Pantheon Report

Generated at 2018-10-26 08:01:12 (UTC).

Data path: Brazil on `p4p1` (*remote*) →AWS Brazil 1 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

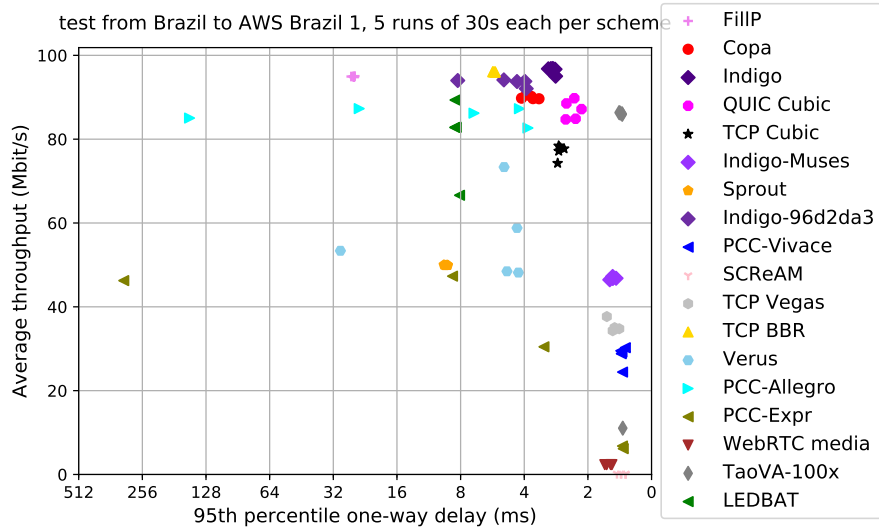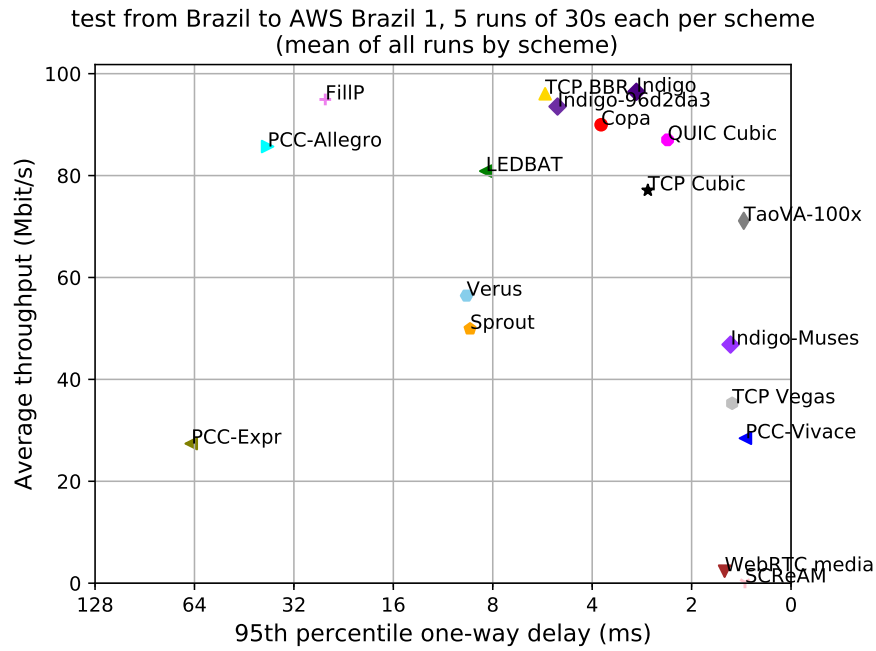NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 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 Brazil to AWS Brazil 1, 5 runs of 30s each per scheme
(mean of all runs by scheme)

test from Brazil to AWS Brazil 1, 5 runs of 30s each per scheme

3

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	96.05	5.55	0.46
Copa	5	89.98	3.76	0.42
TCP Cubic	5	77.10	2.71	0.46
FillP	5	94.94	25.71	1.72
Indigo	5	96.44	2.94	0.47
Indigo-96d2da3	5	93.55	5.09	0.47
LEDBAT	5	80.88	8.40	0.45
Indigo-Muses	5	46.83	1.22	0.40
PCC-Allegro	5	85.69	38.44	0.51
PCC-Expr	5	27.40	65.47	1.13
QUIC Cubic	5	87.01	2.36	0.43
SCReAM	5	0.15	0.93	0.46
Sprout	5	49.92	9.37	0.46
TaoVA-100x	5	71.12	0.95	0.41
TCP Vegas	5	35.31	1.18	0.45
Verus	5	56.44	9.60	0.48
PCC-Vivace	5	28.44	0.92	0.43
WebRTC media	5	2.35	1.34	0.37

4

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-26 06:13:38
End at: 2018-10-26 06:14:08
Local clock offset: -4.936 ms
Remote clock offset: 0.106 ms

# Below is generated by plot.py at 2018-10-26 07:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.10 Mbit/s
95th percentile per-packet one-way delay: 5.621 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 96.10 Mbit/s
95th percentile per-packet one-way delay: 5.621 ms
Loss rate: 0.43%
```
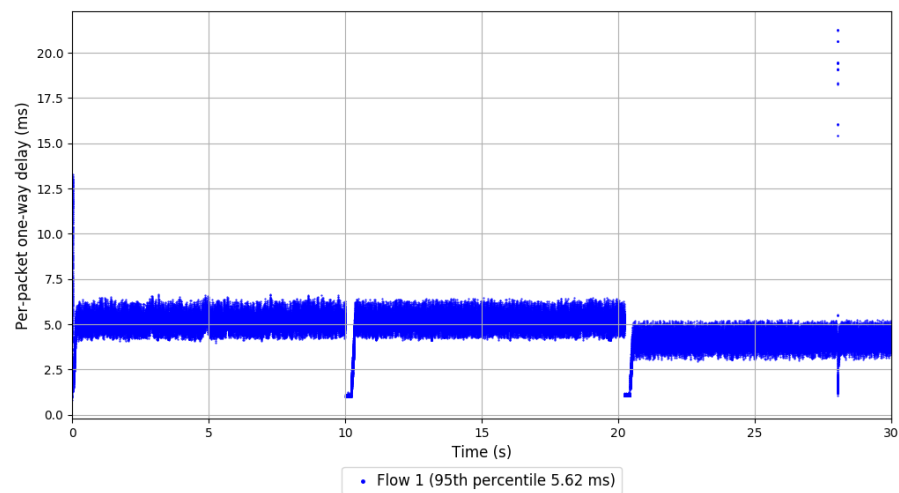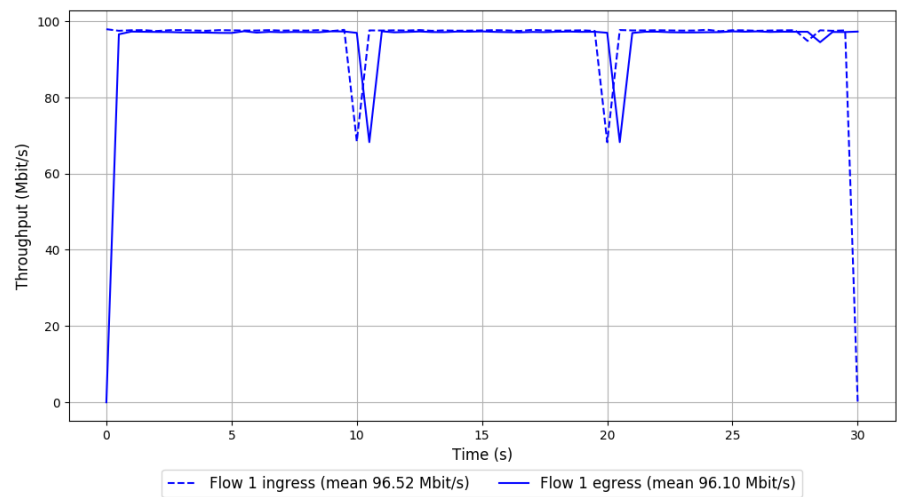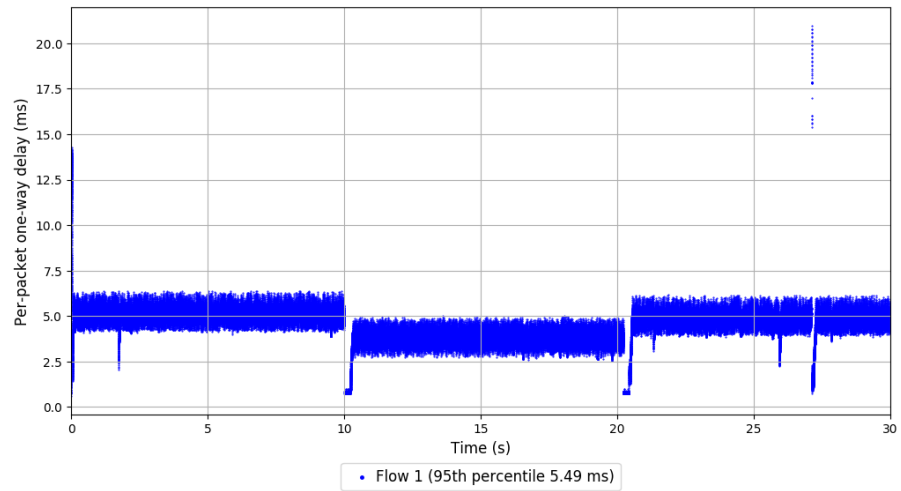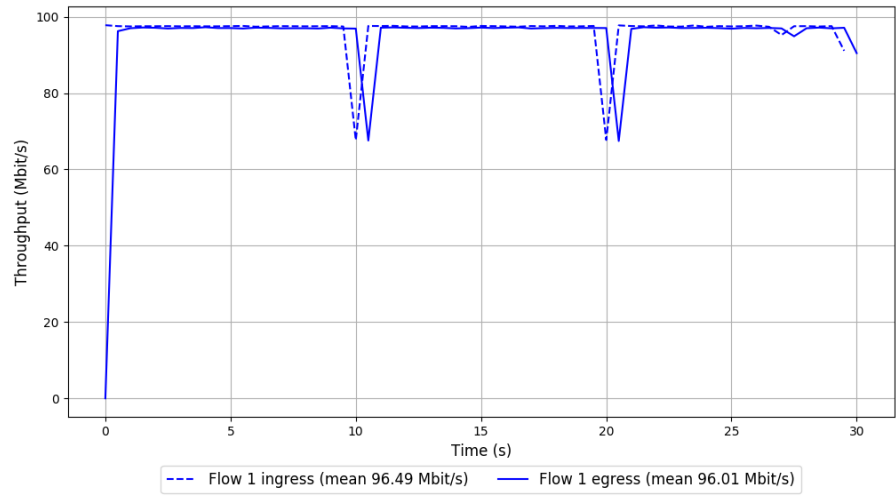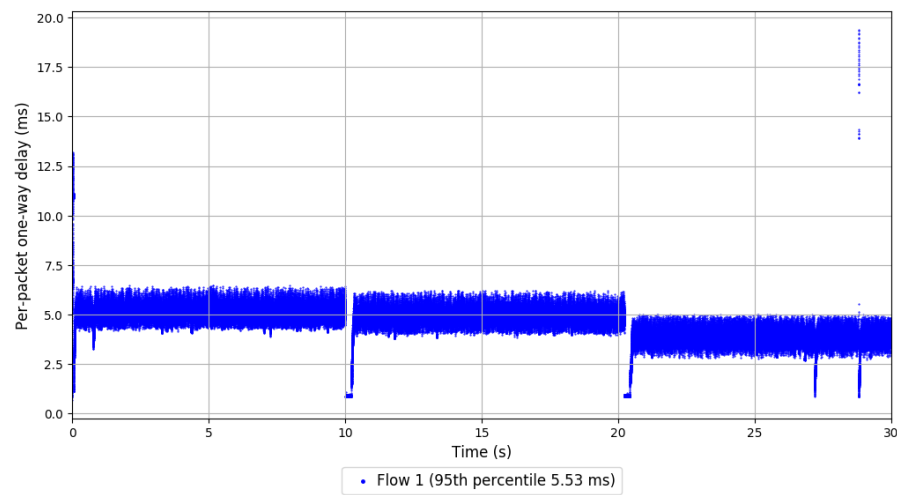
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 96.52 Mbit/s)   Flow 1 egress (mean 96.10 Mbit/s)

Flow 1 (95th percentile 5.62 ms)

6

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-26 06:33:53
End at: 2018-10-26 06:34:23
Local clock offset: -6.864 ms
Remote clock offset: 0.262 ms


# Below is generated by plot.py at 2018-10-26 07:51:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.01 Mbit/s
95th percentile per-packet one-way delay: 5.489 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 96.01 Mbit/s
95th percentile per-packet one-way delay: 5.489 ms
Loss rate: 0.50%
```
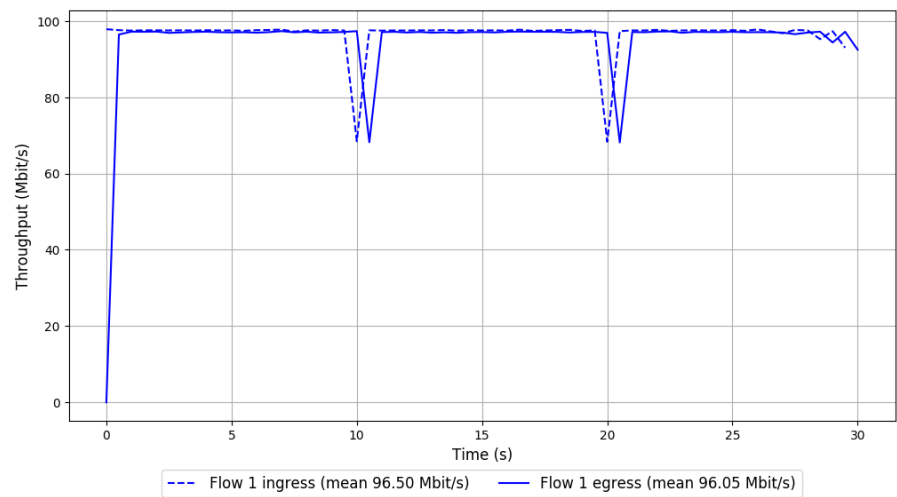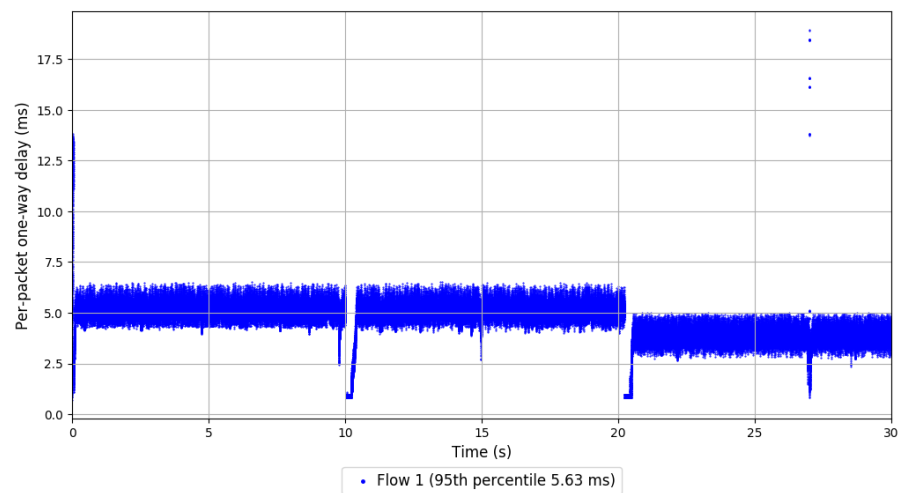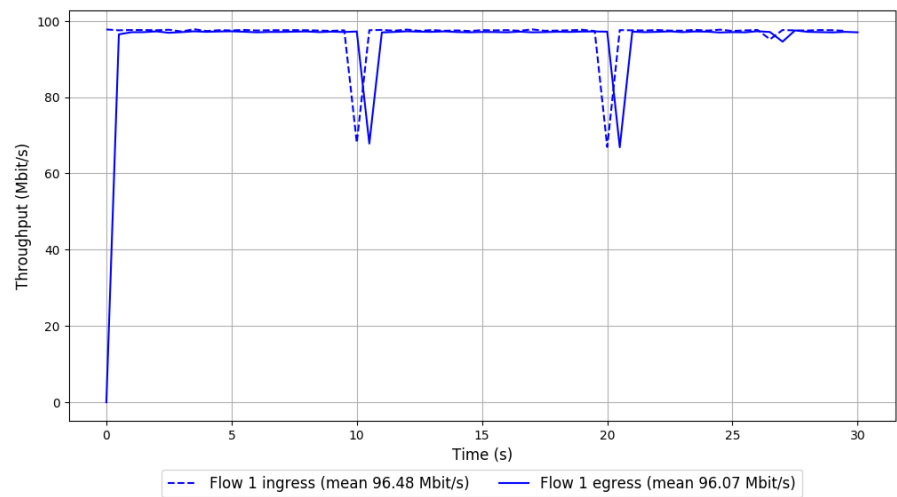
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-26 06:54:05
End at: 2018-10-26 06:54:35
Local clock offset: -6.994 ms
Remote clock offset: 0.434 ms

# Below is generated by plot.py at 2018-10-26 07:51:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.05 Mbit/s
95th percentile per-packet one-way delay: 5.529 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 96.05 Mbit/s
95th percentile per-packet one-way delay: 5.529 ms
Loss rate: 0.47%
```
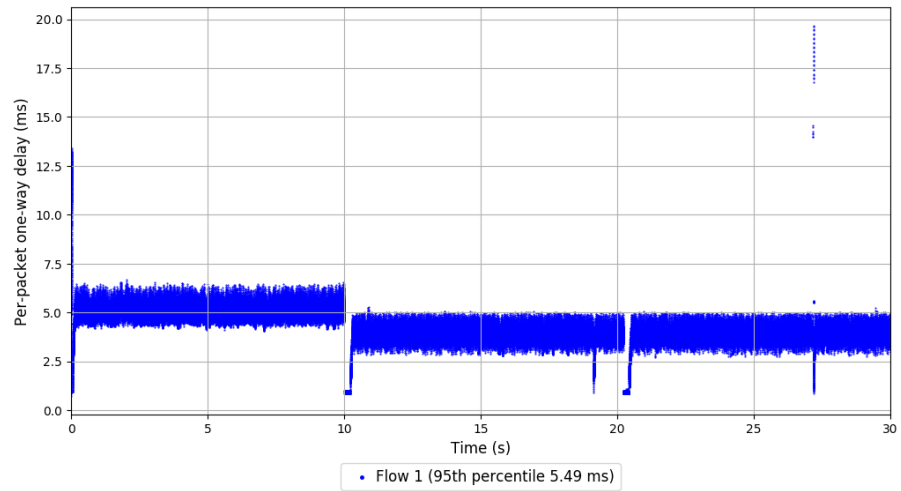
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 96.50 Mbit/s)   Flow 1 egress (mean 96.05 Mbit/s)

Flow 1 (95th percentile 5.53 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-26 07:14:15
End at: 2018-10-26 07:14:45
Local clock offset: -6.114 ms
Remote clock offset: 0.564 ms

# Below is generated by plot.py at 2018-10-26 07:51:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.07 Mbit/s
95th percentile per-packet one-way delay: 5.633 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 96.07 Mbit/s
95th percentile per-packet one-way delay: 5.633 ms
Loss rate: 0.43%
```
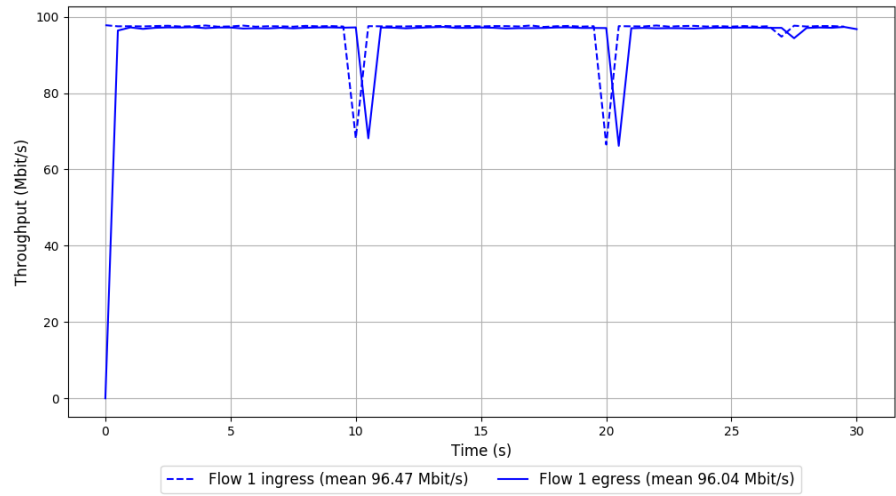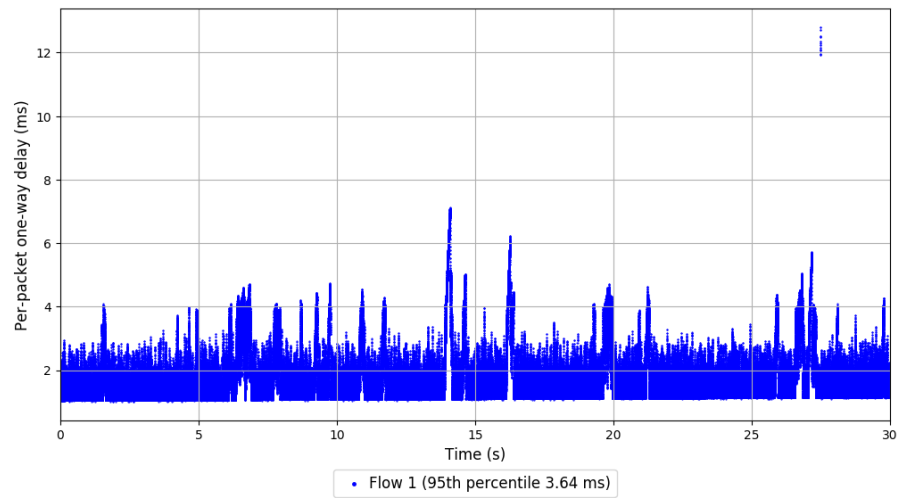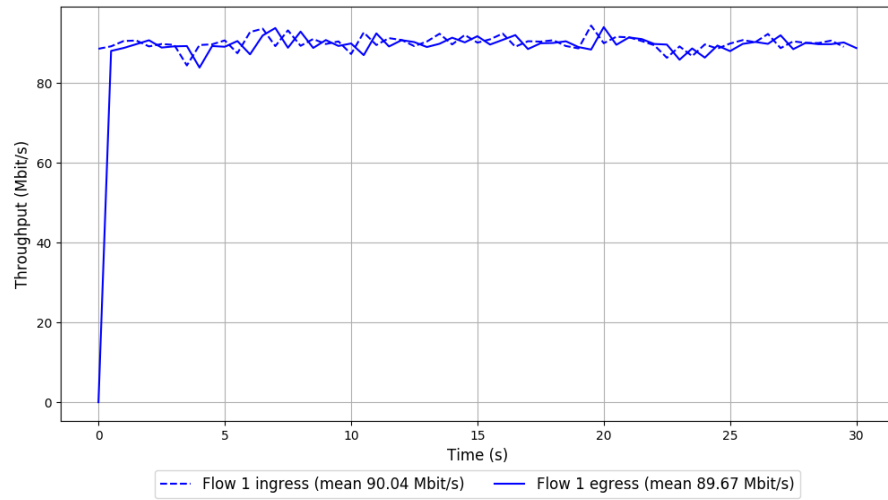
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 96.48 Mbit/s)   Flow 1 egress (mean 96.07 Mbit/s)

Flow 1 (95th percentile 5.63 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-26 07:34:23
End at: 2018-10-26 07:34:53
Local clock offset: -5.88 ms
Remote clock offset: 0.619 ms


# Below is generated by plot.py at 2018-10-26 07:51:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.04 Mbit/s
95th percentile per-packet one-way delay: 5.492 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 96.04 Mbit/s
95th percentile per-packet one-way delay: 5.492 ms
Loss rate: 0.45%
```
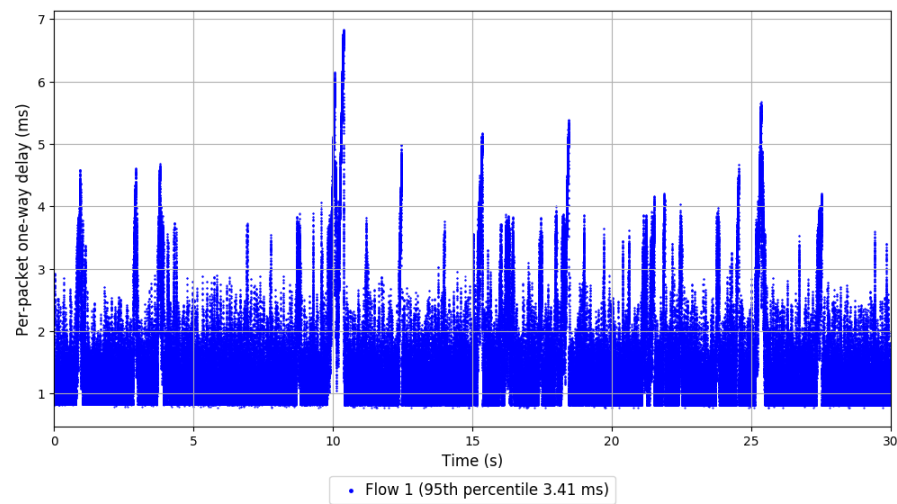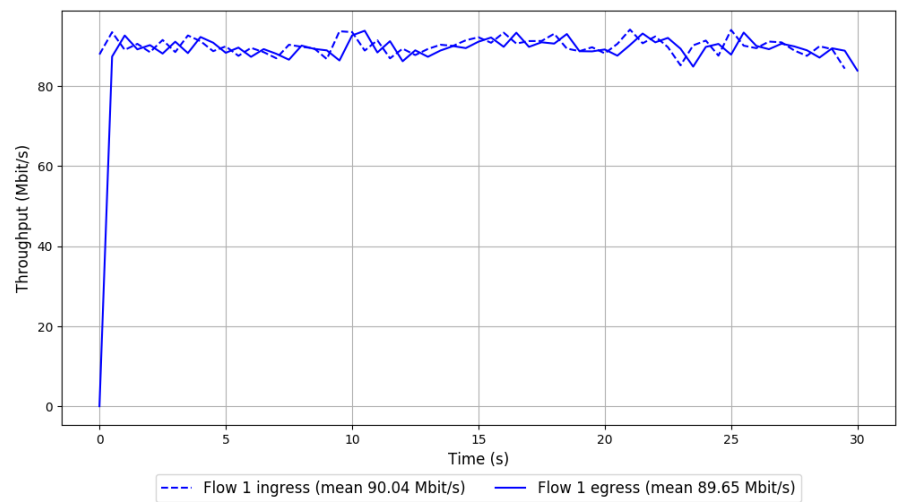
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-10-26 06:12:22
End at: 2018-10-26 06:12:52
Local clock offset: -4.702 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-10-26 07:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.67 Mbit/s
95th percentile per-packet one-way delay: 3.638 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 89.67 Mbit/s
95th percentile per-packet one-way delay: 3.638 ms
Loss rate: 0.41%
```
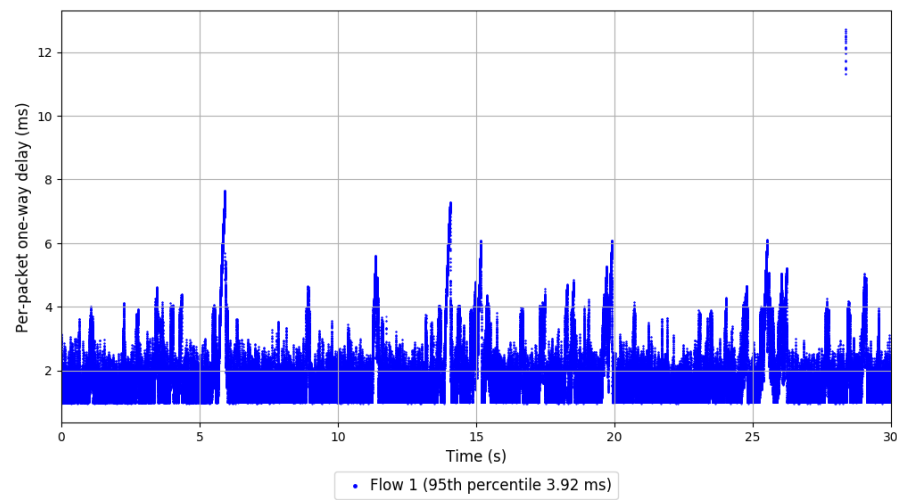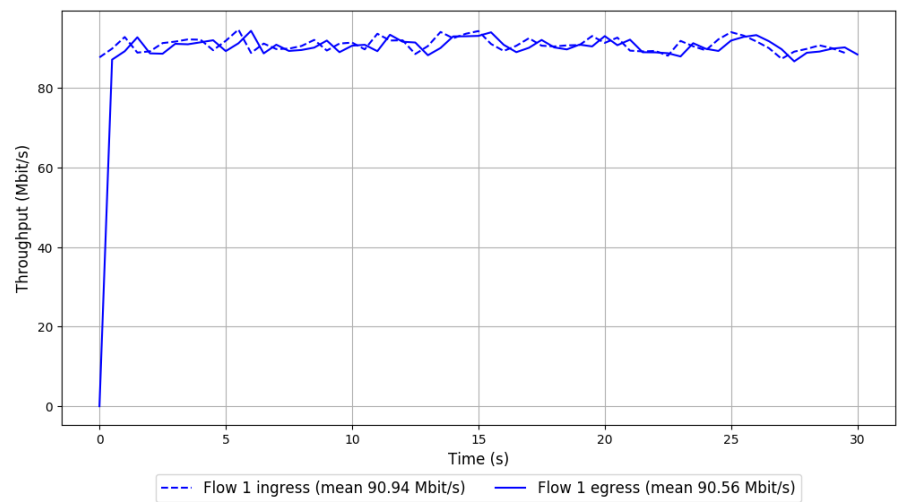
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-10-26 06:32:42
End at: 2018-10-26 06:33:12
Local clock offset: -6.82 ms
Remote clock offset: 0.266 ms


# Below is generated by plot.py at 2018-10-26 07:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.65 Mbit/s
95th percentile per-packet one-way delay: 3.407 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 89.65 Mbit/s
95th percentile per-packet one-way delay: 3.407 ms
Loss rate: 0.44%
```
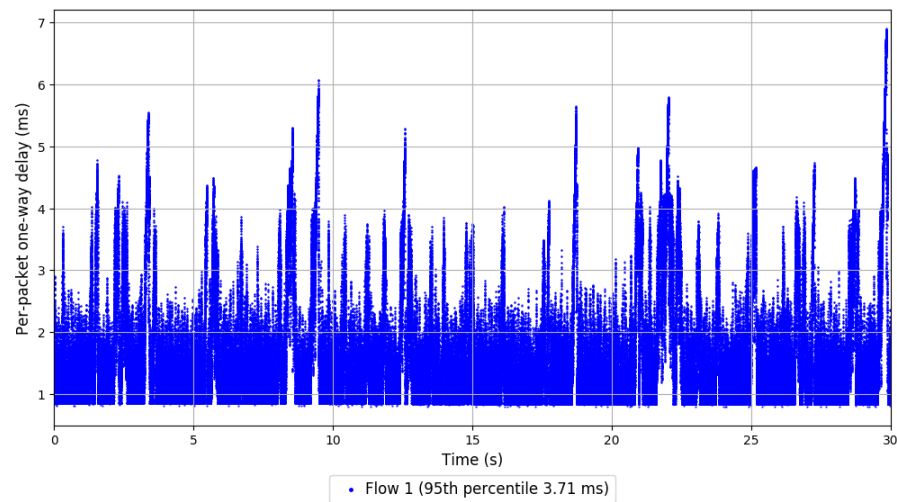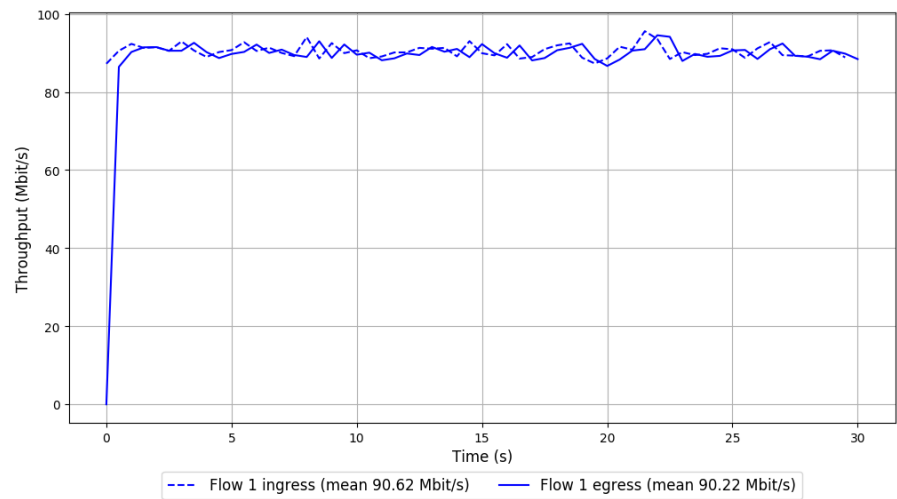
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-26 06:52:53
End at: 2018-10-26 06:53:24
Local clock offset: -6.902 ms
Remote clock offset: 0.325 ms


# Below is generated by plot.py at 2018-10-26 07:52:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.56 Mbit/s
95th percentile per-packet one-way delay: 3.918 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 90.56 Mbit/s
95th percentile per-packet one-way delay: 3.918 ms
Loss rate: 0.42%
```
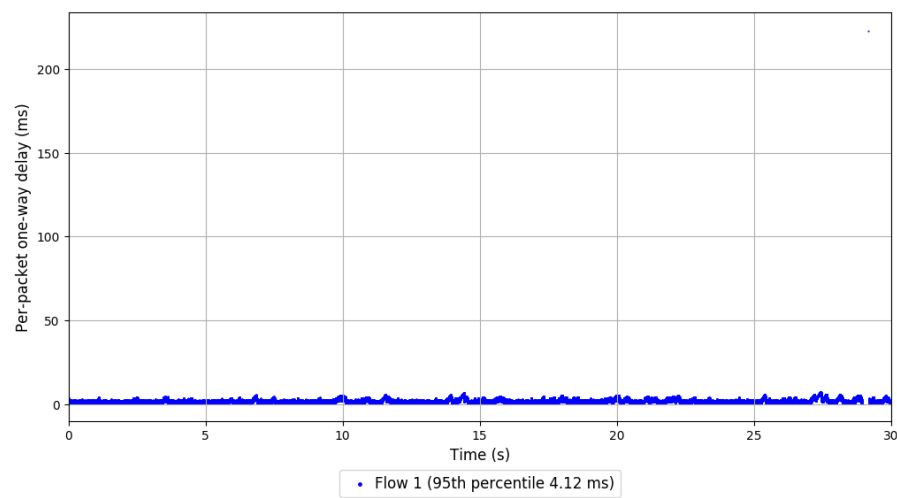
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 90.94 Mbit/s)   Flow 1 egress (mean 90.56 Mbit/s)

Flow 1 (95th percentile 3.92 ms)

```
Run 4: Statistics of Copa

Start at: 2018-10-26 07:13:04
End at: 2018-10-26 07:13:34
Local clock offset: -6.106 ms
Remote clock offset: 0.575 ms


# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.22 Mbit/s
95th percentile per-packet one-way delay: 3.708 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 90.22 Mbit/s
95th percentile per-packet one-way delay: 3.708 ms
Loss rate: 0.45%
```
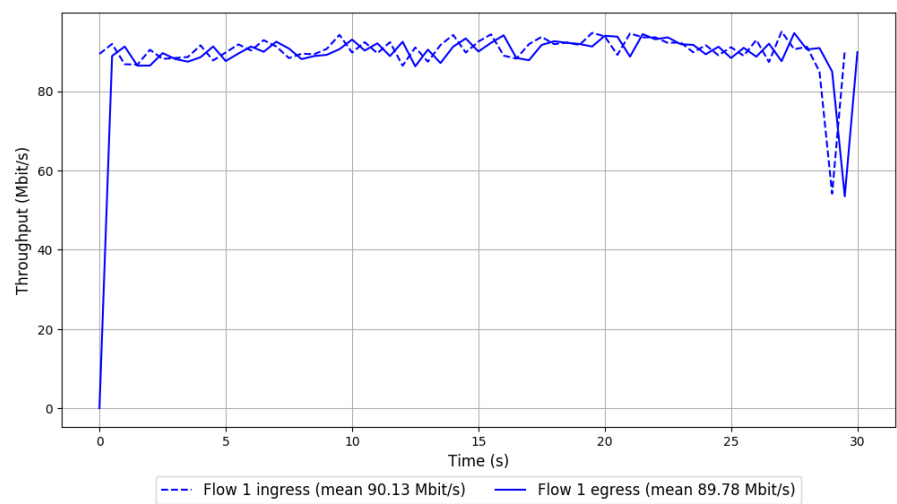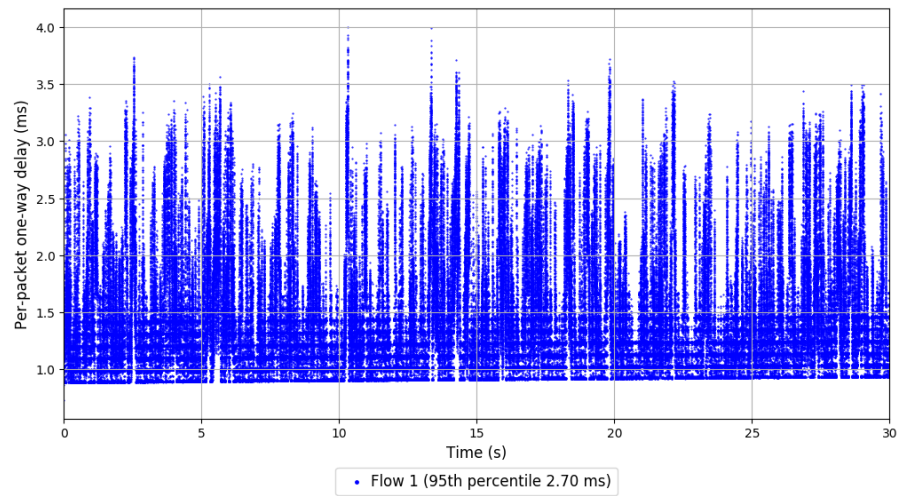
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 90.62 Mbit/s)   Flow 1 egress (mean 90.22 Mbit/s)

