

## Pantheon Report

Generated at 2018-10-09 21:23:08 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

### System info:

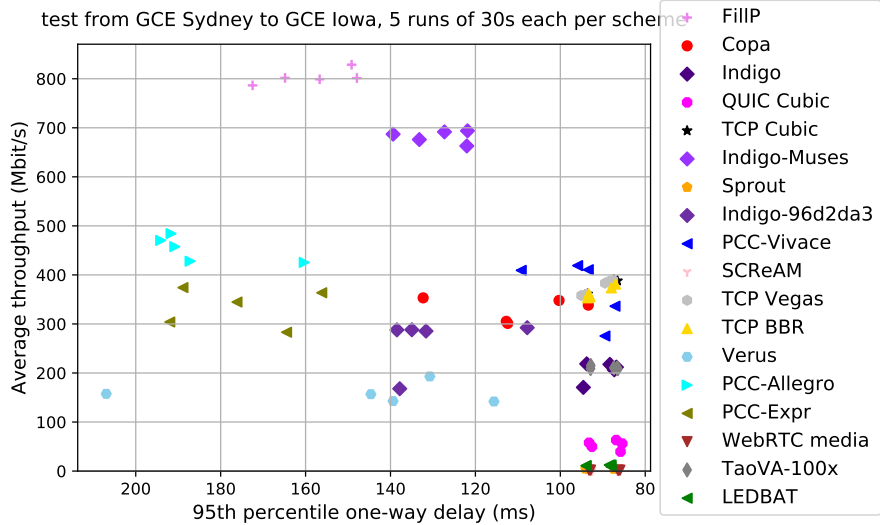
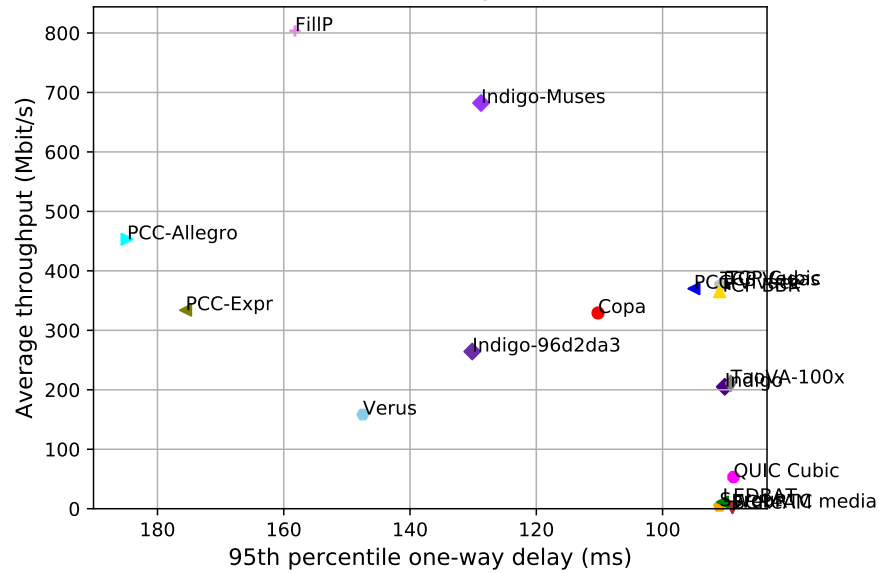
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third\_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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



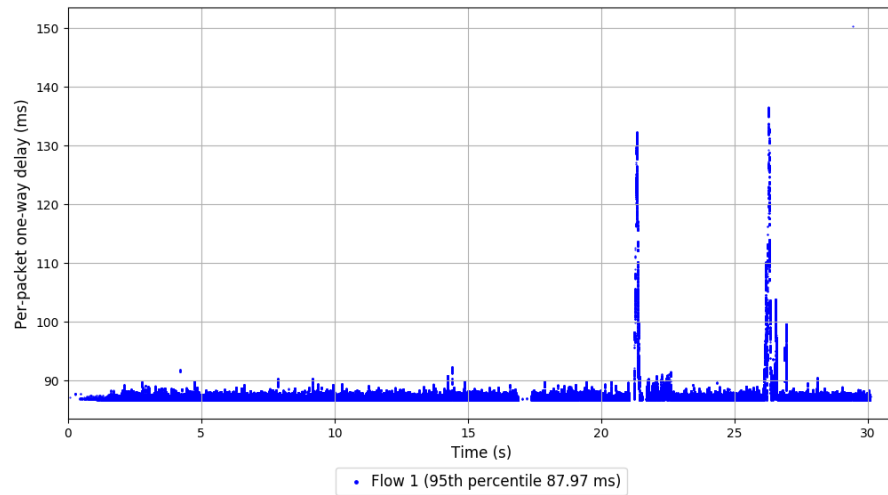
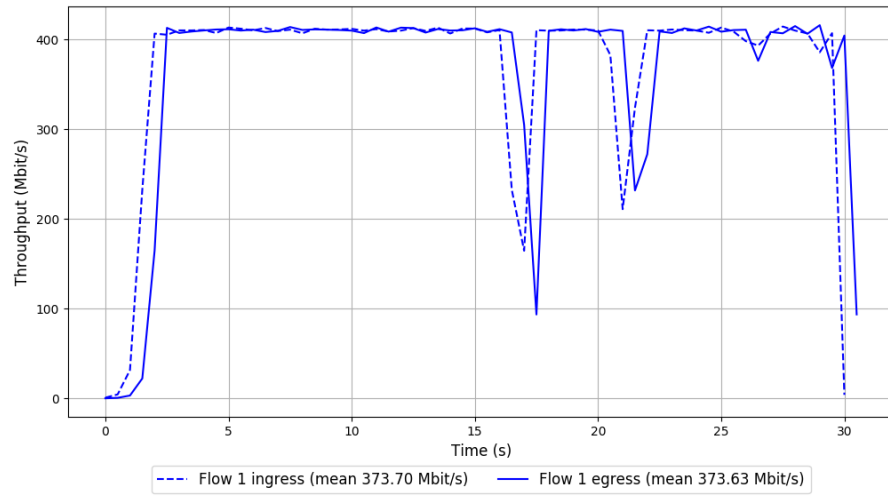
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	365.01	90.98	0.00
Copa	5	329.20	110.23	0.00
TCP Cubic	5	376.95	89.91	0.01
FillP	5	803.44	158.22	2.94
Indigo	5	205.07	90.15	0.00
Indigo-96d2da3	5	264.38	130.14	0.39
LEDBAT	5	11.13	90.50	0.00
Indigo-Muses	5	682.28	128.75	0.29
PCC-Allegro	5	453.10	184.82	1.43
PCC-Expr	5	333.90	175.55	3.10
QUIC Cubic	5	53.30	88.77	0.00
SCReAM	5	0.22	88.87	0.00
Sprout	5	4.33	90.99	0.00
TaoVA-100x	5	210.74	89.23	0.00
TCP Vegas	5	375.70	90.87	0.02
Verus	5	158.39	147.47	1.07
PCC-Vivace	5	370.10	95.04	0.00
WebRTC media	5	1.89	88.95	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-10-09 18:17:02  
End at: 2018-10-09 18:17:32  
Local clock offset: 14.939 ms  
Remote clock offset: 15.349 ms

# Below is generated by plot.py at 2018-10-09 20:16:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 373.63 Mbit/s  
95th percentile per-packet one-way delay: 87.972 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 373.63 Mbit/s  
95th percentile per-packet one-way delay: 87.972 ms  
Loss rate: 0.02%

# Run 1: Report of TCP BBR — Data Link

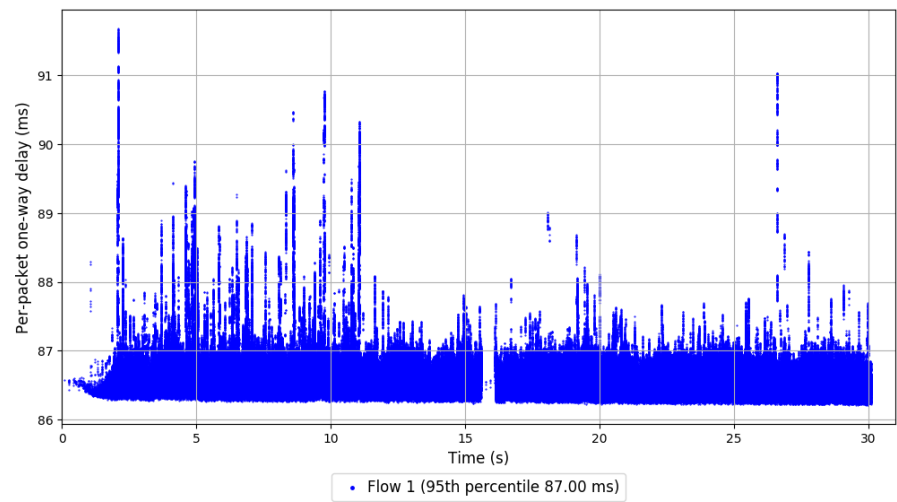
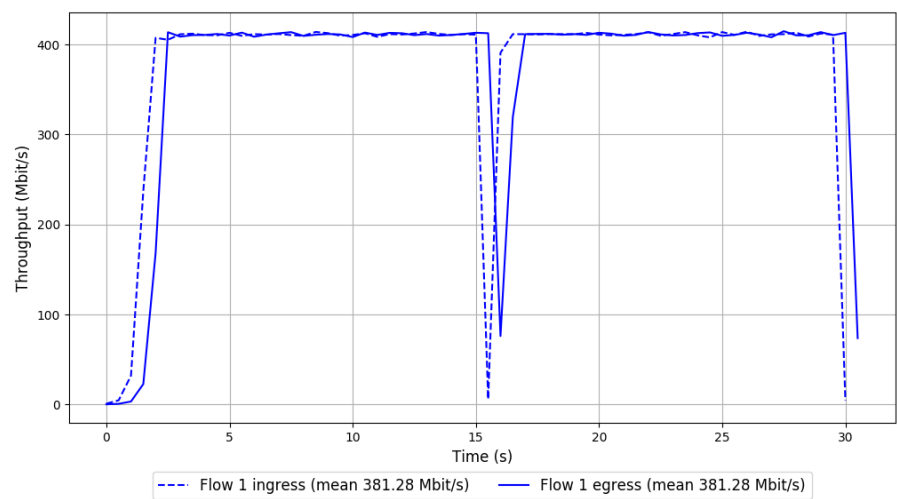


Run 2: Statistics of TCP BBR

Start at: 2018-10-09 18:42:46  
End at: 2018-10-09 18:43:16  
Local clock offset: 18.532 ms  
Remote clock offset: 23.871 ms

# Below is generated by plot.py at 2018-10-09 20:16:30  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 381.28 Mbit/s  
95th percentile per-packet one-way delay: 86.995 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 381.28 Mbit/s  
95th percentile per-packet one-way delay: 86.995 ms  
Loss rate: 0.00%

Run 2: Report of TCP BBR — Data Link



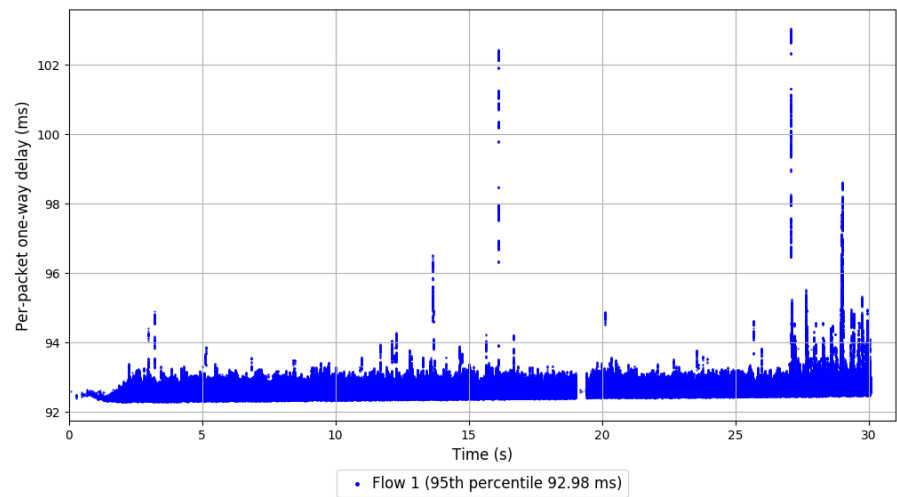
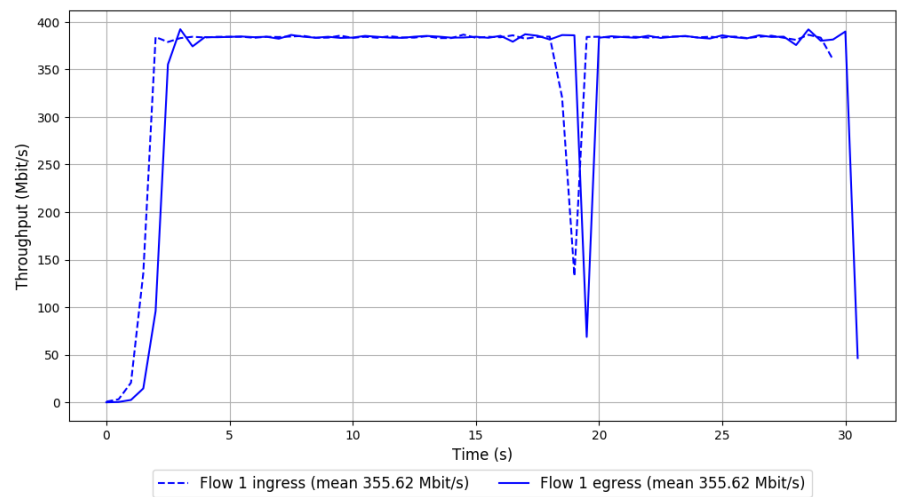


Run 3: Statistics of TCP BBR

Start at: 2018-10-09 19:08:21  
End at: 2018-10-09 19:08:51  
Local clock offset: 19.14 ms  
Remote clock offset: 21.889 ms

# Below is generated by plot.py at 2018-10-09 20:16:30  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 355.62 Mbit/s  
95th percentile per-packet one-way delay: 92.985 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 355.62 Mbit/s  
95th percentile per-packet one-way delay: 92.985 ms  
Loss rate: 0.00%

Run 3: Report of TCP BBR — Data Link

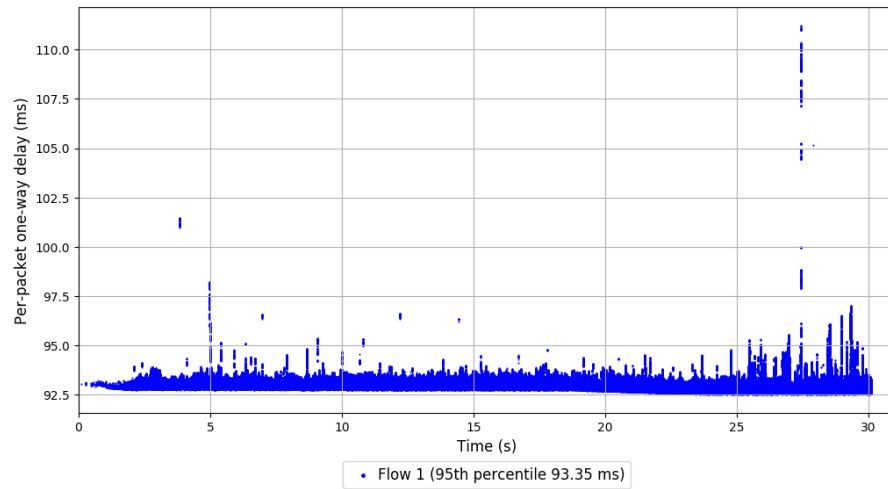
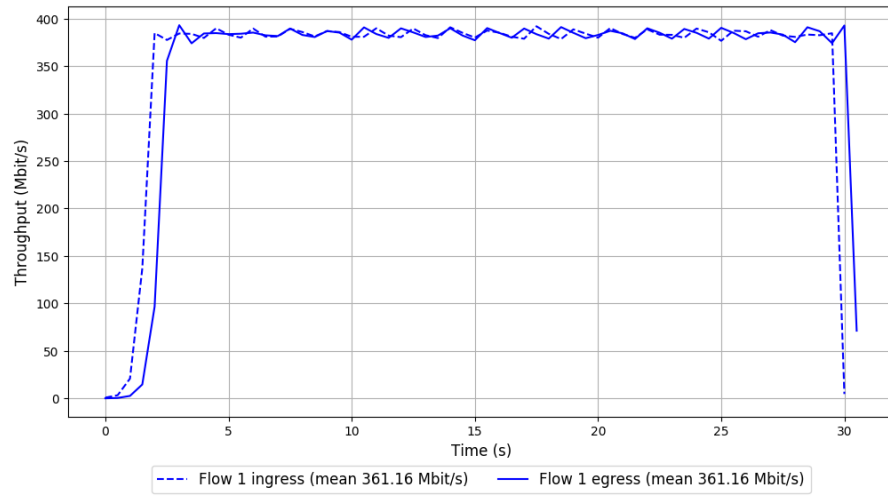


Run 4: Statistics of TCP BBR

Start at: 2018-10-09 19:34:24  
End at: 2018-10-09 19:34:54  
Local clock offset: 21.113 ms  
Remote clock offset: 20.969 ms

# Below is generated by plot.py at 2018-10-09 20:16:30  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 361.16 Mbit/s  
95th percentile per-packet one-way delay: 93.354 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 361.16 Mbit/s  
95th percentile per-packet one-way delay: 93.354 ms  
Loss rate: 0.00%

#### Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-10-09 20:00:06

End at: 2018-10-09 20:00:36

Local clock offset: 8.602 ms

Remote clock offset: 8.403 ms

# Below is generated by plot.py at 2018-10-09 20:16:30

# Datalink statistics

-- Total of 1 flow:

Average throughput: 353.37 Mbit/s

95th percentile per-packet one-way delay: 93.592 ms

Loss rate: 0.00%

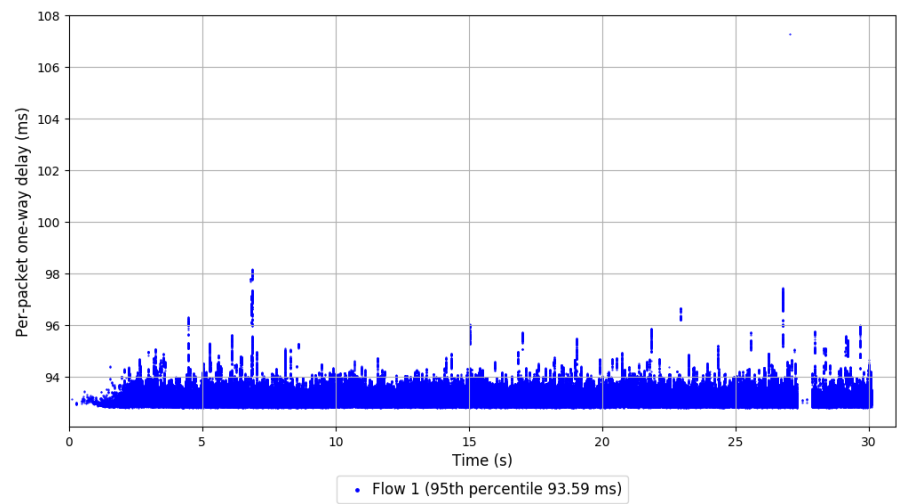
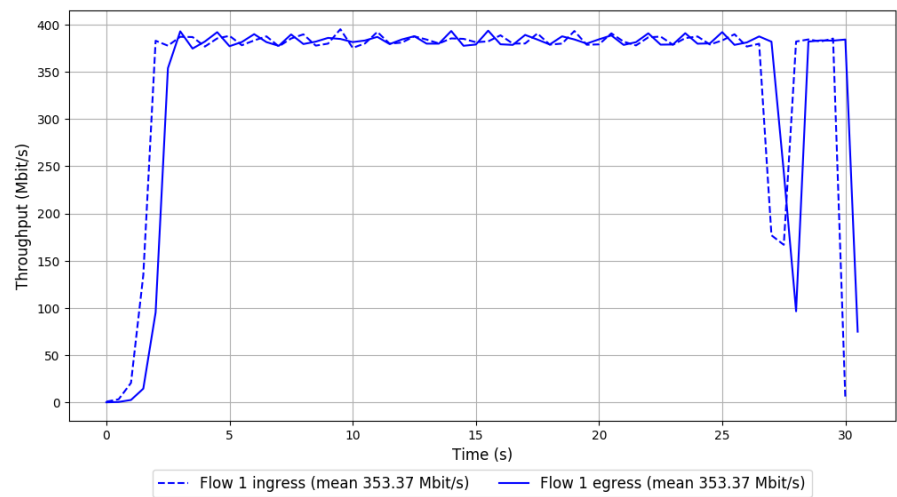
-- Flow 1:

Average throughput: 353.37 Mbit/s

95th percentile per-packet one-way delay: 93.592 ms

Loss rate: 0.00%

Run 5: Report of TCP BBR — Data Link

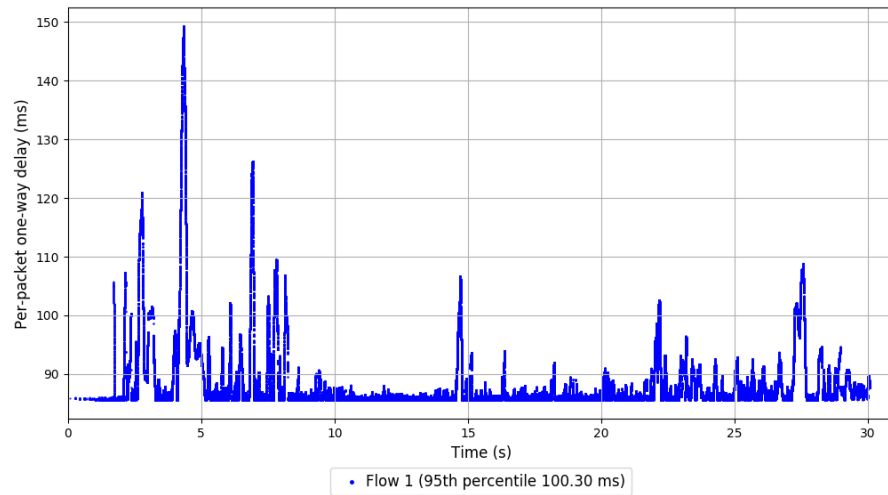
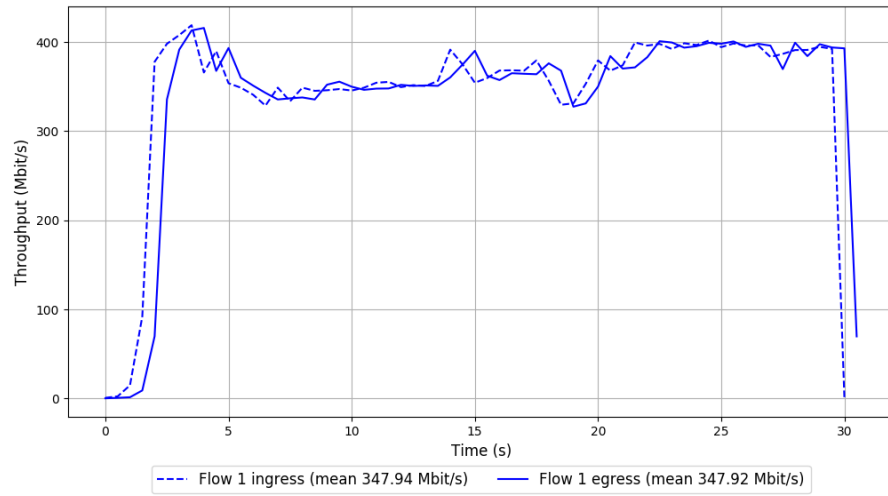


Run 1: Statistics of Copa

Start at: 2018-10-09 18:10:51  
End at: 2018-10-09 18:11:21  
Local clock offset: 16.053 ms  
Remote clock offset: 16.103 ms

# Below is generated by plot.py at 2018-10-09 20:21:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 347.92 Mbit/s  
95th percentile per-packet one-way delay: 100.302 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 347.92 Mbit/s  
95th percentile per-packet one-way delay: 100.302 ms  
Loss rate: 0.00%

## Run 1: Report of Copa — Data Link



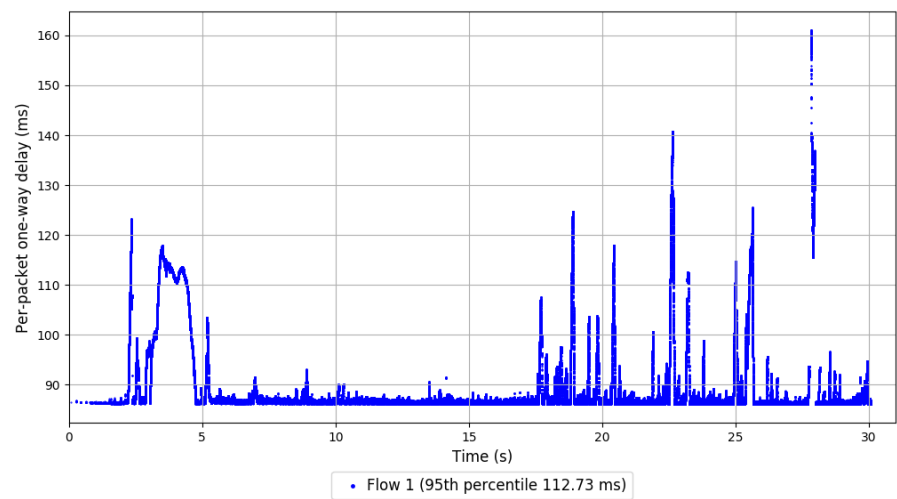
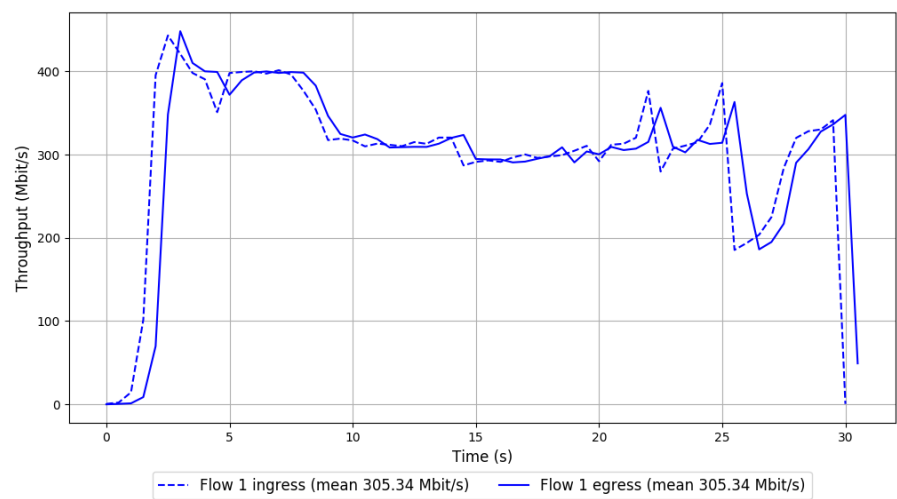


Run 2: Statistics of Copa

Start at: 2018-10-09 18:36:35  
End at: 2018-10-09 18:37:05  
Local clock offset: 16.892 ms  
Remote clock offset: 20.907 ms

# Below is generated by plot.py at 2018-10-09 20:21:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 305.34 Mbit/s  
95th percentile per-packet one-way delay: 112.729 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 305.34 Mbit/s  
95th percentile per-packet one-way delay: 112.729 ms  
Loss rate: 0.00%

Run 2: Report of Copa — Data Link

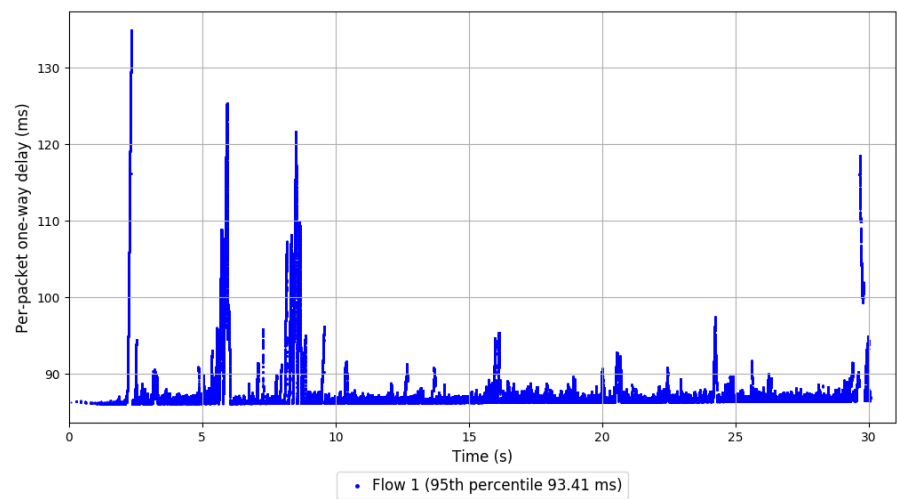
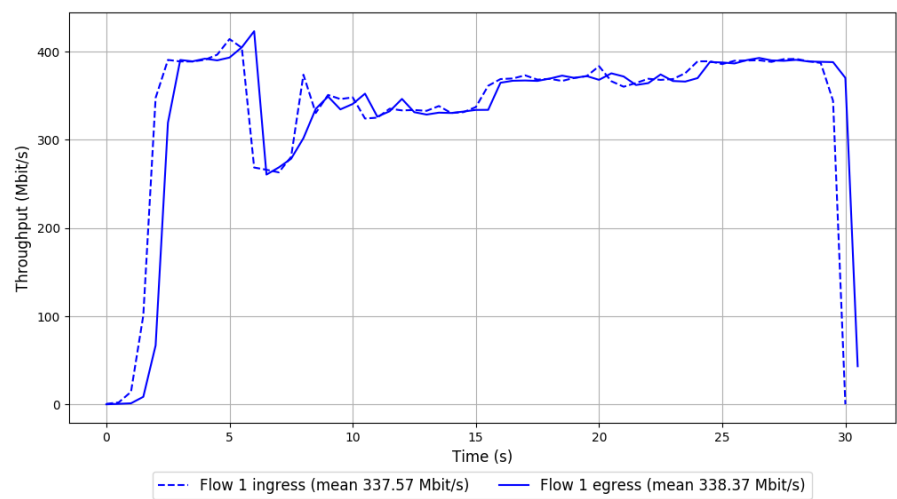


Run 3: Statistics of Copa

Start at: 2018-10-09 19:02:09  
End at: 2018-10-09 19:02:39  
Local clock offset: 30.496 ms  
Remote clock offset: 36.765 ms

# Below is generated by plot.py at 2018-10-09 20:21:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 338.37 Mbit/s  
95th percentile per-packet one-way delay: 93.410 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 338.37 Mbit/s  
95th percentile per-packet one-way delay: 93.410 ms  
Loss rate: 0.00%

Run 3: Report of Copa — Data Link

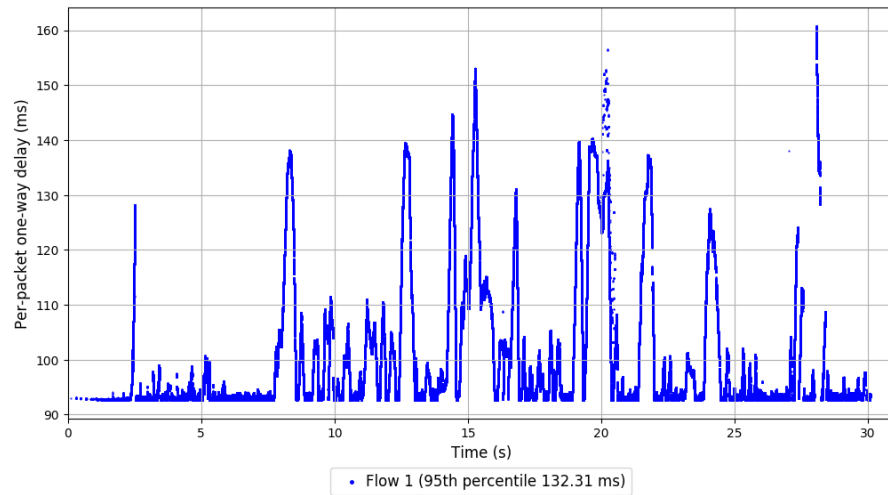
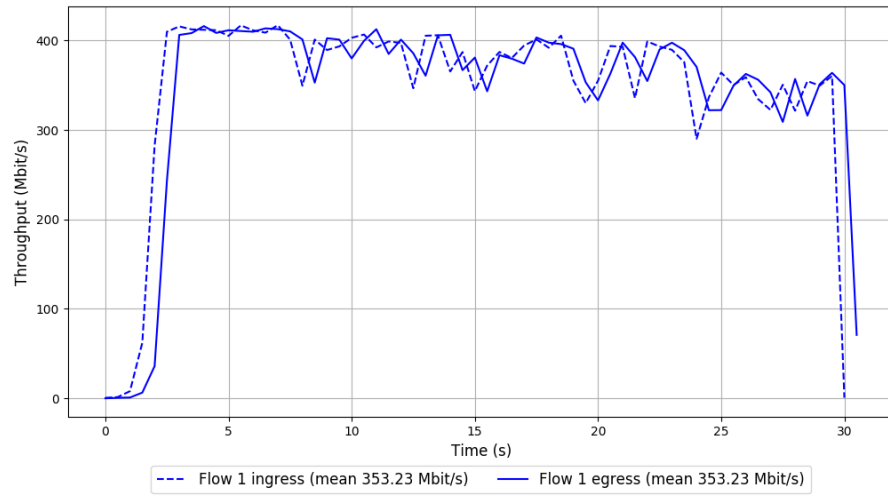


Run 4: Statistics of Copa

Start at: 2018-10-09 19:28:08  
End at: 2018-10-09 19:28:38  
Local clock offset: 18.144 ms  
Remote clock offset: 18.073 ms

# Below is generated by plot.py at 2018-10-09 20:27:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 353.23 Mbit/s  
95th percentile per-packet one-way delay: 132.306 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 353.23 Mbit/s  
95th percentile per-packet one-way delay: 132.306 ms  
Loss rate: 0.00%

#### Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-09 19:53:55

End at: 2018-10-09 19:54:25

Local clock offset: 8.074 ms

Remote clock offset: 7.768 ms

# Below is generated by plot.py at 2018-10-09 20:27:23

# Datalink statistics

-- Total of 1 flow:

Average throughput: 301.12 Mbit/s

95th percentile per-packet one-way delay: 112.388 ms

Loss rate: 0.00%

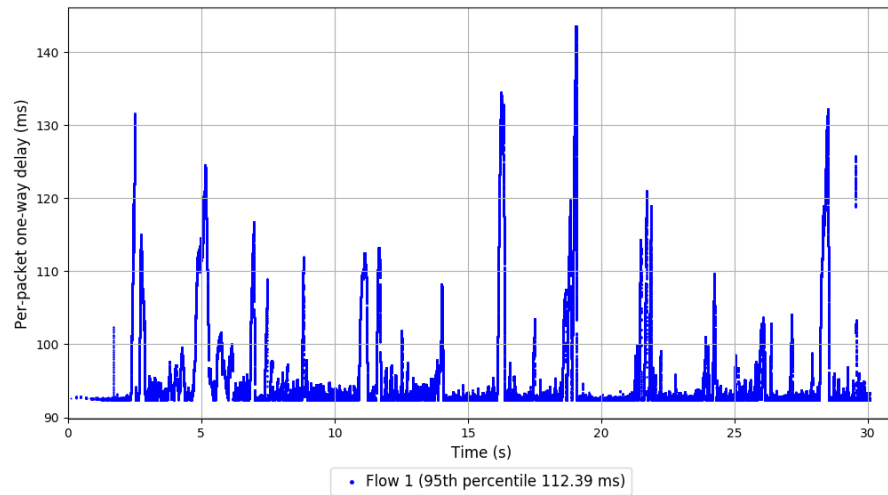
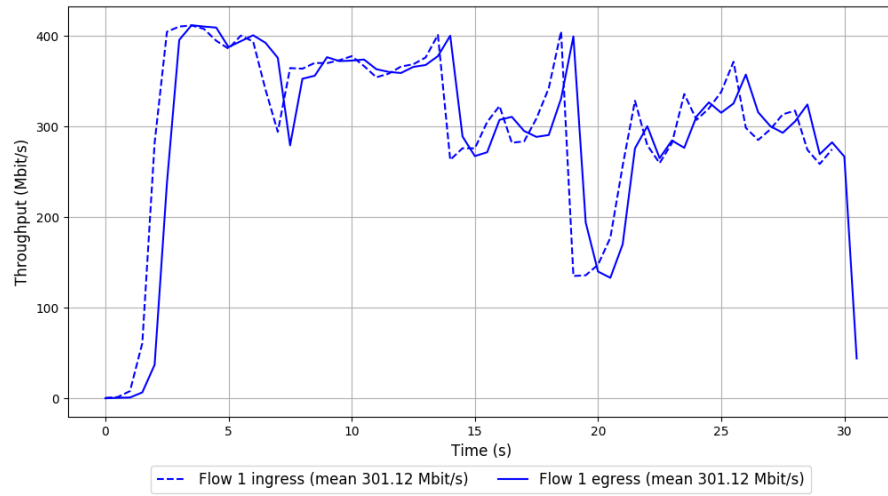
-- Flow 1:

