

Pantheon Report

Generated at 2018-11-15 11:03:01 (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:

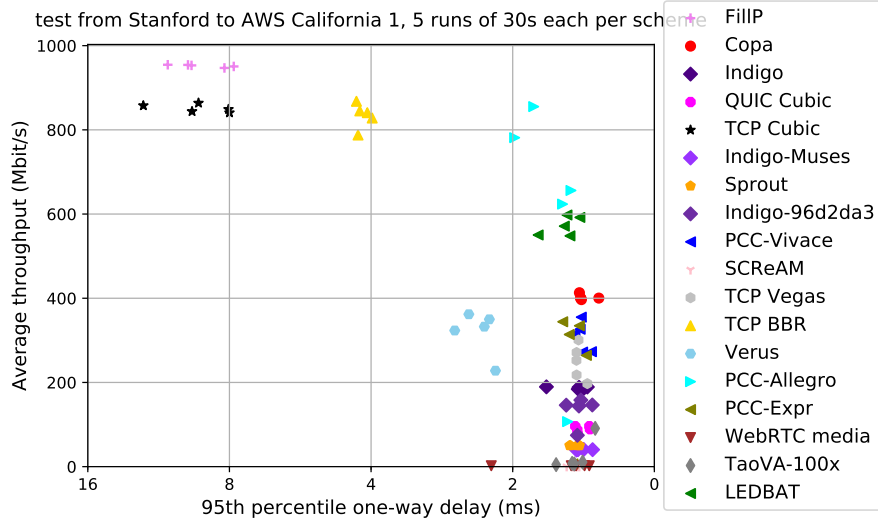
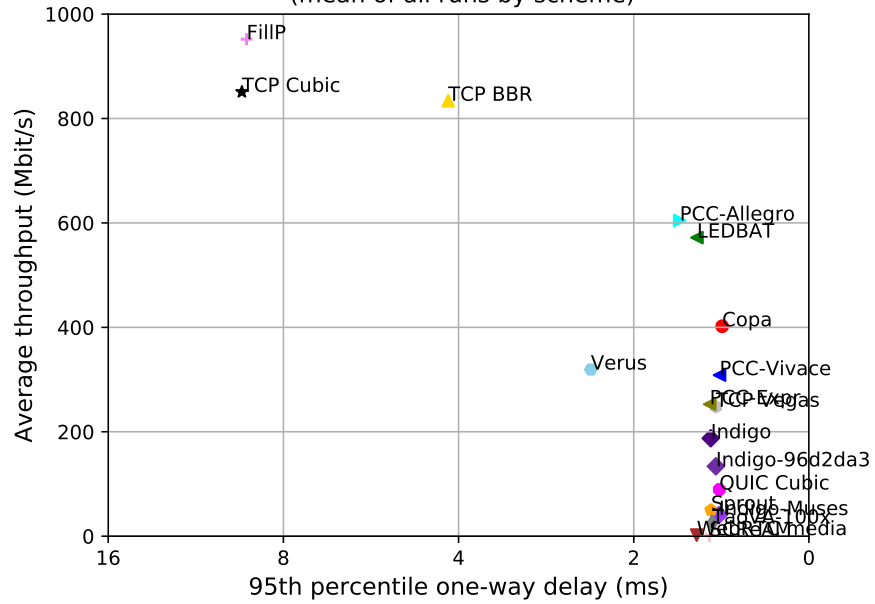
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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	833.92	4.17	0.02
Copa	5	402.08	0.99	0.01
TCP Cubic	5	850.89	9.43	0.02
FillP	5	951.93	9.26	0.02
Indigo	5	187.53	1.12	0.01
Indigo-96d2da3	5	133.84	1.06	0.01
LEDBAT	5	571.87	1.28	0.01
Indigo-Muses	5	40.54	1.03	0.01
PCC-Allegro	5	604.65	1.47	0.01
PCC-Expr	5	252.68	1.13	0.01
QUIC Cubic	5	89.37	1.02	0.01
SCReAM	5	0.22	1.14	0.03
Sprout	5	50.24	1.12	0.01
TaoVA-100x	5	24.12	1.10	0.01
TCP Vegas	5	247.91	1.06	0.01
Verus	5	319.17	2.37	0.01
PCC-Vivace	5	308.48	1.02	0.01
WebRTC media	5	2.09	1.28	0.03

Run 1: Statistics of TCP BBR

Start at: 2018-11-15 08:09:16

End at: 2018-11-15 08:09:46

Local clock offset: 6.09 ms

Remote clock offset: 2.29 ms

Below is generated by plot.py at 2018-11-15 10:23:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 828.11 Mbit/s

95th percentile per-packet one-way delay: 3.978 ms

Loss rate: 0.02%

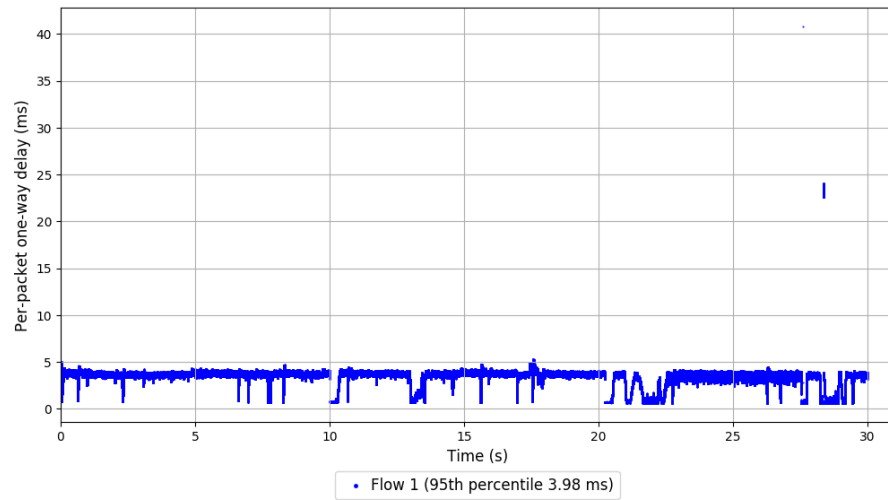
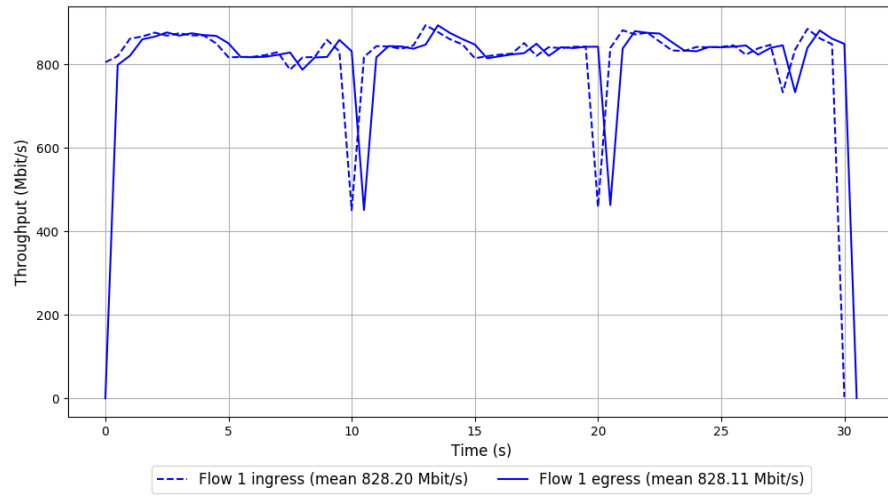
-- Flow 1:

Average throughput: 828.11 Mbit/s

95th percentile per-packet one-way delay: 3.978 ms

Loss rate: 0.02%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-11-15 08:36:04

End at: 2018-11-15 08:36:34

Local clock offset: 5.488 ms

Remote clock offset: -1.574 ms

Below is generated by plot.py at 2018-11-15 10:23:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 787.78 Mbit/s

95th percentile per-packet one-way delay: 4.263 ms

Loss rate: 0.02%

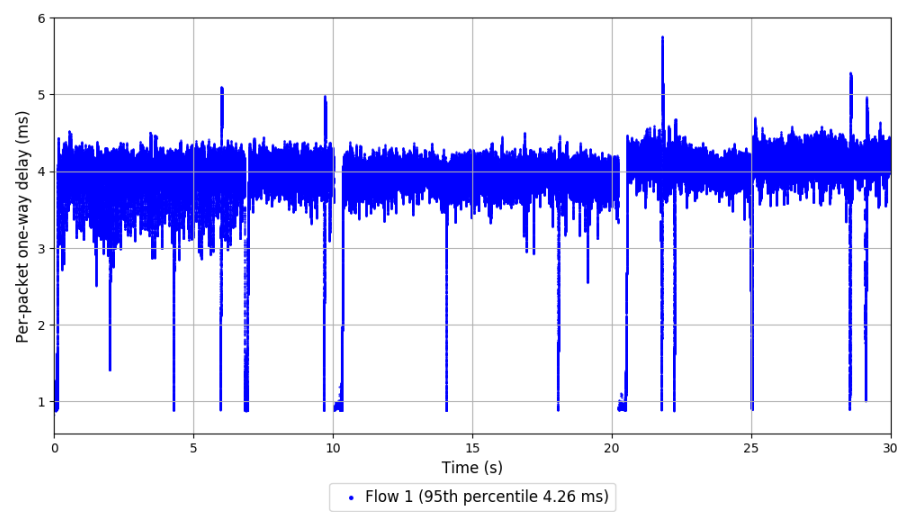
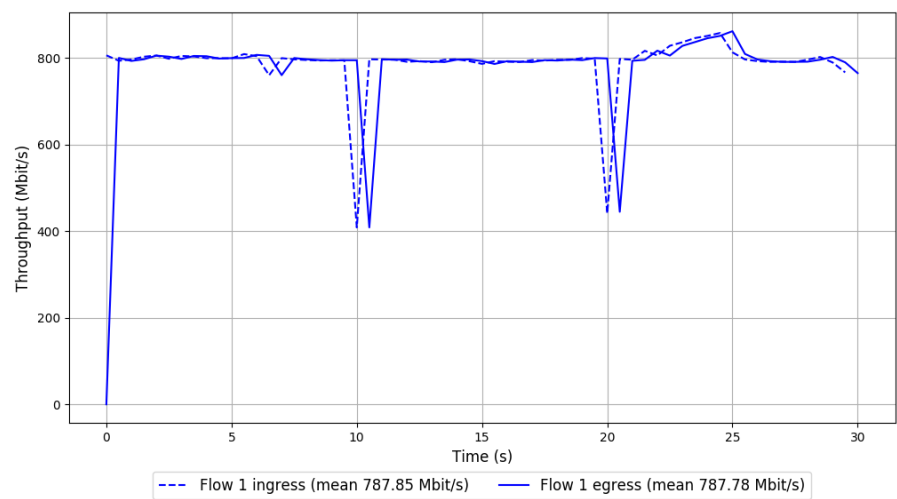
-- Flow 1:

Average throughput: 787.78 Mbit/s

95th percentile per-packet one-way delay: 4.263 ms

Loss rate: 0.02%

Run 2: Report of TCP BBR — Data Link

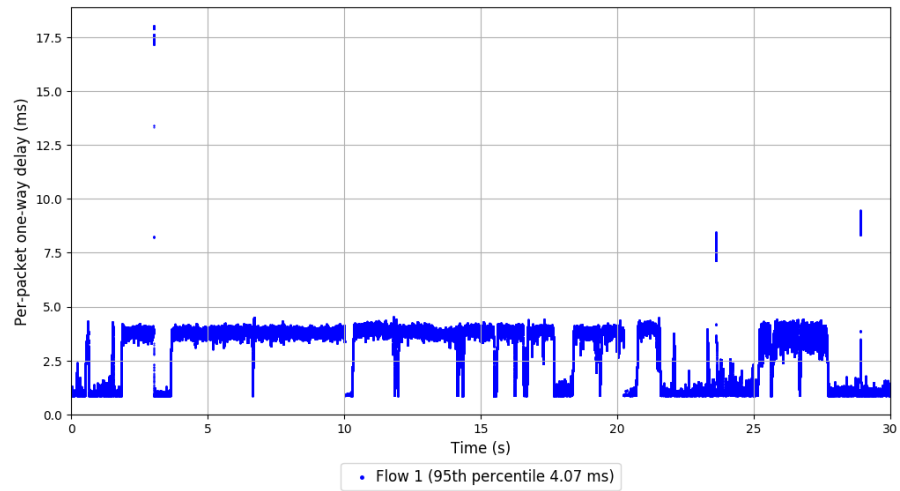
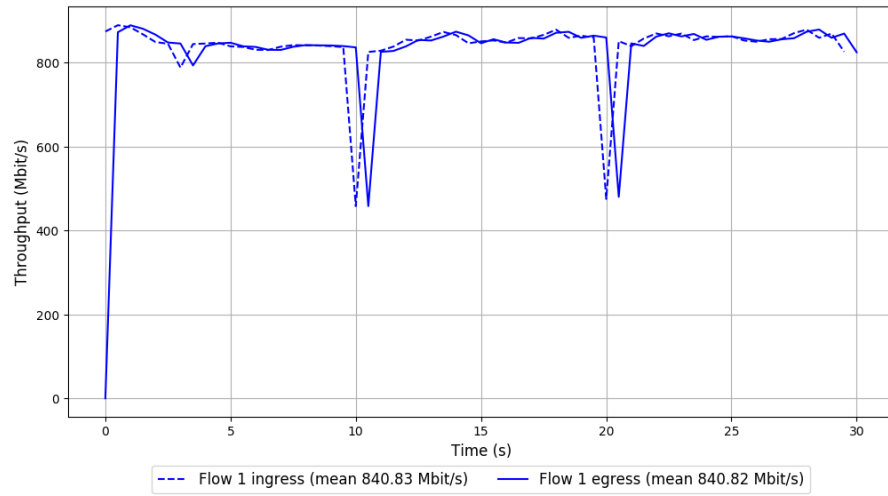


Run 3: Statistics of TCP BBR

Start at: 2018-11-15 09:02:41
End at: 2018-11-15 09:03:11
Local clock offset: 4.759 ms
Remote clock offset: -0.984 ms

Below is generated by plot.py at 2018-11-15 10:23:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 840.82 Mbit/s
95th percentile per-packet one-way delay: 4.074 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 840.82 Mbit/s
95th percentile per-packet one-way delay: 4.074 ms
Loss rate: 0.01%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-11-15 09:29:38

End at: 2018-11-15 09:30:09

Local clock offset: 4.423 ms

Remote clock offset: 2.173 ms

Below is generated by plot.py at 2018-11-15 10:24:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 867.83 Mbit/s

95th percentile per-packet one-way delay: 4.297 ms

Loss rate: 0.02%

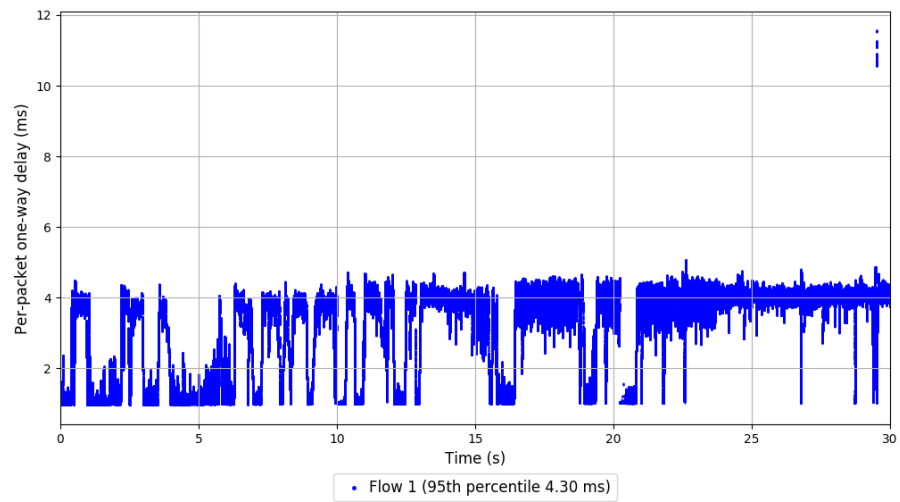
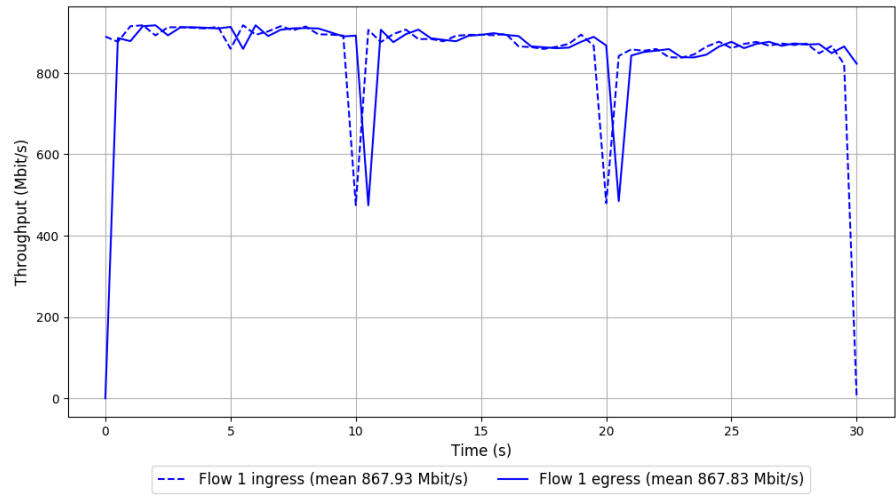
-- Flow 1:

Average throughput: 867.83 Mbit/s

95th percentile per-packet one-way delay: 4.297 ms

Loss rate: 0.02%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-11-15 09:56:41

End at: 2018-11-15 09:57:11

Local clock offset: 4.134 ms

Remote clock offset: 1.012 ms

Below is generated by plot.py at 2018-11-15 10:24:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 845.05 Mbit/s

95th percentile per-packet one-way delay: 4.227 ms

Loss rate: 0.01%

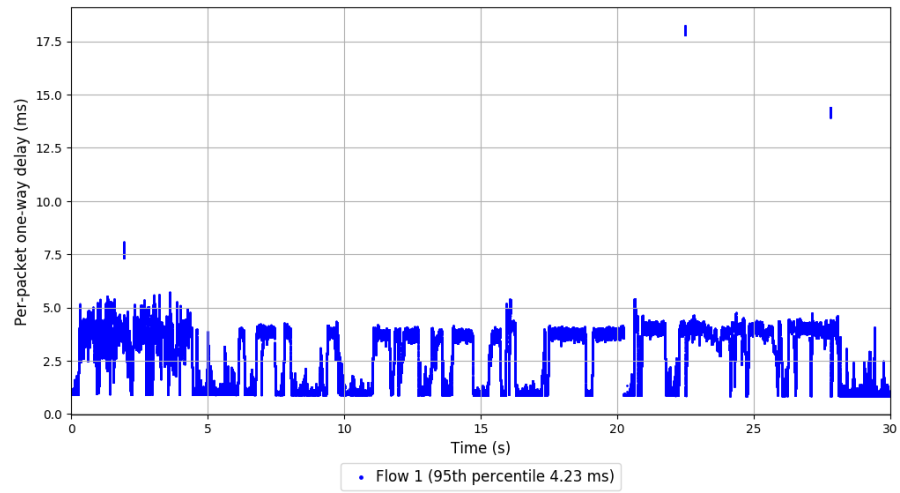
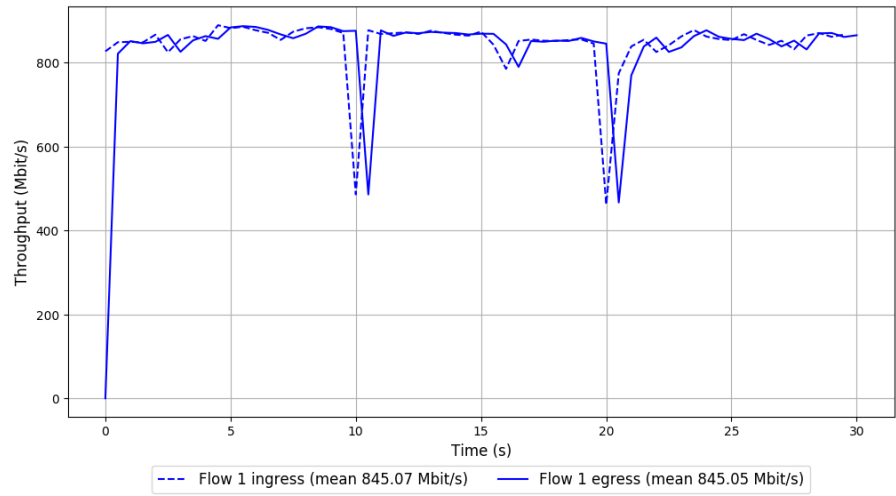
-- Flow 1:

Average throughput: 845.05 Mbit/s

95th percentile per-packet one-way delay: 4.227 ms

Loss rate: 0.01%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-11-15 08:07:34

End at: 2018-11-15 08:08:04

Local clock offset: 6.038 ms

Remote clock offset: 3.029 ms

Below is generated by plot.py at 2018-11-15 10:24:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 400.36 Mbit/s

95th percentile per-packet one-way delay: 0.784 ms

Loss rate: 0.01%

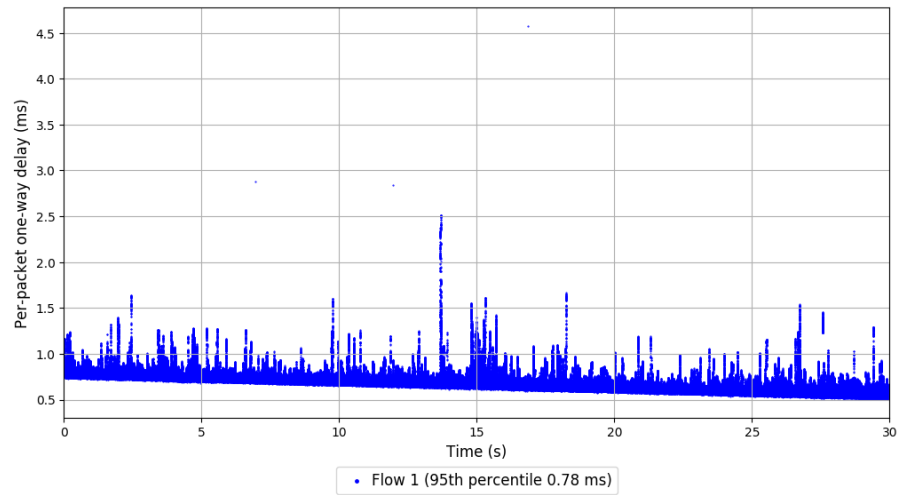
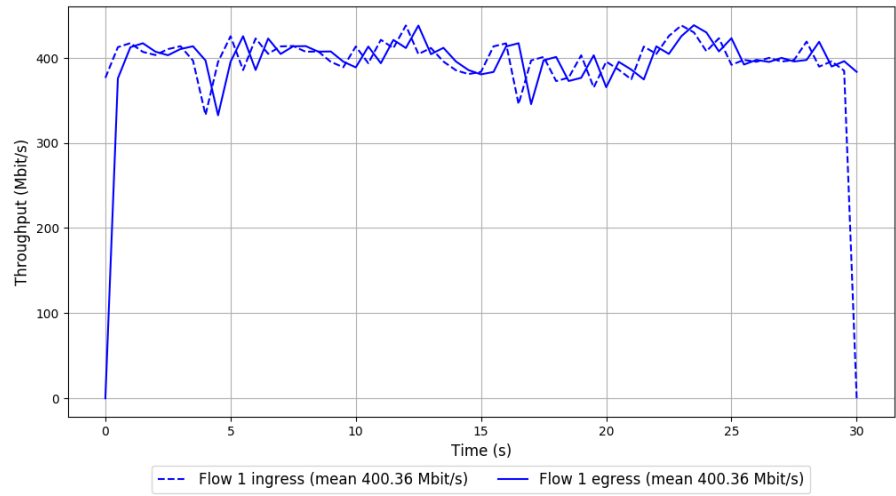
-- Flow 1:

Average throughput: 400.36 Mbit/s

95th percentile per-packet one-way delay: 0.784 ms

Loss rate: 0.01%

Run 1: Report of Copa — Data Link

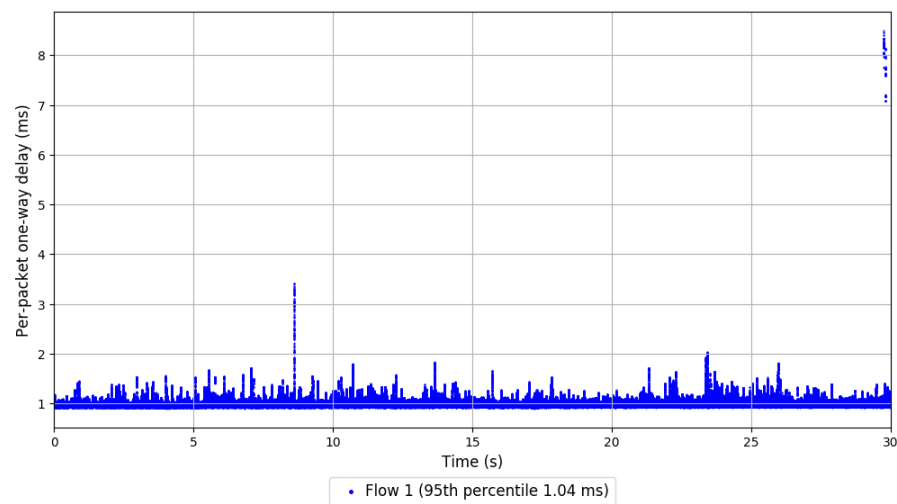
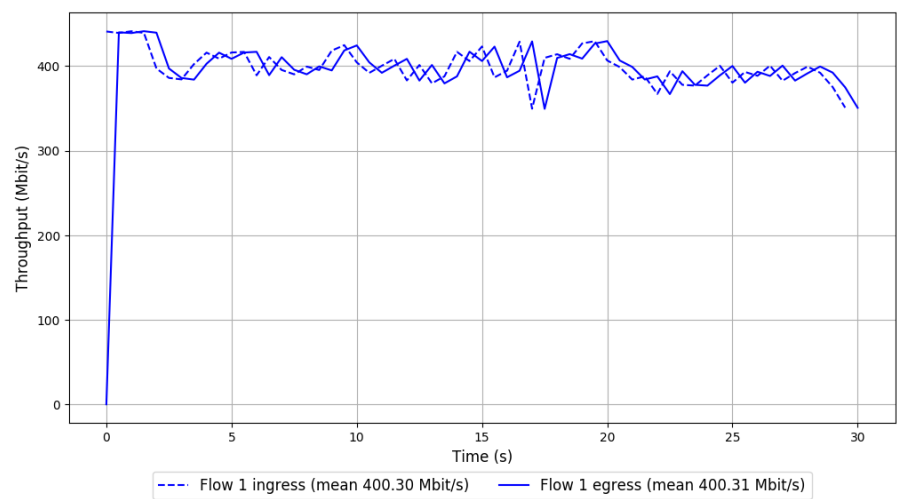


Run 2: Statistics of Copa

Start at: 2018-11-15 08:34:21
End at: 2018-11-15 08:34:51
Local clock offset: 5.596 ms
Remote clock offset: -1.546 ms

Below is generated by plot.py at 2018-11-15 10:24:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 400.31 Mbit/s
95th percentile per-packet one-way delay: 1.043 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 400.31 Mbit/s
95th percentile per-packet one-way delay: 1.043 ms
Loss rate: 0.01%

Run 2: Report of Copa — Data Link

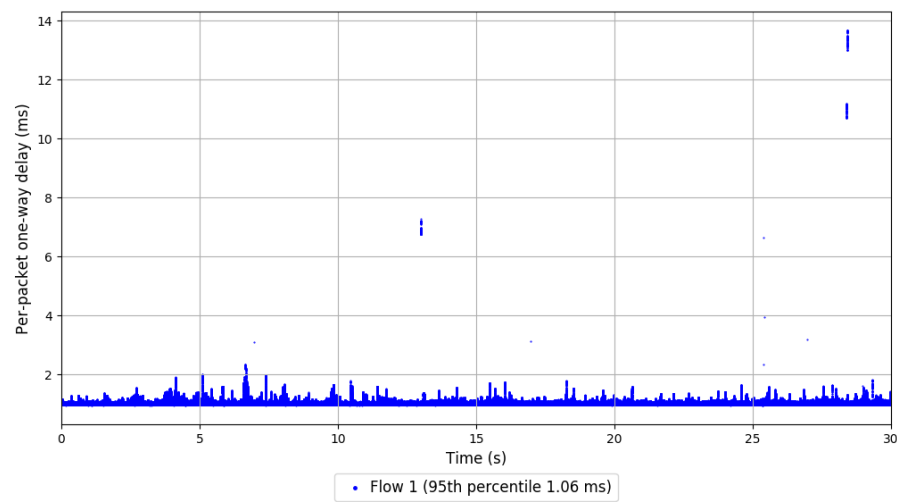
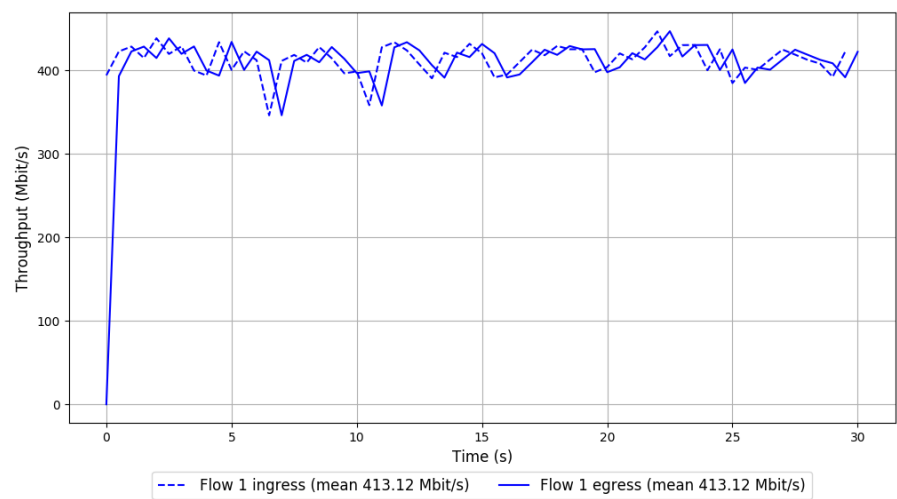


Run 3: Statistics of Copa

Start at: 2018-11-15 09:00:57
End at: 2018-11-15 09:01:27
Local clock offset: 4.798 ms
Remote clock offset: -1.087 ms

Below is generated by plot.py at 2018-11-15 10:24:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 413.12 Mbit/s
95th percentile per-packet one-way delay: 1.058 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 413.12 Mbit/s
95th percentile per-packet one-way delay: 1.058 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-11-15 09:27:56

End at: 2018-11-15 09:28:26

Local clock offset: 4.463 ms

Remote clock offset: 2.045 ms

Below is generated by plot.py at 2018-11-15 10:31:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 399.87 Mbit/s

