

Pantheon Report

Generated at 2018-10-26 03:09:57 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

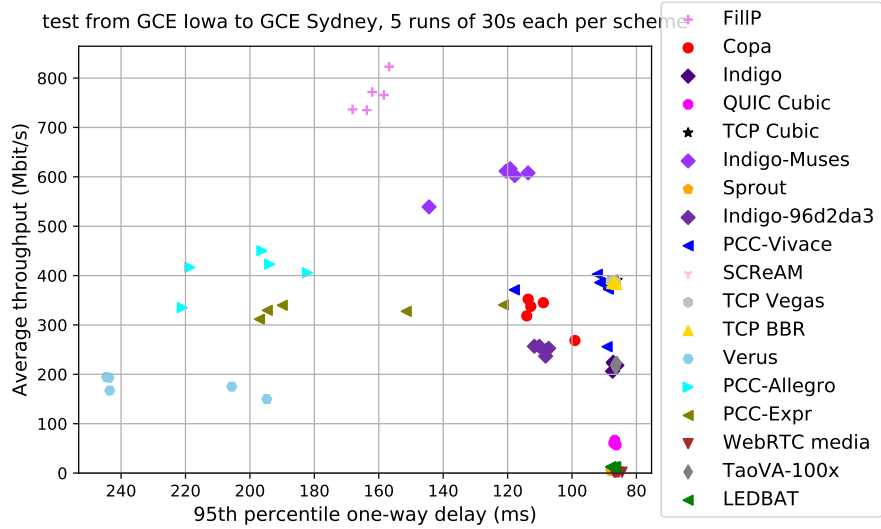
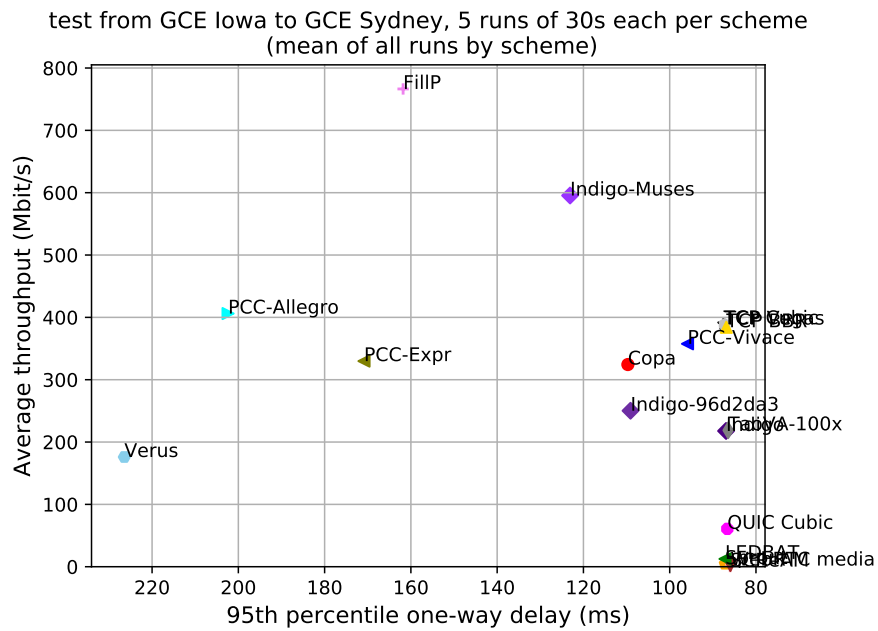
System info:

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

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
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



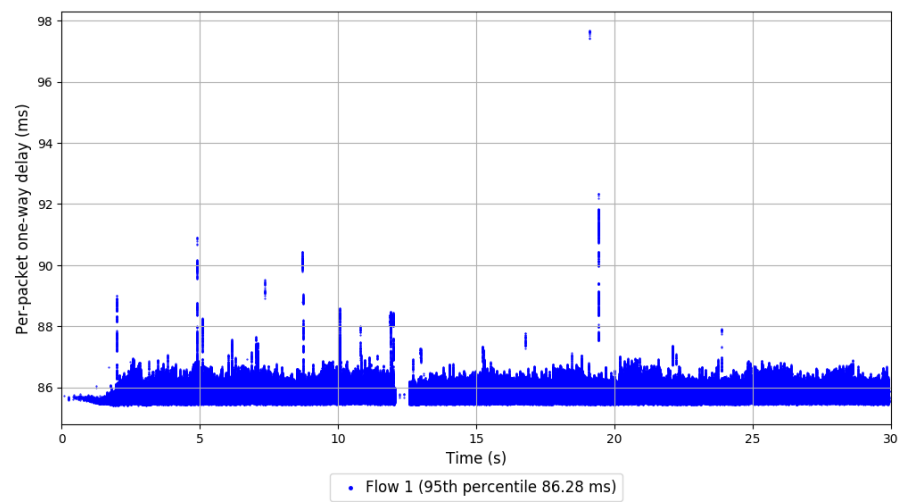
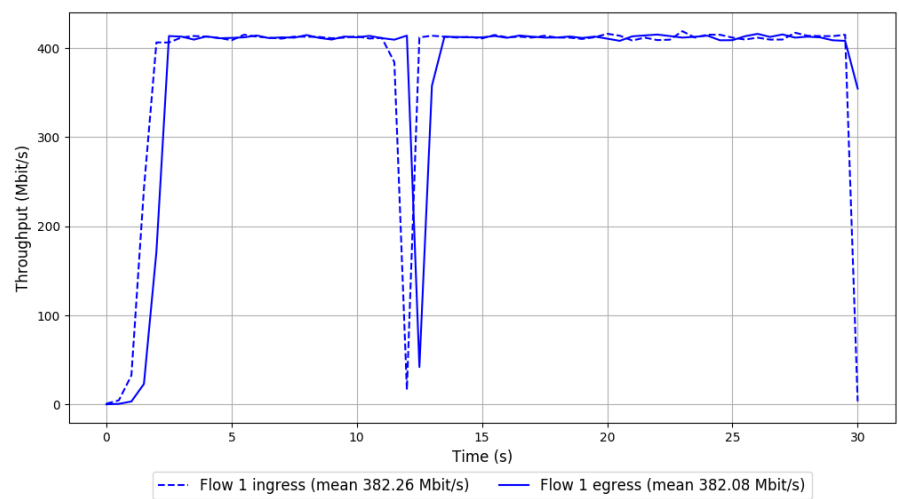
| scheme | # runs | mean avg tput (Mbit/s) flow 1 | mean 95th-%ile delay (ms) flow 1 | mean loss rate (%) flow 1 |
|----------------|--------|----------------------------------|-------------------------------------|------------------------------|
| TCP BBR | 5 | 384.15 | 86.88 | 0.62 |
| Copa | 5 | 324.33 | 109.70 | 0.61 |
| TCP Cubic | 5 | 389.08 | 87.52 | 0.61 |
| FillP | 5 | 766.42 | 161.80 | 4.17 |
| Indigo | 4 | 217.77 | 86.94 | 0.63 |
| Indigo-96d2da3 | 5 | 250.22 | 109.09 | 0.73 |
| LEDBAT | 5 | 12.51 | 87.18 | 1.15 |
| Indigo-Muses | 5 | 595.48 | 123.10 | 0.87 |
| PCC-Allegro | 5 | 406.12 | 202.38 | 5.13 |
| PCC-Expr | 5 | 329.83 | 170.87 | 3.17 |
| QUIC Cubic | 4 | 60.75 | 86.64 | 0.91 |
| SCReAM | 5 | 0.22 | 85.99 | 0.51 |
| Sprout | 5 | 4.37 | 87.16 | 0.67 |
| TaoVA-100x | 5 | 218.85 | 86.46 | 0.62 |
| TCP Vegas | 5 | 388.49 | 87.27 | 0.61 |
| Verus | 5 | 176.02 | 226.43 | 11.00 |
| PCC-Vivace | 5 | 357.57 | 95.87 | 0.77 |
| WebRTC media | 5 | 1.88 | 85.94 | 0.70 |

Run 1: Statistics of TCP BBR

Start at: 2018-10-25 23:40:01
End at: 2018-10-25 23:40:31
Local clock offset: 11.989 ms
Remote clock offset: 11.686 ms

Below is generated by plot.py at 2018-10-26 01:56:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 382.08 Mbit/s
95th percentile per-packet one-way delay: 86.276 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 382.08 Mbit/s
95th percentile per-packet one-way delay: 86.276 ms
Loss rate: 0.62%

Run 1: Report of TCP BBR — Data Link

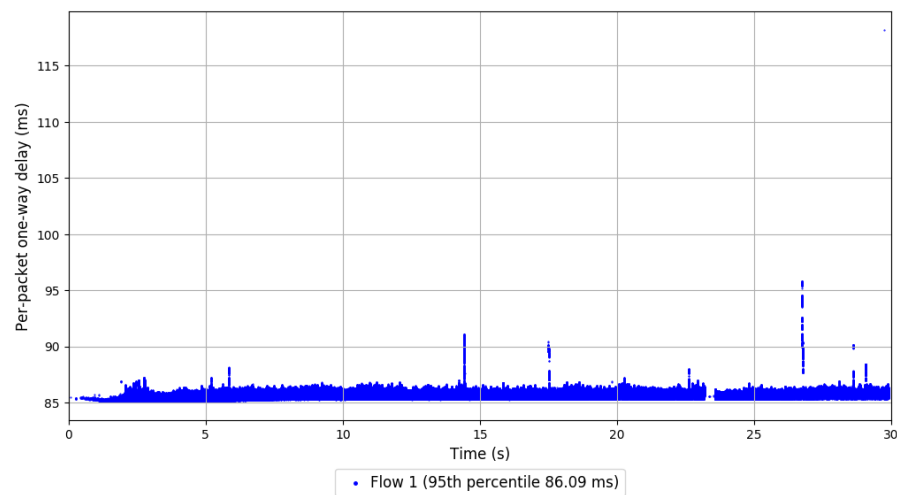
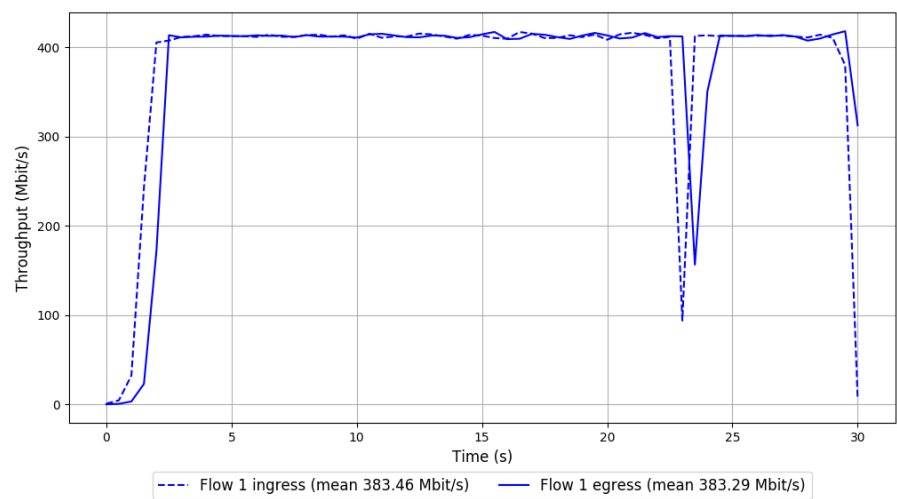


Run 2: Statistics of TCP BBR

Start at: 2018-10-26 00:05:29
End at: 2018-10-26 00:05:59
Local clock offset: 28.618 ms
Remote clock offset: 27.108 ms

Below is generated by plot.py at 2018-10-26 01:56:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 383.29 Mbit/s
95th percentile per-packet one-way delay: 86.091 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 383.29 Mbit/s
95th percentile per-packet one-way delay: 86.091 ms
Loss rate: 0.62%

Run 2: Report of TCP BBR — Data Link

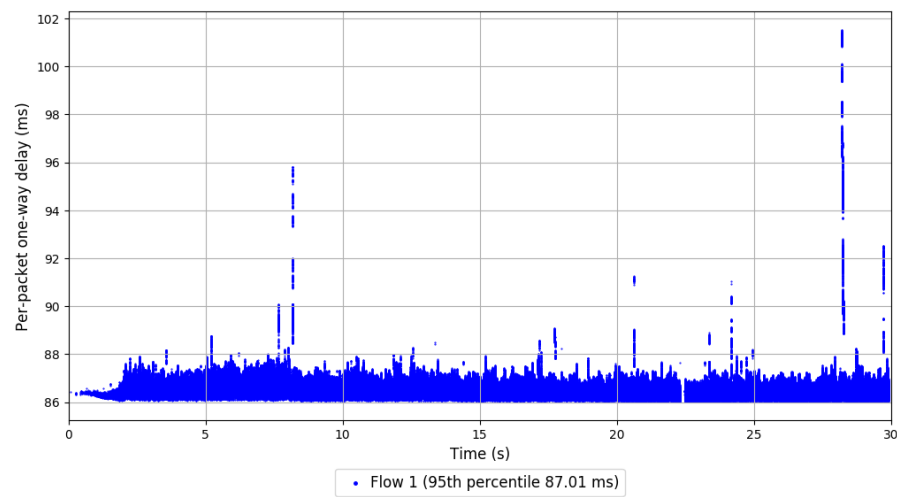
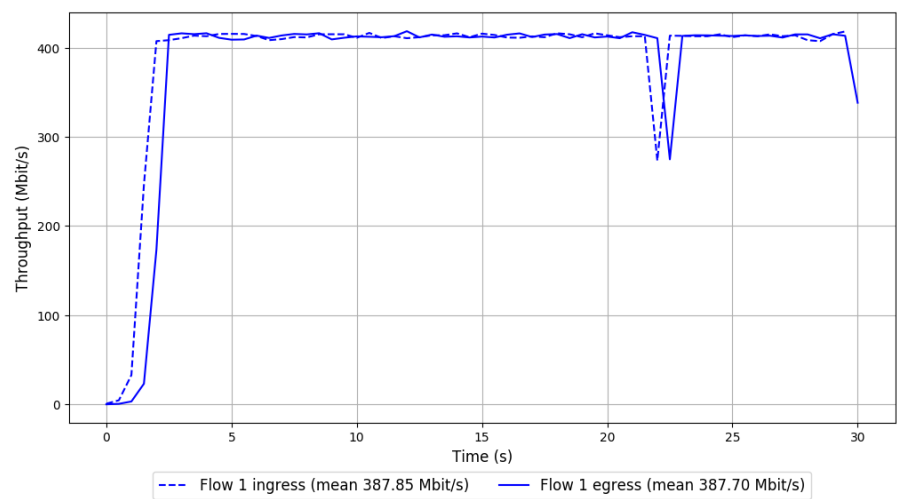


Run 3: Statistics of TCP BBR

Start at: 2018-10-26 00:31:10
End at: 2018-10-26 00:31:40
Local clock offset: 34.243 ms
Remote clock offset: 31.395 ms

Below is generated by plot.py at 2018-10-26 01:56:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 387.70 Mbit/s
95th percentile per-packet one-way delay: 87.014 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 387.70 Mbit/s
95th percentile per-packet one-way delay: 87.014 ms
Loss rate: 0.61%

Run 3: Report of TCP BBR — Data Link

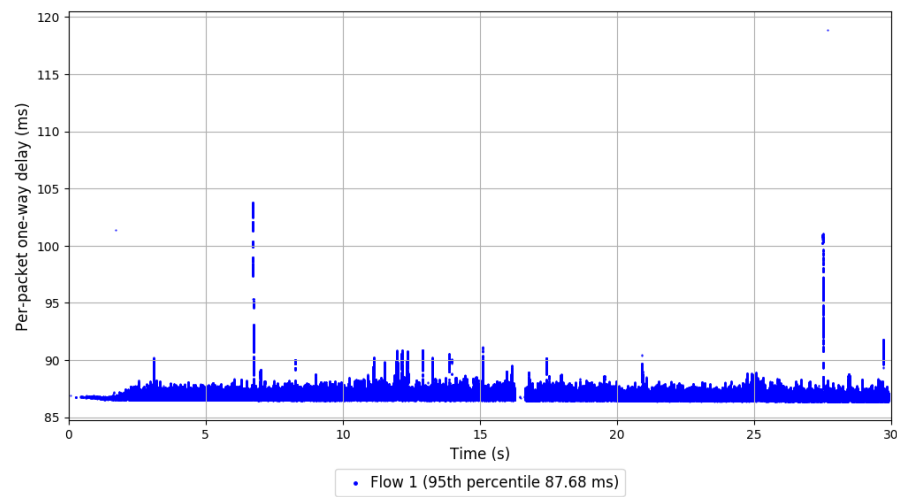
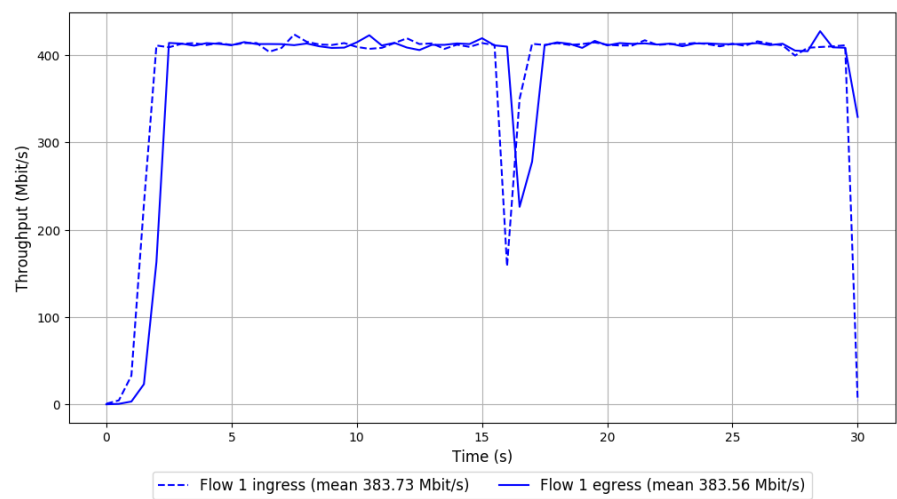


Run 4: Statistics of TCP BBR

Start at: 2018-10-26 00:56:53
End at: 2018-10-26 00:57:23
Local clock offset: 17.418 ms
Remote clock offset: 10.401 ms

Below is generated by plot.py at 2018-10-26 01:56:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 383.56 Mbit/s
95th percentile per-packet one-way delay: 87.683 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 383.56 Mbit/s
95th percentile per-packet one-way delay: 87.683 ms
Loss rate: 0.62%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-10-26 01:22:38

End at: 2018-10-26 01:23:08

Local clock offset: 10.884 ms

Remote clock offset: 4.896 ms

Below is generated by plot.py at 2018-10-26 01:56:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 384.14 Mbit/s

95th percentile per-packet one-way delay: 87.311 ms

Loss rate: 0.62%

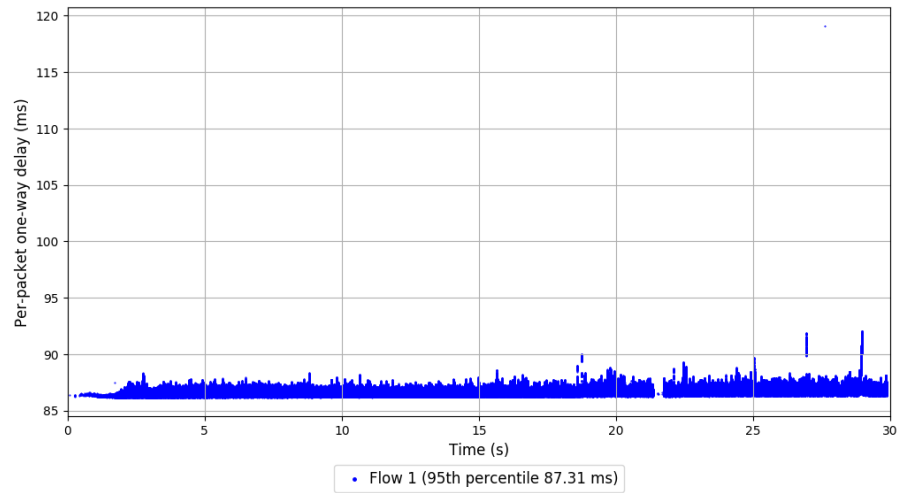
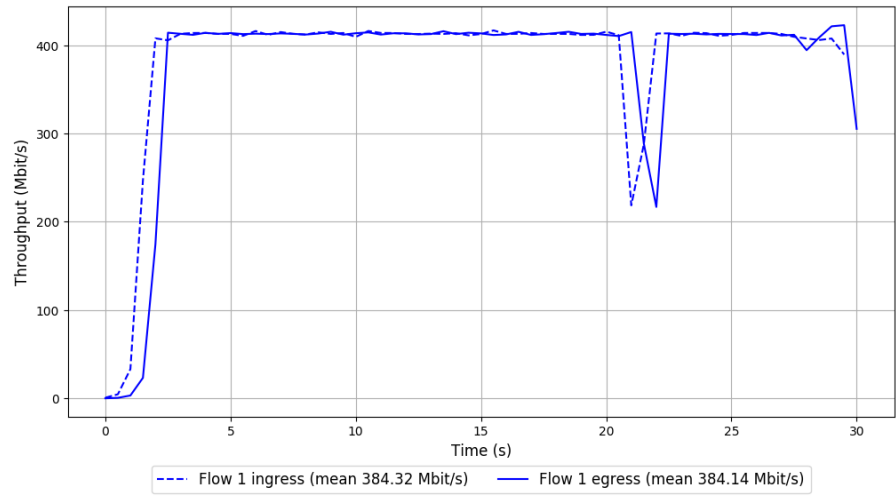
-- Flow 1:

Average throughput: 384.14 Mbit/s

95th percentile per-packet one-way delay: 87.311 ms

Loss rate: 0.62%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-10-25 23:43:04

End at: 2018-10-25 23:43:34

Local clock offset: 9.797 ms

Remote clock offset: 9.257 ms

Below is generated by plot.py at 2018-10-26 02:01:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 352.21 Mbit/s

95th percentile per-packet one-way delay: 113.625 ms

Loss rate: 0.63%

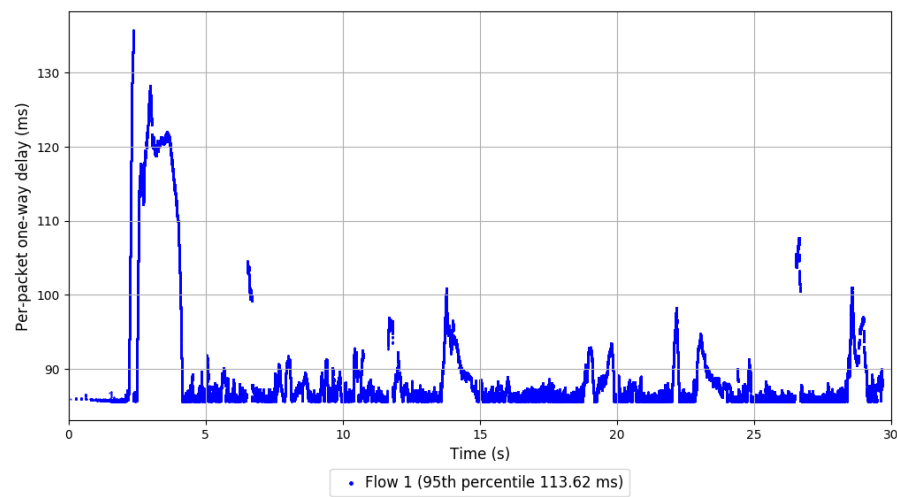
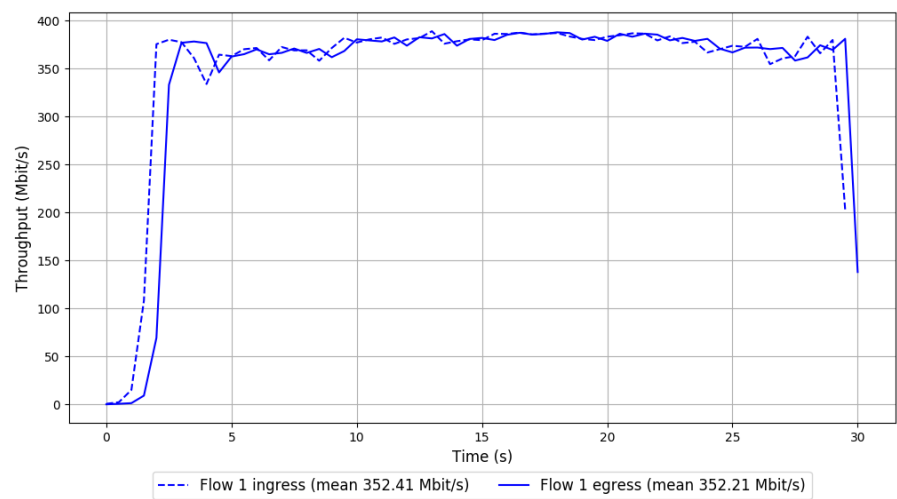
-- Flow 1:

Average throughput: 352.21 Mbit/s

95th percentile per-packet one-way delay: 113.625 ms

Loss rate: 0.63%

Run 1: Report of Copa — Data Link

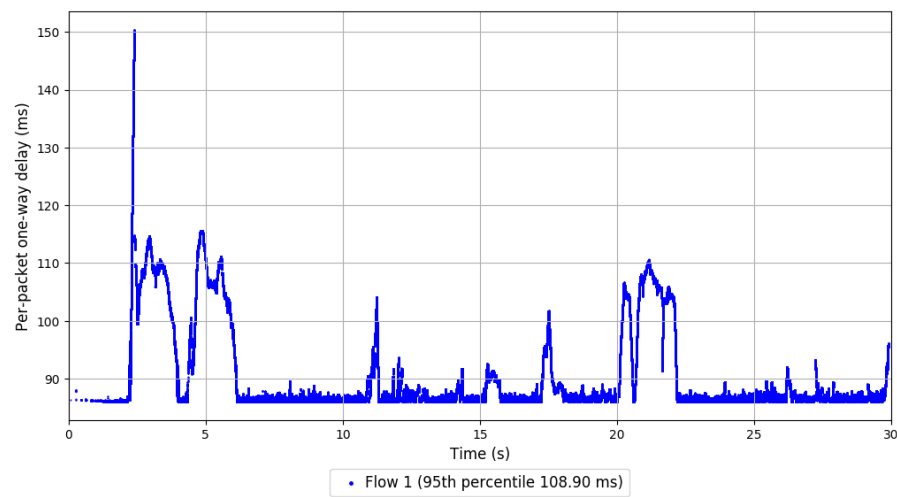
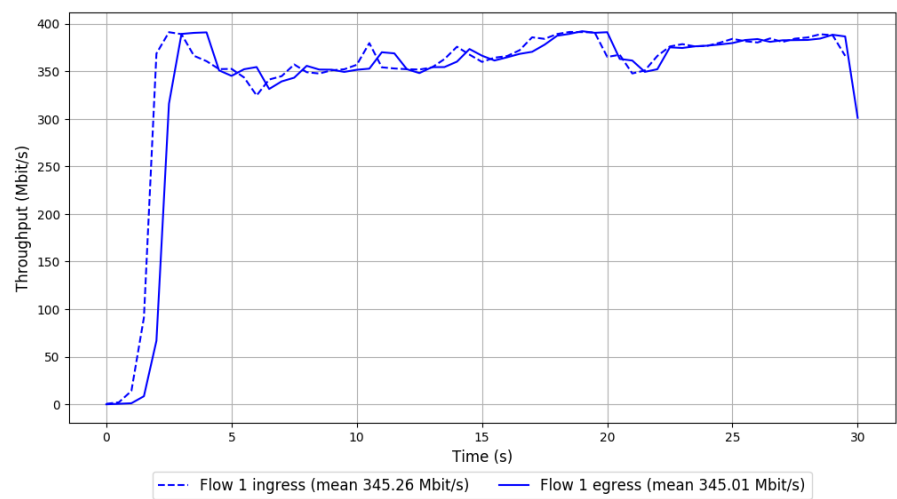


Run 2: Statistics of Copa

Start at: 2018-10-26 00:08:36
End at: 2018-10-26 00:09:06
Local clock offset: 25.0 ms
Remote clock offset: 23.086 ms

Below is generated by plot.py at 2018-10-26 02:01:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 345.01 Mbit/s
95th percentile per-packet one-way delay: 108.898 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 345.01 Mbit/s
95th percentile per-packet one-way delay: 108.898 ms
Loss rate: 0.65%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-10-26 00:34:17

End at: 2018-10-26 00:34:47

Local clock offset: 36.23 ms

Remote clock offset: 34.57 ms

Below is generated by plot.py at 2018-10-26 02:01:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 337.55 Mbit/s

95th percentile per-packet one-way delay: 112.808 ms

Loss rate: 0.65%

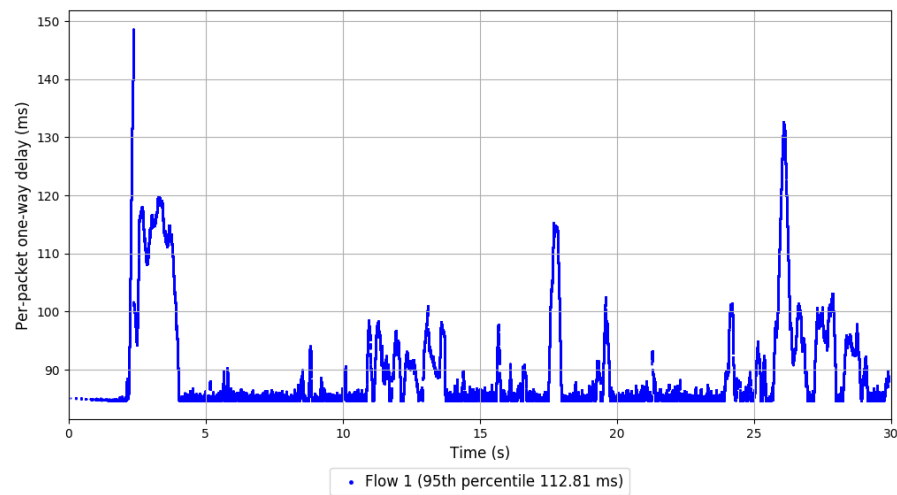
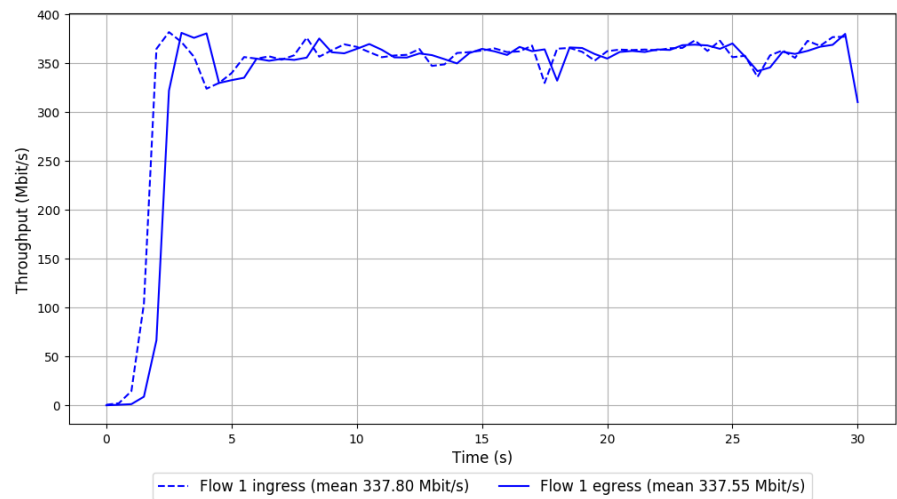
-- Flow 1:

Average throughput: 337.55 Mbit/s

95th percentile per-packet one-way delay: 112.808 ms

Loss rate: 0.65%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-10-26 01:00:00

End at: 2018-10-26 01:00:30

Local clock offset: 16.098 ms

Remote clock offset: 9.58 ms

Below is generated by plot.py at 2018-10-26 02:06:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 268.51 Mbit/s

95th percentile per-packet one-way delay: 99.090 ms

Loss rate: 0.48%

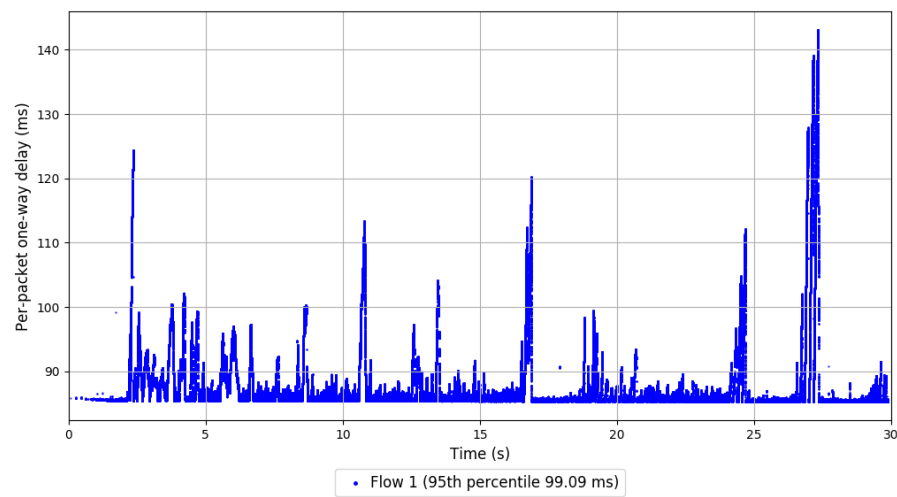
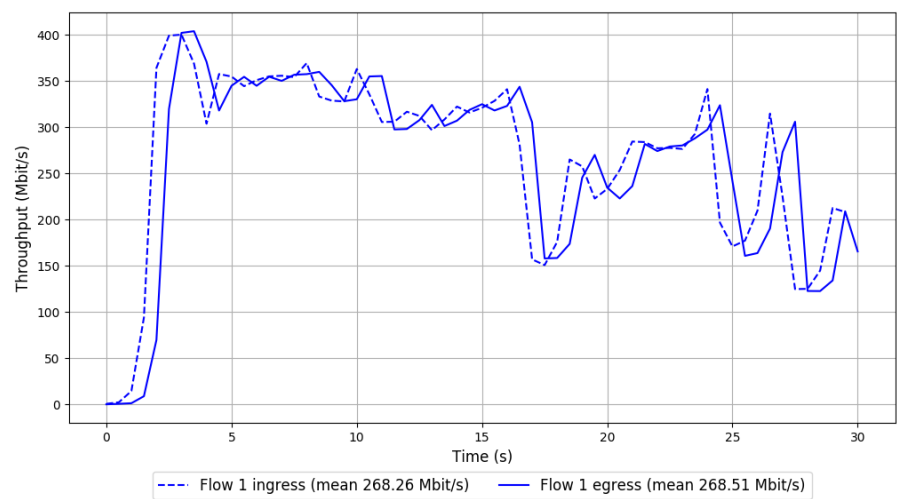
-- Flow 1:

Average throughput: 268.51 Mbit/s

95th percentile per-packet one-way delay: 99.090 ms

Loss rate: 0.48%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-26 01:25:44

End at: 2018-10-26 01:26:14

Local clock offset: 9.392 ms

Remote clock offset: 4.127 ms

Below is generated by plot.py at 2018-10-26 02:08:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 318.37 Mbit/s

95th percentile per-packet one-way delay: 114.062 ms

Loss rate: 0.64%

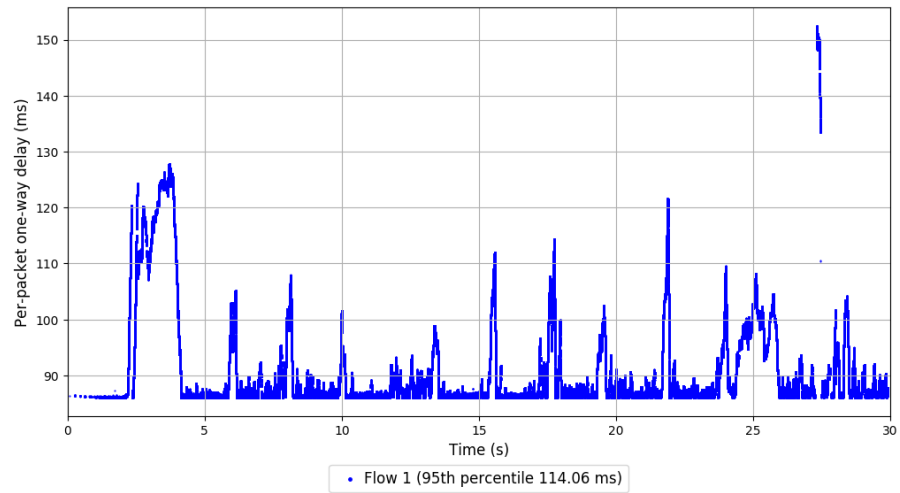
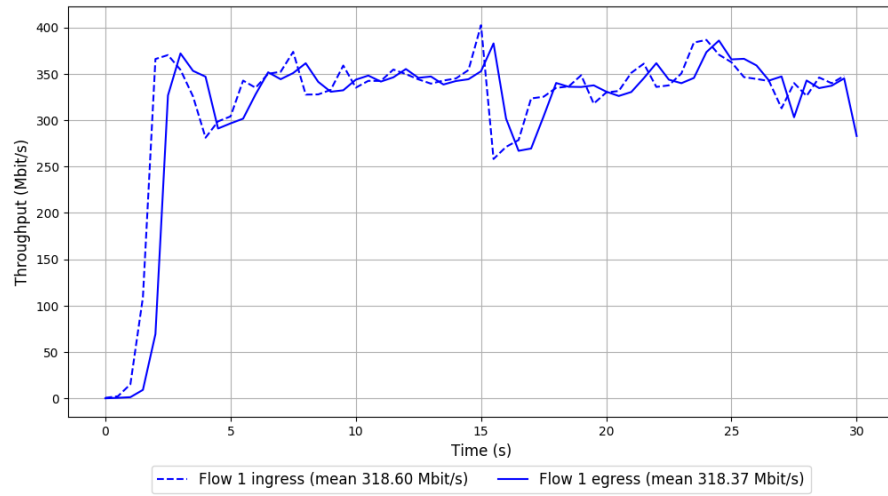
-- Flow 1:

Average throughput: 318.37 Mbit/s

95th percentile per-packet one-way delay: 114.062 ms

Loss rate: 0.64%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-25 23:35:08

End at: 2018-10-25 23:35:38

Local clock offset: 5.411 ms

Remote clock offset: 5.905 ms

Below is generated by plot.py at 2018-10-26 02:08:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 390.76 Mbit/s

95th percentile per-packet one-way delay: 85.967 ms

Loss rate: 0.60%

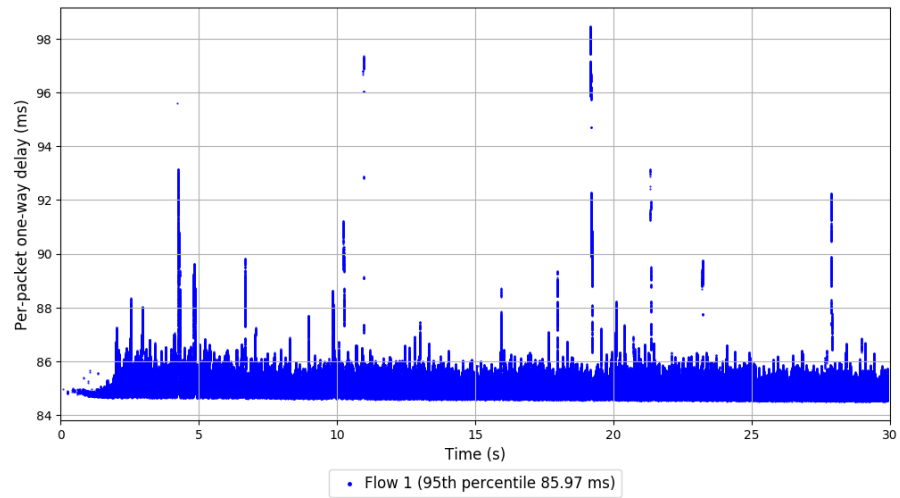
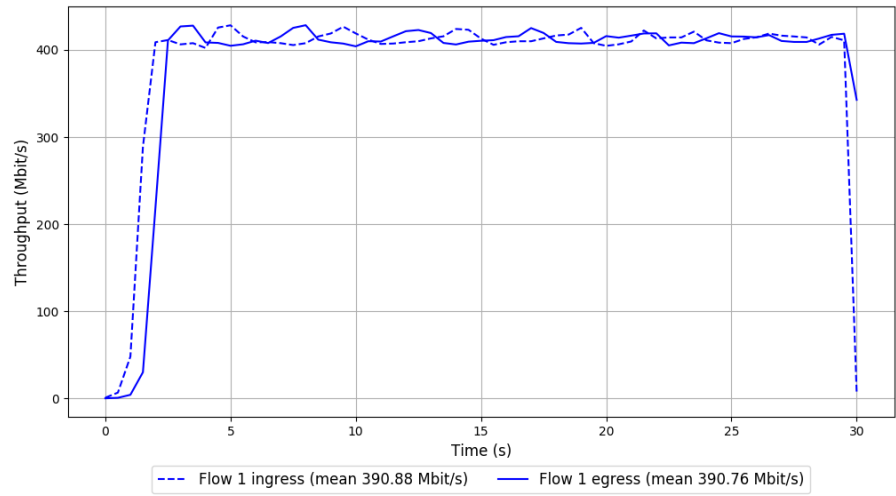
-- Flow 1:

Average throughput: 390.76 Mbit/s

95th percentile per-packet one-way delay: 85.967 ms

Loss rate: 0.60%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 00:00:15

End at: 2018-10-26 00:00:45

Local clock offset: 20.333 ms

Remote clock offset: 19.43 ms

Below is generated by plot.py at 2018-10-26 02:08:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 390.69 Mbit/s

95th percentile per-packet one-way delay: 86.346 ms

Loss rate: 0.61%

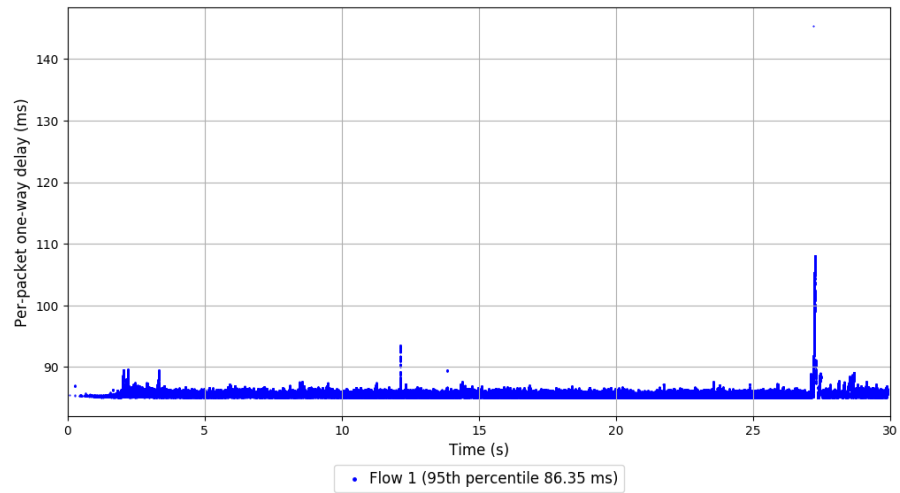
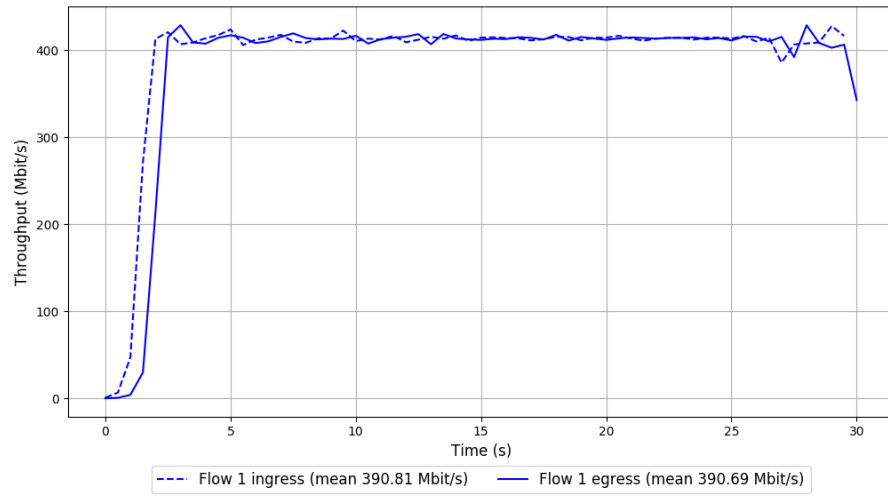
-- Flow 1:

Average throughput: 390.69 Mbit/s

95th percentile per-packet one-way delay: 86.346 ms

Loss rate: 0.61%

Run 2: Report of TCP Cubic — Data Link

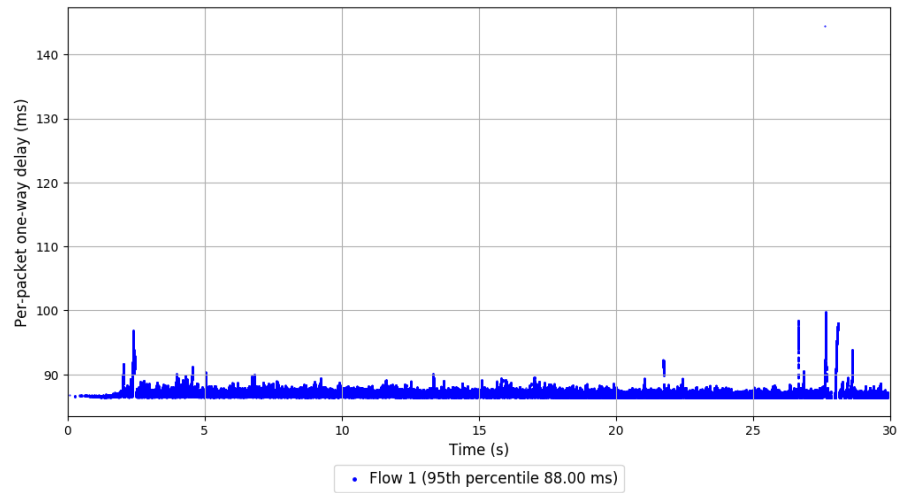
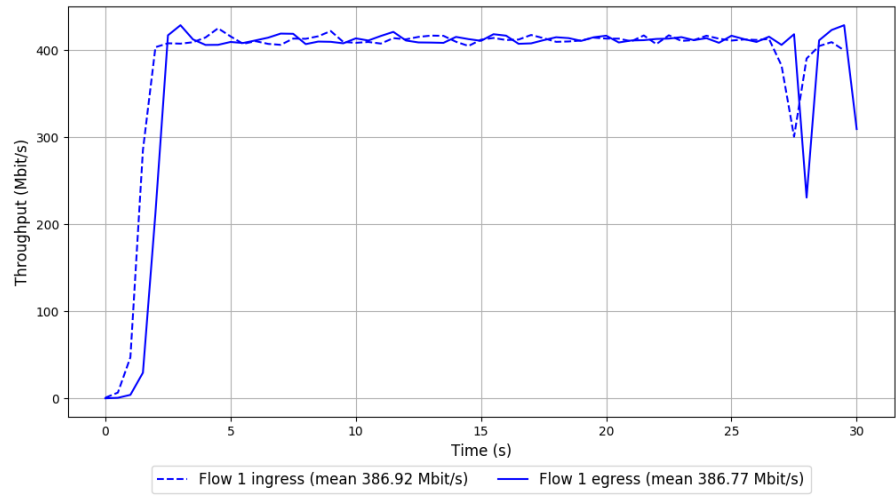


Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 00:25:55
End at: 2018-10-26 00:26:25
Local clock offset: 29.097 ms
Remote clock offset: 26.359 ms

Below is generated by plot.py at 2018-10-26 02:08:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 386.77 Mbit/s
95th percentile per-packet one-way delay: 88.002 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 386.77 Mbit/s
95th percentile per-packet one-way delay: 88.002 ms
Loss rate: 0.61%

Run 3: Report of TCP Cubic — Data Link

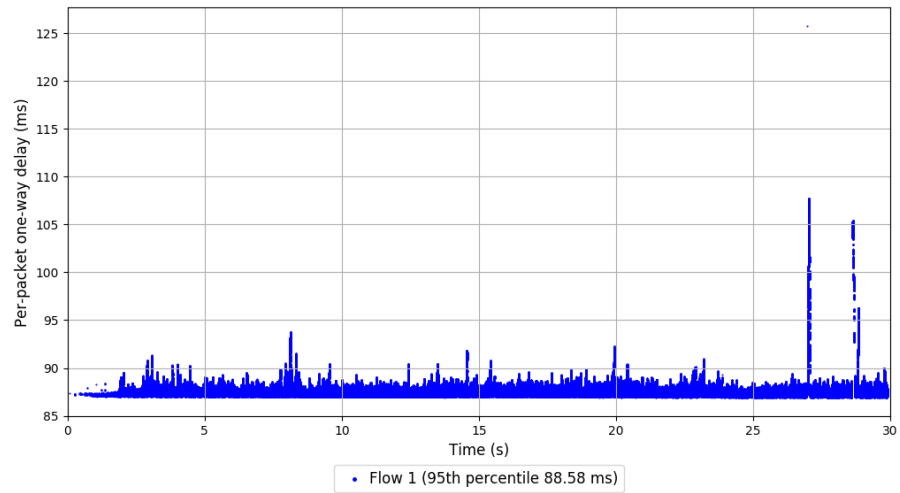
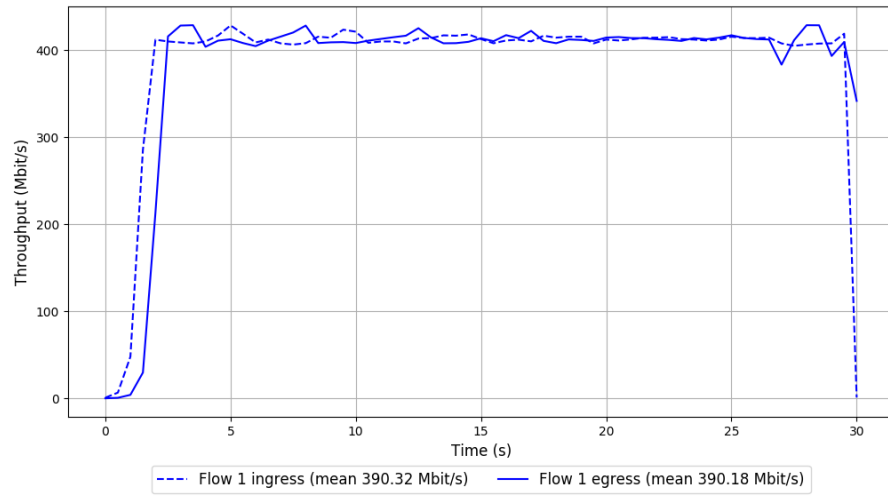


Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 00:51:37
End at: 2018-10-26 00:52:07
Local clock offset: 19.646 ms
Remote clock offset: 13.599 ms

Below is generated by plot.py at 2018-10-26 02:08:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 390.18 Mbit/s
95th percentile per-packet one-way delay: 88.585 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 390.18 Mbit/s
95th percentile per-packet one-way delay: 88.585 ms
Loss rate: 0.61%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 01:17:23

End at: 2018-10-26 01:17:53

Local clock offset: 16.902 ms

Remote clock offset: 7.508 ms

Below is generated by plot.py at 2018-10-26 02:08:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 387.02 Mbit/s

95th percentile per-packet one-way delay: 88.692 ms

Loss rate: 0.61%

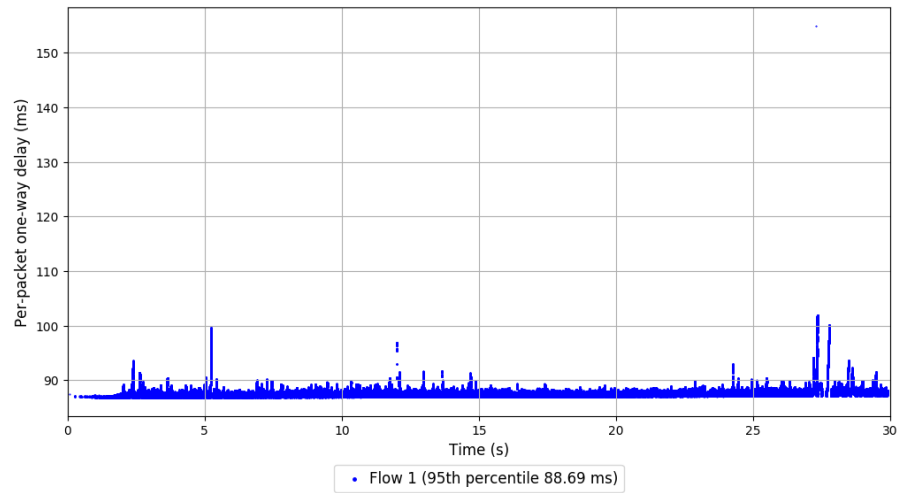
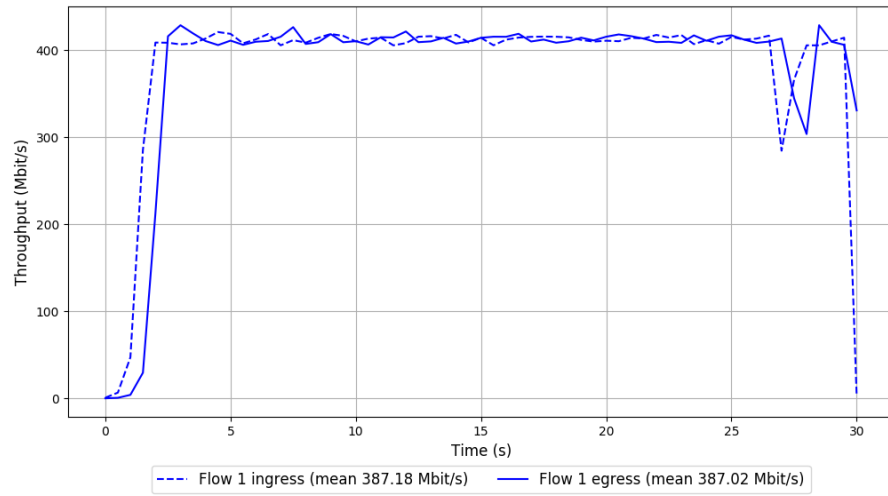
-- Flow 1:

Average throughput: 387.02 Mbit/s

95th percentile per-packet one-way delay: 88.692 ms

Loss rate: 0.61%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-10-25 23:57:08

End at: 2018-10-25 23:57:39

Local clock offset: 17.356 ms

Remote clock offset: 16.01 ms

Below is generated by plot.py at 2018-10-26 02:19:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 735.09 Mbit/s

95th percentile per-packet one-way delay: 163.711 ms

Loss rate: 4.86%

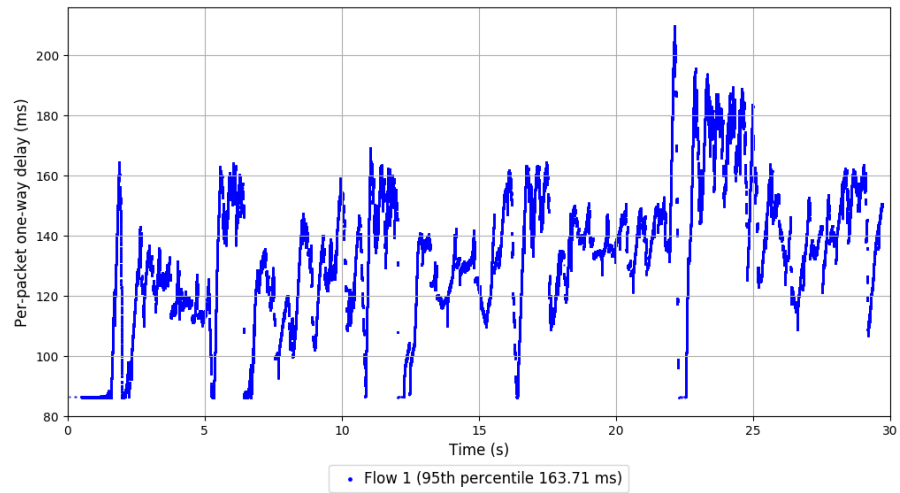
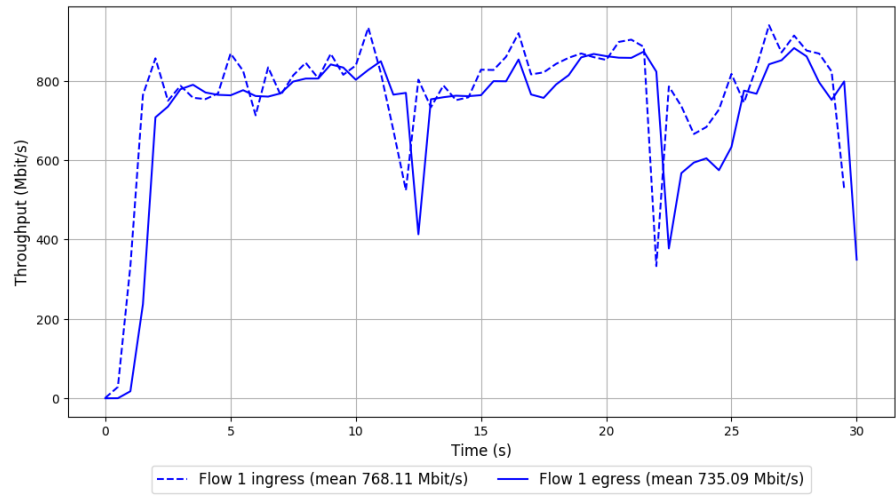
-- Flow 1:

Average throughput: 735.09 Mbit/s

95th percentile per-packet one-way delay: 163.711 ms

Loss rate: 4.86%

Run 1: Report of FillP — Data Link

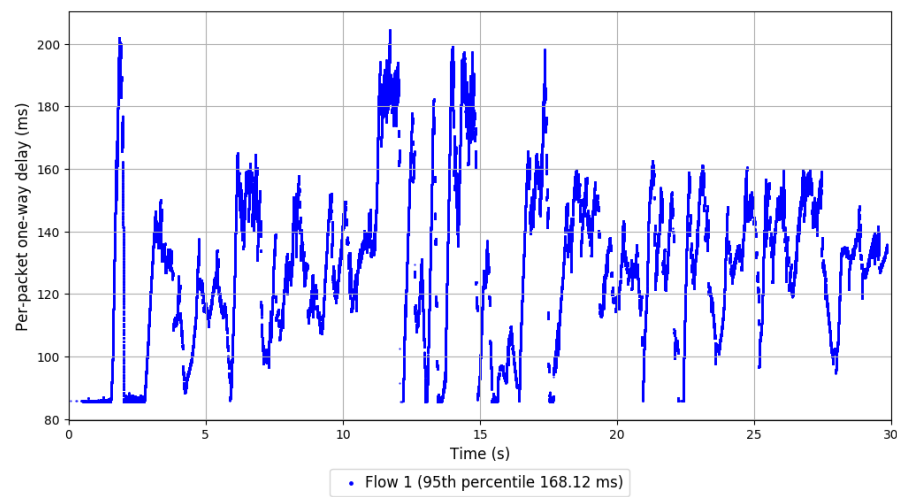
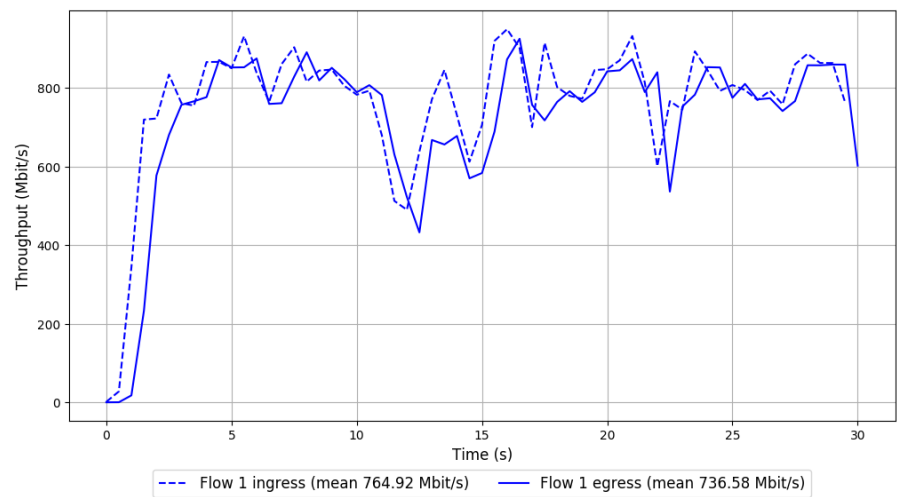


Run 2: Statistics of FillP

Start at: 2018-10-26 00:22:48
End at: 2018-10-26 00:23:18
Local clock offset: 25.166 ms
Remote clock offset: 23.833 ms

Below is generated by plot.py at 2018-10-26 02:22:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 736.58 Mbit/s
95th percentile per-packet one-way delay: 168.120 ms
Loss rate: 4.26%
-- Flow 1:
Average throughput: 736.58 Mbit/s
95th percentile per-packet one-way delay: 168.120 ms
Loss rate: 4.26%

Run 2: Report of FillP — Data Link

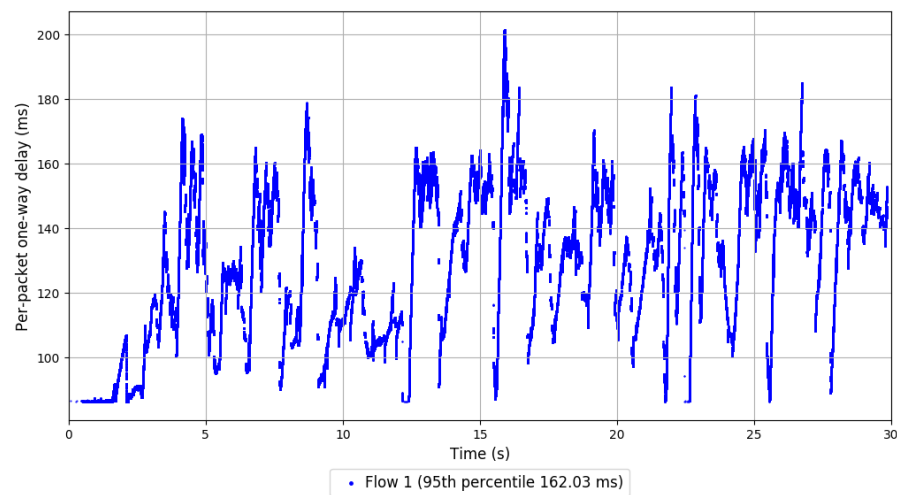
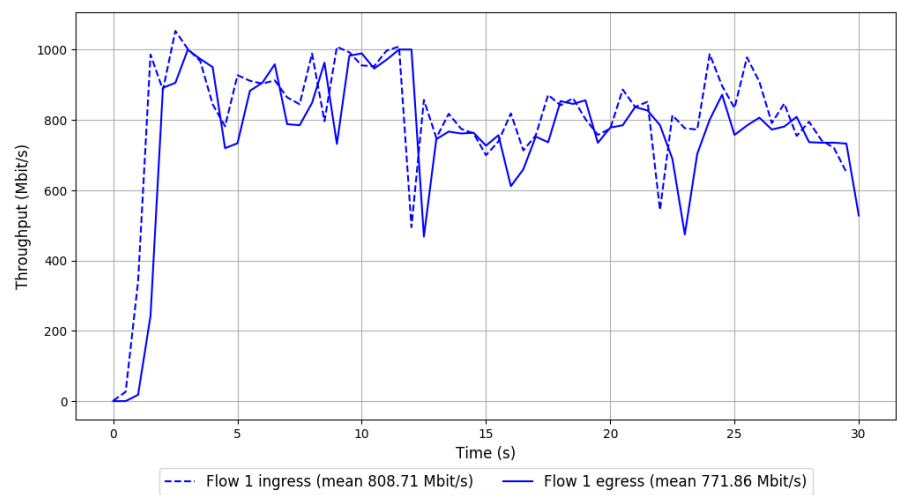


Run 3: Statistics of FillP

Start at: 2018-10-26 00:48:29
End at: 2018-10-26 00:48:59
Local clock offset: 21.632 ms
Remote clock offset: 17.243 ms

Below is generated by plot.py at 2018-10-26 02:23:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 771.86 Mbit/s
95th percentile per-packet one-way delay: 162.025 ms
Loss rate: 5.11%
-- Flow 1:
Average throughput: 771.86 Mbit/s
95th percentile per-packet one-way delay: 162.025 ms
Loss rate: 5.11%

Run 3: Report of FillP — Data Link

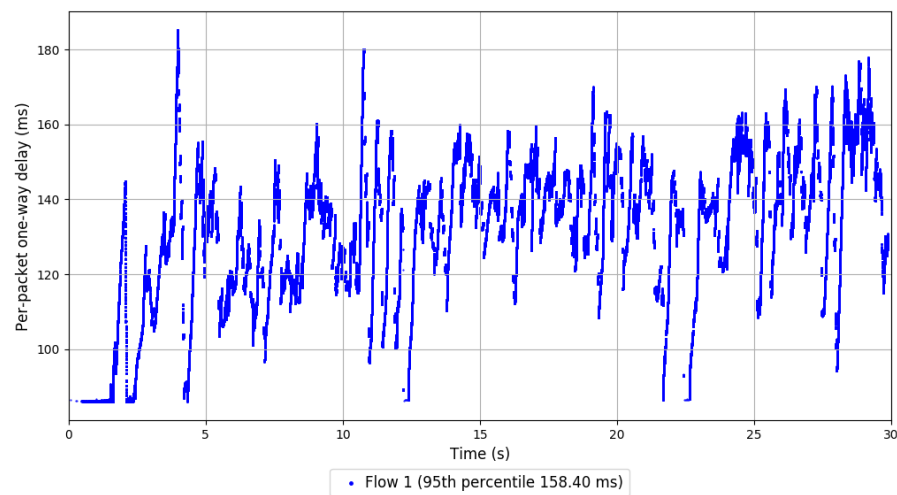
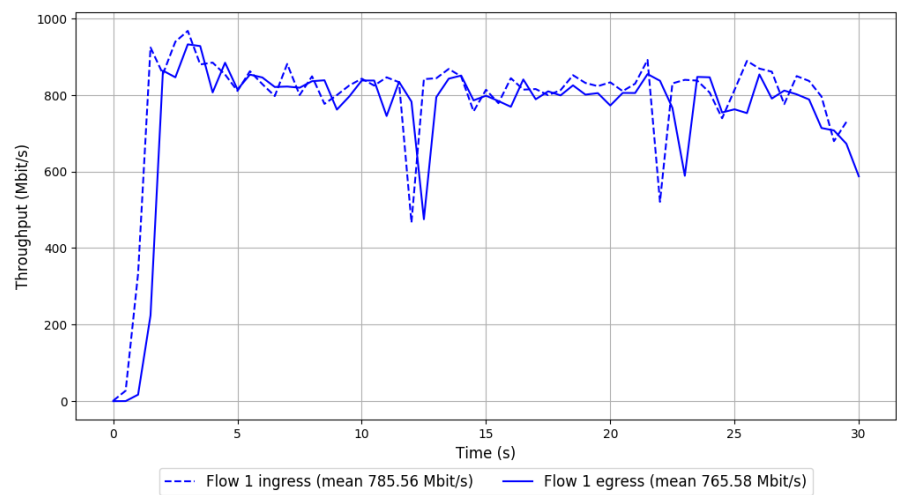


Run 4: Statistics of FillP

Start at: 2018-10-26 01:14:15
End at: 2018-10-26 01:14:45
Local clock offset: 21.203 ms
Remote clock offset: 10.213 ms

Below is generated by plot.py at 2018-10-26 02:23:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 765.58 Mbit/s
95th percentile per-packet one-way delay: 158.399 ms
Loss rate: 3.08%
-- Flow 1:
Average throughput: 765.58 Mbit/s
95th percentile per-packet one-way delay: 158.399 ms
Loss rate: 3.08%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-26 01:39:56

End at: 2018-10-26 01:40:26

Local clock offset: 9.28 ms

Remote clock offset: 3.884 ms

Below is generated by plot.py at 2018-10-26 02:26:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 823.00 Mbit/s

95th percentile per-packet one-way delay: 156.761 ms

Loss rate: 3.54%

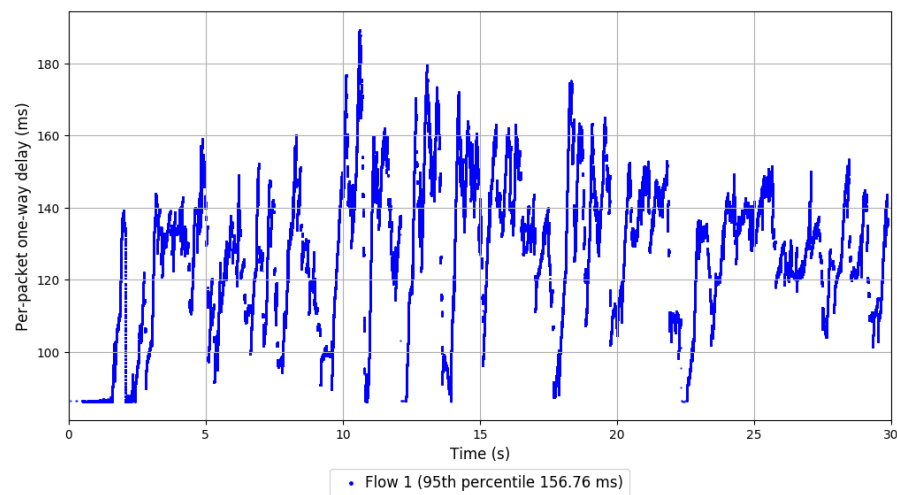
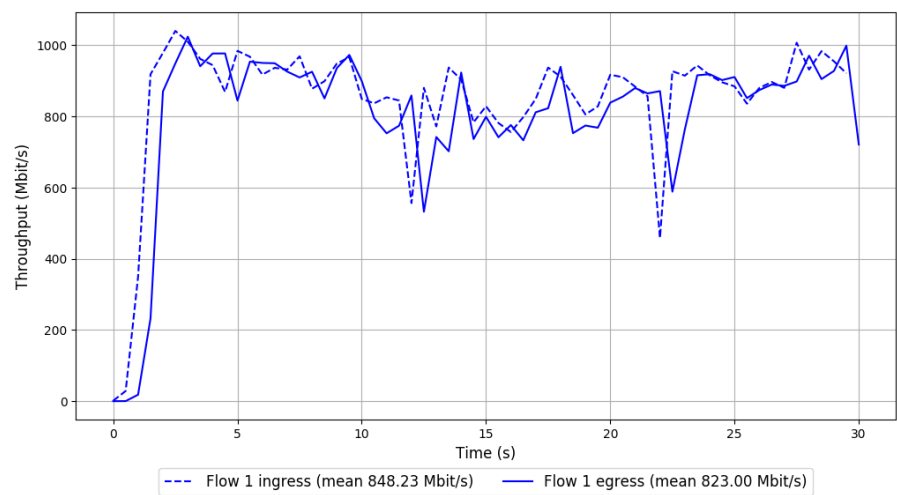
-- Flow 1:

Average throughput: 823.00 Mbit/s

95th percentile per-packet one-way delay: 156.761 ms

Loss rate: 3.54%

Run 5: Report of FillP — Data Link



Run 1: Statistics of Indigo

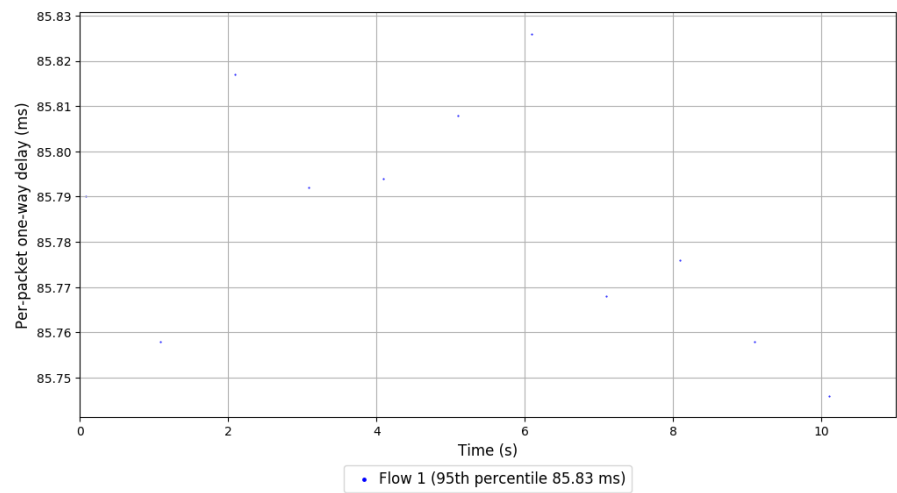
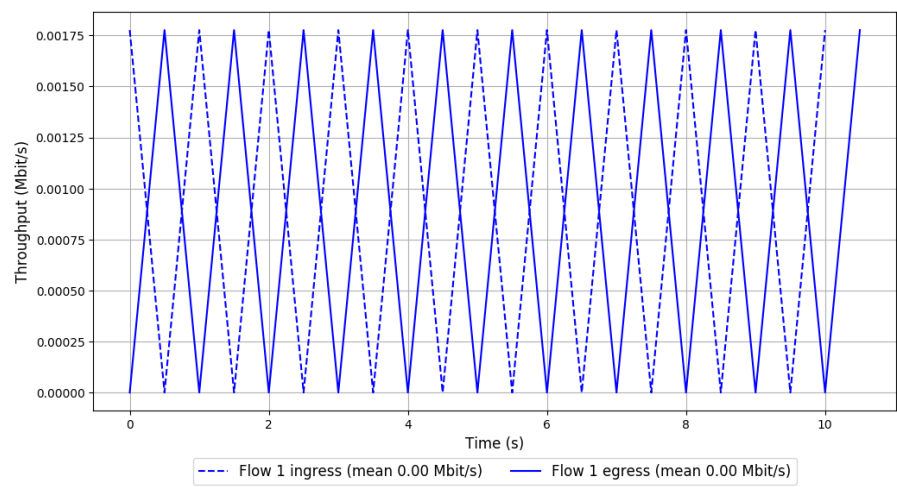
Start at: 2018-10-25 23:37:44

