Pantheon Report

Generated at 2018-09-07 21:57:20 (UTC).

Data path: Saudi Arabia on `enp2s0` (*remote*) →AWS India 2 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.
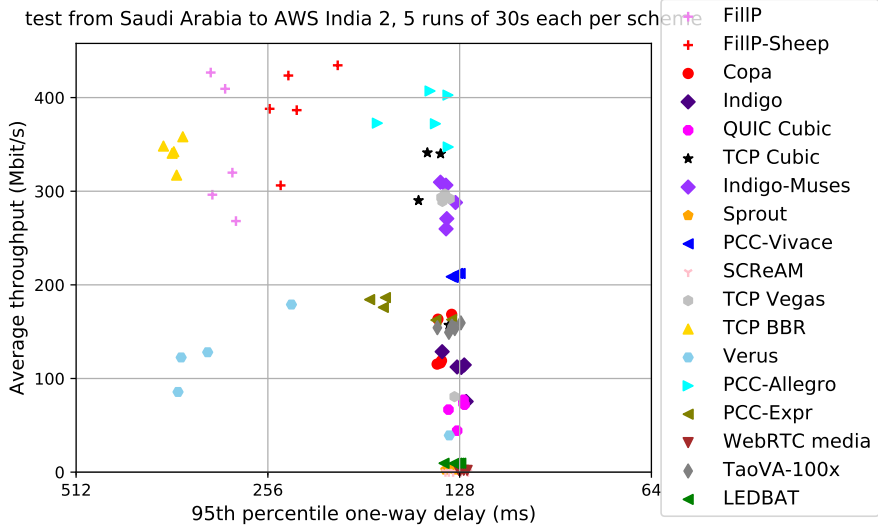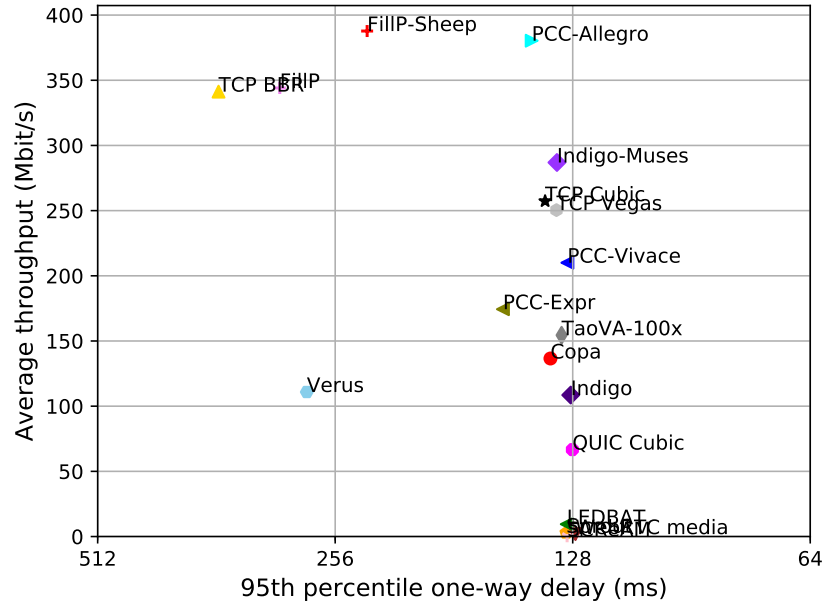
```
System info:
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

```
Git summary:
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
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 Saudi Arabia to AWS India 2, 5 runs of 30s each per scheme
(mean of all runs by scheme)

test from Saudi Arabia to AWS India 2, 5 runs of 30s each per scheme

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	341.28	359.79	2.34
Copa	5	136.57	136.59	0.60
TCP Cubic	5	257.27	138.74	1.00
FillP	5	344.06	300.93	0.95
FillP-Sheep	5	387.76	233.21	1.02
Indigo	5	108.54	128.74	0.63
LEDBAT	5	9.48	130.25	1.30
Indigo-Muses	5	286.92	134.03	0.84
PCC-Allegro	5	380.34	144.28	0.78
PCC-Expr	5	174.38	156.92	0.75
QUIC Cubic	5	66.67	128.12	0.82
SCReAM	5	0.22	130.11	0.64
Sprout	5	2.89	130.47	0.85
TaoVA-100x	5	154.43	132.23	0.69
TCP Vegas	5	250.40	134.22	0.60
Verus	5	110.87	278.12	0.16
PCC-Vivace	5	210.05	130.01	0.76
WebRTC media	5	1.87	126.98	0.71

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-07 19:24:42
End at: 2018-09-07 19:25:12
Local clock offset: 1.733 ms
Remote clock offset: -37.32 ms


# Below is generated by plot.py at 2018-09-07 21:33:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 348.24 Mbit/s
95th percentile per-packet one-way delay: 373.373 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 348.24 Mbit/s
95th percentile per-packet one-way delay: 373.373 ms
Loss rate: 1.78%
```
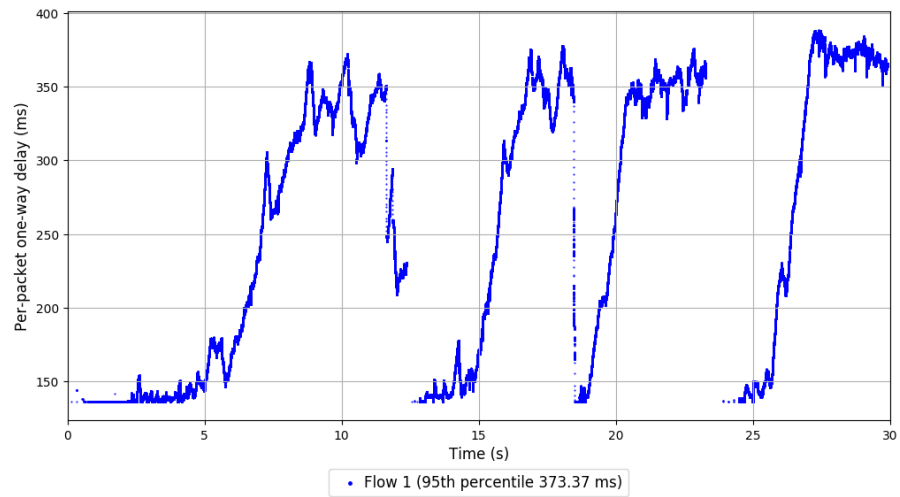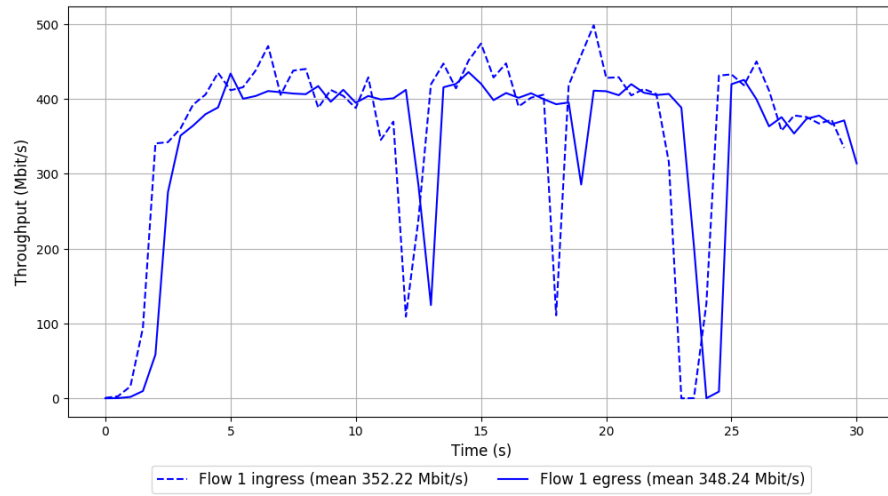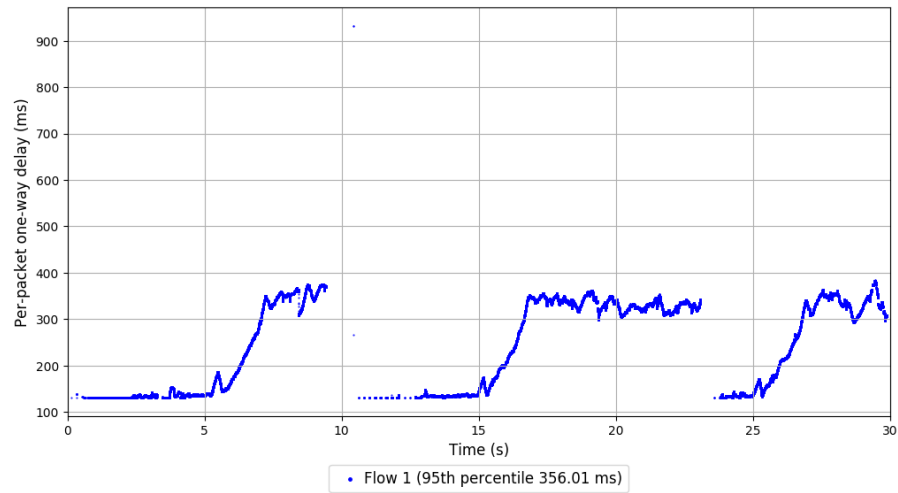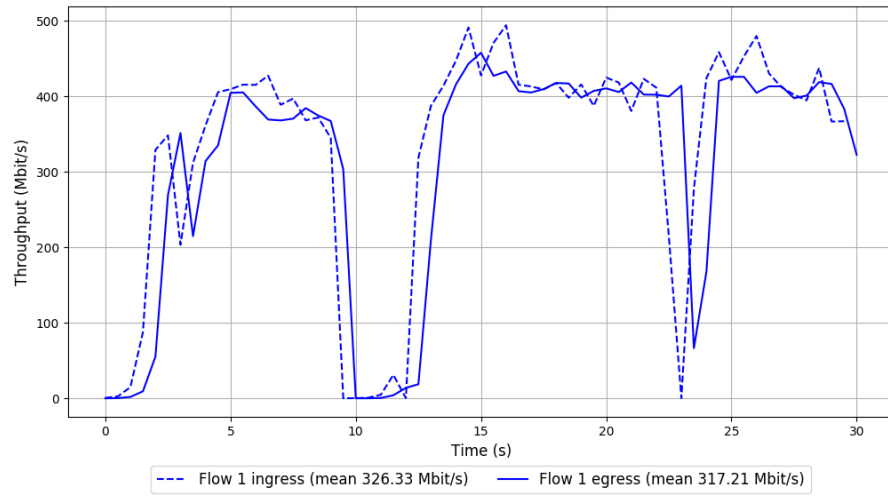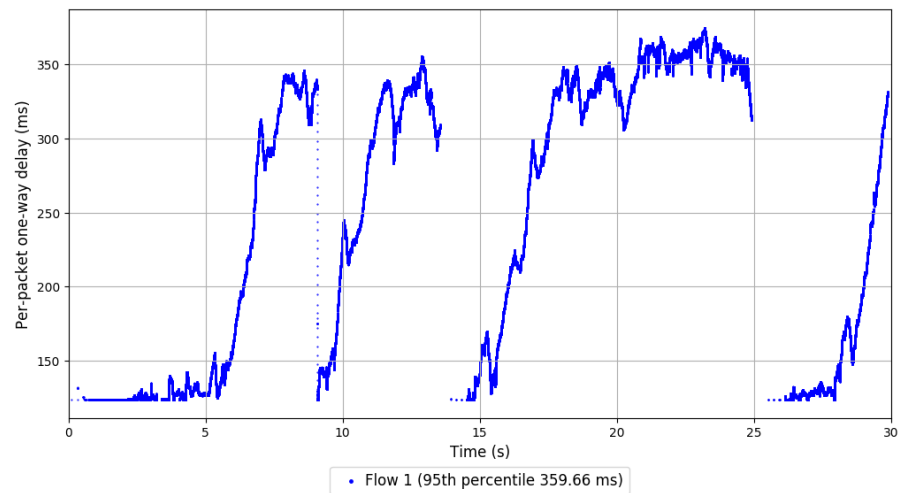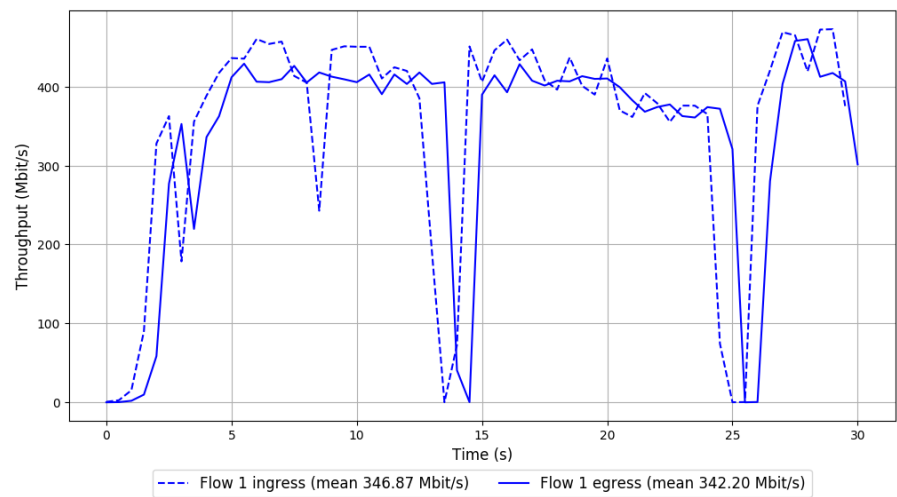
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 352.22 Mbit/s) Flow 1 egress (mean 348.24 Mbit/s)

Flow 1 (95th percentile 373.37 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-09-07 19:48:44
End at: 2018-09-07 19:49:14
Local clock offset: 1.368 ms
Remote clock offset: -30.482 ms

# Below is generated by plot.py at 2018-09-07 21:33:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 317.21 Mbit/s
95th percentile per-packet one-way delay: 356.013 ms
Loss rate: 3.43%
-- Flow 1:
Average throughput: 317.21 Mbit/s
95th percentile per-packet one-way delay: 356.013 ms
Loss rate: 3.43%
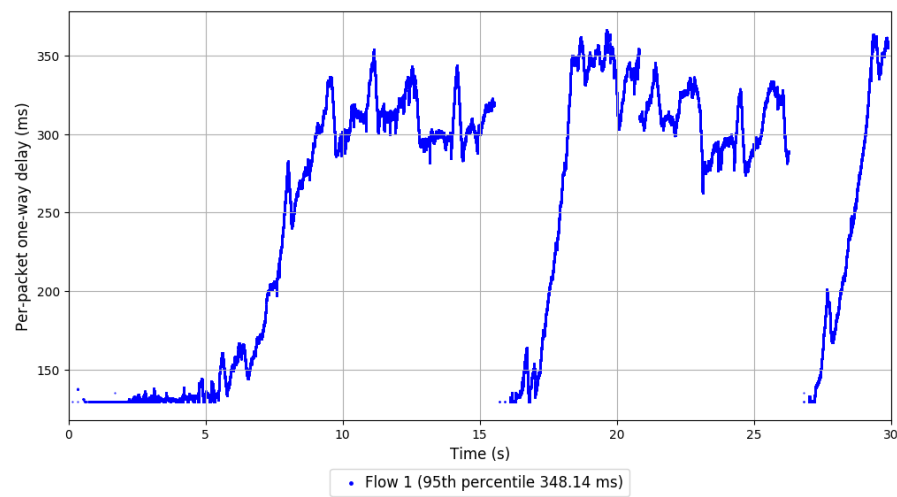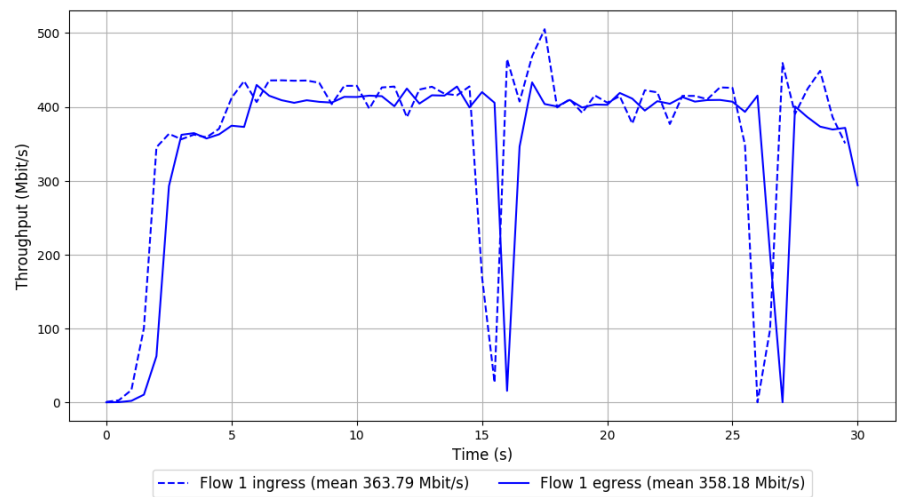```
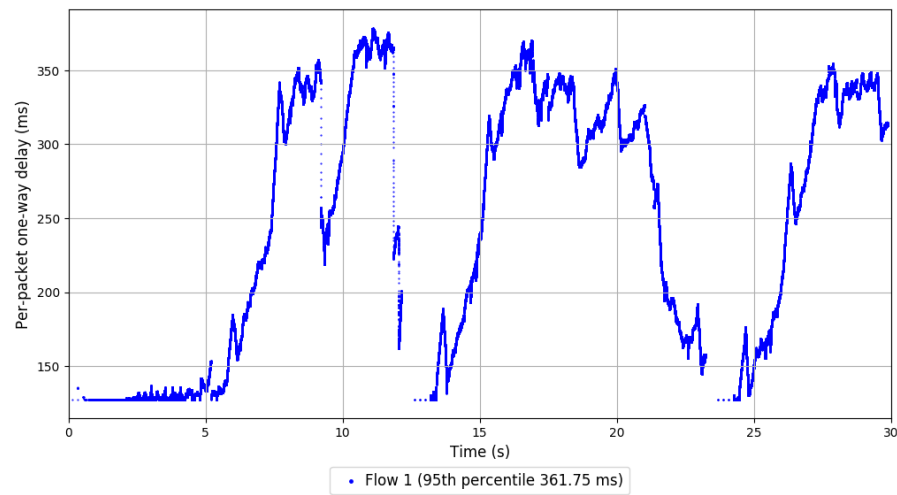
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-09-07 20:18:15
End at: 2018-09-07 20:18:45
Local clock offset: -3.5 ms
Remote clock offset: -29.175 ms

Below is generated by plot.py at 2018-09-07 21:33:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 342.20 Mbit/s
95th percentile per-packet one-way delay: 359.659 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 342.20 Mbit/s
95th percentile per-packet one-way delay: 359.659 ms
Loss rate: 1.99%
```
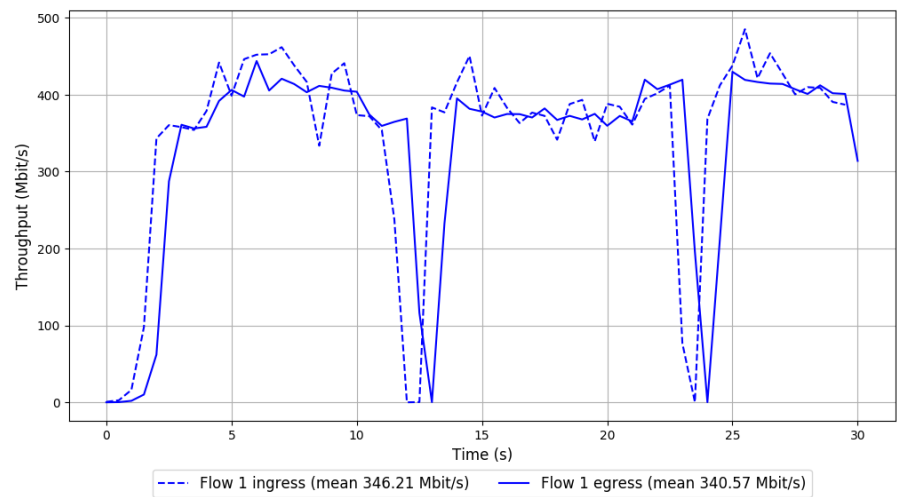
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-09-07 20:42:01
End at: 2018-09-07 20:42:32
Local clock offset: -2.427 ms
Remote clock offset: -34.462 ms

Below is generated by plot.py at 2018-09-07 21:33:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 358.18 Mbit/s
95th percentile per-packet one-way delay: 348.139 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 358.18 Mbit/s
95th percentile per-packet one-way delay: 348.139 ms
Loss rate: 2.19%
```
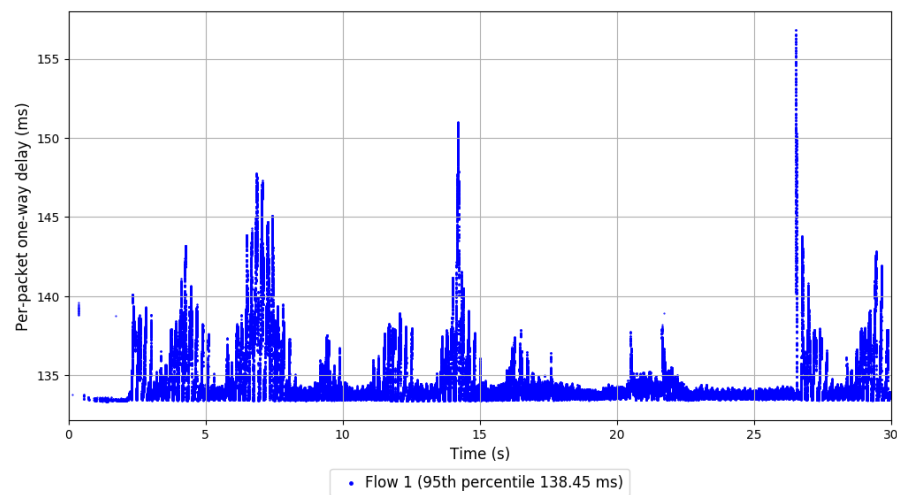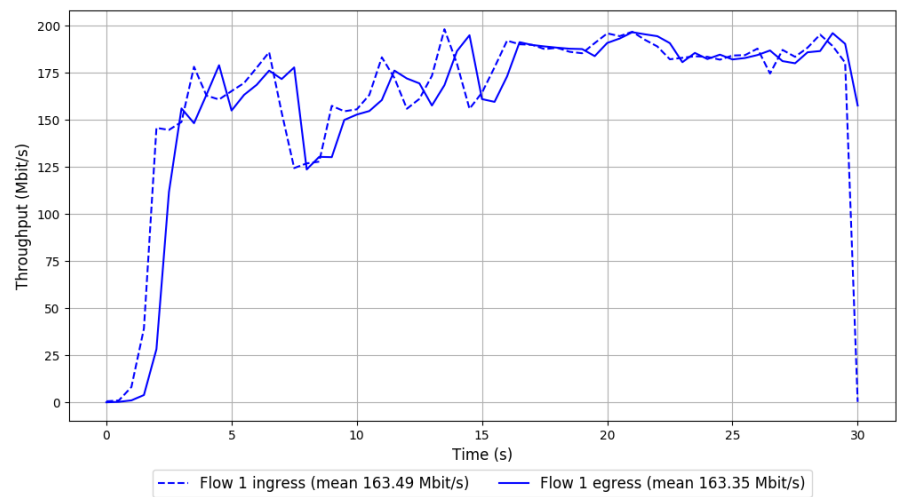
Run 4: Report of TCP BBR — Data Link



Flow 1 ingress (mean 363.79 Mbit/s) ----    Flow 1 egress (mean 358.18 Mbit/s) ——



Flow 1 (95th percentile 348.14 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-09-07 21:05:44
End at: 2018-09-07 21:06:14
Local clock offset: -2.593 ms
Remote clock offset: -31.397 ms

Below is generated by plot.py at 2018-09-07 21:33:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 340.57 Mbit/s
95th percentile per-packet one-way delay: 361.746 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 340.57 Mbit/s
95th percentile per-packet one-way delay: 361.746 ms
Loss rate: 2.29%
```
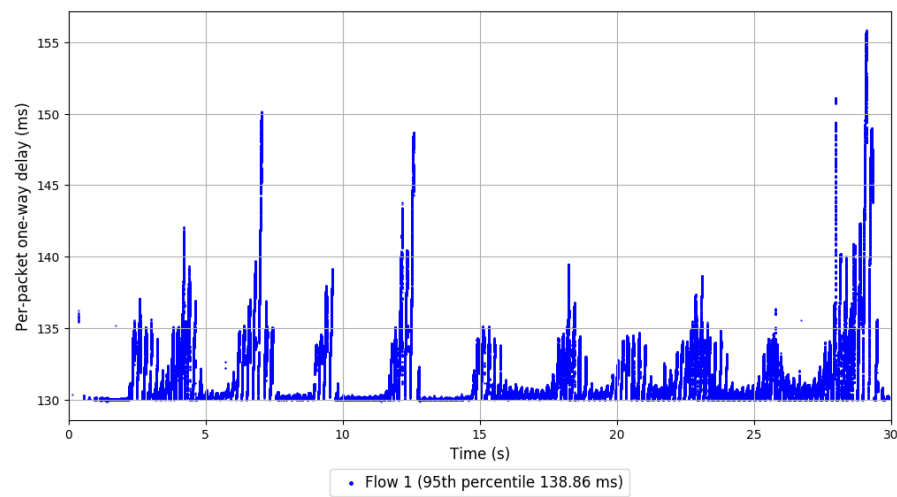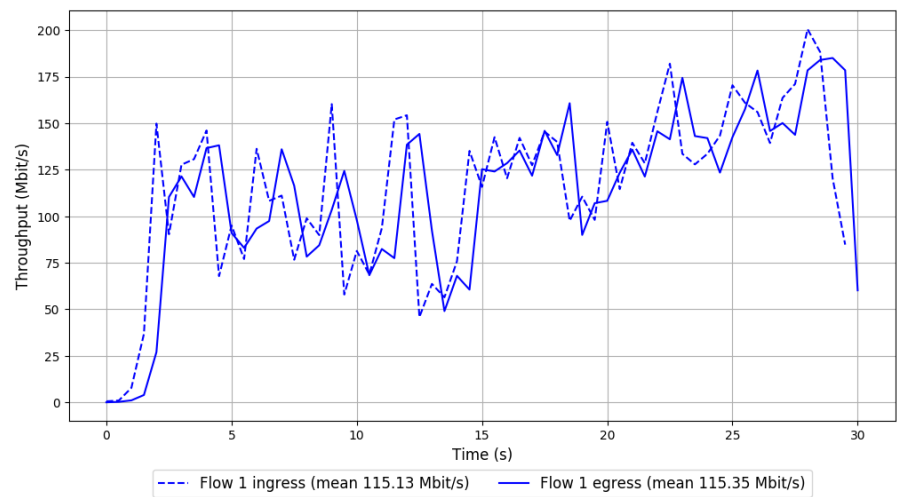
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-09-07 19:33:53
End at: 2018-09-07 19:34:23
Local clock offset: 1.832 ms
Remote clock offset: -35.723 ms

Below is generated by plot.py at 2018-09-07 21:33:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 163.35 Mbit/s
95th percentile per-packet one-way delay: 138.454 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 163.35 Mbit/s
95th percentile per-packet one-way delay: 138.454 ms
Loss rate: 0.73%
```
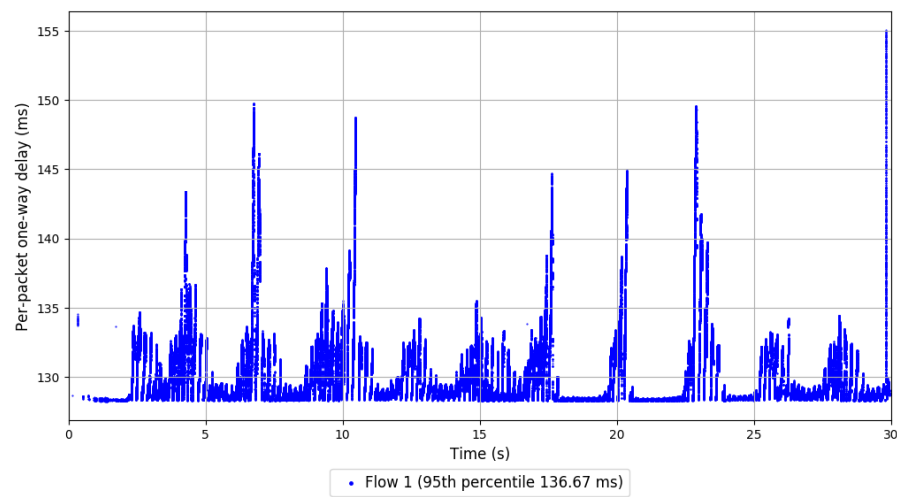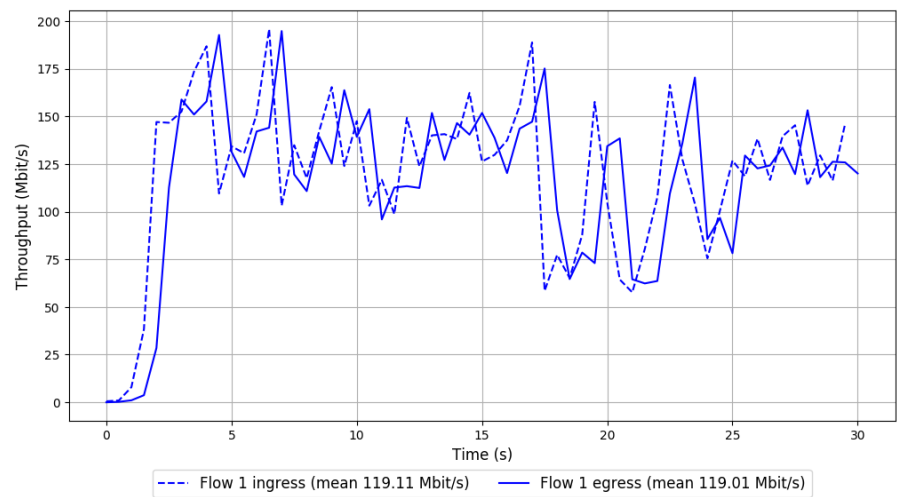
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-09-07 19:57:57
End at: 2018-09-07 19:58:27
Local clock offset: -3.681 ms
Remote clock offset: -34.489 ms

Below is generated by plot.py at 2018-09-07 21:33:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 115.35 Mbit/s
95th percentile per-packet one-way delay: 138.860 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 115.35 Mbit/s
95th percentile per-packet one-way delay: 138.860 ms
Loss rate: 0.45%
```
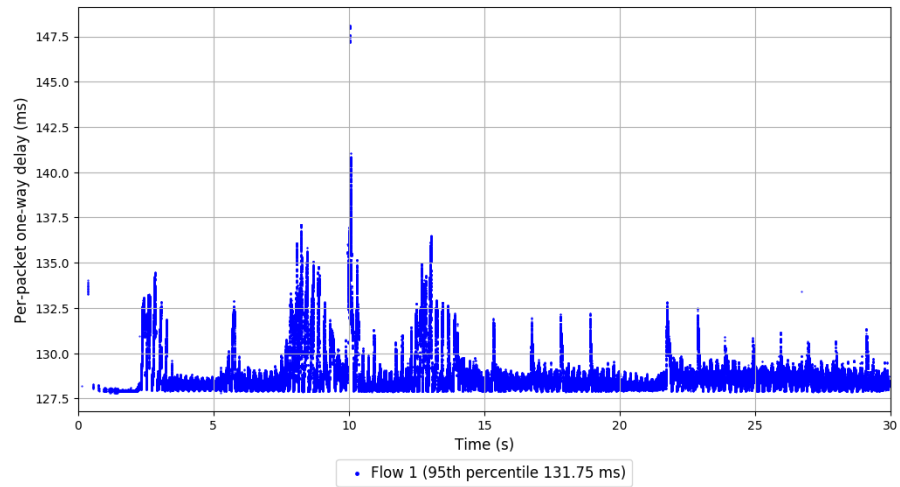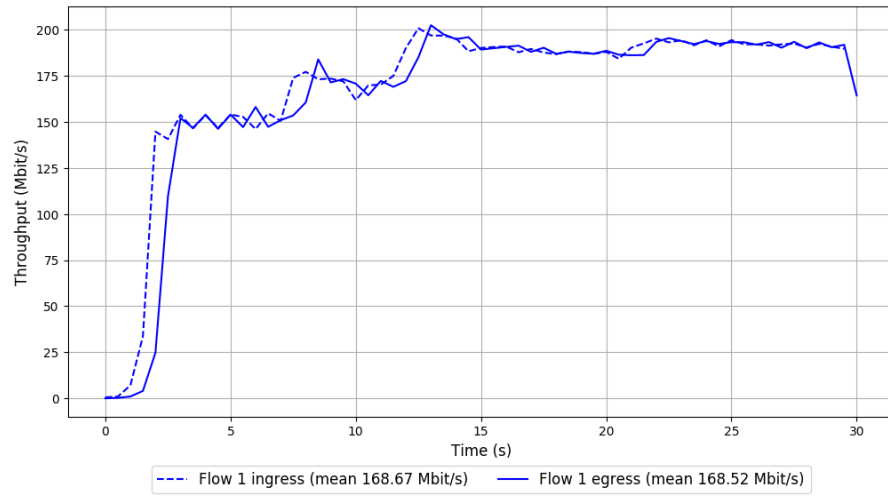
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-09-07 20:27:29
End at: 2018-09-07 20:27:59
Local clock offset: -3.518 ms
Remote clock offset: -34.142 ms

Below is generated by plot.py at 2018-09-07 21:33:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 119.01 Mbit/s
95th percentile per-packet one-way delay: 136.674 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 119.01 Mbit/s
95th percentile per-packet one-way delay: 136.674 ms
Loss rate: 0.73%
```
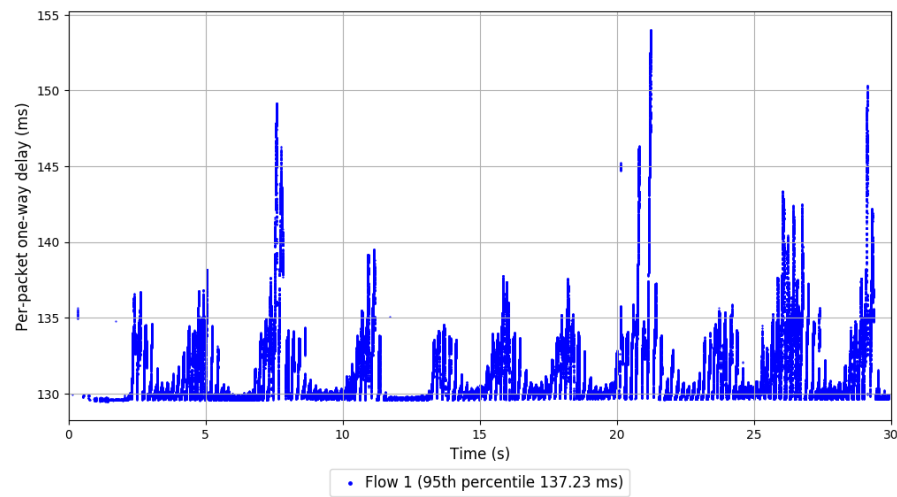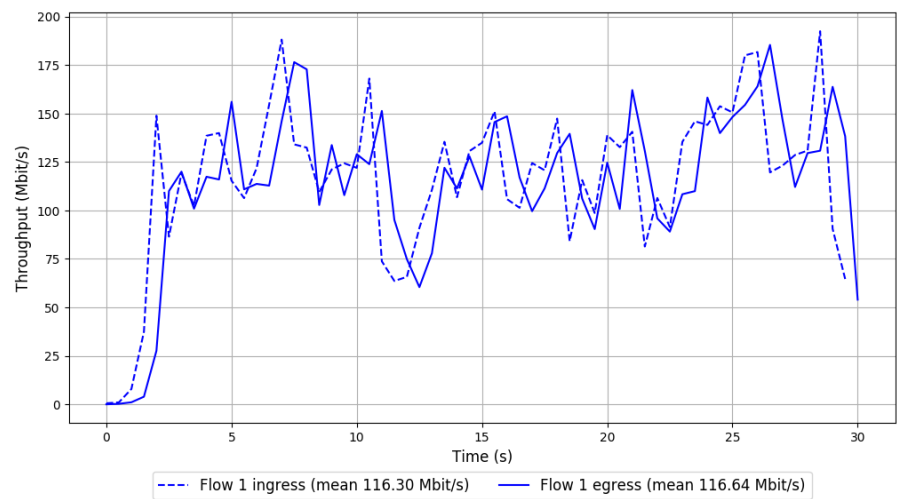
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-09-07 20:51:00
End at: 2018-09-07 20:51:30
Local clock offset: -1.723 ms
Remote clock offset: -31.013 ms

Below is generated by plot.py at 2018-09-07 21:35:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 168.52 Mbit/s
95th percentile per-packet one-way delay: 131.745 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 168.52 Mbit/s
95th percentile per-packet one-way delay: 131.745 ms
Loss rate: 0.73%
```
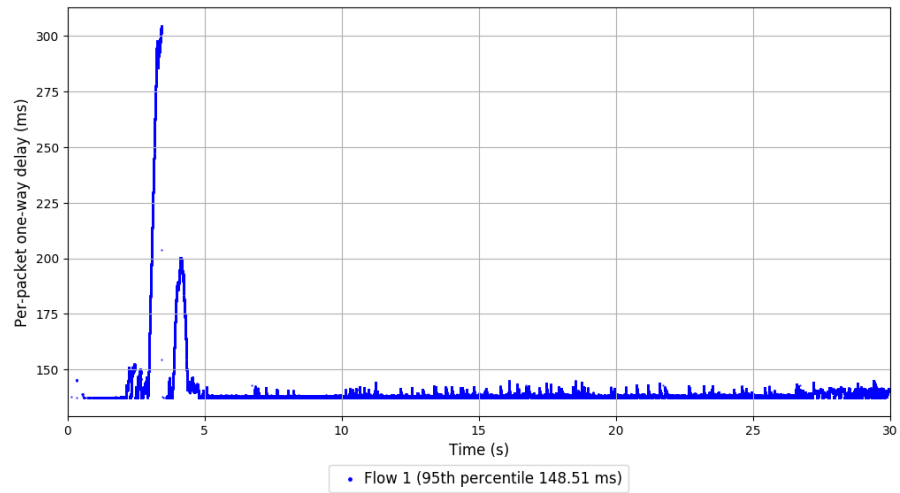
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-09-07 21:14:49
End at: 2018-09-07 21:15:19
Local clock offset: -7.31 ms
Remote clock offset: -38.154 ms

