

Pantheon Report

Generated at 2018-06-18 08:42:16 (UTC).

Data path: AWS California 1 Ethernet (*local*) →Stanford ppp0 ppp0 (*remote*).

Repeated the test of 16 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

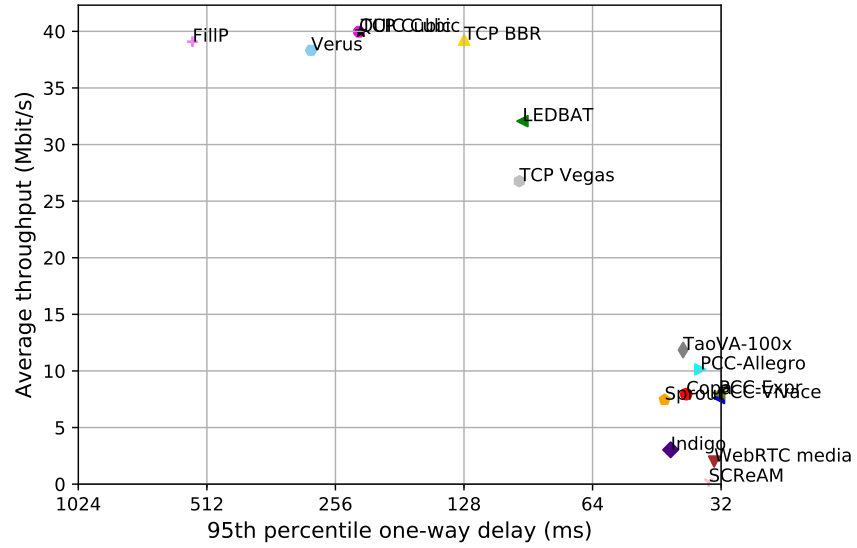
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