Average throughput: 301.12 Mbit/s

95th percentile per-packet one-way delay: 112.388 ms

Loss rate: 0.00%

## Run 5: Report of Copa — Data Link



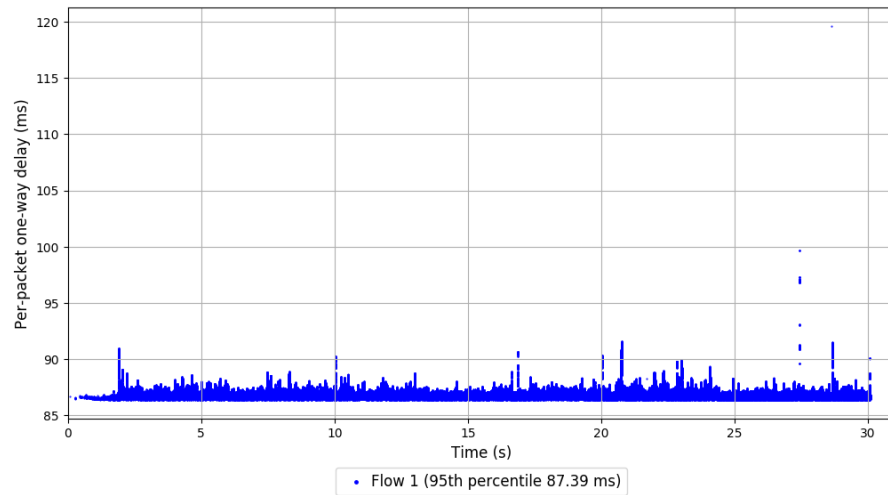
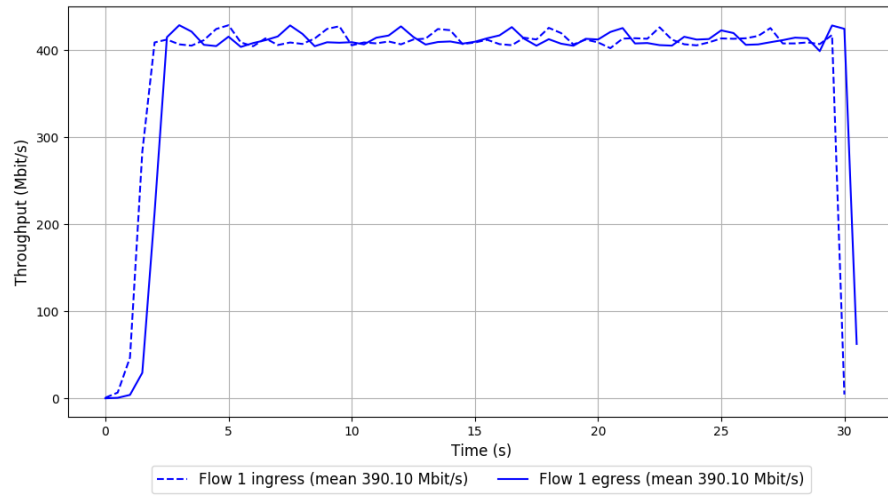


Run 1: Statistics of TCP Cubic

Start at: 2018-10-09 18:06:42  
End at: 2018-10-09 18:07:12  
Local clock offset: 12.839 ms  
Remote clock offset: 13.167 ms

# Below is generated by plot.py at 2018-10-09 20:27:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 390.10 Mbit/s  
95th percentile per-packet one-way delay: 87.385 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 390.10 Mbit/s  
95th percentile per-packet one-way delay: 87.385 ms  
Loss rate: 0.00%

### Run 1: Report of TCP Cubic — Data Link

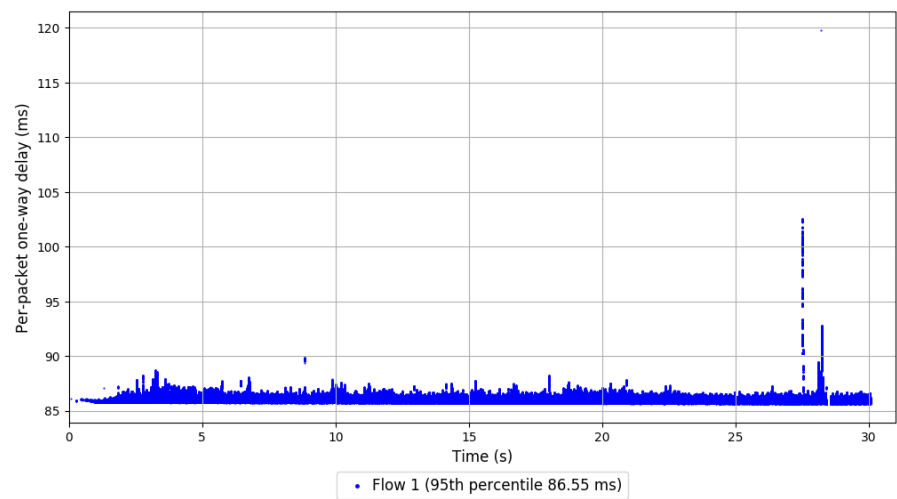
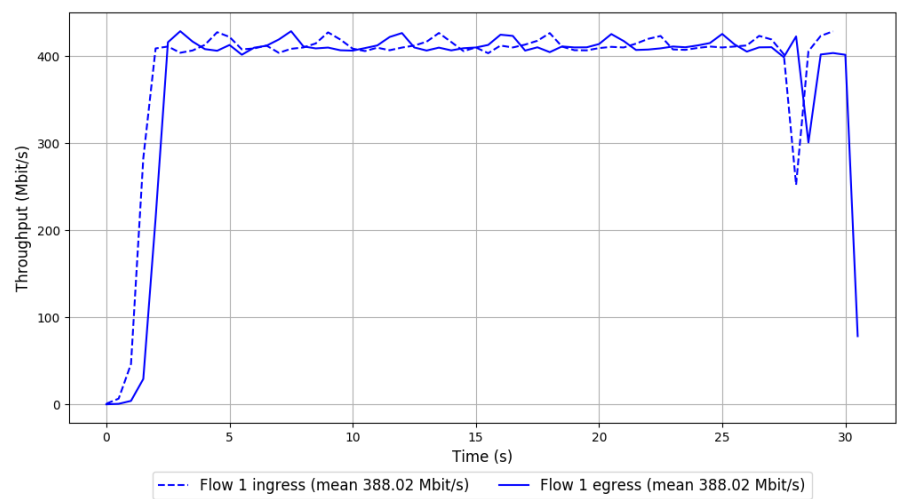


Run 2: Statistics of TCP Cubic

Start at: 2018-10-09 18:32:18  
End at: 2018-10-09 18:32:48  
Local clock offset: 18.504 ms  
Remote clock offset: 21.379 ms

# Below is generated by plot.py at 2018-10-09 20:27:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 388.02 Mbit/s  
95th percentile per-packet one-way delay: 86.546 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 388.02 Mbit/s  
95th percentile per-packet one-way delay: 86.546 ms  
Loss rate: 0.00%

Run 2: Report of TCP Cubic — Data Link

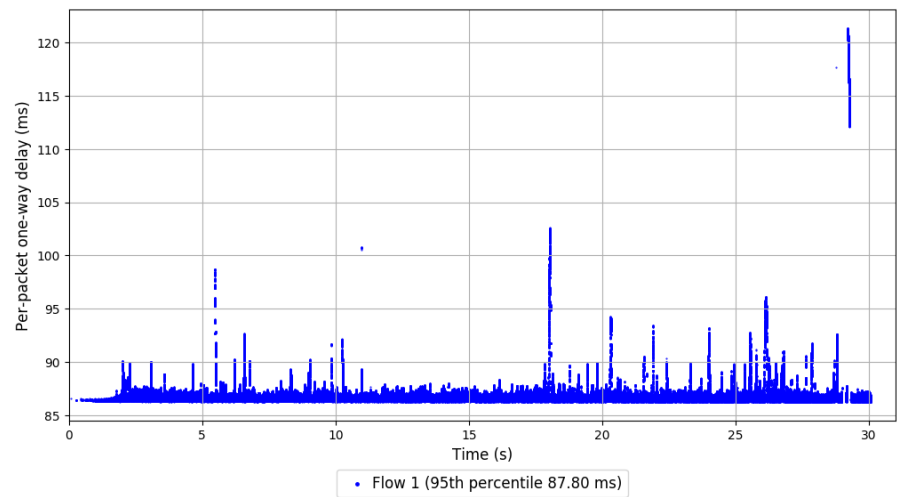
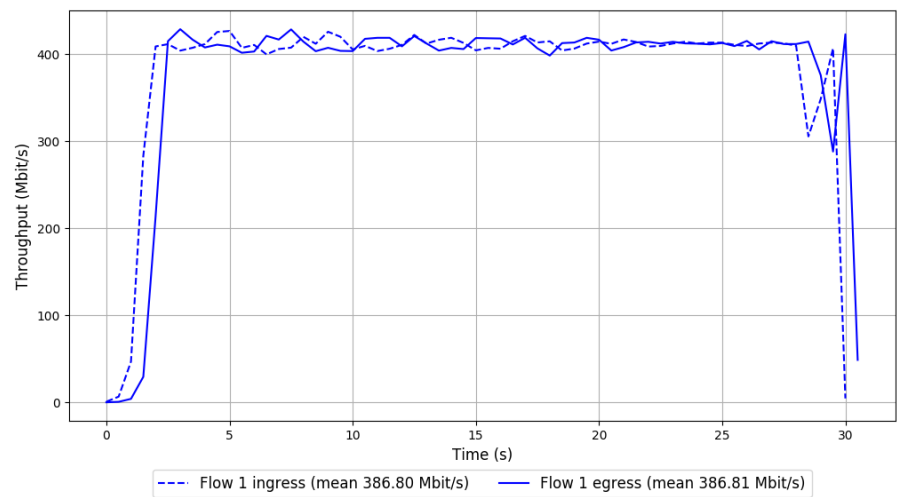


Run 3: Statistics of TCP Cubic

Start at: 2018-10-09 18:57:52  
End at: 2018-10-09 18:58:22  
Local clock offset: 31.322 ms  
Remote clock offset: 38.807 ms

# Below is generated by plot.py at 2018-10-09 20:27:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 386.81 Mbit/s  
95th percentile per-packet one-way delay: 87.795 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 386.81 Mbit/s  
95th percentile per-packet one-way delay: 87.795 ms  
Loss rate: 0.00%

Run 3: Report of TCP Cubic — Data Link

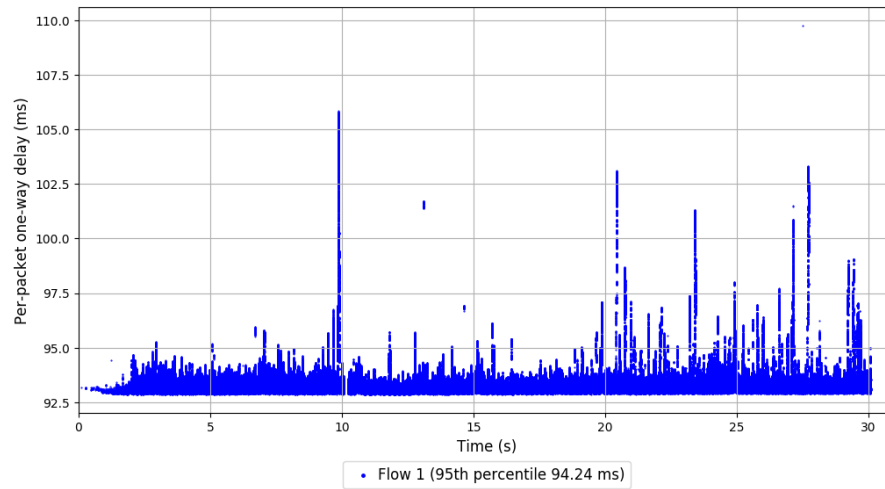
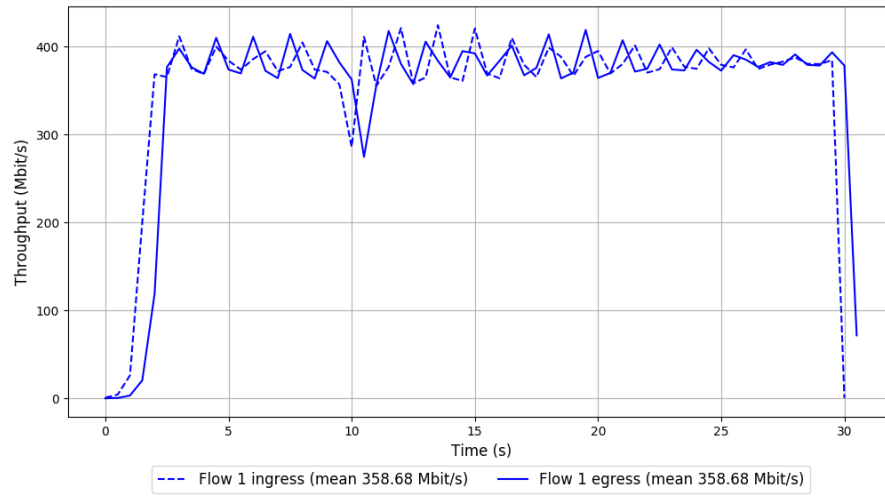


Run 4: Statistics of TCP Cubic

Start at: 2018-10-09 19:23:50  
End at: 2018-10-09 19:24:20  
Local clock offset: 16.559 ms  
Remote clock offset: 16.641 ms

# Below is generated by plot.py at 2018-10-09 20:27:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 358.68 Mbit/s  
95th percentile per-packet one-way delay: 94.238 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 358.68 Mbit/s  
95th percentile per-packet one-way delay: 94.238 ms  
Loss rate: 0.00%

#### Run 4: Report of TCP Cubic — Data Link





Run 5: Statistics of TCP Cubic

Start at: 2018-10-09 19:49:41

End at: 2018-10-09 19:50:11

Local clock offset: 8.443 ms

Remote clock offset: 8.02 ms

# Below is generated by plot.py at 2018-10-09 20:27:23

# Datalink statistics

-- Total of 1 flow:

Average throughput: 361.15 Mbit/s

95th percentile per-packet one-way delay: 93.567 ms

Loss rate: 0.04%

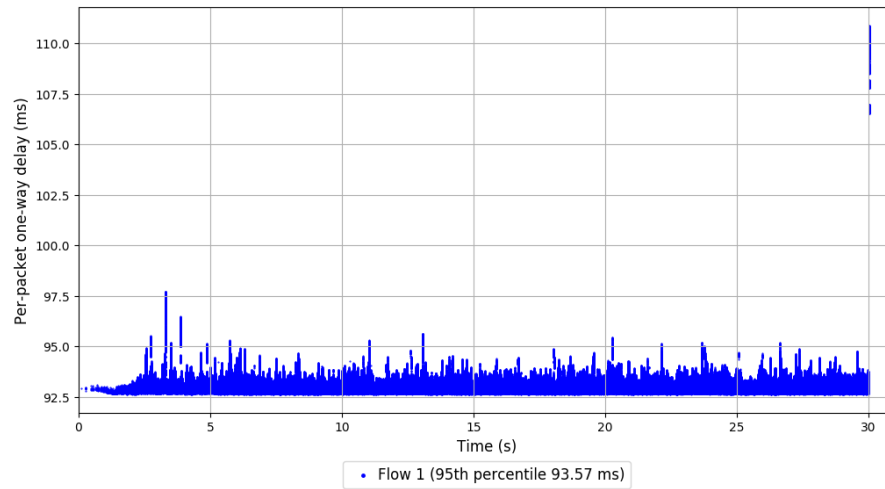
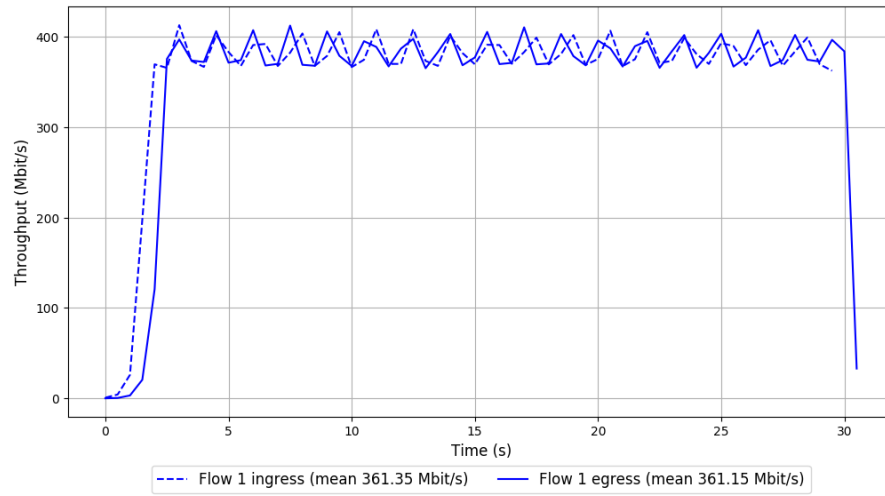
-- Flow 1:

Average throughput: 361.15 Mbit/s

95th percentile per-packet one-way delay: 93.567 ms

Loss rate: 0.04%

### Run 5: Report of TCP Cubic — Data Link

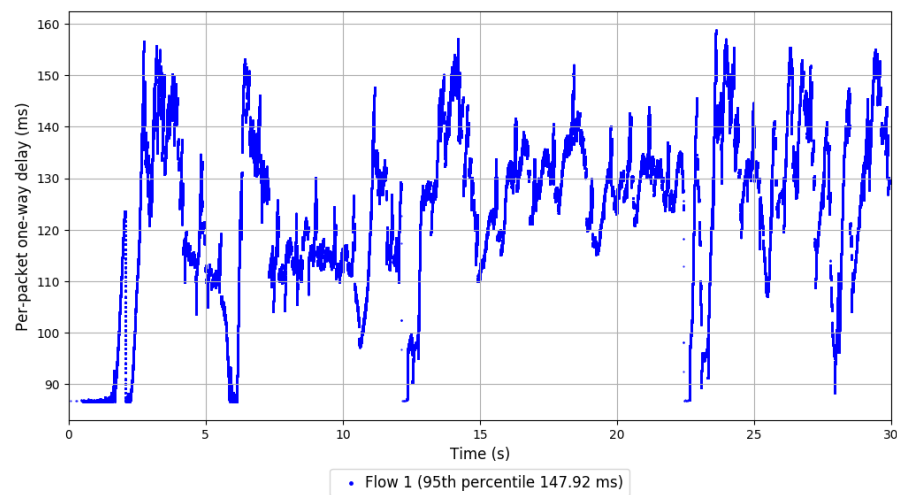
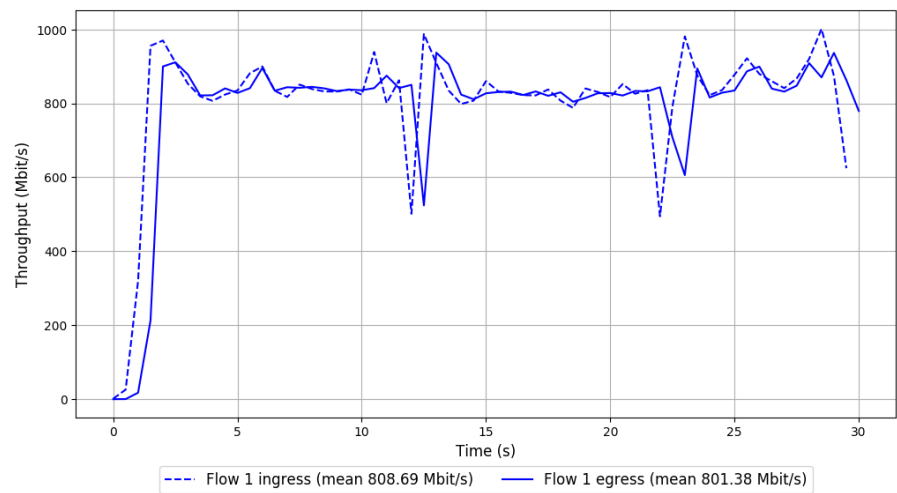


Run 1: Statistics of FillP

Start at: 2018-10-09 18:13:40  
End at: 2018-10-09 18:14:10  
Local clock offset: 13.378 ms  
Remote clock offset: 13.921 ms

# Below is generated by plot.py at 2018-10-09 20:39:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 801.38 Mbit/s  
95th percentile per-packet one-way delay: 147.922 ms  
Loss rate: 0.90%  
-- Flow 1:  
Average throughput: 801.38 Mbit/s  
95th percentile per-packet one-way delay: 147.922 ms  
Loss rate: 0.90%

Run 1: Report of FillP — Data Link

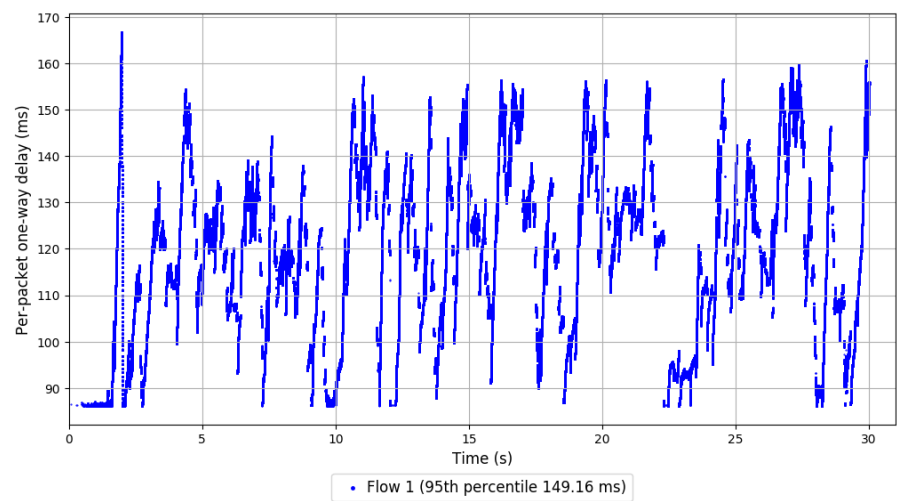
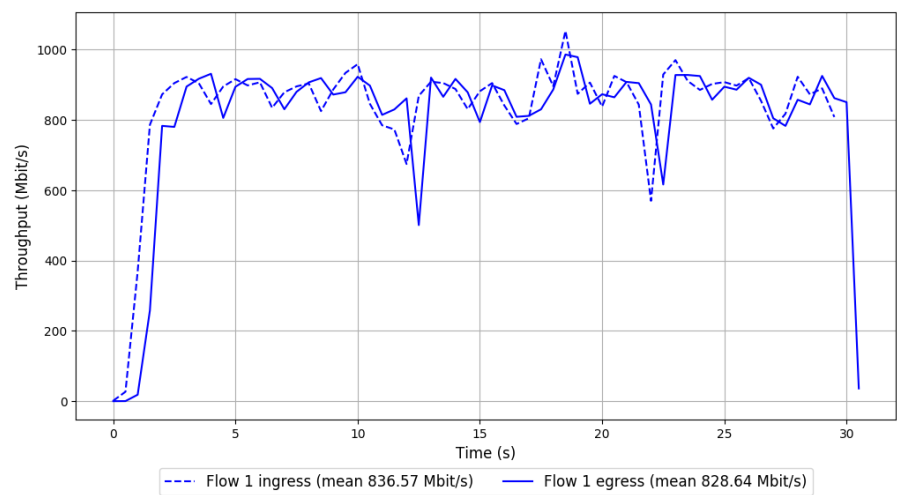


Run 2: Statistics of FillP

Start at: 2018-10-09 18:39:20  
End at: 2018-10-09 18:39:50  
Local clock offset: 17.196 ms  
Remote clock offset: 21.777 ms

# Below is generated by plot.py at 2018-10-09 20:40:37  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 828.64 Mbit/s  
95th percentile per-packet one-way delay: 149.158 ms  
Loss rate: 0.95%  
-- Flow 1:  
Average throughput: 828.64 Mbit/s  
95th percentile per-packet one-way delay: 149.158 ms  
Loss rate: 0.95%

Run 2: Report of FillP — Data Link

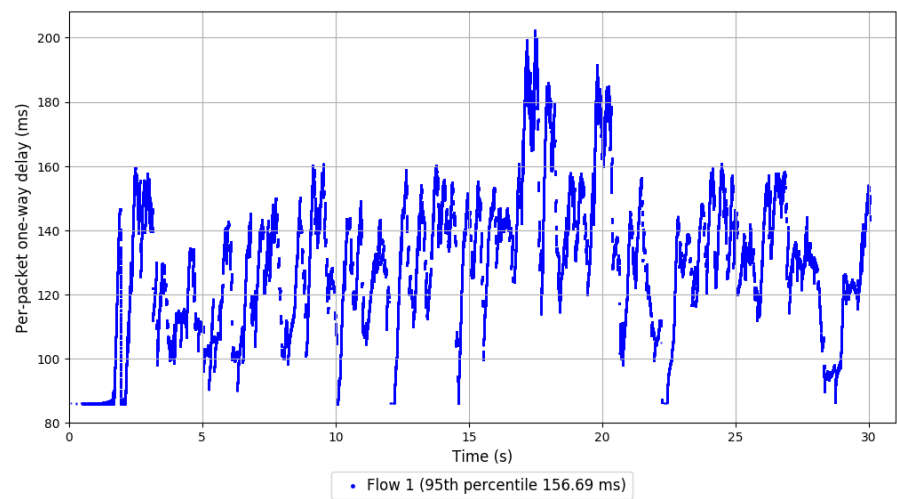
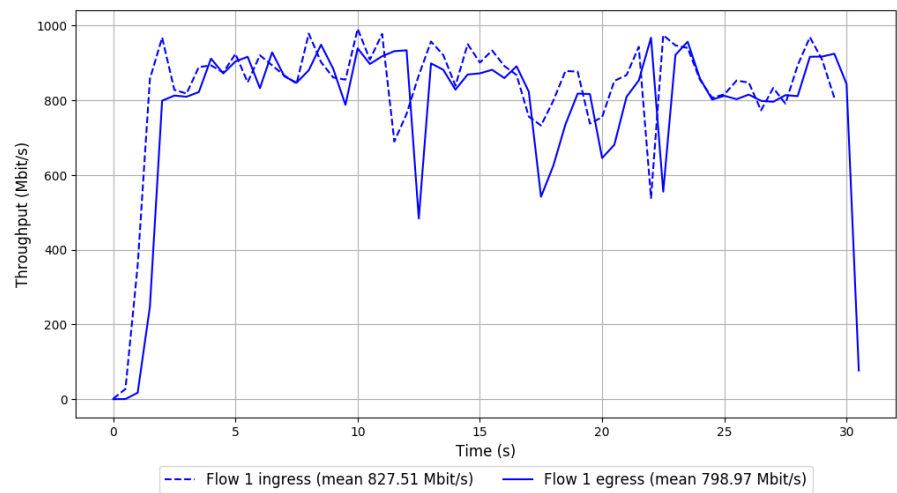


Run 3: Statistics of FillP

Start at: 2018-10-09 19:04:57  
End at: 2018-10-09 19:05:27  
Local clock offset: 23.965 ms  
Remote clock offset: 28.582 ms

# Below is generated by plot.py at 2018-10-09 20:40:37  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 798.97 Mbit/s  
95th percentile per-packet one-way delay: 156.686 ms  
Loss rate: 3.44%  
-- Flow 1:  
Average throughput: 798.97 Mbit/s  
95th percentile per-packet one-way delay: 156.686 ms  
Loss rate: 3.44%

Run 3: Report of FillP — Data Link



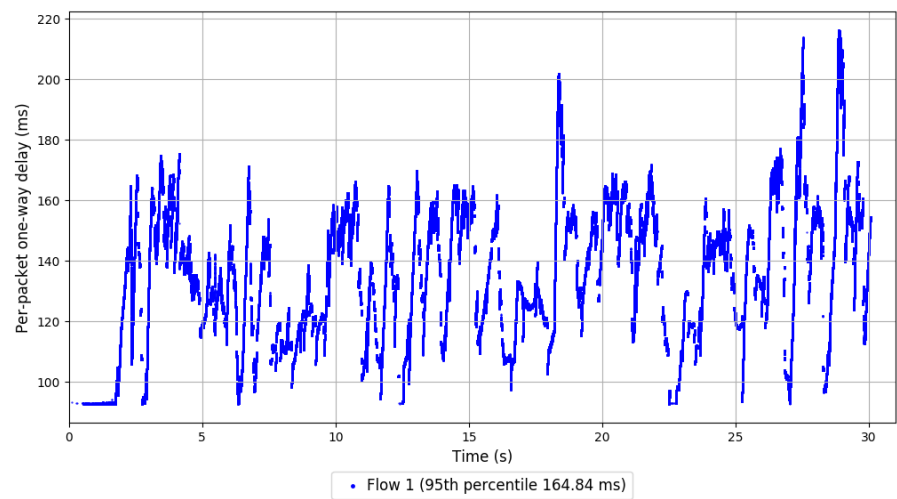
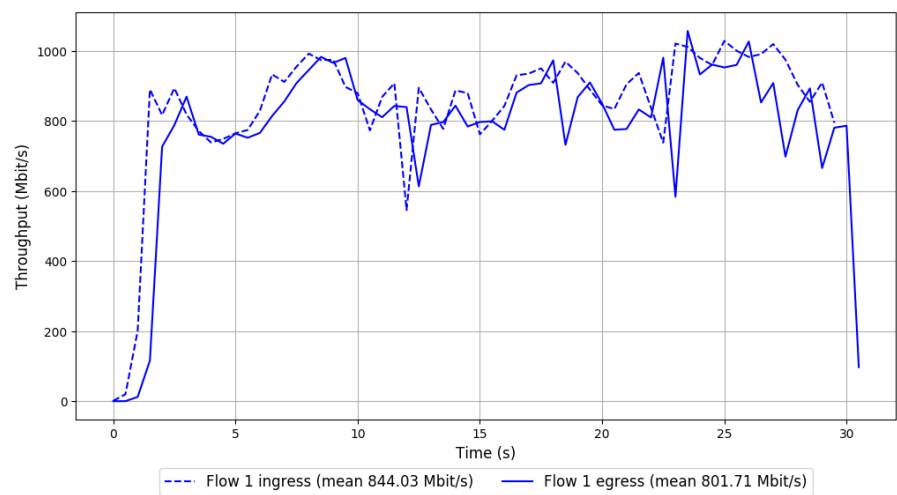


Run 4: Statistics of FillP

Start at: 2018-10-09 19:30:59  
End at: 2018-10-09 19:31:29  
Local clock offset: 19.511 ms  
Remote clock offset: 19.293 ms

# Below is generated by plot.py at 2018-10-09 20:40:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 801.71 Mbit/s  
95th percentile per-packet one-way delay: 164.839 ms  
Loss rate: 5.01%  
-- Flow 1:  
Average throughput: 801.71 Mbit/s  
95th percentile per-packet one-way delay: 164.839 ms  
Loss rate: 5.01%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-09 19:56:41

End at: 2018-10-09 19:57:11

Local clock offset: 8.112 ms

Remote clock offset: 7.987 ms

# Below is generated by plot.py at 2018-10-09 20:42:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 786.49 Mbit/s

95th percentile per-packet one-way delay: 172.482 ms

Loss rate: 4.39%

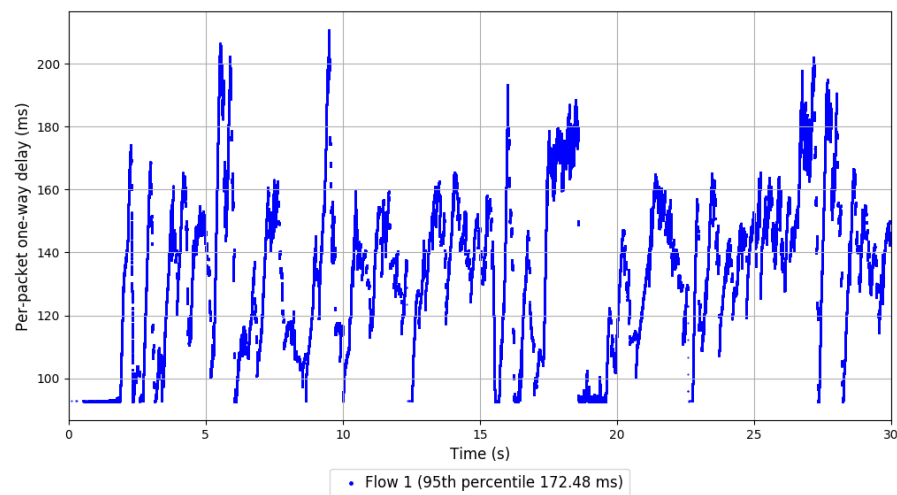
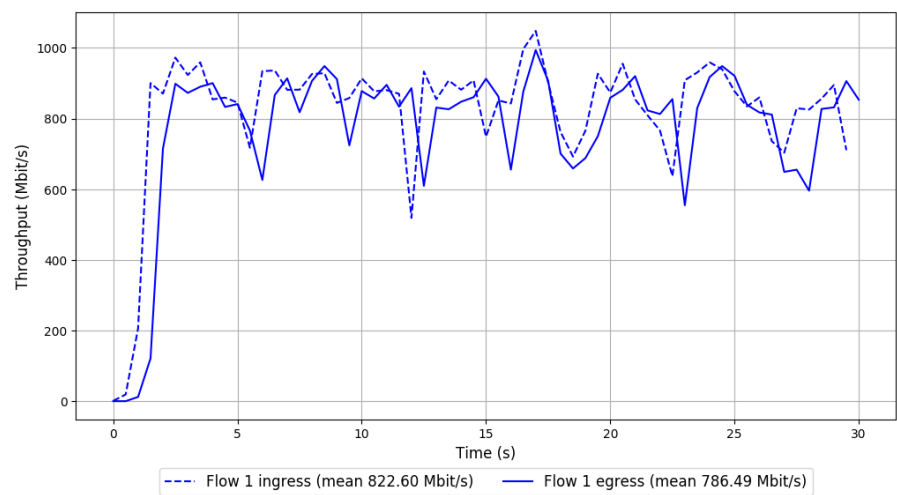
-- Flow 1:

Average throughput: 786.49 Mbit/s

95th percentile per-packet one-way delay: 172.482 ms

Loss rate: 4.39%

Run 5: Report of FillP — Data Link

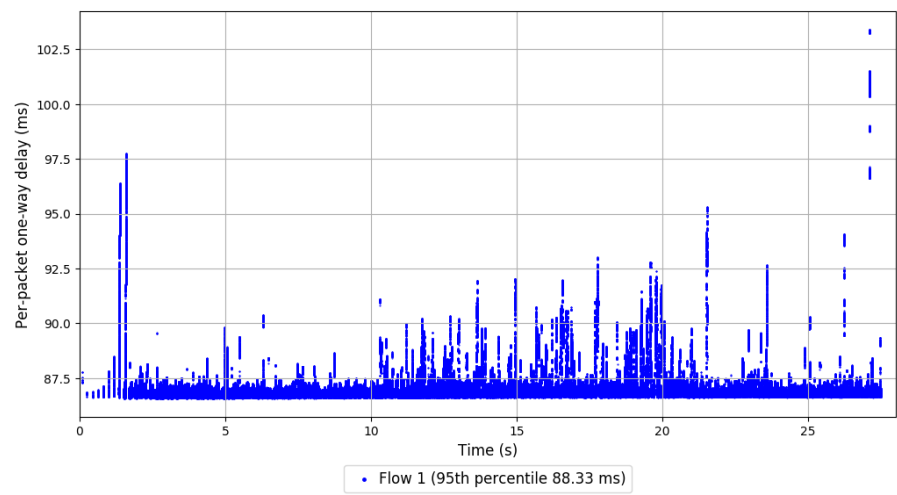
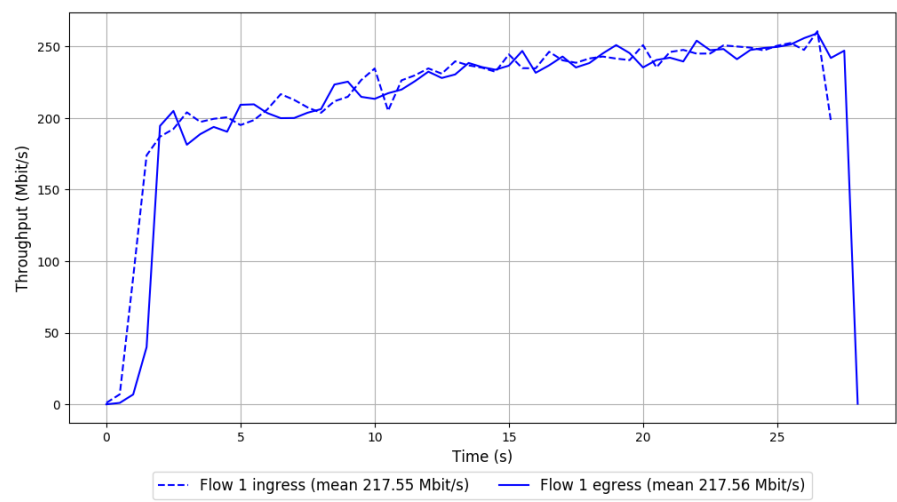


Run 1: Statistics of Indigo

Start at: 2018-10-09 18:09:24  
End at: 2018-10-09 18:09:54  
Local clock offset: 17.626 ms  
Remote clock offset: 18.594 ms

# Below is generated by plot.py at 2018-10-09 20:42:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 217.56 Mbit/s  
95th percentile per-packet one-way delay: 88.327 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 217.56 Mbit/s  
95th percentile per-packet one-way delay: 88.327 ms  
Loss rate: 0.00%