Below is generated by plot.py at 2018-09-07 21:35:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 116.64 Mbit/s
95th percentile per-packet one-way delay: 137.231 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 116.64 Mbit/s
95th percentile per-packet one-way delay: 137.231 ms
Loss rate: 0.36%
```
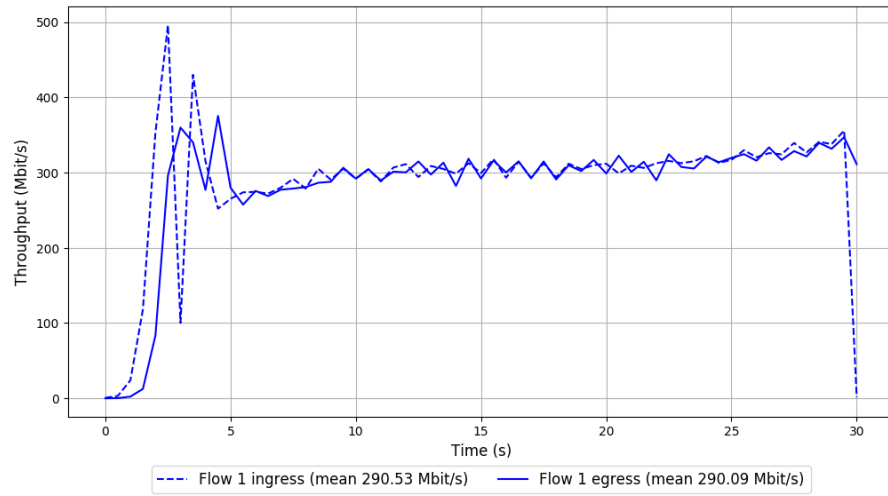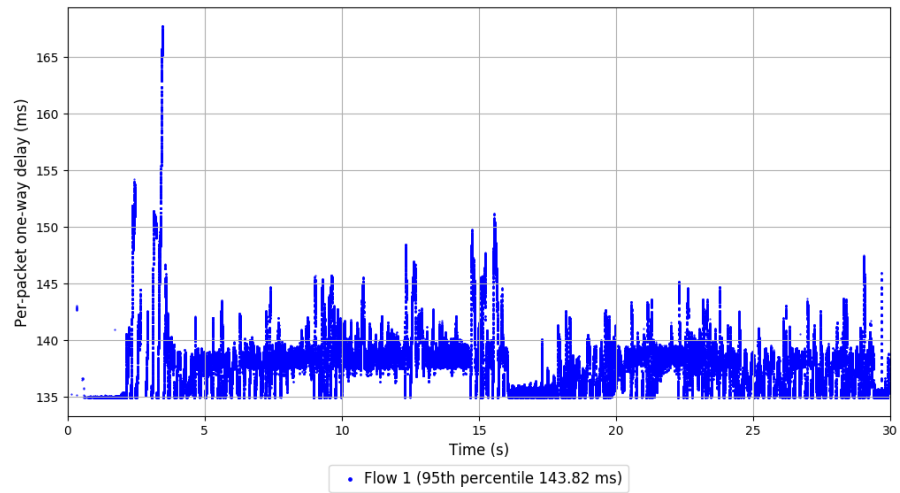
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 19:31:19
End at: 2018-09-07 19:31:49
Local clock offset: 3.221 ms
Remote clock offset: -37.019 ms

Below is generated by plot.py at 2018-09-07 21:36:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 290.09 Mbit/s
95th percentile per-packet one-way delay: 148.506 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 290.09 Mbit/s
95th percentile per-packet one-way delay: 148.506 ms
Loss rate: 0.80%
```
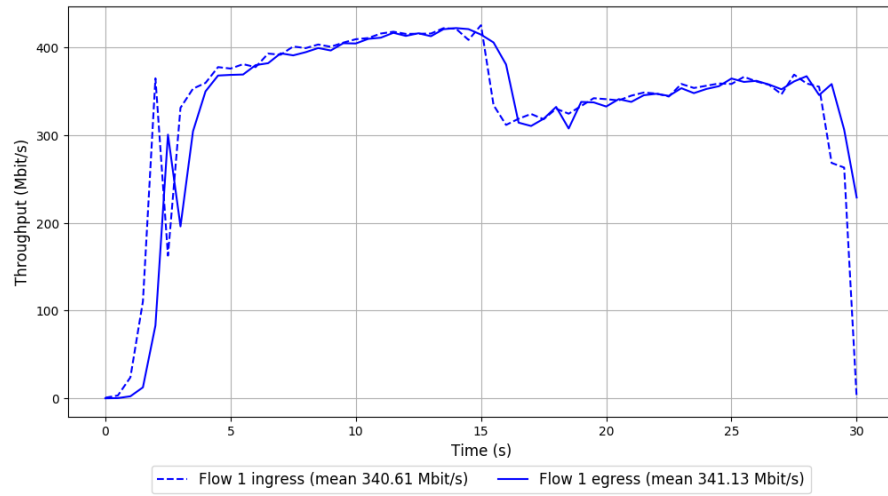
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 19:55:22
End at: 2018-09-07 19:55:52
Local clock offset: -2.692 ms
Remote clock offset: -38.816 ms


# Below is generated by plot.py at 2018-09-07 21:36:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 341.13 Mbit/s
95th percentile per-packet one-way delay: 143.825 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 341.13 Mbit/s
95th percentile per-packet one-way delay: 143.825 ms
Loss rate: 0.50%
```

Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 340.61 Mbit/s)   Flow 1 egress (mean 341.13 Mbit/s)
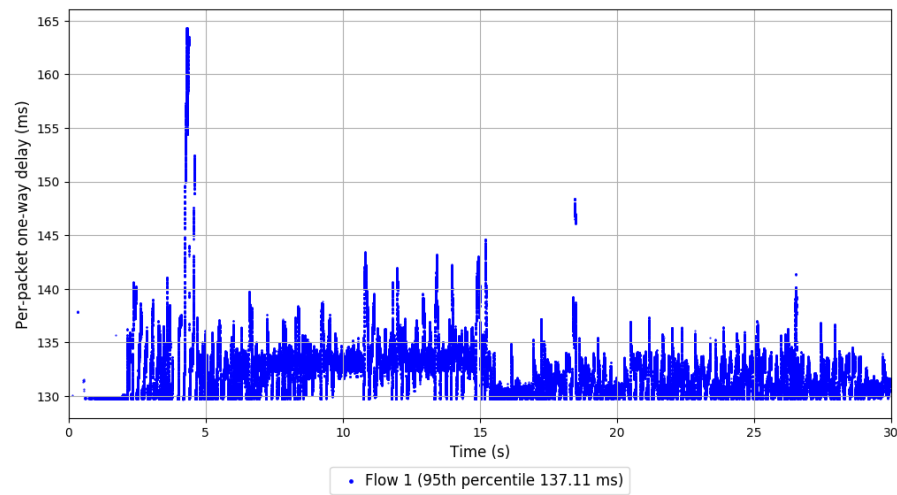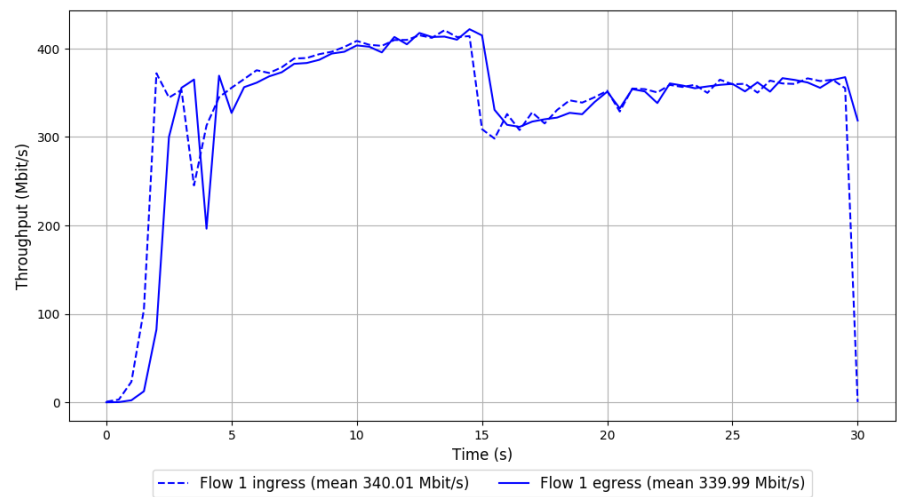

• Flow 1 (95th percentile 143.82 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 20:24:53
End at: 2018-09-07 20:25:23
Local clock offset: -2.72 ms
Remote clock offset: -34.809 ms


# Below is generated by plot.py at 2018-09-07 21:36:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.99 Mbit/s
95th percentile per-packet one-way delay: 137.106 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 339.99 Mbit/s
95th percentile per-packet one-way delay: 137.106 ms
Loss rate: 0.65%
```
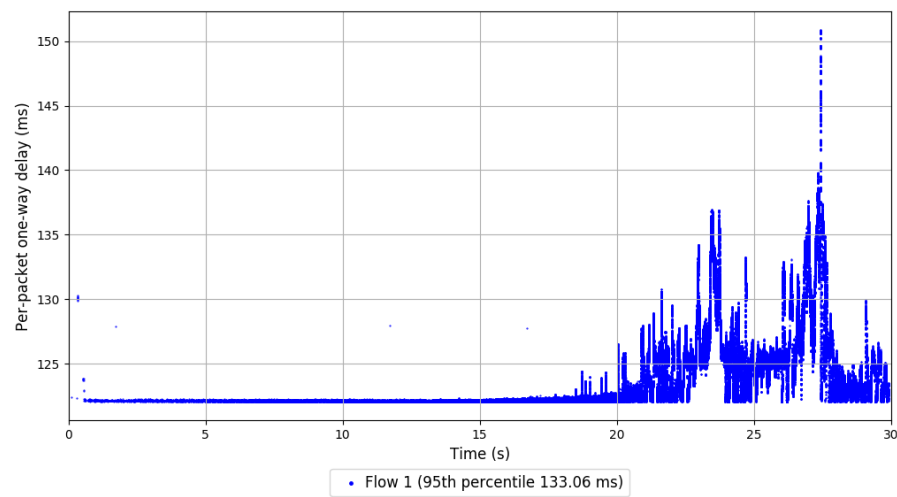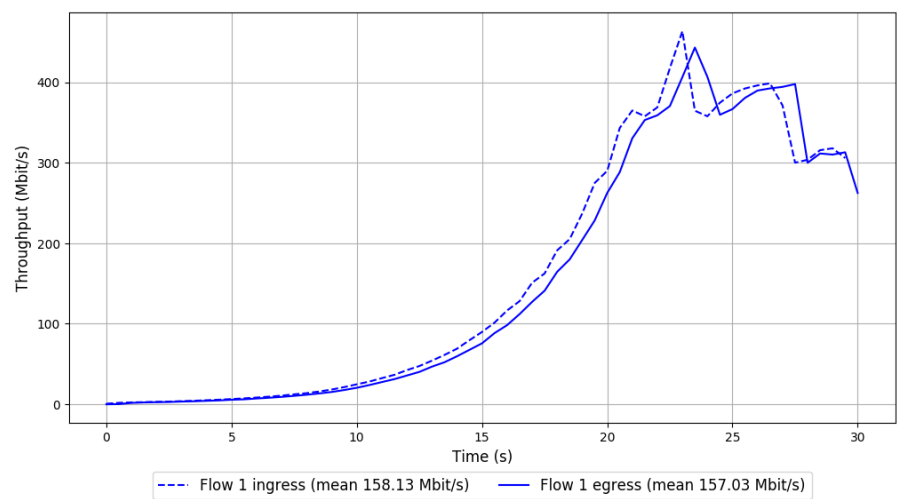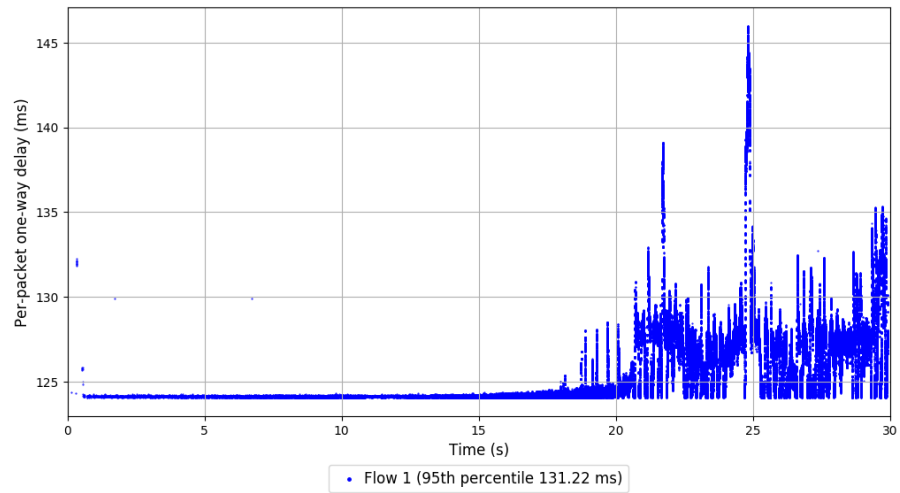
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 340.01 Mbit/s) ----   Flow 1 egress (mean 339.99 Mbit/s) ——

Flow 1 (95th percentile 137.11 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 20:48:32
End at: 2018-09-07 20:49:02
Local clock offset: -2.764 ms
Remote clock offset: -27.3 ms


# Below is generated by plot.py at 2018-09-07 21:36:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 157.03 Mbit/s
95th percentile per-packet one-way delay: 133.061 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 157.03 Mbit/s
95th percentile per-packet one-way delay: 133.061 ms
Loss rate: 1.34%
```
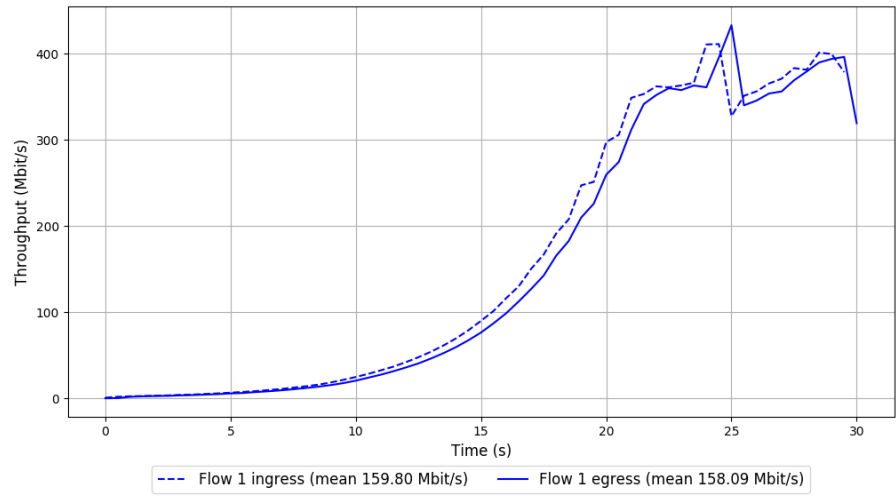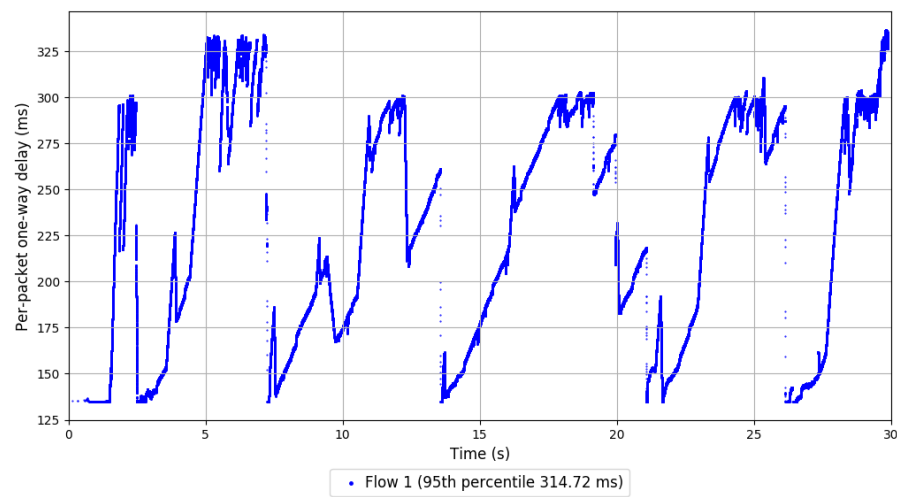
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 21:12:21
End at: 2018-09-07 21:12:51
Local clock offset: -1.012 ms
Remote clock offset: -27.915 ms


# Below is generated by plot.py at 2018-09-07 21:36:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 158.09 Mbit/s
95th percentile per-packet one-way delay: 131.215 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 158.09 Mbit/s
95th percentile per-packet one-way delay: 131.215 ms
Loss rate: 1.70%
```
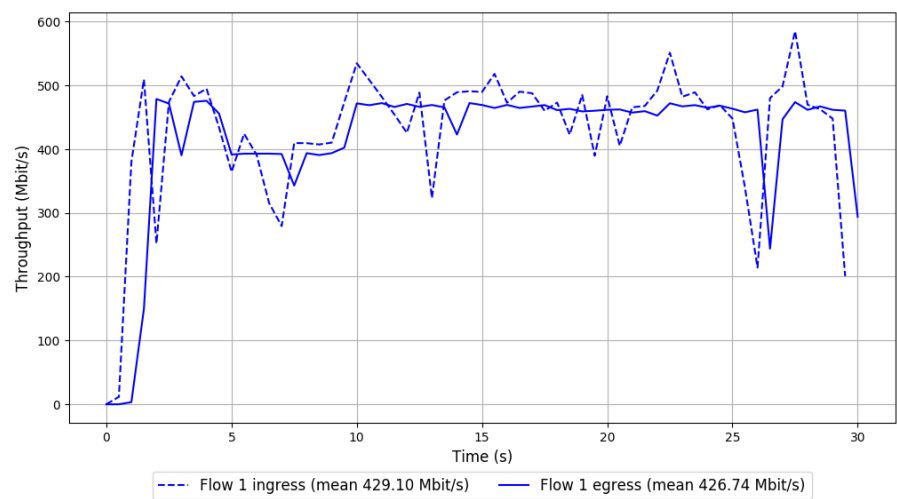
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-09-07 19:44:34
End at: 2018-09-07 19:45:04
Local clock offset: 1.522 ms
Remote clock offset: -35.406 ms


# Below is generated by plot.py at 2018-09-07 21:39:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 426.74 Mbit/s
95th percentile per-packet one-way delay: 314.717 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 426.74 Mbit/s
95th percentile per-packet one-way delay: 314.717 ms
Loss rate: 1.20%
```
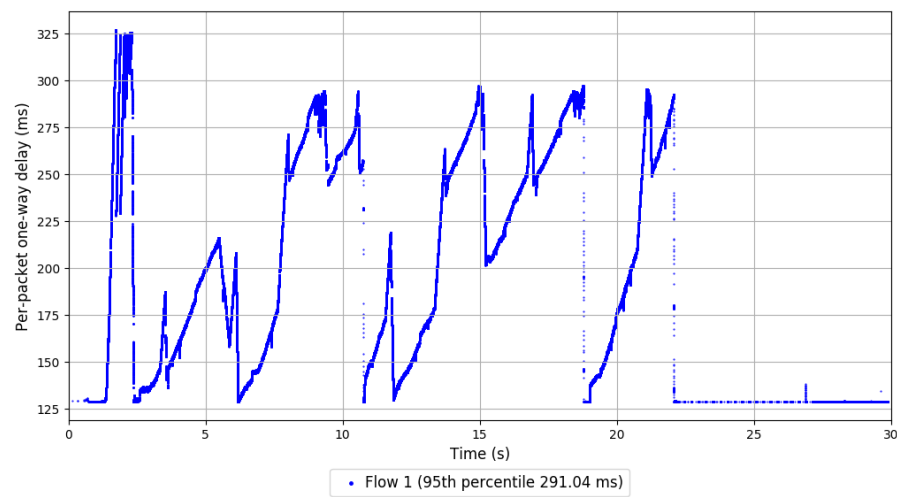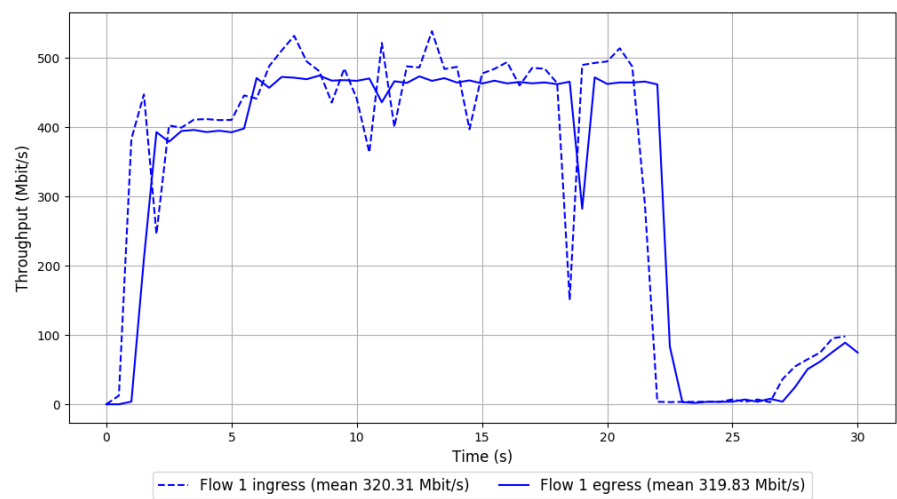
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-09-07 20:14:11
End at: 2018-09-07 20:14:41
Local clock offset: -3.789 ms
Remote clock offset: -34.492 ms


# Below is generated by plot.py at 2018-09-07 21:39:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 319.83 Mbit/s
95th percentile per-packet one-way delay: 291.040 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 319.83 Mbit/s
95th percentile per-packet one-way delay: 291.040 ms
Loss rate: 0.79%
```

Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-09-07 20:38:00
End at: 2018-09-07 20:38:30
Local clock offset: -3.022 ms
Remote clock offset: -31.5 ms


# Below is generated by plot.py at 2018-09-07 21:40:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 409.37 Mbit/s
95th percentile per-packet one-way delay: 298.756 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 409.37 Mbit/s
95th percentile per-packet one-way delay: 298.756 ms
Loss rate: 1.40%
```
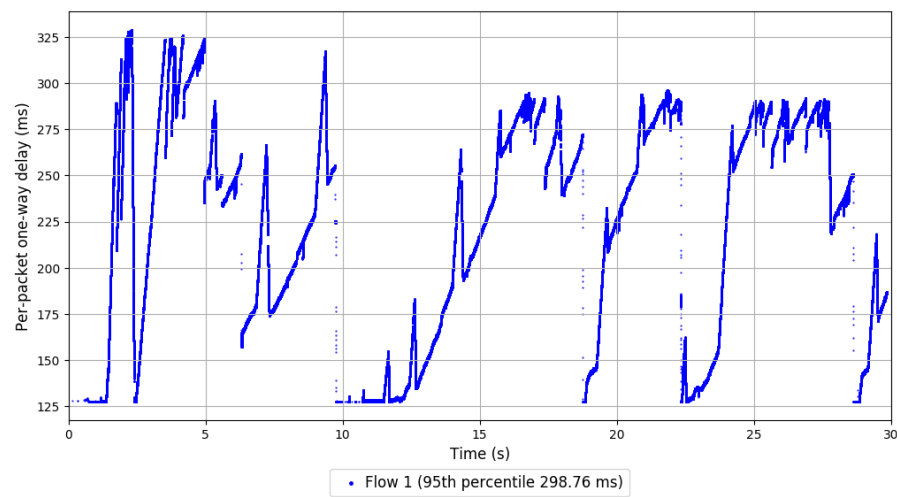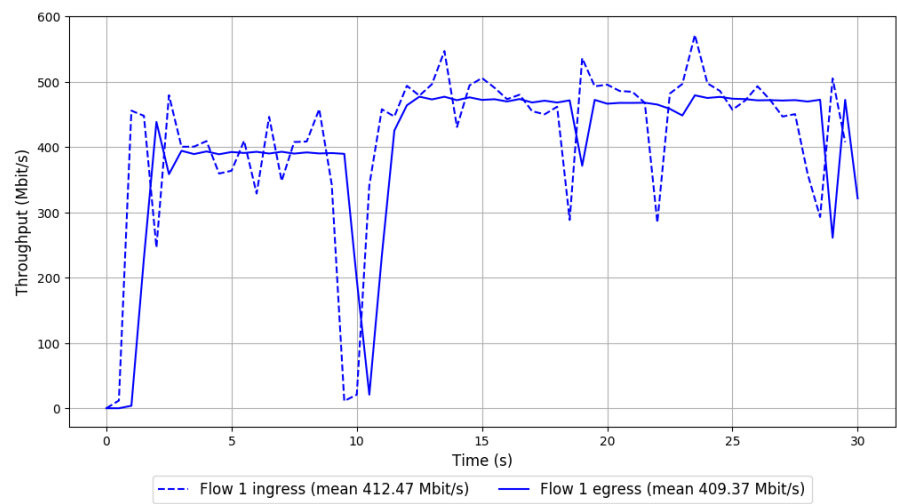
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 412.47 Mbit/s)   Flow 1 egress (mean 409.37 Mbit/s)

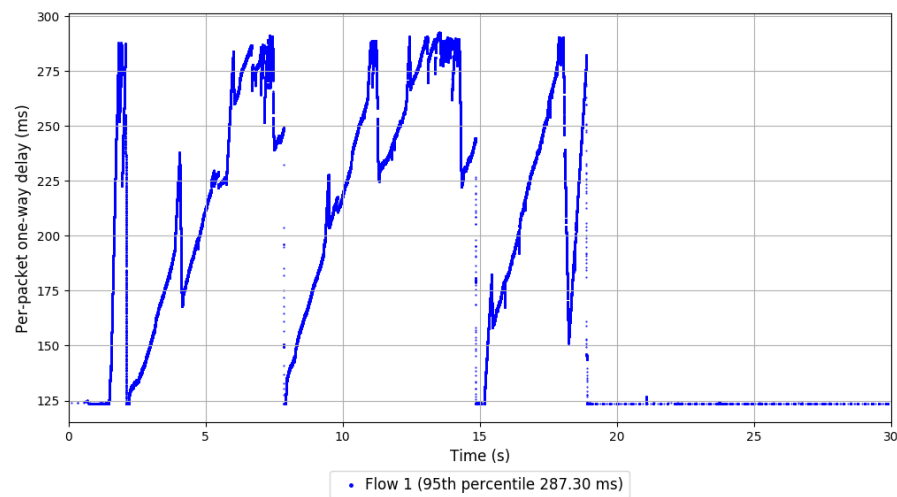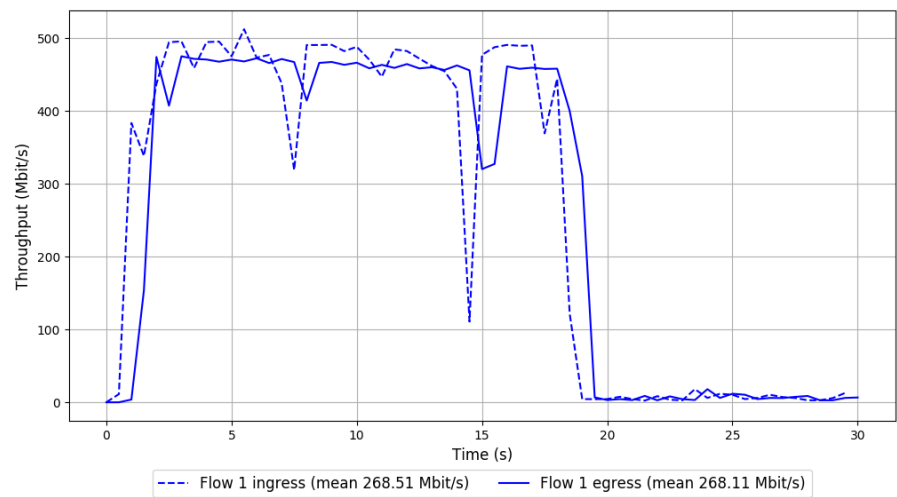Flow 1 (95th percentile 298.76 ms)

```
Run 4: Statistics of FillP

Start at: 2018-09-07 21:01:44
End at: 2018-09-07 21:02:14
Local clock offset: -2.95 ms
Remote clock offset: -29.448 ms


# Below is generated by plot.py at 2018-09-07 21:40:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 268.11 Mbit/s
95th percentile per-packet one-way delay: 287.296 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 268.11 Mbit/s
95th percentile per-packet one-way delay: 287.296 ms
Loss rate: 0.79%
```
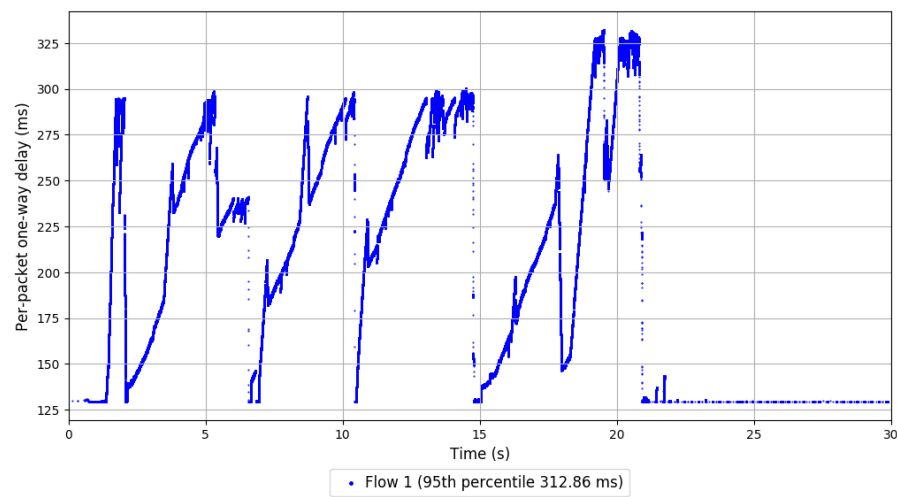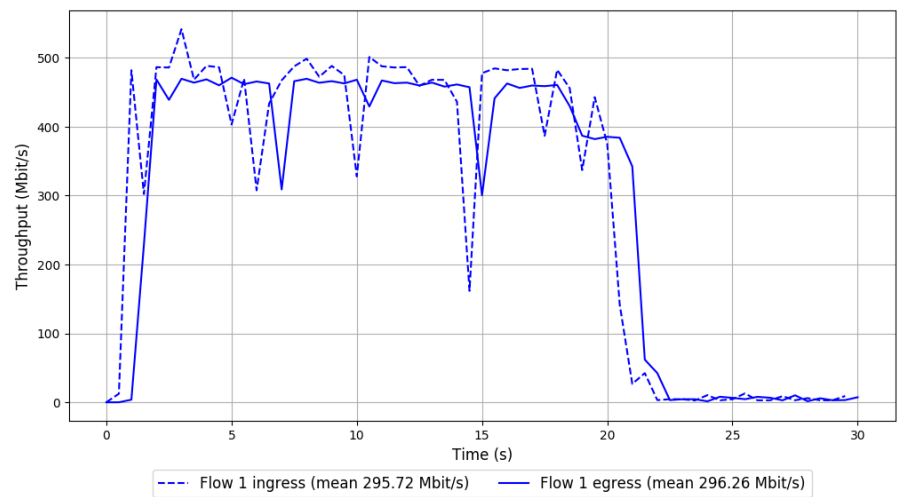
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-09-07 21:25:22
End at: 2018-09-07 21:25:52
Local clock offset: -3.999 ms
Remote clock offset: -35.218 ms


# Below is generated by plot.py at 2018-09-07 21:40:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.26 Mbit/s
95th percentile per-packet one-way delay: 312.857 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 296.26 Mbit/s
95th percentile per-packet one-way delay: 312.857 ms
Loss rate: 0.55%
```

Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 295.72 Mbit/s) — — — Flow 1 egress (mean 296.26 Mbit/s)

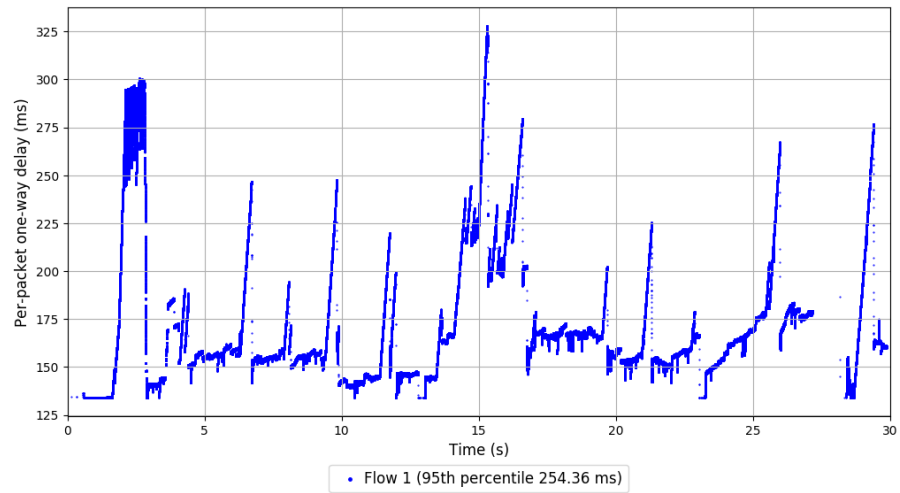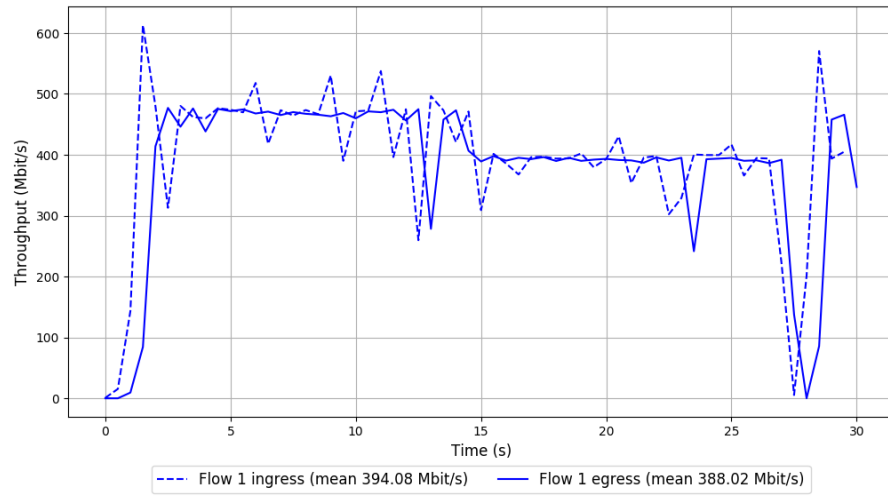

• Flow 1 (95th percentile 312.86 ms)

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 19:43:10
End at: 2018-09-07 19:43:40
Local clock offset: 1.573 ms
Remote clock offset: -34.943 ms


