Pantheon Report

Generated at 2018-10-26 12:07:04 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.
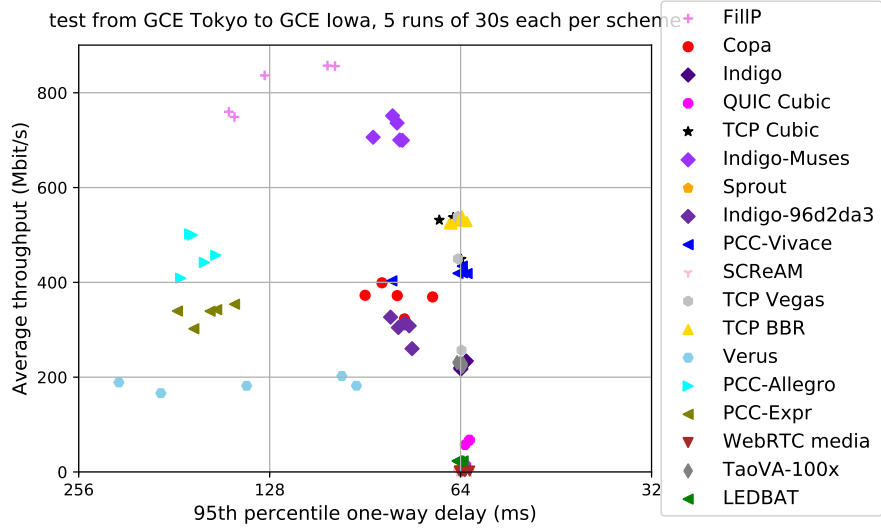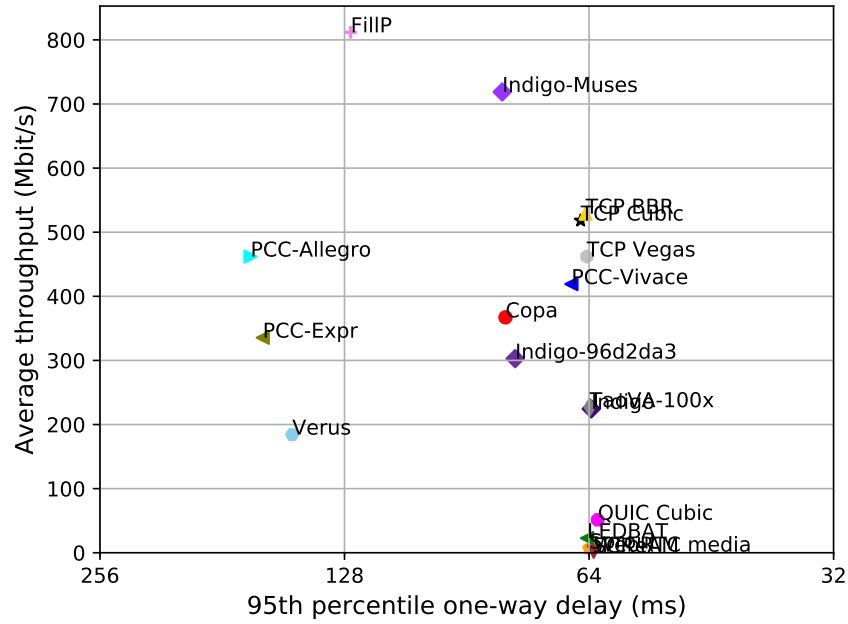
```
System info:
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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

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

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	528.95	64.63	0.45
Copa	5	367.20	81.10	0.45
TCP Cubic	5	518.14	65.54	0.30
FillP	5	811.78	125.79	3.14
Indigo	5	224.40	63.60	0.44
Indigo-96d2da3	5	302.80	78.91	0.46
LEDBAT	5	22.73	64.36	0.73
Indigo-Muses	5	718.79	81.87	0.51
PCC-Allegro	5	461.95	167.07	3.10
PCC-Expr	5	335.44	161.39	3.47
QUIC Cubic	4	51.37	62.44	0.57
SCReAM	5	0.22	63.29	0.43
Sprout	5	6.77	63.98	0.48
TaoVA-100x	5	227.03	63.88	0.42
TCP Vegas	5	462.06	64.42	0.39
Verus	5	184.27	148.45	1.74
PCC-Vivace	5	419.07	67.29	0.46
WebRTC media	5	1.80	63.16	0.48

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-26 08:39:59
End at: 2018-10-26 08:40:29
Local clock offset: 0.113 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-10-26 10:53:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 529.46 Mbit/s
95th percentile per-packet one-way delay: 64.214 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 529.46 Mbit/s
95th percentile per-packet one-way delay: 64.214 ms
Loss rate: 0.45%
```
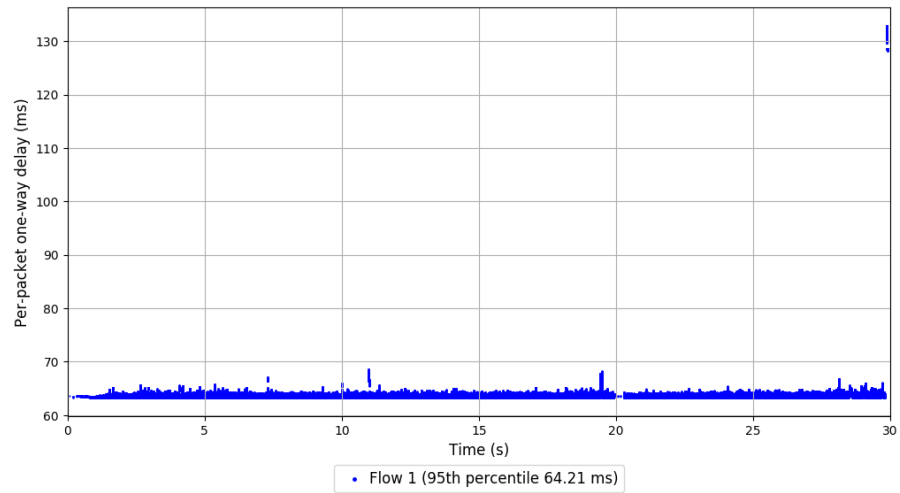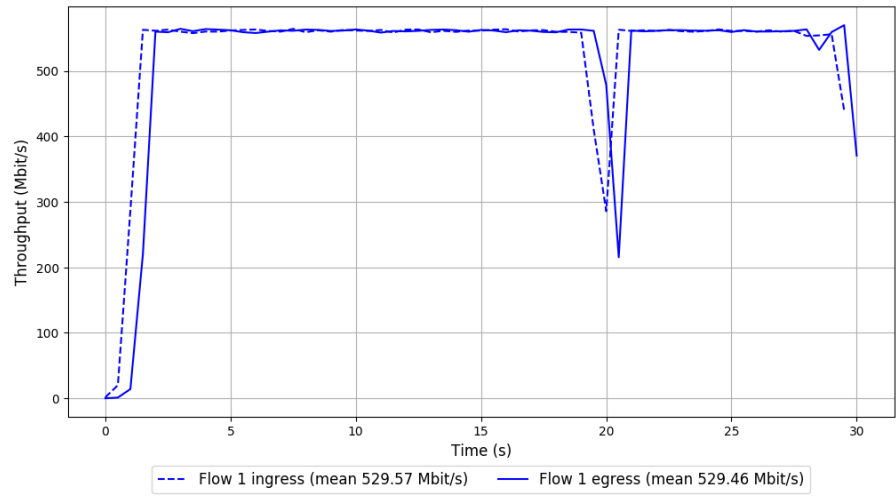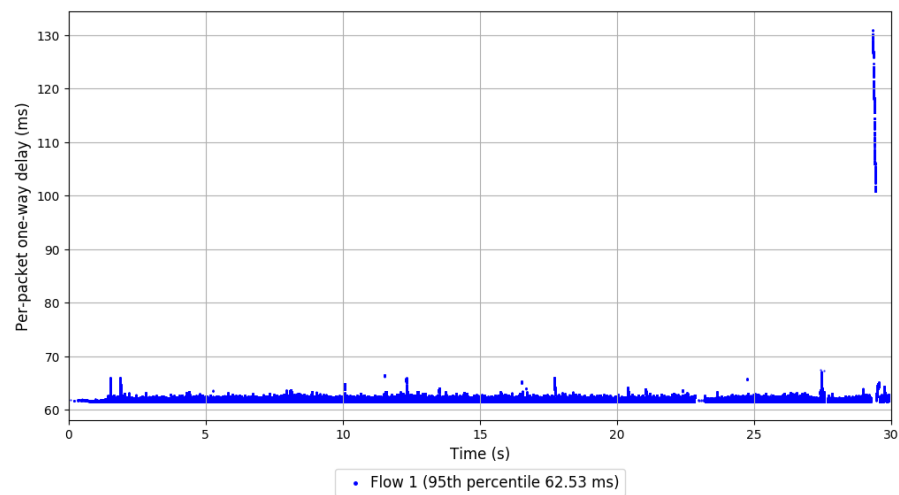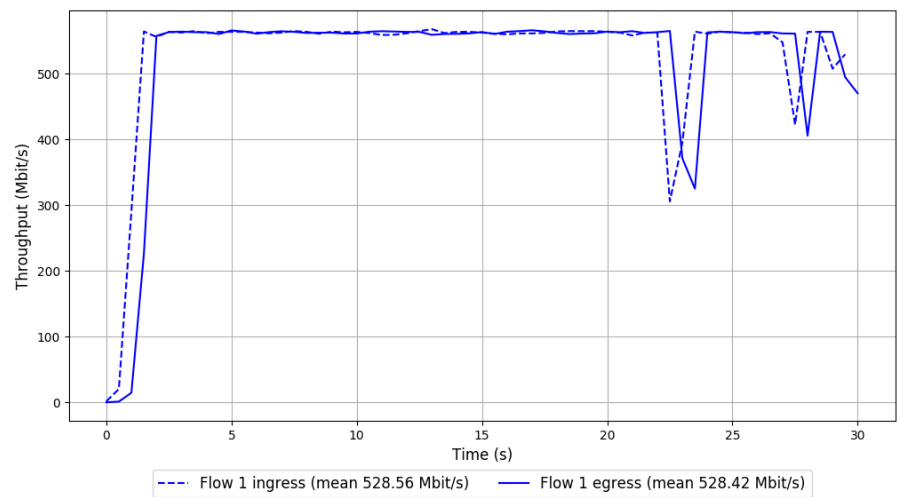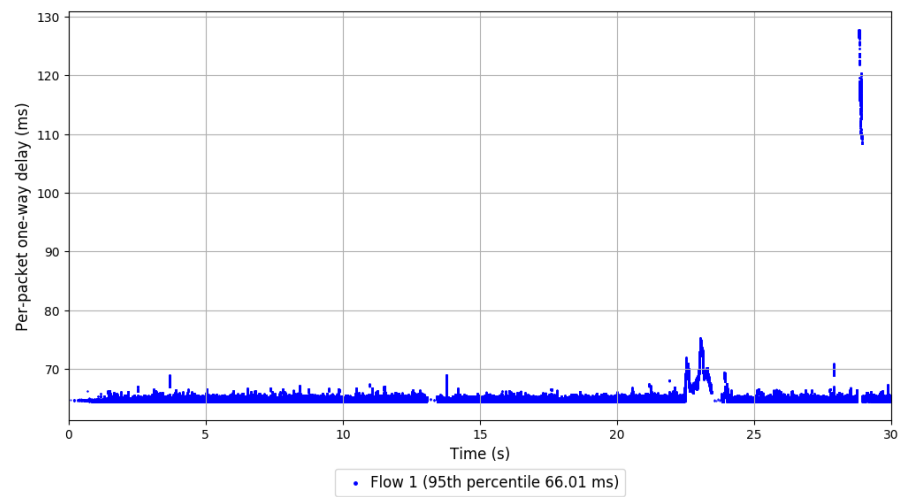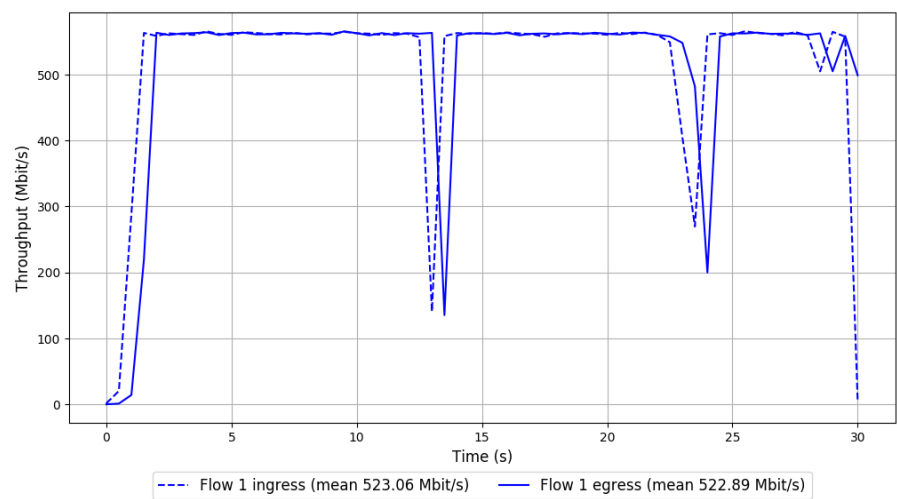
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-26 09:05:52
End at: 2018-10-26 09:06:22
Local clock offset: 0.14 ms
Remote clock offset: 1.359 ms


# Below is generated by plot.py at 2018-10-26 10:53:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 528.42 Mbit/s
95th percentile per-packet one-way delay: 62.535 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 528.42 Mbit/s
95th percentile per-packet one-way delay: 62.535 ms
Loss rate: 0.45%
```

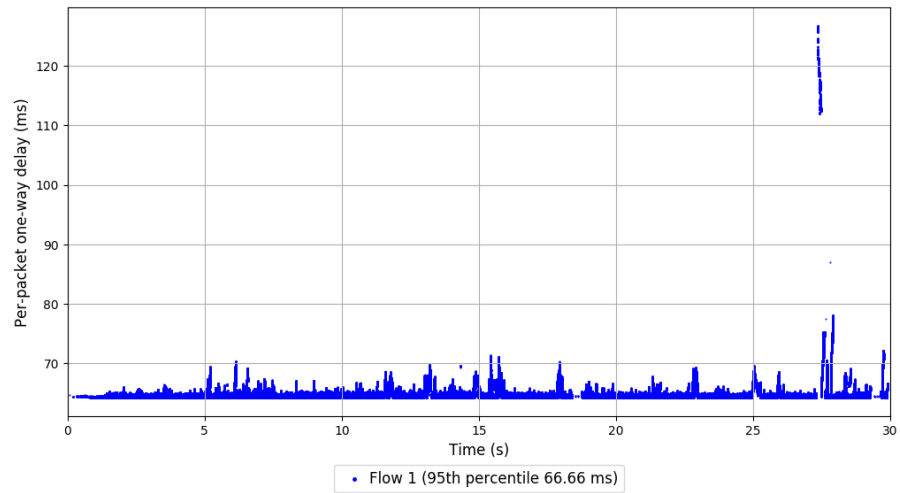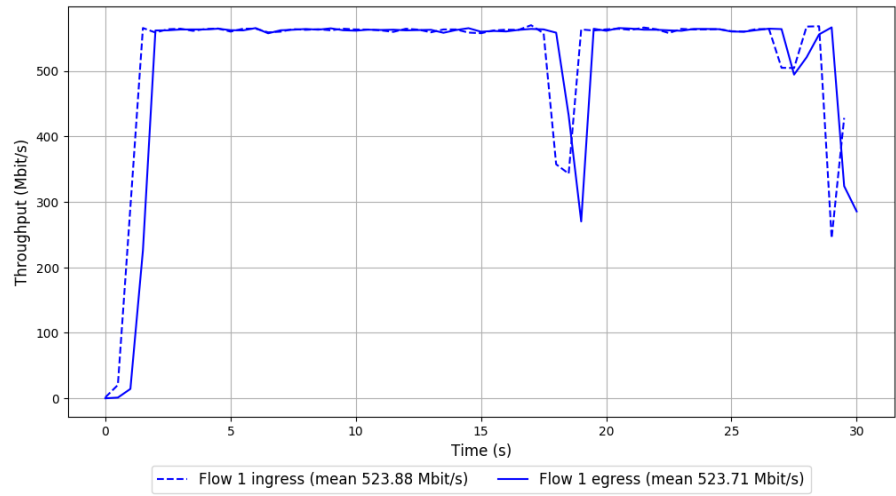Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 528.56 Mbit/s)   Flow 1 egress (mean 528.42 Mbit/s)

Flow 1 (95th percentile 62.53 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-26 09:31:40
End at: 2018-10-26 09:32:10
Local clock offset: 0.188 ms
Remote clock offset: -1.551 ms


# Below is generated by plot.py at 2018-10-26 10:53:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 522.89 Mbit/s
95th percentile per-packet one-way delay: 66.012 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 522.89 Mbit/s
95th percentile per-packet one-way delay: 66.012 ms
Loss rate: 0.45%
```
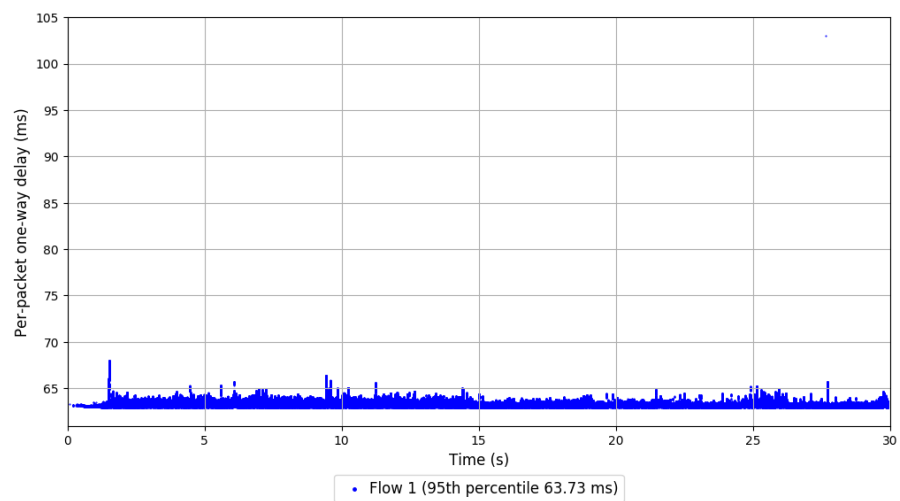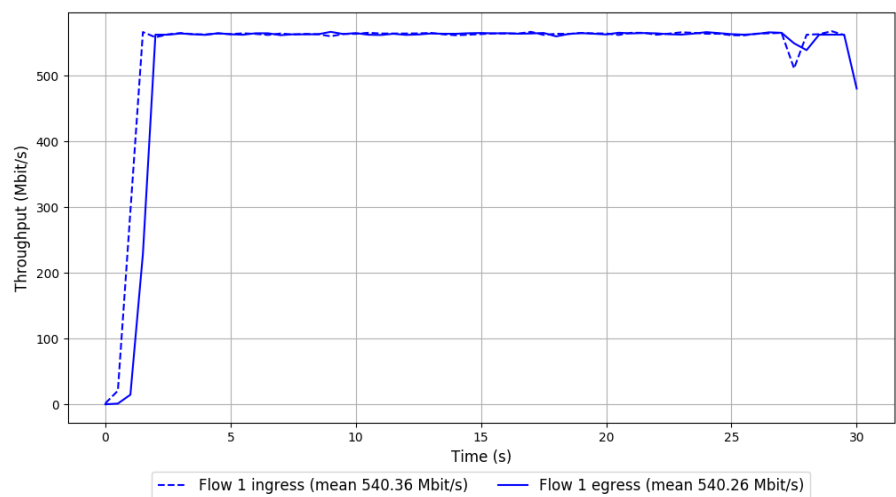
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-26 09:57:30
End at: 2018-10-26 09:58:00
Local clock offset: -0.015 ms
Remote clock offset: -1.418 ms

# Below is generated by plot.py at 2018-10-26 10:53:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 523.71 Mbit/s
95th percentile per-packet one-way delay: 66.655 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 523.71 Mbit/s
95th percentile per-packet one-way delay: 66.655 ms
Loss rate: 0.45%
```
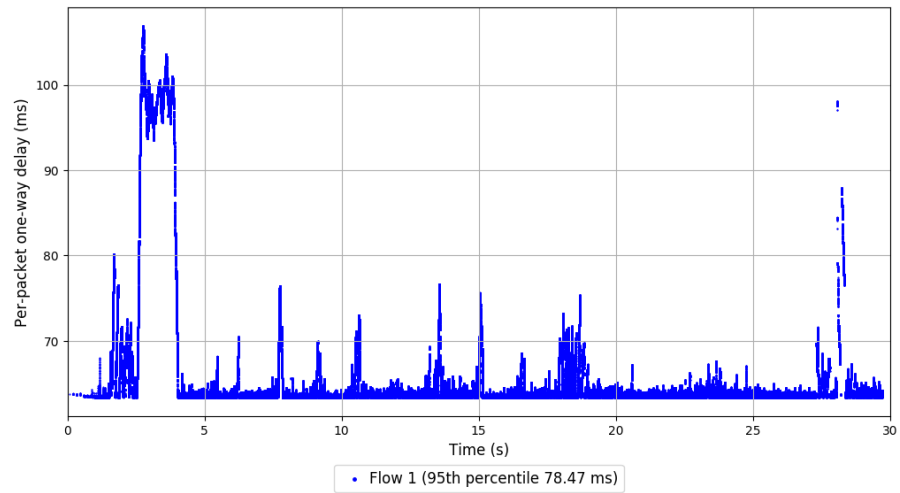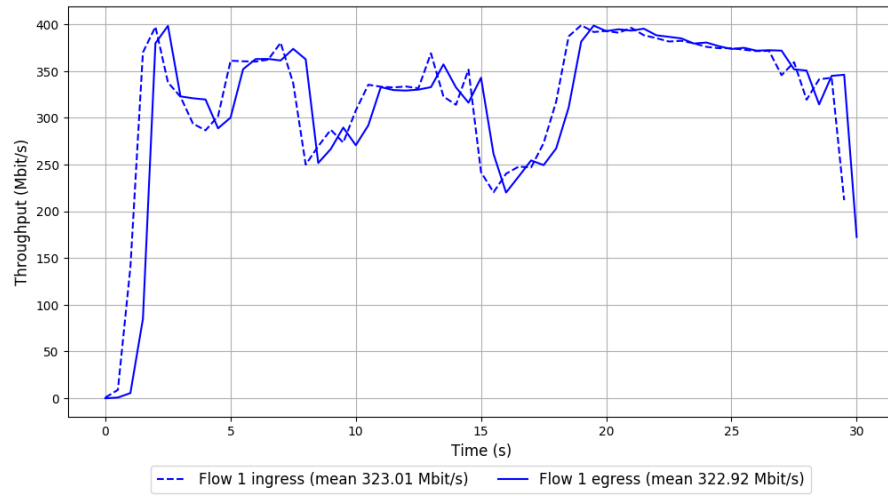
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 523.88 Mbit/s) ---- Flow 1 egress (mean 523.71 Mbit/s) ——

Flow 1 (95th percentile 66.66 ms) •

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```
Run 5: Statistics of TCP BBR

Start at: 2018-10-26 10:23:05
End at: 2018-10-26 10:23:35
Local clock offset: -0.122 ms
Remote clock offset: -0.168 ms


# Below is generated by plot.py at 2018-10-26 10:53:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 540.26 Mbit/s
95th percentile per-packet one-way delay: 63.728 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 540.26 Mbit/s
95th percentile per-packet one-way delay: 63.728 ms
Loss rate: 0.44%
```
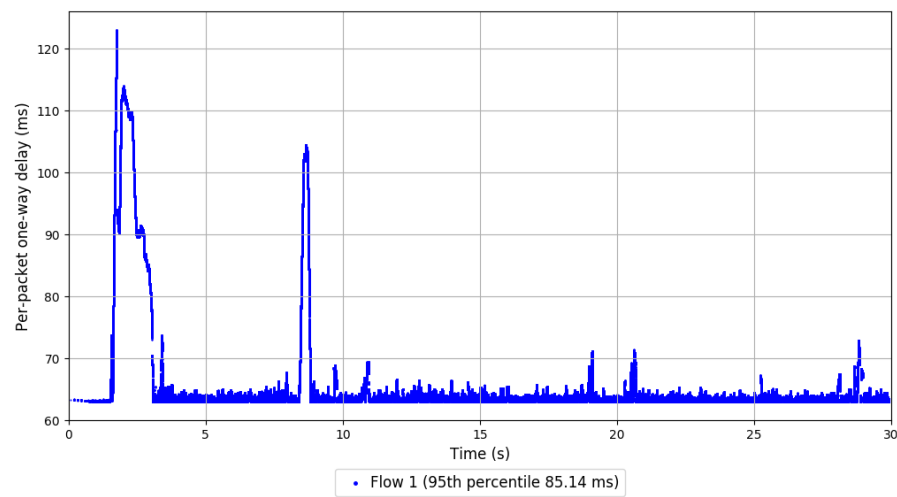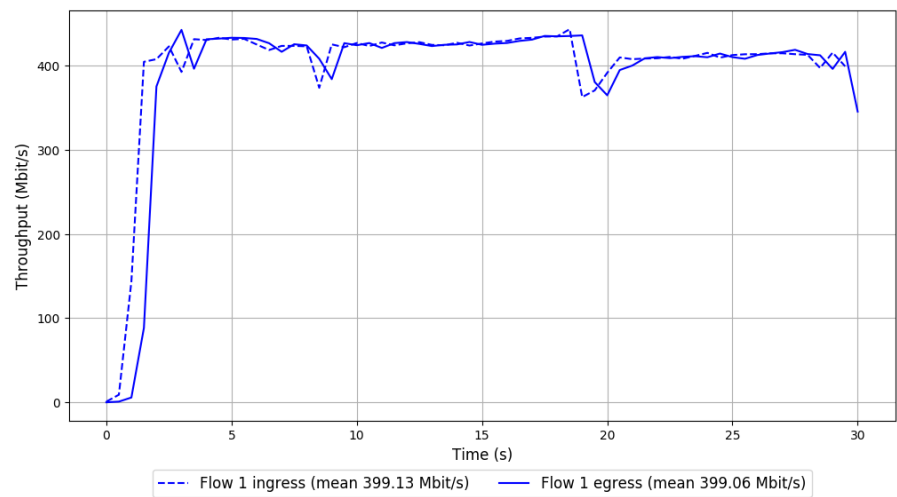
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-10-26 08:29:38
End at: 2018-10-26 08:30:08
Local clock offset: 0.115 ms
Remote clock offset: -0.688 ms

# Below is generated by plot.py at 2018-10-26 10:54:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 322.92 Mbit/s
95th percentile per-packet one-way delay: 78.469 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 322.92 Mbit/s
95th percentile per-packet one-way delay: 78.469 ms
Loss rate: 0.45%
```
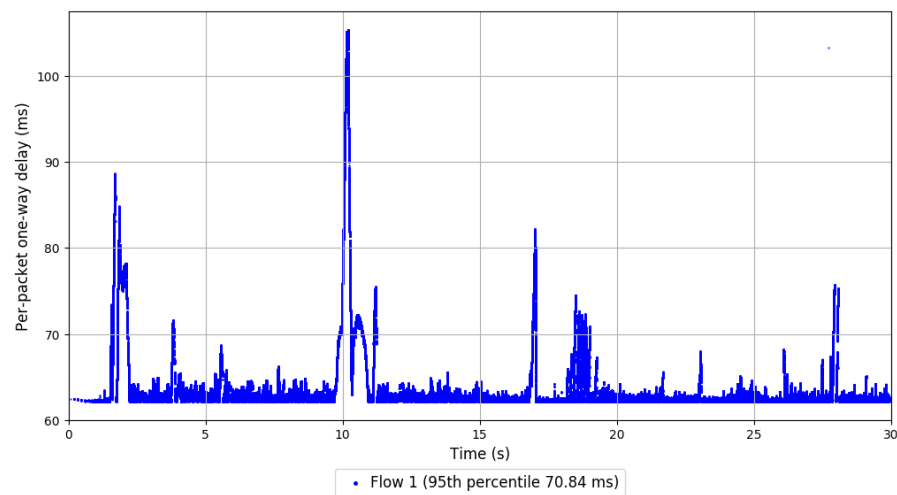
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 323.01 Mbit/s)   Flow 1 egress (mean 322.92 Mbit/s)

Flow 1 (95th percentile 78.47 ms)

```
Run 2: Statistics of Copa

Start at: 2018-10-26 08:55:19
End at: 2018-10-26 08:55:49
Local clock offset: 0.127 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-10-26 10:56:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 399.06 Mbit/s
95th percentile per-packet one-way delay: 85.144 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 399.06 Mbit/s
95th percentile per-packet one-way delay: 85.144 ms
Loss rate: 0.44%
```
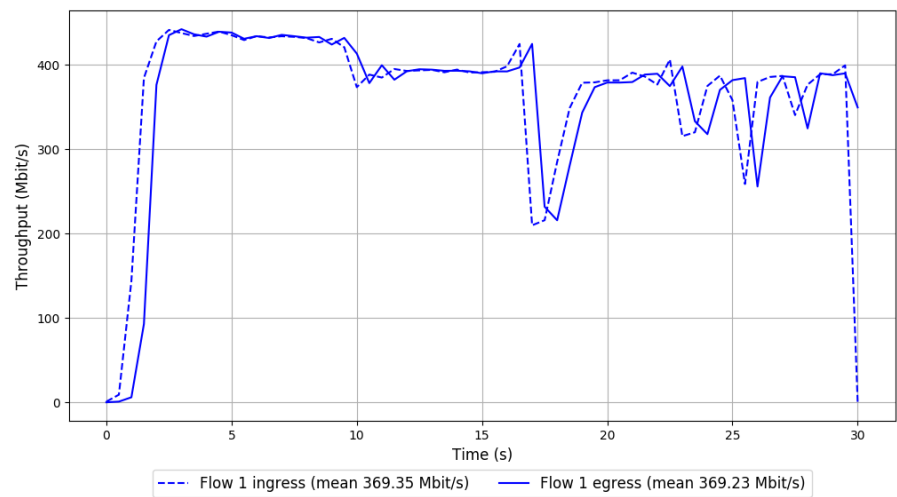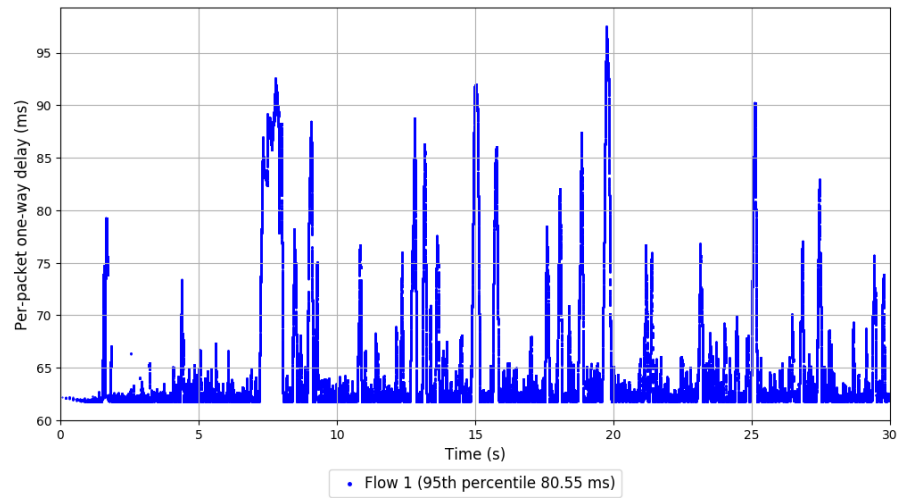
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-26 09:21:16
End at: 2018-10-26 09:21:46
Local clock offset: 0.174 ms
Remote clock offset: 0.423 ms


# Below is generated by plot.py at 2018-10-26 10:56:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 369.23 Mbit/s
95th percentile per-packet one-way delay: 70.841 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 369.23 Mbit/s
95th percentile per-packet one-way delay: 70.841 ms
Loss rate: 0.45%
```

Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-10-26 09:47:01
End at: 2018-10-26 09:47:31
Local clock offset: 0.174 ms
Remote clock offset: 0.93 ms


# Below is generated by plot.py at 2018-10-26 11:04:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.05 Mbit/s
95th percentile per-packet one-way delay: 80.548 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 372.05 Mbit/s
95th percentile per-packet one-way delay: 80.548 ms
Loss rate: 0.46%
```
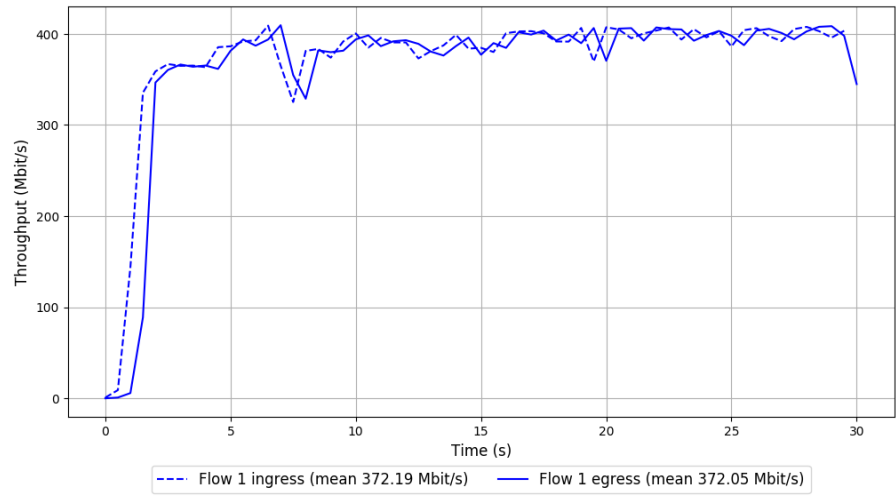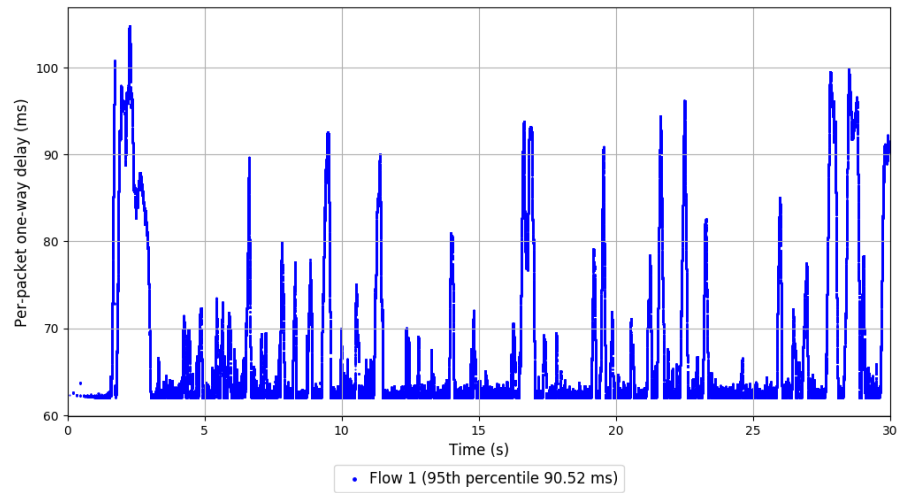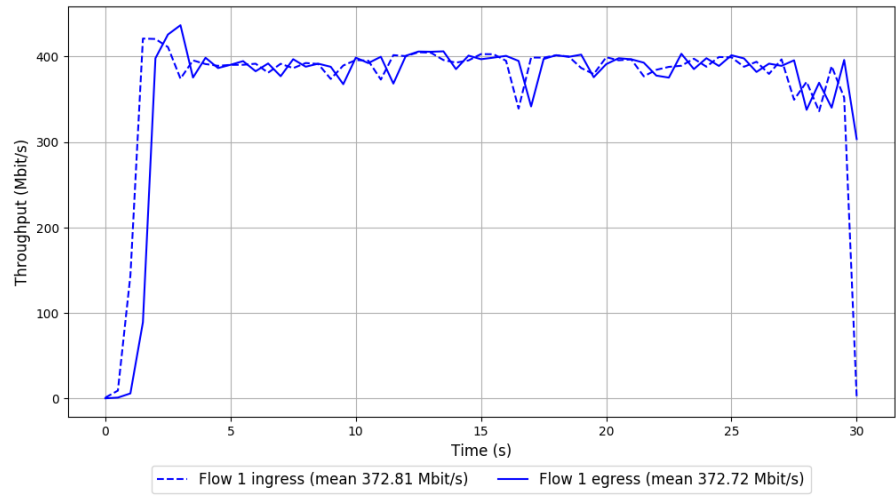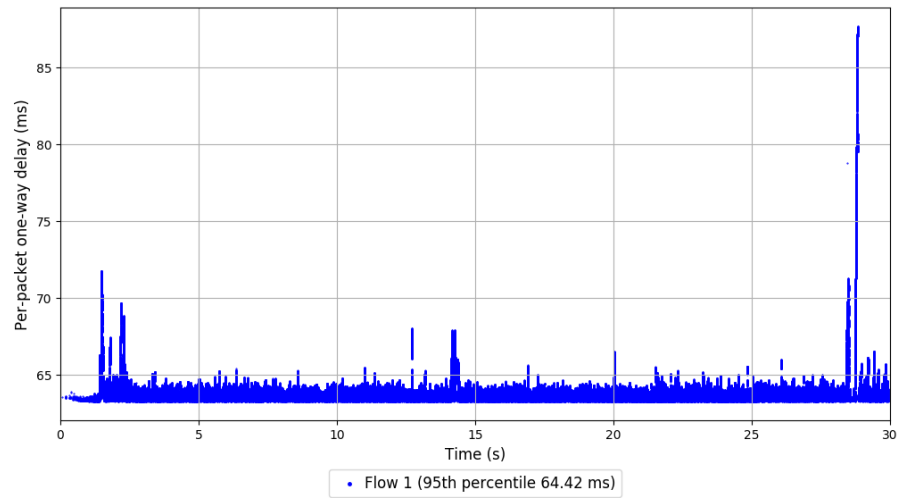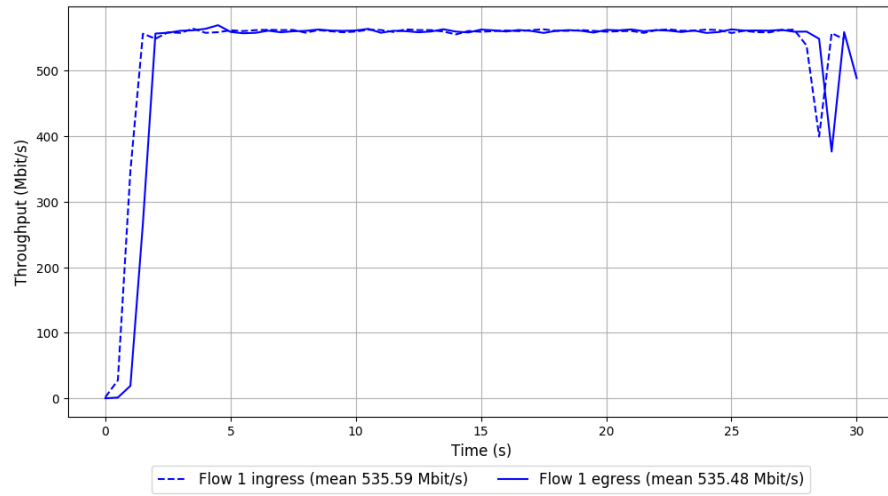
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 372.19 Mbit/s)   Flow 1 egress (mean 372.05 Mbit/s)

Flow 1 (95th percentile 80.55 ms)

