Pantheon Report

Generated at 2018-11-03 06:14:38 (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.
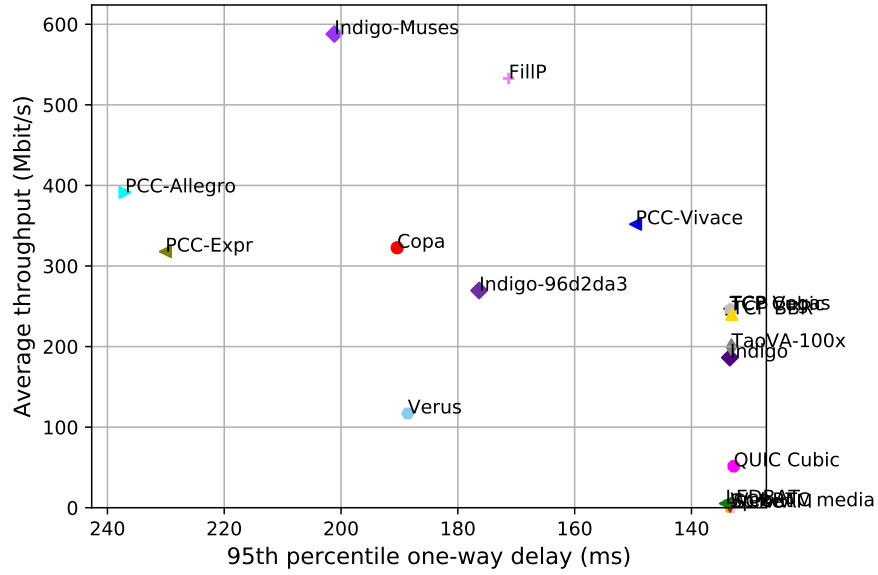
```
System info:
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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
```
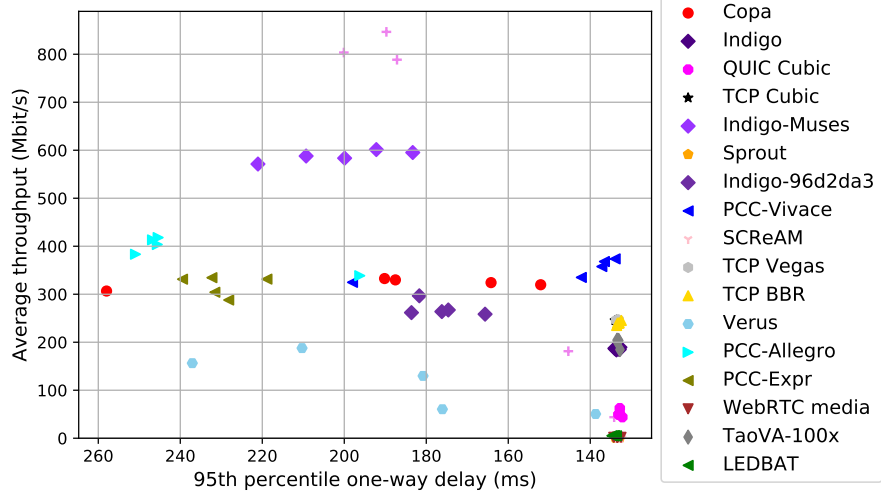
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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

3

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	239.98	133.08	0.99
Copa	5	322.65	190.39	1.01
TCP Cubic	5	245.13	133.48	0.97
FillP	5	532.79	171.30	1.98
Indigo	5	186.31	133.43	0.90
Indigo-96d2da3	5	269.59	176.36	0.86
LEDBAT	5	5.23	134.18	1.78
Indigo-Muses	5	587.86	201.15	1.38
PCC-Allegro	5	391.35	236.98	4.98
PCC-Expr	5	317.87	230.08	4.59
QUIC Cubic	5	51.42	132.78	1.39
SCReAM	5	0.16	132.82	0.88
Sprout	5	0.65	133.37	0.92
TaoVA-100x	5	199.28	133.16	0.96
TCP Vegas	5	245.98	133.33	0.96
Verus	5	116.99	188.58	1.93
PCC-Vivace	5	351.86	149.57	1.21
WebRTC media	5	1.85	133.39	1.23

```
Run 1: Statistics of TCP BBR

Start at: 2018-11-03 02:46:27
End at: 2018-11-03 02:46:57
Local clock offset: 0.06 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-11-03 05:09:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.88 Mbit/s
95th percentile per-packet one-way delay: 133.348 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 239.88 Mbit/s
95th percentile per-packet one-way delay: 133.348 ms
Loss rate: 0.99%
```
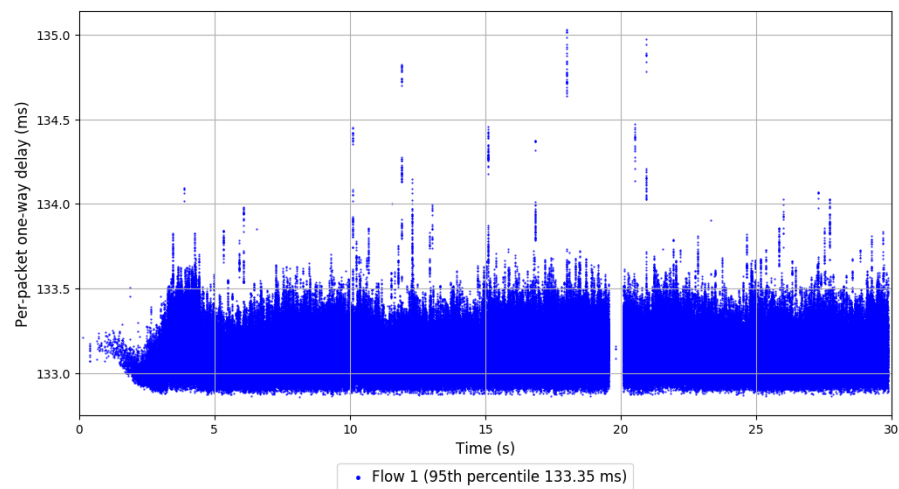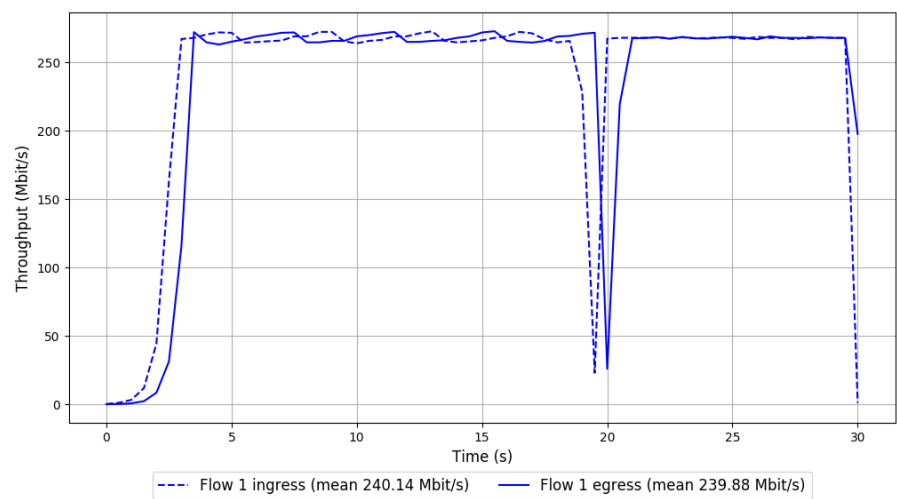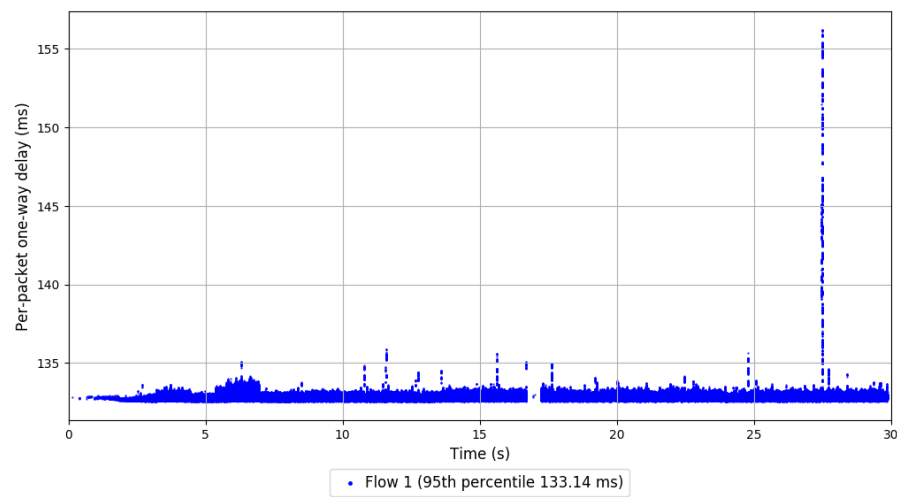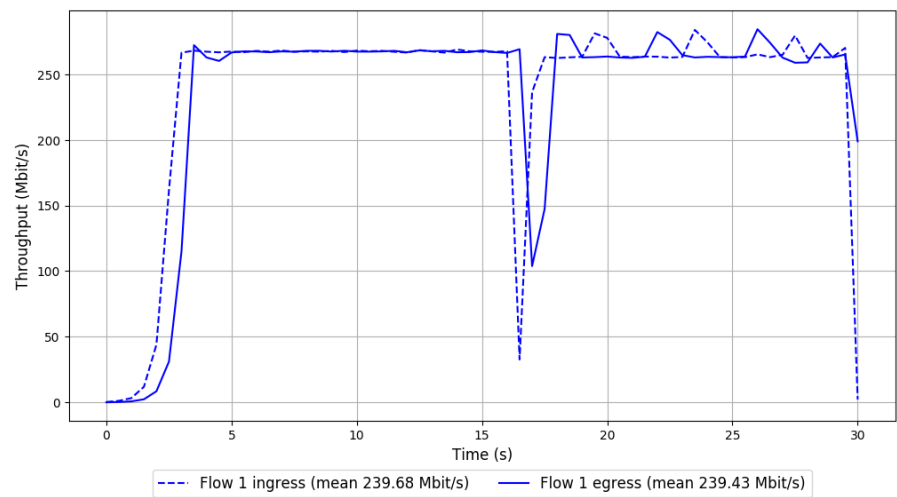
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 240.14 Mbit/s)   Flow 1 egress (mean 239.88 Mbit/s)

• Flow 1 (95th percentile 133.35 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-11-03 03:13:36
End at: 2018-11-03 03:14:06
Local clock offset: -0.114 ms
Remote clock offset: 0.257 ms

# Below is generated by plot.py at 2018-11-03 05:09:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.43 Mbit/s
95th percentile per-packet one-way delay: 133.137 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 239.43 Mbit/s
95th percentile per-packet one-way delay: 133.137 ms
Loss rate: 0.99%
```
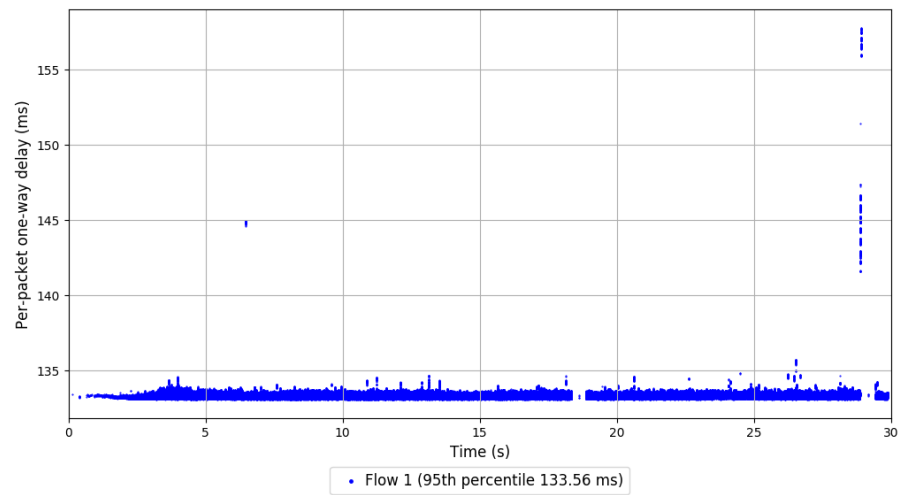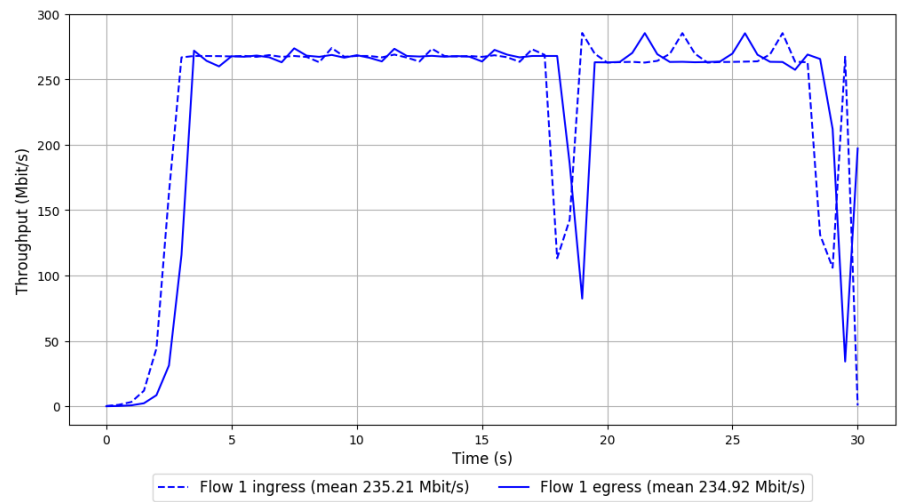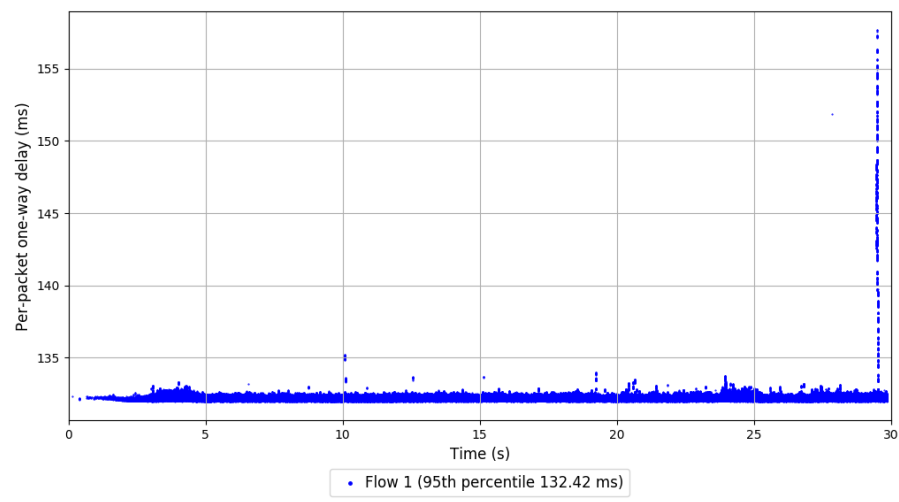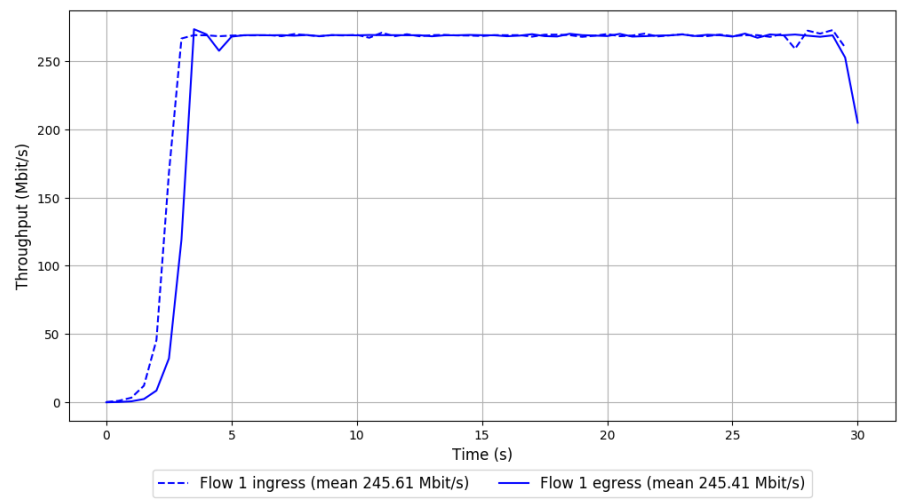
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-11-03 03:40:57
End at: 2018-11-03 03:41:27
Local clock offset: 0.149 ms
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2018-11-03 05:09:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 234.92 Mbit/s
95th percentile per-packet one-way delay: 133.558 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 234.92 Mbit/s
95th percentile per-packet one-way delay: 133.558 ms
Loss rate: 1.01%
```

Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-11-03 04:07:47
End at: 2018-11-03 04:08:17
Local clock offset: -0.016 ms
Remote clock offset: -0.058 ms


# Below is generated by plot.py at 2018-11-03 05:09:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.41 Mbit/s
95th percentile per-packet one-way delay: 132.424 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.41 Mbit/s
95th percentile per-packet one-way delay: 132.424 ms
Loss rate: 0.97%
```
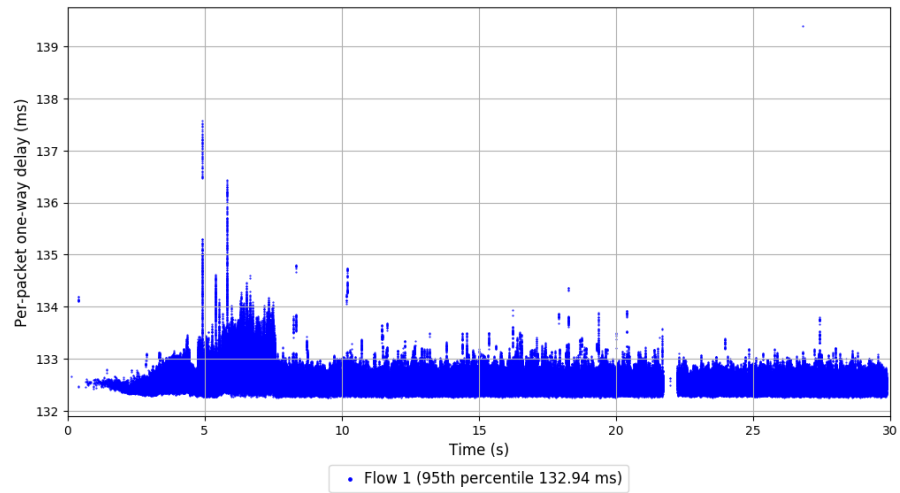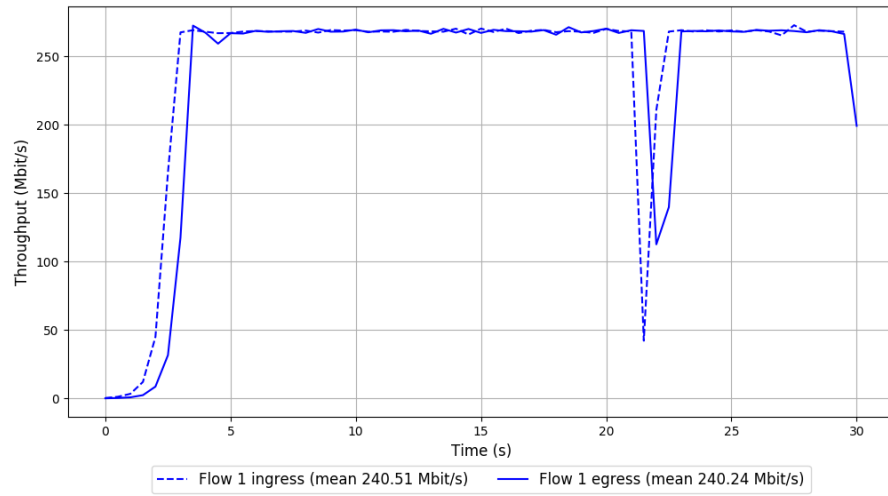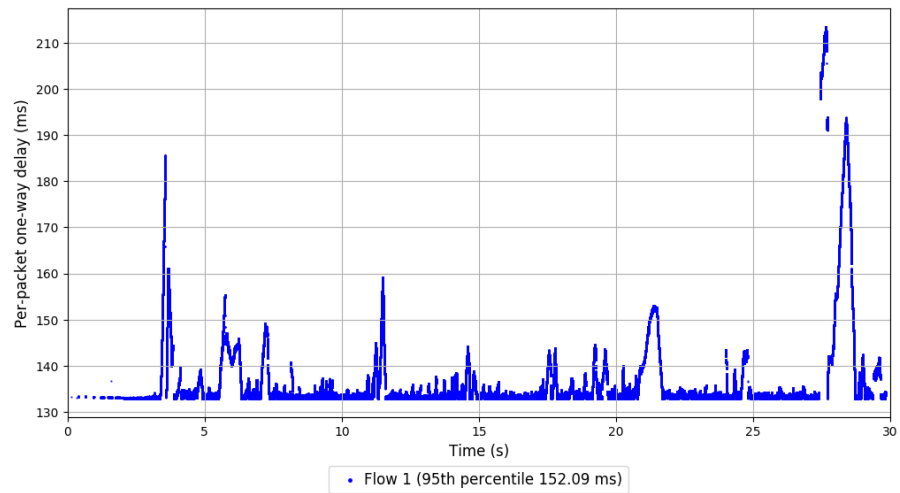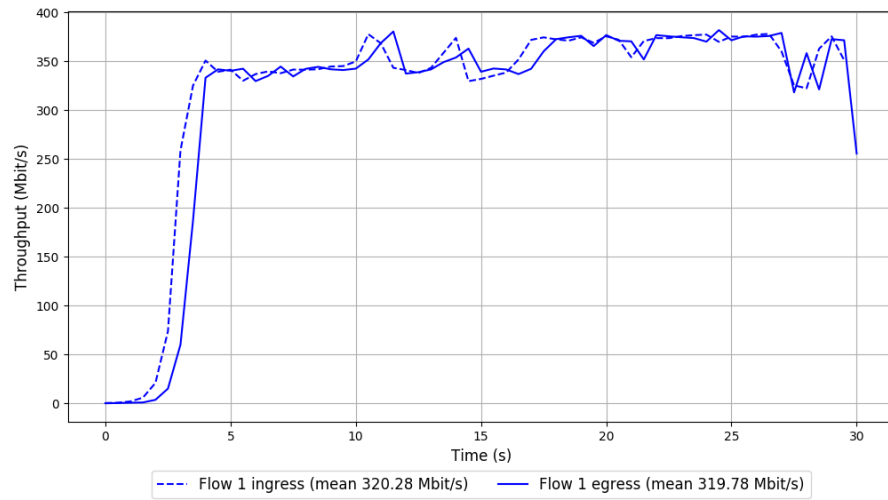
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 245.61 Mbit/s)   Flow 1 egress (mean 245.41 Mbit/s)

Flow 1 (95th percentile 132.42 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-11-03 04:33:57
End at: 2018-11-03 04:34:27
Local clock offset: -0.098 ms
Remote clock offset: 0.363 ms


# Below is generated by plot.py at 2018-11-03 05:09:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 240.24 Mbit/s
95th percentile per-packet one-way delay: 132.941 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 240.24 Mbit/s
95th percentile per-packet one-way delay: 132.941 ms
Loss rate: 0.99%
```

Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-11-03 03:08:47
End at: 2018-11-03 03:09:17
Local clock offset: -0.141 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-11-03 05:16:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 319.78 Mbit/s
95th percentile per-packet one-way delay: 152.091 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 319.78 Mbit/s
95th percentile per-packet one-way delay: 152.091 ms
Loss rate: 1.04%
```
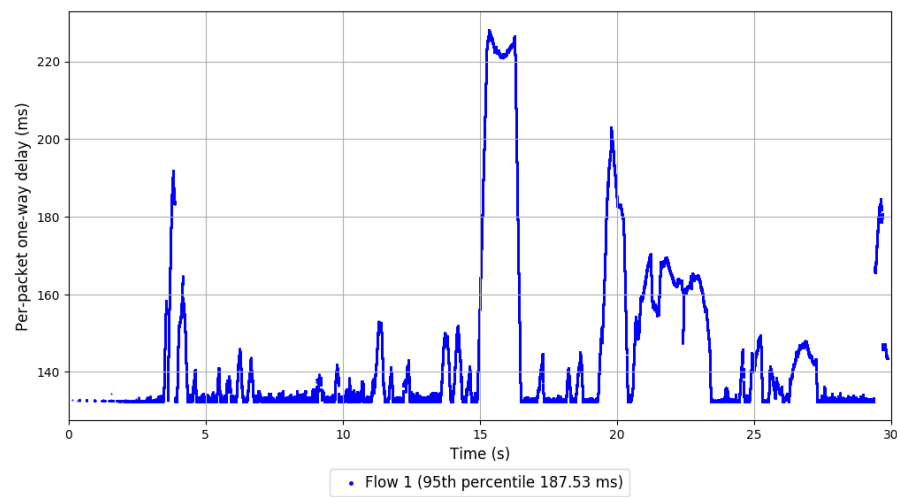
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-11-03 03:36:06
End at: 2018-11-03 03:36:36
Local clock offset: -0.463 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-11-03 05:16:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 329.89 Mbit/s
95th percentile per-packet one-way delay: 187.528 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 329.89 Mbit/s
95th percentile per-packet one-way delay: 187.528 ms
Loss rate: 0.98%
```
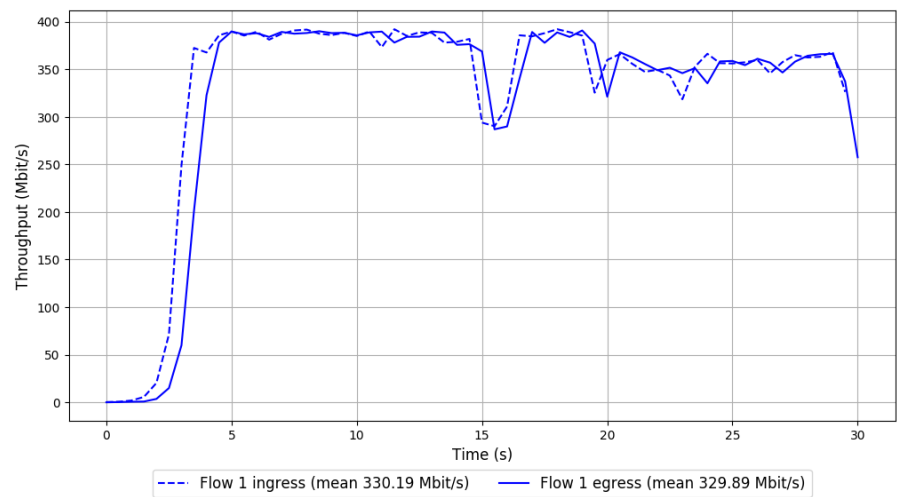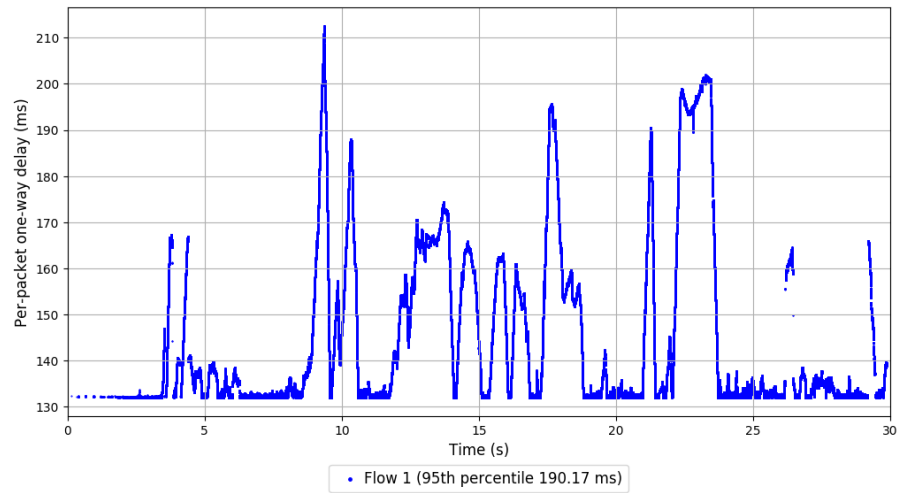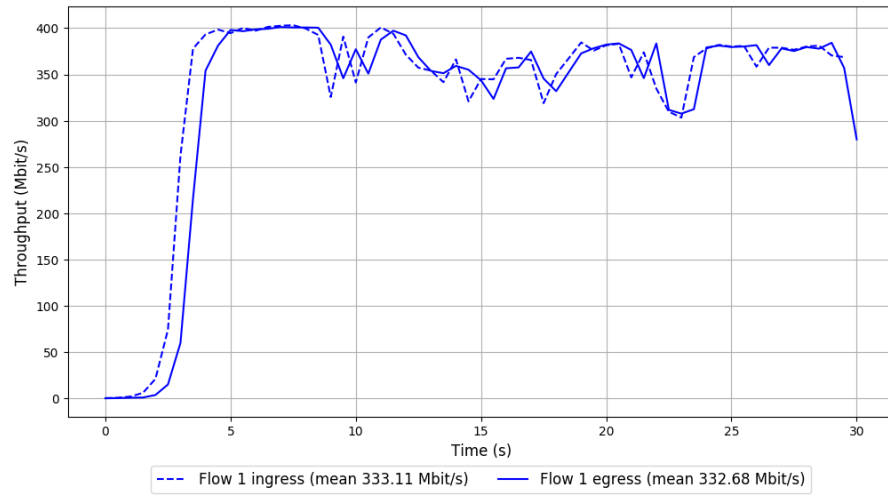
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 330.19 Mbit/s) —— Flow 1 egress (mean 329.89 Mbit/s)

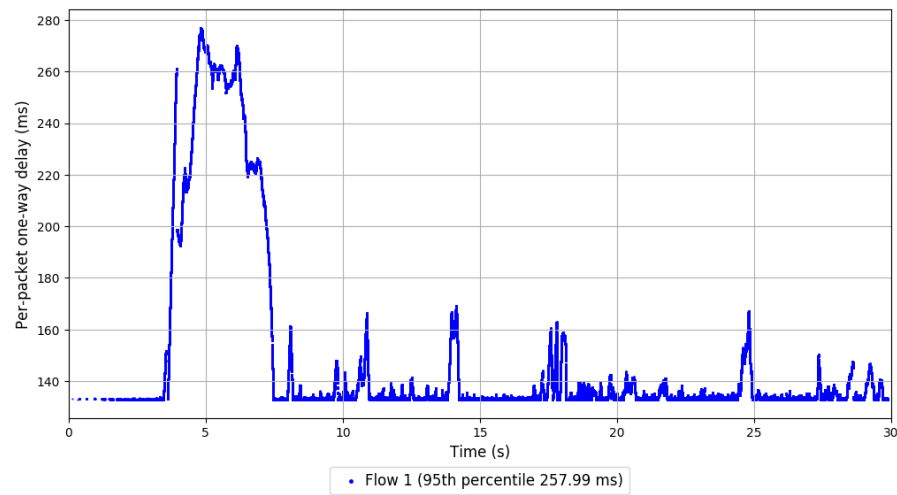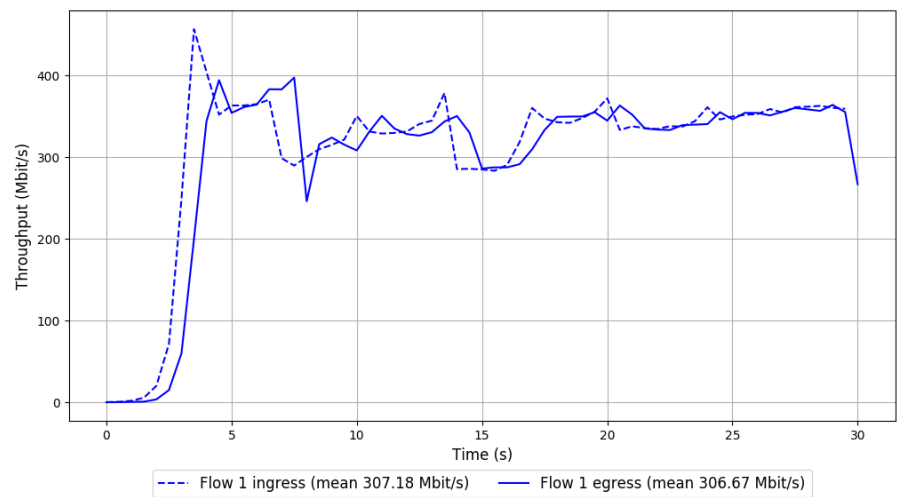• Flow 1 (95th percentile 187.53 ms)

```
Run 3: Statistics of Copa

Start at: 2018-11-03 04:03:03
End at: 2018-11-03 04:03:33
Local clock offset: -0.04 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2018-11-03 05:17:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 332.68 Mbit/s
95th percentile per-packet one-way delay: 190.170 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 332.68 Mbit/s
95th percentile per-packet one-way delay: 190.170 ms
Loss rate: 1.01%
```
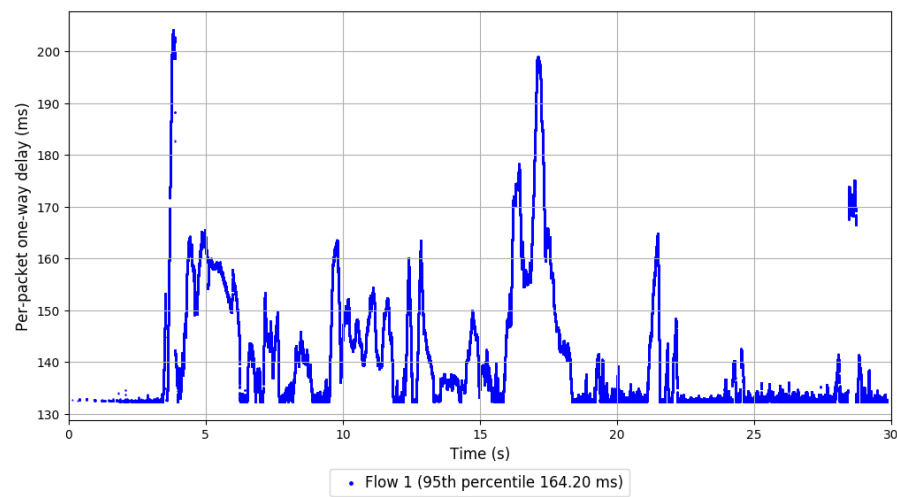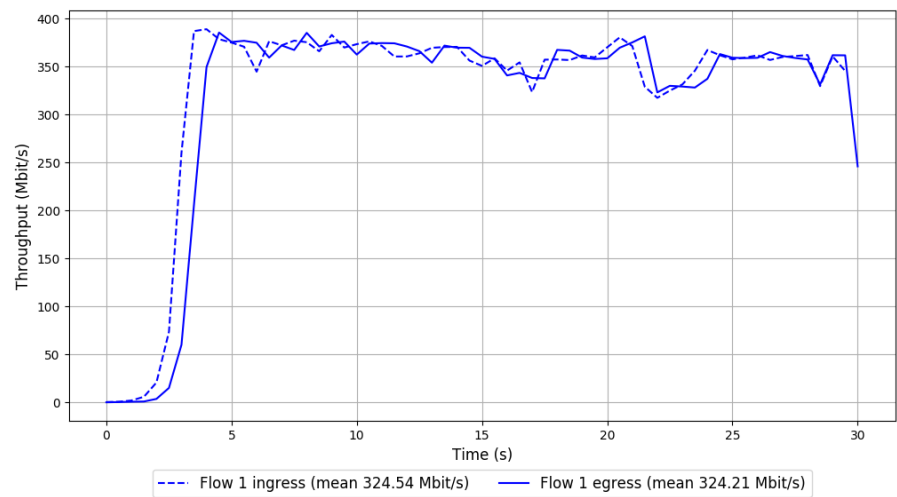
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-11-03 04:29:09
End at: 2018-11-03 04:29:39
Local clock offset: -0.31 ms
Remote clock offset: -0.005 ms