# Below is generated by plot.py at 2018-09-07 21:41:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 388.02 Mbit/s
95th percentile per-packet one-way delay: 254.361 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 388.02 Mbit/s
95th percentile per-packet one-way delay: 254.361 ms
Loss rate: 2.18%
```
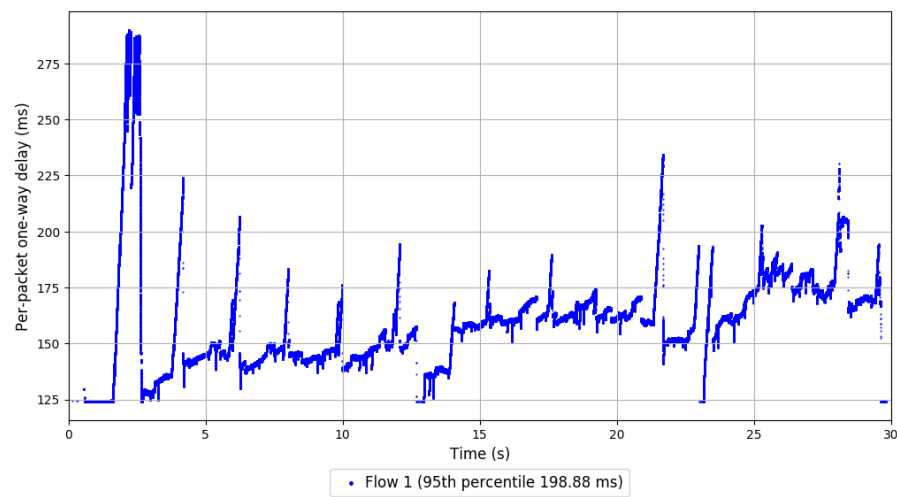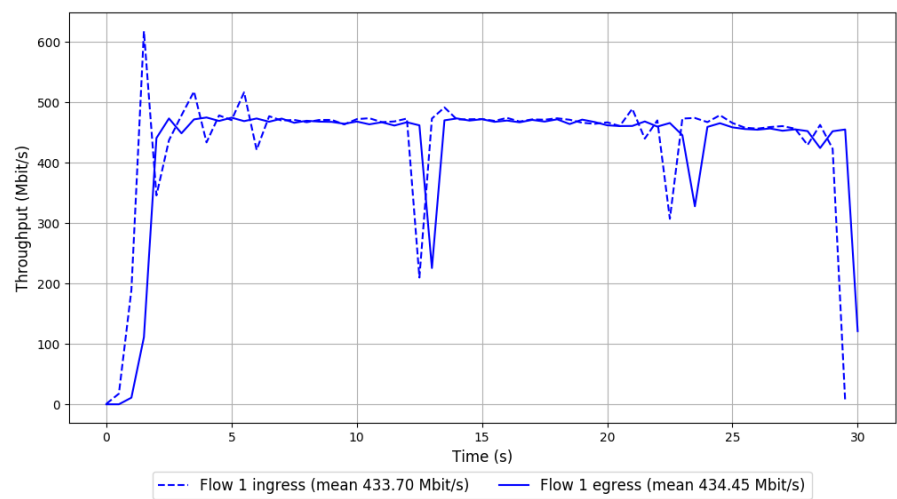
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 20:12:44
End at: 2018-09-07 20:13:14
Local clock offset: -3.531 ms
Remote clock offset: -29.536 ms


# Below is generated by plot.py at 2018-09-07 21:43:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 434.45 Mbit/s
95th percentile per-packet one-way delay: 198.884 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 434.45 Mbit/s
95th percentile per-packet one-way delay: 198.884 ms
Loss rate: 0.64%
```
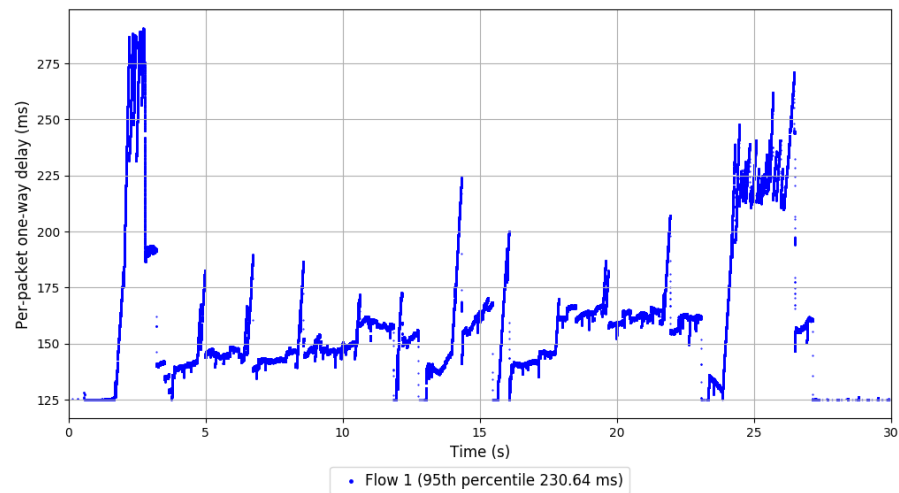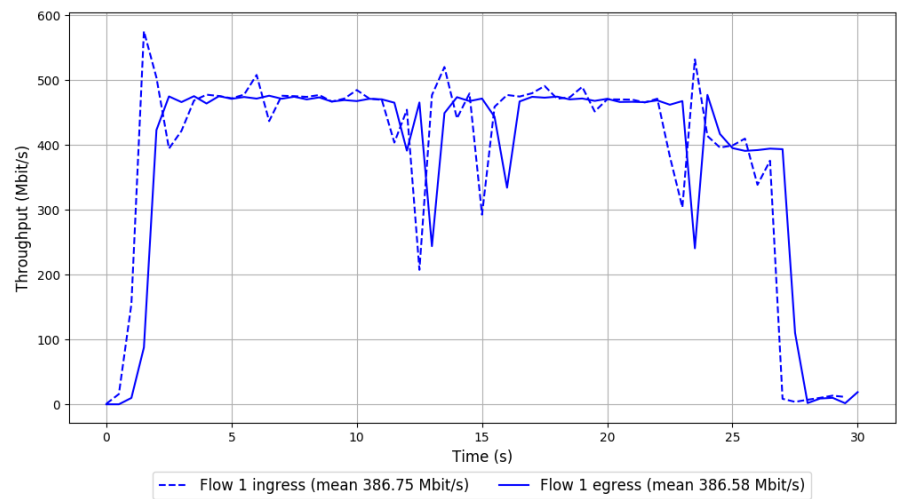
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 20:36:35
End at: 2018-09-07 20:37:05
Local clock offset: -1.806 ms
Remote clock offset: -29.08 ms


# Below is generated by plot.py at 2018-09-07 21:43:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 386.58 Mbit/s
95th percentile per-packet one-way delay: 230.637 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 386.58 Mbit/s
95th percentile per-packet one-way delay: 230.637 ms
Loss rate: 0.50%
```

Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 386.75 Mbit/s)   Flow 1 egress (mean 386.58 Mbit/s)
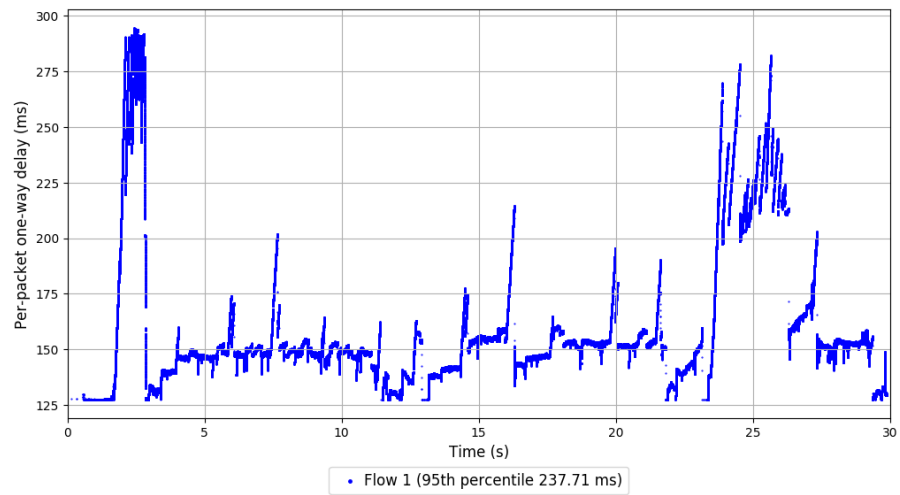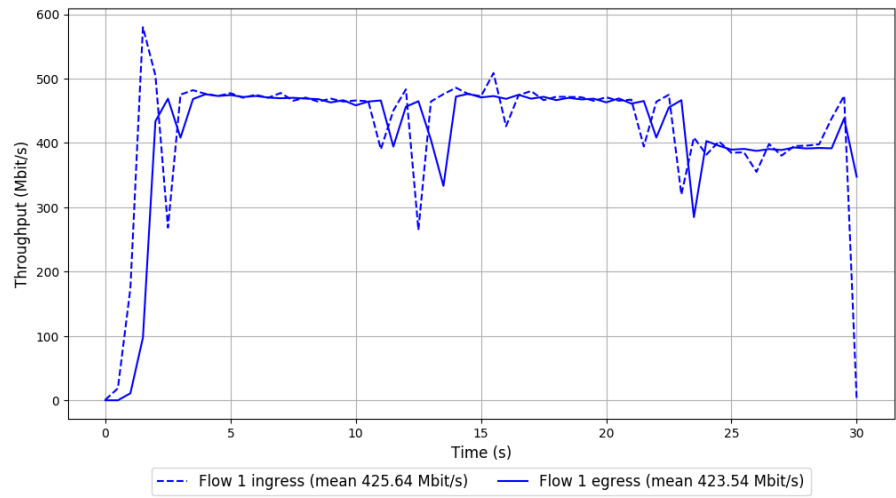

Flow 1 (95th percentile 230.64 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 21:00:17
End at: 2018-09-07 21:00:47
Local clock offset: -2.007 ms
Remote clock offset: -30.92 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 423.54 Mbit/s
95th percentile per-packet one-way delay: 237.711 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 423.54 Mbit/s
95th percentile per-packet one-way delay: 237.711 ms
Loss rate: 1.35%
```
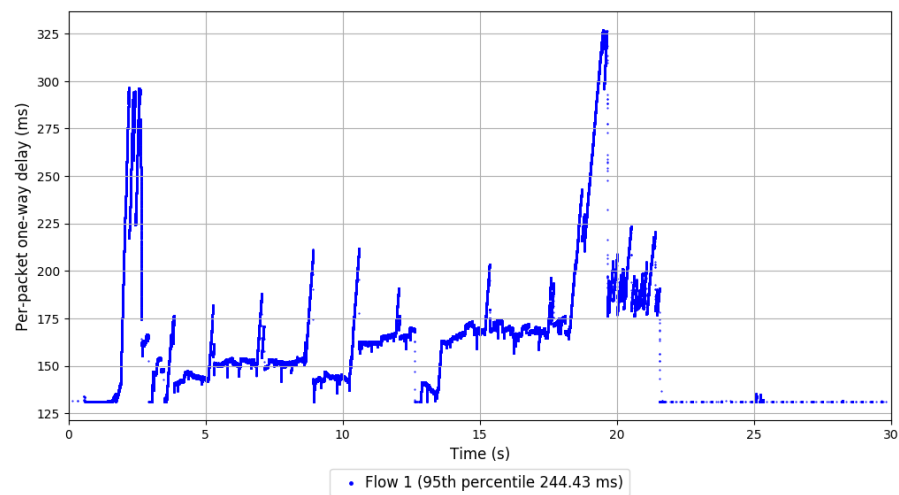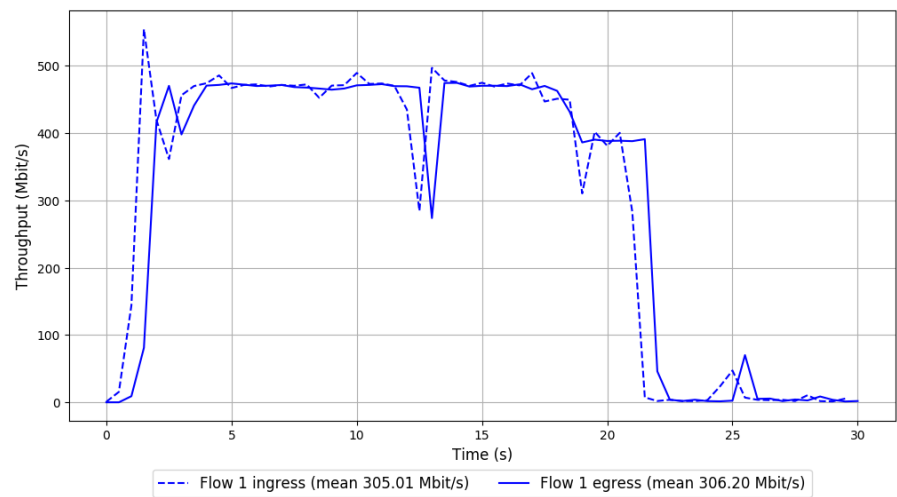
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 21:24:00
End at: 2018-09-07 21:24:30
Local clock offset: -1.736 ms
Remote clock offset: -34.752 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 306.20 Mbit/s
95th percentile per-packet one-way delay: 244.434 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 306.20 Mbit/s
95th percentile per-packet one-way delay: 244.434 ms
Loss rate: 0.41%
```

Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-09-07 19:41:51
End at: 2018-09-07 19:42:21
Local clock offset: 1.539 ms
Remote clock offset: -35.837 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 128.65 Mbit/s
95th percentile per-packet one-way delay: 136.343 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 128.65 Mbit/s
95th percentile per-packet one-way delay: 136.343 ms
Loss rate: 0.74%
```
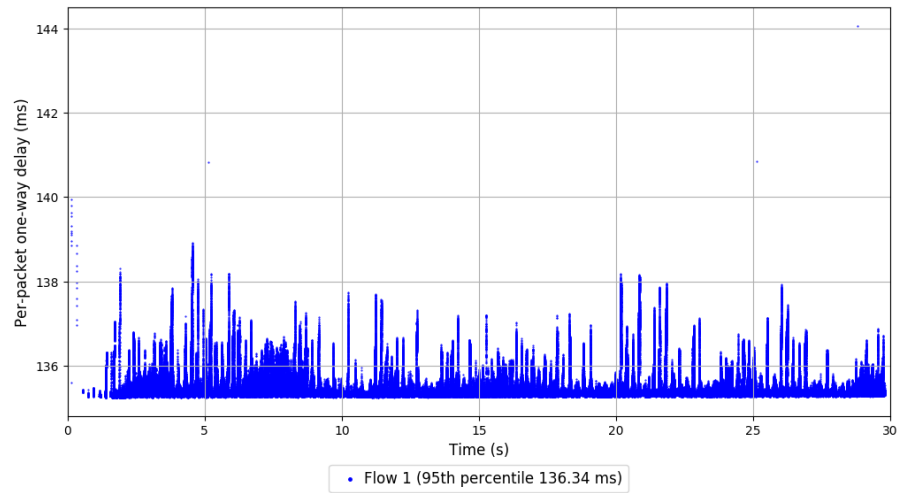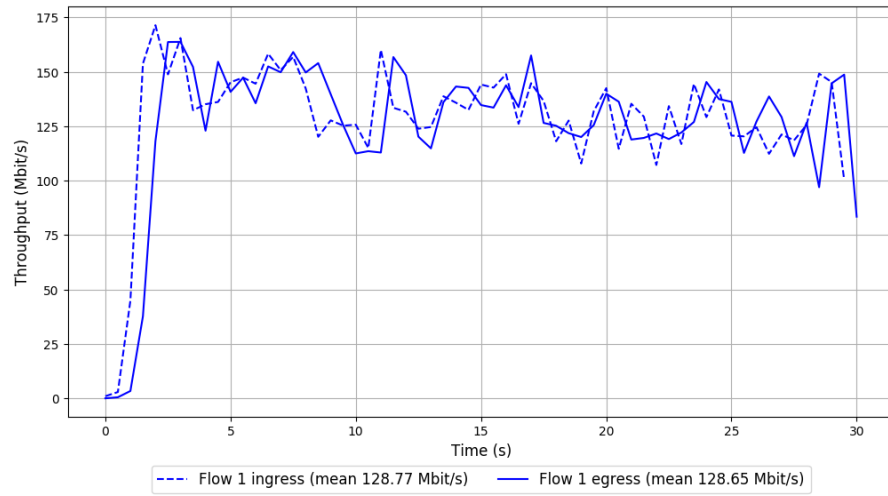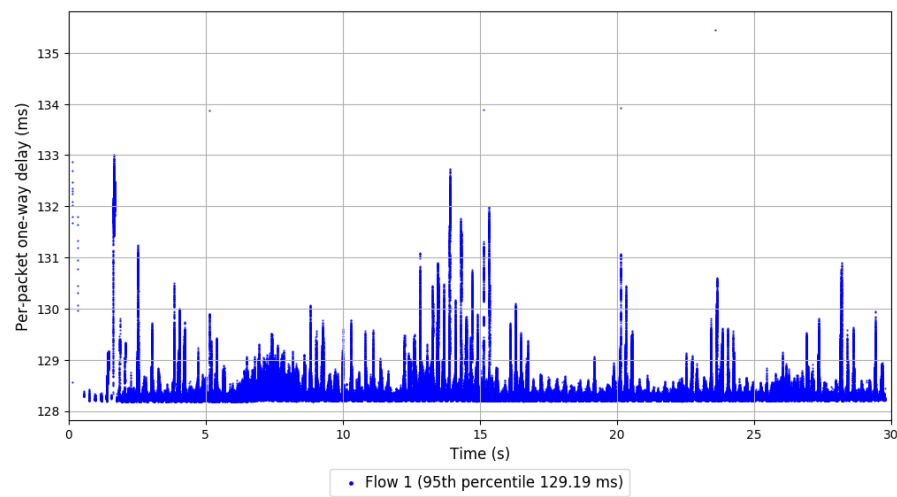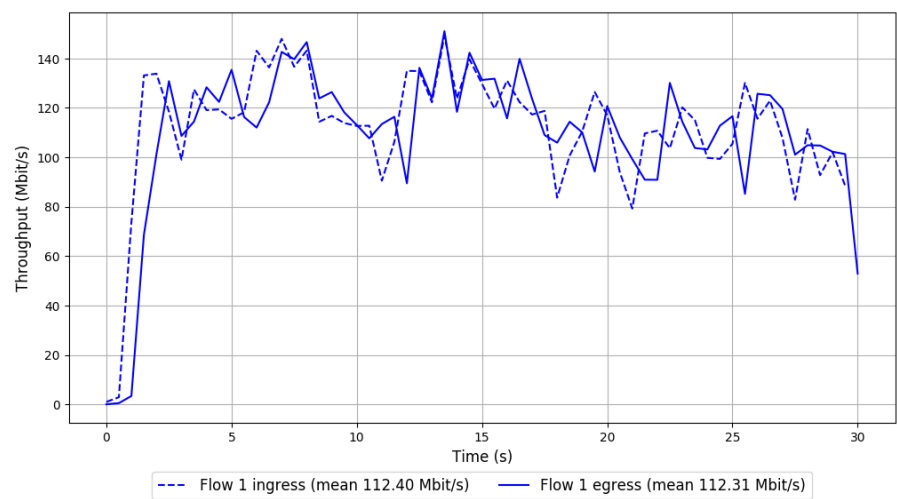
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-09-07 20:11:27
End at: 2018-09-07 20:11:57
Local clock offset: -3.796 ms
Remote clock offset: -32.744 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 112.31 Mbit/s
95th percentile per-packet one-way delay: 129.185 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 112.31 Mbit/s
95th percentile per-packet one-way delay: 129.185 ms
Loss rate: 0.69%
```
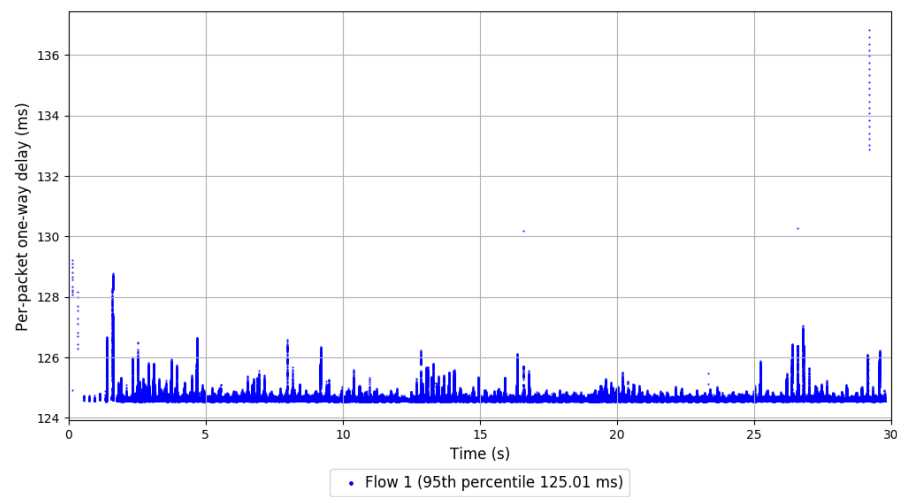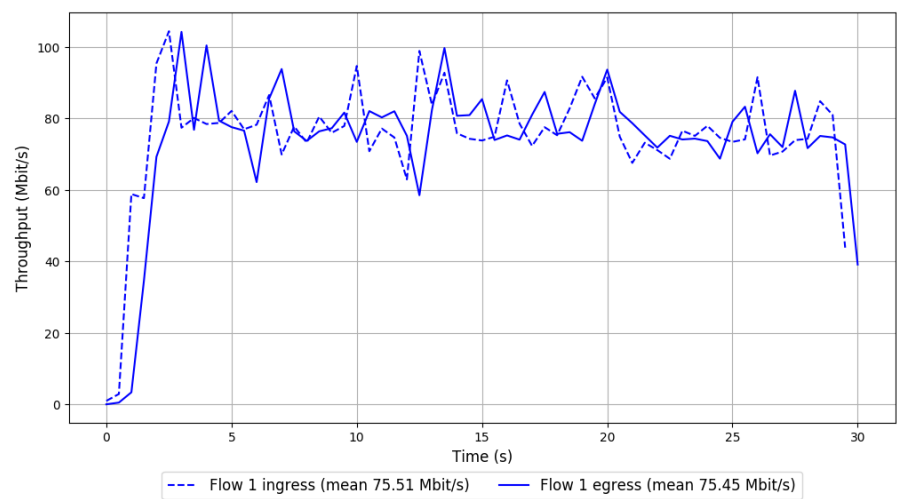
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-09-07 20:35:20
End at: 2018-09-07 20:35:50
Local clock offset: -3.218 ms
Remote clock offset: -28.769 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.45 Mbit/s
95th percentile per-packet one-way delay: 125.010 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 75.45 Mbit/s
95th percentile per-packet one-way delay: 125.010 ms
Loss rate: 0.72%
```
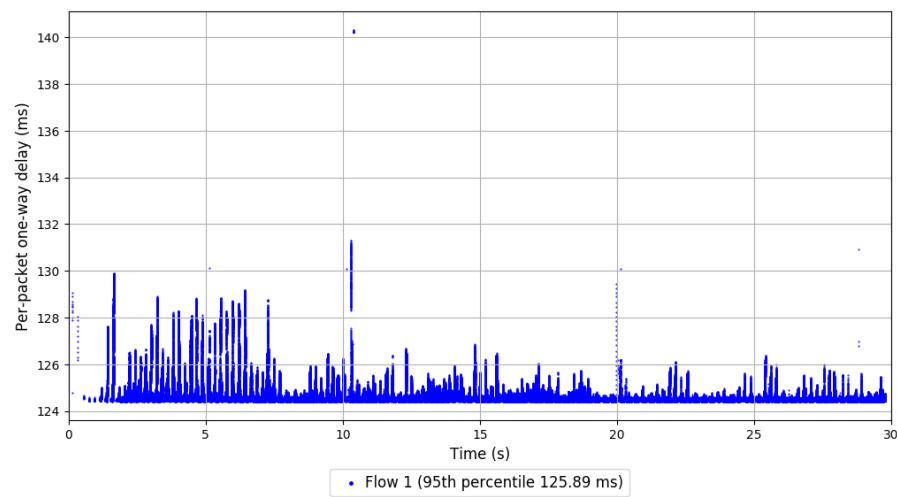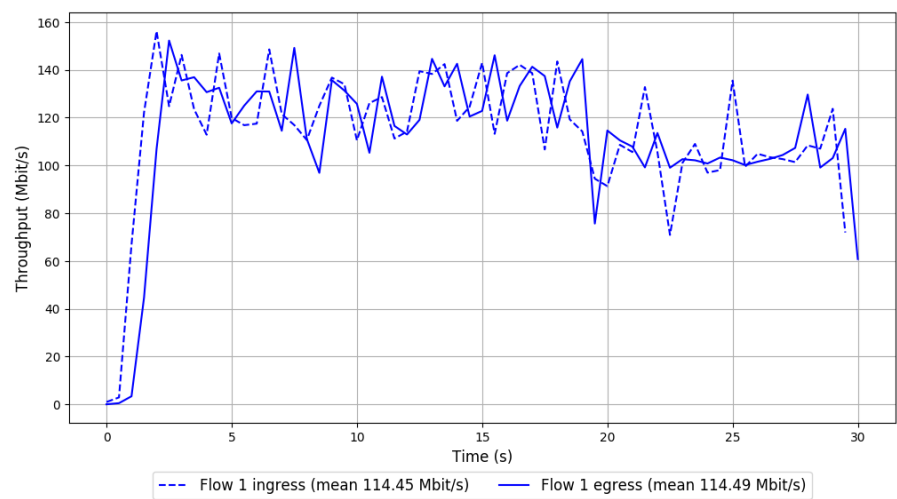
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-09-07 20:59:00
End at: 2018-09-07 20:59:30
Local clock offset: -2.914 ms
Remote clock offset: -28.864 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 114.49 Mbit/s
95th percentile per-packet one-way delay: 125.886 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 114.49 Mbit/s
95th percentile per-packet one-way delay: 125.886 ms
Loss rate: 0.61%
```

Run 4: Report of Indigo — Data Link

Flow 1 ingress (mean 114.45 Mbit/s) ---- Flow 1 egress (mean 114.49 Mbit/s)
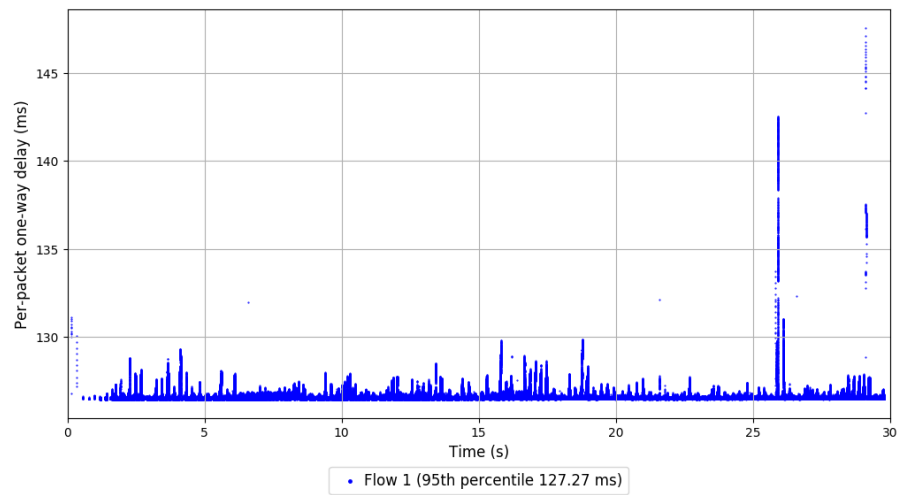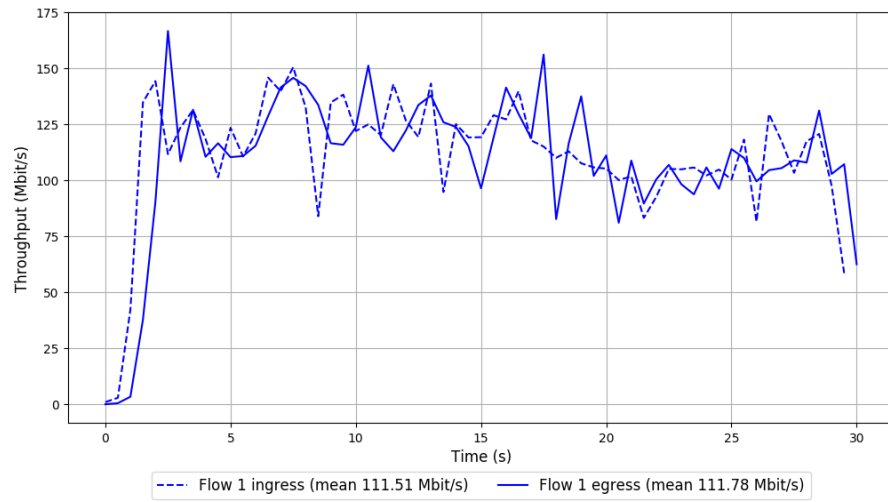

• Flow 1 (95th percentile 125.89 ms)

```
Run 5: Statistics of Indigo

Start at: 2018-09-07 21:22:43
End at: 2018-09-07 21:23:13
Local clock offset: -3.561 ms
Remote clock offset: -30.785 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 111.78 Mbit/s
95th percentile per-packet one-way delay: 127.269 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 111.78 Mbit/s
95th percentile per-packet one-way delay: 127.269 ms
Loss rate: 0.41%
```
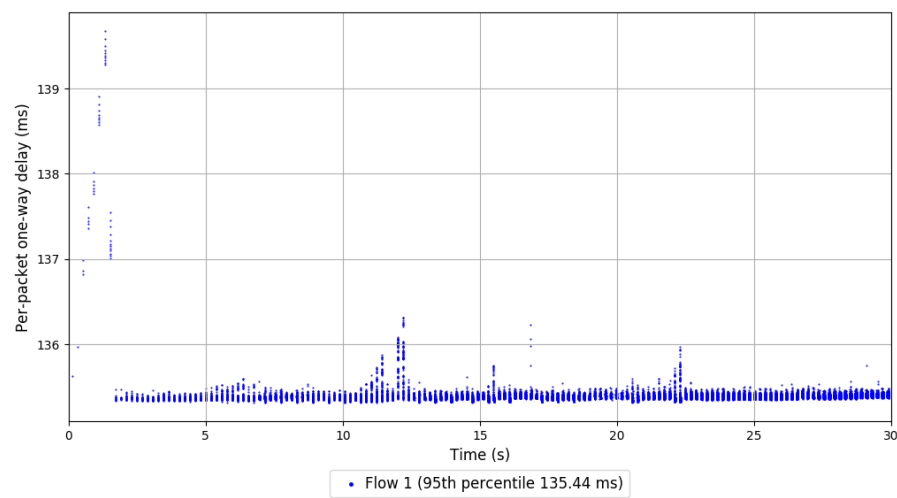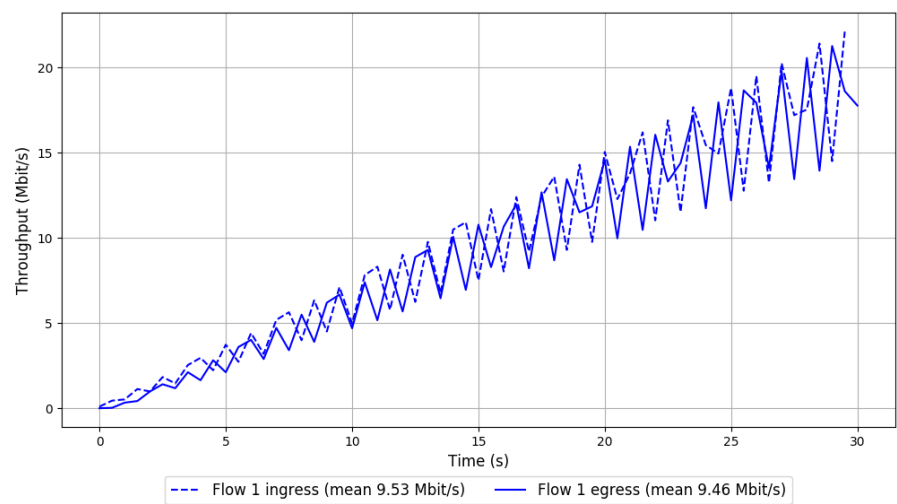
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 19:36:41
End at: 2018-09-07 19:37:11
Local clock offset: 1.705 ms
Remote clock offset: -35.956 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.46 Mbit/s
95th percentile per-packet one-way delay: 135.438 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 9.46 Mbit/s
95th percentile per-packet one-way delay: 135.438 ms
Loss rate: 1.30%
```

Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 9.53 Mbit/s)   Flow 1 egress (mean 9.46 Mbit/s)

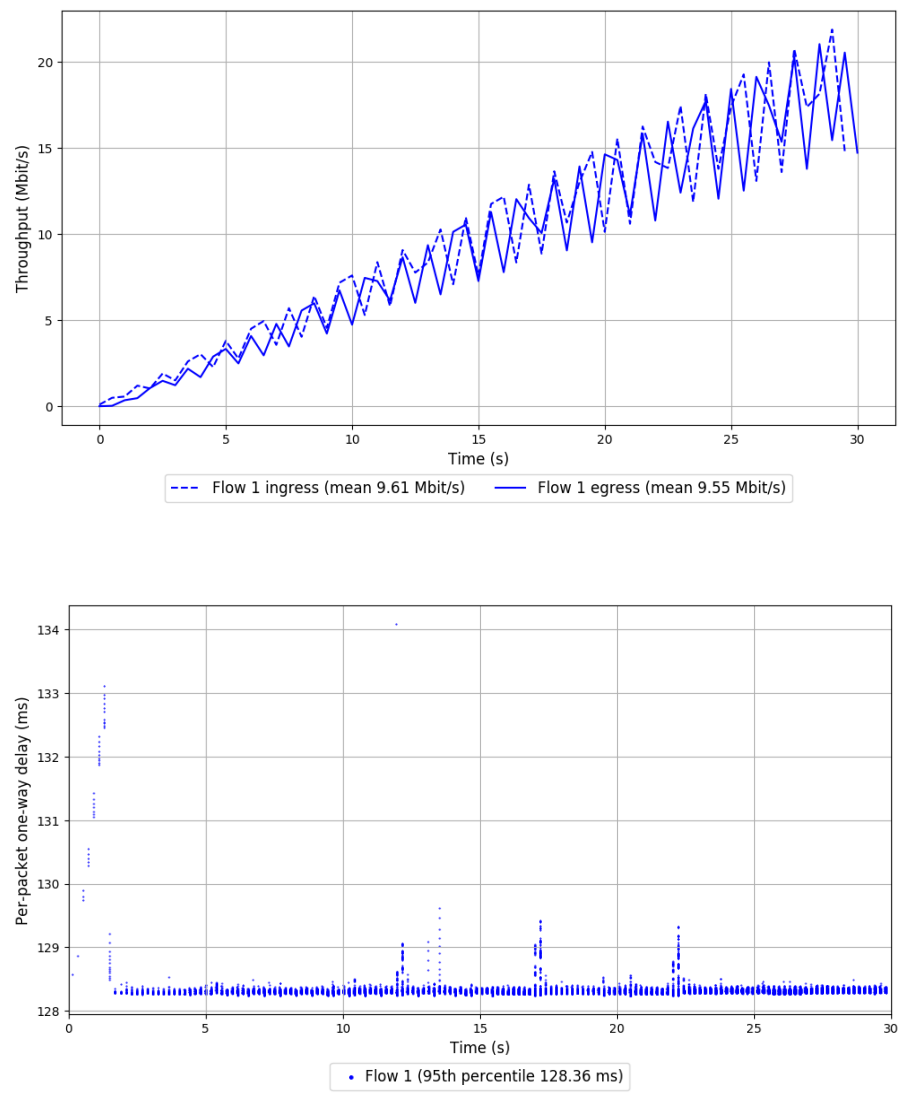Flow 1 (95th percentile 135.44 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-09-07 20:06:15
End at: 2018-09-07 20:06:45
Local clock offset: -1.896 ms
Remote clock offset: -30.807 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 128.360 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 128.360 ms
Loss rate: 1.29%
```

Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 9.61 Mbit/s)   Flow 1 egress (mean 9.55 Mbit/s)

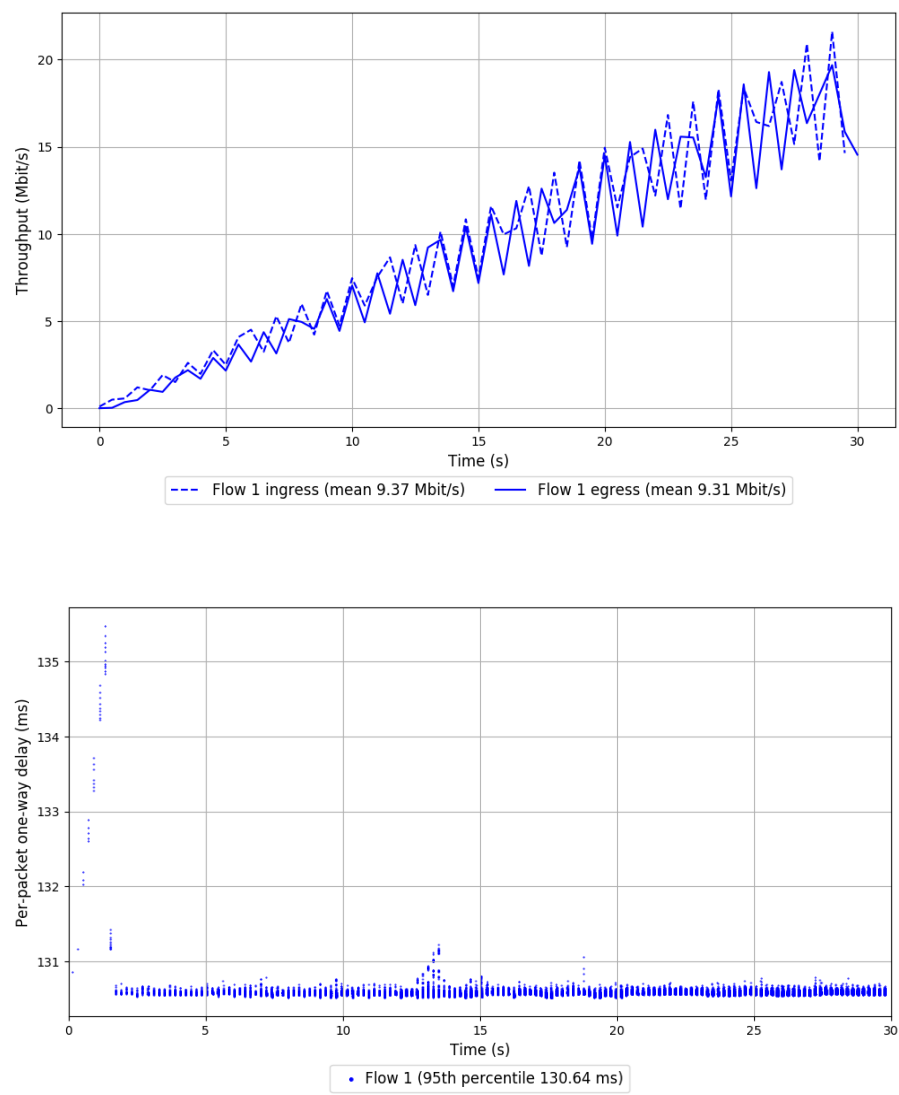• Flow 1 (95th percentile 128.36 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-09-07 20:30:13
End at: 2018-09-07 20:30:43
Local clock offset: -2.976 ms
Remote clock offset: -34.595 ms

# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: 130.638 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: 130.638 ms
Loss rate: 1.31%
```

