-11-30 05:55:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.60 Mbit/s
95th percentile per-packet one-way delay: 66.747 ms
Loss rate: 20.57%
-- Flow 1:
Average throughput: 54.60 Mbit/s
95th percentile per-packet one-way delay: 66.747 ms
Loss rate: 20.57%
```
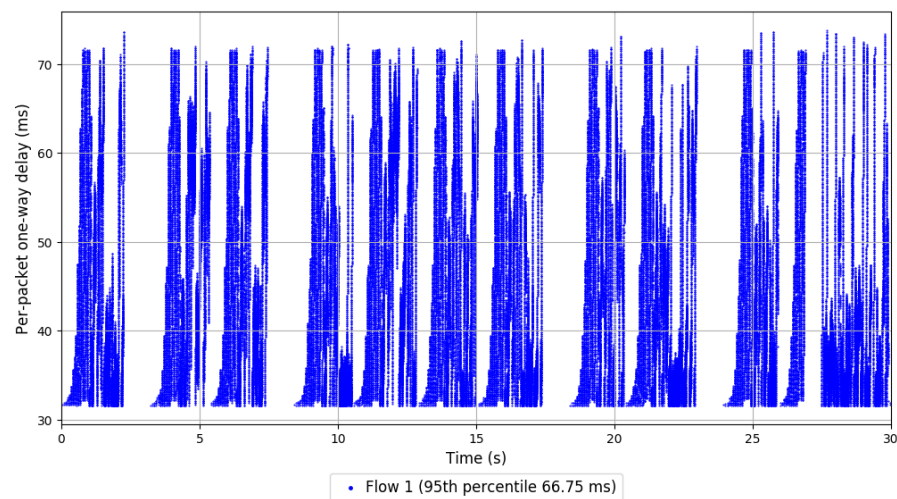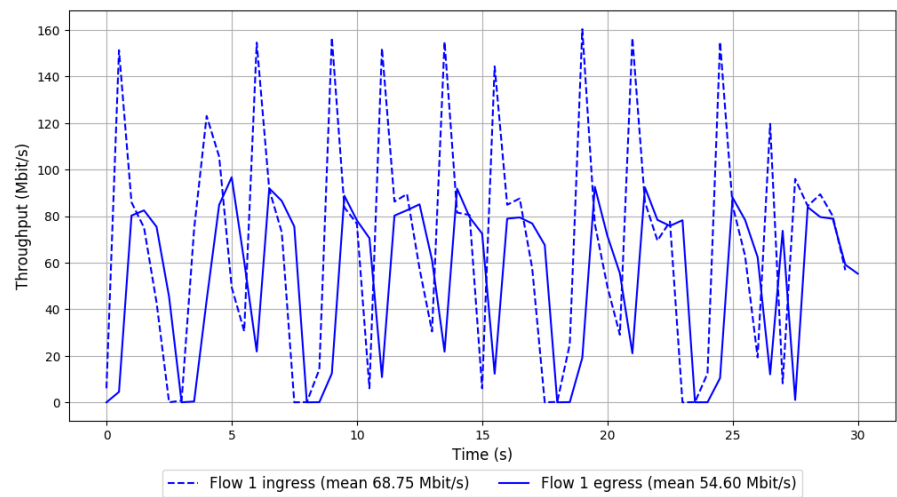
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 68.75 Mbit/s)   Flow 1 egress (mean 54.60 Mbit/s)

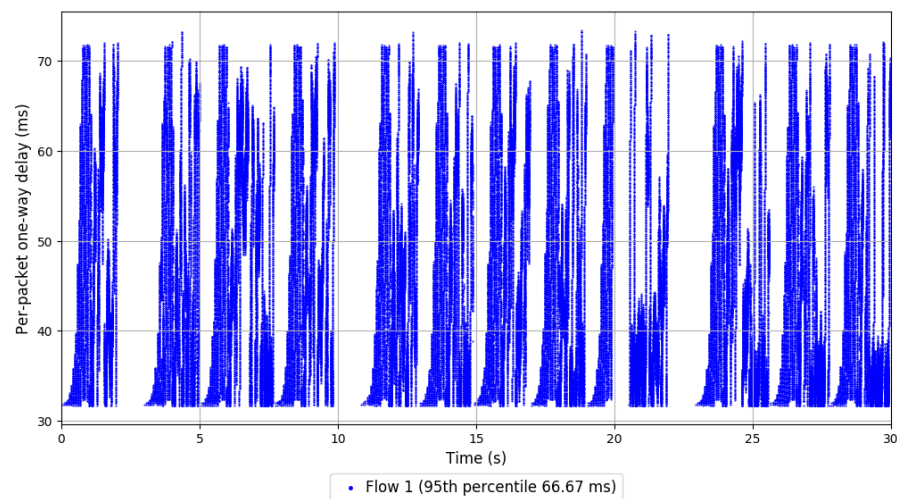

• Flow 1 (95th percentile 66.75 ms)

```
Run 4: Statistics of Verus

Start at: 2018-11-30 05:14:22
End at: 2018-11-30 05:14:52
Local clock offset: -0.299 ms
Remote clock offset: -4.955 ms