Run 1: Report of Indigo — Data Link

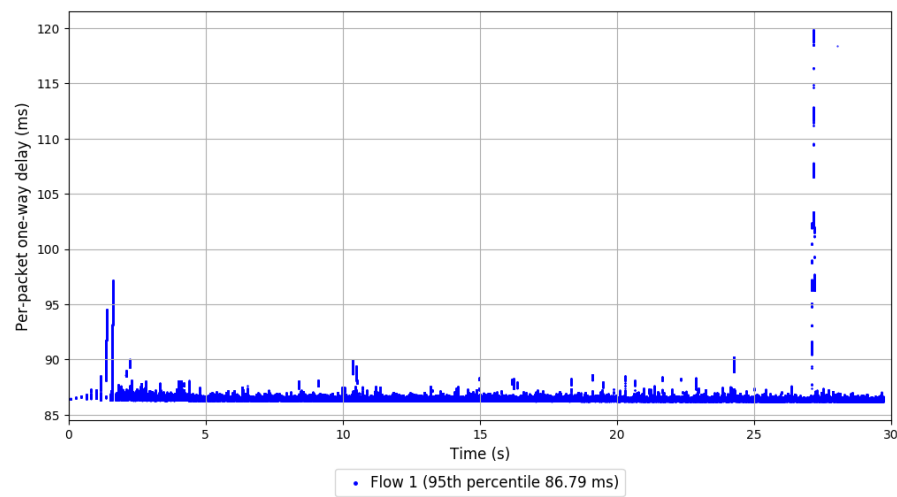
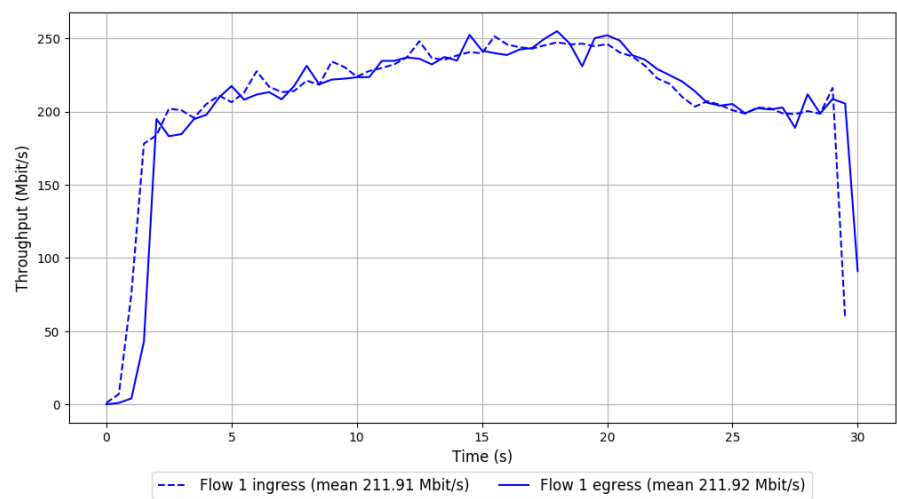


Run 2: Statistics of Indigo

Start at: 2018-10-09 18:35:07  
End at: 2018-10-09 18:35:38  
Local clock offset: 16.841 ms  
Remote clock offset: 20.741 ms

# Below is generated by plot.py at 2018-10-09 20:42:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 211.92 Mbit/s  
95th percentile per-packet one-way delay: 86.788 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 211.92 Mbit/s  
95th percentile per-packet one-way delay: 86.788 ms  
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



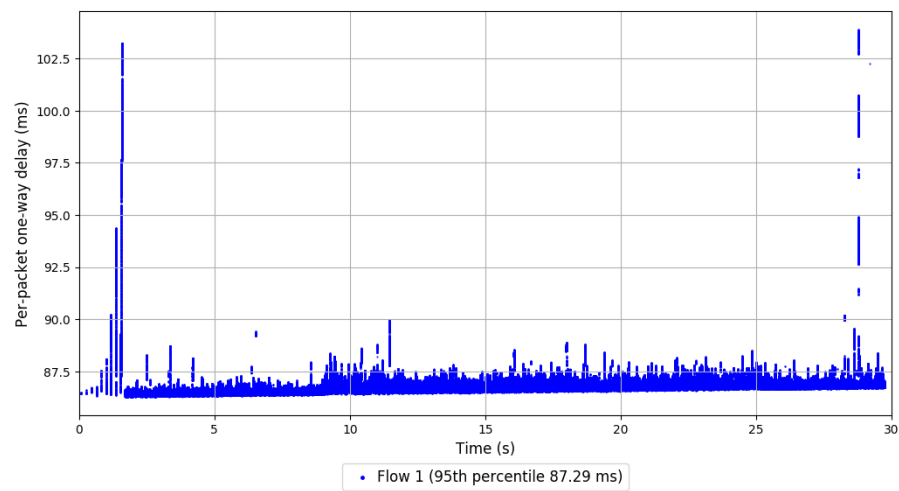
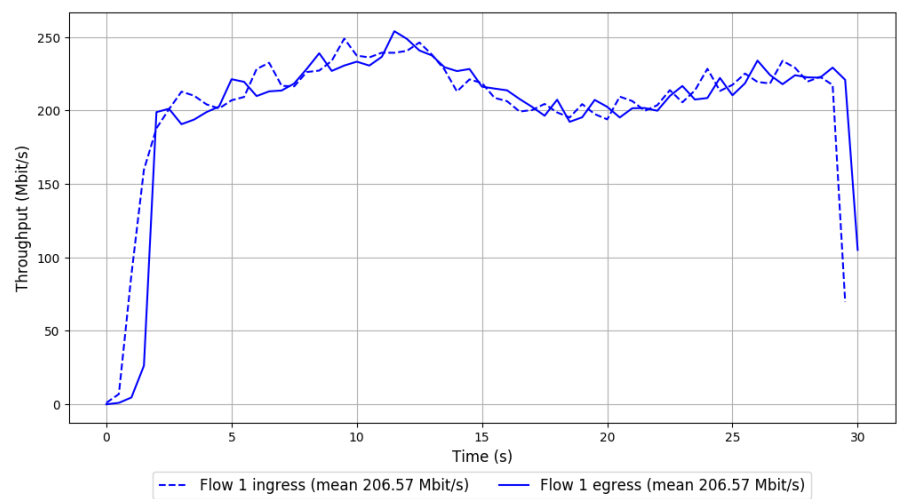


Run 3: Statistics of Indigo

Start at: 2018-10-09 19:00:41  
End at: 2018-10-09 19:01:11  
Local clock offset: 34.024 ms  
Remote clock offset: 41.848 ms

# Below is generated by plot.py at 2018-10-09 20:42:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 206.57 Mbit/s  
95th percentile per-packet one-way delay: 87.289 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 206.57 Mbit/s  
95th percentile per-packet one-way delay: 87.289 ms  
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

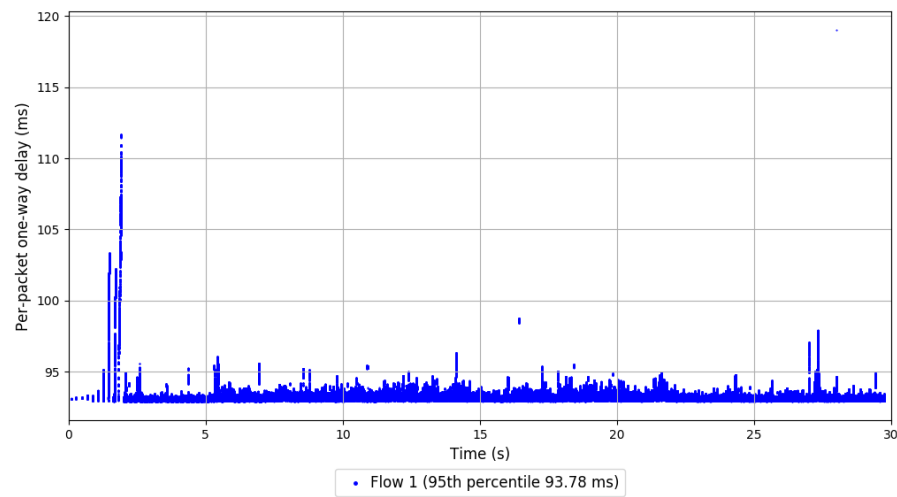
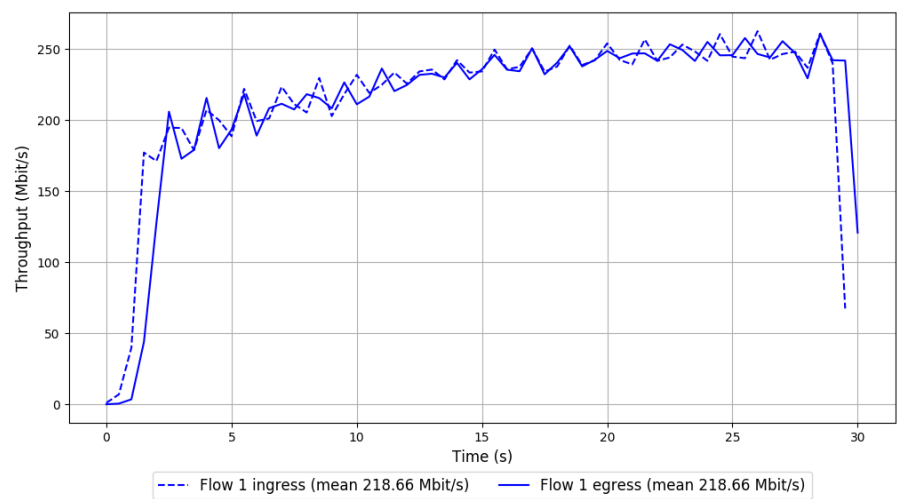


Run 4: Statistics of Indigo

Start at: 2018-10-09 19:26:39  
End at: 2018-10-09 19:27:09  
Local clock offset: 17.325 ms  
Remote clock offset: 17.551 ms

# Below is generated by plot.py at 2018-10-09 20:42:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 218.66 Mbit/s  
95th percentile per-packet one-way delay: 93.784 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 218.66 Mbit/s  
95th percentile per-packet one-way delay: 93.784 ms  
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-09 19:52:30

End at: 2018-10-09 19:53:00

Local clock offset: 7.943 ms

Remote clock offset: 7.745 ms

# Below is generated by plot.py at 2018-10-09 20:42:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 170.64 Mbit/s

95th percentile per-packet one-way delay: 94.577 ms

Loss rate: 0.00%

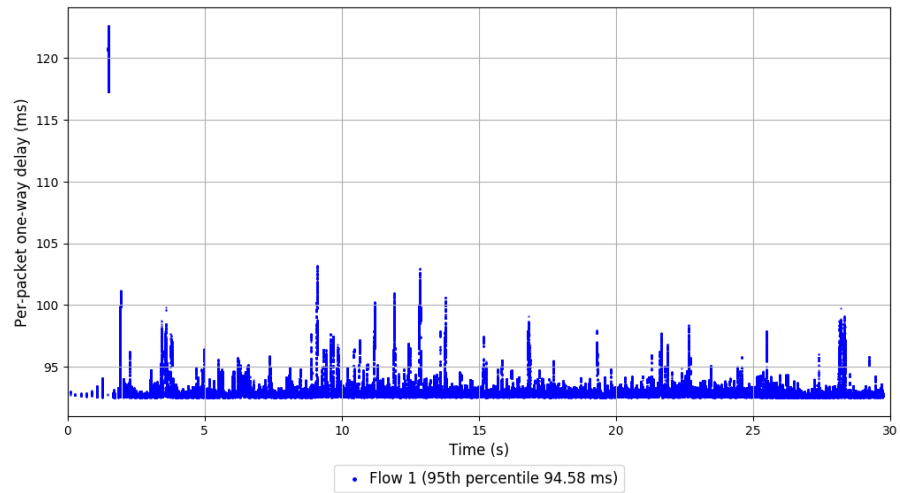
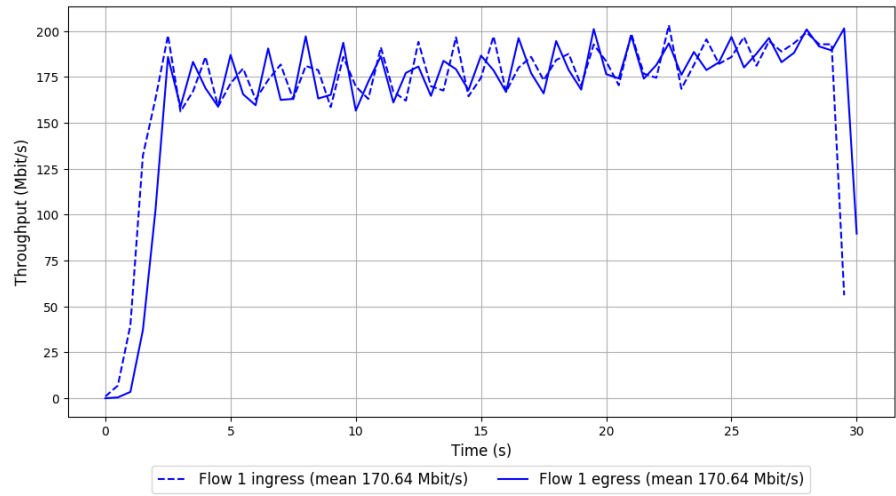
-- Flow 1:

Average throughput: 170.64 Mbit/s

95th percentile per-packet one-way delay: 94.577 ms

Loss rate: 0.00%

### Run 5: Report of Indigo — Data Link

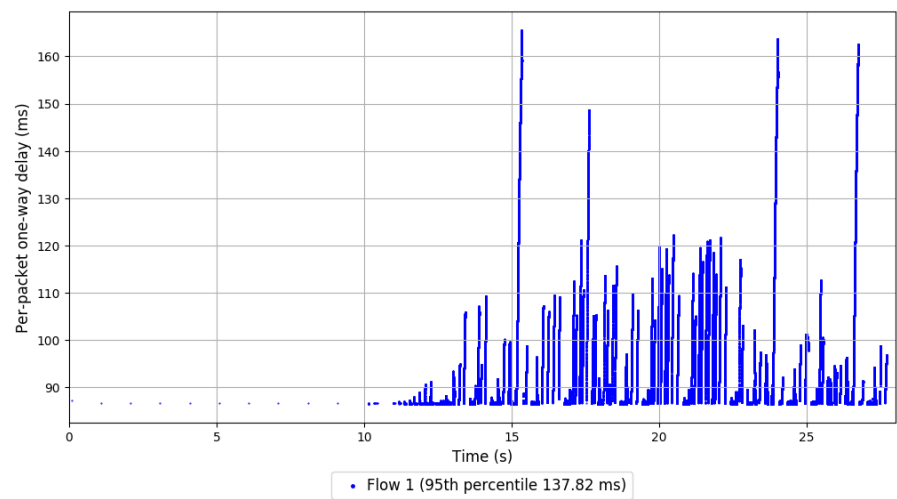
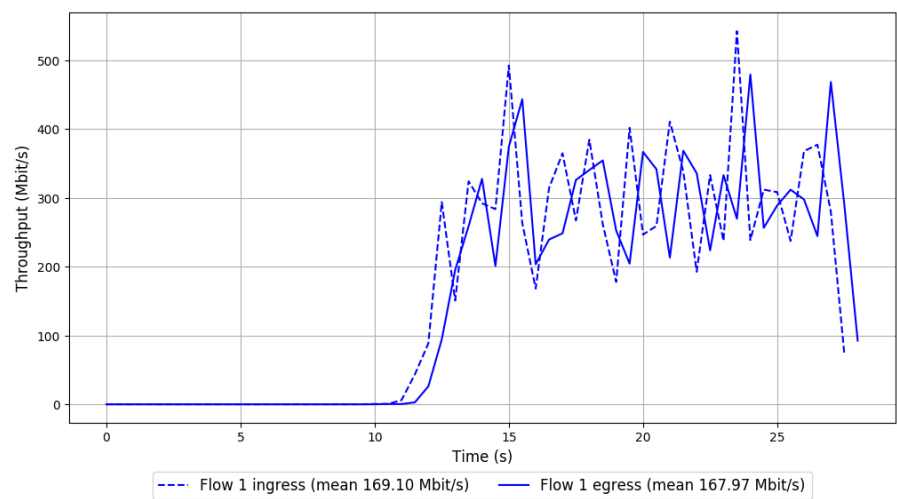


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:08:09  
End at: 2018-10-09 18:08:39  
Local clock offset: 15.015 ms  
Remote clock offset: 15.763 ms

# Below is generated by plot.py at 2018-10-09 20:42:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 167.97 Mbit/s  
95th percentile per-packet one-way delay: 137.822 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 167.97 Mbit/s  
95th percentile per-packet one-way delay: 137.822 ms  
Loss rate: 0.63%

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





Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:33:45

End at: 2018-10-09 18:34:15

Local clock offset: 17.627 ms

Remote clock offset: 20.96 ms

# Below is generated by plot.py at 2018-10-09 20:42:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 292.34 Mbit/s

95th percentile per-packet one-way delay: 107.799 ms

Loss rate: 0.12%

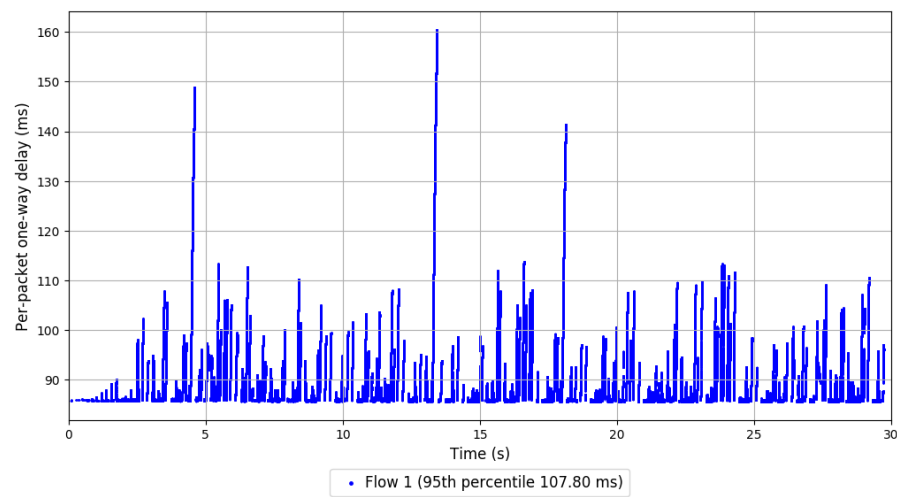
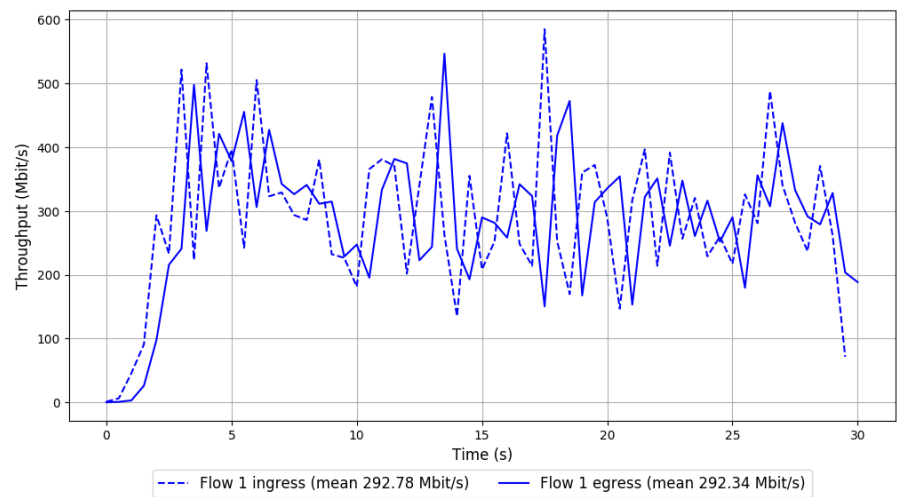
-- Flow 1:

Average throughput: 292.34 Mbit/s

95th percentile per-packet one-way delay: 107.799 ms

Loss rate: 0.12%

Run 2: Report of Indigo-96d2da3 — Data Link

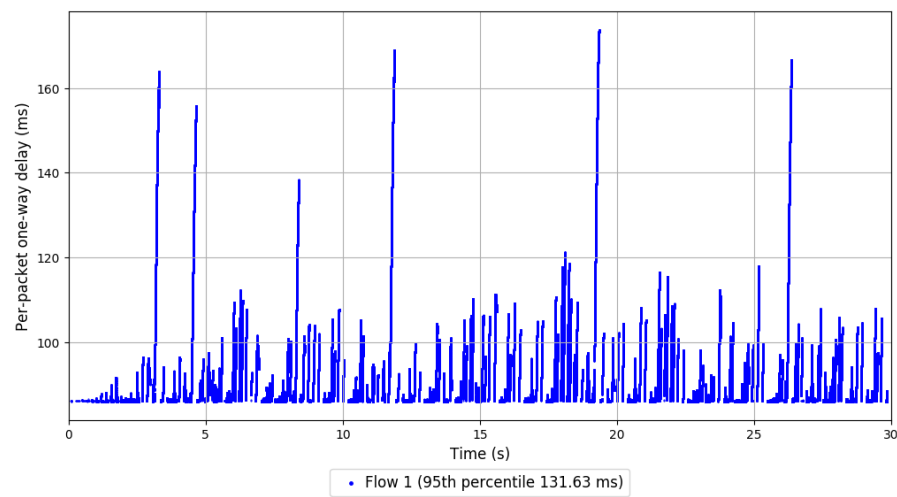
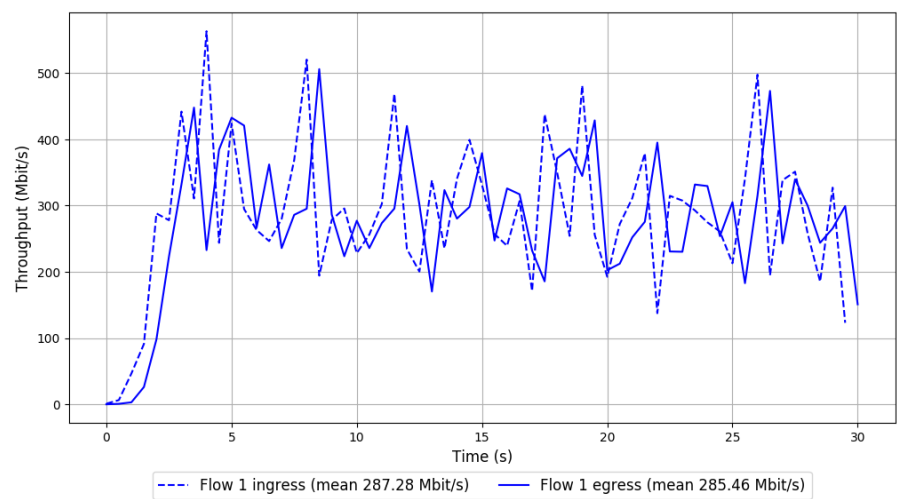


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:59:19  
End at: 2018-10-09 18:59:49  
Local clock offset: 32.903 ms  
Remote clock offset: 40.303 ms

# Below is generated by plot.py at 2018-10-09 20:43:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 285.46 Mbit/s  
95th percentile per-packet one-way delay: 131.634 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 285.46 Mbit/s  
95th percentile per-packet one-way delay: 131.634 ms  
Loss rate: 0.63%

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

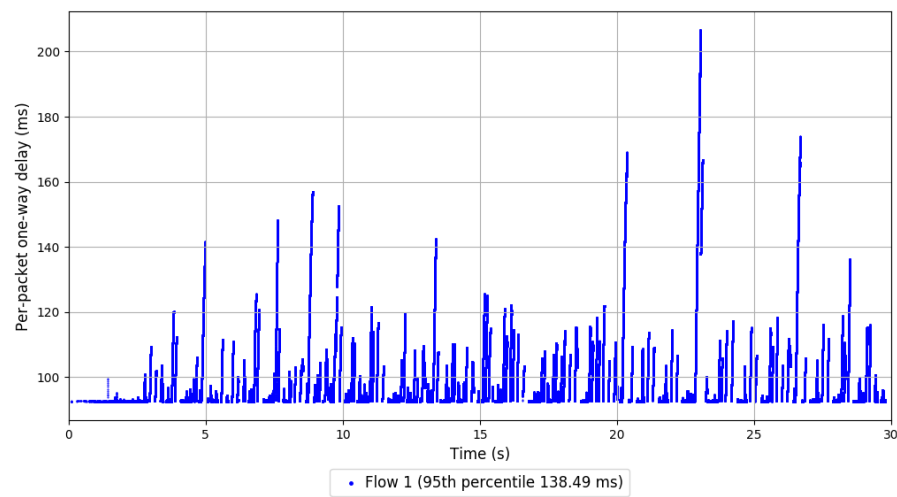
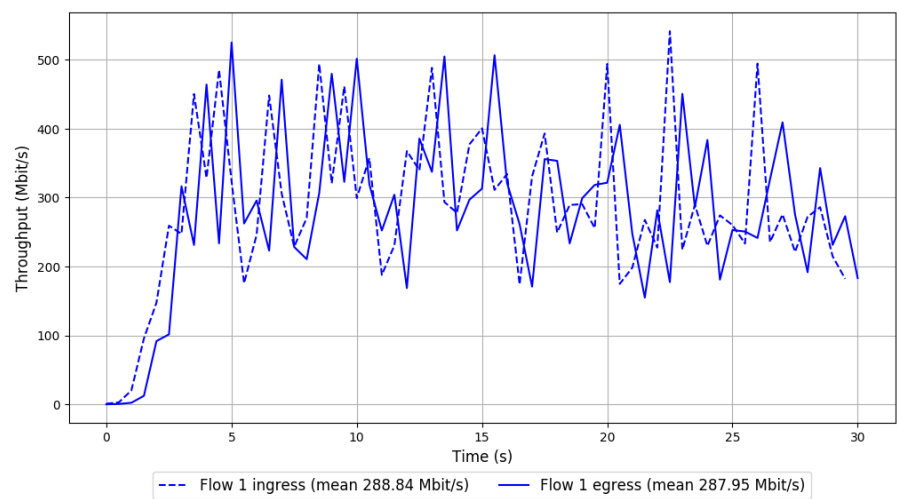


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-09 19:25:16  
End at: 2018-10-09 19:25:47  
Local clock offset: 17.118 ms  
Remote clock offset: 17.045 ms

# Below is generated by plot.py at 2018-10-09 20:44:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 287.95 Mbit/s  
95th percentile per-packet one-way delay: 138.490 ms  
Loss rate: 0.31%  
-- Flow 1:  
Average throughput: 287.95 Mbit/s  
95th percentile per-packet one-way delay: 138.490 ms  
Loss rate: 0.31%

Run 4: Report of Indigo-96d2da3 — Data Link



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-09 19:51:07

End at: 2018-10-09 19:51:37

Local clock offset: 8.04 ms

Remote clock offset: 7.832 ms

# Below is generated by plot.py at 2018-10-09 20:44:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 288.16 Mbit/s

95th percentile per-packet one-way delay: 134.971 ms

Loss rate: 0.28%

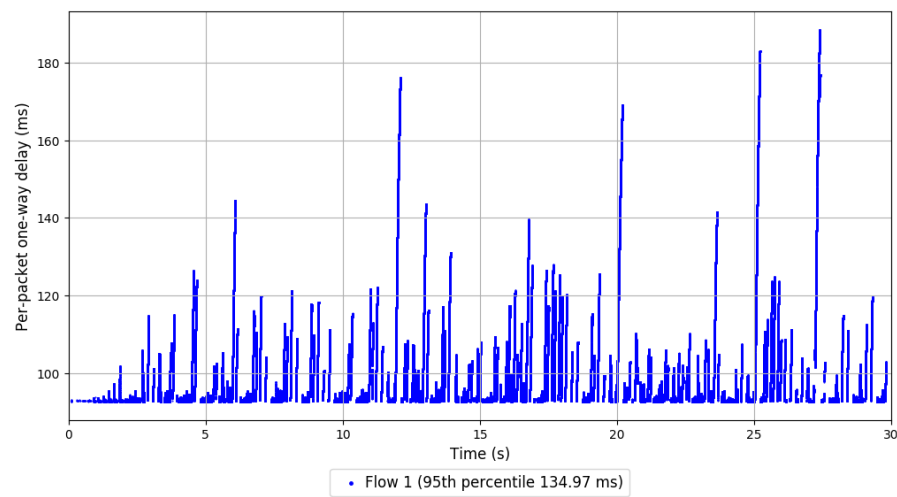
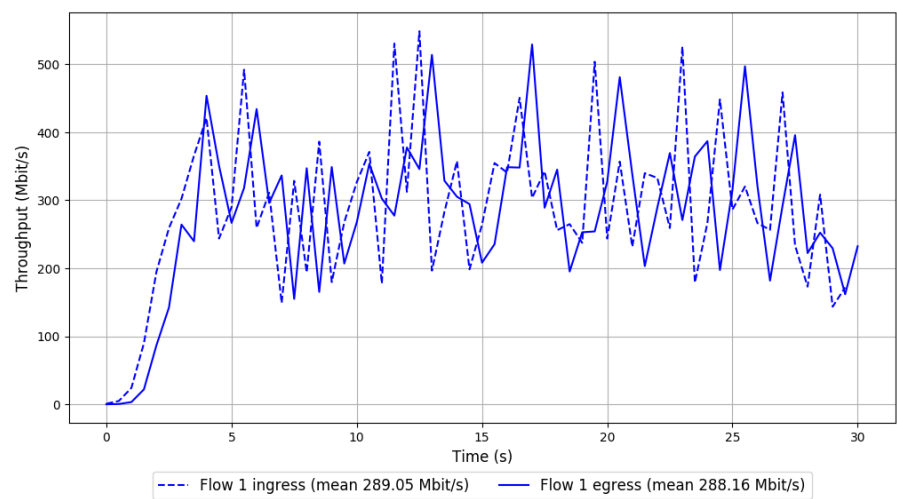
-- Flow 1:

Average throughput: 288.16 Mbit/s

95th percentile per-packet one-way delay: 134.971 ms

Loss rate: 0.28%

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



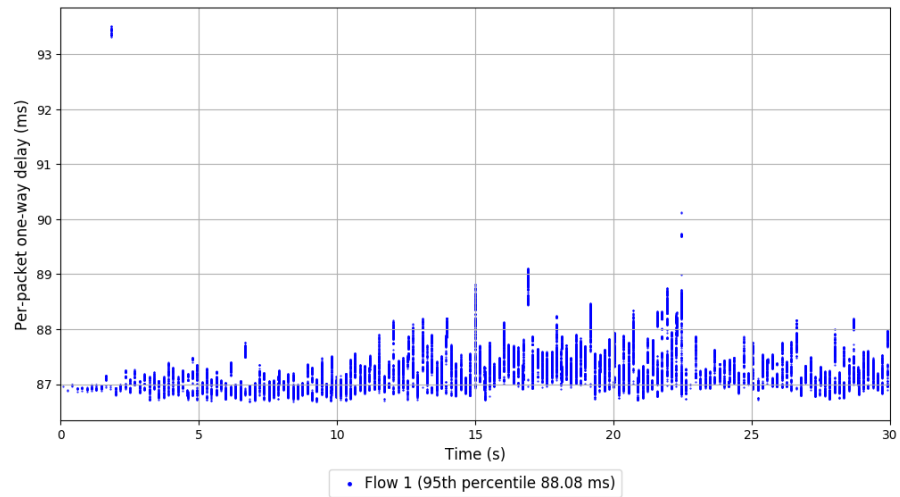
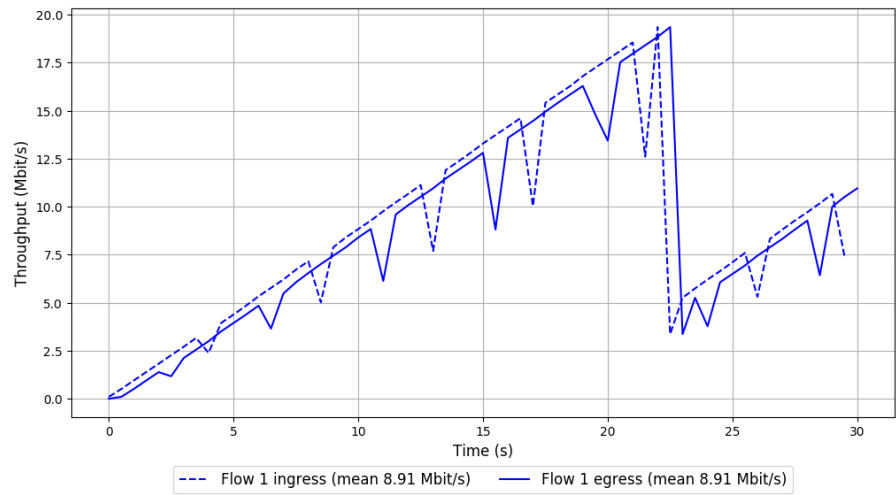


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-09 17:58:29
End at: 2018-10-09 17:58:59
Local clock offset: 6.108 ms
Remote clock offset: 6.52 ms

