Pantheon Report

Generated at 2018-10-02 20:35:11 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against time.google.com and have been applied to correct the timestamps in logs.
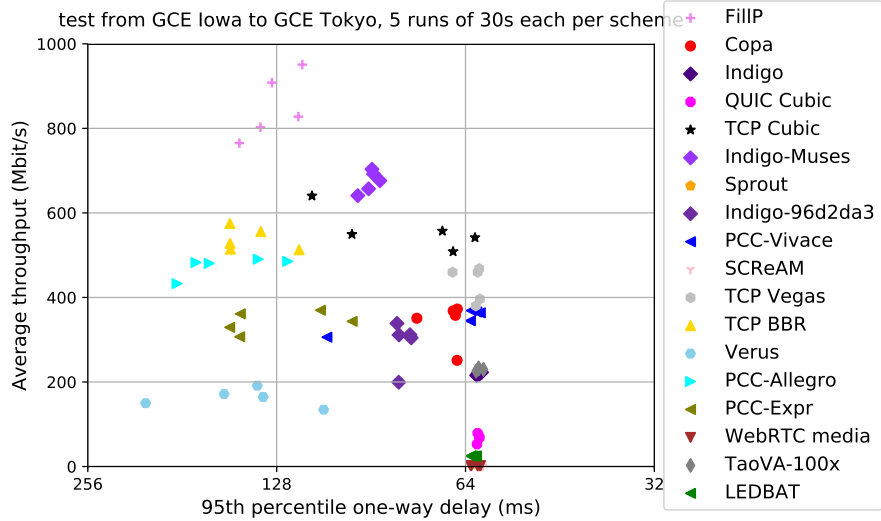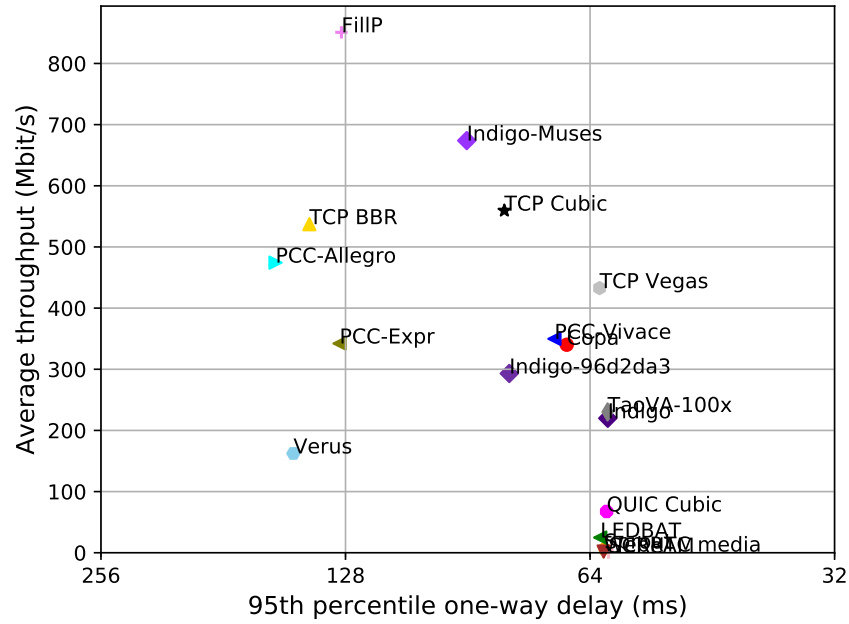
```
System info:
Linux 4.15.0-1019-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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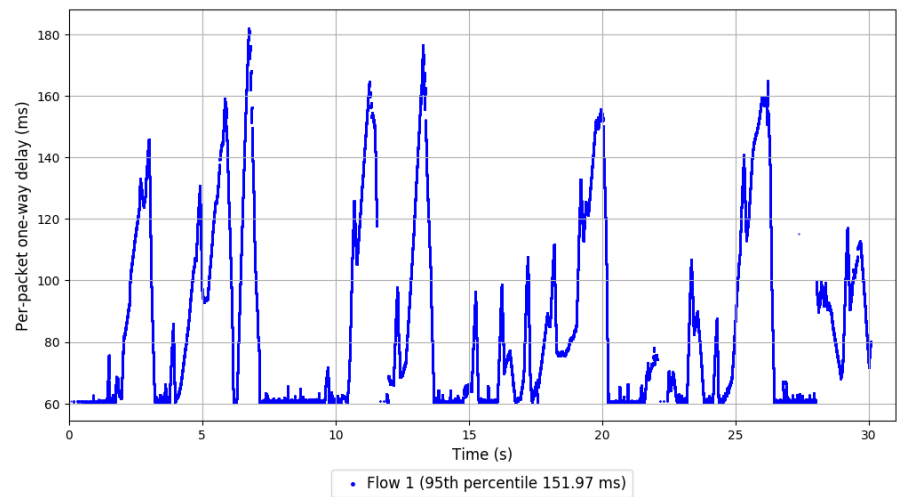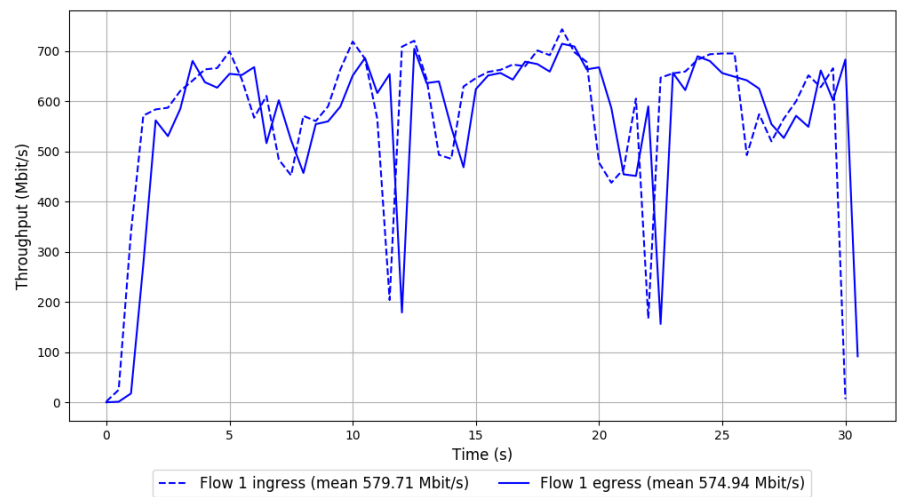(mean of all runs by scheme)

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

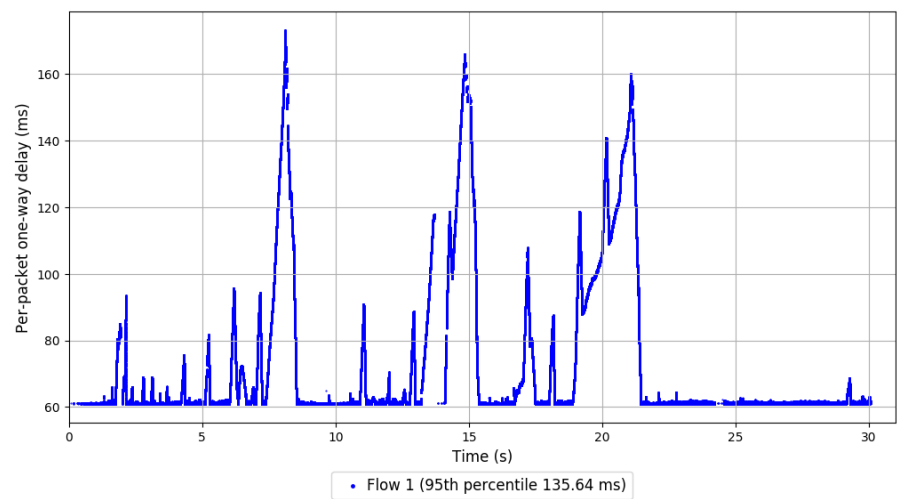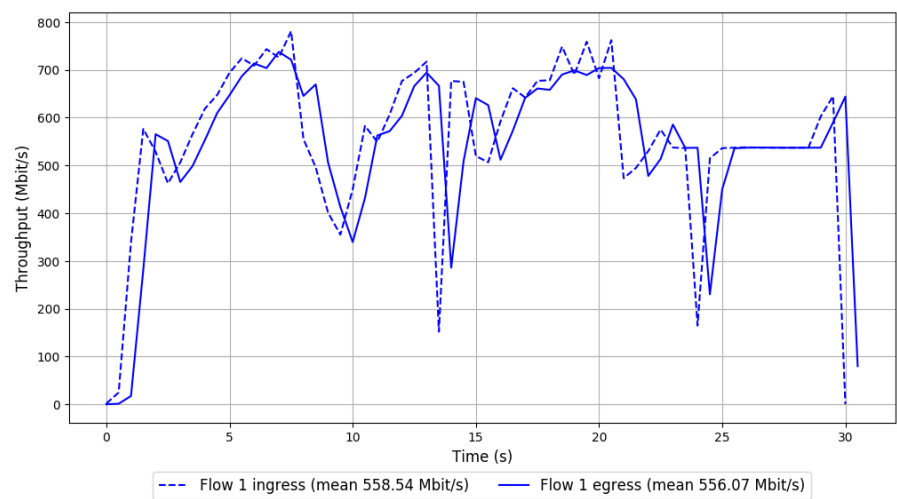| scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	537.24	141.81	0.52
Copa	5	340.10	68.37	0.00
TCP Cubic	5	559.39	81.60	0.04
FillP	5	850.90	129.50	1.49
Indigo	5	219.89	60.87	0.00
Indigo-96d2da3	5	293.11	80.47	0.00
LEDBAT	5	24.86	62.18	0.00
Indigo-Muses	5	673.90	90.78	0.05
PCC-Allegro	5	474.33	156.09	1.62
PCC-Expr	5	342.15	130.19	0.80
QUIC Cubic	4	67.48	61.06	0.00
SCReAM	5	0.22	60.73	0.00
Sprout	5	6.93	61.48	0.00
TaoVA-100x	5	230.16	60.90	0.00
TCP Vegas	5	432.68	62.30	0.00
Verus	5	162.36	148.37	0.73
PCC-Vivace	5	349.79	70.80	0.02
WebRTC media	5	1.92	61.58	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-02 16:58:29
End at: 2018-10-02 16:58:59
Local clock offset: -0.011 ms
Remote clock offset: -0.235 ms


# Below is generated by plot.py at 2018-10-02 19:06:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 574.94 Mbit/s
95th percentile per-packet one-way delay: 151.975 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 574.94 Mbit/s
95th percentile per-packet one-way delay: 151.975 ms
Loss rate: 0.82%
```
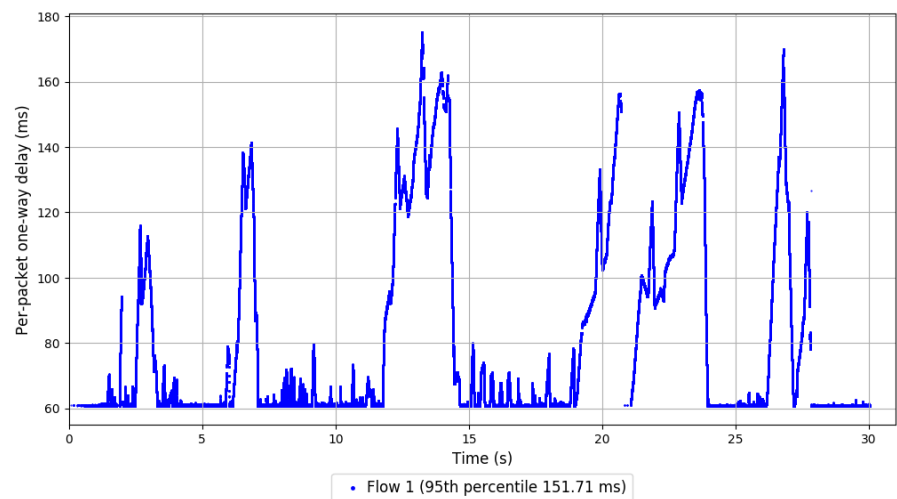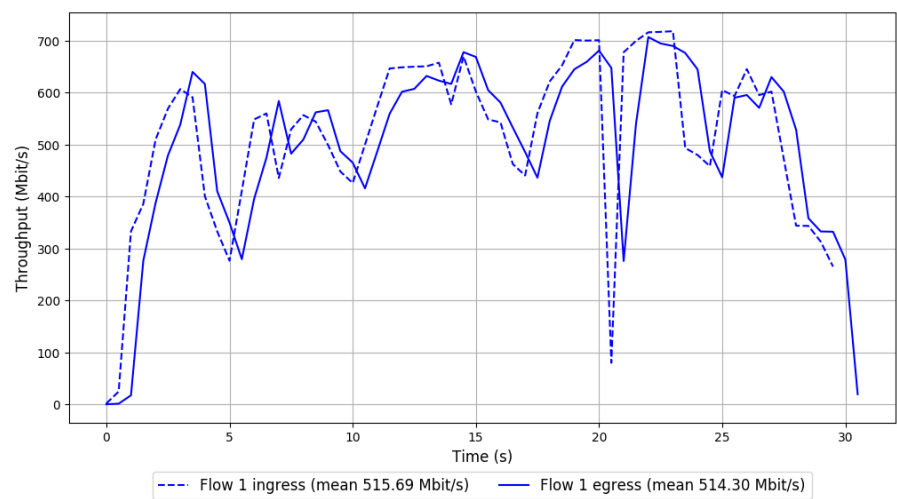
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-02 17:24:15
End at: 2018-10-02 17:24:45
Local clock offset: -0.282 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-10-02 19:06:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 556.07 Mbit/s
95th percentile per-packet one-way delay: 135.644 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 556.07 Mbit/s
95th percentile per-packet one-way delay: 135.644 ms
Loss rate: 0.44%
```
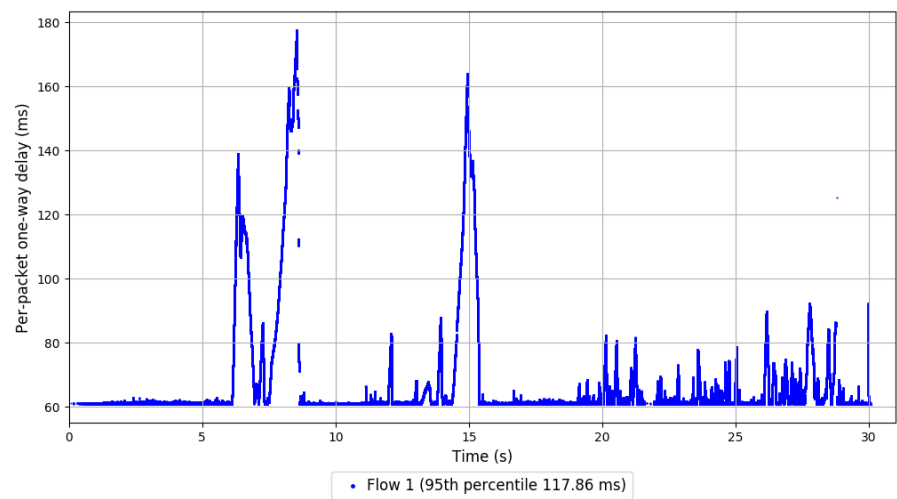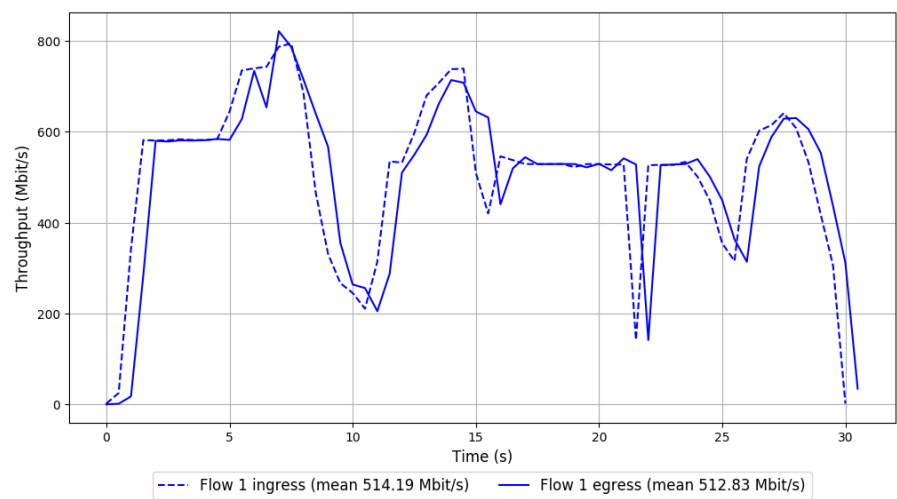
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-02 17:49:56
End at: 2018-10-02 17:50:26
Local clock offset: -0.419 ms
Remote clock offset: -0.194 ms


# Below is generated by plot.py at 2018-10-02 19:06:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 514.30 Mbit/s
95th percentile per-packet one-way delay: 151.705 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 514.30 Mbit/s
95th percentile per-packet one-way delay: 151.705 ms
Loss rate: 0.27%
```
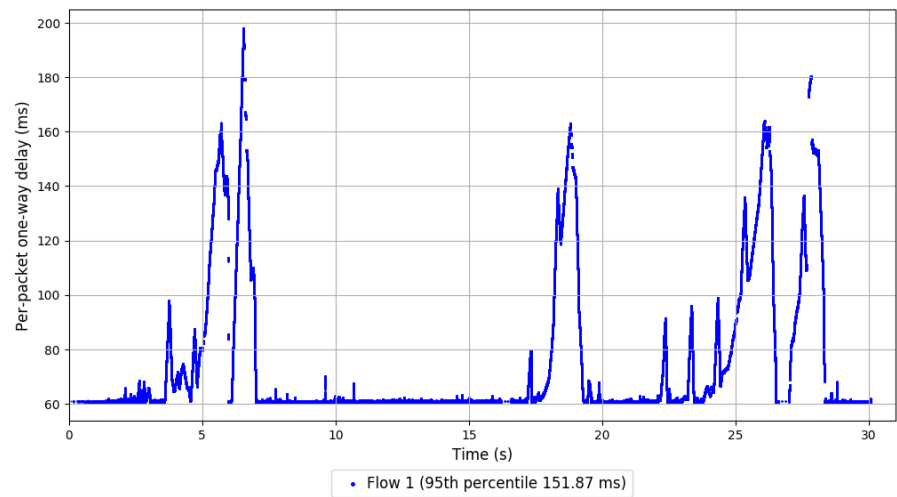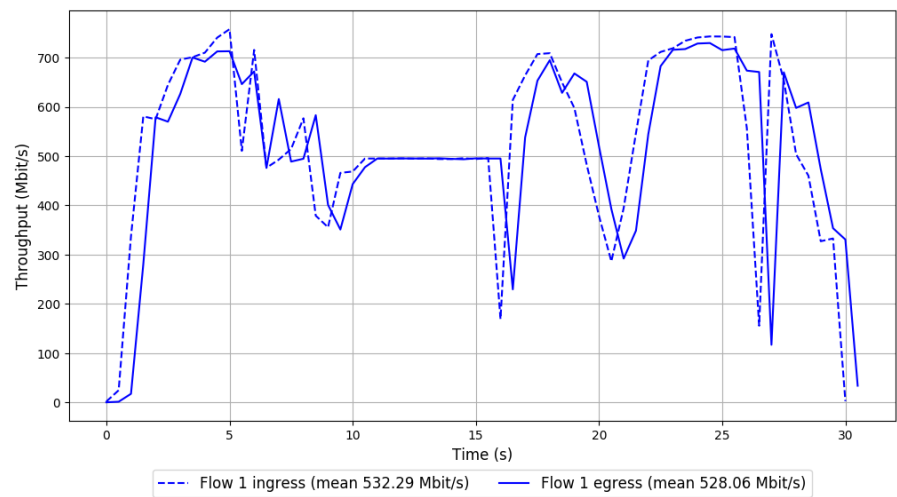
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 515.69 Mbit/s)   Flow 1 egress (mean 514.30 Mbit/s)

Flow 1 (95th percentile 151.71 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-02 18:15:36
End at: 2018-10-02 18:16:06
Local clock offset: -0.583 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2018-10-02 19:06:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 512.83 Mbit/s
95th percentile per-packet one-way delay: 117.859 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 512.83 Mbit/s
95th percentile per-packet one-way delay: 117.859 ms
Loss rate: 0.27%
```
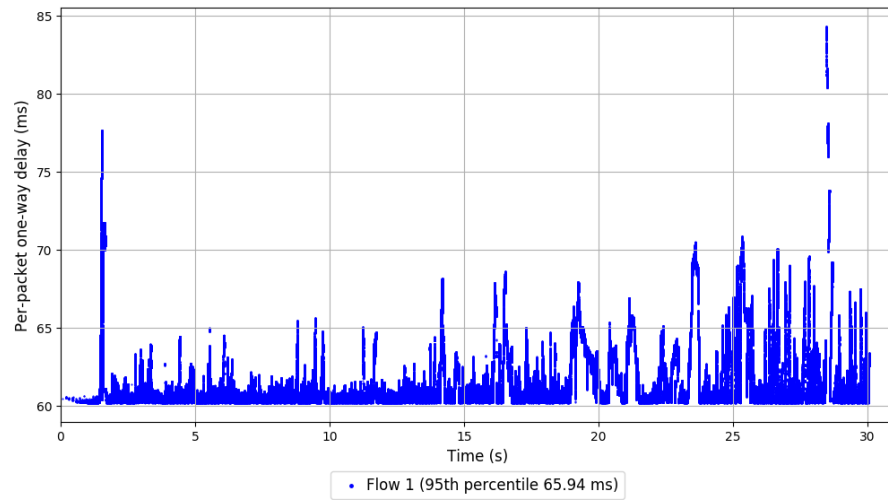
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 514.19 Mbit/s)   Flow 1 egress (mean 512.83 Mbit/s)

Flow 1 (95th percentile 117.86 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-02 18:41:13
End at: 2018-10-02 18:41:43
Local clock offset: -0.677 ms
Remote clock offset: -0.273 ms


# Below is generated by plot.py at 2018-10-02 19:06:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 528.06 Mbit/s
95th percentile per-packet one-way delay: 151.870 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 528.06 Mbit/s
95th percentile per-packet one-way delay: 151.870 ms
Loss rate: 0.79%
```
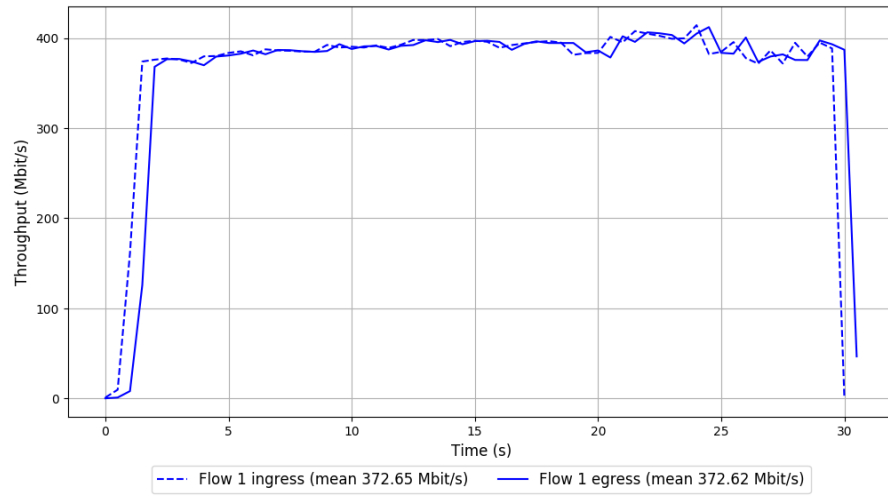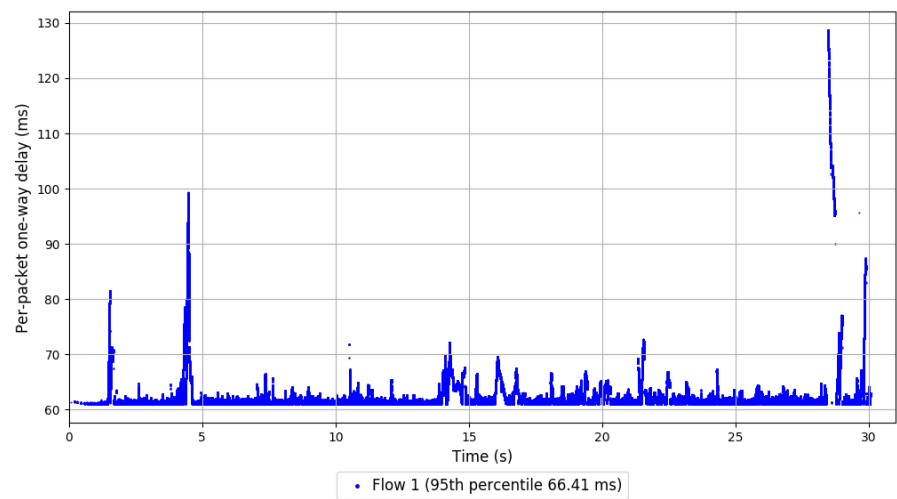
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 532.29 Mbit/s) ---- Flow 1 egress (mean 528.06 Mbit/s) ——

Flow 1 (95th percentile 151.87 ms)

```
Run 1: Statistics of Copa

Start at: 2018-10-02 16:46:47
End at: 2018-10-02 16:47:17
Local clock offset: -0.016 ms
Remote clock offset: -0.79 ms


# Below is generated by plot.py at 2018-10-02 19:08:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.62 Mbit/s
95th percentile per-packet one-way delay: 65.945 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 372.62 Mbit/s
95th percentile per-packet one-way delay: 65.945 ms
Loss rate: 0.01%
```
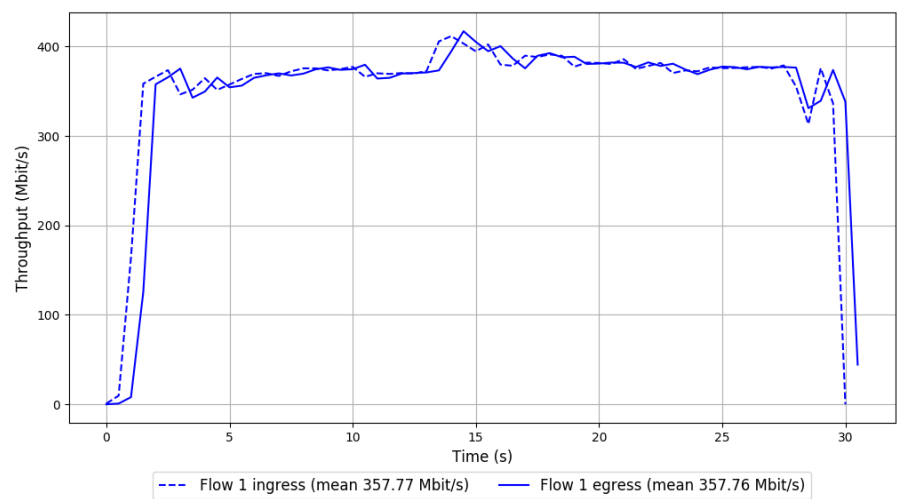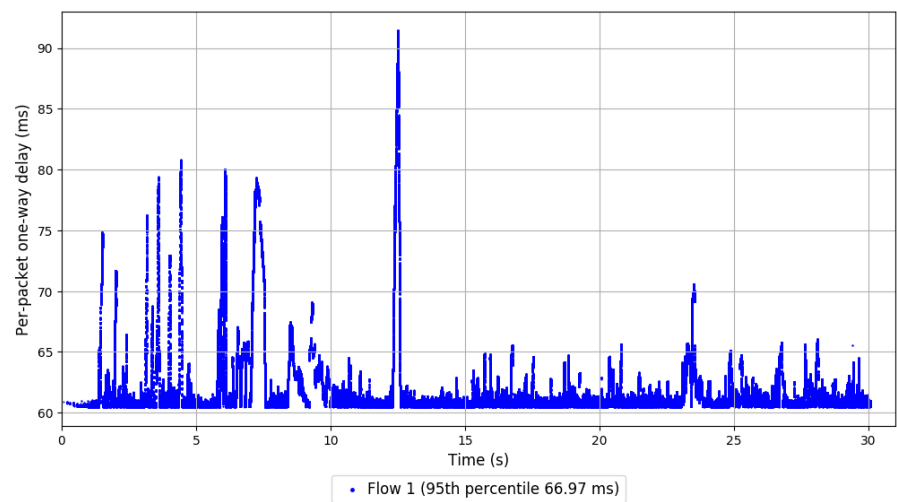
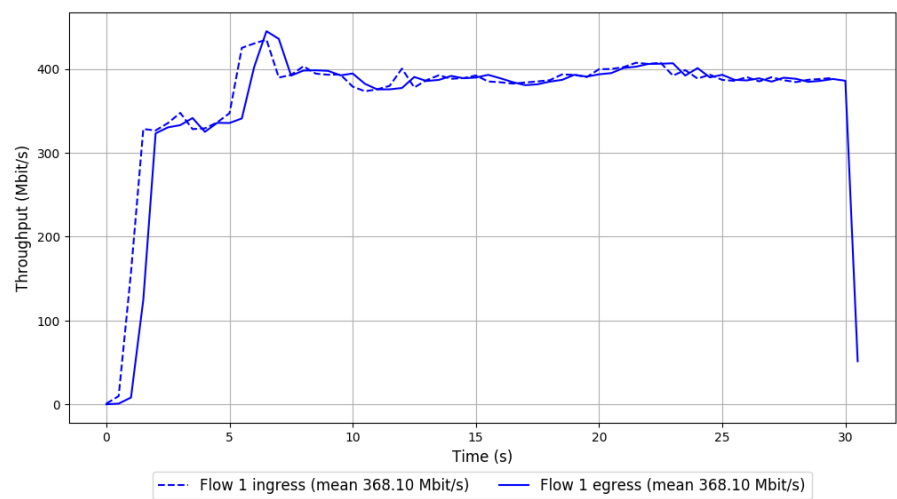Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-10-02 17:12:40
End at: 2018-10-02 17:13:10
Local clock offset: -0.176 ms
Remote clock offset: 0.191 ms


# Below is generated by plot.py at 2018-10-02 19:08:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 357.76 Mbit/s
95th percentile per-packet one-way delay: 66.414 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 357.76 Mbit/s
95th percentile per-packet one-way delay: 66.414 ms
Loss rate: 0.00%
```
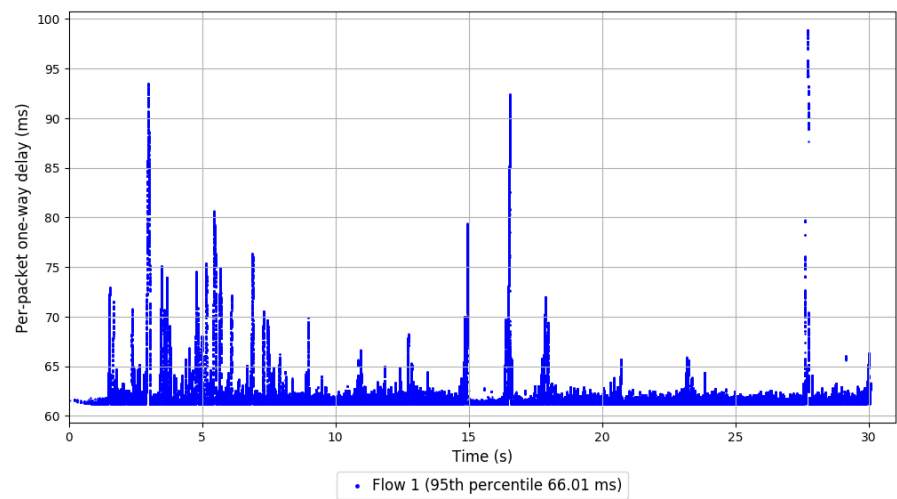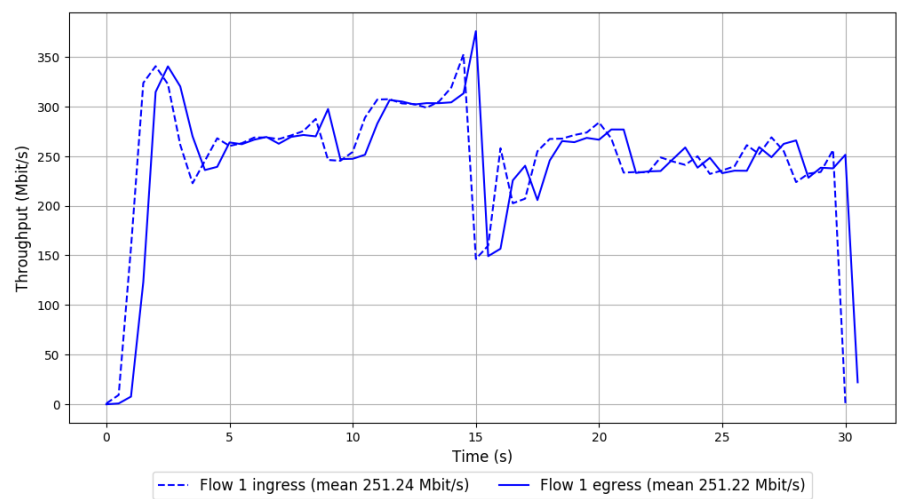
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-02 17:38:19
End at: 2018-10-02 17:38:49
Local clock offset: -0.344 ms
Remote clock offset: -0.437 ms


# Below is generated by plot.py at 2018-10-02 19:08:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 368.10 Mbit/s
95th percentile per-packet one-way delay: 66.968 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 368.10 Mbit/s
95th percentile per-packet one-way delay: 66.968 ms
Loss rate: 0.00%
```
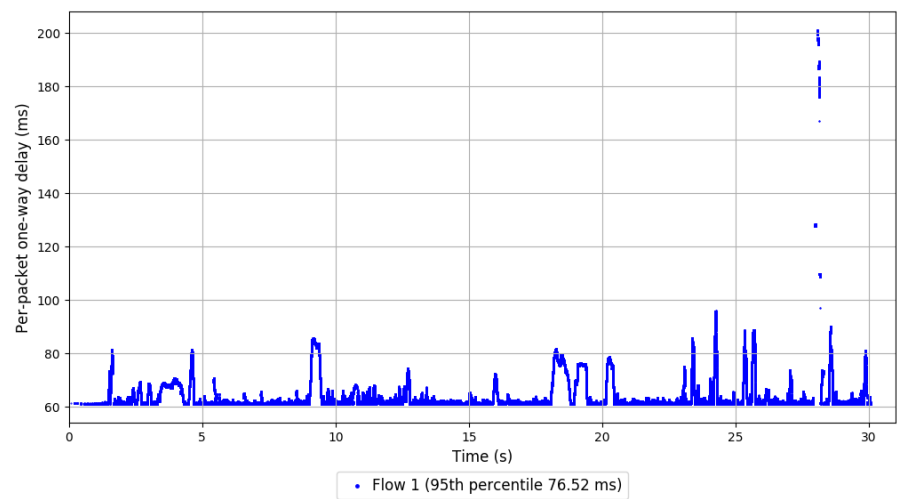
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 368.10 Mbit/s)   Flow 1 egress (mean 368.10 Mbit/s)