End at: 2018-10-25 23:38:14

Local clock offset: 6.965 ms

Remote clock offset: 6.549 ms

Run 1: Report of Indigo — Data Link

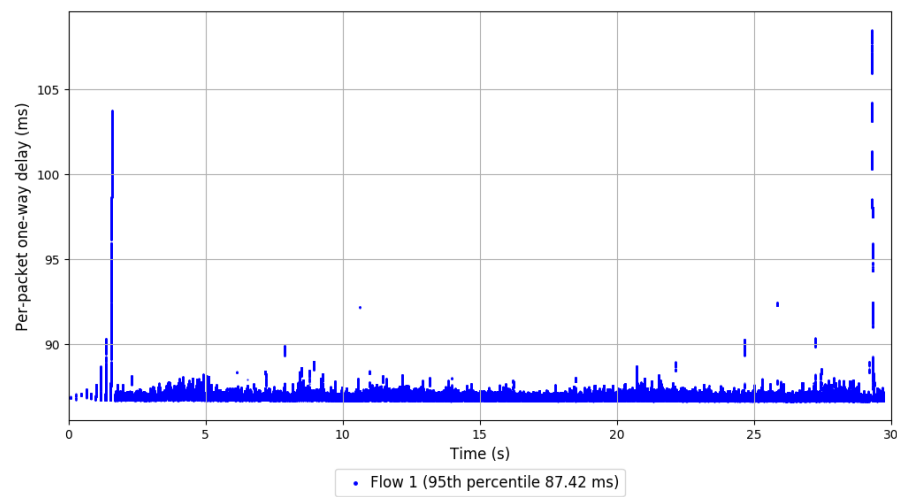
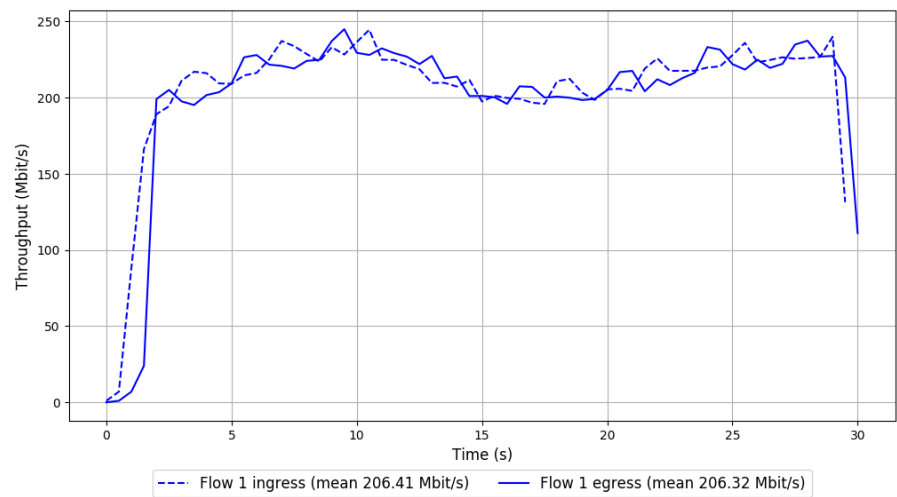


Run 2: Statistics of Indigo

Start at: 2018-10-26 00:02:51
End at: 2018-10-26 00:03:21
Local clock offset: 25.897 ms
Remote clock offset: 23.106 ms

Below is generated by plot.py at 2018-10-26 02:26:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 206.32 Mbit/s
95th percentile per-packet one-way delay: 87.424 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 206.32 Mbit/s
95th percentile per-packet one-way delay: 87.424 ms
Loss rate: 0.61%

Run 2: Report of Indigo — Data Link

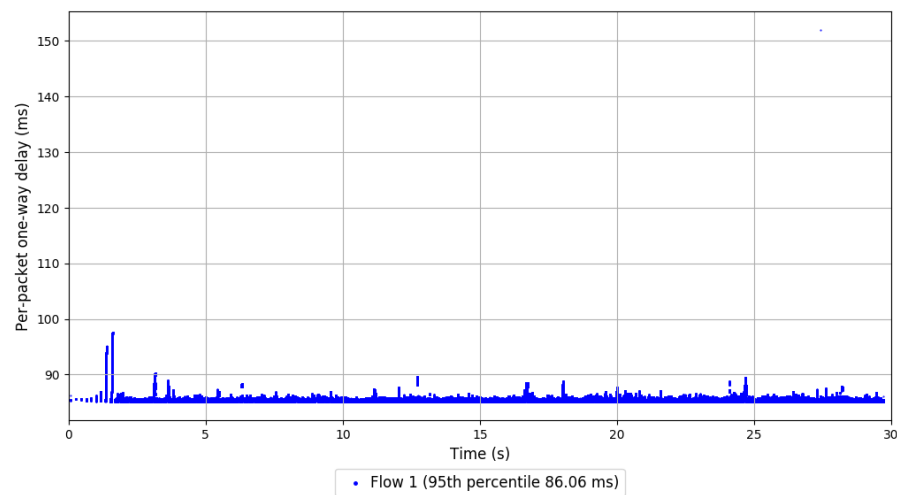
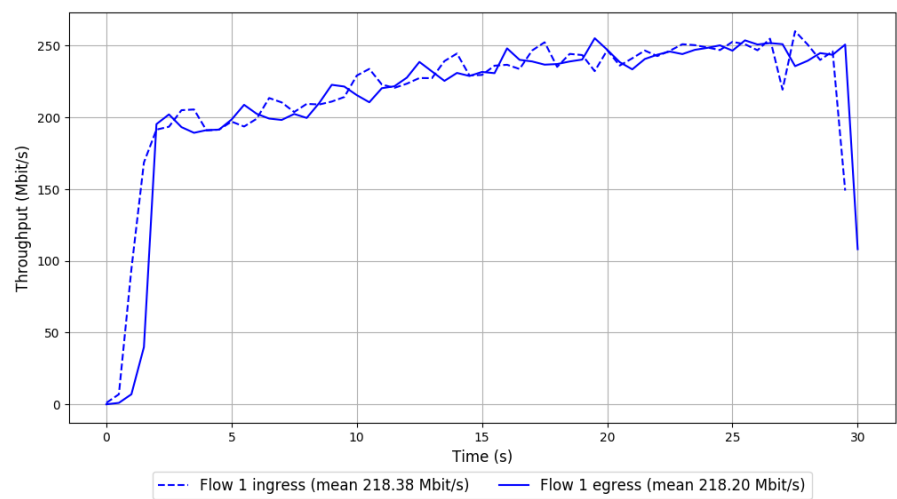


Run 3: Statistics of Indigo

Start at: 2018-10-26 00:28:31
End at: 2018-10-26 00:29:01
Local clock offset: 30.461 ms
Remote clock offset: 28.717 ms

Below is generated by plot.py at 2018-10-26 02:26:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 218.20 Mbit/s
95th percentile per-packet one-way delay: 86.064 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 218.20 Mbit/s
95th percentile per-packet one-way delay: 86.064 ms
Loss rate: 0.66%

Run 3: Report of Indigo — Data Link

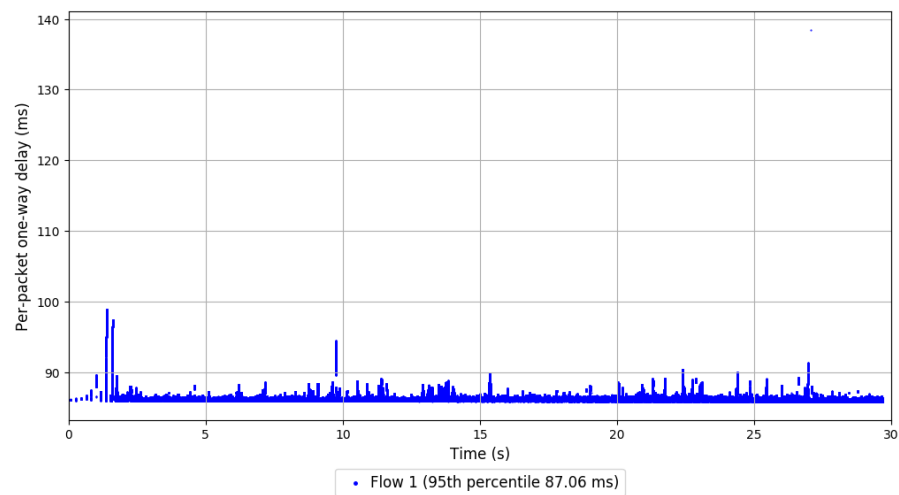
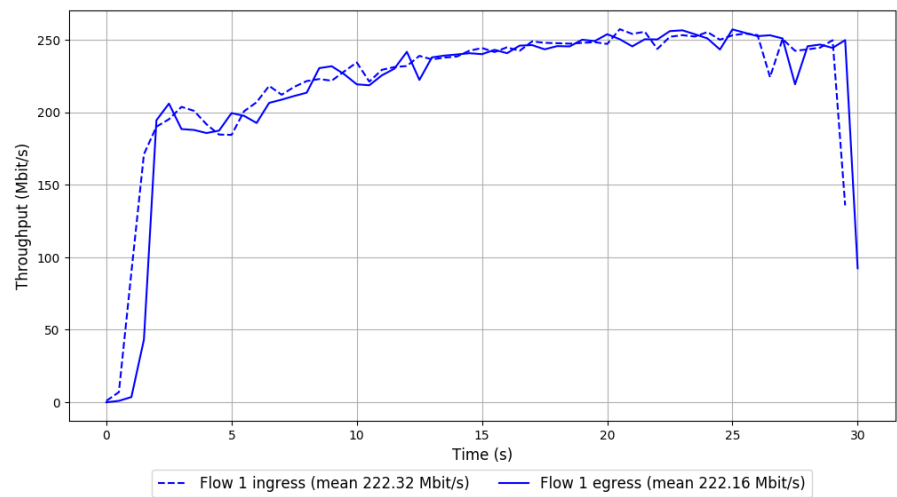


Run 4: Statistics of Indigo

Start at: 2018-10-26 00:54:14
End at: 2018-10-26 00:54:44
Local clock offset: 17.005 ms
Remote clock offset: 11.652 ms

Below is generated by plot.py at 2018-10-26 02:26:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 222.16 Mbit/s
95th percentile per-packet one-way delay: 87.061 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 222.16 Mbit/s
95th percentile per-packet one-way delay: 87.061 ms
Loss rate: 0.65%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-26 01:19:59

End at: 2018-10-26 01:20:29

Local clock offset: 13.16 ms

Remote clock offset: 5.906 ms

Below is generated by plot.py at 2018-10-26 02:26:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 224.41 Mbit/s

95th percentile per-packet one-way delay: 87.195 ms

Loss rate: 0.60%

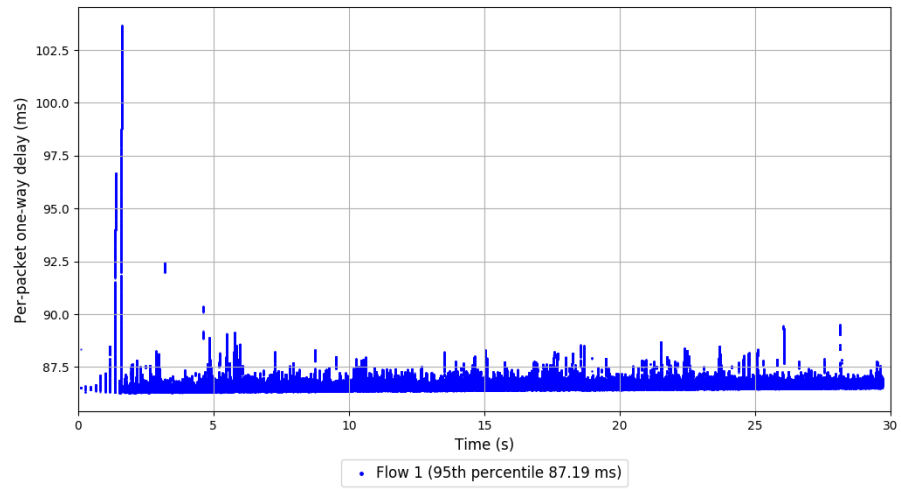
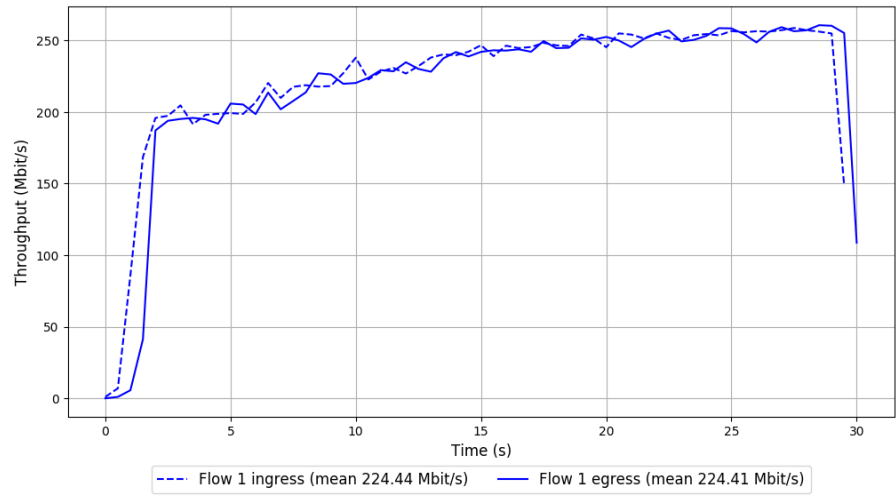
-- Flow 1:

Average throughput: 224.41 Mbit/s

95th percentile per-packet one-way delay: 87.195 ms

Loss rate: 0.60%

Run 5: Report of Indigo — Data Link

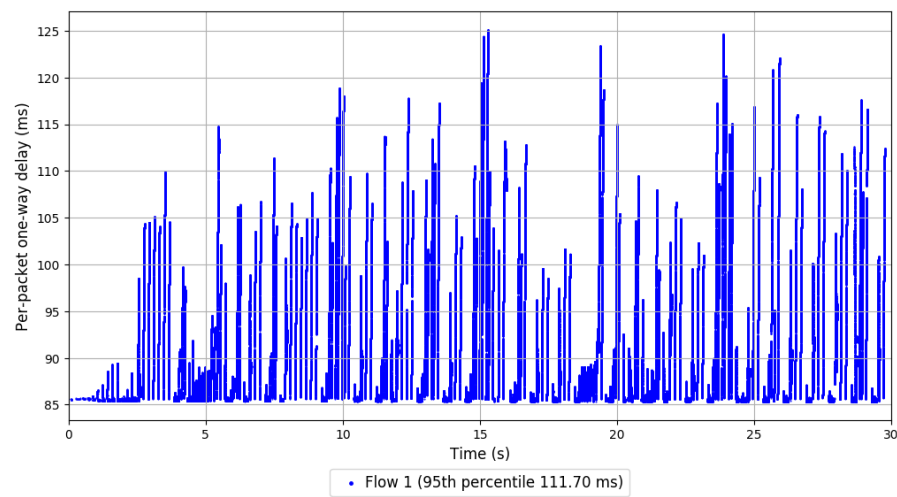
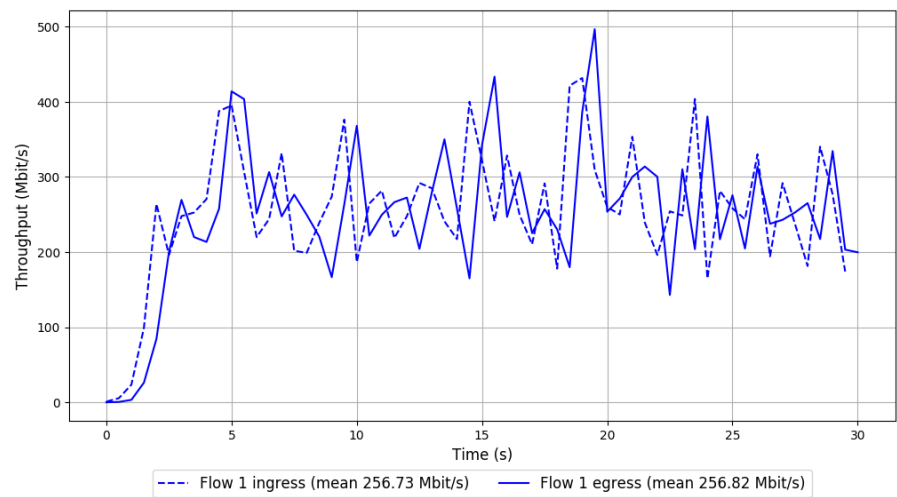


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-25 23:46:10
End at: 2018-10-25 23:46:41
Local clock offset: 14.307 ms
Remote clock offset: 13.566 ms

Below is generated by plot.py at 2018-10-26 02:26:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 256.82 Mbit/s
95th percentile per-packet one-way delay: 111.705 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 256.82 Mbit/s
95th percentile per-packet one-way delay: 111.705 ms
Loss rate: 0.51%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-26 00:11:42

End at: 2018-10-26 00:12:12

Local clock offset: 22.721 ms

Remote clock offset: 20.66 ms

Below is generated by plot.py at 2018-10-26 02:26:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 248.17 Mbit/s

95th percentile per-packet one-way delay: 108.126 ms

Loss rate: 0.46%

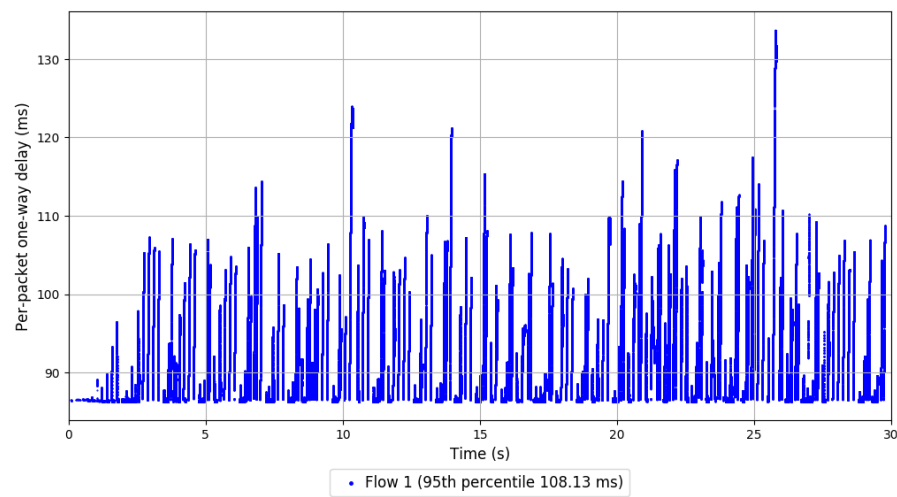
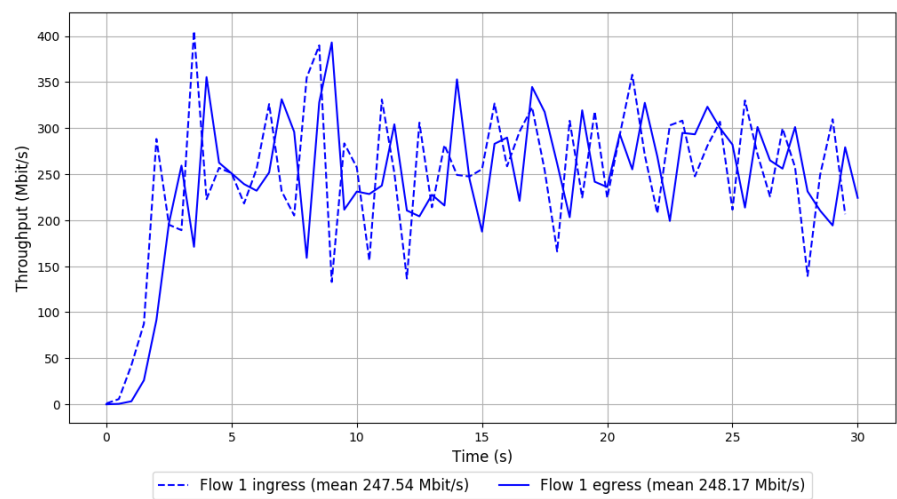
-- Flow 1:

Average throughput: 248.17 Mbit/s

95th percentile per-packet one-way delay: 108.126 ms

Loss rate: 0.46%

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

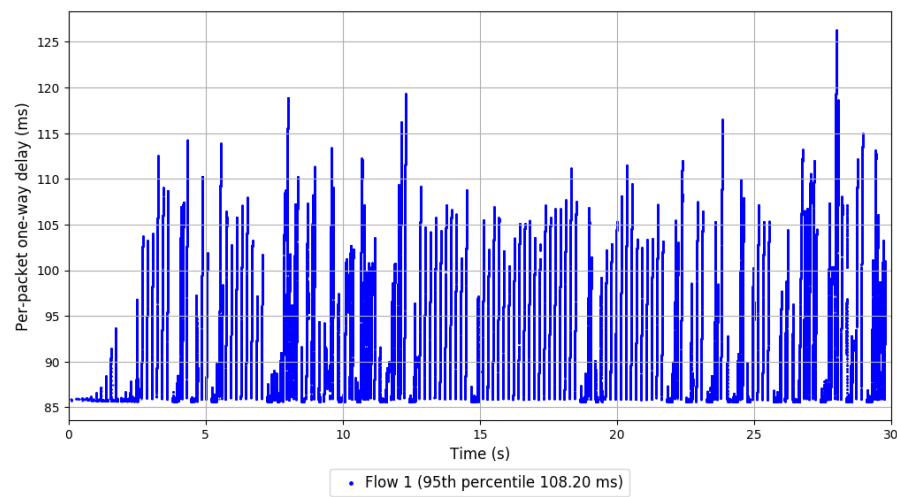
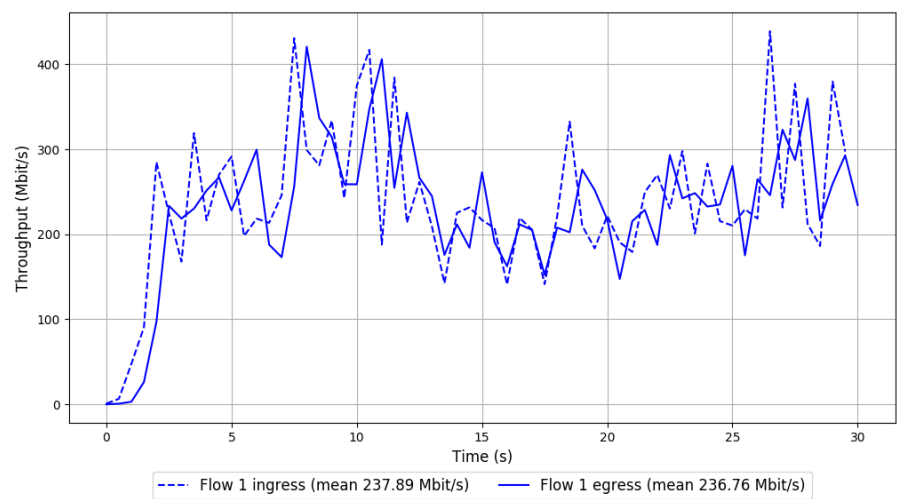


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-26 00:37:25
End at: 2018-10-26 00:37:55
Local clock offset: 41.086 ms
Remote clock offset: 38.099 ms

Below is generated by plot.py at 2018-10-26 02:26:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 236.76 Mbit/s
95th percentile per-packet one-way delay: 108.196 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 236.76 Mbit/s
95th percentile per-packet one-way delay: 108.196 ms
Loss rate: 1.05%

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



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-26 01:03:04

End at: 2018-10-26 01:03:34

Local clock offset: 17.933 ms

Remote clock offset: 9.255 ms

Below is generated by plot.py at 2018-10-26 02:26:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 252.58 Mbit/s

95th percentile per-packet one-way delay: 107.253 ms

Loss rate: 0.83%

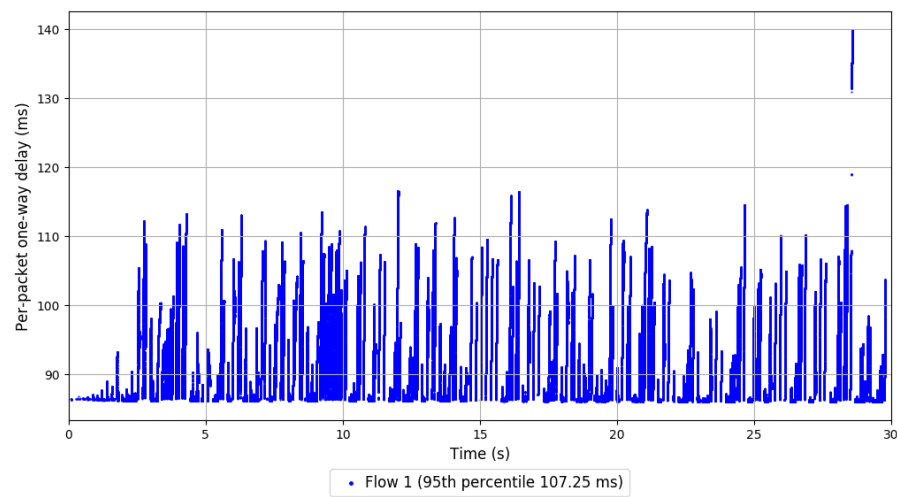
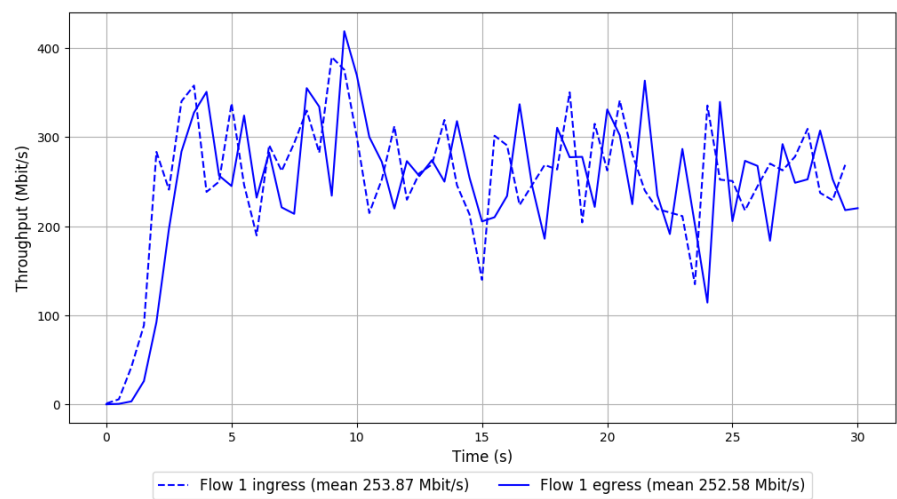
-- Flow 1:

Average throughput: 252.58 Mbit/s

95th percentile per-packet one-way delay: 107.253 ms

Loss rate: 0.83%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-26 01:28:46

End at: 2018-10-26 01:29:16

Local clock offset: 7.782 ms

Remote clock offset: 3.774 ms

Below is generated by plot.py at 2018-10-26 02:26:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 256.76 Mbit/s

95th percentile per-packet one-way delay: 110.150 ms

Loss rate: 0.82%

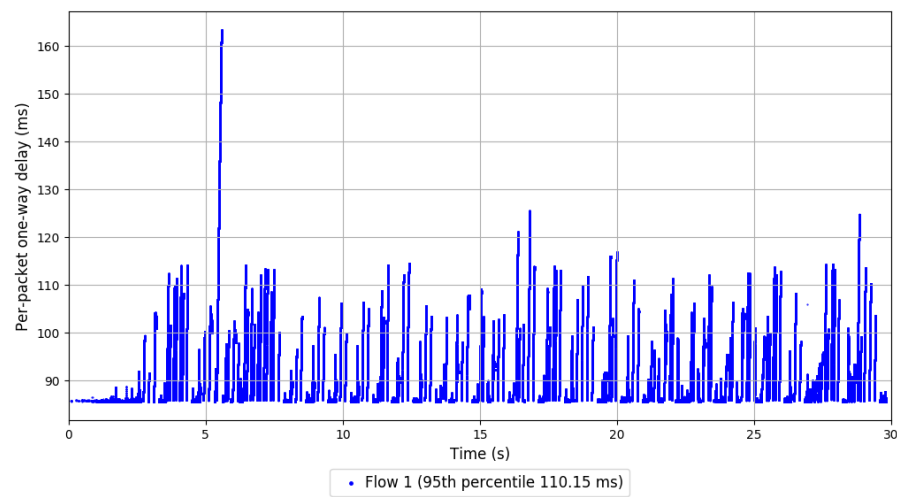
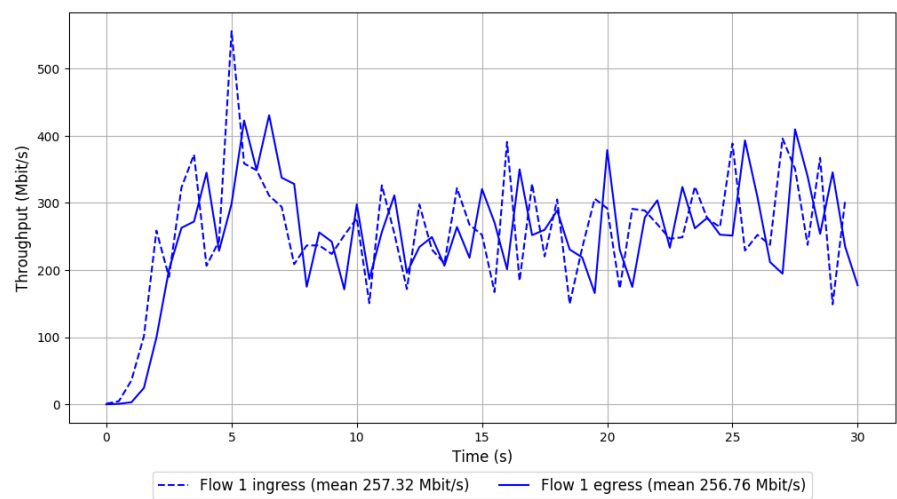
-- Flow 1:

Average throughput: 256.76 Mbit/s

95th percentile per-packet one-way delay: 110.150 ms

Loss rate: 0.82%

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

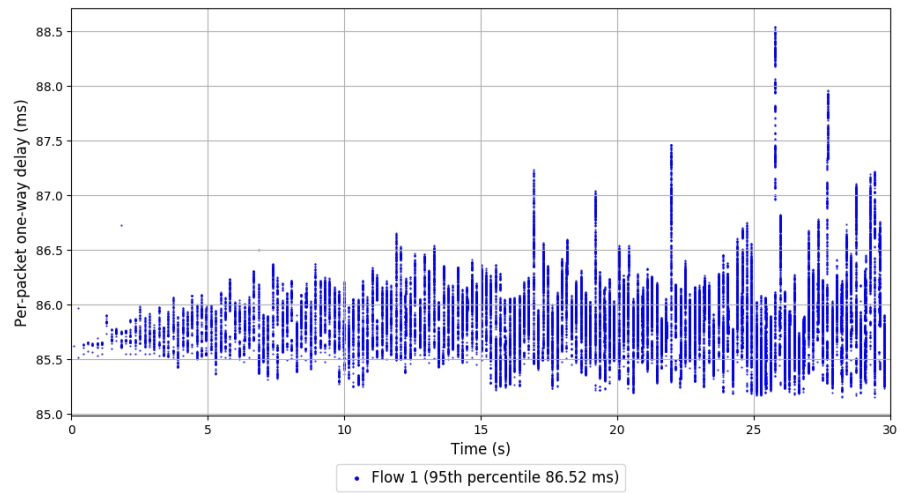
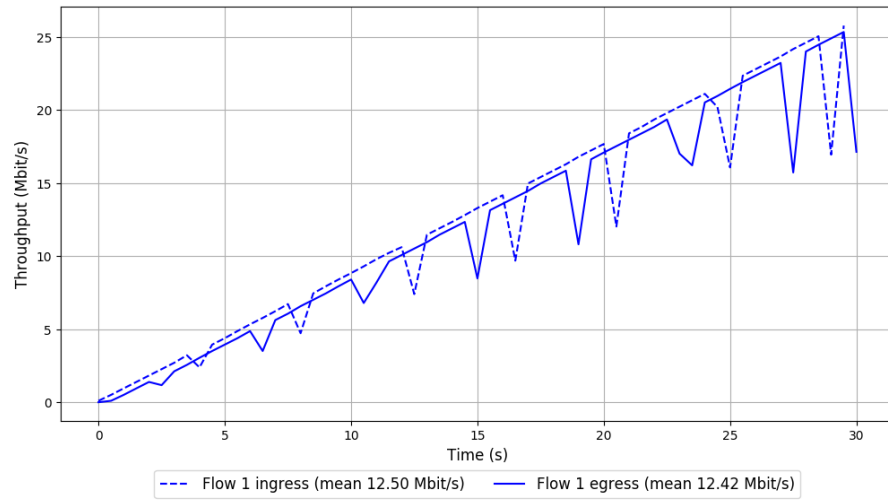



```
Run 1: Statistics of LEDBAT

Start at: 2018-10-25 23:38:51
End at: 2018-10-25 23:39:21
Local clock offset: 8.942 ms
Remote clock offset: 8.899 ms

# Below is generated by plot.py at 2018-10-26 02:26:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.42 Mbit/s
95th percentile per-packet one-way delay: 86.524 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 12.42 Mbit/s
95th percentile per-packet one-way delay: 86.524 ms
Loss rate: 1.16%
```

Run 1: Report of LEDBAT — Data Link

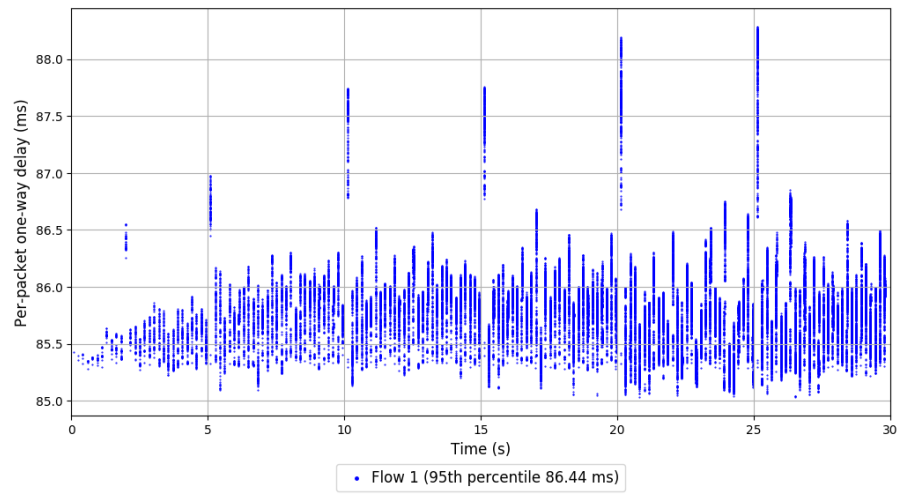
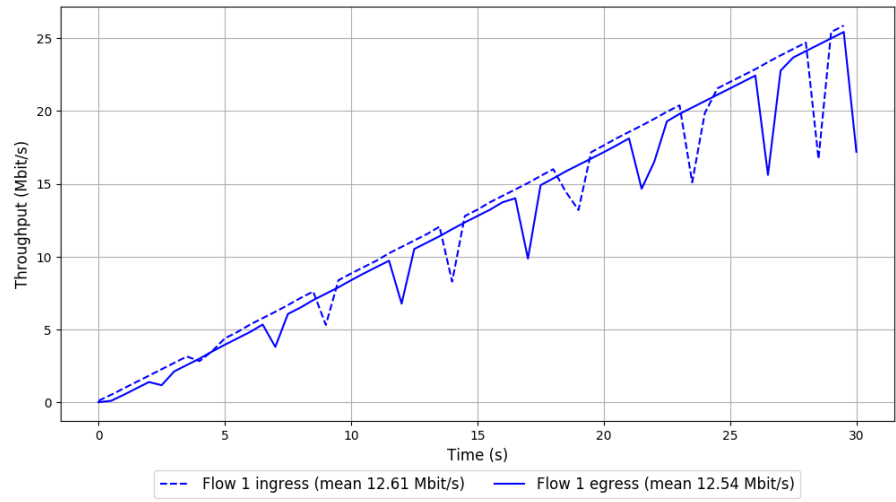


Run 2: Statistics of LEDBAT

Start at: 2018-10-26 00:04:19
End at: 2018-10-26 00:04:49
Local clock offset: 26.509 ms
Remote clock offset: 25.111 ms

Below is generated by plot.py at 2018-10-26 02:26:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 86.442 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 86.442 ms
Loss rate: 1.15%