95th percentile per-packet one-way delay: 1.037 ms

Loss rate: 0.01%

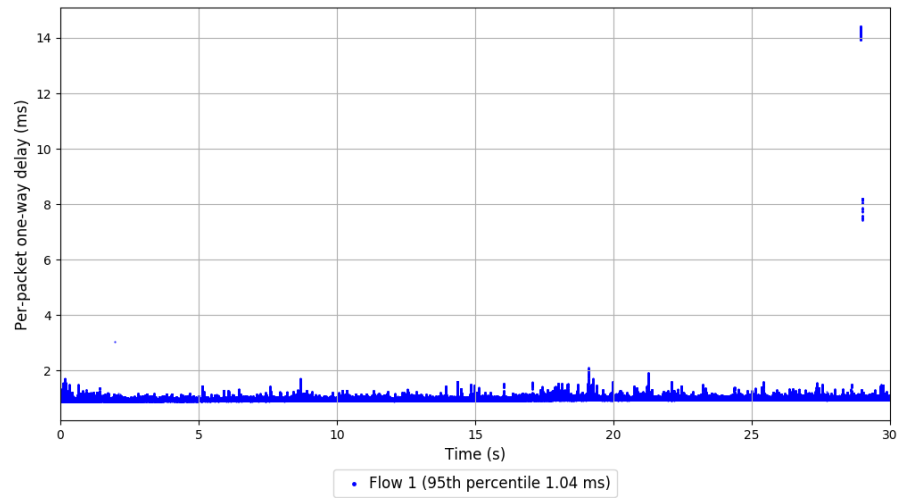
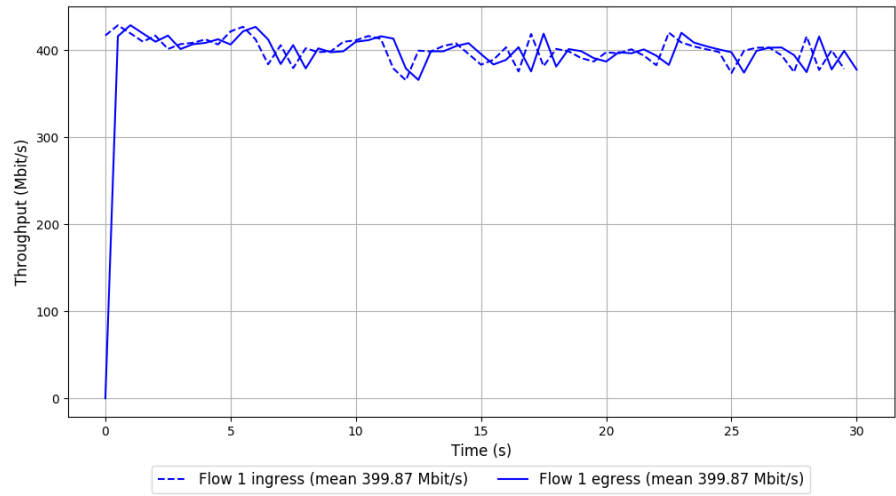
-- Flow 1:

Average throughput: 399.87 Mbit/s

95th percentile per-packet one-way delay: 1.037 ms

Loss rate: 0.01%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-15 09:54:59

End at: 2018-11-15 09:55:29

Local clock offset: 4.166 ms

Remote clock offset: 1.413 ms

Below is generated by plot.py at 2018-11-15 10:31:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 396.74 Mbit/s

95th percentile per-packet one-way delay: 1.030 ms

Loss rate: 0.01%

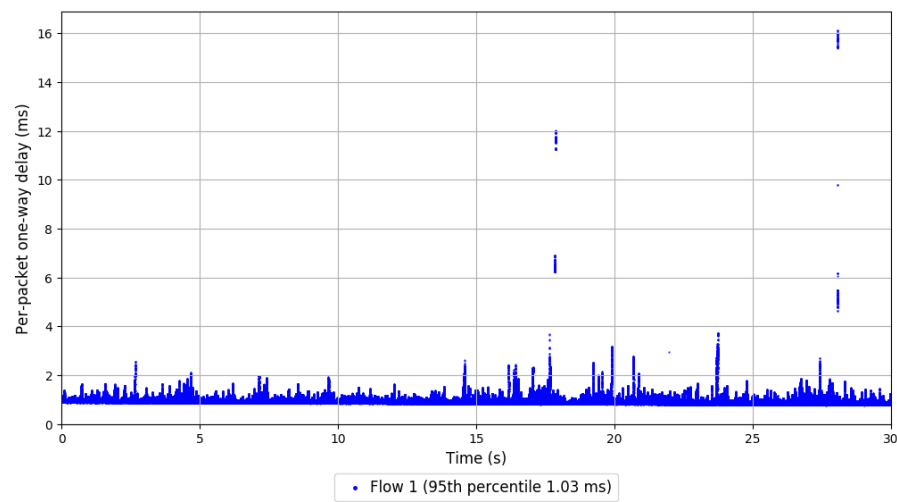
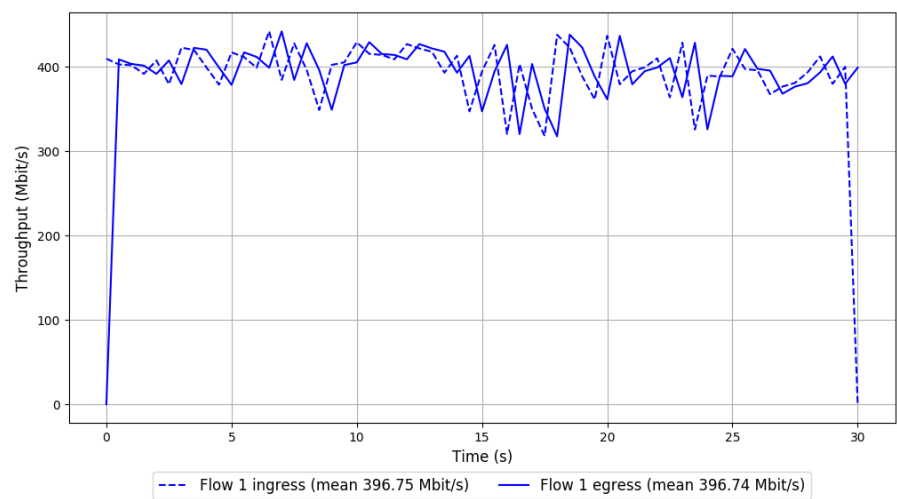
-- Flow 1:

Average throughput: 396.74 Mbit/s

95th percentile per-packet one-way delay: 1.030 ms

Loss rate: 0.01%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 07:55:38

End at: 2018-11-15 07:56:08

Local clock offset: 5.472 ms

Remote clock offset: 2.781 ms

Below is generated by plot.py at 2018-11-15 10:32:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 857.60 Mbit/s

95th percentile per-packet one-way delay: 12.192 ms

Loss rate: 0.01%

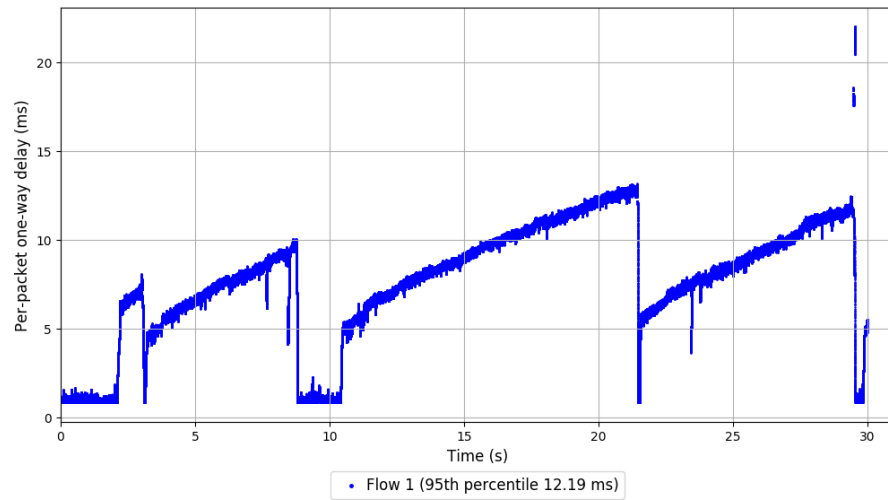
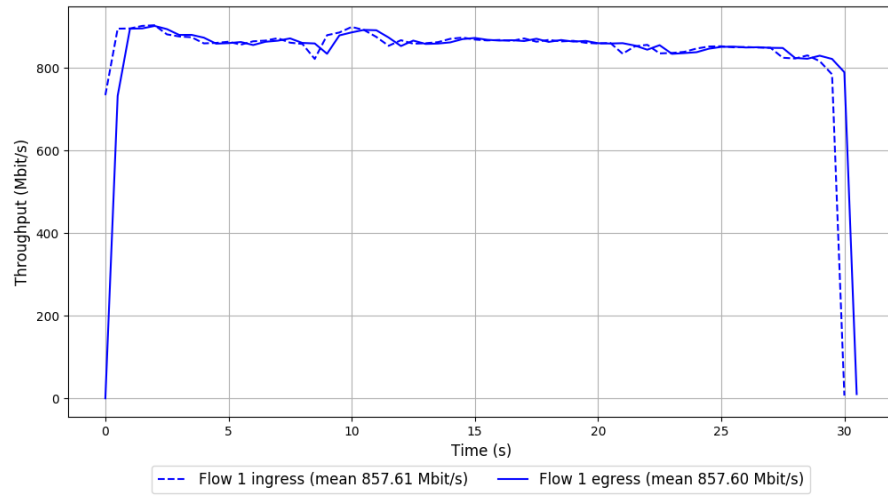
-- Flow 1:

Average throughput: 857.60 Mbit/s

95th percentile per-packet one-way delay: 12.192 ms

Loss rate: 0.01%

Run 1: Report of TCP Cubic — Data Link

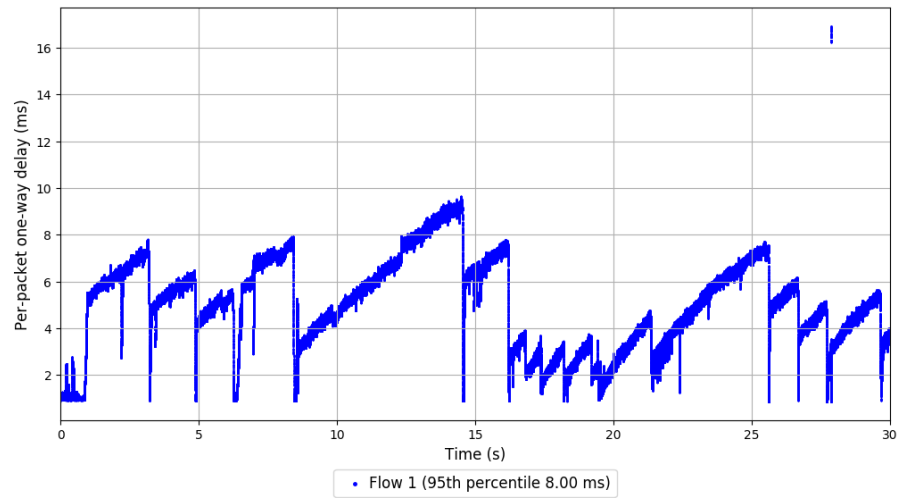
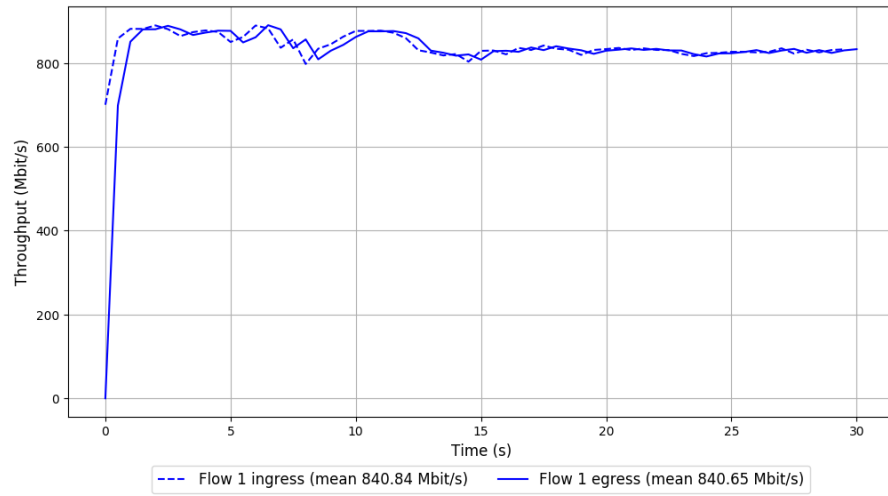


Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 08:22:23
End at: 2018-11-15 08:22:53
Local clock offset: 6.43 ms
Remote clock offset: -0.621 ms

Below is generated by plot.py at 2018-11-15 10:32:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 840.65 Mbit/s
95th percentile per-packet one-way delay: 7.999 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 840.65 Mbit/s
95th percentile per-packet one-way delay: 7.999 ms
Loss rate: 0.03%

Run 2: Report of TCP Cubic — Data Link

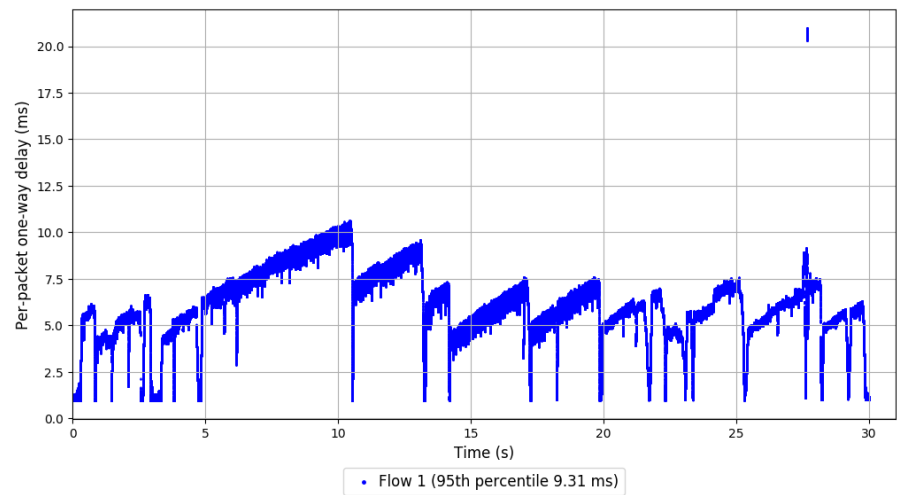
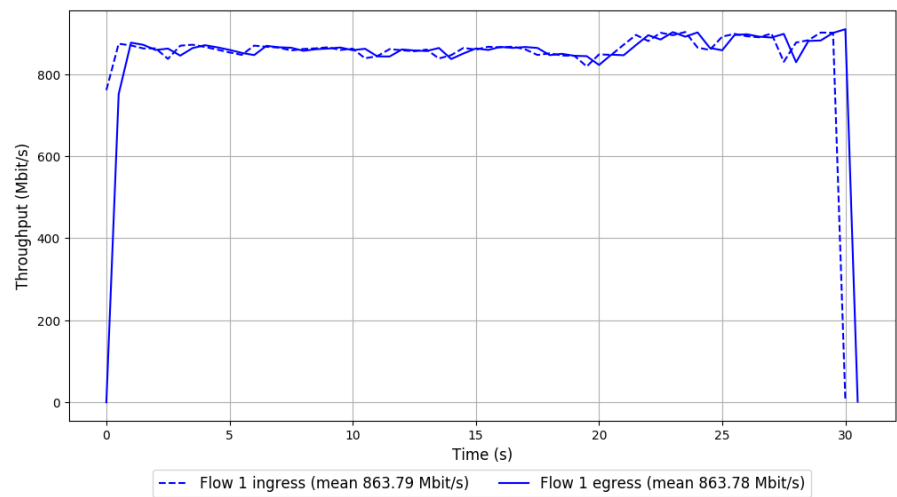


Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 08:49:04
End at: 2018-11-15 08:49:34
Local clock offset: 5.005 ms
Remote clock offset: -1.261 ms

Below is generated by plot.py at 2018-11-15 10:33:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 863.78 Mbit/s
95th percentile per-packet one-way delay: 9.308 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 863.78 Mbit/s
95th percentile per-packet one-way delay: 9.308 ms
Loss rate: 0.01%

Run 3: Report of TCP Cubic — Data Link

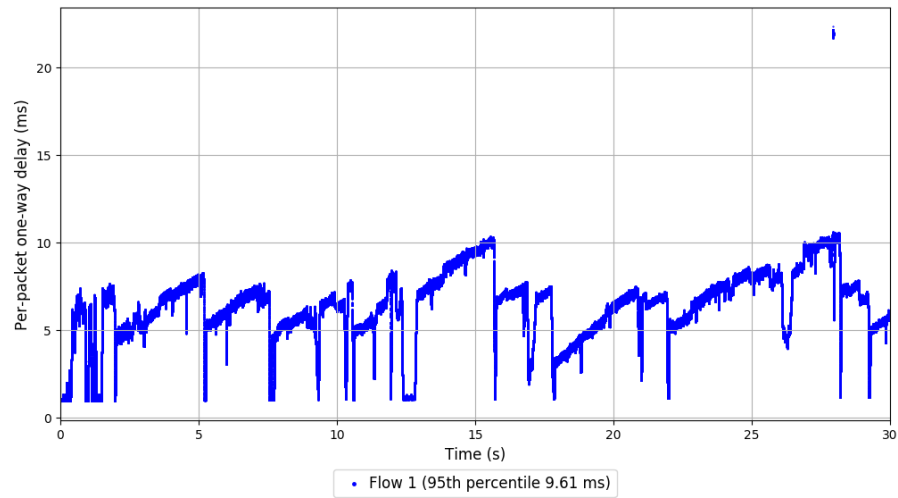
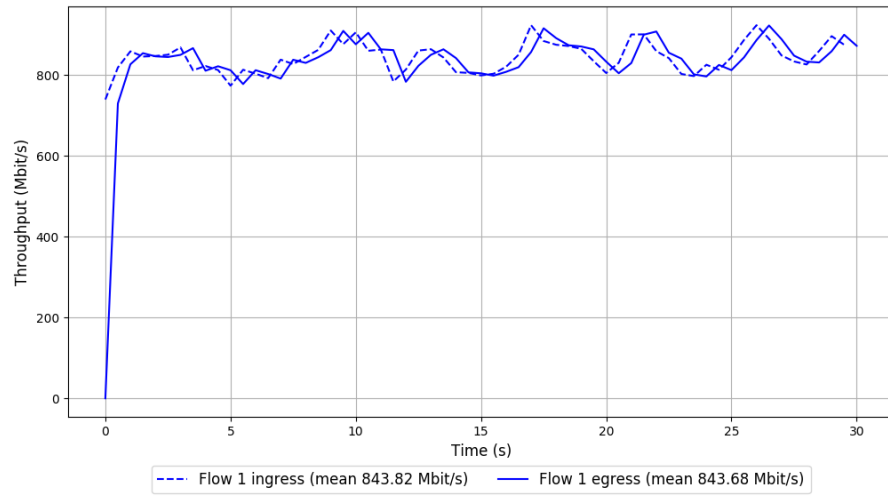


Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 09:16:00
End at: 2018-11-15 09:16:30
Local clock offset: 4.575 ms
Remote clock offset: -0.814 ms

Below is generated by plot.py at 2018-11-15 10:33:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 843.68 Mbit/s
95th percentile per-packet one-way delay: 9.607 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 843.68 Mbit/s
95th percentile per-packet one-way delay: 9.607 ms
Loss rate: 0.02%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 09:43:04

End at: 2018-11-15 09:43:34

Local clock offset: 4.274 ms

Remote clock offset: 3.074 ms

Below is generated by plot.py at 2018-11-15 10:33:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 848.76 Mbit/s

95th percentile per-packet one-way delay: 8.037 ms

Loss rate: 0.02%

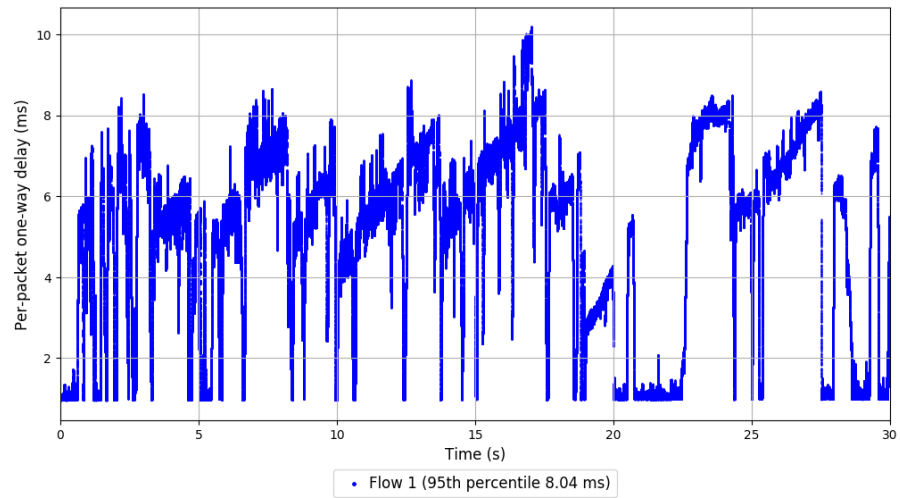
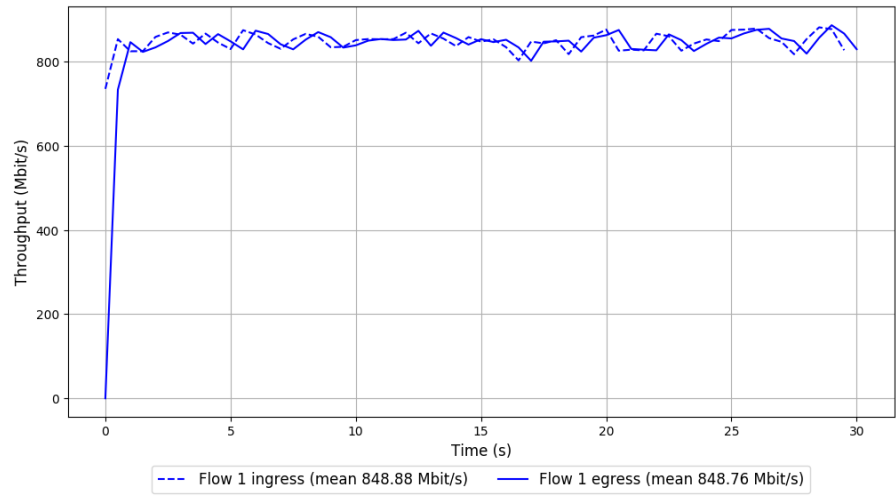
-- Flow 1:

Average throughput: 848.76 Mbit/s

95th percentile per-packet one-way delay: 8.037 ms

Loss rate: 0.02%

Run 5: Report of TCP Cubic — Data Link

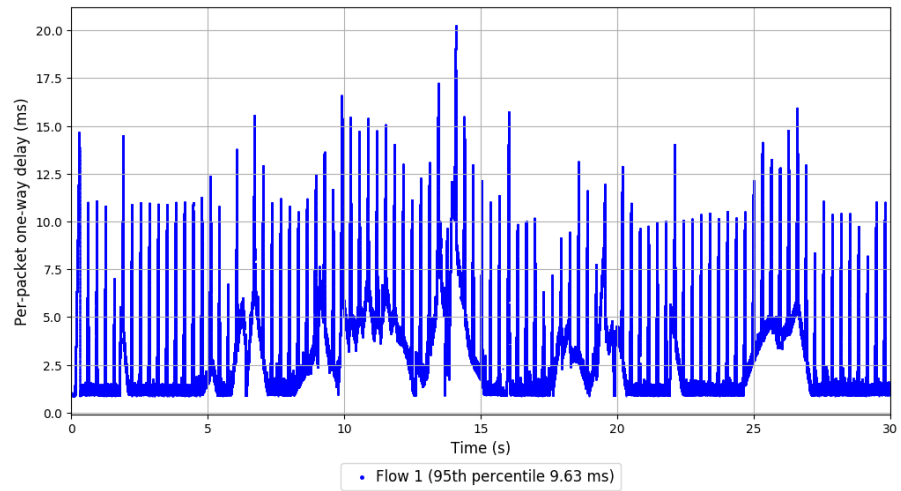
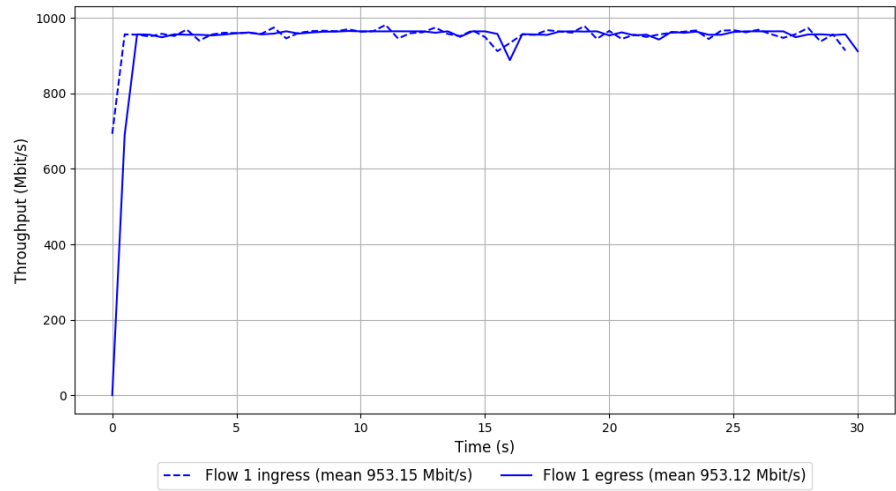


```
Run 1: Statistics of FillP

Start at: 2018-11-15 08:04:24
End at: 2018-11-15 08:04:54
Local clock offset: 5.913 ms
Remote clock offset: 3.15 ms

# Below is generated by plot.py at 2018-11-15 10:37:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 953.12 Mbit/s
95th percentile per-packet one-way delay: 9.631 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 953.12 Mbit/s
95th percentile per-packet one-way delay: 9.631 ms
Loss rate: 0.01%
```

Run 1: Report of FillP — Data Link

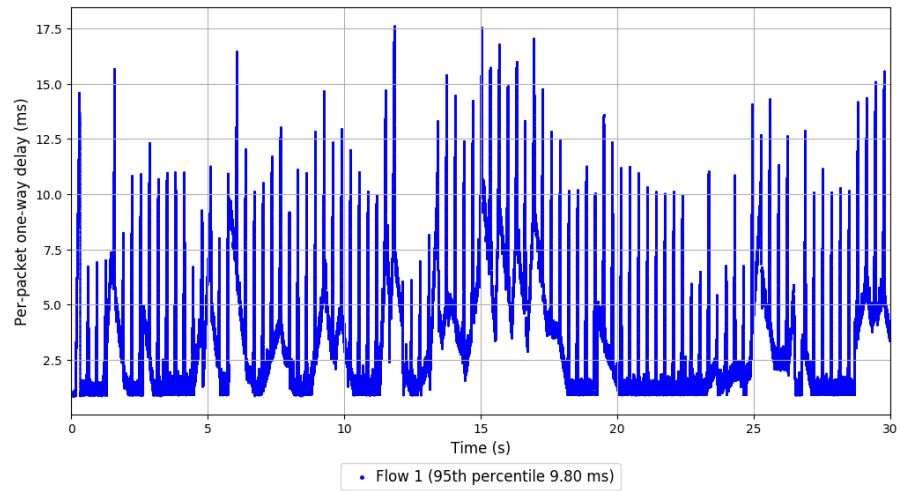
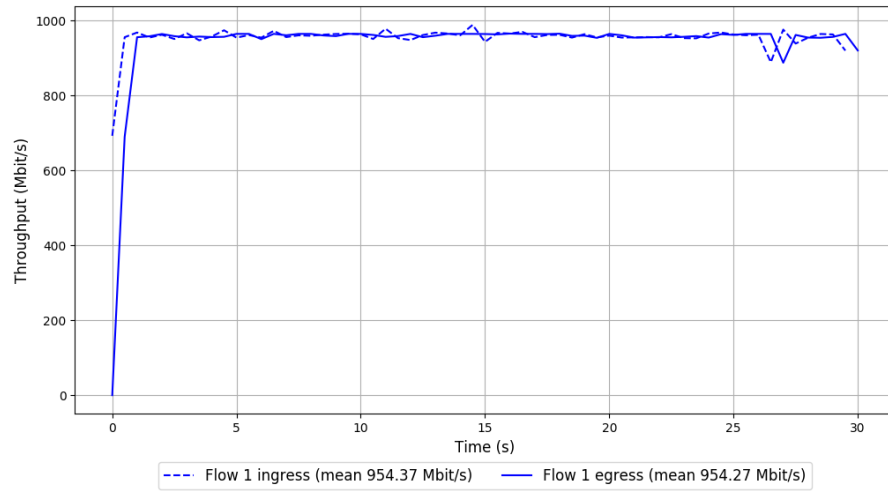


Run 2: Statistics of FillP

Start at: 2018-11-15 08:31:11
End at: 2018-11-15 08:31:41
Local clock offset: 5.894 ms
Remote clock offset: -1.344 ms

Below is generated by plot.py at 2018-11-15 10:45:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 954.27 Mbit/s
95th percentile per-packet one-way delay: 9.800 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 954.27 Mbit/s
95th percentile per-packet one-way delay: 9.800 ms
Loss rate: 0.02%

Run 2: Report of FillP — Data Link

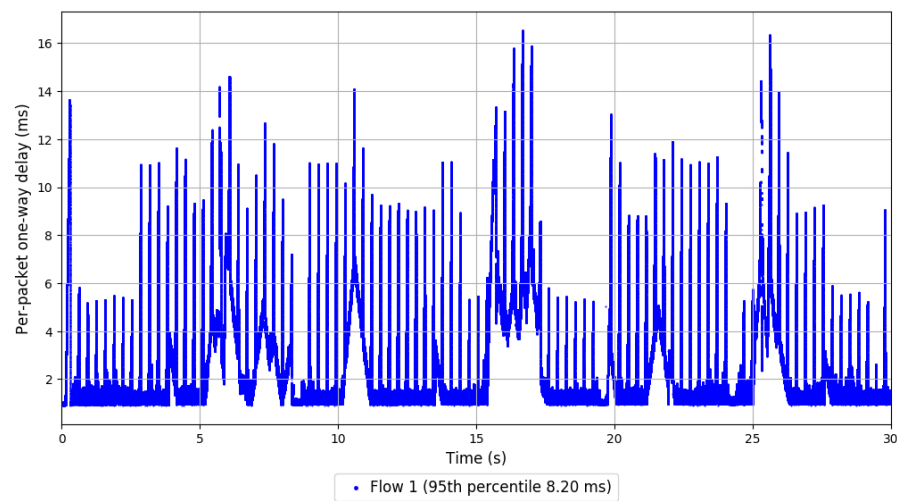
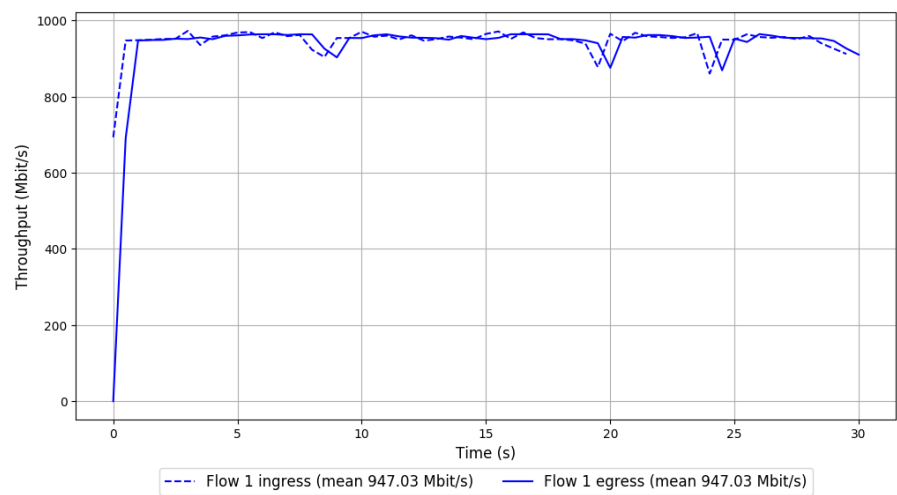


Run 3: Statistics of FillP

Start at: 2018-11-15 08:57:48
End at: 2018-11-15 08:58:18
Local clock offset: 4.869 ms
Remote clock offset: -1.094 ms

