

Pantheon Report

Generated at 2018-09-06 17:37:09 (UTC).

Data path: Stanford on `eno1` (*remote*) → AWS California 1 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

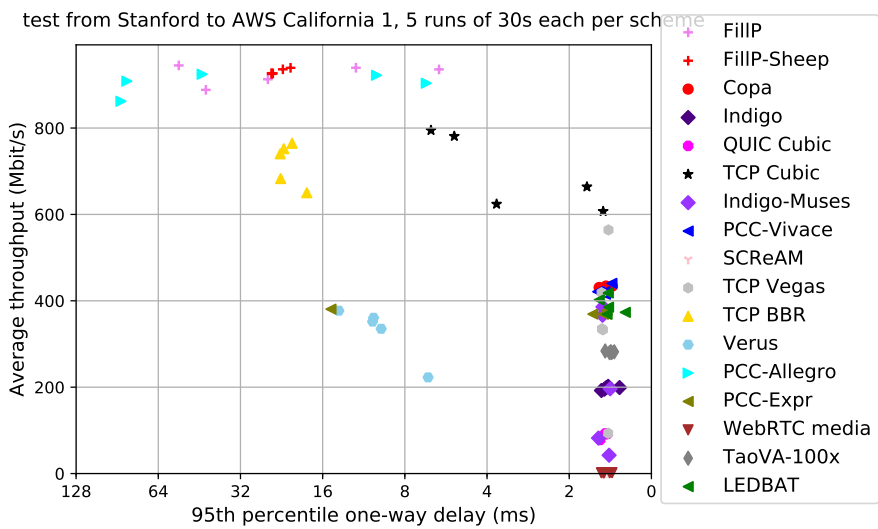
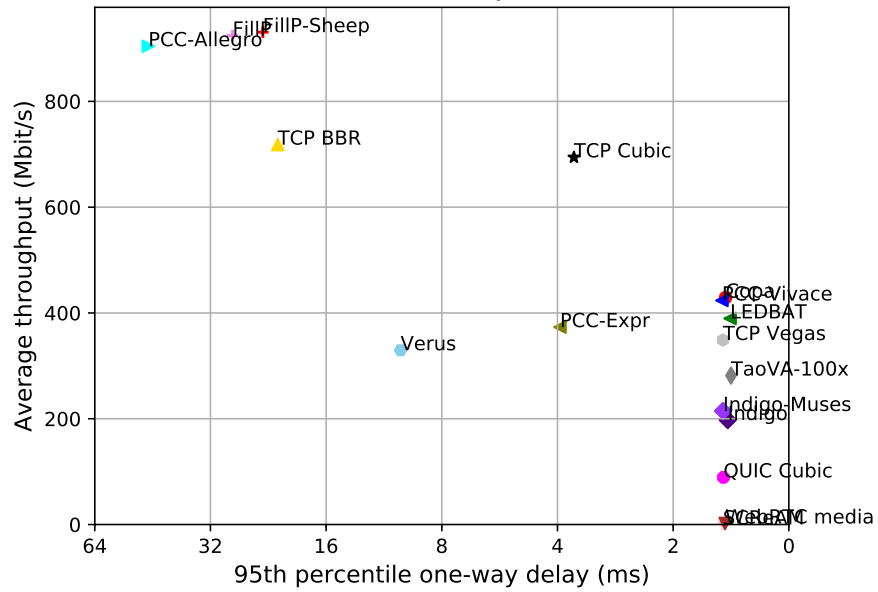
System info:

```
Linux 4.15.0-1020-aws
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
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740d4fe1771f813cd646339e1952
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-quic @ 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 Stanford to AWS California 1, 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	718.17	21.38	0.09
Copa	5	428.90	1.09	0.07
TCP Cubic	5	694.17	3.62	0.07
FillP	5	924.32	28.03	0.63
FillP-Sheep	5	930.86	23.38	0.62
Indigo	5	197.60	1.06	0.07
LEDBAT	5	389.63	1.02	0.07
Indigo-Muses	5	214.67	1.14	0.04
PCC-Allegro	5	904.24	46.43	0.08
PCC-Expr	5	373.21	3.94	0.07
QUIC Cubic	5	89.13	1.13	0.07
SCReAM	5	0.22	1.14	0.10
Sprout	0	N/A	N/A	N/A
TaoVA-100x	5	281.64	1.00	0.07
TCP Vegas	5	348.83	1.14	0.04
Verus	5	329.53	10.24	0.06
PCC-Vivace	5	423.60	1.16	0.06
WebRTC media	5	2.01	1.10	0.06

Run 1: Statistics of TCP BBR

Start at: 2018-09-06 14:29:37

End at: 2018-09-06 14:30:07

Local clock offset: 0.134 ms

Remote clock offset: -4.86 ms

Below is generated by plot.py at 2018-09-06 16:44:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 752.19 Mbit/s

95th percentile per-packet one-way delay: 22.208 ms

Loss rate: 0.04%

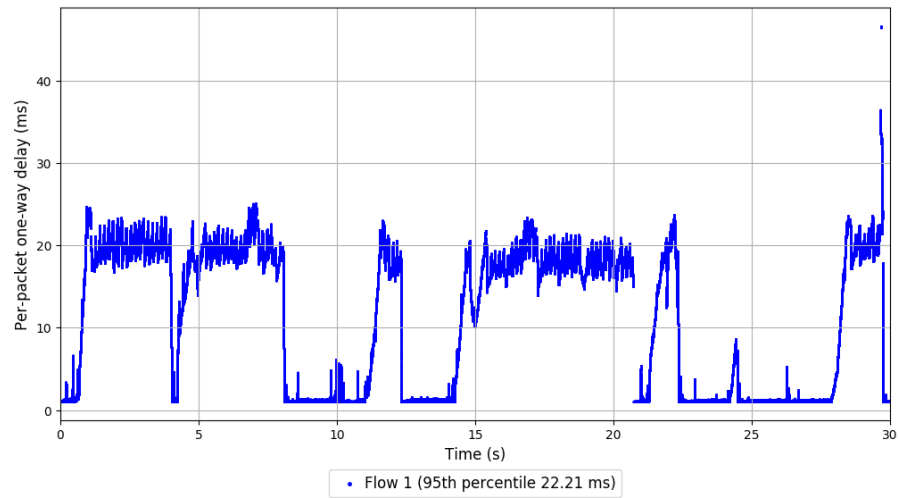
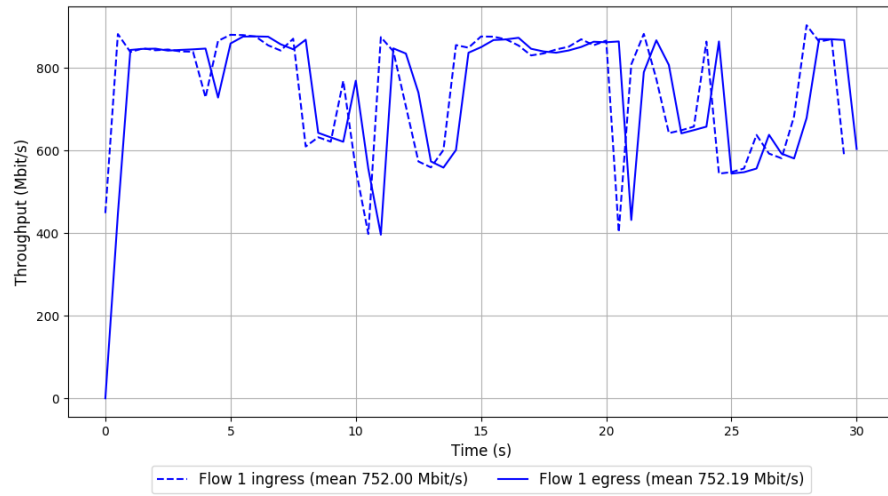
-- Flow 1:

Average throughput: 752.19 Mbit/s

95th percentile per-packet one-way delay: 22.208 ms

Loss rate: 0.04%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-06 14:57:24

End at: 2018-09-06 14:57:54

Local clock offset: -0.48 ms

Remote clock offset: -6.166 ms

Below is generated by plot.py at 2018-09-06 16:44:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 650.34 Mbit/s

95th percentile per-packet one-way delay: 18.293 ms

Loss rate: 0.16%

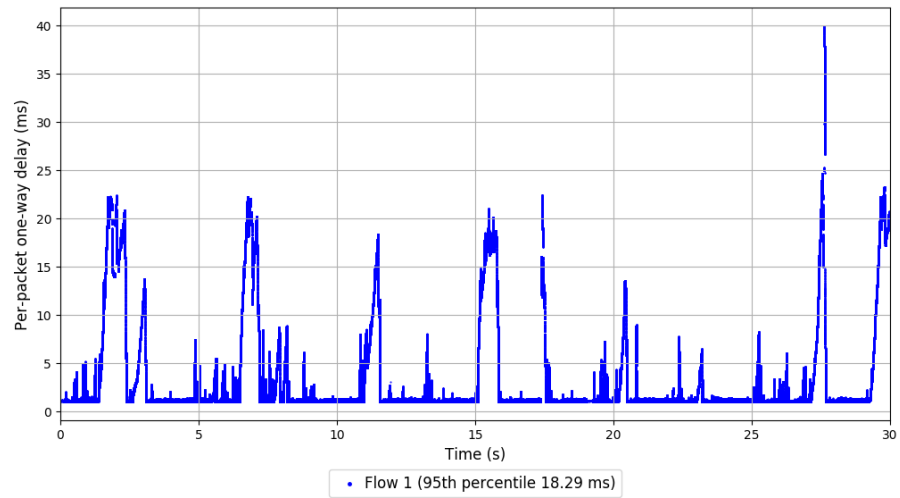
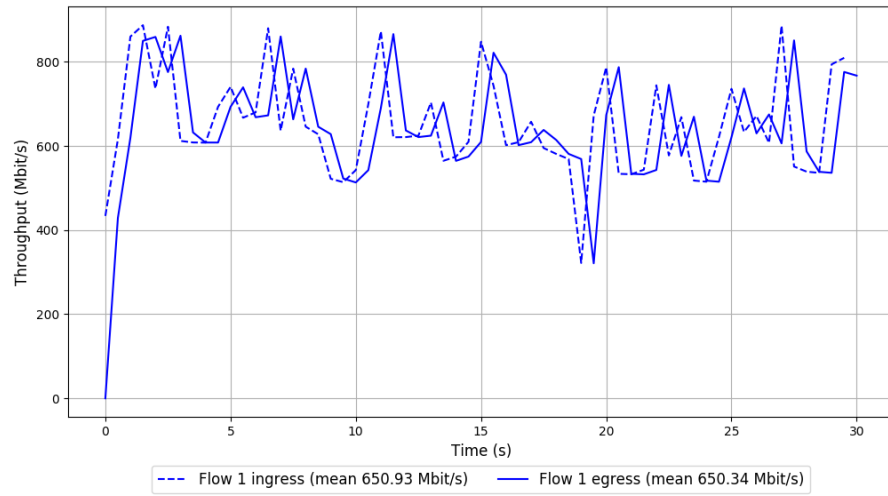
-- Flow 1:

Average throughput: 650.34 Mbit/s

95th percentile per-packet one-way delay: 18.293 ms

Loss rate: 0.16%

Run 2: Report of TCP BBR — Data Link

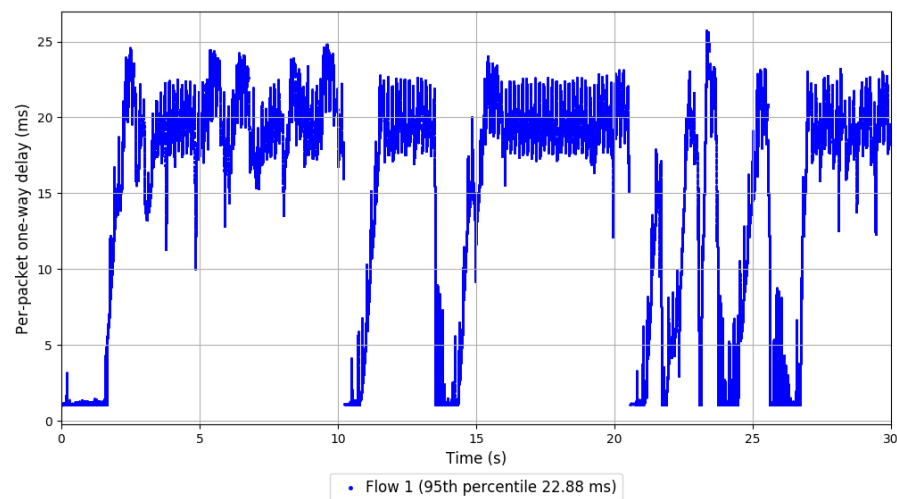
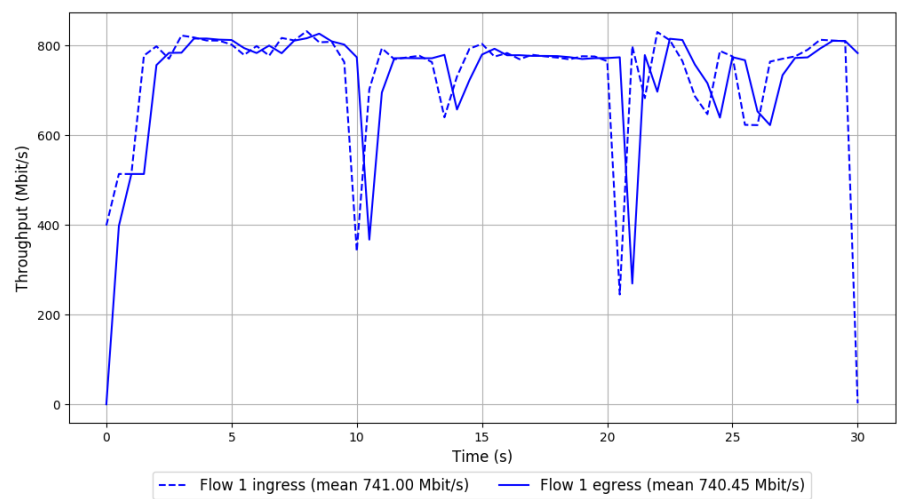


Run 3: Statistics of TCP BBR

Start at: 2018-09-06 15:24:58
End at: 2018-09-06 15:25:28
Local clock offset: -0.289 ms
Remote clock offset: -3.158 ms

Below is generated by plot.py at 2018-09-06 16:44:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 740.45 Mbit/s
95th percentile per-packet one-way delay: 22.880 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 740.45 Mbit/s
95th percentile per-packet one-way delay: 22.880 ms
Loss rate: 0.14%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-06 15:52:52

End at: 2018-09-06 15:53:22

Local clock offset: -0.07 ms

Remote clock offset: 0.092 ms

Below is generated by plot.py at 2018-09-06 16:44:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 764.76 Mbit/s

95th percentile per-packet one-way delay: 20.706 ms

Loss rate: 0.05%

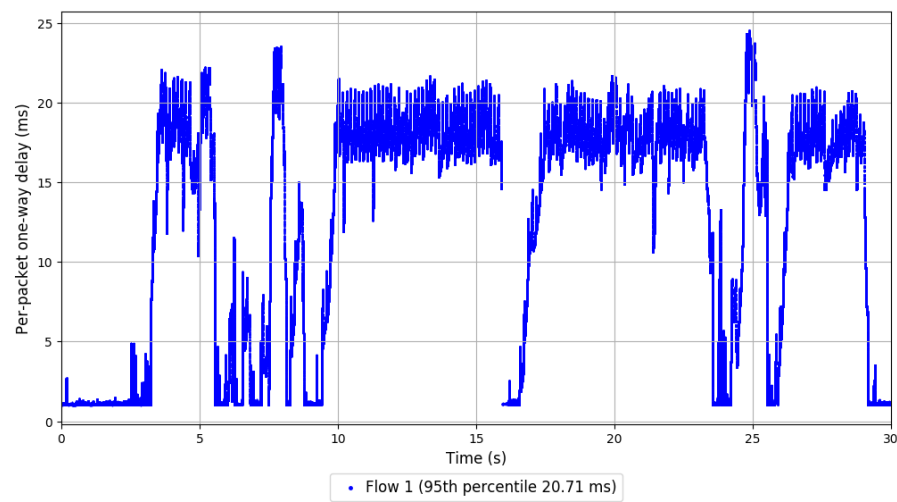
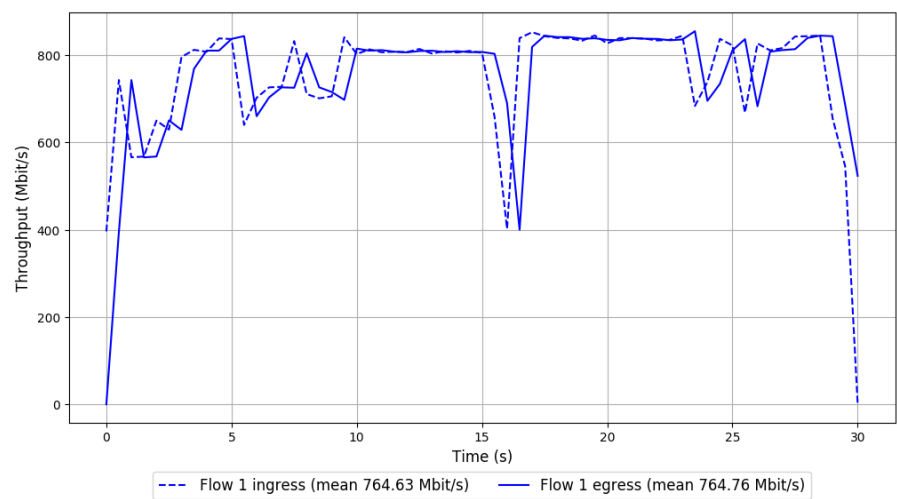
-- Flow 1:

Average throughput: 764.76 Mbit/s

95th percentile per-packet one-way delay: 20.706 ms

Loss rate: 0.05%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-06 16:20:55

End at: 2018-09-06 16:21:25

Local clock offset: 1.532 ms

Remote clock offset: -1.228 ms

Below is generated by plot.py at 2018-09-06 16:44:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 683.12 Mbit/s

95th percentile per-packet one-way delay: 22.811 ms

Loss rate: 0.04%

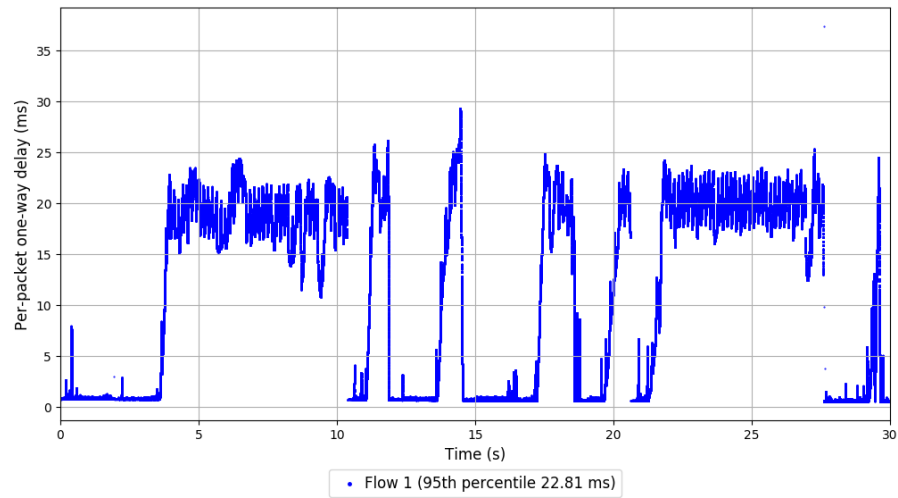
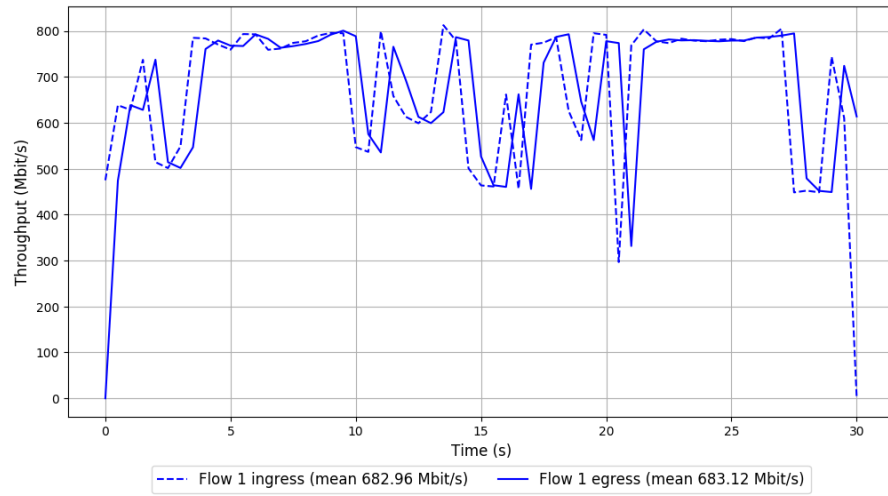
-- Flow 1:

Average throughput: 683.12 Mbit/s

95th percentile per-packet one-way delay: 22.811 ms

Loss rate: 0.04%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-06 14:23:34

End at: 2018-09-06 14:24:04

Local clock offset: 0.965 ms

Remote clock offset: -4.593 ms

Below is generated by plot.py at 2018-09-06 16:44:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 430.86 Mbit/s

95th percentile per-packet one-way delay: 1.272 ms

Loss rate: 0.06%

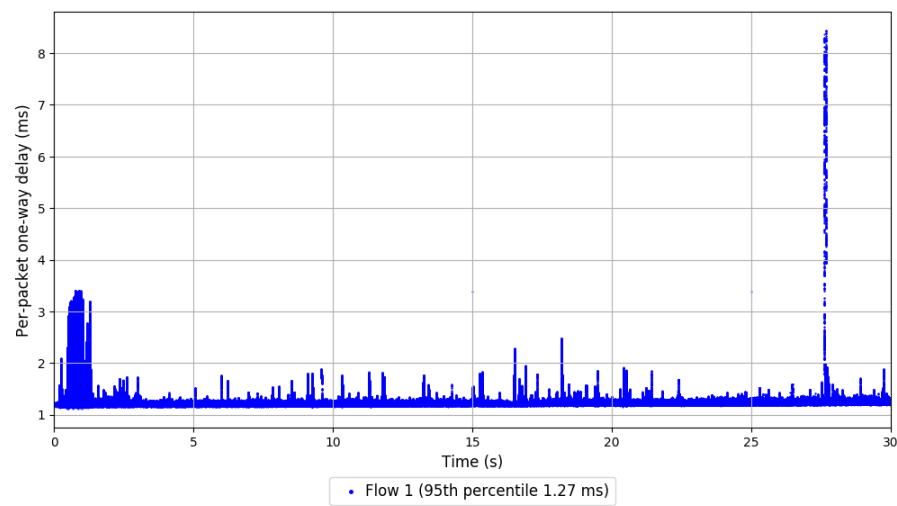
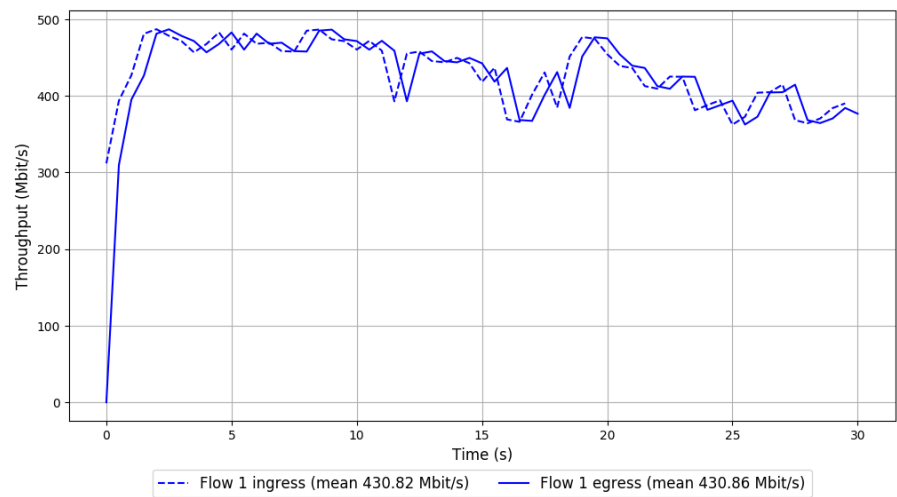
-- Flow 1:

Average throughput: 430.86 Mbit/s

95th percentile per-packet one-way delay: 1.272 ms

Loss rate: 0.06%

Run 1: Report of Copa — Data Link

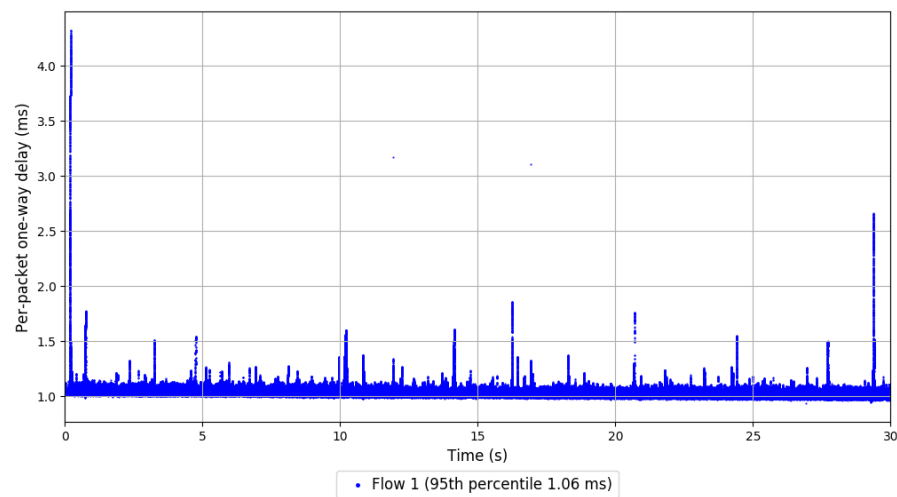
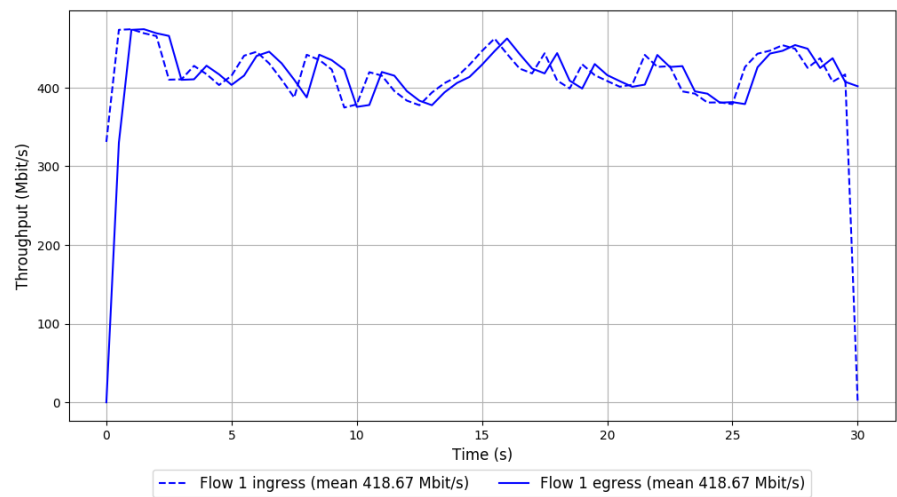


Run 2: Statistics of Copa

Start at: 2018-09-06 14:51:23
End at: 2018-09-06 14:51:53
Local clock offset: -0.608 ms
Remote clock offset: -5.888 ms

Below is generated by plot.py at 2018-09-06 16:44:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 418.67 Mbit/s
95th percentile per-packet one-way delay: 1.063 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 418.67 Mbit/s
95th percentile per-packet one-way delay: 1.063 ms
Loss rate: 0.06%

Run 2: Report of Copa — Data Link

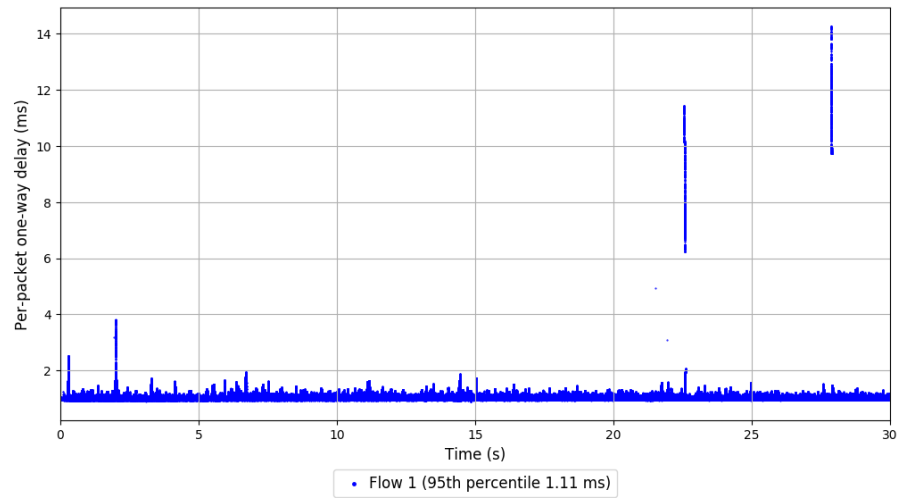
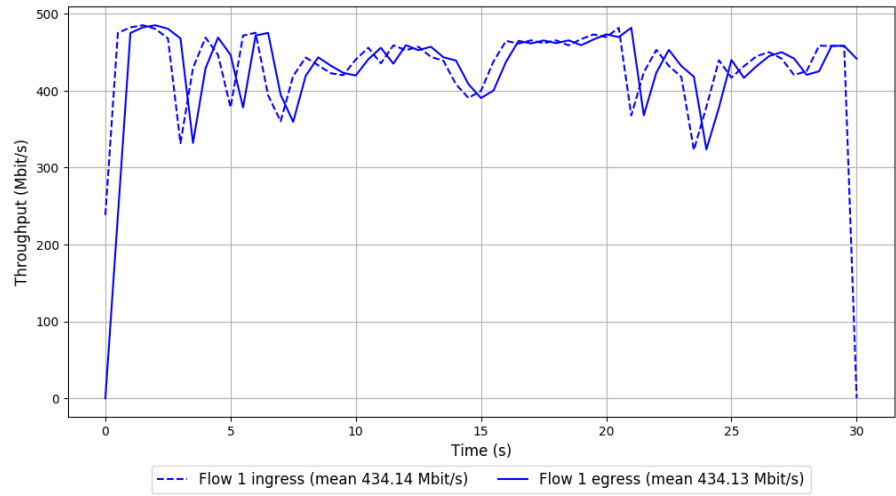


Run 3: Statistics of Copa

Start at: 2018-09-06 15:18:56
End at: 2018-09-06 15:19:26
Local clock offset: -0.499 ms
Remote clock offset: -3.527 ms

Below is generated by plot.py at 2018-09-06 16:44:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 434.13 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 434.13 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.07%

Run 3: Report of Copa — Data Link

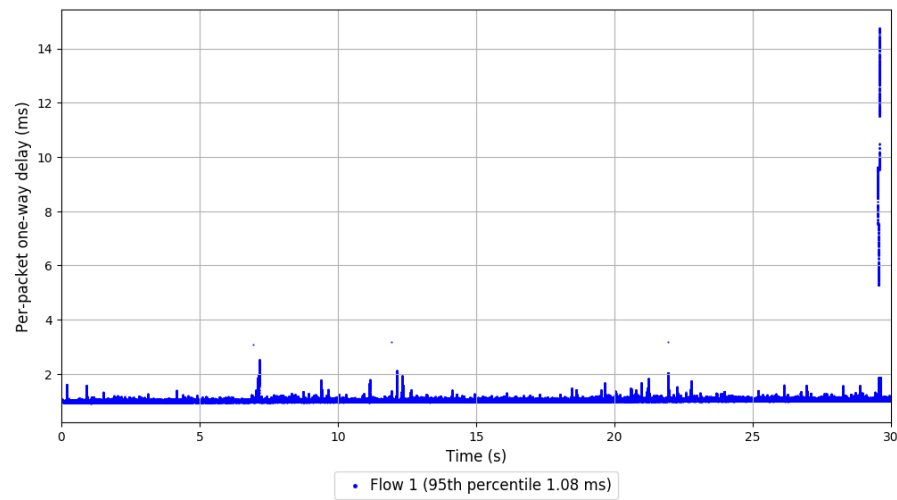
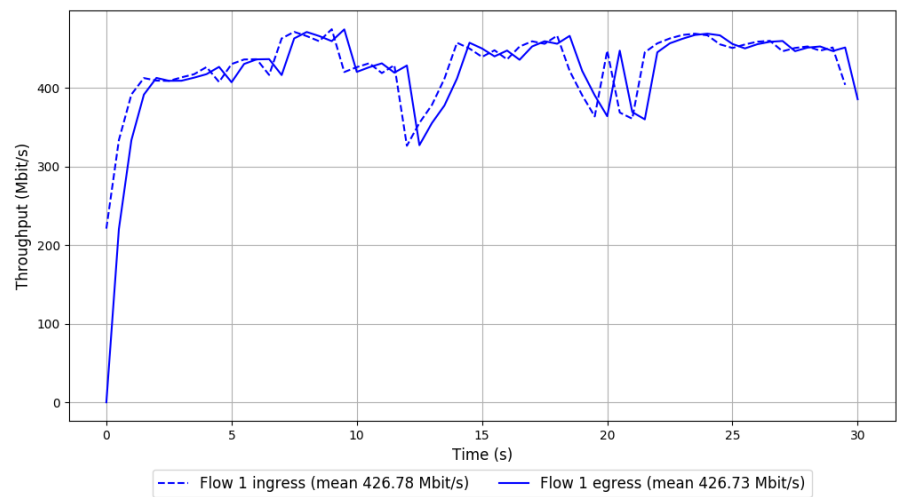


Run 4: Statistics of Copa

Start at: 2018-09-06 15:46:47
End at: 2018-09-06 15:47:17
Local clock offset: -0.319 ms
Remote clock offset: -0.755 ms

Below is generated by plot.py at 2018-09-06 16:51:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 426.73 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 426.73 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.08%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-06 16:14:53