Run 2: Report of LEDBAT — Data Link

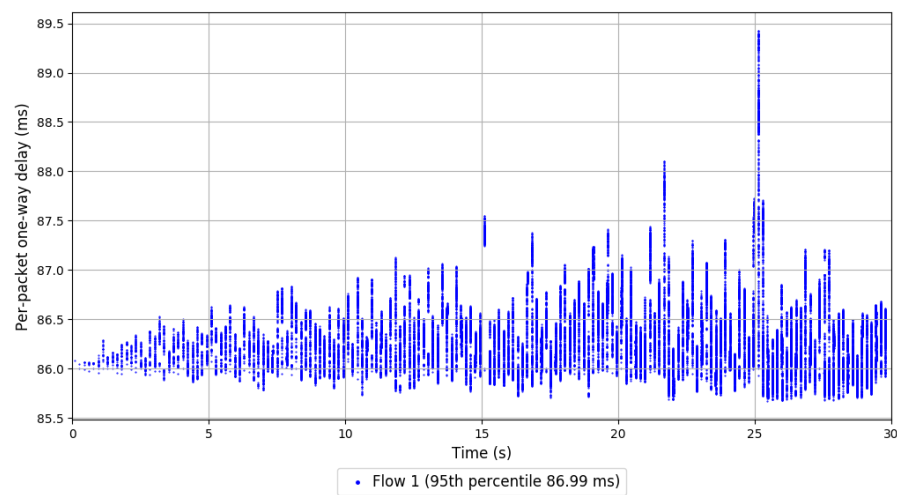
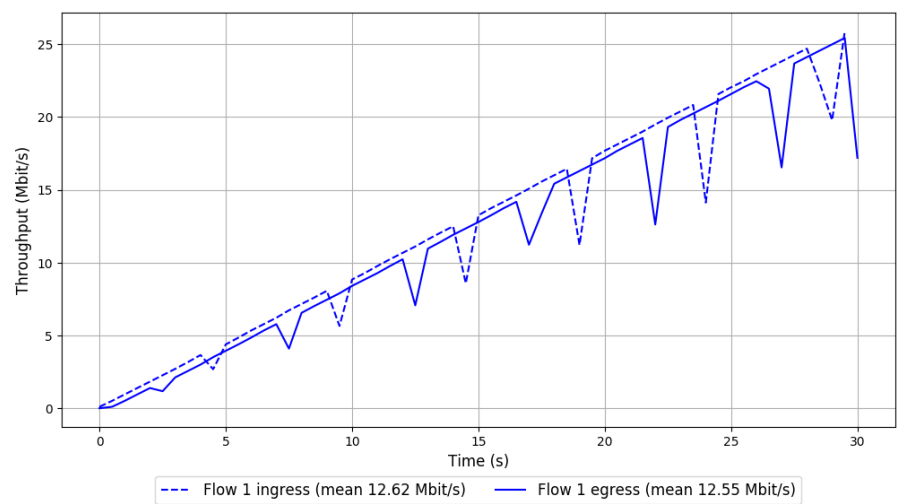


Run 3: Statistics of LEDBAT

Start at: 2018-10-26 00:30:00
End at: 2018-10-26 00:30:30
Local clock offset: 32.694 ms
Remote clock offset: 30.319 ms

Below is generated by plot.py at 2018-10-26 02:26:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 86.993 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 86.993 ms
Loss rate: 1.15%

Run 3: Report of LEDBAT — Data Link

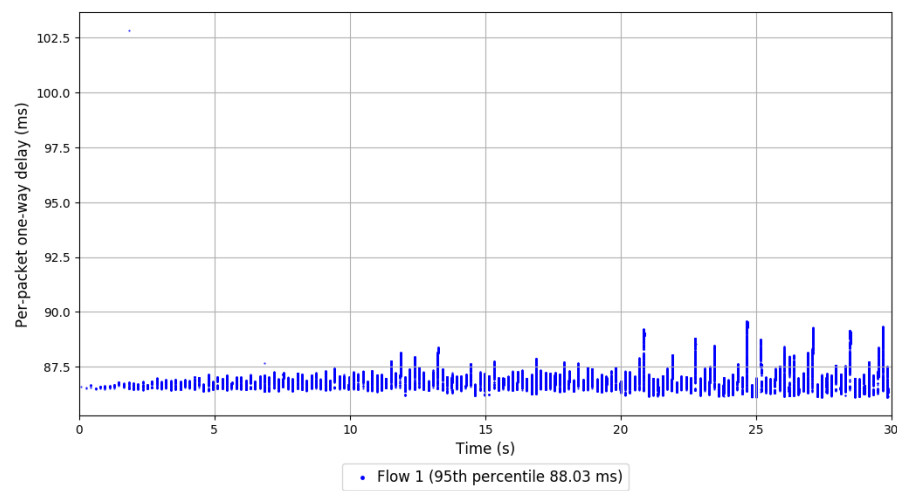
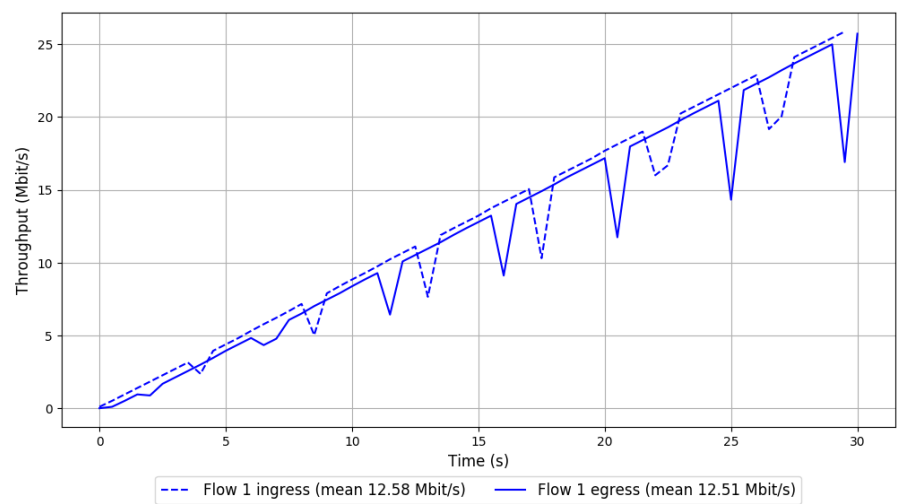


Run 4: Statistics of LEDBAT

Start at: 2018-10-26 00:55:43
End at: 2018-10-26 00:56:13
Local clock offset: 16.973 ms
Remote clock offset: 10.912 ms

Below is generated by plot.py at 2018-10-26 02:26:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 88.031 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 88.031 ms
Loss rate: 1.15%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-26 01:21:29

End at: 2018-10-26 01:21:59

Local clock offset: 11.906 ms

Remote clock offset: 5.358 ms

Below is generated by plot.py at 2018-10-26 02:26:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.52 Mbit/s

95th percentile per-packet one-way delay: 87.919 ms

Loss rate: 1.15%

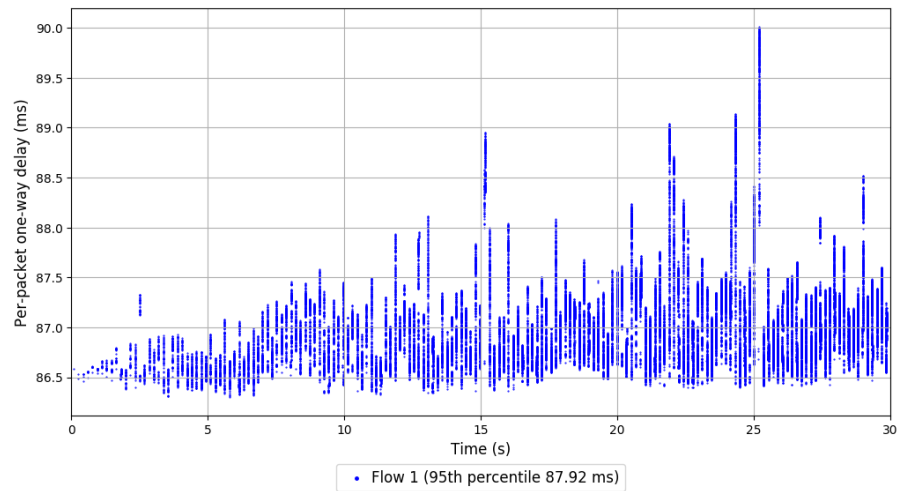
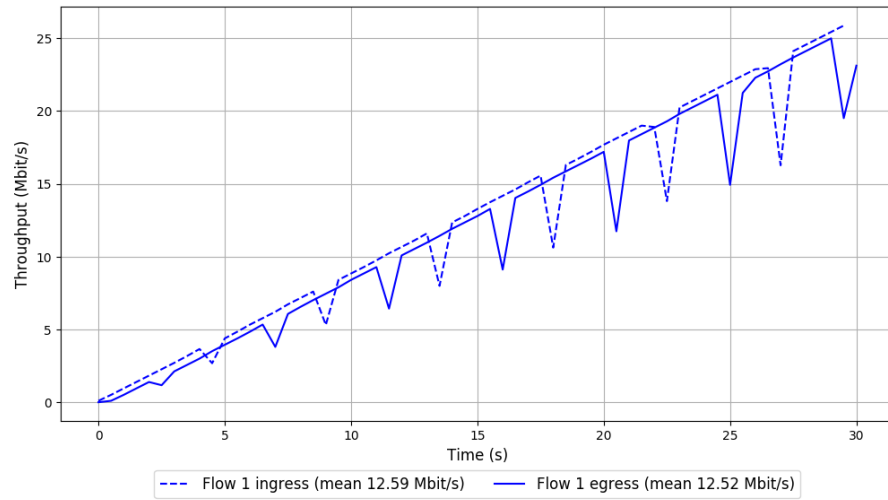
-- Flow 1:

Average throughput: 12.52 Mbit/s

95th percentile per-packet one-way delay: 87.919 ms

Loss rate: 1.15%

Run 5: Report of LEDBAT — Data Link

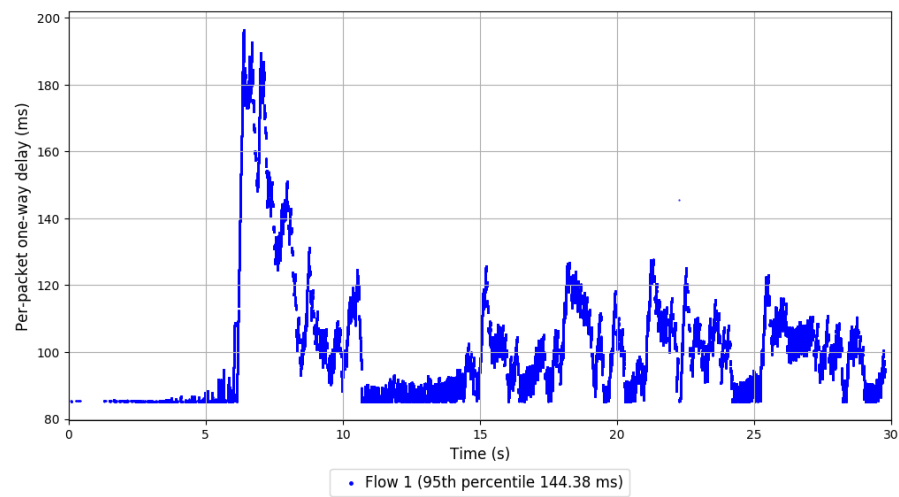
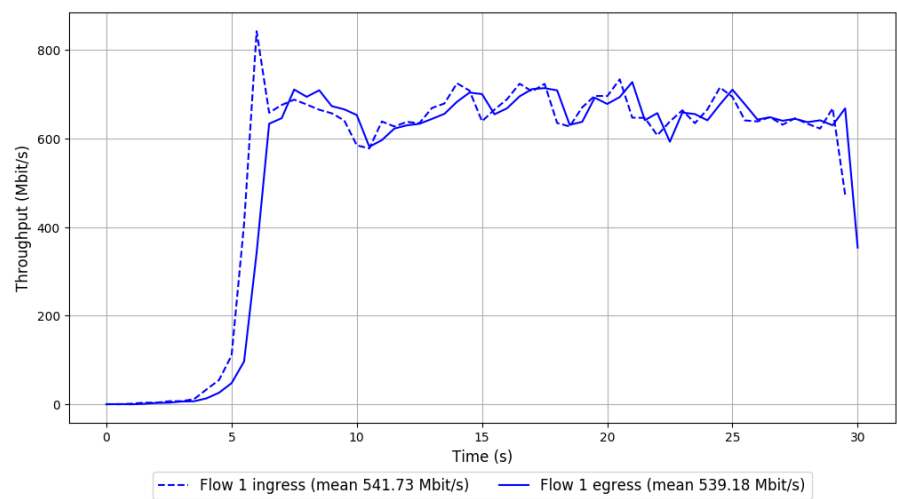


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-25 23:41:29
End at: 2018-10-25 23:41:59
Local clock offset: 9.397 ms
Remote clock offset: 9.411 ms

# Below is generated by plot.py at 2018-10-26 02:34:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 539.18 Mbit/s
95th percentile per-packet one-way delay: 144.382 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 539.18 Mbit/s
95th percentile per-packet one-way delay: 144.382 ms
Loss rate: 1.03%
```

Run 1: Report of Indigo-Muses — Data Link

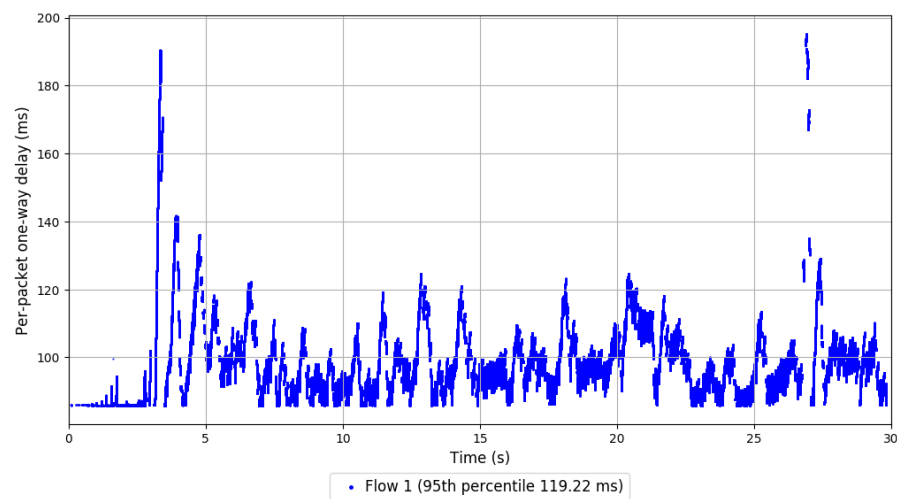
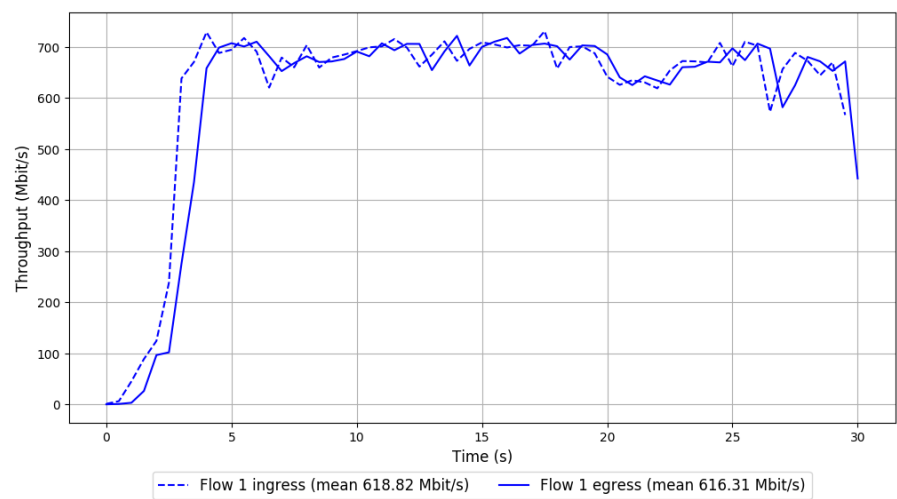


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 00:06:56
End at: 2018-10-26 00:07:26
Local clock offset: 27.201 ms
Remote clock offset: 25.353 ms

Below is generated by plot.py at 2018-10-26 02:35:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 616.31 Mbit/s
95th percentile per-packet one-way delay: 119.219 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 616.31 Mbit/s
95th percentile per-packet one-way delay: 119.219 ms
Loss rate: 0.98%

Run 2: Report of Indigo-Muses — Data Link

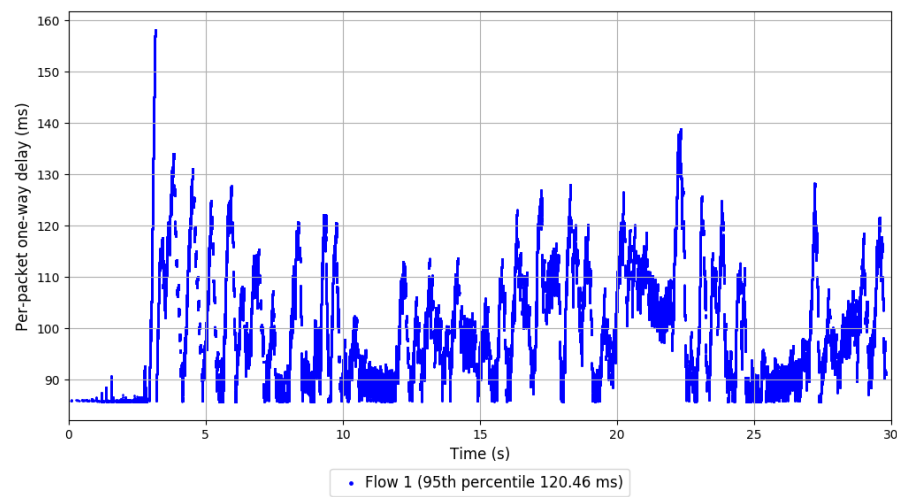
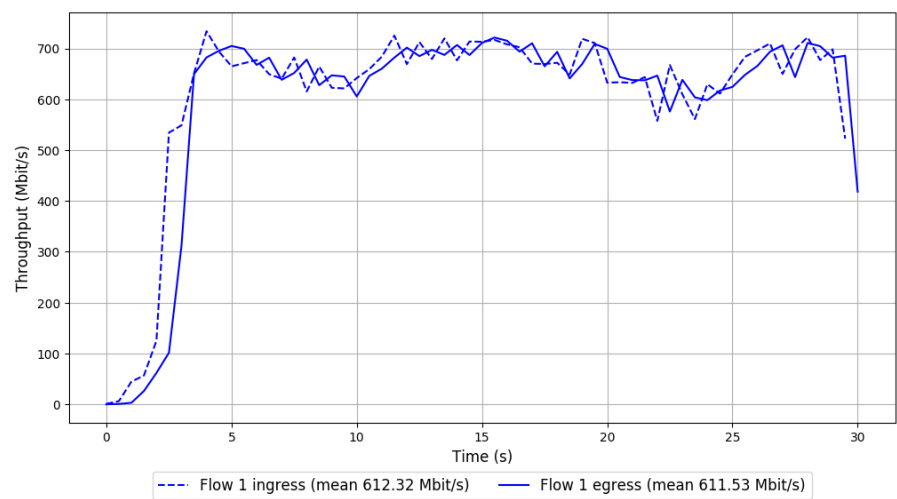


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 00:32:38
End at: 2018-10-26 00:33:08
Local clock offset: 35.401 ms
Remote clock offset: 32.792 ms

Below is generated by plot.py at 2018-10-26 02:35:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 611.53 Mbit/s
95th percentile per-packet one-way delay: 120.463 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 611.53 Mbit/s
95th percentile per-packet one-way delay: 120.463 ms
Loss rate: 0.71%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 00:58:21

End at: 2018-10-26 00:58:52

Local clock offset: 15.529 ms

Remote clock offset: 9.934 ms

Below is generated by plot.py at 2018-10-26 02:35:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 607.95 Mbit/s

95th percentile per-packet one-way delay: 113.640 ms

Loss rate: 0.89%

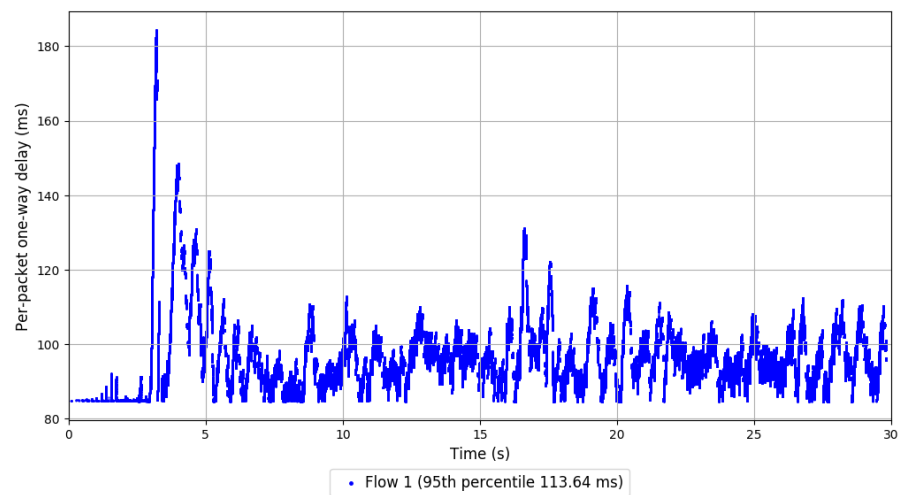
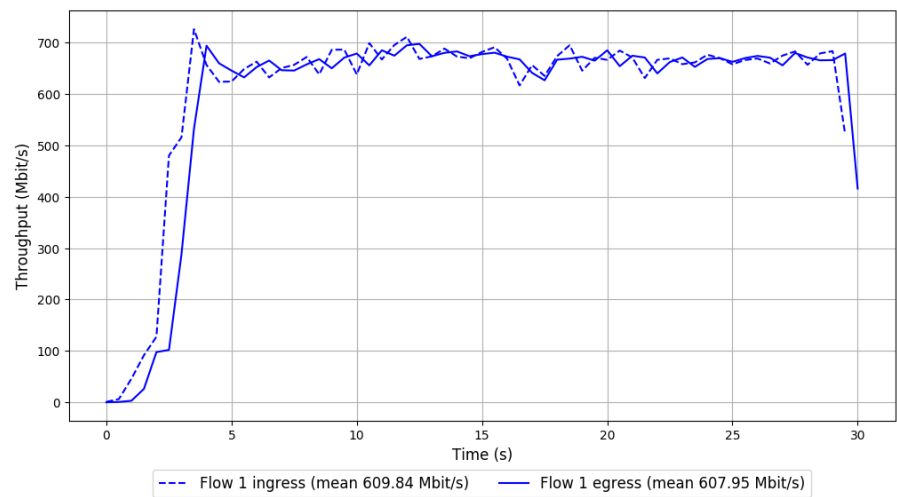
-- Flow 1:

Average throughput: 607.95 Mbit/s

95th percentile per-packet one-way delay: 113.640 ms

Loss rate: 0.89%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 01:24:06

End at: 2018-10-26 01:24:36

Local clock offset: 10.139 ms

Remote clock offset: 4.467 ms

Below is generated by plot.py at 2018-10-26 02:35:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 602.44 Mbit/s

95th percentile per-packet one-way delay: 117.777 ms

Loss rate: 0.73%

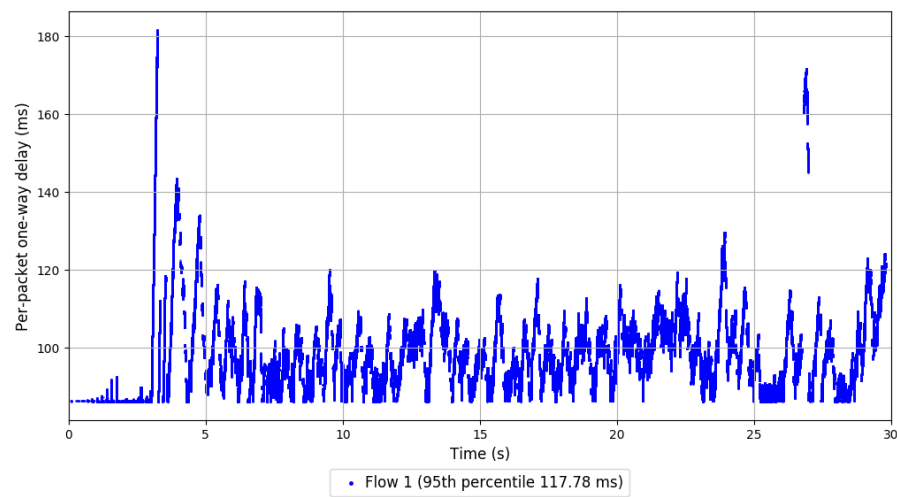
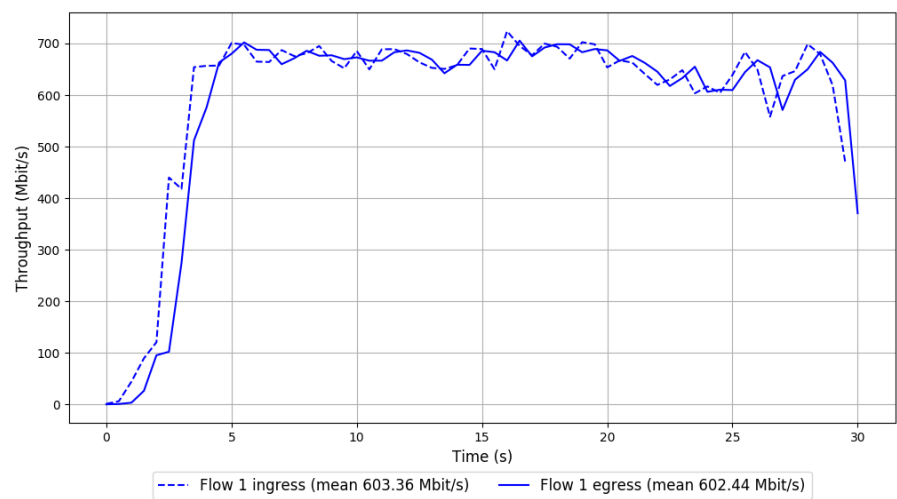
-- Flow 1:

Average throughput: 602.44 Mbit/s

95th percentile per-packet one-way delay: 117.777 ms

Loss rate: 0.73%

Run 5: Report of Indigo-Muses — Data Link

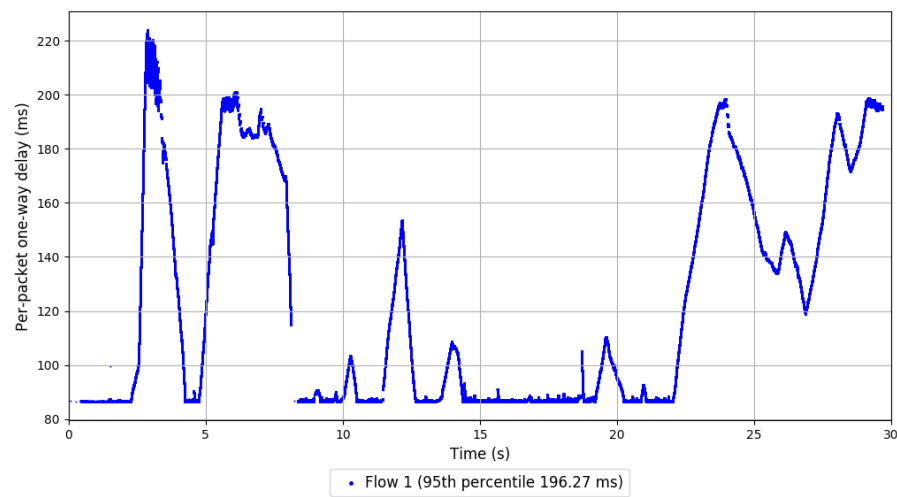
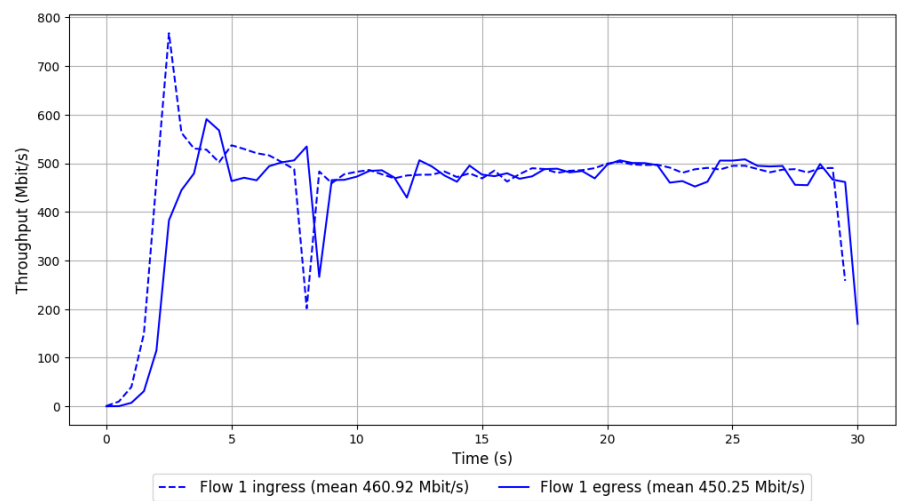


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-25 23:50:09
End at: 2018-10-25 23:50:39
Local clock offset: 16.992 ms
Remote clock offset: 15.375 ms

# Below is generated by plot.py at 2018-10-26 02:42:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 450.25 Mbit/s
95th percentile per-packet one-way delay: 196.272 ms
Loss rate: 2.88%
-- Flow 1:
Average throughput: 450.25 Mbit/s
95th percentile per-packet one-way delay: 196.272 ms
Loss rate: 2.88%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 00:15:43

End at: 2018-10-26 00:16:13

Local clock offset: 21.572 ms

Remote clock offset: 20.307 ms

Below is generated by plot.py at 2018-10-26 02:42:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 405.59 Mbit/s

95th percentile per-packet one-way delay: 182.143 ms

Loss rate: 1.68%

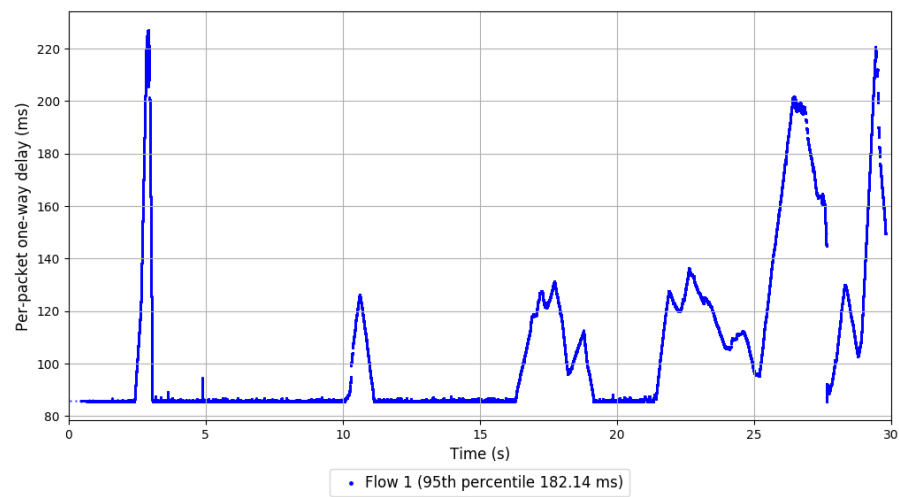
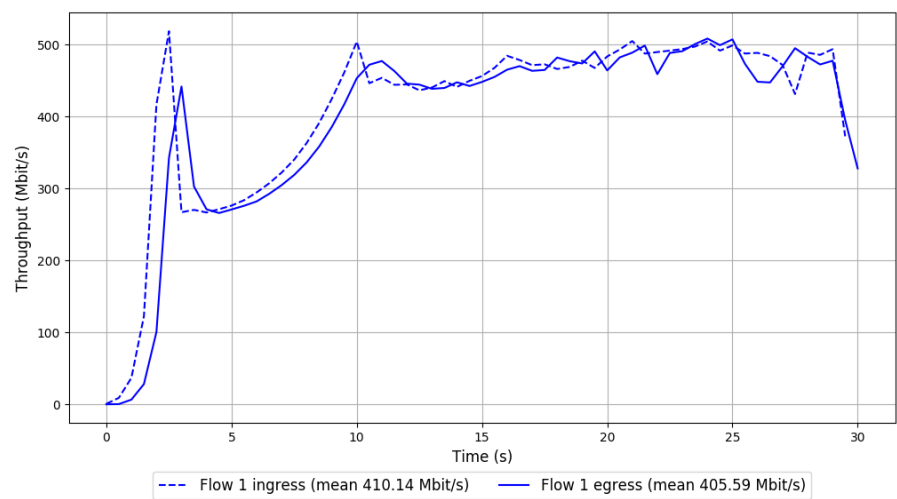
-- Flow 1:

Average throughput: 405.59 Mbit/s

95th percentile per-packet one-way delay: 182.143 ms

Loss rate: 1.68%

Run 2: Report of PCC-Allegro — Data Link

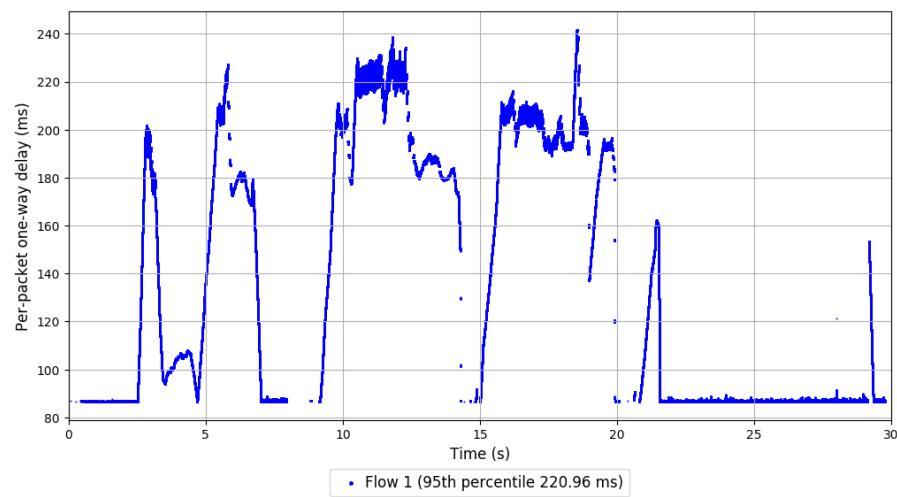
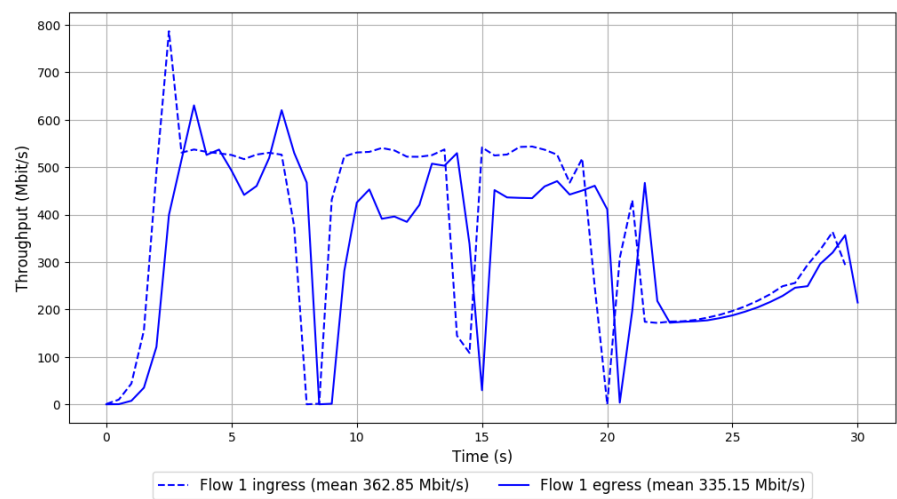


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 00:41:26
End at: 2018-10-26 00:41:56
Local clock offset: 38.594 ms
Remote clock offset: 34.861 ms

Below is generated by plot.py at 2018-10-26 02:42:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 335.15 Mbit/s
95th percentile per-packet one-way delay: 220.963 ms
Loss rate: 8.17%
-- Flow 1:
Average throughput: 335.15 Mbit/s
95th percentile per-packet one-way delay: 220.963 ms
Loss rate: 8.17%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 01:07:05

End at: 2018-10-26 01:07:35

Local clock offset: 18.713 ms

Remote clock offset: 9.39 ms

Below is generated by plot.py at 2018-10-26 02:51:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 416.61 Mbit/s

95th percentile per-packet one-way delay: 218.643 ms

Loss rate: 9.62%

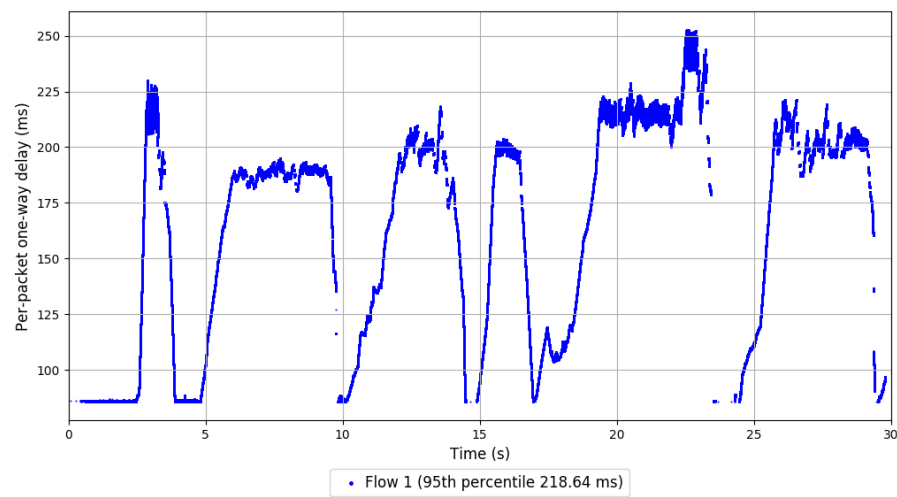
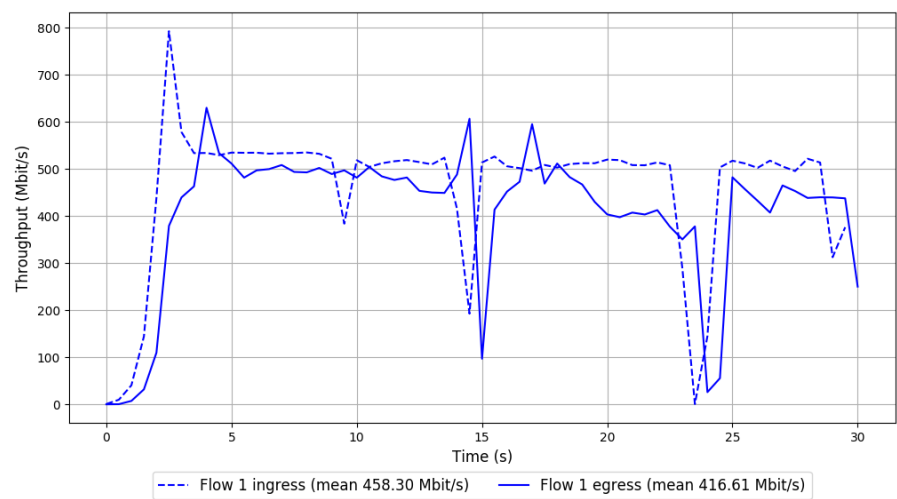
-- Flow 1:

Average throughput: 416.61 Mbit/s

95th percentile per-packet one-way delay: 218.643 ms

Loss rate: 9.62%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 01:32:48

End at: 2018-10-26 01:33:18

Local clock offset: 8.332 ms

Remote clock offset: 3.556 ms

Below is generated by plot.py at 2018-10-26 02:52:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 423.00 Mbit/s

95th percentile per-packet one-way delay: 193.867 ms

Loss rate: 3.31%

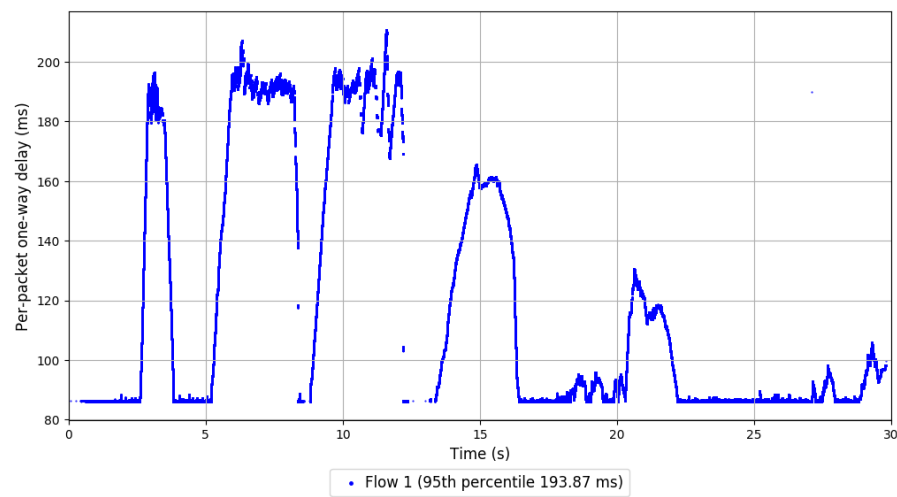
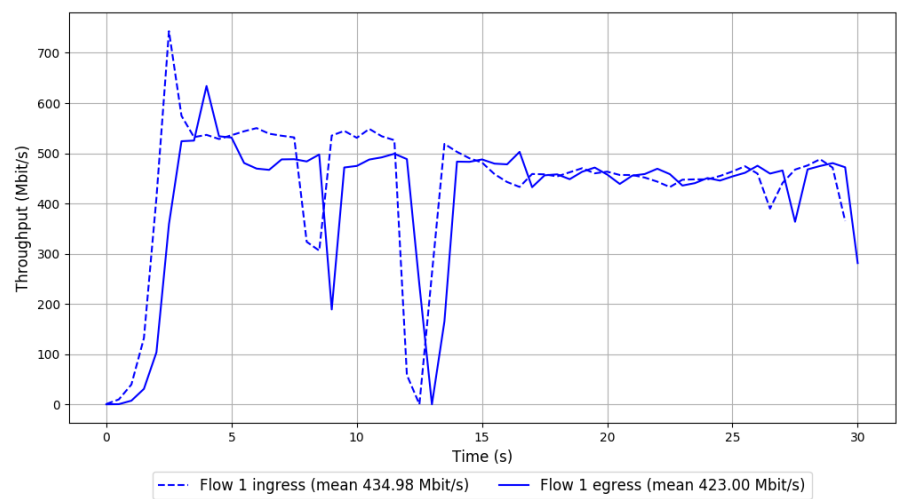
-- Flow 1:

Average throughput: 423.00 Mbit/s

95th percentile per-packet one-way delay: 193.867 ms

Loss rate: 3.31%

Run 5: Report of PCC-Allegro — Data Link

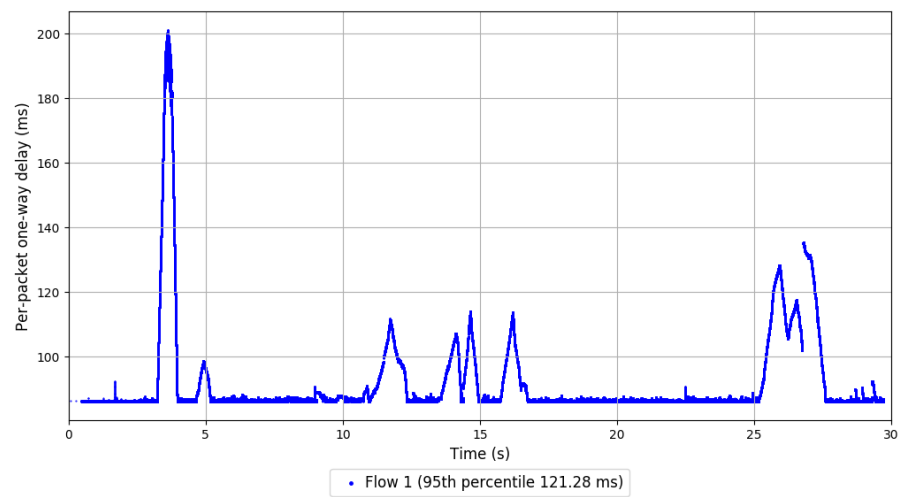
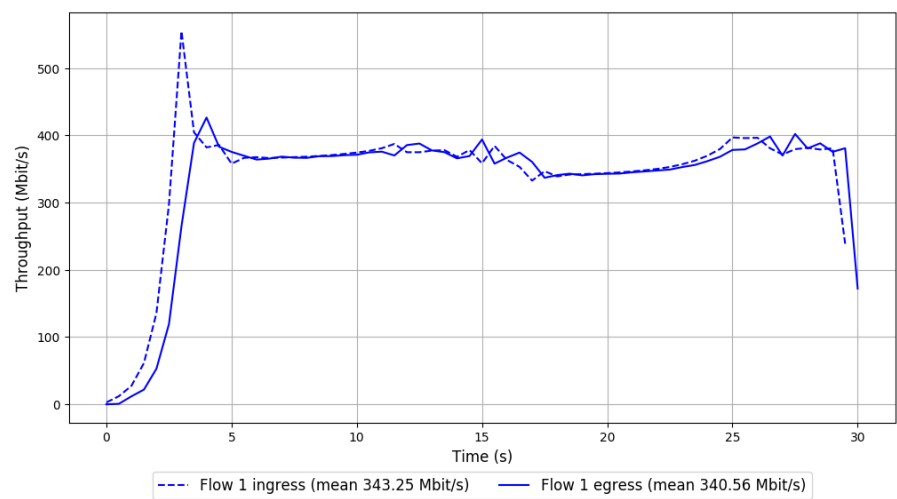


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-25 23:55:29
End at: 2018-10-25 23:55:59
Local clock offset: 15.461 ms
Remote clock offset: 14.464 ms

# Below is generated by plot.py at 2018-10-26 02:52:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.56 Mbit/s
95th percentile per-packet one-way delay: 121.278 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 340.56 Mbit/s
95th percentile per-packet one-way delay: 121.278 ms
Loss rate: 1.36%
```