```
Run 5: Statistics of Copa

Start at: 2018-10-26 10:12:38
End at: 2018-10-26 10:13:08
Local clock offset: -0.1 ms
Remote clock offset: 0.626 ms


# Below is generated by plot.py at 2018-10-26 11:04:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.72 Mbit/s
95th percentile per-packet one-way delay: 90.515 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 372.72 Mbit/s
95th percentile per-packet one-way delay: 90.515 ms
Loss rate: 0.44%
```
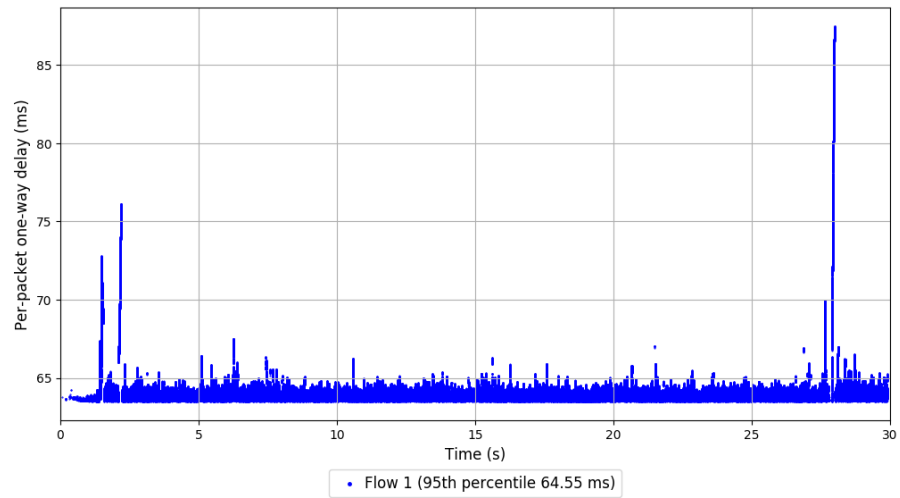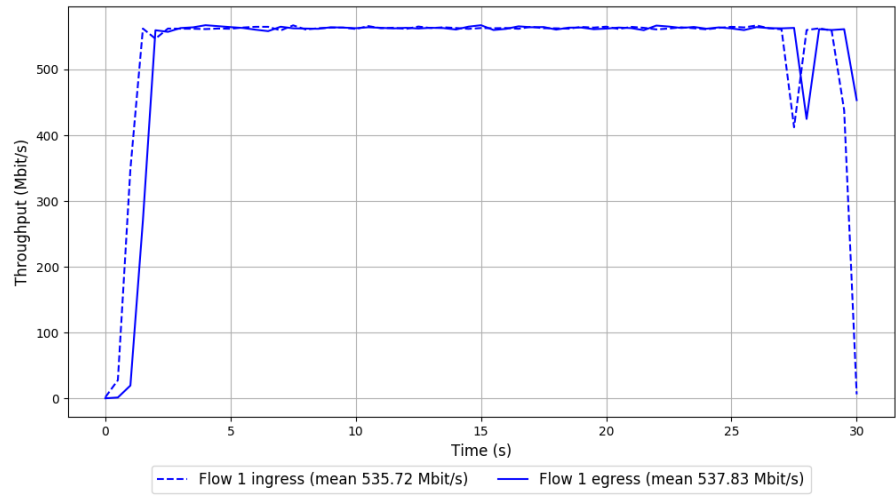
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-26 08:44:11
End at: 2018-10-26 08:44:41
Local clock offset: 0.104 ms
Remote clock offset: -0.297 ms


# Below is generated by plot.py at 2018-10-26 11:04:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 535.48 Mbit/s
95th percentile per-packet one-way delay: 64.415 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 535.48 Mbit/s
95th percentile per-packet one-way delay: 64.415 ms
Loss rate: 0.44%
```

Run 1: Report of TCP Cubic — Data Link

Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 09:10:05
End at: 2018-10-26 09:10:35
Local clock offset: 0.151 ms
Remote clock offset: -0.663 ms


# Below is generated by plot.py at 2018-10-26 11:04:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 537.83 Mbit/s
95th percentile per-packet one-way delay: 64.550 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 537.83 Mbit/s
95th percentile per-packet one-way delay: 64.550 ms
Loss rate: 0.16%
```
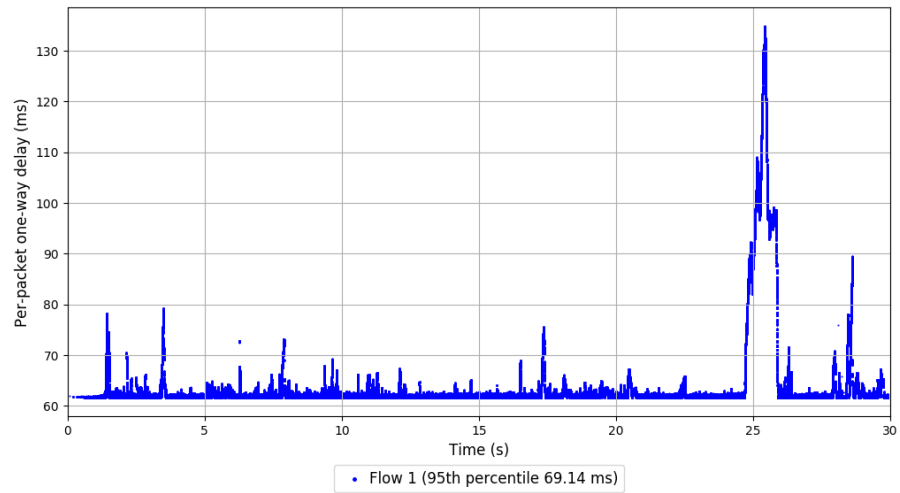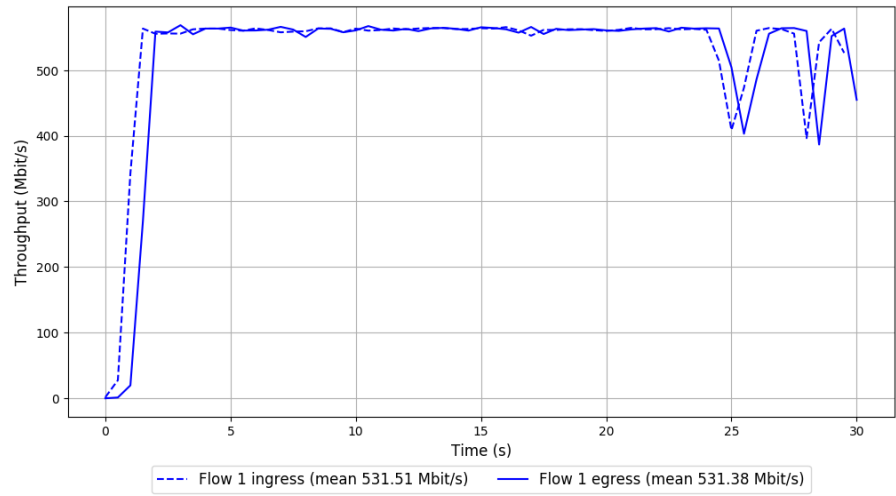
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 535.72 Mbit/s)   Flow 1 egress (mean 537.83 Mbit/s)

• Flow 1 (95th percentile 64.55 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 09:35:51
End at: 2018-10-26 09:36:21
Local clock offset: 0.166 ms
Remote clock offset: 1.131 ms


# Below is generated by plot.py at 2018-10-26 11:04:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 531.38 Mbit/s
95th percentile per-packet one-way delay: 69.143 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 531.38 Mbit/s
95th percentile per-packet one-way delay: 69.143 ms
Loss rate: 0.45%
```
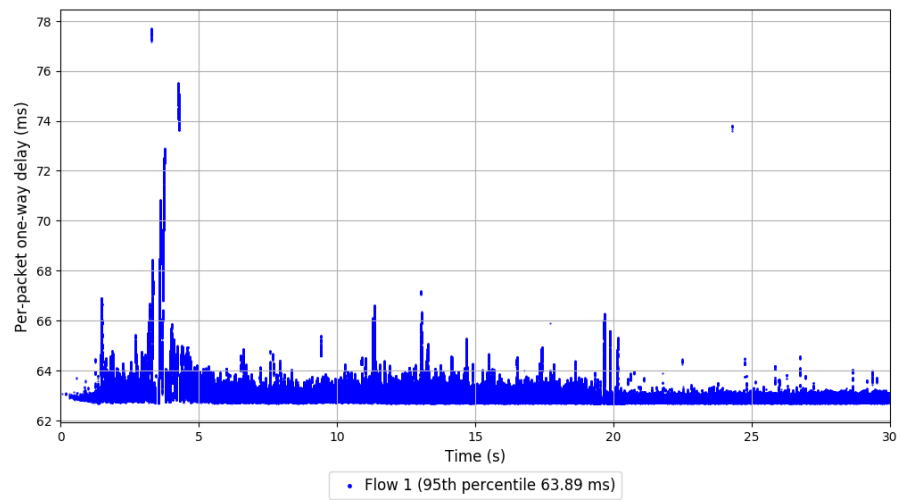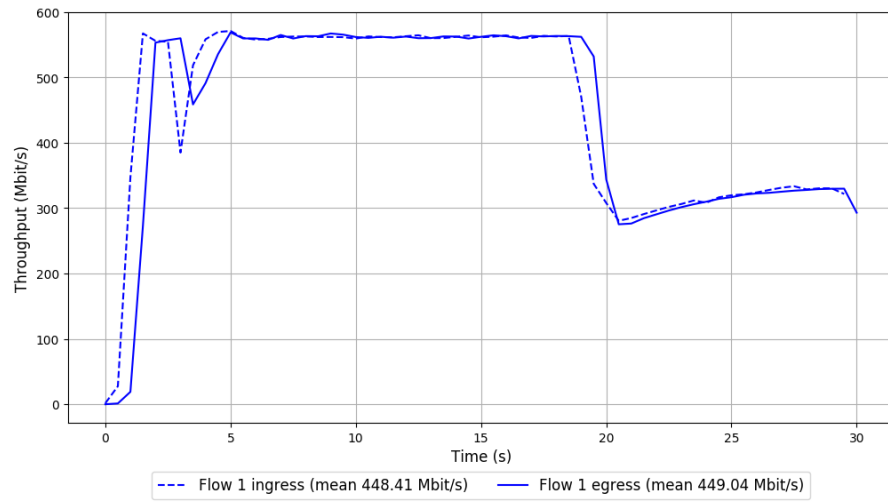
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 531.51 Mbit/s) —— Flow 1 egress (mean 531.38 Mbit/s)

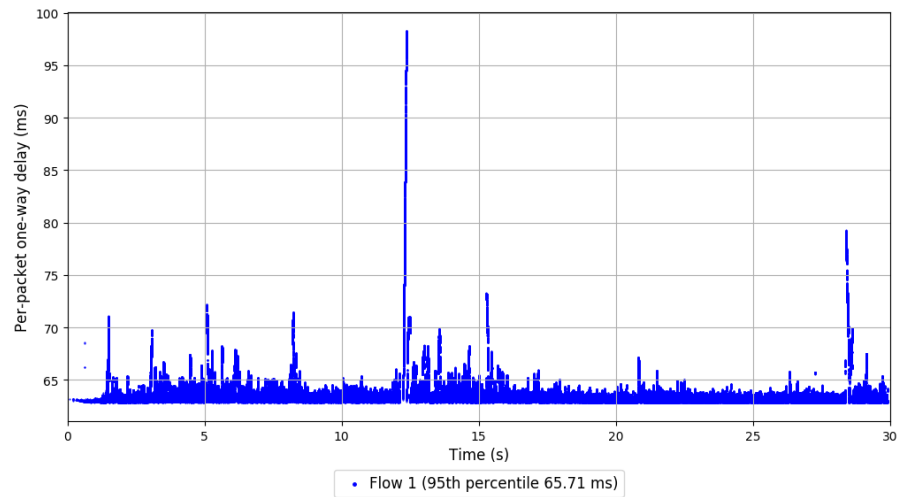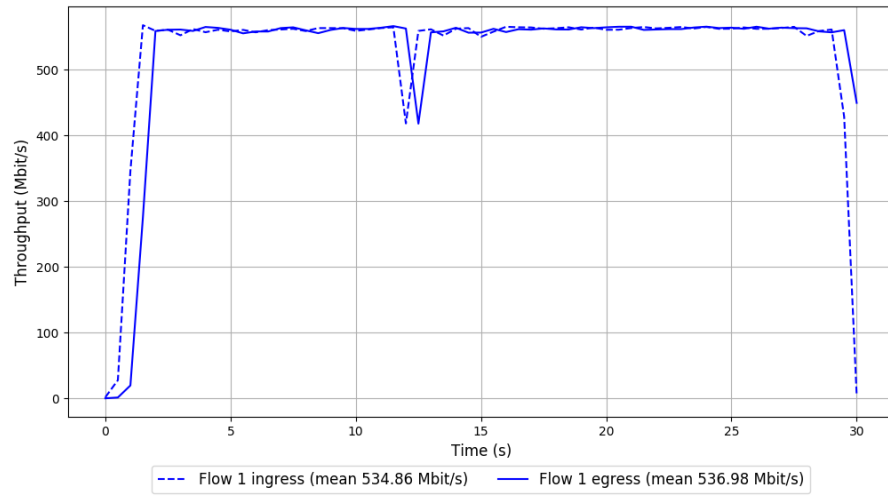

• Flow 1 (95th percentile 69.14 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 10:01:28
End at: 2018-10-26 10:01:58
Local clock offset: -0.061 ms
Remote clock offset: 0.193 ms


# Below is generated by plot.py at 2018-10-26 11:04:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 449.04 Mbit/s
95th percentile per-packet one-way delay: 63.892 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 449.04 Mbit/s
95th percentile per-packet one-way delay: 63.892 ms
Loss rate: 0.29%
```
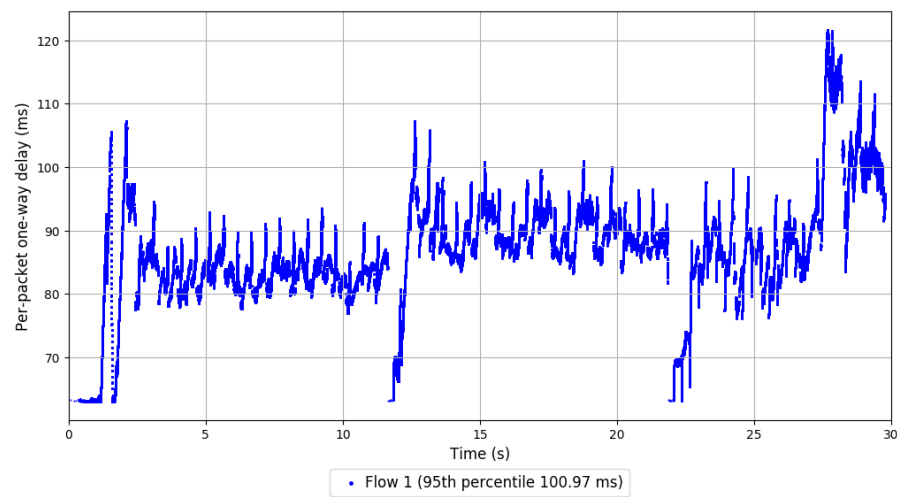
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 448.41 Mbit/s) --- Flow 1 egress (mean 449.04 Mbit/s)

• Flow 1 (95th percentile 63.89 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 10:27:14
End at: 2018-10-26 10:27:44
Local clock offset: -0.11 ms
Remote clock offset: -0.223 ms


# Below is generated by plot.py at 2018-10-26 11:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 536.98 Mbit/s
95th percentile per-packet one-way delay: 65.709 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 536.98 Mbit/s
95th percentile per-packet one-way delay: 65.709 ms
Loss rate: 0.16%
```
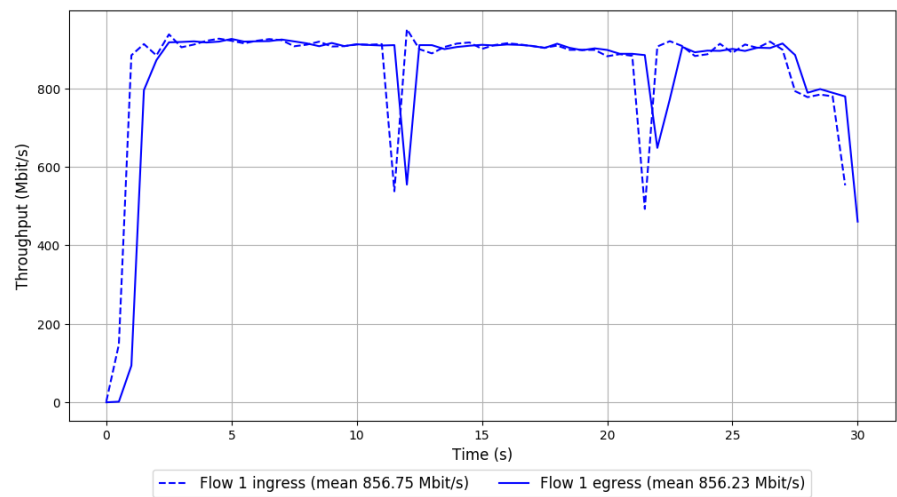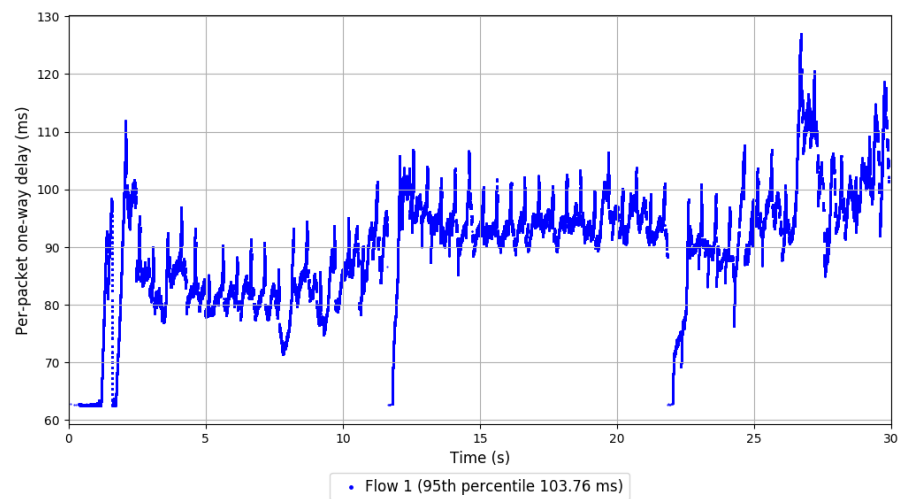
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-10-26 08:33:51
End at: 2018-10-26 08:34:21
Local clock offset: 0.101 ms
Remote clock offset: 0.151 ms


# Below is generated by plot.py at 2018-10-26 11:16:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 856.23 Mbit/s
95th percentile per-packet one-way delay: 100.965 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 856.23 Mbit/s
95th percentile per-packet one-way delay: 100.965 ms
Loss rate: 0.49%
```
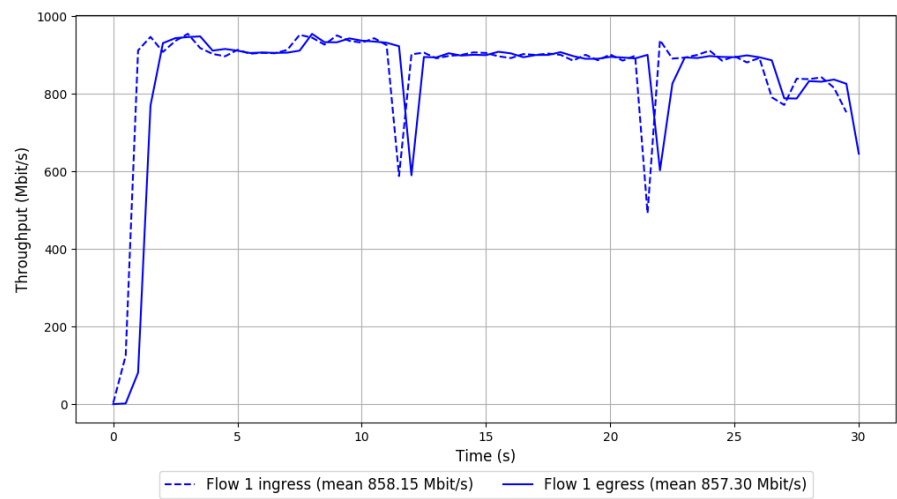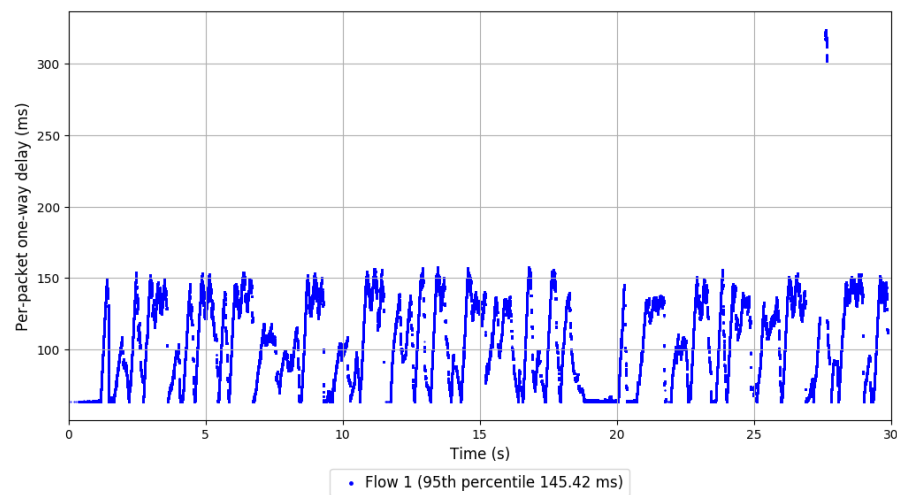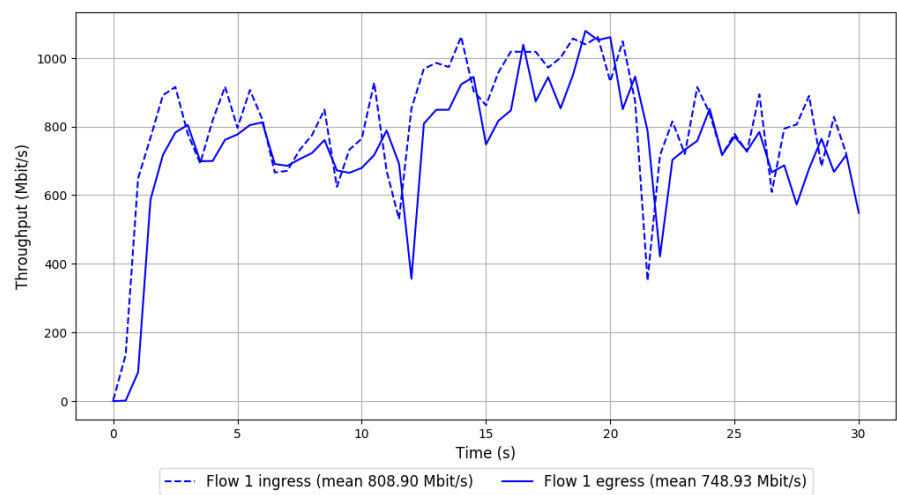
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 856.75 Mbit/s)   Flow 1 egress (mean 856.23 Mbit/s)

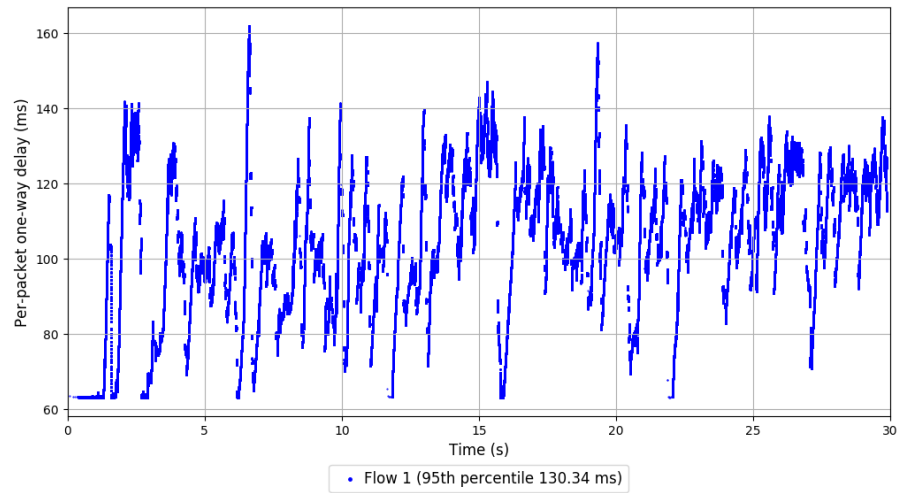
• Flow 1 (95th percentile 100.97 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-26 08:59:40
End at: 2018-10-26 09:00:10
Local clock offset: 0.122 ms
Remote clock offset: 0.122 ms


# Below is generated by plot.py at 2018-10-26 11:20:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 857.30 Mbit/s
95th percentile per-packet one-way delay: 103.761 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 857.30 Mbit/s
95th percentile per-packet one-way delay: 103.761 ms
Loss rate: 0.52%
```
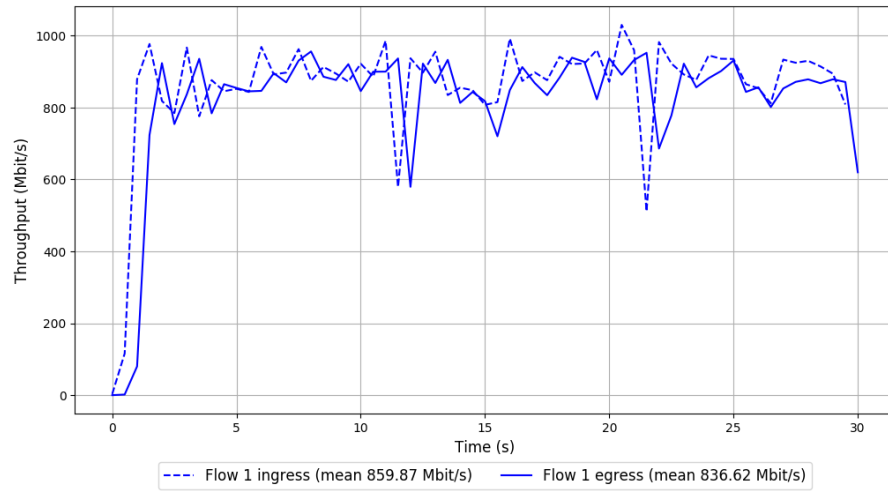
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-10-26 09:25:33
End at: 2018-10-26 09:26:03
Local clock offset: 0.175 ms
Remote clock offset: -0.065 ms


# Below is generated by plot.py at 2018-10-26 11:20:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 748.93 Mbit/s
95th percentile per-packet one-way delay: 145.423 ms
Loss rate: 7.81%
-- Flow 1:
Average throughput: 748.93 Mbit/s
95th percentile per-packet one-way delay: 145.423 ms
Loss rate: 7.81%
```
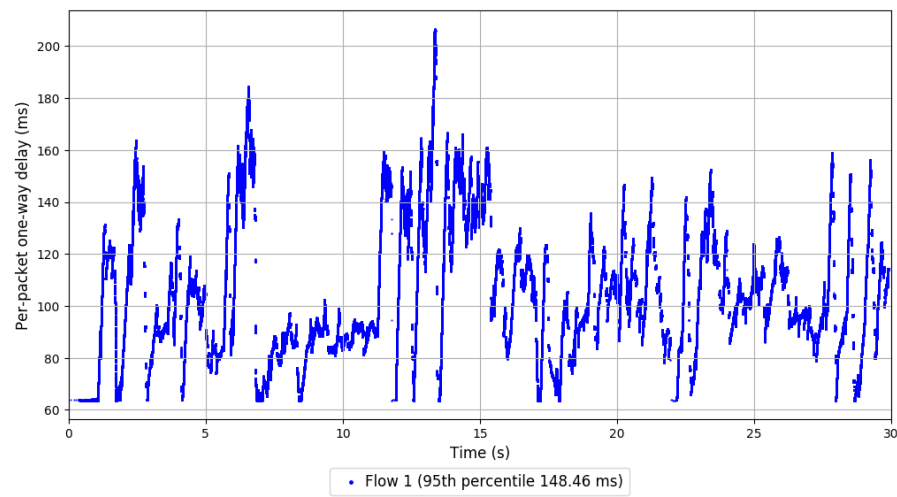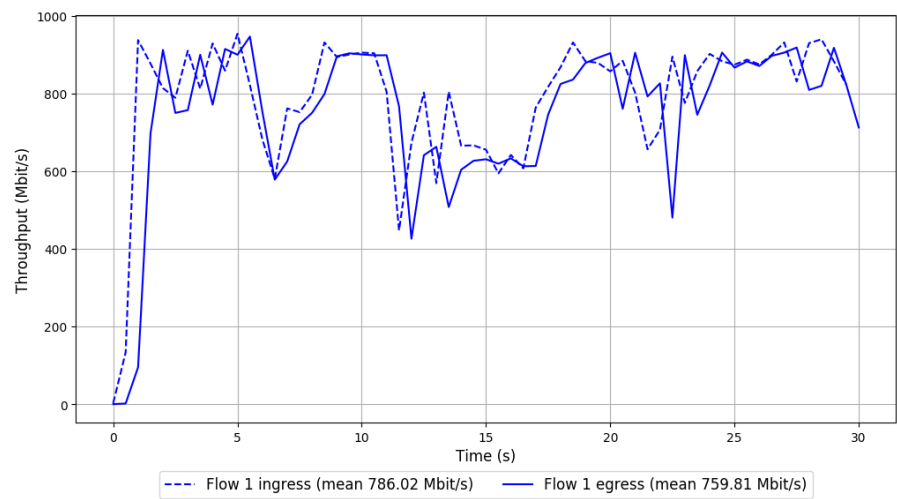
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-26 09:51:18
End at: 2018-10-26 09:51:48
Local clock offset: 0.092 ms
Remote clock offset: -0.284 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 836.62 Mbit/s
95th percentile per-packet one-way delay: 130.341 ms
Loss rate: 3.12%
-- Flow 1:
Average throughput: 836.62 Mbit/s
95th percentile per-packet one-way delay: 130.341 ms
Loss rate: 3.12%
```
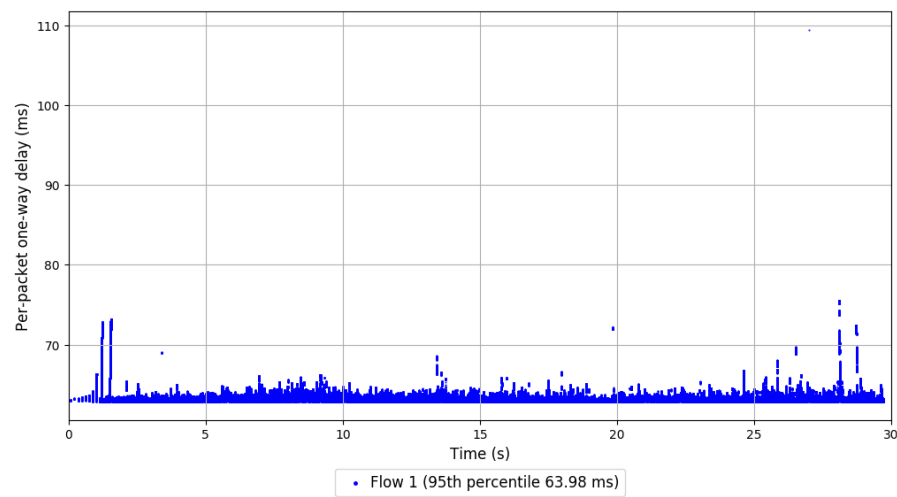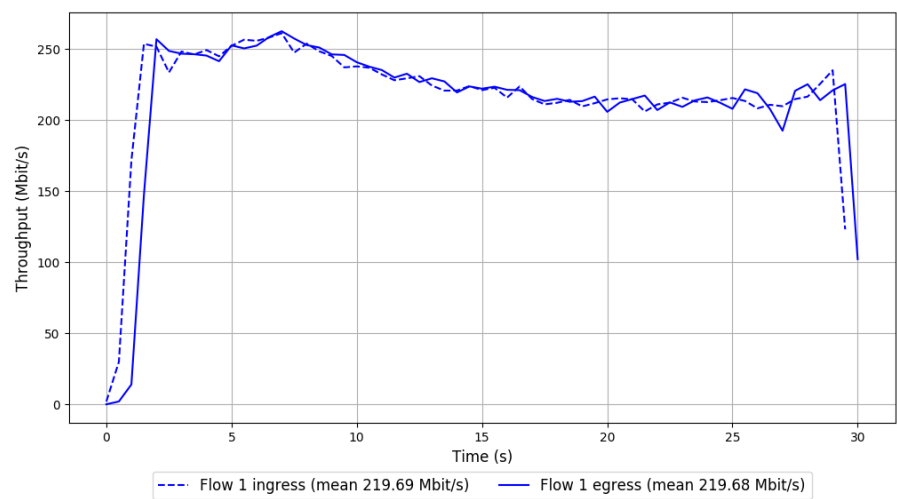
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 859.87 Mbit/s)   Flow 1 egress (mean 836.62 Mbit/s)

• Flow 1 (95th percentile 130.34 ms)

```
Run 5: Statistics of FillP

Start at: 2018-10-26 10:16:56
End at: 2018-10-26 10:17:26
Local clock offset: -0.114 ms
Remote clock offset: -0.576 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 759.81 Mbit/s
95th percentile per-packet one-way delay: 148.457 ms
Loss rate: 3.74%
-- Flow 1:
Average throughput: 759.81 Mbit/s
95th percentile per-packet one-way delay: 148.457 ms
Loss rate: 3.74%
```

