Pantheon Report

Generated at 2018-11-15 14:16:36 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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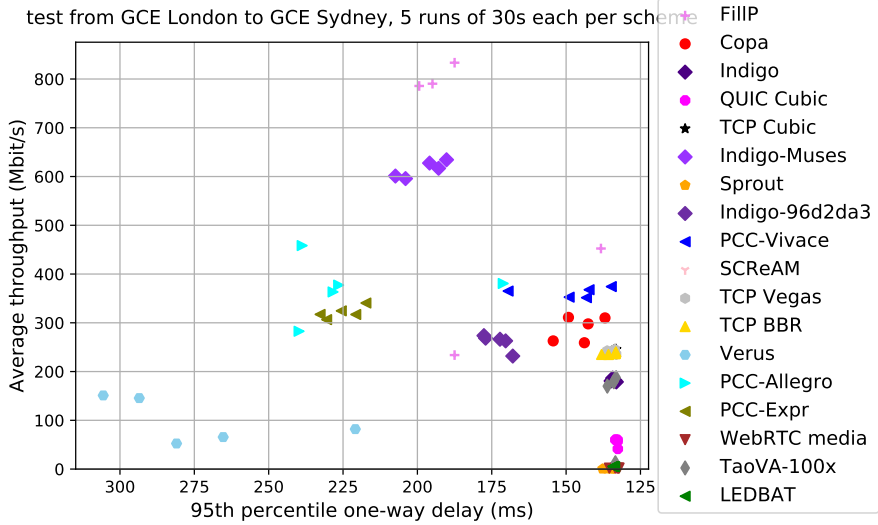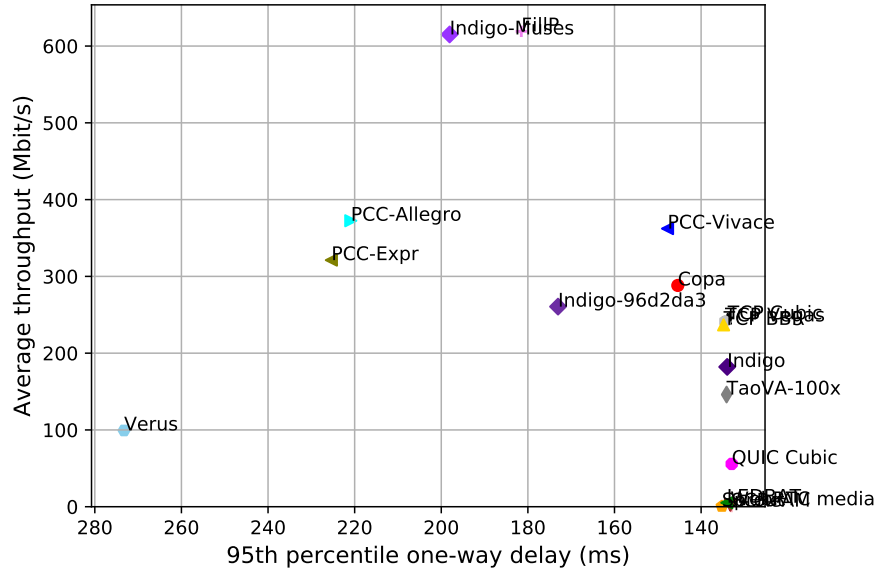
```
System info:
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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

test from GCE London to GCE Sydney, 5 runs of 30s each per scheme

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	236.85	134.81	0.98
Copa	5	288.19	145.38	0.89
TCP Cubic	5	244.12	133.86	0.97
FillP	5	619.14	181.52	2.29
Indigo	5	182.09	133.98	0.87
Indigo-96d2da3	5	260.63	173.04	1.05
LEDBAT	5	5.18	134.08	1.80
Indigo-Muses	5	615.12	198.07	1.43
PCC-Allegro	5	372.46	220.89	2.35
PCC-Expr	5	321.18	225.38	3.50
QUIC Cubic	5	55.74	132.93	1.10
SCReAM	5	0.15	132.99	0.88
Sprout	5	0.57	135.20	0.77
TaoVA-100x	5	146.10	134.12	0.96
TCP Vegas	5	241.36	134.48	0.92
Verus	5	99.32	273.25	11.17
PCC-Vivace	5	362.25	147.76	1.29
WebRTC media	5	1.97	133.25	1.09

```
Run 1: Statistics of TCP BBR

Start at: 2018-11-15 10:54:29
End at: 2018-11-15 10:54:59
Local clock offset: 0.237 ms
Remote clock offset: -0.047 ms


# Below is generated by plot.py at 2018-11-15 13:12:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 235.08 Mbit/s
95th percentile per-packet one-way delay: 138.069 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 235.08 Mbit/s
95th percentile per-packet one-way delay: 138.069 ms
Loss rate: 0.96%
```
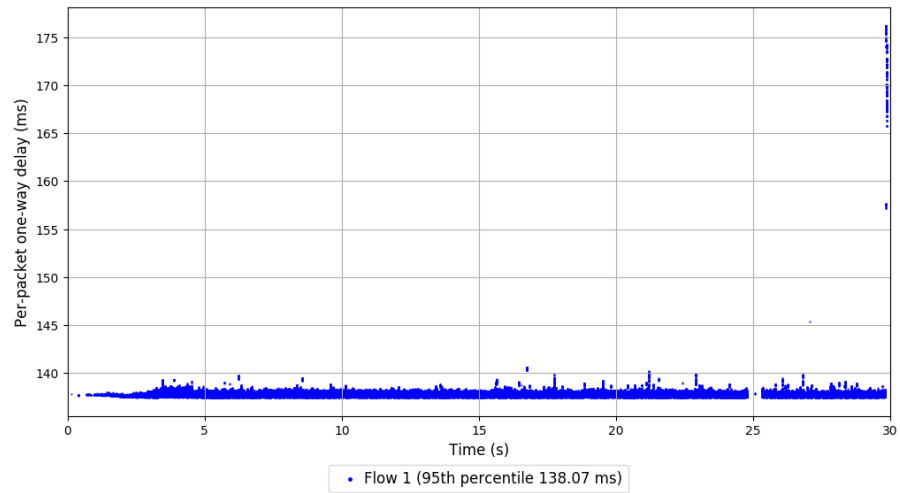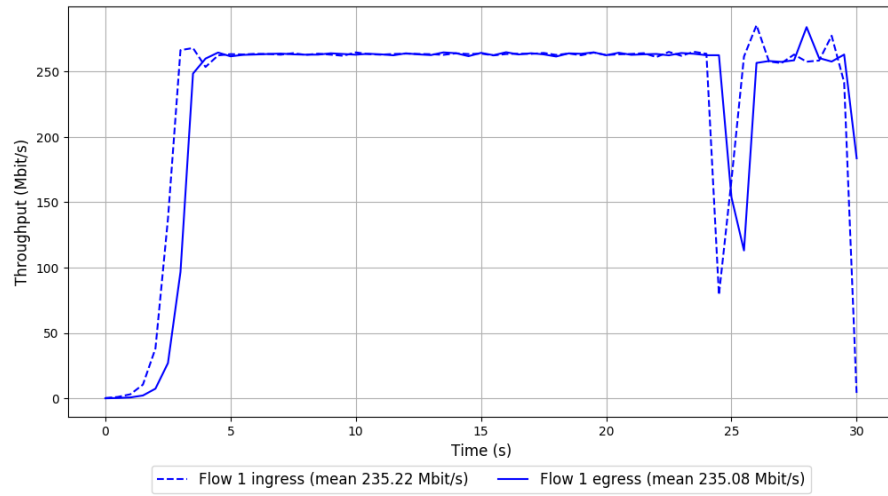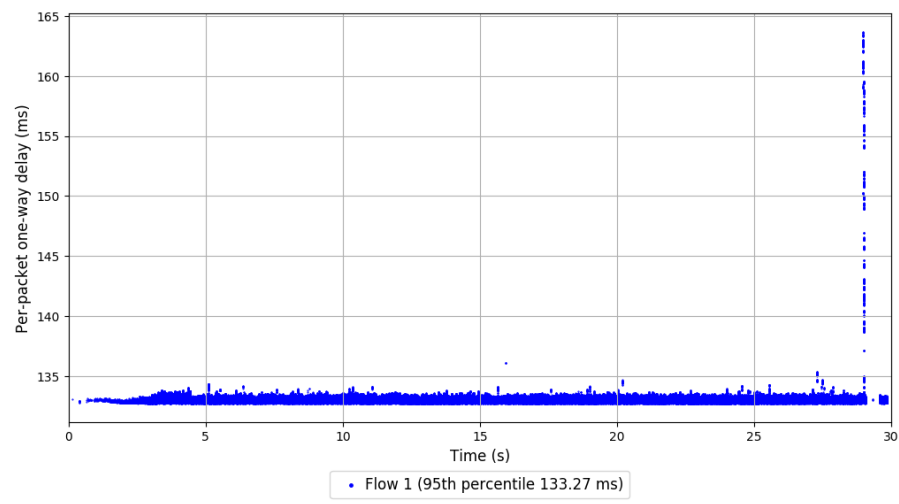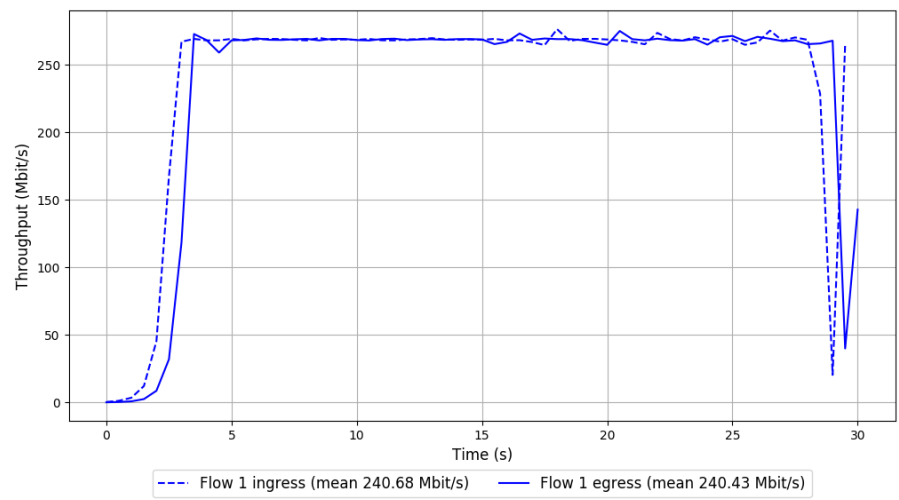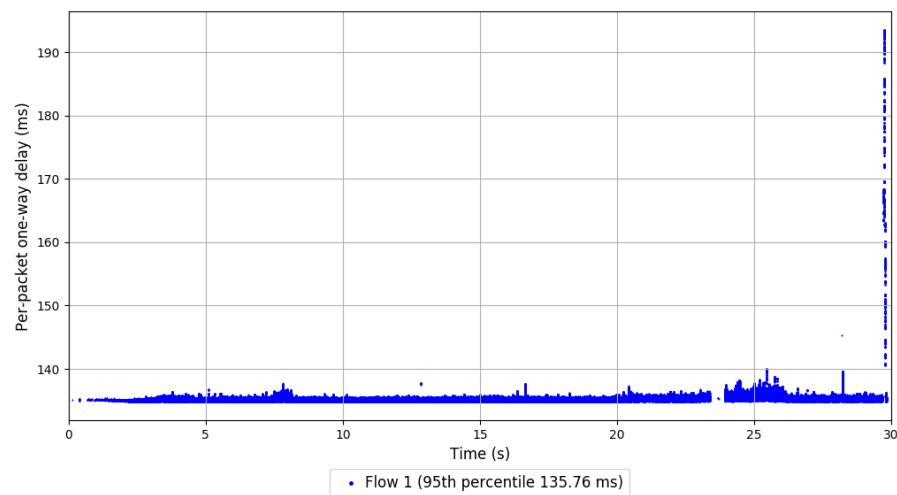
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 235.22 Mbit/s) --- Flow 1 egress (mean 235.08 Mbit/s)

• Flow 1 (95th percentile 138.07 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-11-15 11:23:34
End at: 2018-11-15 11:24:04
Local clock offset: 0.041 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-11-15 13:12:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 240.43 Mbit/s
95th percentile per-packet one-way delay: 133.273 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 240.43 Mbit/s
95th percentile per-packet one-way delay: 133.273 ms
Loss rate: 0.99%
```
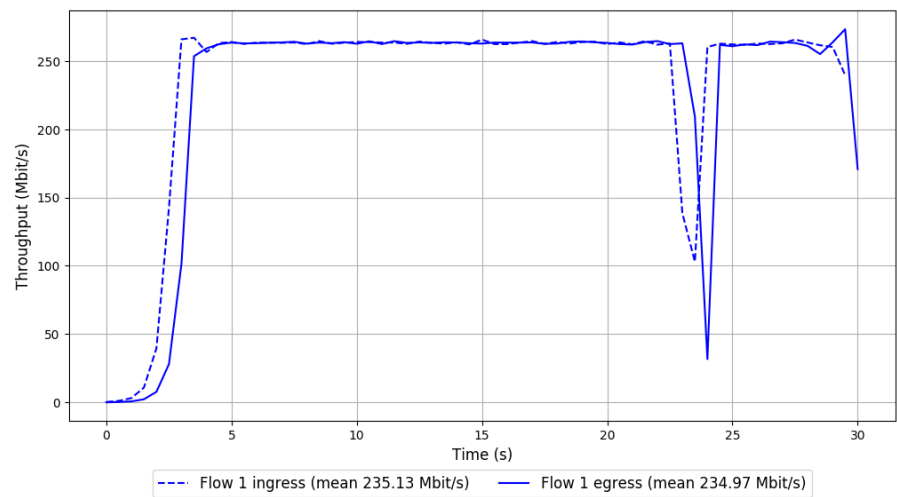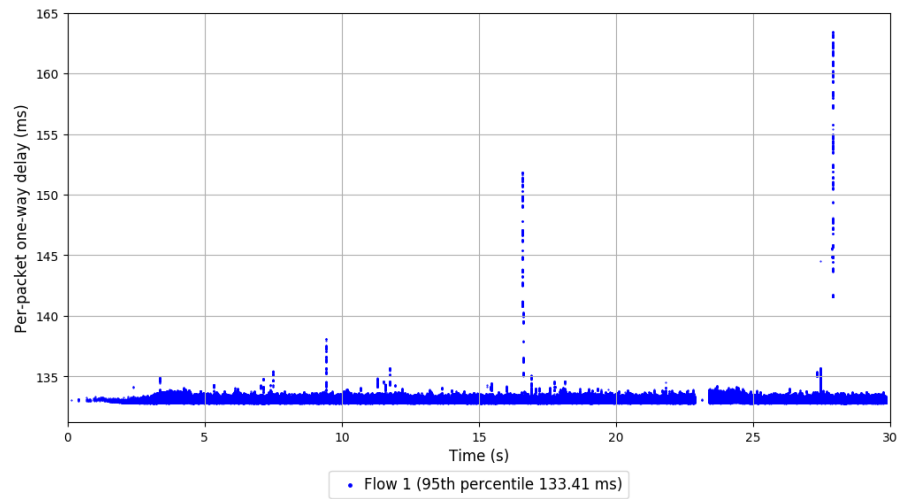
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-11-15 11:49:40
End at: 2018-11-15 11:50:10
Local clock offset: 0.012 ms
Remote clock offset: 0.045 ms

# Below is generated by plot.py at 2018-11-15 13:12:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 234.97 Mbit/s
95th percentile per-packet one-way delay: 135.757 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 234.97 Mbit/s
95th percentile per-packet one-way delay: 135.757 ms
Loss rate: 0.96%
```

Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-11-15 12:16:45
End at: 2018-11-15 12:17:15
Local clock offset: -0.396 ms
Remote clock offset: 0.012 ms


# Below is generated by plot.py at 2018-11-15 13:12:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 237.25 Mbit/s
95th percentile per-packet one-way delay: 133.414 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 237.25 Mbit/s
95th percentile per-packet one-way delay: 133.414 ms
Loss rate: 1.00%
```
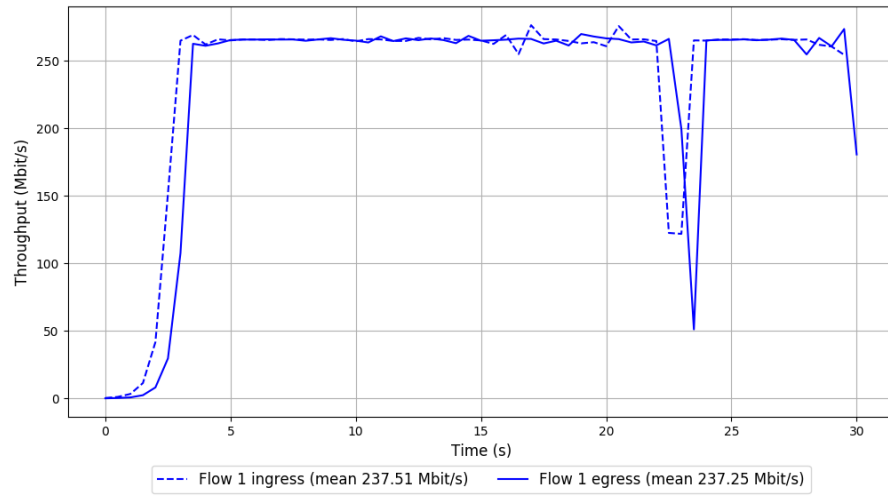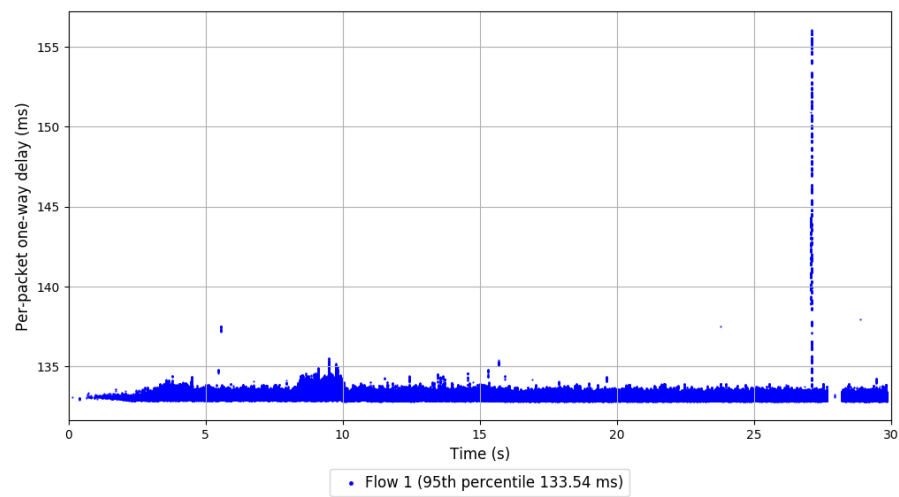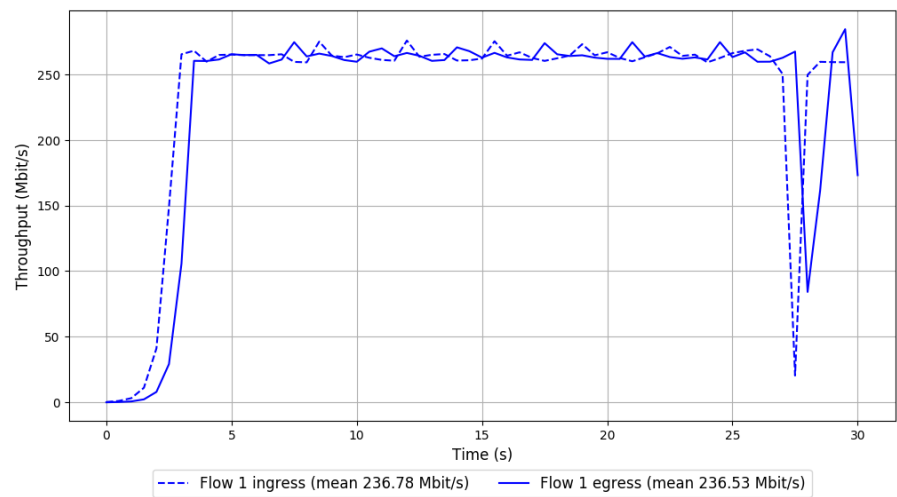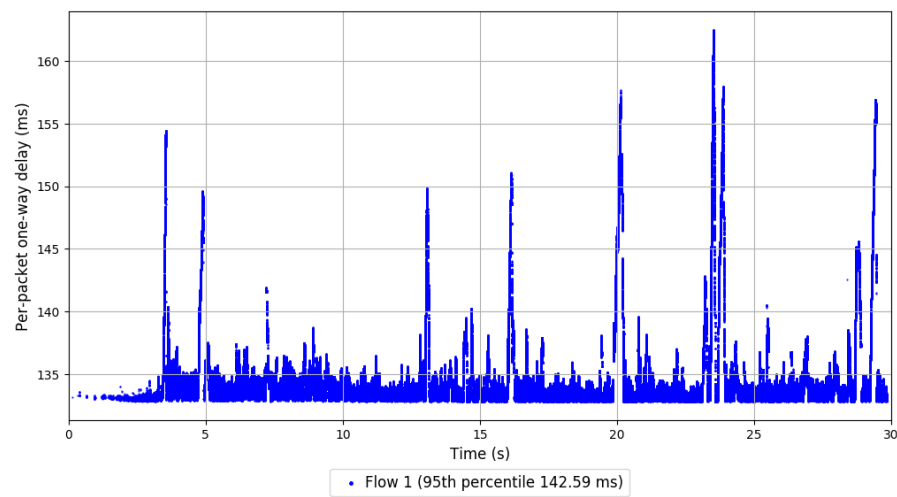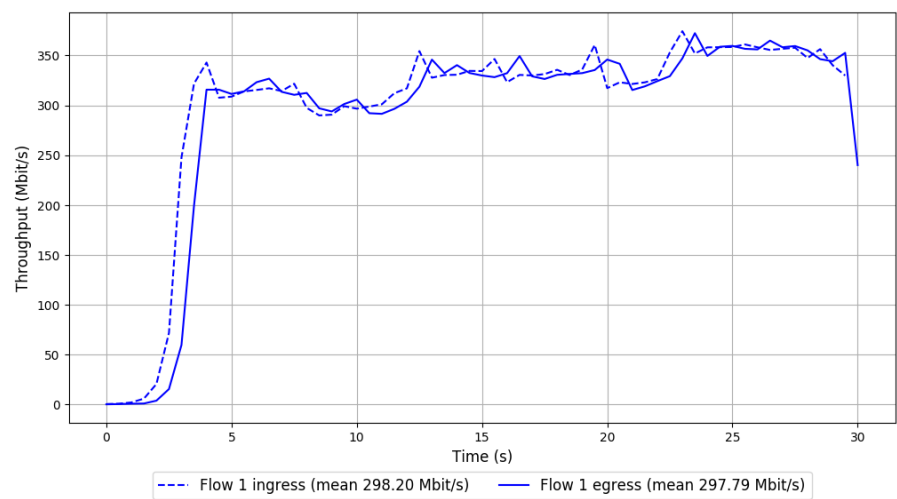
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 237.51 Mbit/s)   Flow 1 egress (mean 237.25 Mbit/s)

Flow 1 (95th percentile 133.41 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-11-15 12:45:09
End at: 2018-11-15 12:45:39
Local clock offset: -0.276 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-11-15 13:12:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 236.53 Mbit/s
95th percentile per-packet one-way delay: 133.541 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 236.53 Mbit/s
95th percentile per-packet one-way delay: 133.541 ms
Loss rate: 1.00%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 236.78 Mbit/s) ----   Flow 1 egress (mean 236.53 Mbit/s) ——

• Flow 1 (95th percentile 133.54 ms)

```
Run 1: Statistics of Copa

Start at: 2018-11-15 10:51:13
End at: 2018-11-15 10:51:43
Local clock offset: -0.001 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-11-15 13:18:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 297.79 Mbit/s
95th percentile per-packet one-way delay: 142.585 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 297.79 Mbit/s
95th percentile per-packet one-way delay: 142.585 ms
Loss rate: 1.03%
```
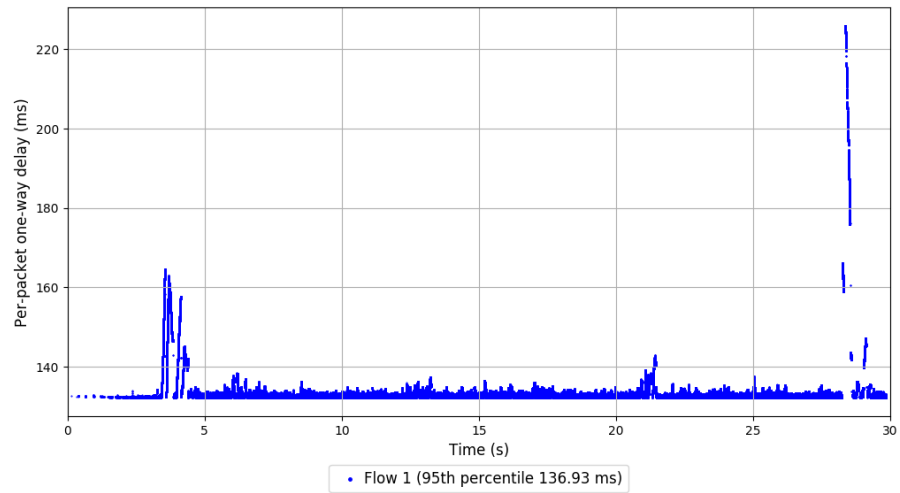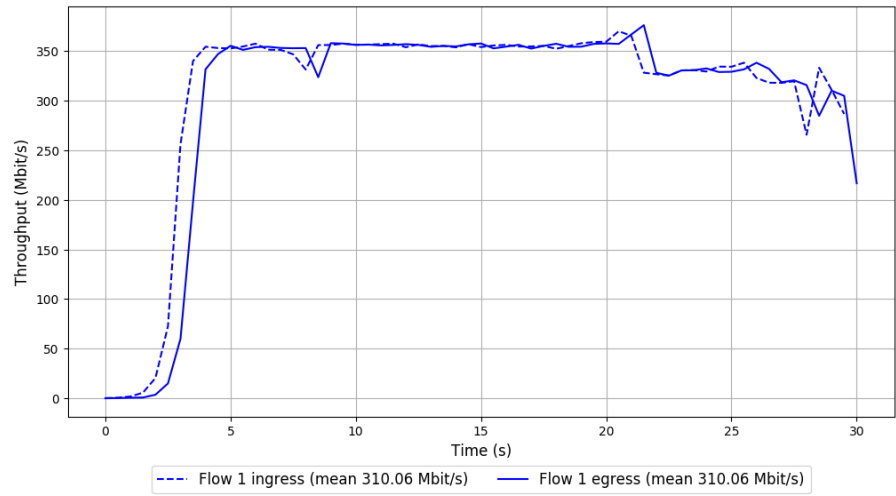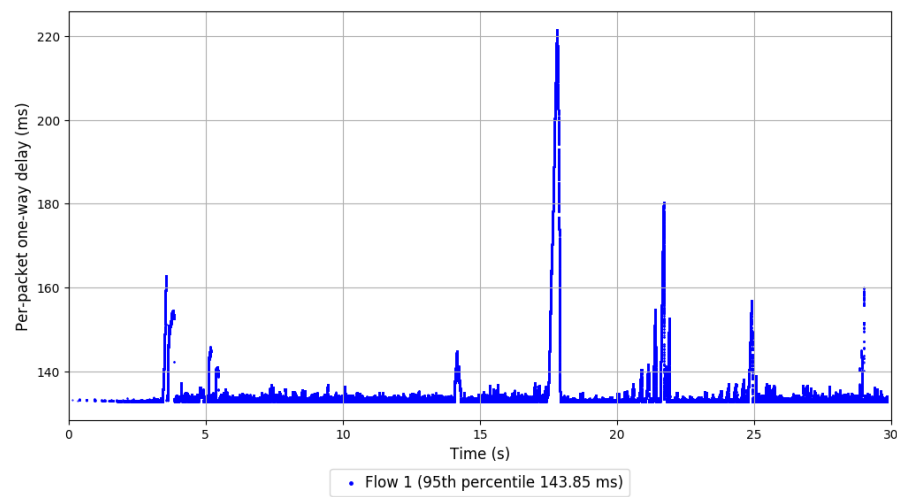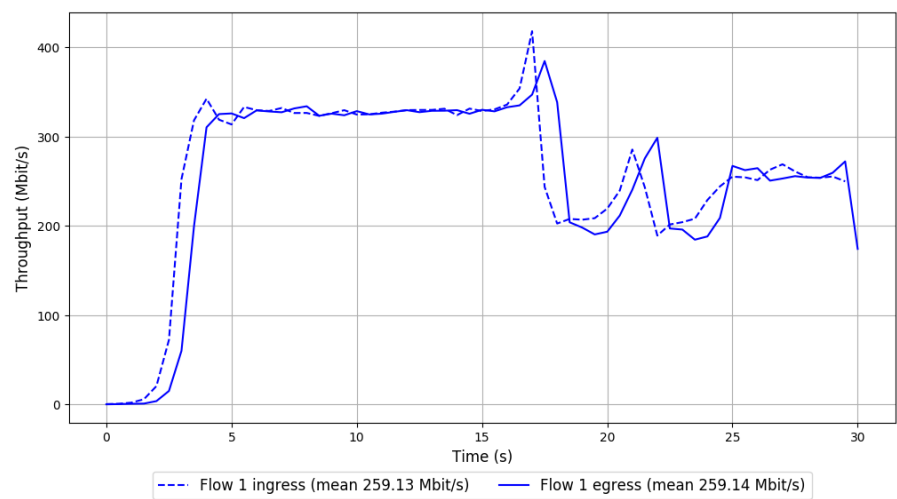
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-11-15 11:20:34
End at: 2018-11-15 11:21:04
Local clock offset: 0.304 ms
Remote clock offset: 0.045 ms


# Below is generated by plot.py at 2018-11-15 13:19:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 310.06 Mbit/s
95th percentile per-packet one-way delay: 136.927 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 310.06 Mbit/s
95th percentile per-packet one-way delay: 136.927 ms
Loss rate: 0.89%
```

Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-11-15 11:46:36
End at: 2018-11-15 11:47:06
Local clock offset: 0.16 ms
Remote clock offset: -0.007 ms


# Below is generated by plot.py at 2018-11-15 13:19:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 259.14 Mbit/s
95th percentile per-packet one-way delay: 143.853 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 259.14 Mbit/s
95th percentile per-packet one-way delay: 143.853 ms
Loss rate: 0.88%
```
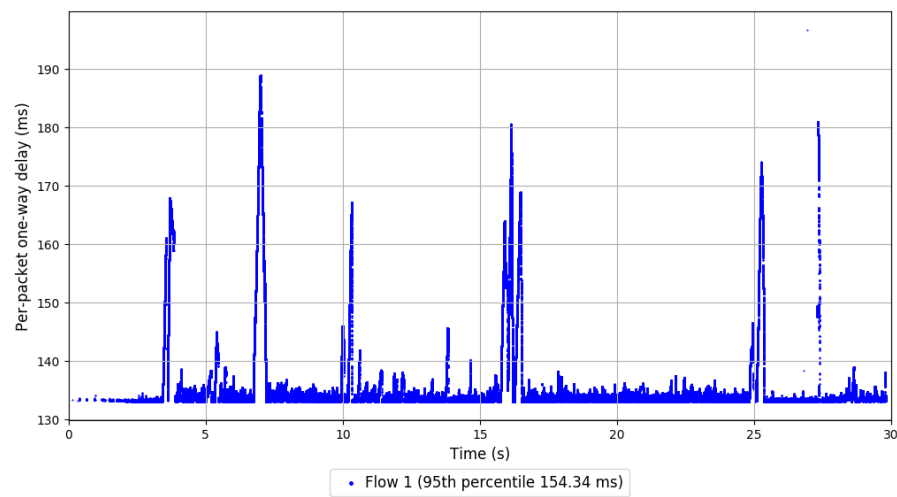
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-11-15 12:13:40
End at: 2018-11-15 12:14:10
Local clock offset: 0.391 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2018-11-15 13:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 262.88 Mbit/s
95th percentile per-packet one-way delay: 154.339 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 262.88 Mbit/s
95th percentile per-packet one-way delay: 154.339 ms
Loss rate: 0.62%
```
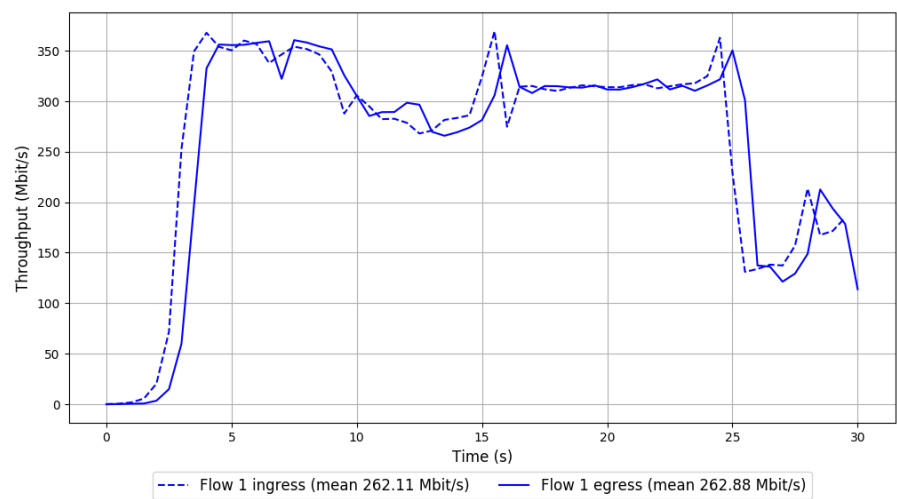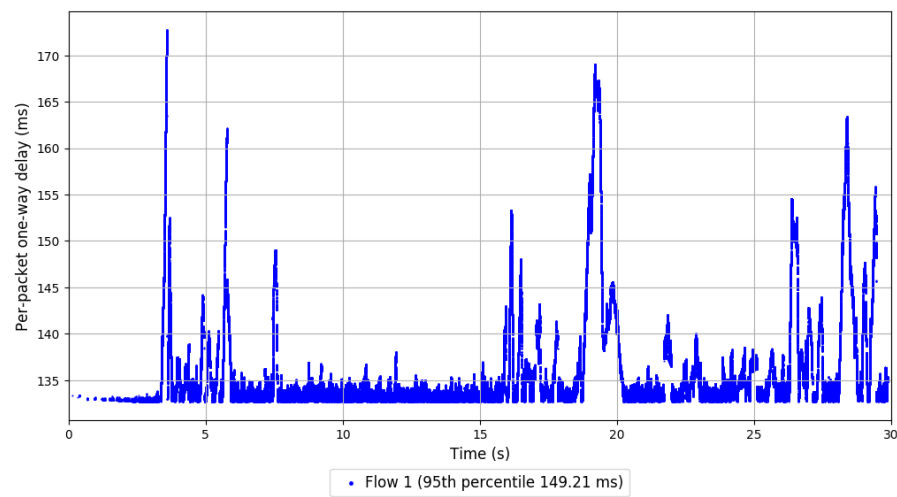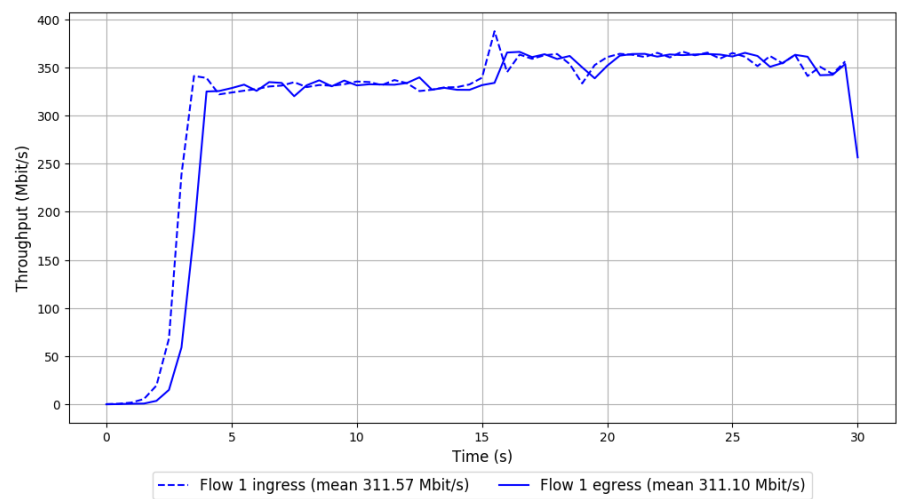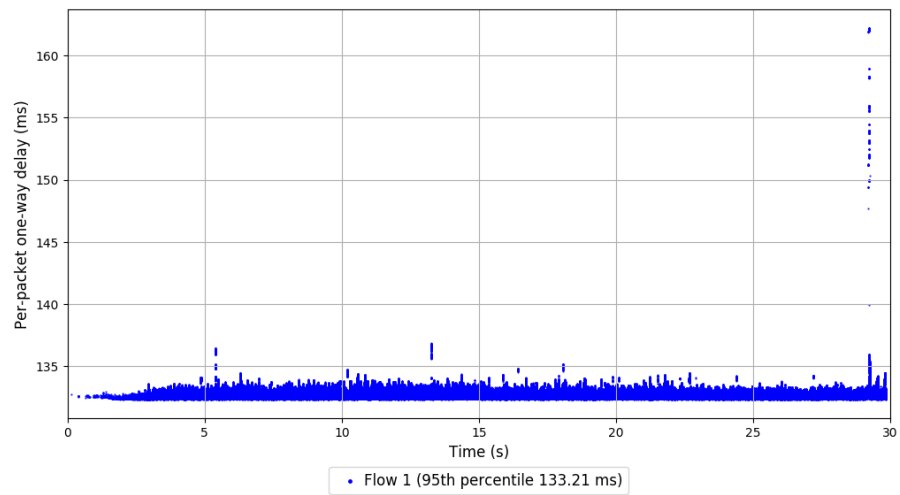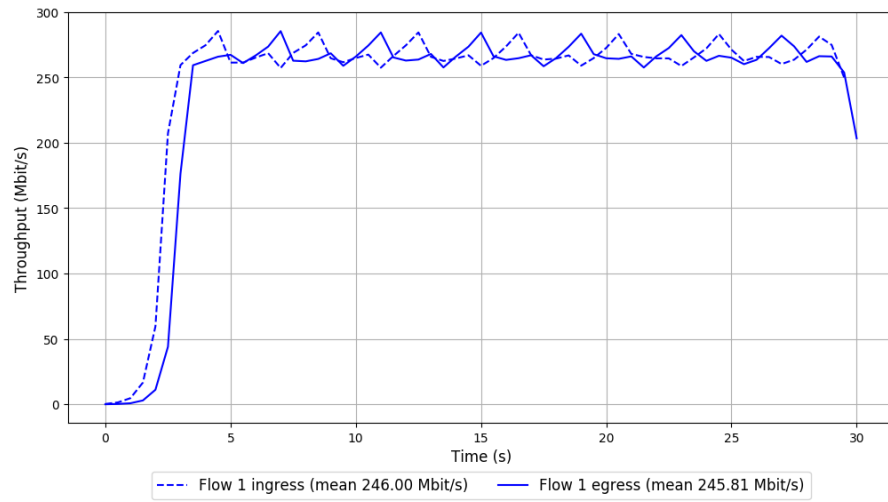
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 262.11 Mbit/s) --- Flow 1 egress (mean 262.88 Mbit/s)

• Flow 1 (95th percentile 154.34 ms)