Below is generated by plot.py at 2018-11-15 10:45:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 947.03 Mbit/s
95th percentile per-packet one-way delay: 8.198 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 947.03 Mbit/s
95th percentile per-packet one-way delay: 8.198 ms
Loss rate: 0.01%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-11-15 09:24:47

End at: 2018-11-15 09:25:17

Local clock offset: 4.485 ms

Remote clock offset: 1.474 ms

Below is generated by plot.py at 2018-11-15 10:46:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 954.63 Mbit/s

95th percentile per-packet one-way delay: 10.819 ms

Loss rate: 0.02%

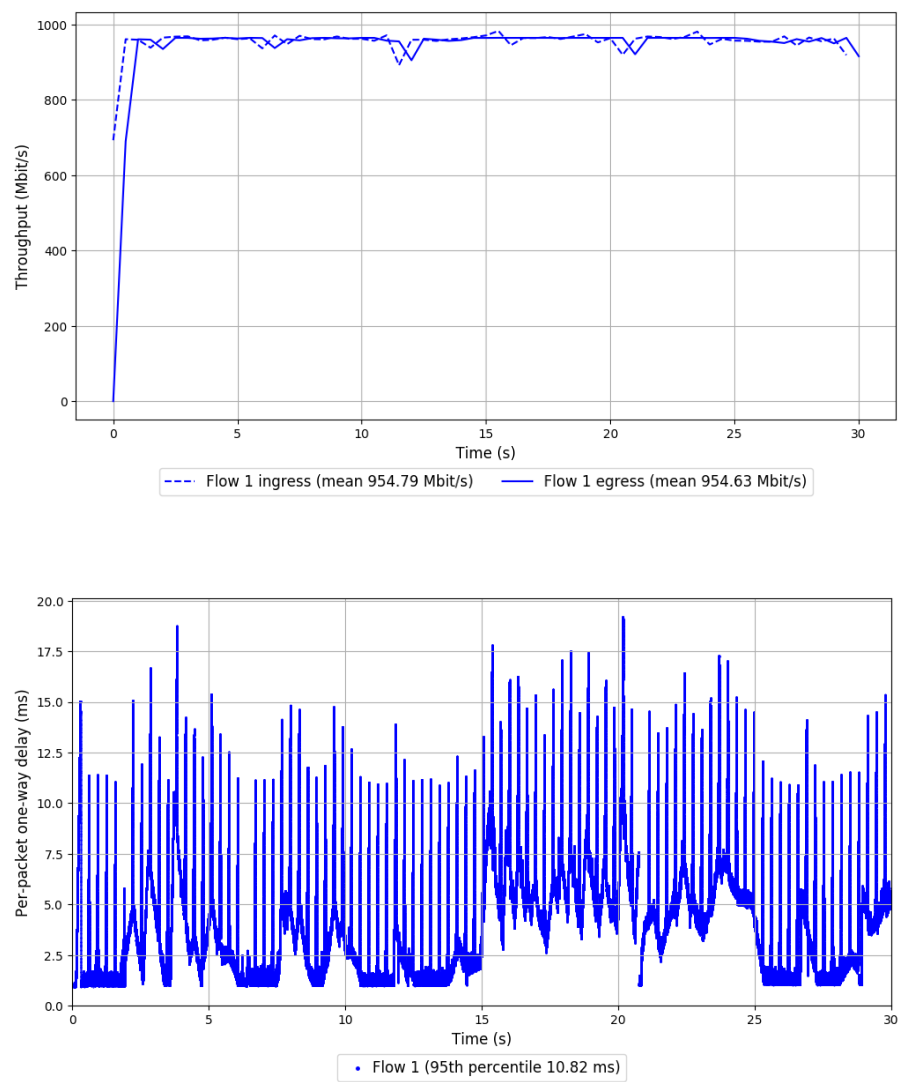
-- Flow 1:

Average throughput: 954.63 Mbit/s

95th percentile per-packet one-way delay: 10.819 ms

Loss rate: 0.02%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-11-15 09:51:50

End at: 2018-11-15 09:52:20

Local clock offset: 4.2 ms

Remote clock offset: 2.306 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 950.60 Mbit/s

95th percentile per-packet one-way delay: 7.833 ms

Loss rate: 0.02%

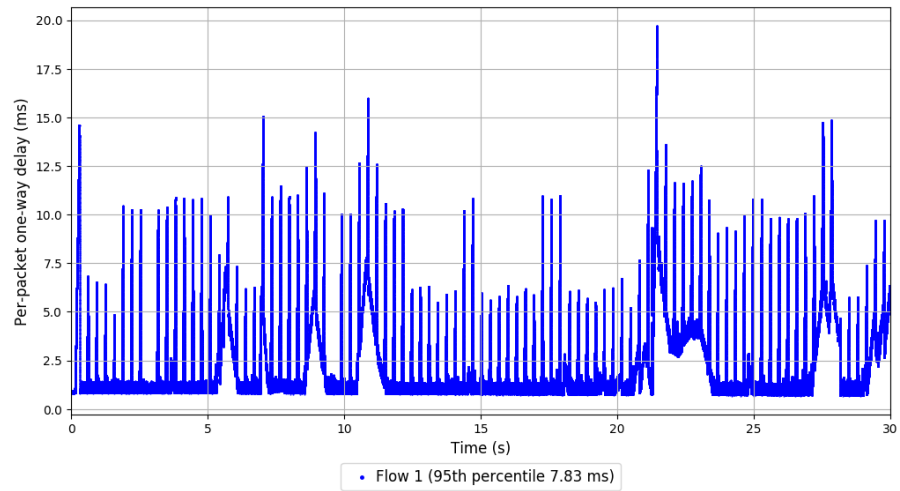
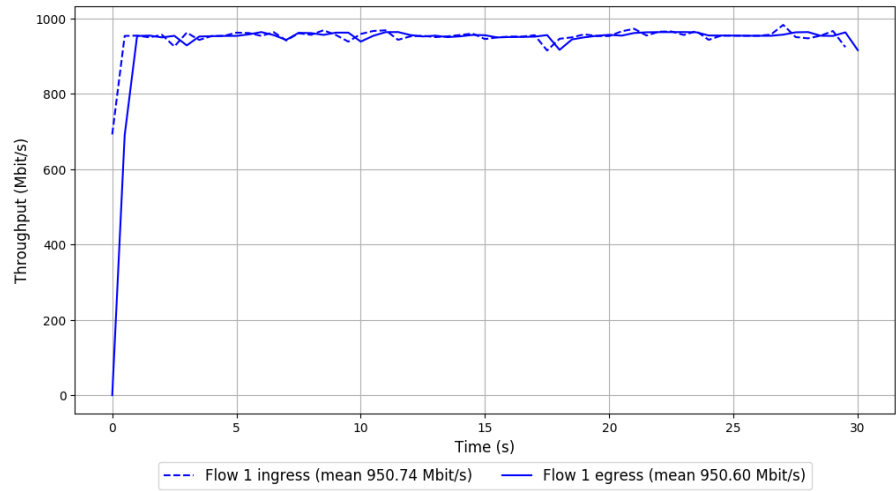
-- Flow 1:

Average throughput: 950.60 Mbit/s

95th percentile per-packet one-way delay: 7.833 ms

Loss rate: 0.02%

Run 5: Report of FillP — Data Link



Run 1: Statistics of Indigo

Start at: 2018-11-15 08:06:08

End at: 2018-11-15 08:06:38

Local clock offset: 5.981 ms

Remote clock offset: 3.263 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 188.47 Mbit/s

95th percentile per-packet one-way delay: 1.063 ms

Loss rate: 0.00%

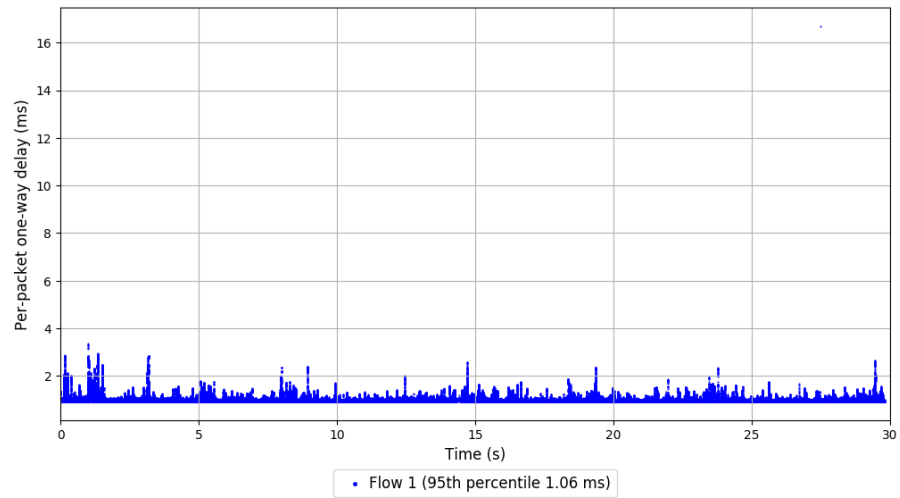
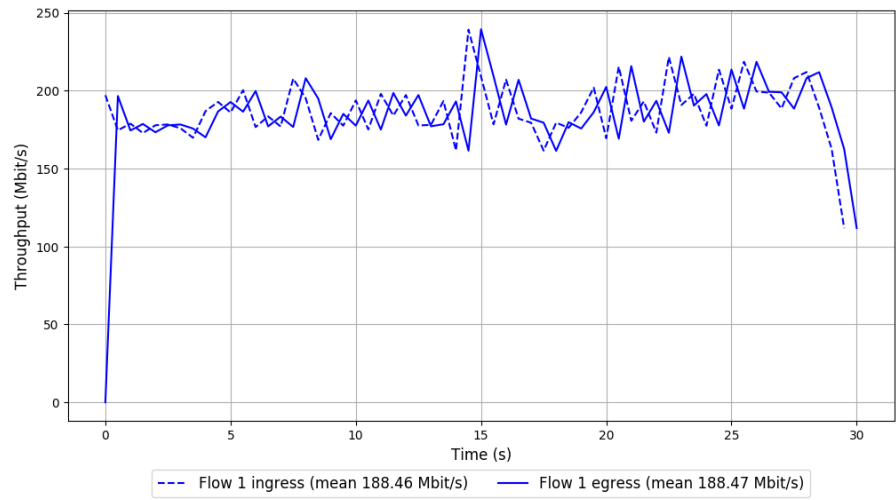
-- Flow 1:

Average throughput: 188.47 Mbit/s

95th percentile per-packet one-way delay: 1.063 ms

Loss rate: 0.00%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-11-15 08:32:55

End at: 2018-11-15 08:33:25

Local clock offset: 5.732 ms

Remote clock offset: -1.511 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 189.53 Mbit/s

95th percentile per-packet one-way delay: 1.524 ms

Loss rate: 0.01%

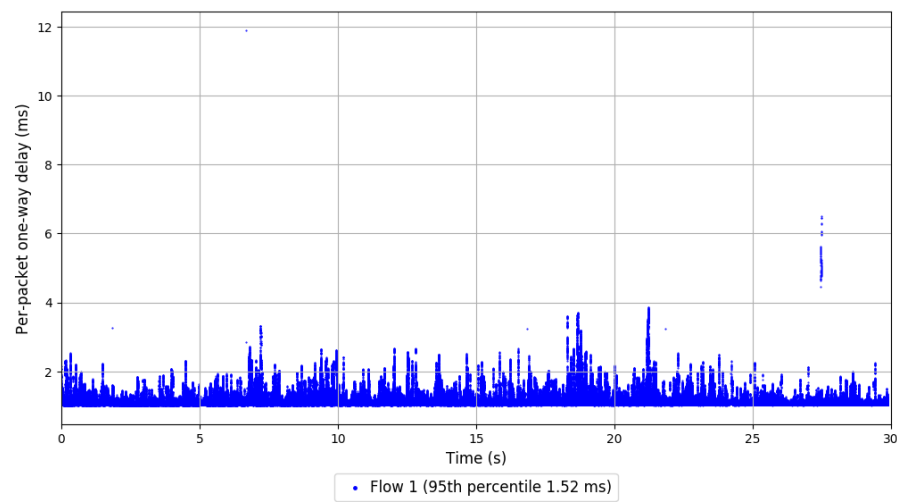
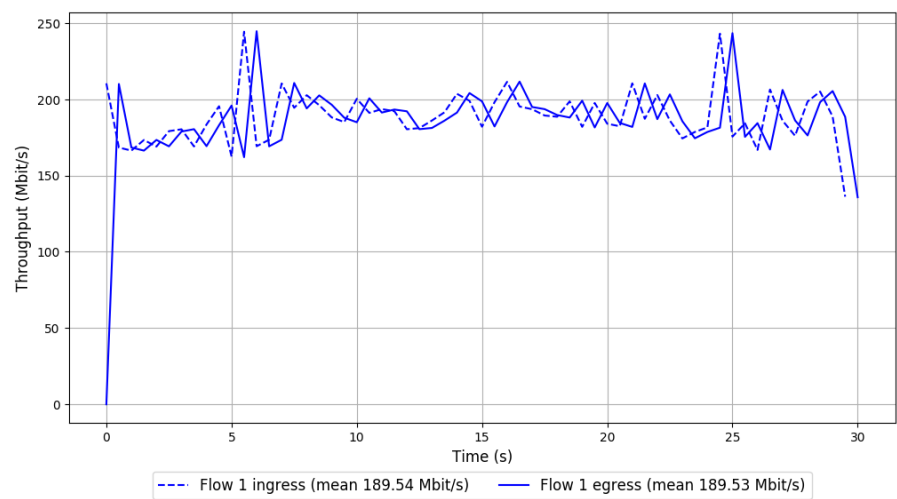
-- Flow 1:

Average throughput: 189.53 Mbit/s

95th percentile per-packet one-way delay: 1.524 ms

Loss rate: 0.01%

Run 2: Report of Indigo — Data Link

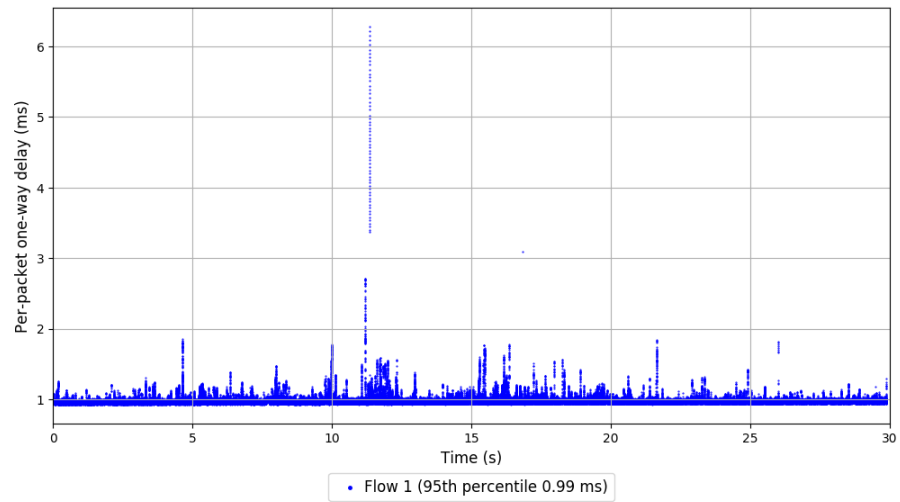
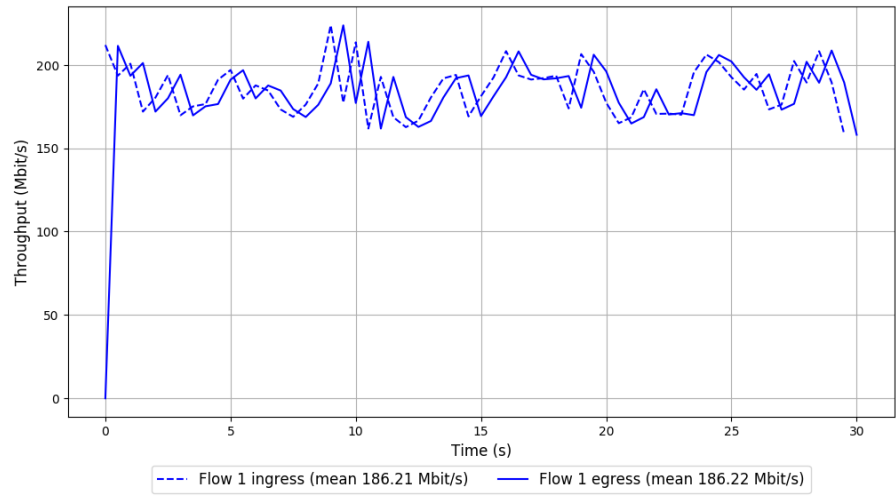


Run 3: Statistics of Indigo

Start at: 2018-11-15 08:59:31
End at: 2018-11-15 09:00:01
Local clock offset: 4.845 ms
Remote clock offset: -1.028 ms

Below is generated by plot.py at 2018-11-15 10:46:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 186.22 Mbit/s
95th percentile per-packet one-way delay: 0.995 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 186.22 Mbit/s
95th percentile per-packet one-way delay: 0.995 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-15 09:26:30

End at: 2018-11-15 09:27:00

Local clock offset: 4.474 ms

Remote clock offset: 1.788 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 184.22 Mbit/s

95th percentile per-packet one-way delay: 1.075 ms

Loss rate: 0.01%

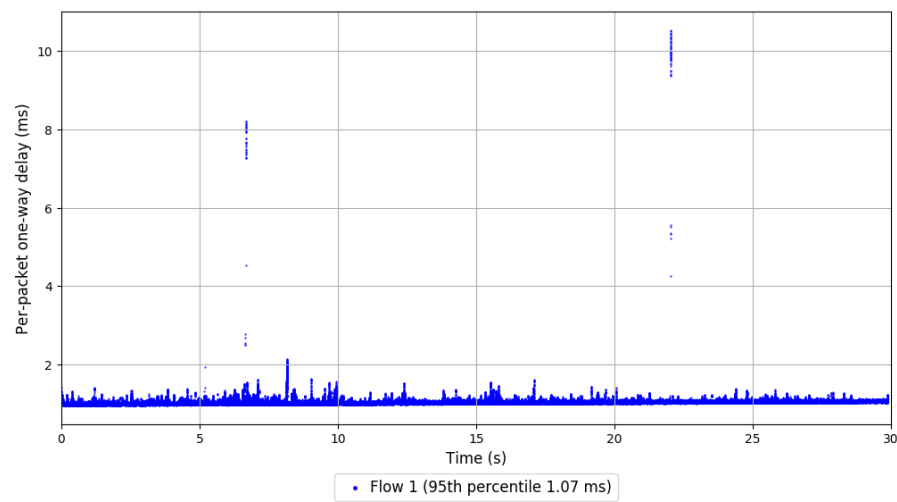
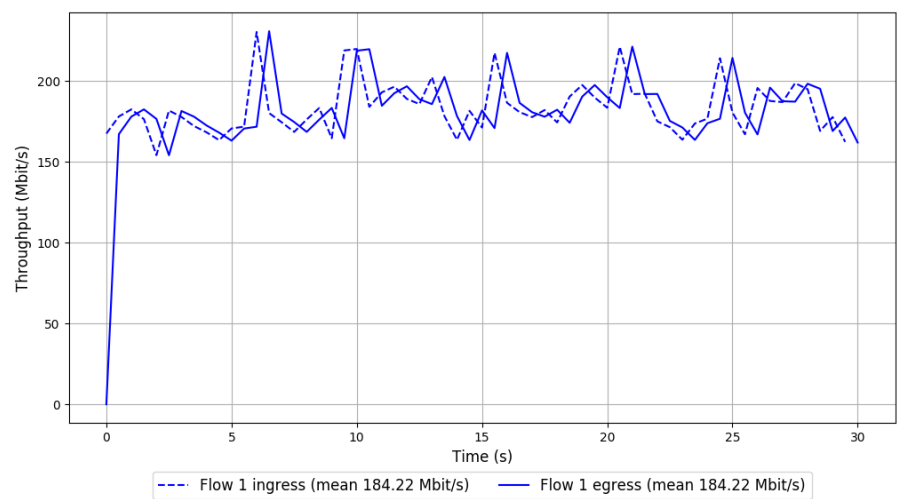
-- Flow 1:

Average throughput: 184.22 Mbit/s

95th percentile per-packet one-way delay: 1.075 ms

Loss rate: 0.01%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-11-15 09:53:33

End at: 2018-11-15 09:54:03

Local clock offset: 4.146 ms

Remote clock offset: 1.712 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 189.20 Mbit/s

95th percentile per-packet one-way delay: 0.946 ms

Loss rate: 0.01%

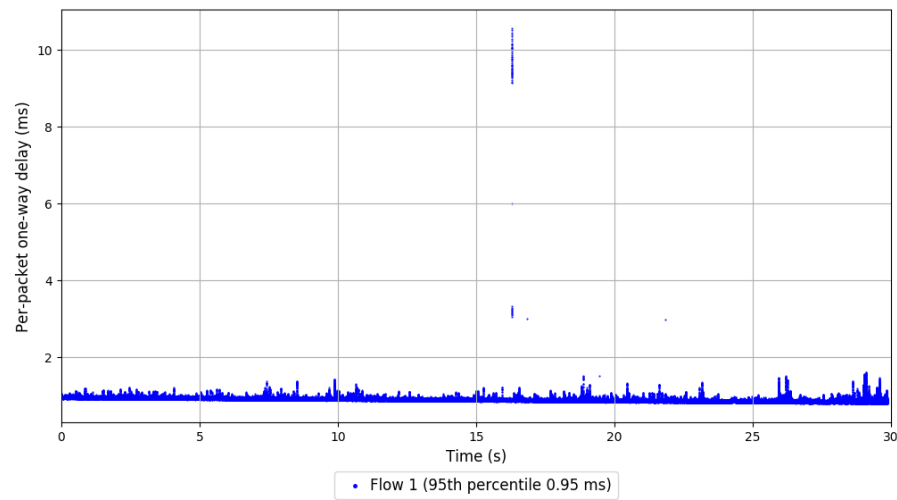
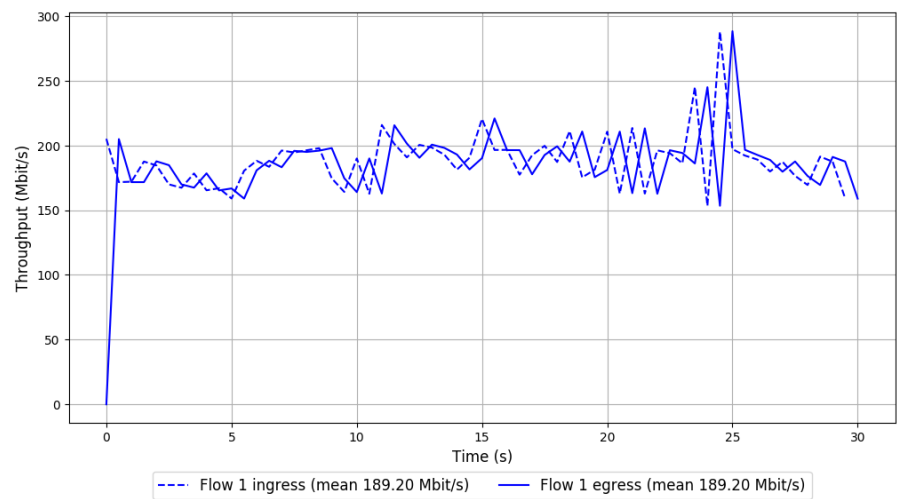
-- Flow 1:

Average throughput: 189.20 Mbit/s

95th percentile per-packet one-way delay: 0.946 ms

Loss rate: 0.01%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-15 07:57:23

End at: 2018-11-15 07:57:53

Local clock offset: 5.511 ms

Remote clock offset: 2.924 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 146.49 Mbit/s

95th percentile per-packet one-way delay: 0.876 ms

Loss rate: 0.01%

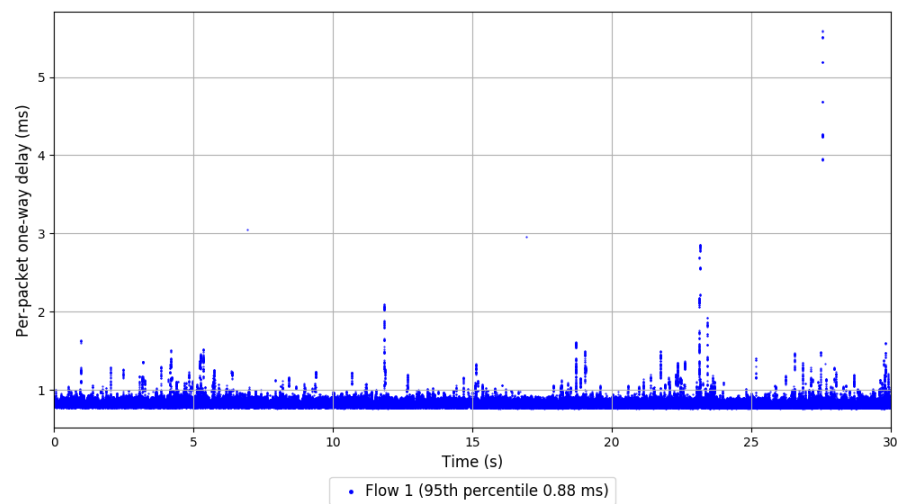
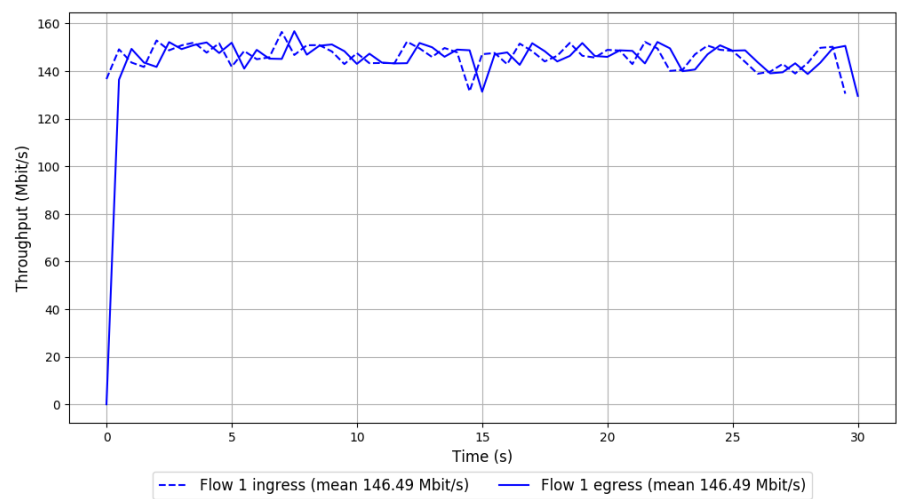
-- Flow 1:

Average throughput: 146.49 Mbit/s

95th percentile per-packet one-way delay: 0.876 ms

Loss rate: 0.01%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 08:24:08

End at: 2018-11-15 08:24:38

Local clock offset: 6.454 ms

Remote clock offset: -0.817 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 158.15 Mbit/s

95th percentile per-packet one-way delay: 1.038 ms

Loss rate: 0.00%

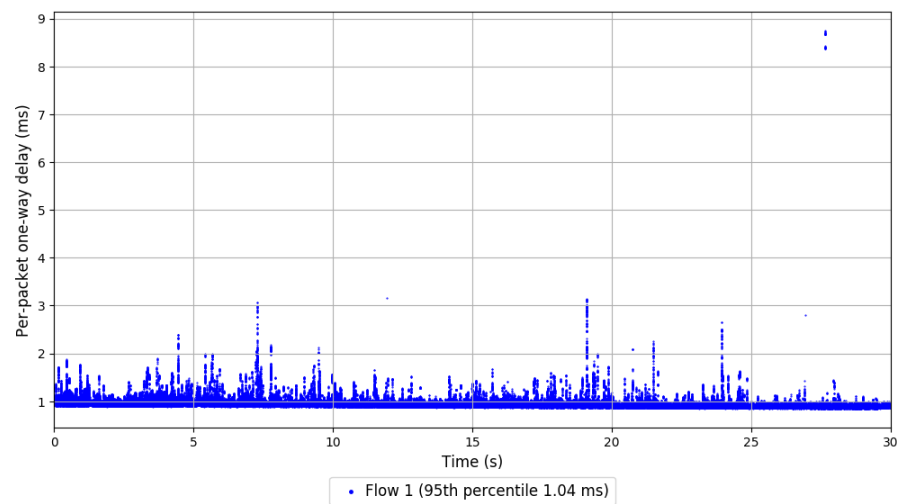
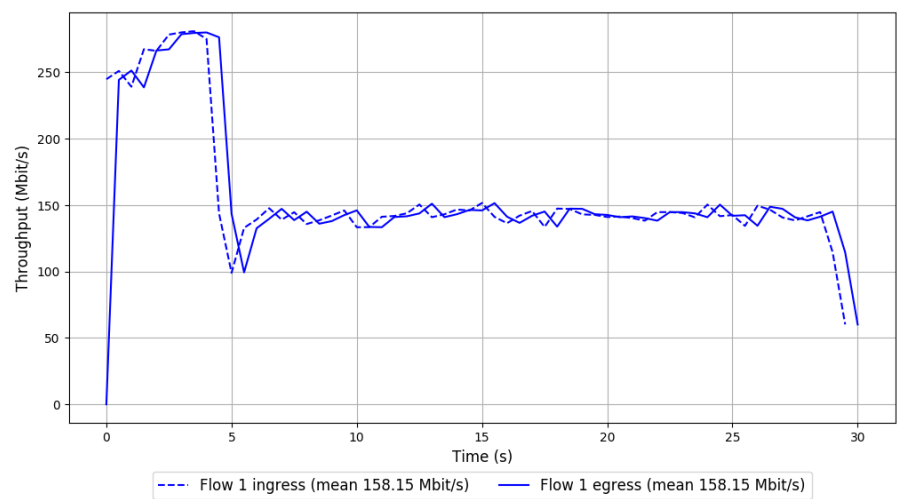
-- Flow 1:

Average throughput: 158.15 Mbit/s

95th percentile per-packet one-way delay: 1.038 ms

Loss rate: 0.00%

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

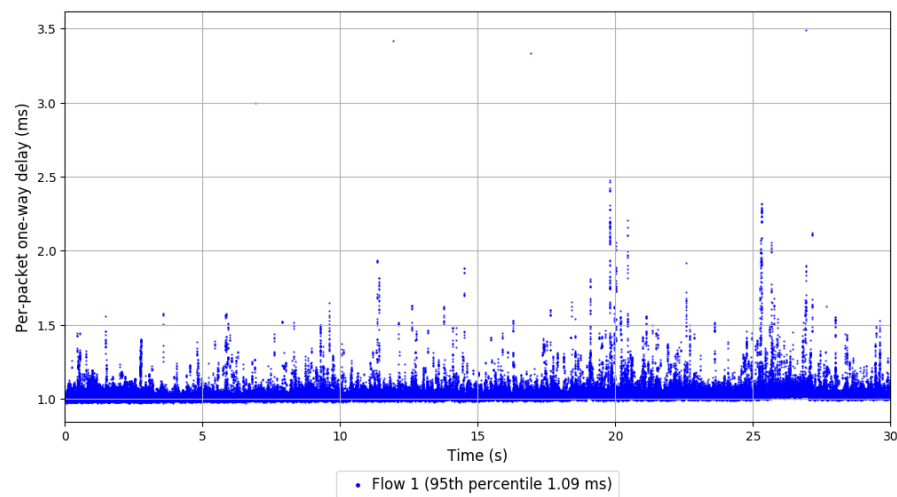
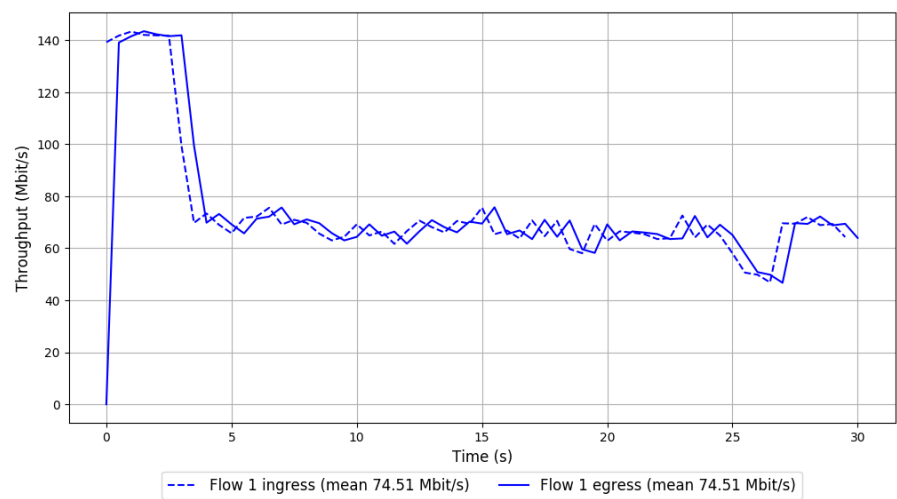