Run 1: Report of PCC-Expr — Data Link

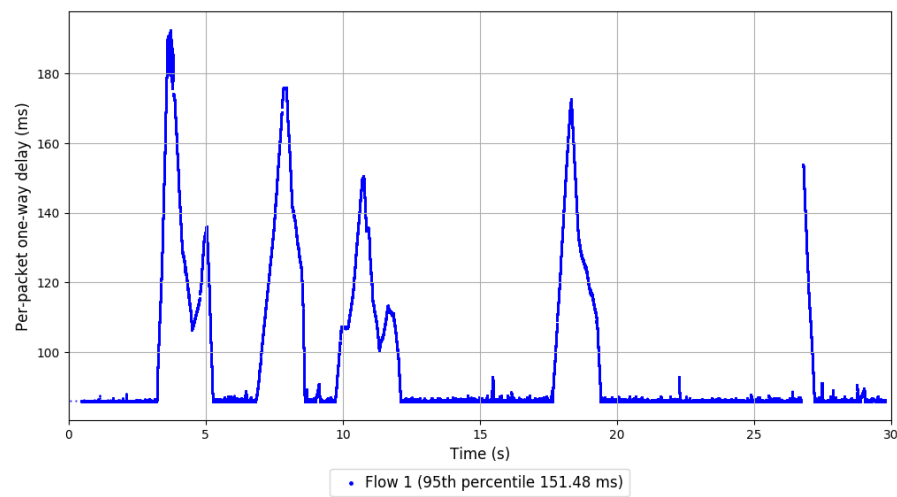
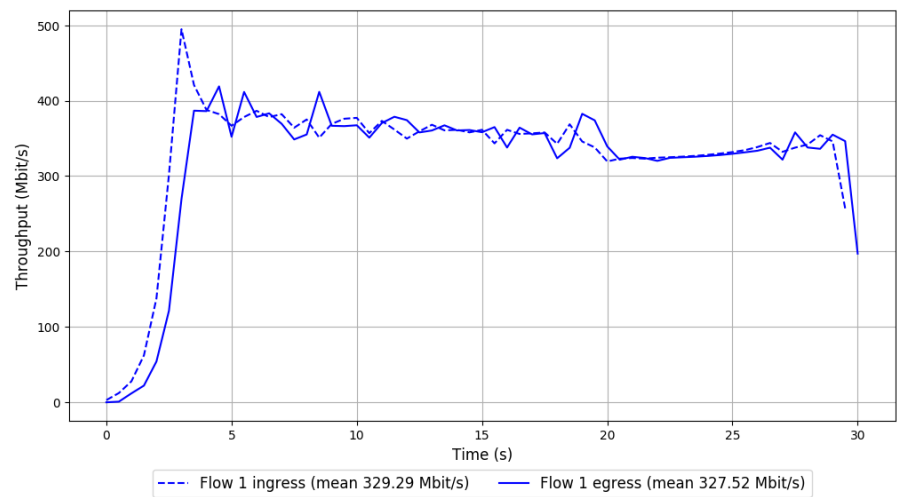


Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 00:21:10
End at: 2018-10-26 00:21:40
Local clock offset: 24.407 ms
Remote clock offset: 22.646 ms

Below is generated by plot.py at 2018-10-26 02:52:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 327.52 Mbit/s
95th percentile per-packet one-way delay: 151.481 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 327.52 Mbit/s
95th percentile per-packet one-way delay: 151.481 ms
Loss rate: 1.11%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 00:46:49

End at: 2018-10-26 00:47:19

Local clock offset: 25.512 ms

Remote clock offset: 19.97 ms

Below is generated by plot.py at 2018-10-26 02:52:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 339.79 Mbit/s

95th percentile per-packet one-way delay: 189.960 ms

Loss rate: 5.73%

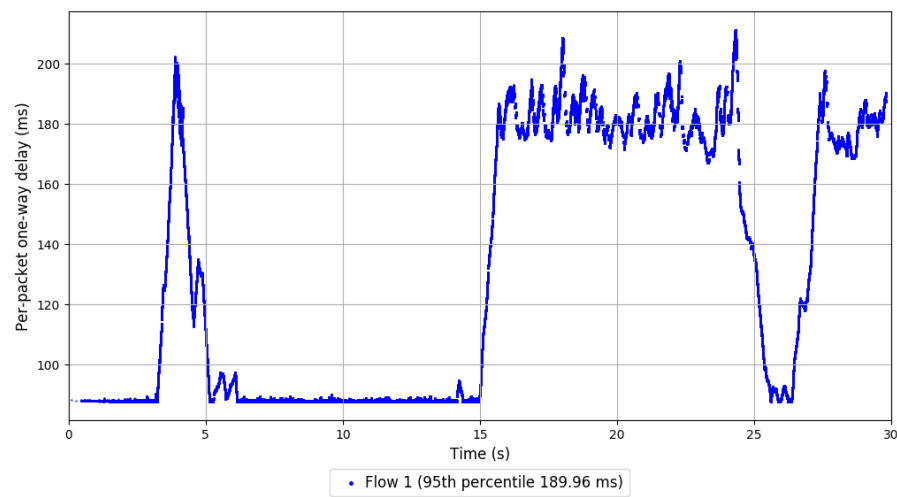
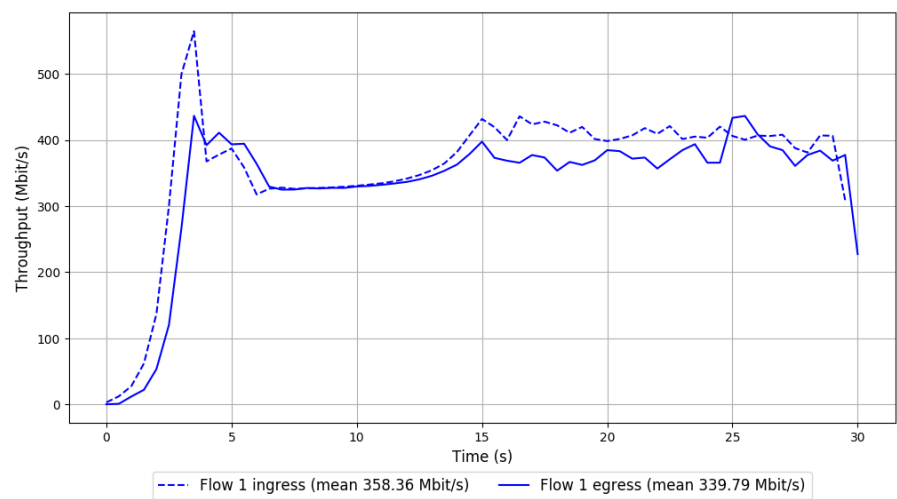
-- Flow 1:

Average throughput: 339.79 Mbit/s

95th percentile per-packet one-way delay: 189.960 ms

Loss rate: 5.73%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 01:12:36

End at: 2018-10-26 01:13:06

Local clock offset: 21.039 ms

Remote clock offset: 10.18 ms

Below is generated by plot.py at 2018-10-26 02:52:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 329.59 Mbit/s

95th percentile per-packet one-way delay: 194.607 ms

Loss rate: 5.00%

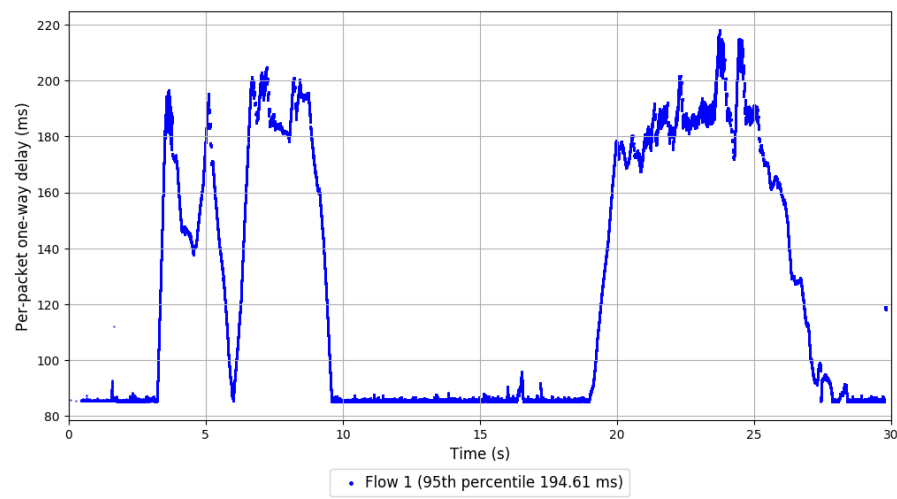
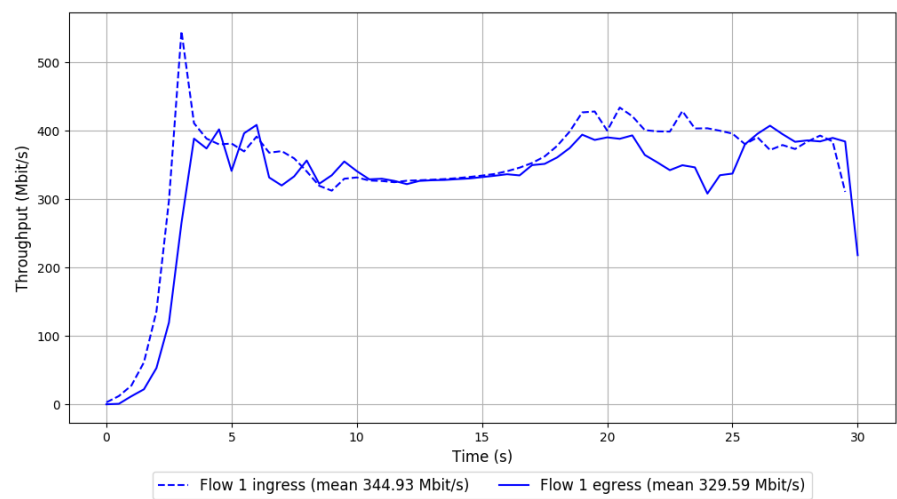
-- Flow 1:

Average throughput: 329.59 Mbit/s

95th percentile per-packet one-way delay: 194.607 ms

Loss rate: 5.00%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 01:38:17

End at: 2018-10-26 01:38:47

Local clock offset: 7.925 ms

Remote clock offset: 3.75 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 311.70 Mbit/s

95th percentile per-packet one-way delay: 197.047 ms

Loss rate: 2.64%

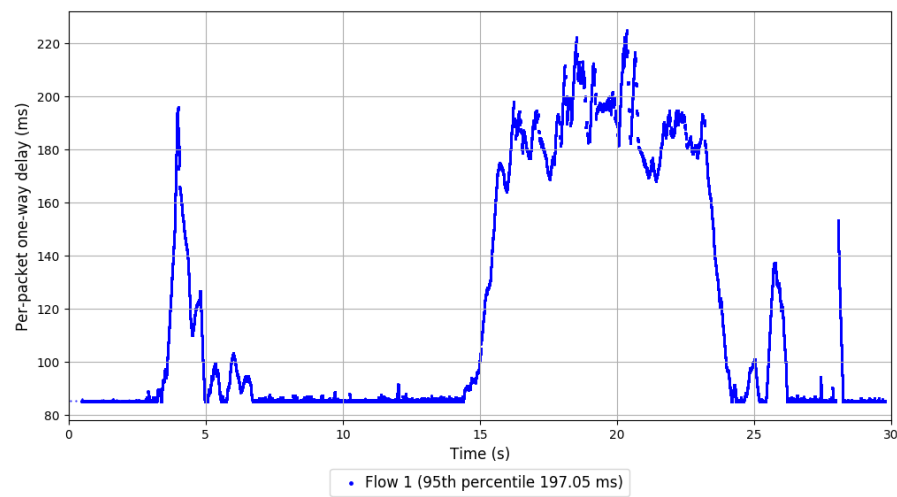
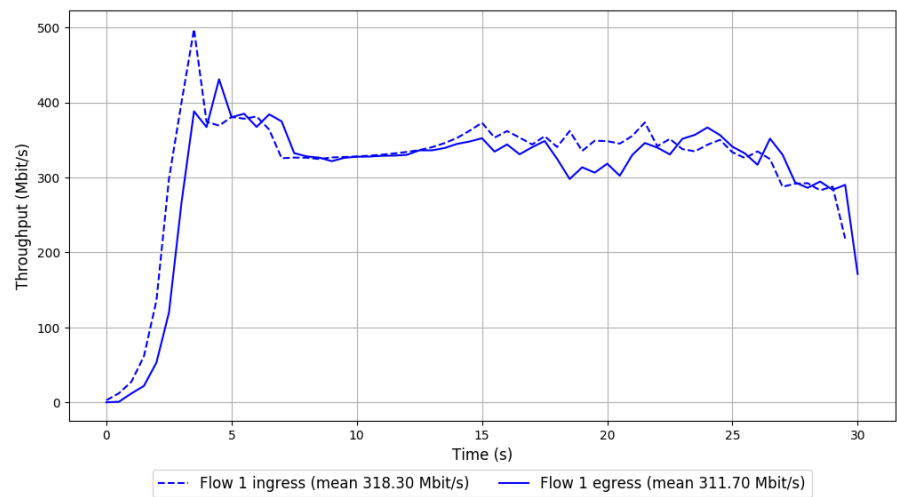
-- Flow 1:

Average throughput: 311.70 Mbit/s

95th percentile per-packet one-way delay: 197.047 ms

Loss rate: 2.64%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

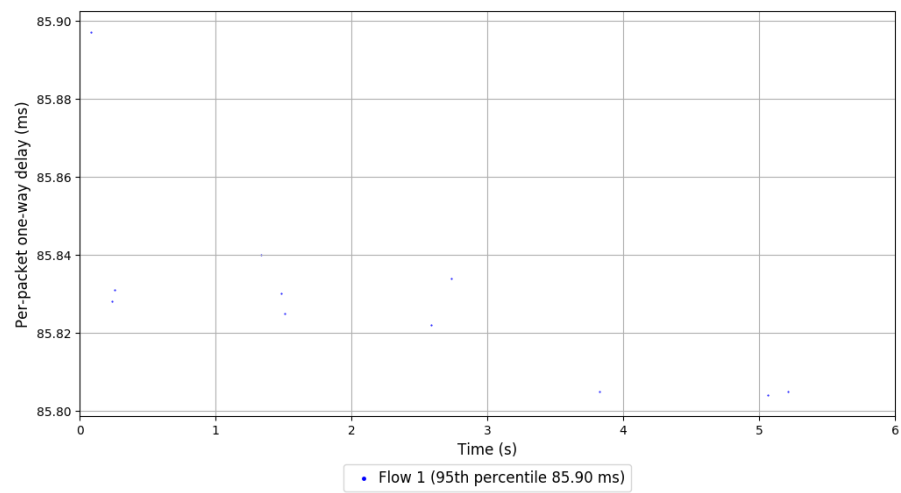
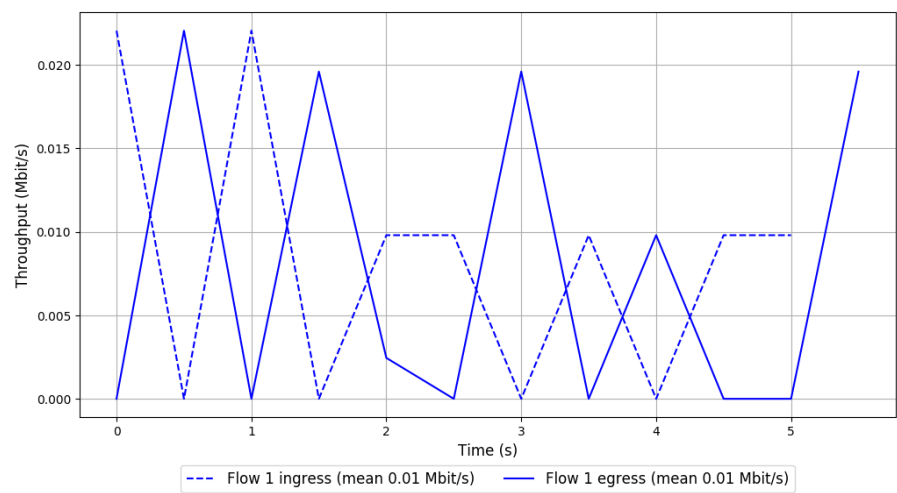
Start at: 2018-10-25 23:49:01

End at: 2018-10-25 23:49:31

Local clock offset: 18.443 ms

Remote clock offset: 17.543 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 00:14:31

End at: 2018-10-26 00:15:01

Local clock offset: 22.173 ms

Remote clock offset: 20.13 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 66.79 Mbit/s

95th percentile per-packet one-way delay: 86.741 ms

Loss rate: 0.86%

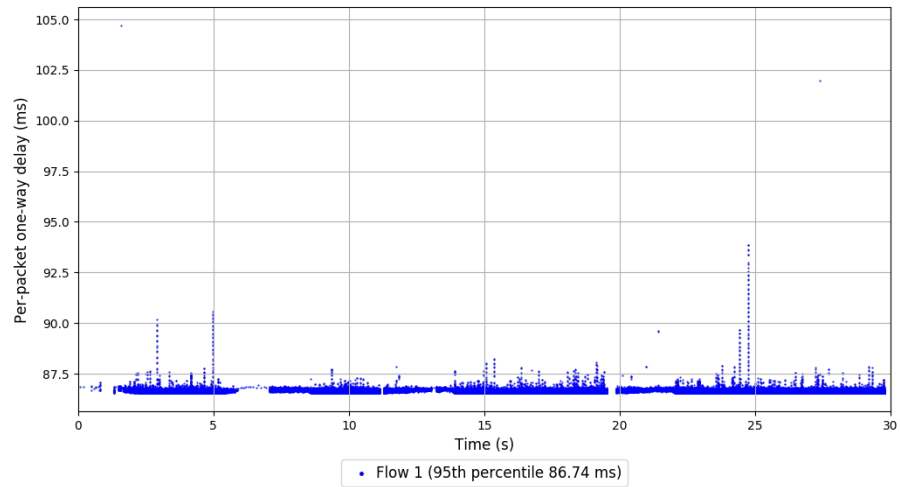
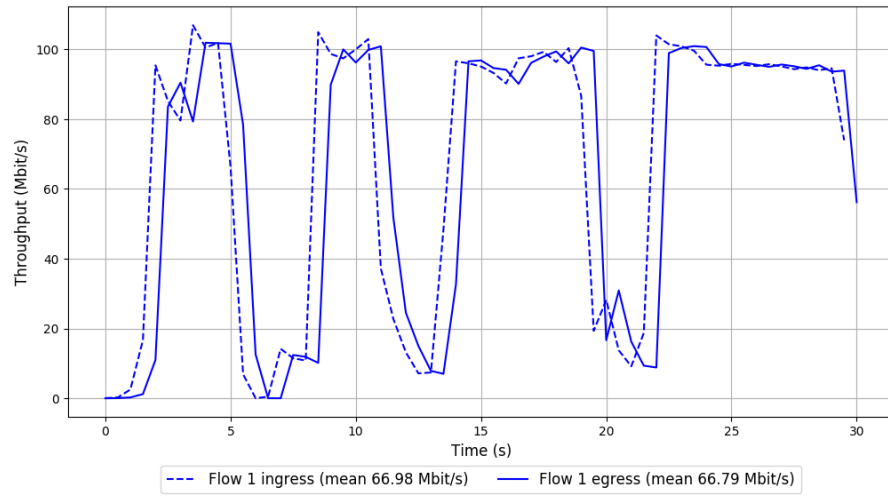
-- Flow 1:

Average throughput: 66.79 Mbit/s

95th percentile per-packet one-way delay: 86.741 ms

Loss rate: 0.86%

Run 2: Report of QUIC Cubic — Data Link

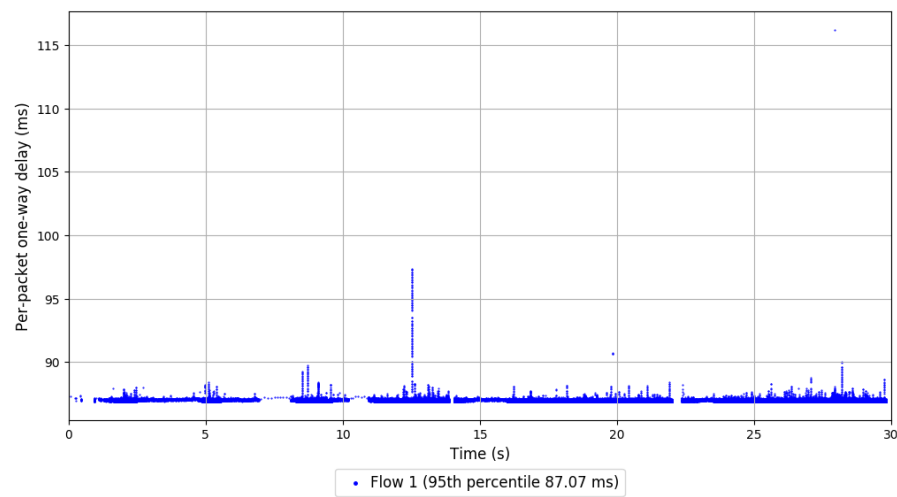
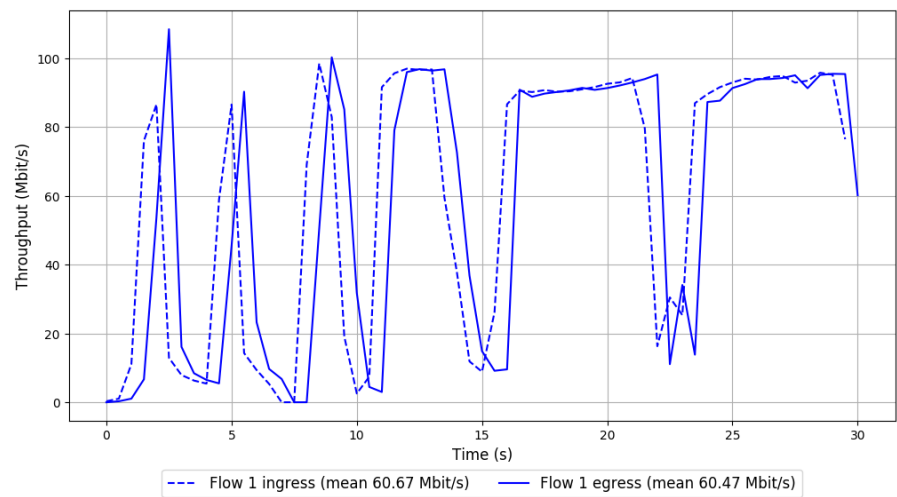


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 00:40:15
End at: 2018-10-26 00:40:45
Local clock offset: 43.745 ms
Remote clock offset: 39.727 ms

Below is generated by plot.py at 2018-10-26 02:53:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 60.47 Mbit/s
95th percentile per-packet one-way delay: 87.068 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 60.47 Mbit/s
95th percentile per-packet one-way delay: 87.068 ms
Loss rate: 0.90%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 01:05:54

End at: 2018-10-26 01:06:24

Local clock offset: 18.747 ms

Remote clock offset: 9.311 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 59.14 Mbit/s

95th percentile per-packet one-way delay: 86.511 ms

Loss rate: 0.92%

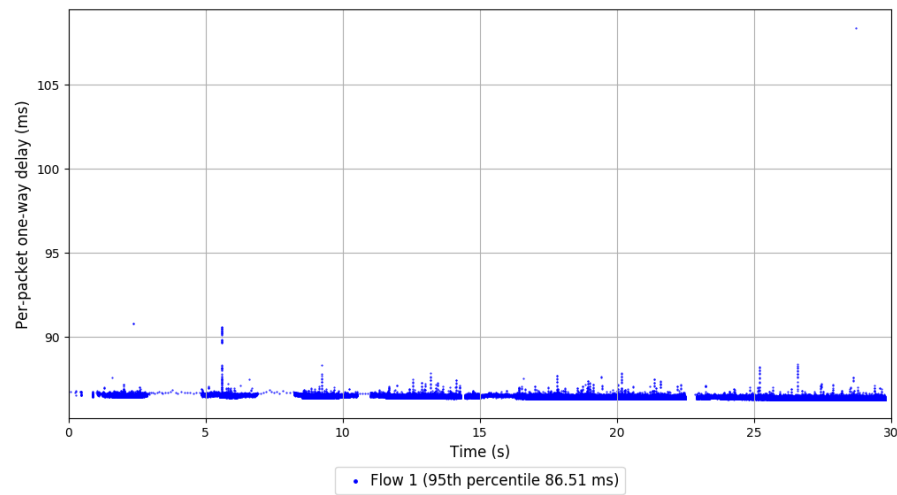
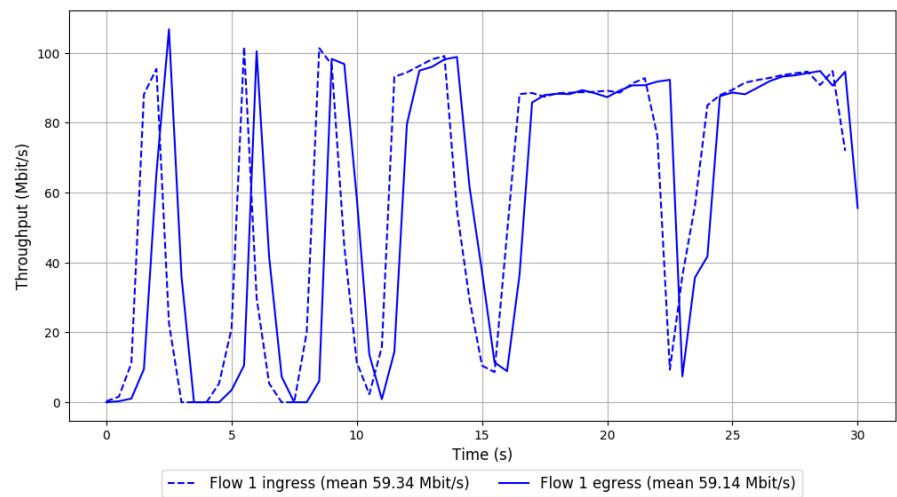
-- Flow 1:

Average throughput: 59.14 Mbit/s

95th percentile per-packet one-way delay: 86.511 ms

Loss rate: 0.92%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 01:31:36

End at: 2018-10-26 01:32:06

Local clock offset: 8.438 ms

Remote clock offset: 3.587 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.60 Mbit/s

95th percentile per-packet one-way delay: 86.258 ms

Loss rate: 0.94%

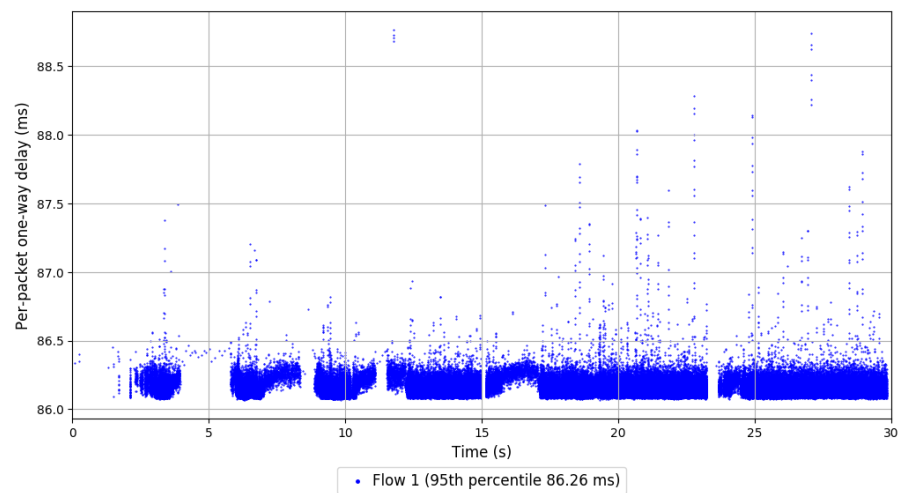
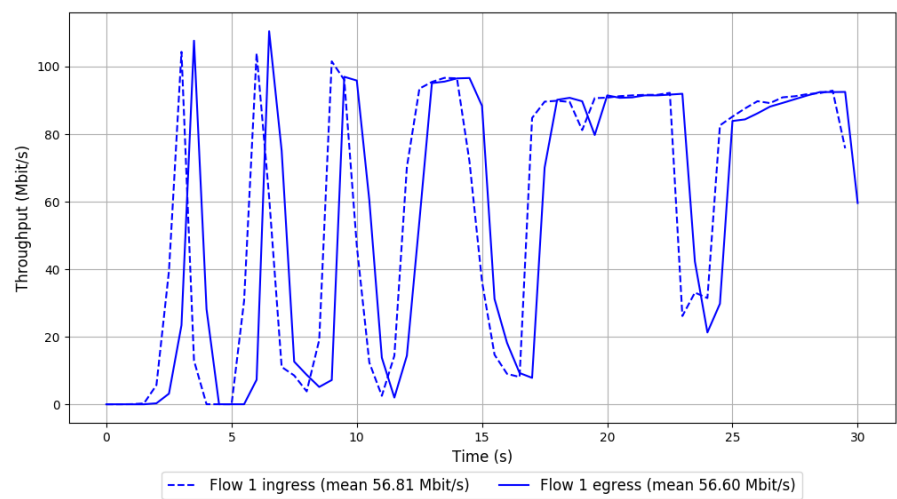
-- Flow 1:

Average throughput: 56.60 Mbit/s

95th percentile per-packet one-way delay: 86.258 ms

Loss rate: 0.94%

Run 5: Report of QUIC Cubic — Data Link

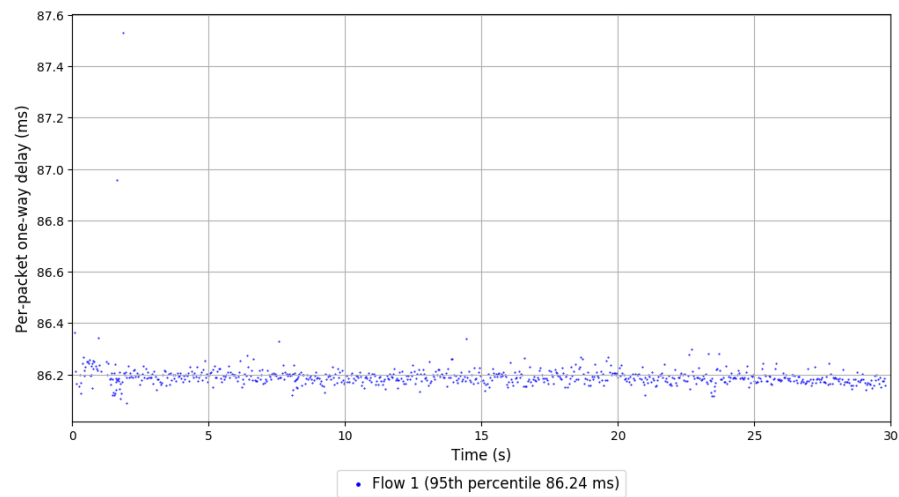
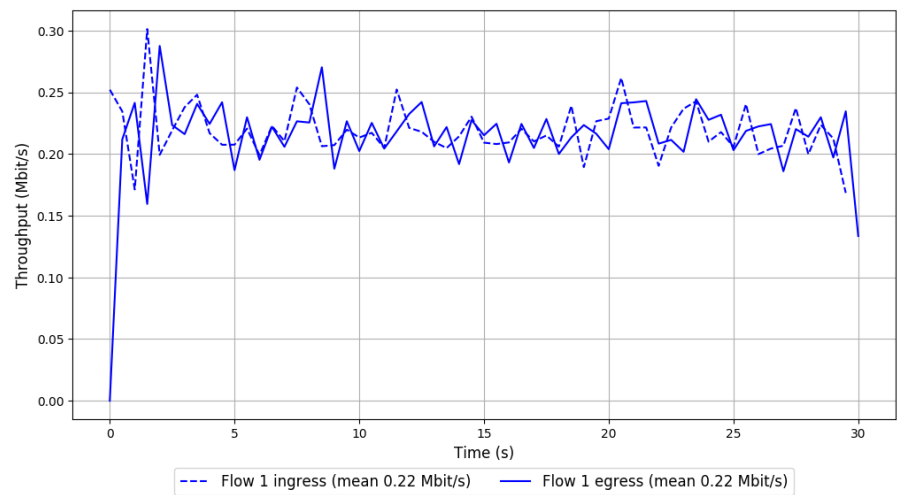


```
Run 1: Statistics of SCReAM

Start at: 2018-10-25 23:52:55
End at: 2018-10-25 23:53:25
Local clock offset: 14.663 ms
Remote clock offset: 13.505 ms

# Below is generated by plot.py at 2018-10-26 02:53:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.240 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.240 ms
Loss rate: 0.52%
```

Run 1: Report of SReAM — Data Link

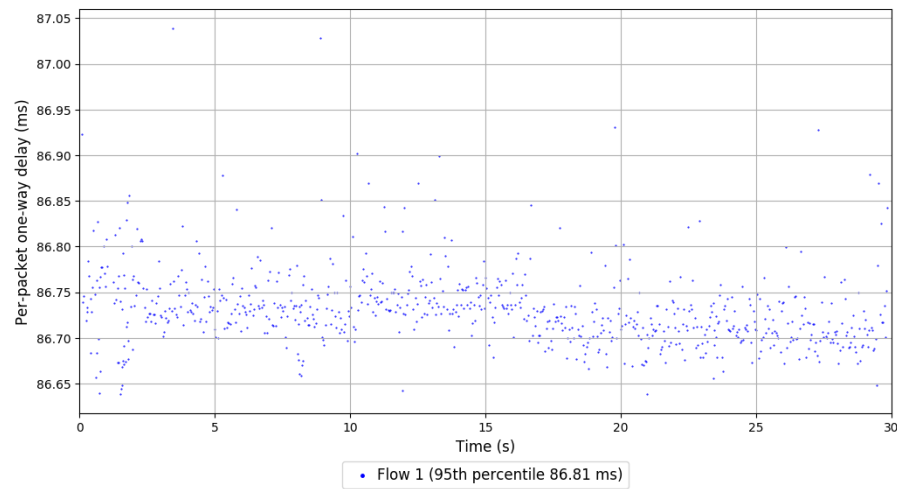
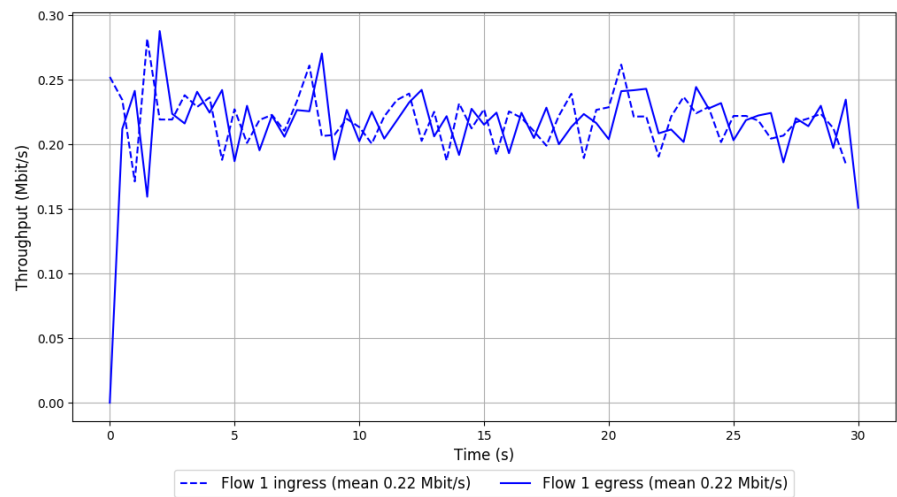


Run 2: Statistics of SReAM

Start at: 2018-10-26 00:18:28
End at: 2018-10-26 00:18:58
Local clock offset: 23.491 ms
Remote clock offset: 21.201 ms

Below is generated by plot.py at 2018-10-26 02:53:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.808 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.808 ms
Loss rate: 0.51%

Run 2: Report of SReAM — Data Link

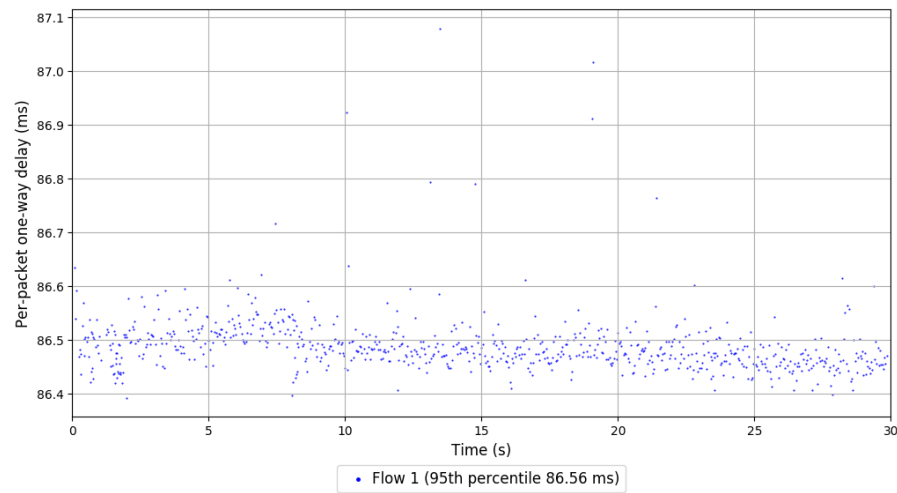
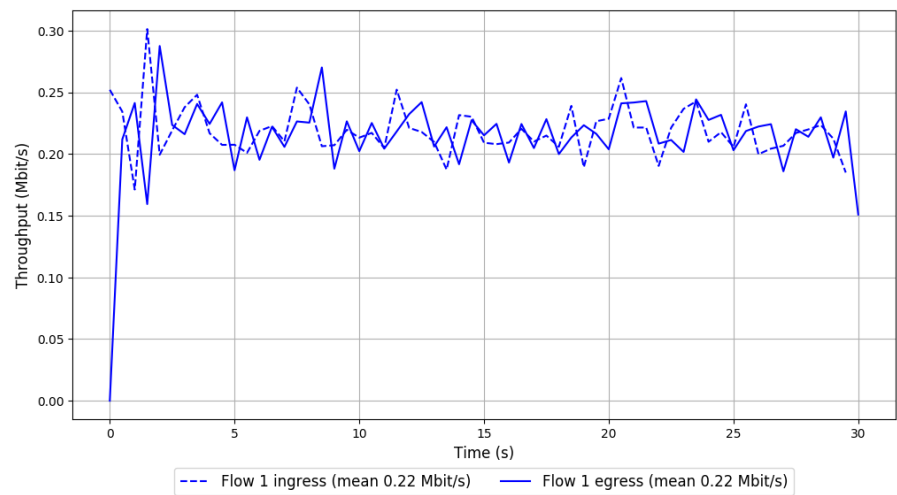


Run 3: Statistics of SCReAM

Start at: 2018-10-26 00:44:07
End at: 2018-10-26 00:44:37
Local clock offset: 29.645 ms
Remote clock offset: 25.882 ms

Below is generated by plot.py at 2018-10-26 02:53:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.557 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.557 ms
Loss rate: 0.51%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SReAM

Start at: 2018-10-26 01:09:52

End at: 2018-10-26 01:10:22

Local clock offset: 18.953 ms

Remote clock offset: 9.757 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 84.702 ms

Loss rate: 0.51%

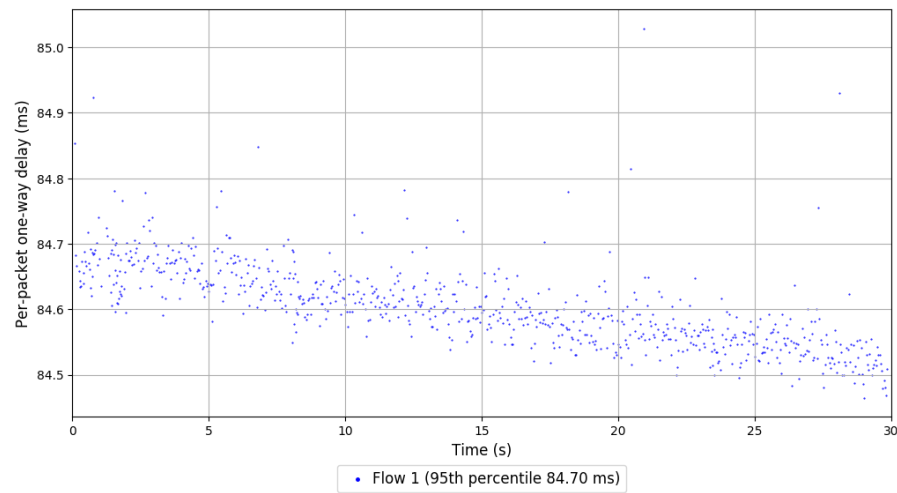
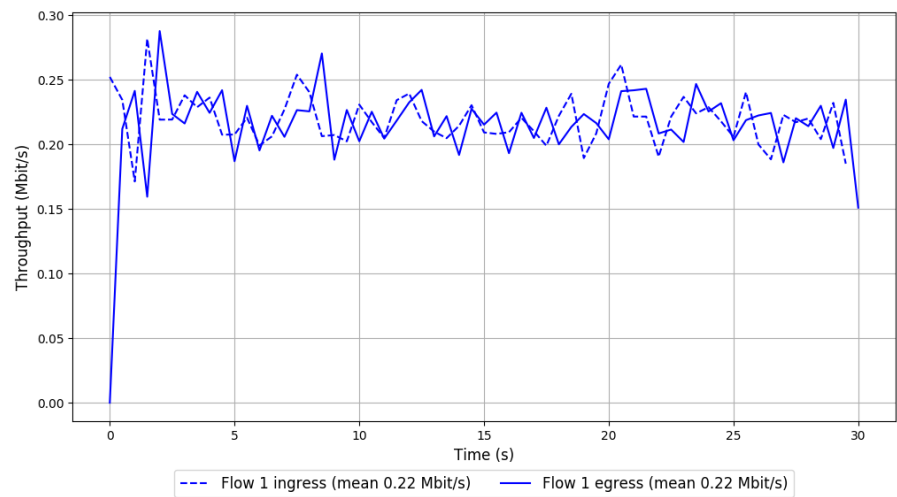
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 84.702 ms

Loss rate: 0.51%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-10-26 01:35:34

End at: 2018-10-26 01:36:04

Local clock offset: 7.511 ms

Remote clock offset: 3.63 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 85.630 ms

Loss rate: 0.51%

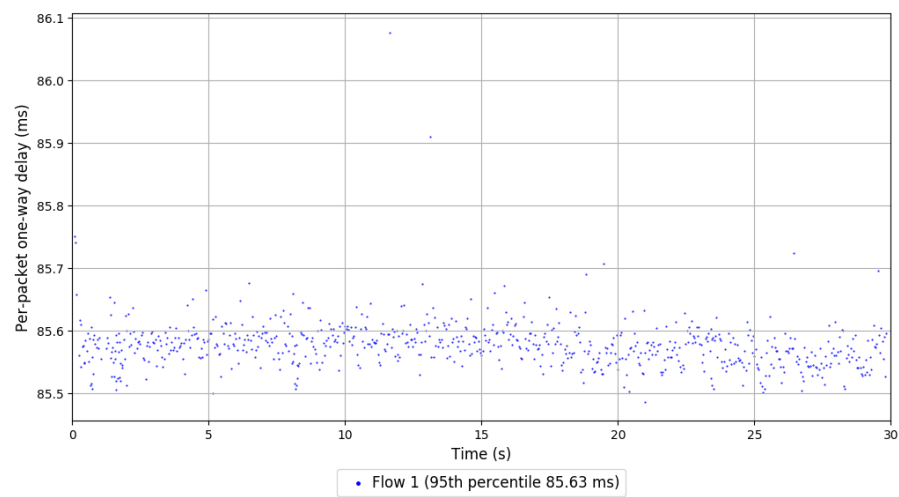
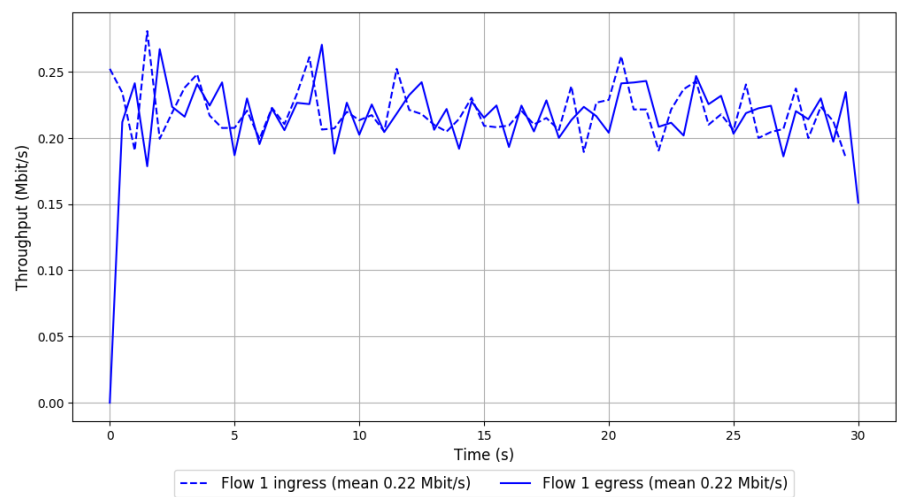
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 85.630 ms

Loss rate: 0.51%

Run 5: Report of SReAM — Data Link

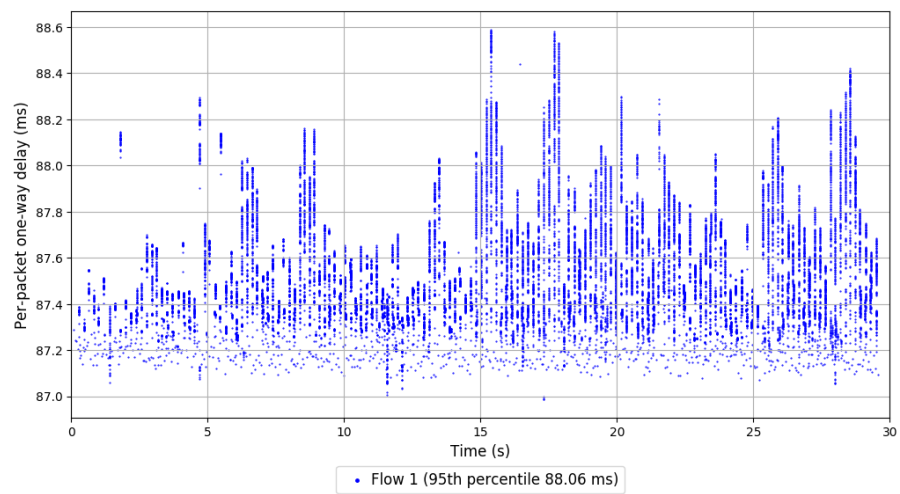
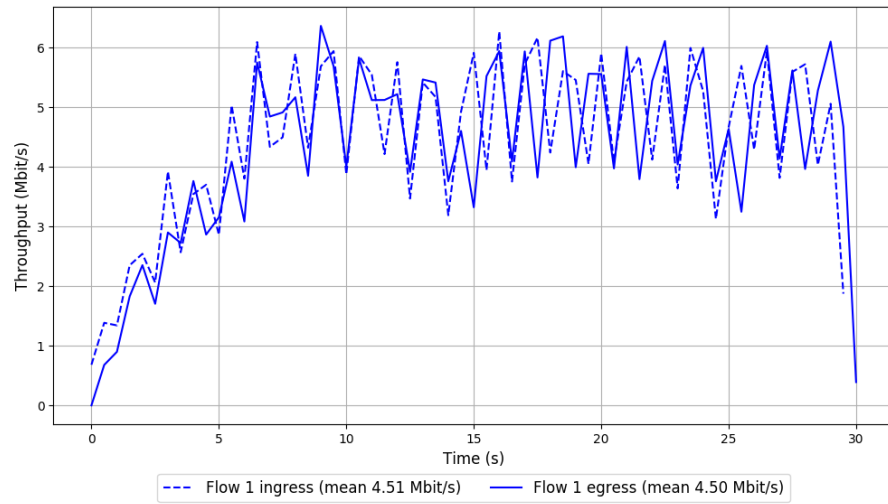


Run 1: Statistics of Sprout

Start at: 2018-10-25 23:51:46
End at: 2018-10-25 23:52:16
Local clock offset: 15.678 ms
Remote clock offset: 13.891 ms

Below is generated by plot.py at 2018-10-26 02:53:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.50 Mbit/s
95th percentile per-packet one-way delay: 88.056 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 4.50 Mbit/s
95th percentile per-packet one-way delay: 88.056 ms
Loss rate: 0.70%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-10-26 00:17:19

End at: 2018-10-26 00:17:49

Local clock offset: 22.569 ms

Remote clock offset: 20.7 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.41 Mbit/s

95th percentile per-packet one-way delay: 87.280 ms

Loss rate: 0.69%

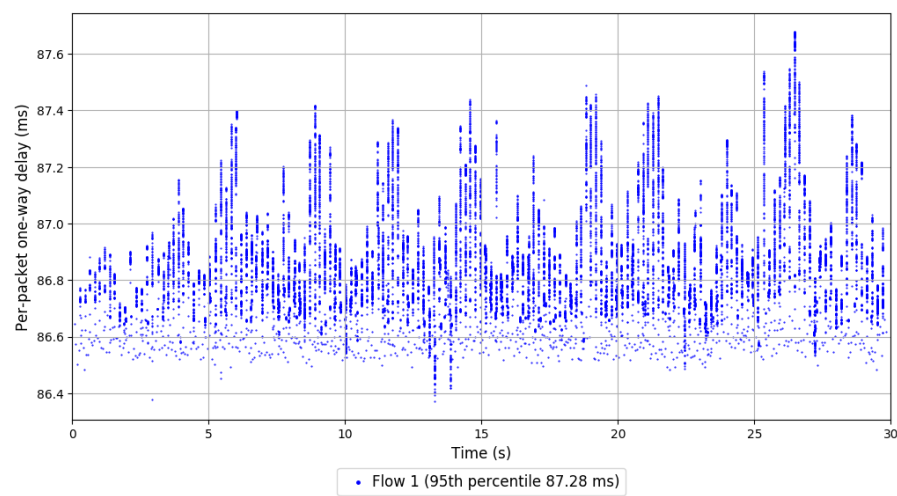
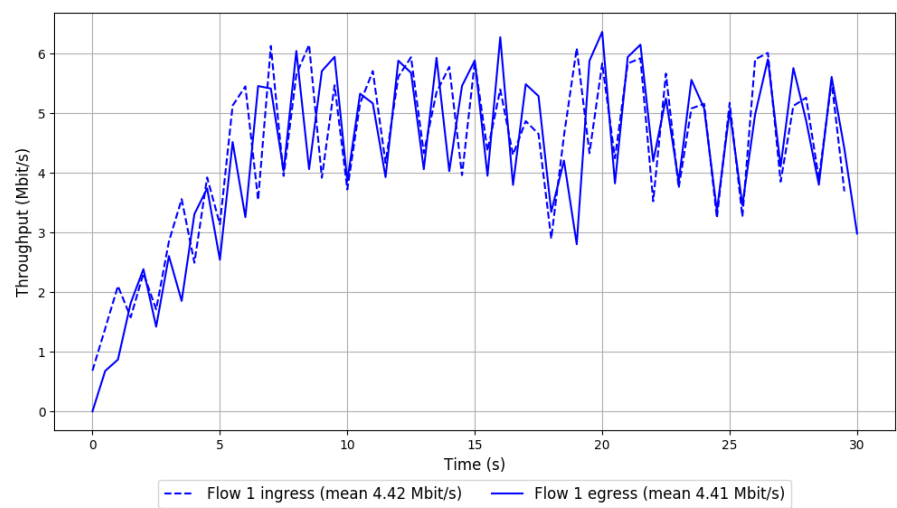
-- Flow 1:

Average throughput: 4.41 Mbit/s

95th percentile per-packet one-way delay: 87.280 ms

Loss rate: 0.69%

Run 2: Report of Sprout — Data Link

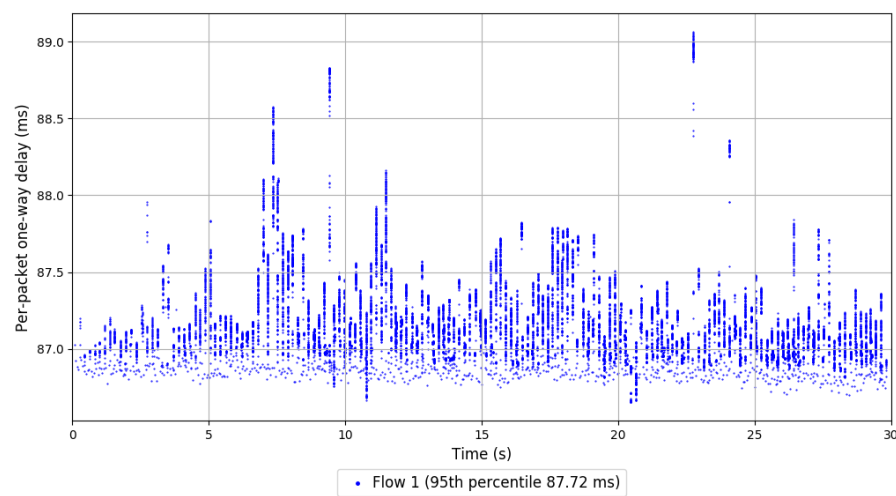
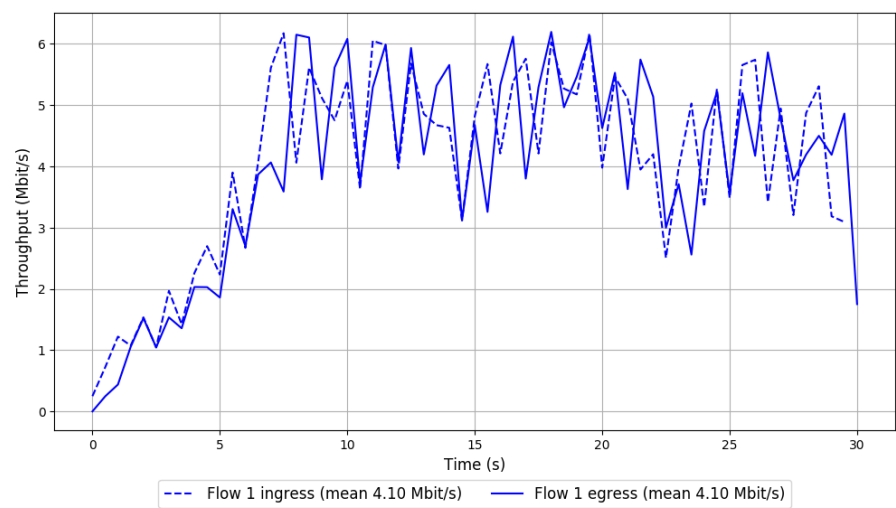


Run 3: Statistics of Sprout

Start at: 2018-10-26 00:42:59
End at: 2018-10-26 00:43:29
Local clock offset: 33.288 ms
Remote clock offset: 29.358 ms

Below is generated by plot.py at 2018-10-26 02:53:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 87.721 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 87.721 ms
Loss rate: 0.55%

Run 3: Report of Sprout — Data Link

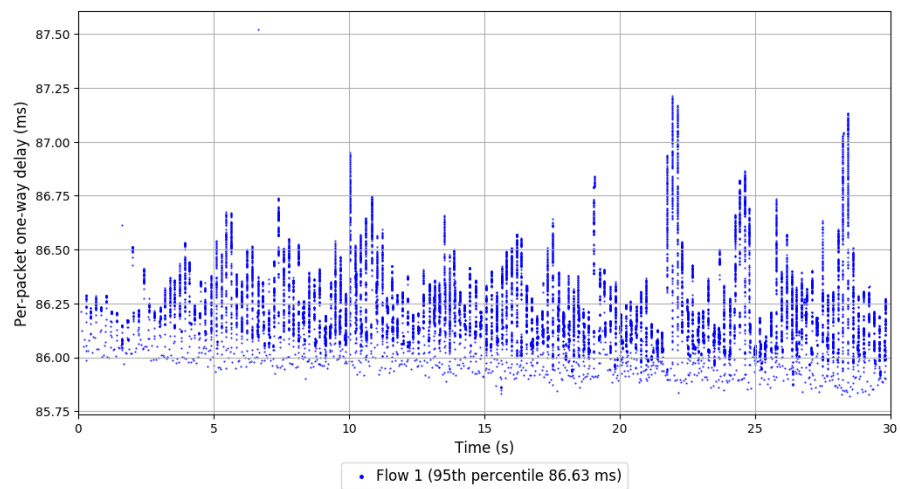
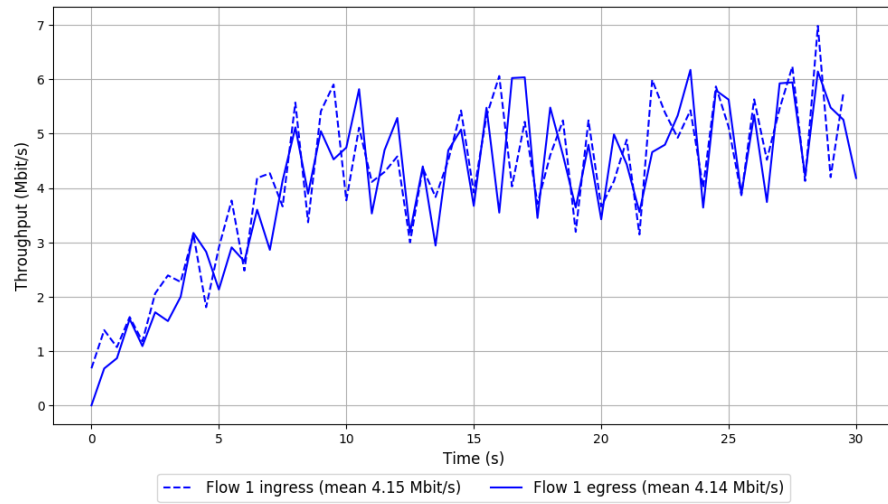


Run 4: Statistics of Sprout

Start at: 2018-10-26 01:08:43
End at: 2018-10-26 01:09:13
Local clock offset: 19.671 ms
Remote clock offset: 9.586 ms

Below is generated by plot.py at 2018-10-26 02:53:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.14 Mbit/s
95th percentile per-packet one-way delay: 86.632 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 4.14 Mbit/s
95th percentile per-packet one-way delay: 86.632 ms
Loss rate: 0.81%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-10-26 01:34:26

End at: 2018-10-26 01:34:56

Local clock offset: 7.887 ms

Remote clock offset: 3.722 ms

Below is generated by plot.py at 2018-10-26 02:53:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.68 Mbit/s

95th percentile per-packet one-way delay: 86.135 ms

Loss rate: 0.60%

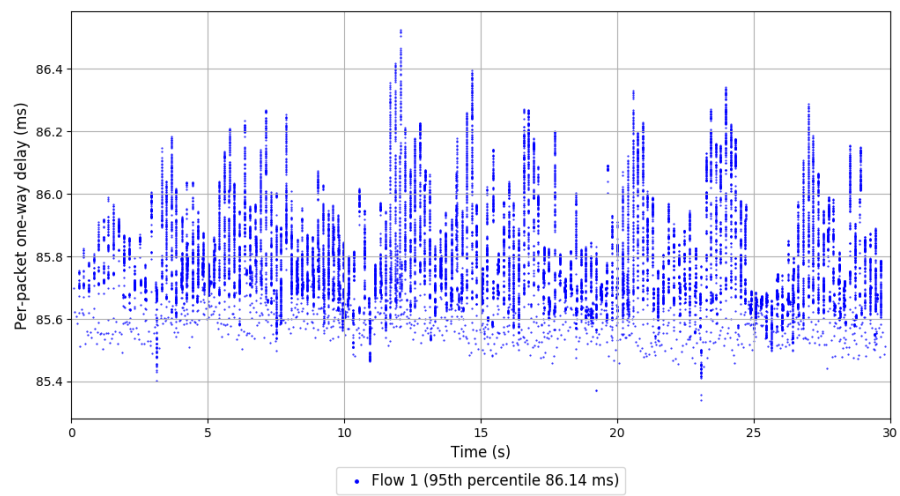
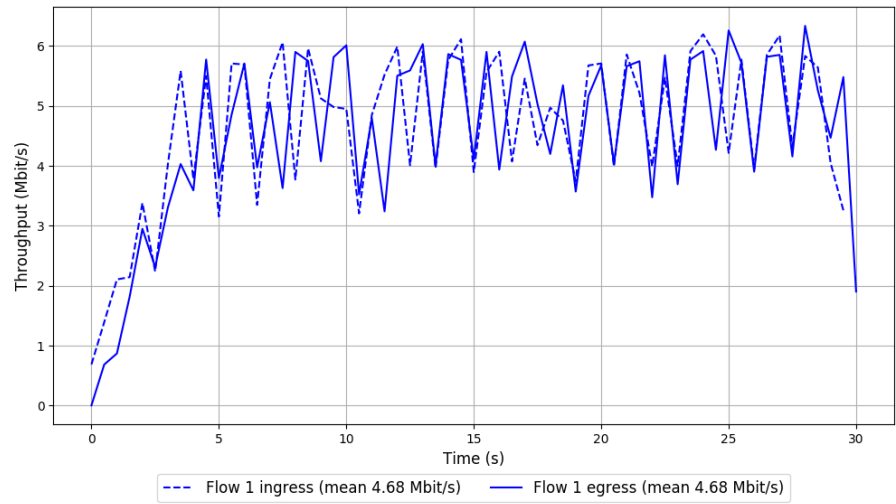
-- Flow 1:

Average throughput: 4.68 Mbit/s

95th percentile per-packet one-way delay: 86.135 ms

Loss rate: 0.60%

Run 5: Report of Sprout — Data Link

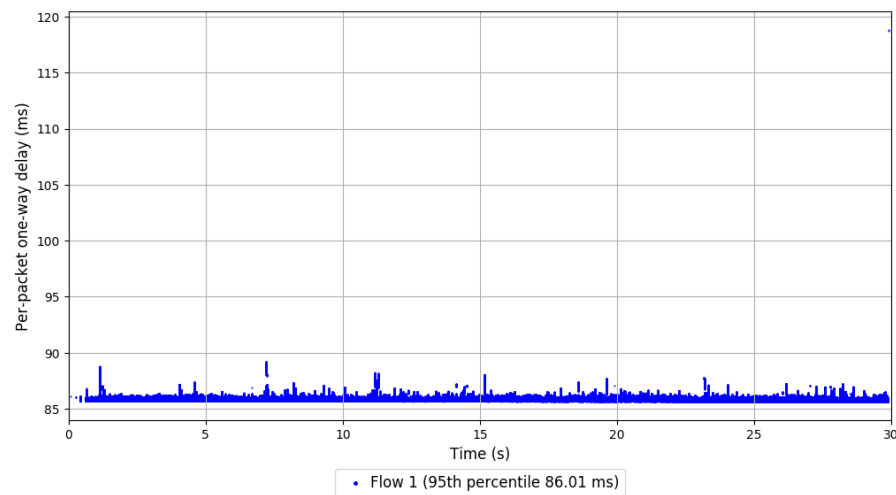
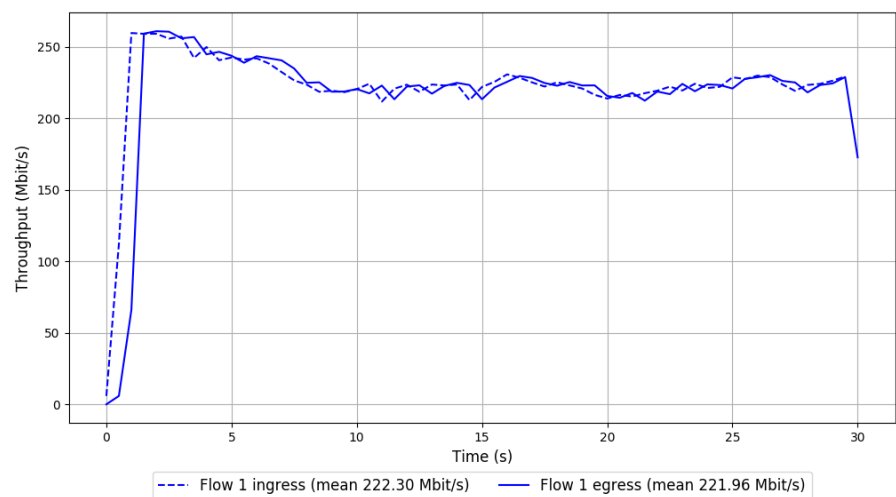


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-25 23:47:32
End at: 2018-10-25 23:48:02
Local clock offset: 16.885 ms
Remote clock offset: 15.904 ms