Flow 1 (95th percentile 66.97 ms)

```
Run 4: Statistics of Copa

Start at: 2018-10-02 18:04:09
End at: 2018-10-02 18:04:39
Local clock offset: -0.519 ms
Remote clock offset: 0.139 ms


# Below is generated by plot.py at 2018-10-02 19:14:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 251.22 Mbit/s
95th percentile per-packet one-way delay: 66.012 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 251.22 Mbit/s
95th percentile per-packet one-way delay: 66.012 ms
Loss rate: 0.01%
```
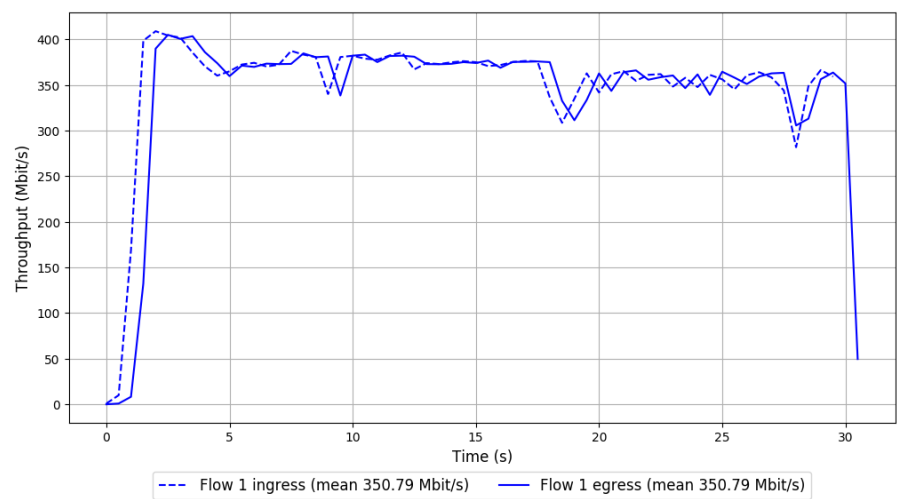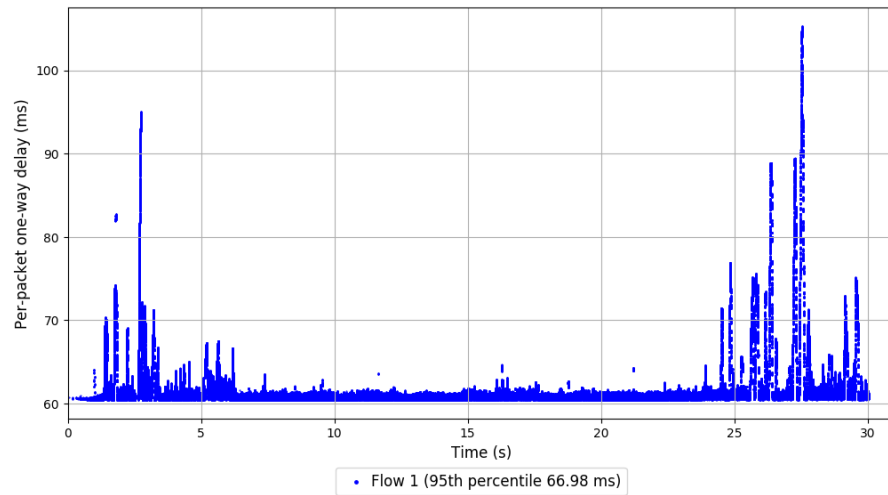
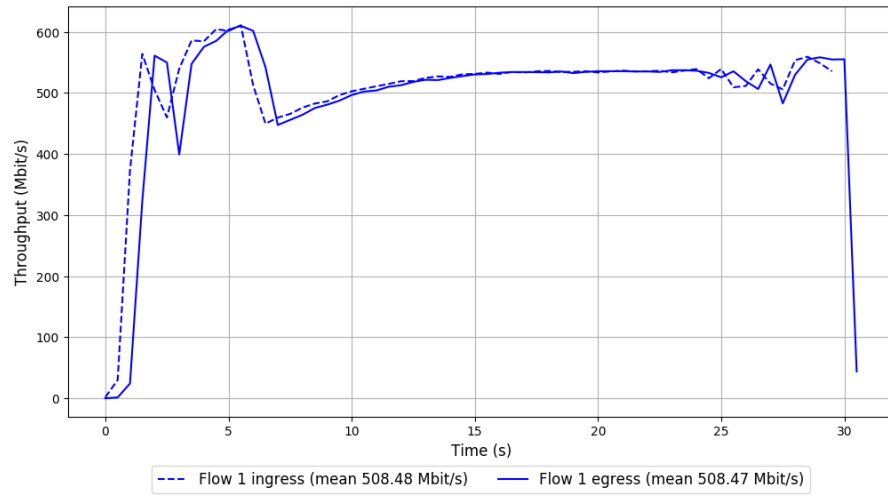Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-10-02 18:29:40
End at: 2018-10-02 18:30:10
Local clock offset: -0.636 ms
Remote clock offset: 0.064 ms


# Below is generated by plot.py at 2018-10-02 19:19:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 350.79 Mbit/s
95th percentile per-packet one-way delay: 76.515 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 350.79 Mbit/s
95th percentile per-packet one-way delay: 76.515 ms
Loss rate: 0.00%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-02 16:37:43
End at: 2018-10-02 16:38:13
Local clock offset: -0.024 ms
Remote clock offset: -0.602 ms


# Below is generated by plot.py at 2018-10-02 19:19:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 508.47 Mbit/s
95th percentile per-packet one-way delay: 66.985 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 508.47 Mbit/s
95th percentile per-packet one-way delay: 66.985 ms
Loss rate: 0.00%
```
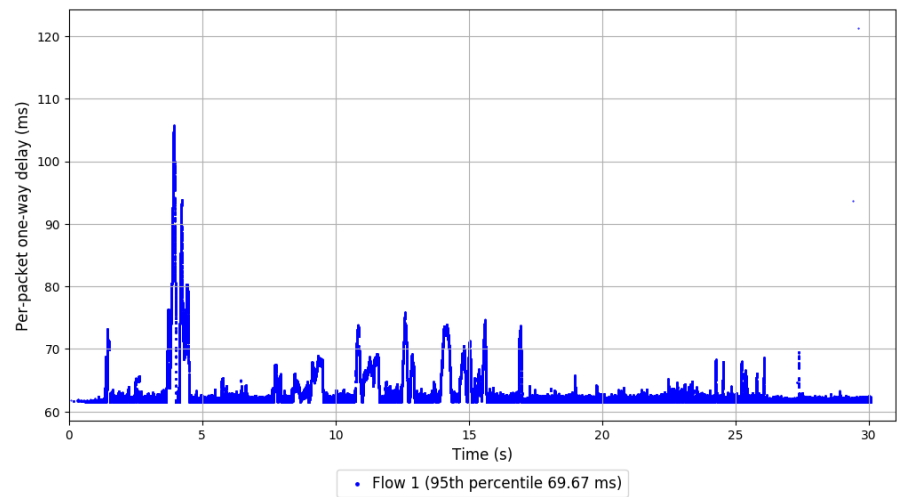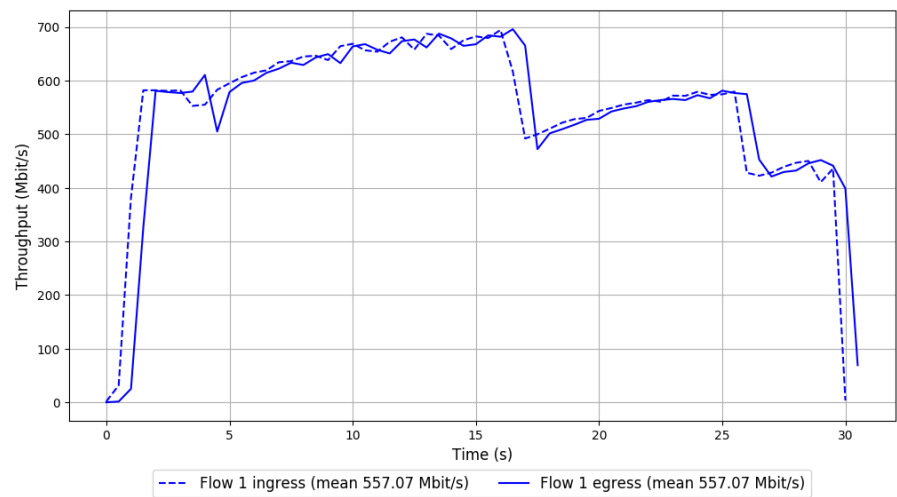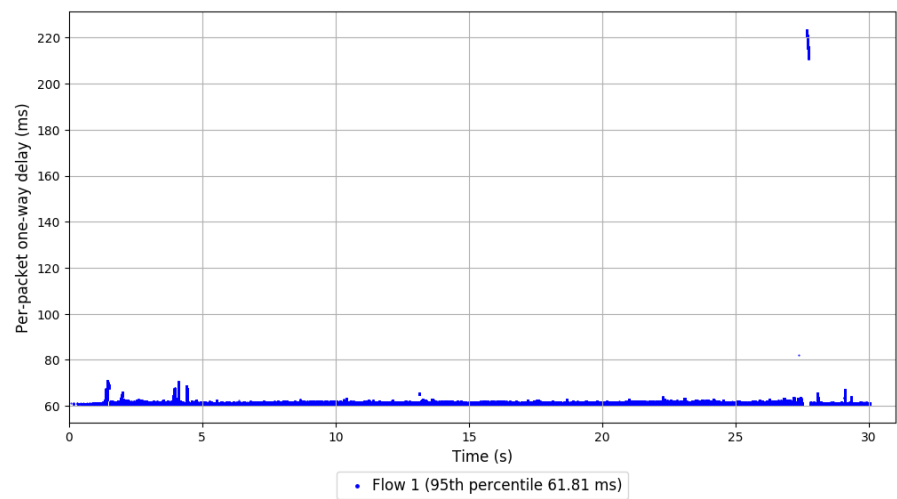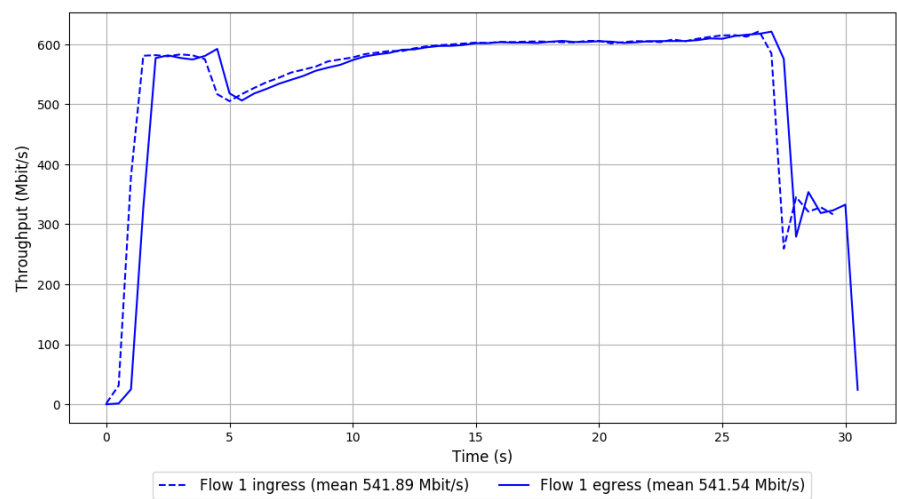
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 508.48 Mbit/s) — Flow 1 egress (mean 508.47 Mbit/s)

Flow 1 (95th percentile 66.98 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-02 17:03:29
End at: 2018-10-02 17:03:59
Local clock offset: -0.057 ms
Remote clock offset: 0.562 ms


# Below is generated by plot.py at 2018-10-02 19:19:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 557.07 Mbit/s
95th percentile per-packet one-way delay: 69.666 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 557.07 Mbit/s
95th percentile per-packet one-way delay: 69.666 ms
Loss rate: 0.00%
```
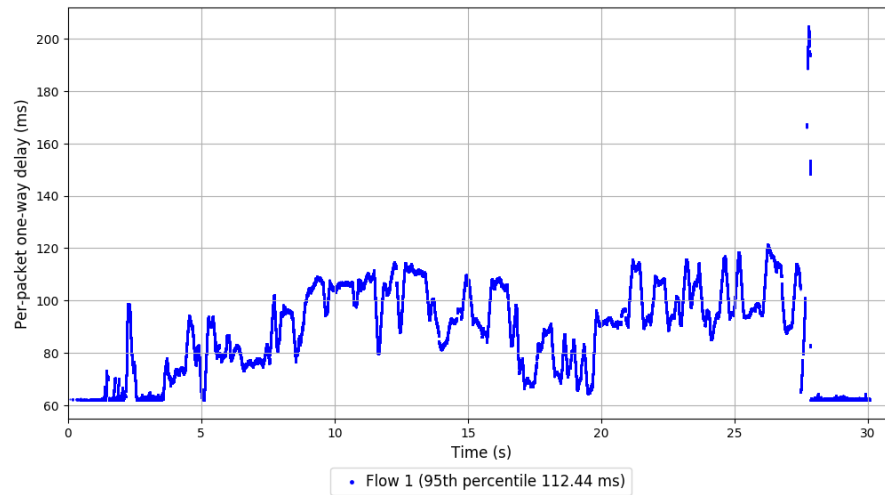
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 557.07 Mbit/s)   Flow 1 egress (mean 557.07 Mbit/s)

Flow 1 (95th percentile 69.67 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-02 17:29:05
End at: 2018-10-02 17:29:35
Local clock offset: -0.32 ms
Remote clock offset: -0.132 ms


# Below is generated by plot.py at 2018-10-02 19:19:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 541.54 Mbit/s
95th percentile per-packet one-way delay: 61.809 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 541.54 Mbit/s
95th percentile per-packet one-way delay: 61.809 ms
Loss rate: 0.06%
```
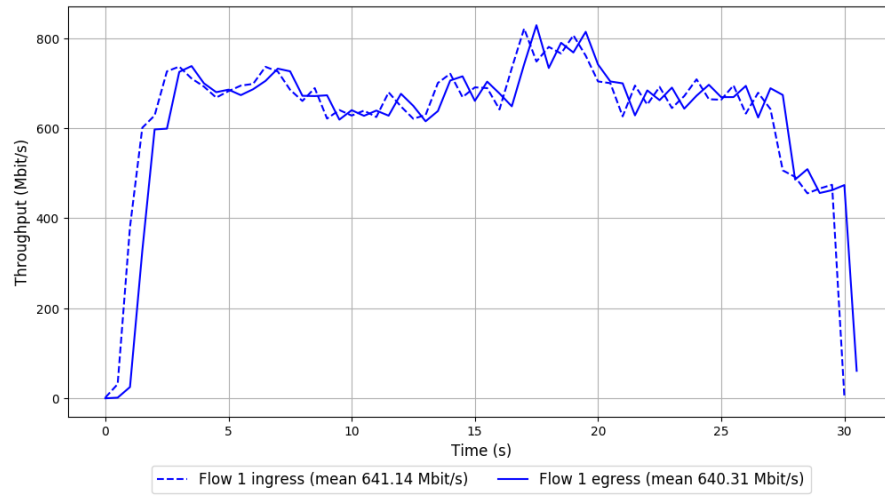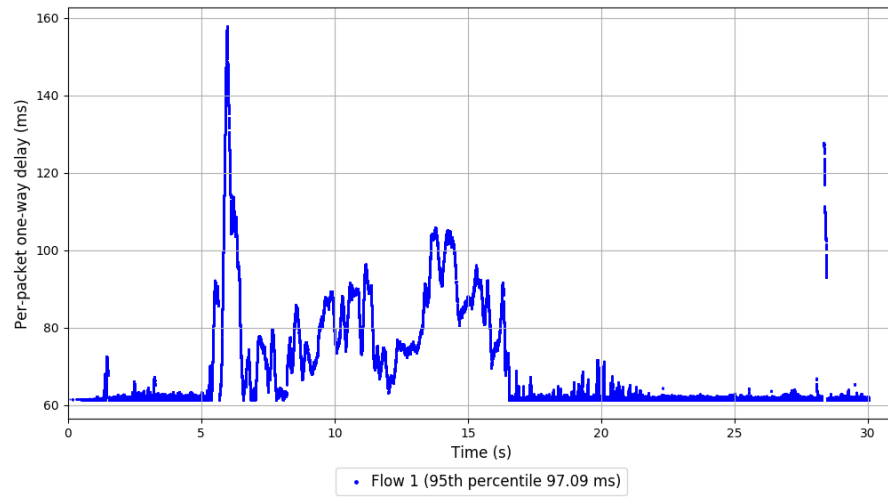
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 541.89 Mbit/s)   Flow 1 egress (mean 541.54 Mbit/s)

Flow 1 (95th percentile 61.81 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-02 17:54:54
End at: 2018-10-02 17:55:25
Local clock offset: -0.446 ms
Remote clock offset: 1.187 ms


# Below is generated by plot.py at 2018-10-02 19:21:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 640.31 Mbit/s
95th percentile per-packet one-way delay: 112.438 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 640.31 Mbit/s
95th percentile per-packet one-way delay: 112.438 ms
Loss rate: 0.13%
```
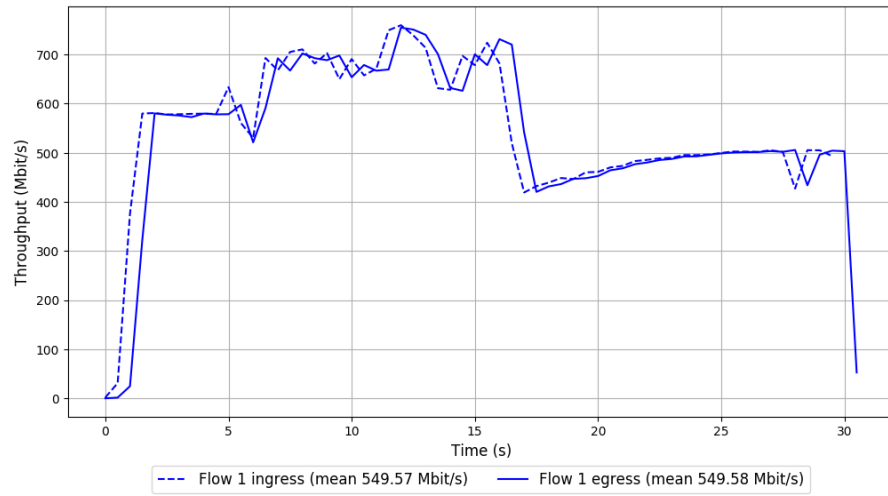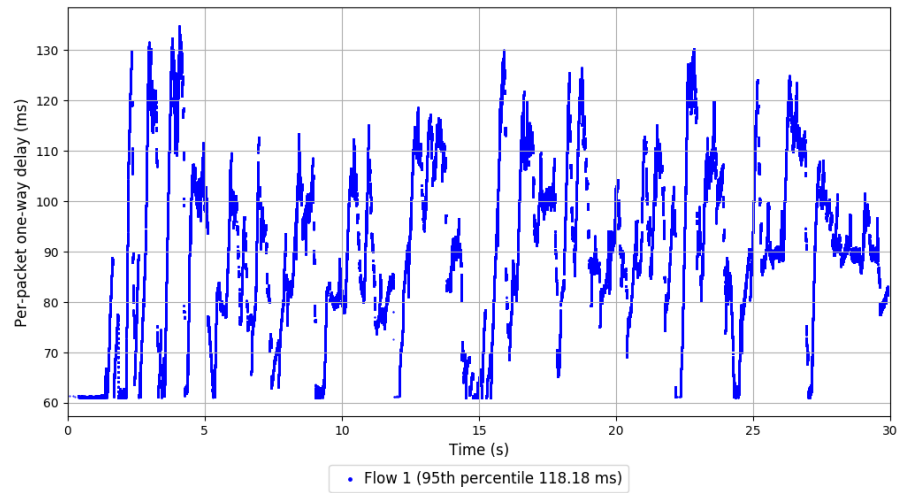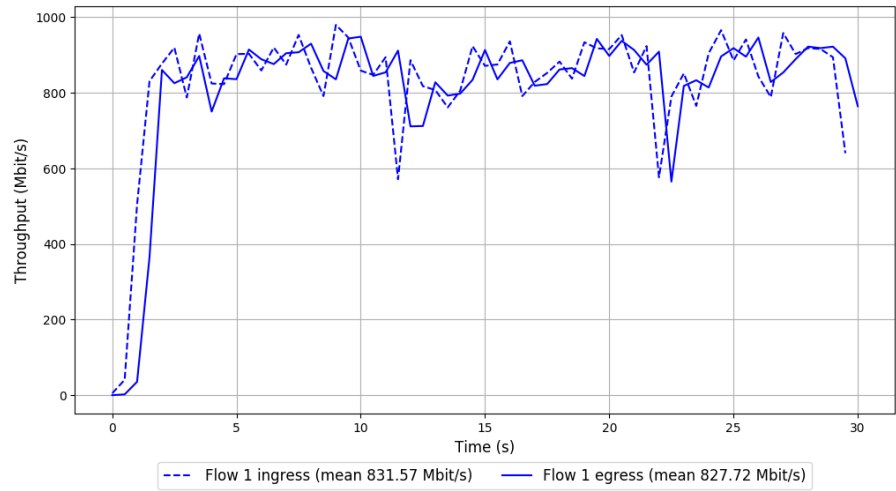
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-02 18:20:26
End at: 2018-10-02 18:20:56
Local clock offset: -0.611 ms
Remote clock offset: 0.272 ms


# Below is generated by plot.py at 2018-10-02 19:21:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 549.58 Mbit/s
95th percentile per-packet one-way delay: 97.095 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 549.58 Mbit/s
95th percentile per-packet one-way delay: 97.095 ms
Loss rate: 0.00%
```
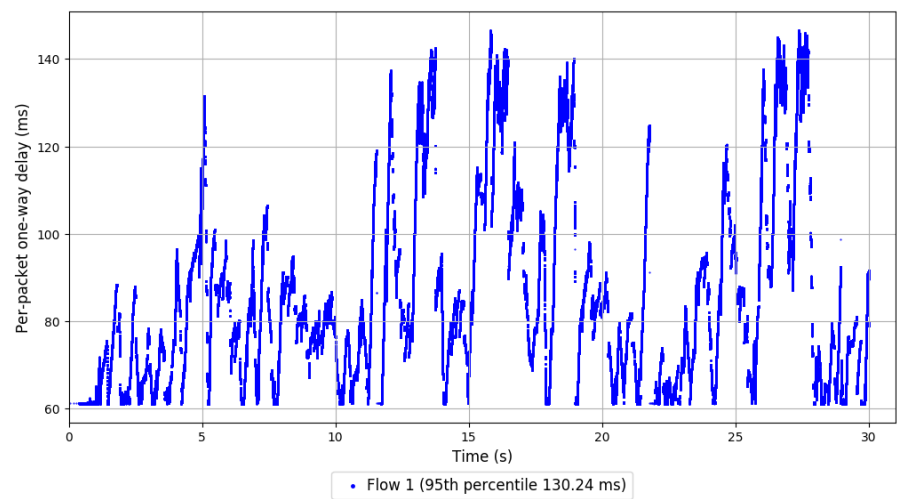
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-10-02 16:36:01
End at: 2018-10-02 16:36:31
Local clock offset: -0.033 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2018-10-02 19:29:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 827.72 Mbit/s
95th percentile per-packet one-way delay: 118.177 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 827.72 Mbit/s
95th percentile per-packet one-way delay: 118.177 ms
Loss rate: 0.46%
```
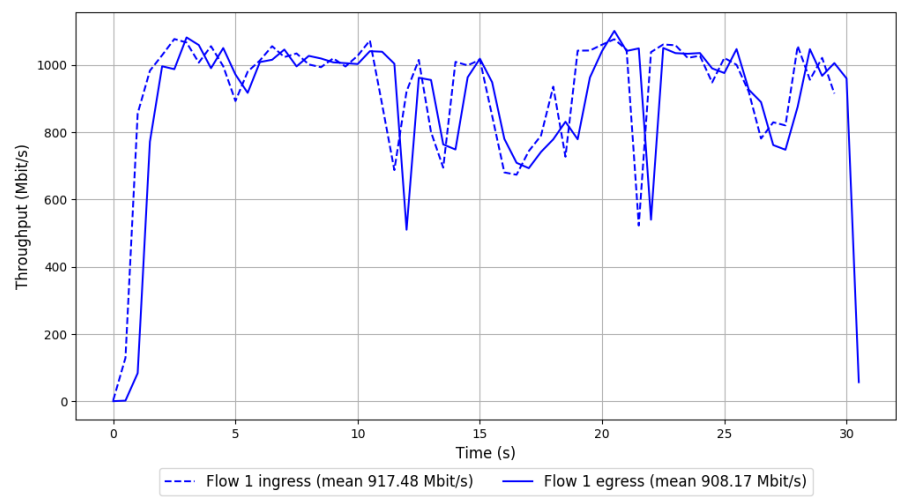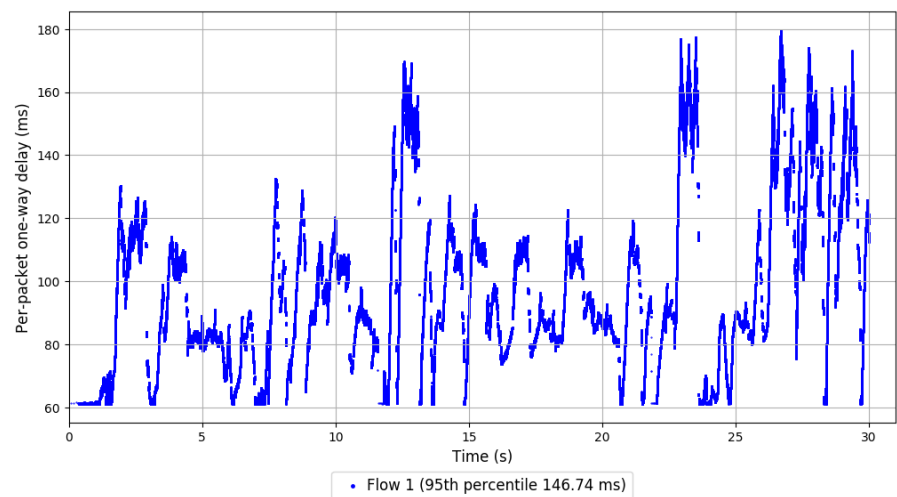
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 831.57 Mbit/s) --- Flow 1 egress (mean 827.72 Mbit/s)

· Flow 1 (95th percentile 118.18 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-02 17:01:45
End at: 2018-10-02 17:02:15
Local clock offset: 0.0 ms
Remote clock offset: 0.34 ms


# Below is generated by plot.py at 2018-10-02 19:39:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 908.17 Mbit/s
95th percentile per-packet one-way delay: 130.237 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 908.17 Mbit/s
95th percentile per-packet one-way delay: 130.237 ms
Loss rate: 1.01%
```
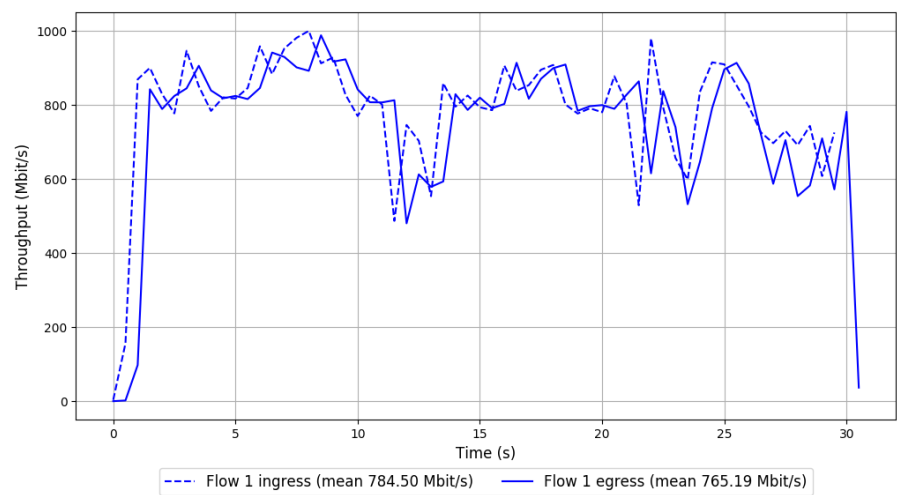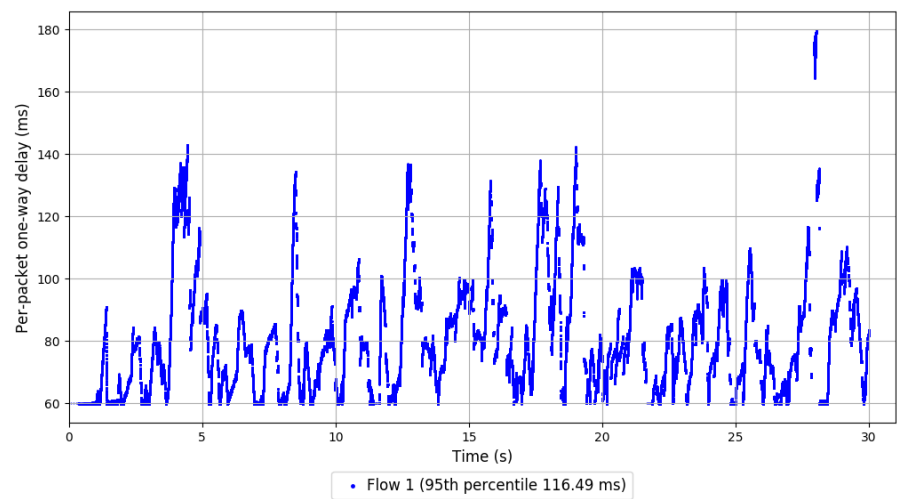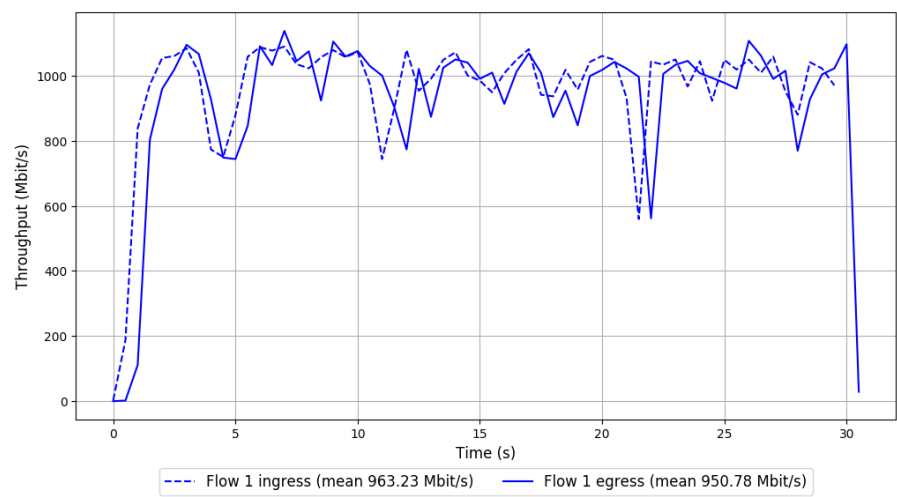
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 917.48 Mbit/s)   Flow 1 egress (mean 908.17 Mbit/s)

Flow 1 (95th percentile 130.24 ms)

```
Run 3: Statistics of FillP

Start at: 2018-10-02 17:27:27
End at: 2018-10-02 17:27:57
Local clock offset: -0.317 ms
Remote clock offset: 0.085 ms