# Below is generated by plot.py at 2018-11-30 05:55:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.45 Mbit/s
95th percentile per-packet one-way delay: 66.674 ms
Loss rate: 20.31%
-- Flow 1:
Average throughput: 57.45 Mbit/s
95th percentile per-packet one-way delay: 66.674 ms
Loss rate: 20.31%
```
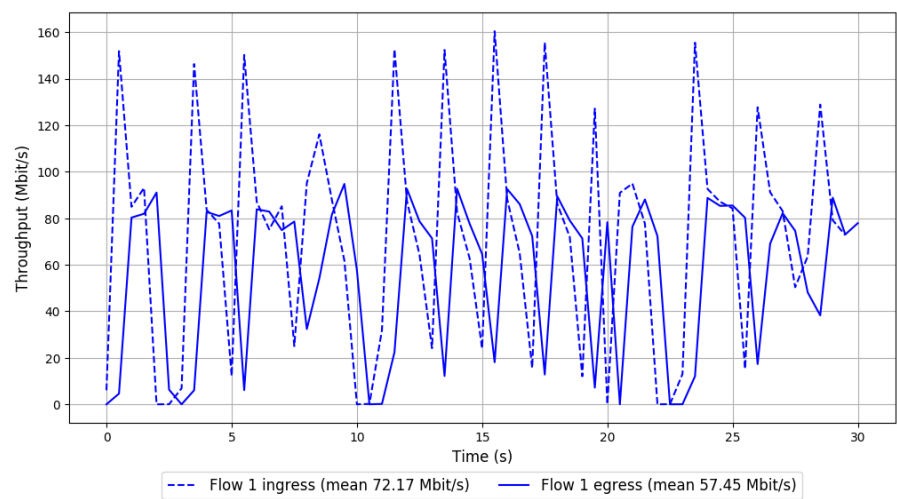
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 72.17 Mbit/s) --- Flow 1 egress (mean 57.45 Mbit/s)

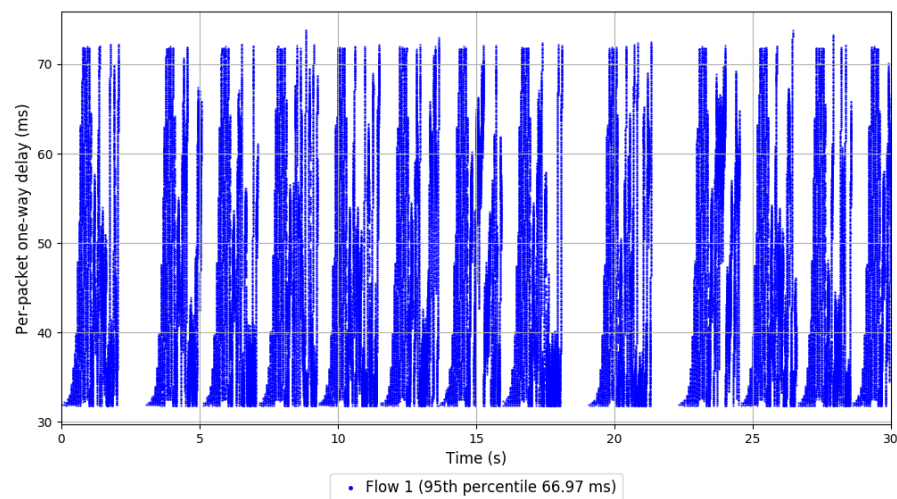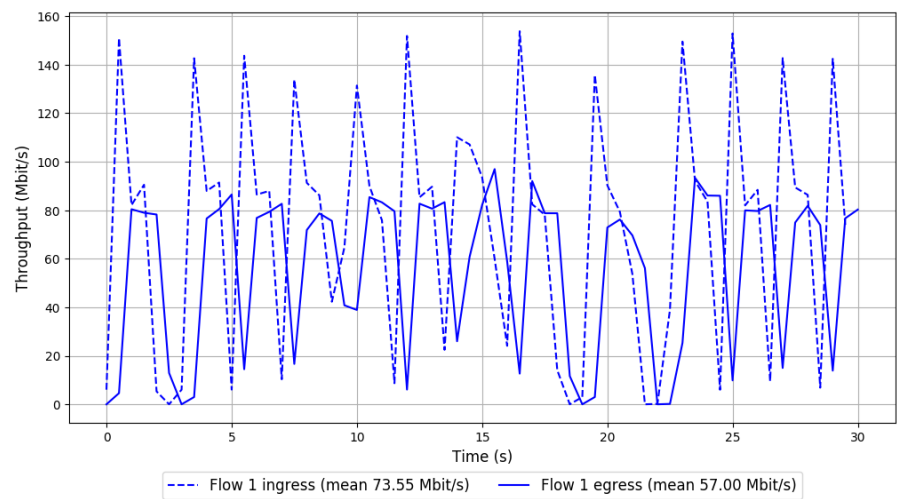

• Flow 1 (95th percentile 66.67 ms)

```
Run 5: Statistics of Verus

Start at: 2018-11-30 05:36:27
End at: 2018-11-30 05:36:57
Local clock offset: -0.096 ms
Remote clock offset: -4.517 ms