• Flow 1 (95th percentile 3.71 ms)

```
Run 5: Statistics of Copa

Start at: 2018-10-26 07:33:12
End at: 2018-10-26 07:33:42
Local clock offset: -5.911 ms
Remote clock offset: 0.535 ms


# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.78 Mbit/s
95th percentile per-packet one-way delay: 4.122 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 89.78 Mbit/s
95th percentile per-packet one-way delay: 4.122 ms
Loss rate: 0.39%
```
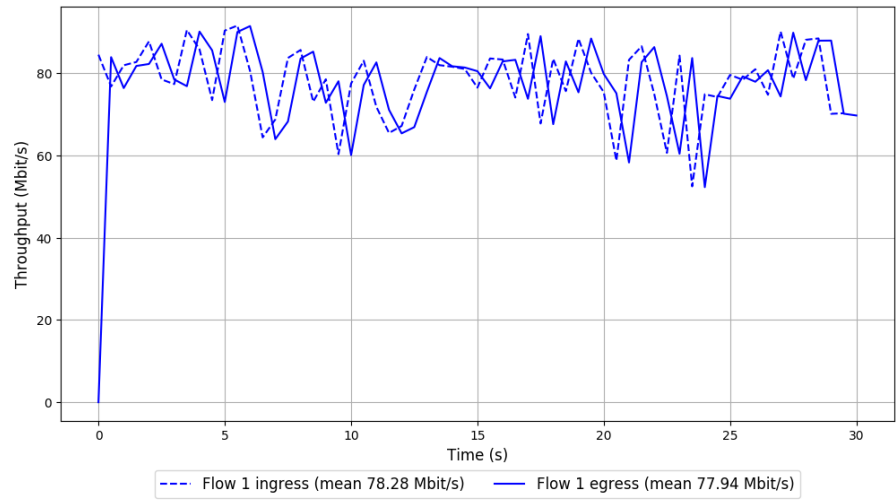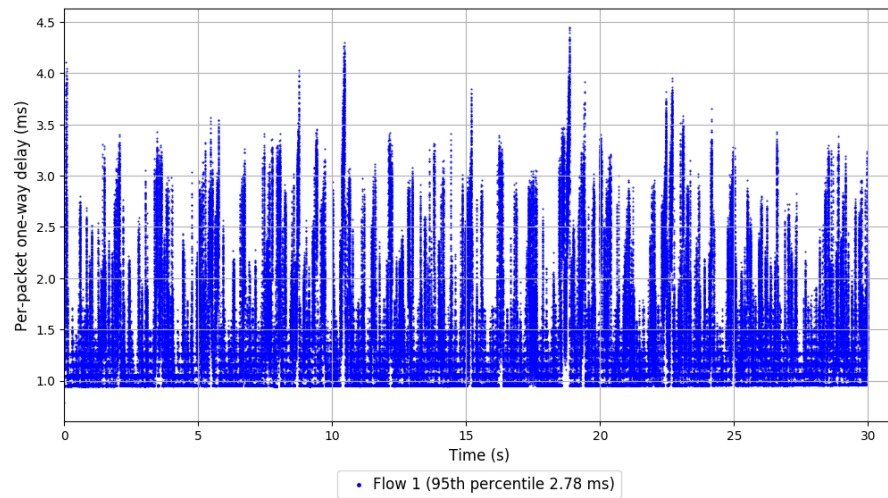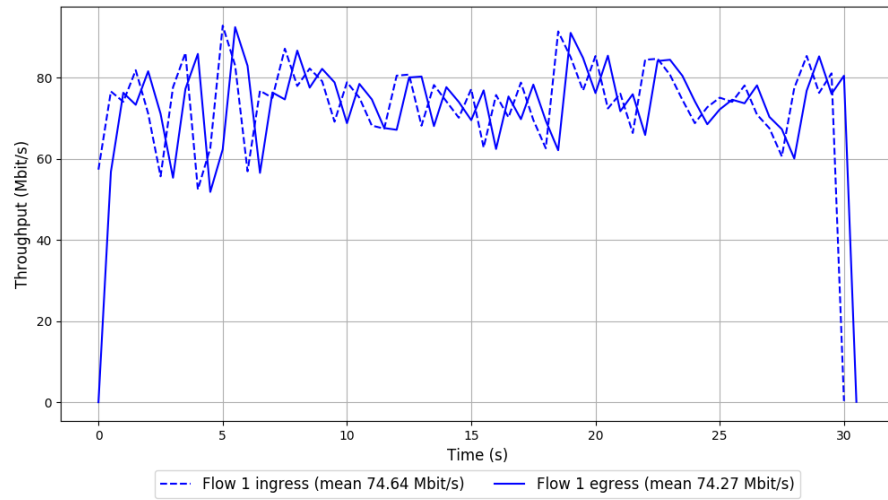
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 90.13 Mbit/s) --- Flow 1 egress (mean 89.78 Mbit/s)

Flow 1 (95th percentile 4.12 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-26 06:21:25
End at: 2018-10-26 06:21:55
Local clock offset: -6.171 ms
Remote clock offset: 0.095 ms

# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.94 Mbit/s
95th percentile per-packet one-way delay: 2.697 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 77.94 Mbit/s
95th percentile per-packet one-way delay: 2.697 ms
Loss rate: 0.44%
```
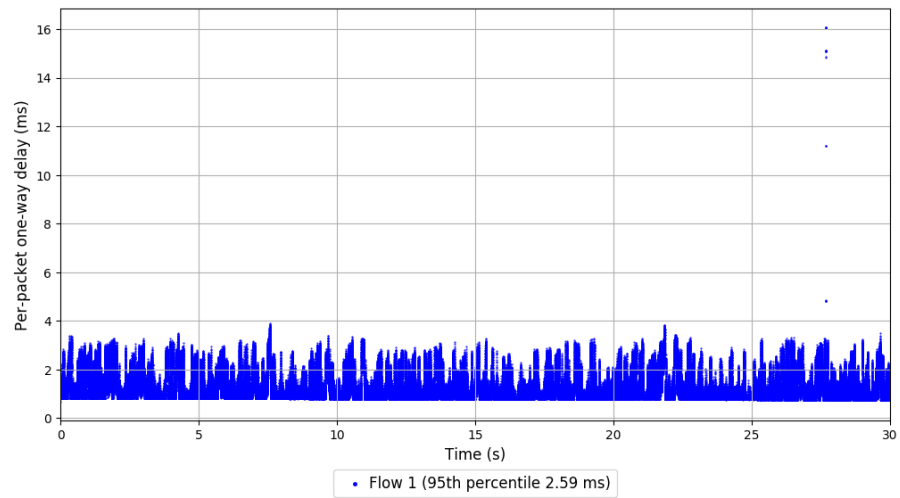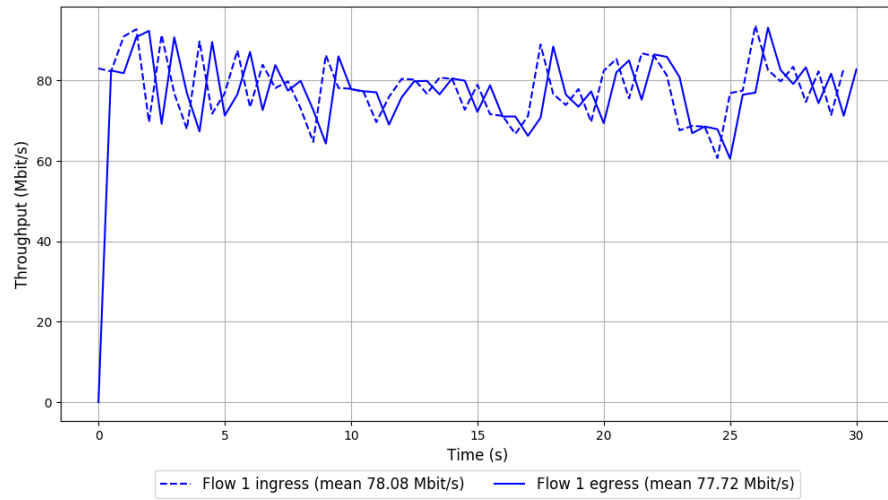
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 06:41:40
End at: 2018-10-26 06:42:10
Local clock offset: -6.658 ms
Remote clock offset: 0.314 ms


# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.27 Mbit/s
95th percentile per-packet one-way delay: 2.781 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 74.27 Mbit/s
95th percentile per-packet one-way delay: 2.781 ms
Loss rate: 0.49%
```
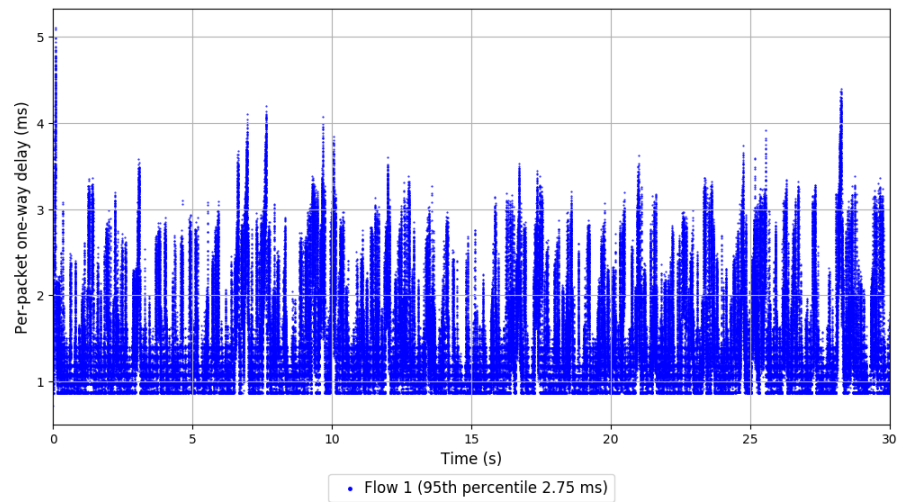
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 07:01:52
End at: 2018-10-26 07:02:22
Local clock offset: -7.028 ms
Remote clock offset: 0.507 ms


# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.72 Mbit/s
95th percentile per-packet one-way delay: 2.593 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 77.72 Mbit/s
95th percentile per-packet one-way delay: 2.593 ms
Loss rate: 0.46%
```
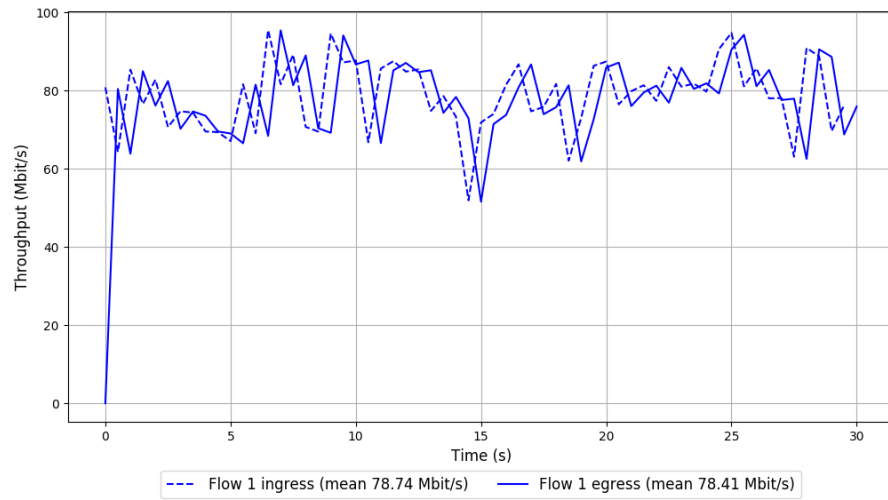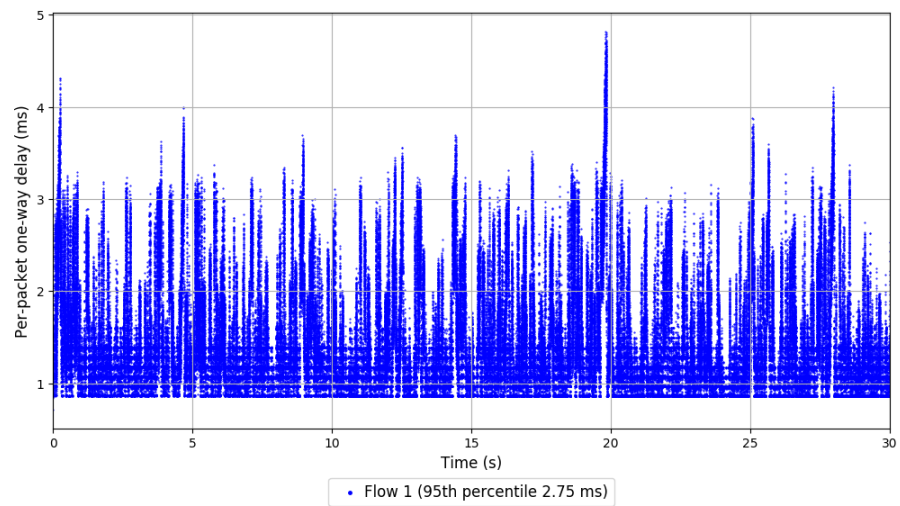
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 78.08 Mbit/s)   Flow 1 egress (mean 77.72 Mbit/s)

Flow 1 (95th percentile 2.59 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 07:21:56
End at: 2018-10-26 07:22:26
Local clock offset: -5.975 ms
Remote clock offset: 0.6 ms


# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.41 Mbit/s
95th percentile per-packet one-way delay: 2.750 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 78.41 Mbit/s
95th percentile per-packet one-way delay: 2.750 ms
Loss rate: 0.43%
```
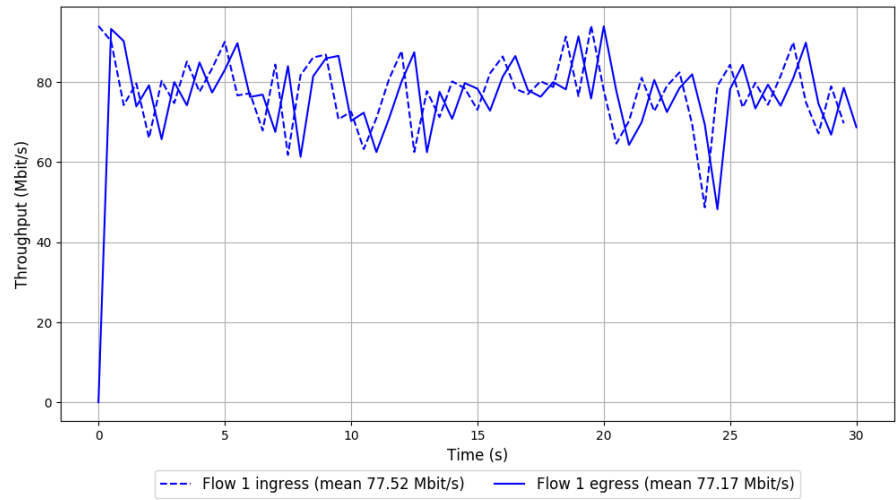
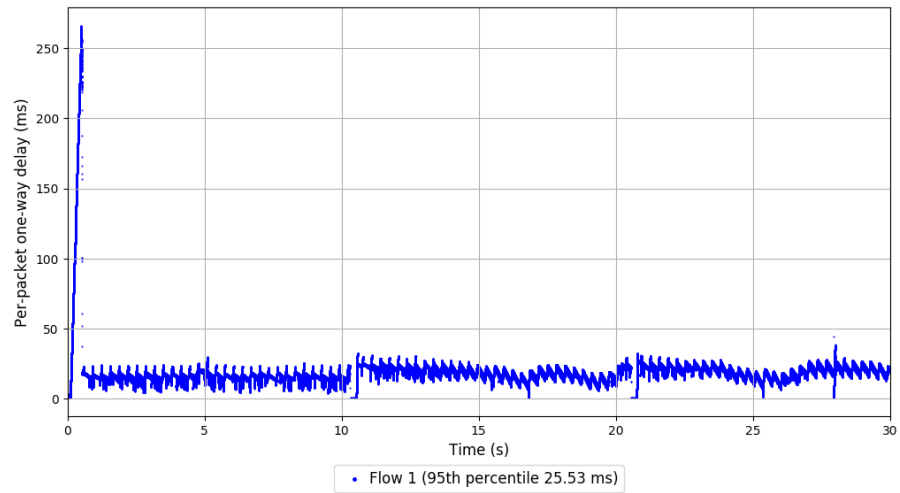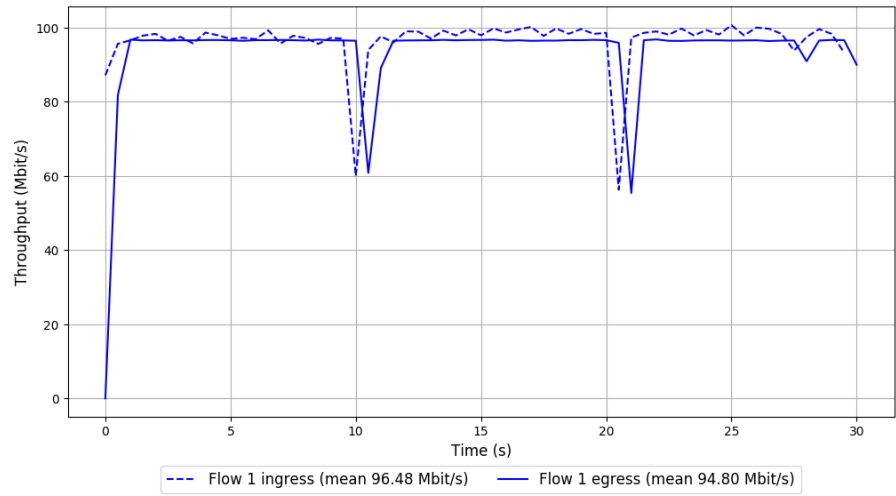Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 07:42:10
End at: 2018-10-26 07:42:40
Local clock offset: -5.816 ms
Remote clock offset: 0.594 ms


# Below is generated by plot.py at 2018-10-26 07:54:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.17 Mbit/s
95th percentile per-packet one-way delay: 2.748 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 77.17 Mbit/s
95th percentile per-packet one-way delay: 2.748 ms
Loss rate: 0.46%
```
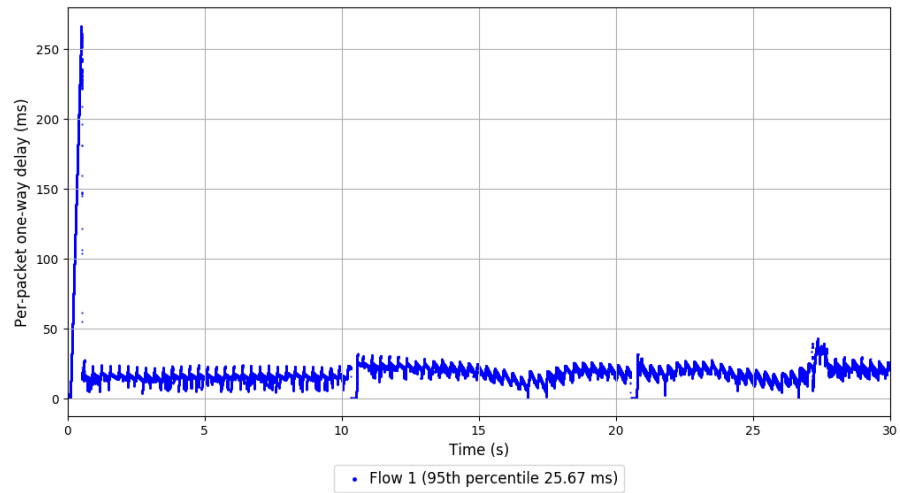
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 77.52 Mbit/s)   Flow 1 egress (mean 77.17 Mbit/s)

• Flow 1 (95th percentile 2.75 ms)

```
Run 1: Statistics of FillP

Start at: 2018-10-26 06:28:11
End at: 2018-10-26 06:28:41
Local clock offset: -6.709 ms
Remote clock offset: 0.169 ms


# Below is generated by plot.py at 2018-10-26 07:54:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 25.531 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 25.531 ms
Loss rate: 1.75%
```
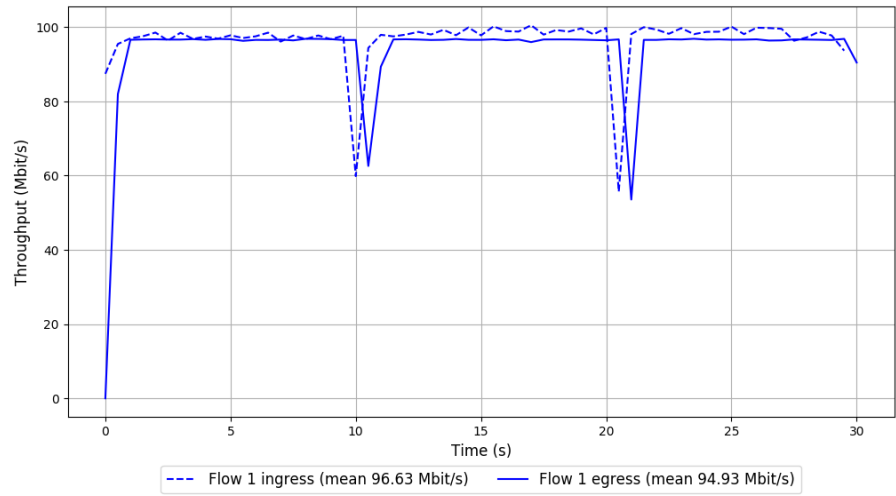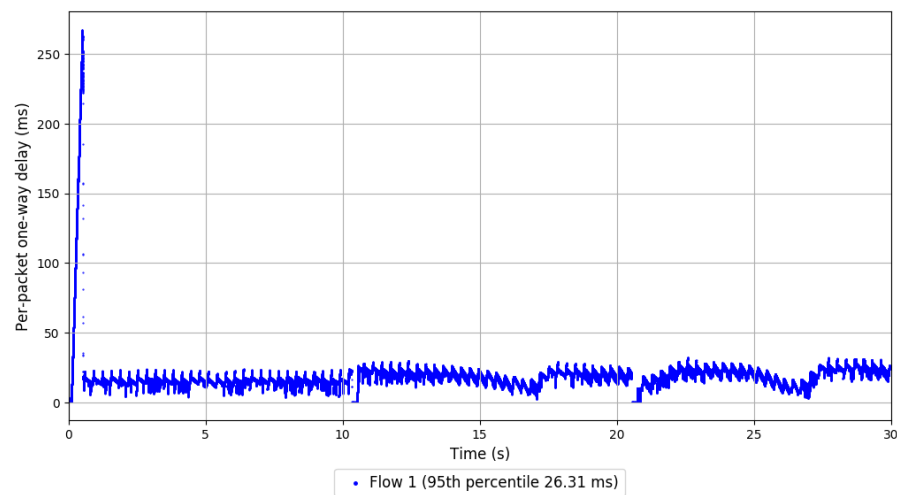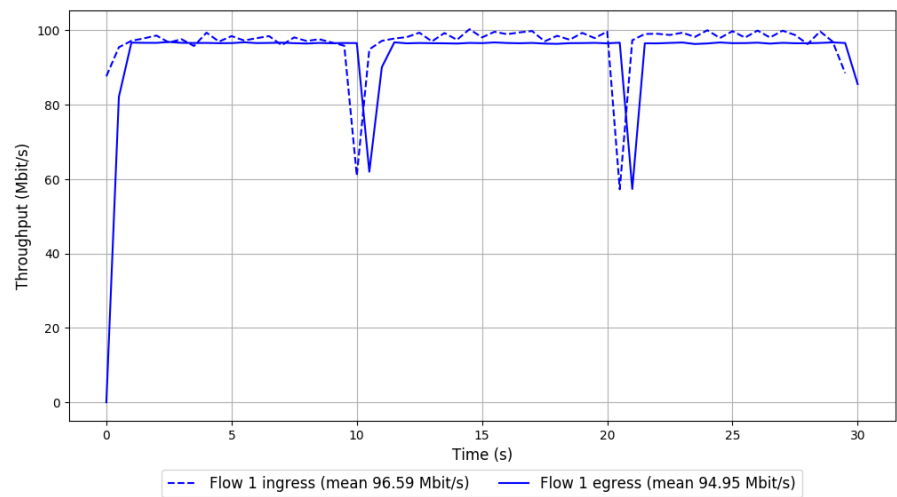
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 96.48 Mbit/s) --- Flow 1 egress (mean 94.80 Mbit/s)

Flow 1 (95th percentile 25.53 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-26 06:48:23
End at: 2018-10-26 06:48:53
Local clock offset: -6.815 ms
Remote clock offset: 0.376 ms


# Below is generated by plot.py at 2018-10-26 07:54:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.93 Mbit/s
95th percentile per-packet one-way delay: 25.668 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 94.93 Mbit/s
95th percentile per-packet one-way delay: 25.668 ms
Loss rate: 1.77%
```
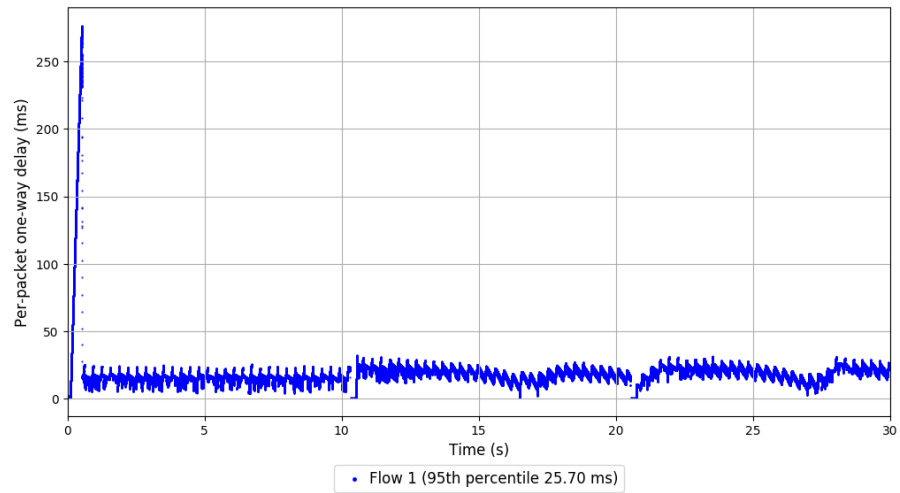
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-10-26 07:08:34
End at: 2018-10-26 07:09:04
Local clock offset: -6.312 ms
Remote clock offset: 0.549 ms


# Below is generated by plot.py at 2018-10-26 07:54:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.95 Mbit/s
95th percentile per-packet one-way delay: 26.313 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 94.95 Mbit/s
95th percentile per-packet one-way delay: 26.313 ms
Loss rate: 1.70%
```
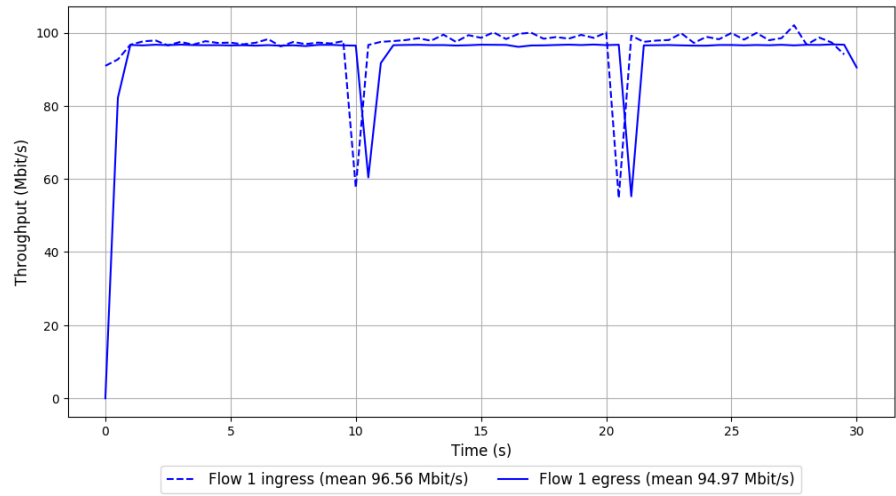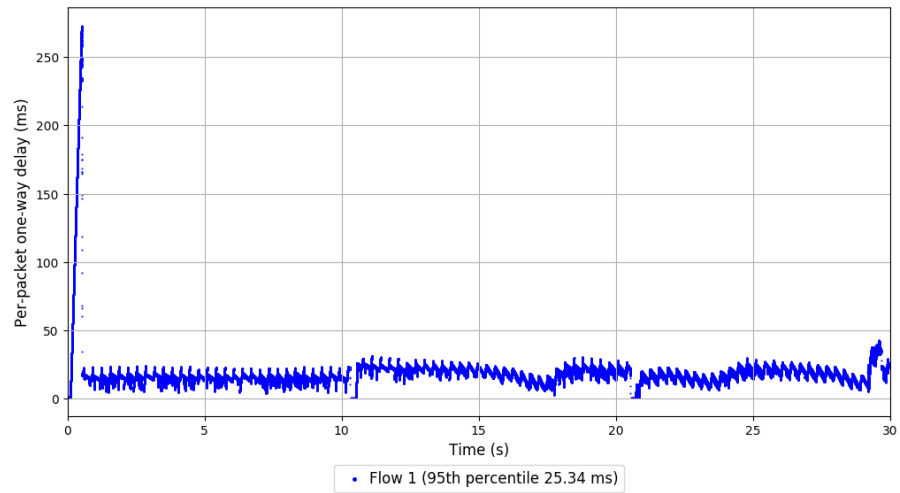
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-26 07:28:41
End at: 2018-10-26 07:29:11
Local clock offset: -5.919 ms
Remote clock offset: 0.579 ms

# Below is generated by plot.py at 2018-10-26 07:54:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.97 Mbit/s
95th percentile per-packet one-way delay: 25.705 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 94.97 Mbit/s
95th percentile per-packet one-way delay: 25.705 ms
Loss rate: 1.66%
```
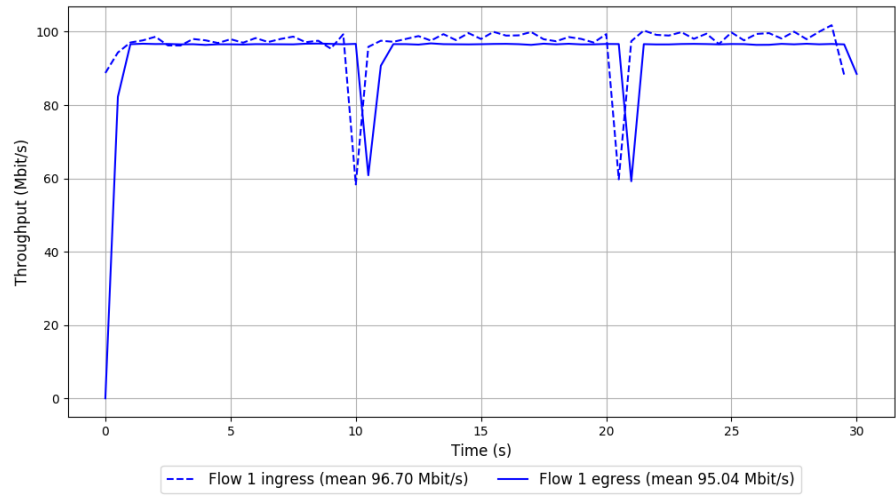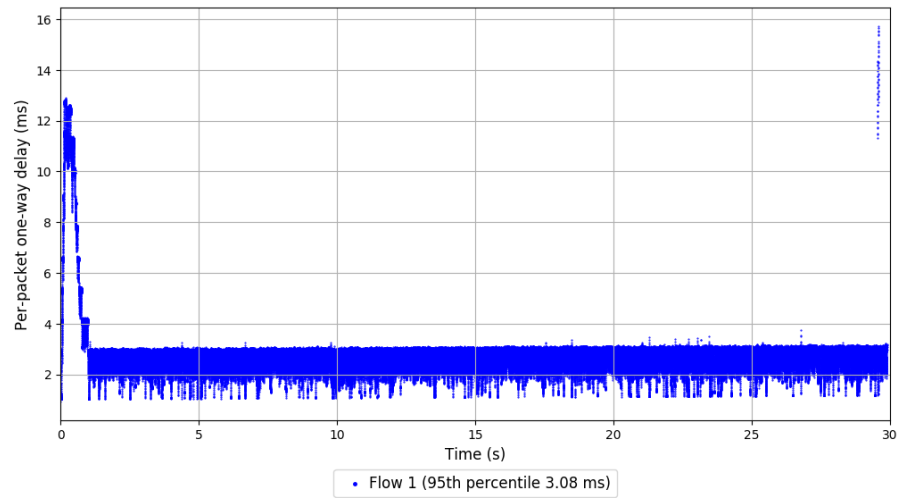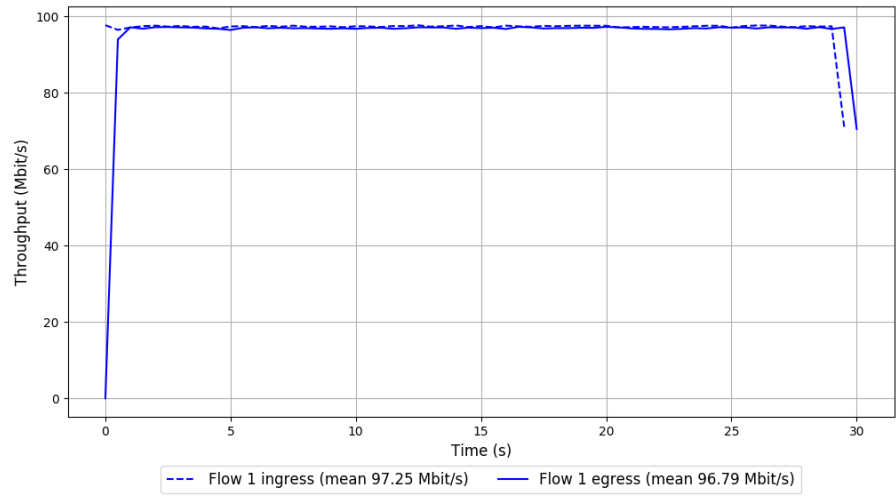
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-10-26 07:48:56
End at: 2018-10-26 07:49:26
Local clock offset: -5.919 ms
Remote clock offset: 0.452 ms