Run 5: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-10-26 08:38:32
End at: 2018-10-26 08:39:02
Local clock offset: 0.105 ms
Remote clock offset: 0.002 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.68 Mbit/s
95th percentile per-packet one-way delay: 63.976 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 219.68 Mbit/s
95th percentile per-packet one-way delay: 63.976 ms
Loss rate: 0.43%
```
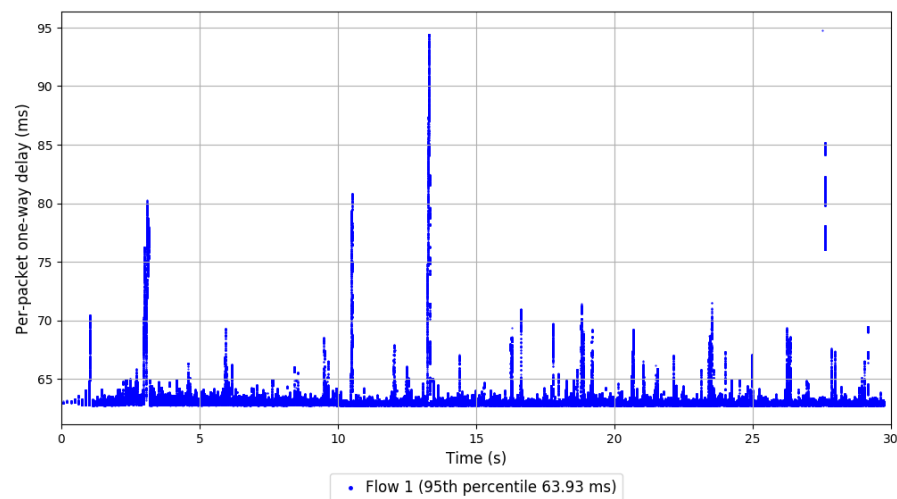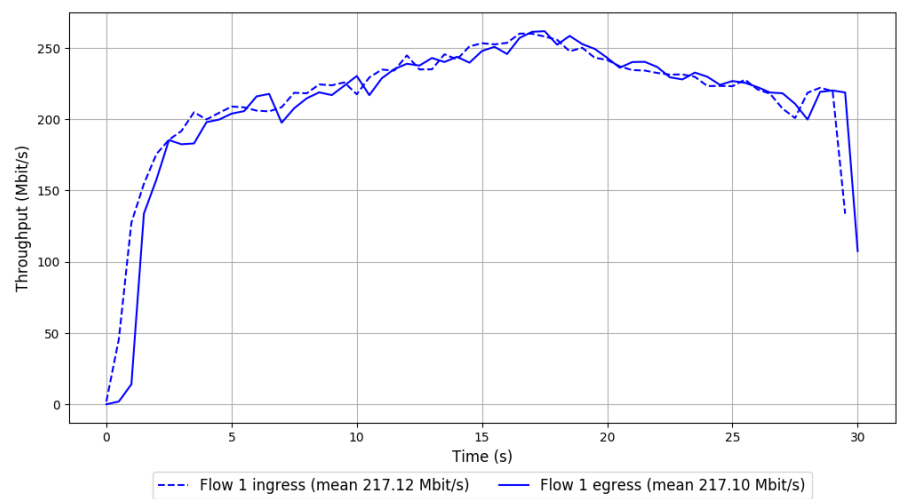
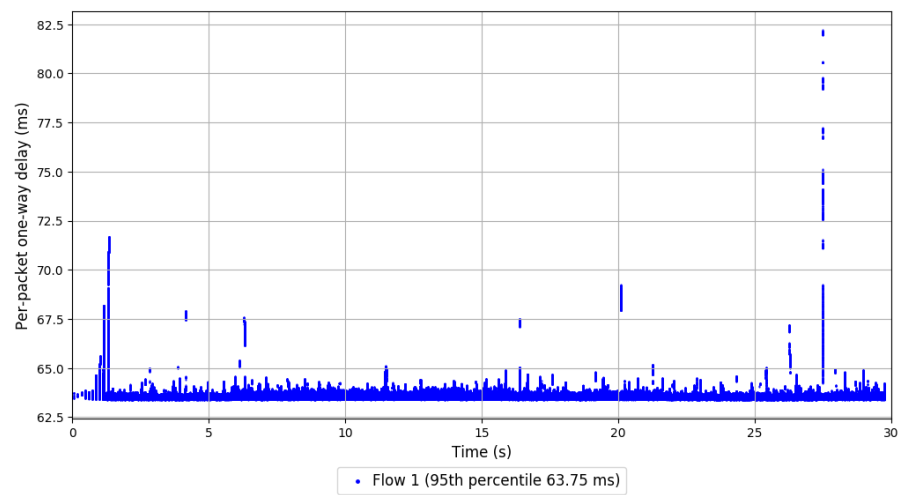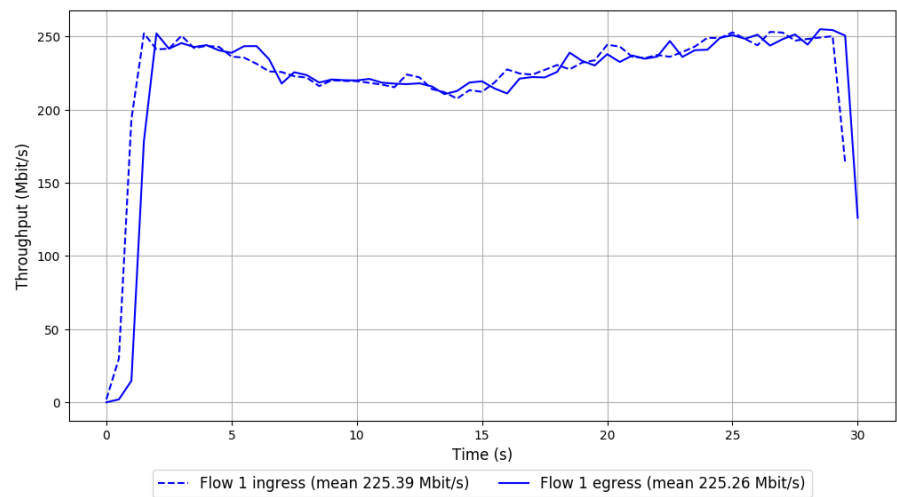Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-26 09:04:26
End at: 2018-10-26 09:04:56
Local clock offset: 0.132 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 217.10 Mbit/s
95th percentile per-packet one-way delay: 63.933 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 217.10 Mbit/s
95th percentile per-packet one-way delay: 63.933 ms
Loss rate: 0.43%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-26 09:30:13
End at: 2018-10-26 09:30:43
Local clock offset: 0.186 ms
Remote clock offset: -0.445 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.26 Mbit/s
95th percentile per-packet one-way delay: 63.750 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 225.26 Mbit/s
95th percentile per-packet one-way delay: 63.750 ms
Loss rate: 0.48%
```
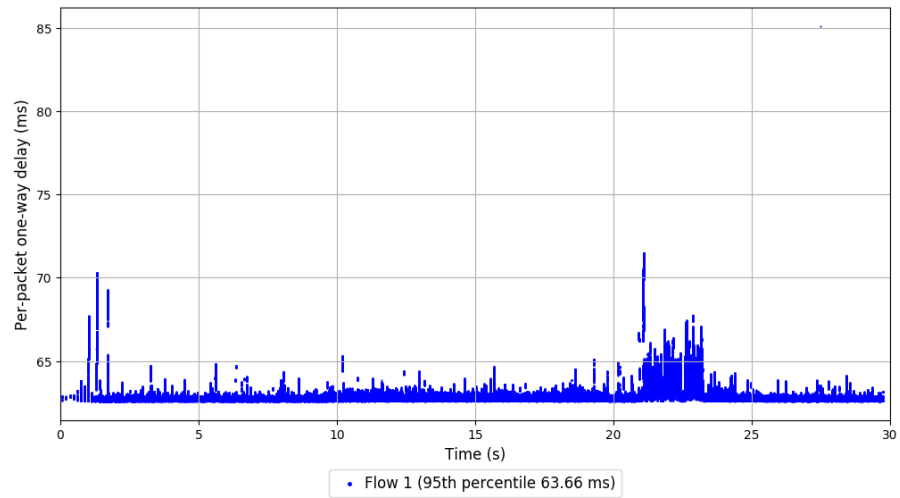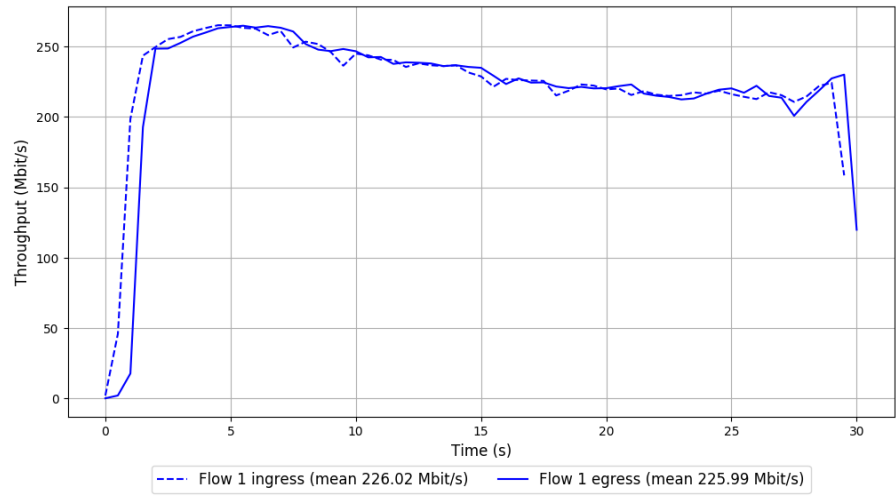
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-26 09:56:03
End at: 2018-10-26 09:56:33
Local clock offset: 0.021 ms
Remote clock offset: 0.06 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.99 Mbit/s
95th percentile per-packet one-way delay: 63.665 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 225.99 Mbit/s
95th percentile per-packet one-way delay: 63.665 ms
Loss rate: 0.44%
```
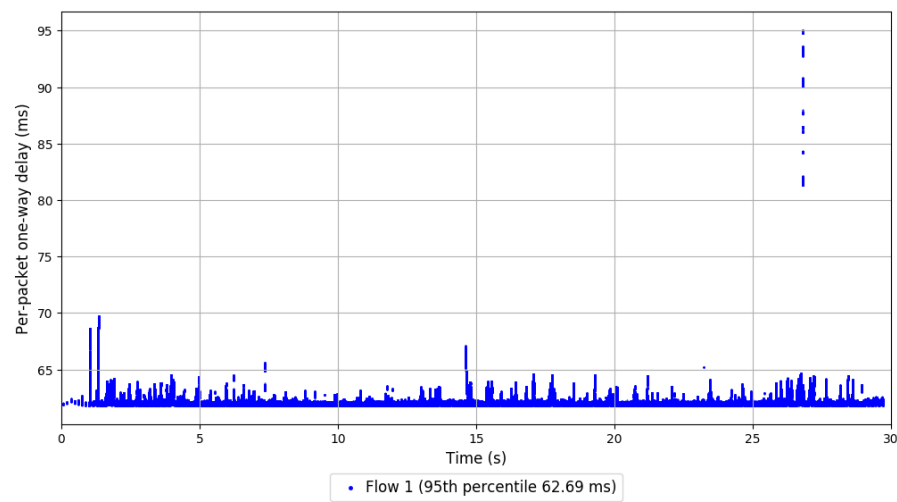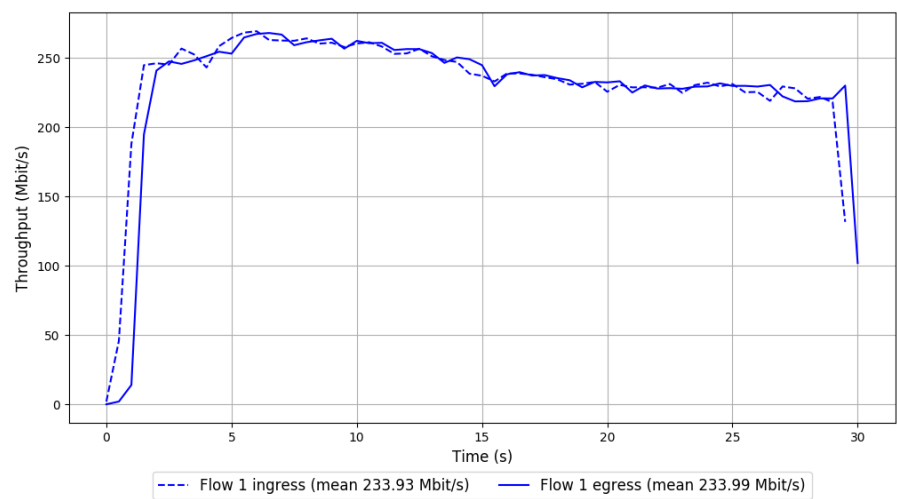
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-10-26 10:21:37
End at: 2018-10-26 10:22:07
Local clock offset: -0.119 ms
Remote clock offset: 0.949 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 233.99 Mbit/s
95th percentile per-packet one-way delay: 62.686 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 233.99 Mbit/s
95th percentile per-packet one-way delay: 62.686 ms
Loss rate: 0.40%
```

Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-26 08:35:32
End at: 2018-10-26 08:36:02
Local clock offset: 0.112 ms
Remote clock offset: -0.226 ms


# Below is generated by plot.py at 2018-10-26 11:20:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 260.14 Mbit/s
95th percentile per-packet one-way delay: 76.330 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 260.14 Mbit/s
95th percentile per-packet one-way delay: 76.330 ms
Loss rate: 0.32%
```
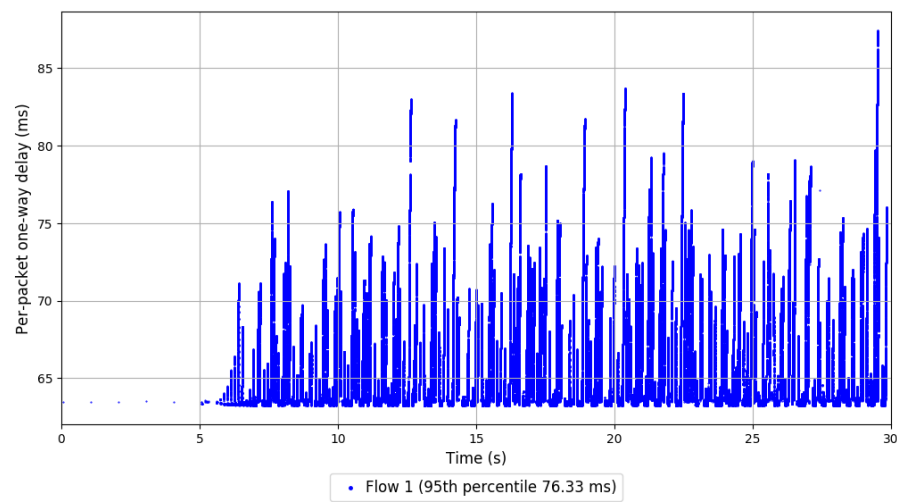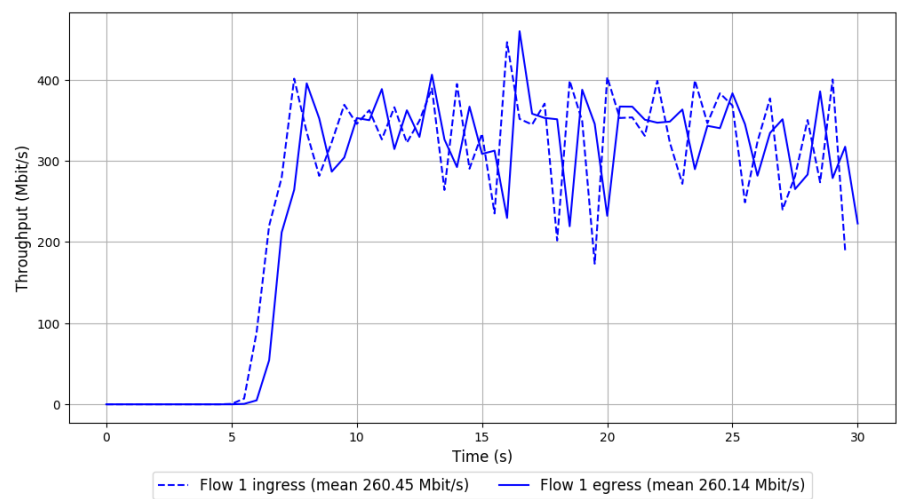
Run 1: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 09:01:21
End at: 2018-10-26 09:01:51
Local clock offset: 0.132 ms
Remote clock offset: -0.44 ms


# Below is generated by plot.py at 2018-10-26 11:21:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 308.28 Mbit/s
95th percentile per-packet one-way delay: 77.130 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 308.28 Mbit/s
95th percentile per-packet one-way delay: 77.130 ms
Loss rate: 0.41%
```
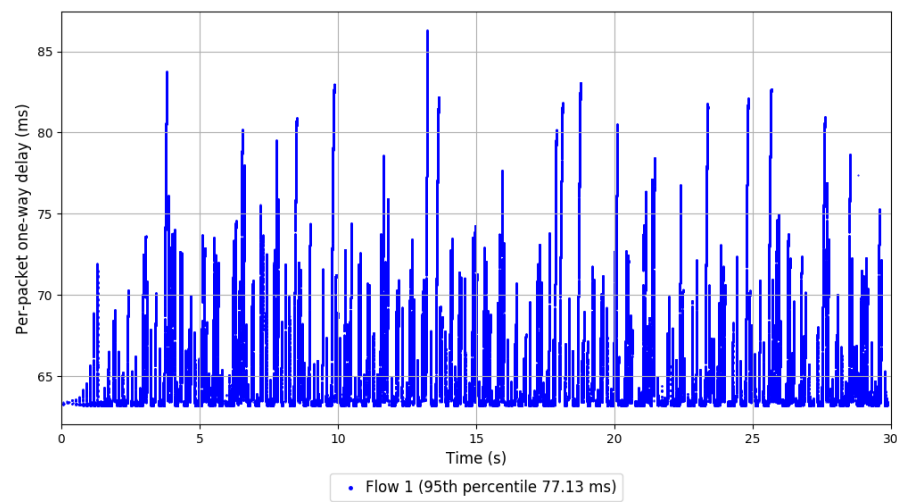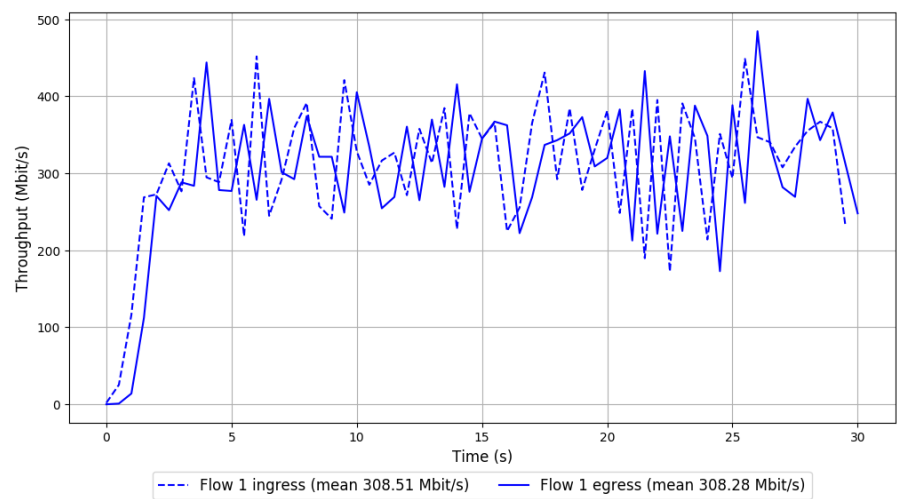
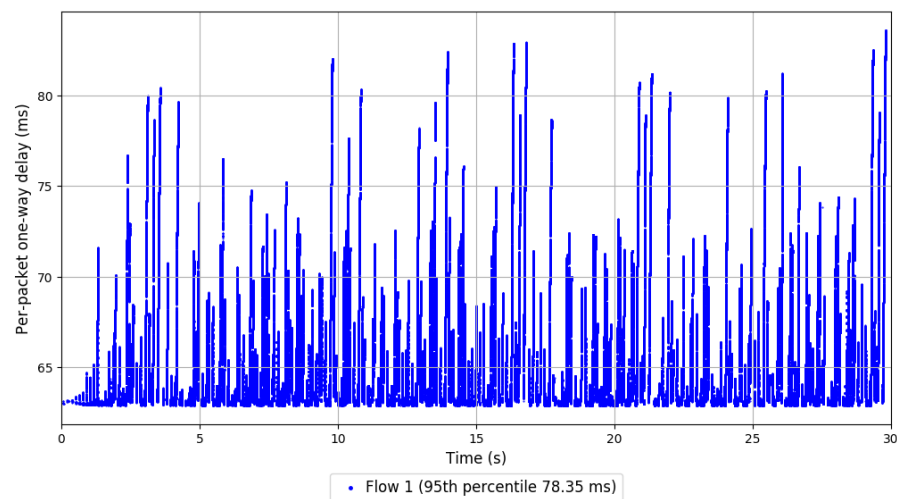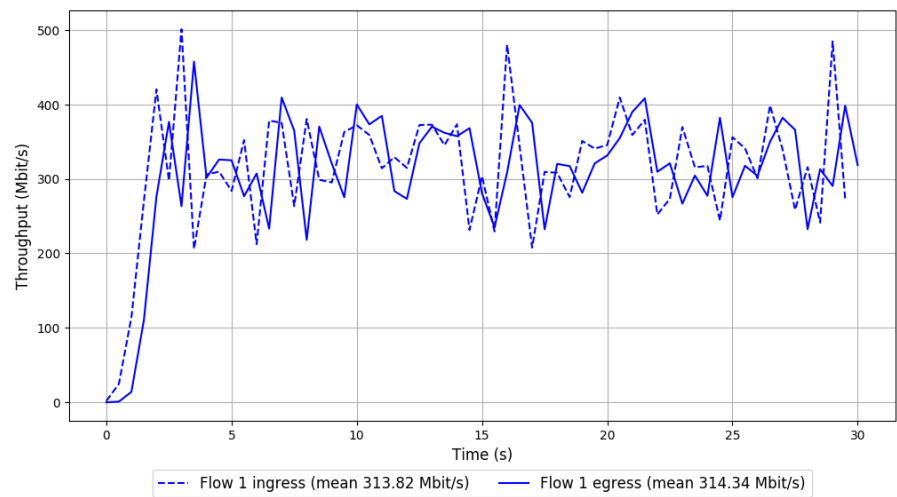# Run 2: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 09:27:11
End at: 2018-10-26 09:27:41
Local clock offset: 0.171 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2018-10-26 11:23:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 314.34 Mbit/s
95th percentile per-packet one-way delay: 78.352 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 314.34 Mbit/s
95th percentile per-packet one-way delay: 78.352 ms
Loss rate: 0.28%
```
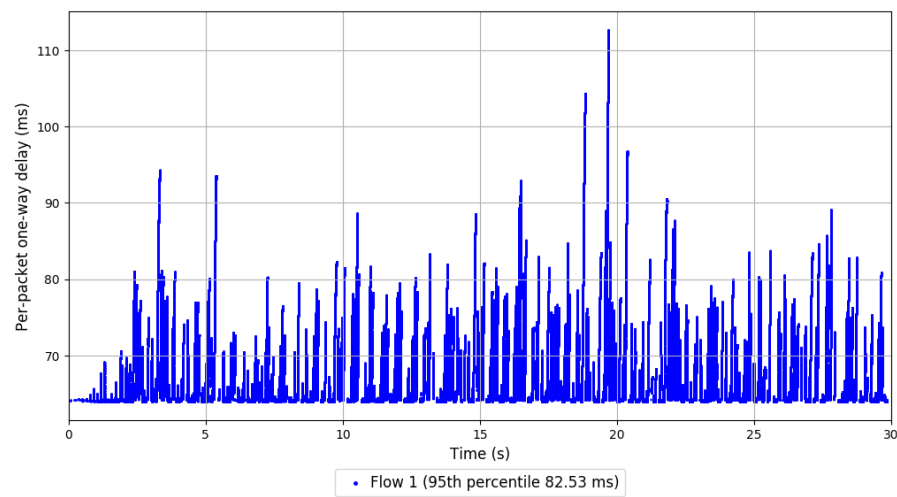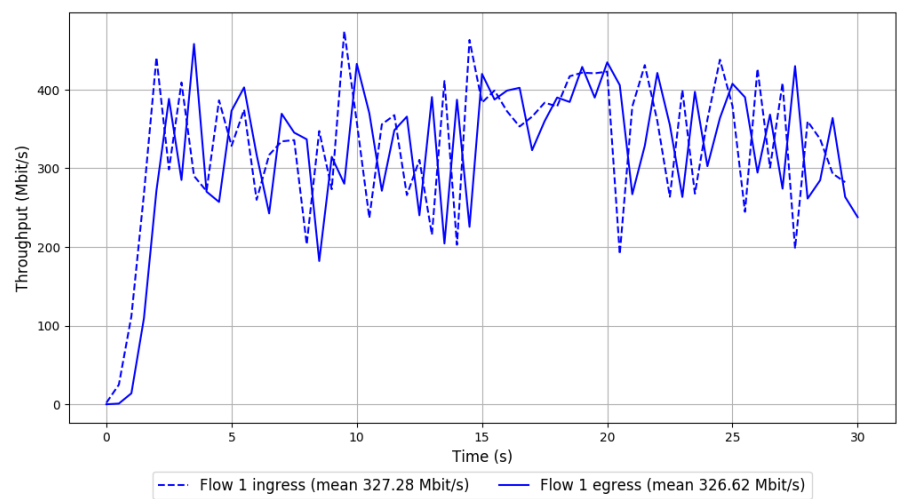
Run 3: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 313.82 Mbit/s)   Flow 1 egress (mean 314.34 Mbit/s)

• Flow 1 (95th percentile 78.35 ms)

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

Start at: 2018-10-26 09:52:58
End at: 2018-10-26 09:53:28
Local clock offset: 0.01 ms
Remote clock offset: -1.12 ms


# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 326.62 Mbit/s
95th percentile per-packet one-way delay: 82.528 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 326.62 Mbit/s
95th percentile per-packet one-way delay: 82.528 ms
Loss rate: 0.62%
```
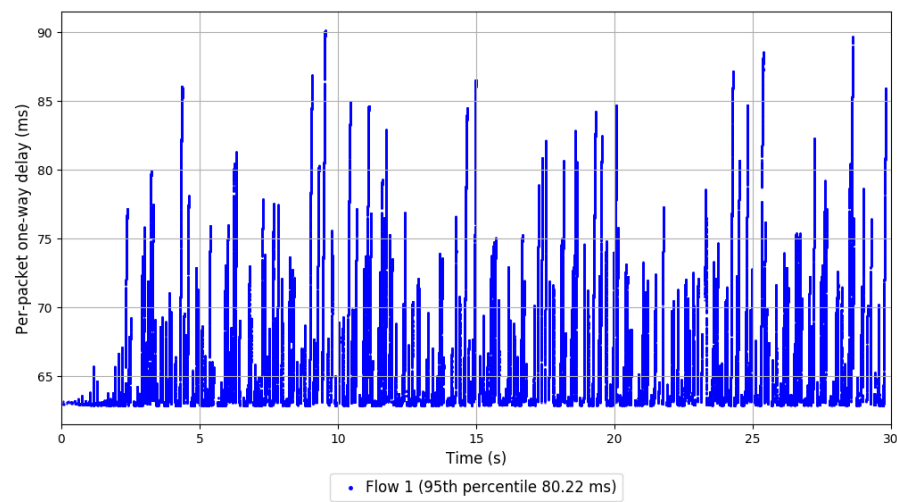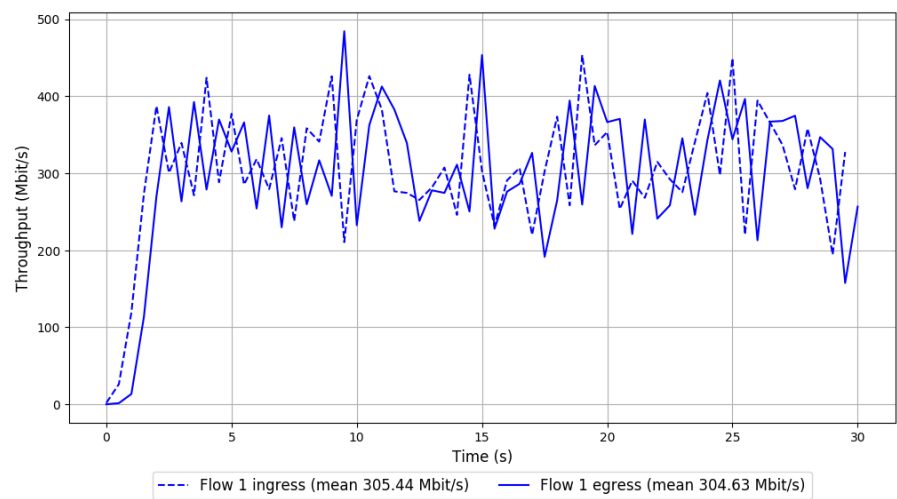
Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 10:18:34
End at: 2018-10-26 10:19:04
Local clock offset: -0.135 ms
Remote clock offset: -0.092 ms


# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 304.63 Mbit/s
95th percentile per-packet one-way delay: 80.223 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 304.63 Mbit/s
95th percentile per-packet one-way delay: 80.223 ms
Loss rate: 0.69%
```

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

Flow 1 ingress (mean 305.44 Mbit/s) Flow 1 egress (mean 304.63 Mbit/s)
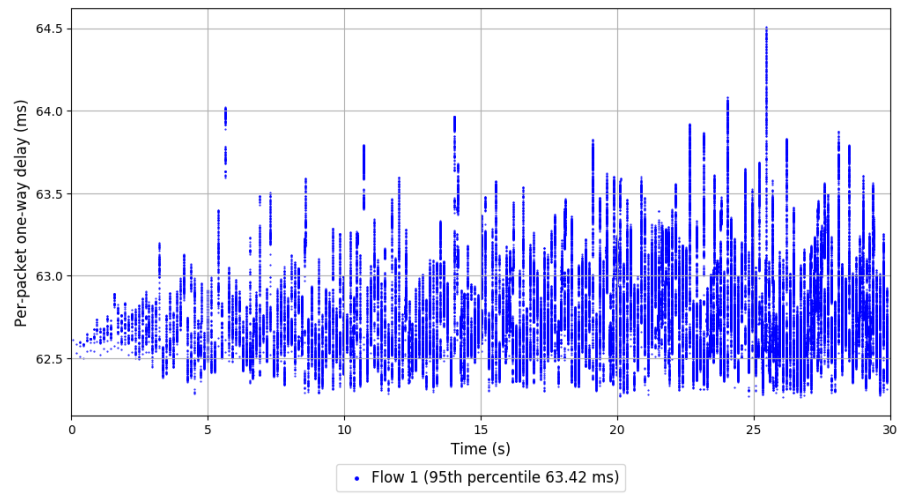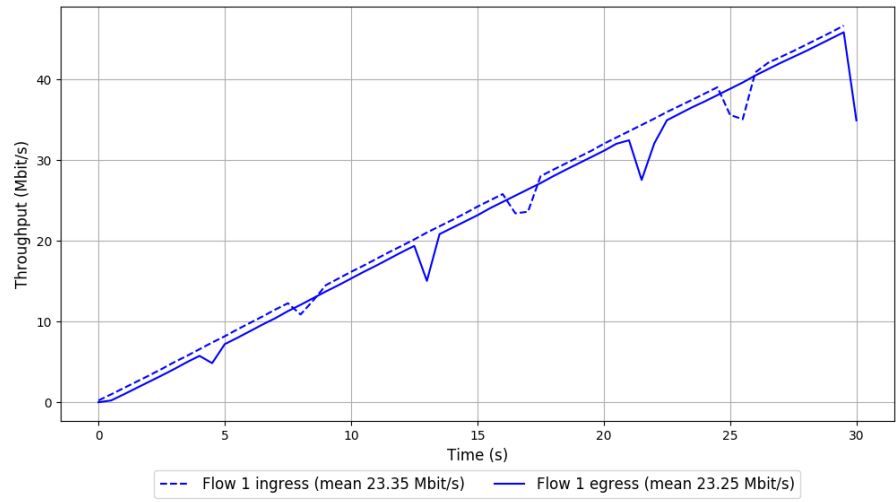

• Flow 1 (95th percentile 80.22 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-26 08:32:41
End at: 2018-10-26 08:33:11
Local clock offset: 0.089 ms
Remote clock offset: 0.585 ms


# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.25 Mbit/s
95th percentile per-packet one-way delay: 63.424 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 23.25 Mbit/s
95th percentile per-packet one-way delay: 63.424 ms
Loss rate: 0.84%
```
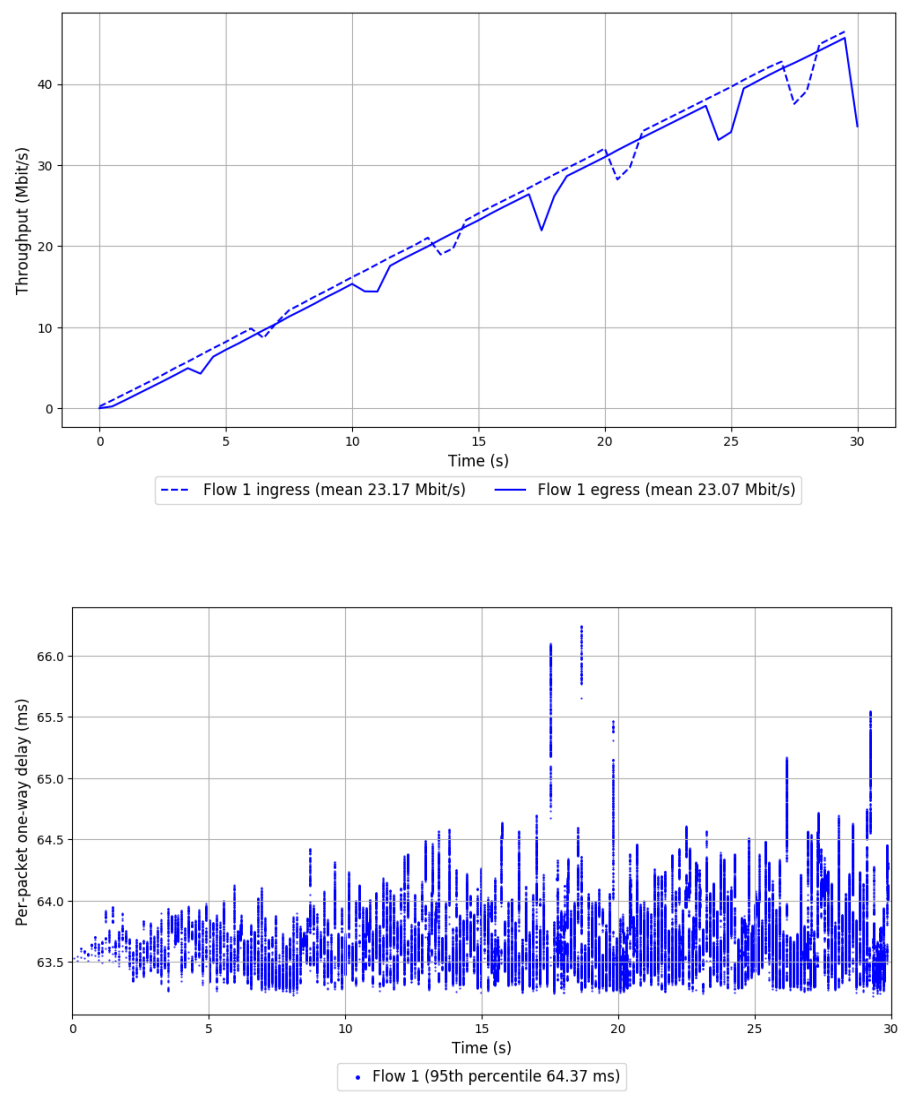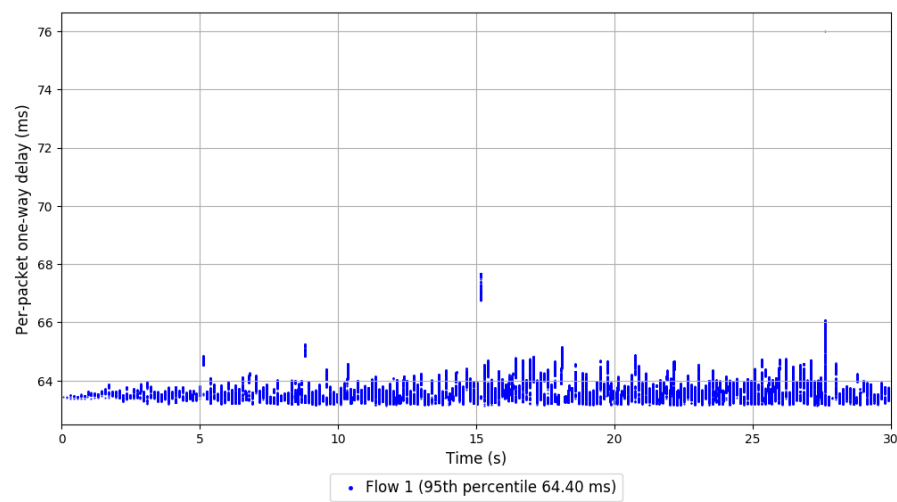
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-26 08:58:30
End at: 2018-10-26 08:59:00
Local clock offset: 0.149 ms
Remote clock offset: 0.09 ms


# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.07 Mbit/s
95th percentile per-packet one-way delay: 64.369 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 23.07 Mbit/s
95th percentile per-packet one-way delay: 64.369 ms
Loss rate: 0.84%
```

Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 23.17 Mbit/s)   Flow 1 egress (mean 23.07 Mbit/s)

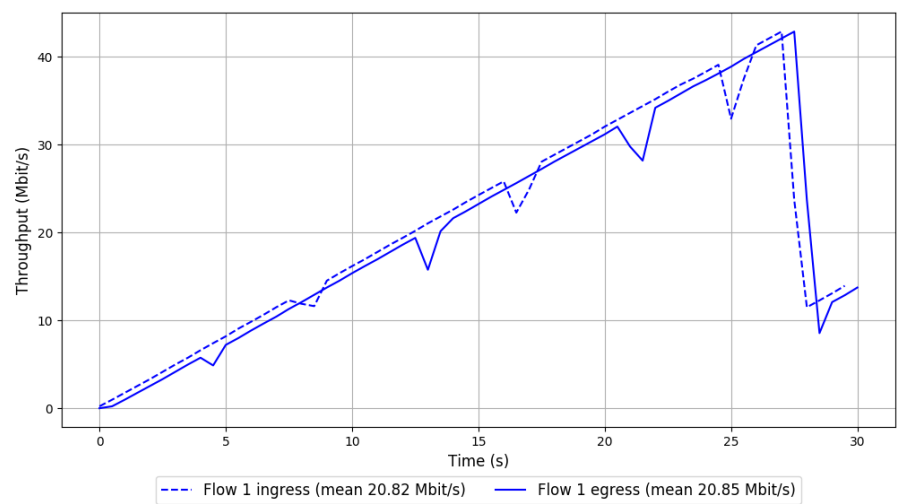Flow 1 (95th percentile 64.37 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-26 09:24:24
End at: 2018-10-26 09:24:54
Local clock offset: 0.186 ms
Remote clock offset: -0.305 ms

# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 20.85 Mbit/s
95th percentile per-packet one-way delay: 64.403 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 20.85 Mbit/s
95th percentile per-packet one-way delay: 64.403 ms
Loss rate: 0.28%
```
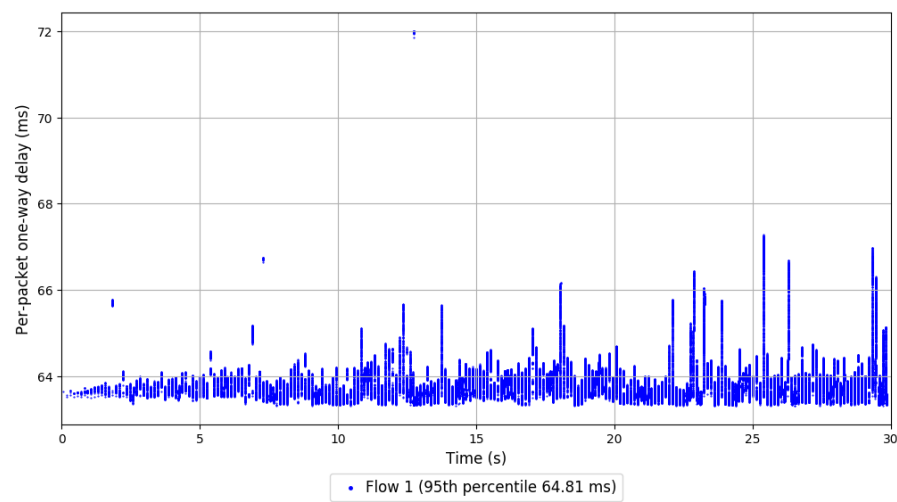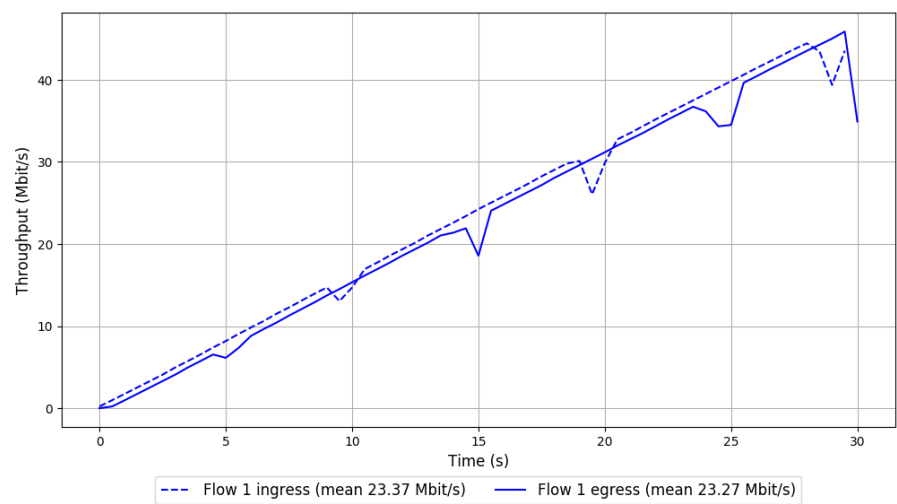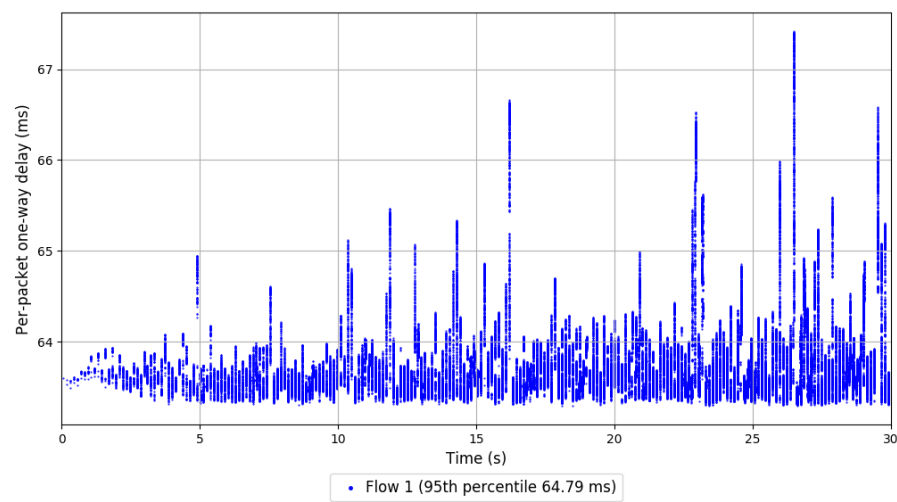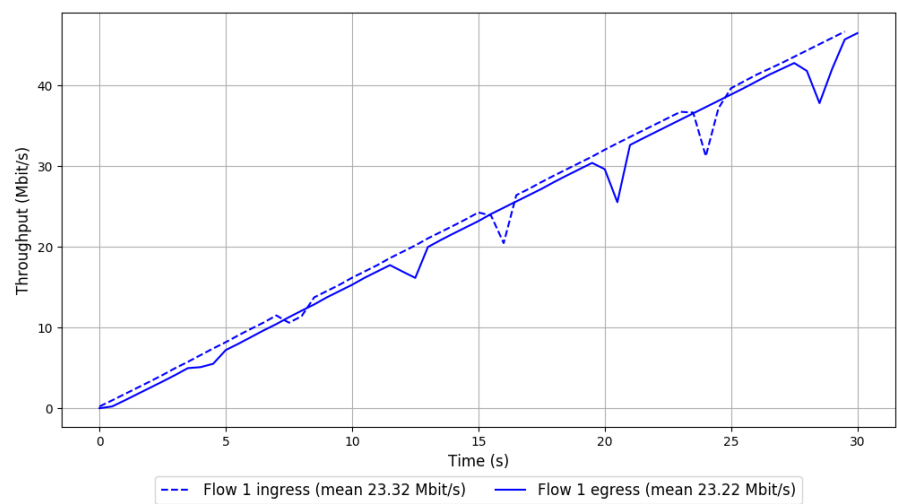
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 20.82 Mbit/s)   Flow 1 egress (mean 20.85 Mbit/s)

Flow 1 (95th percentile 64.40 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-26 09:50:08
End at: 2018-10-26 09:50:38
Local clock offset: 0.106 ms
Remote clock offset: -0.71 ms


# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 64.808 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 64.808 ms
Loss rate: 0.84%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-26 10:15:47
End at: 2018-10-26 10:16:17
Local clock offset: -0.128 ms
Remote clock offset: -0.358 ms

# Below is generated by plot.py at 2018-10-26 11:24:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.22 Mbit/s
95th percentile per-packet one-way delay: 64.790 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 23.22 Mbit/s
95th percentile per-packet one-way delay: 64.790 ms
Loss rate: 0.84%
```
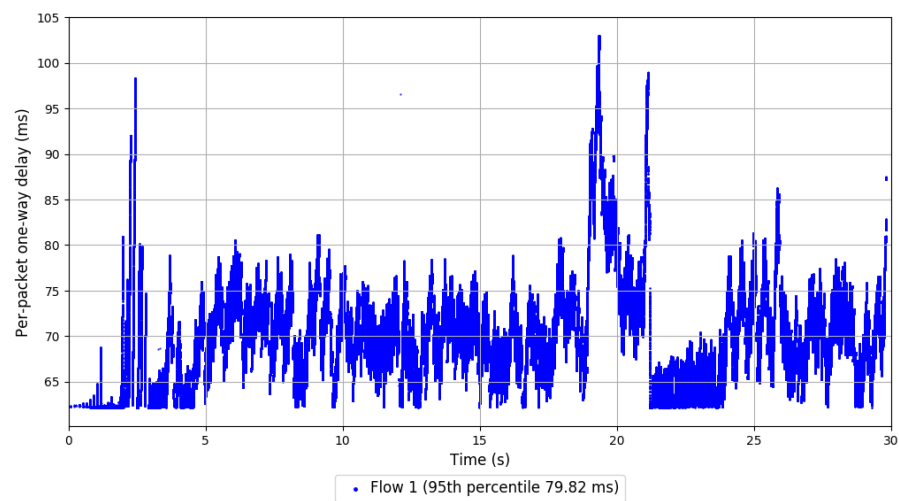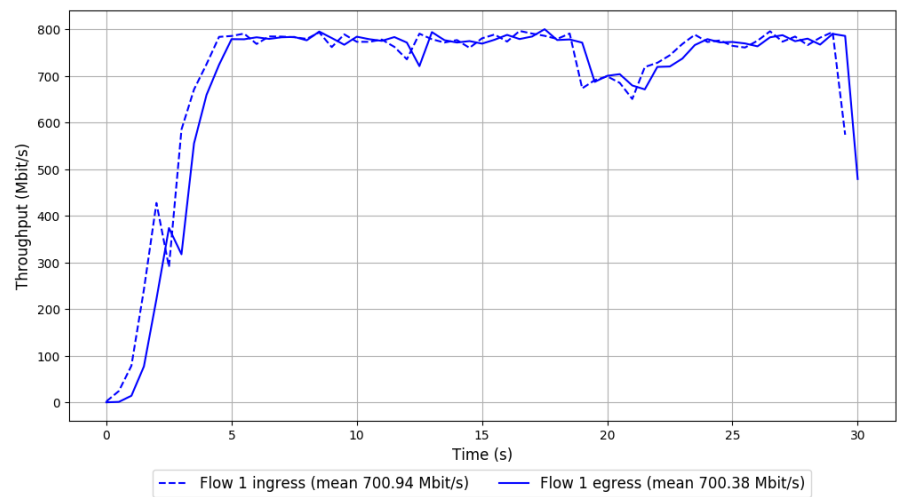
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 23.32 Mbit/s) Flow 1 egress (mean 23.22 Mbit/s)

Flow 1 (95th percentile 64.79 ms)

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-26 08:36:51
End at: 2018-10-26 08:37:21
Local clock offset: 0.061 ms
Remote clock offset: 0.571 ms


# Below is generated by plot.py at 2018-10-26 11:33:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 700.38 Mbit/s
95th percentile per-packet one-way delay: 79.817 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 700.38 Mbit/s
95th percentile per-packet one-way delay: 79.817 ms
Loss rate: 0.50%
```

Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 09:02:43
End at: 2018-10-26 09:03:13
Local clock offset: 0.139 ms
Remote clock offset: 0.643 ms


# Below is generated by plot.py at 2018-10-26 11:34:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 736.23 Mbit/s
95th percentile per-packet one-way delay: 80.603 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 736.23 Mbit/s
95th percentile per-packet one-way delay: 80.603 ms
Loss rate: 0.49%
```
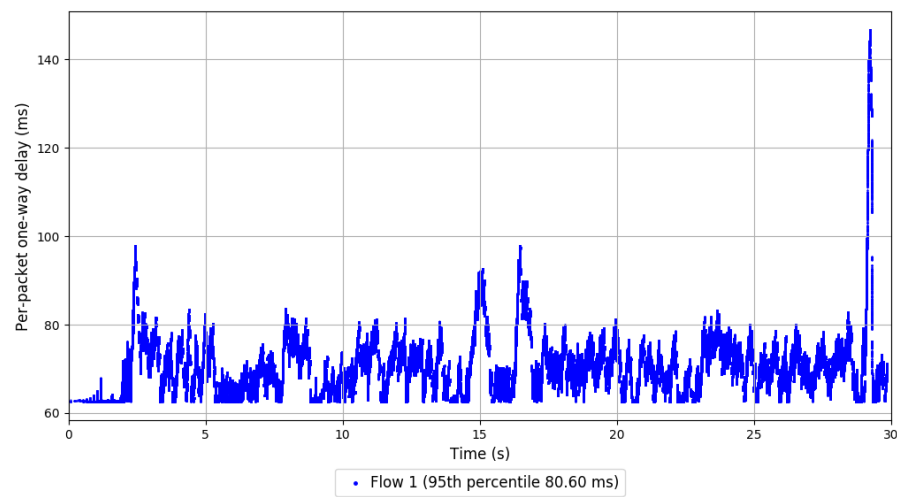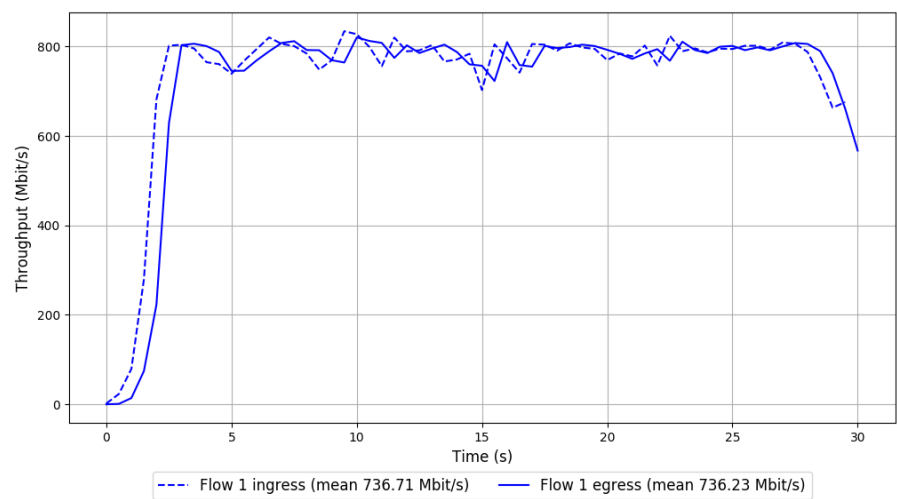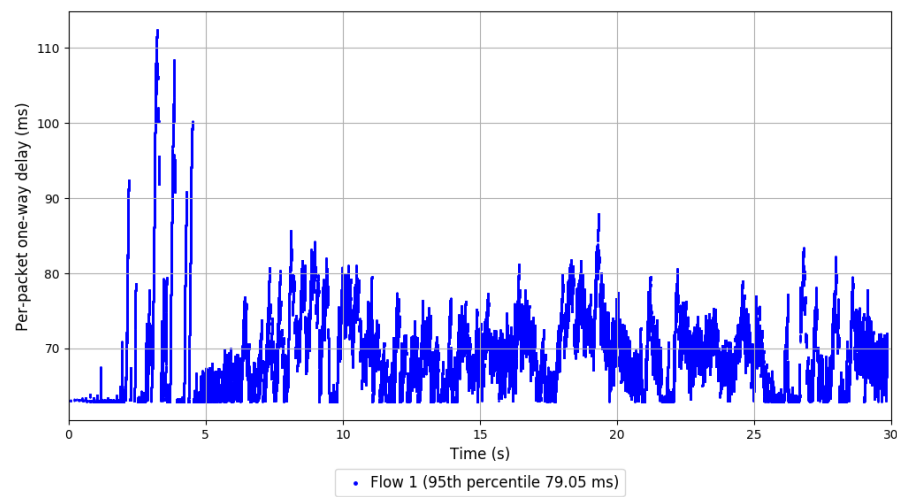
Run 2: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 736.71 Mbit/s) ---- Flow 1 egress (mean 736.23 Mbit/s) ——
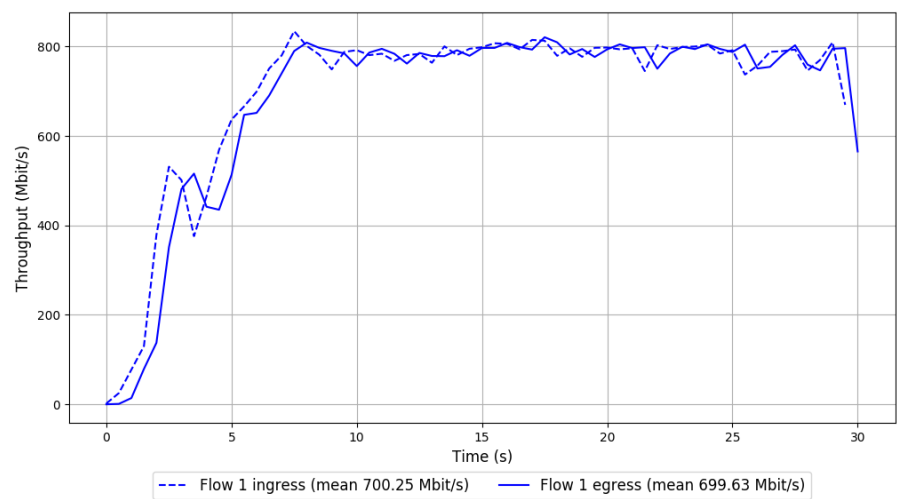

• Flow 1 (95th percentile 80.60 ms)

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 09:28:33
End at: 2018-10-26 09:29:03
Local clock offset: 0.211 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2018-10-26 11:34:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 699.63 Mbit/s
95th percentile per-packet one-way delay: 79.053 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 699.63 Mbit/s
95th percentile per-packet one-way delay: 79.053 ms
Loss rate: 0.51%
```
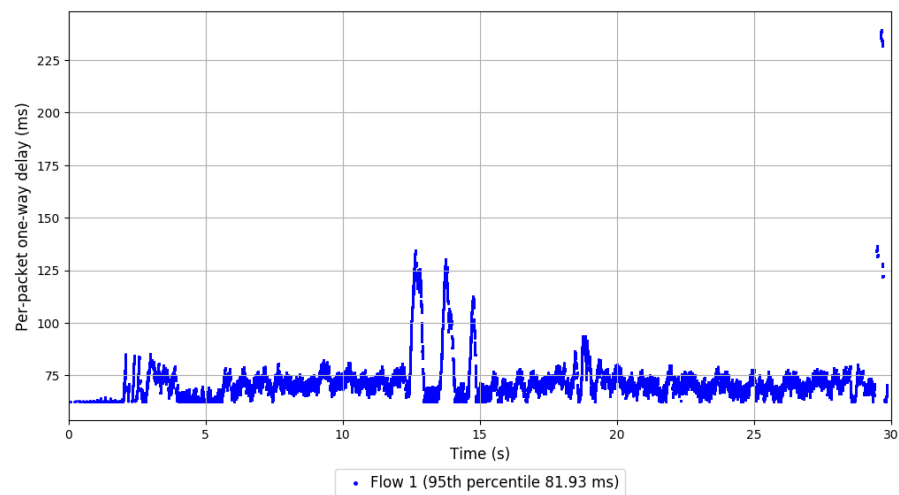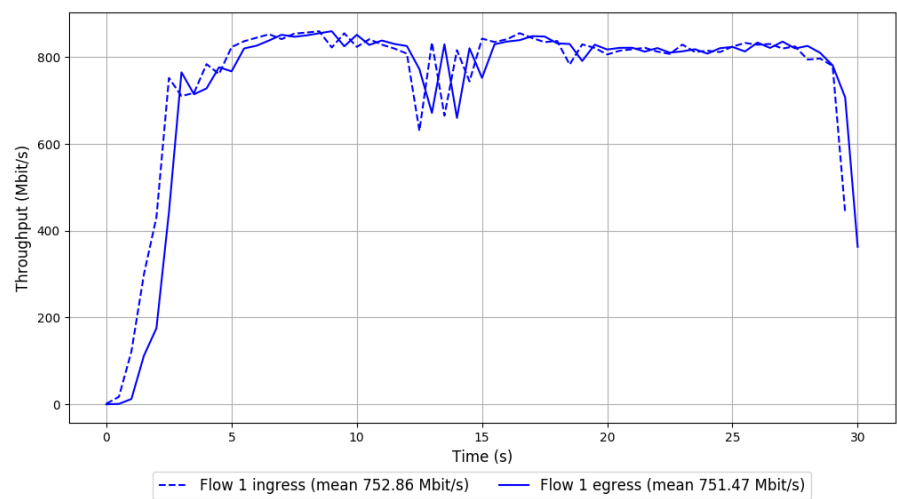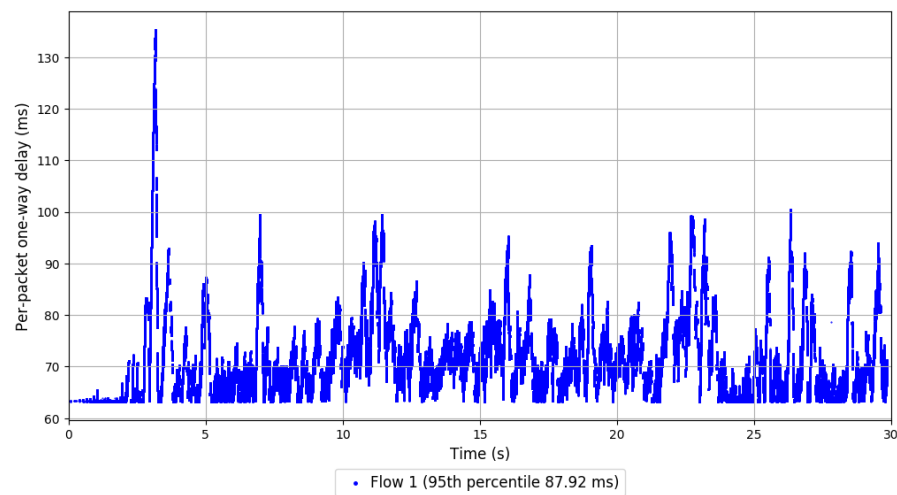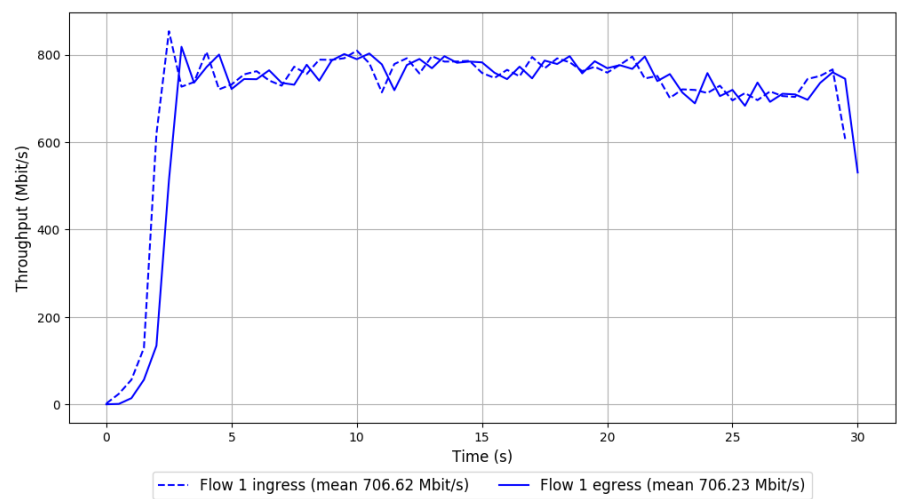
Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 700.25 Mbit/s)   Flow 1 egress (mean 699.63 Mbit/s)

Flow 1 (95th percentile 79.05 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 09:54:20
End at: 2018-10-26 09:54:50
Local clock offset: 0.048 ms
Remote clock offset: 0.588 ms


# Below is generated by plot.py at 2018-10-26 11:34:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 751.47 Mbit/s
95th percentile per-packet one-way delay: 81.934 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 751.47 Mbit/s
95th percentile per-packet one-way delay: 81.934 ms
Loss rate: 0.59%
```

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 10:19:56
End at: 2018-10-26 10:20:26
Local clock offset: -0.123 ms
Remote clock offset: -0.147 ms


# Below is generated by plot.py at 2018-10-26 11:34:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 706.23 Mbit/s
95th percentile per-packet one-way delay: 87.919 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 706.23 Mbit/s
95th percentile per-packet one-way delay: 87.919 ms
Loss rate: 0.48%
```

Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-26 08:28:04
End at: 2018-10-26 08:28:34
Local clock offset: 0.084 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2018-10-26 11:37:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 408.84 Mbit/s
95th percentile per-packet one-way delay: 176.817 ms
Loss rate: 4.61%
-- Flow 1:
Average throughput: 408.84 Mbit/s
95th percentile per-packet one-way delay: 176.817 ms
Loss rate: 4.61%
```
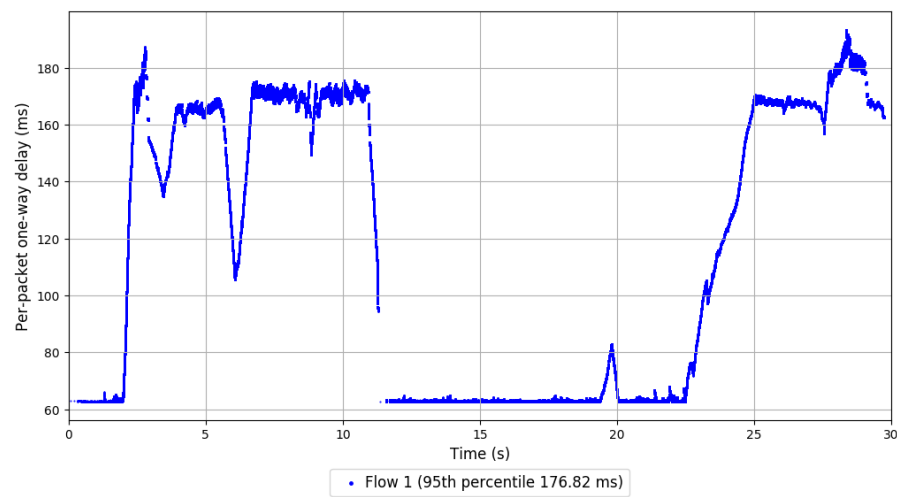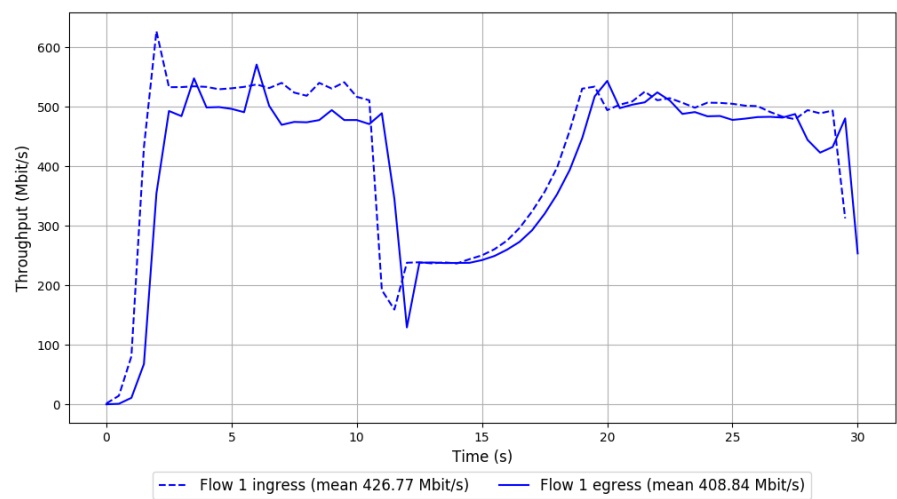
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 08:53:43
End at: 2018-10-26 08:54:13
Local clock offset: 0.164 ms
Remote clock offset: -0.17 ms


# Below is generated by plot.py at 2018-10-26 11:38:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 442.04 Mbit/s
95th percentile per-packet one-way delay: 162.243 ms
Loss rate: 3.04%
-- Flow 1:
Average throughput: 442.04 Mbit/s
95th percentile per-packet one-way delay: 162.243 ms
Loss rate: 3.04%
```
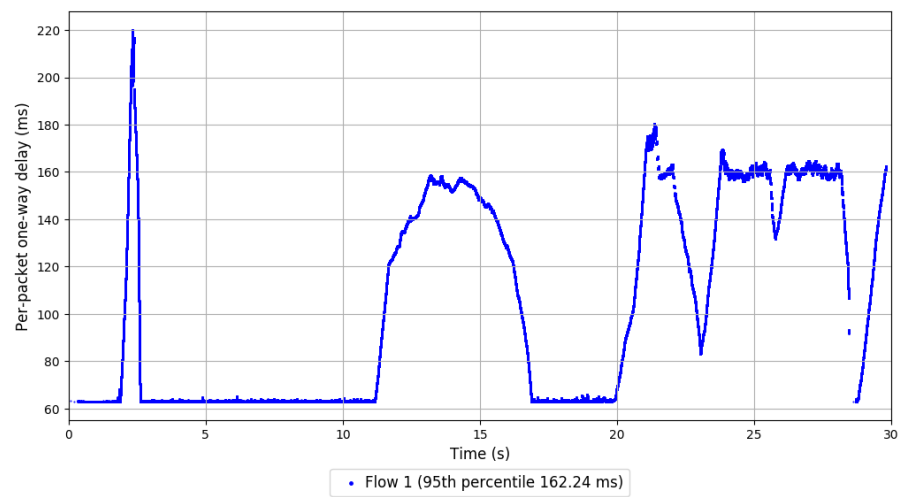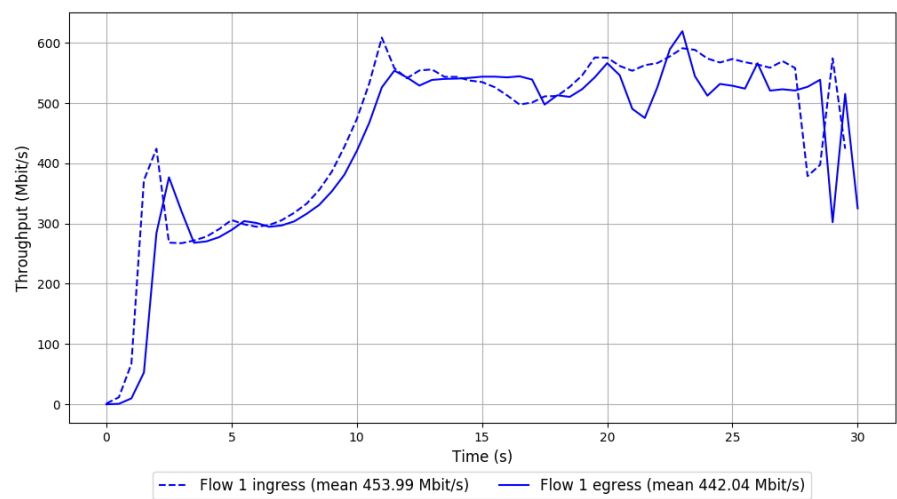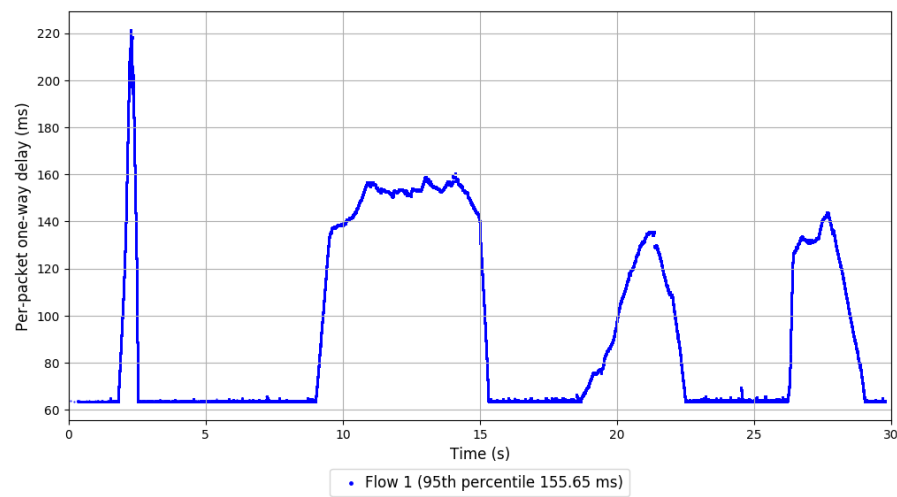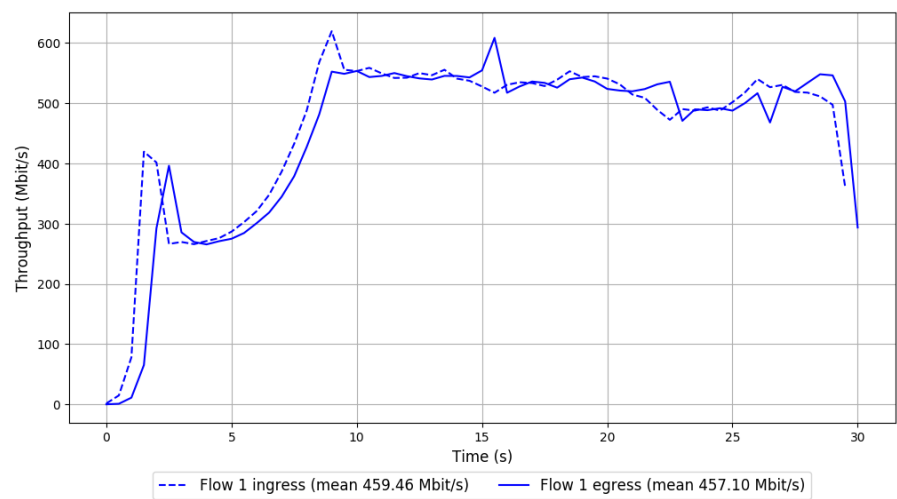
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 09:19:40
End at: 2018-10-26 09:20:10
Local clock offset: 0.218 ms
Remote clock offset: -0.703 ms