```
Run 5: Statistics of Copa

Start at: 2018-11-15 12:42:04
End at: 2018-11-15 12:42:34
Local clock offset: 0.158 ms
Remote clock offset: -0.0 ms


# Below is generated by plot.py at 2018-11-15 13:23:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 311.10 Mbit/s
95th percentile per-packet one-way delay: 149.213 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 311.10 Mbit/s
95th percentile per-packet one-way delay: 149.213 ms
Loss rate: 1.04%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 11:10:31
End at: 2018-11-15 11:11:01
Local clock offset: 0.07 ms
Remote clock offset: -0.003 ms


# Below is generated by plot.py at 2018-11-15 13:23:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.81 Mbit/s
95th percentile per-packet one-way delay: 133.212 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 245.81 Mbit/s
95th percentile per-packet one-way delay: 133.212 ms
Loss rate: 0.96%
```
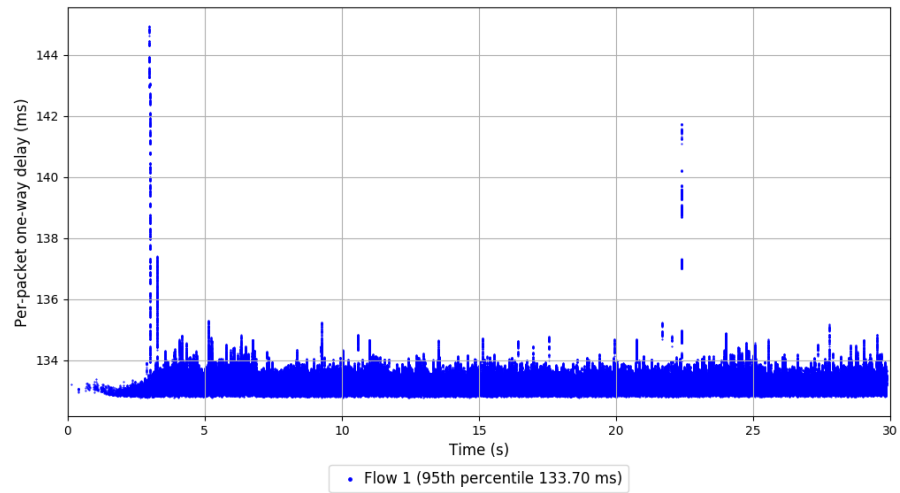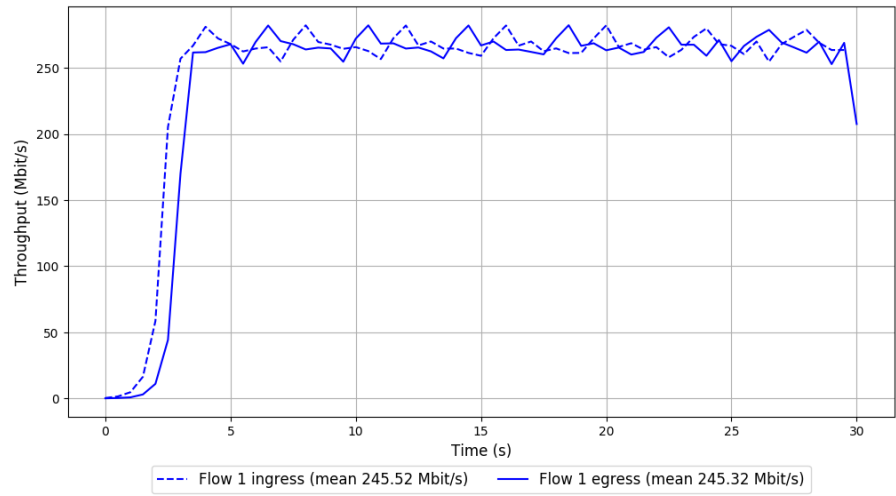
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 11:37:03
End at: 2018-11-15 11:37:33
Local clock offset: 0.136 ms
Remote clock offset: 0.032 ms


# Below is generated by plot.py at 2018-11-15 13:23:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.32 Mbit/s
95th percentile per-packet one-way delay: 133.697 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.32 Mbit/s
95th percentile per-packet one-way delay: 133.697 ms
Loss rate: 0.97%
```
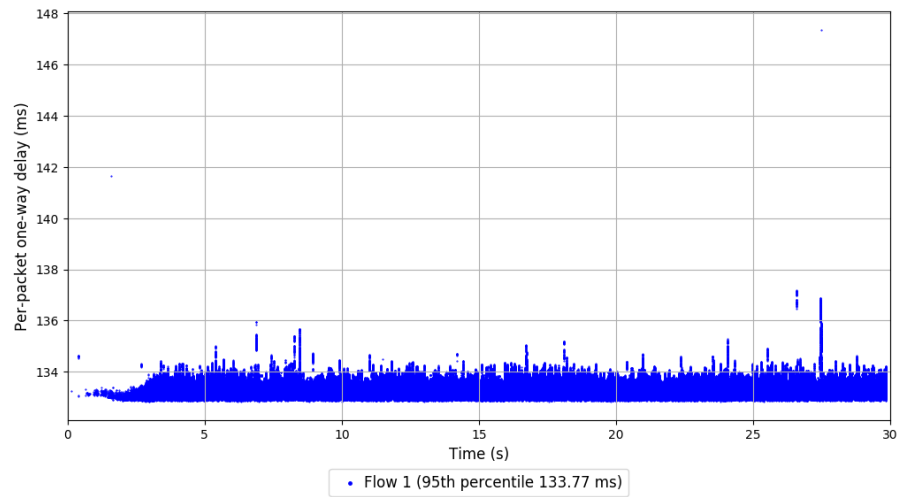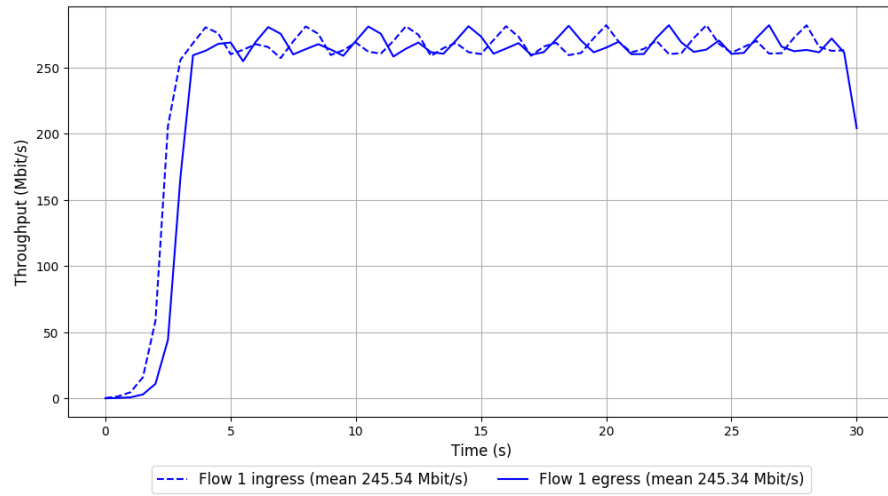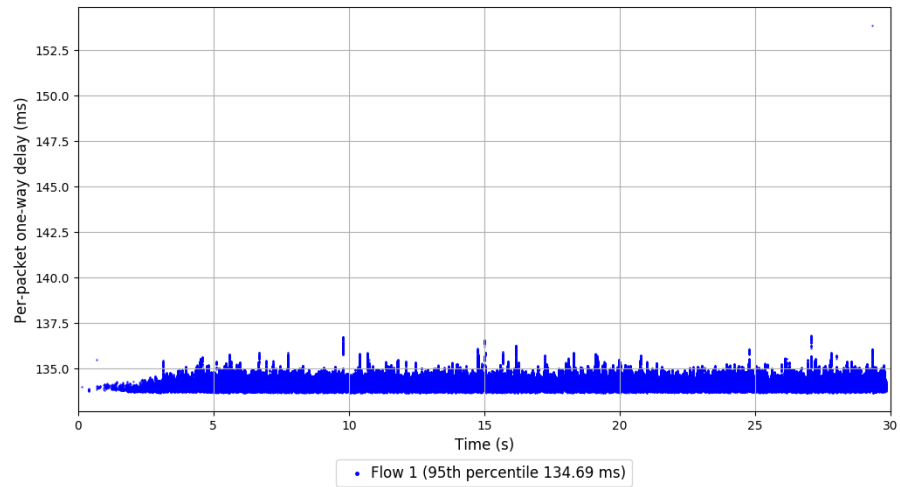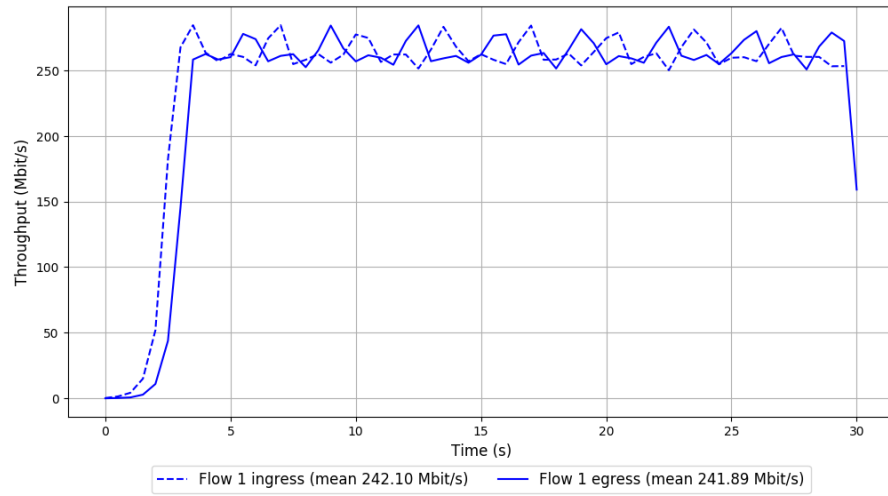
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 245.52 Mbit/s)   Flow 1 egress (mean 245.32 Mbit/s)

Flow 1 (95th percentile 133.70 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 12:04:00
End at: 2018-11-15 12:04:30
Local clock offset: 0.479 ms
Remote clock offset: 0.136 ms

# Below is generated by plot.py at 2018-11-15 13:23:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.34 Mbit/s
95th percentile per-packet one-way delay: 133.768 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.34 Mbit/s
95th percentile per-packet one-way delay: 133.768 ms
Loss rate: 0.97%
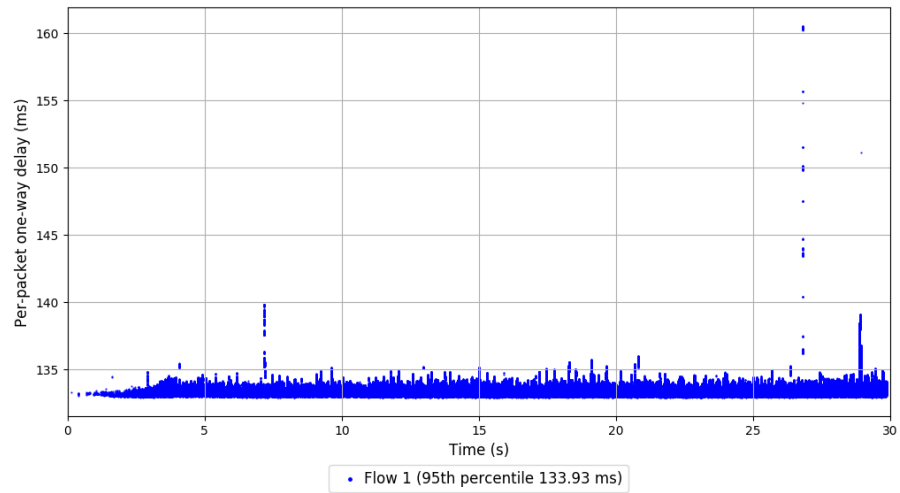```

Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 12:32:11
End at: 2018-11-15 12:32:41
Local clock offset: -0.017 ms
Remote clock offset: -0.351 ms

Below is generated by plot.py at 2018-11-15 13:23:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 241.89 Mbit/s
95th percentile per-packet one-way delay: 134.694 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 241.89 Mbit/s
95th percentile per-packet one-way delay: 134.694 ms
Loss rate: 0.98%
```
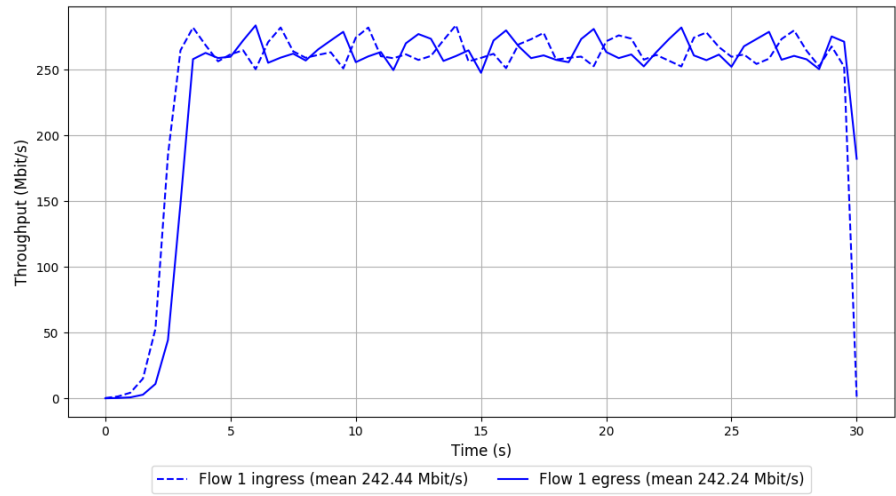
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 13:00:10
End at: 2018-11-15 13:00:40
Local clock offset: -0.312 ms
Remote clock offset: -0.002 ms

Below is generated by plot.py at 2018-11-15 13:23:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 242.24 Mbit/s
95th percentile per-packet one-way delay: 133.926 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 242.24 Mbit/s
95th percentile per-packet one-way delay: 133.926 ms
Loss rate: 0.98%
```
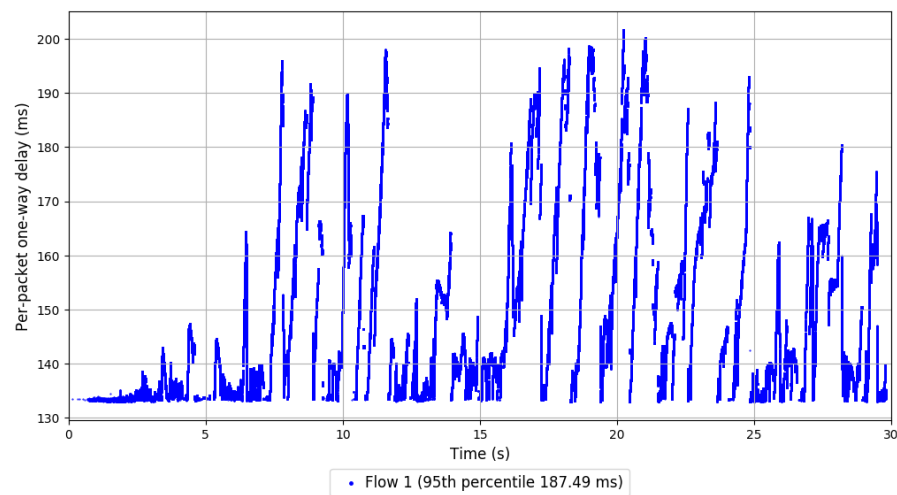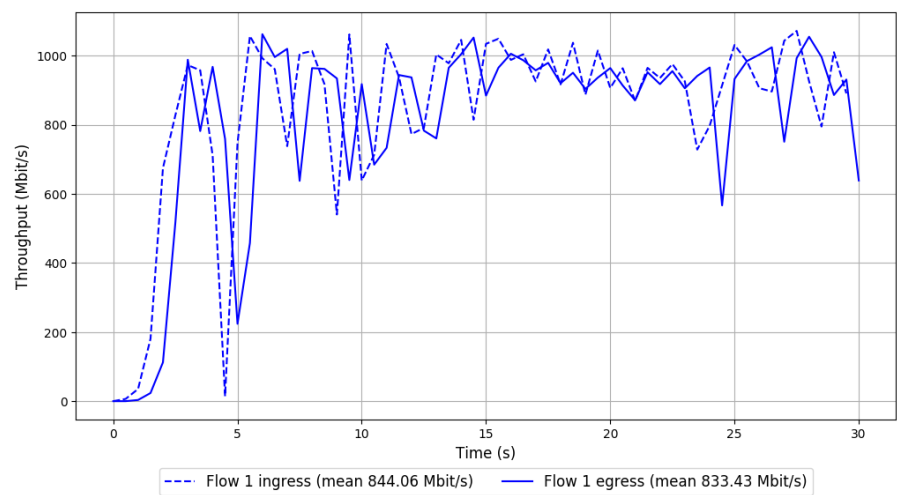
## Run 5: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 242.44 Mbit/s)    Flow 1 egress (mean 242.24 Mbit/s)



Flow 1 (95th percentile 133.93 ms)

```
Run 1: Statistics of FillP

Start at: 2018-11-15 10:58:37
End at: 2018-11-15 10:59:07
Local clock offset: 0.267 ms
Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-11-15 13:37:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 833.43 Mbit/s
95th percentile per-packet one-way delay: 187.488 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 833.43 Mbit/s
95th percentile per-packet one-way delay: 187.488 ms
Loss rate: 2.14%
```
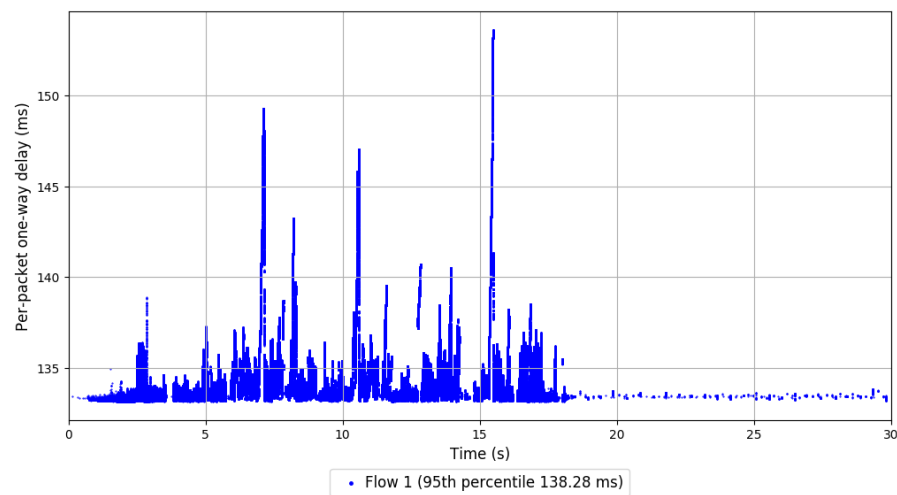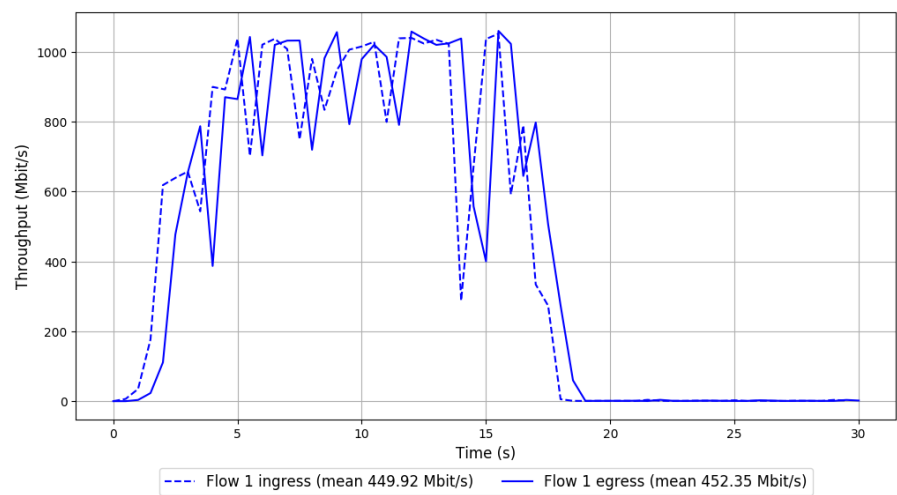
# Run 1: Report of FillP — Data Link



Flow 1 ingress (mean 844.06 Mbit/s) — — — — Flow 1 egress (mean 833.43 Mbit/s)



• Flow 1 (95th percentile 187.49 ms)

```
Run 2: Statistics of FillP

Start at: 2018-11-15 11:27:28
End at: 2018-11-15 11:27:58
Local clock offset: 0.531 ms
Remote clock offset: 0.045 ms

Below is generated by plot.py at 2018-11-15 13:37:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 452.35 Mbit/s
95th percentile per-packet one-way delay: 138.283 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 452.35 Mbit/s
95th percentile per-packet one-way delay: 138.283 ms
Loss rate: 0.00%
```
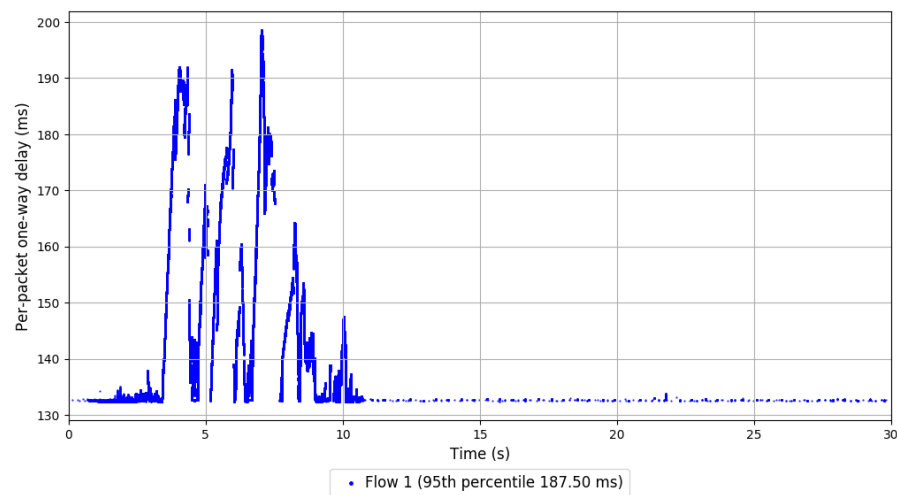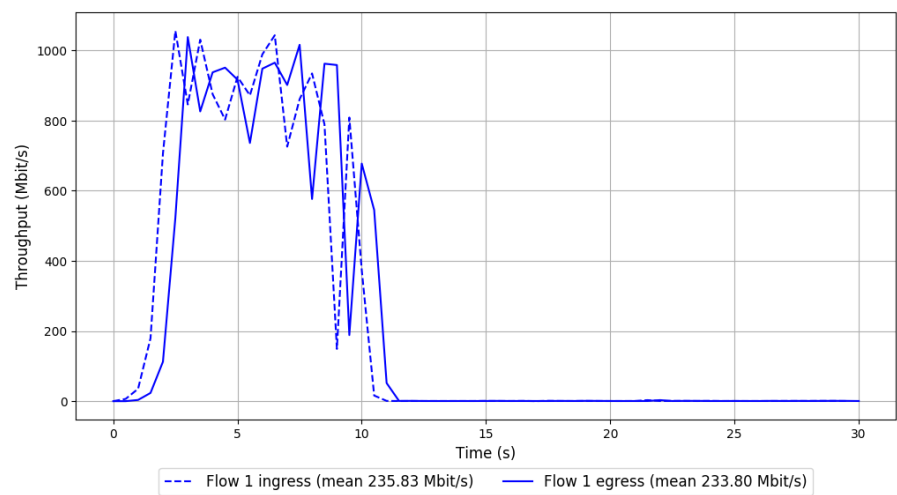
Run 2: Report of FillP — Data Link



Flow 1 ingress (mean 449.92 Mbit/s)  Flow 1 egress (mean 452.35 Mbit/s)



Flow 1 (95th percentile 138.28 ms)

```
Run 3: Statistics of FillP

Start at: 2018-11-15 11:53:41
End at: 2018-11-15 11:54:11
Local clock offset: 0.237 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-11-15 13:37:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 233.80 Mbit/s
95th percentile per-packet one-way delay: 187.498 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 233.80 Mbit/s
95th percentile per-packet one-way delay: 187.498 ms
Loss rate: 1.18%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-11-15 12:21:08
End at: 2018-11-15 12:21:38
Local clock offset: -0.026 ms
Remote clock offset: 0.03 ms


# Below is generated by plot.py at 2018-11-15 13:38:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 790.36 Mbit/s
95th percentile per-packet one-way delay: 194.929 ms
Loss rate: 3.68%
-- Flow 1:
Average throughput: 790.36 Mbit/s
95th percentile per-packet one-way delay: 194.929 ms
Loss rate: 3.68%
```
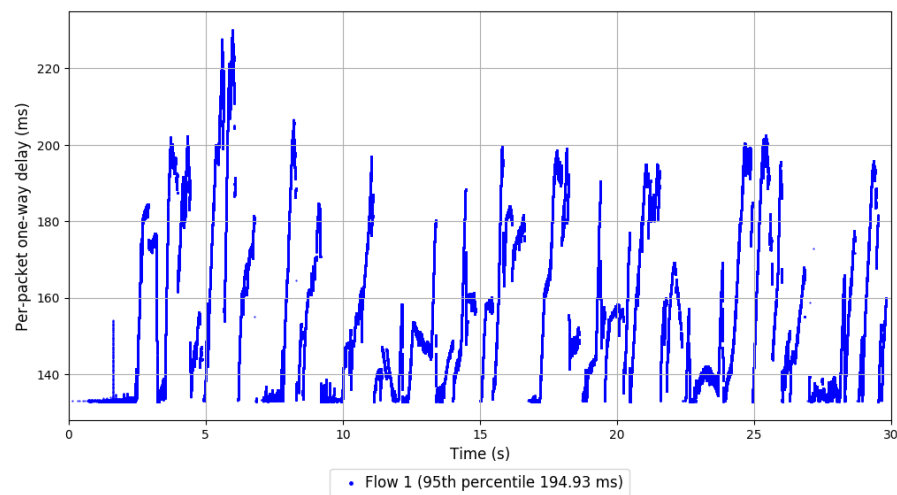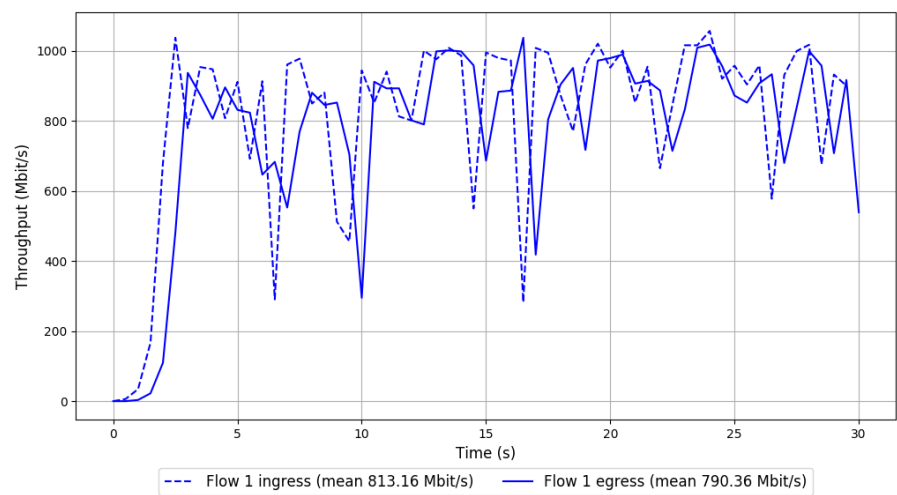
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-11-15 12:49:18
End at: 2018-11-15 12:49:48
Local clock offset: -0.26 ms
Remote clock offset: 0.022 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 785.74 Mbit/s
95th percentile per-packet one-way delay: 199.395 ms
Loss rate: 4.43%
-- Flow 1:
Average throughput: 785.74 Mbit/s
95th percentile per-packet one-way delay: 199.395 ms
Loss rate: 4.43%
```
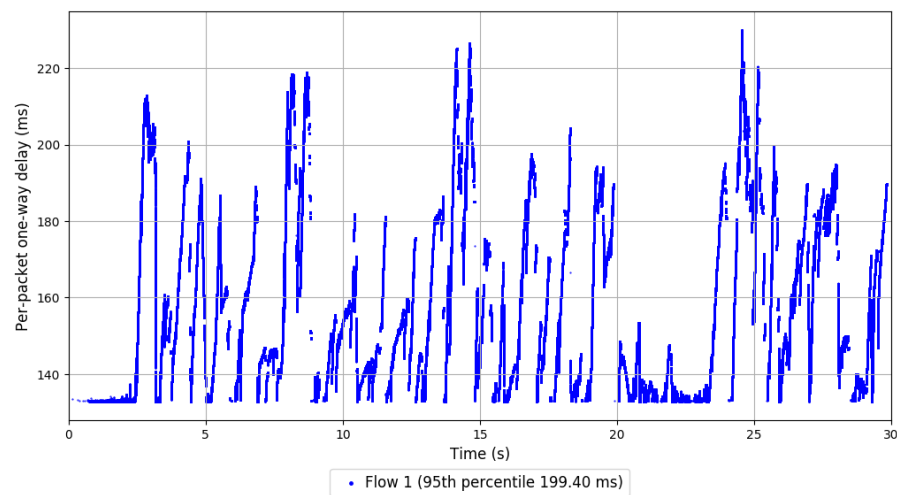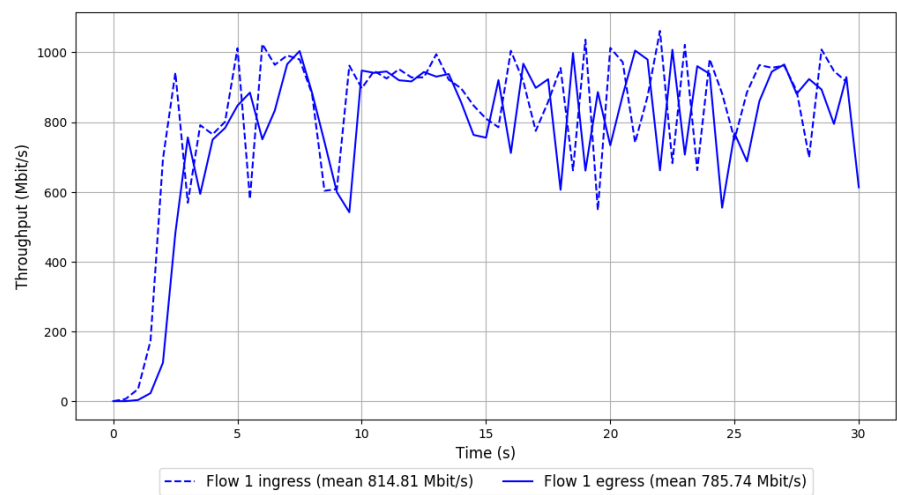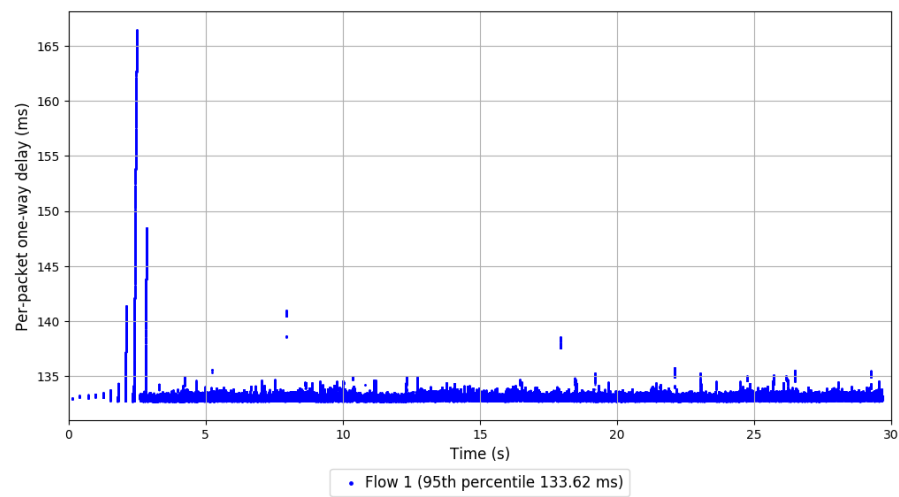
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 814.81 Mbit/s) ----- Flow 1 egress (mean 785.74 Mbit/s) ———
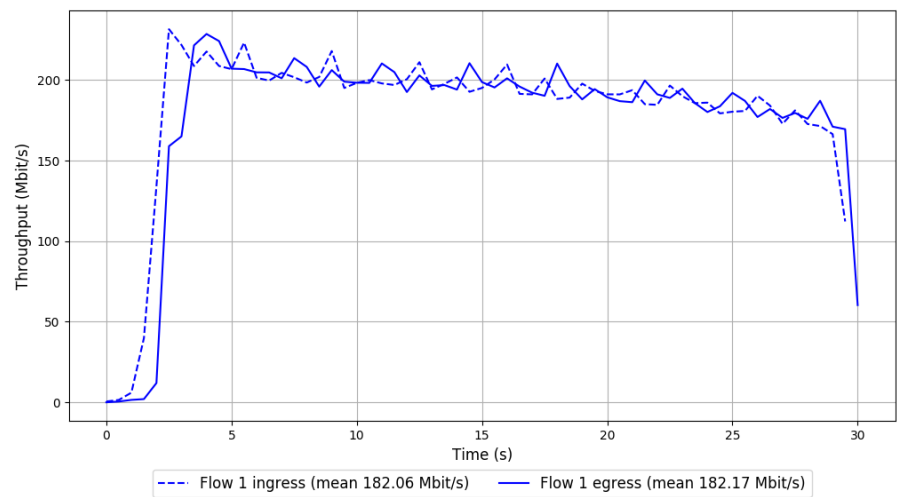

• Flow 1 (95th percentile 199.40 ms)

44