# Below is generated by plot.py at 2018-10-09 20:44:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.91 Mbit/s
95th percentile per-packet one-way delay: 88.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.91 Mbit/s
95th percentile per-packet one-way delay: 88.077 ms
Loss rate: 0.00%
```

## Run 1: Report of LEDBAT — Data Link

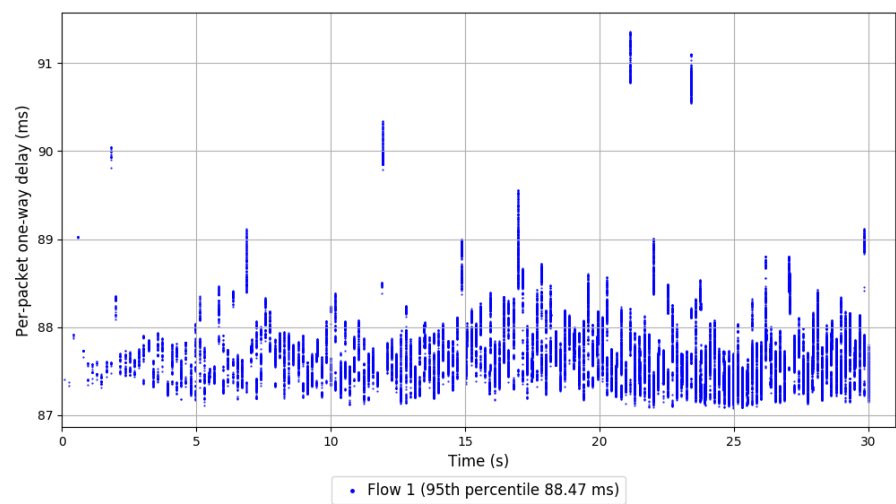
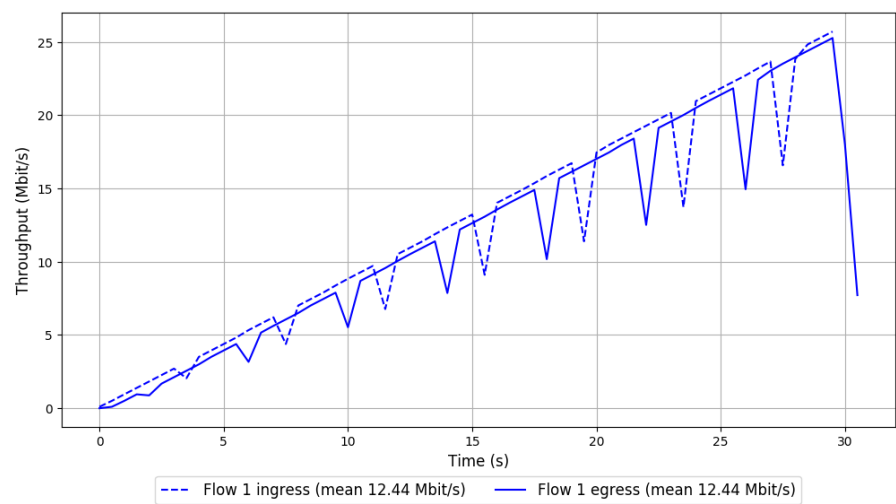


Run 2: Statistics of LEDBAT

Start at: 2018-10-09 18:24:03  
End at: 2018-10-09 18:24:33  
Local clock offset: 23.098 ms  
Remote clock offset: 24.076 ms

# Below is generated by plot.py at 2018-10-09 20:44:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 12.44 Mbit/s  
95th percentile per-packet one-way delay: 88.473 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 12.44 Mbit/s  
95th percentile per-packet one-way delay: 88.473 ms  
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

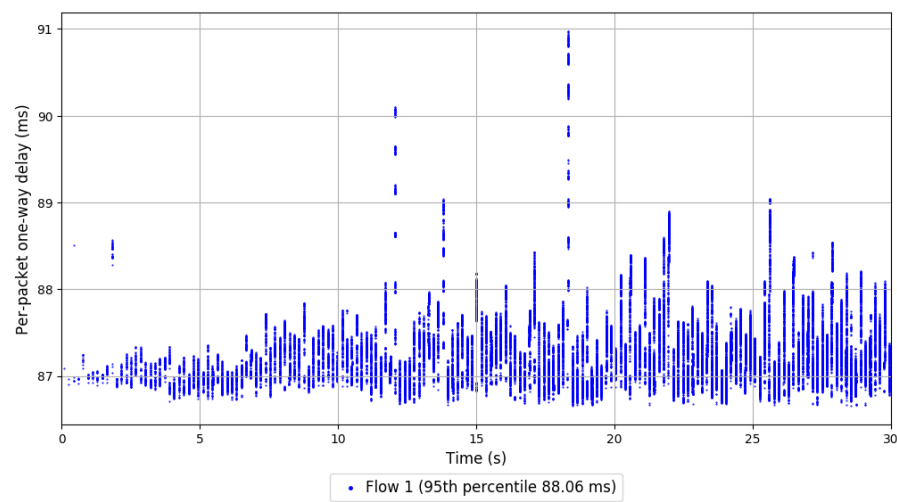
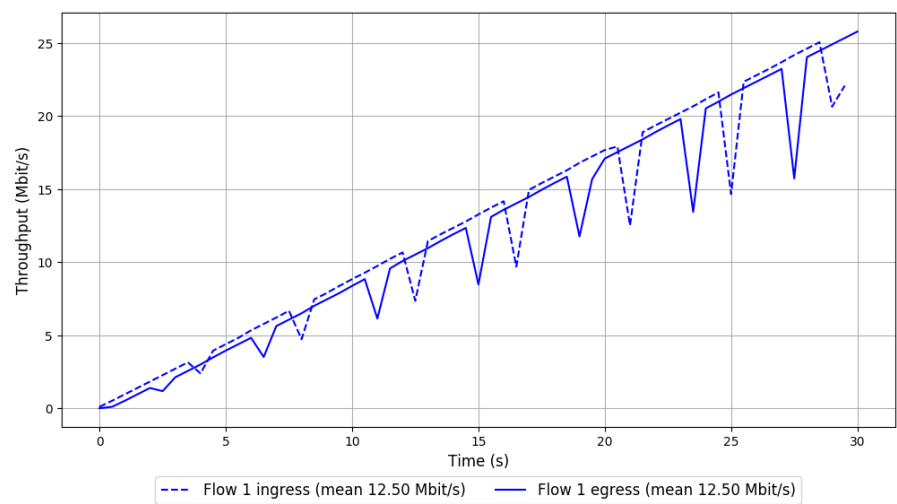


Run 3: Statistics of LEDBAT

Start at: 2018-10-09 18:49:44  
End at: 2018-10-09 18:50:14  
Local clock offset: 23.451 ms  
Remote clock offset: 30.142 ms

# Below is generated by plot.py at 2018-10-09 20:44:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 12.50 Mbit/s  
95th percentile per-packet one-way delay: 88.063 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 12.50 Mbit/s  
95th percentile per-packet one-way delay: 88.063 ms  
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link

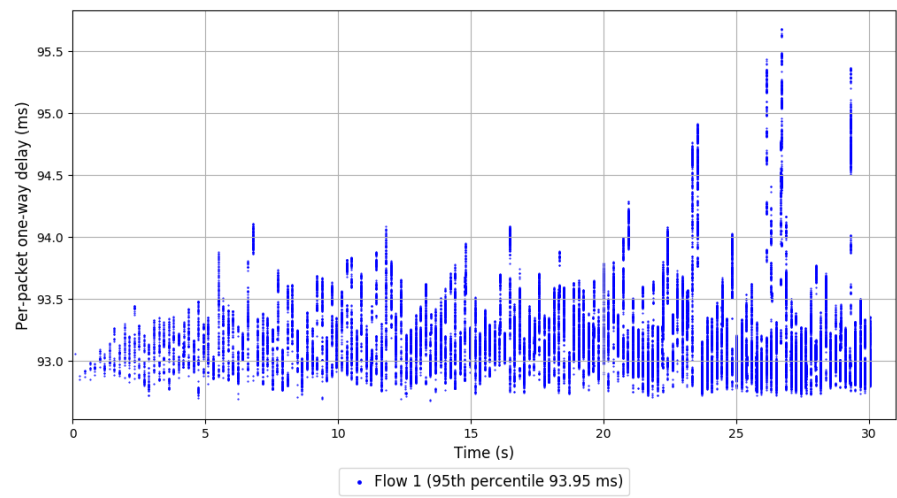
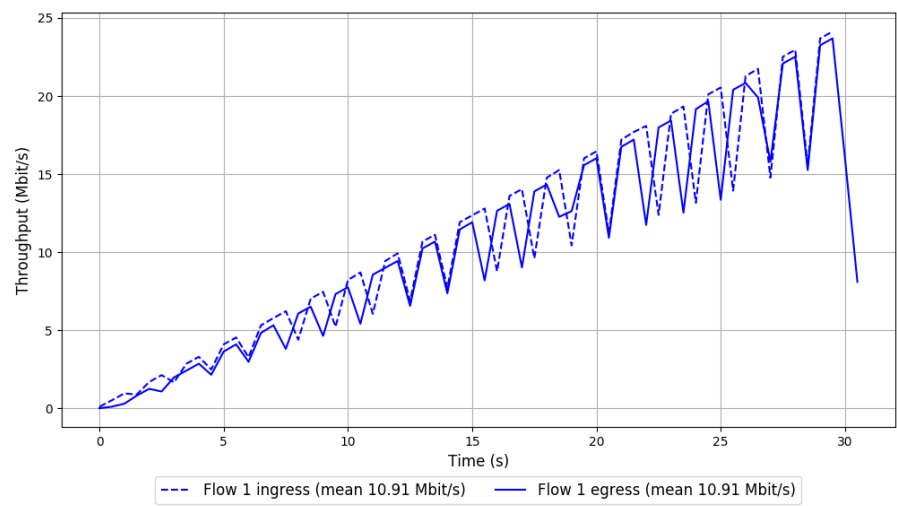


Run 4: Statistics of LEDBAT

Start at: 2018-10-09 19:15:28  
End at: 2018-10-09 19:15:58  
Local clock offset: 15.117 ms  
Remote clock offset: 16.311 ms

# Below is generated by plot.py at 2018-10-09 20:44:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 10.91 Mbit/s  
95th percentile per-packet one-way delay: 93.953 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 10.91 Mbit/s  
95th percentile per-packet one-way delay: 93.953 ms  
Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



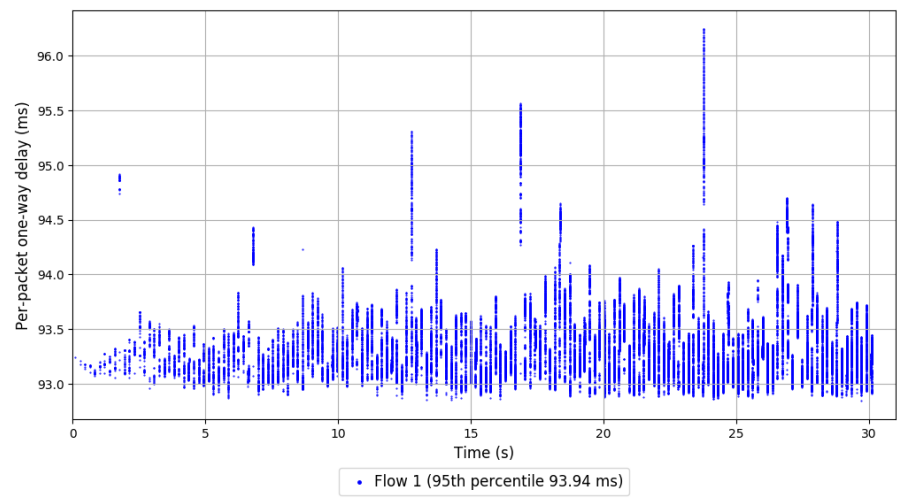
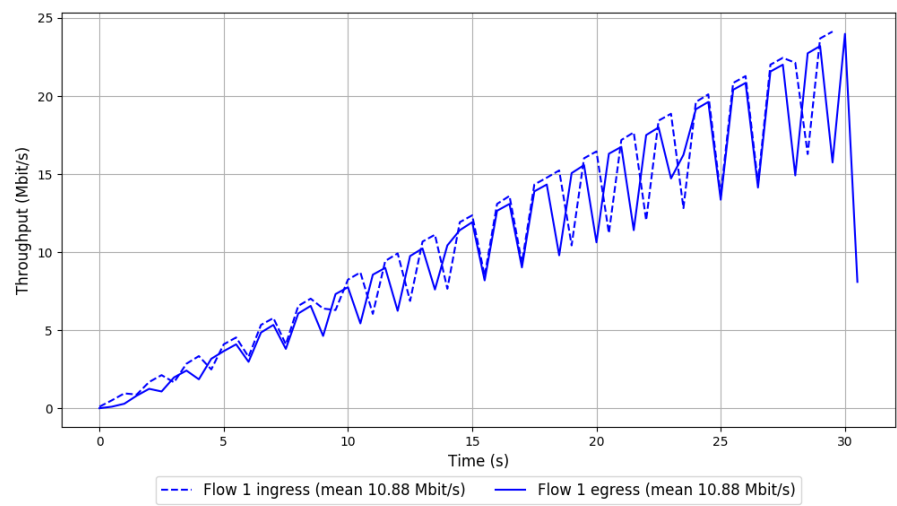


Run 5: Statistics of LEDBAT

Start at: 2018-10-09 19:41:25  
End at: 2018-10-09 19:41:55  
Local clock offset: 11.993 ms  
Remote clock offset: 11.806 ms

# Below is generated by plot.py at 2018-10-09 20:44:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 10.88 Mbit/s  
95th percentile per-packet one-way delay: 93.944 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 10.88 Mbit/s  
95th percentile per-packet one-way delay: 93.944 ms  
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

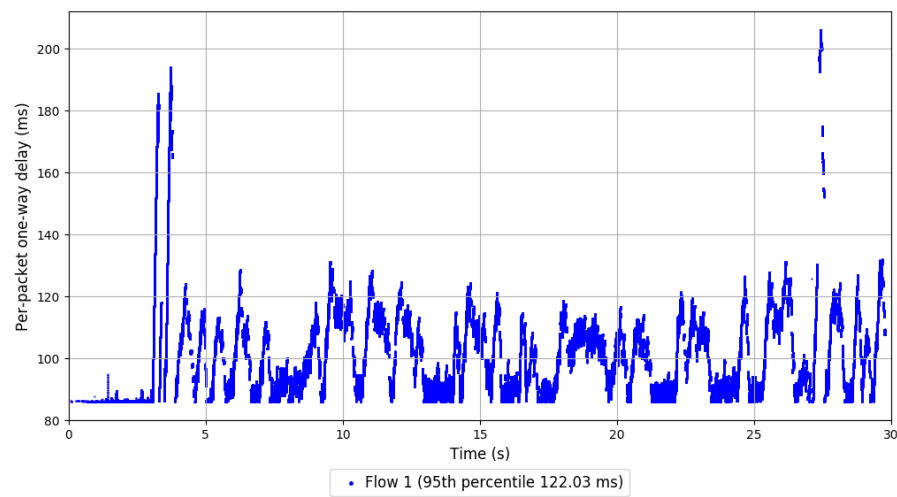
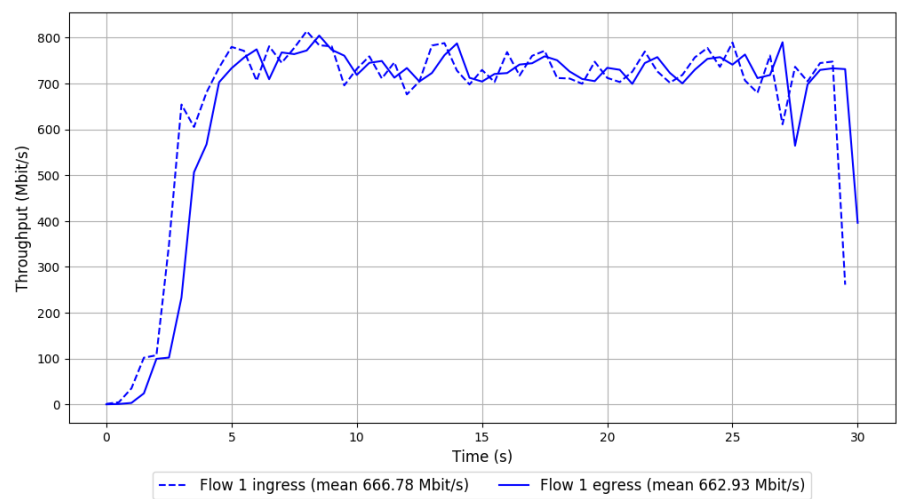


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-09 18:15:20  
End at: 2018-10-09 18:15:50  
Local clock offset: 13.871 ms  
Remote clock offset: 14.291 ms

# Below is generated by plot.py at 2018-10-09 20:51:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 662.93 Mbit/s  
95th percentile per-packet one-way delay: 122.030 ms  
Loss rate: 0.58%  
-- Flow 1:  
Average throughput: 662.93 Mbit/s  
95th percentile per-packet one-way delay: 122.030 ms  
Loss rate: 0.58%

Run 1: Report of Indigo-Muses — Data Link

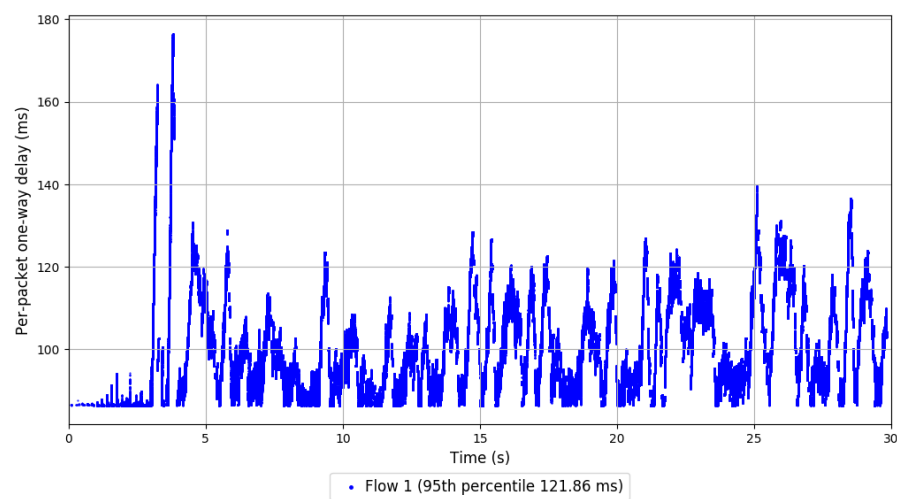
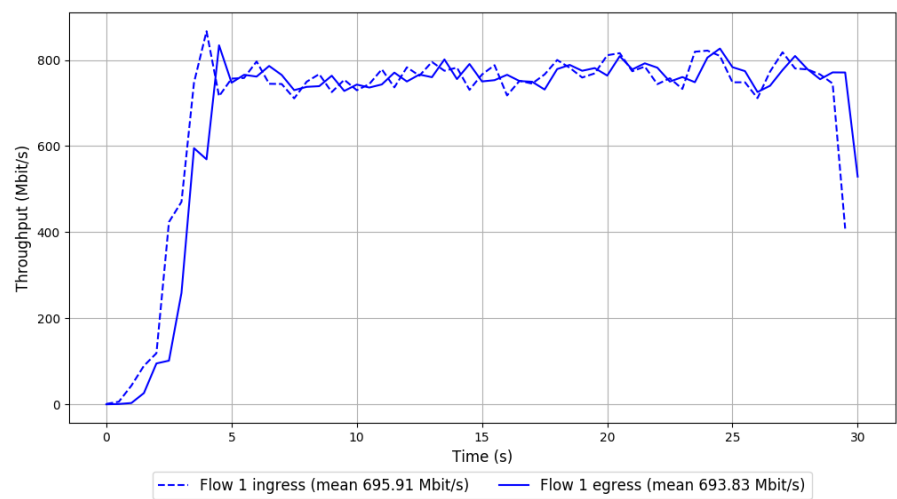


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-09 18:41:02  
End at: 2018-10-09 18:41:32  
Local clock offset: 17.632 ms  
Remote clock offset: 22.693 ms

# Below is generated by plot.py at 2018-10-09 20:52:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 693.83 Mbit/s  
95th percentile per-packet one-way delay: 121.864 ms  
Loss rate: 0.30%  
-- Flow 1:  
Average throughput: 693.83 Mbit/s  
95th percentile per-packet one-way delay: 121.864 ms  
Loss rate: 0.30%

Run 2: Report of Indigo-Muses — Data Link

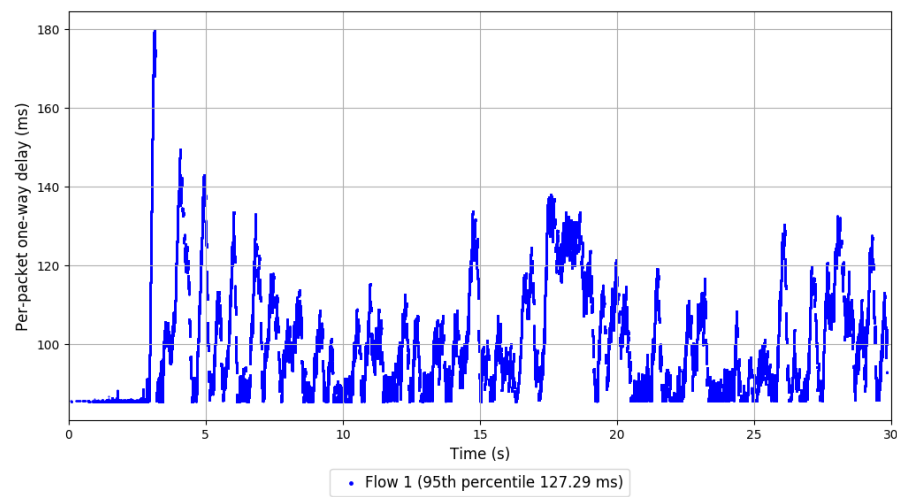
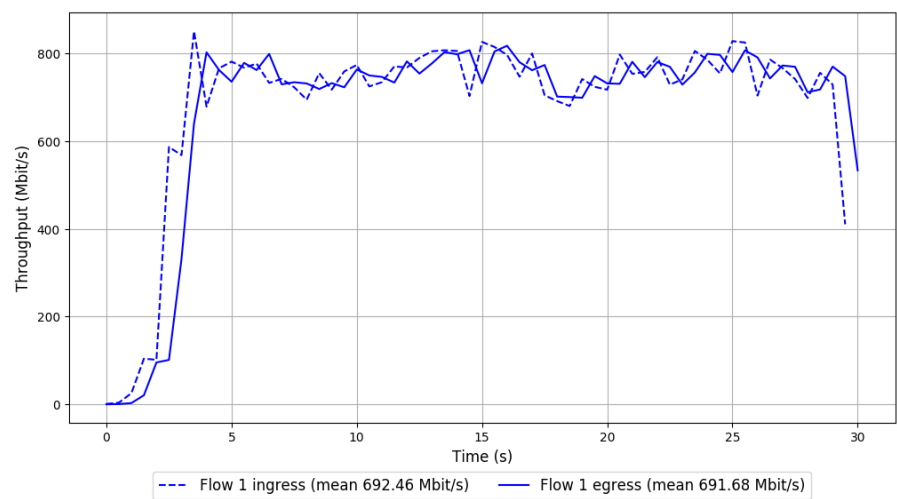


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-09 19:06:38  
End at: 2018-10-09 19:07:08  
Local clock offset: 21.308 ms  
Remote clock offset: 24.567 ms

# Below is generated by plot.py at 2018-10-09 20:52:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 691.68 Mbit/s  
95th percentile per-packet one-way delay: 127.287 ms  
Loss rate: 0.11%  
-- Flow 1:  
Average throughput: 691.68 Mbit/s  
95th percentile per-packet one-way delay: 127.287 ms  
Loss rate: 0.11%

Run 3: Report of Indigo-Muses — Data Link



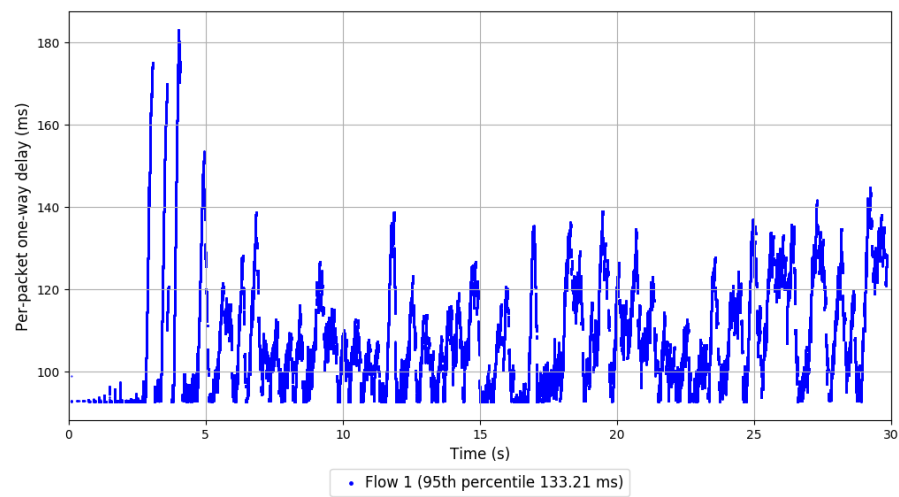
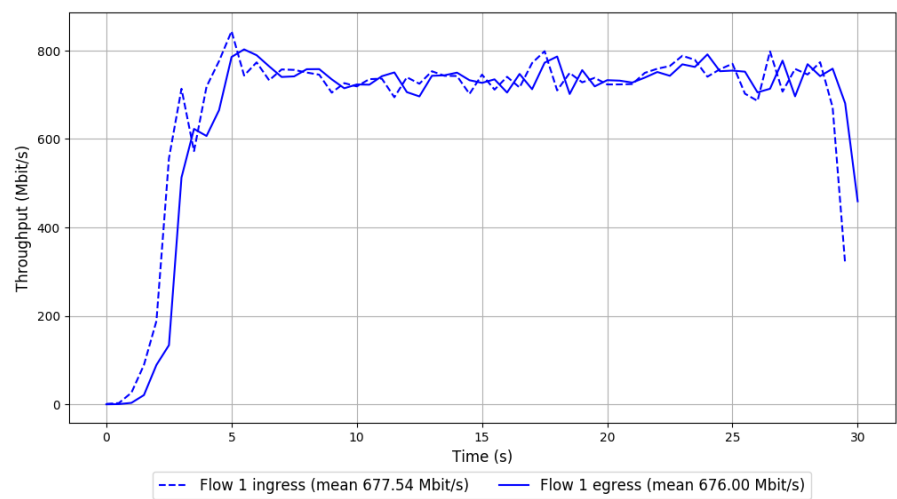


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-09 19:32:41  
End at: 2018-10-09 19:33:11  
Local clock offset: 20.334 ms  
Remote clock offset: 20.141 ms

# Below is generated by plot.py at 2018-10-09 20:53:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 676.00 Mbit/s  
95th percentile per-packet one-way delay: 133.206 ms  
Loss rate: 0.22%  
-- Flow 1:  
Average throughput: 676.00 Mbit/s  
95th percentile per-packet one-way delay: 133.206 ms  
Loss rate: 0.22%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-09 19:58:22

End at: 2018-10-09 19:58:53

Local clock offset: 8.394 ms

Remote clock offset: 8.114 ms

# Below is generated by plot.py at 2018-10-09 20:54:13

# Datalink statistics

-- Total of 1 flow:

Average throughput: 686.95 Mbit/s

95th percentile per-packet one-way delay: 139.379 ms

Loss rate: 0.26%

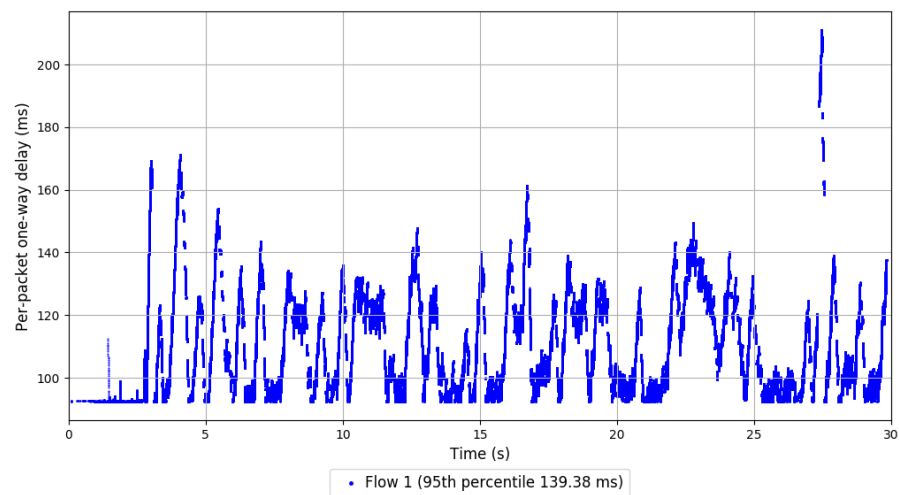
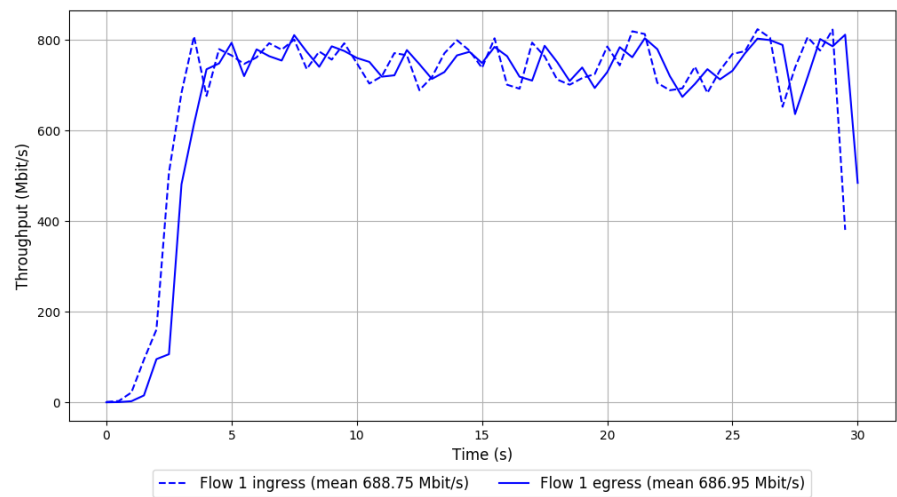
-- Flow 1:

Average throughput: 686.95 Mbit/s

95th percentile per-packet one-way delay: 139.379 ms

Loss rate: 0.26%

Run 5: Report of Indigo-Muses — Data Link

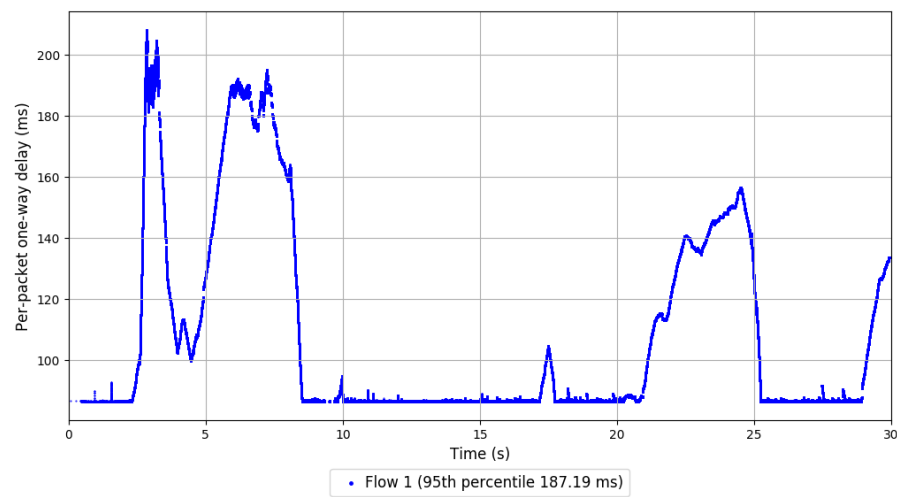
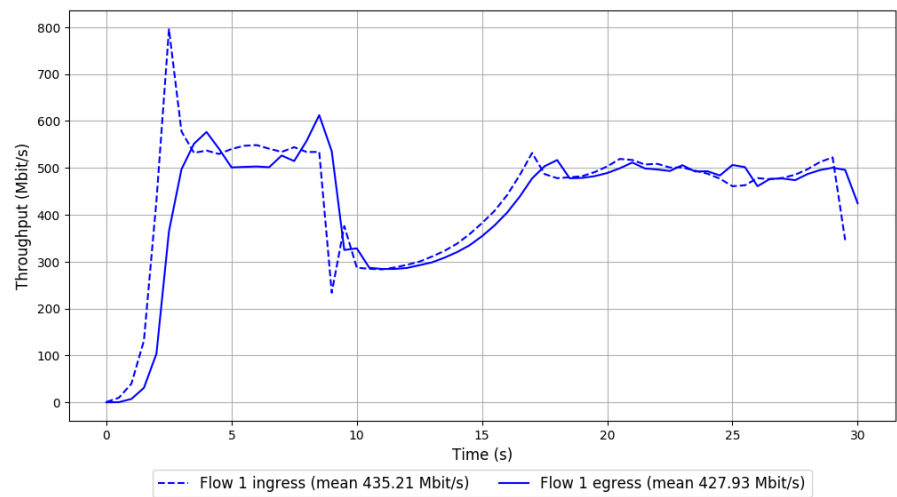


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-09 18:05:05
End at: 2018-10-09 18:05:35
Local clock offset: 10.243 ms
Remote clock offset: 10.571 ms

# Below is generated by plot.py at 2018-10-09 20:57:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 427.93 Mbit/s
95th percentile per-packet one-way delay: 187.193 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 427.93 Mbit/s
95th percentile per-packet one-way delay: 187.193 ms
Loss rate: 1.67%
```

Run 1: Report of PCC-Allegro — Data Link

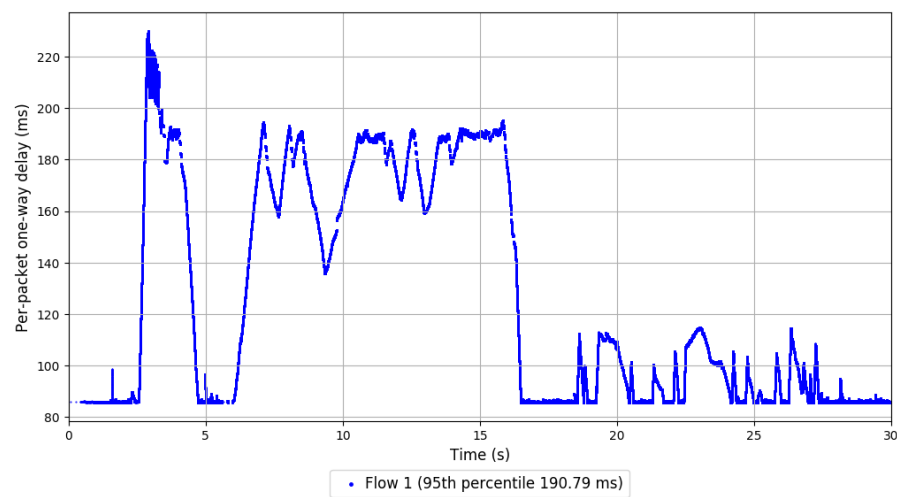
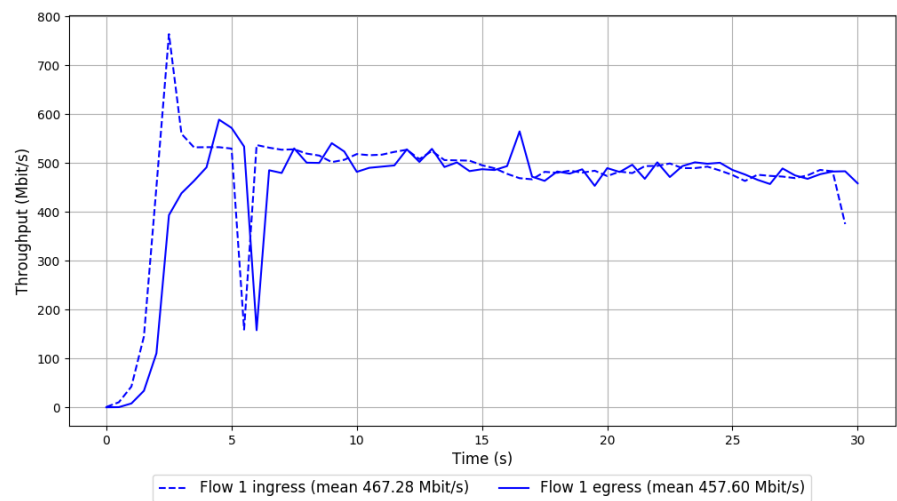


Run 2: Statistics of PCC-Allegro

Start at: 2018-10-09 18:30:39  
End at: 2018-10-09 18:31:09  
Local clock offset: 20.582 ms  
Remote clock offset: 22.583 ms

# Below is generated by plot.py at 2018-10-09 20:58:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 457.60 Mbit/s  
95th percentile per-packet one-way delay: 190.788 ms  
Loss rate: 2.07%  
-- Flow 1:  
Average throughput: 457.60 Mbit/s  
95th percentile per-packet one-way delay: 190.788 ms  
Loss rate: 2.07%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-10-09 18:56:14

End at: 2018-10-09 18:56:44

Local clock offset: 29.797 ms

Remote clock offset: 36.79 ms

# Below is generated by plot.py at 2018-10-09 20:58:59

# Datalink statistics

-- Total of 1 flow:

Average throughput: 425.45 Mbit/s

95th percentile per-packet one-way delay: 160.302 ms

Loss rate: 1.06%

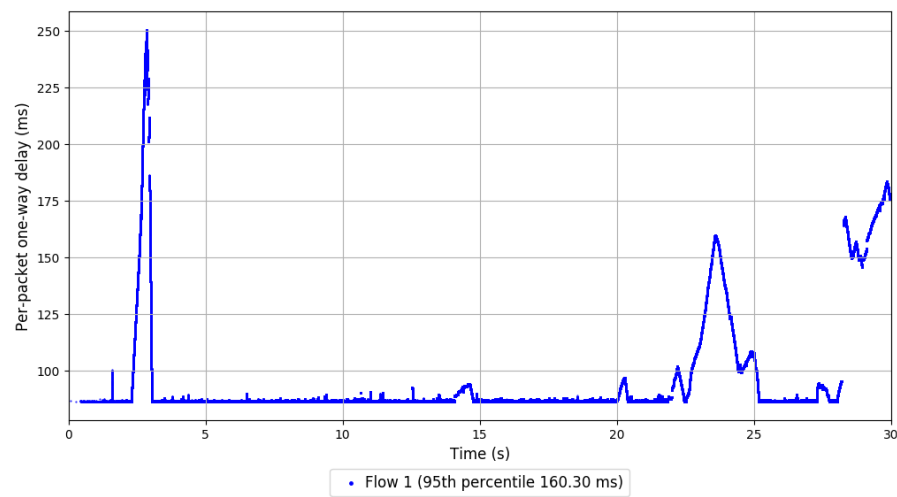
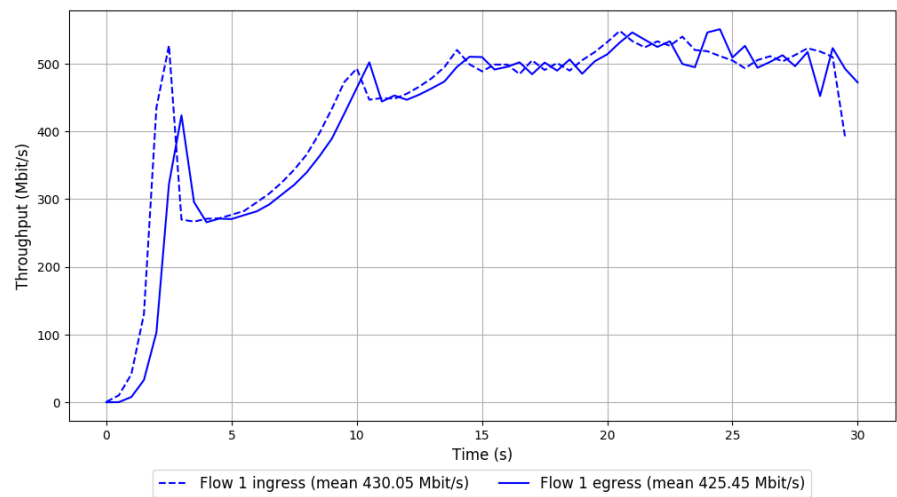
-- Flow 1:

Average throughput: 425.45 Mbit/s

95th percentile per-packet one-way delay: 160.302 ms

Loss rate: 1.06%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-09 19:22:09