# Below is generated by plot.py at 2018-11-30 05:55:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.00 Mbit/s
95th percentile per-packet one-way delay: 66.967 ms
Loss rate: 22.43%
-- Flow 1:
Average throughput: 57.00 Mbit/s
95th percentile per-packet one-way delay: 66.967 ms
Loss rate: 22.43%
```

Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 73.55 Mbit/s)   Flow 1 egress (mean 57.00 Mbit/s)

Flow 1 (95th percentile 66.97 ms)

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-30 04:15:56
End at: 2018-11-30 04:16:26
Local clock offset: 3.304 ms
Remote clock offset: -5.508 ms


# Below is generated by plot.py at 2018-11-30 05:56:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.78 Mbit/s
95th percentile per-packet one-way delay: 33.087 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 84.78 Mbit/s
95th percentile per-packet one-way delay: 33.087 ms
Loss rate: 0.00%
```
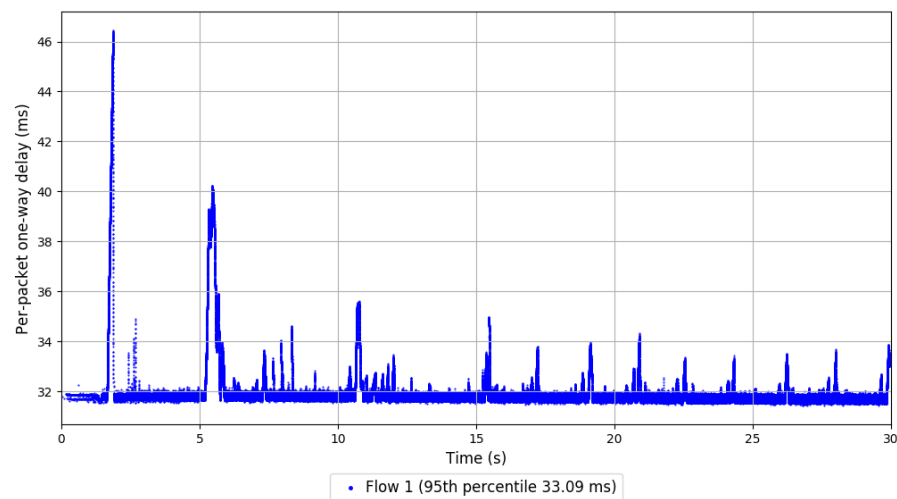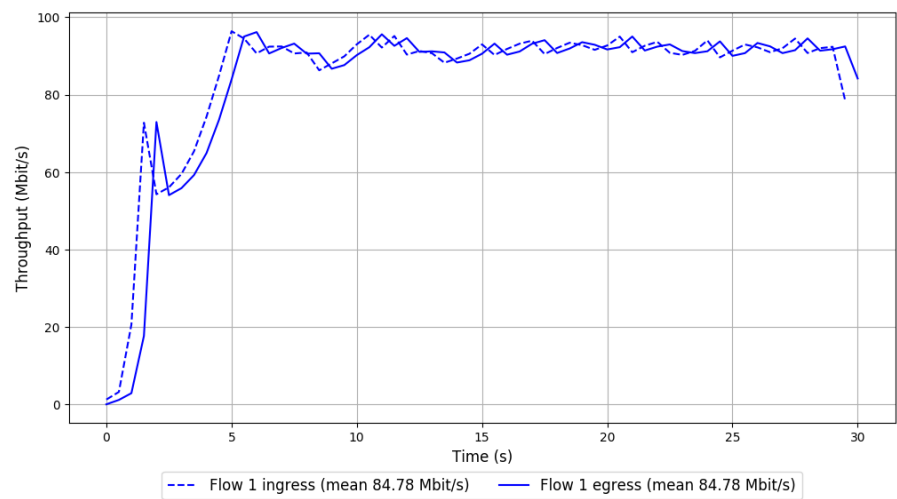
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 84.78 Mbit/s) — — — — Flow 1 egress (mean 84.78 Mbit/s)