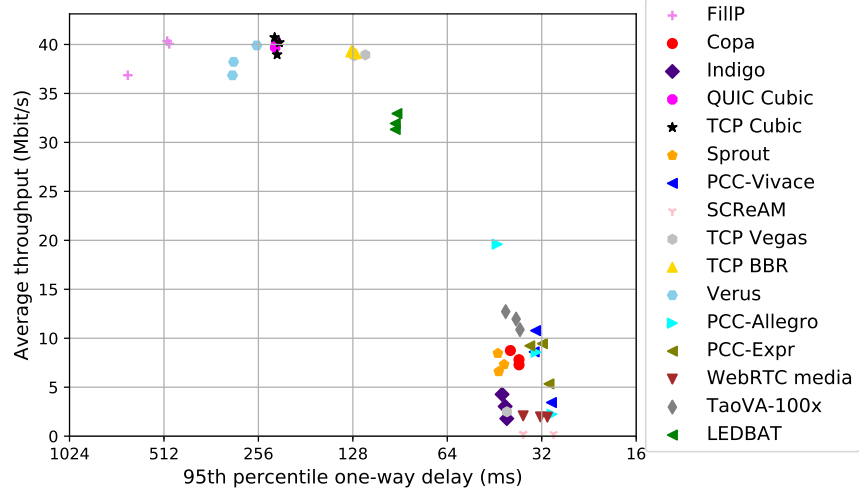
Git summary:

```
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-quick @ 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 California 1 to Stanford ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS California 1 to Stanford 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	39.26	127.89	0.29
Copa	3	7.95	38.63	0.07
TCP Cubic	3	39.96	223.32	0.54
FillP	3	39.09	553.30	27.65
Indigo	3	3.03	42.01	0.01
LEDBAT	3	32.06	93.40	0.34
PCC-Allegro	3	10.14	35.81	0.04
PCC-Expr	3	8.00	32.38	0.04
QUIC Cubic	2	39.97	225.41	0.59
SCReAM	3	0.22	34.23	0.13
Sprout	3	7.46	43.40	0.06
TaoVA-100x	3	11.85	39.28	0.03
TCP Vegas	3	26.76	94.97	0.07
Verus	3	38.33	291.92	1.87
PCC-Vivace	3	7.61	32.37	0.02
WebRTC media	3	1.99	33.22	0.04

Run 1: Statistics of TCP BBR

Start at: 2018-06-18 07:44:40

End at: 2018-06-18 07:45:10

Local clock offset: 2.214 ms

Remote clock offset: 1.469 ms

Below is generated by plot.py at 2018-06-18 08:40:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.22 Mbit/s

95th percentile per-packet one-way delay: 129.874 ms

Loss rate: 0.34%

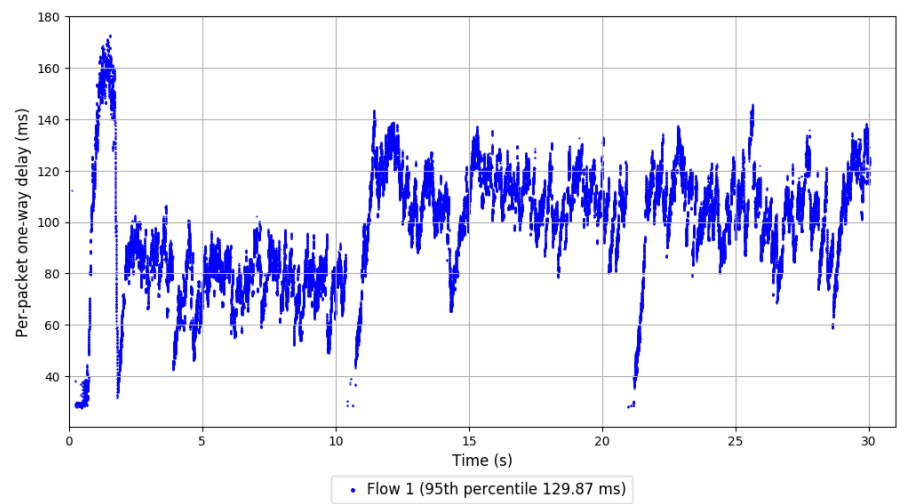
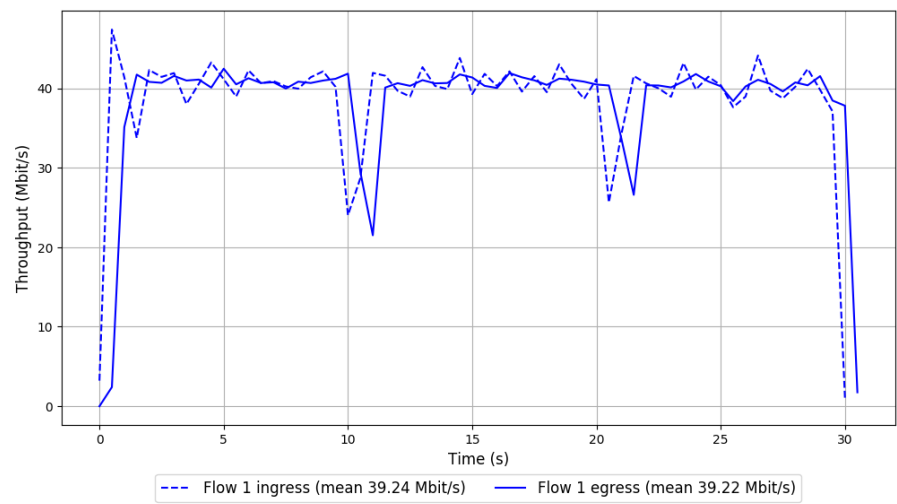
-- Flow 1:

Average throughput: 39.22 Mbit/s

95th percentile per-packet one-way delay: 129.874 ms

Loss rate: 0.34%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-06-18 08:05:30

End at: 2018-06-18 08:06:00

Local clock offset: 0.752 ms

Remote clock offset: 3.397 ms

Below is generated by plot.py at 2018-06-18 08:40:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.05 Mbit/s

95th percentile per-packet one-way delay: 125.209 ms

Loss rate: 0.23%

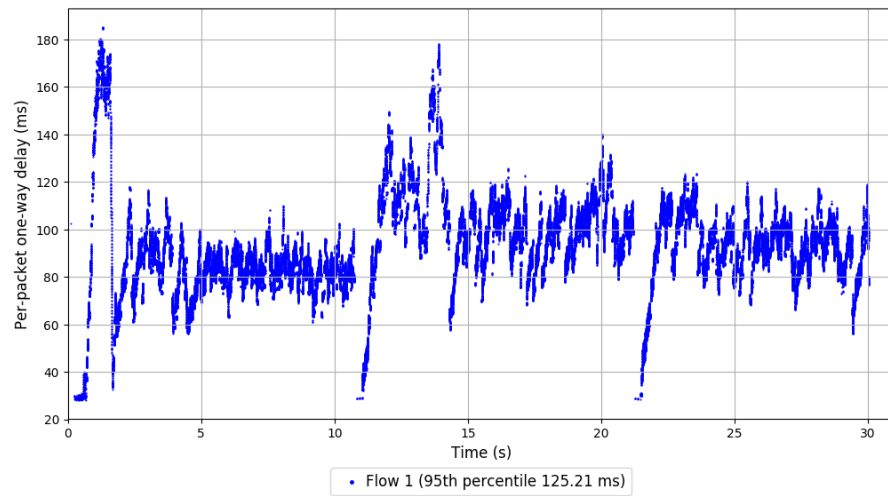
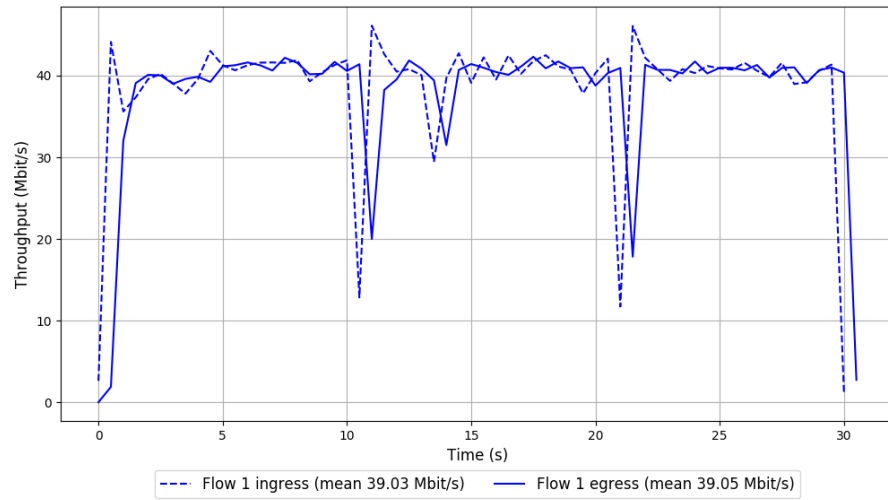
-- Flow 1:

Average throughput: 39.05 Mbit/s

95th percentile per-packet one-way delay: 125.209 ms

Loss rate: 0.23%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-06-18 08:26:31

End at: 2018-06-18 08:27:01

Local clock offset: 2.114 ms

Remote clock offset: 0.102 ms

Below is generated by plot.py at 2018-06-18 08:40:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.50 Mbit/s

95th percentile per-packet one-way delay: 128.589 ms

Loss rate: 0.30%

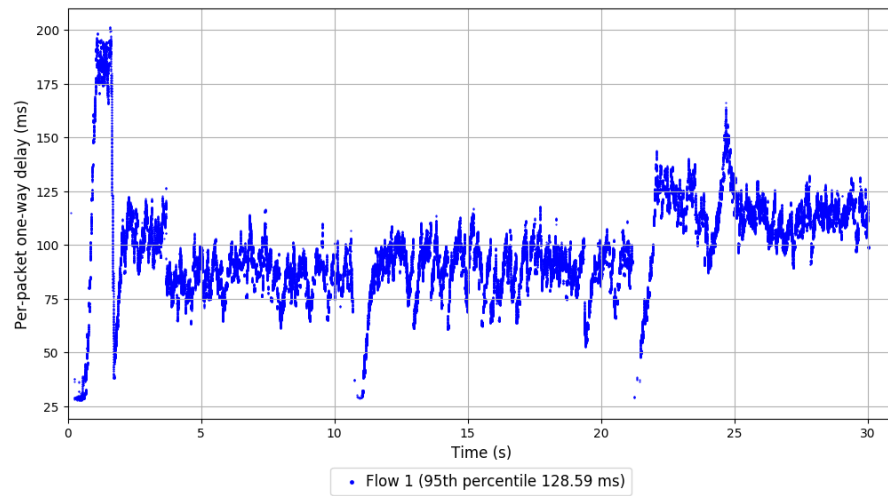
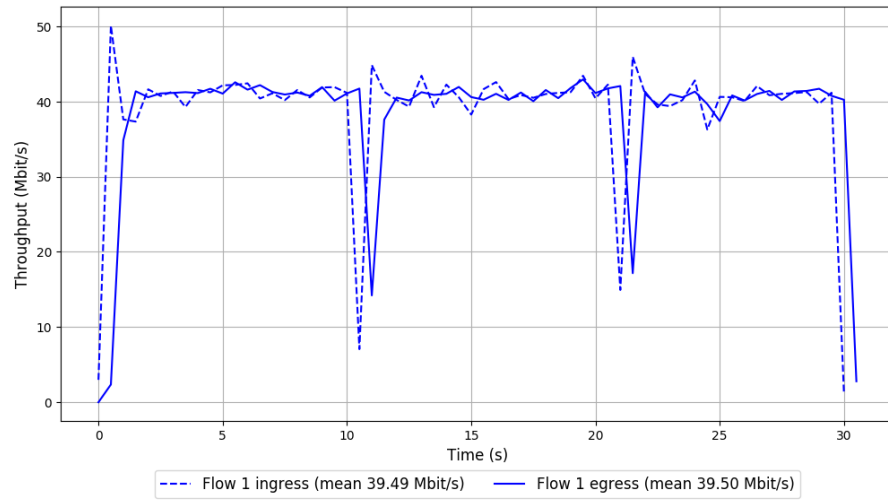
-- Flow 1:

Average throughput: 39.50 Mbit/s

95th percentile per-packet one-way delay: 128.589 ms

Loss rate: 0.30%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-06-18 07:43:22

End at: 2018-06-18 07:43:52

Local clock offset: 2.272 ms

Remote clock offset: 1.171 ms

Below is generated by plot.py at 2018-06-18 08:40:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.81 Mbit/s

95th percentile per-packet one-way delay: 37.814 ms

Loss rate: 0.03%

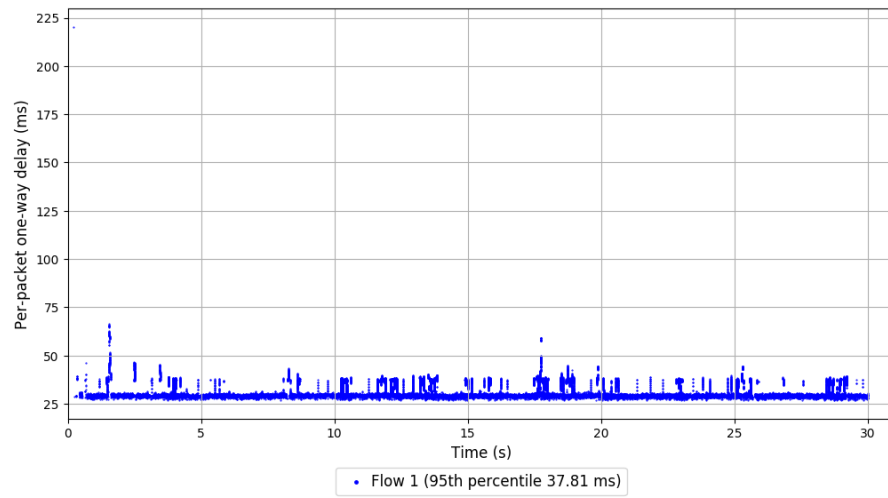
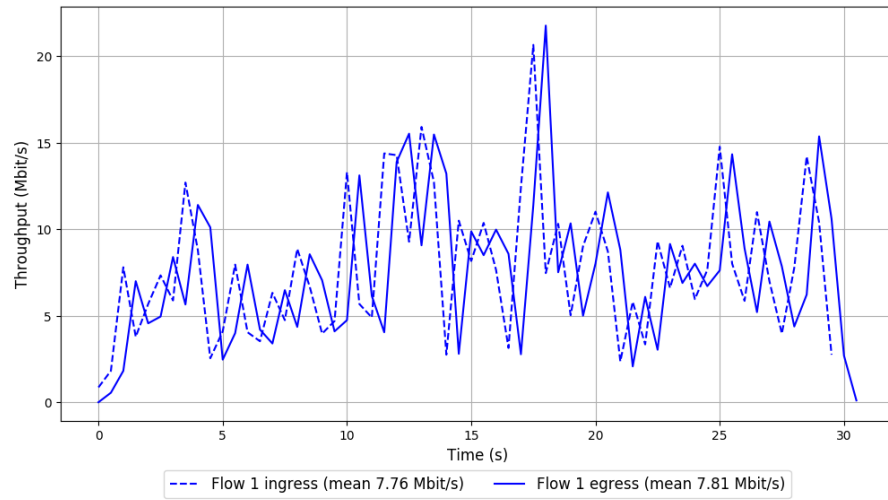
-- Flow 1:

Average throughput: 7.81 Mbit/s

95th percentile per-packet one-way delay: 37.814 ms

Loss rate: 0.03%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-06-18 08:04:12

End at: 2018-06-18 08:04:42

Local clock offset: 0.56 ms

Remote clock offset: 3.365 ms

Below is generated by plot.py at 2018-06-18 08:40:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.28 Mbit/s

95th percentile per-packet one-way delay: 37.805 ms

Loss rate: 0.15%

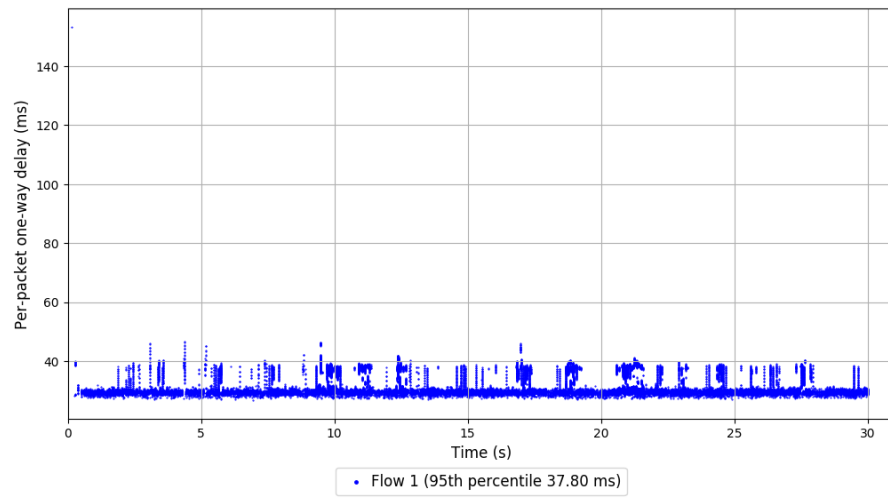
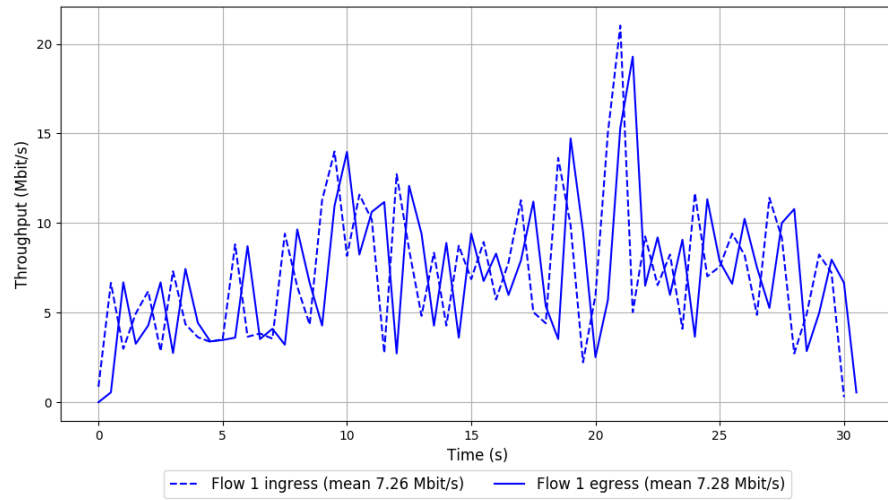
-- Flow 1:

Average throughput: 7.28 Mbit/s

95th percentile per-packet one-way delay: 37.805 ms

Loss rate: 0.15%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-06-18 08:25:12

End at: 2018-06-18 08:25:43

Local clock offset: 2.161 ms

Remote clock offset: 0.277 ms

Below is generated by plot.py at 2018-06-18 08:40:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.75 Mbit/s

95th percentile per-packet one-way delay: 40.276 ms

Loss rate: 0.04%

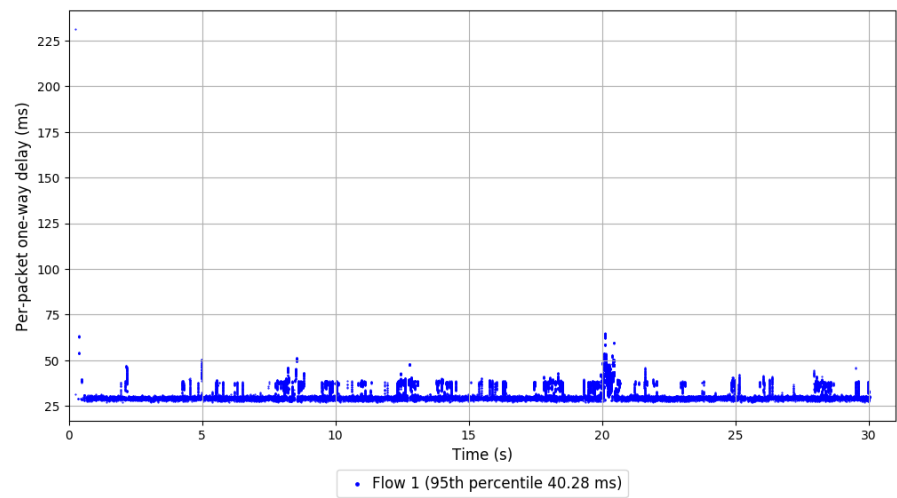
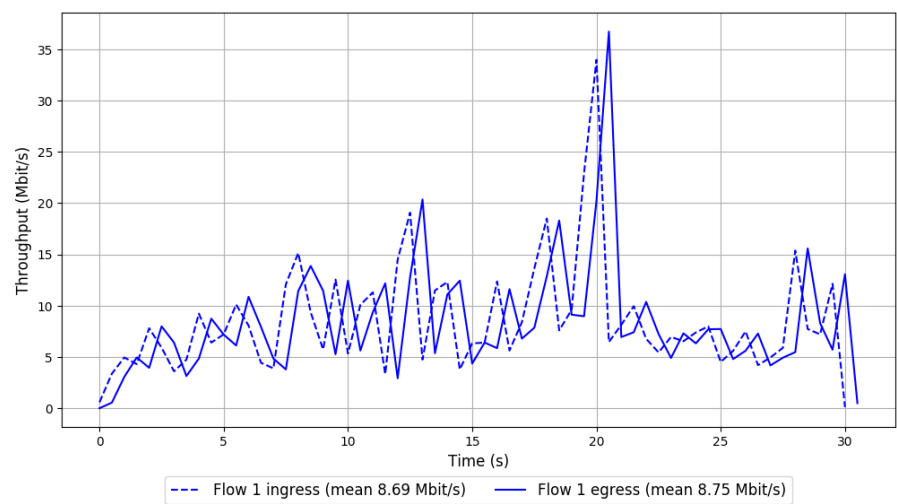
-- Flow 1:

Average throughput: 8.75 Mbit/s

95th percentile per-packet one-way delay: 40.276 ms

Loss rate: 0.04%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-06-18 07:57:40

End at: 2018-06-18 07:58:10

Local clock offset: 1.111 ms

Remote clock offset: 3.002 ms

Below is generated by plot.py at 2018-06-18 08:40:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.96 Mbit/s

95th percentile per-packet one-way delay: 223.187 ms

Loss rate: 0.61%

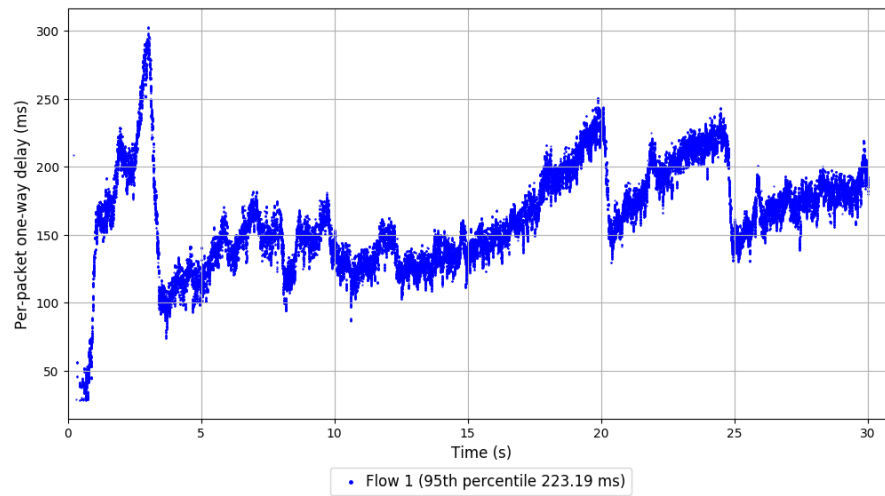
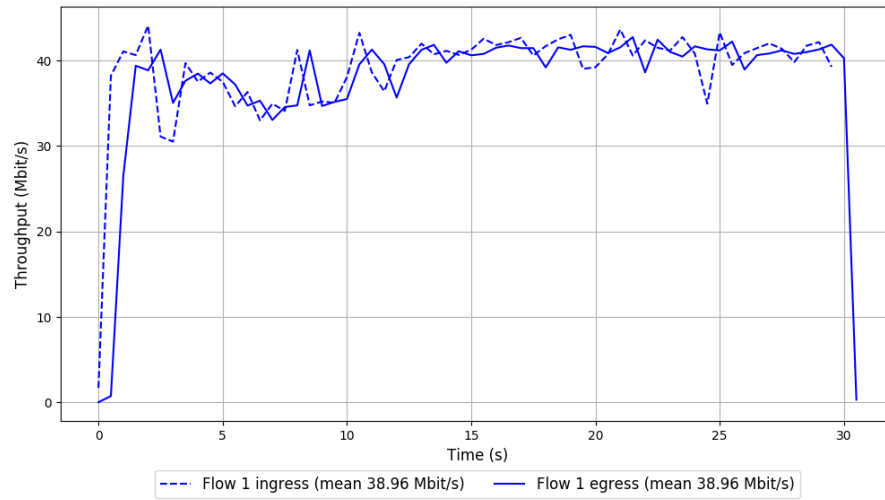
-- Flow 1:

Average throughput: 38.96 Mbit/s