```
Run 1: Statistics of Indigo

Start at: 2018-11-15 11:00:51
End at: 2018-11-15 11:01:21
Local clock offset: 0.027 ms
Remote clock offset: -0.021 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.17 Mbit/s
95th percentile per-packet one-way delay: 133.620 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 182.17 Mbit/s
95th percentile per-packet one-way delay: 133.620 ms
Loss rate: 0.84%
```
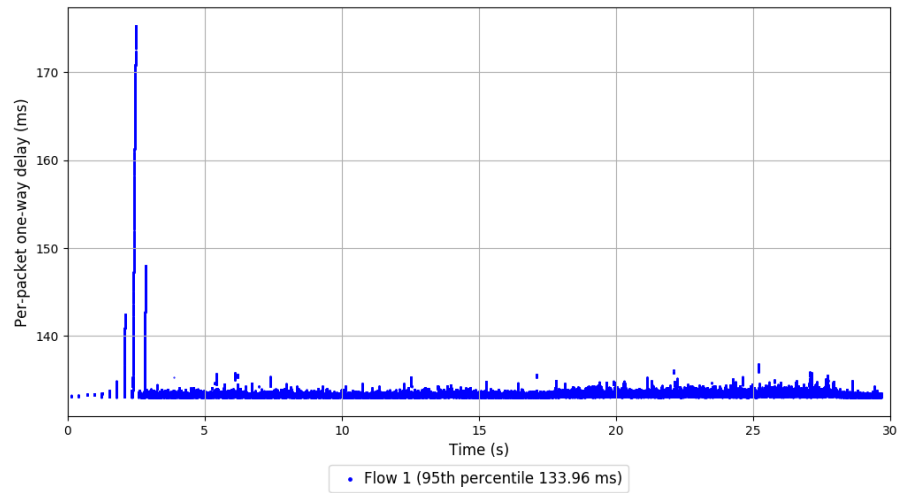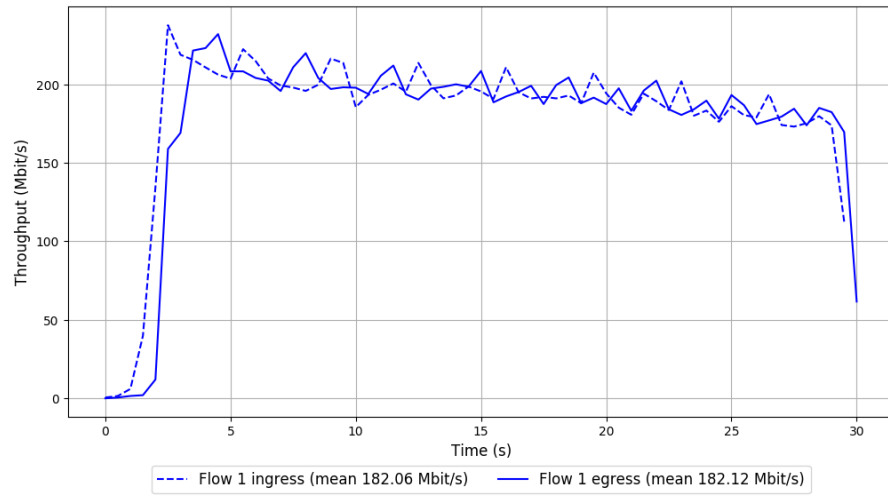
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-11-15 11:29:00
End at: 2018-11-15 11:29:30
Local clock offset: 0.27 ms
Remote clock offset: 0.076 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.12 Mbit/s
95th percentile per-packet one-way delay: 133.961 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 182.12 Mbit/s
95th percentile per-packet one-way delay: 133.961 ms
Loss rate: 0.87%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-11-15 11:55:04
End at: 2018-11-15 11:55:34
Local clock offset: 0.23 ms
Remote clock offset: 0.087 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.58 Mbit/s
95th percentile per-packet one-way delay: 134.340 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 186.58 Mbit/s
95th percentile per-packet one-way delay: 134.340 ms
Loss rate: 0.93%
```
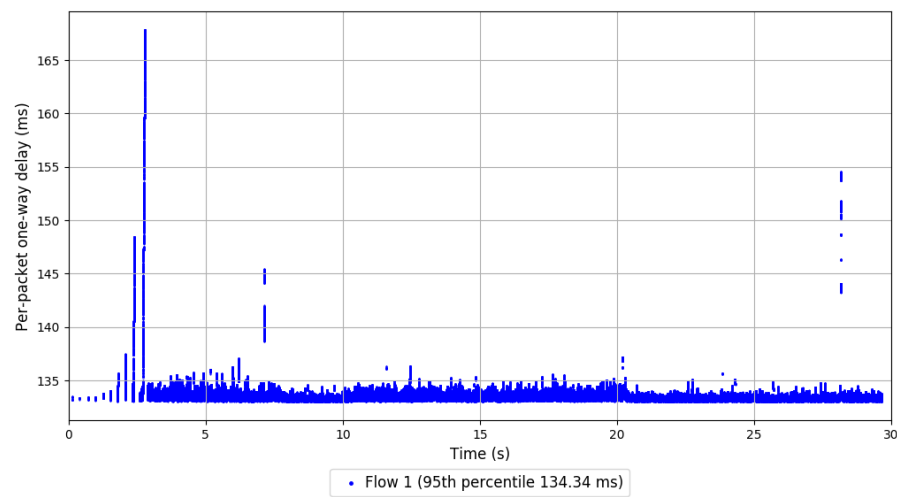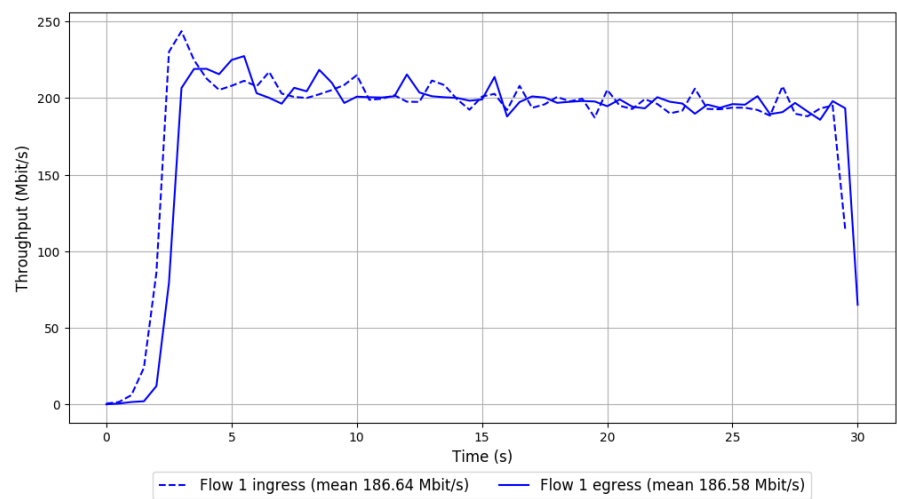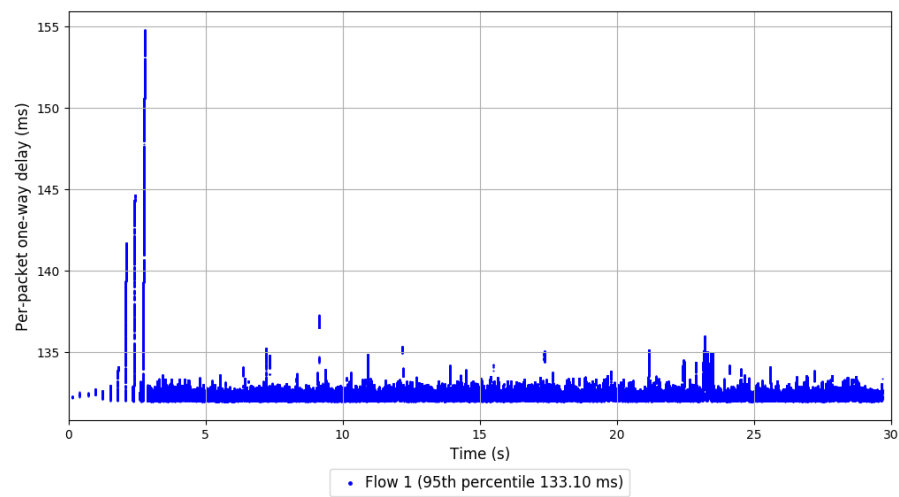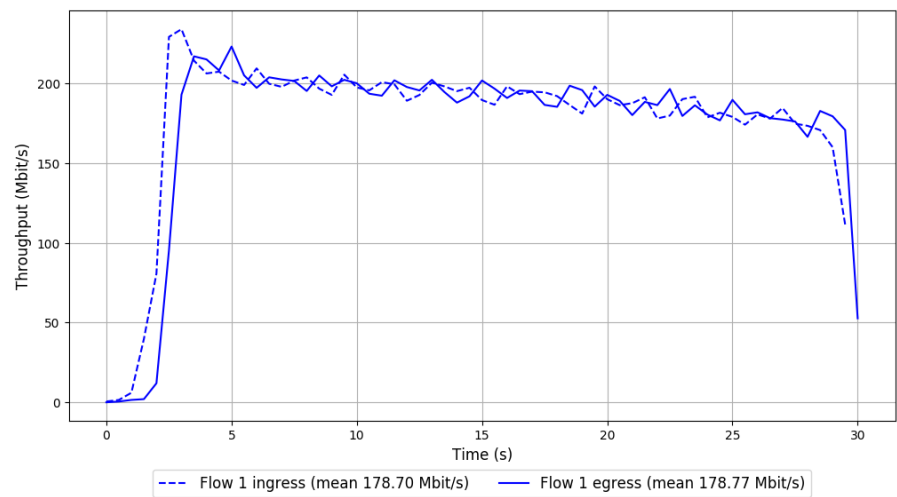
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-11-15 12:22:58
End at: 2018-11-15 12:23:29
Local clock offset: -0.083 ms
Remote clock offset: -0.012 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 178.77 Mbit/s
95th percentile per-packet one-way delay: 133.103 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 178.77 Mbit/s
95th percentile per-packet one-way delay: 133.103 ms
Loss rate: 0.85%
```
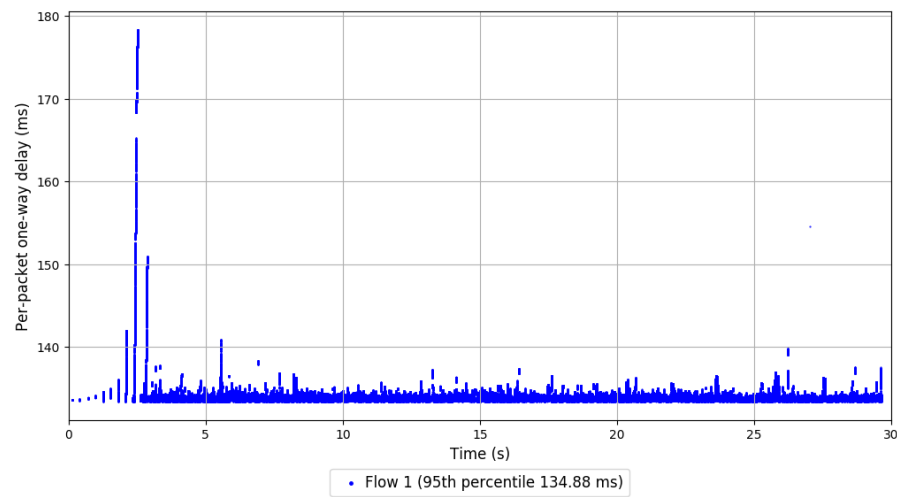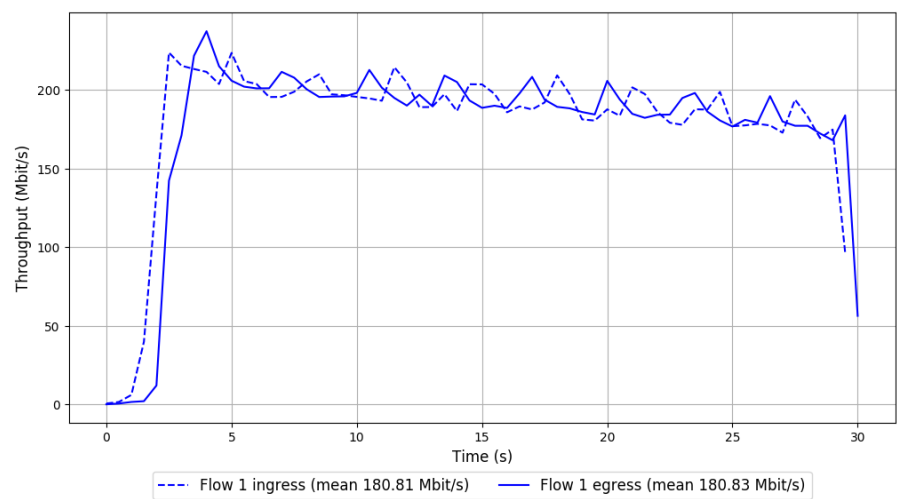
Run 4: Report of Indigo — Data Link

Flow 1 ingress (mean 178.70 Mbit/s) --- Flow 1 egress (mean 178.77 Mbit/s)

• Flow 1 (95th percentile 133.10 ms)

```
Run 5: Statistics of Indigo

Start at: 2018-11-15 12:51:28
End at: 2018-11-15 12:51:58
Local clock offset: 0.001 ms
Remote clock offset: 0.027 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 180.83 Mbit/s
95th percentile per-packet one-way delay: 134.876 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 180.83 Mbit/s
95th percentile per-packet one-way delay: 134.876 ms
Loss rate: 0.86%
```

Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 180.81 Mbit/s)   ——— Flow 1 egress (mean 180.83 Mbit/s)

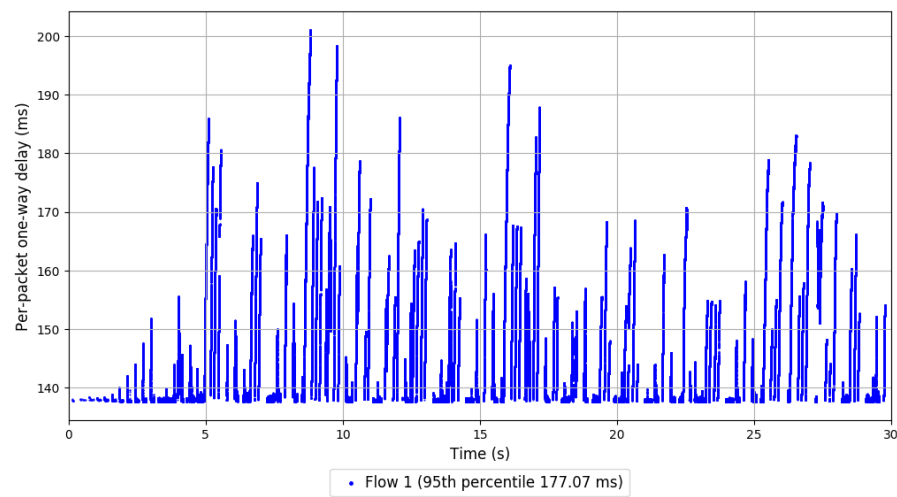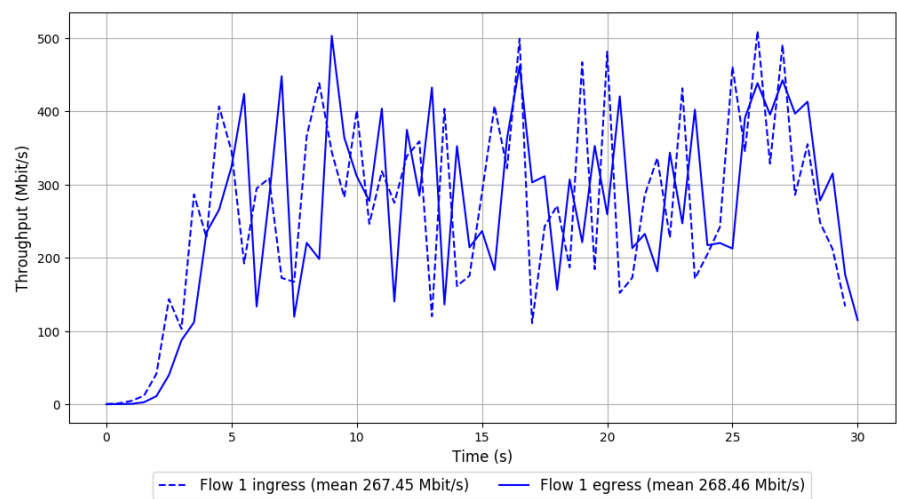
• Flow 1 (95th percentile 134.88 ms)

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

Start at: 2018-11-15 10:43:32
End at: 2018-11-15 10:44:02
Local clock offset: -0.034 ms
Remote clock offset: -0.379 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 268.46 Mbit/s
95th percentile per-packet one-way delay: 177.073 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 268.46 Mbit/s
95th percentile per-packet one-way delay: 177.073 ms
Loss rate: 0.53%
```

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

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

Start at: 2018-11-15 11:13:20
End at: 2018-11-15 11:13:50
Local clock offset: 0.517 ms
Remote clock offset: 0.052 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 273.69 Mbit/s
95th percentile per-packet one-way delay: 177.626 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 273.69 Mbit/s
95th percentile per-packet one-way delay: 177.626 ms
Loss rate: 1.01%
```
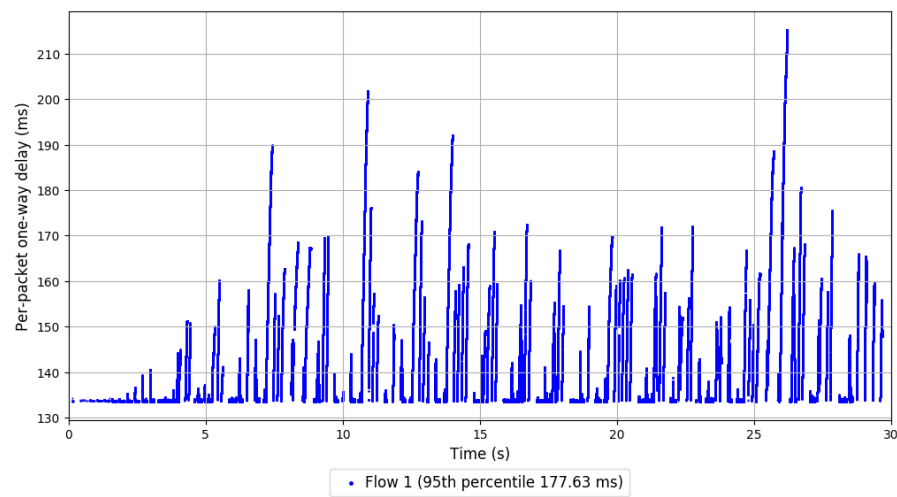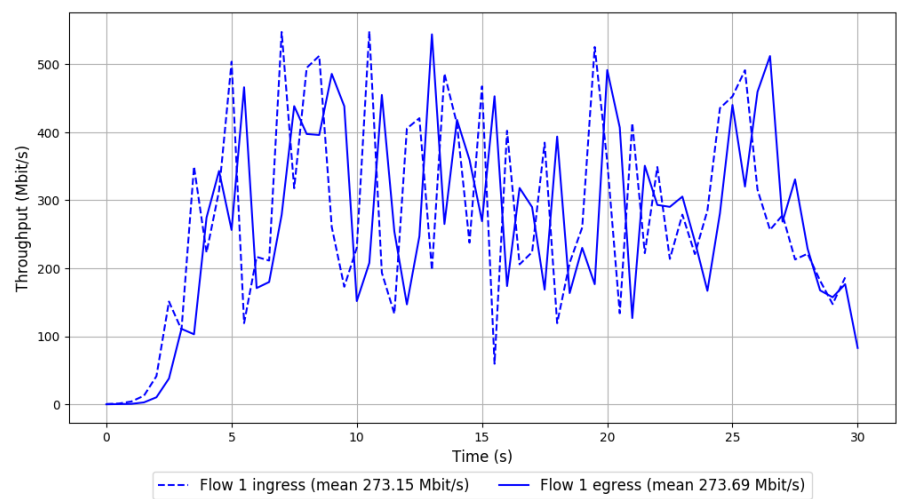
Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 273.15 Mbit/s) ----   Flow 1 egress (mean 273.69 Mbit/s) ——

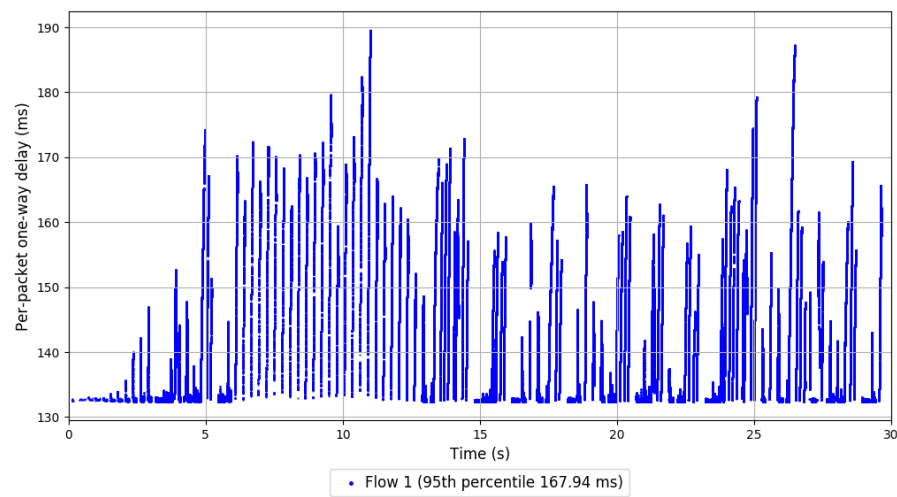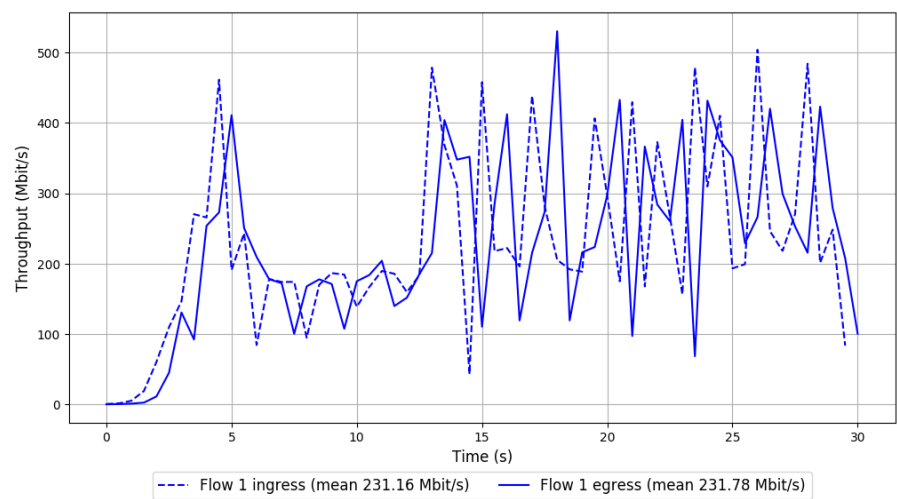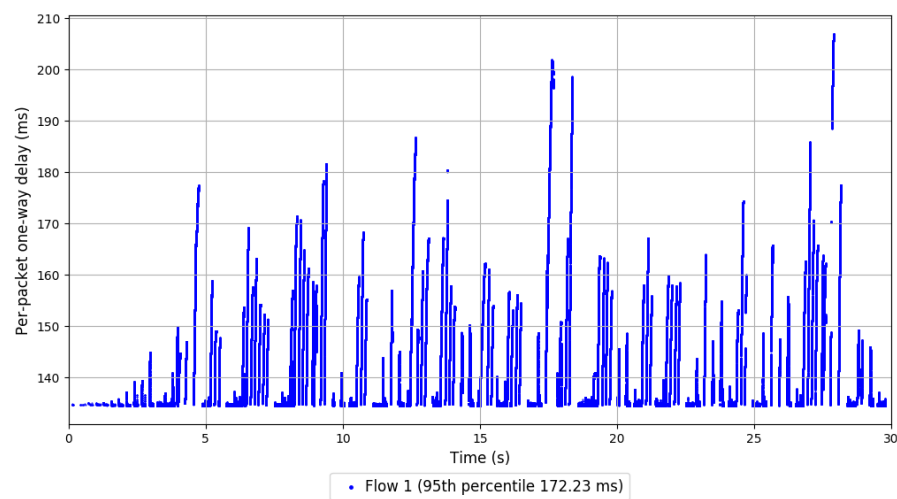• Flow 1 (95th percentile 177.63 ms)

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

Start at: 2018-11-15 11:39:40
End at: 2018-11-15 11:40:10
Local clock offset: 0.529 ms
Remote clock offset: -0.012 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.78 Mbit/s
95th percentile per-packet one-way delay: 167.936 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 231.78 Mbit/s
95th percentile per-packet one-way delay: 167.936 ms
Loss rate: 0.61%
```

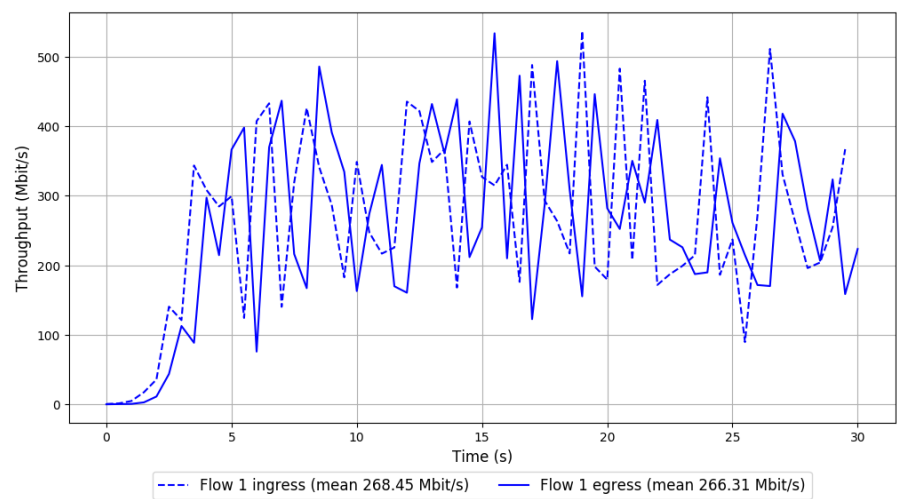Run 3: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-11-15 12:06:37
End at: 2018-11-15 12:07:07
Local clock offset: -0.197 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 266.31 Mbit/s
95th percentile per-packet one-way delay: 172.228 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 266.31 Mbit/s
95th percentile per-packet one-way delay: 172.228 ms
Loss rate: 1.50%
```
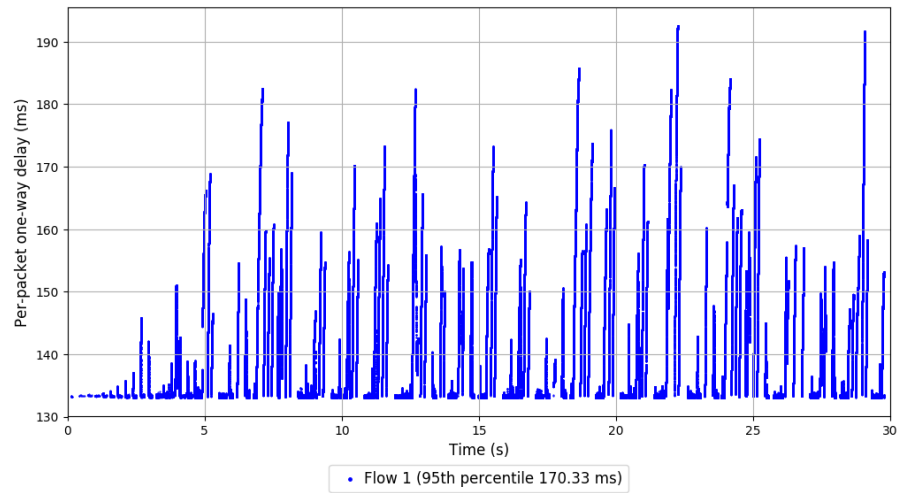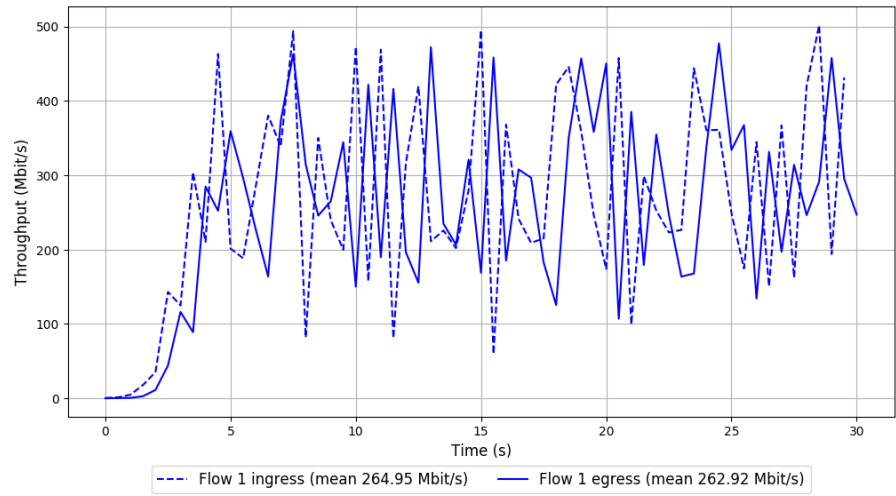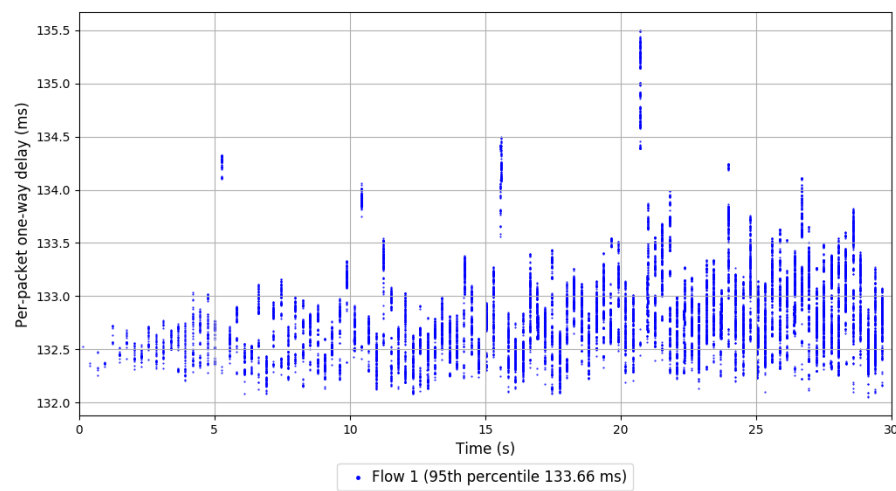
Run 4: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 268.45 Mbit/s)   Flow 1 egress (mean 266.31 Mbit/s)

Flow 1 (95th percentile 172.23 ms)

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

Start at: 2018-11-15 12:34:53
End at: 2018-11-15 12:35:23
Local clock offset: 0.069 ms
Remote clock offset: 0.008 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 262.92 Mbit/s
95th percentile per-packet one-way delay: 170.334 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 262.92 Mbit/s
95th percentile per-packet one-way delay: 170.334 ms
Loss rate: 1.62%
```
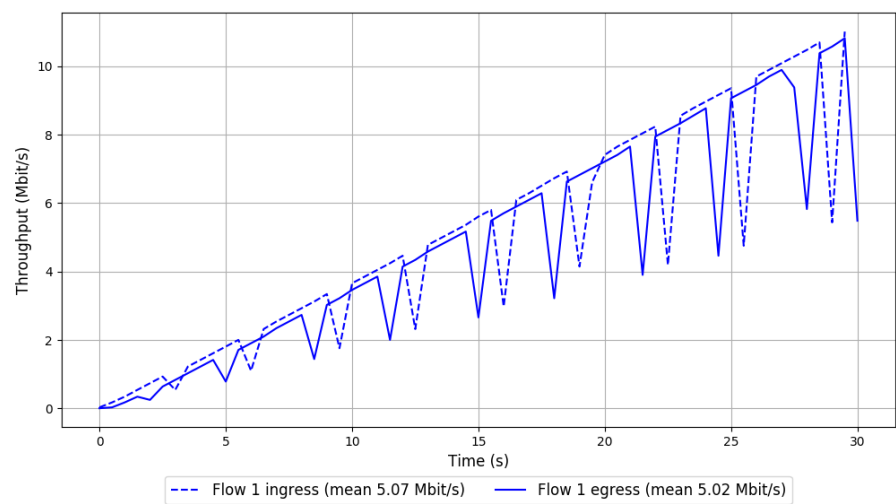
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 10:42:20
End at: 2018-11-15 10:42:50
Local clock offset: -0.301 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.02 Mbit/s
95th percentile per-packet one-way delay: 133.659 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 5.02 Mbit/s
95th percentile per-packet one-way delay: 133.659 ms
Loss rate: 1.83%
```

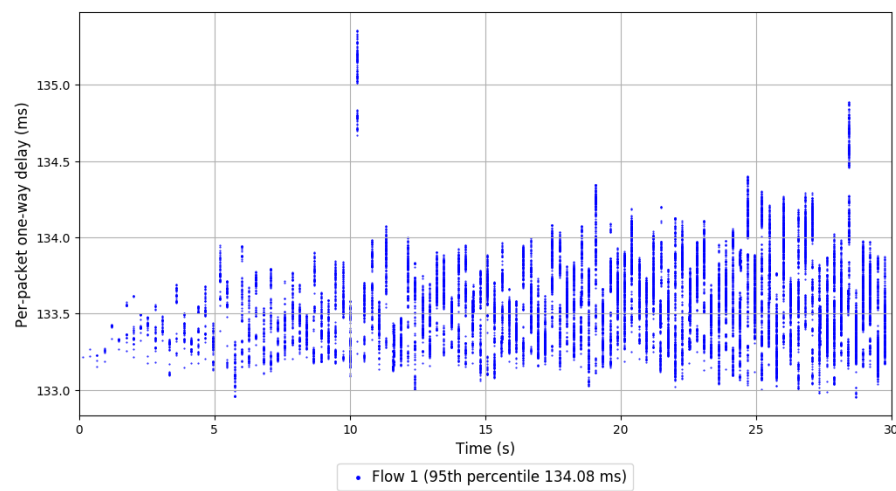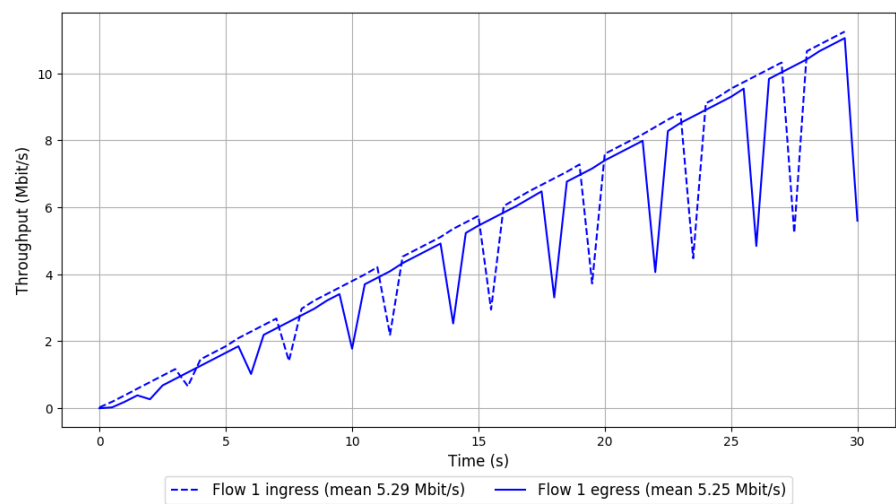# Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-11-15 11:12:08
End at: 2018-11-15 11:12:38
Local clock offset: 0.235 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 134.084 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 134.084 ms
Loss rate: 1.79%
```
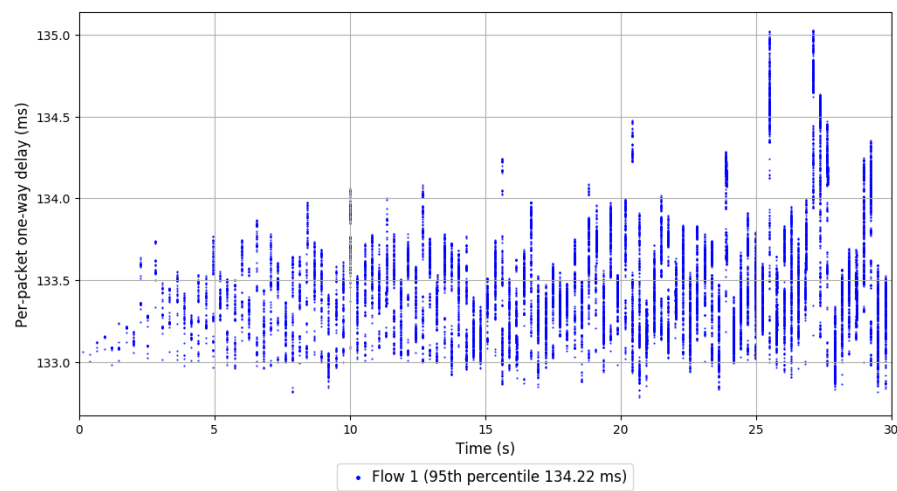
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-11-15 11:38:28
End at: 2018-11-15 11:38:58
Local clock offset: -0.107 ms
Remote clock offset: 0.043 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 134.215 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 134.215 ms
Loss rate: 1.79%
```
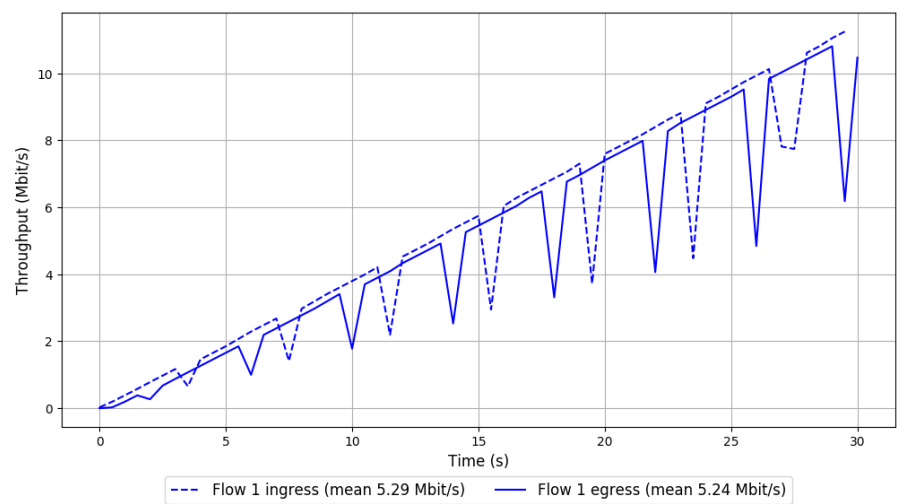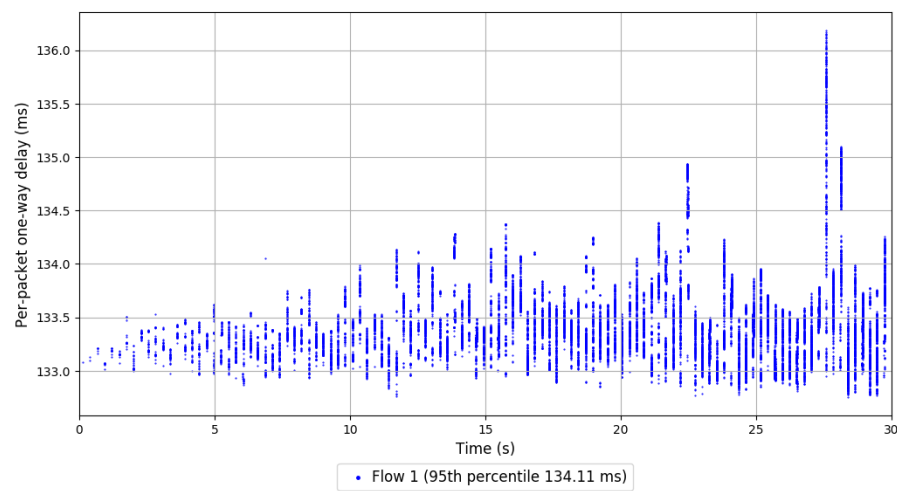
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.29 Mbit/s) Flow 1 egress (mean 5.24 Mbit/s)

Flow 1 (95th percentile 134.22 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-11-15 12:05:25
End at: 2018-11-15 12:05:55
Local clock offset: 0.225 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.16 Mbit/s
95th percentile per-packet one-way delay: 134.111 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 5.16 Mbit/s
95th percentile per-packet one-way delay: 134.111 ms
Loss rate: 1.80%
```
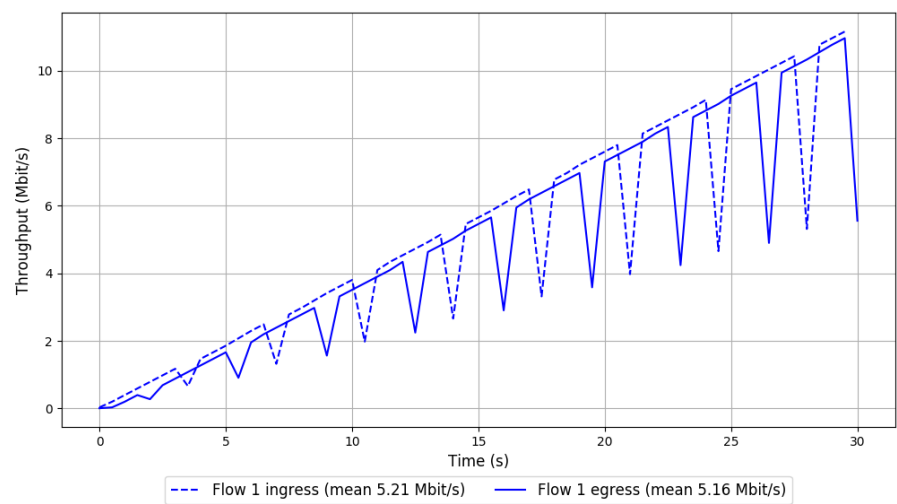
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.21 Mbit/s)   Flow 1 egress (mean 5.16 Mbit/s)