# Below is generated by plot.py at 2018-10-26 02:57:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.96 Mbit/s
95th percentile per-packet one-way delay: 86.013 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 221.96 Mbit/s
95th percentile per-packet one-way delay: 86.013 ms
Loss rate: 0.70%
```

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

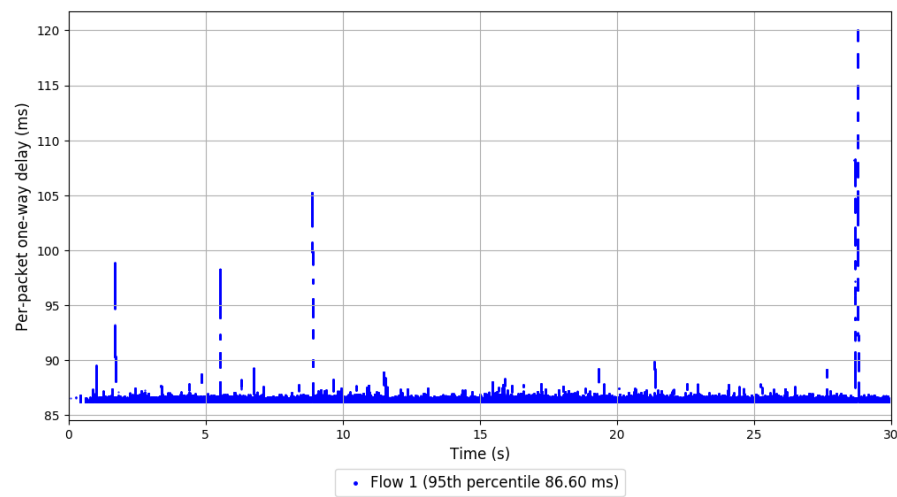
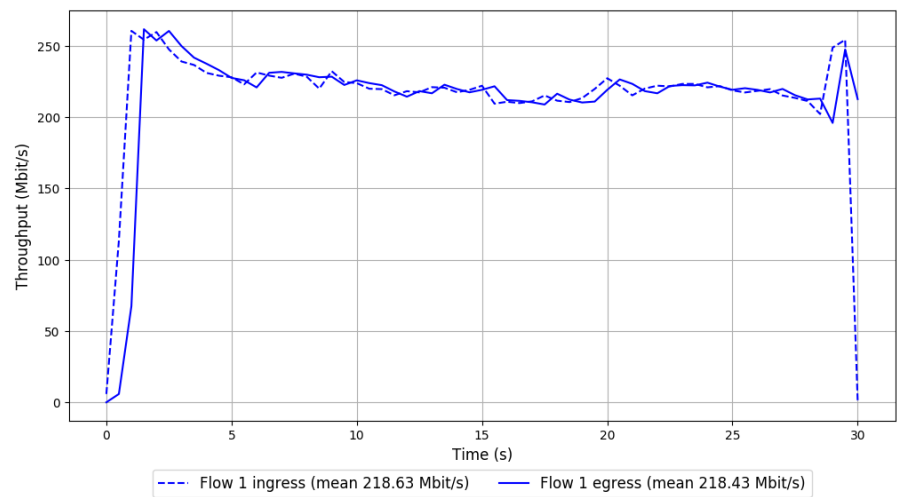


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-26 00:13:02
End at: 2018-10-26 00:13:32
Local clock offset: 22.263 ms
Remote clock offset: 20.254 ms

Below is generated by plot.py at 2018-10-26 02:57:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 218.43 Mbit/s
95th percentile per-packet one-way delay: 86.604 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 218.43 Mbit/s
95th percentile per-packet one-way delay: 86.604 ms
Loss rate: 0.66%

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

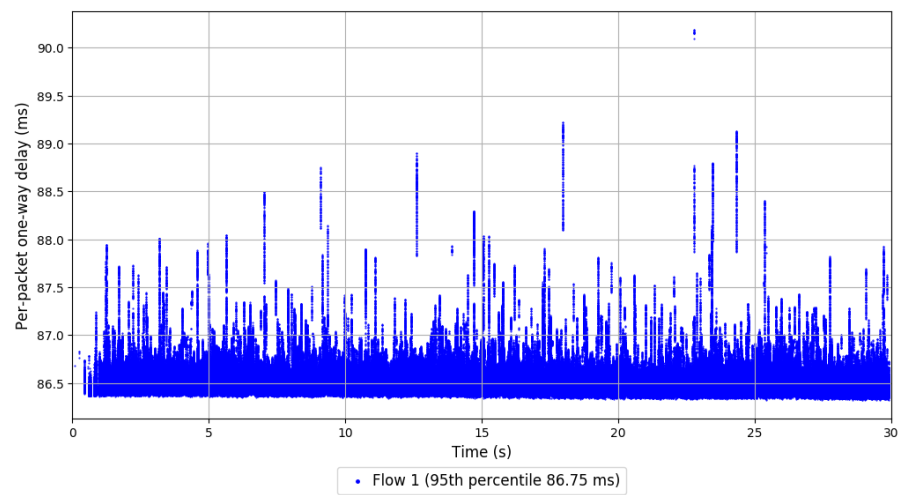
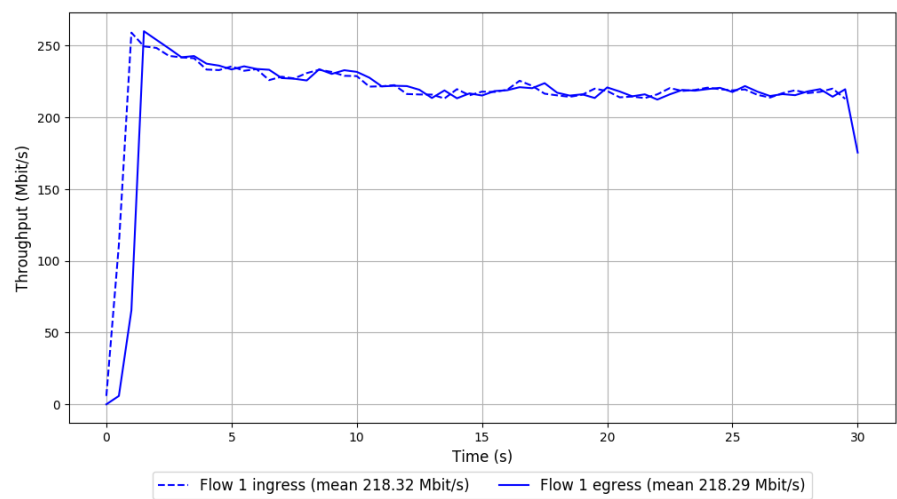


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-26 00:38:46
End at: 2018-10-26 00:39:16
Local clock offset: 43.115 ms
Remote clock offset: 39.645 ms

Below is generated by plot.py at 2018-10-26 02:57:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 218.29 Mbit/s
95th percentile per-packet one-way delay: 86.752 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 218.29 Mbit/s
95th percentile per-packet one-way delay: 86.752 ms
Loss rate: 0.59%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-10-26 01:04:25

End at: 2018-10-26 01:04:55

Local clock offset: 18.294 ms

Remote clock offset: 9.252 ms

Below is generated by plot.py at 2018-10-26 02:57:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 214.06 Mbit/s

95th percentile per-packet one-way delay: 86.429 ms

Loss rate: 0.52%

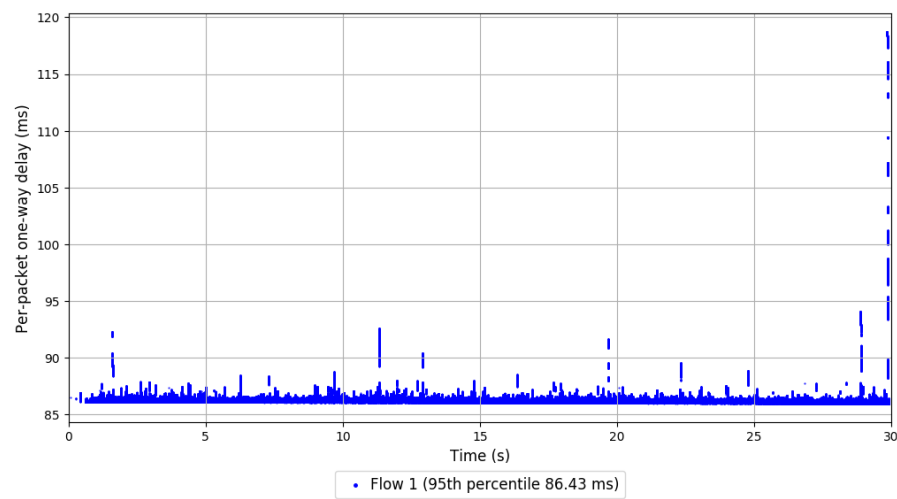
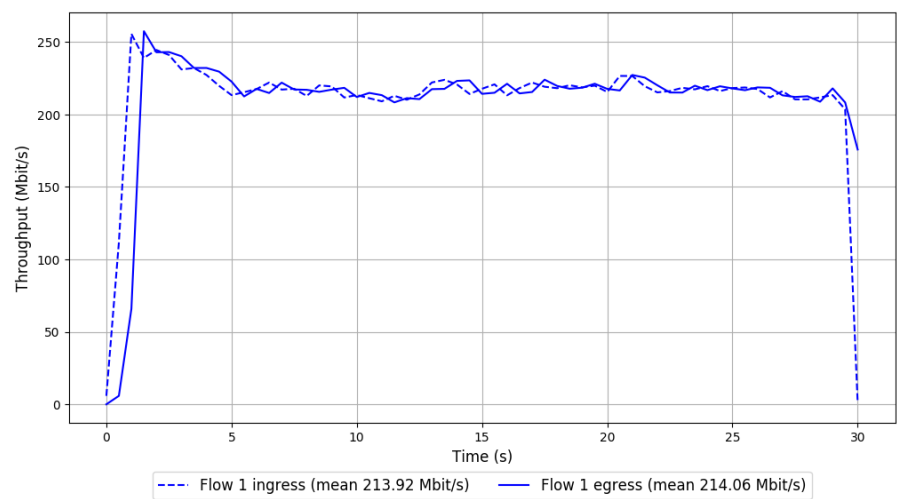
-- Flow 1:

Average throughput: 214.06 Mbit/s

95th percentile per-packet one-way delay: 86.429 ms

Loss rate: 0.52%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-26 01:30:07

End at: 2018-10-26 01:30:37

Local clock offset: 8.595 ms

Remote clock offset: 3.651 ms

Below is generated by plot.py at 2018-10-26 02:59:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 221.53 Mbit/s

95th percentile per-packet one-way delay: 86.489 ms

Loss rate: 0.65%

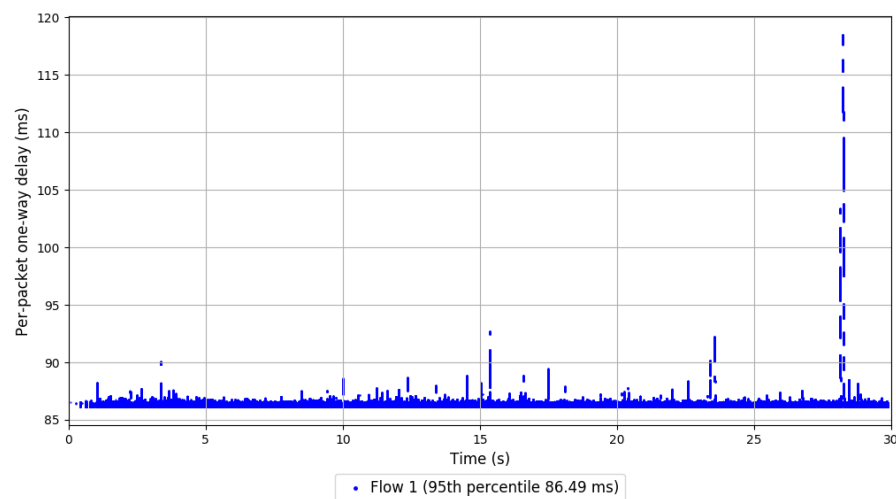
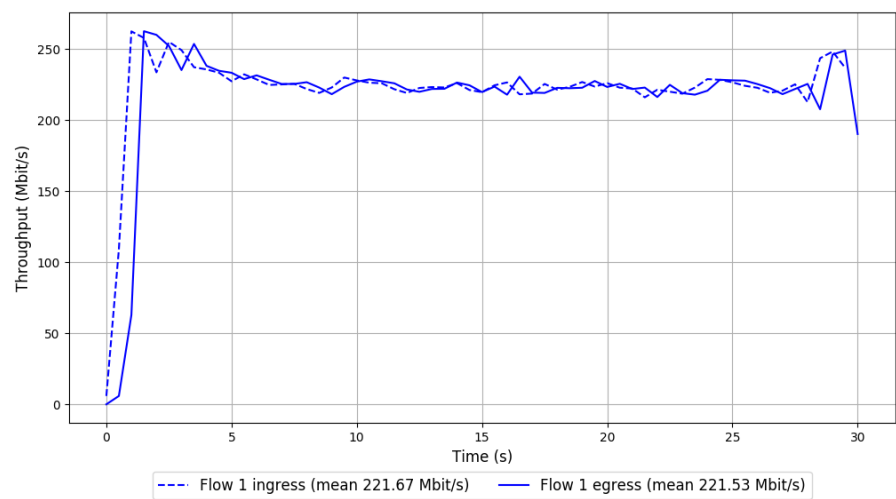
-- Flow 1:

Average throughput: 221.53 Mbit/s

95th percentile per-packet one-way delay: 86.489 ms

Loss rate: 0.65%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-10-25 23:33:38

End at: 2018-10-25 23:34:08

Local clock offset: 5.142 ms

Remote clock offset: 4.449 ms

Below is generated by plot.py at 2018-10-26 03:00:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 389.98 Mbit/s

95th percentile per-packet one-way delay: 87.727 ms

Loss rate: 0.61%

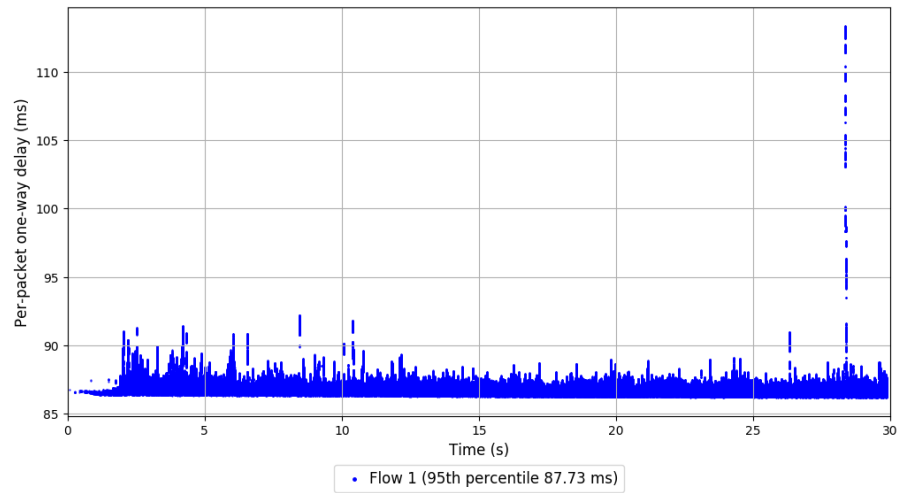
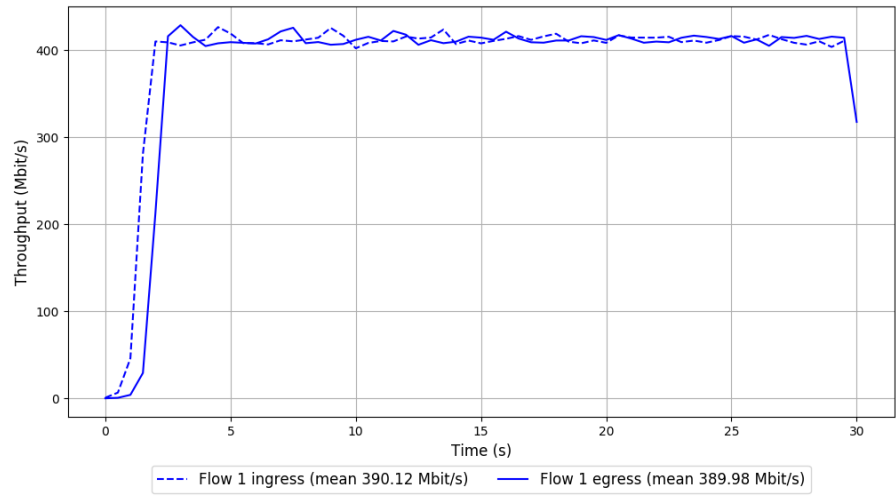
-- Flow 1:

Average throughput: 389.98 Mbit/s

95th percentile per-packet one-way delay: 87.727 ms

Loss rate: 0.61%

Run 1: Report of TCP Vegas — Data Link

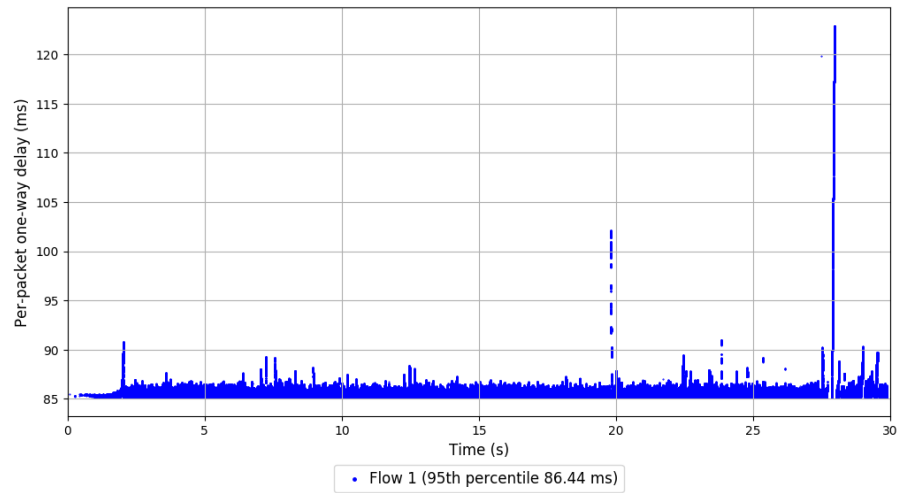
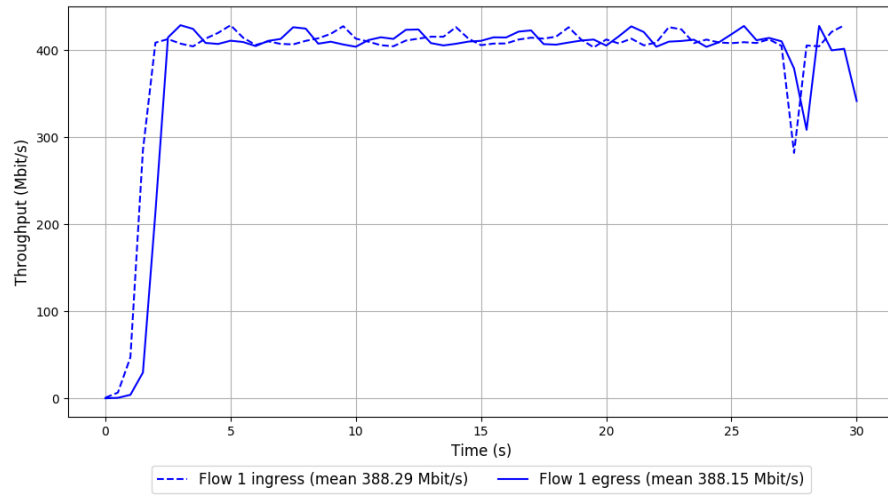


Run 2: Statistics of TCP Vegas

Start at: 2018-10-25 23:58:47
End at: 2018-10-25 23:59:17
Local clock offset: 18.083 ms
Remote clock offset: 17.604 ms

Below is generated by plot.py at 2018-10-26 03:00:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 388.15 Mbit/s
95th percentile per-packet one-way delay: 86.435 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 388.15 Mbit/s
95th percentile per-packet one-way delay: 86.435 ms
Loss rate: 0.61%

Run 2: Report of TCP Vegas — Data Link

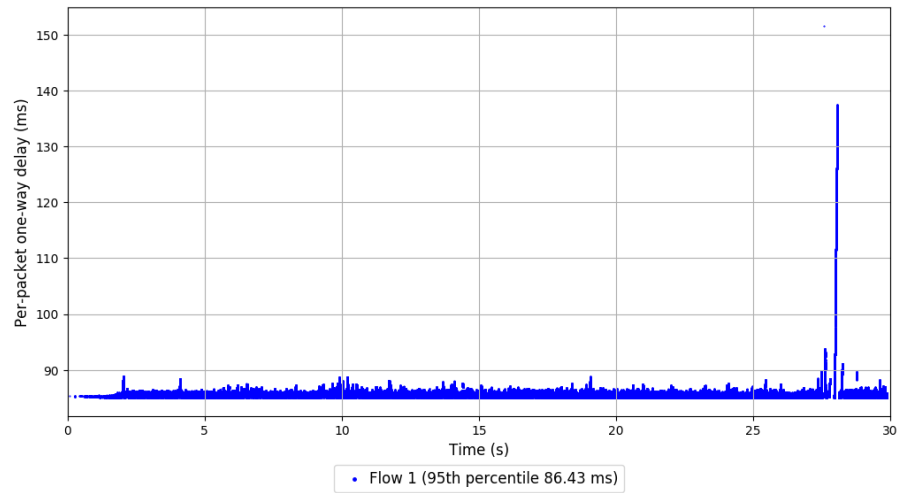
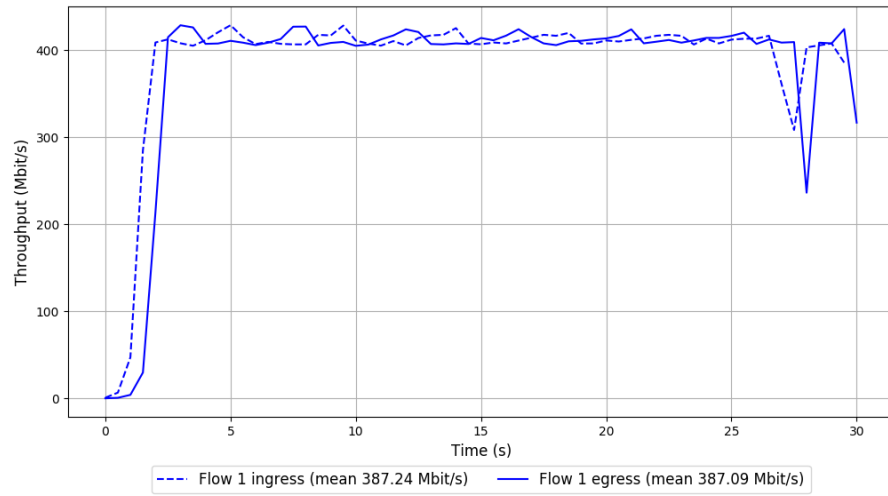


Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 00:24:28
End at: 2018-10-26 00:24:58
Local clock offset: 26.056 ms
Remote clock offset: 25.101 ms

Below is generated by plot.py at 2018-10-26 03:01:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 387.09 Mbit/s
95th percentile per-packet one-way delay: 86.429 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 387.09 Mbit/s
95th percentile per-packet one-way delay: 86.429 ms
Loss rate: 0.61%

Run 3: Report of TCP Vegas — Data Link

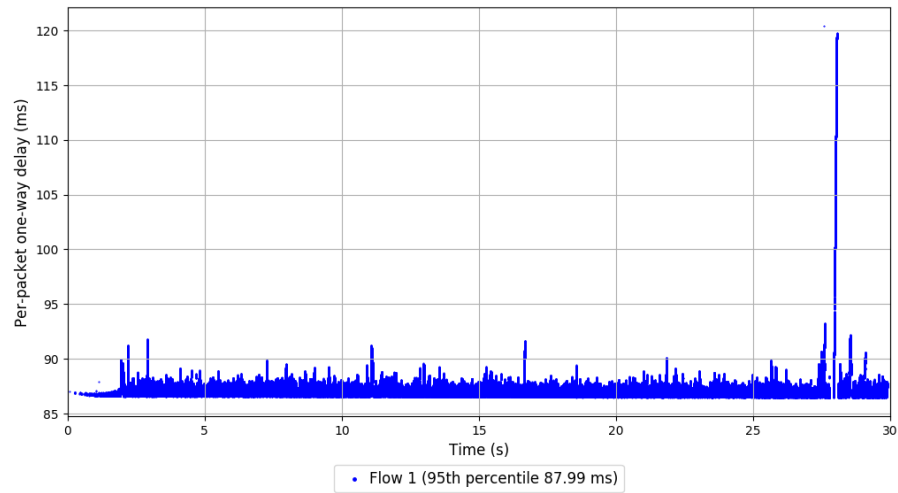
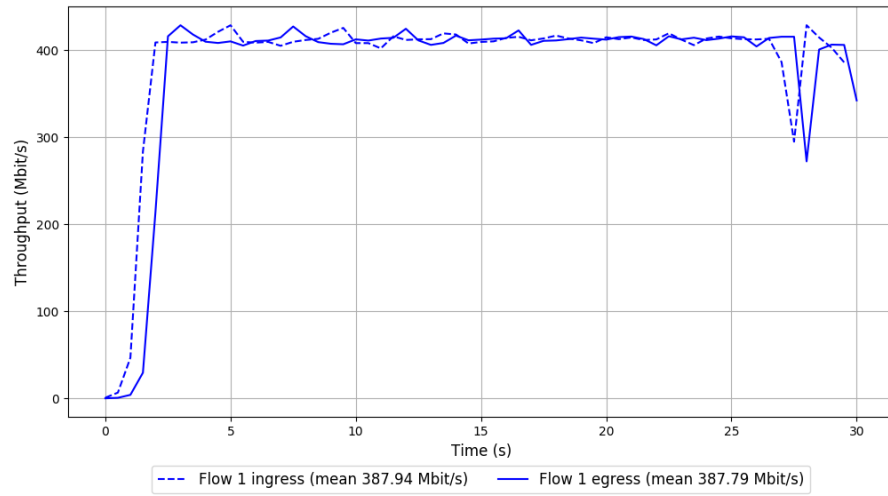


Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 00:50:10
End at: 2018-10-26 00:50:40
Local clock offset: 20.581 ms
Remote clock offset: 15.286 ms

Below is generated by plot.py at 2018-10-26 03:05:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 387.79 Mbit/s
95th percentile per-packet one-way delay: 87.991 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 387.79 Mbit/s
95th percentile per-packet one-way delay: 87.991 ms
Loss rate: 0.61%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 01:15:55

End at: 2018-10-26 01:16:25

Local clock offset: 18.254 ms

Remote clock offset: 8.676 ms

Below is generated by plot.py at 2018-10-26 03:05:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 389.42 Mbit/s

95th percentile per-packet one-way delay: 87.760 ms

Loss rate: 0.61%

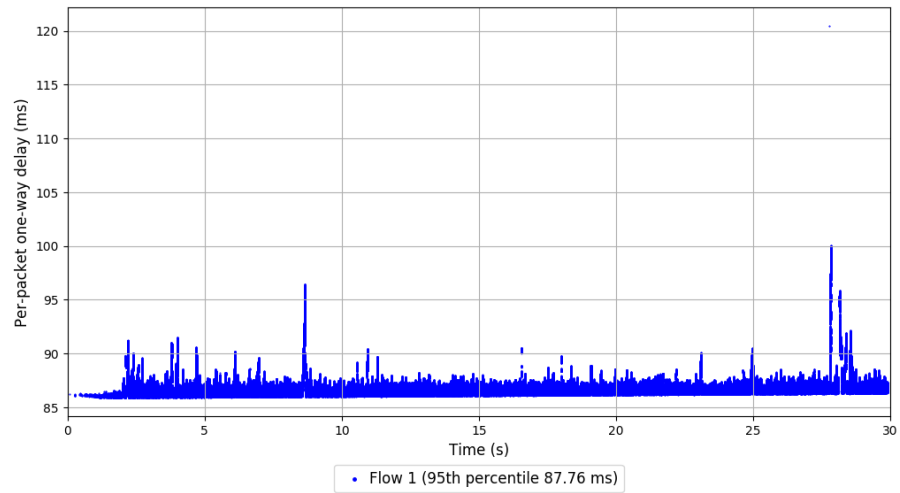
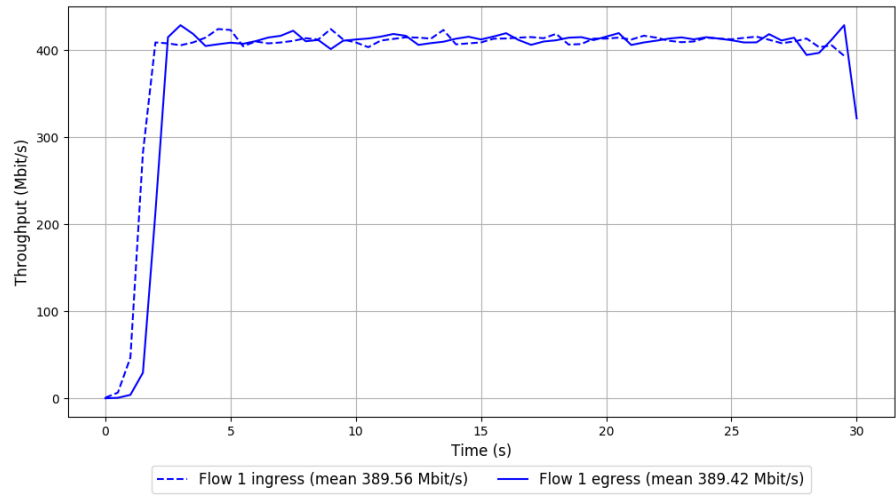
-- Flow 1:

Average throughput: 389.42 Mbit/s

95th percentile per-packet one-way delay: 87.760 ms

Loss rate: 0.61%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-10-25 23:44:45

End at: 2018-10-25 23:45:15

Local clock offset: 11.925 ms

Remote clock offset: 11.07 ms

Below is generated by plot.py at 2018-10-26 03:05:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 167.25 Mbit/s

95th percentile per-packet one-way delay: 243.521 ms

Loss rate: 18.01%

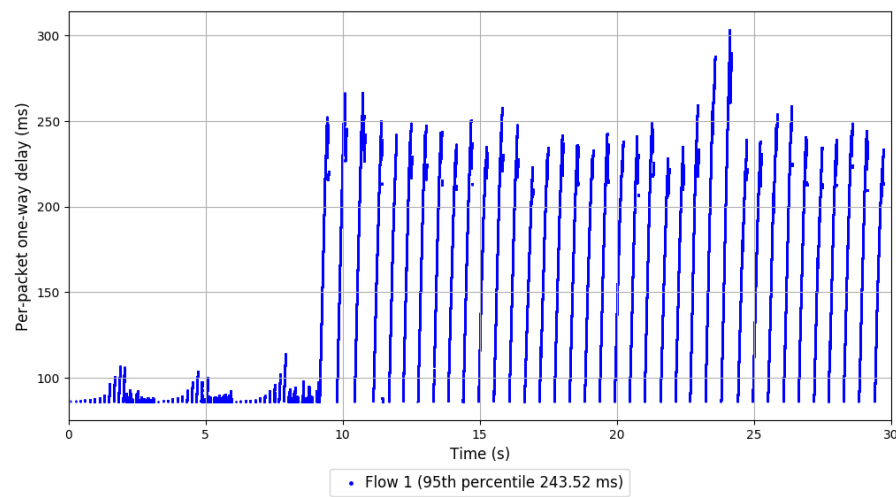
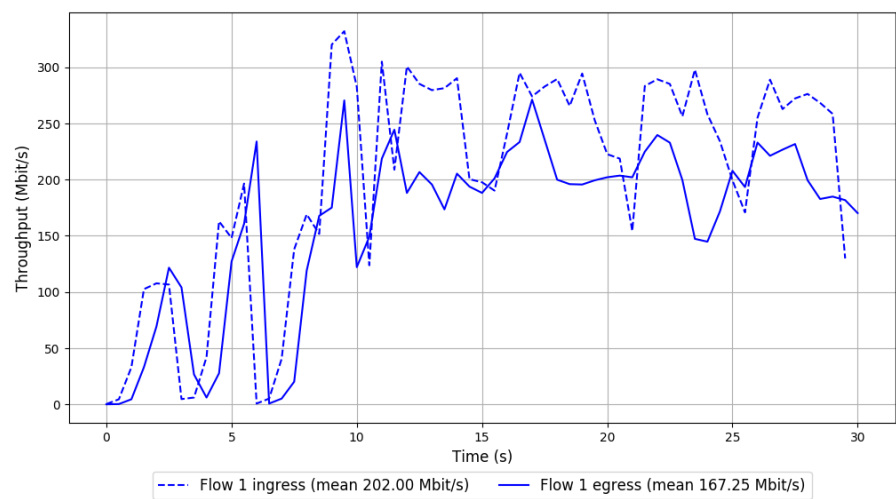
-- Flow 1:

Average throughput: 167.25 Mbit/s

95th percentile per-packet one-way delay: 243.521 ms

Loss rate: 18.01%

Run 1: Report of Verus — Data Link

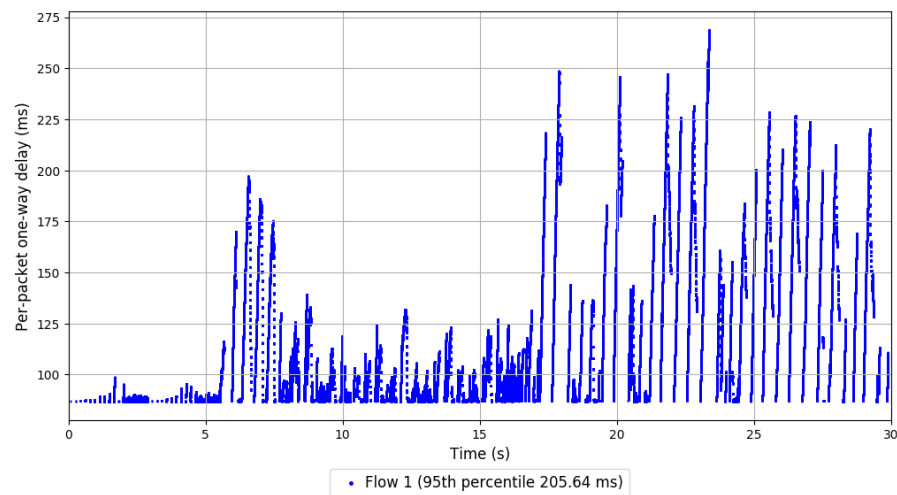
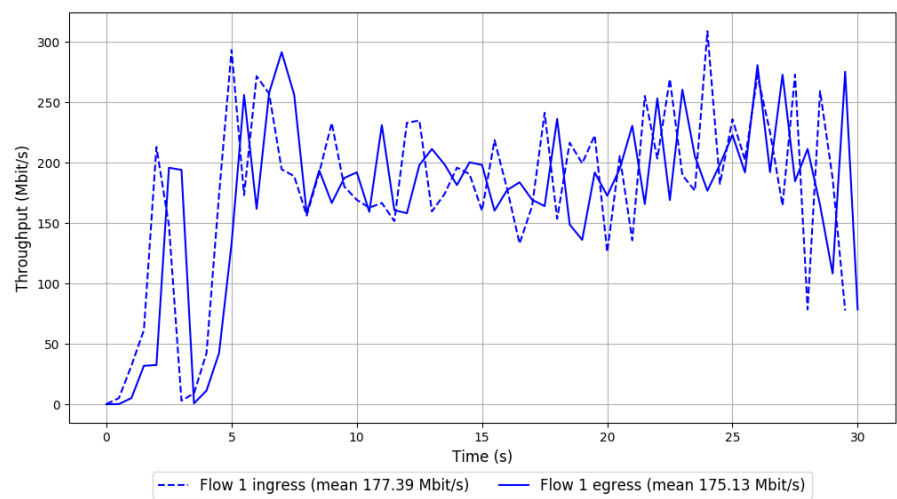


Run 2: Statistics of Verus

Start at: 2018-10-26 00:10:17
End at: 2018-10-26 00:10:47
Local clock offset: 23.662 ms
Remote clock offset: 21.447 ms

Below is generated by plot.py at 2018-10-26 03:05:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 175.13 Mbit/s
95th percentile per-packet one-way delay: 205.641 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 175.13 Mbit/s
95th percentile per-packet one-way delay: 205.641 ms
Loss rate: 1.31%

Run 2: Report of Verus — Data Link

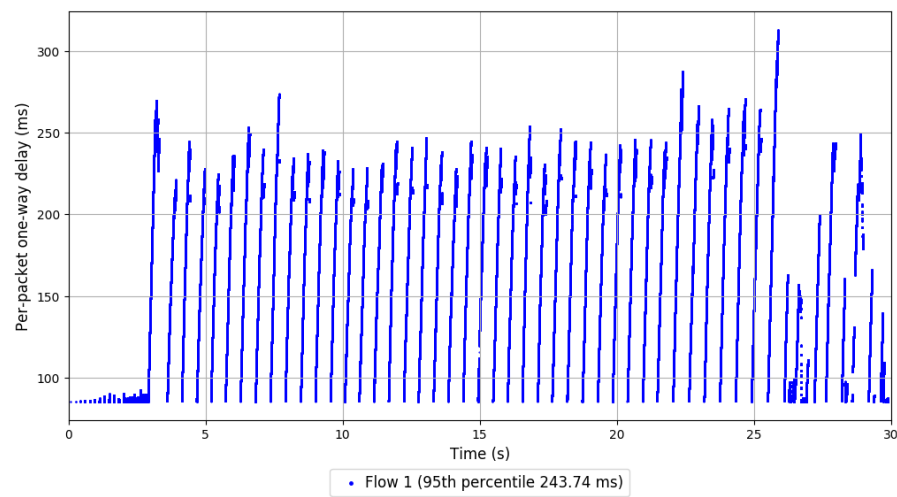
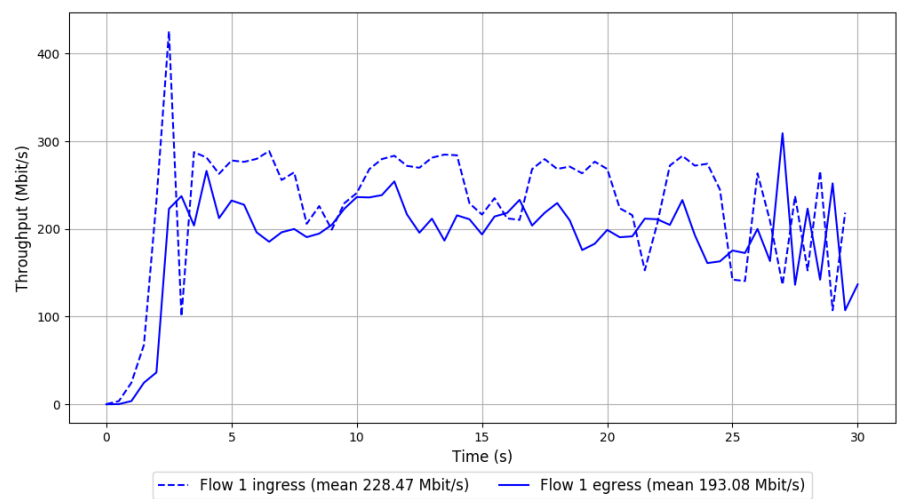