95th percentile per-packet one-way delay: 223.187 ms

Loss rate: 0.61%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

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

End at: 2018-06-18 08:19:09

Local clock offset: 2.232 ms

Remote clock offset: 1.261 ms

Below is generated by plot.py at 2018-06-18 08:40:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.71 Mbit/s

95th percentile per-packet one-way delay: 227.286 ms

Loss rate: 0.43%

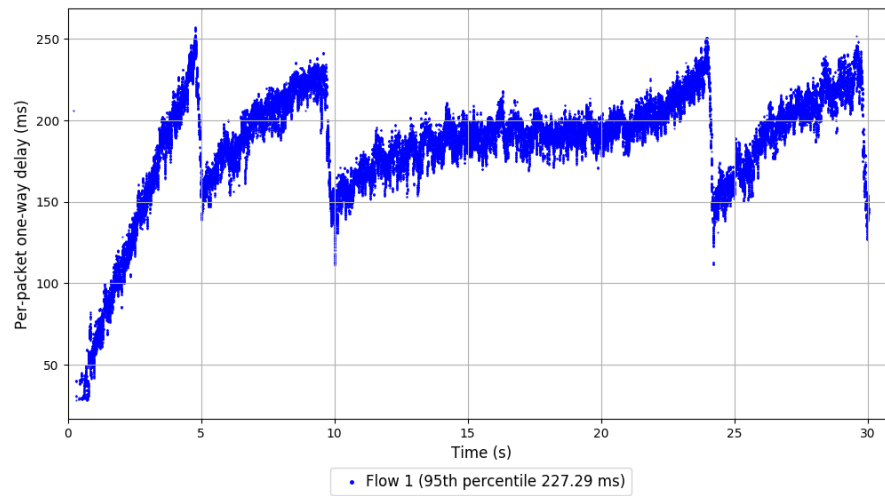
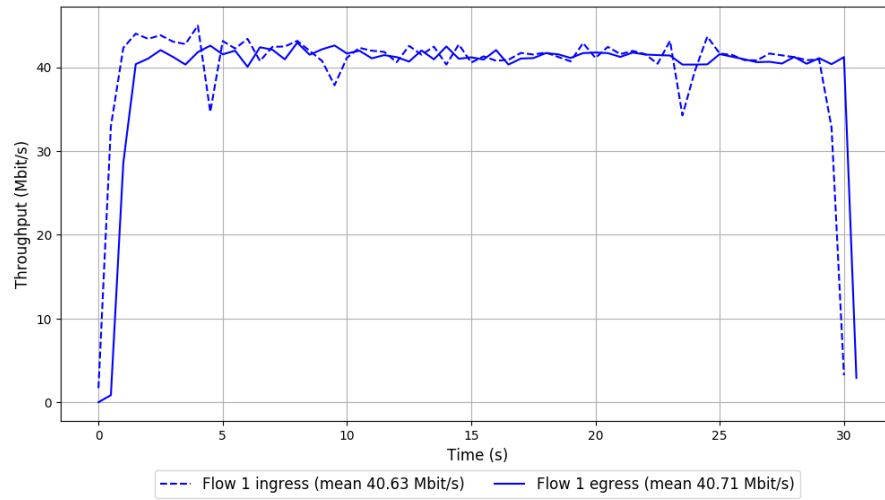
-- Flow 1:

Average throughput: 40.71 Mbit/s

95th percentile per-packet one-way delay: 227.286 ms

Loss rate: 0.43%

Run 2: Report of TCP Cubic — Data Link

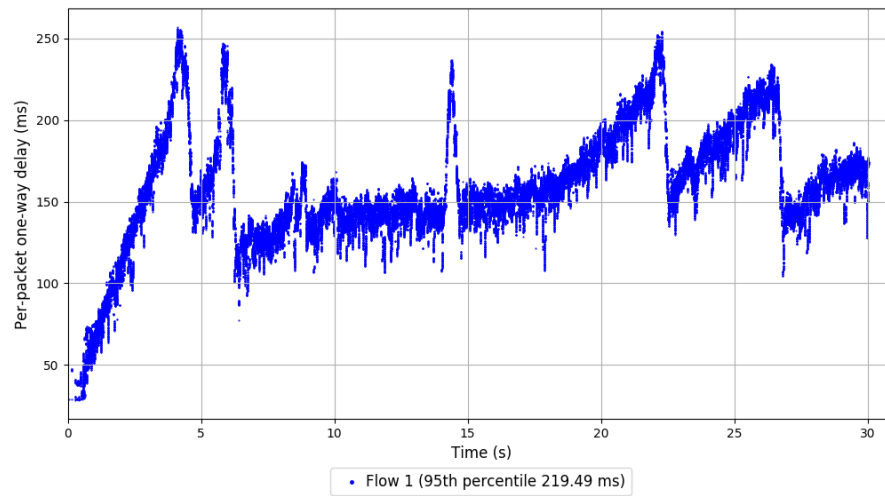
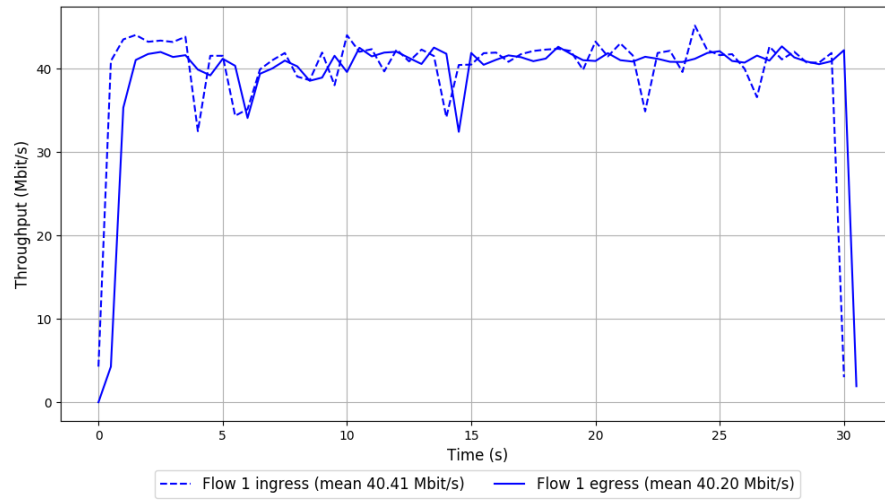


Run 3: Statistics of TCP Cubic

Start at: 2018-06-18 08:39:33
End at: 2018-06-18 08:40:03
Local clock offset: 2.434 ms
Remote clock offset: -0.673 ms

Below is generated by plot.py at 2018-06-18 08:41:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 40.20 Mbit/s
95th percentile per-packet one-way delay: 219.489 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 40.20 Mbit/s
95th percentile per-packet one-way delay: 219.489 ms
Loss rate: 0.57%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-06-18 07:52:28

End at: 2018-06-18 07:52:58

Local clock offset: 1.654 ms

Remote clock offset: 2.564 ms

Below is generated by plot.py at 2018-06-18 08:41:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.86 Mbit/s

95th percentile per-packet one-way delay: 667.445 ms

Loss rate: 28.28%

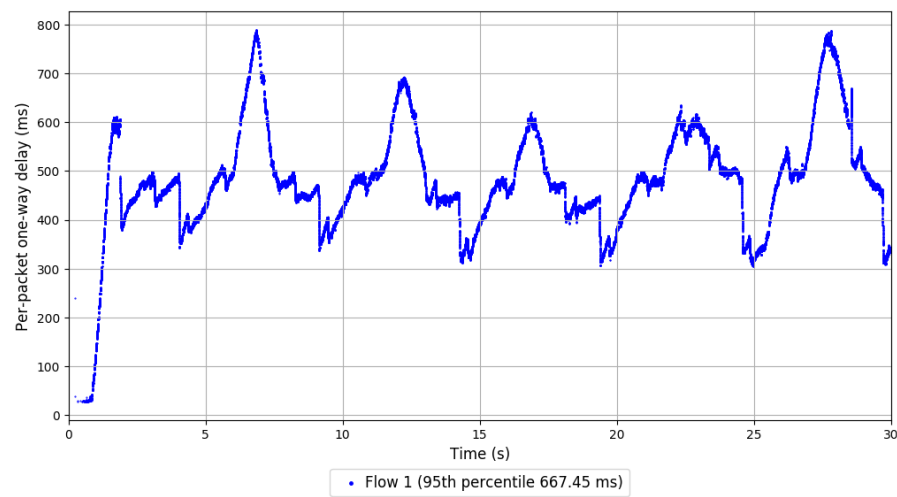
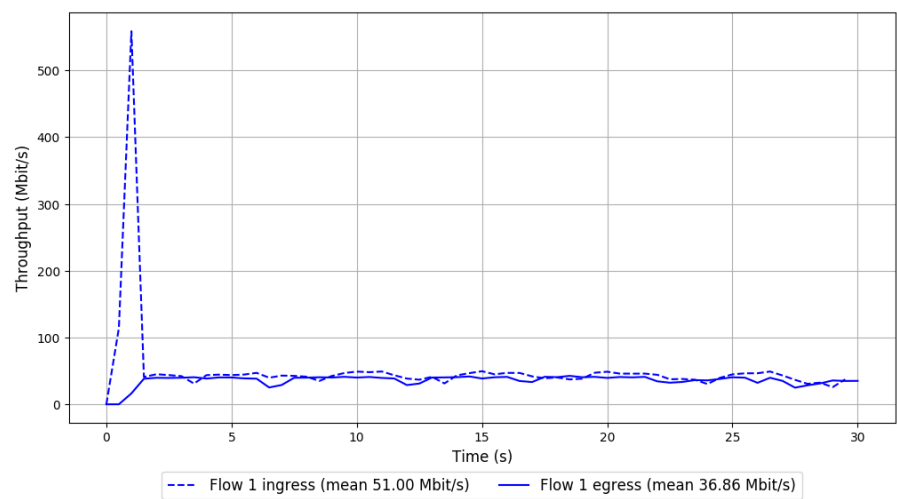
-- Flow 1:

Average throughput: 36.86 Mbit/s

95th percentile per-packet one-way delay: 667.445 ms

Loss rate: 28.28%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-06-18 08:13:24

End at: 2018-06-18 08:13:54

Local clock offset: 1.944 ms

Remote clock offset: 2.655 ms

Below is generated by plot.py at 2018-06-18 08:41:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.34 Mbit/s

95th percentile per-packet one-way delay: 500.012 ms

Loss rate: 28.36%

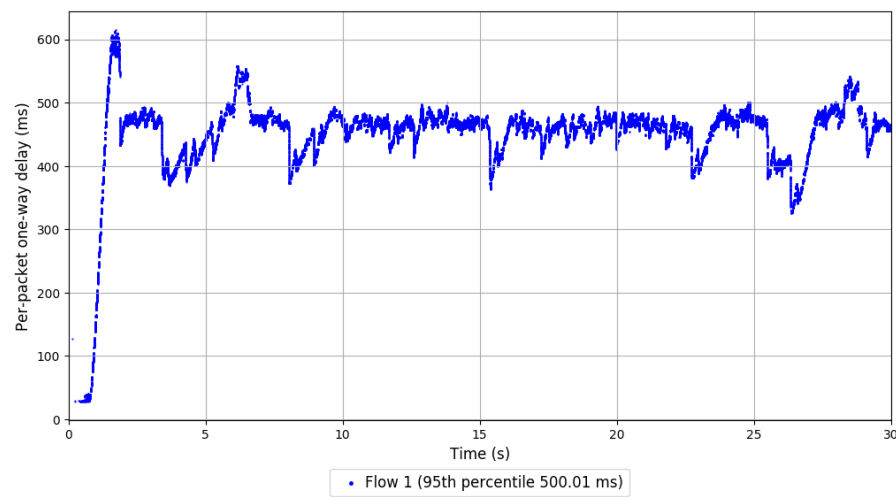
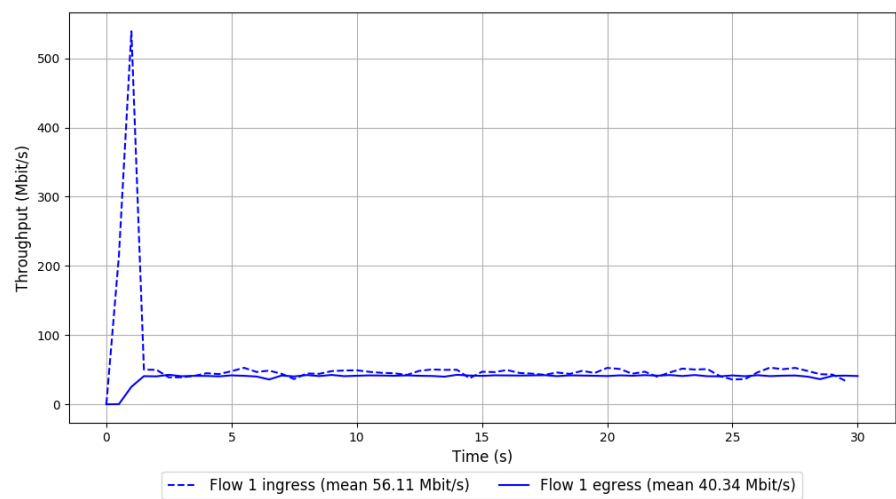
-- Flow 1:

Average throughput: 40.34 Mbit/s

95th percentile per-packet one-way delay: 500.012 ms

Loss rate: 28.36%

Run 2: Report of FillP — Data Link

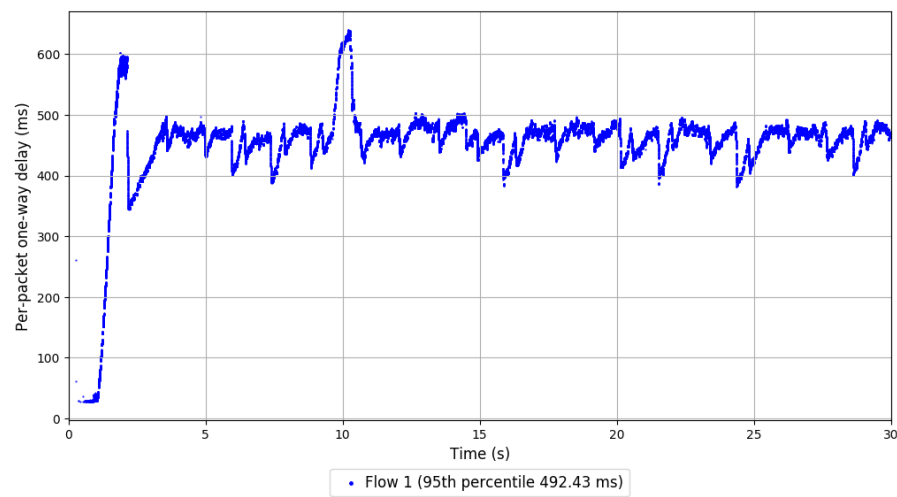
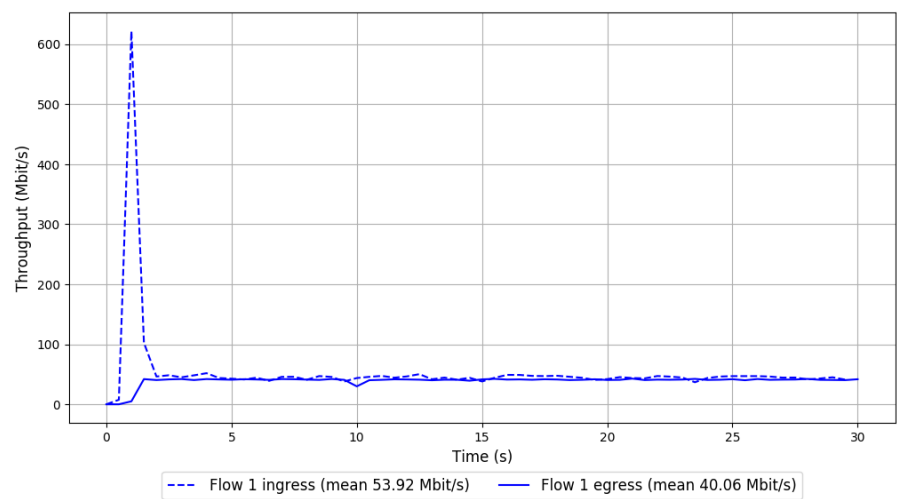


Run 3: Statistics of FillP

Start at: 2018-06-18 08:34:20
End at: 2018-06-18 08:34:50
Local clock offset: 1.721 ms
Remote clock offset: -0.417 ms

Below is generated by plot.py at 2018-06-18 08:41:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 40.06 Mbit/s
95th percentile per-packet one-way delay: 492.434 ms
Loss rate: 26.30%
-- Flow 1:
Average throughput: 40.06 Mbit/s
95th percentile per-packet one-way delay: 492.434 ms
Loss rate: 26.30%

Run 3: Report of FillP — Data Link



Run 1: Statistics of Indigo

Start at: 2018-06-18 07:48:34

End at: 2018-06-18 07:49:04

Local clock offset: 1.877 ms

Remote clock offset: 2.134 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.04 Mbit/s

95th percentile per-packet one-way delay: 41.857 ms

Loss rate: 0.01%

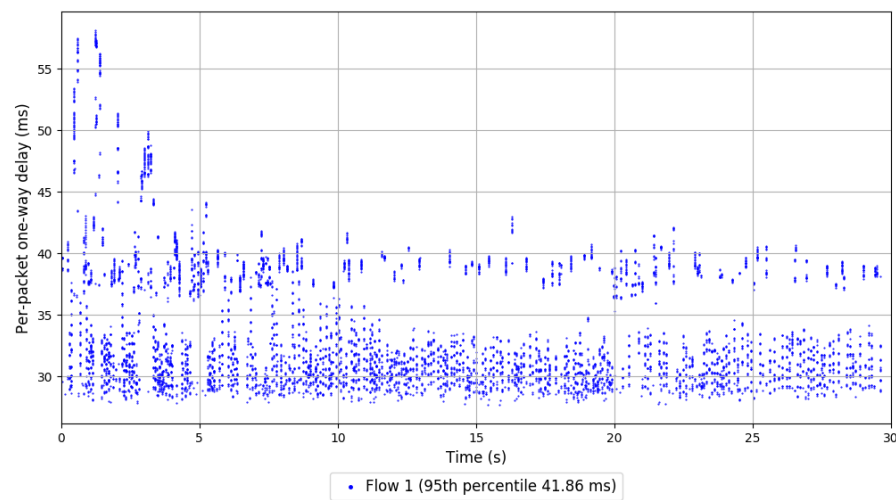
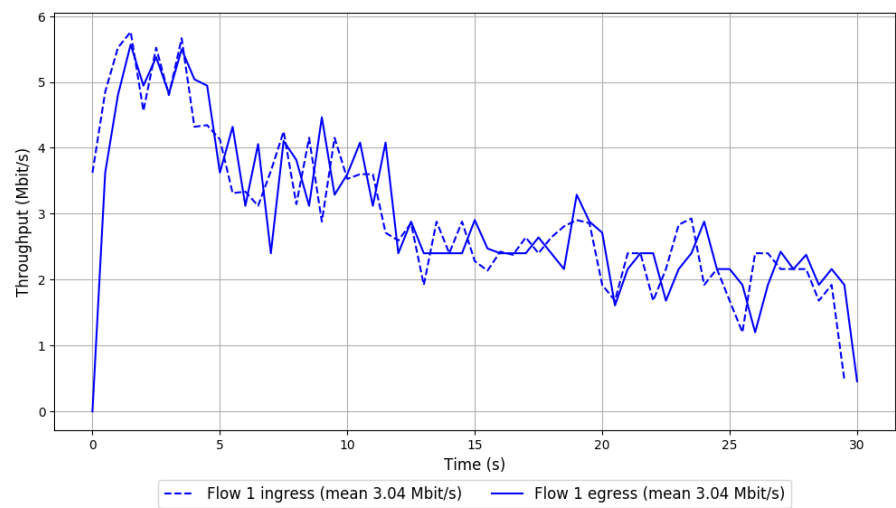
-- Flow 1:

Average throughput: 3.04 Mbit/s

95th percentile per-packet one-way delay: 41.857 ms

Loss rate: 0.01%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-06-18 08:09:30

End at: 2018-06-18 08:10:00

Local clock offset: 1.533 ms

Remote clock offset: 3.588 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.79 Mbit/s

95th percentile per-packet one-way delay: 41.361 ms

Loss rate: 0.02%

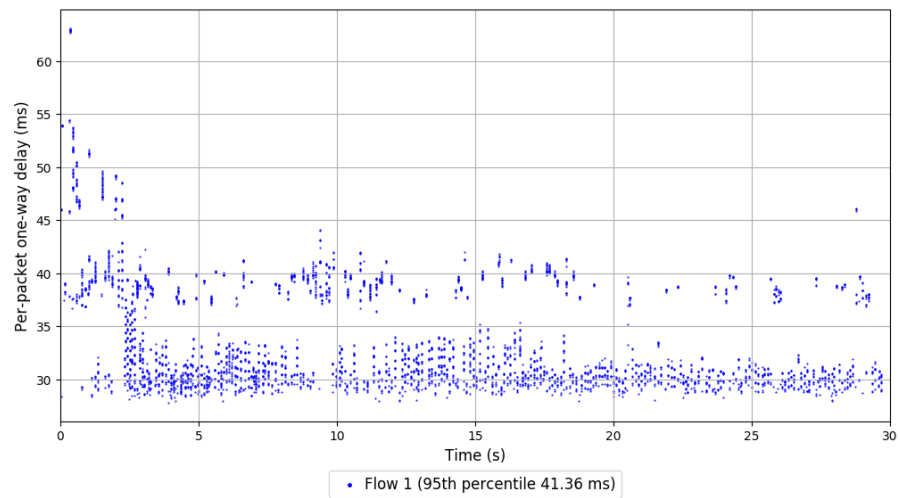
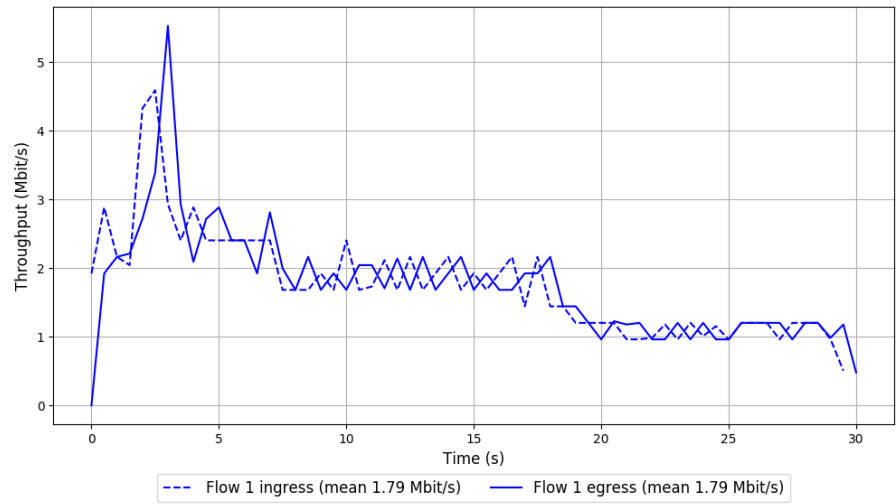
-- Flow 1:

Average throughput: 1.79 Mbit/s

95th percentile per-packet one-way delay: 41.361 ms

Loss rate: 0.02%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-06-18 08:30:26

End at: 2018-06-18 08:30:56

Local clock offset: 1.987 ms

Remote clock offset: -0.204 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.27 Mbit/s

95th percentile per-packet one-way delay: 42.807 ms

Loss rate: 0.00%

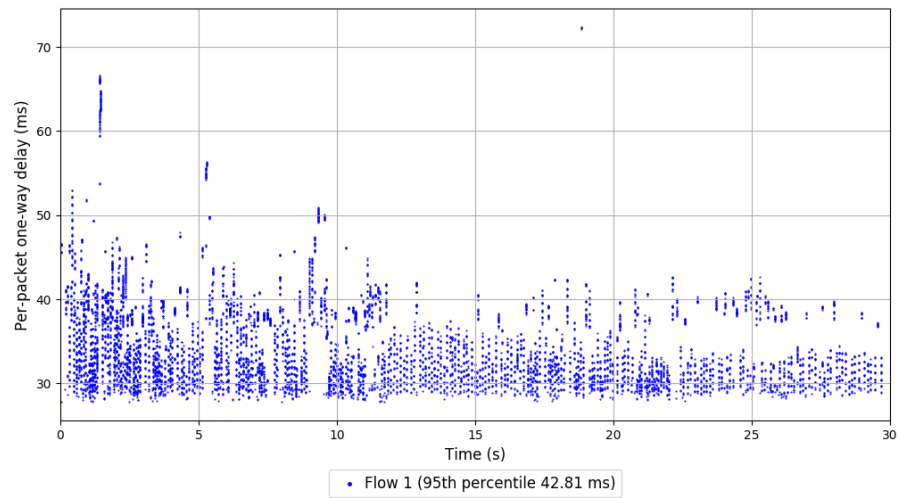
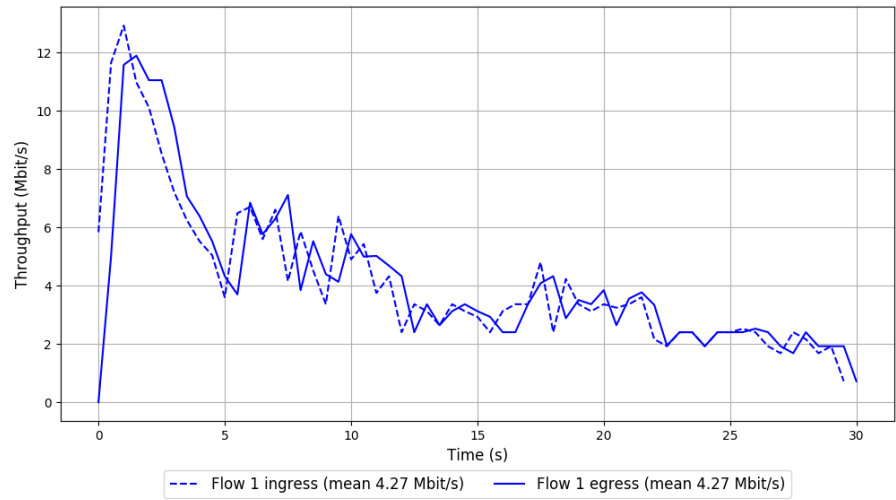
-- Flow 1:

Average throughput: 4.27 Mbit/s

95th percentile per-packet one-way delay: 42.807 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

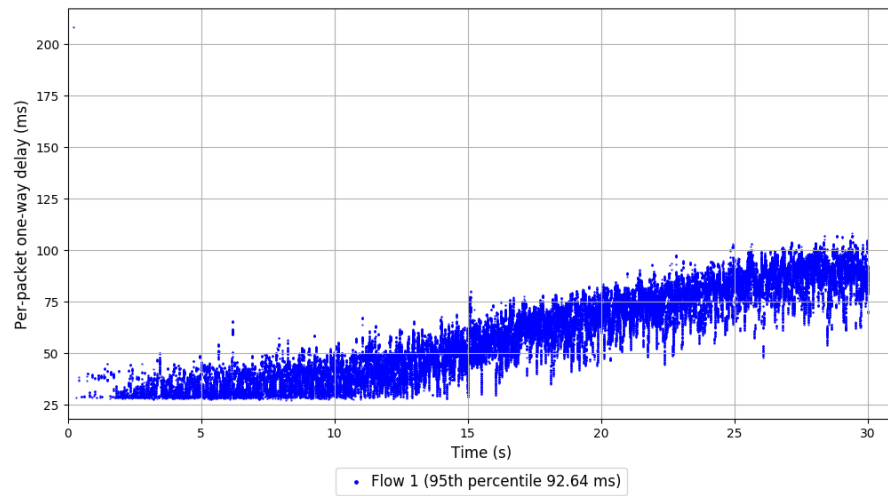
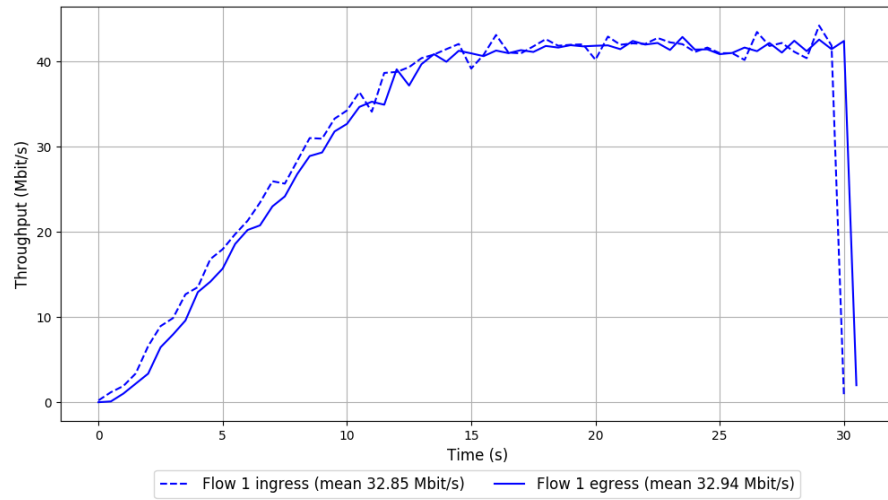