End at: 2018-10-09 19:22:39

Local clock offset: 16.0 ms

Remote clock offset: 16.244 ms

# Below is generated by plot.py at 2018-10-09 21:08:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 484.19 Mbit/s

95th percentile per-packet one-way delay: 191.678 ms

Loss rate: 1.03%

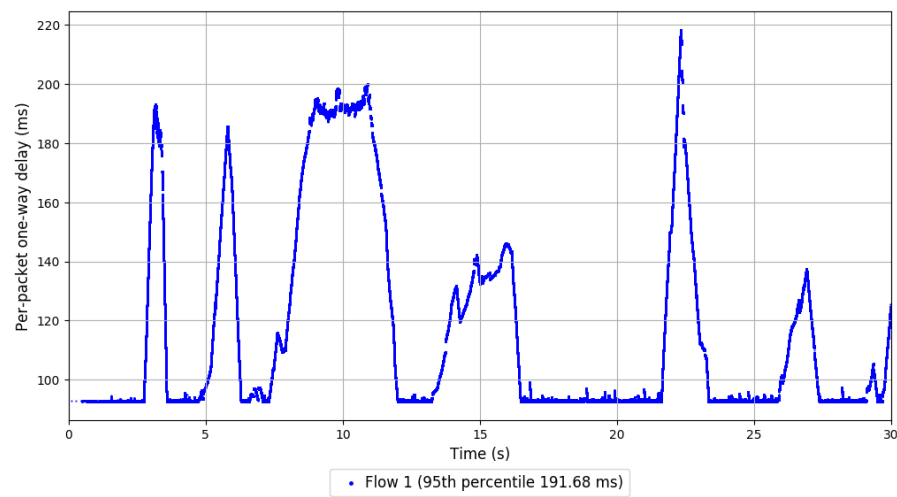
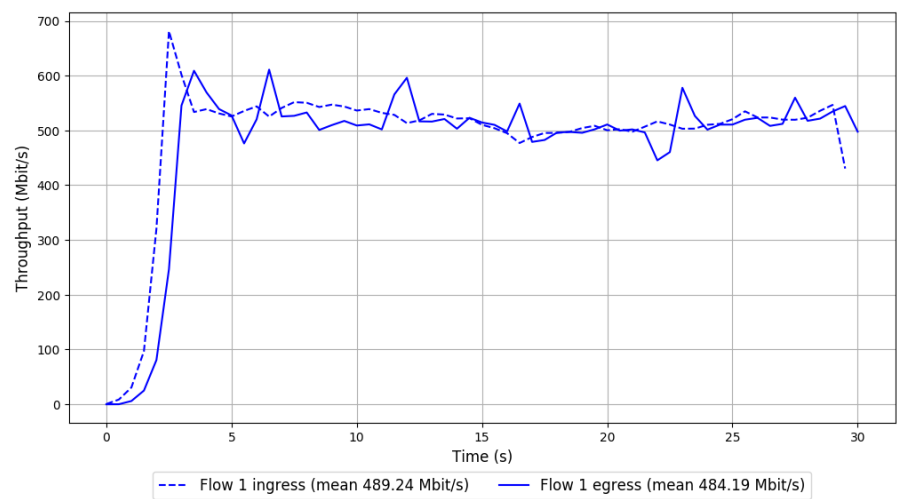
-- Flow 1:

Average throughput: 484.19 Mbit/s

95th percentile per-packet one-way delay: 191.678 ms

Loss rate: 1.03%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-10-09 19:48:01

End at: 2018-10-09 19:48:31

Local clock offset: 8.703 ms

Remote clock offset: 8.321 ms

# Below is generated by plot.py at 2018-10-09 21:08:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 470.35 Mbit/s

95th percentile per-packet one-way delay: 194.120 ms

Loss rate: 1.31%

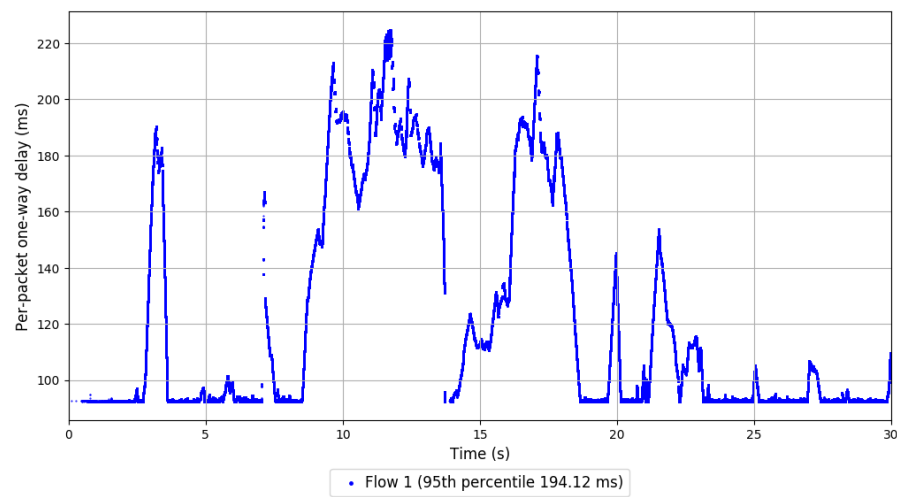
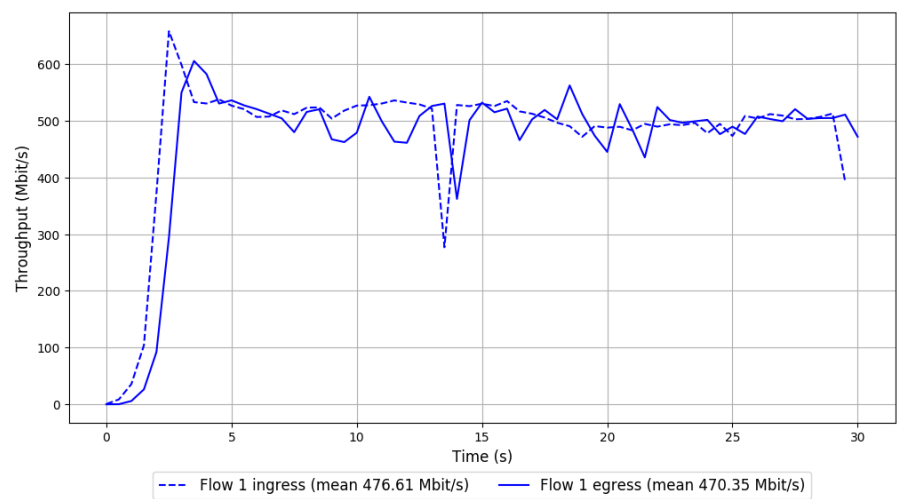
-- Flow 1:

Average throughput: 470.35 Mbit/s

95th percentile per-packet one-way delay: 194.120 ms

Loss rate: 1.31%

Run 5: Report of PCC-Allegro — Data Link

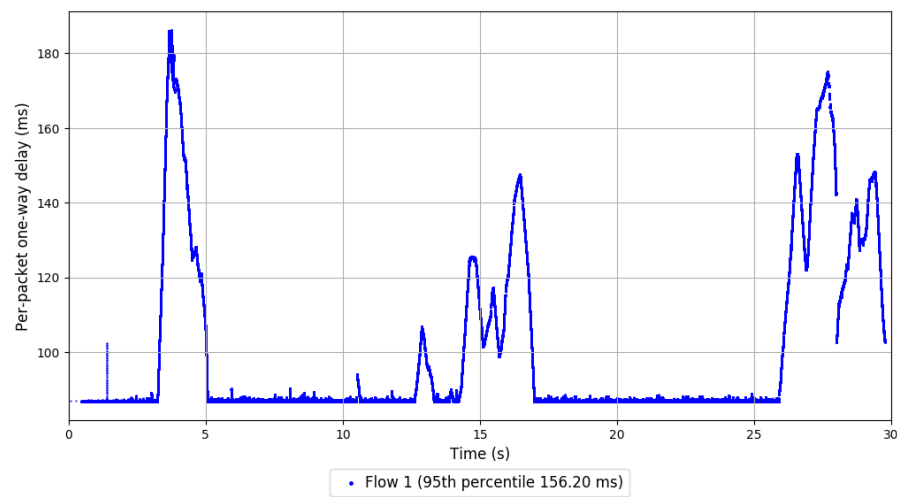
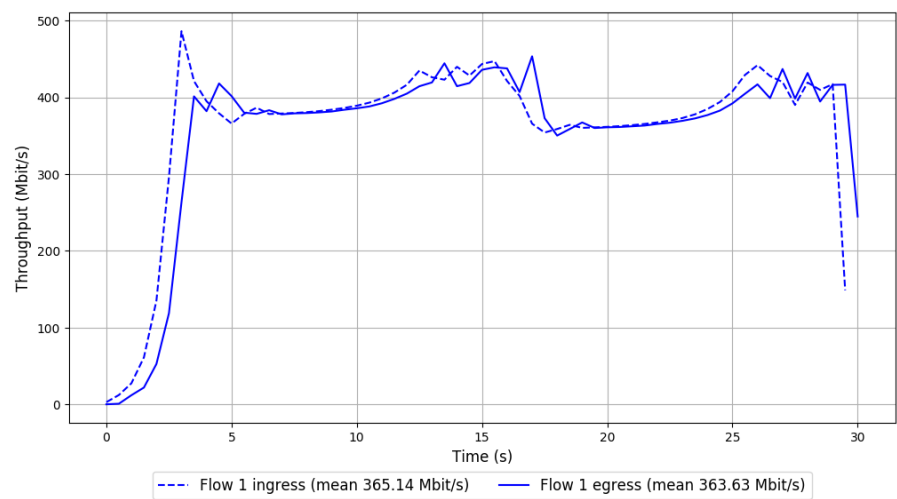


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-09 17:59:38
End at: 2018-10-09 18:00:08
Local clock offset: 8.396 ms
Remote clock offset: 8.856 ms

# Below is generated by plot.py at 2018-10-09 21:08:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 363.63 Mbit/s
95th percentile per-packet one-way delay: 156.199 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 363.63 Mbit/s
95th percentile per-packet one-way delay: 156.199 ms
Loss rate: 0.41%
```

Run 1: Report of PCC-Expr — Data Link



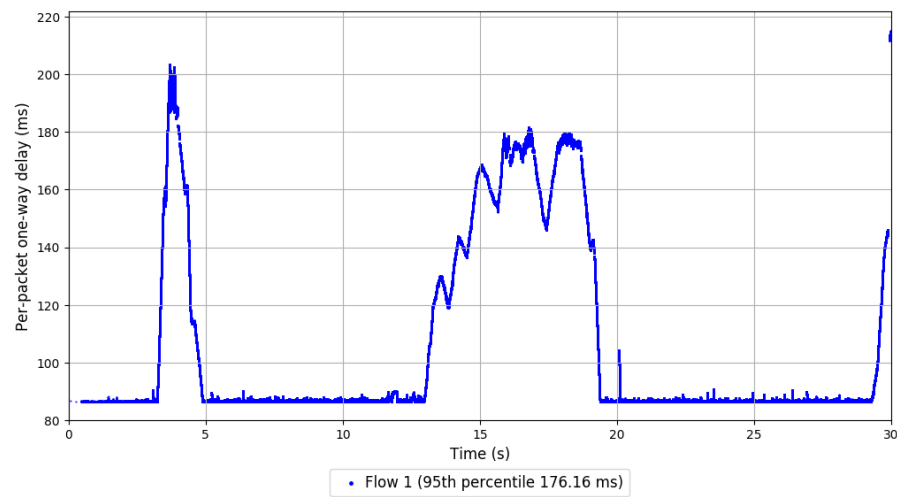
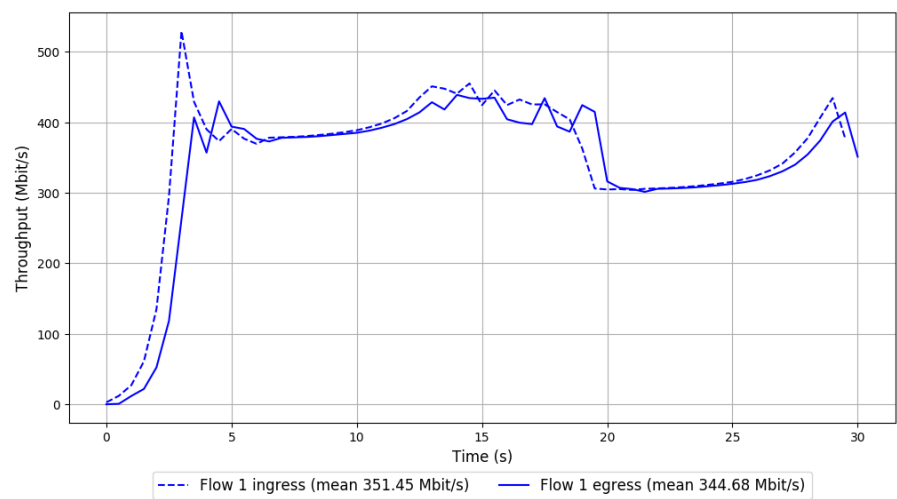


Run 2: Statistics of PCC-Expr

Start at: 2018-10-09 18:25:12  
End at: 2018-10-09 18:25:42  
Local clock offset: 25.337 ms  
Remote clock offset: 26.102 ms

# Below is generated by plot.py at 2018-10-09 21:08:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 344.68 Mbit/s  
95th percentile per-packet one-way delay: 176.164 ms  
Loss rate: 1.92%  
-- Flow 1:  
Average throughput: 344.68 Mbit/s  
95th percentile per-packet one-way delay: 176.164 ms  
Loss rate: 1.92%

Run 2: Report of PCC-Expr — Data Link

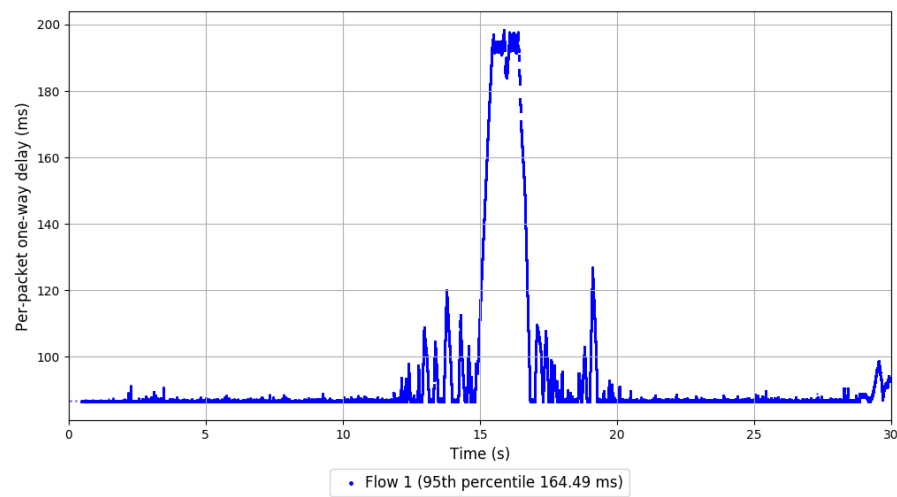
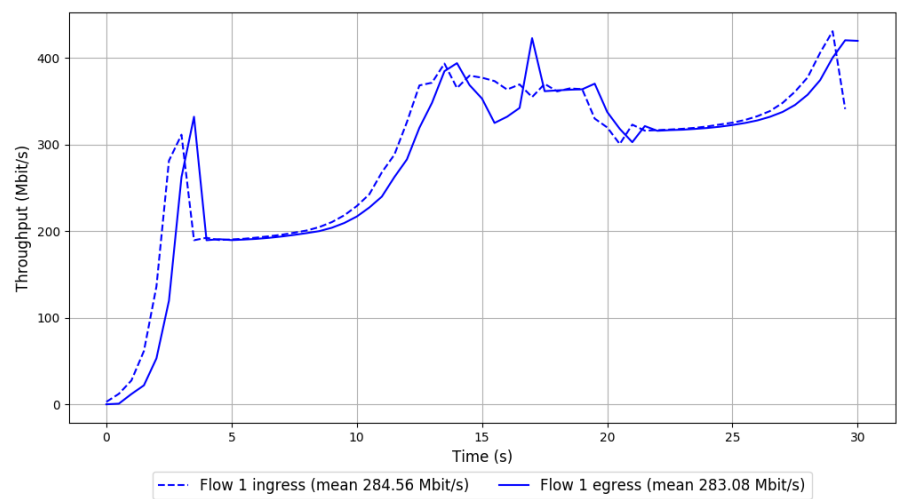


Run 3: Statistics of PCC-Expr

Start at: 2018-10-09 18:50:53  
End at: 2018-10-09 18:51:23  
Local clock offset: 24.3 ms  
Remote clock offset: 31.266 ms

# Below is generated by plot.py at 2018-10-09 21:08:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 283.08 Mbit/s  
95th percentile per-packet one-way delay: 164.485 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 283.08 Mbit/s  
95th percentile per-packet one-way delay: 164.485 ms  
Loss rate: 0.52%

Run 3: Report of PCC-Expr — Data Link

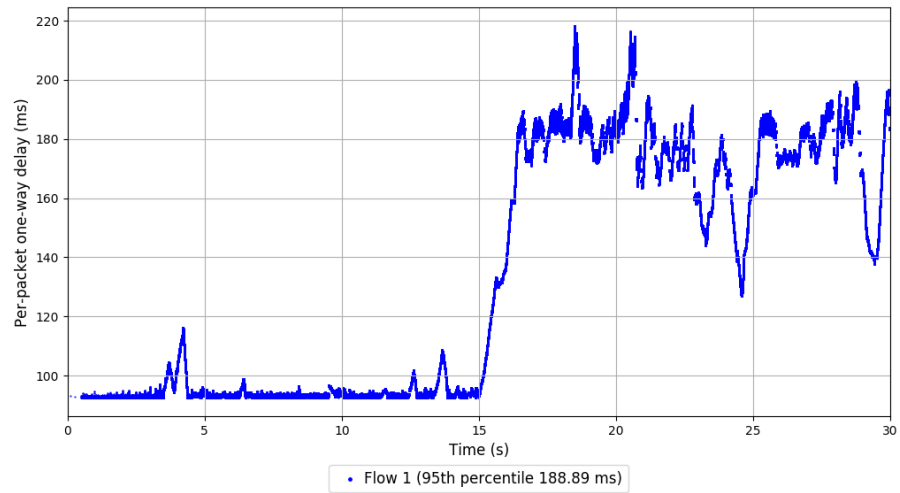
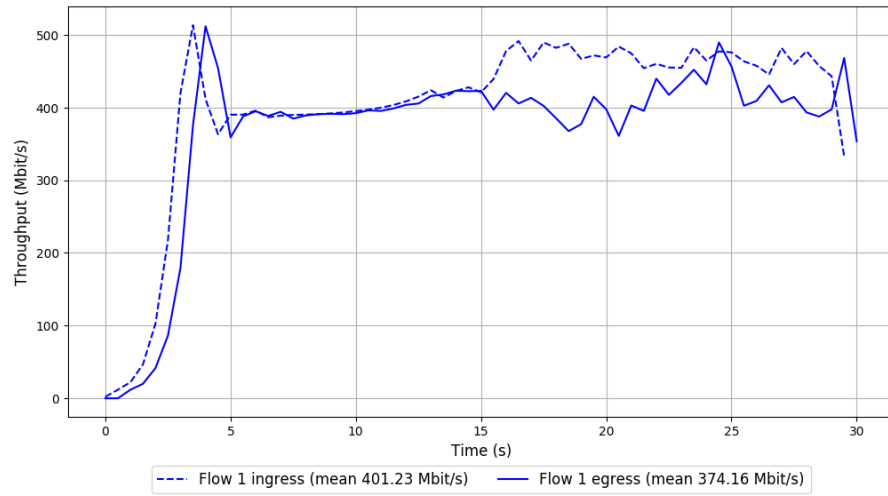


Run 4: Statistics of PCC-Expr

Start at: 2018-10-09 19:16:38  
End at: 2018-10-09 19:17:08  
Local clock offset: 15.11 ms  
Remote clock offset: 16.052 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 374.16 Mbit/s  
95th percentile per-packet one-way delay: 188.892 ms  
Loss rate: 6.74%  
-- Flow 1:  
Average throughput: 374.16 Mbit/s  
95th percentile per-packet one-way delay: 188.892 ms  
Loss rate: 6.74%

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

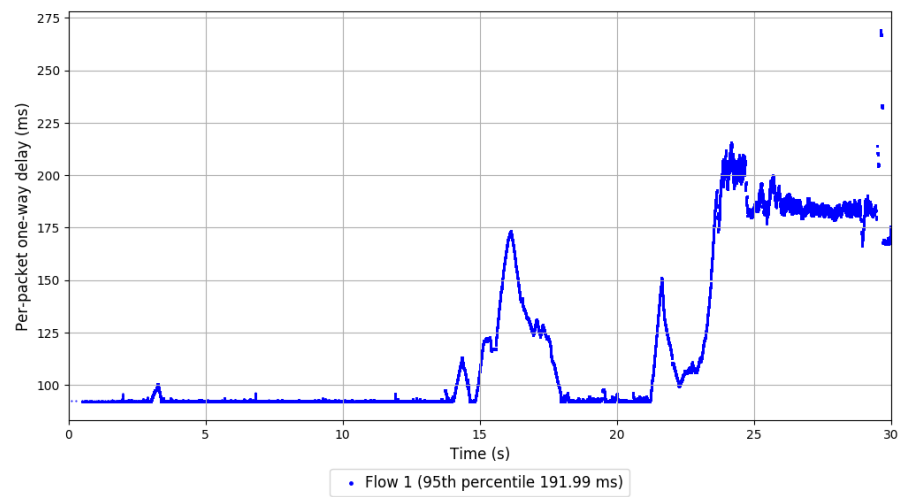
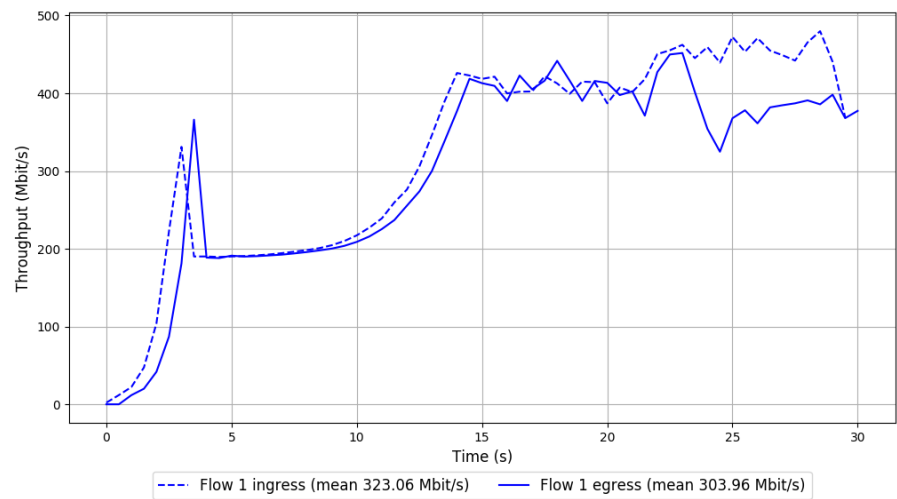


Run 5: Statistics of PCC-Expr

Start at: 2018-10-09 19:42:35  
End at: 2018-10-09 19:43:05  
Local clock offset: 11.394 ms  
Remote clock offset: 10.767 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 303.96 Mbit/s  
95th percentile per-packet one-way delay: 191.988 ms  
Loss rate: 5.91%  
-- Flow 1:  
Average throughput: 303.96 Mbit/s  
95th percentile per-packet one-way delay: 191.988 ms  
Loss rate: 5.91%

Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

Start at: 2018-10-09 18:02:28

End at: 2018-10-09 18:02:58

Local clock offset: 9.712 ms

Remote clock offset: 9.647 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 39.63 Mbit/s

95th percentile per-packet one-way delay: 85.821 ms

Loss rate: 0.00%

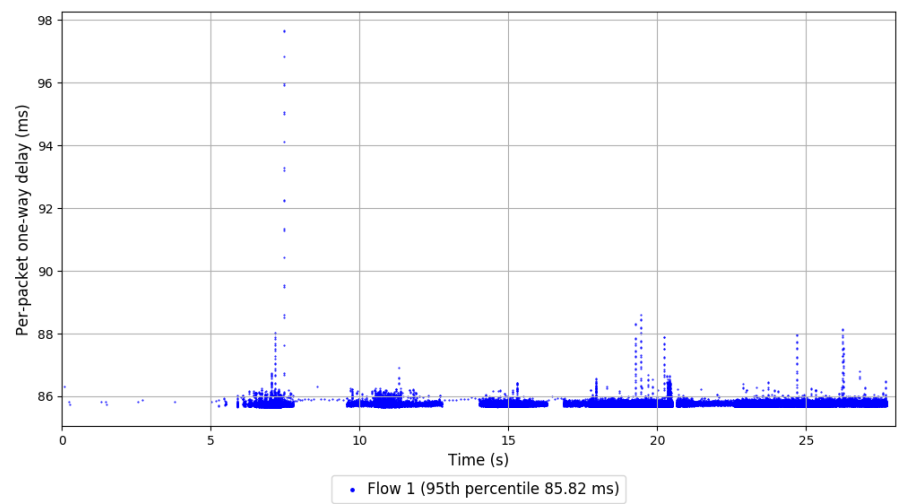
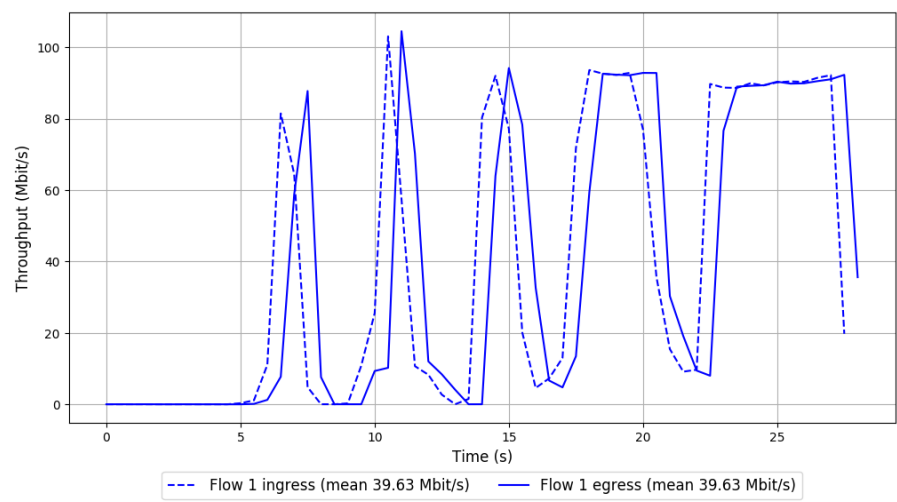
-- Flow 1:

Average throughput: 39.63 Mbit/s

95th percentile per-packet one-way delay: 85.821 ms

Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-09 18:28:00

End at: 2018-10-09 18:28:30

Local clock offset: 24.873 ms

Remote clock offset: 25.565 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 56.08 Mbit/s

95th percentile per-packet one-way delay: 85.412 ms

Loss rate: 0.00%

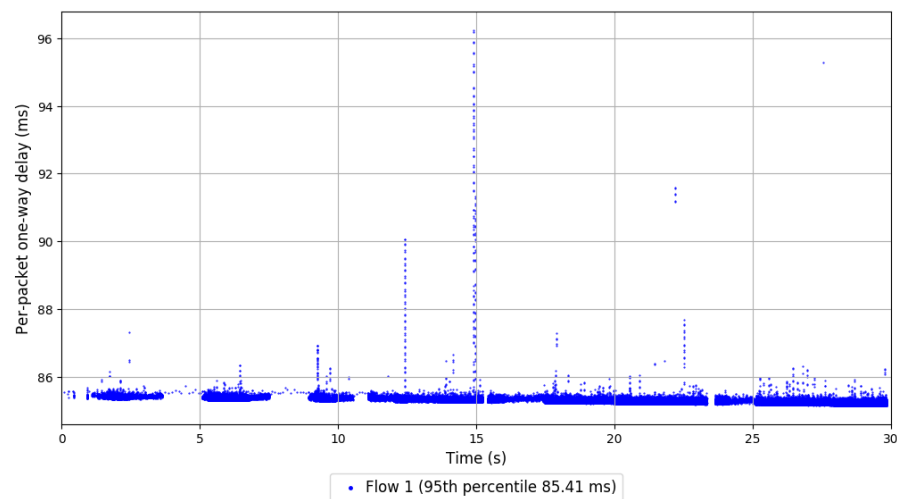
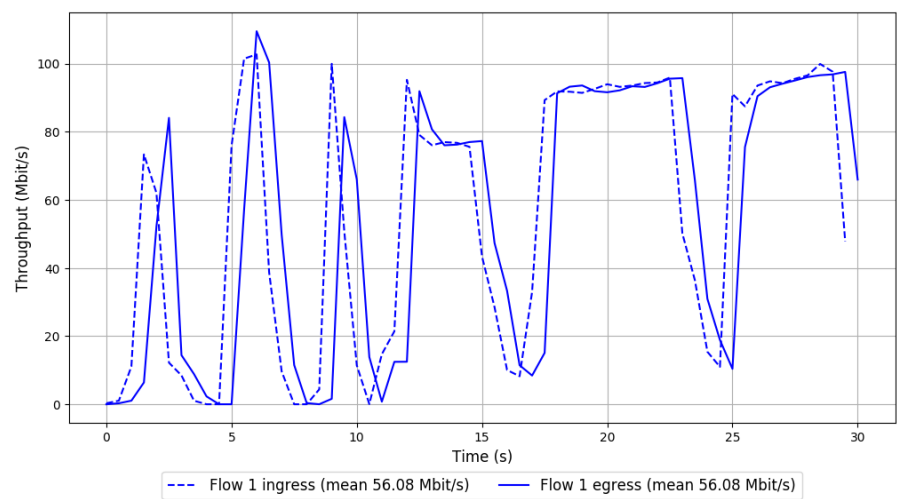
-- Flow 1:

Average throughput: 56.08 Mbit/s

95th percentile per-packet one-way delay: 85.412 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-10-09 18:53:35

End at: 2018-10-09 18:54:05

Local clock offset: 26.741 ms

Remote clock offset: 33.9 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 63.28 Mbit/s

95th percentile per-packet one-way delay: 86.836 ms

Loss rate: 0.00%

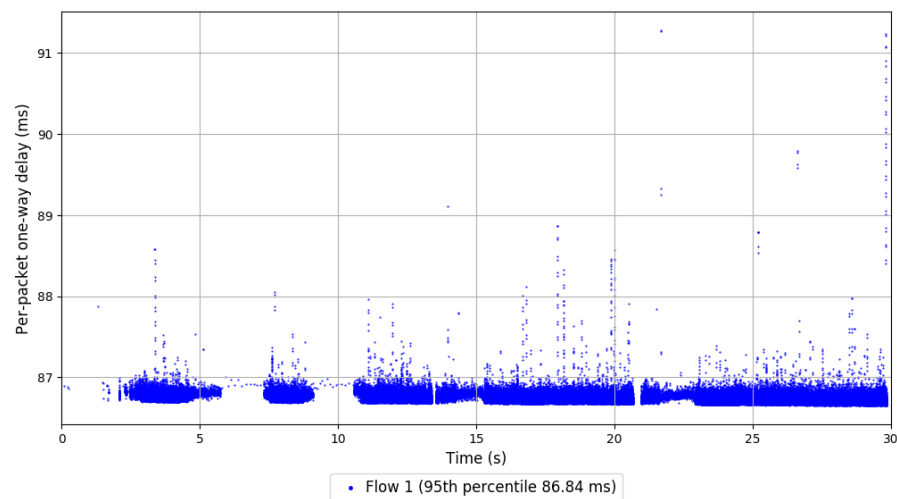
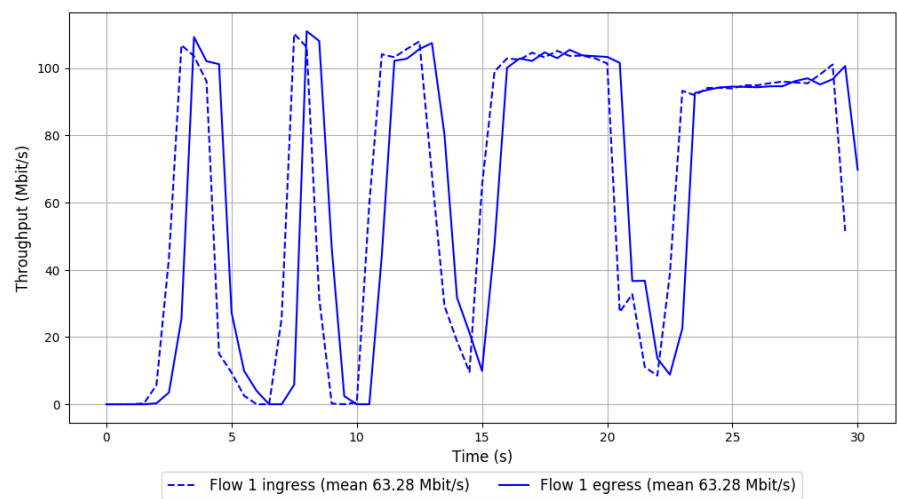
-- Flow 1:

Average throughput: 63.28 Mbit/s

95th percentile per-packet one-way delay: 86.836 ms

Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link

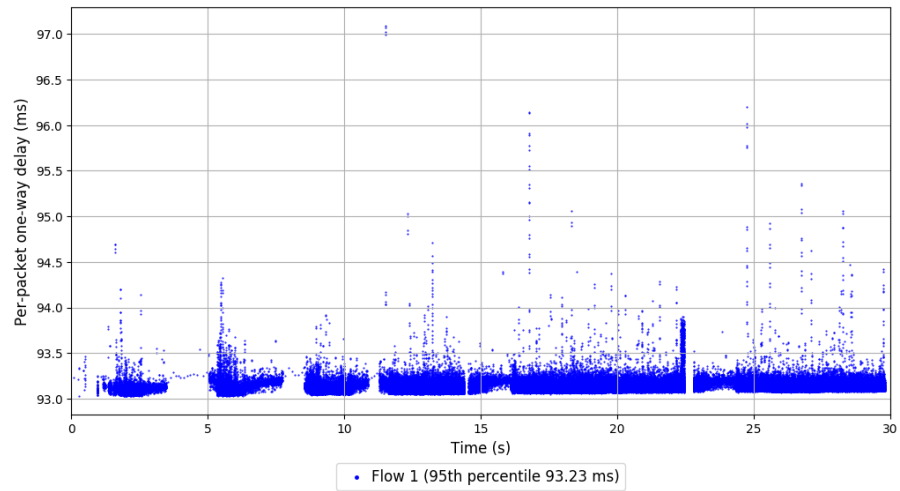
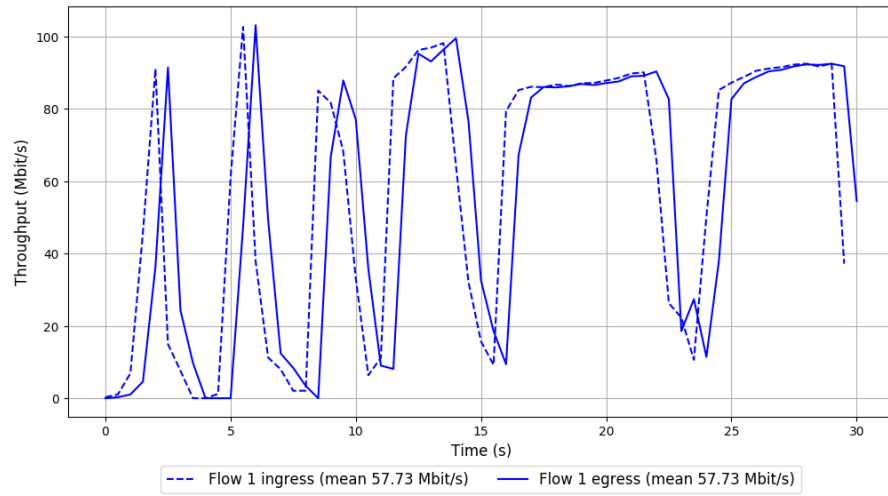


Run 4: Statistics of QUIC Cubic

Start at: 2018-10-09 19:19:29  
End at: 2018-10-09 19:19:59  
Local clock offset: 15.278 ms  
Remote clock offset: 15.979 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 57.73 Mbit/s  
95th percentile per-packet one-way delay: 93.229 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 57.73 Mbit/s  
95th percentile per-packet one-way delay: 93.229 ms  
Loss rate: 0.00%

#### Run 4: Report of QUIC Cubic — Data Link





Run 5: Statistics of QUIC Cubic

Start at: 2018-10-09 19:45:20

End at: 2018-10-09 19:45:50

Local clock offset: 9.46 ms

Remote clock offset: 9.272 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 49.77 Mbit/s

95th percentile per-packet one-way delay: 92.547 ms

Loss rate: 0.00%

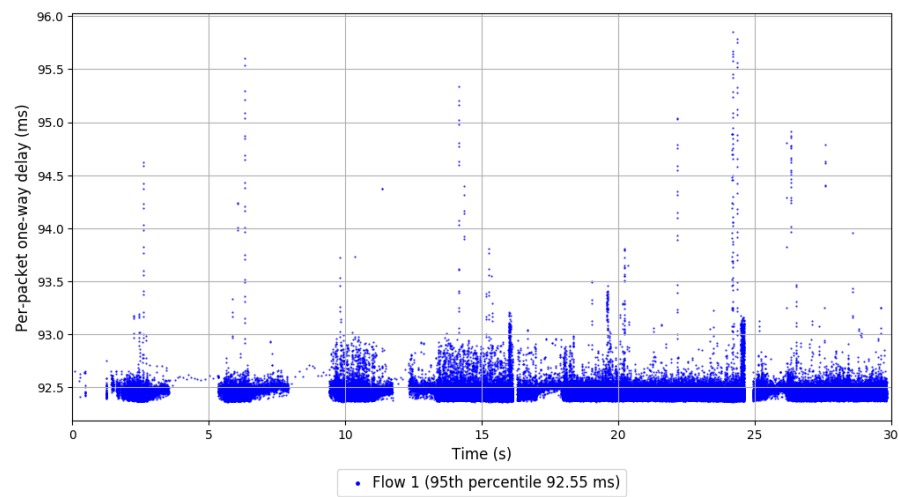
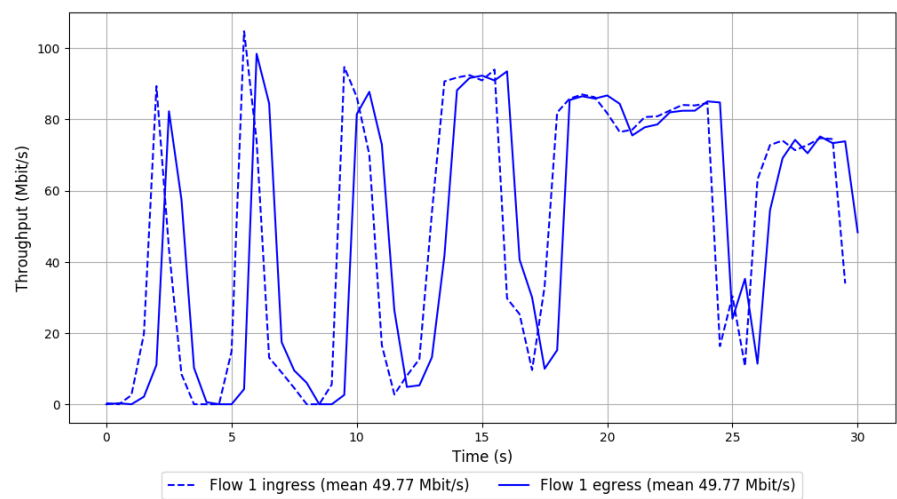
-- Flow 1:

Average throughput: 49.77 Mbit/s

95th percentile per-packet one-way delay: 92.547 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

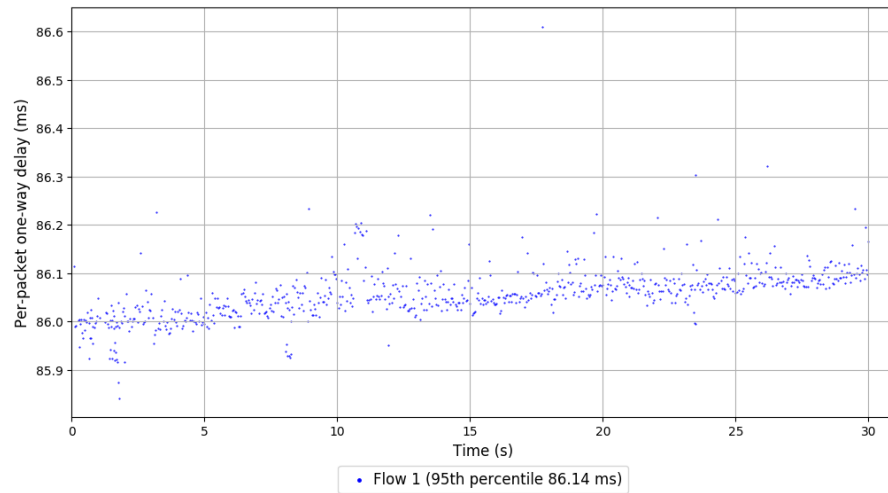
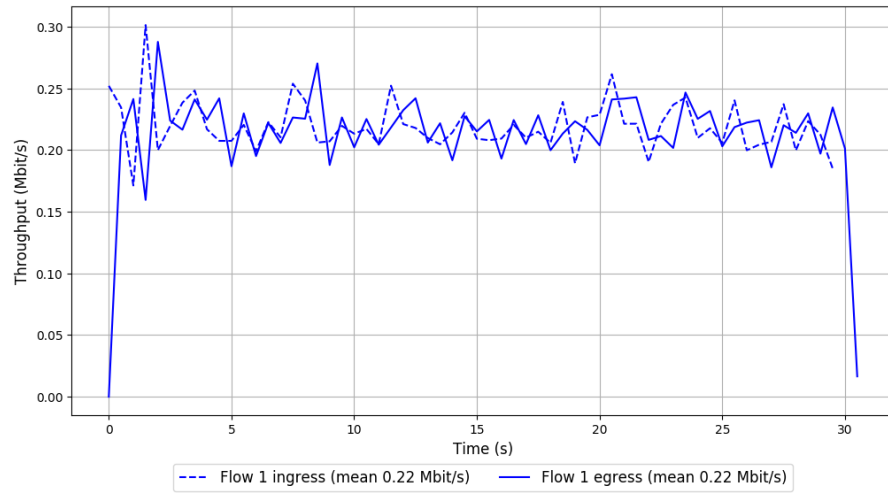


