

Pantheon Report

Generated at 2018-06-18 08:45:54 (UTC).

Data path: AWS Korea Ethernet (*local*) → China ppp0 ppp0 (*remote*).

Repeated the test of 16 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

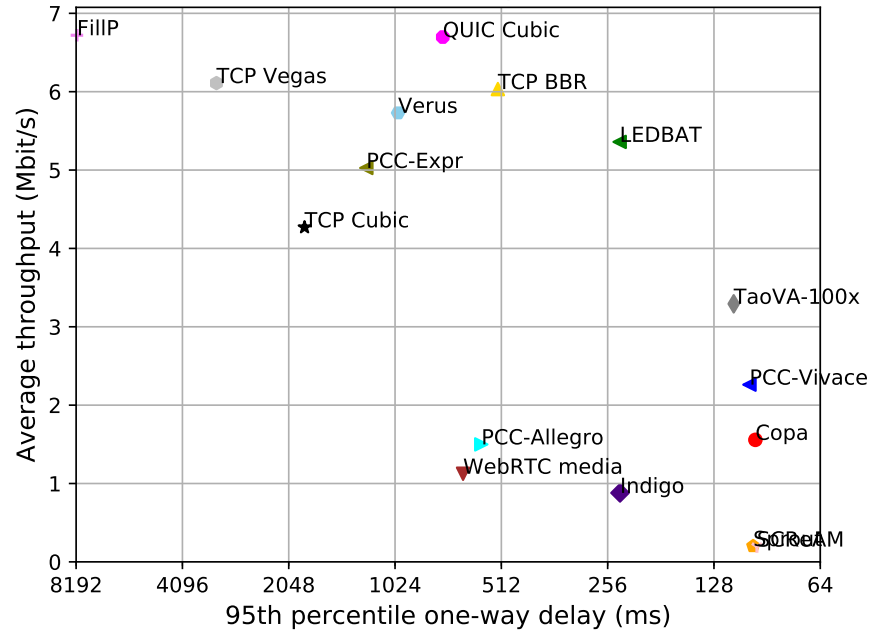
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