Flow 1 (95th percentile 134.11 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-11-15 12:33:41
End at: 2018-11-15 12:34:11
Local clock offset: -0.412 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-11-15 13:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.316 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.316 ms
Loss rate: 1.79%
```
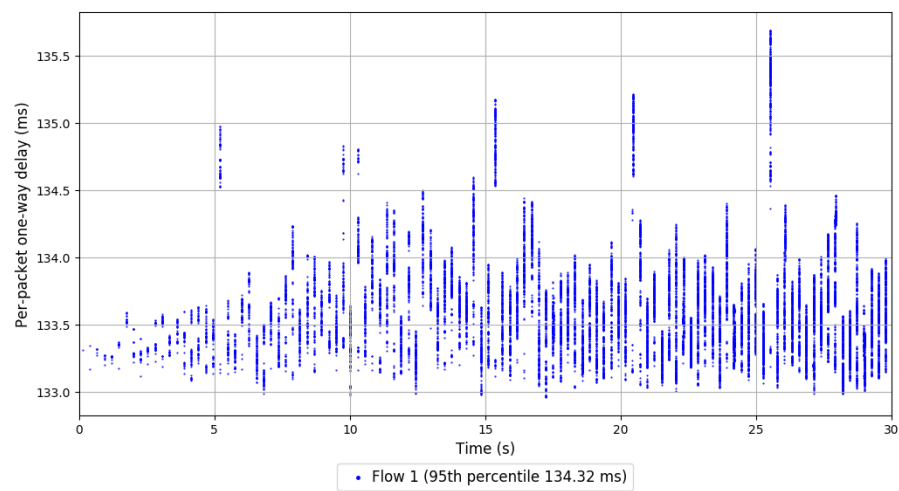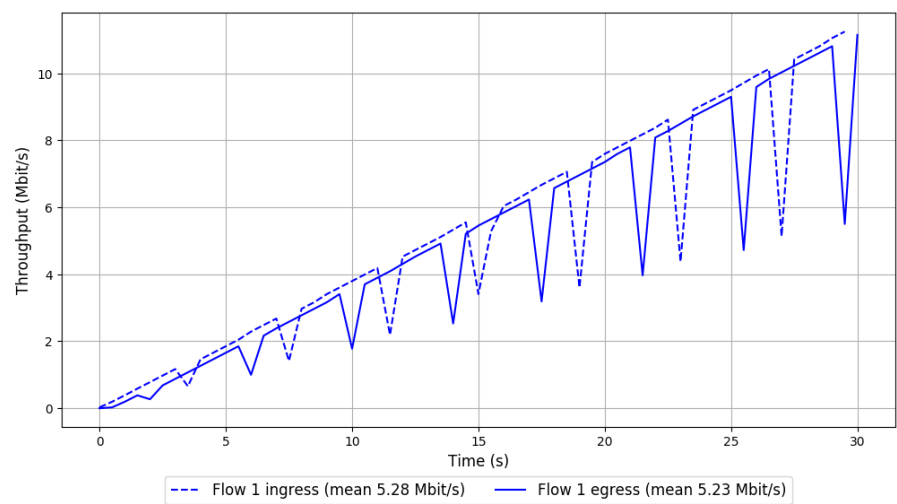
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.28 Mbit/s) Flow 1 egress (mean 5.23 Mbit/s)

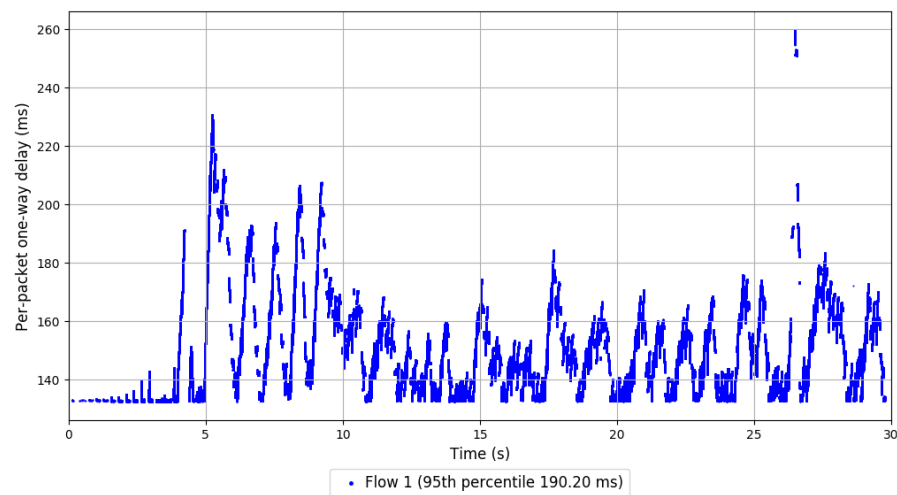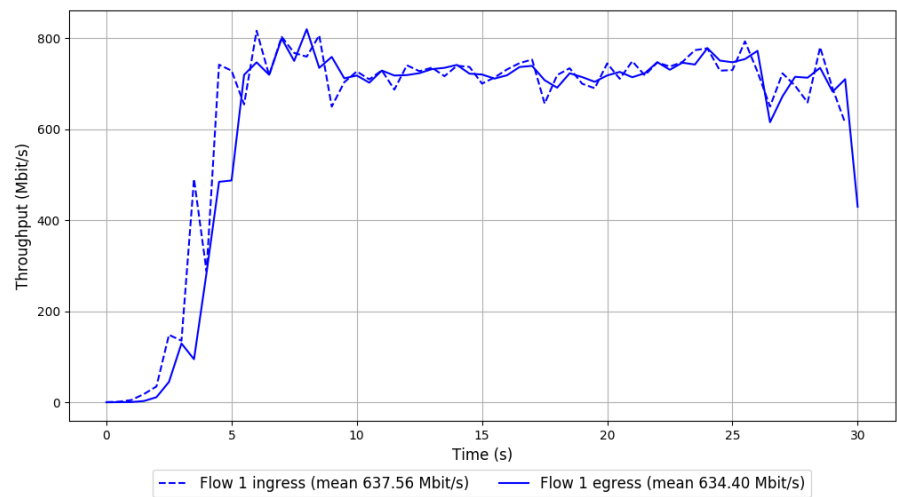Flow 1 (95th percentile 134.32 ms)

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 11:02:37
End at: 2018-11-15 11:03:07
Local clock offset: -0.043 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2018-11-15 13:47:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 634.40 Mbit/s
95th percentile per-packet one-way delay: 190.202 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 634.40 Mbit/s
95th percentile per-packet one-way delay: 190.202 ms
Loss rate: 1.38%
```

Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 11:30:31
End at: 2018-11-15 11:31:01
Local clock offset: -0.299 ms
Remote clock offset: 0.075 ms


# Below is generated by plot.py at 2018-11-15 13:47:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 627.58 Mbit/s
95th percentile per-packet one-way delay: 195.907 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 627.58 Mbit/s
95th percentile per-packet one-way delay: 195.907 ms
Loss rate: 1.24%
```
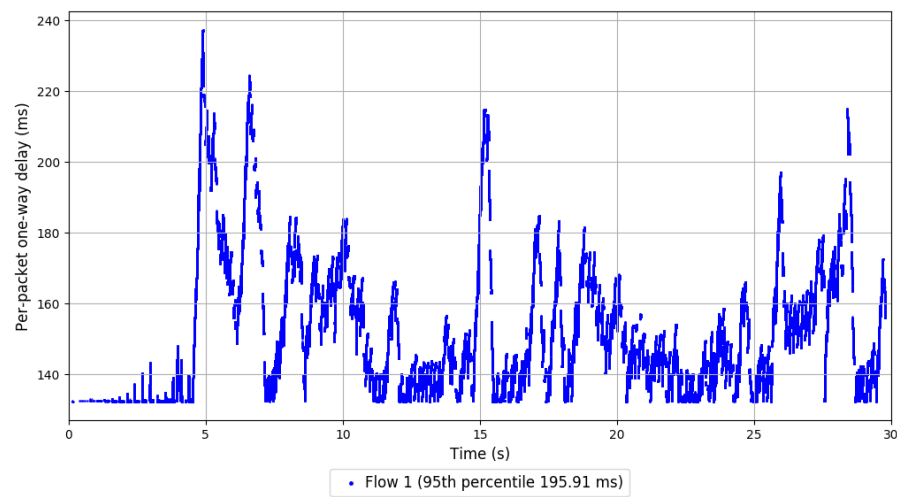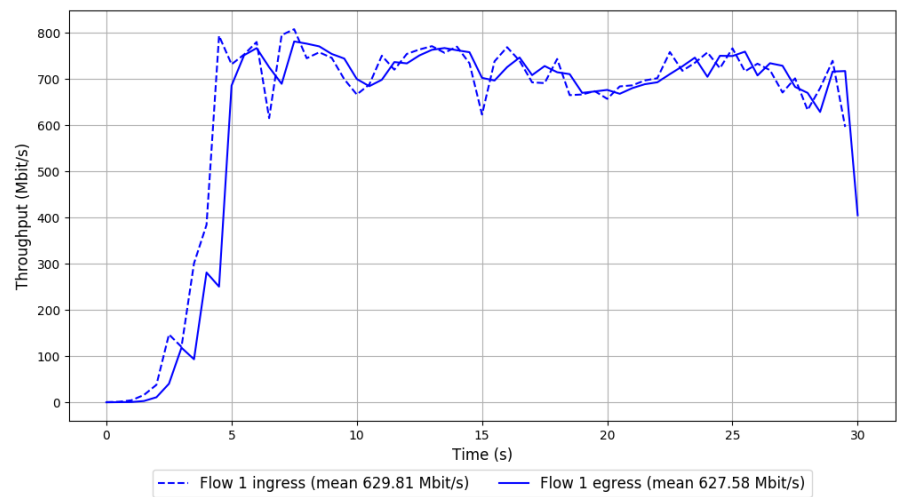
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 11:56:36
End at: 2018-11-15 11:57:06
Local clock offset: 0.181 ms
Remote clock offset: 0.085 ms


# Below is generated by plot.py at 2018-11-15 13:47:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.78 Mbit/s
95th percentile per-packet one-way delay: 203.989 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 595.78 Mbit/s
95th percentile per-packet one-way delay: 203.989 ms
Loss rate: 1.76%
```
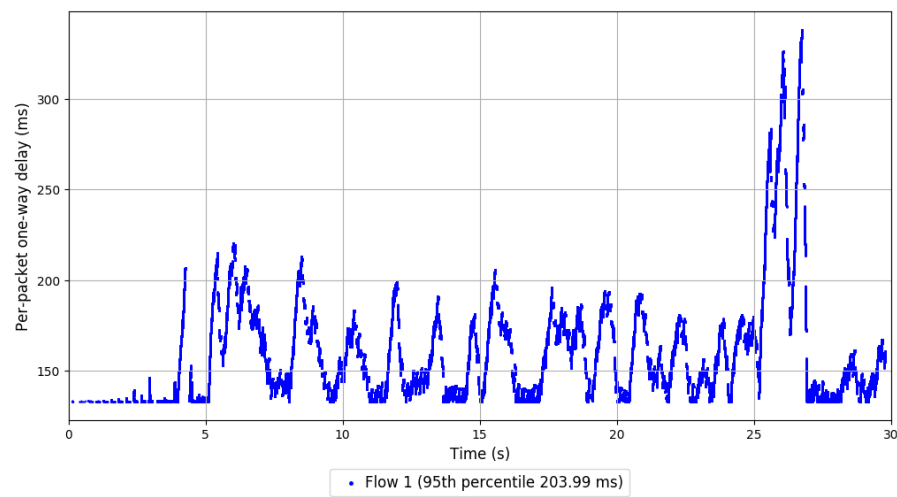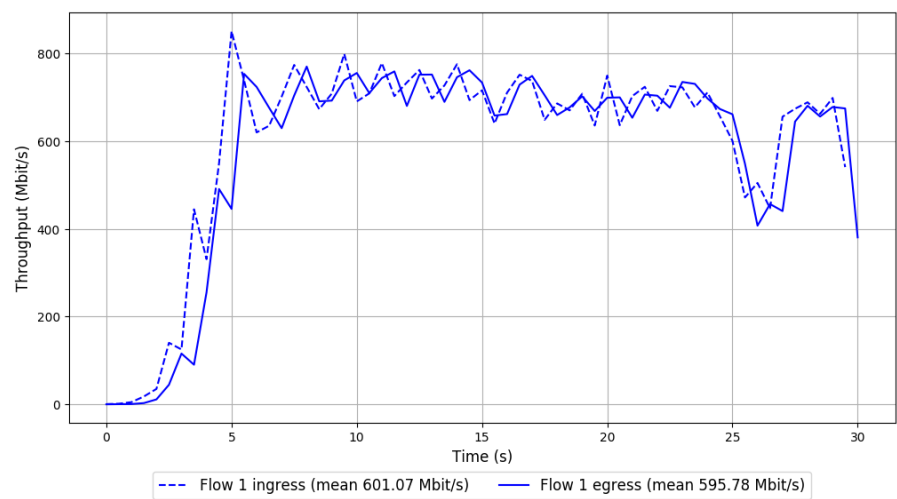
Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 12:24:31
End at: 2018-11-15 12:25:01
Local clock offset: 0.132 ms
Remote clock offset: 0.008 ms


# Below is generated by plot.py at 2018-11-15 13:49:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 616.83 Mbit/s
95th percentile per-packet one-way delay: 192.871 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 616.83 Mbit/s
95th percentile per-packet one-way delay: 192.871 ms
Loss rate: 1.27%
```
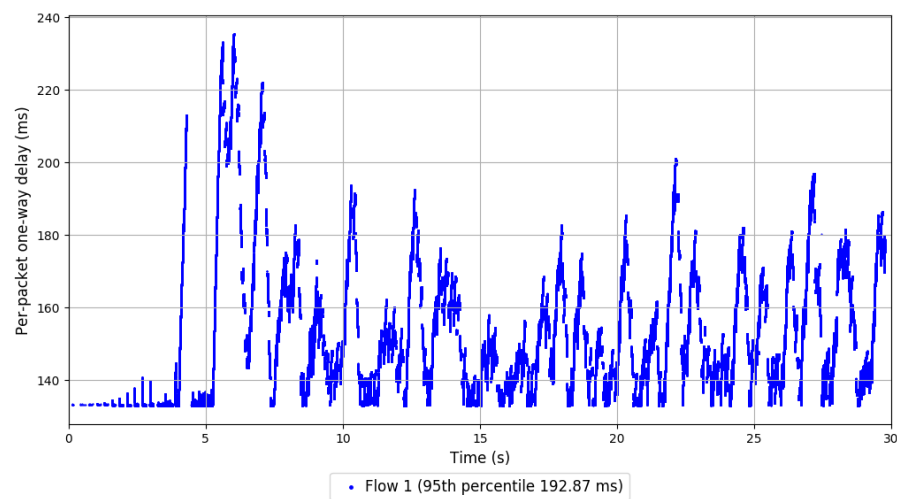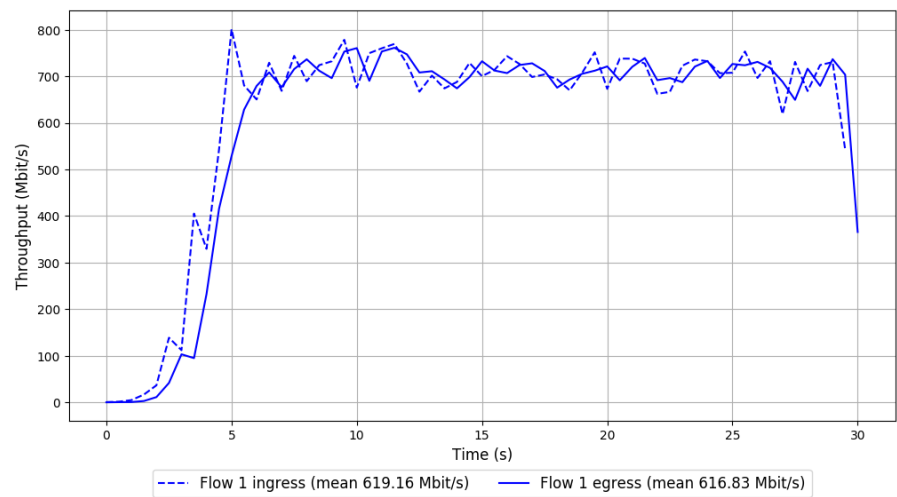
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 12:53:11
End at: 2018-11-15 12:53:41
Local clock offset: 0.109 ms
Remote clock offset: 0.025 ms


# Below is generated by plot.py at 2018-11-15 13:49:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 601.00 Mbit/s
95th percentile per-packet one-way delay: 207.389 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 601.00 Mbit/s
95th percentile per-packet one-way delay: 207.389 ms
Loss rate: 1.49%
```
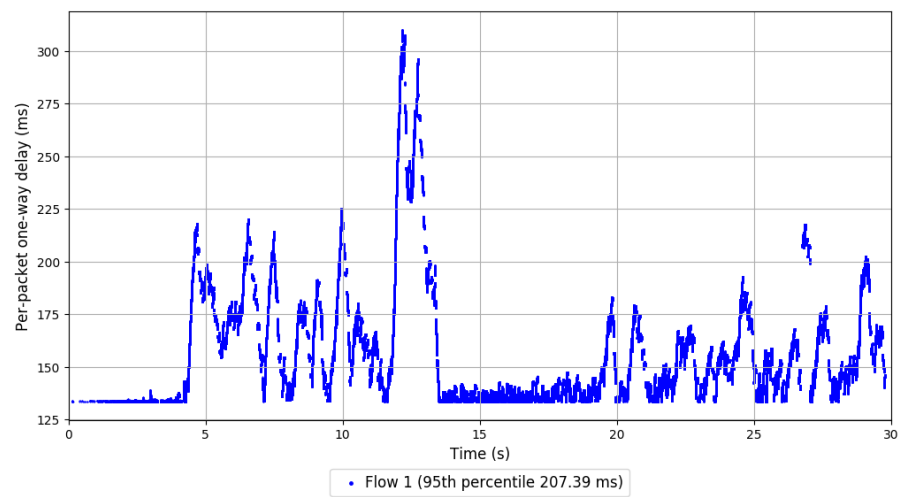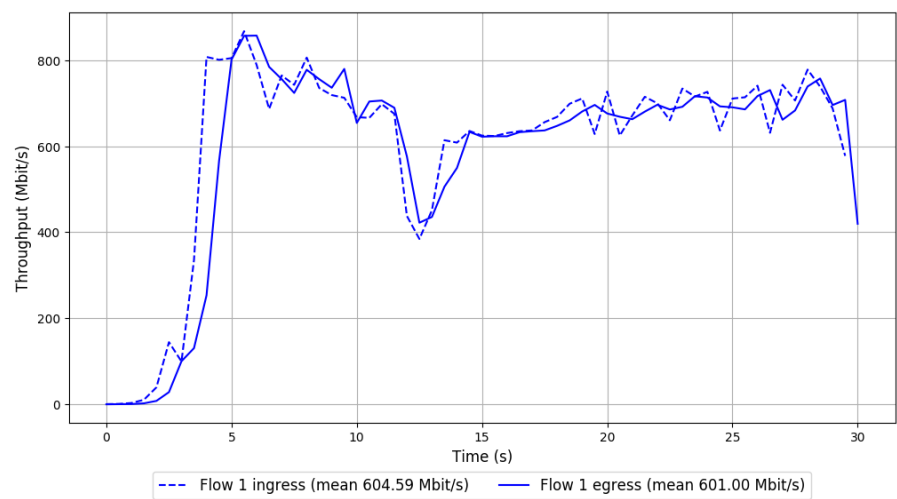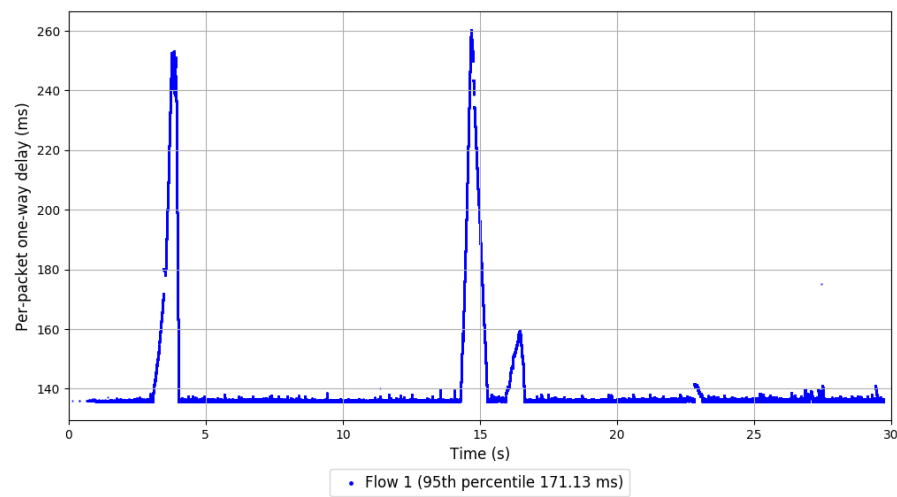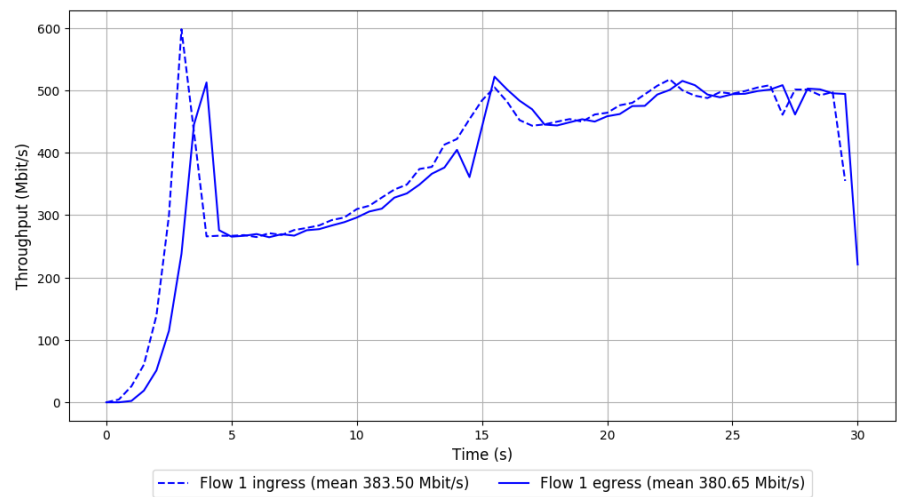
Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 11:08:36
End at: 2018-11-15 11:09:06
Local clock offset: 0.084 ms
Remote clock offset: -0.021 ms


# Below is generated by plot.py at 2018-11-15 13:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 380.65 Mbit/s
95th percentile per-packet one-way delay: 171.131 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 380.65 Mbit/s
95th percentile per-packet one-way delay: 171.131 ms
Loss rate: 1.64%
```

Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 11:35:30
End at: 2018-11-15 11:36:00
Local clock offset: 0.37 ms
Remote clock offset: 0.042 ms


# Below is generated by plot.py at 2018-11-15 13:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 282.64 Mbit/s
95th percentile per-packet one-way delay: 239.776 ms
Loss rate: 3.33%
-- Flow 1:
Average throughput: 282.64 Mbit/s
95th percentile per-packet one-way delay: 239.776 ms
Loss rate: 3.33%
```
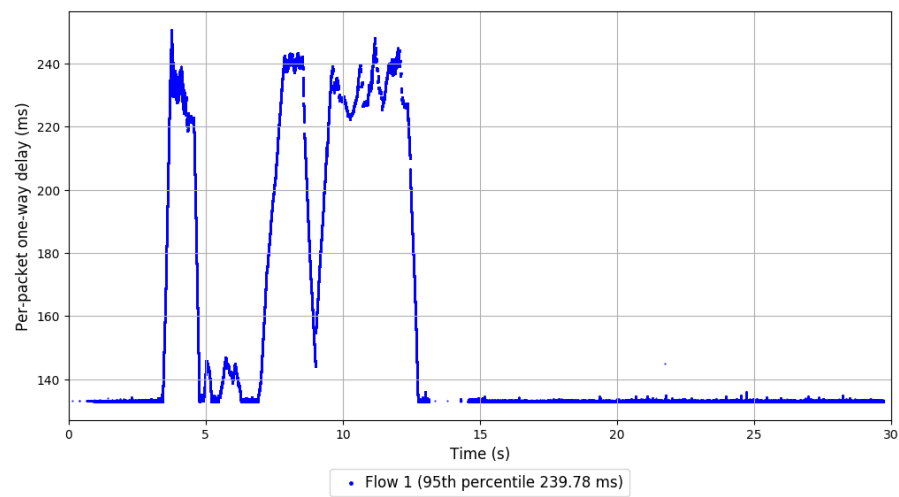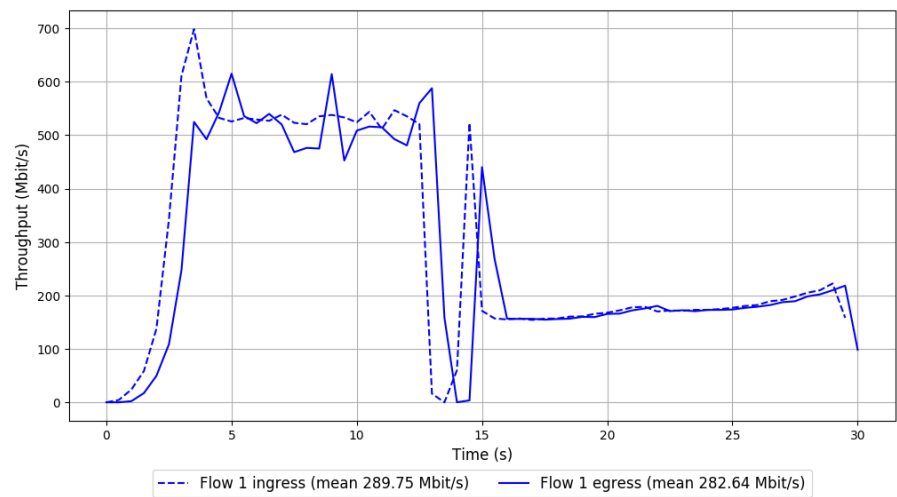
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 289.75 Mbit/s)   Flow 1 egress (mean 282.64 Mbit/s)

Flow 1 (95th percentile 239.78 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 12:01:54
End at: 2018-11-15 12:02:24
Local clock offset: 0.255 ms
Remote clock offset: 0.033 ms