End at: 2018-09-06 16:15:23

Local clock offset: -0.117 ms

Remote clock offset: 1.068 ms

Below is generated by plot.py at 2018-09-06 16:52:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 434.13 Mbit/s

95th percentile per-packet one-way delay: 0.950 ms

Loss rate: 0.07%

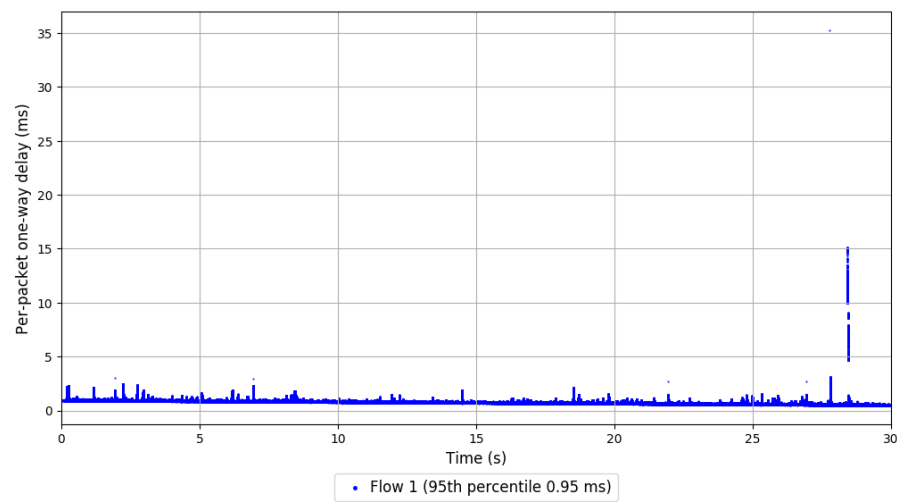
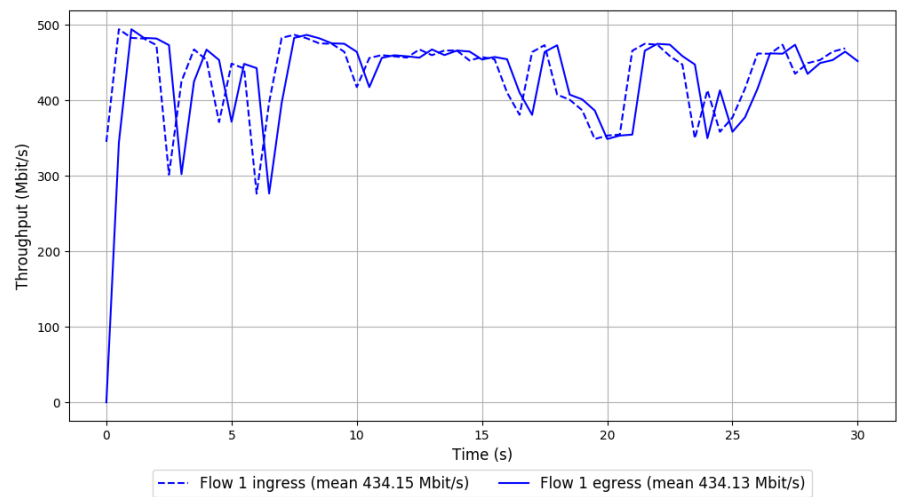
-- Flow 1:

Average throughput: 434.13 Mbit/s

95th percentile per-packet one-way delay: 0.950 ms

Loss rate: 0.07%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 14:20:38

End at: 2018-09-06 14:21:08

Local clock offset: 1.529 ms

Remote clock offset: -4.33 ms

Below is generated by plot.py at 2018-09-06 16:52:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 623.97 Mbit/s

95th percentile per-packet one-way delay: 3.691 ms

Loss rate: 0.08%

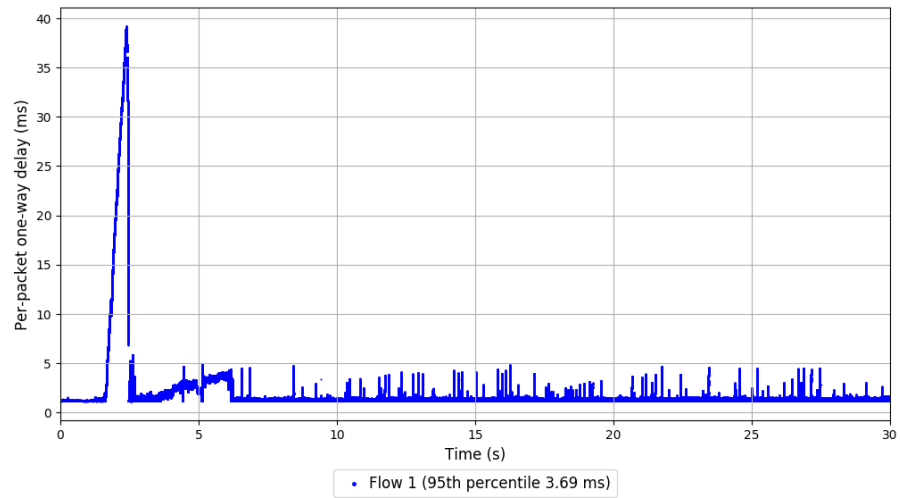
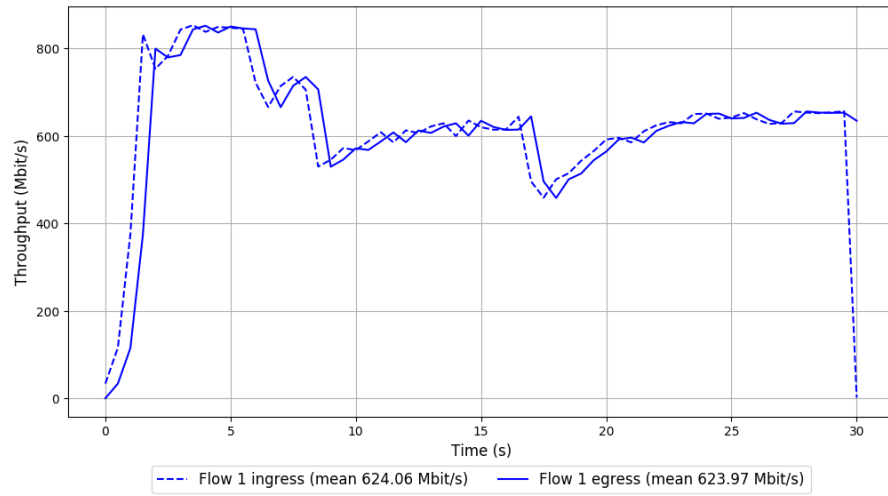
-- Flow 1:

Average throughput: 623.97 Mbit/s

95th percentile per-packet one-way delay: 3.691 ms

Loss rate: 0.08%

Run 1: Report of TCP Cubic — Data Link

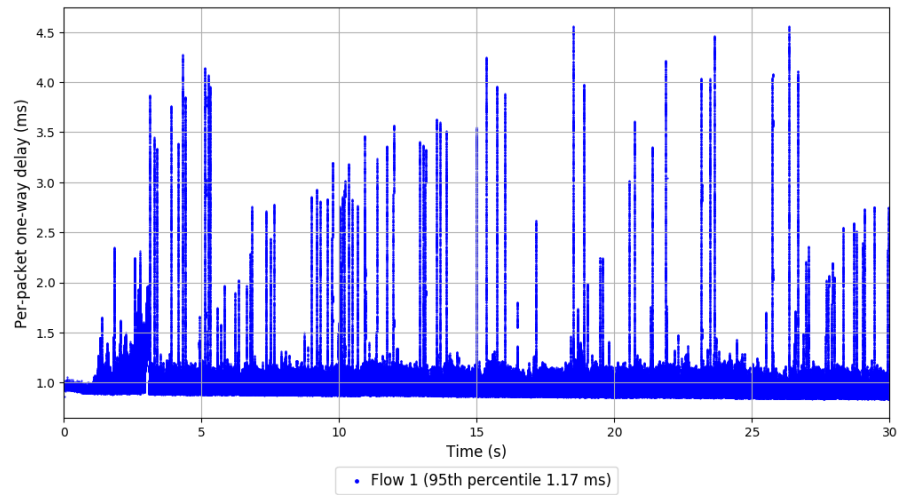
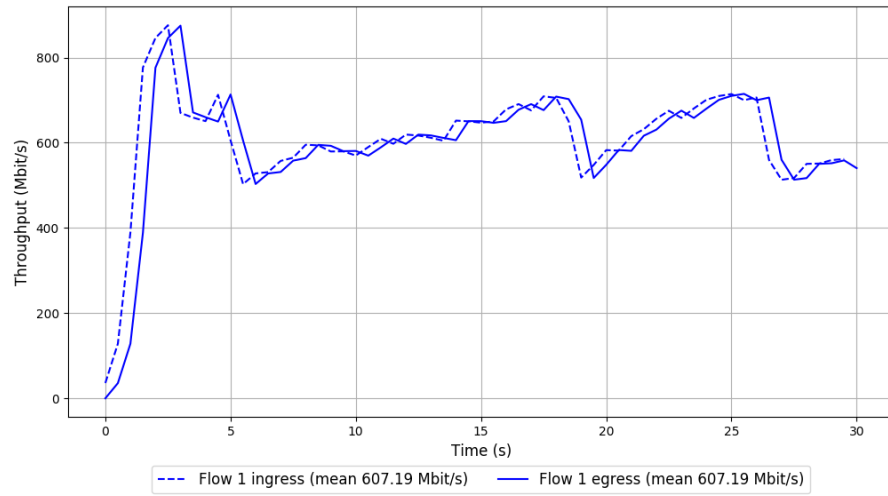


Run 2: Statistics of TCP Cubic

Start at: 2018-09-06 14:48:27
End at: 2018-09-06 14:48:57
Local clock offset: -0.876 ms
Remote clock offset: -5.756 ms

Below is generated by plot.py at 2018-09-06 16:52:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 607.19 Mbit/s
95th percentile per-packet one-way delay: 1.174 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 607.19 Mbit/s
95th percentile per-packet one-way delay: 1.174 ms
Loss rate: 0.06%

Run 2: Report of TCP Cubic — Data Link

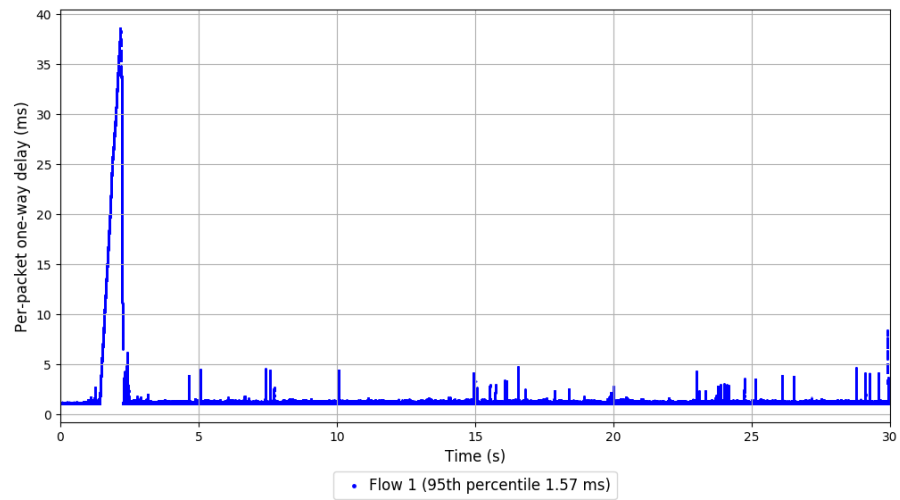
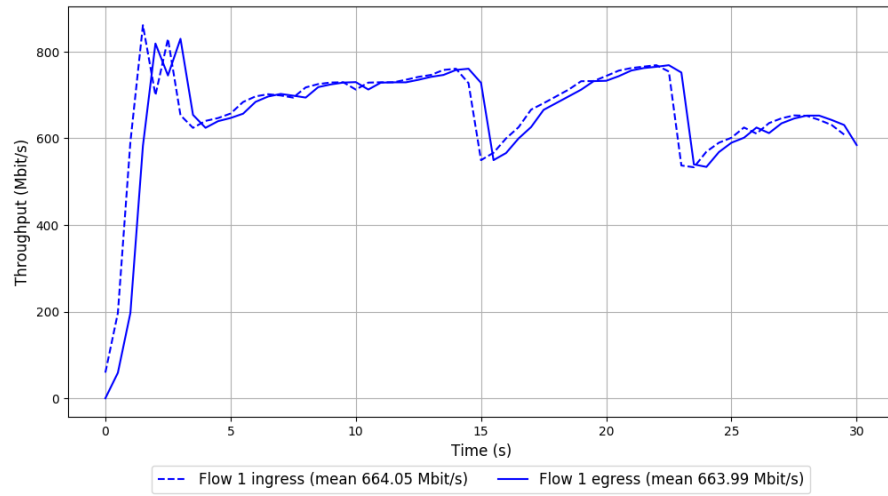


Run 3: Statistics of TCP Cubic

Start at: 2018-09-06 15:15:59
End at: 2018-09-06 15:16:29
Local clock offset: -0.677 ms
Remote clock offset: -3.968 ms

Below is generated by plot.py at 2018-09-06 16:52:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 663.99 Mbit/s
95th percentile per-packet one-way delay: 1.569 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 663.99 Mbit/s
95th percentile per-packet one-way delay: 1.569 ms
Loss rate: 0.08%

Run 3: Report of TCP Cubic — Data Link

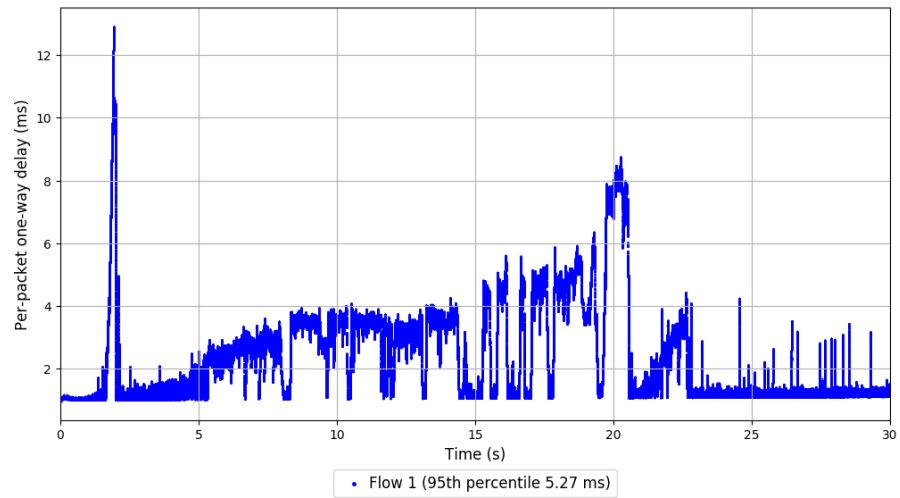
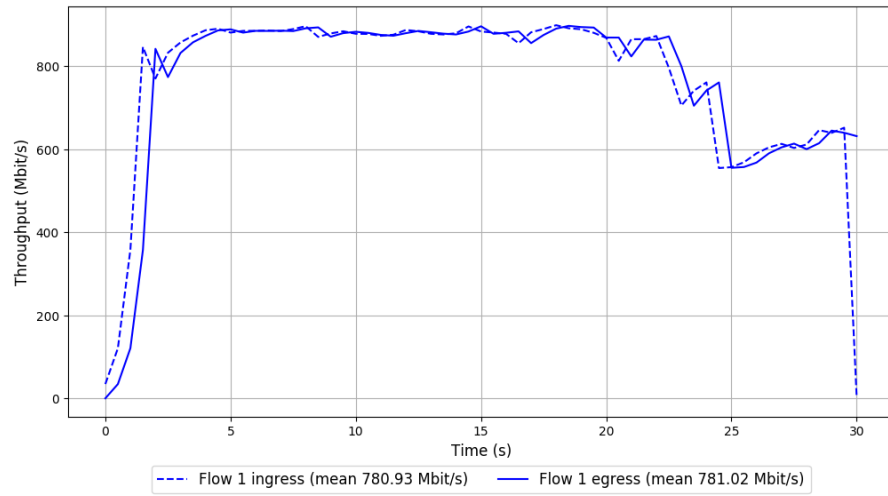


Run 4: Statistics of TCP Cubic

Start at: 2018-09-06 15:43:45
End at: 2018-09-06 15:44:15
Local clock offset: -0.362 ms
Remote clock offset: -1.375 ms

Below is generated by plot.py at 2018-09-06 16:52:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 781.02 Mbit/s
95th percentile per-packet one-way delay: 5.272 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 781.02 Mbit/s
95th percentile per-packet one-way delay: 5.272 ms
Loss rate: 0.05%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-06 16:11:51

End at: 2018-09-06 16:12:21

Local clock offset: -0.169 ms

Remote clock offset: 1.591 ms

Below is generated by plot.py at 2018-09-06 16:53:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 794.69 Mbit/s

95th percentile per-packet one-way delay: 6.418 ms

Loss rate: 0.07%

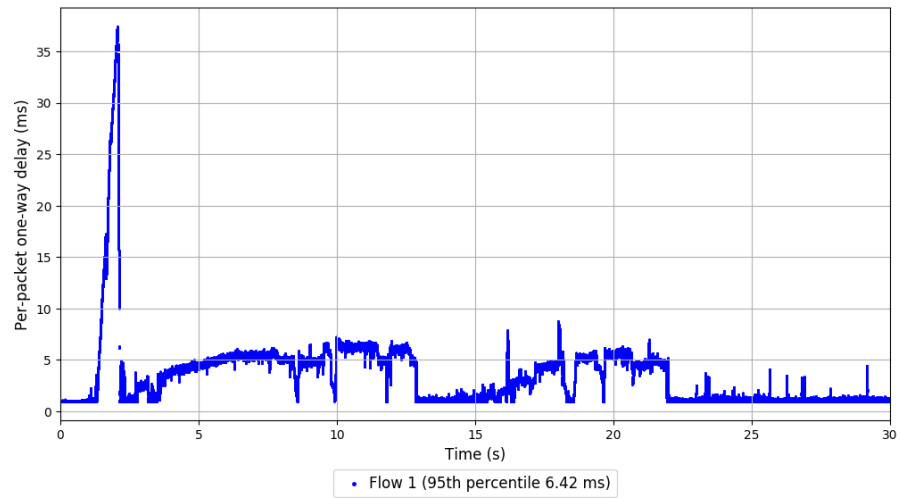
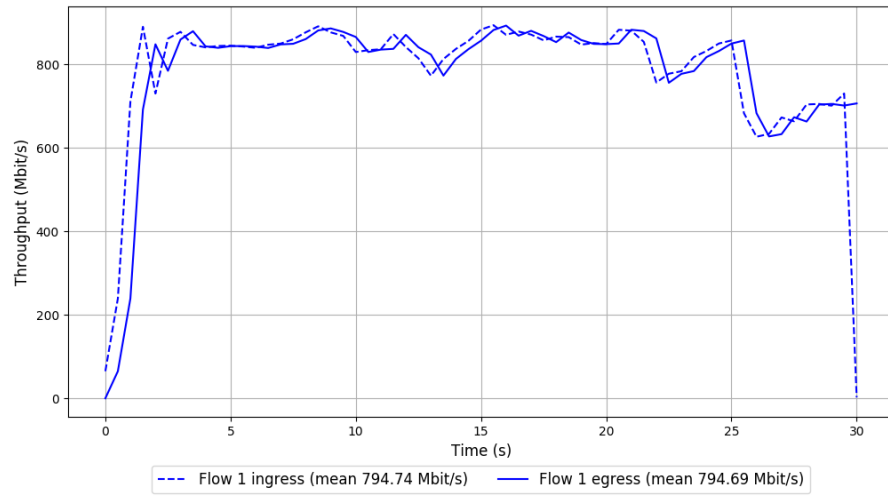
-- Flow 1:

Average throughput: 794.69 Mbit/s

95th percentile per-packet one-way delay: 6.418 ms

Loss rate: 0.07%

Run 5: Report of TCP Cubic — Data Link

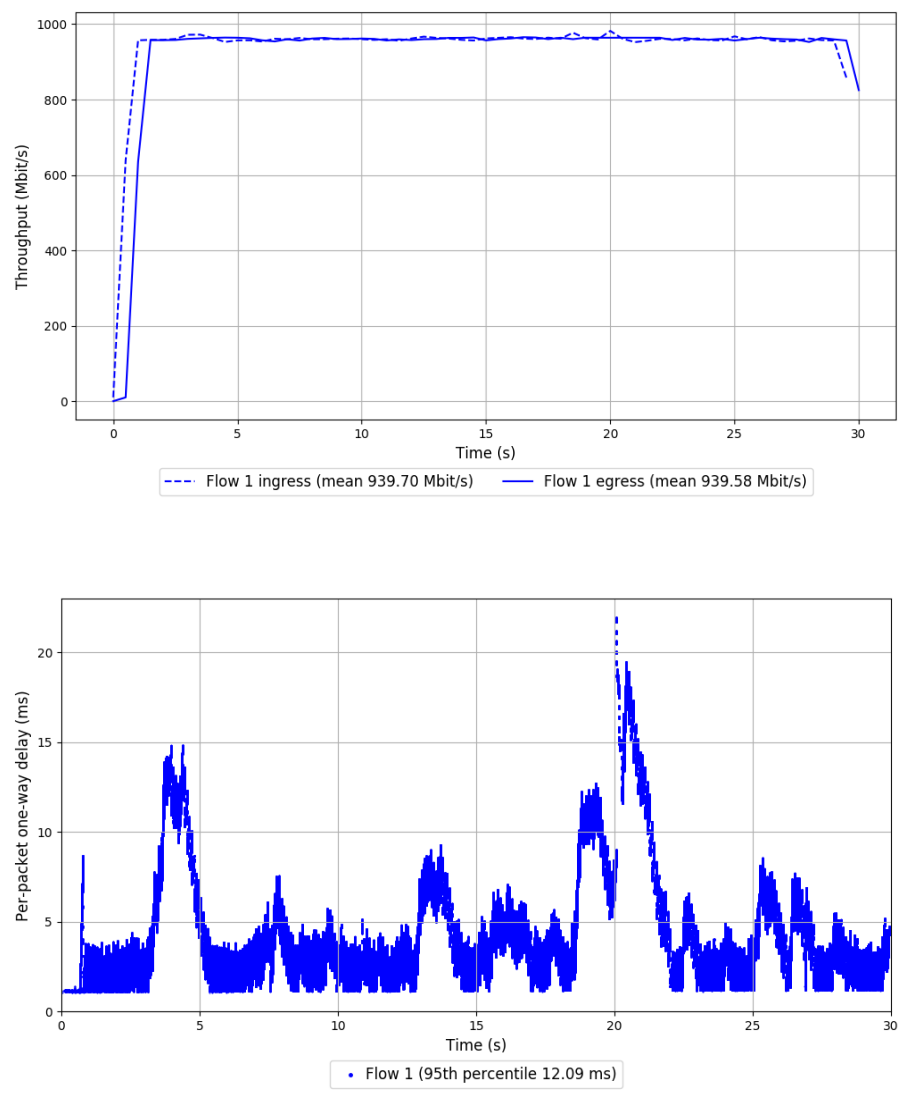


Run 1: Statistics of FillP

Start at: 2018-09-06 14:17:17
End at: 2018-09-06 14:17:47
Local clock offset: 2.359 ms
Remote clock offset: -4.094 ms

Below is generated by plot.py at 2018-09-06 16:56:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 939.58 Mbit/s
95th percentile per-packet one-way delay: 12.088 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 939.58 Mbit/s
95th percentile per-packet one-way delay: 12.088 ms
Loss rate: 0.08%

Run 1: Report of FillP — Data Link

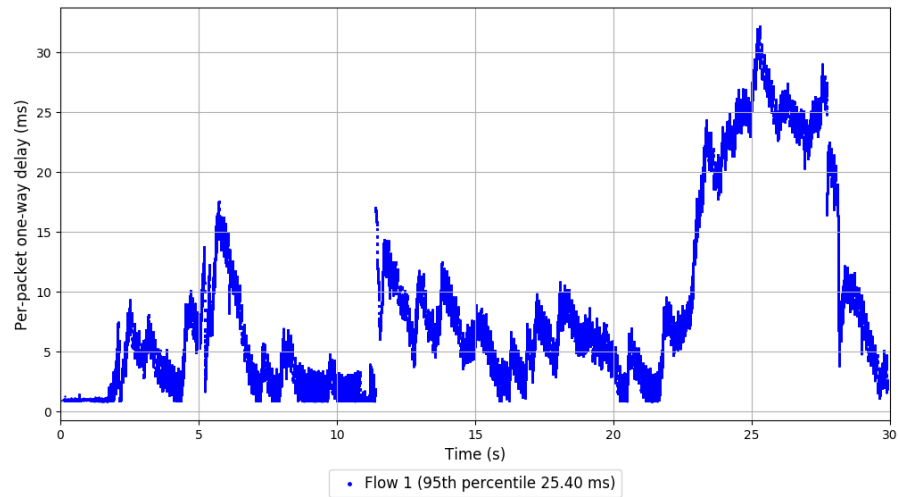
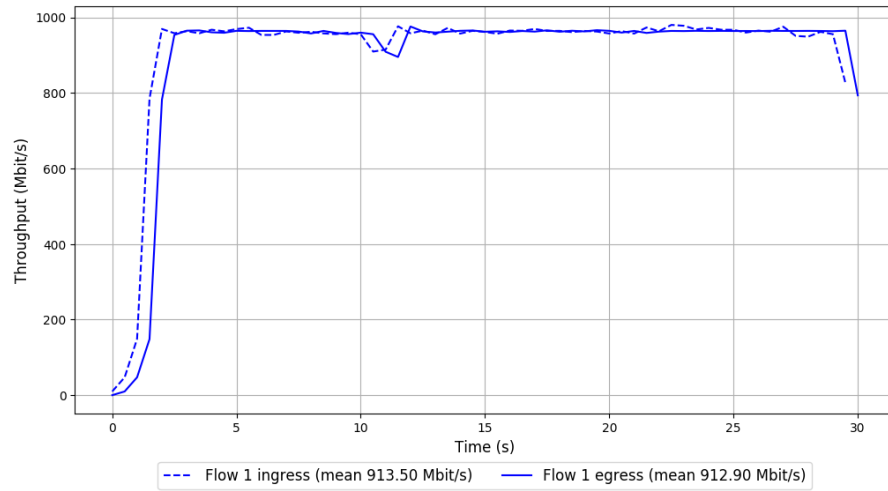


Run 2: Statistics of FillP

Start at: 2018-09-06 14:45:06
End at: 2018-09-06 14:45:36
Local clock offset: -1.136 ms
Remote clock offset: -5.609 ms

Below is generated by plot.py at 2018-09-06 17:03:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 912.90 Mbit/s
95th percentile per-packet one-way delay: 25.398 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 912.90 Mbit/s
95th percentile per-packet one-way delay: 25.398 ms
Loss rate: 0.13%

Run 2: Report of FillP — Data Link

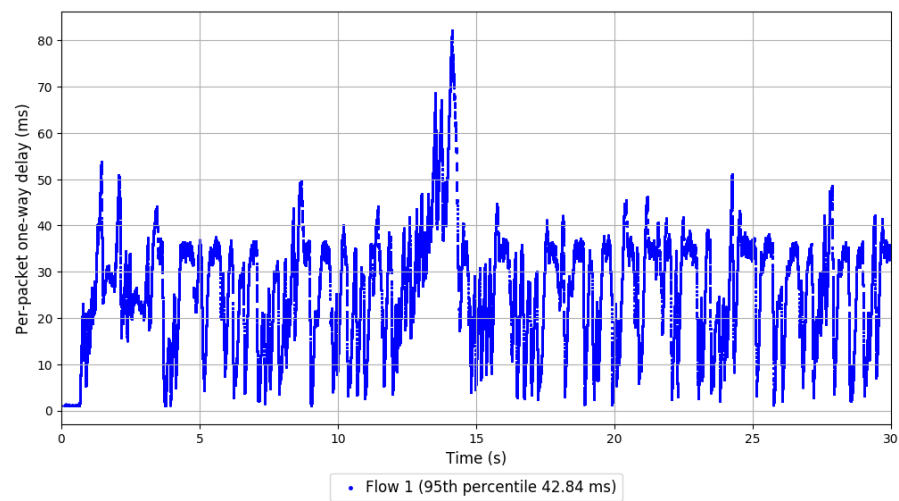
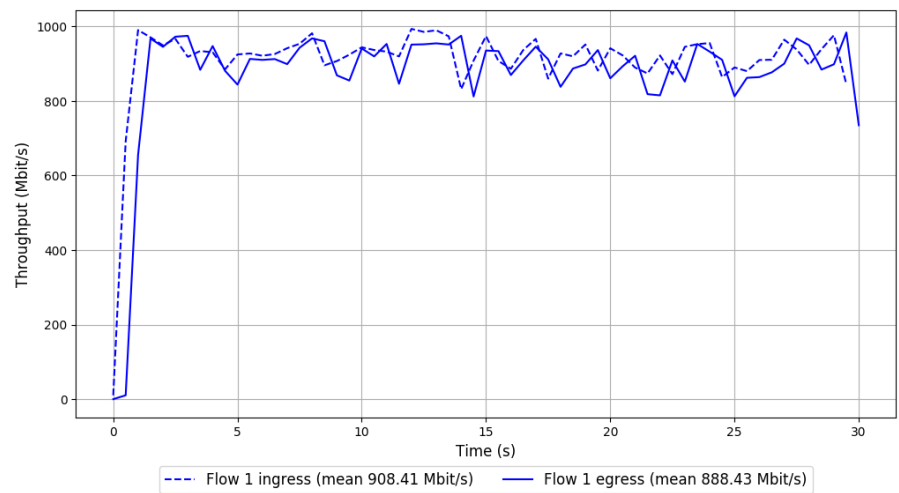


Run 3: Statistics of FillP

Start at: 2018-09-06 15:12:40
End at: 2018-09-06 15:13:10
Local clock offset: -0.645 ms
Remote clock offset: -4.464 ms

Below is generated by plot.py at 2018-09-06 17:03:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 888.43 Mbit/s
95th percentile per-packet one-way delay: 42.845 ms
Loss rate: 2.26%
-- Flow 1:
Average throughput: 888.43 Mbit/s
95th percentile per-packet one-way delay: 42.845 ms
Loss rate: 2.26%

Run 3: Report of FillP — Data Link

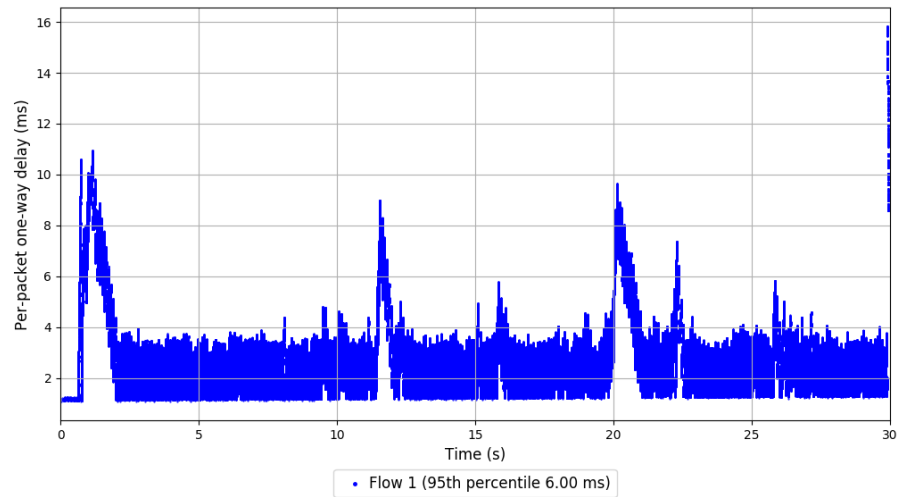
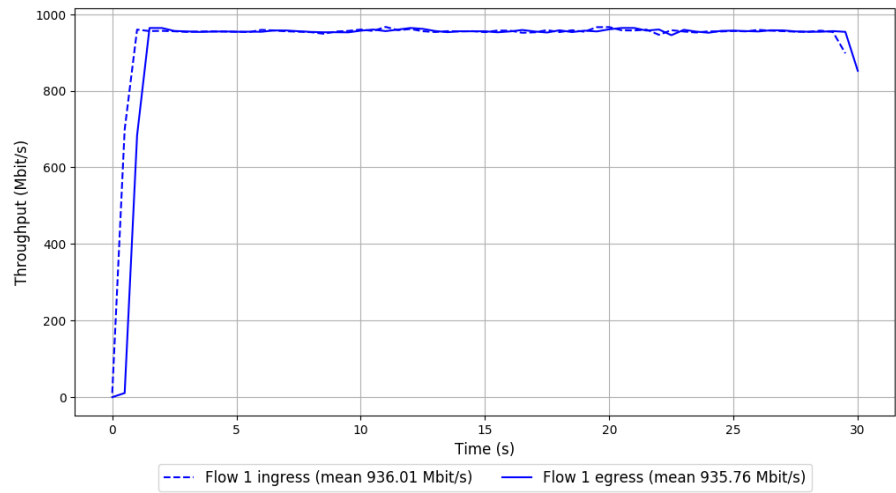


Run 4: Statistics of FillP

Start at: 2018-09-06 15:40:25
End at: 2018-09-06 15:40:55
Local clock offset: -0.26 ms
Remote clock offset: -2.314 ms

Below is generated by plot.py at 2018-09-06 17:04:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 935.76 Mbit/s
95th percentile per-packet one-way delay: 5.998 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 935.76 Mbit/s
95th percentile per-packet one-way delay: 5.998 ms
Loss rate: 0.09%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-06 16:08:30

End at: 2018-09-06 16:09:00

Local clock offset: -0.141 ms

Remote clock offset: 1.429 ms

Below is generated by plot.py at 2018-09-06 17:04:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 944.95 Mbit/s

95th percentile per-packet one-way delay: 53.830 ms