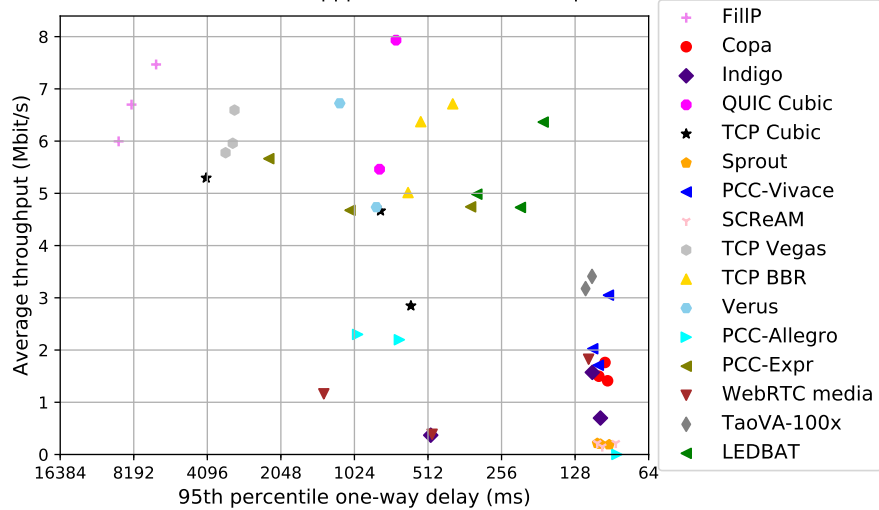
Git summary:

```
branch: master @ 9141c5f9450c85ea5ea2ea755a8e946998d3abf3
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/genericCC @ c7966e494a929986eaa5a9c169a7f381fe1bbbe5
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
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-quirk @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS Korea to China ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS Korea to China ppp0, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	6.03	523.76	0.87
Copa	3	1.56	97.71	0.04
TCP Cubic	3	4.27	1847.28	4.46
FillP	3	6.72	8149.15	32.37
Indigo	3	0.88	236.19	0.06
LEDBAT	3	5.36	236.78	0.61
PCC-Allegro	3	1.50	583.48	0.04
PCC-Expr	3	5.03	1235.02	2.72
QUIC Cubic	2	6.70	750.16	2.17
SCReAM	3	0.20	96.74	0.13
Sprout	3	0.20	99.14	0.07
TaoVA-100x	2	3.29	112.54	0.20
TCP Vegas	3	6.11	3280.68	6.63
Verus	2	5.73	1004.11	8.86
PCC-Vivace	3	2.26	101.57	0.09
WebRTC media	3	1.12	657.22	0.41

Run 1: Statistics of TCP BBR

Start at: 2018-06-18 07:57:38

End at: 2018-06-18 07:58:08

Local clock offset: 2.604 ms

Remote clock offset: -1.21 ms

Below is generated by plot.py at 2018-06-18 08:45:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.71 Mbit/s

95th percentile per-packet one-way delay: 405.415 ms

Loss rate: 0.93%

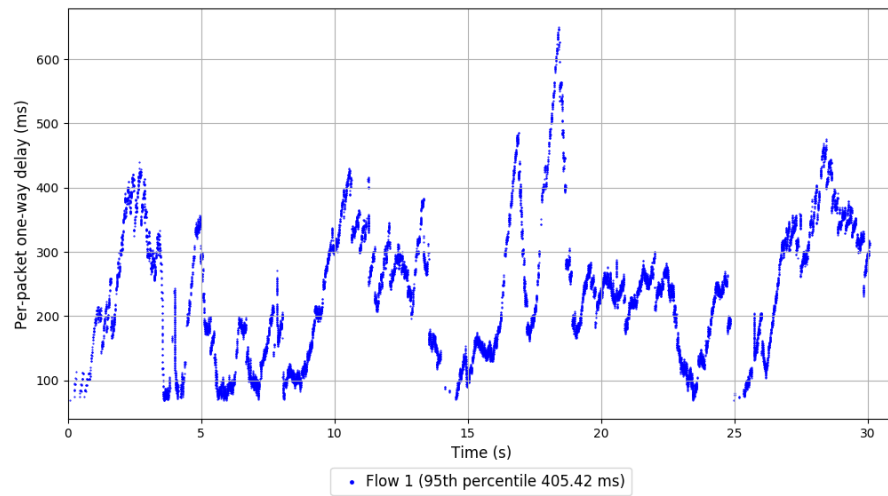
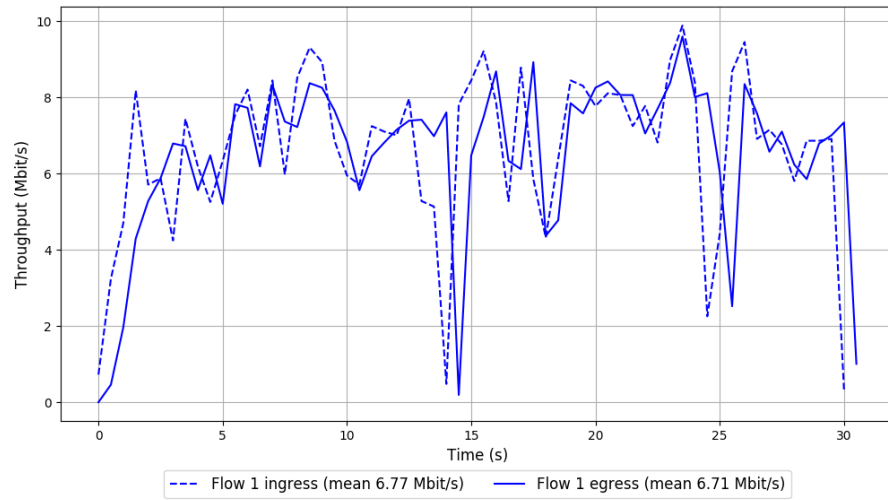
-- Flow 1:

Average throughput: 6.71 Mbit/s

95th percentile per-packet one-way delay: 405.415 ms

Loss rate: 0.93%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-06-18 08:20:16

End at: 2018-06-18 08:20:46

Local clock offset: 0.793 ms

Remote clock offset: -0.863 ms

Below is generated by plot.py at 2018-06-18 08:45:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.01 Mbit/s

95th percentile per-packet one-way delay: 617.762 ms

Loss rate: 1.10%

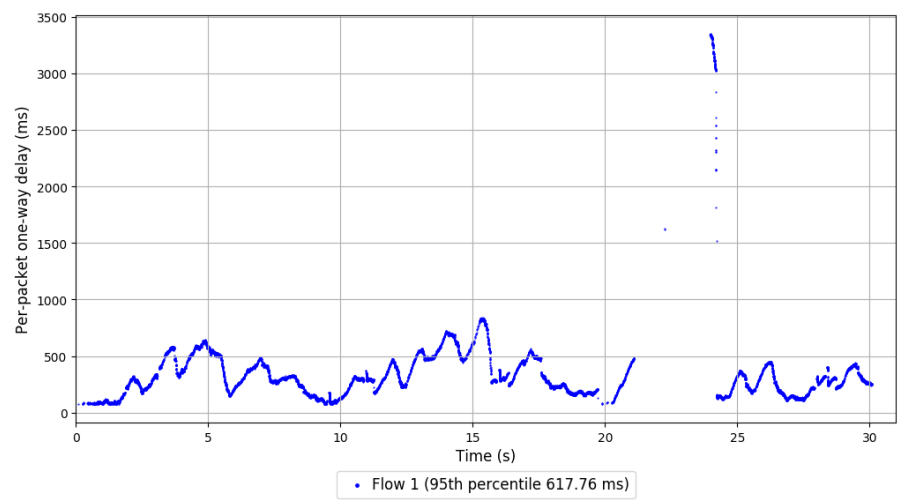
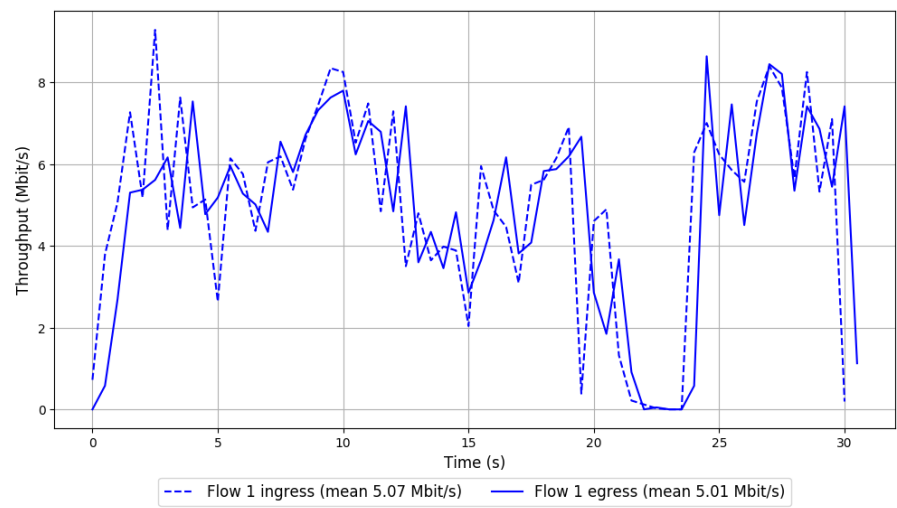
-- Flow 1:

Average throughput: 5.01 Mbit/s

95th percentile per-packet one-way delay: 617.762 ms

Loss rate: 1.10%

Run 2: Report of TCP BBR — Data Link

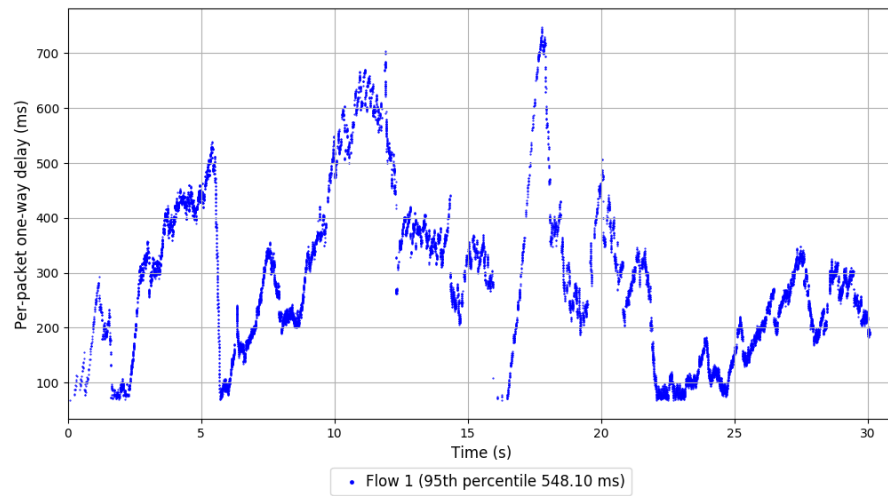
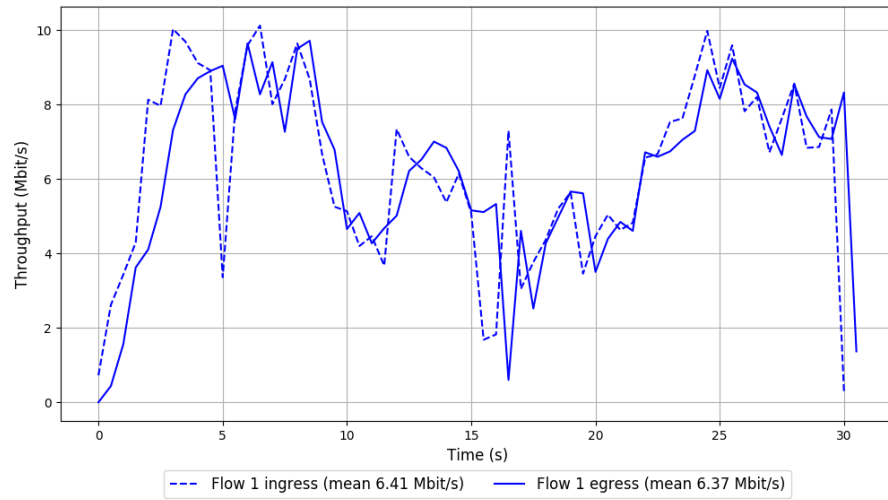


Run 3: Statistics of TCP BBR

Start at: 2018-06-18 08:43:00
End at: 2018-06-18 08:43:30
Local clock offset: 1.844 ms
Remote clock offset: -1.148 ms

Below is generated by plot.py at 2018-06-18 08:45:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 548.100 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 548.100 ms
Loss rate: 0.57%

Run 3: Report of TCP BBR — Data Link

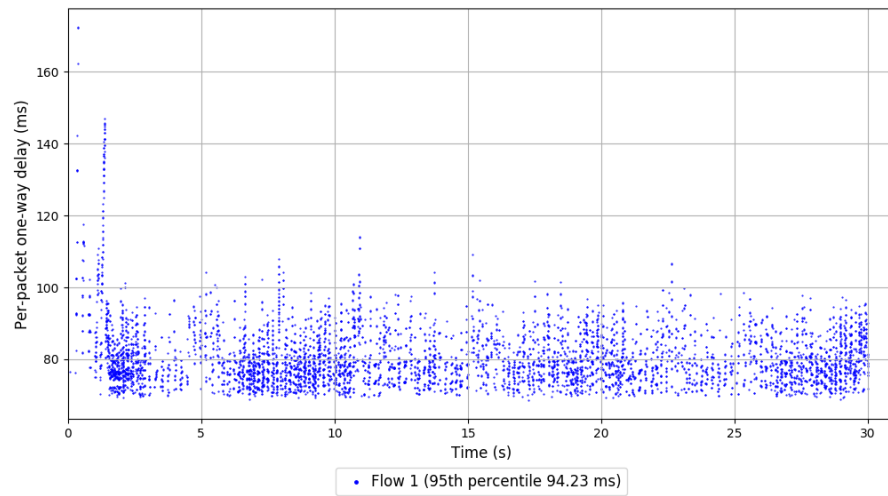
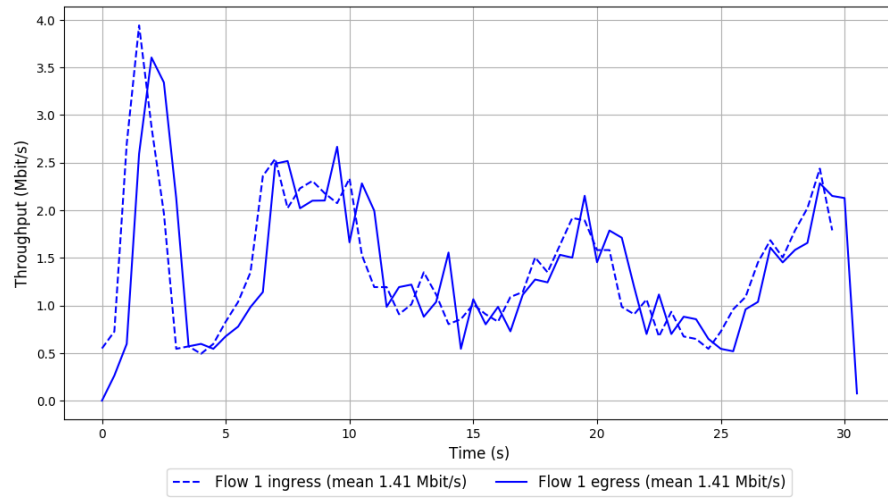


Run 1: Statistics of Copa

Start at: 2018-06-18 07:49:32
End at: 2018-06-18 07:50:02
Local clock offset: 2.327 ms
Remote clock offset: -0.999 ms

Below is generated by plot.py at 2018-06-18 08:45:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 94.234 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 94.234 ms
Loss rate: 0.00%

Run 1: Report of Copa — Data Link

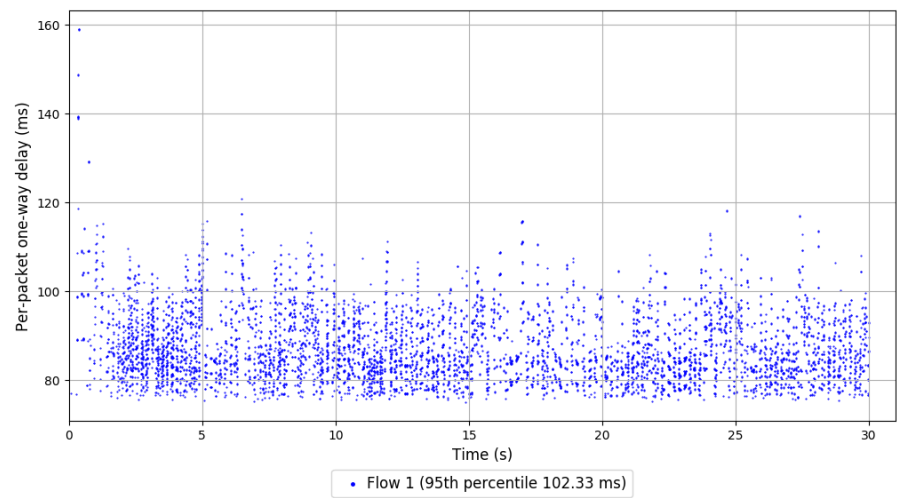
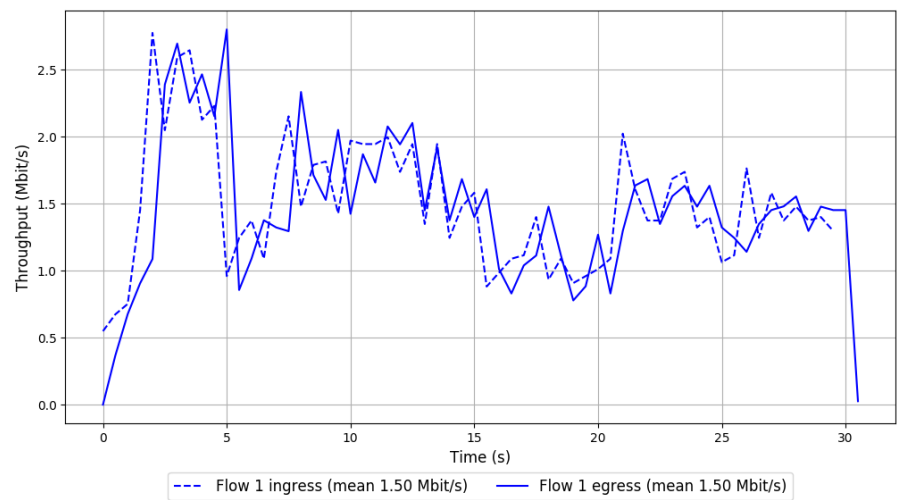


Run 2: Statistics of Copa

Start at: 2018-06-18 08:11:57
End at: 2018-06-18 08:12:27
Local clock offset: 1.737 ms
Remote clock offset: -1.018 ms

Below is generated by plot.py at 2018-06-18 08:45:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 102.333 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 102.333 ms
Loss rate: 0.00%

Run 2: Report of Copa — Data Link

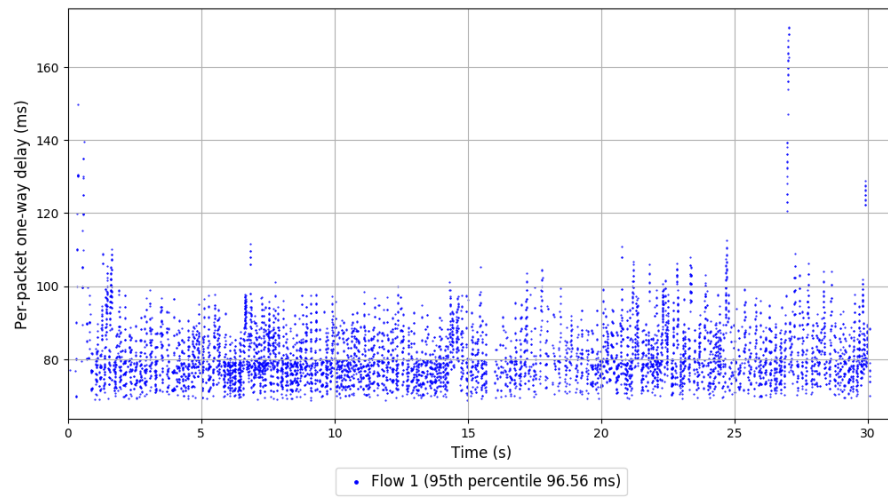
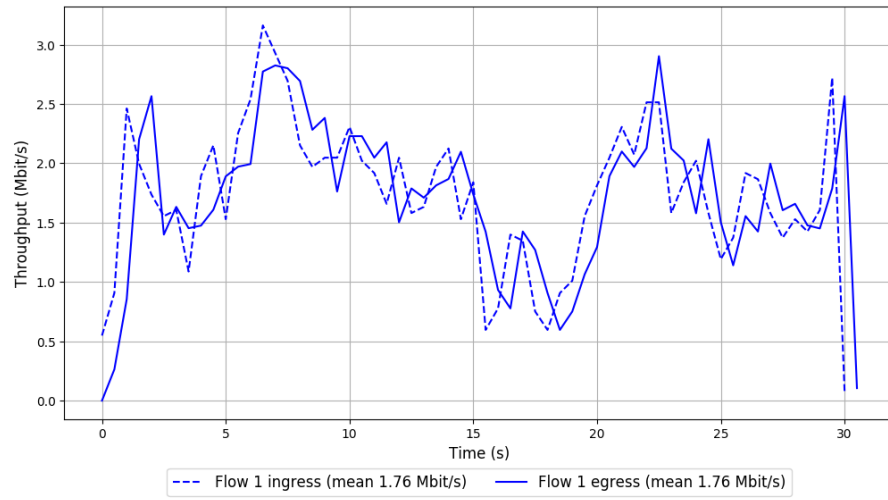


Run 3: Statistics of Copa

Start at: 2018-06-18 08:34:37
End at: 2018-06-18 08:35:07
Local clock offset: 0.439 ms
Remote clock offset: -0.726 ms

Below is generated by plot.py at 2018-06-18 08:45:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 96.560 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 96.560 ms
Loss rate: 0.12%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-06-18 07:38:05

End at: 2018-06-18 07:38:35

Local clock offset: -0.83 ms

Remote clock offset: 0.483 ms

Below is generated by plot.py at 2018-06-18 08:45:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.85 Mbit/s

95th percentile per-packet one-way delay: 601.418 ms

Loss rate: 7.37%

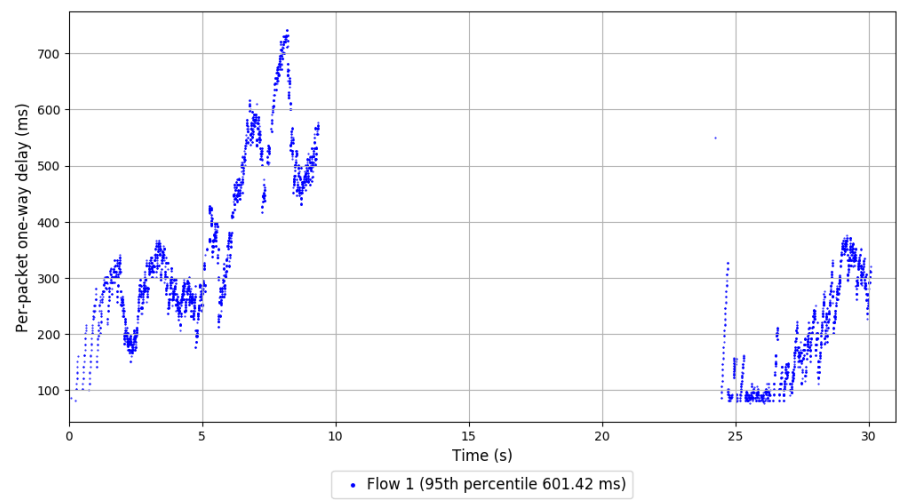
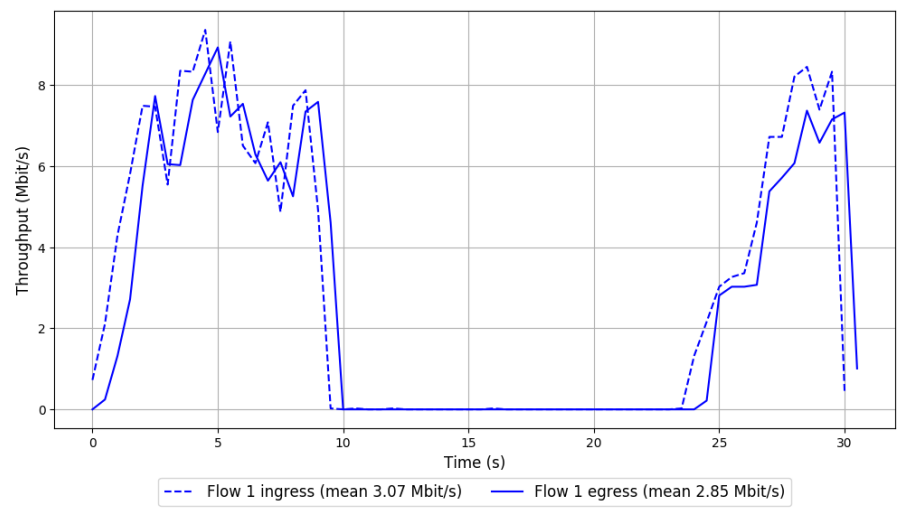