# Below is generated by plot.py at 2018-11-15 13:59:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 458.36 Mbit/s
95th percentile per-packet one-way delay: 238.732 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 458.36 Mbit/s
95th percentile per-packet one-way delay: 238.732 ms
Loss rate: 2.92%
```
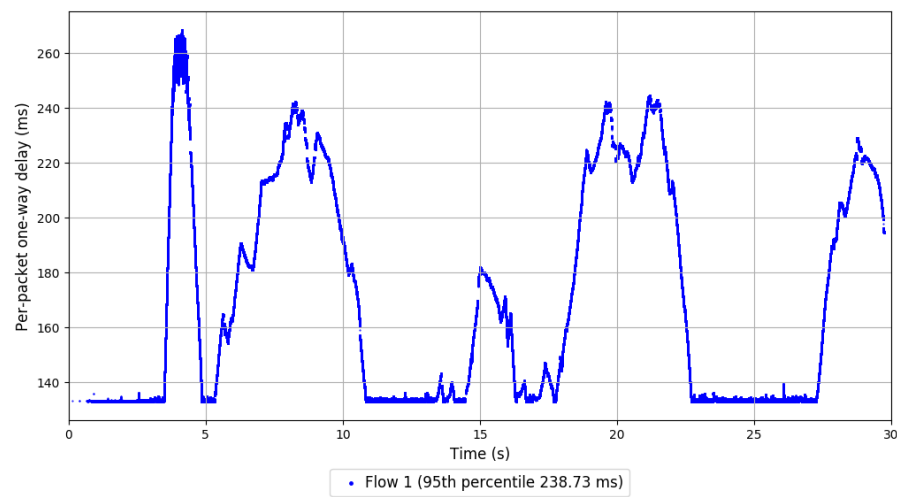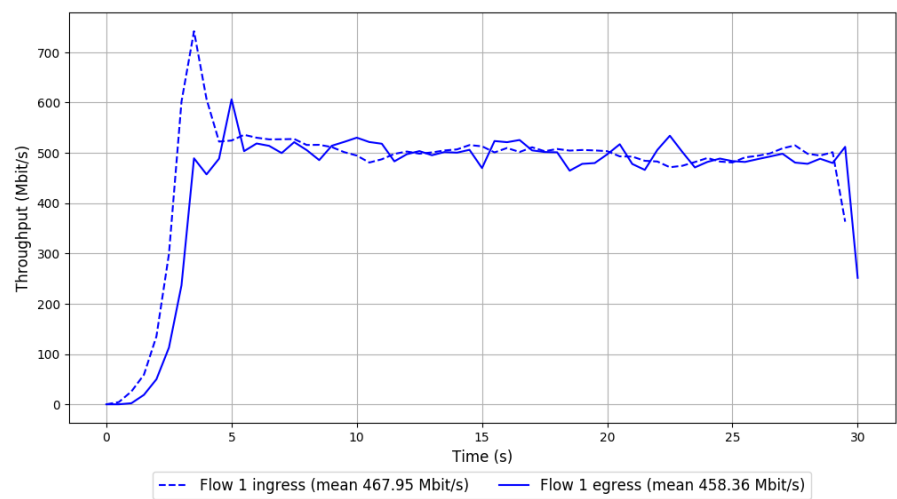
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 12:30:15
End at: 2018-11-15 12:30:45
Local clock offset: -0.159 ms
Remote clock offset: 0.406 ms

# Below is generated by plot.py at 2018-11-15 14:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 363.31 Mbit/s
95th percentile per-packet one-way delay: 228.345 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 363.31 Mbit/s
95th percentile per-packet one-way delay: 228.345 ms
Loss rate: 2.05%
```
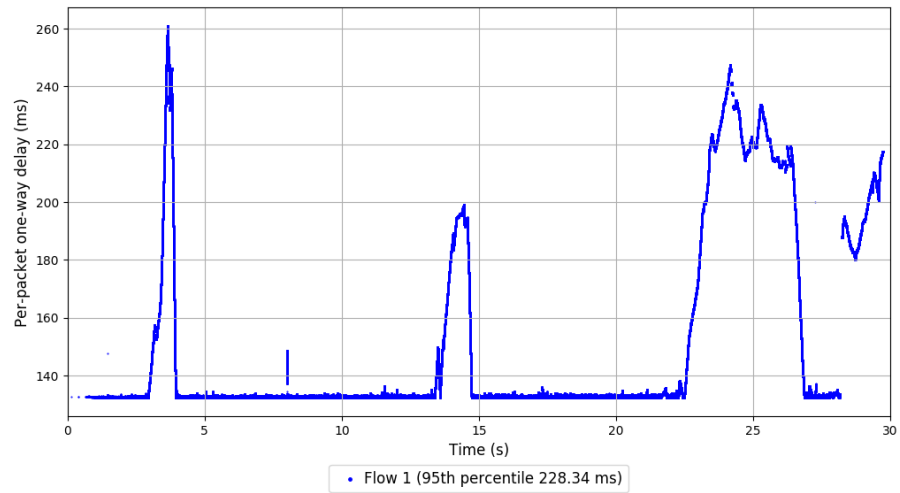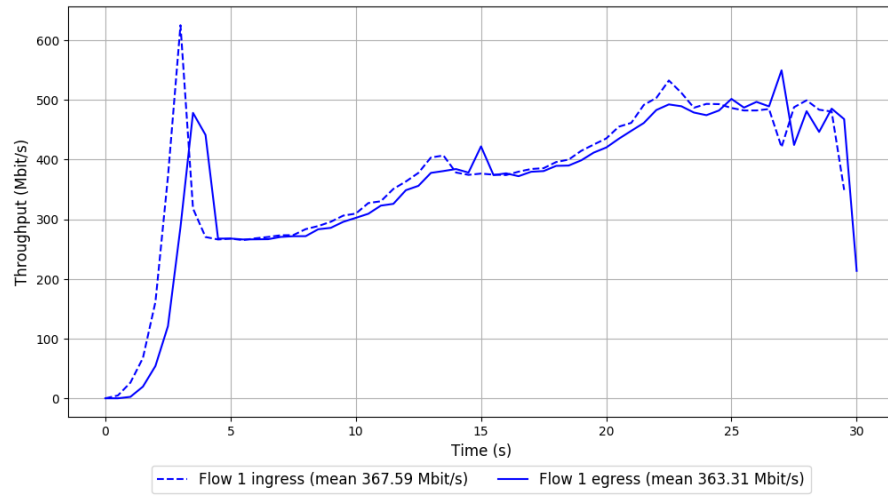
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 12:58:24
End at: 2018-11-15 12:58:54
Local clock offset: -0.121 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2018-11-15 14:02:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 377.34 Mbit/s
95th percentile per-packet one-way delay: 226.455 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 377.34 Mbit/s
95th percentile per-packet one-way delay: 226.455 ms
Loss rate: 1.81%
```
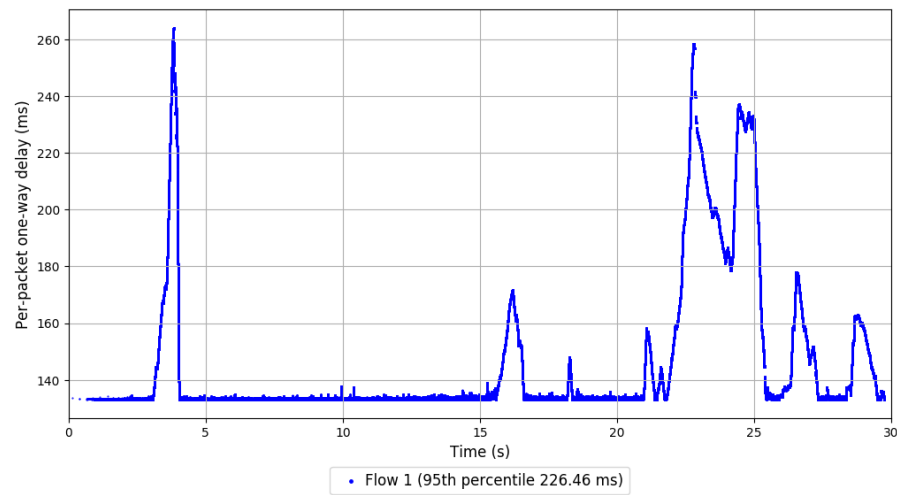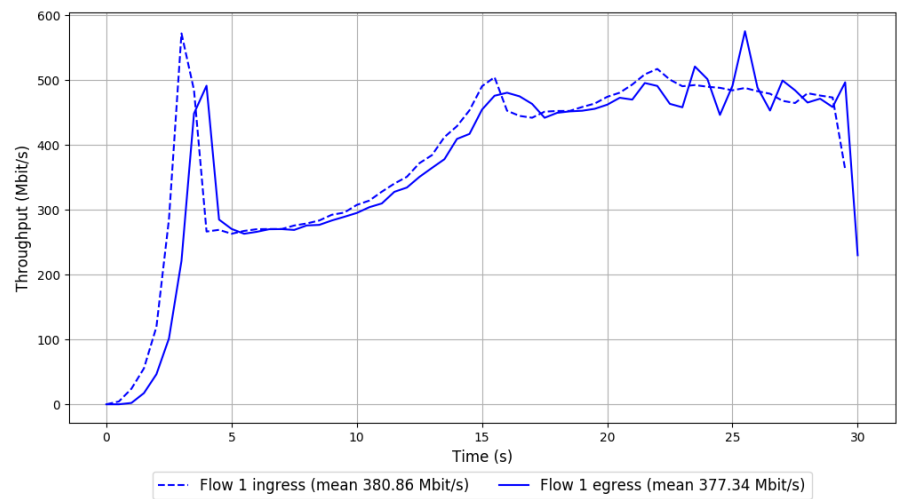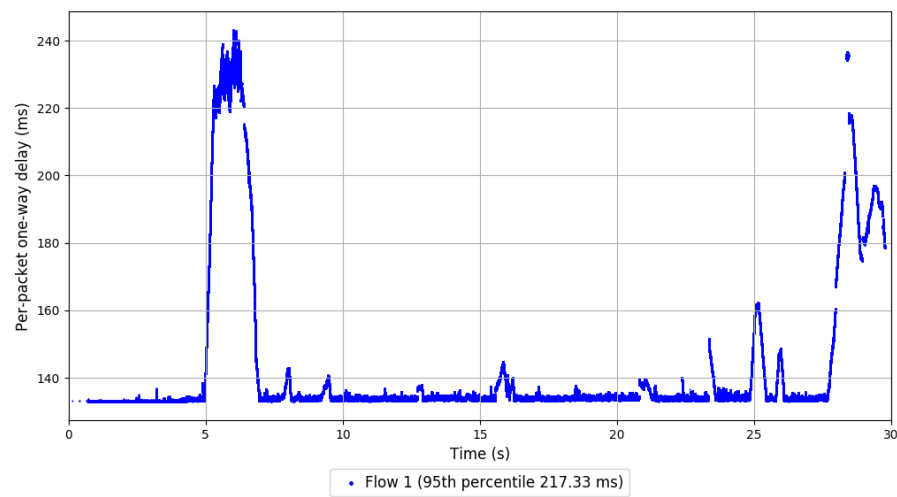
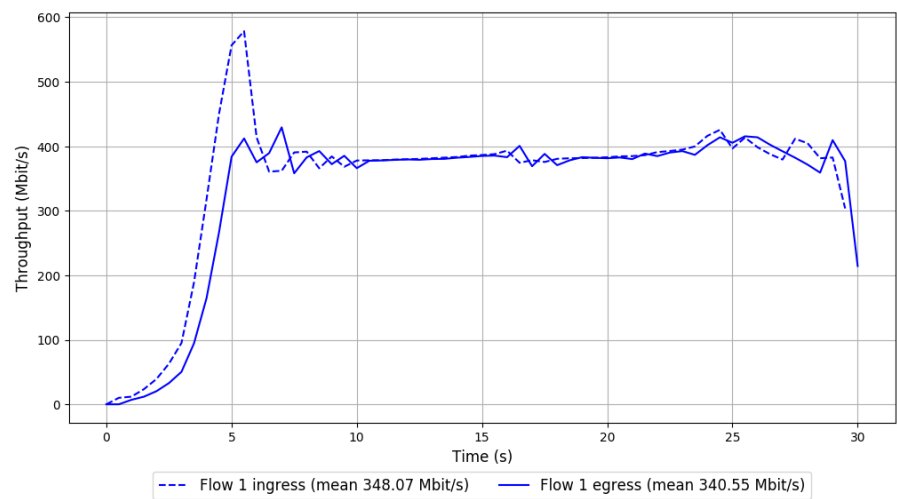Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 10:44:59
End at: 2018-11-15 10:45:29
Local clock offset: -0.01 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-11-15 14:02:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.55 Mbit/s
95th percentile per-packet one-way delay: 217.327 ms
Loss rate: 3.03%
-- Flow 1:
Average throughput: 340.55 Mbit/s
95th percentile per-packet one-way delay: 217.327 ms
Loss rate: 3.03%
```

Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 348.07 Mbit/s)   Flow 1 egress (mean 340.55 Mbit/s)
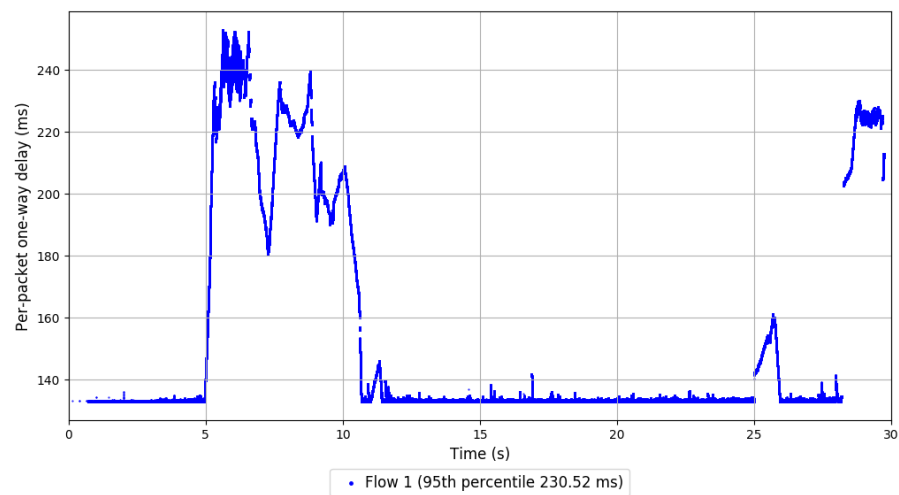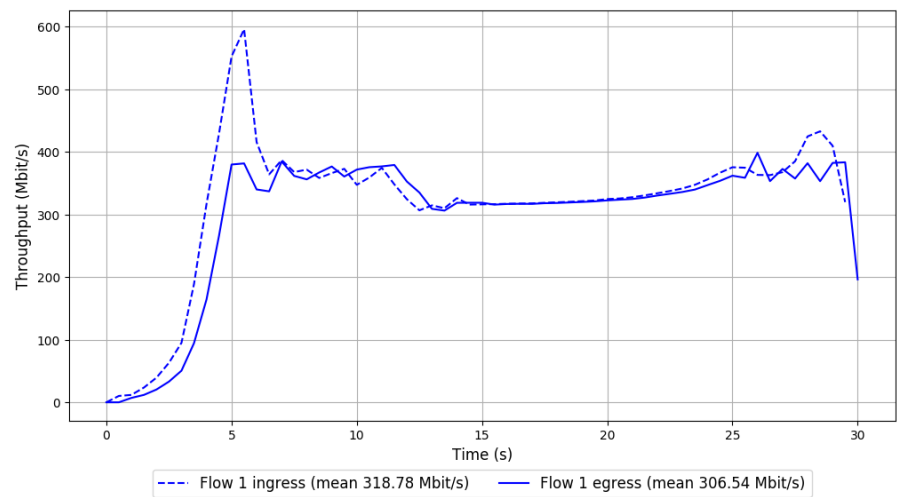

Flow 1 (95th percentile 217.33 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 11:14:54
End at: 2018-11-15 11:15:24
Local clock offset: -0.33 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-11-15 14:02:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 306.54 Mbit/s
95th percentile per-packet one-way delay: 230.520 ms
Loss rate: 4.70%
-- Flow 1:
Average throughput: 306.54 Mbit/s
95th percentile per-packet one-way delay: 230.520 ms
Loss rate: 4.70%
```
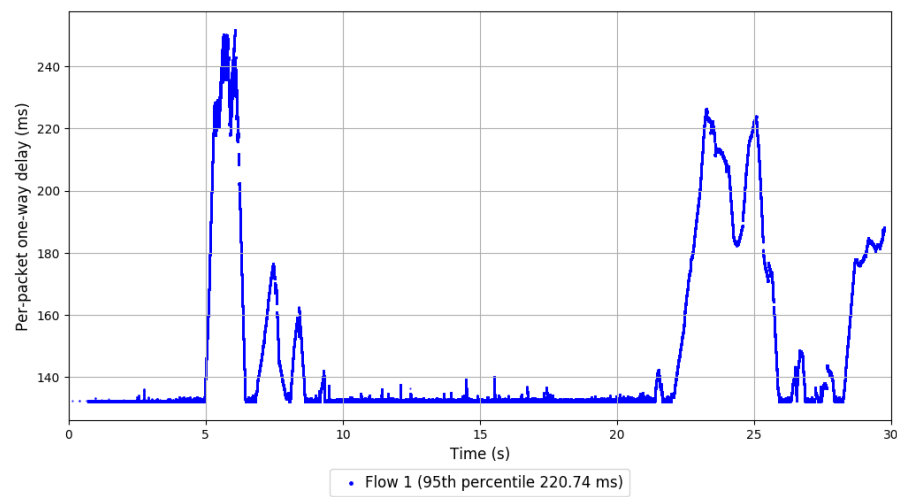
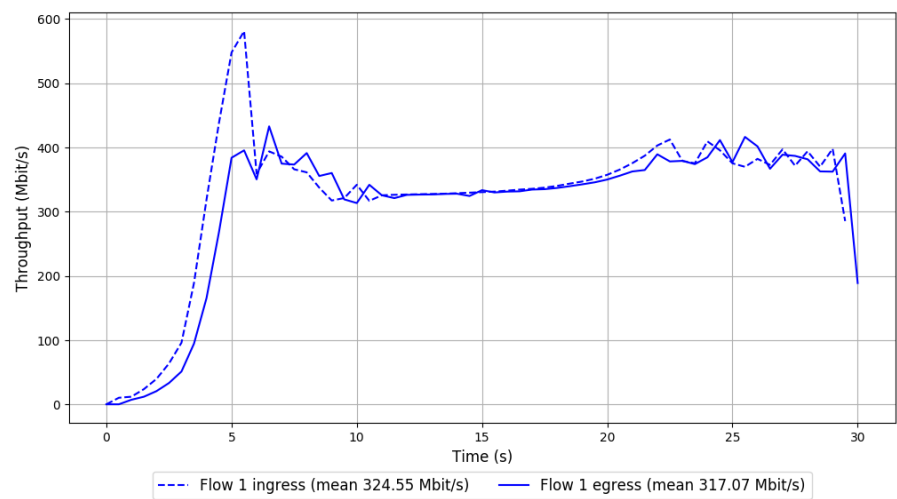Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 11:41:04
End at: 2018-11-15 11:41:34
Local clock offset: -0.081 ms
Remote clock offset: -0.004 ms


# Below is generated by plot.py at 2018-11-15 14:02:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 317.07 Mbit/s
95th percentile per-packet one-way delay: 220.736 ms
Loss rate: 3.17%
-- Flow 1:
Average throughput: 317.07 Mbit/s
95th percentile per-packet one-way delay: 220.736 ms
Loss rate: 3.17%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 324.55 Mbit/s) — Flow 1 egress (mean 317.07 Mbit/s)

• Flow 1 (95th percentile 220.74 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 12:08:03
End at: 2018-11-15 12:08:33
Local clock offset: 0.16 ms
Remote clock offset: 0.011 ms


# Below is generated by plot.py at 2018-11-15 14:02:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 317.24 Mbit/s
95th percentile per-packet one-way delay: 232.729 ms
Loss rate: 4.31%
-- Flow 1:
Average throughput: 317.24 Mbit/s
95th percentile per-packet one-way delay: 232.729 ms
Loss rate: 4.31%
```
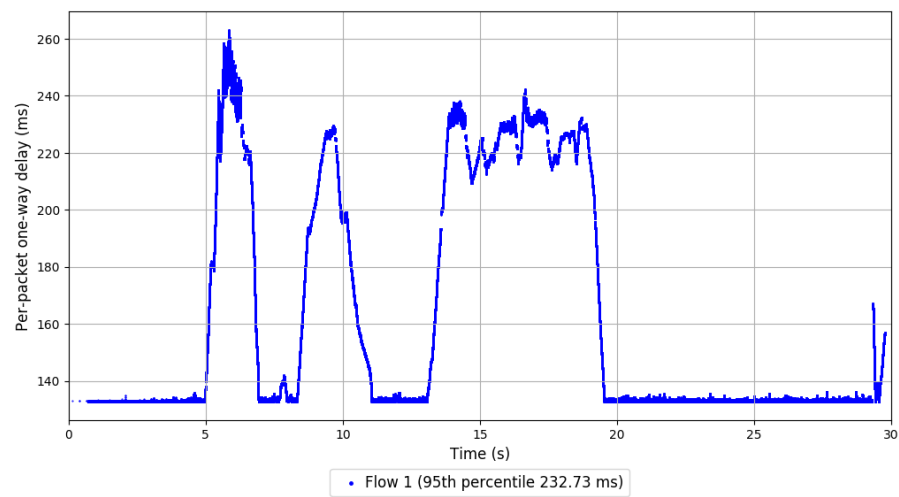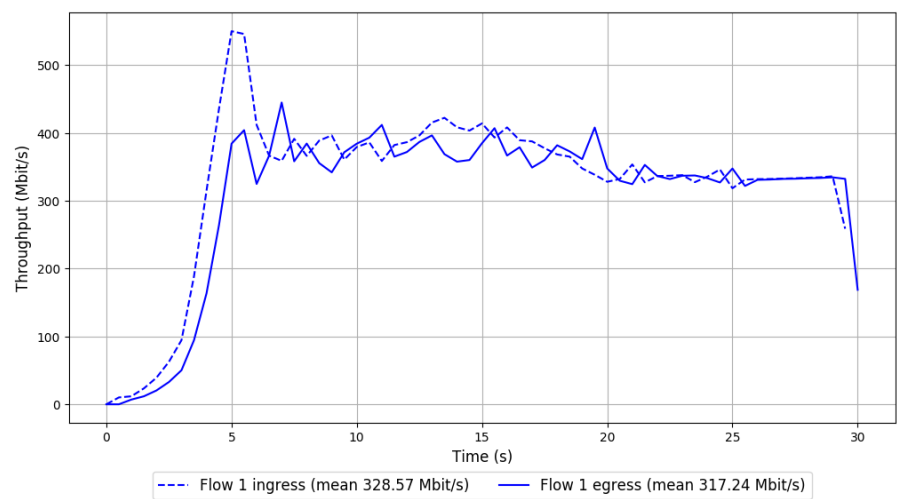
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 328.57 Mbit/s) Flow 1 egress (mean 317.24 Mbit/s)

Flow 1 (95th percentile 232.73 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 12:36:26
End at: 2018-11-15 12:36:56
Local clock offset: -0.242 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.51 Mbit/s
95th percentile per-packet one-way delay: 225.601 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 324.51 Mbit/s
95th percentile per-packet one-way delay: 225.601 ms
Loss rate: 2.29%
```
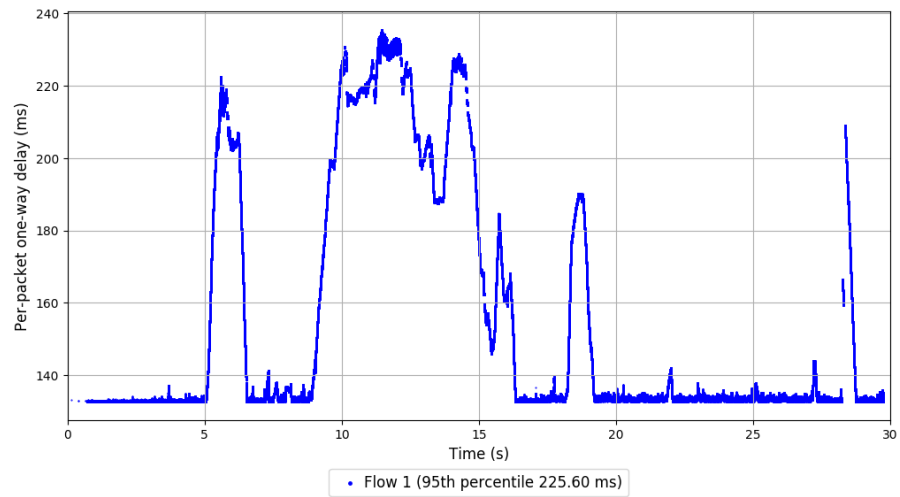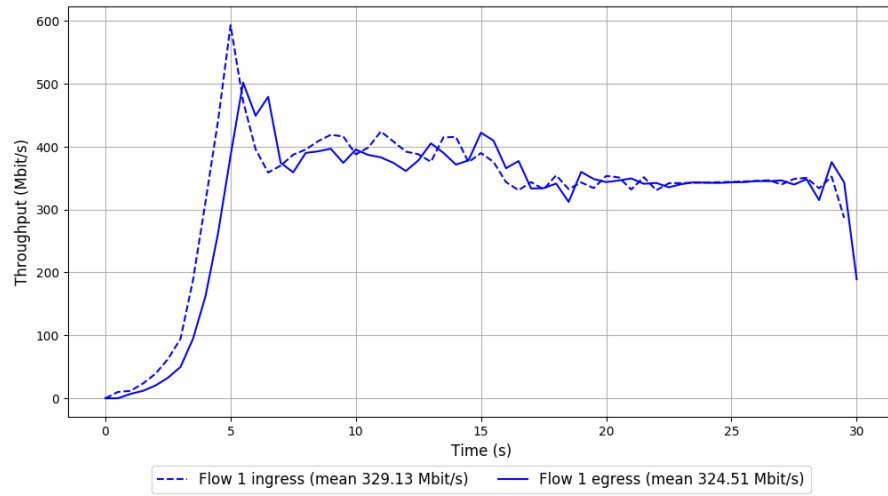
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 10:53:12
End at: 2018-11-15 10:53:42
Local clock offset: 0.136 ms
Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.81 Mbit/s
95th percentile per-packet one-way delay: 132.711 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 56.81 Mbit/s
95th percentile per-packet one-way delay: 132.711 ms
Loss rate: 1.43%
```
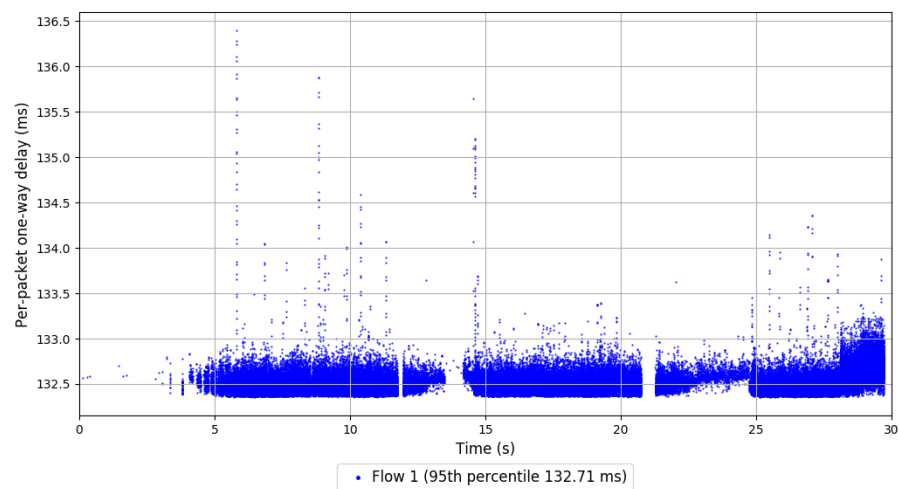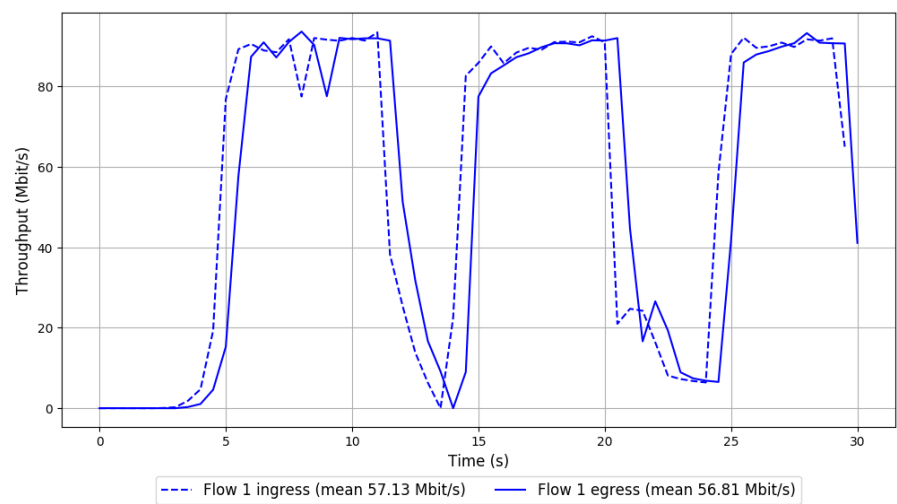
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 57.13 Mbit/s)   Flow 1 egress (mean 56.81 Mbit/s)

Flow 1 (95th percentile 132.71 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 11:22:19
End at: 2018-11-15 11:22:49
Local clock offset: 0.273 ms
Remote clock offset: 0.031 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.99 Mbit/s
95th percentile per-packet one-way delay: 133.453 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 59.99 Mbit/s
95th percentile per-packet one-way delay: 133.453 ms
Loss rate: 1.18%
```
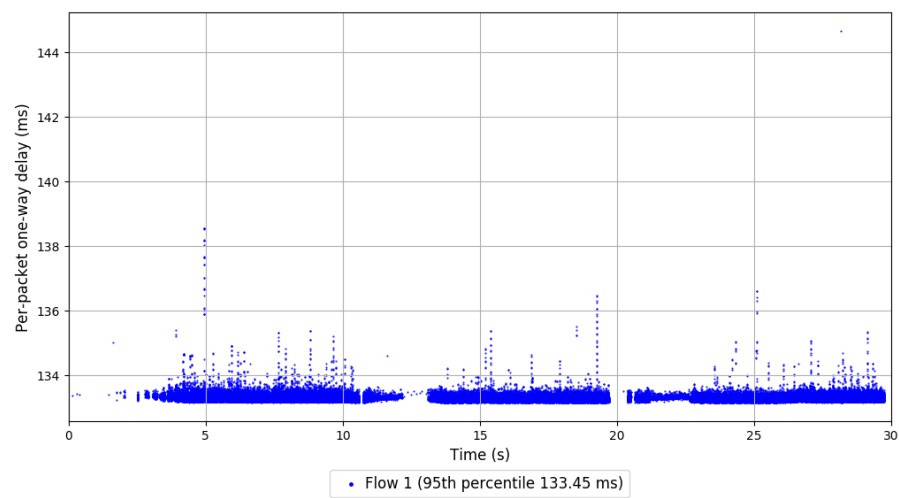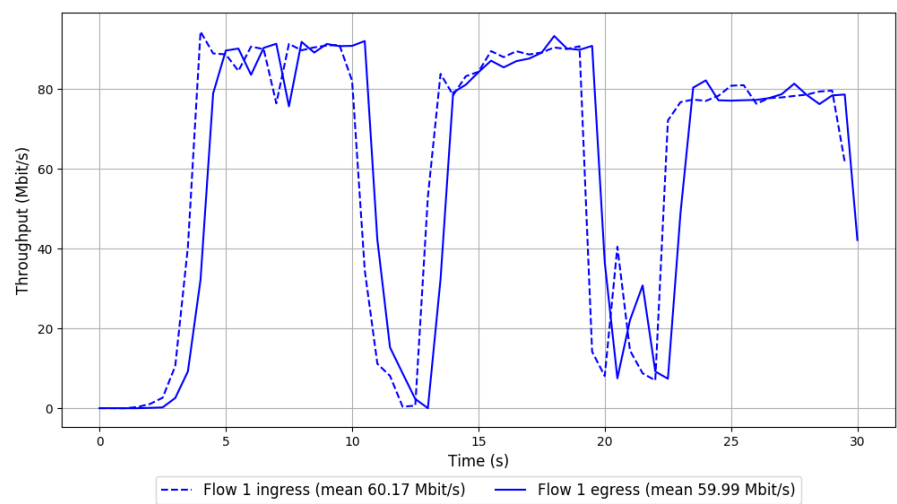
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 11:48:24
End at: 2018-11-15 11:48:54
Local clock offset: -0.089 ms
Remote clock offset: 0.032 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.01 Mbit/s
95th percentile per-packet one-way delay: 132.692 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 60.01 Mbit/s
95th percentile per-packet one-way delay: 132.692 ms
Loss rate: 1.35%
```
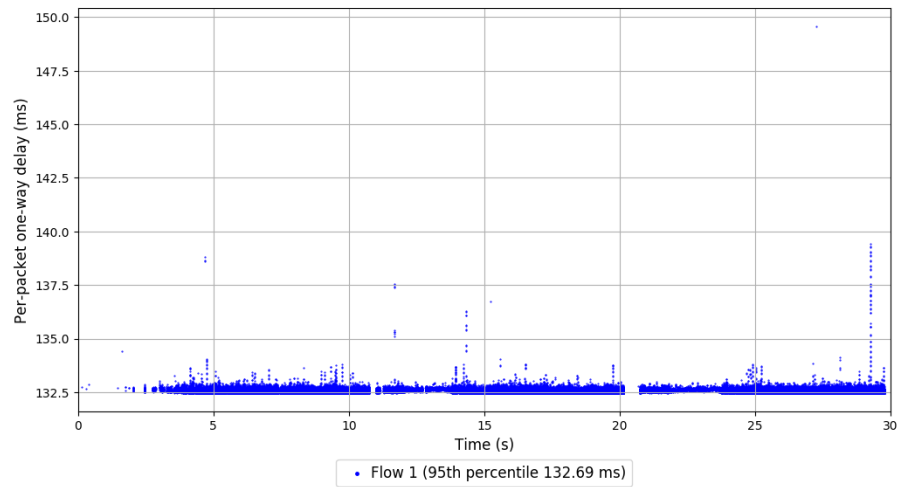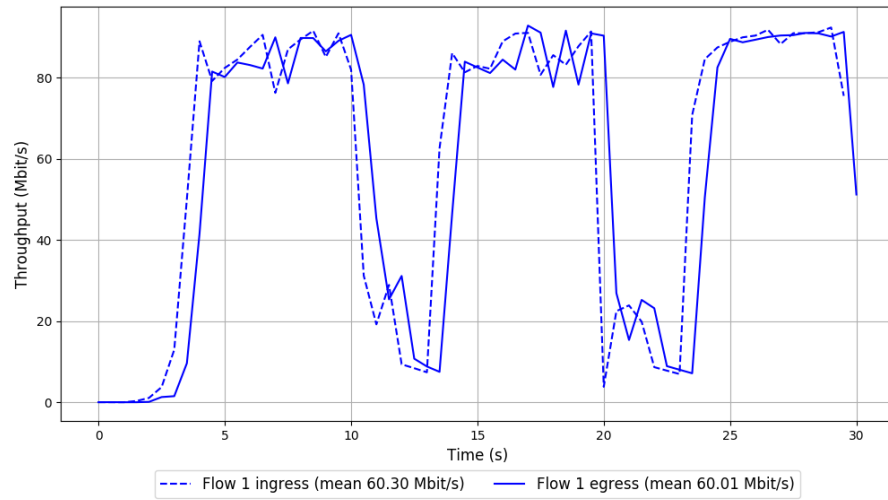
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 60.30 Mbit/s)   Flow 1 egress (mean 60.01 Mbit/s)

Flow 1 (95th percentile 132.69 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 12:15:27
End at: 2018-11-15 12:15:57
Local clock offset: 0.092 ms
Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.40 Mbit/s
95th percentile per-packet one-way delay: 132.613 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 41.40 Mbit/s
95th percentile per-packet one-way delay: 132.613 ms
Loss rate: 0.19%
```
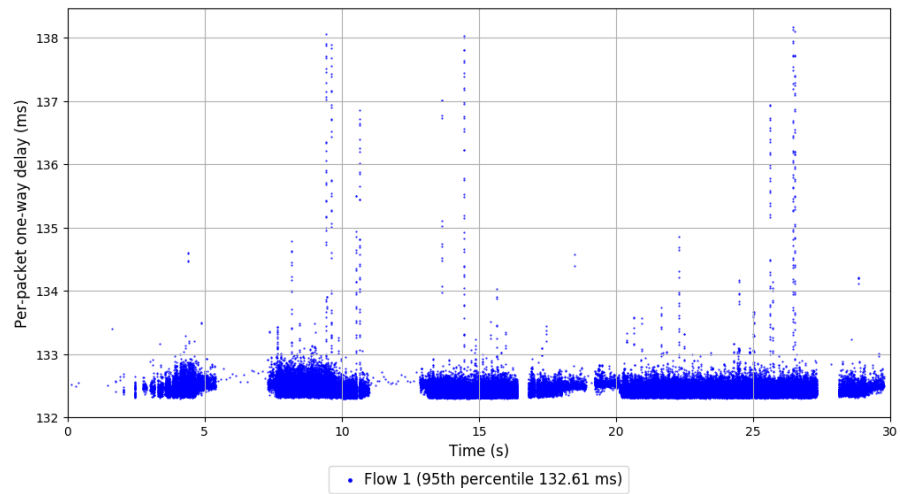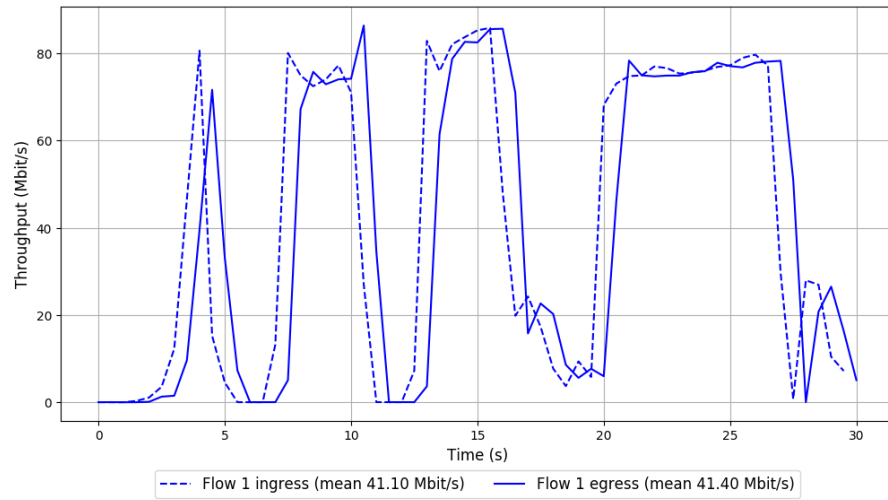
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 41.10 Mbit/s) —— Flow 1 egress (mean 41.40 Mbit/s)

• Flow 1 (95th percentile 132.61 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 12:43:53
End at: 2018-11-15 12:44:23
Local clock offset: -0.507 ms
Remote clock offset: 0.013 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.49 Mbit/s
95th percentile per-packet one-way delay: 133.205 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 60.49 Mbit/s
95th percentile per-packet one-way delay: 133.205 ms
Loss rate: 1.34%
```
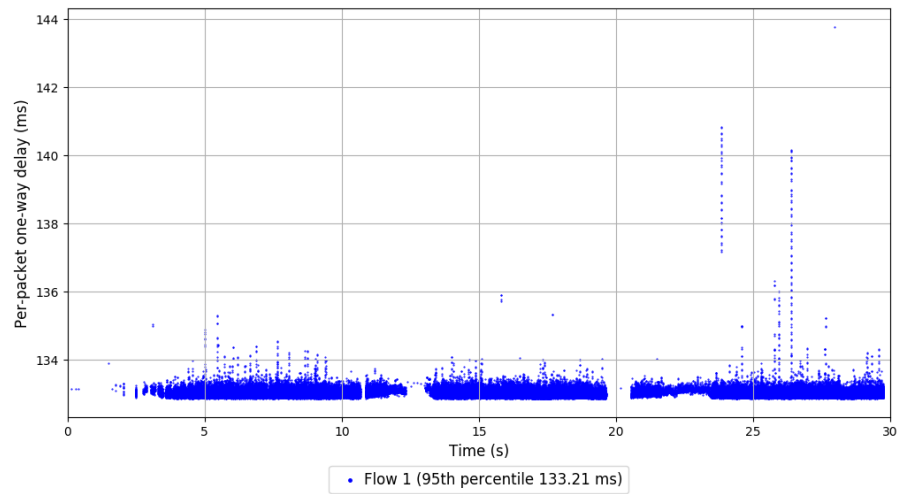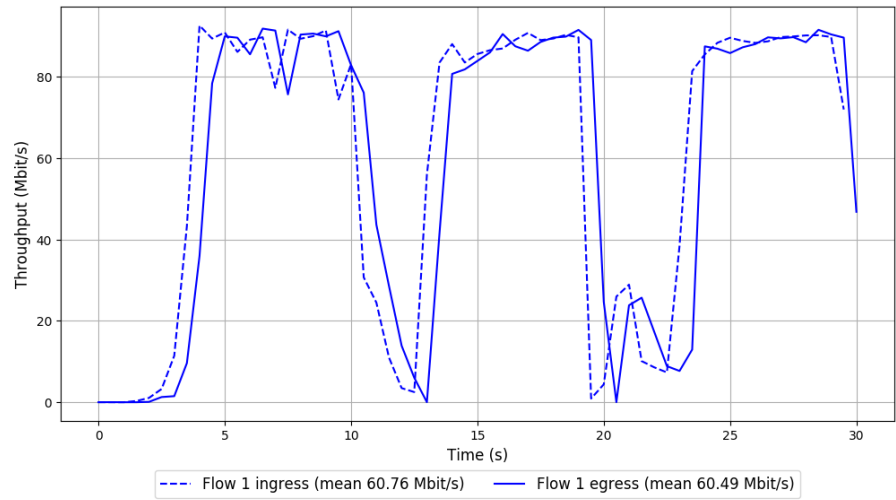
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 60.76 Mbit/s)   Flow 1 egress (mean 60.49 Mbit/s)
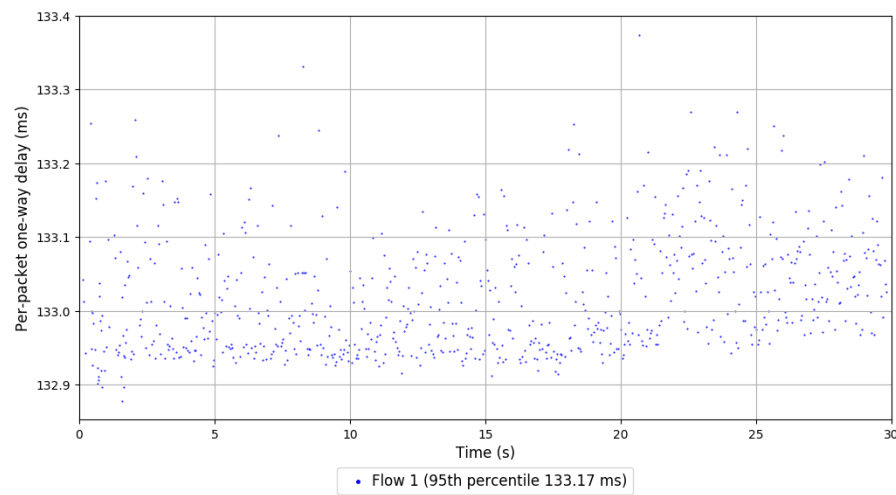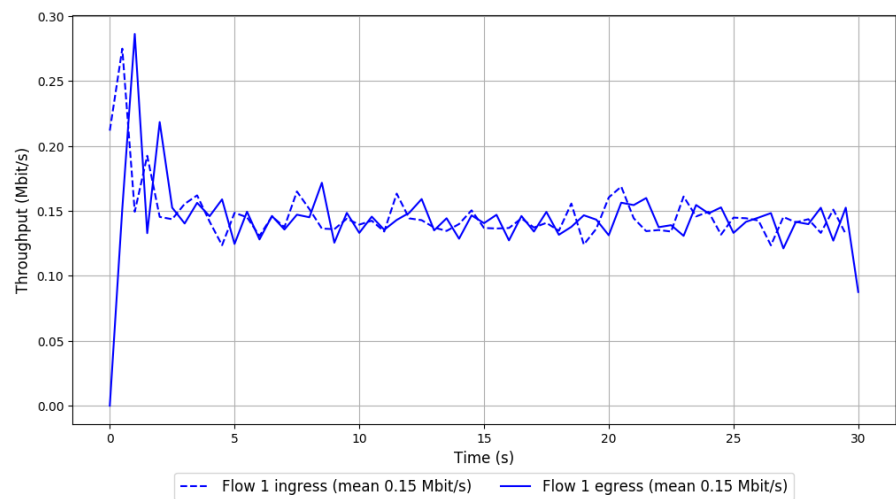