# Below is generated by plot.py at 2018-10-02 19:39:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 765.19 Mbit/s
95th percentile per-packet one-way delay: 146.735 ms
Loss rate: 2.46%
-- Flow 1:
Average throughput: 765.19 Mbit/s
95th percentile per-packet one-way delay: 146.735 ms
Loss rate: 2.46%
```
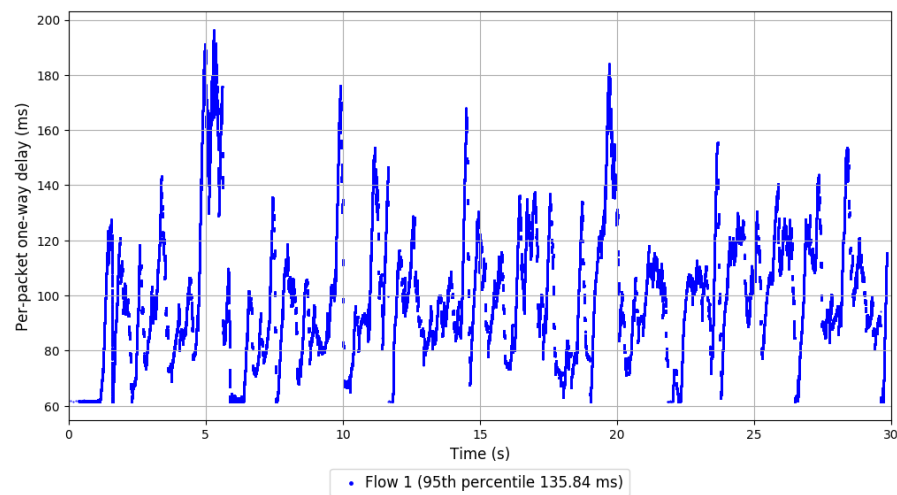
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-02 17:53:10
End at: 2018-10-02 17:53:41
Local clock offset: -0.465 ms
Remote clock offset: -1.175 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 950.78 Mbit/s
95th percentile per-packet one-way delay: 116.491 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 950.78 Mbit/s
95th percentile per-packet one-way delay: 116.491 ms
Loss rate: 1.29%
```
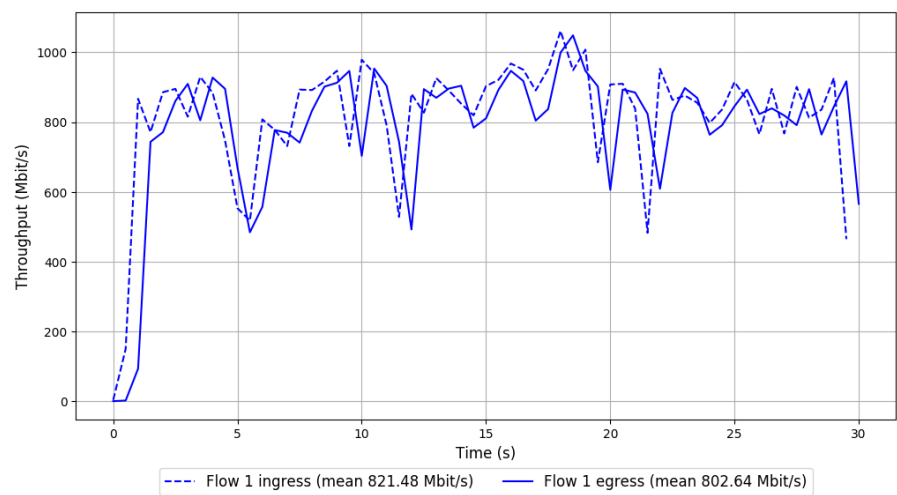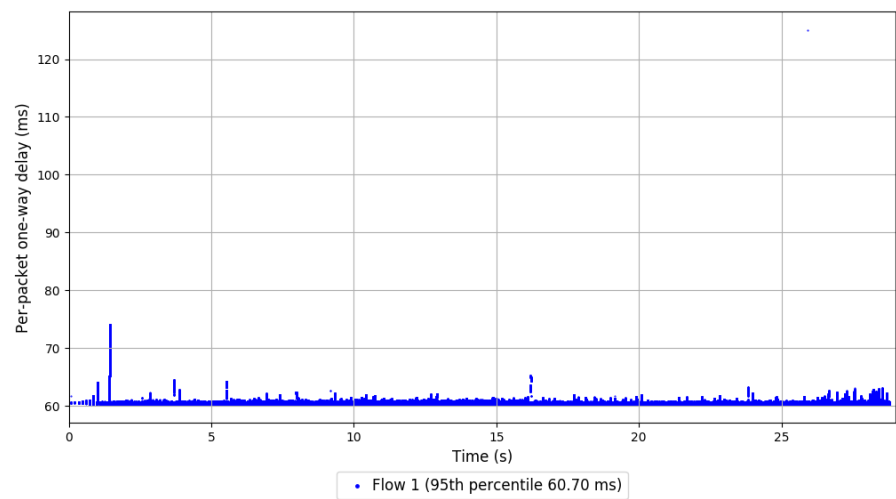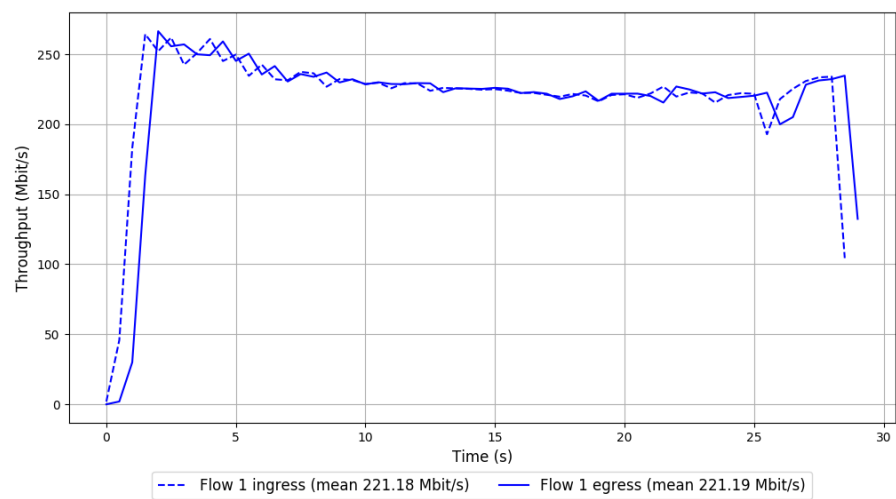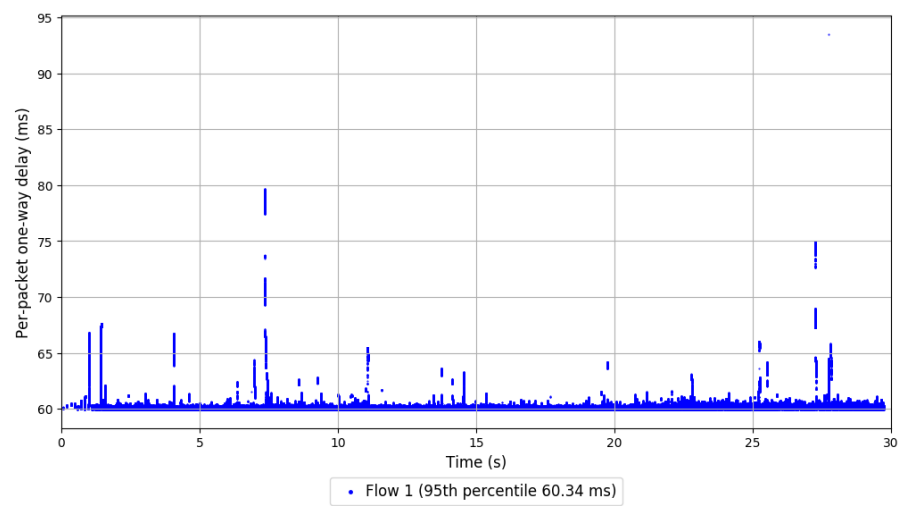
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-10-02 18:18:46
End at: 2018-10-02 18:19:16
Local clock offset: -0.562 ms
Remote clock offset: 0.578 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 802.64 Mbit/s
95th percentile per-packet one-way delay: 135.835 ms
Loss rate: 2.24%
-- Flow 1:
Average throughput: 802.64 Mbit/s
95th percentile per-packet one-way delay: 135.835 ms
Loss rate: 2.24%
```

Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 821.48 Mbit/s)   Flow 1 egress (mean 802.64 Mbit/s)

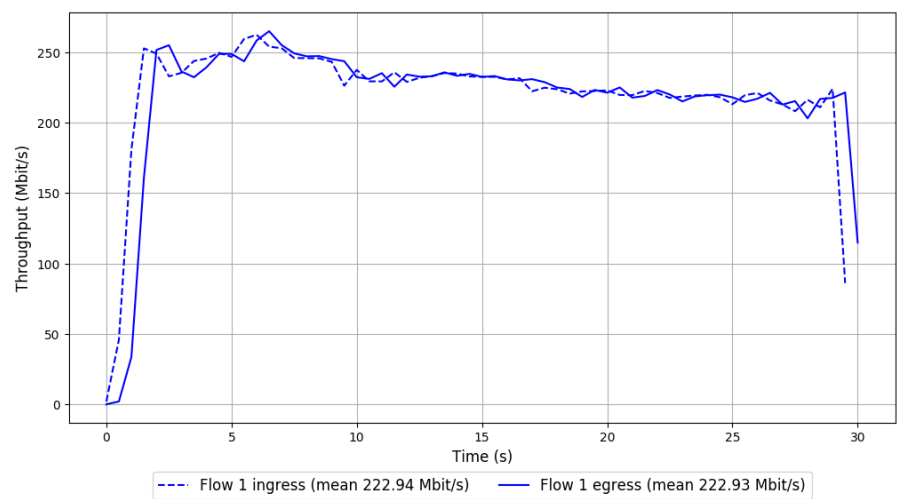• Flow 1 (95th percentile 135.84 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-10-02 16:55:22
End at: 2018-10-02 16:55:52
Local clock offset: -0.019 ms
Remote clock offset: -0.598 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.19 Mbit/s
95th percentile per-packet one-way delay: 60.702 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 221.19 Mbit/s
95th percentile per-packet one-way delay: 60.702 ms
Loss rate: 0.00%
```
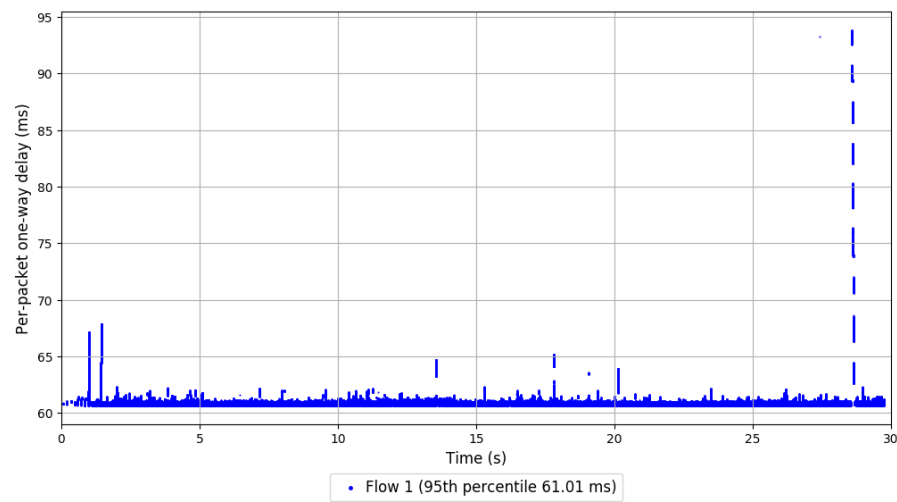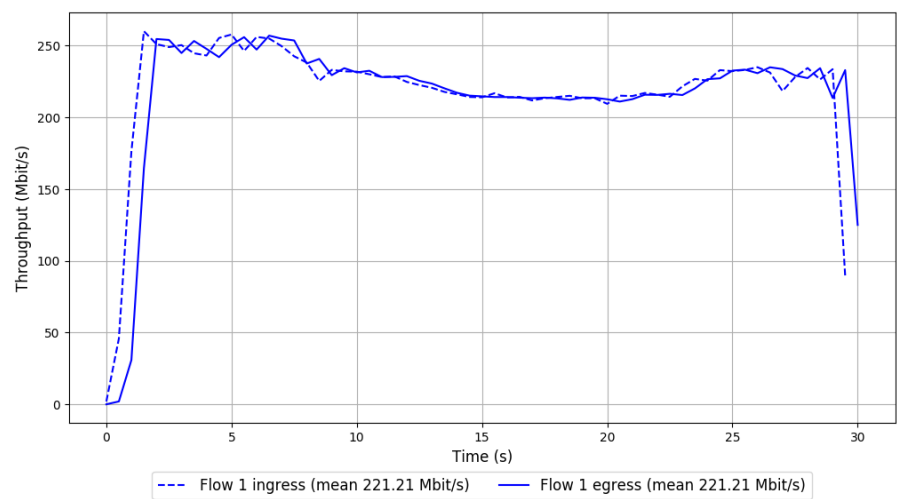
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-02 17:21:10
End at: 2018-10-02 17:21:40
Local clock offset: -0.273 ms
Remote clock offset: -0.983 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.93 Mbit/s
95th percentile per-packet one-way delay: 60.338 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 222.93 Mbit/s
95th percentile per-packet one-way delay: 60.338 ms
Loss rate: 0.00%
```
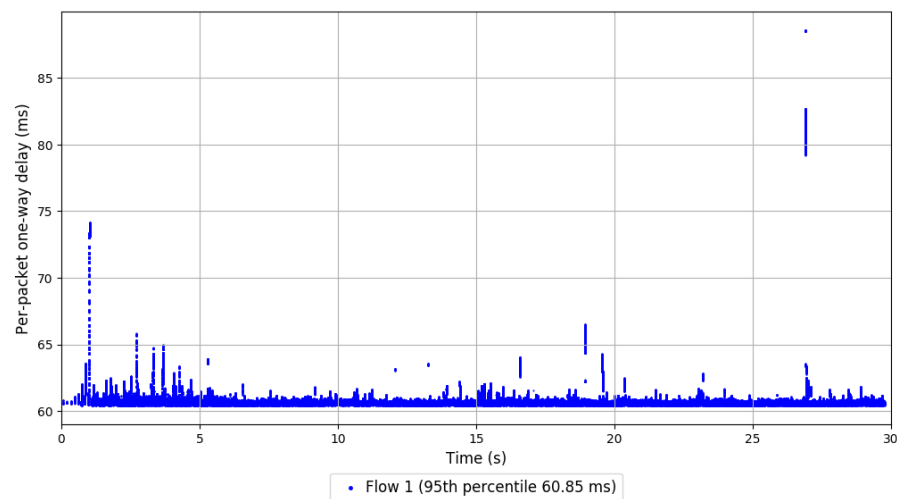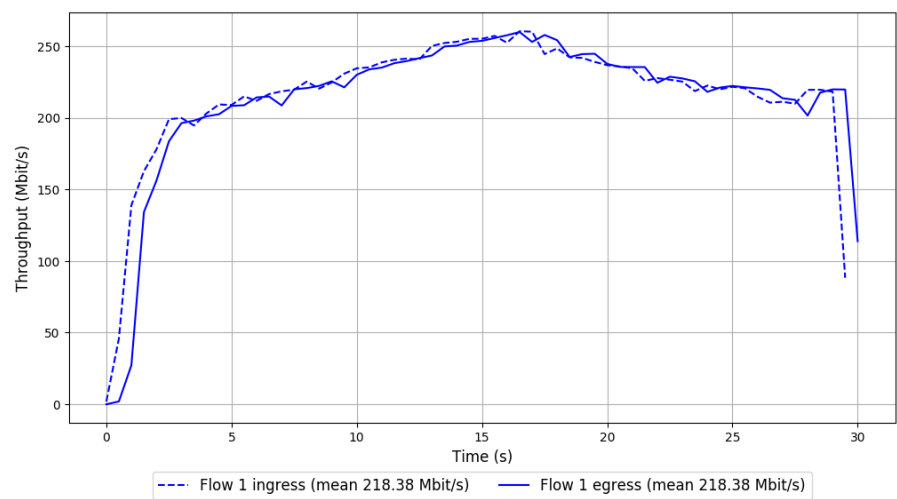
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-02 17:46:49
End at: 2018-10-02 17:47:19
Local clock offset: -0.434 ms
Remote clock offset: -0.135 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.21 Mbit/s
95th percentile per-packet one-way delay: 61.009 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 221.21 Mbit/s
95th percentile per-packet one-way delay: 61.009 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-02 18:12:28
End at: 2018-10-02 18:12:58
Local clock offset: -0.529 ms
Remote clock offset: -0.293 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 218.38 Mbit/s
95th percentile per-packet one-way delay: 60.852 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 218.38 Mbit/s
95th percentile per-packet one-way delay: 60.852 ms
Loss rate: 0.00%
```
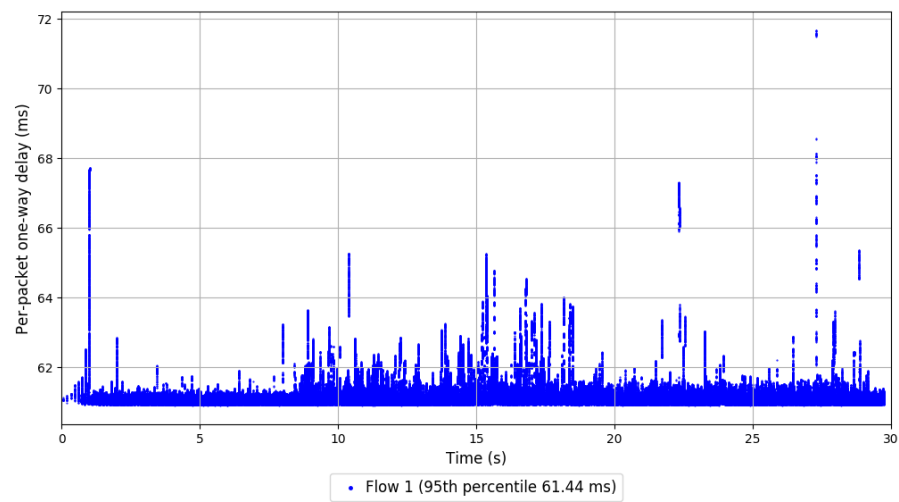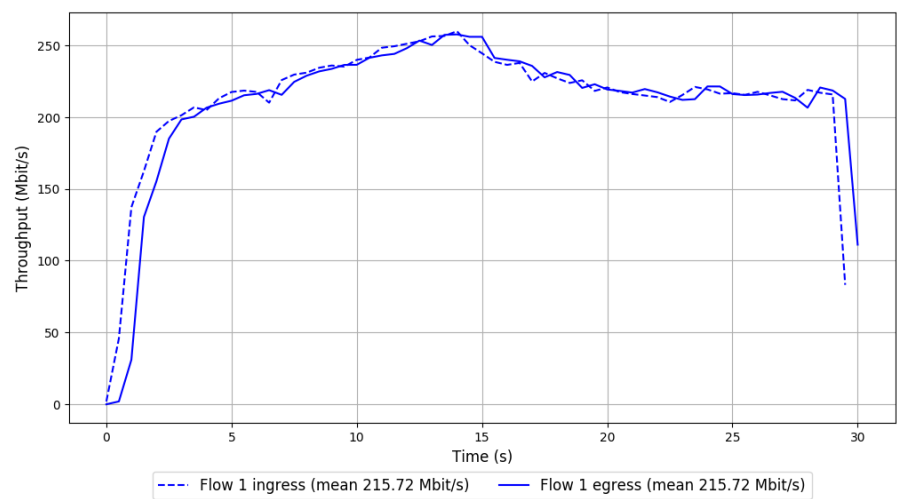
Run 4: Report of Indigo — Data Link

Flow 1 ingress (mean 218.38 Mbit/s)   Flow 1 egress (mean 218.38 Mbit/s)

Flow 1 (95th percentile 60.85 ms)

```
Run 5: Statistics of Indigo

Start at: 2018-10-02 18:38:08
End at: 2018-10-02 18:38:38
Local clock offset: -0.677 ms
Remote clock offset: 0.115 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 215.72 Mbit/s
95th percentile per-packet one-way delay: 61.437 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.72 Mbit/s
95th percentile per-packet one-way delay: 61.437 ms
Loss rate: 0.00%
```
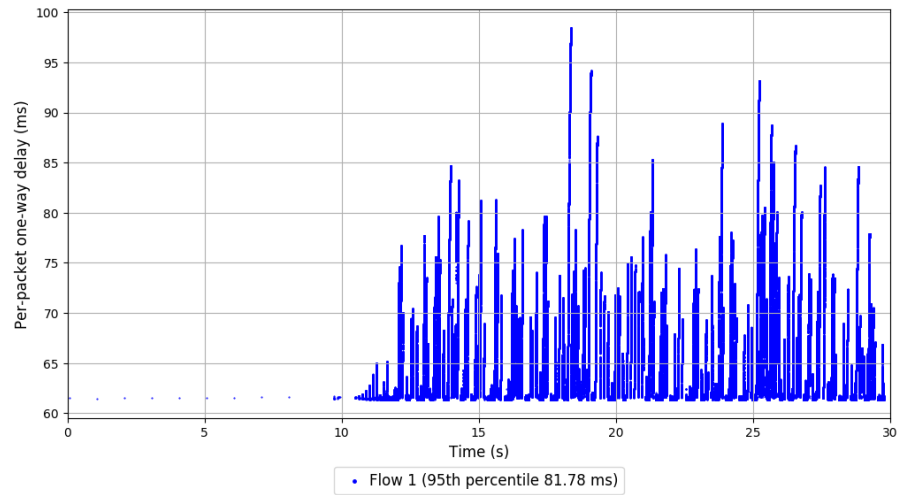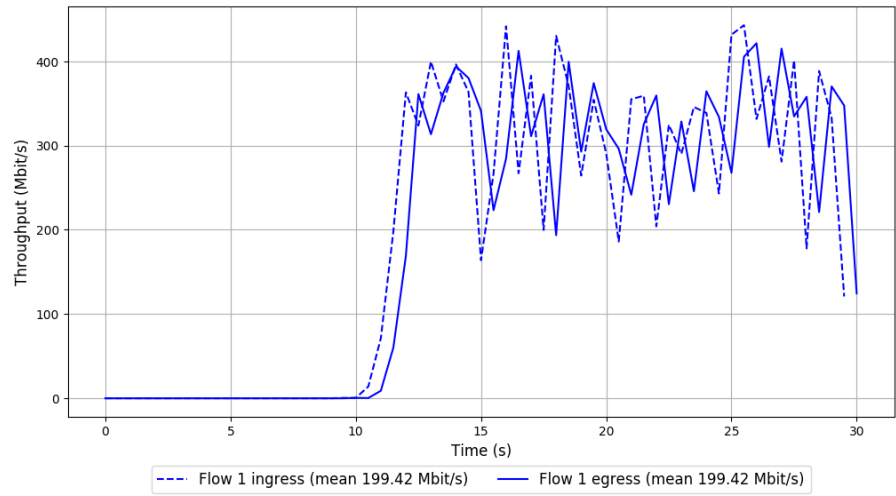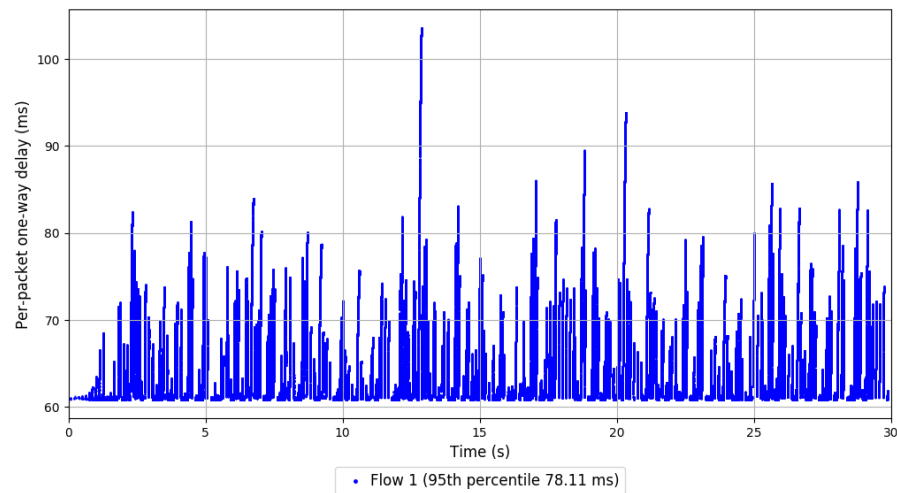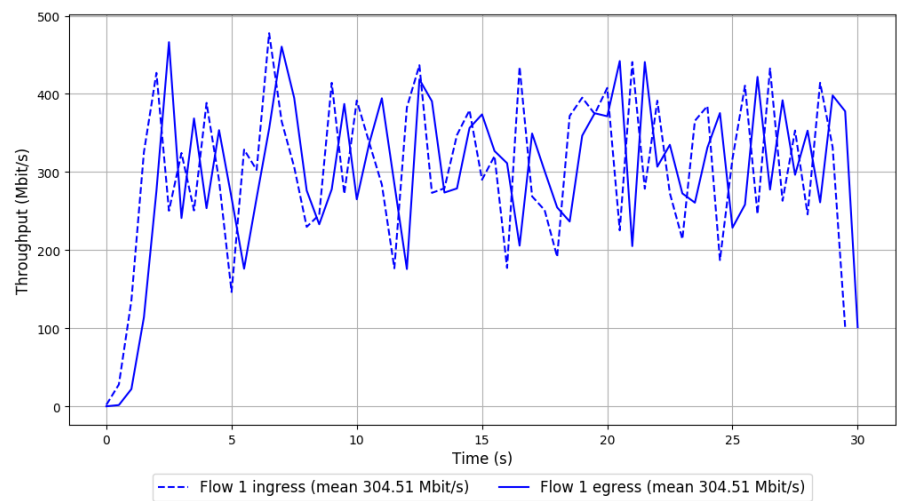
Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-02 16:45:31
End at: 2018-10-02 16:46:01
Local clock offset: -0.017 ms
Remote clock offset: 0.524 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 199.42 Mbit/s
95th percentile per-packet one-way delay: 81.776 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.42 Mbit/s
95th percentile per-packet one-way delay: 81.776 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-02 17:11:19
End at: 2018-10-02 17:11:49
Local clock offset: -0.129 ms
Remote clock offset: -0.025 ms


# Below is generated by plot.py at 2018-10-02 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 304.51 Mbit/s
95th percentile per-packet one-way delay: 78.111 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 304.51 Mbit/s
95th percentile per-packet one-way delay: 78.111 ms
Loss rate: 0.00%
```
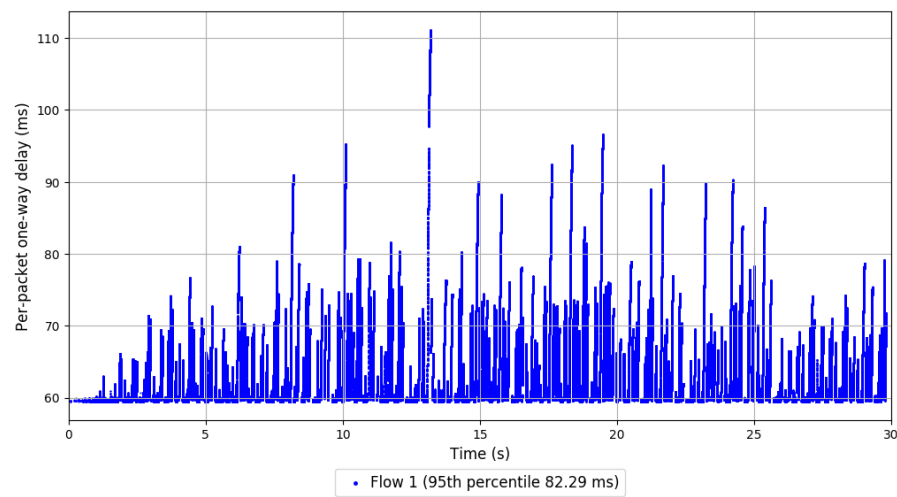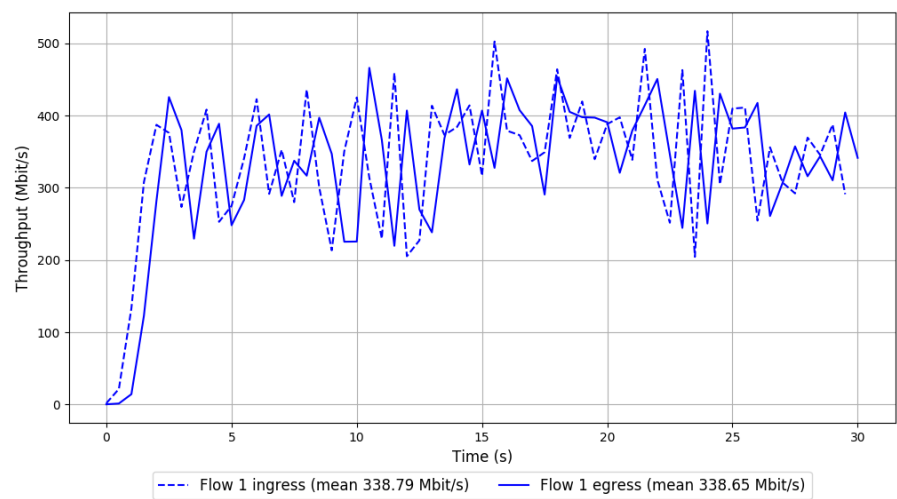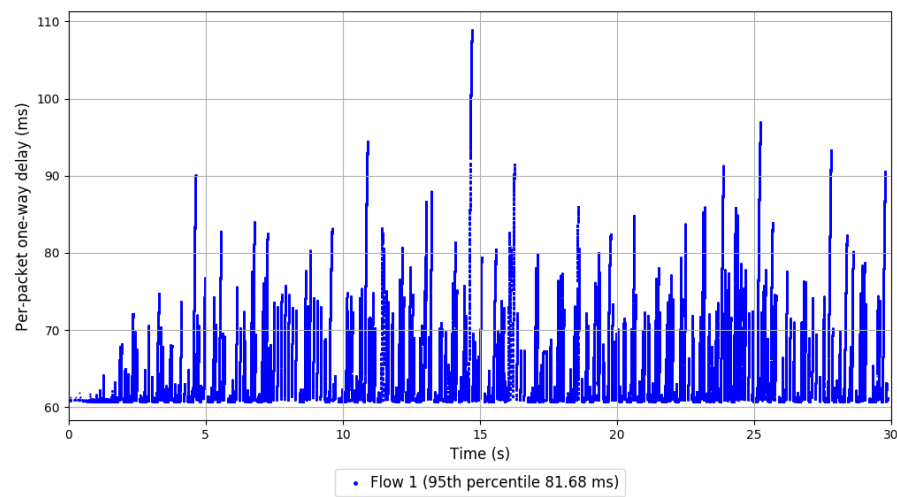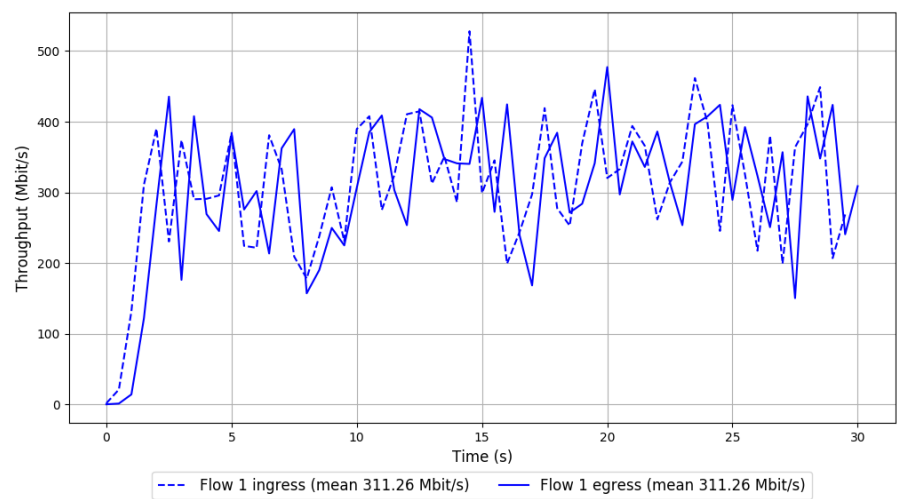
Run 2: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-02 17:36:56
End at: 2018-10-02 17:37:26
Local clock offset: -0.385 ms
Remote clock offset: -1.564 ms


# Below is generated by plot.py at 2018-10-02 19:42:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 338.65 Mbit/s
95th percentile per-packet one-way delay: 82.294 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 338.65 Mbit/s
95th percentile per-packet one-way delay: 82.294 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 338.79 Mbit/s)   Flow 1 egress (mean 338.65 Mbit/s)

Flow 1 (95th percentile 82.29 ms)

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

Start at: 2018-10-02 18:02:47
End at: 2018-10-02 18:03:17
Local clock offset: -0.507 ms
Remote clock offset: -0.072 ms


# Below is generated by plot.py at 2018-10-02 19:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 311.26 Mbit/s
95th percentile per-packet one-way delay: 81.682 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 311.26 Mbit/s
95th percentile per-packet one-way delay: 81.682 ms
Loss rate: 0.00%
```
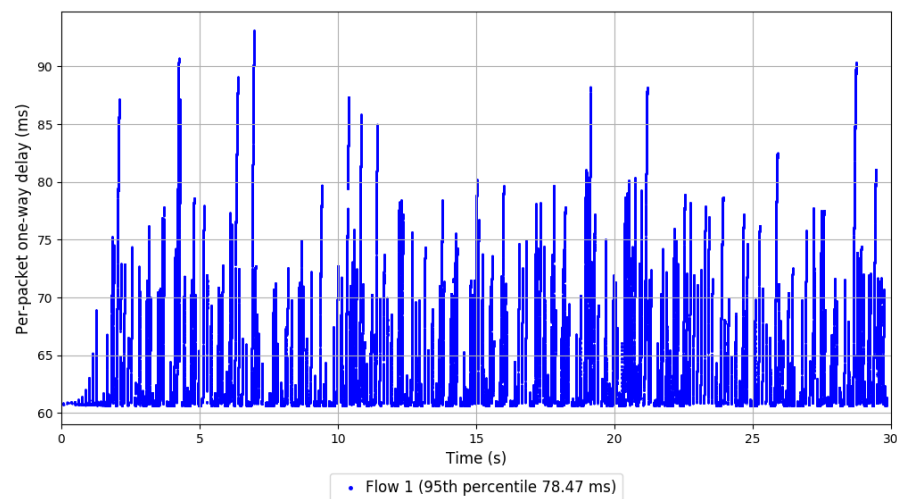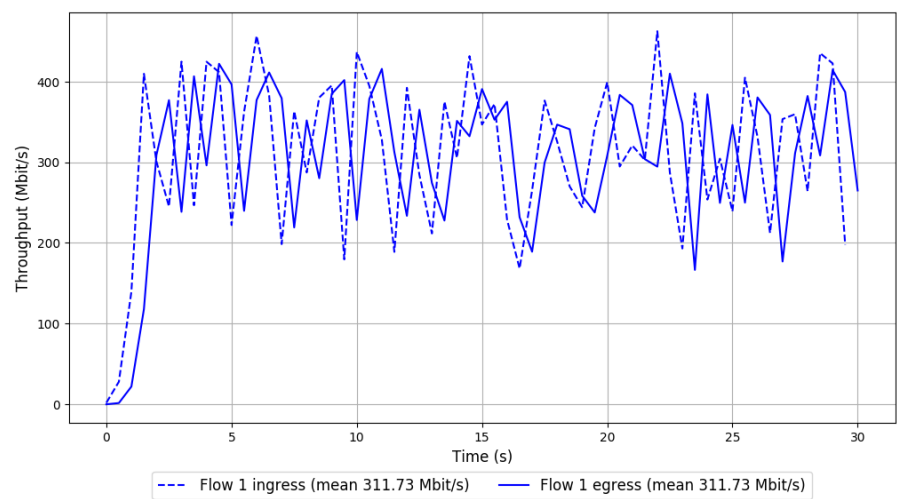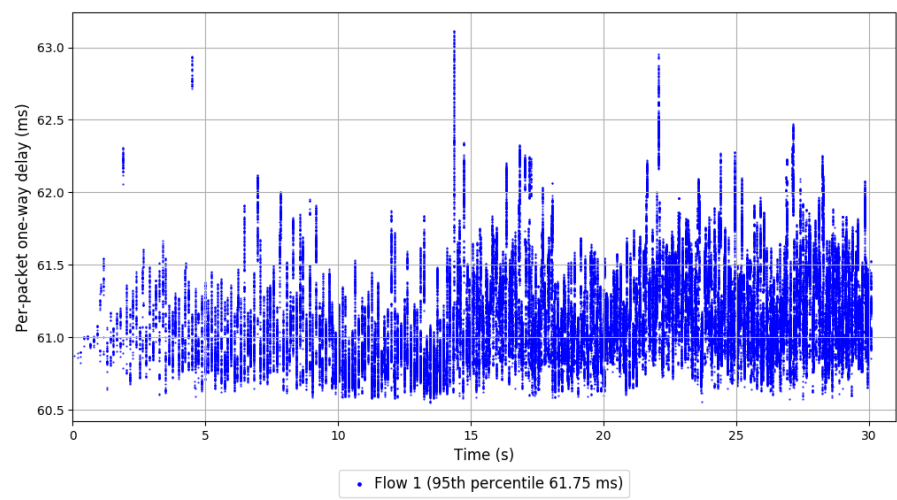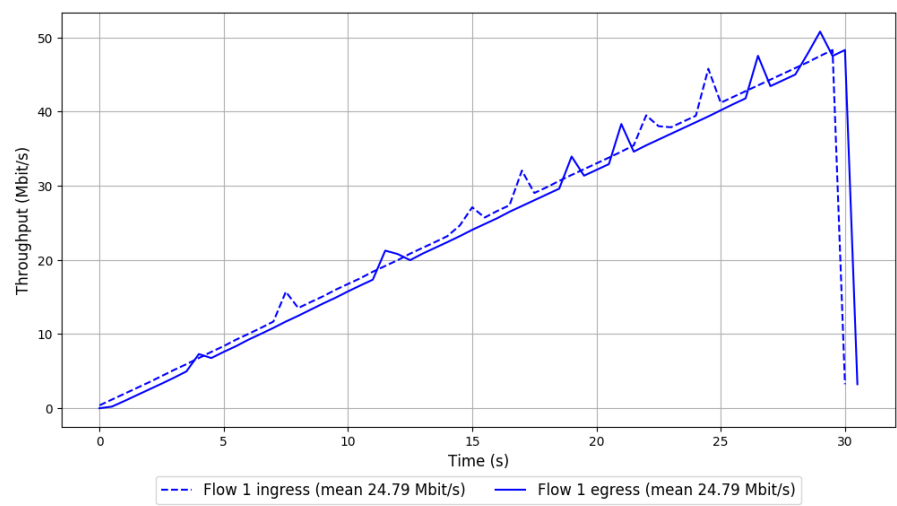
Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-02 18:28:18
End at: 2018-10-02 18:28:48
Local clock offset: -0.58 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2018-10-02 19:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 311.73 Mbit/s
95th percentile per-packet one-way delay: 78.468 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 311.73 Mbit/s
95th percentile per-packet one-way delay: 78.468 ms
Loss rate: 0.00%
```
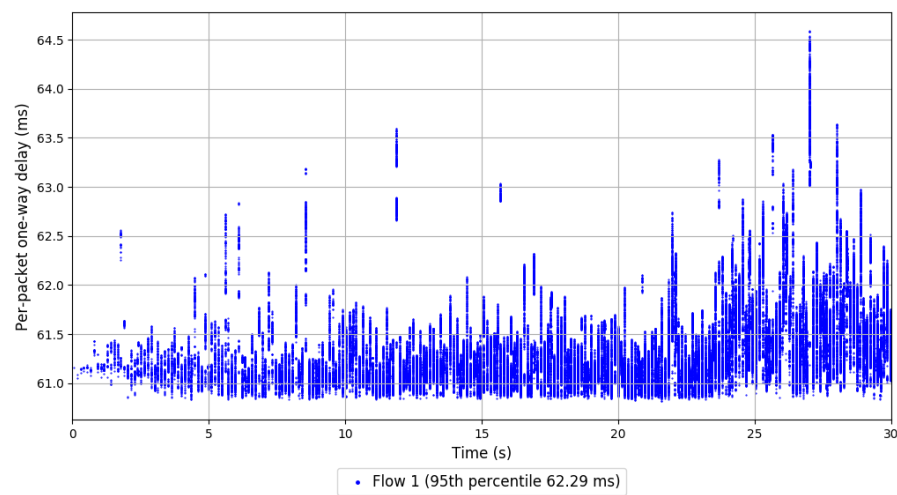
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-02 16:42:57
End at: 2018-10-02 16:43:27
Local clock offset: -0.061 ms
Remote clock offset: -0.515 ms

# Below is generated by plot.py at 2018-10-02 19:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.79 Mbit/s
95th percentile per-packet one-way delay: 61.751 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.79 Mbit/s
95th percentile per-packet one-way delay: 61.751 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 24.79 Mbit/s)   Flow 1 egress (mean 24.79 Mbit/s)

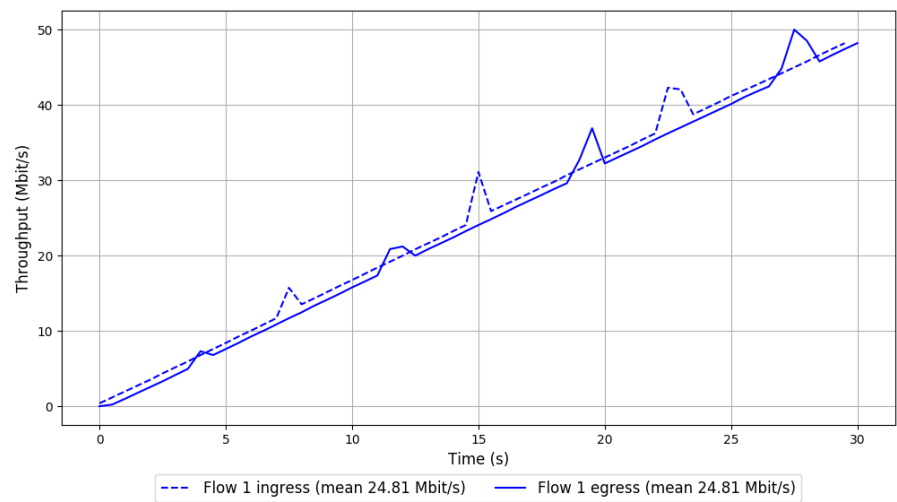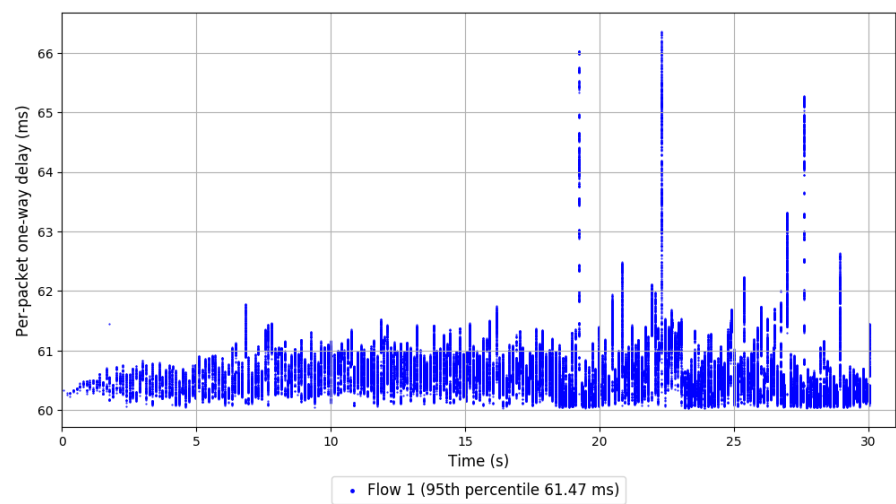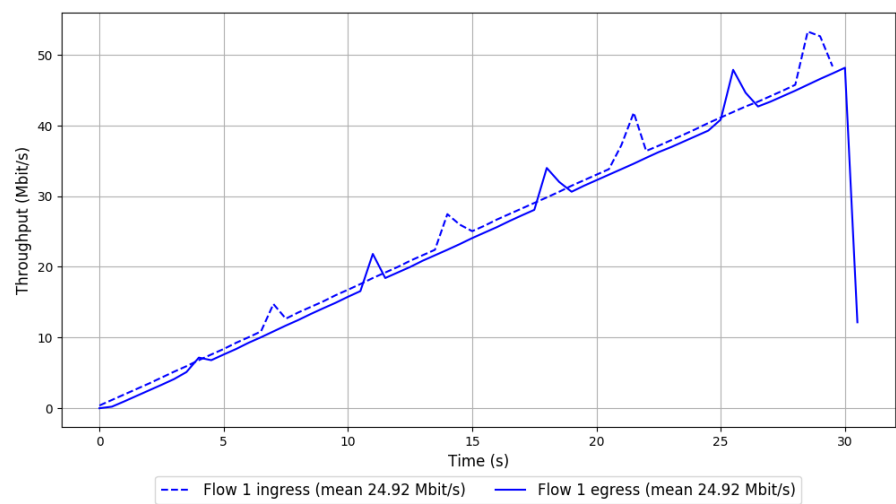• Flow 1 (95th percentile 61.75 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-02 17:08:49
End at: 2018-10-02 17:09:19
Local clock offset: -0.115 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2018-10-02 19:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.81 Mbit/s
95th percentile per-packet one-way delay: 62.289 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.81 Mbit/s
95th percentile per-packet one-way delay: 62.289 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 24.81 Mbit/s) --- Flow 1 egress (mean 24.81 Mbit/s)

Flow 1 (95th percentile 62.29 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-02 17:34:24
End at: 2018-10-02 17:34:54
Local clock offset: -0.341 ms
Remote clock offset: -0.872 ms


# Below is generated by plot.py at 2018-10-02 19:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.92 Mbit/s
95th percentile per-packet one-way delay: 61.470 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.92 Mbit/s
95th percentile per-packet one-way delay: 61.470 ms
Loss rate: 0.00%
```
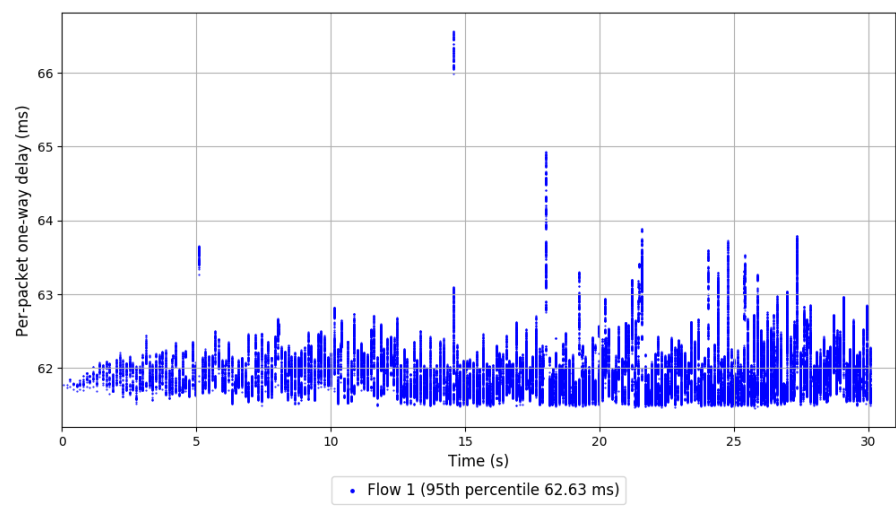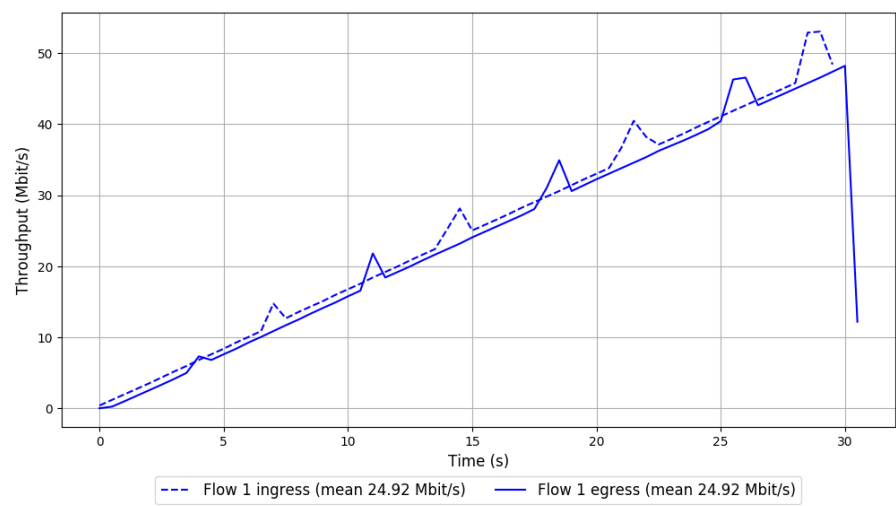
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-02 18:00:19
End at: 2018-10-02 18:00:49
Local clock offset: -0.473 ms
Remote clock offset: 0.581 ms


