

Pantheon Report

Generated at 2018-12-20 12:16:57 (UTC).

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

Repeated the test of 19 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:

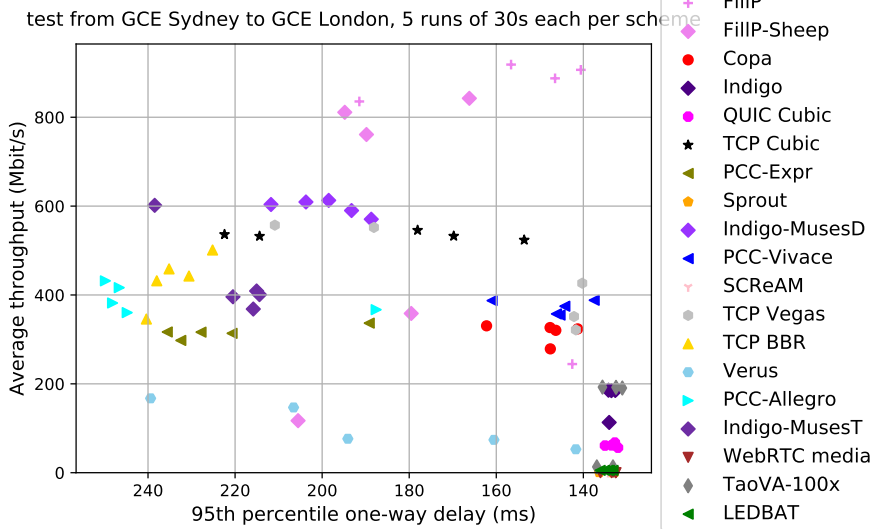
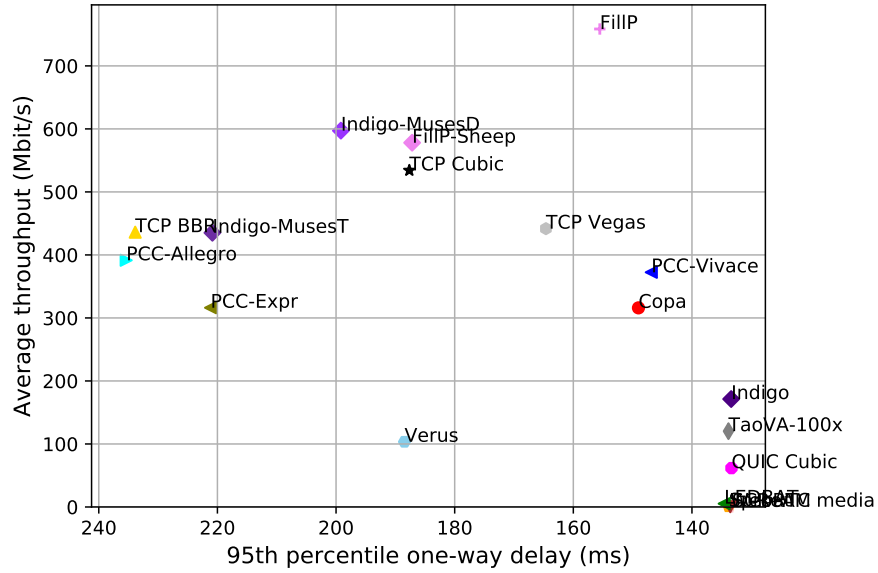
```
Linux 4.15.0-1025-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
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 London, 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	436.11	233.86	1.47
Copa	5	316.01	149.02	0.00
TCP Cubic	5	534.12	187.65	0.14
FillP	5	758.54	155.53	0.51
FillP-Sheep	5	578.07	187.17	1.60
Indigo	5	171.31	133.39	0.00
Indigo-MusesD	5	597.25	199.19	0.31
Indigo-MusesT	5	435.16	220.84	1.21
LEDBAT	5	5.28	134.57	0.00
PCC-Allegro	5	391.51	235.38	4.02
PCC-Expr	5	316.19	221.16	2.62
QUIC Cubic	4	61.71	133.34	0.00
SCReAM	5	0.15	133.26	0.00
Sprout	5	0.65	133.80	0.00
TaoVA-100x	5	120.31	133.85	0.00
TCP Vegas	5	441.68	164.62	0.03
Verus	5	103.47	188.46	0.19
PCC-Vivace	5	372.45	146.86	0.28
WebRTC media	5	0.42	133.54	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-12-20 08:40:11

End at: 2018-12-20 08:40:41

Local clock offset: 0.065 ms

Remote clock offset: 0.001 ms

Below is generated by plot.py at 2018-12-20 11:04:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 458.73 Mbit/s

95th percentile per-packet one-way delay: 235.161 ms

Loss rate: 1.24%

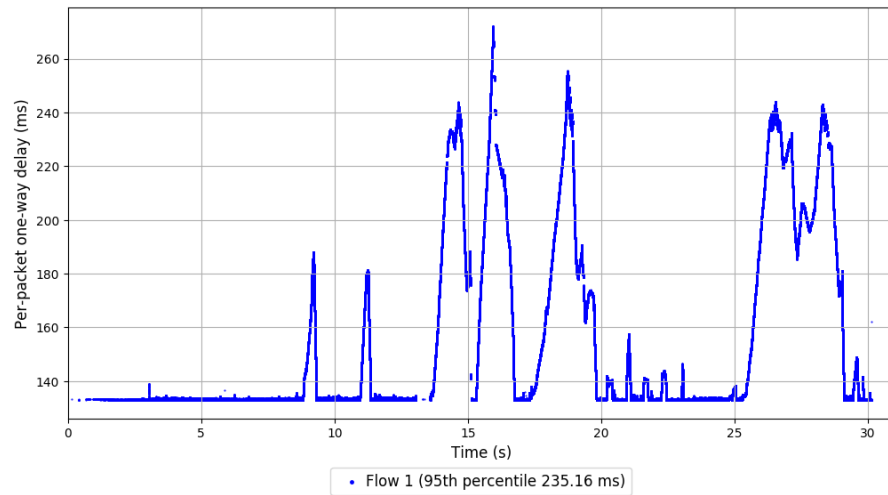
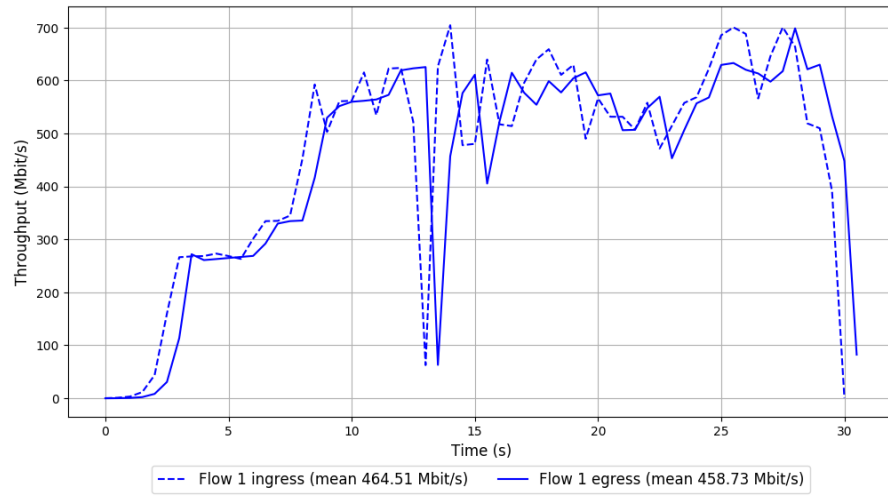
-- Flow 1:

Average throughput: 458.73 Mbit/s

95th percentile per-packet one-way delay: 235.161 ms

Loss rate: 1.24%

Run 1: Report of TCP BBR — Data Link

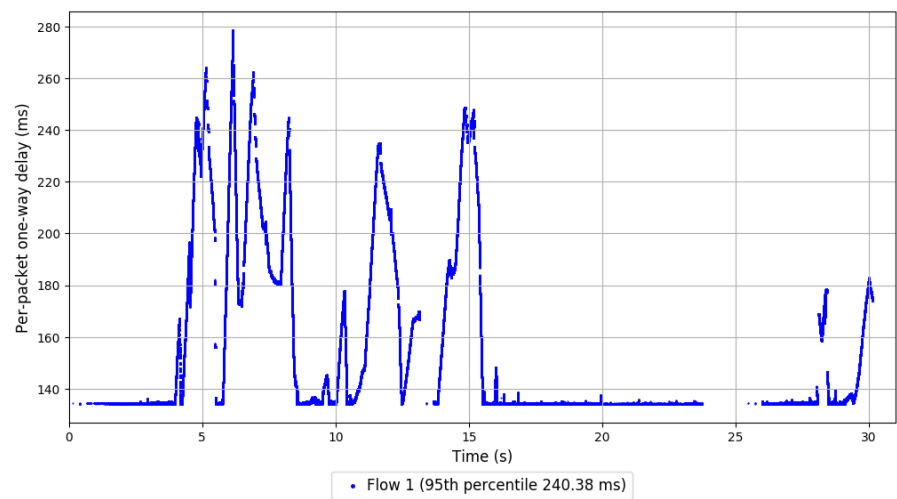
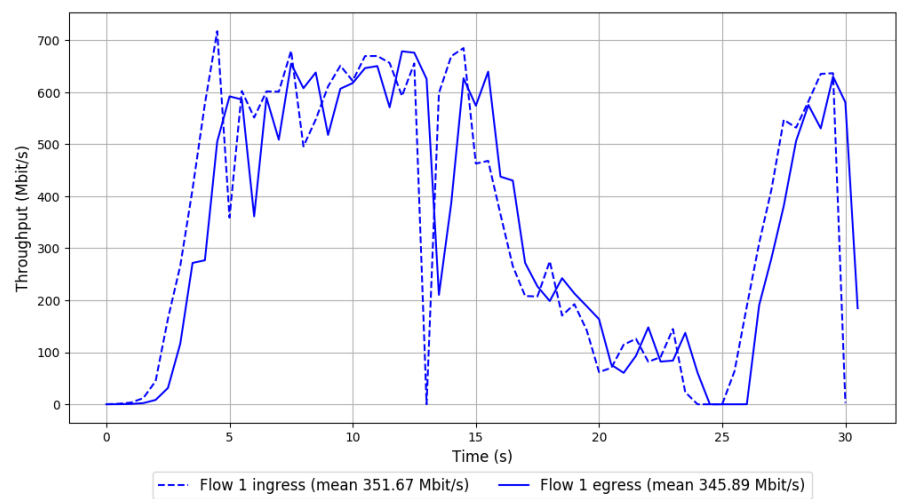


Run 2: Statistics of TCP BBR

Start at: 2018-12-20 09:08:57
End at: 2018-12-20 09:09:27
Local clock offset: -1.402 ms
Remote clock offset: -0.085 ms

Below is generated by plot.py at 2018-12-20 11:04:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 345.89 Mbit/s
95th percentile per-packet one-way delay: 240.375 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 345.89 Mbit/s
95th percentile per-packet one-way delay: 240.375 ms
Loss rate: 1.64%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-12-20 09:37:35

End at: 2018-12-20 09:38:05

Local clock offset: 1.548 ms

Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-12-20 11:04:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 431.99 Mbit/s

95th percentile per-packet one-way delay: 237.989 ms

Loss rate: 2.15%

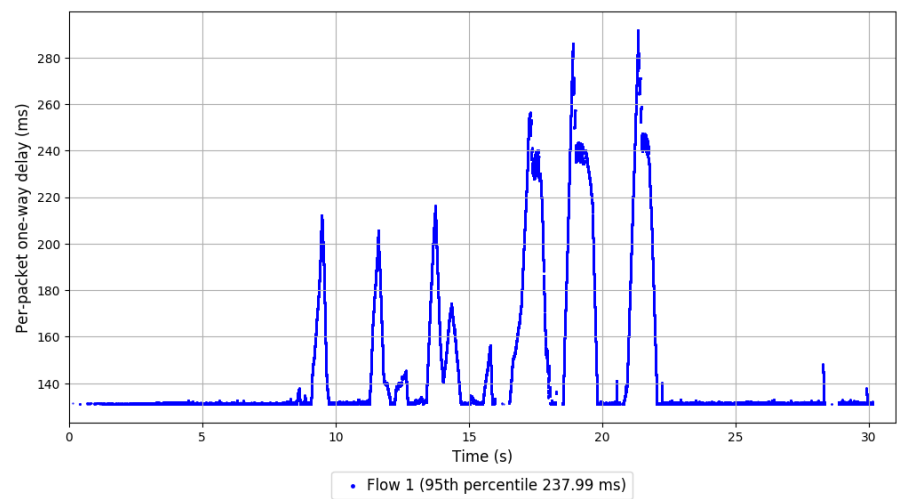
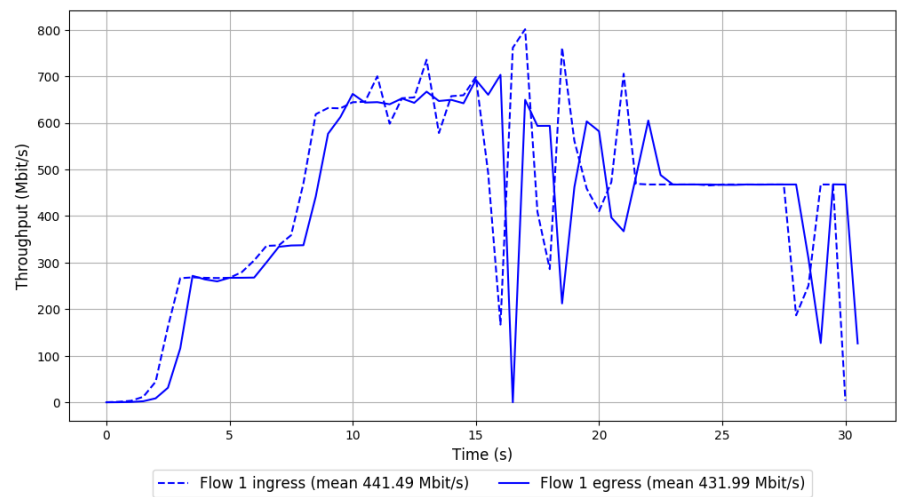
-- Flow 1:

Average throughput: 431.99 Mbit/s

95th percentile per-packet one-way delay: 237.989 ms

Loss rate: 2.15%

Run 3: Report of TCP BBR — Data Link

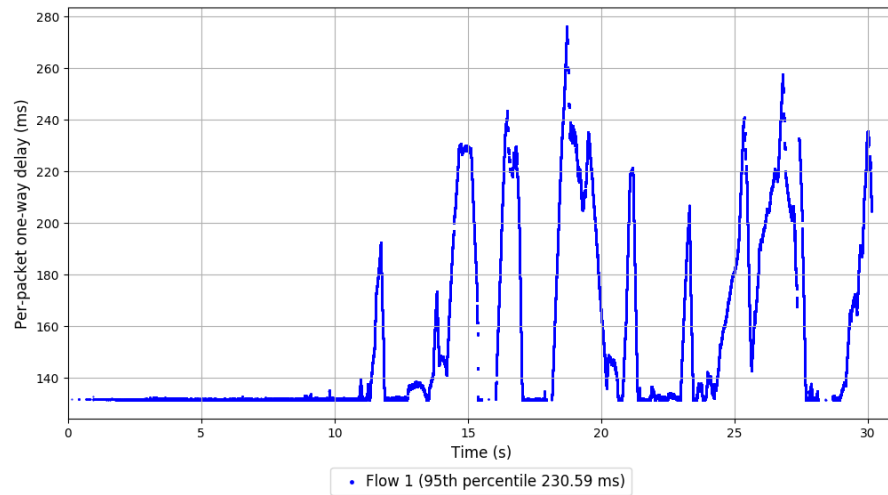
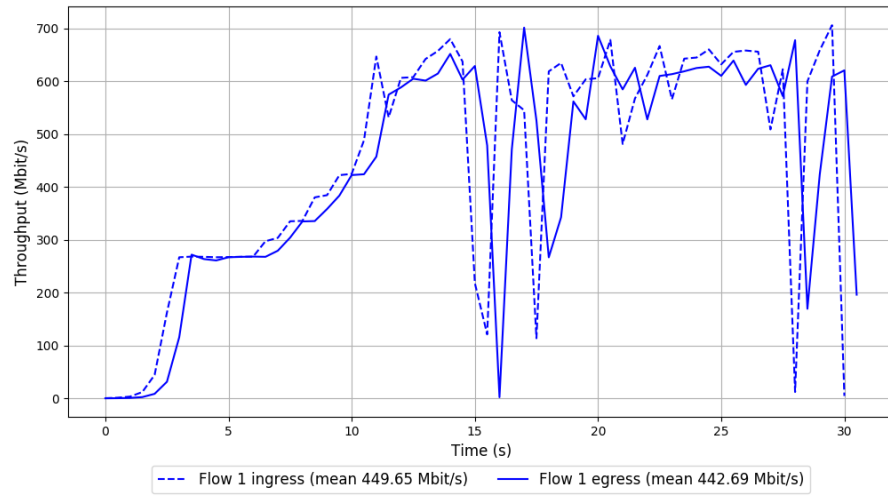


Run 4: Statistics of TCP BBR

Start at: 2018-12-20 10:06:41
End at: 2018-12-20 10:07:11
Local clock offset: 1.357 ms
Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-12-20 11:04:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 442.69 Mbit/s
95th percentile per-packet one-way delay: 230.591 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 442.69 Mbit/s
95th percentile per-packet one-way delay: 230.591 ms
Loss rate: 1.55%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-12-20 10:35:43

End at: 2018-12-20 10:36:13

Local clock offset: -0.107 ms

Remote clock offset: 0.336 ms

Below is generated by plot.py at 2018-12-20 11:04:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 501.24 Mbit/s

95th percentile per-packet one-way delay: 225.170 ms

Loss rate: 0.77%

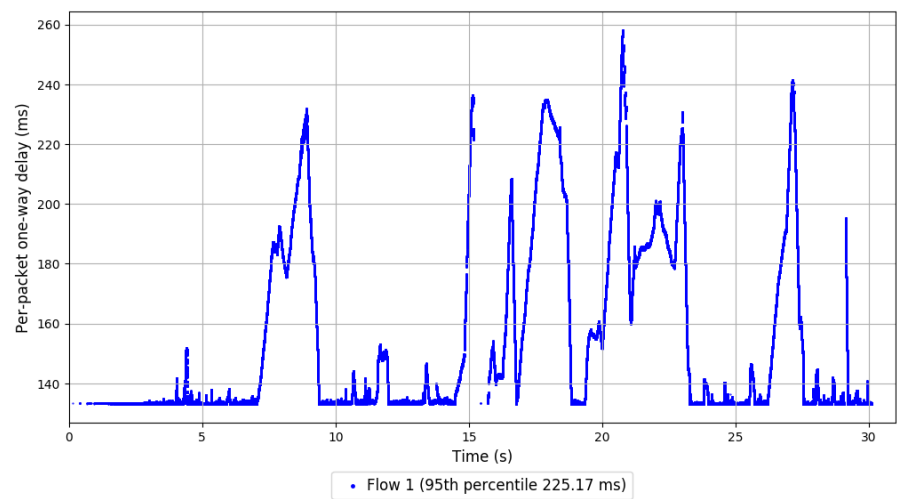
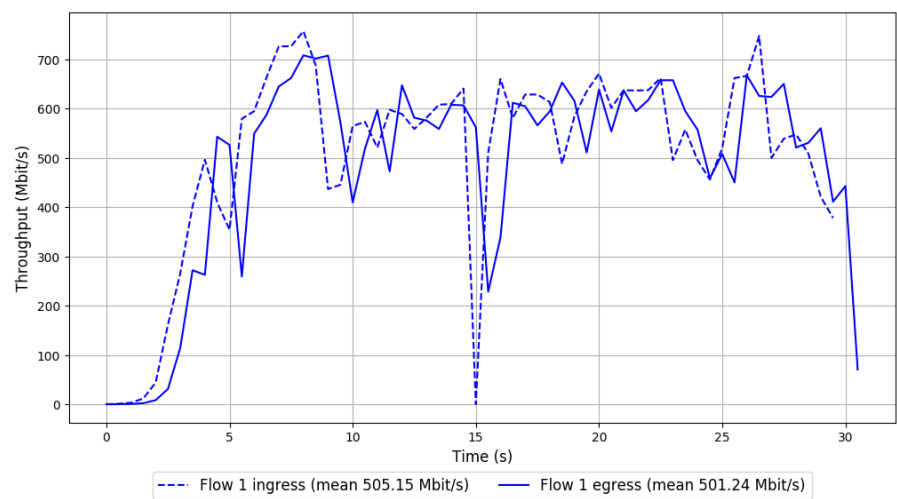
-- Flow 1:

Average throughput: 501.24 Mbit/s

95th percentile per-packet one-way delay: 225.170 ms

Loss rate: 0.77%

Run 5: Report of TCP BBR — Data Link

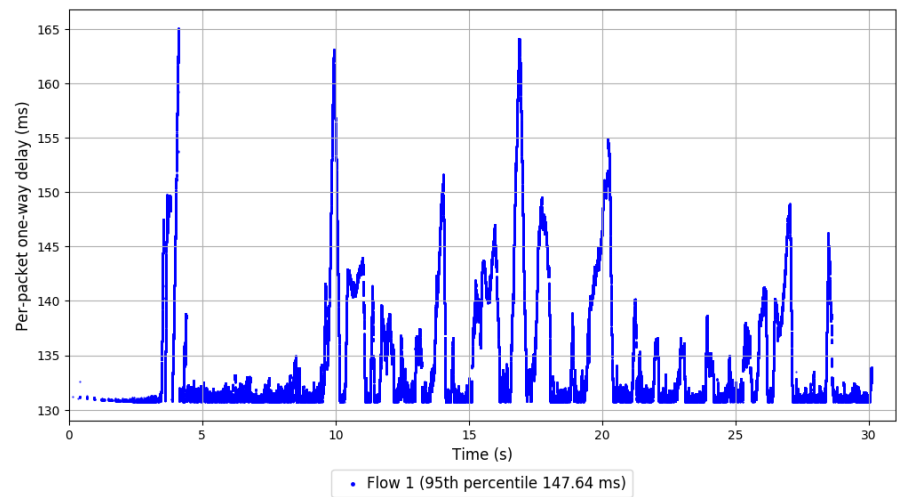
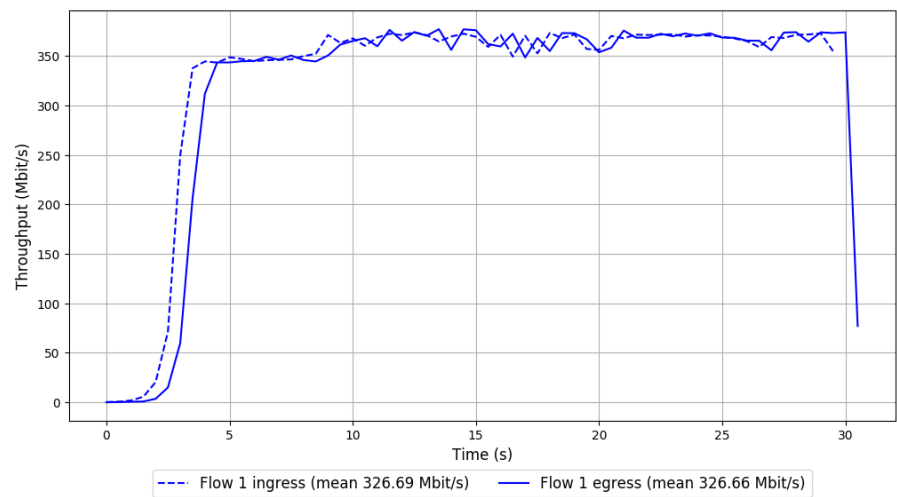


Run 1: Statistics of Copa

Start at: 2018-12-20 08:32:02
End at: 2018-12-20 08:32:32
Local clock offset: 1.577 ms
Remote clock offset: -0.368 ms

Below is generated by plot.py at 2018-12-20 11:06:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 326.66 Mbit/s
95th percentile per-packet one-way delay: 147.642 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 326.66 Mbit/s
95th percentile per-packet one-way delay: 147.642 ms
Loss rate: 0.01%

Run 1: Report of Copa — Data Link

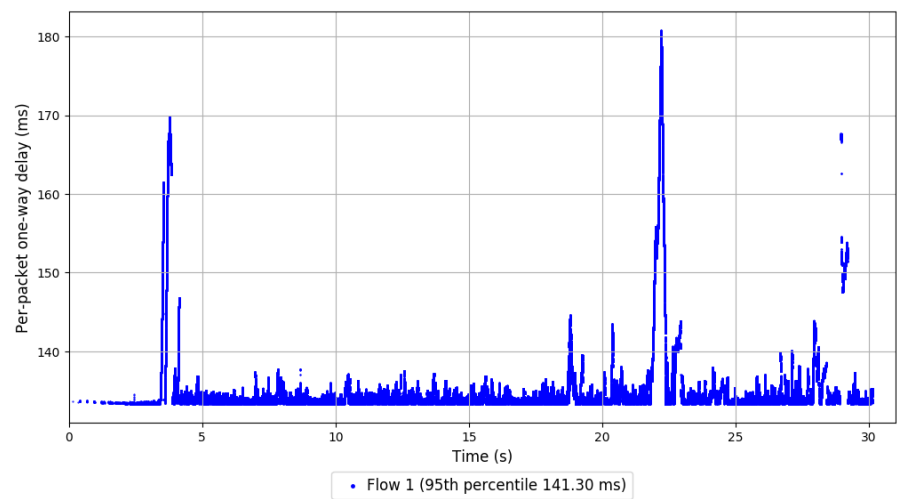
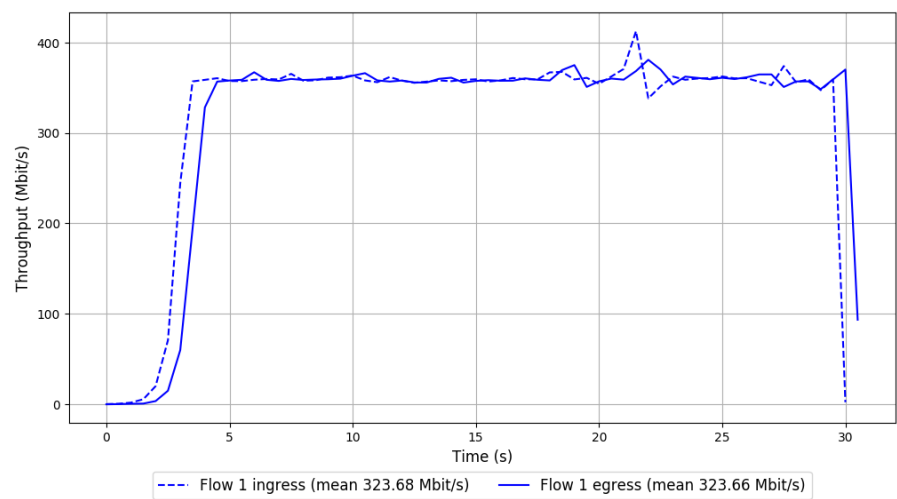


Run 2: Statistics of Copa

Start at: 2018-12-20 09:00:30
End at: 2018-12-20 09:01:00
Local clock offset: 0.026 ms
Remote clock offset: -0.014 ms

Below is generated by plot.py at 2018-12-20 11:06:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 323.66 Mbit/s
95th percentile per-packet one-way delay: 141.304 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 323.66 Mbit/s
95th percentile per-packet one-way delay: 141.304 ms
Loss rate: 0.01%

Run 2: Report of Copa — Data Link

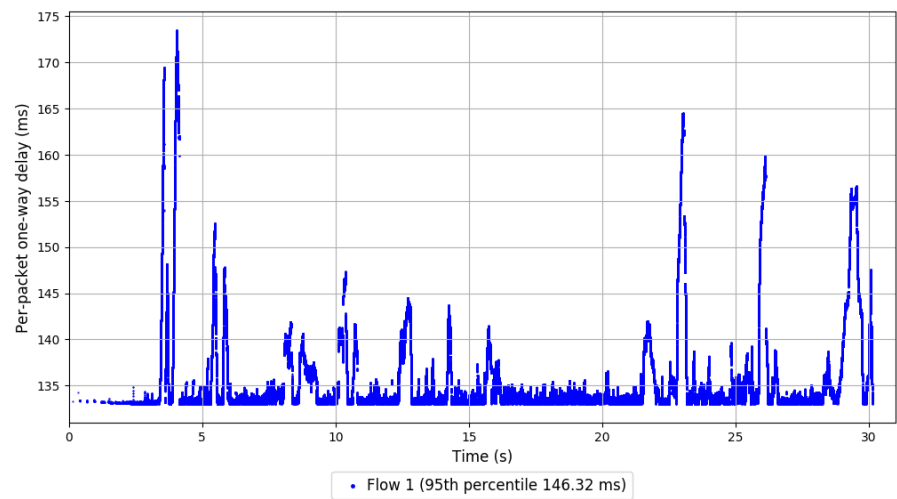
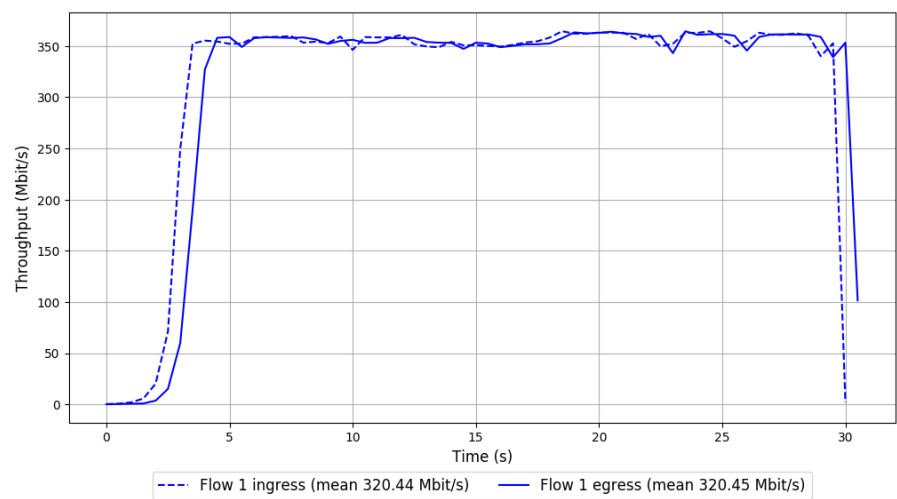


Run 3: Statistics of Copa

Start at: 2018-12-20 09:29:17
End at: 2018-12-20 09:29:47
Local clock offset: -0.058 ms
Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-12-20 11:06:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 320.45 Mbit/s
95th percentile per-packet one-way delay: 146.325 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 320.45 Mbit/s
95th percentile per-packet one-way delay: 146.325 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link

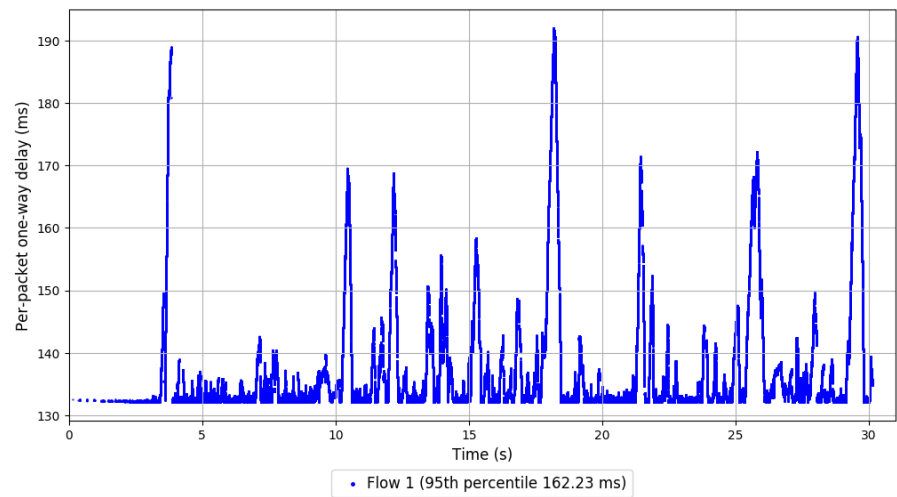
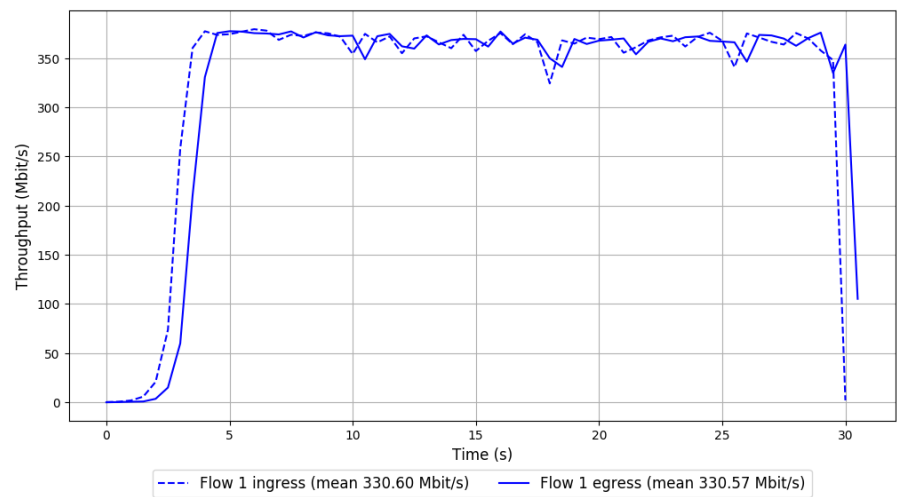


Run 4: Statistics of Copa

Start at: 2018-12-20 09:58:12
End at: 2018-12-20 09:58:42
Local clock offset: 0.055 ms
Remote clock offset: -0.139 ms

Below is generated by plot.py at 2018-12-20 11:12:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 330.57 Mbit/s
95th percentile per-packet one-way delay: 162.233 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 330.57 Mbit/s
95th percentile per-packet one-way delay: 162.233 ms
Loss rate: 0.00%

Run 4: Report of Copa — Data Link

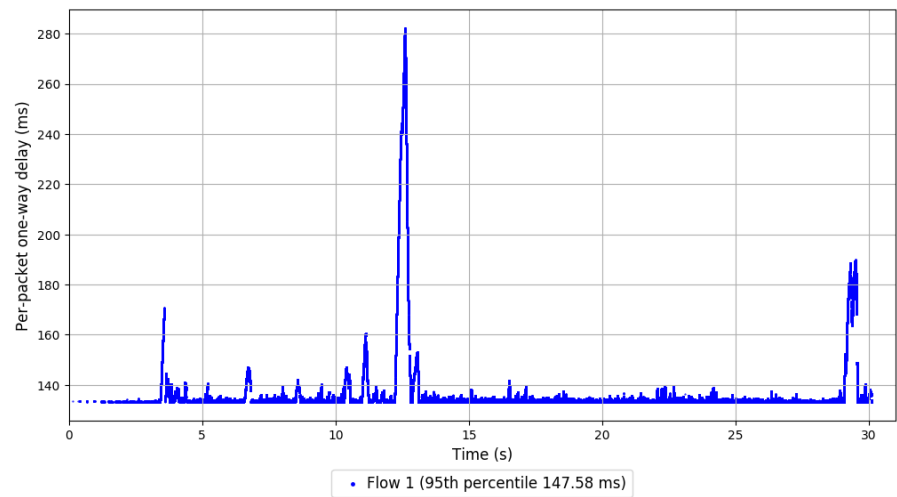
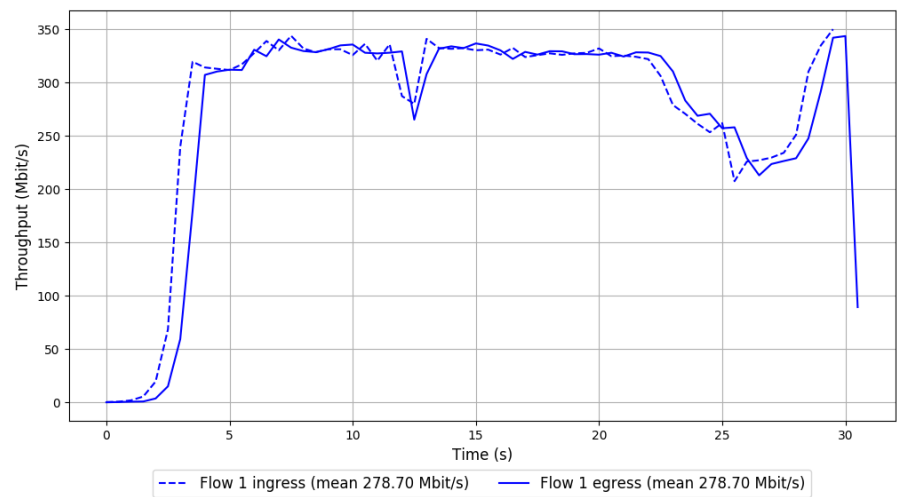


Run 5: Statistics of Copa

Start at: 2018-12-20 10:27:22
End at: 2018-12-20 10:27:52
Local clock offset: 0.105 ms
Remote clock offset: -0.086 ms

Below is generated by plot.py at 2018-12-20 11:12:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 278.70 Mbit/s
95th percentile per-packet one-way delay: 147.582 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 278.70 Mbit/s
95th percentile per-packet one-way delay: 147.582 ms
Loss rate: 0.00%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-12-20 08:26:50

End at: 2018-12-20 08:27:20

Local clock offset: 0.16 ms

Remote clock offset: 0.024 ms

Below is generated by plot.py at 2018-12-20 11:12:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 532.57 Mbit/s

95th percentile per-packet one-way delay: 169.782 ms

Loss rate: 0.01%

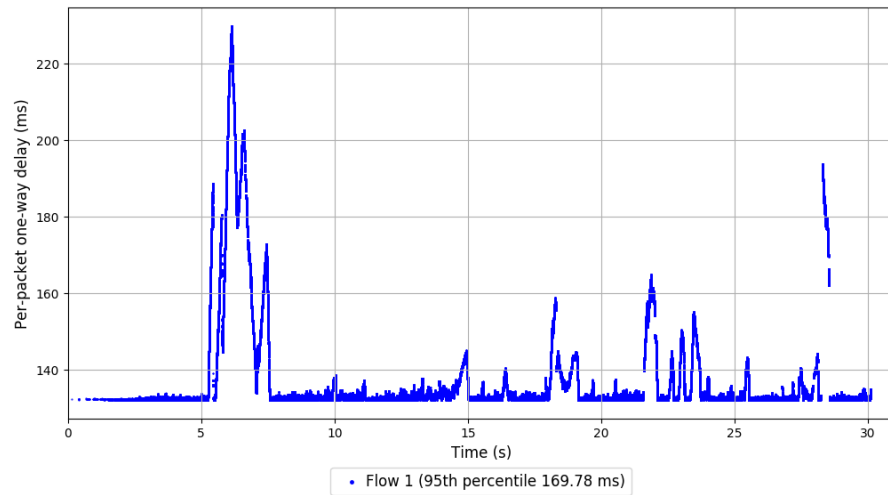
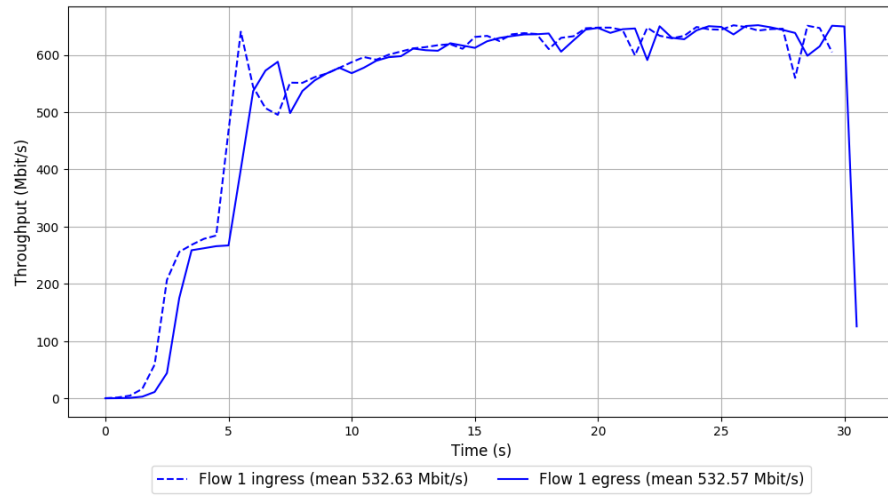
-- Flow 1:

Average throughput: 532.57 Mbit/s

95th percentile per-packet one-way delay: 169.782 ms

Loss rate: 0.01%

Run 1: Report of TCP Cubic — Data Link

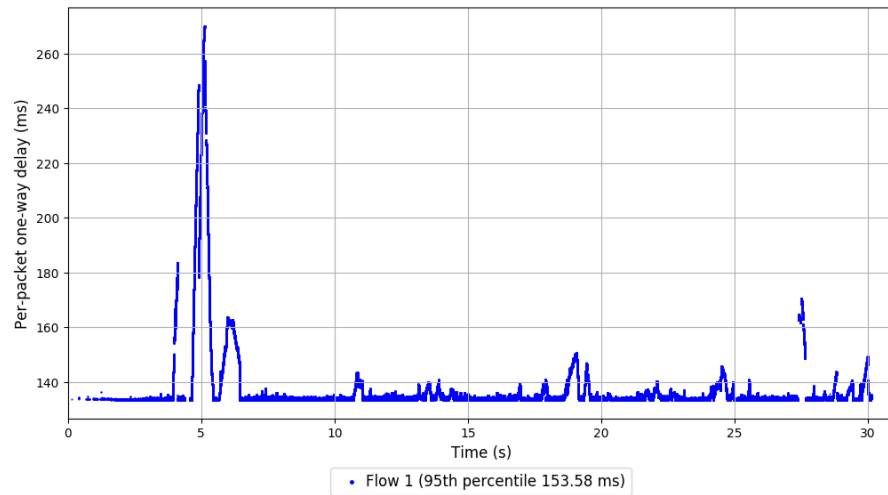
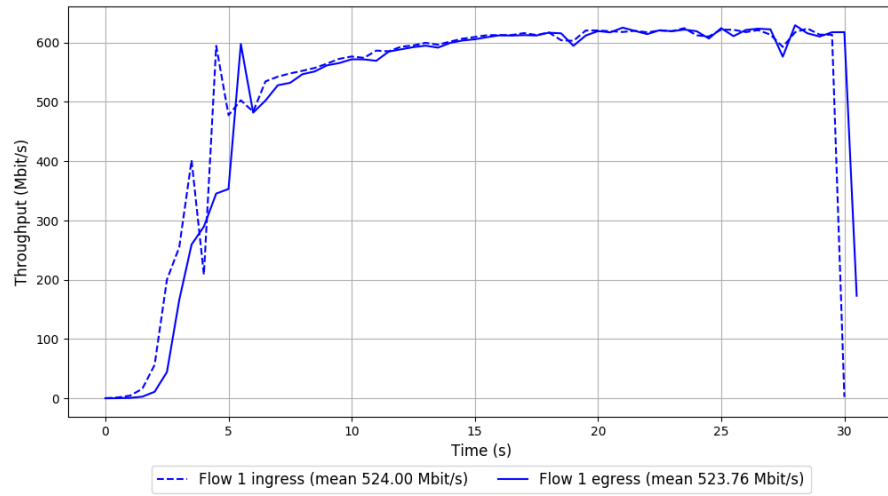


Run 2: Statistics of TCP Cubic

Start at: 2018-12-20 08:55:12
End at: 2018-12-20 08:55:42
Local clock offset: -0.145 ms
Remote clock offset: -0.008 ms

Below is generated by plot.py at 2018-12-20 11:12:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 523.76 Mbit/s
95th percentile per-packet one-way delay: 153.581 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 523.76 Mbit/s
95th percentile per-packet one-way delay: 153.581 ms
Loss rate: 0.05%

Run 2: Report of TCP Cubic — Data Link

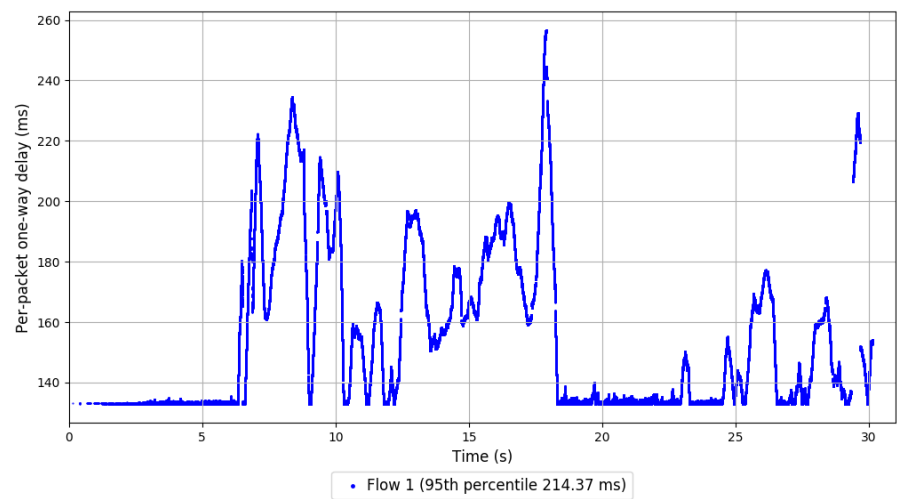
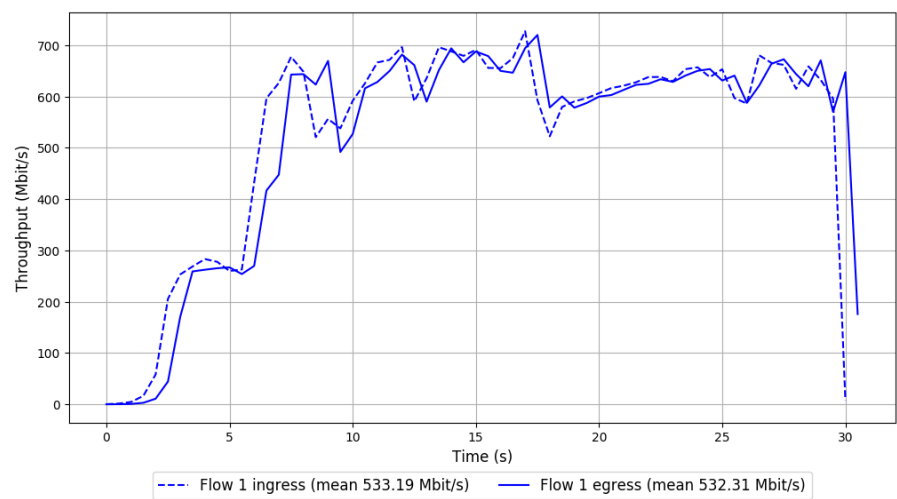


Run 3: Statistics of TCP Cubic

Start at: 2018-12-20 09:23:58
End at: 2018-12-20 09:24:28
Local clock offset: -0.157 ms
Remote clock offset: -0.038 ms

Below is generated by plot.py at 2018-12-20 11:14:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 532.31 Mbit/s
95th percentile per-packet one-way delay: 214.374 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 532.31 Mbit/s
95th percentile per-packet one-way delay: 214.374 ms
Loss rate: 0.16%

Run 3: Report of TCP Cubic — Data Link

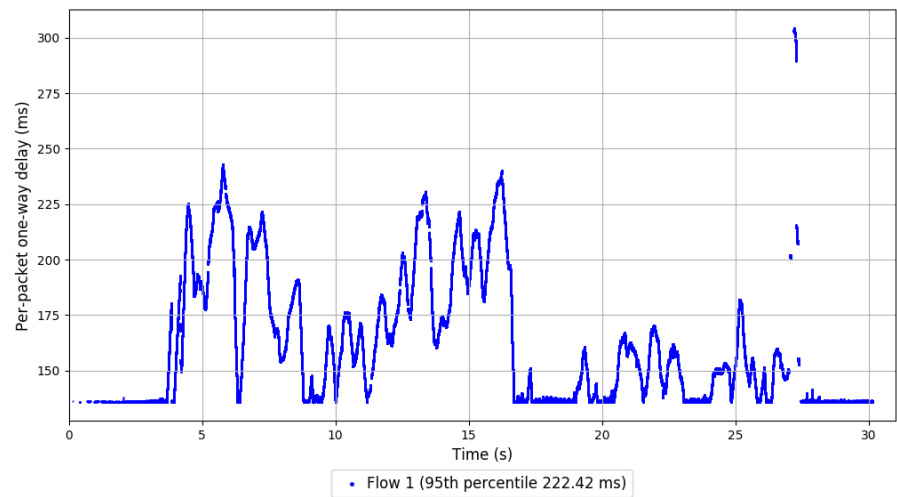
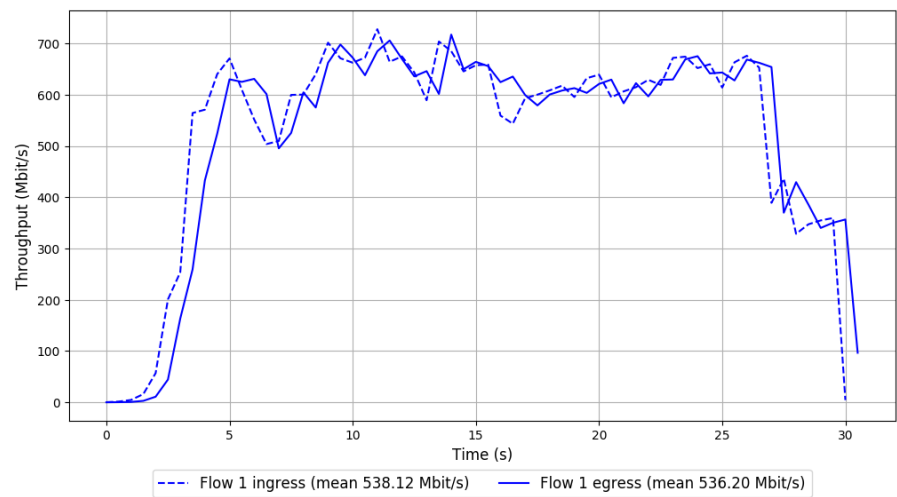


Run 4: Statistics of TCP Cubic

Start at: 2018-12-20 09:52:53
End at: 2018-12-20 09:53:23
Local clock offset: -2.937 ms
Remote clock offset: -0.496 ms

Below is generated by plot.py at 2018-12-20 11:15:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 536.20 Mbit/s
95th percentile per-packet one-way delay: 222.423 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 536.20 Mbit/s
95th percentile per-packet one-way delay: 222.423 ms
Loss rate: 0.36%

Run 4: Report of TCP Cubic — Data Link

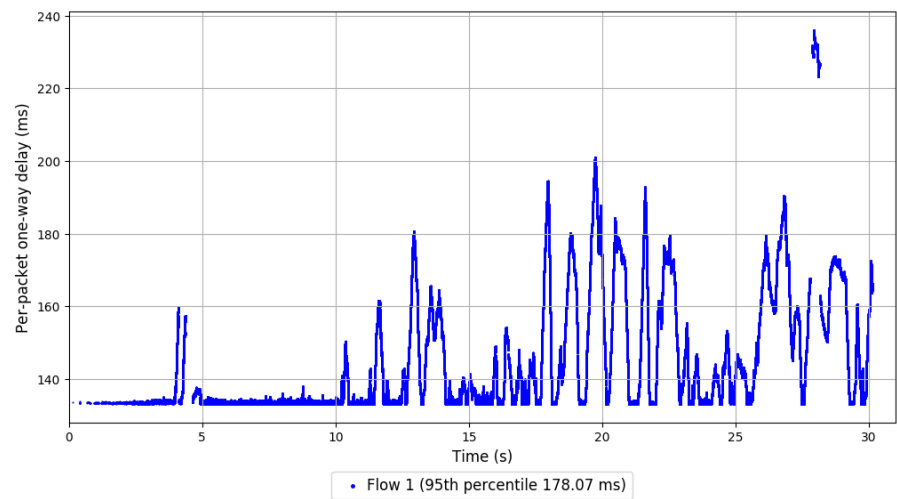