```
Run 1: Statistics of LEDBAT

Start at: 2018-06-18 07:40:45
End at: 2018-06-18 07:41:15
Local clock offset: 2.357 ms
Remote clock offset: 0.464 ms

# Below is generated by plot.py at 2018-06-18 08:41:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.94 Mbit/s
95th percentile per-packet one-way delay: 92.636 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 32.94 Mbit/s
95th percentile per-packet one-way delay: 92.636 ms
Loss rate: 0.32%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-06-18 08:01:35

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

Local clock offset: 0.732 ms

Remote clock offset: 3.202 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.32 Mbit/s

95th percentile per-packet one-way delay: 93.794 ms

Loss rate: 0.32%

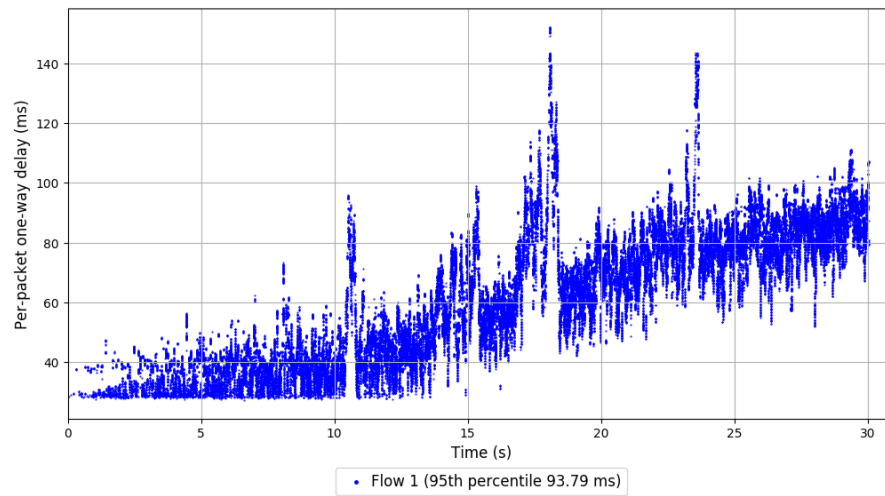
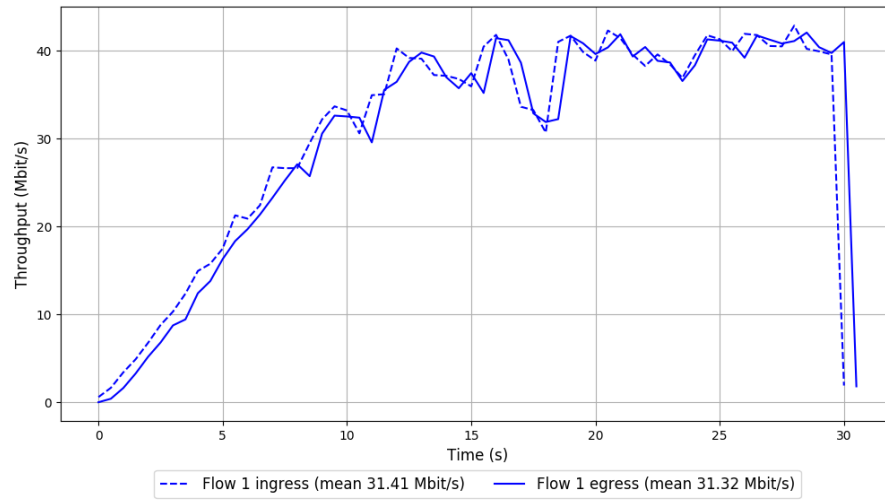
-- Flow 1:

Average throughput: 31.32 Mbit/s

95th percentile per-packet one-way delay: 93.794 ms

Loss rate: 0.32%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-06-18 08:22:35

End at: 2018-06-18 08:23:05

Local clock offset: 2.12 ms

Remote clock offset: 0.651 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.93 Mbit/s

95th percentile per-packet one-way delay: 93.761 ms

Loss rate: 0.37%

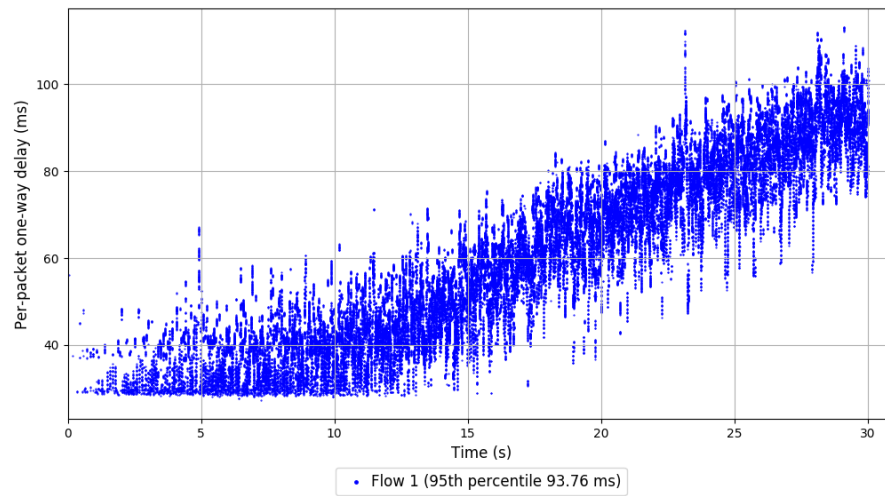
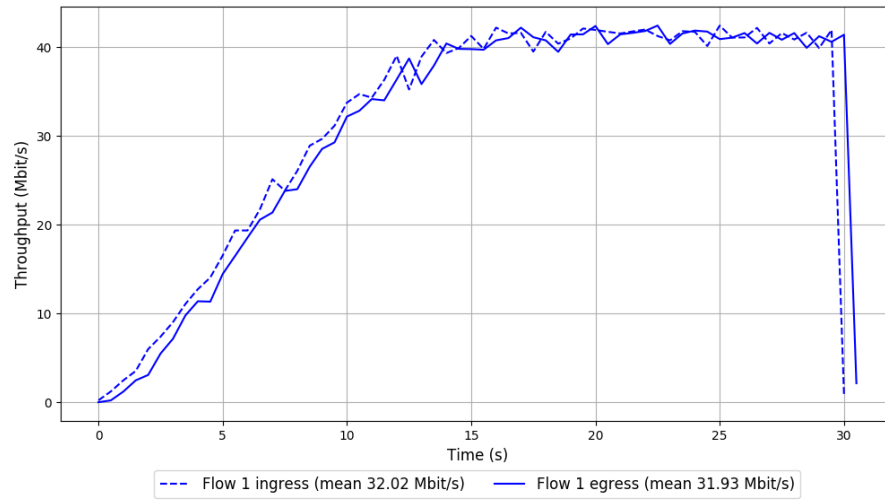
-- Flow 1:

Average throughput: 31.93 Mbit/s

95th percentile per-packet one-way delay: 93.761 ms

Loss rate: 0.37%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-06-18 07:45:59

End at: 2018-06-18 07:46:29

Local clock offset: 2.127 ms

Remote clock offset: 1.716 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 29.694 ms

Loss rate: 0.04%

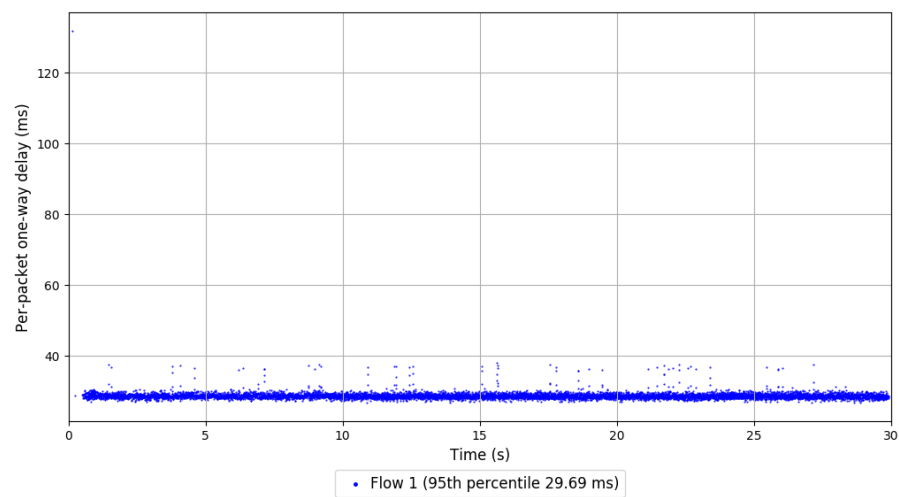
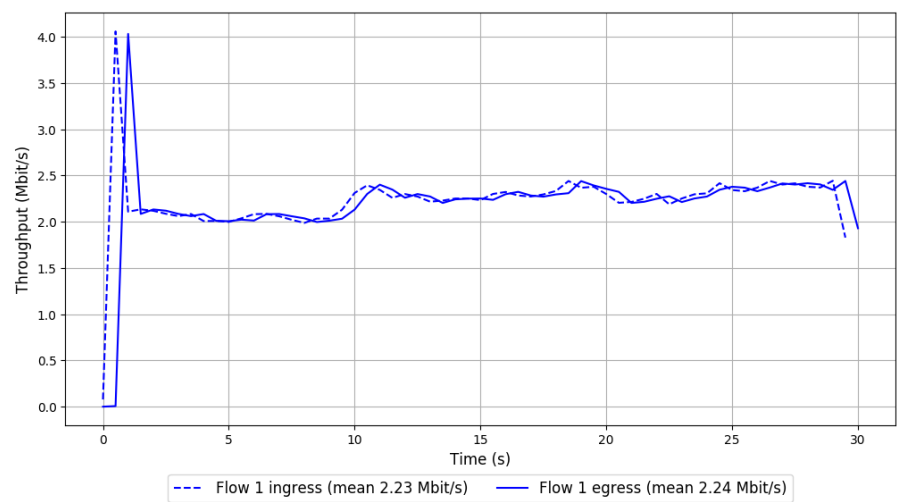
-- Flow 1:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 29.694 ms

Loss rate: 0.04%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-06-18 08:06:49

End at: 2018-06-18 08:07:19

Local clock offset: 1.144 ms

Remote clock offset: 3.477 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.60 Mbit/s

95th percentile per-packet one-way delay: 44.406 ms

Loss rate: 0.04%

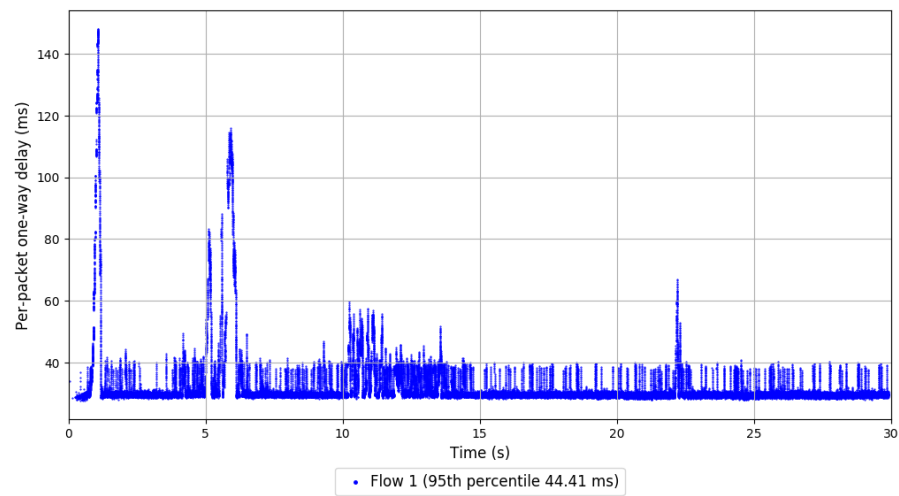
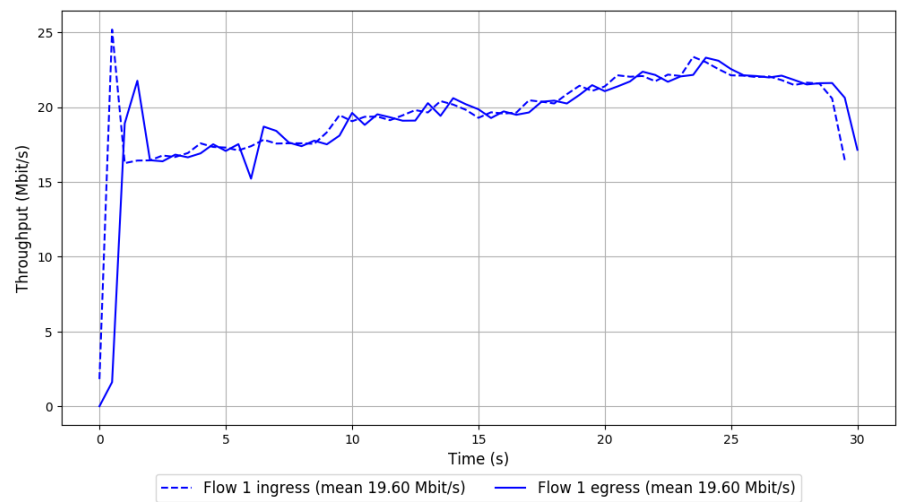
-- Flow 1:

Average throughput: 19.60 Mbit/s

95th percentile per-packet one-way delay: 44.406 ms

Loss rate: 0.04%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-06-18 08:27:50

End at: 2018-06-18 08:28:20

Local clock offset: 1.988 ms

Remote clock offset: -0.031 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.57 Mbit/s

95th percentile per-packet one-way delay: 33.344 ms

Loss rate: 0.04%

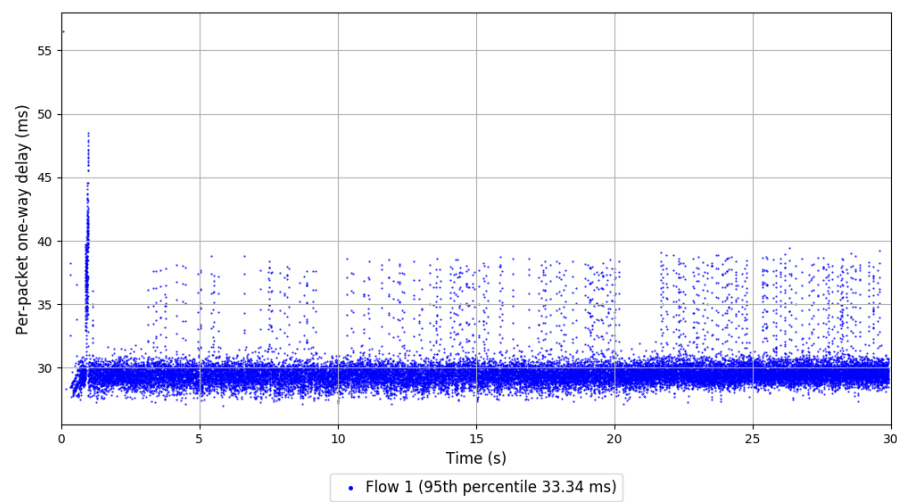
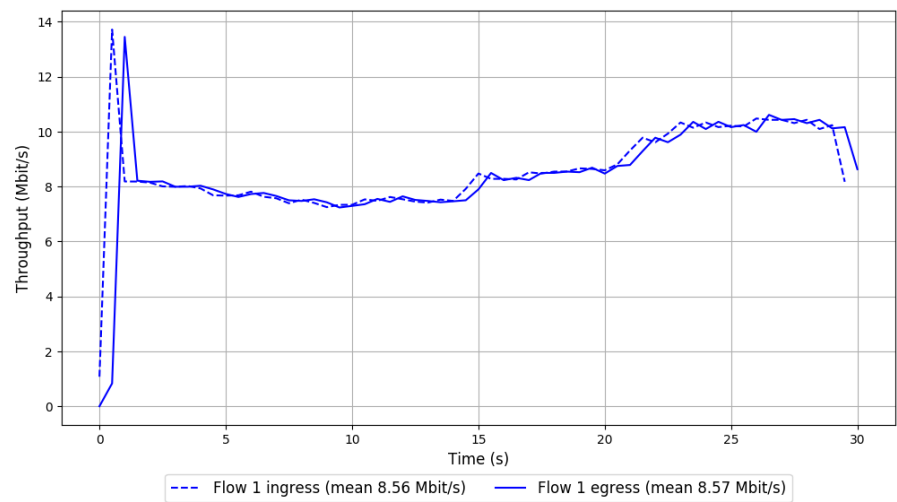
-- Flow 1:

Average throughput: 8.57 Mbit/s

95th percentile per-packet one-way delay: 33.344 ms

Loss rate: 0.04%

Run 3: Report of PCC-Allegro — Data Link

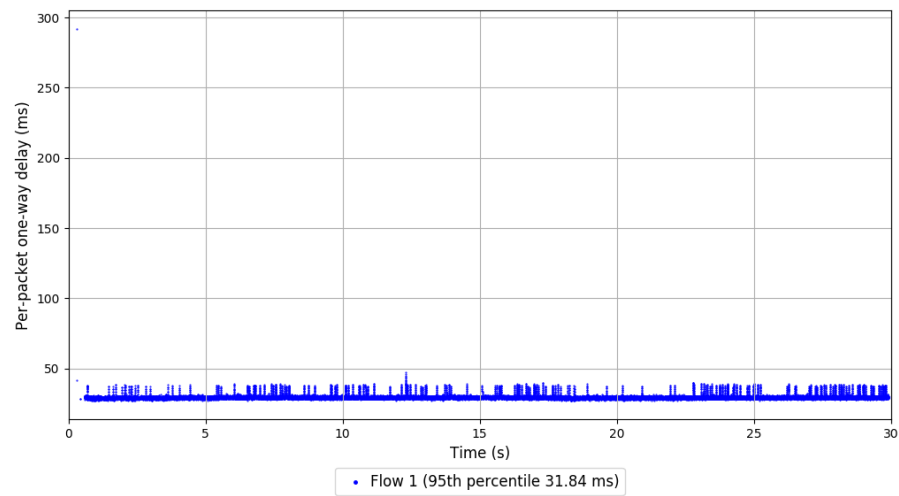
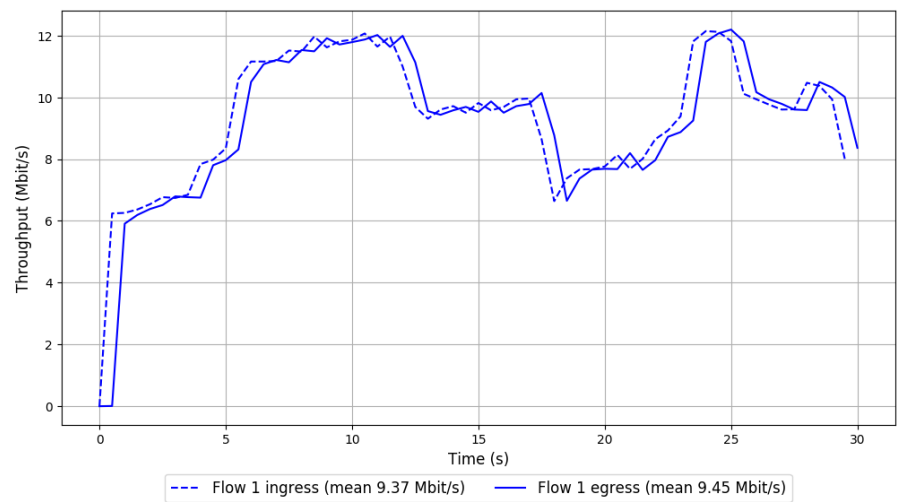


```
Run 1: Statistics of PCC-Expr

Start at: 2018-06-18 07:39:27
End at: 2018-06-18 07:39:57
Local clock offset: 2.29 ms
Remote clock offset: 0.045 ms

# Below is generated by plot.py at 2018-06-18 08:41:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.45 Mbit/s
95th percentile per-packet one-way delay: 31.836 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 9.45 Mbit/s
95th percentile per-packet one-way delay: 31.836 ms
Loss rate: 0.04%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-06-18 08:00:18

End at: 2018-06-18 08:00:48

Local clock offset: 0.94 ms

Remote clock offset: 3.182 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.34 Mbit/s

95th percentile per-packet one-way delay: 30.348 ms

Loss rate: 0.05%

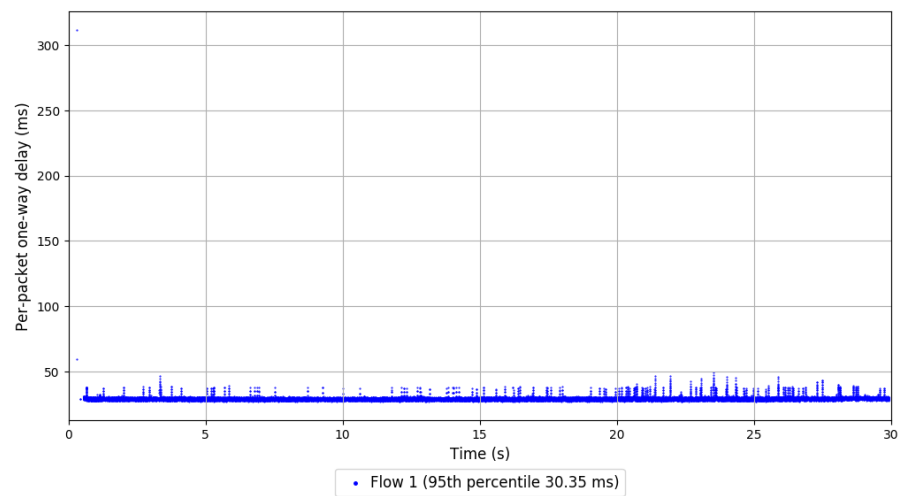
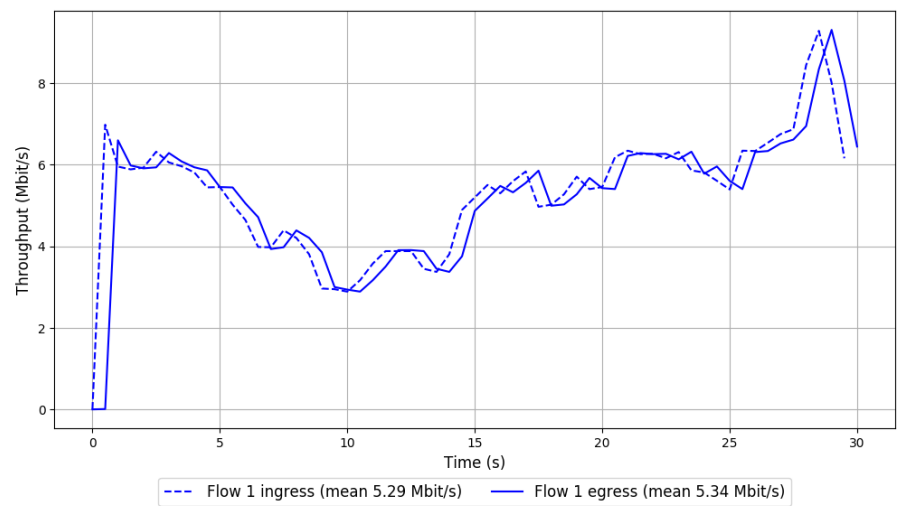
-- Flow 1:

Average throughput: 5.34 Mbit/s

95th percentile per-packet one-way delay: 30.348 ms

Loss rate: 0.05%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-06-18 08:21:17

End at: 2018-06-18 08:21:47

Local clock offset: 2.233 ms

Remote clock offset: 0.77 ms

Below is generated by plot.py at 2018-06-18 08:41:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.22 Mbit/s

95th percentile per-packet one-way delay: 34.945 ms

Loss rate: 0.04%

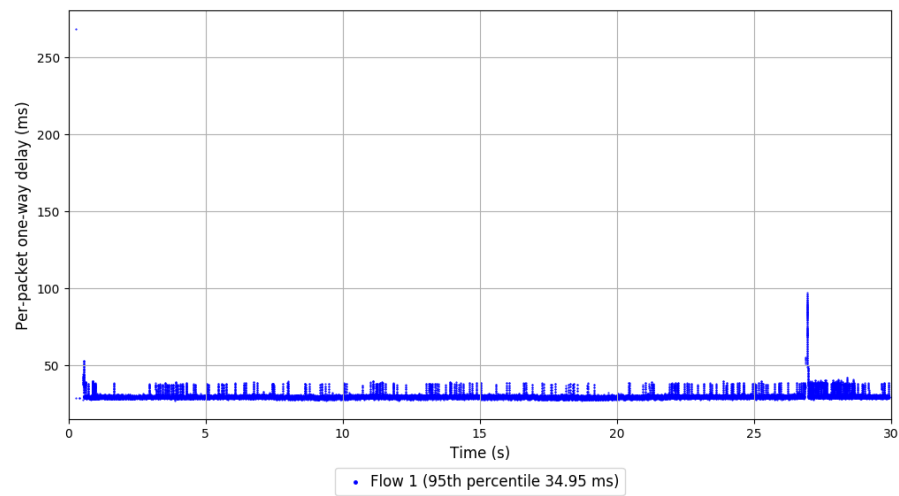
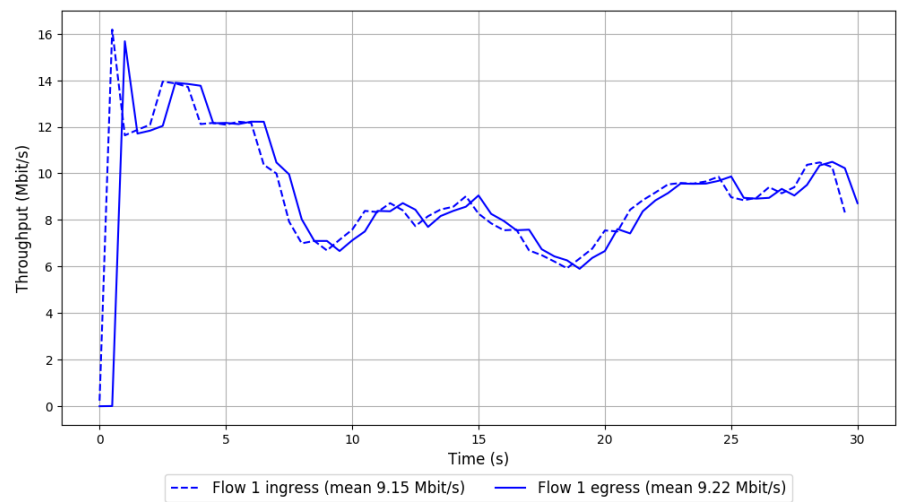
-- Flow 1:

Average throughput: 9.22 Mbit/s

95th percentile per-packet one-way delay: 34.945 ms

Loss rate: 0.04%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

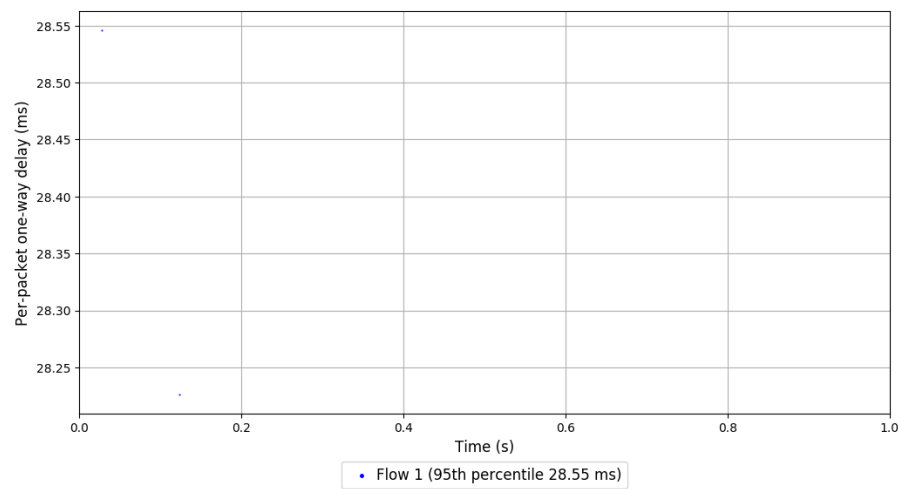
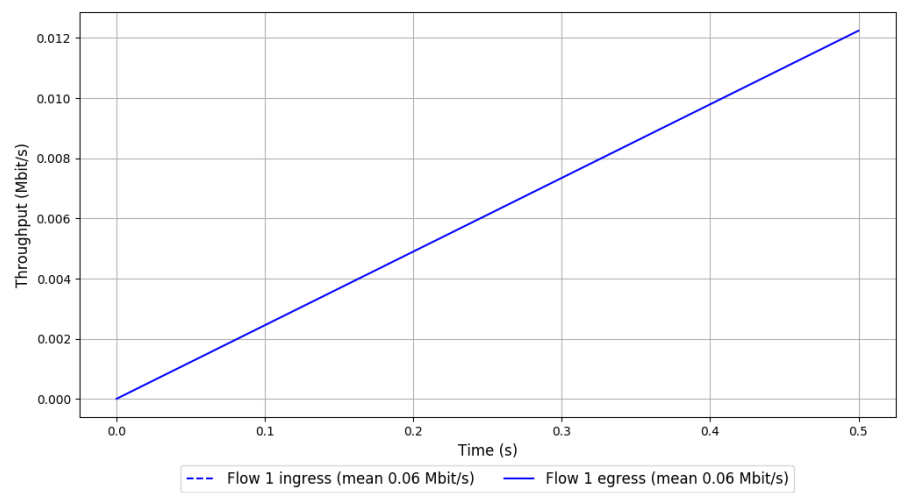
Start at: 2018-06-18 07:56:23

End at: 2018-06-18 07:56:53

Local clock offset: 1.32 ms

Remote clock offset: 2.96 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-06-18 08:17:20

End at: 2018-06-18 08:17:50

Local clock offset: 2.109 ms

Remote clock offset: 1.428 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.24 Mbit/s

95th percentile per-packet one-way delay: 224.537 ms

Loss rate: 0.73%

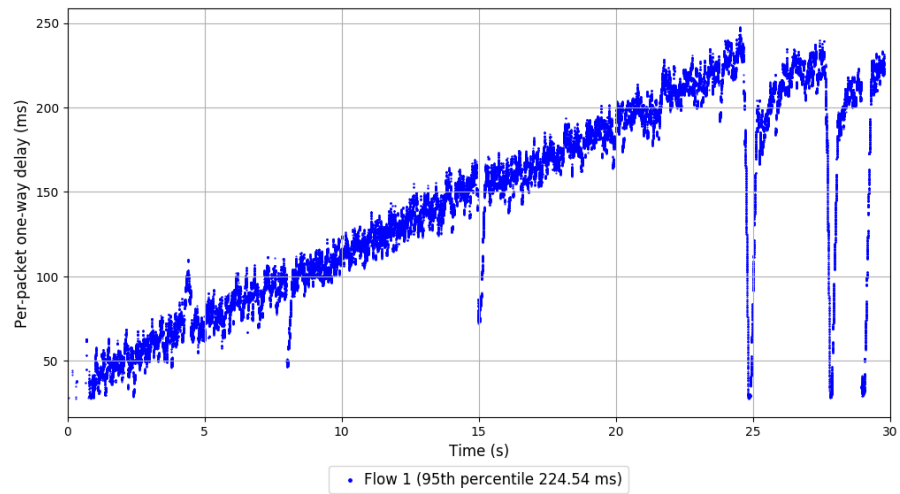
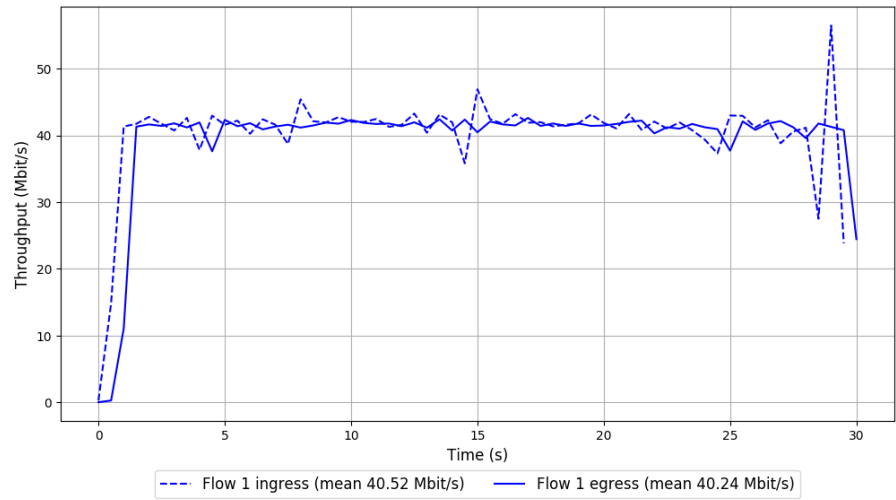
-- Flow 1:

Average throughput: 40.24 Mbit/s

95th percentile per-packet one-way delay: 224.537 ms

Loss rate: 0.73%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-06-18 08:38:14

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

Local clock offset: 2.298 ms

Remote clock offset: -0.647 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.69 Mbit/s

95th percentile per-packet one-way delay: 226.285 ms

Loss rate: 0.45%

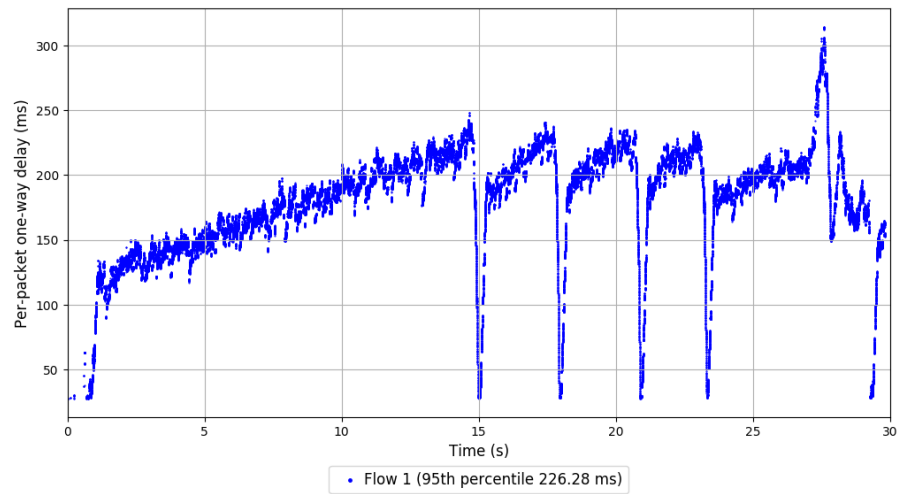
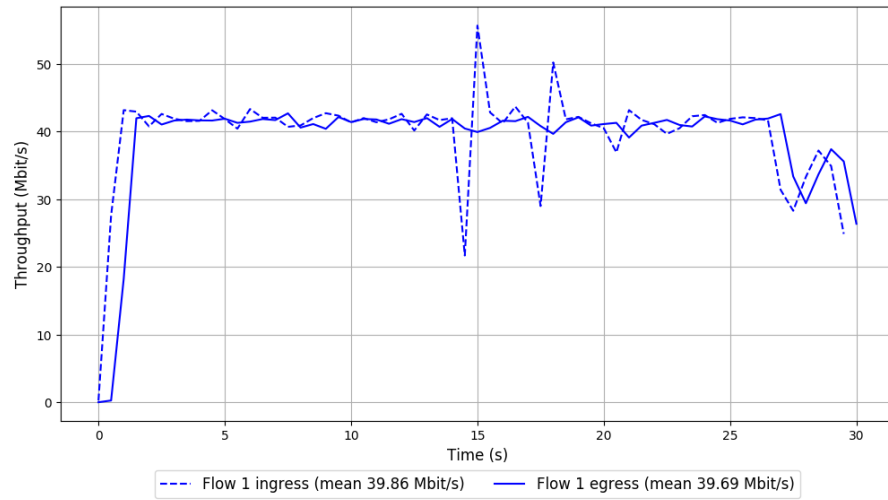
-- Flow 1:

Average throughput: 39.69 Mbit/s

95th percentile per-packet one-way delay: 226.285 ms

Loss rate: 0.45%

Run 3: Report of QUIC Cubic — Data Link



Run 1: Statistics of SCReAM

Start at: 2018-06-18 07:51:10

End at: 2018-06-18 07:51:40

Local clock offset: 1.669 ms

Remote clock offset: 2.446 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 36.707 ms

Loss rate: 0.13%

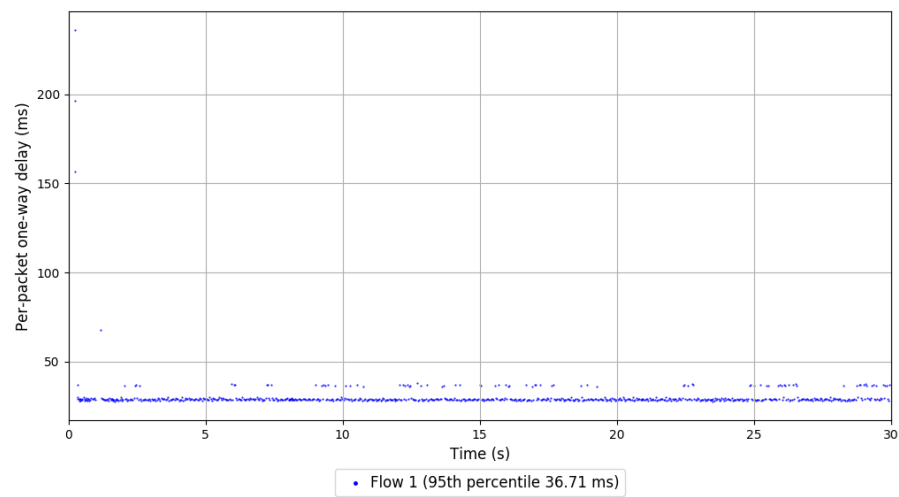
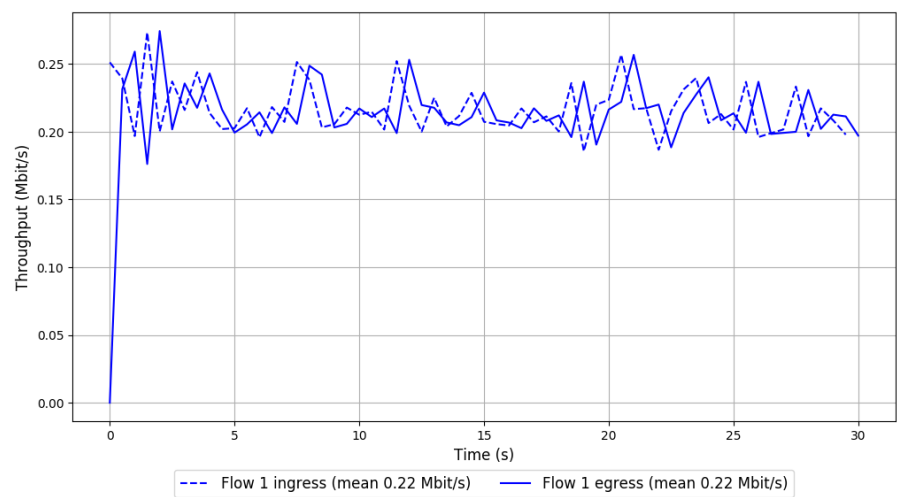
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 36.707 ms

Loss rate: 0.13%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-06-18 08:12:06

End at: 2018-06-18 08:12:36

Local clock offset: 1.922 ms

Remote clock offset: 3.04 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 36.633 ms

Loss rate: 0.13%

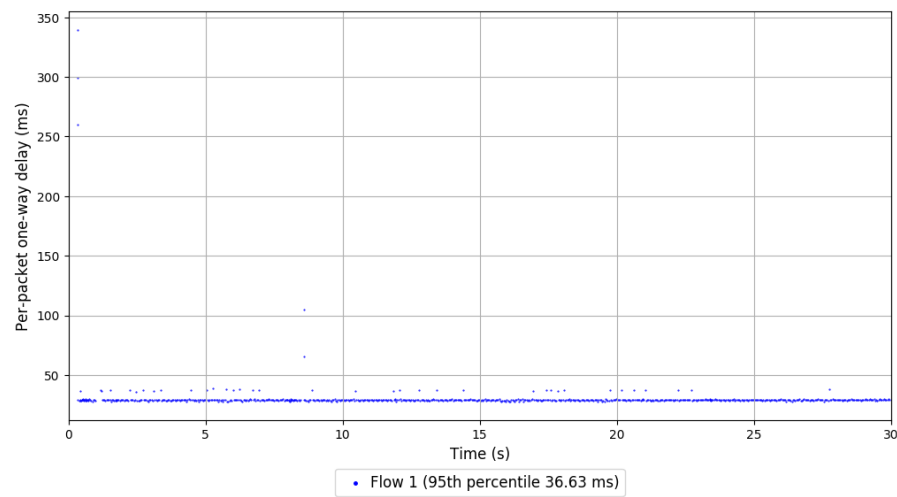
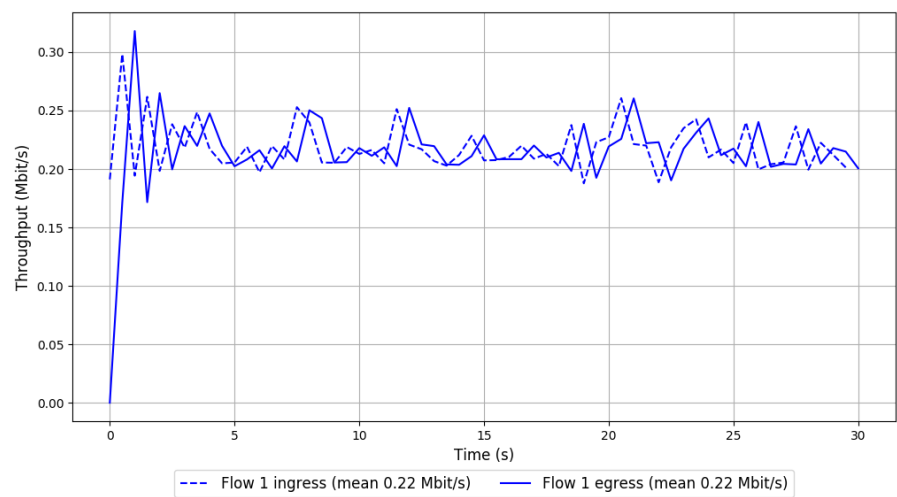
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 36.633 ms

Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

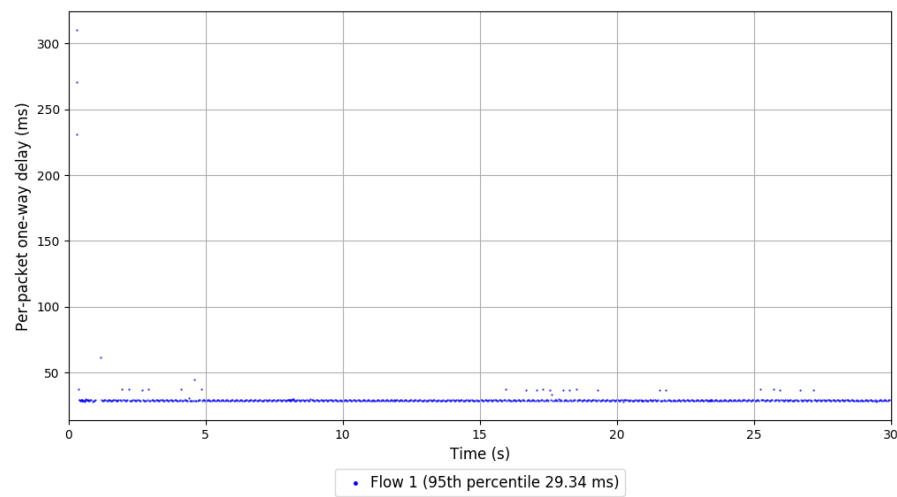
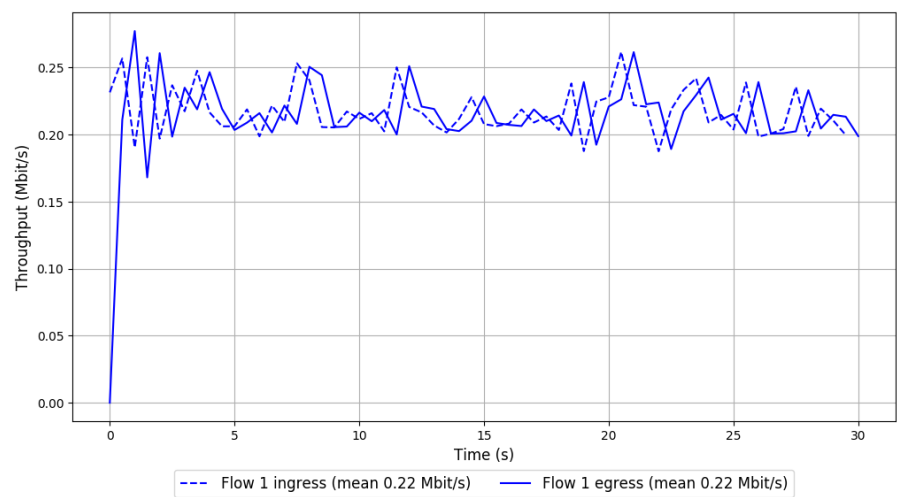


Run 3: Statistics of SCReAM

Start at: 2018-06-18 08:33:02
End at: 2018-06-18 08:33:32
Local clock offset: 1.857 ms
Remote clock offset: -0.284 ms

Below is generated by plot.py at 2018-06-18 08:41:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 29.344 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 29.344 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-06-18 07:47:16

End at: 2018-06-18 07:47:46

Local clock offset: 1.973 ms

Remote clock offset: 1.91 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.60 Mbit/s