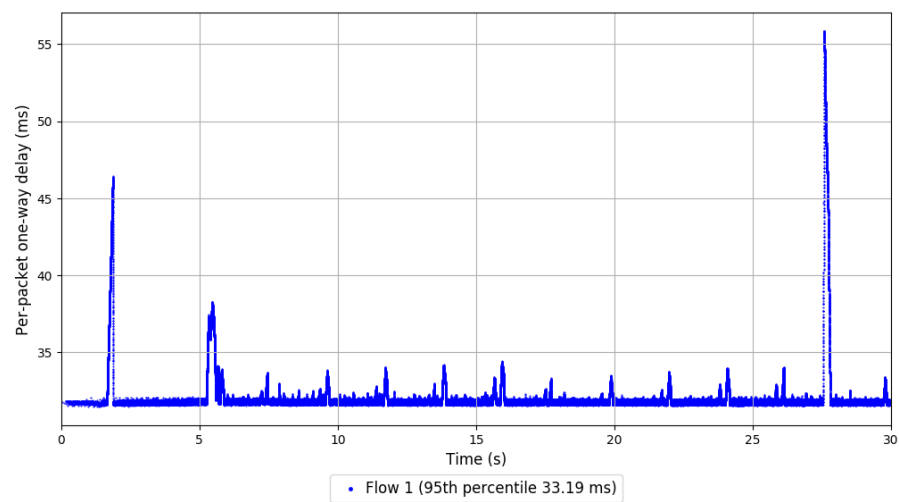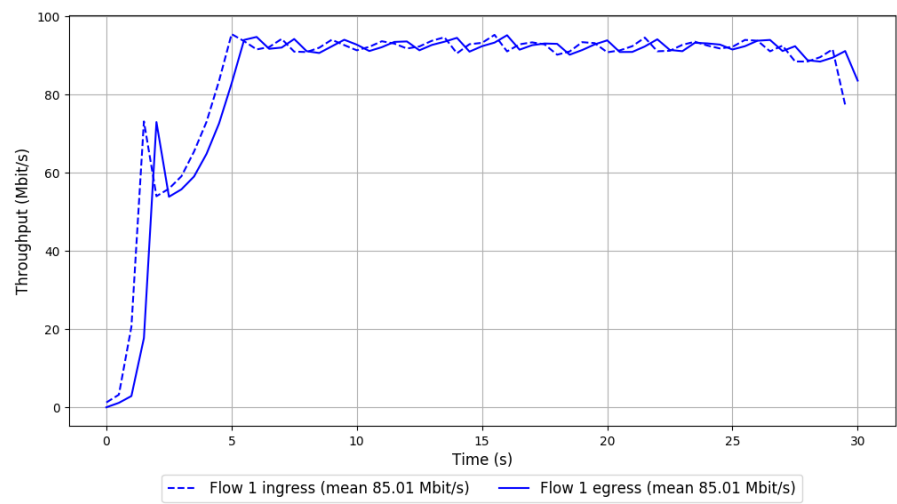

• Flow 1 (95th percentile 33.09 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-30 04:38:01
End at: 2018-11-30 04:38:31
Local clock offset: -0.242 ms
Remote clock offset: -5.677 ms


# Below is generated by plot.py at 2018-11-30 05:56:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.01 Mbit/s
95th percentile per-packet one-way delay: 33.188 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 85.01 Mbit/s
95th percentile per-packet one-way delay: 33.188 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-30 05:00:34
End at: 2018-11-30 05:01:04
Local clock offset: -0.159 ms
Remote clock offset: -5.165 ms