-- Flow 1:

Average throughput: 2.85 Mbit/s

95th percentile per-packet one-way delay: 601.418 ms

Loss rate: 7.37%

Run 1: Report of TCP Cubic — Data Link

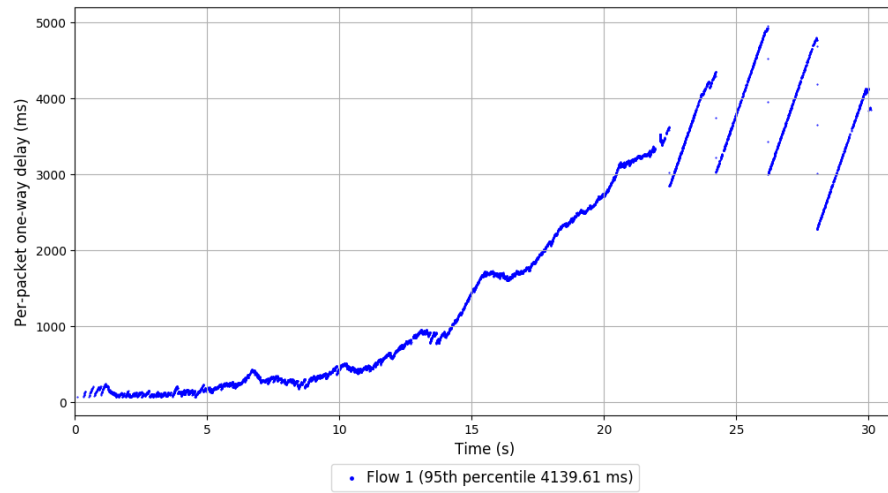
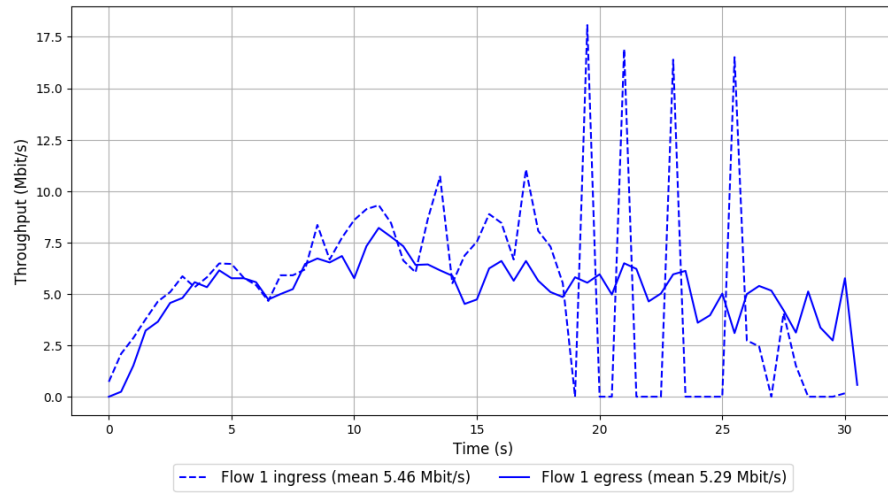


Run 2: Statistics of TCP Cubic

Start at: 2018-06-18 08:00:31
End at: 2018-06-18 08:01:01
Local clock offset: 2.245 ms
Remote clock offset: -1.237 ms

Below is generated by plot.py at 2018-06-18 08:45:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 4139.615 ms
Loss rate: 3.15%
-- Flow 1:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 4139.615 ms
Loss rate: 3.15%

Run 2: Report of TCP Cubic — Data Link

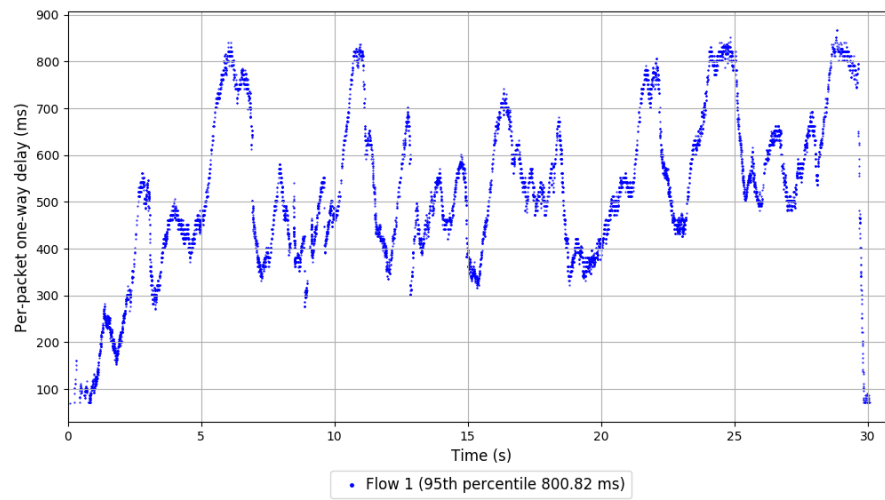
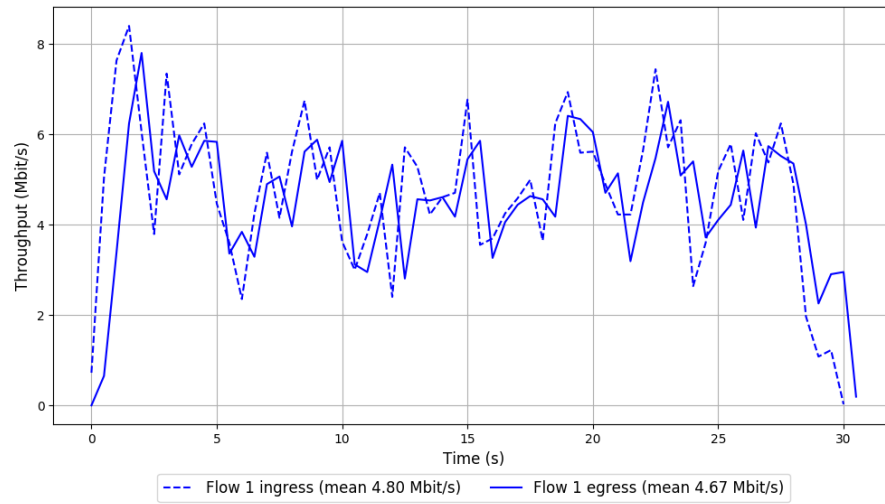


Run 3: Statistics of TCP Cubic

Start at: 2018-06-18 08:22:58
End at: 2018-06-18 08:23:28
Local clock offset: 0.513 ms
Remote clock offset: -0.919 ms

Below is generated by plot.py at 2018-06-18 08:45:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 800.815 ms
Loss rate: 2.87%
-- Flow 1:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 800.815 ms
Loss rate: 2.87%

Run 3: Report of TCP Cubic — Data Link

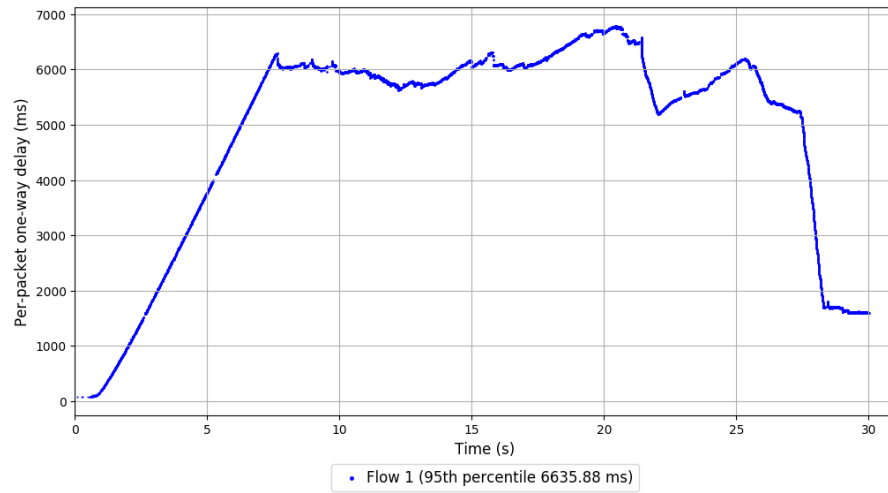
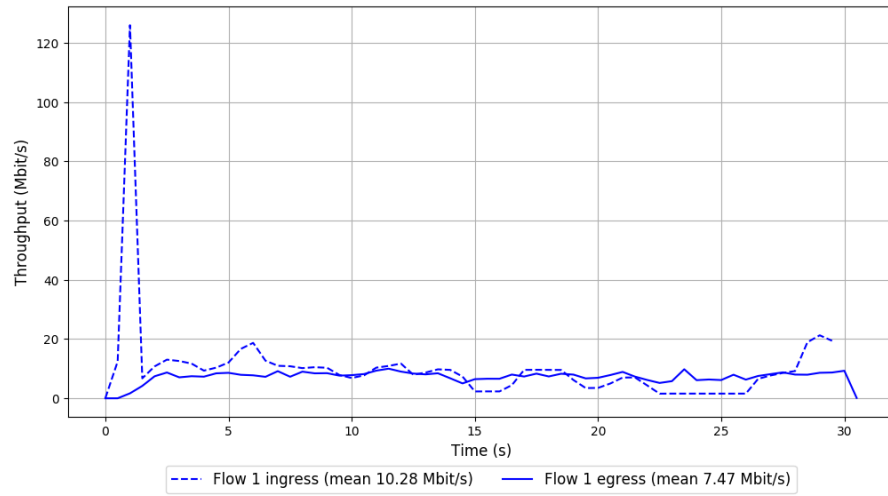


Run 1: Statistics of FillP

Start at: 2018-06-18 07:46:47
End at: 2018-06-18 07:47:17
Local clock offset: 2.352 ms
Remote clock offset: -0.531 ms

Below is generated by plot.py at 2018-06-18 08:45:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 6635.876 ms
Loss rate: 27.41%
-- Flow 1:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 6635.876 ms
Loss rate: 27.41%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-06-18 08:09:06

End at: 2018-06-18 08:09:36

Local clock offset: 2.066 ms

Remote clock offset: -1.06 ms

Below is generated by plot.py at 2018-06-18 08:45:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.70 Mbit/s

95th percentile per-packet one-way delay: 8365.659 ms

Loss rate: 31.10%

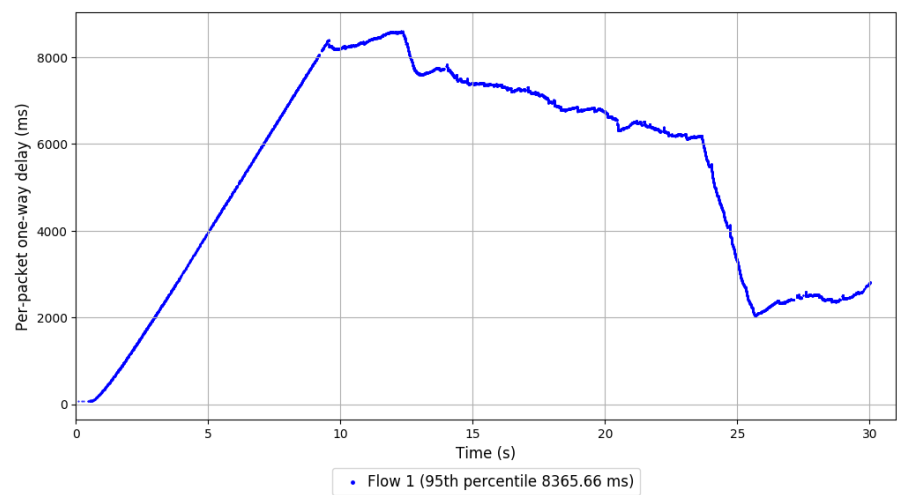
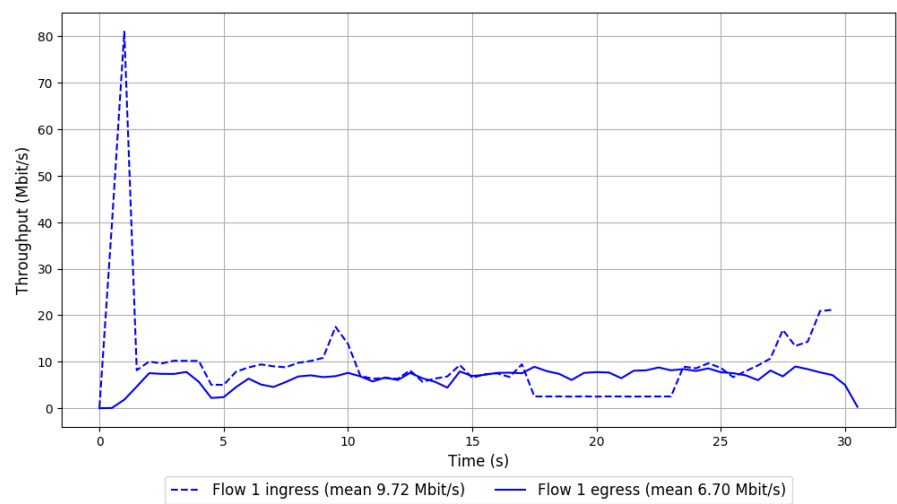
-- Flow 1:

Average throughput: 6.70 Mbit/s

95th percentile per-packet one-way delay: 8365.659 ms

Loss rate: 31.10%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-06-18 08:31:46

End at: 2018-06-18 08:32:16

Local clock offset: -0.562 ms

Remote clock offset: -0.73 ms

Below is generated by plot.py at 2018-06-18 08:45:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.00 Mbit/s

95th percentile per-packet one-way delay: 9445.906 ms

Loss rate: 38.60%

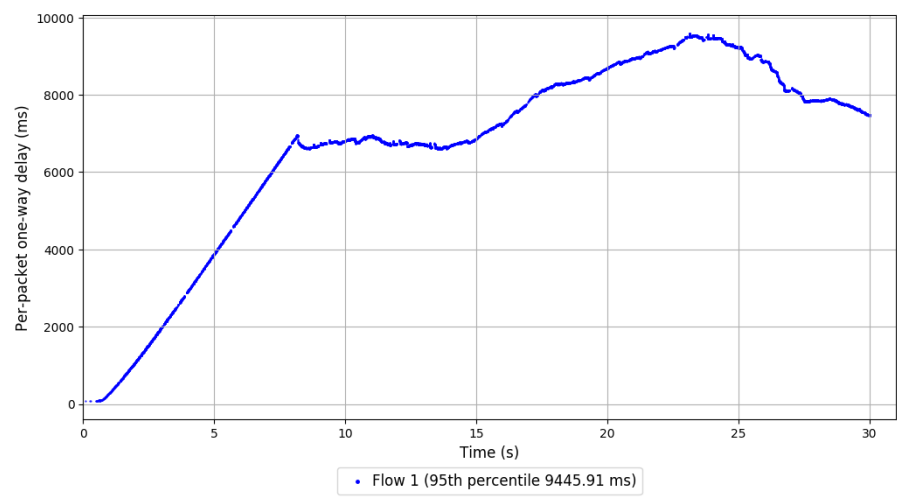
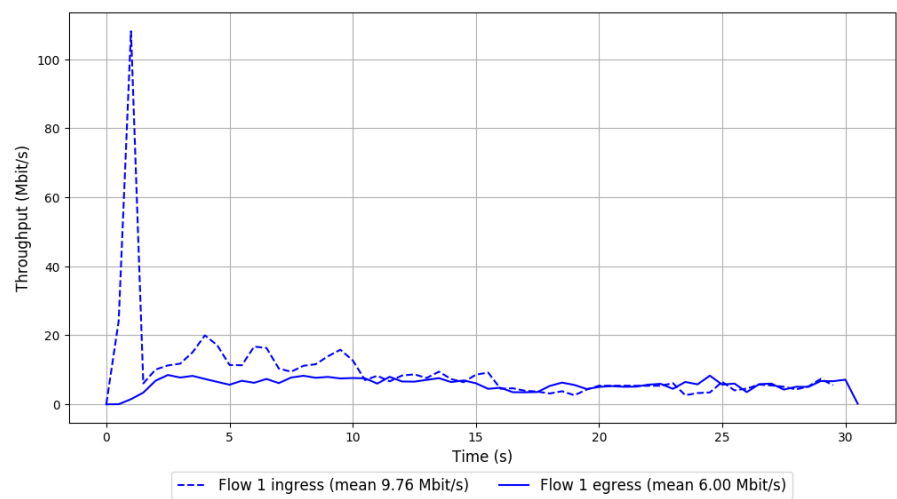
-- Flow 1:

Average throughput: 6.00 Mbit/s

95th percentile per-packet one-way delay: 9445.906 ms

Loss rate: 38.60%

Run 3: Report of FillP — Data Link



Run 1: Statistics of Indigo

Start at: 2018-06-18 07:50:53

End at: 2018-06-18 07:51:23

Local clock offset: 2.4 ms

Remote clock offset: -0.99 ms

Below is generated by plot.py at 2018-06-18 08:45:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.70 Mbit/s

95th percentile per-packet one-way delay: 100.805 ms

Loss rate: 0.00%

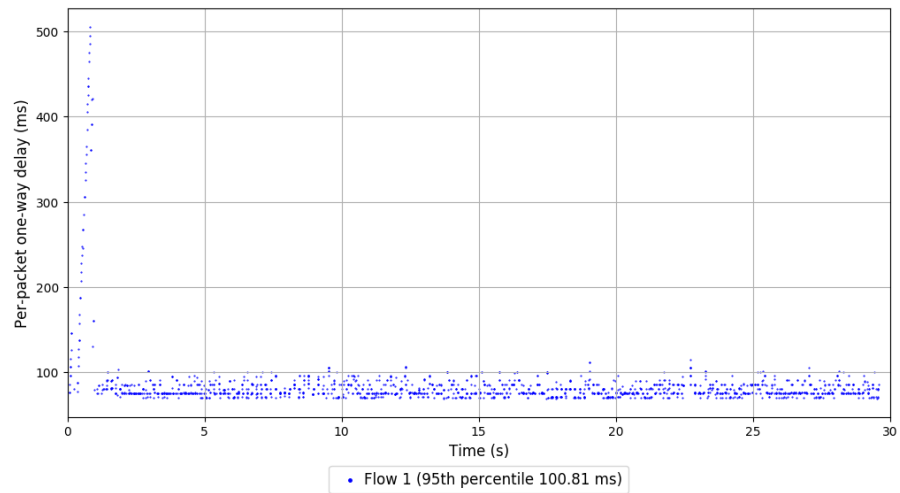
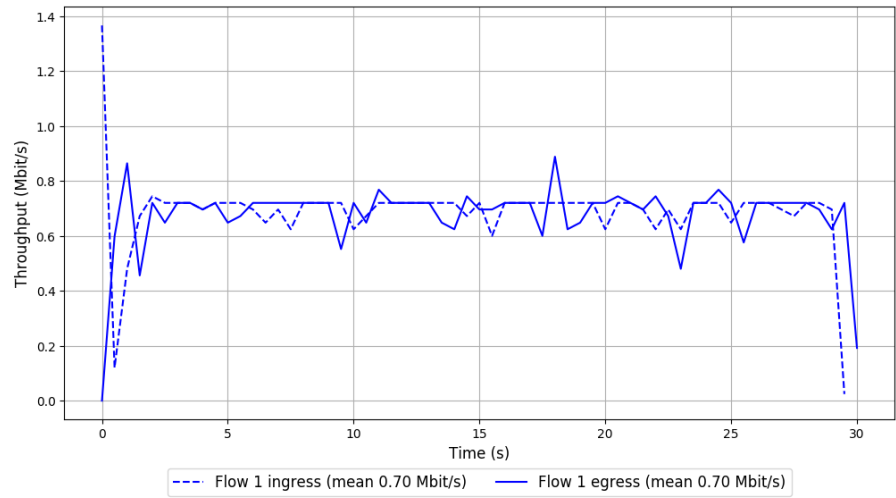
-- Flow 1:

Average throughput: 0.70 Mbit/s

95th percentile per-packet one-way delay: 100.805 ms

Loss rate: 0.00%

Run 1: Report of Indigo — Data Link

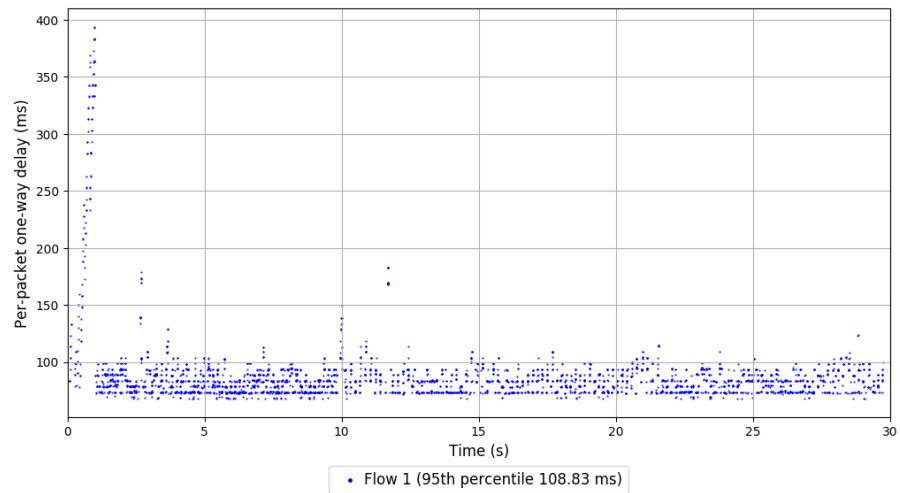
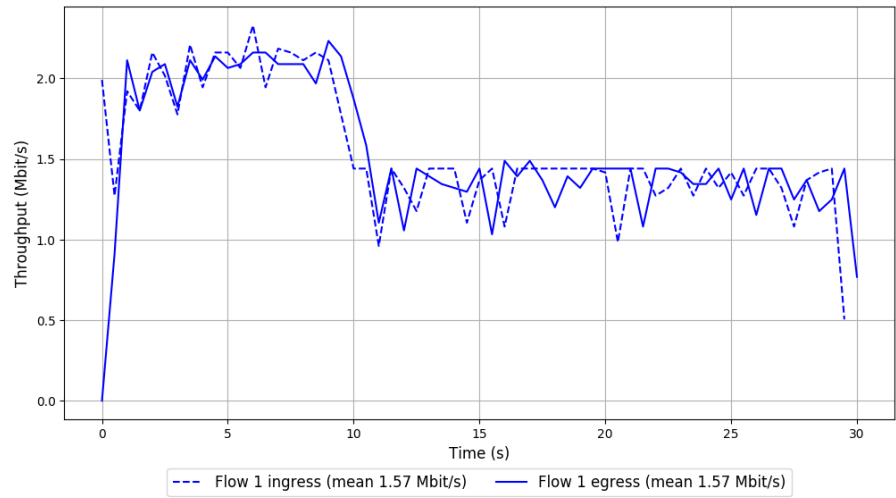


Run 2: Statistics of Indigo

Start at: 2018-06-18 08:13:17
End at: 2018-06-18 08:13:47
Local clock offset: 1.753 ms
Remote clock offset: -1.035 ms

Below is generated by plot.py at 2018-06-18 08:45:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 108.826 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 108.826 ms
Loss rate: 0.18%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-06-18 08:35:58

End at: 2018-06-18 08:36:28

Local clock offset: 0.718 ms

Remote clock offset: -0.88 ms

Below is generated by plot.py at 2018-06-18 08:45:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 498.925 ms

Loss rate: 0.00%

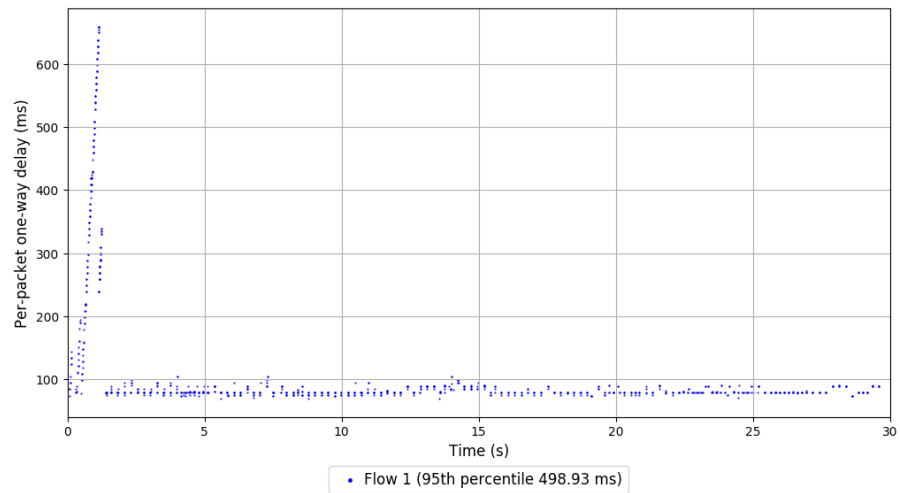
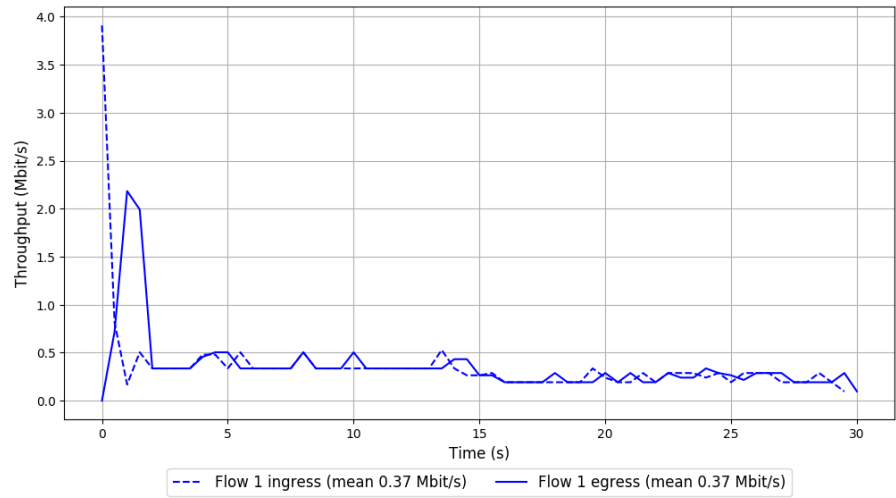
-- Flow 1:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 498.925 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

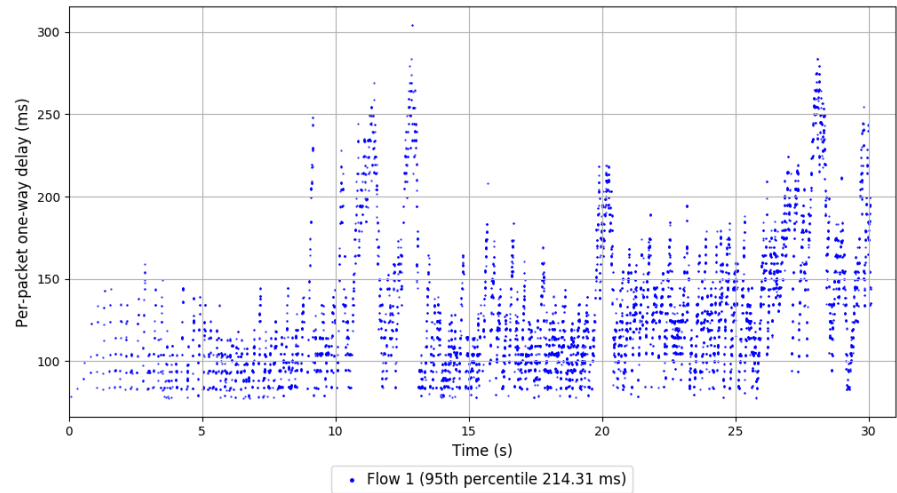
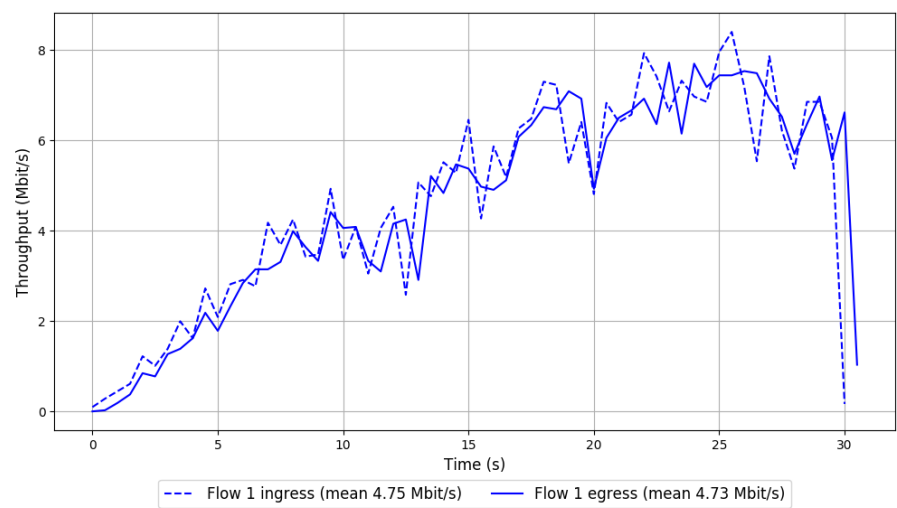