95th percentile per-packet one-way delay: 43.866 ms

Loss rate: 0.18%

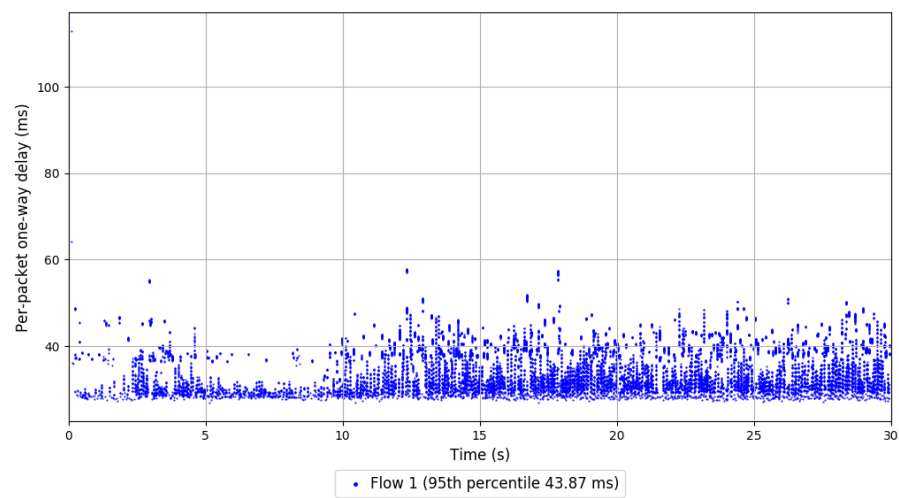
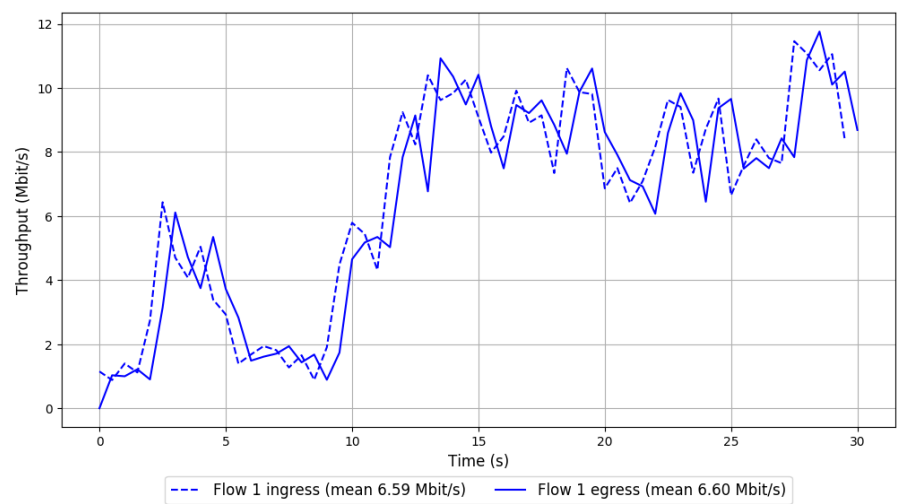
-- Flow 1:

Average throughput: 6.60 Mbit/s

95th percentile per-packet one-way delay: 43.866 ms

Loss rate: 0.18%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-06-18 08:08:12

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

Local clock offset: 1.429 ms

Remote clock offset: 3.53 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.46 Mbit/s

95th percentile per-packet one-way delay: 44.159 ms

Loss rate: 0.00%

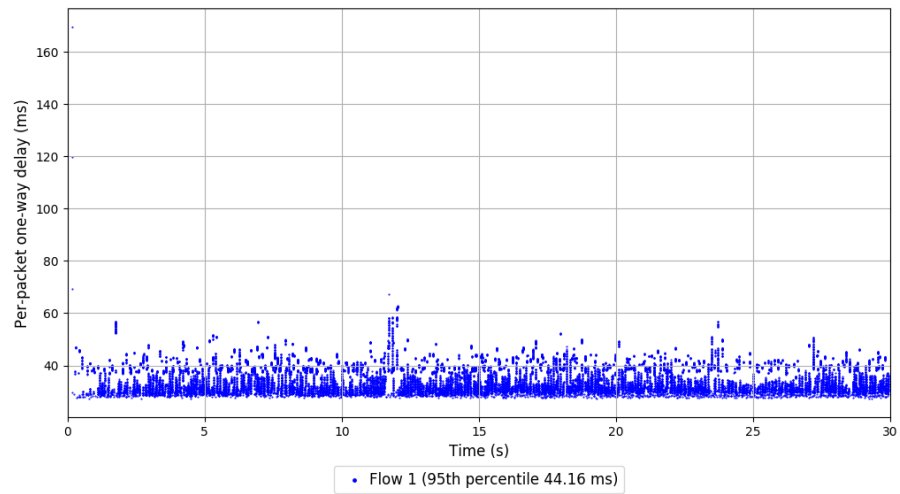
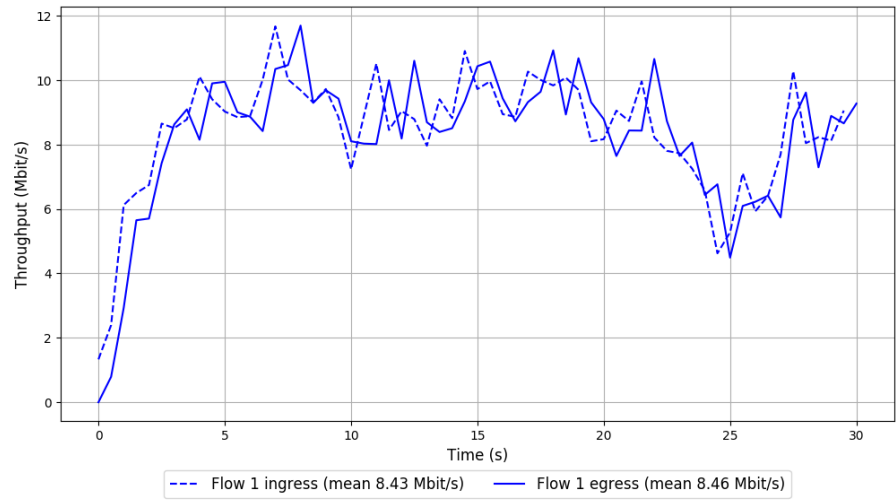
-- Flow 1:

Average throughput: 8.46 Mbit/s

95th percentile per-packet one-way delay: 44.159 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

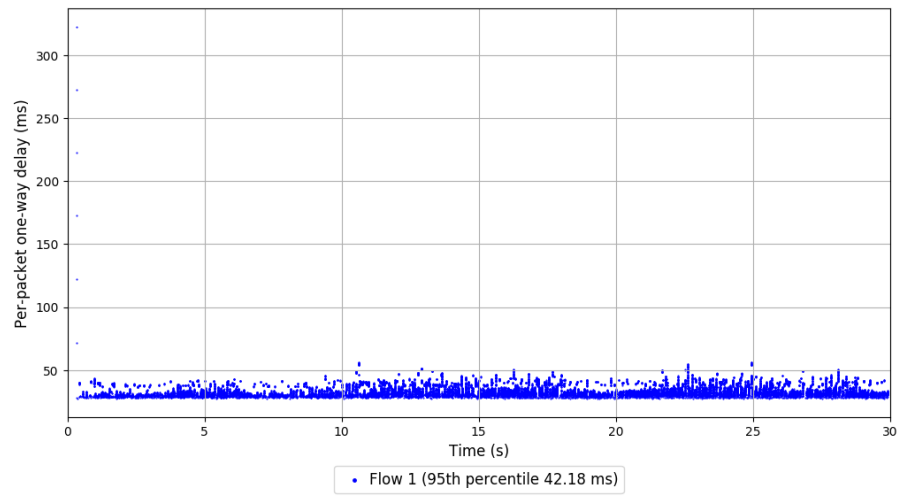
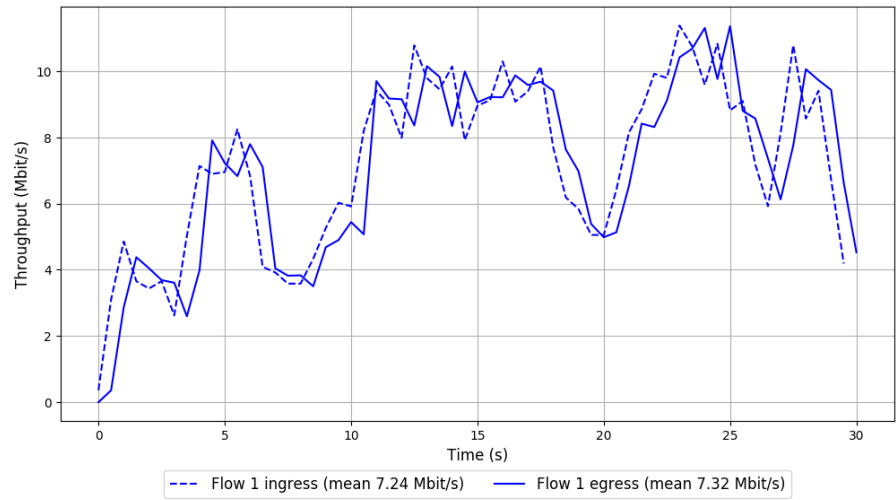


Run 3: Statistics of Sprout

Start at: 2018-06-18 08:29:08
End at: 2018-06-18 08:29:38
Local clock offset: 2.032 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-06-18 08:41:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.32 Mbit/s
95th percentile per-packet one-way delay: 42.183 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 7.32 Mbit/s
95th percentile per-packet one-way delay: 42.183 ms
Loss rate: 0.01%

Run 3: Report of Sprout — Data Link

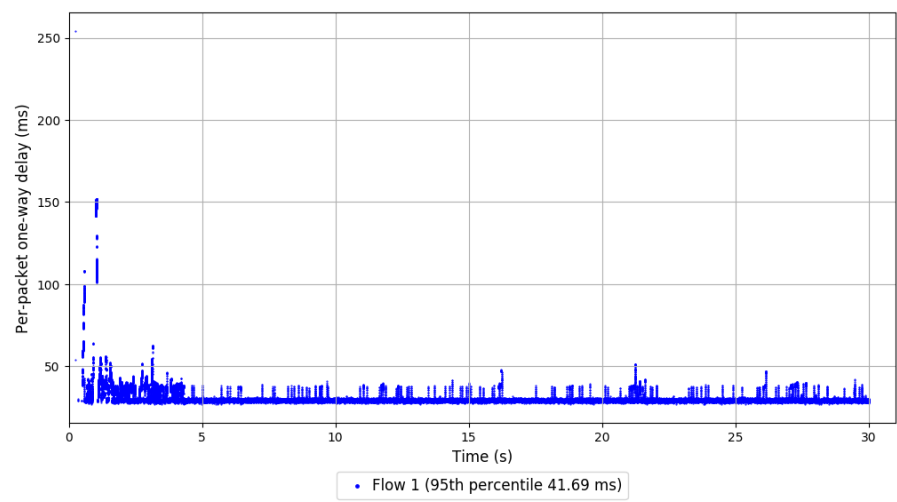
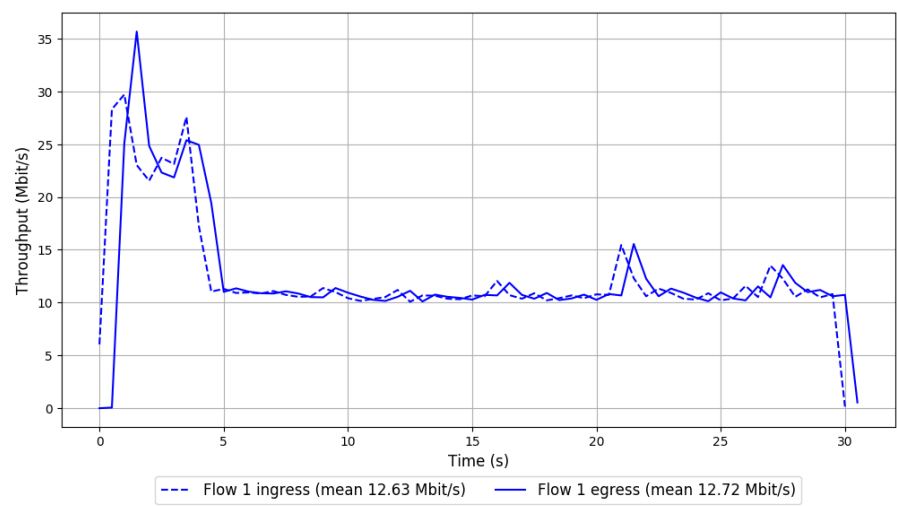


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-06-18 07:49:52
End at: 2018-06-18 07:50:22
Local clock offset: 1.853 ms
Remote clock offset: 2.295 ms

# Below is generated by plot.py at 2018-06-18 08:41:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.72 Mbit/s
95th percentile per-packet one-way delay: 41.691 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 12.72 Mbit/s
95th percentile per-packet one-way delay: 41.691 ms
Loss rate: 0.03%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-06-18 08:10:48

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

Local clock offset: 1.799 ms

Remote clock offset: 3.635 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.96 Mbit/s

95th percentile per-packet one-way delay: 38.614 ms

Loss rate: 0.03%

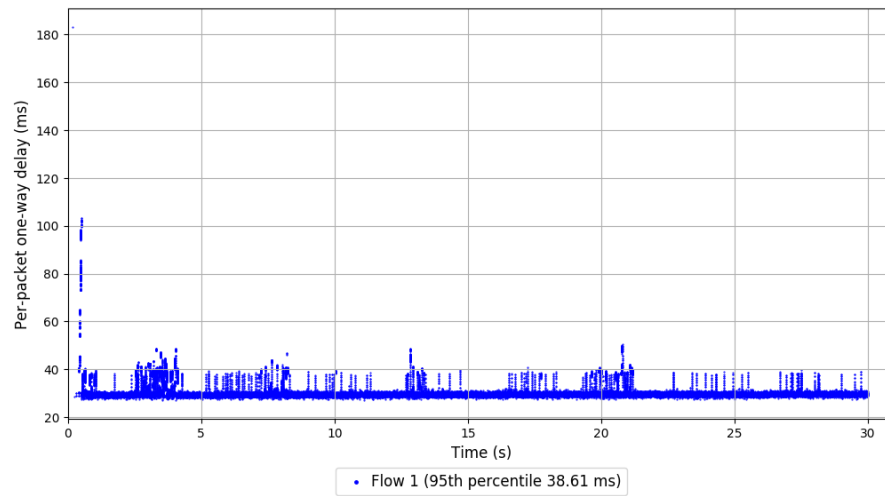
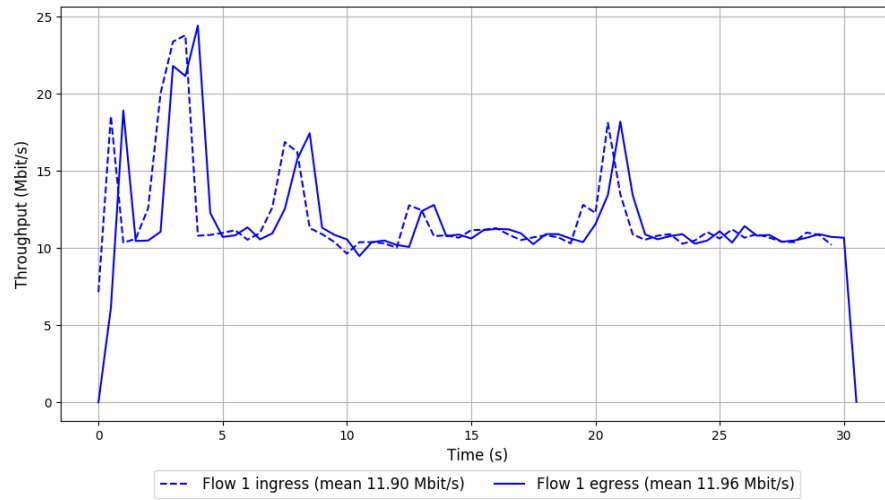
-- Flow 1:

Average throughput: 11.96 Mbit/s

95th percentile per-packet one-way delay: 38.614 ms

Loss rate: 0.03%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-06-18 08:31:44

End at: 2018-06-18 08:32:14

Local clock offset: 1.844 ms

Remote clock offset: -0.261 ms

Below is generated by plot.py at 2018-06-18 08:41:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.88 Mbit/s

95th percentile per-packet one-way delay: 37.543 ms

Loss rate: 0.03%

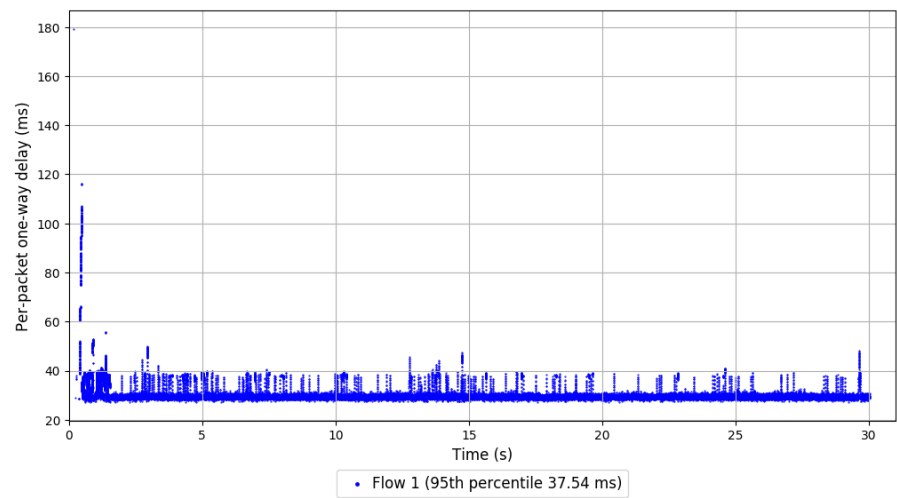
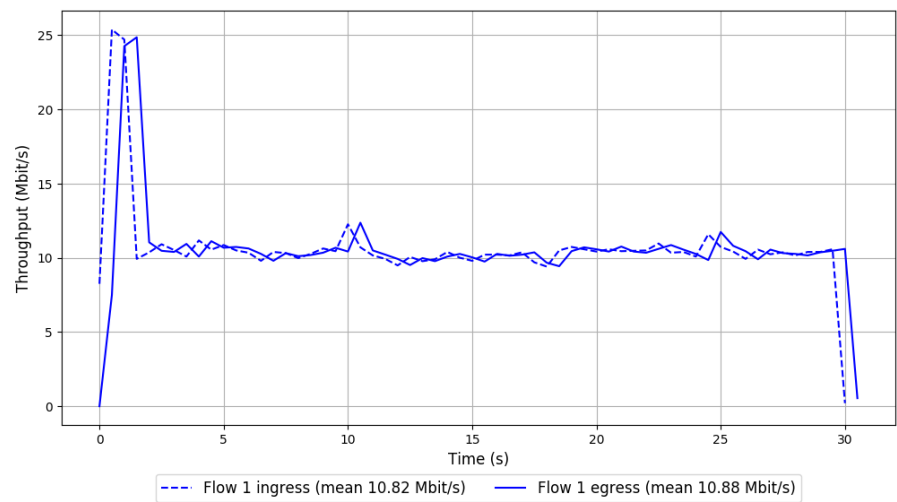
-- Flow 1:

Average throughput: 10.88 Mbit/s

95th percentile per-packet one-way delay: 37.543 ms

Loss rate: 0.03%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-06-18 07:55:04

End at: 2018-06-18 07:55:34

Local clock offset: 1.348 ms

Remote clock offset: 2.783 ms

Below is generated by plot.py at 2018-06-18 08:42:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.94 Mbit/s

95th percentile per-packet one-way delay: 116.812 ms

Loss rate: 0.05%

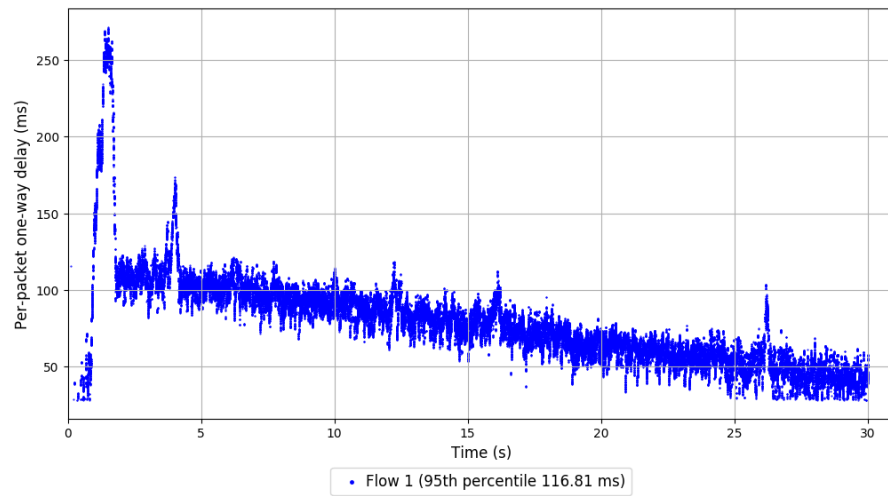
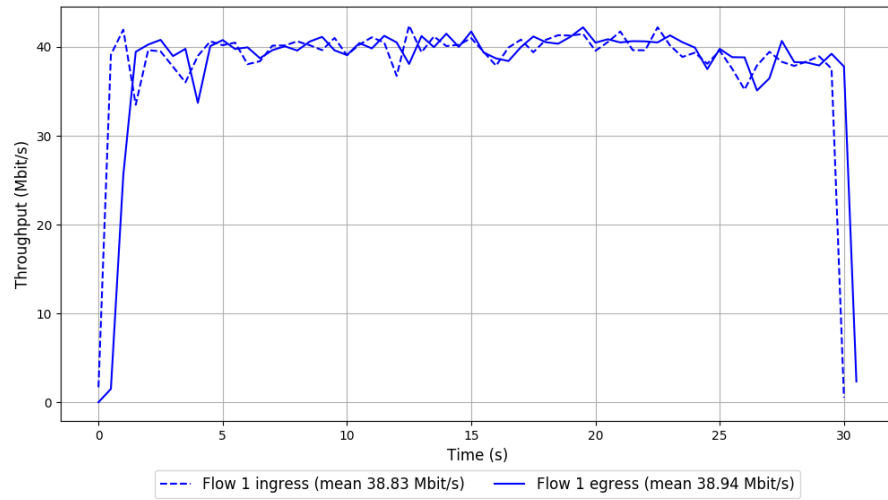
-- Flow 1:

Average throughput: 38.94 Mbit/s

95th percentile per-packet one-way delay: 116.812 ms

Loss rate: 0.05%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-06-18 08:16:01

End at: 2018-06-18 08:16:31

Local clock offset: 2.159 ms

Remote clock offset: 1.762 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.85 Mbit/s

95th percentile per-packet one-way delay: 126.798 ms

Loss rate: 0.13%

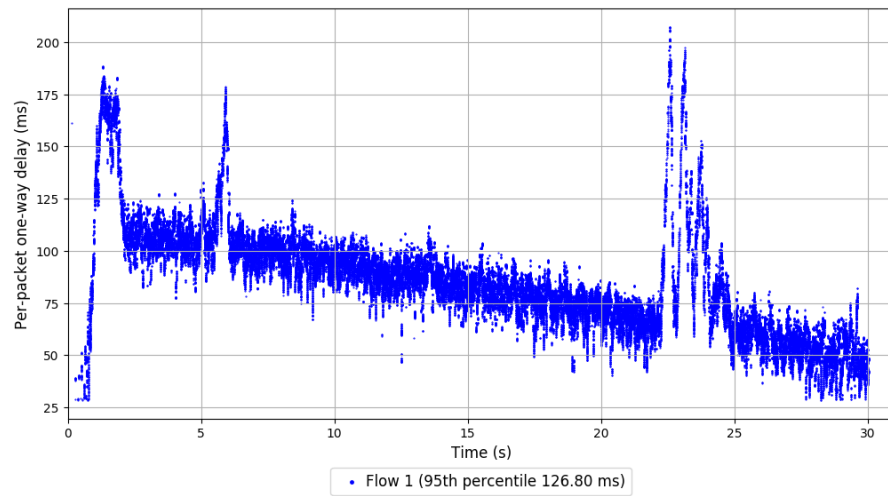
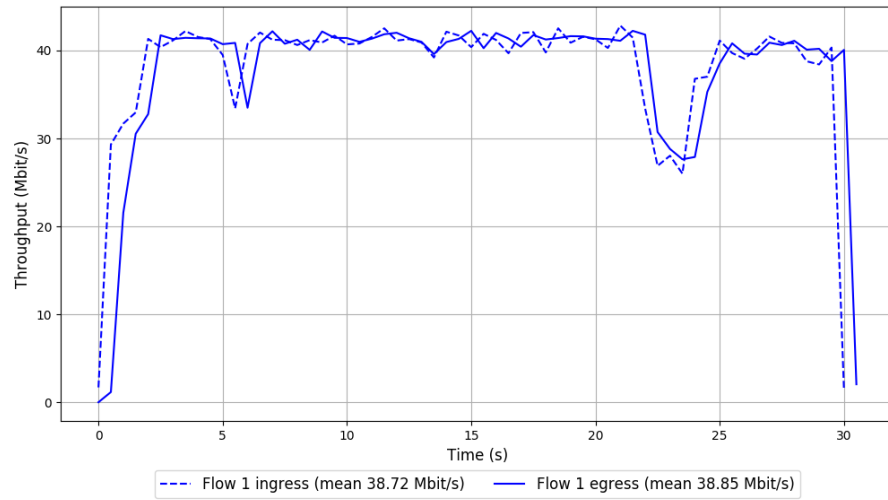
-- Flow 1:

Average throughput: 38.85 Mbit/s

95th percentile per-packet one-way delay: 126.798 ms

Loss rate: 0.13%

Run 2: Report of TCP Vegas — Data Link

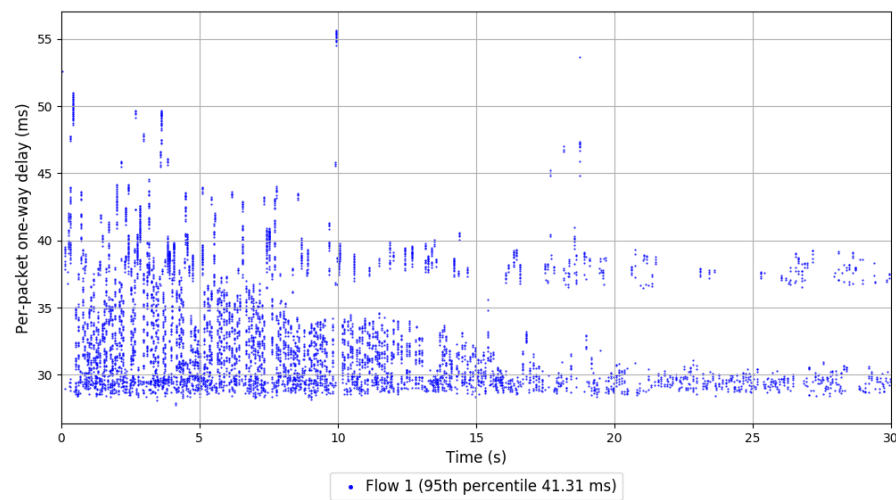
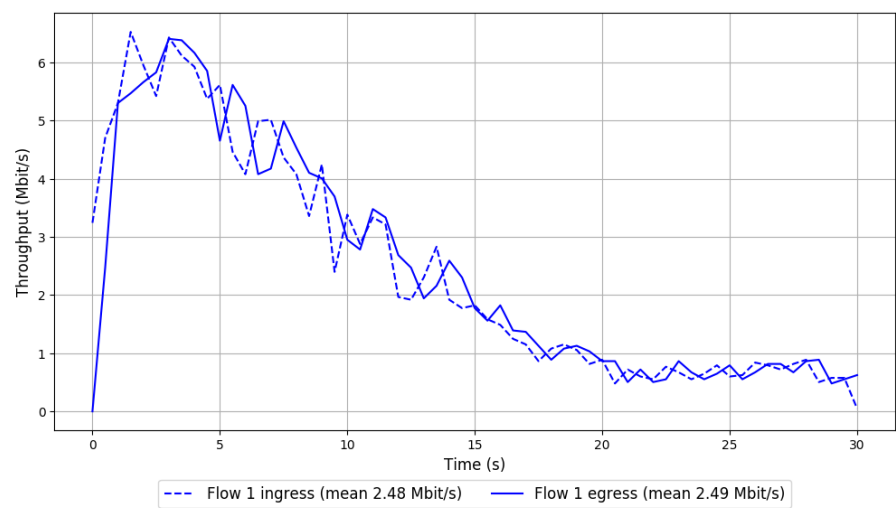


Run 3: Statistics of TCP Vegas

Start at: 2018-06-18 08:36:56
End at: 2018-06-18 08:37:26
Local clock offset: 2.087 ms
Remote clock offset: -0.597 ms

Below is generated by plot.py at 2018-06-18 08:42:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.49 Mbit/s