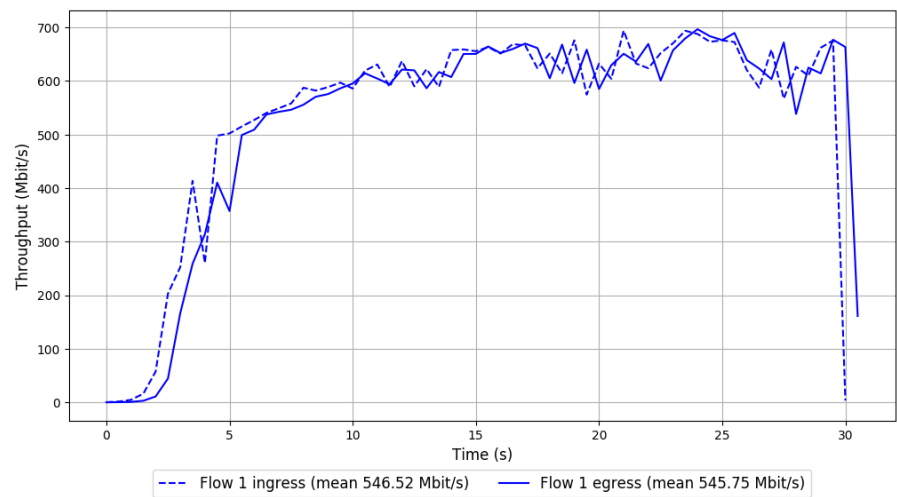


Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 10:21:57
End at: 2018-12-20 10:22:27
Local clock offset: -0.246 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-12-20 11:15:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 545.75 Mbit/s
95th percentile per-packet one-way delay: 178.074 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 545.75 Mbit/s
95th percentile per-packet one-way delay: 178.074 ms
Loss rate: 0.14%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-12-20 08:36:40

End at: 2018-12-20 08:37:10

Local clock offset: 0.121 ms

Remote clock offset: 0.058 ms

Below is generated by plot.py at 2018-12-20 11:23:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 887.53 Mbit/s

95th percentile per-packet one-way delay: 146.498 ms

Loss rate: 0.00%

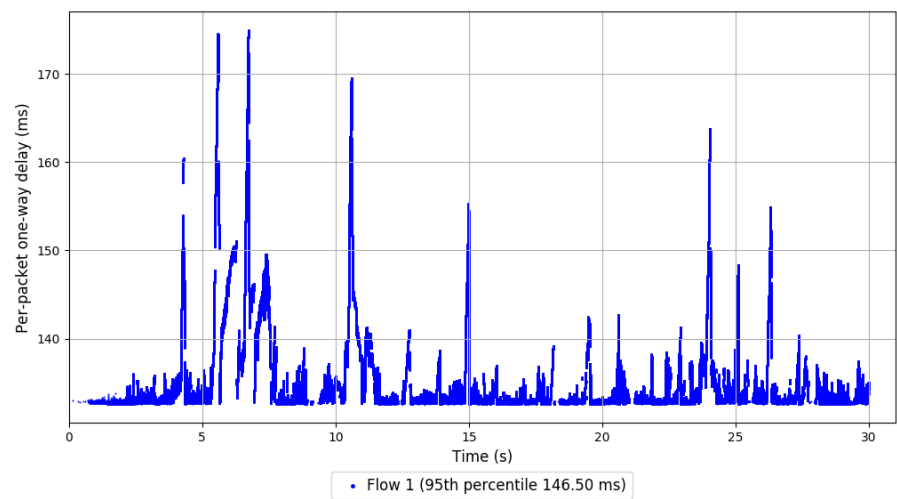
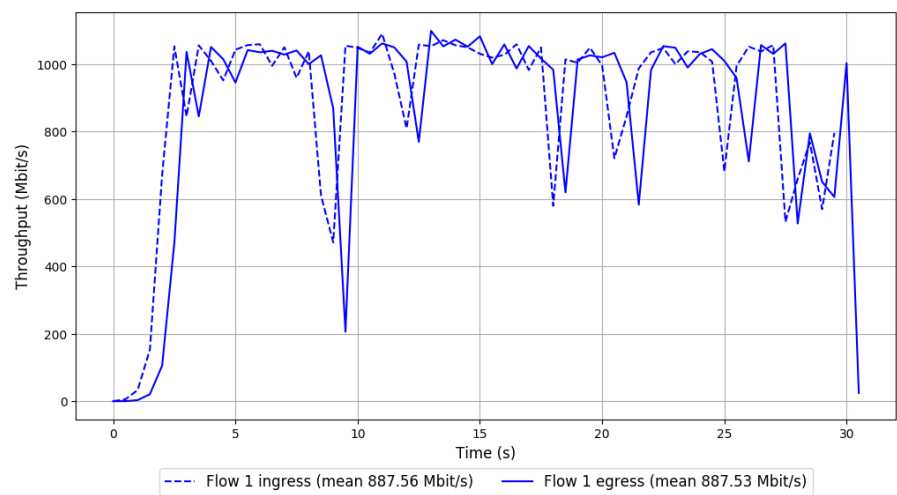
-- Flow 1:

Average throughput: 887.53 Mbit/s

95th percentile per-packet one-way delay: 146.498 ms

Loss rate: 0.00%

Run 1: Report of FillP — Data Link

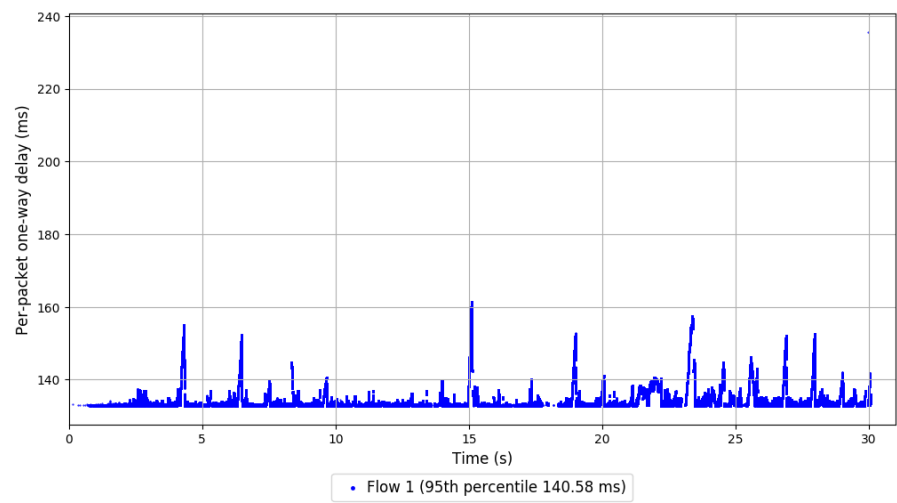
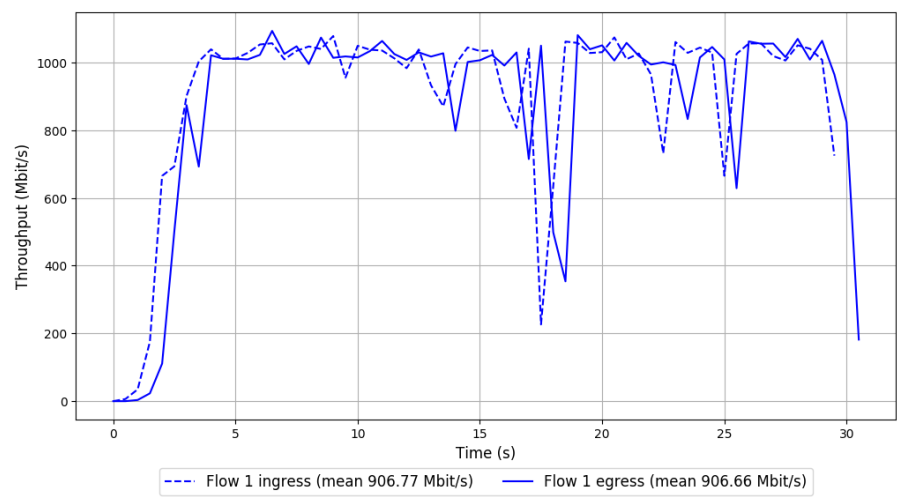


Run 2: Statistics of FillP

Start at: 2018-12-20 09:05:27
End at: 2018-12-20 09:05:57
Local clock offset: -0.056 ms
Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-12-20 11:32:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 906.66 Mbit/s
95th percentile per-packet one-way delay: 140.577 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 906.66 Mbit/s
95th percentile per-packet one-way delay: 140.577 ms
Loss rate: 0.01%

Run 2: Report of FillP — Data Link

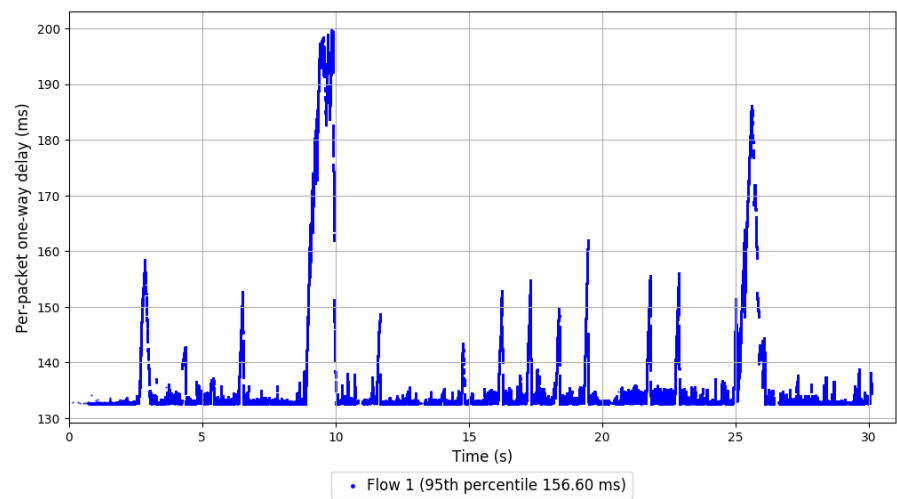
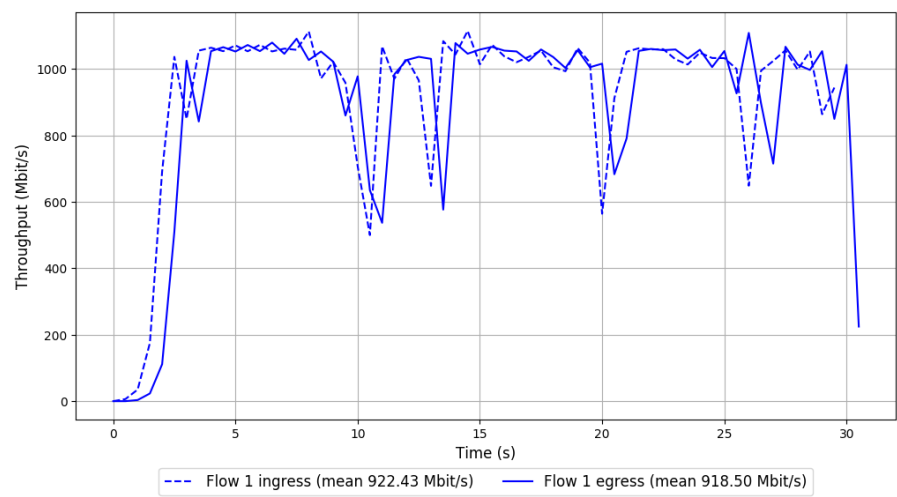


Run 3: Statistics of FillP

Start at: 2018-12-20 09:34:01
End at: 2018-12-20 09:34:31
Local clock offset: 0.069 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-12-20 11:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 918.50 Mbit/s
95th percentile per-packet one-way delay: 156.601 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 918.50 Mbit/s
95th percentile per-packet one-way delay: 156.601 ms
Loss rate: 0.42%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-12-20 10:03:11

End at: 2018-12-20 10:03:41

Local clock offset: 0.119 ms

Remote clock offset: 0.207 ms

Below is generated by plot.py at 2018-12-20 11:33:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 835.51 Mbit/s

95th percentile per-packet one-way delay: 191.456 ms

Loss rate: 2.10%

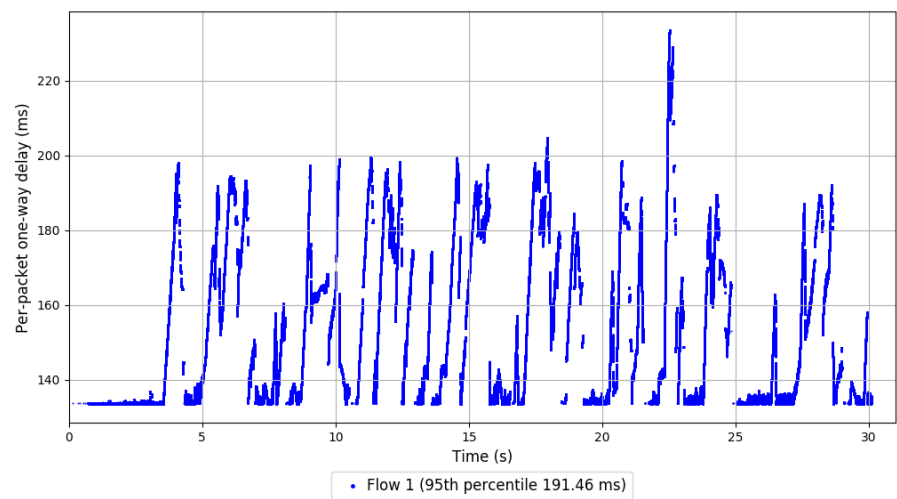
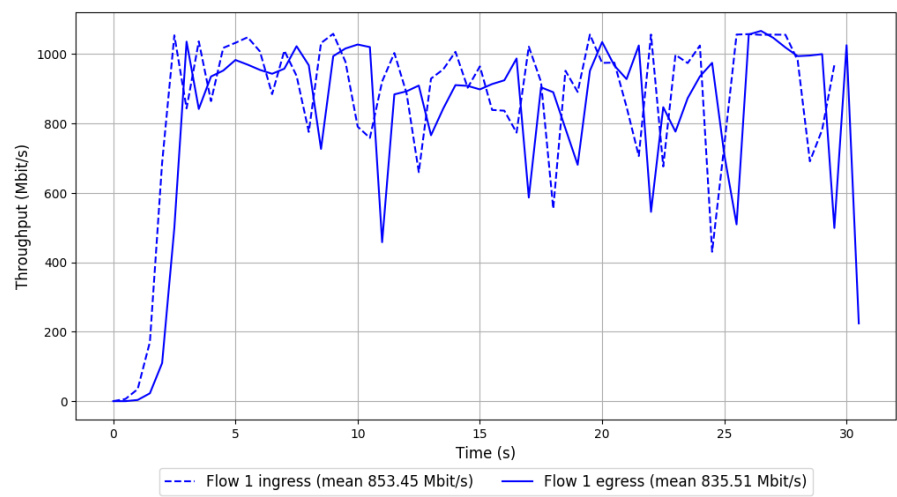
-- Flow 1:

Average throughput: 835.51 Mbit/s

95th percentile per-packet one-way delay: 191.456 ms

Loss rate: 2.10%

Run 4: Report of FillP — Data Link

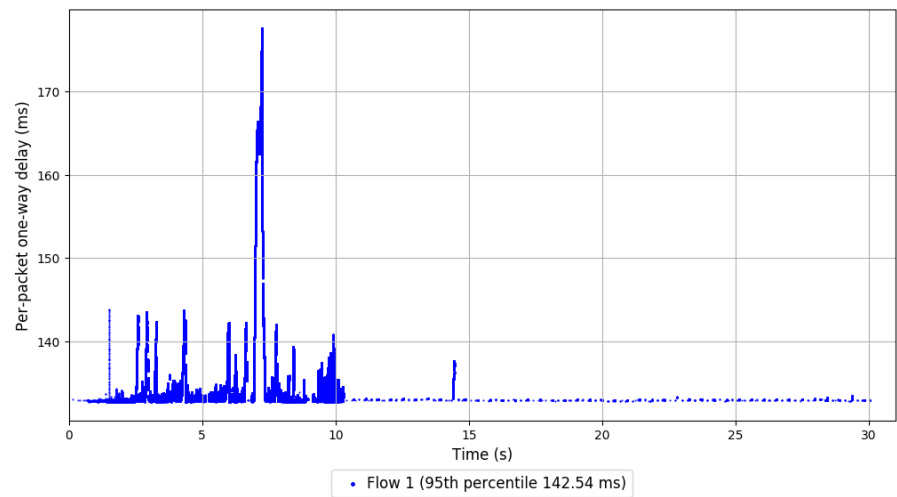
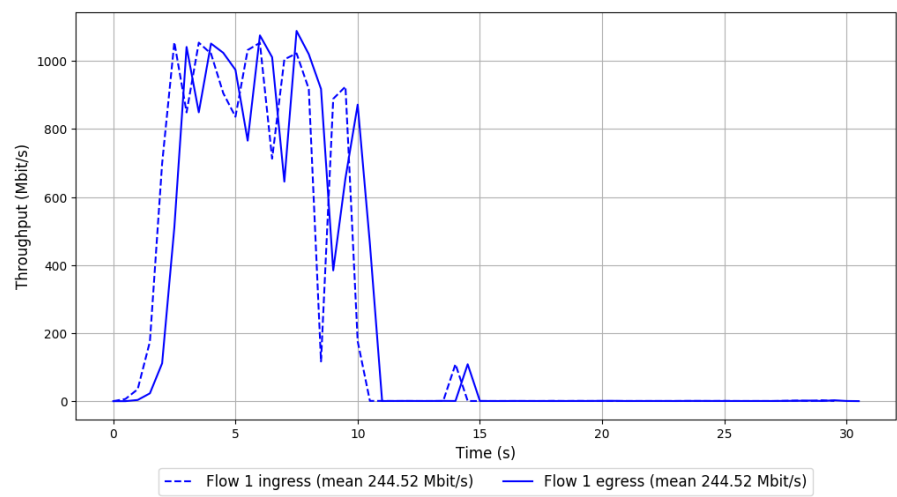


Run 5: Statistics of FillP

Start at: 2018-12-20 10:32:16
End at: 2018-12-20 10:32:46
Local clock offset: -0.257 ms
Remote clock offset: -0.086 ms

Below is generated by plot.py at 2018-12-20 11:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 244.52 Mbit/s
95th percentile per-packet one-way delay: 142.543 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 244.52 Mbit/s
95th percentile per-packet one-way delay: 142.543 ms
Loss rate: 0.00%

Run 5: Report of FillP — Data Link

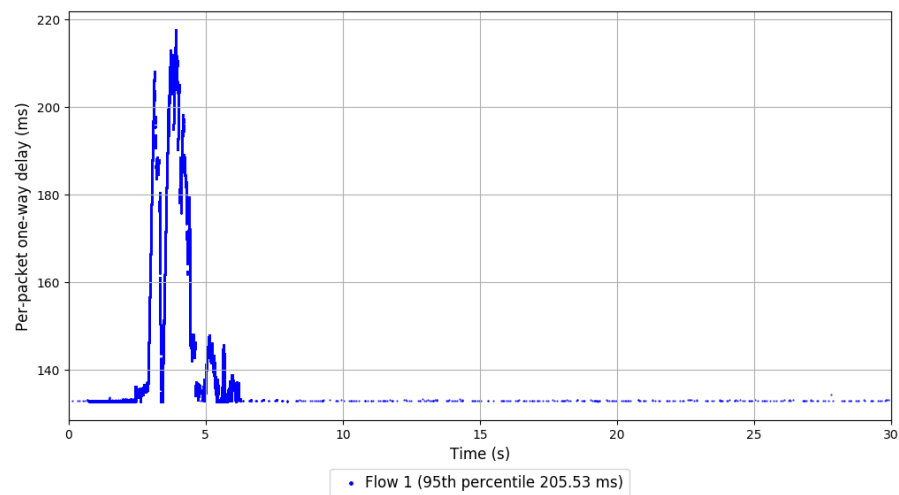
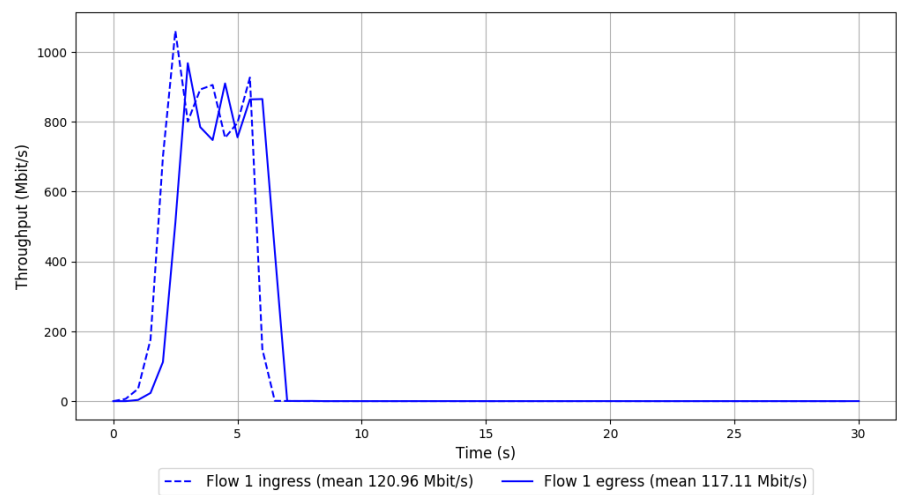


Run 1: Statistics of FillP-Sheep

Start at: 2018-12-20 08:43:35
End at: 2018-12-20 08:44:05
Local clock offset: -0.081 ms
Remote clock offset: -0.006 ms

Below is generated by plot.py at 2018-12-20 11:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 117.11 Mbit/s
95th percentile per-packet one-way delay: 205.529 ms
Loss rate: 3.18%
-- Flow 1:
Average throughput: 117.11 Mbit/s
95th percentile per-packet one-way delay: 205.529 ms
Loss rate: 3.18%

Run 1: Report of FillP-Sheep — Data Link

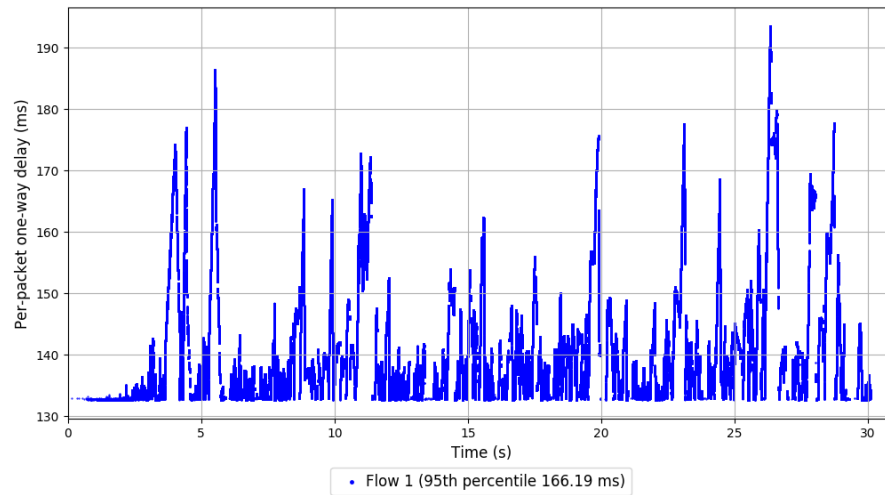
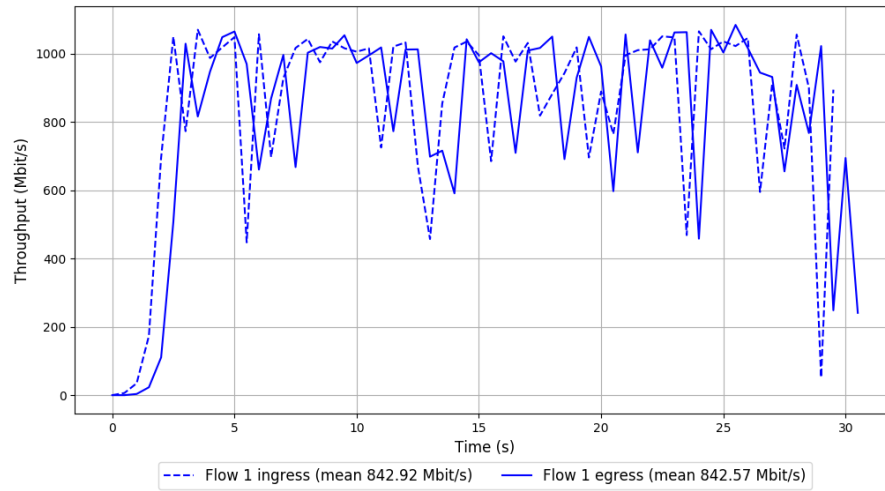


Run 2: Statistics of FillP-Sheep

Start at: 2018-12-20 09:12:15
End at: 2018-12-20 09:12:45
Local clock offset: 0.086 ms
Remote clock offset: -0.033 ms

Below is generated by plot.py at 2018-12-20 11:34:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 842.57 Mbit/s
95th percentile per-packet one-way delay: 166.186 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 842.57 Mbit/s
95th percentile per-packet one-way delay: 166.186 ms
Loss rate: 0.04%

Run 2: Report of FillP-Sheep — Data Link

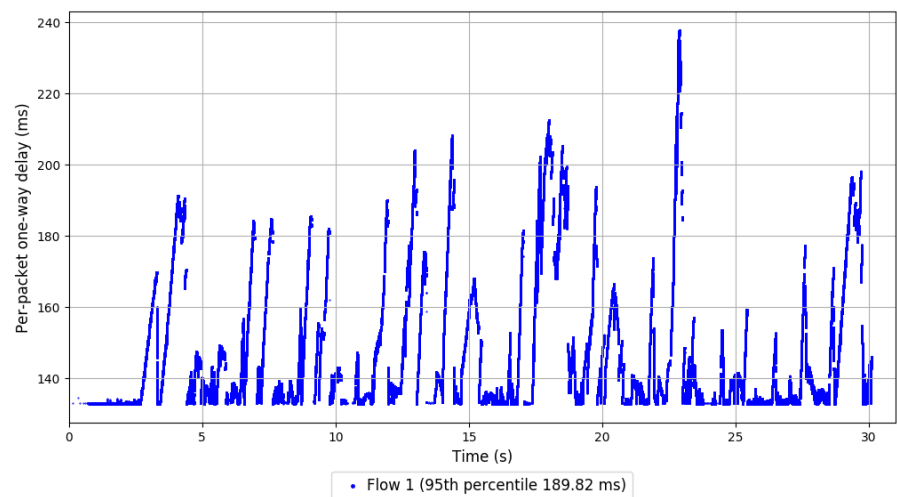
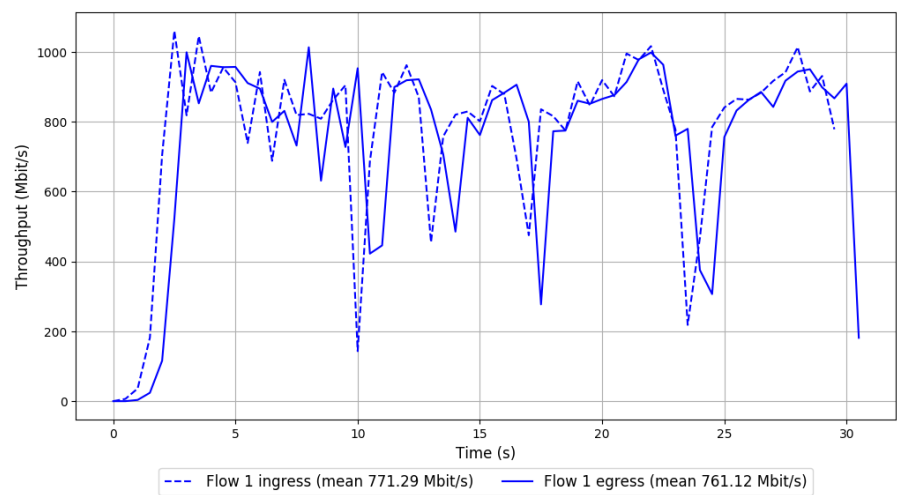


Run 3: Statistics of FillP-Sheep

Start at: 2018-12-20 09:40:57
End at: 2018-12-20 09:41:27
Local clock offset: -0.119 ms
Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-12-20 11:34:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 761.12 Mbit/s
95th percentile per-packet one-way delay: 189.820 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 761.12 Mbit/s
95th percentile per-packet one-way delay: 189.820 ms
Loss rate: 1.31%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-12-20 10:10:05

End at: 2018-12-20 10:10:35

Local clock offset: -0.138 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-12-20 11:34:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 811.12 Mbit/s

95th percentile per-packet one-way delay: 194.803 ms

Loss rate: 2.41%

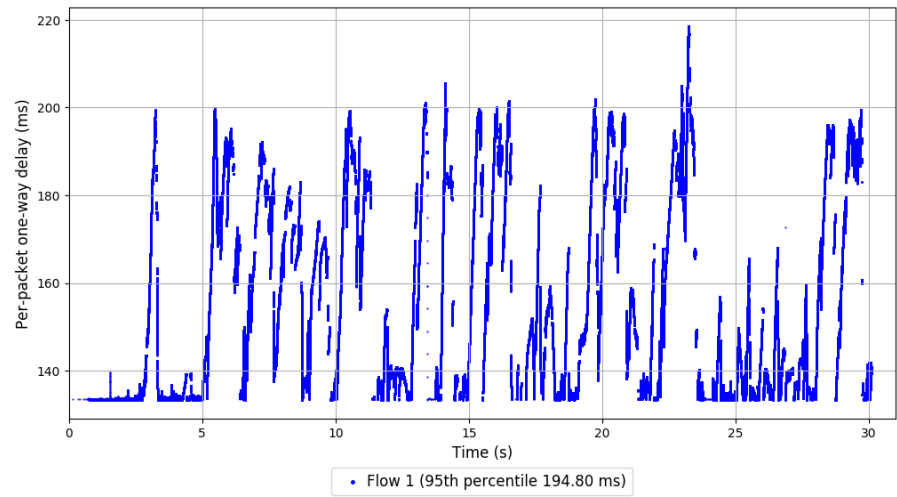
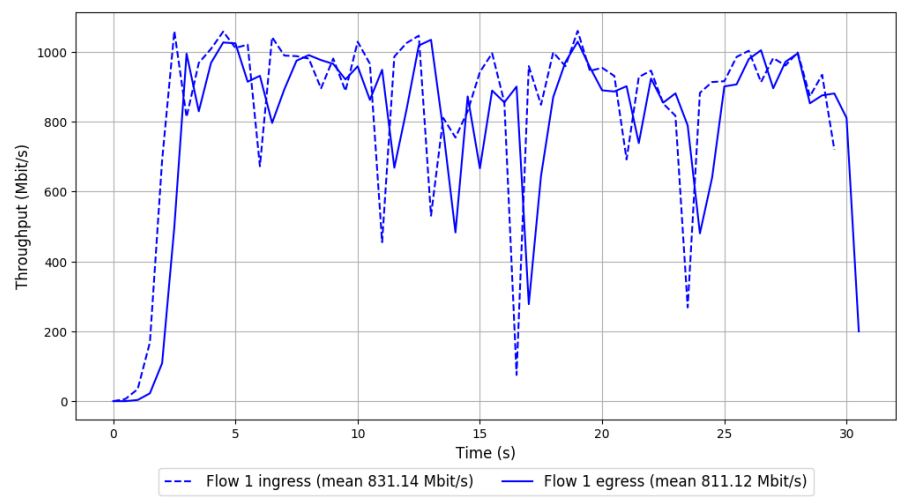
-- Flow 1:

Average throughput: 811.12 Mbit/s

95th percentile per-packet one-way delay: 194.803 ms

Loss rate: 2.41%

Run 4: Report of FillP-Sheep — Data Link

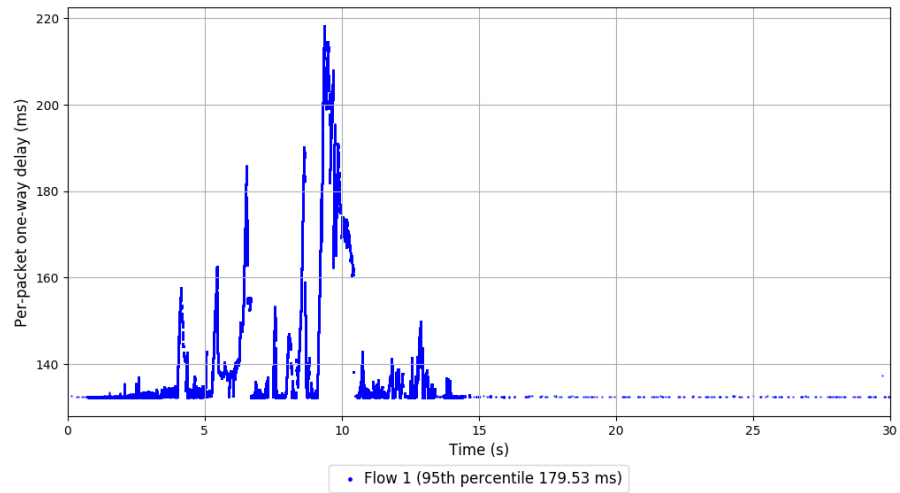
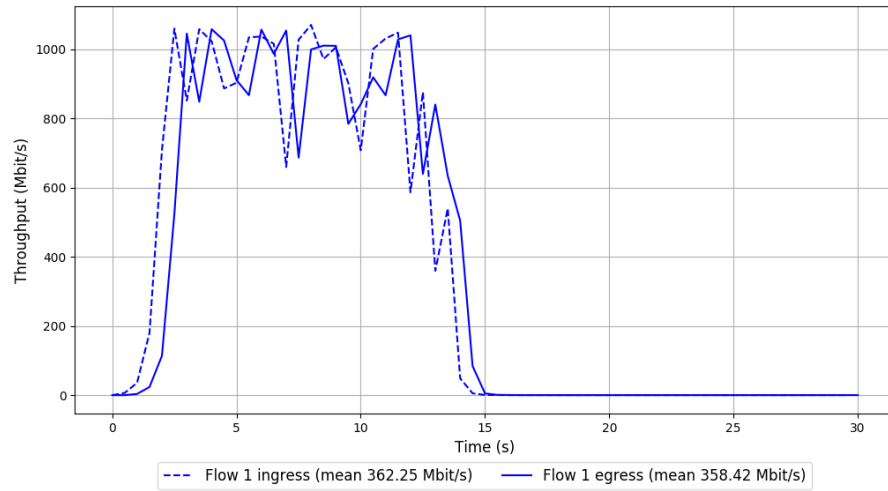


Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 10:39:27
End at: 2018-12-20 10:39:57
Local clock offset: -0.028 ms
Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-12-20 11:34:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 358.42 Mbit/s
95th percentile per-packet one-way delay: 179.534 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 358.42 Mbit/s
95th percentile per-packet one-way delay: 179.534 ms
Loss rate: 1.06%

Run 5: Report of FillP-Sheep — Data Link

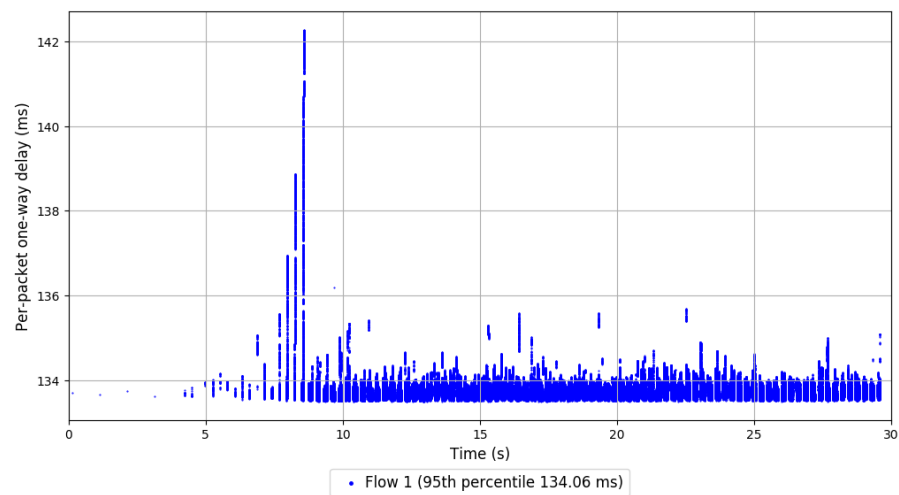
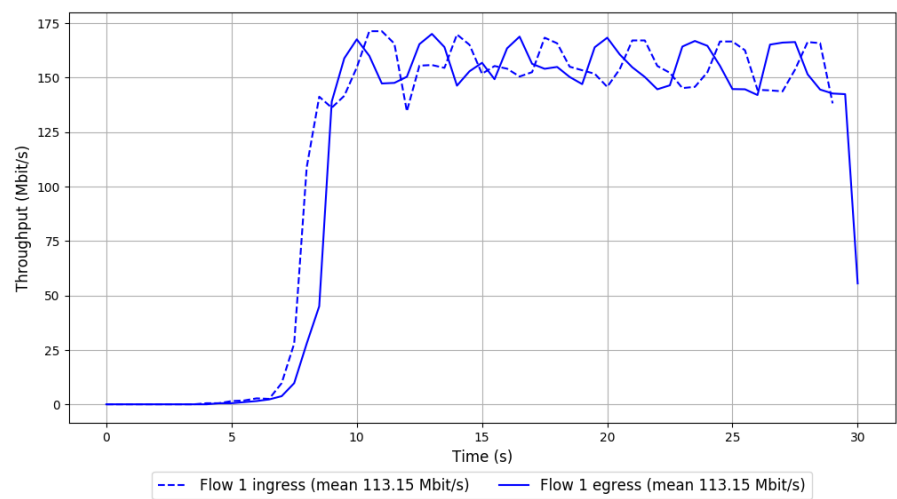


Run 1: Statistics of Indigo

Start at: 2018-12-20 08:35:17
End at: 2018-12-20 08:35:47
Local clock offset: -1.138 ms
Remote clock offset: -0.348 ms

Below is generated by plot.py at 2018-12-20 11:34:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 113.15 Mbit/s
95th percentile per-packet one-way delay: 134.065 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 113.15 Mbit/s
95th percentile per-packet one-way delay: 134.065 ms
Loss rate: 0.00%

Run 1: Report of Indigo — Data Link

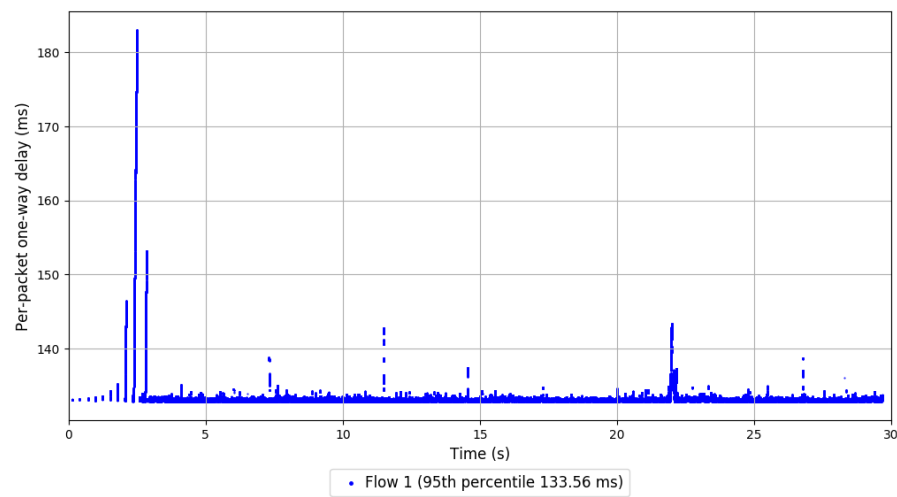
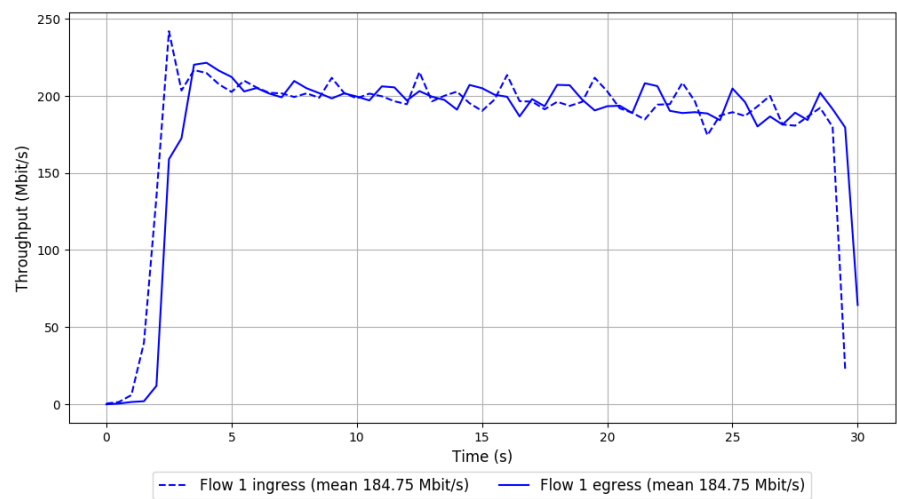


Run 2: Statistics of Indigo

Start at: 2018-12-20 09:03:57
End at: 2018-12-20 09:04:27
Local clock offset: -0.237 ms
Remote clock offset: -0.408 ms

Below is generated by plot.py at 2018-12-20 11:34:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 184.75 Mbit/s
95th percentile per-packet one-way delay: 133.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 184.75 Mbit/s
95th percentile per-packet one-way delay: 133.555 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link

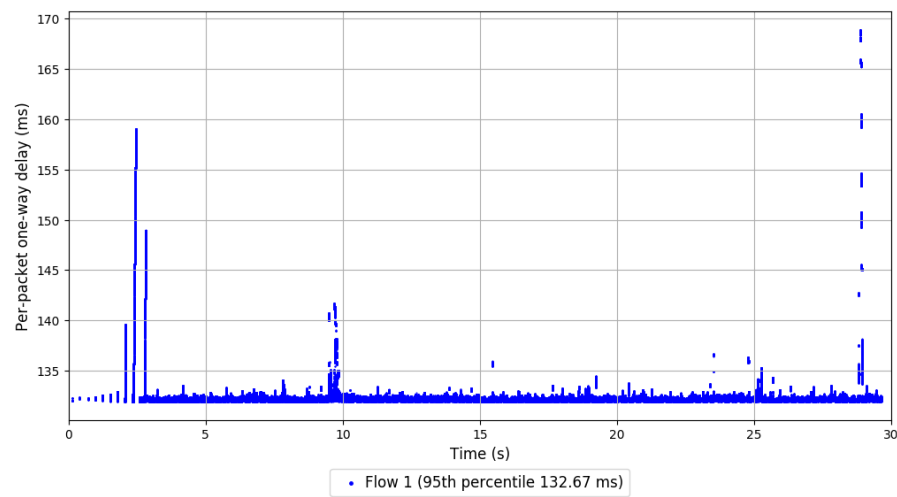
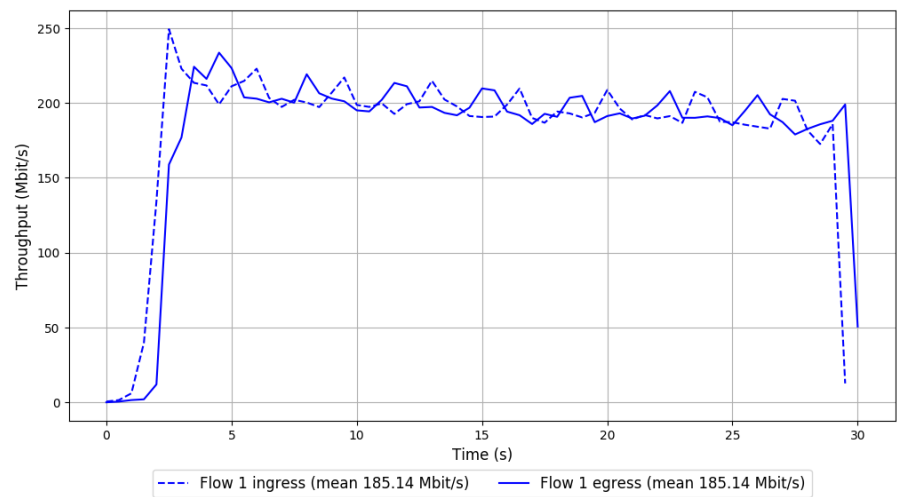


Run 3: Statistics of Indigo

Start at: 2018-12-20 09:32:31
End at: 2018-12-20 09:33:01
Local clock offset: -0.026 ms
Remote clock offset: -0.435 ms

Below is generated by plot.py at 2018-12-20 11:35:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 185.14 Mbit/s
95th percentile per-packet one-way delay: 132.670 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 185.14 Mbit/s
95th percentile per-packet one-way delay: 132.670 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

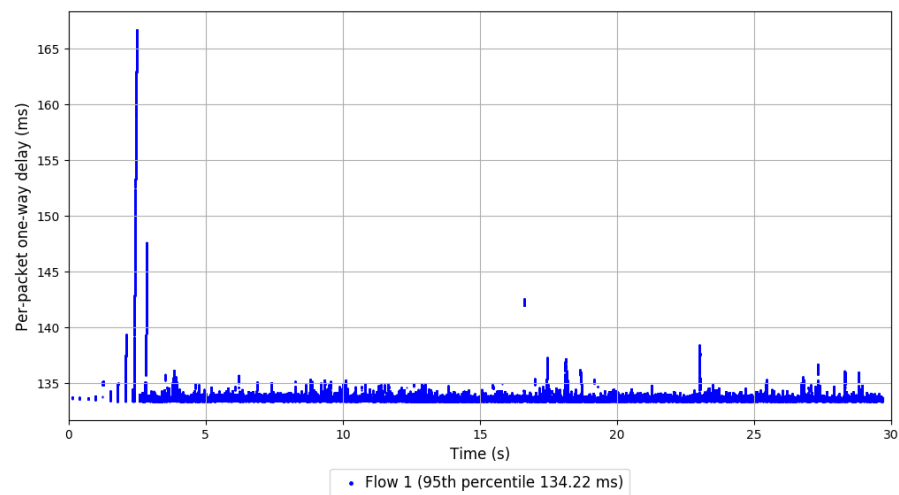
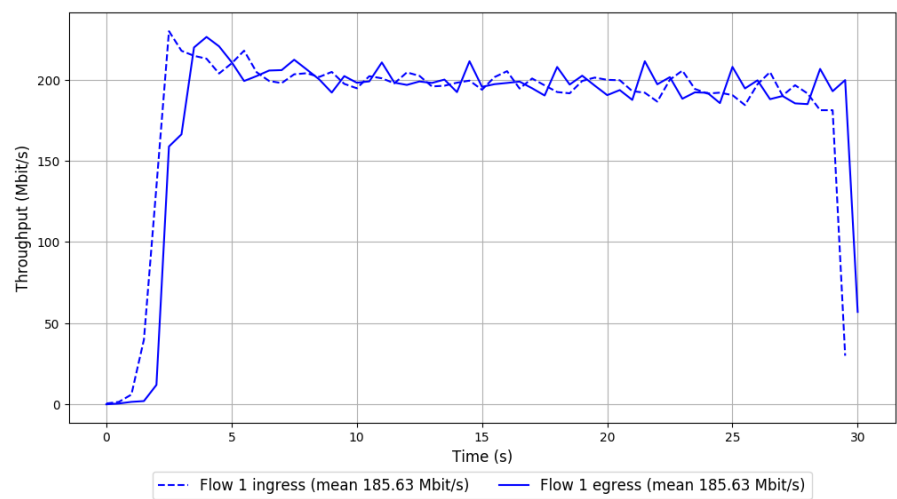


Run 4: Statistics of Indigo

Start at: 2018-12-20 10:01:40
End at: 2018-12-20 10:02:10
Local clock offset: -0.255 ms
Remote clock offset: -0.144 ms

Below is generated by plot.py at 2018-12-20 11:37:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 185.63 Mbit/s
95th percentile per-packet one-way delay: 134.225 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 185.63 Mbit/s
95th percentile per-packet one-way delay: 134.225 ms
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-12-20 10:30:45

End at: 2018-12-20 10:31:15

Local clock offset: 1.245 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-12-20 11:37:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 187.87 Mbit/s

95th percentile per-packet one-way delay: 132.425 ms

Loss rate: 0.00%

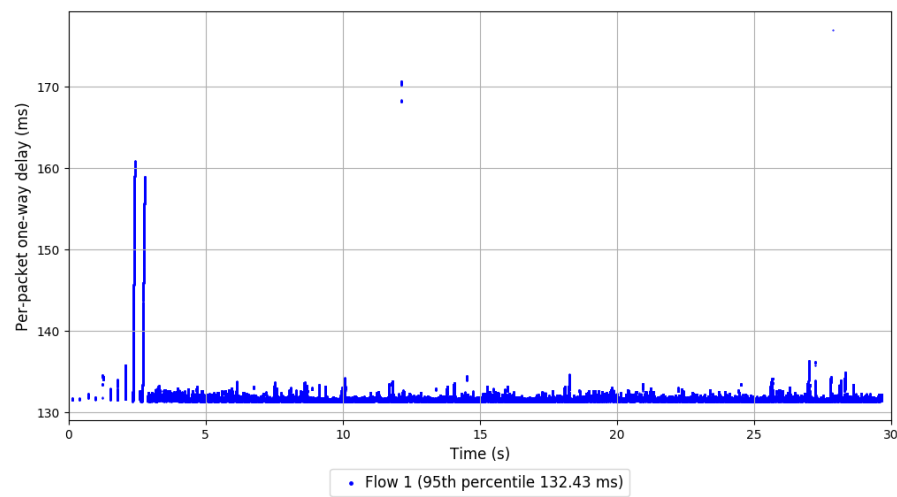
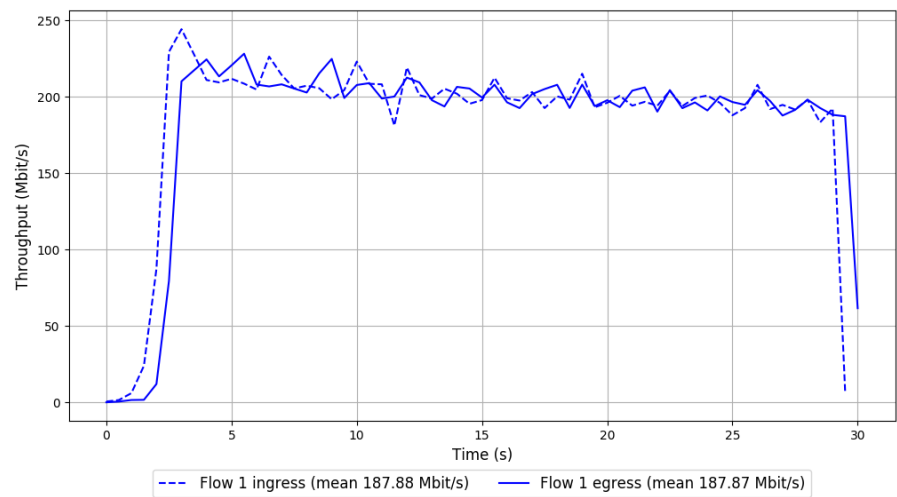
-- Flow 1:

Average throughput: 187.87 Mbit/s

95th percentile per-packet one-way delay: 132.425 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

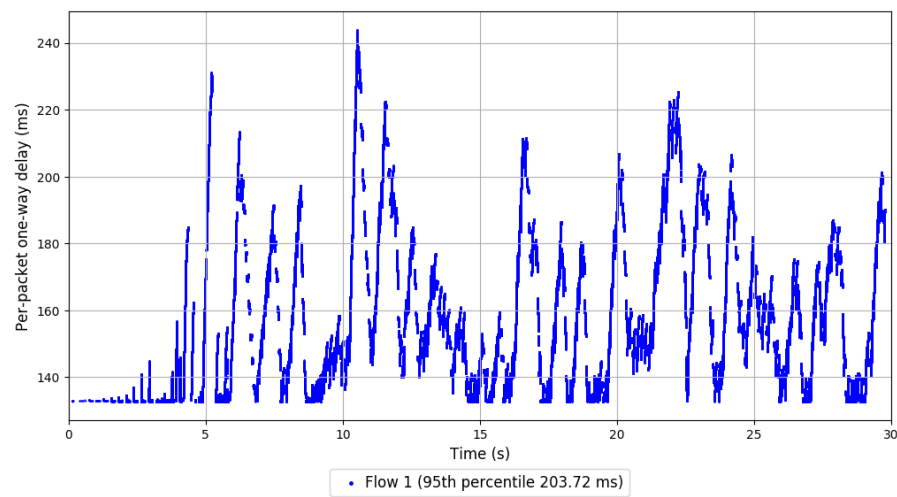
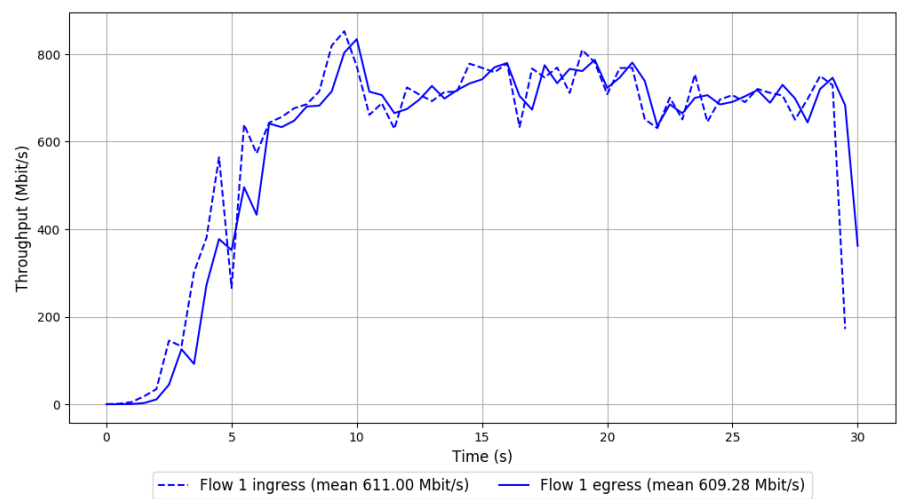