# Below is generated by plot.py at 2018-10-26 11:39:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 457.10 Mbit/s
95th percentile per-packet one-way delay: 155.647 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 457.10 Mbit/s
95th percentile per-packet one-way delay: 155.647 ms
Loss rate: 0.94%
```

Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 09:45:22
End at: 2018-10-26 09:45:52
Local clock offset: 0.21 ms
Remote clock offset: 0.296 ms

# Below is generated by plot.py at 2018-10-26 11:50:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 502.14 Mbit/s
95th percentile per-packet one-way delay: 171.135 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 502.14 Mbit/s
95th percentile per-packet one-way delay: 171.135 ms
Loss rate: 2.61%
```
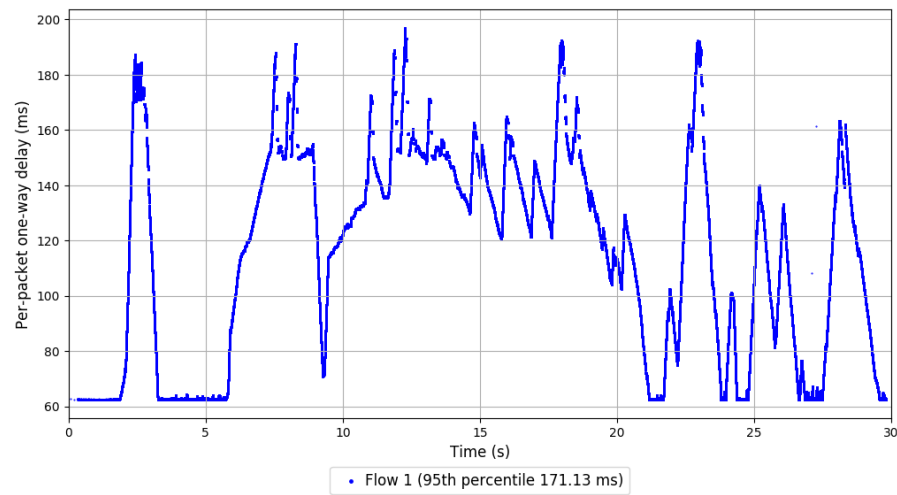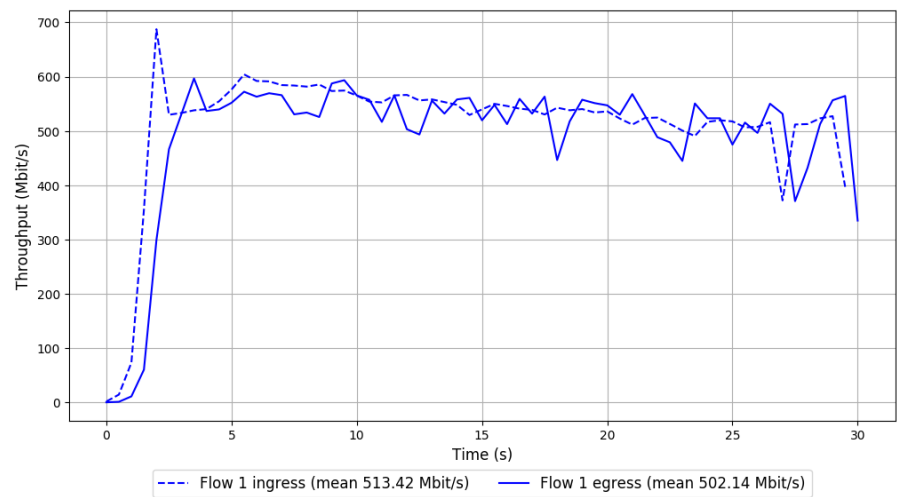
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 513.42 Mbit/s) ----- Flow 1 egress (mean 502.14 Mbit/s) ——
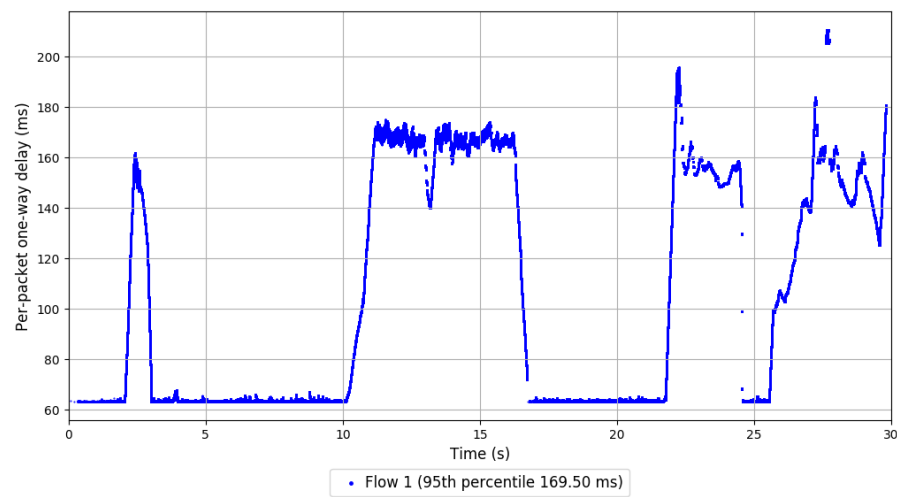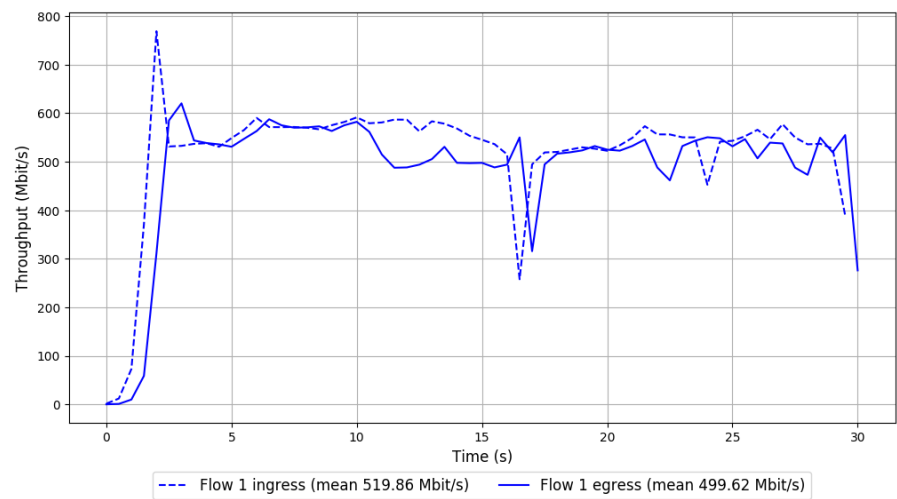

· Flow 1 (95th percentile 171.13 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 10:10:58
End at: 2018-10-26 10:11:28
Local clock offset: -0.095 ms
Remote clock offset: -0.222 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 499.62 Mbit/s
95th percentile per-packet one-way delay: 169.498 ms
Loss rate: 4.30%
-- Flow 1:
Average throughput: 499.62 Mbit/s
95th percentile per-packet one-way delay: 169.498 ms
Loss rate: 4.30%
```
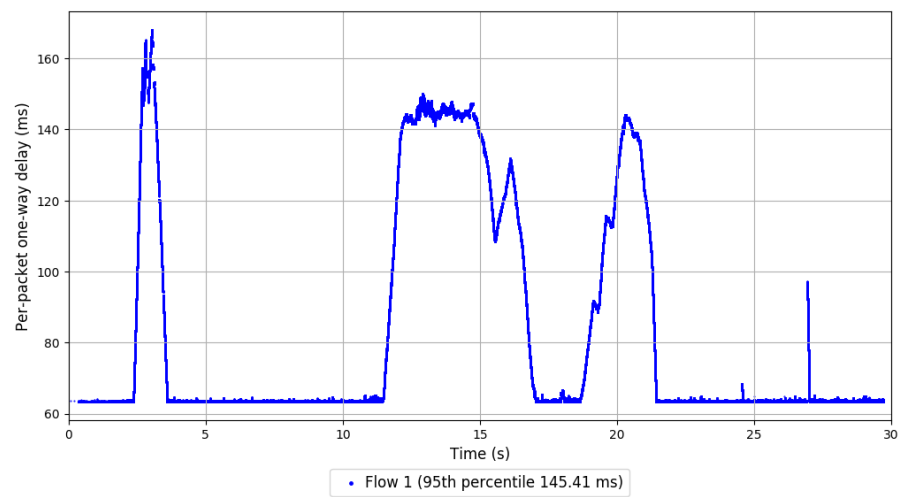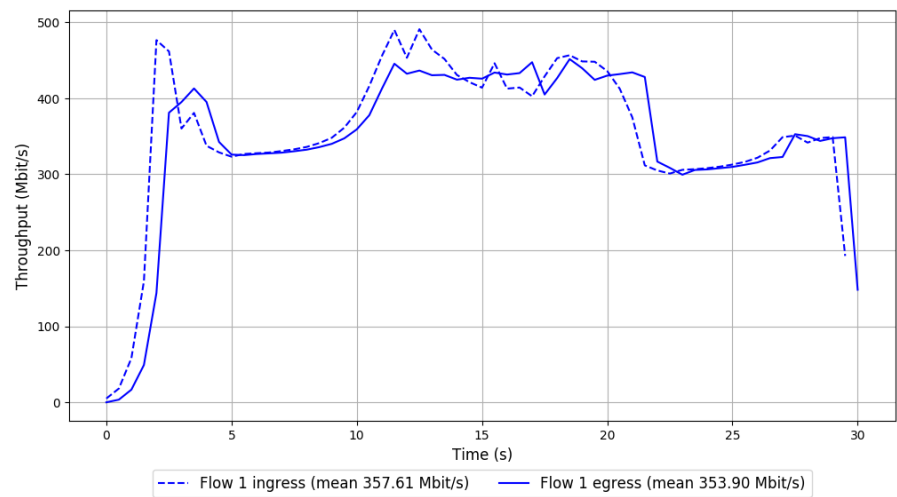
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-26 08:48:27
End at: 2018-10-26 08:48:57
Local clock offset: 0.151 ms
Remote clock offset: -0.722 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 353.90 Mbit/s
95th percentile per-packet one-way delay: 145.415 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 353.90 Mbit/s
95th percentile per-packet one-way delay: 145.415 ms
Loss rate: 1.46%
```

Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 357.61 Mbit/s)   Flow 1 egress (mean 353.90 Mbit/s)
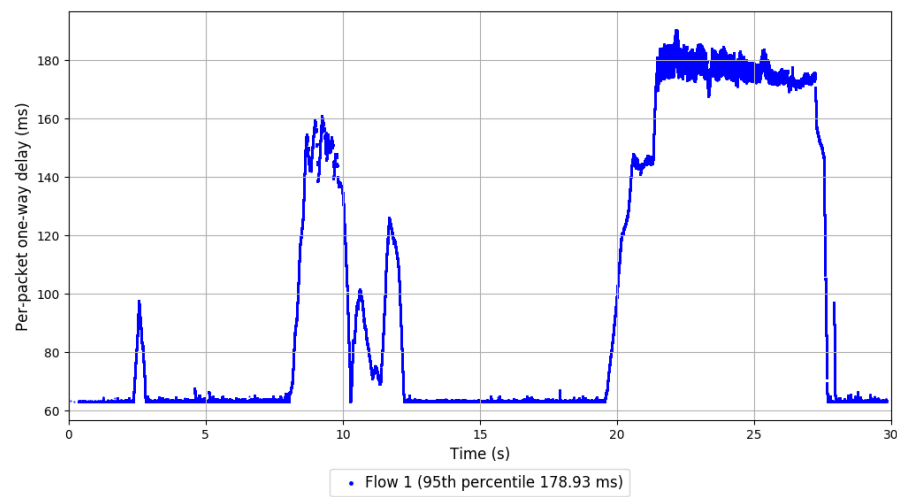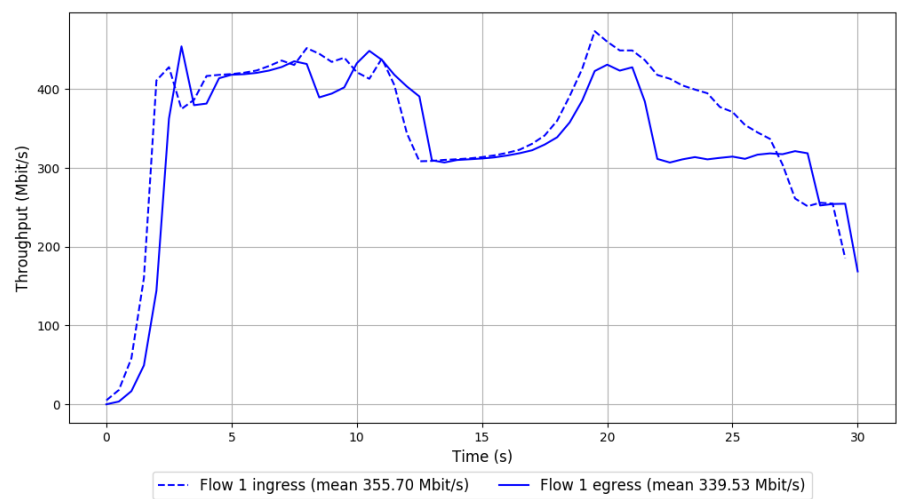

Flow 1 (95th percentile 145.41 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 09:14:20
End at: 2018-10-26 09:14:50
Local clock offset: 0.175 ms
Remote clock offset: -0.065 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.53 Mbit/s
95th percentile per-packet one-way delay: 178.928 ms
Loss rate: 4.99%
-- Flow 1:
Average throughput: 339.53 Mbit/s
95th percentile per-packet one-way delay: 178.928 ms
Loss rate: 4.99%
```
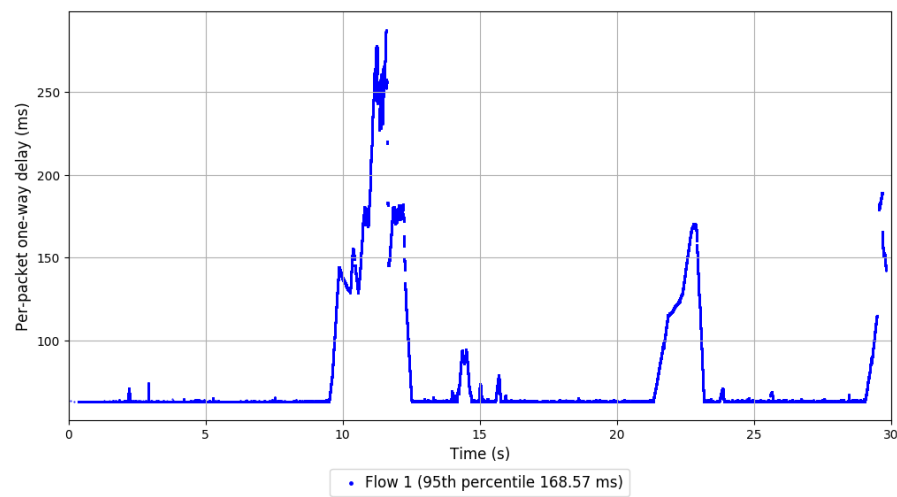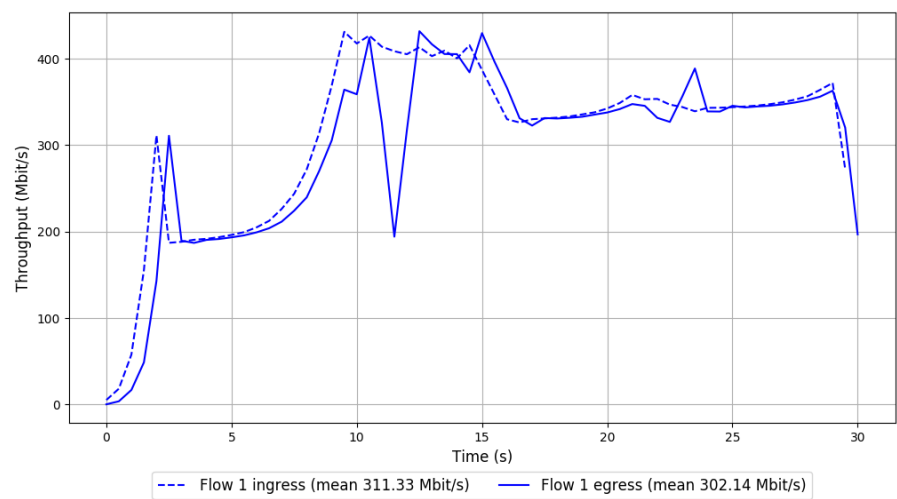
Run 2: Report of PCC-Expr — Data Link

--- Flow 1 ingress (mean 355.70 Mbit/s) ⸺ Flow 1 egress (mean 339.53 Mbit/s)
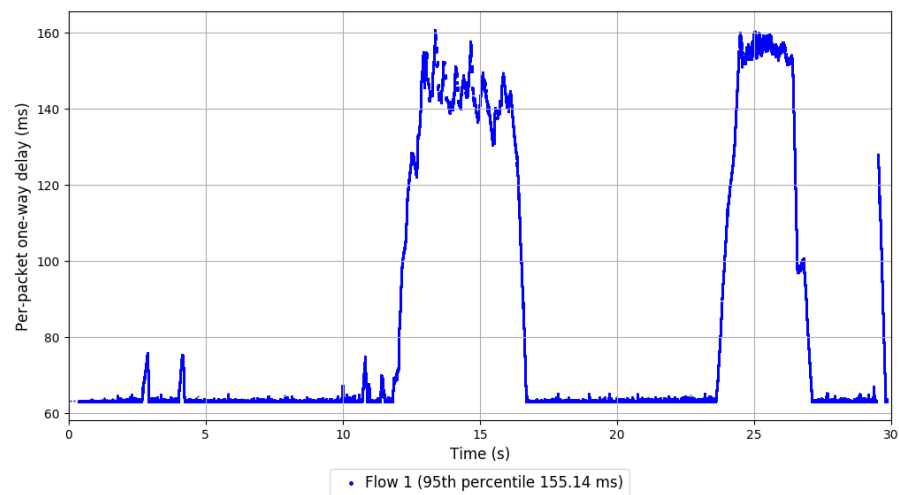

• Flow 1 (95th percentile 178.93 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 09:40:06
End at: 2018-10-26 09:40:36
Local clock offset: 0.191 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 302.14 Mbit/s
95th percentile per-packet one-way delay: 168.573 ms
Loss rate: 3.37%
-- Flow 1:
Average throughput: 302.14 Mbit/s
95th percentile per-packet one-way delay: 168.573 ms
Loss rate: 3.37%
```
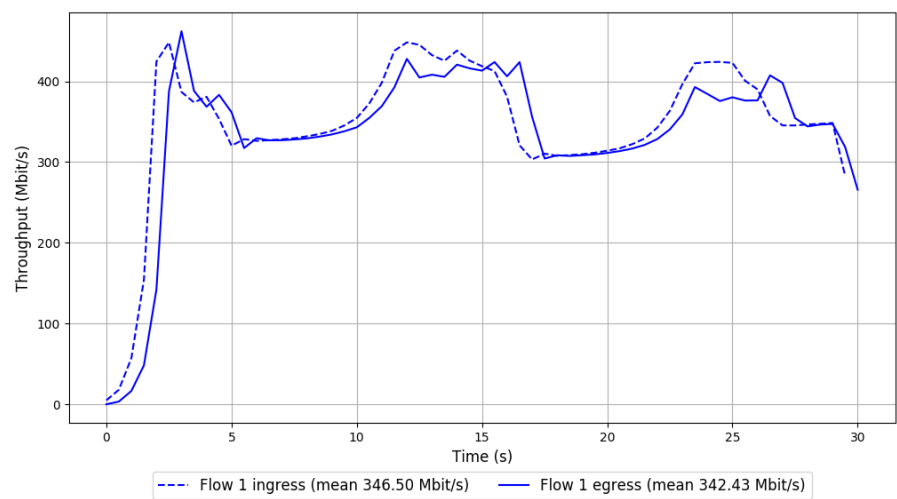
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 10:05:39
End at: 2018-10-26 10:06:09
Local clock offset: -0.07 ms
Remote clock offset: -0.157 ms

# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 342.43 Mbit/s
95th percentile per-packet one-way delay: 155.137 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 342.43 Mbit/s
95th percentile per-packet one-way delay: 155.137 ms
Loss rate: 1.60%
```

Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 346.50 Mbit/s)   Flow 1 egress (mean 342.43 Mbit/s)
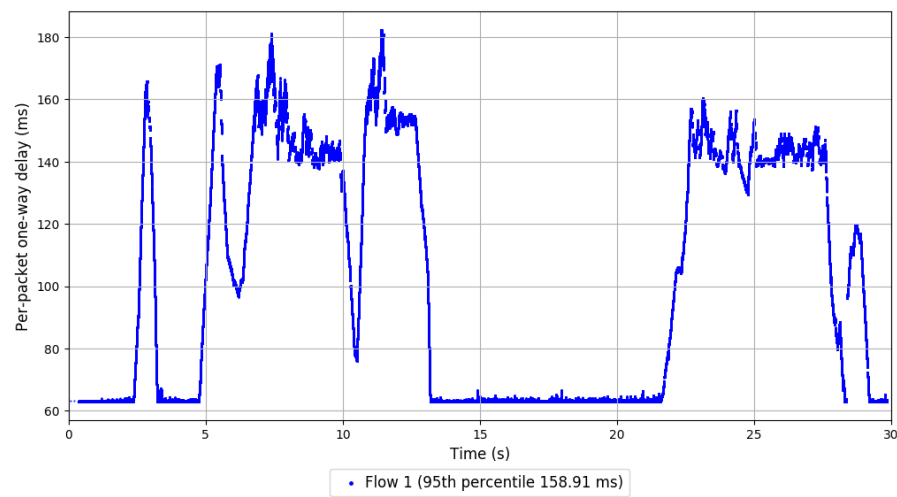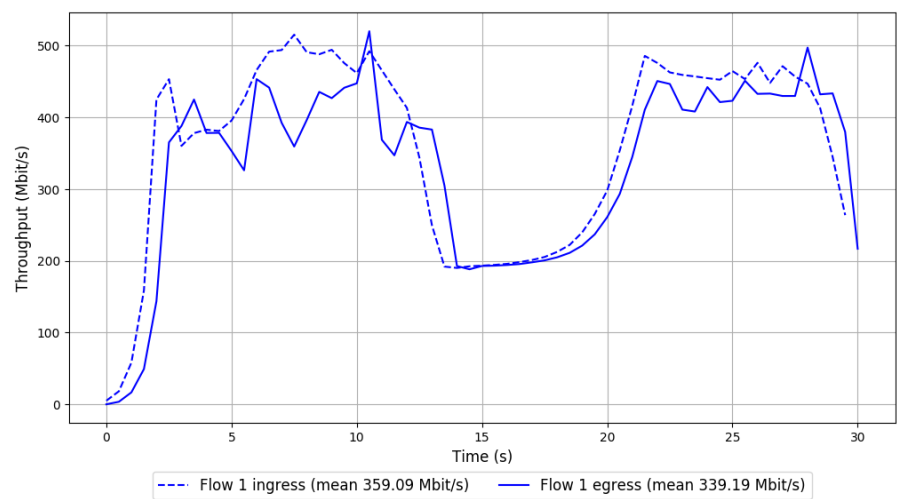

• Flow 1 (95th percentile 155.14 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 10:31:30
End at: 2018-10-26 10:32:00
Local clock offset: -0.085 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.19 Mbit/s
95th percentile per-packet one-way delay: 158.907 ms
Loss rate: 5.94%
-- Flow 1:
Average throughput: 339.19 Mbit/s
95th percentile per-packet one-way delay: 158.907 ms
Loss rate: 5.94%
```

Run 5: Report of PCC-Expr — Data Link
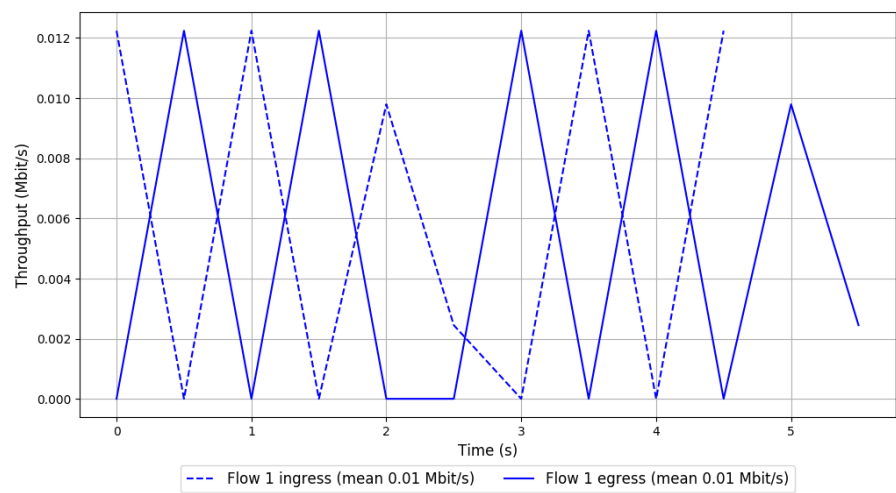
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-26 08:50:06
End at: 2018-10-26 08:50:36
Local clock offset: 0.155 ms
Remote clock offset: 0.528 ms
```

Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 09:15:58
End at: 2018-10-26 09:16:28
Local clock offset: 0.175 ms
Remote clock offset: -0.07 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.21 Mbit/s
95th percentile per-packet one-way delay: 62.976 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 57.21 Mbit/s
95th percentile per-packet one-way delay: 62.976 ms
Loss rate: 0.08%
```
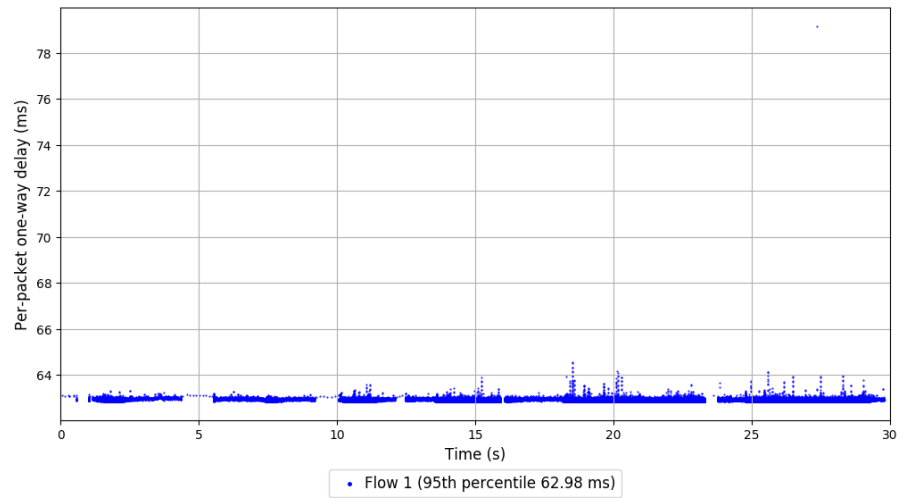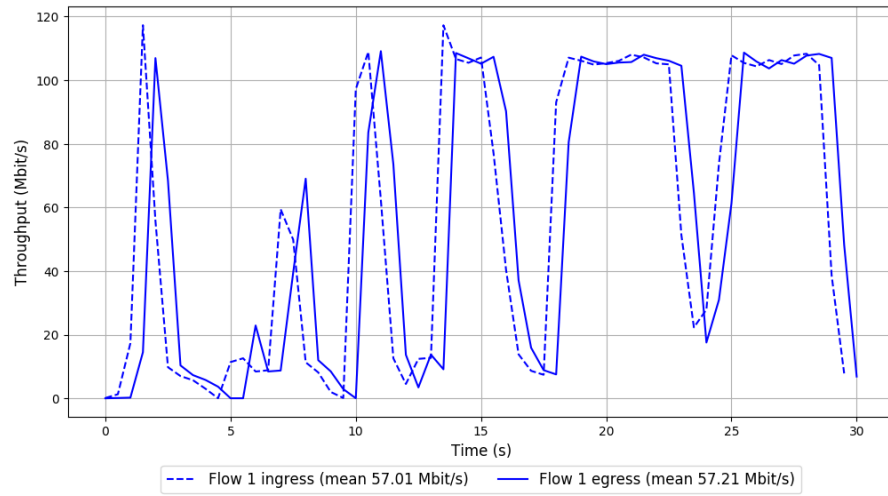
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 09:41:40
End at: 2018-10-26 09:42:10
Local clock offset: 0.206 ms
Remote clock offset: 0.887 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.47 Mbit/s
95th percentile per-packet one-way delay: 62.064 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 66.47 Mbit/s
95th percentile per-packet one-way delay: 62.064 ms
Loss rate: 0.68%
```
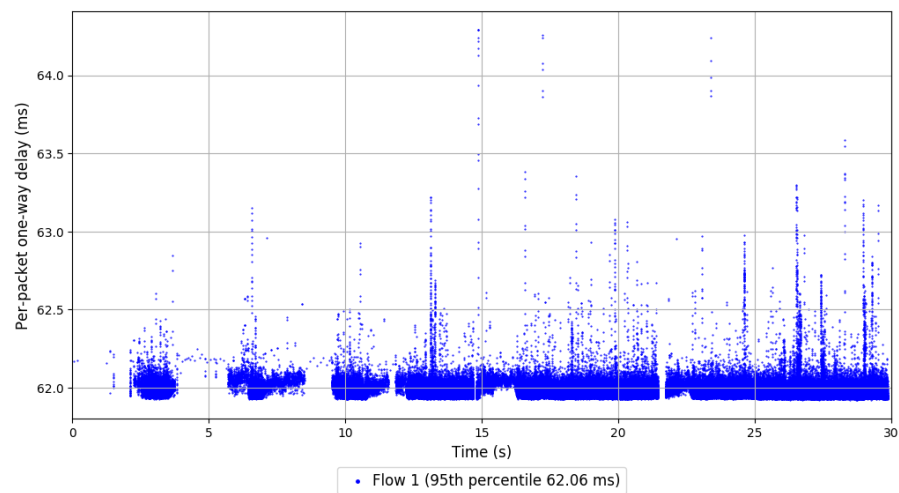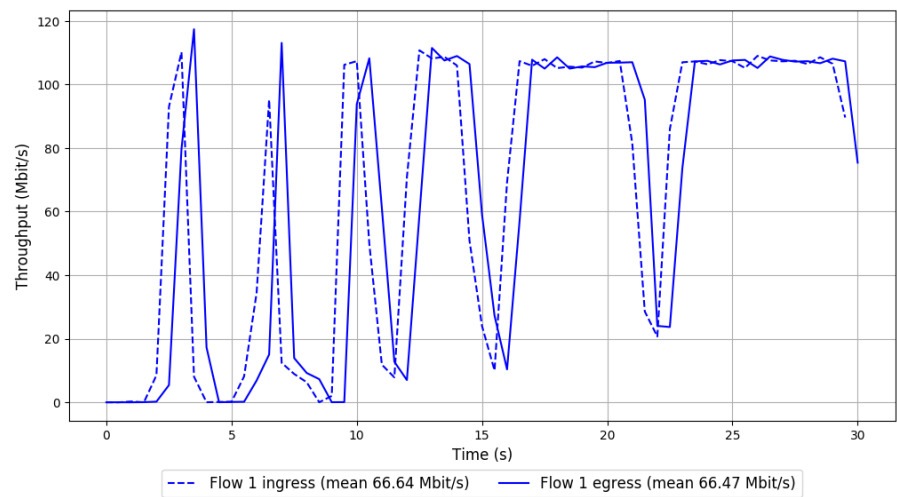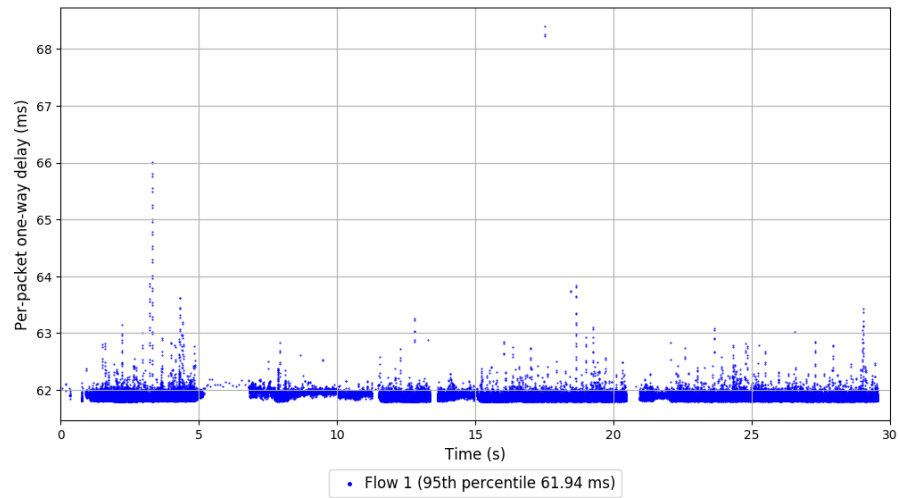
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 66.64 Mbit/s)   Flow 1 egress (mean 66.47 Mbit/s)

Flow 1 (95th percentile 62.06 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 10:07:17
End at: 2018-10-26 10:07:47
Local clock offset: -0.066 ms
Remote clock offset: 0.868 ms

# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.57 Mbit/s
95th percentile per-packet one-way delay: 61.944 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 67.57 Mbit/s
95th percentile per-packet one-way delay: 61.944 ms
Loss rate: 0.64%
```
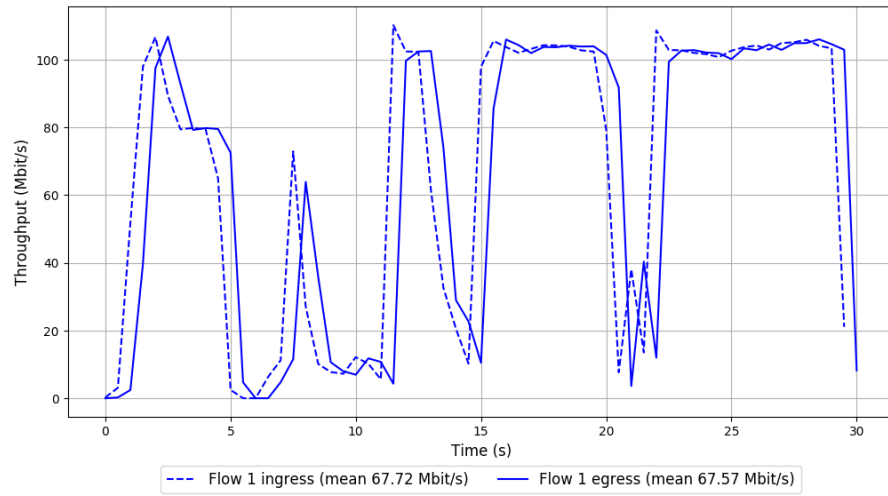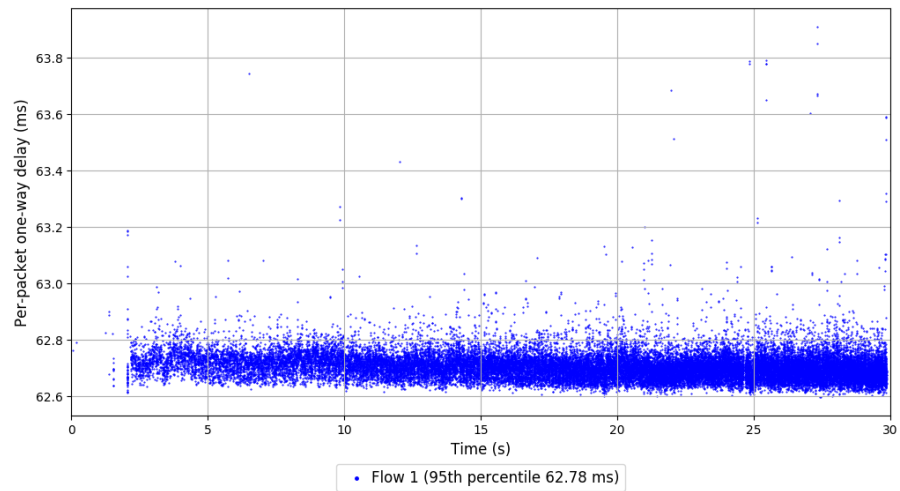
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 67.72 Mbit/s) — Flow 1 egress (mean 67.57 Mbit/s)