# Below is generated by plot.py at 2018-11-03 05:20:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 306.67 Mbit/s
95th percentile per-packet one-way delay: 257.986 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 306.67 Mbit/s
95th percentile per-packet one-way delay: 257.986 ms
Loss rate: 1.05%
```
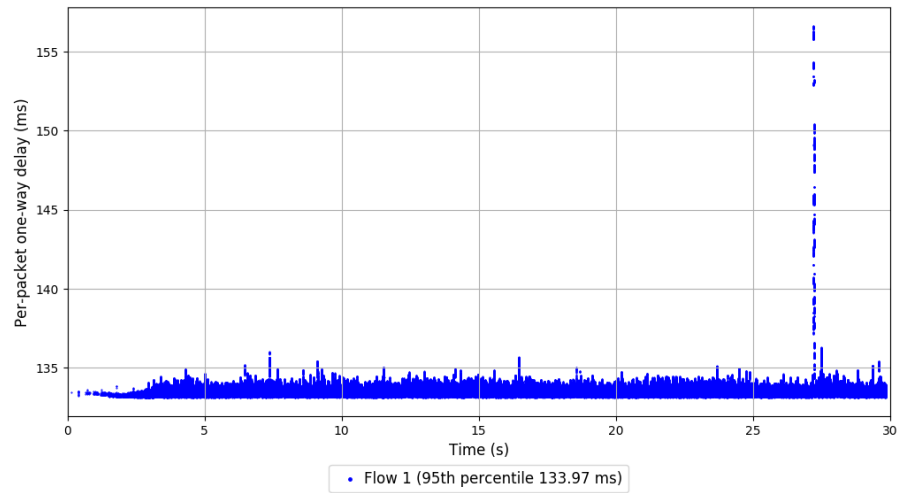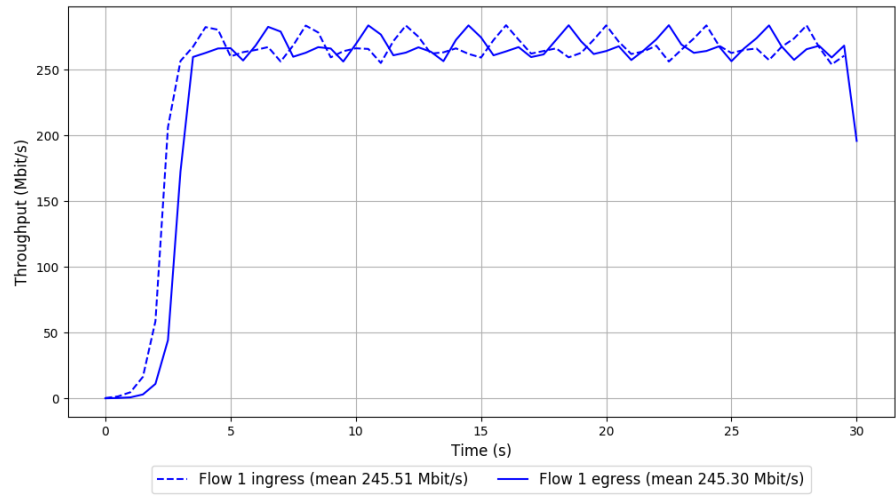
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-11-03 04:56:00
End at: 2018-11-03 04:56:30
Local clock offset: -0.096 ms
Remote clock offset: -0.027 ms


# Below is generated by plot.py at 2018-11-03 05:21:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.21 Mbit/s
95th percentile per-packet one-way delay: 164.199 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 324.21 Mbit/s
95th percentile per-packet one-way delay: 164.199 ms
Loss rate: 0.99%
```

Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 324.54 Mbit/s) ----   Flow 1 egress (mean 324.21 Mbit/s) ——
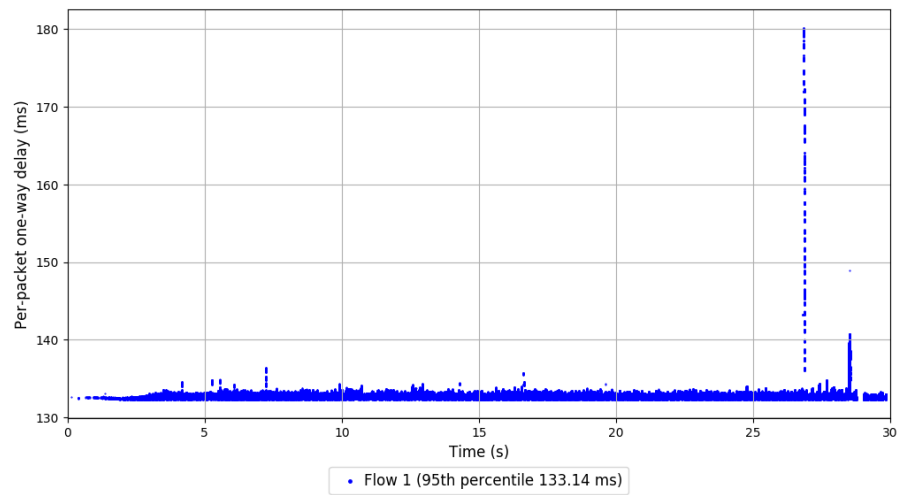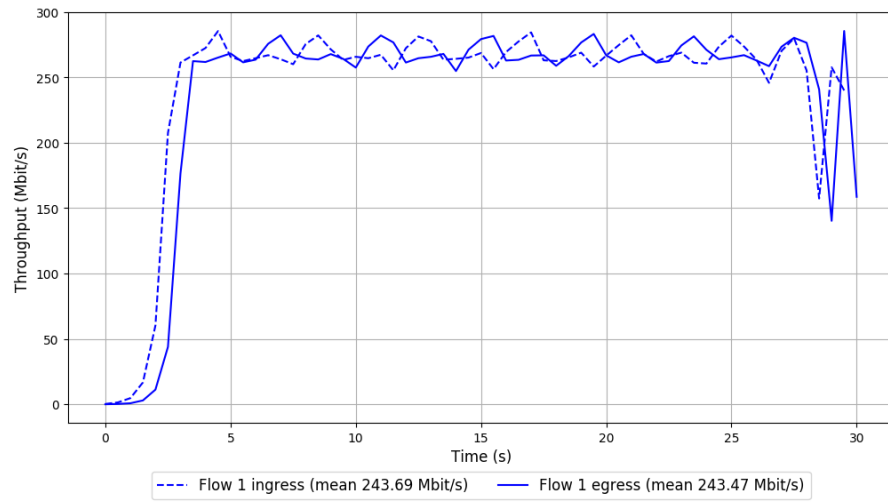

• Flow 1 (95th percentile 164.20 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2018-11-03 02:53:34
End at: 2018-11-03 02:54:04
Local clock offset: -0.103 ms
Remote clock offset: -0.413 ms

# Below is generated by plot.py at 2018-11-03 05:21:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.30 Mbit/s
95th percentile per-packet one-way delay: 133.969 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.30 Mbit/s
95th percentile per-packet one-way delay: 133.969 ms
Loss rate: 0.97%
```
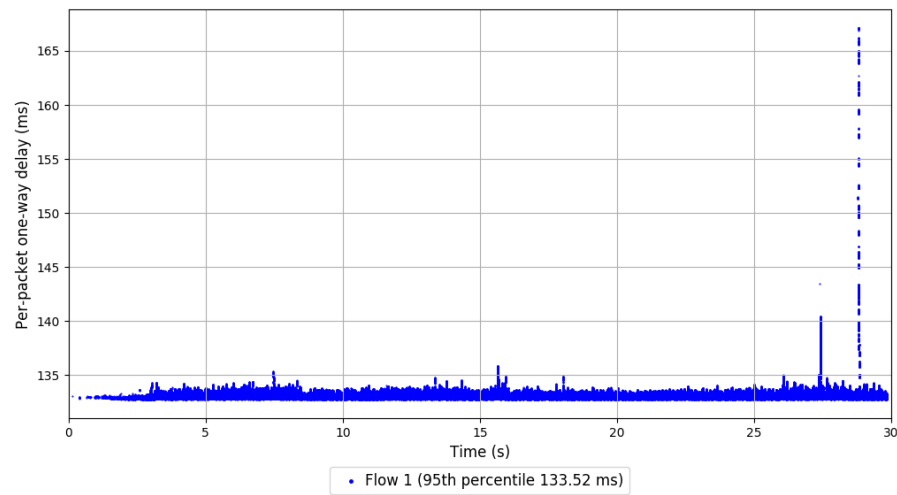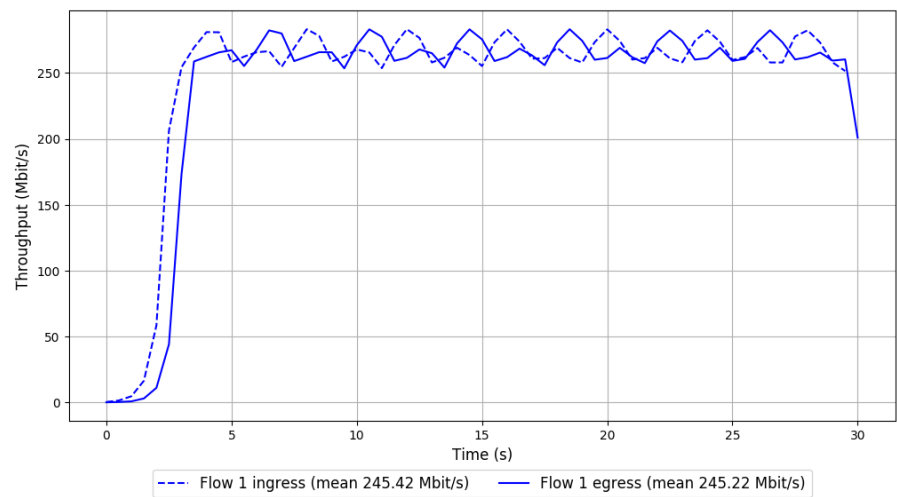
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-11-03 03:20:50
End at: 2018-11-03 03:21:20
Local clock offset: -0.103 ms
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2018-11-03 05:21:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 243.47 Mbit/s
95th percentile per-packet one-way delay: 133.143 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 243.47 Mbit/s
95th percentile per-packet one-way delay: 133.143 ms
Loss rate: 0.97%
```

Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 243.69 Mbit/s) — — — Flow 1 egress (mean 243.47 Mbit/s) ———

• Flow 1 (95th percentile 133.14 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-11-03 03:48:10
End at: 2018-11-03 03:48:40
Local clock offset: -0.187 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2018-11-03 05:21:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.22 Mbit/s
95th percentile per-packet one-way delay: 133.517 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.22 Mbit/s
95th percentile per-packet one-way delay: 133.517 ms
Loss rate: 0.97%
```
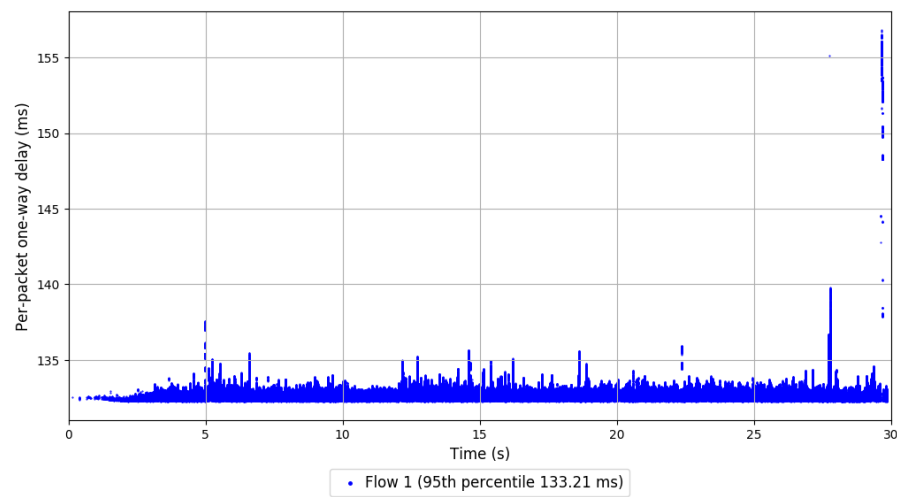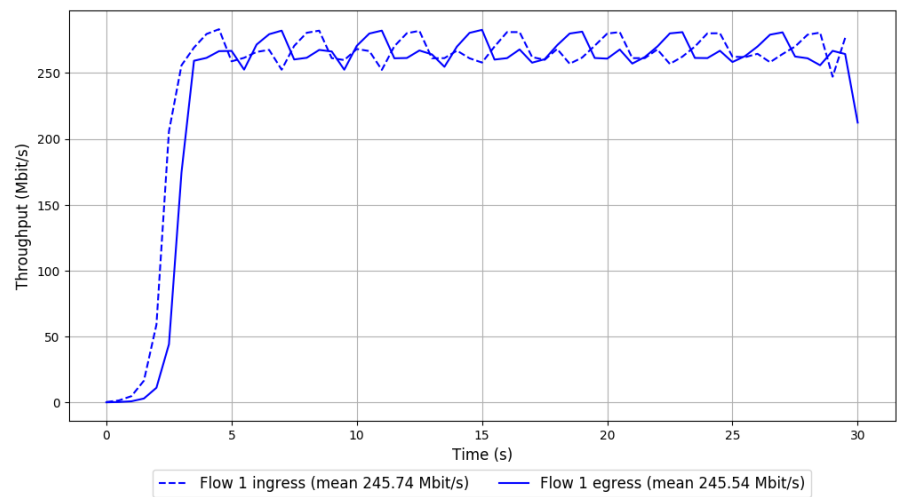
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-11-03 04:14:23
End at: 2018-11-03 04:14:53
Local clock offset: -0.225 ms
Remote clock offset: 0.277 ms


# Below is generated by plot.py at 2018-11-03 05:21:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.54 Mbit/s
95th percentile per-packet one-way delay: 133.211 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 245.54 Mbit/s
95th percentile per-packet one-way delay: 133.211 ms
Loss rate: 0.96%
```
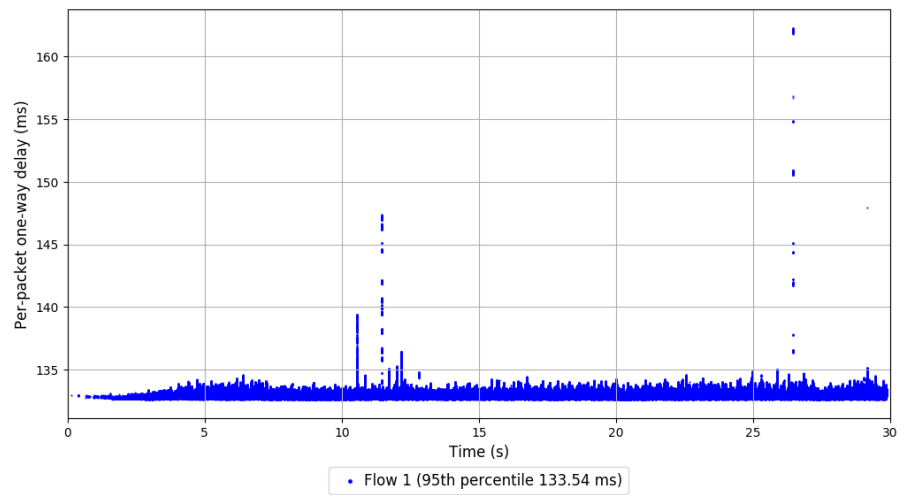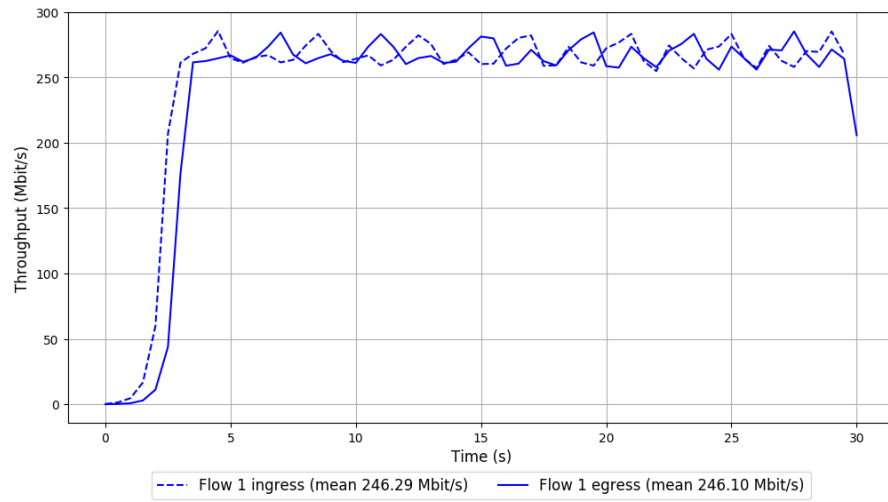
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 245.74 Mbit/s)   Flow 1 egress (mean 245.54 Mbit/s)

Flow 1 (95th percentile 133.21 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-11-03 04:40:37
End at: 2018-11-03 04:41:07
Local clock offset: -0.241 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-11-03 05:21:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.10 Mbit/s
95th percentile per-packet one-way delay: 133.537 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 246.10 Mbit/s
95th percentile per-packet one-way delay: 133.537 ms
Loss rate: 0.96%
```
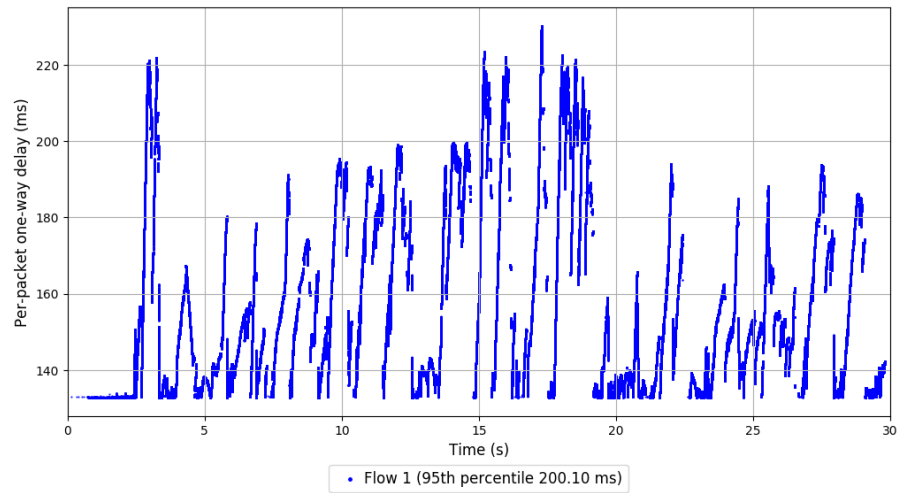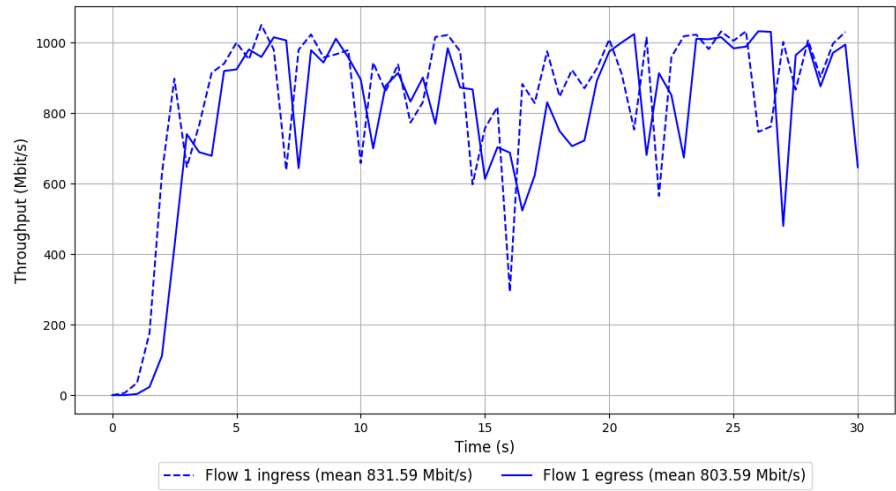
Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 246.29 Mbit/s) ——— Flow 1 egress (mean 246.10 Mbit/s)

• Flow 1 (95th percentile 133.54 ms)

```
Run 1: Statistics of FillP

Start at: 2018-11-03 02:47:52
End at: 2018-11-03 02:48:22
Local clock offset: -0.126 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-11-03 05:34:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 803.59 Mbit/s
95th percentile per-packet one-way delay: 200.102 ms
Loss rate: 4.23%
-- Flow 1:
Average throughput: 803.59 Mbit/s
95th percentile per-packet one-way delay: 200.102 ms
Loss rate: 4.23%
```
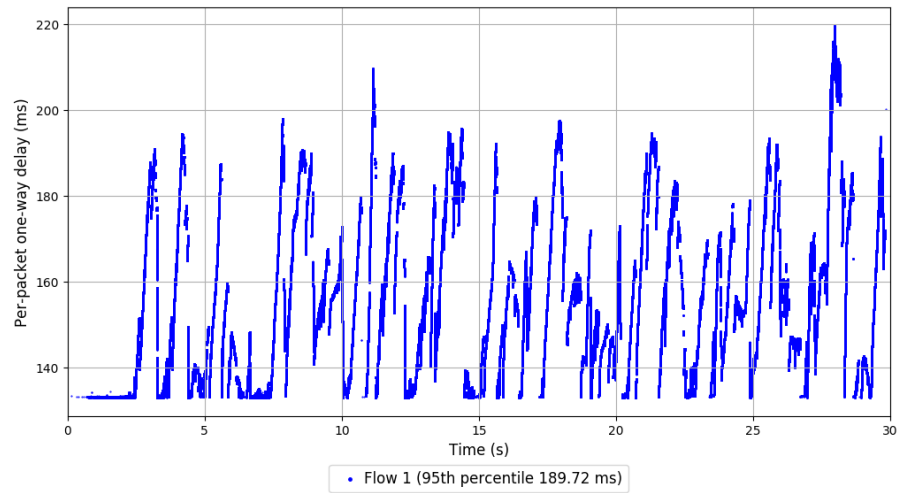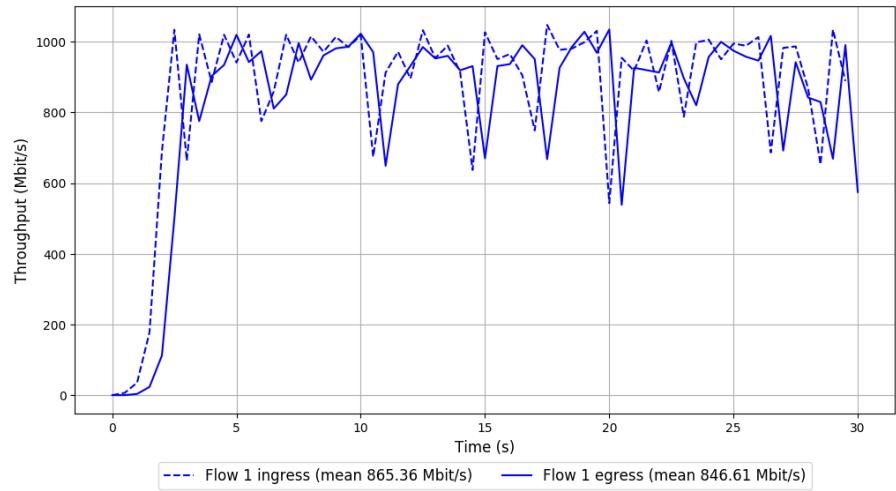
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 831.59 Mbit/s)   Flow 1 egress (mean 803.59 Mbit/s)

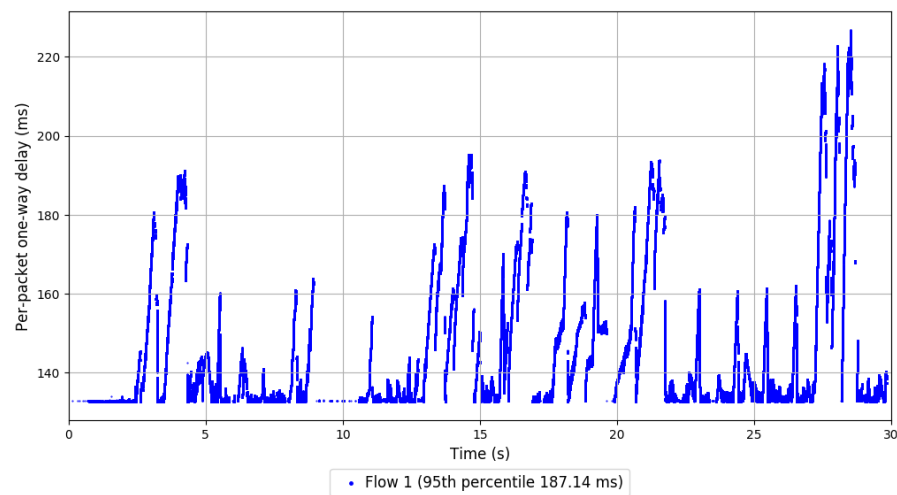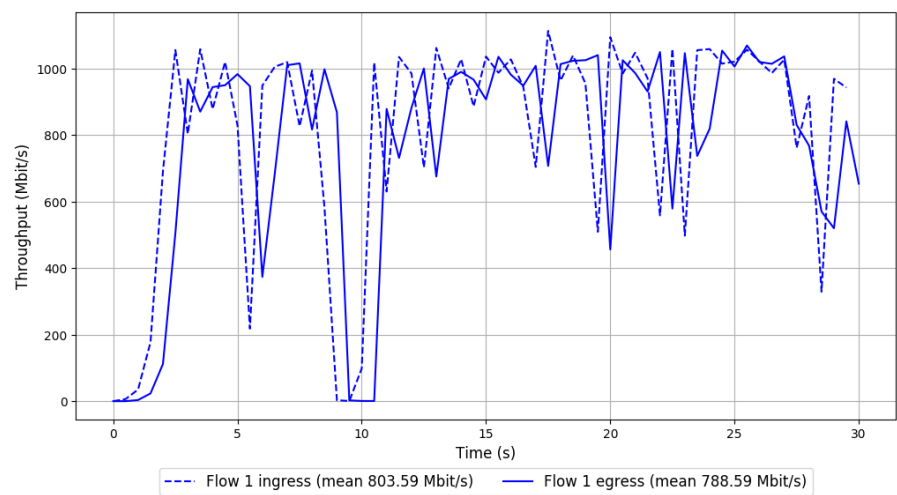Flow 1 (95th percentile 200.10 ms)

```
Run 2: Statistics of FillP

Start at: 2018-11-03 03:15:01
End at: 2018-11-03 03:15:31
Local clock offset: 0.074 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 846.61 Mbit/s
95th percentile per-packet one-way delay: 189.725 ms
Loss rate: 2.95%
-- Flow 1:
Average throughput: 846.61 Mbit/s
95th percentile per-packet one-way delay: 189.725 ms
Loss rate: 2.95%
```

Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 865.36 Mbit/s)   Flow 1 egress (mean 846.61 Mbit/s)

• Flow 1 (95th percentile 189.72 ms)

```
Run 3: Statistics of FillP

Start at: 2018-11-03 03:42:24
End at: 2018-11-03 03:42:54
Local clock offset: -0.247 ms
Remote clock offset: -0.042 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 788.59 Mbit/s
95th percentile per-packet one-way delay: 187.136 ms
Loss rate: 2.74%
-- Flow 1:
Average throughput: 788.59 Mbit/s
95th percentile per-packet one-way delay: 187.136 ms
Loss rate: 2.74%
```
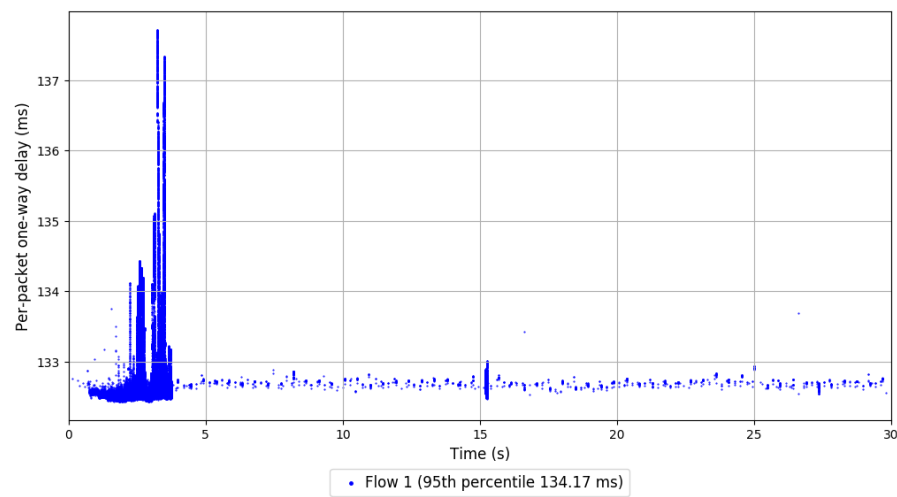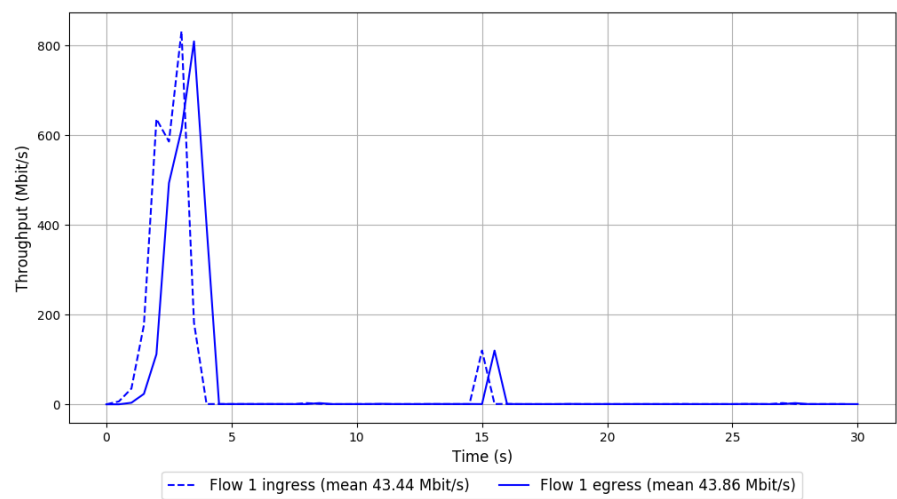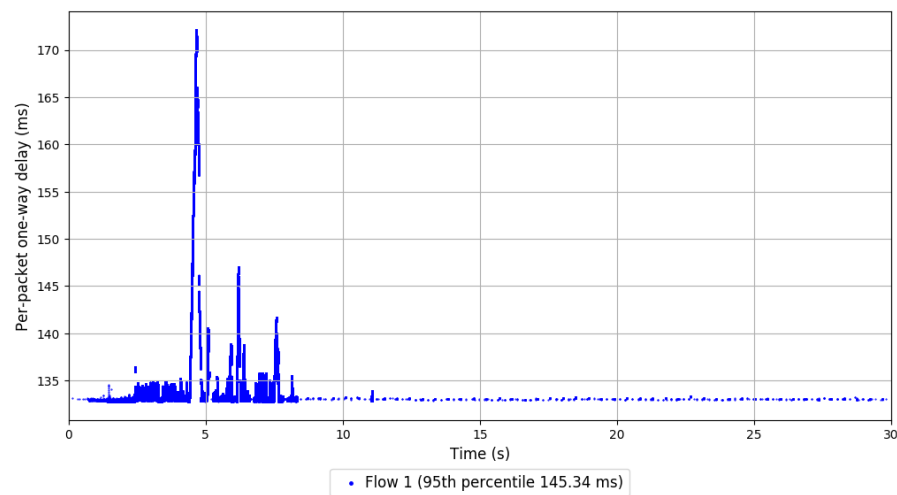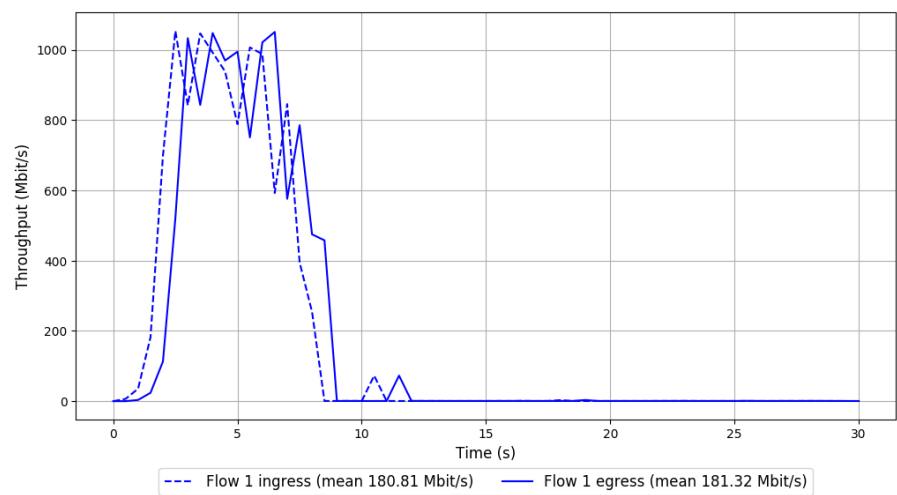
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-11-03 04:09:13
End at: 2018-11-03 04:09:43
Local clock offset: -0.405 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.86 Mbit/s
95th percentile per-packet one-way delay: 134.170 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 43.86 Mbit/s
95th percentile per-packet one-way delay: 134.170 ms
Loss rate: 0.00%
```

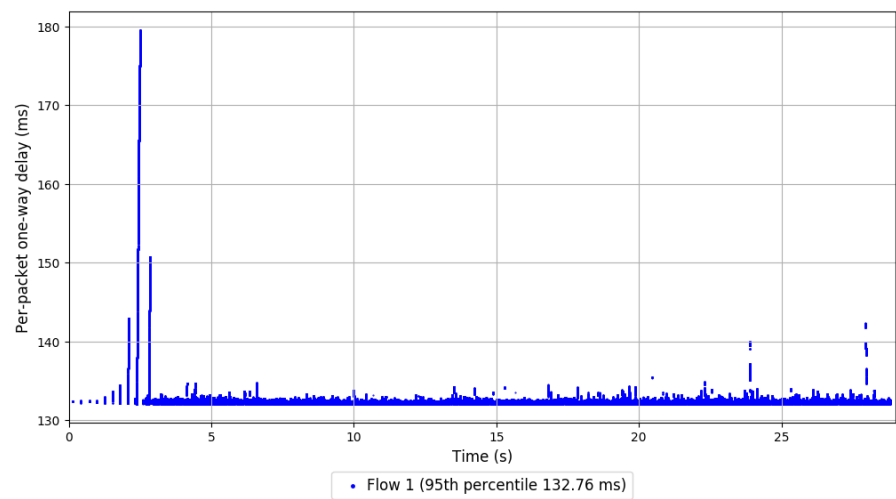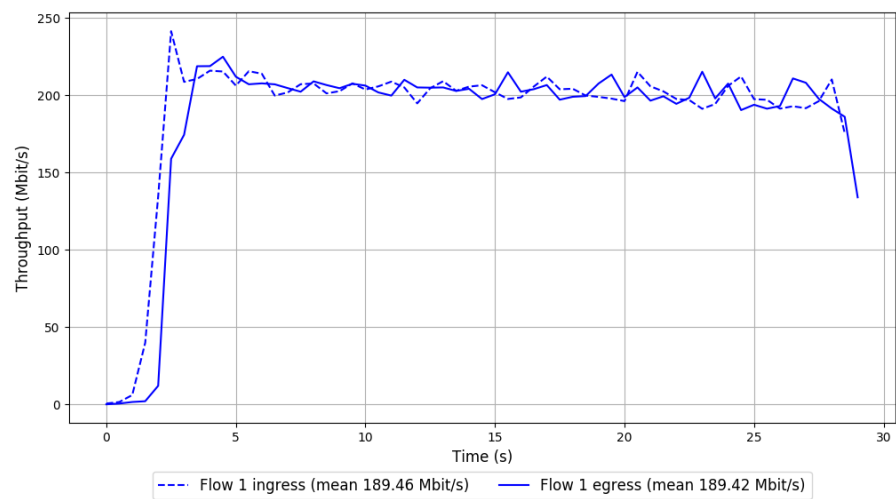Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-11-03 04:35:23
End at: 2018-11-03 04:35:53
Local clock offset: 0.301 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 181.32 Mbit/s
95th percentile per-packet one-way delay: 145.345 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.32 Mbit/s
95th percentile per-packet one-way delay: 145.345 ms
Loss rate: 0.00%
```

Run 5: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-11-03 02:49:40
End at: 2018-11-03 02:50:10
Local clock offset: 0.331 ms
Remote clock offset: 0.302 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 189.42 Mbit/s
95th percentile per-packet one-way delay: 132.763 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 189.42 Mbit/s
95th percentile per-packet one-way delay: 132.763 ms
Loss rate: 0.94%
```
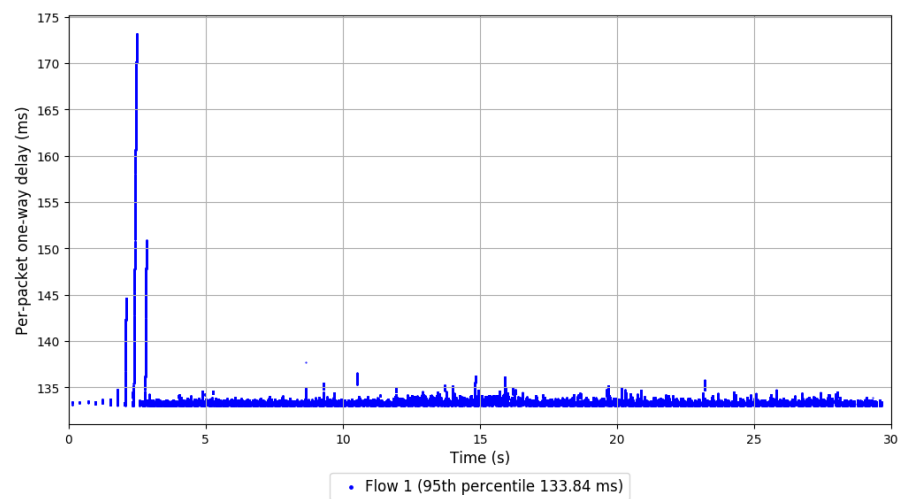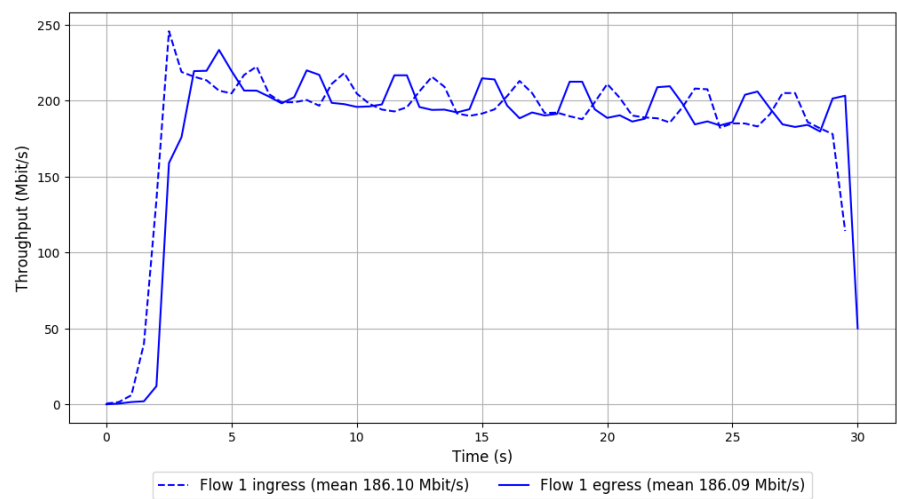
Run 1: Report of Indigo — Data Link