# Below is generated by plot.py at 2018-10-26 07:55:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 25.343 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 25.343 ms
Loss rate: 1.72%
```

Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 96.70 Mbit/s)   Flow 1 egress (mean 95.04 Mbit/s)

Flow 1 (95th percentile 25.34 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-10-26 06:09:00
End at: 2018-10-26 06:09:30
Local clock offset: -3.831 ms
Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-10-26 07:55:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.79 Mbit/s
95th percentile per-packet one-way delay: 3.076 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 96.79 Mbit/s
95th percentile per-packet one-way delay: 3.076 ms
Loss rate: 0.48%
```
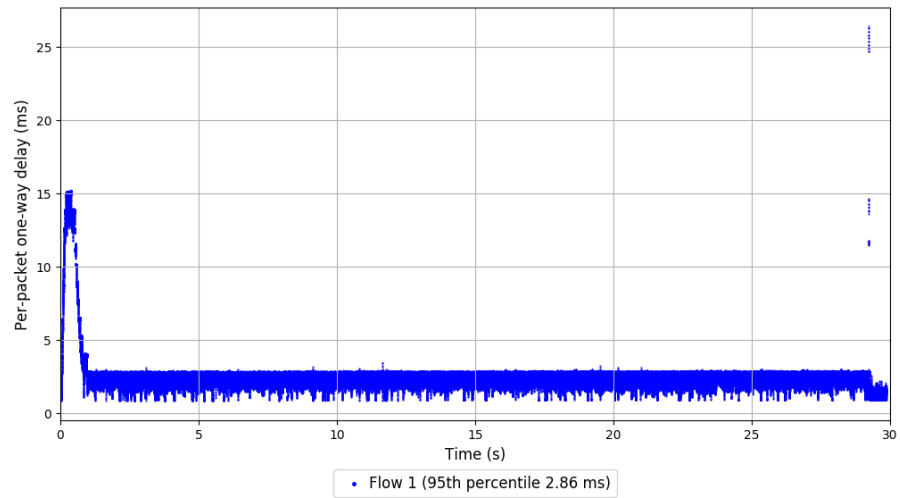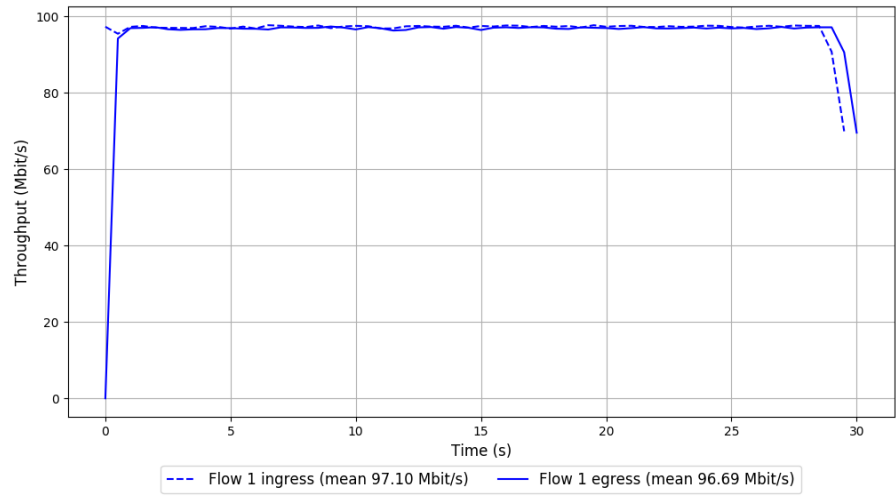
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-26 06:29:19
End at: 2018-10-26 06:29:49
Local clock offset: -6.735 ms
Remote clock offset: 0.19 ms


# Below is generated by plot.py at 2018-10-26 07:55:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.69 Mbit/s
95th percentile per-packet one-way delay: 2.860 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 96.69 Mbit/s
95th percentile per-packet one-way delay: 2.860 ms
Loss rate: 0.43%
```
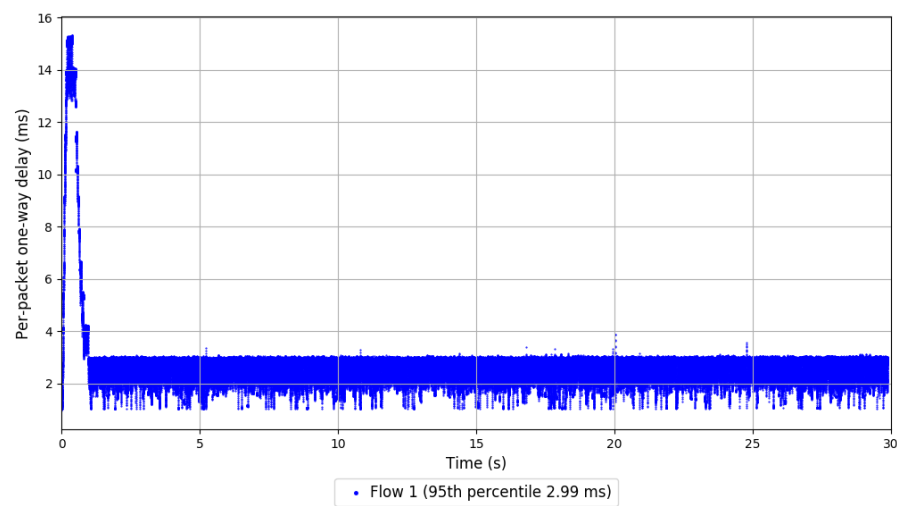
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-26 06:49:31
End at: 2018-10-26 06:50:01
Local clock offset: -6.758 ms
Remote clock offset: 0.34 ms


# Below is generated by plot.py at 2018-10-26 07:55:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.85 Mbit/s
95th percentile per-packet one-way delay: 2.992 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 96.85 Mbit/s
95th percentile per-packet one-way delay: 2.992 ms
Loss rate: 0.47%
```
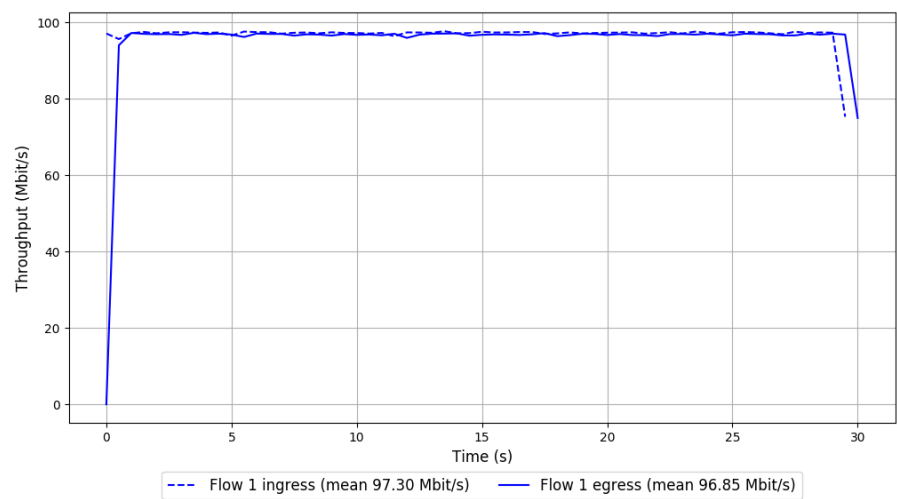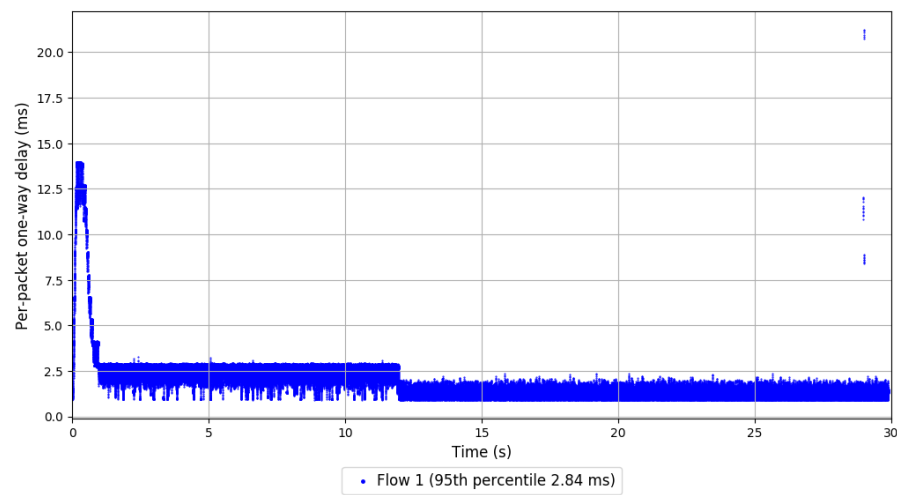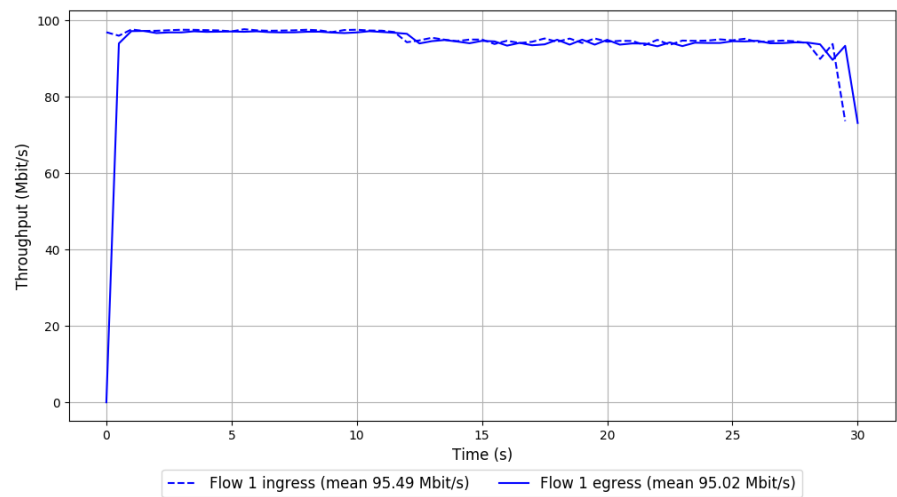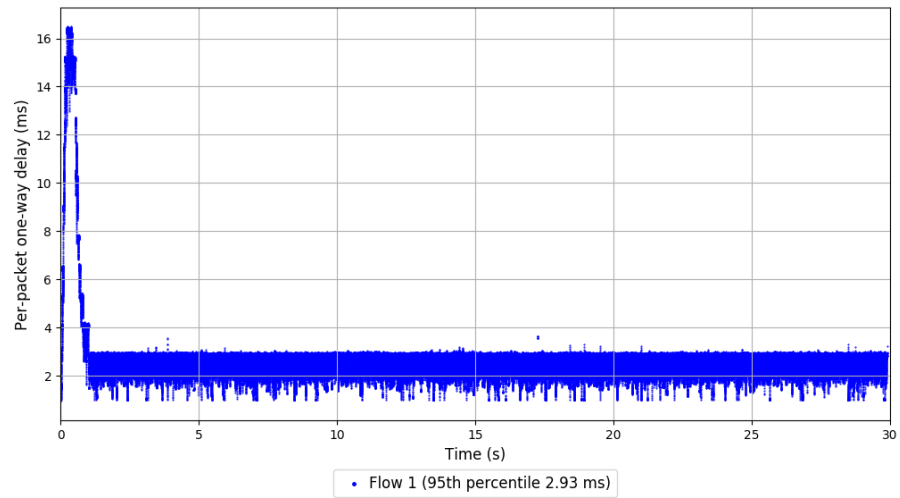
Run 3: Report of Indigo — Data Link

Flow 1 ingress (mean 97.30 Mbit/s)   Flow 1 egress (mean 96.85 Mbit/s)

Flow 1 (95th percentile 2.99 ms)

```
Run 4: Statistics of Indigo

Start at: 2018-10-26 07:09:42
End at: 2018-10-26 07:10:12
Local clock offset: -6.265 ms
Remote clock offset: 0.483 ms


# Below is generated by plot.py at 2018-10-26 07:55:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.02 Mbit/s
95th percentile per-packet one-way delay: 2.843 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 95.02 Mbit/s
95th percentile per-packet one-way delay: 2.843 ms
Loss rate: 0.50%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-10-26 07:29:49
End at: 2018-10-26 07:30:19
Local clock offset: -5.919 ms
Remote clock offset: 0.552 ms


# Below is generated by plot.py at 2018-10-26 07:55:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.87 Mbit/s
95th percentile per-packet one-way delay: 2.929 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 96.87 Mbit/s
95th percentile per-packet one-way delay: 2.929 ms
Loss rate: 0.45%
```
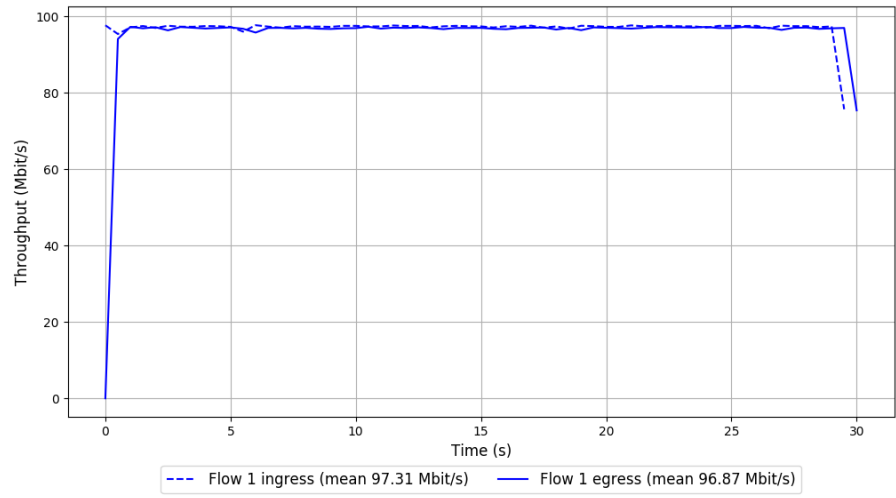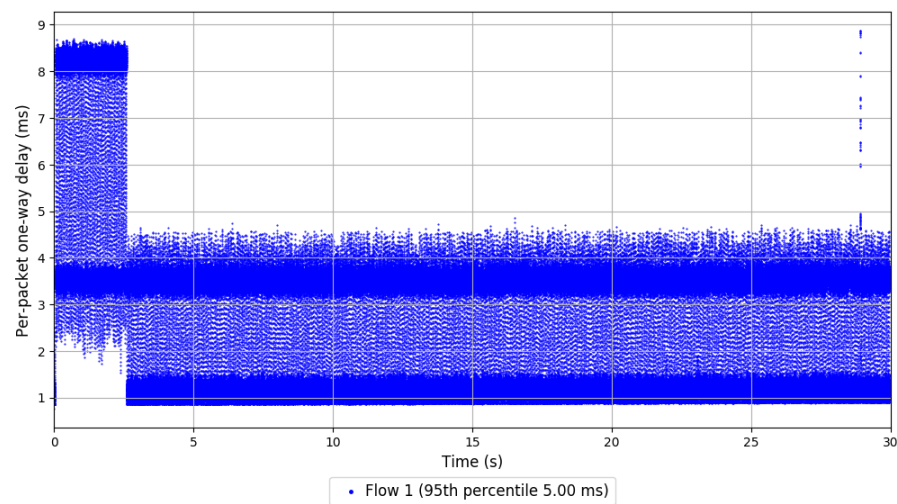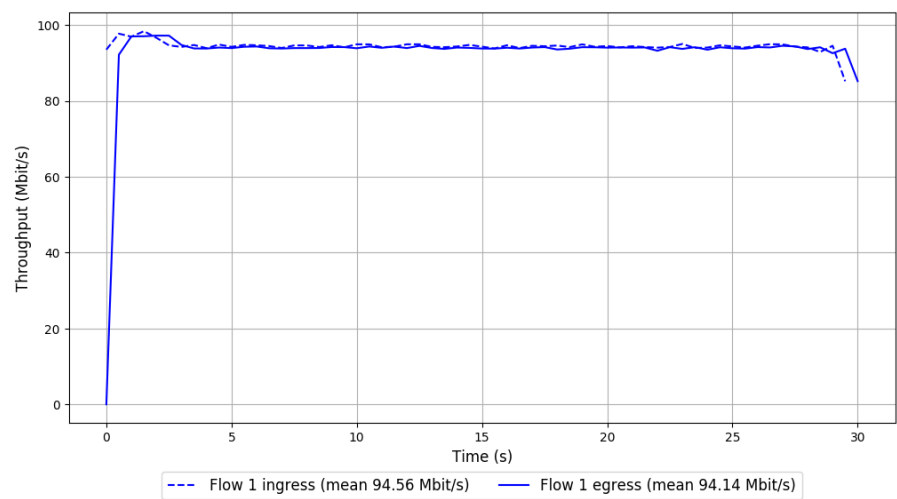
Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 97.31 Mbit/s) — — — Flow 1 egress (mean 96.87 Mbit/s)

Flow 1 (95th percentile 2.93 ms)

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

Start at: 2018-10-26 06:23:41
End at: 2018-10-26 06:24:11
Local clock offset: -6.364 ms
Remote clock offset: 0.144 ms

# Below is generated by plot.py at 2018-10-26 07:55:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.14 Mbit/s
95th percentile per-packet one-way delay: 4.995 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 94.14 Mbit/s
95th percentile per-packet one-way delay: 4.995 ms
Loss rate: 0.45%
```
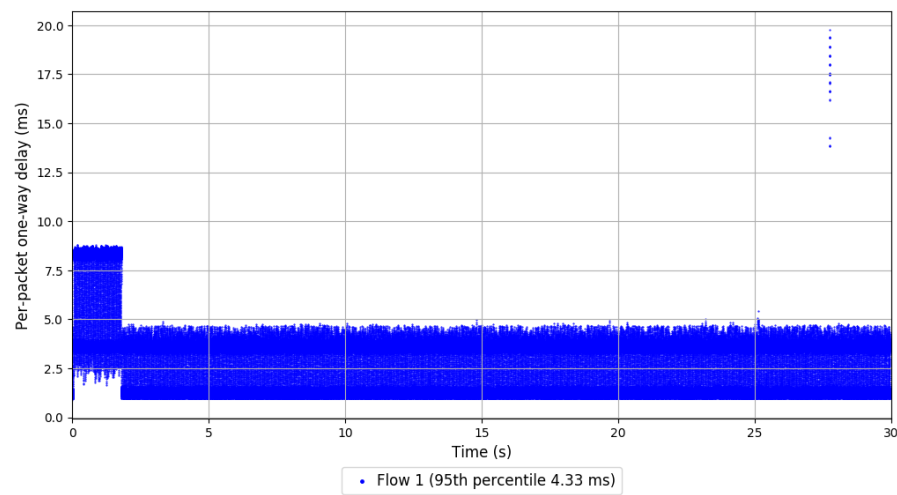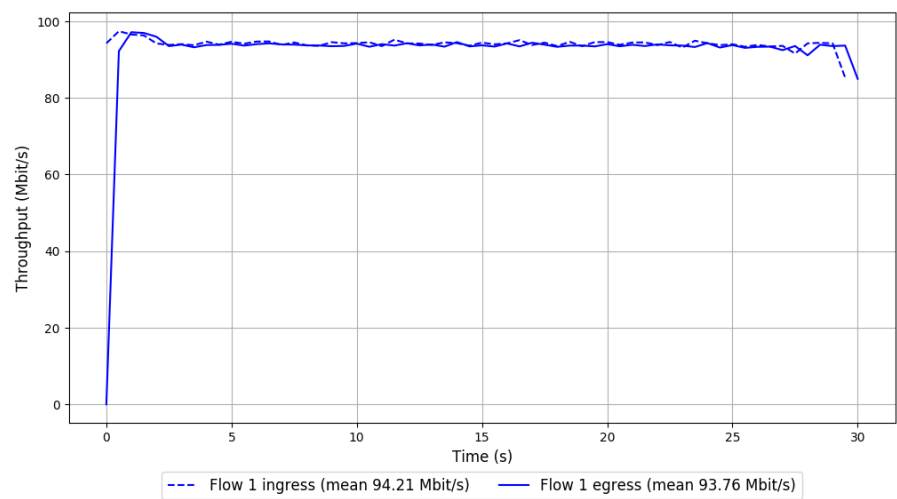
Run 1: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 94.56 Mbit/s) ----   Flow 1 egress (mean 94.14 Mbit/s) ——

Flow 1 (95th percentile 5.00 ms)

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

Start at: 2018-10-26 06:43:56
End at: 2018-10-26 06:44:26
Local clock offset: -6.691 ms
Remote clock offset: 0.32 ms


# Below is generated by plot.py at 2018-10-26 07:55:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.76 Mbit/s
95th percentile per-packet one-way delay: 4.329 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 93.76 Mbit/s
95th percentile per-packet one-way delay: 4.329 ms
Loss rate: 0.48%
```
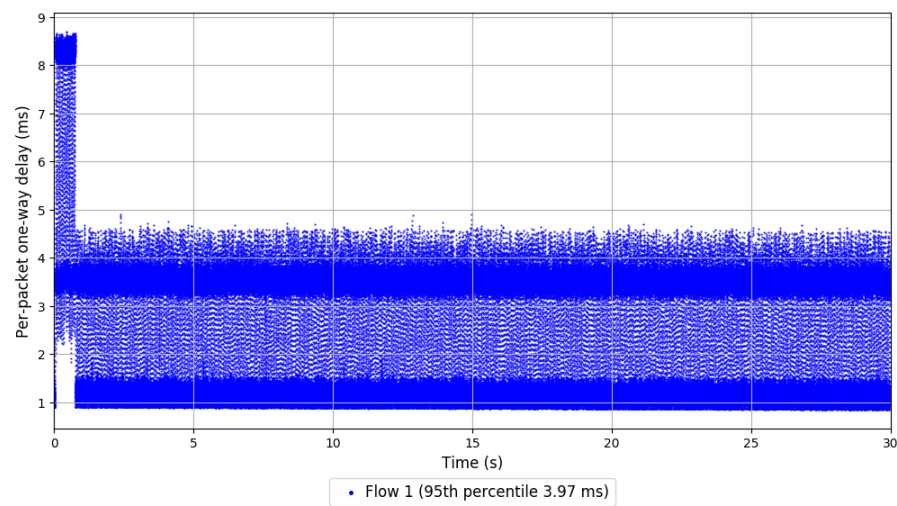
Run 2: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 07:04:07
End at: 2018-10-26 07:04:37
Local clock offset: -6.724 ms
Remote clock offset: 0.455 ms


# Below is generated by plot.py at 2018-10-26 07:56:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.79 Mbit/s
95th percentile per-packet one-way delay: 3.974 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 93.79 Mbit/s
95th percentile per-packet one-way delay: 3.974 ms
Loss rate: 0.51%
```
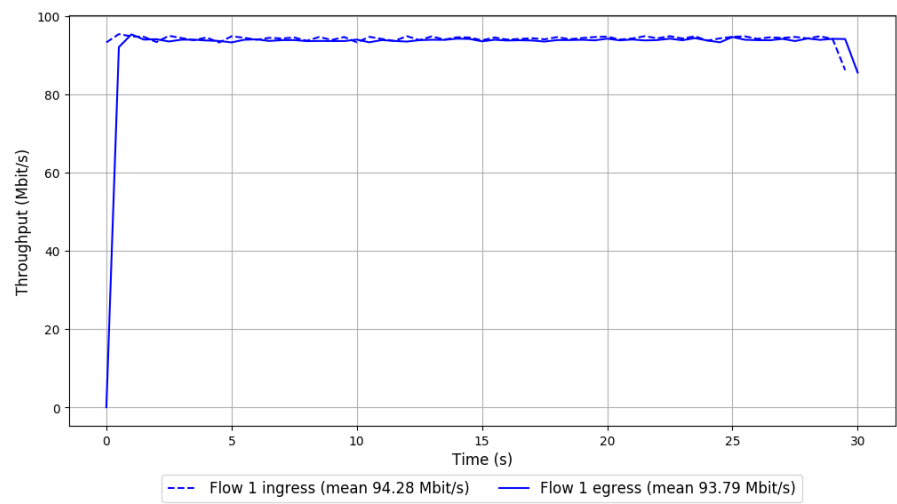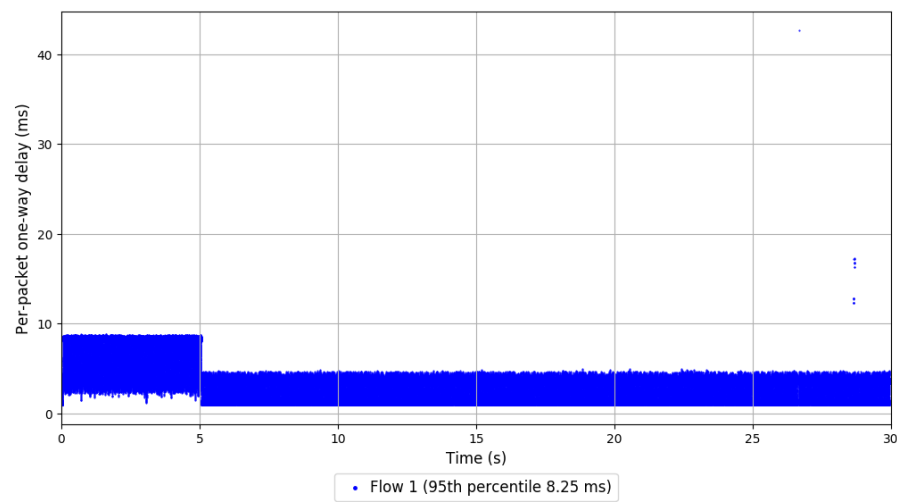
Run 3: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 07:24:12
End at: 2018-10-26 07:24:42
Local clock offset: -5.92 ms
Remote clock offset: 0.584 ms


# Below is generated by plot.py at 2018-10-26 07:56:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.00 Mbit/s
95th percentile per-packet one-way delay: 8.254 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 94.00 Mbit/s
95th percentile per-packet one-way delay: 8.254 ms
Loss rate: 0.47%
```
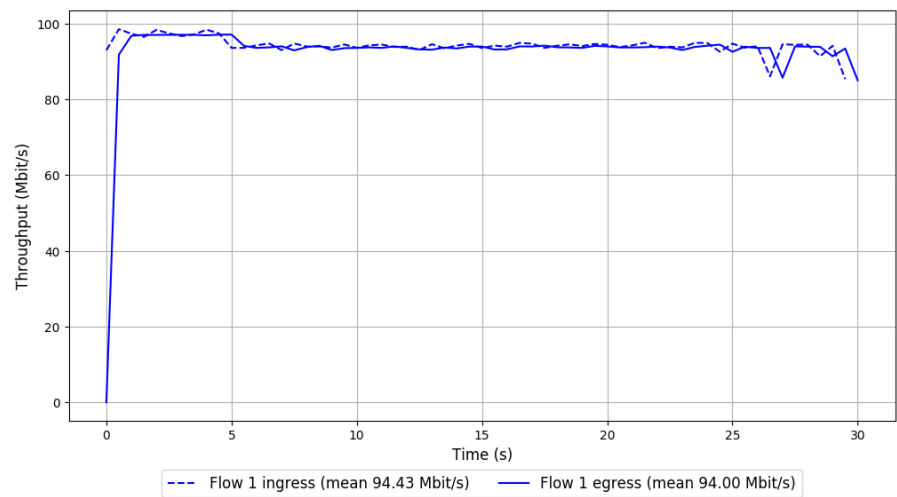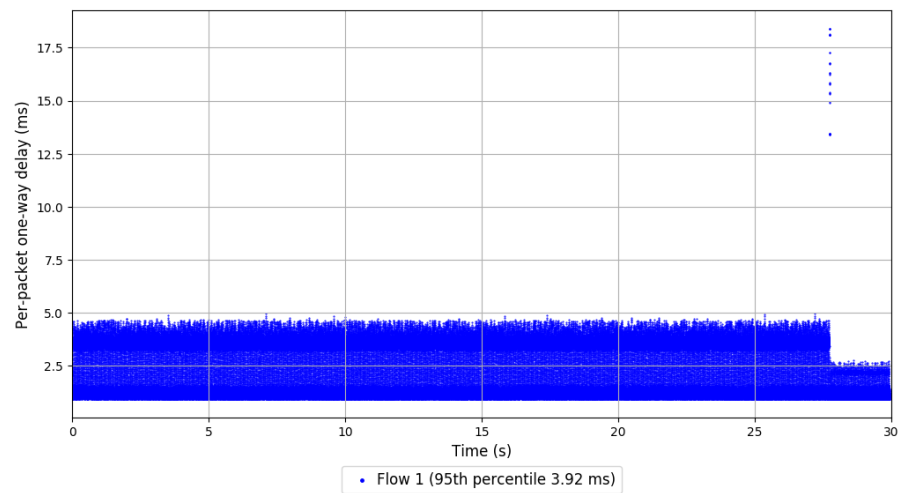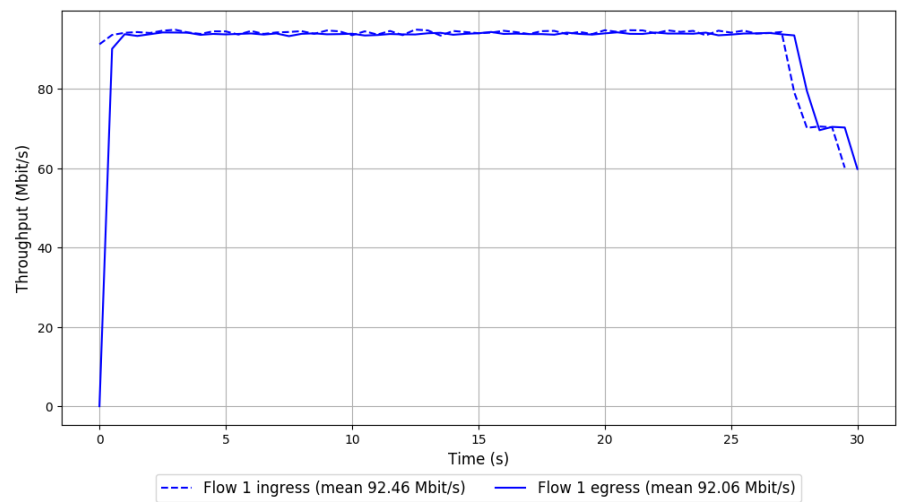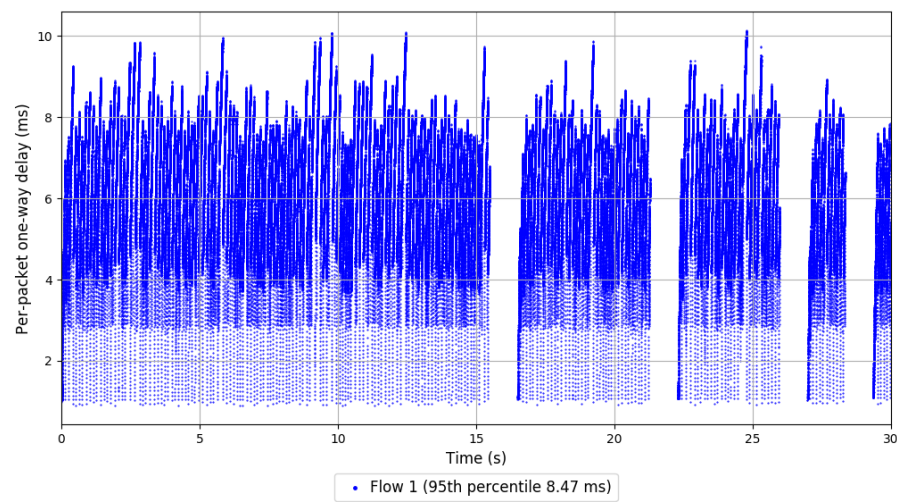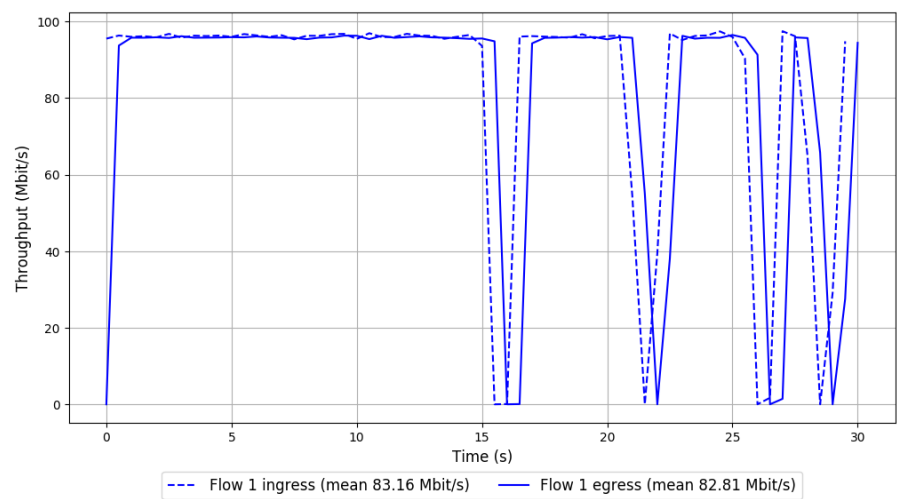
Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 07:44:27
End at: 2018-10-26 07:44:57
Local clock offset: -5.788 ms
Remote clock offset: 0.529 ms


# Below is generated by plot.py at 2018-10-26 07:56:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.06 Mbit/s
95th percentile per-packet one-way delay: 3.915 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 92.06 Mbit/s
95th percentile per-packet one-way delay: 3.915 ms
Loss rate: 0.44%
```

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

Flow 1 ingress (mean 92.46 Mbit/s)   Flow 1 egress (mean 92.06 Mbit/s)

Flow 1 (95th percentile 3.92 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-26 06:22:33
End at: 2018-10-26 06:23:03
Local clock offset: -6.151 ms
Remote clock offset: 0.069 ms


# Below is generated by plot.py at 2018-10-26 07:56:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.81 Mbit/s
95th percentile per-packet one-way delay: 8.472 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 82.81 Mbit/s
95th percentile per-packet one-way delay: 8.472 ms
Loss rate: 0.43%
```
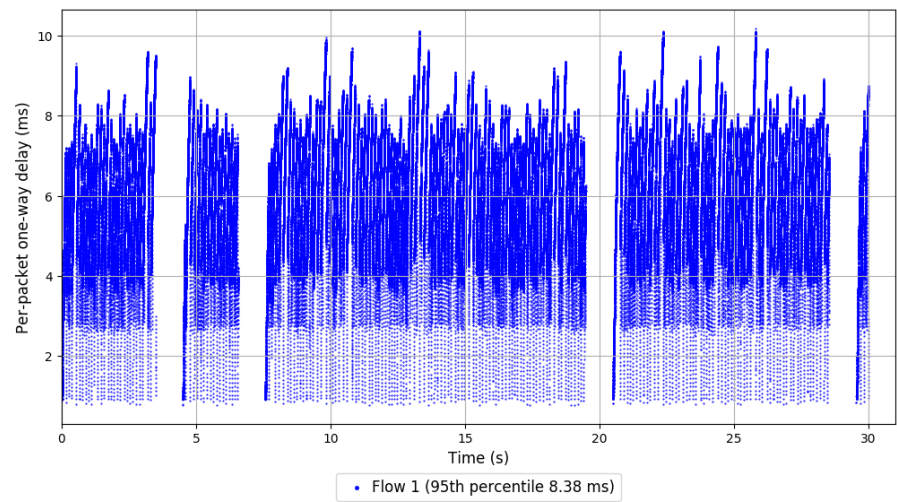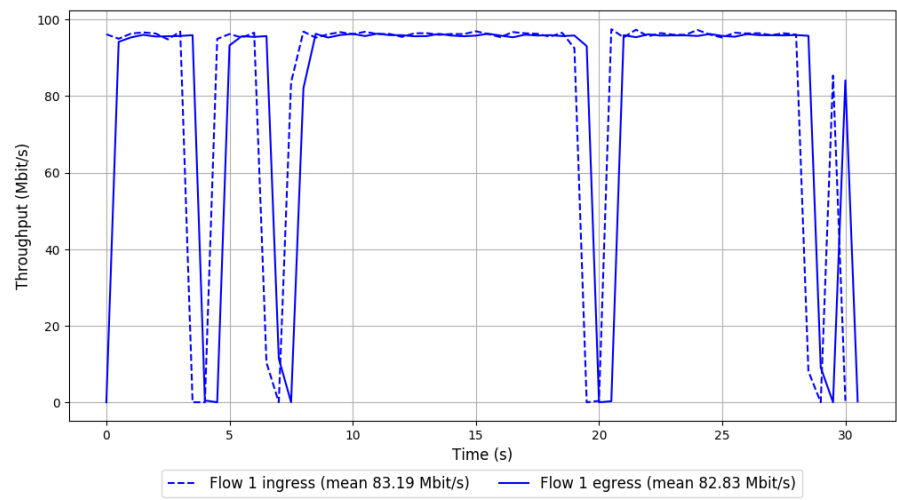
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 83.16 Mbit/s)   Flow 1 egress (mean 82.81 Mbit/s)

• Flow 1 (95th percentile 8.47 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-26 06:42:48
End at: 2018-10-26 06:43:18
Local clock offset: -6.736 ms
Remote clock offset: 0.29 ms