# Below is generated by plot.py at 2018-10-02 19:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.92 Mbit/s
95th percentile per-packet one-way delay: 62.629 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.92 Mbit/s
95th percentile per-packet one-way delay: 62.629 ms
Loss rate: 0.00%
```
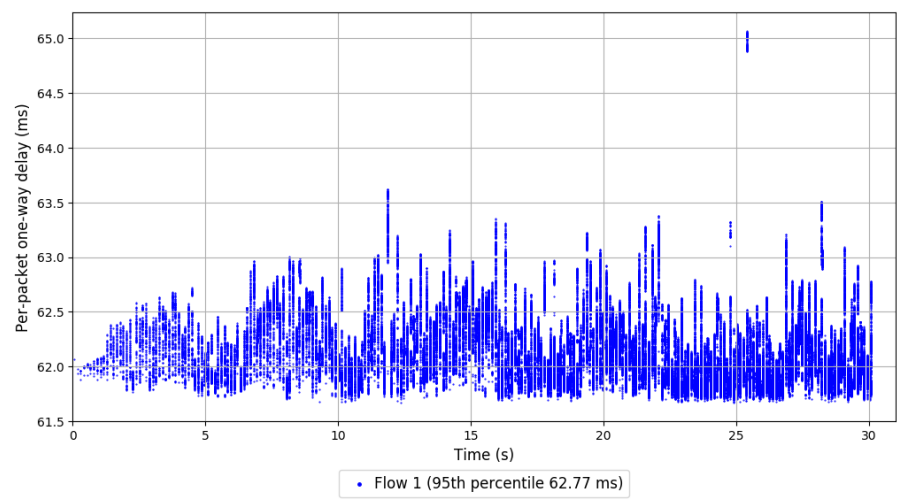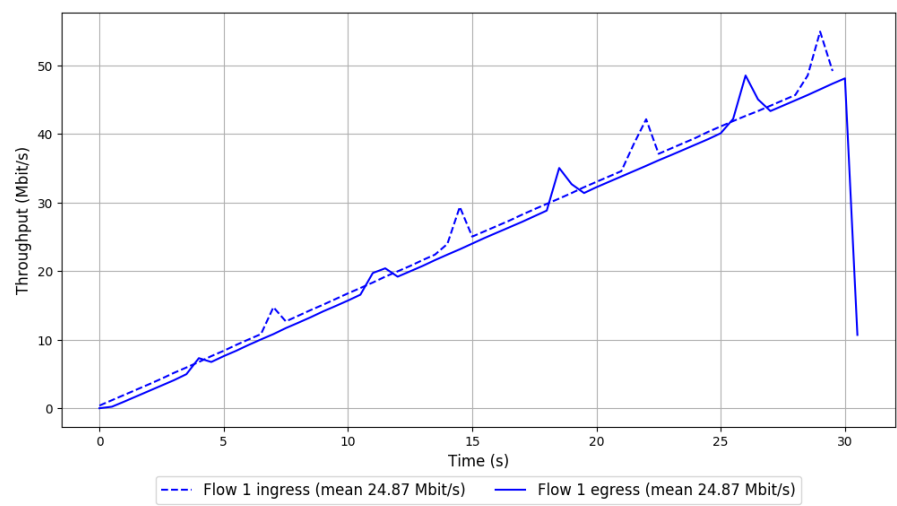
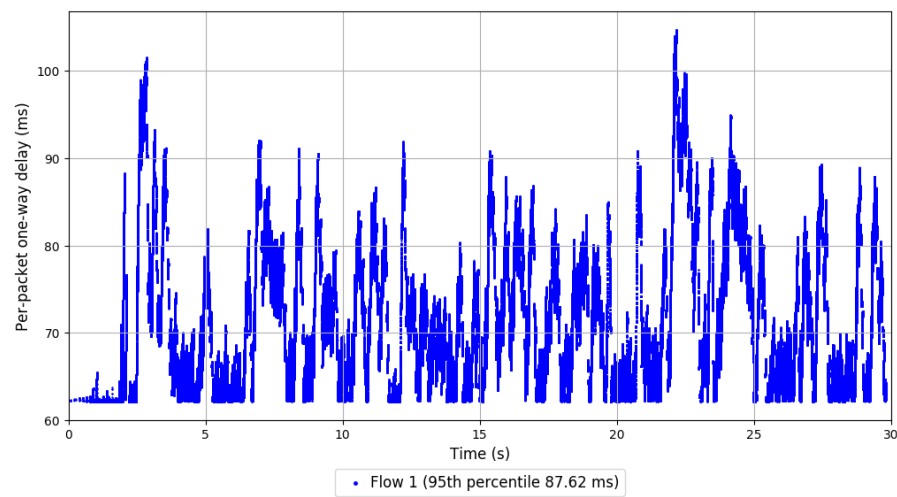# Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-02 18:25:45
End at: 2018-10-02 18:26:15
Local clock offset: -0.577 ms
Remote clock offset: 0.808 ms


# Below is generated by plot.py at 2018-10-02 19:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.87 Mbit/s
95th percentile per-packet one-way delay: 62.771 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.87 Mbit/s
95th percentile per-packet one-way delay: 62.771 ms
Loss rate: 0.00%
```

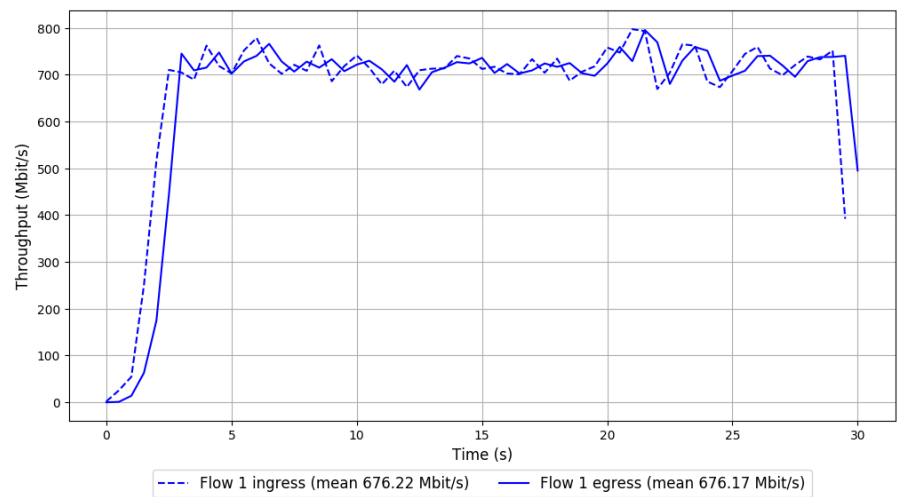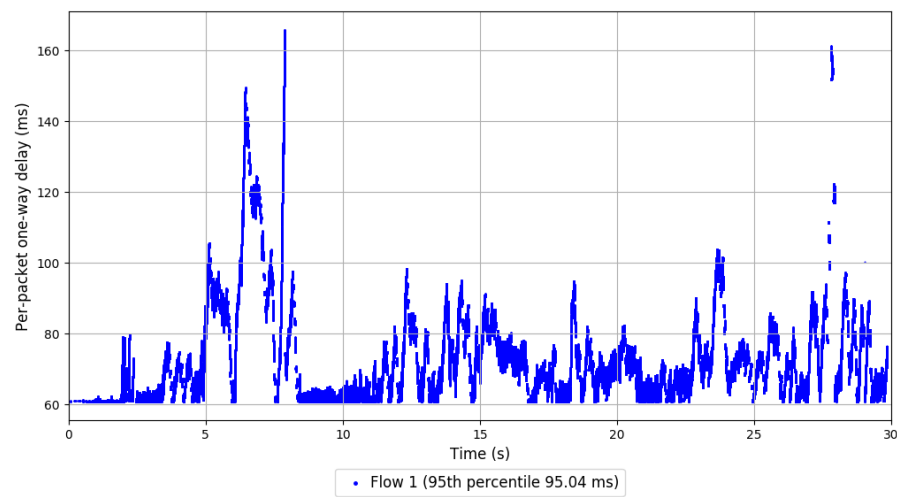Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-02 16:56:48
End at: 2018-10-02 16:57:18
Local clock offset: -0.027 ms
Remote clock offset: 1.118 ms

# Below is generated by plot.py at 2018-10-02 19:54:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 676.17 Mbit/s
95th percentile per-packet one-way delay: 87.622 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 676.17 Mbit/s
95th percentile per-packet one-way delay: 87.622 ms
Loss rate: 0.01%
```
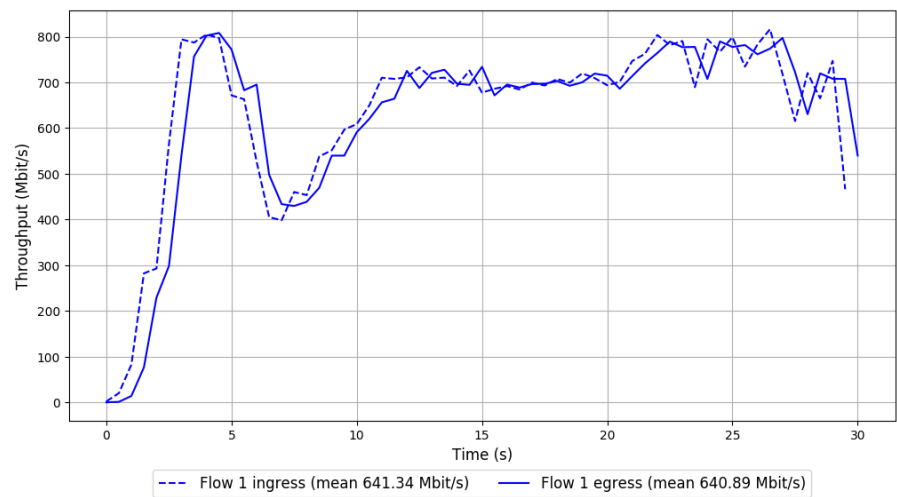
Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-02 17:22:37
End at: 2018-10-02 17:23:07
Local clock offset: -0.307 ms
Remote clock offset: -0.227 ms


# Below is generated by plot.py at 2018-10-02 19:54:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 640.89 Mbit/s
95th percentile per-packet one-way delay: 95.037 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 640.89 Mbit/s
95th percentile per-packet one-way delay: 95.037 ms
Loss rate: 0.07%
```

Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-02 17:48:15
End at: 2018-10-02 17:48:45
Local clock offset: -0.427 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-10-02 19:54:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 703.30 Mbit/s
95th percentile per-packet one-way delay: 90.199 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 703.30 Mbit/s
95th percentile per-packet one-way delay: 90.199 ms
Loss rate: 0.10%
```
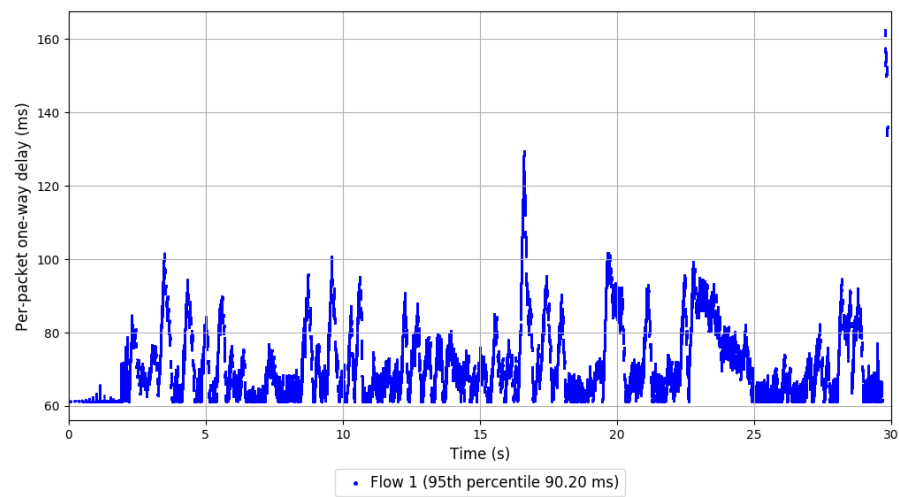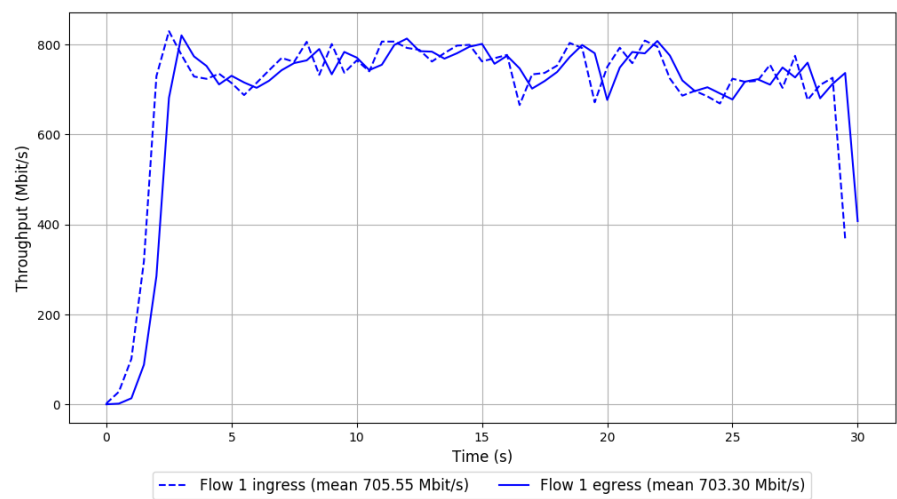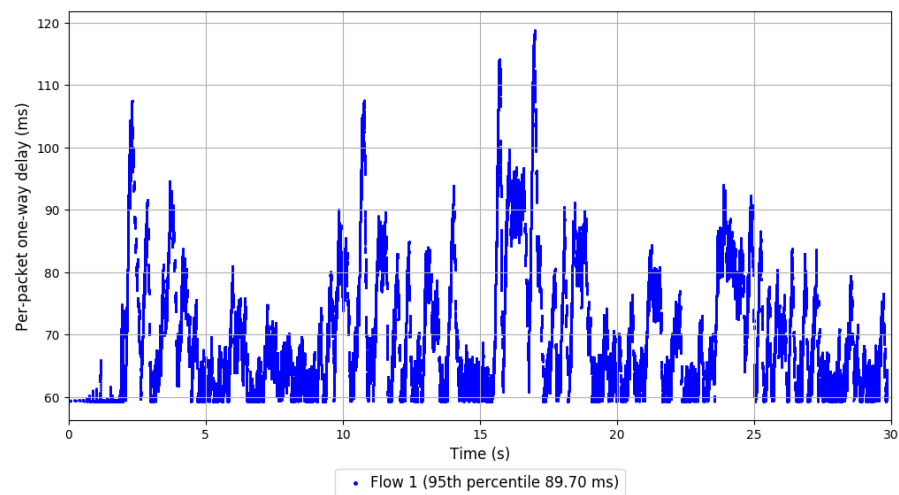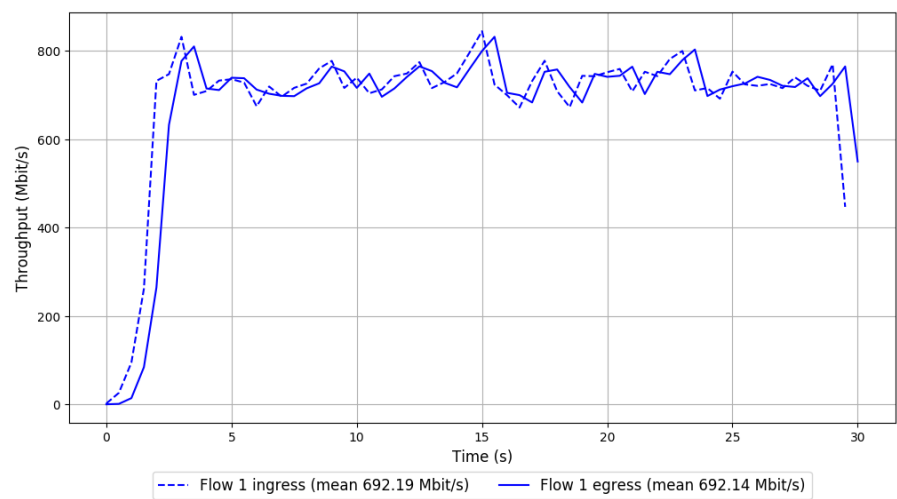
Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-02 18:13:54
End at: 2018-10-02 18:14:24
Local clock offset: -0.551 ms
Remote clock offset: -1.439 ms


# Below is generated by plot.py at 2018-10-02 19:54:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 692.14 Mbit/s
95th percentile per-packet one-way delay: 89.700 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 692.14 Mbit/s
95th percentile per-packet one-way delay: 89.700 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-02 18:39:34
End at: 2018-10-02 18:40:04
Local clock offset: -0.631 ms
Remote clock offset: 0.075 ms


# Below is generated by plot.py at 2018-10-02 19:55:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 656.99 Mbit/s
95th percentile per-packet one-way delay: 91.328 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 656.99 Mbit/s
95th percentile per-packet one-way delay: 91.328 ms
Loss rate: 0.07%
```
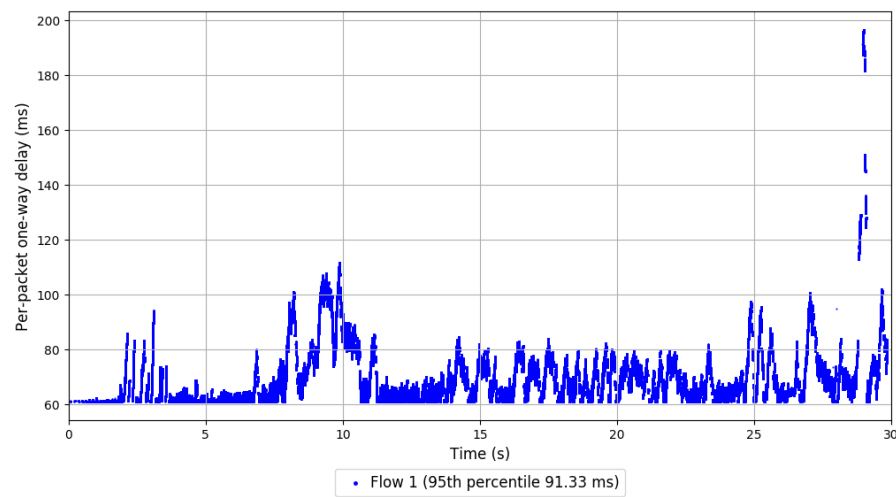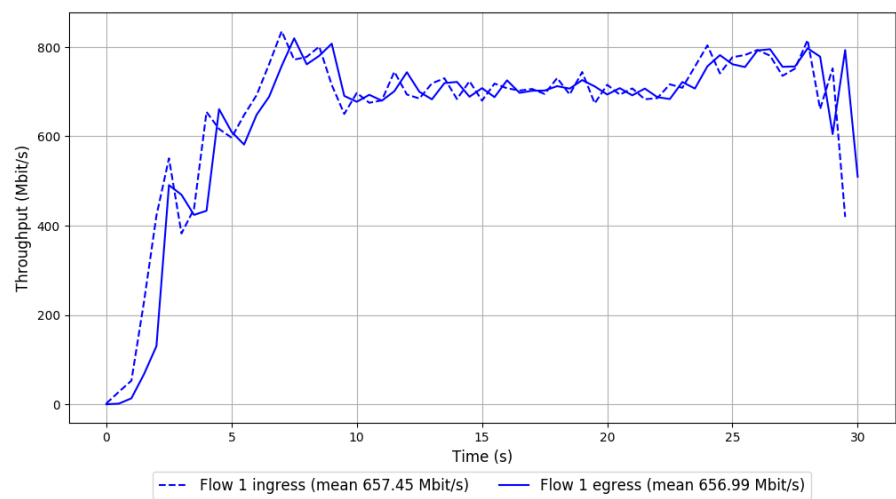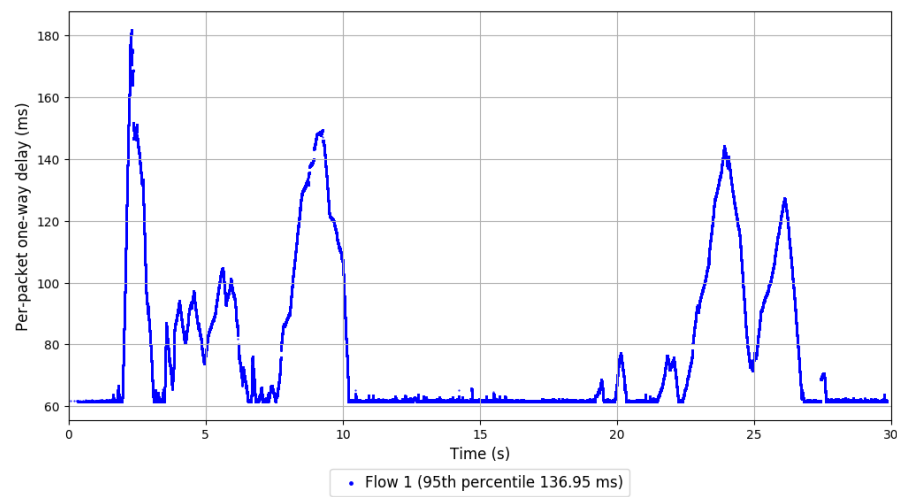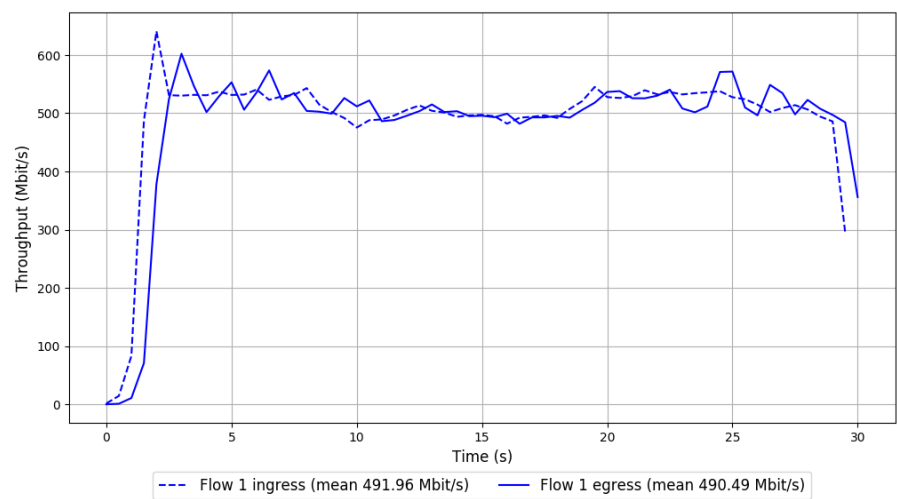
Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-02 16:49:59
End at: 2018-10-02 16:50:29
Local clock offset: -0.032 ms
Remote clock offset: 0.488 ms


# Below is generated by plot.py at 2018-10-02 20:02:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 490.49 Mbit/s
95th percentile per-packet one-way delay: 136.949 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 490.49 Mbit/s
95th percentile per-packet one-way delay: 136.949 ms
Loss rate: 0.30%
```
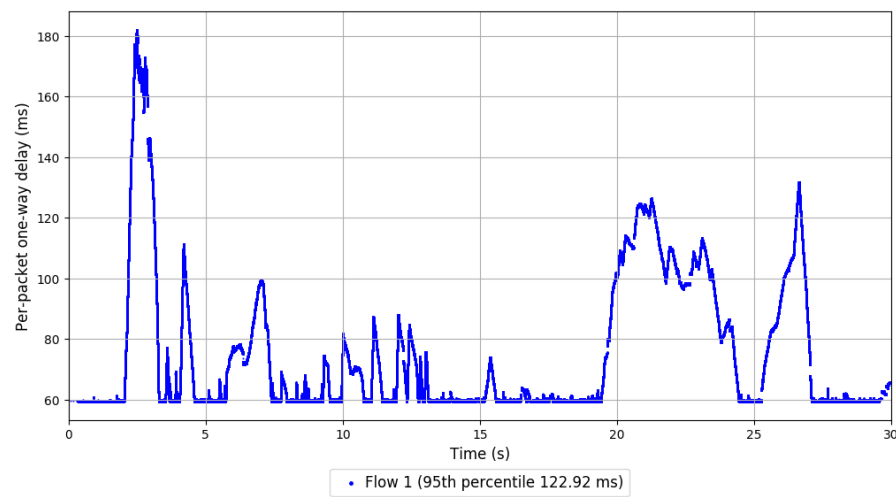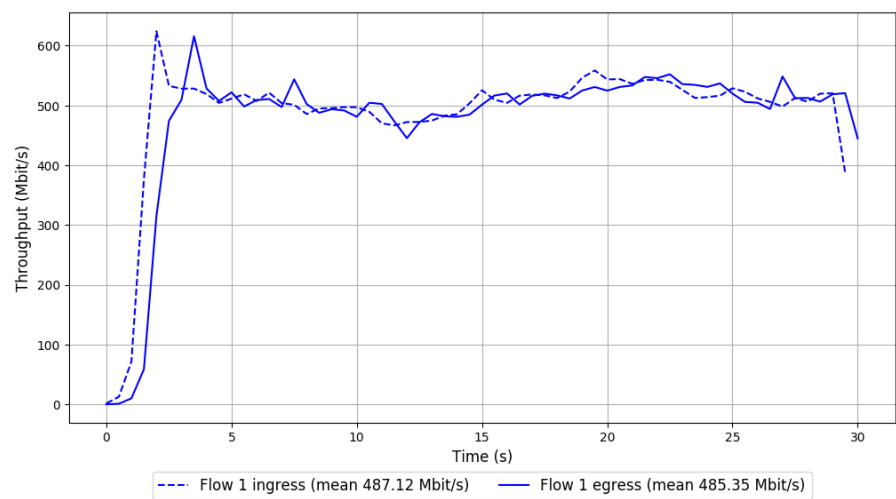
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-02 17:15:48
End at: 2018-10-02 17:16:18
Local clock offset: -0.218 ms
Remote clock offset: -1.466 ms


# Below is generated by plot.py at 2018-10-02 20:02:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 485.35 Mbit/s
95th percentile per-packet one-way delay: 122.915 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 485.35 Mbit/s
95th percentile per-packet one-way delay: 122.915 ms
Loss rate: 0.36%
```

Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-02 17:41:31
End at: 2018-10-02 17:42:01
Local clock offset: -0.36 ms
Remote clock offset: 1.032 ms


# Below is generated by plot.py at 2018-10-02 20:03:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 482.64 Mbit/s
95th percentile per-packet one-way delay: 172.100 ms
Loss rate: 4.13%
-- Flow 1:
Average throughput: 482.64 Mbit/s
95th percentile per-packet one-way delay: 172.100 ms
Loss rate: 4.13%
```
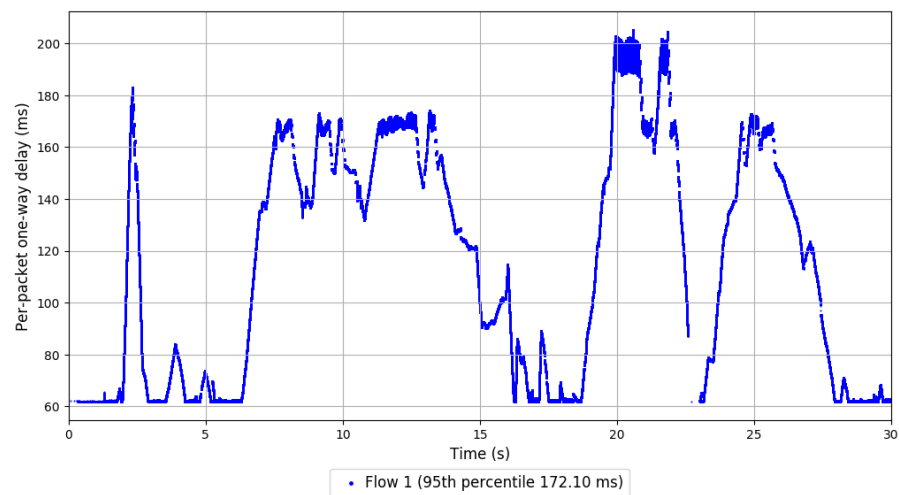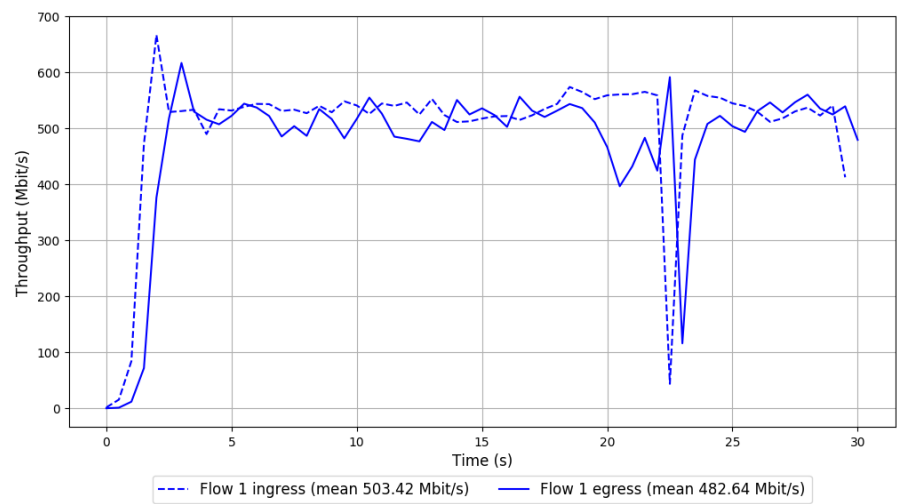
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 503.42 Mbit/s)   Flow 1 egress (mean 482.64 Mbit/s)

Flow 1 (95th percentile 172.10 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-02 18:07:10
End at: 2018-10-02 18:07:40
Local clock offset: -0.486 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-10-02 20:12:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 432.68 Mbit/s
95th percentile per-packet one-way delay: 184.527 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 432.68 Mbit/s
95th percentile per-packet one-way delay: 184.527 ms
Loss rate: 2.52%
```
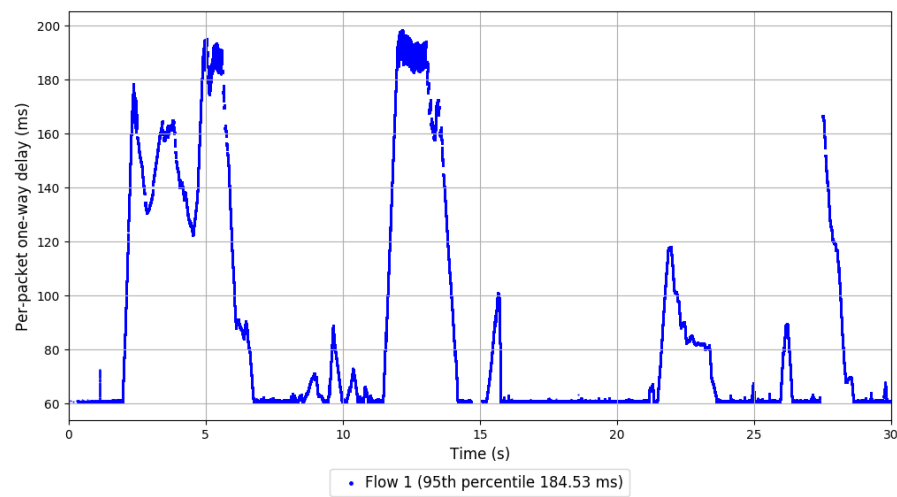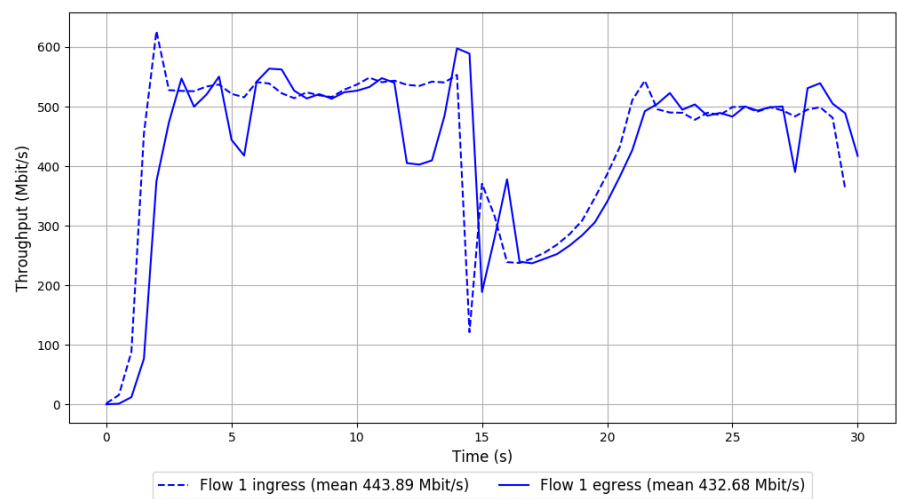
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 443.89 Mbit/s) ——— Flow 1 egress (mean 432.68 Mbit/s)
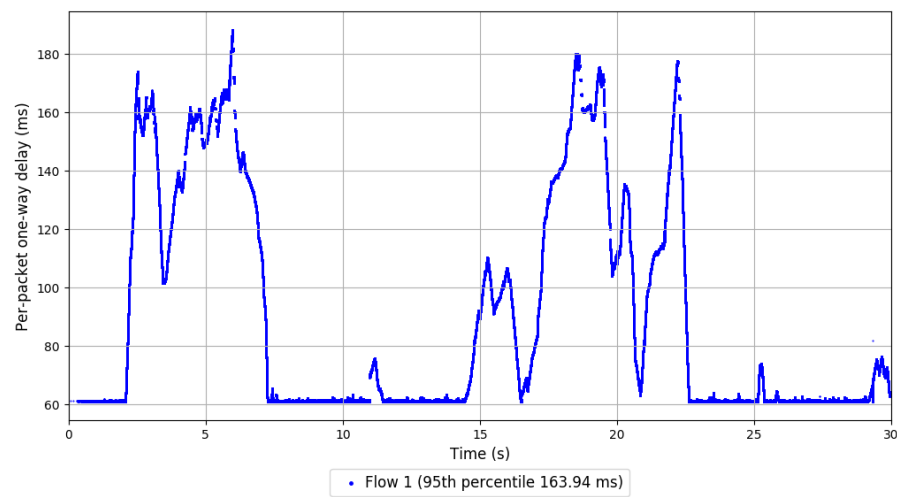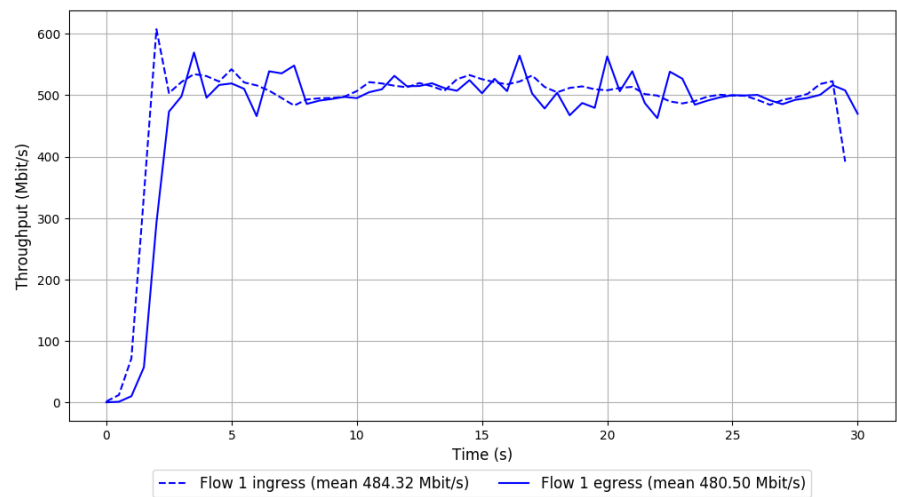