Loss rate: 0.60%

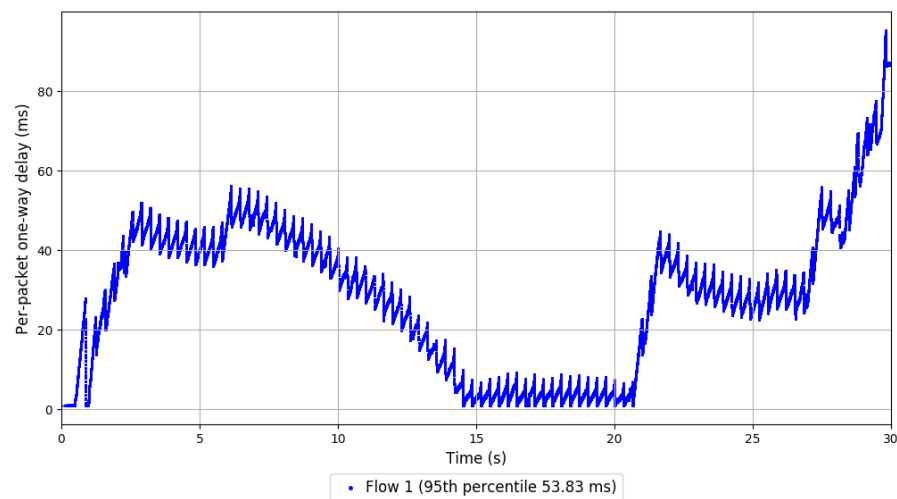
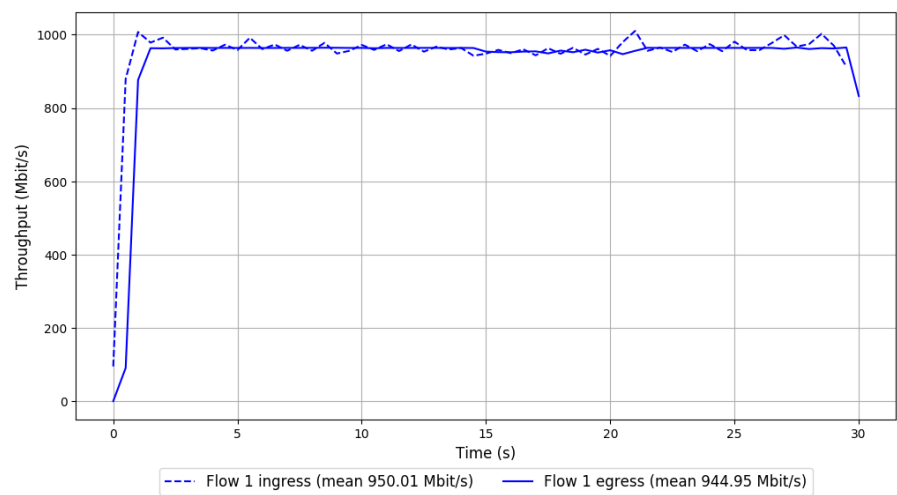
-- Flow 1:

Average throughput: 944.95 Mbit/s

95th percentile per-packet one-way delay: 53.830 ms

Loss rate: 0.60%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-06 14:09:34

End at: 2018-09-06 14:10:04

Local clock offset: 3.025 ms

Remote clock offset: -3.533 ms

Below is generated by plot.py at 2018-09-06 17:05:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 939.42 Mbit/s

95th percentile per-packet one-way delay: 20.974 ms

Loss rate: 0.63%

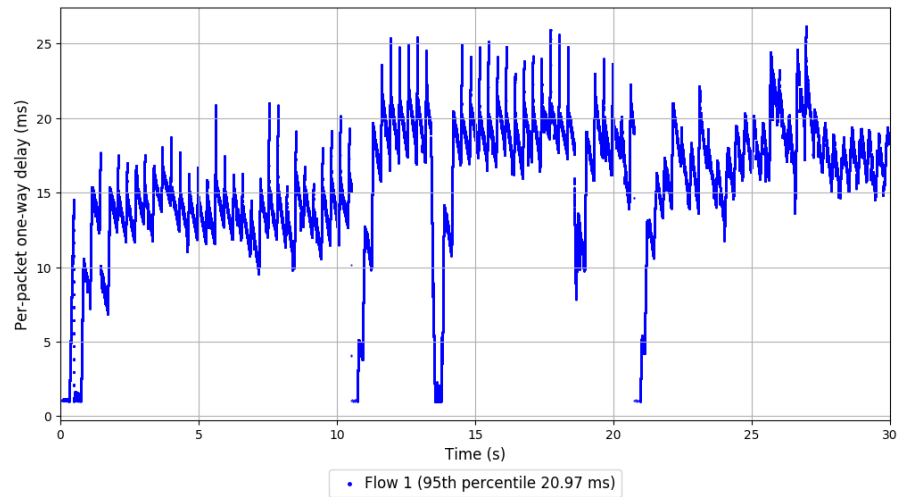
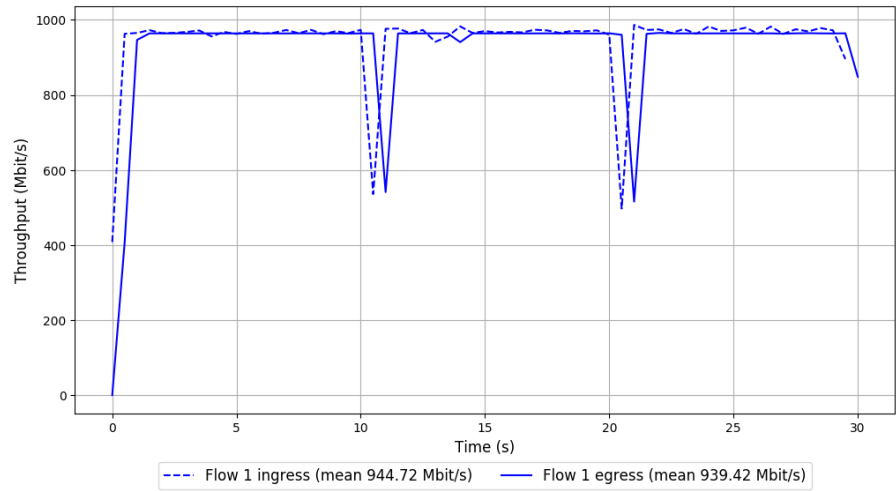
-- Flow 1:

Average throughput: 939.42 Mbit/s

95th percentile per-packet one-way delay: 20.974 ms

Loss rate: 0.63%

Run 1: Report of FillP-Sheep — Data Link

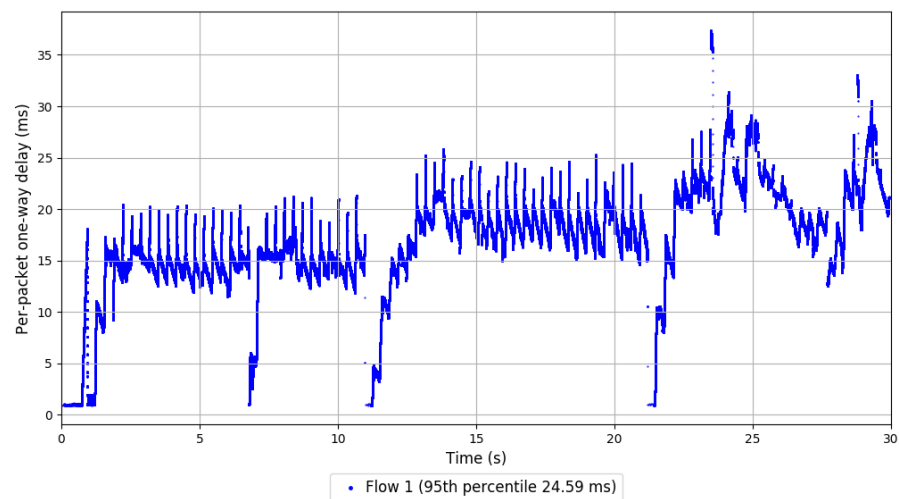
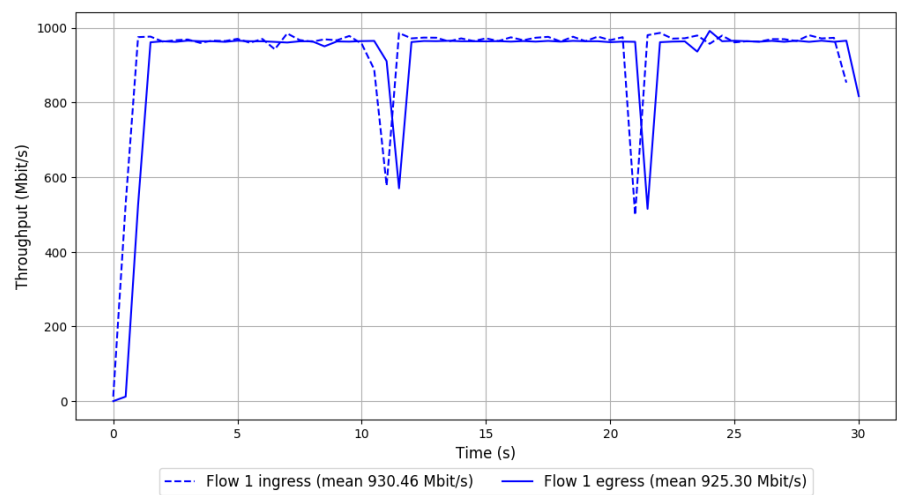


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-06 14:37:10
End at: 2018-09-06 14:37:40
Local clock offset: -0.668 ms
Remote clock offset: -5.23 ms

Below is generated by plot.py at 2018-09-06 17:05:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 925.30 Mbit/s
95th percentile per-packet one-way delay: 24.585 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 925.30 Mbit/s
95th percentile per-packet one-way delay: 24.585 ms
Loss rate: 0.62%

Run 2: Report of FillP-Sheep — Data Link

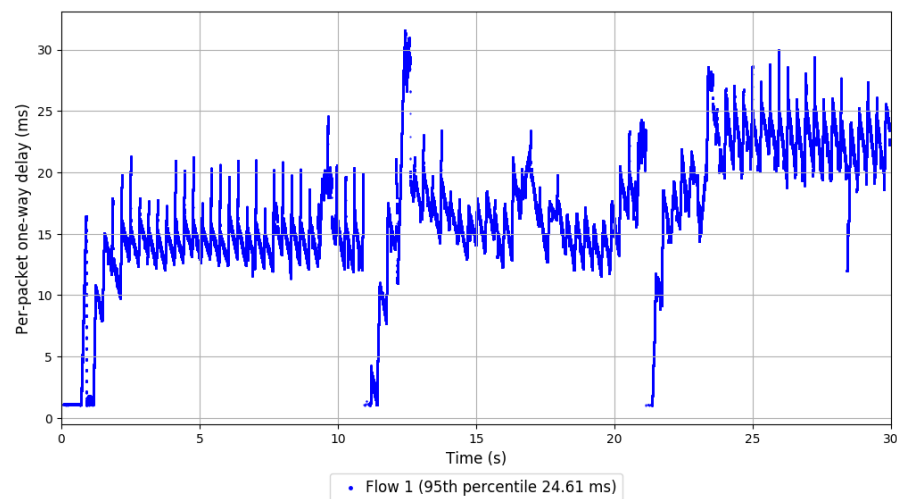
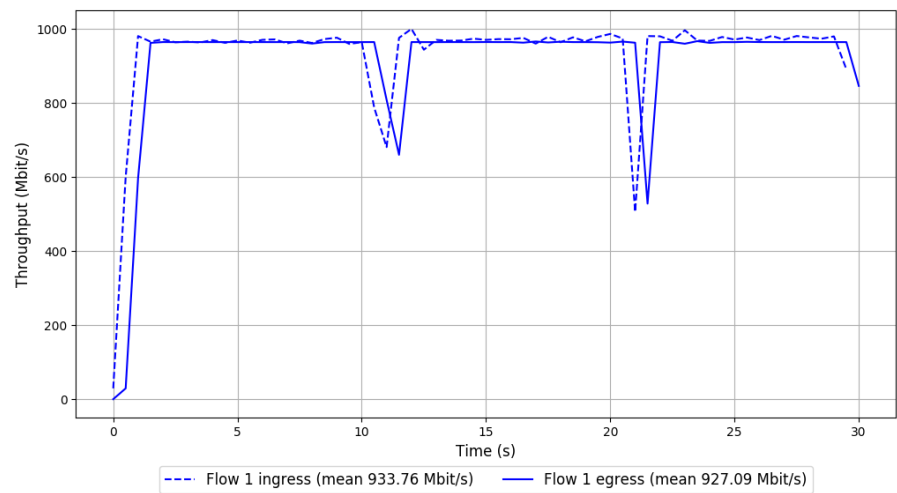


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-06 15:04:54
End at: 2018-09-06 15:05:24
Local clock offset: -0.485 ms
Remote clock offset: -6.485 ms

Below is generated by plot.py at 2018-09-06 17:06:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 927.09 Mbit/s
95th percentile per-packet one-way delay: 24.611 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 927.09 Mbit/s
95th percentile per-packet one-way delay: 24.611 ms
Loss rate: 0.78%

Run 3: Report of FillP-Sheep — Data Link

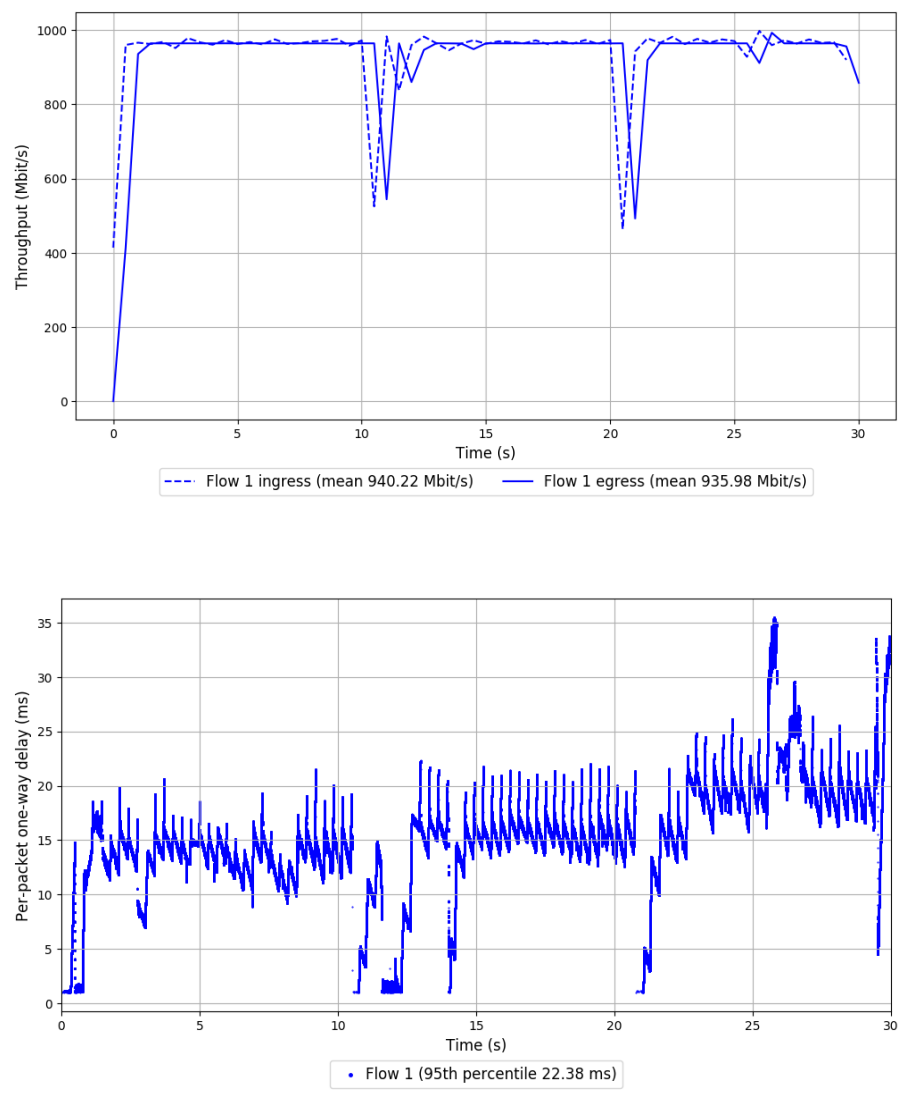


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-06 15:32:35
End at: 2018-09-06 15:33:05
Local clock offset: -0.218 ms
Remote clock offset: -2.777 ms

Below is generated by plot.py at 2018-09-06 17:10:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 935.98 Mbit/s
95th percentile per-packet one-way delay: 22.381 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 935.98 Mbit/s
95th percentile per-packet one-way delay: 22.381 ms
Loss rate: 0.52%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-06 16:00:34

End at: 2018-09-06 16:01:04

Local clock offset: -0.003 ms

Remote clock offset: 0.795 ms

Below is generated by plot.py at 2018-09-06 17:15:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 926.52 Mbit/s

95th percentile per-packet one-way delay: 24.347 ms

Loss rate: 0.54%

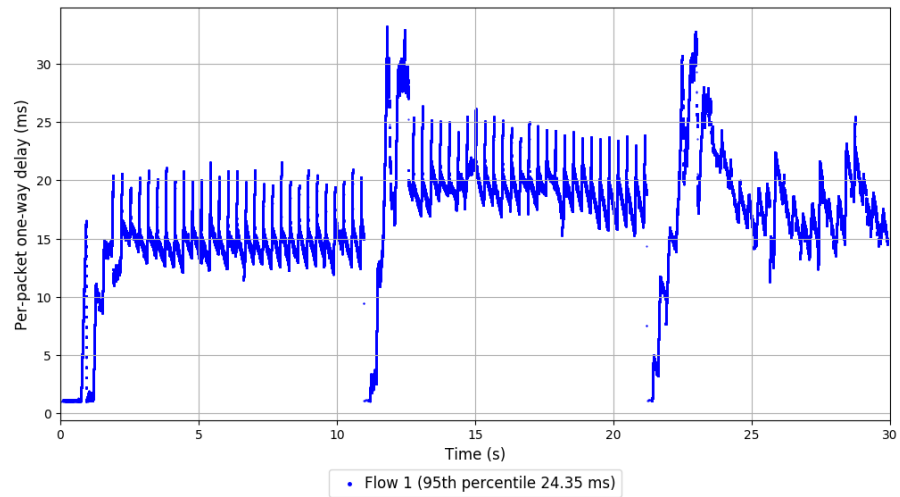
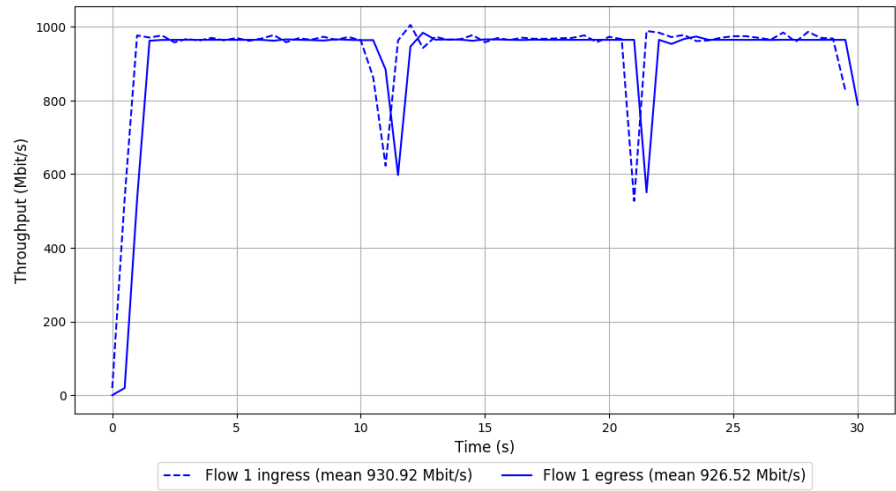
-- Flow 1:

Average throughput: 926.52 Mbit/s

95th percentile per-packet one-way delay: 24.347 ms

Loss rate: 0.54%

Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2018-09-06 14:26:53

End at: 2018-09-06 14:27:23

Local clock offset: 0.485 ms

Remote clock offset: -4.784 ms

Below is generated by plot.py at 2018-09-06 17:15:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 192.34 Mbit/s

95th percentile per-packet one-way delay: 1.216 ms

Loss rate: 0.07%

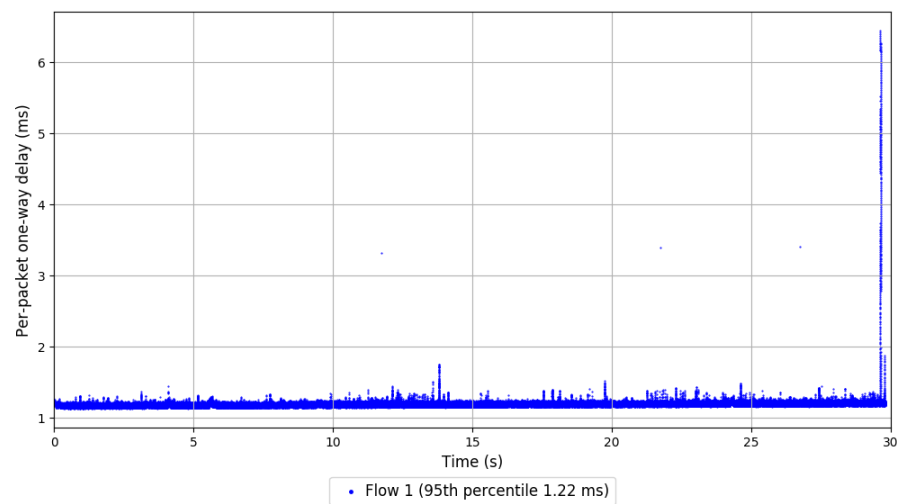
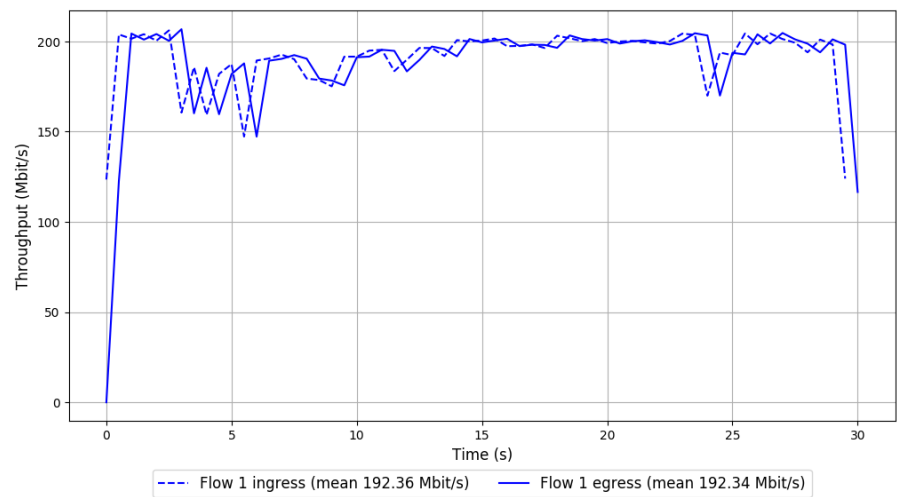
-- Flow 1:

Average throughput: 192.34 Mbit/s

95th percentile per-packet one-way delay: 1.216 ms

Loss rate: 0.07%

Run 1: Report of Indigo — Data Link

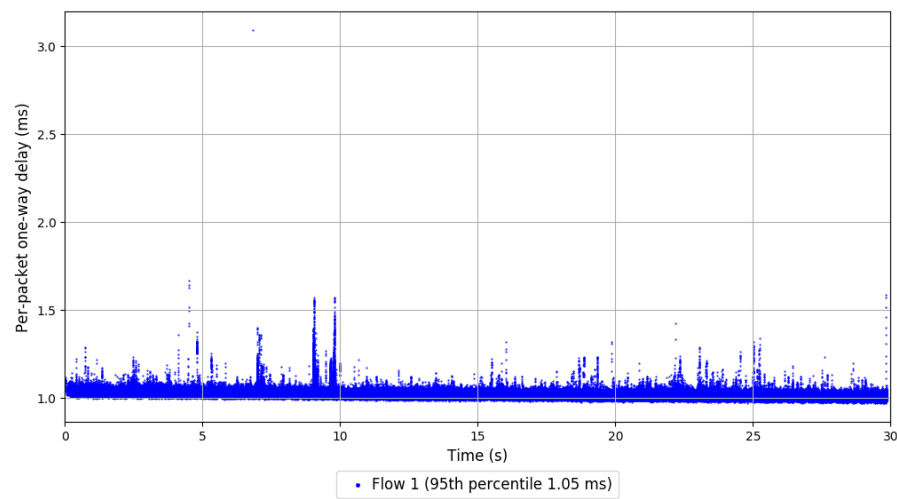
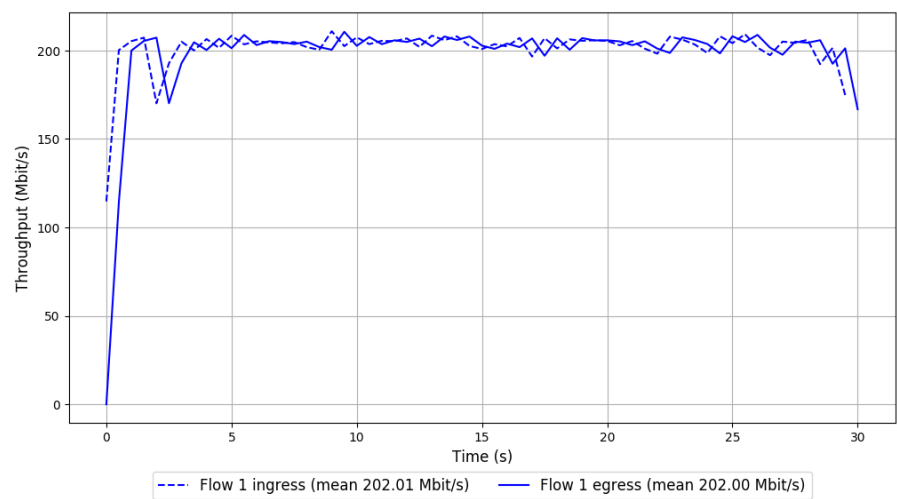


Run 2: Statistics of Indigo

Start at: 2018-09-06 14:54:39
End at: 2018-09-06 14:55:09
Local clock offset: -0.513 ms
Remote clock offset: -6.031 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 202.00 Mbit/s
95th percentile per-packet one-way delay: 1.052 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 202.00 Mbit/s
95th percentile per-packet one-way delay: 1.052 ms
Loss rate: 0.07%

Run 2: Report of Indigo — Data Link

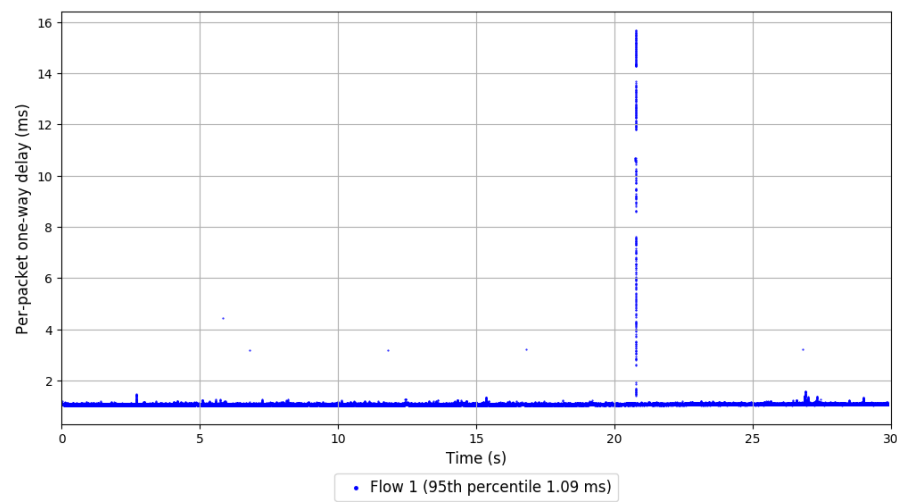
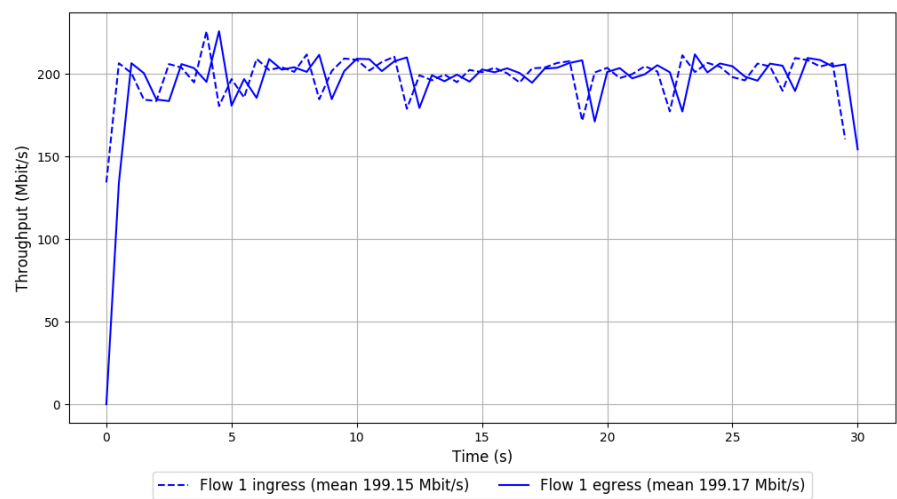


Run 3: Statistics of Indigo

Start at: 2018-09-06 15:22:13
End at: 2018-09-06 15:22:43
Local clock offset: -0.374 ms
Remote clock offset: -3.341 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 199.17 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 199.17 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 0.06%

Run 3: Report of Indigo — Data Link

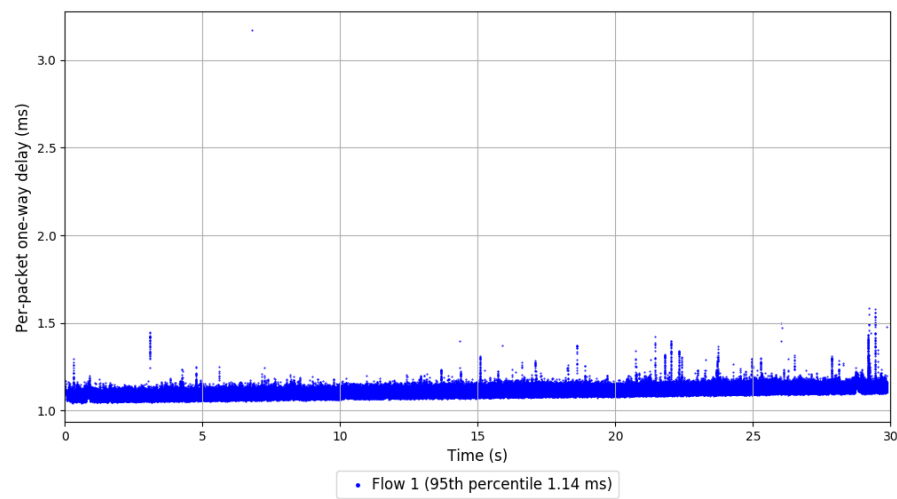
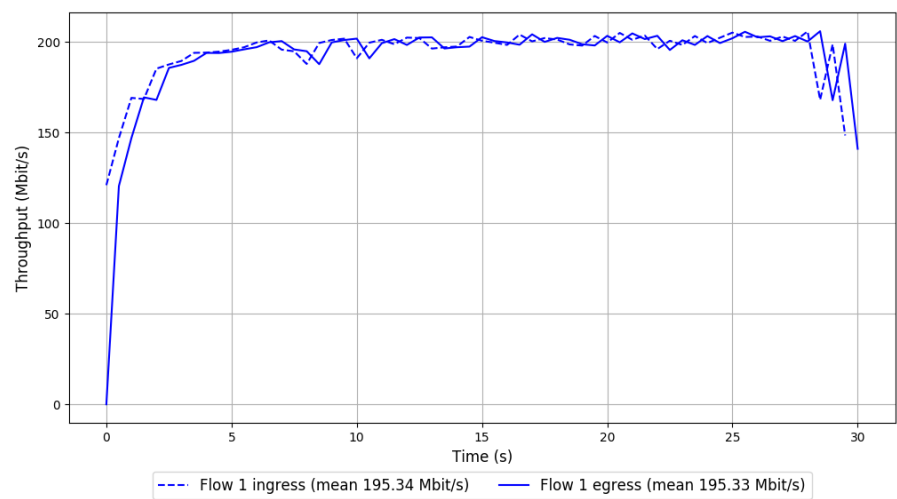


Run 4: Statistics of Indigo

Start at: 2018-09-06 15:50:07
End at: 2018-09-06 15:50:37
Local clock offset: -0.12 ms
Remote clock offset: -0.263 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 195.33 Mbit/s
95th percentile per-packet one-way delay: 1.144 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 195.33 Mbit/s
95th percentile per-packet one-way delay: 1.144 ms
Loss rate: 0.07%

Run 4: Report of Indigo — Data Link

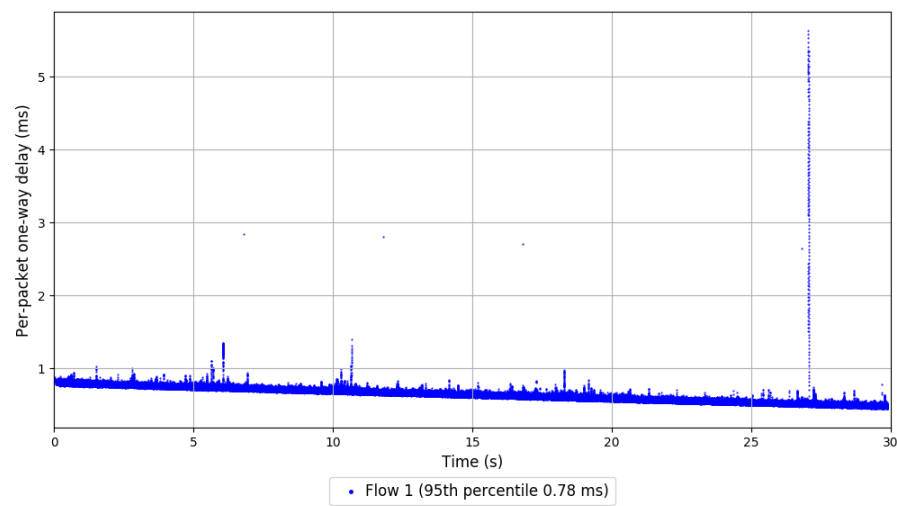
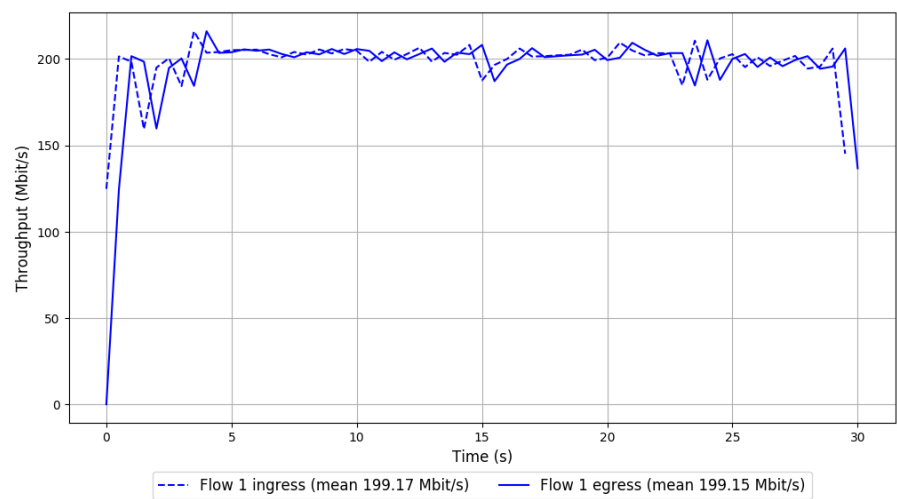


Run 5: Statistics of Indigo

Start at: 2018-09-06 16:18:11
End at: 2018-09-06 16:18:41
Local clock offset: 0.796 ms
Remote clock offset: -0.428 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 199.15 Mbit/s
95th percentile per-packet one-way delay: 0.776 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 199.15 Mbit/s
95th percentile per-packet one-way delay: 0.776 ms
Loss rate: 0.07%

Run 5: Report of Indigo — Data Link

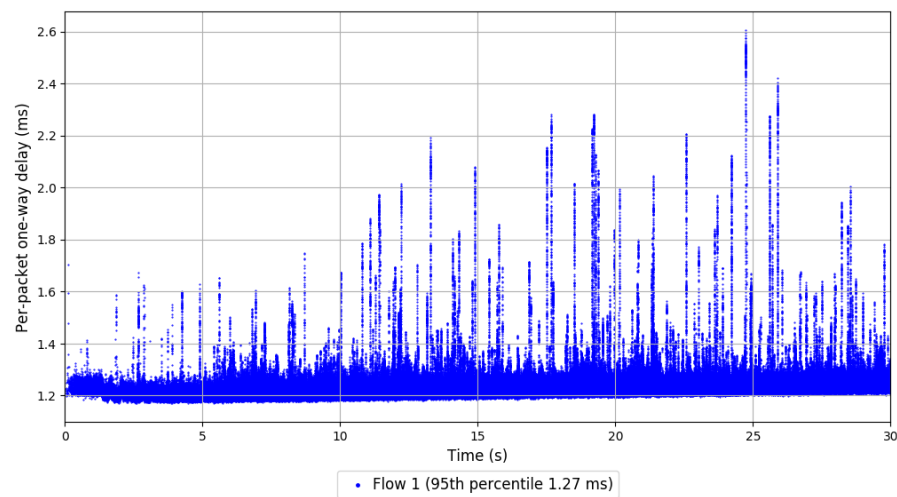
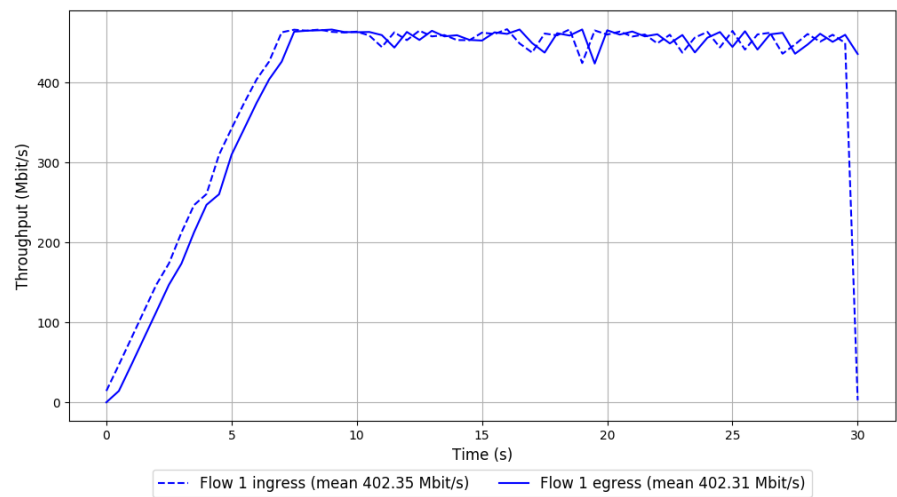


Run 1: Statistics of LEDBAT

Start at: 2018-09-06 14:25:18
End at: 2018-09-06 14:25:48
Local clock offset: 0.689 ms
Remote clock offset: -4.726 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 402.31 Mbit/s