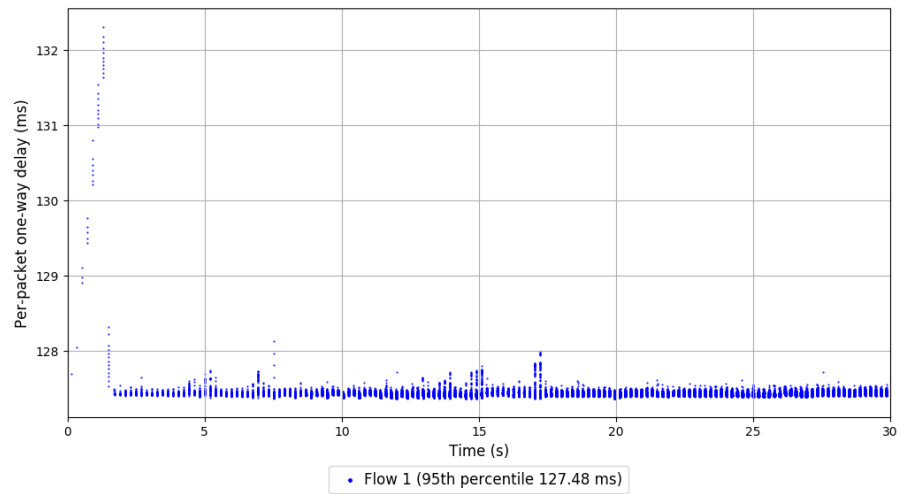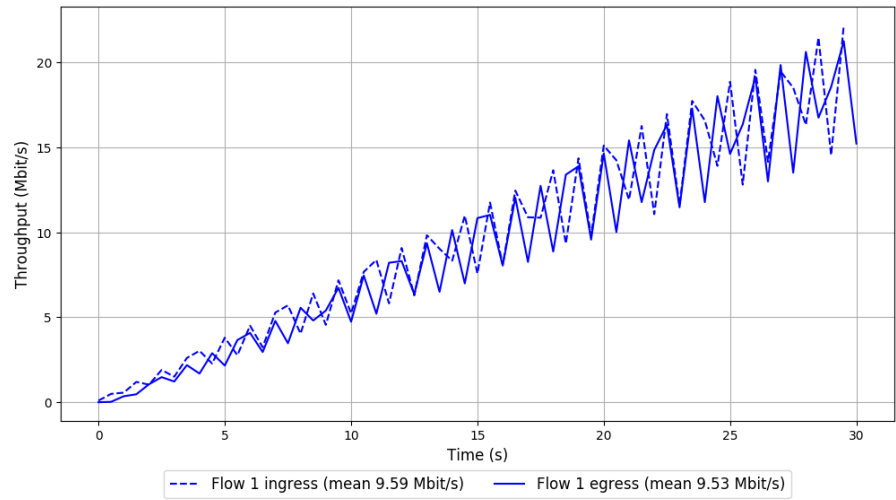Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-09-07 20:53:49
End at: 2018-09-07 20:54:19
Local clock offset: -2.018 ms
Remote clock offset: -30.419 ms


# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.53 Mbit/s
95th percentile per-packet one-way delay: 127.485 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 9.53 Mbit/s
95th percentile per-packet one-way delay: 127.485 ms
Loss rate: 1.29%
```
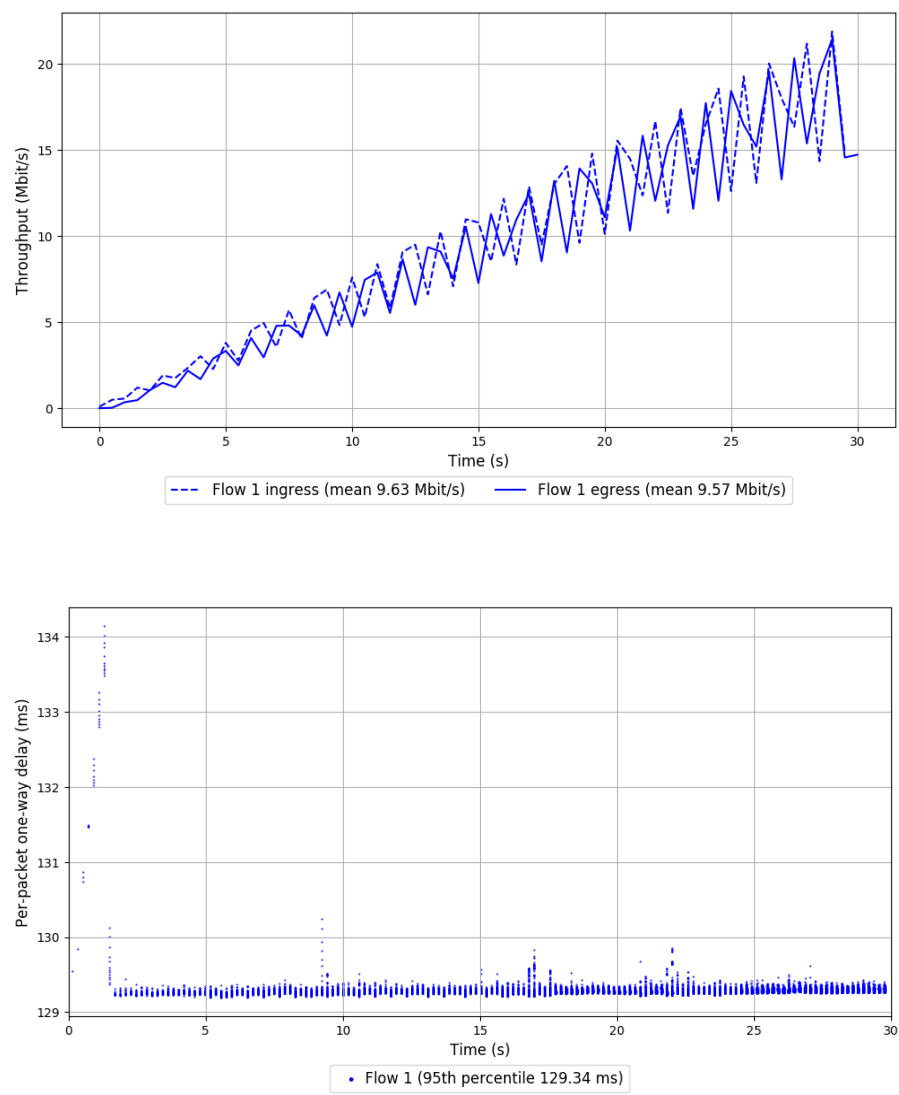
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-09-07 21:17:33
End at: 2018-09-07 21:18:03
Local clock offset: -3.335 ms
Remote clock offset: -33.676 ms

# Below is generated by plot.py at 2018-09-07 21:45:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.57 Mbit/s
95th percentile per-packet one-way delay: 129.336 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 9.57 Mbit/s
95th percentile per-packet one-way delay: 129.336 ms
Loss rate: 1.29%
```

Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 9.63 Mbit/s) — — —   Flow 1 egress (mean 9.57 Mbit/s) ———

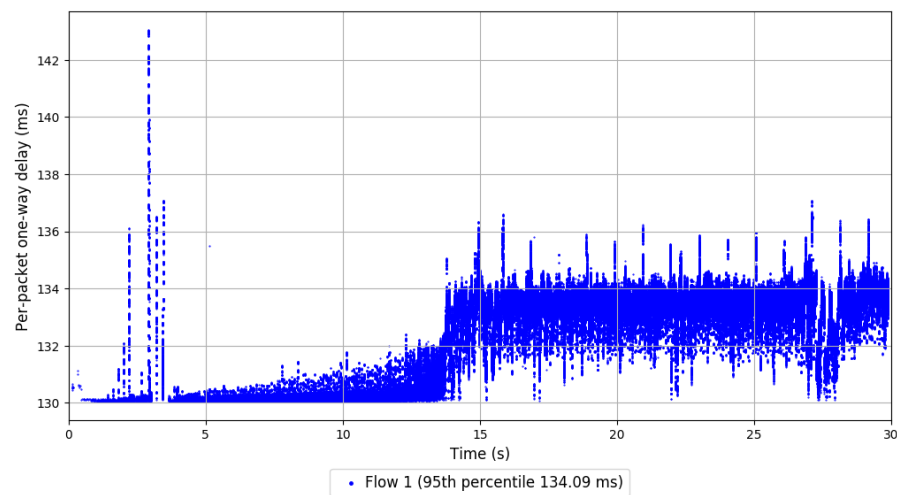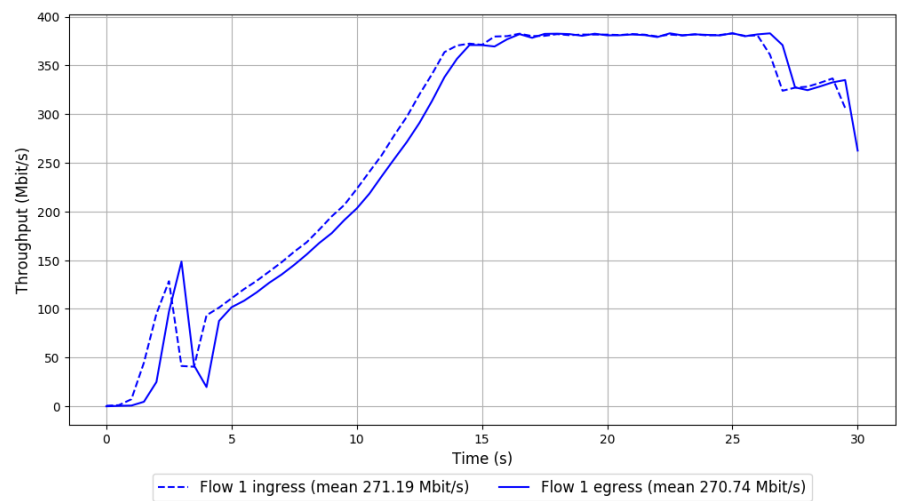

Flow 1 (95th percentile 129.34 ms)

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 19:21:50
End at: 2018-09-07 19:22:20
Local clock offset: 3.776 ms
Remote clock offset: -30.983 ms


# Below is generated by plot.py at 2018-09-07 21:45:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 270.74 Mbit/s
95th percentile per-packet one-way delay: 134.088 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 270.74 Mbit/s
95th percentile per-packet one-way delay: 134.088 ms
Loss rate: 0.82%
```

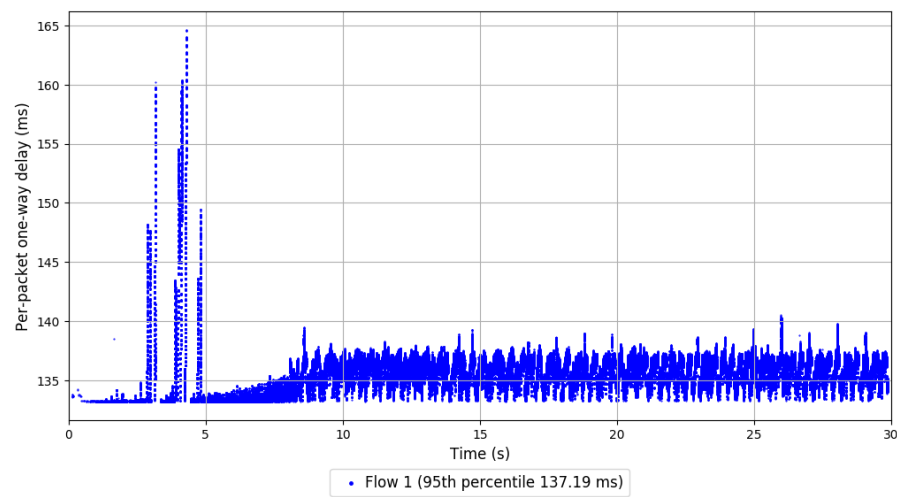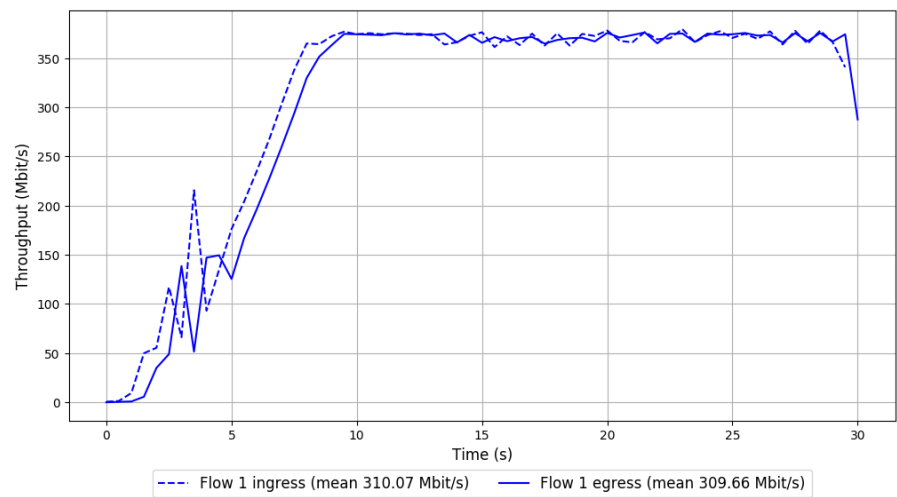Run 1: Report of Indigo-Muses — Data Link

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```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 19:46:01
End at: 2018-09-07 19:46:31
Local clock offset: 2.249 ms
Remote clock offset: -33.004 ms


# Below is generated by plot.py at 2018-09-07 21:45:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 309.66 Mbit/s
95th percentile per-packet one-way delay: 137.186 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 309.66 Mbit/s
95th percentile per-packet one-way delay: 137.186 ms
Loss rate: 0.81%
```

Run 2: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 310.07 Mbit/s) --- Flow 1 egress (mean 309.66 Mbit/s) ———

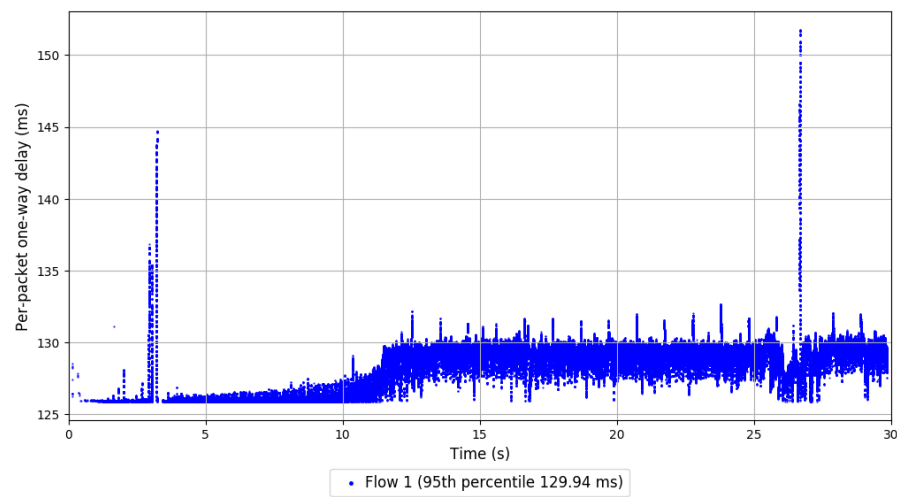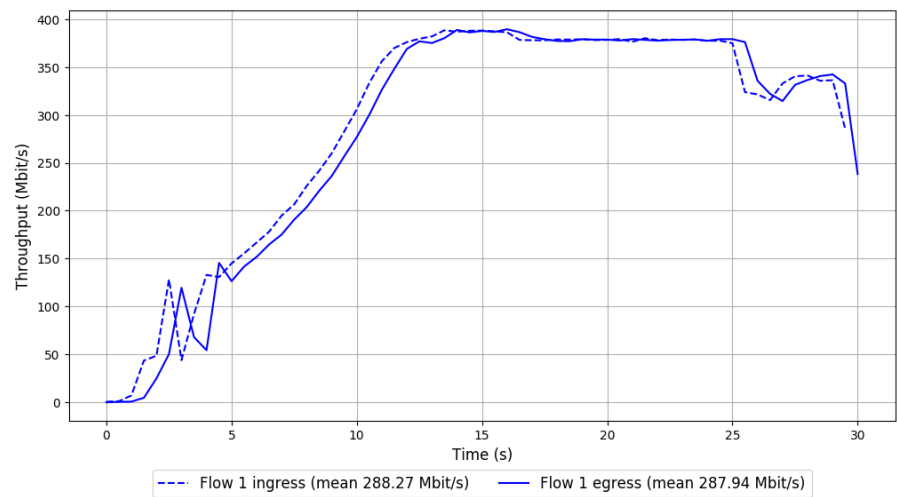• Flow 1 (95th percentile 137.19 ms)

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 20:15:33
End at: 2018-09-07 20:16:03
Local clock offset: -3.871 ms
Remote clock offset: -30.133 ms


# Below is generated by plot.py at 2018-09-07 21:45:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 287.94 Mbit/s
95th percentile per-packet one-way delay: 129.937 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 287.94 Mbit/s
95th percentile per-packet one-way delay: 129.937 ms
Loss rate: 0.77%
```
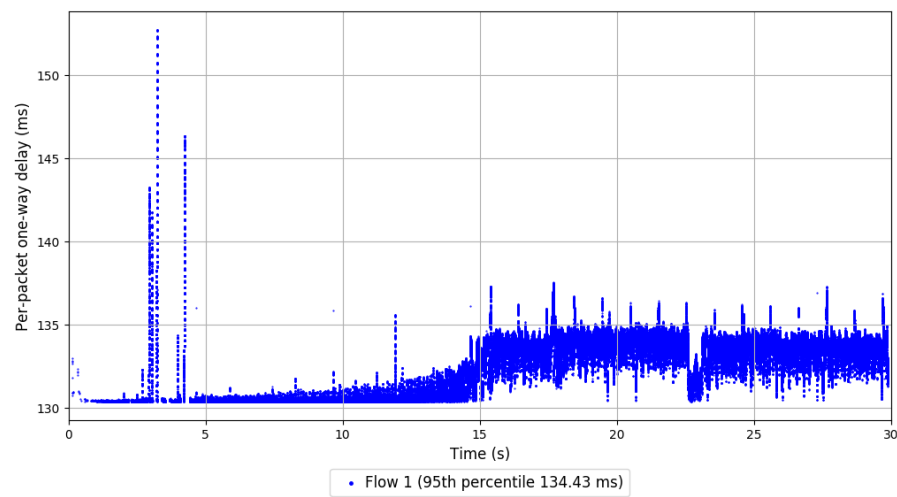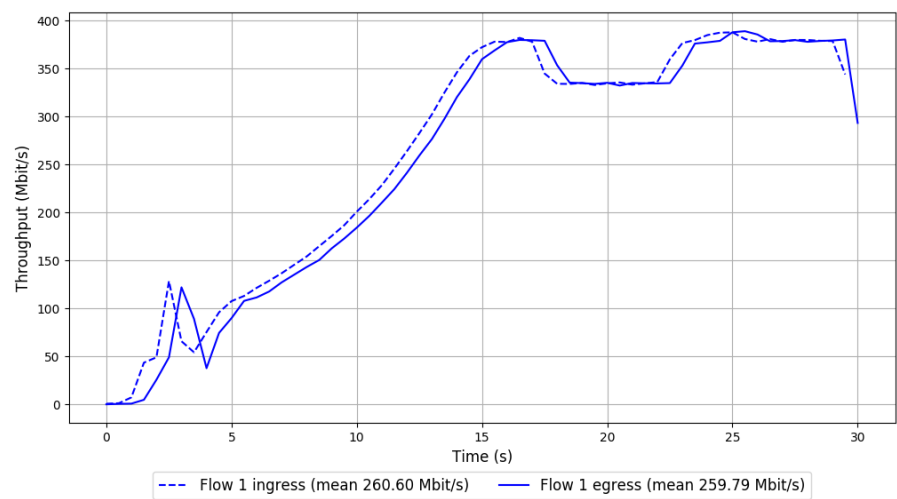
Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 20:39:26
End at: 2018-09-07 20:39:56
Local clock offset: -3.008 ms
Remote clock offset: -34.04 ms


# Below is generated by plot.py at 2018-09-07 21:45:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 259.79 Mbit/s
95th percentile per-packet one-way delay: 134.430 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 259.79 Mbit/s
95th percentile per-packet one-way delay: 134.430 ms
Loss rate: 0.97%
```
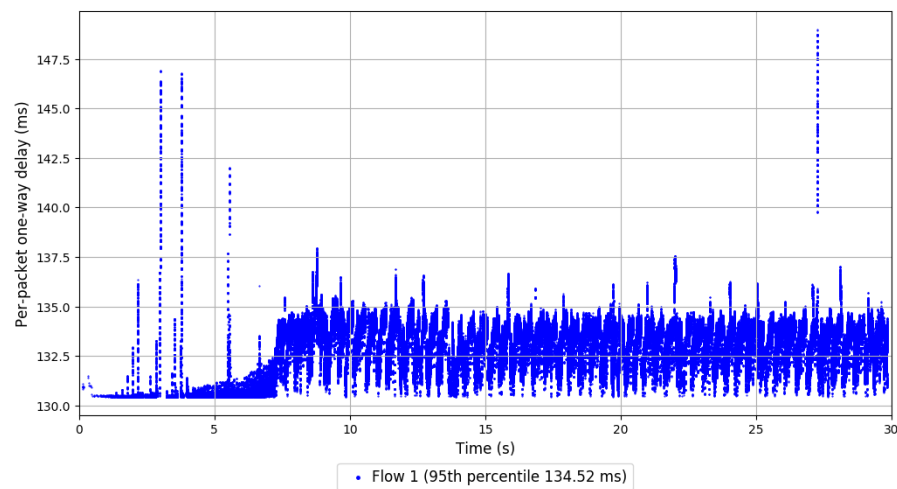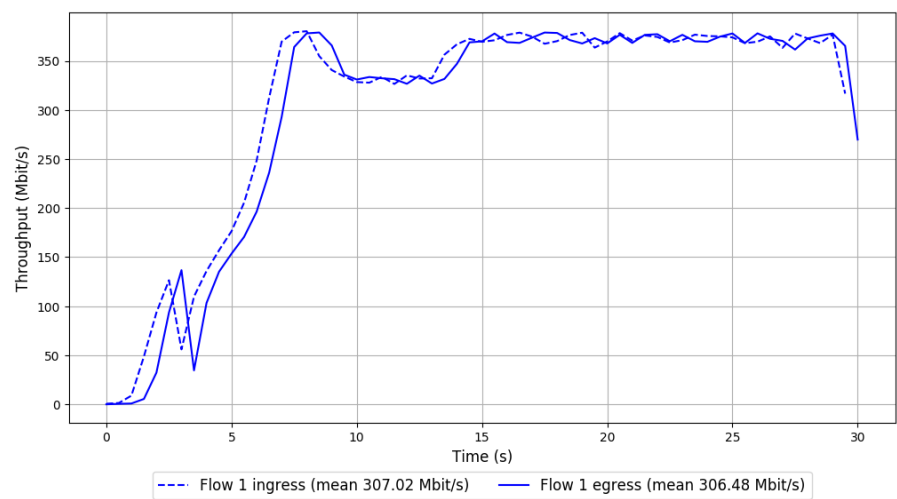
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 21:03:04
End at: 2018-09-07 21:03:34
Local clock offset: -2.388 ms
Remote clock offset: -34.312 ms


# Below is generated by plot.py at 2018-09-07 21:46:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 306.48 Mbit/s
95th percentile per-packet one-way delay: 134.524 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 306.48 Mbit/s
95th percentile per-packet one-way delay: 134.524 ms
Loss rate: 0.82%
```

Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 19:37:53
End at: 2018-09-07 19:38:23
Local clock offset: 2.407 ms
Remote clock offset: -35.228 ms


# Below is generated by plot.py at 2018-09-07 21:47:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 407.05 Mbit/s
95th percentile per-packet one-way delay: 142.448 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 407.05 Mbit/s
95th percentile per-packet one-way delay: 142.448 ms
Loss rate: 0.79%
```
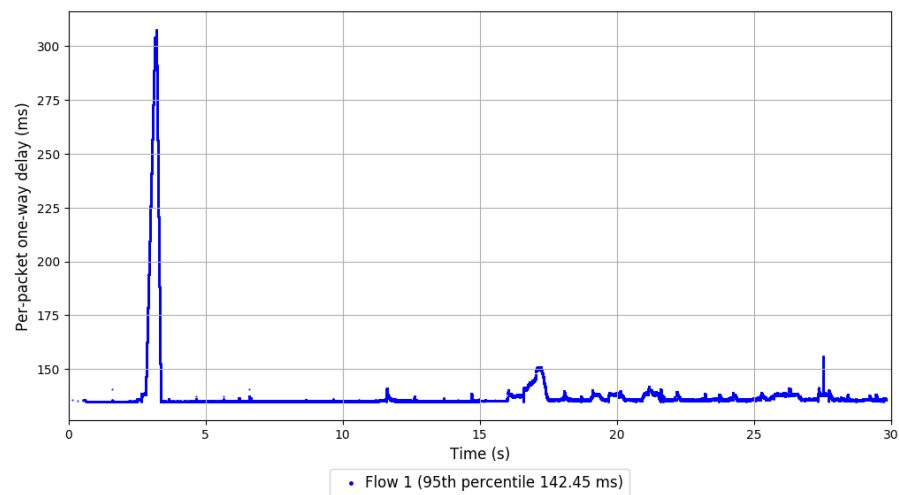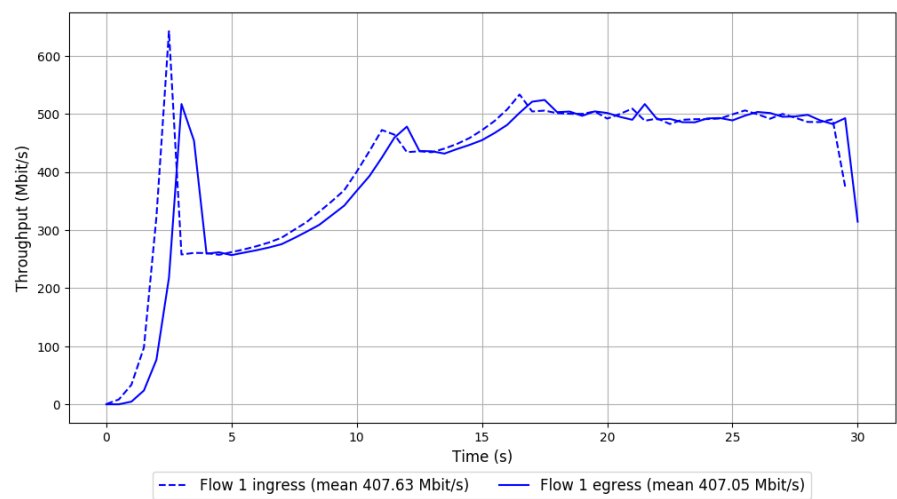
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 20:07:26
End at: 2018-09-07 20:07:56
Local clock offset: -3.884 ms
Remote clock offset: -28.59 ms


# Below is generated by plot.py at 2018-09-07 21:48:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 402.65 Mbit/s
95th percentile per-packet one-way delay: 133.508 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 402.65 Mbit/s
95th percentile per-packet one-way delay: 133.508 ms
Loss rate: 0.79%
```
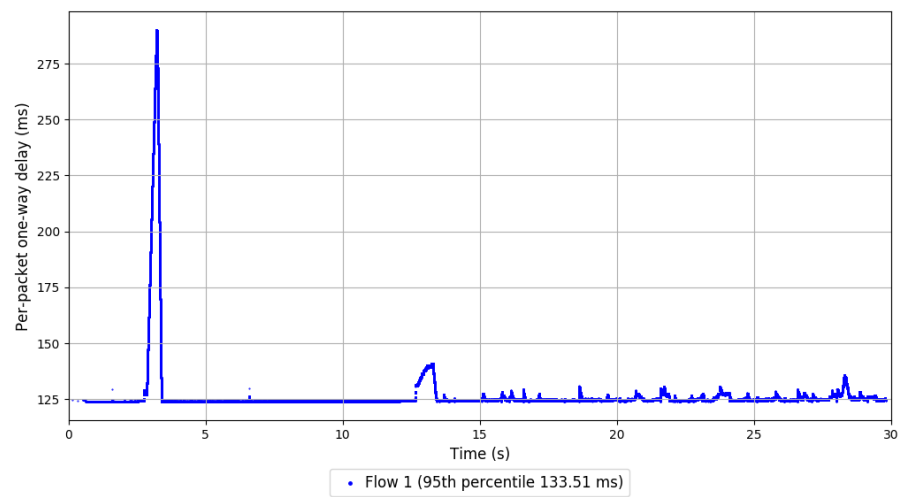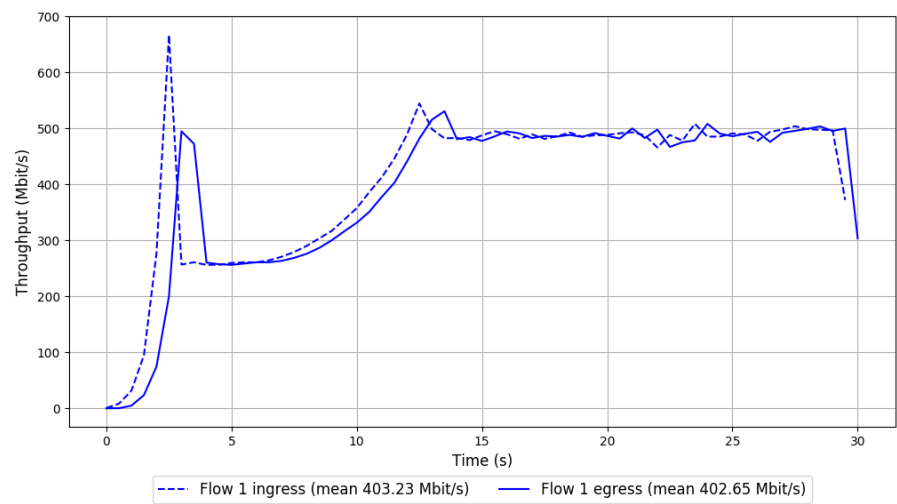
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 20:31:24
End at: 2018-09-07 20:31:54
Local clock offset: -3.359 ms
Remote clock offset: -33.922 ms


# Below is generated by plot.py at 2018-09-07 21:49:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 347.26 Mbit/s
95th percentile per-packet one-way delay: 133.395 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 347.26 Mbit/s
95th percentile per-packet one-way delay: 133.395 ms
Loss rate: 0.92%
```
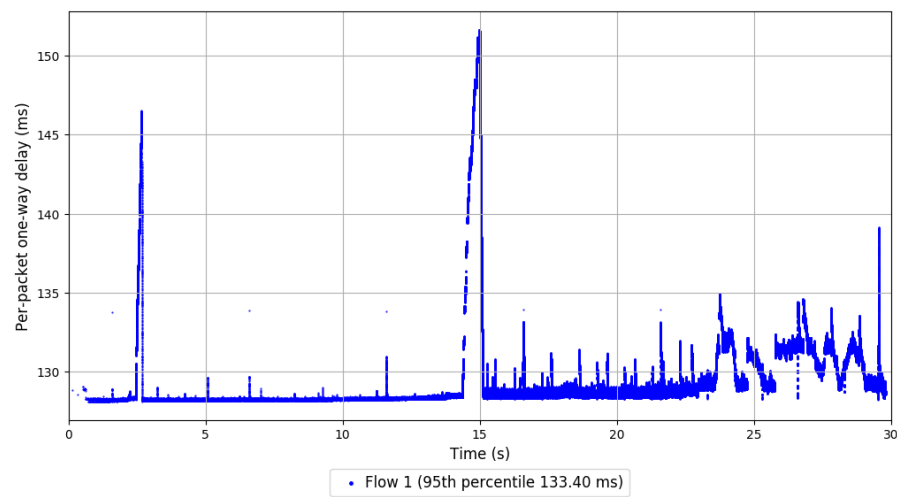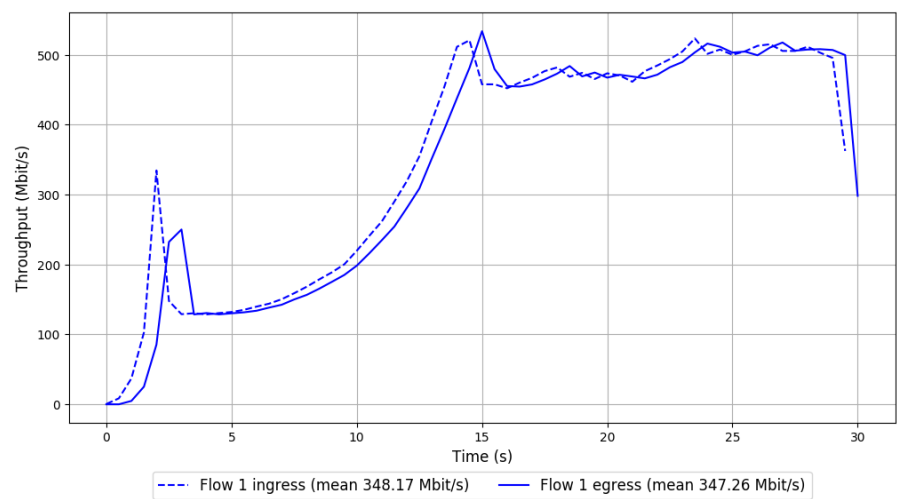
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 20:55:00
End at: 2018-09-07 20:55:30
Local clock offset: -0.051 ms
Remote clock offset: -34.075 ms