• Flow 1 (95th percentile 184.53 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-02 18:32:50
End at: 2018-10-02 18:33:20
Local clock offset: -0.685 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-10-02 20:15:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 480.50 Mbit/s
95th percentile per-packet one-way delay: 163.940 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 480.50 Mbit/s
95th percentile per-packet one-way delay: 163.940 ms
Loss rate: 0.79%
```

Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 484.32 Mbit/s)　　Flow 1 egress (mean 480.50 Mbit/s)
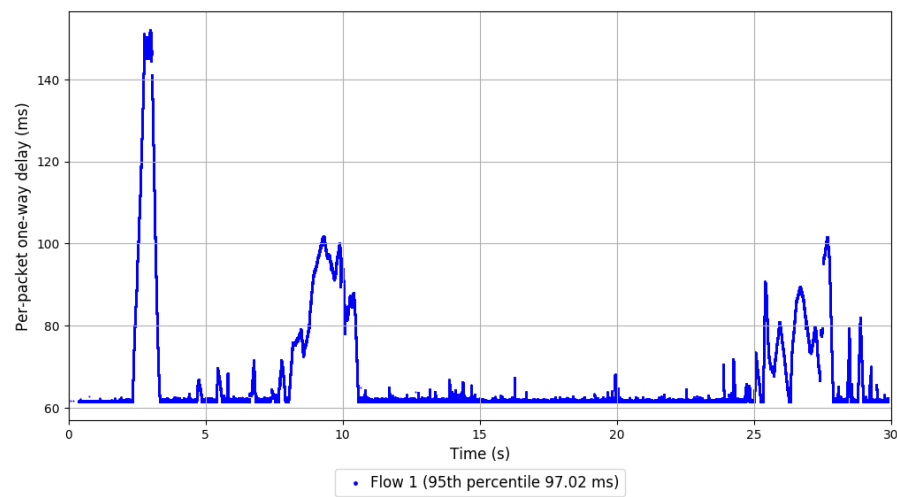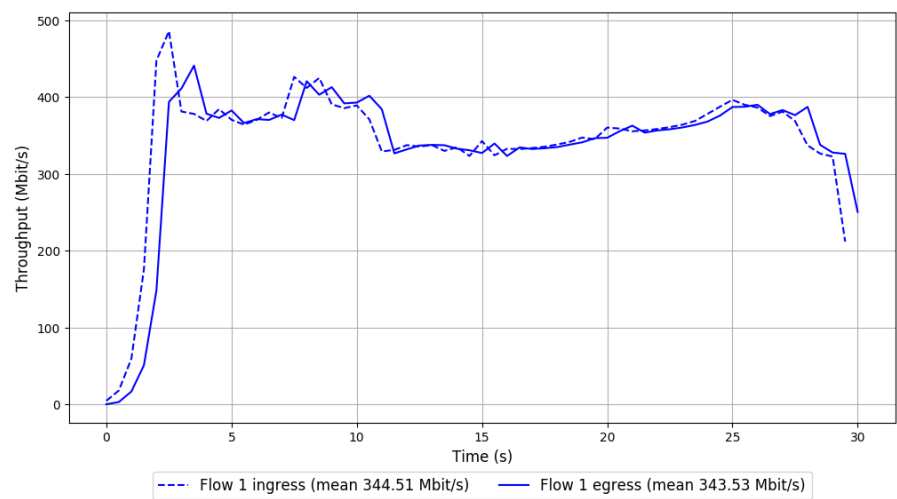

Flow 1 (95th percentile 163.94 ms)

94

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-02 17:00:08
End at: 2018-10-02 17:00:38
Local clock offset: -0.056 ms
Remote clock offset: 0.587 ms

# Below is generated by plot.py at 2018-10-02 20:15:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 343.53 Mbit/s
95th percentile per-packet one-way delay: 97.015 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 343.53 Mbit/s
95th percentile per-packet one-way delay: 97.015 ms
Loss rate: 0.29%
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-02 17:25:52
End at: 2018-10-02 17:26:22
Local clock offset: -0.279 ms
Remote clock offset: 0.175 ms


# Below is generated by plot.py at 2018-10-02 20:15:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 329.32 Mbit/s
95th percentile per-packet one-way delay: 152.088 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 329.32 Mbit/s
95th percentile per-packet one-way delay: 152.088 ms
Loss rate: 1.77%
```
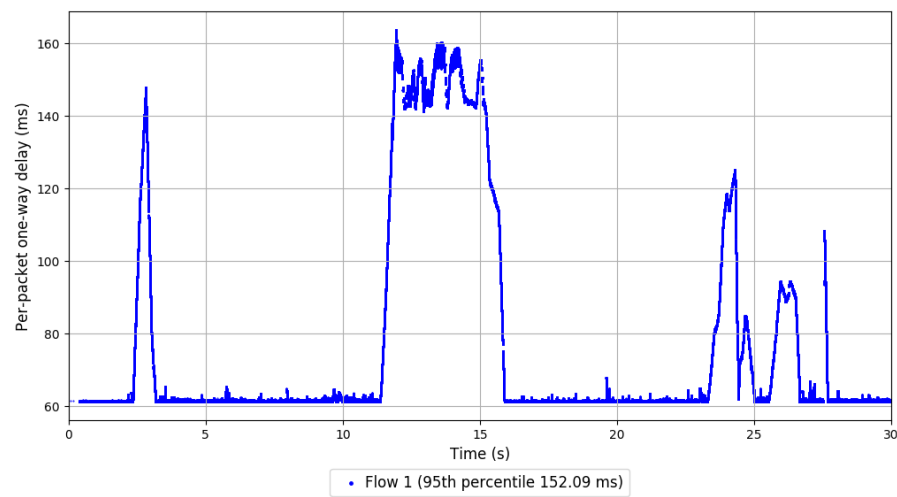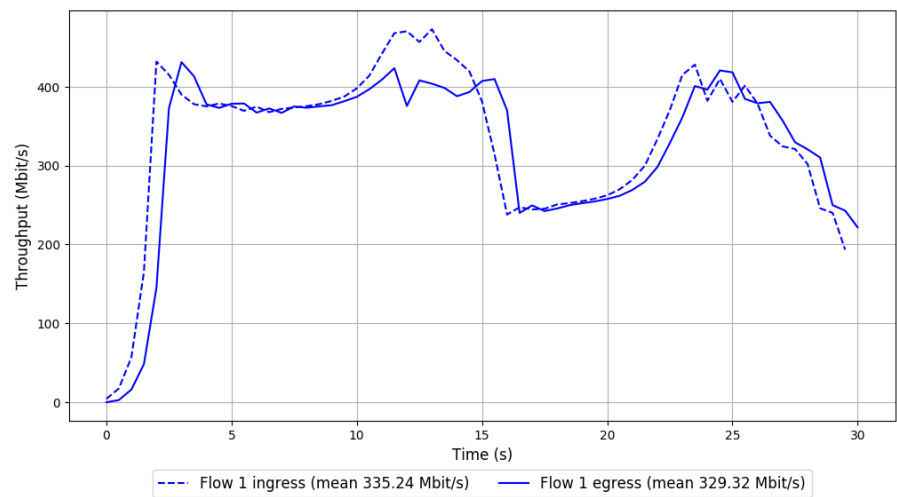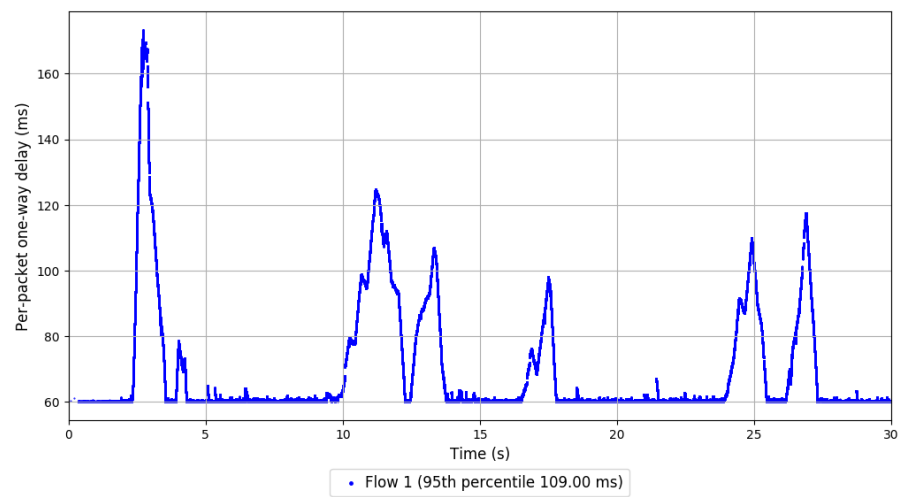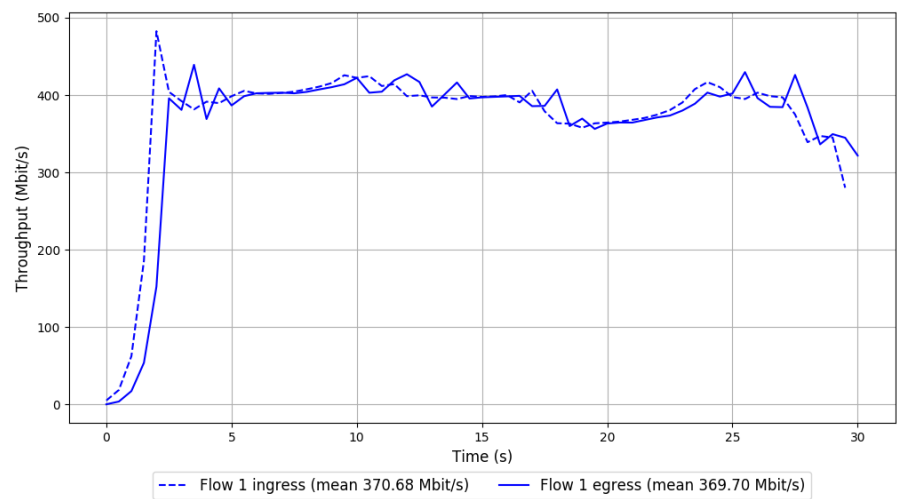
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-02 17:51:31
End at: 2018-10-02 17:52:01
Local clock offset: -0.425 ms
Remote clock offset: -0.868 ms

# Below is generated by plot.py at 2018-10-02 20:15:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 369.70 Mbit/s
95th percentile per-packet one-way delay: 108.999 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 369.70 Mbit/s
95th percentile per-packet one-way delay: 108.999 ms
Loss rate: 0.26%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 370.68 Mbit/s)   Flow 1 egress (mean 369.70 Mbit/s)

Flow 1 (95th percentile 109.00 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-02 18:17:11
End at: 2018-10-02 18:17:41
Local clock offset: -0.55 ms
Remote clock offset: 0.022 ms


# Below is generated by plot.py at 2018-10-02 20:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 307.00 Mbit/s
95th percentile per-packet one-way delay: 146.598 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 307.00 Mbit/s
95th percentile per-packet one-way delay: 146.598 ms
Loss rate: 0.65%
```
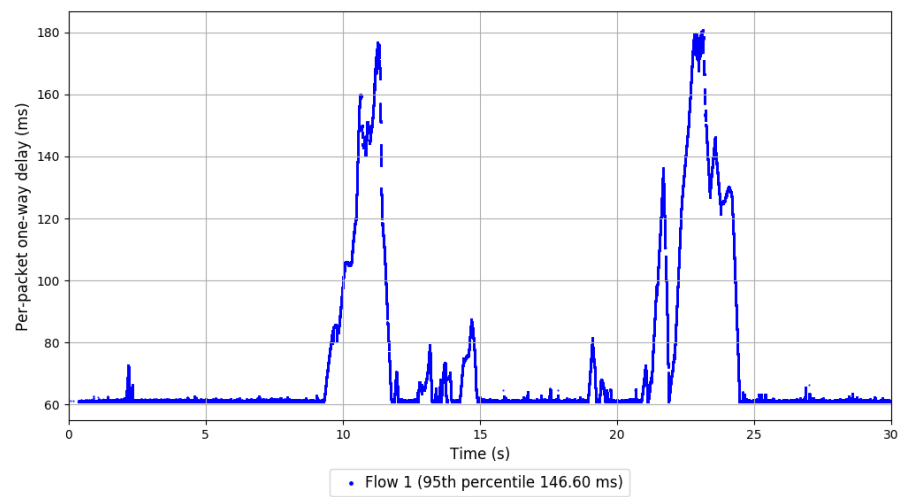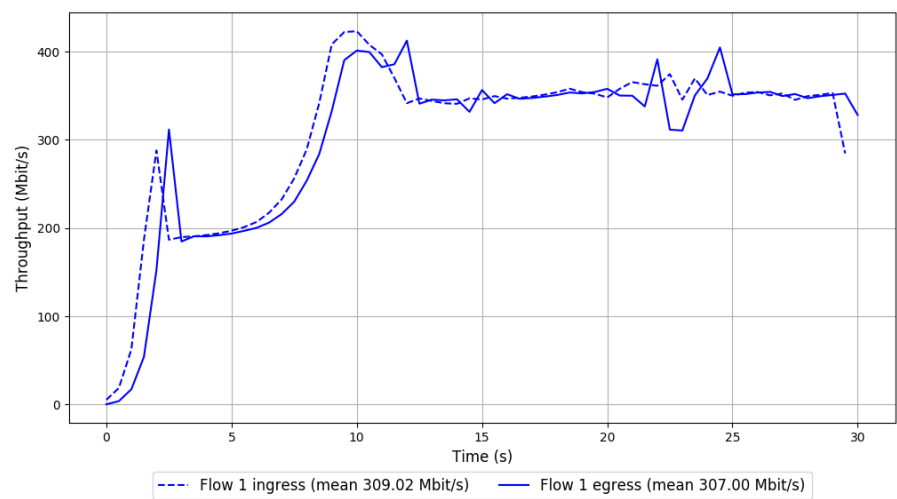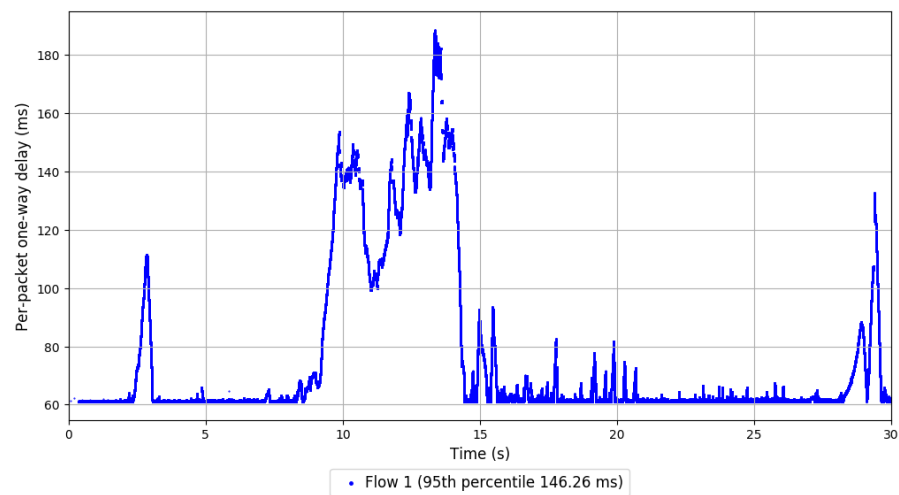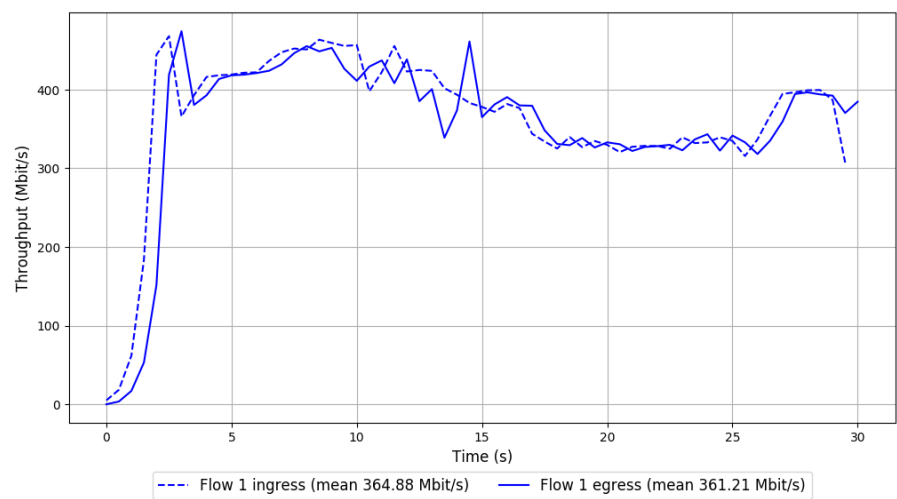
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-02 18:42:49
End at: 2018-10-02 18:43:19
Local clock offset: -0.729 ms
Remote clock offset: -0.121 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 361.21 Mbit/s
95th percentile per-packet one-way delay: 146.264 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 361.21 Mbit/s
95th percentile per-packet one-way delay: 146.264 ms
Loss rate: 1.01%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 364.88 Mbit/s)   Flow 1 egress (mean 361.21 Mbit/s)

Flow 1 (95th percentile 146.26 ms)
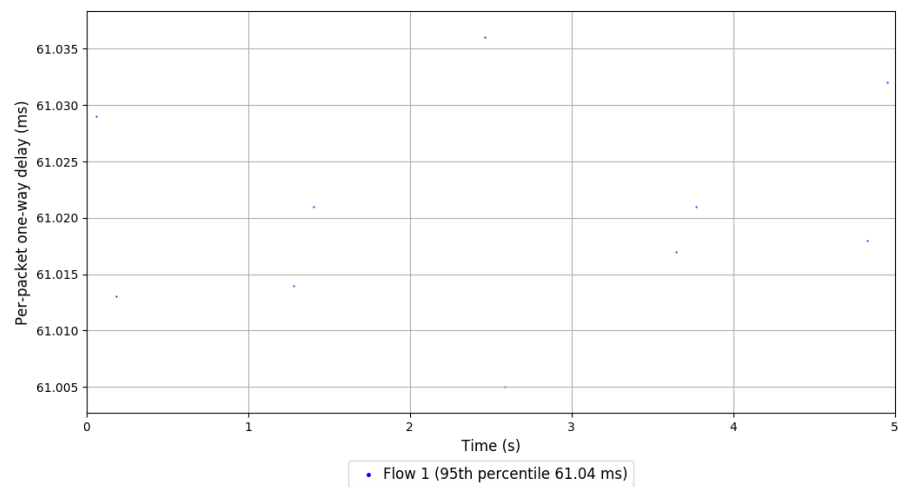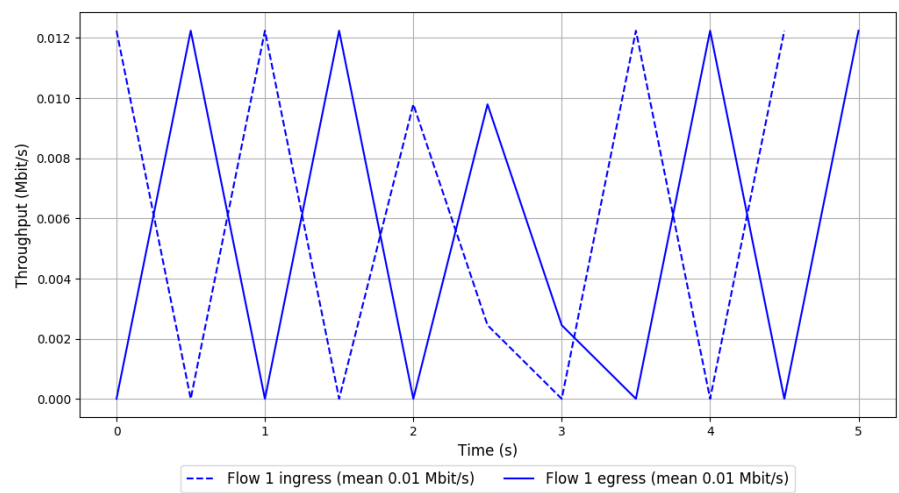
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-02 16:39:16
End at: 2018-10-02 16:39:46
Local clock offset: -0.033 ms
Remote clock offset: -0.079 ms
```

Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-02 17:05:03
End at: 2018-10-02 17:05:33
Local clock offset: -0.017 ms
Remote clock offset: -0.168 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.31 Mbit/s
95th percentile per-packet one-way delay: 60.846 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.31 Mbit/s
95th percentile per-packet one-way delay: 60.846 ms
Loss rate: 0.00%
```
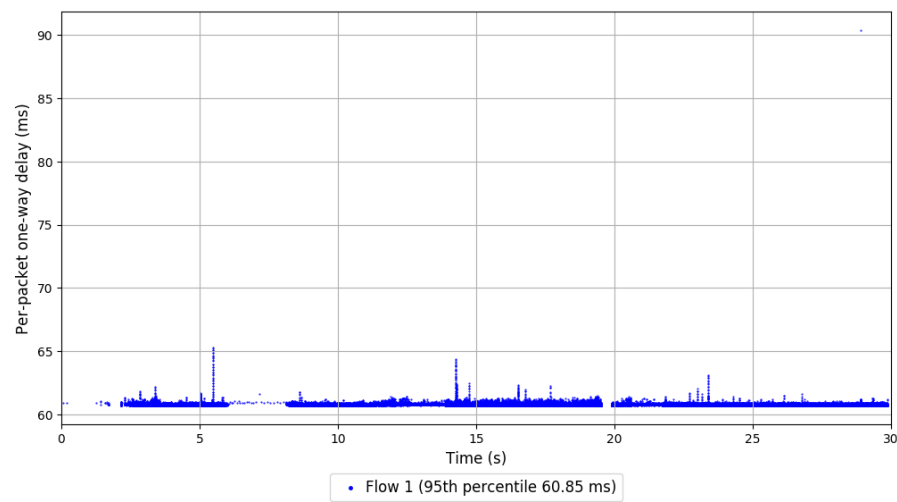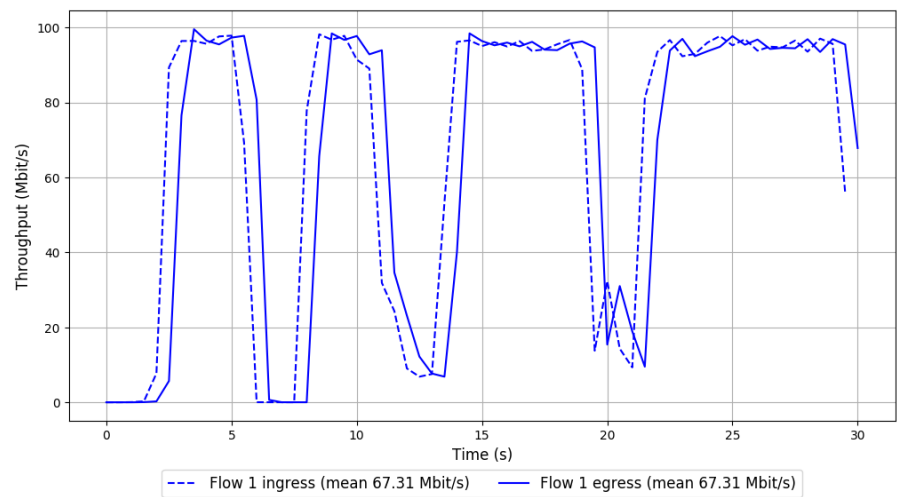
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-02 17:30:38
End at: 2018-10-02 17:31:08
Local clock offset: -0.346 ms
Remote clock offset: -0.226 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.80 Mbit/s
95th percentile per-packet one-way delay: 60.845 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.80 Mbit/s
95th percentile per-packet one-way delay: 60.845 ms
Loss rate: 0.00%
```
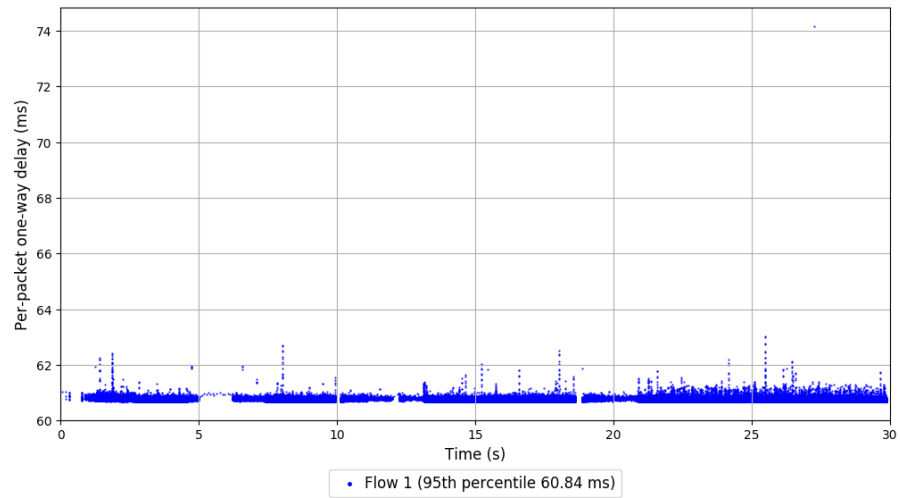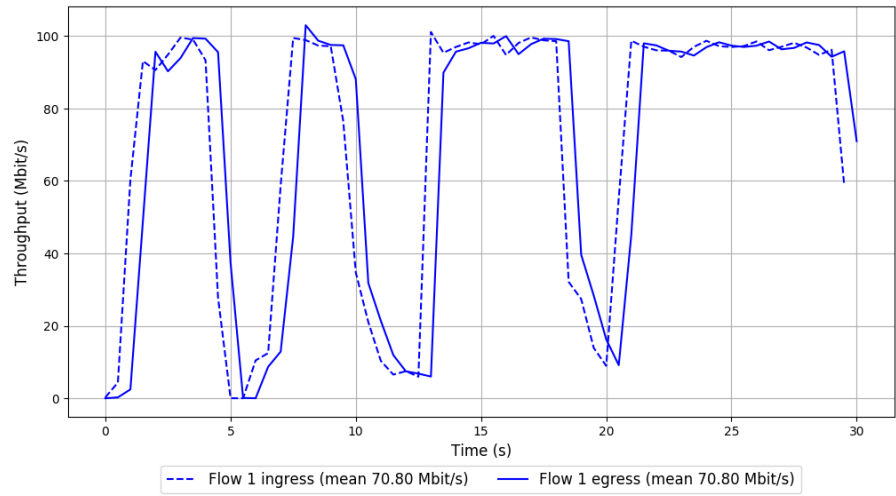
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-02 17:56:33
End at: 2018-10-02 17:57:03
Local clock offset: -0.451 ms
Remote clock offset: 0.035 ms

# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.95 Mbit/s
95th percentile per-packet one-way delay: 61.204 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 78.95 Mbit/s
95th percentile per-packet one-way delay: 61.204 ms
Loss rate: 0.00%
```
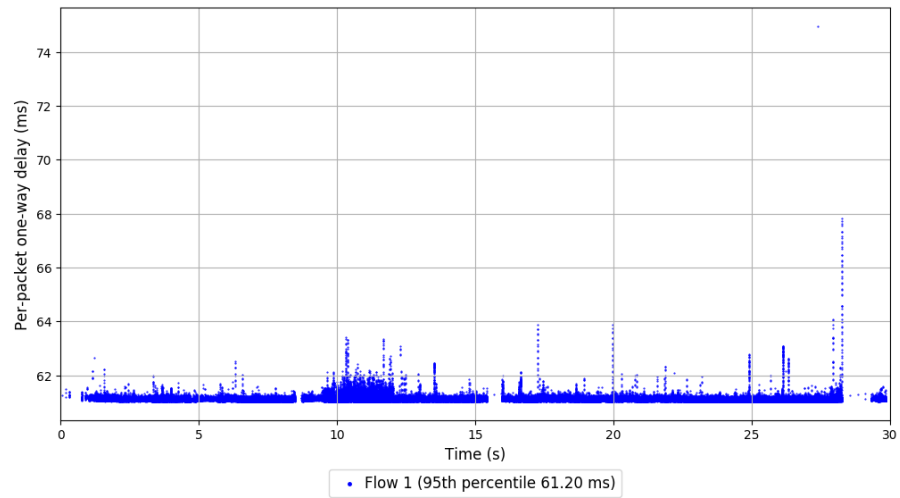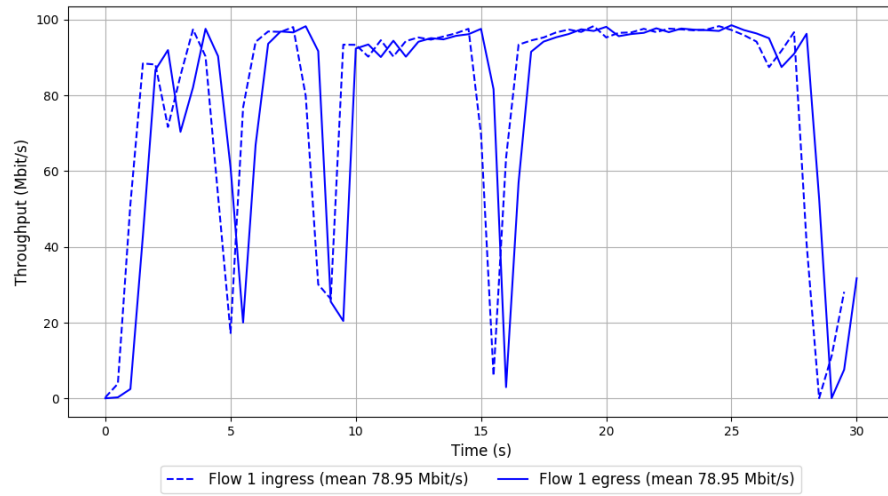
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 78.95 Mbit/s) — Flow 1 egress (mean 78.95 Mbit/s)

Flow 1 (95th percentile 61.20 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-02 18:22:00
End at: 2018-10-02 18:22:30
Local clock offset: -0.577 ms
Remote clock offset: 0.44 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.86 Mbit/s
95th percentile per-packet one-way delay: 61.355 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.86 Mbit/s
95th percentile per-packet one-way delay: 61.355 ms
Loss rate: 0.00%
```
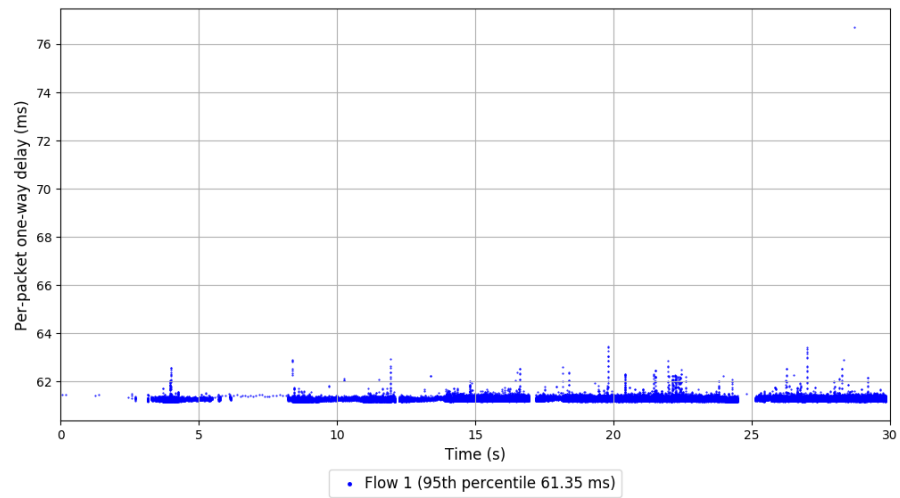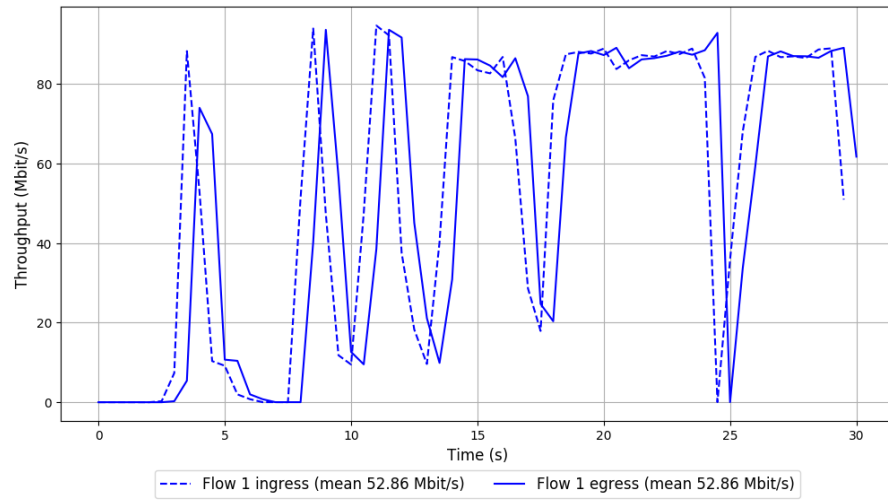
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 52.86 Mbit/s) ---- Flow 1 egress (mean 52.86 Mbit/s) ——
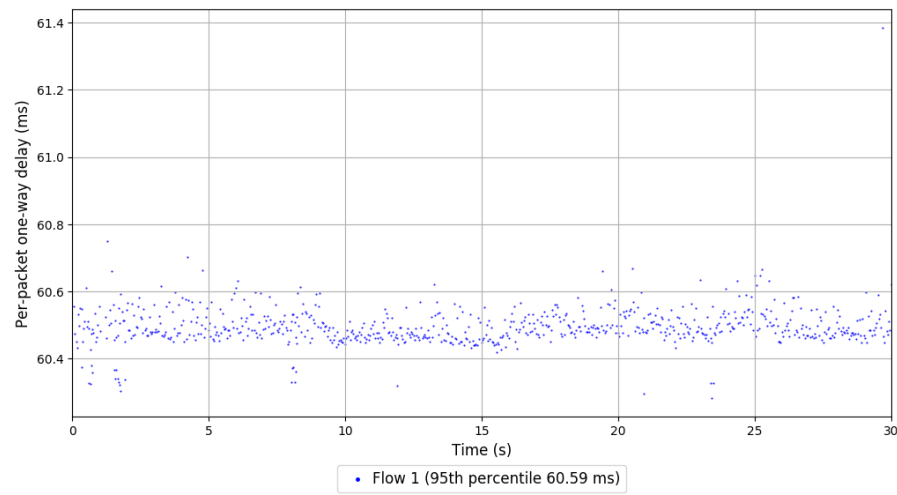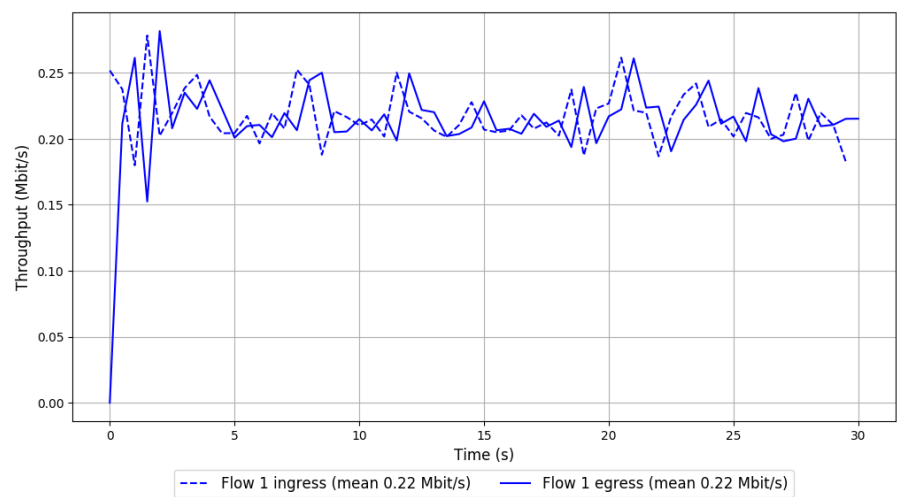