```
Run 1: Statistics of SCReAM

Start at: 2018-10-09 18:01:20
End at: 2018-10-09 18:01:50
Local clock offset: 11.776 ms
Remote clock offset: 11.653 ms

# Below is generated by plot.py at 2018-10-09 21:10:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.136 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.136 ms
Loss rate: 0.00%
```

# Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-10-09 18:26:52

End at: 2018-10-09 18:27:22

Local clock offset: 27.282 ms

Remote clock offset: 27.95 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 86.099 ms

Loss rate: 0.00%

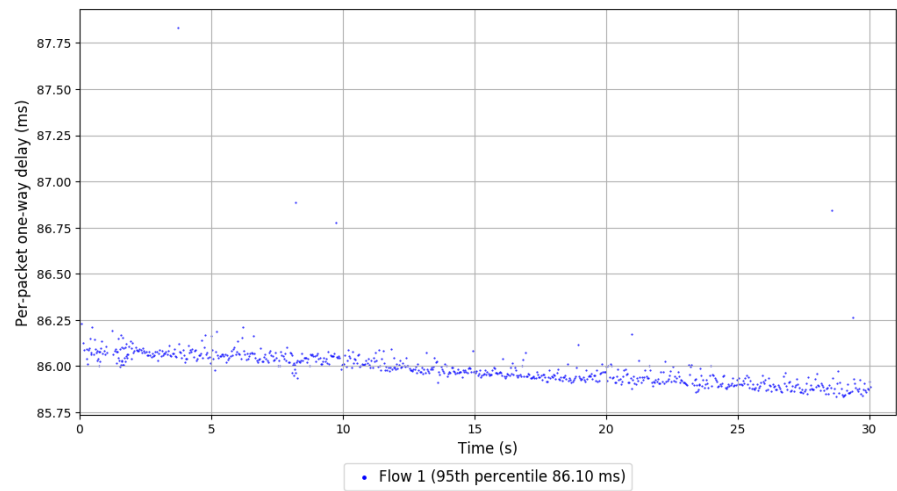
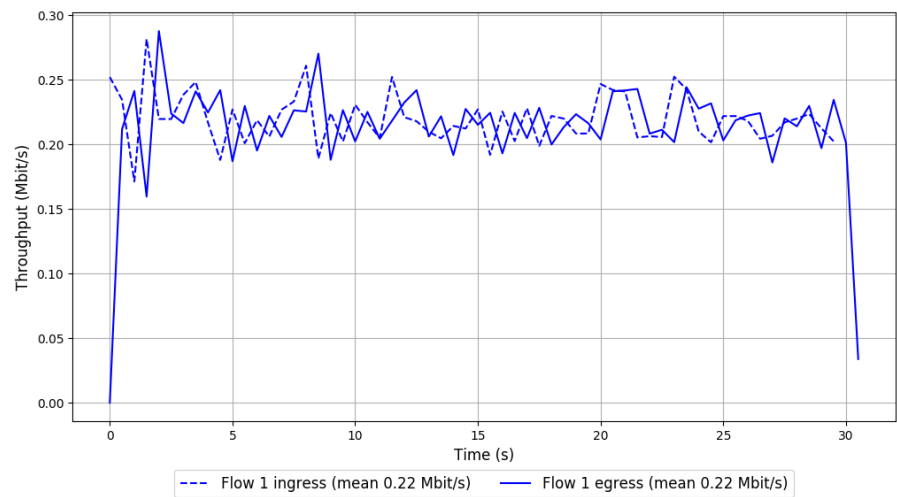
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 86.099 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

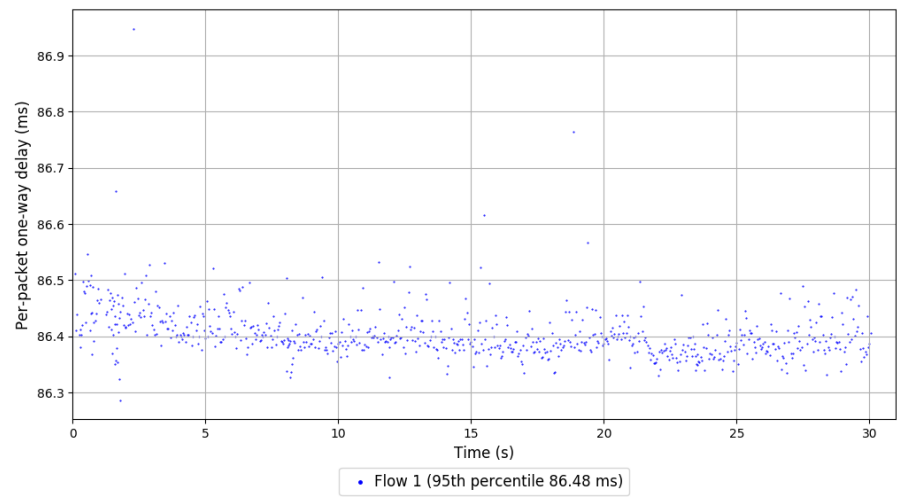
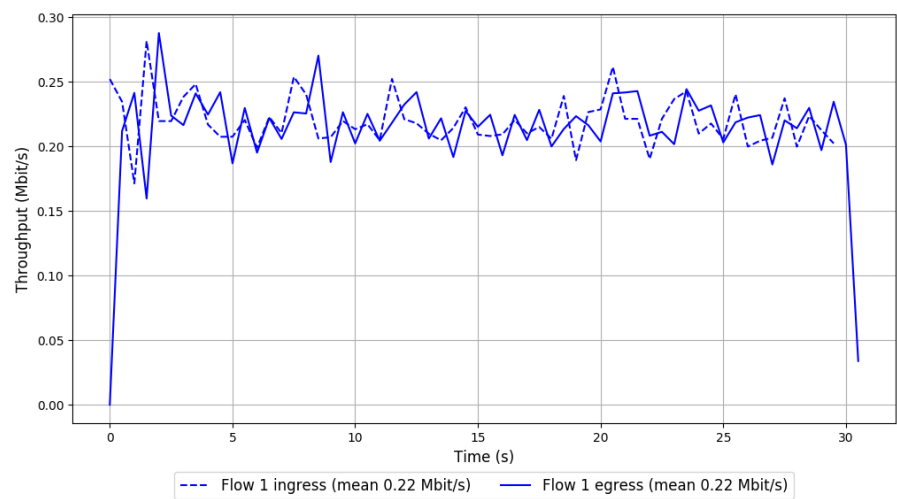


Run 3: Statistics of SCReAM

Start at: 2018-10-09 18:52:27  
End at: 2018-10-09 18:52:57  
Local clock offset: 26.186 ms  
Remote clock offset: 32.675 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.480 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.480 ms  
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



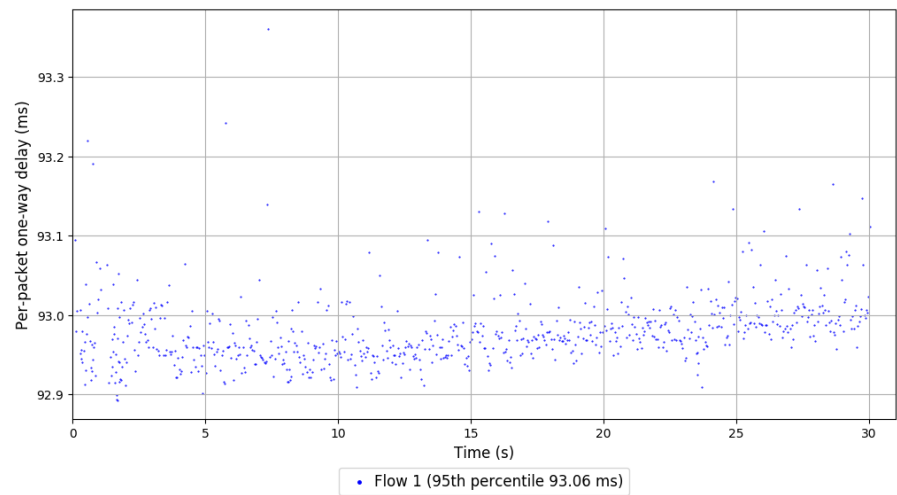
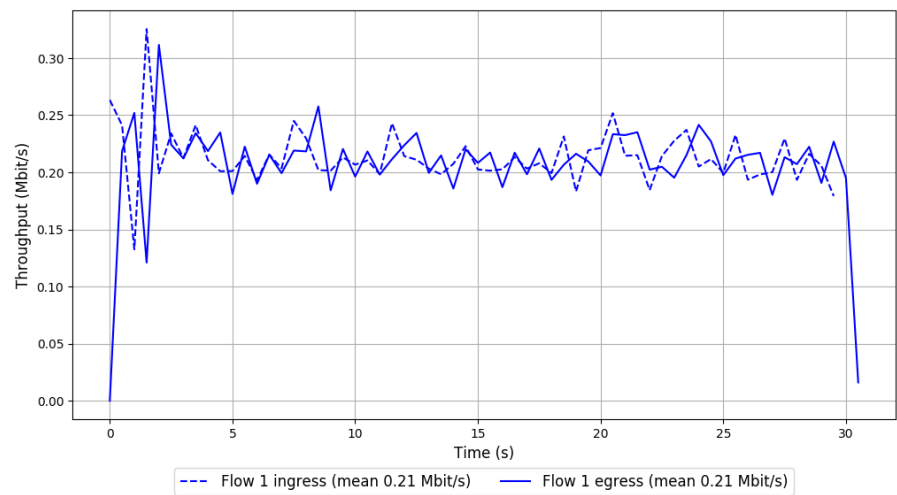


Run 4: Statistics of SCReAM

Start at: 2018-10-09 19:18:21  
End at: 2018-10-09 19:18:51  
Local clock offset: 15.328 ms  
Remote clock offset: 15.895 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 93.064 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 93.064 ms  
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-10-09 19:44:12

End at: 2018-10-09 19:44:42

Local clock offset: 10.278 ms

Remote clock offset: 9.794 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 92.563 ms

Loss rate: 0.00%

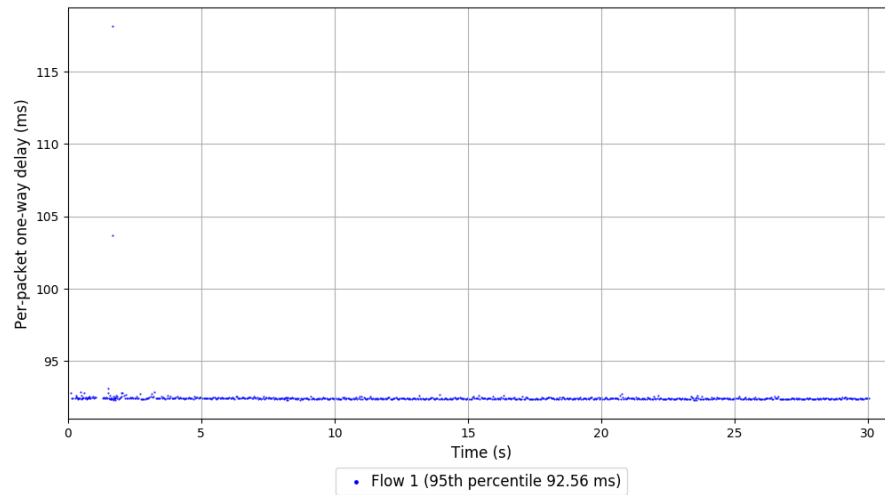
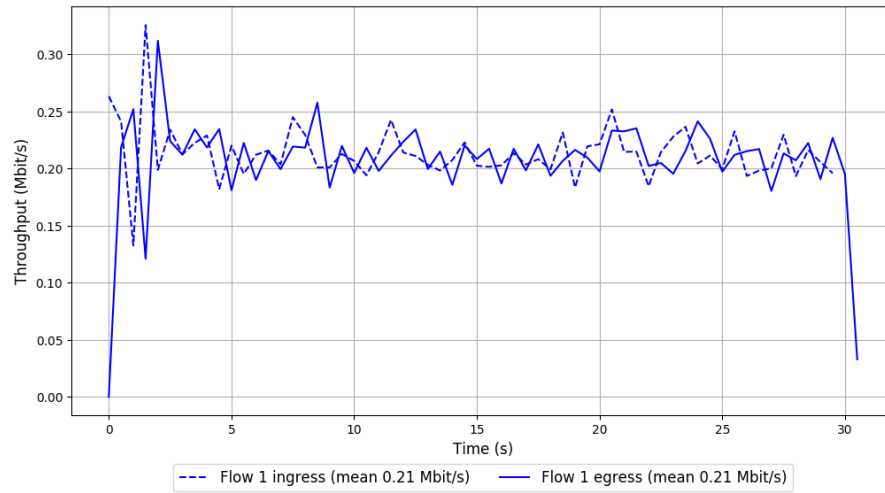
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 92.563 ms

Loss rate: 0.00%

## Run 5: Report of SReAM — Data Link

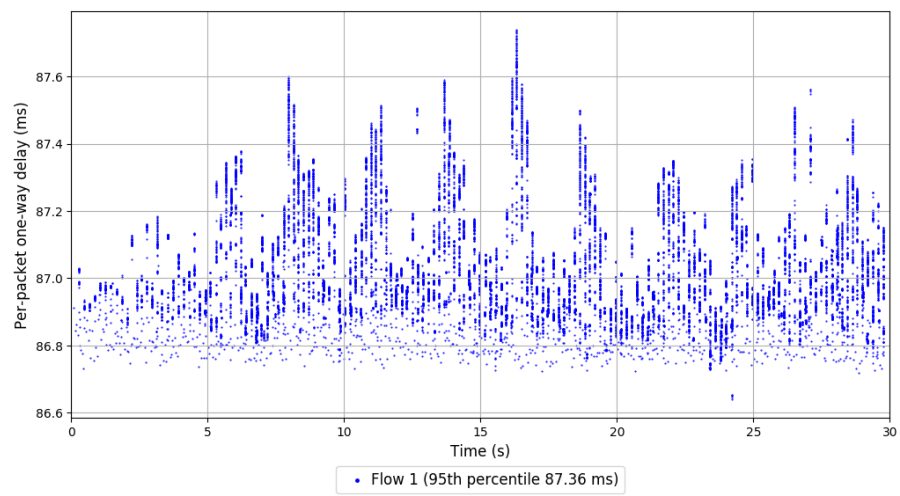
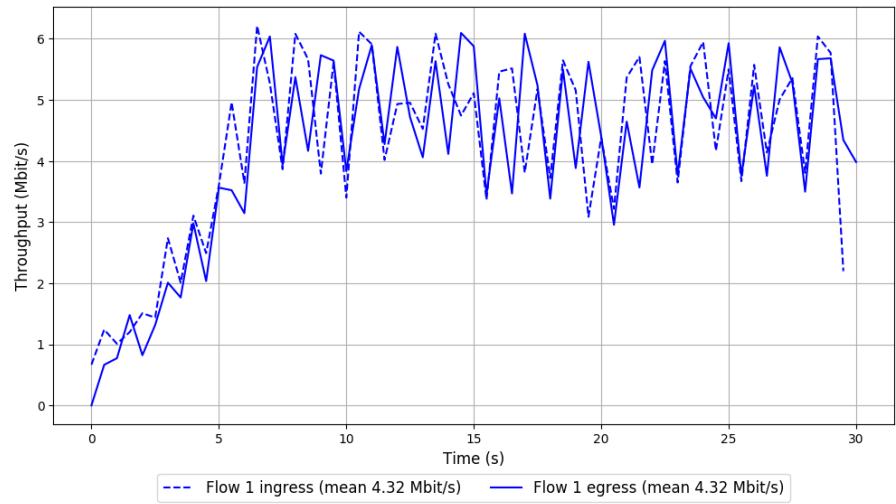


Run 1: Statistics of Sprout

Start at: 2018-10-09 18:18:29  
End at: 2018-10-09 18:18:59  
Local clock offset: 16.257 ms  
Remote clock offset: 16.873 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.32 Mbit/s  
95th percentile per-packet one-way delay: 87.365 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 4.32 Mbit/s  
95th percentile per-packet one-way delay: 87.365 ms  
Loss rate: 0.00%

# Run 1: Report of Sprout — Data Link

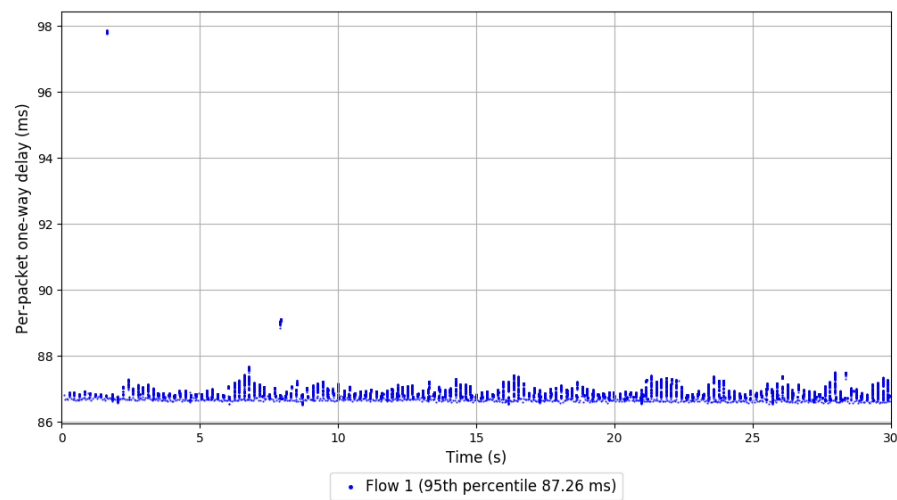
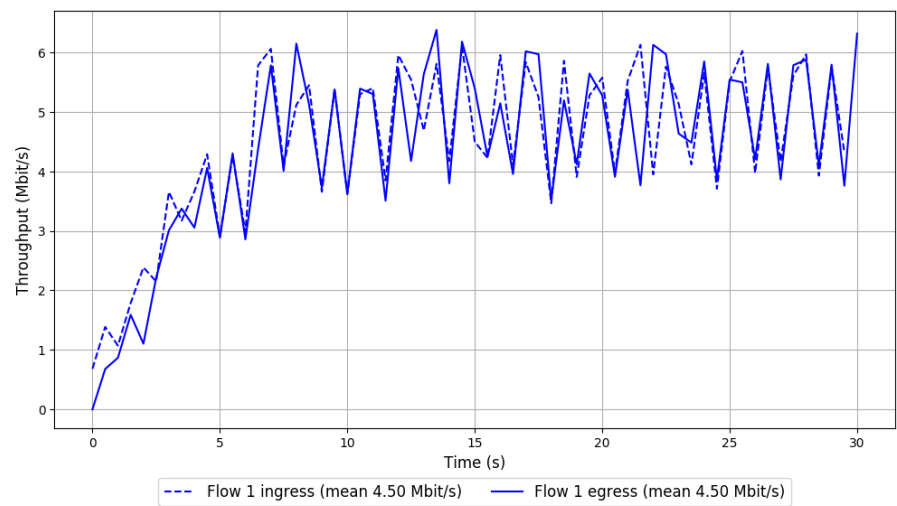


Run 2: Statistics of Sprout

Start at: 2018-10-09 18:44:13  
End at: 2018-10-09 18:44:43  
Local clock offset: 19.153 ms  
Remote clock offset: 24.892 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.50 Mbit/s  
95th percentile per-packet one-way delay: 87.259 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 4.50 Mbit/s  
95th percentile per-packet one-way delay: 87.259 ms  
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



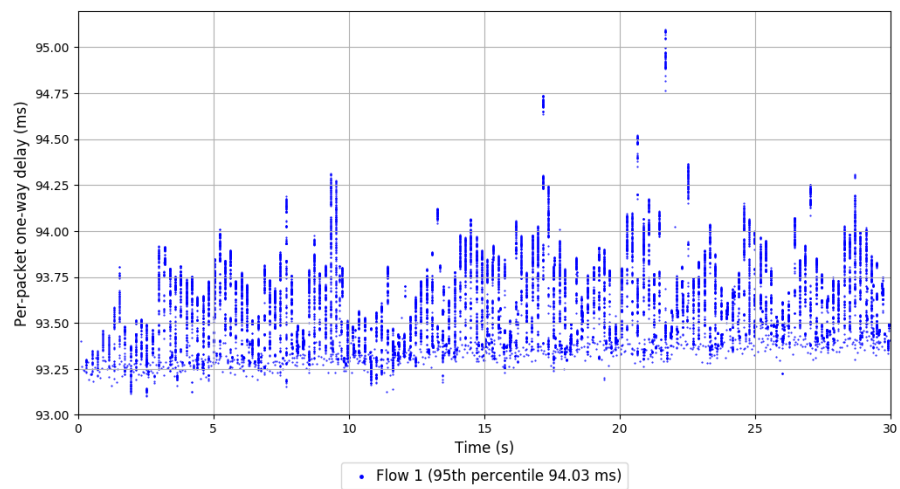
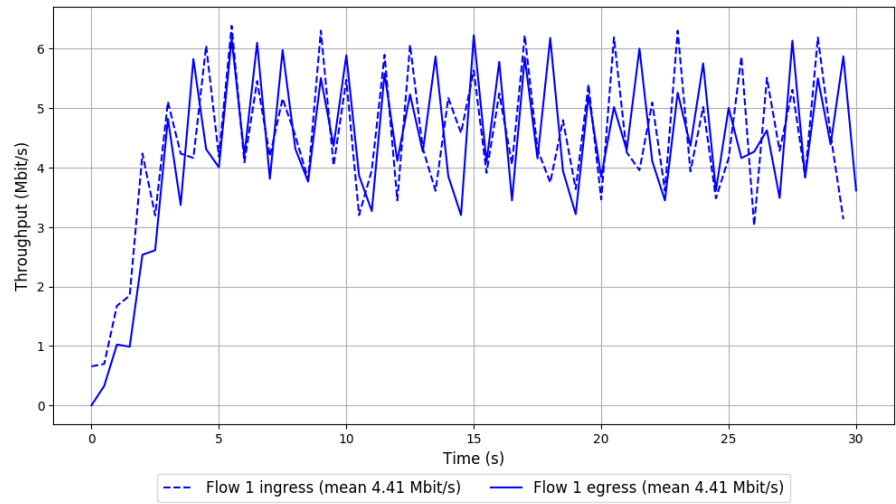


Run 3: Statistics of Sprout

Start at: 2018-10-09 19:09:47  
End at: 2018-10-09 19:10:17  
Local clock offset: 17.491 ms  
Remote clock offset: 20.141 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.41 Mbit/s  
95th percentile per-packet one-way delay: 94.032 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 4.41 Mbit/s  
95th percentile per-packet one-way delay: 94.032 ms  
Loss rate: 0.00%

### Run 3: Report of Sprout — Data Link

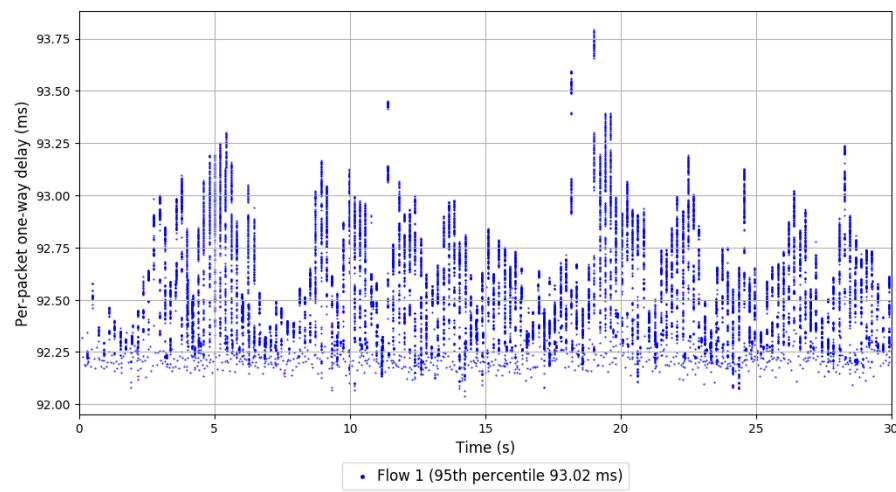
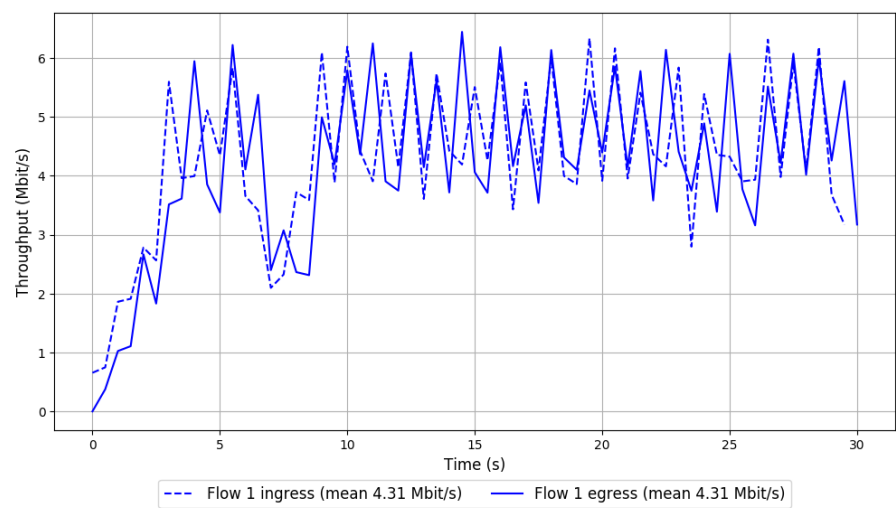


Run 4: Statistics of Sprout

Start at: 2018-10-09 19:35:50  
End at: 2018-10-09 19:36:21  
Local clock offset: 20.116 ms  
Remote clock offset: 19.38 ms

# Below is generated by plot.py at 2018-10-09 21:10:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.31 Mbit/s  
95th percentile per-packet one-way delay: 93.023 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 4.31 Mbit/s  
95th percentile per-packet one-way delay: 93.023 ms  
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-10-09 20:01:32

End at: 2018-10-09 20:02:02

Local clock offset: 8.848 ms

Remote clock offset: 8.623 ms

# Below is generated by plot.py at 2018-10-09 21:10:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 4.12 Mbit/s

95th percentile per-packet one-way delay: 93.271 ms

Loss rate: 0.00%

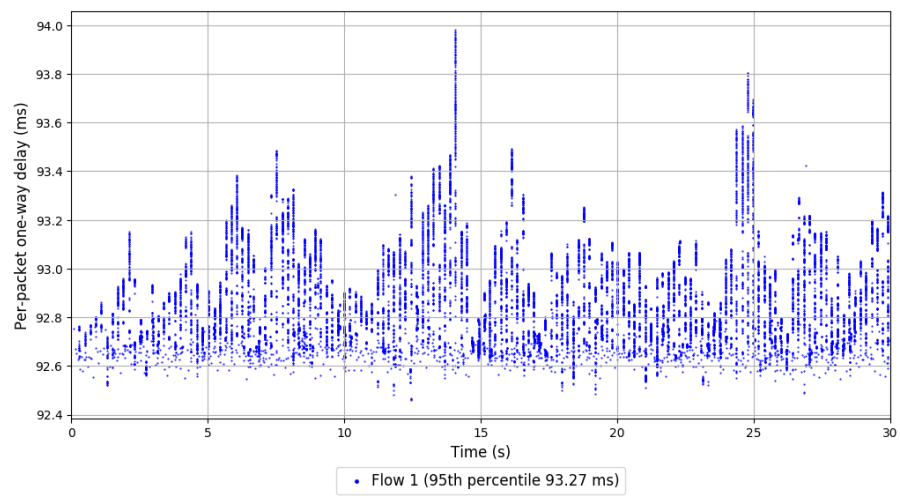
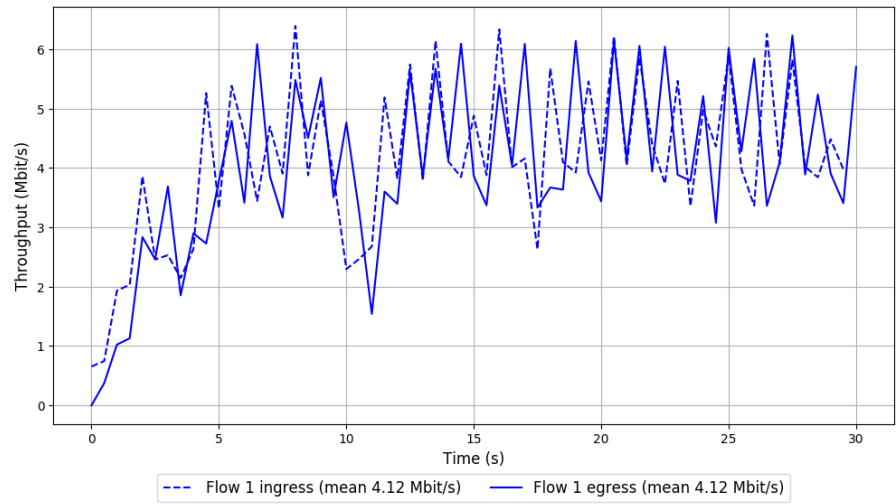
-- Flow 1:

Average throughput: 4.12 Mbit/s

95th percentile per-packet one-way delay: 93.271 ms

Loss rate: 0.00%

## Run 5: Report of Sprout — Data Link

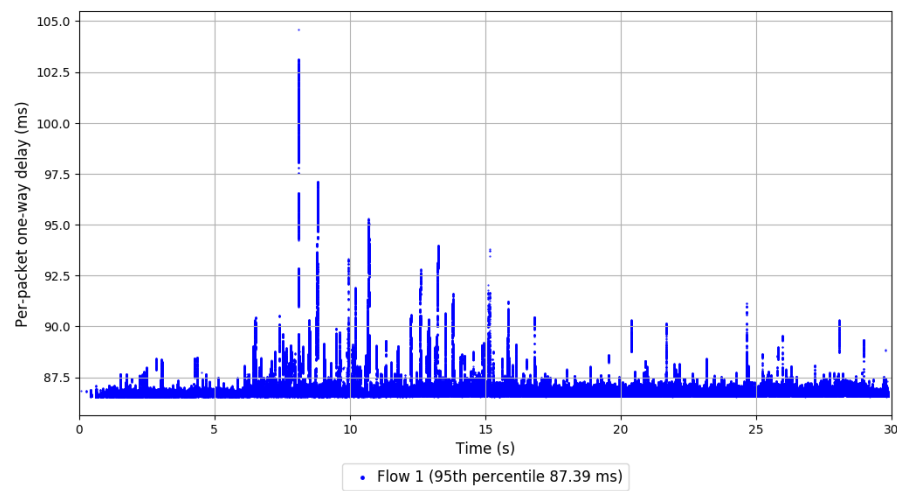
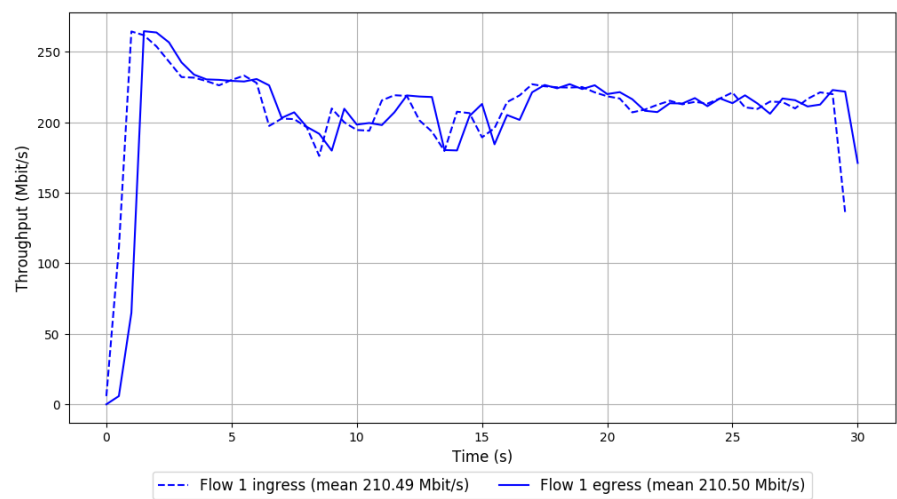


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-09 18:03:38
End at: 2018-10-09 18:04:08
Local clock offset: 8.886 ms
Remote clock offset: 9.354 ms

# Below is generated by plot.py at 2018-10-09 21:11:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 210.50 Mbit/s
95th percentile per-packet one-way delay: 87.394 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 210.50 Mbit/s
95th percentile per-packet one-way delay: 87.394 ms
Loss rate: 0.00%
```

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



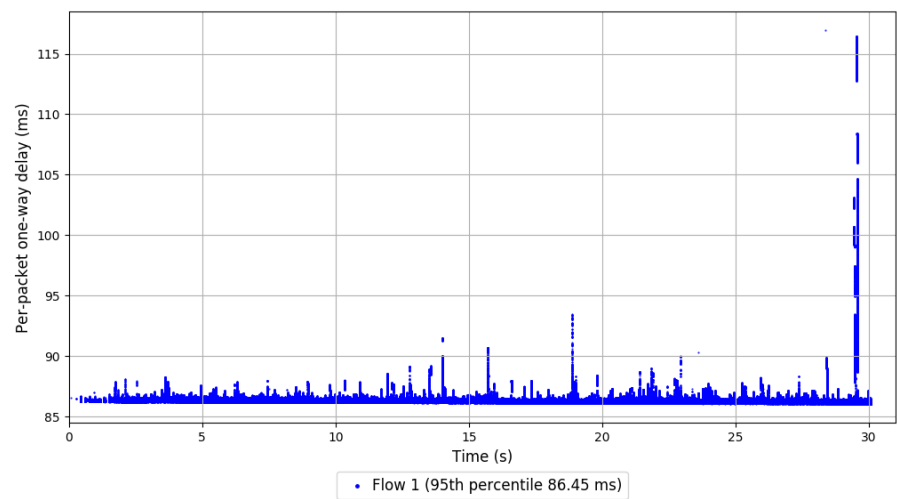
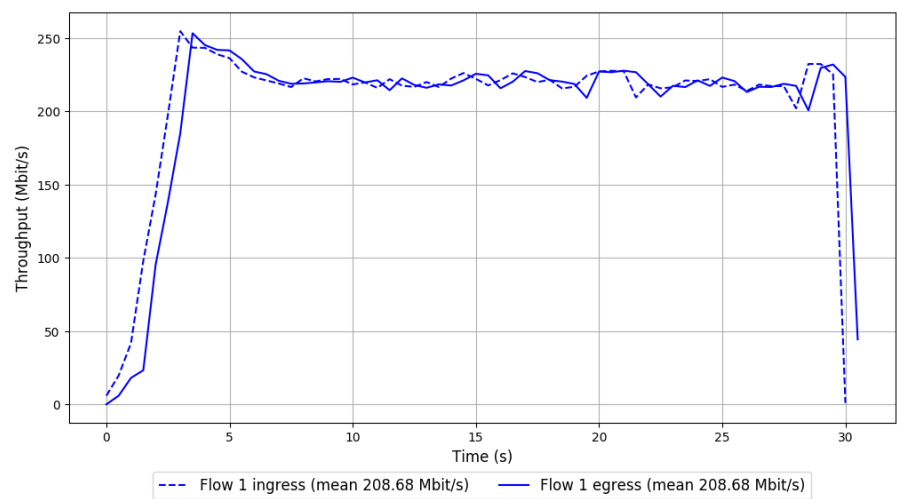