95th percentile per-packet one-way delay: 1.270 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 402.31 Mbit/s
95th percentile per-packet one-way delay: 1.270 ms
Loss rate: 0.07%

Run 1: Report of LEDBAT — Data Link

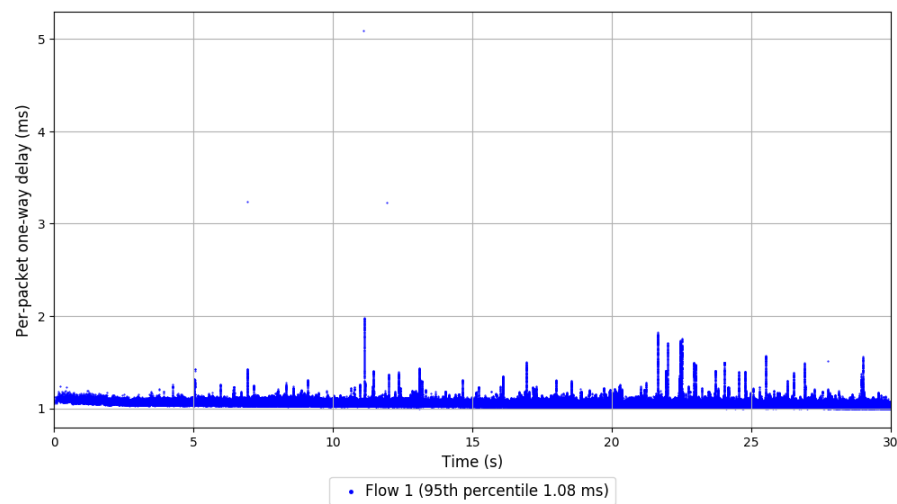
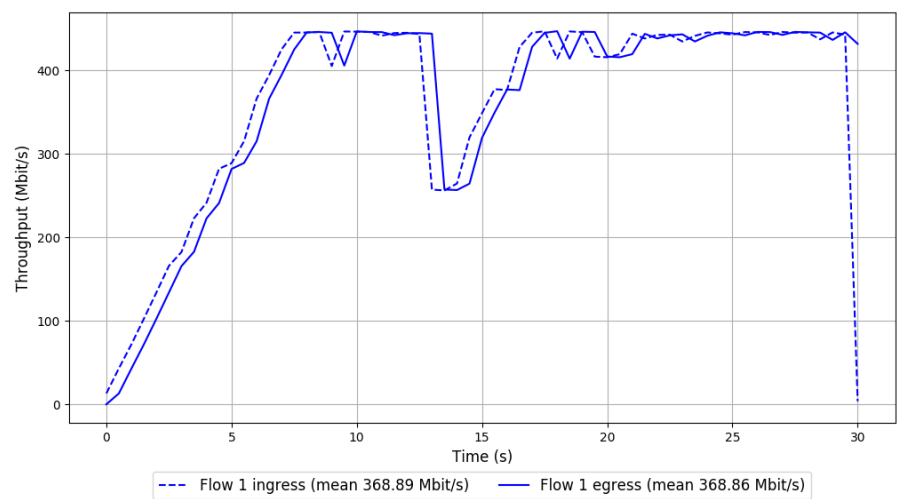


Run 2: Statistics of LEDBAT

Start at: 2018-09-06 14:53:06
End at: 2018-09-06 14:53:36
Local clock offset: -0.533 ms
Remote clock offset: -5.981 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 368.86 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 368.86 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.07%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-06 15:20:40

End at: 2018-09-06 15:21:10

Local clock offset: -0.519 ms

Remote clock offset: -3.49 ms

Below is generated by plot.py at 2018-09-06 17:15:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 385.49 Mbit/s

95th percentile per-packet one-way delay: 1.044 ms

Loss rate: 0.07%

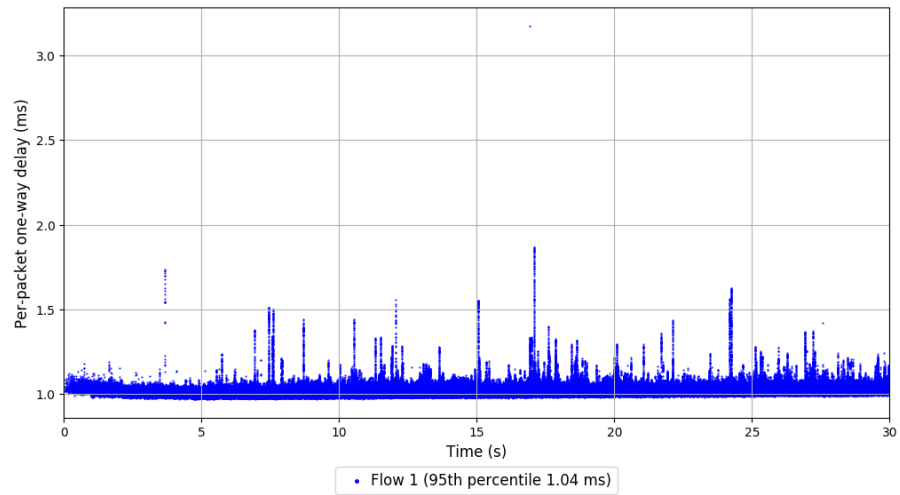
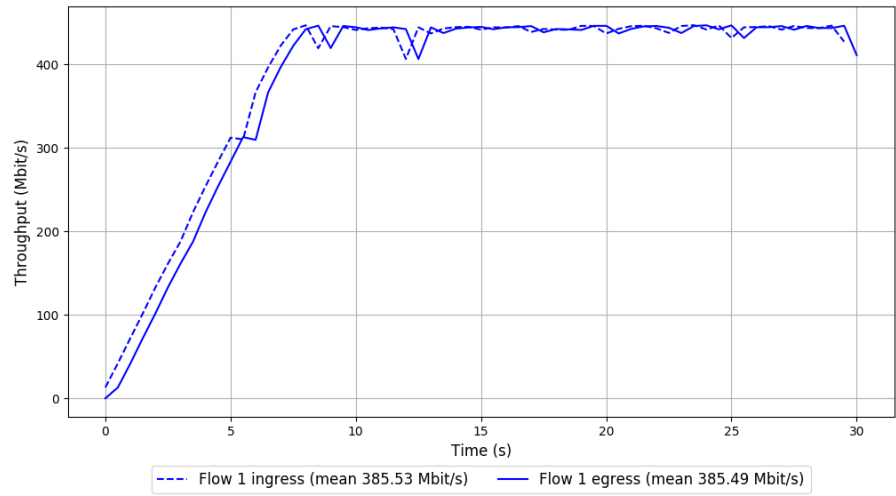
-- Flow 1:

Average throughput: 385.49 Mbit/s

95th percentile per-packet one-way delay: 1.044 ms

Loss rate: 0.07%

Run 3: Report of LEDBAT — Data Link

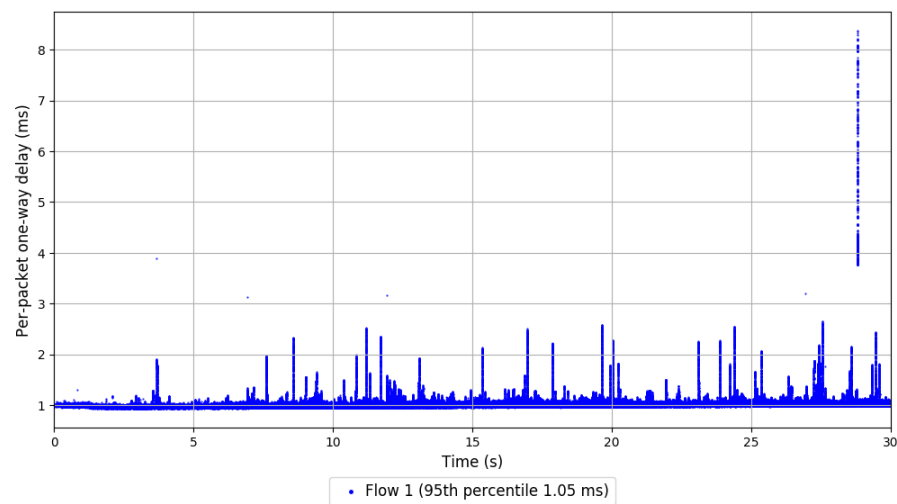
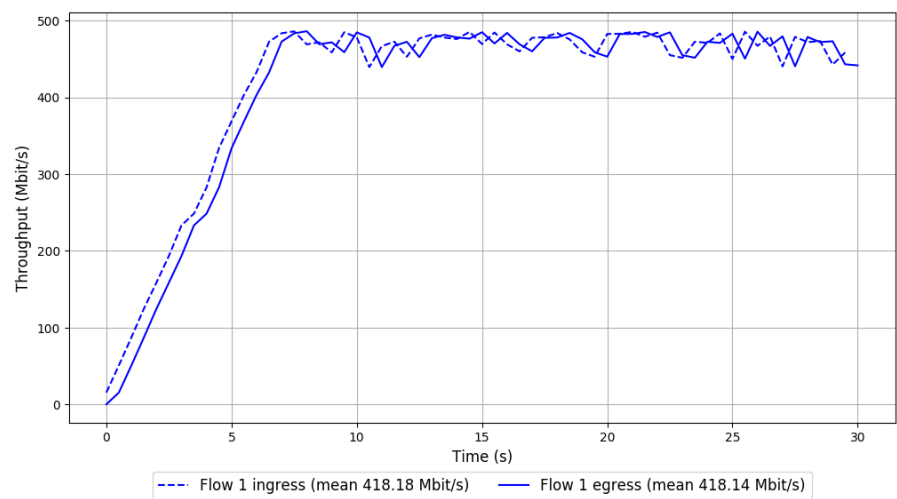


Run 4: Statistics of LEDBAT

Start at: 2018-09-06 15:48:31
End at: 2018-09-06 15:49:01
Local clock offset: -0.166 ms
Remote clock offset: -0.378 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 418.14 Mbit/s
95th percentile per-packet one-way delay: 1.051 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 418.14 Mbit/s
95th percentile per-packet one-way delay: 1.051 ms
Loss rate: 0.07%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-06 16:16:37

End at: 2018-09-06 16:17:07

Local clock offset: 0.304 ms

Remote clock offset: 0.298 ms

Below is generated by plot.py at 2018-09-06 17:15:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 373.33 Mbit/s

95th percentile per-packet one-way delay: 0.637 ms

Loss rate: 0.08%

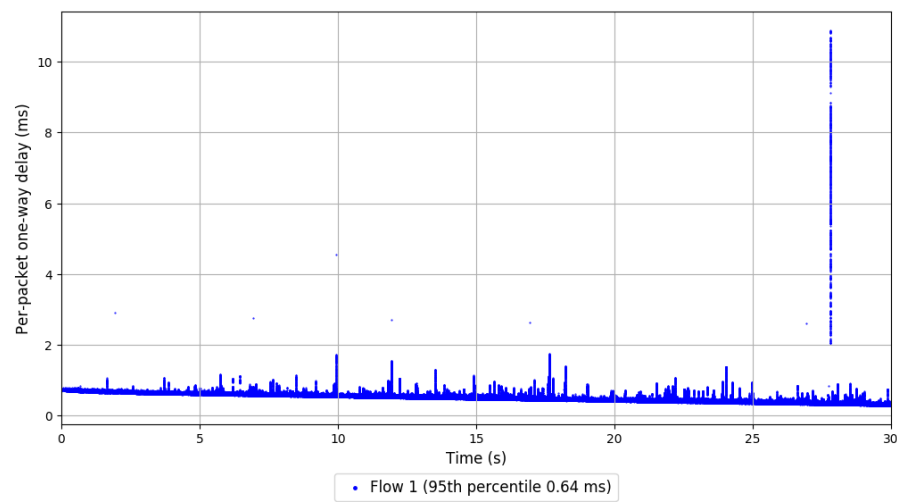
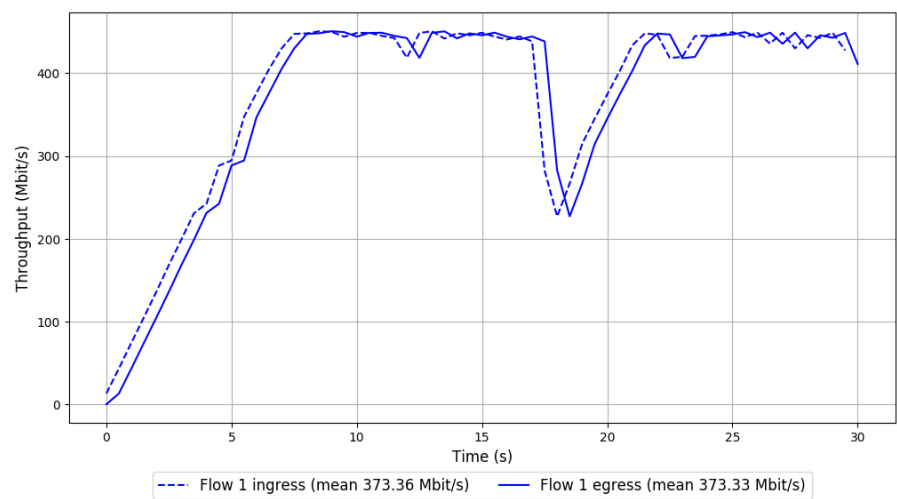
-- Flow 1:

Average throughput: 373.33 Mbit/s

95th percentile per-packet one-way delay: 0.637 ms

Loss rate: 0.08%

Run 5: Report of LEDBAT — Data Link

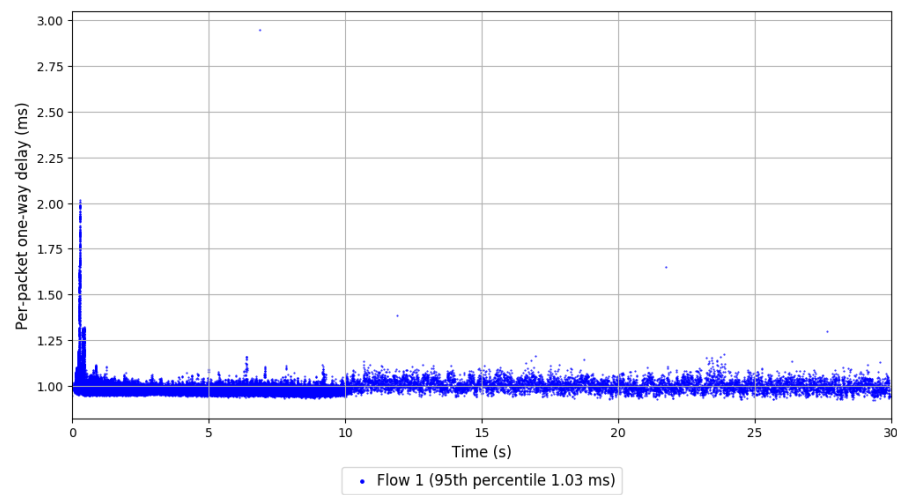
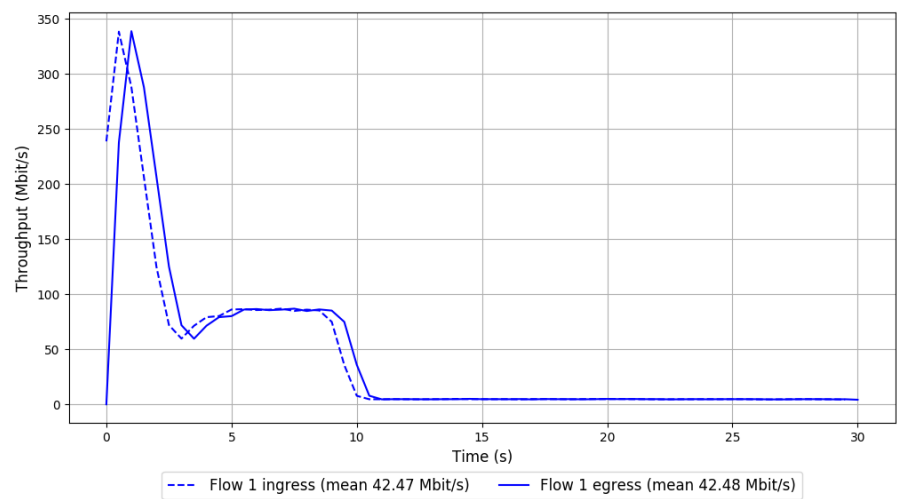


Run 1: Statistics of Indigo-Muses

Start at: 2018-09-06 14:11:17
End at: 2018-09-06 14:11:47
Local clock offset: 2.926 ms
Remote clock offset: -3.717 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 1.030 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 1.030 ms
Loss rate: 0.00%

Run 1: Report of Indigo-Muses — Data Link

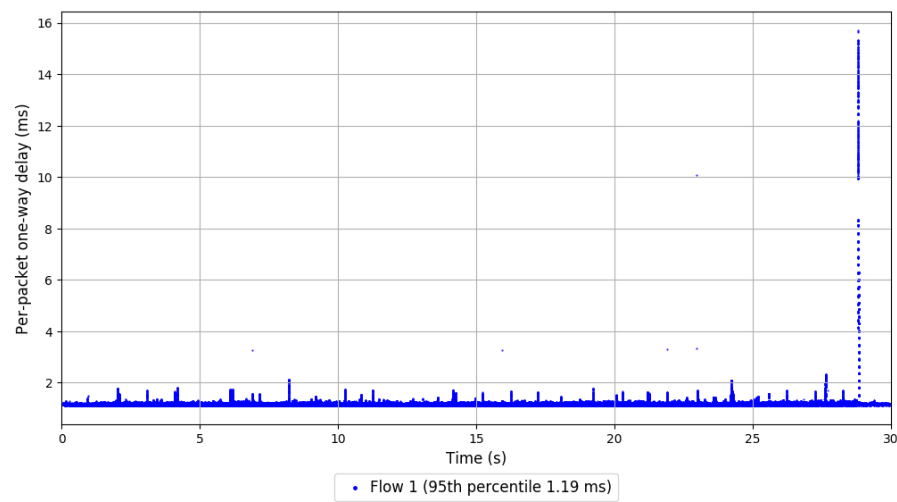
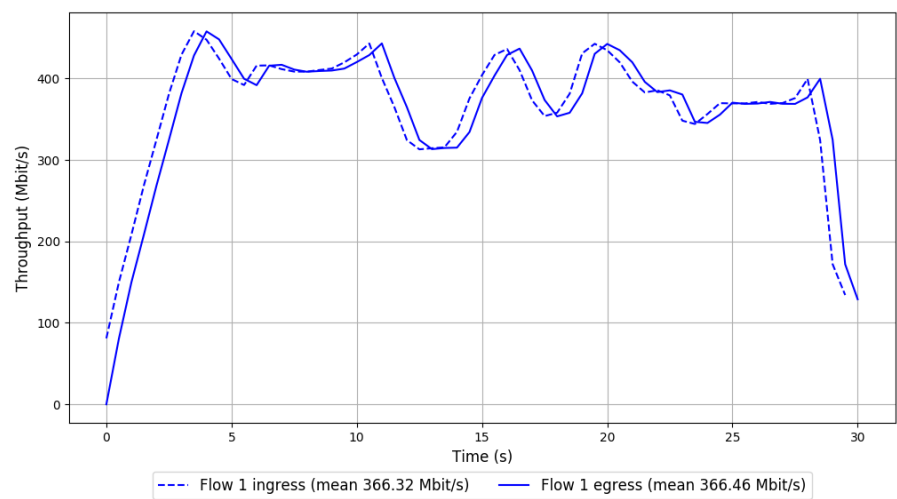


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-06 14:38:54
End at: 2018-09-06 14:39:24
Local clock offset: -0.69 ms
Remote clock offset: -5.403 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 366.46 Mbit/s
95th percentile per-packet one-way delay: 1.189 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 366.46 Mbit/s
95th percentile per-packet one-way delay: 1.189 ms
Loss rate: 0.03%

Run 2: Report of Indigo-Muses — Data Link

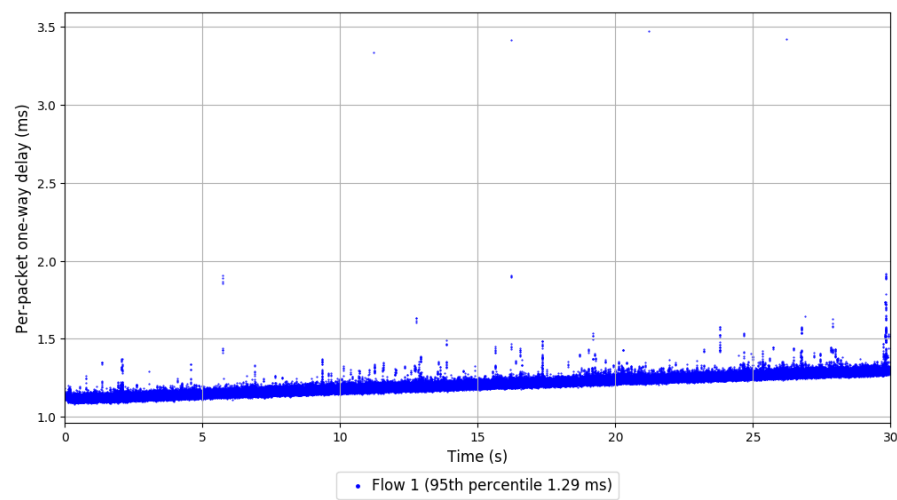
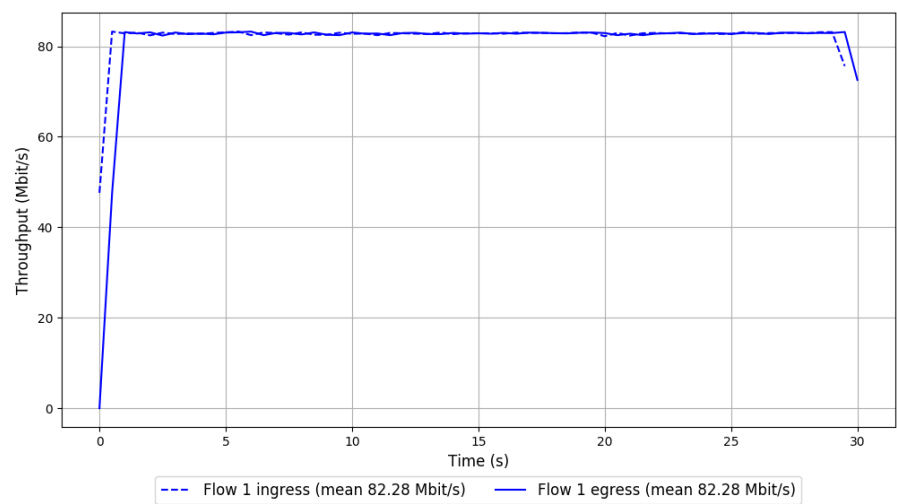


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-06 15:06:38
End at: 2018-09-06 15:07:08
Local clock offset: -0.535 ms
Remote clock offset: -6.057 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 82.28 Mbit/s
95th percentile per-packet one-way delay: 1.288 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 82.28 Mbit/s
95th percentile per-packet one-way delay: 1.288 ms
Loss rate: 0.07%

Run 3: Report of Indigo-Muses — Data Link

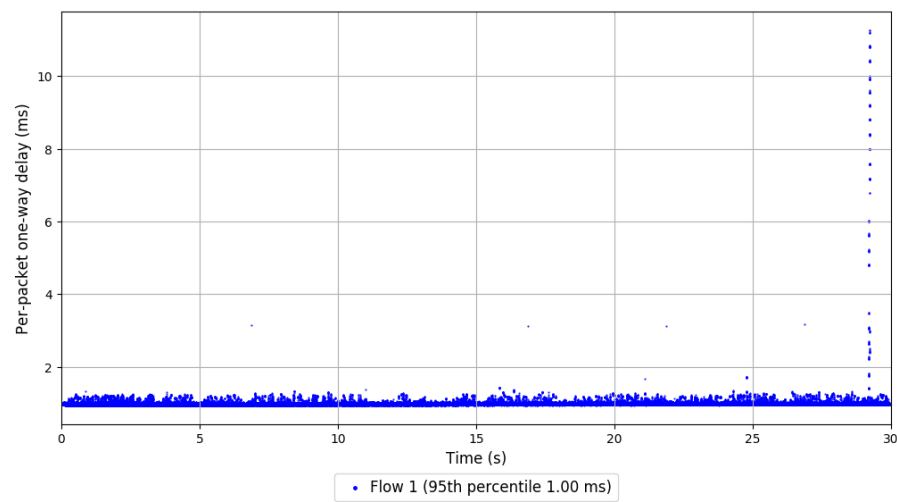
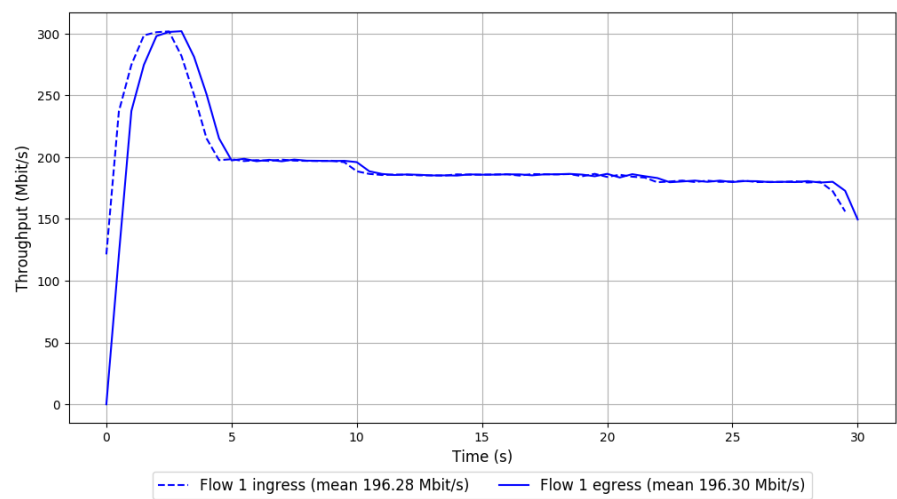


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-06 15:34:19
End at: 2018-09-06 15:34:49
Local clock offset: -0.32 ms
Remote clock offset: -2.716 ms

Below is generated by plot.py at 2018-09-06 17:15:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 196.30 Mbit/s
95th percentile per-packet one-way delay: 1.004 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 196.30 Mbit/s
95th percentile per-packet one-way delay: 1.004 ms
Loss rate: 0.06%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-06 16:02:17

End at: 2018-09-06 16:02:47

Local clock offset: -0.026 ms

Remote clock offset: 0.952 ms

Below is generated by plot.py at 2018-09-06 17:15:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 385.85 Mbit/s

95th percentile per-packet one-way delay: 1.180 ms

Loss rate: 0.06%

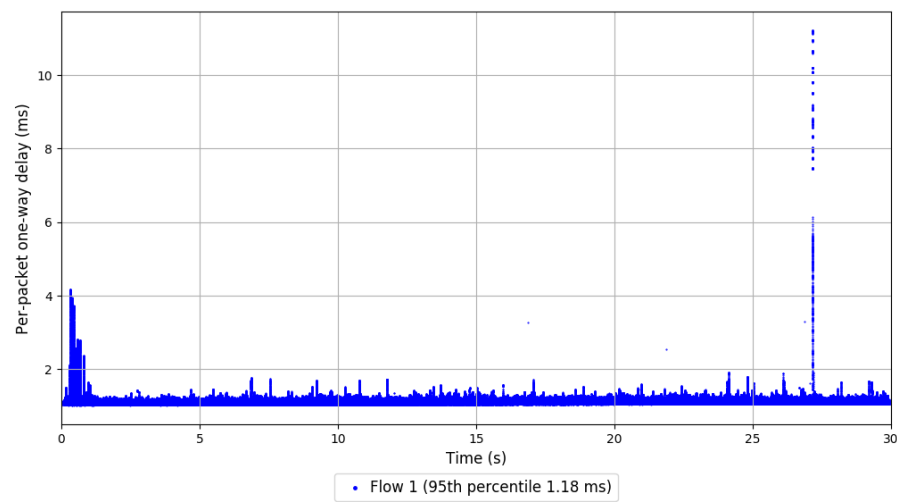
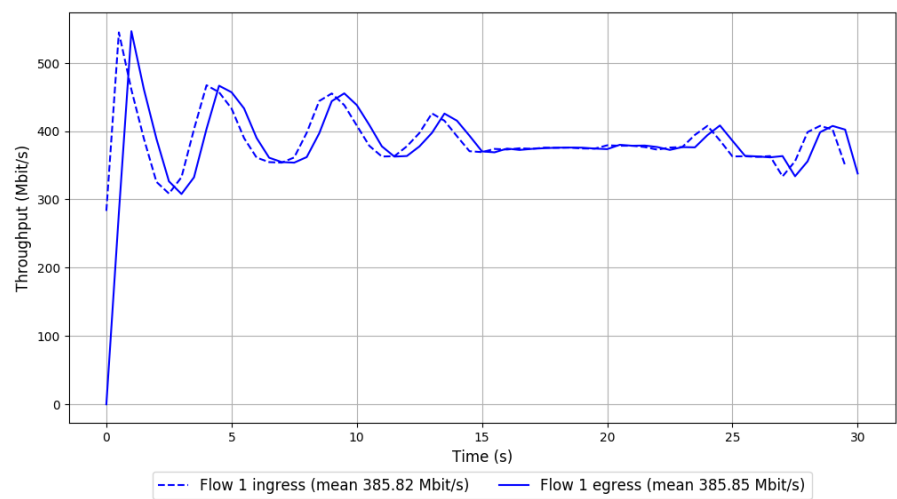
-- Flow 1:

Average throughput: 385.85 Mbit/s

95th percentile per-packet one-way delay: 1.180 ms

Loss rate: 0.06%

Run 5: Report of Indigo-Muses — Data Link

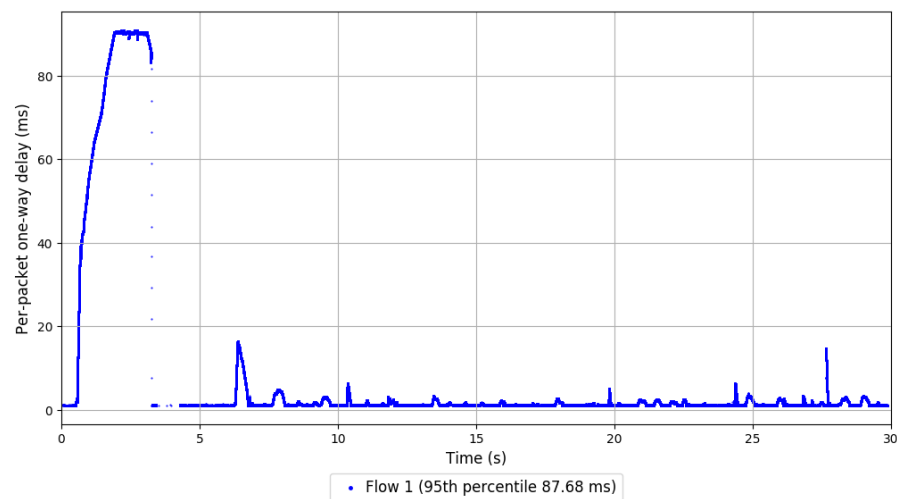
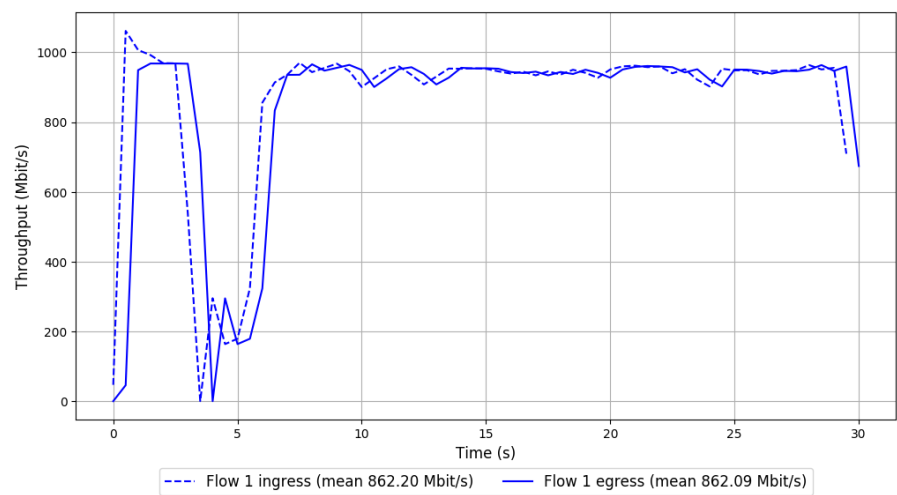


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 14:12:37
End at: 2018-09-06 14:13:07
Local clock offset: 2.991 ms
Remote clock offset: -3.854 ms

# Below is generated by plot.py at 2018-09-06 17:21:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 862.09 Mbit/s
95th percentile per-packet one-way delay: 87.681 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 862.09 Mbit/s
95th percentile per-packet one-way delay: 87.681 ms
Loss rate: 0.08%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-06 14:40:24

End at: 2018-09-06 14:40:54

Local clock offset: -0.792 ms

Remote clock offset: -5.451 ms

Below is generated by plot.py at 2018-09-06 17:21:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 924.51 Mbit/s

95th percentile per-packet one-way delay: 44.199 ms

Loss rate: 0.07%

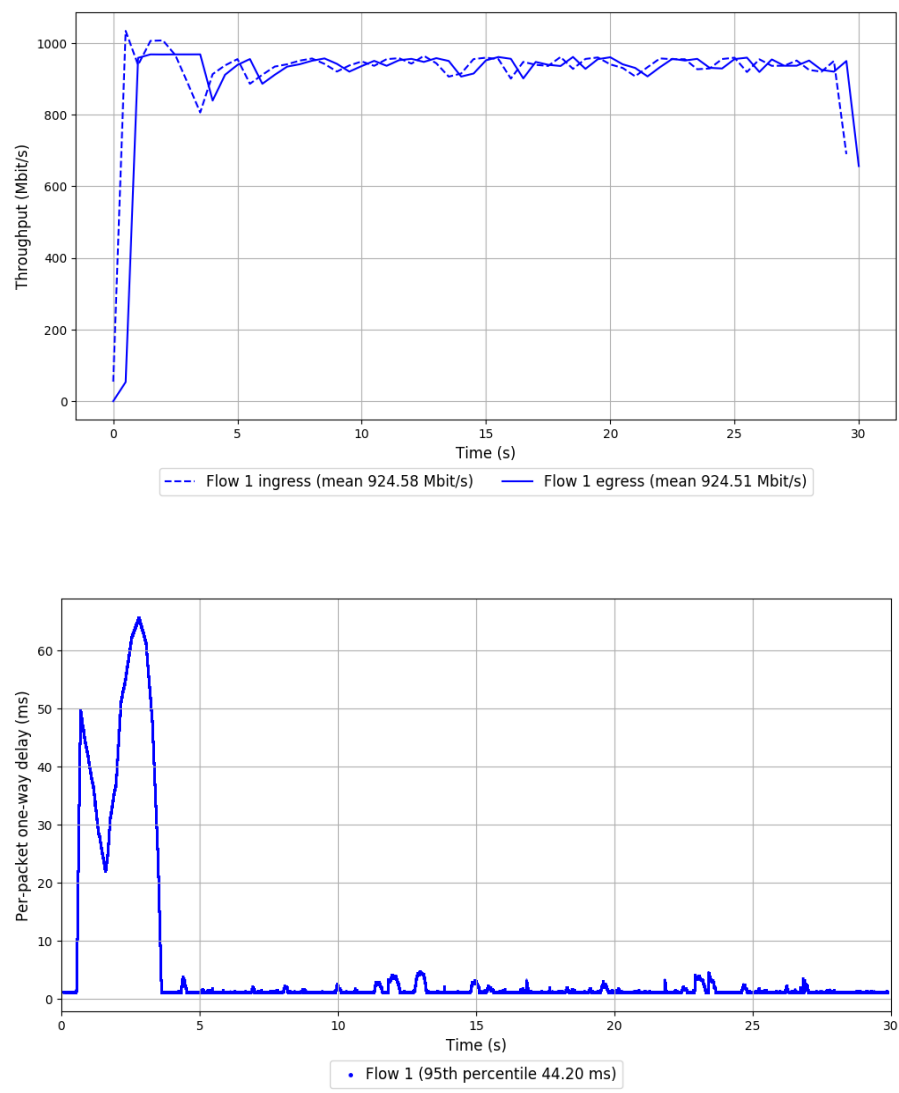
-- Flow 1:

Average throughput: 924.51 Mbit/s

95th percentile per-packet one-way delay: 44.199 ms

Loss rate: 0.07%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-06 15:07:59