Flow 1 (95th percentile 61.35 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-10-02 16:54:15
End at: 2018-10-02 16:54:45
Local clock offset: -0.055 ms
Remote clock offset: -0.69 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.585 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.585 ms
Loss rate: 0.00%
```

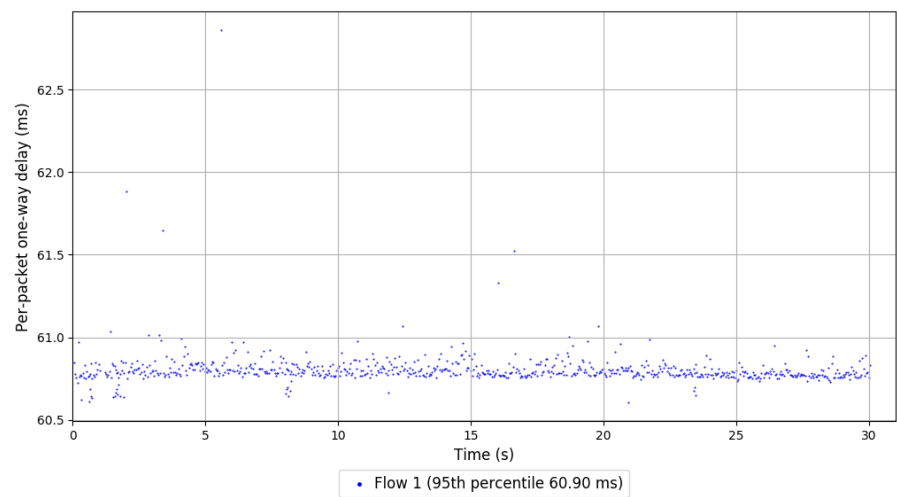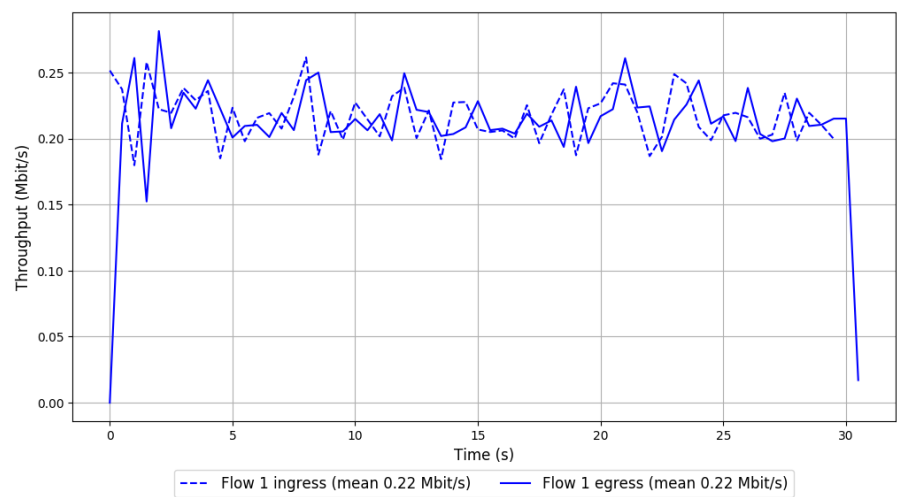Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-10-02 17:20:03
End at: 2018-10-02 17:20:33
Local clock offset: -0.165 ms
Remote clock offset: -0.469 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.899 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.899 ms
Loss rate: 0.00%
```

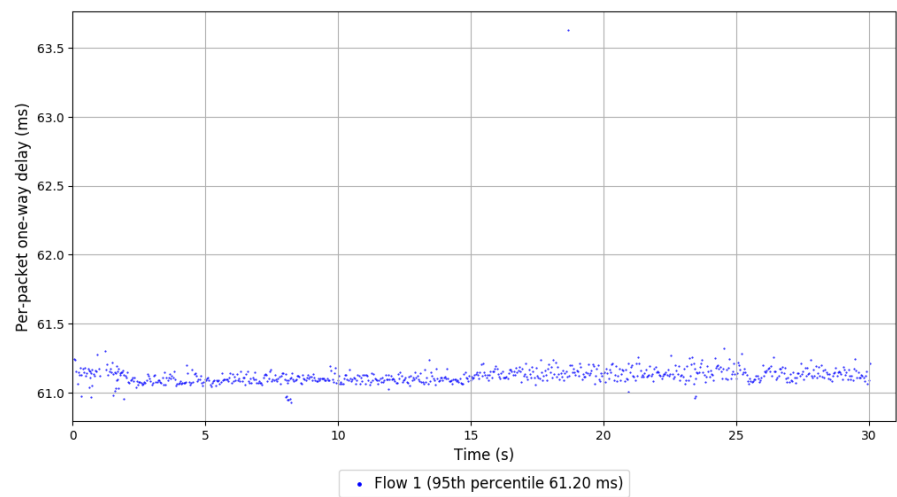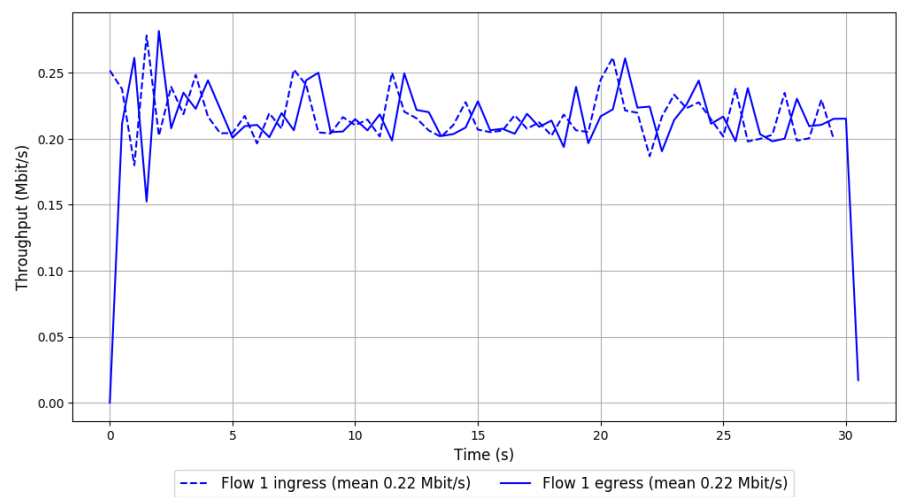Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-02 17:45:42
End at: 2018-10-02 17:46:12
Local clock offset: -0.41 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.203 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.203 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

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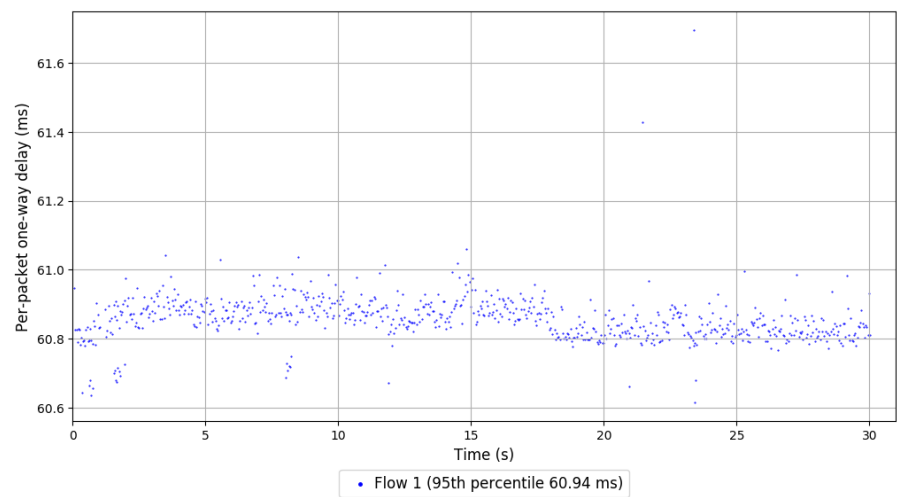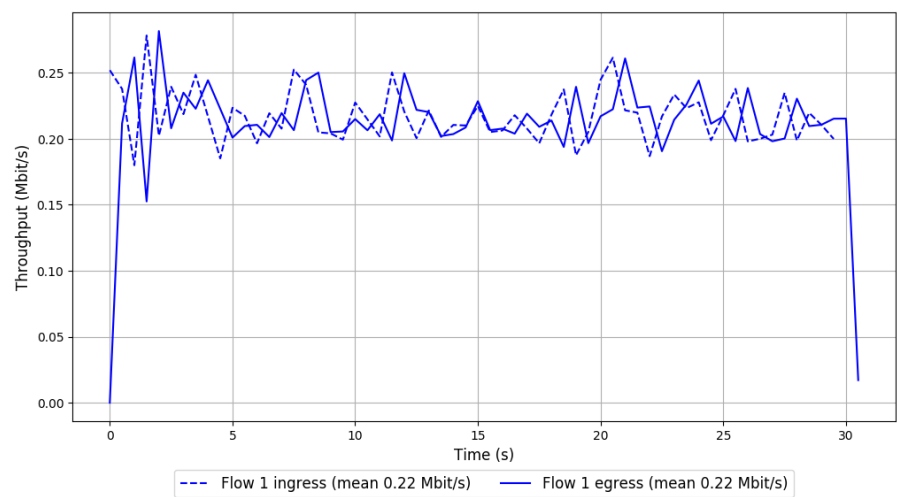

Flow 1 (95th percentile 61.20 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-10-02 18:11:21
End at: 2018-10-02 18:11:51
Local clock offset: -0.5 ms
Remote clock offset: -0.121 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.944 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.944 ms
Loss rate: 0.00%
```

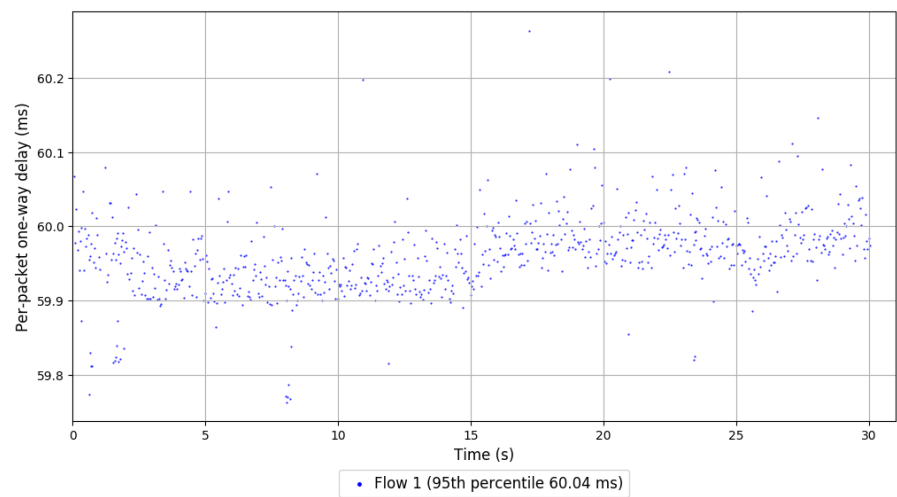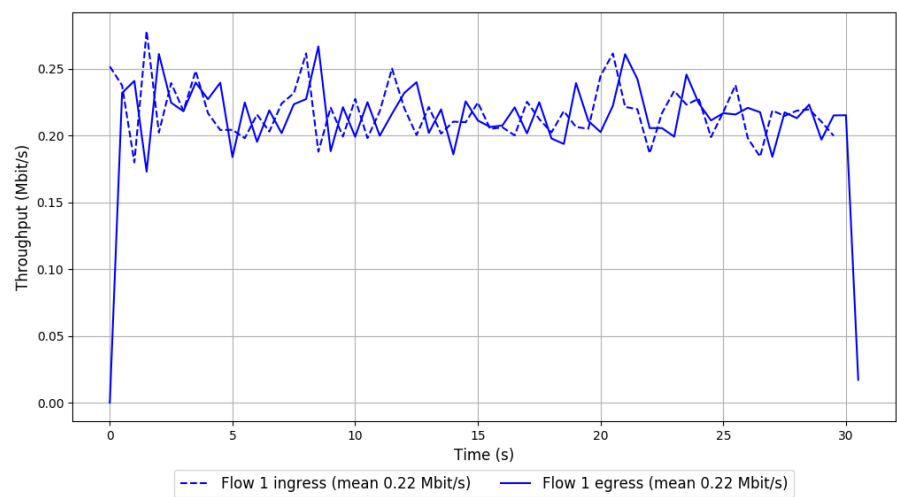Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-02 18:37:01
End at: 2018-10-02 18:37:31
Local clock offset: -0.622 ms
Remote clock offset: -1.149 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.044 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.044 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

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

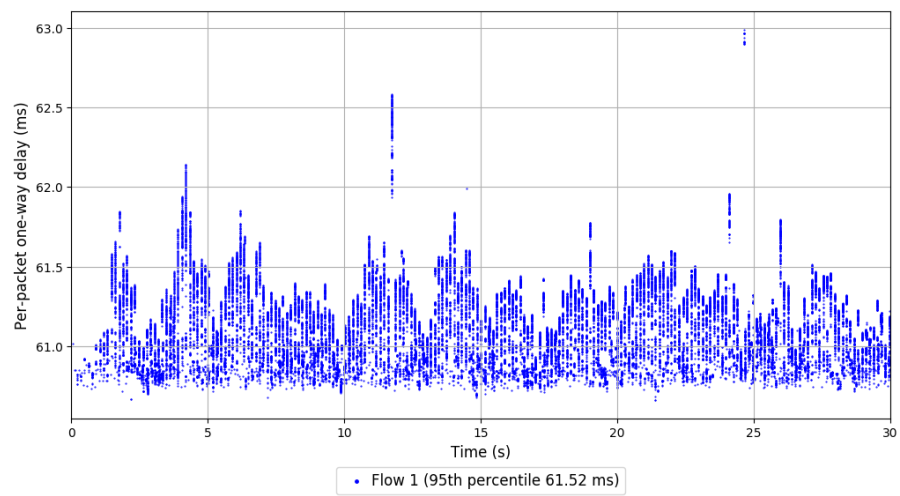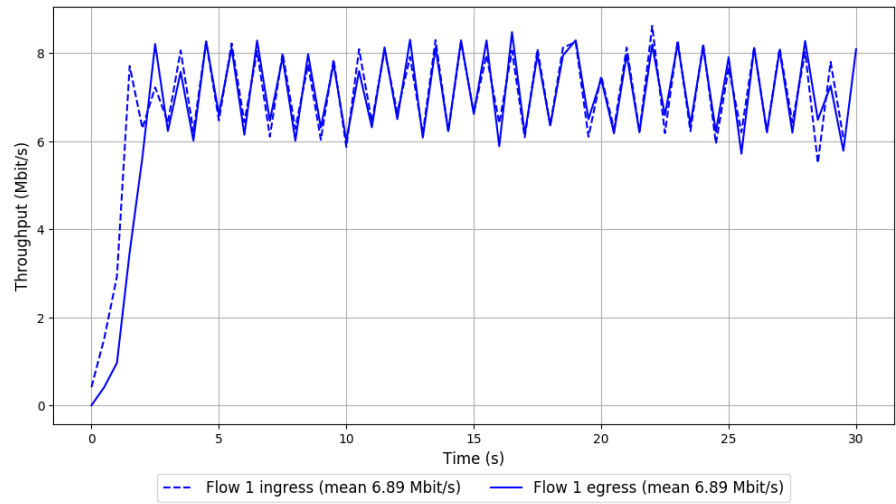
Flow 1 (95th percentile 60.04 ms)

```
Run 1: Statistics of Sprout

Start at: 2018-10-02 16:51:38
End at: 2018-10-02 16:52:08
Local clock offset: -0.031 ms
Remote clock offset: -0.288 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 61.524 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 61.524 ms
Loss rate: 0.00%
```

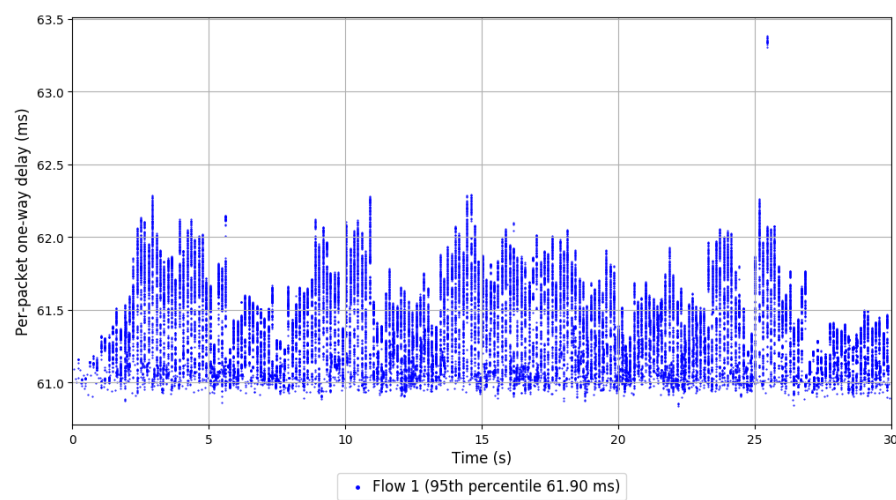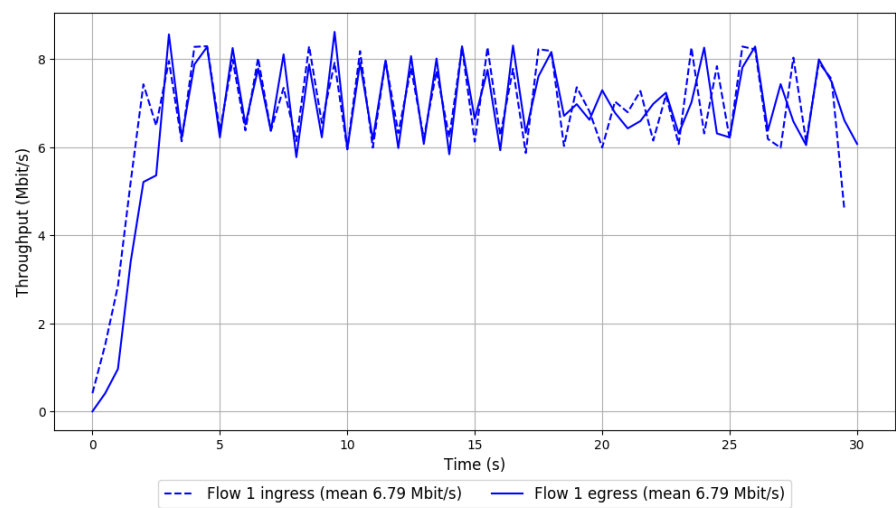Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-10-02 17:17:26
End at: 2018-10-02 17:17:56
Local clock offset: -0.193 ms
Remote clock offset: -0.215 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 61.903 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 61.903 ms
Loss rate: 0.00%
```
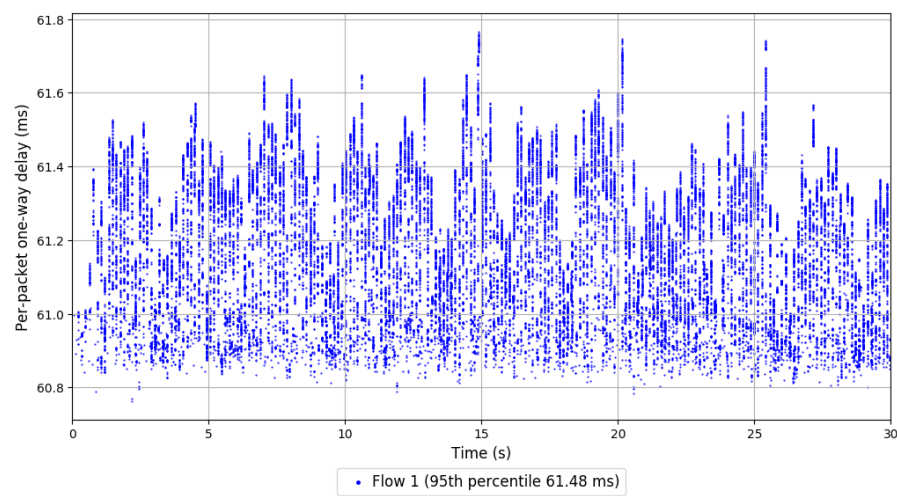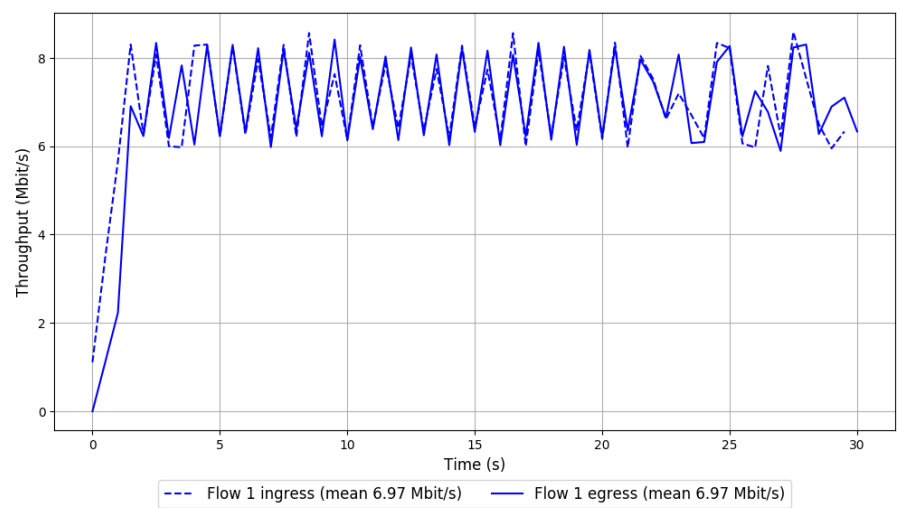
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-02 17:43:09
End at: 2018-10-02 17:43:39
Local clock offset: -0.421 ms
Remote clock offset: -0.204 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.97 Mbit/s
95th percentile per-packet one-way delay: 61.483 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.97 Mbit/s
95th percentile per-packet one-way delay: 61.483 ms
Loss rate: 0.00%
```
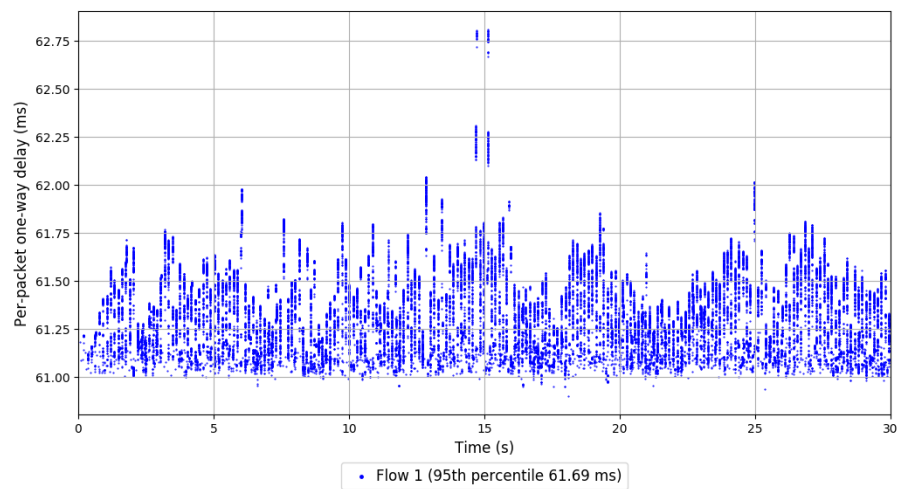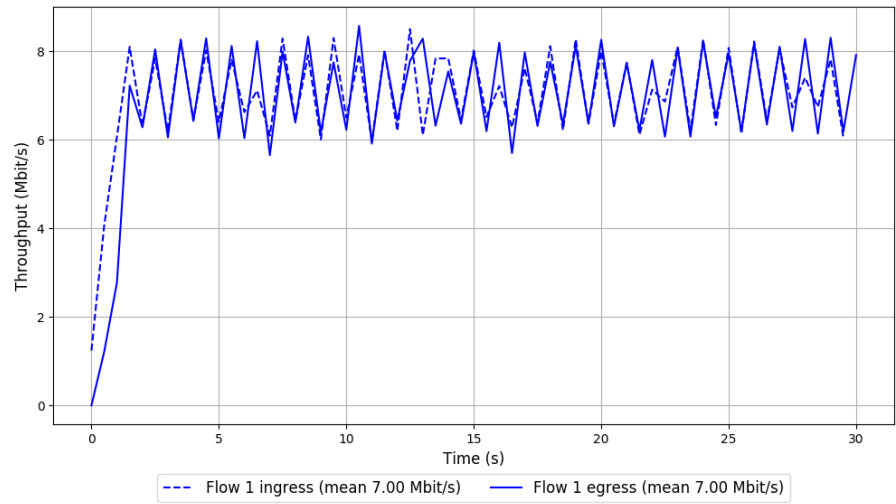
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-02 18:08:44
End at: 2018-10-02 18:09:14
Local clock offset: -0.522 ms
Remote clock offset: 0.141 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.00 Mbit/s
95th percentile per-packet one-way delay: 61.693 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.00 Mbit/s
95th percentile per-packet one-way delay: 61.693 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 7.00 Mbit/s) —— Flow 1 egress (mean 7.00 Mbit/s)

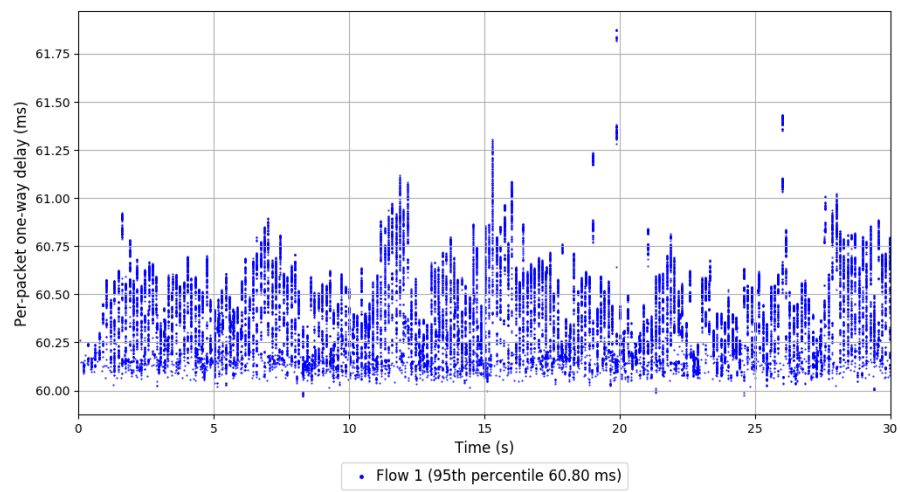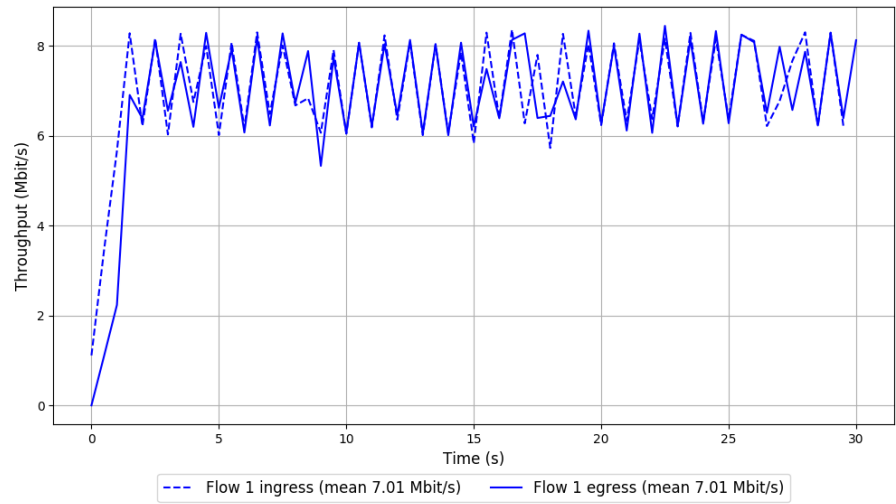
• Flow 1 (95th percentile 61.69 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-10-02 18:34:27
End at: 2018-10-02 18:34:57
Local clock offset: -0.637 ms
Remote clock offset: -0.851 ms


# Below is generated by plot.py at 2018-10-02 20:18:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: 60.796 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: 60.796 ms
Loss rate: 0.00%
```

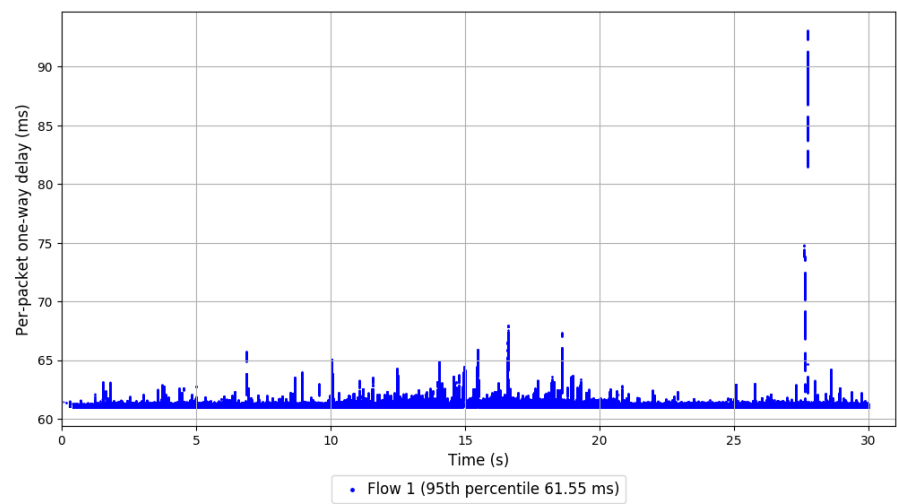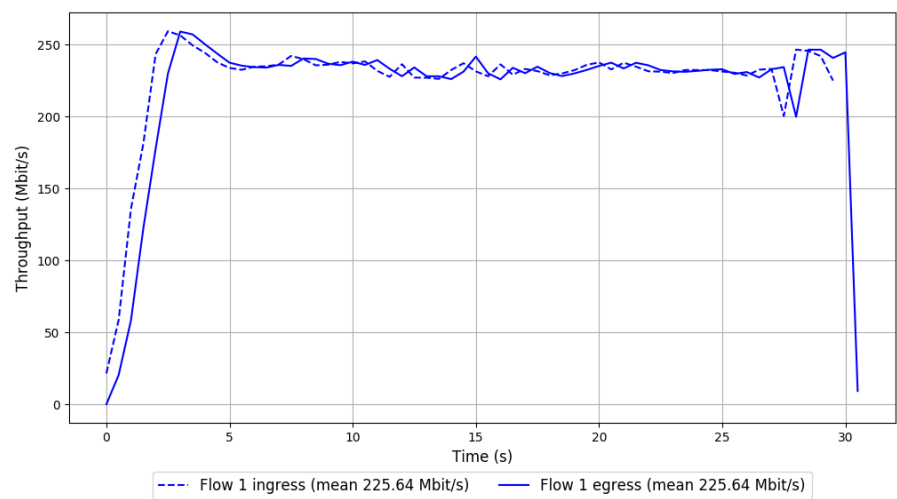## Run 5: Report of Sprout — Data Link

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

Start at: 2018-10-02 16:41:30
End at: 2018-10-02 16:42:00
Local clock offset: -0.012 ms
Remote clock offset: -0.017 ms