# Below is generated by plot.py at 2018-10-26 07:56:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.83 Mbit/s
95th percentile per-packet one-way delay: 8.385 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 82.83 Mbit/s
95th percentile per-packet one-way delay: 8.385 ms
Loss rate: 0.44%
```
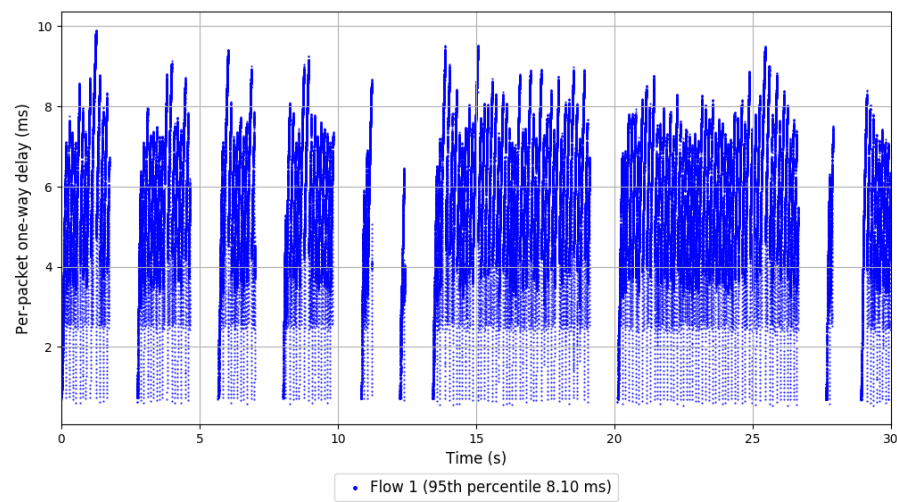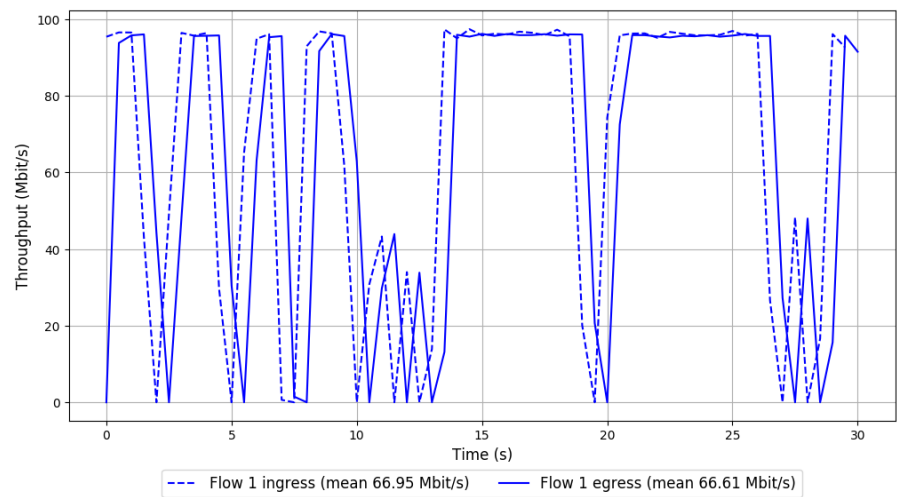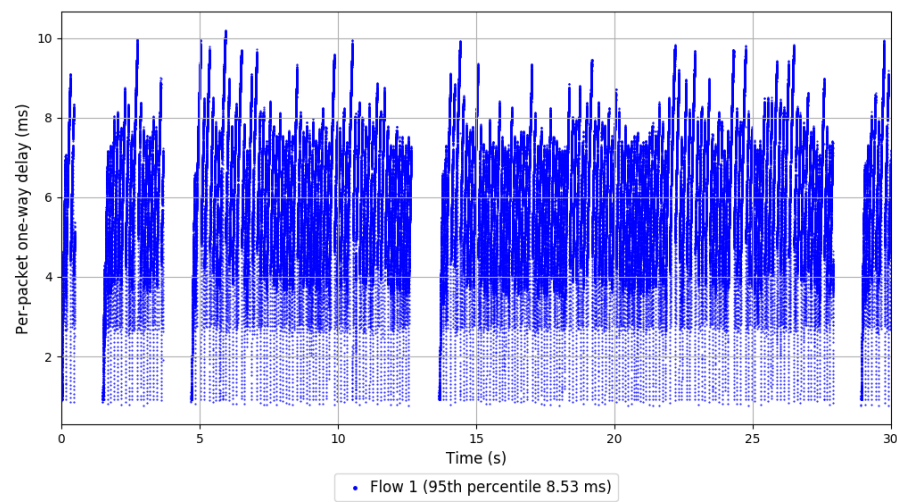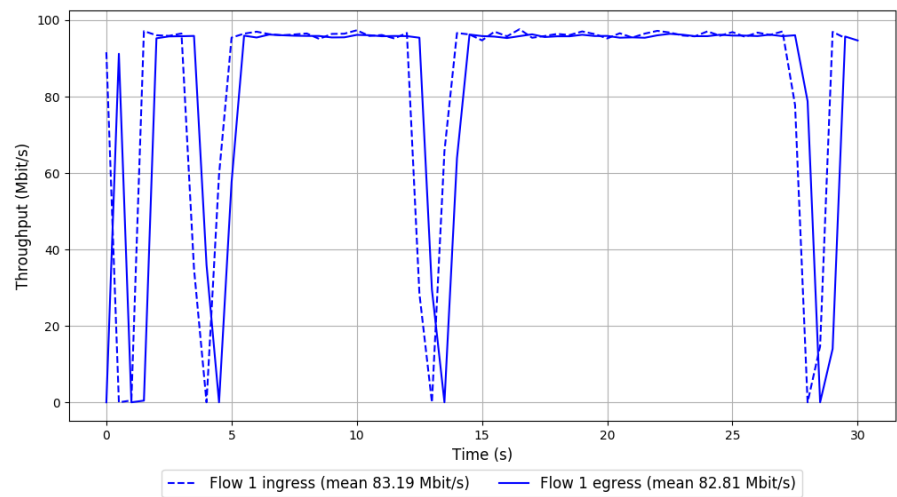
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 83.19 Mbit/s) ------- Flow 1 egress (mean 82.83 Mbit/s)

• Flow 1 (95th percentile 8.38 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-26 07:03:00
End at: 2018-10-26 07:03:30
Local clock offset: -6.964 ms
Remote clock offset: 0.511 ms


# Below is generated by plot.py at 2018-10-26 07:56:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.61 Mbit/s
95th percentile per-packet one-way delay: 8.096 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 66.61 Mbit/s
95th percentile per-packet one-way delay: 8.096 ms
Loss rate: 0.50%
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-26 07:23:04
End at: 2018-10-26 07:23:34
Local clock offset: -5.927 ms
Remote clock offset: 0.614 ms

# Below is generated by plot.py at 2018-10-26 07:56:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.81 Mbit/s
95th percentile per-packet one-way delay: 8.534 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 82.81 Mbit/s
95th percentile per-packet one-way delay: 8.534 ms
Loss rate: 0.47%
```
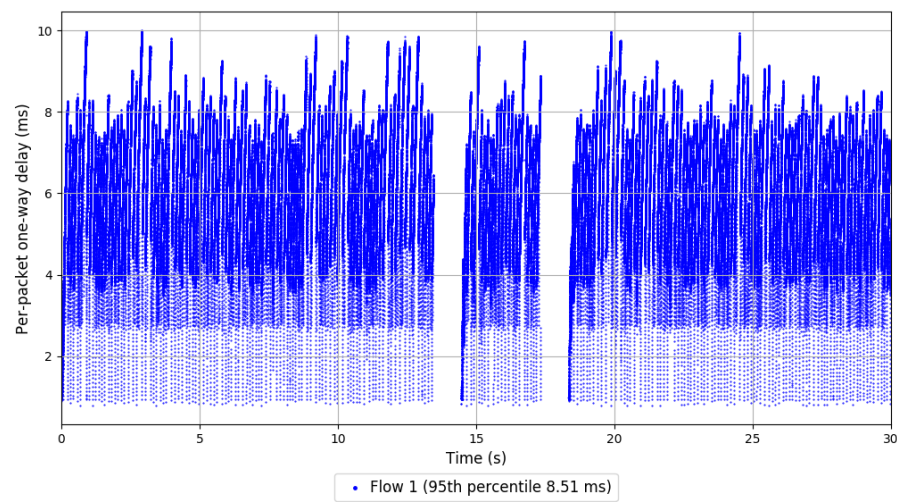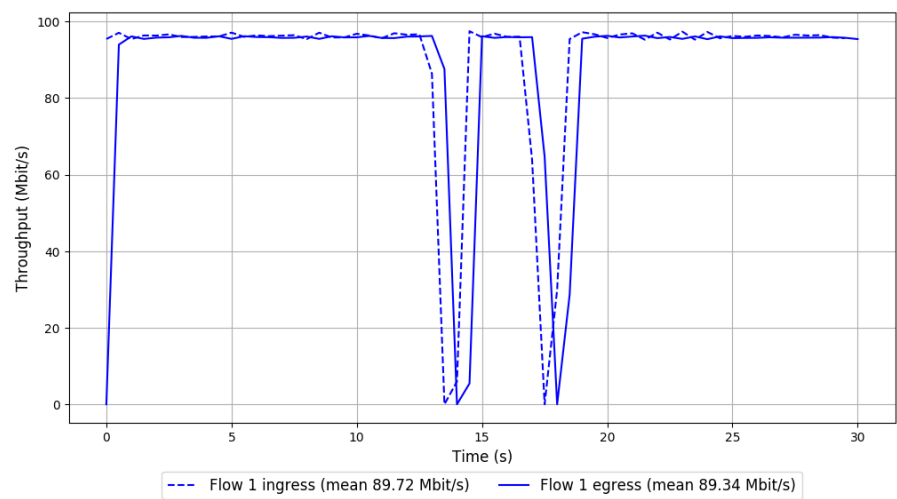
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 83.19 Mbit/s) —— Flow 1 egress (mean 82.81 Mbit/s)

• Flow 1 (95th percentile 8.53 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-26 07:43:17
End at: 2018-10-26 07:43:47
Local clock offset: -5.8 ms
Remote clock offset: 0.542 ms

# Below is generated by plot.py at 2018-10-26 07:56:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.34 Mbit/s
95th percentile per-packet one-way delay: 8.507 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 89.34 Mbit/s
95th percentile per-packet one-way delay: 8.507 ms
Loss rate: 0.42%
```
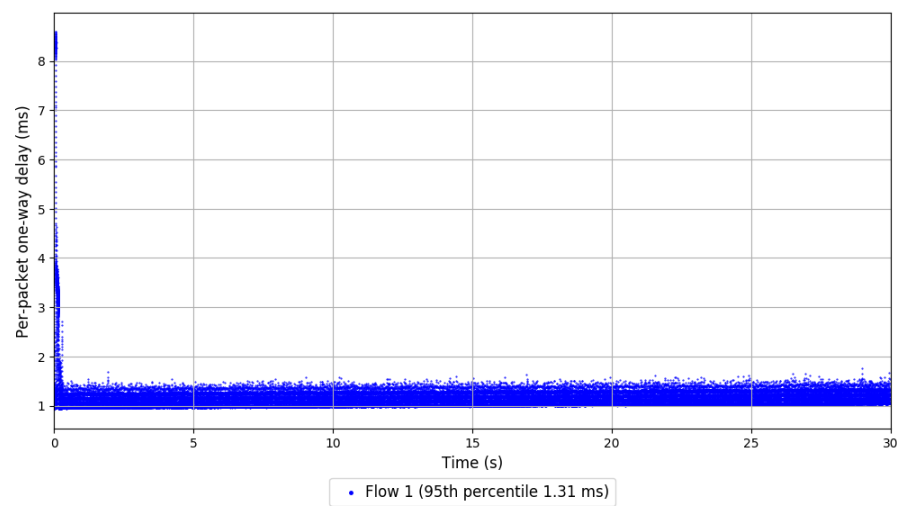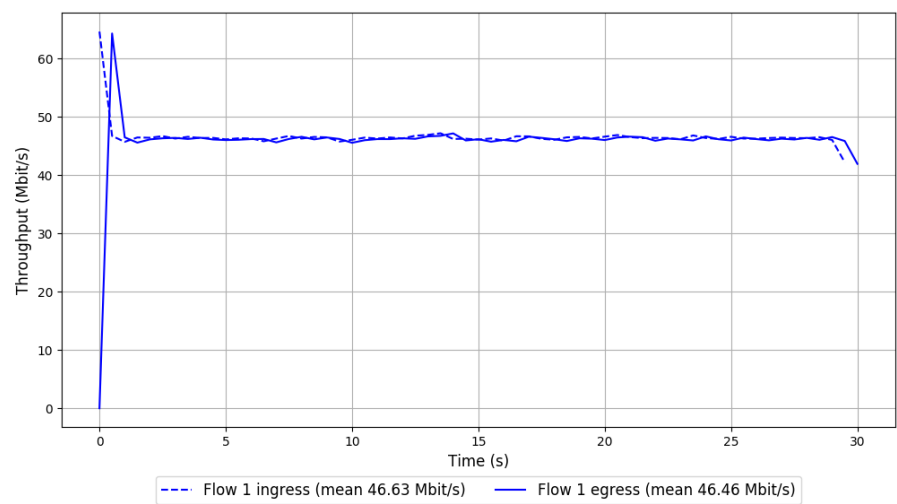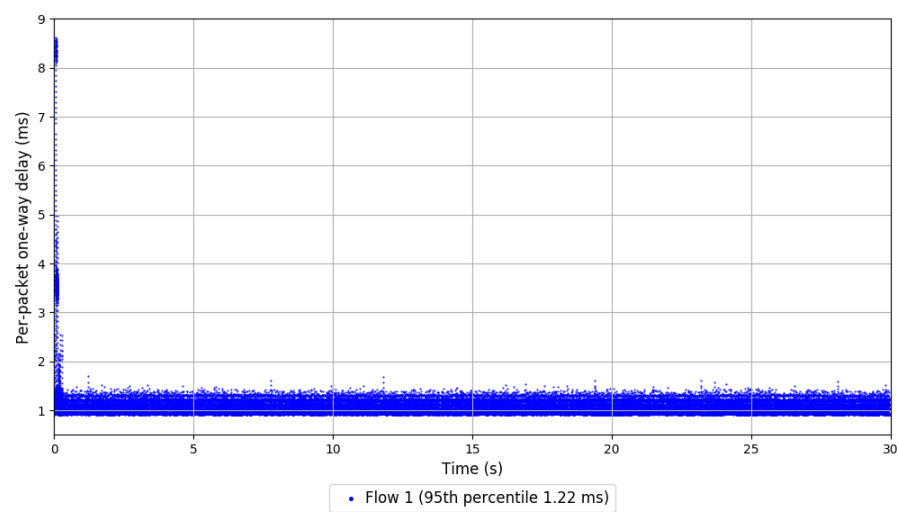
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 89.72 Mbit/s) —— Flow 1 egress (mean 89.34 Mbit/s)

· Flow 1 (95th percentile 8.51 ms)

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-26 06:14:47
End at: 2018-10-26 06:15:17
Local clock offset: -5.179 ms
Remote clock offset: 0.109 ms


# Below is generated by plot.py at 2018-10-26 07:56:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.46 Mbit/s
95th percentile per-packet one-way delay: 1.313 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 46.46 Mbit/s
95th percentile per-packet one-way delay: 1.313 ms
Loss rate: 0.39%
```
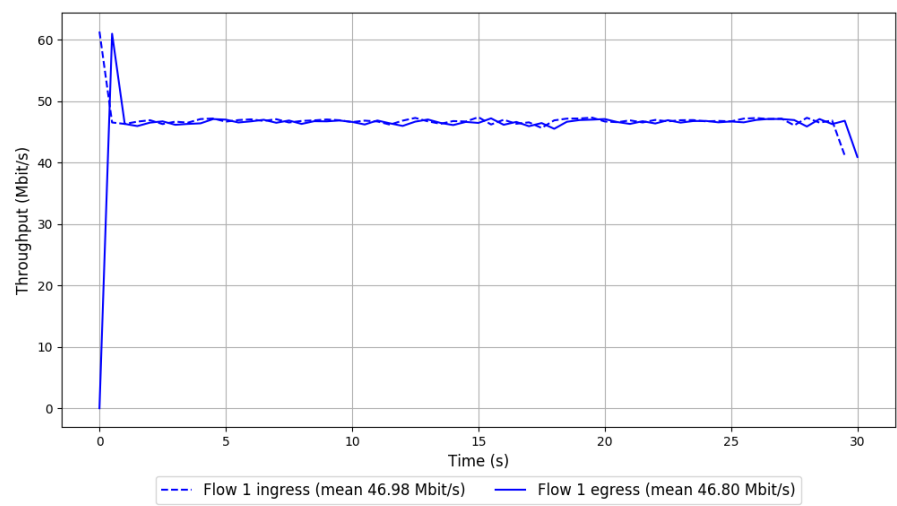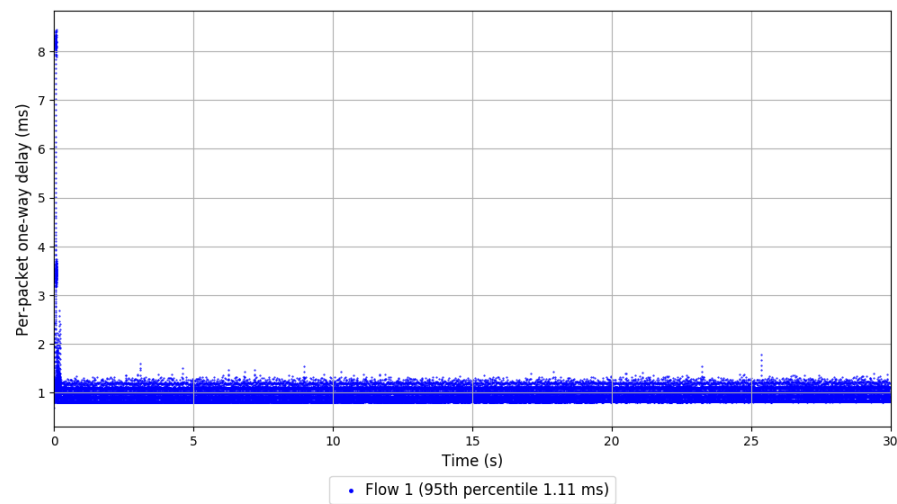
Run 1: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 46.63 Mbit/s)   Flow 1 egress (mean 46.46 Mbit/s)

Flow 1 (95th percentile 1.31 ms)

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 06:35:01
End at: 2018-10-26 06:35:31
Local clock offset: -6.705 ms
Remote clock offset: 0.254 ms


# Below is generated by plot.py at 2018-10-26 07:56:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.80 Mbit/s
95th percentile per-packet one-way delay: 1.219 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 46.80 Mbit/s
95th percentile per-packet one-way delay: 1.219 ms
Loss rate: 0.40%
```
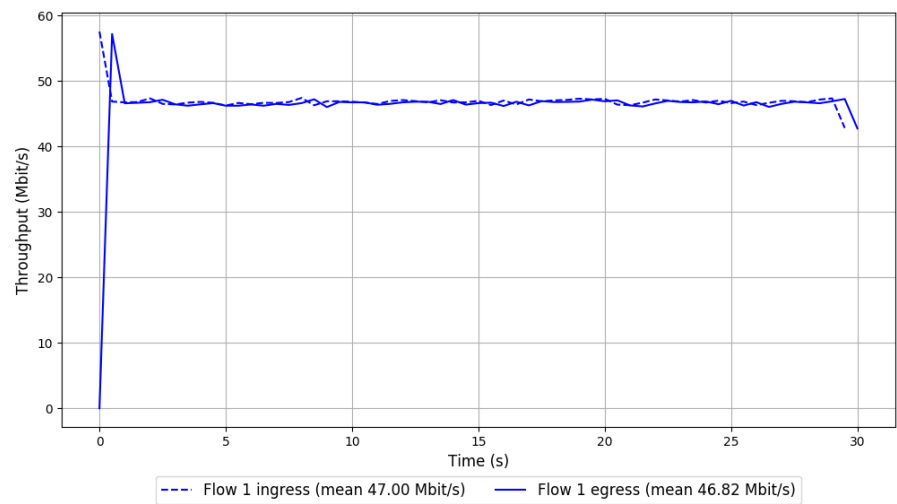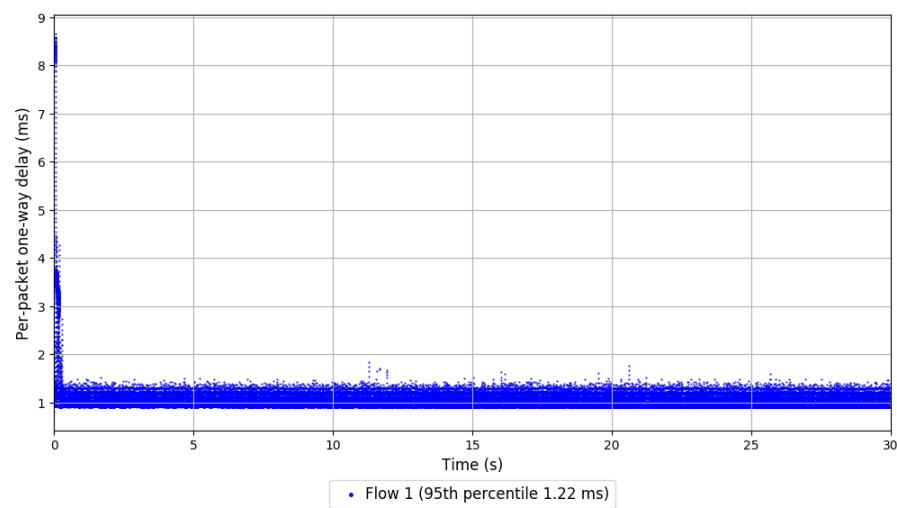
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 06:55:13
End at: 2018-10-26 06:55:43
Local clock offset: -7.008 ms
Remote clock offset: 0.473 ms


# Below is generated by plot.py at 2018-10-26 07:56:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.82 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 46.82 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.39%
```
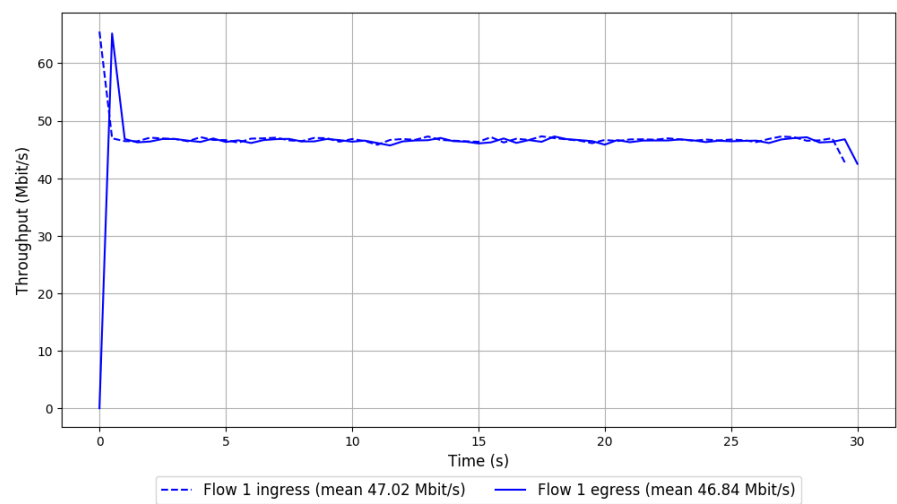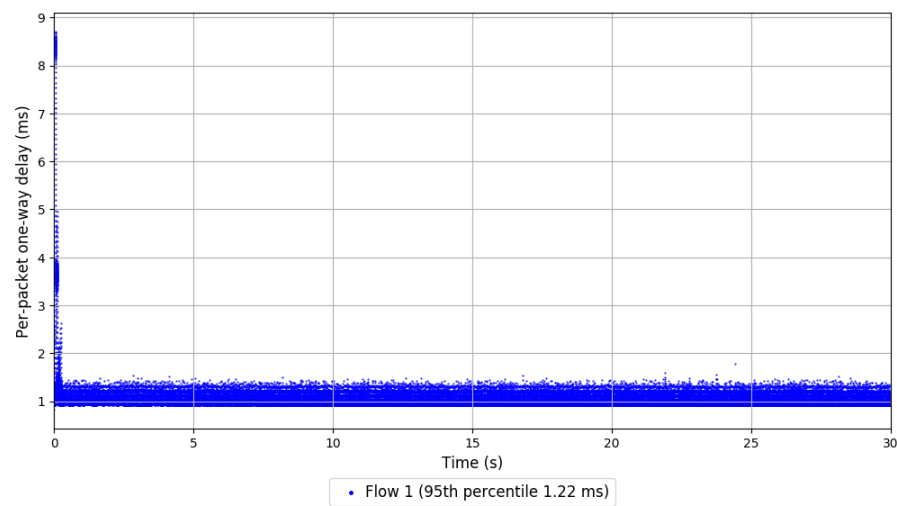
Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 47.00 Mbit/s) ----- Flow 1 egress (mean 46.82 Mbit/s)

• Flow 1 (95th percentile 1.11 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 07:15:24
End at: 2018-10-26 07:15:54
Local clock offset: -6.097 ms
Remote clock offset: 0.483 ms


# Below is generated by plot.py at 2018-10-26 07:57:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.84 Mbit/s
95th percentile per-packet one-way delay: 1.216 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 46.84 Mbit/s
95th percentile per-packet one-way delay: 1.216 ms
Loss rate: 0.39%
```
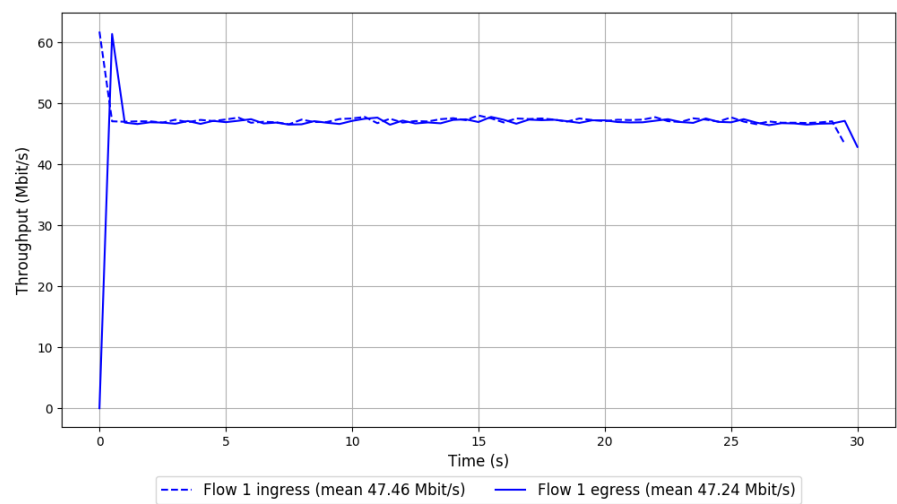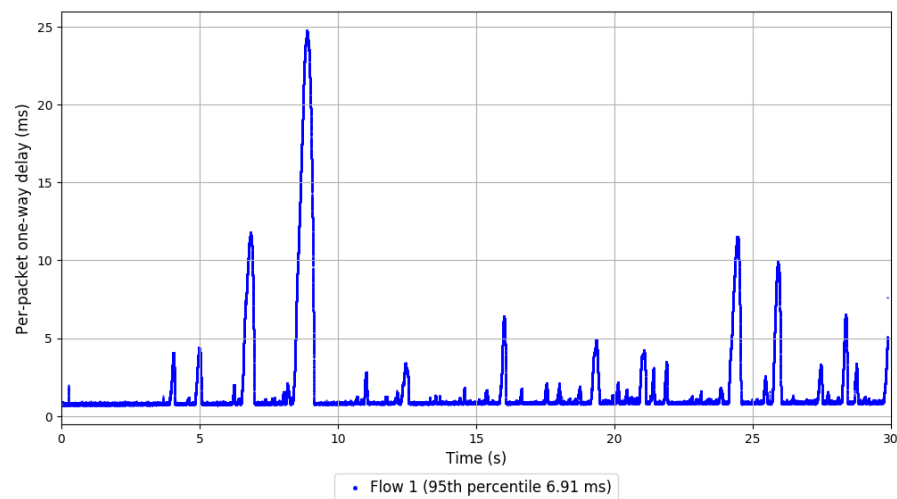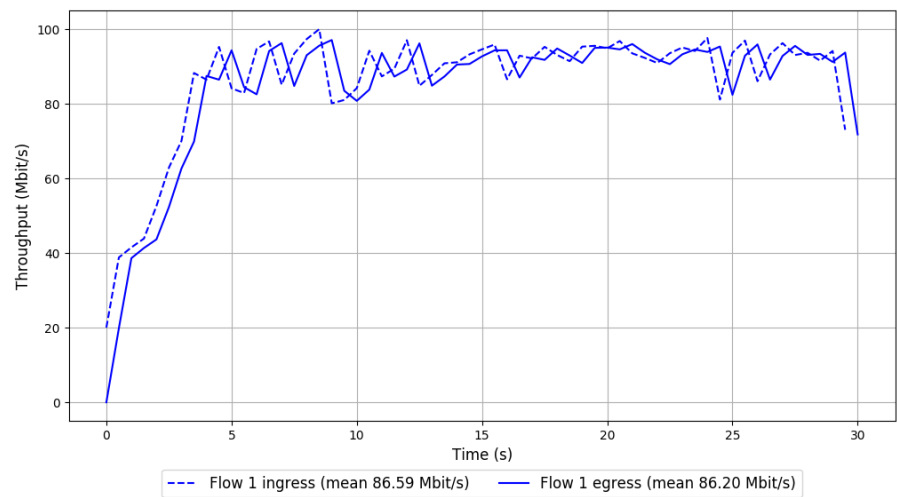
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 07:35:32
End at: 2018-10-26 07:36:02
Local clock offset: -5.856 ms
Remote clock offset: 0.559 ms

# Below is generated by plot.py at 2018-10-26 07:57:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.24 Mbit/s
95th percentile per-packet one-way delay: 1.222 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 47.24 Mbit/s
95th percentile per-packet one-way delay: 1.222 ms
Loss rate: 0.45%
```
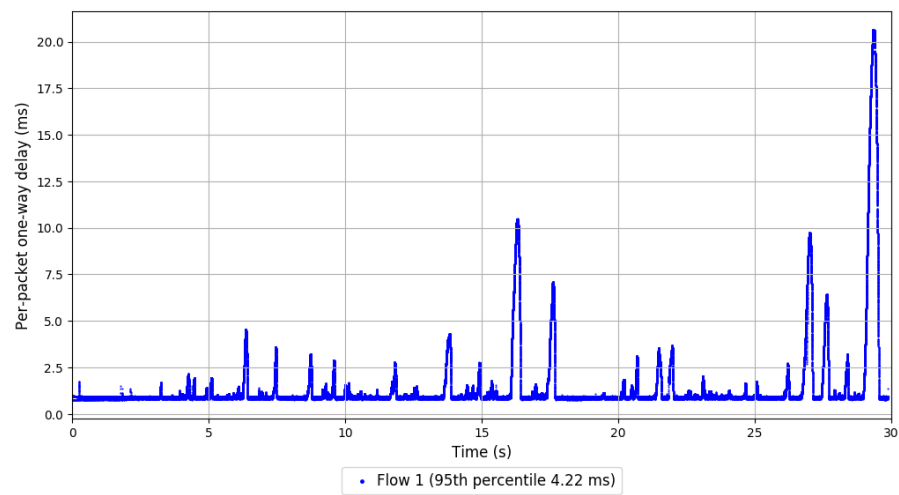
Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-26 06:15:53
End at: 2018-10-26 06:16:23
Local clock offset: -5.453 ms
Remote clock offset: 0.127 ms


# Below is generated by plot.py at 2018-10-26 07:57:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.20 Mbit/s
95th percentile per-packet one-way delay: 6.912 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 86.20 Mbit/s
95th percentile per-packet one-way delay: 6.912 ms
Loss rate: 0.44%
```

Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 06:36:08
End at: 2018-10-26 06:36:38
Local clock offset: -6.741 ms
Remote clock offset: 0.224 ms


# Below is generated by plot.py at 2018-10-26 07:57:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.27 Mbit/s
95th percentile per-packet one-way delay: 4.216 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 87.27 Mbit/s
95th percentile per-packet one-way delay: 4.216 ms
Loss rate: 0.46%
```
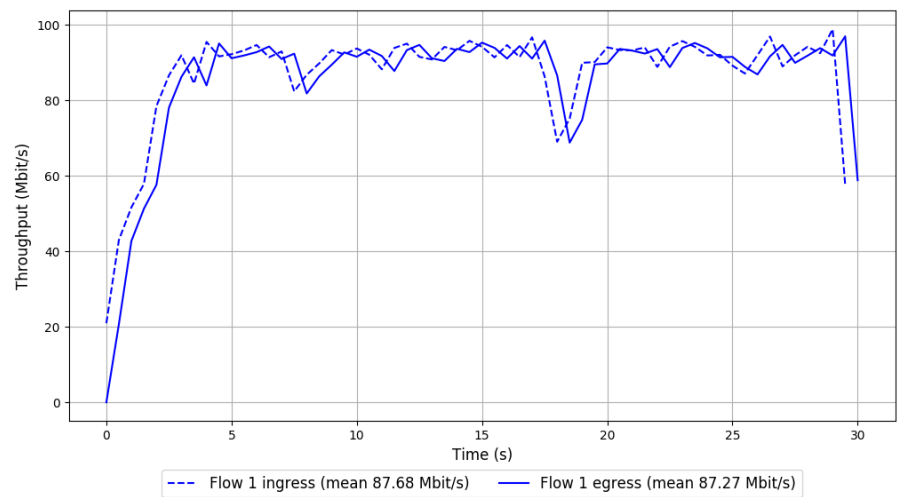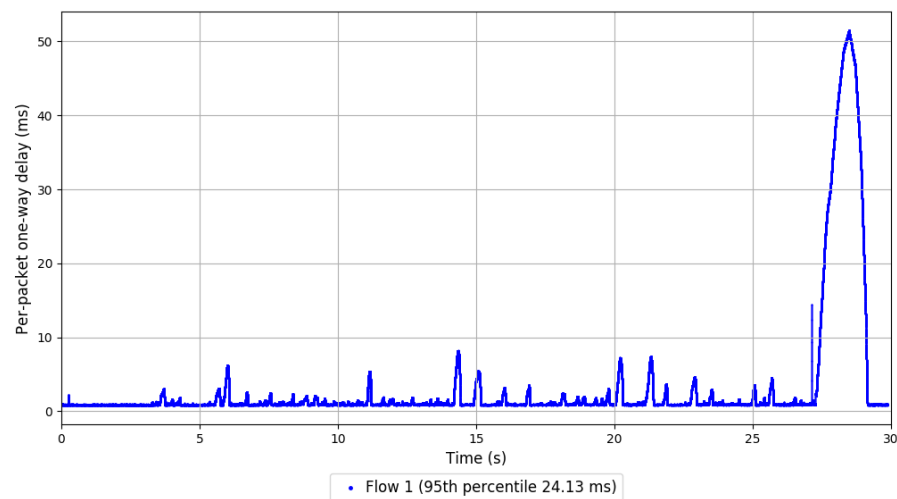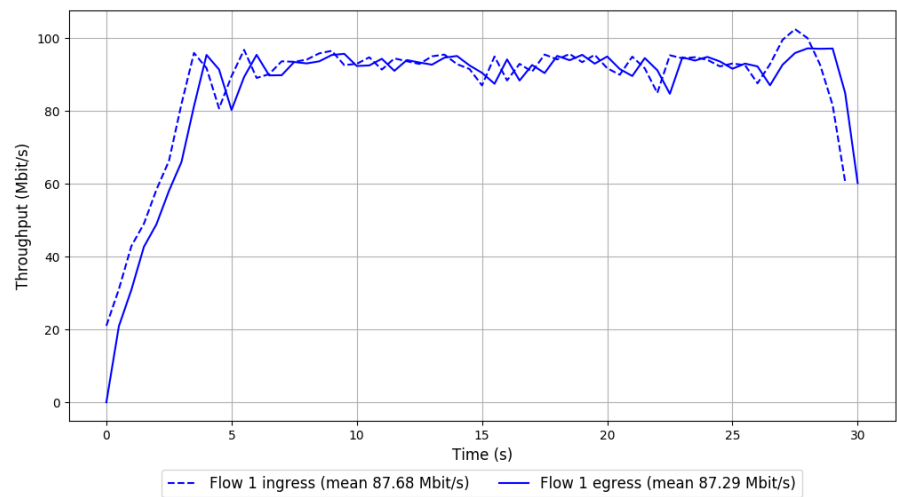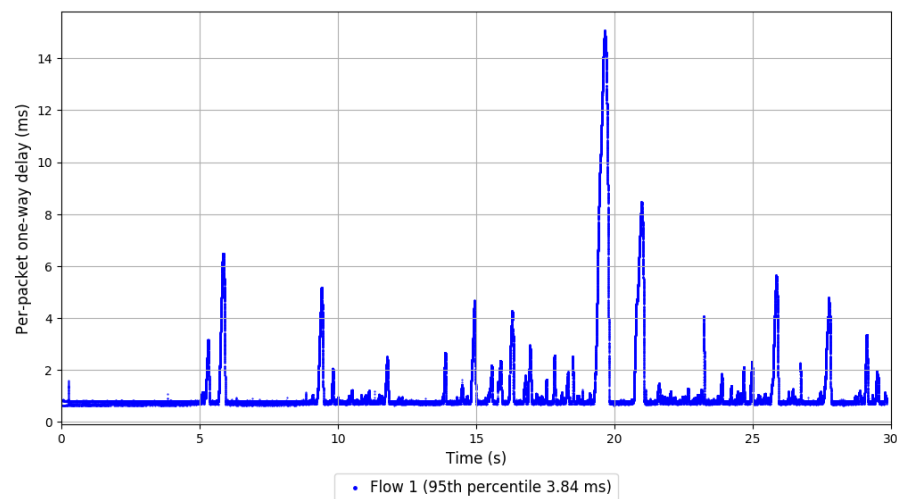
Run 2: Report of PCC-Allegro — Data Link