# Below is generated by plot.py at 2018-11-30 05:56:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.83 Mbit/s
95th percentile per-packet one-way delay: 40.193 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 82.83 Mbit/s
95th percentile per-packet one-way delay: 40.193 ms
Loss rate: 0.01%
```
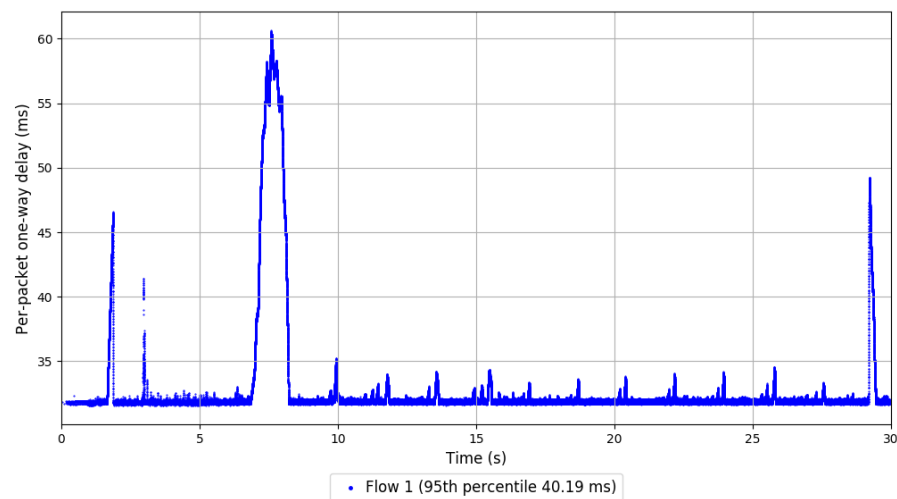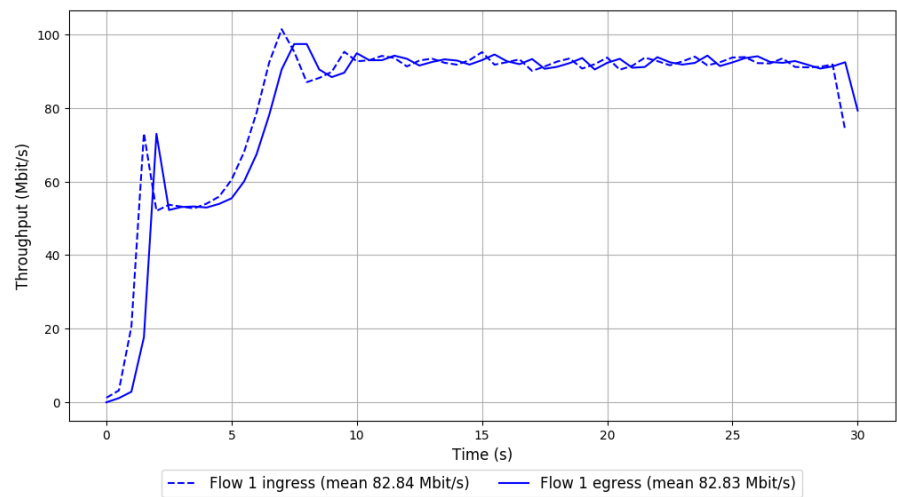
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 82.84 Mbit/s)   Flow 1 egress (mean 82.83 Mbit/s)

Flow 1 (95th percentile 40.19 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-30 05:22:30
End at: 2018-11-30 05:23:00
Local clock offset: -0.086 ms
Remote clock offset: -4.93 ms


# Below is generated by plot.py at 2018-11-30 05:56:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.43 Mbit/s
95th percentile per-packet one-way delay: 33.176 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 85.43 Mbit/s
95th percentile per-packet one-way delay: 33.176 ms
Loss rate: 0.00%
```
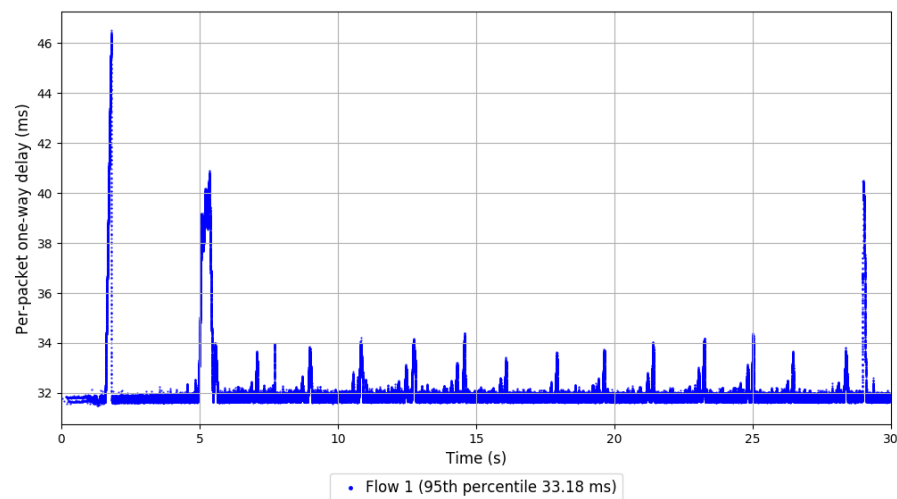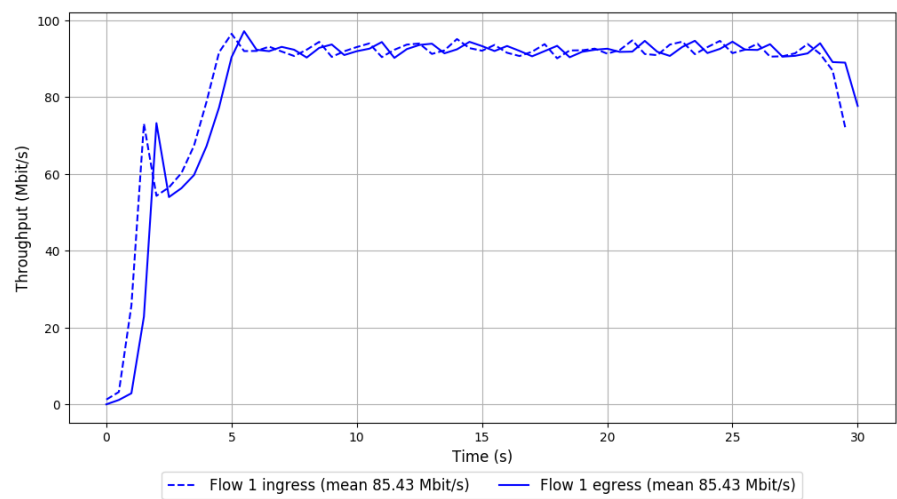
Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 85.43 Mbit/s) —— Flow 1 egress (mean 85.43 Mbit/s)

• Flow 1 (95th percentile 33.18 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-30 05:44:36
End at: 2018-11-30 05:45:06
Local clock offset: -0.15 ms
Remote clock offset: -4.393 ms