# Below is generated by plot.py at 2018-10-02 20:20:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 225.64 Mbit/s
95th percentile per-packet one-way delay: 61.546 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 225.64 Mbit/s
95th percentile per-packet one-way delay: 61.546 ms
Loss rate: 0.00%
```

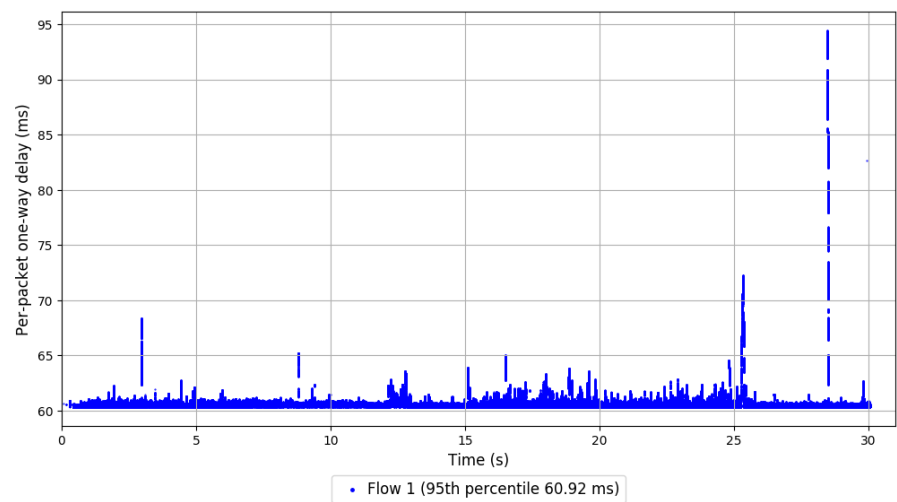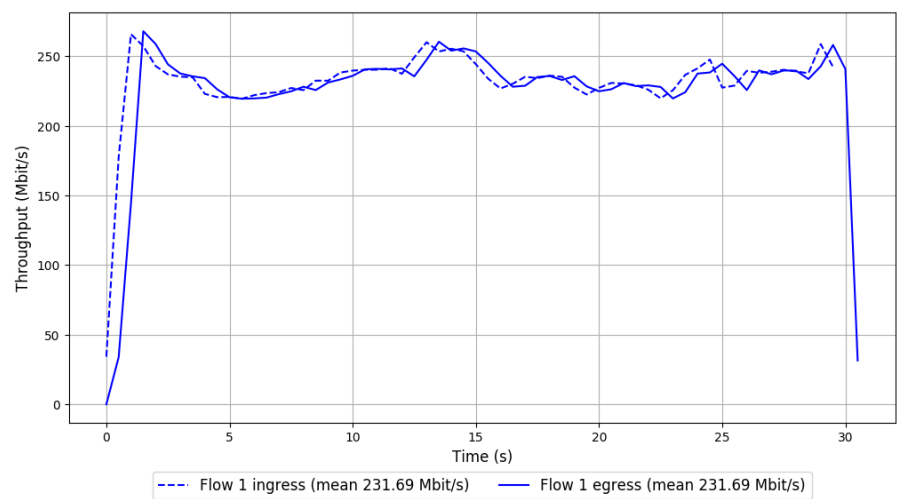Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-02 17:07:21
End at: 2018-10-02 17:07:51
Local clock offset: -0.027 ms
Remote clock offset: -0.519 ms


# Below is generated by plot.py at 2018-10-02 20:20:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.69 Mbit/s
95th percentile per-packet one-way delay: 60.916 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 231.69 Mbit/s
95th percentile per-packet one-way delay: 60.916 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 231.69 Mbit/s)   Flow 1 egress (mean 231.69 Mbit/s)

• Flow 1 (95th percentile 60.92 ms)

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

Start at: 2018-10-02 17:32:56
End at: 2018-10-02 17:33:26
Local clock offset: -0.35 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2018-10-02 20:20:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 230.75 Mbit/s
95th percentile per-packet one-way delay: 61.066 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 230.75 Mbit/s
95th percentile per-packet one-way delay: 61.066 ms
Loss rate: 0.00%
```
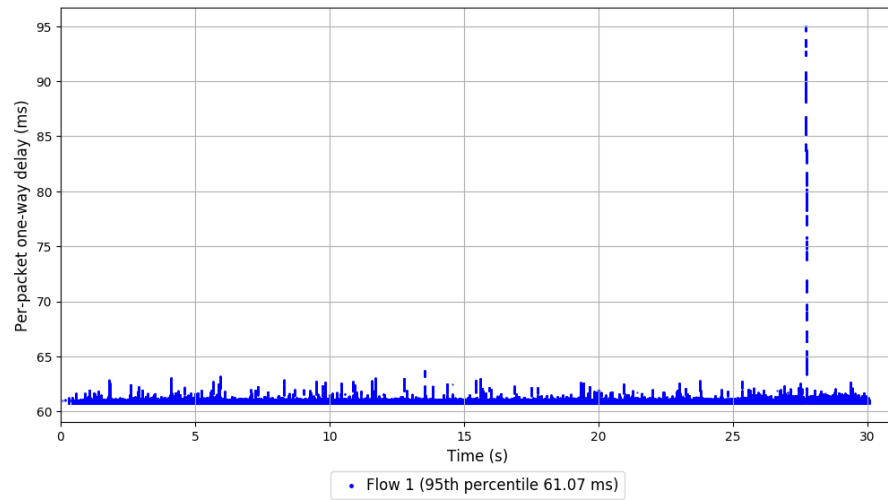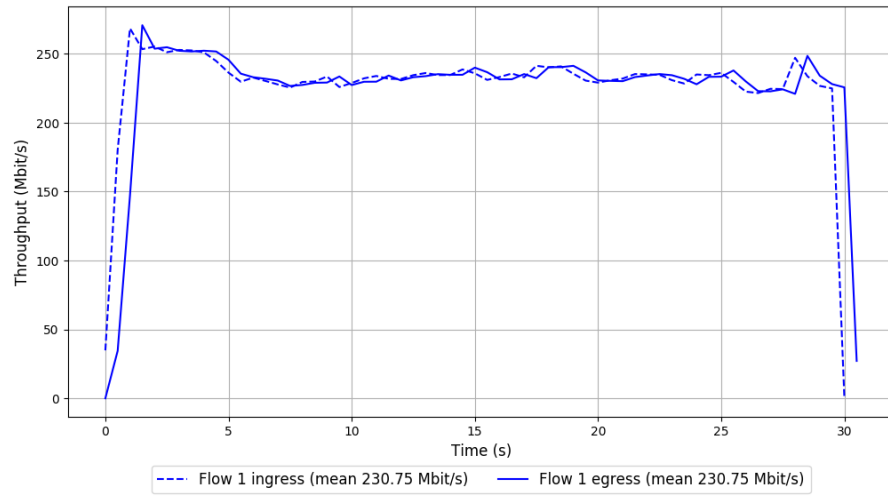
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 230.75 Mbit/s)   Flow 1 egress (mean 230.75 Mbit/s)
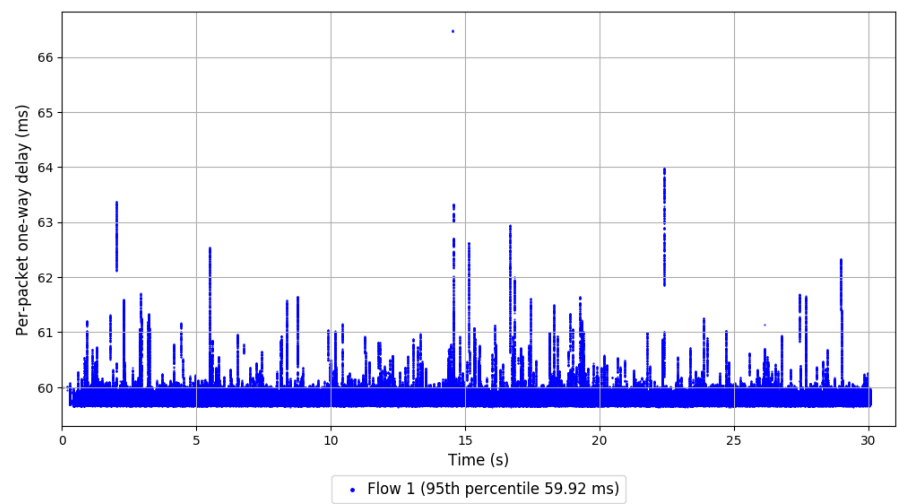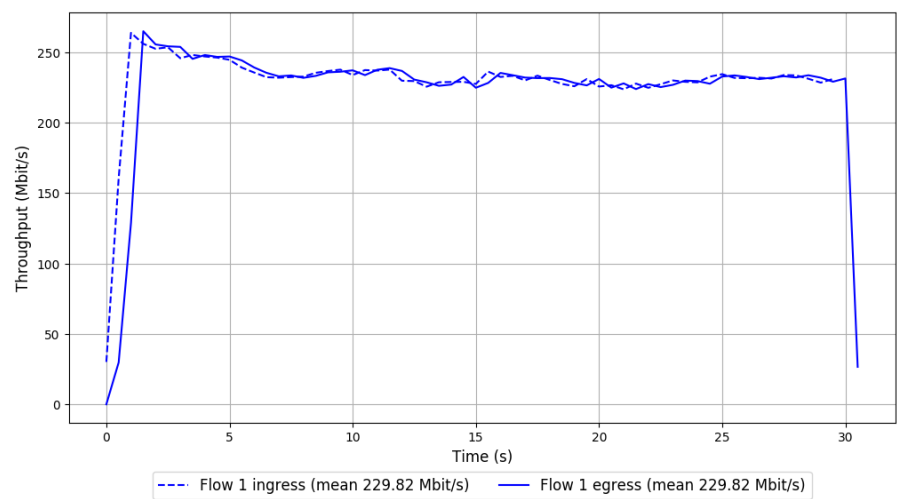

Flow 1 (95th percentile 61.07 ms)

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

Start at: 2018-10-02 17:58:51
End at: 2018-10-02 17:59:21
Local clock offset: -0.474 ms
Remote clock offset: -1.354 ms


# Below is generated by plot.py at 2018-10-02 20:21:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.82 Mbit/s
95th percentile per-packet one-way delay: 59.916 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 229.82 Mbit/s
95th percentile per-packet one-way delay: 59.916 ms
Loss rate: 0.00%
```

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

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

Start at: 2018-10-02 18:24:17
End at: 2018-10-02 18:24:47
Local clock offset: -0.594 ms
Remote clock offset: -0.06 ms


# Below is generated by plot.py at 2018-10-02 20:21:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 232.91 Mbit/s
95th percentile per-packet one-way delay: 61.039 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 232.91 Mbit/s
95th percentile per-packet one-way delay: 61.039 ms
Loss rate: 0.00%
```
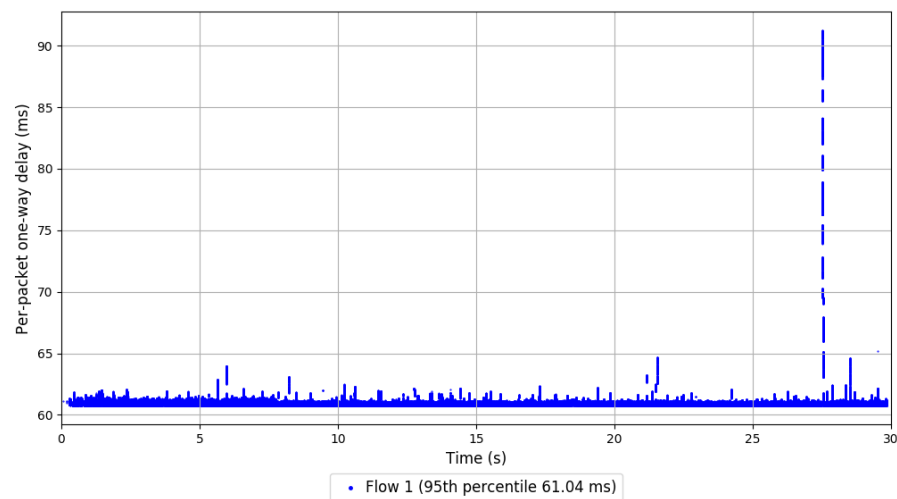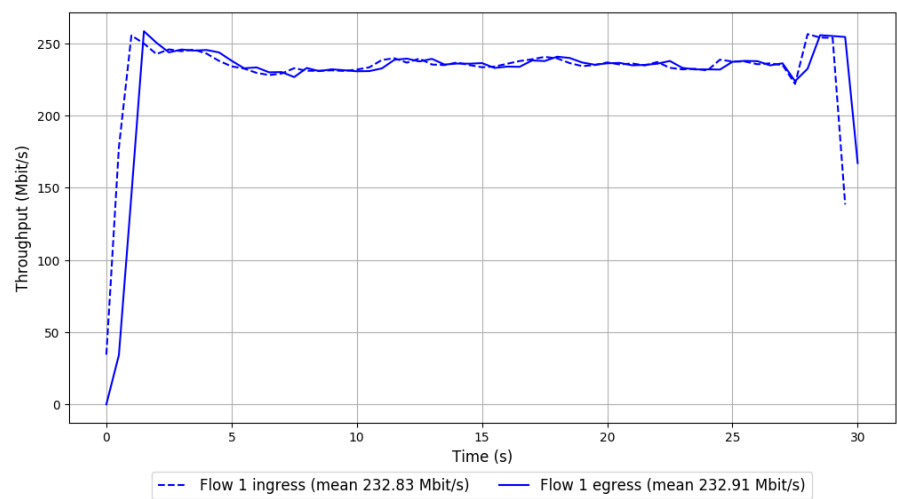
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 232.83 Mbit/s)   Flow 1 egress (mean 232.91 Mbit/s)
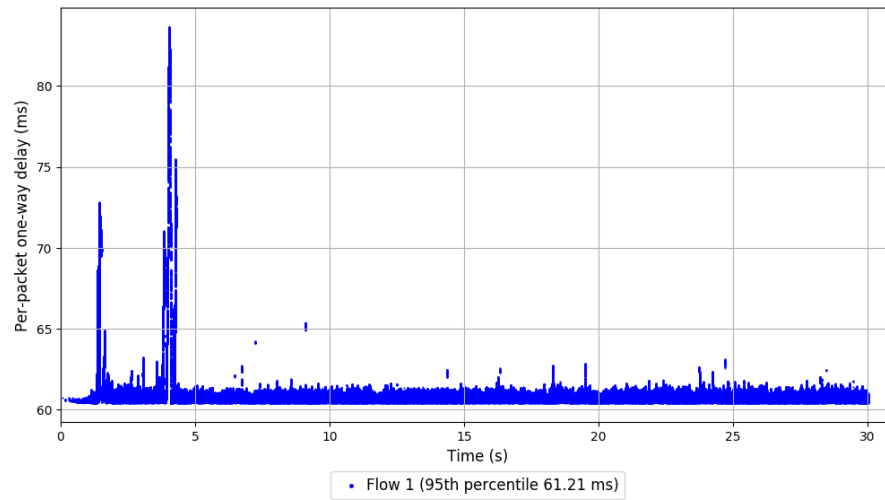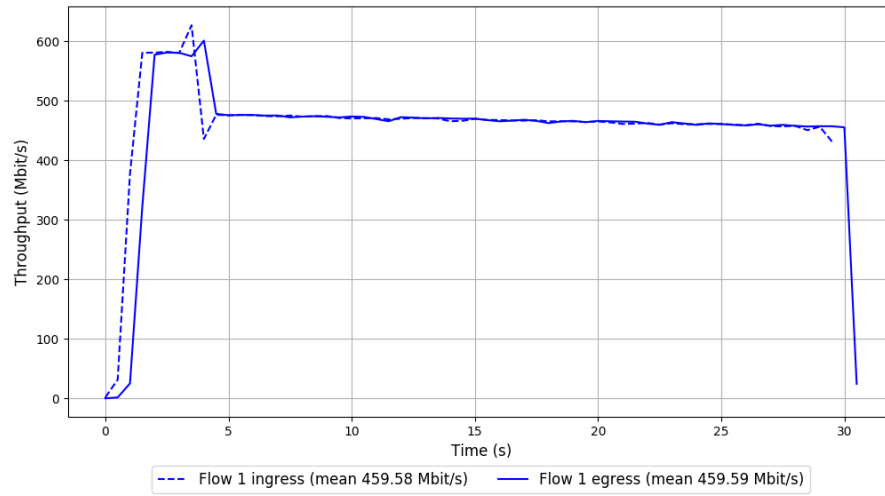

Flow 1 (95th percentile 61.04 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-02 16:52:45
End at: 2018-10-02 16:53:15
Local clock offset: -0.032 ms
Remote clock offset: -0.498 ms


# Below is generated by plot.py at 2018-10-02 20:25:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 459.59 Mbit/s
95th percentile per-packet one-way delay: 61.208 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 459.59 Mbit/s
95th percentile per-packet one-way delay: 61.208 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 459.58 Mbit/s) — Flow 1 egress (mean 459.59 Mbit/s)
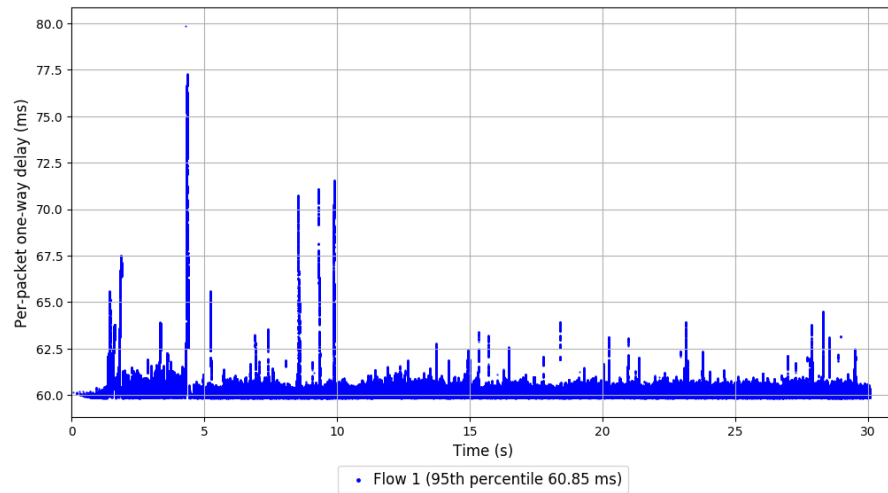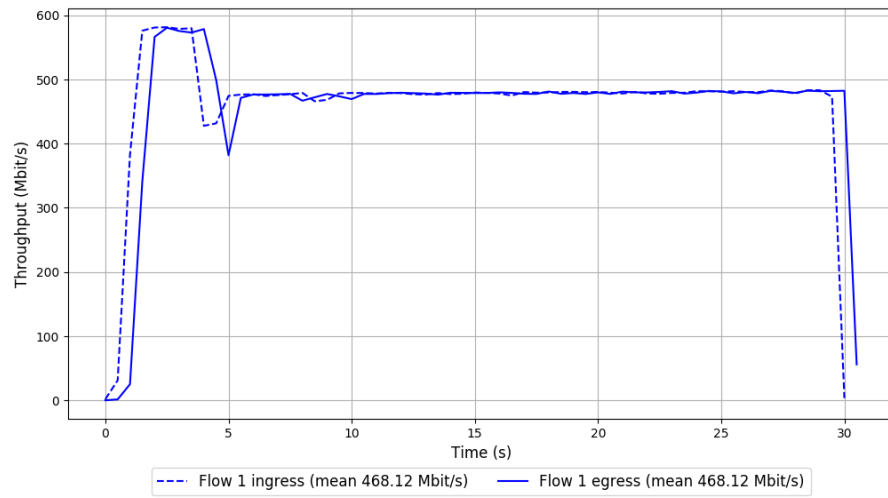

Flow 1 (95th percentile 61.21 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-02 17:18:33
End at: 2018-10-02 17:19:03
Local clock offset: -0.263 ms
Remote clock offset: -1.267 ms


# Below is generated by plot.py at 2018-10-02 20:25:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 468.12 Mbit/s
95th percentile per-packet one-way delay: 60.852 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 468.12 Mbit/s
95th percentile per-packet one-way delay: 60.852 ms
Loss rate: 0.00%
```
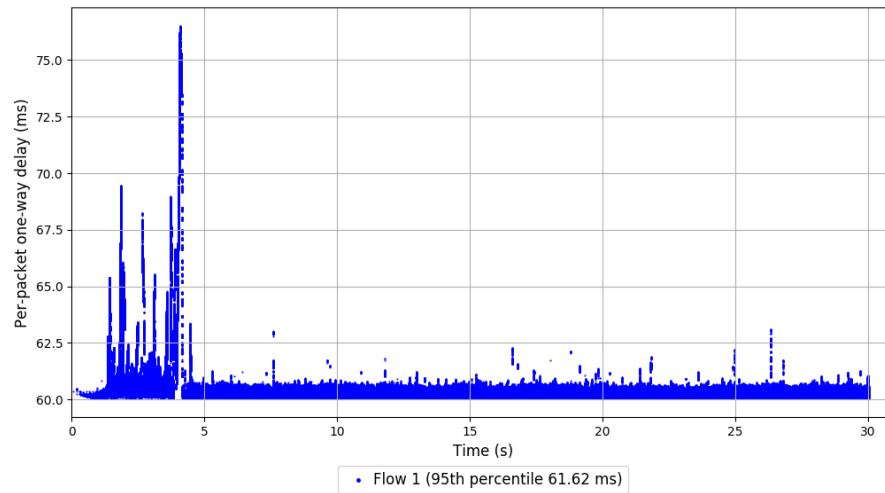
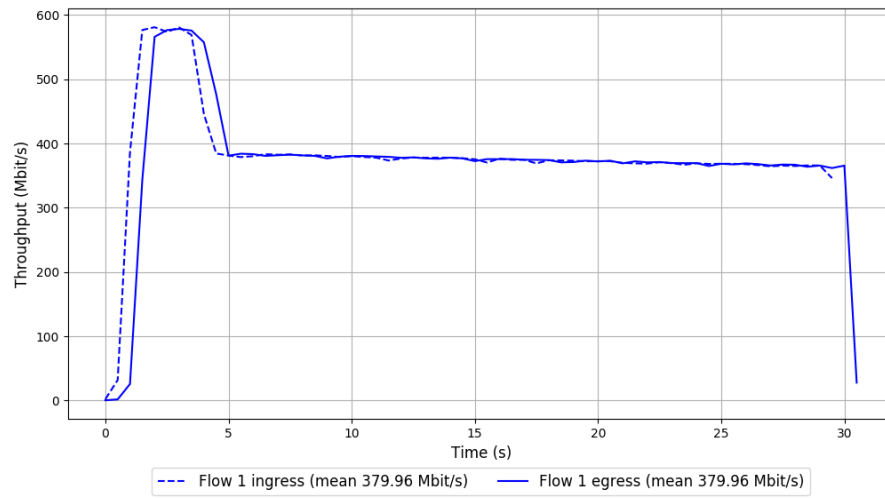Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-02 17:44:16
End at: 2018-10-02 17:44:46
Local clock offset: -0.412 ms
Remote clock offset: -0.857 ms


# Below is generated by plot.py at 2018-10-02 20:27:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 379.96 Mbit/s
95th percentile per-packet one-way delay: 61.617 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 379.96 Mbit/s
95th percentile per-packet one-way delay: 61.617 ms
Loss rate: 0.00%
```

Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-02 18:09:52
End at: 2018-10-02 18:10:22
Local clock offset: -0.521 ms
Remote clock offset: 0.516 ms


# Below is generated by plot.py at 2018-10-02 20:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 459.64 Mbit/s
95th percentile per-packet one-way delay: 67.115 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 459.64 Mbit/s
95th percentile per-packet one-way delay: 67.115 ms
Loss rate: 0.00%
```
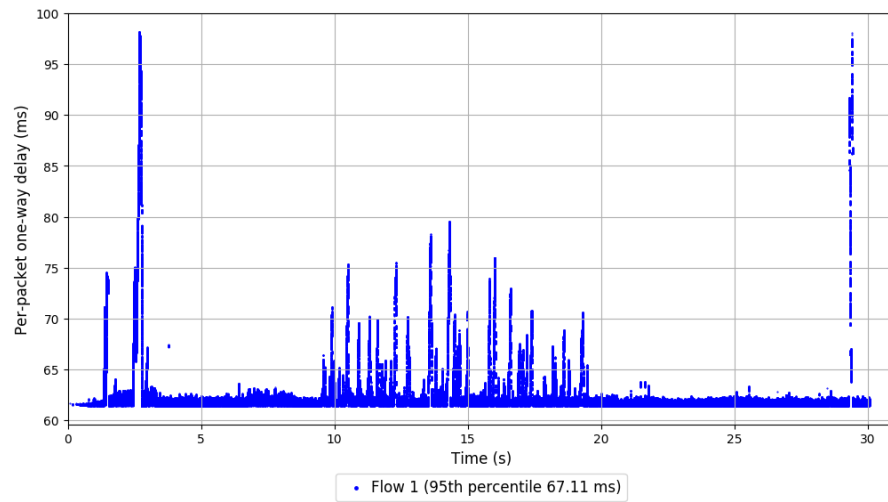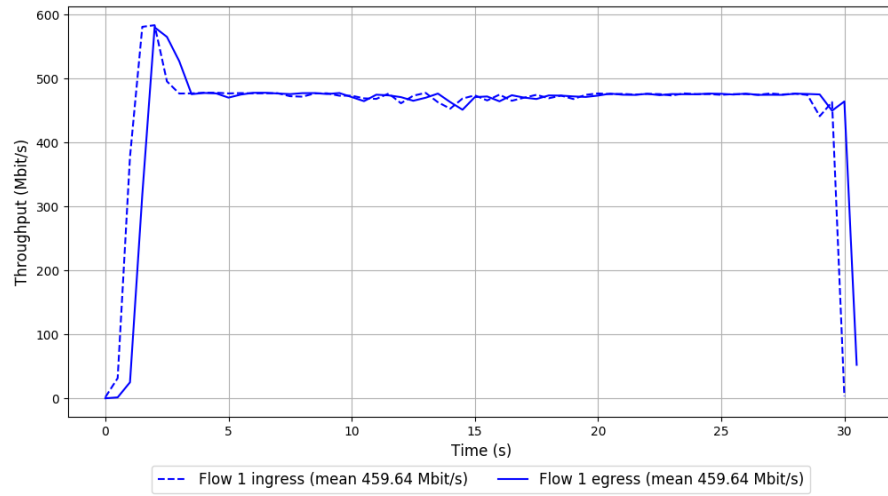
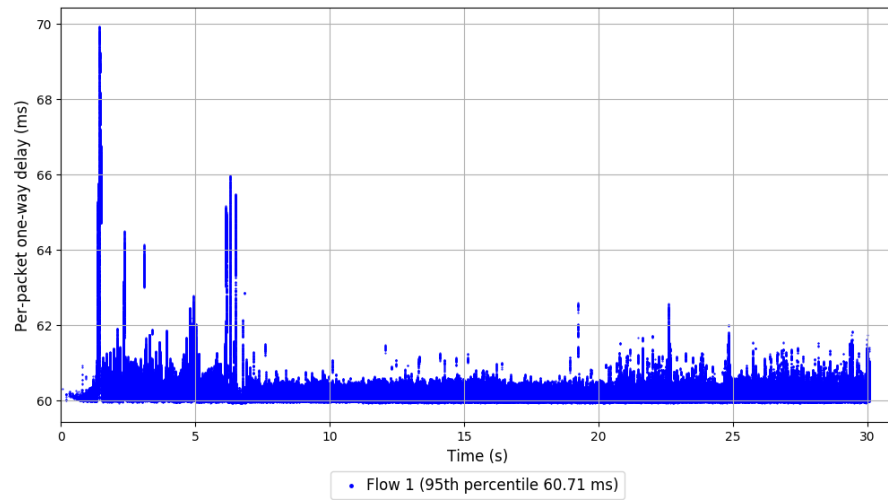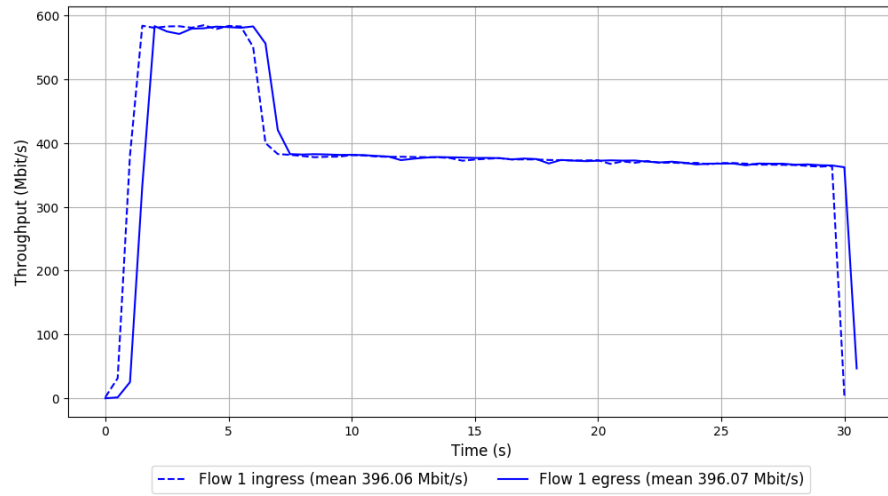Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-02 18:35:35
End at: 2018-10-02 18:36:05
Local clock offset: -0.675 ms
Remote clock offset: -0.896 ms


# Below is generated by plot.py at 2018-10-02 20:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 396.07 Mbit/s
95th percentile per-packet one-way delay: 60.706 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 396.07 Mbit/s
95th percentile per-packet one-way delay: 60.706 ms
Loss rate: 0.00%
```

Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 396.06 Mbit/s) --- Flow 1 egress (mean 396.07 Mbit/s)
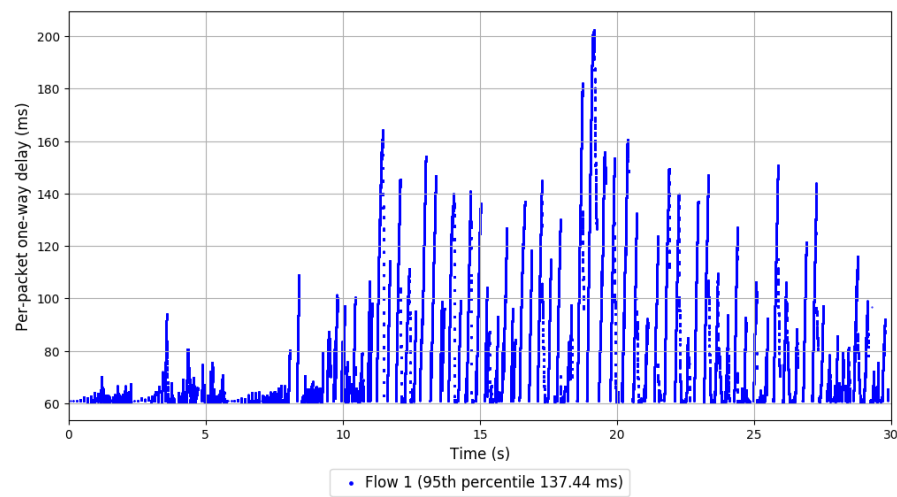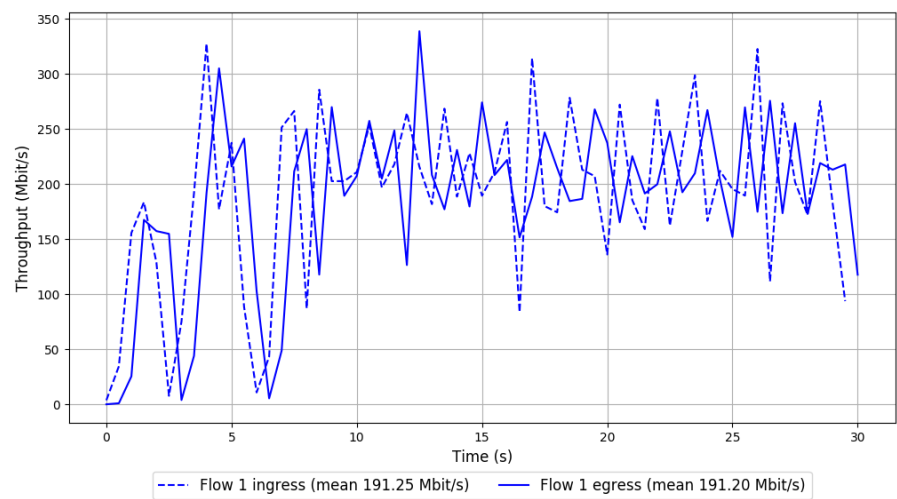

Flow 1 (95th percentile 60.71 ms)

```
Run 1: Statistics of Verus

Start at: 2018-10-02 16:44:06
End at: 2018-10-02 16:44:36
Local clock offset: -0.02 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2018-10-02 20:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 191.20 Mbit/s
95th percentile per-packet one-way delay: 137.439 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 191.20 Mbit/s
95th percentile per-packet one-way delay: 137.439 ms
Loss rate: 0.03%
```
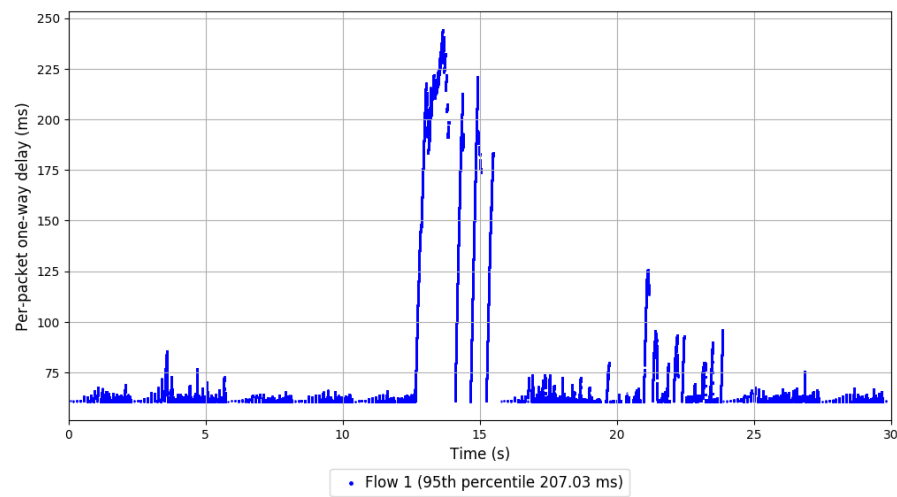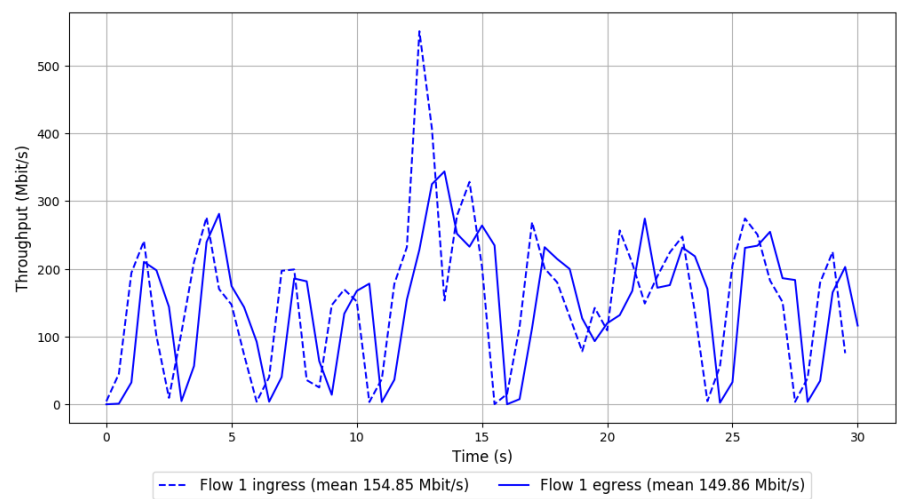
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-10-02 17:09:58
End at: 2018-10-02 17:10:28
Local clock offset: -0.086 ms
Remote clock offset: -0.339 ms