88

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 06:56:19
End at: 2018-10-26 06:56:49
Local clock offset: -6.94 ms
Remote clock offset: 0.443 ms

# Below is generated by plot.py at 2018-10-26 07:57:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.29 Mbit/s
95th percentile per-packet one-way delay: 24.128 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 87.29 Mbit/s
95th percentile per-packet one-way delay: 24.128 ms
Loss rate: 0.45%
```
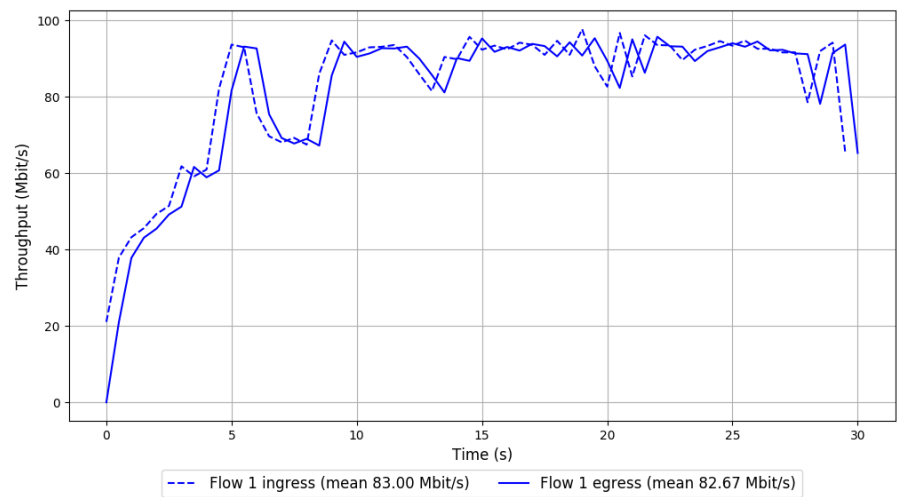
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 87.68 Mbit/s)   Flow 1 egress (mean 87.29 Mbit/s)

Flow 1 (95th percentile 24.13 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 07:16:30
End at: 2018-10-26 07:17:00
Local clock offset: -6.131 ms
Remote clock offset: 0.544 ms


# Below is generated by plot.py at 2018-10-26 07:57:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.67 Mbit/s
95th percentile per-packet one-way delay: 3.841 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 82.67 Mbit/s
95th percentile per-packet one-way delay: 3.841 ms
Loss rate: 0.41%
```
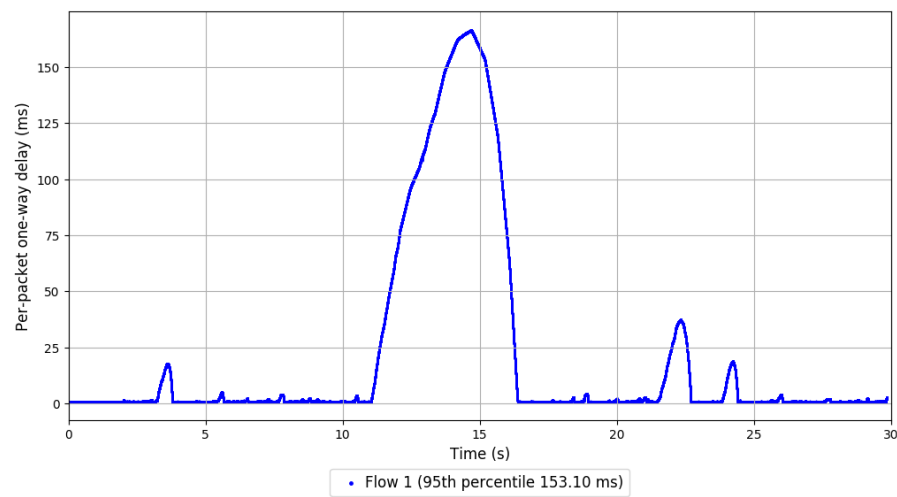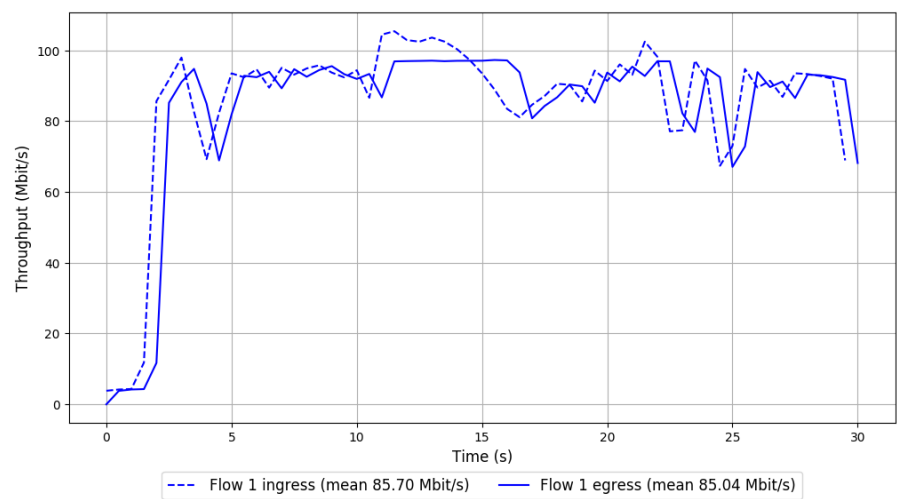
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 83.00 Mbit/s)   Flow 1 egress (mean 82.67 Mbit/s)

Flow 1 (95th percentile 3.84 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 07:36:38
End at: 2018-10-26 07:37:08
Local clock offset: -5.851 ms
Remote clock offset: 0.572 ms

# Below is generated by plot.py at 2018-10-26 07:58:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.04 Mbit/s
95th percentile per-packet one-way delay: 153.104 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 85.04 Mbit/s
95th percentile per-packet one-way delay: 153.104 ms
Loss rate: 0.77%
```
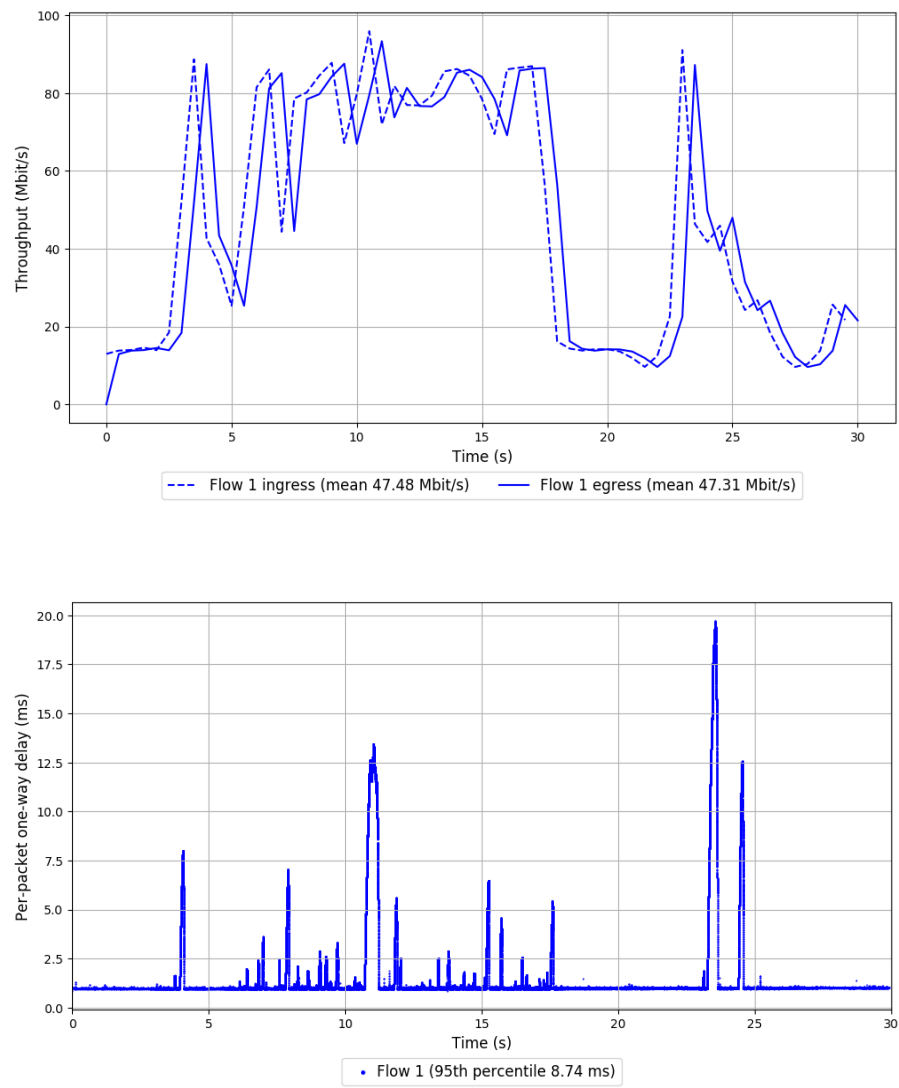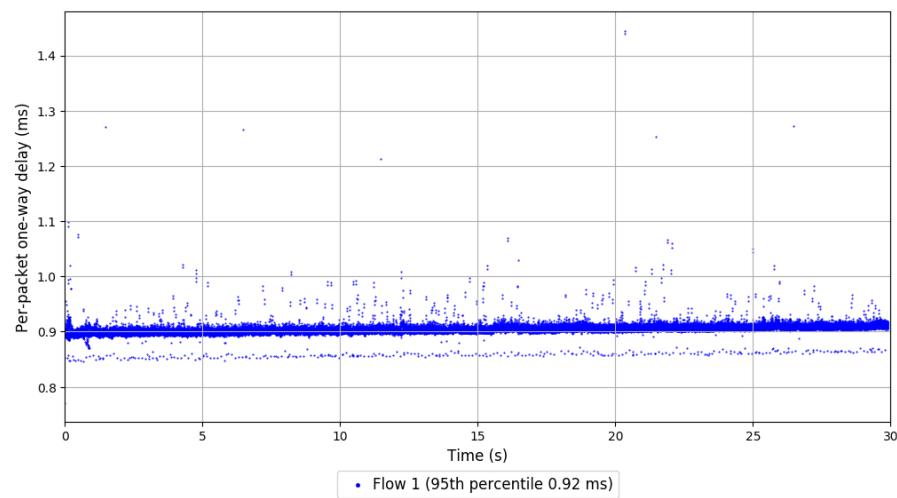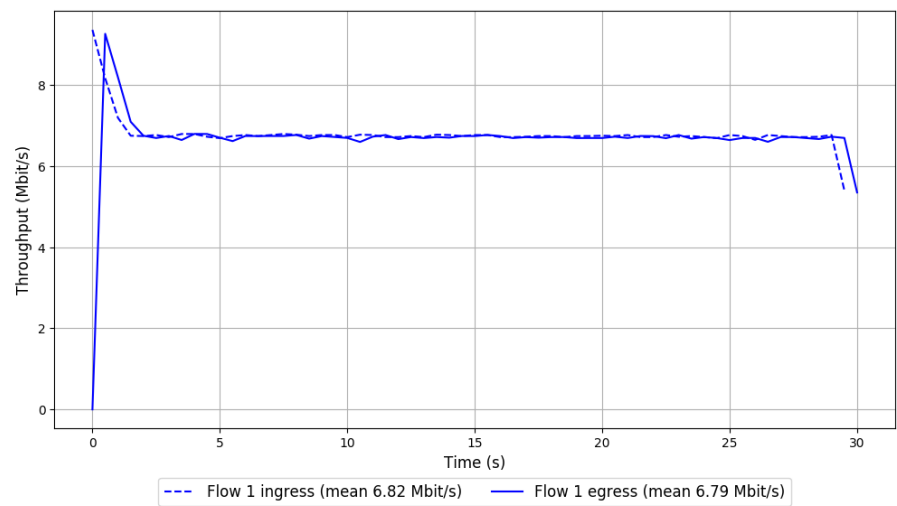
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 85.70 Mbit/s)   Flow 1 egress (mean 85.04 Mbit/s)

• Flow 1 (95th percentile 153.10 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-26 06:27:04
End at: 2018-10-26 06:27:34
Local clock offset: -6.523 ms
Remote clock offset: 0.146 ms


# Below is generated by plot.py at 2018-10-26 07:58:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.31 Mbit/s
95th percentile per-packet one-way delay: 8.739 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 47.31 Mbit/s
95th percentile per-packet one-way delay: 8.739 ms
Loss rate: 0.36%
```
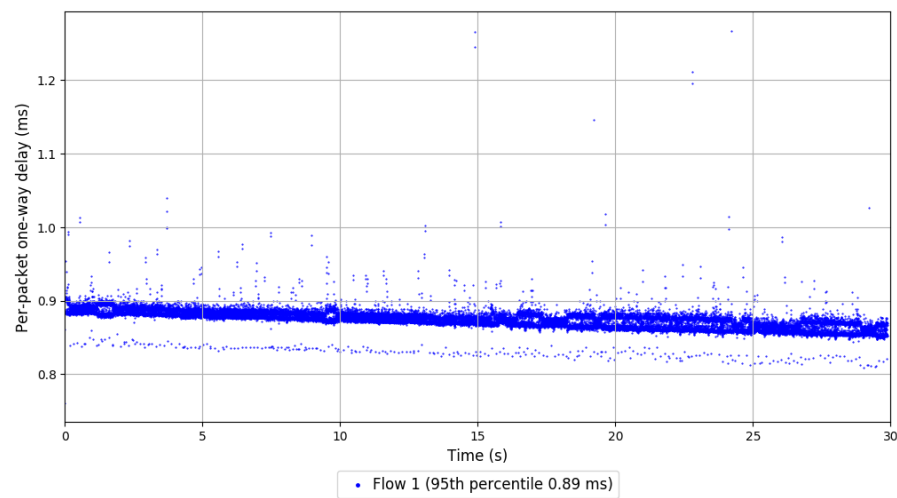
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 06:47:18
End at: 2018-10-26 06:47:48
Local clock offset: -6.788 ms
Remote clock offset: 0.364 ms

# Below is generated by plot.py at 2018-10-26 07:58:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 0.915 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 0.915 ms
Loss rate: 0.48%
```
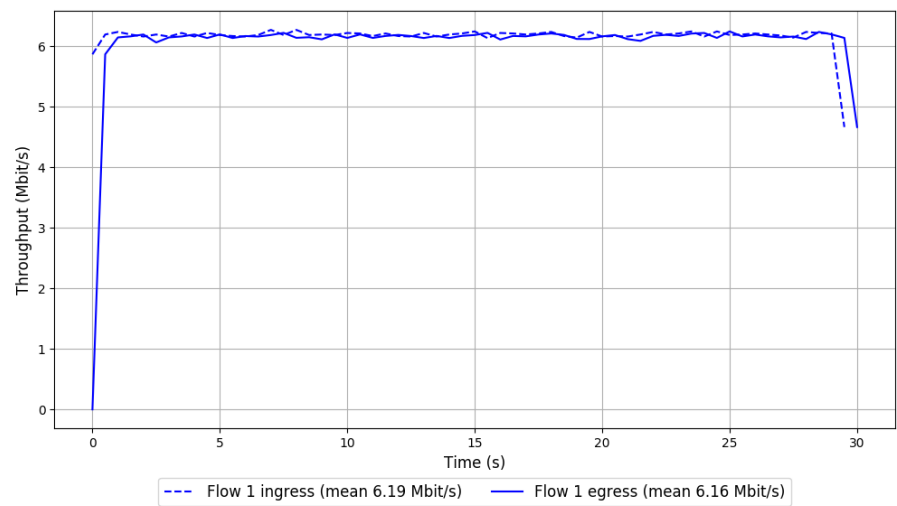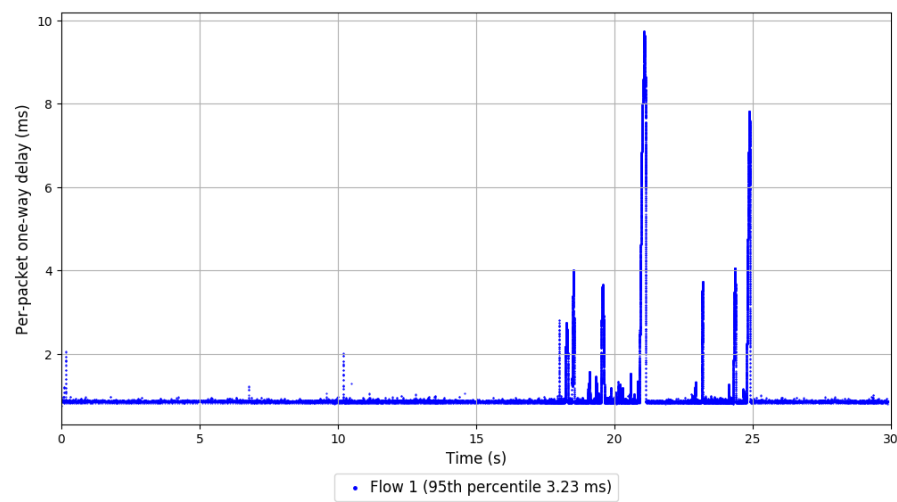
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 07:07:29
End at: 2018-10-26 07:07:59
Local clock offset: -6.453 ms
Remote clock offset: 0.46 ms


# Below is generated by plot.py at 2018-10-26 07:58:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 0.891 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 0.891 ms
Loss rate: 0.49%
```
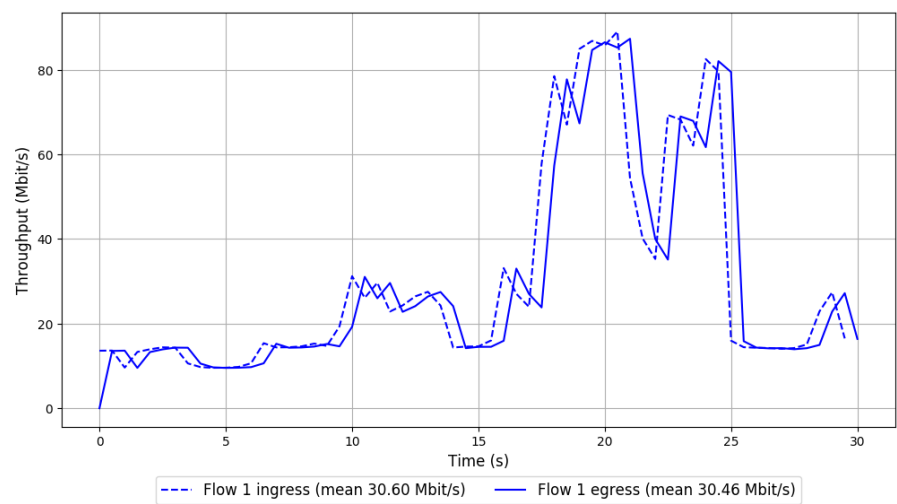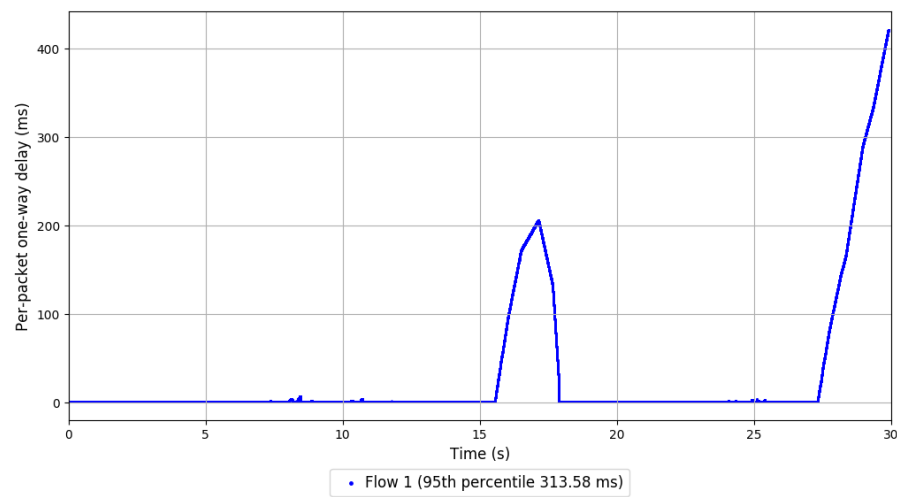
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 6.19 Mbit/s)   Flow 1 egress (mean 6.16 Mbit/s)

Flow 1 (95th percentile 0.89 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 07:27:35
End at: 2018-10-26 07:28:05
Local clock offset: -5.975 ms
Remote clock offset: 0.598 ms

# Below is generated by plot.py at 2018-10-26 07:58:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 30.46 Mbit/s
95th percentile per-packet one-way delay: 3.229 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 30.46 Mbit/s
95th percentile per-packet one-way delay: 3.229 ms
Loss rate: 0.44%
```
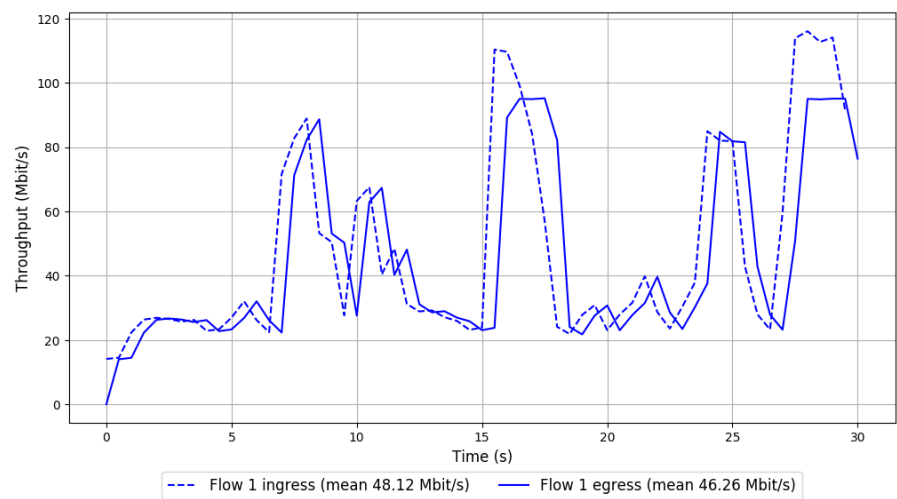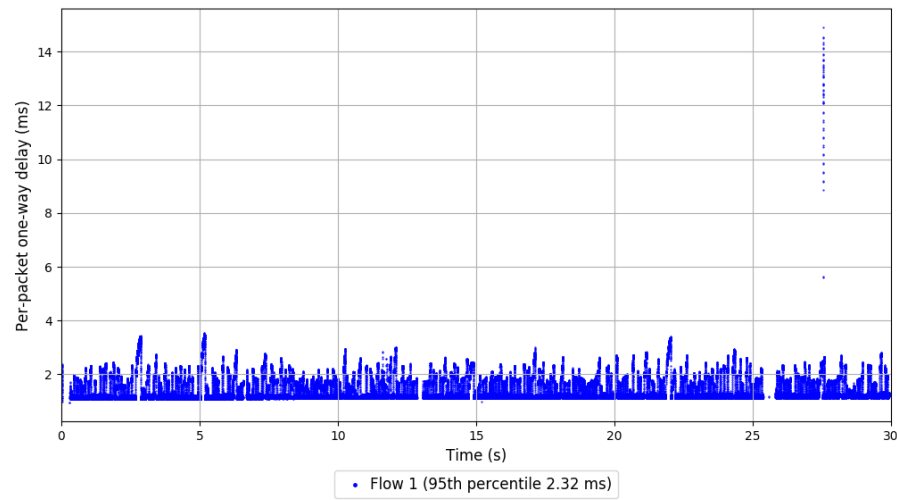
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 30.60 Mbit/s) — Flow 1 egress (mean 30.46 Mbit/s)

Flow 1 (95th percentile 3.23 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 07:47:48
End at: 2018-10-26 07:48:18
Local clock offset: -5.794 ms
Remote clock offset: 0.502 ms


# Below is generated by plot.py at 2018-10-26 07:58:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.26 Mbit/s
95th percentile per-packet one-way delay: 313.580 ms
Loss rate: 3.89%
-- Flow 1:
Average throughput: 46.26 Mbit/s
95th percentile per-packet one-way delay: 313.580 ms
Loss rate: 3.89%
```
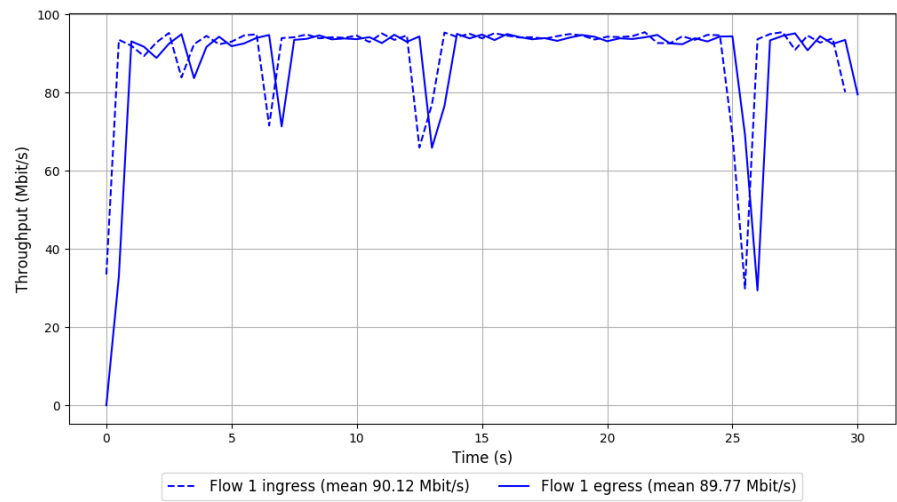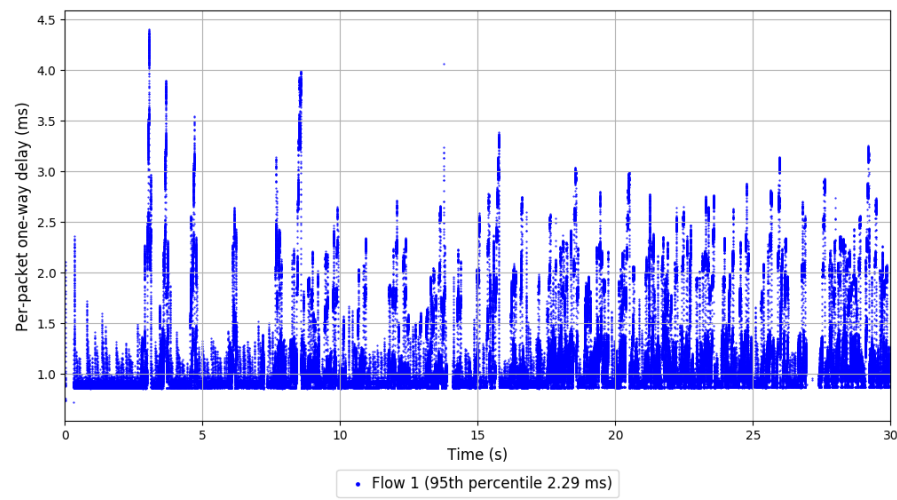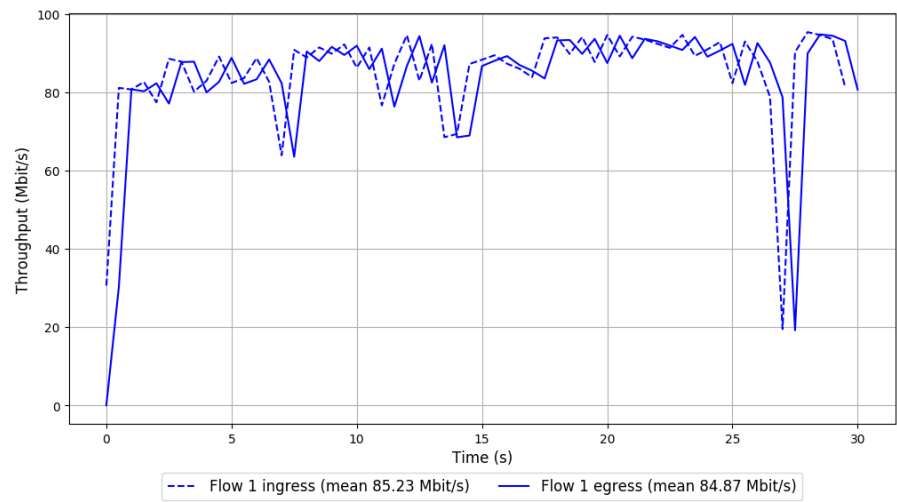
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 48.12 Mbit/s) — Flow 1 egress (mean 46.26 Mbit/s)

Flow 1 (95th percentile 313.58 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-26 06:24:49
End at: 2018-10-26 06:25:20
Local clock offset: -6.35 ms
Remote clock offset: 0.029 ms


# Below is generated by plot.py at 2018-10-26 07:58:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.77 Mbit/s
95th percentile per-packet one-way delay: 2.319 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 89.77 Mbit/s
95th percentile per-packet one-way delay: 2.319 ms
Loss rate: 0.39%
```
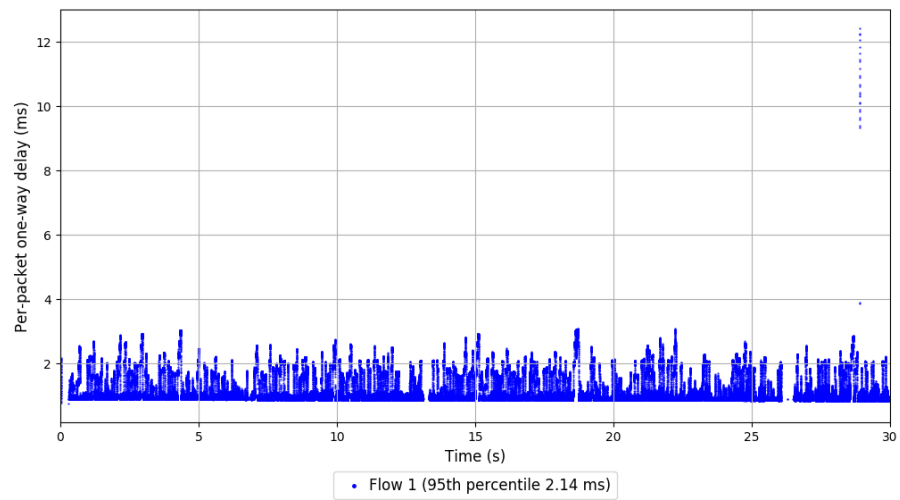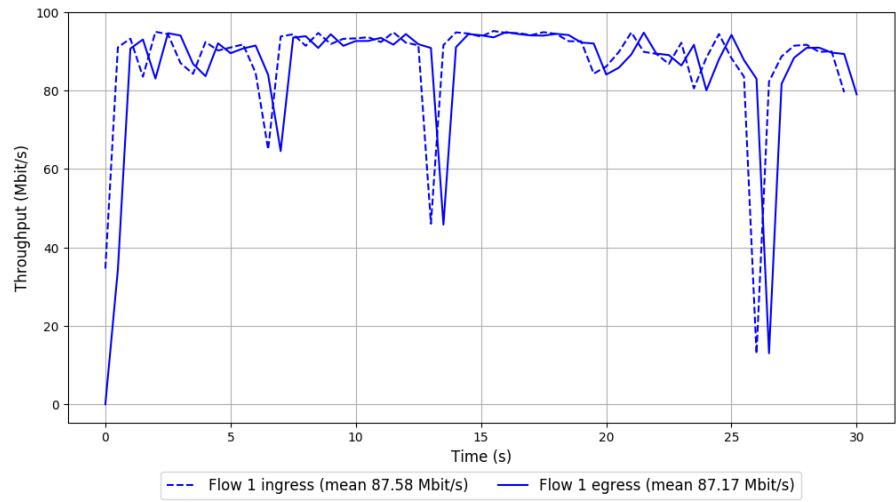
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 06:45:05
End at: 2018-10-26 06:45:35
Local clock offset: -6.701 ms
Remote clock offset: 0.408 ms


# Below is generated by plot.py at 2018-10-26 07:58:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.87 Mbit/s
95th percentile per-packet one-way delay: 2.287 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 84.87 Mbit/s
95th percentile per-packet one-way delay: 2.287 ms
Loss rate: 0.43%
```
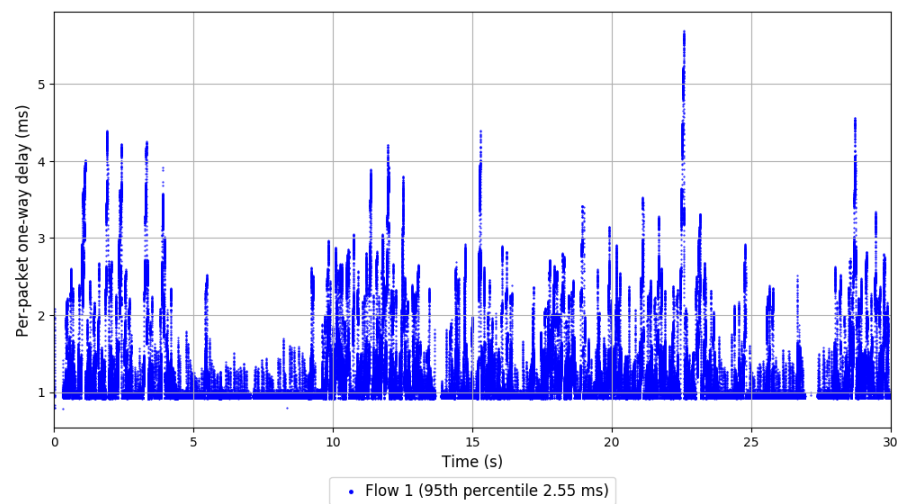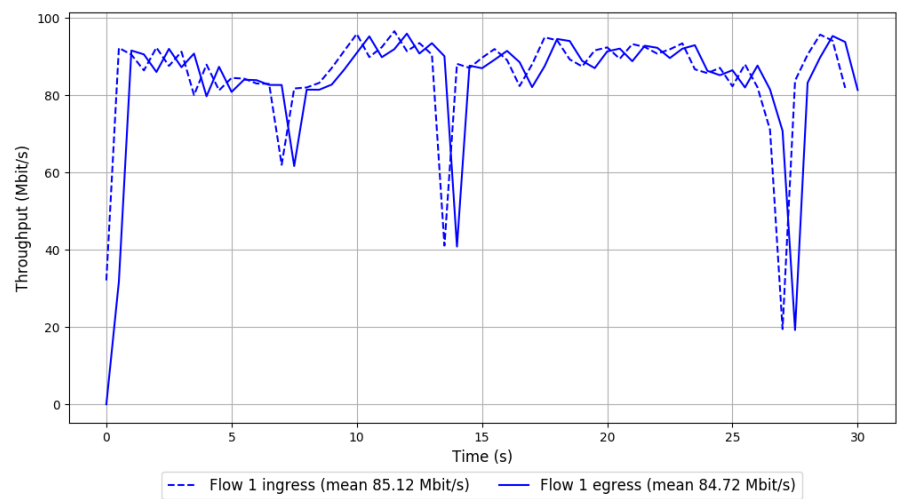
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 07:05:16
End at: 2018-10-26 07:05:46
Local clock offset: -6.594 ms
Remote clock offset: 0.469 ms


# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.17 Mbit/s
95th percentile per-packet one-way delay: 2.144 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 87.17 Mbit/s
95th percentile per-packet one-way delay: 2.144 ms
Loss rate: 0.46%
```
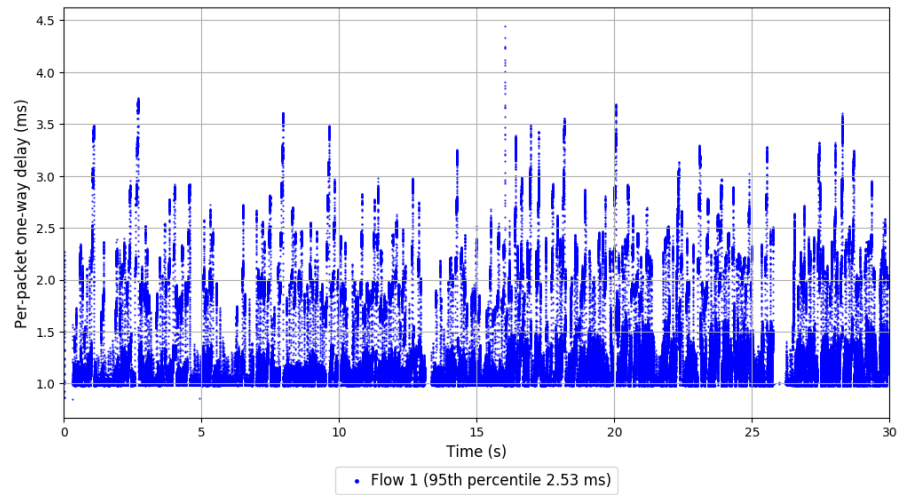
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 87.58 Mbit/s)   Flow 1 egress (mean 87.17 Mbit/s)

Flow 1 (95th percentile 2.14 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 07:25:21
End at: 2018-10-26 07:25:51
Local clock offset: -5.92 ms
Remote clock offset: 0.588 ms


# Below is generated by plot.py at 2018-10-26 07:59:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.72 Mbit/s
95th percentile per-packet one-way delay: 2.547 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 84.72 Mbit/s
95th percentile per-packet one-way delay: 2.547 ms
Loss rate: 0.48%
```
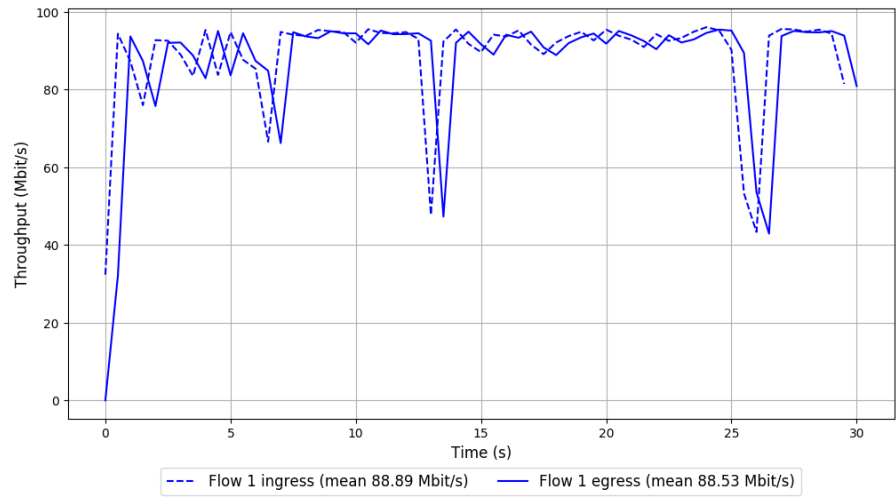
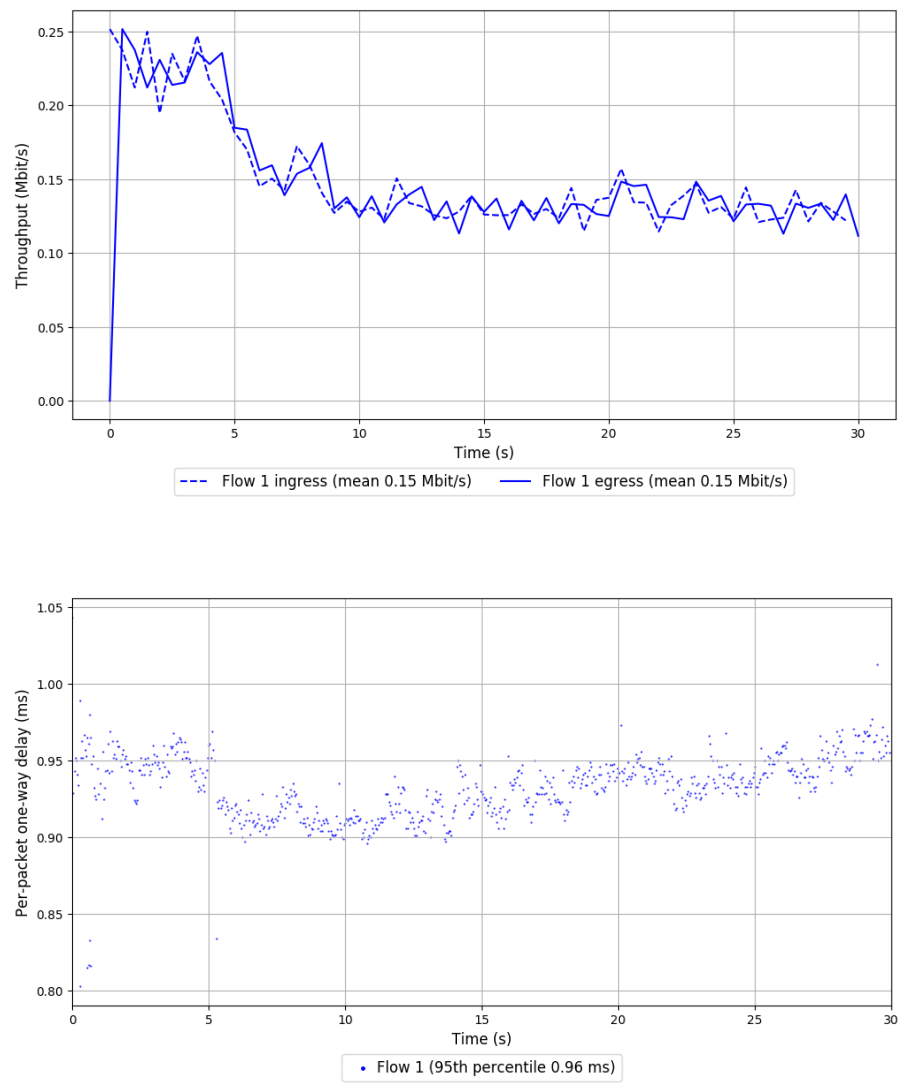# Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 07:45:34
End at: 2018-10-26 07:46:05
Local clock offset: -5.795 ms
Remote clock offset: 0.475 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.53 Mbit/s
95th percentile per-packet one-way delay: 2.527 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 88.53 Mbit/s
95th percentile per-packet one-way delay: 2.527 ms
Loss rate: 0.41%
```
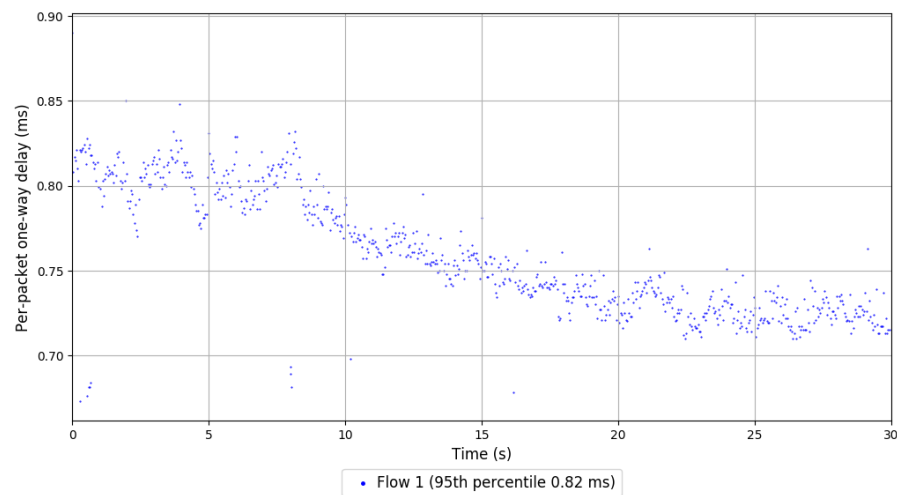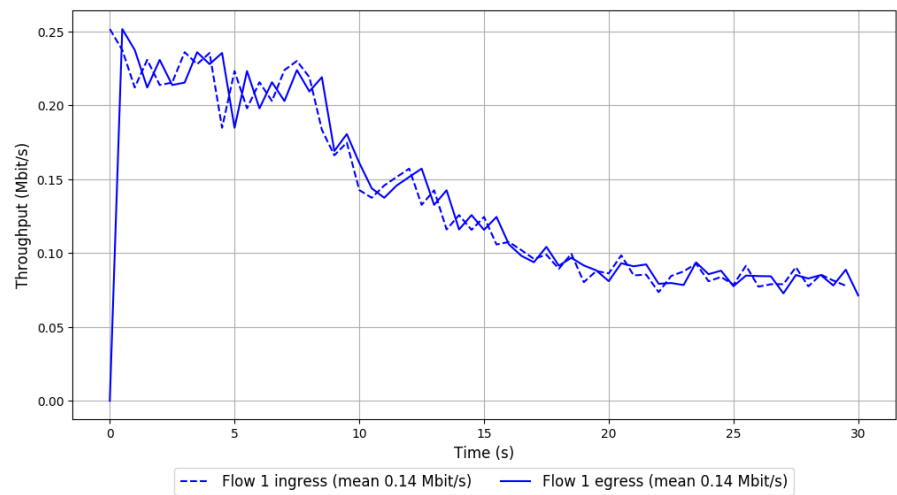
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 88.89 Mbit/s) ----- Flow 1 egress (mean 88.53 Mbit/s) ——

• Flow 1 (95th percentile 2.53 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-10-26 06:17:00
End at: 2018-10-26 06:17:30
Local clock offset: -5.508 ms
Remote clock offset: 0.142 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 0.963 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 0.963 ms
Loss rate: 0.31%
```
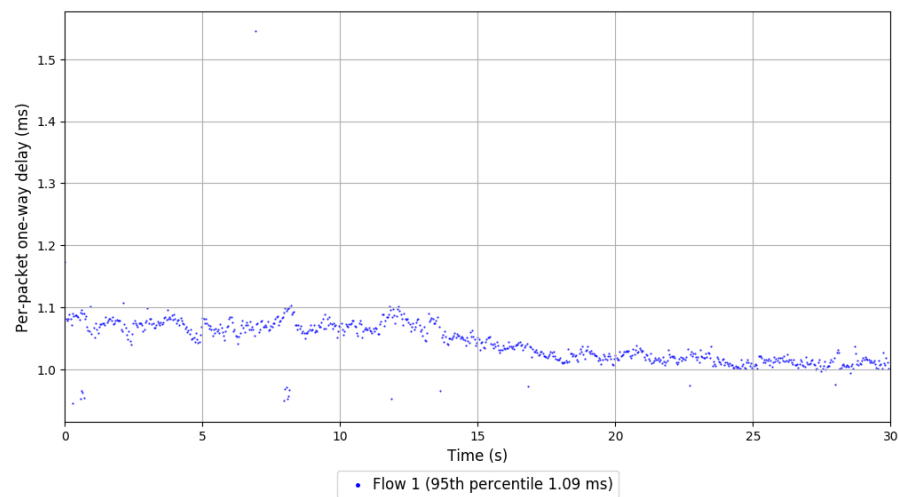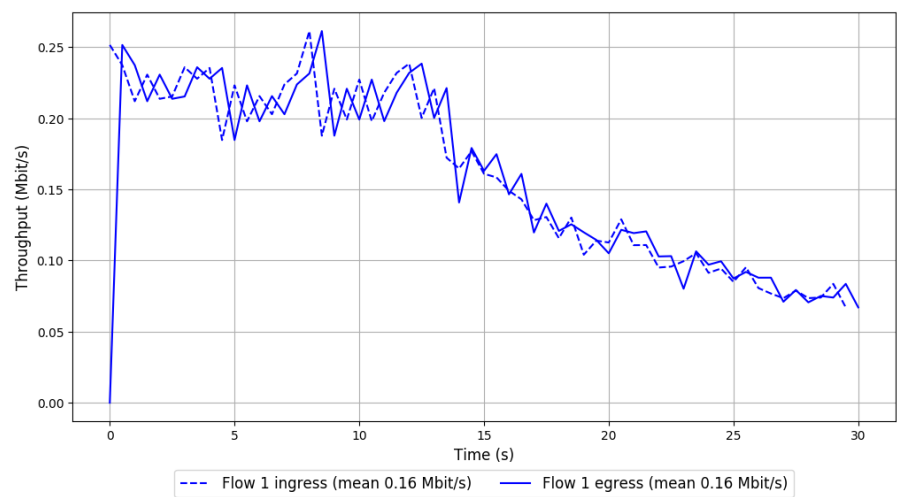
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-10-26 06:37:15
End at: 2018-10-26 06:37:45
Local clock offset: -6.741 ms
Remote clock offset: 0.32 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 0.817 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 0.817 ms
Loss rate: 0.59%
```
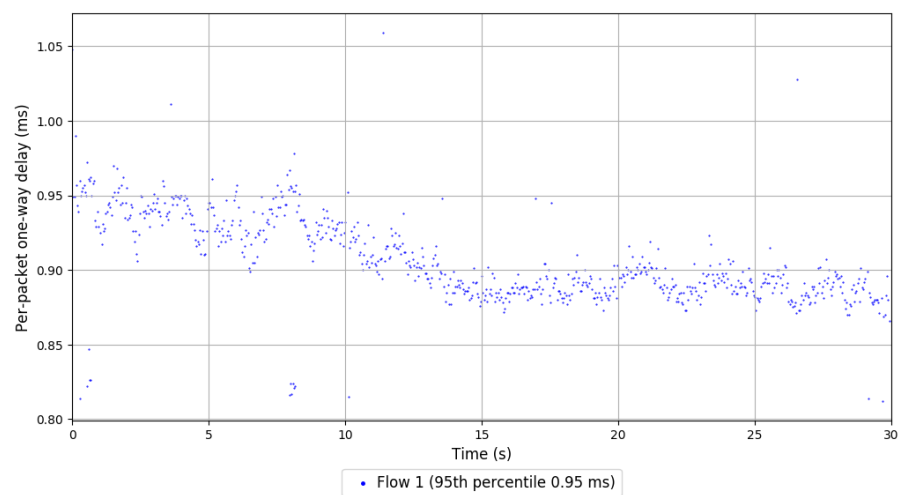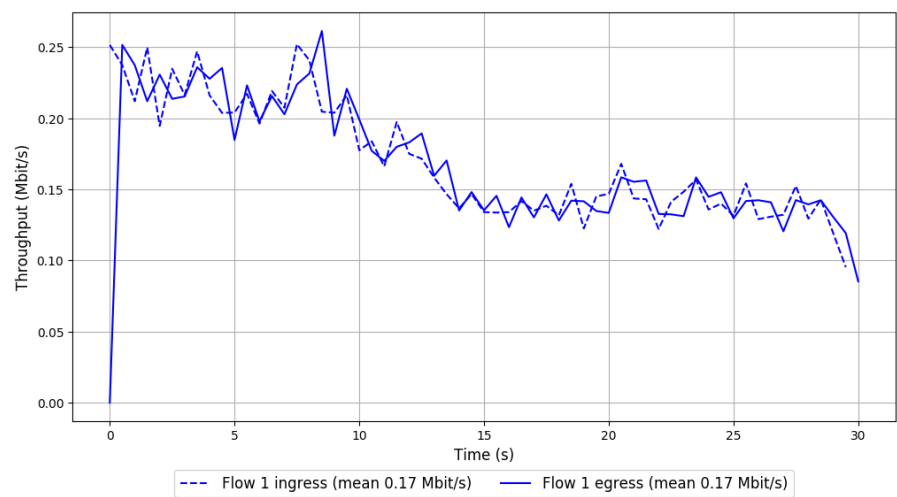
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-26 06:57:26
End at: 2018-10-26 06:57:56
Local clock offset: -6.956 ms
Remote clock offset: 0.325 ms

# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.46%
```
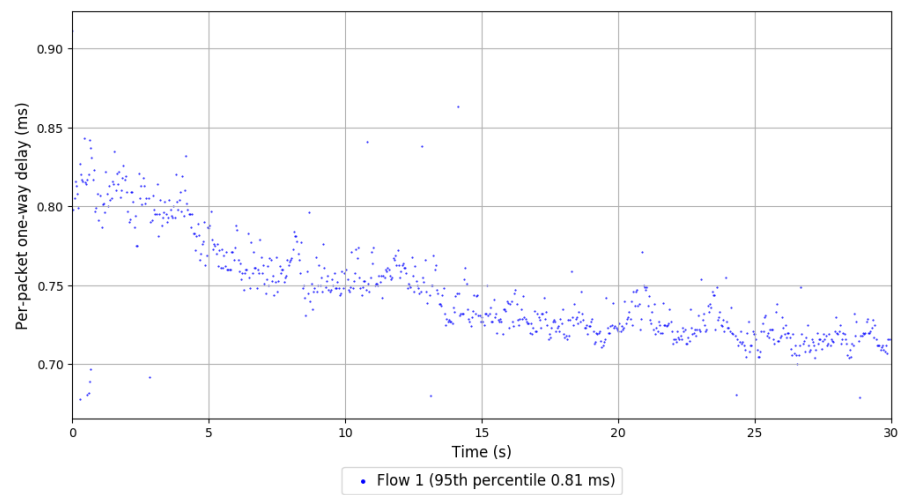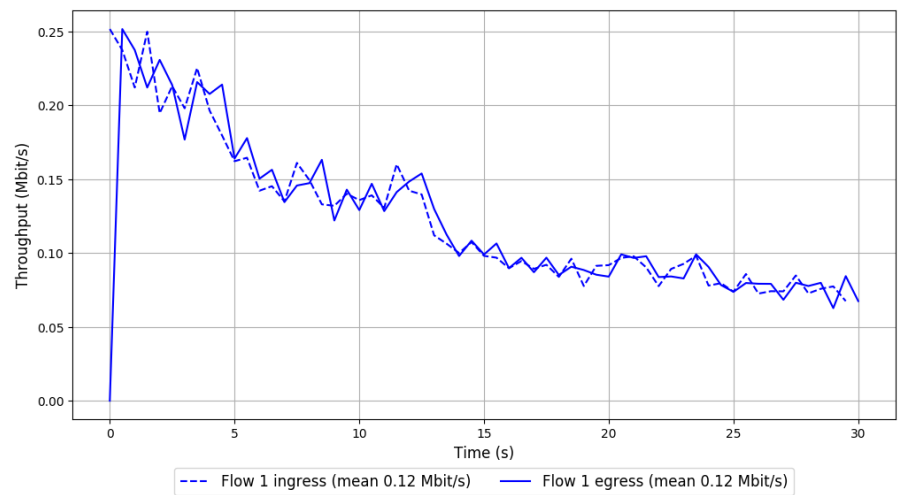
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.16 Mbit/s)   Flow 1 egress (mean 0.16 Mbit/s)

Flow 1 (95th percentile 1.09 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-10-26 07:17:37
End at: 2018-10-26 07:18:07
Local clock offset: -5.977 ms
Remote clock offset: 0.549 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 0.39%
```
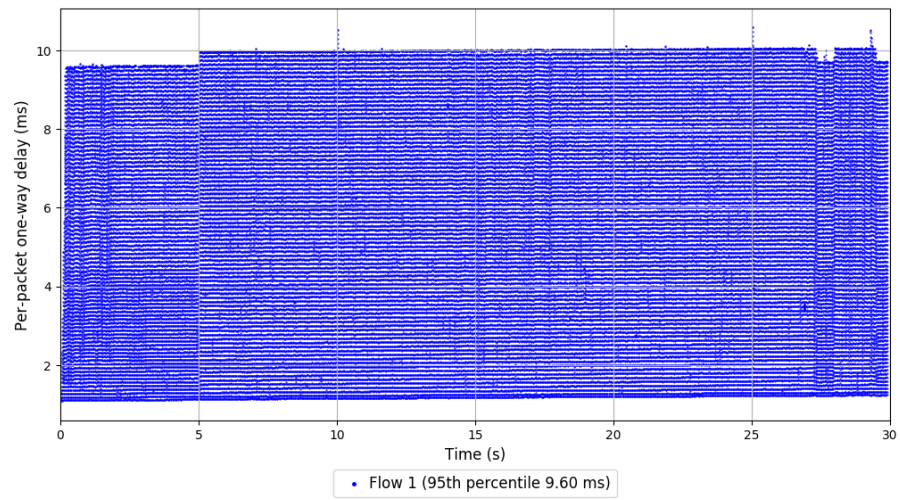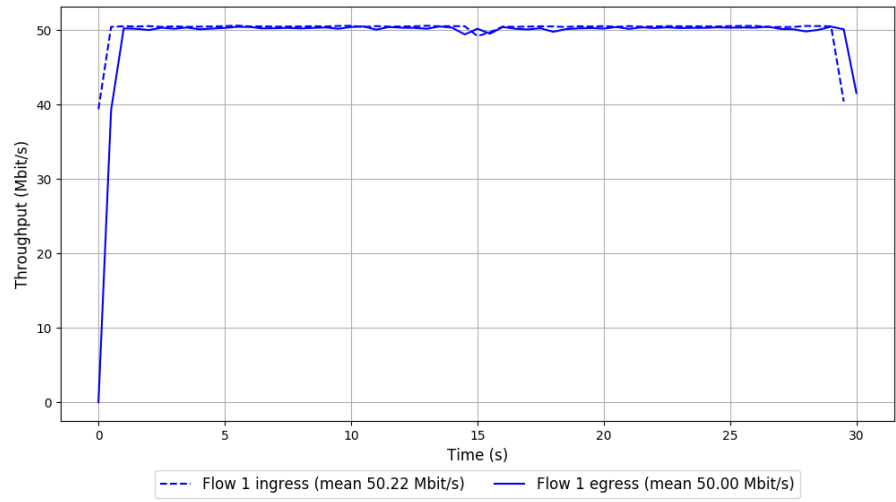
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-26 07:37:45
End at: 2018-10-26 07:38:15
Local clock offset: -5.961 ms
Remote clock offset: 0.562 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 0.813 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 0.813 ms
Loss rate: 0.55%
```
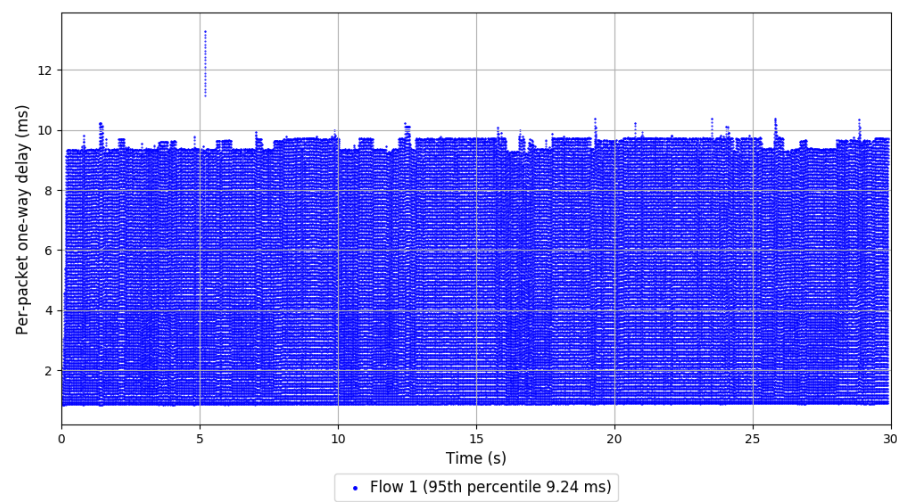
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-10-26 06:10:09
End at: 2018-10-26 06:10:39
Local clock offset: -4.108 ms
Remote clock offset: 0.038 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.00 Mbit/s
95th percentile per-packet one-way delay: 9.596 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 50.00 Mbit/s
95th percentile per-packet one-way delay: 9.596 ms
Loss rate: 0.42%
```
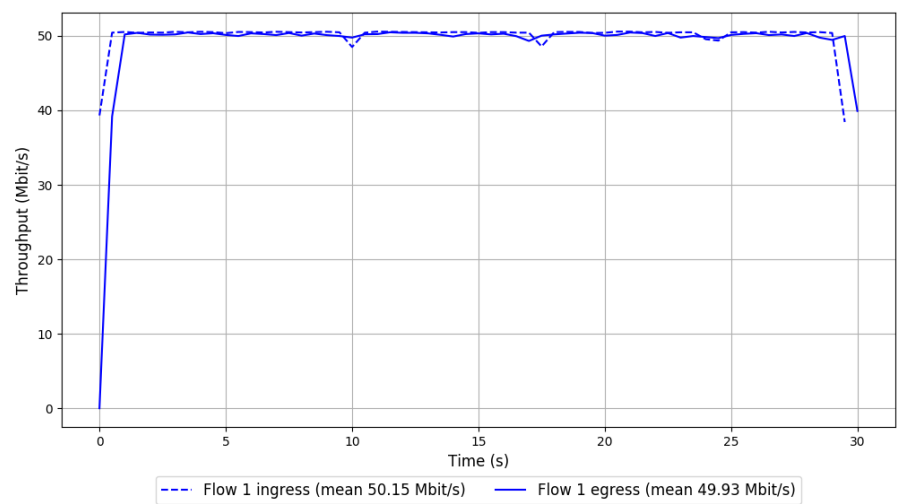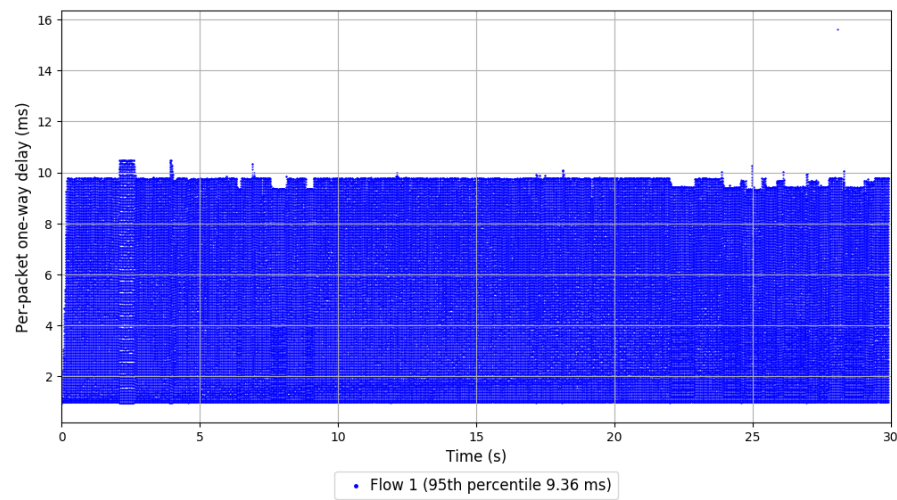
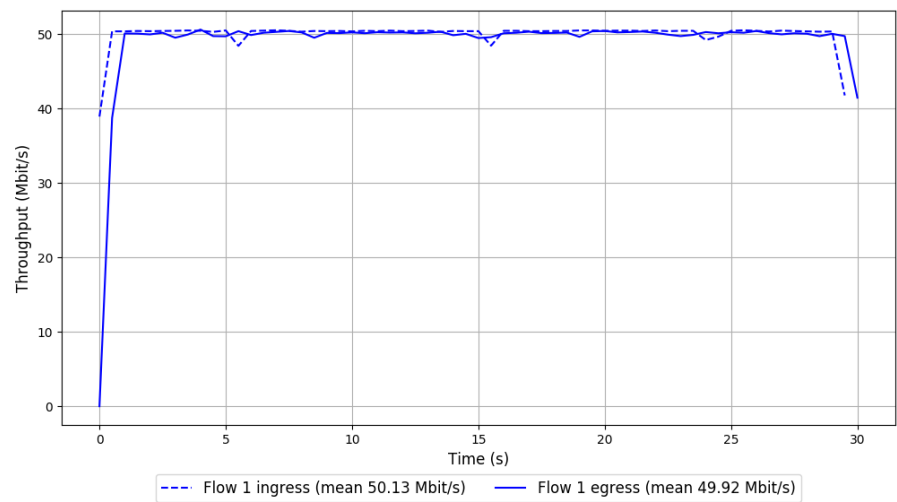Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-10-26 06:30:29
End at: 2018-10-26 06:30:59
Local clock offset: -6.868 ms
Remote clock offset: 0.199 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.93 Mbit/s
95th percentile per-packet one-way delay: 9.240 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 49.93 Mbit/s
95th percentile per-packet one-way delay: 9.240 ms
Loss rate: 0.41%
```

Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-26 06:50:41
End at: 2018-10-26 06:51:11
Local clock offset: -6.803 ms
Remote clock offset: 0.423 ms


# Below is generated by plot.py at 2018-10-26 07:59:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.92 Mbit/s
95th percentile per-packet one-way delay: 9.355 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 49.92 Mbit/s
95th percentile per-packet one-way delay: 9.355 ms
Loss rate: 0.47%
```
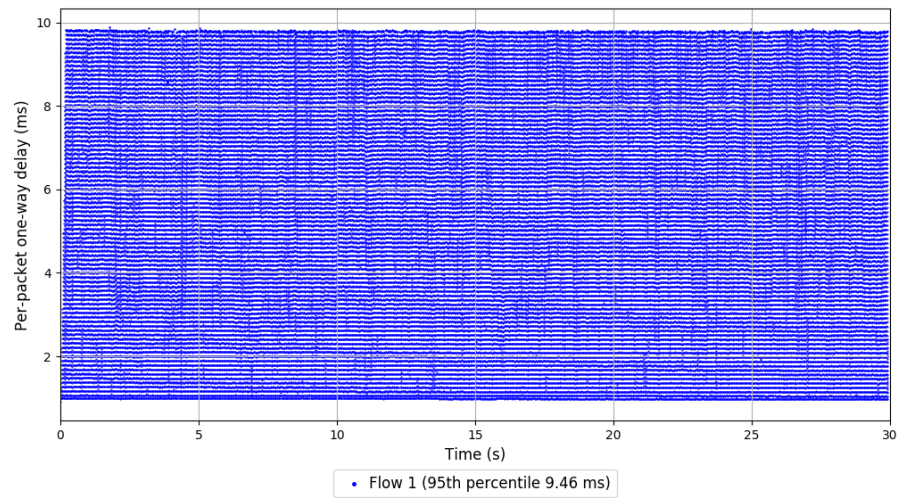
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-26 07:10:51
End at: 2018-10-26 07:11:21
Local clock offset: -6.182 ms
Remote clock offset: 0.484 ms


# Below is generated by plot.py at 2018-10-26 07:59:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.87 Mbit/s
95th percentile per-packet one-way delay: 9.460 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 49.87 Mbit/s
95th percentile per-packet one-way delay: 9.460 ms
Loss rate: 0.53%
```
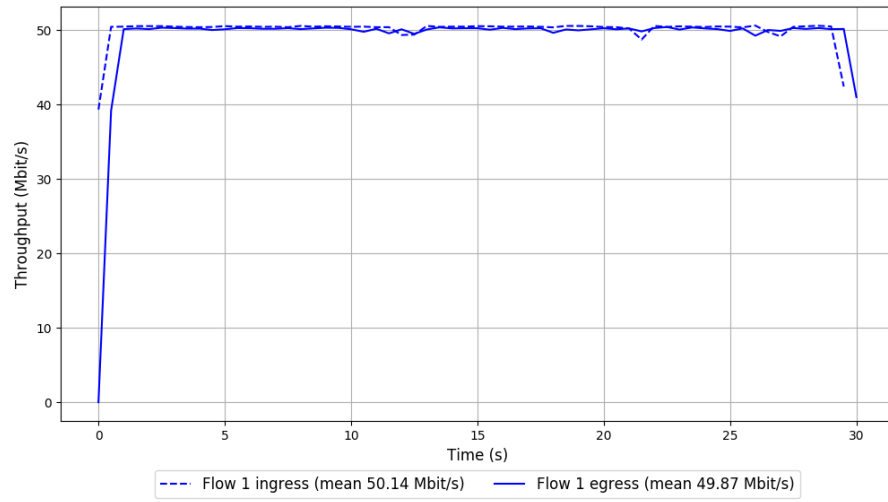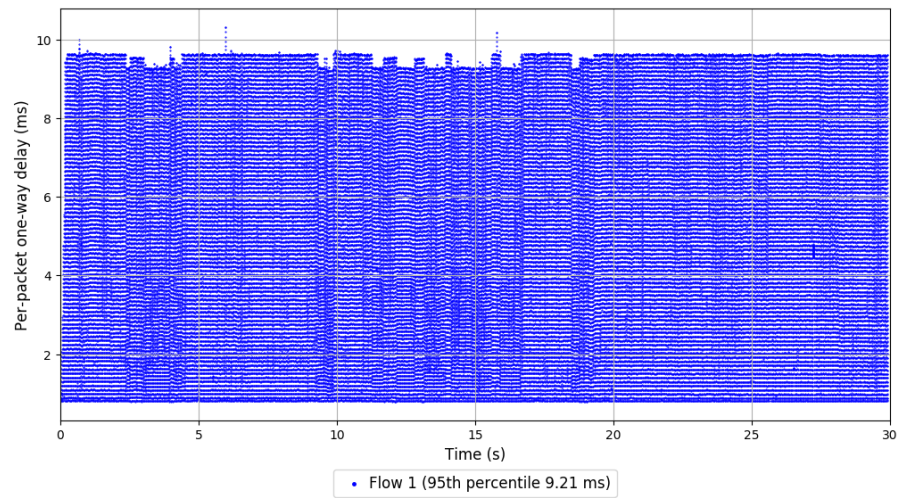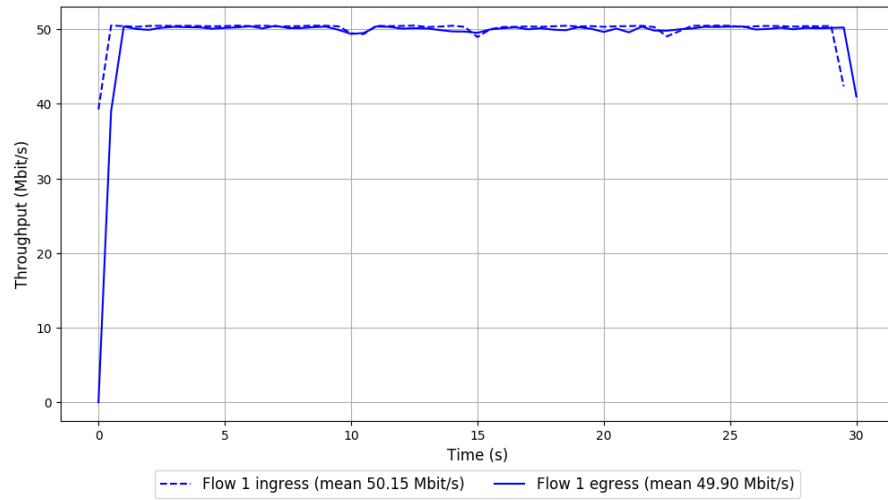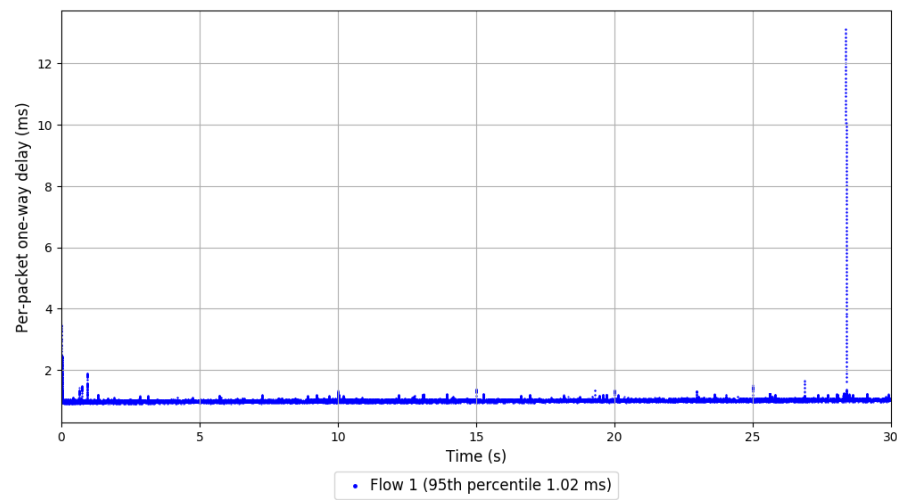
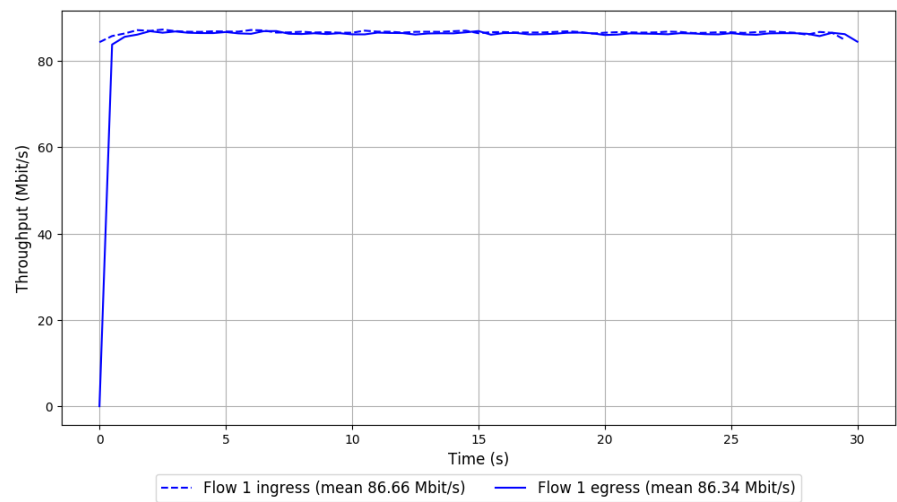Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 50.14 Mbit/s) ----- Flow 1 egress (mean 49.87 Mbit/s)

• Flow 1 (95th percentile 9.46 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-10-26 07:30:58
End at: 2018-10-26 07:31:28
Local clock offset: -6.043 ms
Remote clock offset: 0.617 ms