# Below is generated by plot.py at 2018-09-07 21:49:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.05 Mbit/s
95th percentile per-packet one-way delay: 139.714 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 372.05 Mbit/s
95th percentile per-packet one-way delay: 139.714 ms
Loss rate: 1.14%
```
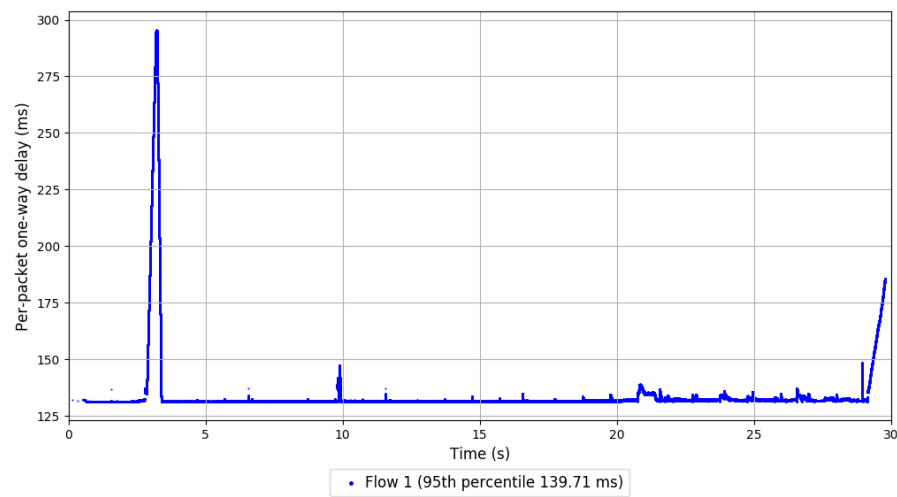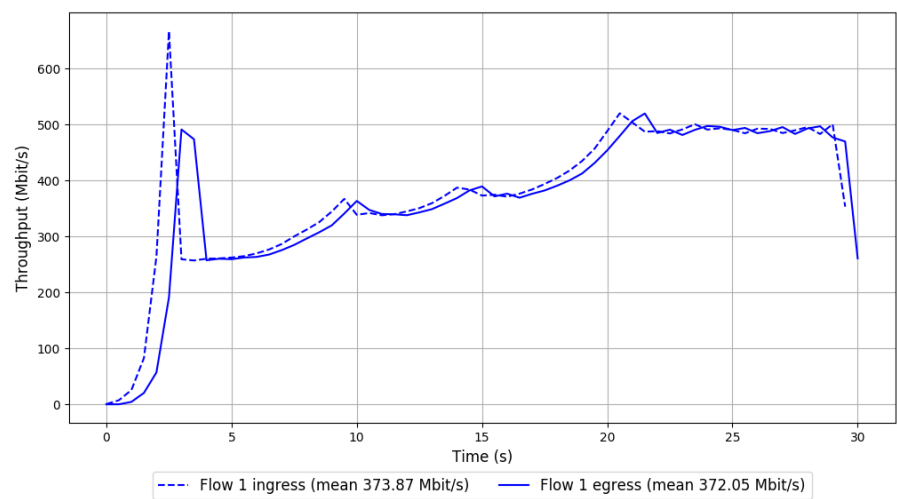
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 373.87 Mbit/s) --- Flow 1 egress (mean 372.05 Mbit/s)

• Flow 1 (95th percentile 139.71 ms)

92

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 21:18:45
End at: 2018-09-07 21:19:15
Local clock offset: -2.772 ms
Remote clock offset: -32.715 ms


# Below is generated by plot.py at 2018-09-07 21:49:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.70 Mbit/s
95th percentile per-packet one-way delay: 172.338 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 372.70 Mbit/s
95th percentile per-packet one-way delay: 172.338 ms
Loss rate: 0.28%
```
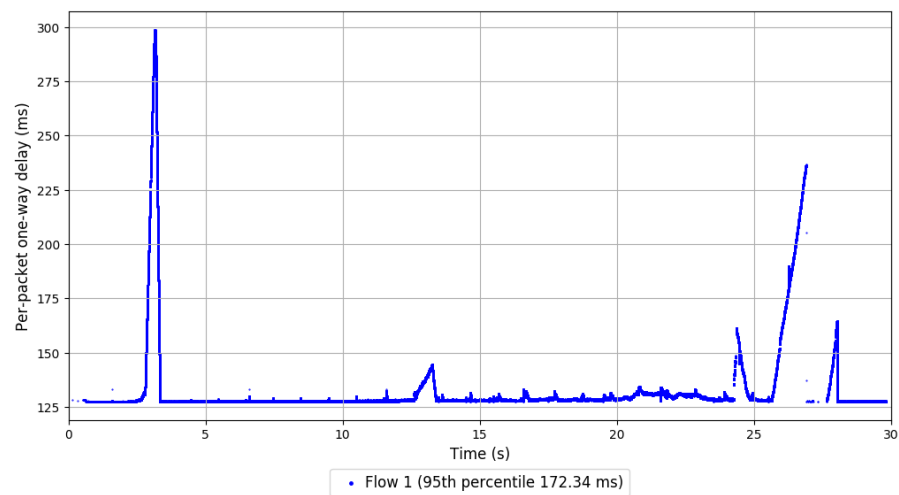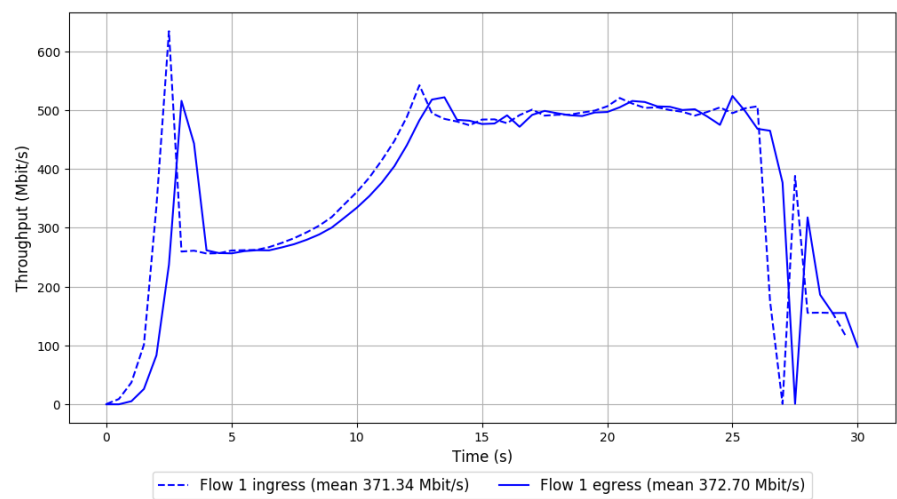
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 371.34 Mbit/s)   Flow 1 egress (mean 372.70 Mbit/s)
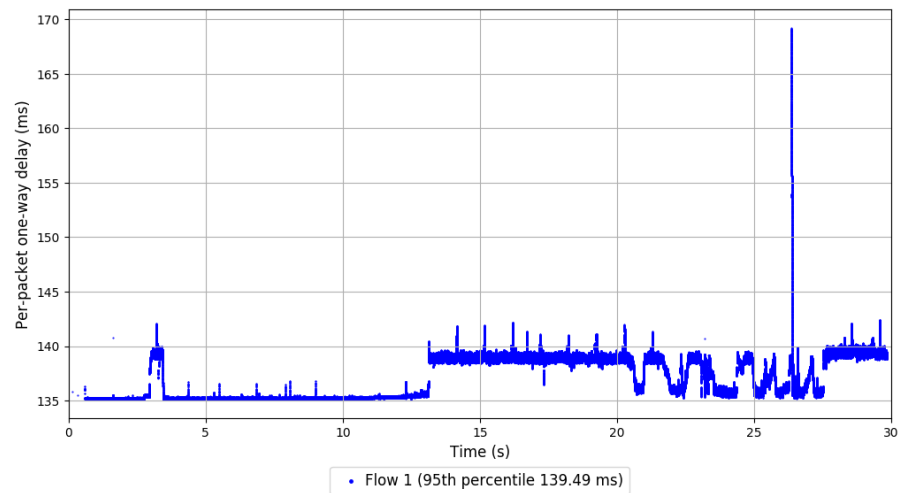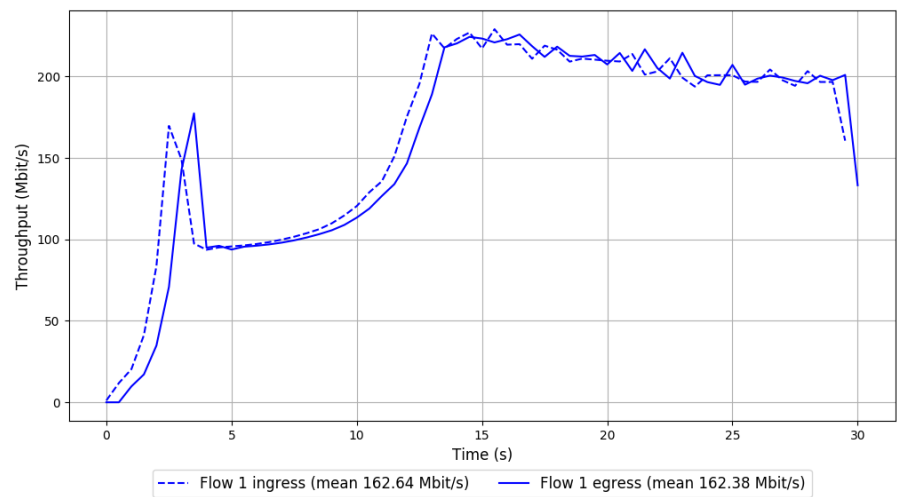

Flow 1 (95th percentile 172.34 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 19:39:17
End at: 2018-09-07 19:39:47
Local clock offset: 2.138 ms
Remote clock offset: -35.706 ms

# Below is generated by plot.py at 2018-09-07 21:49:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 162.38 Mbit/s
95th percentile per-packet one-way delay: 139.485 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 162.38 Mbit/s
95th percentile per-packet one-way delay: 139.485 ms
Loss rate: 0.82%
```
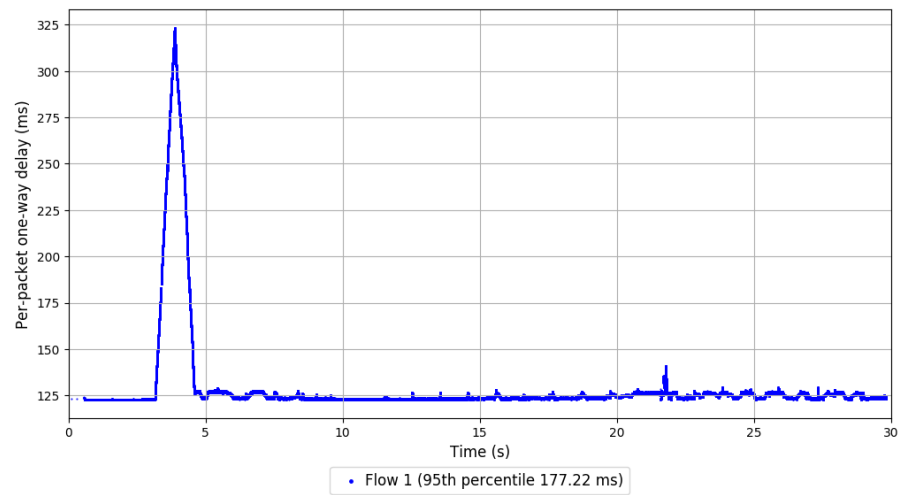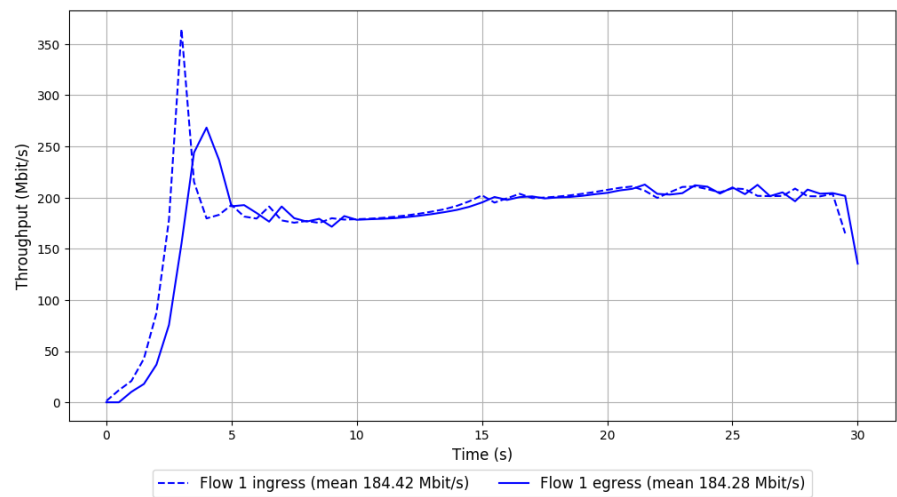
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 20:08:50
End at: 2018-09-07 20:09:20
Local clock offset: -3.217 ms
Remote clock offset: -28.14 ms


# Below is generated by plot.py at 2018-09-07 21:49:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.28 Mbit/s
95th percentile per-packet one-way delay: 177.221 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 184.28 Mbit/s
95th percentile per-packet one-way delay: 177.221 ms
Loss rate: 0.73%
```
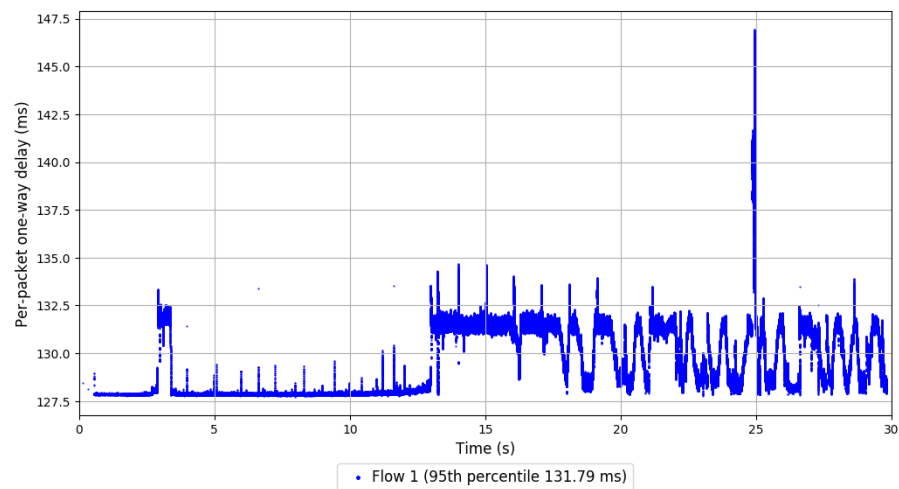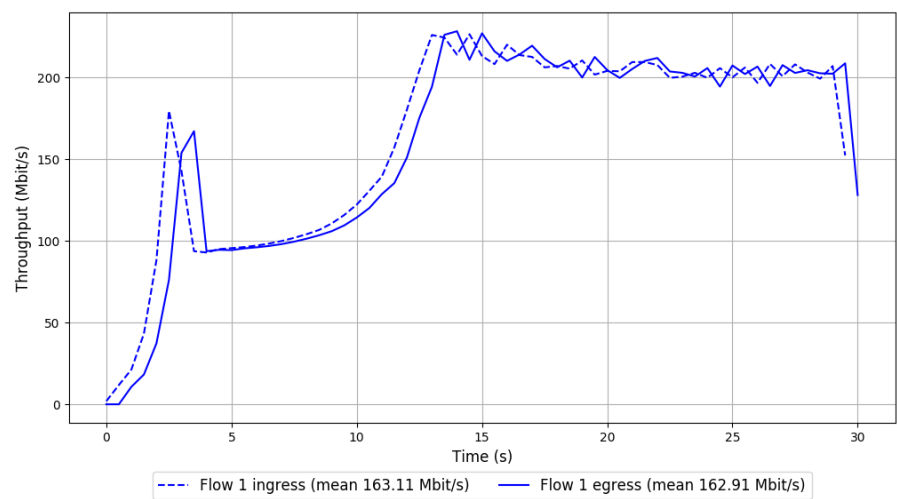
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 20:32:46
End at: 2018-09-07 20:33:16
Local clock offset: -3.209 ms
Remote clock offset: -31.777 ms


# Below is generated by plot.py at 2018-09-07 21:49:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 162.91 Mbit/s
95th percentile per-packet one-way delay: 131.788 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 162.91 Mbit/s
95th percentile per-packet one-way delay: 131.788 ms
Loss rate: 0.77%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 163.11 Mbit/s)   Flow 1 egress (mean 162.91 Mbit/s)
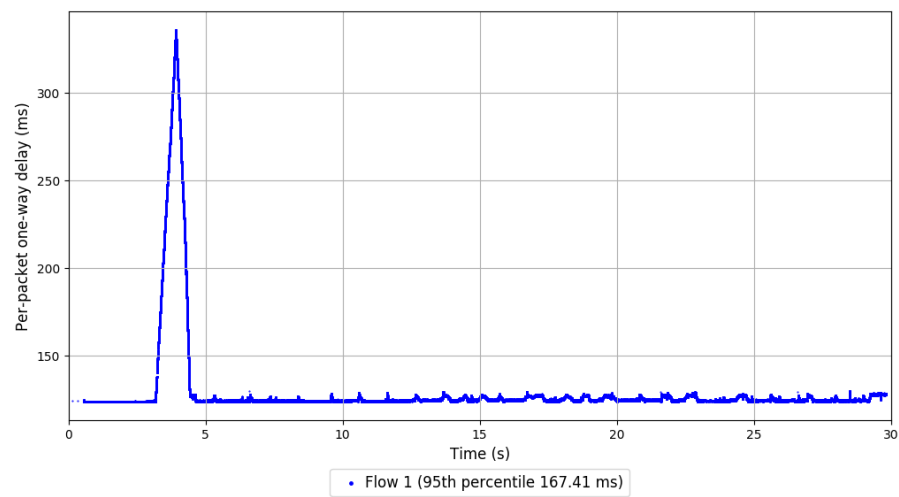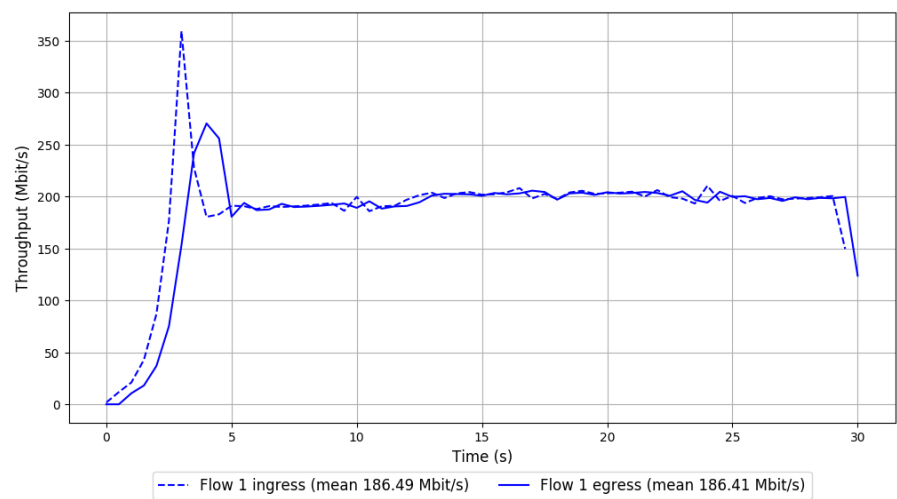

Flow 1 (95th percentile 131.79 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 20:56:23
End at: 2018-09-07 20:56:53
Local clock offset: -2.498 ms
Remote clock offset: -29.107 ms


# Below is generated by plot.py at 2018-09-07 21:51:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.41 Mbit/s
95th percentile per-packet one-way delay: 167.413 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 186.41 Mbit/s
95th percentile per-packet one-way delay: 167.413 ms
Loss rate: 0.70%
```

Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 186.49 Mbit/s)   Flow 1 egress (mean 186.41 Mbit/s)
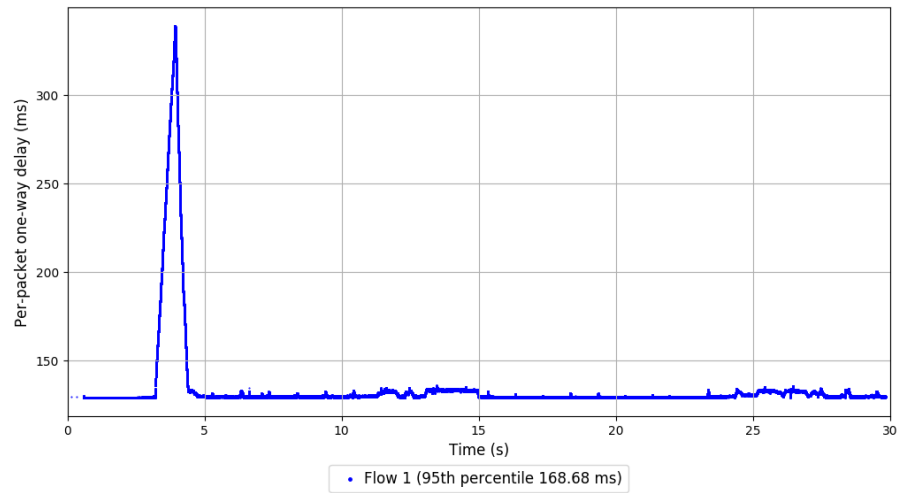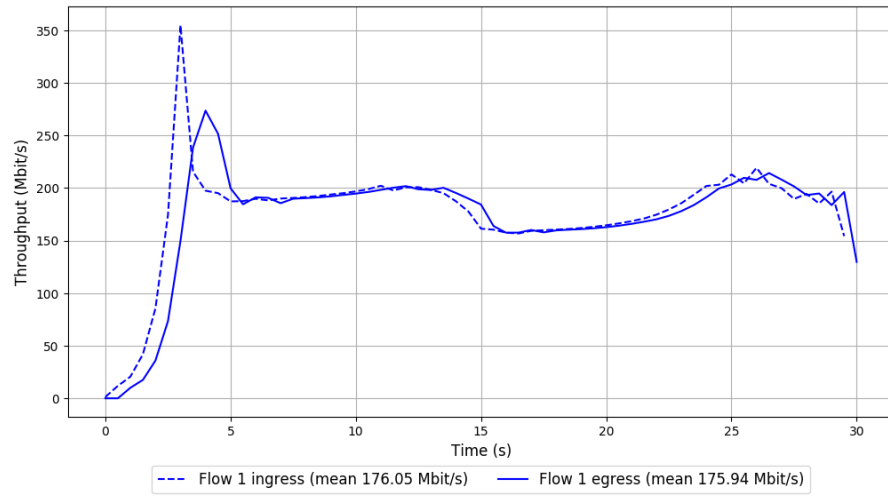

• Flow 1 (95th percentile 167.41 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 21:20:07
End at: 2018-09-07 21:20:37
Local clock offset: -2.947 ms
Remote clock offset: -32.516 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 175.94 Mbit/s
95th percentile per-packet one-way delay: 168.680 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 175.94 Mbit/s
95th percentile per-packet one-way delay: 168.680 ms
Loss rate: 0.72%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 176.05 Mbit/s)   Flow 1 egress (mean 175.94 Mbit/s)
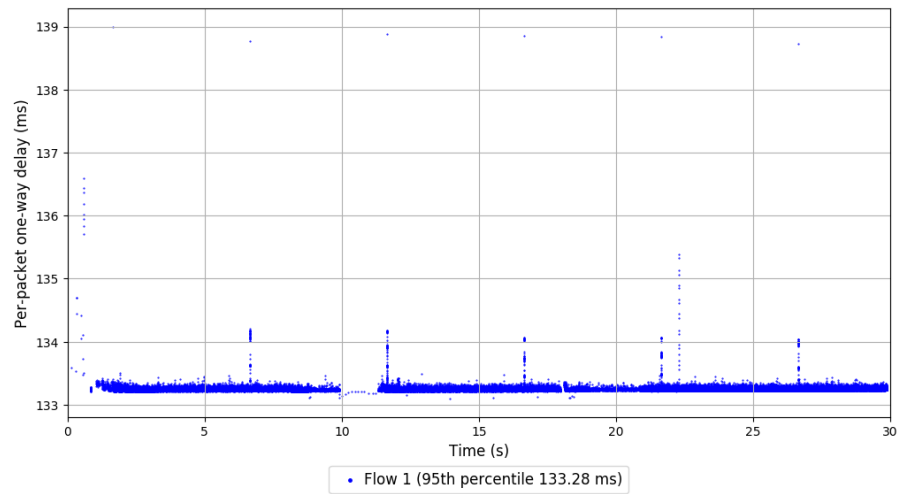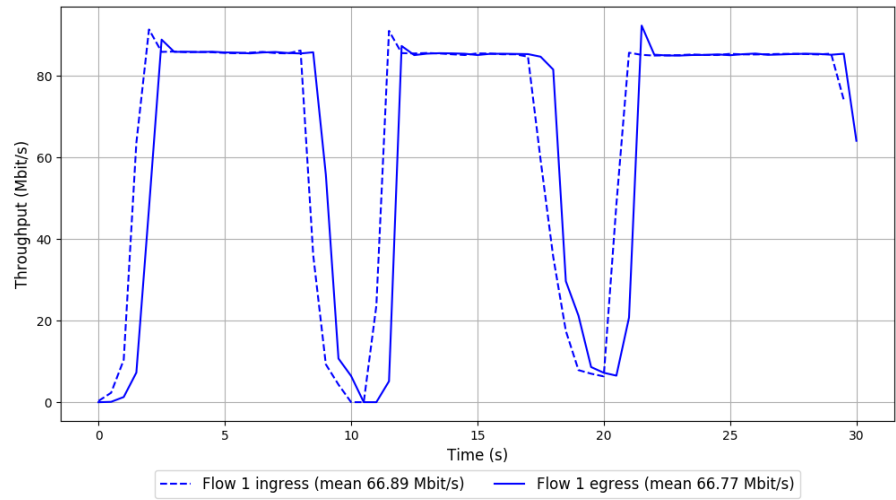

Flow 1 (95th percentile 168.68 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 19:28:42
End at: 2018-09-07 19:29:12
Local clock offset: 1.461 ms
Remote clock offset: -36.093 ms

# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.77 Mbit/s
95th percentile per-packet one-way delay: 133.280 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 66.77 Mbit/s
95th percentile per-packet one-way delay: 133.280 ms
Loss rate: 0.82%
```

Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 66.89 Mbit/s)   Flow 1 egress (mean 66.77 Mbit/s)

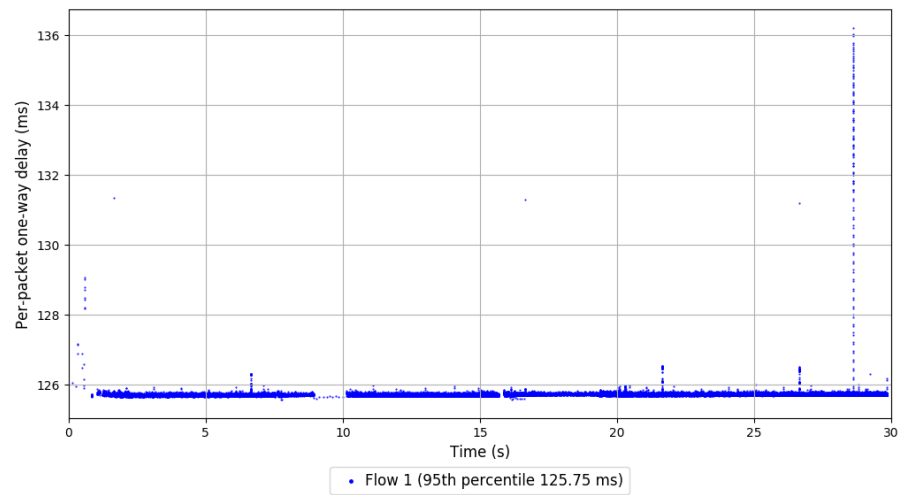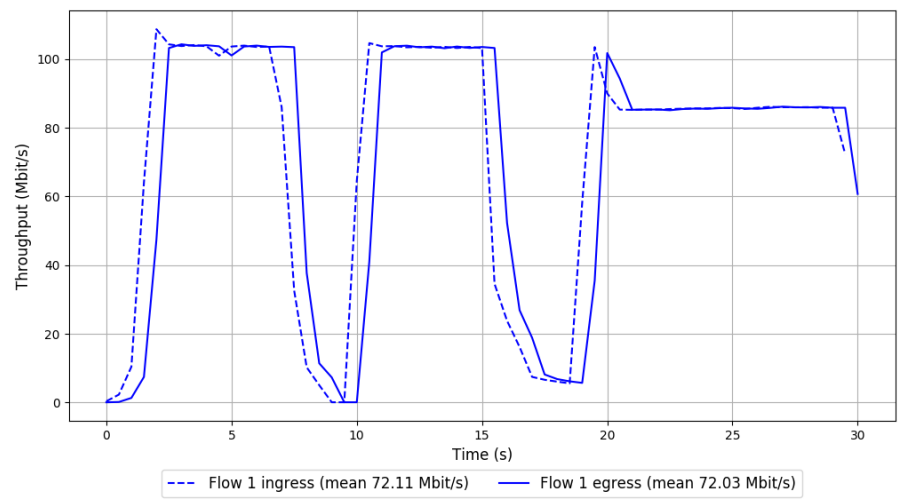

Flow 1 (95th percentile 133.28 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 19:52:43
End at: 2018-09-07 19:53:13
Local clock offset: -2.834 ms
Remote clock offset: -29.635 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.03 Mbit/s
95th percentile per-packet one-way delay: 125.753 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 72.03 Mbit/s
95th percentile per-packet one-way delay: 125.753 ms
Loss rate: 0.77%
```

Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 72.11 Mbit/s) ---- Flow 1 egress (mean 72.03 Mbit/s) ——
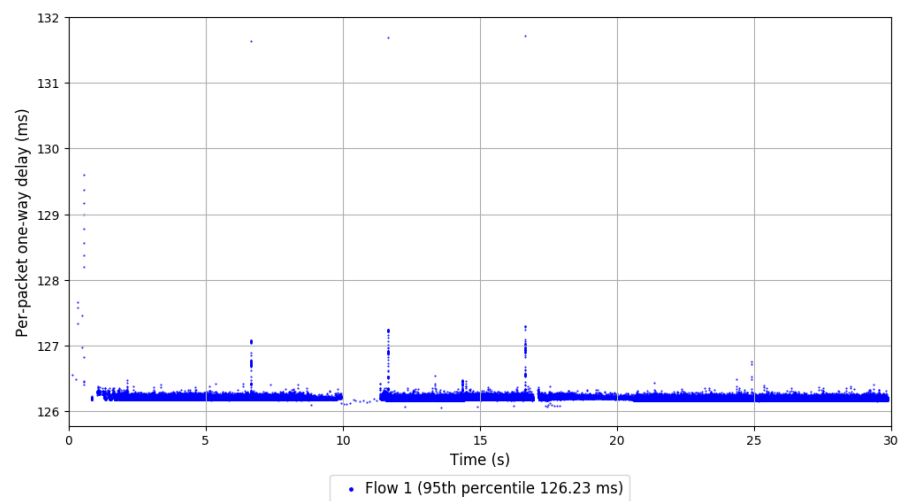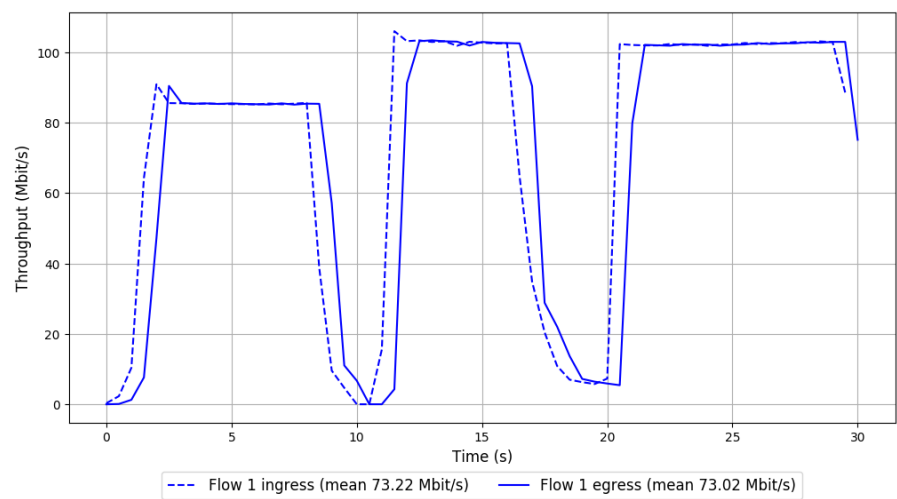

Flow 1 (95th percentile 125.75 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 20:22:15
End at: 2018-09-07 20:22:45
Local clock offset: -1.492 ms
Remote clock offset: -29.974 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.02 Mbit/s
95th percentile per-packet one-way delay: 126.233 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 73.02 Mbit/s
95th percentile per-packet one-way delay: 126.233 ms
Loss rate: 0.90%
```
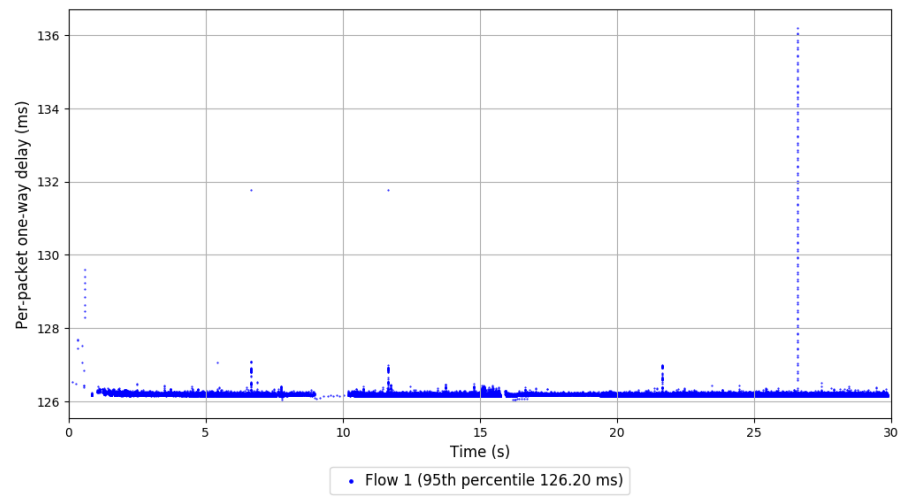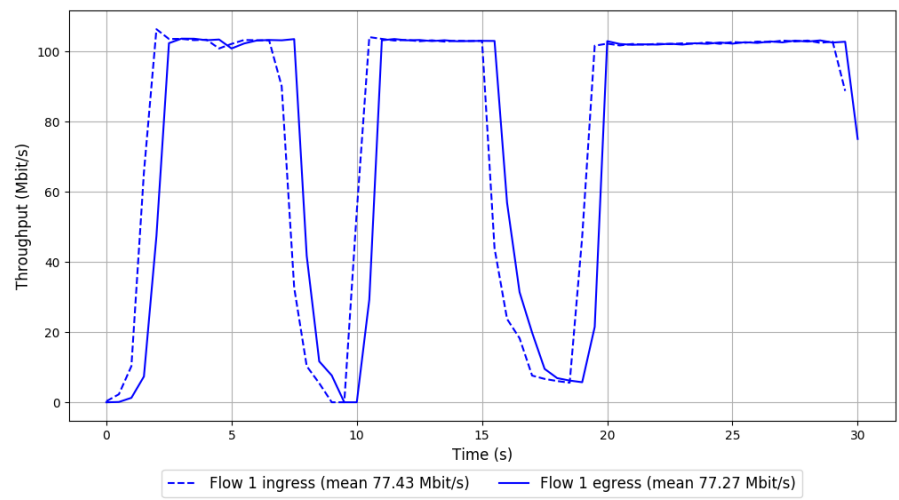
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 20:45:54
End at: 2018-09-07 20:46:24
Local clock offset: -2.646 ms
Remote clock offset: -29.933 ms

# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.27 Mbit/s
95th percentile per-packet one-way delay: 126.203 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 77.27 Mbit/s
95th percentile per-packet one-way delay: 126.203 ms
Loss rate: 0.86%
```
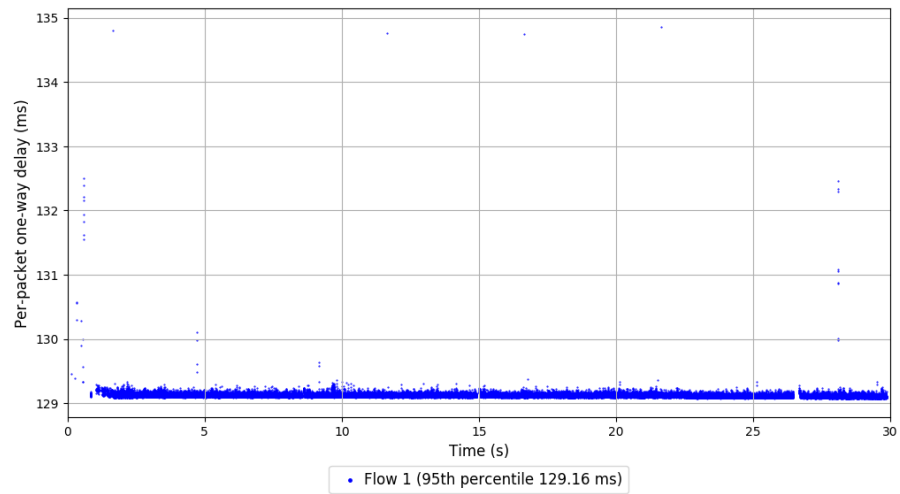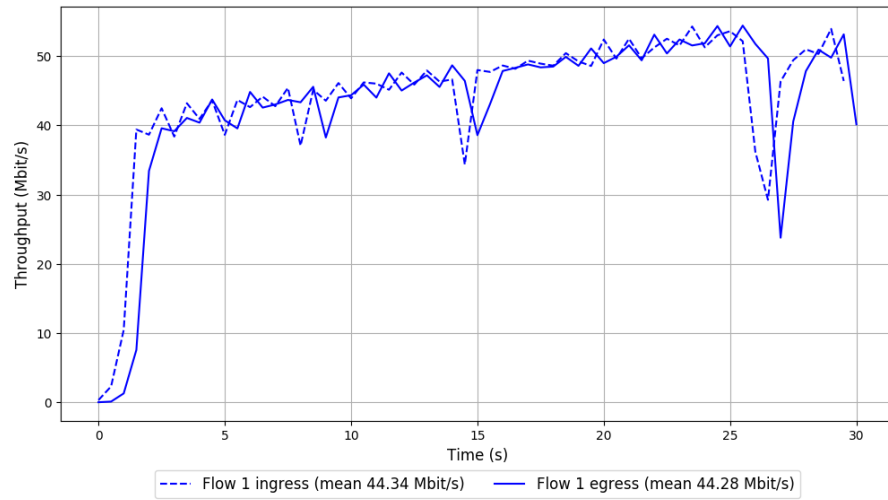
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 21:09:44
End at: 2018-09-07 21:10:14
Local clock offset: -2.584 ms
Remote clock offset: -34.507 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.28 Mbit/s
95th percentile per-packet one-way delay: 129.155 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 44.28 Mbit/s
95th percentile per-packet one-way delay: 129.155 ms
Loss rate: 0.77%
```
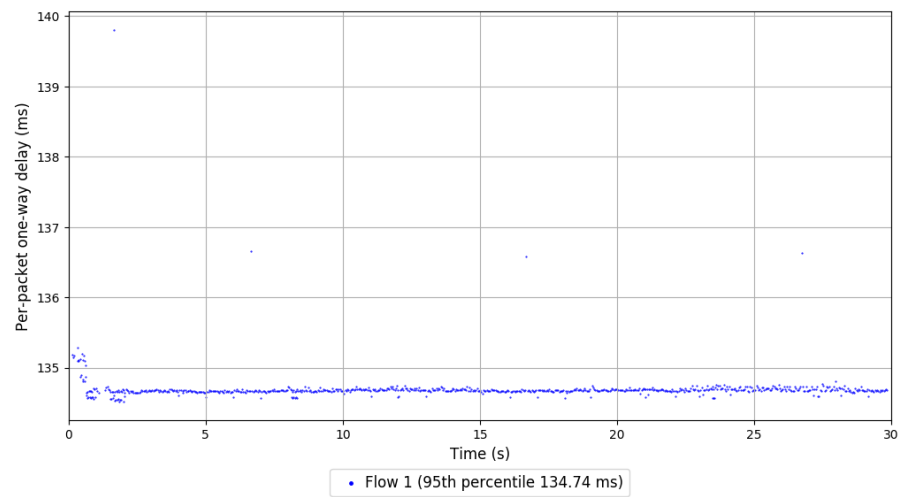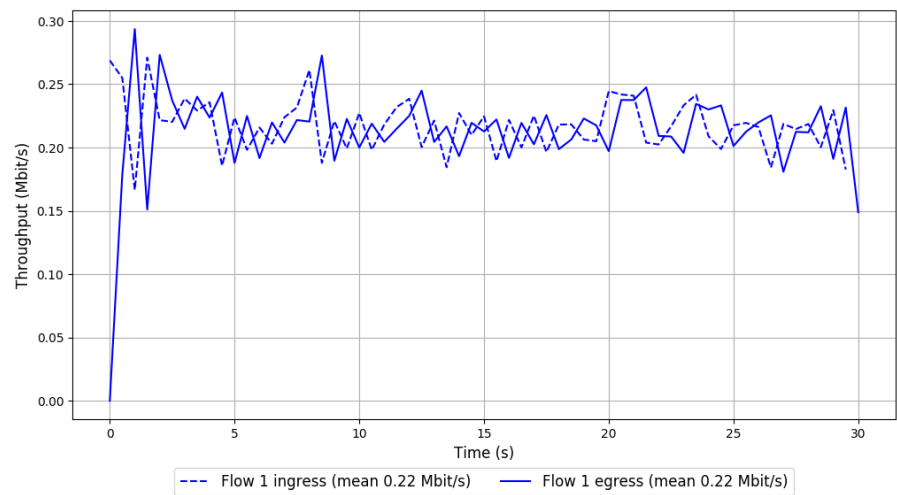
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 19:27:32
End at: 2018-09-07 19:28:02
Local clock offset: 1.832 ms
Remote clock offset: -35.492 ms

# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 134.739 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 134.739 ms
Loss rate: 0.64%
```

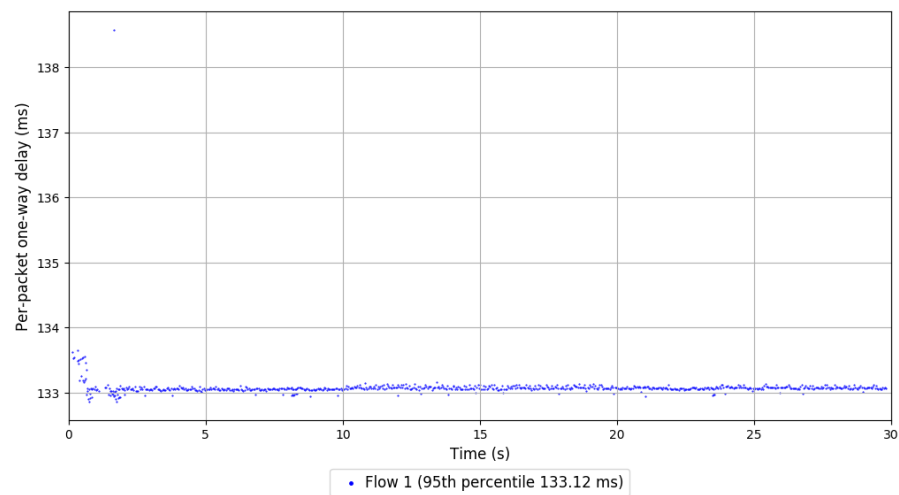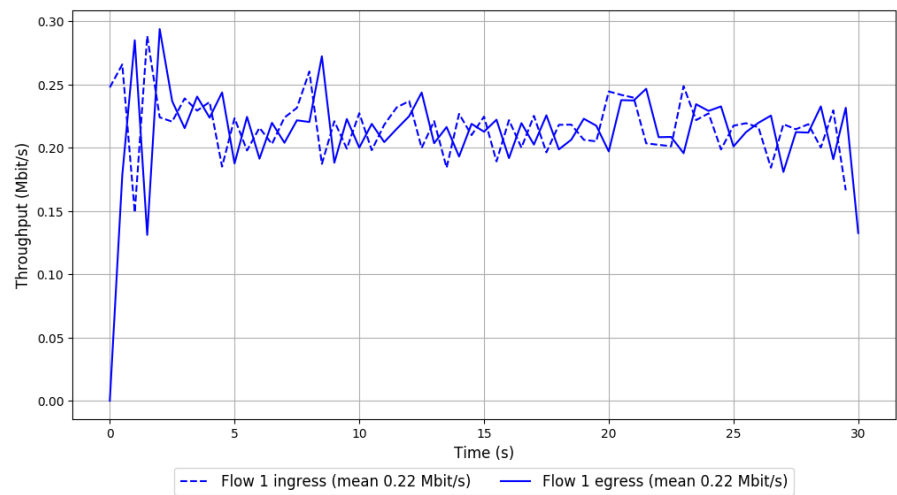Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-09-07 19:51:33
End at: 2018-09-07 19:52:03
Local clock offset: -2.898 ms
Remote clock offset: -36.965 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 133.124 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 133.124 ms
Loss rate: 0.64%
```

Run 2: Report of SCReAM — Data Link

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

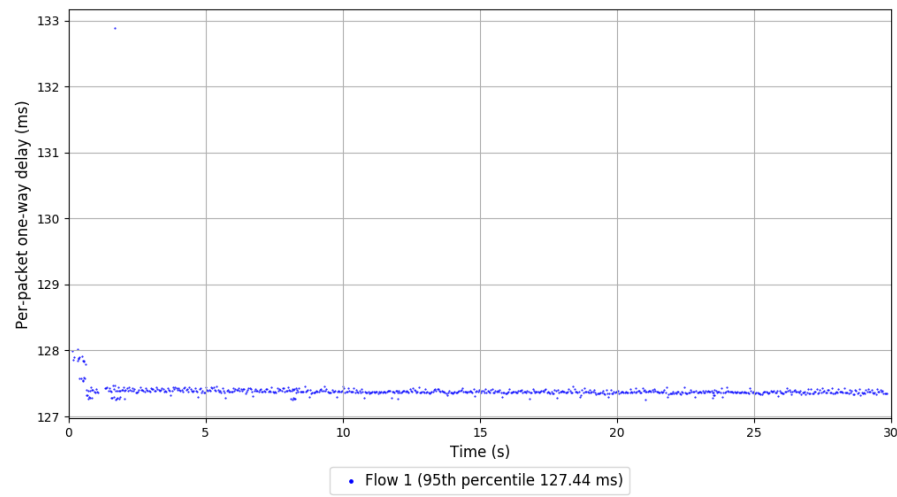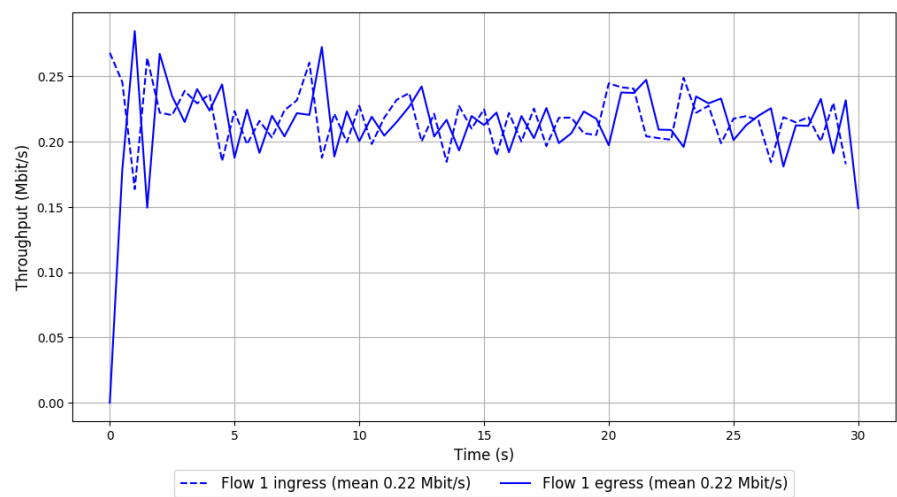Flow 1 (95th percentile 133.12 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-09-07 20:21:05
End at: 2018-09-07 20:21:35
Local clock offset: -2.722 ms
Remote clock offset: -32.22 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 127.435 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 127.435 ms
Loss rate: 0.64%
```

Run 3: Report of SCReAM — Data Link

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

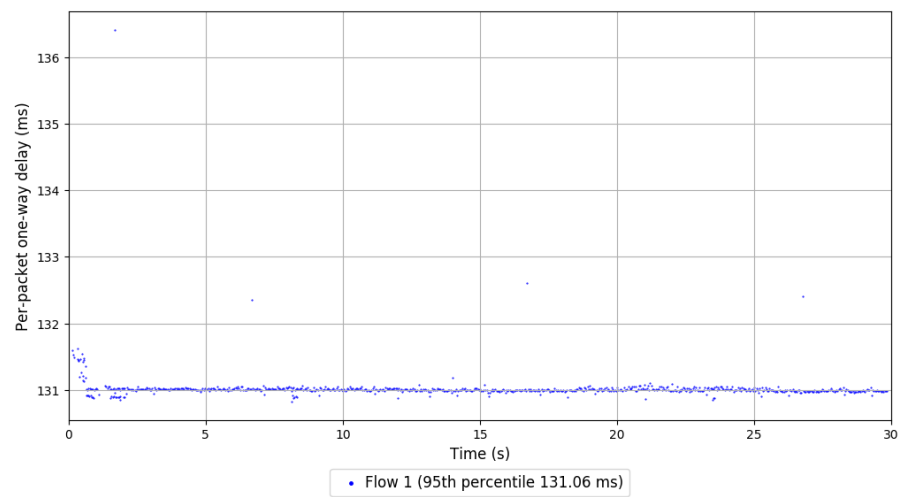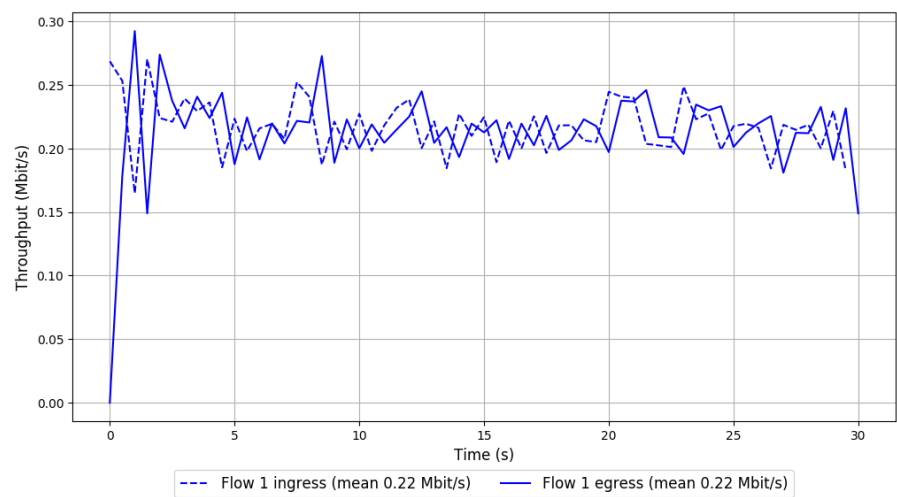• Flow 1 (95th percentile 127.44 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-09-07 20:44:44
End at: 2018-09-07 20:45:14
Local clock offset: -1.928 ms
Remote clock offset: -33.891 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 131.058 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 131.058 ms
Loss rate: 0.64%
```
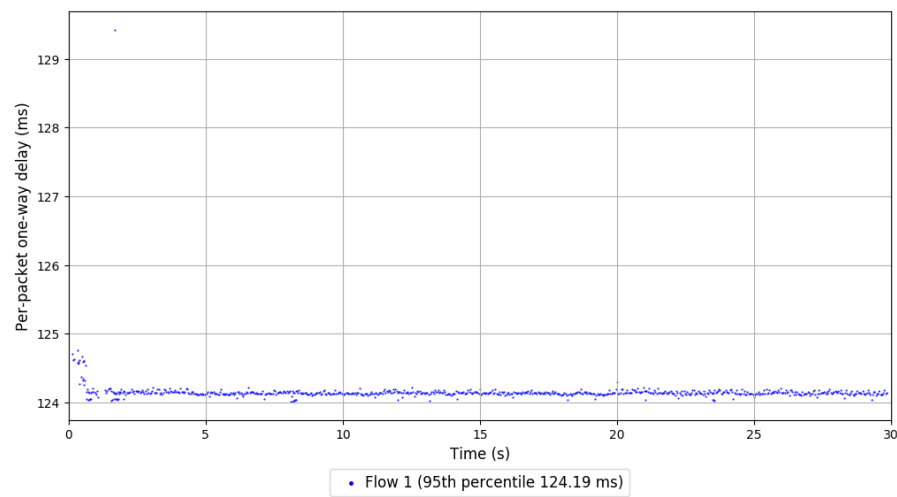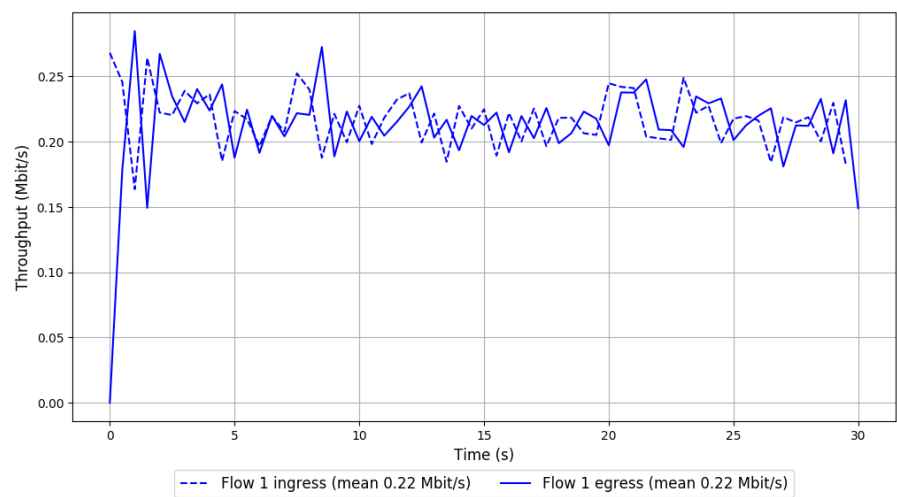
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-09-07 21:08:35
End at: 2018-09-07 21:09:05
Local clock offset: -2.265 ms
Remote clock offset: -29.095 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 124.195 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 124.195 ms
Loss rate: 0.64%
```
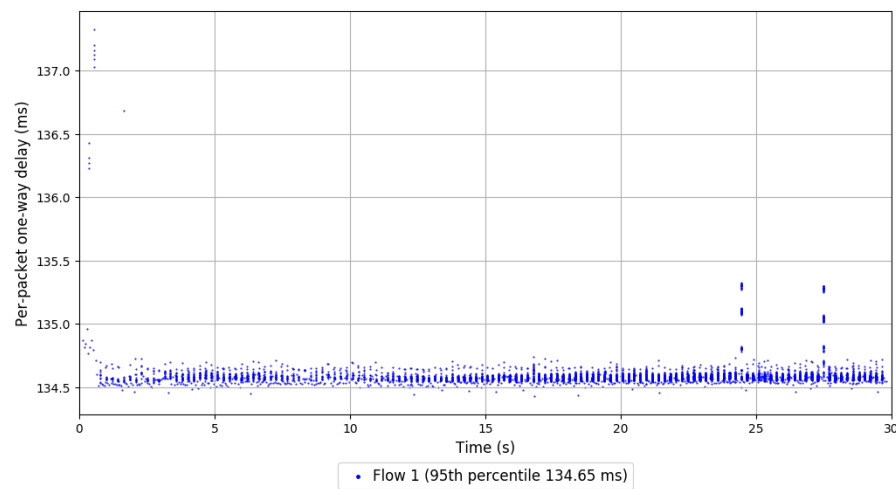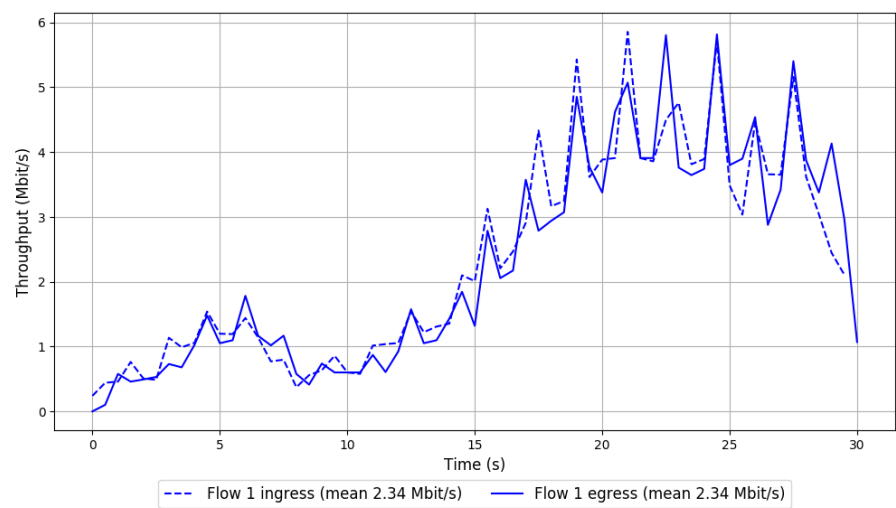
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-09-07 19:32:43
End at: 2018-09-07 19:33:13
Local clock offset: 1.634 ms
Remote clock offset: -35.436 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 134.650 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 134.650 ms
Loss rate: 0.75%
```

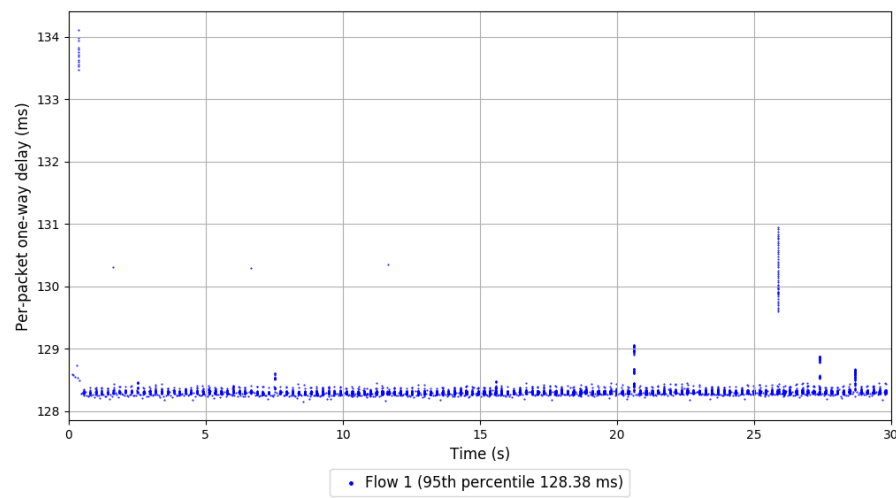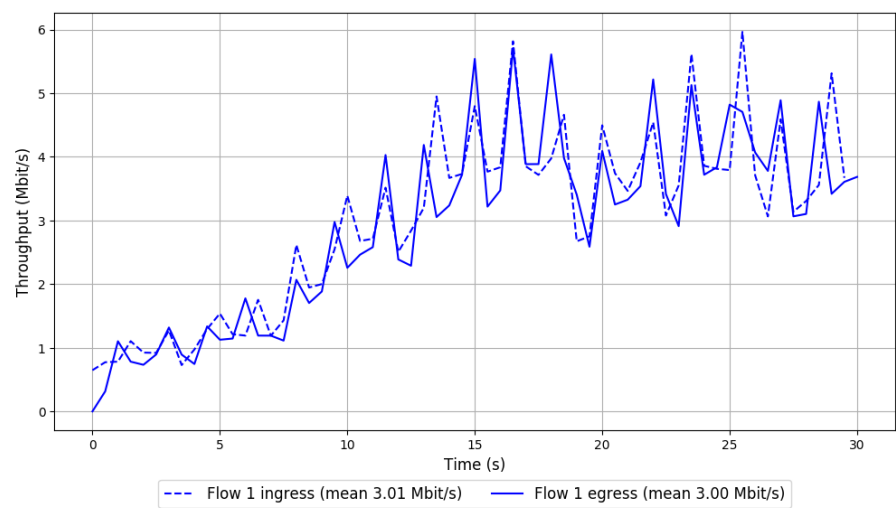Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-09-07 19:56:47
End at: 2018-09-07 19:57:17
Local clock offset: -3.351 ms
Remote clock offset: -32.442 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 128.383 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 128.383 ms
Loss rate: 1.02%
```
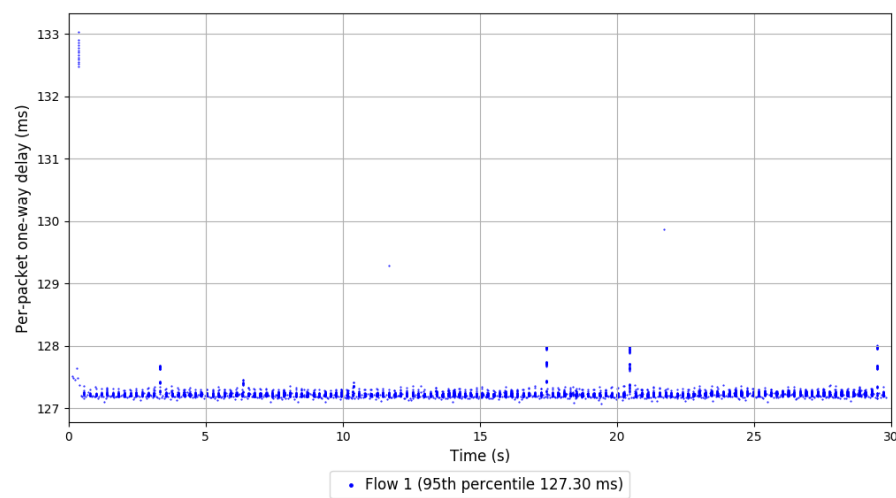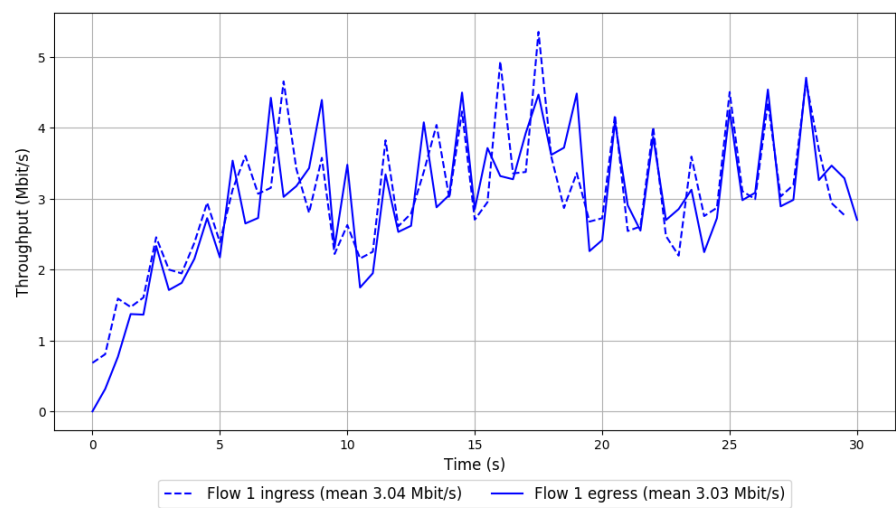
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-09-07 20:26:19
End at: 2018-09-07 20:26:49
Local clock offset: -2.875 ms
Remote clock offset: -32.336 ms

# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 127.298 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 127.298 ms
Loss rate: 0.74%
```
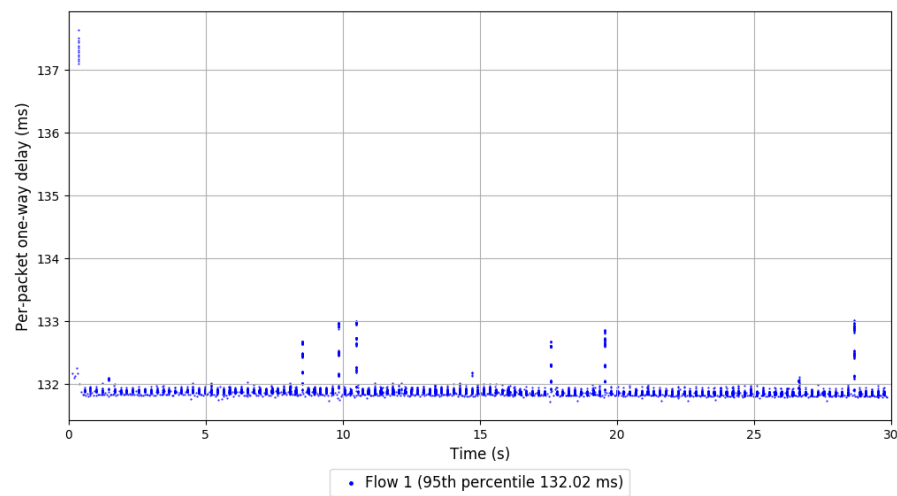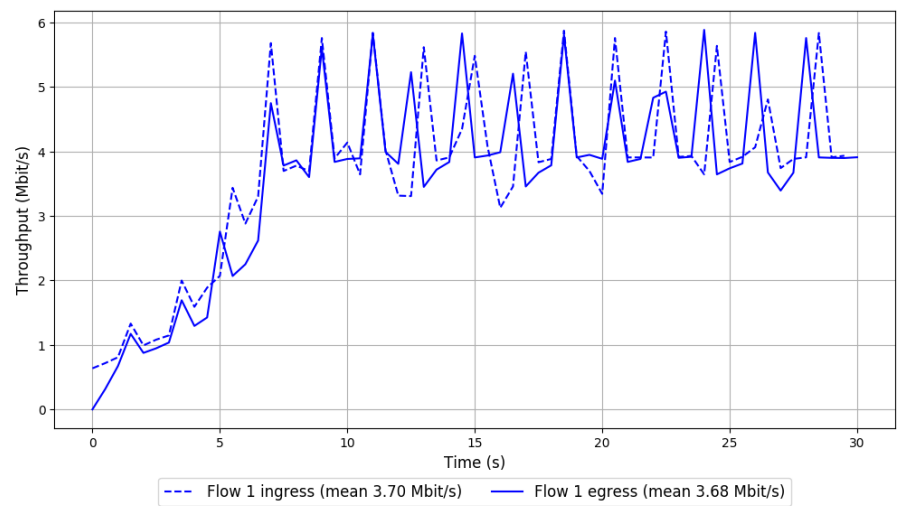
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-09-07 20:49:50
End at: 2018-09-07 20:50:20
Local clock offset: -3.0 ms
Remote clock offset: -35.731 ms


# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 132.023 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 132.023 ms
Loss rate: 0.89%
```

Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 3.70 Mbit/s)   Flow 1 egress (mean 3.68 Mbit/s)

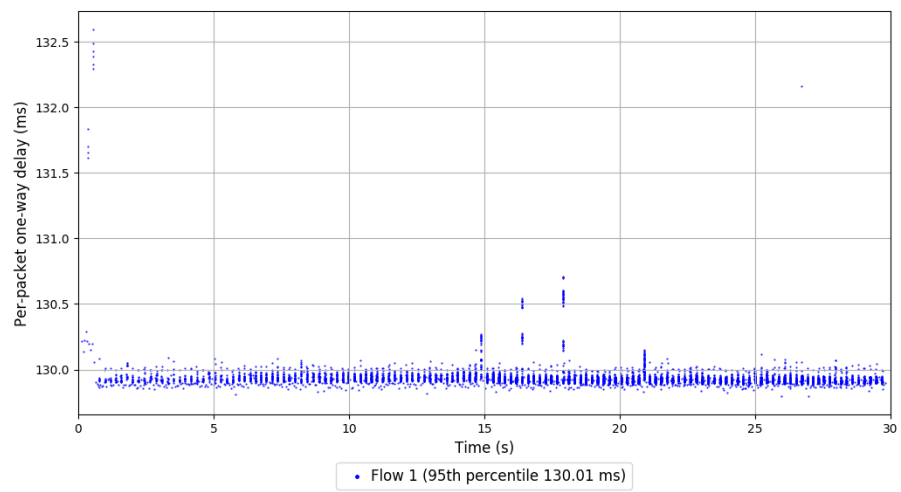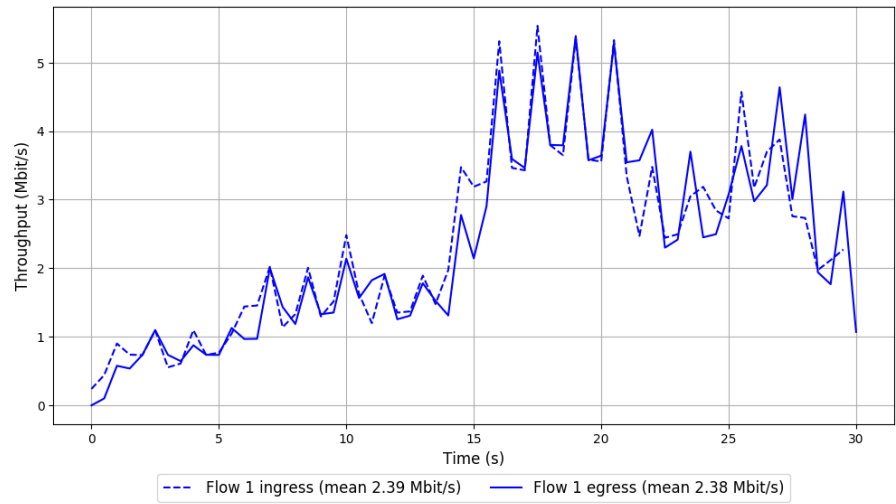
Flow 1 (95th percentile 132.02 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-09-07 21:13:39
End at: 2018-09-07 21:14:09
Local clock offset: -1.897 ms
Remote clock offset: -34.742 ms

# Below is generated by plot.py at 2018-09-07 21:51:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.38 Mbit/s
95th percentile per-packet one-way delay: 130.007 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 2.38 Mbit/s
95th percentile per-packet one-way delay: 130.007 ms
Loss rate: 0.85%
```
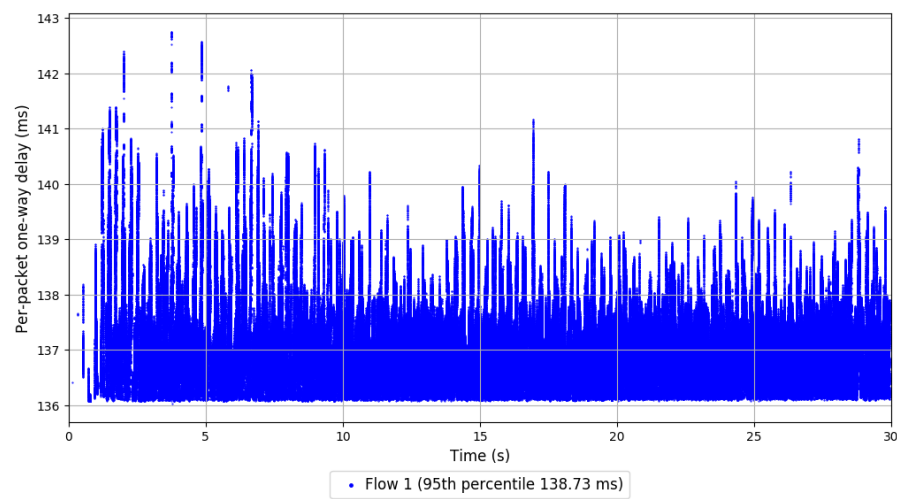
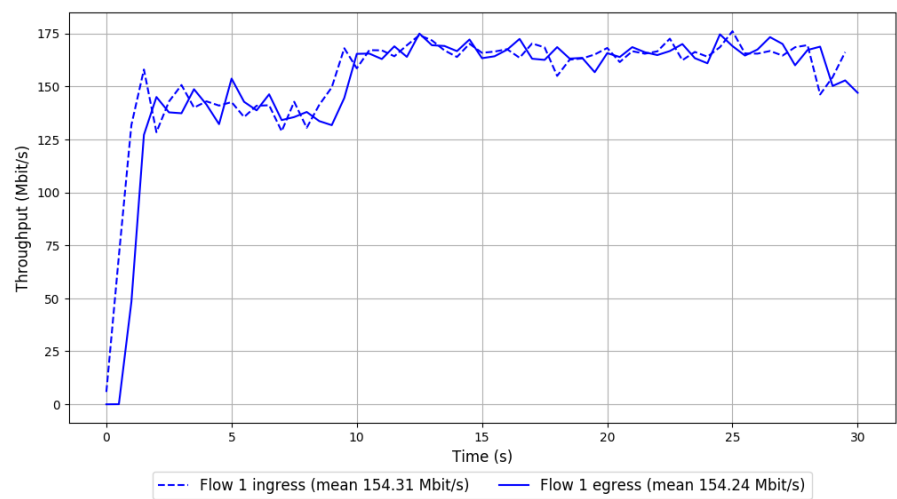Run 5: Report of Sprout — Data Link

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

Start at: 2018-09-07 19:29:56
End at: 2018-09-07 19:30:26
Local clock offset: 2.353 ms
Remote clock offset: -36.418 ms