Flow 1 ingress (mean 189.46 Mbit/s)   Flow 1 egress (mean 189.42 Mbit/s)

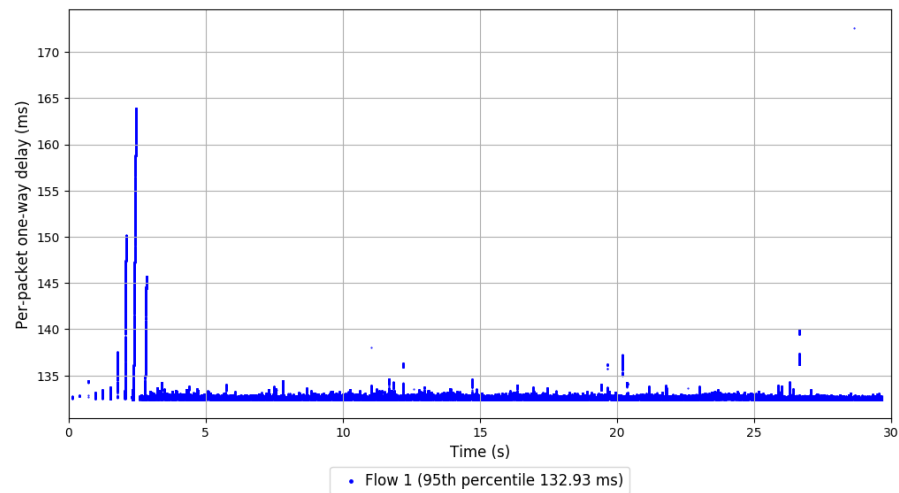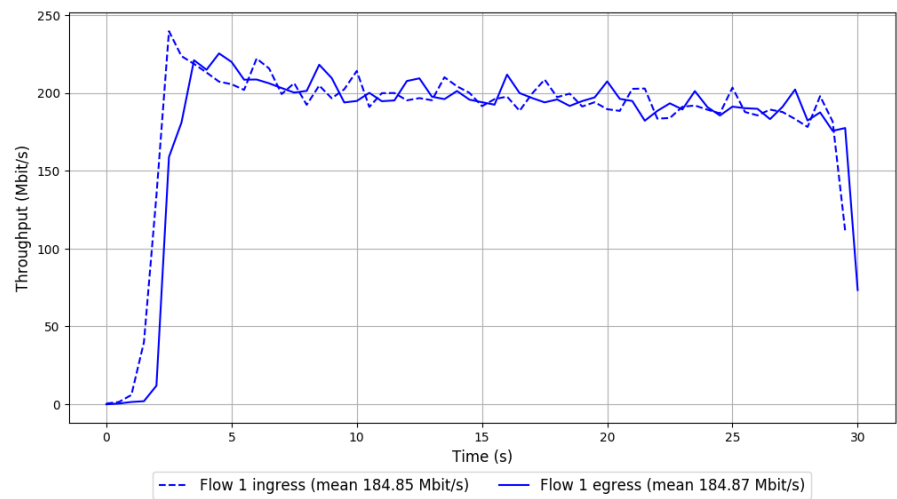Flow 1 (95th percentile 132.76 ms)

```
Run 2: Statistics of Indigo

Start at: 2018-11-03 03:16:54
End at: 2018-11-03 03:17:24
Local clock offset: 0.111 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.09 Mbit/s
95th percentile per-packet one-way delay: 133.842 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 186.09 Mbit/s
95th percentile per-packet one-way delay: 133.842 ms
Loss rate: 0.91%
```
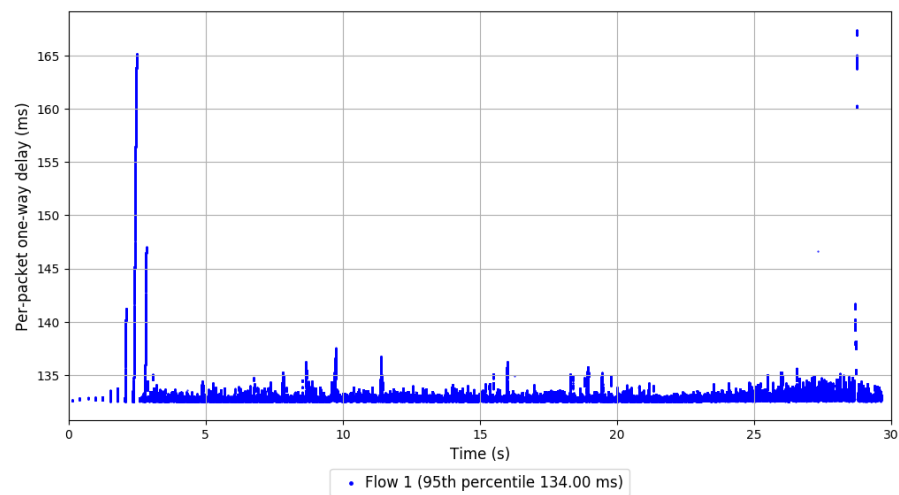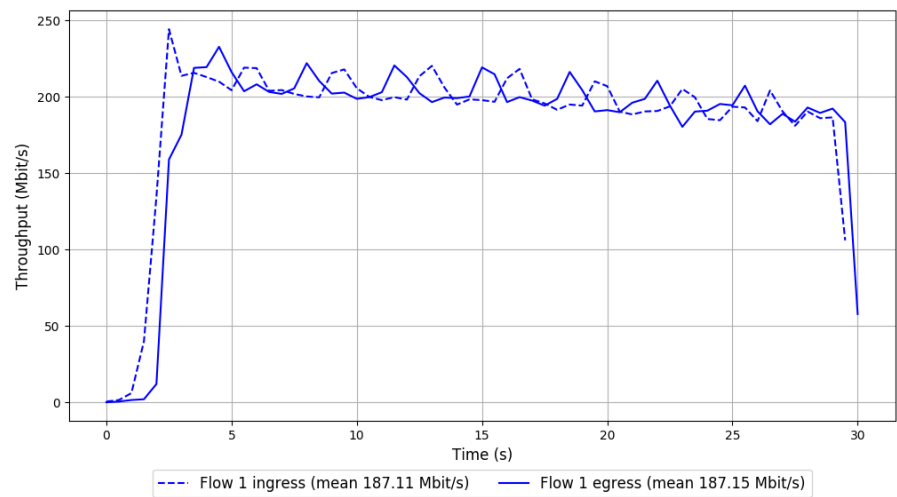
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 186.10 Mbit/s) ----   Flow 1 egress (mean 186.09 Mbit/s) ——

• Flow 1 (95th percentile 133.84 ms)

```
Run 3: Statistics of Indigo

Start at: 2018-11-03 03:44:16
End at: 2018-11-03 03:44:46
Local clock offset: 0.363 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.87 Mbit/s
95th percentile per-packet one-way delay: 132.926 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 184.87 Mbit/s
95th percentile per-packet one-way delay: 132.926 ms
Loss rate: 0.89%
```
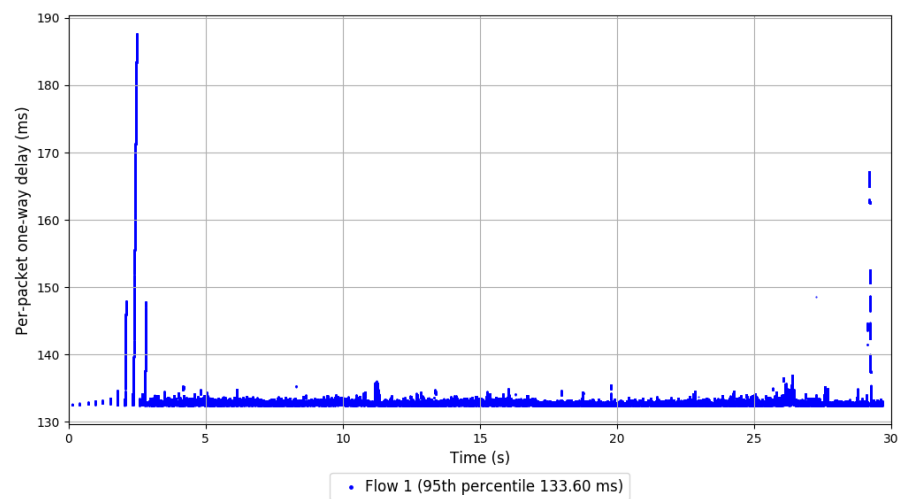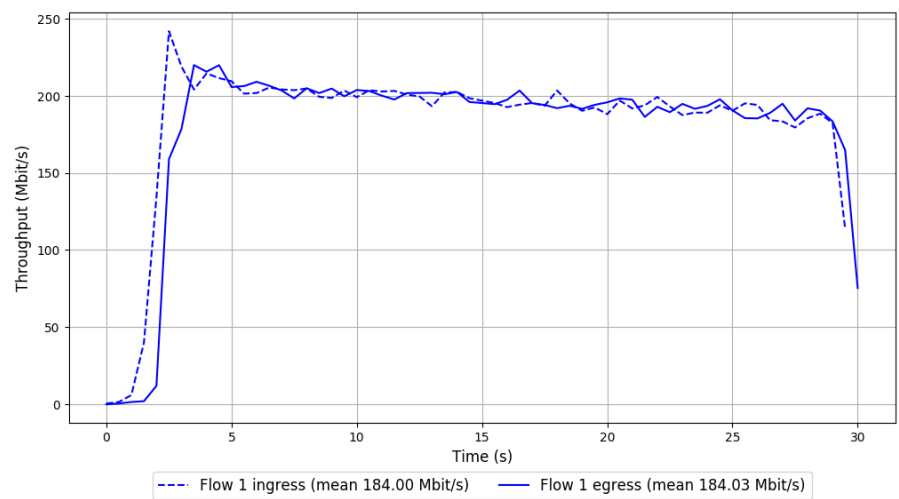
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-11-03 04:10:27
End at: 2018-11-03 04:10:57
Local clock offset: -0.293 ms
Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.15 Mbit/s
95th percentile per-packet one-way delay: 133.996 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 187.15 Mbit/s
95th percentile per-packet one-way delay: 133.996 ms
Loss rate: 0.87%
```
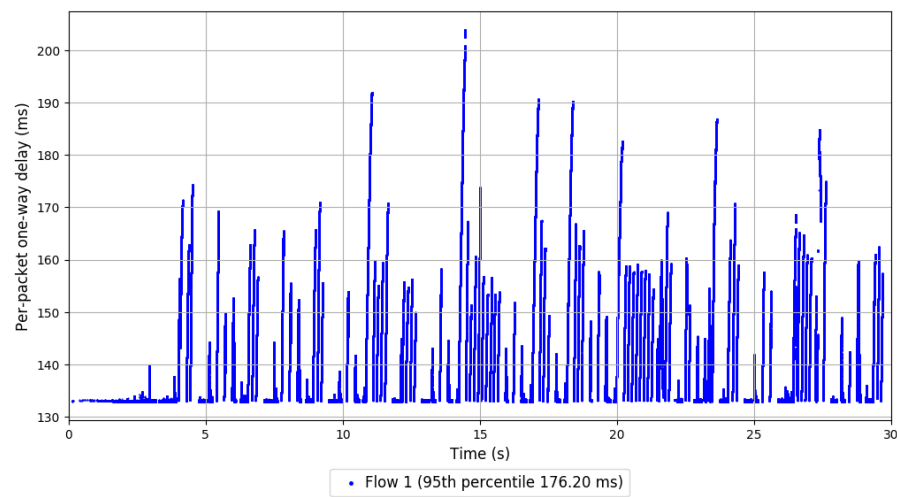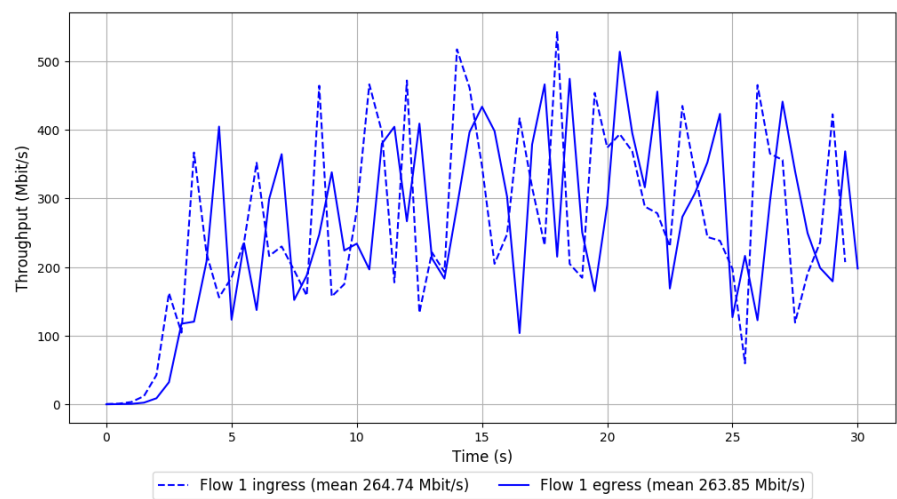
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-11-03 04:36:43
End at: 2018-11-03 04:37:13
Local clock offset: -0.059 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.03 Mbit/s
95th percentile per-packet one-way delay: 133.603 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 184.03 Mbit/s
95th percentile per-packet one-way delay: 133.603 ms
Loss rate: 0.87%
```

Run 5: Report of Indigo — Data Link

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

Start at: 2018-11-03 03:10:36
End at: 2018-11-03 03:11:06
Local clock offset: -0.291 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 263.85 Mbit/s
95th percentile per-packet one-way delay: 176.198 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 263.85 Mbit/s
95th percentile per-packet one-way delay: 176.198 ms
Loss rate: 0.77%
```

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

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

Start at: 2018-11-03 03:37:54
End at: 2018-11-03 03:38:24
Local clock offset: -0.054 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 267.22 Mbit/s
95th percentile per-packet one-way delay: 174.625 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 267.22 Mbit/s
95th percentile per-packet one-way delay: 174.625 ms
Loss rate: 0.52%
```
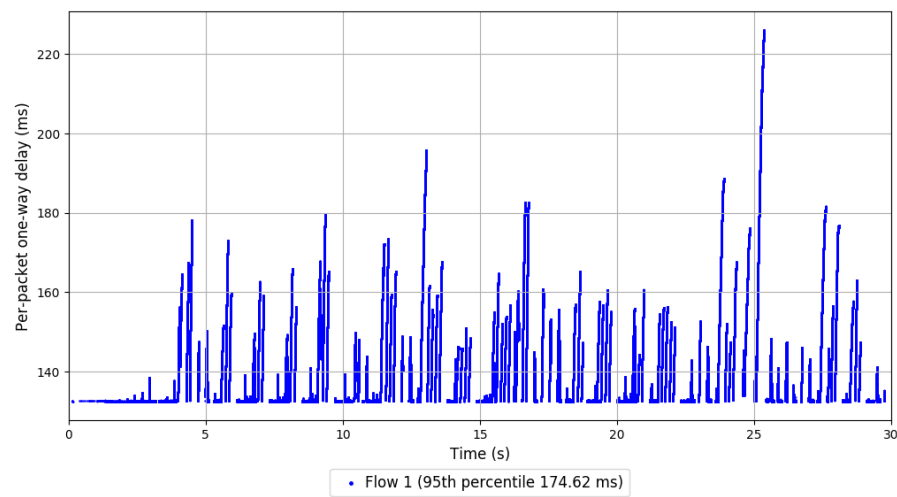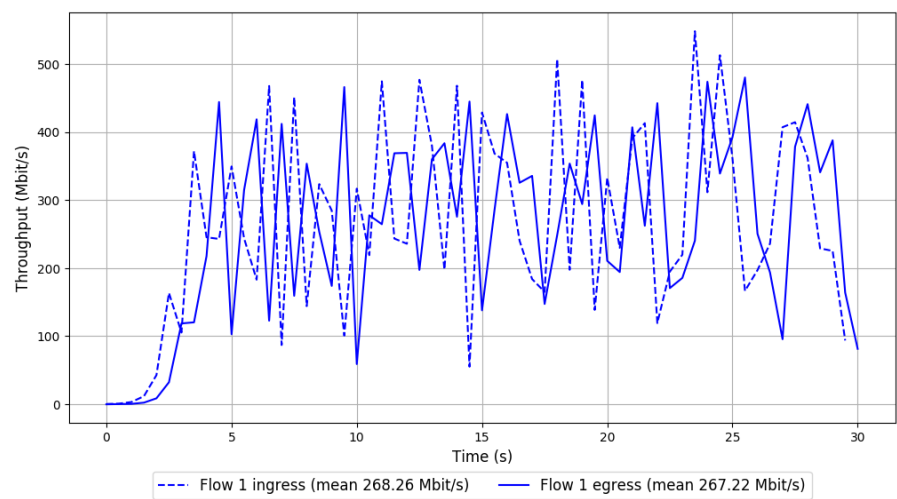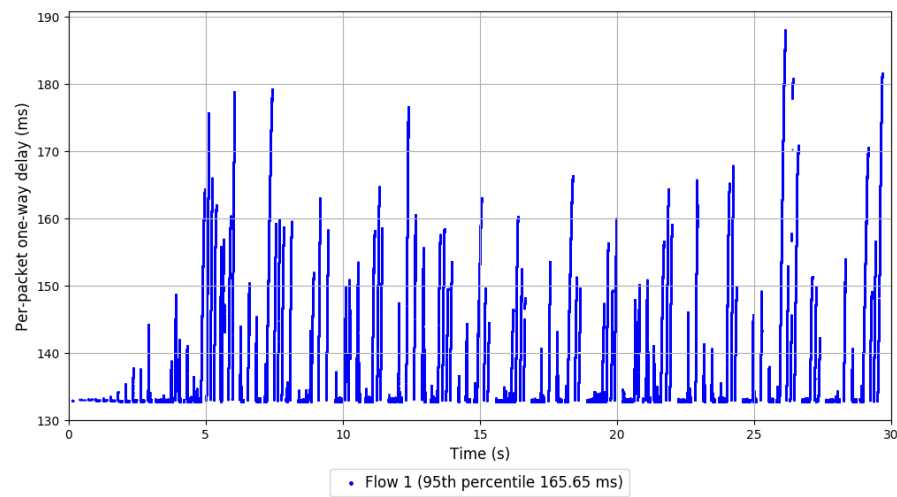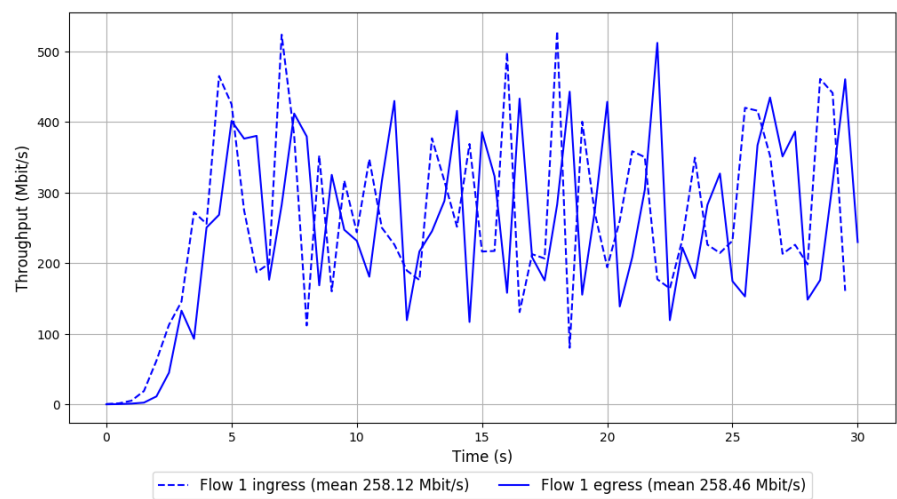
Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 268.26 Mbit/s)   Flow 1 egress (mean 267.22 Mbit/s)

Flow 1 (95th percentile 174.62 ms)

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

Start at: 2018-11-03 04:04:50
End at: 2018-11-03 04:05:20
Local clock offset: -0.028 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 258.46 Mbit/s
95th percentile per-packet one-way delay: 165.654 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 258.46 Mbit/s
95th percentile per-packet one-way delay: 165.654 ms
Loss rate: 1.04%
```

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

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

Start at: 2018-11-03 04:30:56
End at: 2018-11-03 04:31:26
Local clock offset: 0.331 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.74 Mbit/s
95th percentile per-packet one-way delay: 181.695 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 296.74 Mbit/s
95th percentile per-packet one-way delay: 181.695 ms
Loss rate: 1.34%
```
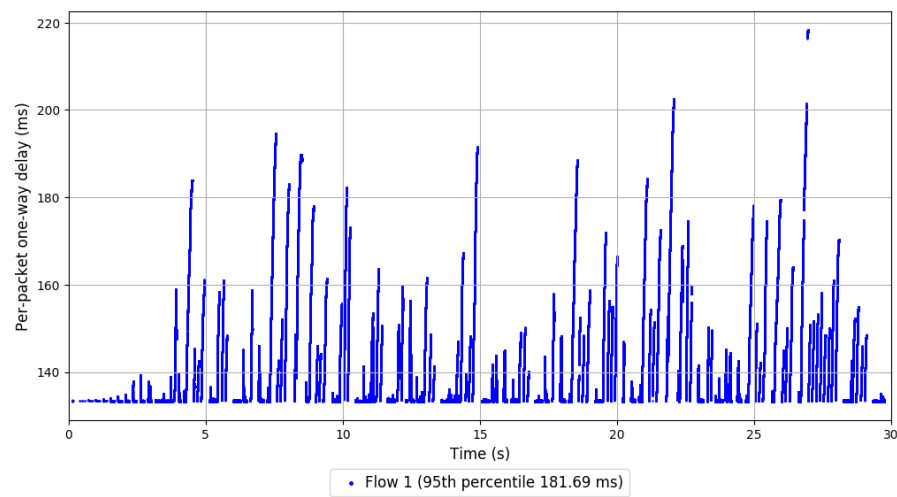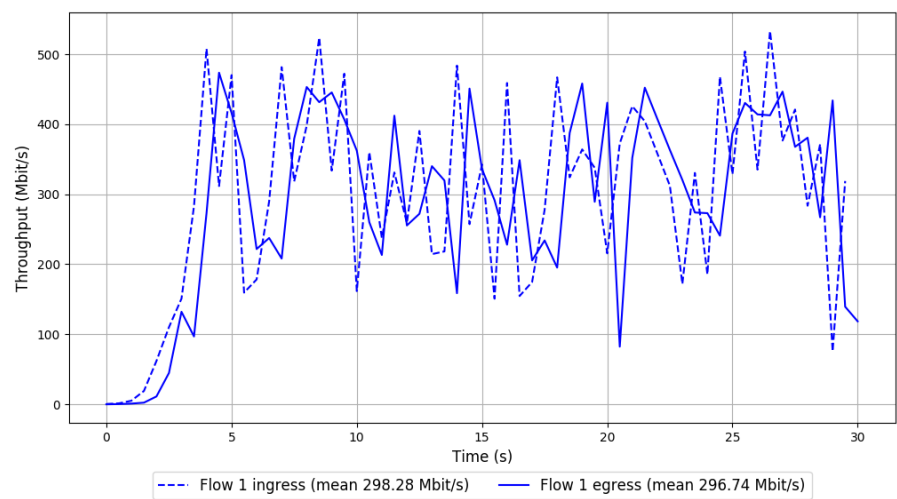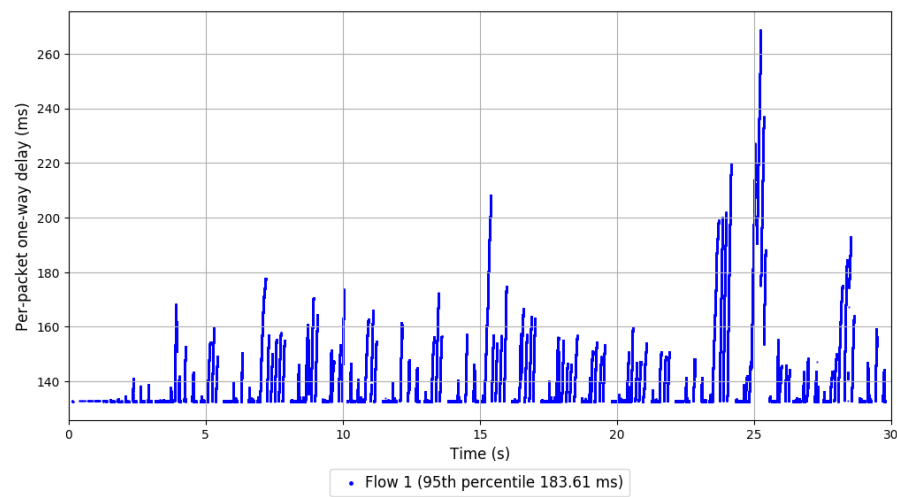
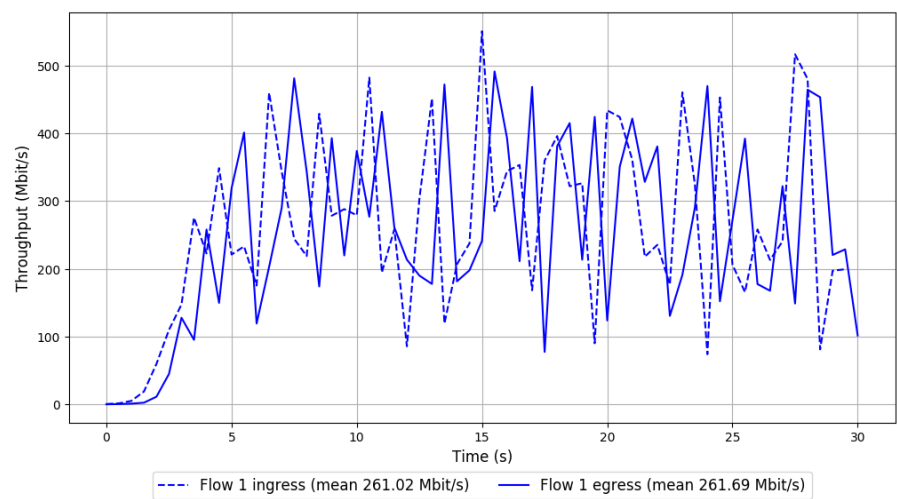Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-11-03 04:57:49
End at: 2018-11-03 04:58:19
Local clock offset: -0.366 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 261.69 Mbit/s
95th percentile per-packet one-way delay: 183.612 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 261.69 Mbit/s
95th percentile per-packet one-way delay: 183.612 ms
Loss rate: 0.64%
```
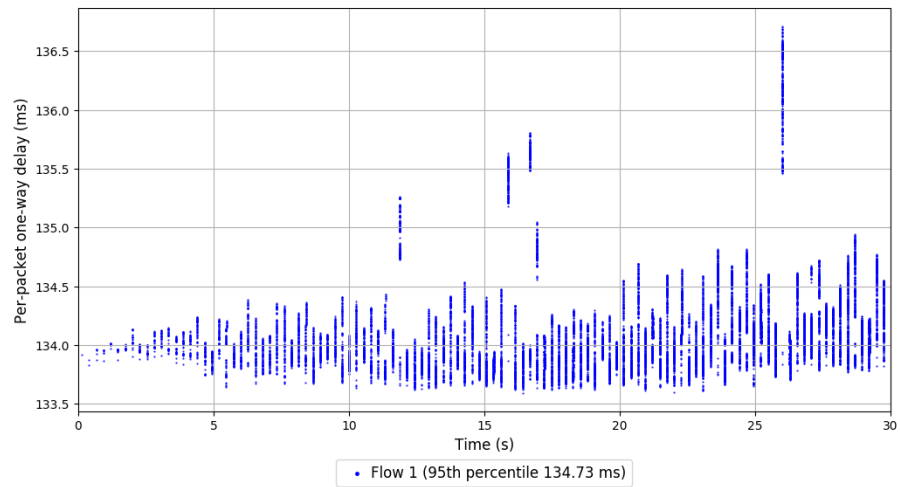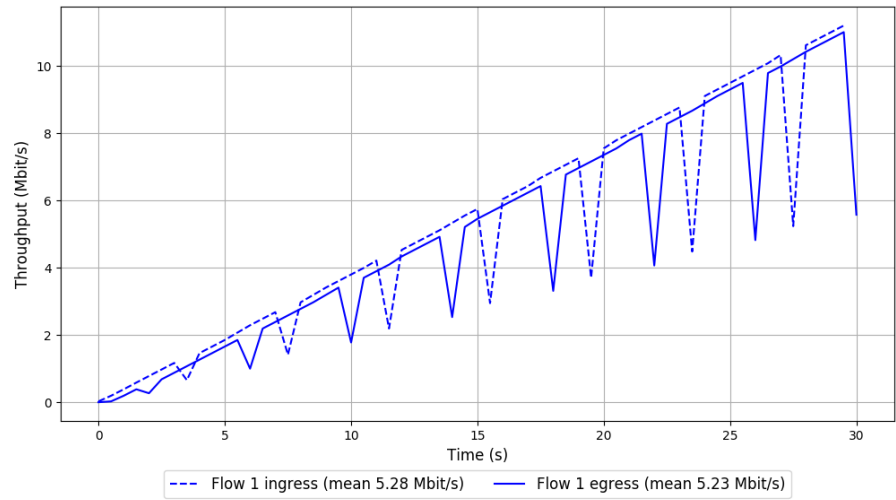
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-11-03 02:51:11
End at: 2018-11-03 02:51:41
Local clock offset: 0.258 ms
Remote clock offset: -0.433 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.732 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.732 ms
Loss rate: 1.78%
```

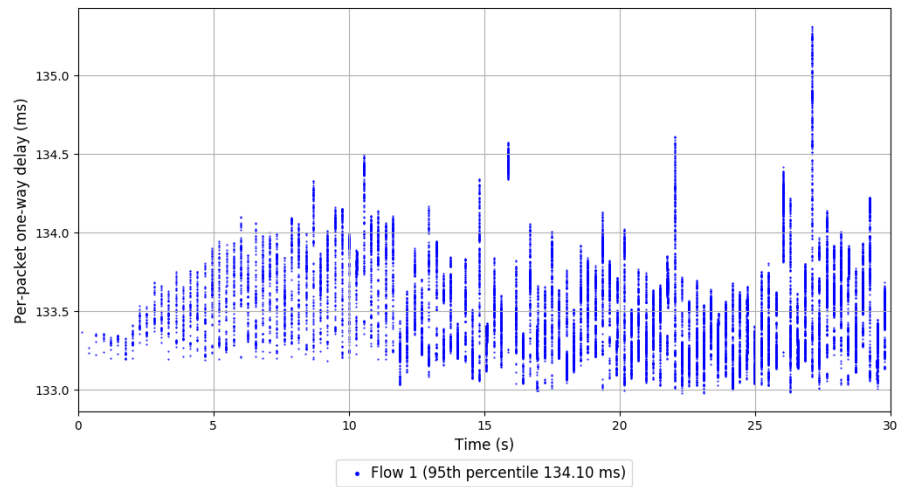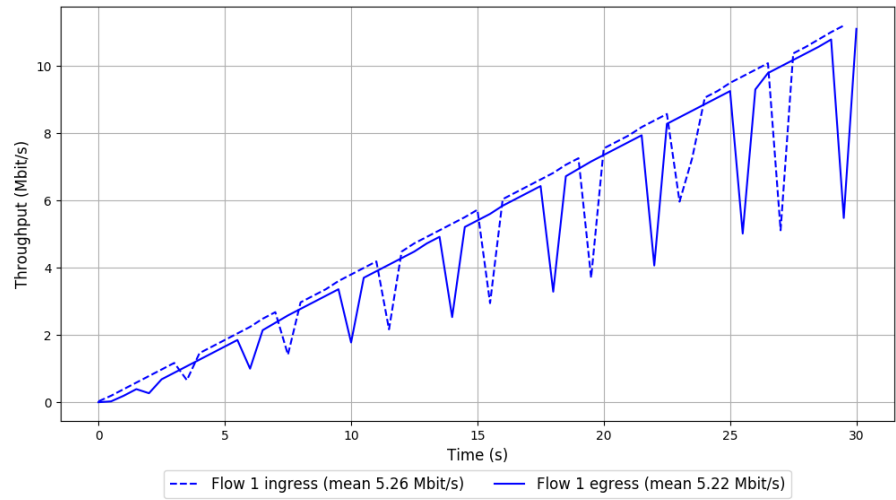Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-11-03 03:18:27
End at: 2018-11-03 03:18:57
Local clock offset: -0.117 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 134.102 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 134.102 ms
Loss rate: 1.79%
```
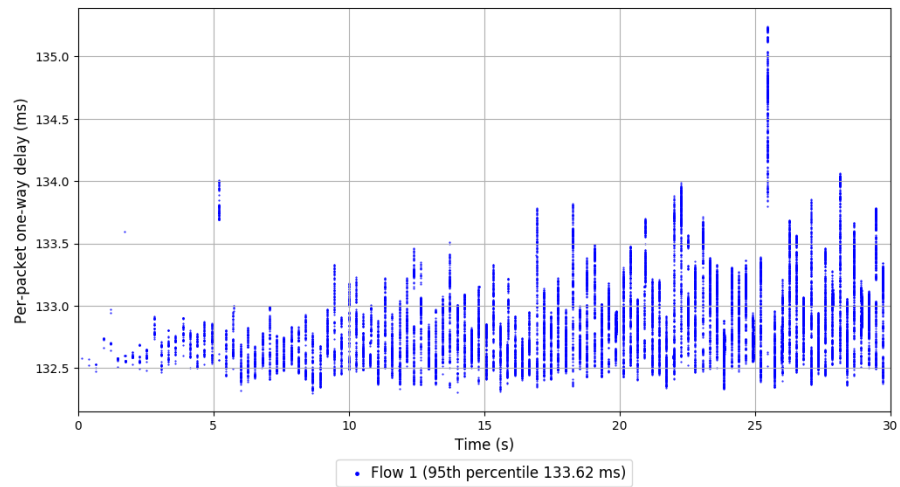
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-11-03 03:45:48
End at: 2018-11-03 03:46:18
Local clock offset: -0.055 ms
Remote clock offset: 0.367 ms


# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 133.617 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 133.617 ms
Loss rate: 1.78%
```
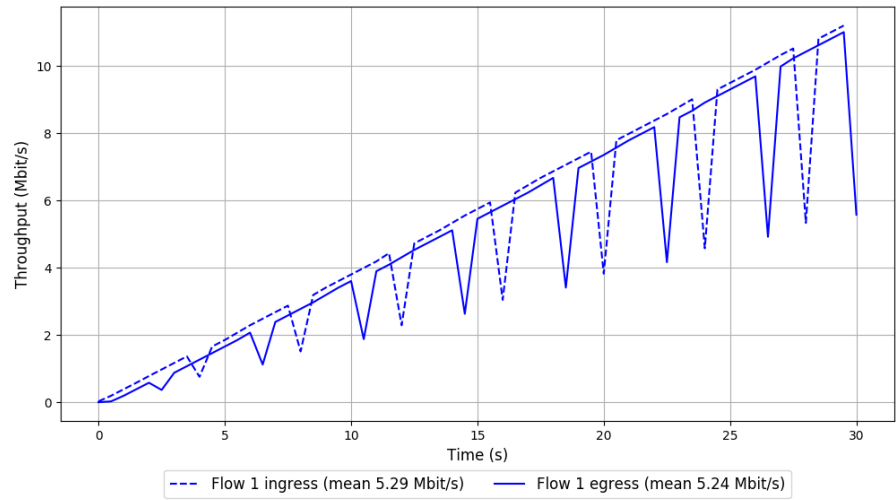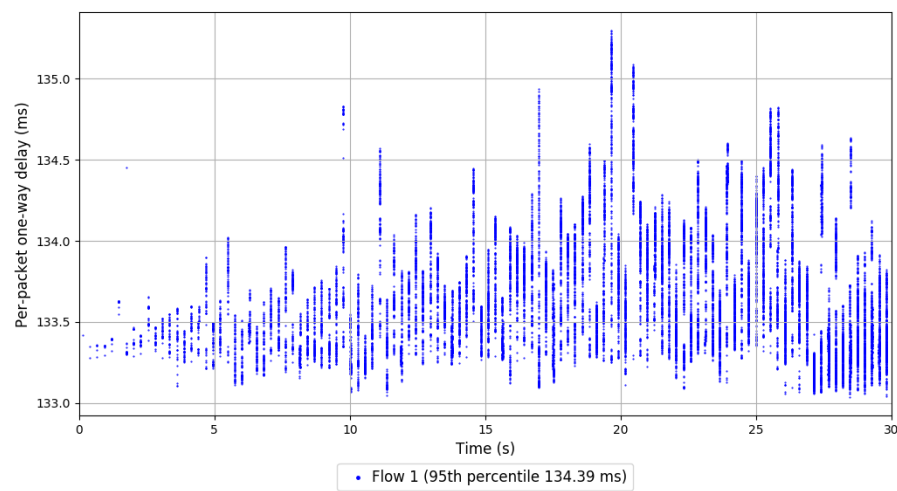
Run 3: Report of LEDBAT — Data Link