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-09 18:29:11  
End at: 2018-10-09 18:29:41  
Local clock offset: 22.076 ms  
Remote clock offset: 24.114 ms

# Below is generated by plot.py at 2018-10-09 21:11:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 208.68 Mbit/s  
95th percentile per-packet one-way delay: 86.451 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 208.68 Mbit/s  
95th percentile per-packet one-way delay: 86.451 ms  
Loss rate: 0.00%

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

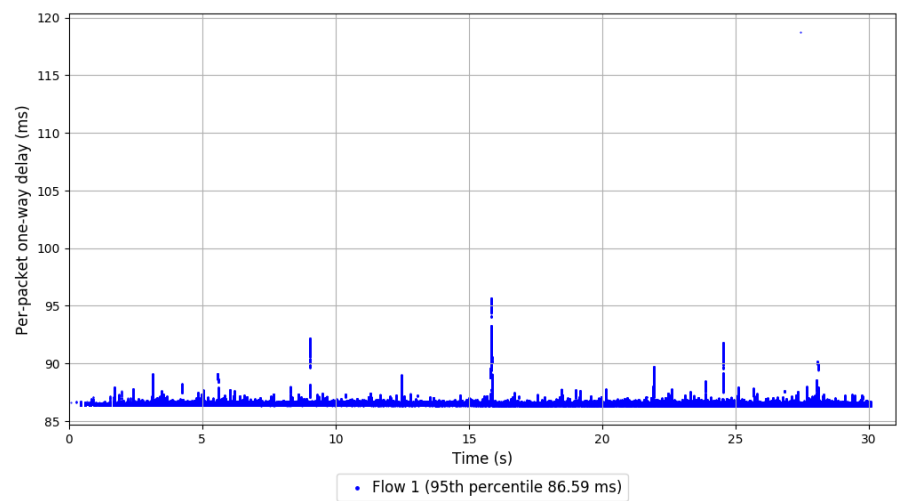
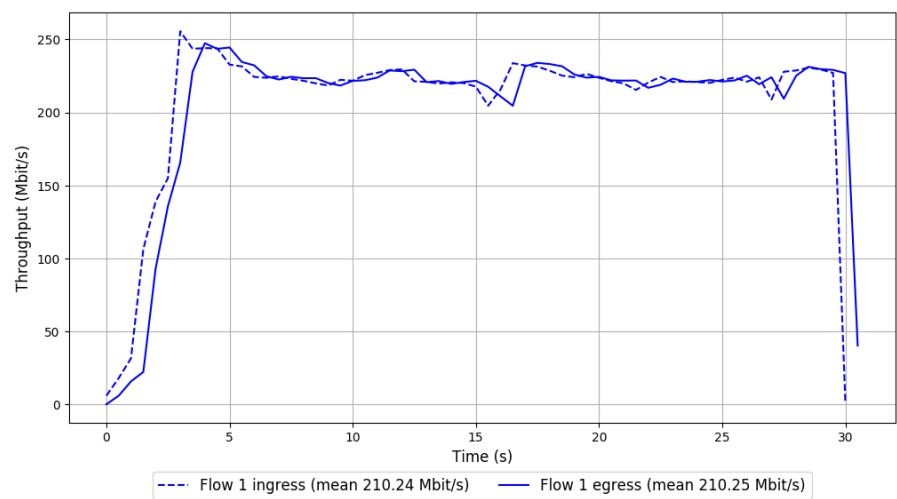


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-09 18:54:46  
End at: 2018-10-09 18:55:16  
Local clock offset: 27.977 ms  
Remote clock offset: 35.193 ms

# Below is generated by plot.py at 2018-10-09 21:11:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 210.25 Mbit/s  
95th percentile per-packet one-way delay: 86.593 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 210.25 Mbit/s  
95th percentile per-packet one-way delay: 86.593 ms  
Loss rate: 0.00%

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

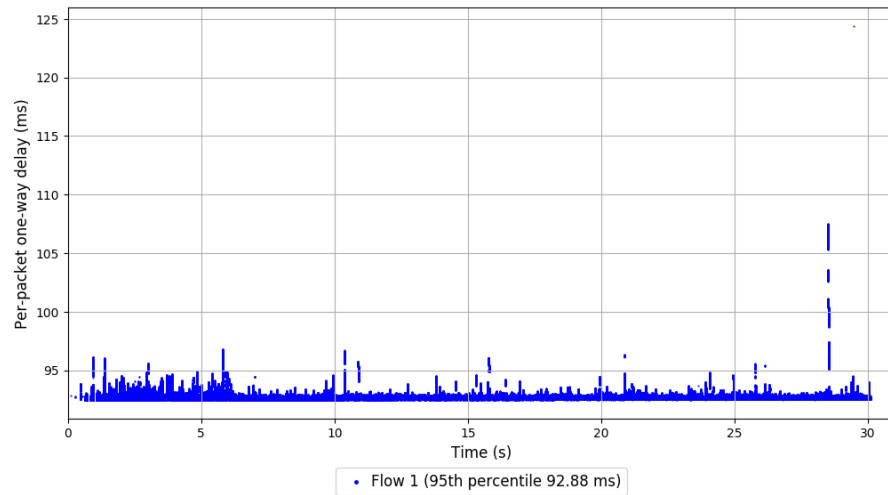
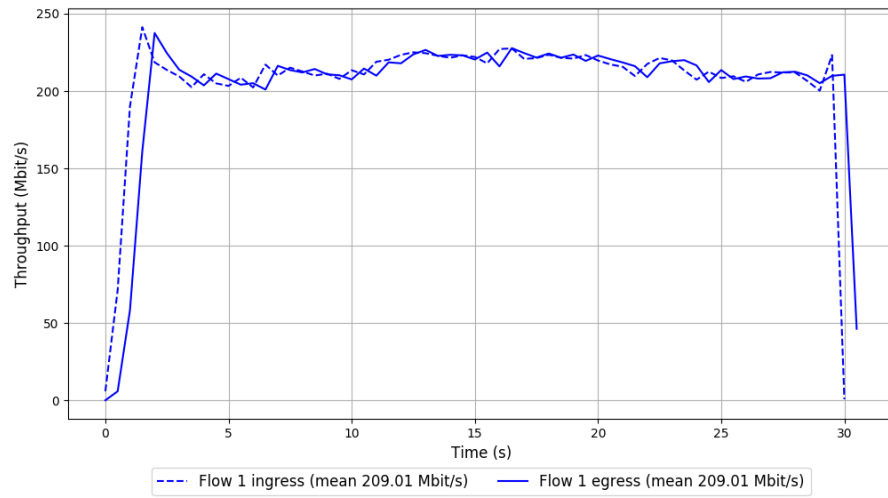


Run 4: Statistics of TaoVA-100x

Start at: 2018-10-09 19:20:41  
End at: 2018-10-09 19:21:11  
Local clock offset: 15.579 ms  
Remote clock offset: 15.973 ms

# Below is generated by plot.py at 2018-10-09 21:12:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 209.01 Mbit/s  
95th percentile per-packet one-way delay: 92.879 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 209.01 Mbit/s  
95th percentile per-packet one-way delay: 92.879 ms  
Loss rate: 0.00%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-09 19:46:32

End at: 2018-10-09 19:47:02

Local clock offset: 8.92 ms

Remote clock offset: 8.788 ms

# Below is generated by plot.py at 2018-10-09 21:15:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 215.28 Mbit/s

95th percentile per-packet one-way delay: 92.828 ms

Loss rate: 0.00%

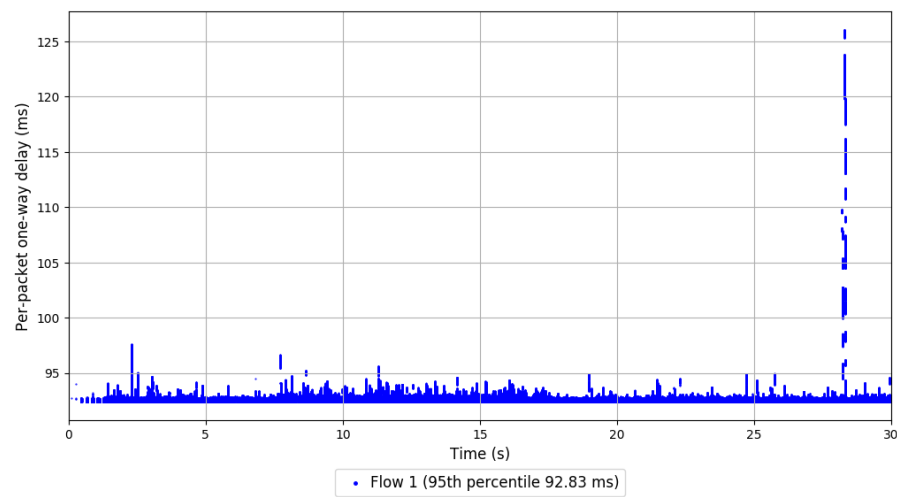
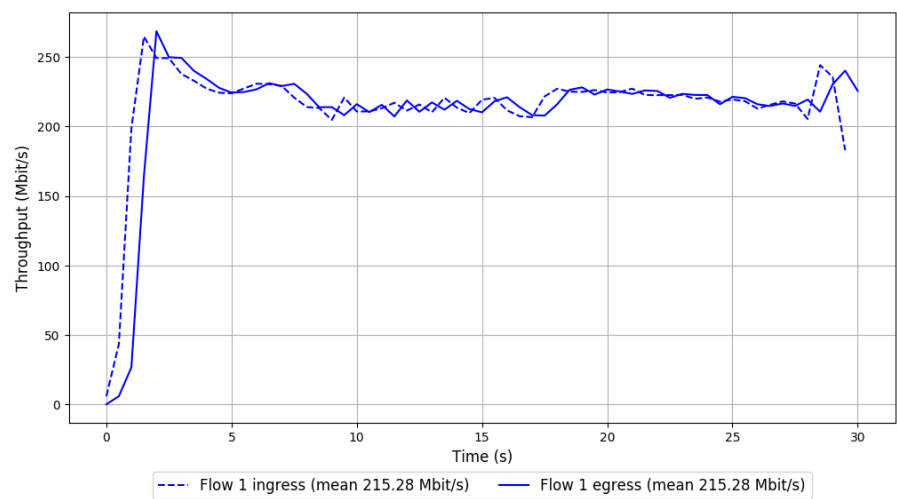
-- Flow 1:

Average throughput: 215.28 Mbit/s

95th percentile per-packet one-way delay: 92.828 ms

Loss rate: 0.00%

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





Run 1: Statistics of TCP Vegas

Start at: 2018-10-09 17:54:08

End at: 2018-10-09 17:54:38

Local clock offset: 2.138 ms

Remote clock offset: 2.954 ms

# Below is generated by plot.py at 2018-10-09 21:15:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 387.51 Mbit/s

95th percentile per-packet one-way delay: 88.435 ms

Loss rate: 0.00%

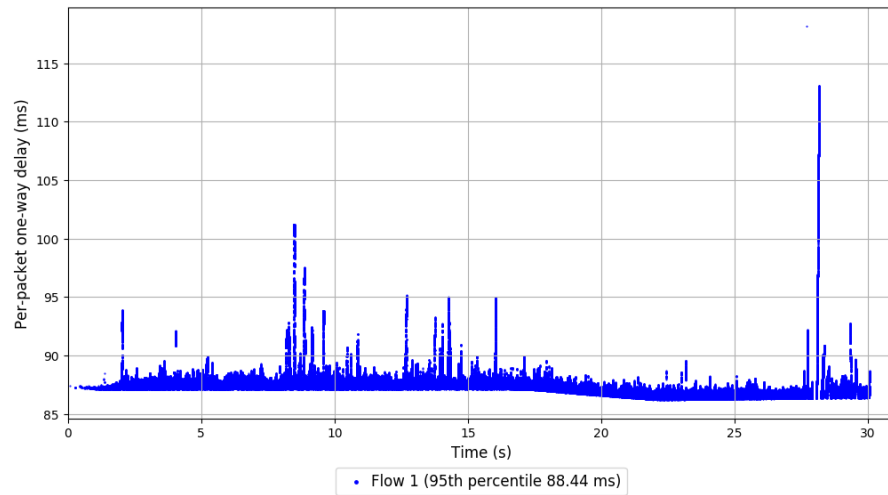
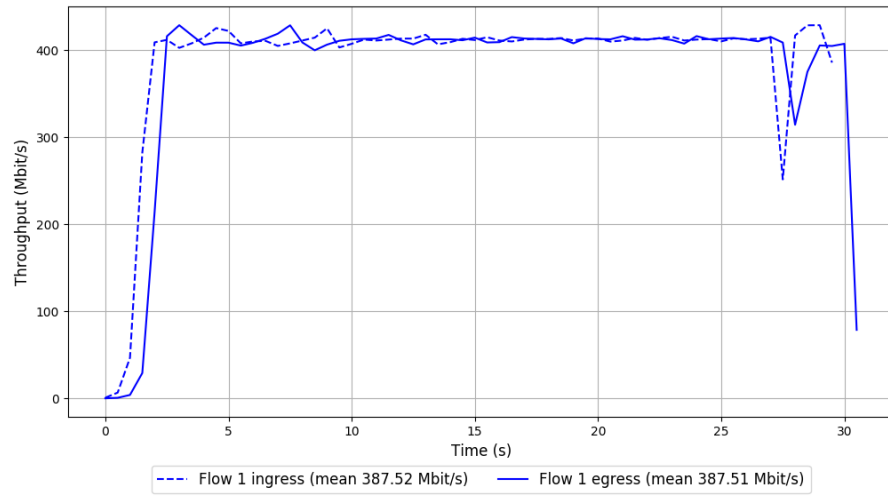
-- Flow 1:

Average throughput: 387.51 Mbit/s

95th percentile per-packet one-way delay: 88.435 ms

Loss rate: 0.00%

### Run 1: Report of TCP Vegas — Data Link

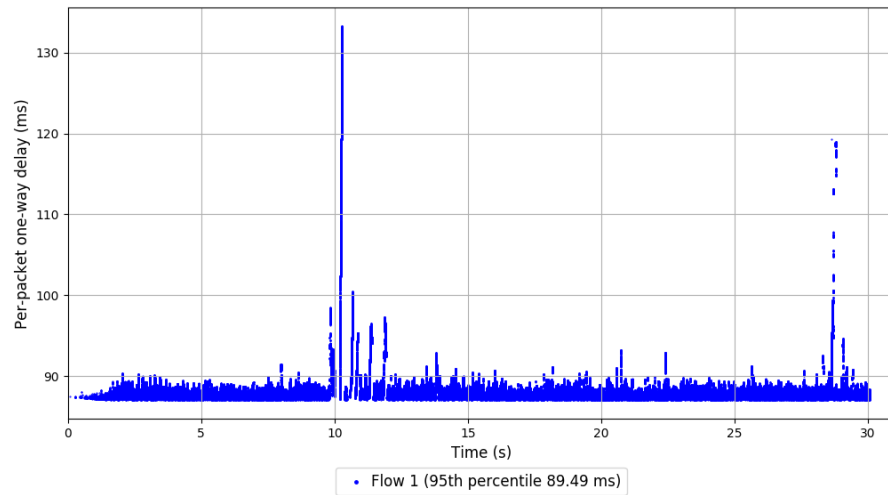
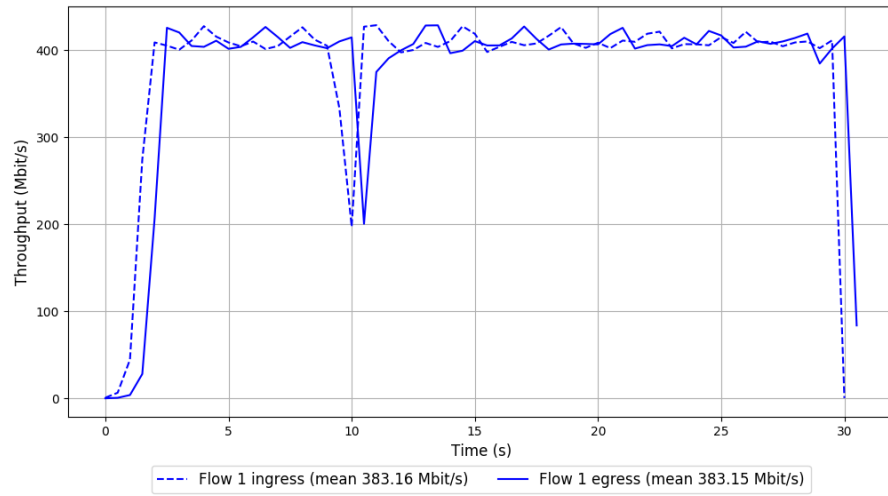


Run 2: Statistics of TCP Vegas

Start at: 2018-10-09 18:19:38  
End at: 2018-10-09 18:20:08  
Local clock offset: 17.401 ms  
Remote clock offset: 18.241 ms

# Below is generated by plot.py at 2018-10-09 21:16:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 383.15 Mbit/s  
95th percentile per-packet one-way delay: 89.486 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 383.15 Mbit/s  
95th percentile per-packet one-way delay: 89.486 ms  
Loss rate: 0.00%

## Run 2: Report of TCP Vegas — Data Link

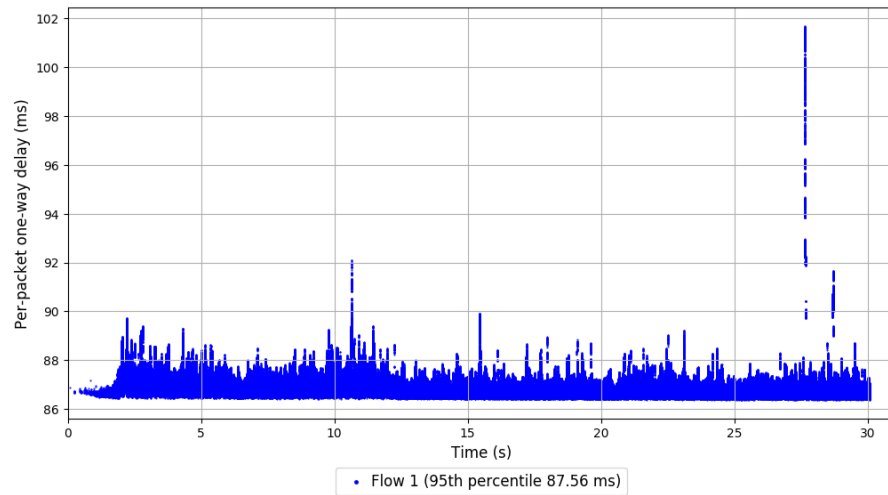
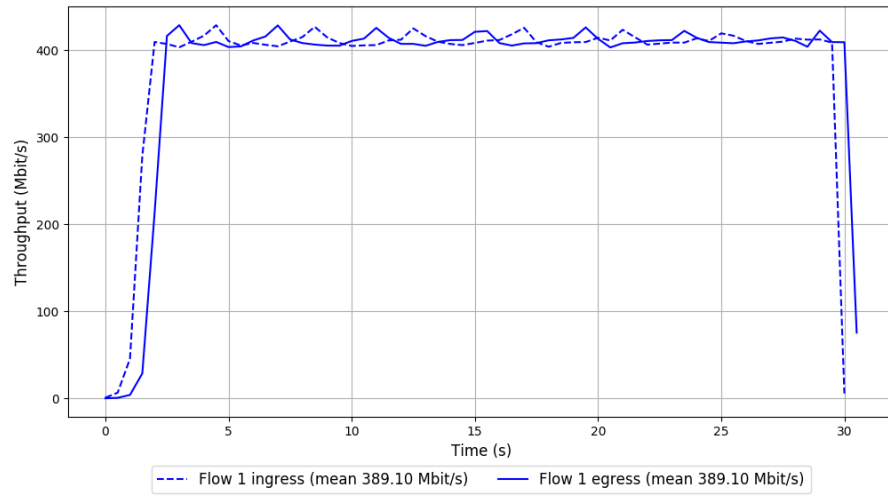


Run 3: Statistics of TCP Vegas

Start at: 2018-10-09 18:45:22  
End at: 2018-10-09 18:45:52  
Local clock offset: 19.99 ms  
Remote clock offset: 25.851 ms

# Below is generated by plot.py at 2018-10-09 21:17:19  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 389.10 Mbit/s  
95th percentile per-packet one-way delay: 87.555 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 389.10 Mbit/s  
95th percentile per-packet one-way delay: 87.555 ms  
Loss rate: 0.00%

### Run 3: Report of TCP Vegas — Data Link

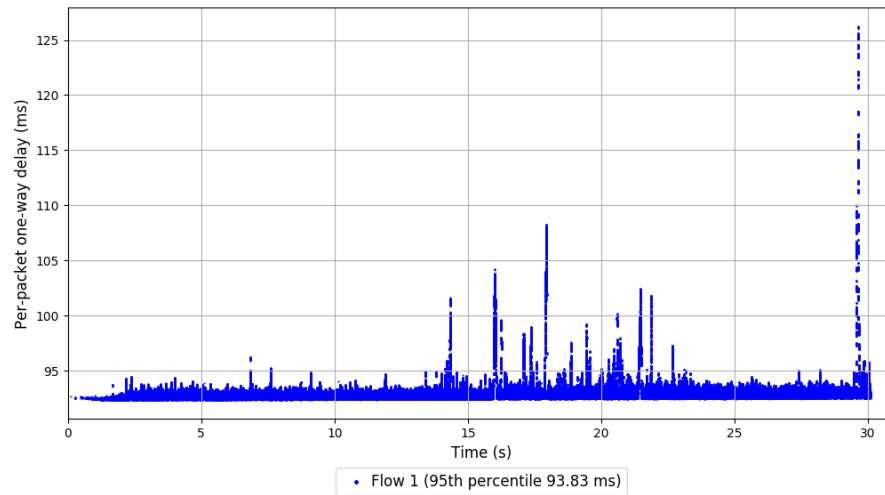
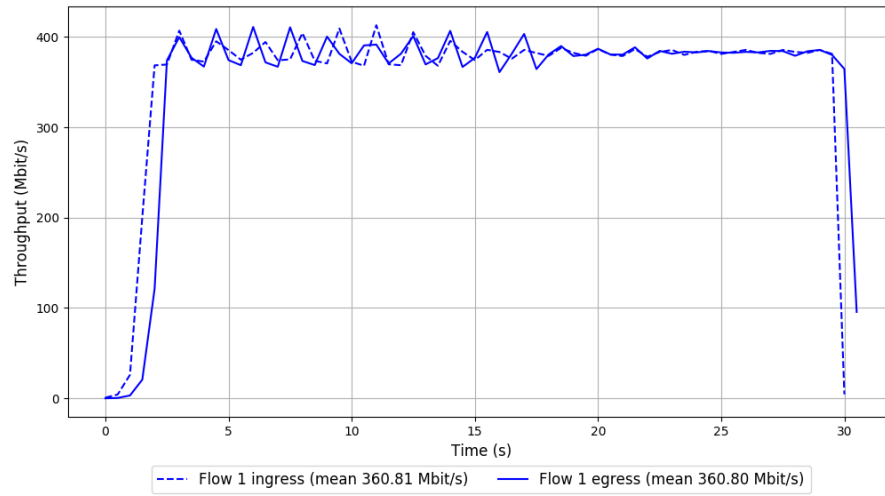


Run 4: Statistics of TCP Vegas

Start at: 2018-10-09 19:10:56  
End at: 2018-10-09 19:11:26  
Local clock offset: 16.908 ms  
Remote clock offset: 18.94 ms

# Below is generated by plot.py at 2018-10-09 21:18:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 360.80 Mbit/s  
95th percentile per-packet one-way delay: 93.832 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 360.80 Mbit/s  
95th percentile per-packet one-way delay: 93.832 ms  
Loss rate: 0.00%

#### Run 4: Report of TCP Vegas — Data Link





Run 5: Statistics of TCP Vegas

Start at: 2018-10-09 19:36:59

End at: 2018-10-09 19:37:29

Local clock offset: 18.081 ms

Remote clock offset: 17.28 ms

# Below is generated by plot.py at 2018-10-09 21:18:11

# Datalink statistics

-- Total of 1 flow:

Average throughput: 357.95 Mbit/s

95th percentile per-packet one-way delay: 95.065 ms

Loss rate: 0.08%

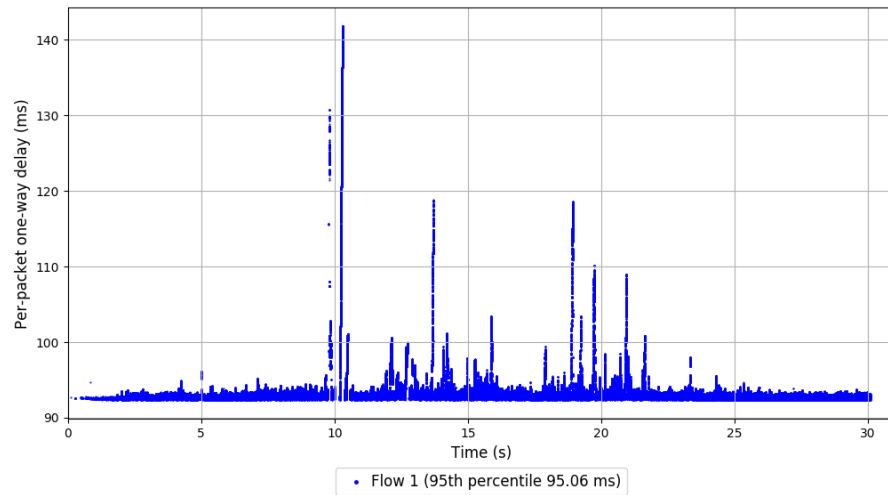
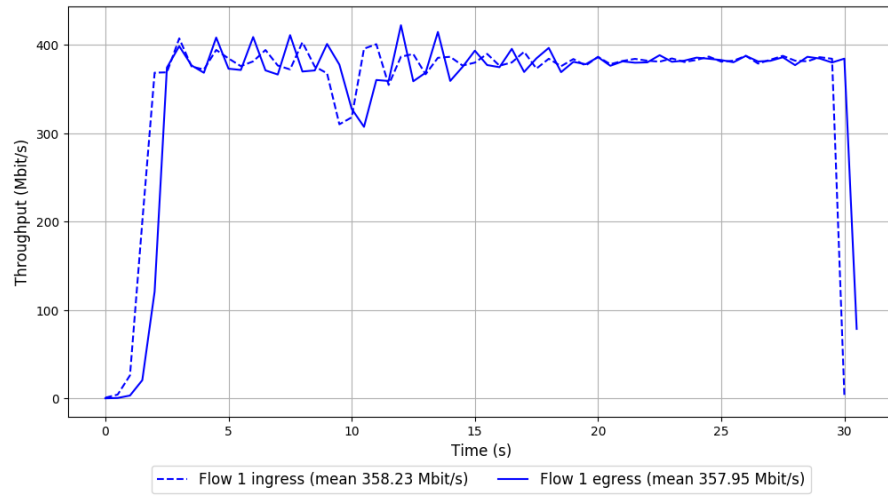
-- Flow 1:

Average throughput: 357.95 Mbit/s

95th percentile per-packet one-way delay: 95.065 ms

Loss rate: 0.08%

### Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-10-09 17:57:06

End at: 2018-10-09 17:57:36

Local clock offset: 7.954 ms

Remote clock offset: 7.245 ms

# Below is generated by plot.py at 2018-10-09 21:18:11

# Datalink statistics

-- Total of 1 flow:

Average throughput: 157.49 Mbit/s

95th percentile per-packet one-way delay: 206.954 ms

Loss rate: 2.23%

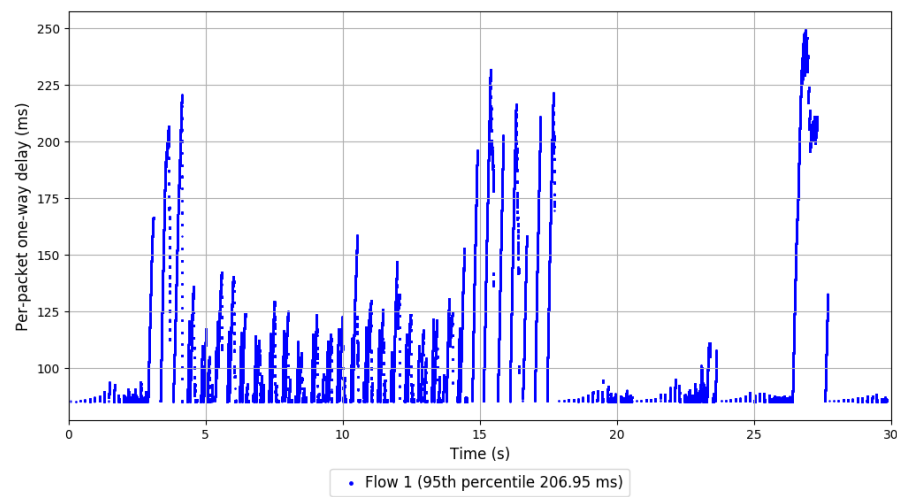
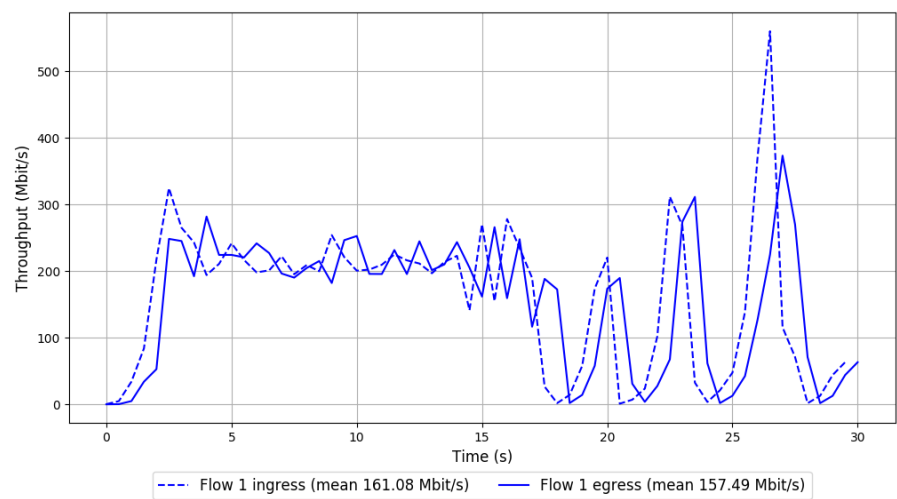
-- Flow 1:

Average throughput: 157.49 Mbit/s

95th percentile per-packet one-way delay: 206.954 ms

Loss rate: 2.23%

Run 1: Report of Verus — Data Link

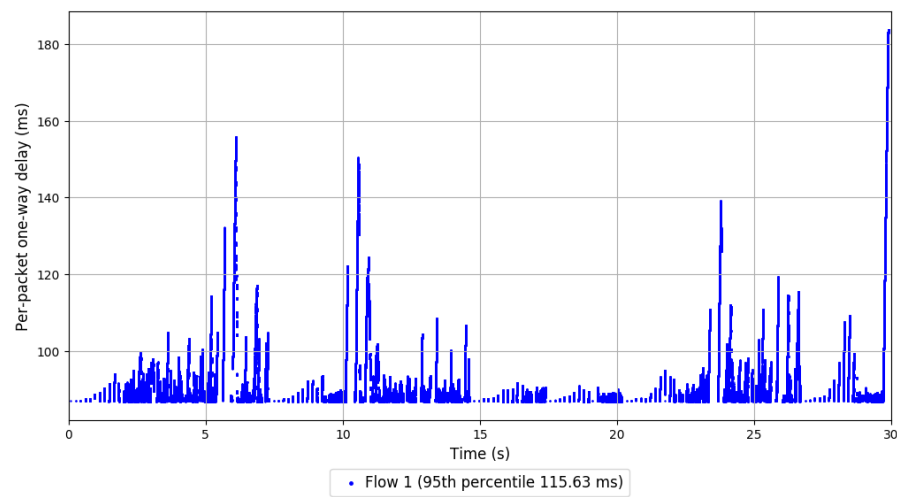
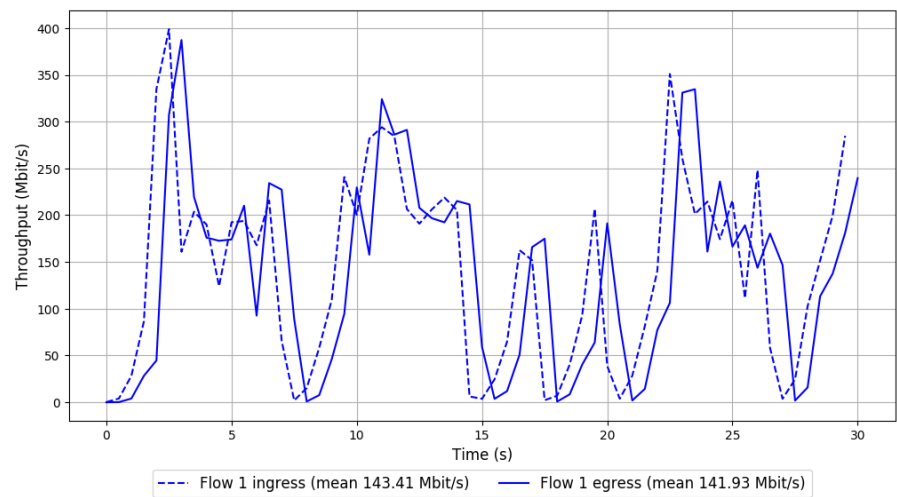


Run 2: Statistics of Verus

Start at: 2018-10-09 18:22:41  
End at: 2018-10-09 18:23:11  
Local clock offset: 21.423 ms  
Remote clock offset: 22.367 ms

# Below is generated by plot.py at 2018-10-09 21:18:11  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 141.93 Mbit/s  
95th percentile per-packet one-way delay: 115.631 ms  
Loss rate: 0.91%  
-- Flow 1:  
Average throughput: 141.93 Mbit/s  
95th percentile per-packet one-way delay: 115.631 ms  
Loss rate: 0.91%

Run 2: Report of Verus — Data Link

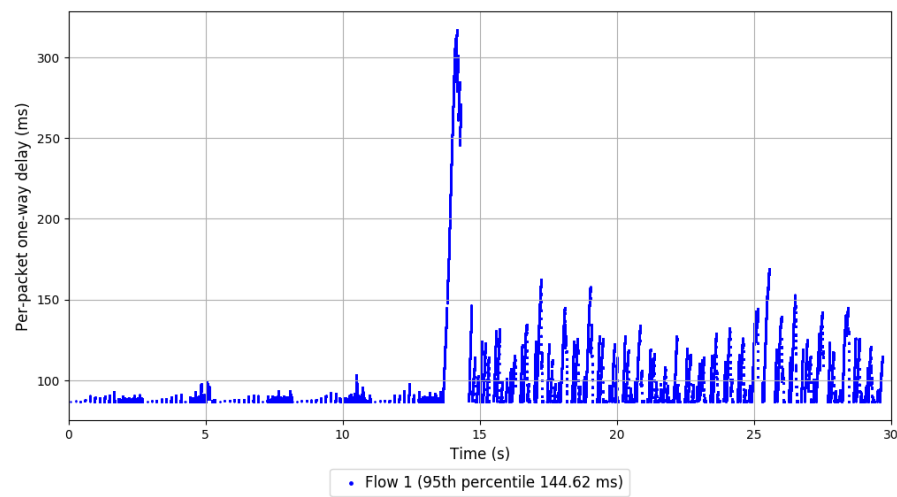
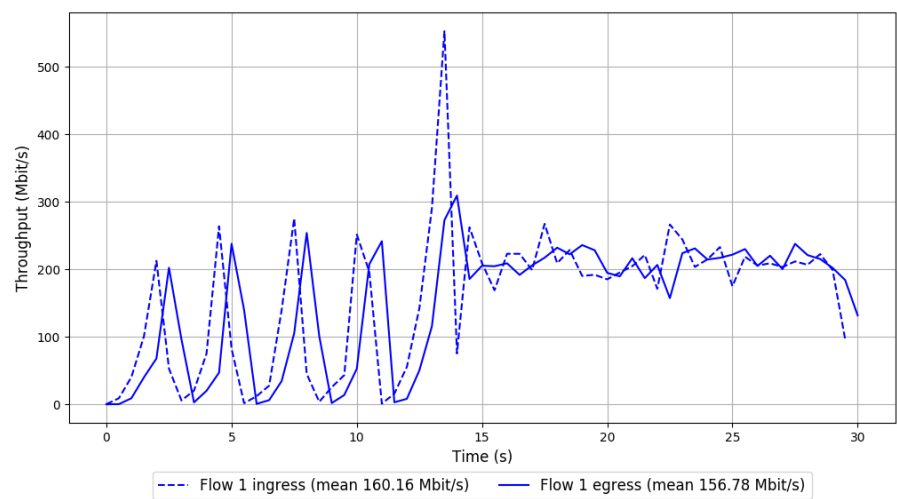