```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-20 08:41:51
End at: 2018-12-20 08:42:21
Local clock offset: 0.084 ms
Remote clock offset: 0.003 ms

# Below is generated by plot.py at 2018-12-20 11:44:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 609.28 Mbit/s
95th percentile per-packet one-way delay: 203.723 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 609.28 Mbit/s
95th percentile per-packet one-way delay: 203.723 ms
Loss rate: 0.27%
```

Run 1: Report of Indigo-MusesD — Data Link

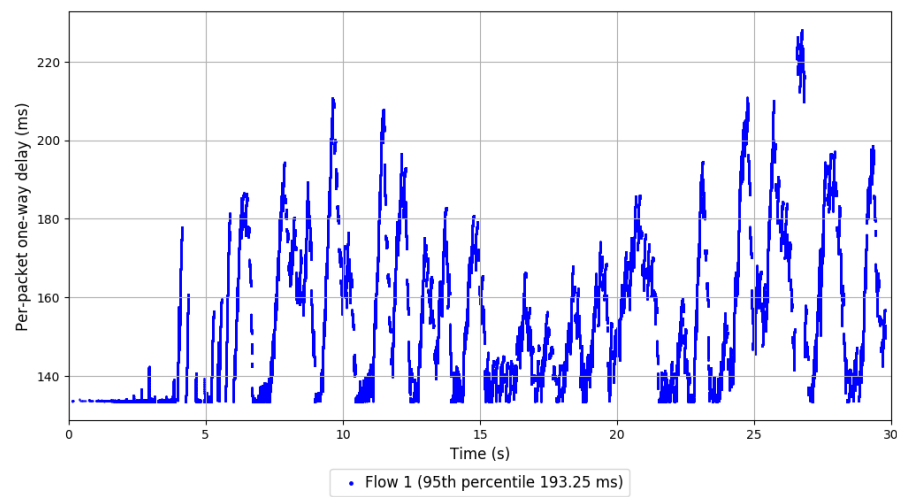
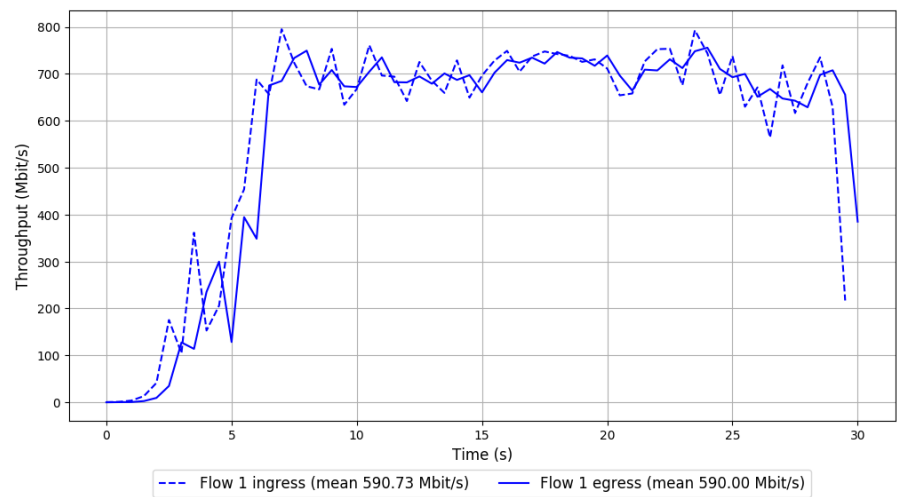


Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-20 09:10:31
End at: 2018-12-20 09:11:01
Local clock offset: -0.255 ms
Remote clock offset: -0.058 ms

Below is generated by plot.py at 2018-12-20 11:44:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 590.00 Mbit/s
95th percentile per-packet one-way delay: 193.247 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 590.00 Mbit/s
95th percentile per-packet one-way delay: 193.247 ms
Loss rate: 0.12%

Run 2: Report of Indigo-MusesD — Data Link

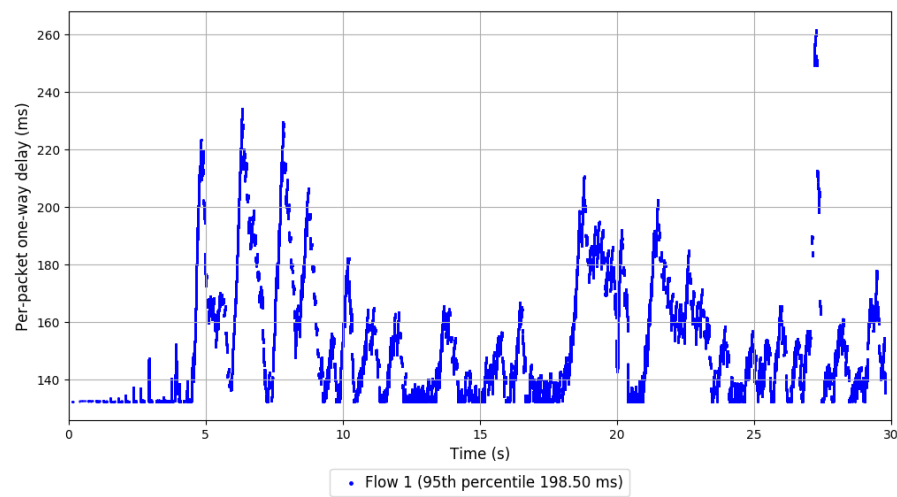
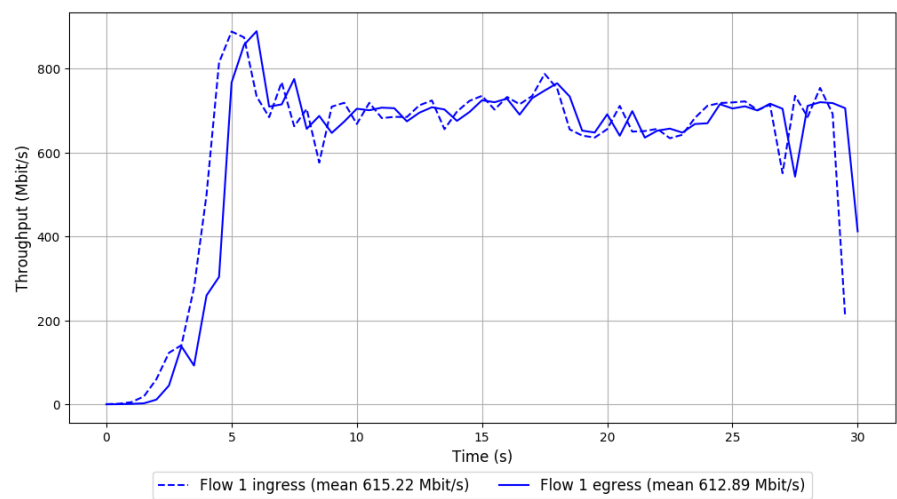


Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-20 09:39:12
End at: 2018-12-20 09:39:42
Local clock offset: -0.045 ms
Remote clock offset: -0.464 ms

Below is generated by plot.py at 2018-12-20 11:44:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 612.89 Mbit/s
95th percentile per-packet one-way delay: 198.497 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 612.89 Mbit/s
95th percentile per-packet one-way delay: 198.497 ms
Loss rate: 0.37%

Run 3: Report of Indigo-MusesD — Data Link

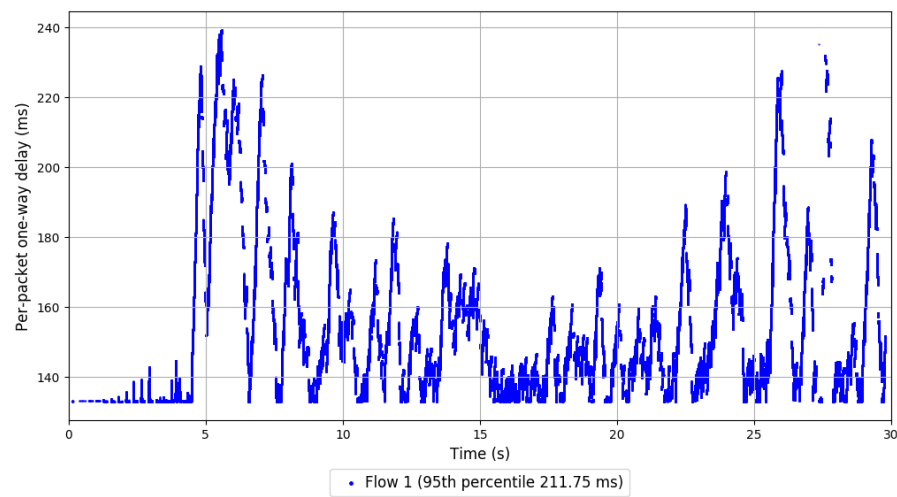
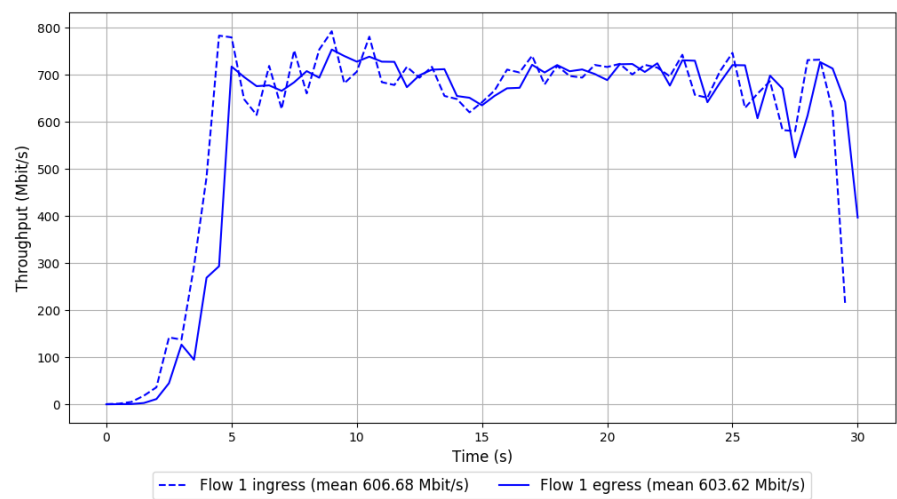


Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-20 10:08:20
End at: 2018-12-20 10:08:50
Local clock offset: -0.076 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-12-20 11:45:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 603.62 Mbit/s
95th percentile per-packet one-way delay: 211.747 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 603.62 Mbit/s
95th percentile per-packet one-way delay: 211.747 ms
Loss rate: 0.50%

Run 4: Report of Indigo-MusesD — Data Link

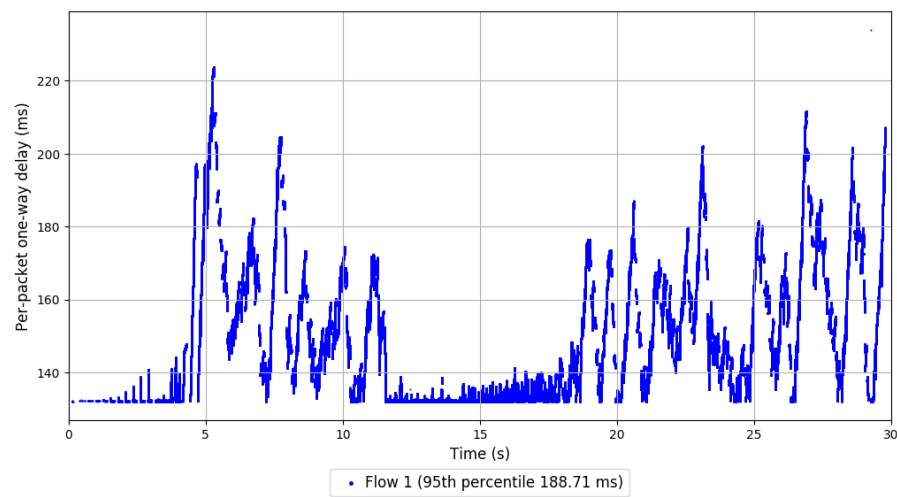
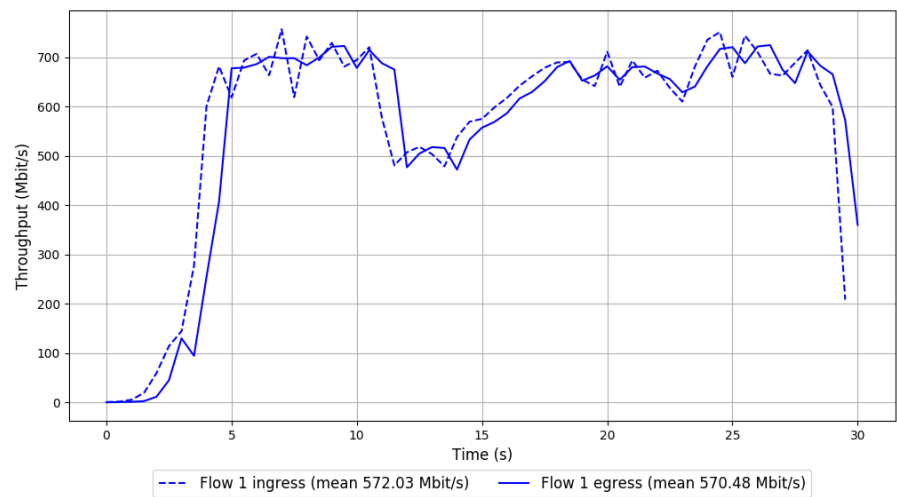


Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 10:37:28
End at: 2018-12-20 10:37:58
Local clock offset: -0.064 ms
Remote clock offset: -0.384 ms

Below is generated by plot.py at 2018-12-20 11:45:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 570.48 Mbit/s
95th percentile per-packet one-way delay: 188.714 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 570.48 Mbit/s
95th percentile per-packet one-way delay: 188.714 ms
Loss rate: 0.27%

Run 5: Report of Indigo-MusesD — Data Link

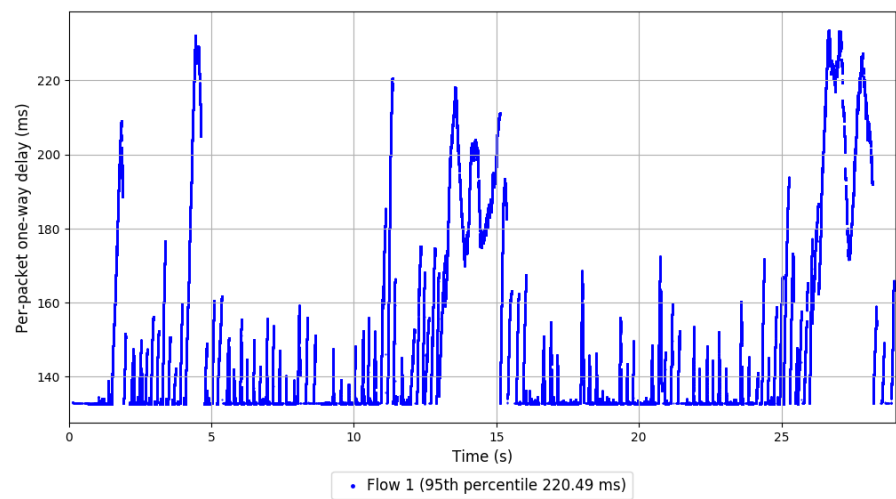
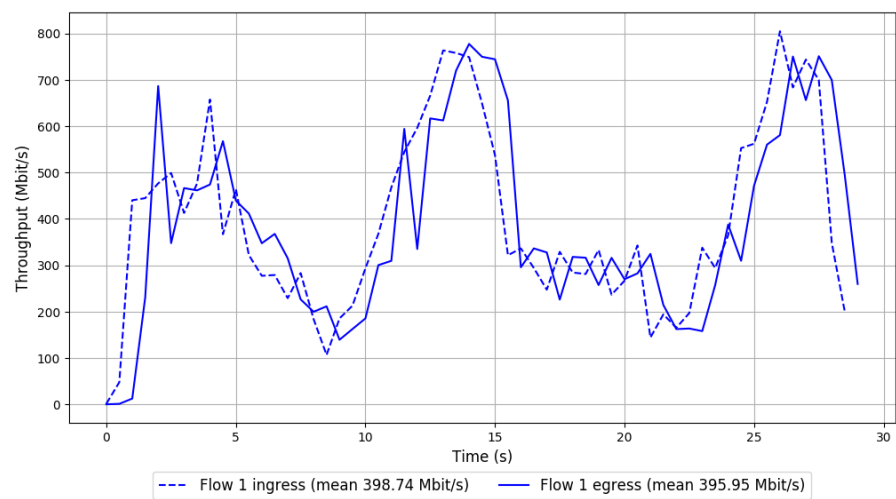