```
Run 1: Statistics of LEDBAT

Start at: 2018-06-18 07:42:25
End at: 2018-06-18 07:42:55
Local clock offset: 0.638 ms
Remote clock offset: 0.571 ms

# Below is generated by plot.py at 2018-06-18 08:45:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 214.310 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 214.310 ms
Loss rate: 0.49%
```

Run 1: Report of LEDBAT — Data Link

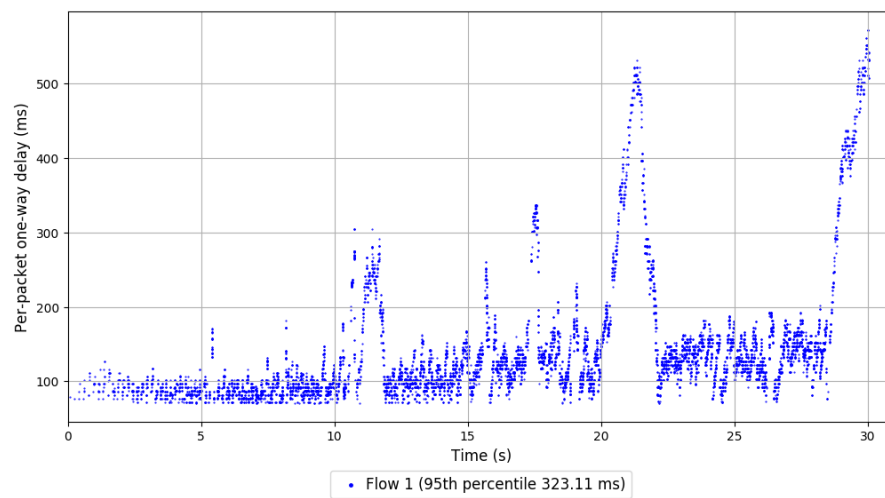
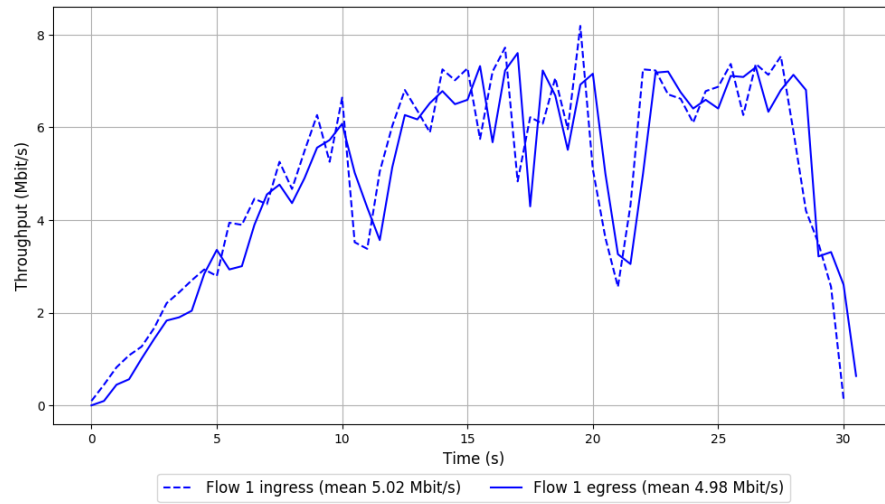


Run 2: Statistics of LEDBAT

Start at: 2018-06-18 08:04:38
End at: 2018-06-18 08:05:08
Local clock offset: 2.117 ms
Remote clock offset: -1.171 ms

Below is generated by plot.py at 2018-06-18 08:45:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.98 Mbit/s
95th percentile per-packet one-way delay: 323.105 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 4.98 Mbit/s
95th percentile per-packet one-way delay: 323.105 ms
Loss rate: 0.80%

Run 2: Report of LEDBAT — Data Link

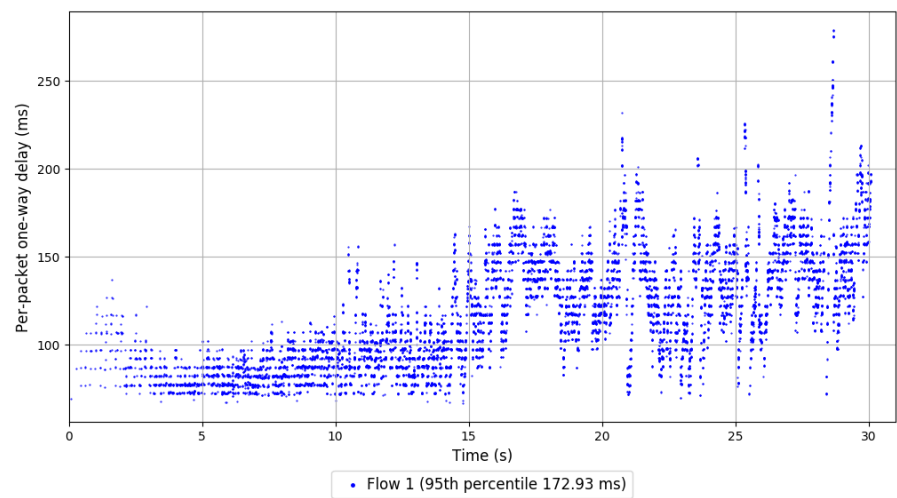
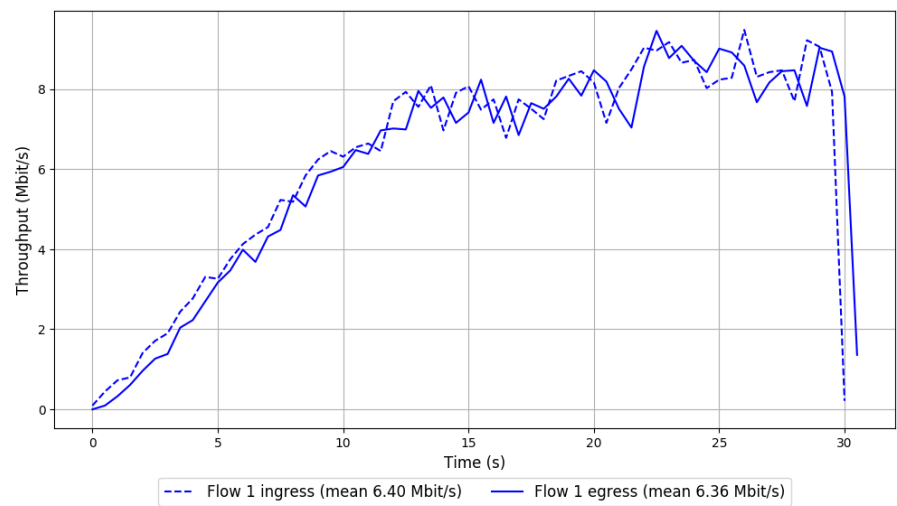


Run 3: Statistics of LEDBAT

Start at: 2018-06-18 08:27:11
End at: 2018-06-18 08:27:41
Local clock offset: 0.065 ms
Remote clock offset: -0.844 ms

Below is generated by plot.py at 2018-06-18 08:45:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.36 Mbit/s
95th percentile per-packet one-way delay: 172.930 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 6.36 Mbit/s
95th percentile per-packet one-way delay: 172.930 ms
Loss rate: 0.53%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-06-18 07:48:16

End at: 2018-06-18 07:48:46

Local clock offset: 2.21 ms

Remote clock offset: -0.756 ms

Below is generated by plot.py at 2018-06-18 08:45:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 86.311 ms

Loss rate: 0.00%

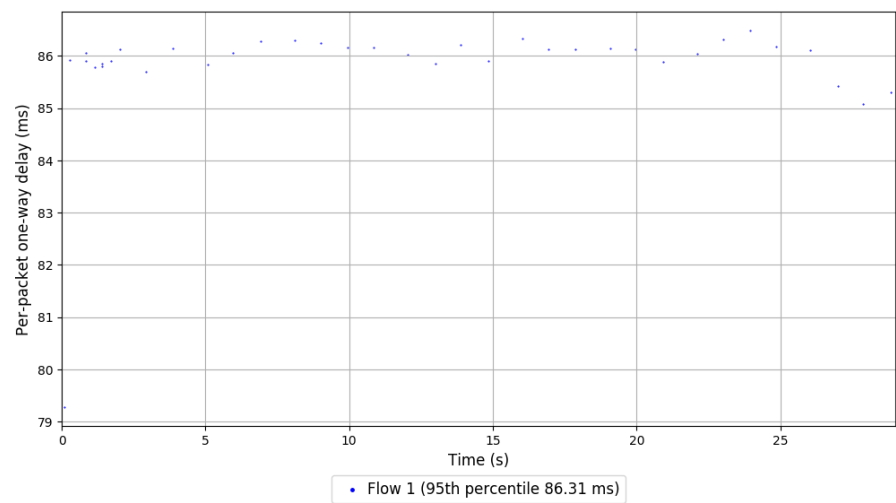
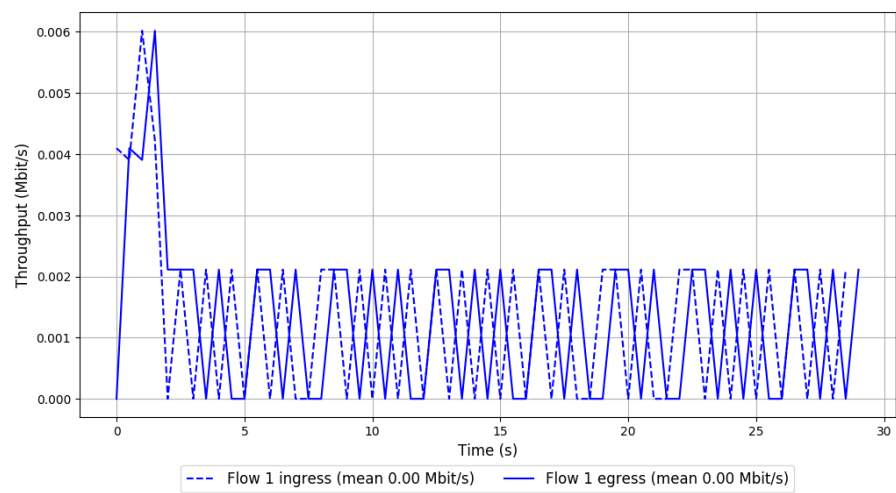
-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 86.311 ms

Loss rate: 0.00%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-06-18 08:10:36

End at: 2018-06-18 08:11:06

Local clock offset: 1.709 ms

Remote clock offset: -1.091 ms

Below is generated by plot.py at 2018-06-18 08:45:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.20 Mbit/s

95th percentile per-packet one-way delay: 670.412 ms

Loss rate: 0.04%

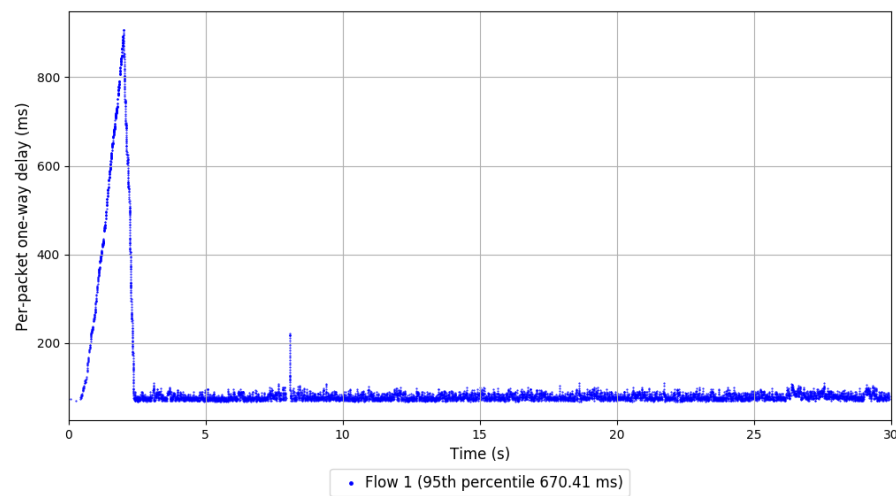
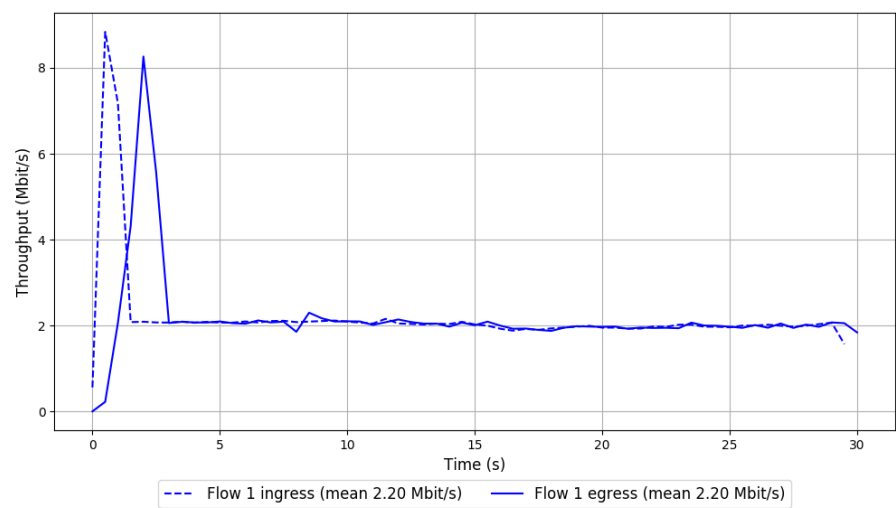
-- Flow 1:

Average throughput: 2.20 Mbit/s

95th percentile per-packet one-way delay: 670.412 ms

Loss rate: 0.04%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-06-18 08:33:15

End at: 2018-06-18 08:33:45

Local clock offset: -0.136 ms

Remote clock offset: -0.785 ms

Below is generated by plot.py at 2018-06-18 08:45:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.30 Mbit/s

95th percentile per-packet one-way delay: 993.726 ms

Loss rate: 0.08%

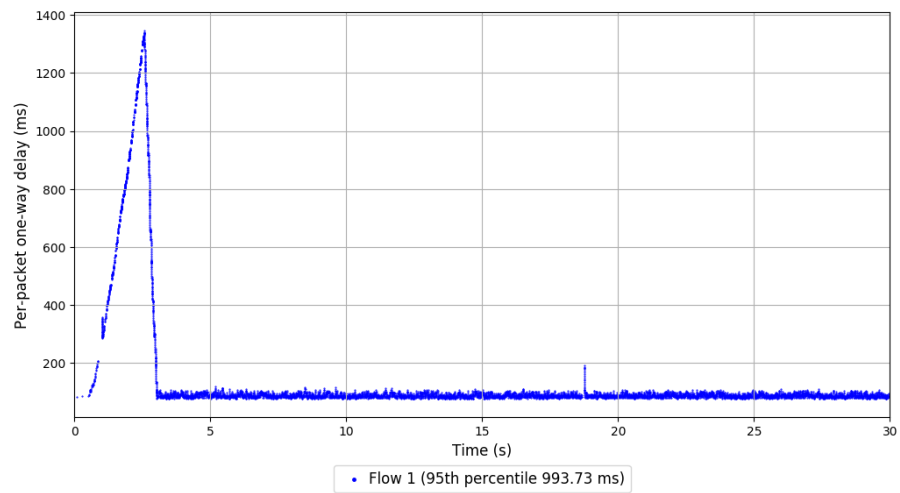
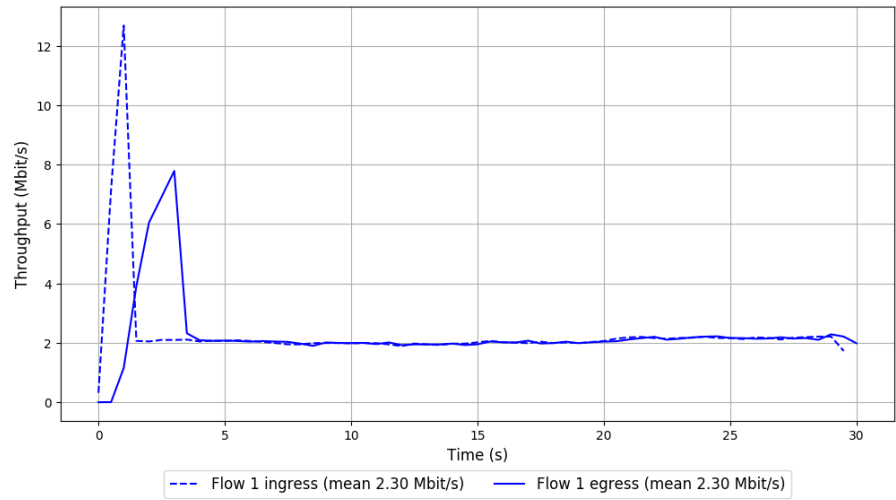
-- Flow 1:

Average throughput: 2.30 Mbit/s

95th percentile per-packet one-way delay: 993.726 ms

Loss rate: 0.08%

Run 3: Report of PCC-Allegro — Data Link

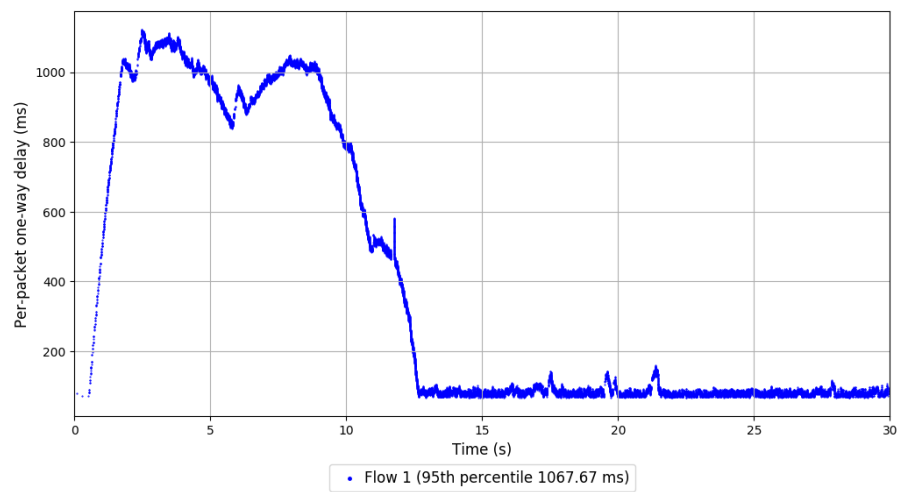
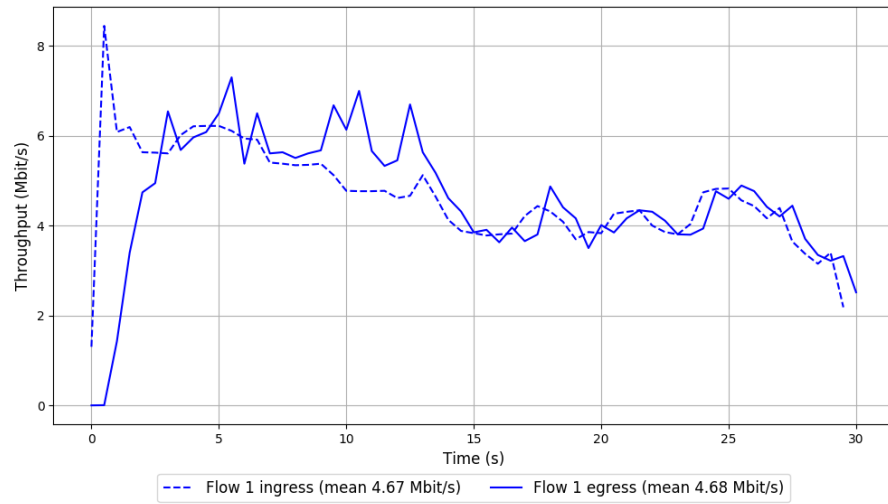


```
Run 1: Statistics of PCC-Expr

Start at: 2018-06-18 07:45:13
End at: 2018-06-18 07:45:43
Local clock offset: 2.254 ms
Remote clock offset: -0.237 ms