End at: 2018-09-06 15:08:29

Local clock offset: -0.642 ms

Remote clock offset: -5.555 ms

Below is generated by plot.py at 2018-09-06 17:22:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 922.17 Mbit/s

95th percentile per-packet one-way delay: 10.159 ms

Loss rate: 0.07%

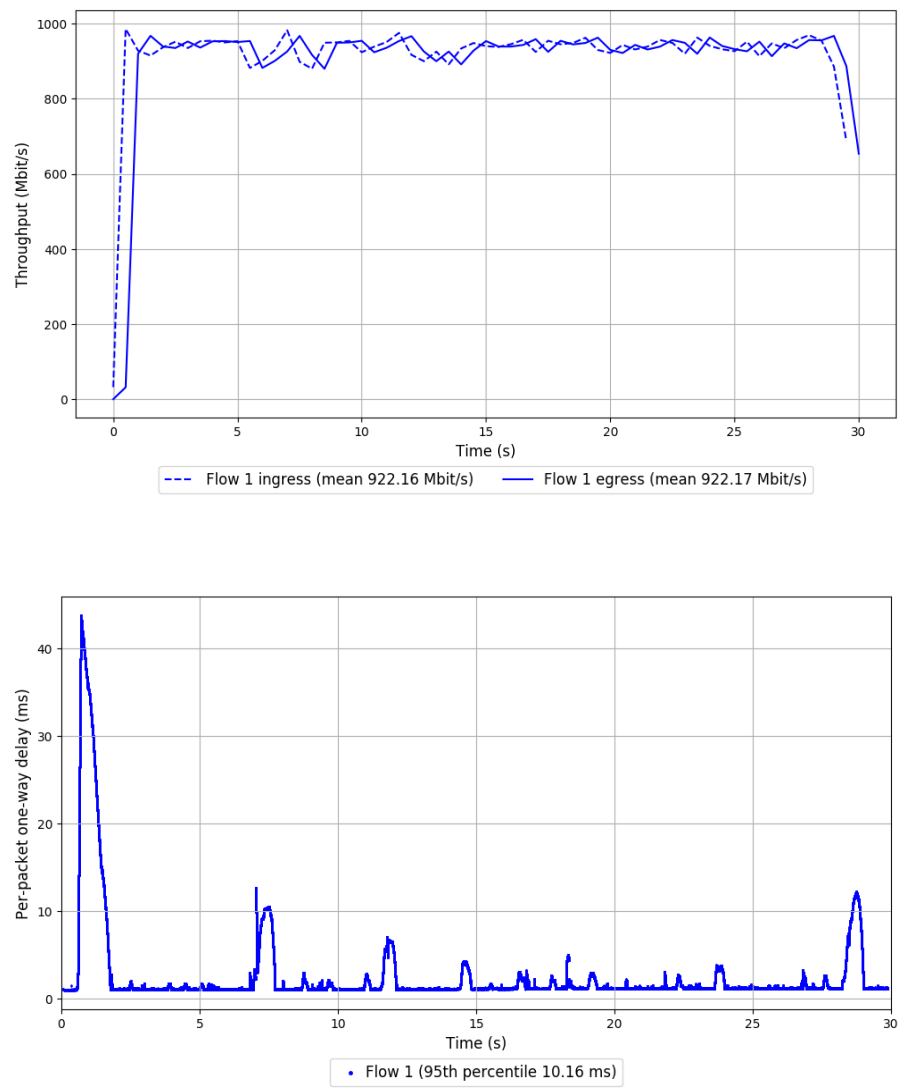
-- Flow 1:

Average throughput: 922.17 Mbit/s

95th percentile per-packet one-way delay: 10.159 ms

Loss rate: 0.07%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-06 15:35:44

End at: 2018-09-06 15:36:14

Local clock offset: -0.317 ms

Remote clock offset: -2.708 ms

Below is generated by plot.py at 2018-09-06 17:22:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 908.61 Mbit/s

95th percentile per-packet one-way delay: 83.414 ms

Loss rate: 0.09%

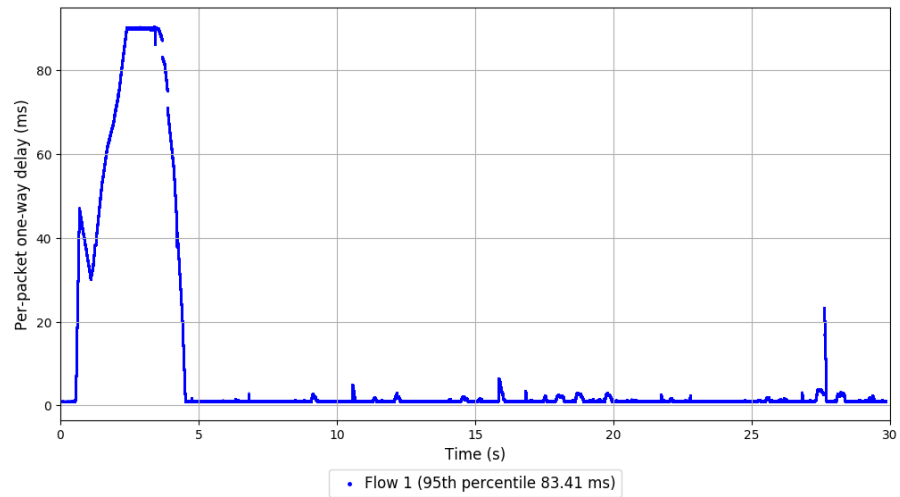
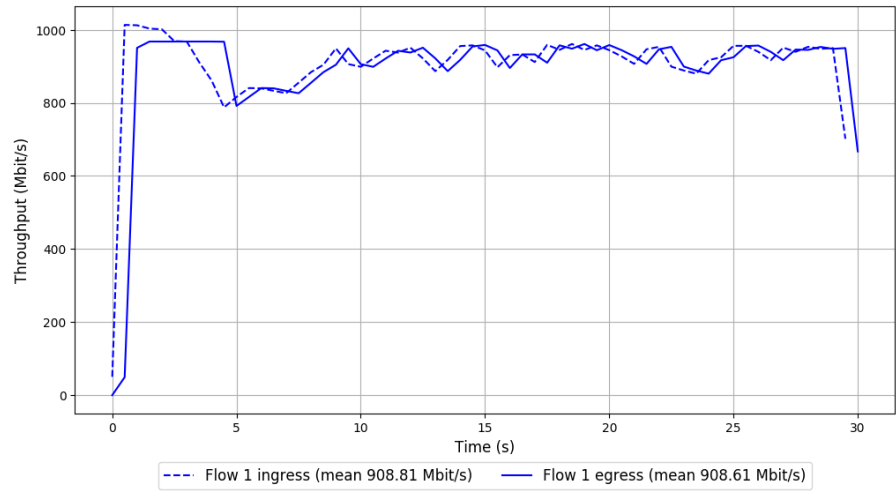
-- Flow 1:

Average throughput: 908.61 Mbit/s

95th percentile per-packet one-way delay: 83.414 ms

Loss rate: 0.09%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-06 16:03:48

End at: 2018-09-06 16:04:18

Local clock offset: -0.104 ms

Remote clock offset: 1.026 ms

Below is generated by plot.py at 2018-09-06 17:23:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 903.82 Mbit/s

95th percentile per-packet one-way delay: 6.676 ms

Loss rate: 0.10%

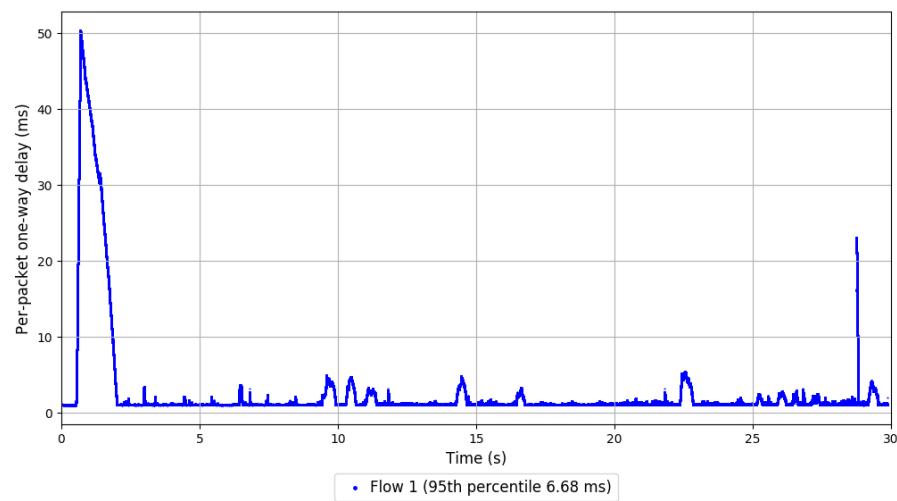
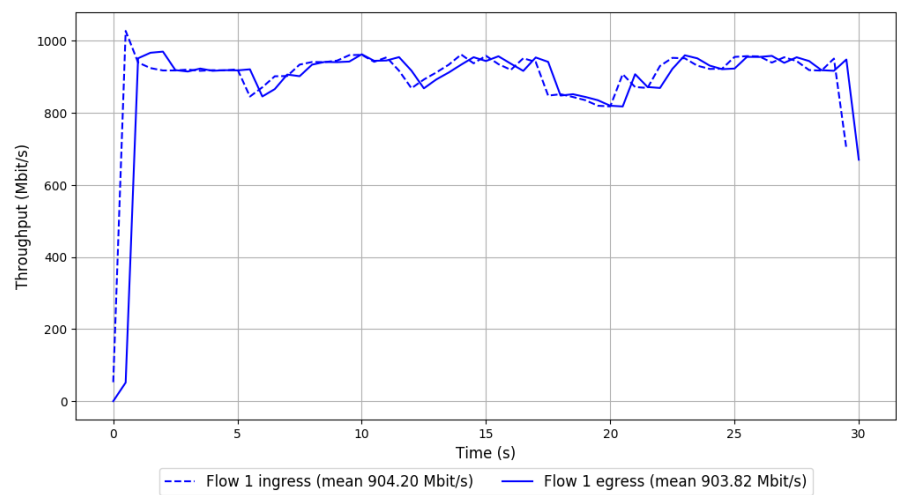
-- Flow 1:

Average throughput: 903.82 Mbit/s

95th percentile per-packet one-way delay: 6.676 ms

Loss rate: 0.10%

Run 5: Report of PCC-Allegro — Data Link

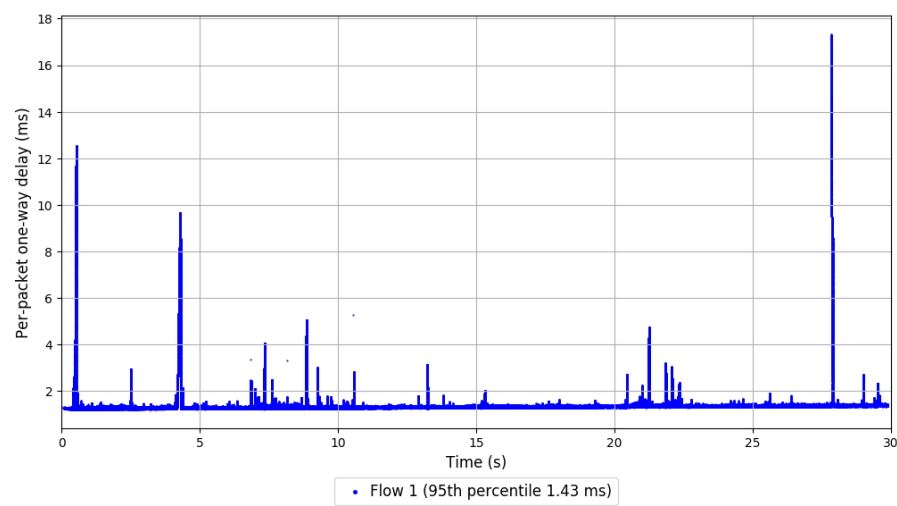
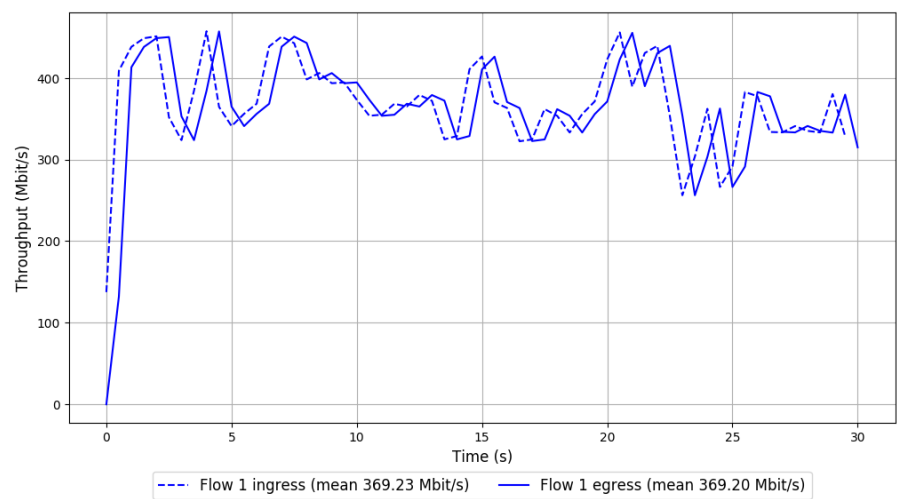


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-06 14:15:37
End at: 2018-09-06 14:16:07
Local clock offset: 2.932 ms
Remote clock offset: -4.051 ms

# Below is generated by plot.py at 2018-09-06 17:23:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 369.20 Mbit/s
95th percentile per-packet one-way delay: 1.426 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 369.20 Mbit/s
95th percentile per-packet one-way delay: 1.426 ms
Loss rate: 0.07%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-06 14:43:26

End at: 2018-09-06 14:43:56

Local clock offset: -0.973 ms

Remote clock offset: -5.47 ms

Below is generated by plot.py at 2018-09-06 17:23:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 369.59 Mbit/s

95th percentile per-packet one-way delay: 1.109 ms

Loss rate: 0.07%

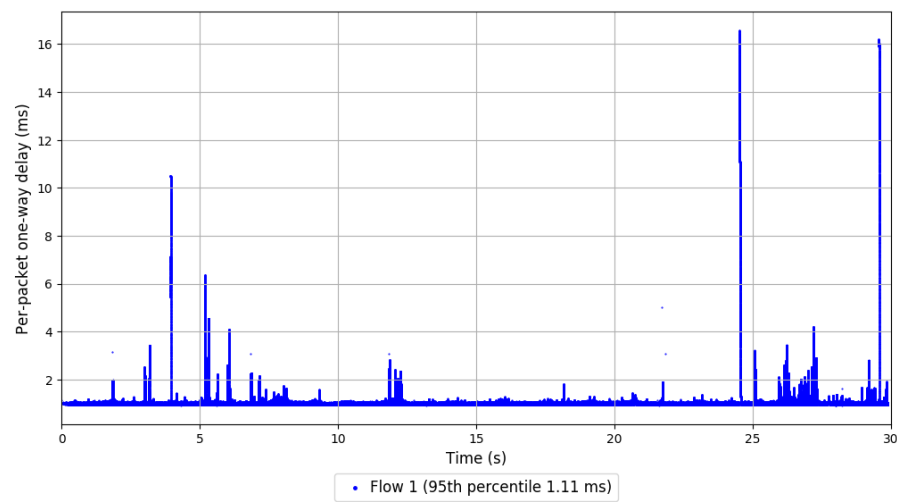
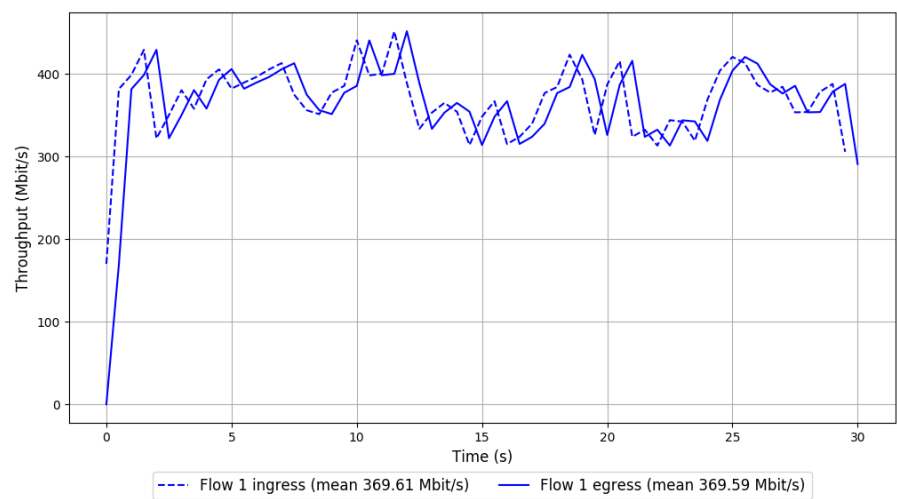
-- Flow 1:

Average throughput: 369.59 Mbit/s

95th percentile per-packet one-way delay: 1.109 ms

Loss rate: 0.07%

Run 2: Report of PCC-Expr — Data Link

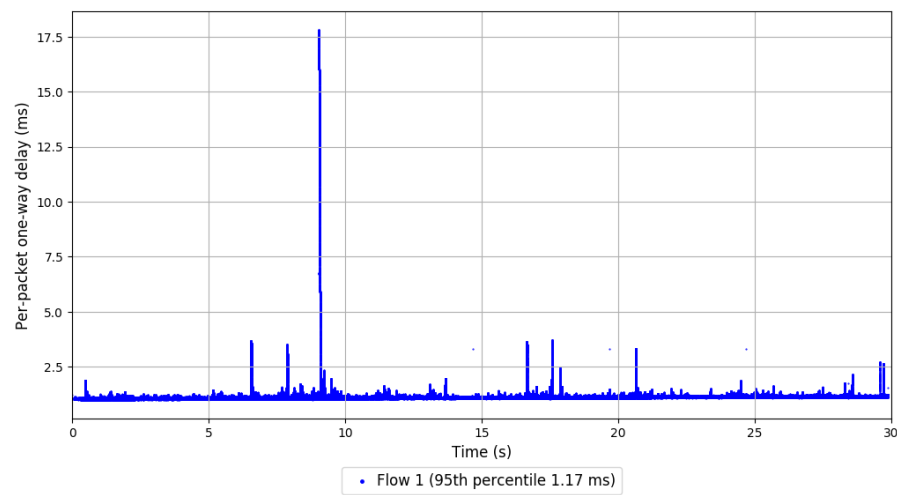
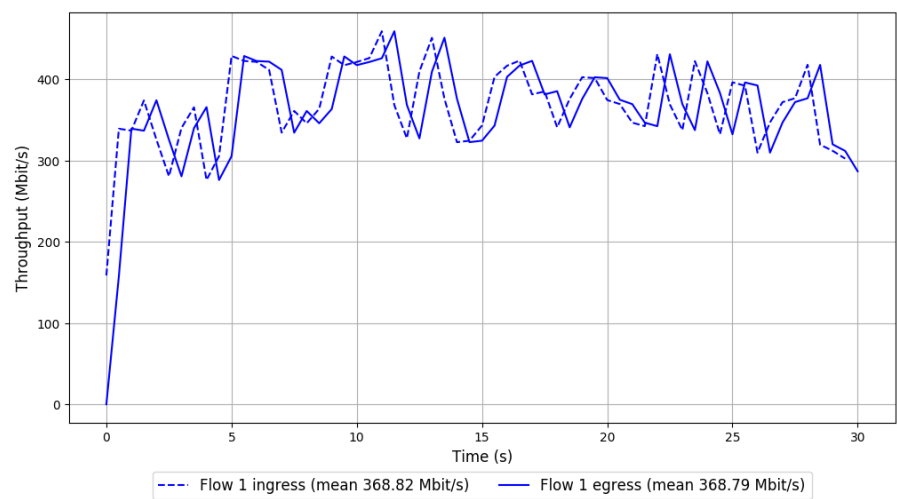


Run 3: Statistics of PCC-Expr

Start at: 2018-09-06 15:11:00
End at: 2018-09-06 15:11:30
Local clock offset: -0.699 ms
Remote clock offset: -4.824 ms

Below is generated by plot.py at 2018-09-06 17:24:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 368.79 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 368.79 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.07%

Run 3: Report of PCC-Expr — Data Link

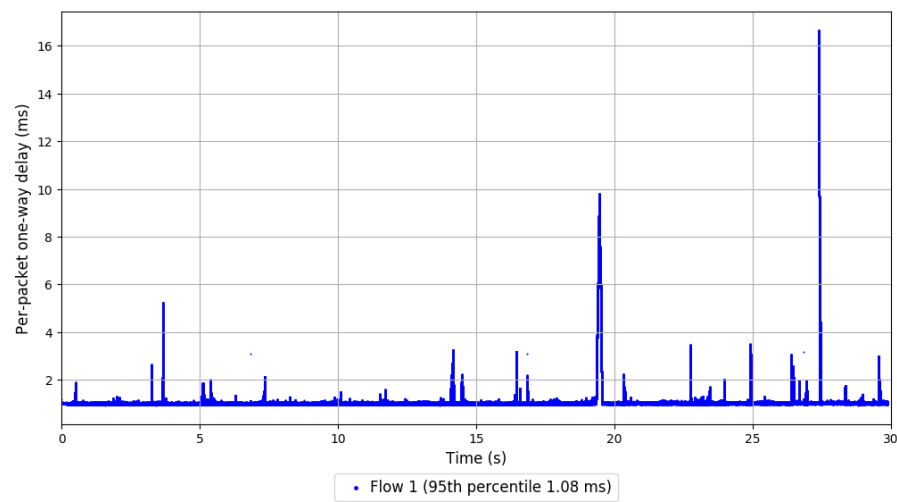
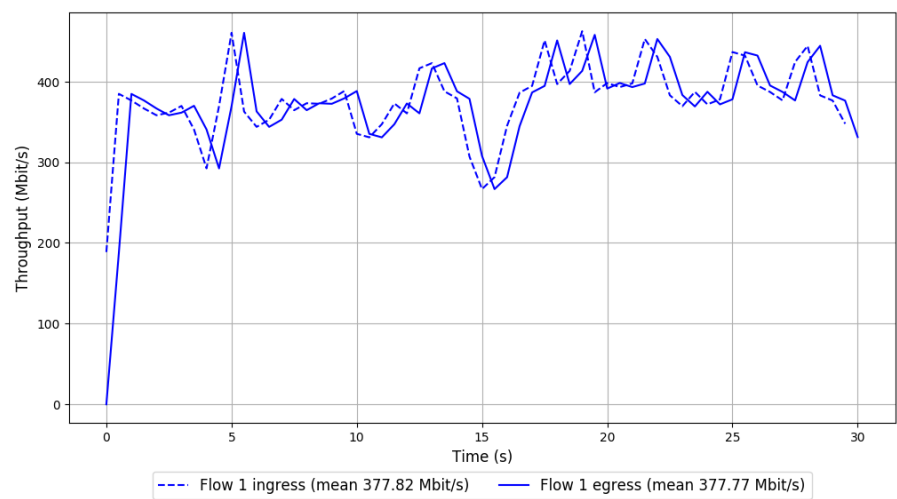


Run 4: Statistics of PCC-Expr

Start at: 2018-09-06 15:38:44
End at: 2018-09-06 15:39:14
Local clock offset: -0.251 ms
Remote clock offset: -2.532 ms

Below is generated by plot.py at 2018-09-06 17:29:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 377.77 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 377.77 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.08%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-06 16:06:49

End at: 2018-09-06 16:07:19

Local clock offset: -0.024 ms

Remote clock offset: 1.307 ms

Below is generated by plot.py at 2018-09-06 17:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 380.71 Mbit/s

95th percentile per-packet one-way delay: 14.921 ms

Loss rate: 0.06%

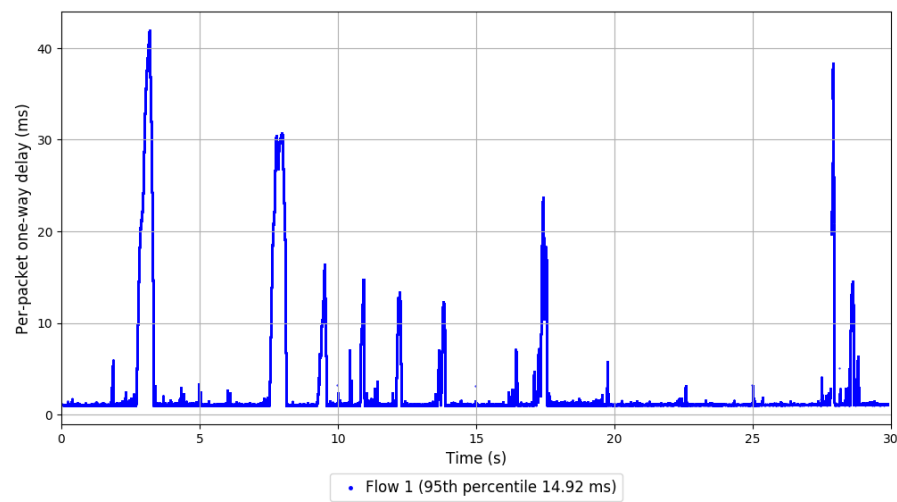
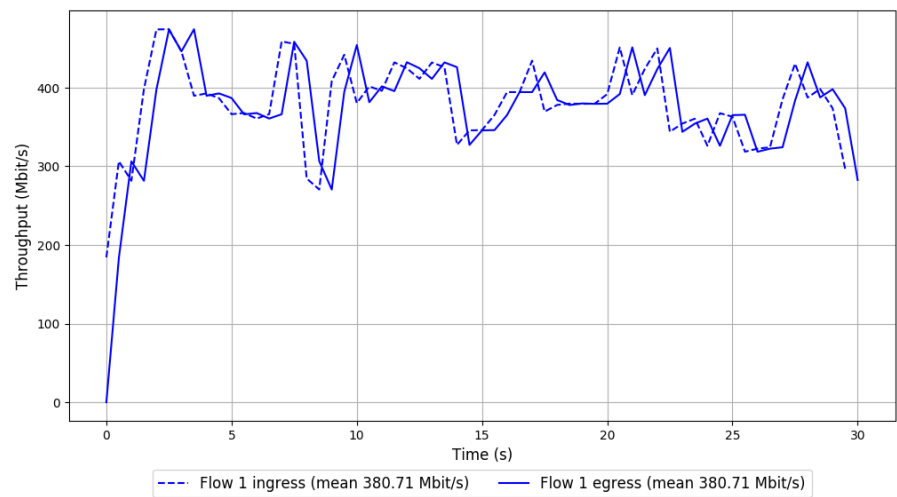
-- Flow 1:

Average throughput: 380.71 Mbit/s

95th percentile per-packet one-way delay: 14.921 ms

Loss rate: 0.06%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 14:14:15

End at: 2018-09-06 14:14:45

Local clock offset: 2.979 ms

Remote clock offset: -3.992 ms

Below is generated by plot.py at 2018-09-06 17:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.35 Mbit/s

95th percentile per-packet one-way delay: 1.103 ms

Loss rate: 0.07%

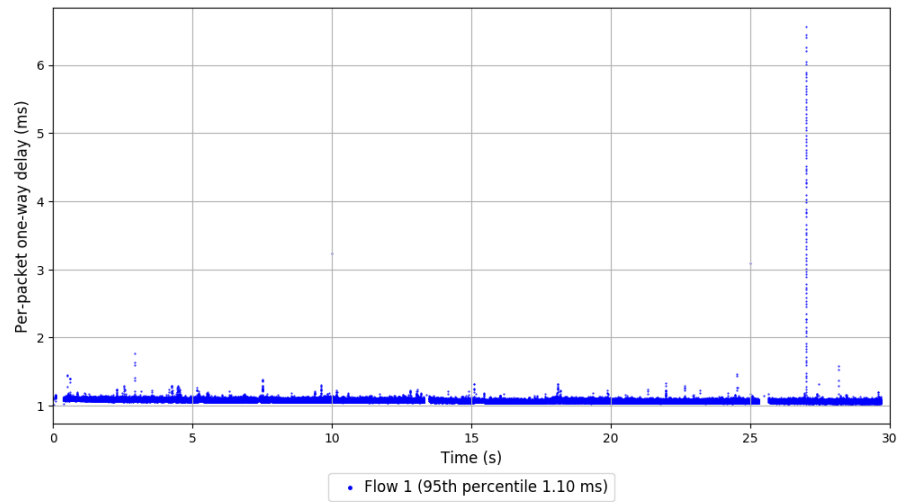
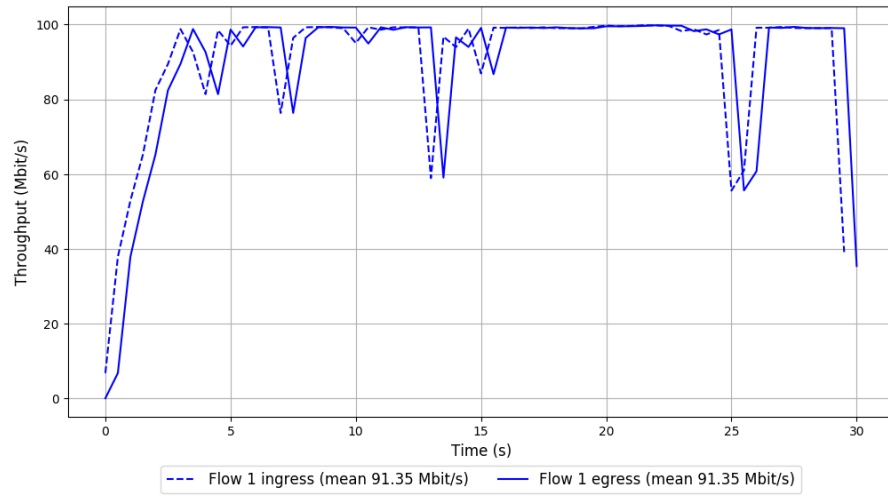
-- Flow 1:

Average throughput: 91.35 Mbit/s

95th percentile per-packet one-way delay: 1.103 ms

Loss rate: 0.07%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-06 14:42:04

End at: 2018-09-06 14:42:34

Local clock offset: -0.893 ms

Remote clock offset: -5.451 ms

Below is generated by plot.py at 2018-09-06 17:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.12 Mbit/s

95th percentile per-packet one-way delay: 1.067 ms

Loss rate: 0.07%

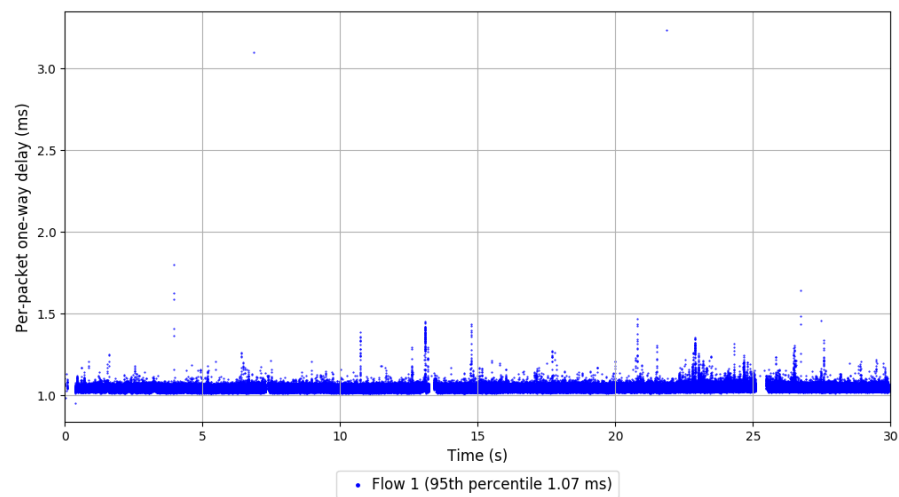
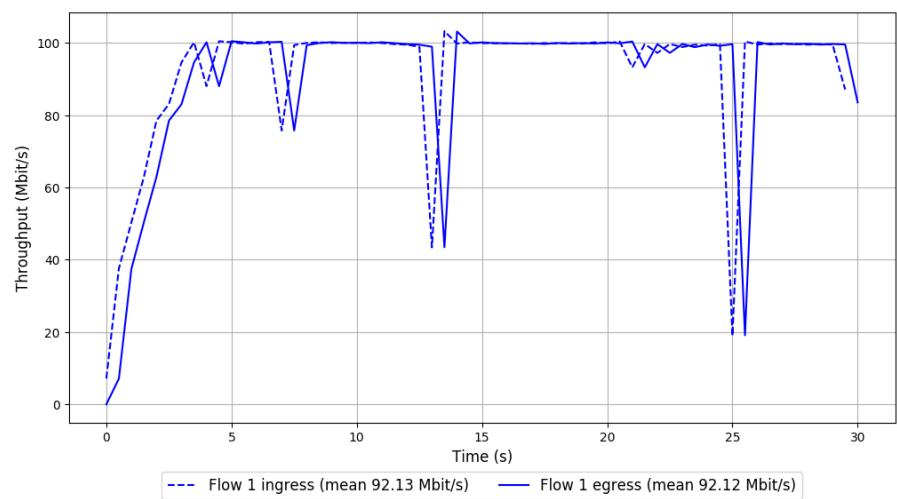
-- Flow 1:

Average throughput: 92.12 Mbit/s

95th percentile per-packet one-way delay: 1.067 ms

Loss rate: 0.07%

Run 2: Report of QUIC Cubic — Data Link

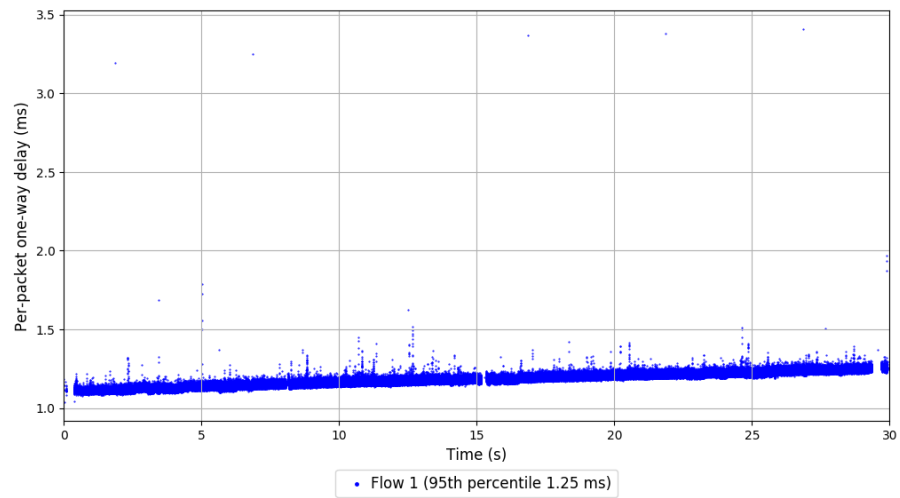
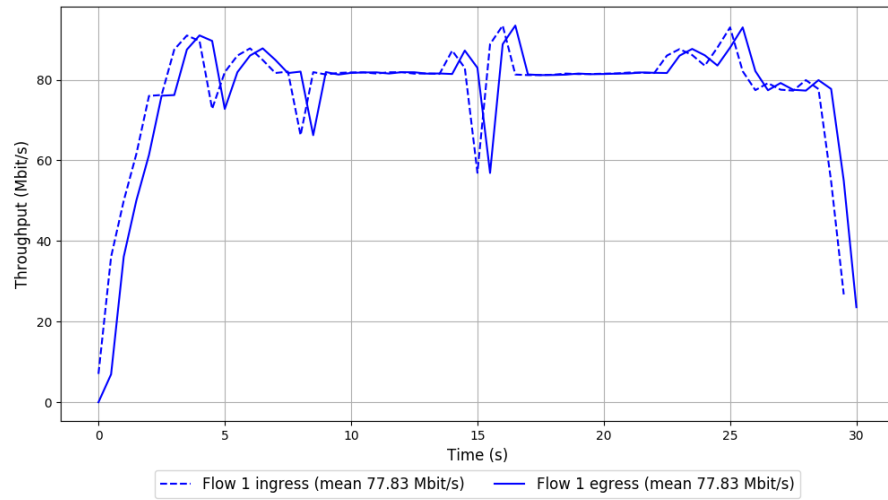


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-06 15:09:39
End at: 2018-09-06 15:10:09
Local clock offset: -0.592 ms
Remote clock offset: -5.135 ms

Below is generated by plot.py at 2018-09-06 17:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 77.83 Mbit/s
95th percentile per-packet one-way delay: 1.247 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 77.83 Mbit/s
95th percentile per-packet one-way delay: 1.247 ms
Loss rate: 0.07%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-06 15:37:23