• Flow 1 (95th percentile 61.94 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 10:33:07
End at: 2018-10-26 10:33:37
Local clock offset: -0.109 ms
Remote clock offset: -0.02 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.22 Mbit/s
95th percentile per-packet one-way delay: 62.782 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 14.22 Mbit/s
95th percentile per-packet one-way delay: 62.782 ms
Loss rate: 0.90%
```
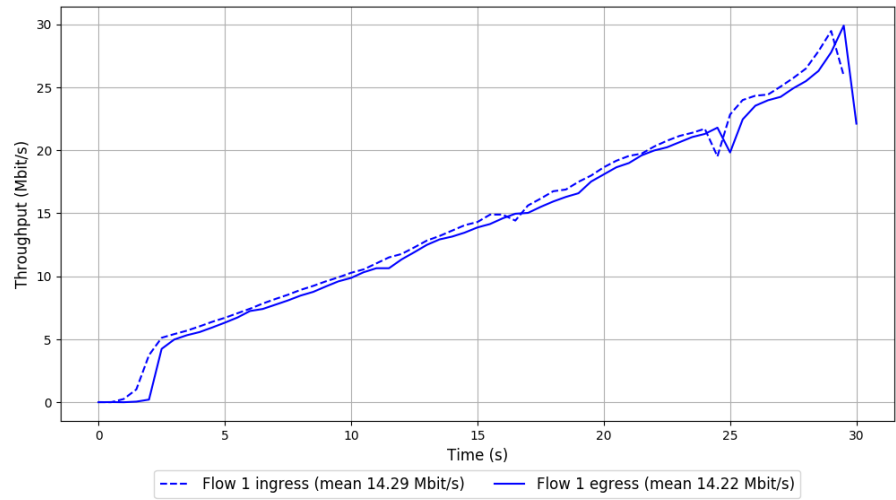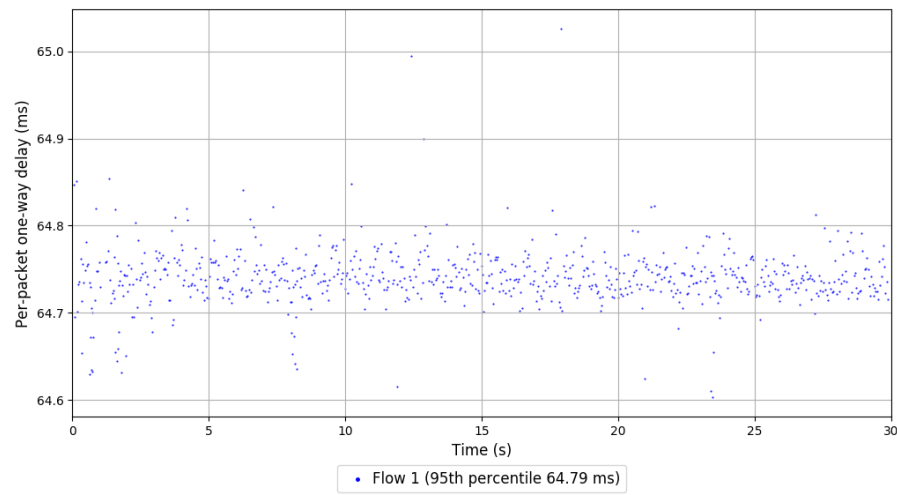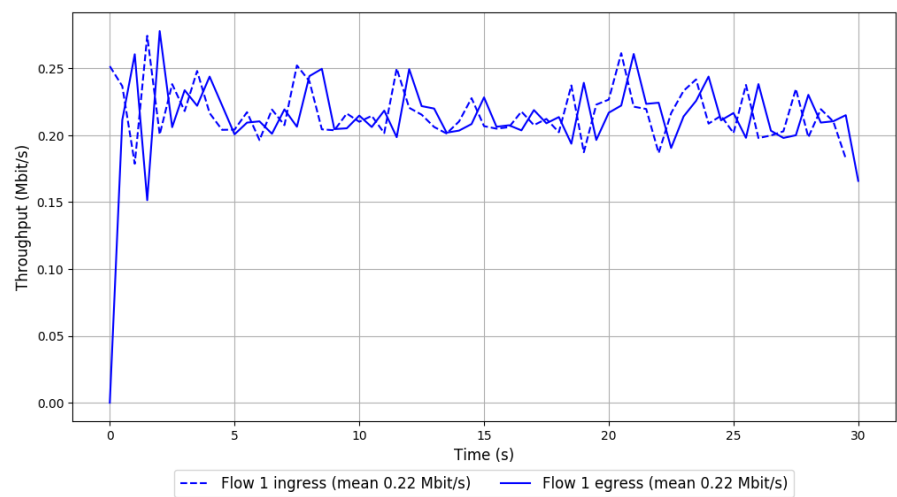
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-10-26 08:41:31
End at: 2018-10-26 08:42:01
Local clock offset: 0.12 ms
Remote clock offset: -1.332 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 64.788 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 64.788 ms
Loss rate: 0.38%
```

Run 1: Report of SCReAM — Data Link

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

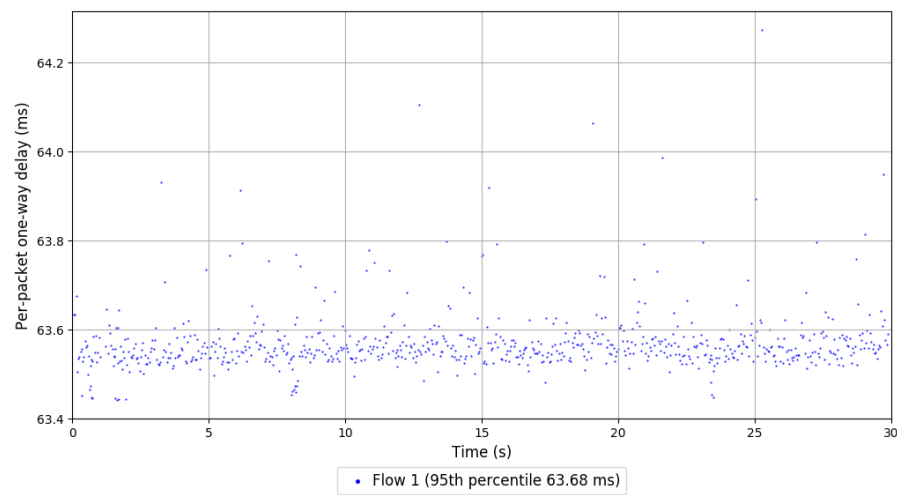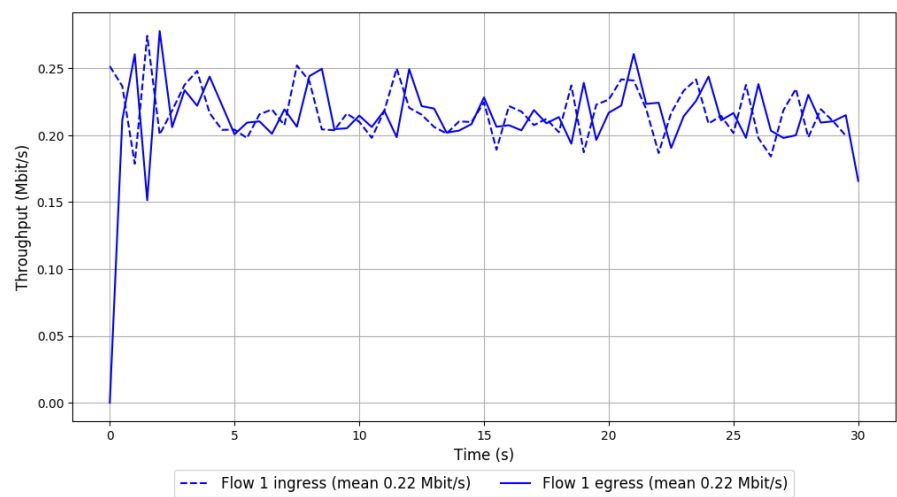Flow 1 (95th percentile 64.79 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-10-26 09:07:25
End at: 2018-10-26 09:07:55
Local clock offset: 0.167 ms
Remote clock offset: -0.122 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.684 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.684 ms
Loss rate: 0.51%
```

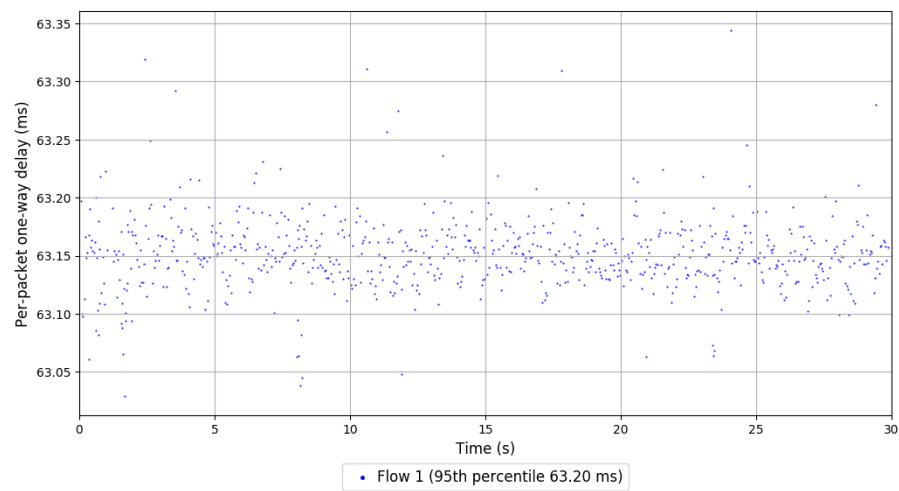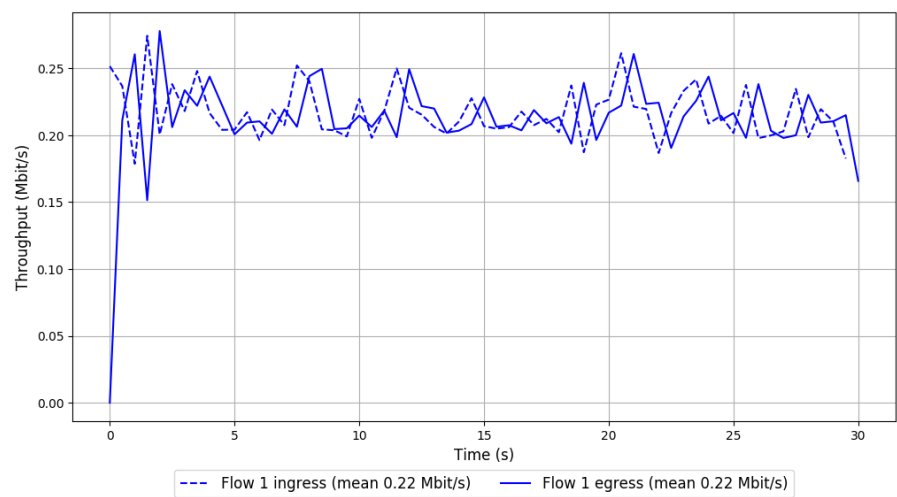Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-26 09:33:12
End at: 2018-10-26 09:33:42
Local clock offset: 0.164 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.195 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.195 ms
Loss rate: 0.38%
```

Run 3: Report of SCReAM — Data Link

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

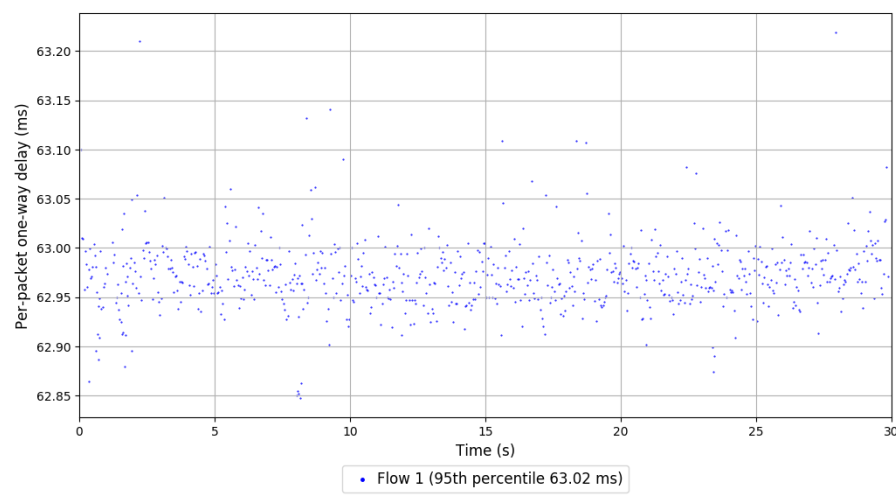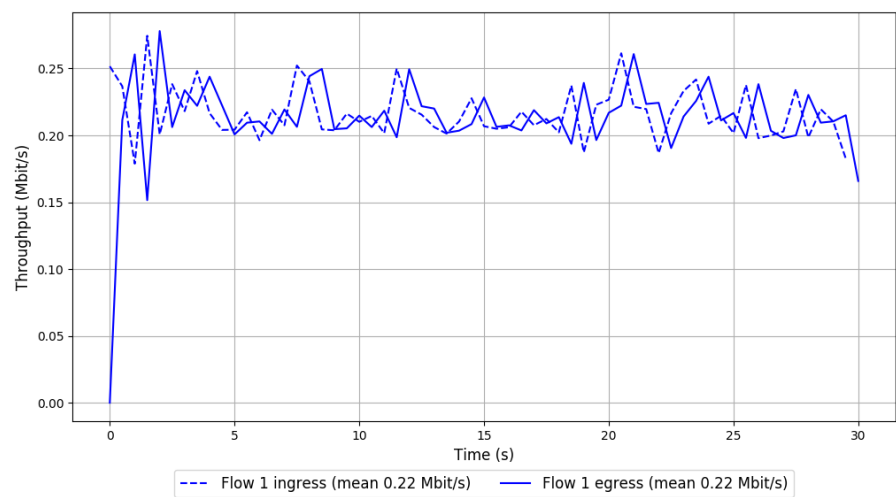Flow 1 (95th percentile 63.20 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-10-26 09:59:02
End at: 2018-10-26 09:59:32
Local clock offset: -0.017 ms
Remote clock offset: -0.088 ms

# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.025 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.025 ms
Loss rate: 0.38%
```
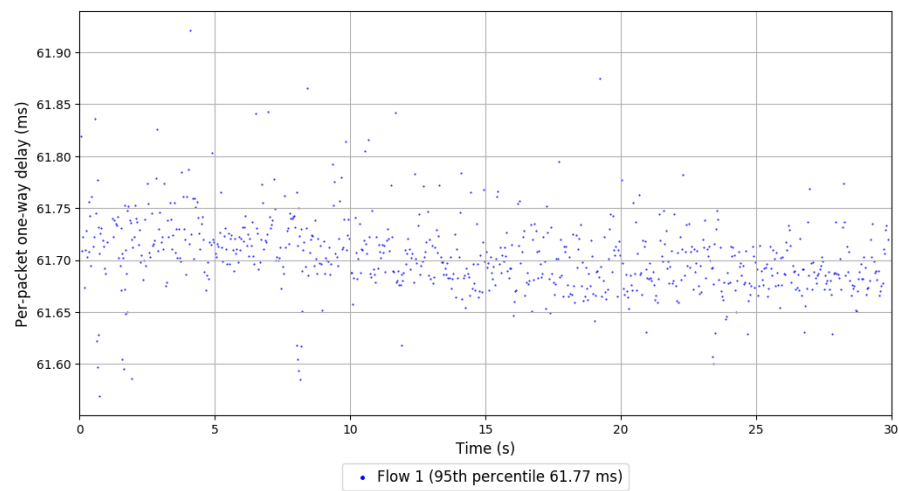
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-26 10:24:38
End at: 2018-10-26 10:25:08
Local clock offset: -0.104 ms
Remote clock offset: 1.304 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.765 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.765 ms
Loss rate: 0.51%
```
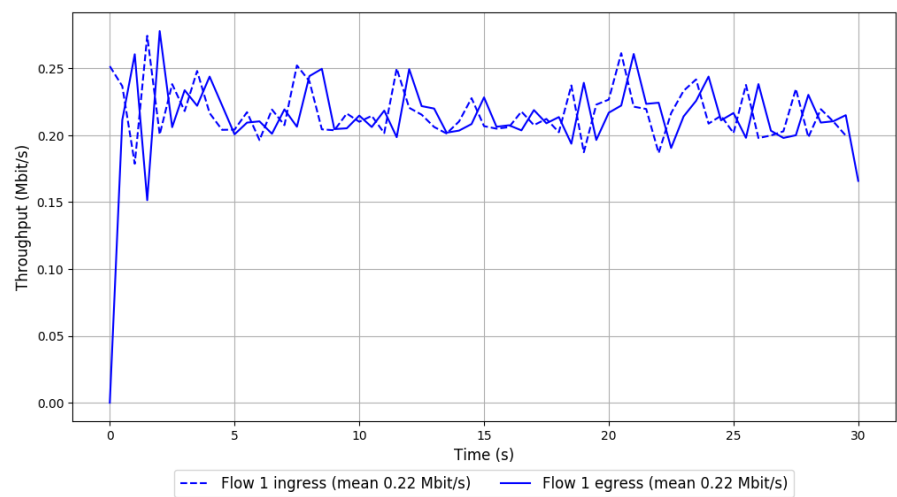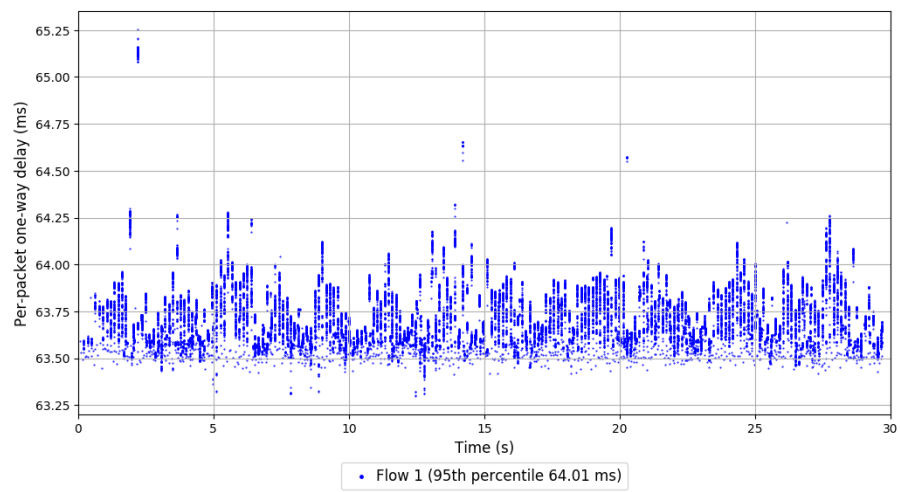
Run 5: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 61.77 ms)

```
Run 1: Statistics of Sprout

Start at: 2018-10-26 08:47:20
End at: 2018-10-26 08:47:50
Local clock offset: 0.137 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 64.006 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 64.006 ms
Loss rate: 0.41%
```
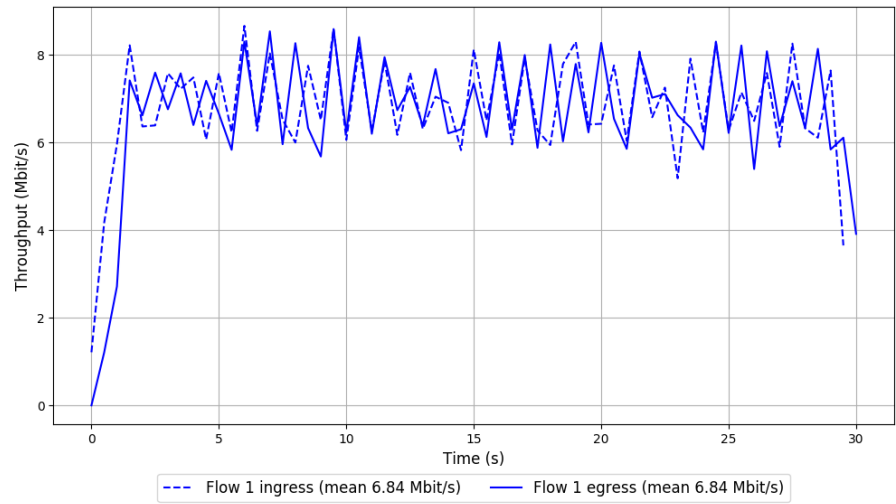
Run 1: Report of Sprout — Data Link

Flow 1 ingress (mean 6.84 Mbit/s) --- Flow 1 egress (mean 6.84 Mbit/s)

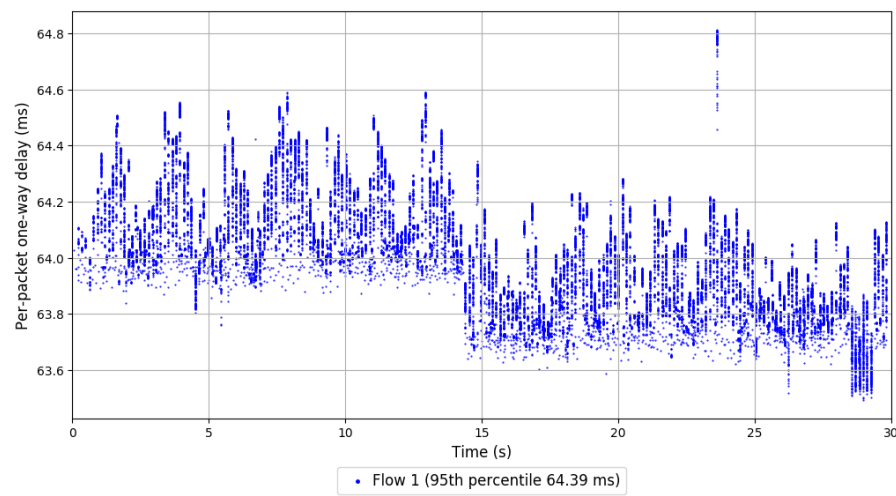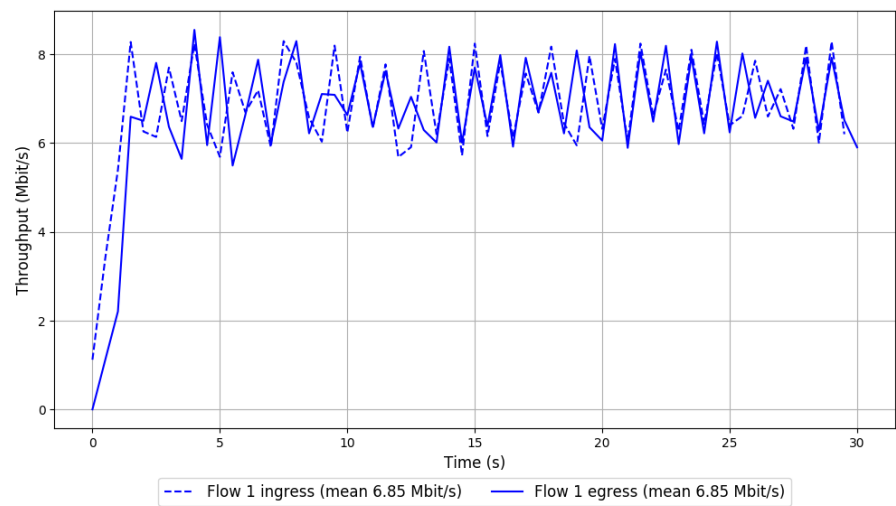Flow 1 (95th percentile 64.01 ms)

```
Run 2: Statistics of Sprout

Start at: 2018-10-26 09:13:12
End at: 2018-10-26 09:13:42
Local clock offset: 0.189 ms
Remote clock offset: -0.821 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 64.389 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 64.389 ms
Loss rate: 0.51%
```
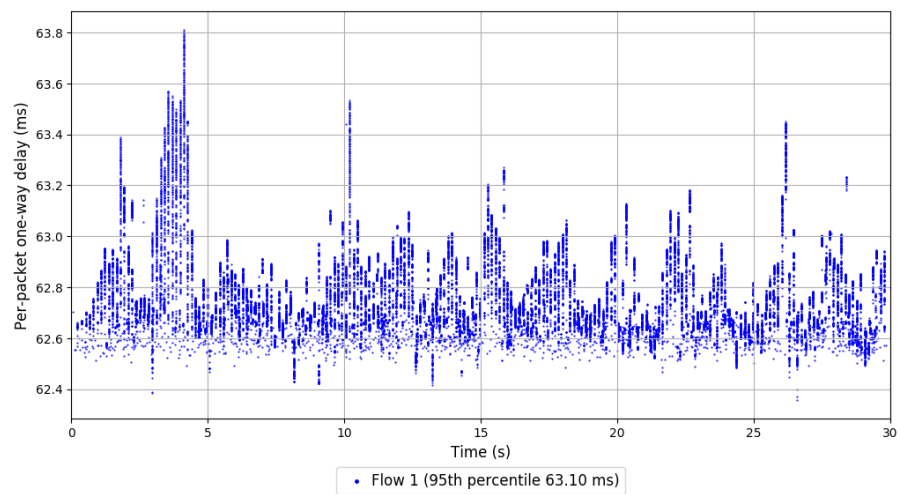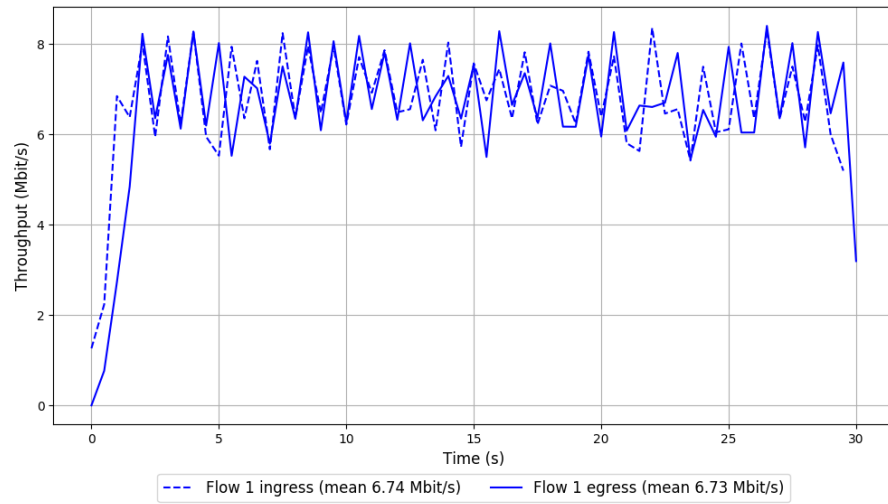
Run 2: Report of Sprout — Data Link

Flow 1 ingress (mean 6.85 Mbit/s)   Flow 1 egress (mean 6.85 Mbit/s)

• Flow 1 (95th percentile 64.39 ms)

```
Run 3: Statistics of Sprout

Start at: 2018-10-26 09:38:58
End at: 2018-10-26 09:39:28
Local clock offset: 0.212 ms
Remote clock offset: 0.497 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 63.096 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 63.096 ms
Loss rate: 0.50%
```

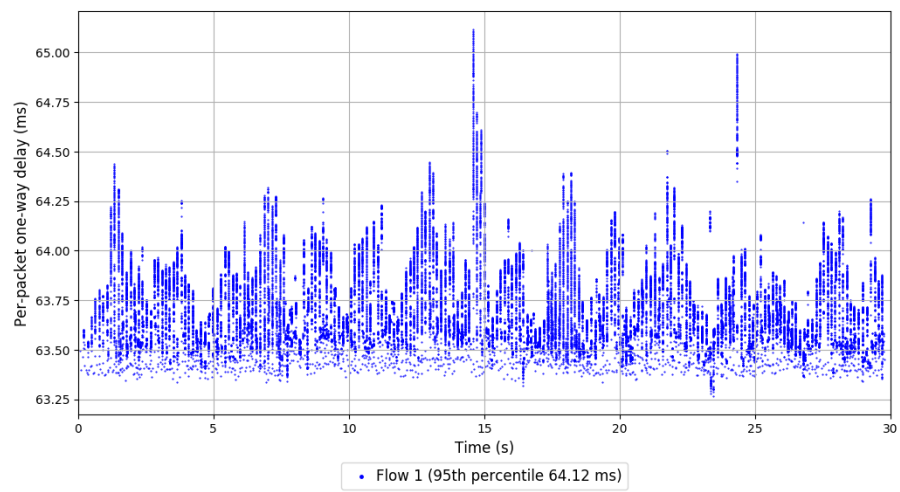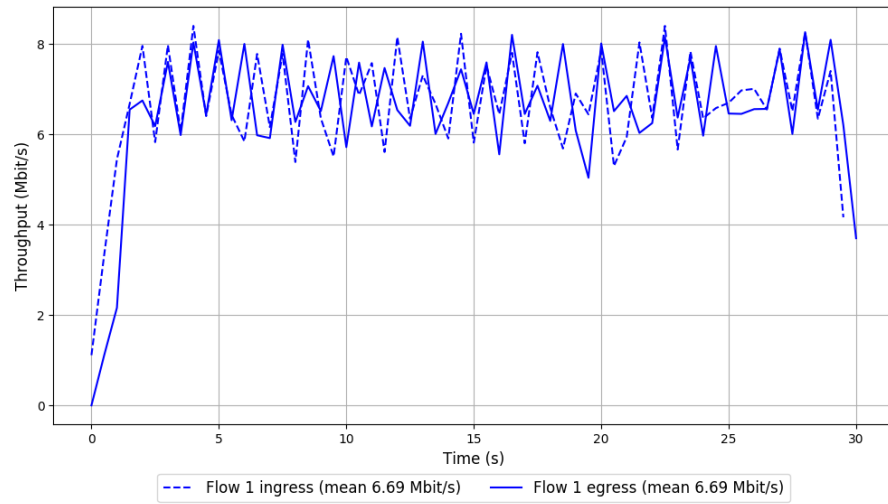Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-26 10:04:31
End at: 2018-10-26 10:05:01
Local clock offset: -0.049 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 64.119 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 64.119 ms
Loss rate: 0.48%
```

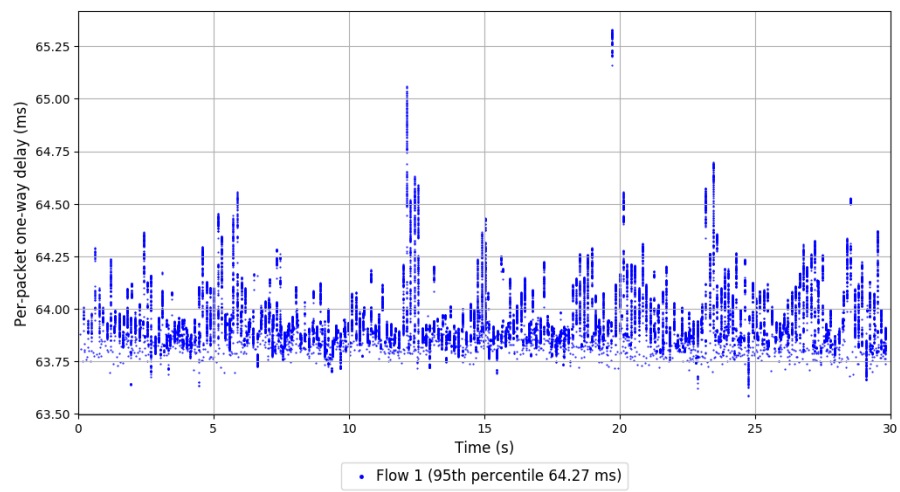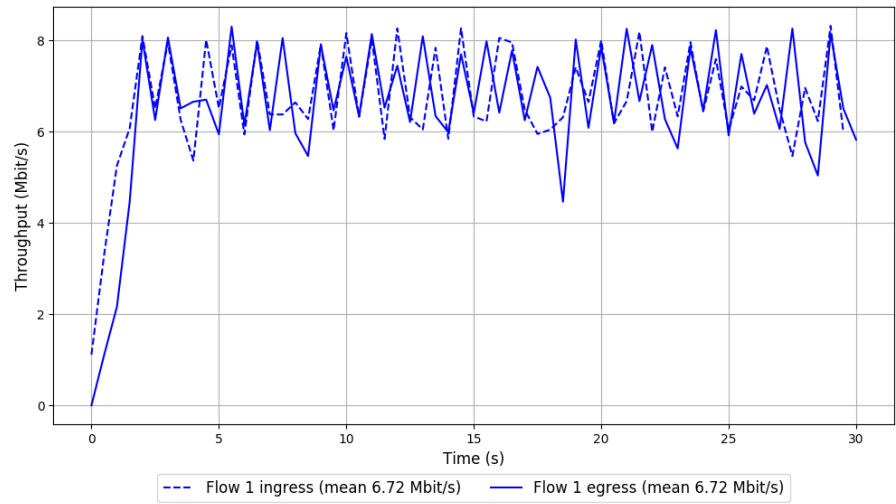Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-10-26 10:30:22
End at: 2018-10-26 10:30:52
Local clock offset: -0.087 ms
Remote clock offset: -0.685 ms


# Below is generated by plot.py at 2018-10-26 11:51:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.72 Mbit/s
95th percentile per-packet one-way delay: 64.266 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 6.72 Mbit/s
95th percentile per-packet one-way delay: 64.266 ms
Loss rate: 0.49%
```

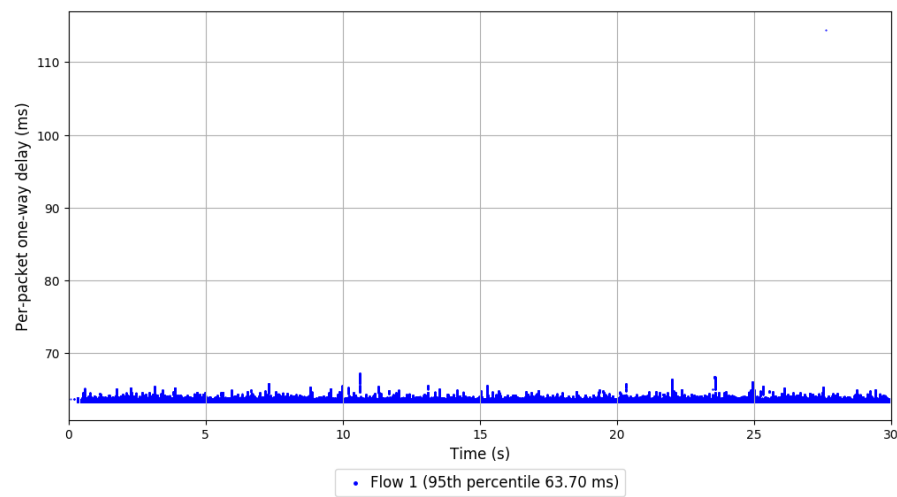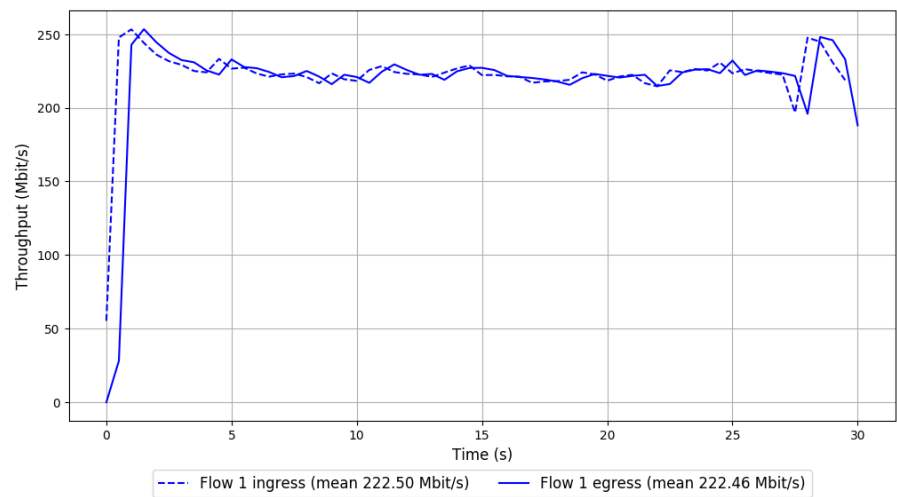# Run 5: Report of Sprout — Data Link

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

Start at: 2018-10-26 08:31:14
End at: 2018-10-26 08:31:44
Local clock offset: 0.106 ms
Remote clock offset: 0.025 ms