# Below is generated by plot.py at 2018-11-30 05:56:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.45 Mbit/s
95th percentile per-packet one-way delay: 33.523 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 85.45 Mbit/s
95th percentile per-packet one-way delay: 33.523 ms
Loss rate: 0.01%
```
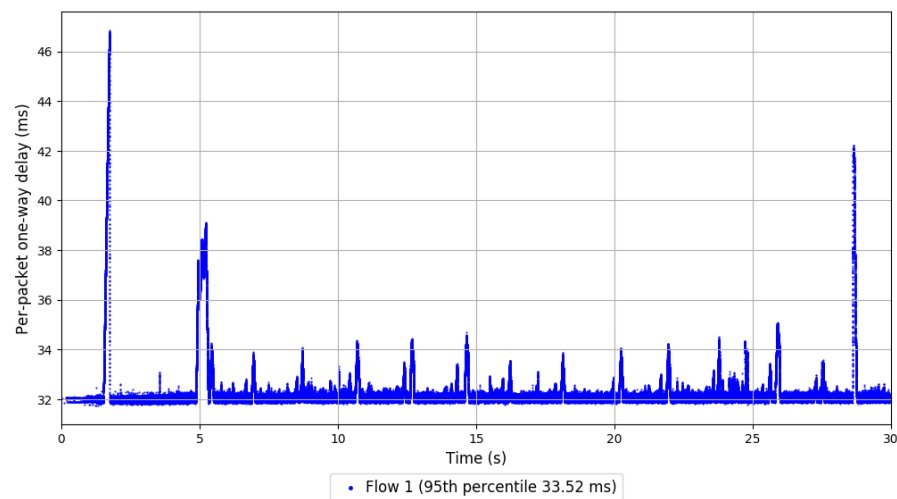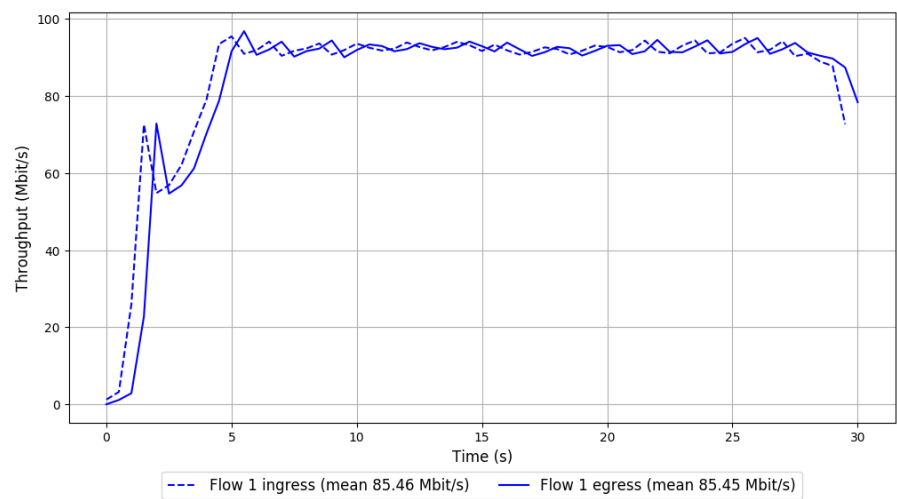
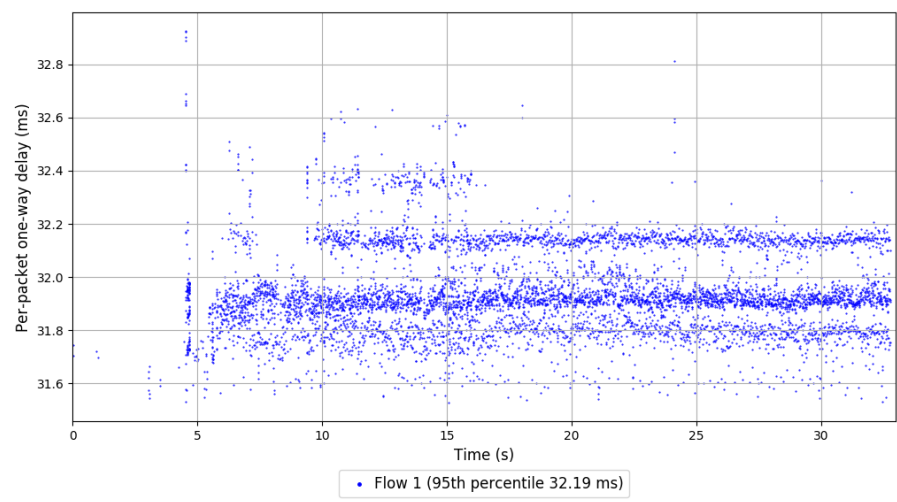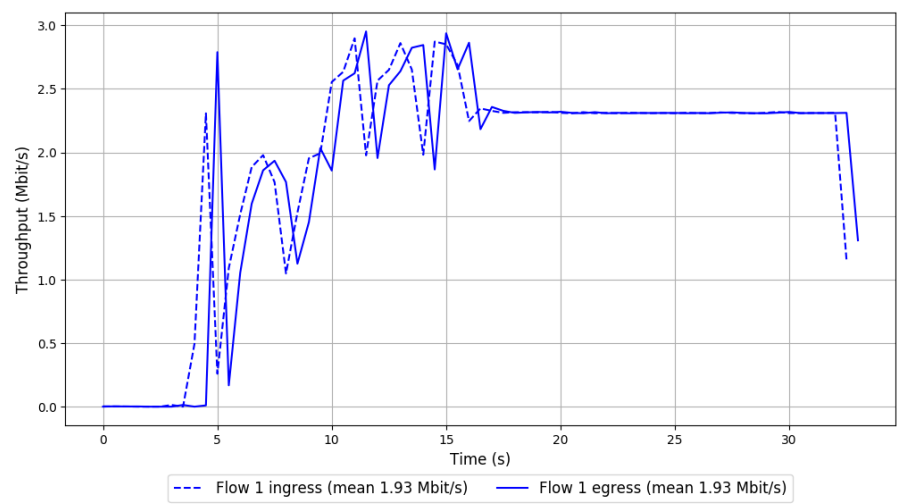## Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-11-30 04:00:52
End at: 2018-11-30 04:01:22
Local clock offset: 3.518 ms
Remote clock offset: -5.783 ms


# Below is generated by plot.py at 2018-11-30 05:56:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.187 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.187 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.93 Mbit/s) ---- Flow 1 egress (mean 1.93 Mbit/s)

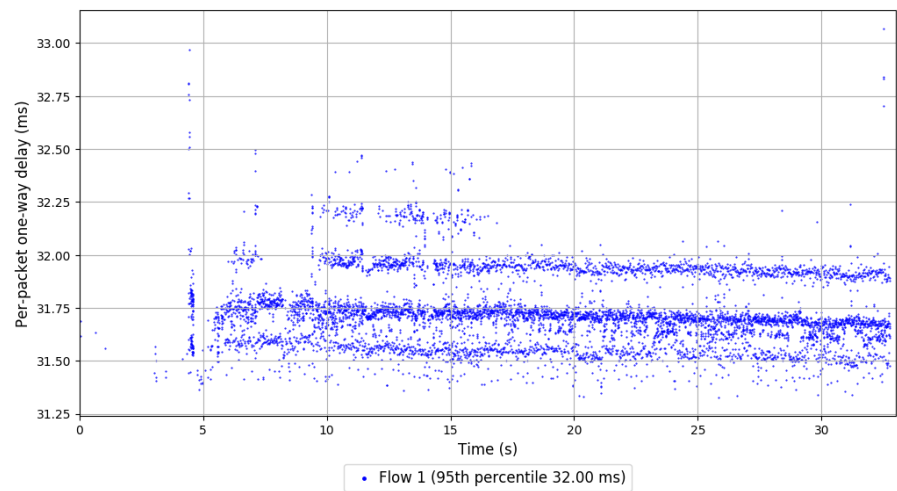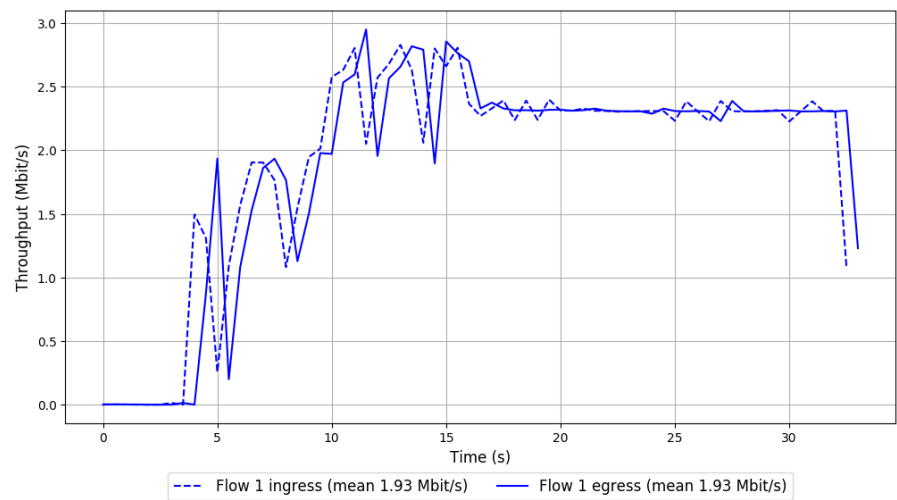

• Flow 1 (95th percentile 32.19 ms)