End at: 2018-09-06 15:37:53

Local clock offset: -0.24 ms

Remote clock offset: -2.635 ms

Below is generated by plot.py at 2018-09-06 17:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.78 Mbit/s

95th percentile per-packet one-way delay: 1.111 ms

Loss rate: 0.07%

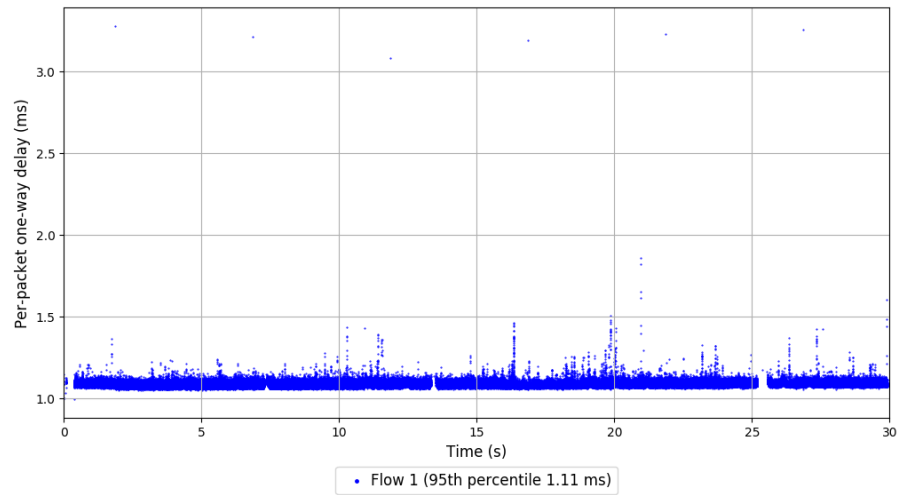
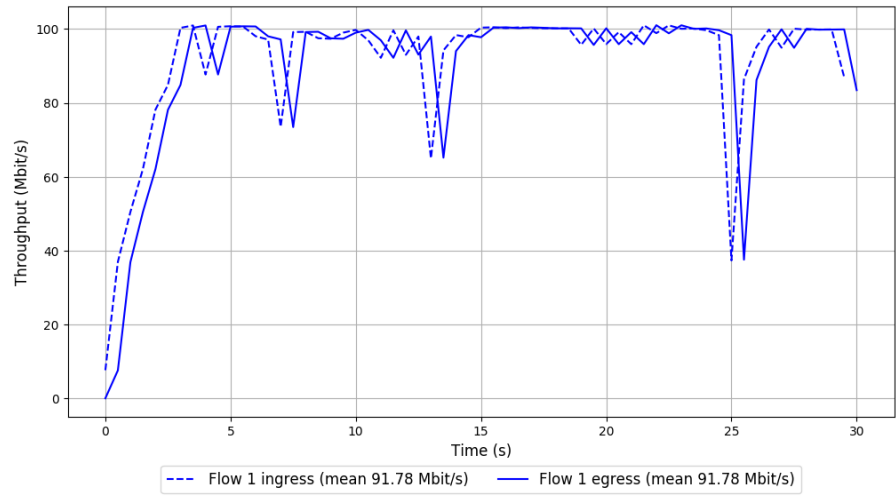
-- Flow 1:

Average throughput: 91.78 Mbit/s

95th percentile per-packet one-way delay: 1.111 ms

Loss rate: 0.07%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-06 16:05:28

End at: 2018-09-06 16:05:58

Local clock offset: -0.042 ms

Remote clock offset: 1.149 ms

Below is generated by plot.py at 2018-09-06 17:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.57 Mbit/s

95th percentile per-packet one-way delay: 1.128 ms

Loss rate: 0.07%

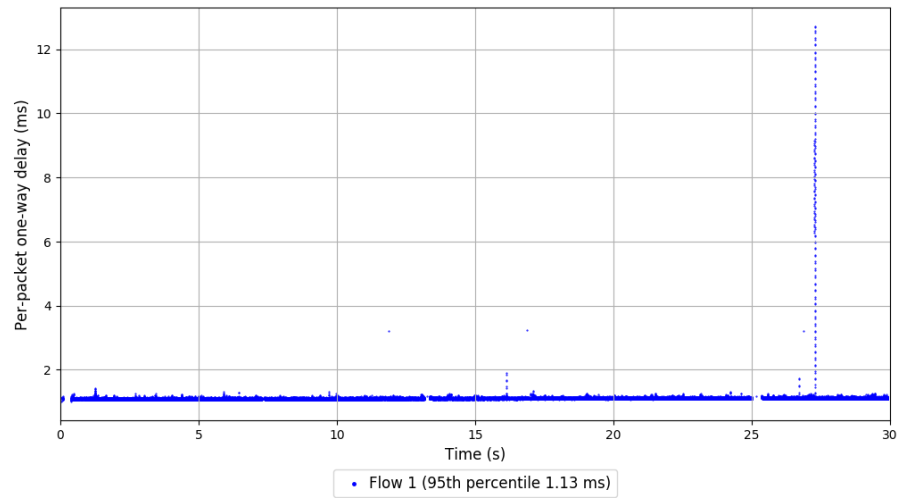
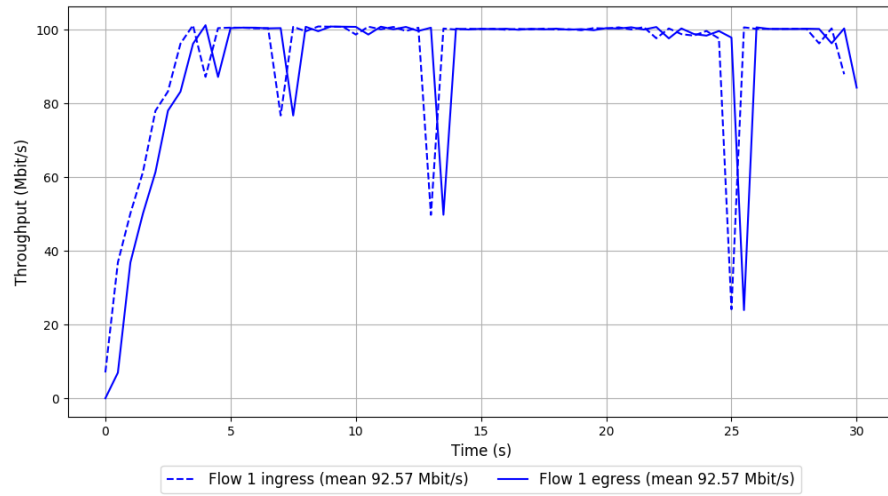
-- Flow 1:

Average throughput: 92.57 Mbit/s

95th percentile per-packet one-way delay: 1.128 ms

Loss rate: 0.07%

Run 5: Report of QUIC Cubic — Data Link

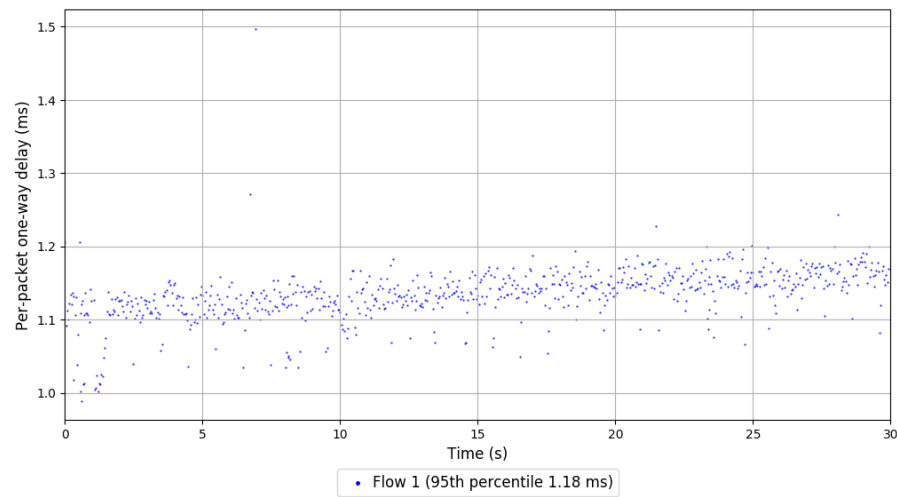
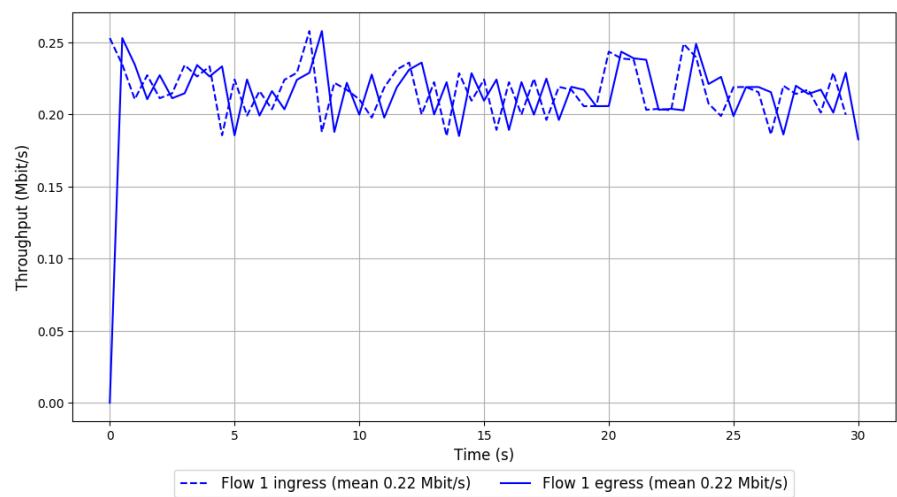


```
Run 1: Statistics of SCReAM

Start at: 2018-09-06 14:22:16
End at: 2018-09-06 14:22:46
Local clock offset: 1.095 ms
Remote clock offset: -4.441 ms

# Below is generated by plot.py at 2018-09-06 17:29:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.13%
```

Run 1: Report of SReAM — Data Link

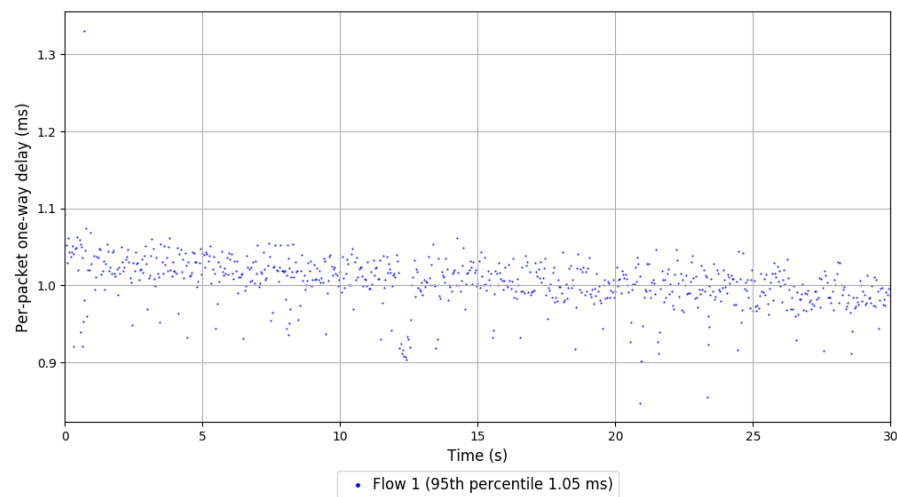
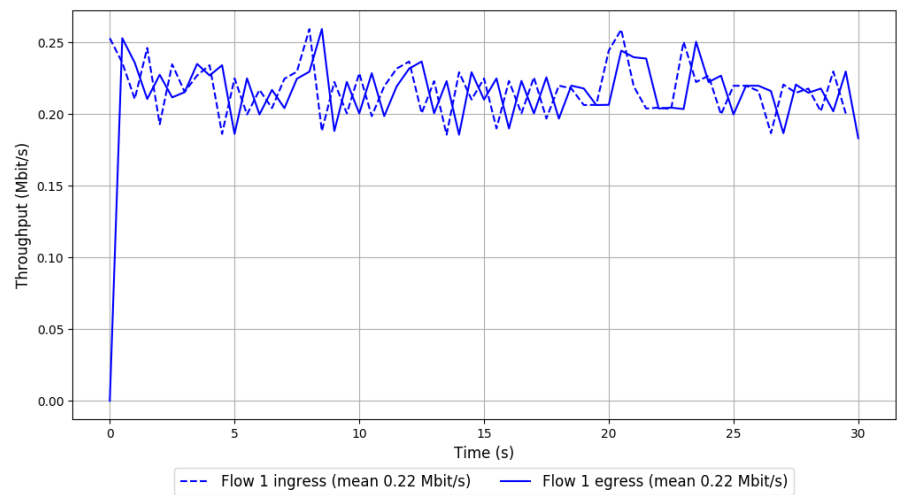


Run 2: Statistics of SCReAM

Start at: 2018-09-06 14:50:05
End at: 2018-09-06 14:50:35
Local clock offset: -0.78 ms
Remote clock offset: -5.843 ms

Below is generated by plot.py at 2018-09-06 17:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.046 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.046 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

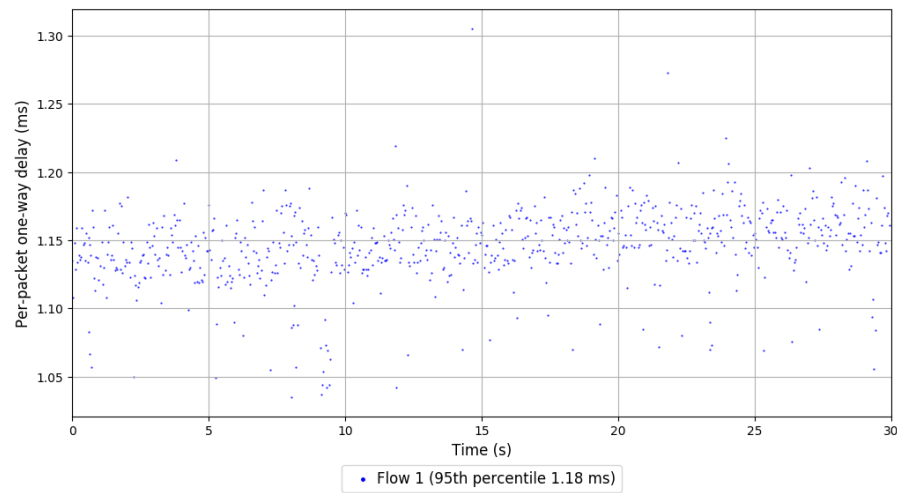
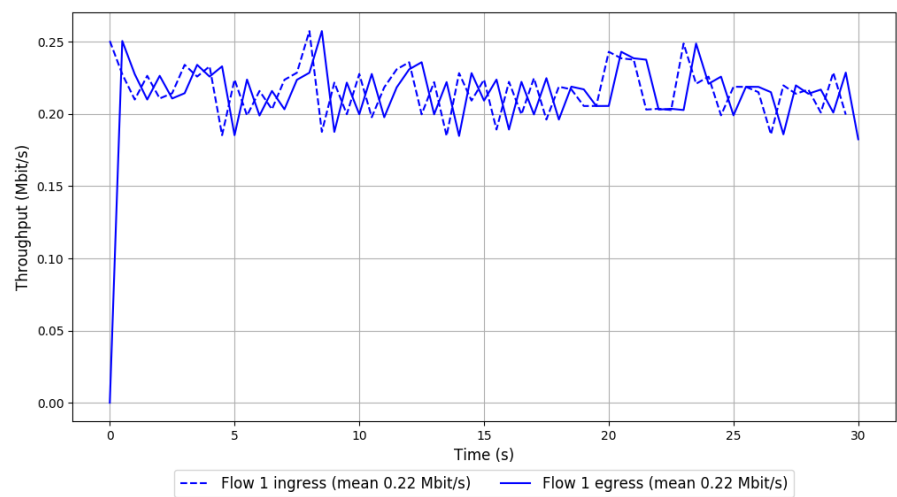


Run 3: Statistics of SCReAM

Start at: 2018-09-06 15:17:38
End at: 2018-09-06 15:18:08
Local clock offset: -0.581 ms
Remote clock offset: -3.744 ms

Below is generated by plot.py at 2018-09-06 17:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.183 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.183 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link

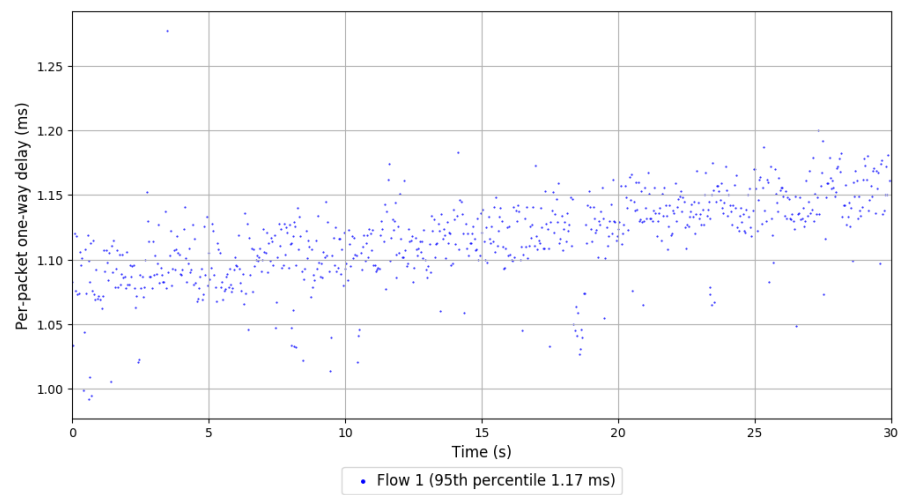
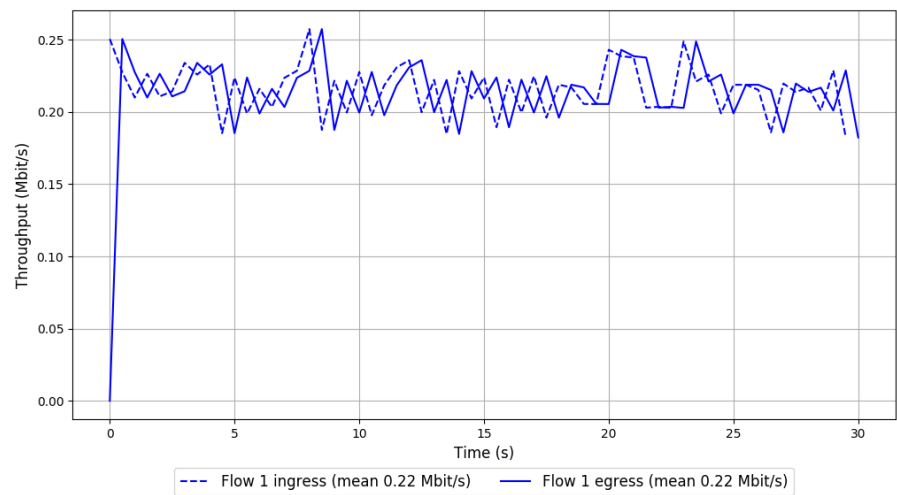


Run 4: Statistics of SCReAM

Start at: 2018-09-06 15:45:29
End at: 2018-09-06 15:45:59
Local clock offset: -0.306 ms
Remote clock offset: -0.927 ms

Below is generated by plot.py at 2018-09-06 17:29:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.165 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.165 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-06 16:13:36

End at: 2018-09-06 16:14:06

Local clock offset: -0.079 ms

Remote clock offset: 1.752 ms

Below is generated by plot.py at 2018-09-06 17:29:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.128 ms

Loss rate: 0.13%

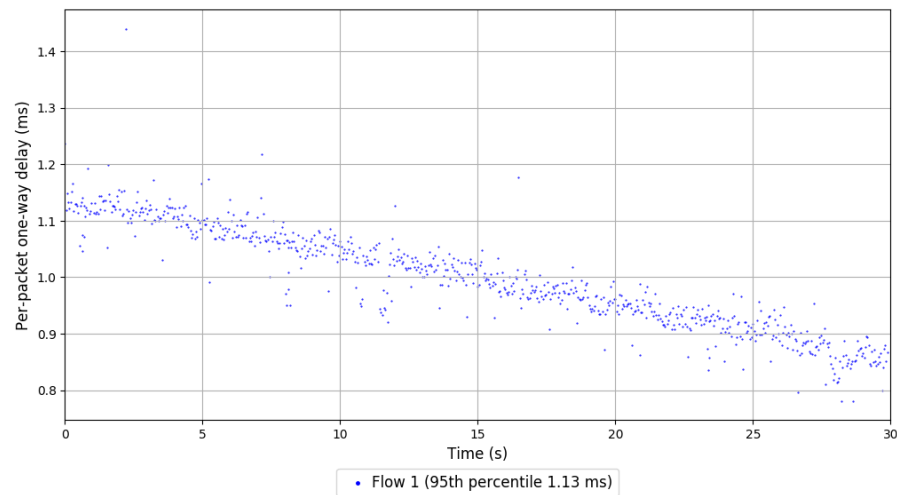
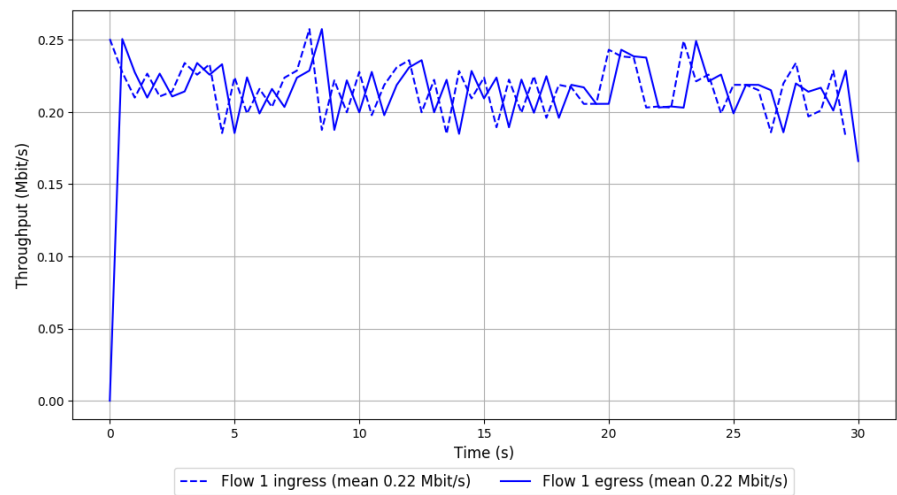
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.128 ms

Loss rate: 0.13%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

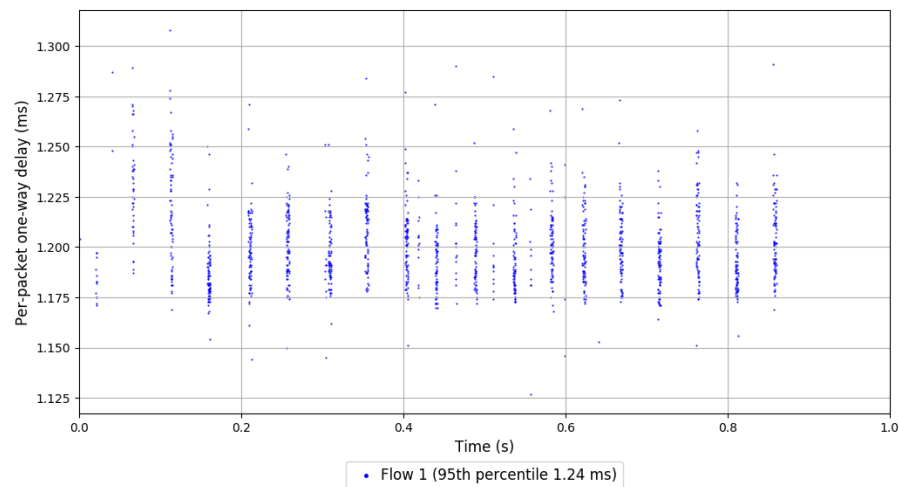
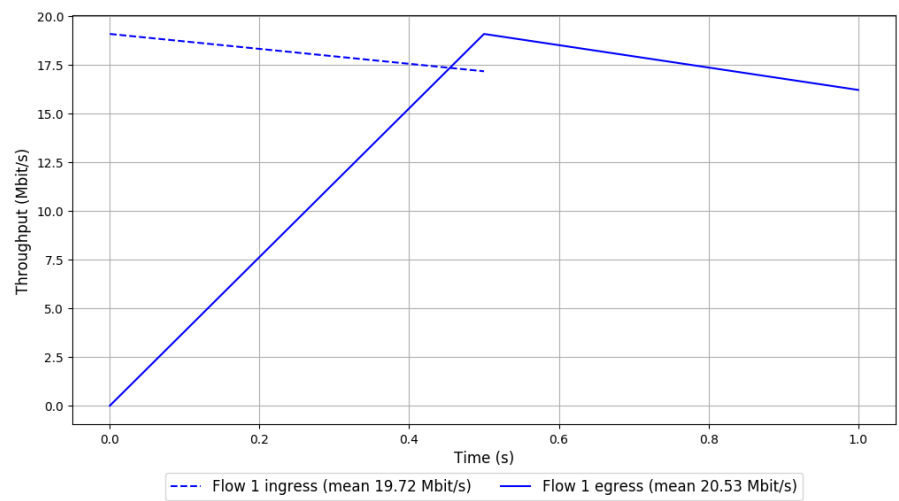
Start at: 2018-09-06 14:28:19

End at: 2018-09-06 14:28:49

Local clock offset: 0.294 ms

Remote clock offset: -4.889 ms

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

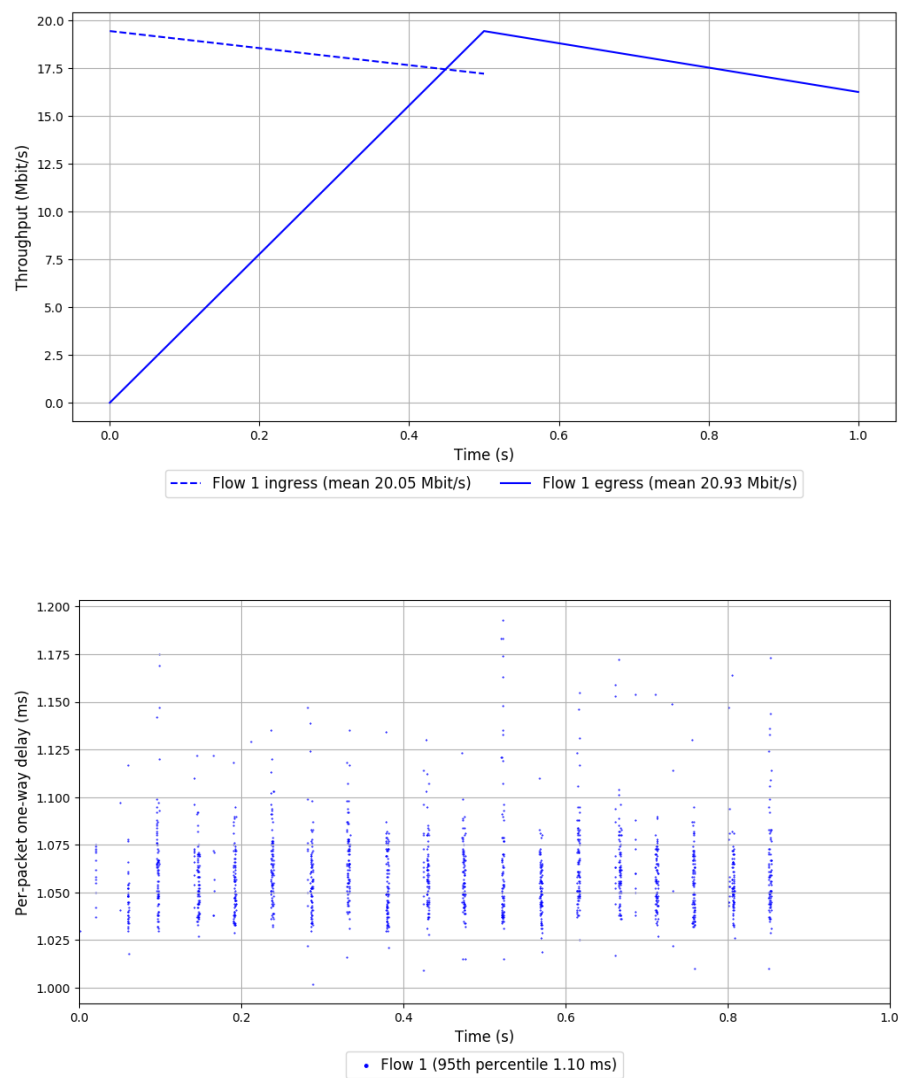
Start at: 2018-09-06 14:56:06

End at: 2018-09-06 14:56:36

Local clock offset: -0.465 ms

Remote clock offset: -6.055 ms

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

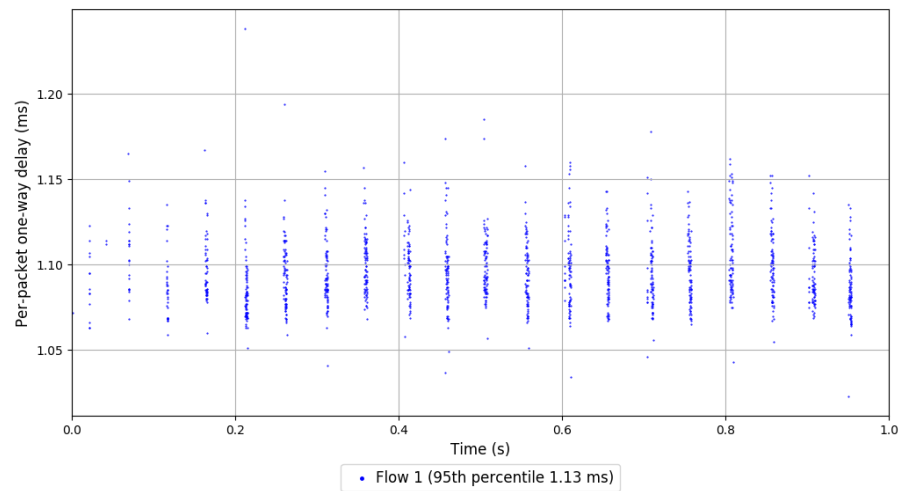
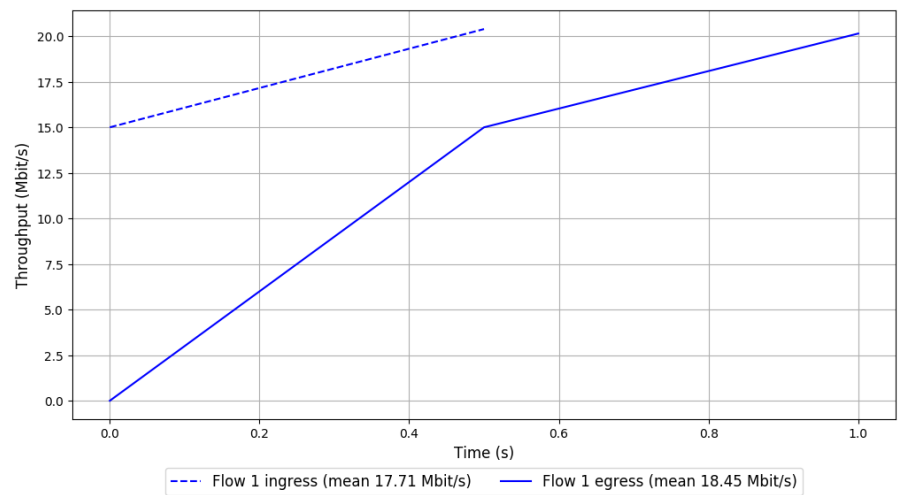
Start at: 2018-09-06 15:23:40

End at: 2018-09-06 15:24:10

Local clock offset: -0.333 ms

Remote clock offset: -3.236 ms

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

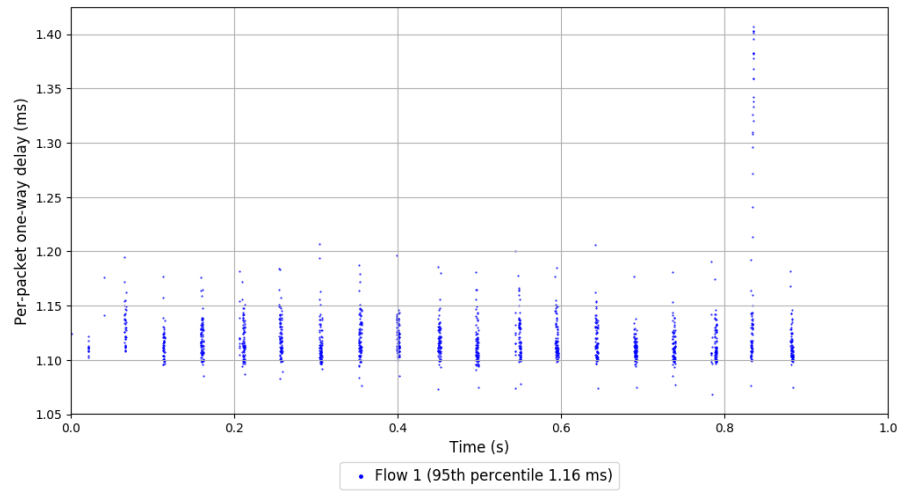
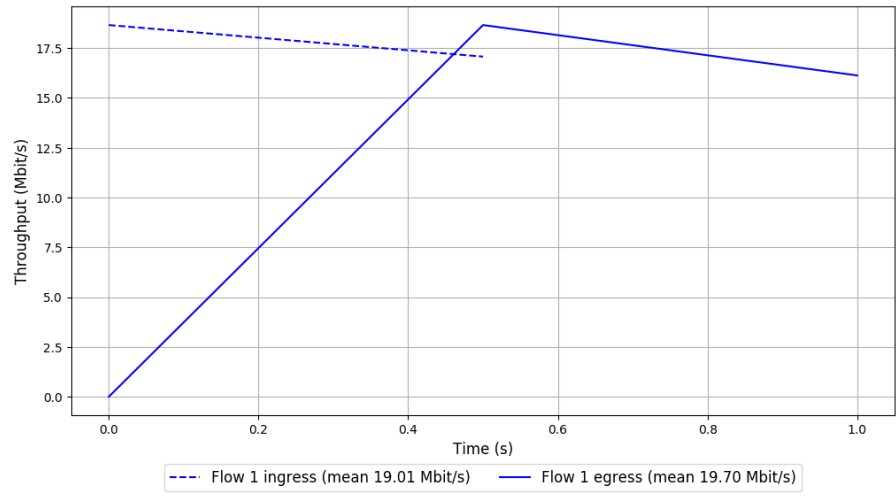
Start at: 2018-09-06 15:51:33

End at: 2018-09-06 15:52:03

Local clock offset: -0.083 ms

Remote clock offset: -0.099 ms

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

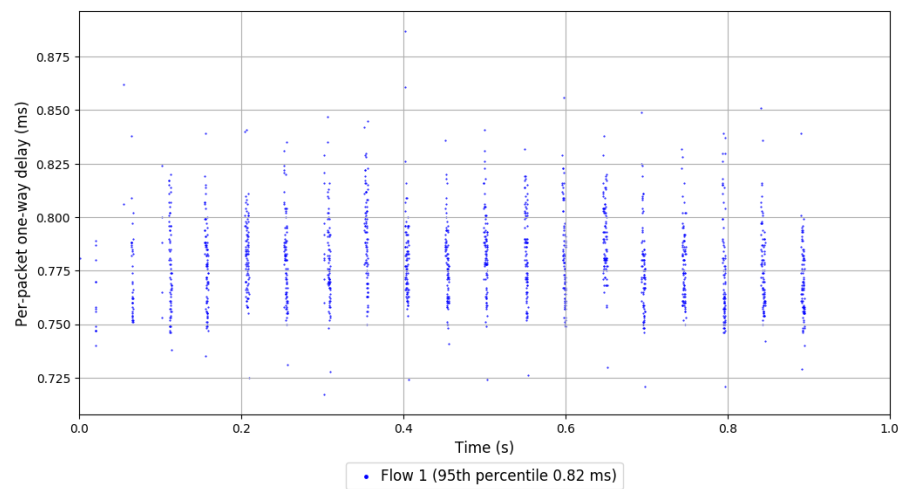
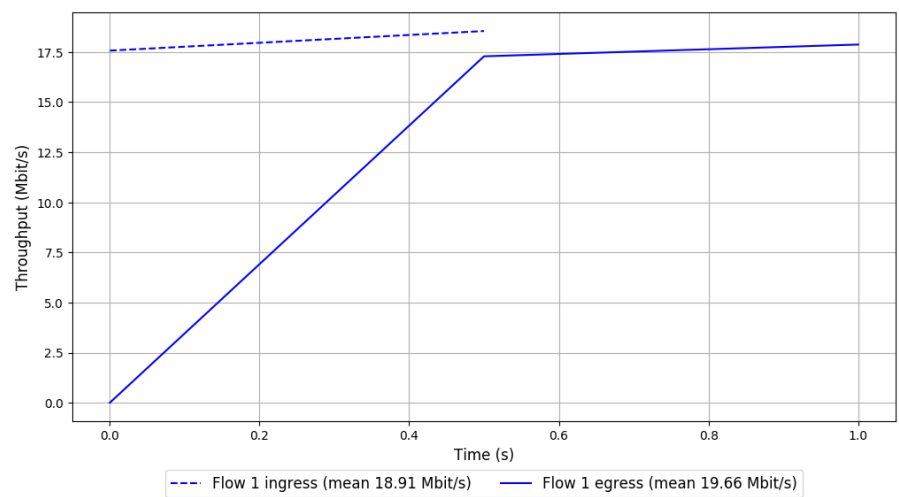
Start at: 2018-09-06 16:19:37

End at: 2018-09-06 16:20:07

Local clock offset: 1.27 ms

Remote clock offset: -0.782 ms

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-06 14:34:06

End at: 2018-09-06 14:34:36

Local clock offset: -0.416 ms

Remote clock offset: -5.101 ms

Below is generated by plot.py at 2018-09-06 17:29:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 282.25 Mbit/s

95th percentile per-packet one-way delay: 0.987 ms

Loss rate: 0.06%

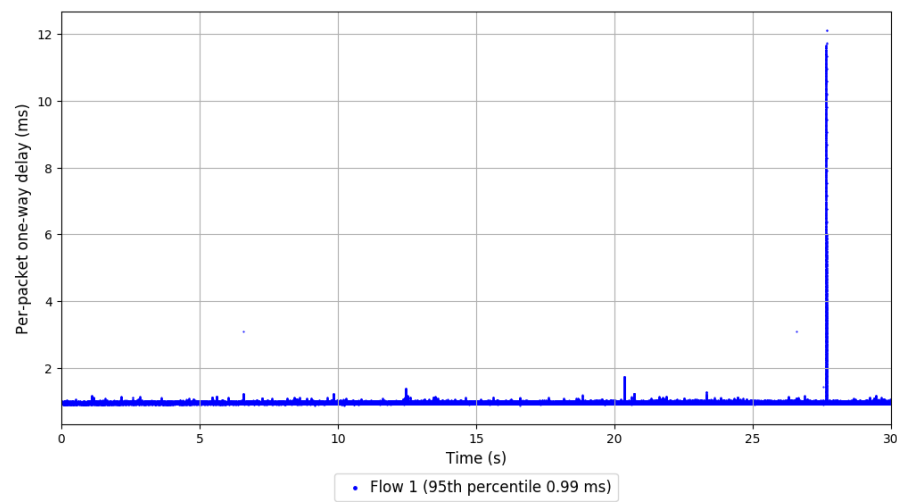
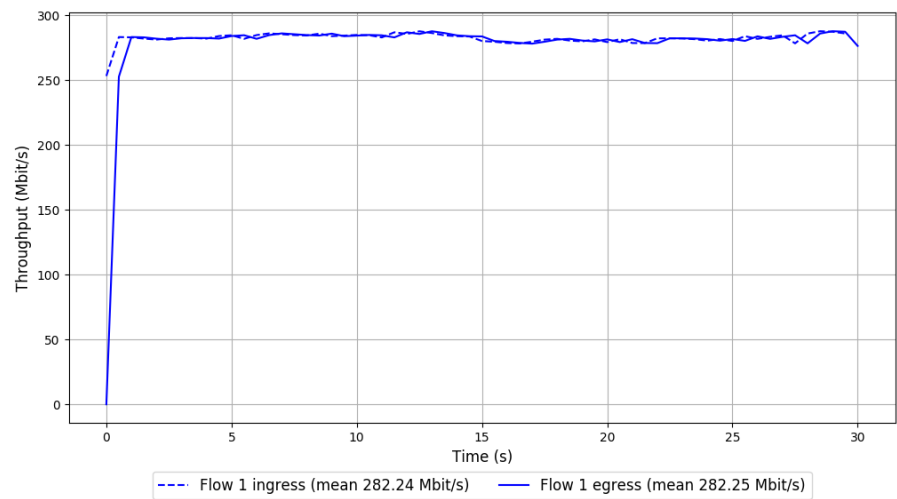
-- Flow 1:

Average throughput: 282.25 Mbit/s

95th percentile per-packet one-way delay: 0.987 ms

Loss rate: 0.06%

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

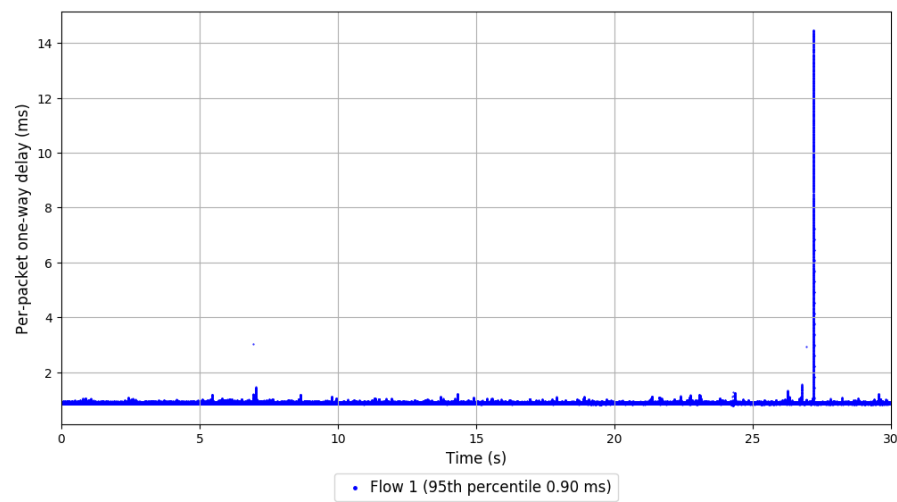
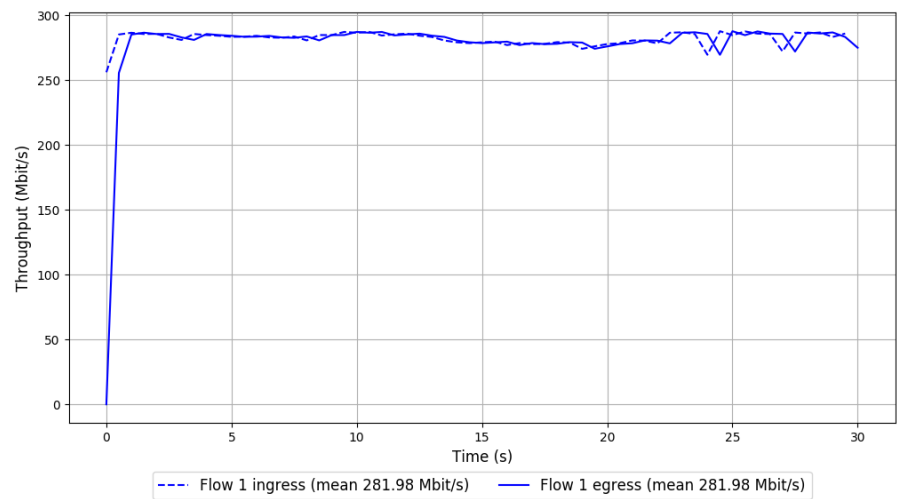


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-06 15:01:58
End at: 2018-09-06 15:02:28
Local clock offset: -0.551 ms
Remote clock offset: -6.271 ms

Below is generated by plot.py at 2018-09-06 17:29:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 281.98 Mbit/s
95th percentile per-packet one-way delay: 0.904 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 281.98 Mbit/s
95th percentile per-packet one-way delay: 0.904 ms
Loss rate: 0.07%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-06 15:29:32

End at: 2018-09-06 15:30:02

Local clock offset: -0.32 ms

Remote clock offset: -2.924 ms

Below is generated by plot.py at 2018-09-06 17:29:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 280.05 Mbit/s

95th percentile per-packet one-way delay: 1.018 ms

Loss rate: 0.07%