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

Flow 1 (95th percentile 133.62 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-11-03 04:12:00
End at: 2018-11-03 04:12:30
Local clock offset: -0.042 ms
Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 134.388 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 134.388 ms
Loss rate: 1.78%
```
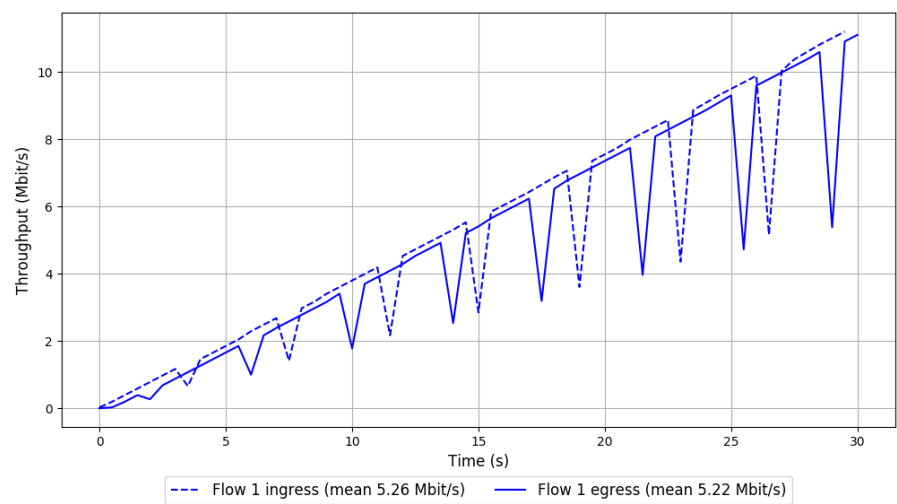
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.26 Mbit/s) --- Flow 1 egress (mean 5.22 Mbit/s)

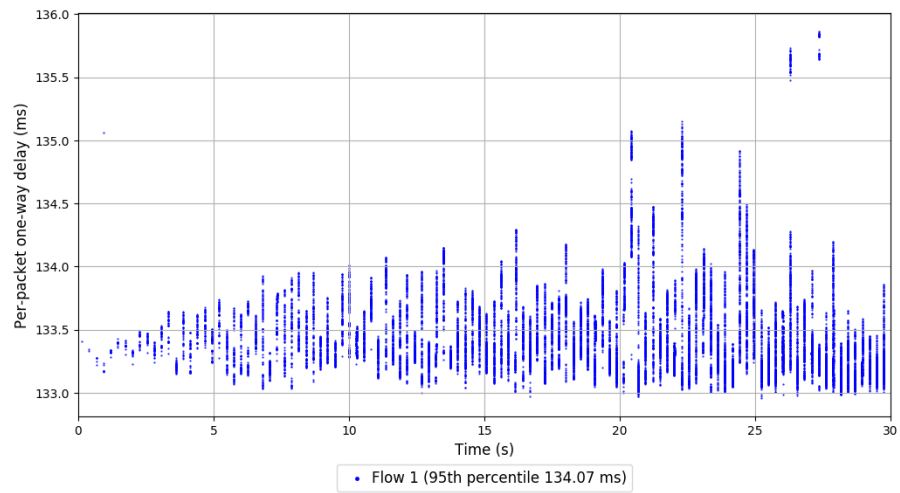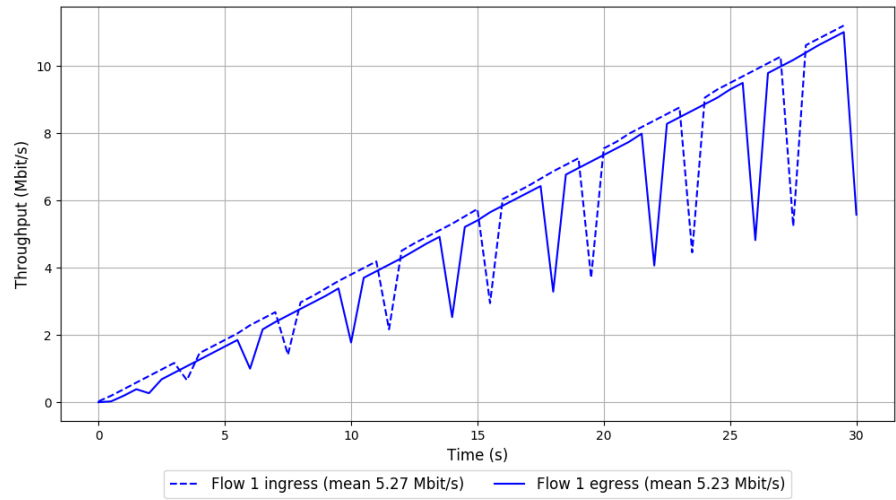Flow 1 (95th percentile 134.39 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-11-03 04:38:15
End at: 2018-11-03 04:38:45
Local clock offset: 0.139 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2018-11-03 05:37:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.073 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.073 ms
Loss rate: 1.78%
```

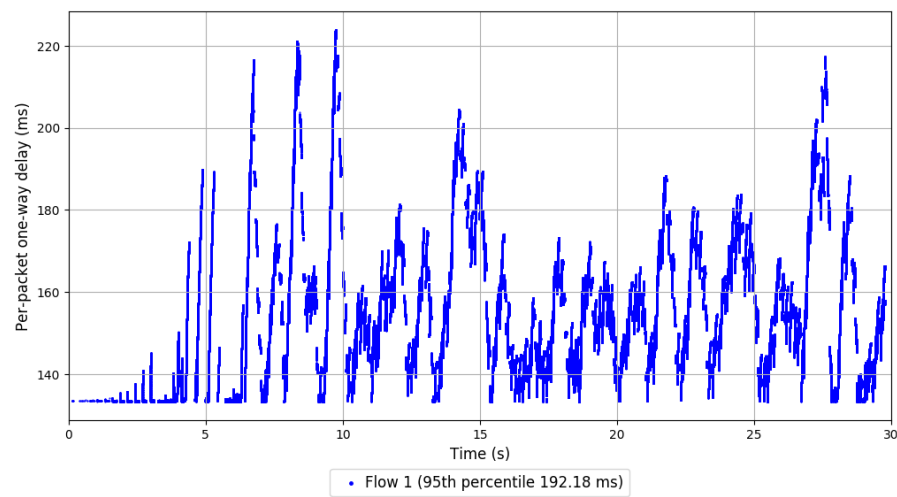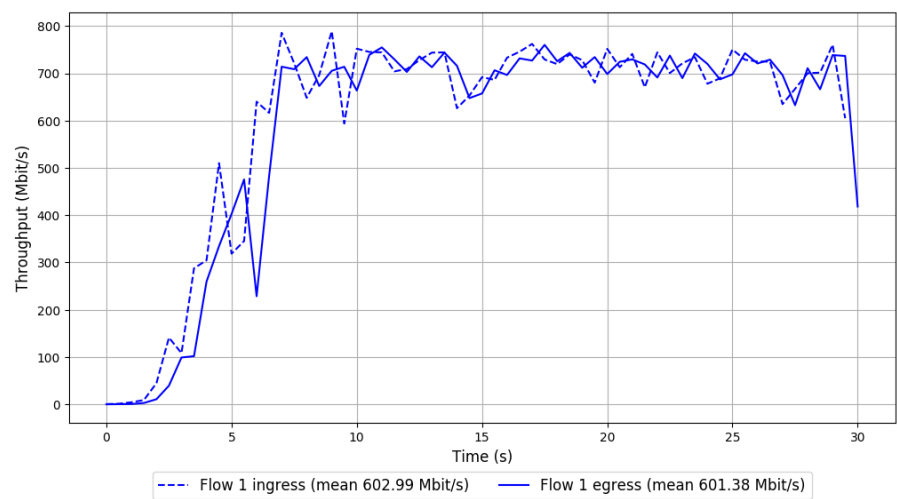Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-03 03:05:04
End at: 2018-11-03 03:05:34
Local clock offset: 0.118 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2018-11-03 05:43:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 601.38 Mbit/s
95th percentile per-packet one-way delay: 192.180 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 601.38 Mbit/s
95th percentile per-packet one-way delay: 192.180 ms
Loss rate: 1.15%
```

Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-11-03 03:32:39
End at: 2018-11-03 03:33:09
Local clock offset: 0.091 ms
Remote clock offset: 0.007 ms


# Below is generated by plot.py at 2018-11-03 05:43:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 587.93 Mbit/s
95th percentile per-packet one-way delay: 209.301 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 587.93 Mbit/s
95th percentile per-packet one-way delay: 209.301 ms
Loss rate: 1.62%
```
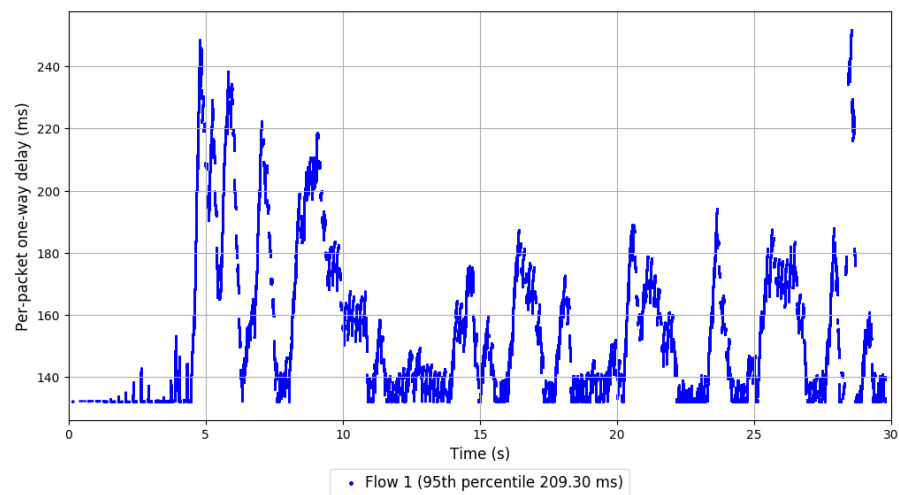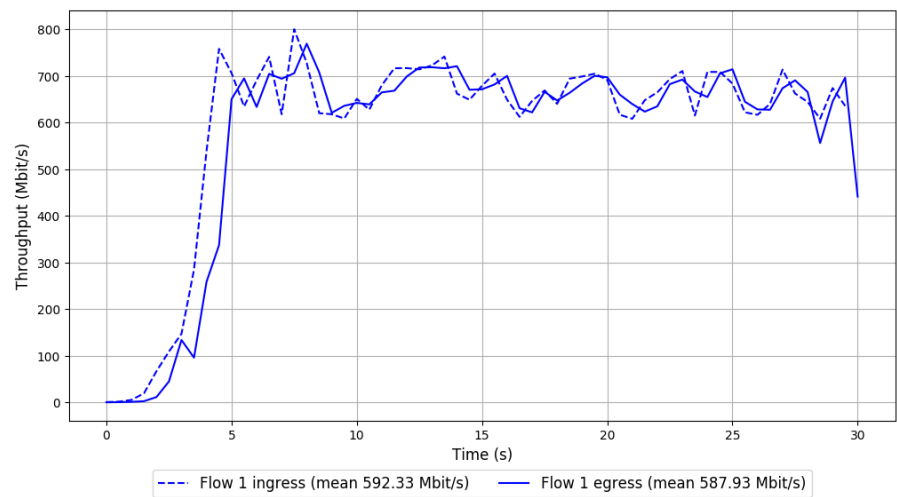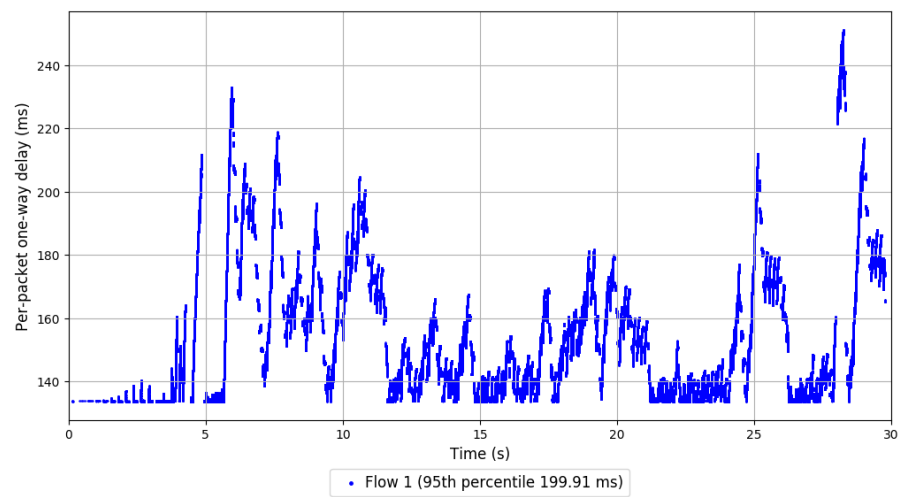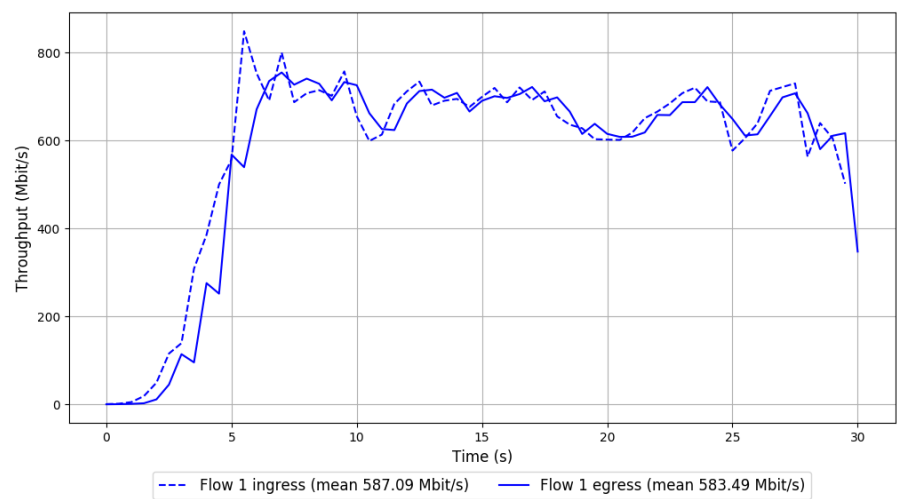
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-11-03 03:59:36
End at: 2018-11-03 04:00:06
Local clock offset: 0.159 ms
Remote clock offset: -0.425 ms


# Below is generated by plot.py at 2018-11-03 05:44:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 583.49 Mbit/s
95th percentile per-packet one-way delay: 199.914 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 583.49 Mbit/s
95th percentile per-packet one-way delay: 199.914 ms
Loss rate: 1.50%
```

Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 587.09 Mbit/s)   Flow 1 egress (mean 583.49 Mbit/s)
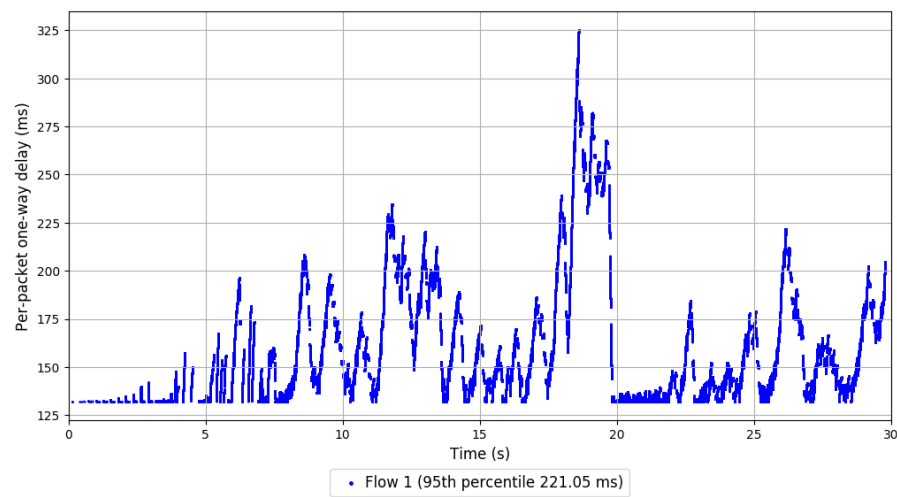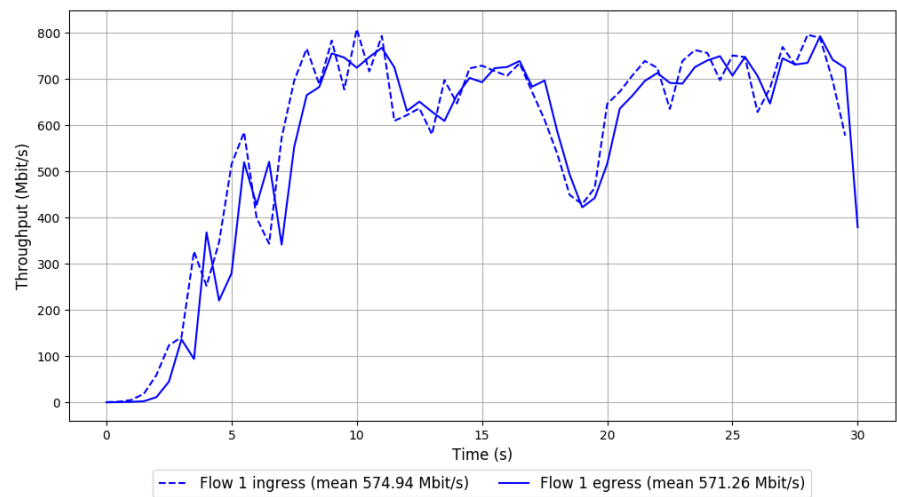

Flow 1 (95th percentile 199.91 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-11-03 04:25:41
End at: 2018-11-03 04:26:11
Local clock offset: -0.036 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-11-03 05:44:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 571.26 Mbit/s
95th percentile per-packet one-way delay: 221.054 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 571.26 Mbit/s
95th percentile per-packet one-way delay: 221.054 ms
Loss rate: 1.52%
```

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-11-03 04:52:28
End at: 2018-11-03 04:52:58
Local clock offset: -0.348 ms
Remote clock offset: 0.006 ms


# Below is generated by plot.py at 2018-11-03 05:46:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.23 Mbit/s
95th percentile per-packet one-way delay: 183.299 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 595.23 Mbit/s
95th percentile per-packet one-way delay: 183.299 ms
Loss rate: 1.10%
```
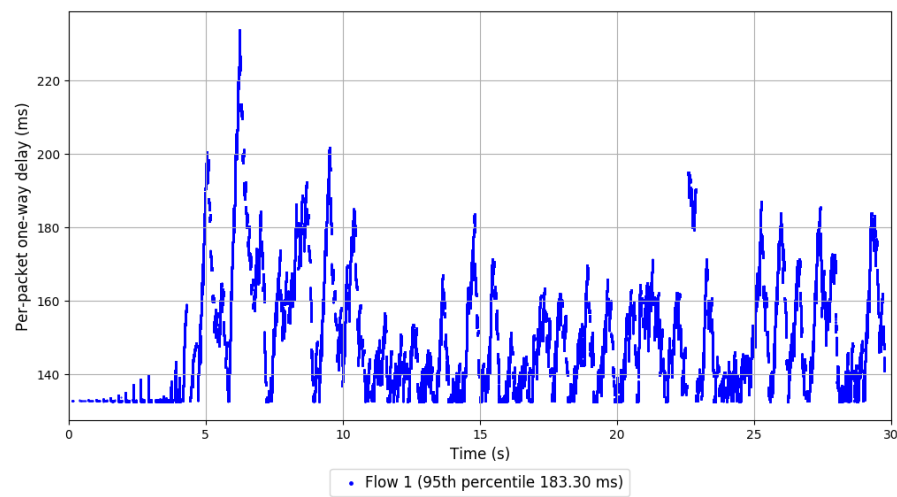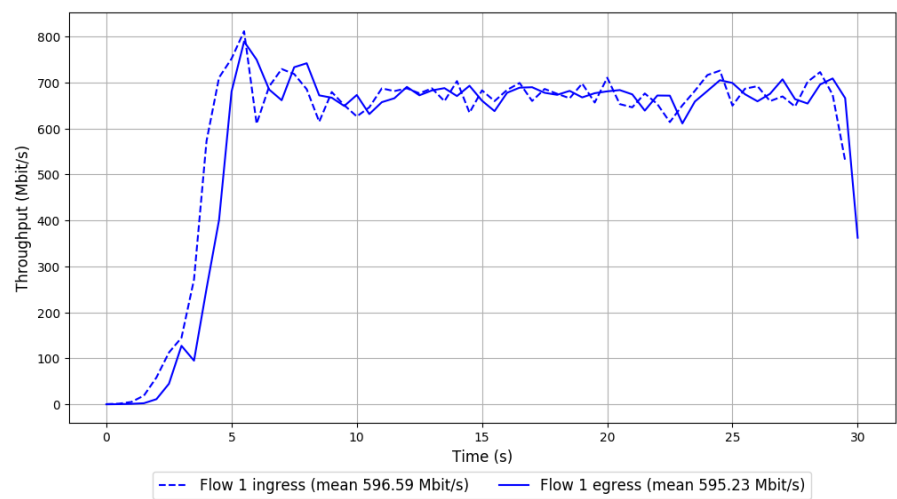
Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-03 02:58:49
End at: 2018-11-03 02:59:19
Local clock offset: 0.112 ms
Remote clock offset: -0.091 ms


# Below is generated by plot.py at 2018-11-03 05:49:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 383.30 Mbit/s
95th percentile per-packet one-way delay: 250.921 ms
Loss rate: 9.04%
-- Flow 1:
Average throughput: 383.30 Mbit/s
95th percentile per-packet one-way delay: 250.921 ms
Loss rate: 9.04%
```
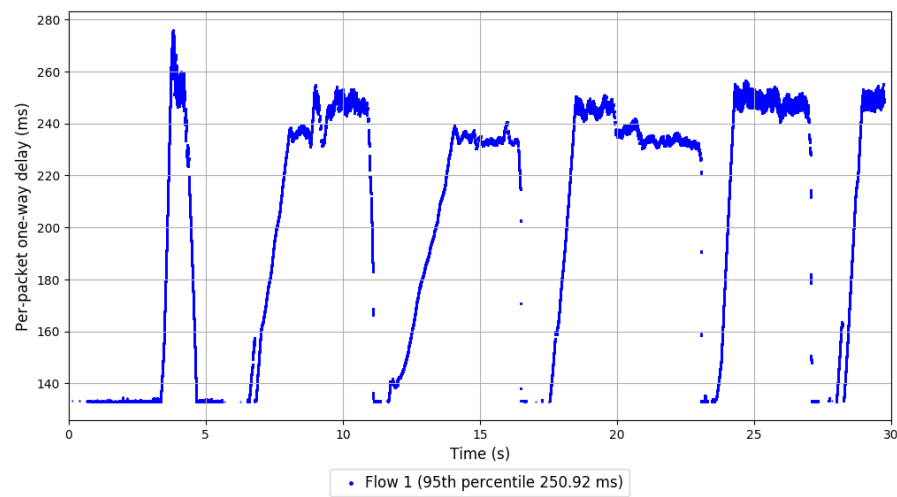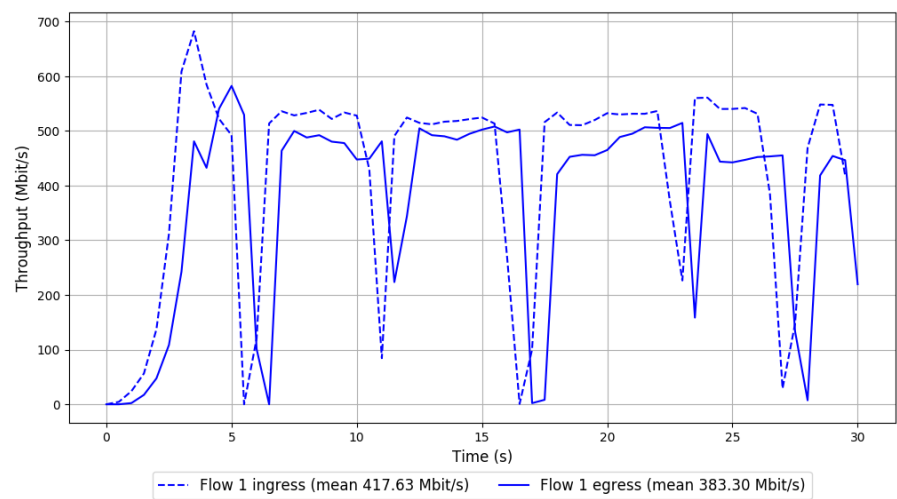
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-11-03 03:26:15
End at: 2018-11-03 03:26:45
Local clock offset: -0.488 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2018-11-03 05:50:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 403.54 Mbit/s
95th percentile per-packet one-way delay: 245.597 ms
Loss rate: 4.74%
-- Flow 1:
Average throughput: 403.54 Mbit/s
95th percentile per-packet one-way delay: 245.597 ms
Loss rate: 4.74%
```
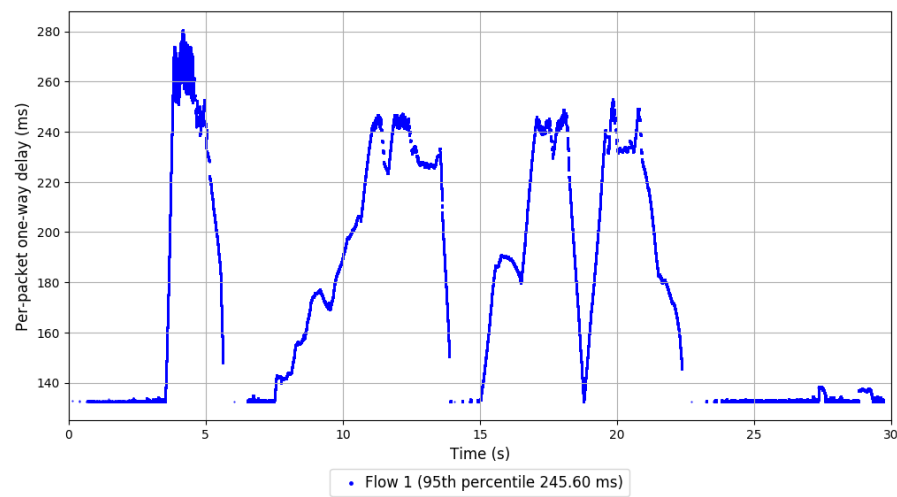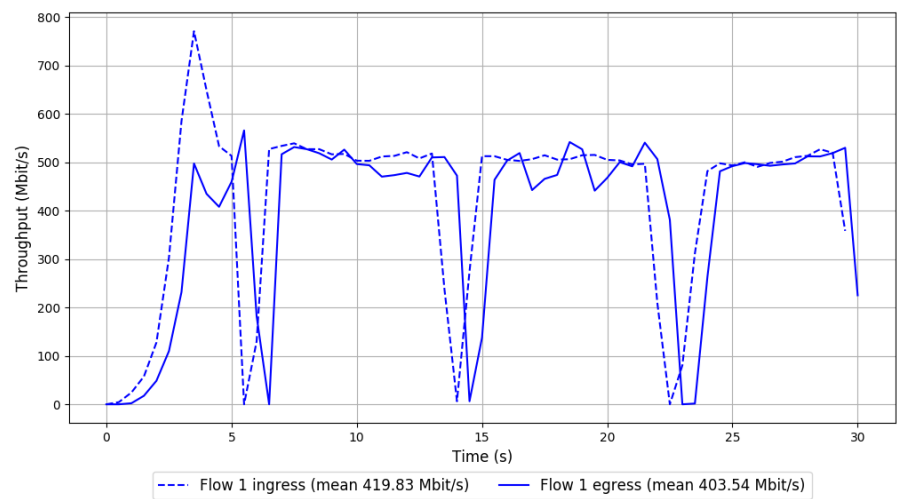
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-11-03 03:53:16
End at: 2018-11-03 03:53:46
Local clock offset: -0.084 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2018-11-03 05:53:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 418.08 Mbit/s
95th percentile per-packet one-way delay: 245.392 ms
Loss rate: 4.79%
-- Flow 1:
Average throughput: 418.08 Mbit/s
95th percentile per-packet one-way delay: 245.392 ms
Loss rate: 4.79%
```
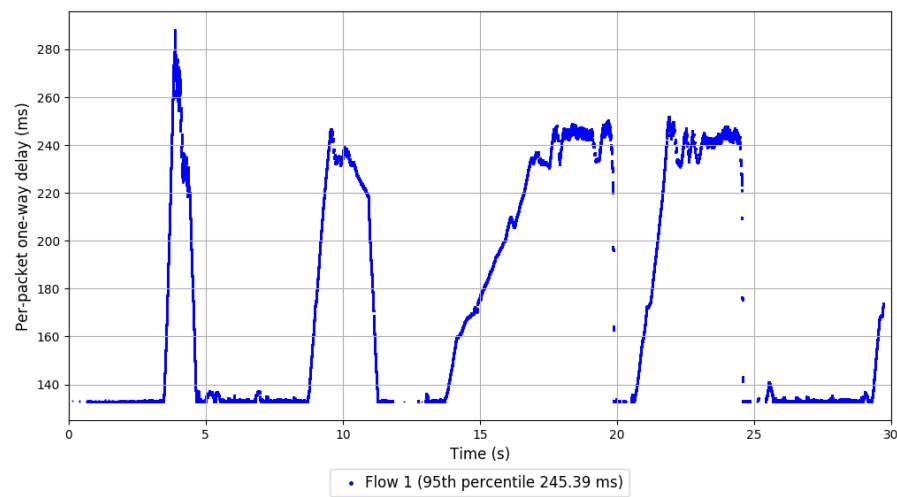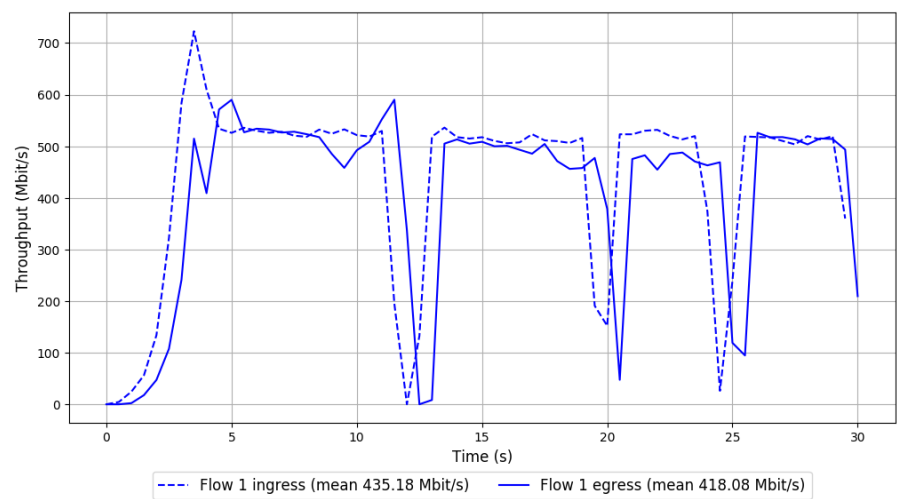
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-11-03 04:19:28
End at: 2018-11-03 04:19:58
Local clock offset: -0.289 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2018-11-03 05:59:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 413.21 Mbit/s
95th percentile per-packet one-way delay: 246.769 ms
Loss rate: 4.39%
-- Flow 1:
Average throughput: 413.21 Mbit/s
95th percentile per-packet one-way delay: 246.769 ms
Loss rate: 4.39%
```
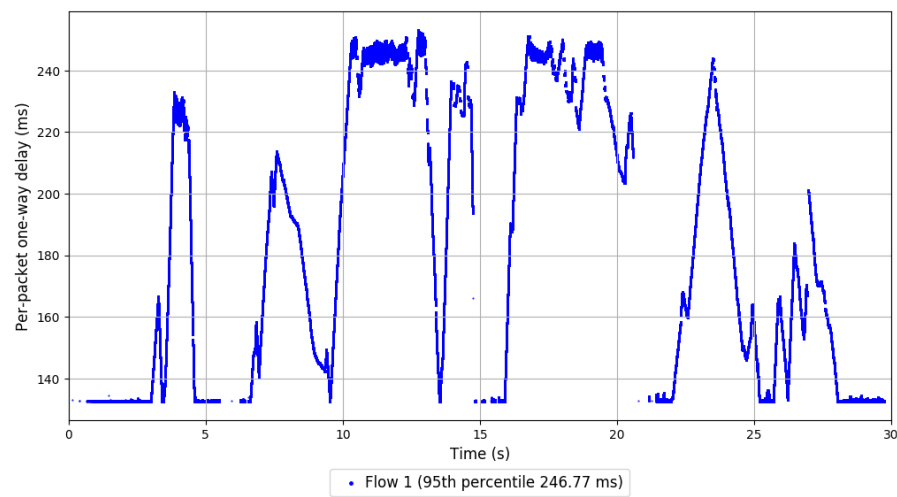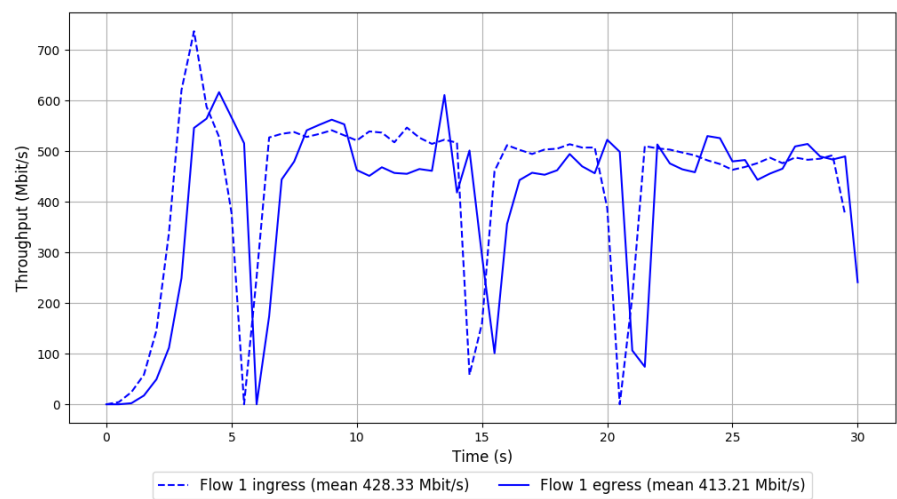
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-11-03 04:45:59
End at: 2018-11-03 04:46:29
Local clock offset: -0.329 ms
Remote clock offset: 0.346 ms


# Below is generated by plot.py at 2018-11-03 05:59:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 338.62 Mbit/s
95th percentile per-packet one-way delay: 196.211 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 338.62 Mbit/s
95th percentile per-packet one-way delay: 196.211 ms
Loss rate: 1.94%
```
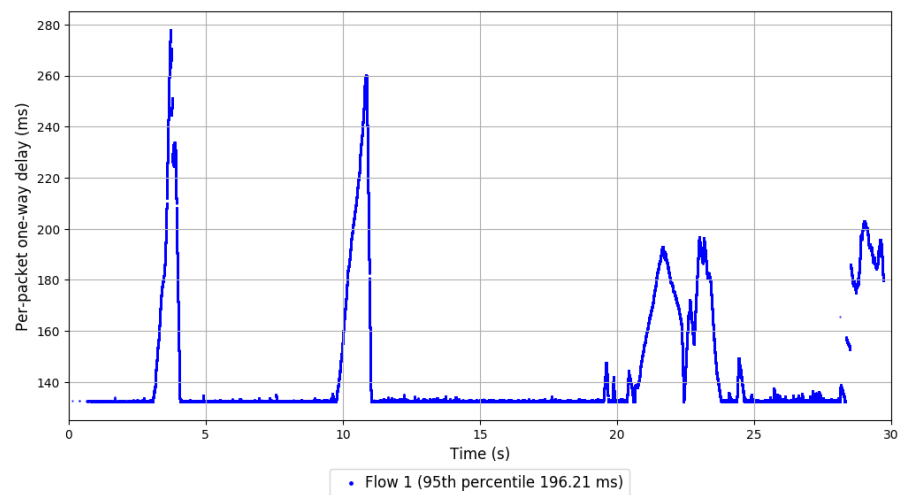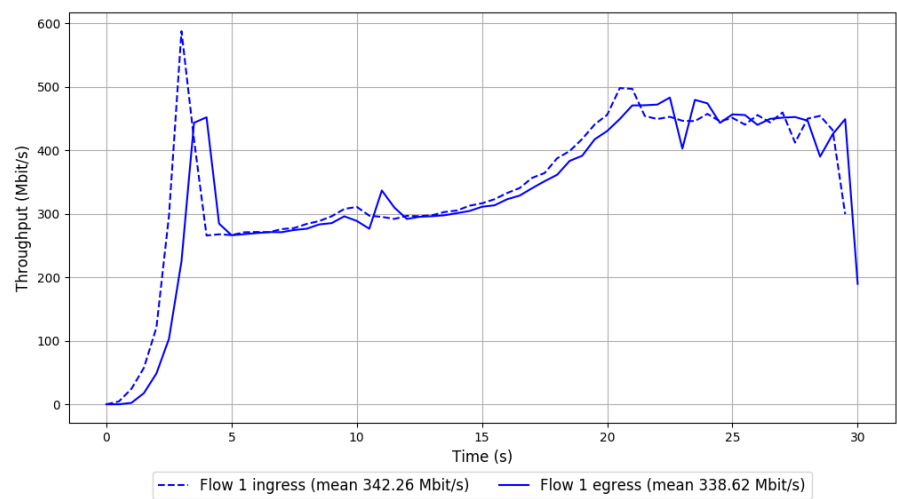
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 342.26 Mbit/s) — Flow 1 egress (mean 338.62 Mbit/s)
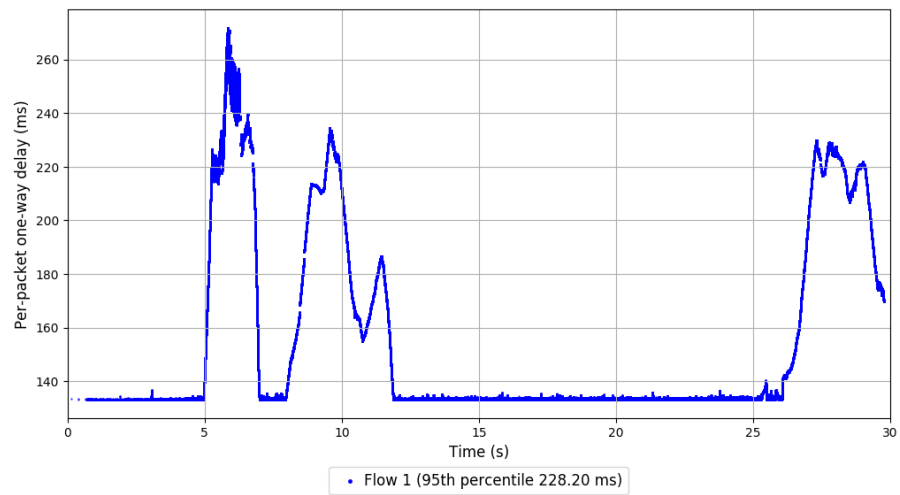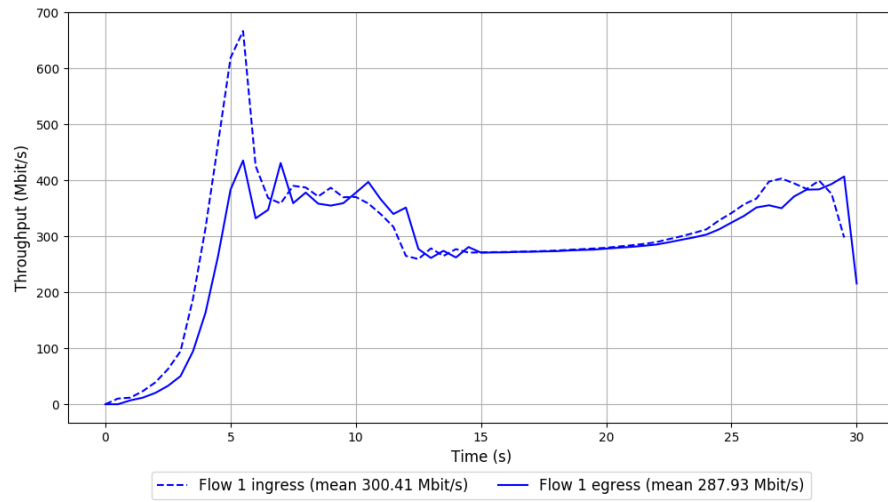