Flow 1 (95th percentile 133.21 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-11-15 10:56:02
End at: 2018-11-15 10:56:32
Local clock offset: 0.396 ms
Remote clock offset: -0.02 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.169 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.169 ms
Loss rate: 0.88%
```

Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.15 Mbit/s)   Flow 1 egress (mean 0.15 Mbit/s)

Flow 1 (95th percentile 133.17 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-11-15 11:24:59
End at: 2018-11-15 11:25:29
Local clock offset: 0.1 ms
Remote clock offset: 0.035 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.079 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.079 ms
Loss rate: 0.88%
```
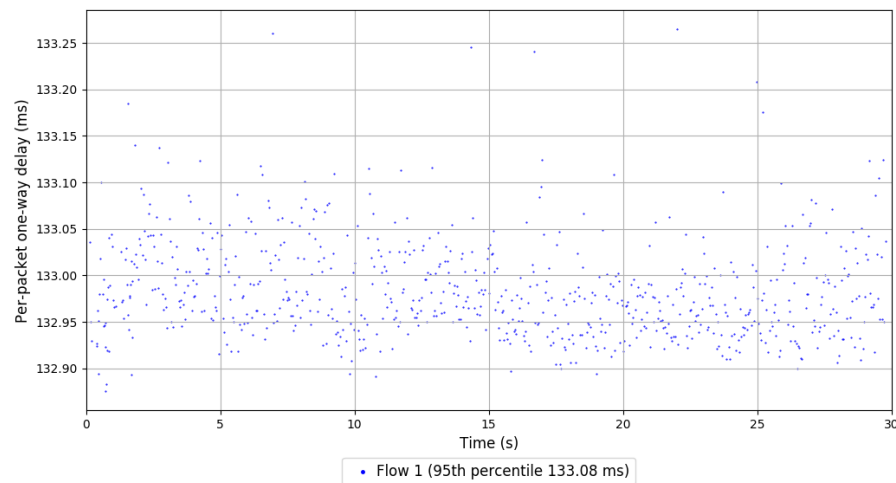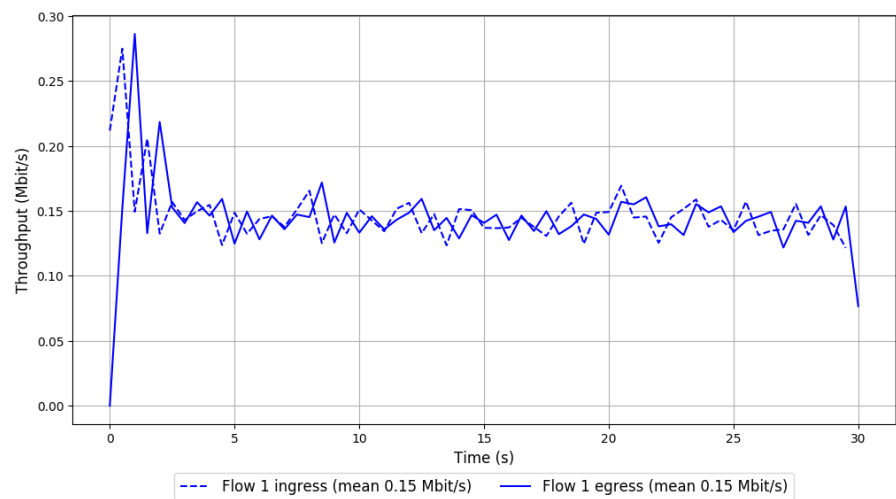
Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.15 Mbit/s)   Flow 1 egress (mean 0.15 Mbit/s)

Flow 1 (95th percentile 133.08 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-11-15 11:51:11
End at: 2018-11-15 11:51:41
Local clock offset: -0.084 ms
Remote clock offset: 0.03 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.910 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.910 ms
Loss rate: 0.88%
```
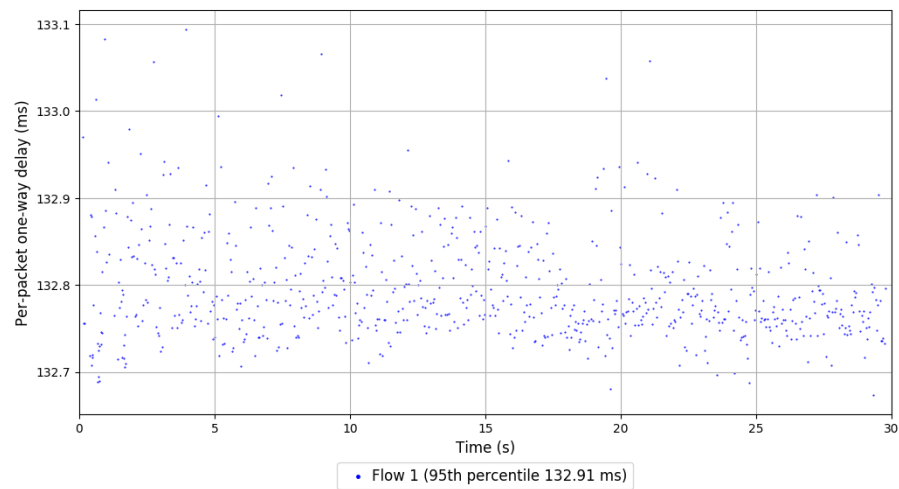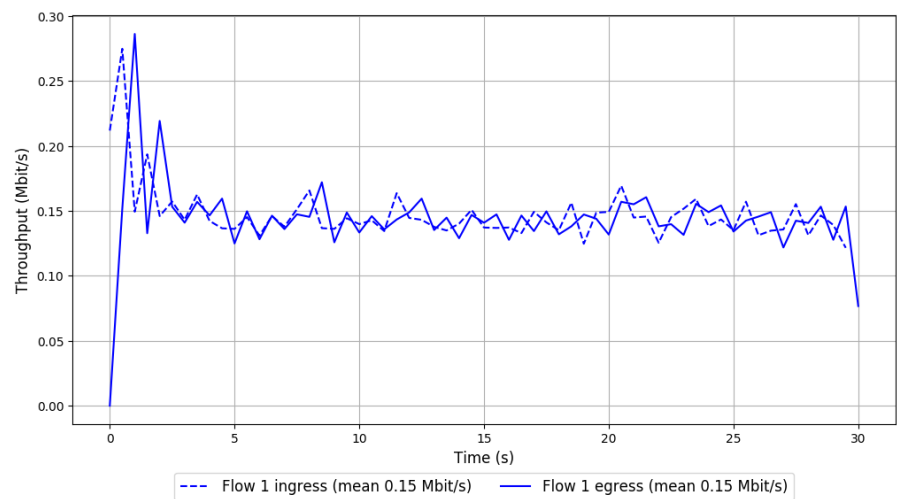
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.15 Mbit/s) --- Flow 1 egress (mean 0.15 Mbit/s)

Flow 1 (95th percentile 132.91 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-11-15 12:18:24
End at: 2018-11-15 12:18:54
Local clock offset: -0.407 ms
Remote clock offset: 0.047 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.679 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.679 ms
Loss rate: 0.88%
```
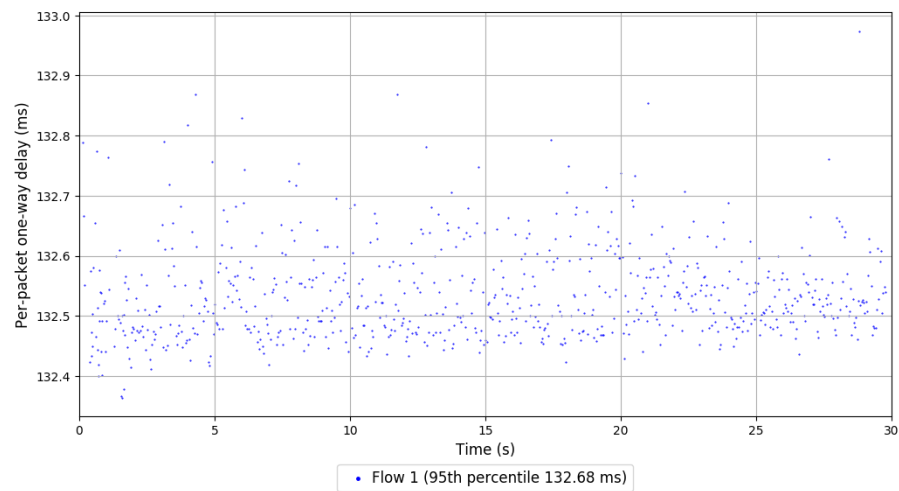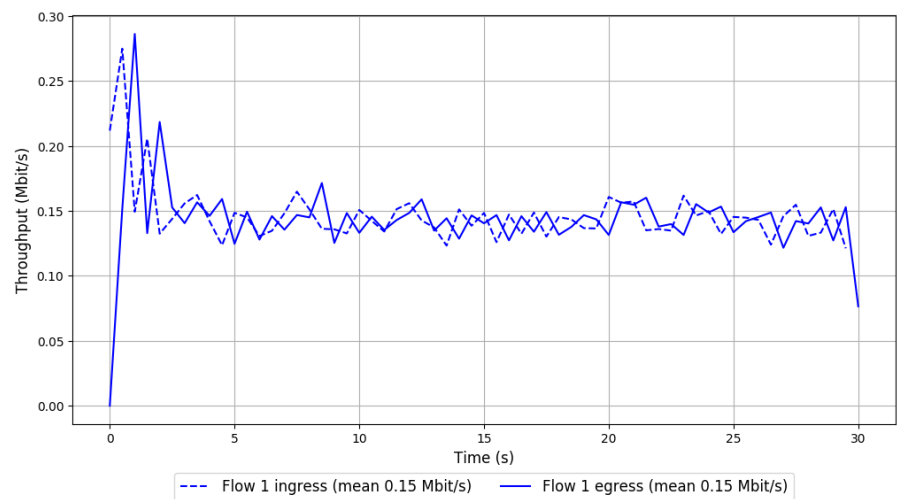
Run 4: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.15 Mbit/s)   Flow 1 egress (mean 0.15 Mbit/s)

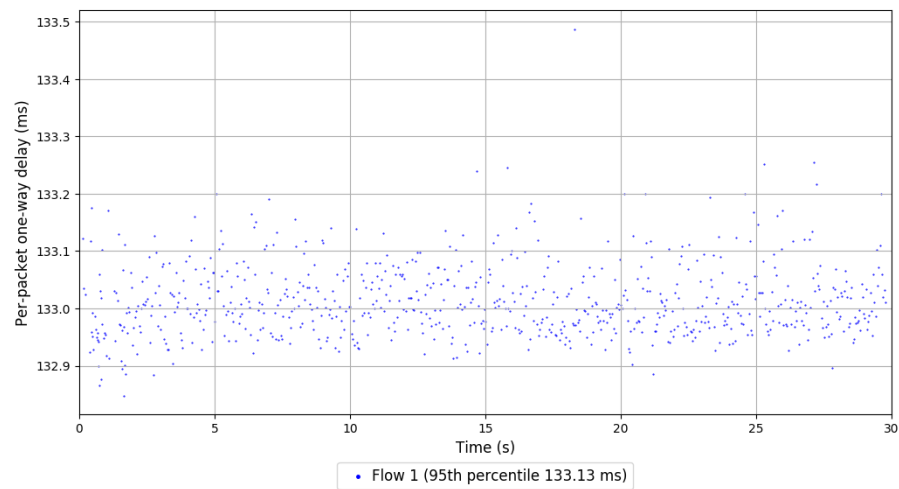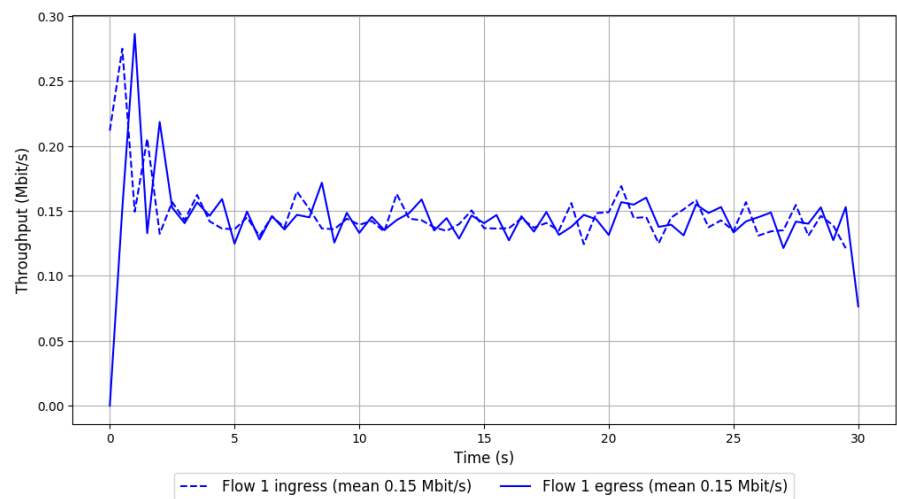Flow 1 (95th percentile 132.68 ms)

```
Run 5: Statistics of SCReAM

Start at: 2018-11-15 12:46:36
End at: 2018-11-15 12:47:06
Local clock offset: -0.422 ms
Remote clock offset: -0.011 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.128 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.128 ms
Loss rate: 0.88%
```

Run 5: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.15 Mbit/s) --- Flow 1 egress (mean 0.15 Mbit/s)

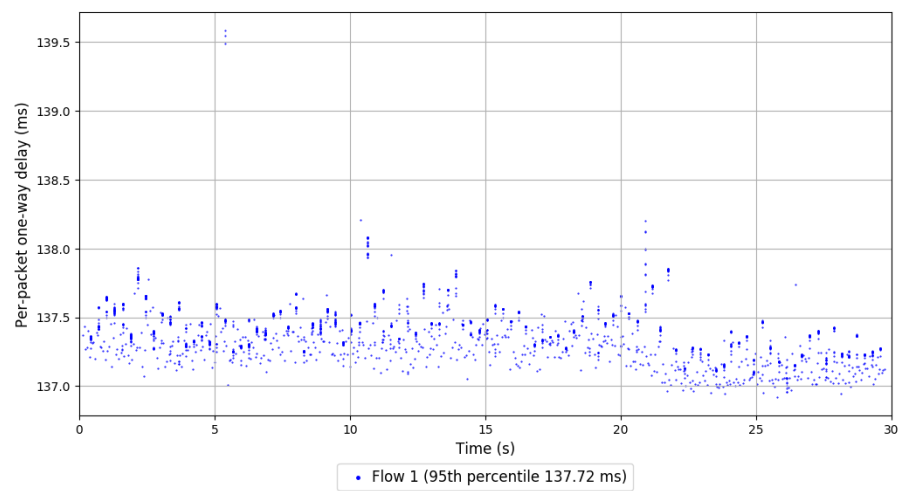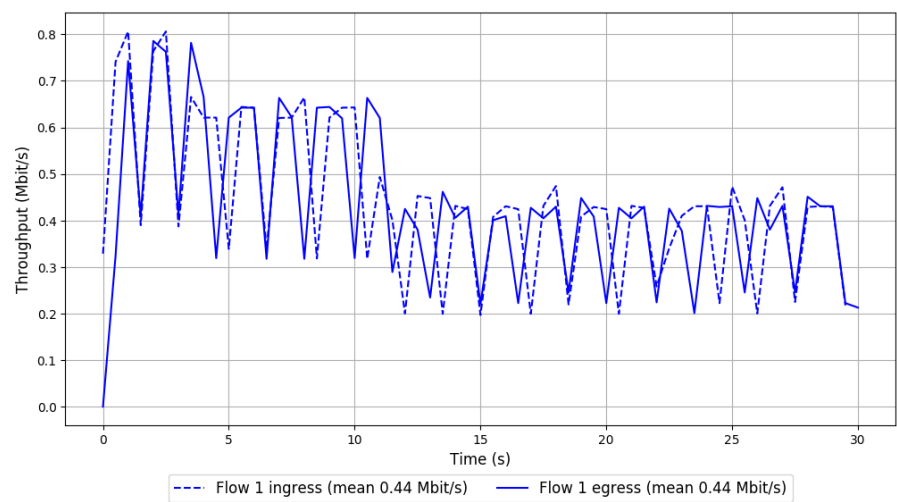Flow 1 (95th percentile 133.13 ms)

```
Run 1: Statistics of Sprout

Start at: 2018-11-15 10:50:02
End at: 2018-11-15 10:50:32
Local clock offset: -0.432 ms
Remote clock offset: -0.024 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 137.725 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 137.725 ms
Loss rate: 0.81%
```
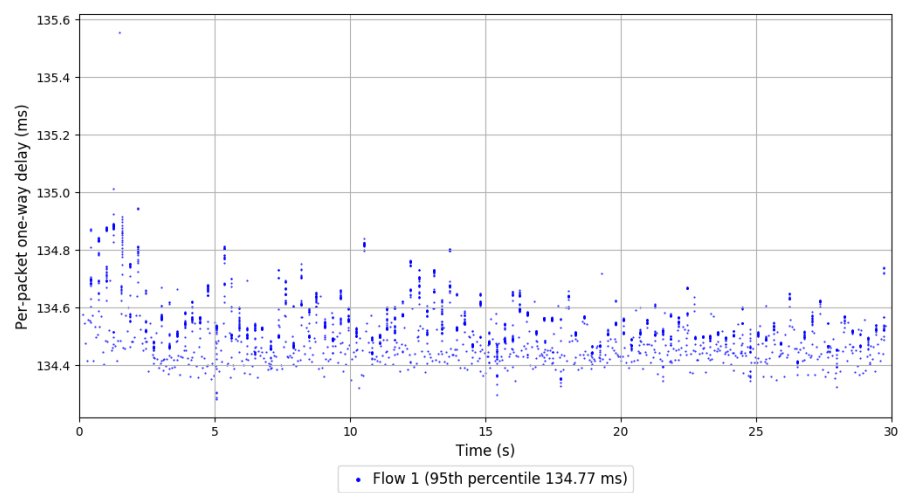
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-11-15 11:19:23
End at: 2018-11-15 11:19:53
Local clock offset: -0.31 ms
Remote clock offset: 0.019 ms

# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 134.769 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 134.769 ms
Loss rate: 0.74%
```
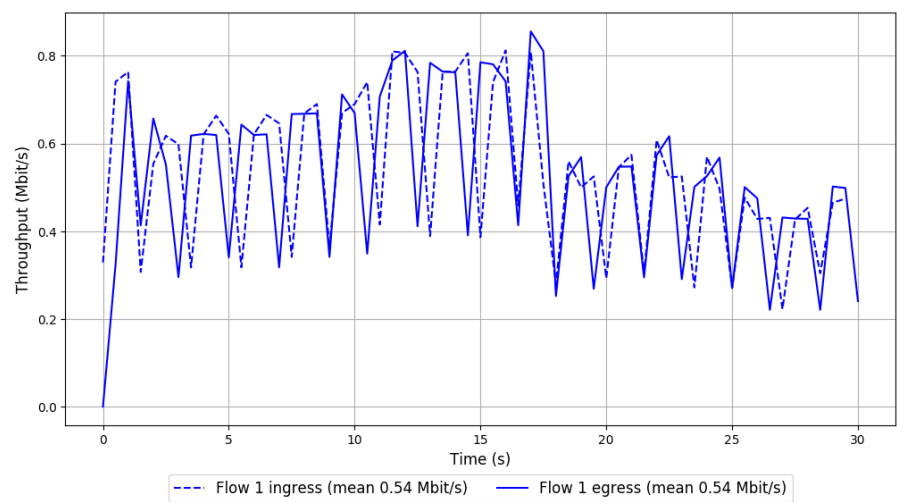
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-11-15 11:45:25
End at: 2018-11-15 11:45:55
Local clock offset: 0.146 ms
Remote clock offset: 0.049 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 133.259 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 133.259 ms
Loss rate: 0.61%
```
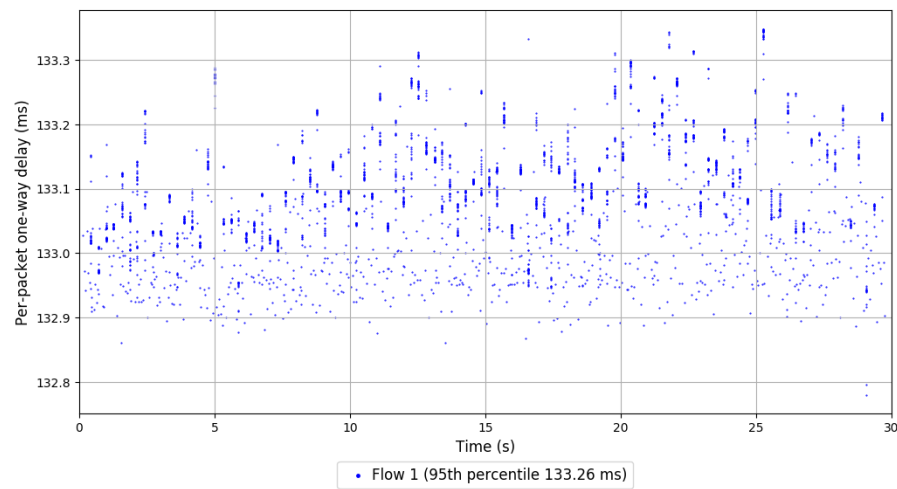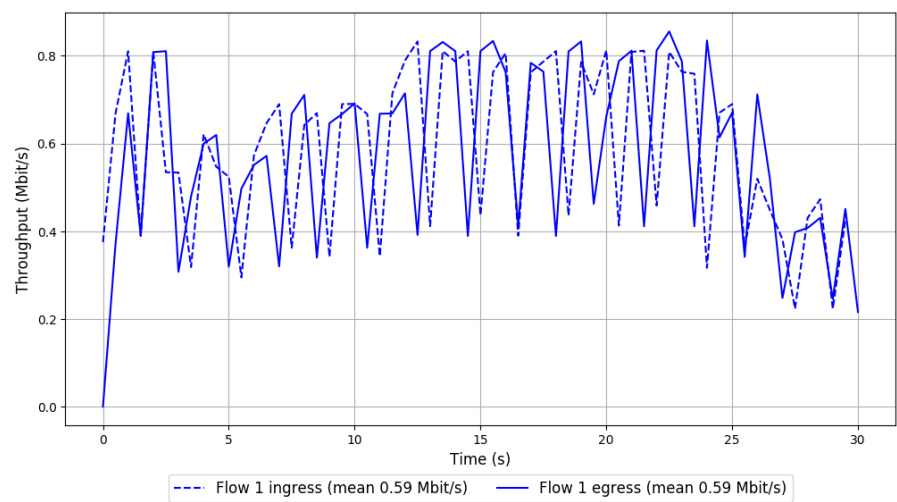
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-11-15 12:12:29
End at: 2018-11-15 12:12:59
Local clock offset: 0.158 ms
Remote clock offset: 0.004 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 136.274 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 136.274 ms
Loss rate: 0.75%
```
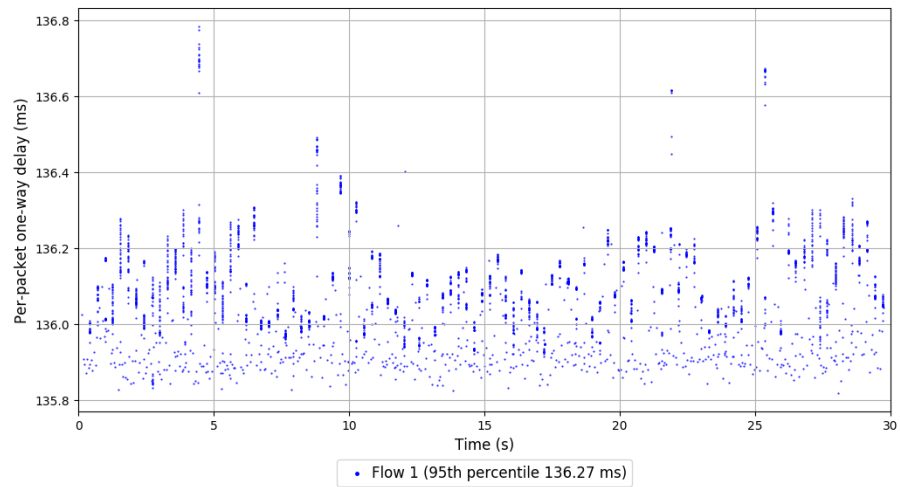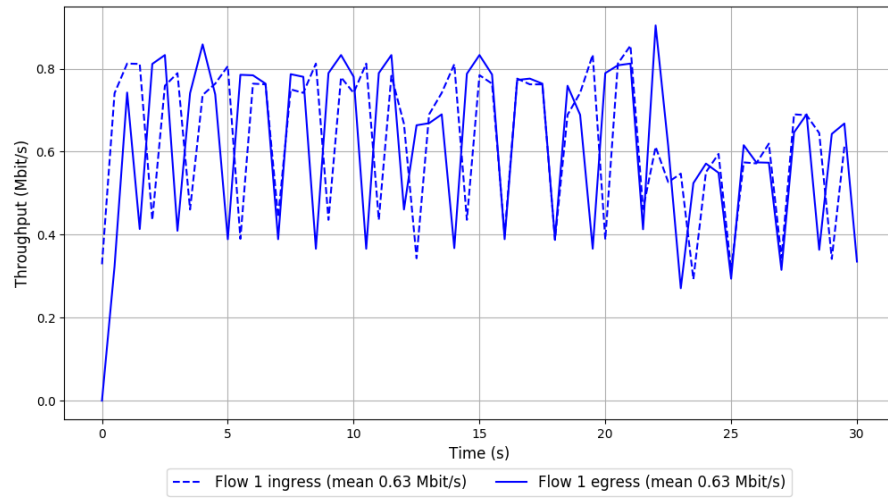
Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 0.63 Mbit/s)   Flow 1 egress (mean 0.63 Mbit/s)

Flow 1 (95th percentile 136.27 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-11-15 12:40:53
End at: 2018-11-15 12:41:23
Local clock offset: 0.281 ms
Remote clock offset: 0.04 ms


# Below is generated by plot.py at 2018-11-15 14:05:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 133.996 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 133.996 ms
Loss rate: 0.95%
```
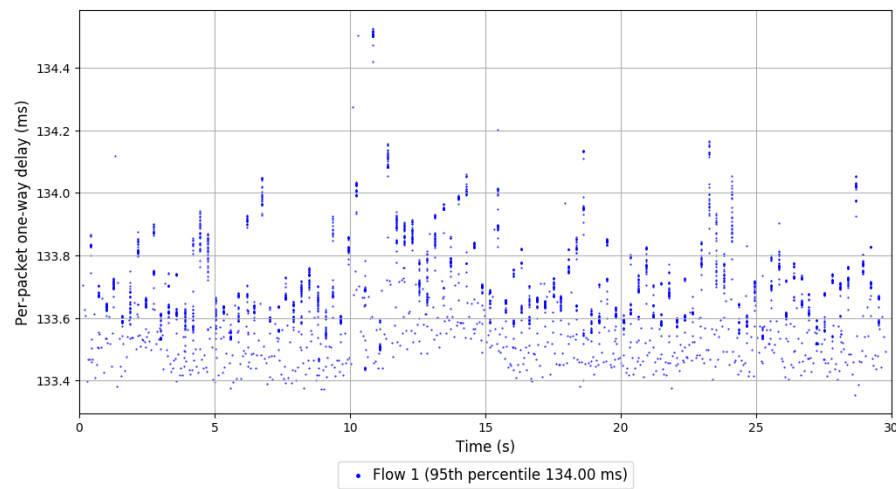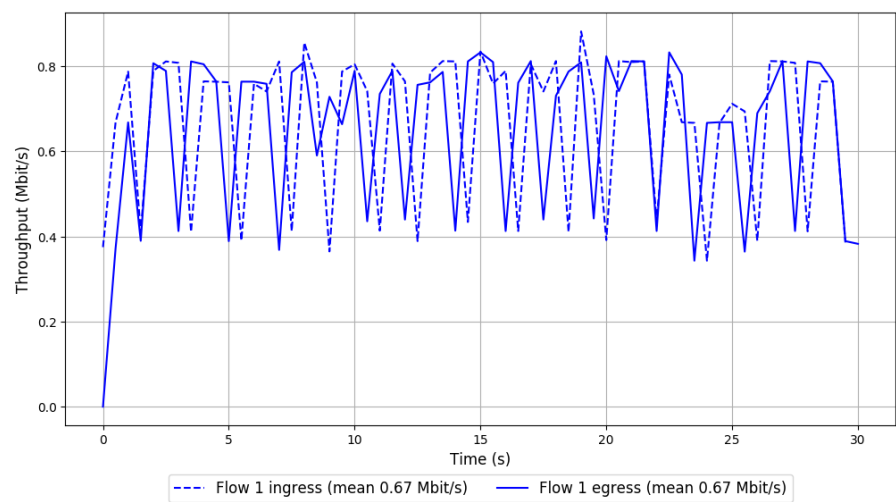
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 0.67 Mbit/s) ----   Flow 1 egress (mean 0.67 Mbit/s) ——

Flow 1 (95th percentile 134.00 ms)

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

Start at: 2018-11-15 11:04:44
End at: 2018-11-15 11:05:14
Local clock offset: 0.044 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-11-15 14:08:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 170.08 Mbit/s
95th percentile per-packet one-way delay: 136.134 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 170.08 Mbit/s
95th percentile per-packet one-way delay: 136.134 ms
Loss rate: 0.98%
```
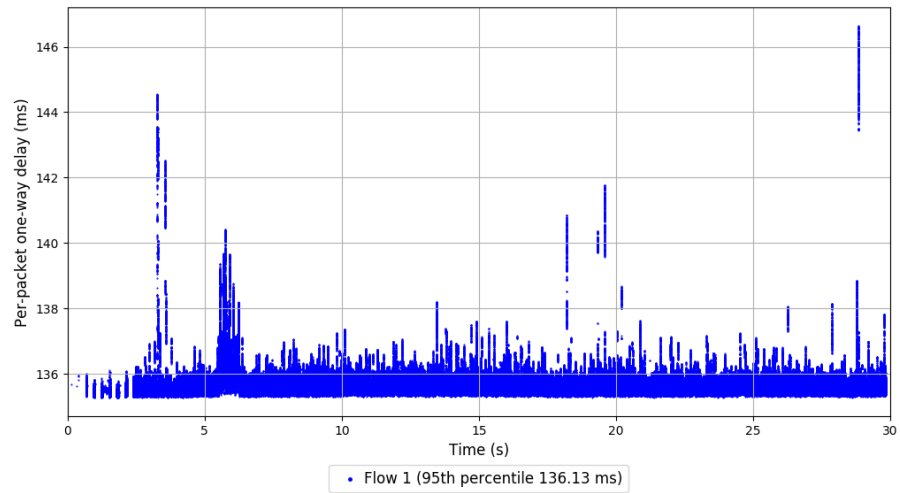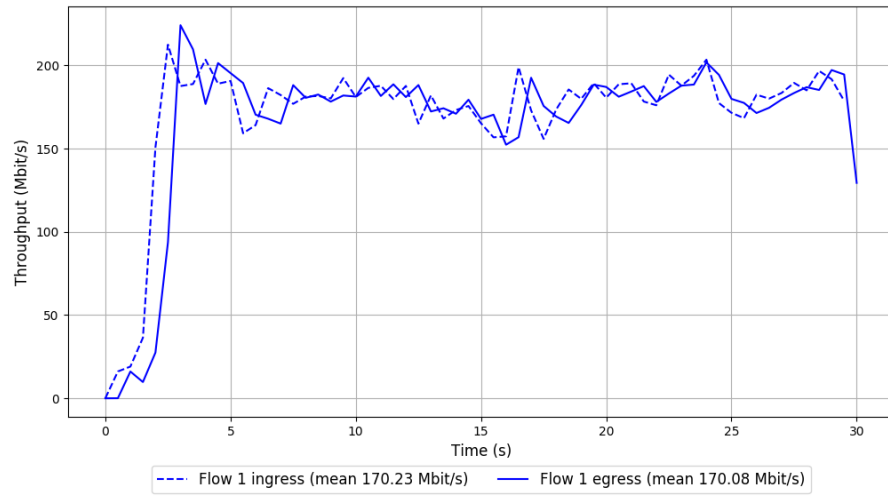
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 170.23 Mbit/s) ----   Flow 1 egress (mean 170.08 Mbit/s) ——

• Flow 1 (95th percentile 136.13 ms)

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

Start at: 2018-11-15 11:32:18
End at: 2018-11-15 11:32:48
Local clock offset: 0.52 ms
Remote clock offset: 0.062 ms

# Below is generated by plot.py at 2018-11-15 14:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.57 Mbit/s
95th percentile per-packet one-way delay: 133.185 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 187.57 Mbit/s
95th percentile per-packet one-way delay: 133.185 ms
Loss rate: 0.91%
```
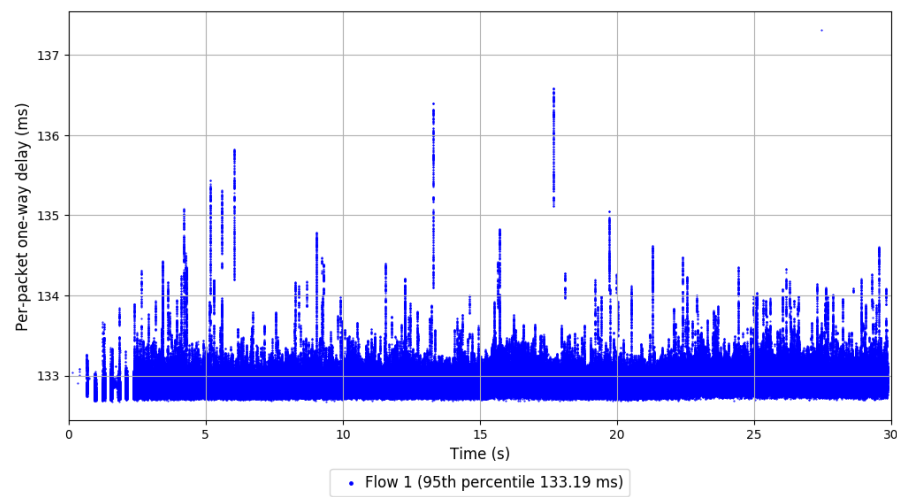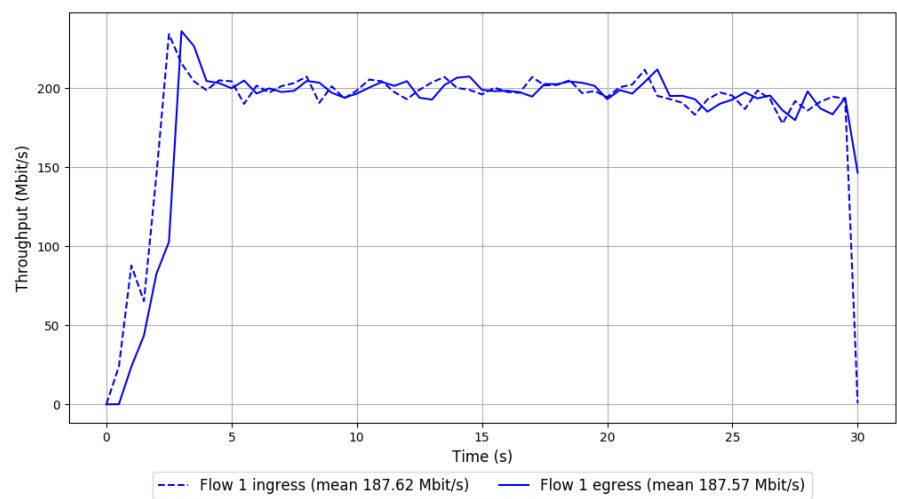
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-11-15 11:58:27
End at: 2018-11-15 11:58:57
Local clock offset: 0.404 ms
Remote clock offset: 0.065 ms