```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-20 08:49:34
End at: 2018-12-20 08:50:04
Local clock offset: 0.081 ms
Remote clock offset: 0.043 ms

# Below is generated by plot.py at 2018-12-20 11:45:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 395.95 Mbit/s
95th percentile per-packet one-way delay: 220.485 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 395.95 Mbit/s
95th percentile per-packet one-way delay: 220.485 ms
Loss rate: 0.70%
```

Run 1: Report of Indigo-MusesT — Data Link

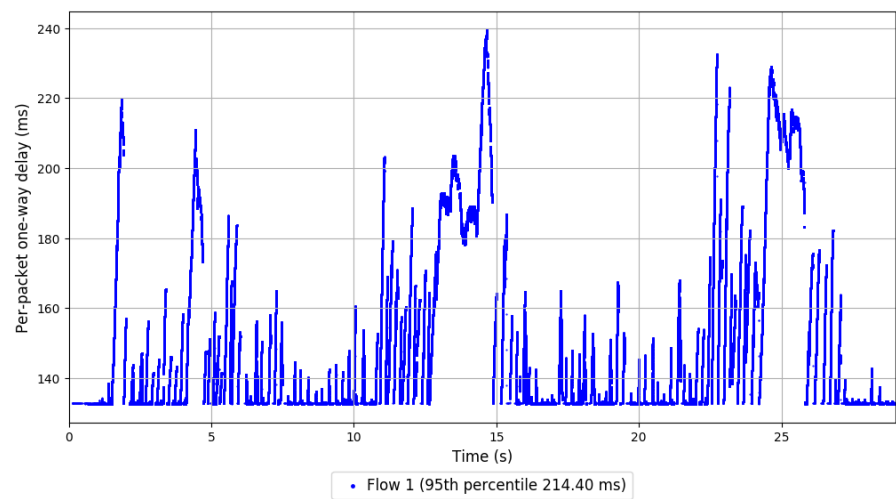
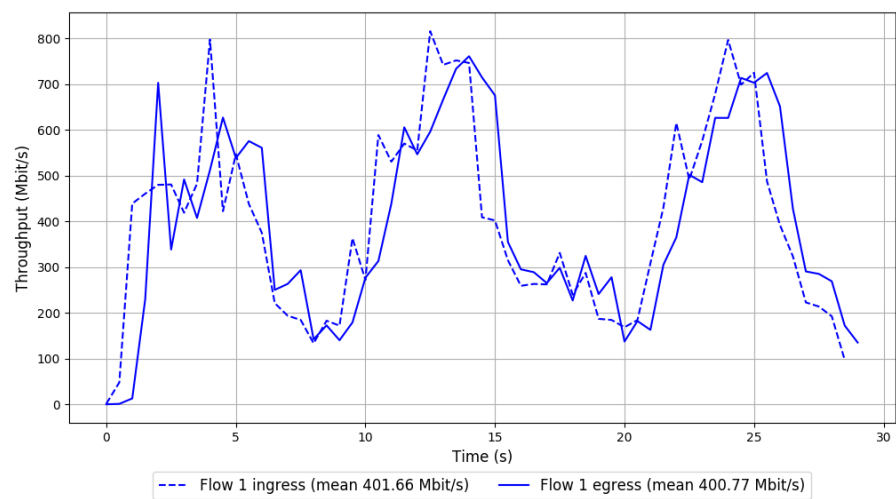


Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-20 09:18:22
End at: 2018-12-20 09:18:52
Local clock offset: -0.254 ms
Remote clock offset: -0.425 ms

Below is generated by plot.py at 2018-12-20 11:45:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 400.77 Mbit/s
95th percentile per-packet one-way delay: 214.397 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 400.77 Mbit/s
95th percentile per-packet one-way delay: 214.397 ms
Loss rate: 0.22%

Run 2: Report of Indigo-MusesT — Data Link

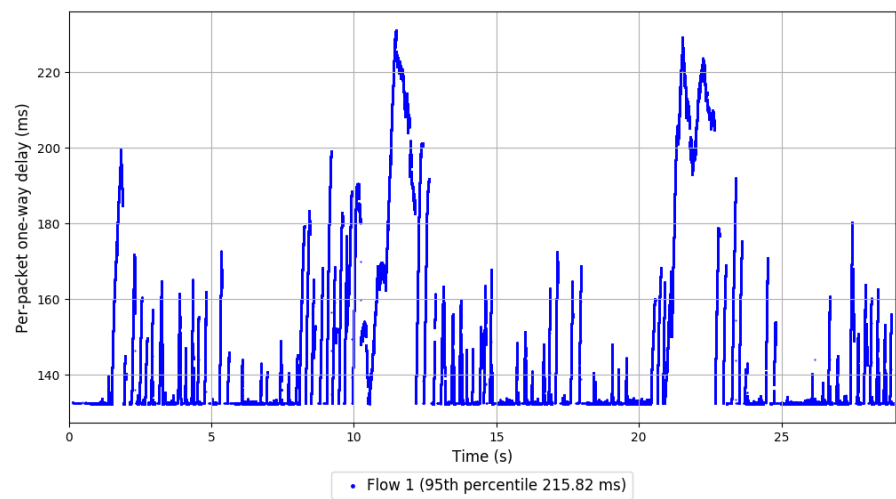
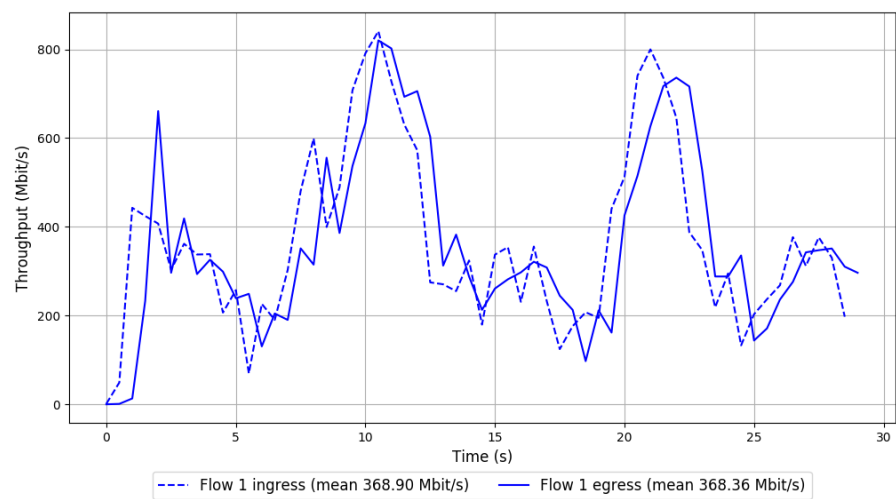


Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-20 09:47:19
End at: 2018-12-20 09:47:49
Local clock offset: -0.083 ms
Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-12-20 11:45:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 368.36 Mbit/s
95th percentile per-packet one-way delay: 215.817 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 368.36 Mbit/s
95th percentile per-packet one-way delay: 215.817 ms
Loss rate: 0.15%

Run 3: Report of Indigo-MusesT — Data Link

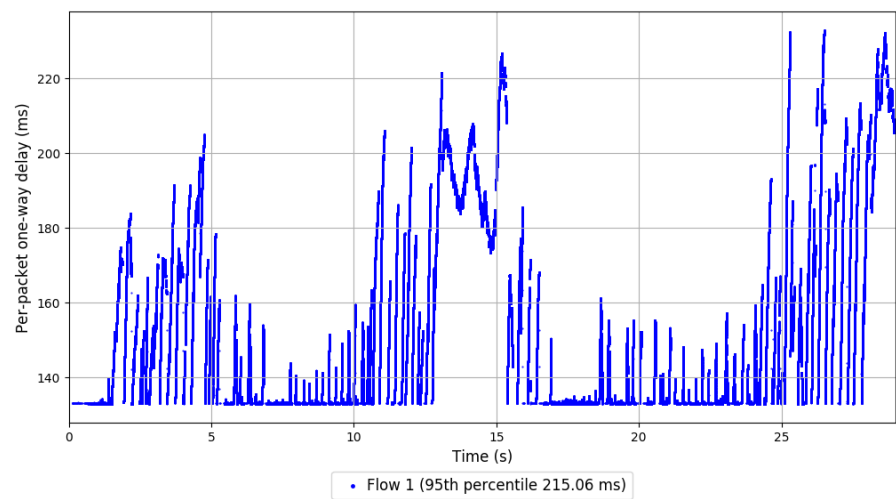
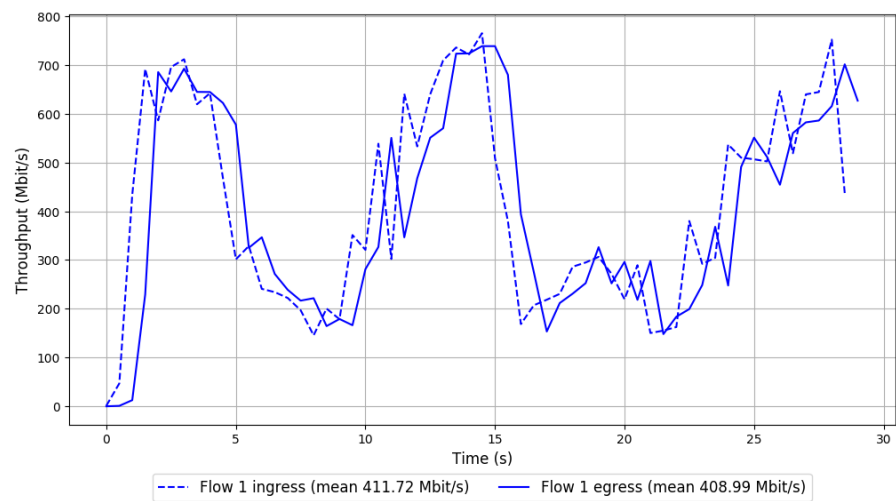


Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-20 10:16:18
End at: 2018-12-20 10:16:48
Local clock offset: -0.201 ms
Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-12-20 11:48:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 408.99 Mbit/s
95th percentile per-packet one-way delay: 215.055 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 408.99 Mbit/s
95th percentile per-packet one-way delay: 215.055 ms
Loss rate: 0.66%

Run 4: Report of Indigo-MusesT — Data Link

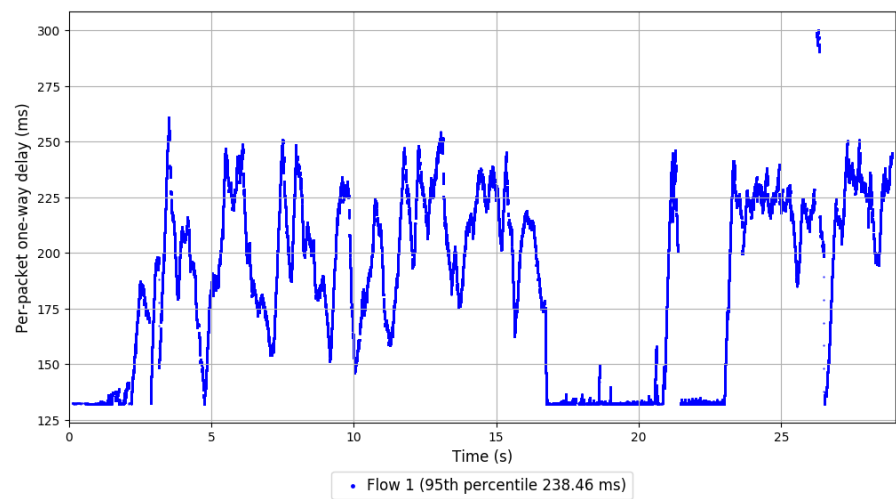
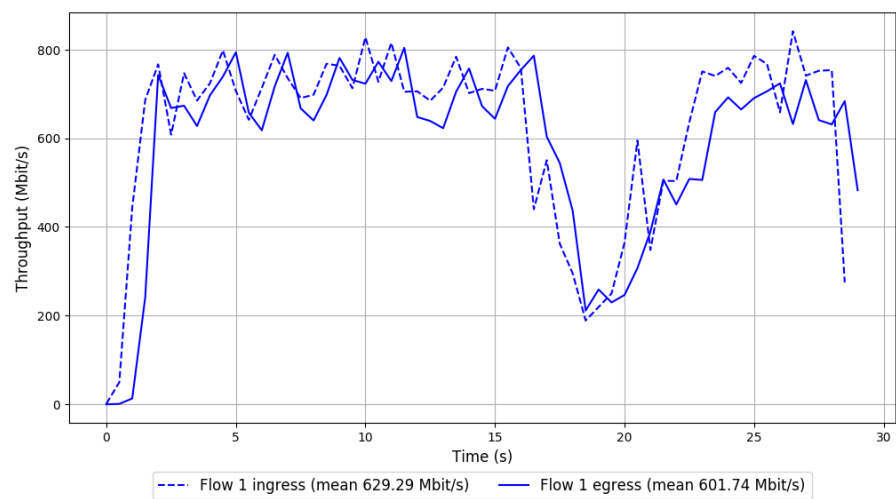


Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 10:45:27
End at: 2018-12-20 10:45:57
Local clock offset: -0.112 ms
Remote clock offset: -0.361 ms

Below is generated by plot.py at 2018-12-20 11:54:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 601.74 Mbit/s
95th percentile per-packet one-way delay: 238.464 ms
Loss rate: 4.34%
-- Flow 1:
Average throughput: 601.74 Mbit/s
95th percentile per-packet one-way delay: 238.464 ms
Loss rate: 4.34%

Run 5: Report of Indigo-MusesT — Data Link

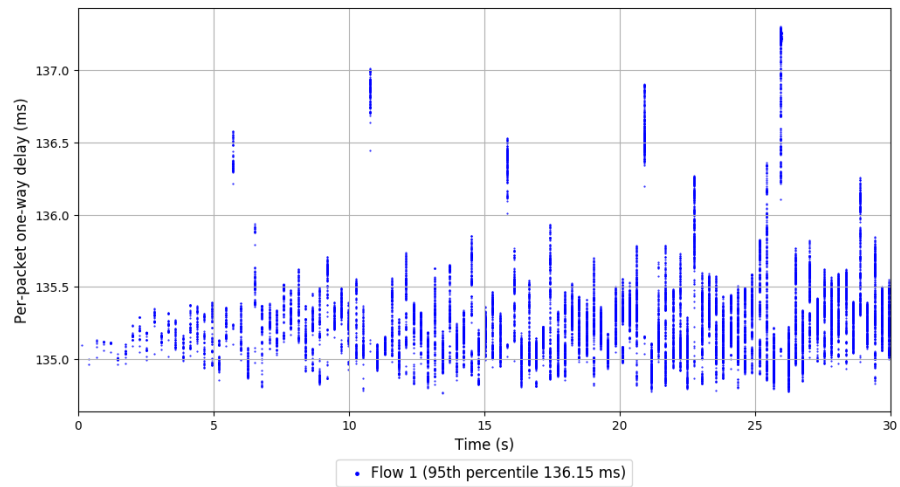
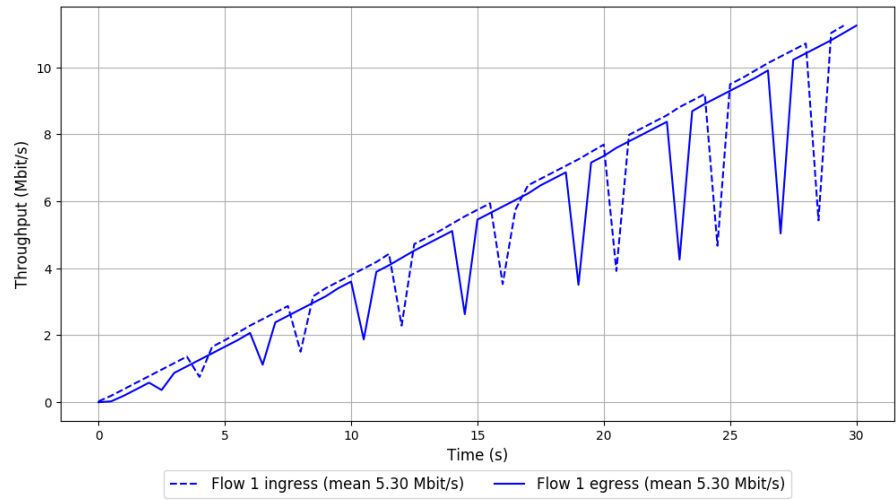


```
Run 1: Statistics of LEDBAT

Start at: 2018-12-20 08:25:38
End at: 2018-12-20 08:26:08
Local clock offset: -2.826 ms
Remote clock offset: -0.374 ms

# Below is generated by plot.py at 2018-12-20 11:54:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.30 Mbit/s
95th percentile per-packet one-way delay: 136.145 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.30 Mbit/s
95th percentile per-packet one-way delay: 136.145 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

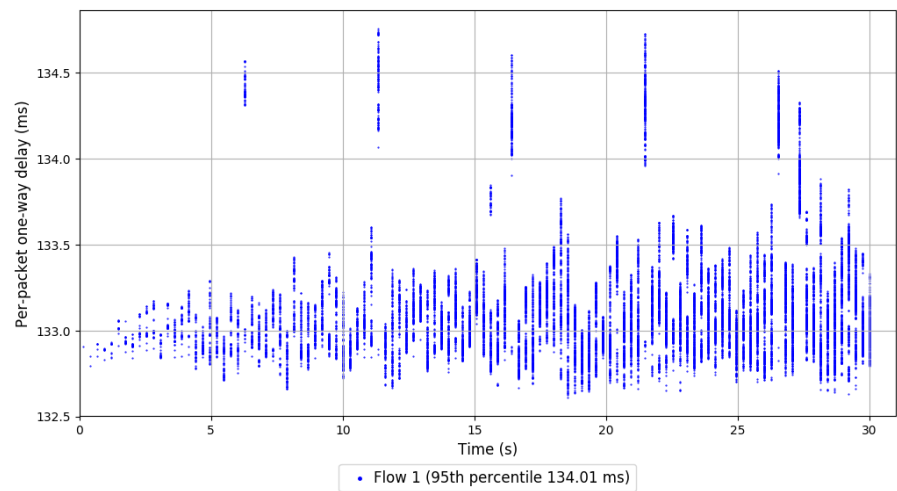
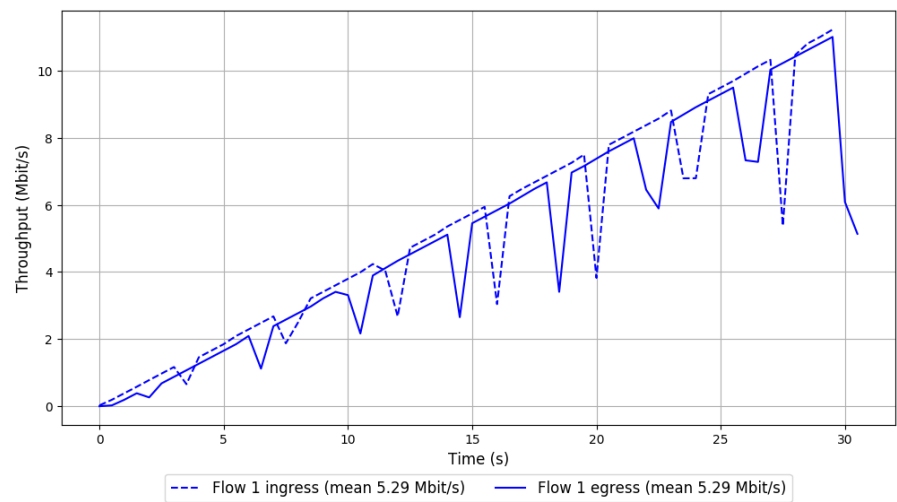


Run 2: Statistics of LEDBAT

Start at: 2018-12-20 08:54:00
End at: 2018-12-20 08:54:30
Local clock offset: 0.092 ms
Remote clock offset: -0.001 ms

Below is generated by plot.py at 2018-12-20 11:54:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 134.010 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 134.010 ms
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

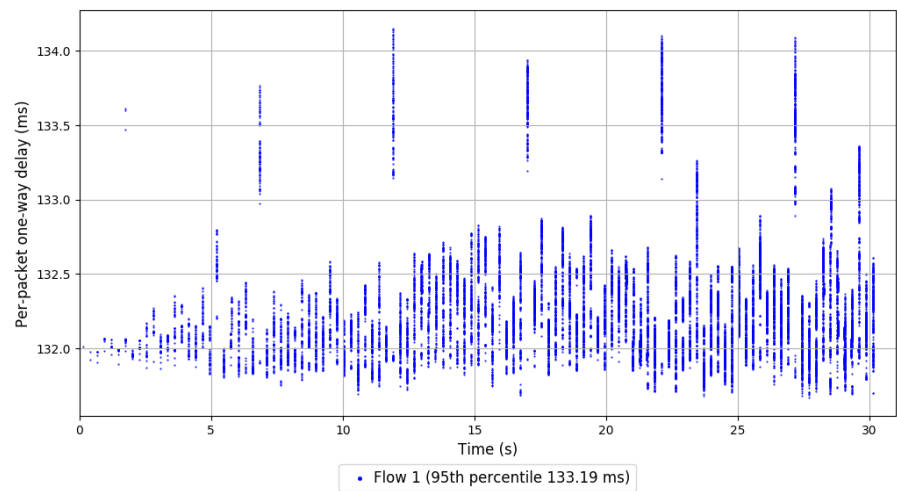
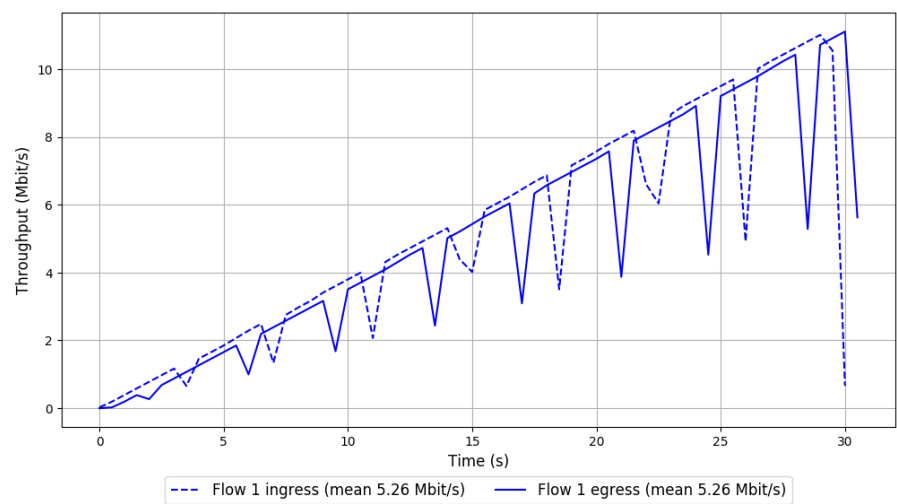


Run 3: Statistics of LEDBAT

Start at: 2018-12-20 09:22:46
End at: 2018-12-20 09:23:17
Local clock offset: 1.604 ms
Remote clock offset: -0.051 ms

Below is generated by plot.py at 2018-12-20 11:54:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 133.192 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 133.192 ms
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-12-20 09:51:41

End at: 2018-12-20 09:52:12

Local clock offset: -0.258 ms

Remote clock offset: 0.238 ms

Below is generated by plot.py at 2018-12-20 11:54:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.28 Mbit/s

95th percentile per-packet one-way delay: 135.150 ms

Loss rate: 0.00%

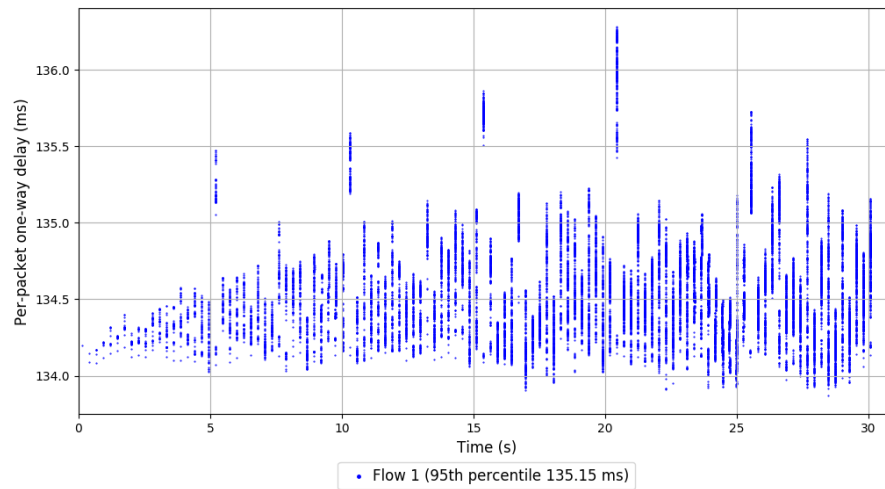
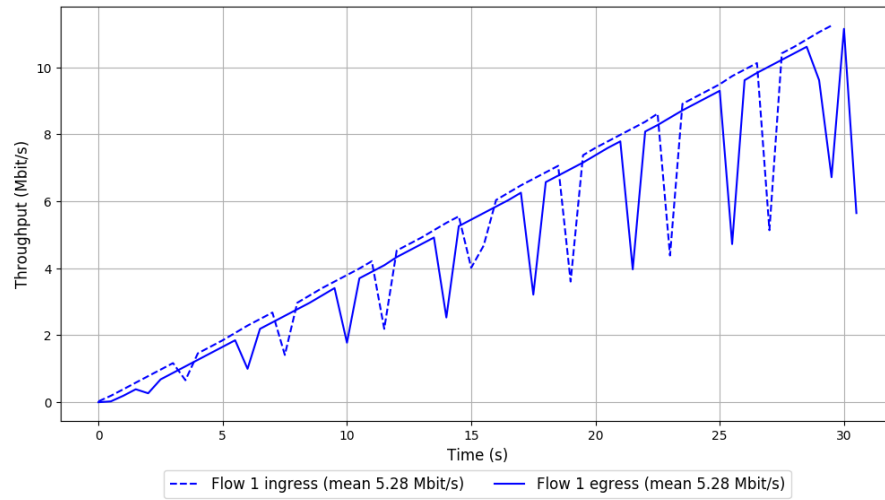
-- Flow 1:

Average throughput: 5.28 Mbit/s

95th percentile per-packet one-way delay: 135.150 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

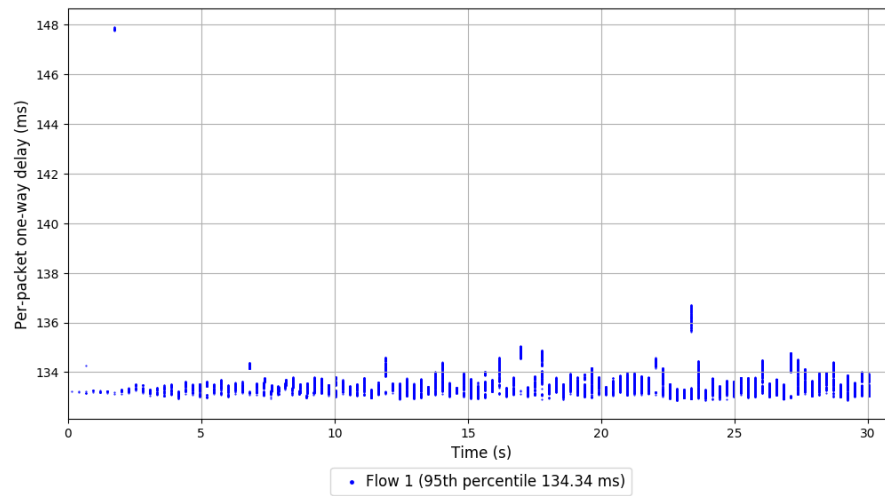
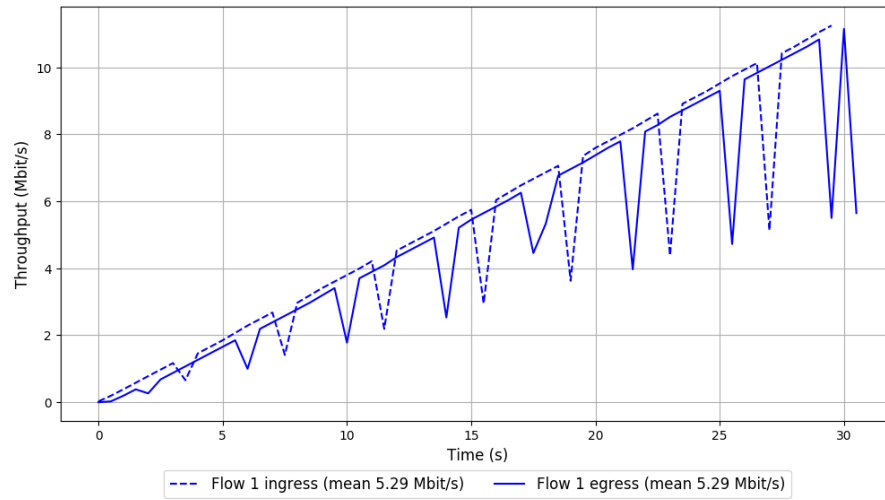


Run 5: Statistics of LEDBAT

Start at: 2018-12-20 10:20:45
End at: 2018-12-20 10:21:15
Local clock offset: -0.256 ms
Remote clock offset: -0.101 ms

Below is generated by plot.py at 2018-12-20 11:54:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 134.342 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 134.342 ms
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

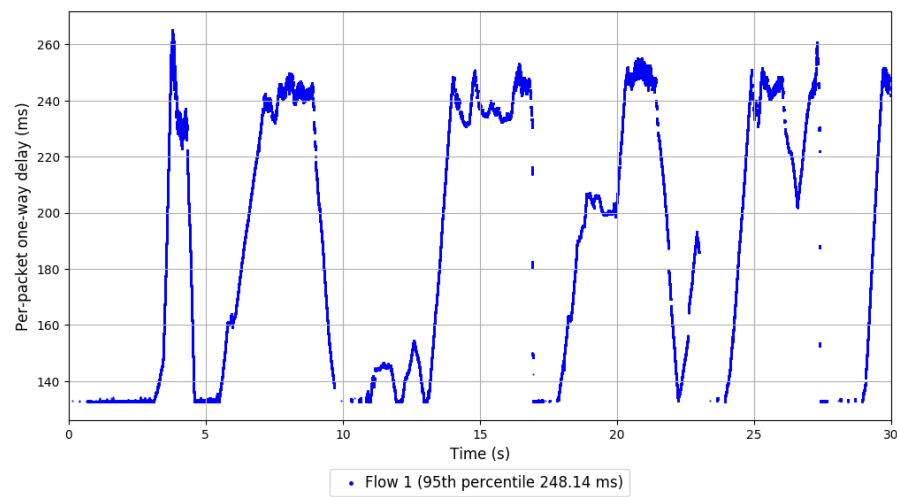
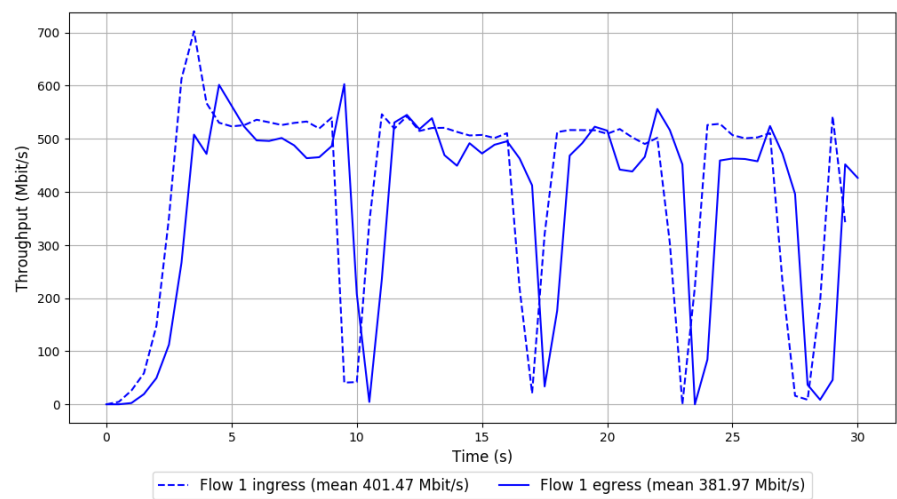


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-20 08:38:32
End at: 2018-12-20 08:39:02
Local clock offset: -0.017 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2018-12-20 11:58:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 381.97 Mbit/s
95th percentile per-packet one-way delay: 248.139 ms
Loss rate: 4.86%
-- Flow 1:
Average throughput: 381.97 Mbit/s
95th percentile per-packet one-way delay: 248.139 ms
Loss rate: 4.86%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-12-20 09:07:20