```
Run 2: Statistics of WebRTC media

Start at: 2018-11-30 04:22:59
End at: 2018-11-30 04:23:29
Local clock offset: 1.347 ms
Remote clock offset: -5.739 ms


# Below is generated by plot.py at 2018-11-30 05:56:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.000 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.000 ms
Loss rate: 0.00%
```

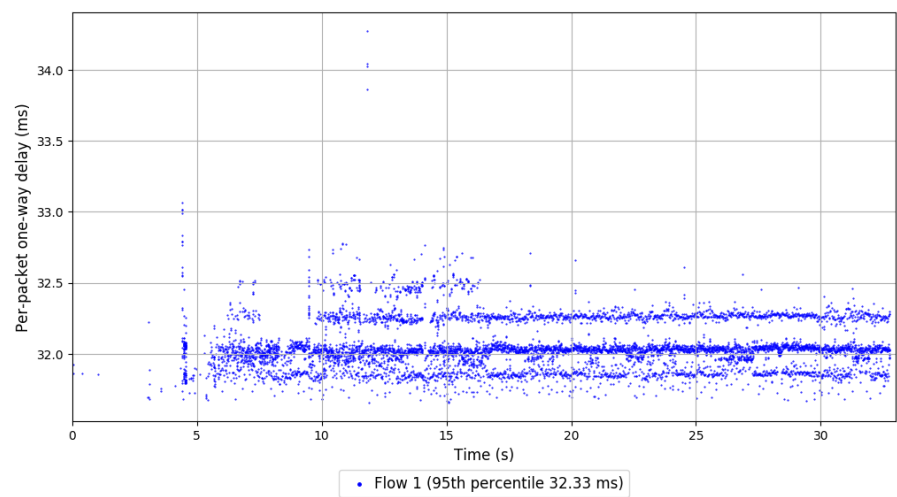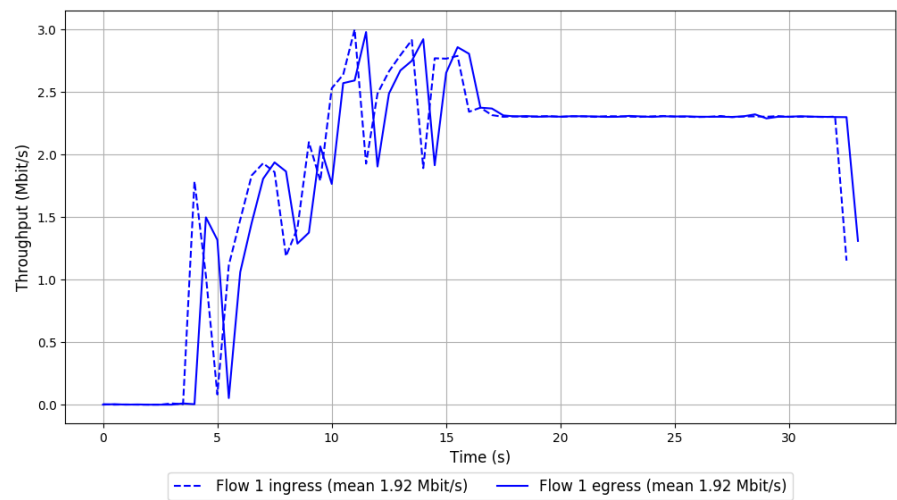Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-11-30 04:44:57
End at: 2018-11-30 04:45:27
Local clock offset: -0.559 ms
Remote clock offset: -5.423 ms


# Below is generated by plot.py at 2018-11-30 05:56:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 32.329 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 32.329 ms
Loss rate: 0.00%
```