# Below is generated by plot.py at 2018-10-26 11:52:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.46 Mbit/s
95th percentile per-packet one-way delay: 63.701 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 222.46 Mbit/s
95th percentile per-packet one-way delay: 63.701 ms
Loss rate: 0.44%
```

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

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

Start at: 2018-10-26 08:57:02
End at: 2018-10-26 08:57:32
Local clock offset: 0.128 ms
Remote clock offset: -0.706 ms


# Below is generated by plot.py at 2018-10-26 11:53:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.18 Mbit/s
95th percentile per-packet one-way delay: 64.055 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 229.18 Mbit/s
95th percentile per-packet one-way delay: 64.055 ms
Loss rate: 0.46%
```
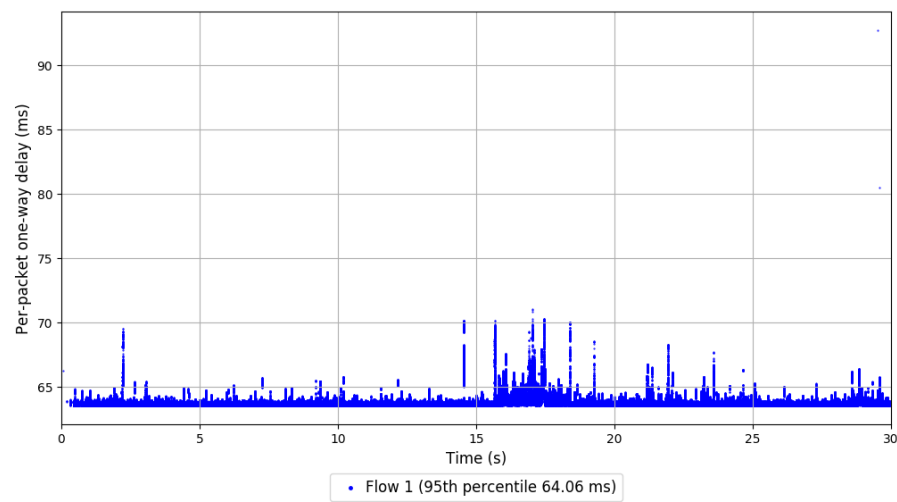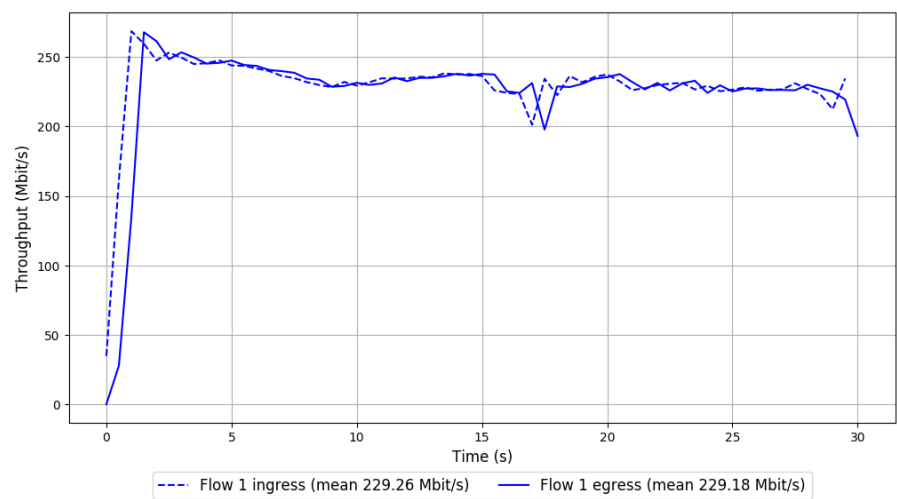
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 09:22:56
End at: 2018-10-26 09:23:26
Local clock offset: 0.169 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2018-10-26 11:53:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 228.40 Mbit/s
95th percentile per-packet one-way delay: 63.429 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 228.40 Mbit/s
95th percentile per-packet one-way delay: 63.429 ms
Loss rate: 0.43%
```
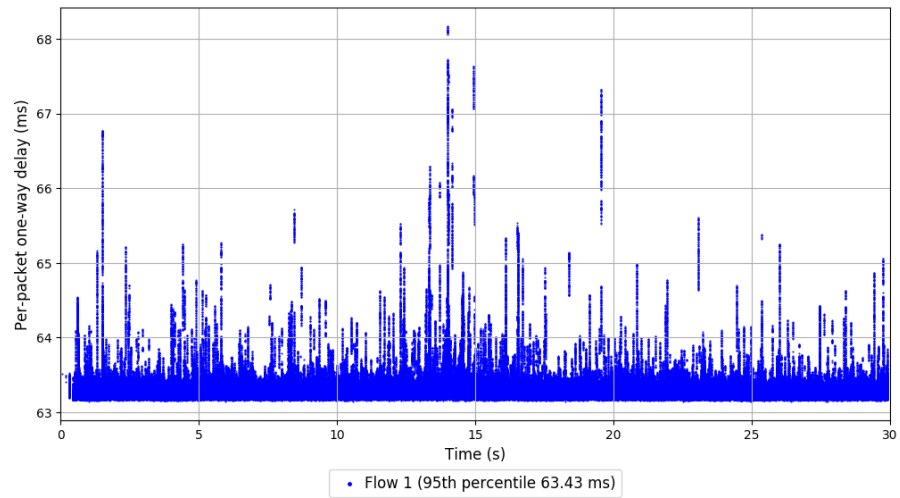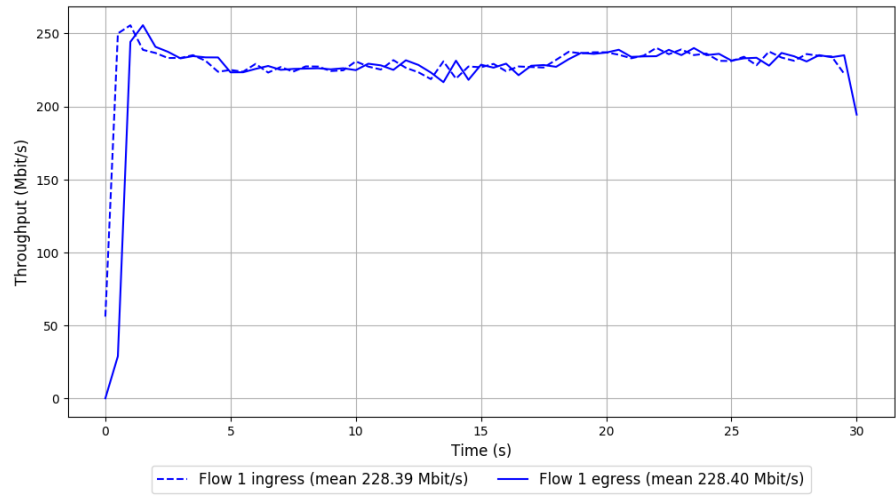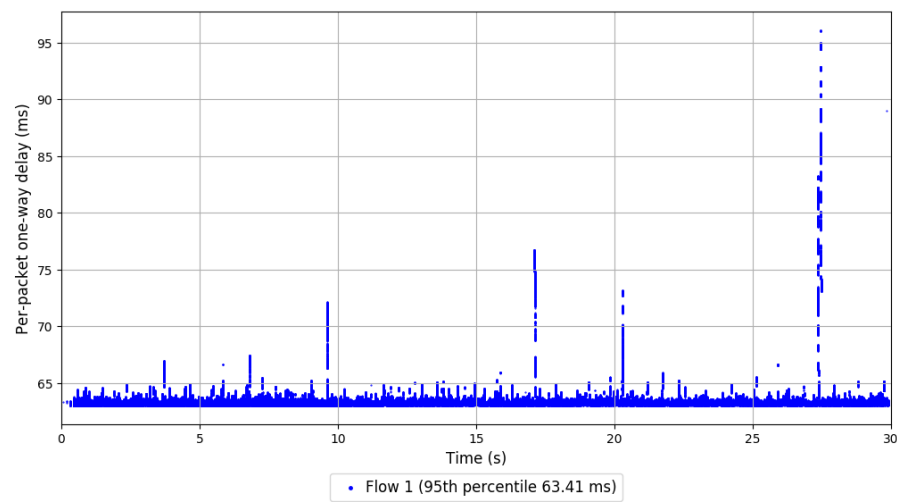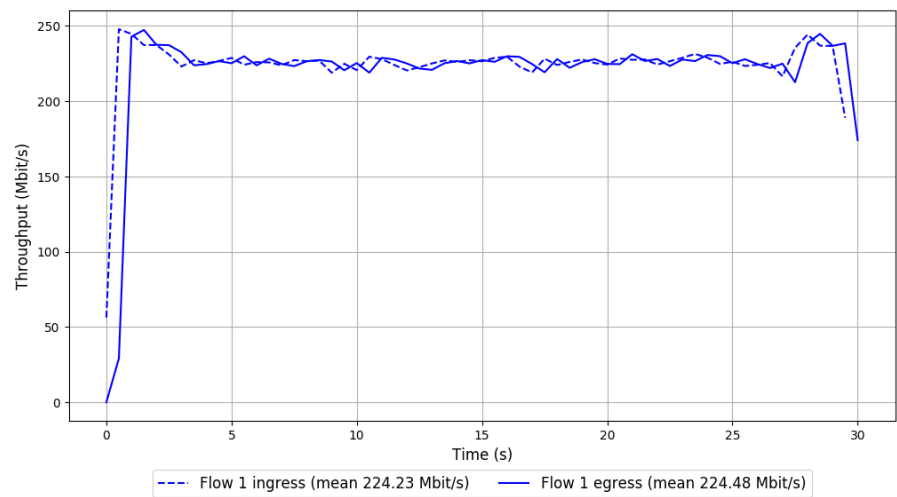
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 09:48:41
End at: 2018-10-26 09:49:11
Local clock offset: 0.14 ms
Remote clock offset: -0.112 ms


# Below is generated by plot.py at 2018-10-26 11:53:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.48 Mbit/s
95th percentile per-packet one-way delay: 63.415 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 224.48 Mbit/s
95th percentile per-packet one-way delay: 63.415 ms
Loss rate: 0.31%
```

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

Flow 1 ingress (mean 224.23 Mbit/s)   Flow 1 egress (mean 224.48 Mbit/s)
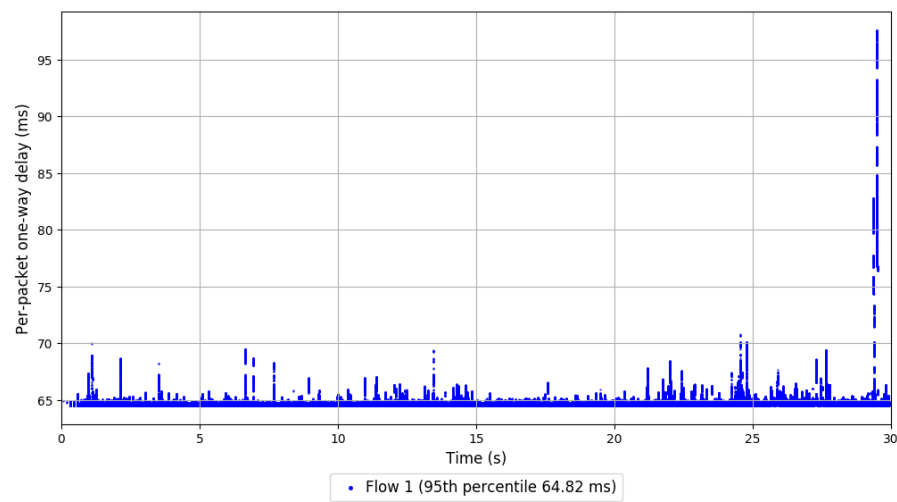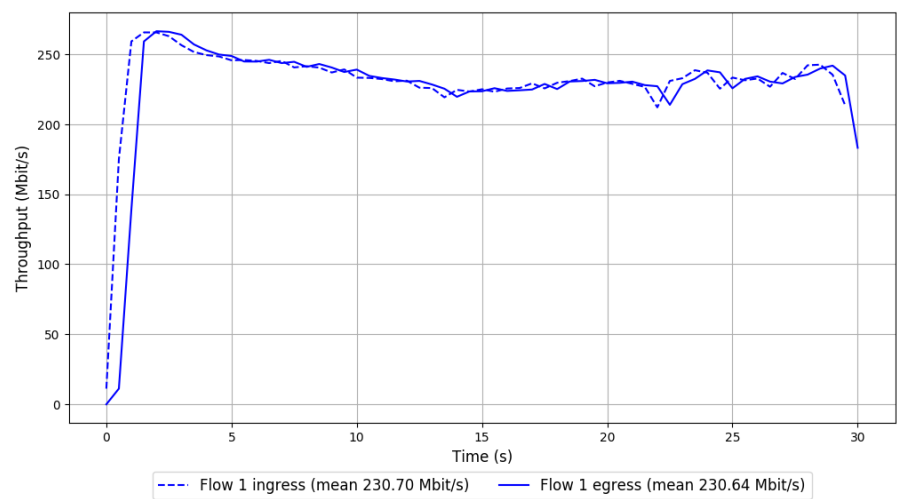

Flow 1 (95th percentile 63.41 ms)

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

Start at: 2018-10-26 10:14:19
End at: 2018-10-26 10:14:49
Local clock offset: -0.134 ms
Remote clock offset: -1.395 ms


# Below is generated by plot.py at 2018-10-26 11:56:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 230.64 Mbit/s
95th percentile per-packet one-way delay: 64.816 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 230.64 Mbit/s
95th percentile per-packet one-way delay: 64.816 ms
Loss rate: 0.45%
```

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

Flow 1 ingress (mean 230.70 Mbit/s) --- Flow 1 egress (mean 230.64 Mbit/s)
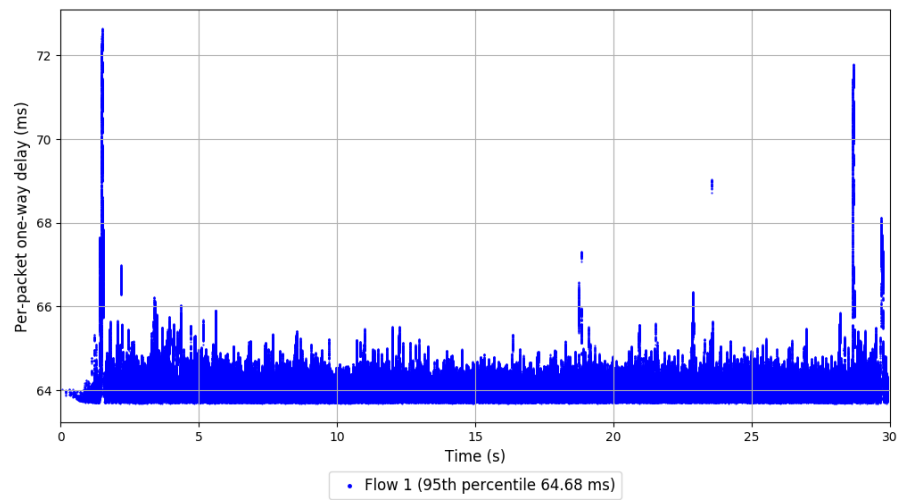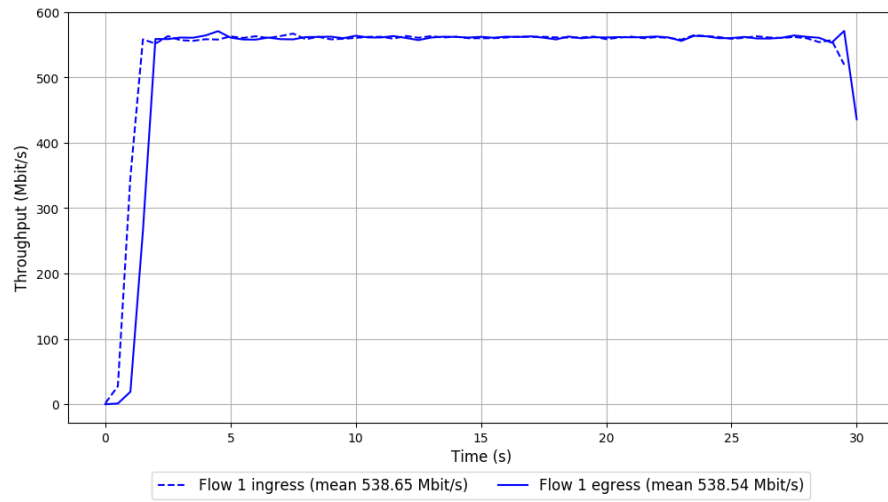

• Flow 1 (95th percentile 64.82 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-26 08:42:38
End at: 2018-10-26 08:43:08
Local clock offset: 0.115 ms
Remote clock offset: -0.678 ms


# Below is generated by plot.py at 2018-10-26 12:00:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 538.54 Mbit/s
95th percentile per-packet one-way delay: 64.680 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 538.54 Mbit/s
95th percentile per-packet one-way delay: 64.680 ms
Loss rate: 0.44%
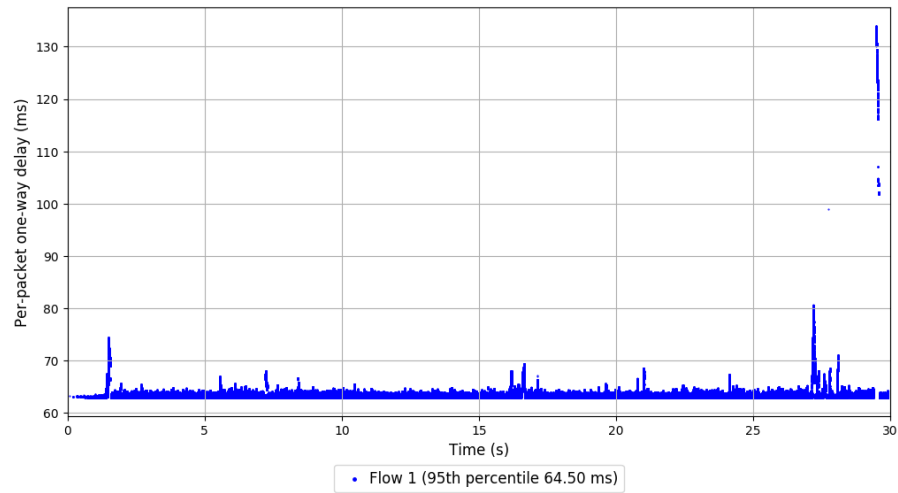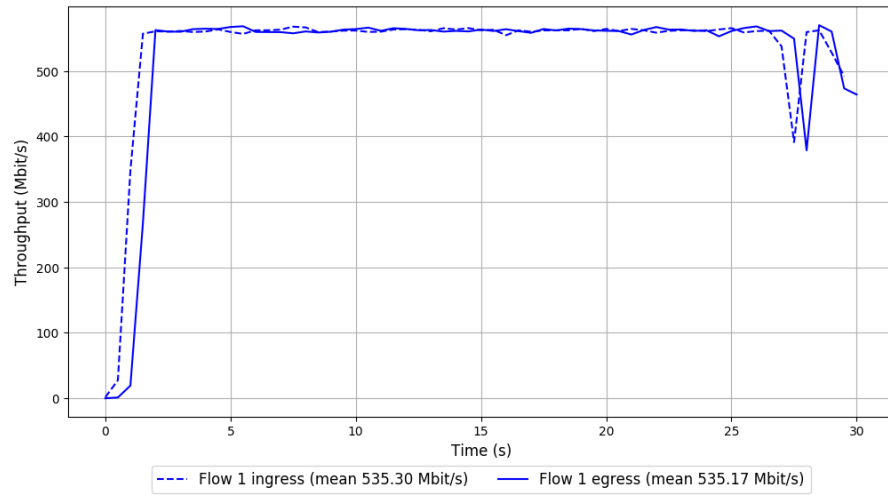```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 09:08:32
End at: 2018-10-26 09:09:02
Local clock offset: 0.144 ms
Remote clock offset: -0.062 ms

Below is generated by plot.py at 2018-10-26 12:00:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 535.17 Mbit/s
95th percentile per-packet one-way delay: 64.497 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 535.17 Mbit/s
95th percentile per-packet one-way delay: 64.497 ms
Loss rate: 0.44%
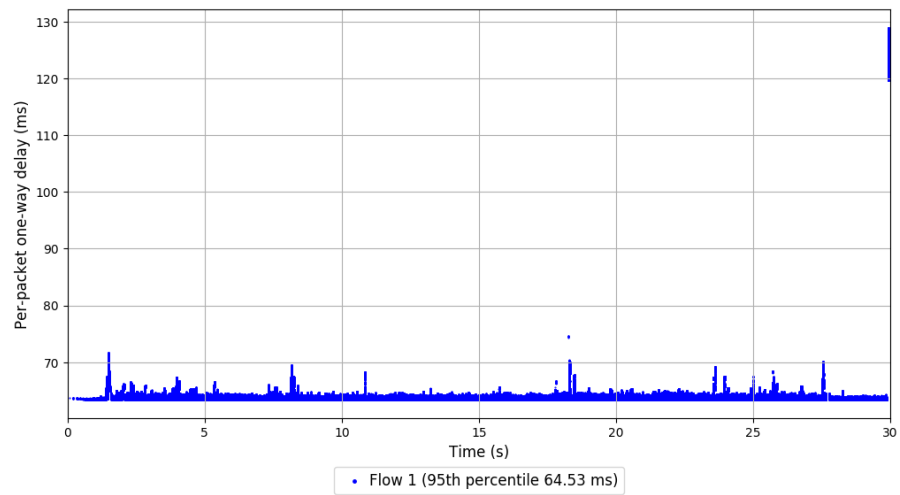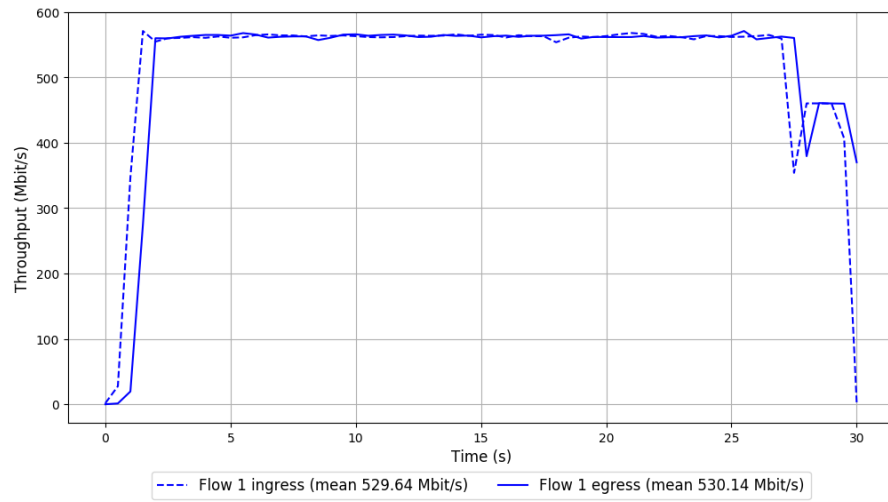```

Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 09:34:19
End at: 2018-10-26 09:34:49
Local clock offset: 0.218 ms
Remote clock offset: -0.691 ms


# Below is generated by plot.py at 2018-10-26 12:00:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 530.14 Mbit/s
95th percentile per-packet one-way delay: 64.526 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 530.14 Mbit/s
95th percentile per-packet one-way delay: 64.526 ms
Loss rate: 0.28%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 529.64 Mbit/s)   Flow 1 egress (mean 530.14 Mbit/s)
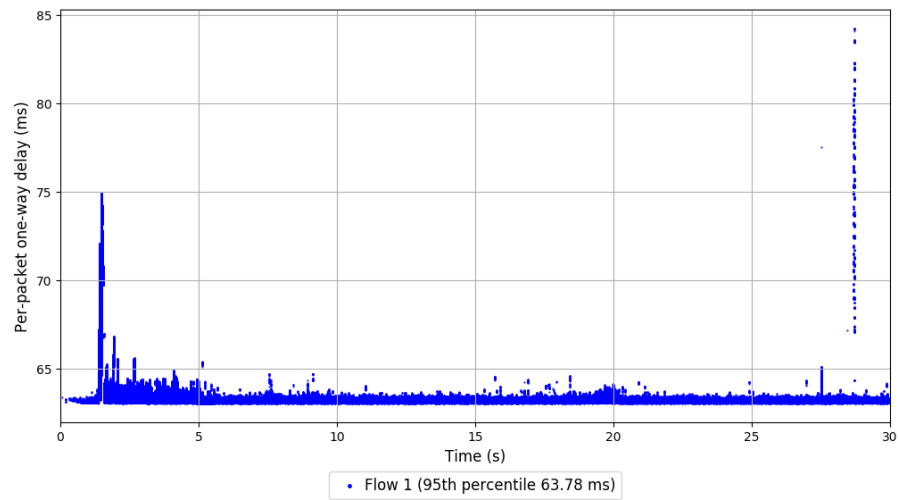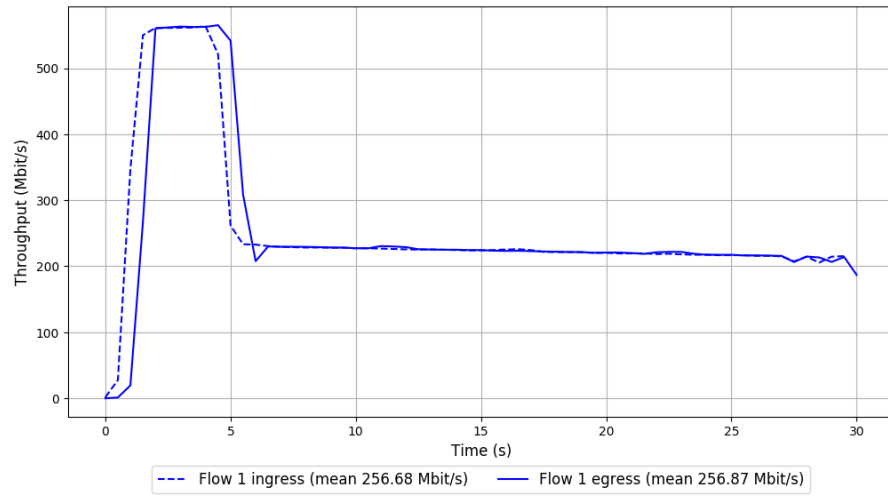

Flow 1 (95th percentile 64.53 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 10:00:09
End at: 2018-10-26 10:00:39
Local clock offset: -0.037 ms
Remote clock offset: -0.258 ms


# Below is generated by plot.py at 2018-10-26 12:00:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 256.87 Mbit/s
95th percentile per-packet one-way delay: 63.778 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 256.87 Mbit/s
95th percentile per-packet one-way delay: 63.778 ms
Loss rate: 0.35%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 256.68 Mbit/s)   Flow 1 egress (mean 256.87 Mbit/s)
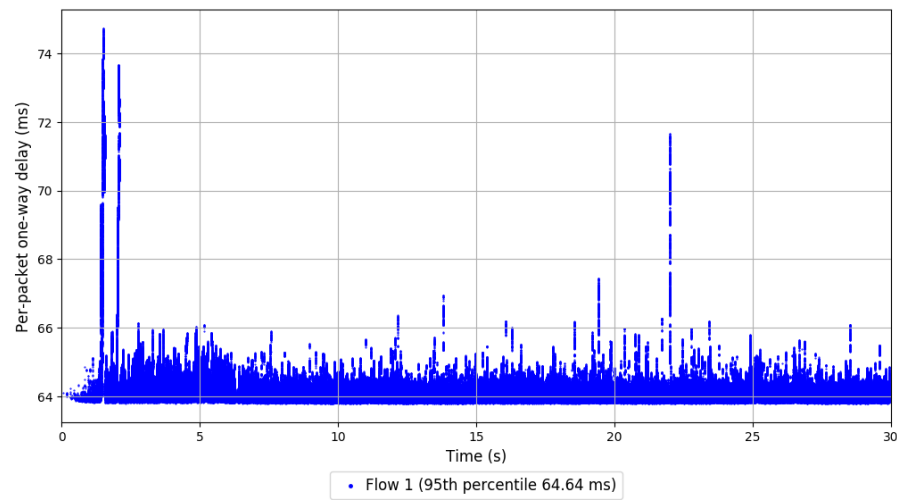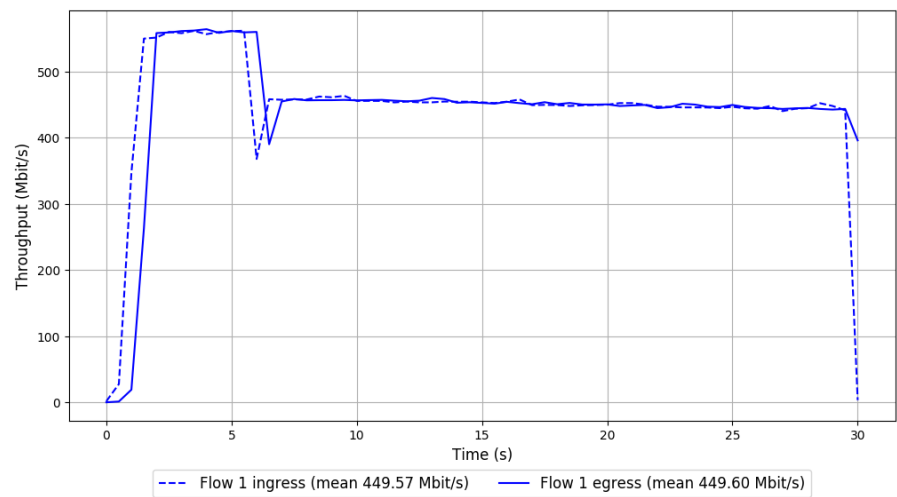

Flow 1 (95th percentile 63.78 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 10:25:45
End at: 2018-10-26 10:26:15
Local clock offset: -0.11 ms
Remote clock offset: -0.793 ms


# Below is generated by plot.py at 2018-10-26 12:01:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 449.60 Mbit/s
95th percentile per-packet one-way delay: 64.635 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 449.60 Mbit/s
95th percentile per-packet one-way delay: 64.635 ms
Loss rate: 0.42%
```

Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-10-26 08:26:40
End at: 2018-10-26 08:27:10
Local clock offset: 0.104 ms
Remote clock offset: 0.78 ms


# Below is generated by plot.py at 2018-10-26 12:01:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 181.74 Mbit/s
95th percentile per-packet one-way delay: 139.133 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 181.74 Mbit/s
95th percentile per-packet one-way delay: 139.133 ms
Loss rate: 0.88%
```
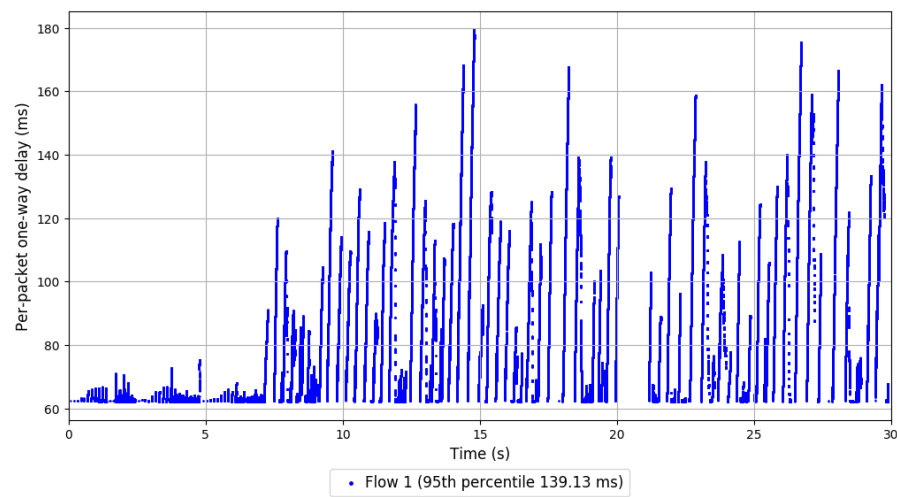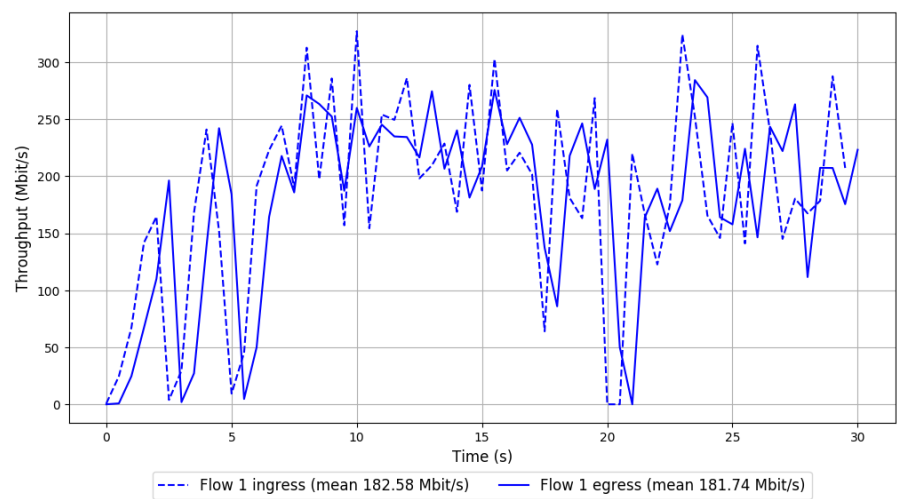
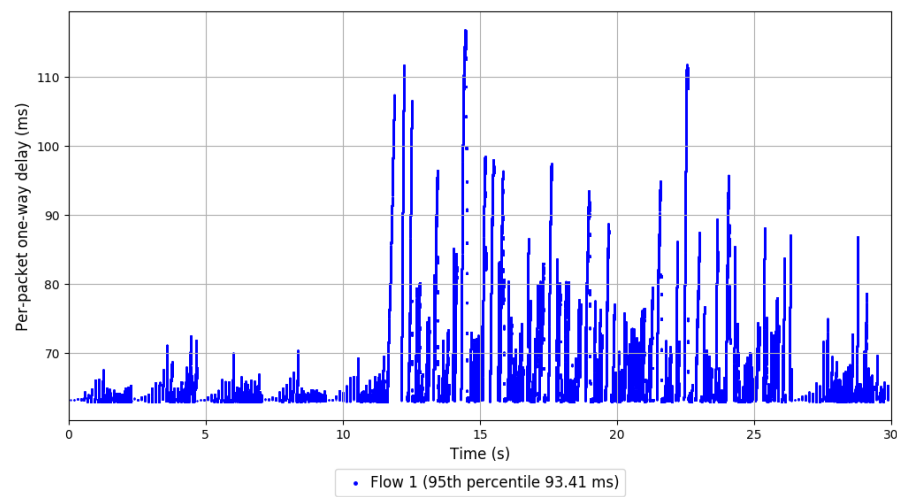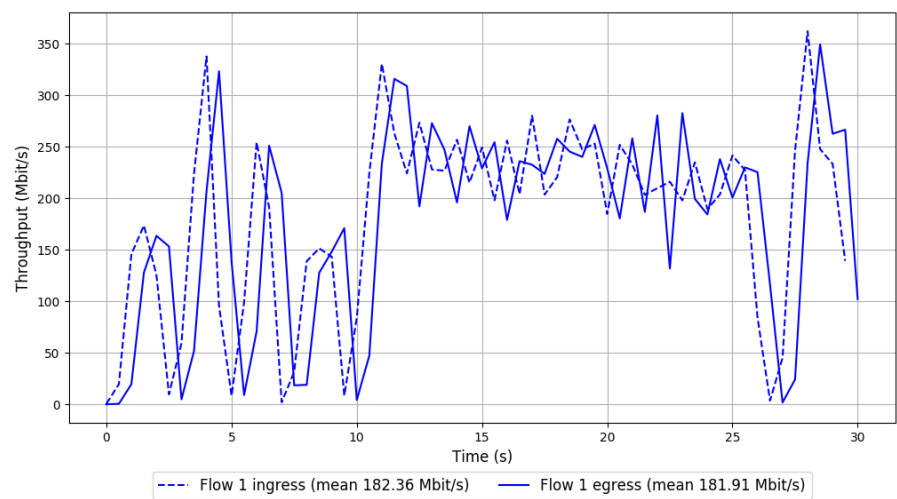# Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-10-26 08:52:19
End at: 2018-10-26 08:52:49
Local clock offset: 0.14 ms
Remote clock offset: -0.347 ms


# Below is generated by plot.py at 2018-10-26 12:01:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 181.91 Mbit/s
95th percentile per-packet one-way delay: 93.409 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 181.91 Mbit/s
95th percentile per-packet one-way delay: 93.409 ms
Loss rate: 0.34%
```

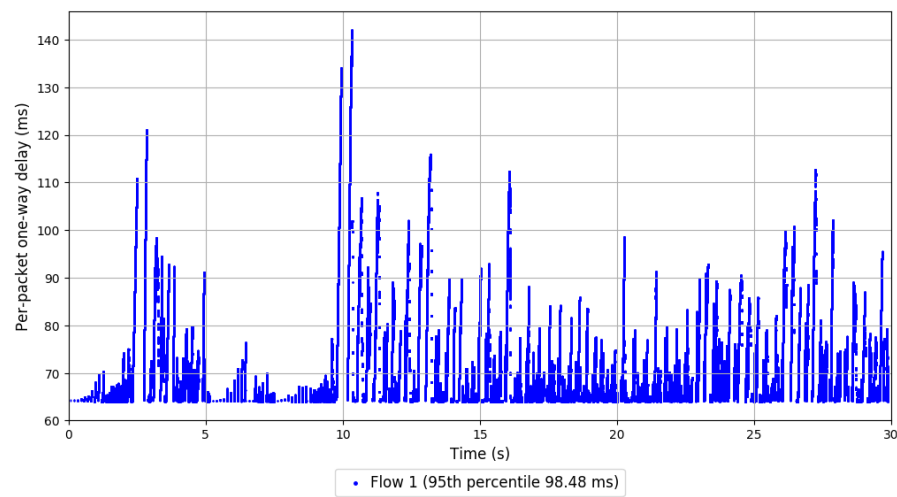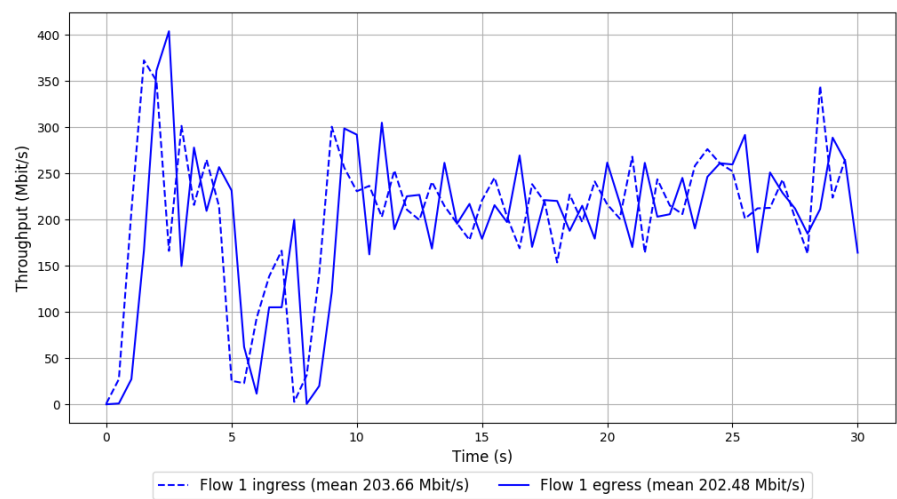Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-26 09:18:15
End at: 2018-10-26 09:18:45
Local clock offset: 0.184 ms
Remote clock offset: -1.364 ms