# Below is generated by plot.py at 2018-11-15 14:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 180.87 Mbit/s
95th percentile per-packet one-way delay: 133.887 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 180.87 Mbit/s
95th percentile per-packet one-way delay: 133.887 ms
Loss rate: 0.99%
```
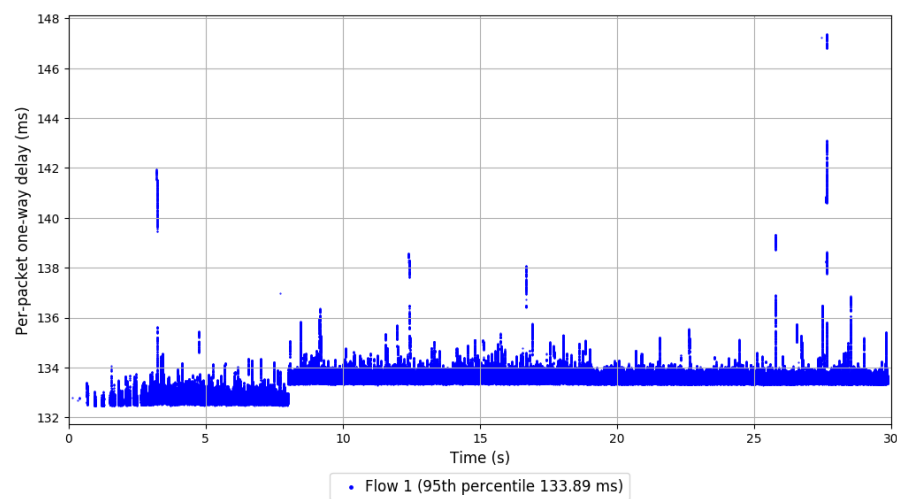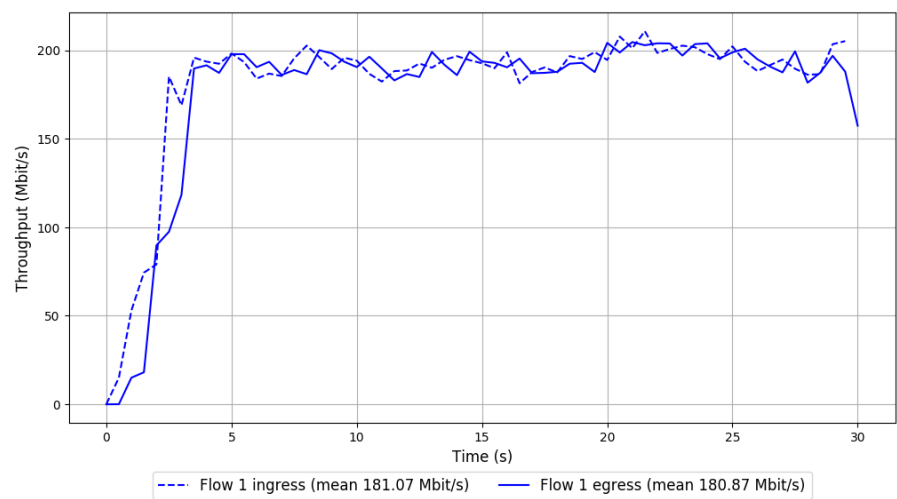
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 181.07 Mbit/s)   Flow 1 egress (mean 180.87 Mbit/s)

Flow 1 (95th percentile 133.89 ms)

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

Start at: 2018-11-15 12:26:30
End at: 2018-11-15 12:27:00
Local clock offset: 0.124 ms
Remote clock offset: 0.032 ms


# Below is generated by plot.py at 2018-11-15 14:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 178.99 Mbit/s
95th percentile per-packet one-way delay: 133.966 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 178.99 Mbit/s
95th percentile per-packet one-way delay: 133.966 ms
Loss rate: 0.98%
```
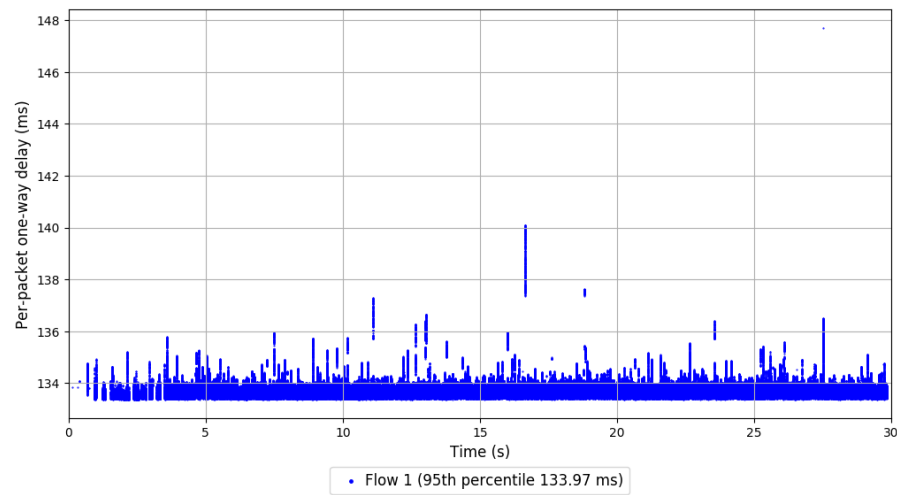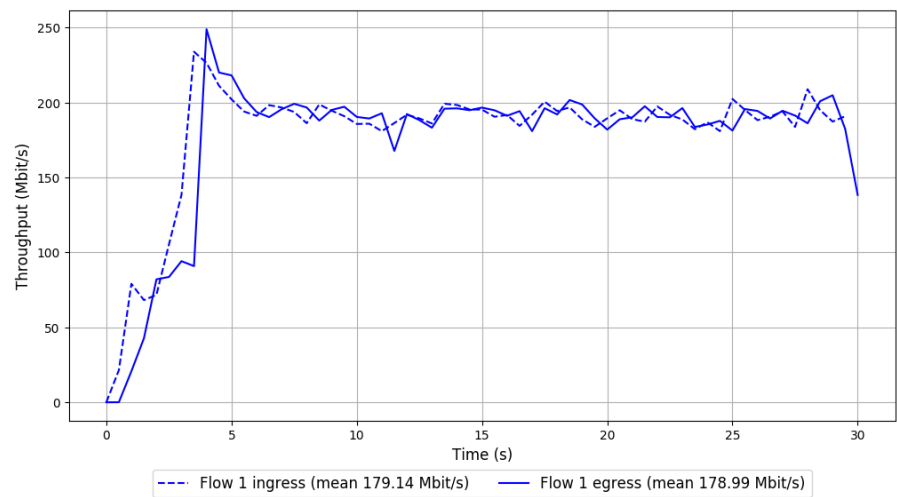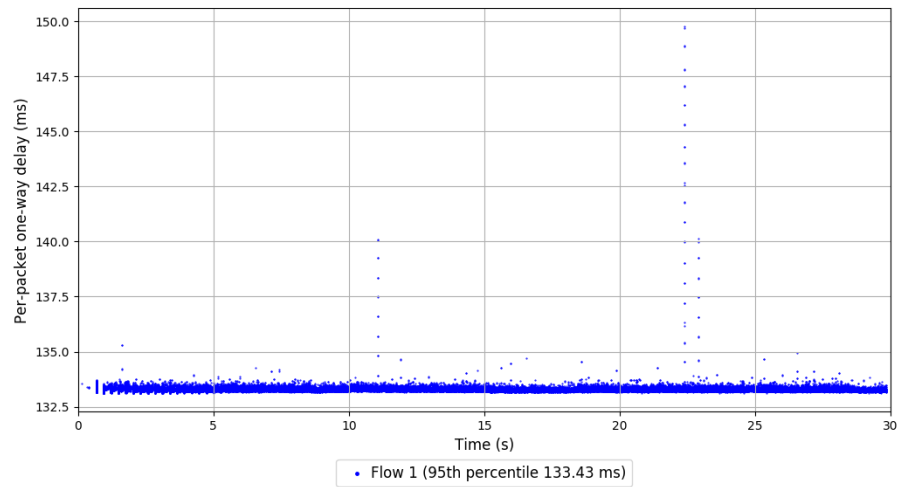
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 179.14 Mbit/s)   Flow 1 egress (mean 178.99 Mbit/s)

Flow 1 (95th percentile 133.97 ms)

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

Start at: 2018-11-15 12:55:18
End at: 2018-11-15 12:55:48
Local clock offset: 0.131 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-11-15 14:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.01 Mbit/s
95th percentile per-packet one-way delay: 133.431 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 13.01 Mbit/s
95th percentile per-packet one-way delay: 133.431 ms
Loss rate: 0.92%
```
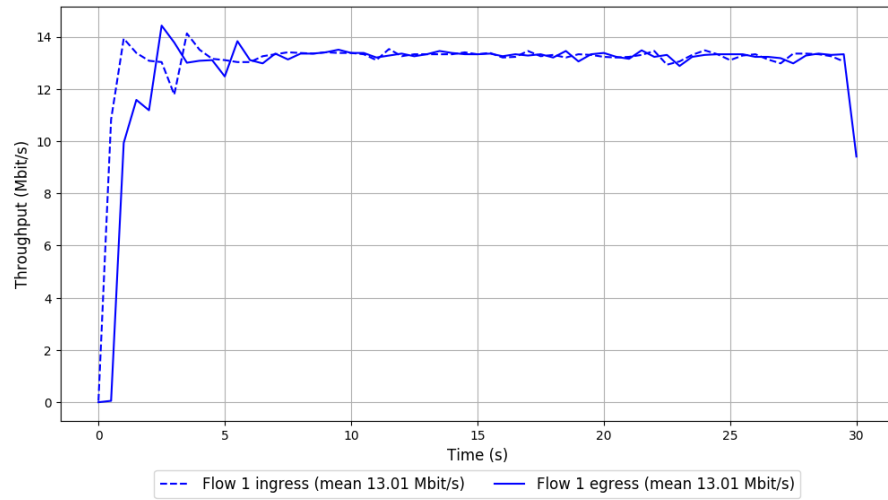
Run 5: Report of TaoVA-100x — Data Link

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 10:47:12
End at: 2018-11-15 10:47:42
Local clock offset: 0.167 ms
Remote clock offset: -0.015 ms


# Below is generated by plot.py at 2018-11-15 14:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.64 Mbit/s
95th percentile per-packet one-way delay: 133.594 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.64 Mbit/s
95th percentile per-packet one-way delay: 133.594 ms
Loss rate: 0.97%
```
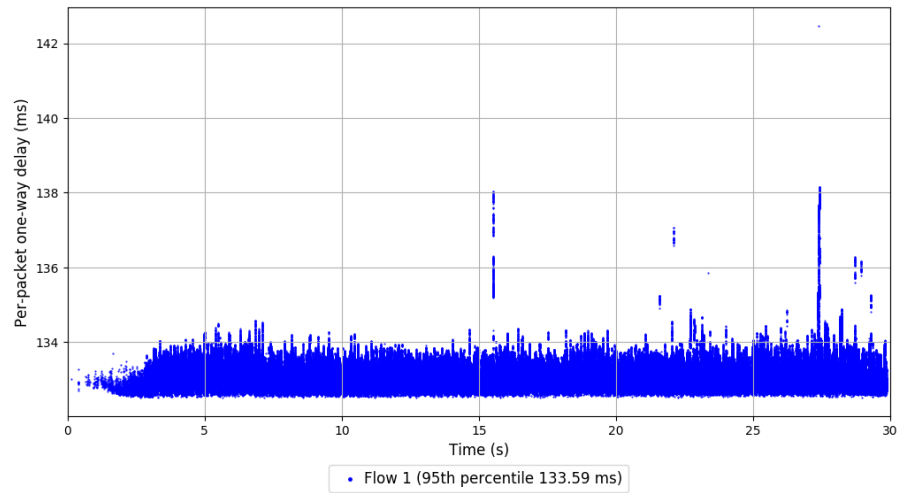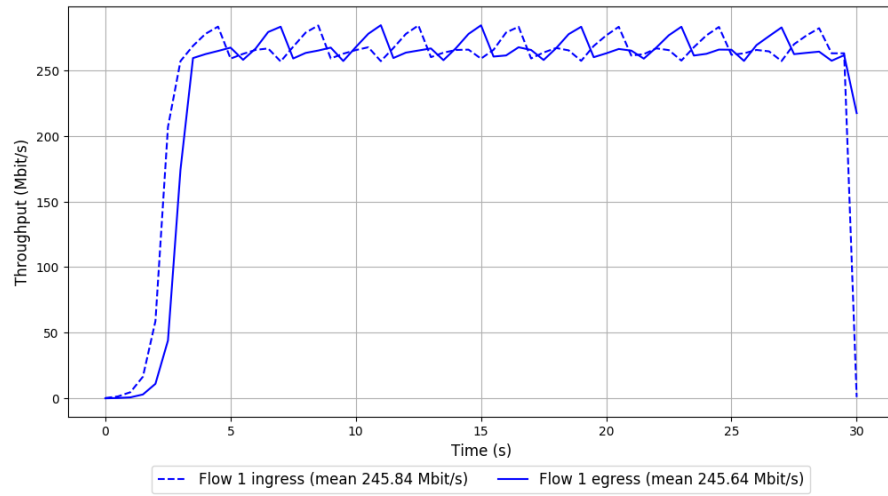
Run 1: Report of TCP Vegas — Data Link

Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 11:16:46
End at: 2018-11-15 11:17:16
Local clock offset: -0.304 ms
Remote clock offset: 0.022 ms

Below is generated by plot.py at 2018-11-15 14:09:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 241.32 Mbit/s
95th percentile per-packet one-way delay: 135.832 ms
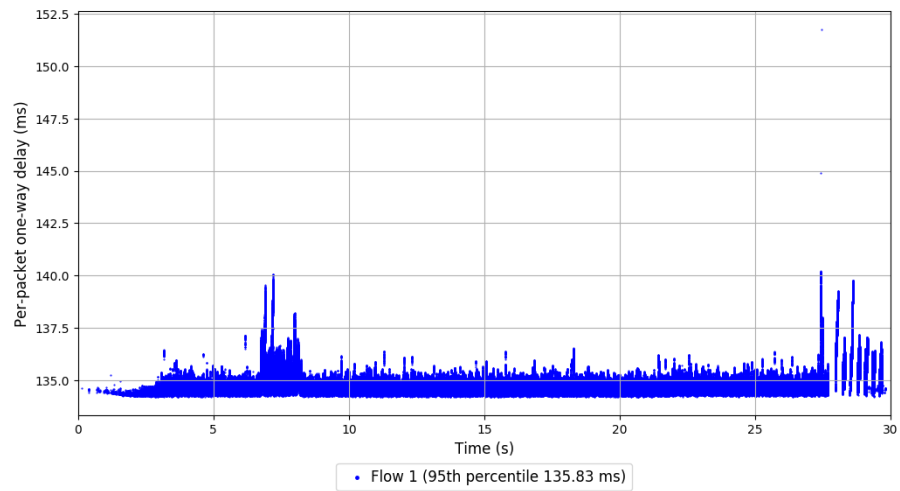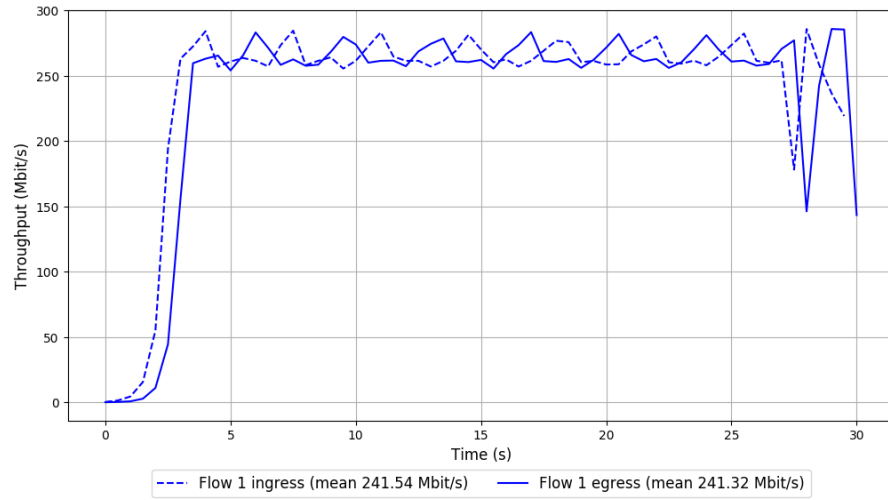Loss rate: 0.98%
-- Flow 1:
Average throughput: 241.32 Mbit/s
95th percentile per-packet one-way delay: 135.832 ms
Loss rate: 0.98%

Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 241.54 Mbit/s) --- Flow 1 egress (mean 241.32 Mbit/s)

Flow 1 (95th percentile 135.83 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 11:42:49
End at: 2018-11-15 11:43:19
Local clock offset: 0.172 ms
Remote clock offset: 0.043 ms


# Below is generated by plot.py at 2018-11-15 14:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 235.06 Mbit/s
95th percentile per-packet one-way delay: 133.119 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 235.06 Mbit/s
95th percentile per-packet one-way delay: 133.119 ms
Loss rate: 0.67%
```
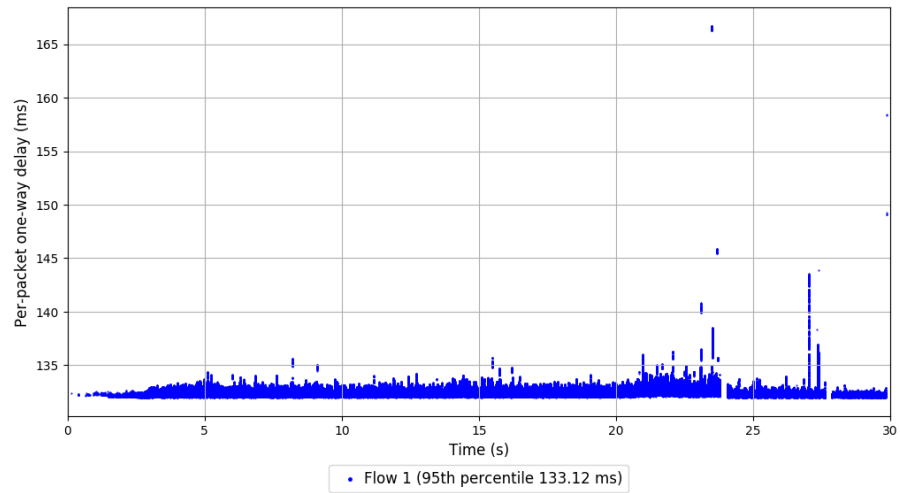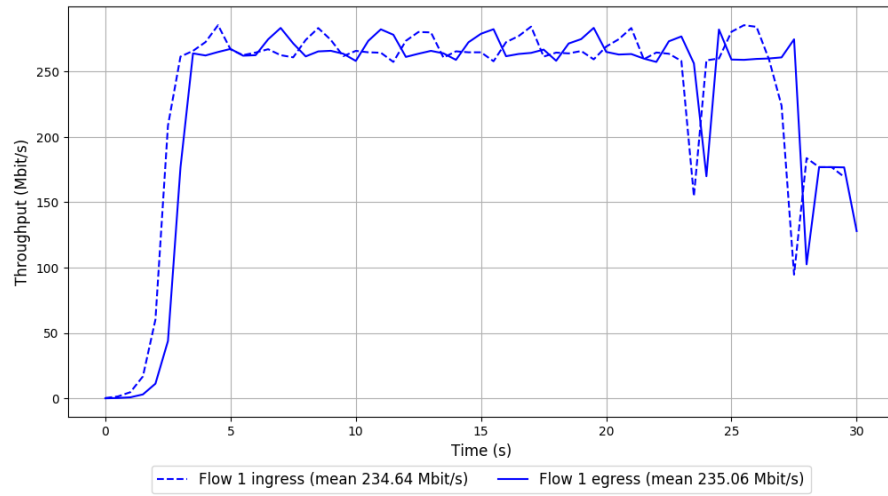
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 12:09:49
End at: 2018-11-15 12:10:19
Local clock offset: 0.207 ms
Remote clock offset: 0.011 ms


# Below is generated by plot.py at 2018-11-15 14:10:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 242.63 Mbit/s
95th percentile per-packet one-way delay: 136.205 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 242.63 Mbit/s
95th percentile per-packet one-way delay: 136.205 ms
Loss rate: 0.98%
```
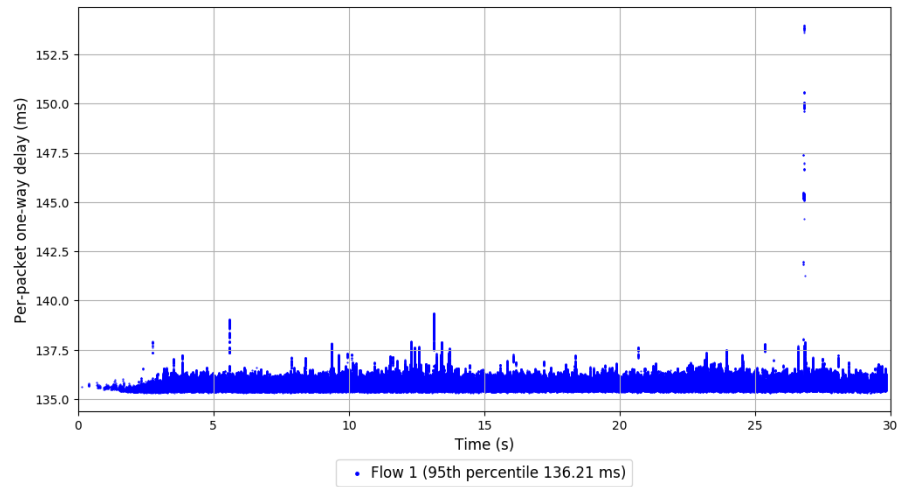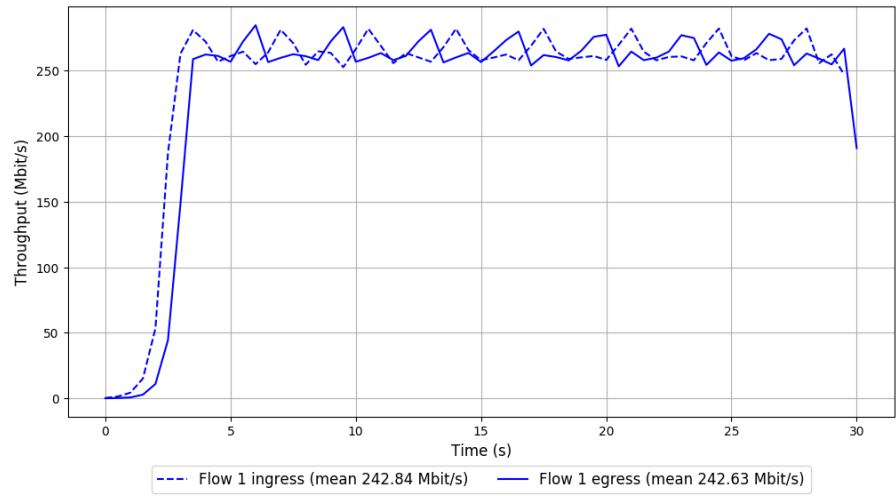
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 12:38:15
End at: 2018-11-15 12:38:45
Local clock offset: -0.139 ms
Remote clock offset: 0.07 ms


# Below is generated by plot.py at 2018-11-15 14:12:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 242.13 Mbit/s
95th percentile per-packet one-way delay: 133.634 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 242.13 Mbit/s
95th percentile per-packet one-way delay: 133.634 ms
Loss rate: 0.98%
```
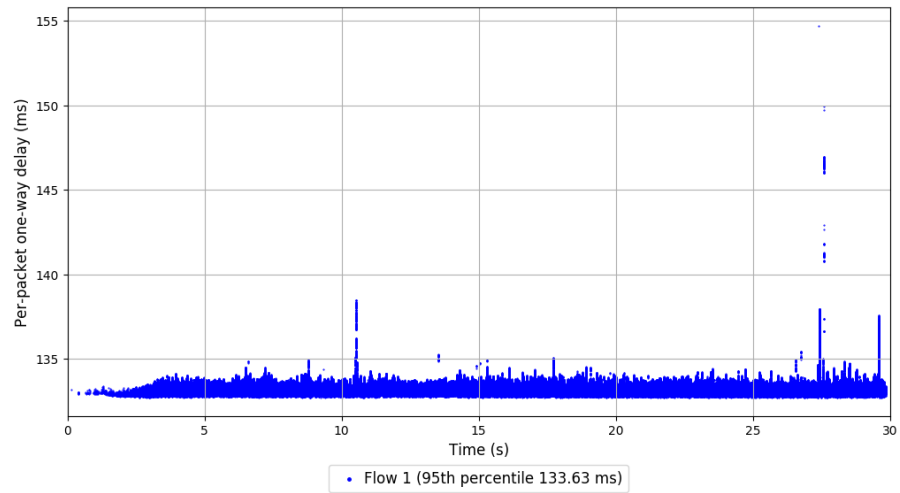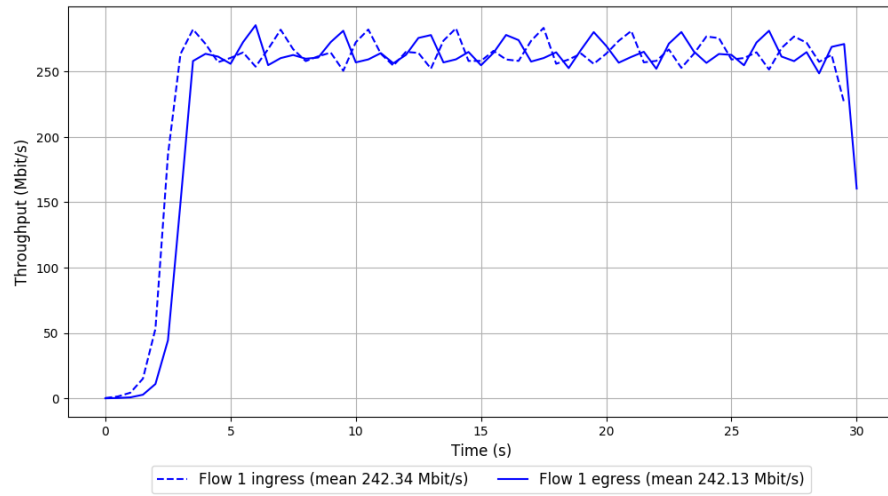
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 242.34 Mbit/s) ---- Flow 1 egress (mean 242.13 Mbit/s)
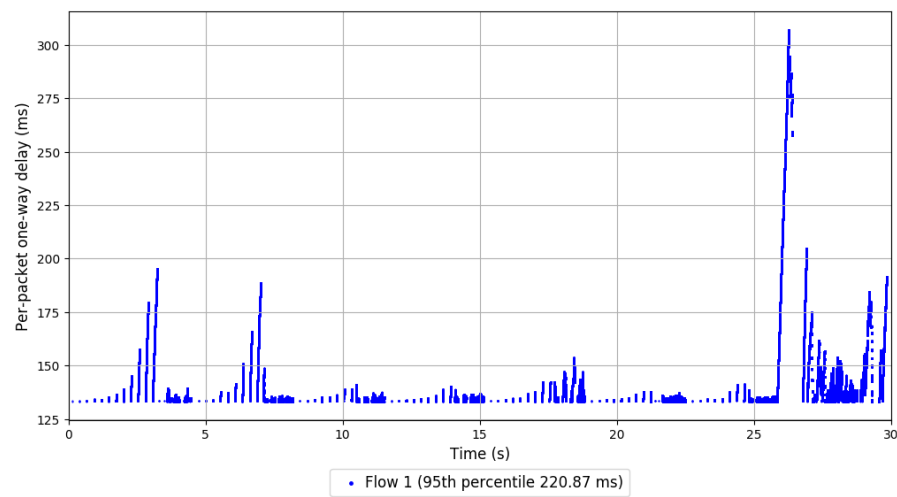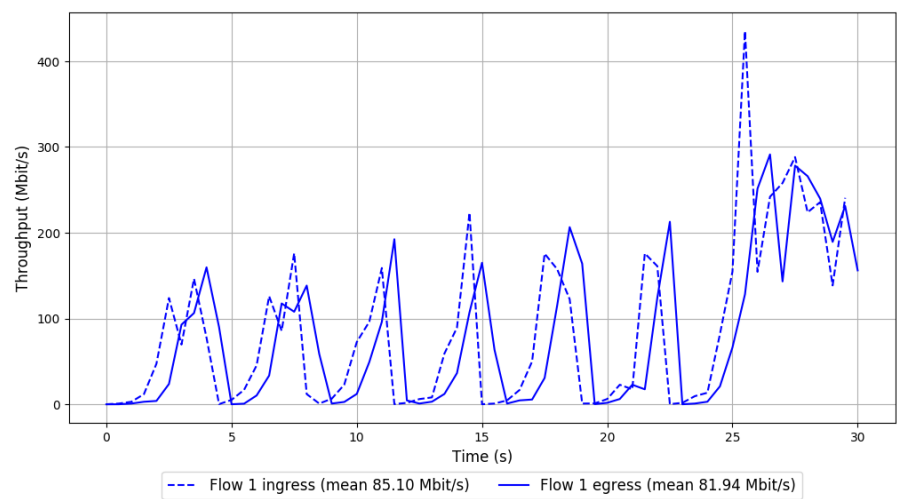

Flow 1 (95th percentile 133.63 ms)

```
Run 1: Statistics of Verus

Start at: 2018-11-15 10:57:13
End at: 2018-11-15 10:57:43
Local clock offset: 0.281 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-11-15 14:12:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.94 Mbit/s
95th percentile per-packet one-way delay: 220.869 ms
Loss rate: 4.17%
-- Flow 1:
Average throughput: 81.94 Mbit/s
95th percentile per-packet one-way delay: 220.869 ms
Loss rate: 4.17%
```

Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 85.10 Mbit/s)   Flow 1 egress (mean 81.94 Mbit/s)

• Flow 1 (95th percentile 220.87 ms)

```
Run 2: Statistics of Verus

Start at: 2018-11-15 11:26:09
End at: 2018-11-15 11:26:39
Local clock offset: -0.31 ms
Remote clock offset: 0.002 ms


# Below is generated by plot.py at 2018-11-15 14:12:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.60 Mbit/s
95th percentile per-packet one-way delay: 265.289 ms
Loss rate: 9.53%
-- Flow 1:
Average throughput: 65.60 Mbit/s
95th percentile per-packet one-way delay: 265.289 ms
Loss rate: 9.53%
```
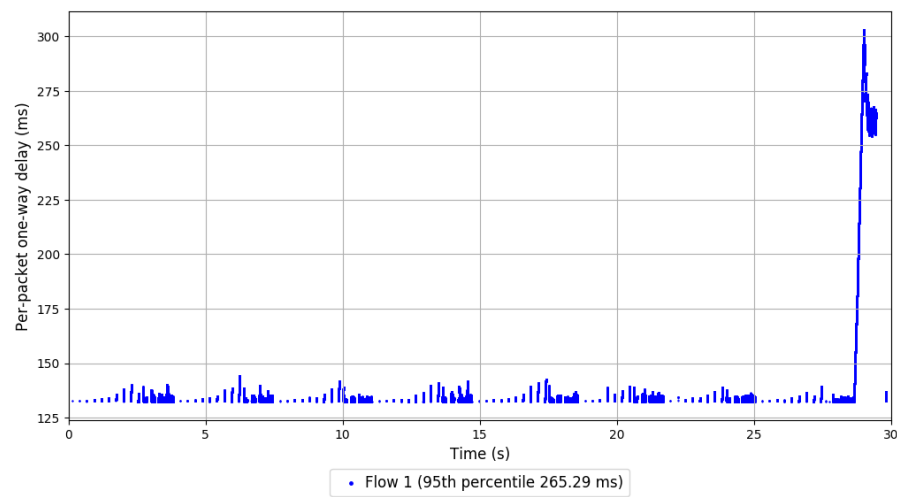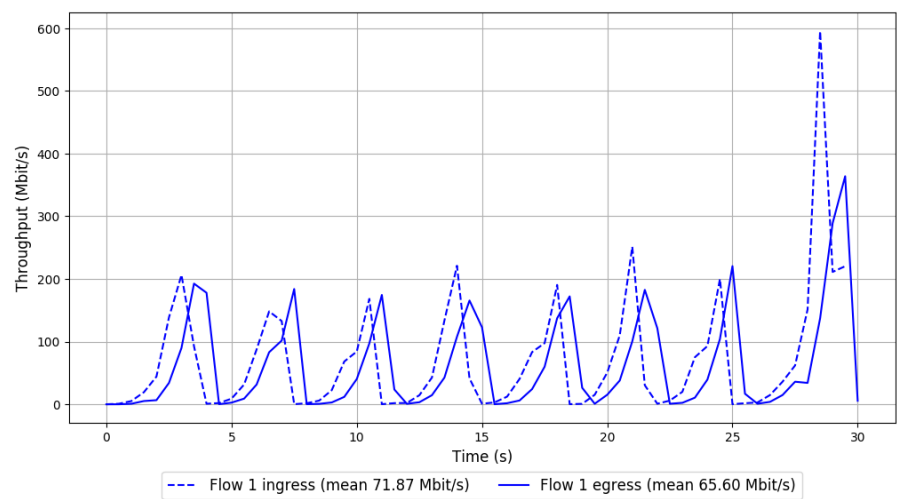
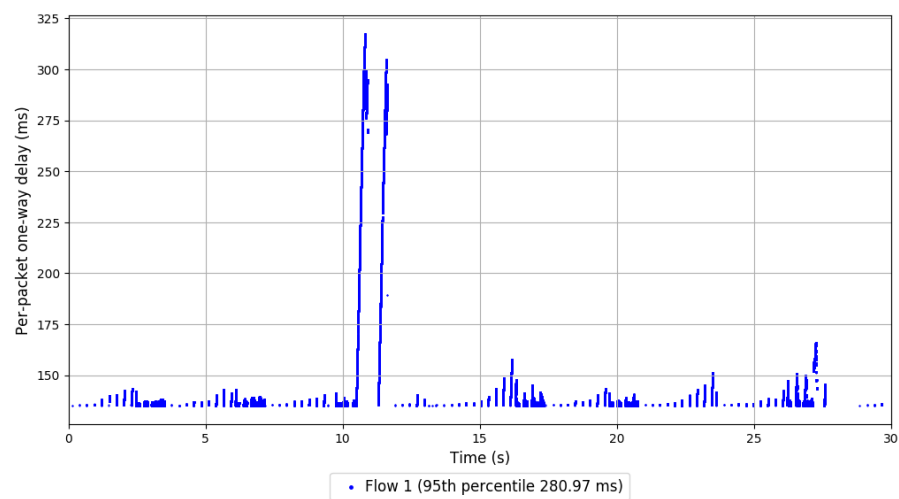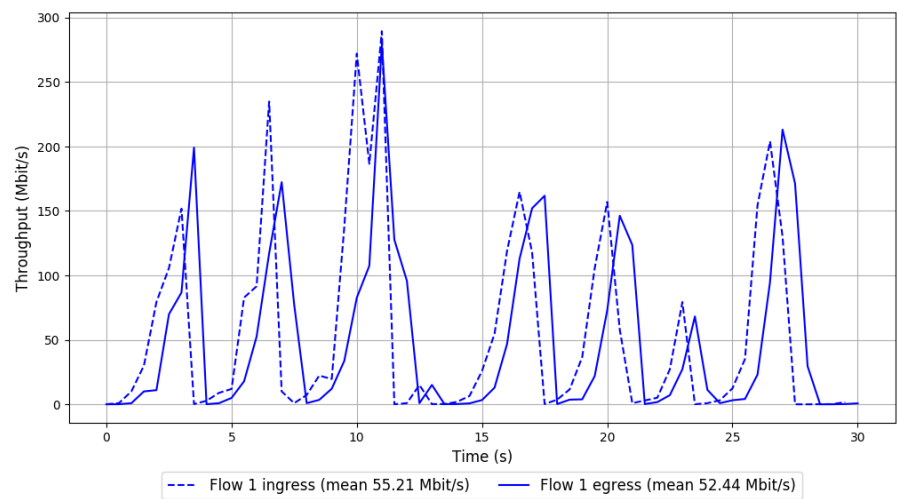Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-11-15 11:52:21
End at: 2018-11-15 11:52:52
Local clock offset: 0.175 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-11-15 14:12:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.44 Mbit/s
95th percentile per-packet one-way delay: 280.972 ms
Loss rate: 5.87%
-- Flow 1:
Average throughput: 52.44 Mbit/s
95th percentile per-packet one-way delay: 280.972 ms
Loss rate: 5.87%
```

Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-11-15 12:19:34
End at: 2018-11-15 12:20:04
Local clock offset: -0.008 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-11-15 14:14:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 151.05 Mbit/s
95th percentile per-packet one-way delay: 305.624 ms
Loss rate: 19.28%
-- Flow 1:
Average throughput: 151.05 Mbit/s
95th percentile per-packet one-way delay: 305.624 ms
Loss rate: 19.28%
```
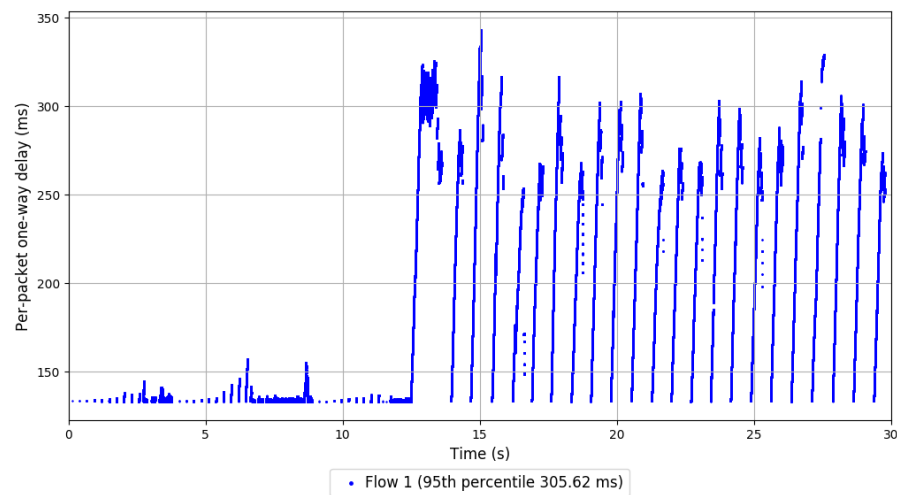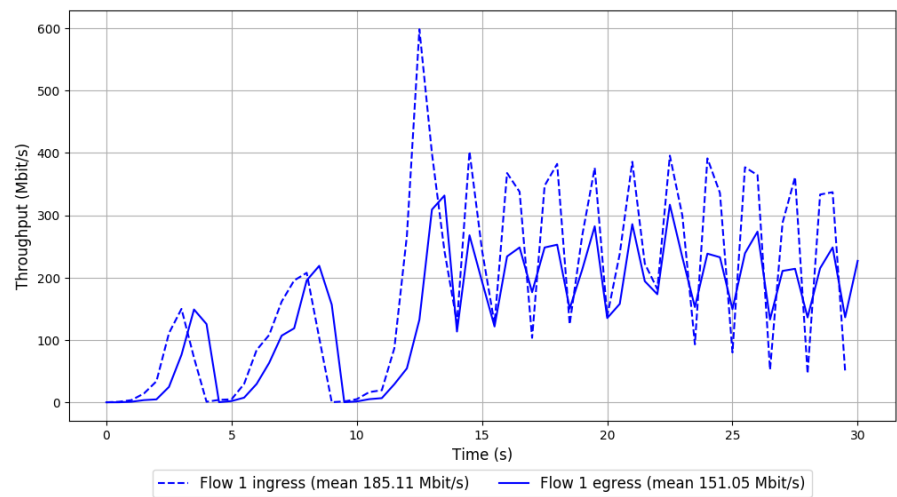
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-11-15 12:47:47
End at: 2018-11-15 12:48:17
Local clock offset: -0.251 ms
Remote clock offset: 0.064 ms


# Below is generated by plot.py at 2018-11-15 14:14:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 145.57 Mbit/s
95th percentile per-packet one-way delay: 293.508 ms
Loss rate: 17.01%
-- Flow 1:
Average throughput: 145.57 Mbit/s
95th percentile per-packet one-way delay: 293.508 ms
Loss rate: 17.01%
```
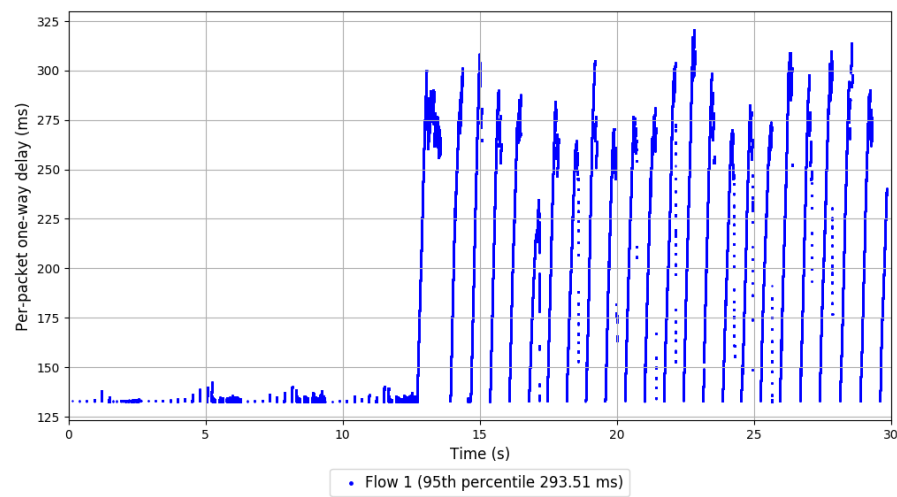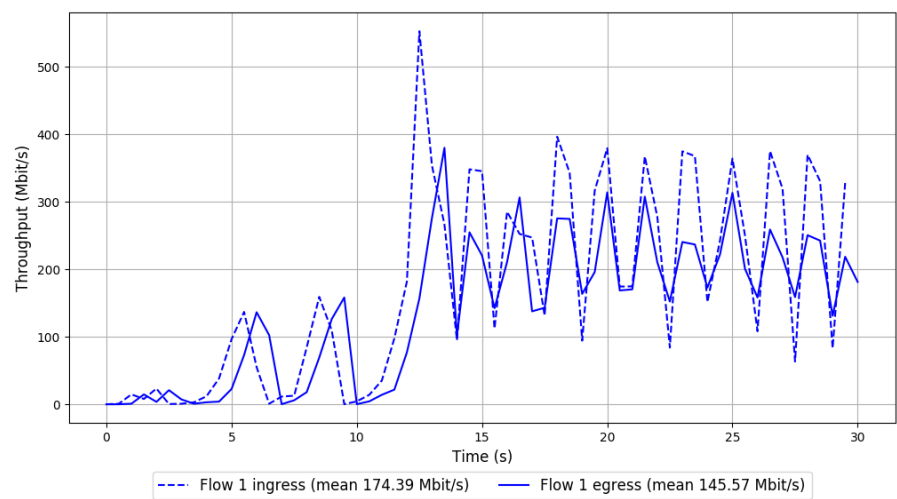
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 11:06:32
End at: 2018-11-15 11:07:02
Local clock offset: 0.303 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-11-15 14:16:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 367.82 Mbit/s
95th percentile per-packet one-way delay: 142.286 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 367.82 Mbit/s
95th percentile per-packet one-way delay: 142.286 ms
Loss rate: 1.53%
```
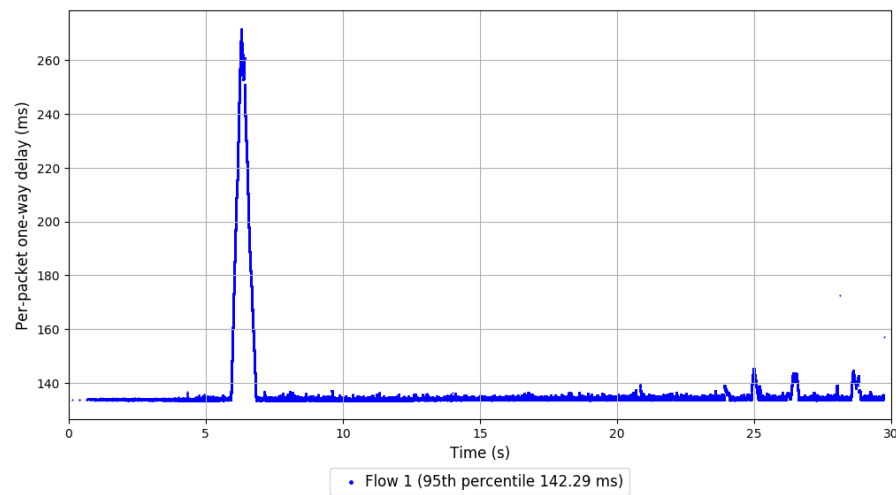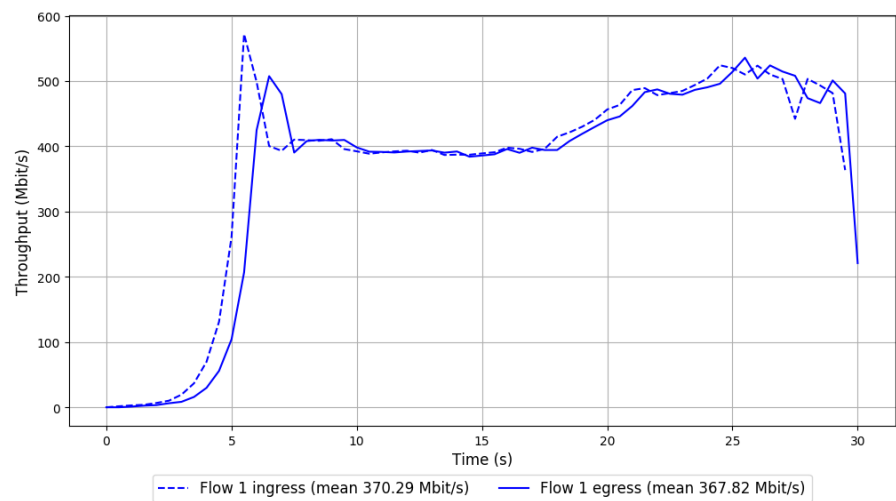
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 11:33:50
End at: 2018-11-15 11:34:20
Local clock offset: 0.398 ms
Remote clock offset: 0.031 ms


# Below is generated by plot.py at 2018-11-15 14:16:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 374.25 Mbit/s
95th percentile per-packet one-way delay: 134.821 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 374.25 Mbit/s
95th percentile per-packet one-way delay: 134.821 ms
Loss rate: 1.21%
```
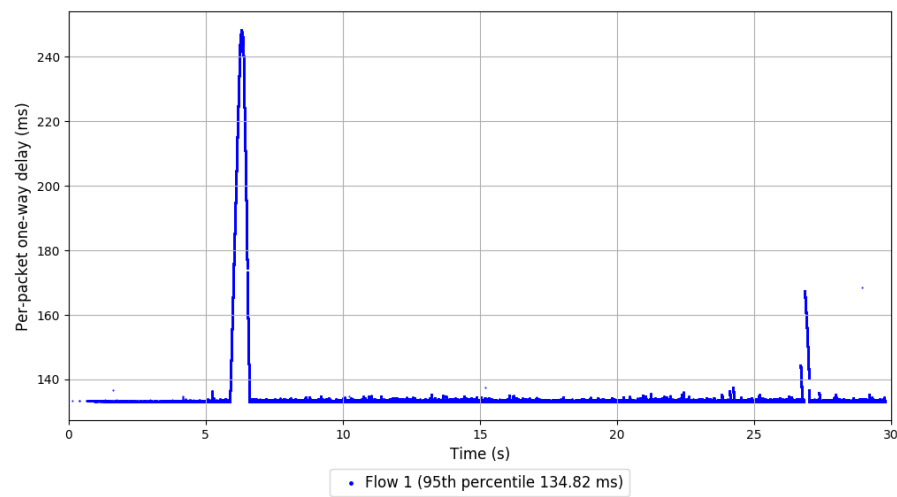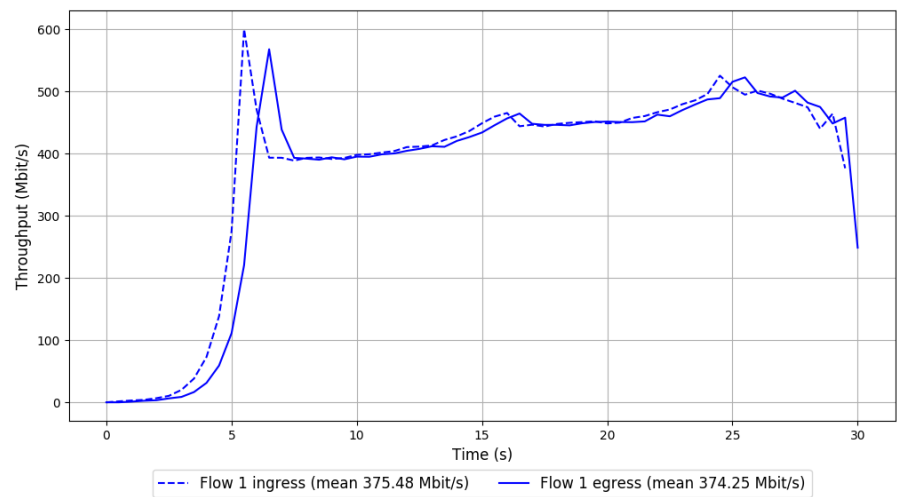
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 12:00:02
End at: 2018-11-15 12:00:32
Local clock offset: 0.457 ms
Remote clock offset: 0.013 ms


# Below is generated by plot.py at 2018-11-15 14:16:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 351.52 Mbit/s
95th percentile per-packet one-way delay: 143.174 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 351.52 Mbit/s
95th percentile per-packet one-way delay: 143.174 ms
Loss rate: 1.29%
```
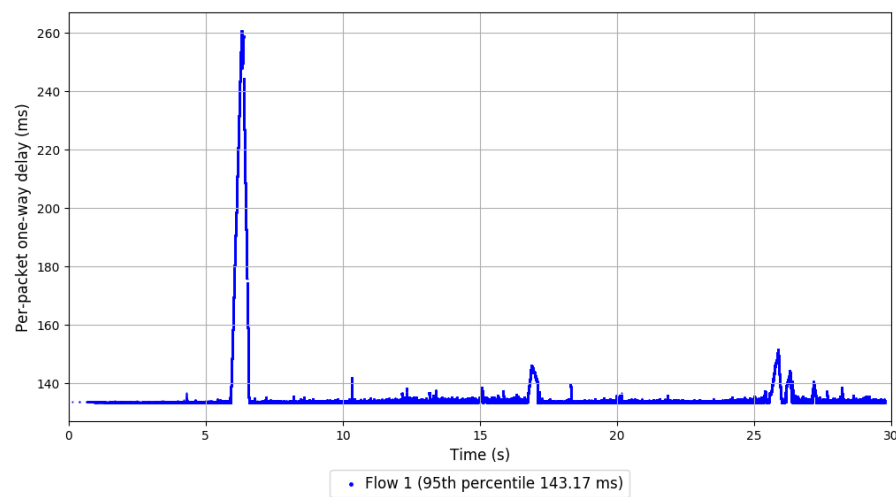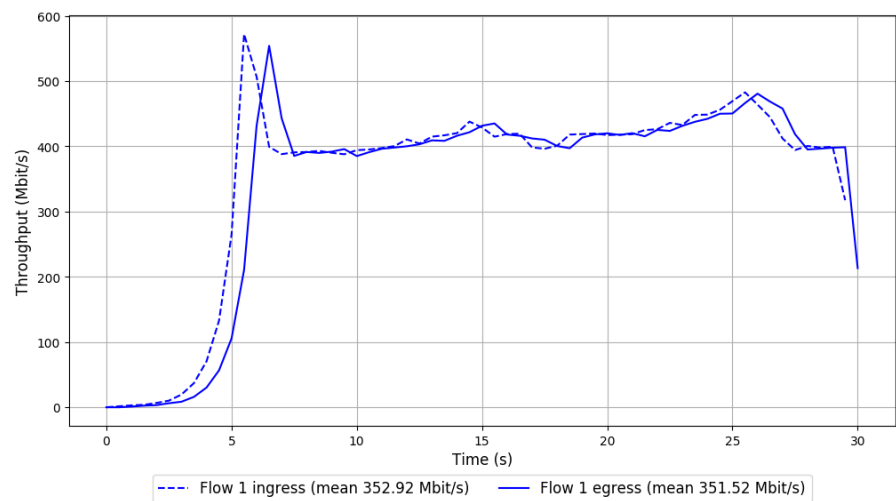
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 352.92 Mbit/s) — Flow 1 egress (mean 351.52 Mbit/s)

· Flow 1 (95th percentile 143.17 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 12:28:14
End at: 2018-11-15 12:28:44
Local clock offset: -0.434 ms
Remote clock offset: 0.021 ms


# Below is generated by plot.py at 2018-11-15 14:16:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 352.56 Mbit/s
95th percentile per-packet one-way delay: 148.989 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 352.56 Mbit/s
95th percentile per-packet one-way delay: 148.989 ms
Loss rate: 1.28%
```
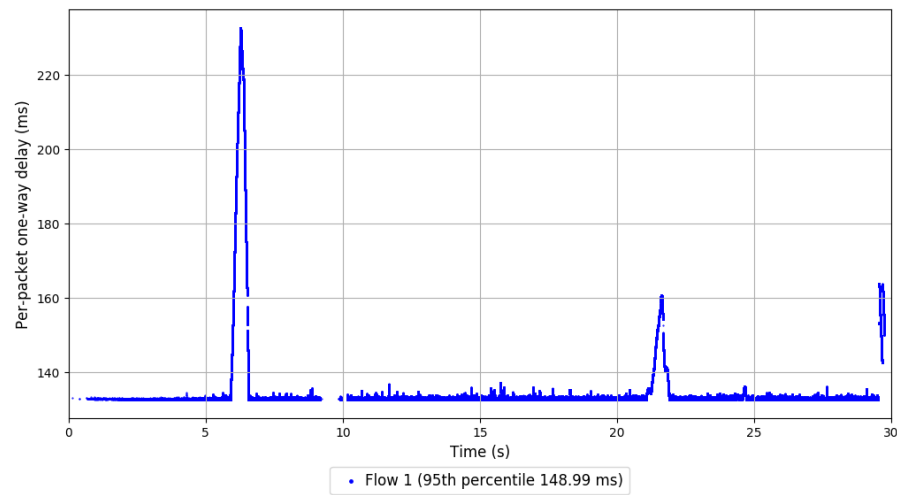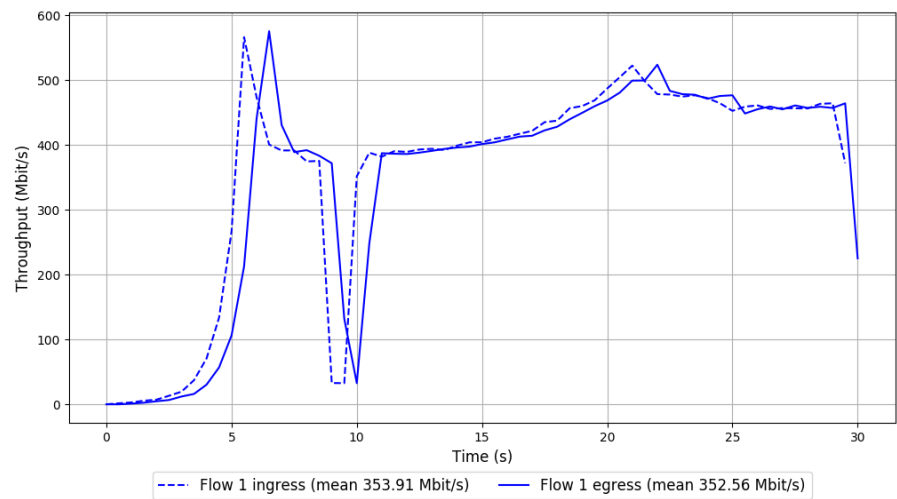
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 12:56:32
End at: 2018-11-15 12:57:02
Local clock offset: -0.281 ms
Remote clock offset: 0.044 ms


# Below is generated by plot.py at 2018-11-15 14:16:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 365.09 Mbit/s
95th percentile per-packet one-way delay: 169.510 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 365.09 Mbit/s
95th percentile per-packet one-way delay: 169.510 ms
Loss rate: 1.16%
```
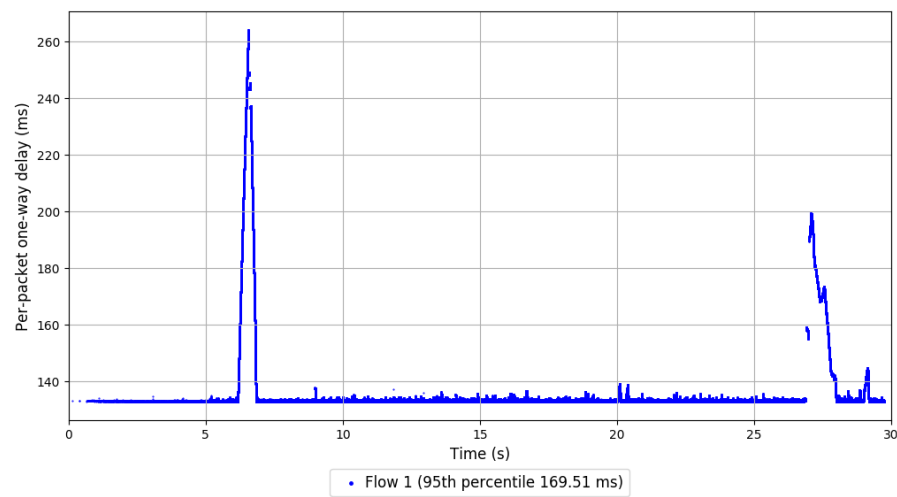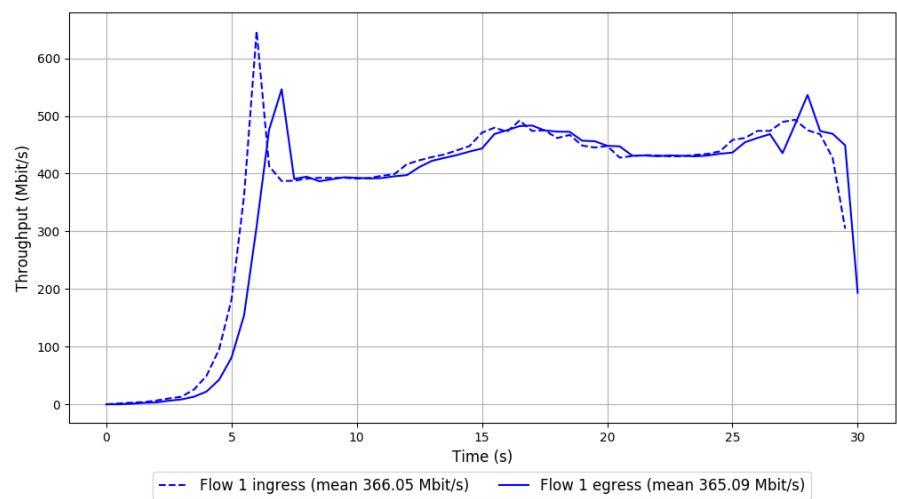
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 10:48:50
End at: 2018-11-15 10:49:20
Local clock offset: -0.003 ms
Remote clock offset: 0.012 ms


# Below is generated by plot.py at 2018-11-15 14:16:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 133.447 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 133.447 ms
Loss rate: 1.02%
```
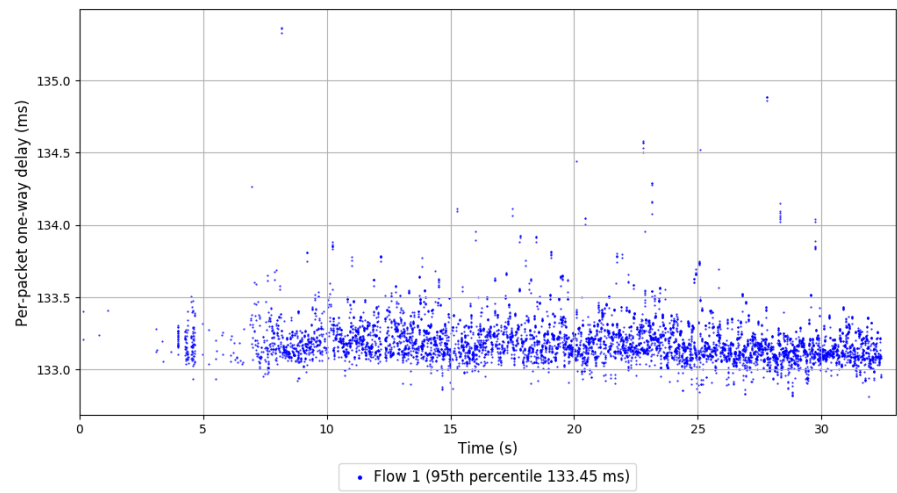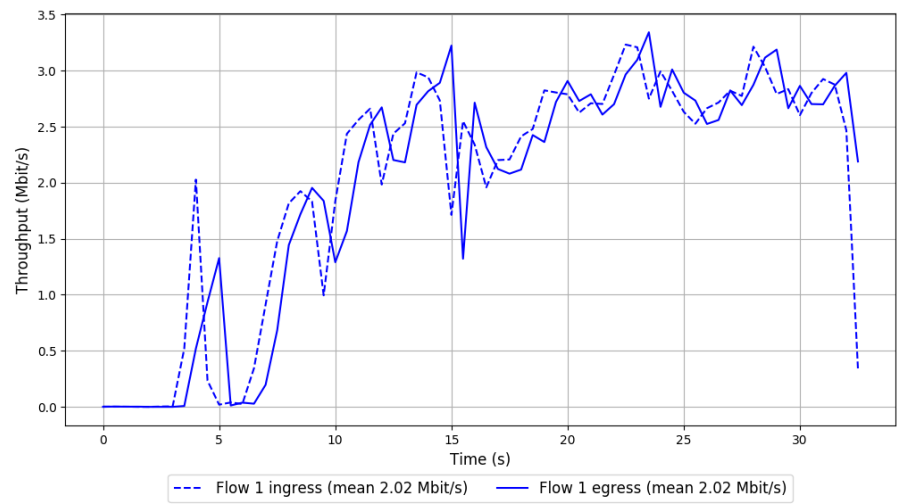
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-11-15 11:18:12
End at: 2018-11-15 11:18:42
Local clock offset: 0.103 ms
Remote clock offset: 0.042 ms


# Below is generated by plot.py at 2018-11-15 14:16:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 132.367 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 132.367 ms
Loss rate: 1.18%
```
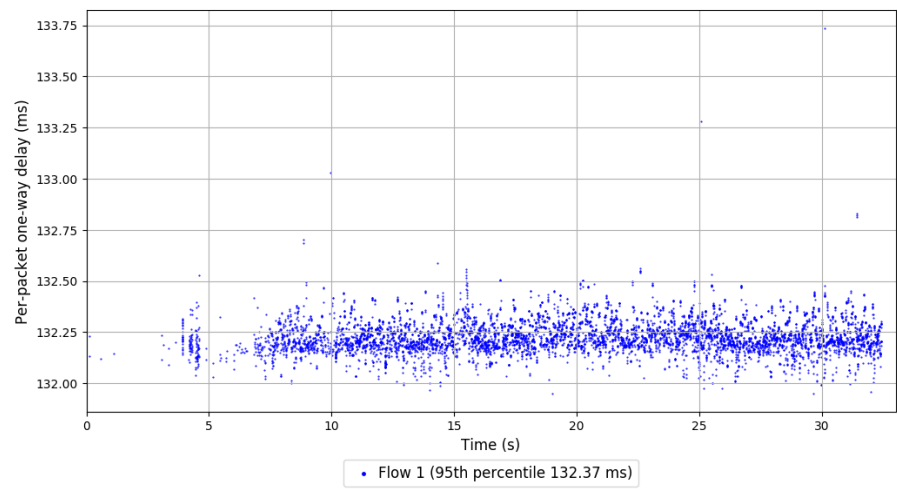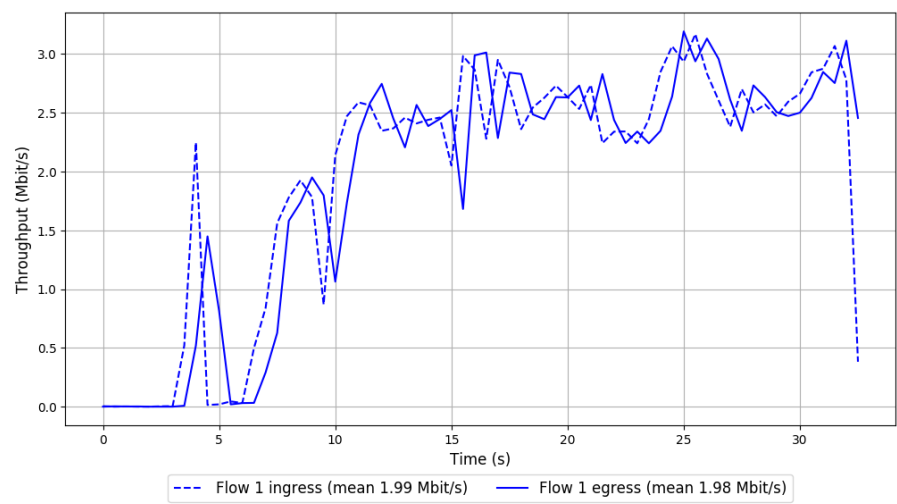
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-11-15 11:44:14
End at: 2018-11-15 11:44:44
Local clock offset: 0.167 ms
Remote clock offset: 0.035 ms


# Below is generated by plot.py at 2018-11-15 14:16:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 135.448 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 135.448 ms
Loss rate: 0.96%
```
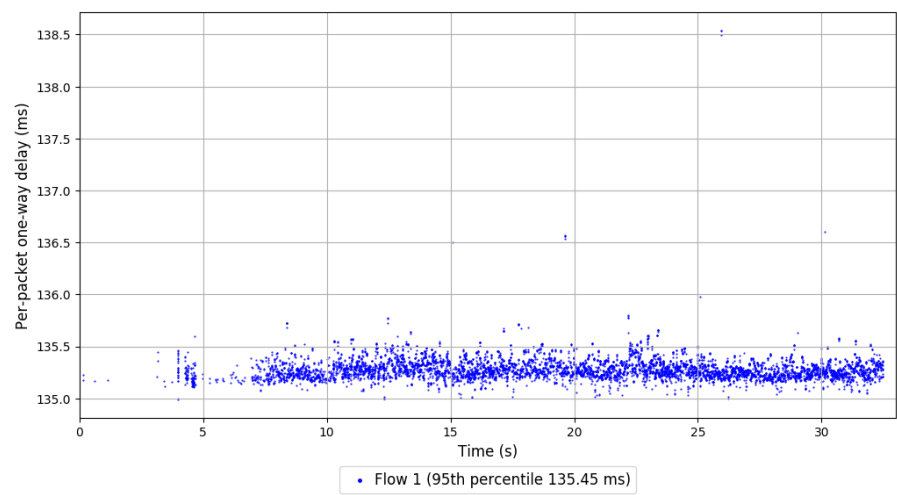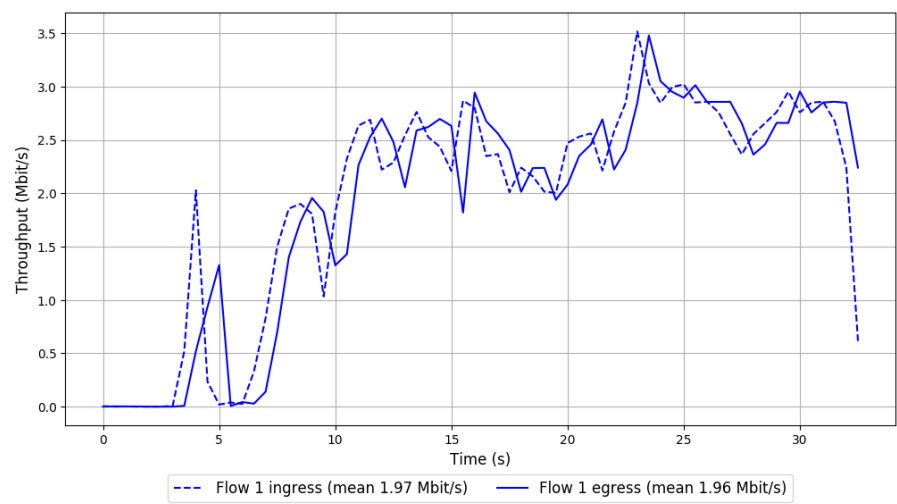
Run 3: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.97 Mbit/s)   Flow 1 egress (mean 1.96 Mbit/s)

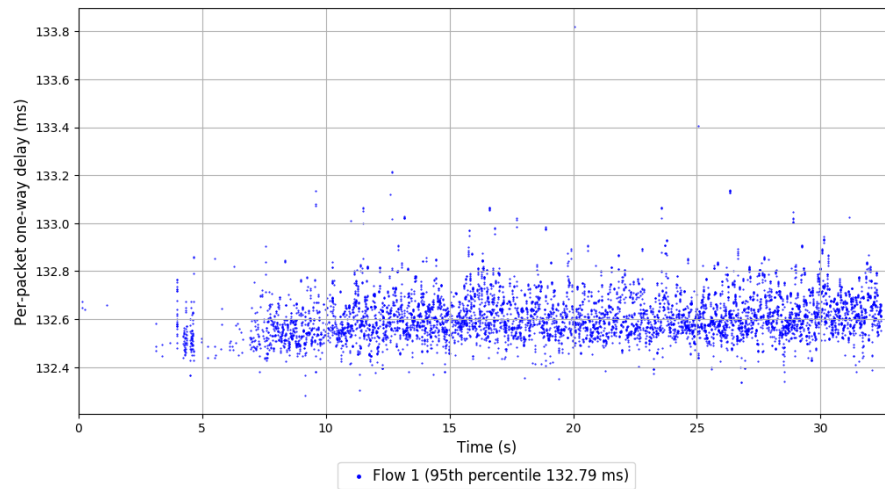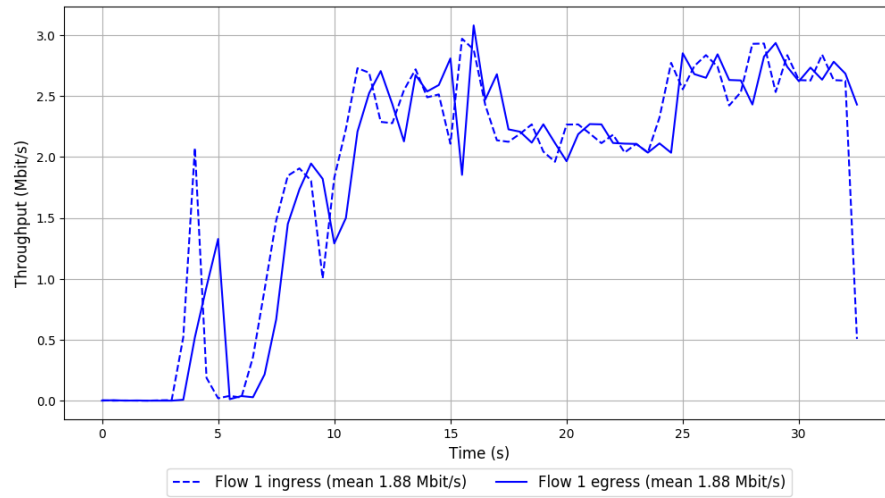
• Flow 1 (95th percentile 135.45 ms)

```
Run 4: Statistics of WebRTC media

Start at: 2018-11-15 12:11:18
End at: 2018-11-15 12:11:48
Local clock offset: 0.468 ms
Remote clock offset: -0.004 ms


# Below is generated by plot.py at 2018-11-15 14:16:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 132.786 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 132.786 ms
Loss rate: 1.15%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-11-15 12:39:42
End at: 2018-11-15 12:40:12
Local clock offset: -0.228 ms
Remote clock offset: 0.404 ms


# Below is generated by plot.py at 2018-11-15 14:16:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 132.191 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 132.191 ms
Loss rate: 1.12%
```

Run 5: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.00 Mbit/s) --- Flow 1 egress (mean 2.00 Mbit/s)

Flow 1 (95th percentile 132.19 ms)