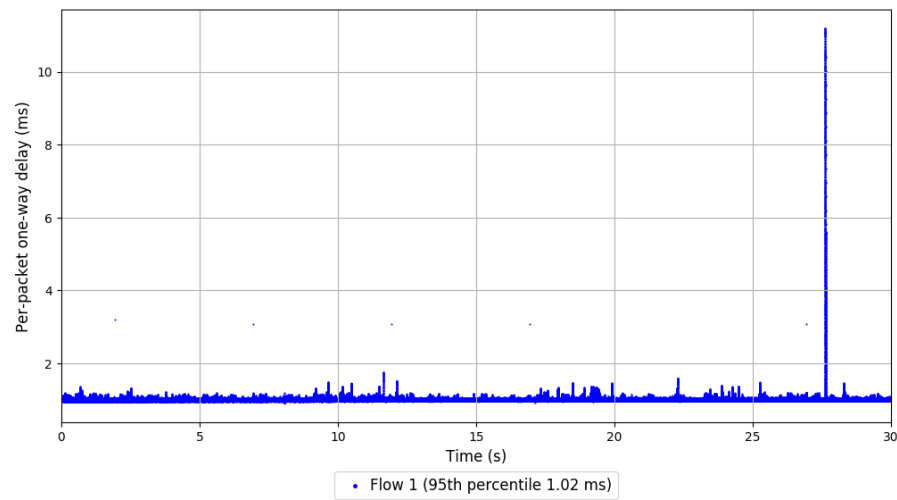
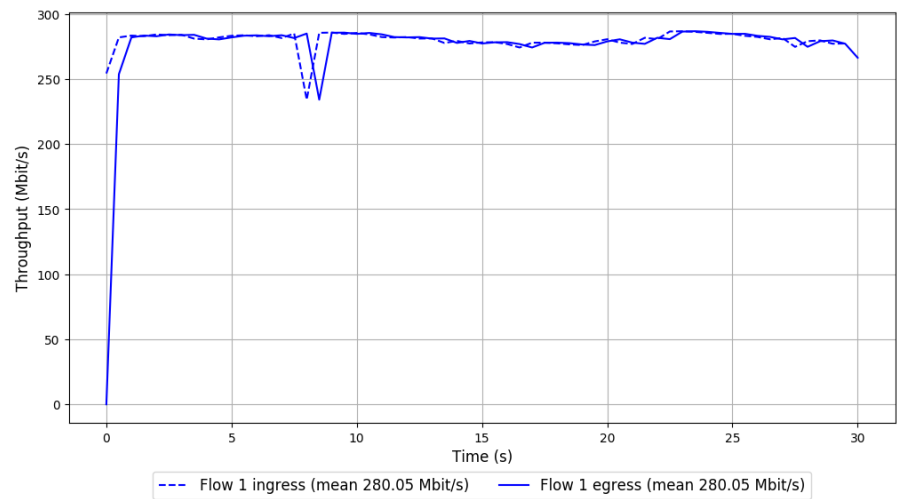
-- Flow 1:

Average throughput: 280.05 Mbit/s

95th percentile per-packet one-way delay: 1.018 ms

Loss rate: 0.07%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-06 15:57:27

End at: 2018-09-06 15:57:57

Local clock offset: -0.03 ms

Remote clock offset: 0.519 ms

Below is generated by plot.py at 2018-09-06 17:30:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 283.89 Mbit/s

95th percentile per-packet one-way delay: 1.125 ms

Loss rate: 0.07%

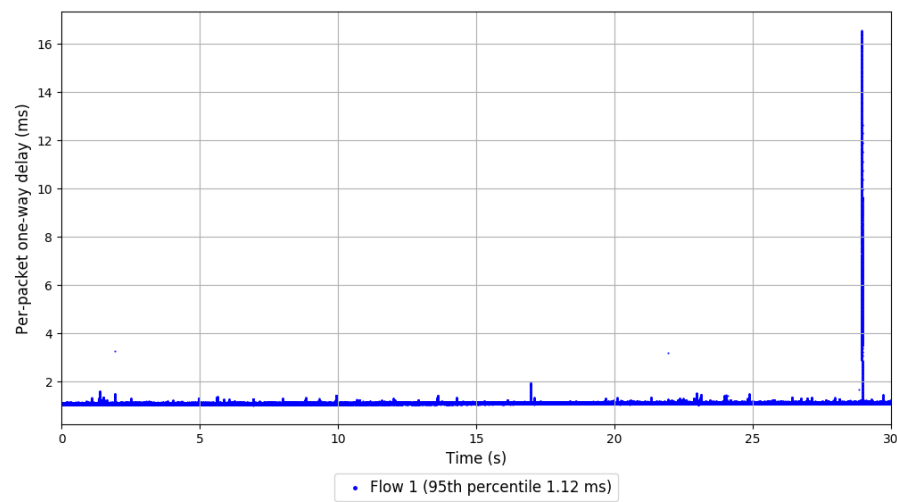
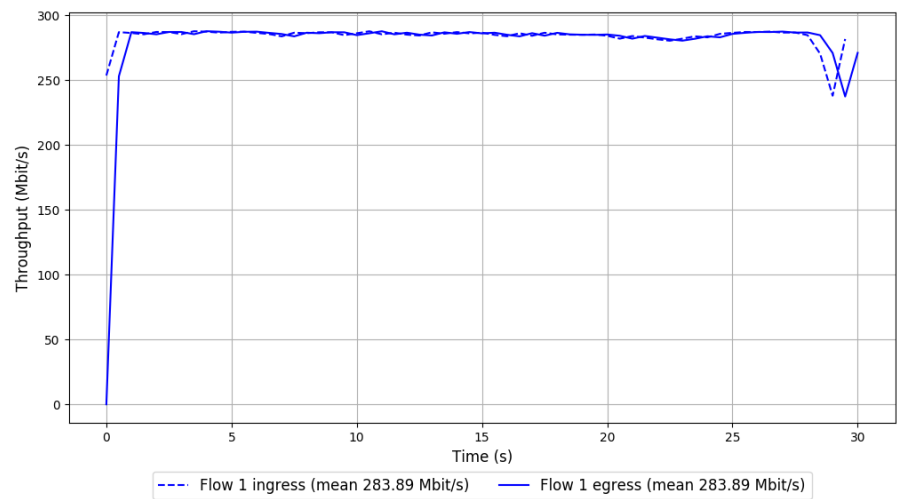
-- Flow 1:

Average throughput: 283.89 Mbit/s

95th percentile per-packet one-way delay: 1.125 ms

Loss rate: 0.07%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-06 16:25:27

End at: 2018-09-06 16:25:57

Local clock offset: 2.482 ms

Remote clock offset: -2.331 ms

Below is generated by plot.py at 2018-09-06 17:30:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 280.05 Mbit/s

95th percentile per-packet one-way delay: 0.969 ms

Loss rate: 0.07%

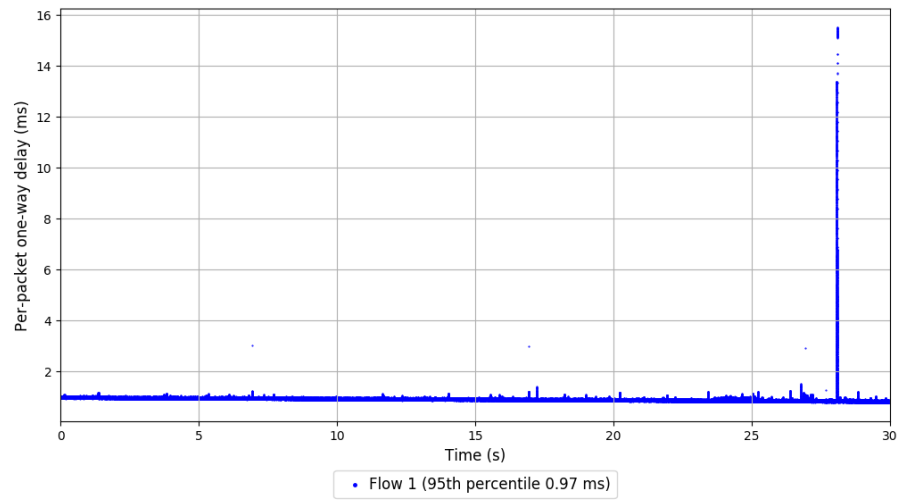
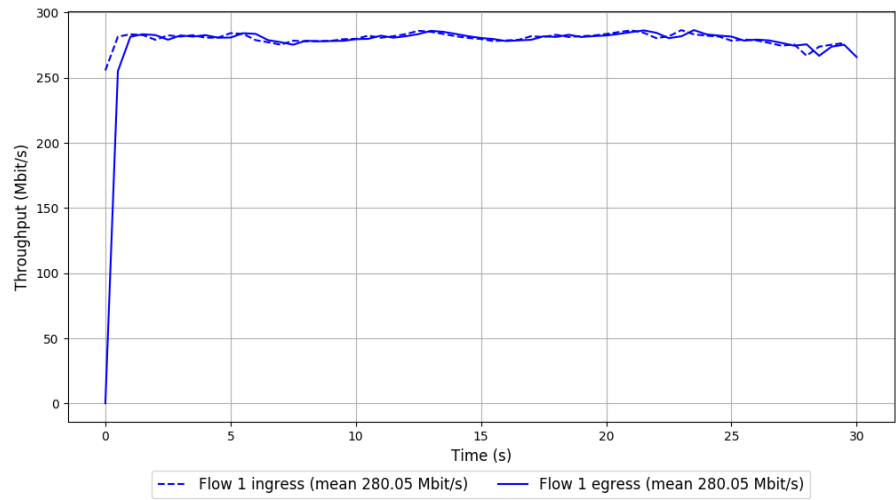
-- Flow 1:

Average throughput: 280.05 Mbit/s

95th percentile per-packet one-way delay: 0.969 ms

Loss rate: 0.07%

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

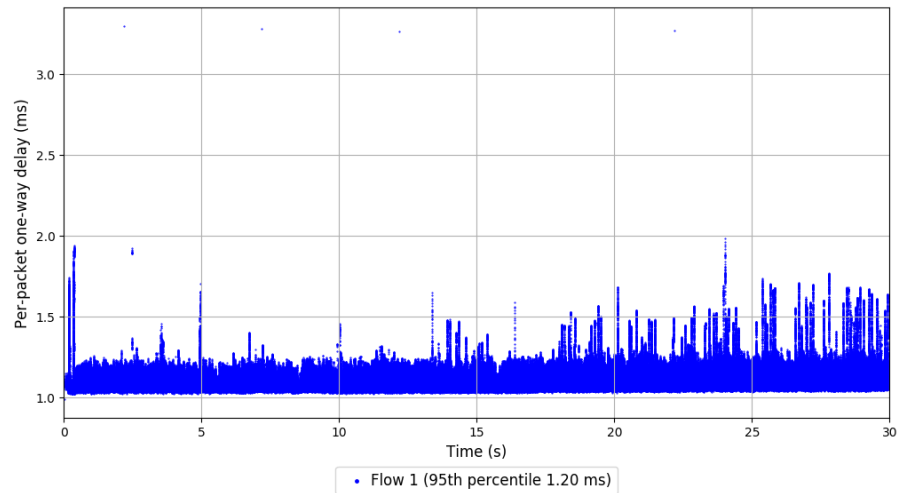
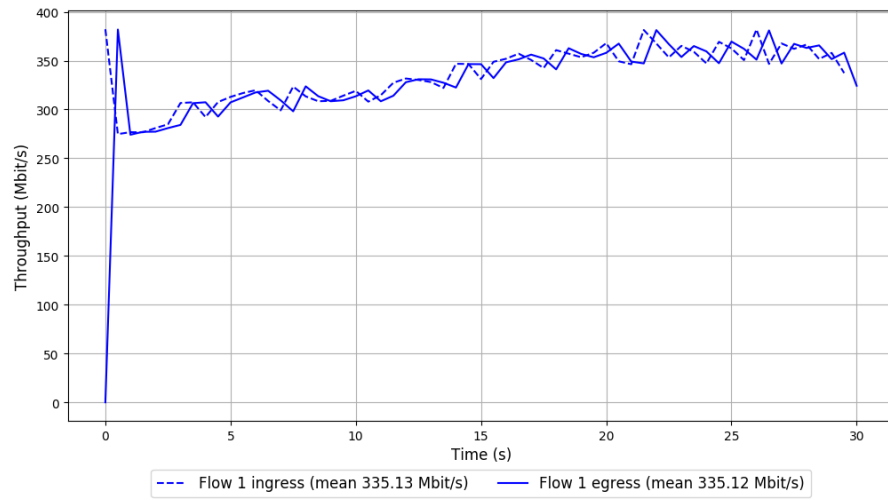


Run 1: Statistics of TCP Vegas

Start at: 2018-09-06 14:35:41
End at: 2018-09-06 14:36:11
Local clock offset: -0.446 ms
Remote clock offset: -5.174 ms

Below is generated by plot.py at 2018-09-06 17:30:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 335.12 Mbit/s
95th percentile per-packet one-way delay: 1.203 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 335.12 Mbit/s
95th percentile per-packet one-way delay: 1.203 ms
Loss rate: 0.07%

Run 1: Report of TCP Vegas — Data Link

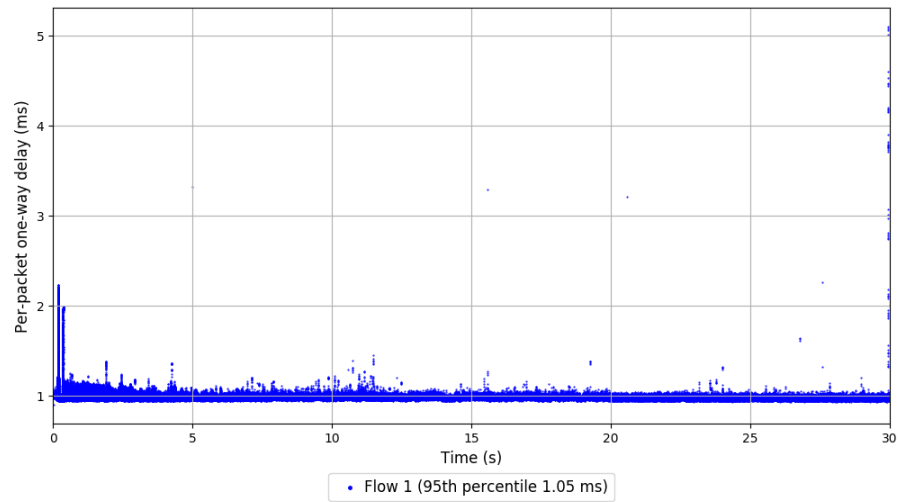
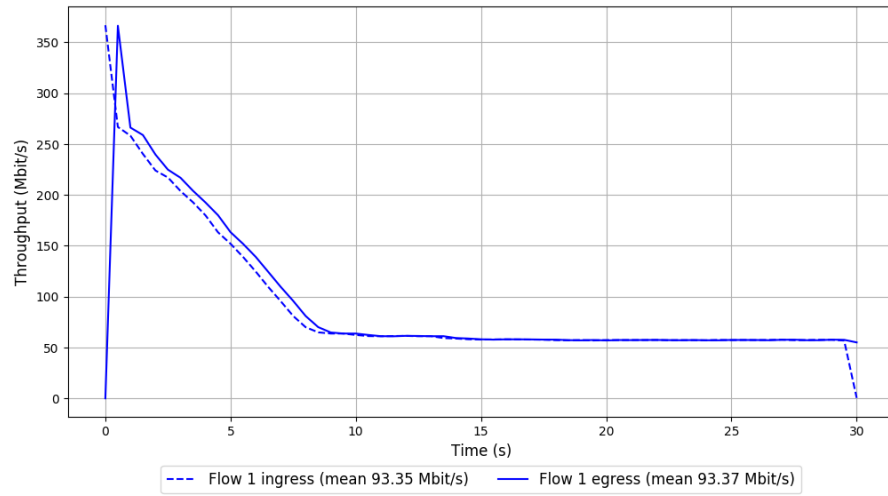


Run 2: Statistics of TCP Vegas

Start at: 2018-09-06 15:03:33
End at: 2018-09-06 15:04:03
Local clock offset: -0.578 ms
Remote clock offset: -6.43 ms

Below is generated by plot.py at 2018-09-06 17:30:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.04%

Run 2: Report of TCP Vegas — Data Link

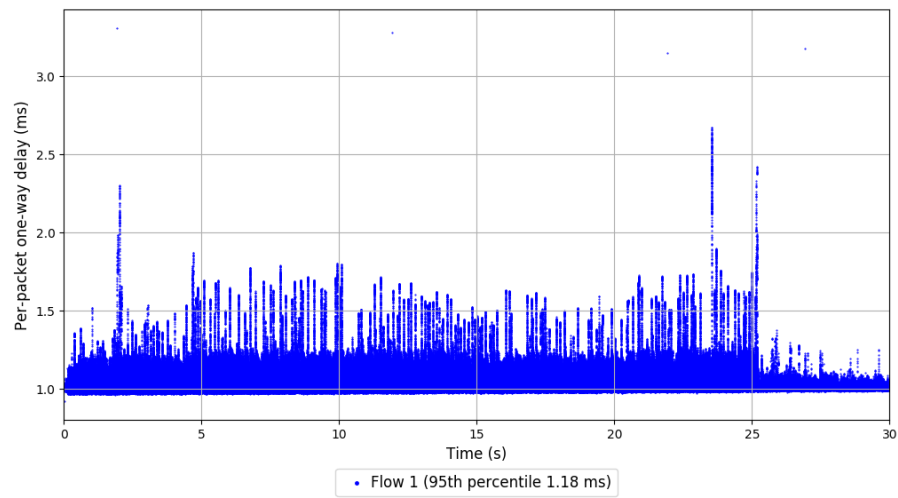
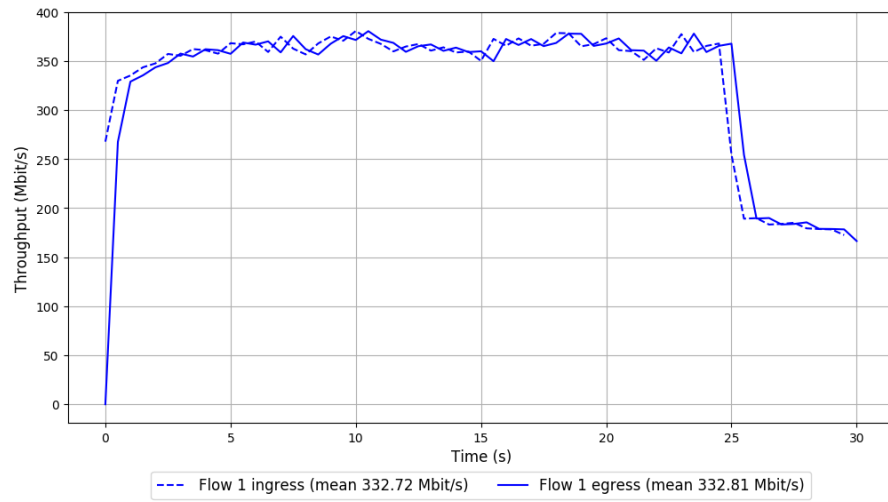


Run 3: Statistics of TCP Vegas

Start at: 2018-09-06 15:31:07
End at: 2018-09-06 15:31:37
Local clock offset: -0.306 ms
Remote clock offset: -2.863 ms

Below is generated by plot.py at 2018-09-06 17:32:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 332.81 Mbit/s
95th percentile per-packet one-way delay: 1.180 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 332.81 Mbit/s
95th percentile per-packet one-way delay: 1.180 ms
Loss rate: 0.03%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-06 15:59:02

End at: 2018-09-06 15:59:32

Local clock offset: -0.109 ms

Remote clock offset: 0.673 ms

Below is generated by plot.py at 2018-09-06 17:34:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 418.75 Mbit/s

95th percentile per-packet one-way delay: 1.213 ms

Loss rate: 0.00%

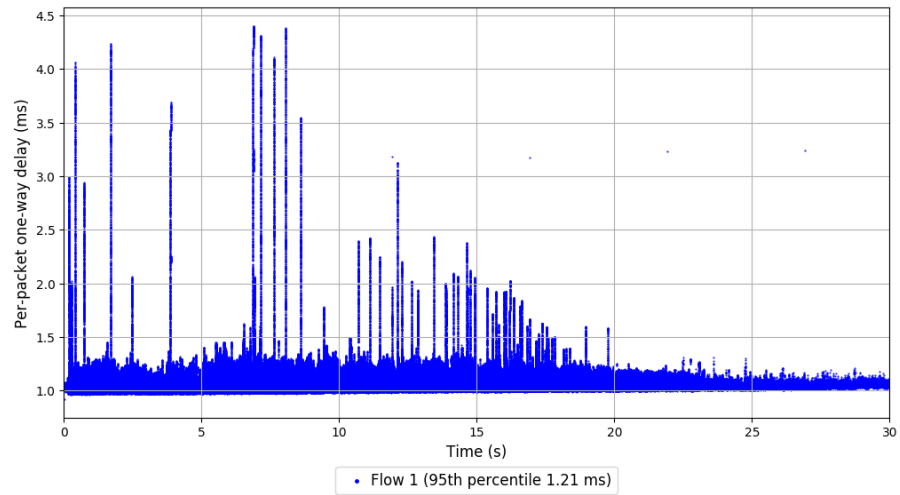
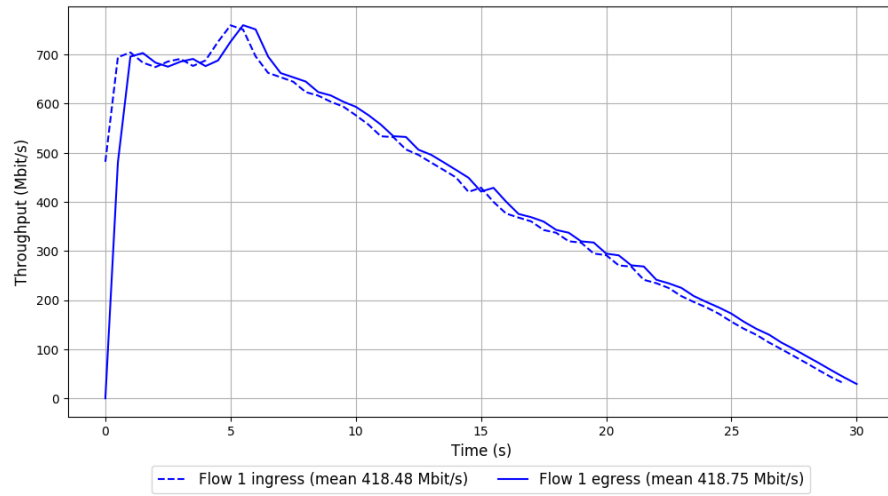
-- Flow 1:

Average throughput: 418.75 Mbit/s

95th percentile per-packet one-way delay: 1.213 ms

Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link

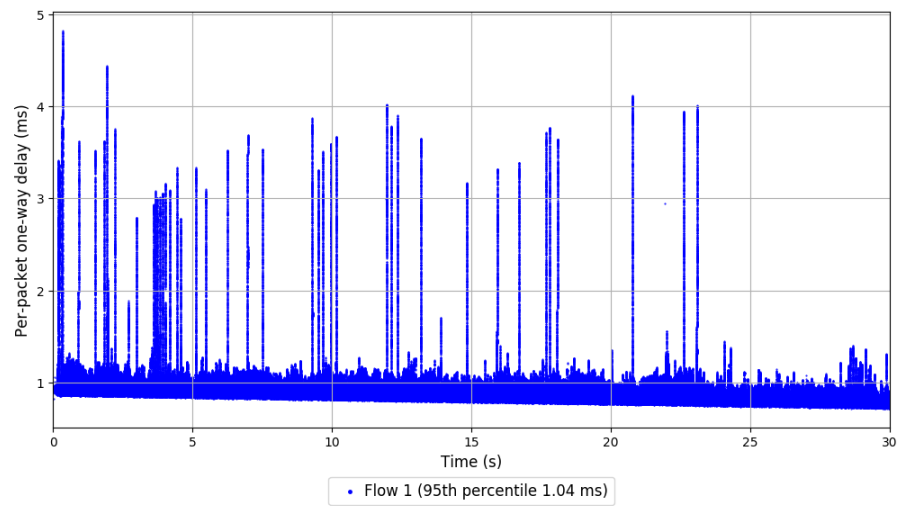
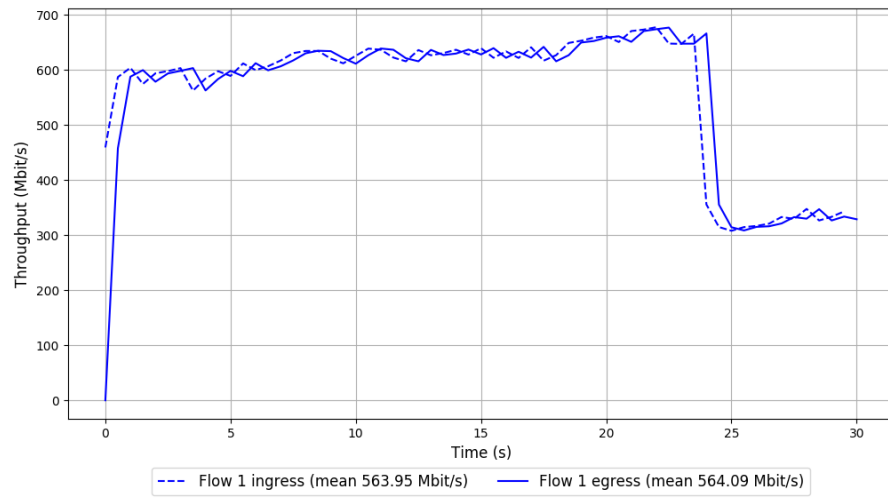


Run 5: Statistics of TCP Vegas

Start at: 2018-09-06 16:27:01
End at: 2018-09-06 16:27:31
Local clock offset: 2.627 ms
Remote clock offset: -2.568 ms

Below is generated by plot.py at 2018-09-06 17:35:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 564.09 Mbit/s
95th percentile per-packet one-way delay: 1.045 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 564.09 Mbit/s
95th percentile per-packet one-way delay: 1.045 ms
Loss rate: 0.04%

Run 5: Report of TCP Vegas — Data Link

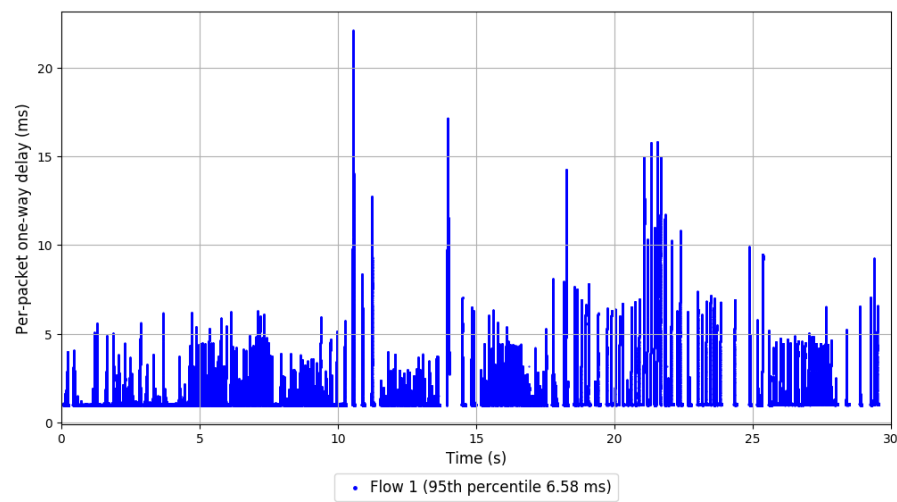
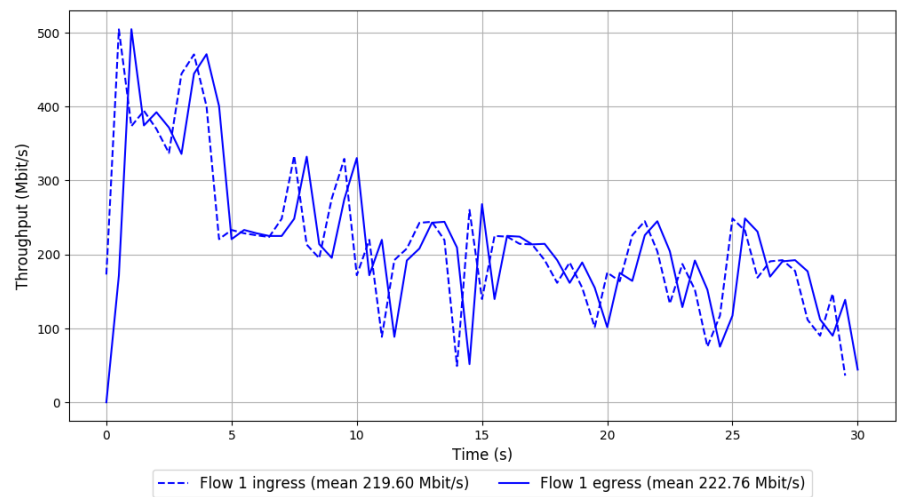


Run 1: Statistics of Verus

Start at: 2018-09-06 14:32:38
End at: 2018-09-06 14:33:08
Local clock offset: -0.278 ms
Remote clock offset: -5.077 ms

Below is generated by plot.py at 2018-09-06 17:35:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 222.76 Mbit/s
95th percentile per-packet one-way delay: 6.577 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 222.76 Mbit/s
95th percentile per-packet one-way delay: 6.577 ms
Loss rate: 0.00%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-06 15:00:23

End at: 2018-09-06 15:00:54

Local clock offset: -0.451 ms

Remote clock offset: -6.31 ms

Below is generated by plot.py at 2018-09-06 17:35:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 377.12 Mbit/s

95th percentile per-packet one-way delay: 13.958 ms

Loss rate: 0.10%

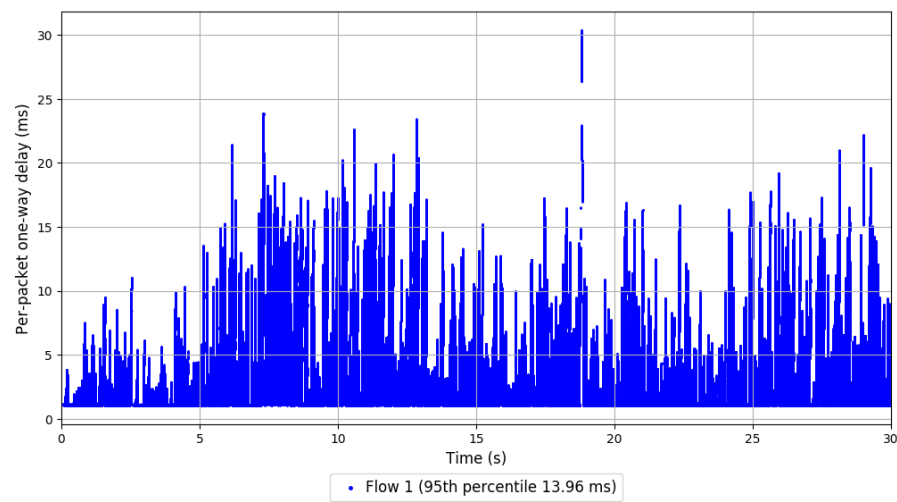
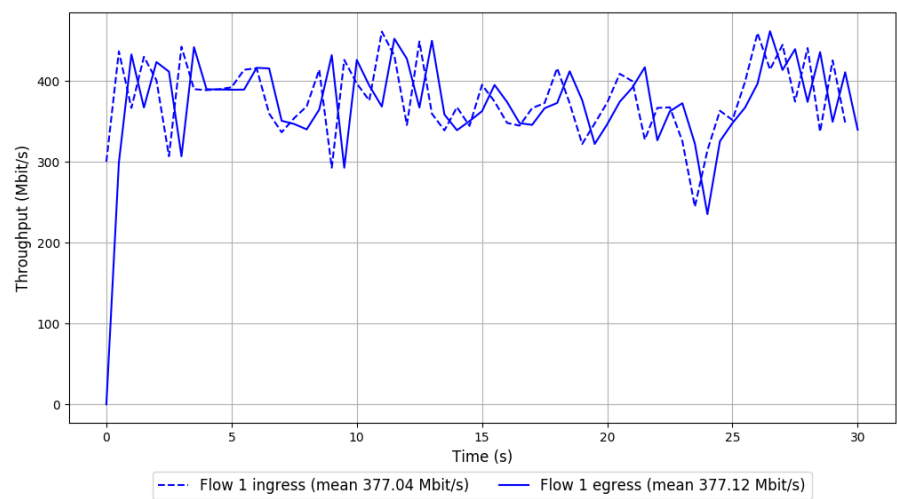
-- Flow 1:

Average throughput: 377.12 Mbit/s

95th percentile per-packet one-way delay: 13.958 ms

Loss rate: 0.10%

Run 2: Report of Verus — Data Link

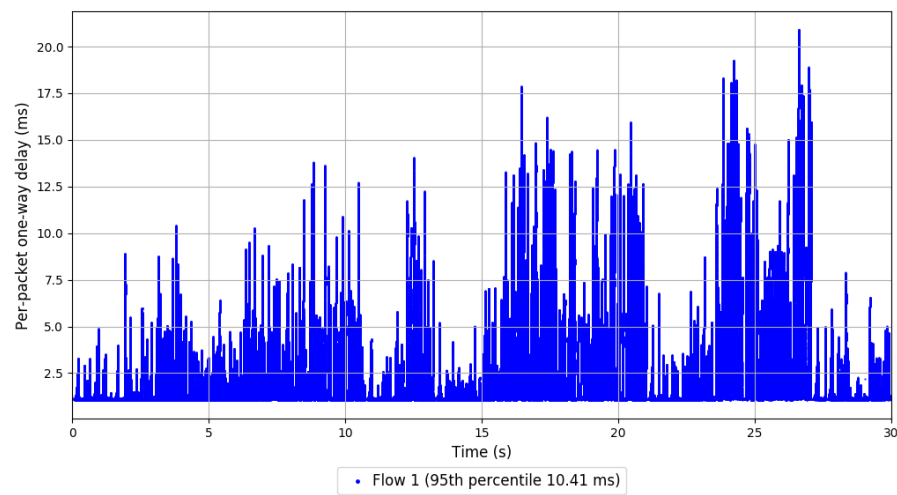
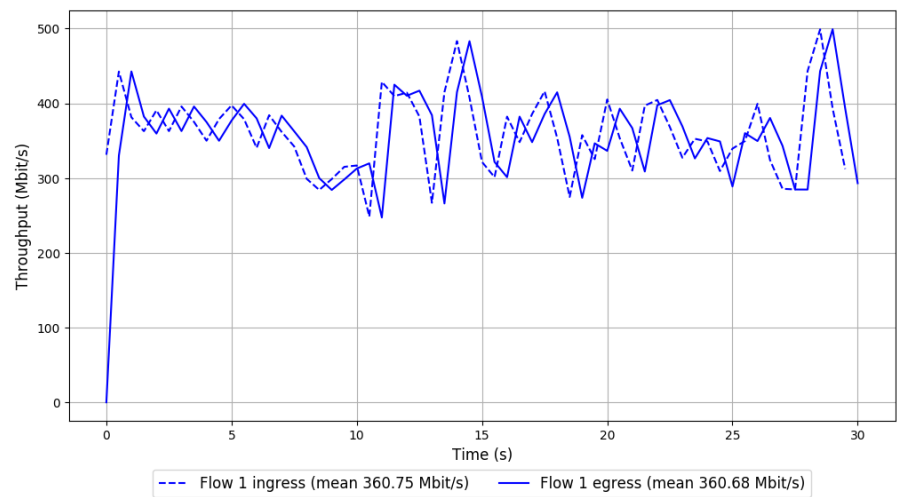


Run 3: Statistics of Verus

Start at: 2018-09-06 15:27:59
End at: 2018-09-06 15:28:29
Local clock offset: -0.242 ms
Remote clock offset: -3.011 ms

Below is generated by plot.py at 2018-09-06 17:35:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 360.68 Mbit/s
95th percentile per-packet one-way delay: 10.414 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 360.68 Mbit/s
95th percentile per-packet one-way delay: 10.414 ms
Loss rate: 0.09%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-06 15:55:53

End at: 2018-09-06 15:56:23

Local clock offset: -0.03 ms

Remote clock offset: 0.378 ms

Below is generated by plot.py at 2018-09-06 17:35:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 351.83 Mbit/s