End at: 2018-12-20 09:07:50

Local clock offset: 0.152 ms

Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-12-20 11:58:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 360.33 Mbit/s

95th percentile per-packet one-way delay: 244.772 ms

Loss rate: 2.41%

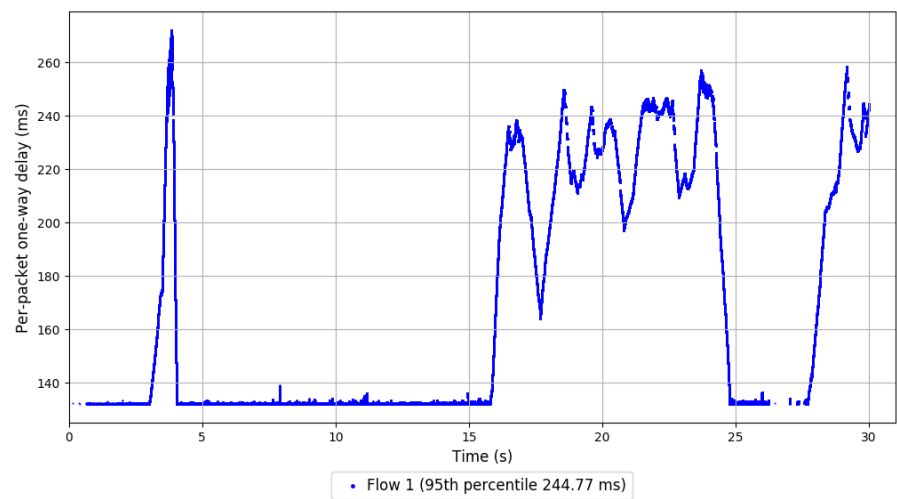
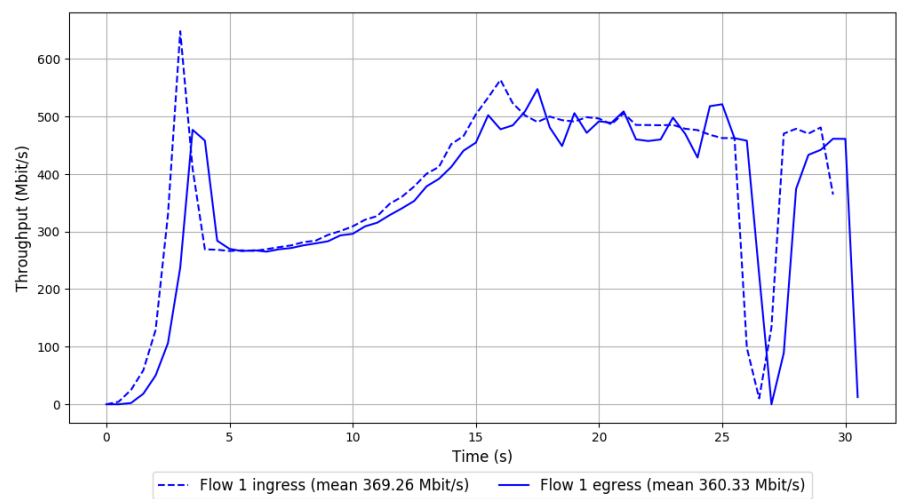
-- Flow 1:

Average throughput: 360.33 Mbit/s

95th percentile per-packet one-way delay: 244.772 ms

Loss rate: 2.41%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-20 09:35:54

End at: 2018-12-20 09:36:24

Local clock offset: 1.689 ms

Remote clock offset: -0.102 ms

Below is generated by plot.py at 2018-12-20 11:59:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 416.51 Mbit/s

95th percentile per-packet one-way delay: 246.602 ms

Loss rate: 5.06%

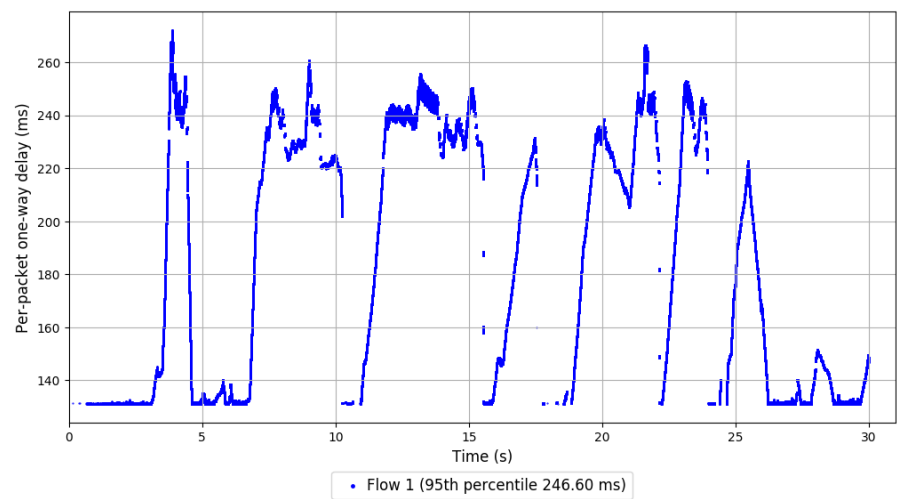
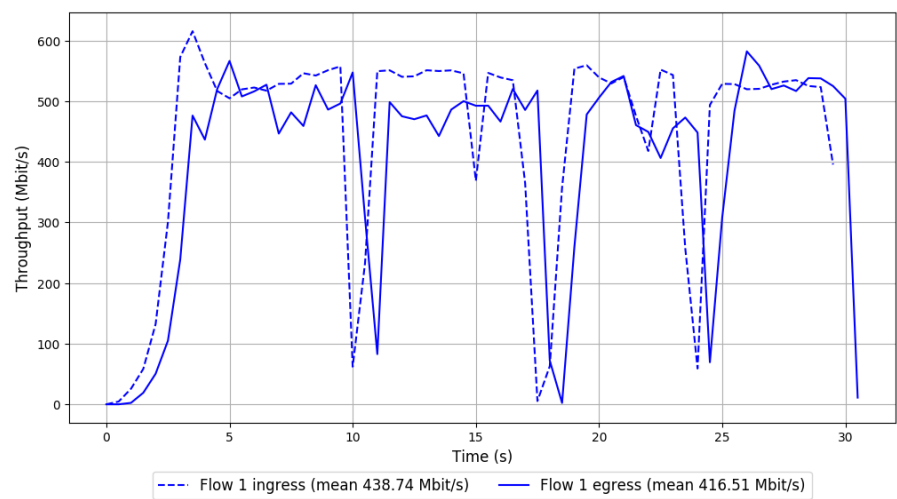
-- Flow 1:

Average throughput: 416.51 Mbit/s

95th percentile per-packet one-way delay: 246.602 ms

Loss rate: 5.06%

Run 3: Report of PCC-Allegro — Data Link

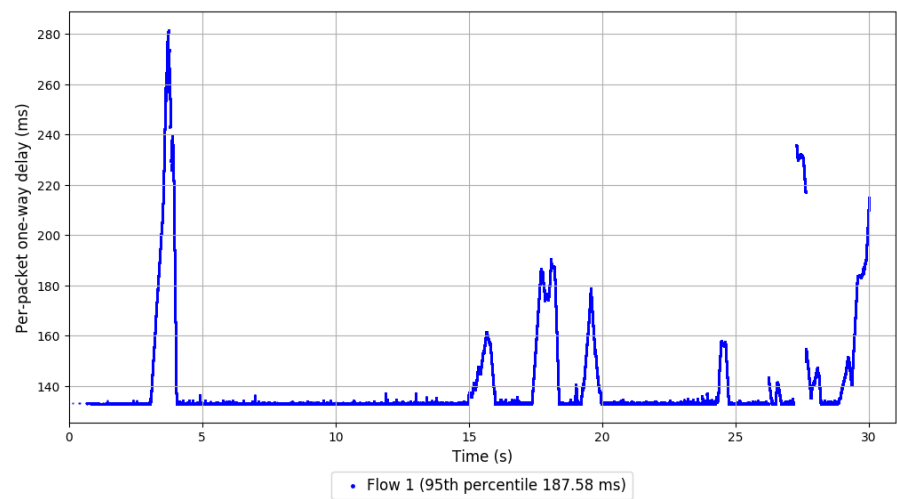
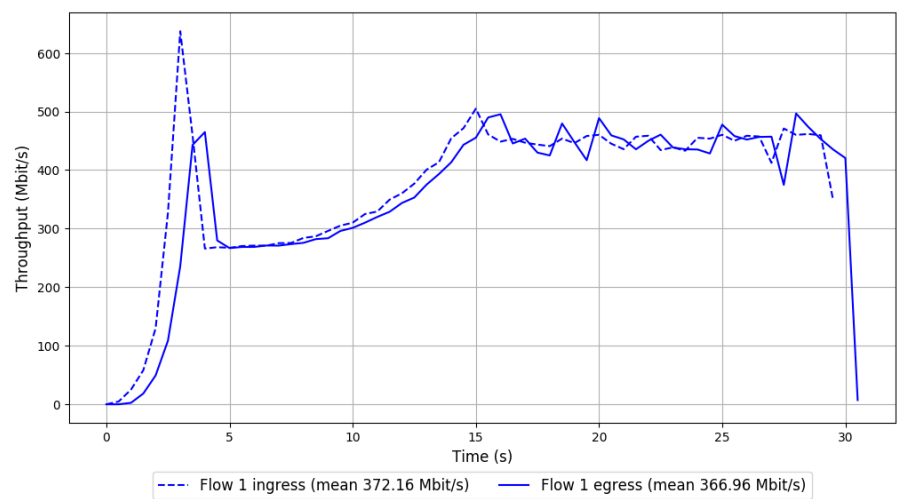


Run 4: Statistics of PCC-Allegro

Start at: 2018-12-20 10:05:03
End at: 2018-12-20 10:05:33
Local clock offset: -0.269 ms
Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-12-20 11:59:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 366.96 Mbit/s
95th percentile per-packet one-way delay: 187.584 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 366.96 Mbit/s
95th percentile per-packet one-way delay: 187.584 ms
Loss rate: 1.40%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 10:33:44

End at: 2018-12-20 10:34:14

Local clock offset: 0.127 ms

Remote clock offset: -0.412 ms

Below is generated by plot.py at 2018-12-20 12:00:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 431.77 Mbit/s

95th percentile per-packet one-way delay: 249.784 ms

Loss rate: 6.37%

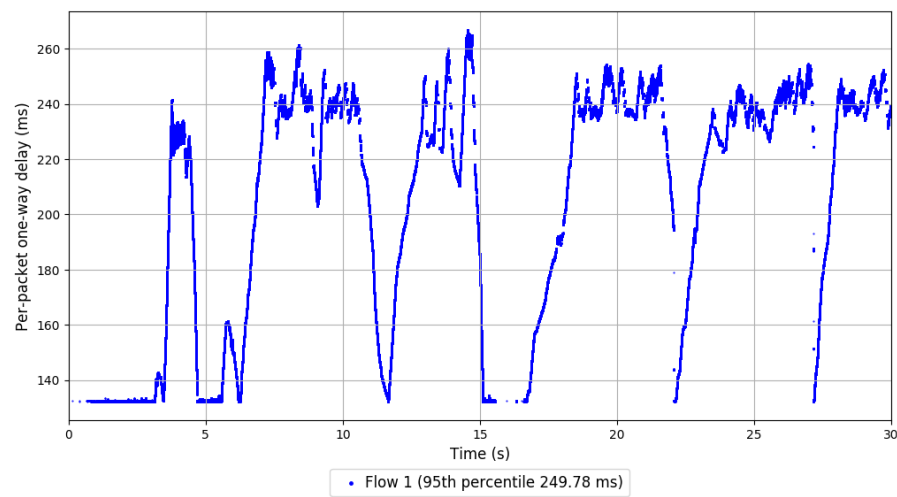
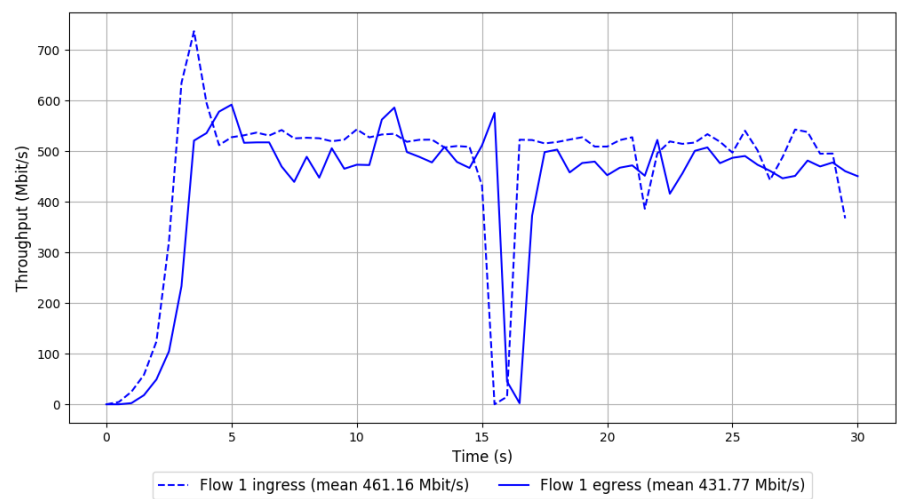
-- Flow 1:

Average throughput: 431.77 Mbit/s

95th percentile per-packet one-way delay: 249.784 ms

Loss rate: 6.37%

Run 5: Report of PCC-Allegro — Data Link

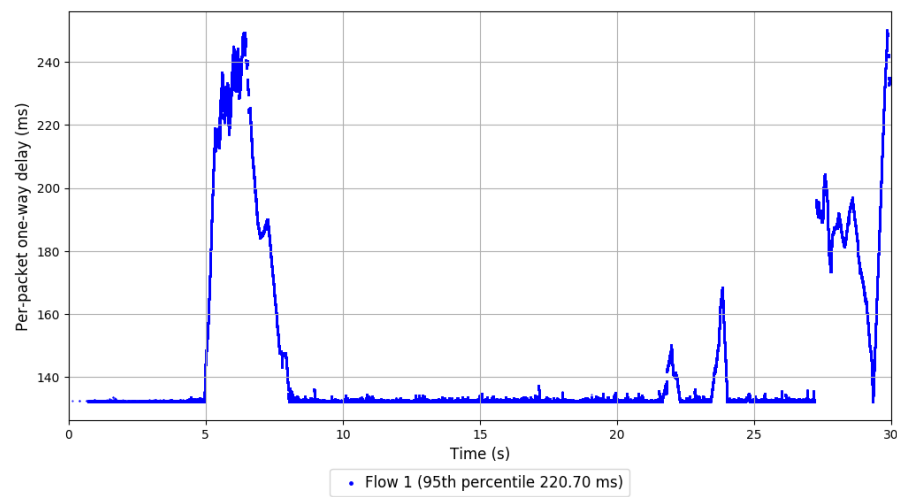
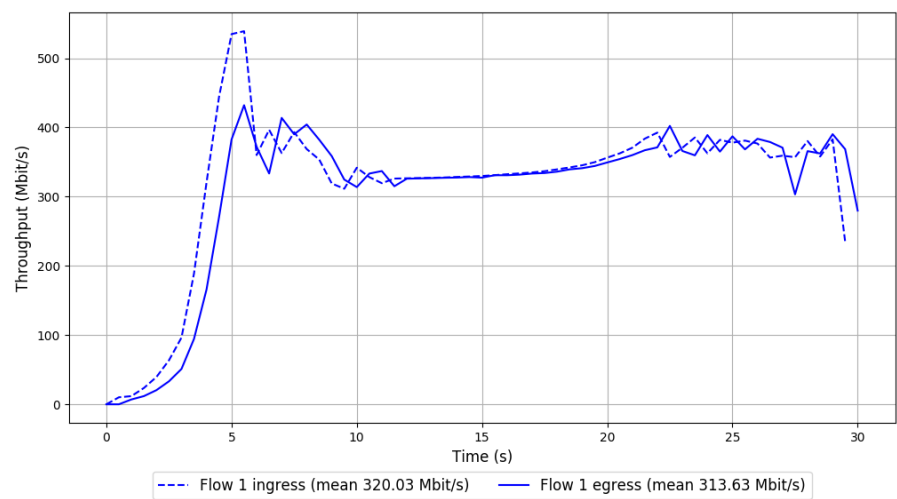



```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-20 08:47:51
End at: 2018-12-20 08:48:21
Local clock offset: 0.208 ms
Remote clock offset: 0.017 ms

# Below is generated by plot.py at 2018-12-20 12:00:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 313.63 Mbit/s
95th percentile per-packet one-way delay: 220.698 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 313.63 Mbit/s
95th percentile per-packet one-way delay: 220.698 ms
Loss rate: 2.00%
```

Run 1: Report of PCC-Expr — Data Link

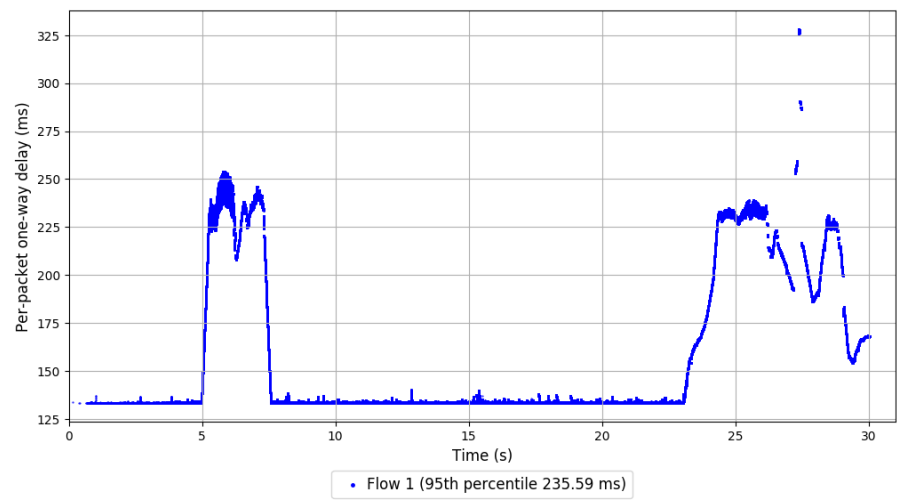
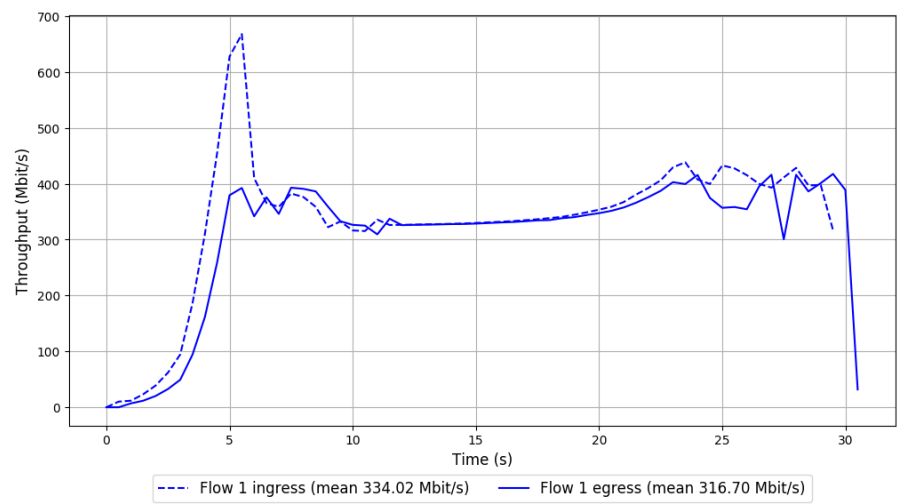


Run 2: Statistics of PCC-Expr

Start at: 2018-12-20 09:16:36
End at: 2018-12-20 09:17:06
Local clock offset: 0.062 ms
Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-12-20 12:00:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 316.70 Mbit/s
95th percentile per-packet one-way delay: 235.586 ms
Loss rate: 5.18%
-- Flow 1:
Average throughput: 316.70 Mbit/s
95th percentile per-packet one-way delay: 235.586 ms
Loss rate: 5.18%

Run 2: Report of PCC-Expr — Data Link

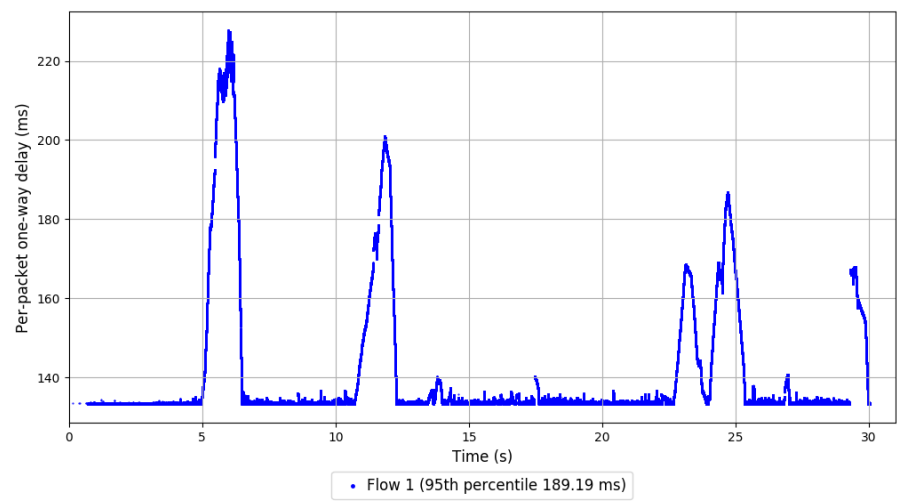
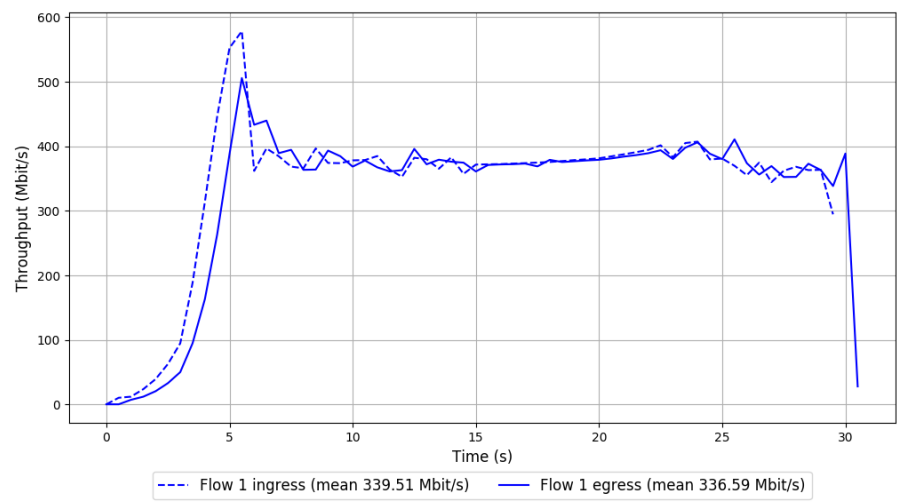


Run 3: Statistics of PCC-Expr

Start at: 2018-12-20 09:45:33
End at: 2018-12-20 09:46:03
Local clock offset: -0.087 ms
Remote clock offset: -0.122 ms

Below is generated by plot.py at 2018-12-20 12:06:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 336.59 Mbit/s
95th percentile per-packet one-way delay: 189.191 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 336.59 Mbit/s
95th percentile per-packet one-way delay: 189.191 ms
Loss rate: 0.86%

Run 3: Report of PCC-Expr — Data Link

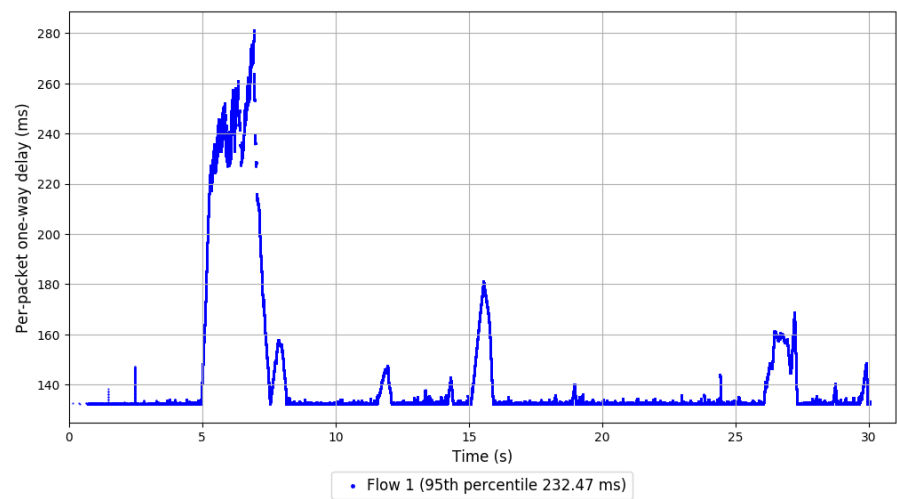
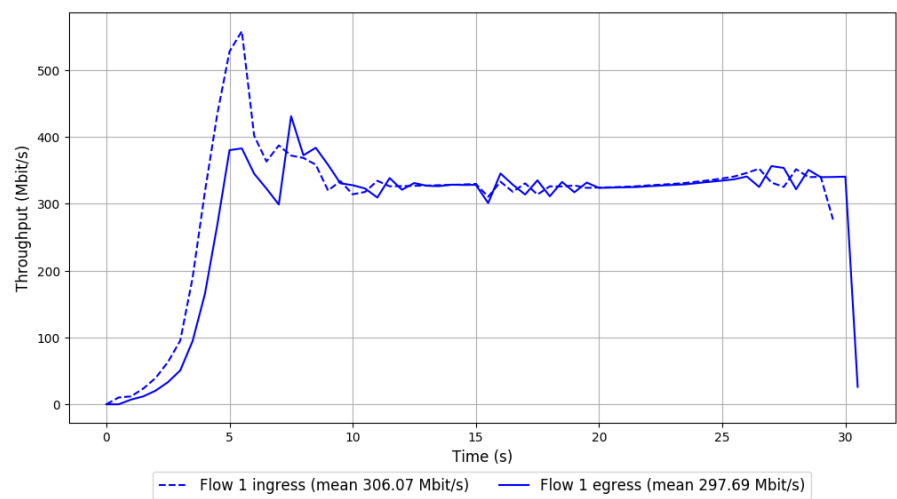


Run 4: Statistics of PCC-Expr

Start at: 2018-12-20 10:14:34
End at: 2018-12-20 10:15:04
Local clock offset: -0.093 ms
Remote clock offset: -0.497 ms

Below is generated by plot.py at 2018-12-20 12:06:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 297.69 Mbit/s
95th percentile per-packet one-way delay: 232.472 ms
Loss rate: 2.74%
-- Flow 1:
Average throughput: 297.69 Mbit/s
95th percentile per-packet one-way delay: 232.472 ms
Loss rate: 2.74%

Run 4: Report of PCC-Expr — Data Link

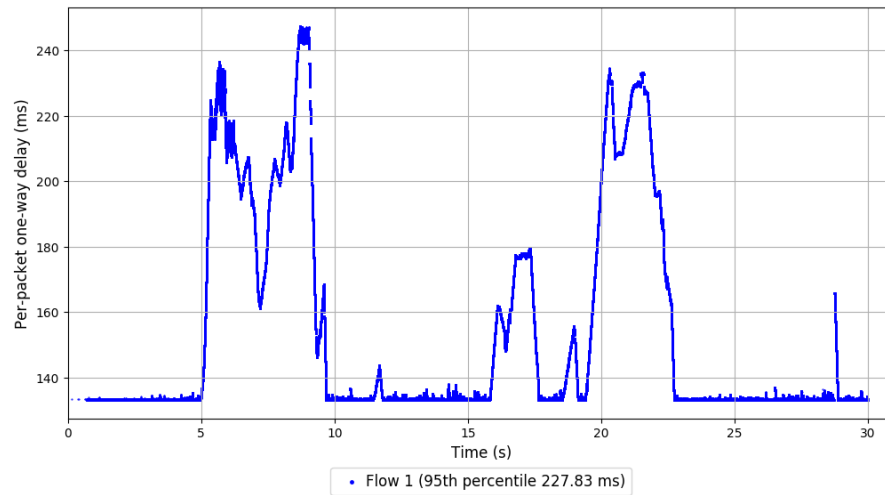
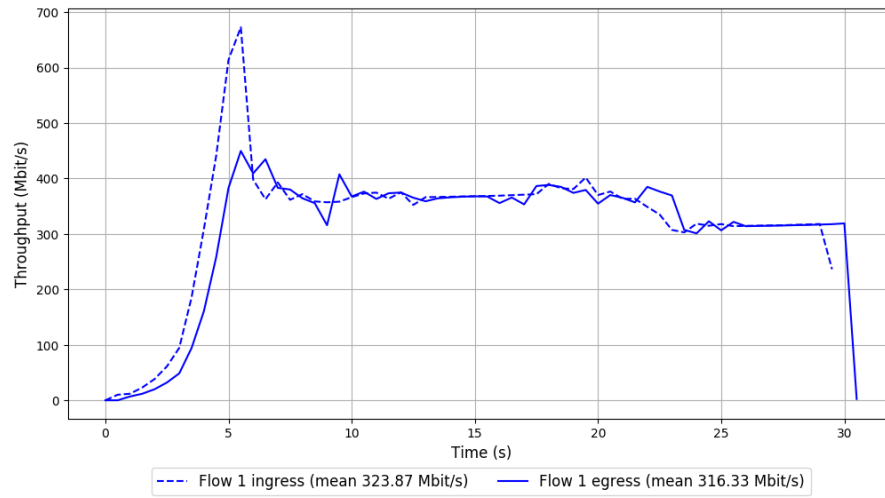


Run 5: Statistics of PCC-Expr

Start at: 2018-12-20 10:43:44
End at: 2018-12-20 10:44:14
Local clock offset: -0.188 ms
Remote clock offset: -0.006 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 316.33 Mbit/s
95th percentile per-packet one-way delay: 227.829 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 316.33 Mbit/s
95th percentile per-packet one-way delay: 227.829 ms
Loss rate: 2.33%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

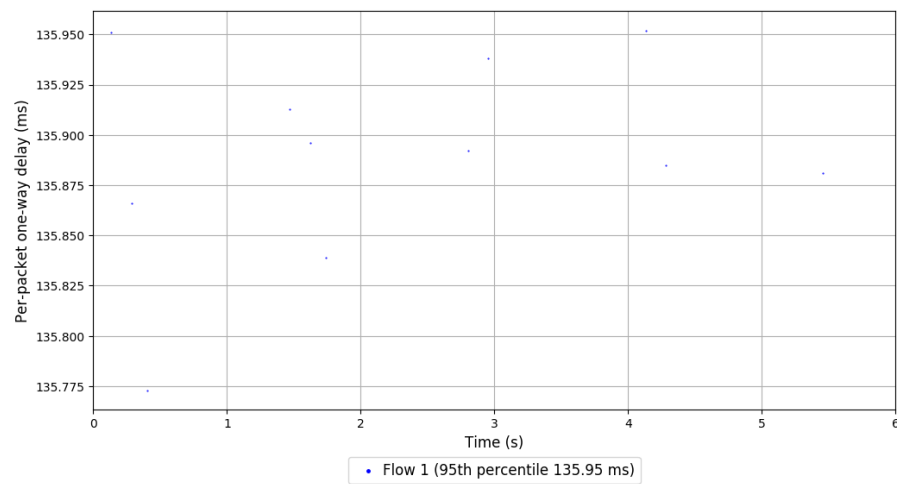
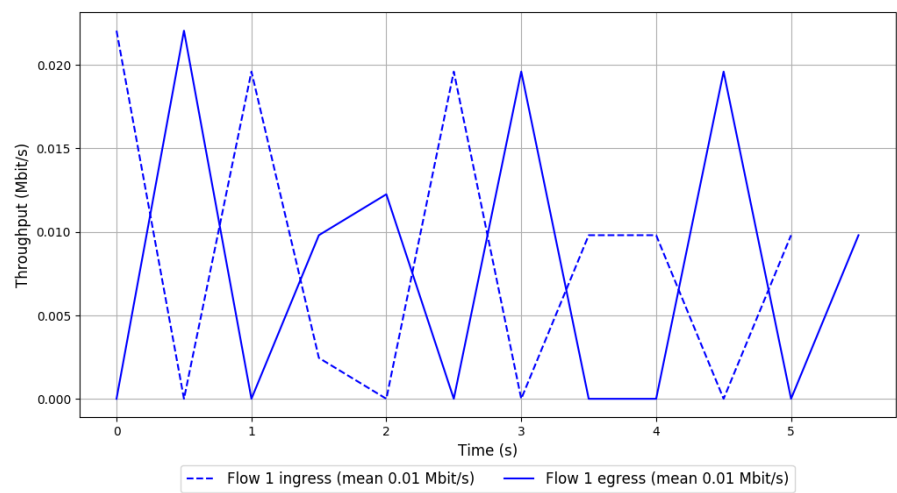
Start at: 2018-12-20 08:28:30

End at: 2018-12-20 08:29:00

Local clock offset: -3.25 ms

Remote clock offset: -0.33 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-12-20 08:56:53

End at: 2018-12-20 08:57:23

Local clock offset: -0.307 ms

Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 67.80 Mbit/s

95th percentile per-packet one-way delay: 132.767 ms

Loss rate: 0.00%

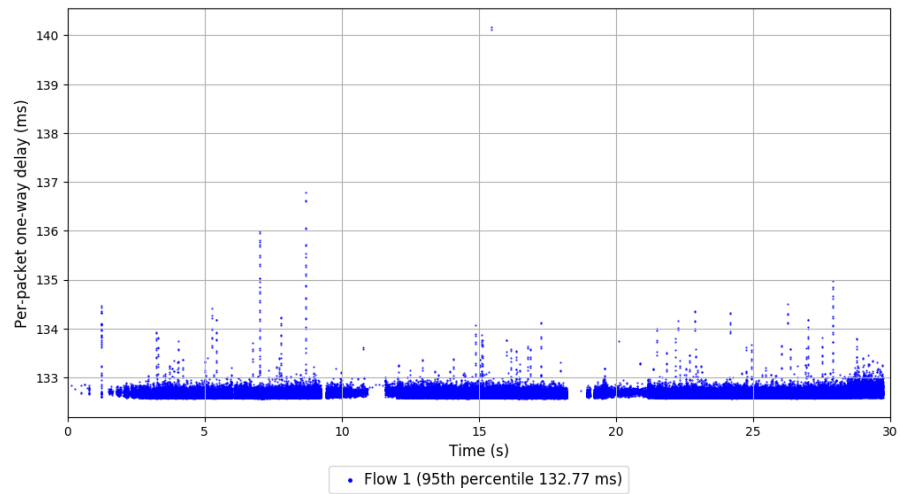
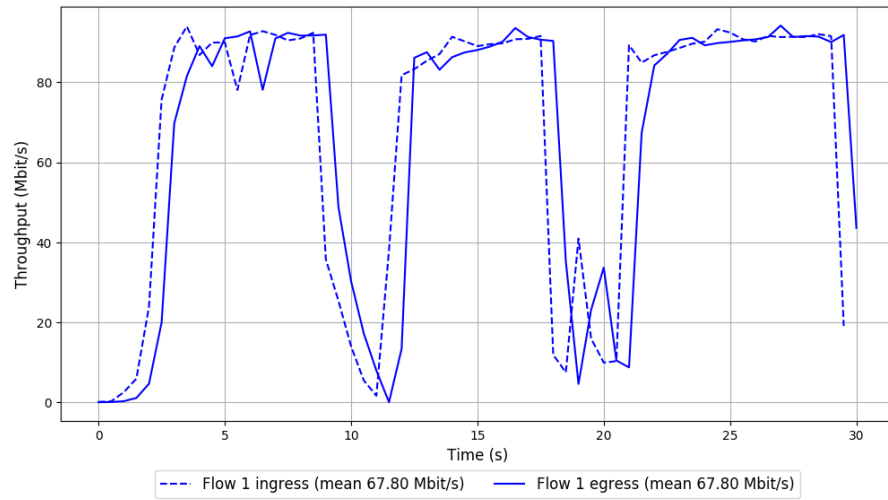
-- Flow 1:

Average throughput: 67.80 Mbit/s

95th percentile per-packet one-way delay: 132.767 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-12-20 09:25:40

End at: 2018-12-20 09:26:10

Local clock offset: -0.026 ms

Remote clock offset: -0.08 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.52 Mbit/s

95th percentile per-packet one-way delay: 133.520 ms

Loss rate: 0.00%

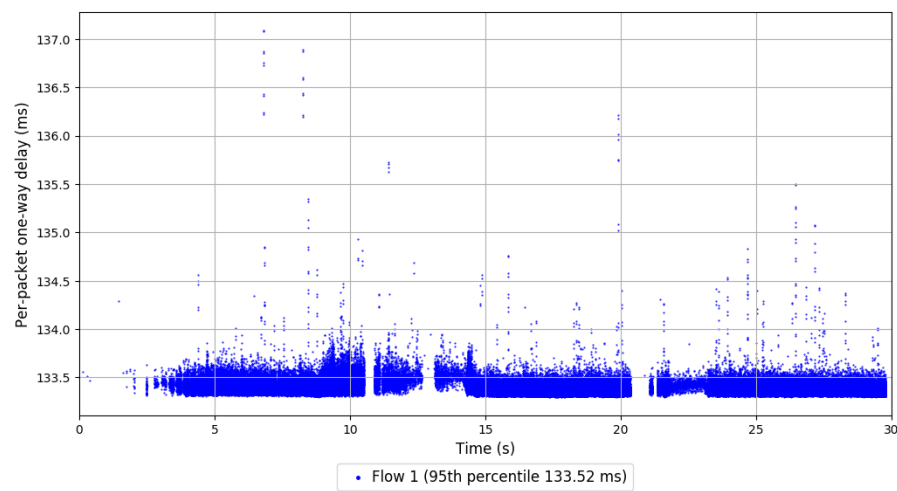
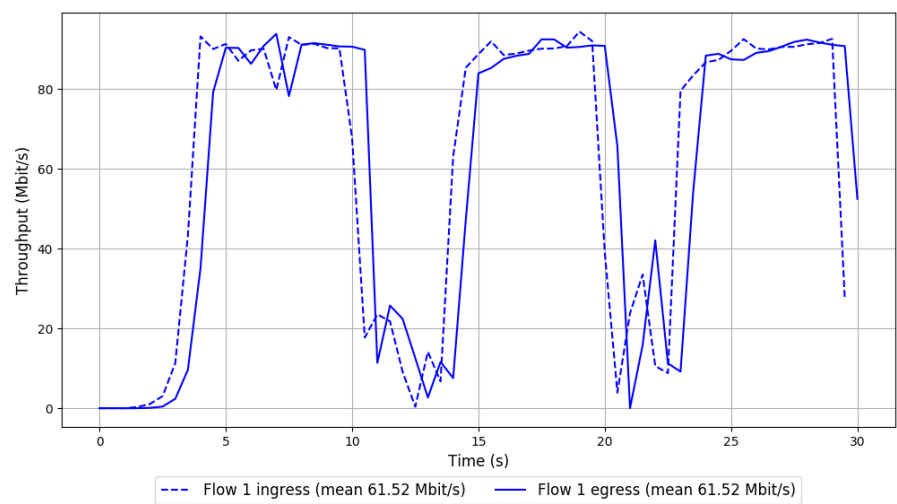
-- Flow 1:

Average throughput: 61.52 Mbit/s

95th percentile per-packet one-way delay: 133.520 ms

Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-12-20 09:54:36

End at: 2018-12-20 09:55:06

Local clock offset: -0.061 ms

Remote clock offset: -0.575 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.40 Mbit/s

95th percentile per-packet one-way delay: 132.042 ms

Loss rate: 0.00%

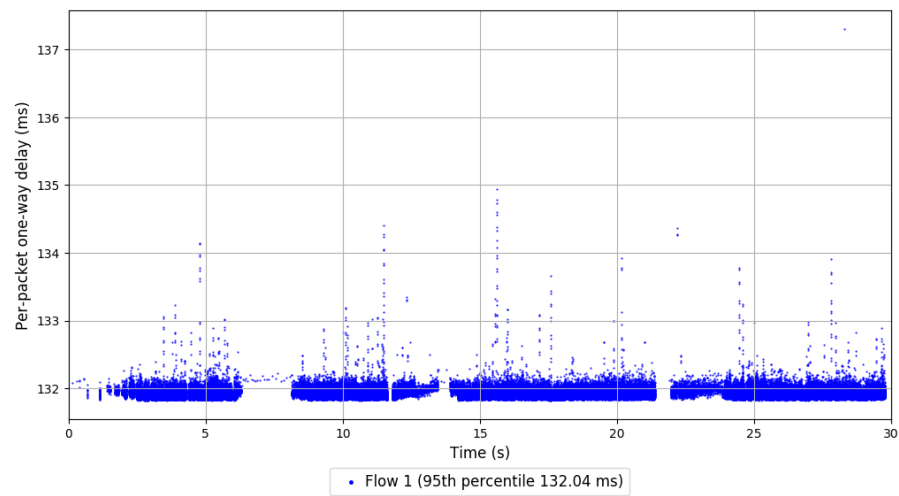
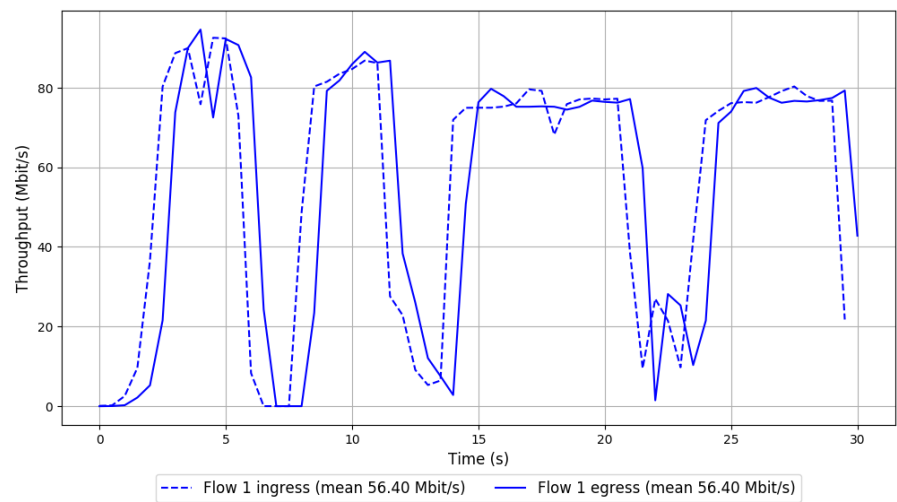
-- Flow 1:

Average throughput: 56.40 Mbit/s

95th percentile per-packet one-way delay: 132.042 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 10:23:45

End at: 2018-12-20 10:24:15

Local clock offset: -2.221 ms

Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.11 Mbit/s

95th percentile per-packet one-way delay: 135.027 ms

Loss rate: 0.00%

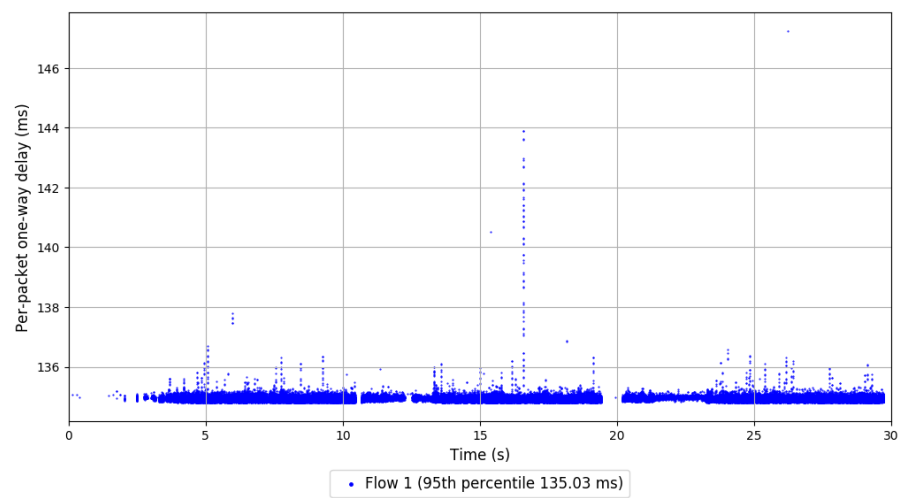
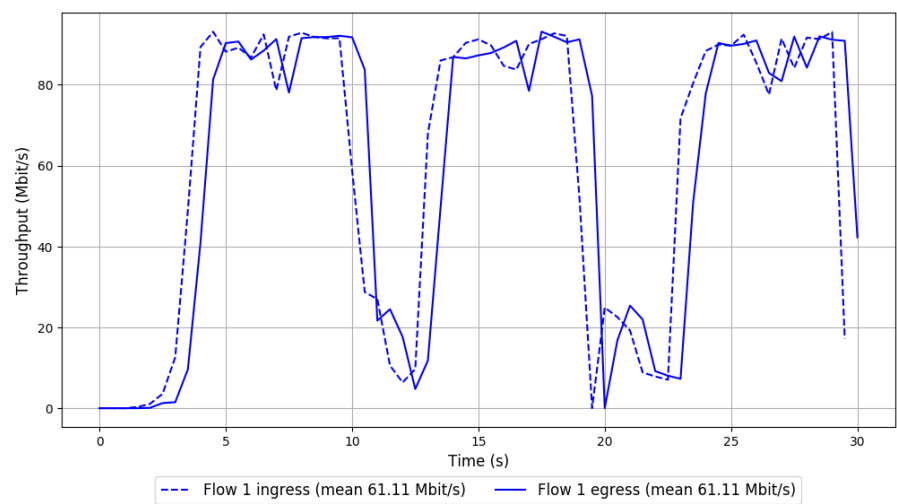
-- Flow 1:

Average throughput: 61.11 Mbit/s

95th percentile per-packet one-way delay: 135.027 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

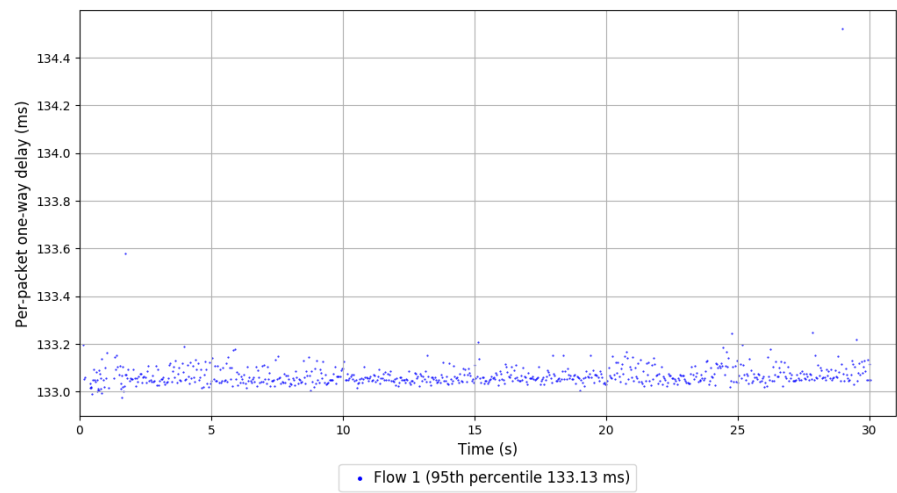
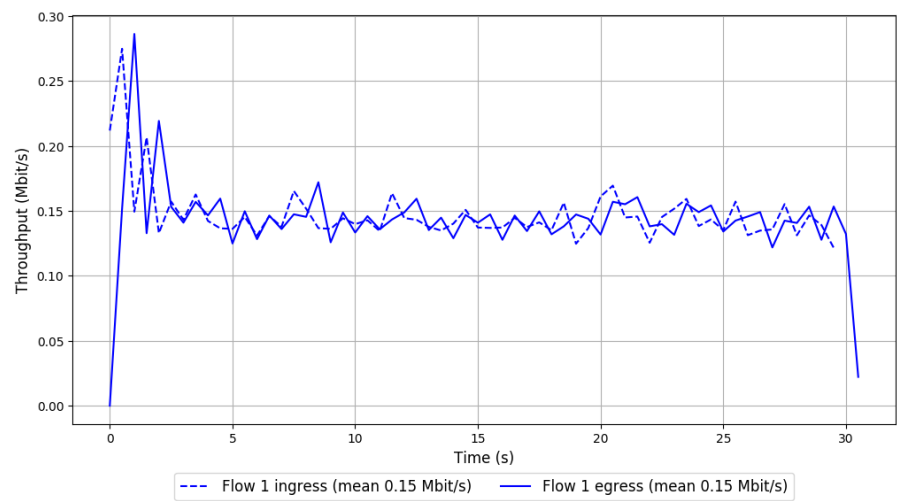


```
Run 1: Statistics of SCReAM

Start at: 2018-12-20 08:30:51
End at: 2018-12-20 08:31:21
Local clock offset: -0.059 ms
Remote clock offset: 0.012 ms

# Below is generated by plot.py at 2018-12-20 12:07:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.134 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.134 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

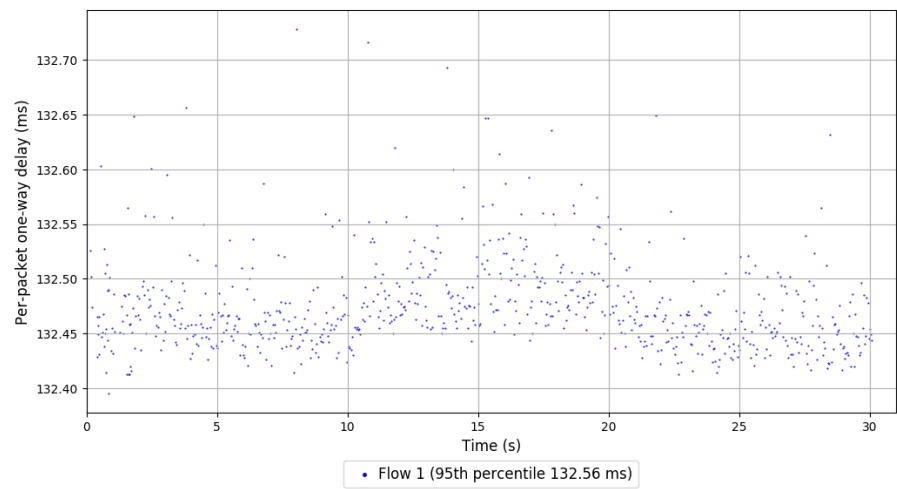
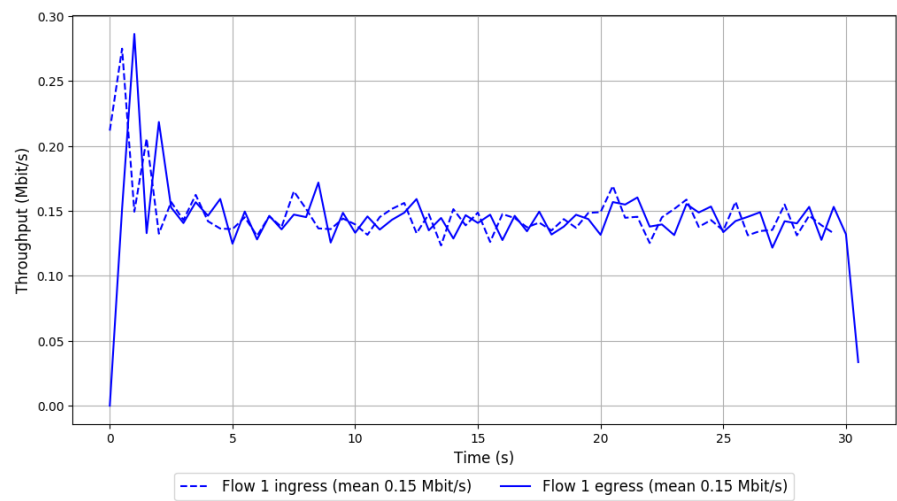


Run 2: Statistics of SCReAM

Start at: 2018-12-20 08:59:20
End at: 2018-12-20 08:59:50
Local clock offset: 0.039 ms
Remote clock offset: -0.053 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.555 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-12-20 09:28:06

End at: 2018-12-20 09:28:36

Local clock offset: -1.213 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 134.321 ms

Loss rate: 0.00%

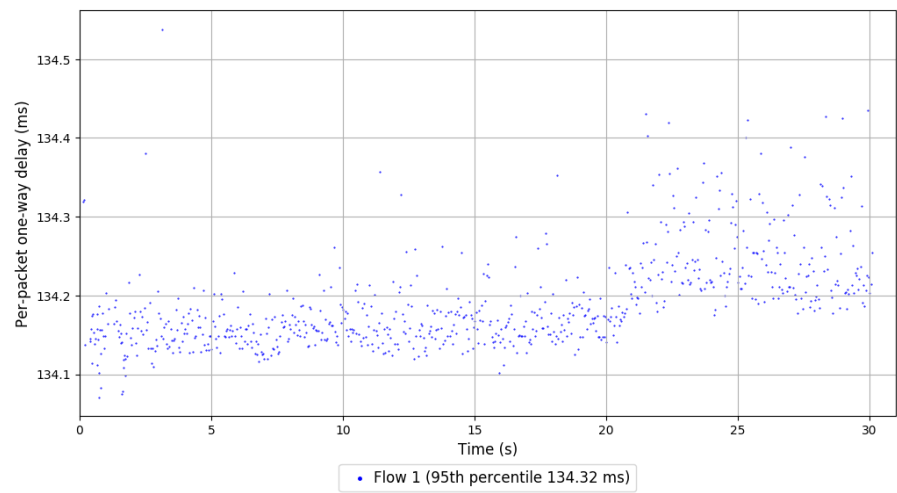
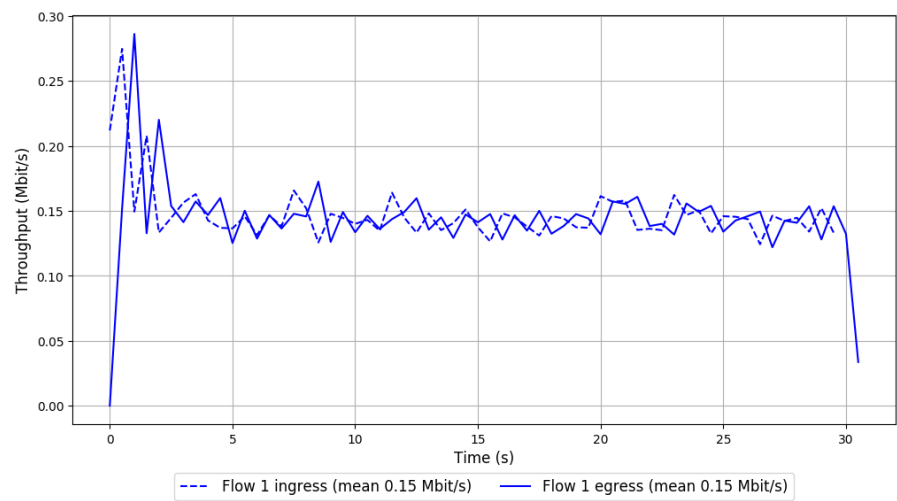
-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 134.321 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

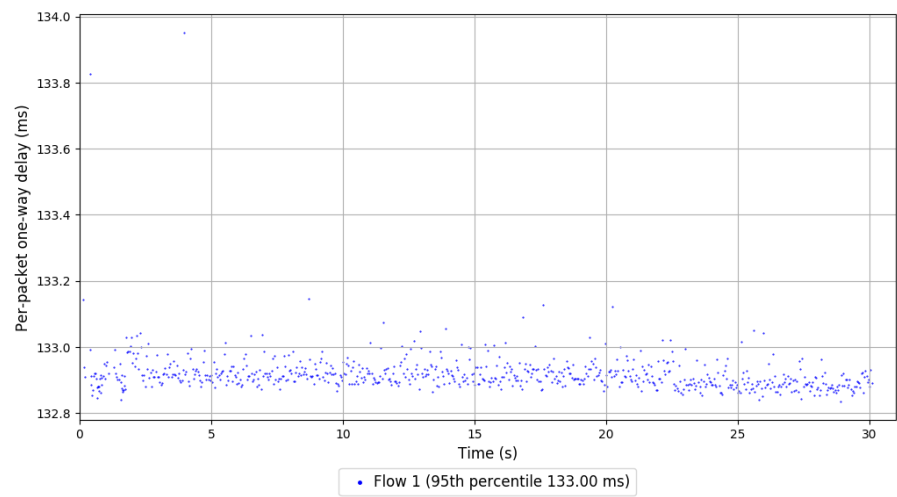
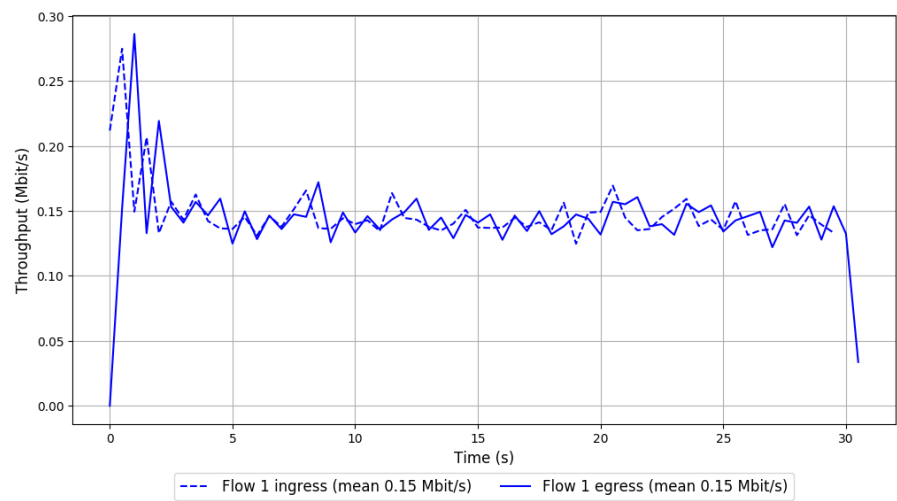


Run 4: Statistics of SCReAM

Start at: 2018-12-20 09:57:02
End at: 2018-12-20 09:57:32
Local clock offset: -0.157 ms
Remote clock offset: -0.171 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.997 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.997 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-12-20 10:26:12

End at: 2018-12-20 10:26:42

Local clock offset: -0.418 ms

Remote clock offset: -0.13 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 133.271 ms

Loss rate: 0.00%

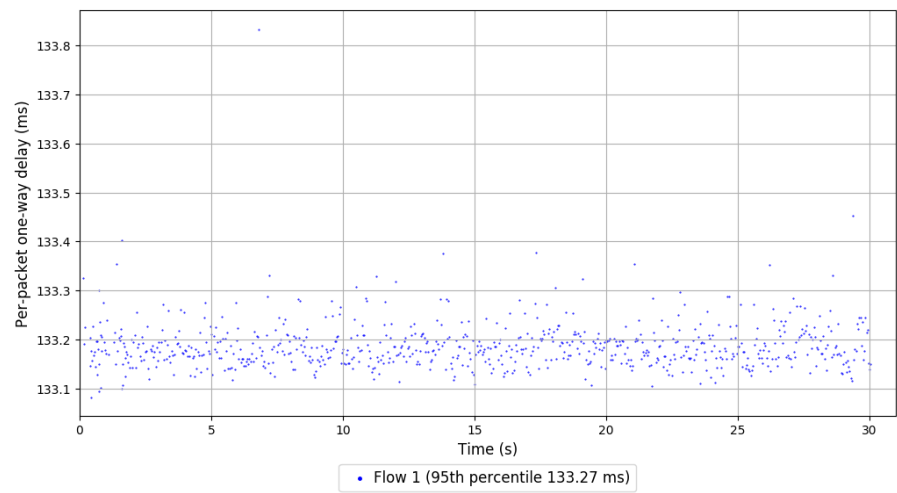
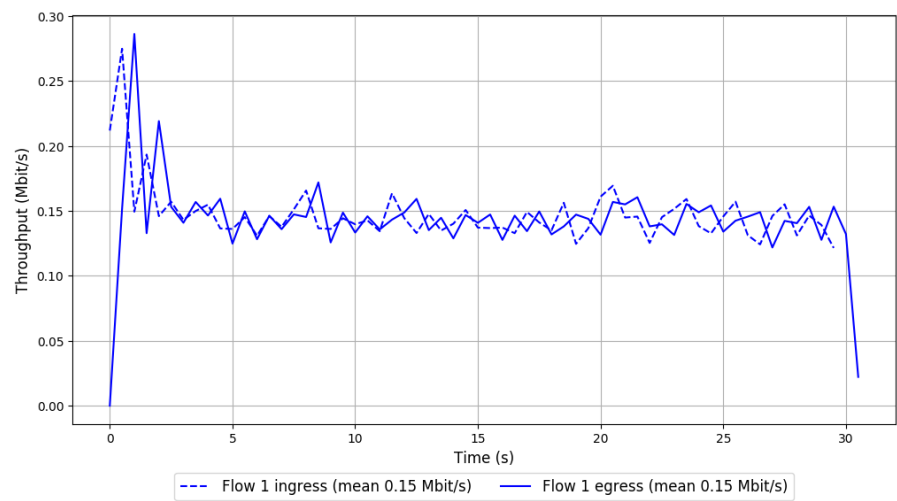
-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 133.271 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-12-20 08:29:40

End at: 2018-12-20 08:30:10

Local clock offset: -0.207 ms

Remote clock offset: -0.01 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.65 Mbit/s

95th percentile per-packet one-way delay: 133.504 ms

Loss rate: 0.00%

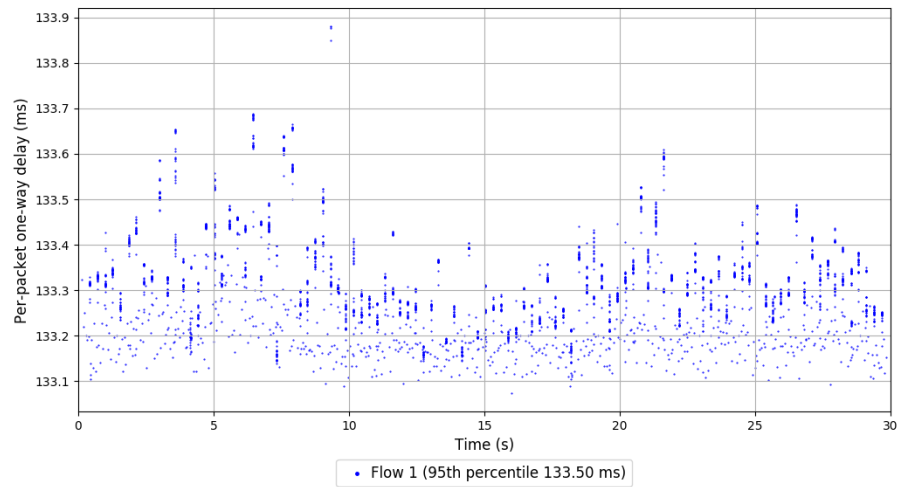
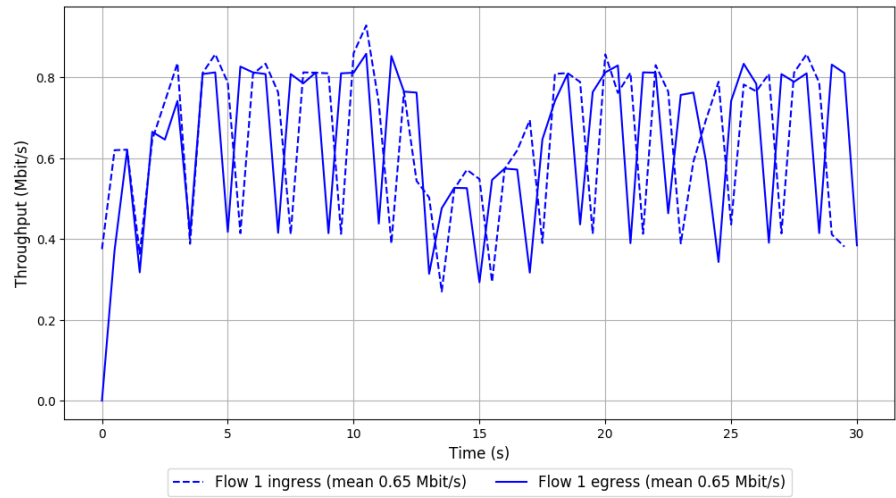
-- Flow 1:

Average throughput: 0.65 Mbit/s

95th percentile per-packet one-way delay: 133.504 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

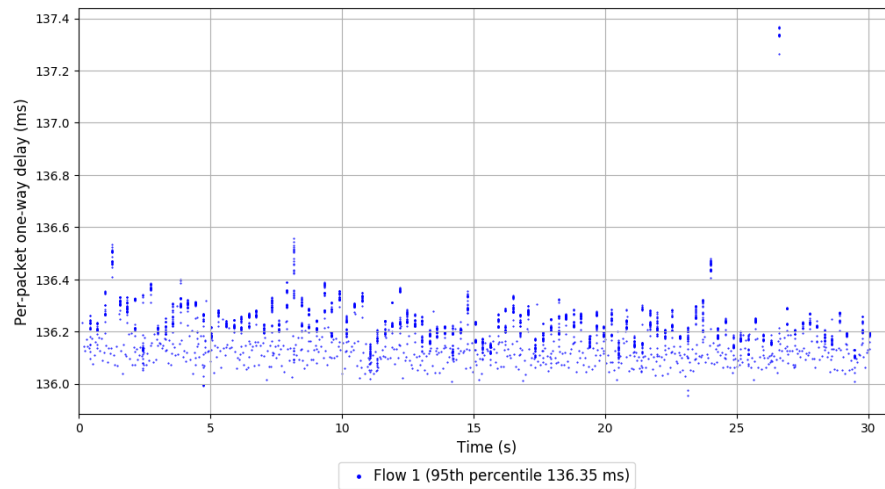
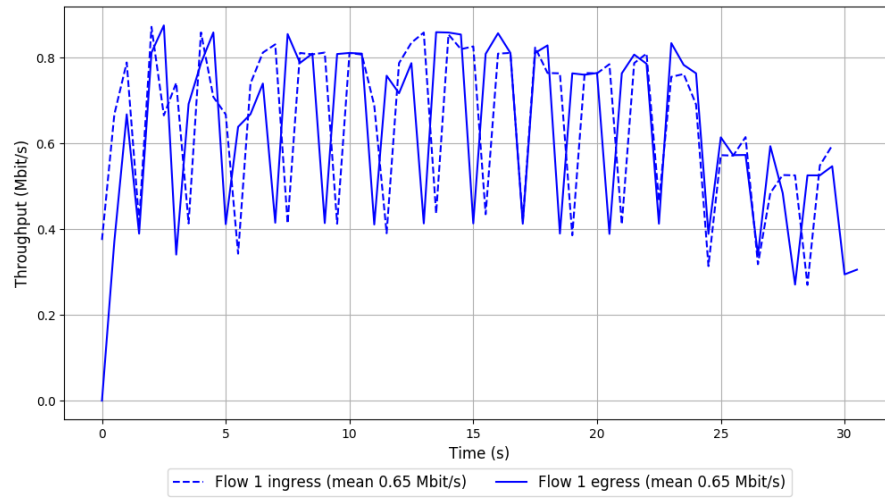


Run 2: Statistics of Sprout

Start at: 2018-12-20 08:58:08
End at: 2018-12-20 08:58:38
Local clock offset: -3.226 ms
Remote clock offset: -0.028 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 136.348 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 136.348 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

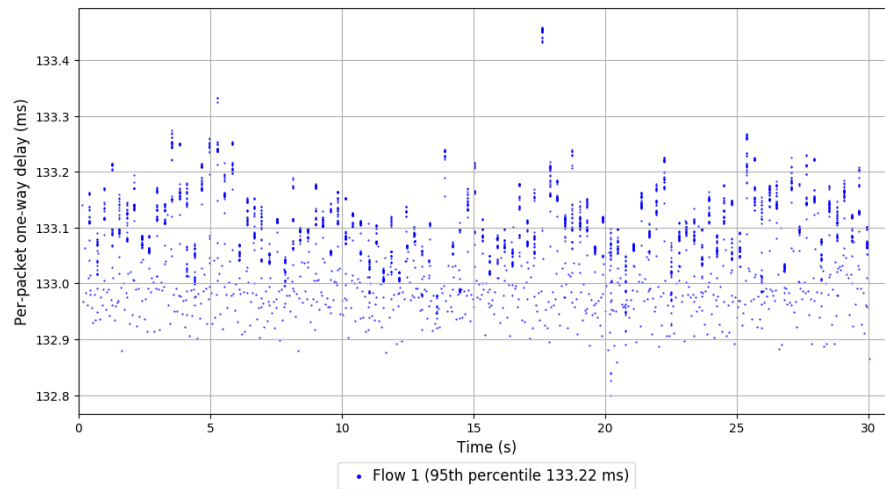
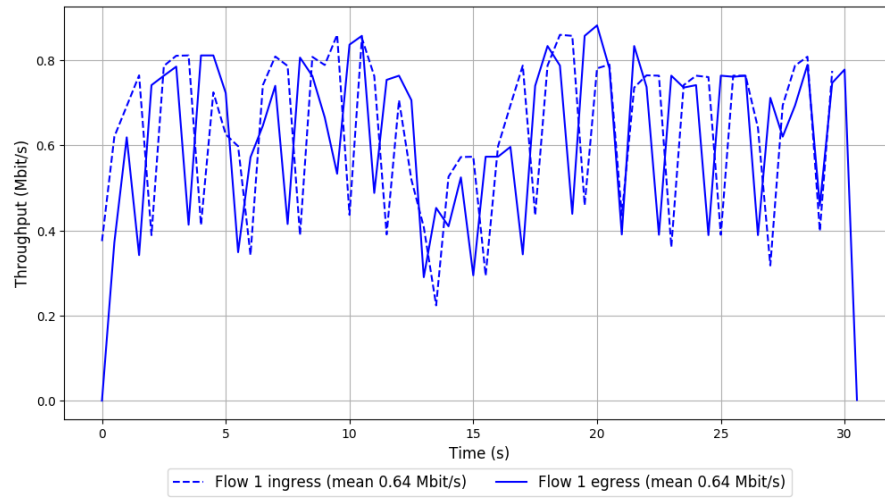


Run 3: Statistics of Sprout

Start at: 2018-12-20 09:26:55
End at: 2018-12-20 09:27:25
Local clock offset: -0.077 ms
Remote clock offset: -0.066 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 133.217 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 133.217 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

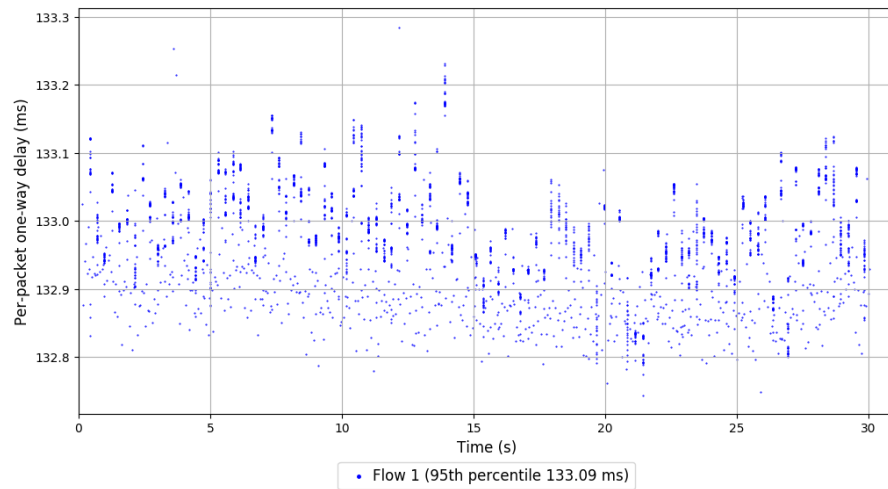
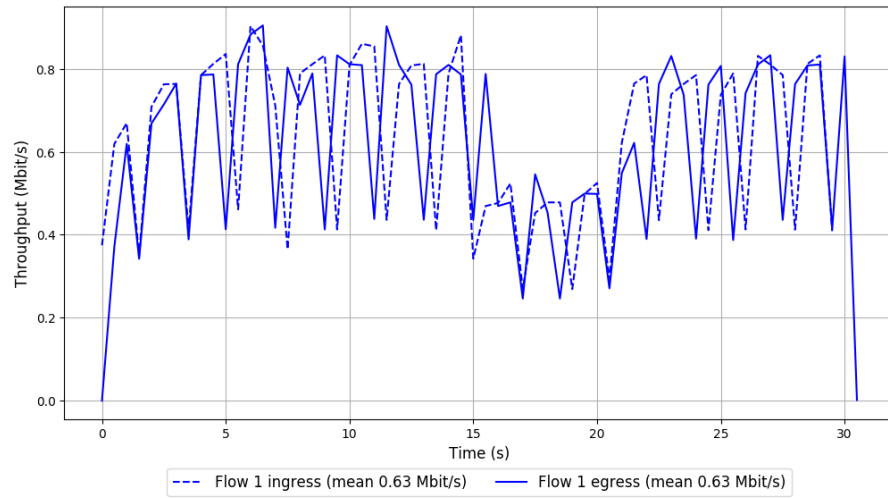


Run 4: Statistics of Sprout

Start at: 2018-12-20 09:55:51
End at: 2018-12-20 09:56:21
Local clock offset: -0.106 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.090 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.090 ms
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link

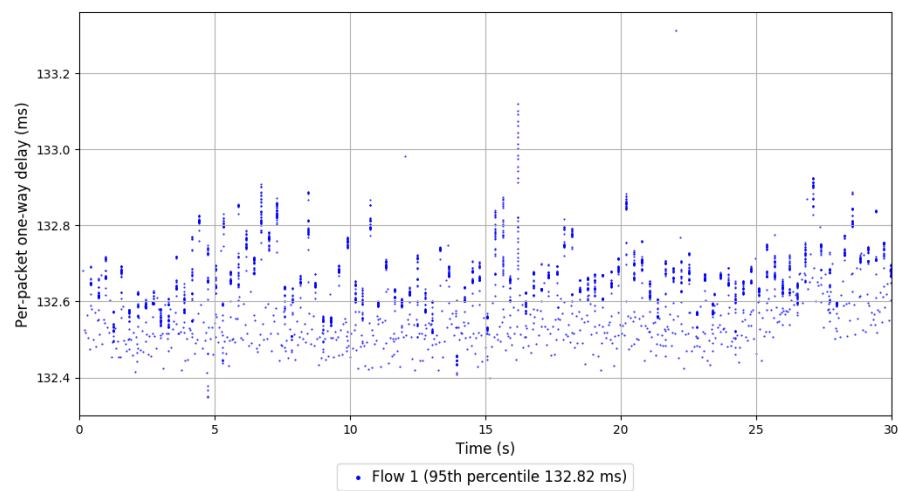
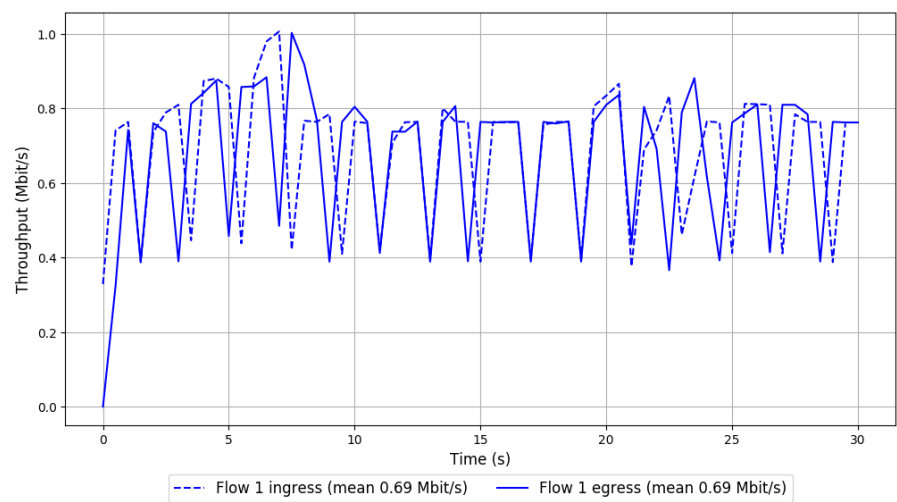


Run 5: Statistics of Sprout

Start at: 2018-12-20 10:25:01
End at: 2018-12-20 10:25:31
Local clock offset: 0.072 ms
Remote clock offset: -0.402 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 132.822 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 132.822 ms
Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

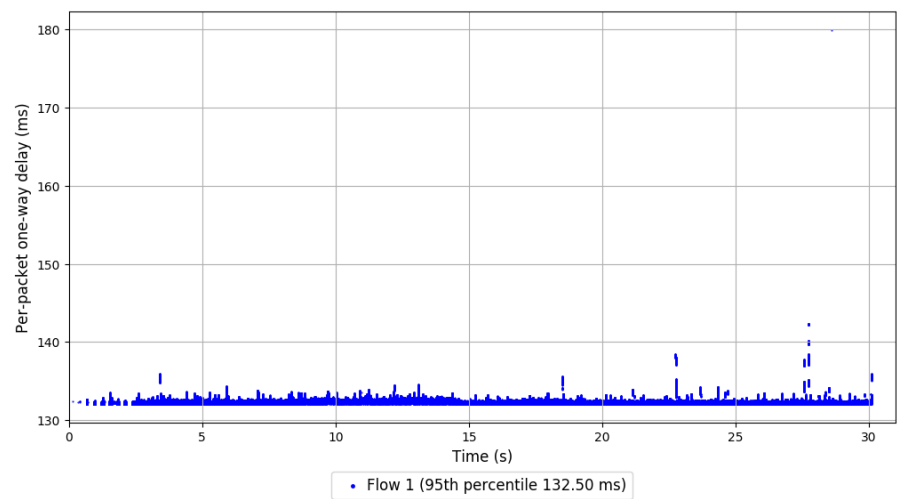
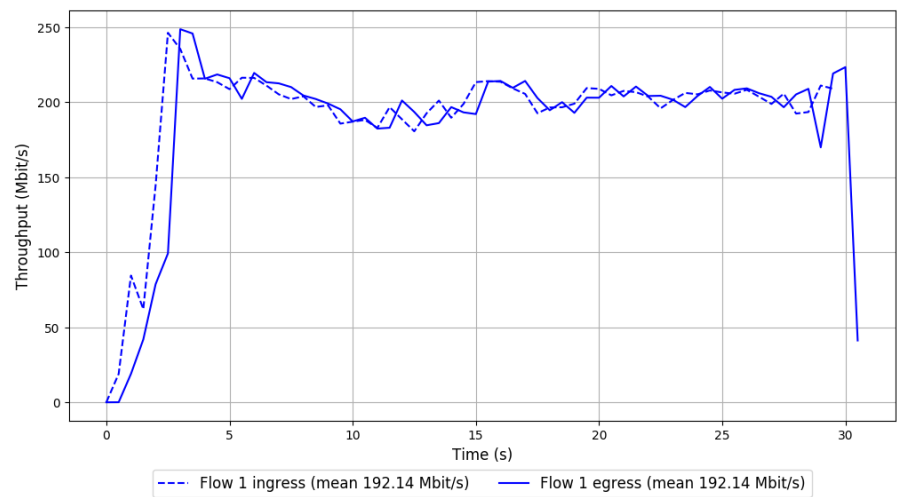