# Below is generated by plot.py at 2018-10-26 07:59:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.90 Mbit/s
95th percentile per-packet one-way delay: 9.205 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 49.90 Mbit/s
95th percentile per-packet one-way delay: 9.205 ms
Loss rate: 0.49%
```

Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 50.15 Mbit/s) ------ Flow 1 egress (mean 49.90 Mbit/s)

• Flow 1 (95th percentile 9.21 ms)

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

Start at: 2018-10-26 06:18:04
End at: 2018-10-26 06:18:34
Local clock offset: -5.644 ms
Remote clock offset: 0.131 ms


# Below is generated by plot.py at 2018-10-26 08:00:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.34 Mbit/s
95th percentile per-packet one-way delay: 1.019 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 86.34 Mbit/s
95th percentile per-packet one-way delay: 1.019 ms
Loss rate: 0.38%
```
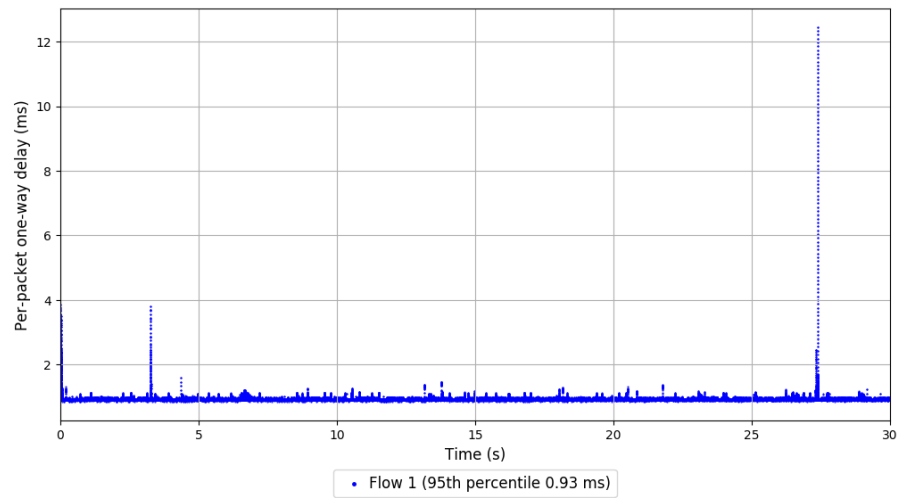
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 06:38:19
End at: 2018-10-26 06:38:49
Local clock offset: -6.666 ms
Remote clock offset: 0.313 ms


# Below is generated by plot.py at 2018-10-26 08:00:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.05 Mbit/s
95th percentile per-packet one-way delay: 0.927 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 86.05 Mbit/s
95th percentile per-packet one-way delay: 0.927 ms
Loss rate: 0.42%
```
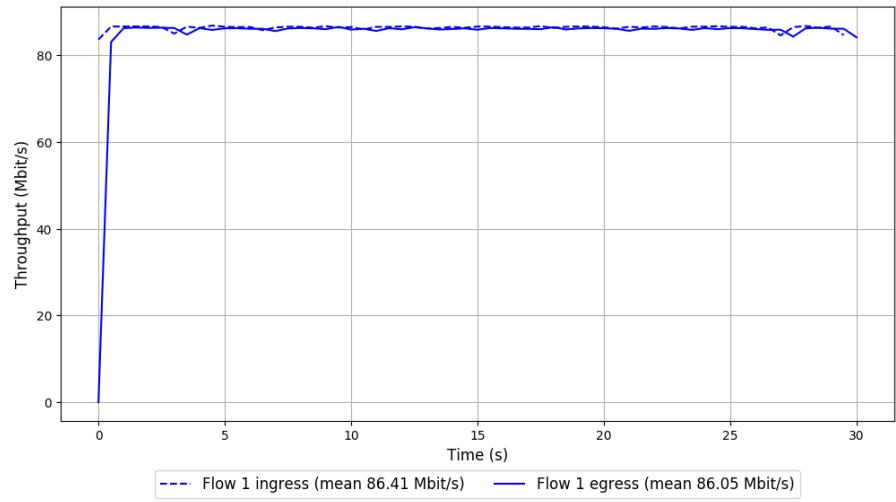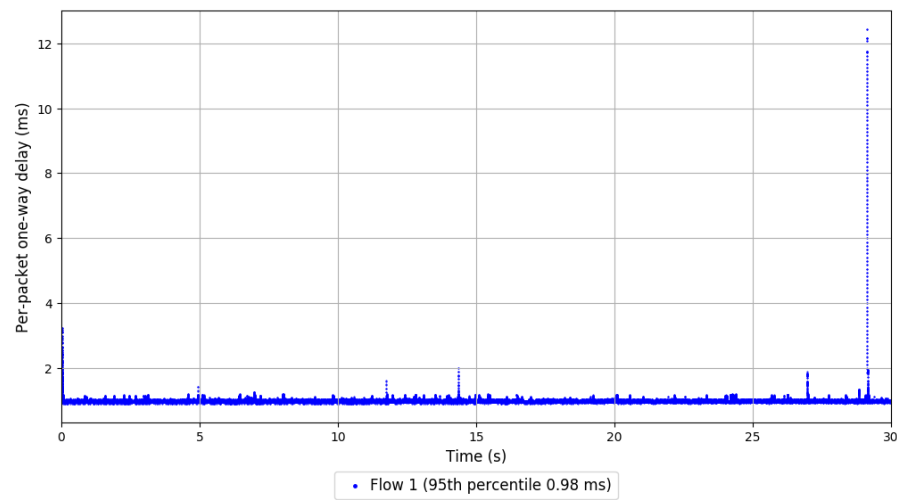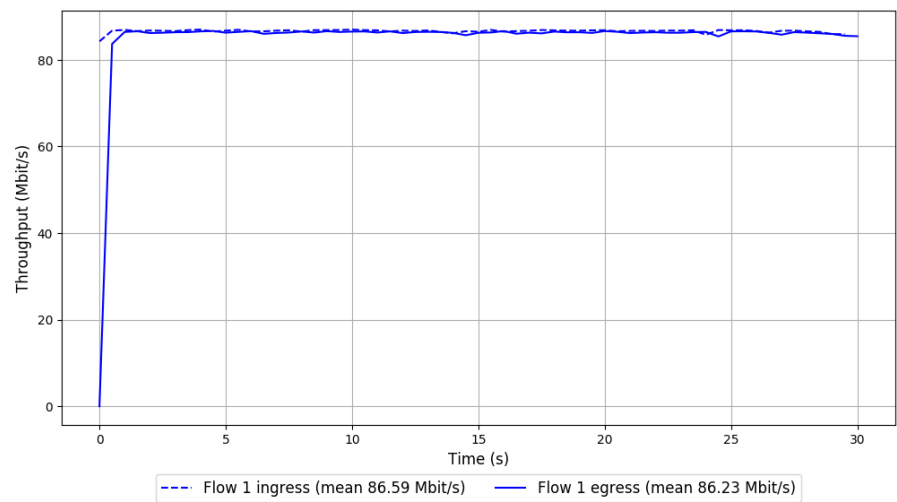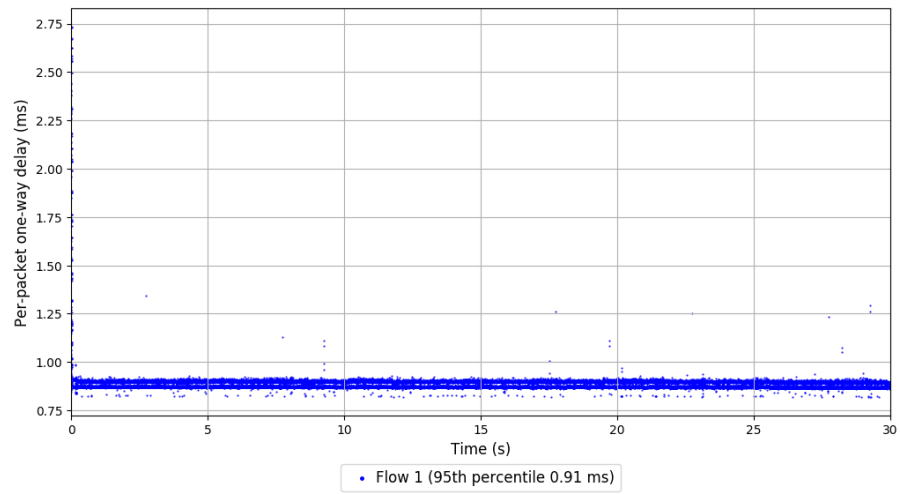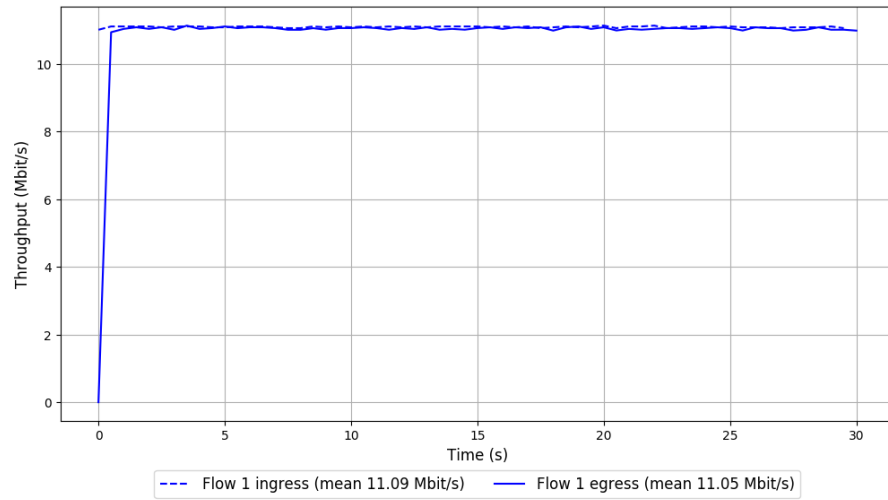
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 06:58:31
End at: 2018-10-26 06:59:01
Local clock offset: -6.987 ms
Remote clock offset: 0.457 ms


# Below is generated by plot.py at 2018-10-26 08:00:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.23 Mbit/s
95th percentile per-packet one-way delay: 0.982 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 86.23 Mbit/s
95th percentile per-packet one-way delay: 0.982 ms
Loss rate: 0.43%
```

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

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

Start at: 2018-10-26 07:18:41
End at: 2018-10-26 07:19:11
Local clock offset: -5.963 ms
Remote clock offset: 0.6 ms

# Below is generated by plot.py at 2018-10-26 08:00:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.05 Mbit/s
95th percentile per-packet one-way delay: 0.905 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 11.05 Mbit/s
95th percentile per-packet one-way delay: 0.905 ms
Loss rate: 0.41%
```
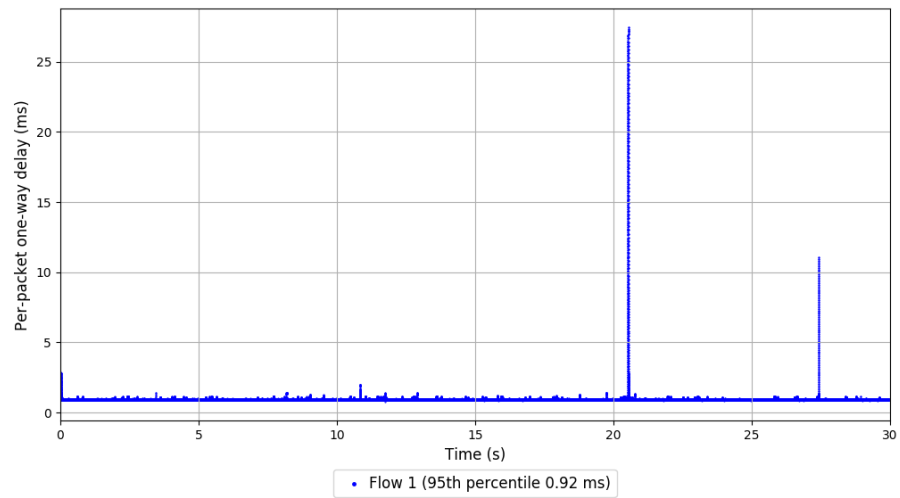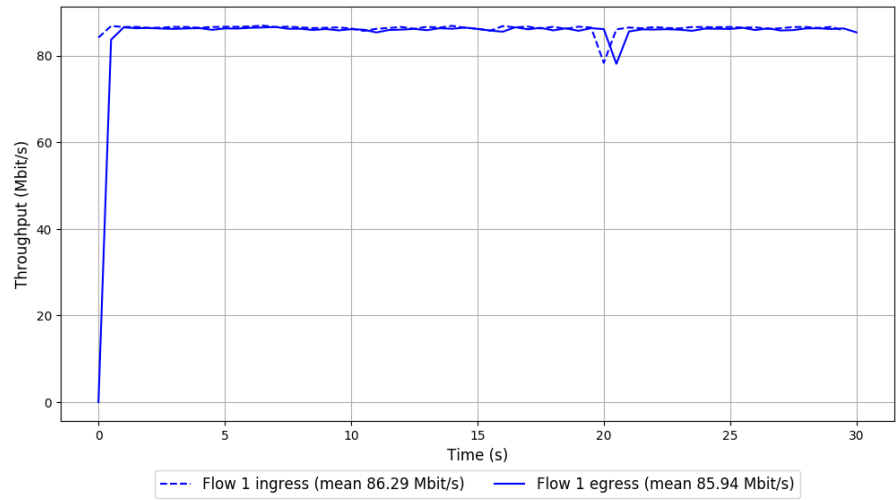
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 11.09 Mbit/s) ----- Flow 1 egress (mean 11.05 Mbit/s) ——

Flow 1 (95th percentile 0.91 ms)

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

Start at: 2018-10-26 07:38:49
End at: 2018-10-26 07:39:19
Local clock offset: -5.822 ms
Remote clock offset: 0.57 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.94 Mbit/s
95th percentile per-packet one-way delay: 0.921 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 85.94 Mbit/s
95th percentile per-packet one-way delay: 0.921 ms
Loss rate: 0.42%
```
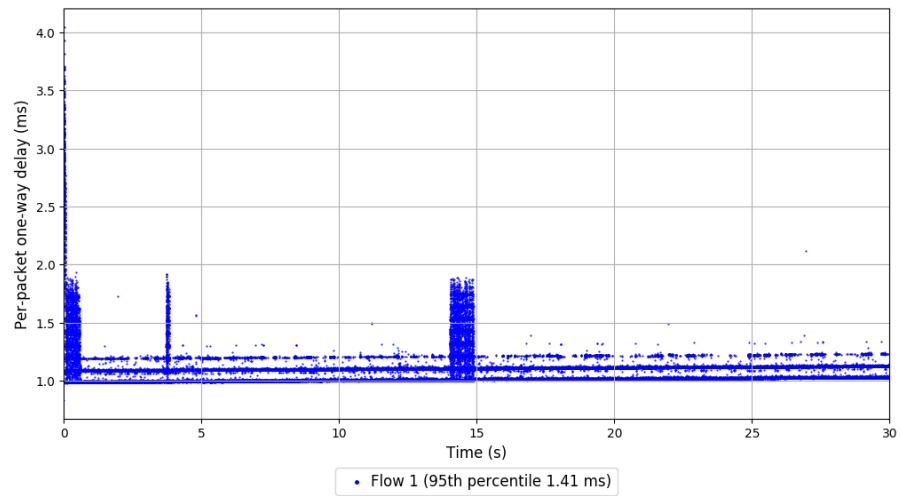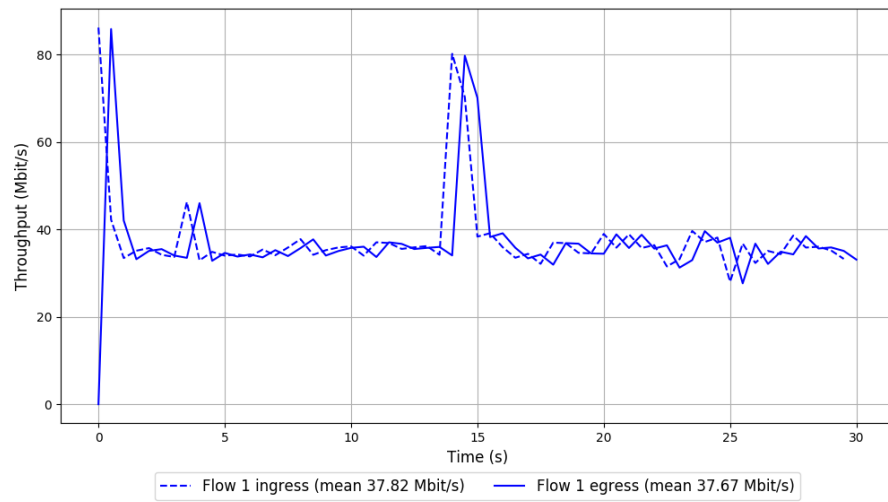
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 86.29 Mbit/s)   Flow 1 egress (mean 85.94 Mbit/s)

Flow 1 (95th percentile 0.92 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-26 06:25:58
End at: 2018-10-26 06:26:28
Local clock offset: -6.435 ms
Remote clock offset: 0.138 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.67 Mbit/s
95th percentile per-packet one-way delay: 1.405 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 37.67 Mbit/s
95th percentile per-packet one-way delay: 1.405 ms
Loss rate: 0.40%
```
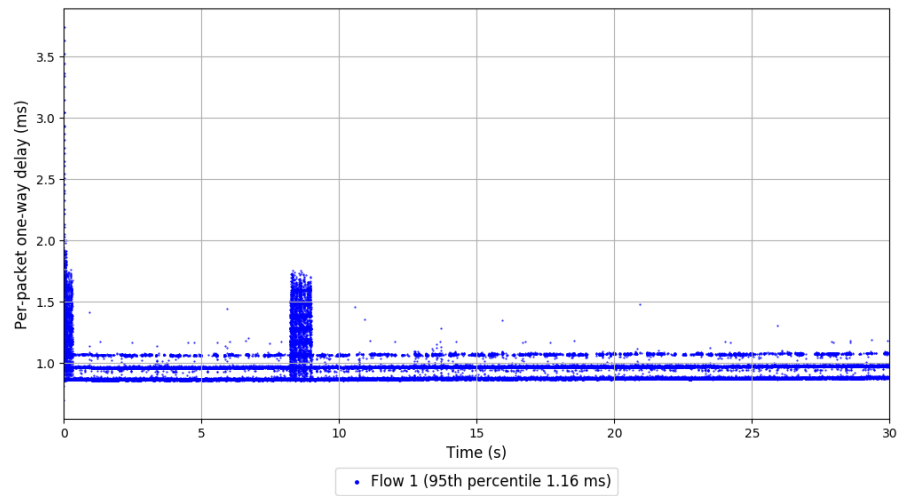
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 06:46:13
End at: 2018-10-26 06:46:43
Local clock offset: -6.777 ms
Remote clock offset: 0.411 ms

# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.02 Mbit/s
95th percentile per-packet one-way delay: 1.161 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 35.02 Mbit/s
95th percentile per-packet one-way delay: 1.161 ms
Loss rate: 0.44%
```
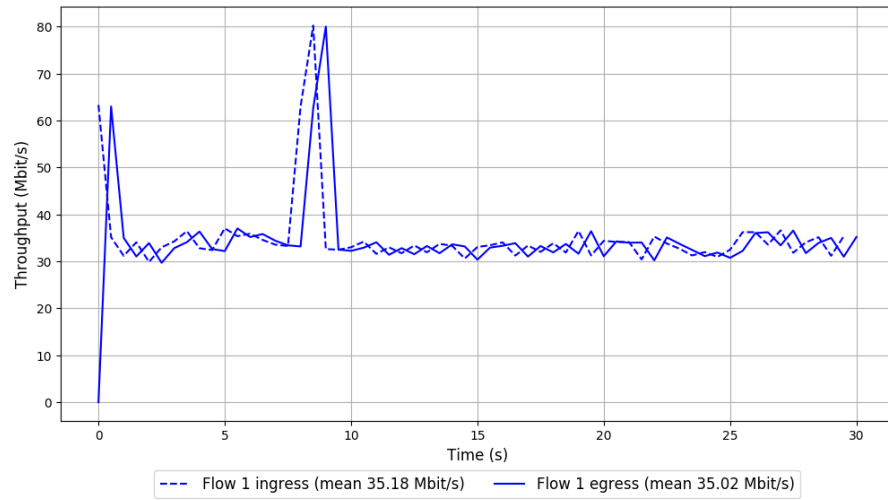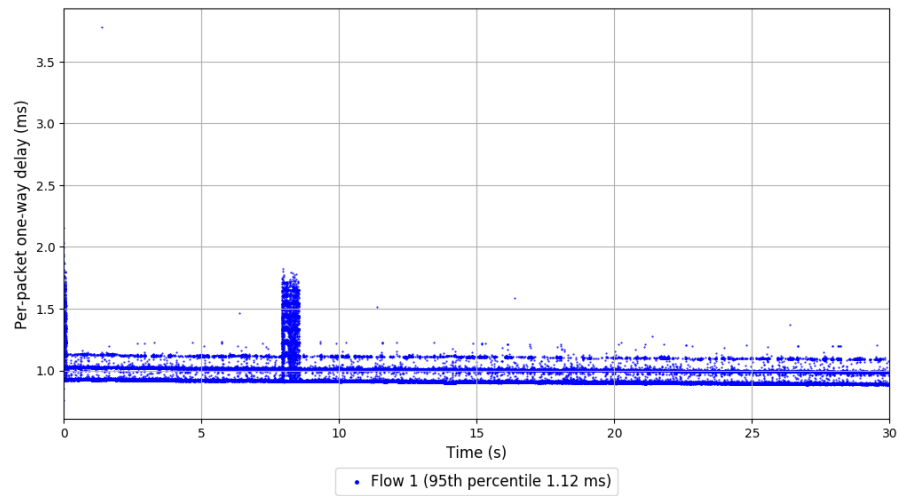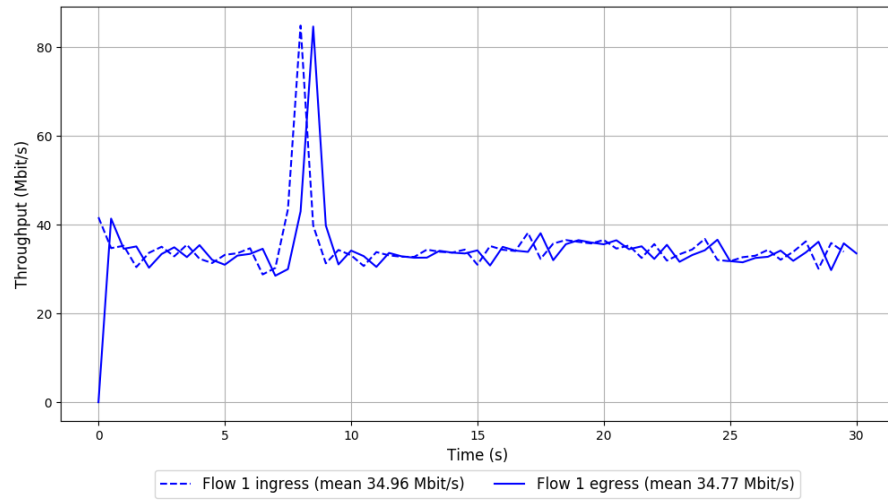
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 07:06:24
End at: 2018-10-26 07:06:54
Local clock offset: -6.484 ms
Remote clock offset: 0.465 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.77 Mbit/s
95th percentile per-packet one-way delay: 1.119 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 34.77 Mbit/s
95th percentile per-packet one-way delay: 1.119 ms
Loss rate: 0.55%
```
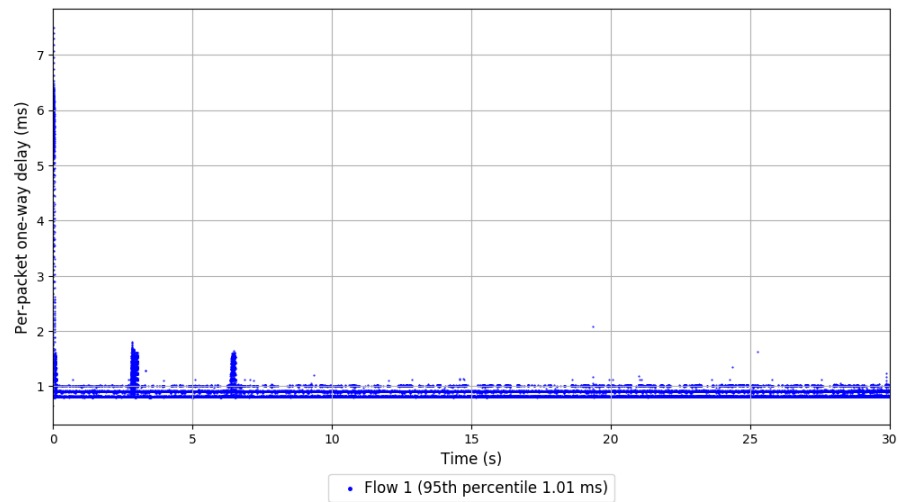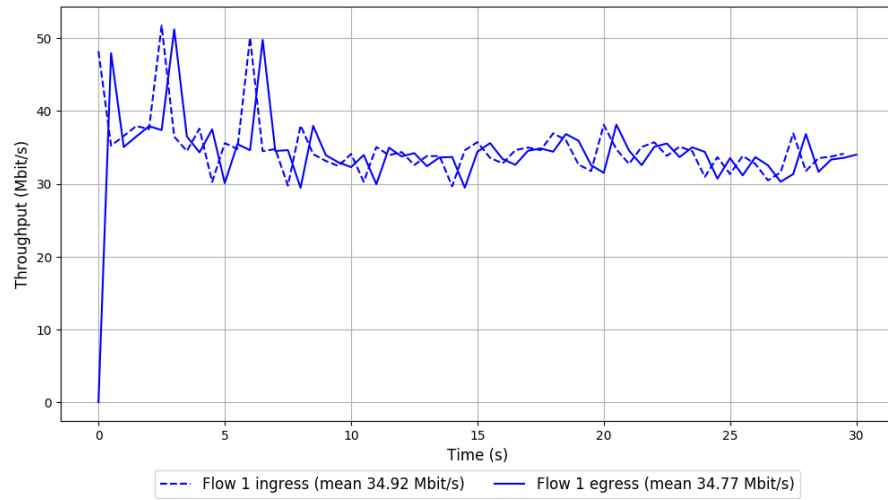
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 34.96 Mbit/s)   Flow 1 egress (mean 34.77 Mbit/s)

• Flow 1 (95th percentile 1.12 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 07:26:29
End at: 2018-10-26 07:26:59
Local clock offset: -6.029 ms
Remote clock offset: 0.635 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.77 Mbit/s
95th percentile per-packet one-way delay: 1.014 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 34.77 Mbit/s
95th percentile per-packet one-way delay: 1.014 ms
Loss rate: 0.44%
```
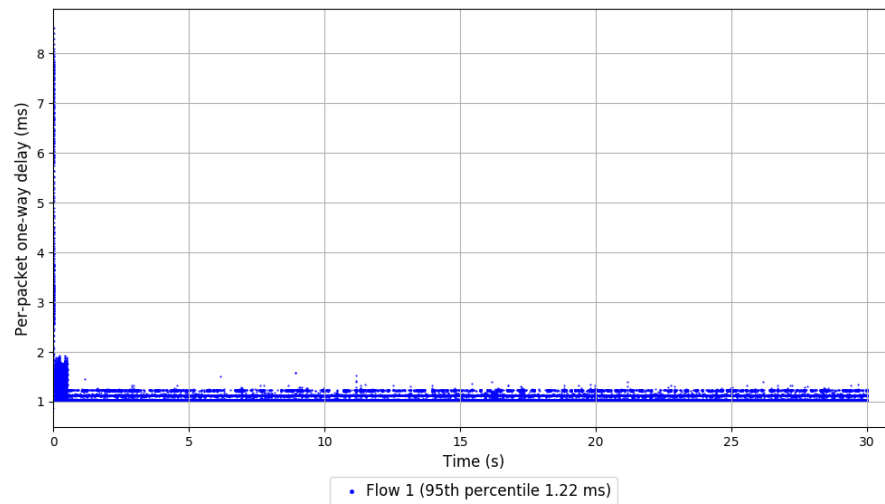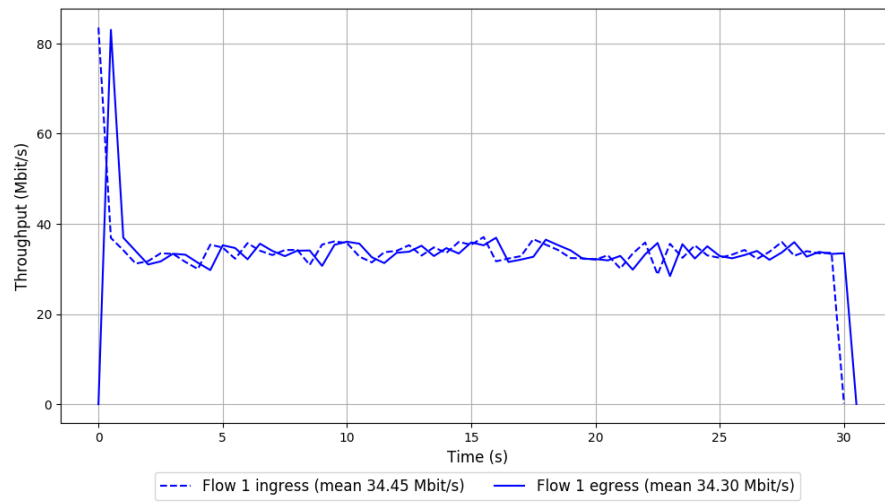
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 07:46:43
End at: 2018-10-26 07:47:13
Local clock offset: -5.784 ms
Remote clock offset: 0.473 ms

# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.30 Mbit/s
95th percentile per-packet one-way delay: 1.222 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 34.30 Mbit/s
95th percentile per-packet one-way delay: 1.222 ms
Loss rate: 0.44%
```

Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-10-26 06:11:15
End at: 2018-10-26 06:11:45
Local clock offset: -4.389 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.48 Mbit/s
95th percentile per-packet one-way delay: 4.829 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 48.48 Mbit/s
95th percentile per-packet one-way delay: 4.829 ms
Loss rate: 0.43%
```
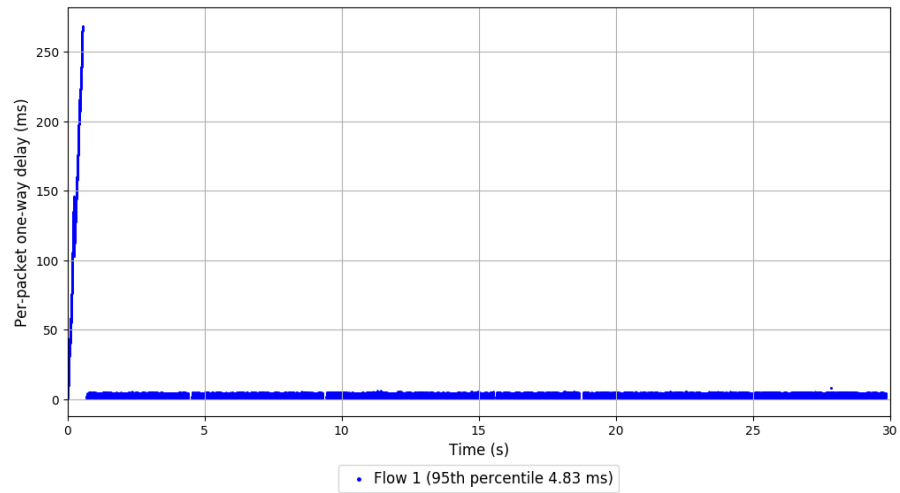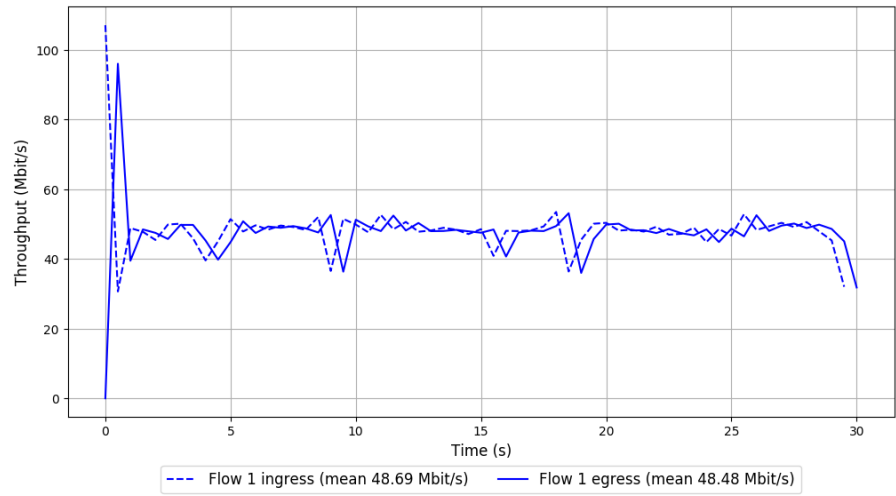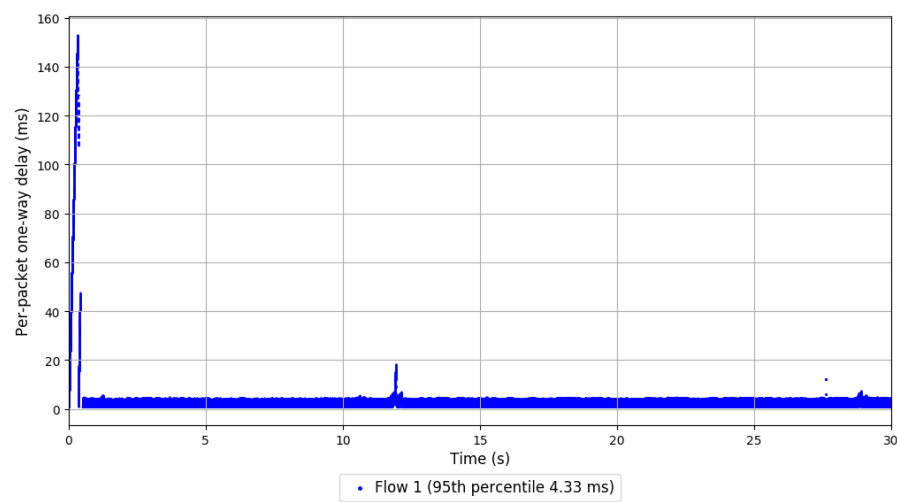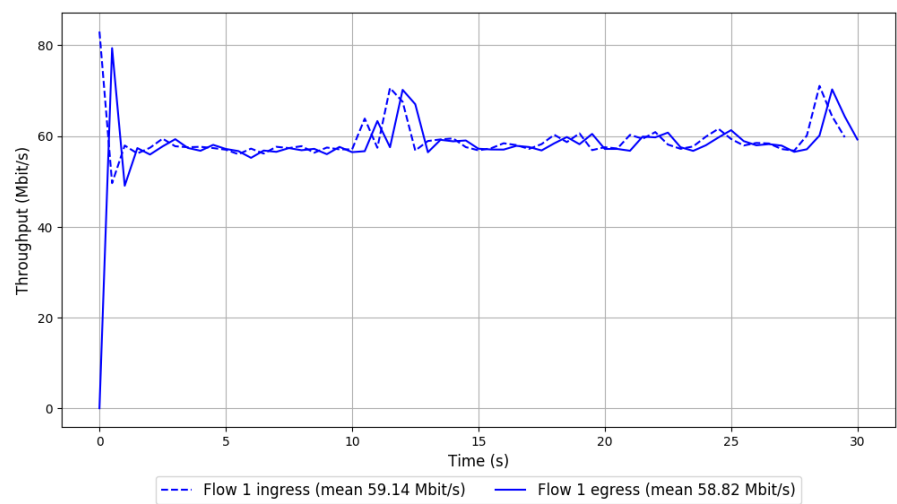
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-10-26 06:31:34
End at: 2018-10-26 06:32:04
Local clock offset: -6.796 ms
Remote clock offset: 0.199 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.82 Mbit/s
95th percentile per-packet one-way delay: 4.328 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 58.82 Mbit/s
95th percentile per-packet one-way delay: 4.328 ms
Loss rate: 0.55%
```

Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-26 06:51:46
End at: 2018-10-26 06:52:16
Local clock offset: -6.895 ms
Remote clock offset: 0.48 ms


# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.37 Mbit/s
95th percentile per-packet one-way delay: 29.618 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 53.37 Mbit/s
95th percentile per-packet one-way delay: 29.618 ms
Loss rate: 0.51%
```
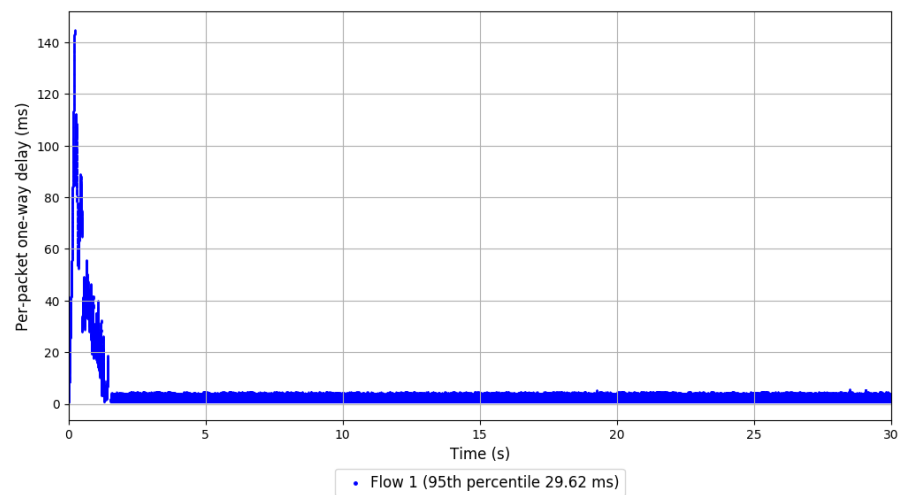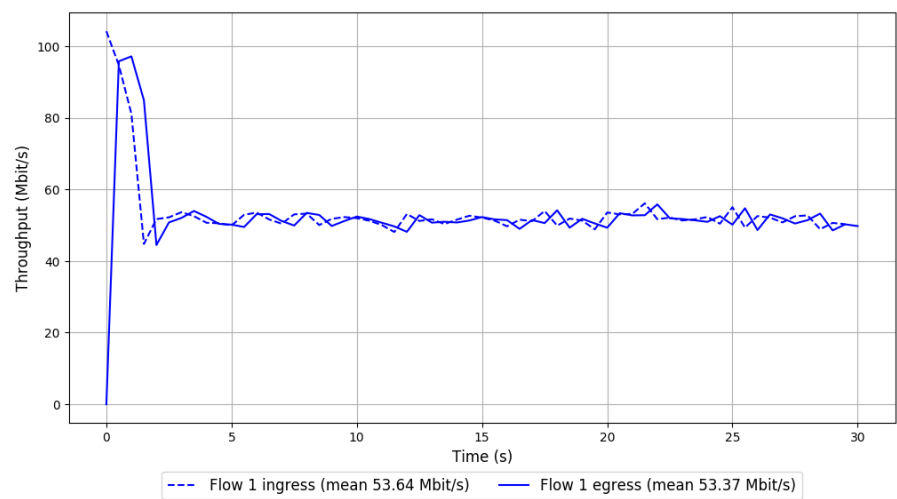
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-26 07:11:57
End at: 2018-10-26 07:12:27
Local clock offset: -6.199 ms
Remote clock offset: 0.581 ms