Run 3: Statistics of Verus

Start at: 2018-10-26 00:35:57
End at: 2018-10-26 00:36:27
Local clock offset: 39.163 ms
Remote clock offset: 36.501 ms

Below is generated by plot.py at 2018-10-26 03:07:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 193.08 Mbit/s
95th percentile per-packet one-way delay: 243.743 ms
Loss rate: 15.77%
-- Flow 1:
Average throughput: 193.08 Mbit/s
95th percentile per-packet one-way delay: 243.743 ms
Loss rate: 15.77%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-10-26 01:01:34

End at: 2018-10-26 01:02:04

Local clock offset: 16.513 ms

Remote clock offset: 9.368 ms

Below is generated by plot.py at 2018-10-26 03:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 194.72 Mbit/s

95th percentile per-packet one-way delay: 244.509 ms

Loss rate: 18.92%

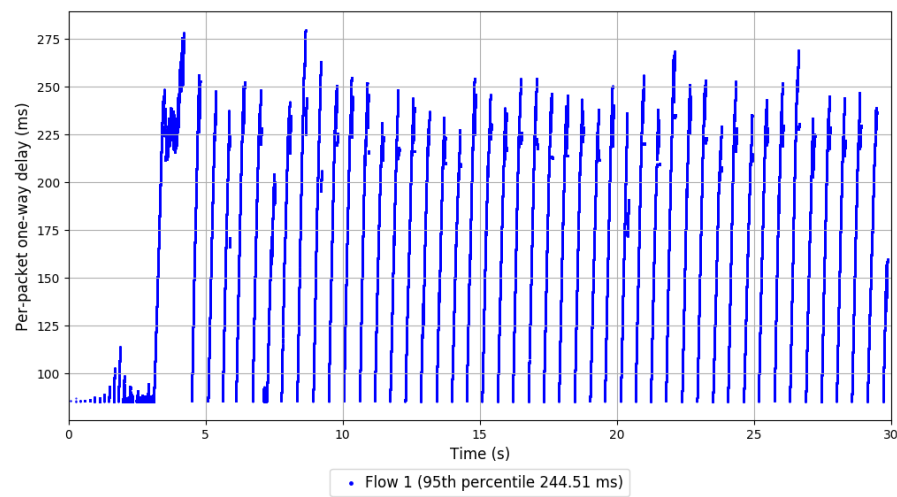
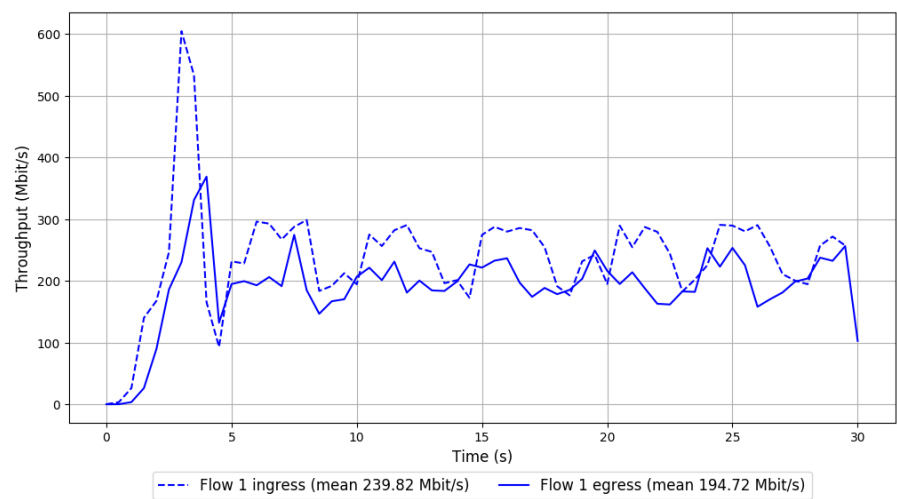
-- Flow 1:

Average throughput: 194.72 Mbit/s

95th percentile per-packet one-way delay: 244.509 ms

Loss rate: 18.92%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-26 01:27:22

End at: 2018-10-26 01:27:52

Local clock offset: 8.118 ms

Remote clock offset: 3.892 ms

Below is generated by plot.py at 2018-10-26 03:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 149.90 Mbit/s

95th percentile per-packet one-way delay: 194.759 ms

Loss rate: 1.00%

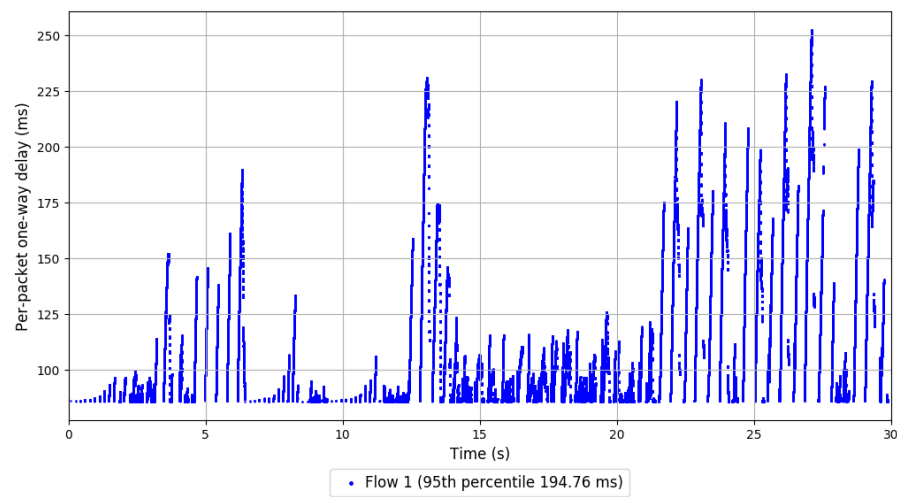
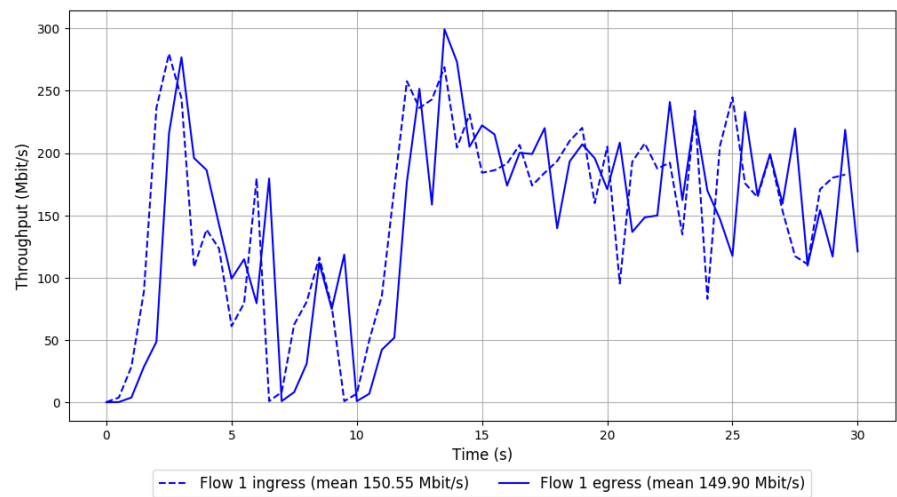
-- Flow 1:

Average throughput: 149.90 Mbit/s

95th percentile per-packet one-way delay: 194.759 ms

Loss rate: 1.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-25 23:54:03

End at: 2018-10-25 23:54:33

Local clock offset: 14.042 ms

Remote clock offset: 13.75 ms

Below is generated by plot.py at 2018-10-26 03:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 255.92 Mbit/s

95th percentile per-packet one-way delay: 89.118 ms

Loss rate: 0.99%

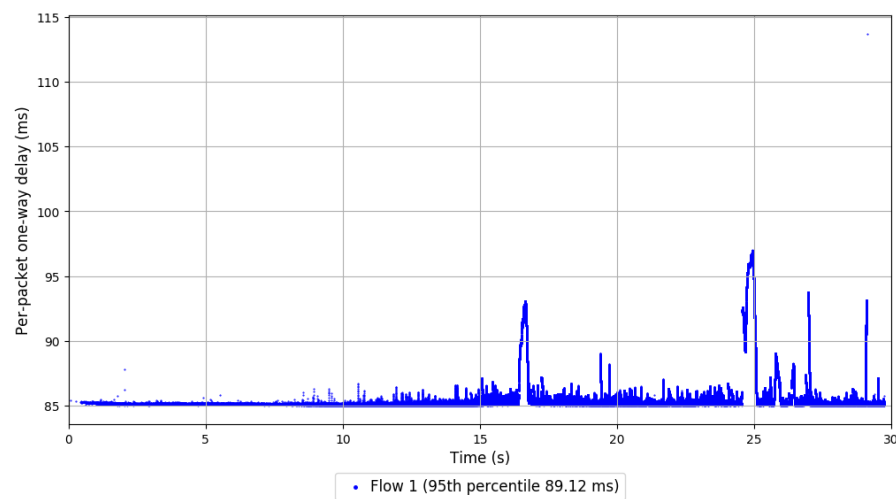
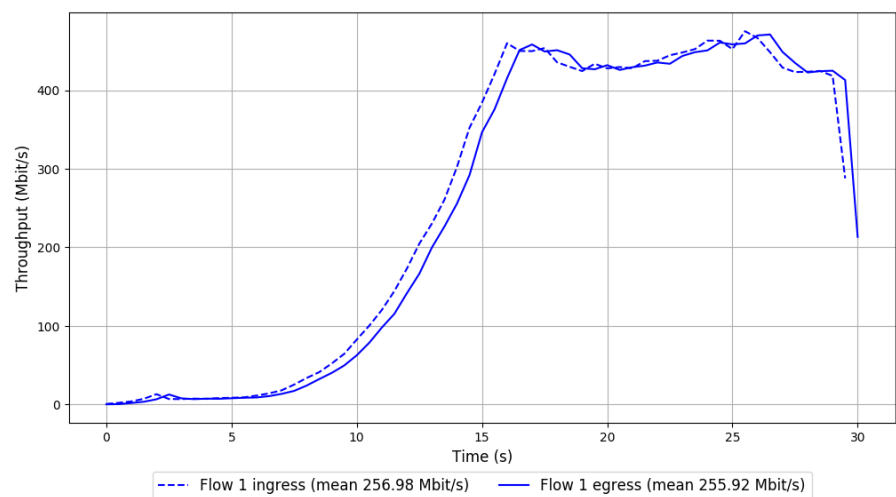
-- Flow 1:

Average throughput: 255.92 Mbit/s

95th percentile per-packet one-way delay: 89.118 ms

Loss rate: 0.99%

Run 1: Report of PCC-Vivace — Data Link

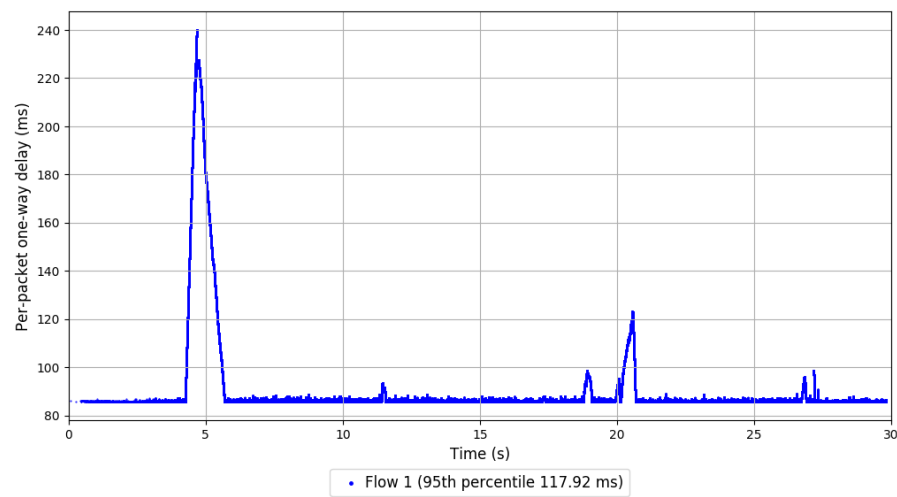
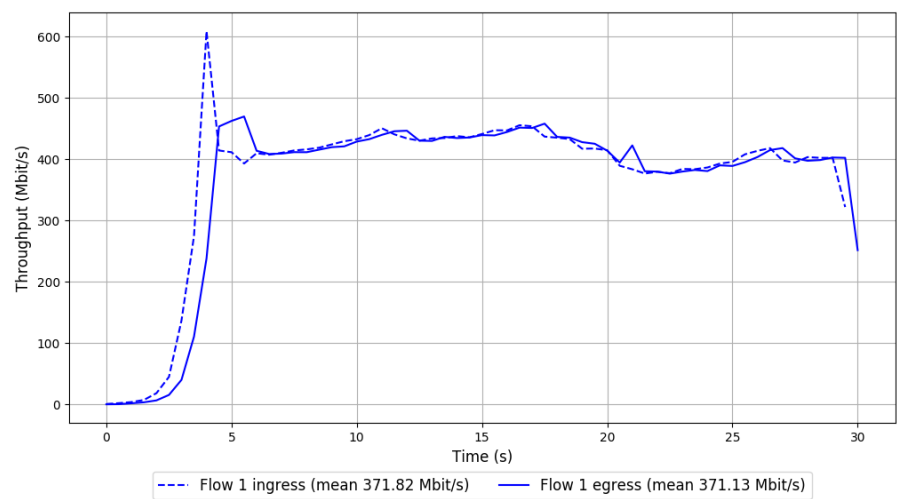


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 00:19:36
End at: 2018-10-26 00:20:06
Local clock offset: 23.316 ms
Remote clock offset: 21.686 ms

Below is generated by plot.py at 2018-10-26 03:09:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 371.13 Mbit/s
95th percentile per-packet one-way delay: 117.918 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 371.13 Mbit/s
95th percentile per-packet one-way delay: 117.918 ms
Loss rate: 0.76%

Run 2: Report of PCC-Vivace — Data Link

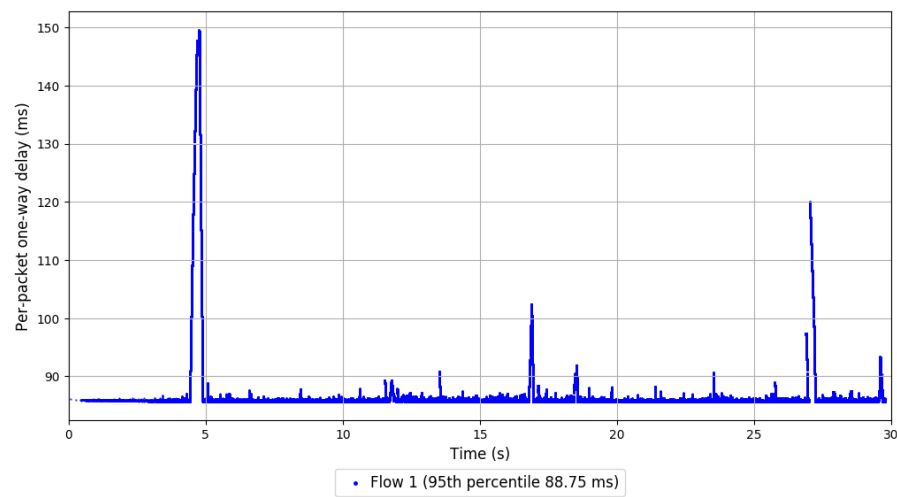
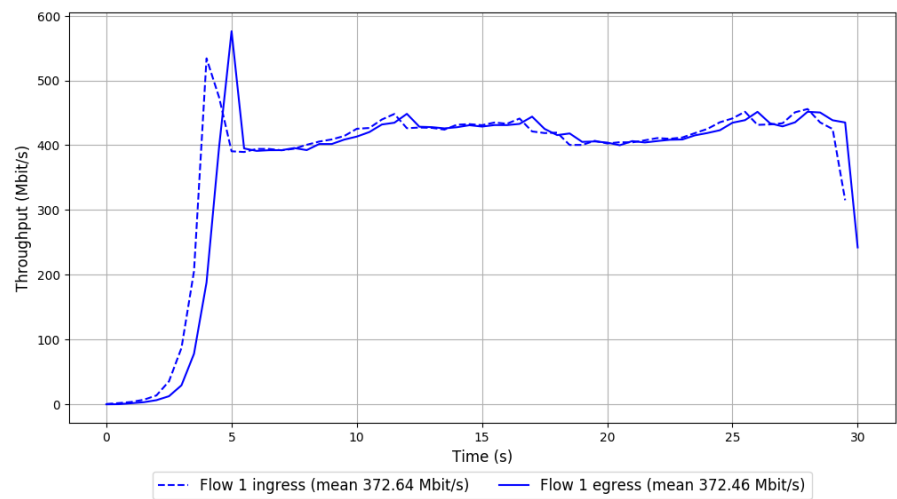


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 00:45:15
End at: 2018-10-26 00:45:45
Local clock offset: 26.787 ms
Remote clock offset: 23.495 ms

Below is generated by plot.py at 2018-10-26 03:09:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 372.46 Mbit/s
95th percentile per-packet one-way delay: 88.753 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 372.46 Mbit/s
95th percentile per-packet one-way delay: 88.753 ms
Loss rate: 0.63%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 01:11:00

End at: 2018-10-26 01:11:30

Local clock offset: 20.623 ms

Remote clock offset: 9.865 ms

Below is generated by plot.py at 2018-10-26 03:09:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 402.48 Mbit/s

95th percentile per-packet one-way delay: 92.166 ms

Loss rate: 0.68%

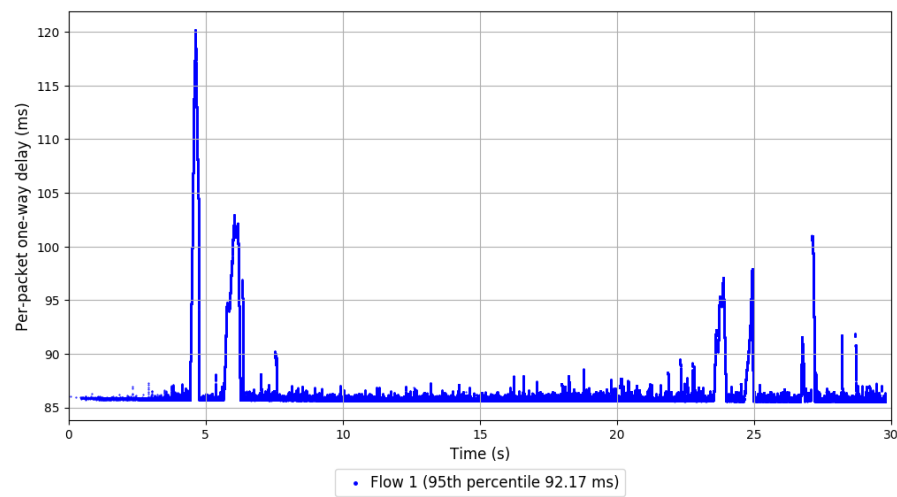
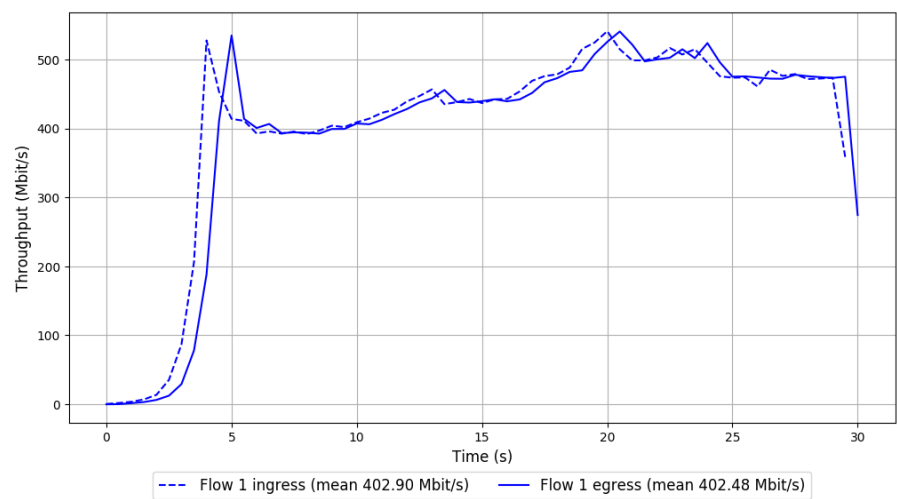
-- Flow 1:

Average throughput: 402.48 Mbit/s

95th percentile per-packet one-way delay: 92.166 ms

Loss rate: 0.68%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 01:36:42

End at: 2018-10-26 01:37:12

Local clock offset: 7.165 ms

Remote clock offset: 3.655 ms

Below is generated by plot.py at 2018-10-26 03:09:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 385.86 Mbit/s

95th percentile per-packet one-way delay: 91.412 ms

Loss rate: 0.77%

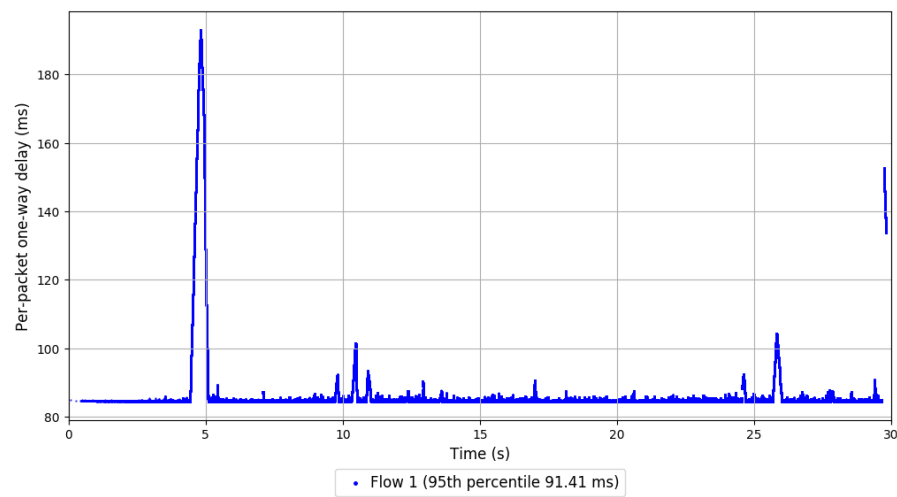
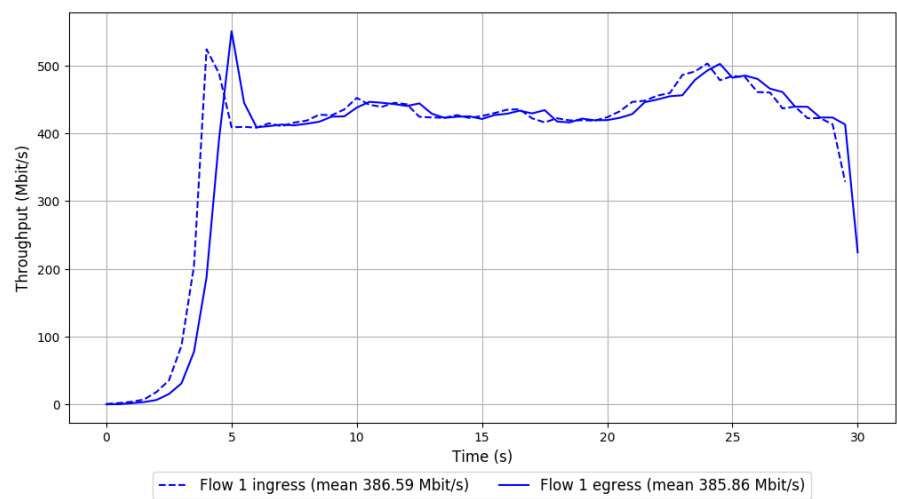
-- Flow 1:

Average throughput: 385.86 Mbit/s

95th percentile per-packet one-way delay: 91.412 ms

Loss rate: 0.77%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-10-25 23:36:36

End at: 2018-10-25 23:37:06

Local clock offset: 6.845 ms

Remote clock offset: 6.255 ms

Below is generated by plot.py at 2018-10-26 03:09:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 86.264 ms

Loss rate: 0.80%

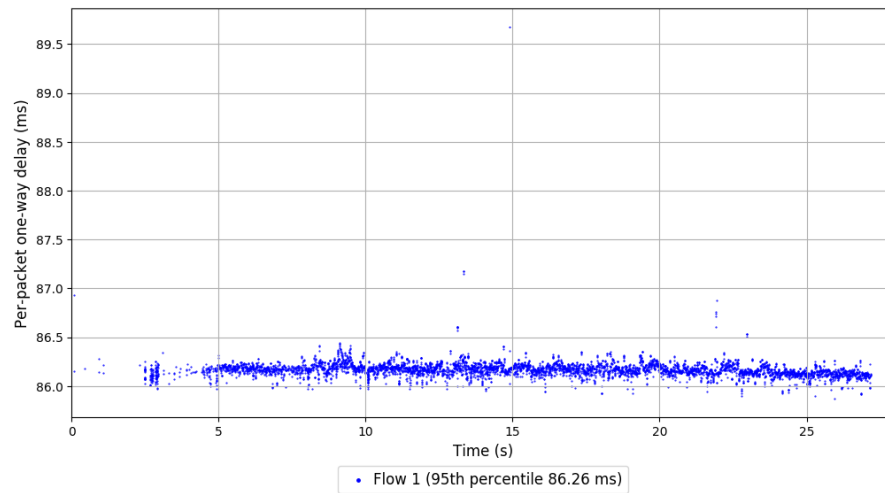
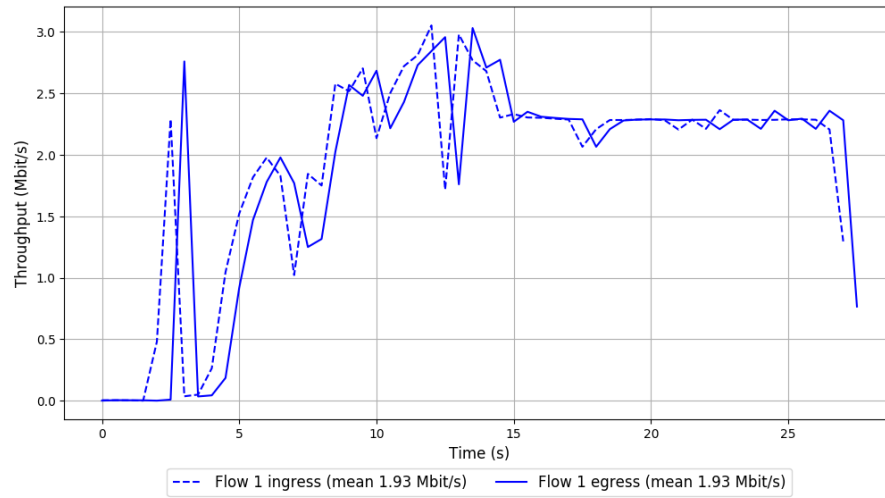
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 86.264 ms

Loss rate: 0.80%

Run 1: Report of WebRTC media — Data Link

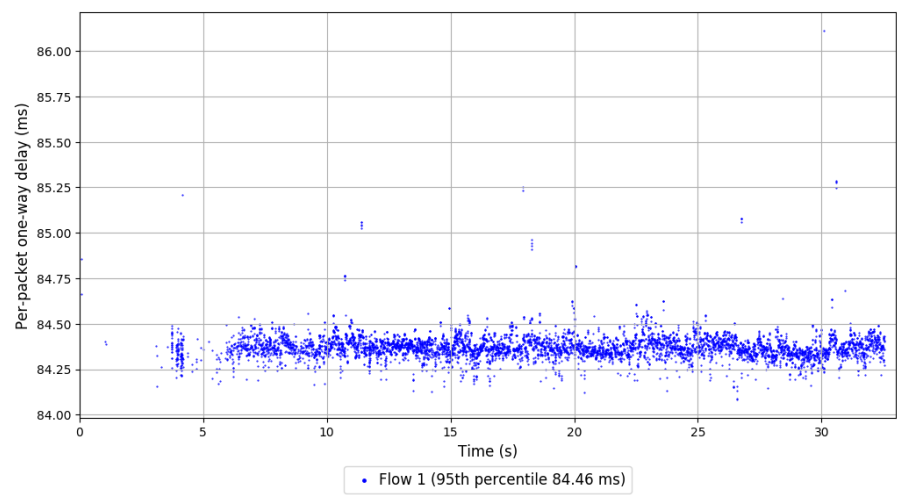
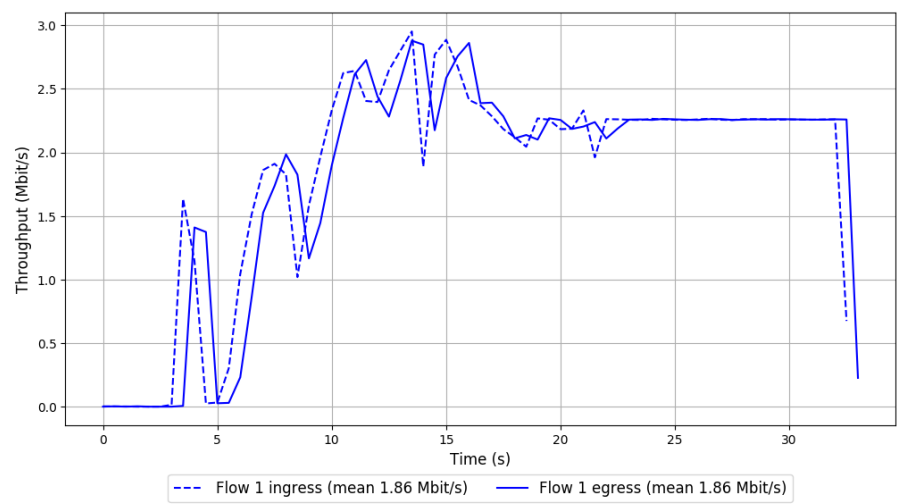


Run 2: Statistics of WebRTC media

Start at: 2018-10-26 00:01:43
End at: 2018-10-26 00:02:13
Local clock offset: 21.643 ms
Remote clock offset: 21.518 ms

Below is generated by plot.py at 2018-10-26 03:09:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 84.464 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 84.464 ms
Loss rate: 0.68%

Run 2: Report of WebRTC media — Data Link

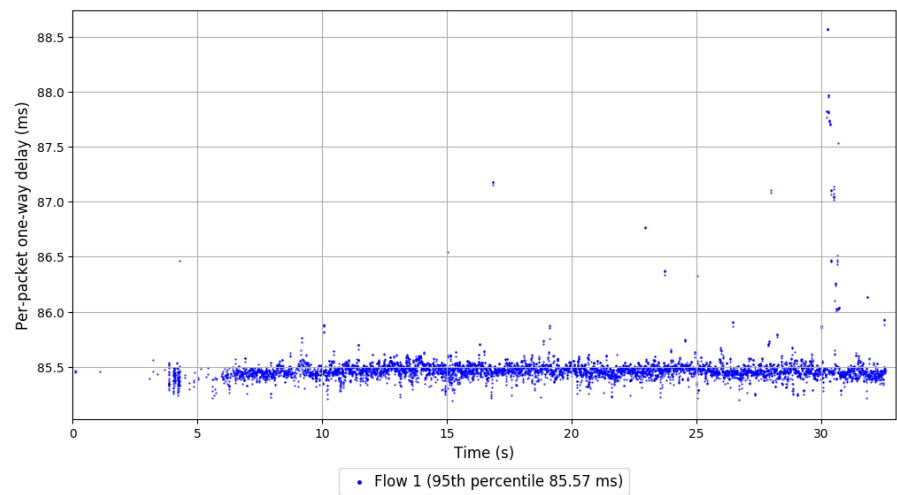
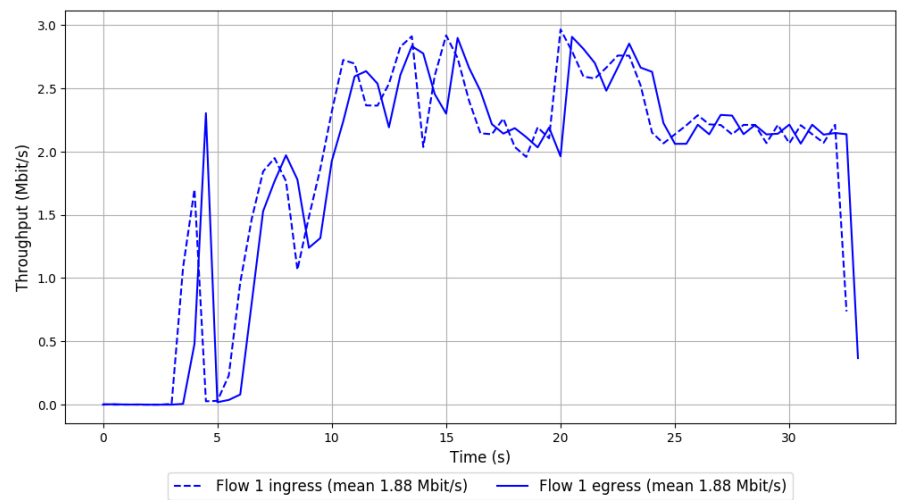


Run 3: Statistics of WebRTC media

Start at: 2018-10-26 00:27:23
End at: 2018-10-26 00:27:53
Local clock offset: 29.26 ms
Remote clock offset: 27.613 ms

Below is generated by plot.py at 2018-10-26 03:09:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 85.569 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 85.569 ms
Loss rate: 0.60%

Run 3: Report of WebRTC media — Data Link

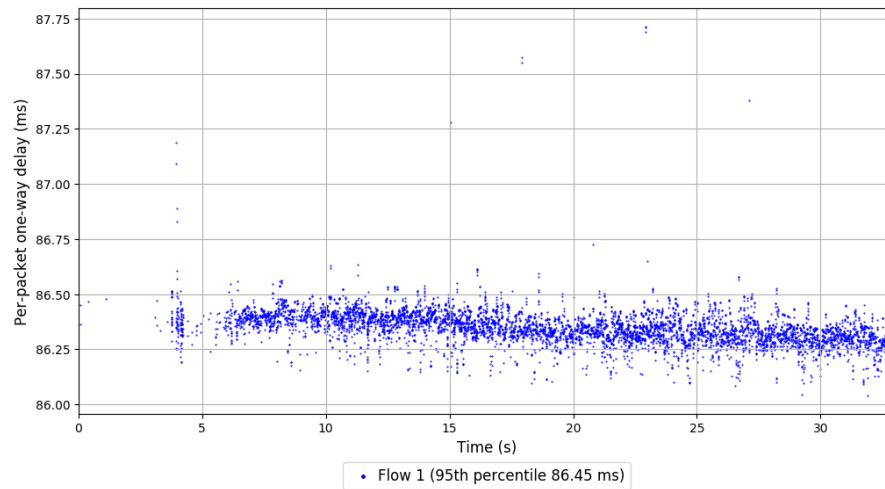
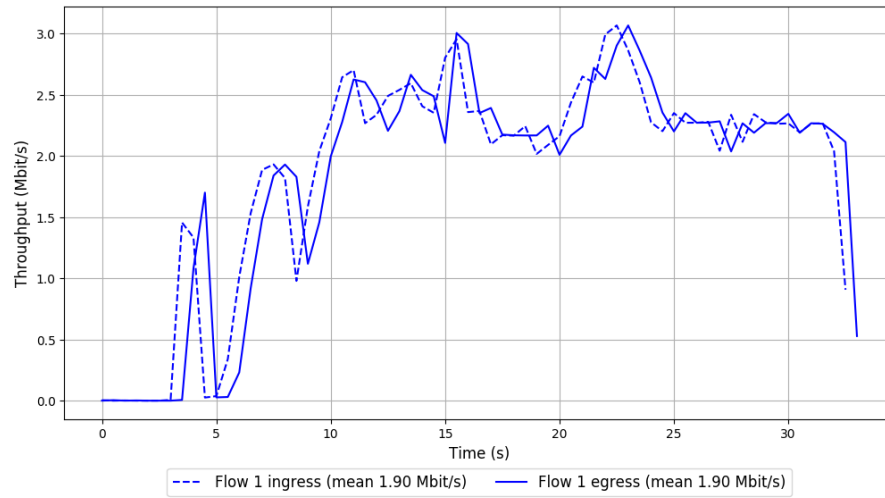


Run 4: Statistics of WebRTC media

Start at: 2018-10-26 00:53:06
End at: 2018-10-26 00:53:36
Local clock offset: 17.994 ms
Remote clock offset: 12.494 ms

Below is generated by plot.py at 2018-10-26 03:09:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 86.454 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 86.454 ms
Loss rate: 0.61%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-26 01:18:51

End at: 2018-10-26 01:19:21

Local clock offset: 14.554 ms

Remote clock offset: 6.572 ms

Below is generated by plot.py at 2018-10-26 03:09:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 86.937 ms

Loss rate: 0.83%

-- Flow 1:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 86.937 ms

Loss rate: 0.83%

Run 5: Report of WebRTC media — Data Link