# Below is generated by plot.py at 2018-06-18 08:45:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 1067.673 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 1067.673 ms
Loss rate: 0.06%
```

Run 1: Report of PCC-Expr — Data Link

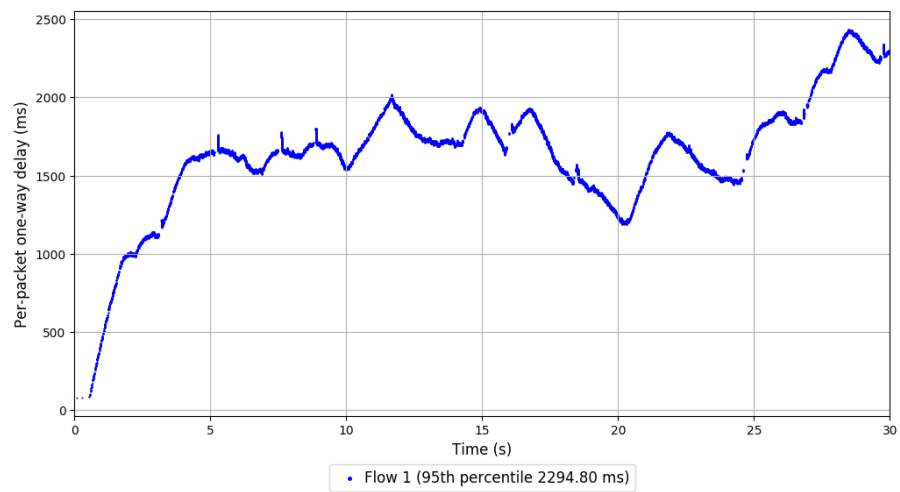
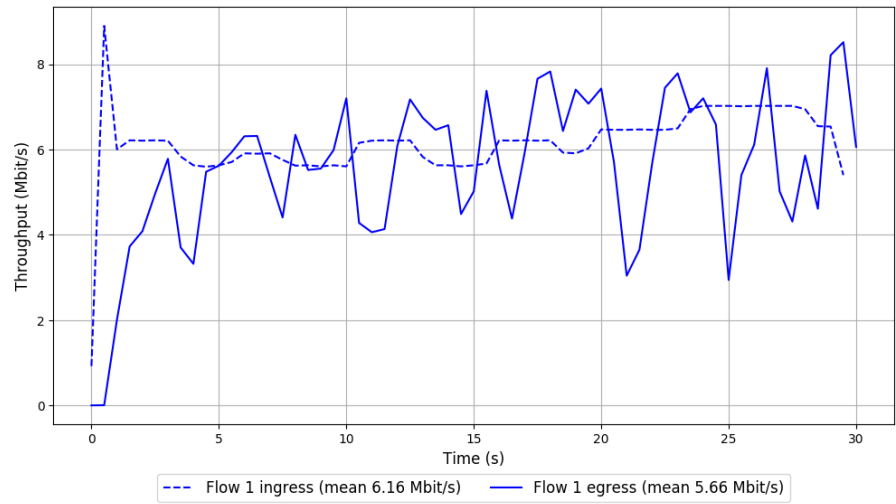


Run 2: Statistics of PCC-Expr

Start at: 2018-06-18 08:07:30
End at: 2018-06-18 08:08:00
Local clock offset: 2.149 ms
Remote clock offset: -1.104 ms

Below is generated by plot.py at 2018-06-18 08:45:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.66 Mbit/s
95th percentile per-packet one-way delay: 2294.801 ms
Loss rate: 8.06%
-- Flow 1:
Average throughput: 5.66 Mbit/s
95th percentile per-packet one-way delay: 2294.801 ms
Loss rate: 8.06%

Run 2: Report of PCC-Expr — Data Link

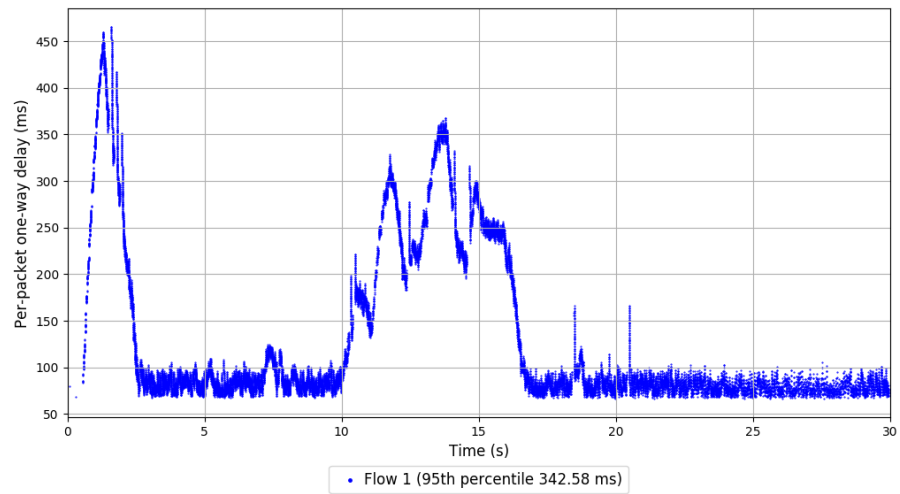
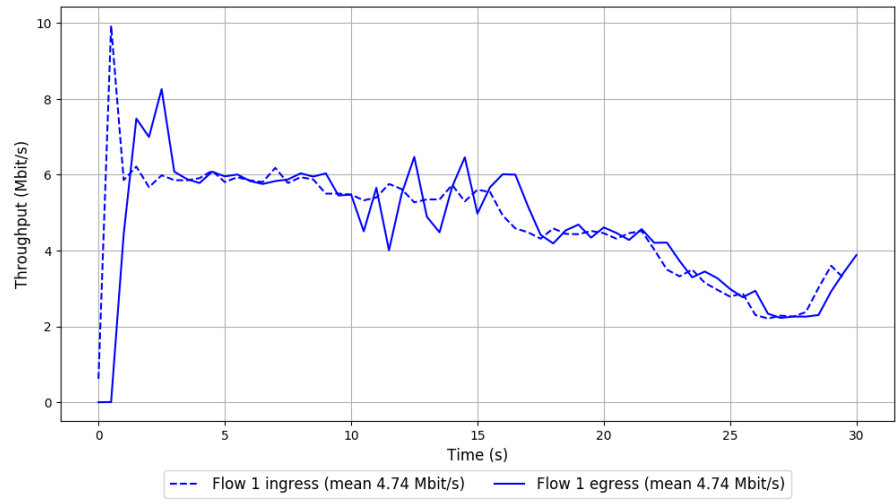


Run 3: Statistics of PCC-Expr

Start at: 2018-06-18 08:30:13
End at: 2018-06-18 08:30:43
Local clock offset: -0.45 ms
Remote clock offset: -0.692 ms

Below is generated by plot.py at 2018-06-18 08:45:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.74 Mbit/s
95th percentile per-packet one-way delay: 342.583 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 4.74 Mbit/s
95th percentile per-packet one-way delay: 342.583 ms
Loss rate: 0.04%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

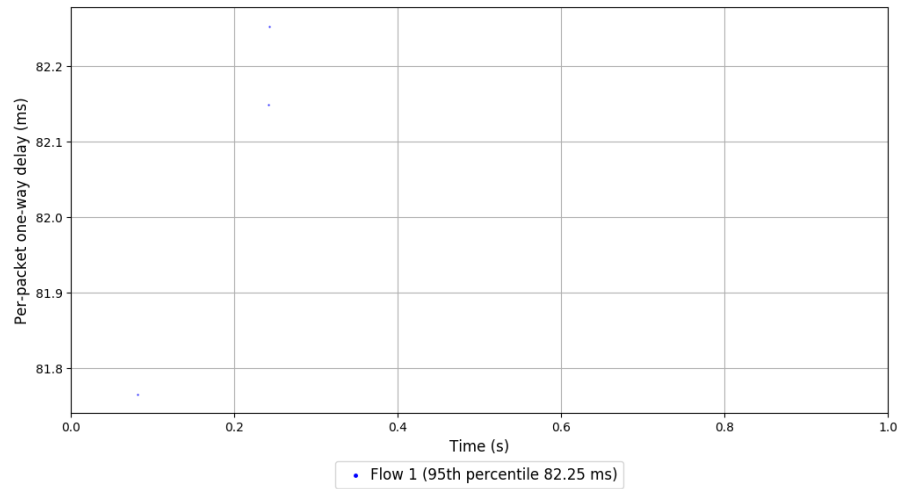
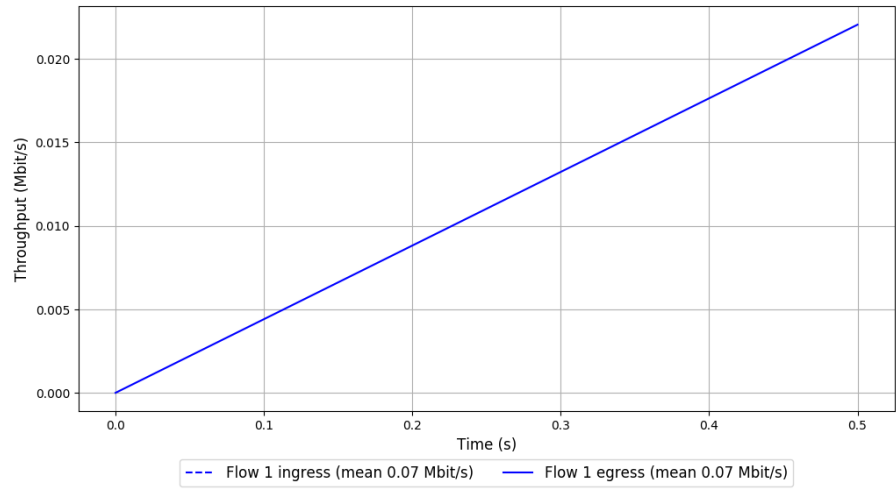
Start at: 2018-06-18 07:54:55

End at: 2018-06-18 07:55:25

Local clock offset: 2.596 ms

Remote clock offset: -1.222 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-06-18 08:17:25

End at: 2018-06-18 08:17:55

Local clock offset: 1.282 ms

Remote clock offset: -0.993 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.46 Mbit/s

95th percentile per-packet one-way delay: 808.148 ms

Loss rate: 2.01%

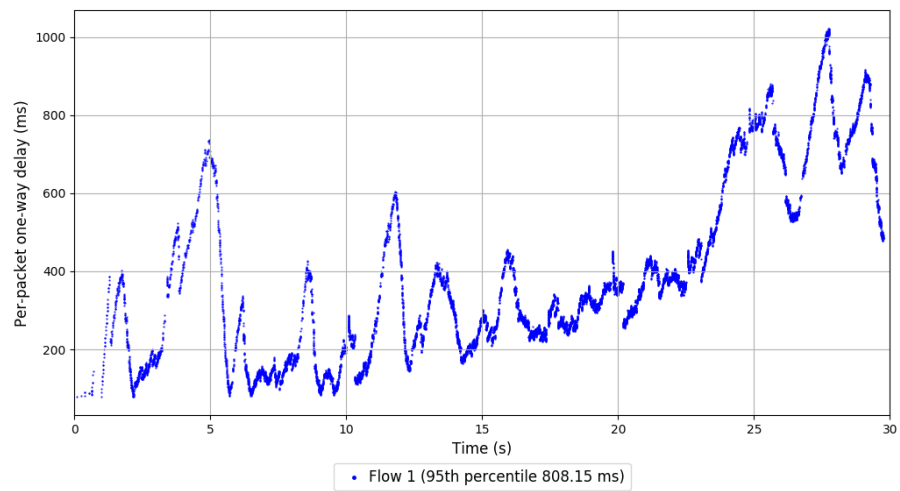
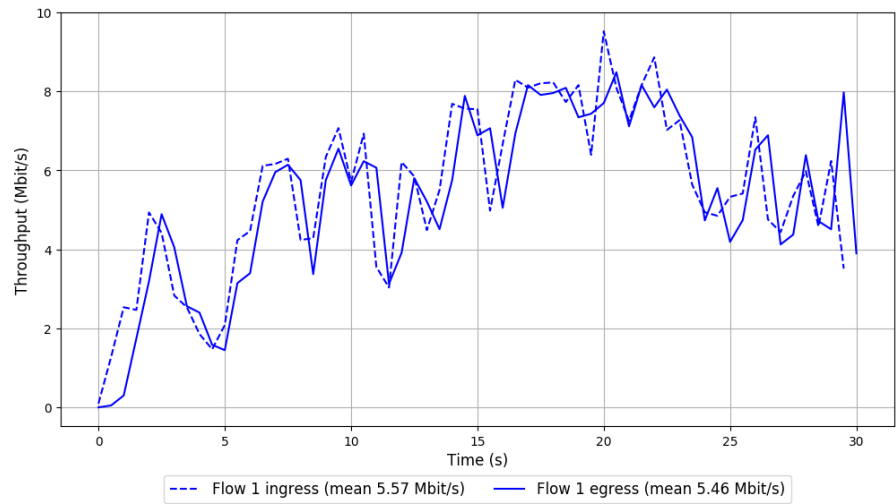
-- Flow 1:

Average throughput: 5.46 Mbit/s

95th percentile per-packet one-way delay: 808.148 ms

Loss rate: 2.01%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-06-18 08:39:59

End at: 2018-06-18 08:40:29

Local clock offset: 1.442 ms

Remote clock offset: -1.059 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.93 Mbit/s

95th percentile per-packet one-way delay: 692.165 ms

Loss rate: 2.32%

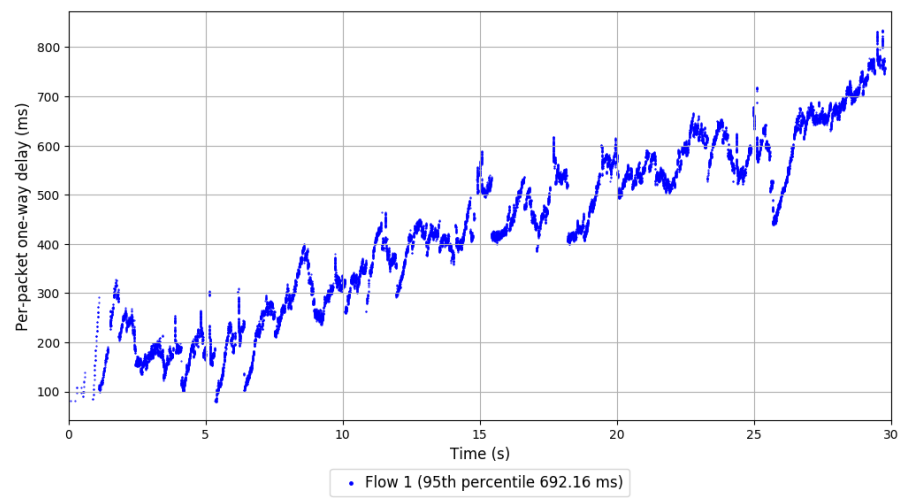
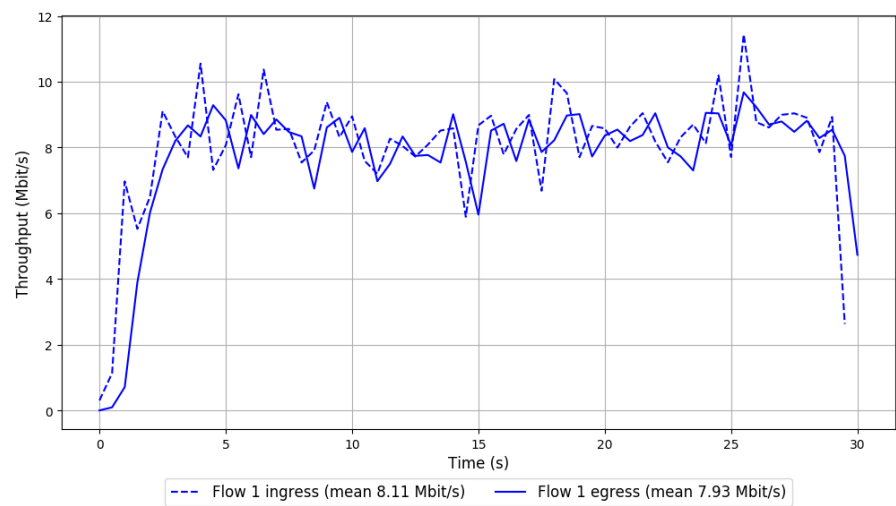
-- Flow 1:

Average throughput: 7.93 Mbit/s

95th percentile per-packet one-way delay: 692.165 ms

Loss rate: 2.32%

Run 3: Report of QUIC Cubic — Data Link



Run 1: Statistics of SCReAM

Start at: 2018-06-18 07:53:38

End at: 2018-06-18 07:54:08

Local clock offset: 2.646 ms

Remote clock offset: -1.15 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 87.210 ms

Loss rate: 0.13%

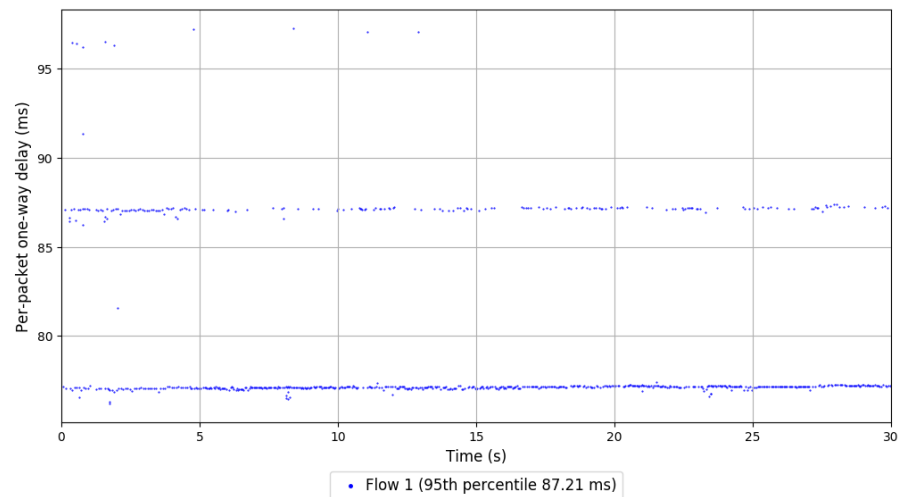
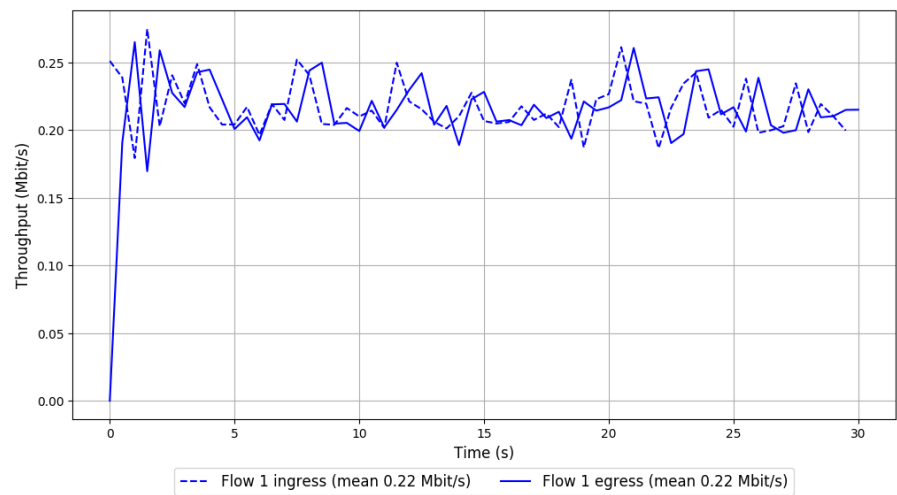
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 87.210 ms

Loss rate: 0.13%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-06-18 08:16:09

End at: 2018-06-18 08:16:39

Local clock offset: 1.449 ms

Remote clock offset: -1.06 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 103.909 ms

Loss rate: 0.13%

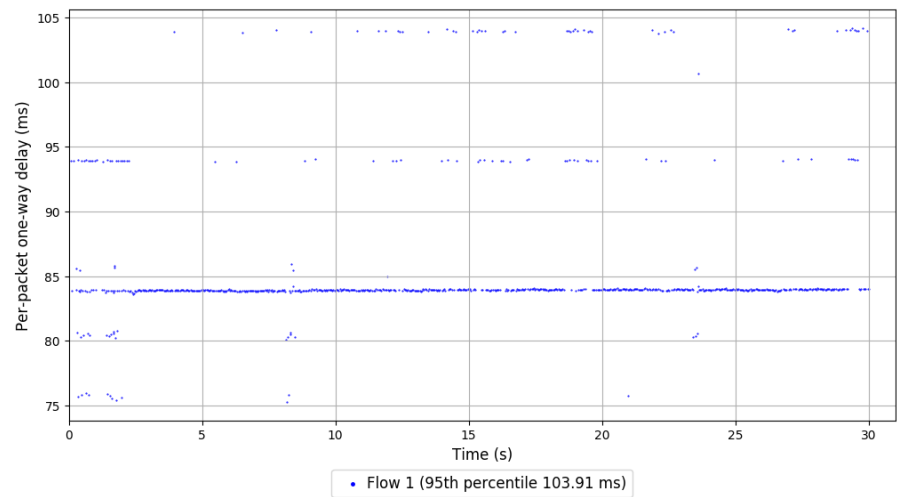
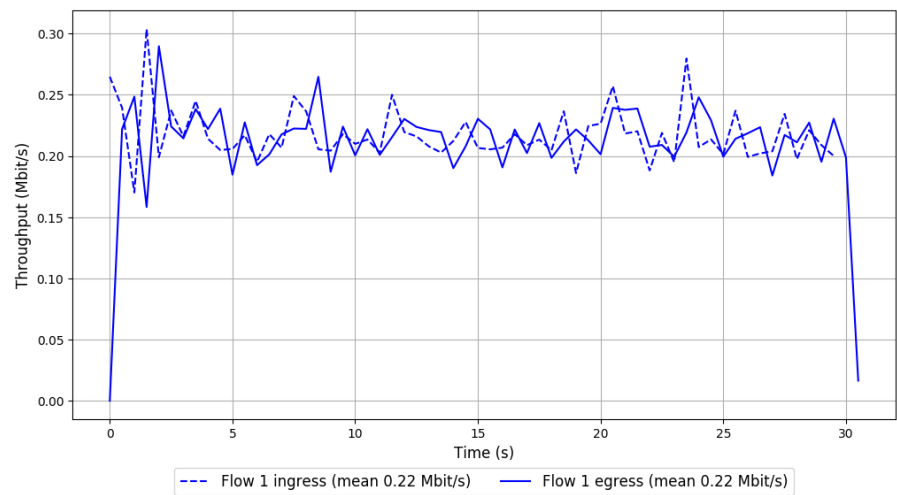
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 103.909 ms

Loss rate: 0.13%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-06-18 08:38:44

End at: 2018-06-18 08:39:14

Local clock offset: 1.334 ms

Remote clock offset: -0.98 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 99.087 ms

Loss rate: 0.13%