```
Run 1: Statistics of TaoVA-100x

Start at: 2018-12-20 08:44:52
End at: 2018-12-20 08:45:22
Local clock offset: -0.069 ms
Remote clock offset: 0.059 ms

# Below is generated by plot.py at 2018-12-20 12:07:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 192.14 Mbit/s
95th percentile per-packet one-way delay: 132.496 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 192.14 Mbit/s
95th percentile per-packet one-way delay: 132.496 ms
Loss rate: 0.00%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-12-20 09:14:04

End at: 2018-12-20 09:14:34

Local clock offset: -3.076 ms

Remote clock offset: 0.295 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.12 Mbit/s

95th percentile per-packet one-way delay: 136.902 ms

Loss rate: 0.00%

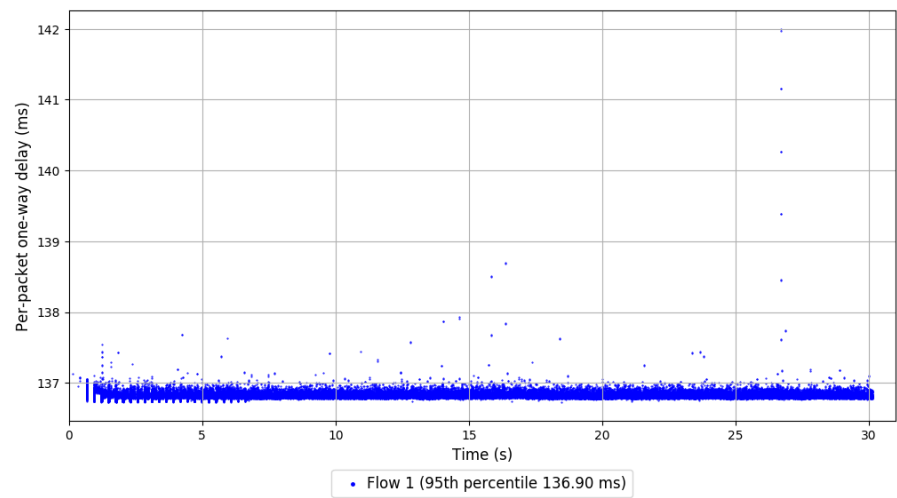
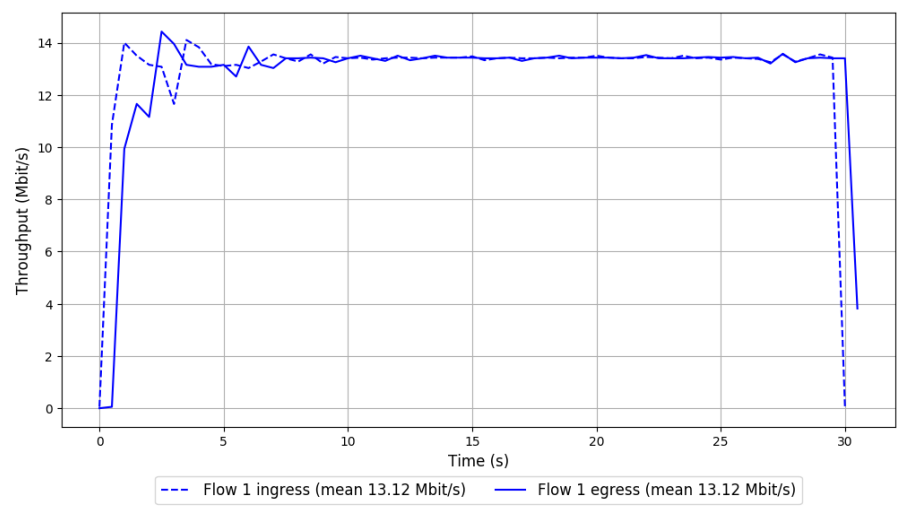
-- Flow 1:

Average throughput: 13.12 Mbit/s

95th percentile per-packet one-way delay: 136.902 ms

Loss rate: 0.00%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-12-20 09:42:43

End at: 2018-12-20 09:43:13

Local clock offset: 1.468 ms

Remote clock offset: -0.483 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 190.60 Mbit/s

95th percentile per-packet one-way delay: 131.041 ms

Loss rate: 0.00%

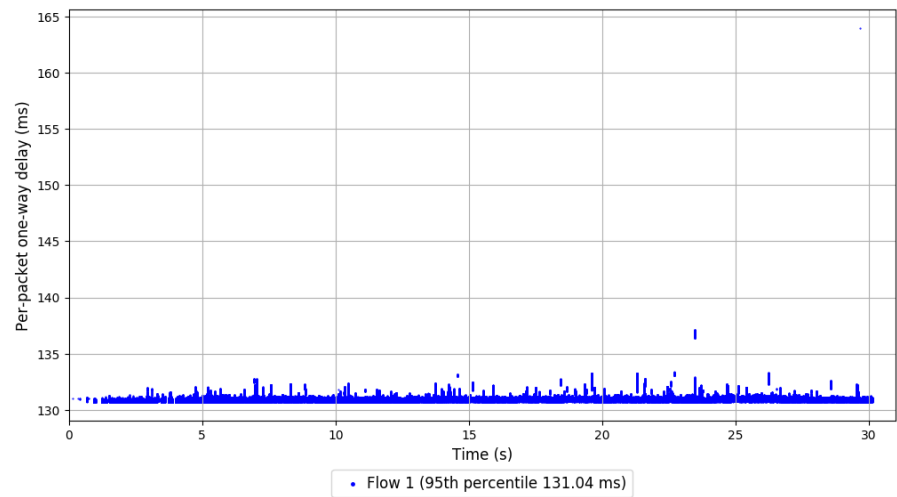
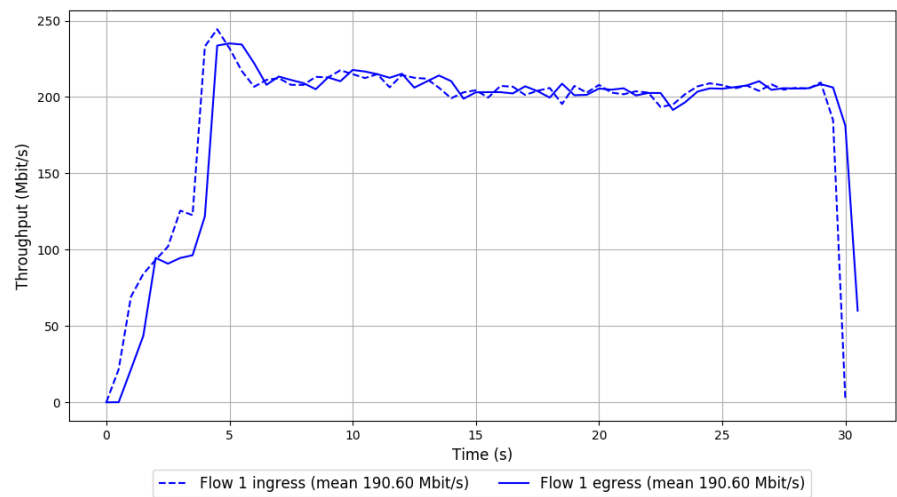
-- Flow 1:

Average throughput: 190.60 Mbit/s

95th percentile per-packet one-way delay: 131.041 ms

Loss rate: 0.00%

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

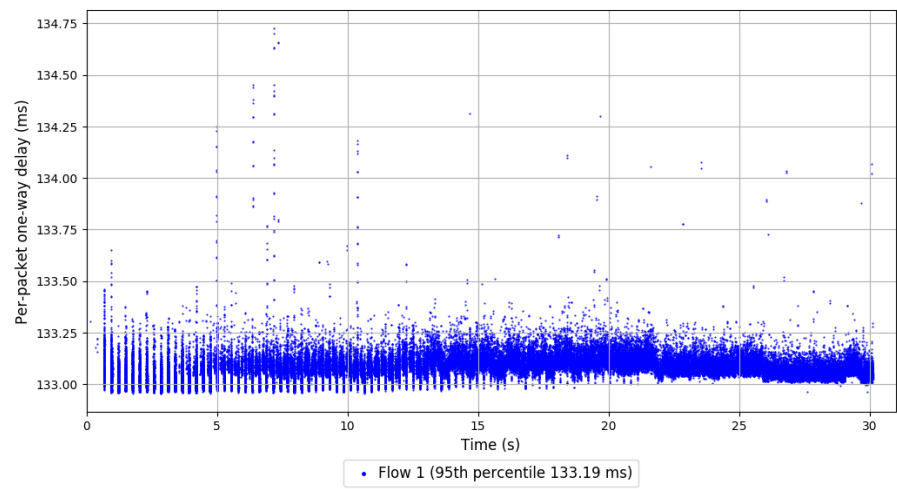
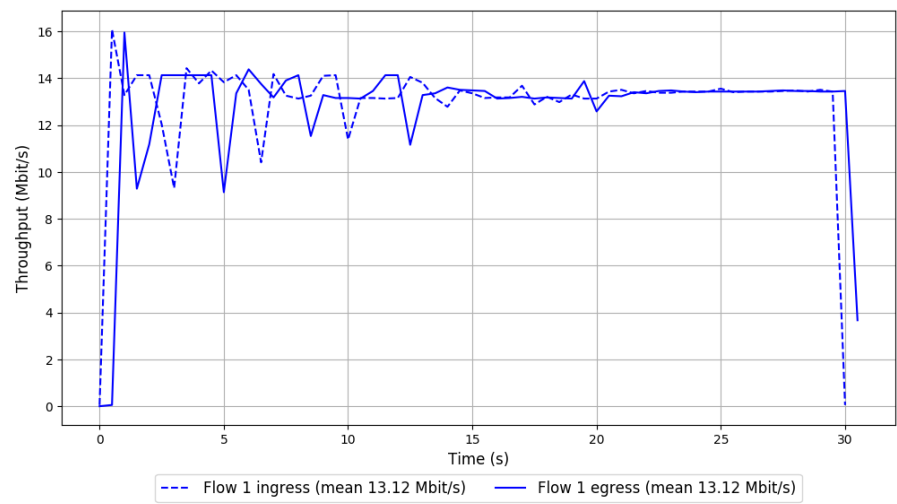


Run 4: Statistics of TaoVA-100x

Start at: 2018-12-20 10:11:53
End at: 2018-12-20 10:12:23
Local clock offset: -0.101 ms
Remote clock offset: -0.144 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.12 Mbit/s
95th percentile per-packet one-way delay: 133.192 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.12 Mbit/s
95th percentile per-packet one-way delay: 133.192 ms
Loss rate: 0.00%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-12-20 10:40:54

End at: 2018-12-20 10:41:24

Local clock offset: -2.83 ms

Remote clock offset: -0.391 ms

Below is generated by plot.py at 2018-12-20 12:07:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 192.59 Mbit/s

95th percentile per-packet one-way delay: 135.605 ms

Loss rate: 0.00%

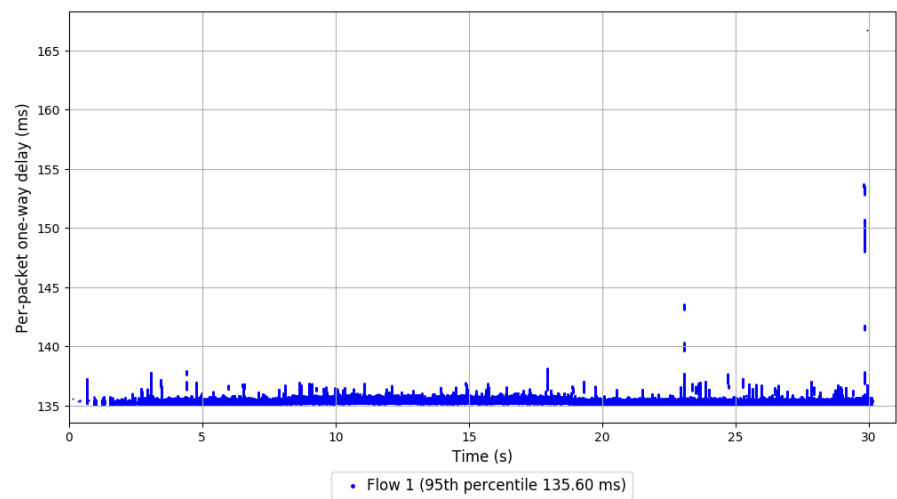
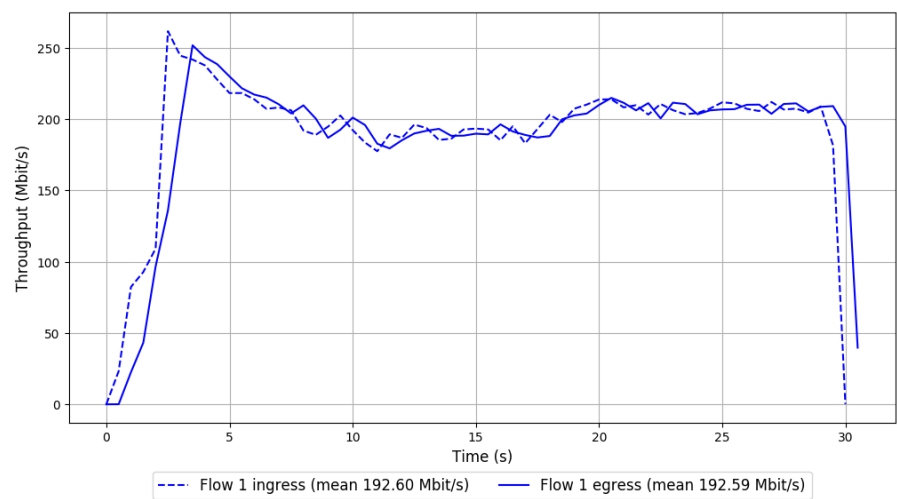
-- Flow 1:

Average throughput: 192.59 Mbit/s

95th percentile per-packet one-way delay: 135.605 ms

Loss rate: 0.00%

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

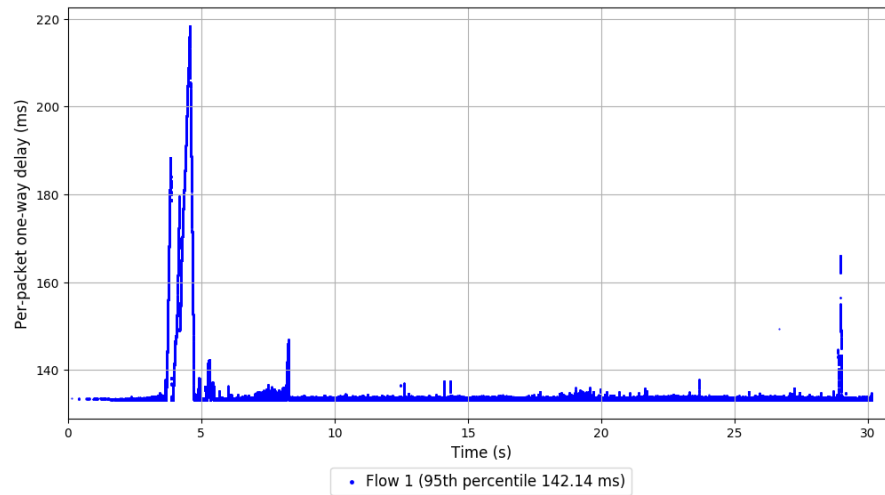
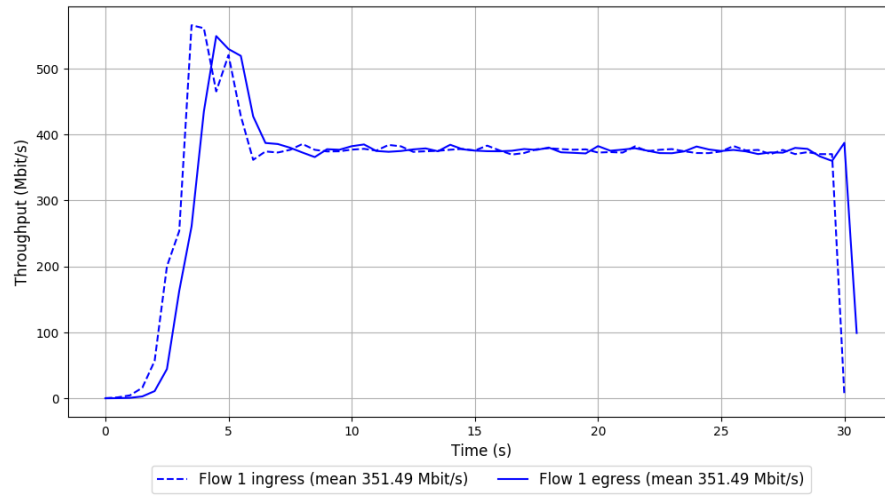


Run 1: Statistics of TCP Vegas

Start at: 2018-12-20 08:33:47
End at: 2018-12-20 08:34:17
Local clock offset: 0.109 ms
Remote clock offset: -0.015 ms

Below is generated by plot.py at 2018-12-20 12:07:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 351.49 Mbit/s
95th percentile per-packet one-way delay: 142.143 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 351.49 Mbit/s
95th percentile per-packet one-way delay: 142.143 ms
Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link

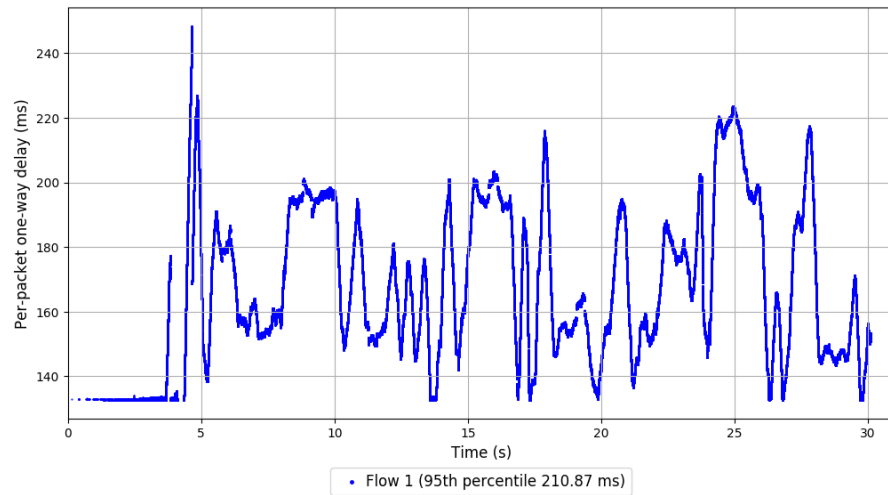
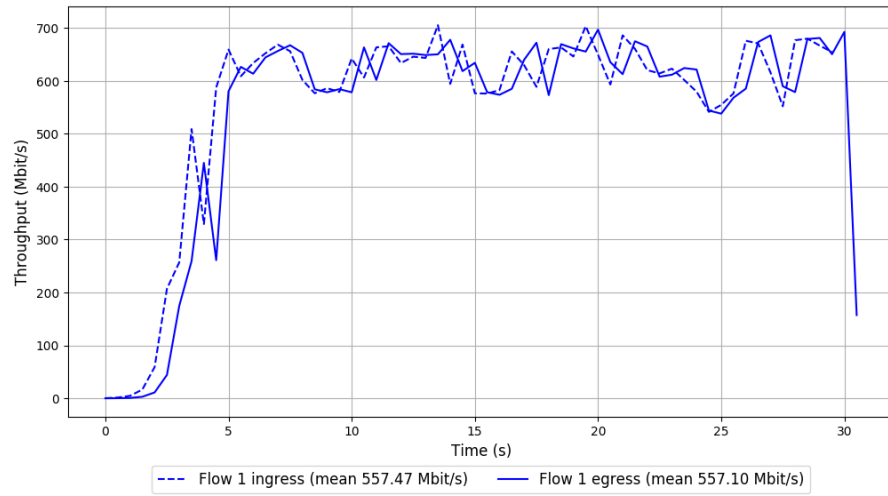


Run 2: Statistics of TCP Vegas

Start at: 2018-12-20 09:02:15
End at: 2018-12-20 09:02:45
Local clock offset: -0.044 ms
Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-12-20 12:10:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 557.10 Mbit/s
95th percentile per-packet one-way delay: 210.867 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 557.10 Mbit/s
95th percentile per-packet one-way delay: 210.867 ms
Loss rate: 0.06%

Run 2: Report of TCP Vegas — Data Link

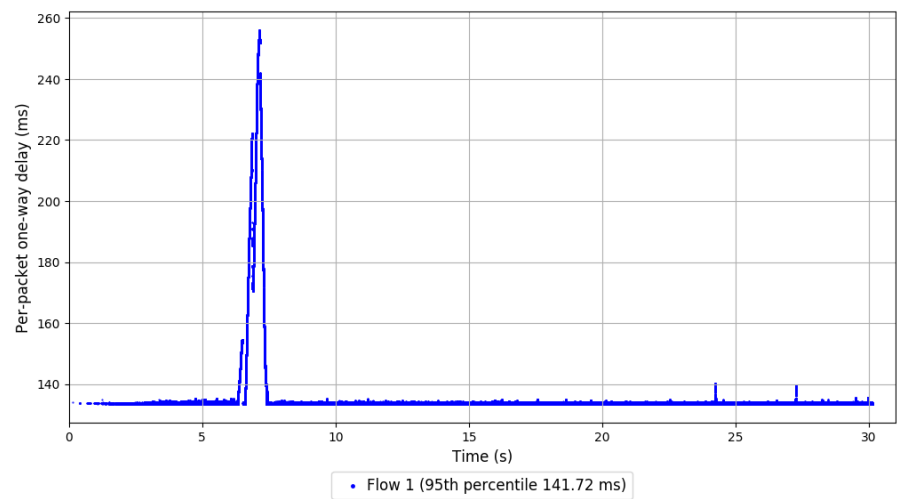
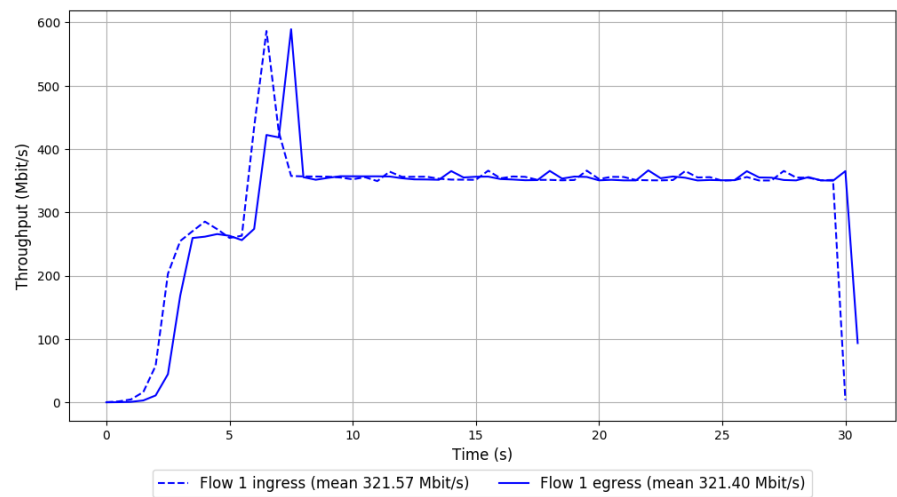


Run 3: Statistics of TCP Vegas

Start at: 2018-12-20 09:31:01
End at: 2018-12-20 09:31:31
Local clock offset: -0.13 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-12-20 12:11:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 321.40 Mbit/s
95th percentile per-packet one-way delay: 141.720 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 321.40 Mbit/s
95th percentile per-packet one-way delay: 141.720 ms
Loss rate: 0.05%

Run 3: Report of TCP Vegas — Data Link

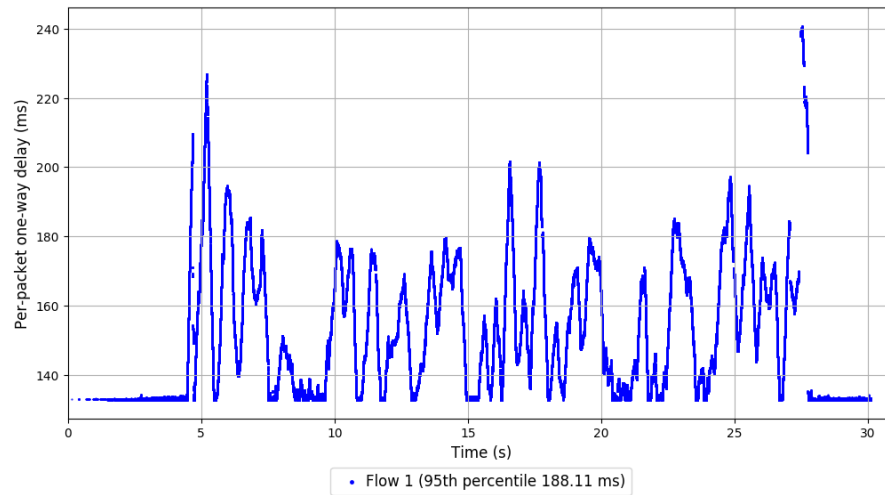
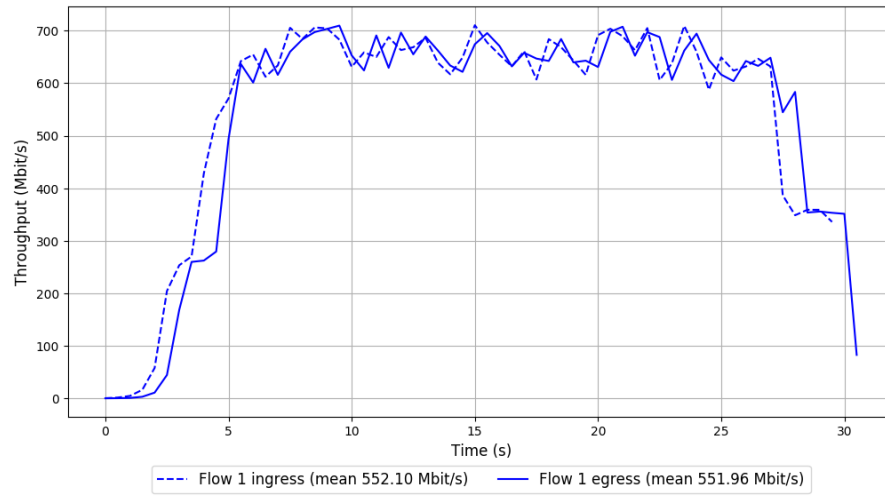


Run 4: Statistics of TCP Vegas

Start at: 2018-12-20 09:59:58
End at: 2018-12-20 10:00:28
Local clock offset: -0.067 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 551.96 Mbit/s
95th percentile per-packet one-way delay: 188.110 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 551.96 Mbit/s
95th percentile per-packet one-way delay: 188.110 ms
Loss rate: 0.03%

Run 4: Report of TCP Vegas — Data Link

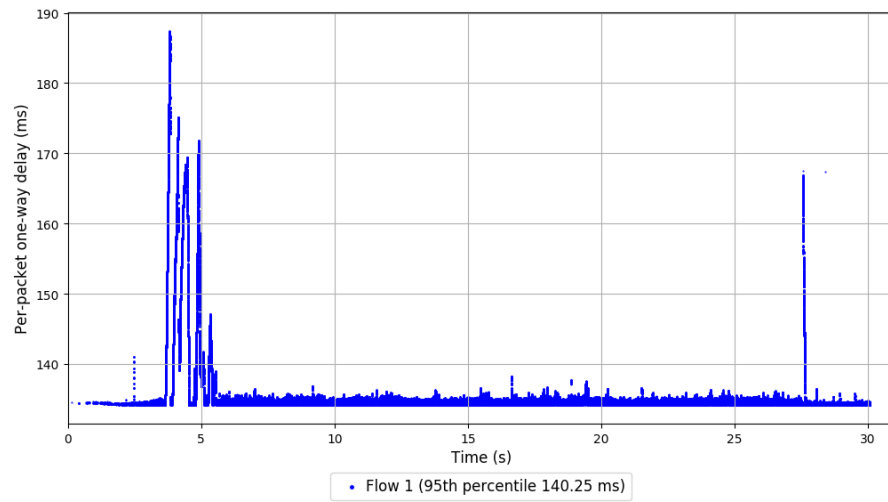
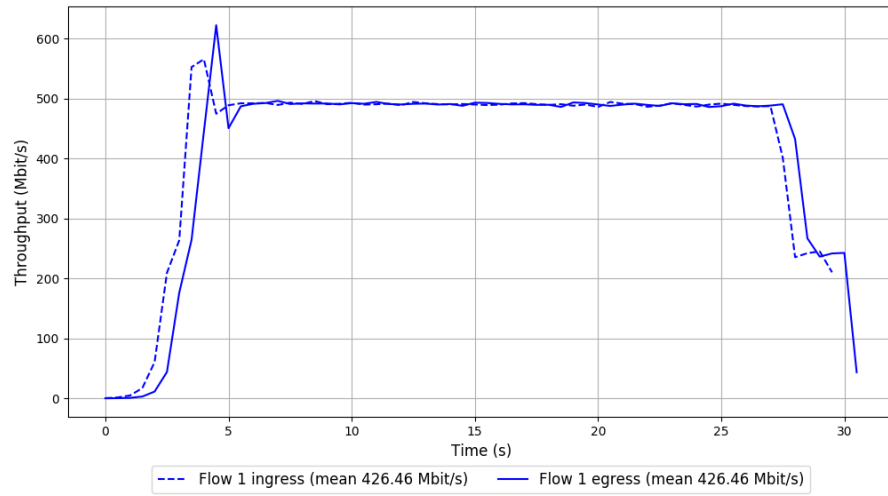


Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 10:29:07
End at: 2018-12-20 10:29:37
Local clock offset: -2.0 ms
Remote clock offset: -0.116 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 426.46 Mbit/s
95th percentile per-packet one-way delay: 140.253 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 426.46 Mbit/s
95th percentile per-packet one-way delay: 140.253 ms
Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link

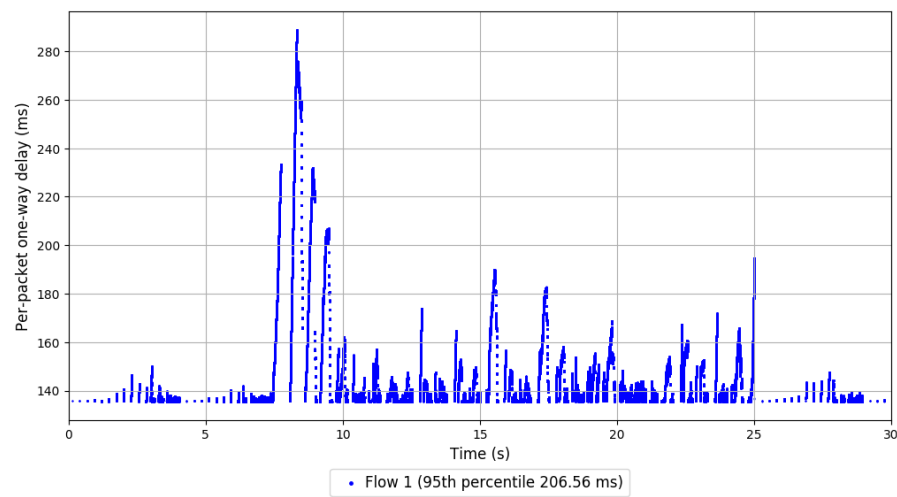
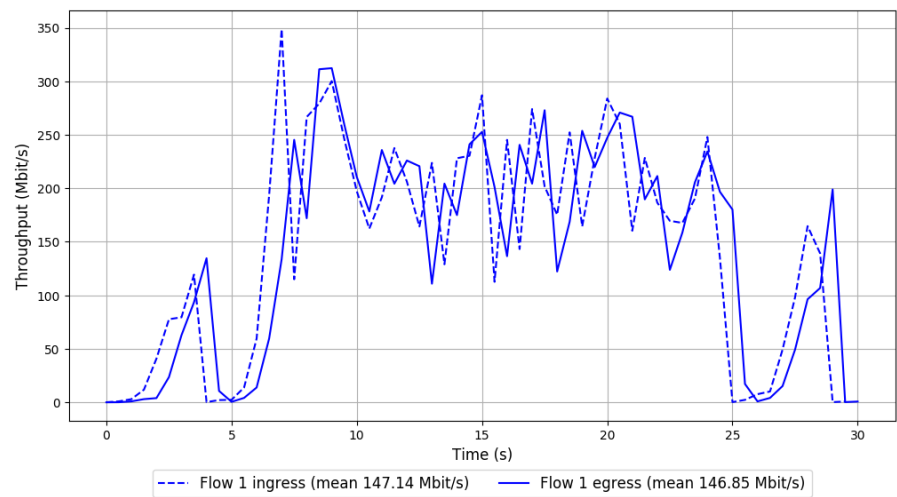


Run 1: Statistics of Verus

Start at: 2018-12-20 08:46:24
End at: 2018-12-20 08:46:54
Local clock offset: -2.995 ms
Remote clock offset: -0.355 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 146.85 Mbit/s
95th percentile per-packet one-way delay: 206.562 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 146.85 Mbit/s
95th percentile per-packet one-way delay: 206.562 ms
Loss rate: 0.19%

Run 1: Report of Verus — Data Link

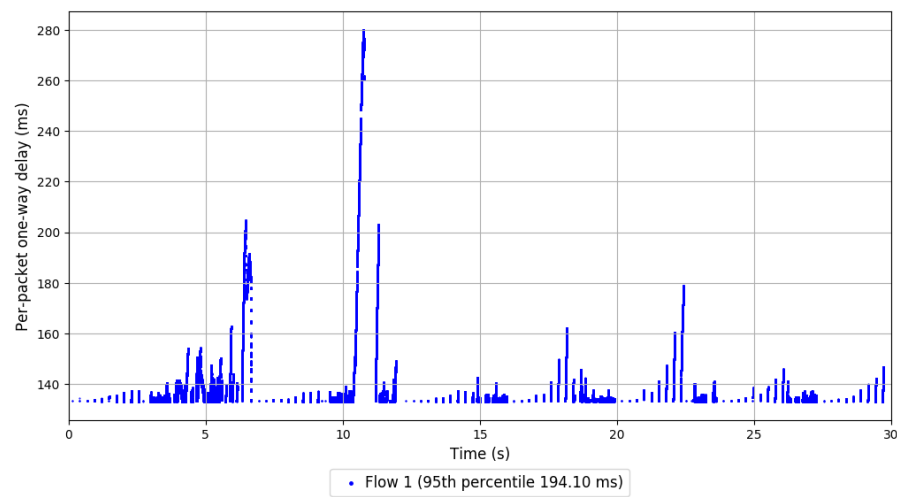
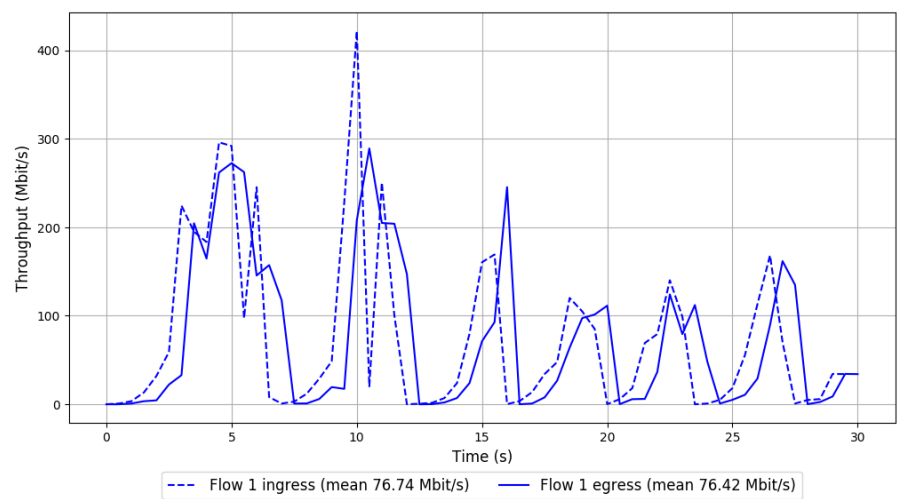


Run 2: Statistics of Verus

Start at: 2018-12-20 09:15:17
End at: 2018-12-20 09:15:47
Local clock offset: 0.111 ms
Remote clock offset: -0.037 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 76.42 Mbit/s
95th percentile per-packet one-way delay: 194.096 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 76.42 Mbit/s
95th percentile per-packet one-way delay: 194.096 ms
Loss rate: 0.38%