95th percentile per-packet one-way delay: 41.312 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 2.49 Mbit/s
95th percentile per-packet one-way delay: 41.312 ms
Loss rate: 0.03%

Run 3: Report of TCP Vegas — Data Link

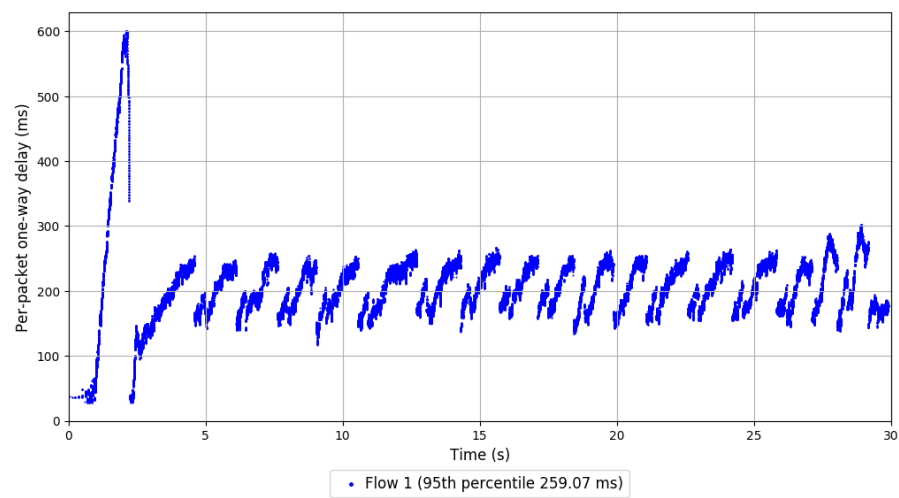
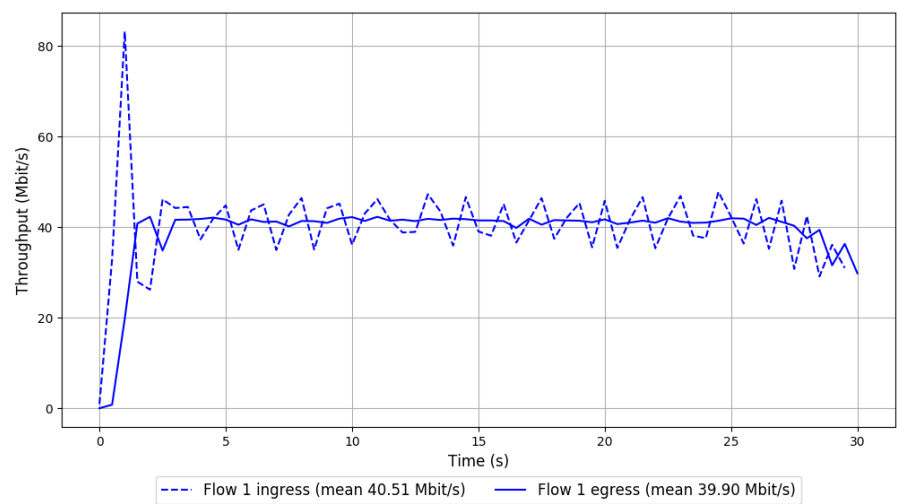


Run 1: Statistics of Verus

Start at: 2018-06-18 07:38:08
End at: 2018-06-18 07:38:38
Local clock offset: 2.288 ms
Remote clock offset: -0.496 ms

Below is generated by plot.py at 2018-06-18 08:42:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 39.90 Mbit/s
95th percentile per-packet one-way delay: 259.071 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 39.90 Mbit/s
95th percentile per-packet one-way delay: 259.071 ms
Loss rate: 1.57%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-06-18 07:58:59

End at: 2018-06-18 07:59:29

Local clock offset: 1.074 ms

Remote clock offset: 3.109 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.85 Mbit/s

95th percentile per-packet one-way delay: 309.622 ms

Loss rate: 2.25%

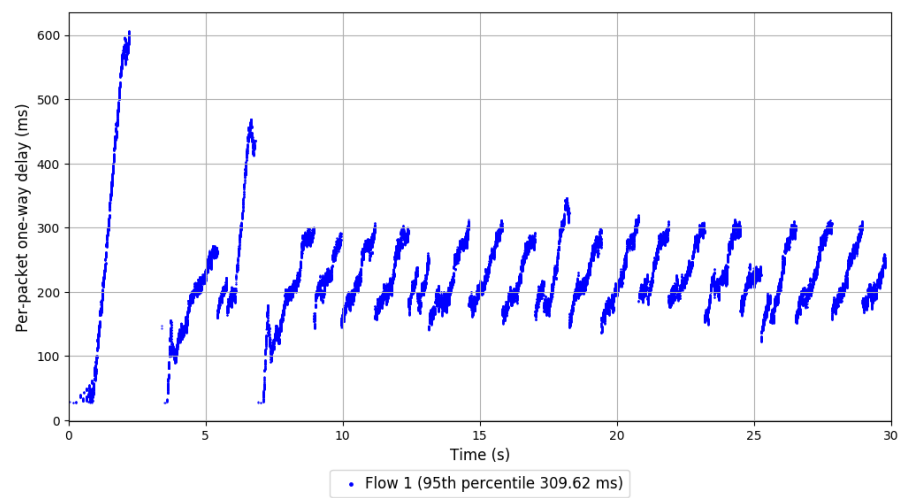
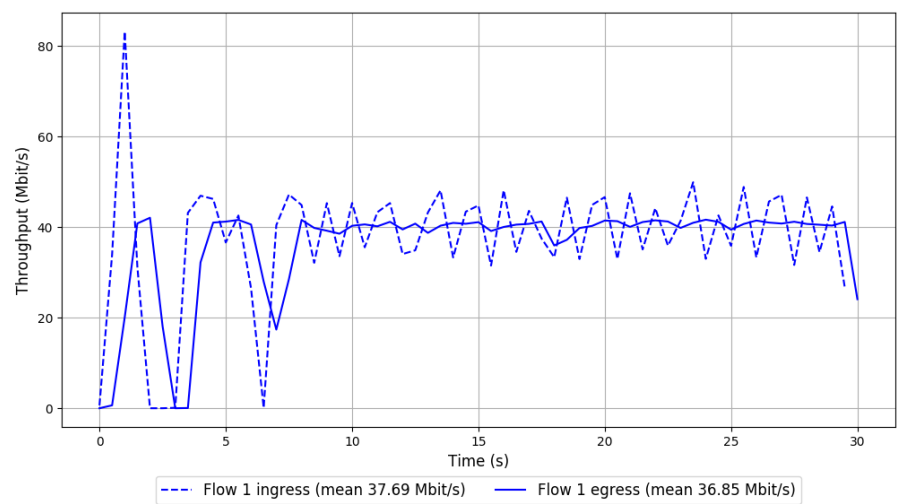
-- Flow 1:

Average throughput: 36.85 Mbit/s

95th percentile per-packet one-way delay: 309.622 ms

Loss rate: 2.25%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-06-18 08:19:58

End at: 2018-06-18 08:20:28

Local clock offset: 2.226 ms

Remote clock offset: 0.993 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.23 Mbit/s

95th percentile per-packet one-way delay: 307.062 ms

Loss rate: 1.80%

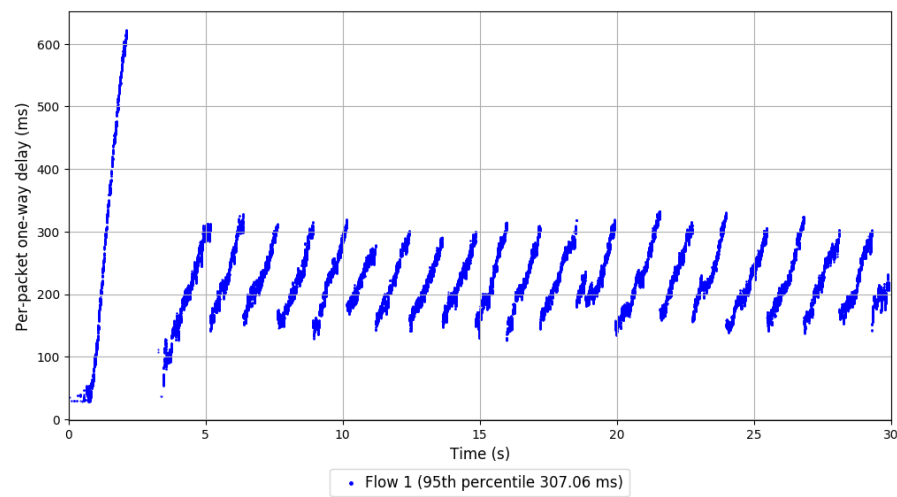
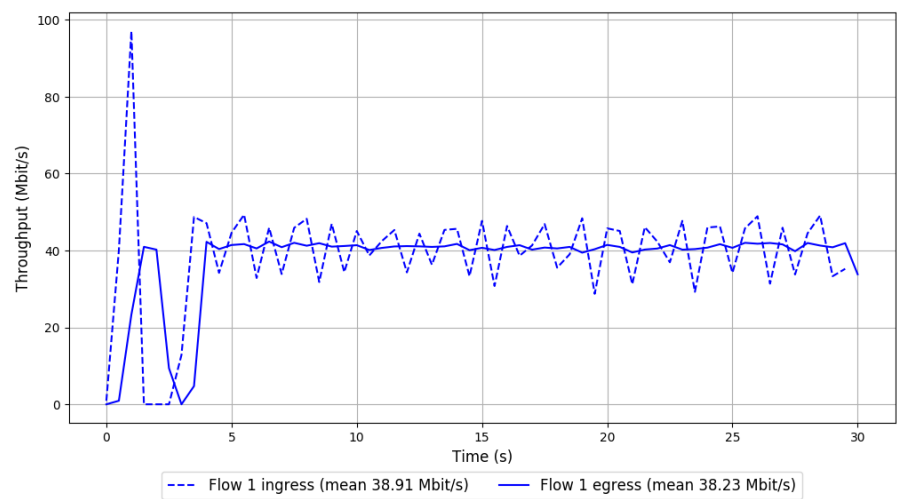
-- Flow 1:

Average throughput: 38.23 Mbit/s

95th percentile per-packet one-way delay: 307.062 ms

Loss rate: 1.80%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-06-18 07:42:04

End at: 2018-06-18 07:42:34

Local clock offset: 2.229 ms

Remote clock offset: 0.766 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.78 Mbit/s

95th percentile per-packet one-way delay: 33.475 ms

Loss rate: 0.03%

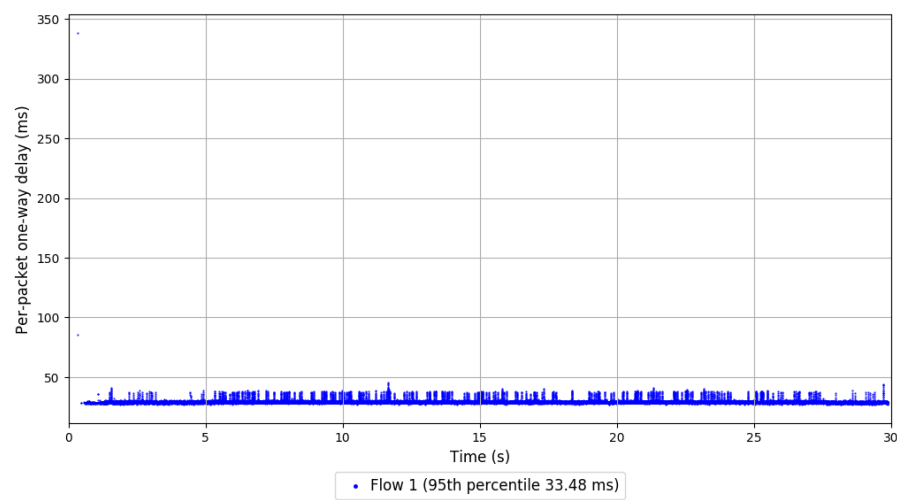
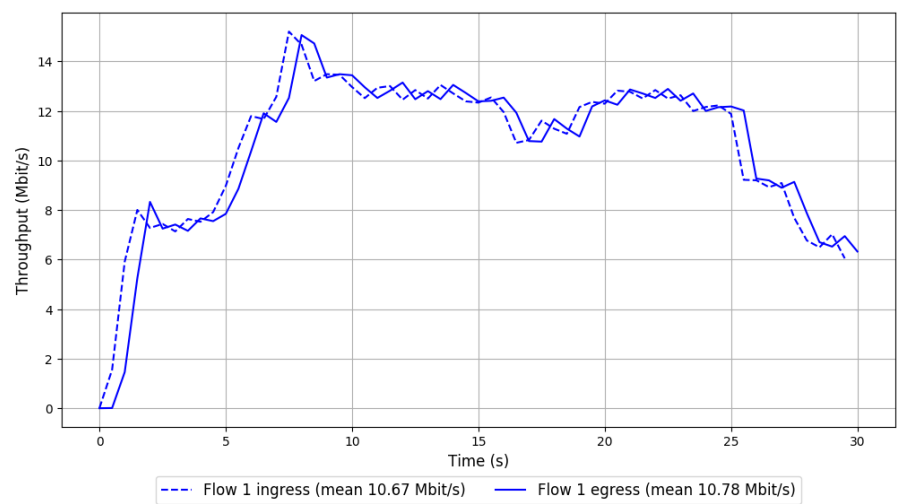
-- Flow 1:

Average throughput: 10.78 Mbit/s

95th percentile per-packet one-way delay: 33.475 ms

Loss rate: 0.03%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-06-18 08:02:54

End at: 2018-06-18 08:03:24

Local clock offset: 0.63 ms

Remote clock offset: 3.303 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 29.804 ms

Loss rate: 0.02%

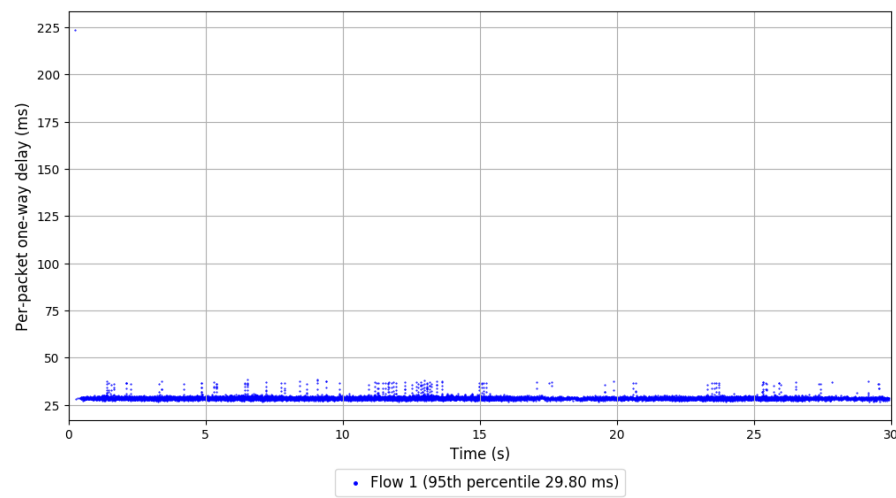
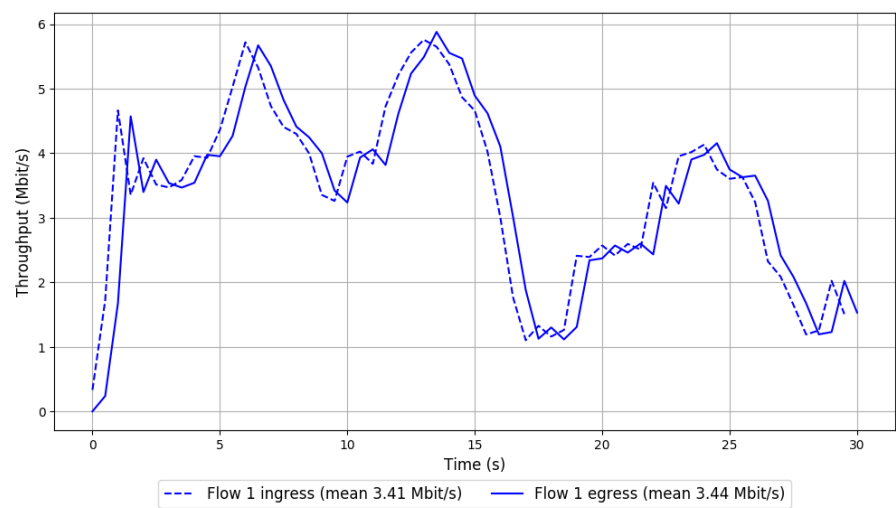
-- Flow 1:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 29.804 ms

Loss rate: 0.02%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-06-18 08:23:54

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

Local clock offset: 2.204 ms

Remote clock offset: 0.365 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.61 Mbit/s

95th percentile per-packet one-way delay: 33.831 ms

Loss rate: 0.01%

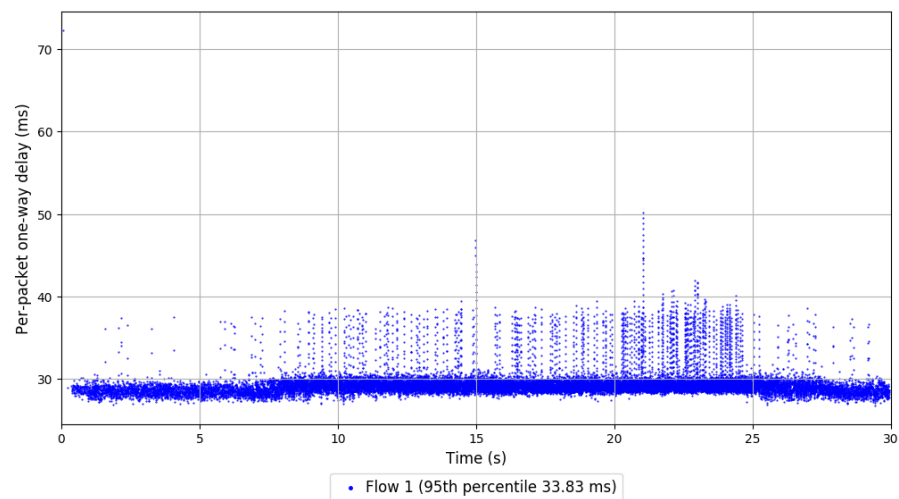
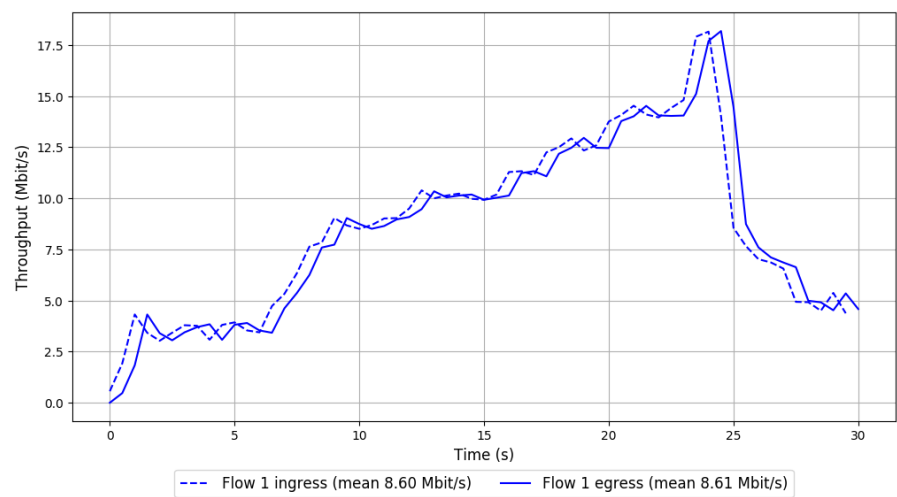
-- Flow 1:

Average throughput: 8.61 Mbit/s

95th percentile per-packet one-way delay: 33.831 ms

Loss rate: 0.01%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-06-18 07:53:46

End at: 2018-06-18 07:54:16

Local clock offset: 1.461 ms

Remote clock offset: 2.674 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 36.671 ms

Loss rate: 0.06%

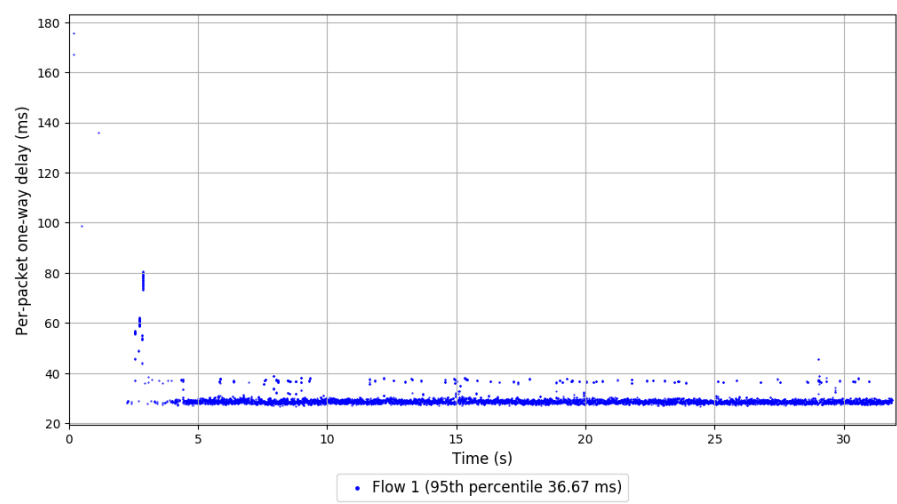
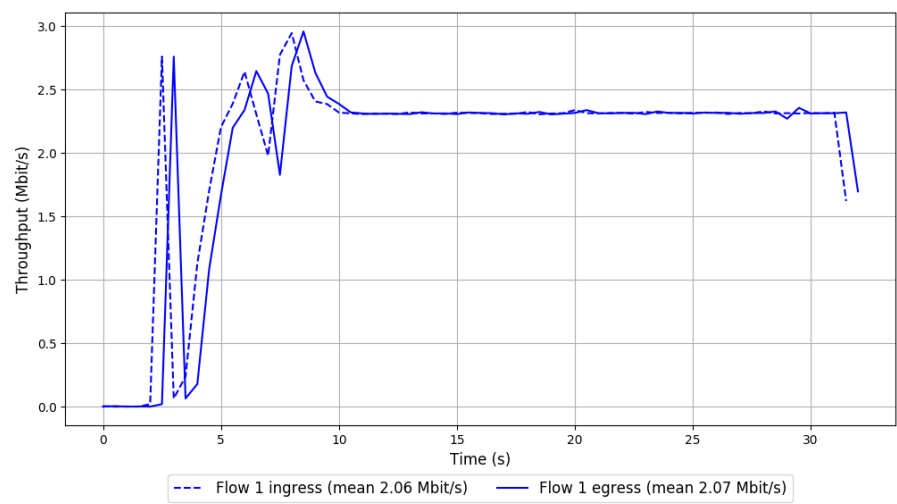
-- Flow 1:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 36.671 ms

Loss rate: 0.06%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-06-18 08:14:43

End at: 2018-06-18 08:15:13

Local clock offset: 2.119 ms

Remote clock offset: 2.236 ms

Below is generated by plot.py at 2018-06-18 08:42:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.96 Mbit/s

95th percentile per-packet one-way delay: 32.294 ms

Loss rate: 0.06%

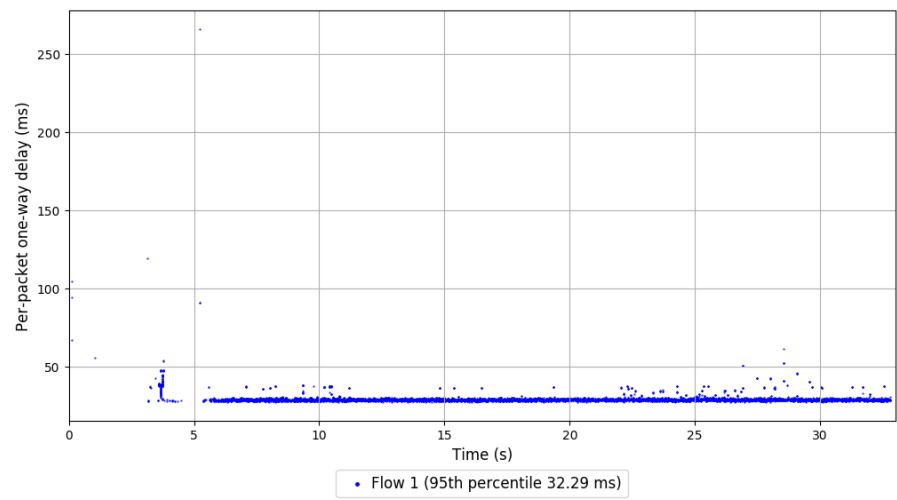
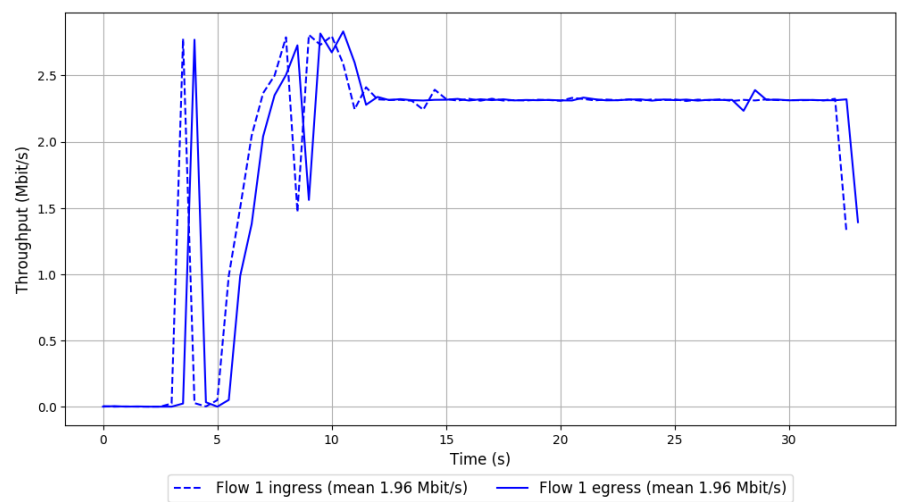
-- Flow 1:

Average throughput: 1.96 Mbit/s

95th percentile per-packet one-way delay: 32.294 ms

Loss rate: 0.06%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-06-18 08:35:39
End at: 2018-06-18 08:36:09
Local clock offset: 1.9 ms
Remote clock offset: -0.541 ms

Below is generated by plot.py at 2018-06-18 08:42:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 30.703 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 30.703 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