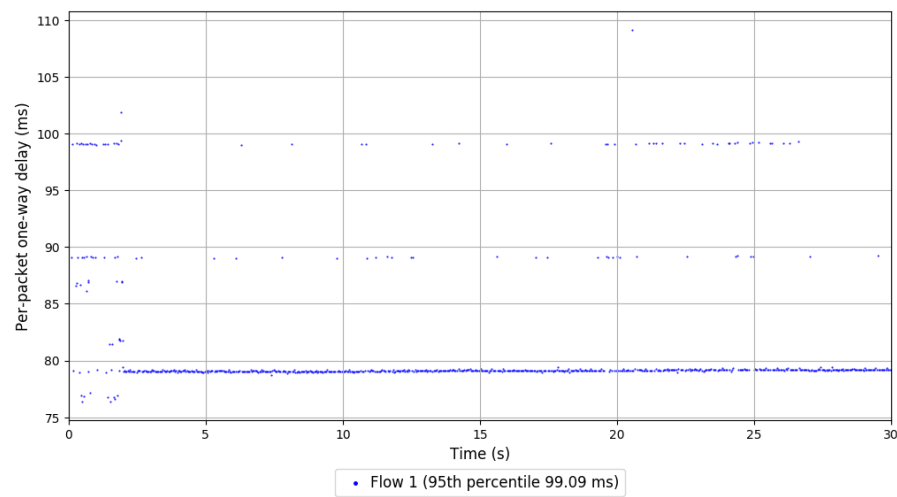
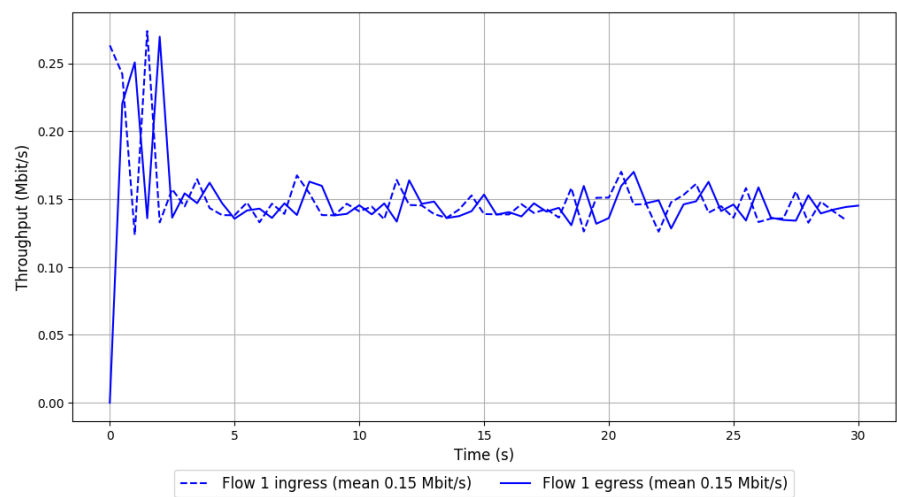
-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 99.087 ms

Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-06-18 07:39:29

End at: 2018-06-18 07:39:59

Local clock offset: -1.96 ms

Remote clock offset: 0.454 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.20 Mbit/s

95th percentile per-packet one-way delay: 100.796 ms

Loss rate: 0.20%

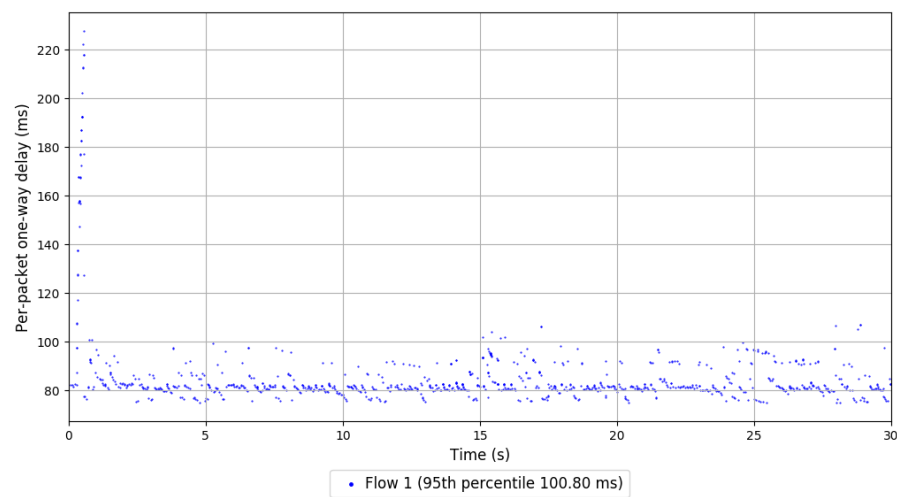
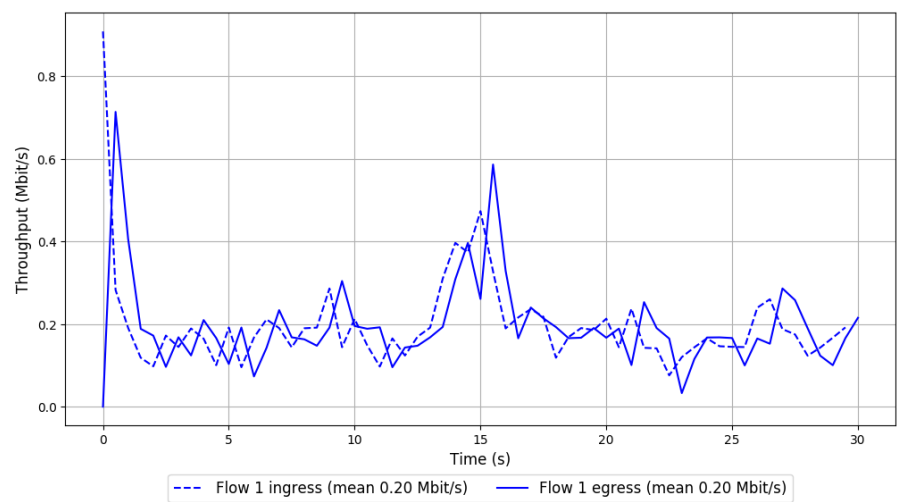
-- Flow 1:

Average throughput: 0.20 Mbit/s

95th percentile per-packet one-way delay: 100.796 ms

Loss rate: 0.20%

Run 1: Report of Sprout — Data Link

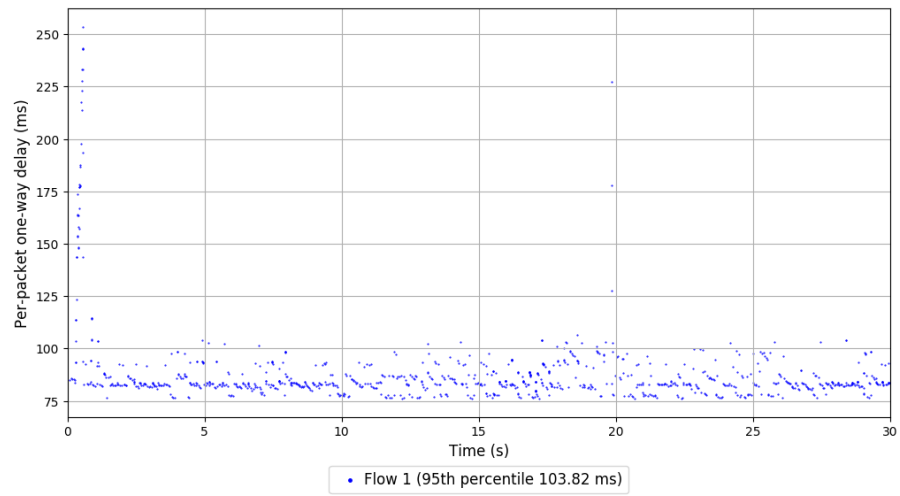
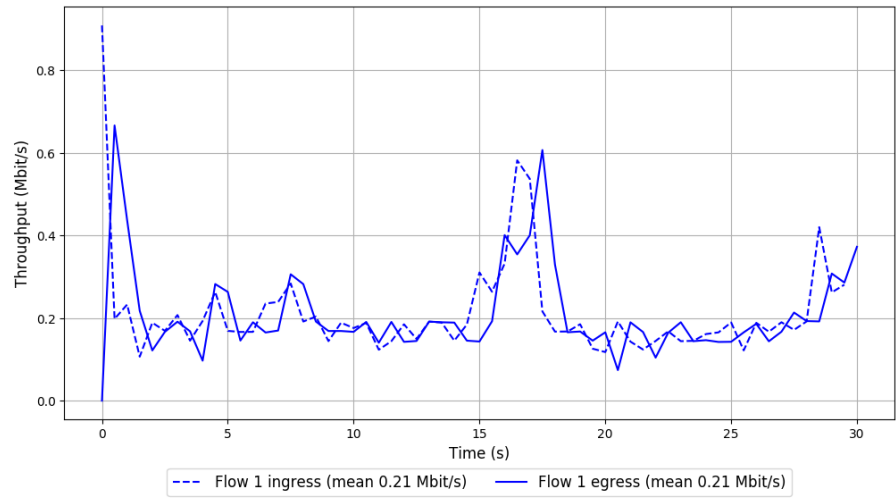


Run 2: Statistics of Sprout

Start at: 2018-06-18 08:01:57
End at: 2018-06-18 08:02:27
Local clock offset: 2.04 ms
Remote clock offset: -1.193 ms

Below is generated by plot.py at 2018-06-18 08:45:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 103.819 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 103.819 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-06-18 08:24:23

End at: 2018-06-18 08:24:53

Local clock offset: 0.209 ms

Remote clock offset: -0.79 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 92.793 ms

Loss rate: 0.01%

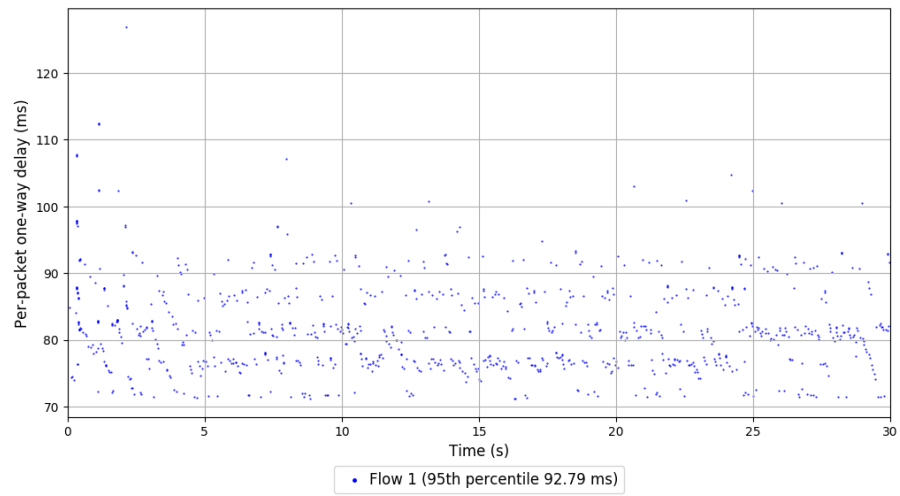
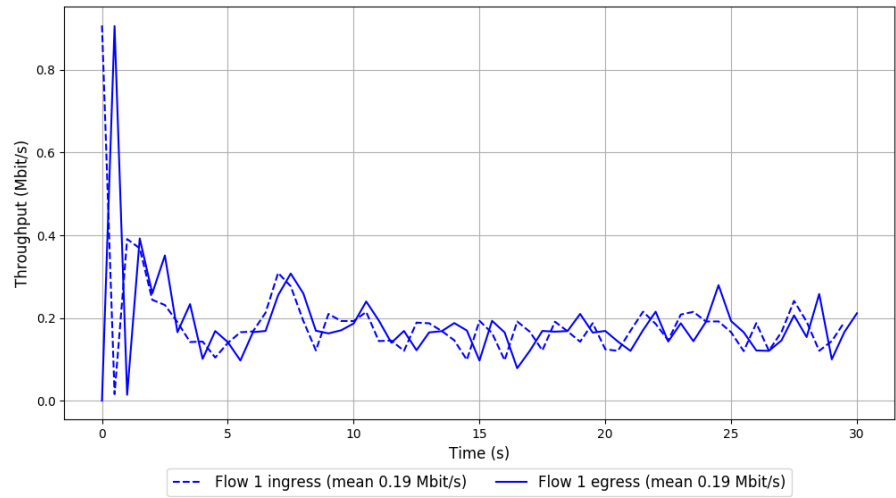
-- Flow 1:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 92.793 ms

Loss rate: 0.01%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-06-18 07:56:10

End at: 2018-06-18 07:56:40

Local clock offset: 2.546 ms

Remote clock offset: -1.147 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.18 Mbit/s

95th percentile per-packet one-way delay: 115.956 ms

Loss rate: 0.11%

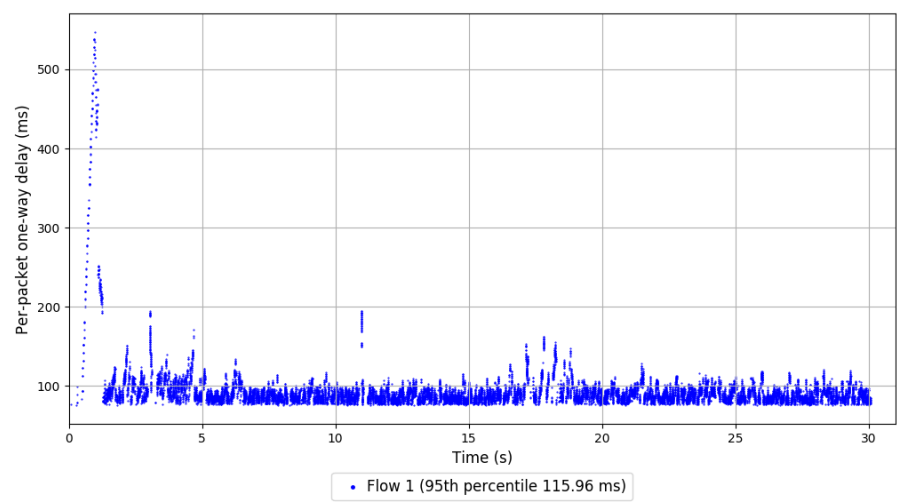
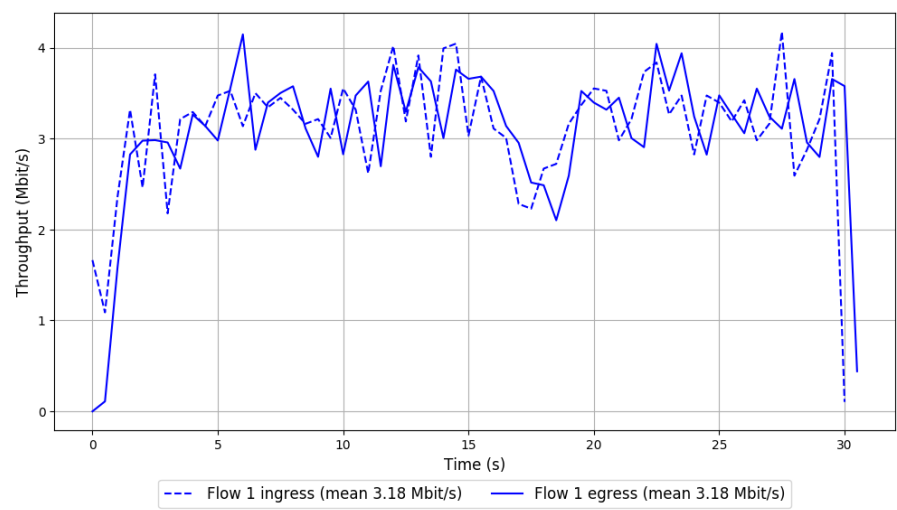
-- Flow 1:

Average throughput: 3.18 Mbit/s

95th percentile per-packet one-way delay: 115.956 ms

Loss rate: 0.11%

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



Run 2: Statistics of TaoVA-100x

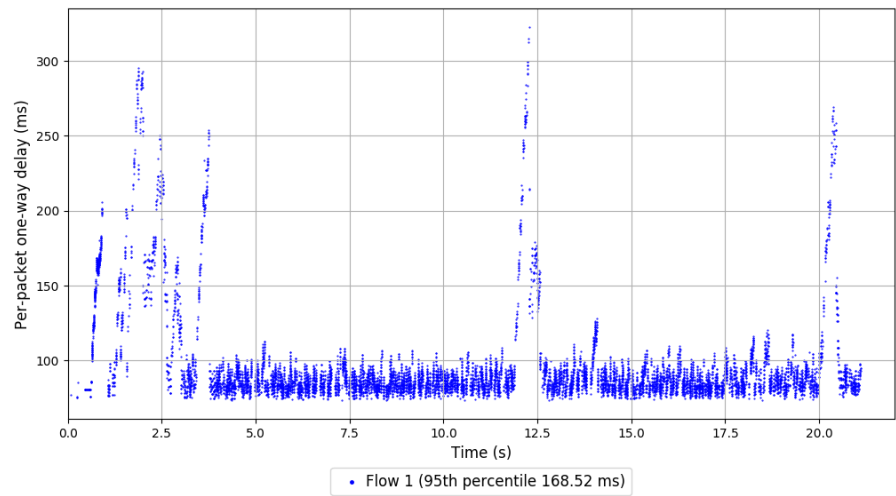
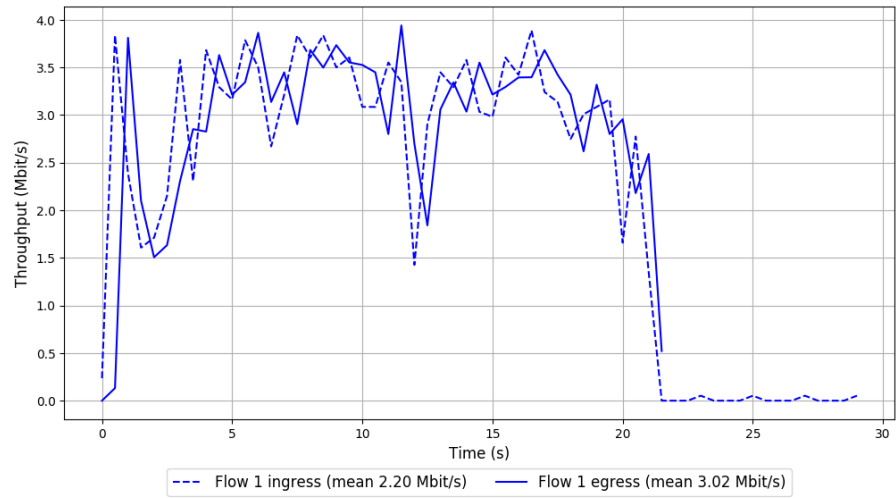
Start at: 2018-06-18 08:18:52

End at: 2018-06-18 08:19:22

Local clock offset: 1.018 ms

Remote clock offset: -0.976 ms

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-06-18 08:41:32

End at: 2018-06-18 08:42:02

Local clock offset: 1.718 ms

Remote clock offset: -1.134 ms

Below is generated by plot.py at 2018-06-18 08:45:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.41 Mbit/s

95th percentile per-packet one-way delay: 109.126 ms

Loss rate: 0.28%

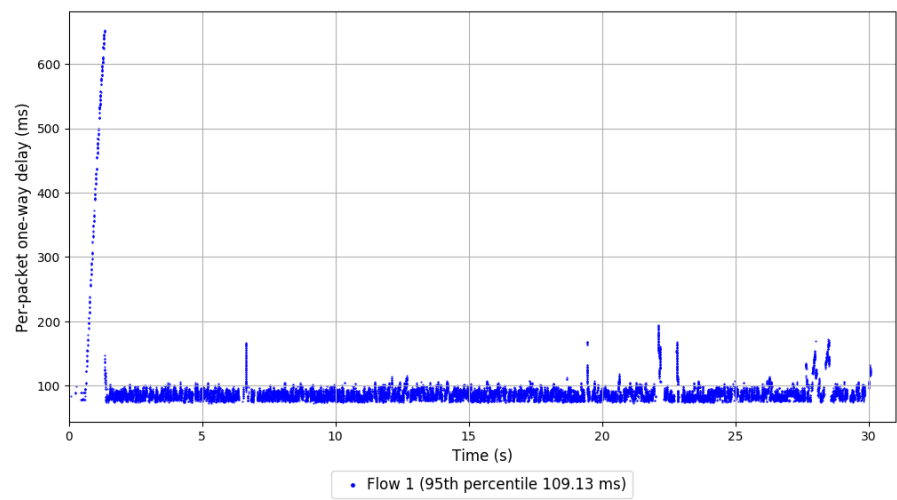
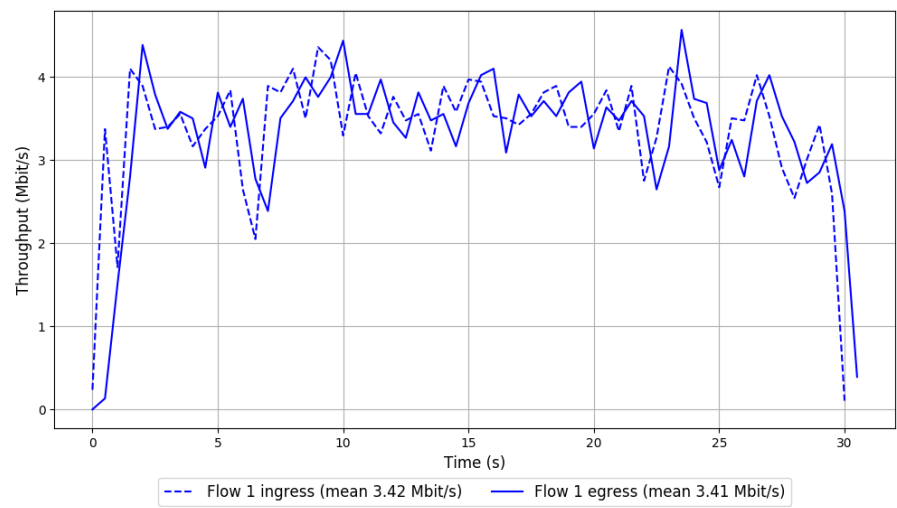
-- Flow 1:

Average throughput: 3.41 Mbit/s

95th percentile per-packet one-way delay: 109.126 ms

Loss rate: 0.28%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-06-18 07:52:09

End at: 2018-06-18 07:52:39

Local clock offset: 2.659 ms

Remote clock offset: -1.13 ms

Below is generated by plot.py at 2018-06-18 08:45:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.59 Mbit/s

95th percentile per-packet one-way delay: 3169.824 ms

Loss rate: 7.19%

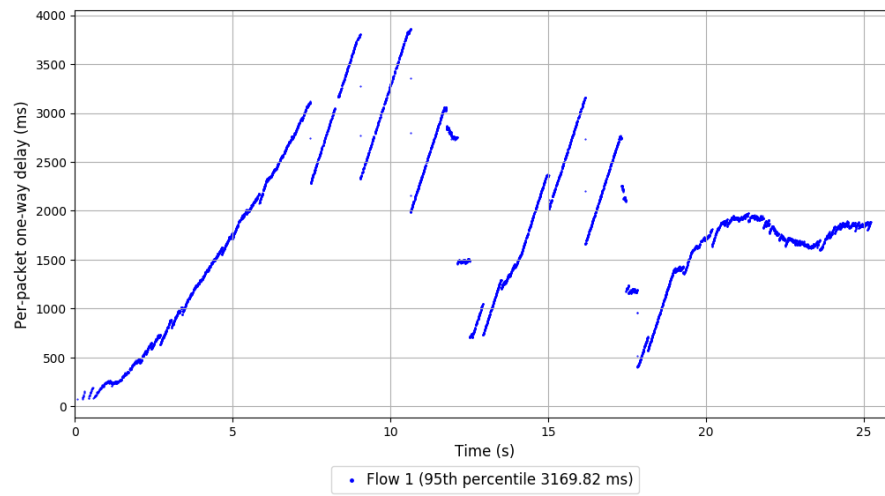
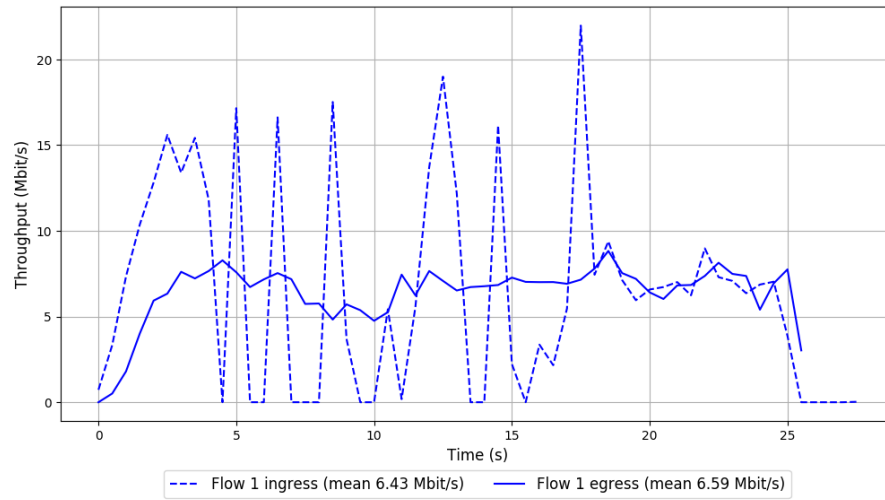
-- Flow 1:

Average throughput: 6.59 Mbit/s

95th percentile per-packet one-way delay: 3169.824 ms

Loss rate: 7.19%

Run 1: Report of TCP Vegas — Data Link

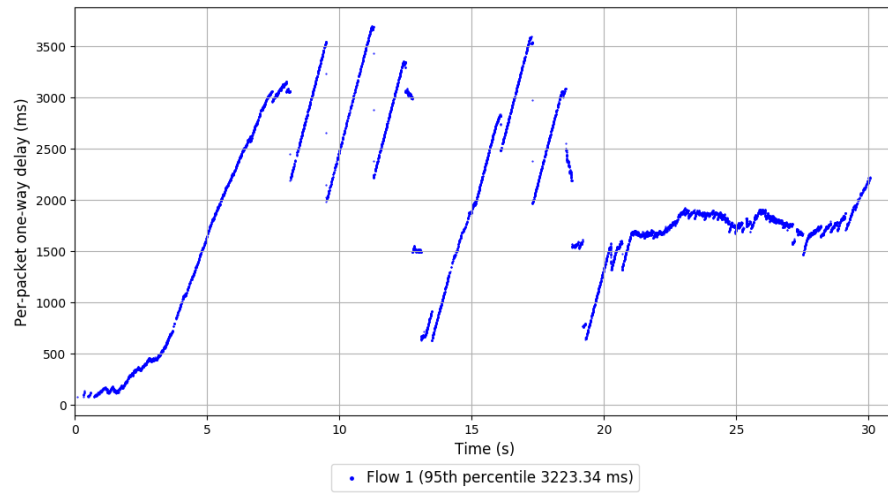
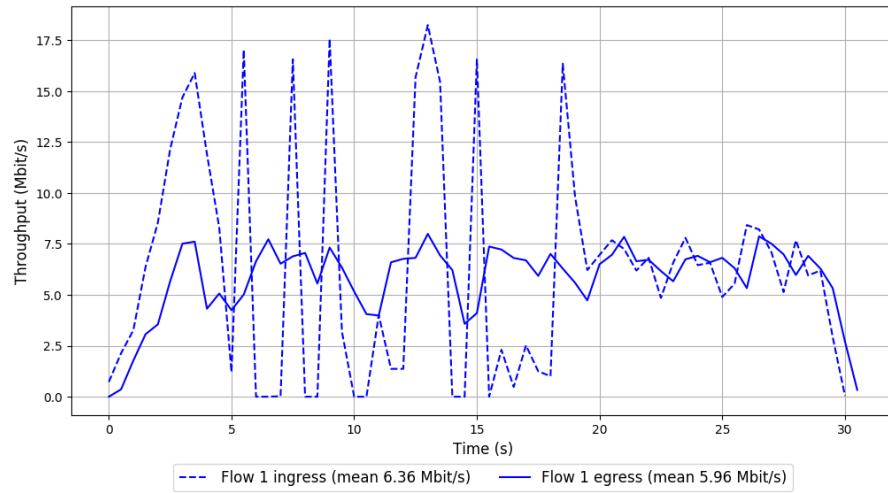


Run 2: Statistics of TCP Vegas

Start at: 2018-06-18 08:14:36
End at: 2018-06-18 08:15:06
Local clock offset: 1.539 ms
Remote clock offset: -0.944 ms