# Below is generated by plot.py at 2018-10-26 12:03:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 202.48 Mbit/s
95th percentile per-packet one-way delay: 98.482 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 202.48 Mbit/s
95th percentile per-packet one-way delay: 98.482 ms
Loss rate: 0.96%
```

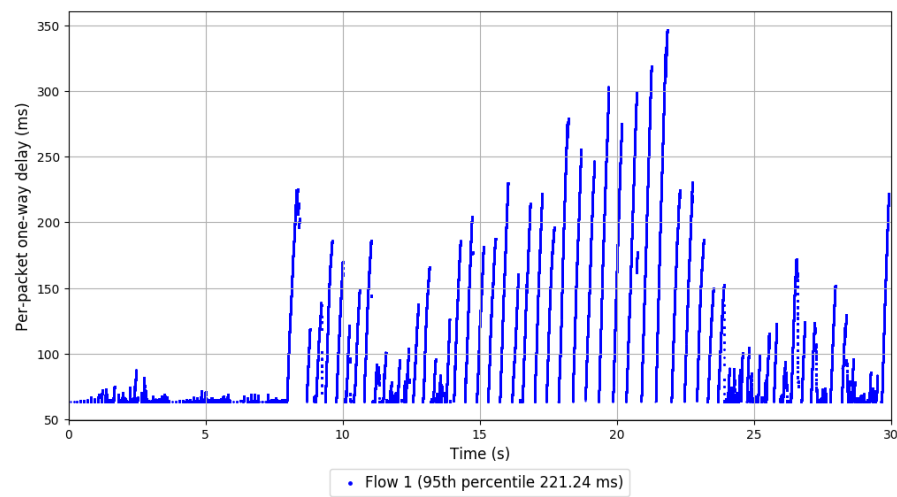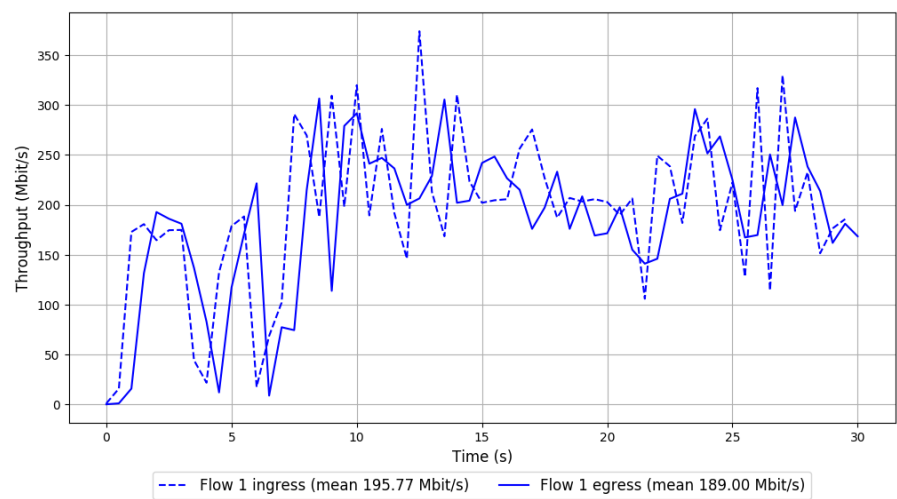Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-26 09:43:58
End at: 2018-10-26 09:44:28
Local clock offset: 0.209 ms
Remote clock offset: -0.769 ms


# Below is generated by plot.py at 2018-10-26 12:03:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 189.00 Mbit/s
95th percentile per-packet one-way delay: 221.243 ms
Loss rate: 2.99%
-- Flow 1:
Average throughput: 189.00 Mbit/s
95th percentile per-packet one-way delay: 221.243 ms
Loss rate: 2.99%
```
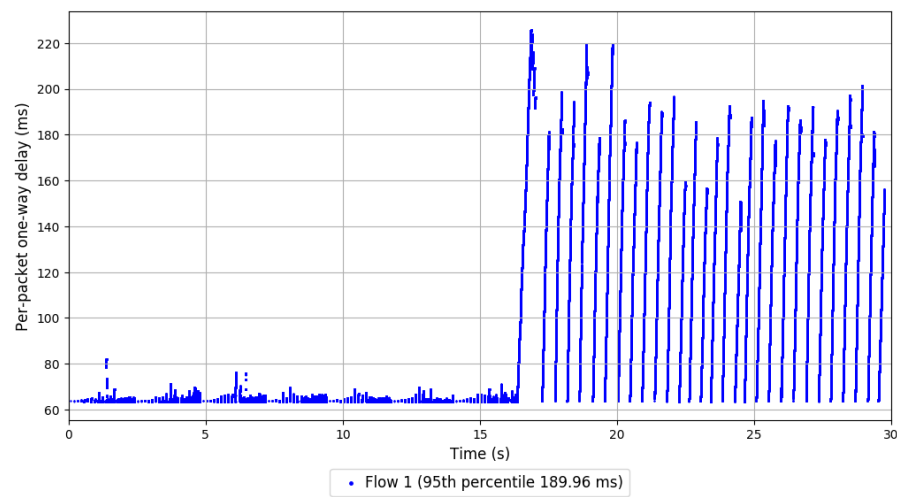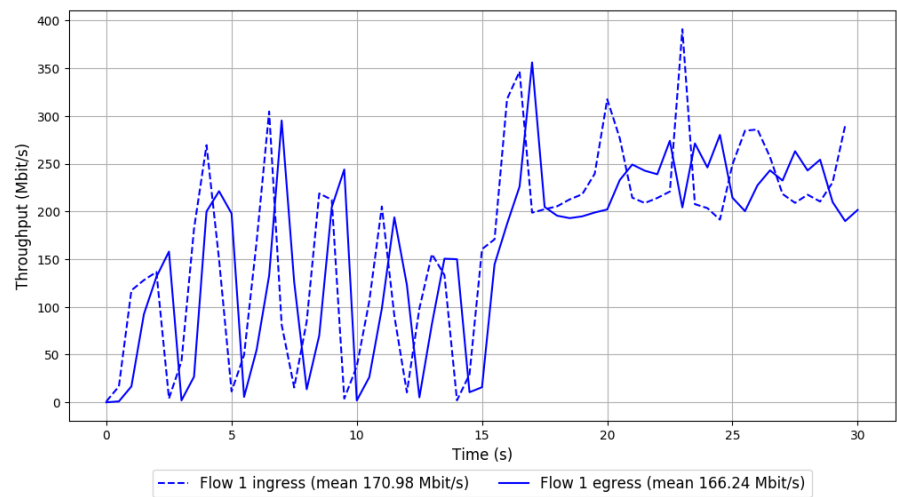
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-26 10:09:35
End at: 2018-10-26 10:10:05
Local clock offset: -0.091 ms
Remote clock offset: -0.587 ms


# Below is generated by plot.py at 2018-10-26 12:04:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 166.24 Mbit/s
95th percentile per-packet one-way delay: 189.964 ms
Loss rate: 3.55%
-- Flow 1:
Average throughput: 166.24 Mbit/s
95th percentile per-packet one-way delay: 189.964 ms
Loss rate: 3.55%
```

Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-26 08:45:44
End at: 2018-10-26 08:46:14
Local clock offset: 0.126 ms
Remote clock offset: -0.136 ms


# Below is generated by plot.py at 2018-10-26 12:06:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 434.26 Mbit/s
95th percentile per-packet one-way delay: 63.615 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 434.26 Mbit/s
95th percentile per-packet one-way delay: 63.615 ms
Loss rate: 0.46%
```
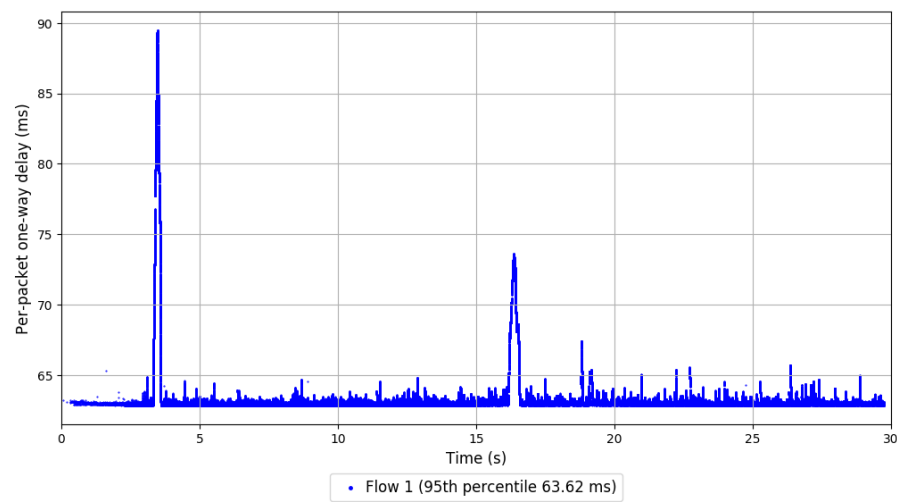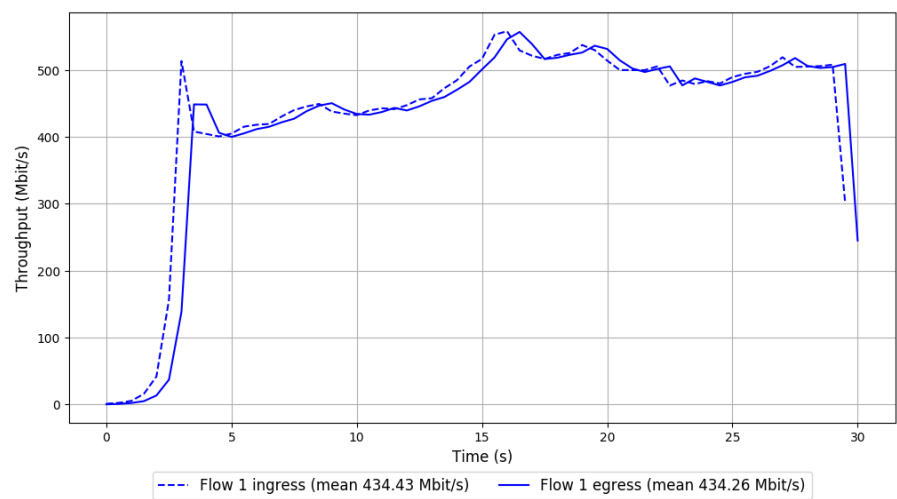
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 434.43 Mbit/s) — — — Flow 1 egress (mean 434.26 Mbit/s)

• Flow 1 (95th percentile 63.62 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 09:11:38
End at: 2018-10-26 09:12:08
Local clock offset: 0.138 ms
Remote clock offset: 0.798 ms


# Below is generated by plot.py at 2018-10-26 12:06:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 418.63 Mbit/s
95th percentile per-packet one-way delay: 62.516 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 418.63 Mbit/s
95th percentile per-packet one-way delay: 62.516 ms
Loss rate: 0.47%
```
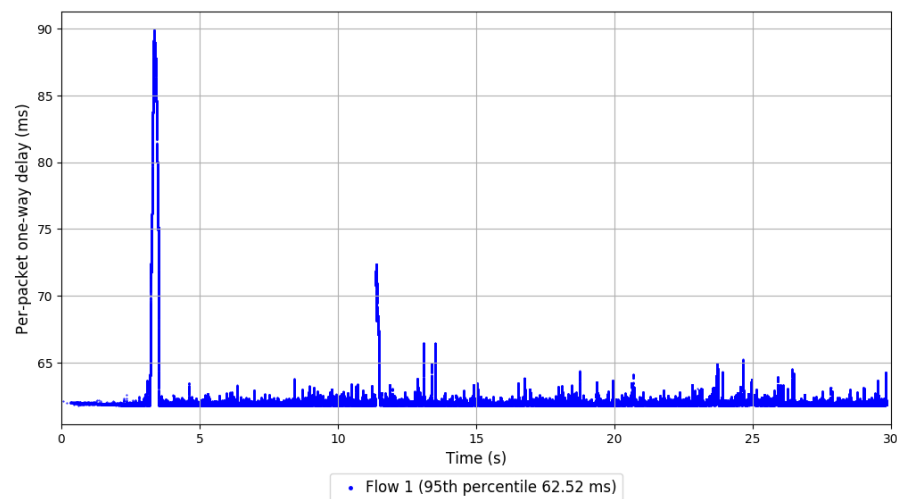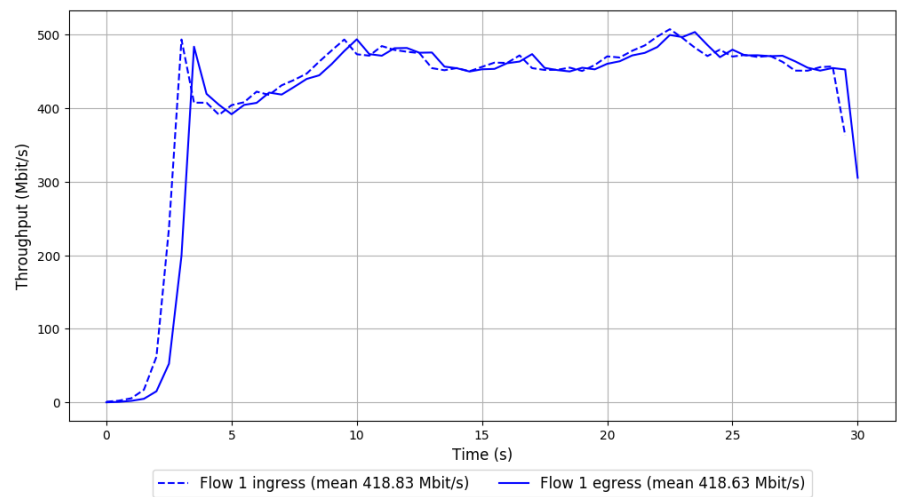
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 09:37:23
End at: 2018-10-26 09:37:54
Local clock offset: 0.216 ms
Remote clock offset: -0.611 ms


# Below is generated by plot.py at 2018-10-26 12:06:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 420.22 Mbit/s
95th percentile per-packet one-way delay: 63.568 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 420.22 Mbit/s
95th percentile per-packet one-way delay: 63.568 ms
Loss rate: 0.47%
```
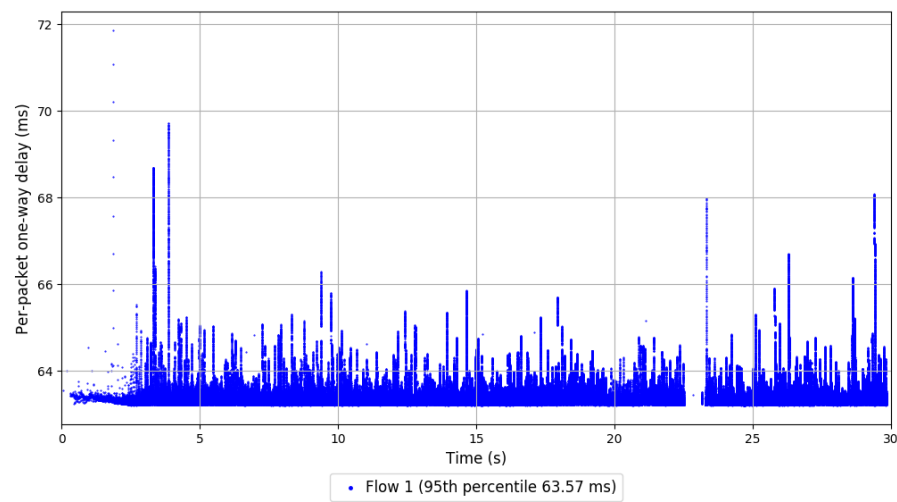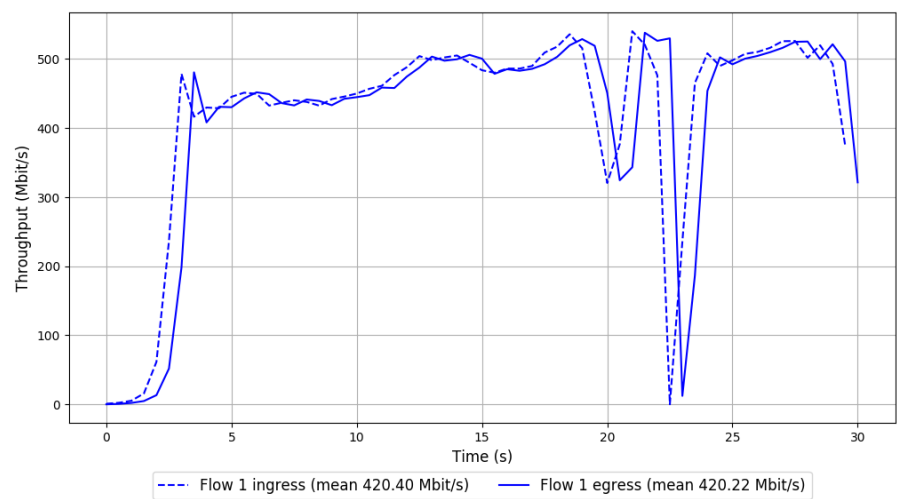
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 420.40 Mbit/s) —— Flow 1 egress (mean 420.22 Mbit/s)
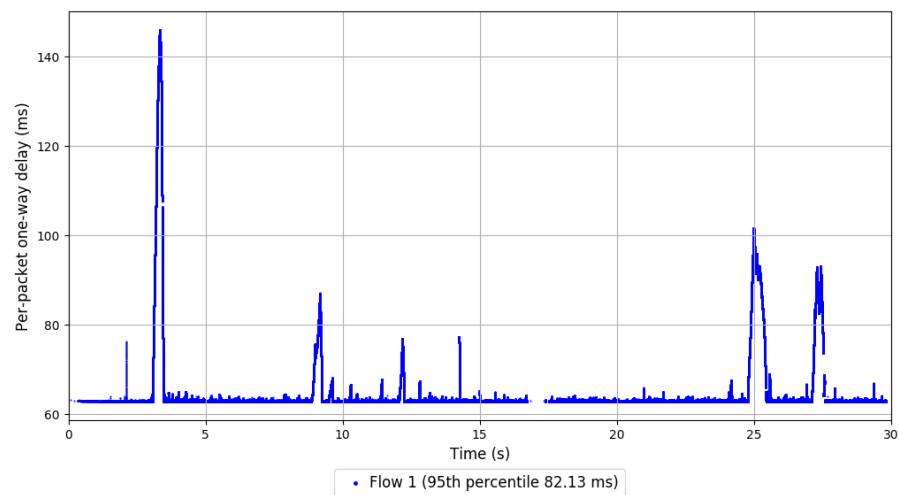
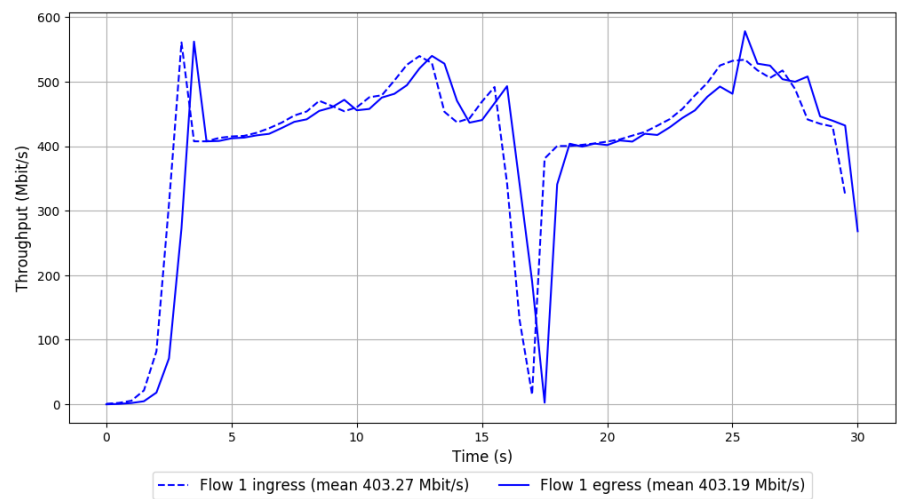

• Flow 1 (95th percentile 63.57 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 10:02:57
End at: 2018-10-26 10:03:27
Local clock offset: -0.062 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2018-10-26 12:06:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 403.19 Mbit/s
95th percentile per-packet one-way delay: 82.127 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 403.19 Mbit/s
95th percentile per-packet one-way delay: 82.127 ms
Loss rate: 0.45%
```

Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 10:28:47
End at: 2018-10-26 10:29:17
Local clock offset: -0.082 ms
Remote clock offset: 0.38 ms


# Below is generated by plot.py at 2018-10-26 12:07:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 419.06 Mbit/s
95th percentile per-packet one-way delay: 64.622 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 419.06 Mbit/s
95th percentile per-packet one-way delay: 64.622 ms
Loss rate: 0.45%
```
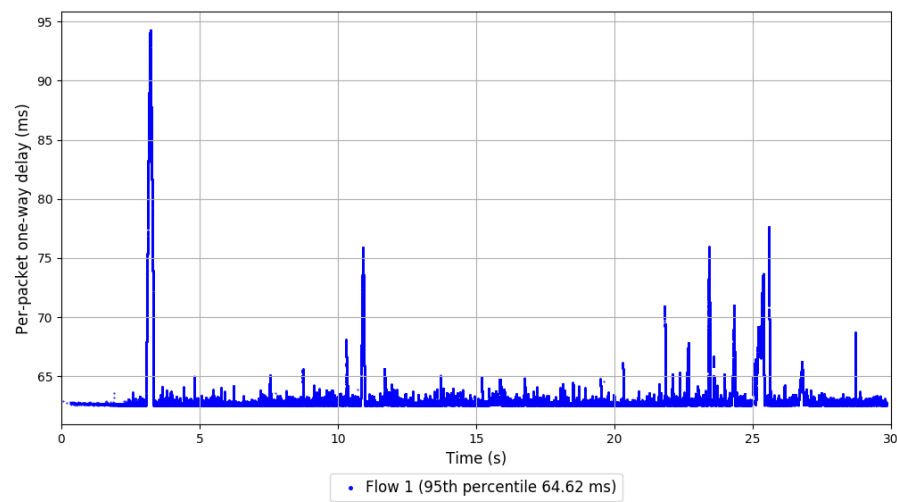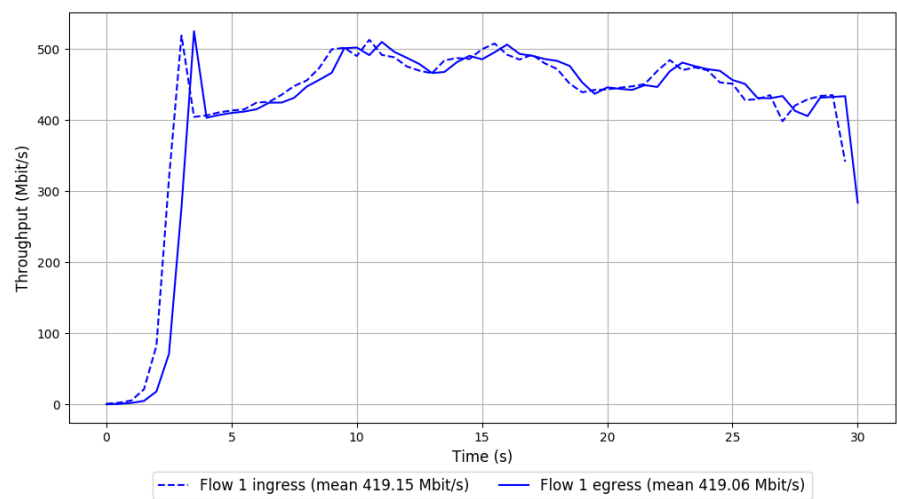
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 419.15 Mbit/s)   Flow 1 egress (mean 419.06 Mbit/s)

Flow 1 (95th percentile 64.62 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-26 08:25:31
End at: 2018-10-26 08:26:02
Local clock offset: 0.061 ms
Remote clock offset: -1.09 ms


# Below is generated by plot.py at 2018-10-26 12:07:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 64.287 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 64.287 ms
Loss rate: 0.43%
```
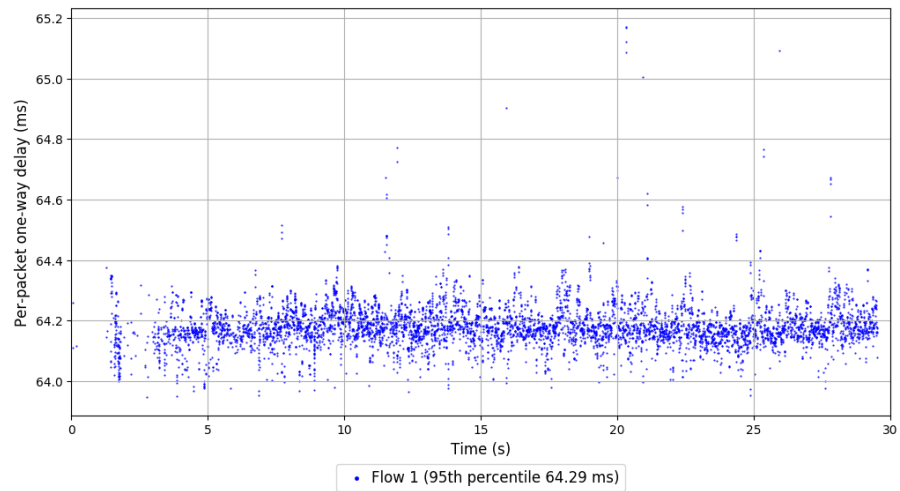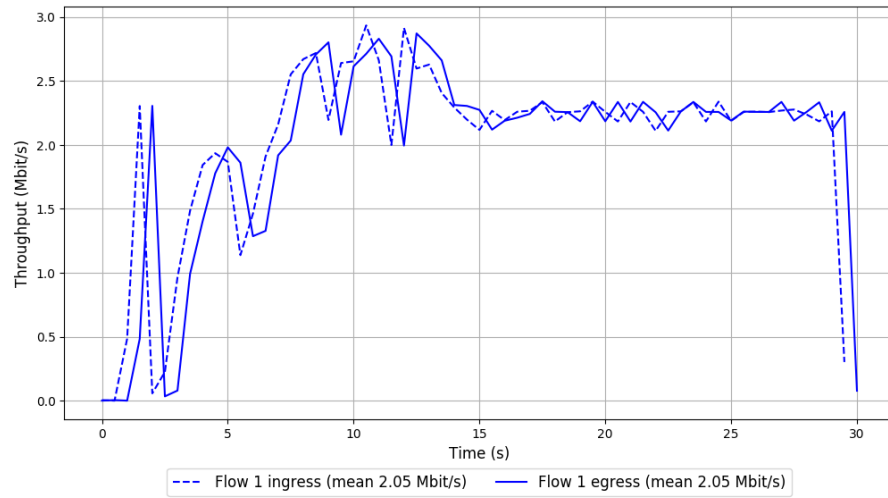
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-26 08:51:12
End at: 2018-10-26 08:51:42
Local clock offset: 0.111 ms
Remote clock offset: 1.293 ms


# Below is generated by plot.py at 2018-10-26 12:07:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 61.939 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 61.939 ms
Loss rate: 0.41%
```
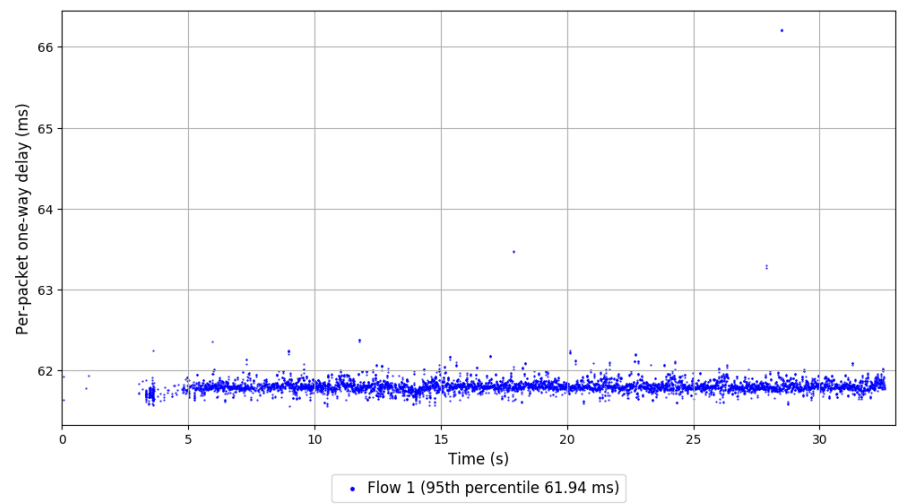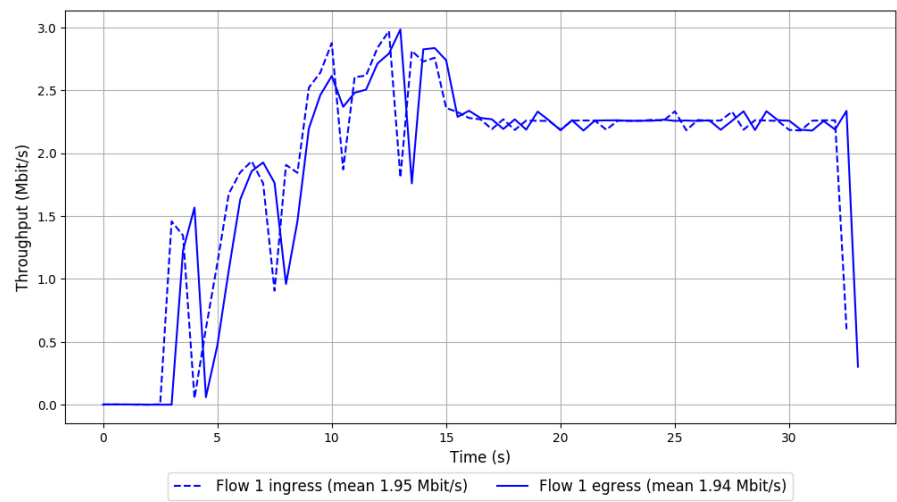
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-26 09:17:08
End at: 2018-10-26 09:17:38
Local clock offset: 0.156 ms
Remote clock offset: 0.394 ms


# Below is generated by plot.py at 2018-10-26 12:07:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 62.862 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 62.862 ms
Loss rate: 0.49%
```
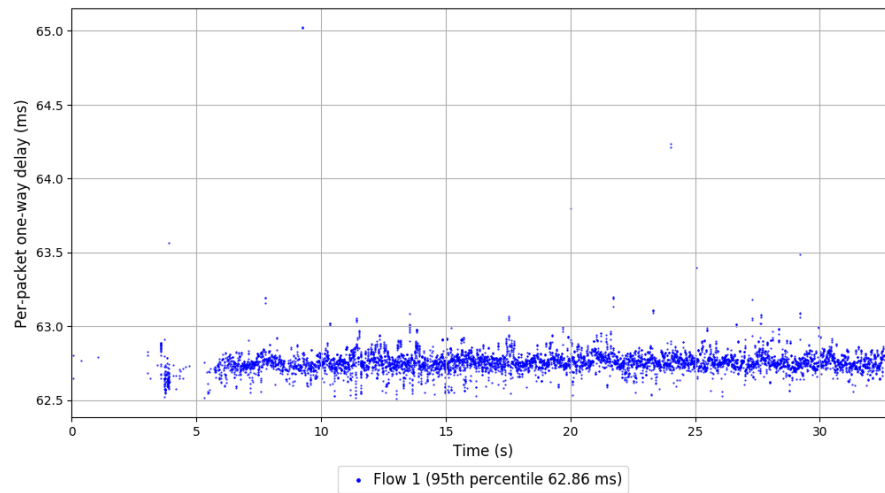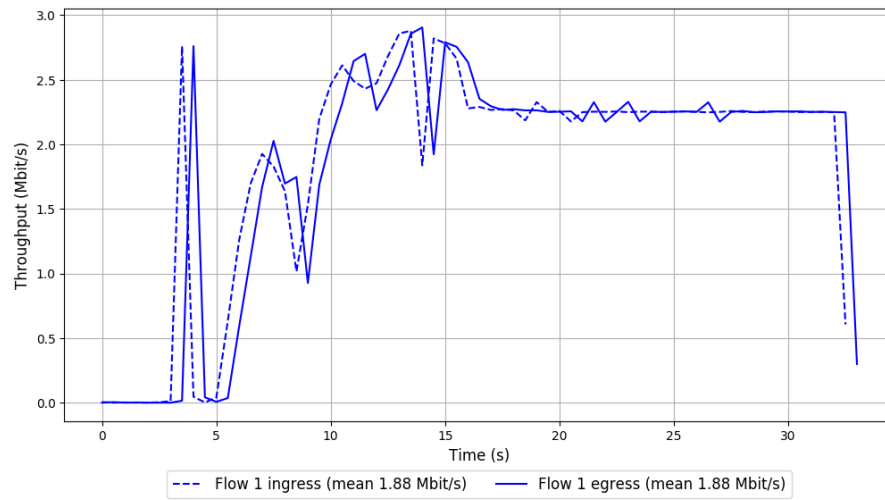
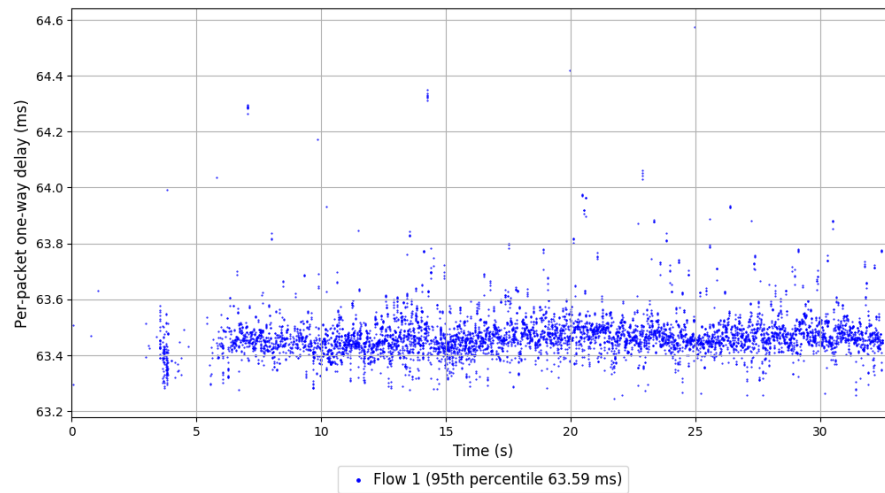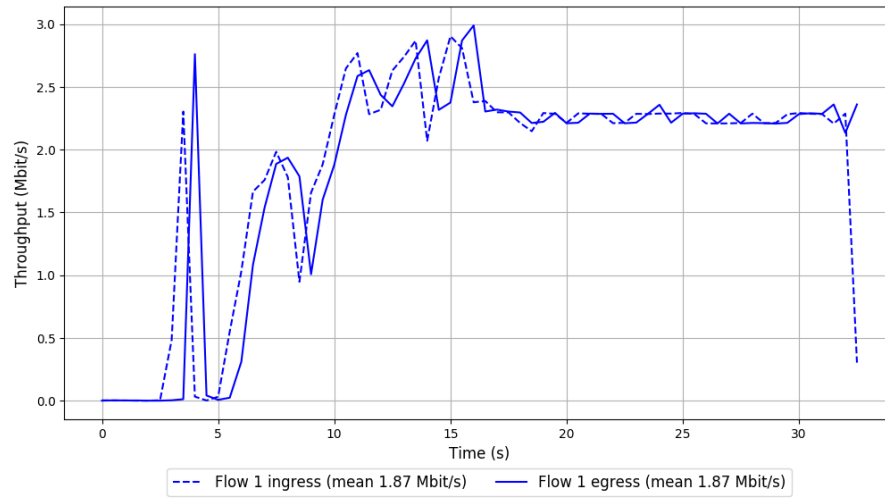Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-26 09:42:51
End at: 2018-10-26 09:43:21
Local clock offset: 0.211 ms
Remote clock offset: -0.158 ms


# Below is generated by plot.py at 2018-10-26 12:07:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 63.589 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 63.589 ms
Loss rate: 0.44%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-26 10:08:28
End at: 2018-10-26 10:08:58
Local clock offset: -0.09 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2018-10-26 12:07:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 63.104 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 63.104 ms
Loss rate: 0.65%
```

Run 5: Report of WebRTC media — Data Link