# Below is generated by plot.py at 2018-09-07 21:53:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 154.24 Mbit/s
95th percentile per-packet one-way delay: 138.734 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 154.24 Mbit/s
95th percentile per-packet one-way delay: 138.734 ms
Loss rate: 0.69%
```

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

Flow 1 ingress (mean 154.31 Mbit/s)   Flow 1 egress (mean 154.24 Mbit/s)
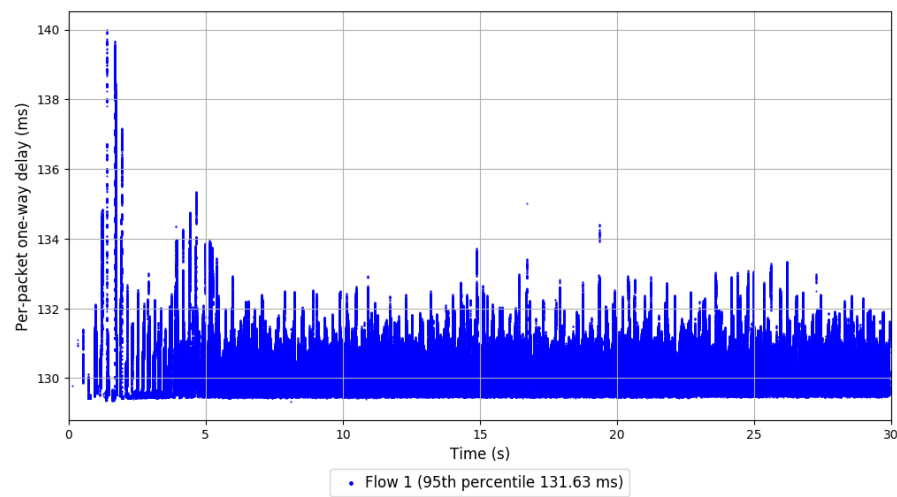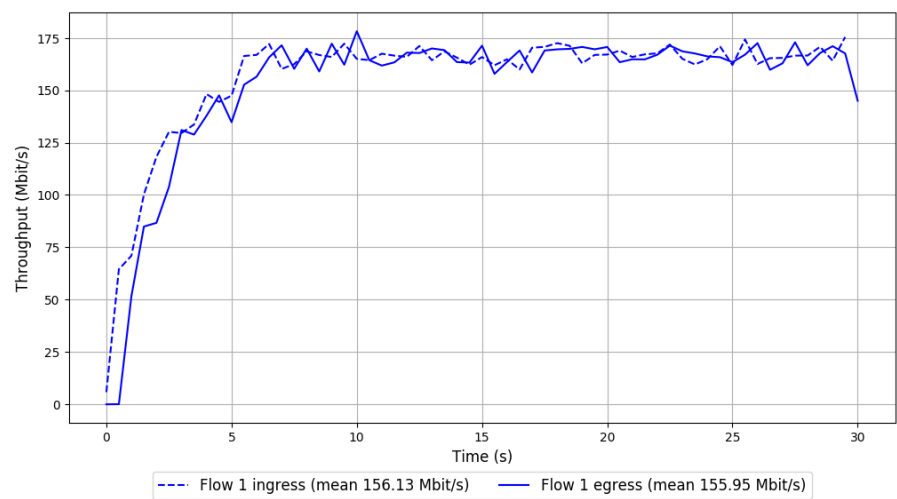

Flow 1 (95th percentile 138.73 ms)

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

Start at: 2018-09-07 19:53:58
End at: 2018-09-07 19:54:28
Local clock offset: -3.159 ms
Remote clock offset: -35.188 ms


# Below is generated by plot.py at 2018-09-07 21:53:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 155.95 Mbit/s
95th percentile per-packet one-way delay: 131.627 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 155.95 Mbit/s
95th percentile per-packet one-way delay: 131.627 ms
Loss rate: 0.76%
```
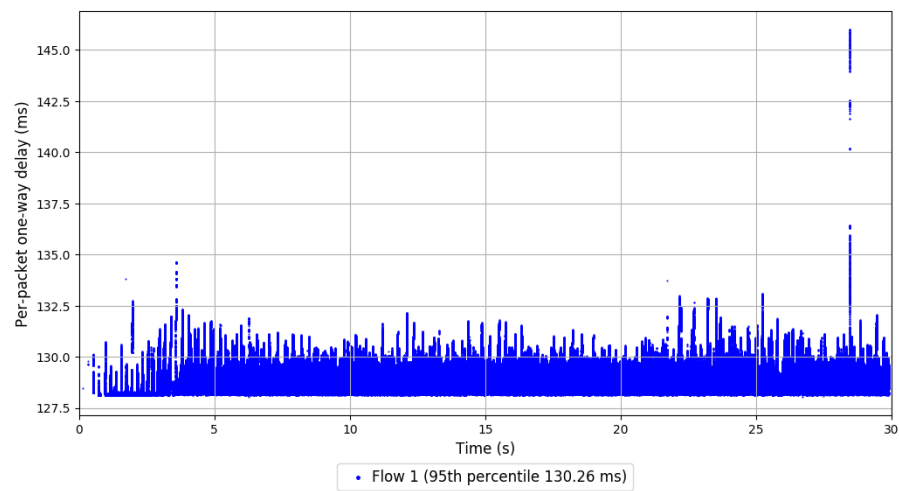
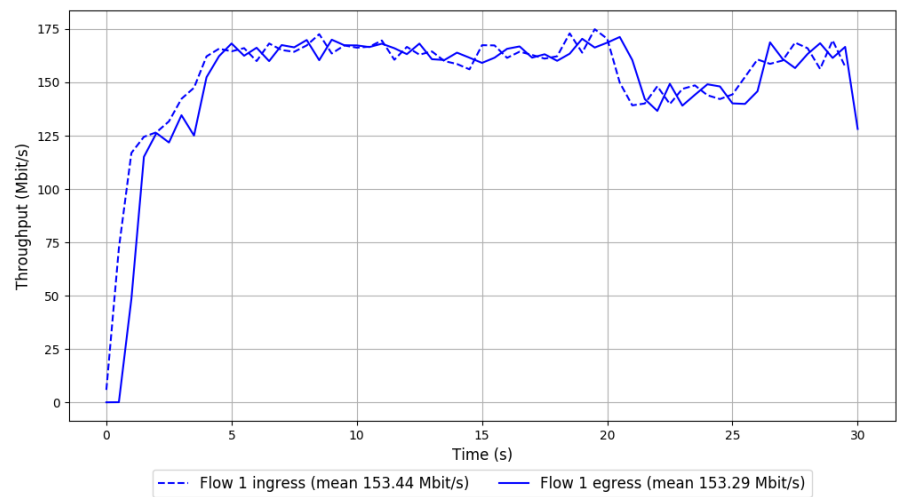Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-09-07 20:23:29
End at: 2018-09-07 20:23:59
Local clock offset: -3.355 ms
Remote clock offset: -33.785 ms


# Below is generated by plot.py at 2018-09-07 21:53:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 153.29 Mbit/s
95th percentile per-packet one-way delay: 130.260 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 153.29 Mbit/s
95th percentile per-packet one-way delay: 130.260 ms
Loss rate: 0.77%
```

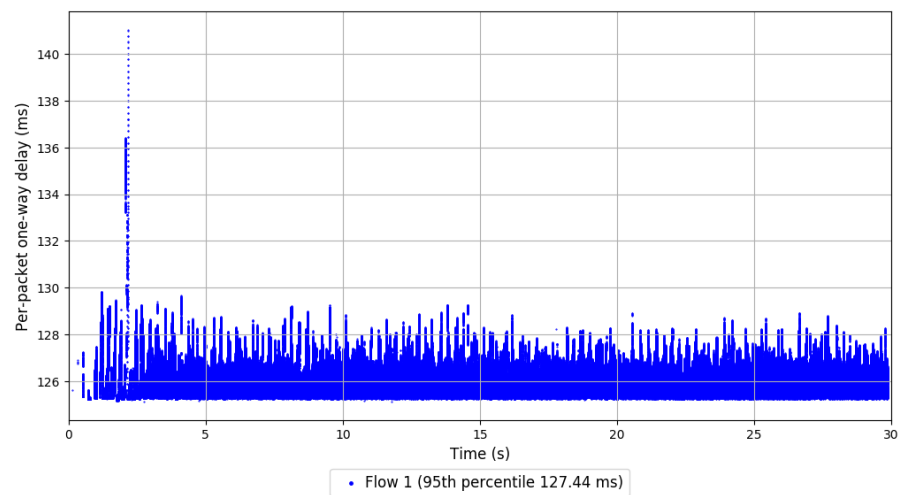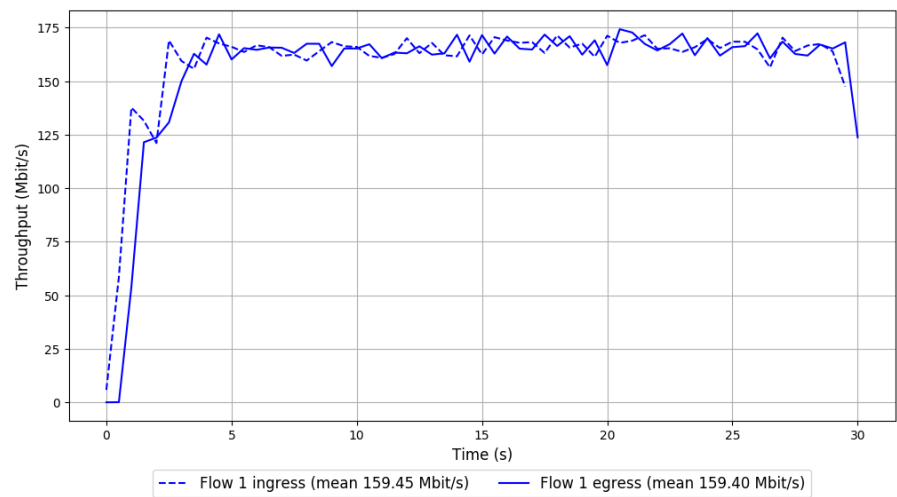Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-09-07 20:47:08
End at: 2018-09-07 20:47:38
Local clock offset: -2.865 ms
Remote clock offset: -30.593 ms


# Below is generated by plot.py at 2018-09-07 21:53:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 159.40 Mbit/s
95th percentile per-packet one-way delay: 127.436 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 159.40 Mbit/s
95th percentile per-packet one-way delay: 127.436 ms
Loss rate: 0.67%
```

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

Flow 1 ingress (mean 159.45 Mbit/s)   Flow 1 egress (mean 159.40 Mbit/s)
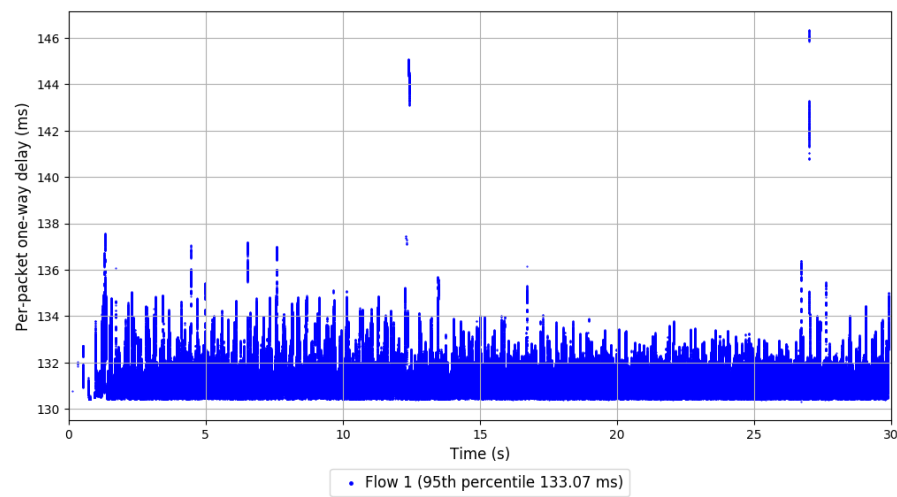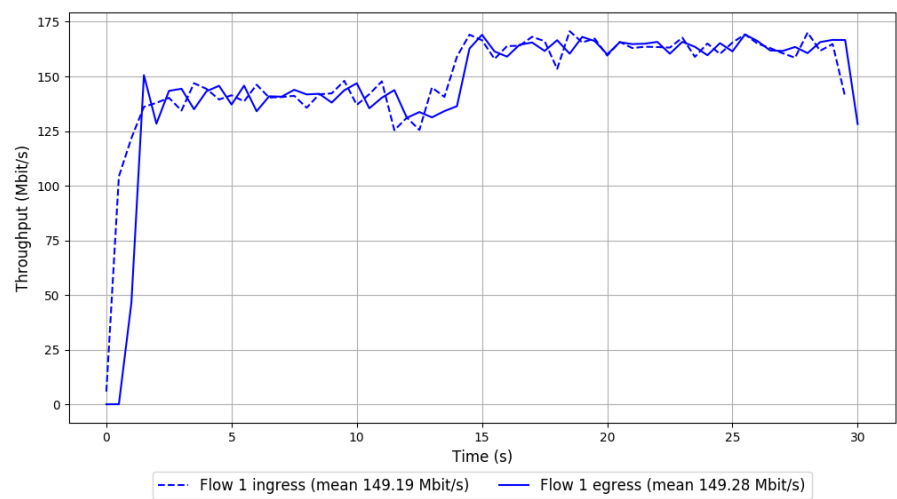

Flow 1 (95th percentile 127.44 ms)

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

Start at: 2018-09-07 21:10:57
End at: 2018-09-07 21:11:27
Local clock offset: -2.468 ms
Remote clock offset: -34.163 ms


# Below is generated by plot.py at 2018-09-07 21:53:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 149.28 Mbit/s
95th percentile per-packet one-way delay: 133.070 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 149.28 Mbit/s
95th percentile per-packet one-way delay: 133.070 ms
Loss rate: 0.58%
```

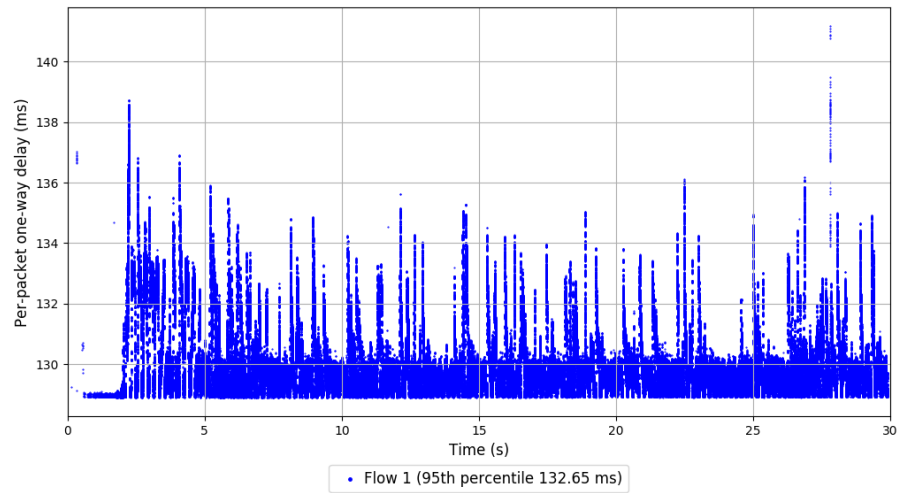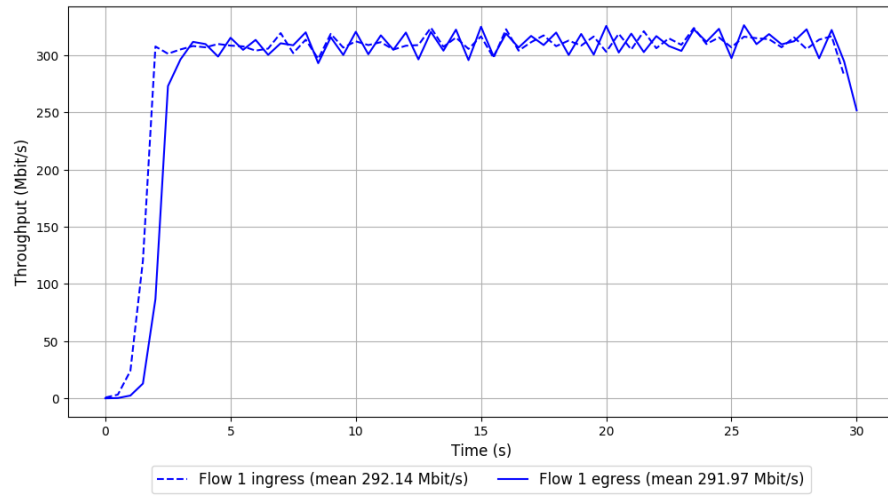Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 19:26:09
End at: 2018-09-07 19:26:39
Local clock offset: 1.58 ms
Remote clock offset: -30.445 ms


# Below is generated by plot.py at 2018-09-07 21:54:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 291.97 Mbit/s
95th percentile per-packet one-way delay: 132.652 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 291.97 Mbit/s
95th percentile per-packet one-way delay: 132.652 ms
Loss rate: 0.71%
```

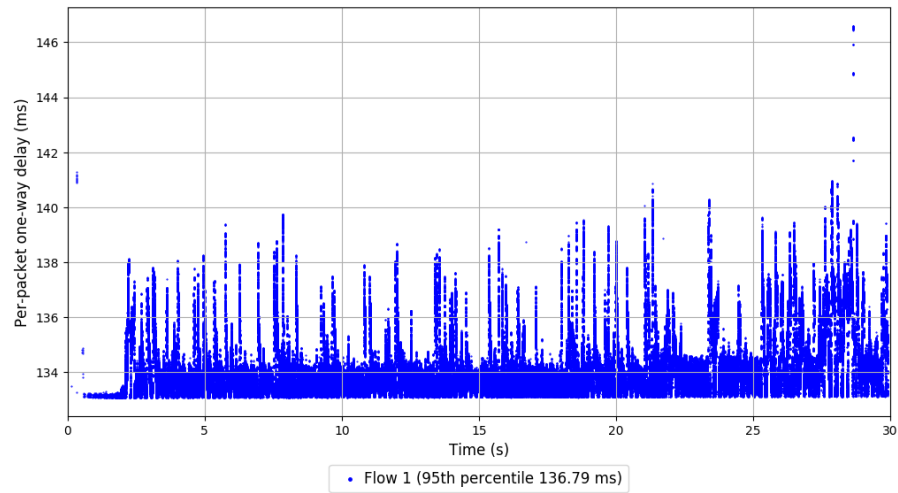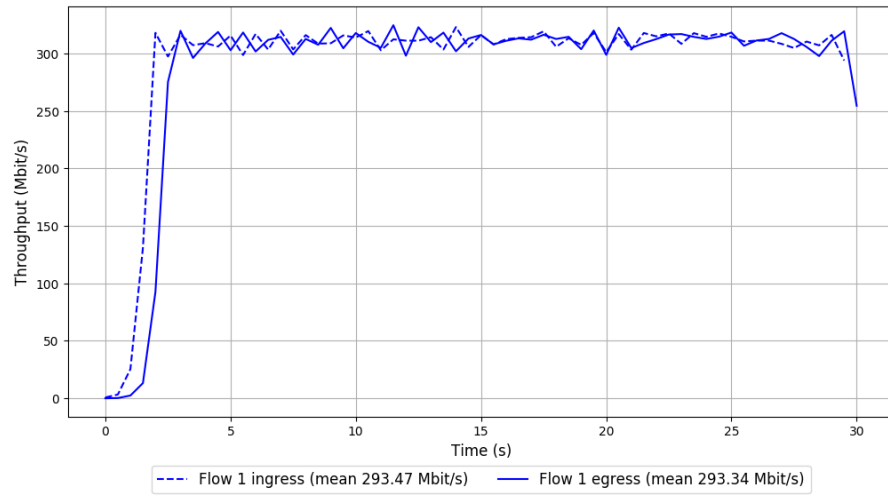Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 19:50:09
End at: 2018-09-07 19:50:39
Local clock offset: 1.014 ms
Remote clock offset: -34.964 ms

# Below is generated by plot.py at 2018-09-07 21:55:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 293.34 Mbit/s
95th percentile per-packet one-way delay: 136.788 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 293.34 Mbit/s
95th percentile per-packet one-way delay: 136.788 ms
Loss rate: 0.70%
```

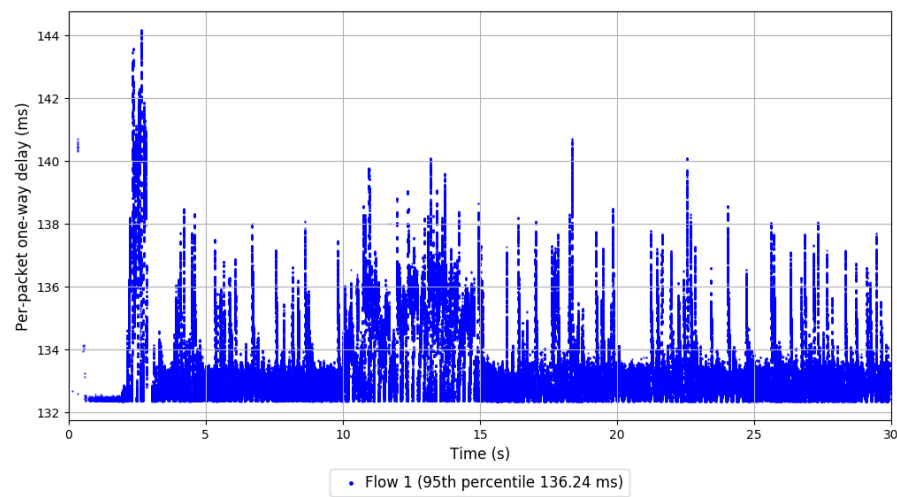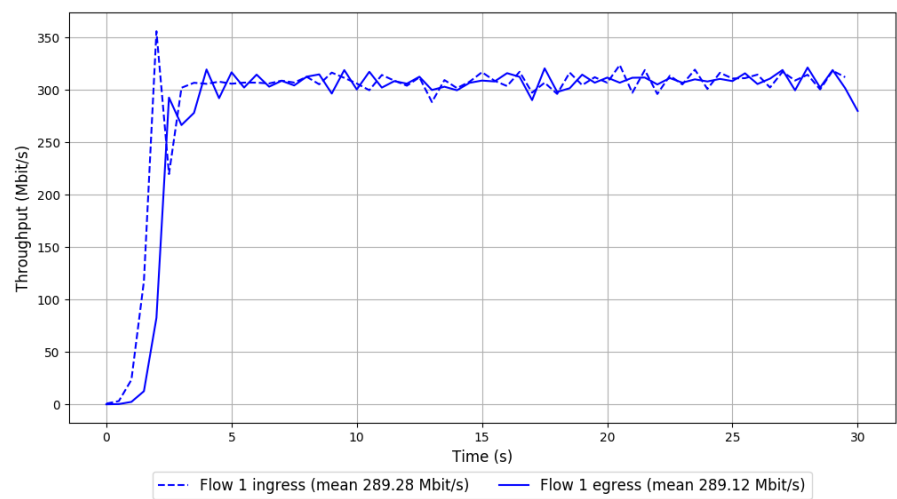Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 20:19:42
End at: 2018-09-07 20:20:12
Local clock offset: -3.454 ms
Remote clock offset: -36.388 ms


# Below is generated by plot.py at 2018-09-07 21:55:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 289.12 Mbit/s
95th percentile per-packet one-way delay: 136.244 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 289.12 Mbit/s
95th percentile per-packet one-way delay: 136.244 ms
Loss rate: 0.70%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 289.28 Mbit/s)   Flow 1 egress (mean 289.12 Mbit/s)
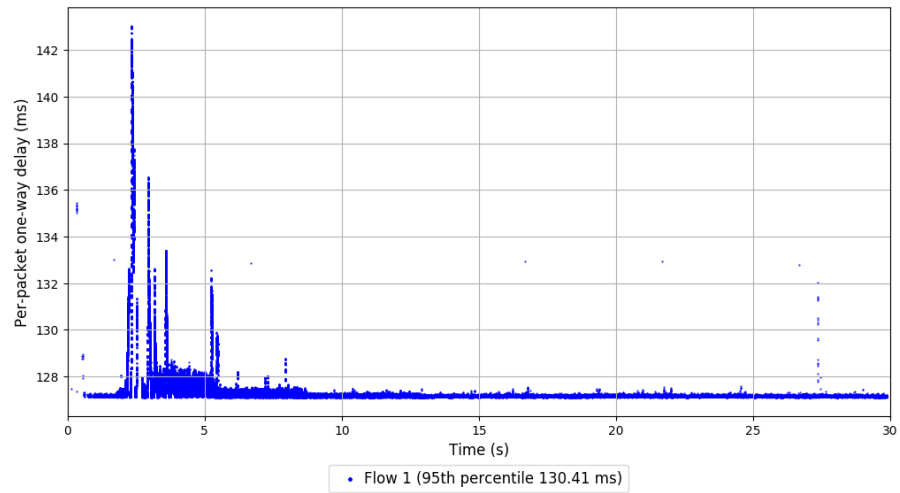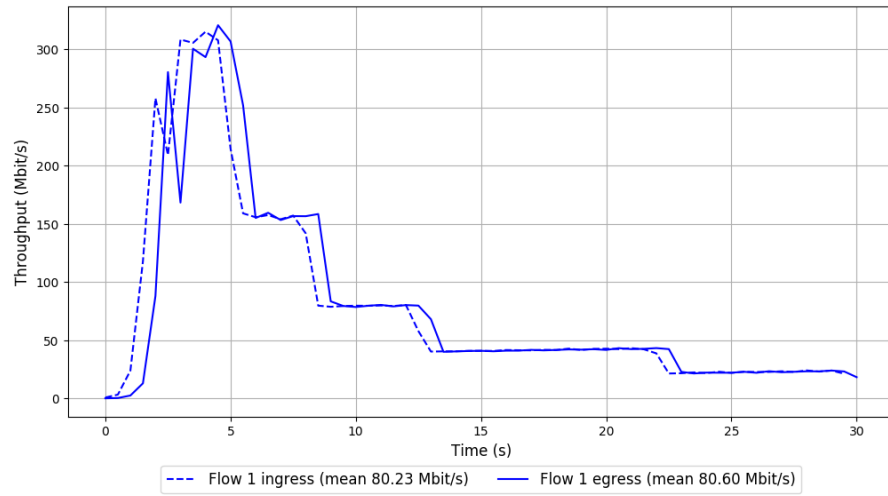

Flow 1 (95th percentile 136.24 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 20:43:30
End at: 2018-09-07 20:44:00
Local clock offset: -3.273 ms
Remote clock offset: -31.062 ms


# Below is generated by plot.py at 2018-09-07 21:55:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.60 Mbit/s
95th percentile per-packet one-way delay: 130.415 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 80.60 Mbit/s
95th percentile per-packet one-way delay: 130.415 ms
Loss rate: 0.19%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 80.23 Mbit/s)　　Flow 1 egress (mean 80.60 Mbit/s)
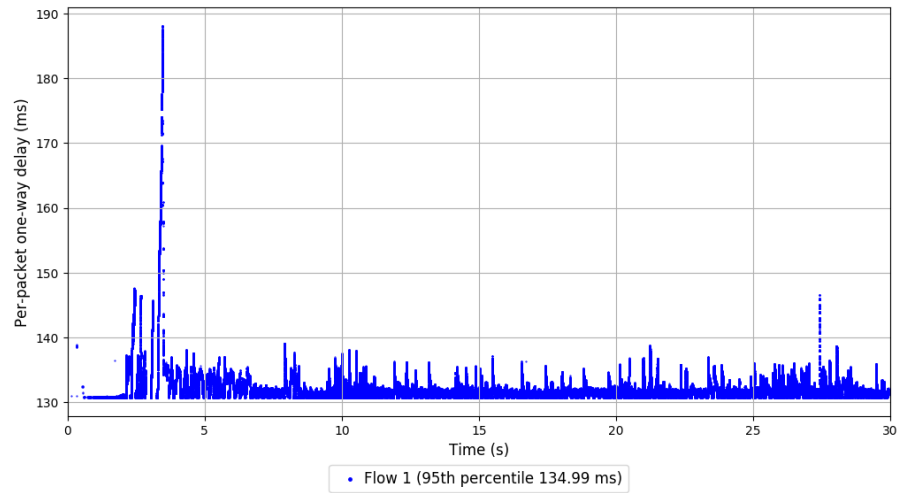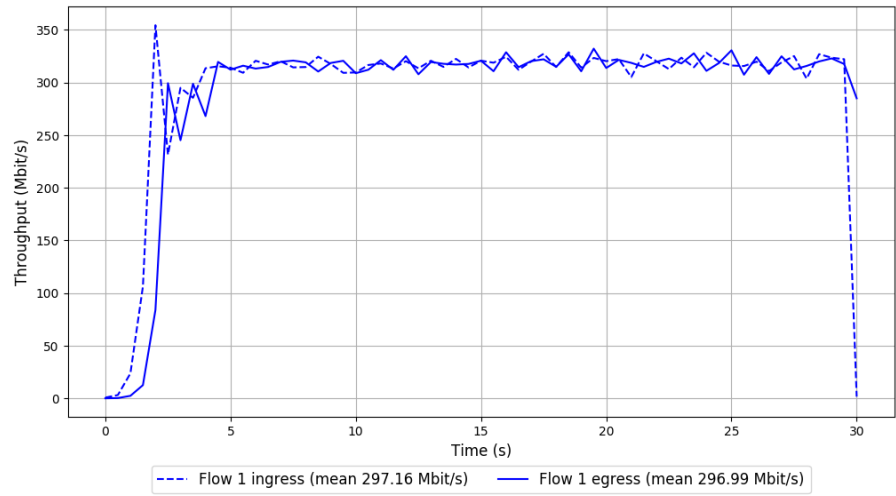

Flow 1 (95th percentile 130.41 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 21:07:11
End at: 2018-09-07 21:07:41
Local clock offset: -2.224 ms
Remote clock offset: -34.125 ms


# Below is generated by plot.py at 2018-09-07 21:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.99 Mbit/s
95th percentile per-packet one-way delay: 134.987 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 296.99 Mbit/s
95th percentile per-packet one-way delay: 134.987 ms
Loss rate: 0.71%
```

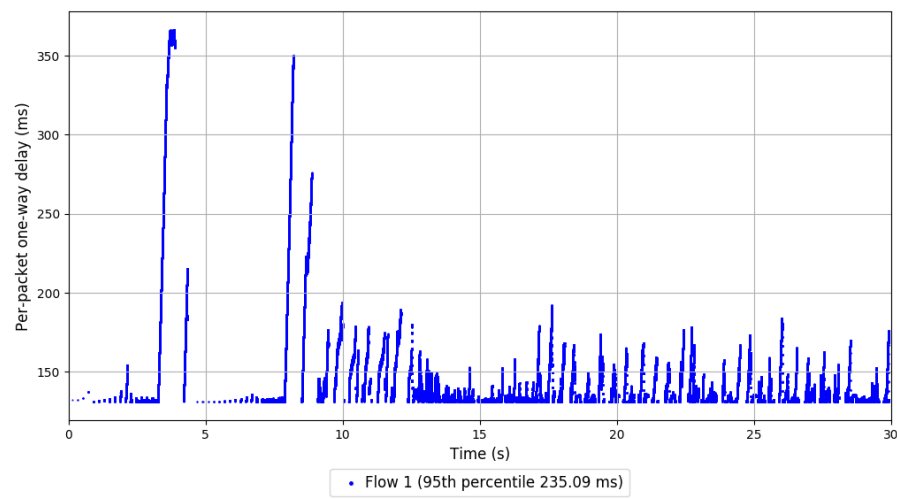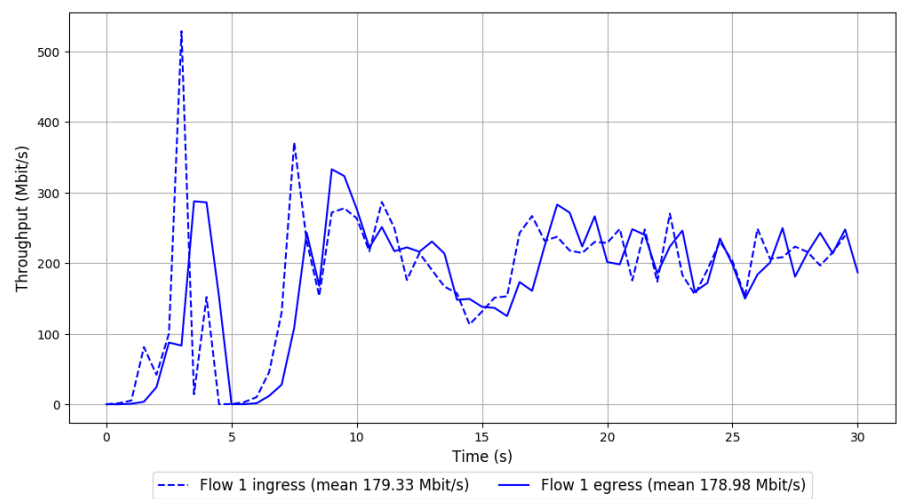Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-09-07 19:23:21
End at: 2018-09-07 19:23:51
Local clock offset: 1.884 ms
Remote clock offset: -32.372 ms


# Below is generated by plot.py at 2018-09-07 21:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 178.98 Mbit/s
95th percentile per-packet one-way delay: 235.085 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 178.98 Mbit/s
95th percentile per-packet one-way delay: 235.085 ms
Loss rate: 0.69%
```
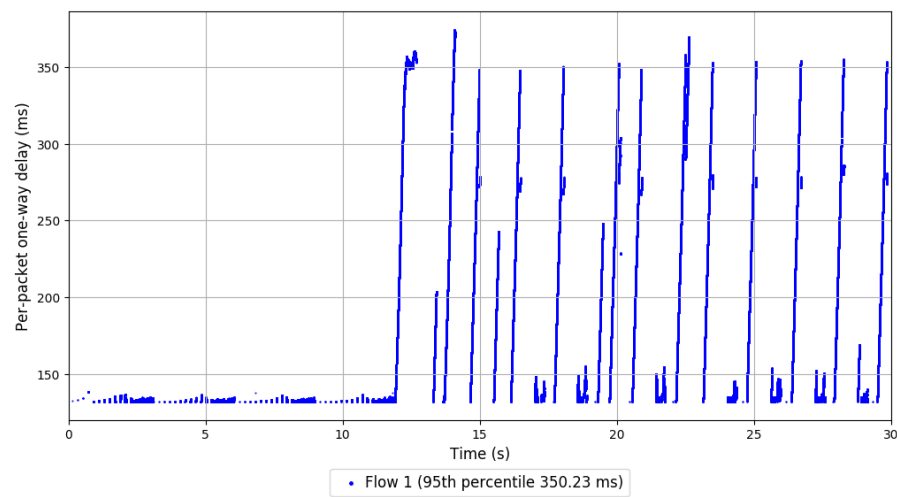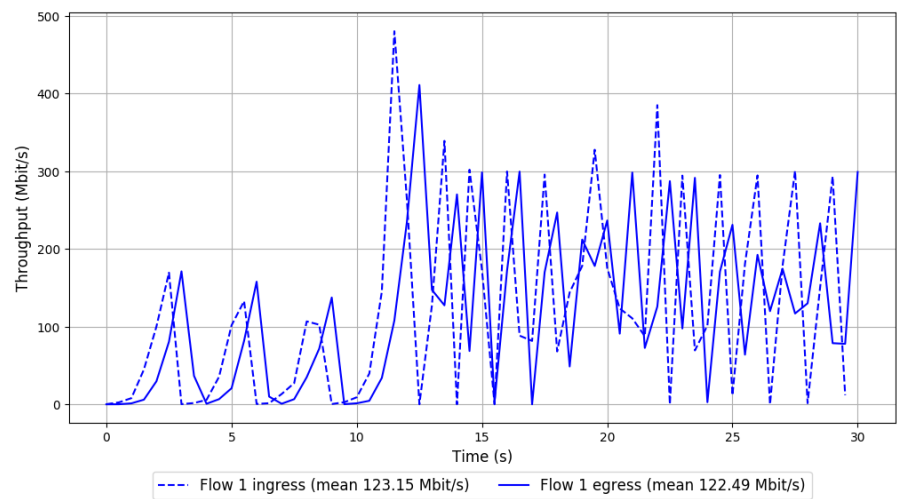
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-09-07 19:47:26
End at: 2018-09-07 19:47:56
Local clock offset: 1.319 ms
Remote clock offset: -32.637 ms


# Below is generated by plot.py at 2018-09-07 21:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 122.49 Mbit/s
95th percentile per-packet one-way delay: 350.228 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 122.49 Mbit/s
95th percentile per-packet one-way delay: 350.228 ms
Loss rate: 0.04%
```

Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 123.15 Mbit/s) ---- Flow 1 egress (mean 122.49 Mbit/s)

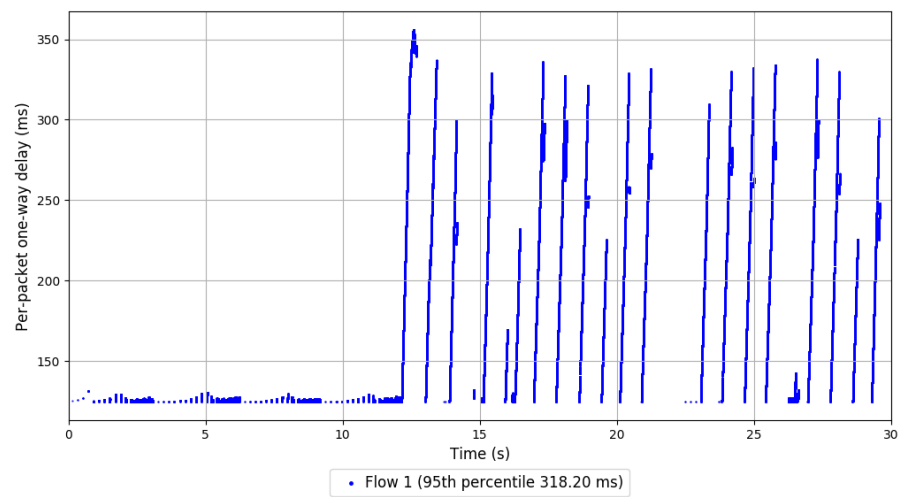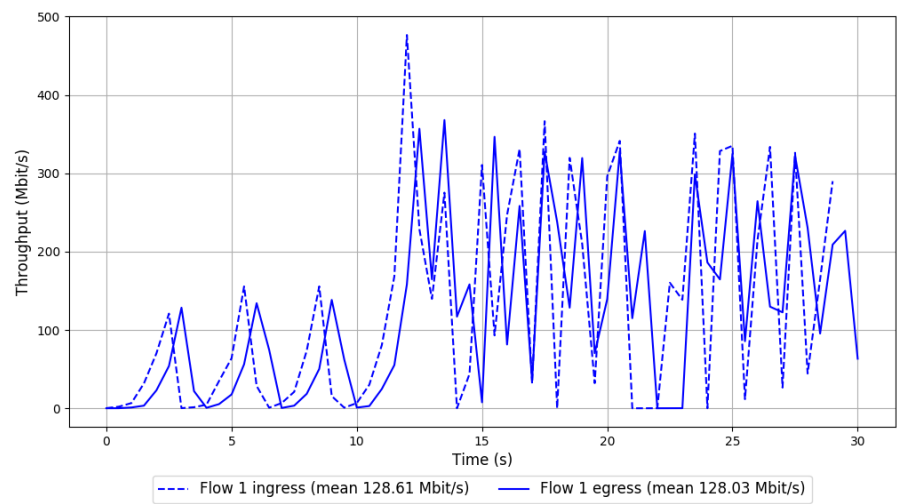Flow 1 (95th percentile 350.23 ms)