Below is generated by plot.py at 2018-06-18 08:45:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 3223.345 ms
Loss rate: 6.34%
-- Flow 1:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 3223.345 ms
Loss rate: 6.34%

Run 2: Report of TCP Vegas — Data Link

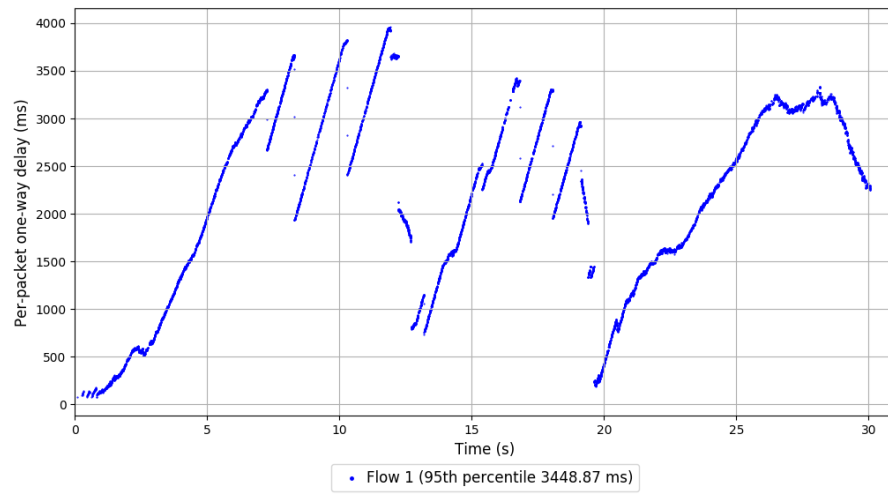
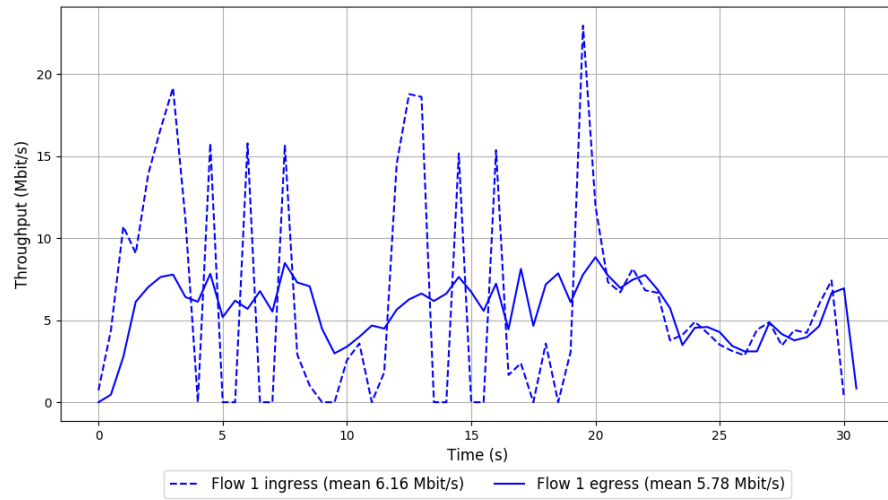


Run 3: Statistics of TCP Vegas

Start at: 2018-06-18 08:37:15
End at: 2018-06-18 08:37:45
Local clock offset: 0.949 ms
Remote clock offset: -0.957 ms

Below is generated by plot.py at 2018-06-18 08:45:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 3448.868 ms
Loss rate: 6.35%
-- Flow 1:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 3448.868 ms
Loss rate: 6.35%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-06-18 07:40:45

End at: 2018-06-18 07:41:15

Local clock offset: -2.482 ms

Remote clock offset: 0.48 ms

Below is generated by plot.py at 2018-06-18 08:45:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.72 Mbit/s

95th percentile per-packet one-way delay: 1175.751 ms

Loss rate: 2.55%

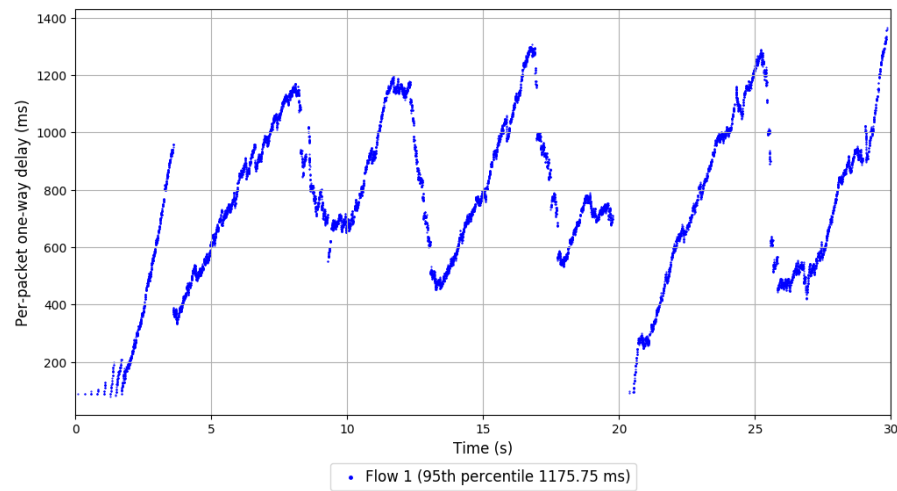
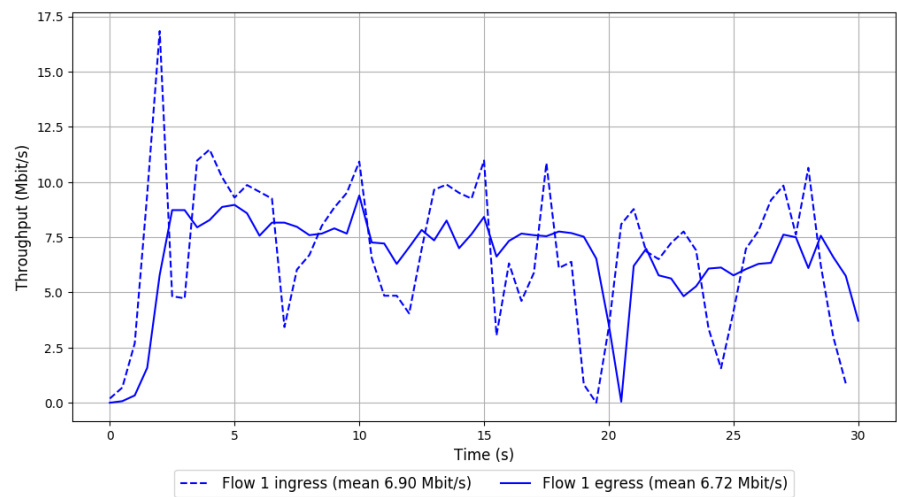
-- Flow 1:

Average throughput: 6.72 Mbit/s

95th percentile per-packet one-way delay: 1175.751 ms

Loss rate: 2.55%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

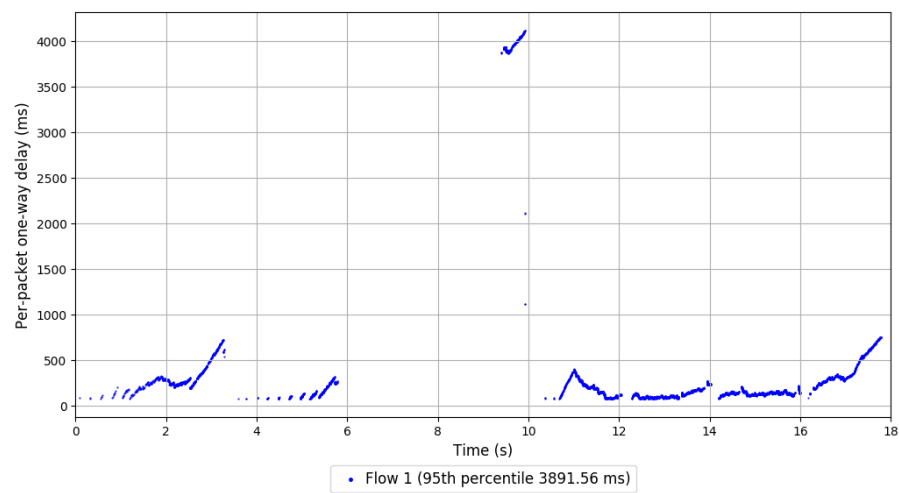
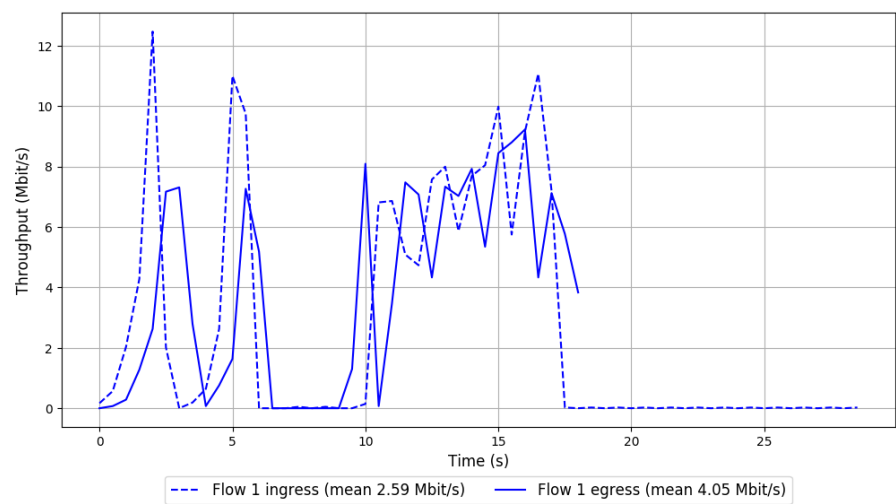
Start at: 2018-06-18 08:03:13

End at: 2018-06-18 08:03:43

Local clock offset: 2.222 ms

Remote clock offset: -1.157 ms

Run 2: Report of Verus — Data Link

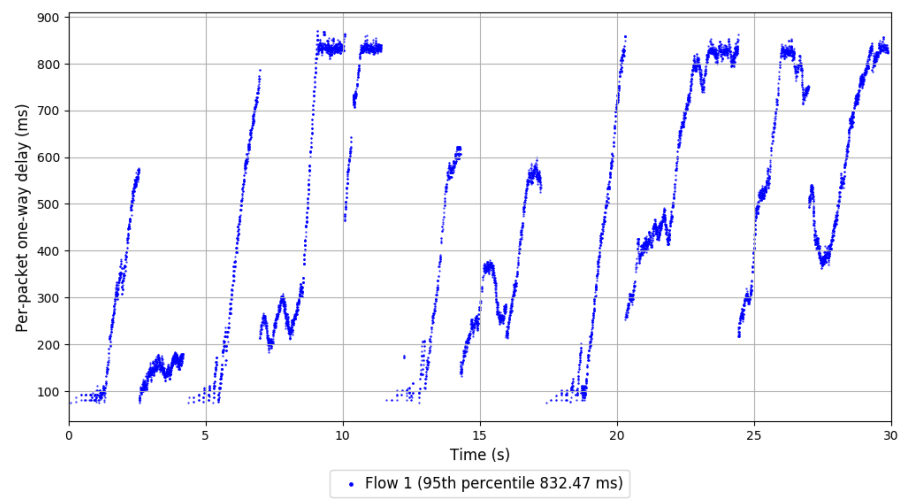
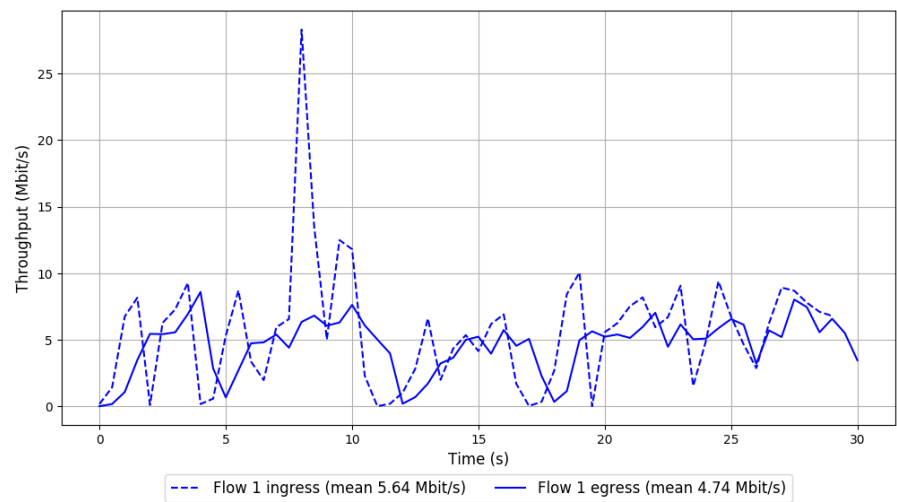


Run 3: Statistics of Verus

Start at: 2018-06-18 08:25:39
End at: 2018-06-18 08:26:09
Local clock offset: 0.184 ms
Remote clock offset: -0.879 ms

Below is generated by plot.py at 2018-06-18 08:45:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.74 Mbit/s
95th percentile per-packet one-way delay: 832.473 ms
Loss rate: 15.16%
-- Flow 1:
Average throughput: 4.74 Mbit/s
95th percentile per-packet one-way delay: 832.473 ms
Loss rate: 15.16%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-06-18 07:43:50

End at: 2018-06-18 07:44:20

Local clock offset: 1.904 ms

Remote clock offset: 0.267 ms

Below is generated by plot.py at 2018-06-18 08:45:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.71 Mbit/s

95th percentile per-packet one-way delay: 102.823 ms

Loss rate: 0.04%

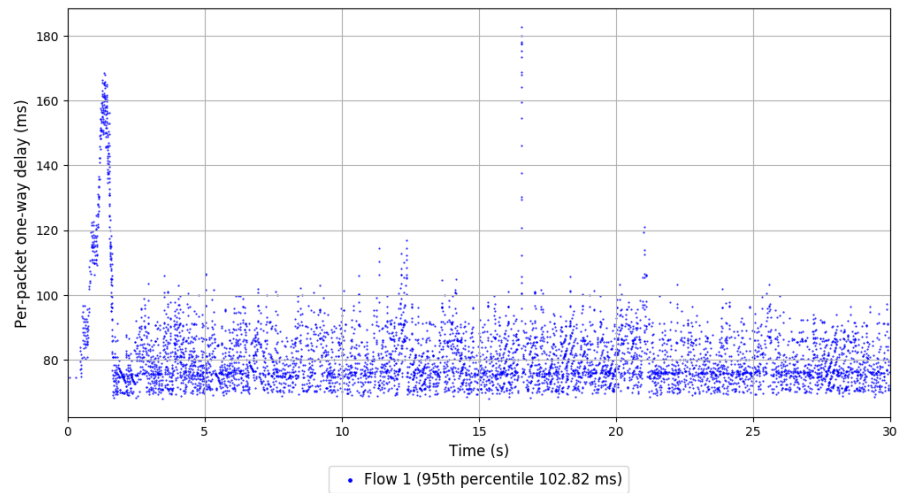
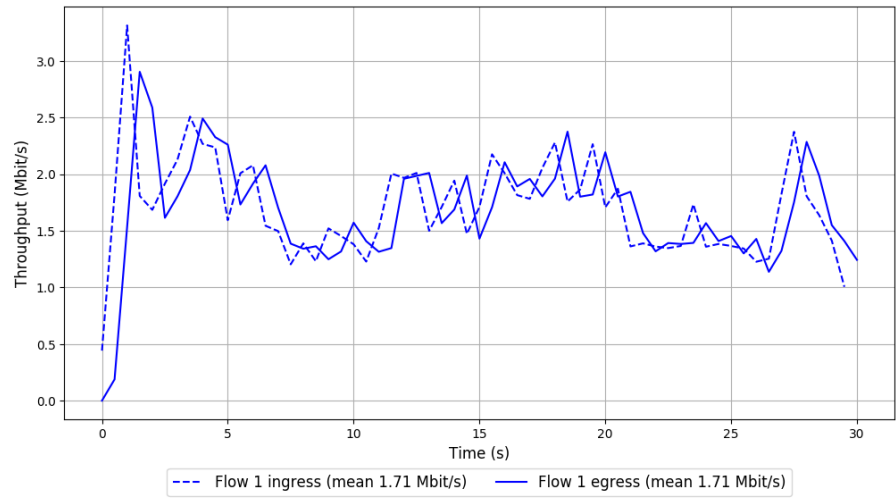
-- Flow 1:

Average throughput: 1.71 Mbit/s

95th percentile per-packet one-way delay: 102.823 ms

Loss rate: 0.04%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-06-18 08:06:06

End at: 2018-06-18 08:06:36

Local clock offset: 1.982 ms

Remote clock offset: -1.126 ms

Below is generated by plot.py at 2018-06-18 08:45:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 108.409 ms

Loss rate: 0.15%

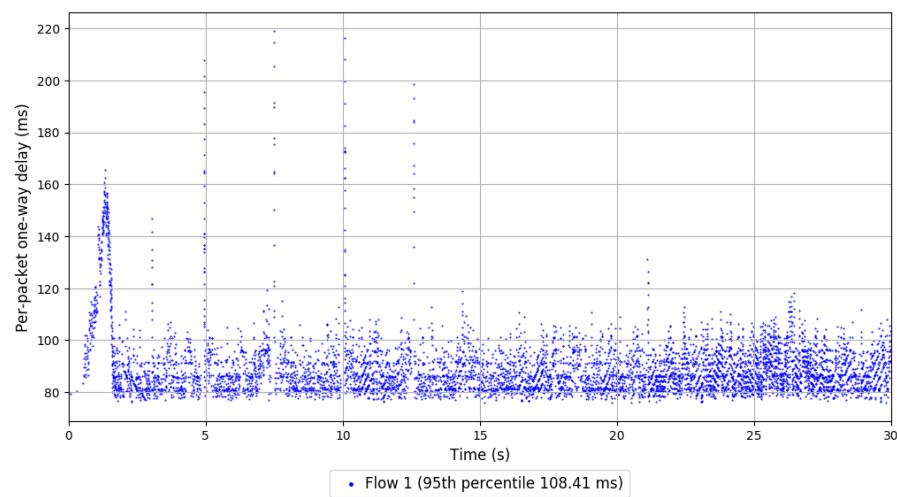
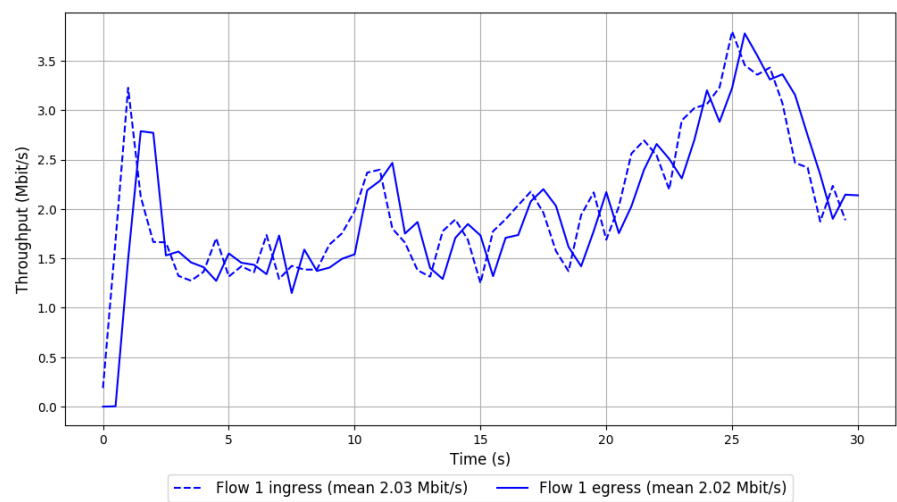
-- Flow 1:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 108.409 ms

Loss rate: 0.15%

Run 2: Report of PCC-Vivace — Data Link

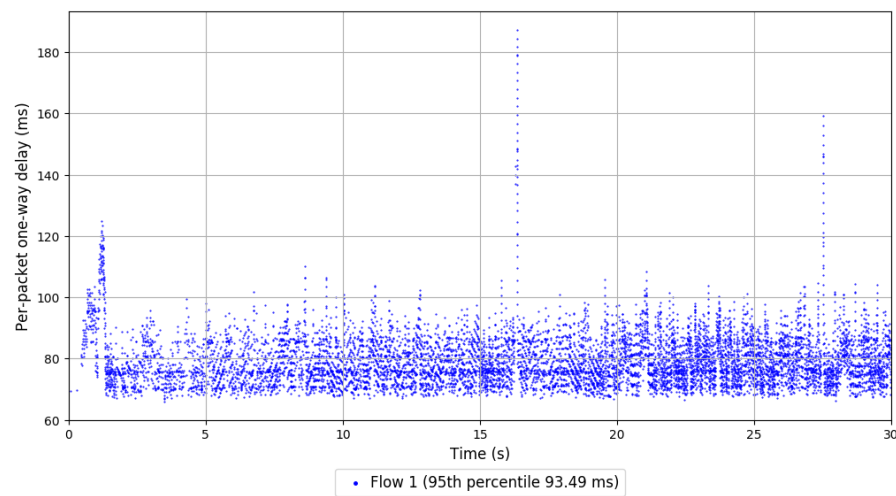
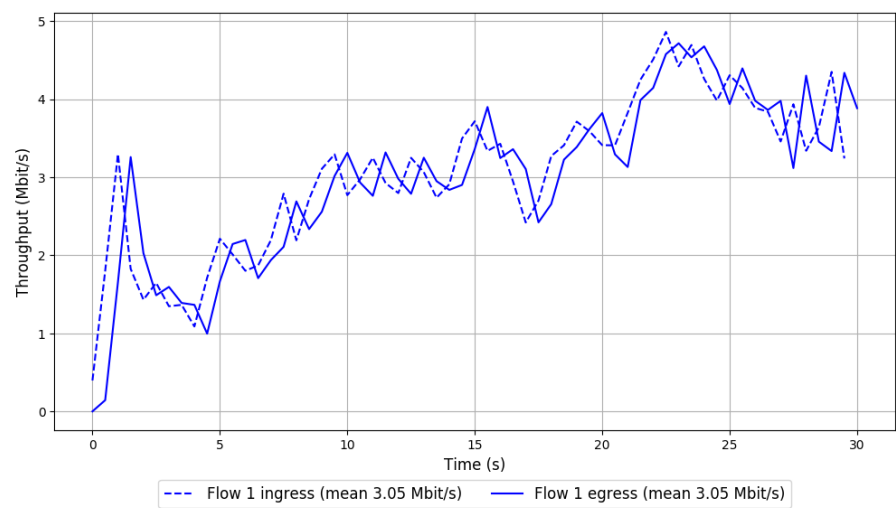


Run 3: Statistics of PCC-Vivace

Start at: 2018-06-18 08:28:45
End at: 2018-06-18 08:29:15
Local clock offset: -0.276 ms
Remote clock offset: -0.728 ms

Below is generated by plot.py at 2018-06-18 08:45:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 93.491 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 93.491 ms
Loss rate: 0.08%

Run 3: Report of PCC-Vivace — Data Link

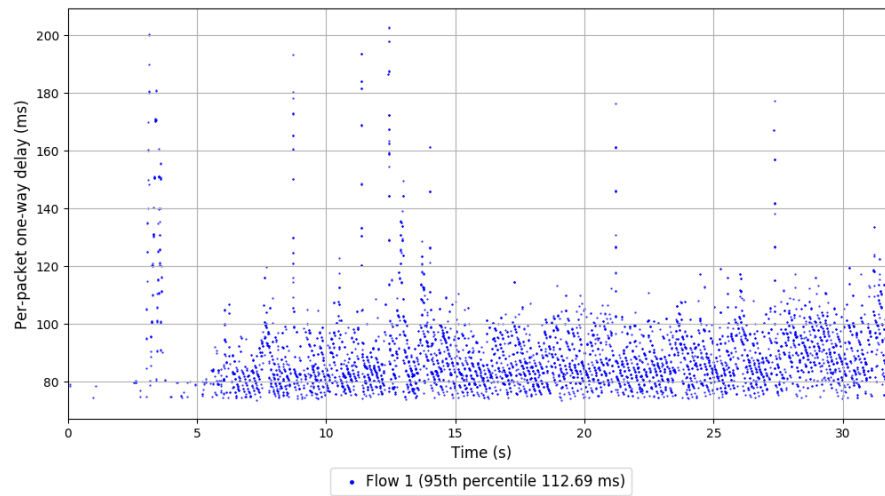
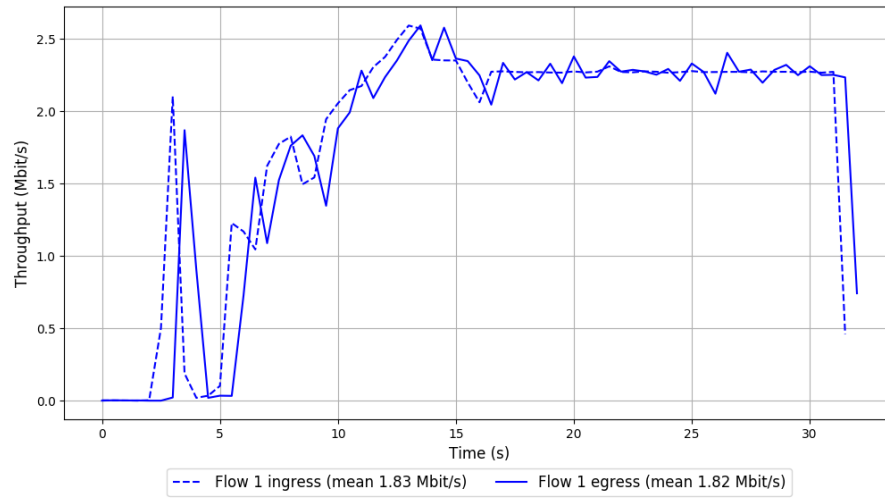