Flow 1 (95th percentile 196.21 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-03 03:03:17
End at: 2018-11-03 03:03:47
Local clock offset: 0.308 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2018-11-03 05:59:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 287.93 Mbit/s
95th percentile per-packet one-way delay: 228.196 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 287.93 Mbit/s
95th percentile per-packet one-way delay: 228.196 ms
Loss rate: 5.01%
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-03 03:30:48
End at: 2018-11-03 03:31:18
Local clock offset: -0.072 ms
Remote clock offset: 0.007 ms


# Below is generated by plot.py at 2018-11-03 05:59:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 304.10 Mbit/s
95th percentile per-packet one-way delay: 231.573 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 304.10 Mbit/s
95th percentile per-packet one-way delay: 231.573 ms
Loss rate: 4.04%
```
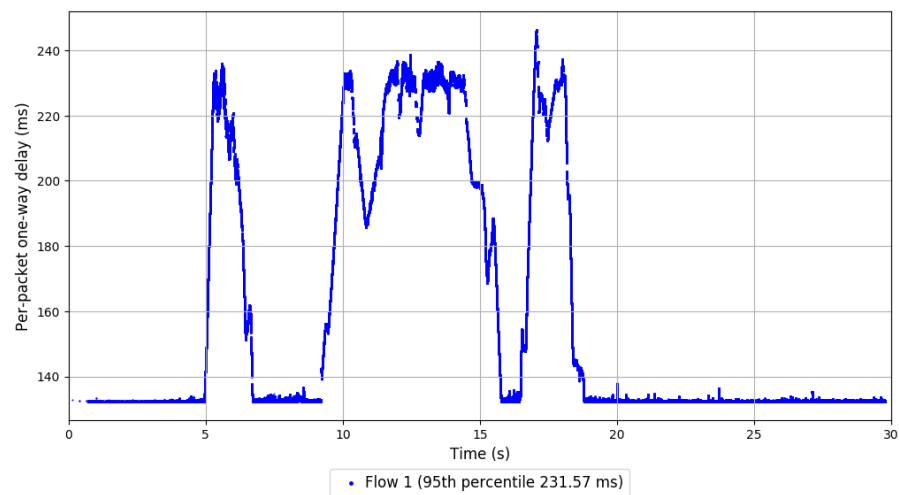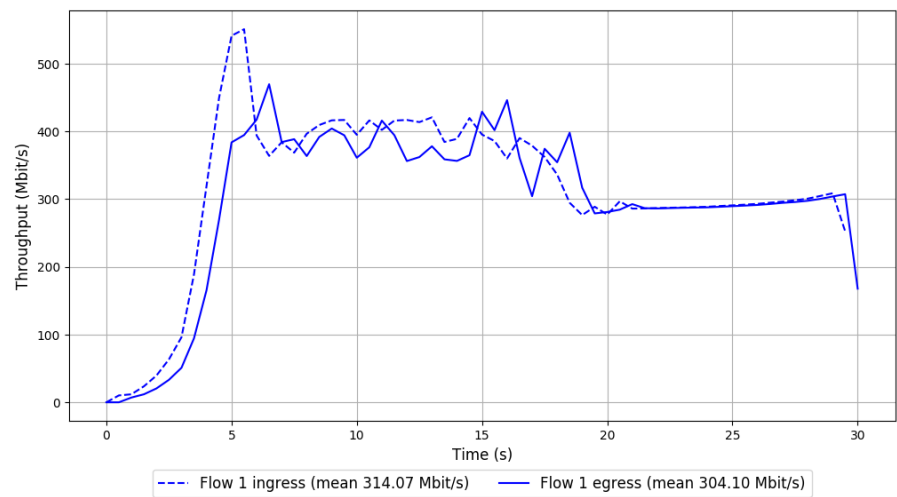
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 314.07 Mbit/s)   Flow 1 egress (mean 304.10 Mbit/s)
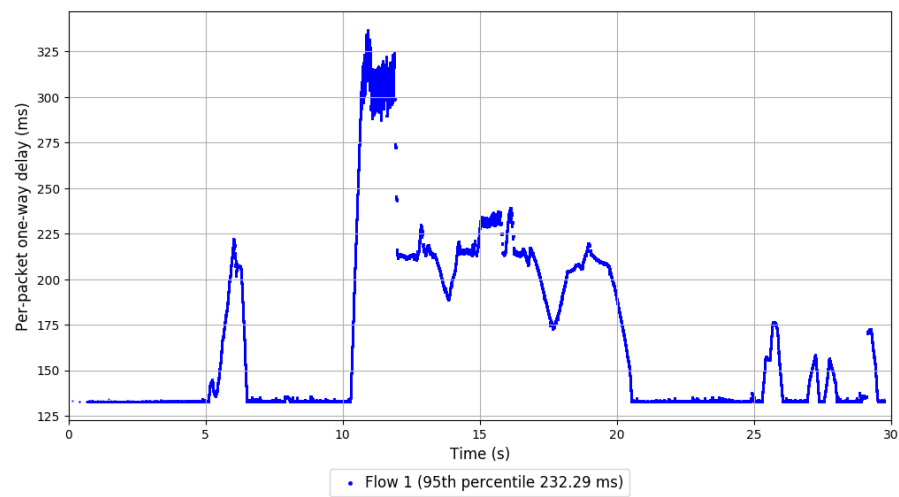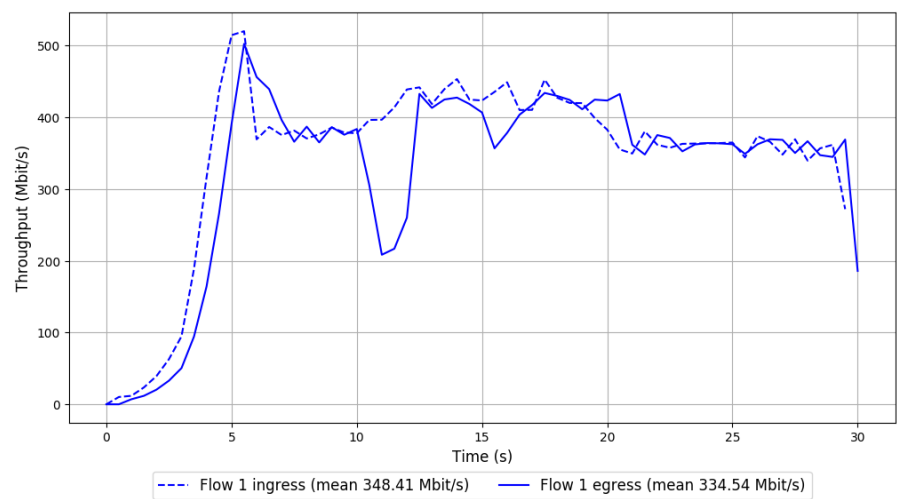

Flow 1 (95th percentile 231.57 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-11-03 03:57:41
End at: 2018-11-03 03:58:11
Local clock offset: -0.036 ms
Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2018-11-03 05:59:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 334.54 Mbit/s
95th percentile per-packet one-way delay: 232.290 ms
Loss rate: 4.84%
-- Flow 1:
Average throughput: 334.54 Mbit/s
95th percentile per-packet one-way delay: 232.290 ms
Loss rate: 4.84%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 348.41 Mbit/s) --- Flow 1 egress (mean 334.54 Mbit/s)
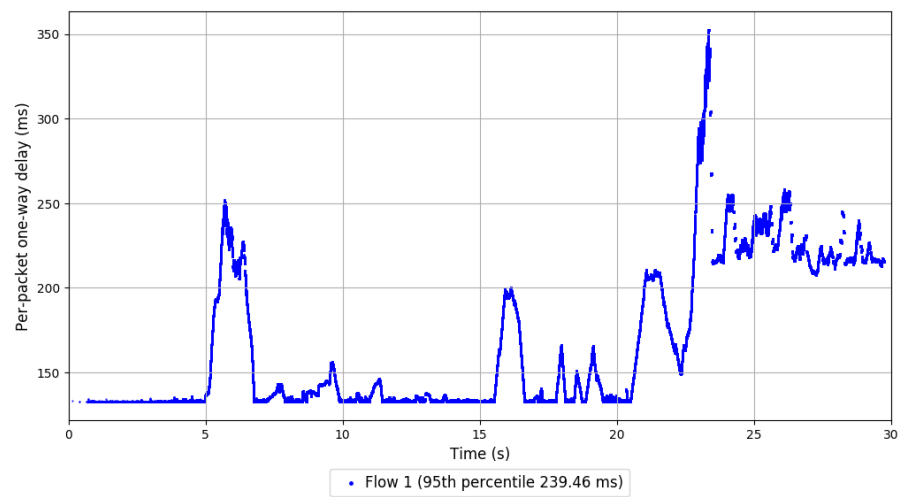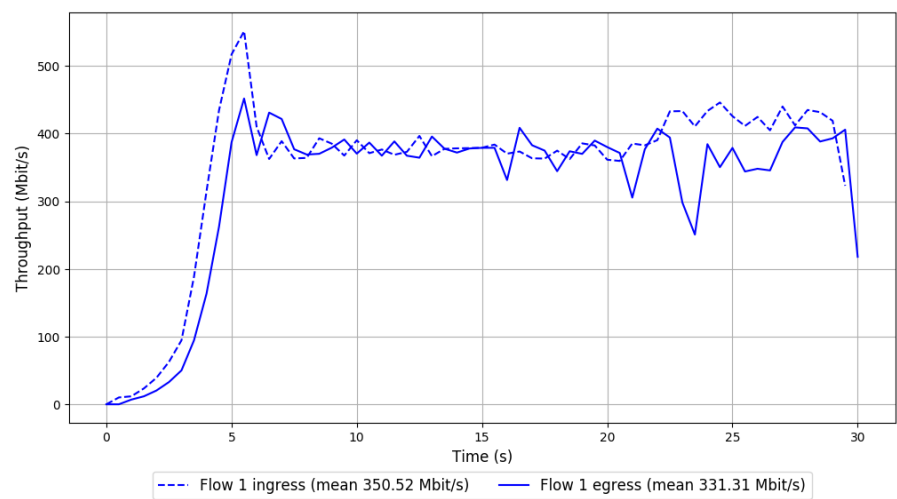

Flow 1 (95th percentile 232.29 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-11-03 04:23:55
End at: 2018-11-03 04:24:25
Local clock offset: -0.258 ms
Remote clock offset: -0.058 ms

# Below is generated by plot.py at 2018-11-03 06:01:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 331.31 Mbit/s
95th percentile per-packet one-way delay: 239.458 ms
Loss rate: 6.32%
-- Flow 1:
Average throughput: 331.31 Mbit/s
95th percentile per-packet one-way delay: 239.458 ms
Loss rate: 6.32%
```

Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 350.52 Mbit/s)   Flow 1 egress (mean 331.31 Mbit/s)
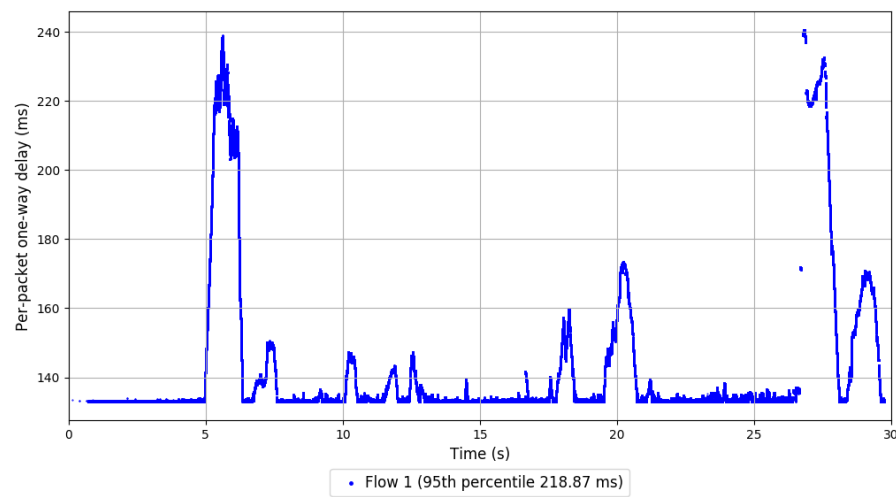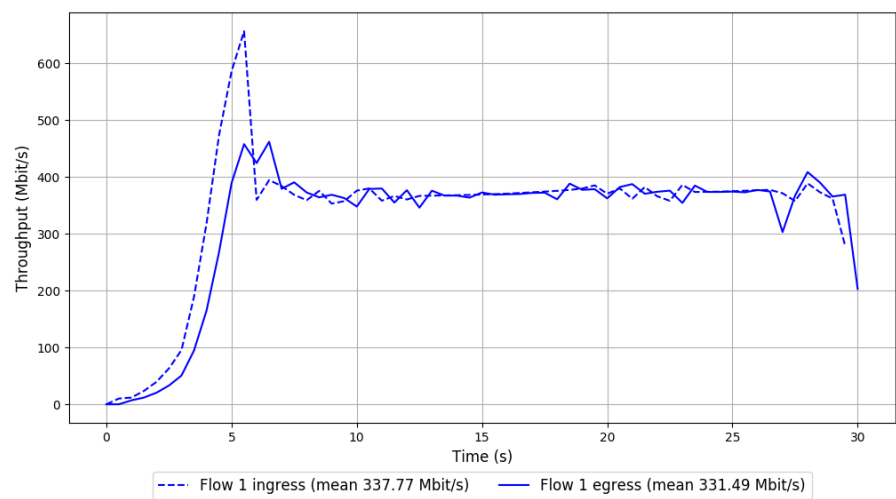

Flow 1 (95th percentile 239.46 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-11-03 04:50:29
End at: 2018-11-03 04:50:59
Local clock offset: 0.079 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 331.49 Mbit/s
95th percentile per-packet one-way delay: 218.869 ms
Loss rate: 2.73%
-- Flow 1:
Average throughput: 331.49 Mbit/s
95th percentile per-packet one-way delay: 218.869 ms
Loss rate: 2.73%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 337.77 Mbit/s) --- Flow 1 egress (mean 331.49 Mbit/s)

Flow 1 (95th percentile 218.87 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-11-03 03:02:02
End at: 2018-11-03 03:02:32
Local clock offset: 0.094 ms
Remote clock offset: -0.119 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.42 Mbit/s
95th percentile per-packet one-way delay: 133.105 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 49.42 Mbit/s
95th percentile per-packet one-way delay: 133.105 ms
Loss rate: 1.44%
```
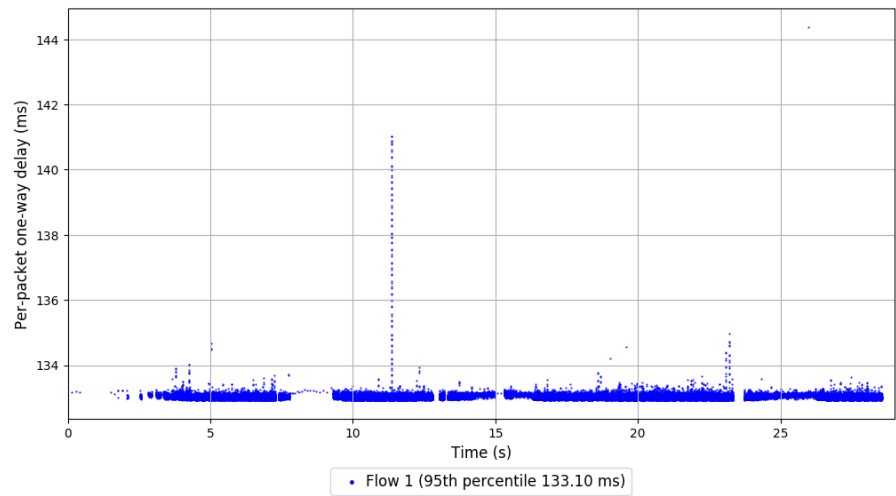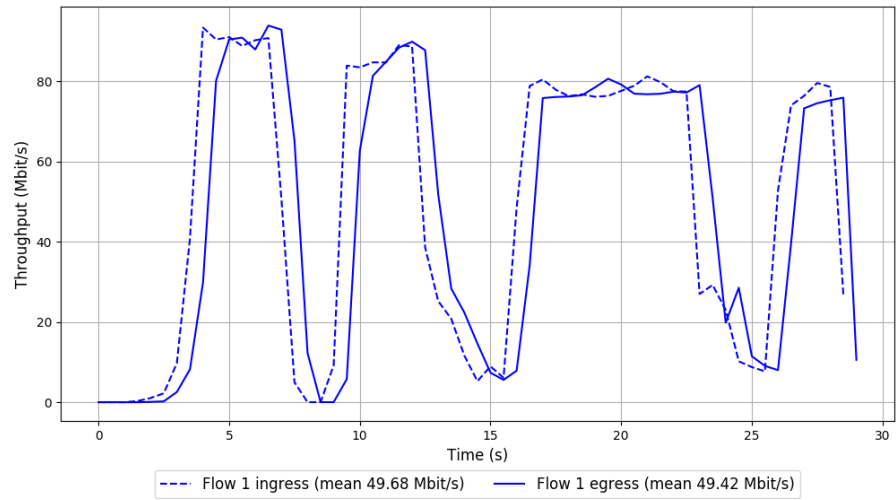
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 49.68 Mbit/s)   Flow 1 egress (mean 49.42 Mbit/s)

Flow 1 (95th percentile 133.10 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-11-03 03:29:33
End at: 2018-11-03 03:30:03
Local clock offset: -0.466 ms
Remote clock offset: -0.022 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.93 Mbit/s
95th percentile per-packet one-way delay: 132.824 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 51.93 Mbit/s
95th percentile per-packet one-way delay: 132.824 ms
Loss rate: 1.34%
```
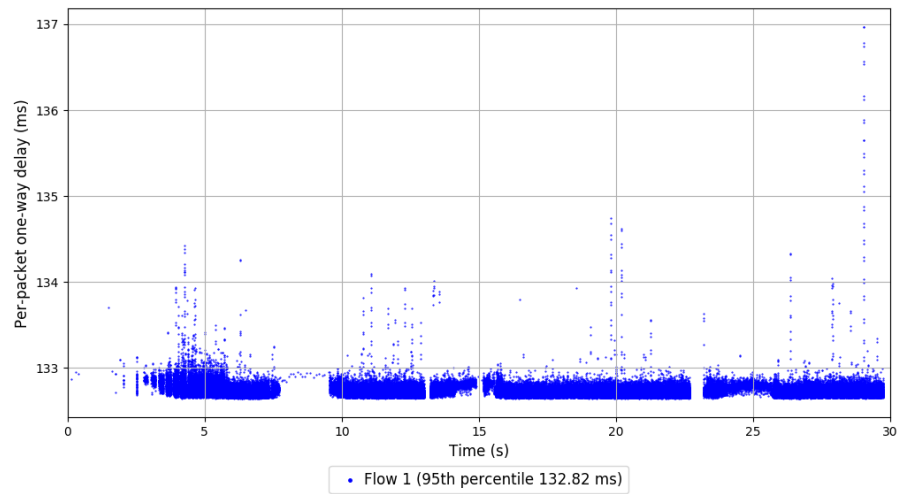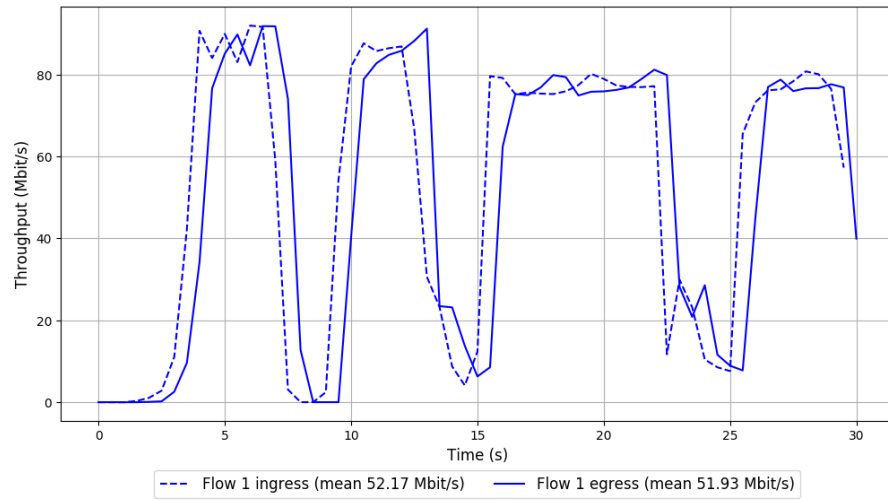
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-11-03 03:56:26
End at: 2018-11-03 03:56:56
Local clock offset: -0.073 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.30 Mbit/s
95th percentile per-packet one-way delay: 132.979 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 49.30 Mbit/s
95th percentile per-packet one-way delay: 132.979 ms
Loss rate: 1.38%
```
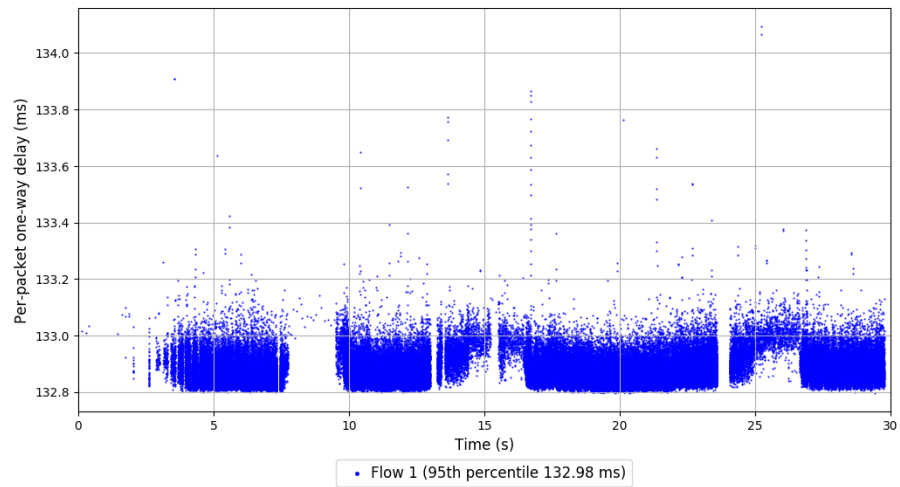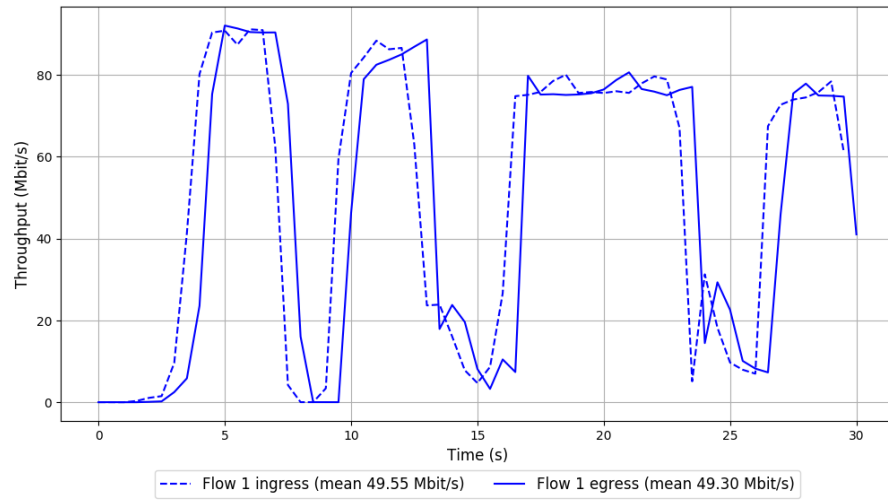
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-11-03 04:22:39
End at: 2018-11-03 04:23:09
Local clock offset: -0.224 ms
Remote clock offset: -0.031 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.48 Mbit/s
95th percentile per-packet one-way delay: 132.794 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 62.48 Mbit/s
95th percentile per-packet one-way delay: 132.794 ms
Loss rate: 1.30%
```
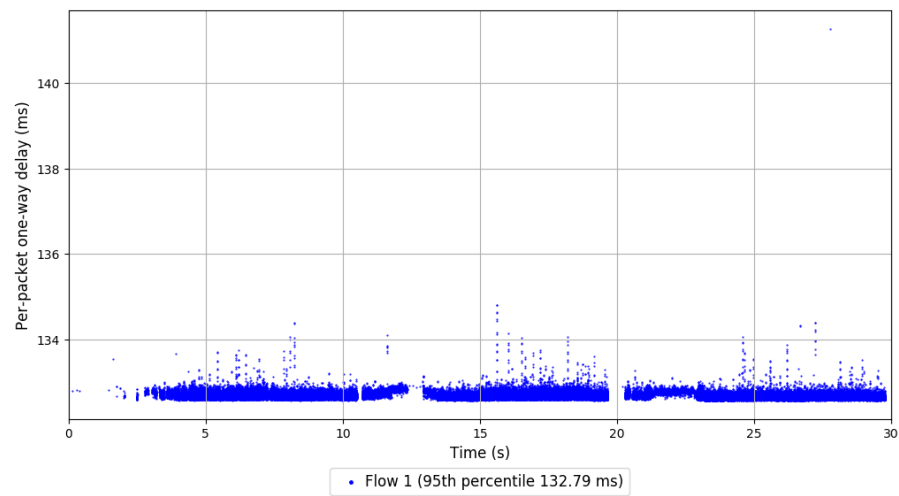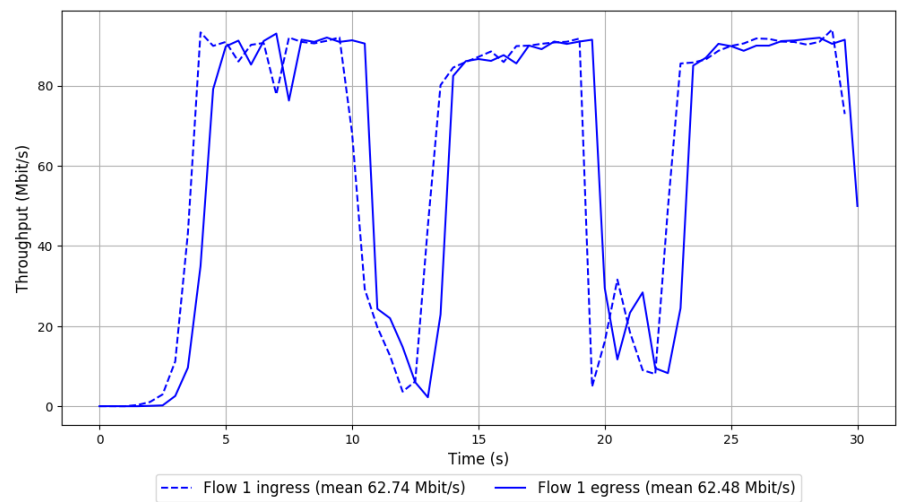
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 62.74 Mbit/s)   Flow 1 egress (mean 62.48 Mbit/s)