Run 2: Report of Verus — Data Link

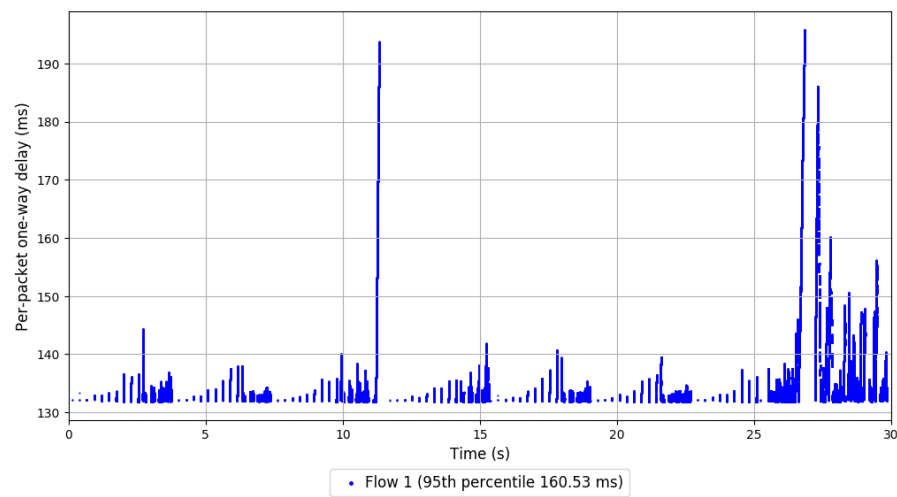
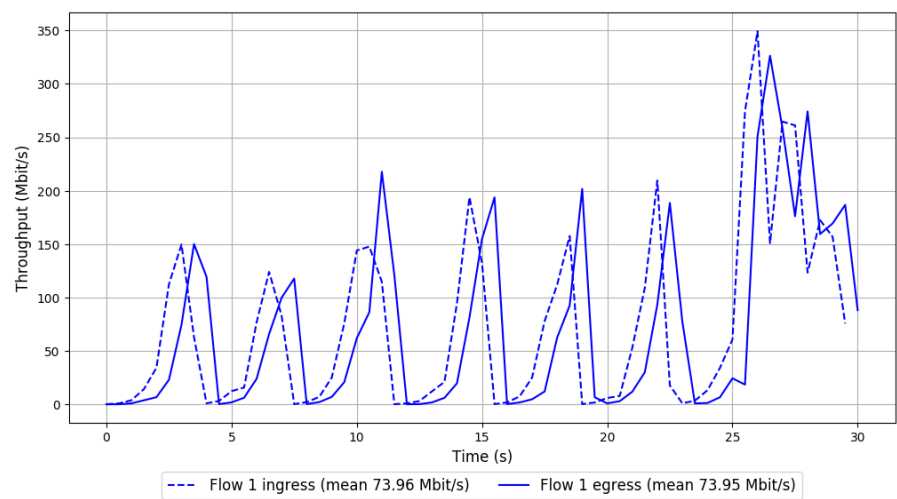


Run 3: Statistics of Verus

Start at: 2018-12-20 09:44:14
End at: 2018-12-20 09:44:44
Local clock offset: 0.336 ms
Remote clock offset: -0.162 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 73.95 Mbit/s
95th percentile per-packet one-way delay: 160.532 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 73.95 Mbit/s
95th percentile per-packet one-way delay: 160.532 ms
Loss rate: 0.00%

Run 3: Report of Verus — Data Link

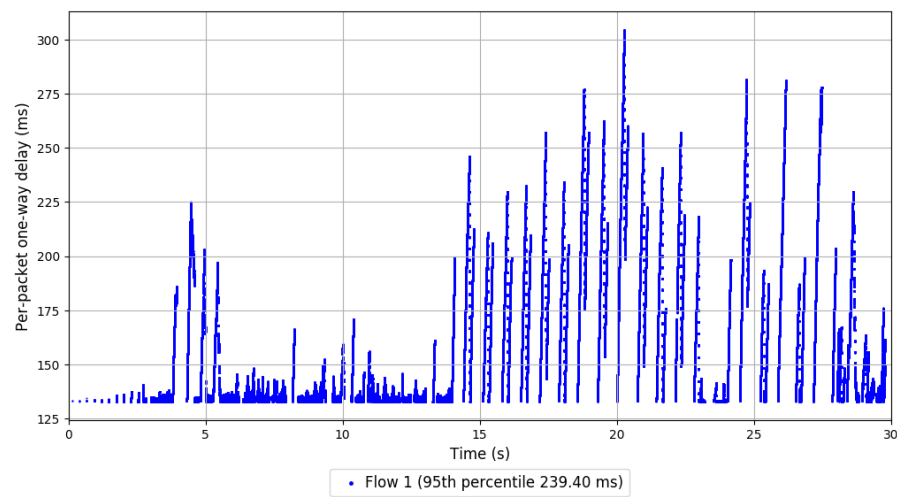
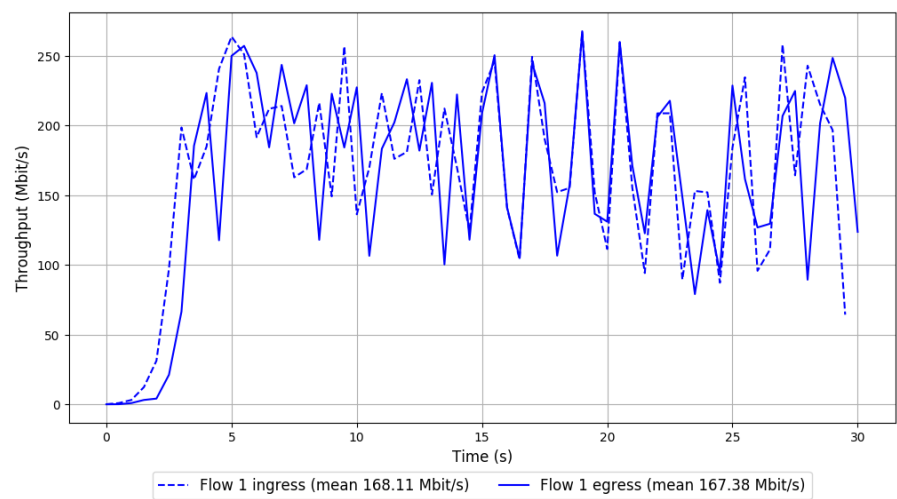


Run 4: Statistics of Verus

Start at: 2018-12-20 10:13:05
End at: 2018-12-20 10:13:35
Local clock offset: -0.102 ms
Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 167.38 Mbit/s
95th percentile per-packet one-way delay: 239.402 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 167.38 Mbit/s
95th percentile per-packet one-way delay: 239.402 ms
Loss rate: 0.38%

Run 4: Report of Verus — Data Link

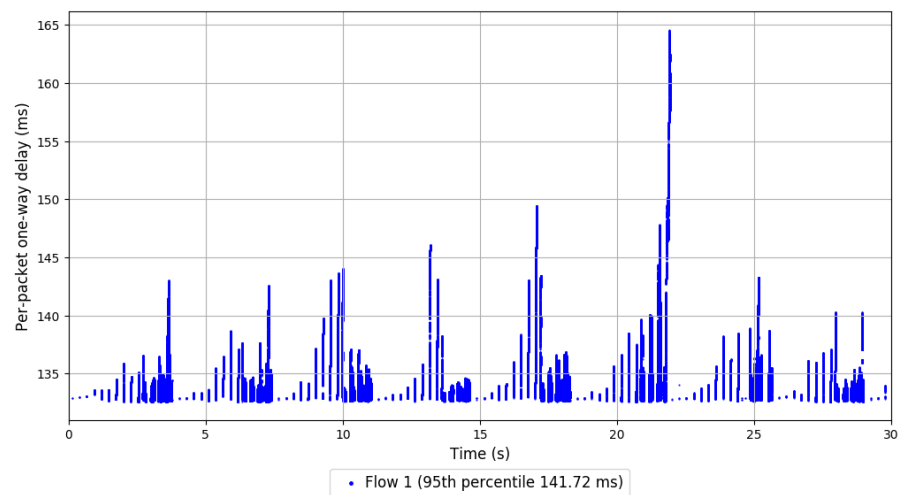
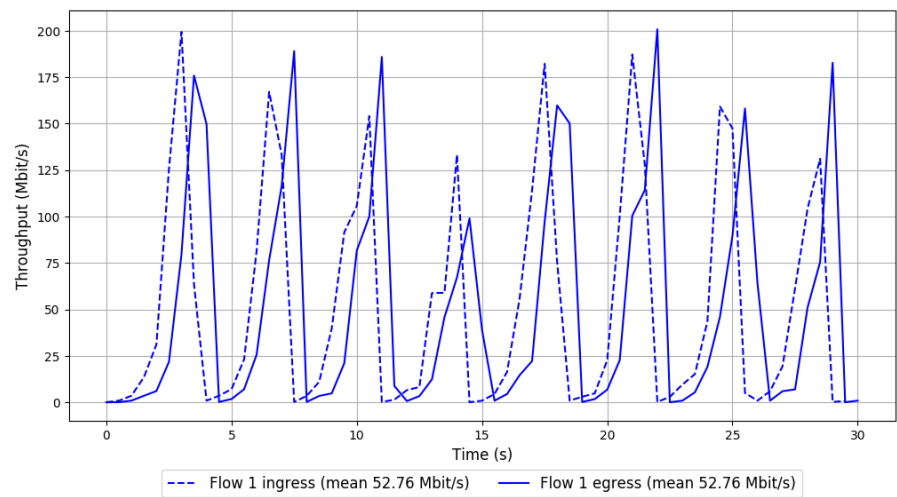


Run 5: Statistics of Verus

Start at: 2018-12-20 10:42:26
End at: 2018-12-20 10:42:56
Local clock offset: 0.05 ms
Remote clock offset: -0.024 ms

Below is generated by plot.py at 2018-12-20 12:15:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 52.76 Mbit/s
95th percentile per-packet one-way delay: 141.722 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.76 Mbit/s
95th percentile per-packet one-way delay: 141.722 ms
Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-12-20 08:23:59

End at: 2018-12-20 08:24:29

Local clock offset: 1.503 ms

Remote clock offset: -0.008 ms

Below is generated by plot.py at 2018-12-20 12:15:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 354.75 Mbit/s

95th percentile per-packet one-way delay: 145.358 ms

Loss rate: 0.61%

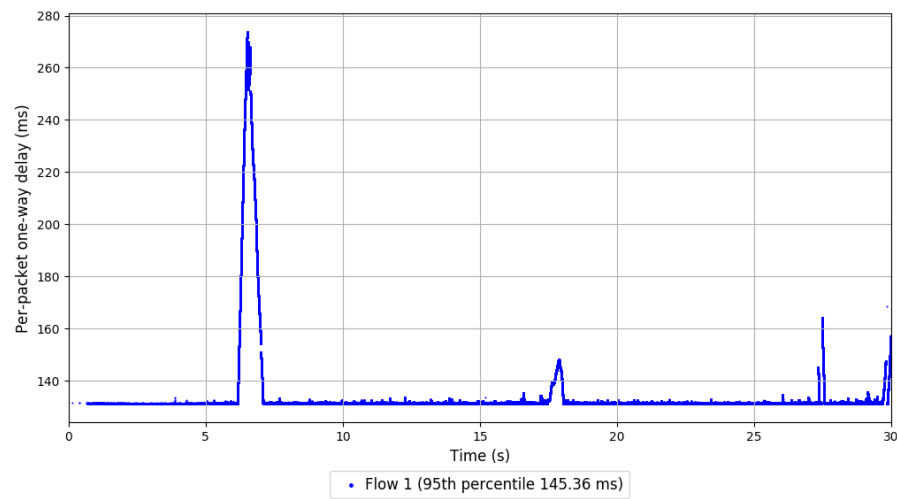
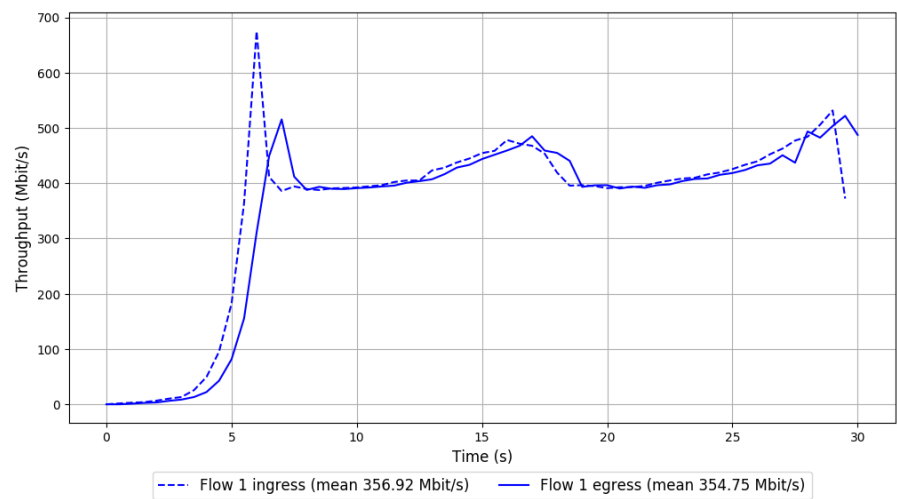
-- Flow 1:

Average throughput: 354.75 Mbit/s

95th percentile per-packet one-way delay: 145.358 ms

Loss rate: 0.61%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-12-20 08:52:18

End at: 2018-12-20 08:52:48

Local clock offset: 0.199 ms

Remote clock offset: -0.017 ms

Below is generated by plot.py at 2018-12-20 12:16:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 374.66 Mbit/s

95th percentile per-packet one-way delay: 144.257 ms

Loss rate: 0.31%

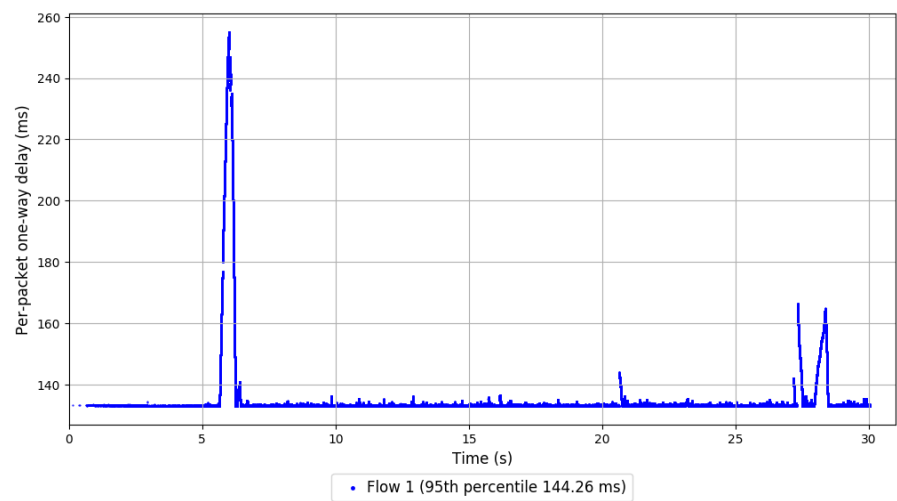
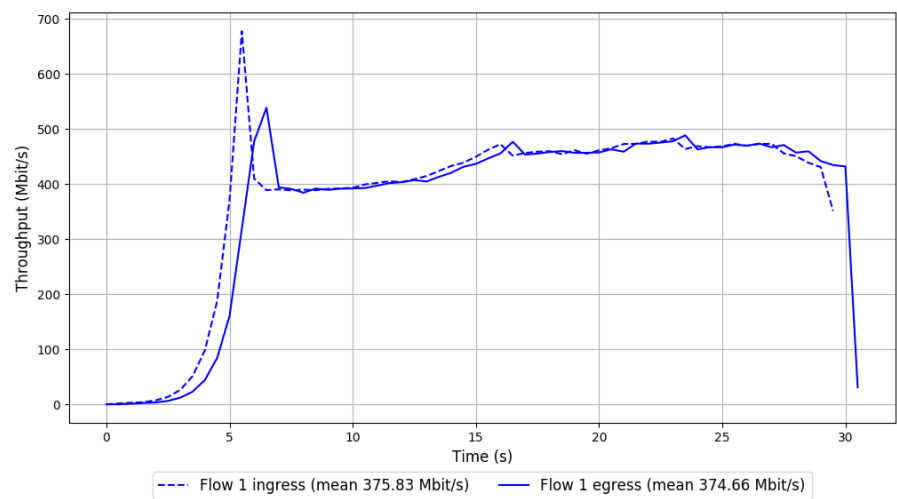
-- Flow 1:

Average throughput: 374.66 Mbit/s

95th percentile per-packet one-way delay: 144.257 ms

Loss rate: 0.31%

Run 2: Report of PCC-Vivace — Data Link

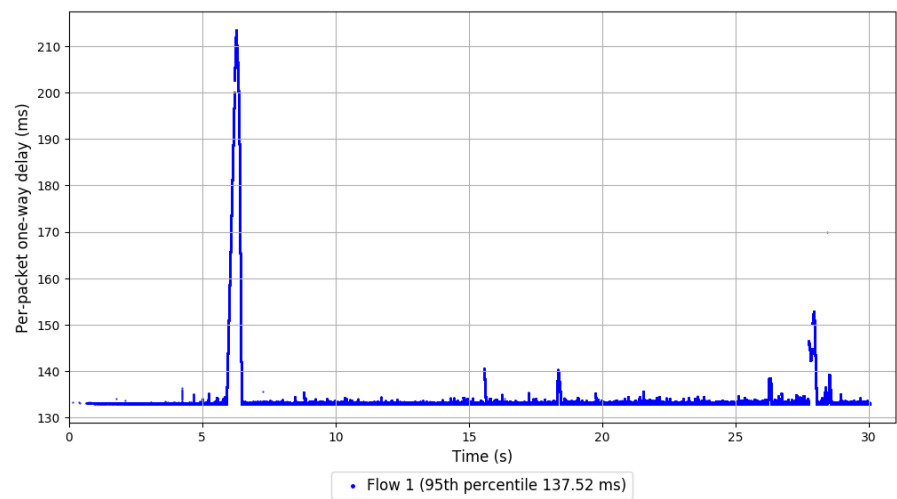
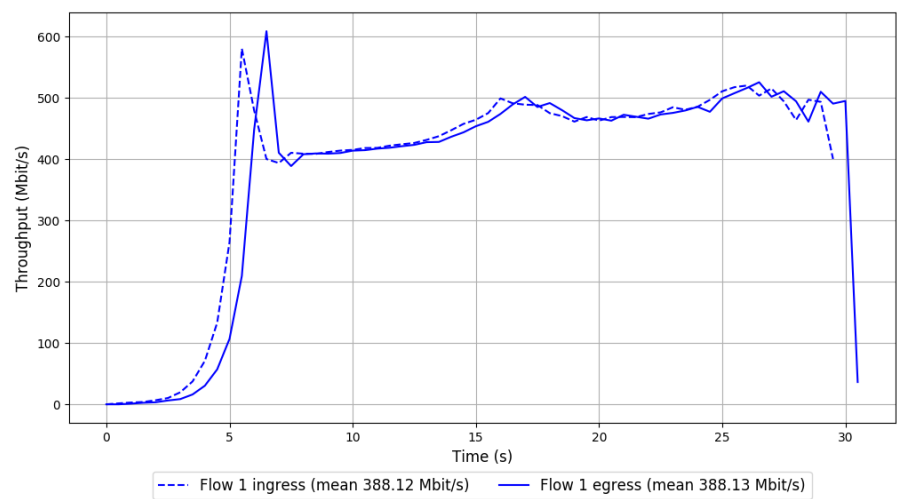


Run 3: Statistics of PCC-Vivace

Start at: 2018-12-20 09:21:05
End at: 2018-12-20 09:21:35
Local clock offset: -0.226 ms
Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-12-20 12:16:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 388.13 Mbit/s
95th percentile per-packet one-way delay: 137.518 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 388.13 Mbit/s
95th percentile per-packet one-way delay: 137.518 ms
Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-12-20 09:50:00

End at: 2018-12-20 09:50:30

Local clock offset: -0.107 ms

Remote clock offset: 0.236 ms

Below is generated by plot.py at 2018-12-20 12:16:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 387.34 Mbit/s

95th percentile per-packet one-way delay: 160.976 ms

Loss rate: 0.28%

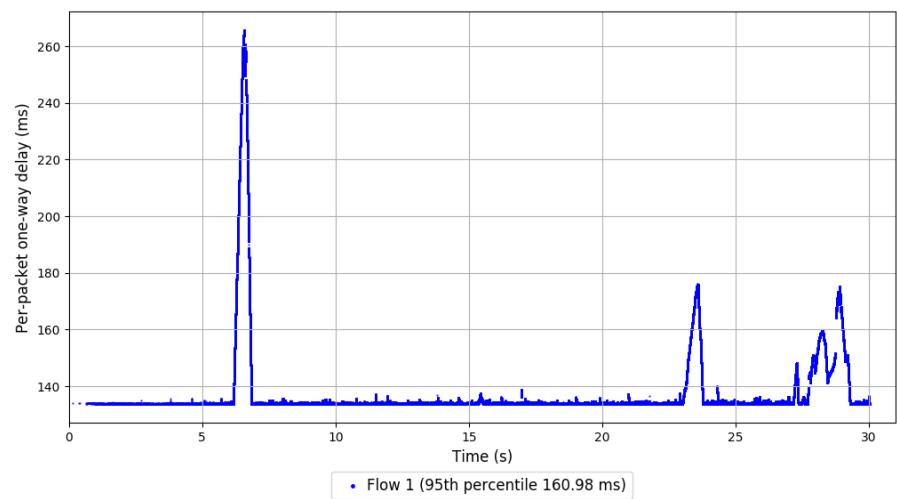
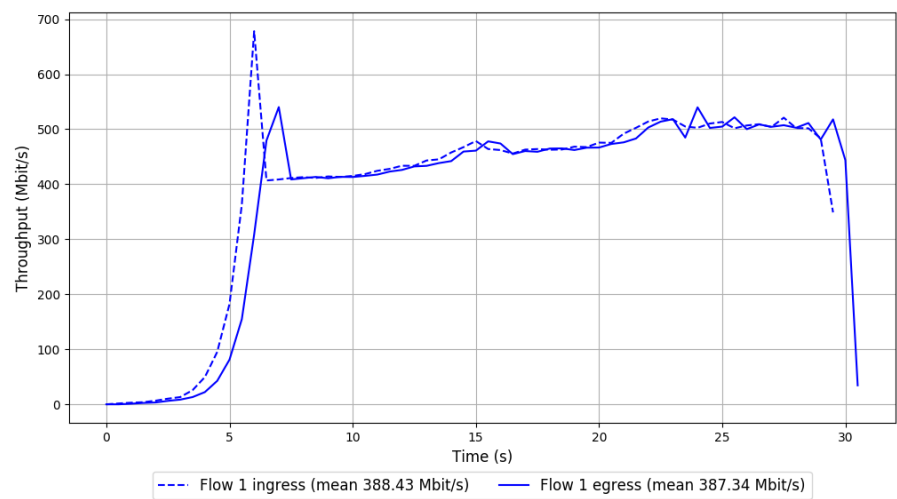
-- Flow 1:

Average throughput: 387.34 Mbit/s

95th percentile per-packet one-way delay: 160.976 ms

Loss rate: 0.28%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 10:19:04

End at: 2018-12-20 10:19:34

Local clock offset: 0.043 ms

Remote clock offset: -0.461 ms

Below is generated by plot.py at 2018-12-20 12:16:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 357.35 Mbit/s

95th percentile per-packet one-way delay: 146.189 ms

Loss rate: 0.21%

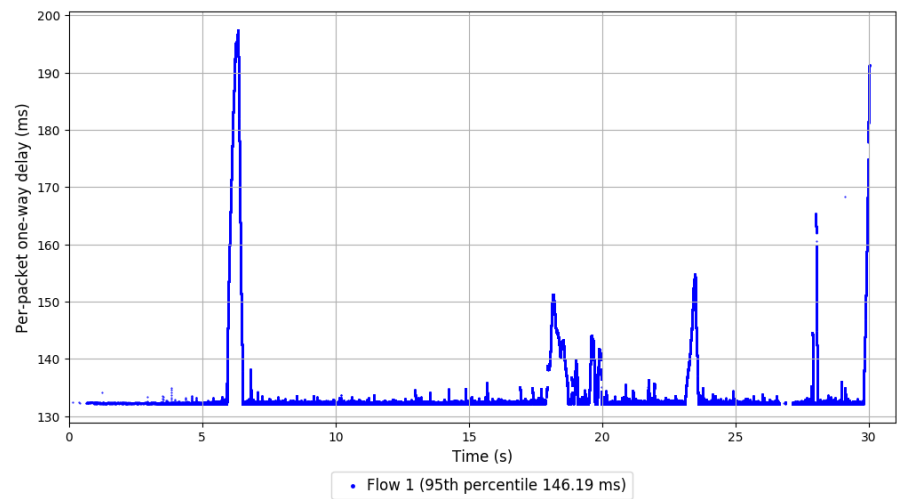
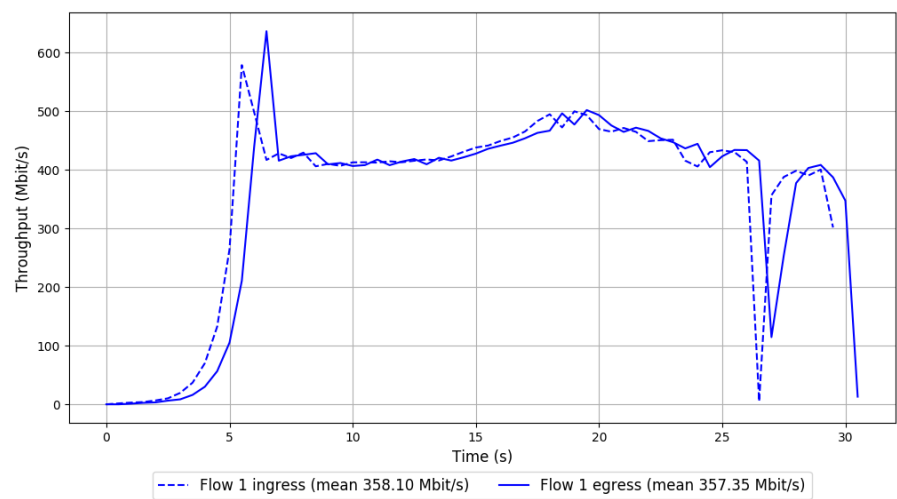
-- Flow 1:

Average throughput: 357.35 Mbit/s

95th percentile per-packet one-way delay: 146.189 ms

Loss rate: 0.21%

Run 5: Report of PCC-Vivace — Data Link

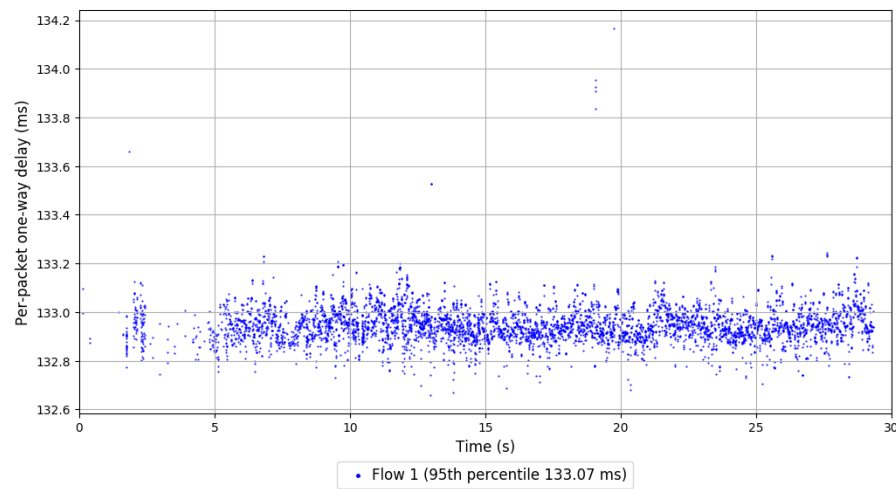
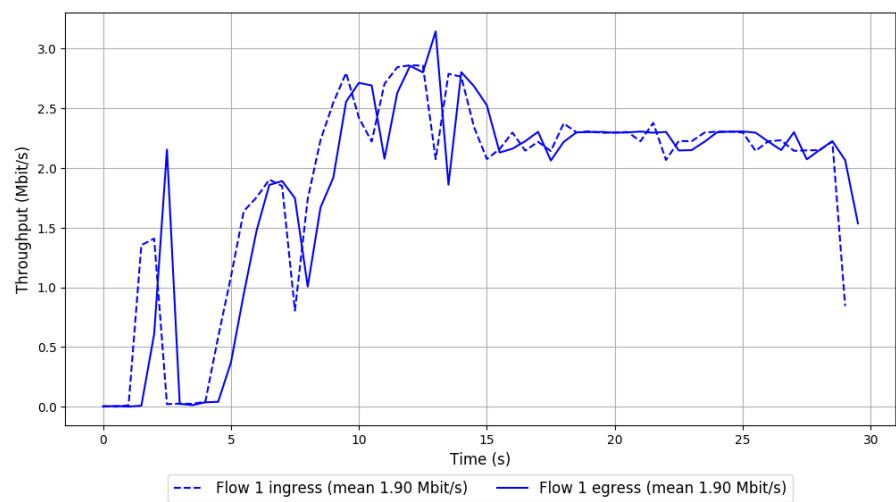



```
Run 1: Statistics of WebRTC media

Start at: 2018-12-20 08:22:48
End at: 2018-12-20 08:23:18
Local clock offset: 0.032 ms
Remote clock offset: -0.0 ms

# Below is generated by plot.py at 2018-12-20 12:16:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 133.068 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 133.068 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

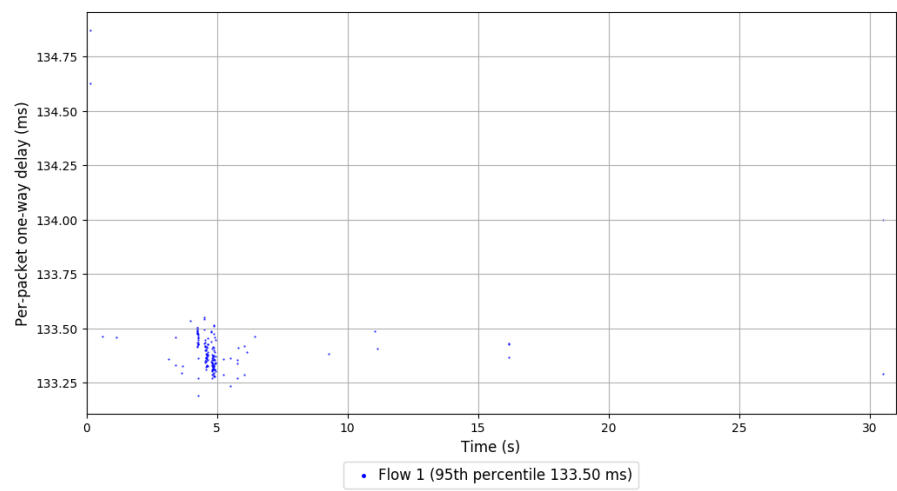
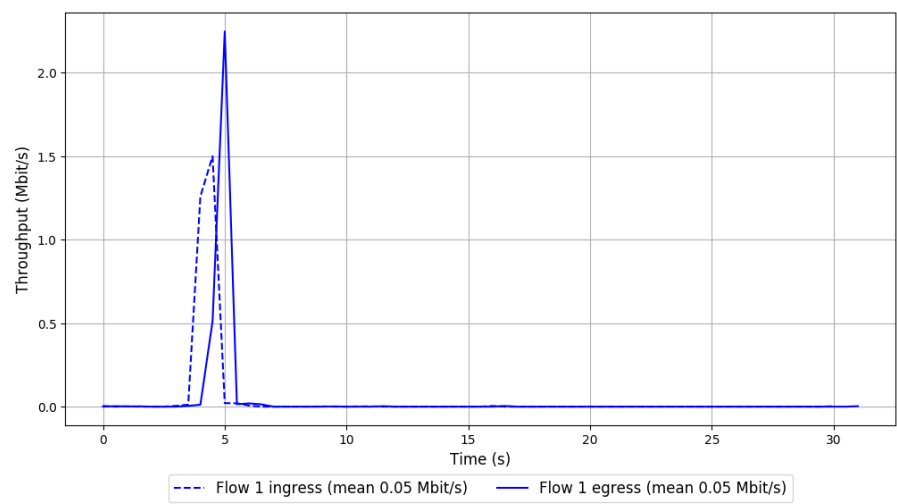


Run 2: Statistics of WebRTC media

Start at: 2018-12-20 08:51:08
End at: 2018-12-20 08:51:38
Local clock offset: 0.13 ms
Remote clock offset: -0.044 ms

Below is generated by plot.py at 2018-12-20 12:16:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.503 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.503 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

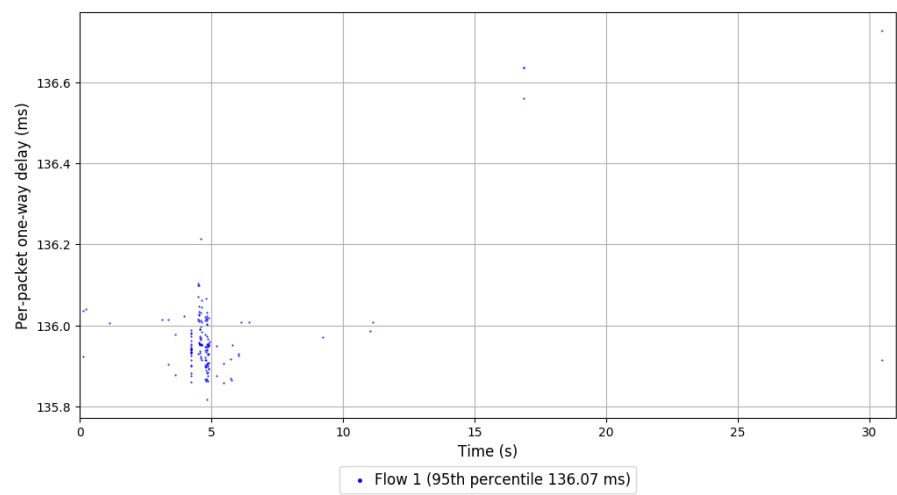
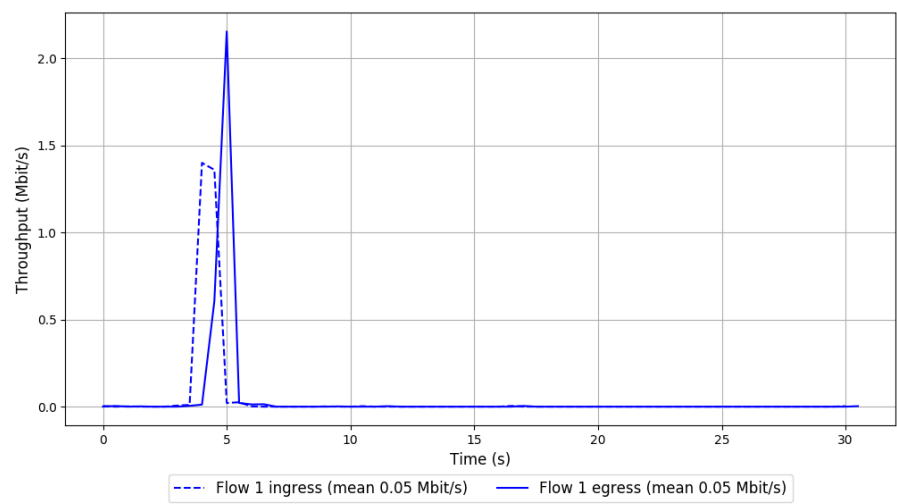


Run 3: Statistics of WebRTC media

Start at: 2018-12-20 09:19:55
End at: 2018-12-20 09:20:25
Local clock offset: -3.047 ms
Remote clock offset: -0.056 ms

Below is generated by plot.py at 2018-12-20 12:16:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 136.070 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 136.070 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

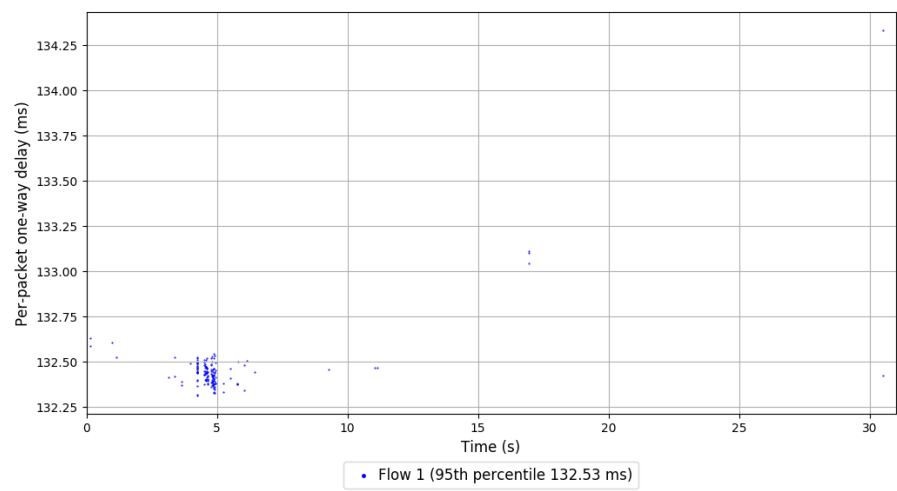
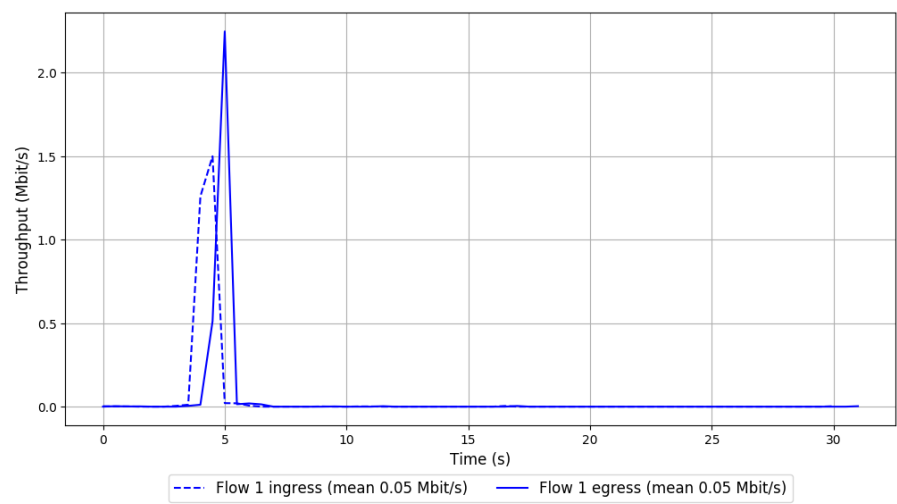


Run 4: Statistics of WebRTC media

Start at: 2018-12-20 09:48:50
End at: 2018-12-20 09:49:20
Local clock offset: 0.116 ms
Remote clock offset: -0.453 ms

Below is generated by plot.py at 2018-12-20 12:16:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.530 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.530 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-12-20 10:17:54
End at: 2018-12-20 10:18:24
Local clock offset: 0.132 ms
Remote clock offset: -0.456 ms

Below is generated by plot.py at 2018-12-20 12:16:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.550 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.550 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