```
Run 1: Statistics of WebRTC media

Start at: 2018-06-18 07:59:12
End at: 2018-06-18 07:59:42
Local clock offset: 2.284 ms
Remote clock offset: -1.205 ms

# Below is generated by plot.py at 2018-06-18 08:45:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 112.693 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 112.693 ms
Loss rate: 0.13%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-06-18 08:21:42

End at: 2018-06-18 08:22:12

Local clock offset: 0.678 ms

Remote clock offset: -0.971 ms

Below is generated by plot.py at 2018-06-18 08:45:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 492.383 ms

Loss rate: 0.04%

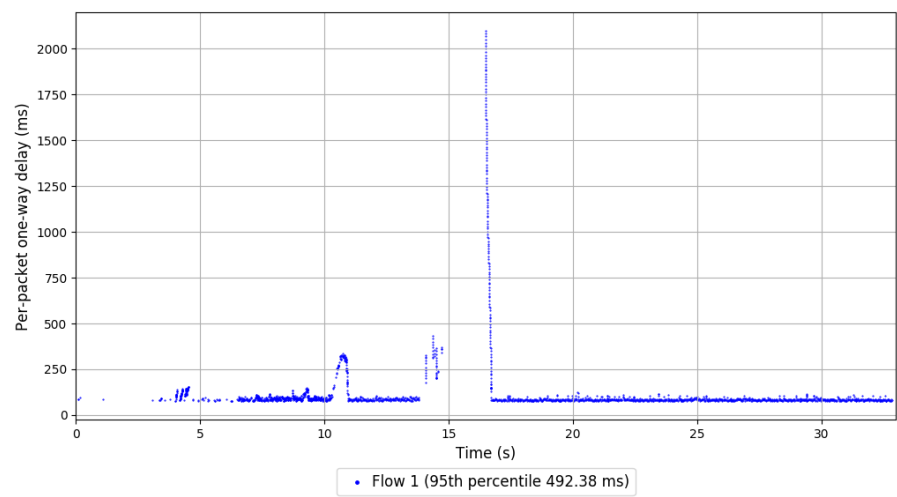
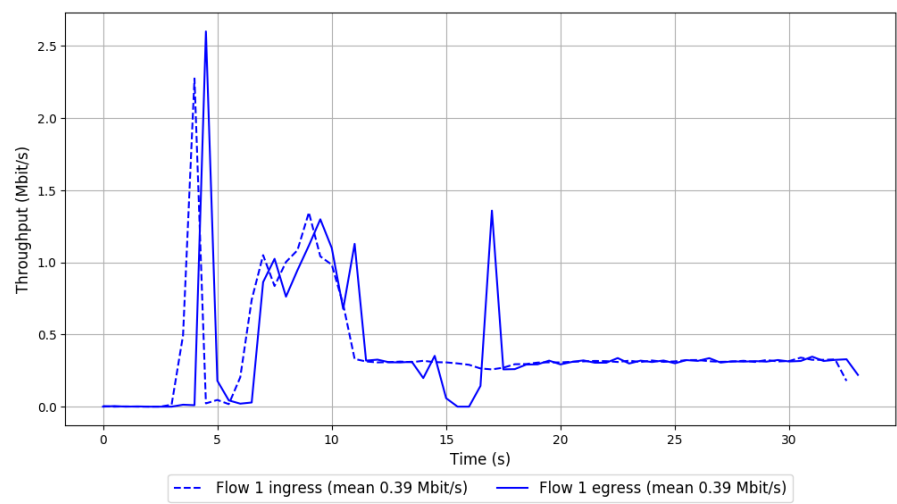
-- Flow 1:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 492.383 ms

Loss rate: 0.04%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-06-18 08:44:29
End at: 2018-06-18 08:44:59
Local clock offset: 1.824 ms
Remote clock offset: -1.194 ms

Below is generated by plot.py at 2018-06-18 08:45:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 1366.579 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 1366.579 ms
Loss rate: 1.05%

Run 3: Report of WebRTC media — Data Link