# Below is generated by plot.py at 2018-10-02 20:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 149.86 Mbit/s
95th percentile per-packet one-way delay: 207.035 ms
Loss rate: 3.22%
-- Flow 1:
Average throughput: 149.86 Mbit/s
95th percentile per-packet one-way delay: 207.035 ms
Loss rate: 3.22%
```

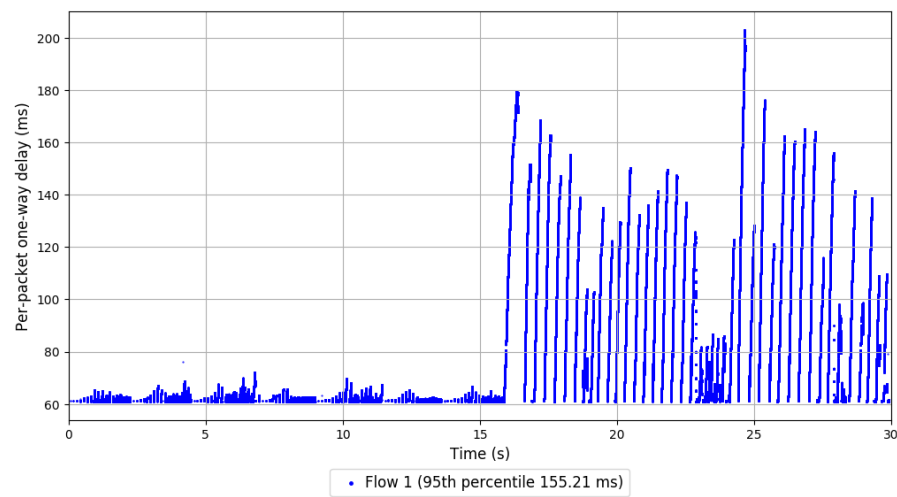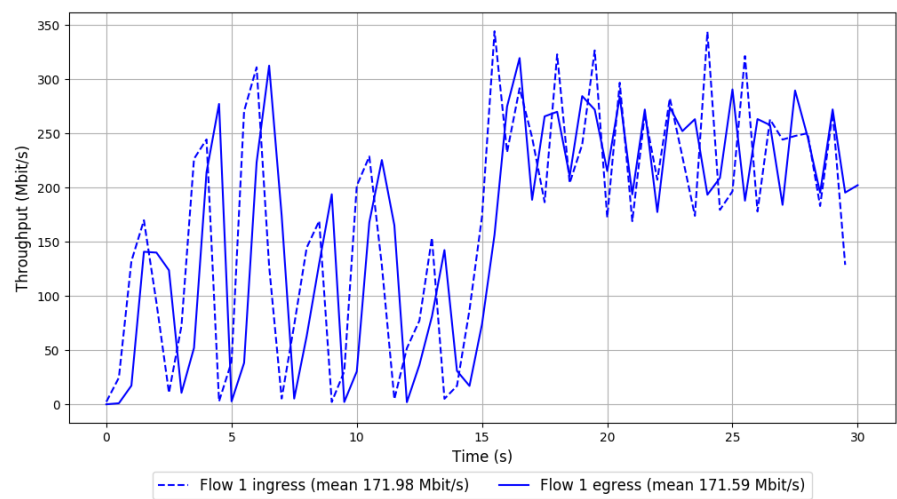## Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-02 17:35:33
End at: 2018-10-02 17:36:03
Local clock offset: -0.332 ms
Remote clock offset: -0.171 ms


# Below is generated by plot.py at 2018-10-02 20:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 171.59 Mbit/s
95th percentile per-packet one-way delay: 155.213 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 171.59 Mbit/s
95th percentile per-packet one-way delay: 155.213 ms
Loss rate: 0.23%
```
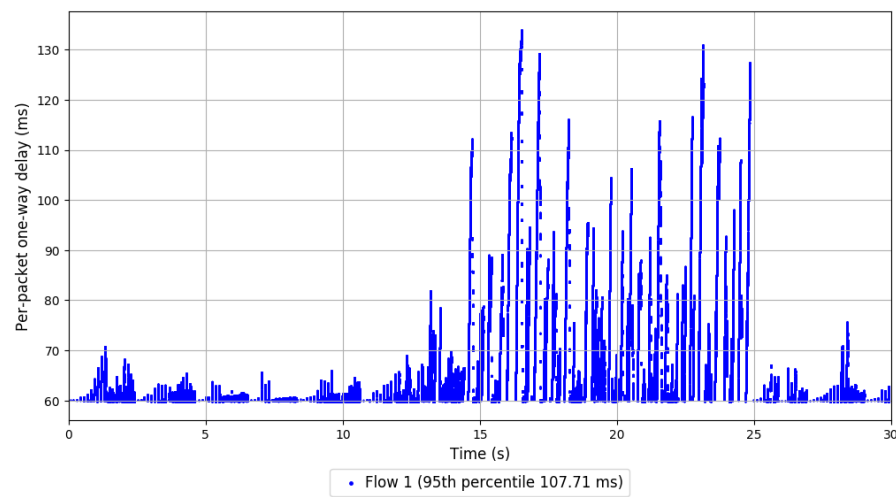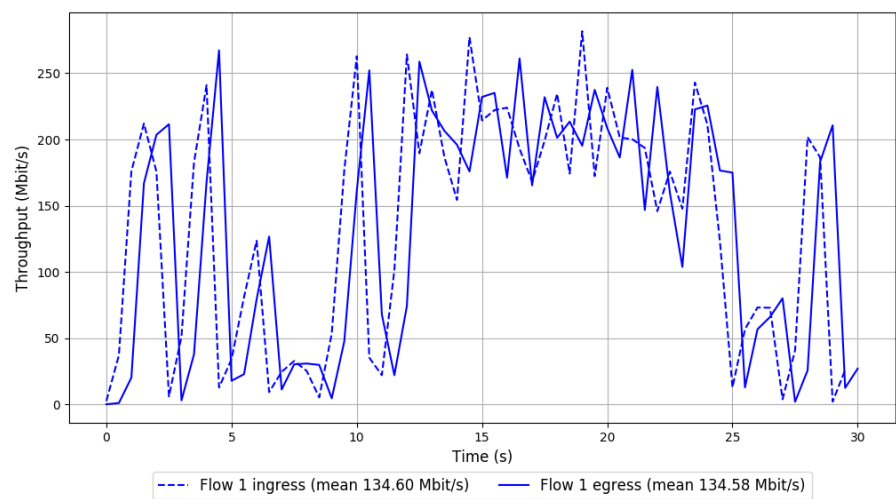
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-02 18:01:28
End at: 2018-10-02 18:01:58
Local clock offset: -0.512 ms
Remote clock offset: -1.132 ms


# Below is generated by plot.py at 2018-10-02 20:31:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 134.58 Mbit/s
95th percentile per-packet one-way delay: 107.714 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 134.58 Mbit/s
95th percentile per-packet one-way delay: 107.714 ms
Loss rate: 0.00%
```
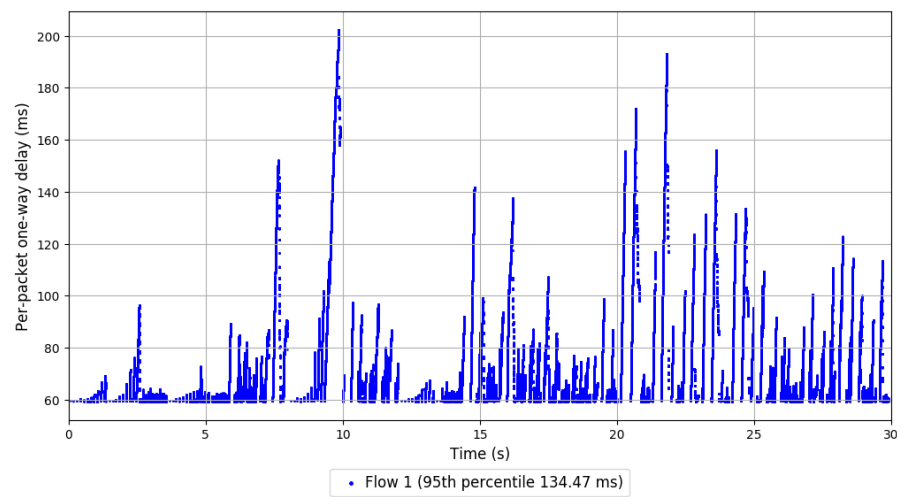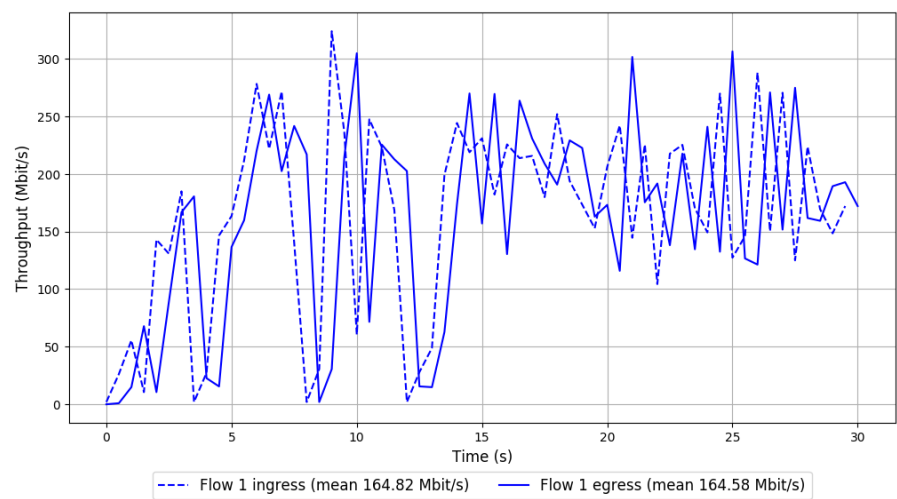
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-02 18:26:55
End at: 2018-10-02 18:27:25
Local clock offset: -0.621 ms
Remote clock offset: -1.533 ms


# Below is generated by plot.py at 2018-10-02 20:32:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 164.58 Mbit/s
95th percentile per-packet one-way delay: 134.471 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 164.58 Mbit/s
95th percentile per-packet one-way delay: 134.471 ms
Loss rate: 0.15%
```

Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 164.82 Mbit/s)   Flow 1 egress (mean 164.58 Mbit/s)

• Flow 1 (95th percentile 134.47 ms)

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-02 16:48:28
End at: 2018-10-02 16:48:58
Local clock offset: -0.068 ms
Remote clock offset: 0.545 ms


# Below is generated by plot.py at 2018-10-02 20:33:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 344.81 Mbit/s
95th percentile per-packet one-way delay: 62.868 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 344.81 Mbit/s
95th percentile per-packet one-way delay: 62.868 ms
Loss rate: 0.00%
```
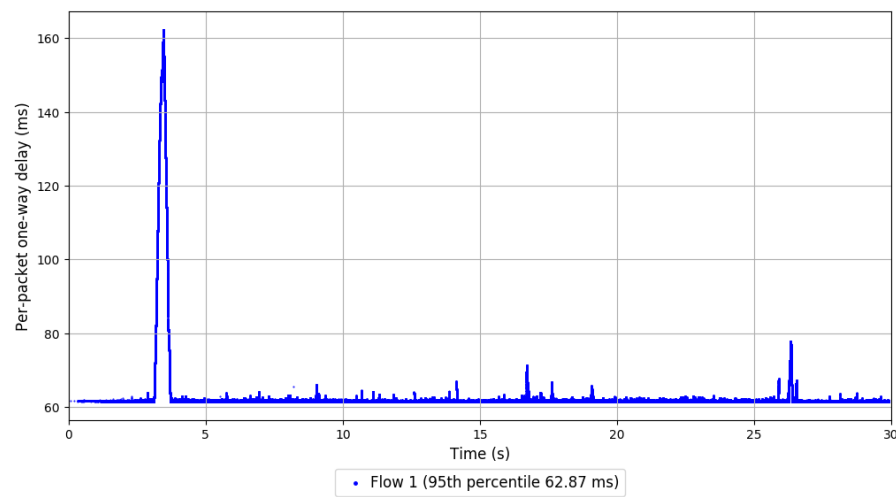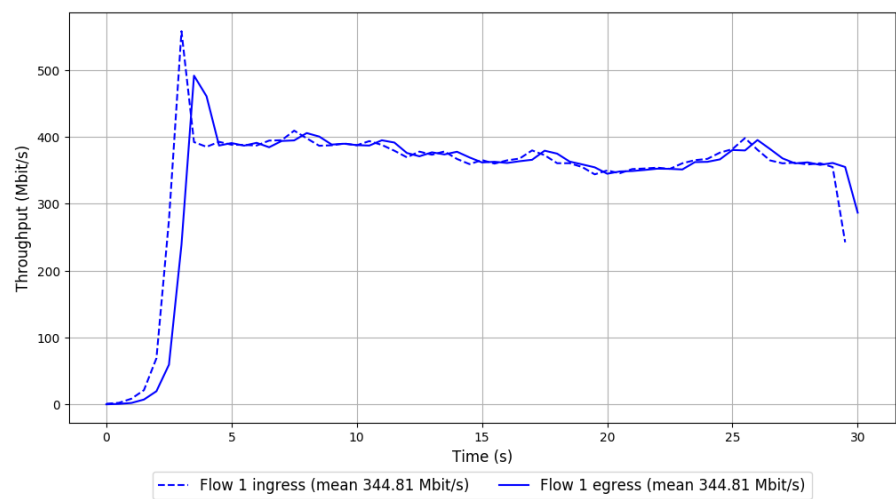
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-02 17:14:20
End at: 2018-10-02 17:14:50
Local clock offset: -0.173 ms
Remote clock offset: -0.12 ms


# Below is generated by plot.py at 2018-10-02 20:34:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 305.97 Mbit/s
95th percentile per-packet one-way delay: 106.451 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 305.97 Mbit/s
95th percentile per-packet one-way delay: 106.451 ms
Loss rate: 0.11%
```
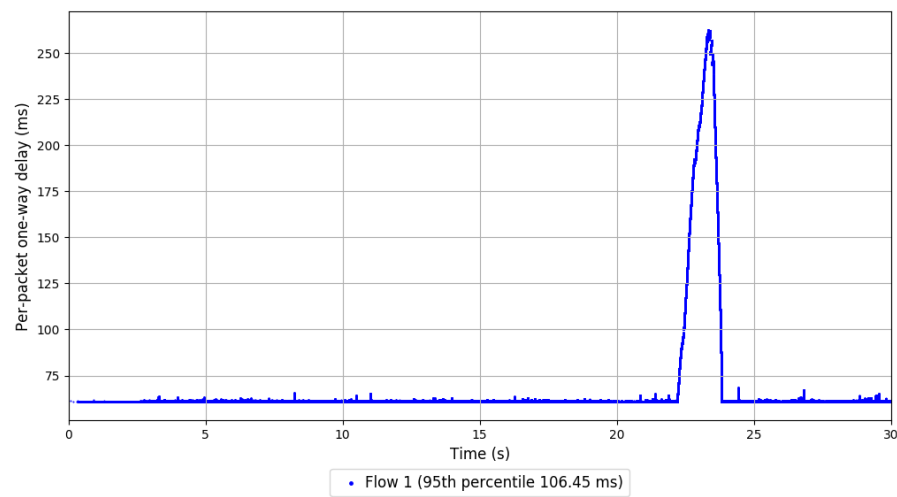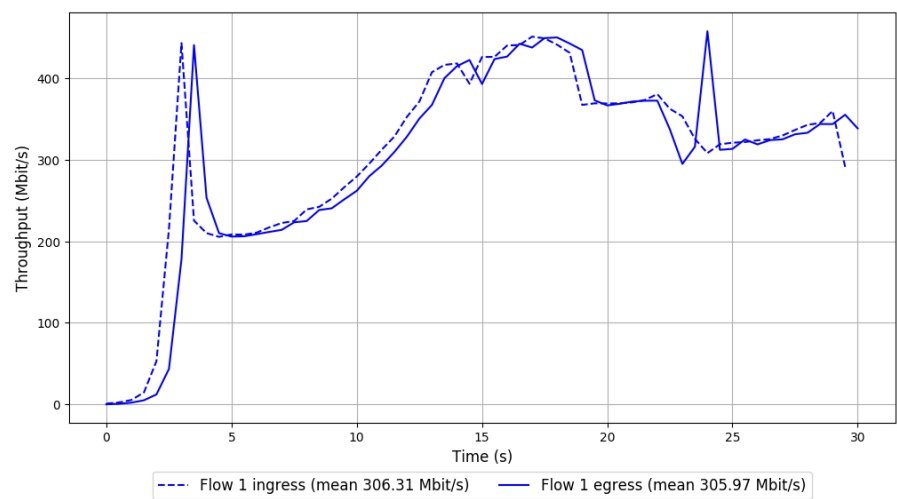
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-02 17:39:59
End at: 2018-10-02 17:40:29
Local clock offset: -0.342 ms
Remote clock offset: 1.255 ms


# Below is generated by plot.py at 2018-10-02 20:35:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 368.94 Mbit/s
95th percentile per-packet one-way delay: 62.669 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 368.94 Mbit/s
95th percentile per-packet one-way delay: 62.669 ms
Loss rate: 0.00%
```
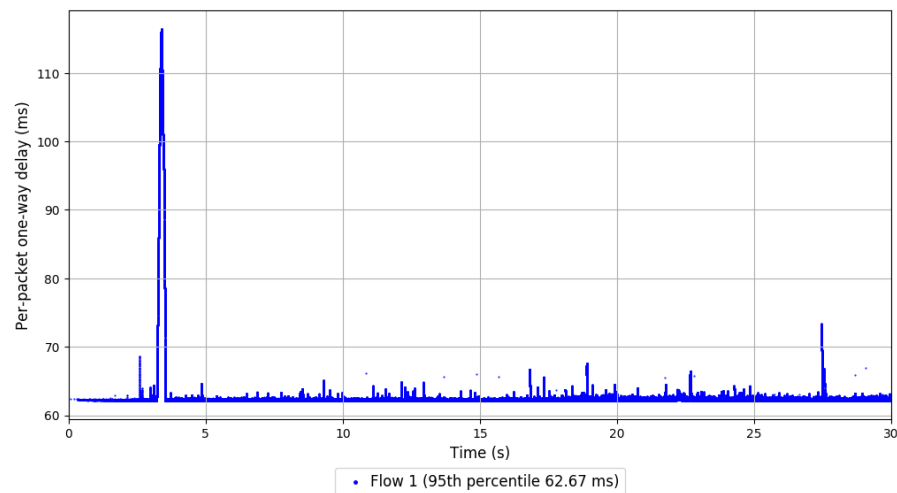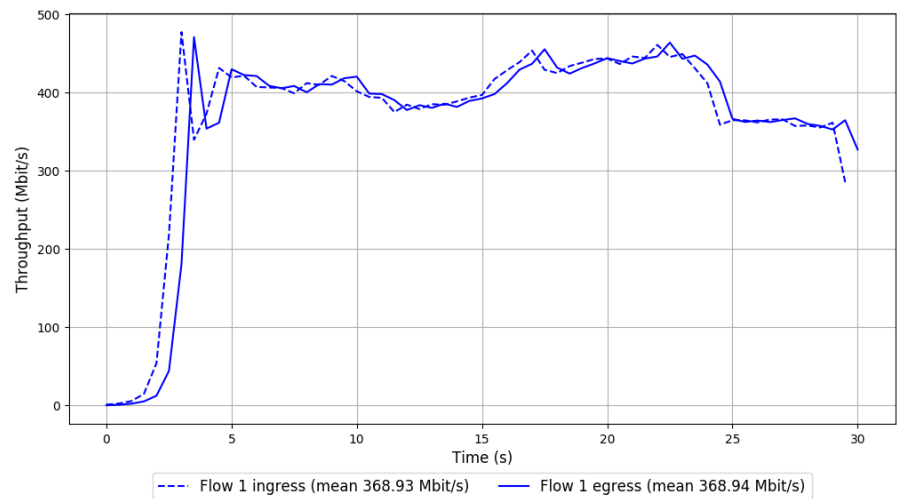
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 368.93 Mbit/s)   Flow 1 egress (mean 368.94 Mbit/s)
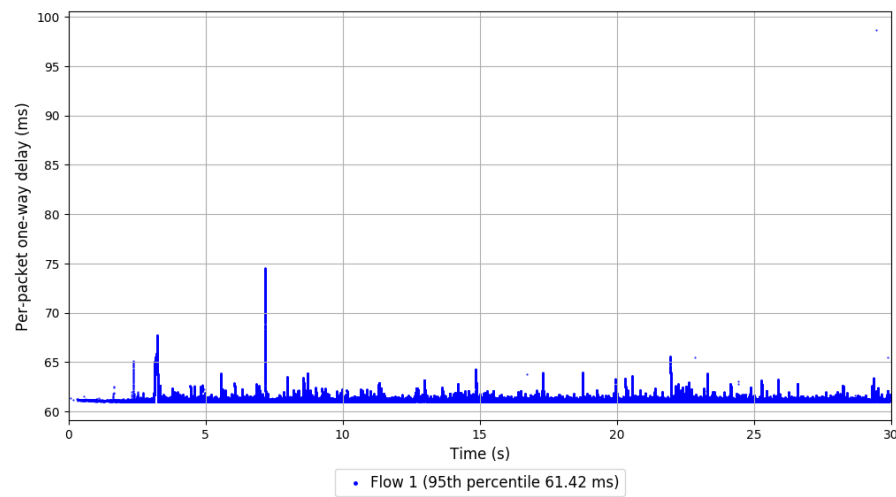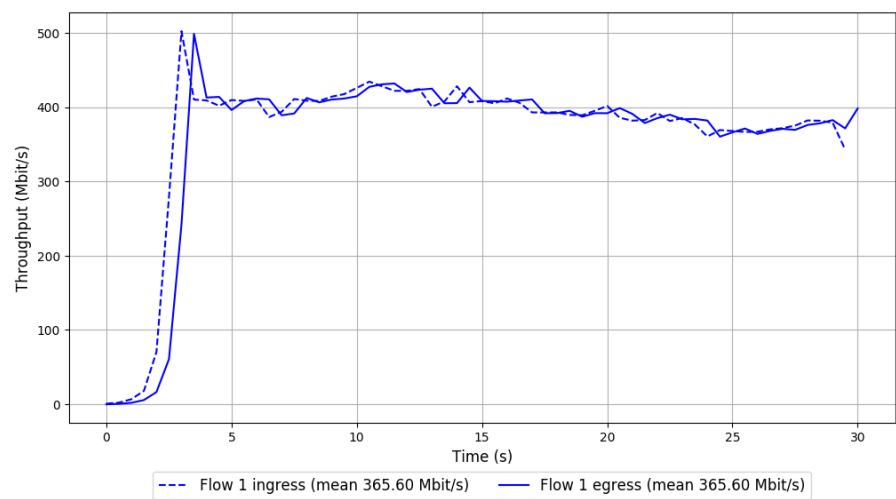

Flow 1 (95th percentile 62.67 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-02 18:05:39
End at: 2018-10-02 18:06:09
Local clock offset: -0.531 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2018-10-02 20:35:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 365.60 Mbit/s
95th percentile per-packet one-way delay: 61.416 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 365.60 Mbit/s
95th percentile per-packet one-way delay: 61.416 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 365.60 Mbit/s)   Flow 1 egress (mean 365.60 Mbit/s)
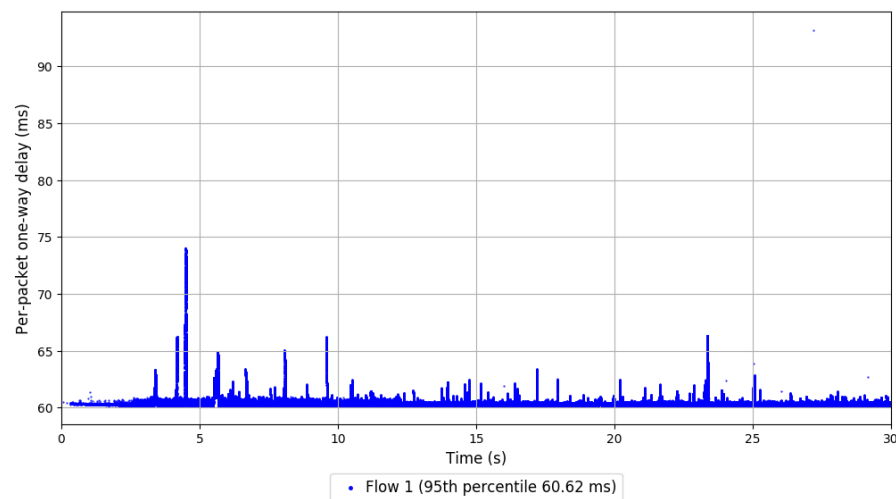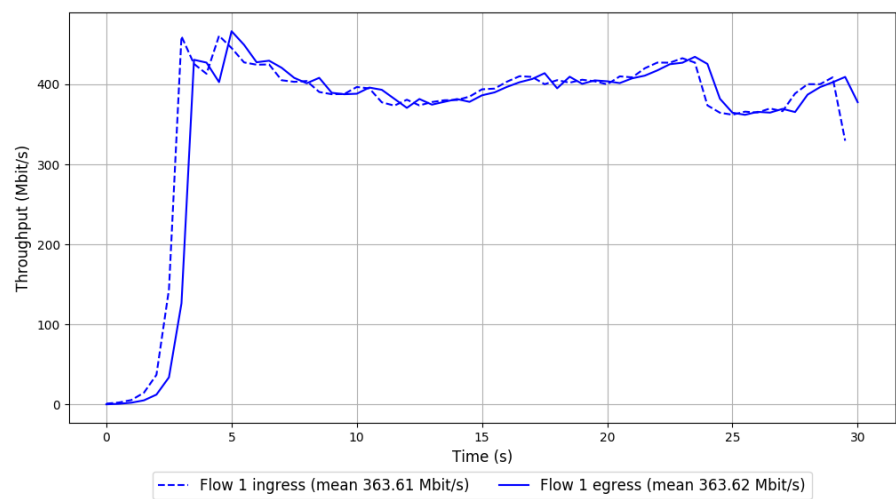

Flow 1 (95th percentile 61.42 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-02 18:31:18
End at: 2018-10-02 18:31:48
Local clock offset: -0.617 ms
Remote clock offset: -0.628 ms


# Below is generated by plot.py at 2018-10-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 363.62 Mbit/s
95th percentile per-packet one-way delay: 60.620 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 363.62 Mbit/s
95th percentile per-packet one-way delay: 60.620 ms
Loss rate: 0.00%
```

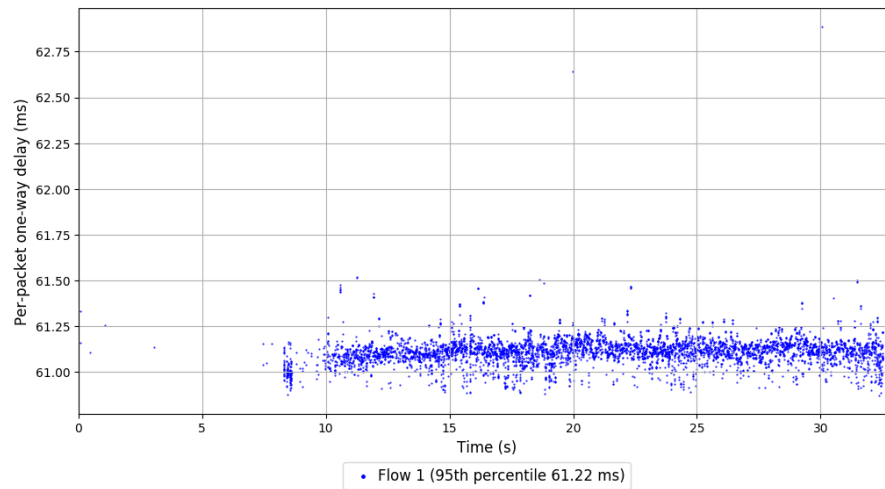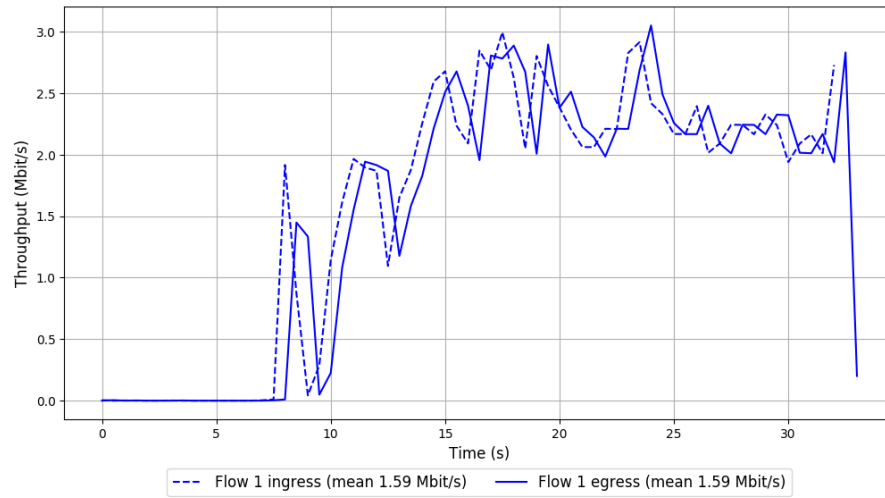# Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-02 16:40:22
End at: 2018-10-02 16:40:53
Local clock offset: -0.039 ms
Remote clock offset: -0.172 ms


# Below is generated by plot.py at 2018-10-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 61.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 61.216 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-02 17:06:14
End at: 2018-10-02 17:06:44
Local clock offset: -0.061 ms
Remote clock offset: 1.401 ms


# Below is generated by plot.py at 2018-10-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 62.820 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 62.820 ms
Loss rate: 0.00%
```
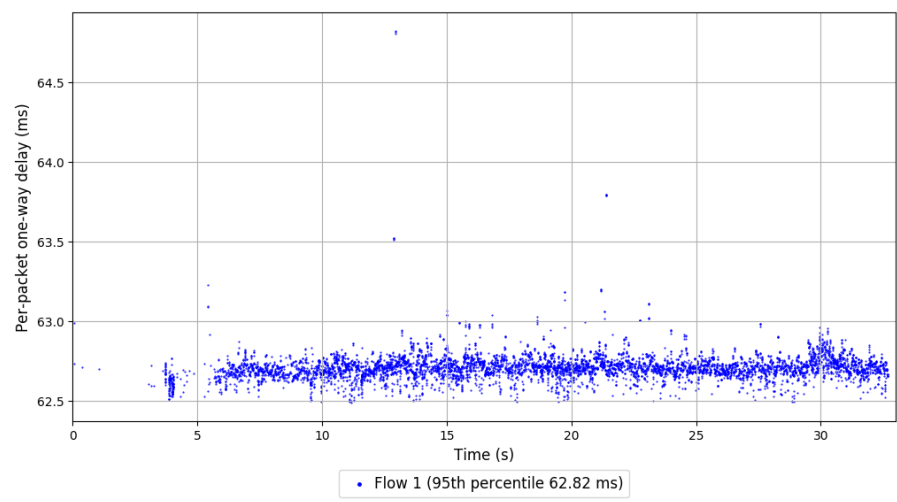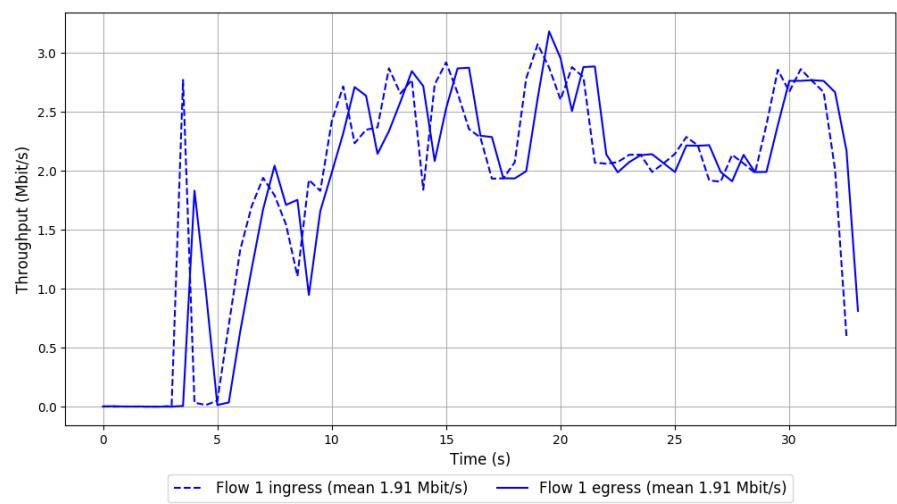
Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.91 Mbit/s)   Flow 1 egress (mean 1.91 Mbit/s)
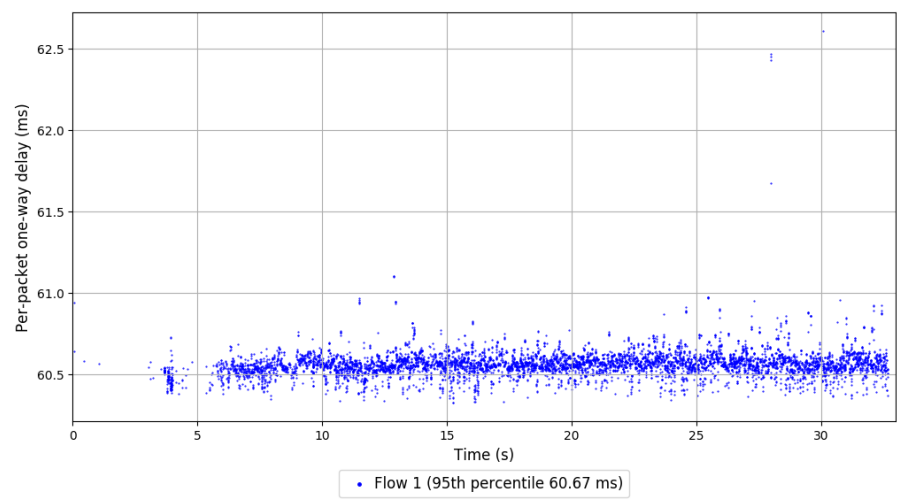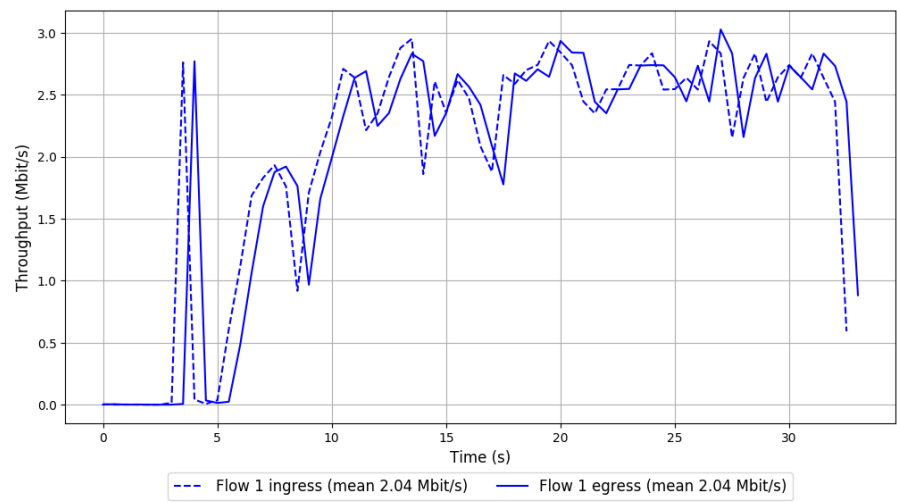

Flow 1 (95th percentile 62.82 ms)

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-02 17:31:49
End at: 2018-10-02 17:32:19
Local clock offset: -0.342 ms
Remote clock offset: -0.582 ms


# Below is generated by plot.py at 2018-10-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 60.672 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 60.672 ms
Loss rate: 0.00%
```

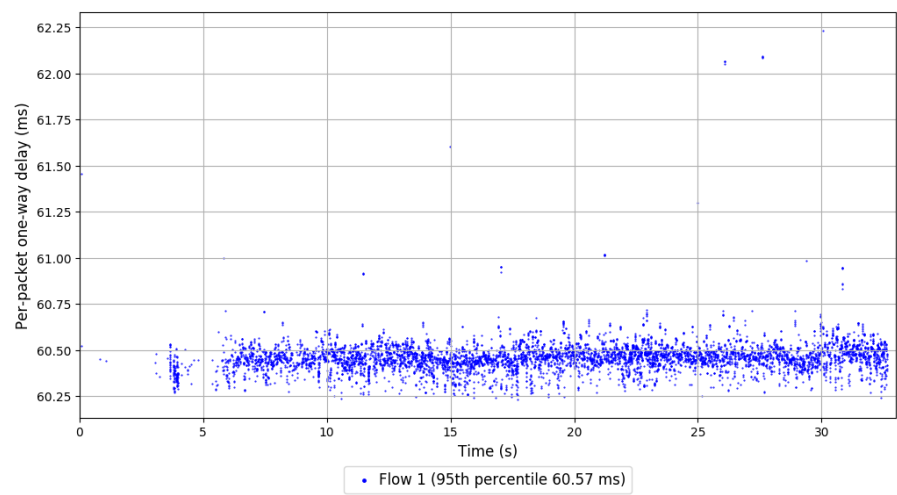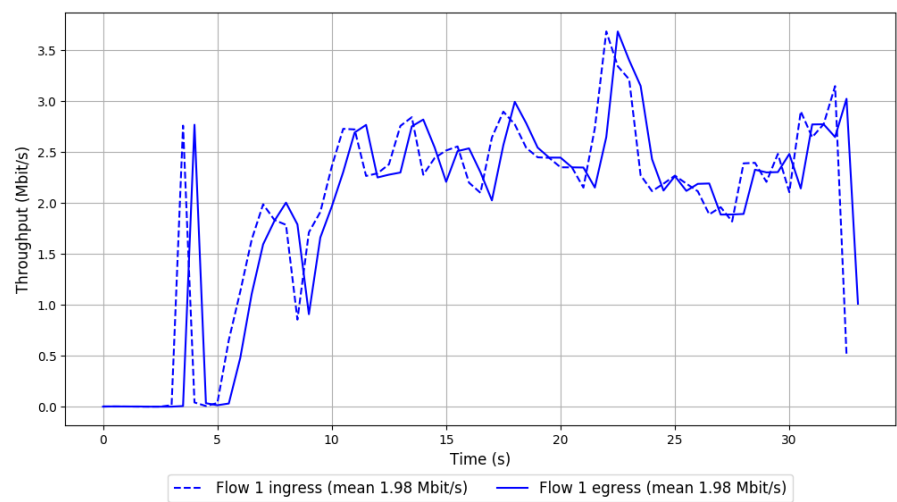Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-02 17:57:44
End at: 2018-10-02 17:58:14
Local clock offset: -0.489 ms
Remote clock offset: -0.816 ms


# Below is generated by plot.py at 2018-10-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 60.567 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 60.567 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.98 Mbit/s) ----   Flow 1 egress (mean 1.98 Mbit/s) ——

Flow 1 (95th percentile 60.57 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-02 18:23:10
End at: 2018-10-02 18:23:40
Local clock offset: -0.61 ms
Remote clock offset: 1.159 ms


# Below is generated by plot.py at 2018-10-02 20:35:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 62.617 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 62.617 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link