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```
Run 3: Statistics of Verus

Start at: 2018-09-07 20:16:57
End at: 2018-09-07 20:17:27
Local clock offset: -3.501 ms
Remote clock offset: -29.304 ms


# Below is generated by plot.py at 2018-09-07 21:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 128.03 Mbit/s
95th percentile per-packet one-way delay: 318.201 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 128.03 Mbit/s
95th percentile per-packet one-way delay: 318.201 ms
Loss rate: 0.03%
```
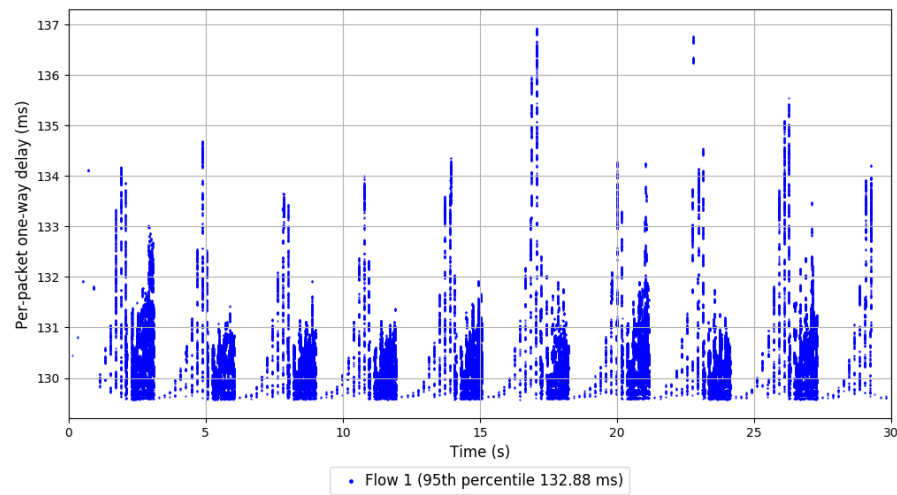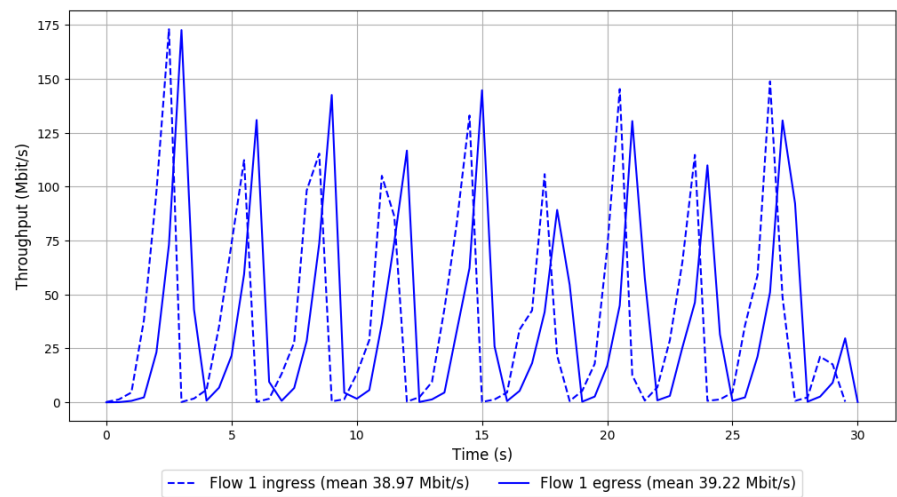
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-09-07 20:40:48
End at: 2018-09-07 20:41:18
Local clock offset: -2.516 ms
Remote clock offset: -32.988 ms


# Below is generated by plot.py at 2018-09-07 21:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.22 Mbit/s
95th percentile per-packet one-way delay: 132.878 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 39.22 Mbit/s
95th percentile per-packet one-way delay: 132.878 ms
Loss rate: 0.01%
```
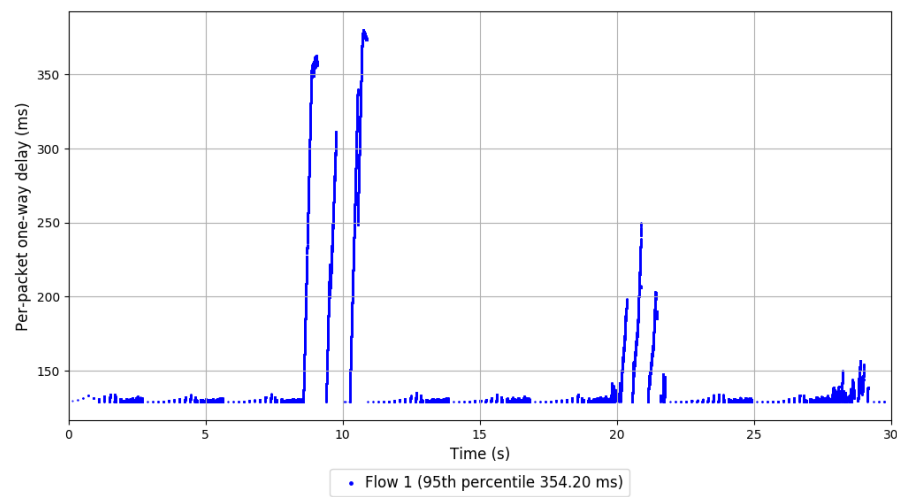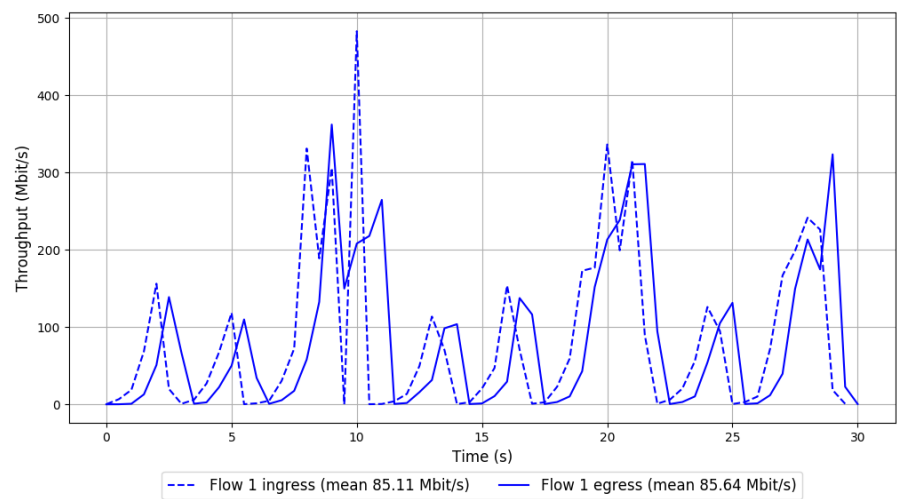
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-09-07 21:04:28
End at: 2018-09-07 21:04:58
Local clock offset: -2.972 ms
Remote clock offset: -33.268 ms


# Below is generated by plot.py at 2018-09-07 21:56:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.64 Mbit/s
95th percentile per-packet one-way delay: 354.200 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 85.64 Mbit/s
95th percentile per-packet one-way delay: 354.200 ms
Loss rate: 0.03%
```
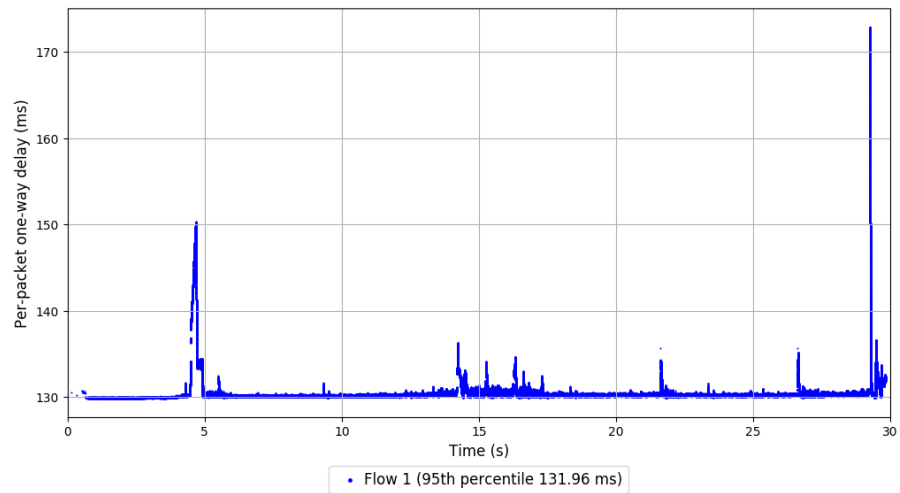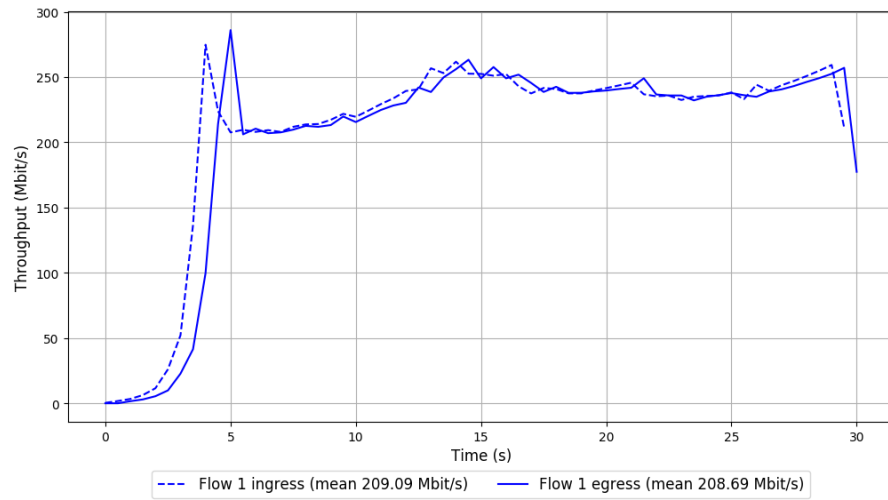
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 19:35:18
End at: 2018-09-07 19:35:48
Local clock offset: 1.464 ms
Remote clock offset: -32.512 ms

# Below is generated by plot.py at 2018-09-07 21:56:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 208.69 Mbit/s
95th percentile per-packet one-way delay: 131.955 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 208.69 Mbit/s
95th percentile per-packet one-way delay: 131.955 ms
Loss rate: 0.84%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 209.09 Mbit/s) — Flow 1 egress (mean 208.69 Mbit/s)

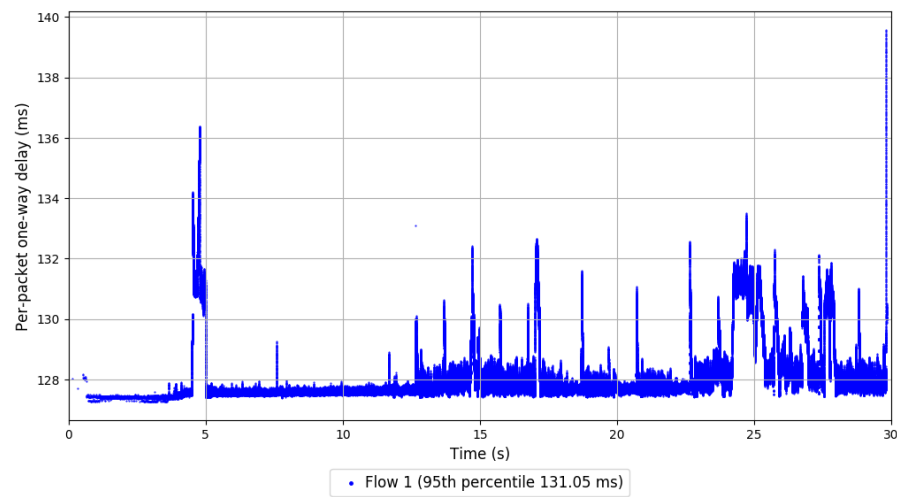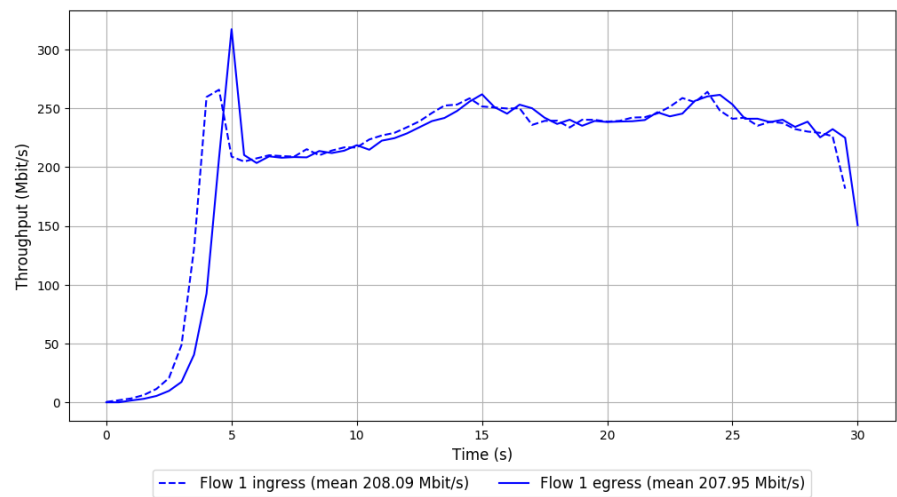
• Flow 1 (95th percentile 131.96 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 19:59:18
End at: 2018-09-07 19:59:48
Local clock offset: -3.615 ms
Remote clock offset: -32.113 ms


# Below is generated by plot.py at 2018-09-07 21:57:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 207.95 Mbit/s
95th percentile per-packet one-way delay: 131.052 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 207.95 Mbit/s
95th percentile per-packet one-way delay: 131.052 ms
Loss rate: 0.72%
```

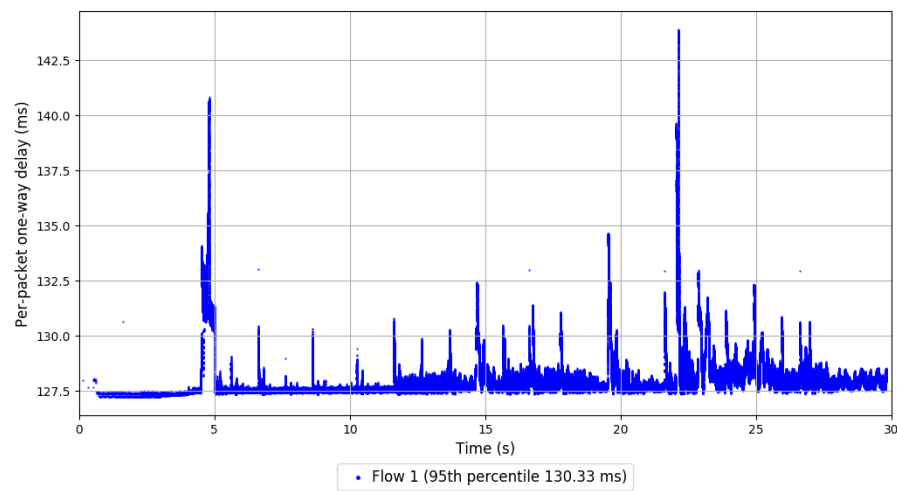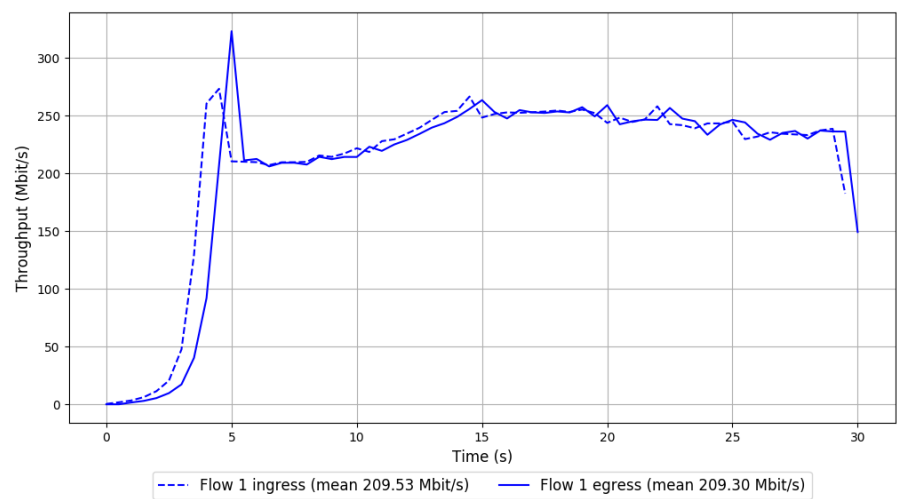Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 20:28:49
End at: 2018-09-07 20:29:19
Local clock offset: -2.165 ms
Remote clock offset: -31.927 ms


# Below is generated by plot.py at 2018-09-07 21:57:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 209.30 Mbit/s
95th percentile per-packet one-way delay: 130.333 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 209.30 Mbit/s
95th percentile per-packet one-way delay: 130.333 ms
Loss rate: 0.75%
```

Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 209.53 Mbit/s) — Flow 1 egress (mean 209.30 Mbit/s)
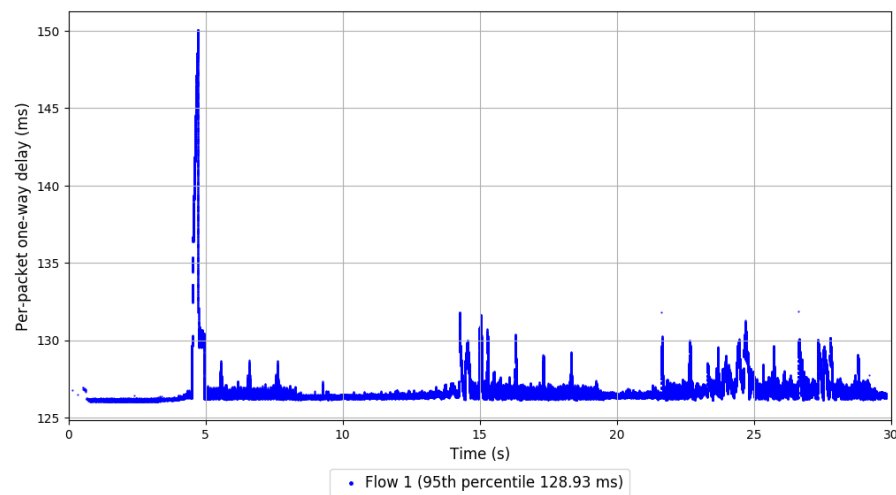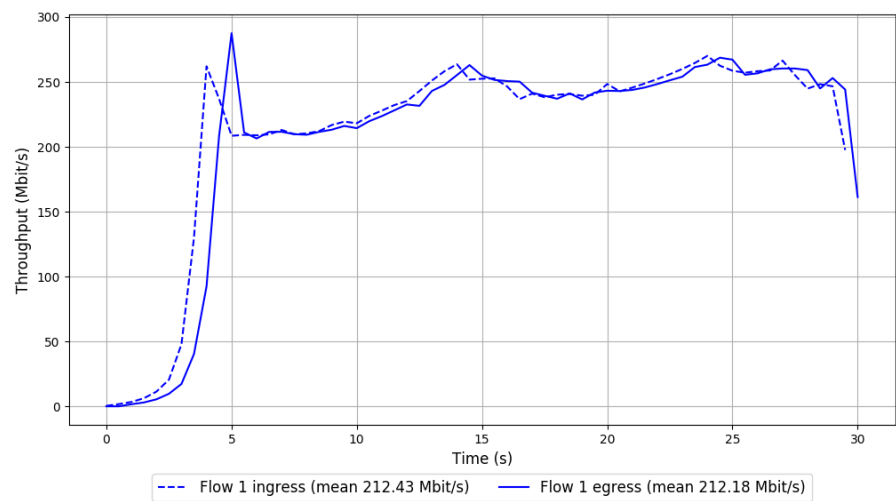

Flow 1 (95th percentile 130.33 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 20:52:25
End at: 2018-09-07 20:52:55
Local clock offset: -2.357 ms
Remote clock offset: -29.518 ms


# Below is generated by plot.py at 2018-09-07 21:57:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 212.18 Mbit/s
95th percentile per-packet one-way delay: 128.927 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 212.18 Mbit/s
95th percentile per-packet one-way delay: 128.927 ms
Loss rate: 0.78%
```

Run 4: Report of PCC-Vivace — Data Link

- - - Flow 1 ingress (mean 212.43 Mbit/s) —— Flow 1 egress (mean 212.18 Mbit/s)

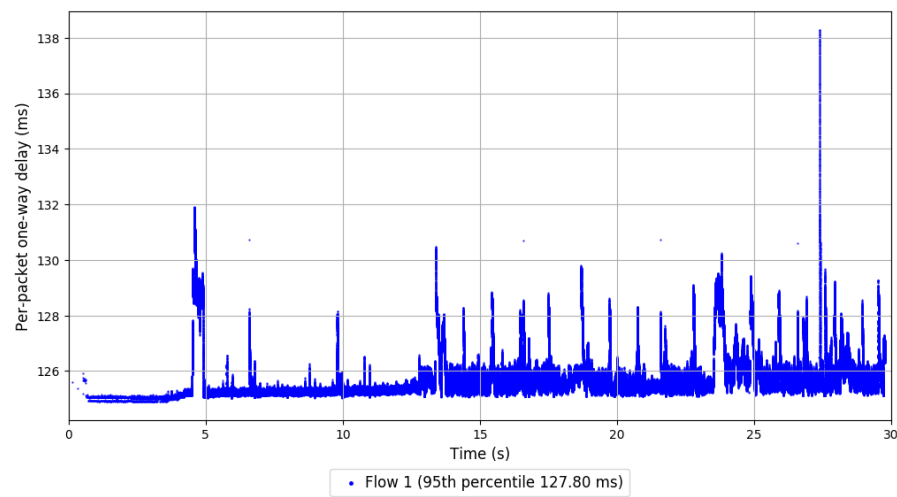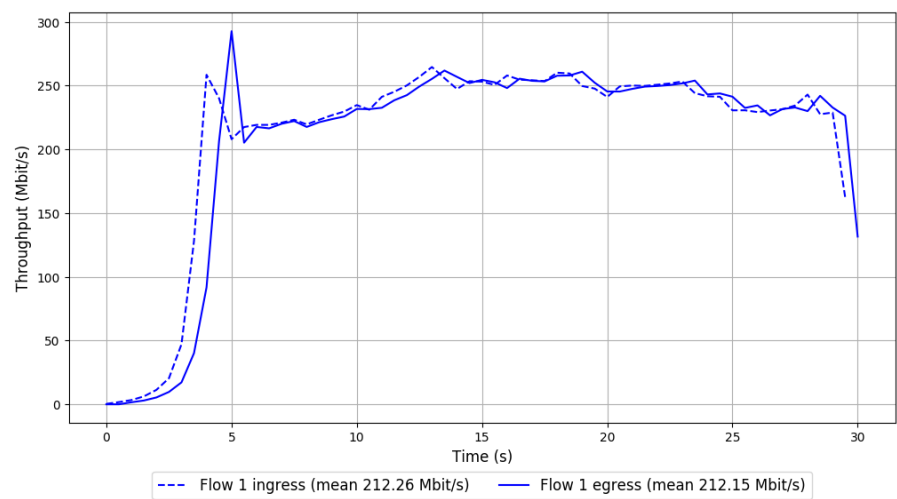
• Flow 1 (95th percentile 128.93 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 21:16:09
End at: 2018-09-07 21:16:39
Local clock offset: -1.608 ms
Remote clock offset: -29.265 ms


# Below is generated by plot.py at 2018-09-07 21:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 212.15 Mbit/s
95th percentile per-packet one-way delay: 127.797 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 212.15 Mbit/s
95th percentile per-packet one-way delay: 127.797 ms
Loss rate: 0.70%
```

Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 212.26 Mbit/s) ----- Flow 1 egress (mean 212.15 Mbit/s) ——

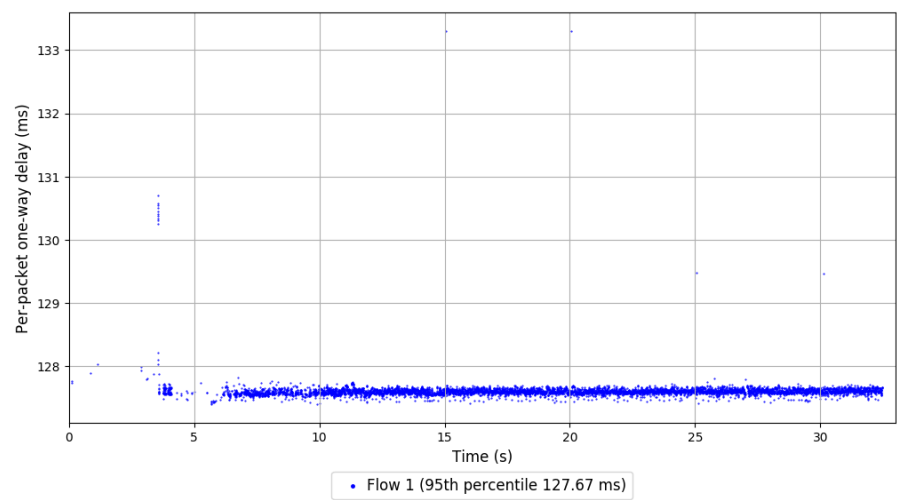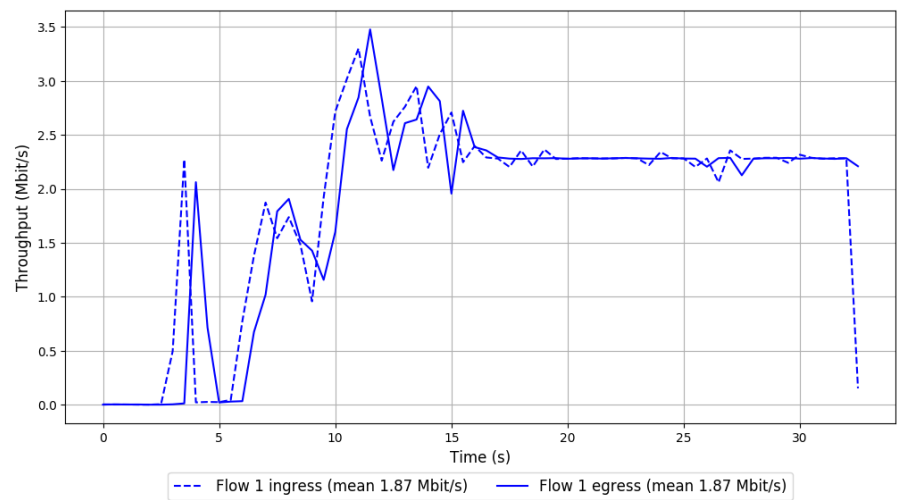
• Flow 1 (95th percentile 127.80 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-09-07 19:40:41
End at: 2018-09-07 19:41:11
Local clock offset: 2.171 ms
Remote clock offset: -29.077 ms


# Below is generated by plot.py at 2018-09-07 21:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 127.668 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 127.668 ms
Loss rate: 0.68%
```

Run 1: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.87 Mbit/s)   Flow 1 egress (mean 1.87 Mbit/s)
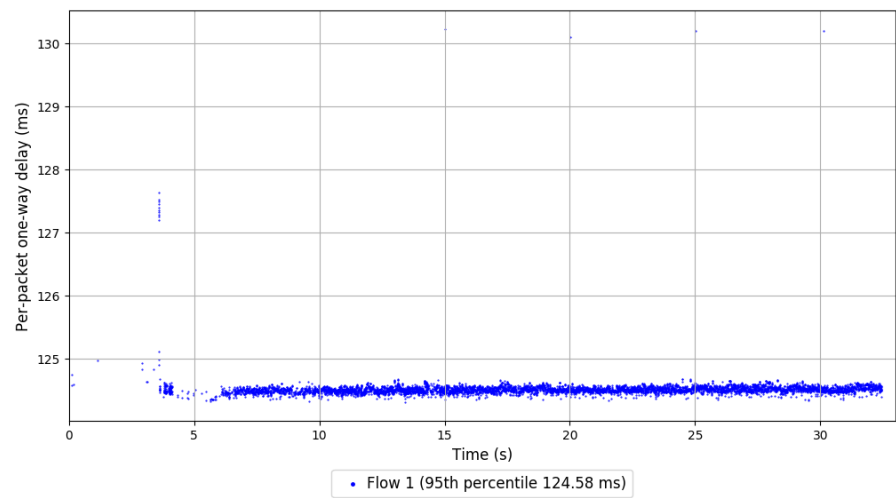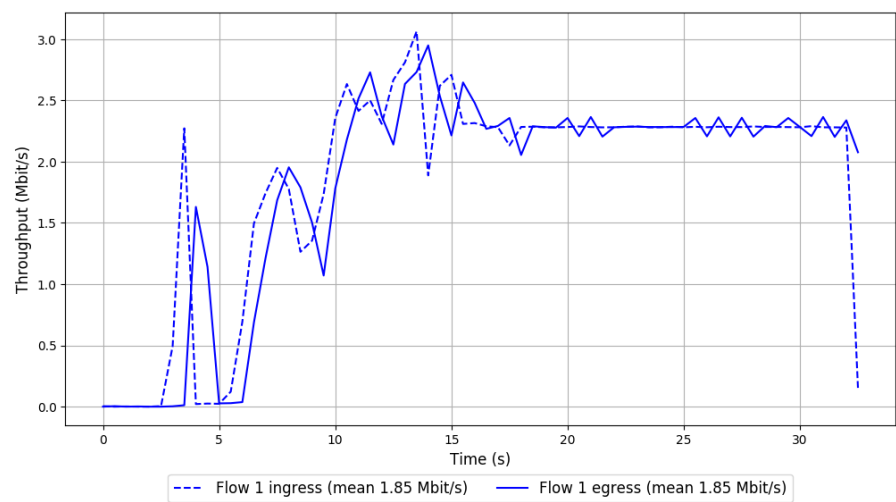

Flow 1 (95th percentile 127.67 ms)

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-07 20:10:17
End at: 2018-09-07 20:10:47
Local clock offset: -3.83 ms
Remote clock offset: -30.282 ms


# Below is generated by plot.py at 2018-09-07 21:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 124.585 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 124.585 ms
Loss rate: 0.75%
```

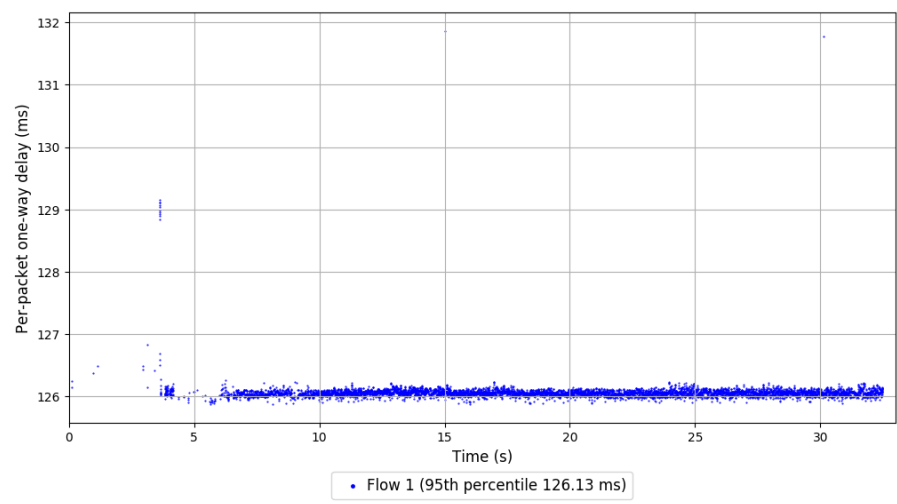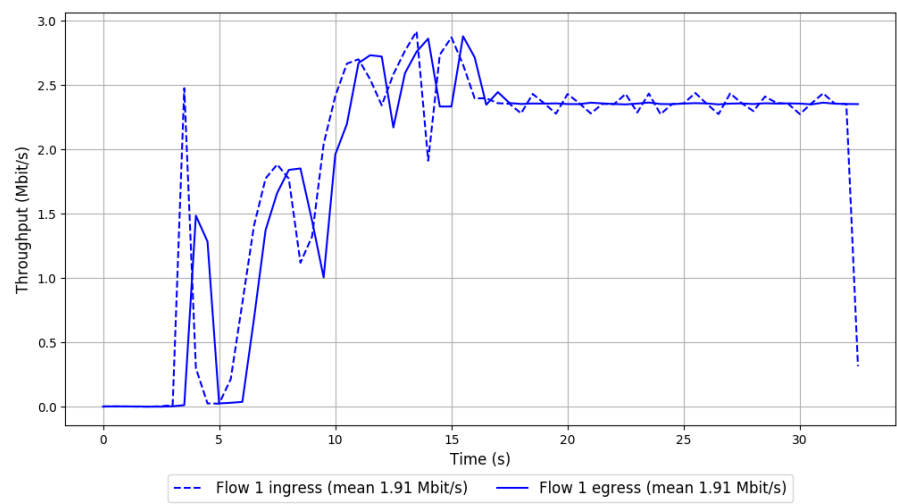Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-09-07 20:34:10
End at: 2018-09-07 20:34:40
Local clock offset: -2.648 ms
Remote clock offset: -29.433 ms


# Below is generated by plot.py at 2018-09-07 21:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 126.127 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 126.127 ms
Loss rate: 0.76%
```

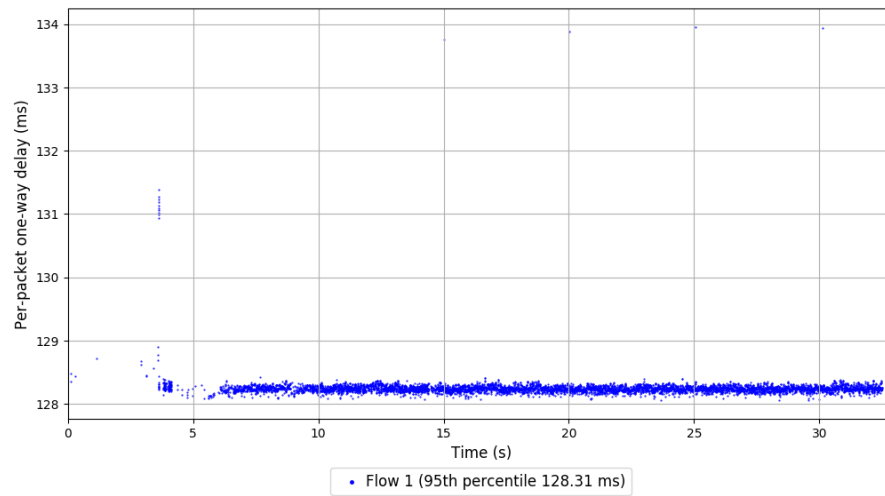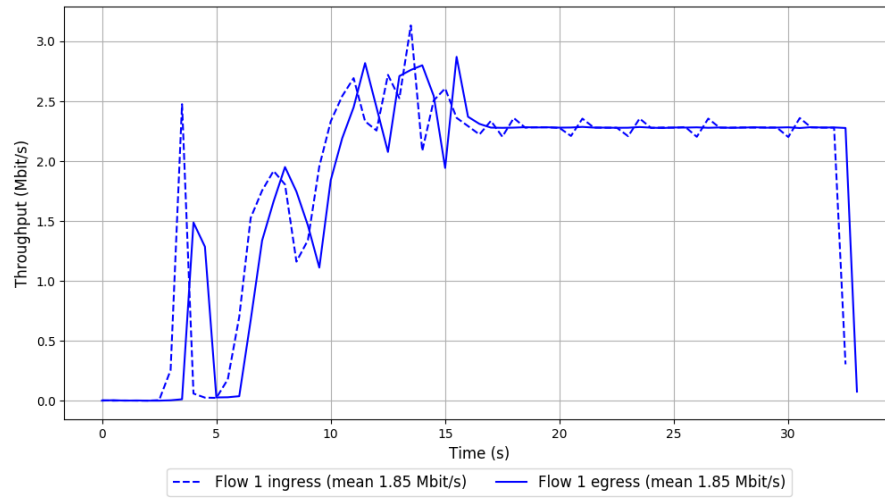Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-09-07 20:57:49
End at: 2018-09-07 20:58:19
Local clock offset: -0.874 ms
Remote clock offset: -30.177 ms


# Below is generated by plot.py at 2018-09-07 21:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 128.313 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 128.313 ms
Loss rate: 0.69%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.85 Mbit/s)   Flow 1 egress (mean 1.85 Mbit/s)

Flow 1 (95th percentile 128.31 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-09-07 21:21:32
End at: 2018-09-07 21:22:03
Local clock offset: -1.63 ms
Remote clock offset: -31.715 ms


# Below is generated by plot.py at 2018-09-07 21:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 128.202 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 128.202 ms
Loss rate: 0.69%
```

Run 5: Report of WebRTC media — Data Link