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-15 08:50:50
End at: 2018-11-15 08:51:20
Local clock offset: 4.978 ms
Remote clock offset: -1.206 ms

Below is generated by plot.py at 2018-11-15 10:46:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 74.51 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 74.51 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.01%

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

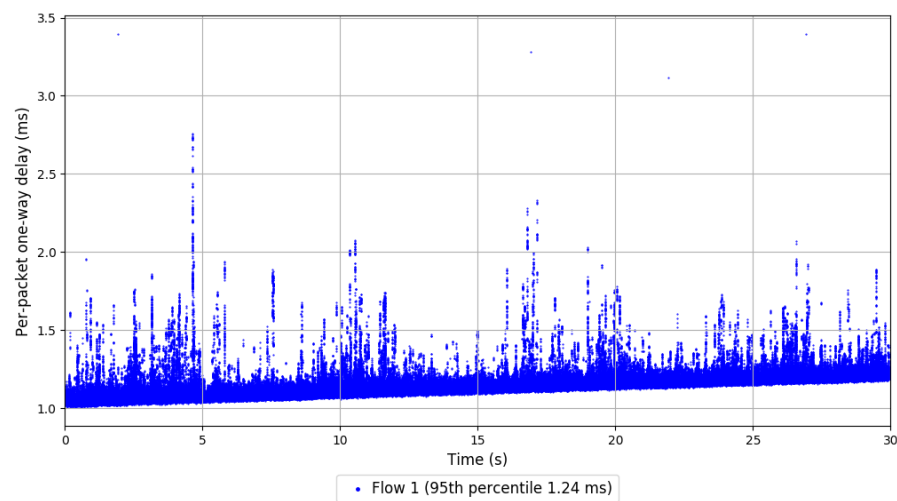
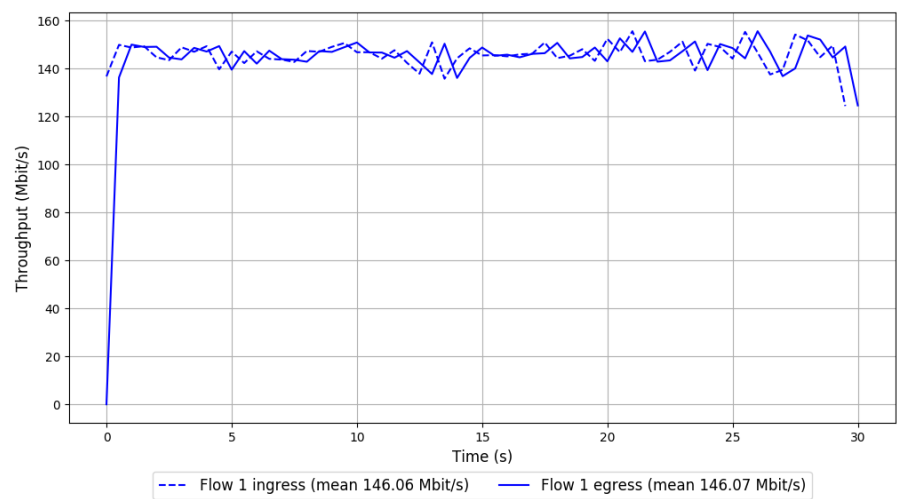


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 09:17:45
End at: 2018-11-15 09:18:15
Local clock offset: 4.567 ms
Remote clock offset: -0.222 ms

Below is generated by plot.py at 2018-11-15 10:46:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 146.07 Mbit/s
95th percentile per-packet one-way delay: 1.244 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 146.07 Mbit/s
95th percentile per-packet one-way delay: 1.244 ms
Loss rate: 0.01%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 09:44:49

End at: 2018-11-15 09:45:19

Local clock offset: 4.268 ms

Remote clock offset: 3.161 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 144.00 Mbit/s

95th percentile per-packet one-way delay: 1.065 ms

Loss rate: 0.01%

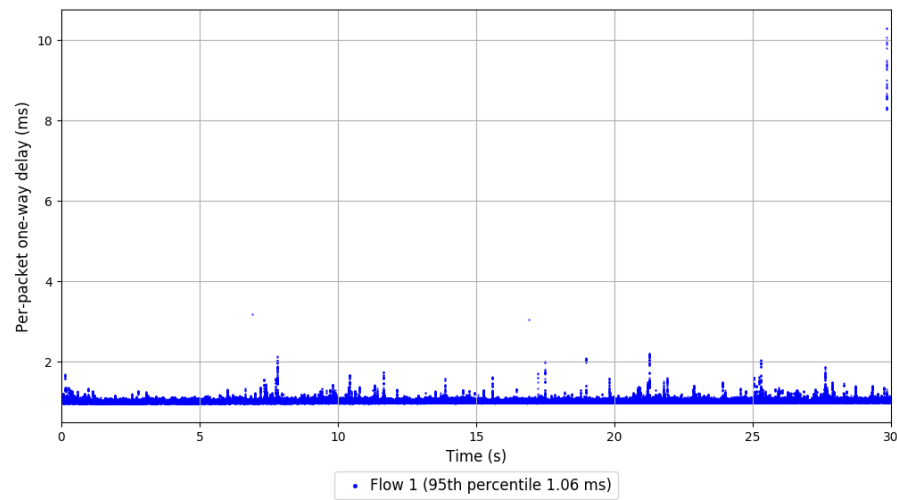
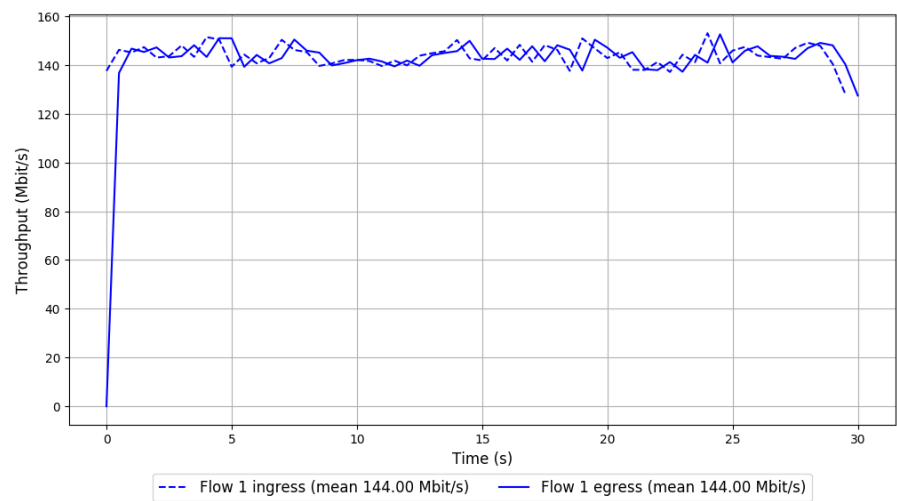
-- Flow 1:

Average throughput: 144.00 Mbit/s

95th percentile per-packet one-way delay: 1.065 ms

Loss rate: 0.01%

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



Run 1: Statistics of LEDBAT

Start at: 2018-11-15 07:58:46

End at: 2018-11-15 07:59:16

Local clock offset: 5.619 ms

Remote clock offset: 2.958 ms

Below is generated by plot.py at 2018-11-15 10:46:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 571.26 Mbit/s

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

Loss rate: 0.00%

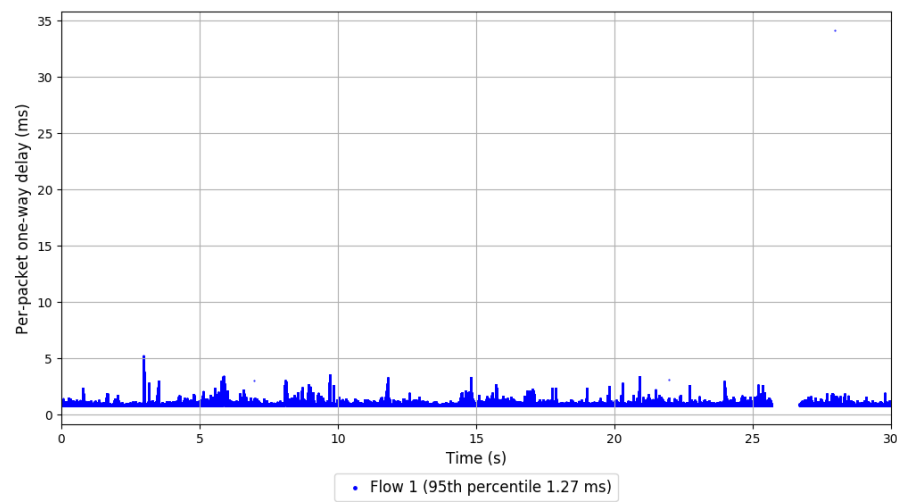
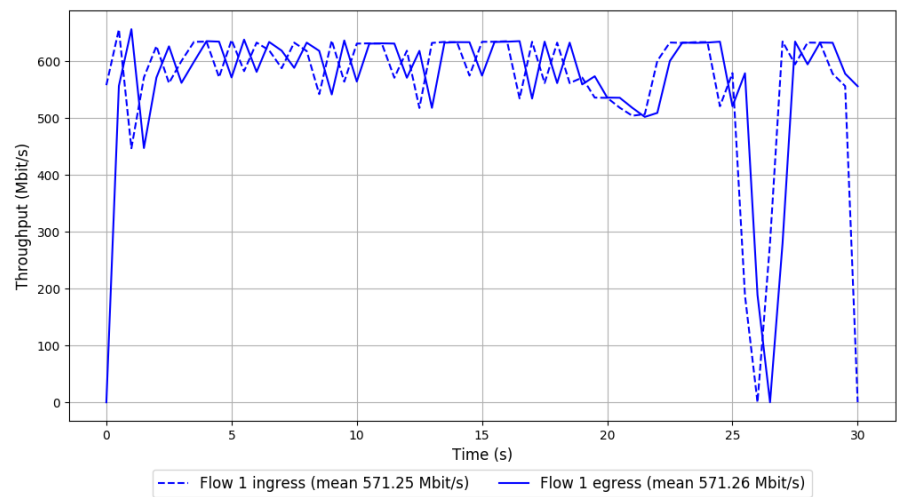
-- Flow 1:

Average throughput: 571.26 Mbit/s

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

Loss rate: 0.00%

Run 1: Report of LEDBAT — Data Link

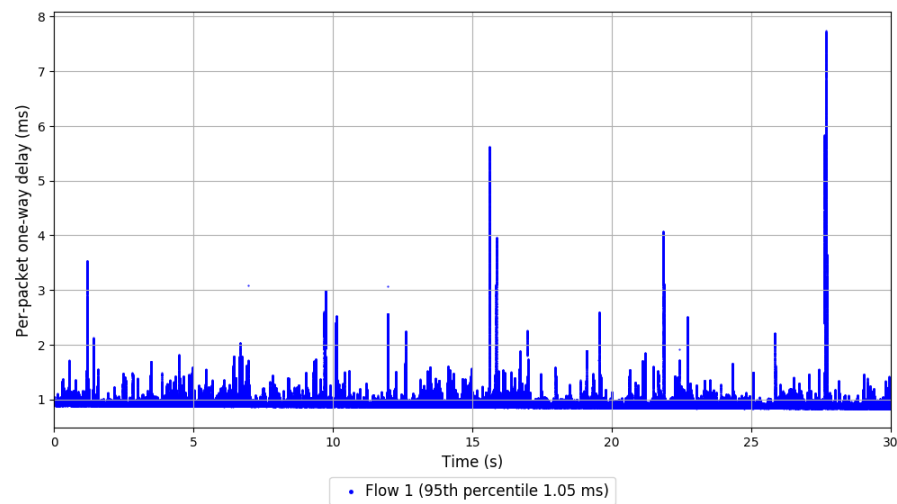
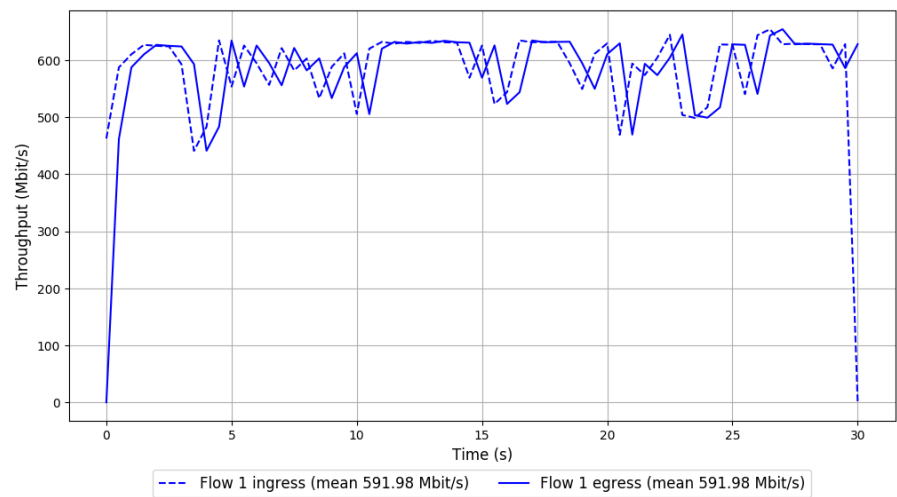


Run 2: Statistics of LEDBAT

Start at: 2018-11-15 08:25:31
End at: 2018-11-15 08:26:01
Local clock offset: 6.458 ms
Remote clock offset: -0.946 ms

Below is generated by plot.py at 2018-11-15 10:46:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 591.98 Mbit/s
95th percentile per-packet one-way delay: 1.052 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 591.98 Mbit/s
95th percentile per-packet one-way delay: 1.052 ms
Loss rate: 0.01%

Run 2: Report of LEDBAT — Data Link

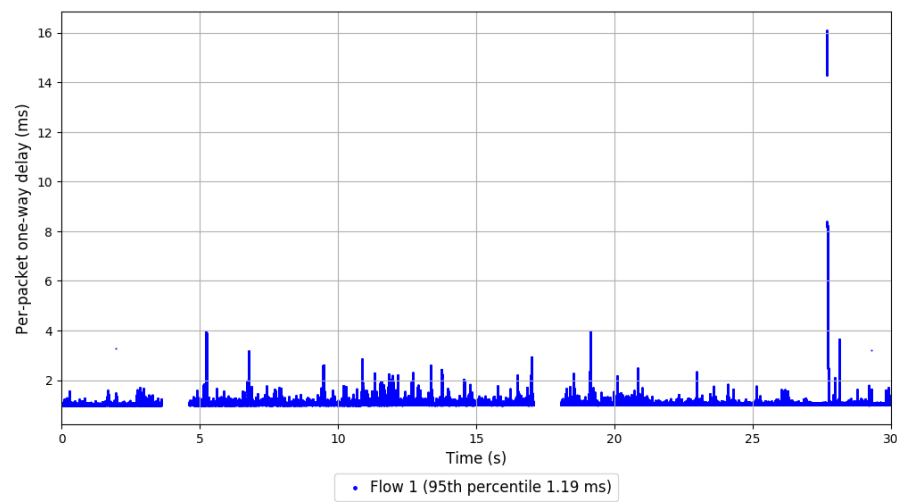
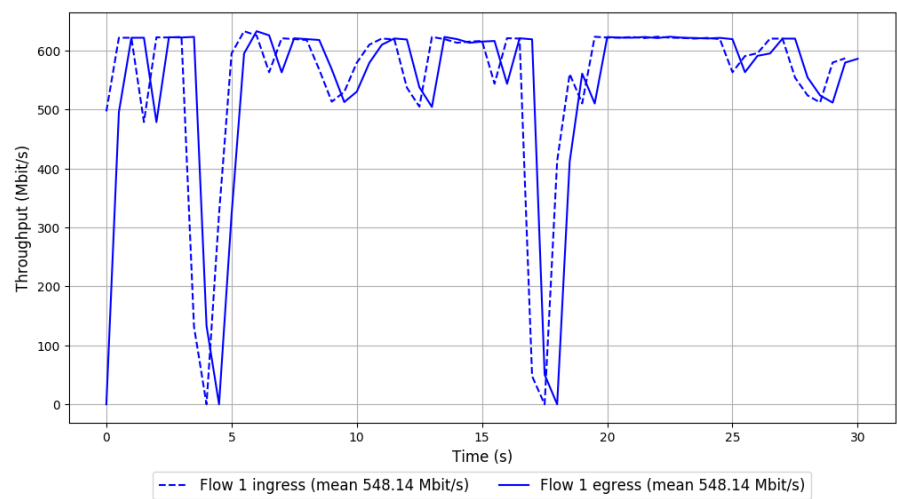


Run 3: Statistics of LEDBAT

Start at: 2018-11-15 08:52:10
End at: 2018-11-15 08:52:40
Local clock offset: 4.962 ms
Remote clock offset: -1.176 ms

Below is generated by plot.py at 2018-11-15 10:46:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 548.14 Mbit/s
95th percentile per-packet one-way delay: 1.192 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 548.14 Mbit/s
95th percentile per-packet one-way delay: 1.192 ms
Loss rate: 0.01%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-11-15 09:19:08

End at: 2018-11-15 09:19:38

Local clock offset: 4.55 ms

Remote clock offset: 0.215 ms

Below is generated by plot.py at 2018-11-15 10:47:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 597.72 Mbit/s

95th percentile per-packet one-way delay: 1.234 ms

Loss rate: 0.00%

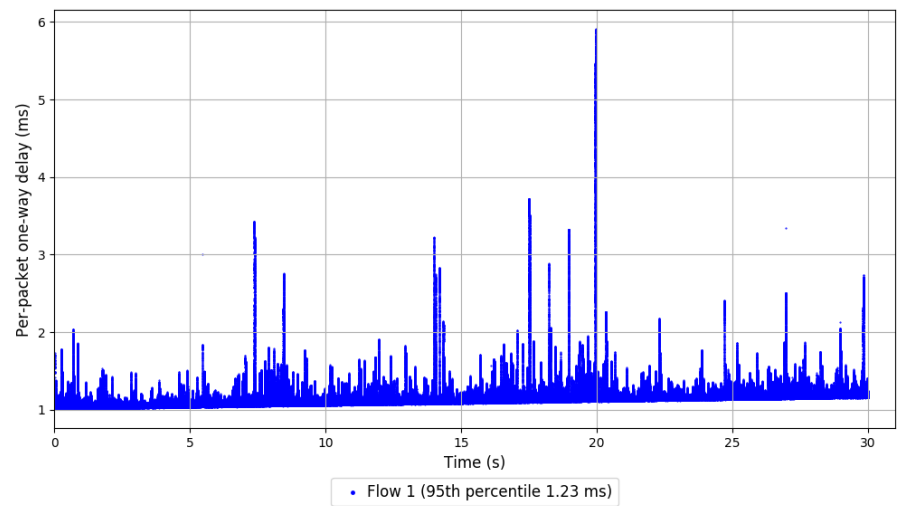
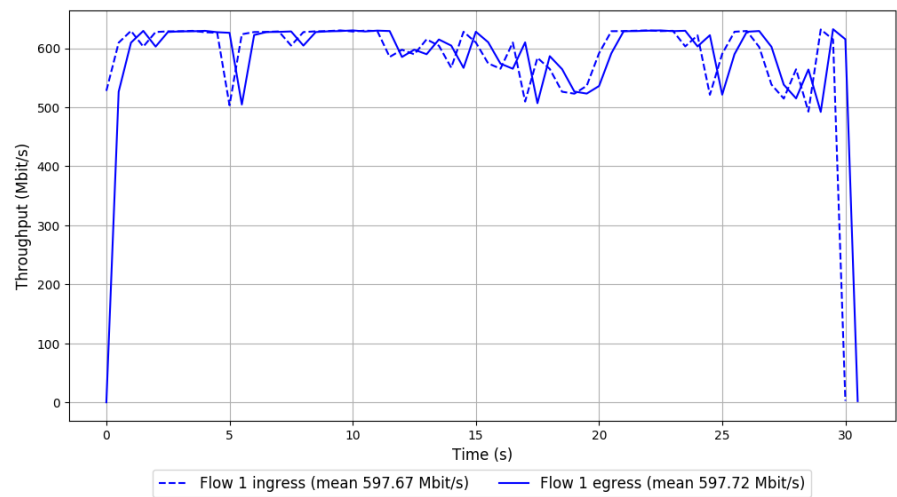
-- Flow 1:

Average throughput: 597.72 Mbit/s

95th percentile per-packet one-way delay: 1.234 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-11-15 09:46:11

End at: 2018-11-15 09:46:41

Local clock offset: 4.251 ms

Remote clock offset: 3.278 ms

Below is generated by plot.py at 2018-11-15 10:51:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 550.27 Mbit/s

95th percentile per-packet one-way delay: 1.641 ms

Loss rate: 0.01%

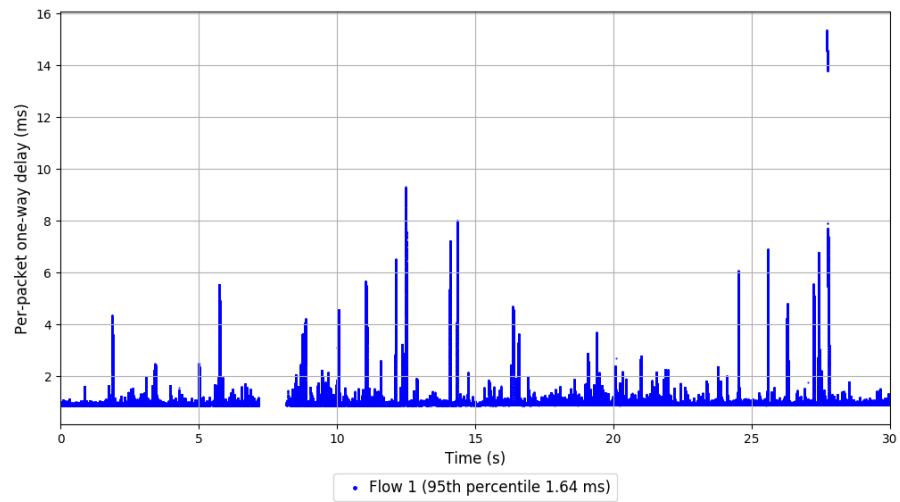
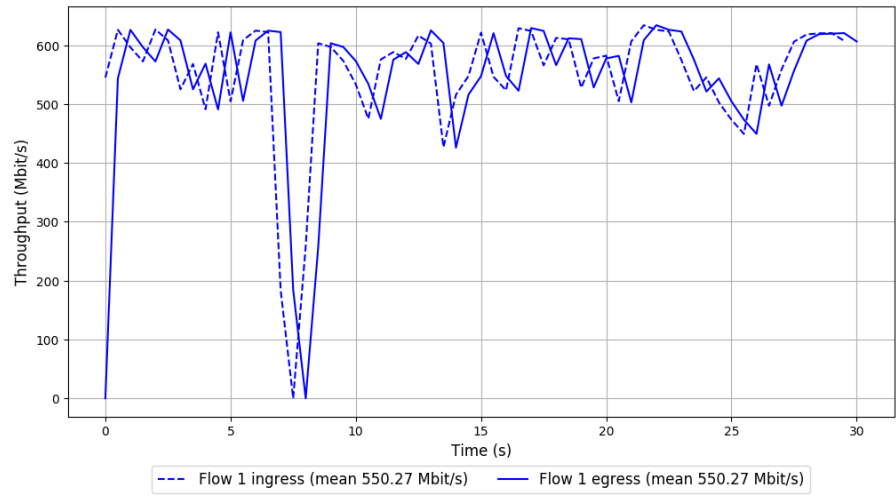
-- Flow 1:

Average throughput: 550.27 Mbit/s

95th percentile per-packet one-way delay: 1.641 ms

Loss rate: 0.01%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 08:11:01

End at: 2018-11-15 08:11:31

Local clock offset: 6.103 ms

Remote clock offset: 1.623 ms

Below is generated by plot.py at 2018-11-15 10:51:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.34 Mbit/s

95th percentile per-packet one-way delay: 0.872 ms

Loss rate: 0.00%

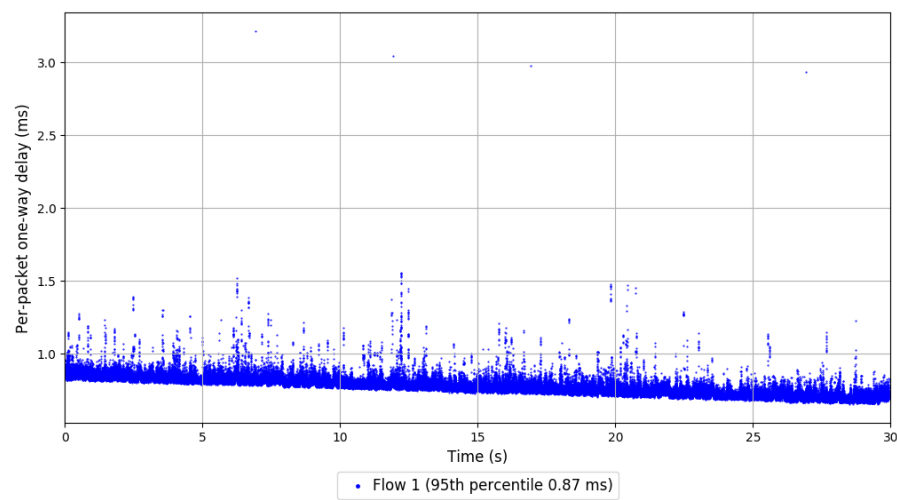
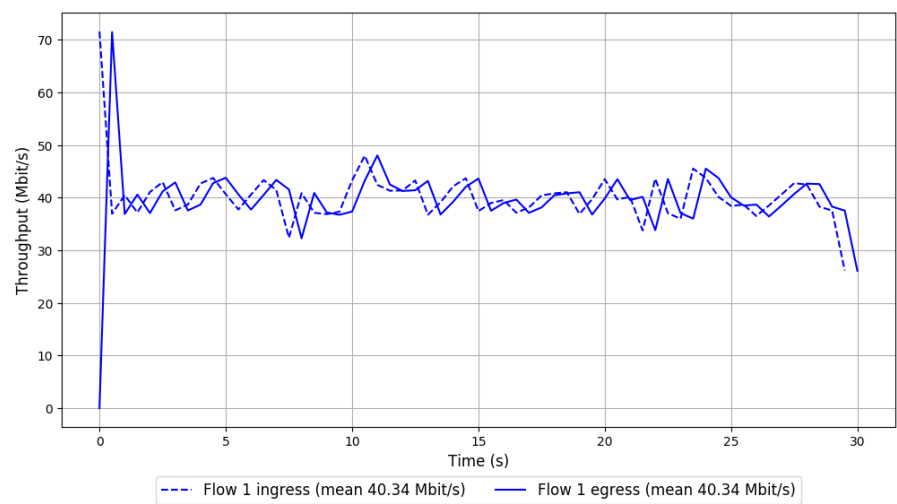
-- Flow 1:

Average throughput: 40.34 Mbit/s

95th percentile per-packet one-way delay: 0.872 ms

Loss rate: 0.00%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 08:37:47

End at: 2018-11-15 08:38:17

Local clock offset: 5.374 ms

Remote clock offset: -1.76 ms

Below is generated by plot.py at 2018-11-15 10:51:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.42 Mbit/s

95th percentile per-packet one-way delay: 1.078 ms

Loss rate: 0.01%

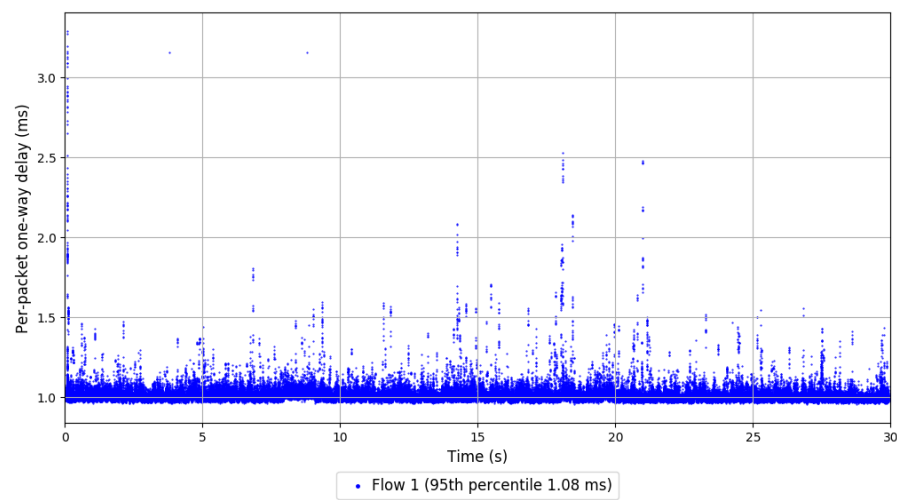
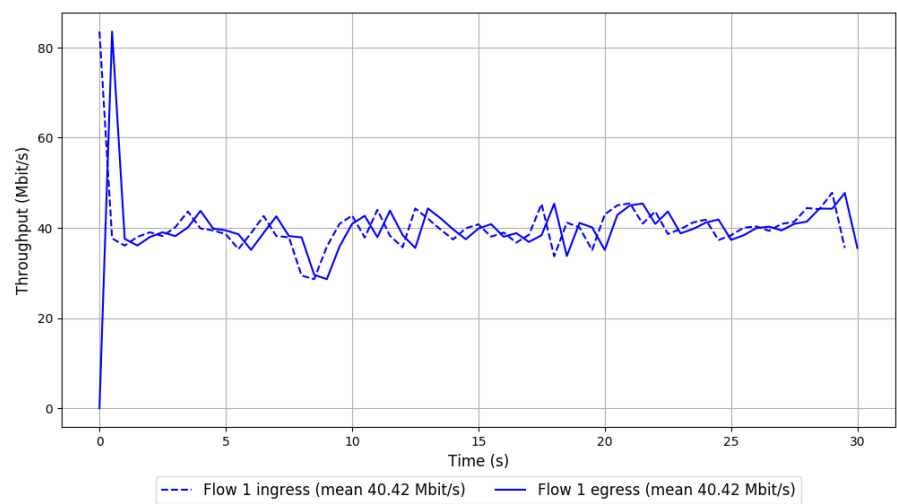
-- Flow 1:

Average throughput: 40.42 Mbit/s

95th percentile per-packet one-way delay: 1.078 ms

Loss rate: 0.01%

Run 2: Report of Indigo-Muses — Data Link

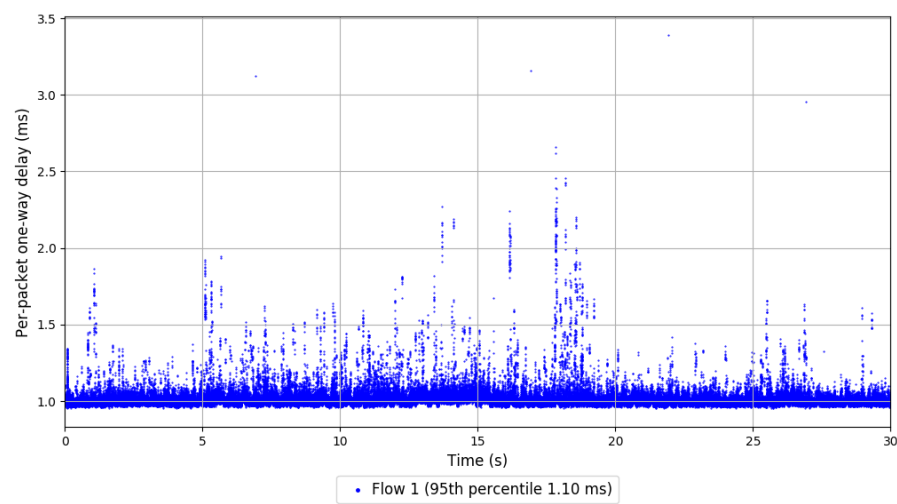
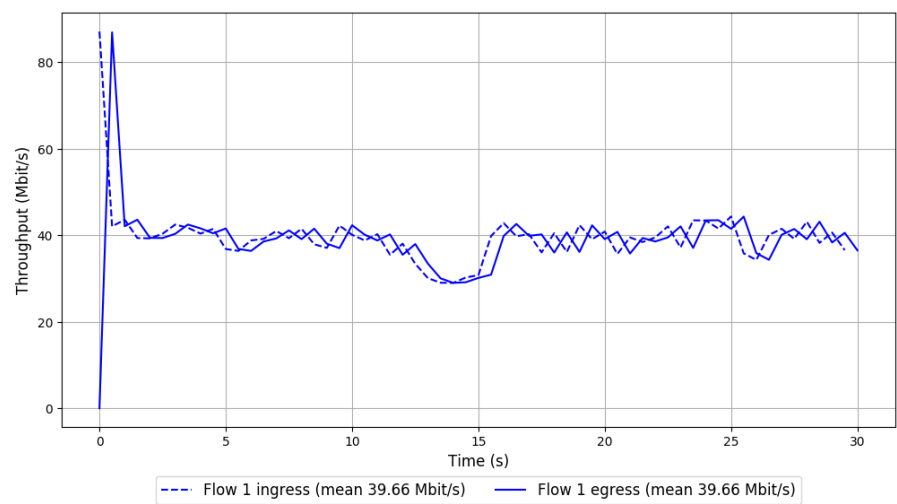


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 09:04:25
End at: 2018-11-15 09:04:55
Local clock offset: 4.719 ms
Remote clock offset: -1.105 ms

Below is generated by plot.py at 2018-11-15 10:51:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 39.66 Mbit/s
95th percentile per-packet one-way delay: 1.099 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 39.66 Mbit/s
95th percentile per-packet one-way delay: 1.099 ms
Loss rate: 0.01%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 09:31:24

End at: 2018-11-15 09:31:54

Local clock offset: 4.415 ms

Remote clock offset: 2.4 ms

Below is generated by plot.py at 2018-11-15 10:51:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 41.37 Mbit/s

95th percentile per-packet one-way delay: 1.090 ms

Loss rate: 0.00%

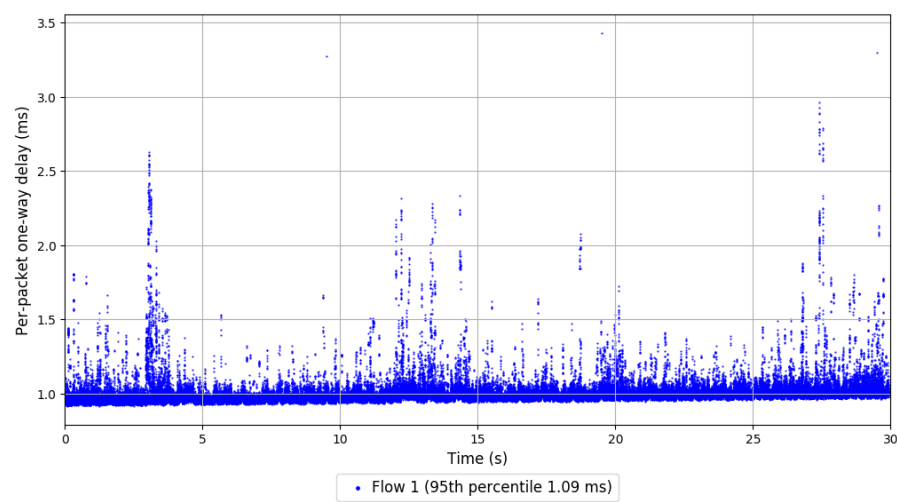
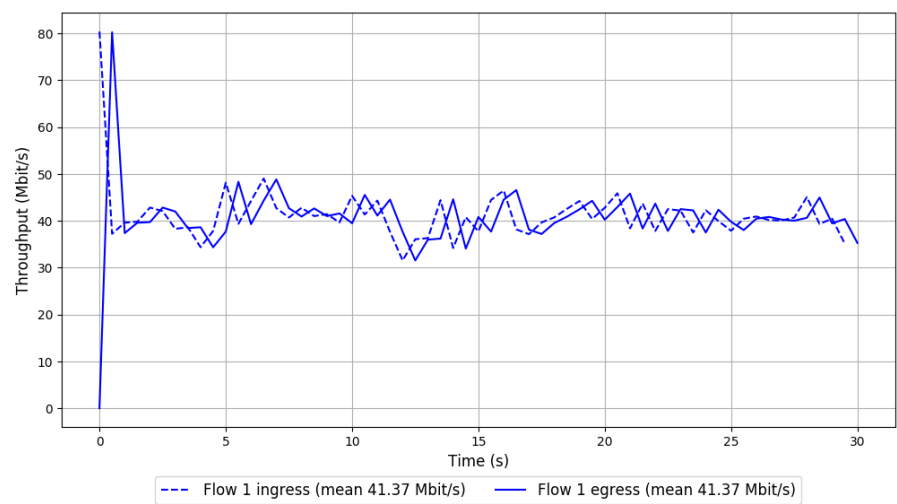
-- Flow 1:

Average throughput: 41.37 Mbit/s

95th percentile per-packet one-way delay: 1.090 ms

Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 09:58:26

End at: 2018-11-15 09:58:56

Local clock offset: 4.114 ms

Remote clock offset: 0.726 ms

Below is generated by plot.py at 2018-11-15 10:51:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.90 Mbit/s

95th percentile per-packet one-way delay: 0.998 ms

Loss rate: 0.01%

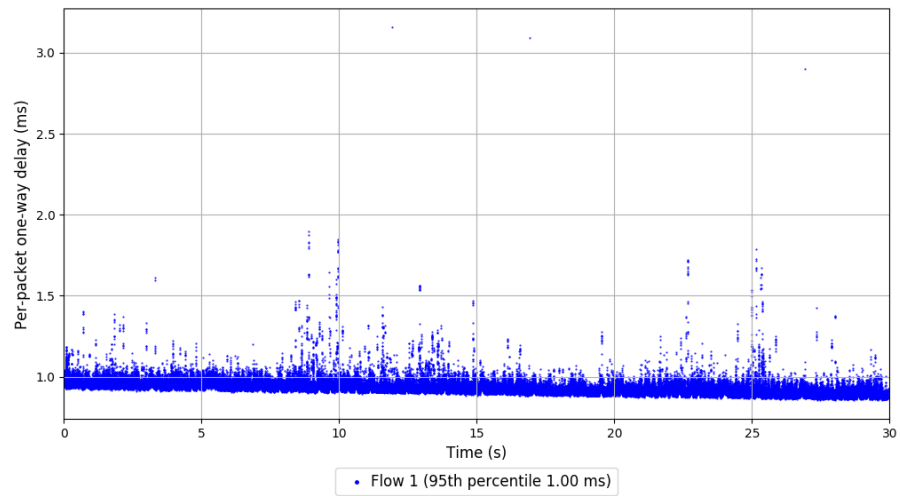
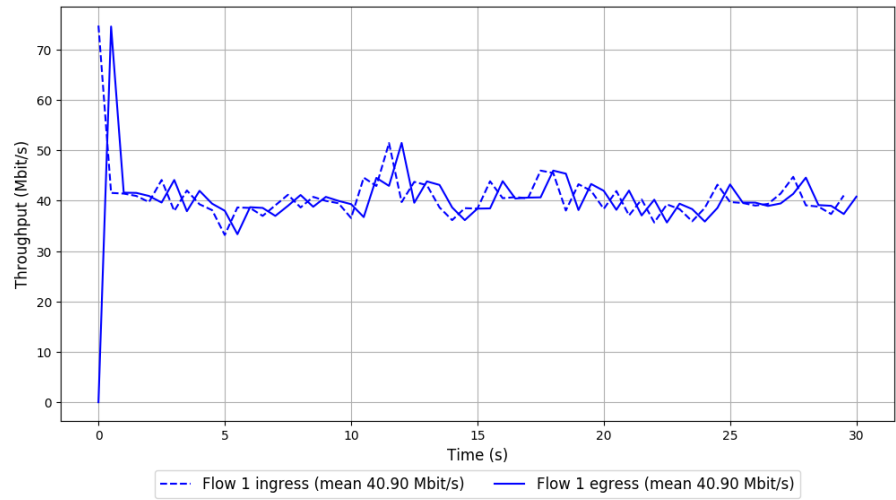
-- Flow 1:

Average throughput: 40.90 Mbit/s

95th percentile per-packet one-way delay: 0.998 ms

Loss rate: 0.01%

Run 5: Report of Indigo-Muses — Data Link

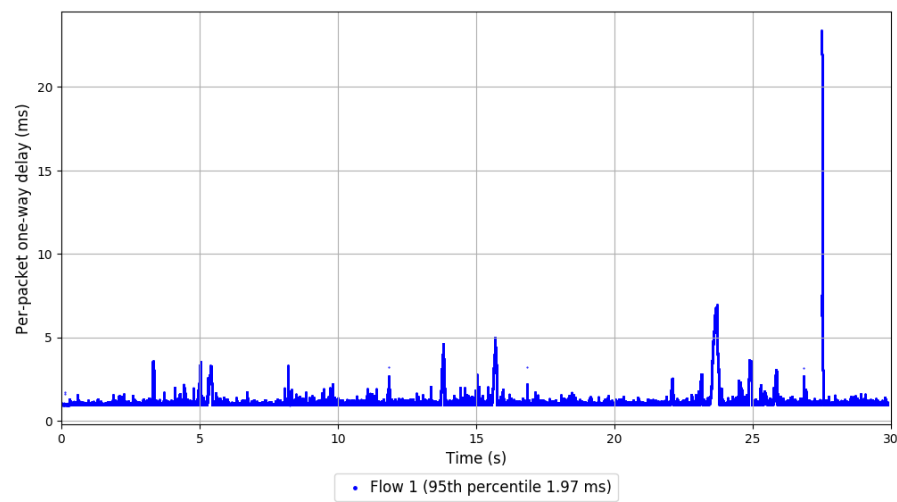
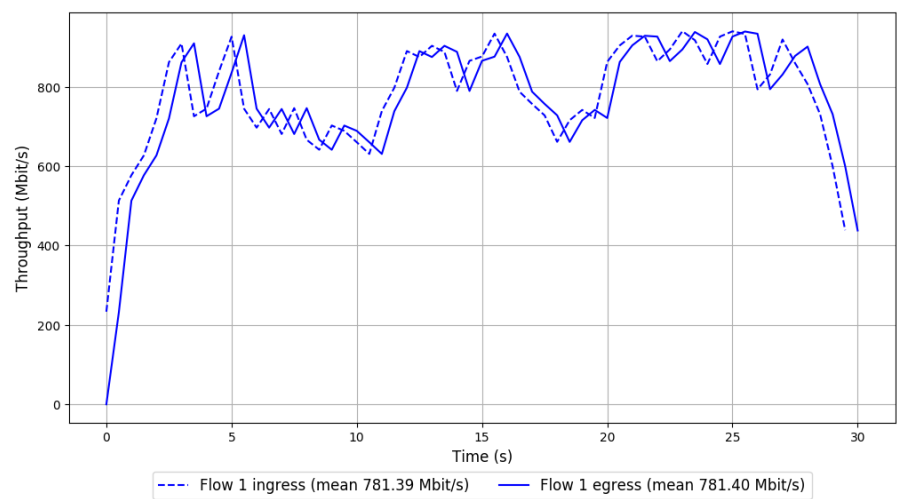


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 07:54:02
End at: 2018-11-15 07:54:32
Local clock offset: 5.464 ms
Remote clock offset: 2.607 ms

# Below is generated by plot.py at 2018-11-15 10:55:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 781.40 Mbit/s
95th percentile per-packet one-way delay: 1.972 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 781.40 Mbit/s
95th percentile per-packet one-way delay: 1.972 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 08:21:03

End at: 2018-11-15 08:21:33

Local clock offset: 6.39 ms

Remote clock offset: -0.376 ms

Below is generated by plot.py at 2018-11-15 10:55:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 106.96 Mbit/s

95th percentile per-packet one-way delay: 1.225 ms

Loss rate: 0.03%

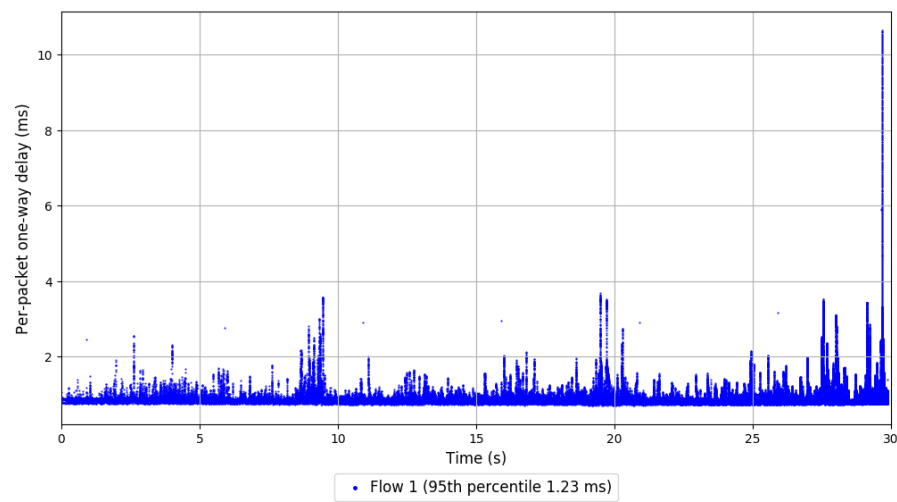
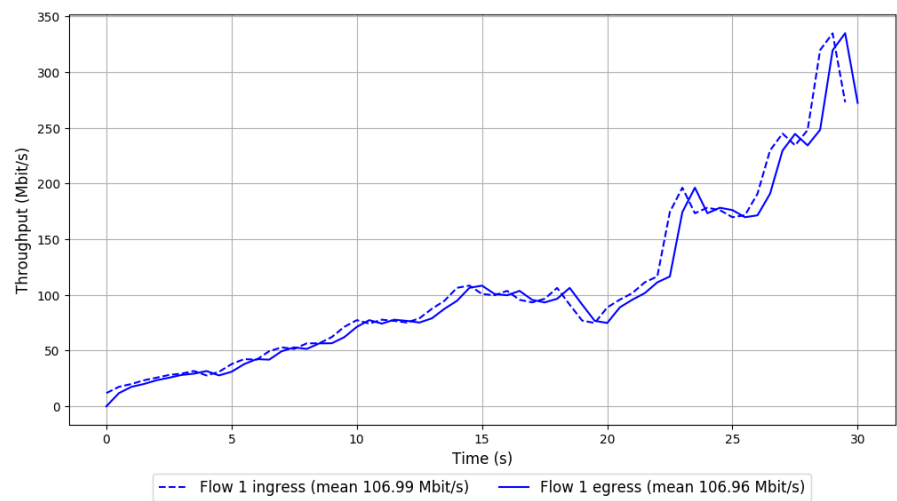
-- Flow 1:

Average throughput: 106.96 Mbit/s

95th percentile per-packet one-way delay: 1.225 ms

Loss rate: 0.03%

Run 2: Report of PCC-Allegro — Data Link

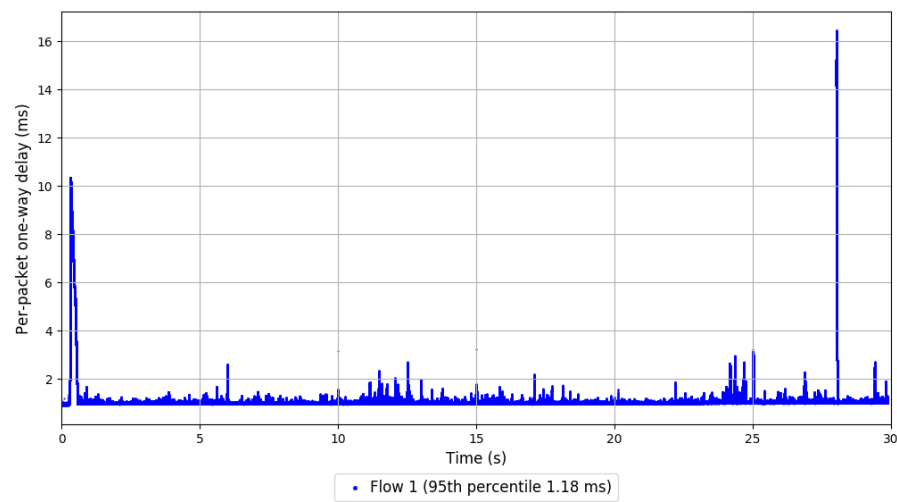
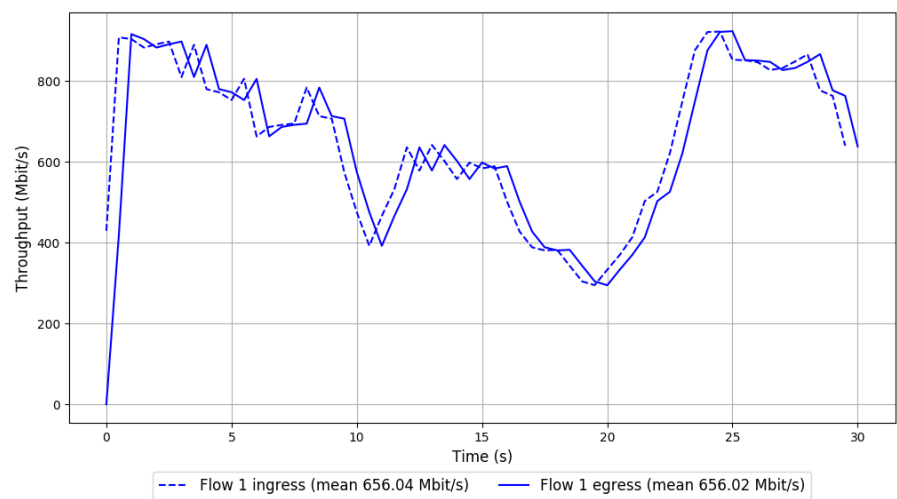


Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 08:47:31
End at: 2018-11-15 08:48:01
Local clock offset: 5.034 ms
Remote clock offset: -1.319 ms

Below is generated by plot.py at 2018-11-15 10:55:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 656.02 Mbit/s
95th percentile per-packet one-way delay: 1.177 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 656.02 Mbit/s
95th percentile per-packet one-way delay: 1.177 ms
Loss rate: 0.01%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 09:14:28

End at: 2018-11-15 09:14:58

Local clock offset: 4.615 ms

Remote clock offset: -1.304 ms

Below is generated by plot.py at 2018-11-15 10:55:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 623.64 Mbit/s

95th percentile per-packet one-way delay: 1.296 ms

Loss rate: 0.01%

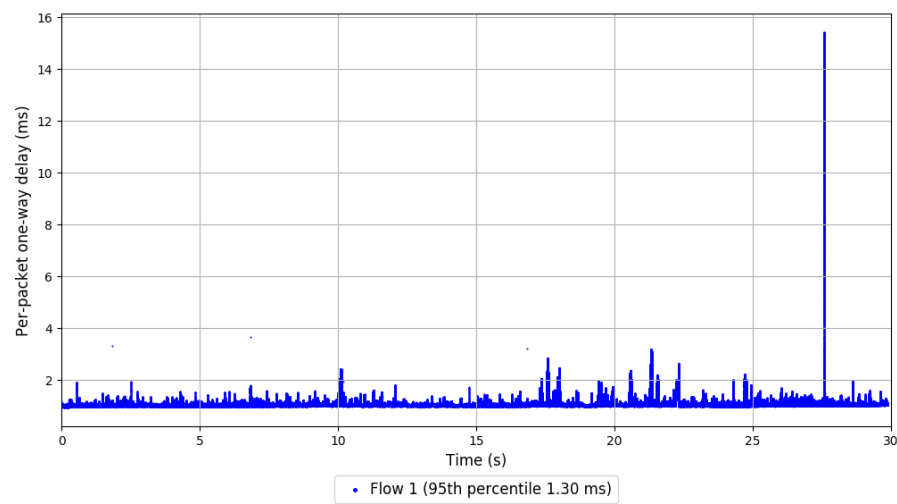
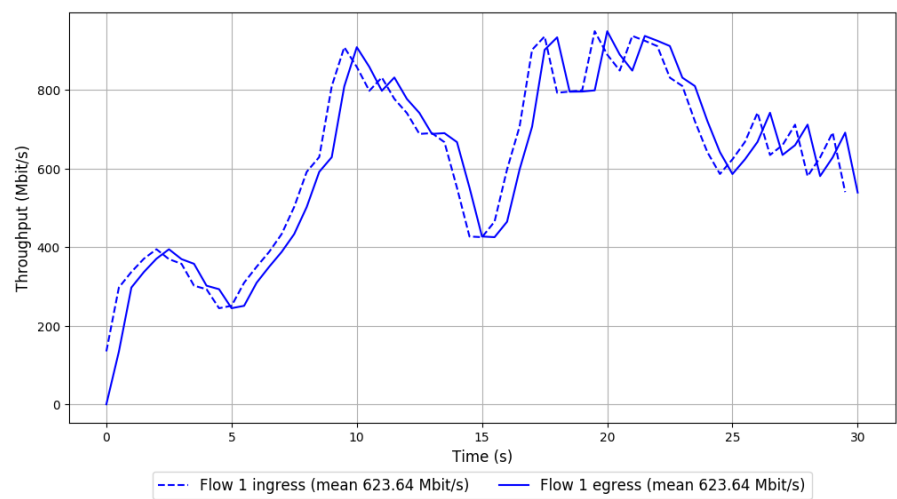
-- Flow 1:

Average throughput: 623.64 Mbit/s

95th percentile per-packet one-way delay: 1.296 ms

Loss rate: 0.01%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 09:41:26

End at: 2018-11-15 09:41:56

Local clock offset: 4.302 ms

Remote clock offset: 2.961 ms

Below is generated by plot.py at 2018-11-15 10:56:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 855.22 Mbit/s

95th percentile per-packet one-way delay: 1.703 ms

Loss rate: 0.01%

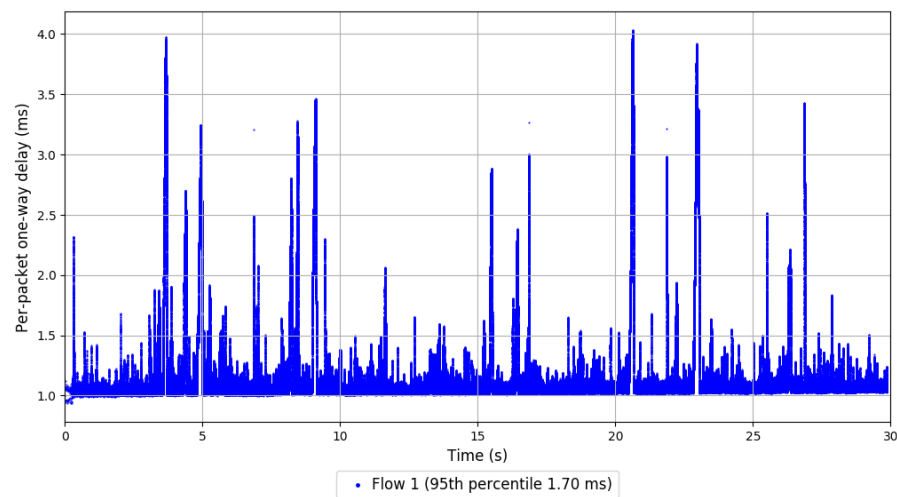
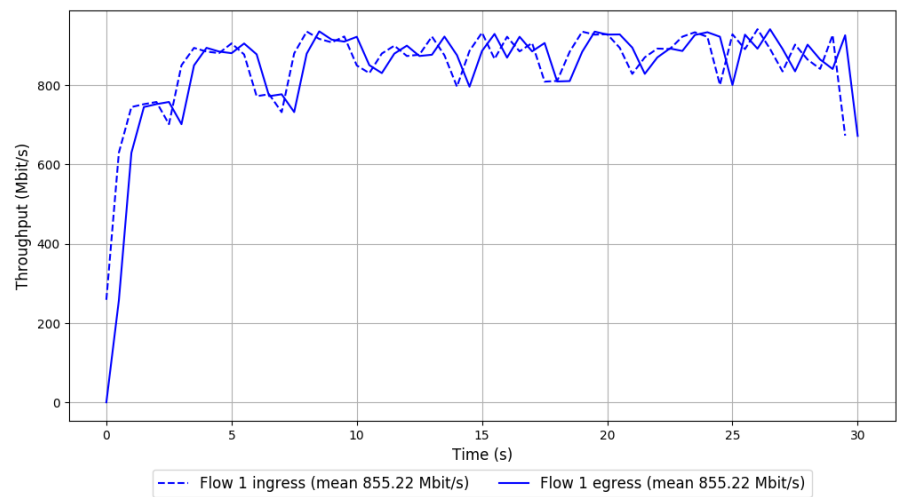
-- Flow 1:

Average throughput: 855.22 Mbit/s

95th percentile per-packet one-way delay: 1.703 ms

Loss rate: 0.01%

Run 5: Report of PCC-Allegro — Data Link

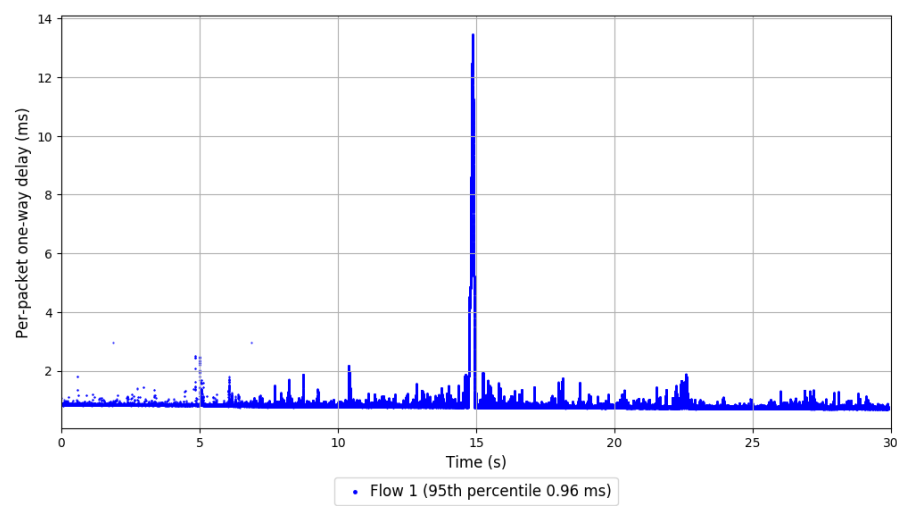
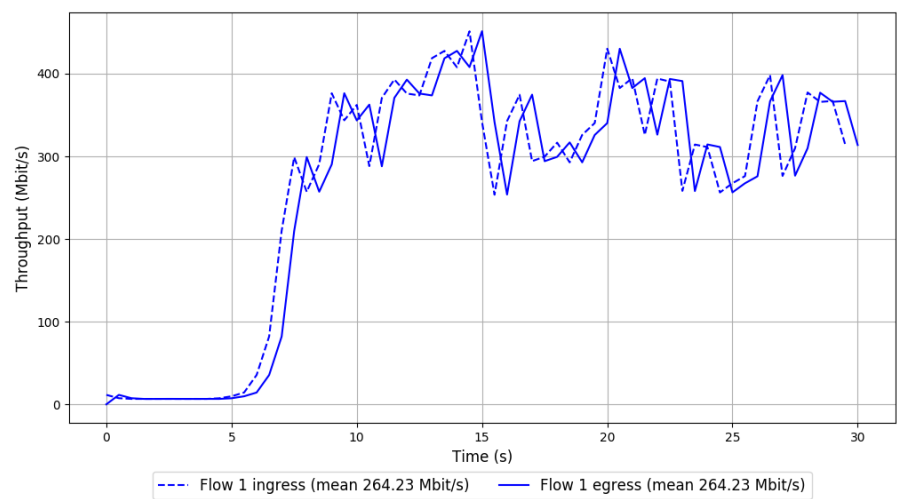


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 08:15:01
End at: 2018-11-15 08:15:31
Local clock offset: 6.241 ms
Remote clock offset: 0.602 ms

# Below is generated by plot.py at 2018-11-15 10:56:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 264.23 Mbit/s
95th percentile per-packet one-way delay: 0.960 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 264.23 Mbit/s
95th percentile per-packet one-way delay: 0.960 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Expr — Data Link

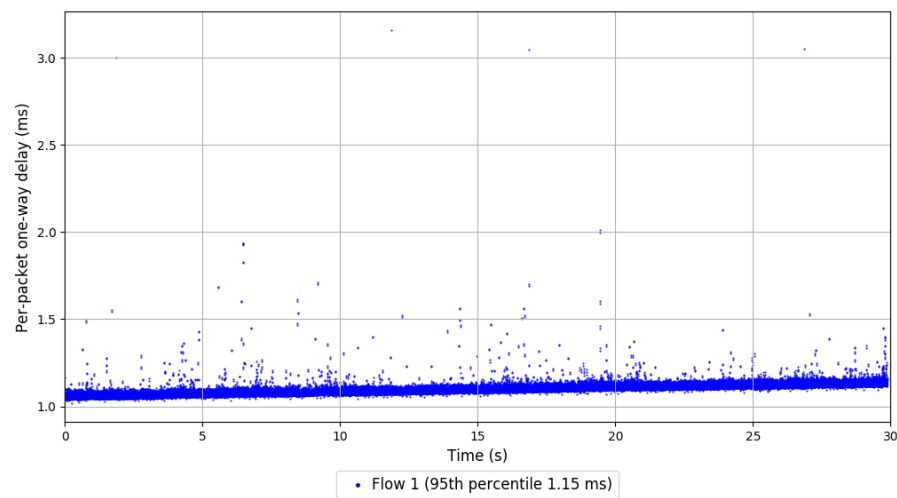
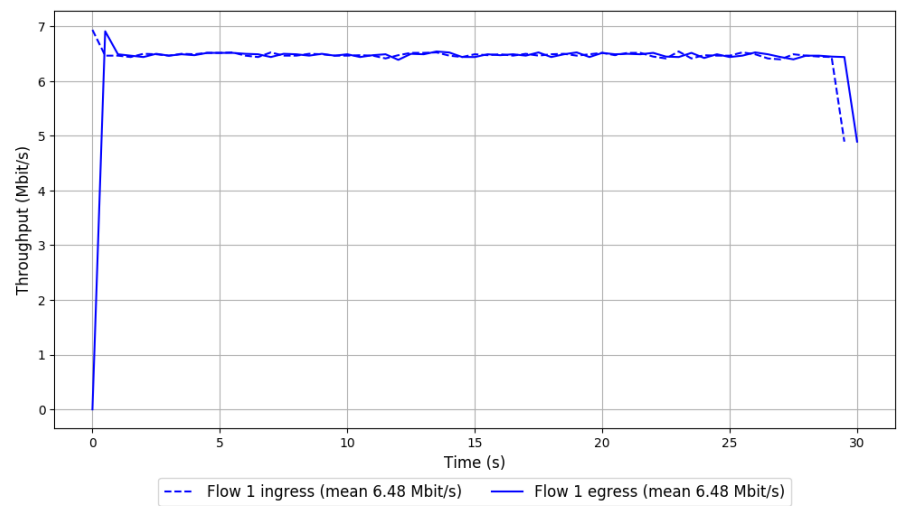


Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 08:41:42
End at: 2018-11-15 08:42:12
Local clock offset: 5.199 ms
Remote clock offset: -1.886 ms

Below is generated by plot.py at 2018-11-15 10:56:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.48 Mbit/s
95th percentile per-packet one-way delay: 1.150 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 6.48 Mbit/s
95th percentile per-packet one-way delay: 1.150 ms
Loss rate: 0.01%

Run 2: Report of PCC-Expr — Data Link

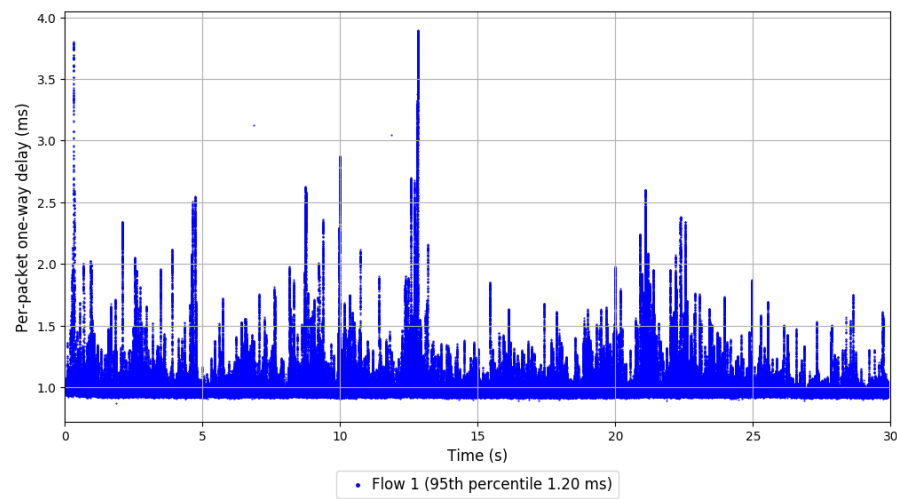
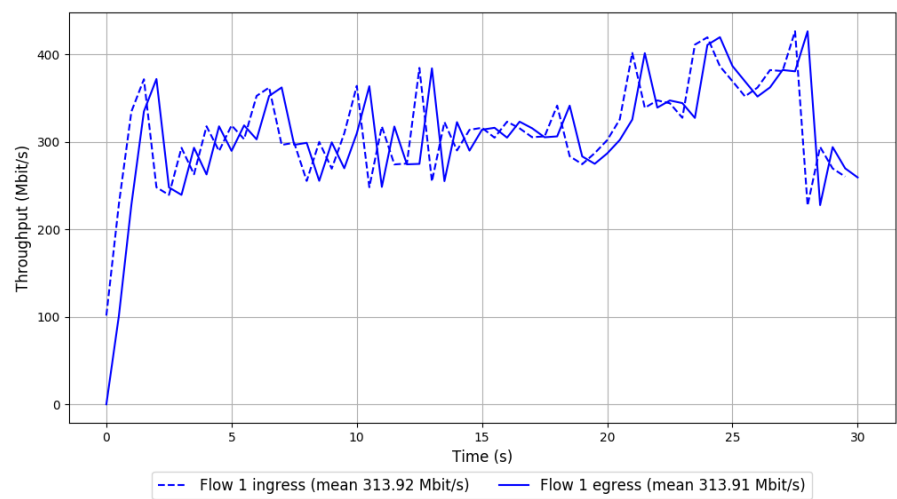


Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 09:08:21
End at: 2018-11-15 09:08:51
Local clock offset: 4.662 ms
Remote clock offset: -1.152 ms

Below is generated by plot.py at 2018-11-15 10:56:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 313.91 Mbit/s
95th percentile per-packet one-way delay: 1.202 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 313.91 Mbit/s
95th percentile per-packet one-way delay: 1.202 ms
Loss rate: 0.01%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 09:35:19

End at: 2018-11-15 09:35:49

Local clock offset: 4.369 ms

Remote clock offset: 2.674 ms

Below is generated by plot.py at 2018-11-15 10:56:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 334.63 Mbit/s

95th percentile per-packet one-way delay: 1.059 ms

Loss rate: 0.01%

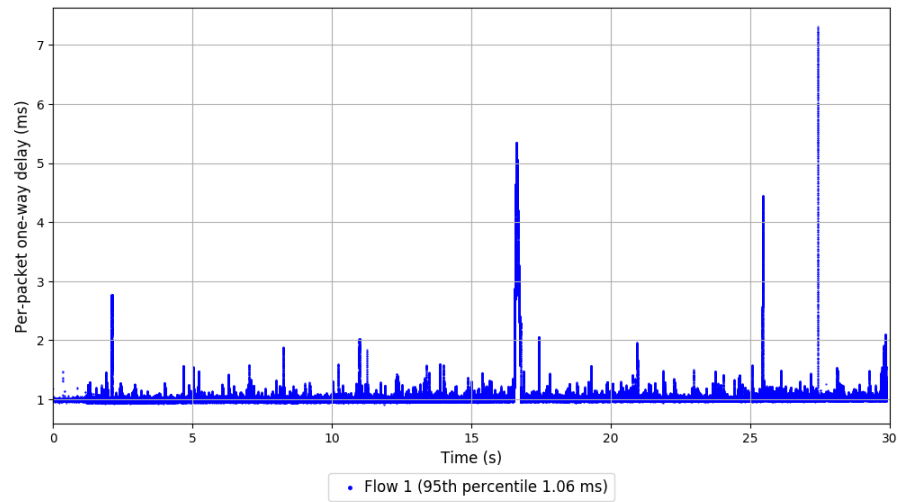
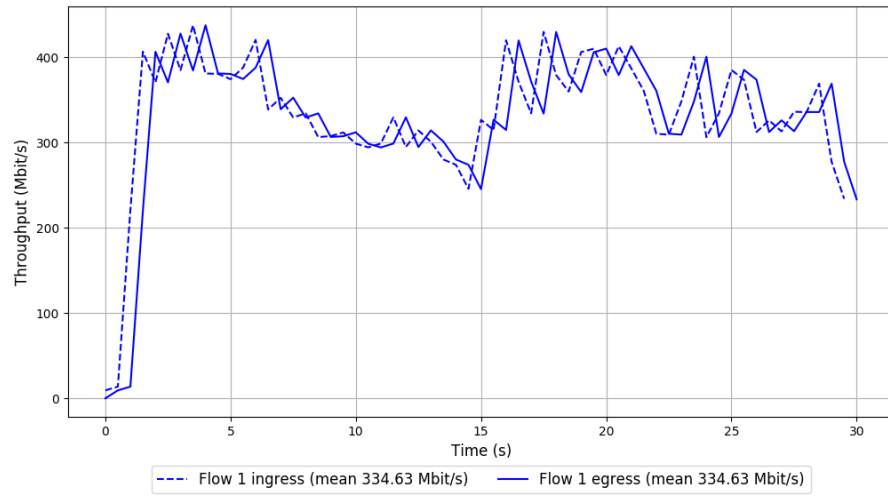
-- Flow 1:

Average throughput: 334.63 Mbit/s

95th percentile per-packet one-way delay: 1.059 ms

Loss rate: 0.01%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 10:02:22

End at: 2018-11-15 10:02:52

Local clock offset: 4.024 ms

Remote clock offset: 0.09 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 344.17 Mbit/s

95th percentile per-packet one-way delay: 1.294 ms

Loss rate: 0.01%

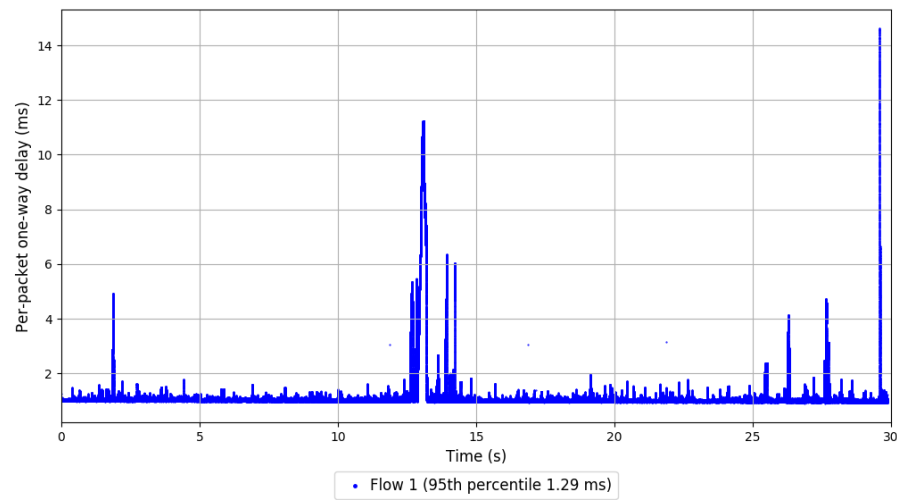
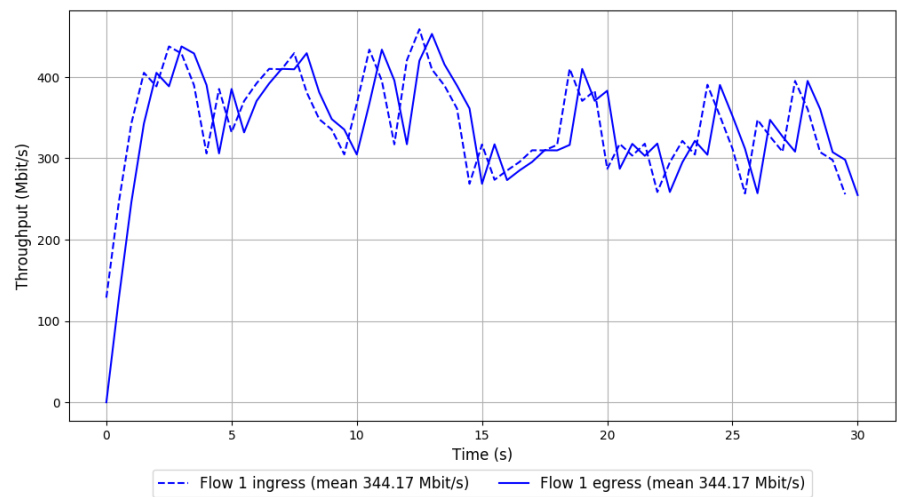
-- Flow 1:

Average throughput: 344.17 Mbit/s

95th percentile per-packet one-way delay: 1.294 ms

Loss rate: 0.01%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 08:01:46

End at: 2018-11-15 08:02:16

Local clock offset: 5.78 ms

Remote clock offset: 3.042 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 78.14 Mbit/s

95th percentile per-packet one-way delay: 1.083 ms

Loss rate: 0.00%

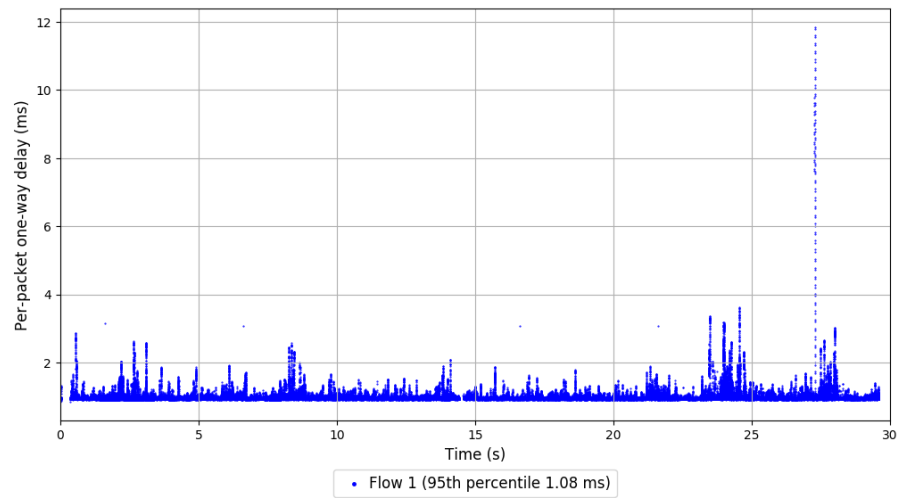
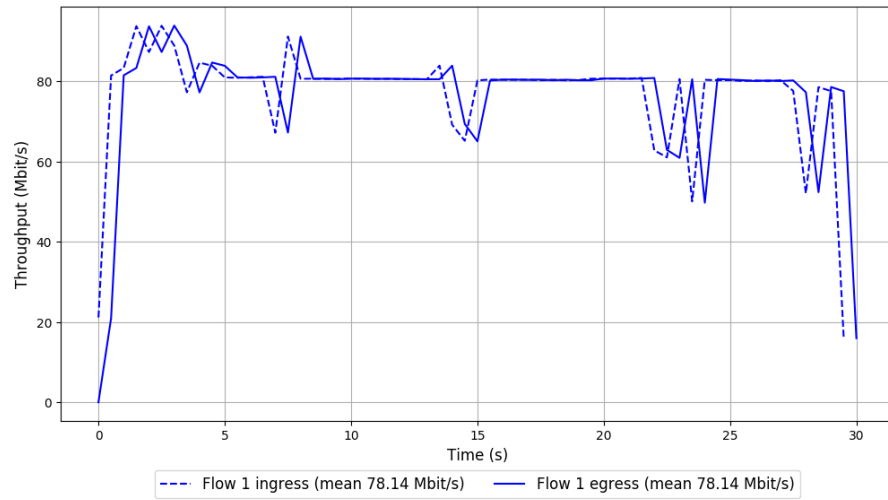
-- Flow 1:

Average throughput: 78.14 Mbit/s

95th percentile per-packet one-way delay: 1.083 ms

Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 08:28:32

End at: 2018-11-15 08:29:02

Local clock offset: 6.261 ms

Remote clock offset: -1.205 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.00 Mbit/s

95th percentile per-packet one-way delay: 1.117 ms

Loss rate: 0.01%

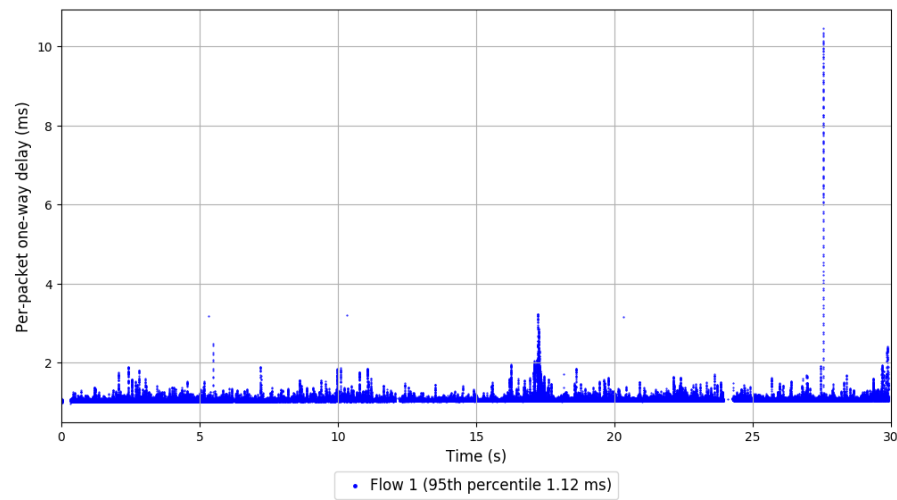
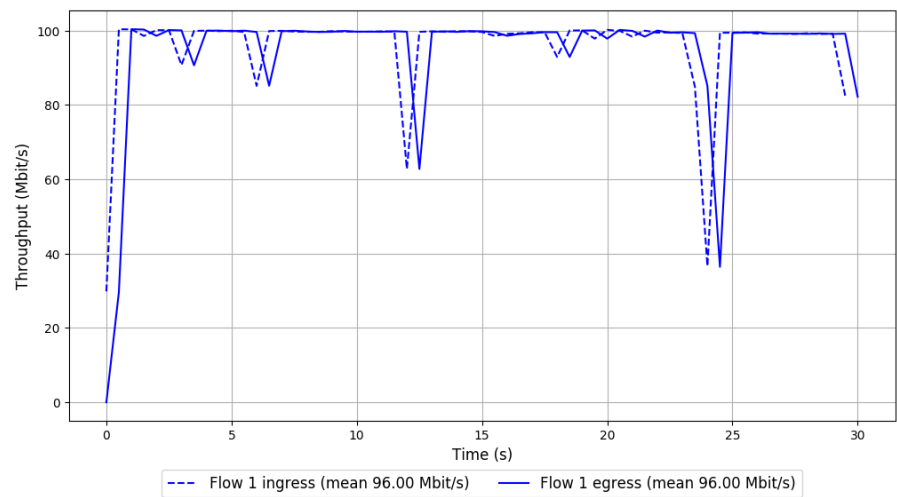
-- Flow 1:

Average throughput: 96.00 Mbit/s

95th percentile per-packet one-way delay: 1.117 ms

Loss rate: 0.01%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 08:55:09

End at: 2018-11-15 08:55:39

Local clock offset: 4.933 ms

Remote clock offset: -0.997 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 96.10 Mbit/s

95th percentile per-packet one-way delay: 0.918 ms

Loss rate: 0.01%

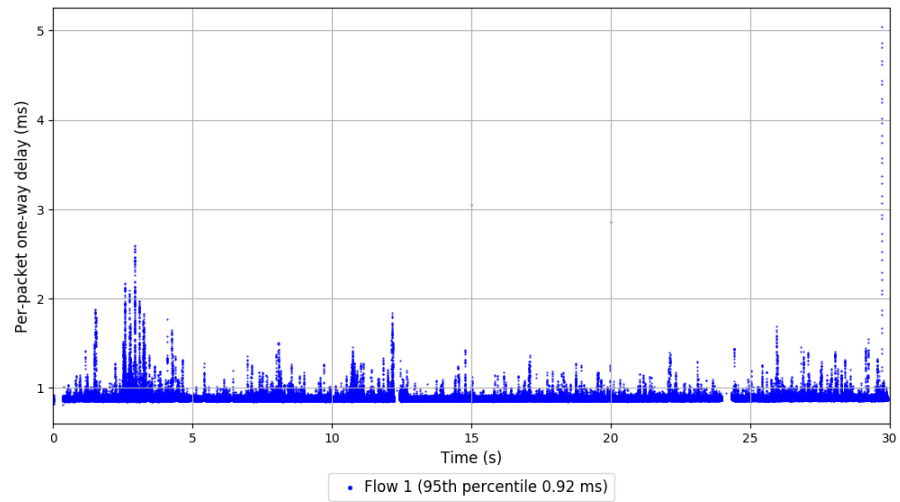
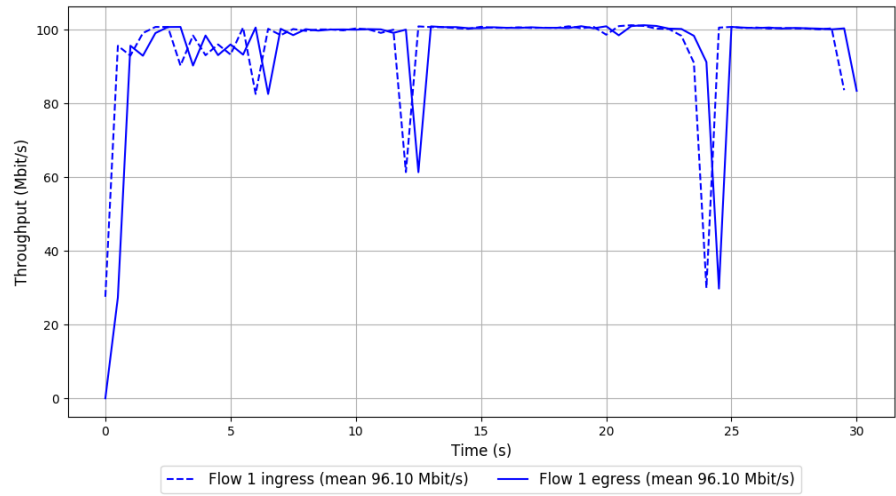
-- Flow 1:

Average throughput: 96.10 Mbit/s

95th percentile per-packet one-way delay: 0.918 ms

Loss rate: 0.01%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 09:22:08

End at: 2018-11-15 09:22:38

Local clock offset: 4.526 ms

Remote clock offset: 1.036 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 87.63 Mbit/s

95th percentile per-packet one-way delay: 1.088 ms

Loss rate: 0.01%

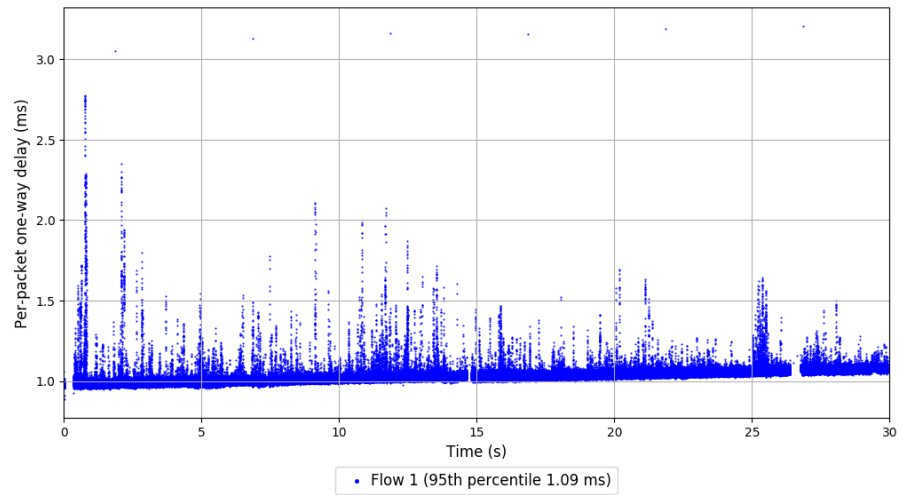
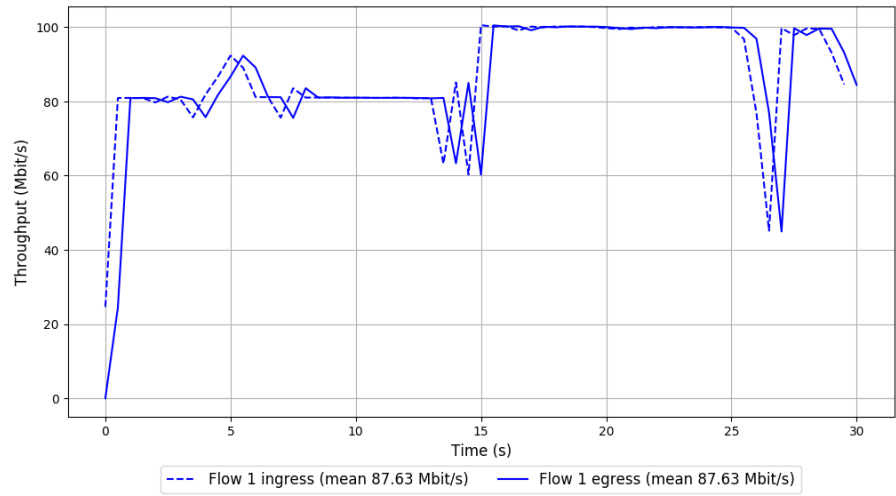
-- Flow 1:

Average throughput: 87.63 Mbit/s

95th percentile per-packet one-way delay: 1.088 ms

Loss rate: 0.01%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 09:49:11

End at: 2018-11-15 09:49:41

Local clock offset: 4.215 ms

Remote clock offset: 3.31 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 88.99 Mbit/s

95th percentile per-packet one-way delay: 0.909 ms

Loss rate: 0.01%

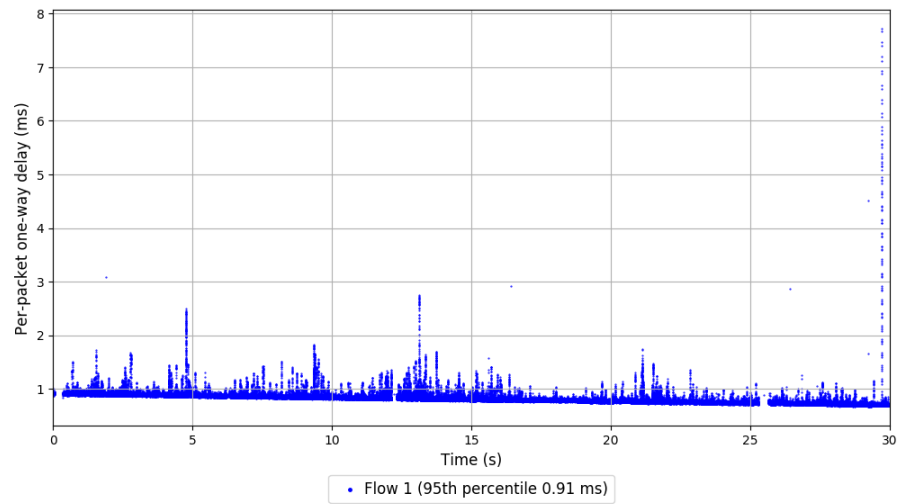
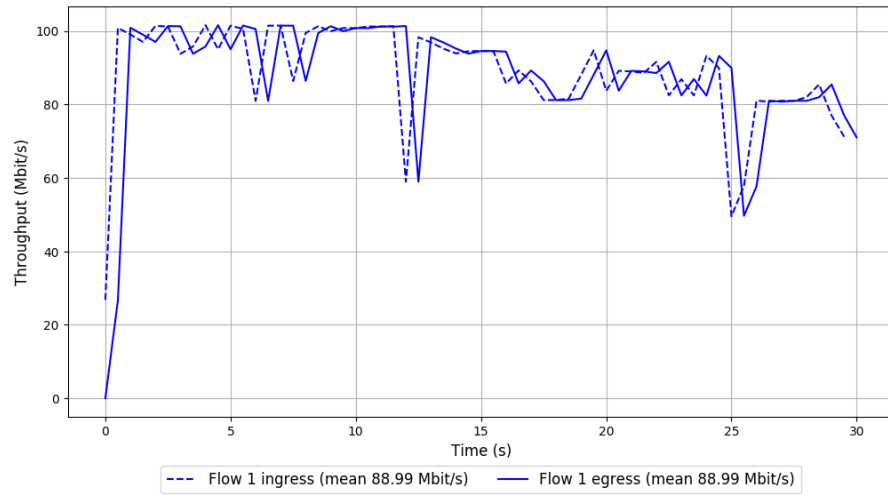
-- Flow 1:

Average throughput: 88.99 Mbit/s

95th percentile per-packet one-way delay: 0.909 ms

Loss rate: 0.01%

Run 5: Report of QUIC Cubic — Data Link

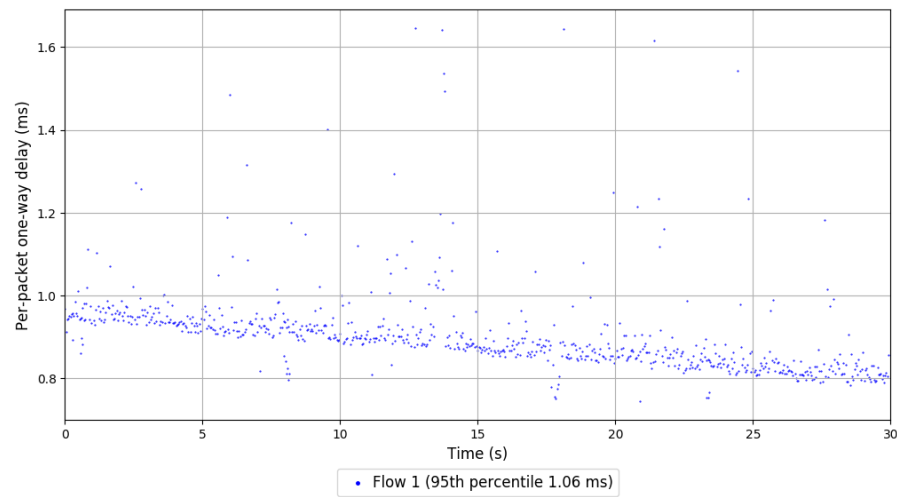
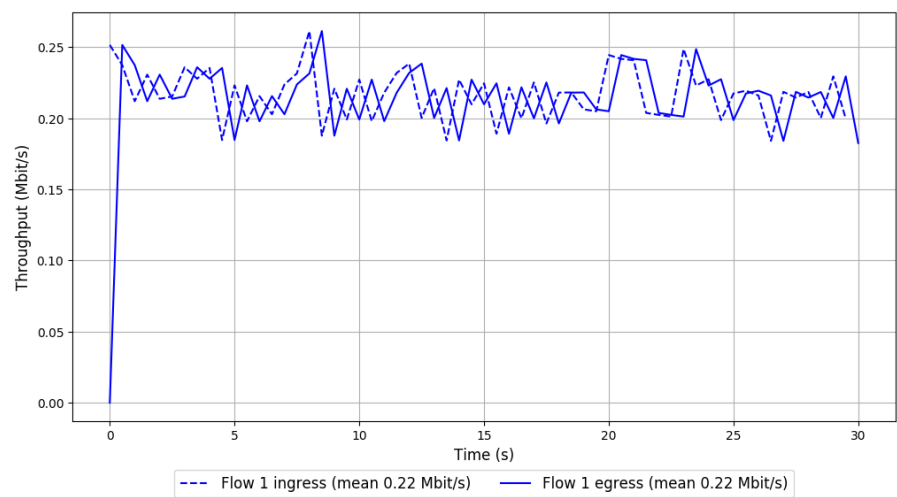


```
Run 1: Statistics of SCReAM

Start at: 2018-11-15 08:12:20
End at: 2018-11-15 08:12:50
Local clock offset: 6.178 ms
Remote clock offset: 1.279 ms

# Below is generated by plot.py at 2018-11-15 10:59:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.060 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.060 ms
Loss rate: 0.13%
```