Flow 1 (95th percentile 132.79 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-11-03 04:49:13
End at: 2018-11-03 04:49:43
Local clock offset: -0.086 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.96 Mbit/s
95th percentile per-packet one-way delay: 132.179 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 43.96 Mbit/s
95th percentile per-packet one-way delay: 132.179 ms
Loss rate: 1.49%
```
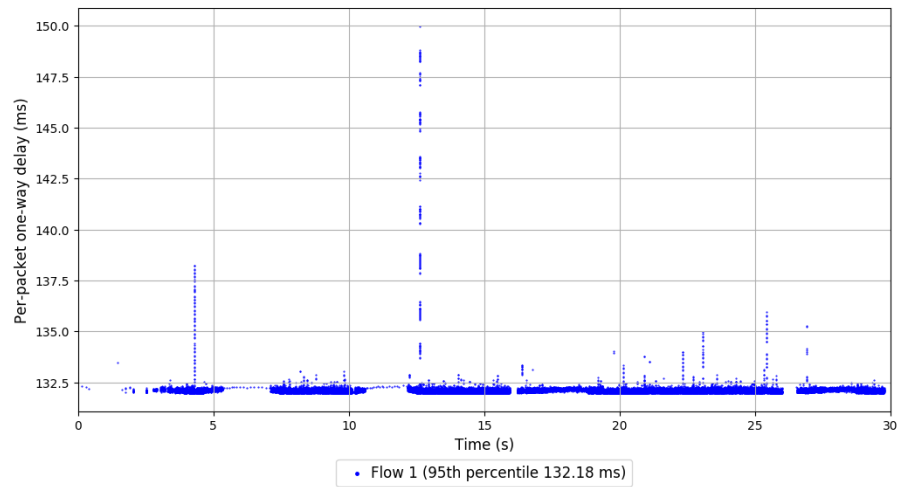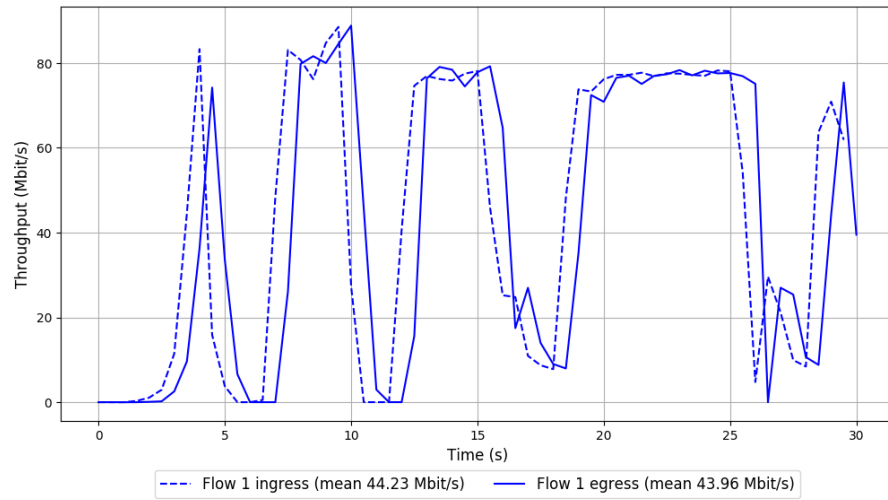
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 44.23 Mbit/s)   Flow 1 egress (mean 43.96 Mbit/s)
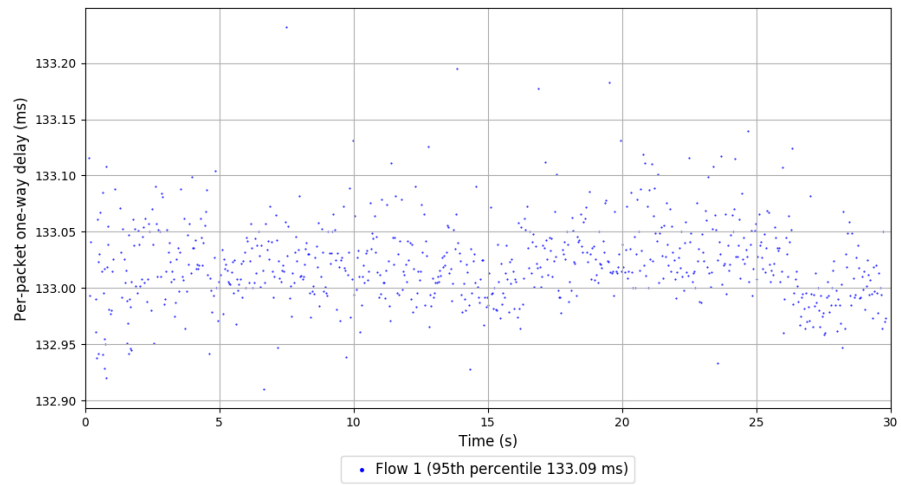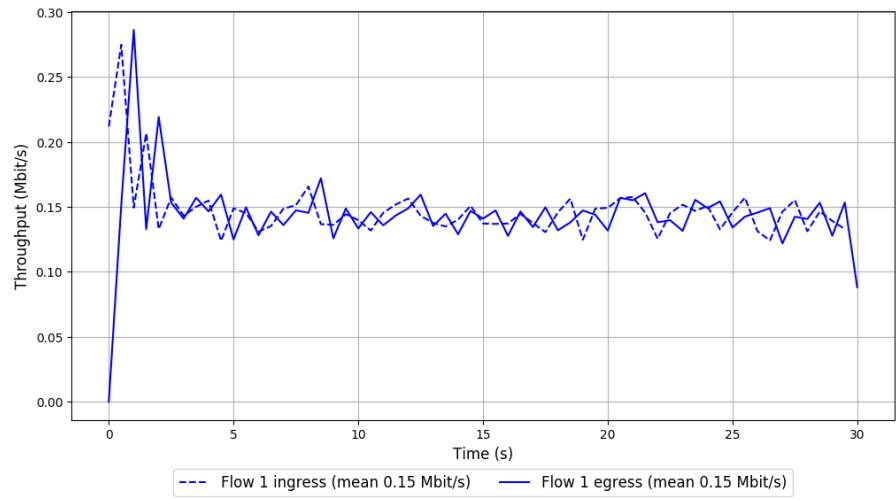

Flow 1 (95th percentile 132.18 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-11-03 02:52:23
End at: 2018-11-03 02:52:53
Local clock offset: -0.146 ms
Remote clock offset: -0.138 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.085 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.085 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)

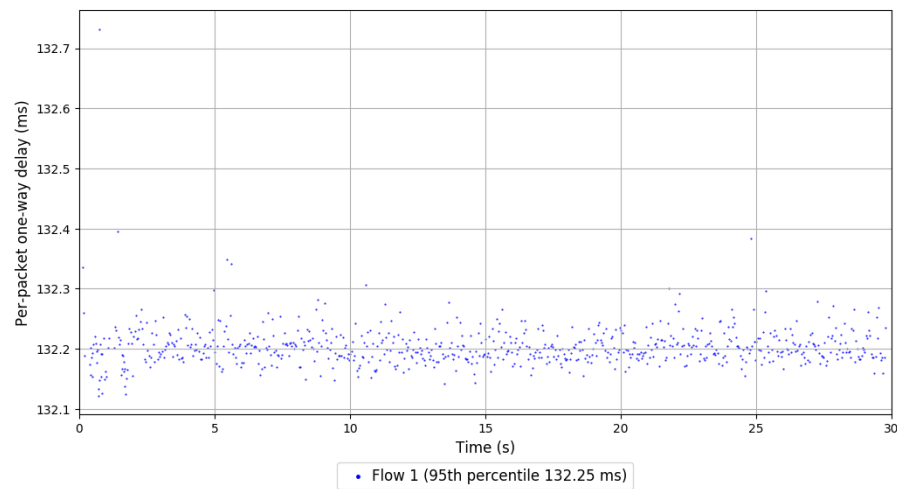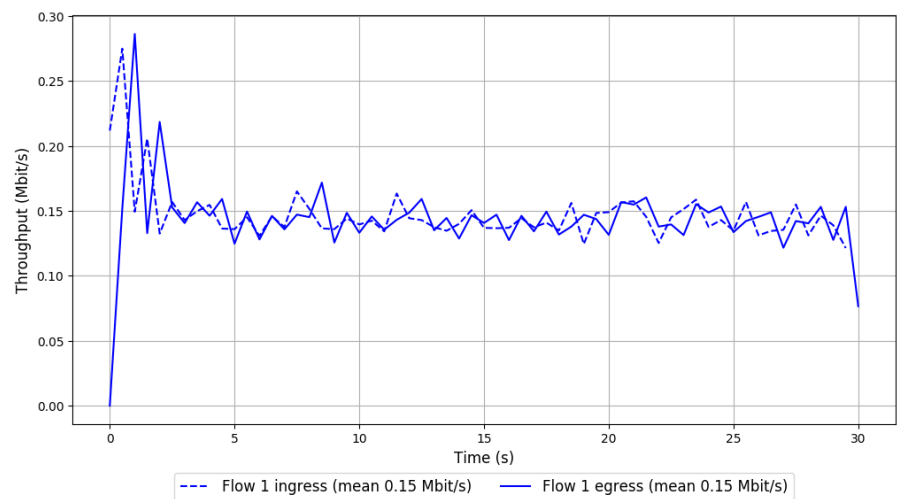Flow 1 (95th percentile 133.09 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-11-03 03:19:40
End at: 2018-11-03 03:20:10
Local clock offset: -0.155 ms
Remote clock offset: -0.055 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.253 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.253 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)

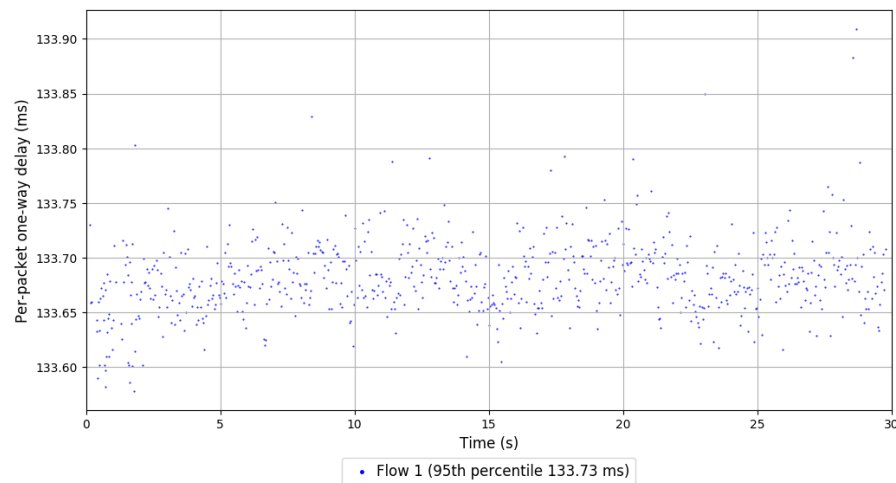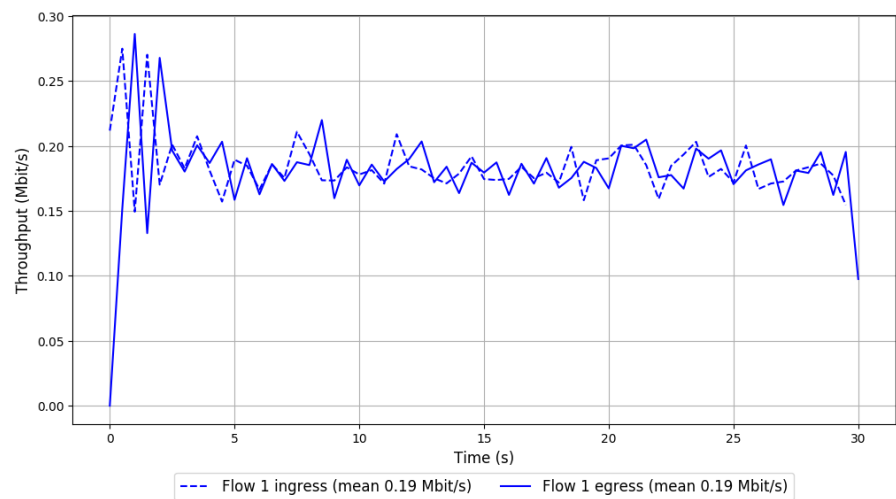Flow 1 (95th percentile 132.25 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-11-03 03:47:00
End at: 2018-11-03 03:47:30
Local clock offset: 0.33 ms
Remote clock offset: -0.009 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 133.732 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 133.732 ms
Loss rate: 0.89%
```

Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.19 Mbit/s)   Flow 1 egress (mean 0.19 Mbit/s)

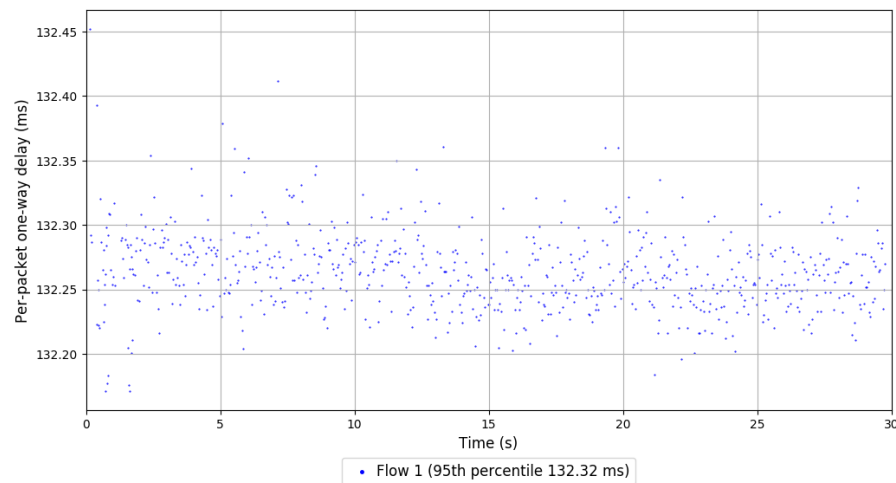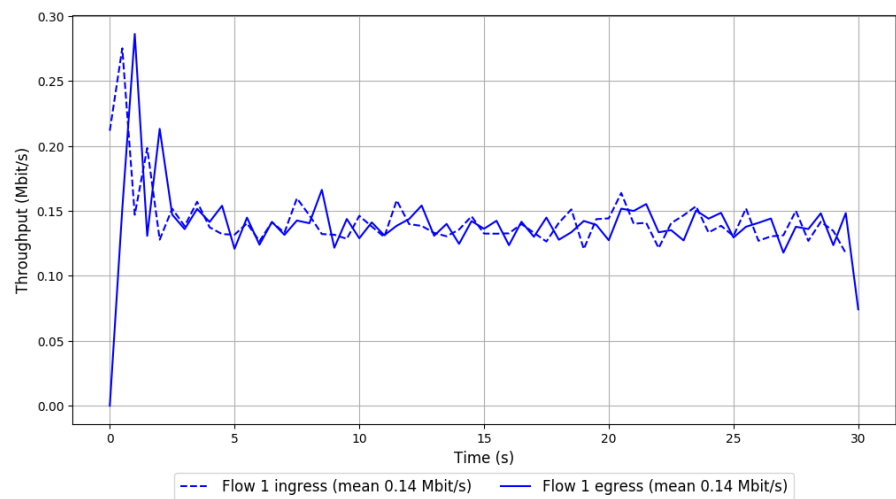Flow 1 (95th percentile 133.73 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-11-03 04:13:12
End at: 2018-11-03 04:13:42
Local clock offset: -0.017 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 132.316 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 132.316 ms
Loss rate: 0.88%
```

Run 4: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.14 Mbit/s)   Flow 1 egress (mean 0.14 Mbit/s)

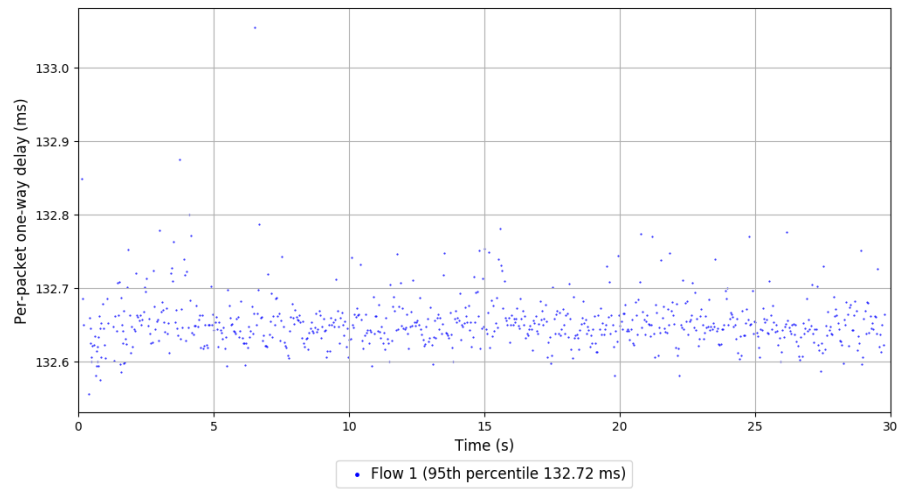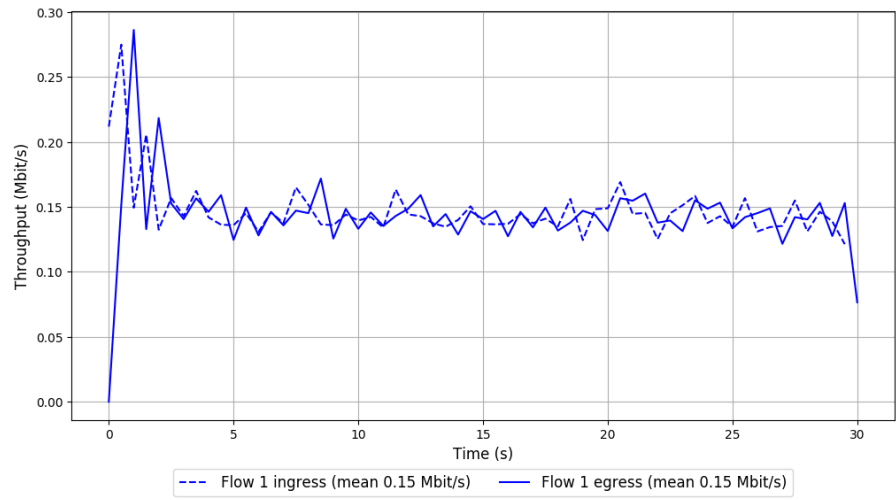Flow 1 (95th percentile 132.32 ms)

```
Run 5: Statistics of SCReAM

Start at: 2018-11-03 04:39:27
End at: 2018-11-03 04:39:57
Local clock offset: -0.512 ms
Remote clock offset: -0.031 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.721 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.721 ms
Loss rate: 0.88%
```
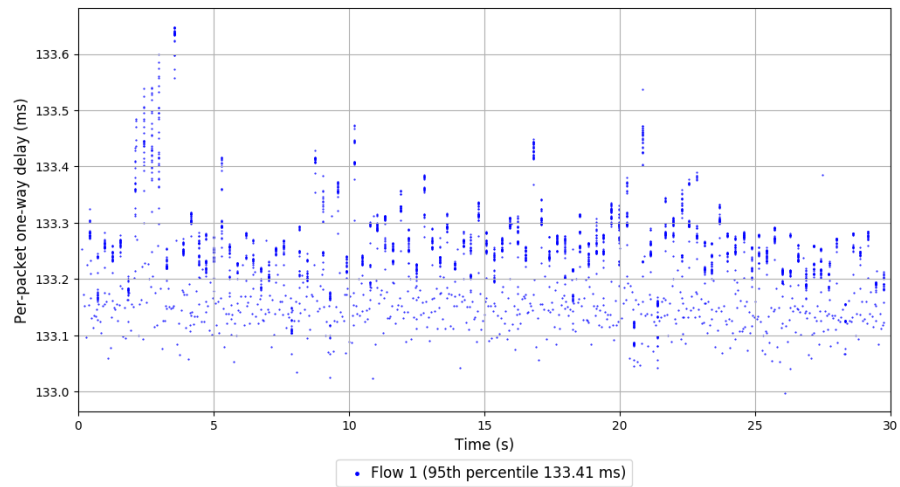
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-11-03 02:57:38
End at: 2018-11-03 02:58:08
Local clock offset: -0.366 ms
Remote clock offset: -0.5 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.414 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.414 ms
Loss rate: 0.70%
```
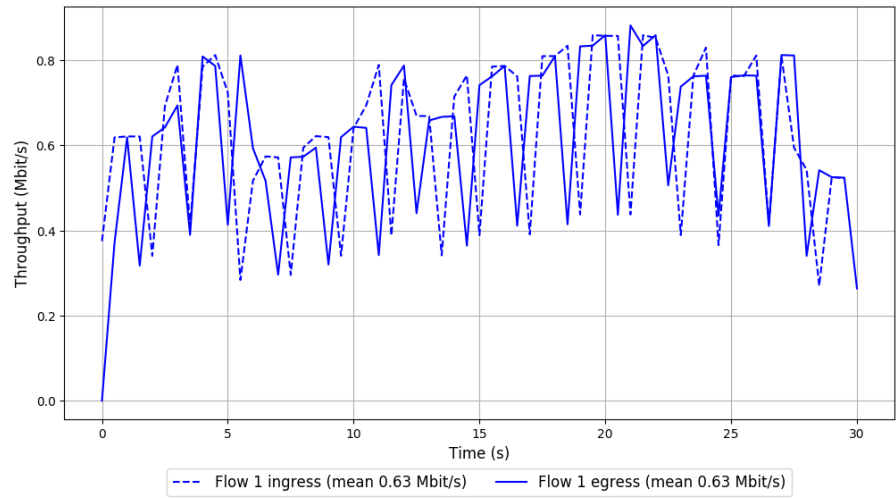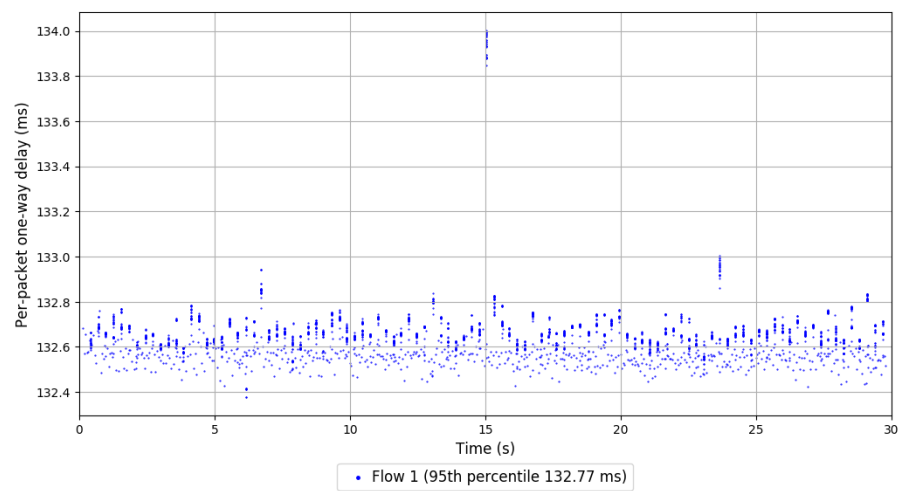
Run 1: Report of Sprout — Data Link

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

Flow 1 (95th percentile 133.41 ms)

```
Run 2: Statistics of Sprout

Start at: 2018-11-03 03:25:04
End at: 2018-11-03 03:25:34
Local clock offset: -0.057 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 132.769 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 132.769 ms
Loss rate: 0.89%
```
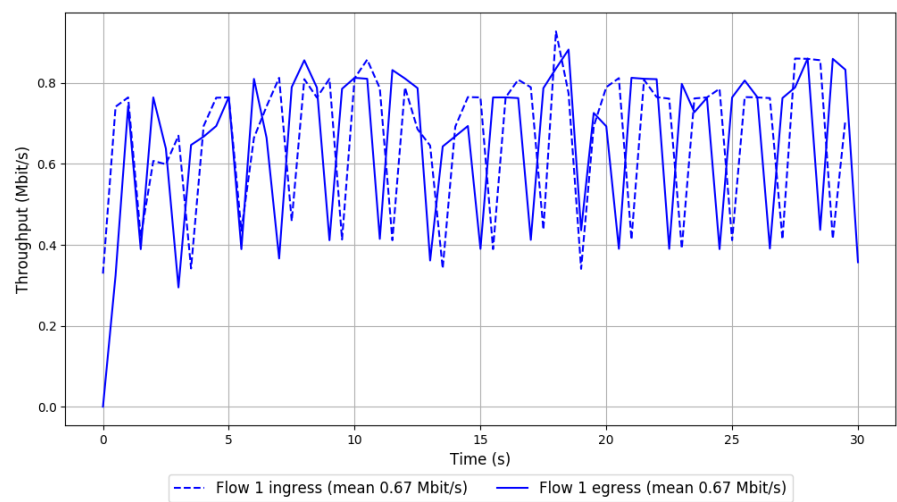
Run 2: Report of Sprout — Data Link

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

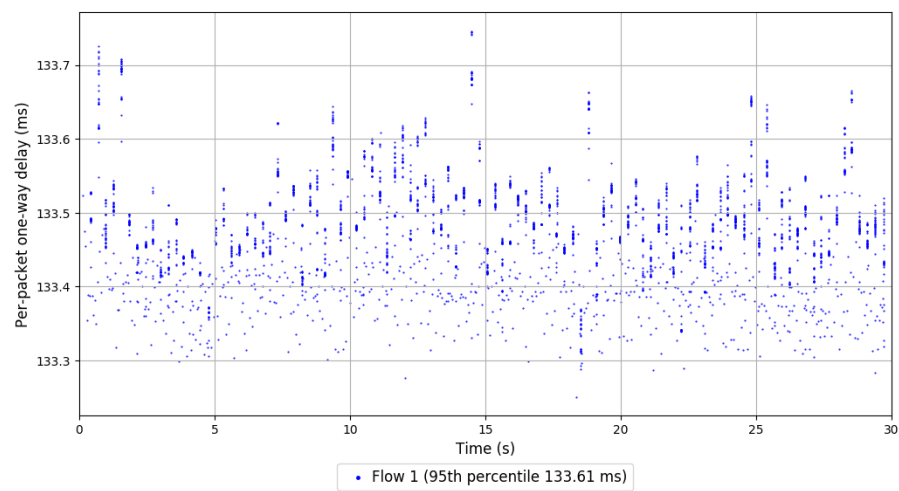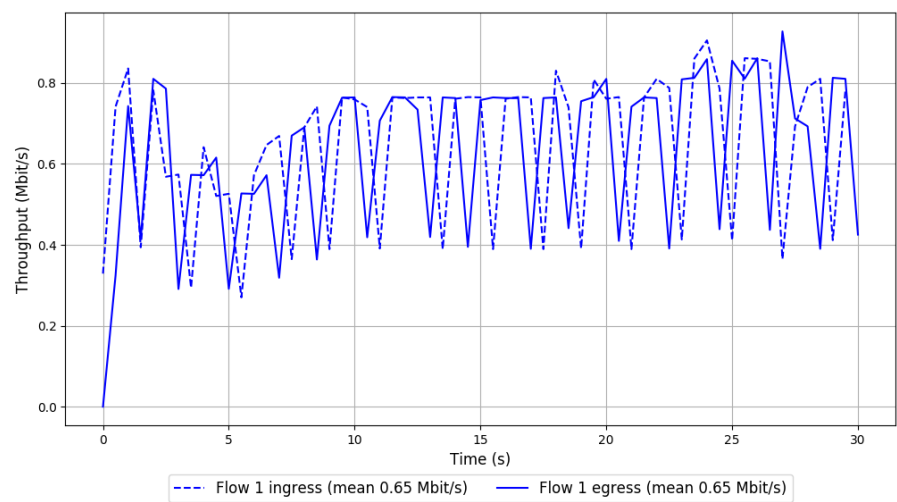Flow 1 (95th percentile 132.77 ms)

```
Run 3: Statistics of Sprout

Start at: 2018-11-03 03:52:06
End at: 2018-11-03 03:52:36
Local clock offset: 0.361 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 133.609 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 133.609 ms
Loss rate: 0.92%
```

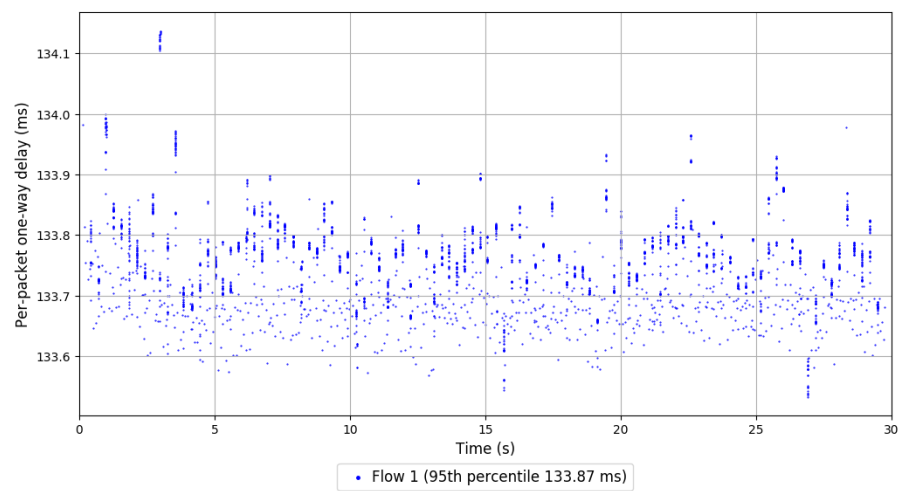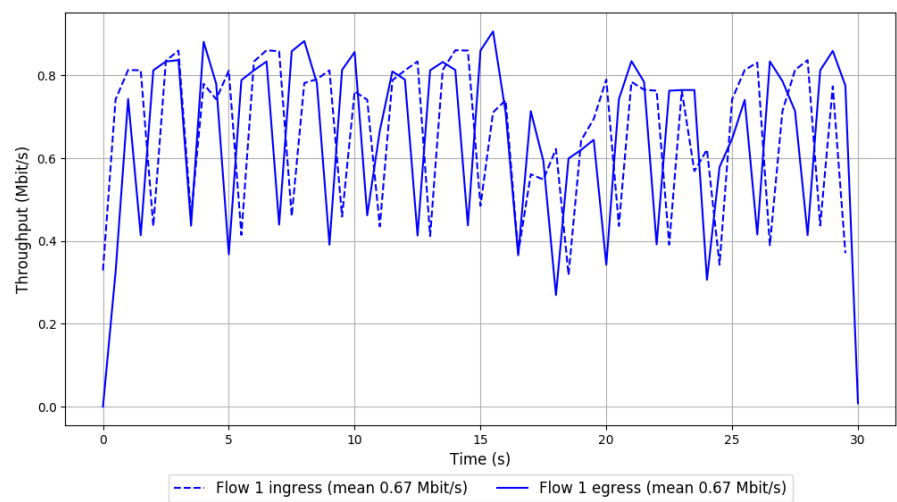Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-11-03 04:18:17
End at: 2018-11-03 04:18:47
Local clock offset: 0.389 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 133.874 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 133.874 ms
Loss rate: 0.92%
```

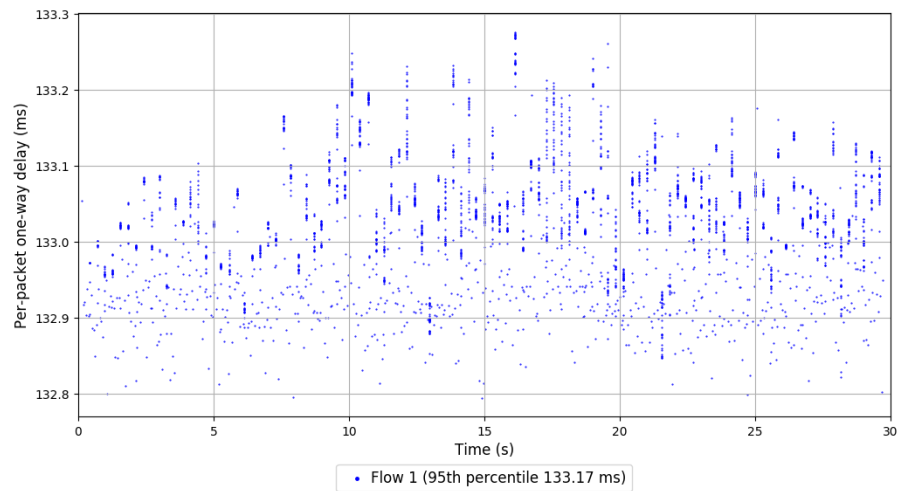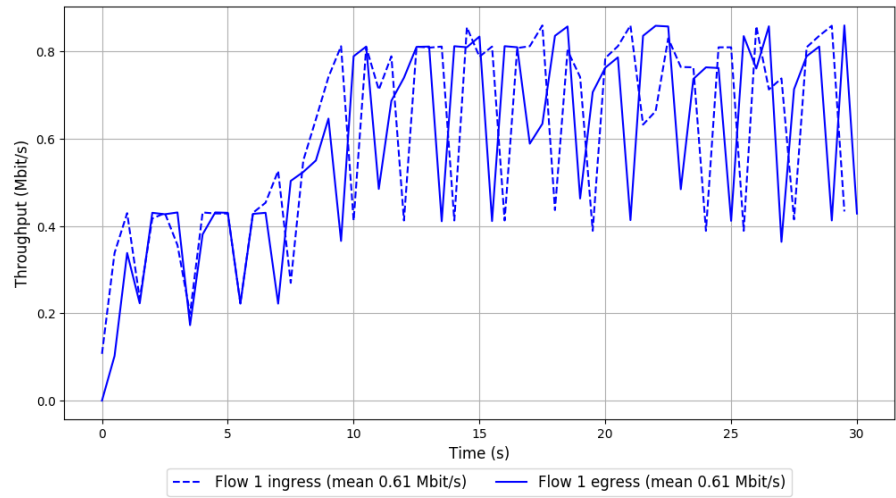## Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-11-03 04:44:48
End at: 2018-11-03 04:45:18
Local clock offset: -0.112 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 133.174 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 133.174 ms
Loss rate: 1.18%
```

Run 5: Report of Sprout — Data Link

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

Start at: 2018-11-03 02:44:57
End at: 2018-11-03 02:45:27
Local clock offset: -0.123 ms
Remote clock offset: 0.268 ms


# Below is generated by plot.py at 2018-11-03 06:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.69 Mbit/s
95th percentile per-packet one-way delay: 132.753 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 184.69 Mbit/s
95th percentile per-packet one-way delay: 132.753 ms
Loss rate: 1.02%
```
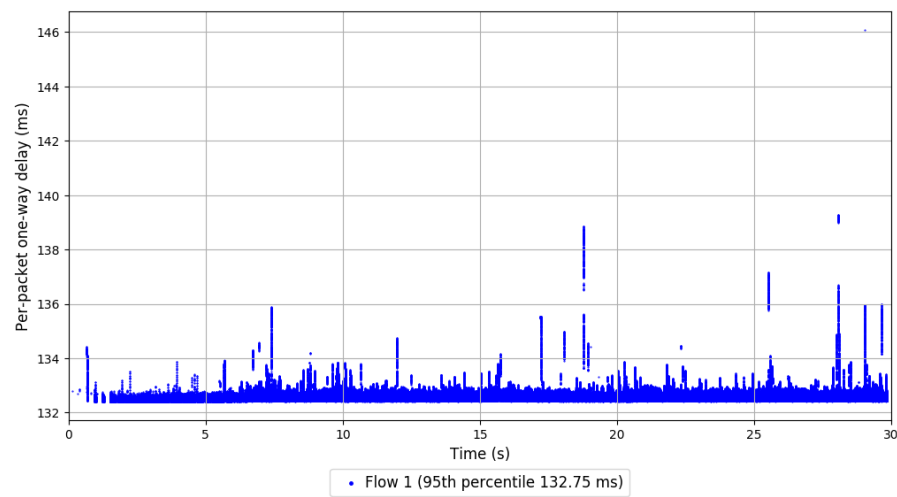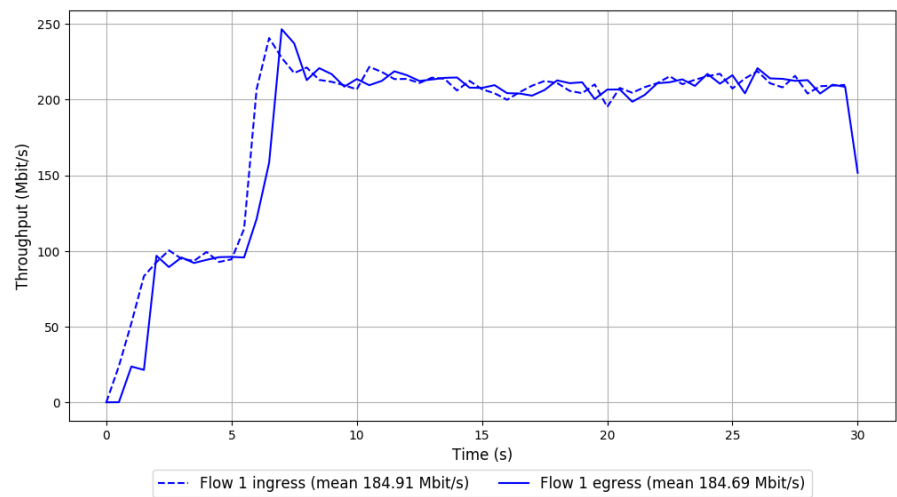
Run 1: Report of TaoVA-100x — Data Link

136

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

Start at: 2018-11-03 03:12:03
End at: 2018-11-03 03:12:33
Local clock offset: -0.16 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2018-11-03 06:04:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 203.36 Mbit/s
95th percentile per-packet one-way delay: 133.053 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 203.36 Mbit/s
95th percentile per-packet one-way delay: 133.053 ms
Loss rate: 1.03%
```
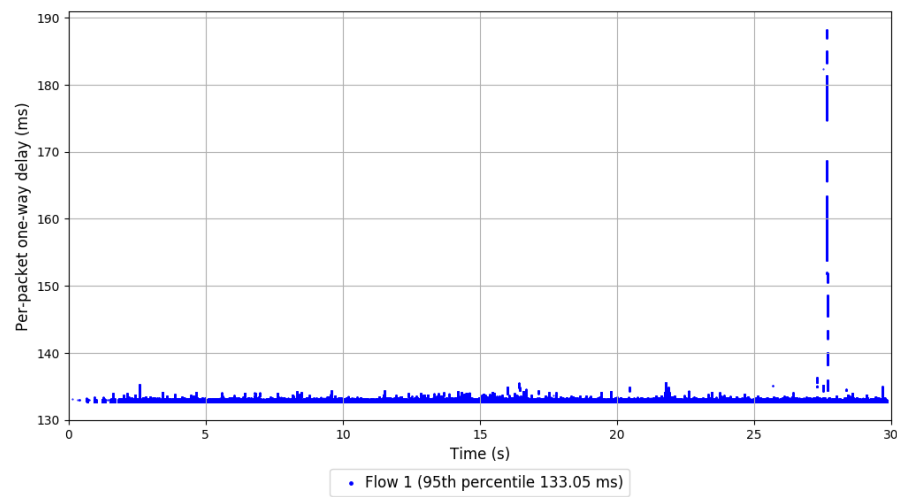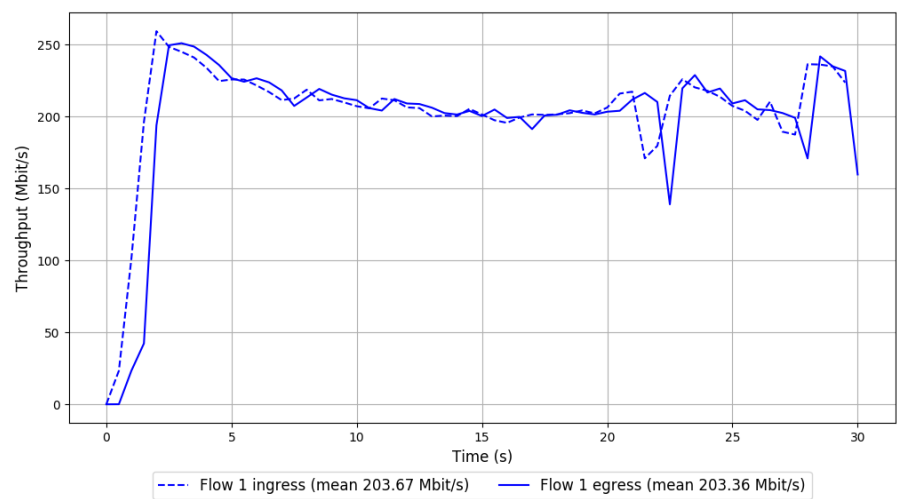
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 203.67 Mbit/s) — Flow 1 egress (mean 203.36 Mbit/s)