Run 3: Statistics of Verus

Start at: 2018-10-09 18:48:21  
End at: 2018-10-09 18:48:51  
Local clock offset: 22.139 ms  
Remote clock offset: 28.602 ms

# Below is generated by plot.py at 2018-10-09 21:20:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 156.78 Mbit/s  
95th percentile per-packet one-way delay: 144.623 ms  
Loss rate: 2.02%  
-- Flow 1:  
Average throughput: 156.78 Mbit/s  
95th percentile per-packet one-way delay: 144.623 ms  
Loss rate: 2.02%

Run 3: Report of Verus — Data Link



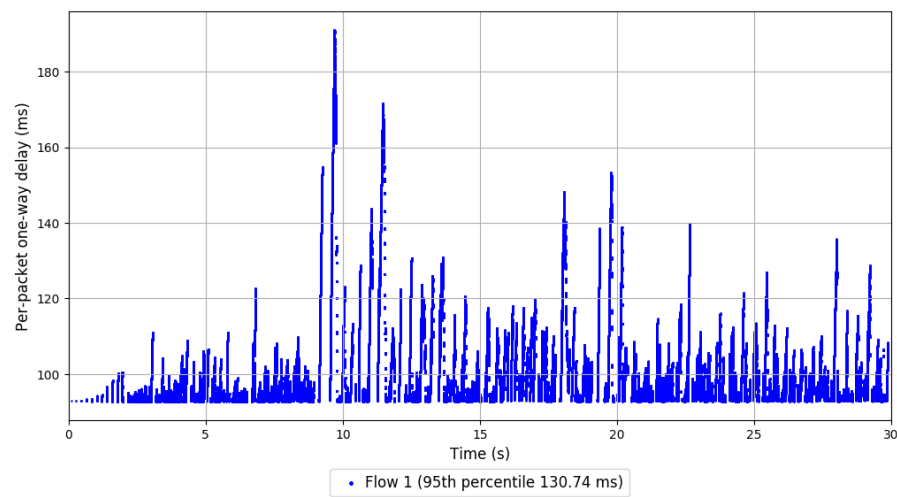
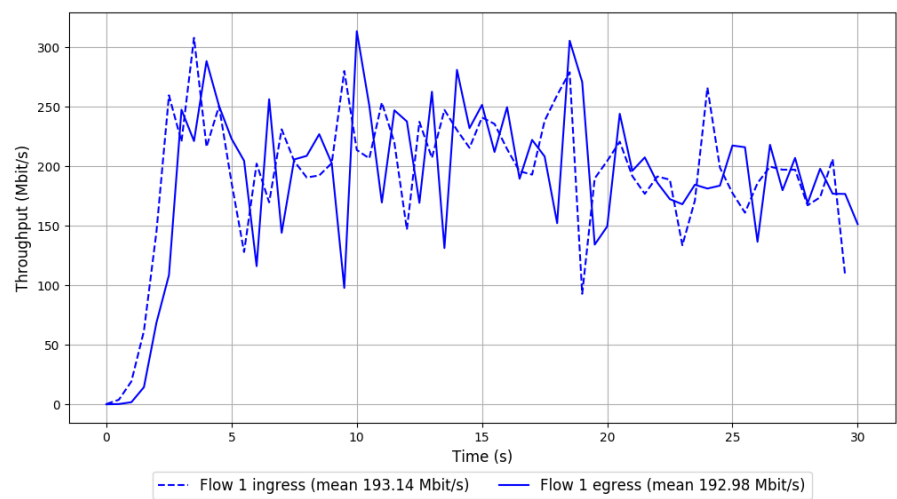


Run 4: Statistics of Verus

Start at: 2018-10-09 19:14:01  
End at: 2018-10-09 19:14:31  
Local clock offset: 15.626 ms  
Remote clock offset: 16.803 ms

# Below is generated by plot.py at 2018-10-09 21:21:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 192.98 Mbit/s  
95th percentile per-packet one-way delay: 130.737 ms  
Loss rate: 0.08%  
-- Flow 1:  
Average throughput: 192.98 Mbit/s  
95th percentile per-packet one-way delay: 130.737 ms  
Loss rate: 0.08%

Run 4: Report of Verus — Data Link

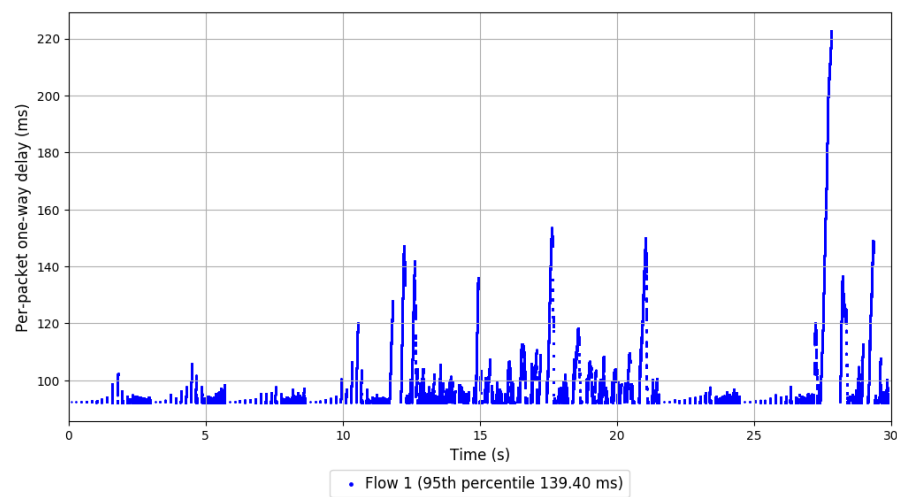
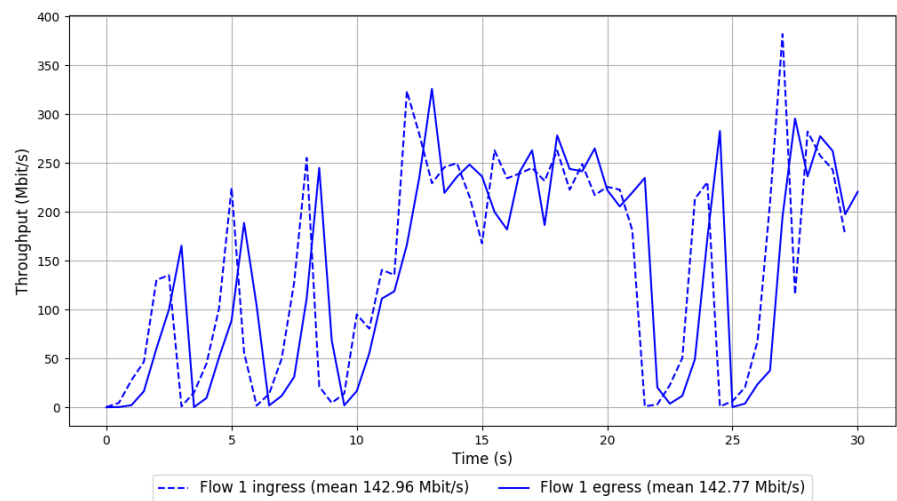


Run 5: Statistics of Verus

Start at: 2018-10-09 19:40:03  
End at: 2018-10-09 19:40:33  
Local clock offset: 13.713 ms  
Remote clock offset: 13.148 ms

# Below is generated by plot.py at 2018-10-09 21:21:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 142.77 Mbit/s  
95th percentile per-packet one-way delay: 139.397 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 142.77 Mbit/s  
95th percentile per-packet one-way delay: 139.397 ms  
Loss rate: 0.13%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-09 17:55:39

End at: 2018-10-09 17:56:09

Local clock offset: 4.288 ms

Remote clock offset: 4.944 ms

# Below is generated by plot.py at 2018-10-09 21:21:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 275.45 Mbit/s

95th percentile per-packet one-way delay: 89.503 ms

Loss rate: 0.00%

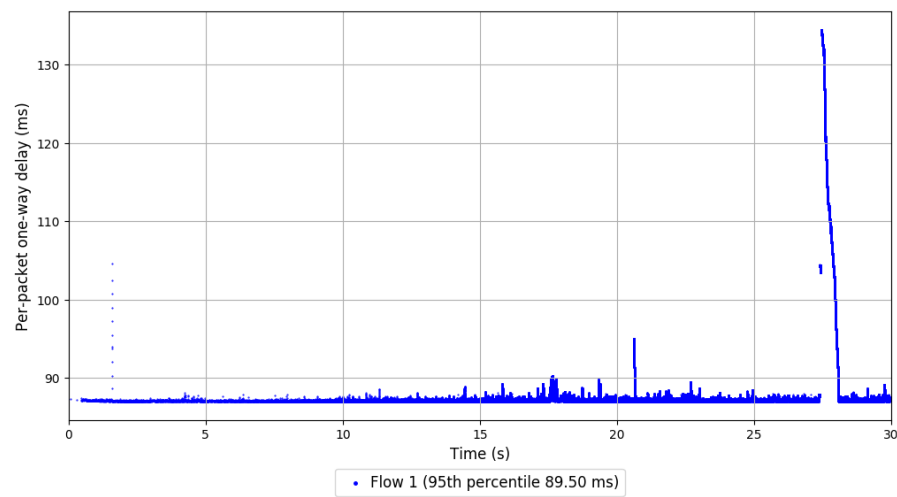
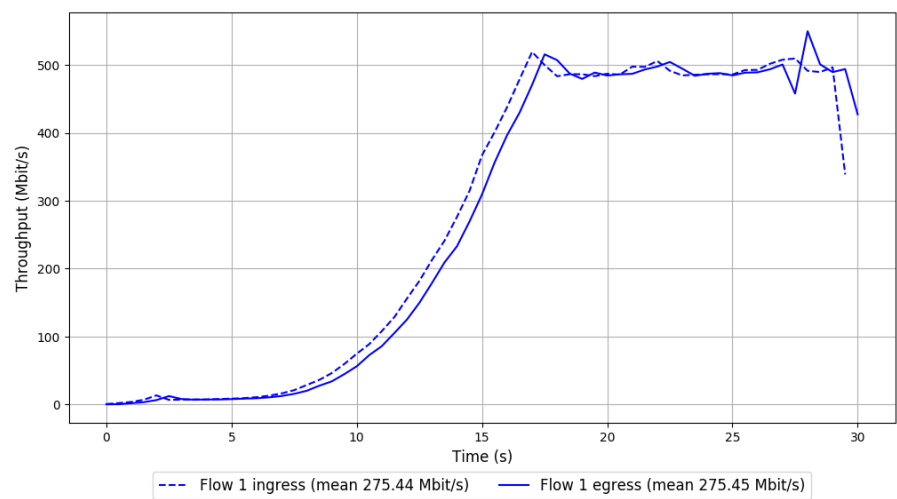
-- Flow 1:

Average throughput: 275.45 Mbit/s

95th percentile per-packet one-way delay: 89.503 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link

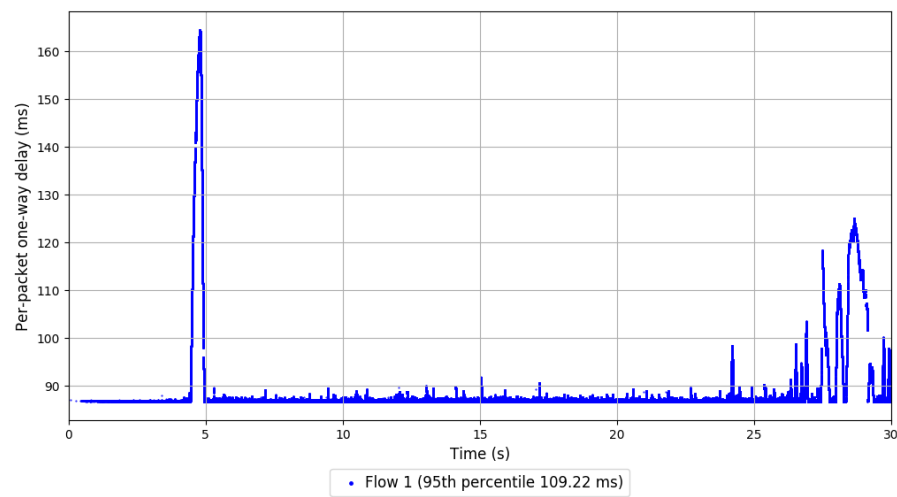
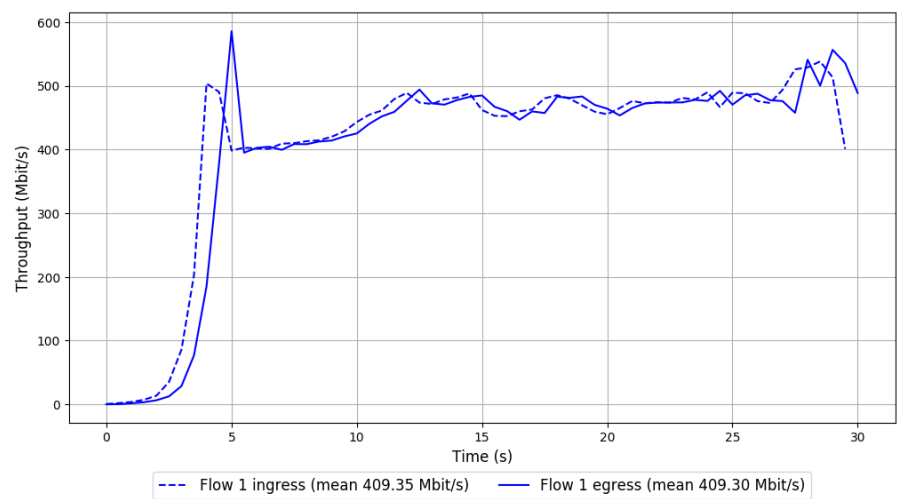


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-09 18:21:05  
End at: 2018-10-09 18:21:35  
Local clock offset: 19.28 ms  
Remote clock offset: 19.889 ms

# Below is generated by plot.py at 2018-10-09 21:22:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 409.30 Mbit/s  
95th percentile per-packet one-way delay: 109.218 ms  
Loss rate: 0.01%  
-- Flow 1:  
Average throughput: 409.30 Mbit/s  
95th percentile per-packet one-way delay: 109.218 ms  
Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



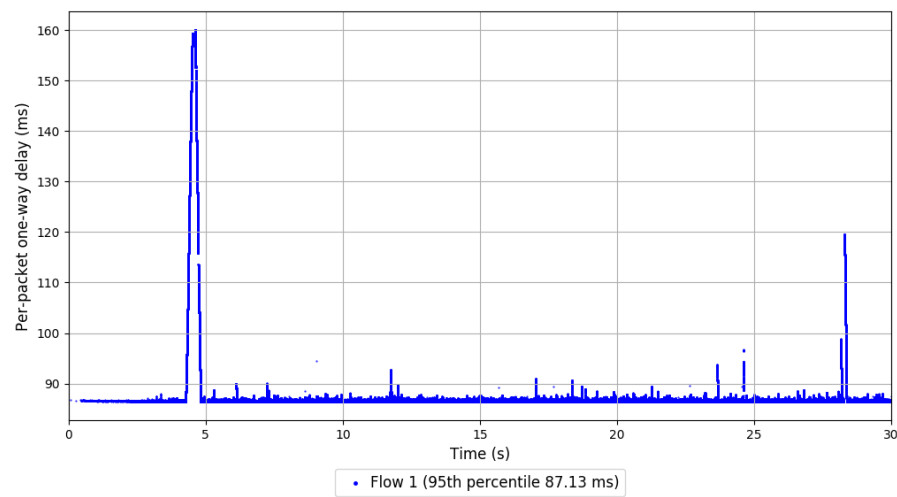
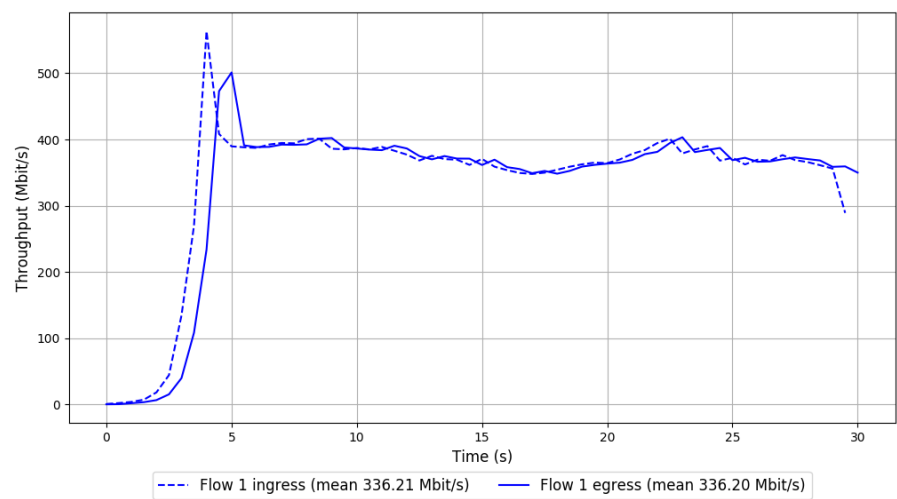


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-09 18:46:49  
End at: 2018-10-09 18:47:19  
Local clock offset: 21.006 ms  
Remote clock offset: 27.109 ms

# Below is generated by plot.py at 2018-10-09 21:22:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 336.20 Mbit/s  
95th percentile per-packet one-way delay: 87.134 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 336.20 Mbit/s  
95th percentile per-packet one-way delay: 87.134 ms  
Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link

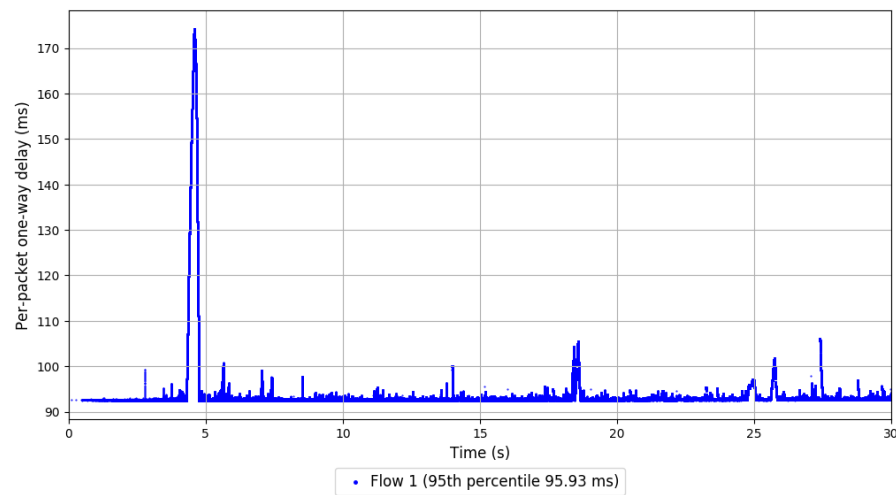
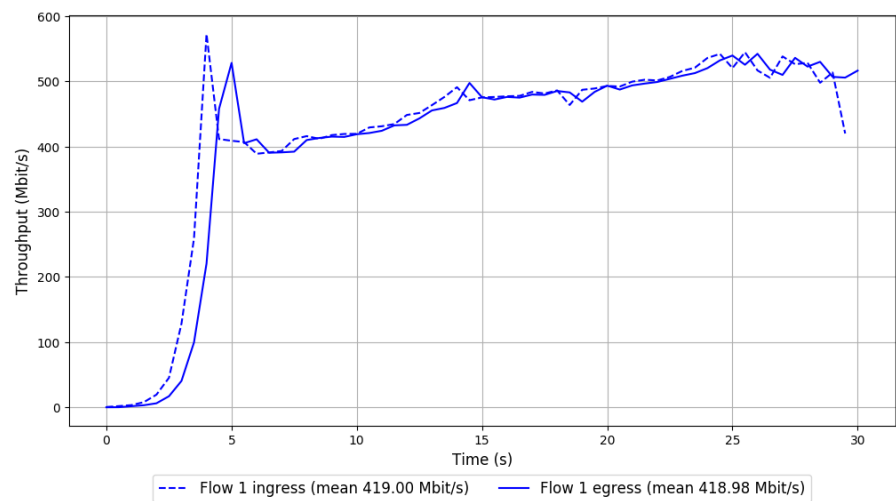


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-09 19:12:23  
End at: 2018-10-09 19:12:53  
Local clock offset: 16.008 ms  
Remote clock offset: 17.754 ms

# Below is generated by plot.py at 2018-10-09 21:23:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 418.98 Mbit/s  
95th percentile per-packet one-way delay: 95.929 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 418.98 Mbit/s  
95th percentile per-packet one-way delay: 95.929 ms  
Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link

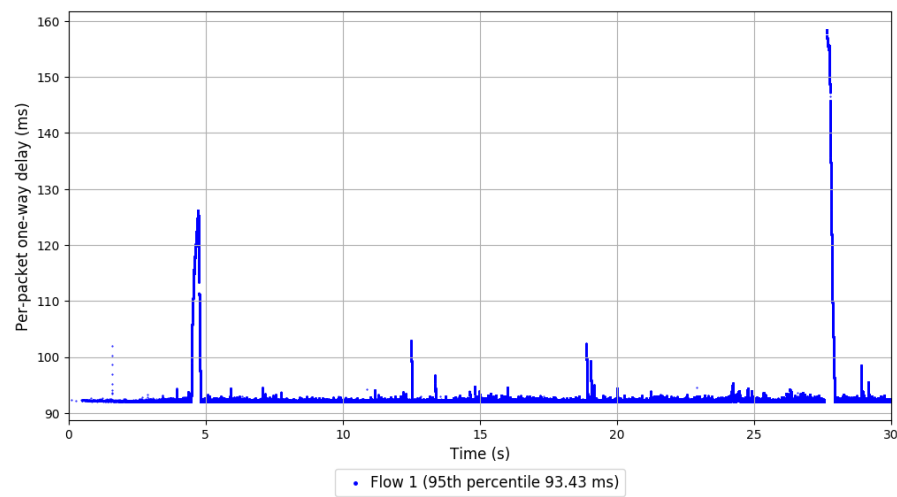
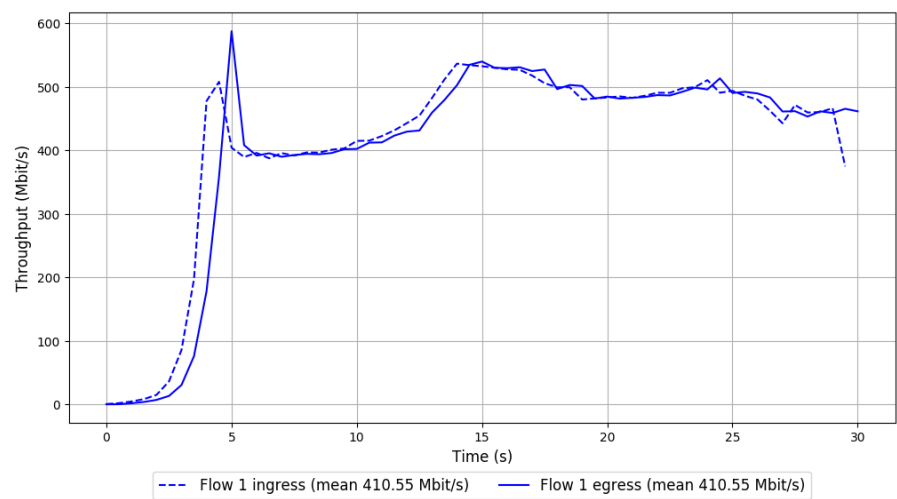


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-09 19:38:26  
End at: 2018-10-09 19:38:56  
Local clock offset: 15.745 ms  
Remote clock offset: 15.176 ms

# Below is generated by plot.py at 2018-10-09 21:23:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 410.55 Mbit/s  
95th percentile per-packet one-way delay: 93.427 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 410.55 Mbit/s  
95th percentile per-packet one-way delay: 93.427 ms  
Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

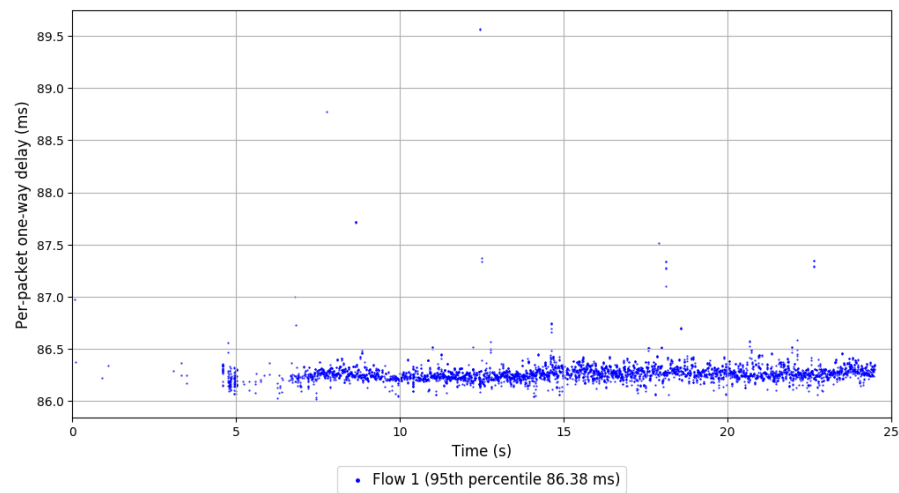
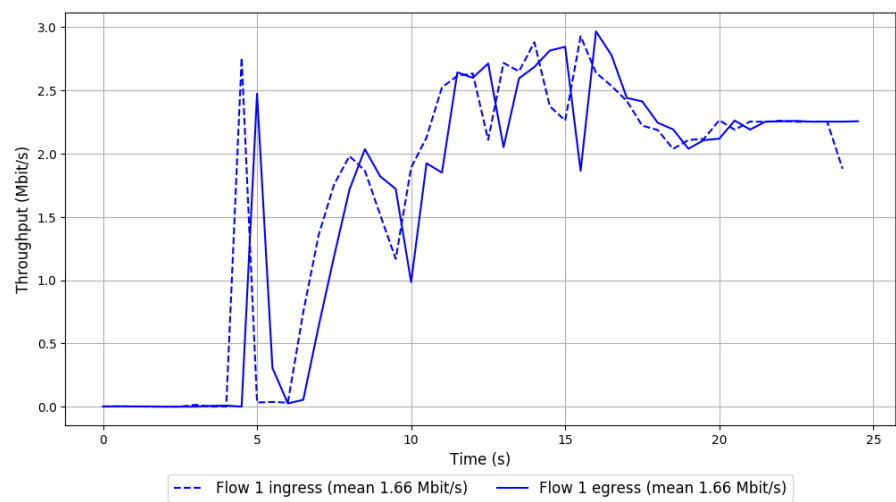


```
Run 1: Statistics of WebRTC media

Start at: 2018-10-09 18:12:32
End at: 2018-10-09 18:13:02
Local clock offset: 14.105 ms
Remote clock offset: 14.255 ms

# Below is generated by plot.py at 2018-10-09 21:23:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 86.380 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 86.380 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link



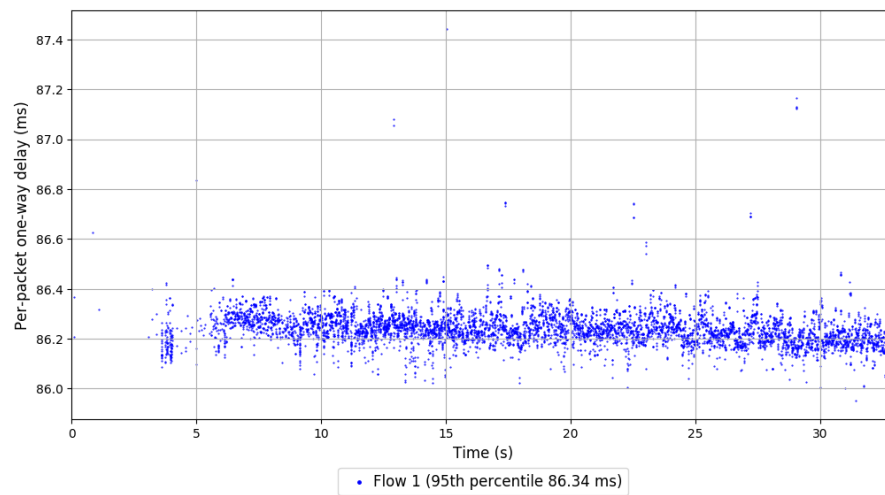
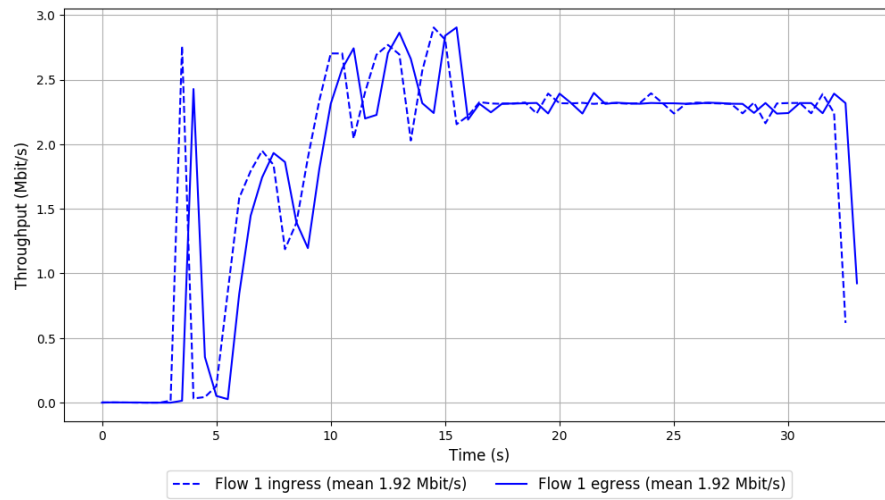


Run 2: Statistics of WebRTC media

Start at: 2018-10-09 18:38:12  
End at: 2018-10-09 18:38:42  
Local clock offset: 16.671 ms  
Remote clock offset: 21.287 ms

# Below is generated by plot.py at 2018-10-09 21:23:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.92 Mbit/s  
95th percentile per-packet one-way delay: 86.340 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.92 Mbit/s  
95th percentile per-packet one-way delay: 86.340 ms  
Loss rate: 0.00%

## Run 2: Report of WebRTC media — Data Link

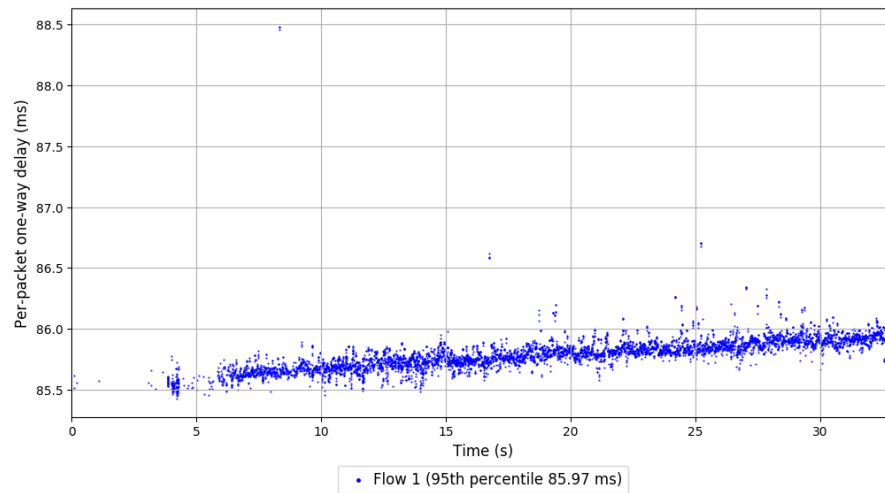
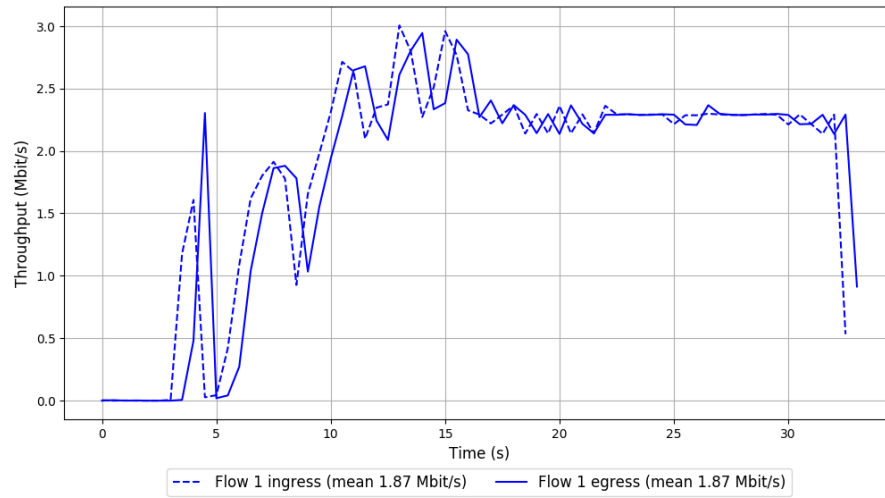


Run 3: Statistics of WebRTC media

Start at: 2018-10-09 19:03:49  
End at: 2018-10-09 19:04:19  
Local clock offset: 26.622 ms  
Remote clock offset: 31.391 ms

# Below is generated by plot.py at 2018-10-09 21:23:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.87 Mbit/s  
95th percentile per-packet one-way delay: 85.965 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.87 Mbit/s  
95th percentile per-packet one-way delay: 85.965 ms  
Loss rate: 0.00%

### Run 3: Report of WebRTC media — Data Link

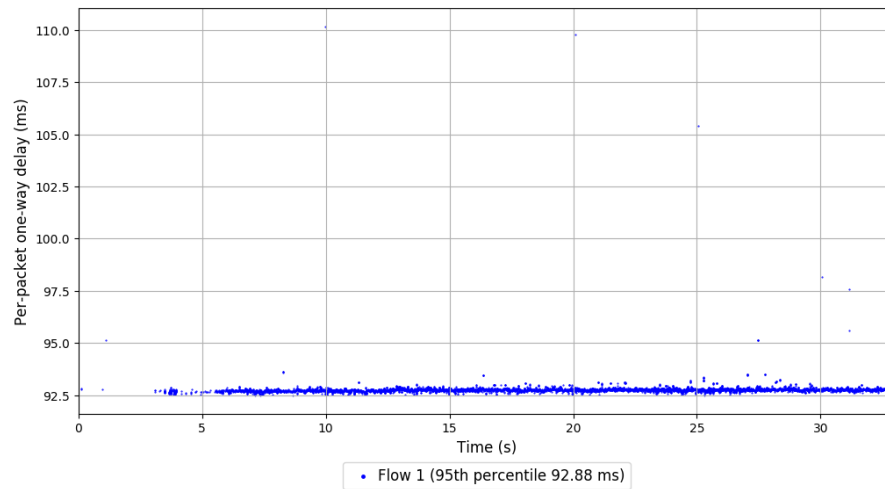
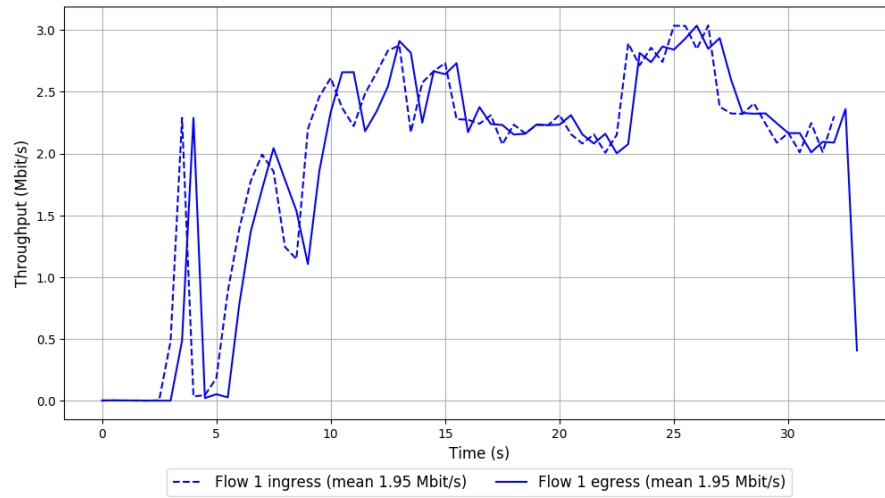


Run 4: Statistics of WebRTC media

Start at: 2018-10-09 19:29:50  
End at: 2018-10-09 19:30:20  
Local clock offset: 19.085 ms  
Remote clock offset: 18.806 ms

# Below is generated by plot.py at 2018-10-09 21:23:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.95 Mbit/s  
95th percentile per-packet one-way delay: 92.876 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.95 Mbit/s  
95th percentile per-packet one-way delay: 92.876 ms  
Loss rate: 0.00%

#### Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-09 19:55:33

End at: 2018-10-09 19:56:03

Local clock offset: 8.133 ms

Remote clock offset: 7.858 ms

# Below is generated by plot.py at 2018-10-09 21:23:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.05 Mbit/s

95th percentile per-packet one-way delay: 93.202 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.05 Mbit/s

95th percentile per-packet one-way delay: 93.202 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