95th percentile per-packet one-way delay: 10.503 ms

Loss rate: 0.08%

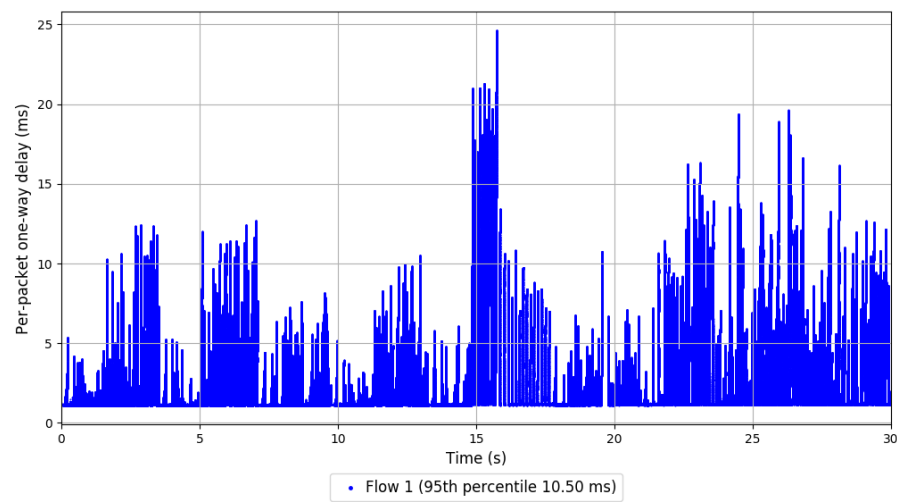
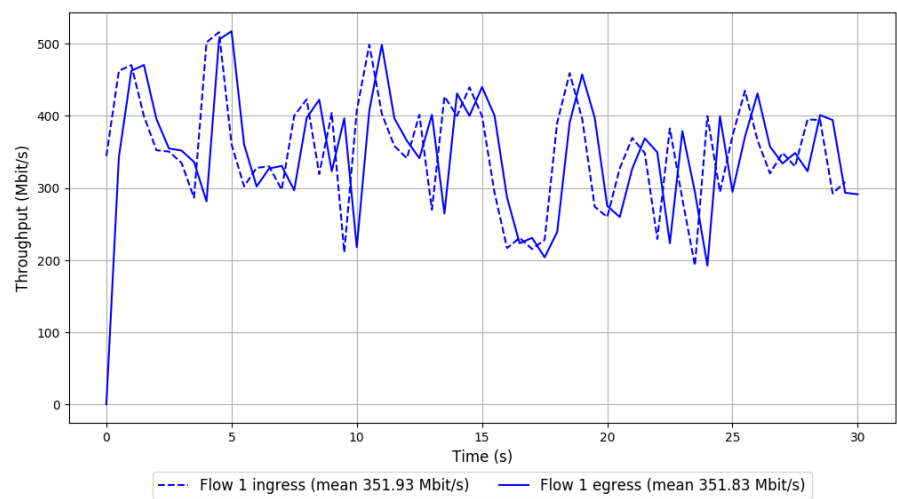
-- Flow 1:

Average throughput: 351.83 Mbit/s

95th percentile per-packet one-way delay: 10.503 ms

Loss rate: 0.08%

Run 4: Report of Verus — Data Link

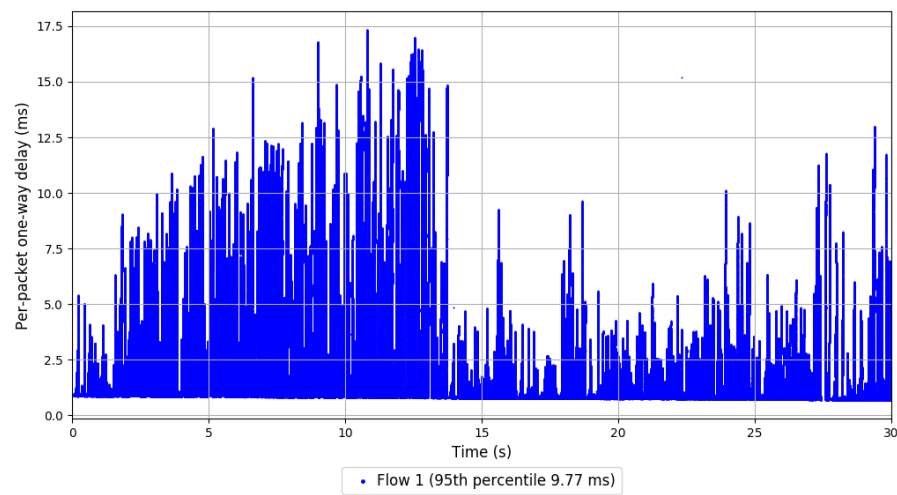
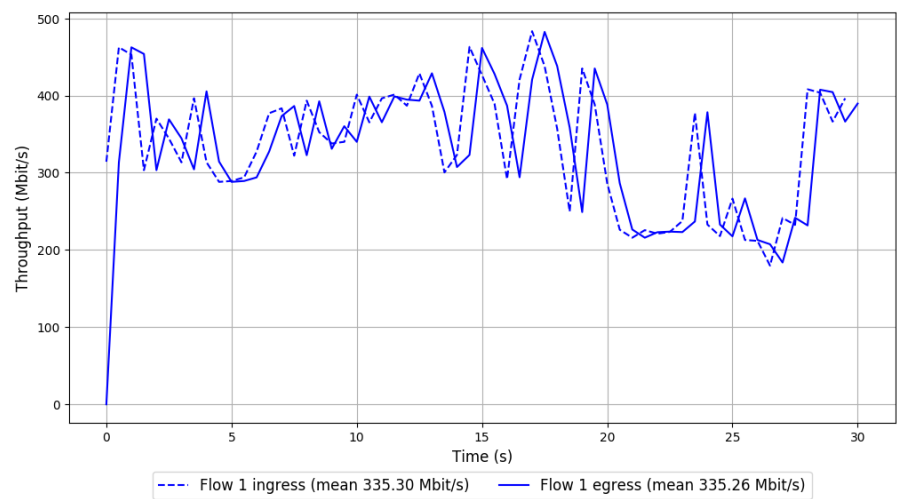


Run 5: Statistics of Verus

Start at: 2018-09-06 16:23:54
End at: 2018-09-06 16:24:24
Local clock offset: 2.201 ms
Remote clock offset: -1.996 ms

Below is generated by plot.py at 2018-09-06 17:35:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 335.26 Mbit/s
95th percentile per-packet one-way delay: 9.768 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 335.26 Mbit/s
95th percentile per-packet one-way delay: 9.768 ms
Loss rate: 0.04%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-06 14:19:00

End at: 2018-09-06 14:19:30

Local clock offset: 1.897 ms

Remote clock offset: -4.326 ms

Below is generated by plot.py at 2018-09-06 17:36:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 421.11 Mbit/s

95th percentile per-packet one-way delay: 1.308 ms

Loss rate: 0.07%

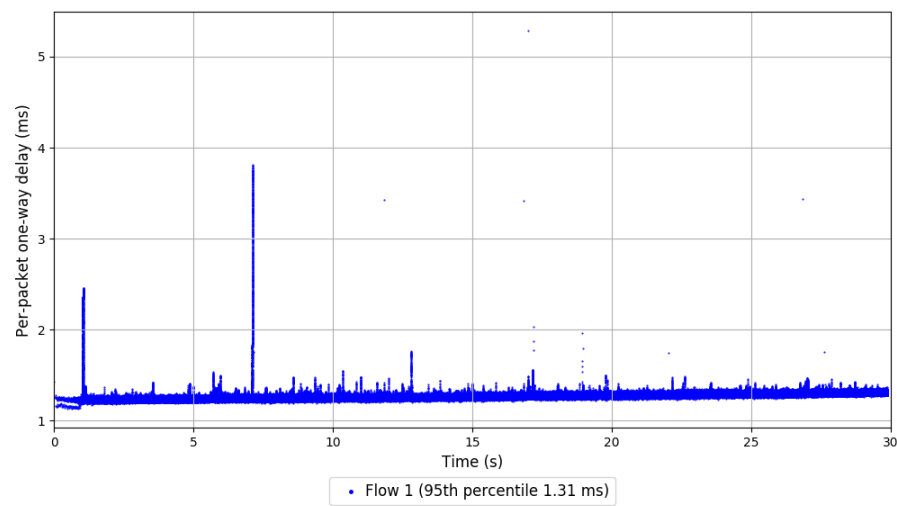
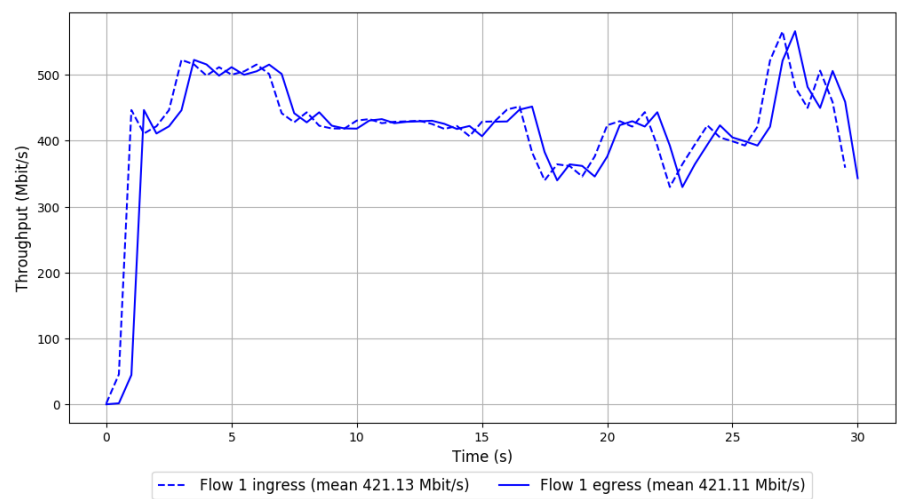
-- Flow 1:

Average throughput: 421.11 Mbit/s

95th percentile per-packet one-way delay: 1.308 ms

Loss rate: 0.07%

Run 1: Report of PCC-Vivace — Data Link

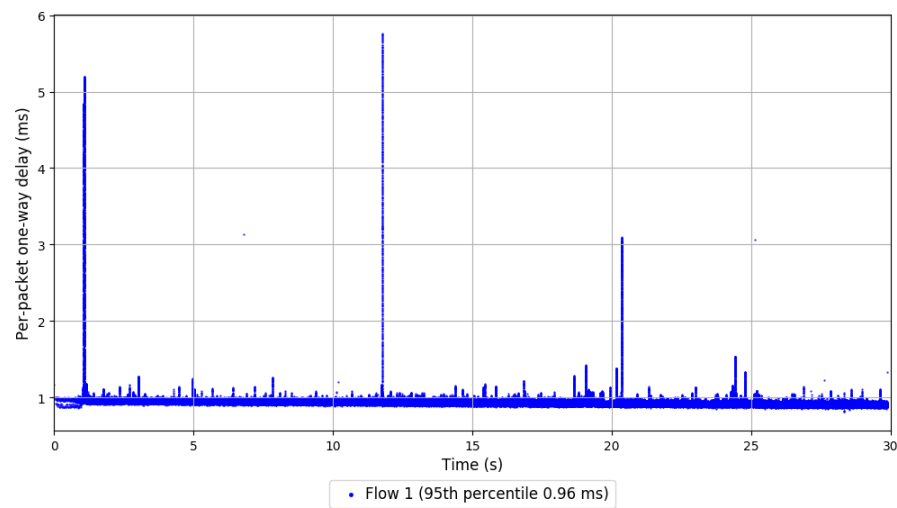
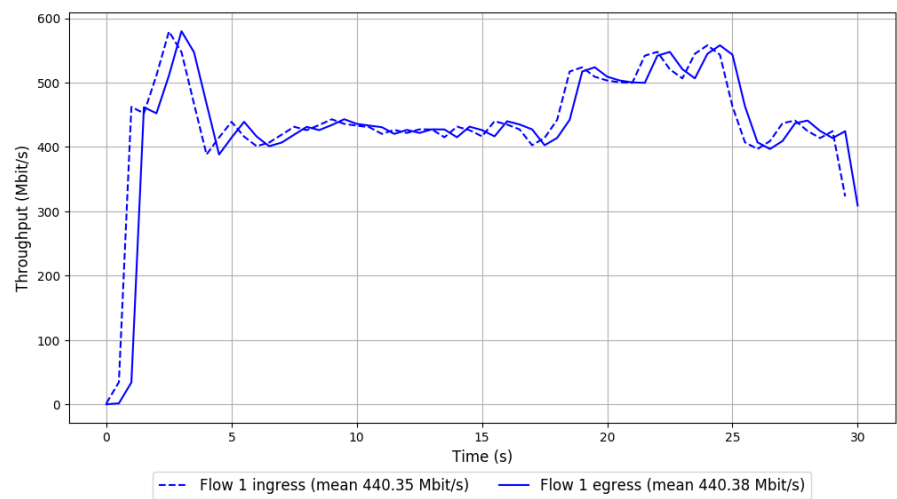


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-06 14:46:49
End at: 2018-09-06 14:47:19
Local clock offset: -0.922 ms
Remote clock offset: -5.657 ms

Below is generated by plot.py at 2018-09-06 17:36:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 440.38 Mbit/s
95th percentile per-packet one-way delay: 0.962 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 440.38 Mbit/s
95th percentile per-packet one-way delay: 0.962 ms
Loss rate: 0.06%

Run 2: Report of PCC-Vivace — Data Link

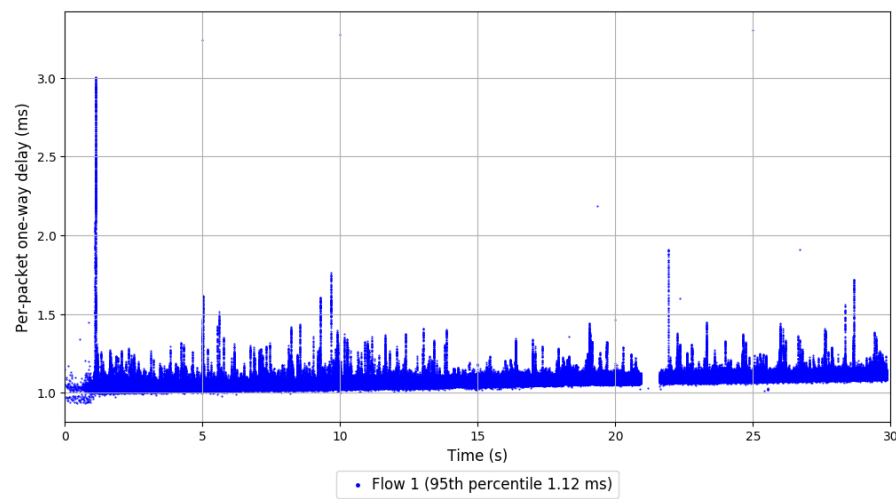
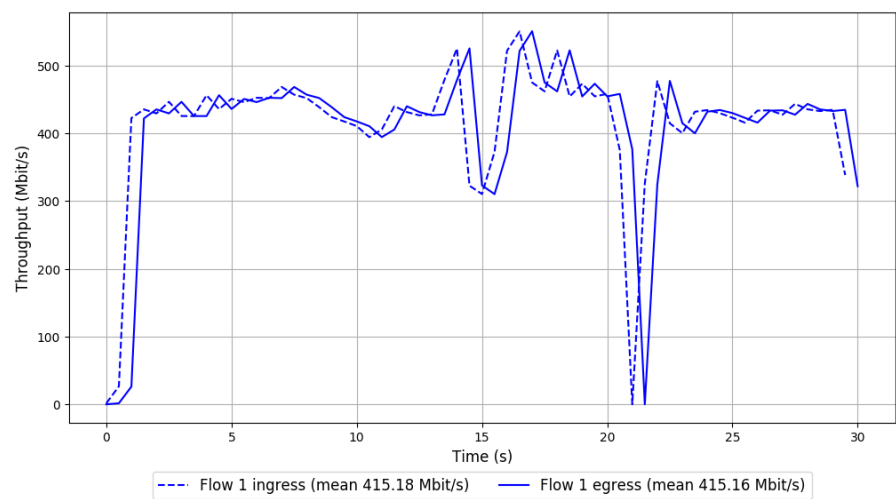


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-06 15:14:22
End at: 2018-09-06 15:14:52
Local clock offset: -0.78 ms
Remote clock offset: -4.183 ms

Below is generated by plot.py at 2018-09-06 17:37:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 415.16 Mbit/s
95th percentile per-packet one-way delay: 1.119 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 415.16 Mbit/s
95th percentile per-packet one-way delay: 1.119 ms
Loss rate: 0.07%

Run 3: Report of PCC-Vivace — Data Link

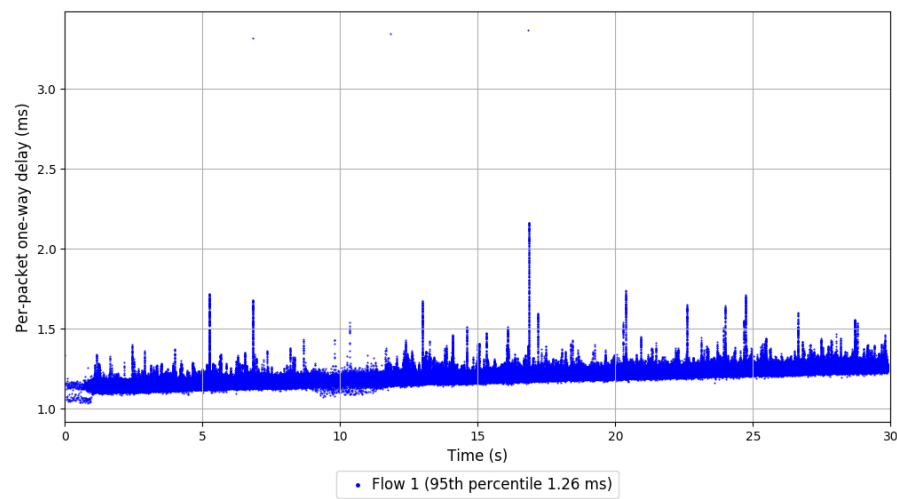
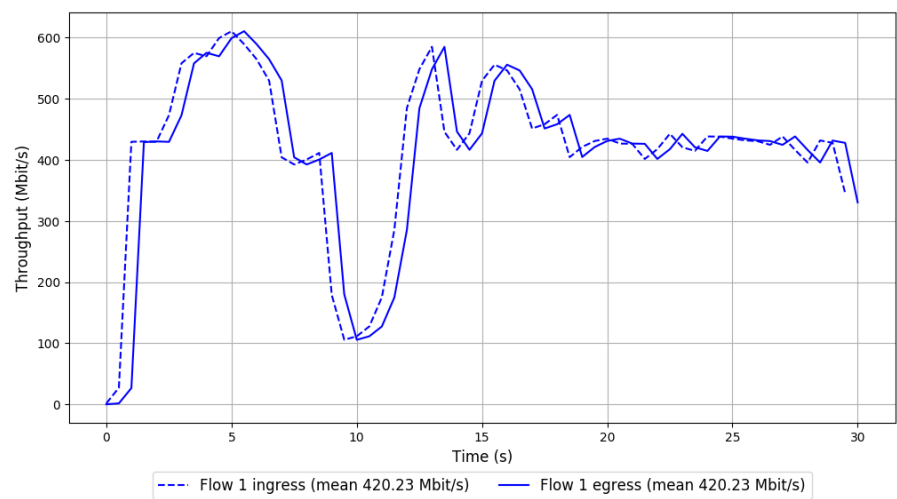


Run 4: Statistics of PCC-Vivace

Start at: 2018-09-06 15:42:08
End at: 2018-09-06 15:42:38
Local clock offset: -0.252 ms
Remote clock offset: -1.782 ms

Below is generated by plot.py at 2018-09-06 17:37:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 420.23 Mbit/s
95th percentile per-packet one-way delay: 1.263 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 420.23 Mbit/s
95th percentile per-packet one-way delay: 1.263 ms
Loss rate: 0.06%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-06 16:10:14

End at: 2018-09-06 16:10:44

Local clock offset: -0.067 ms

Remote clock offset: 1.471 ms

Below is generated by plot.py at 2018-09-06 17:37:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 421.13 Mbit/s

95th percentile per-packet one-way delay: 1.132 ms

Loss rate: 0.06%

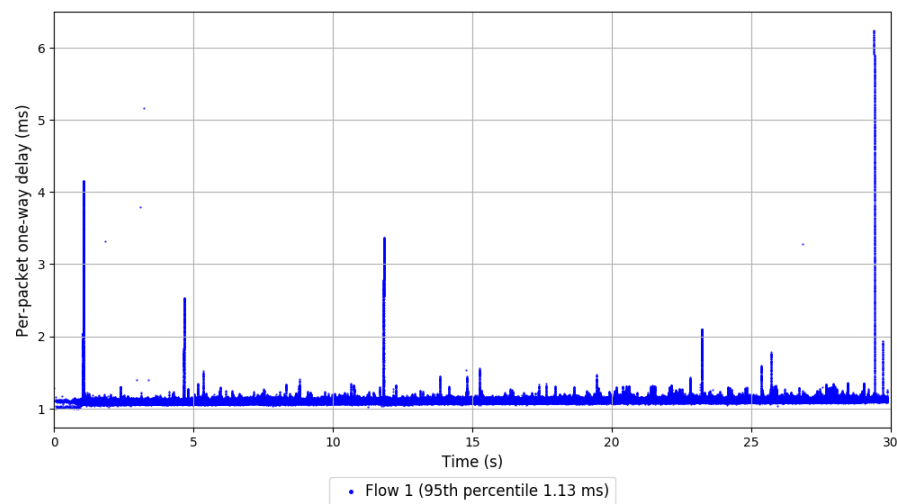
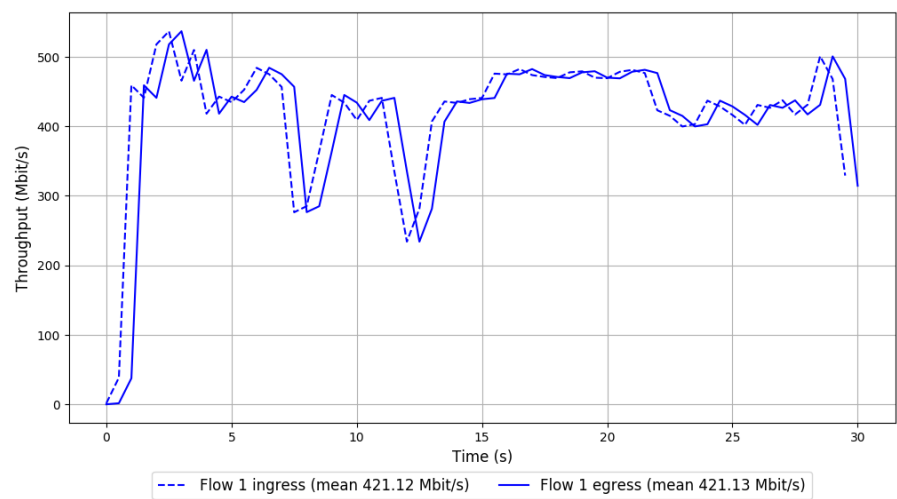
-- Flow 1:

Average throughput: 421.13 Mbit/s

95th percentile per-packet one-way delay: 1.132 ms

Loss rate: 0.06%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-06 14:31:20

End at: 2018-09-06 14:31:50

Local clock offset: -0.132 ms

Remote clock offset: -5.05 ms

Below is generated by plot.py at 2018-09-06 17:37:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.99 Mbit/s

95th percentile per-packet one-way delay: 1.166 ms

Loss rate: 0.08%

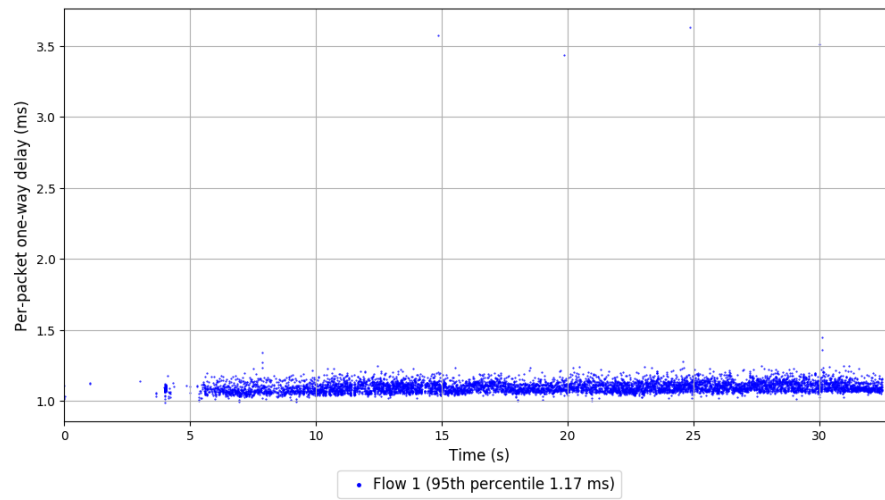
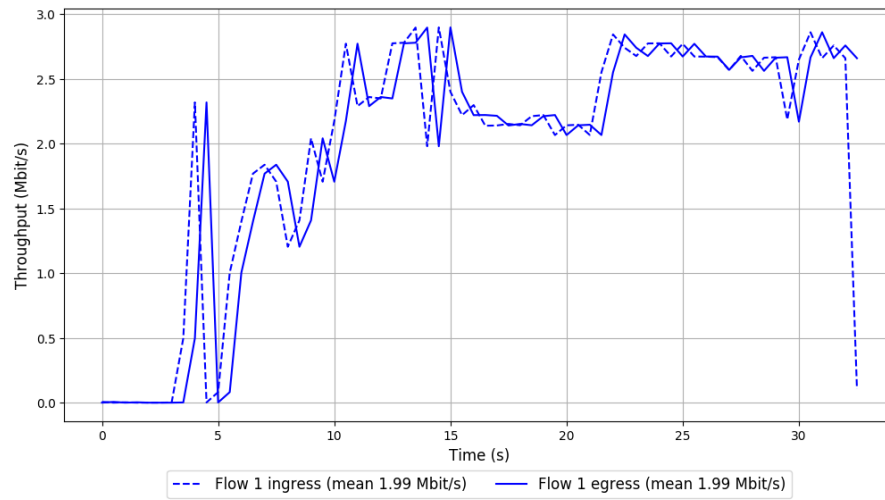
-- Flow 1:

Average throughput: 1.99 Mbit/s

95th percentile per-packet one-way delay: 1.166 ms

Loss rate: 0.08%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-06 14:59:05

End at: 2018-09-06 14:59:35

Local clock offset: -0.447 ms

Remote clock offset: -6.24 ms

Below is generated by plot.py at 2018-09-06 17:37:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.04 Mbit/s

95th percentile per-packet one-way delay: 1.156 ms

Loss rate: 0.07%

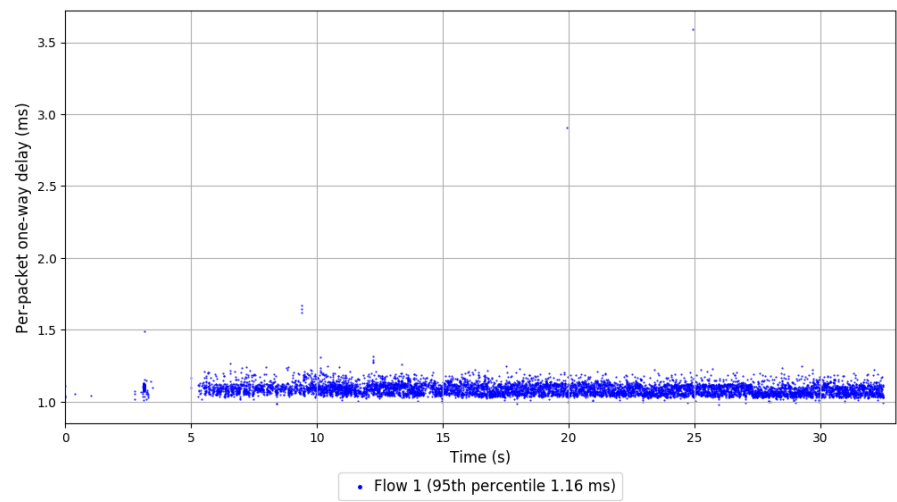
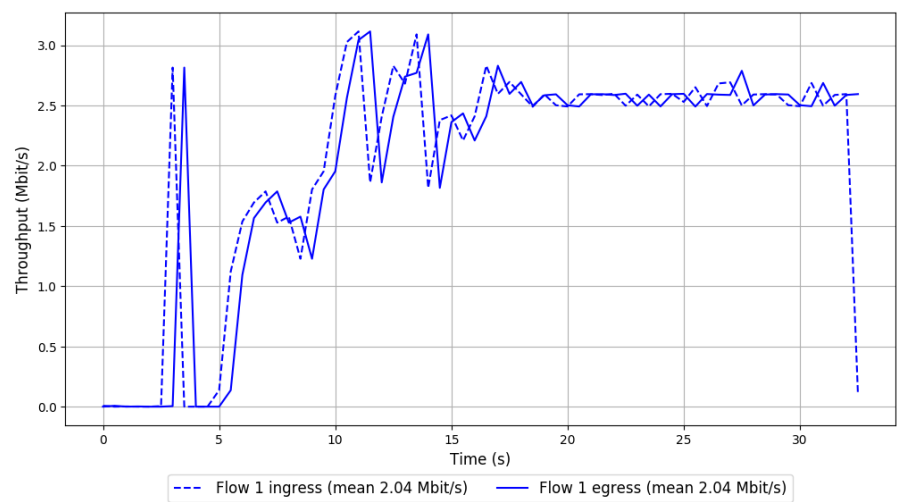
-- Flow 1:

Average throughput: 2.04 Mbit/s

95th percentile per-packet one-way delay: 1.156 ms

Loss rate: 0.07%

Run 2: Report of WebRTC media — Data Link

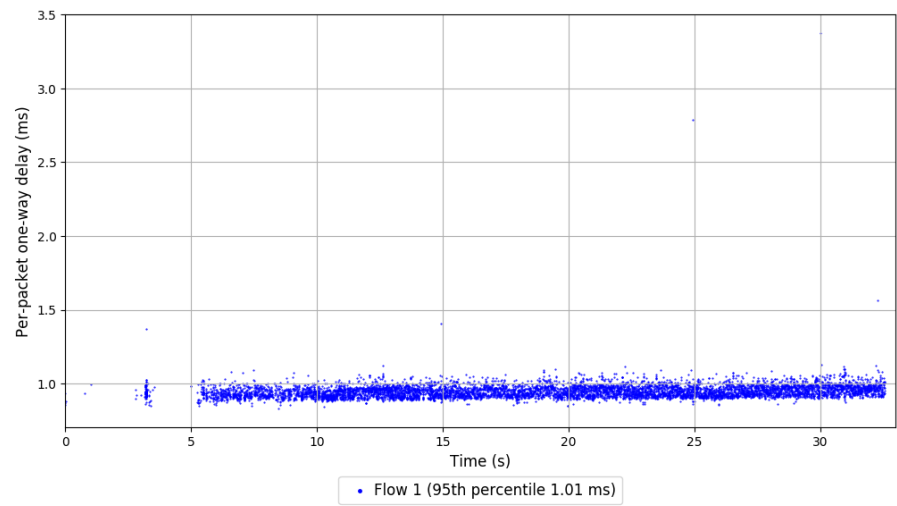
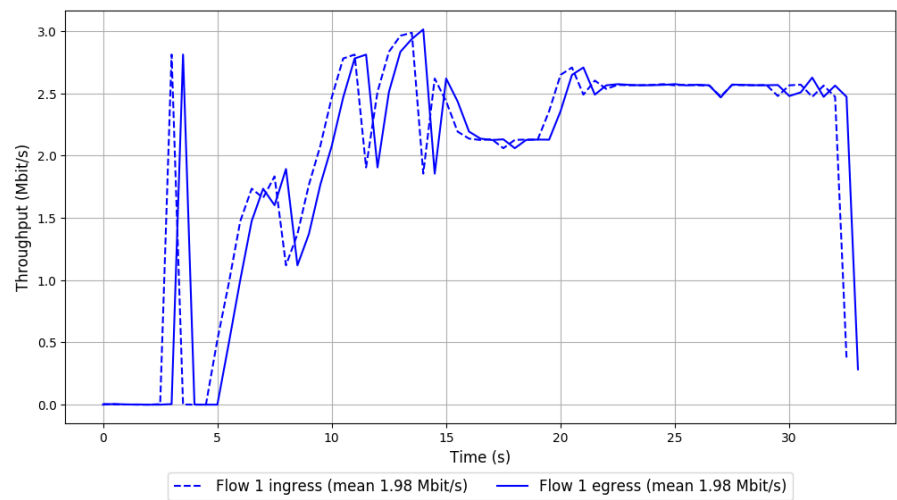


Run 3: Statistics of WebRTC media

Start at: 2018-09-06 15:26:40
End at: 2018-09-06 15:27:11
Local clock offset: -0.365 ms
Remote clock offset: -3.016 ms

Below is generated by plot.py at 2018-09-06 17:37:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 0.07%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-06 15:54:35

End at: 2018-09-06 15:55:05

Local clock offset: -0.038 ms

Remote clock offset: 0.223 ms

Below is generated by plot.py at 2018-09-06 17:37:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 1.217 ms

Loss rate: 0.08%

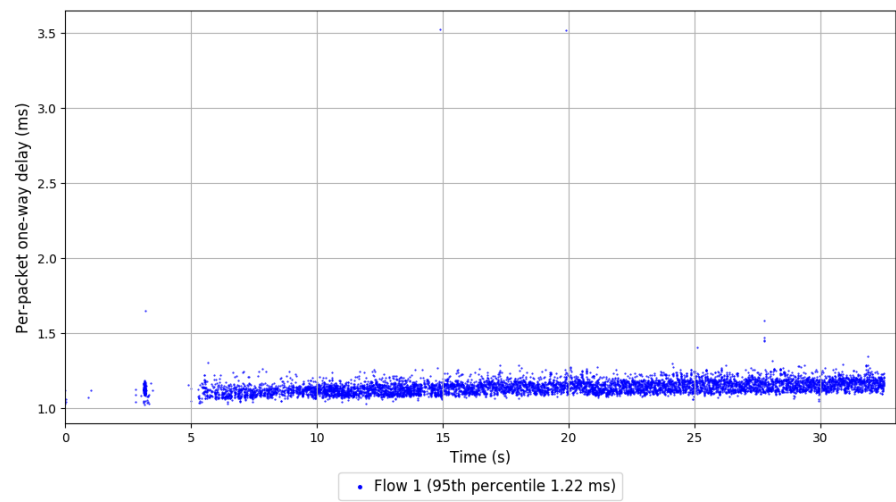
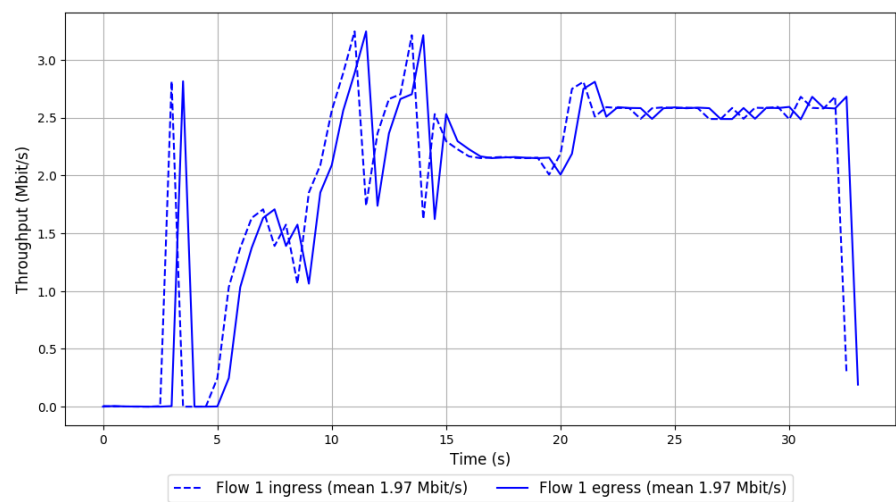
-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 1.217 ms

Loss rate: 0.08%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-06 16:22:36
End at: 2018-09-06 16:23:06
Local clock offset: 1.976 ms
Remote clock offset: -1.755 ms

Below is generated by plot.py at 2018-09-06 17:37:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 0.959 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 0.959 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