· Flow 1 (95th percentile 133.05 ms)

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

Start at: 2018-11-03 03:39:22
End at: 2018-11-03 03:39:52
Local clock offset: -0.285 ms
Remote clock offset: 0.009 ms


# Below is generated by plot.py at 2018-11-03 06:04:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 203.83 Mbit/s
95th percentile per-packet one-way delay: 133.158 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 203.83 Mbit/s
95th percentile per-packet one-way delay: 133.158 ms
Loss rate: 0.83%
```
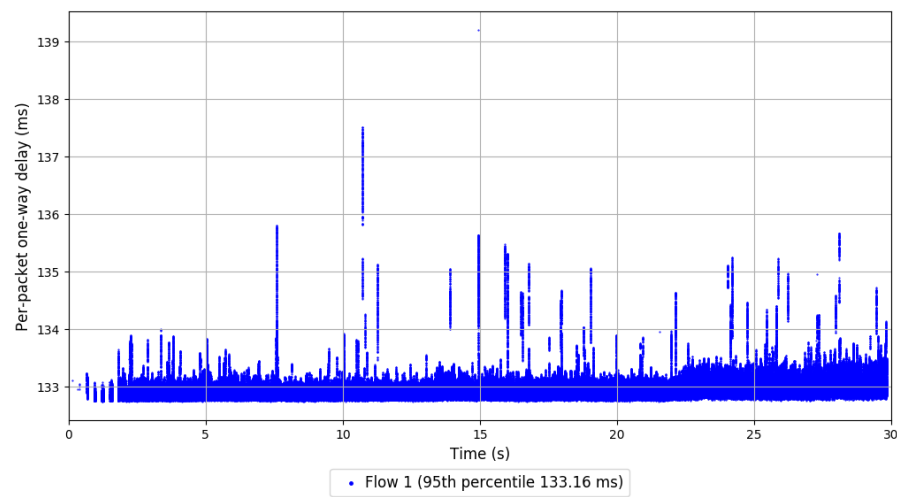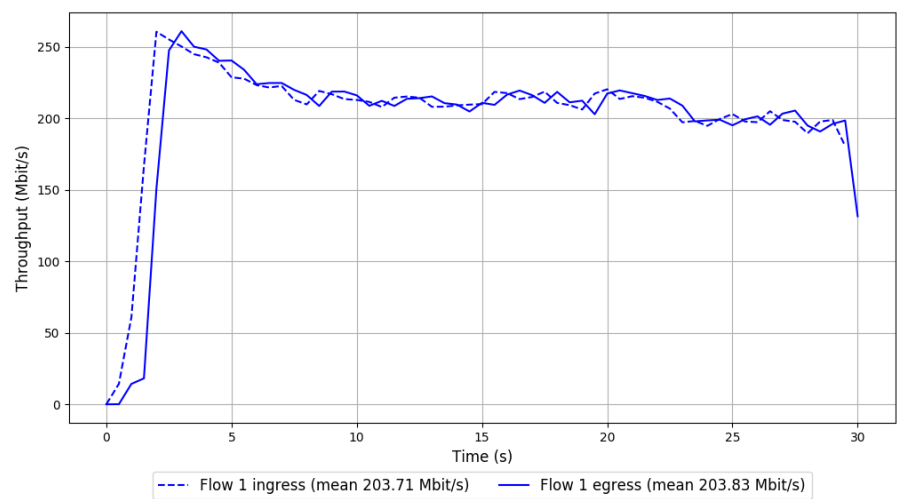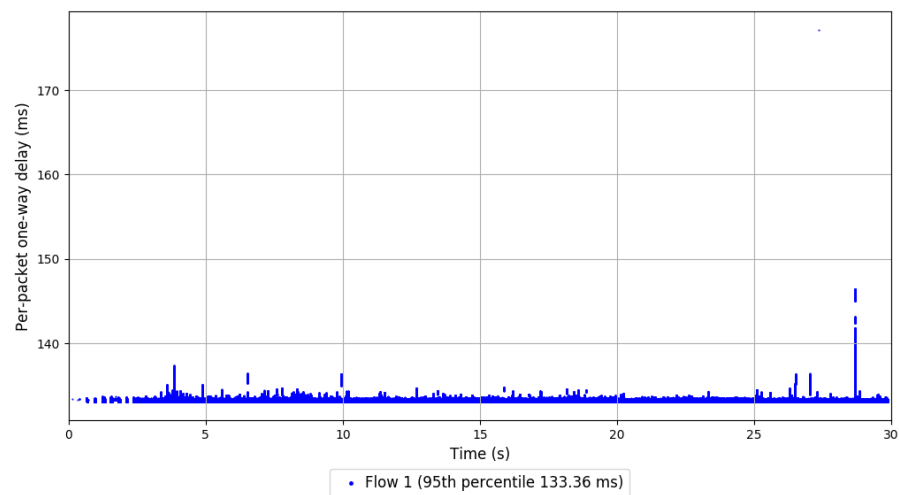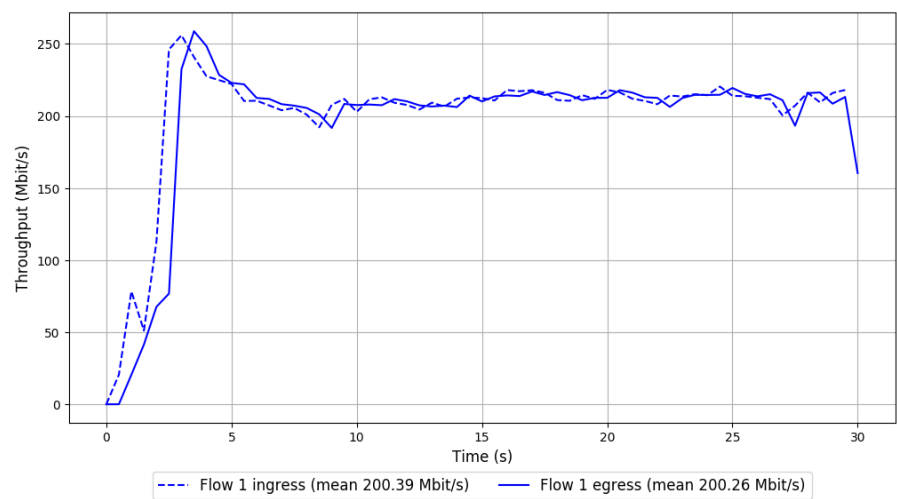
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-11-03 04:06:15
End at: 2018-11-03 04:06:45
Local clock offset: -0.005 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-11-03 06:05:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 200.26 Mbit/s
95th percentile per-packet one-way delay: 133.364 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 200.26 Mbit/s
95th percentile per-packet one-way delay: 133.364 ms
Loss rate: 0.96%
```

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

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

Start at: 2018-11-03 04:32:25
End at: 2018-11-03 04:32:55
Local clock offset: 0.147 ms
Remote clock offset: -0.112 ms


# Below is generated by plot.py at 2018-11-03 06:06:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 204.28 Mbit/s
95th percentile per-packet one-way delay: 133.453 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 204.28 Mbit/s
95th percentile per-packet one-way delay: 133.453 ms
Loss rate: 0.98%
```
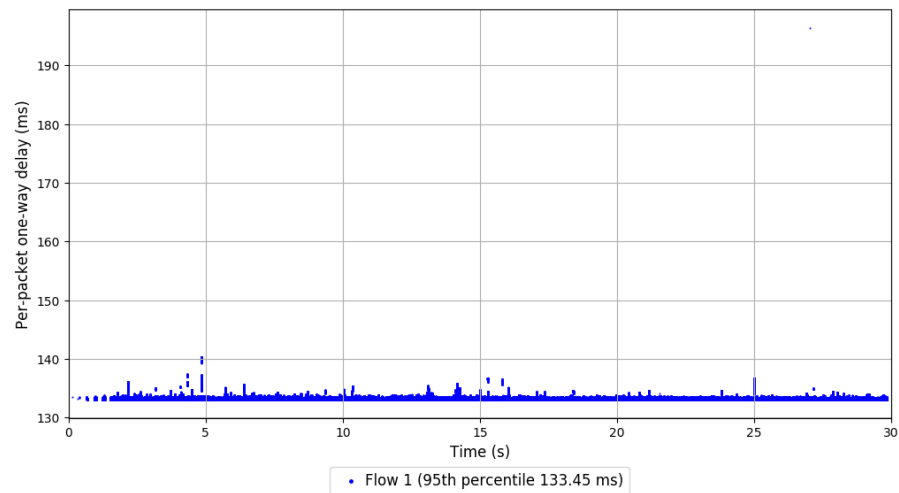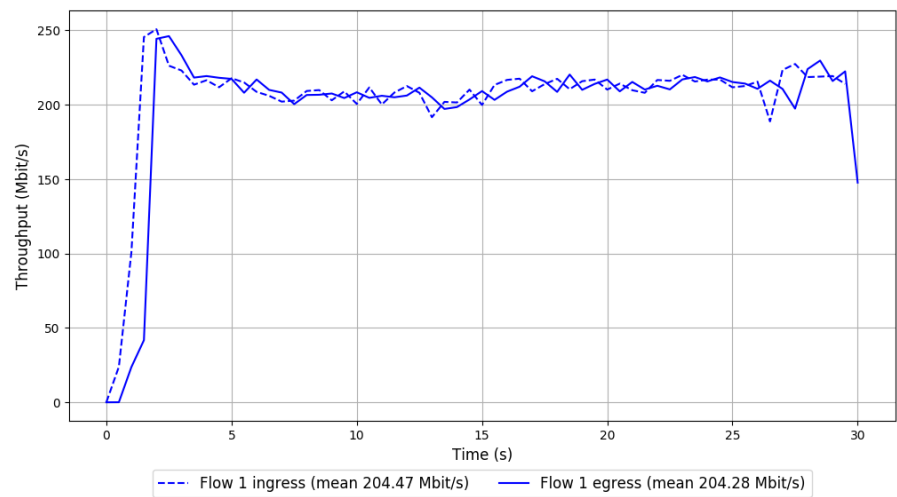
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 204.47 Mbit/s) Flow 1 egress (mean 204.28 Mbit/s)
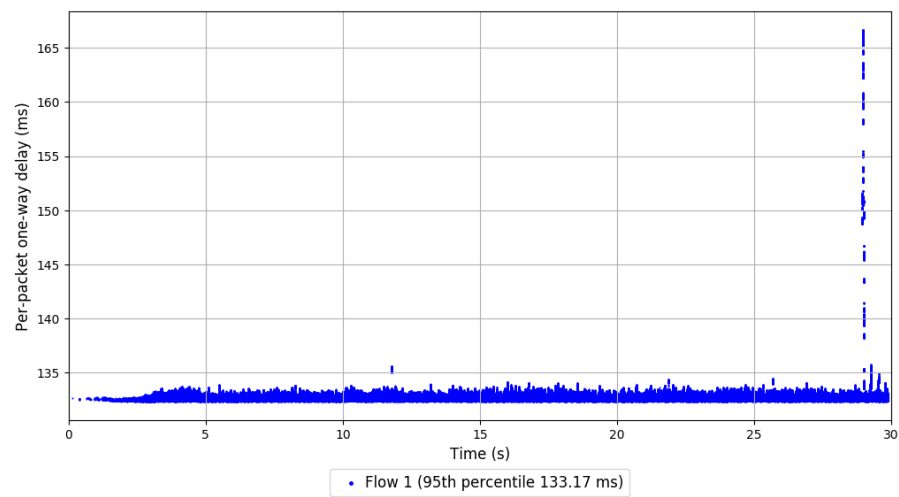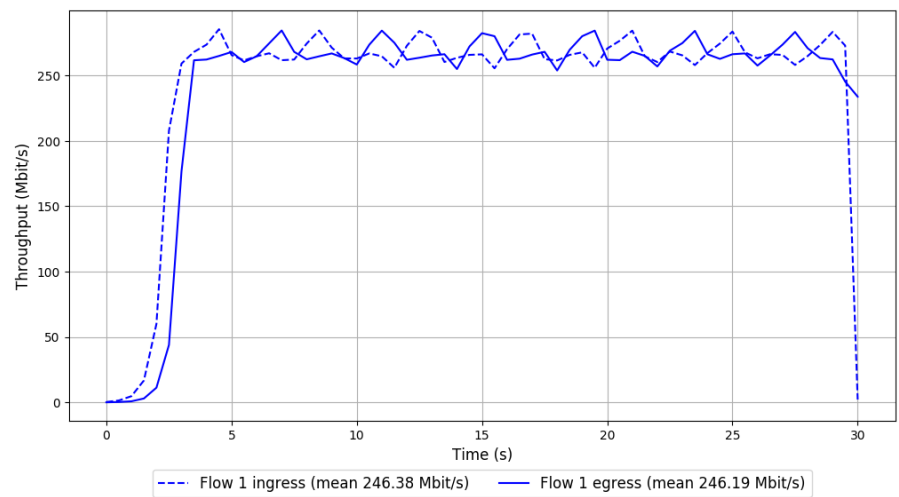

• Flow 1 (95th percentile 133.45 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-11-03 03:00:34
End at: 2018-11-03 03:01:04
Local clock offset: -0.148 ms
Remote clock offset: -0.093 ms


# Below is generated by plot.py at 2018-11-03 06:06:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.19 Mbit/s
95th percentile per-packet one-way delay: 133.171 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 246.19 Mbit/s
95th percentile per-packet one-way delay: 133.171 ms
Loss rate: 0.96%
```
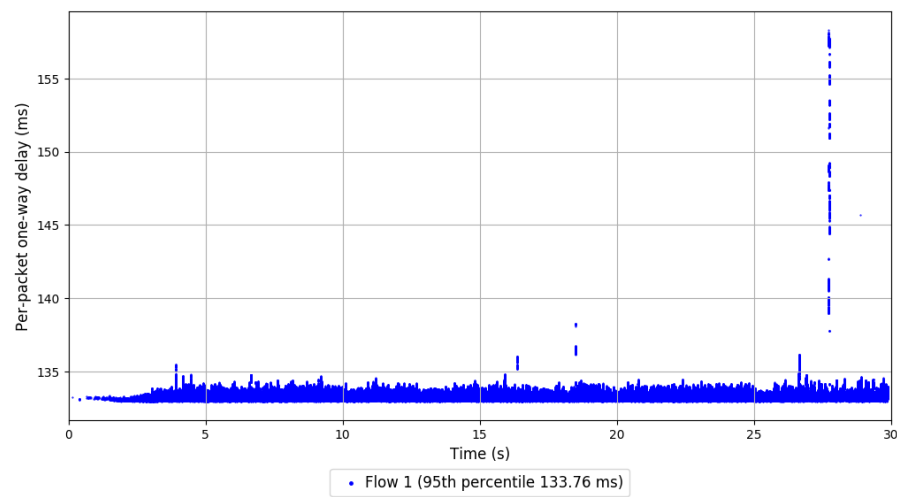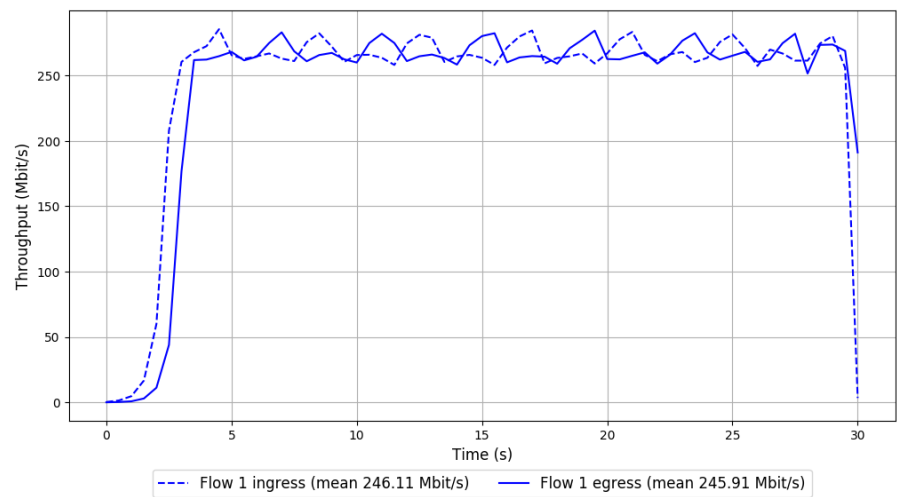
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-11-03 03:28:02
End at: 2018-11-03 03:28:32
Local clock offset: 0.127 ms
Remote clock offset: -0.015 ms


# Below is generated by plot.py at 2018-11-03 06:07:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.91 Mbit/s
95th percentile per-packet one-way delay: 133.756 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.91 Mbit/s
95th percentile per-packet one-way delay: 133.756 ms
Loss rate: 0.97%
```

Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 246.11 Mbit/s)   Flow 1 egress (mean 245.91 Mbit/s)

Flow 1 (95th percentile 133.76 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-11-03 03:55:00
End at: 2018-11-03 03:55:30
Local clock offset: -0.1 ms
Remote clock offset: 0.266 ms


# Below is generated by plot.py at 2018-11-03 06:09:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.29 Mbit/s
95th percentile per-packet one-way delay: 133.341 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.29 Mbit/s
95th percentile per-packet one-way delay: 133.341 ms
Loss rate: 0.97%
```
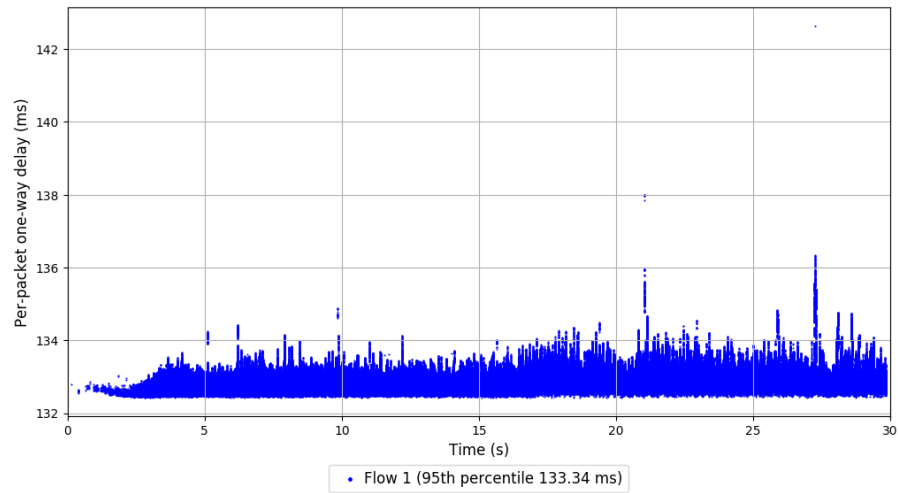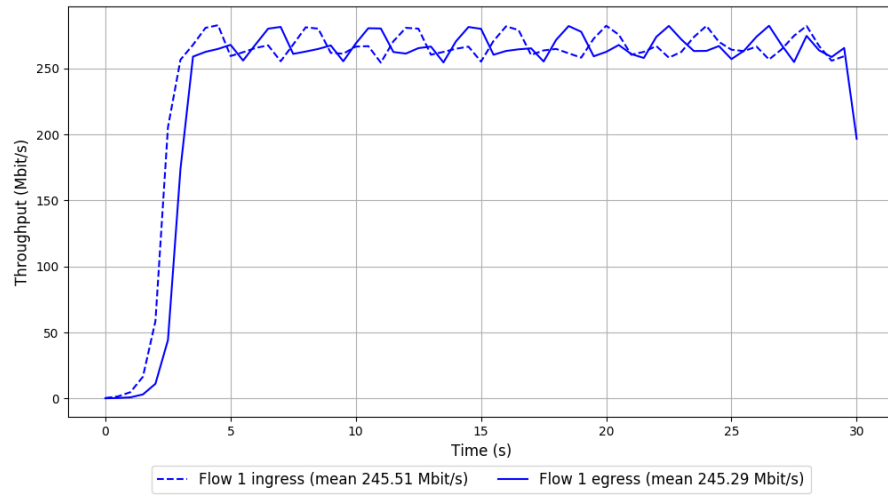
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 245.51 Mbit/s) — — — — Flow 1 egress (mean 245.29 Mbit/s)
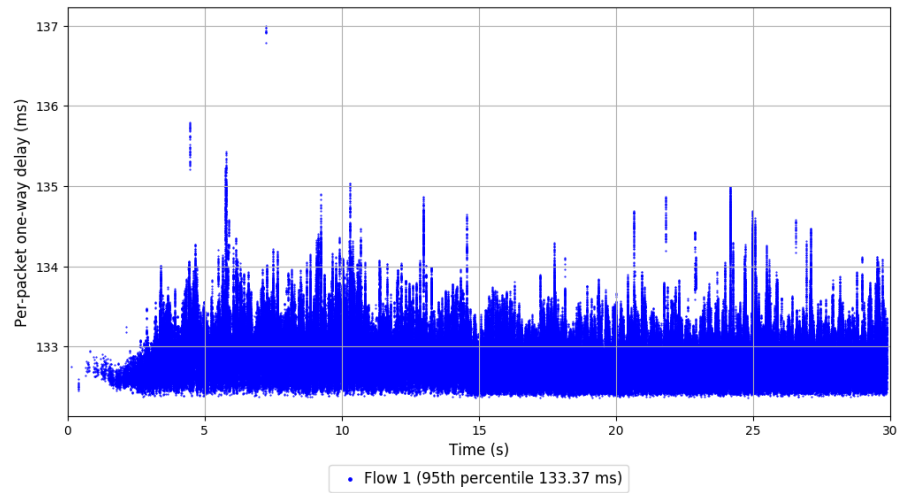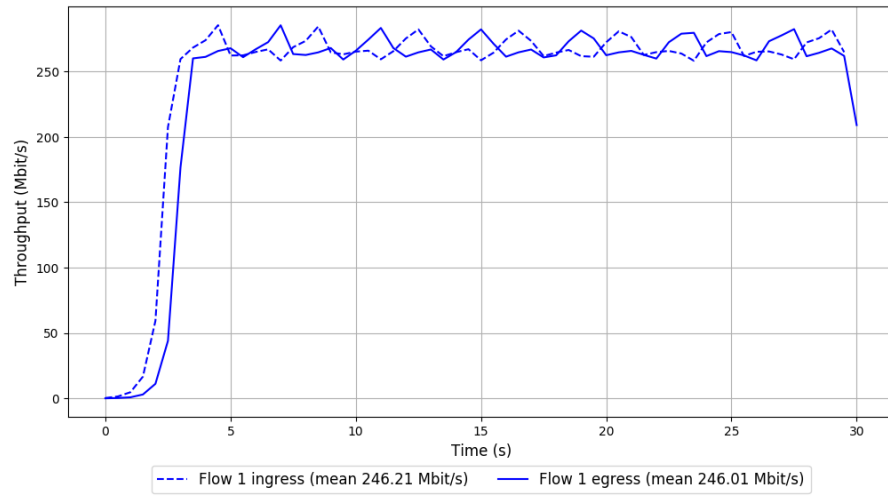

Flow 1 (95th percentile 133.34 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-11-03 04:21:13
End at: 2018-11-03 04:21:43
Local clock offset: -0.032 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2018-11-03 06:09:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.01 Mbit/s
95th percentile per-packet one-way delay: 133.370 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 246.01 Mbit/s
95th percentile per-packet one-way delay: 133.370 ms
Loss rate: 0.96%
```
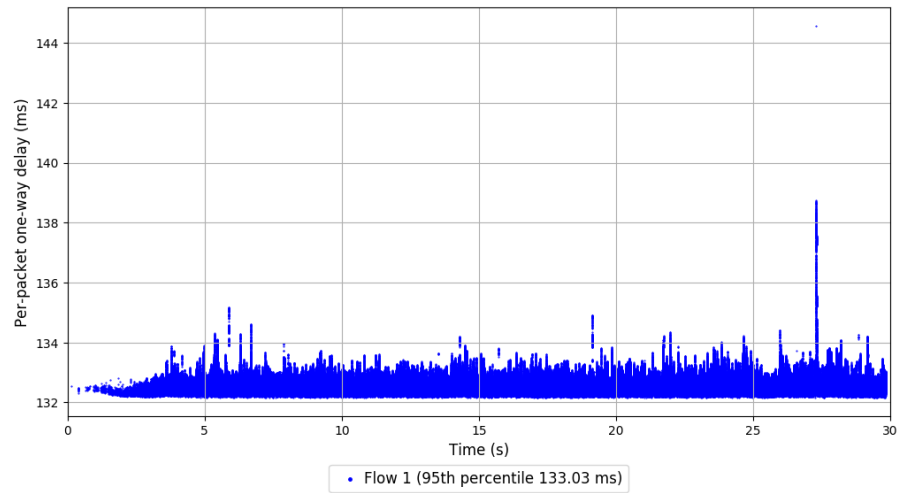
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 246.21 Mbit/s) ----   Flow 1 egress (mean 246.01 Mbit/s) ——

Flow 1 (95th percentile 133.37 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-11-03 04:47:40
End at: 2018-11-03 04:48:10
Local clock offset: -0.241 ms
Remote clock offset: -0.02 ms


# Below is generated by plot.py at 2018-11-03 06:09:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.52 Mbit/s
95th percentile per-packet one-way delay: 133.025 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 246.52 Mbit/s
95th percentile per-packet one-way delay: 133.025 ms
Loss rate: 0.96%
```
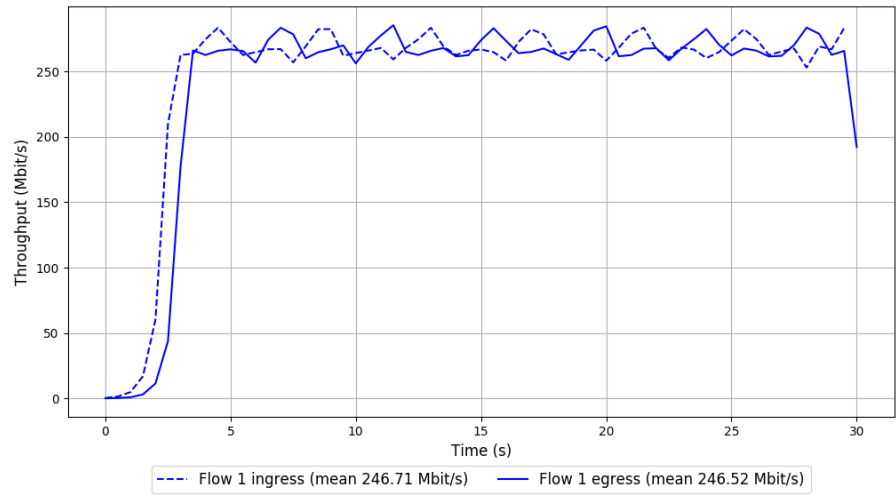
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 246.71 Mbit/s)   Flow 1 egress (mean 246.52 Mbit/s)
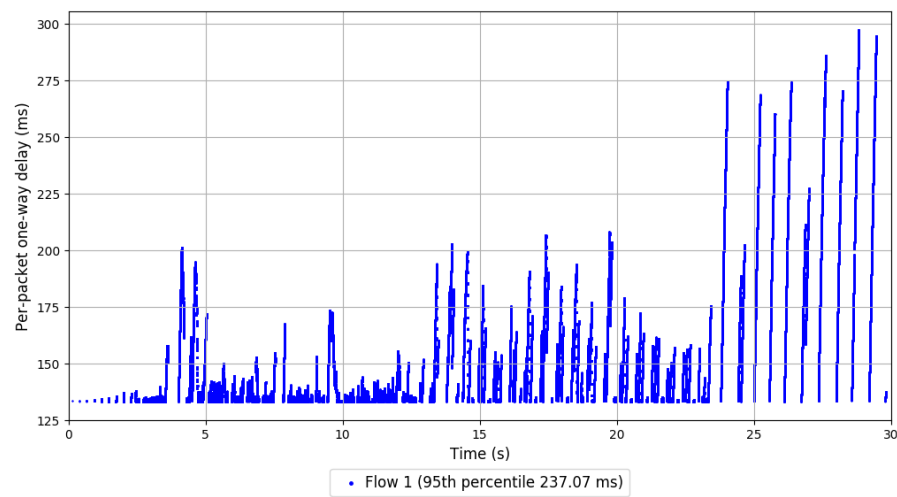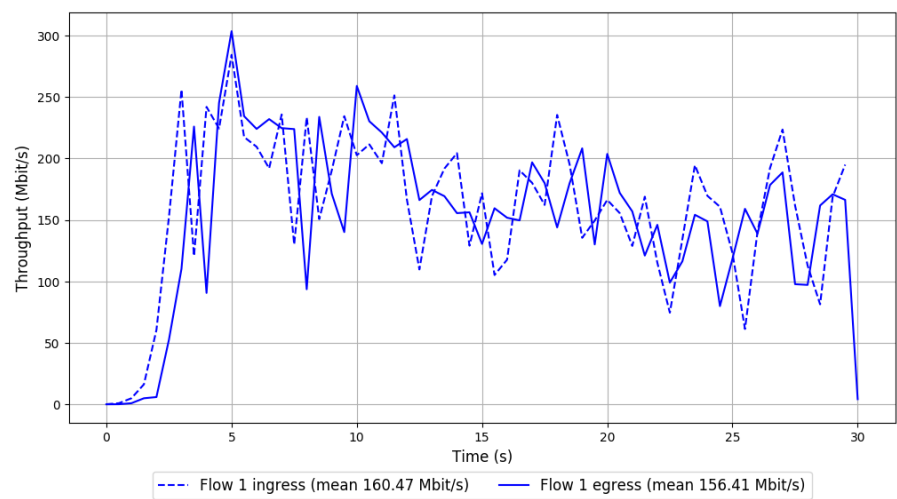

Flow 1 (95th percentile 133.03 ms)

```
Run 1: Statistics of Verus

Start at: 2018-11-03 02:56:10
End at: 2018-11-03 02:56:40
Local clock offset: 0.138 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2018-11-03 06:10:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 156.41 Mbit/s
95th percentile per-packet one-way delay: 237.067 ms
Loss rate: 2.88%
-- Flow 1:
Average throughput: 156.41 Mbit/s
95th percentile per-packet one-way delay: 237.067 ms
Loss rate: 2.88%
```
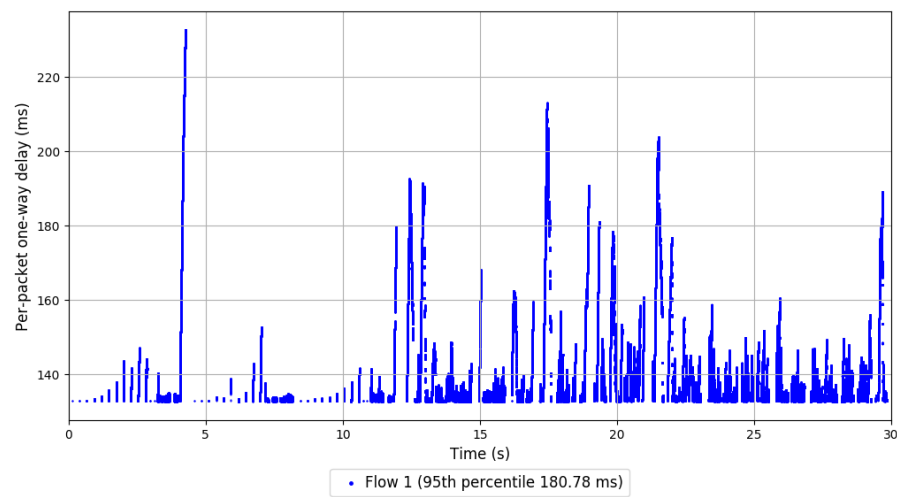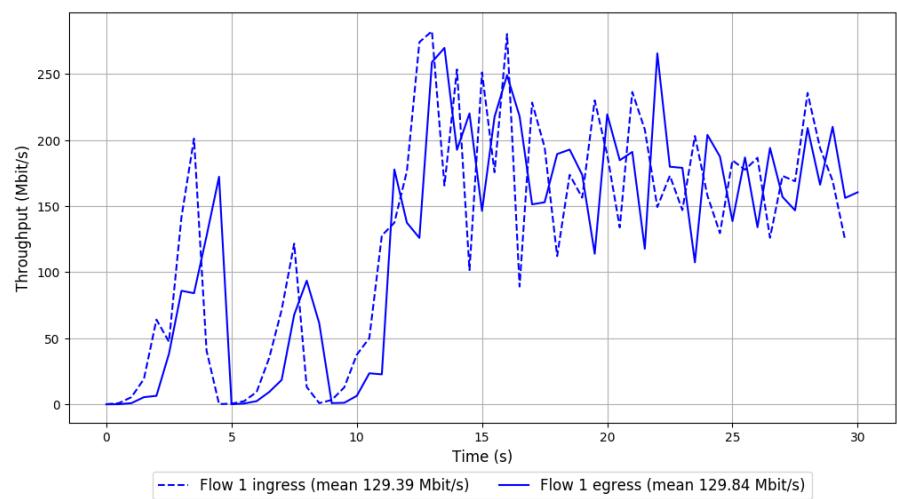
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-11-03 03:23:34
End at: 2018-11-03 03:24:05
Local clock offset: -0.285 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2018-11-03 06:10:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 129.84 Mbit/s
95th percentile per-packet one-way delay: 180.778 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 129.84 Mbit/s
95th percentile per-packet one-way delay: 180.778 ms
Loss rate: 0.56%
```
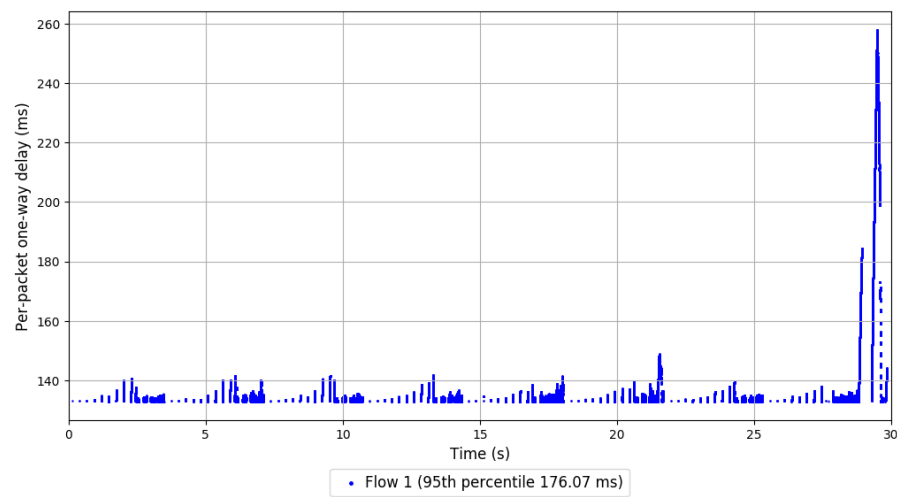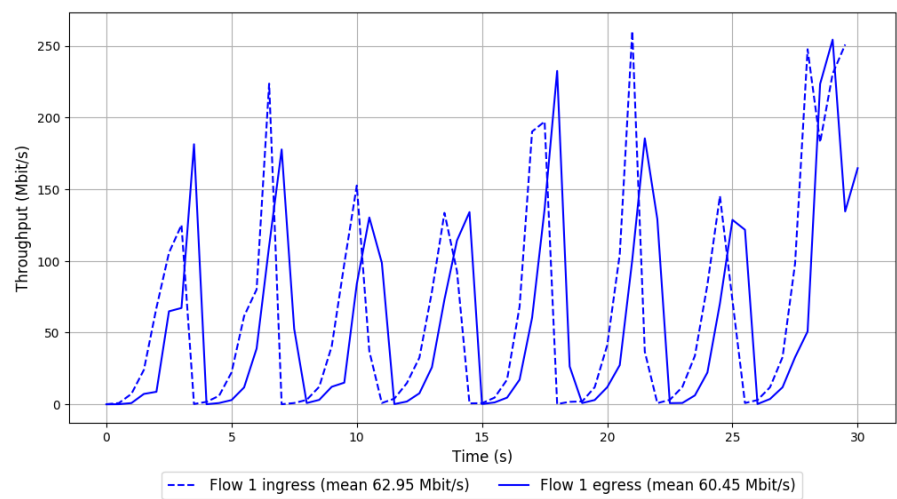
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-11-03 03:50:48
End at: 2018-11-03 03:51:18
Local clock offset: -0.48 ms
Remote clock offset: -0.396 ms


# Below is generated by plot.py at 2018-11-03 06:10:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.45 Mbit/s
95th percentile per-packet one-way delay: 176.066 ms
Loss rate: 4.83%
-- Flow 1:
Average throughput: 60.45 Mbit/s
95th percentile per-packet one-way delay: 176.066 ms
Loss rate: 4.83%
```