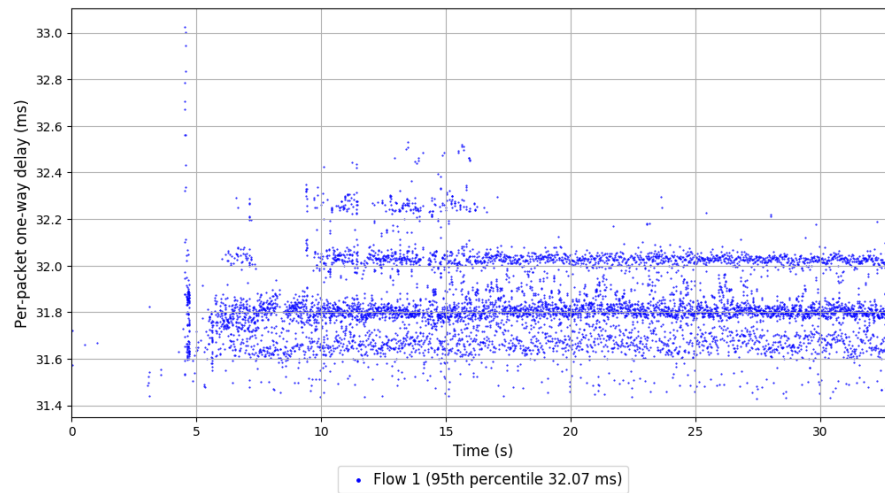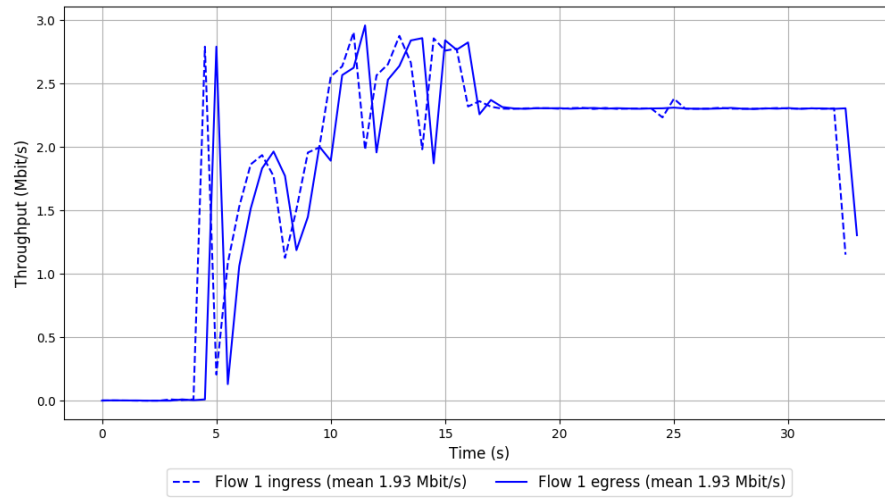Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-11-30 05:07:29
End at: 2018-11-30 05:07:59
Local clock offset: -0.21 ms
Remote clock offset: -5.085 ms


# Below is generated by plot.py at 2018-11-30 05:56:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.070 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.070 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.93 Mbit/s)   Flow 1 egress (mean 1.93 Mbit/s)

Flow 1 (95th percentile 32.07 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-11-30 05:29:31
End at: 2018-11-30 05:30:01
Local clock offset: -0.062 ms
Remote clock offset: -4.68 ms


# Below is generated by plot.py at 2018-11-30 05:56:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.247 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.247 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.93 Mbit/s) --- Flow 1 egress (mean 1.93 Mbit/s)

Flow 1 (95th percentile 32.25 ms)