# Below is generated by plot.py at 2018-10-26 08:01:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.17 Mbit/s
95th percentile per-packet one-way delay: 4.263 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 48.17 Mbit/s
95th percentile per-packet one-way delay: 4.263 ms
Loss rate: 0.48%
```
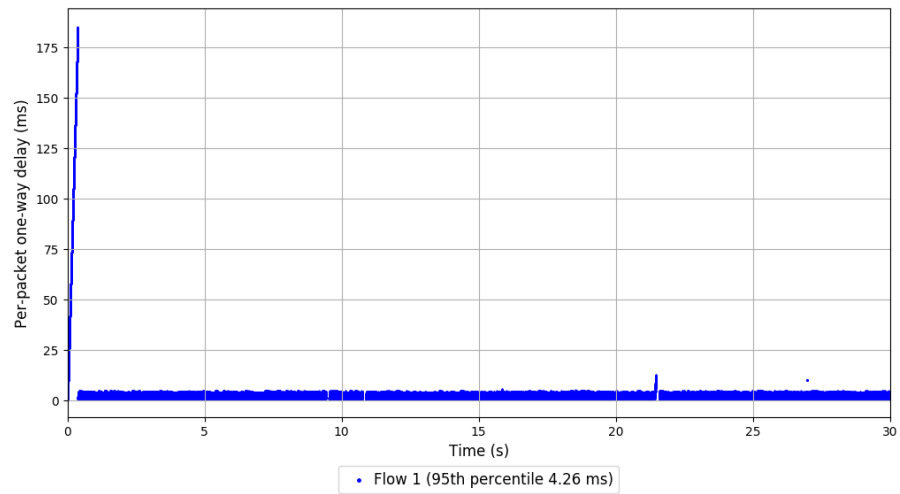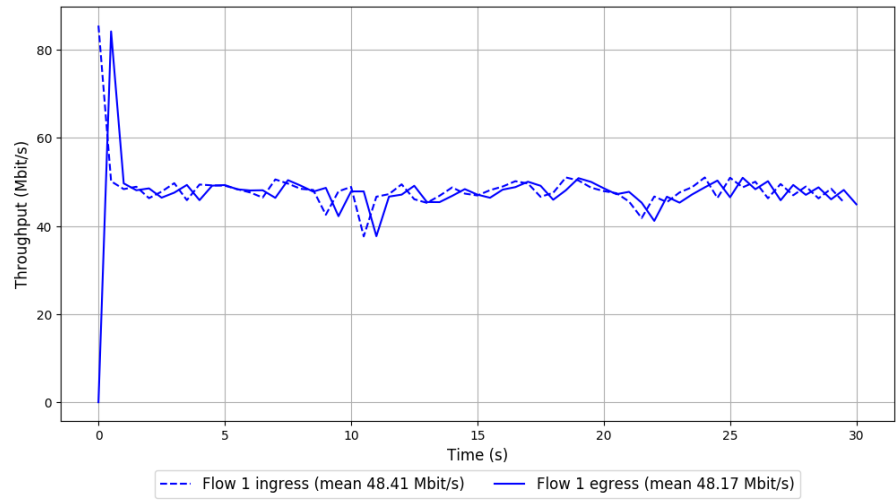
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-26 07:32:04
End at: 2018-10-26 07:32:34
Local clock offset: -6.043 ms
Remote clock offset: 0.592 ms


# Below is generated by plot.py at 2018-10-26 08:01:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.34 Mbit/s
95th percentile per-packet one-way delay: 4.981 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 73.34 Mbit/s
95th percentile per-packet one-way delay: 4.981 ms
Loss rate: 0.45%
```
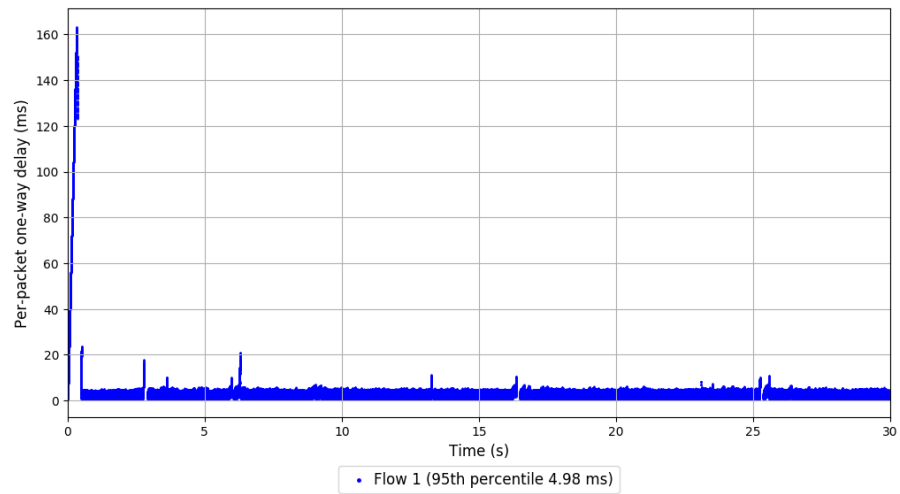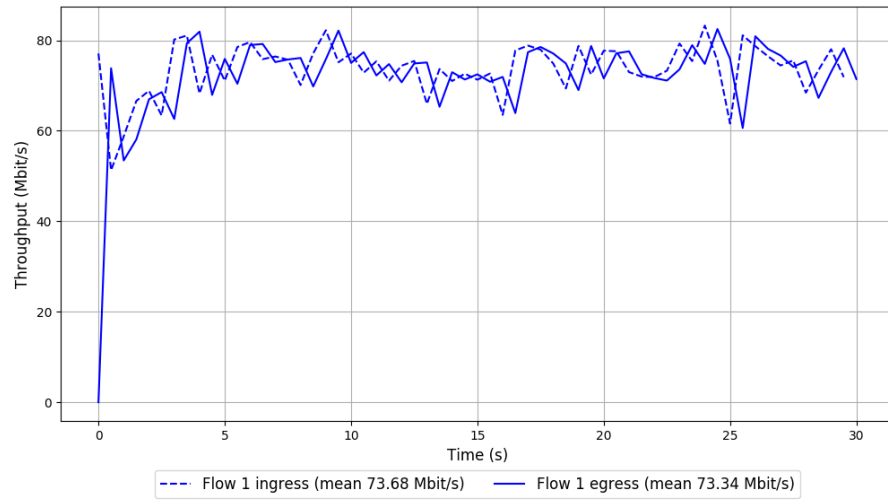
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-26 06:20:19
End at: 2018-10-26 06:20:49
Local clock offset: -5.982 ms
Remote clock offset: 0.138 ms

# Below is generated by plot.py at 2018-10-26 08:01:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 29.22 Mbit/s
95th percentile per-packet one-way delay: 0.931 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 29.22 Mbit/s
95th percentile per-packet one-way delay: 0.931 ms
Loss rate: 0.42%
```
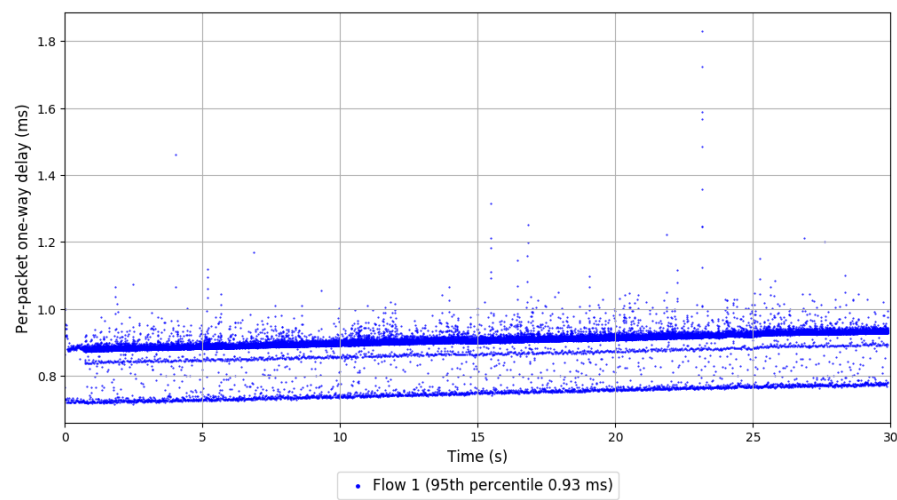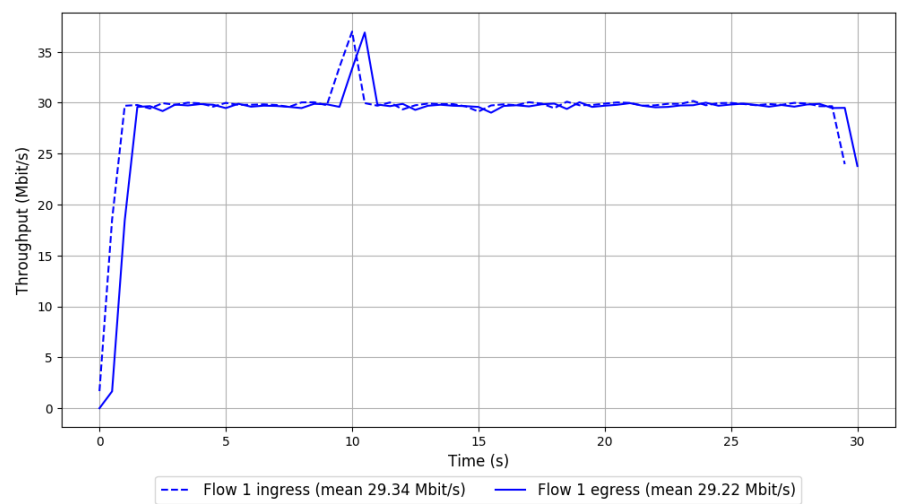
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 06:40:34
End at: 2018-10-26 06:41:04
Local clock offset: -6.652 ms
Remote clock offset: 0.288 ms


# Below is generated by plot.py at 2018-10-26 08:01:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.81 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 28.81 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 0.43%
```
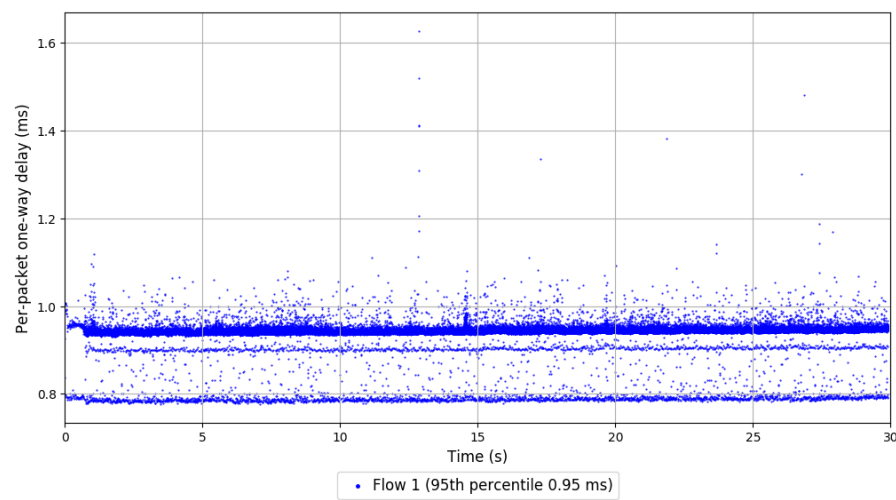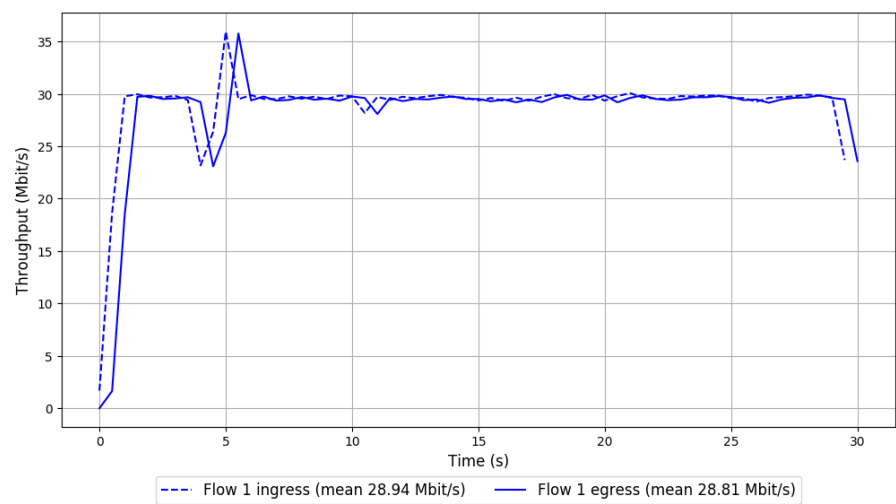
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 07:00:46
End at: 2018-10-26 07:01:16
Local clock offset: -7.049 ms
Remote clock offset: 0.459 ms


# Below is generated by plot.py at 2018-10-26 08:01:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 29.51 Mbit/s
95th percentile per-packet one-way delay: 0.968 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 29.51 Mbit/s
95th percentile per-packet one-way delay: 0.968 ms
Loss rate: 0.43%
```
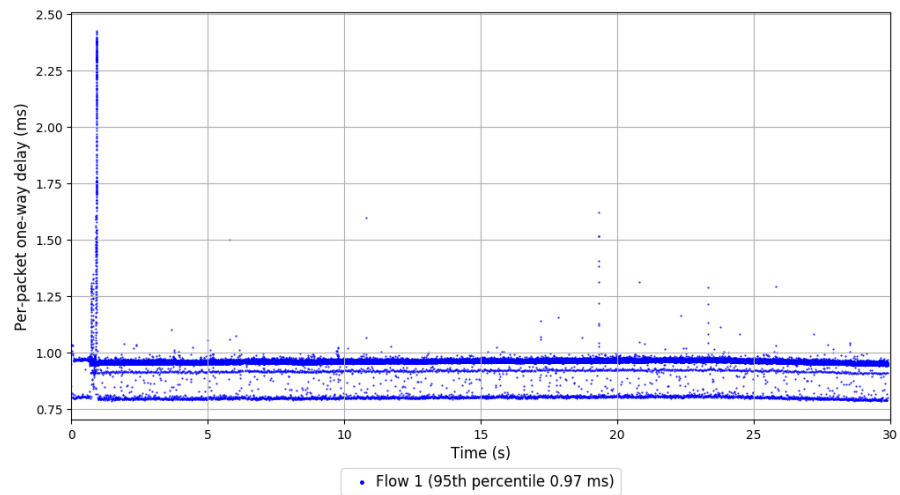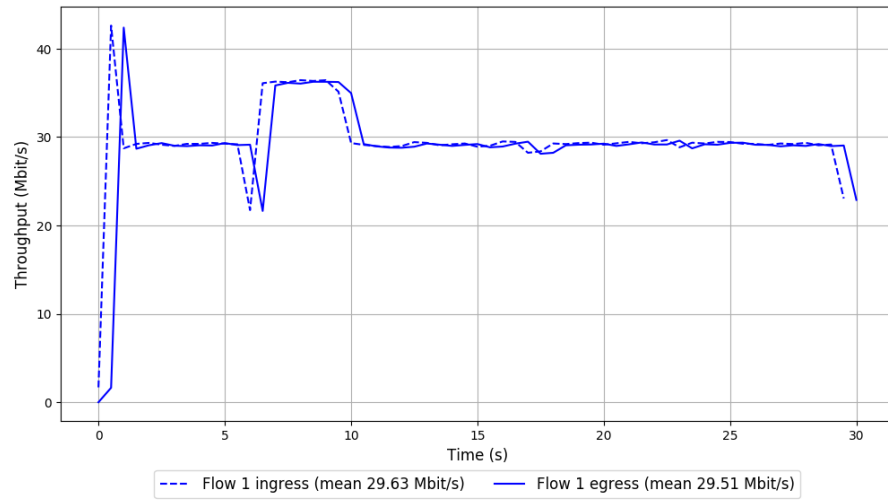
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 07:20:50
End at: 2018-10-26 07:21:20
Local clock offset: -6.062 ms
Remote clock offset: 0.538 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 30.24 Mbit/s
95th percentile per-packet one-way delay: 0.826 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 30.24 Mbit/s
95th percentile per-packet one-way delay: 0.826 ms
Loss rate: 0.49%
```
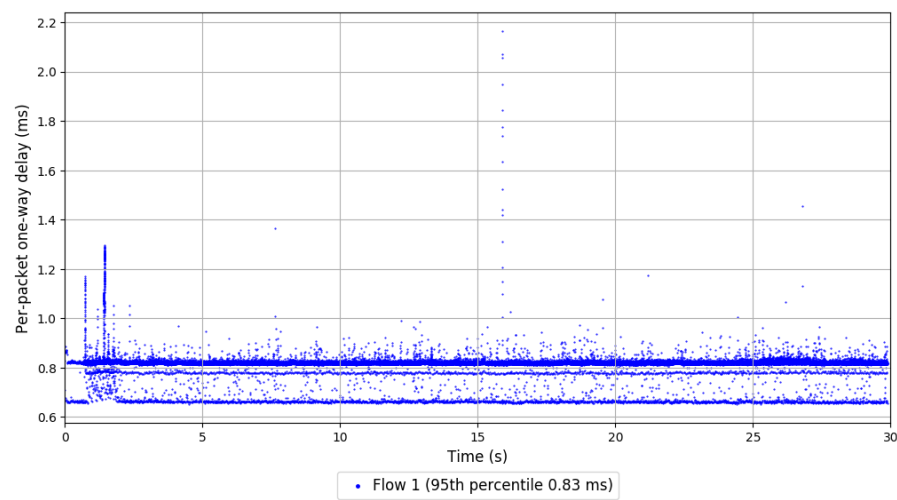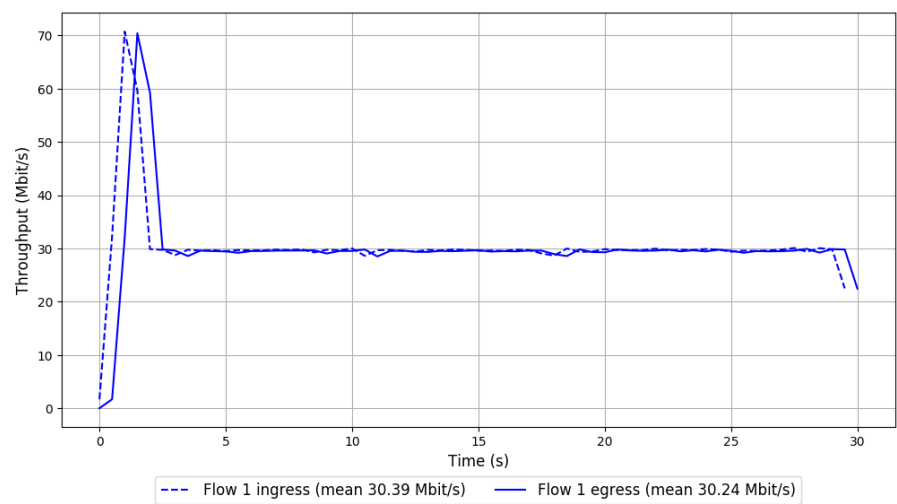
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 07:41:04
End at: 2018-10-26 07:41:34
Local clock offset: -5.831 ms
Remote clock offset: 0.542 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.43 Mbit/s
95th percentile per-packet one-way delay: 0.912 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 24.43 Mbit/s
95th percentile per-packet one-way delay: 0.912 ms
Loss rate: 0.37%
```
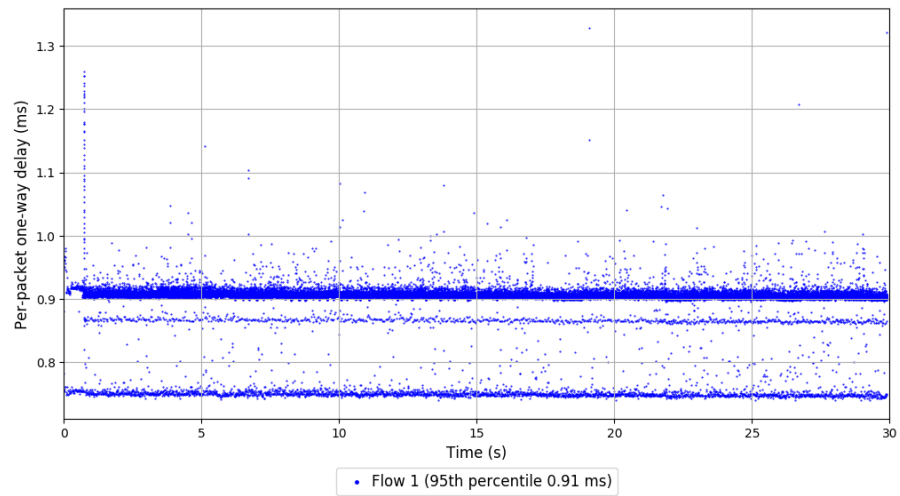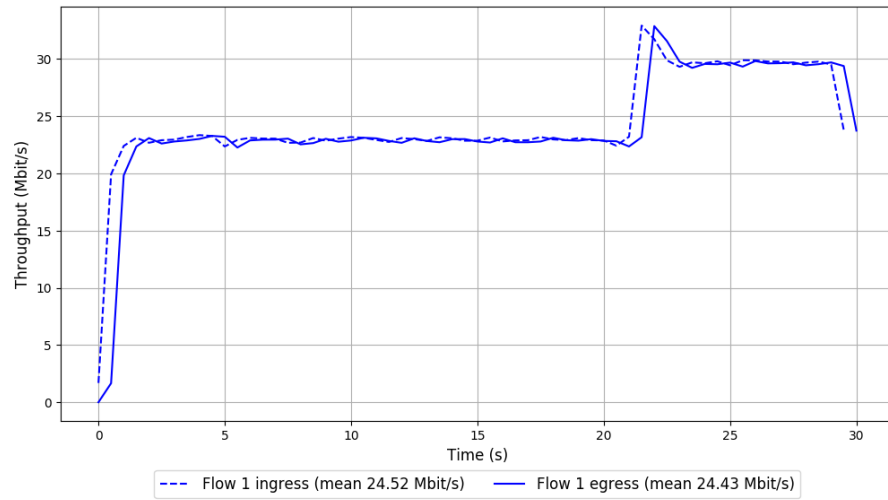
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-26 06:19:15
End at: 2018-10-26 06:19:45
Local clock offset: -5.81 ms
Remote clock offset: 0.134 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 1.412 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 1.412 ms
Loss rate: 0.43%
```
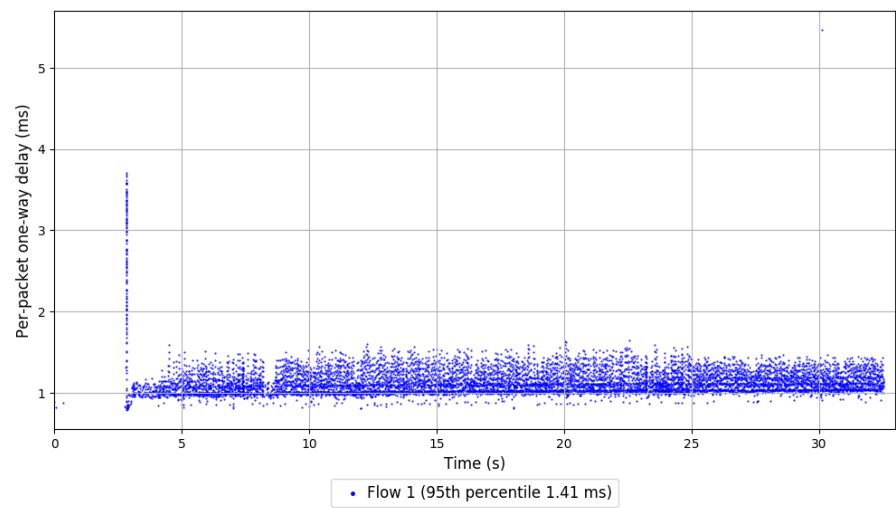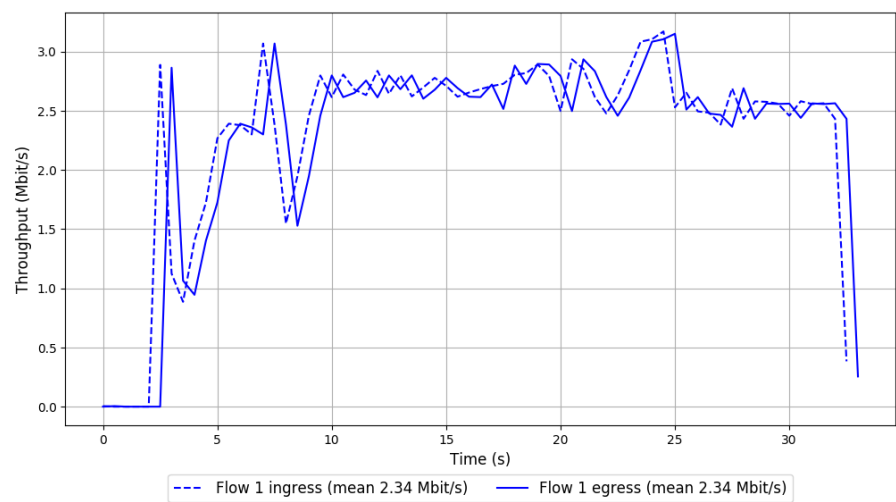
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-26 06:39:30
End at: 2018-10-26 06:40:00
Local clock offset: -6.781 ms
Remote clock offset: 0.338 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 1.268 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 1.268 ms
Loss rate: 0.40%
```
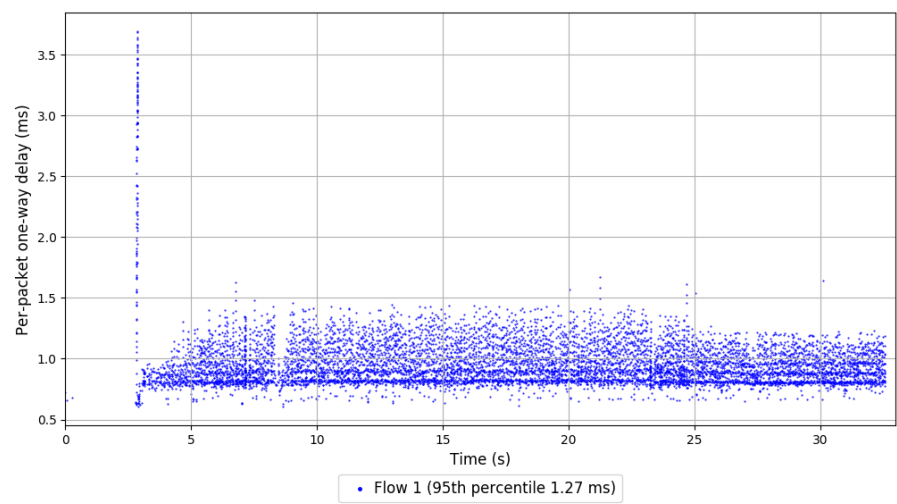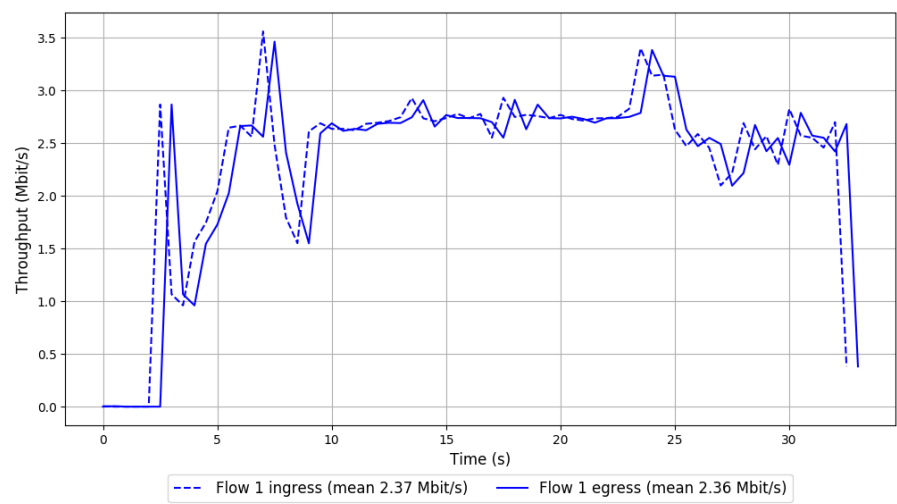
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-26 06:59:42
End at: 2018-10-26 07:00:12
Local clock offset: -7.073 ms
Remote clock offset: 0.505 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 1.286 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 1.286 ms
Loss rate: 0.33%
```
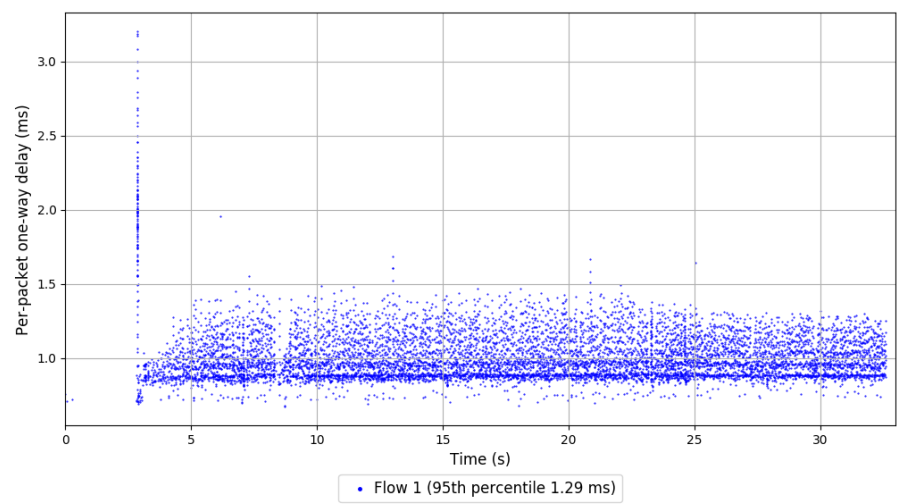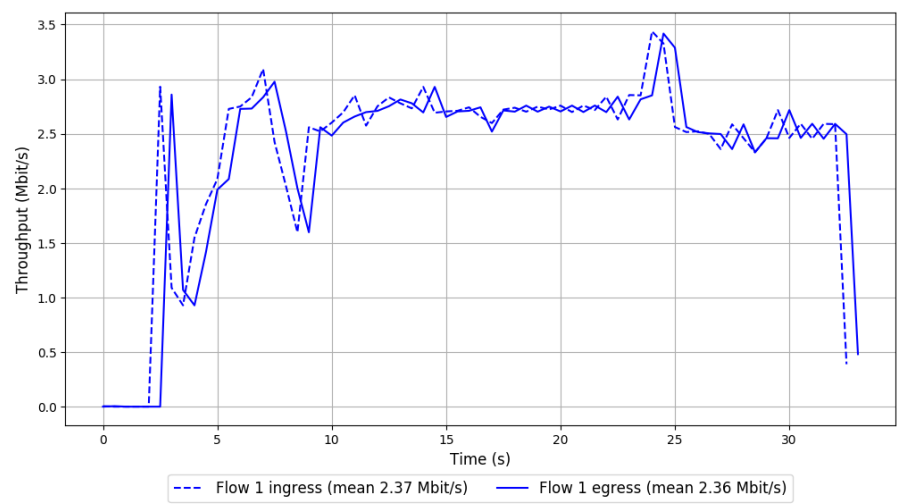
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-26 07:19:46
End at: 2018-10-26 07:20:16
Local clock offset: -6.077 ms
Remote clock offset: 0.611 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.41%
```
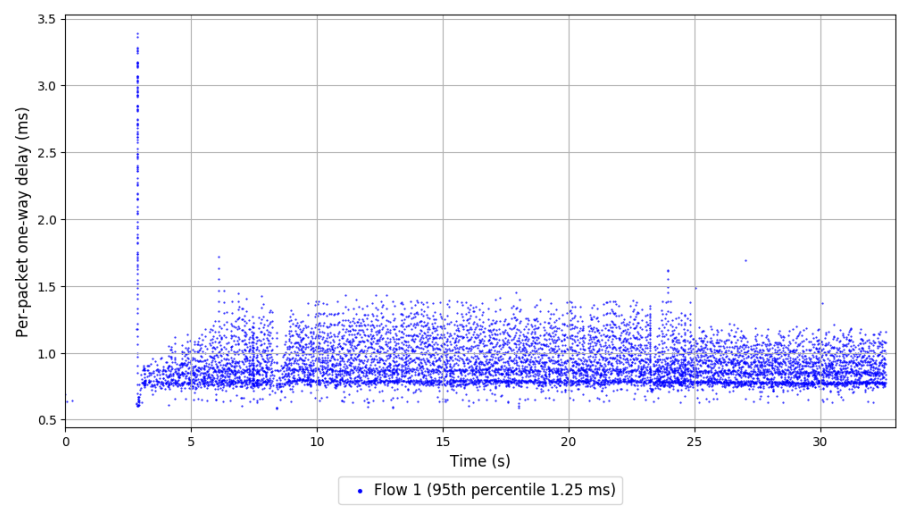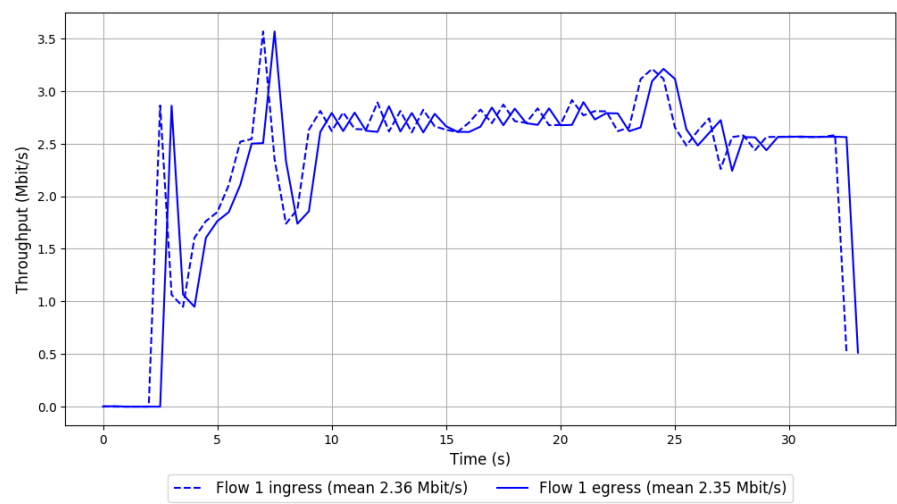
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-26 07:40:00
End at: 2018-10-26 07:40:30
Local clock offset: -5.821 ms
Remote clock offset: 0.453 ms


# Below is generated by plot.py at 2018-10-26 08:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 1.469 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 1.469 ms
Loss rate: 0.29%
```

Run 5: Report of WebRTC media — Data Link