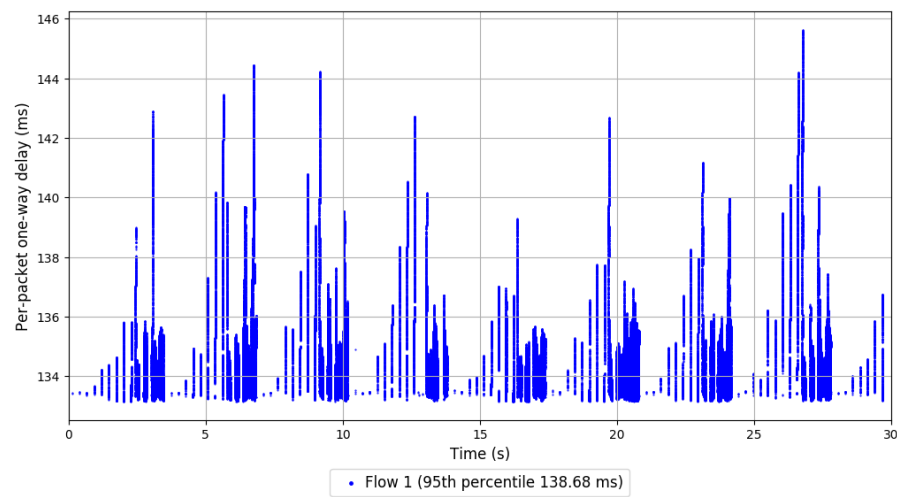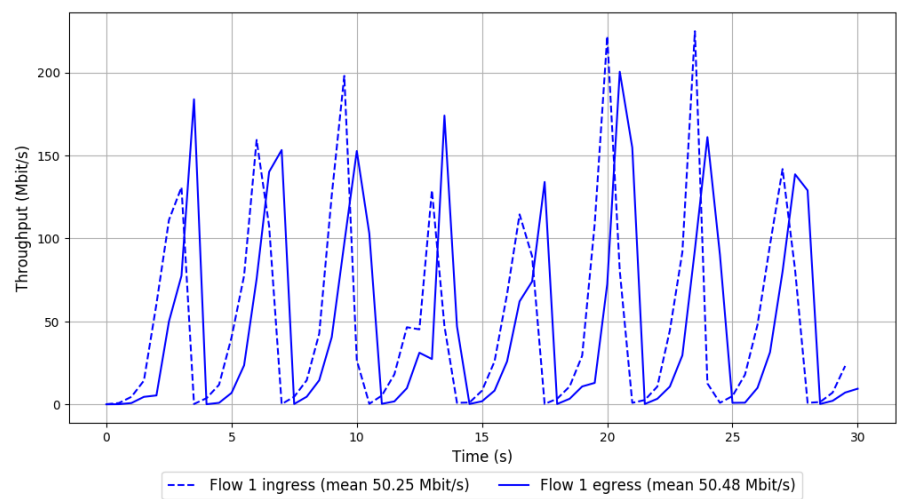## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-11-03 04:17:00
End at: 2018-11-03 04:17:30
Local clock offset: 0.436 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2018-11-03 06:10:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.48 Mbit/s
95th percentile per-packet one-way delay: 138.683 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 50.48 Mbit/s
95th percentile per-packet one-way delay: 138.683 ms
Loss rate: 0.46%
```

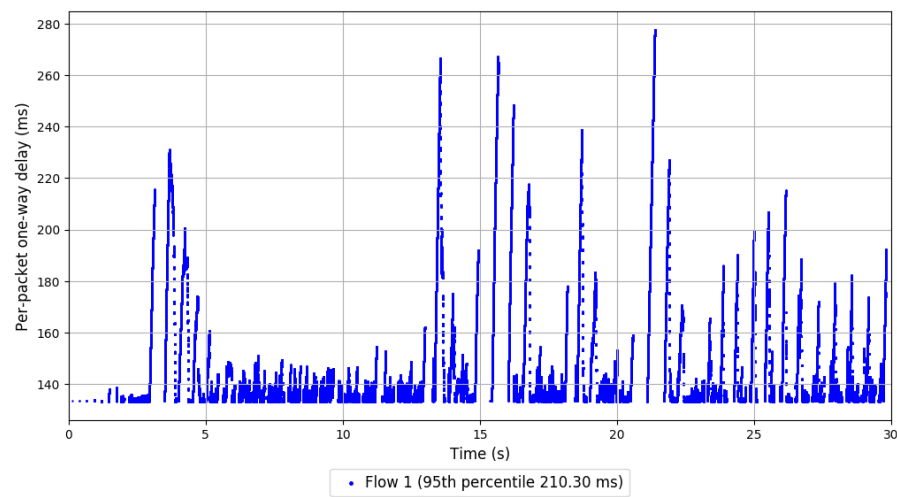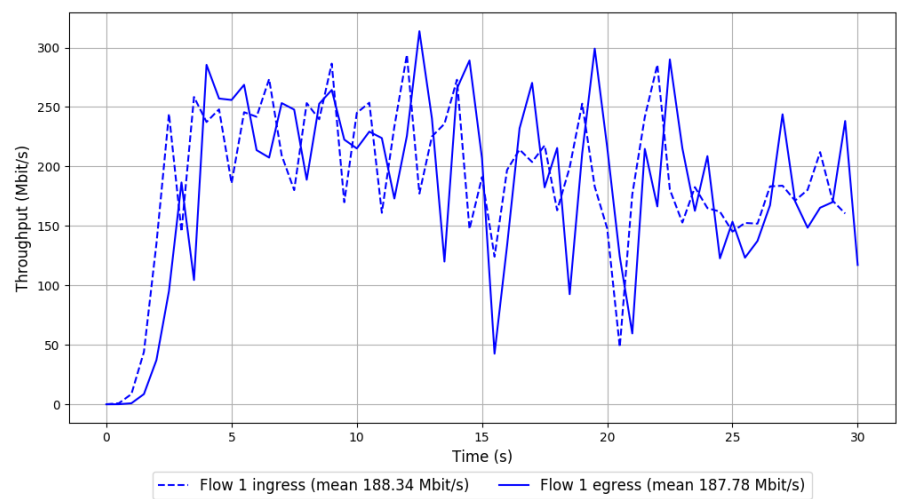Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-11-03 04:43:14
End at: 2018-11-03 04:43:44
Local clock offset: -0.107 ms
Remote clock offset: -0.055 ms


# Below is generated by plot.py at 2018-11-03 06:13:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.78 Mbit/s
95th percentile per-packet one-way delay: 210.299 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 187.78 Mbit/s
95th percentile per-packet one-way delay: 210.299 ms
Loss rate: 0.94%
```

Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-11-03 03:07:00
End at: 2018-11-03 03:07:30
Local clock offset: 0.126 ms
Remote clock offset: -0.426 ms


# Below is generated by plot.py at 2018-11-03 06:14:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 373.67 Mbit/s
95th percentile per-packet one-way delay: 133.931 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 373.67 Mbit/s
95th percentile per-packet one-way delay: 133.931 ms
Loss rate: 1.28%
```
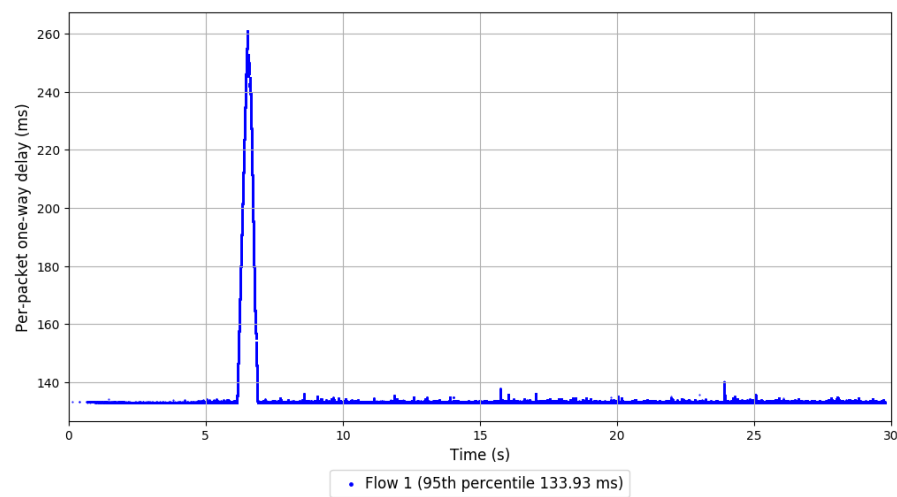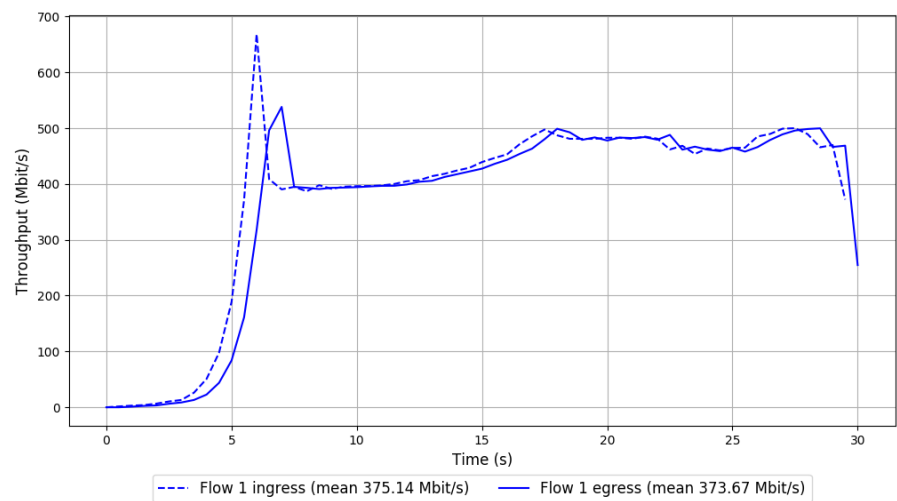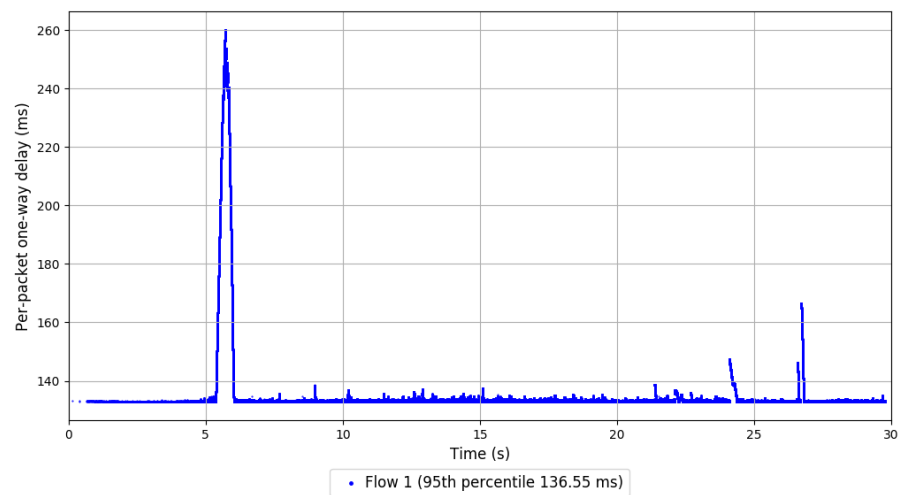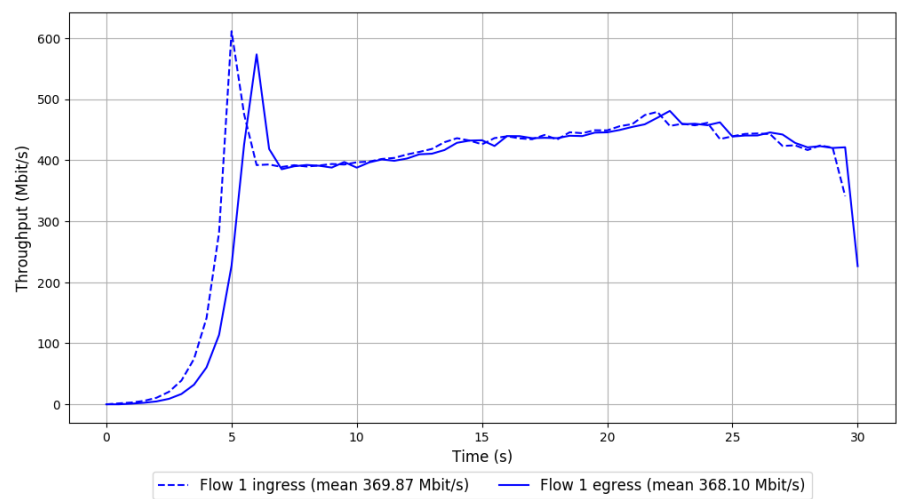
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-11-03 03:34:25
End at: 2018-11-03 03:34:55
Local clock offset: -0.077 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 368.10 Mbit/s
95th percentile per-packet one-way delay: 136.551 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 368.10 Mbit/s
95th percentile per-packet one-way delay: 136.551 ms
Loss rate: 1.36%
```
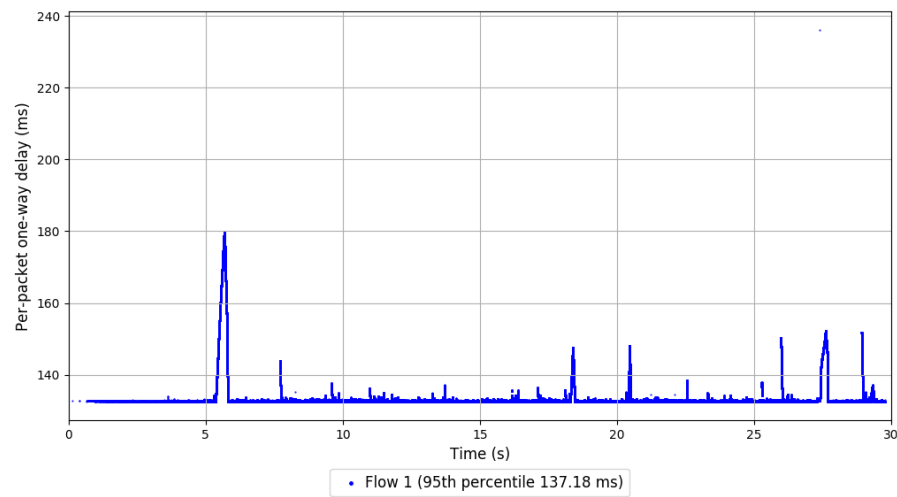
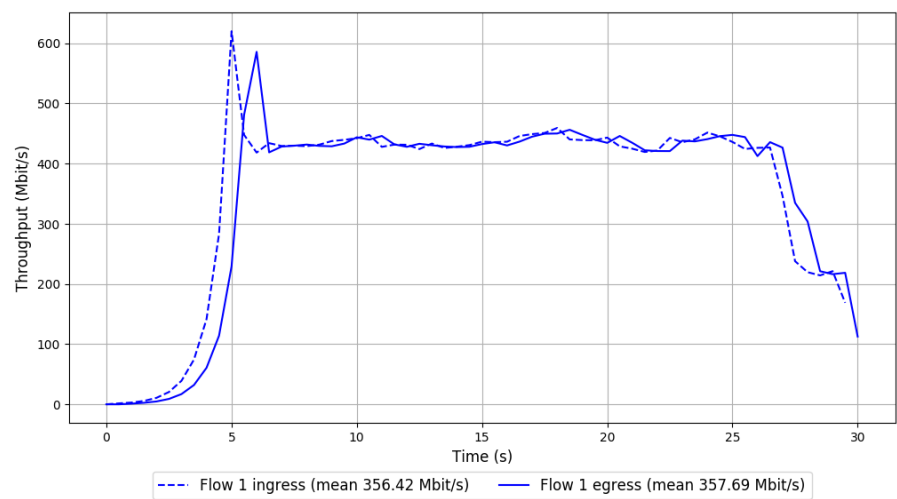Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-11-03 04:01:24
End at: 2018-11-03 04:01:54
Local clock offset: -0.457 ms
Remote clock offset: -0.066 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 357.69 Mbit/s
95th percentile per-packet one-way delay: 137.183 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 357.69 Mbit/s
95th percentile per-packet one-way delay: 137.183 ms
Loss rate: 0.53%
```
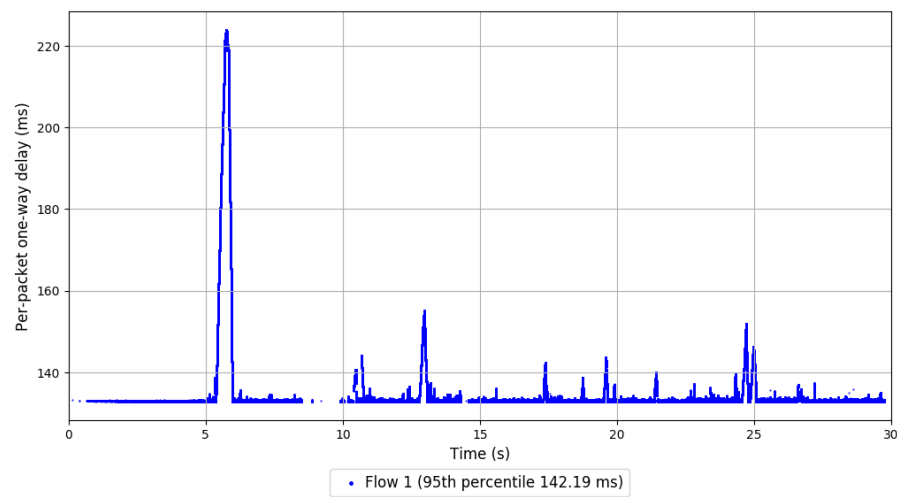
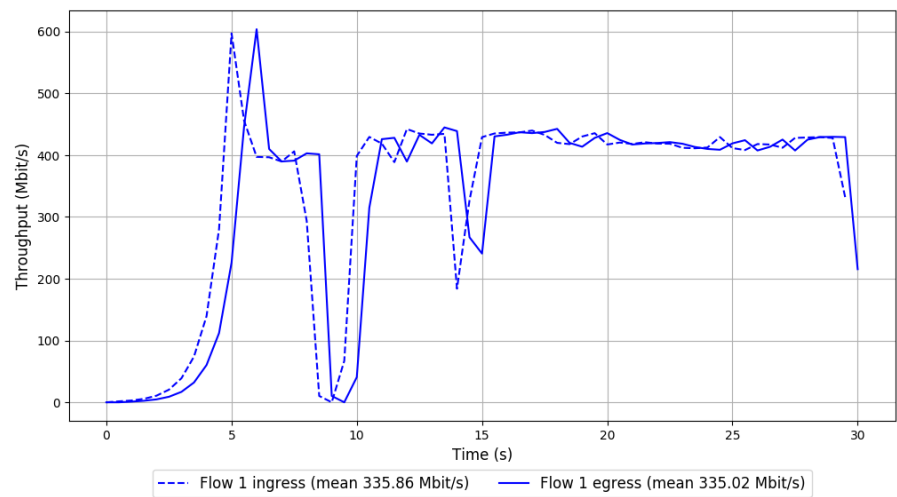Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-11-03 04:27:30
End at: 2018-11-03 04:28:00
Local clock offset: -0.087 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 335.02 Mbit/s
95th percentile per-packet one-way delay: 142.185 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 335.02 Mbit/s
95th percentile per-packet one-way delay: 142.185 ms
Loss rate: 1.14%
```

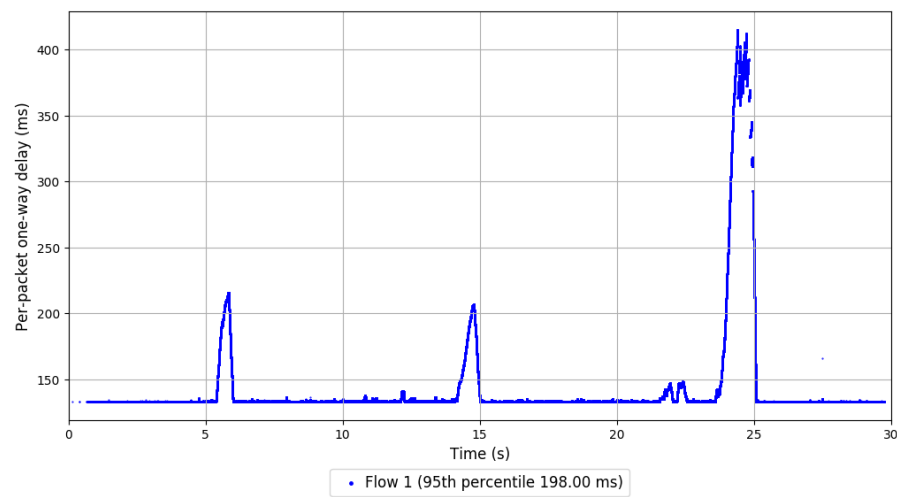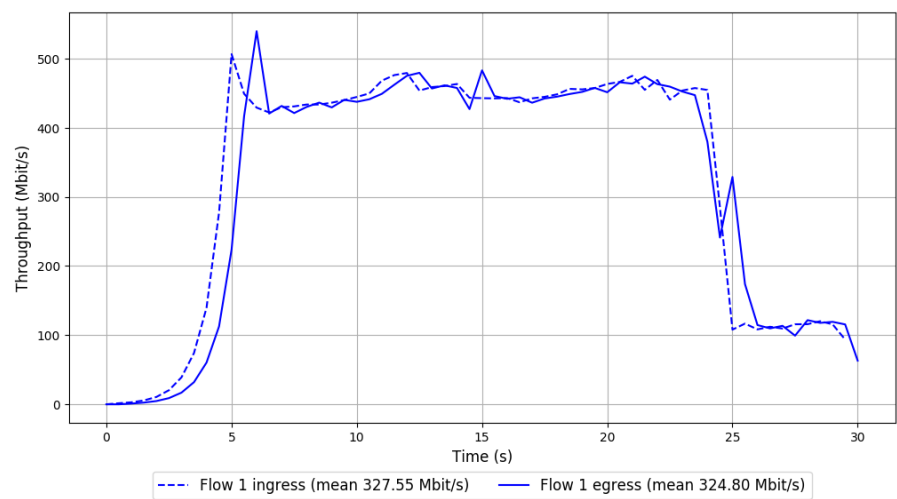## Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-11-03 04:54:19
End at: 2018-11-03 04:54:49
Local clock offset: -0.144 ms
Remote clock offset: -0.409 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.80 Mbit/s
95th percentile per-packet one-way delay: 197.995 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 324.80 Mbit/s
95th percentile per-packet one-way delay: 197.995 ms
Loss rate: 1.72%
```

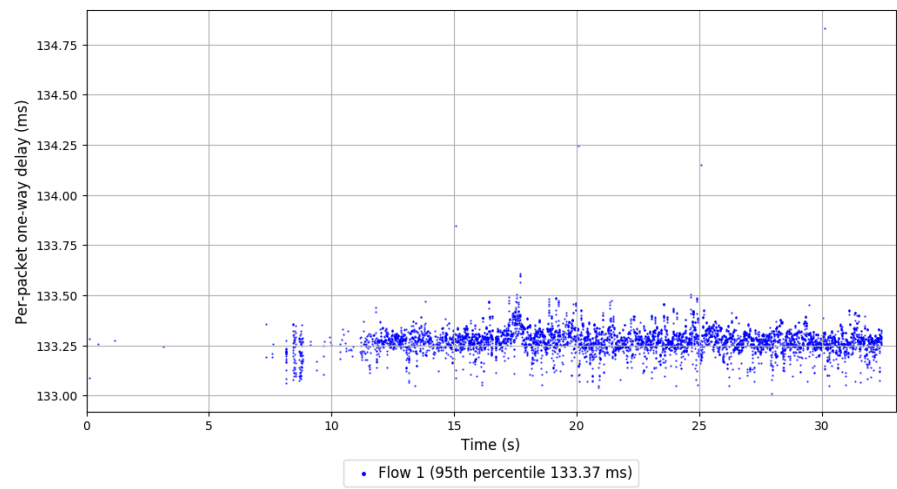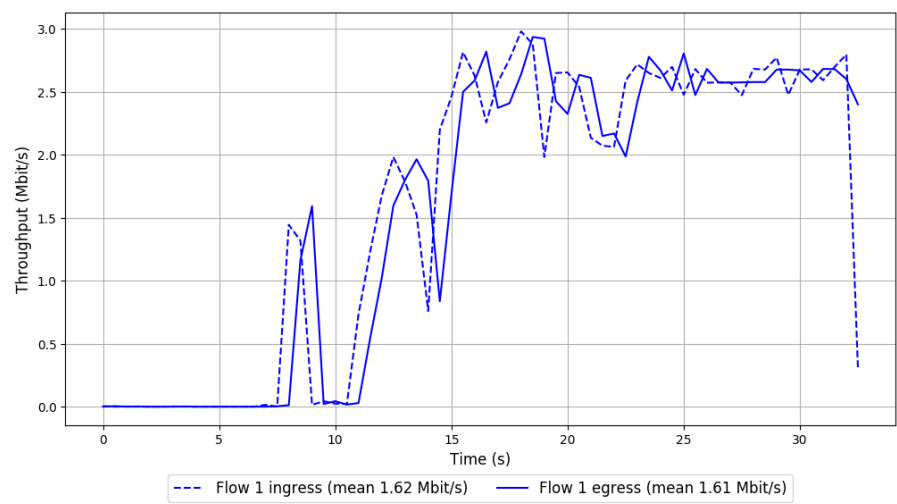## Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-11-03 02:54:59
End at: 2018-11-03 02:55:29
Local clock offset: -0.146 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 133.373 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 133.373 ms
Loss rate: 1.33%
```

Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-11-03 03:22:23
End at: 2018-11-03 03:22:53
Local clock offset: 0.125 ms
Remote clock offset: -0.02 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 133.440 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 133.440 ms
Loss rate: 1.16%
```
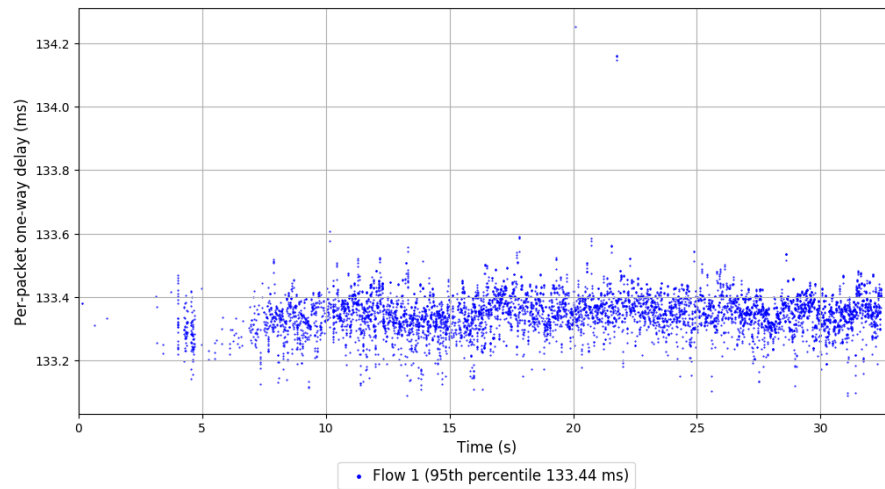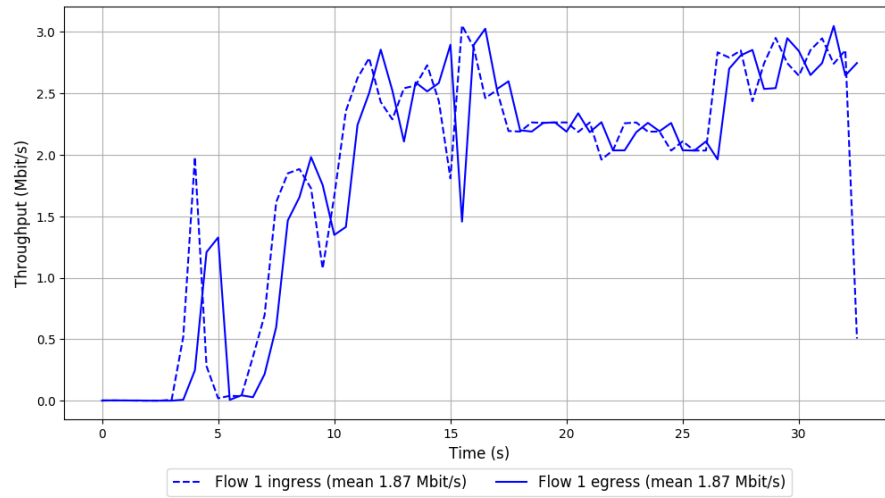
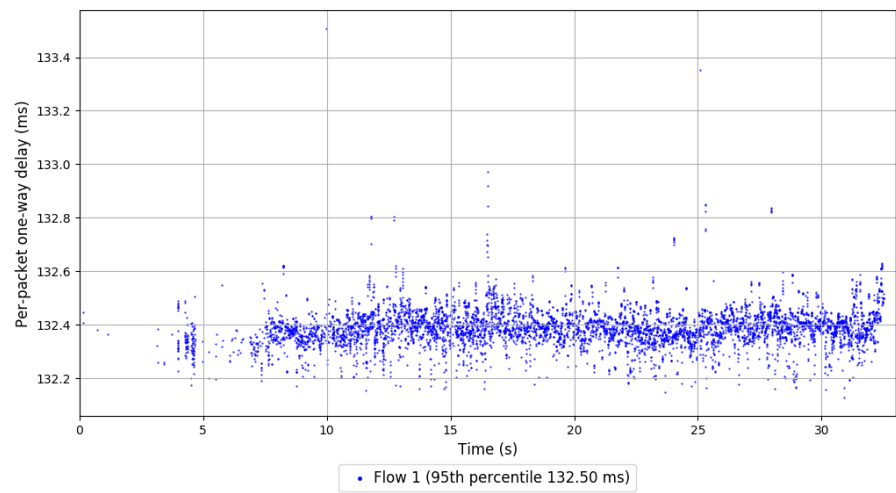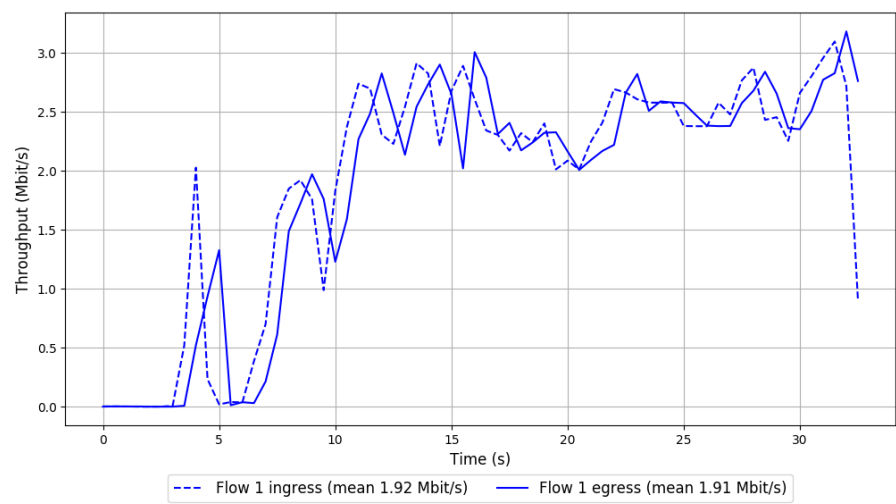Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-11-03 03:49:36
End at: 2018-11-03 03:50:06
Local clock offset: -0.264 ms
Remote clock offset: -0.375 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 132.497 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 132.497 ms
Loss rate: 1.33%
```

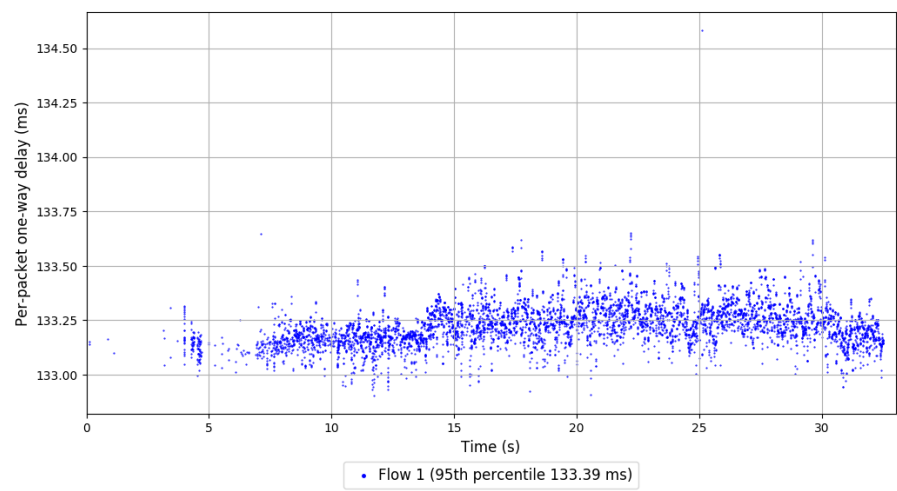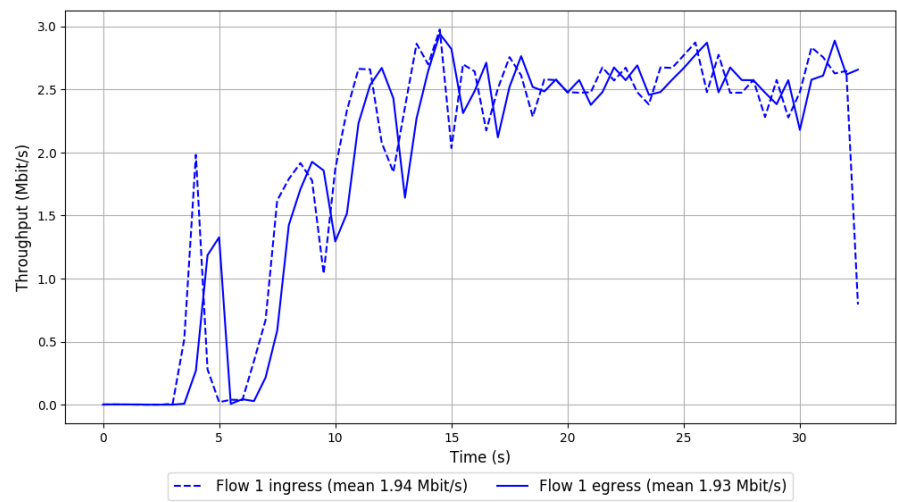Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-11-03 04:15:49
End at: 2018-11-03 04:16:19
Local clock offset: 0.134 ms
Remote clock offset: -0.129 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 133.386 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 133.386 ms
Loss rate: 1.17%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.94 Mbit/s) — — — Flow 1 egress (mean 1.93 Mbit/s)

• Flow 1 (95th percentile 133.39 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-11-03 04:42:03
End at: 2018-11-03 04:42:33
Local clock offset: 0.297 ms
Remote clock offset: -0.422 ms


# Below is generated by plot.py at 2018-11-03 06:14:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 134.271 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 134.271 ms
Loss rate: 1.16%
```

Run 5: Report of WebRTC media — Data Link