Run 1: Report of SReAM — Data Link

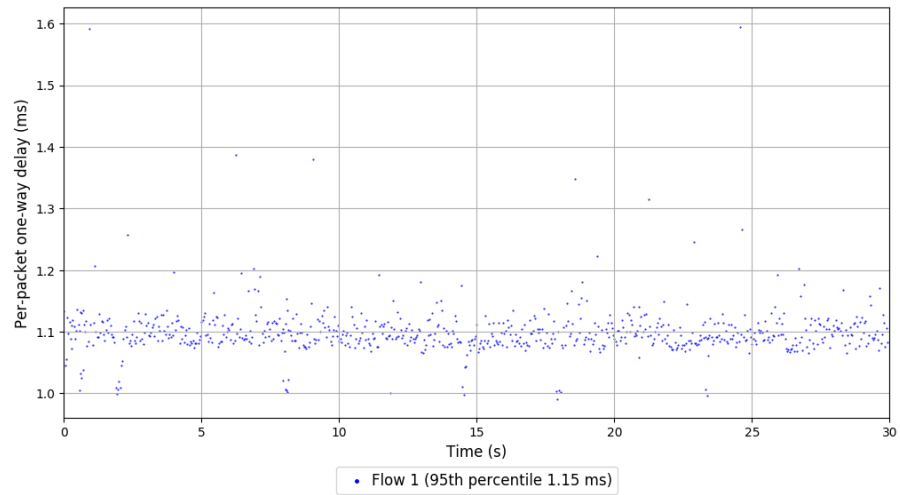
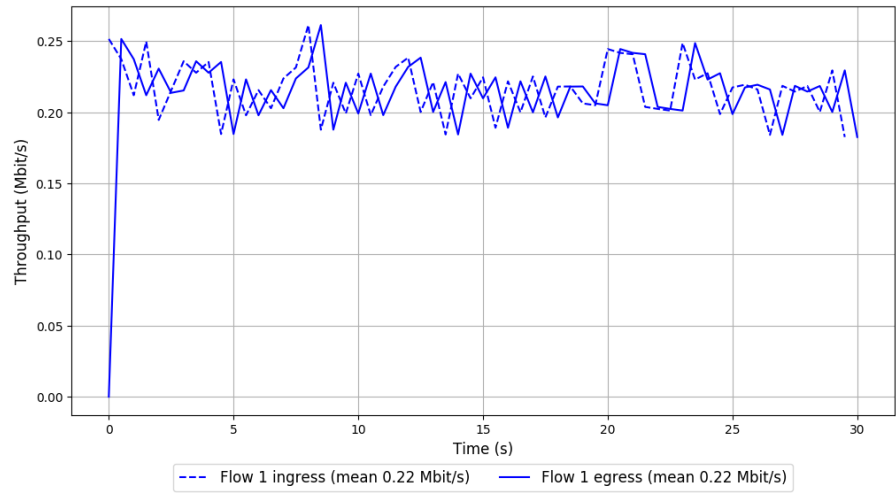


Run 2: Statistics of SCReAM

Start at: 2018-11-15 08:39:06
End at: 2018-11-15 08:39:36
Local clock offset: 5.301 ms
Remote clock offset: -1.845 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

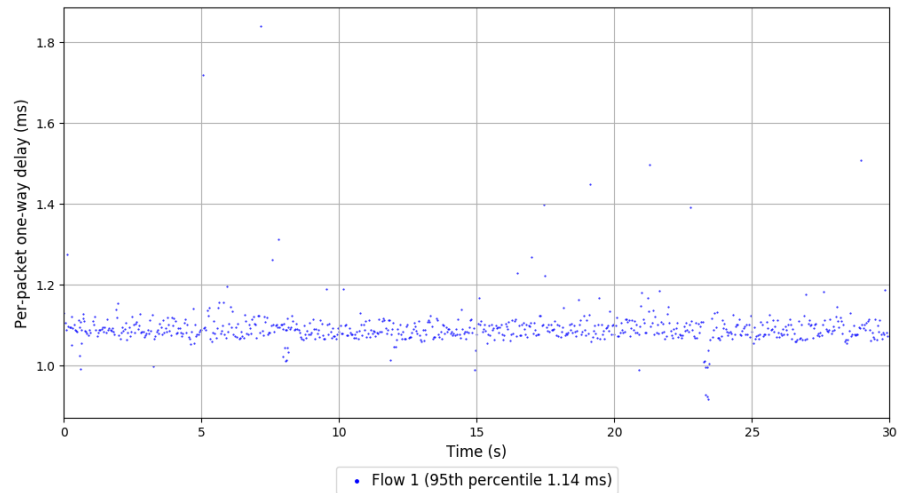
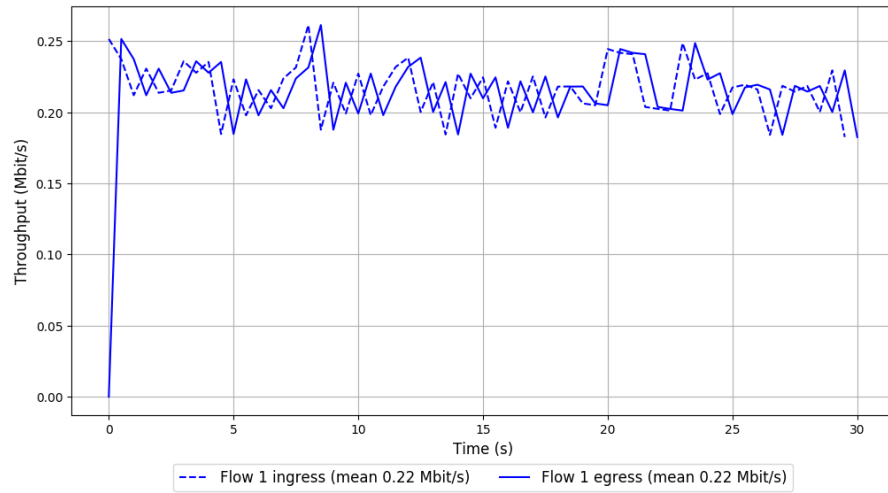


Run 3: Statistics of SCReAM

Start at: 2018-11-15 09:05:45
End at: 2018-11-15 09:06:15
Local clock offset: 4.711 ms
Remote clock offset: -1.116 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.137 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.137 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-11-15 09:32:43

End at: 2018-11-15 09:33:13

Local clock offset: 4.403 ms

Remote clock offset: 2.452 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.238 ms

Loss rate: 0.00%

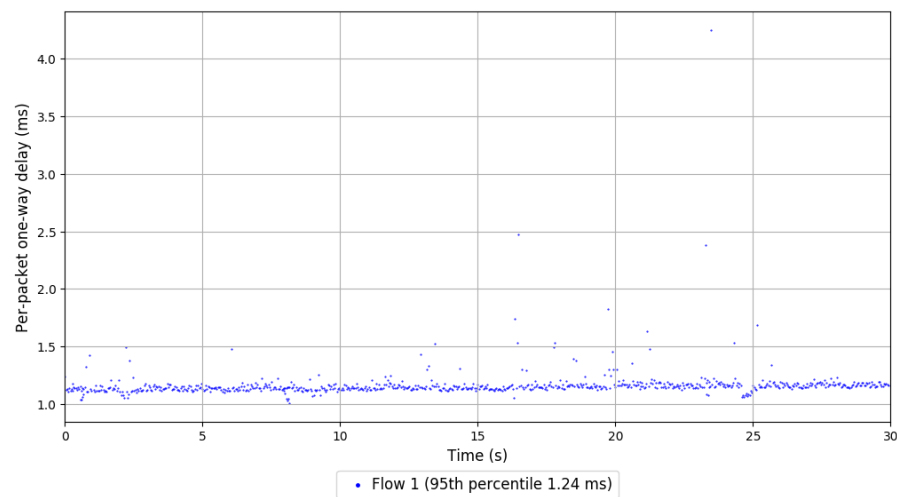
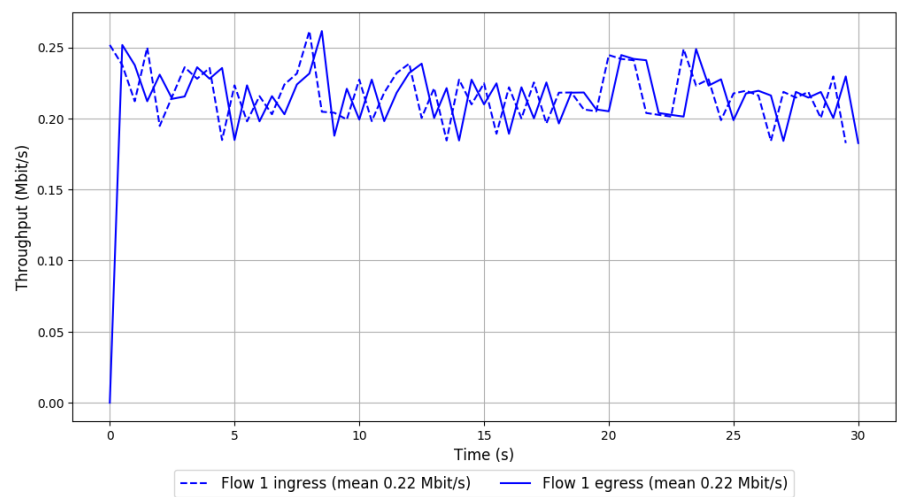
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.238 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-11-15 09:59:46

End at: 2018-11-15 10:00:16

Local clock offset: 4.062 ms

Remote clock offset: 0.477 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.094 ms

Loss rate: 0.00%

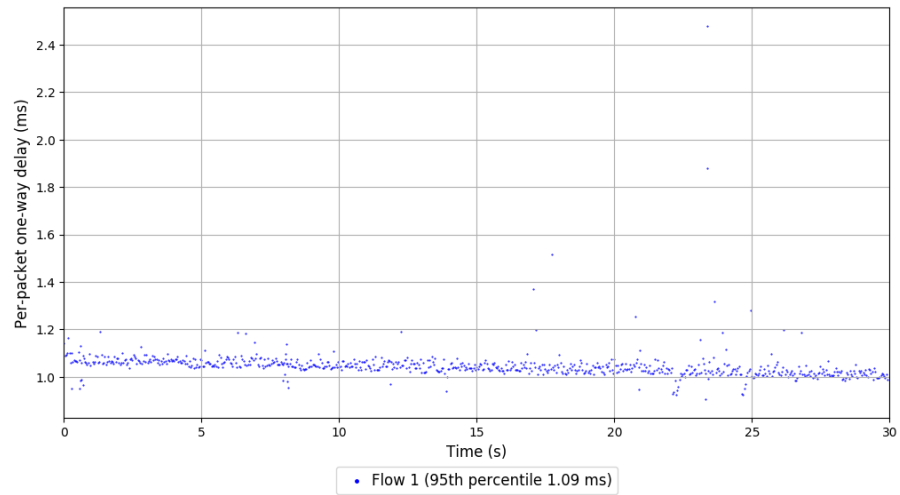
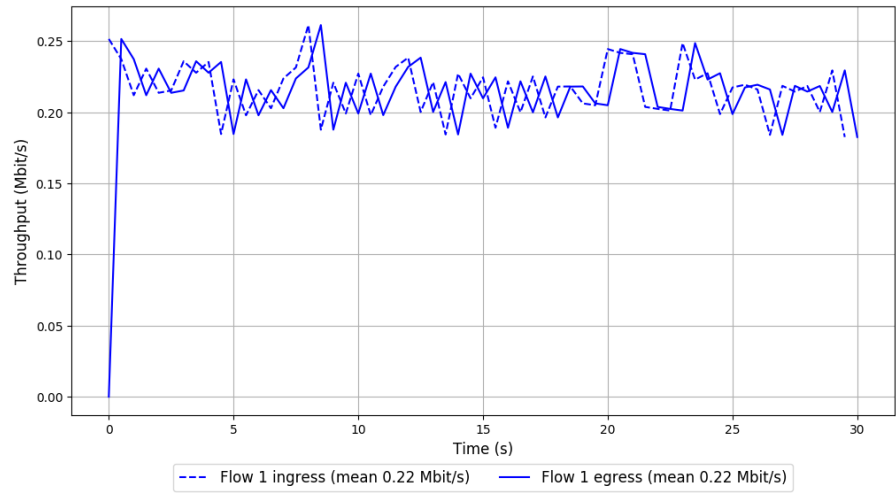
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.094 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-11-15 08:00:27

End at: 2018-11-15 08:00:57

Local clock offset: 5.725 ms

Remote clock offset: 3.009 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.23 Mbit/s

95th percentile per-packet one-way delay: 1.091 ms

Loss rate: 0.00%

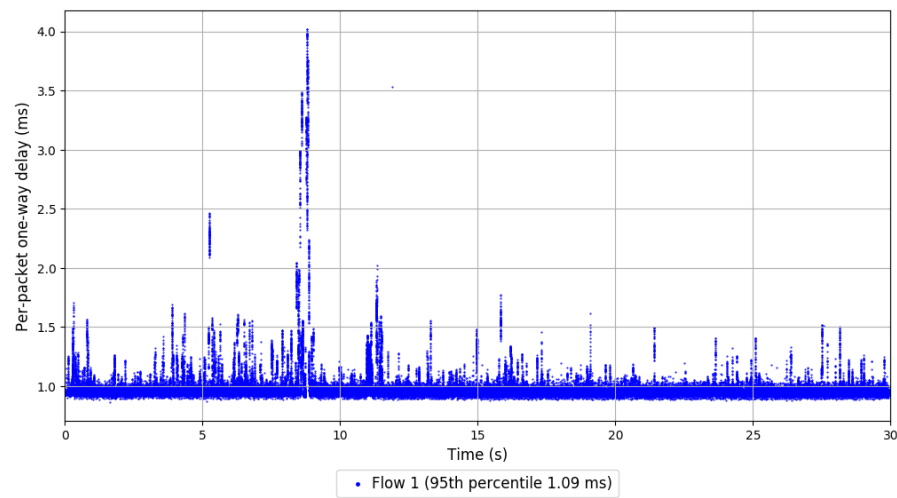
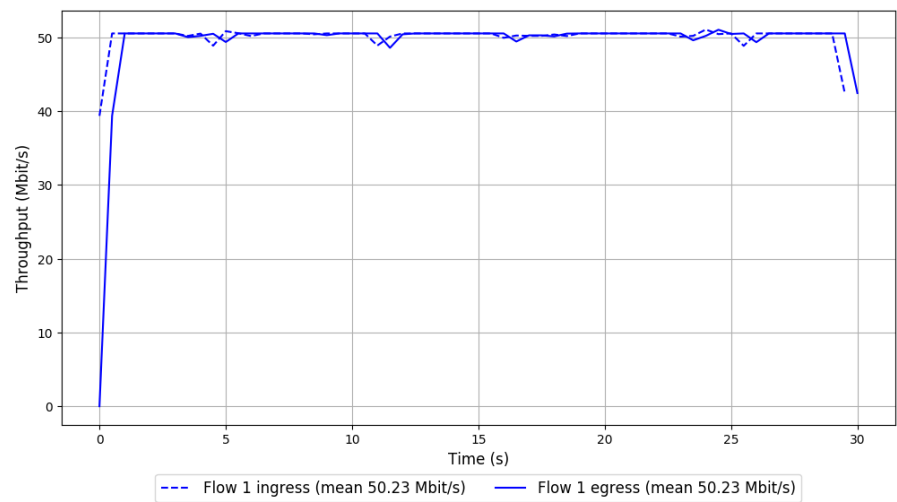
-- Flow 1:

Average throughput: 50.23 Mbit/s

95th percentile per-packet one-way delay: 1.091 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

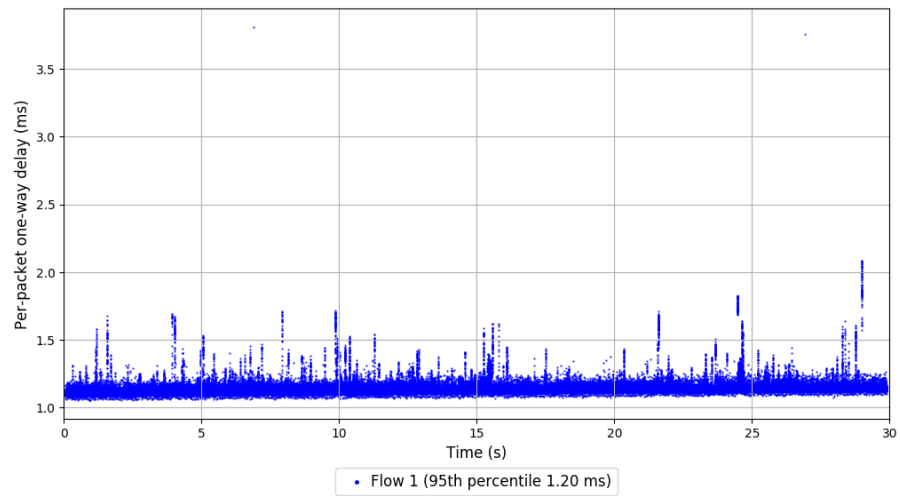
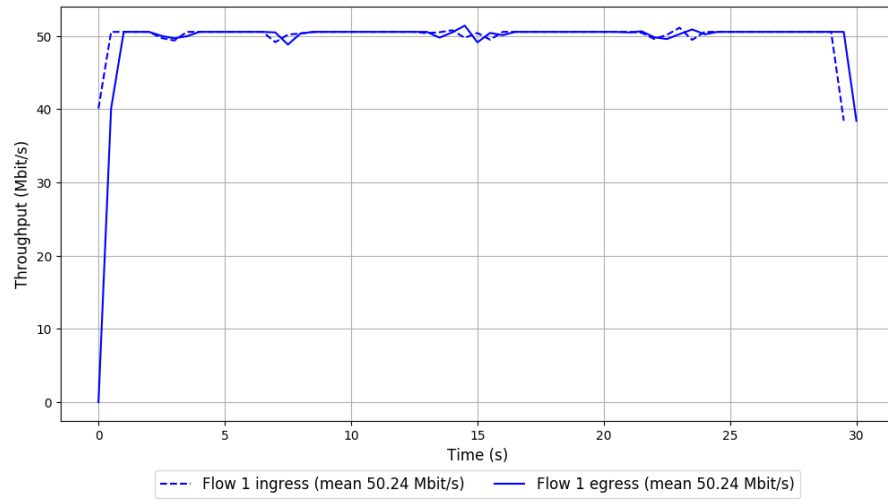


Run 2: Statistics of Sprout

Start at: 2018-11-15 08:27:13
End at: 2018-11-15 08:27:43
Local clock offset: 6.496 ms
Remote clock offset: -1.106 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 1.197 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 1.197 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

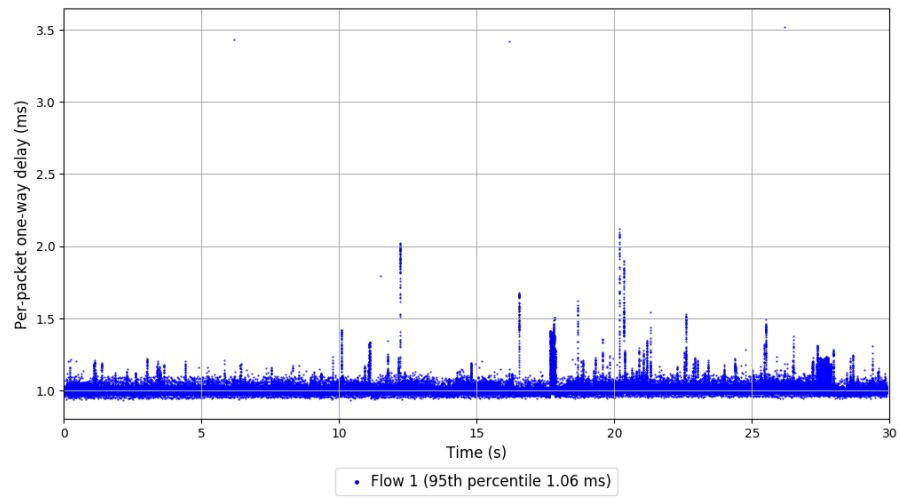
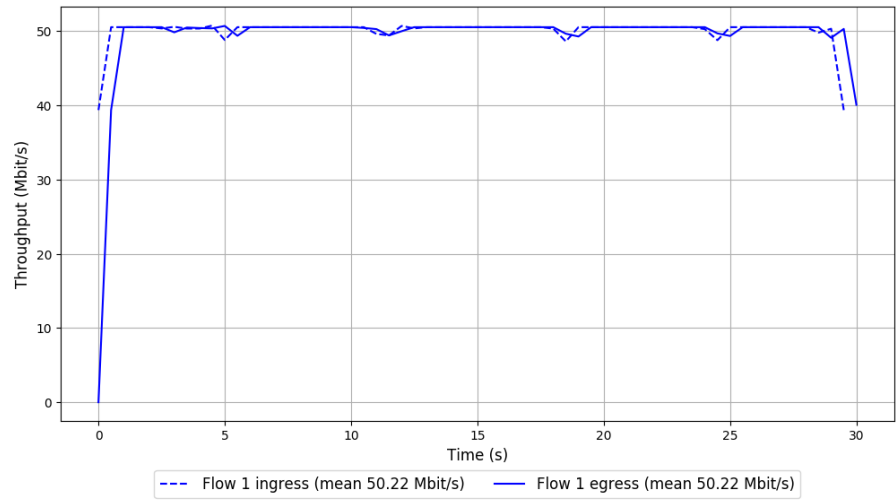


Run 3: Statistics of Sprout

Start at: 2018-11-15 08:53:50
End at: 2018-11-15 08:54:20
Local clock offset: 4.932 ms
Remote clock offset: -1.121 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 50.22 Mbit/s
95th percentile per-packet one-way delay: 1.061 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.22 Mbit/s
95th percentile per-packet one-way delay: 1.061 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-11-15 09:20:49

End at: 2018-11-15 09:21:19

Local clock offset: 4.533 ms

Remote clock offset: 0.692 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.23 Mbit/s

95th percentile per-packet one-way delay: 1.185 ms

Loss rate: 0.00%

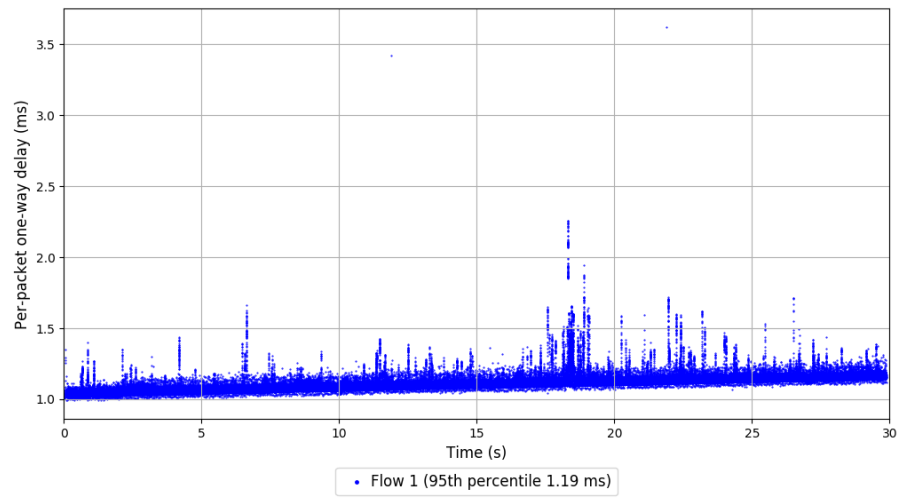
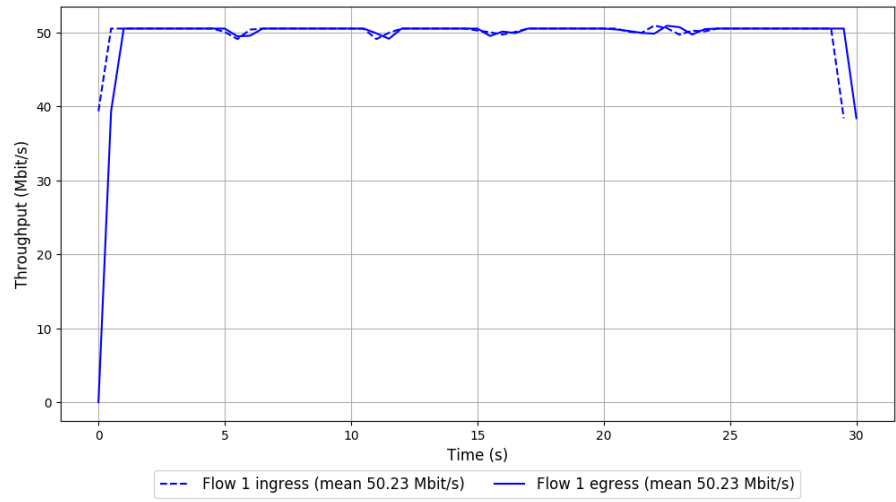
-- Flow 1:

Average throughput: 50.23 Mbit/s

95th percentile per-packet one-way delay: 1.185 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-11-15 09:47:52

End at: 2018-11-15 09:48:22

Local clock offset: 4.251 ms

Remote clock offset: 3.34 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 50.26 Mbit/s

95th percentile per-packet one-way delay: 1.056 ms

Loss rate: 0.04%

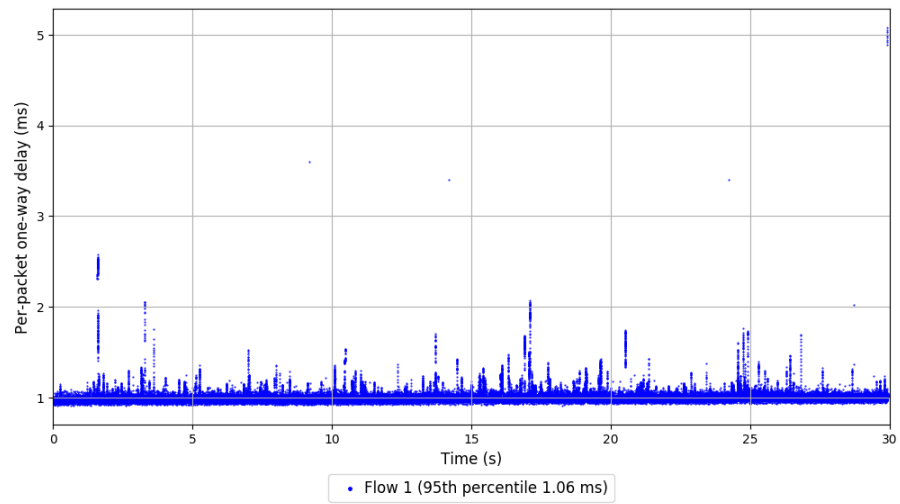
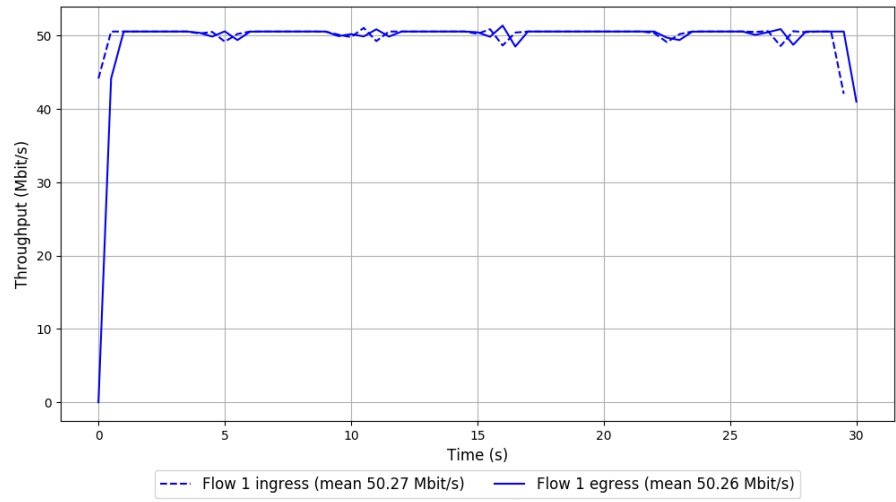
-- Flow 1:

Average throughput: 50.26 Mbit/s

95th percentile per-packet one-way delay: 1.056 ms

Loss rate: 0.04%

Run 5: Report of Sprout — Data Link

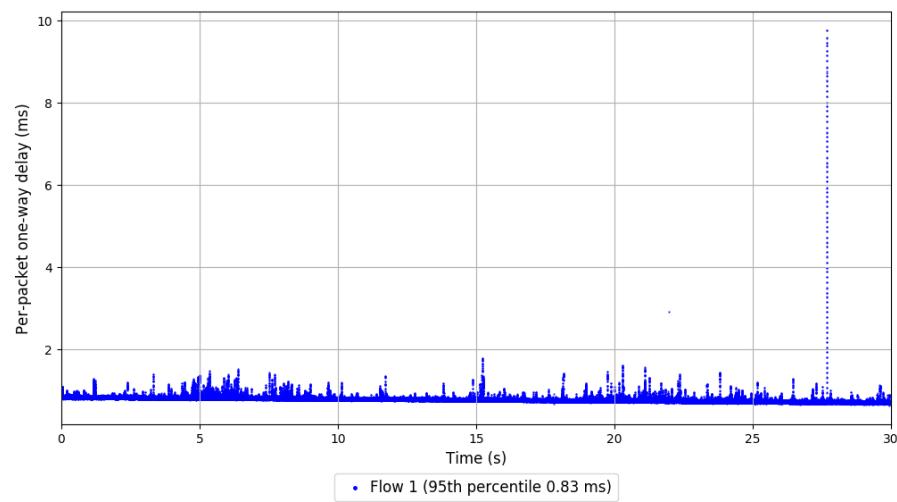
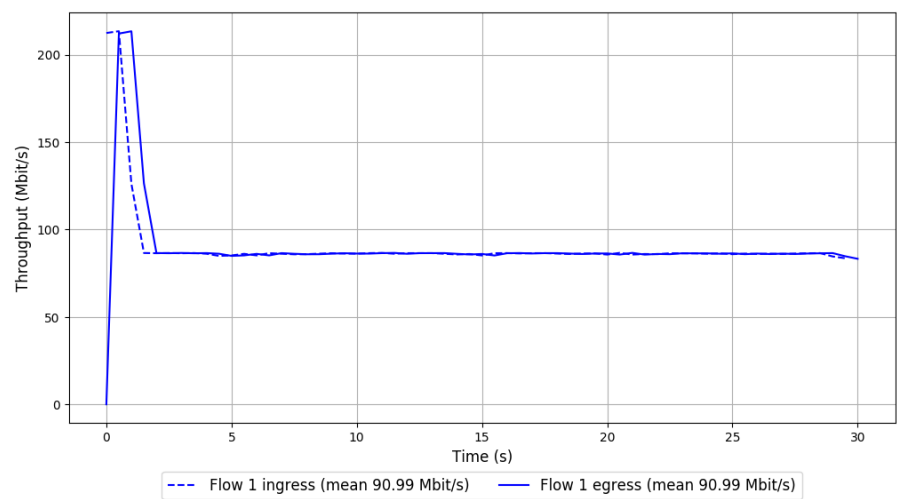


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 08:13:38
End at: 2018-11-15 08:14:08
Local clock offset: 6.205 ms
Remote clock offset: 0.948 ms

# Below is generated by plot.py at 2018-11-15 10:59:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.99 Mbit/s
95th percentile per-packet one-way delay: 0.835 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 90.99 Mbit/s
95th percentile per-packet one-way delay: 0.835 ms
Loss rate: 0.01%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-15 08:40:24

End at: 2018-11-15 08:40:54

Local clock offset: 5.262 ms

Remote clock offset: -1.911 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.38 Mbit/s

95th percentile per-packet one-way delay: 1.130 ms

Loss rate: 0.01%

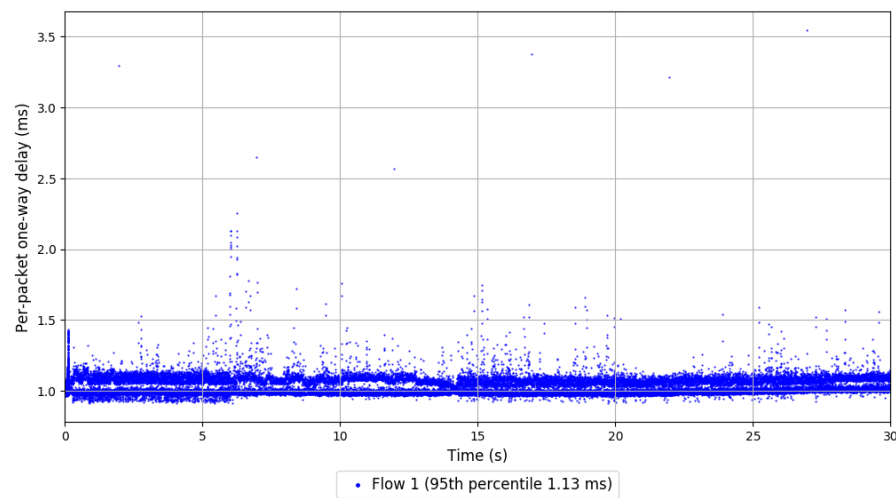
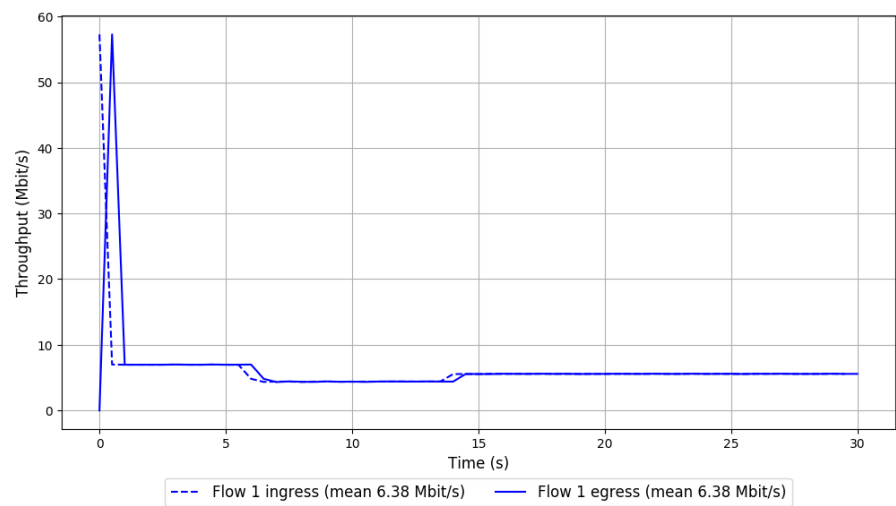
-- Flow 1:

Average throughput: 6.38 Mbit/s

95th percentile per-packet one-way delay: 1.130 ms

Loss rate: 0.01%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 09:07:02

End at: 2018-11-15 09:07:32

Local clock offset: 4.688 ms

Remote clock offset: -1.07 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.69 Mbit/s

95th percentile per-packet one-way delay: 1.012 ms

Loss rate: 0.00%

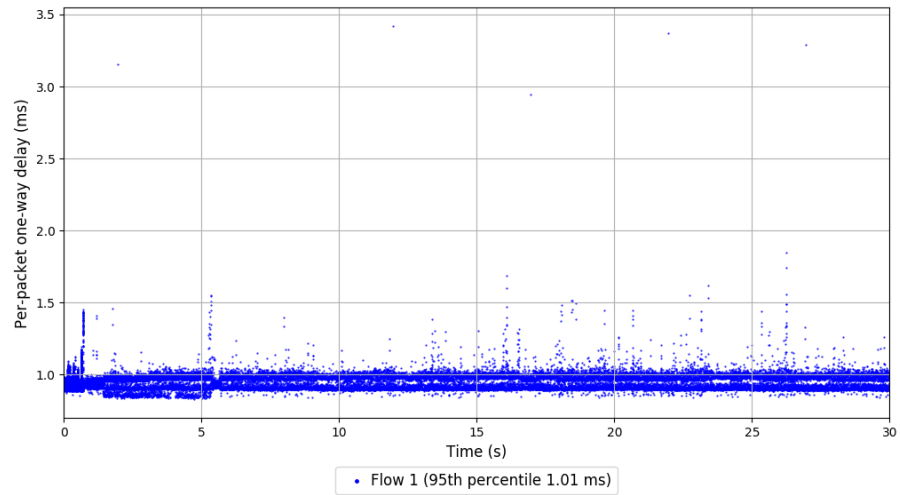
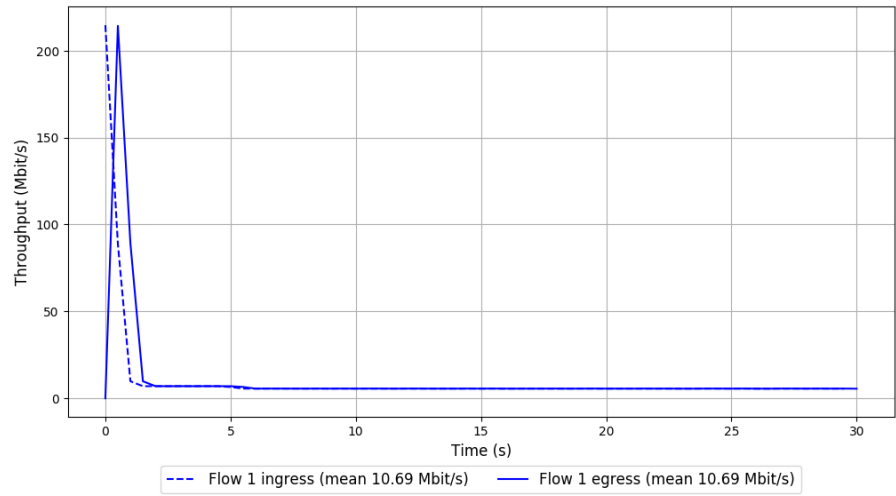
-- Flow 1:

Average throughput: 10.69 Mbit/s

95th percentile per-packet one-way delay: 1.012 ms

Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 09:34:01

End at: 2018-11-15 09:34:31

Local clock offset: 4.375 ms

Remote clock offset: 2.548 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.76 Mbit/s

95th percentile per-packet one-way delay: 1.161 ms

Loss rate: 0.01%

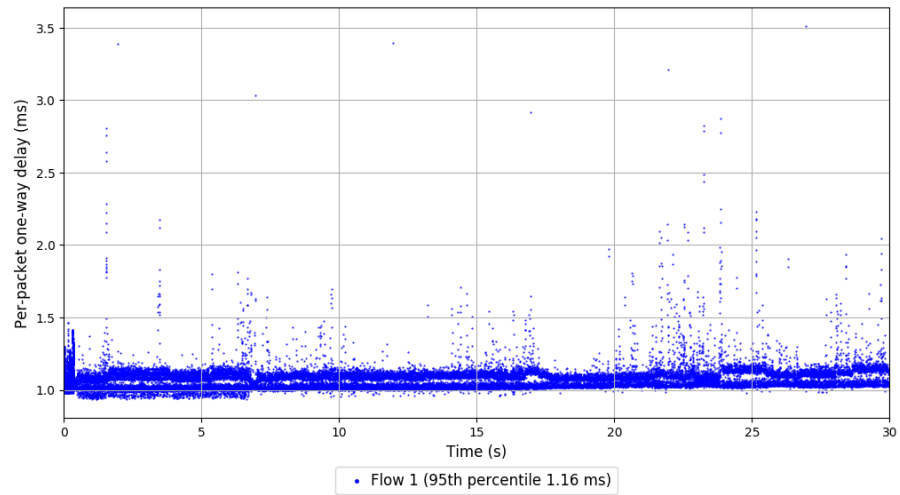
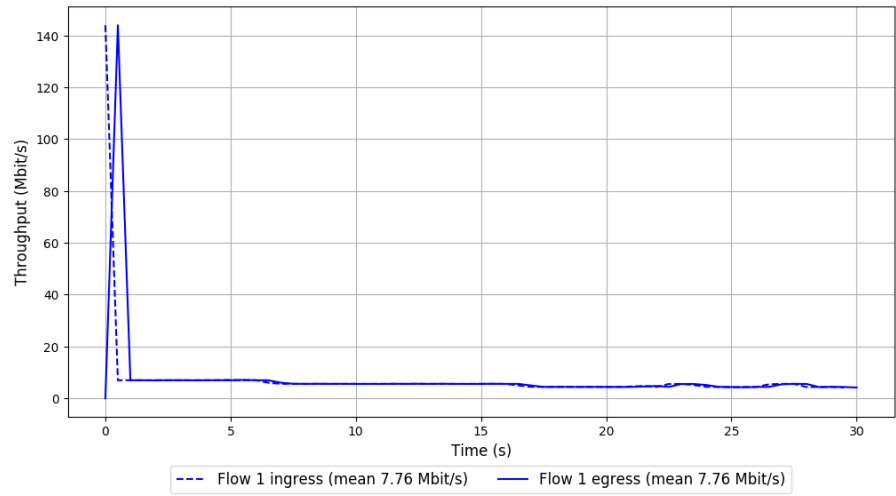
-- Flow 1:

Average throughput: 7.76 Mbit/s

95th percentile per-packet one-way delay: 1.161 ms

Loss rate: 0.01%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-15 10:01:04

End at: 2018-11-15 10:01:34

Local clock offset: 4.039 ms

Remote clock offset: 0.257 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.78 Mbit/s

95th percentile per-packet one-way delay: 1.387 ms

Loss rate: 0.02%

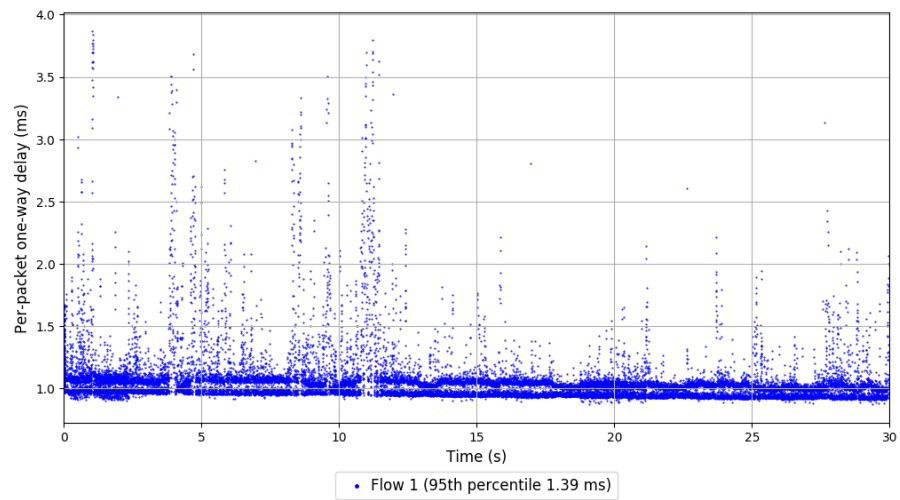
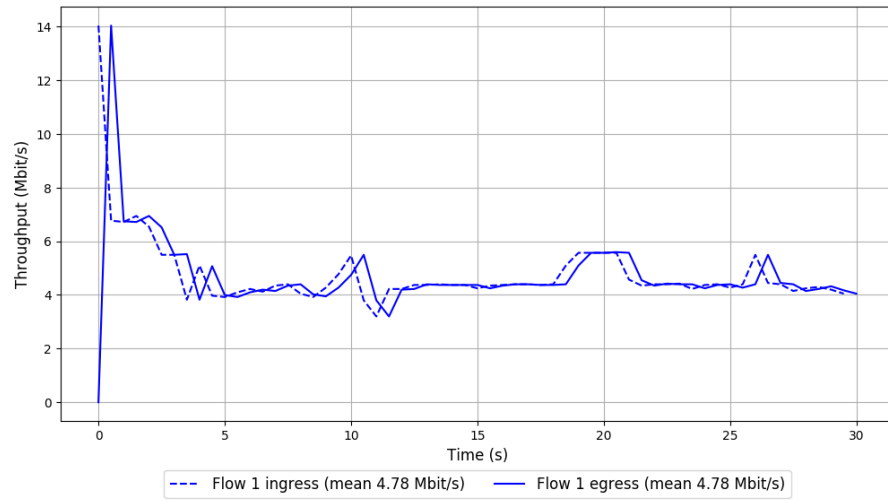
-- Flow 1:

Average throughput: 4.78 Mbit/s

95th percentile per-packet one-way delay: 1.387 ms

Loss rate: 0.02%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 08:18:08

End at: 2018-11-15 08:18:38

Local clock offset: 6.342 ms

Remote clock offset: 0.007 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 197.21 Mbit/s

95th percentile per-packet one-way delay: 0.946 ms

Loss rate: 0.01%

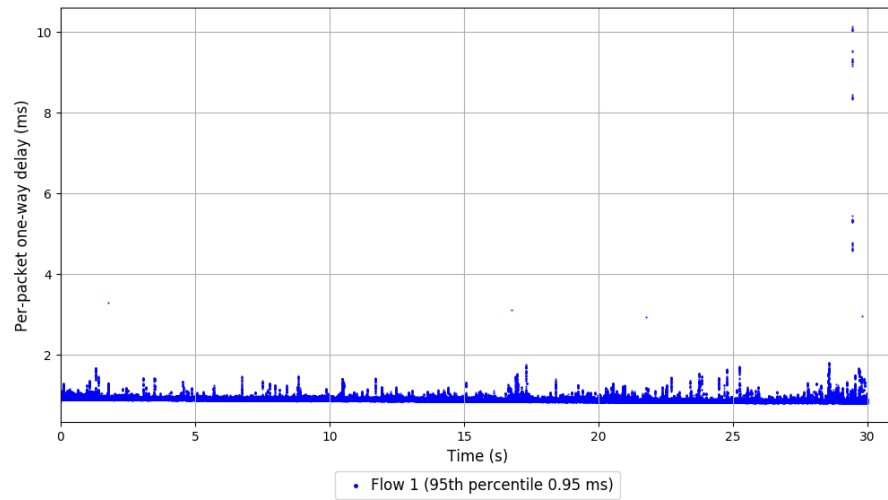
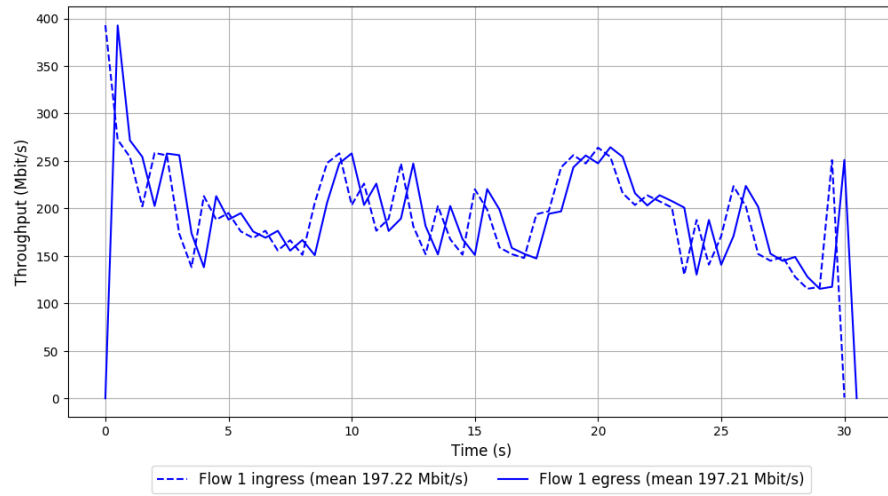
-- Flow 1:

Average throughput: 197.21 Mbit/s

95th percentile per-packet one-way delay: 0.946 ms

Loss rate: 0.01%

Run 1: Report of TCP Vegas — Data Link

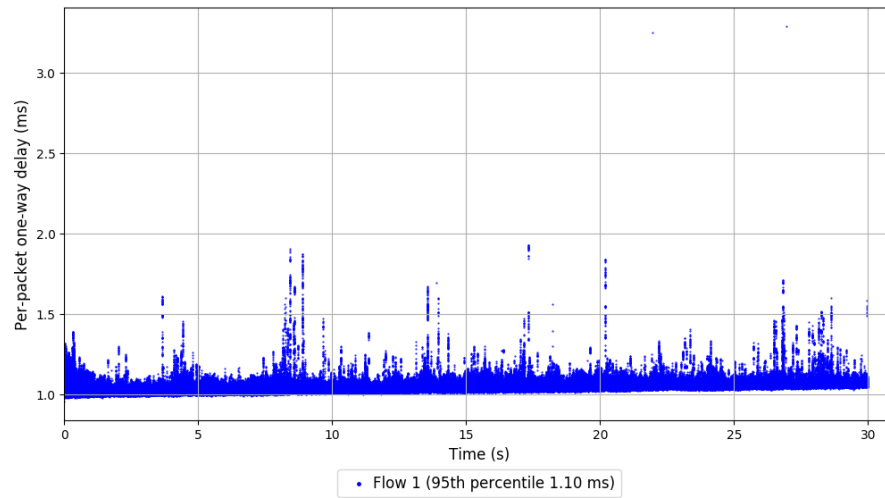
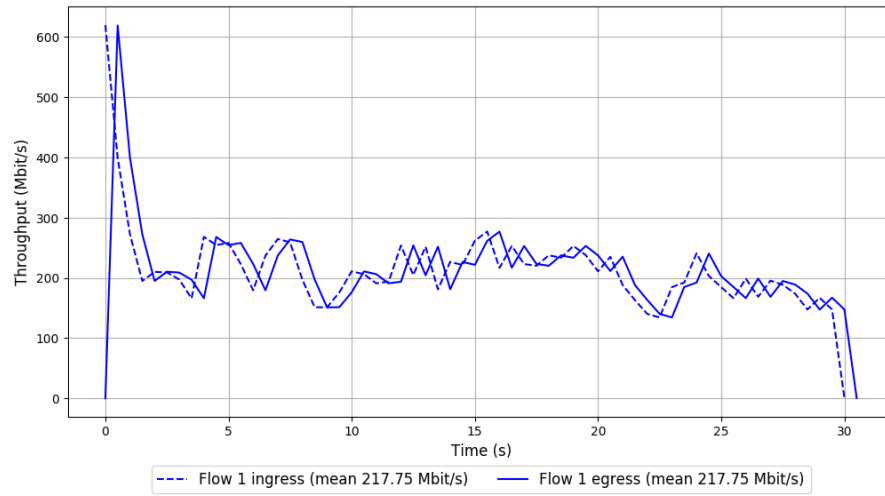


Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 08:44:34
End at: 2018-11-15 08:45:04
Local clock offset: 5.124 ms
Remote clock offset: -1.534 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 217.75 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 217.75 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link

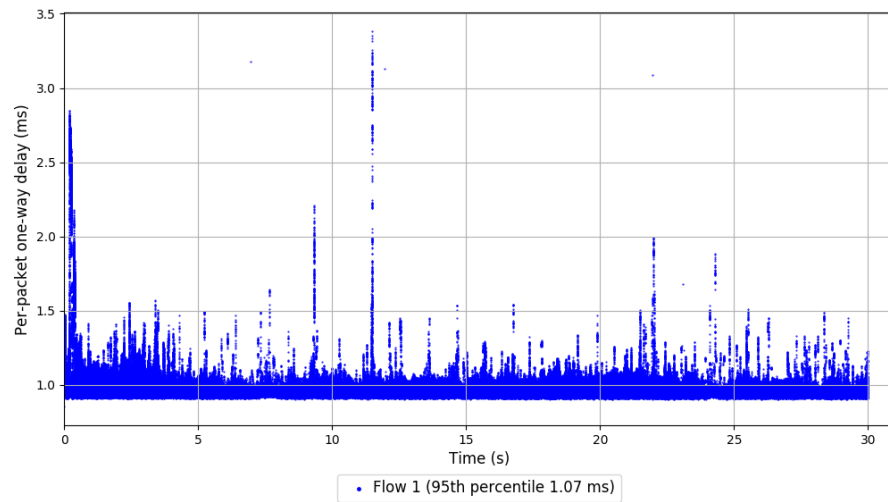
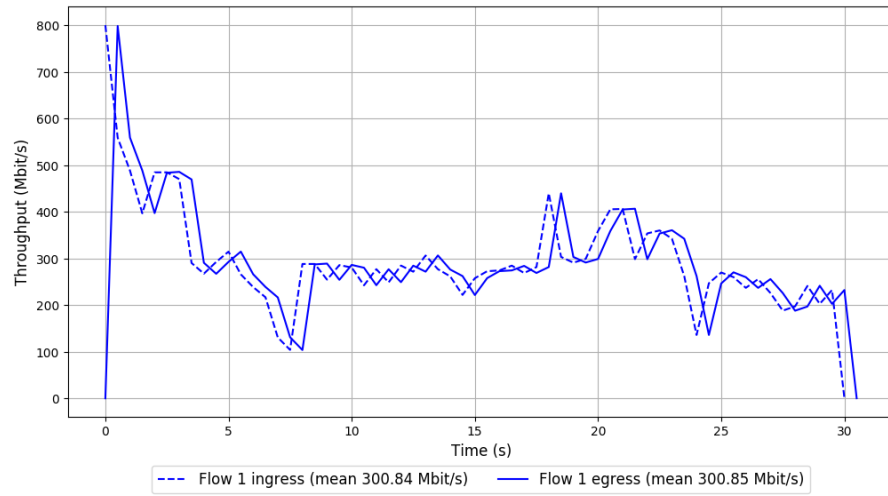


Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 09:11:30
End at: 2018-11-15 09:12:00
Local clock offset: 4.631 ms
Remote clock offset: -1.193 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 300.85 Mbit/s
95th percentile per-packet one-way delay: 1.071 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 300.85 Mbit/s
95th percentile per-packet one-way delay: 1.071 ms
Loss rate: 0.01%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 09:38:25

End at: 2018-11-15 09:38:55

Local clock offset: 4.321 ms

Remote clock offset: 2.862 ms

Below is generated by plot.py at 2018-11-15 10:59:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 252.52 Mbit/s

95th percentile per-packet one-way delay: 1.100 ms

Loss rate: 0.01%

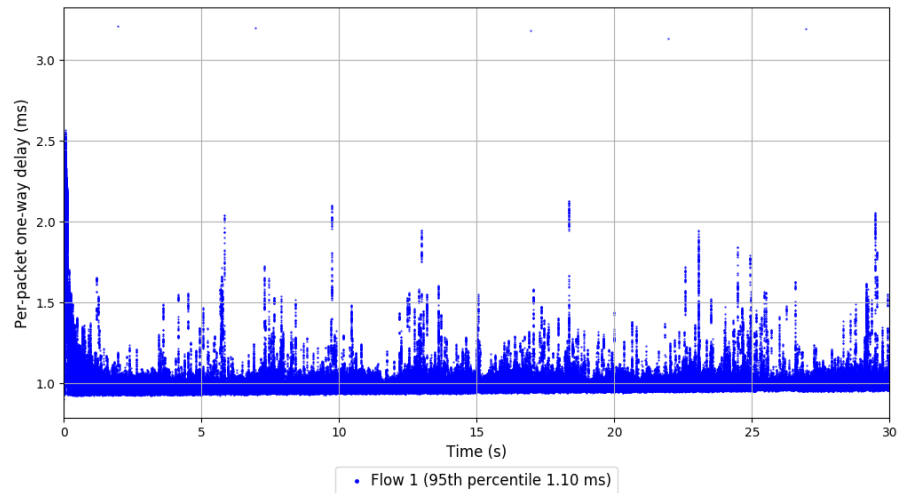
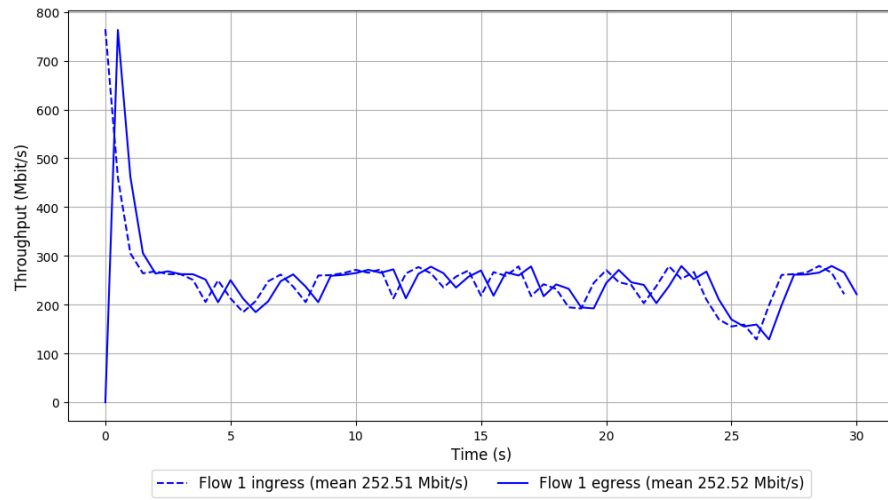
-- Flow 1:

Average throughput: 252.52 Mbit/s

95th percentile per-packet one-way delay: 1.100 ms

Loss rate: 0.01%

Run 4: Report of TCP Vegas — Data Link

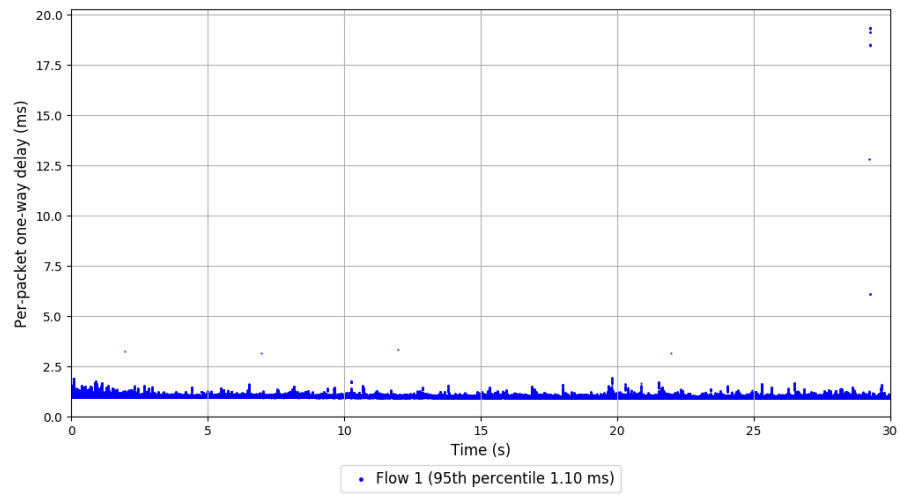
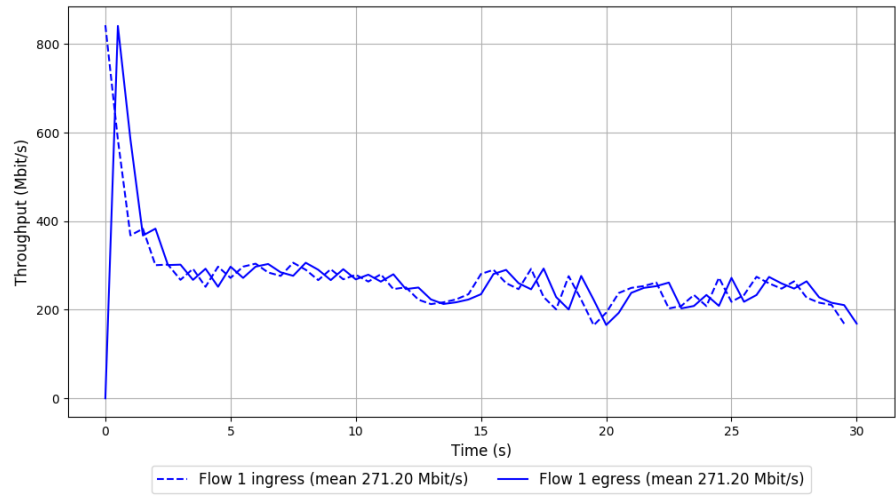


Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 10:05:33
End at: 2018-11-15 10:06:03
Local clock offset: 3.943 ms
Remote clock offset: -0.239 ms

Below is generated by plot.py at 2018-11-15 10:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 271.20 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 271.20 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-11-15 08:16:35

End at: 2018-11-15 08:17:05

Local clock offset: 6.283 ms

Remote clock offset: 0.235 ms

Below is generated by plot.py at 2018-11-15 11:00:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 349.96 Mbit/s

95th percentile per-packet one-way delay: 2.242 ms

Loss rate: 0.01%

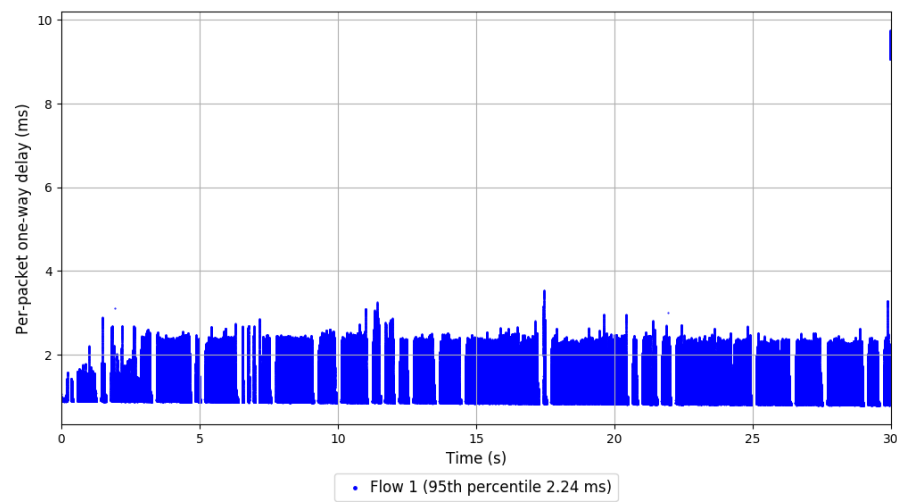
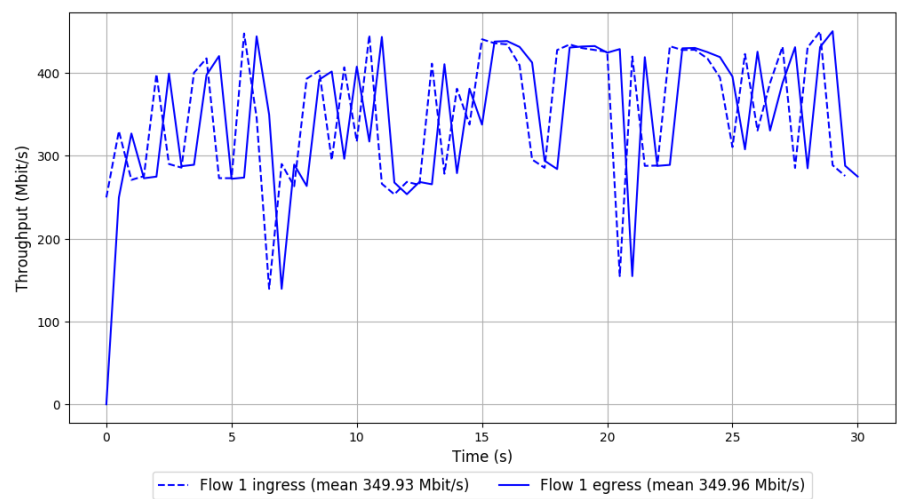
-- Flow 1:

Average throughput: 349.96 Mbit/s

95th percentile per-packet one-way delay: 2.242 ms

Loss rate: 0.01%

Run 1: Report of Verus — Data Link

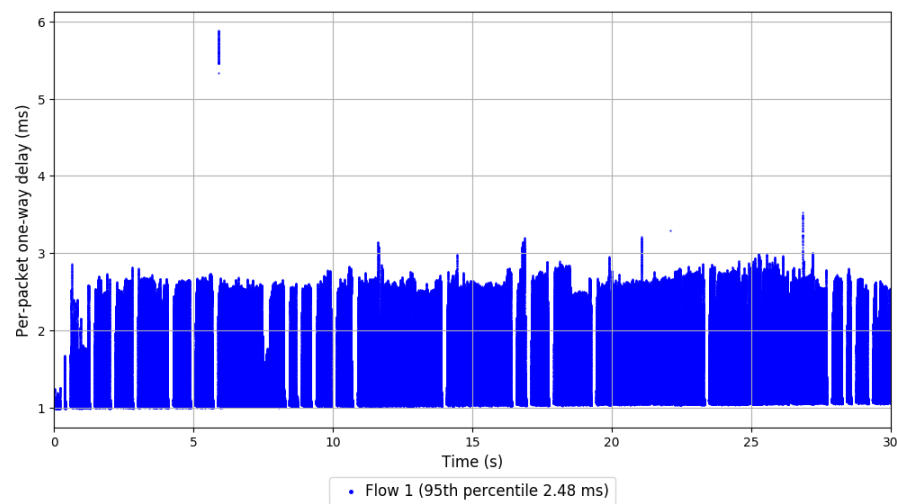
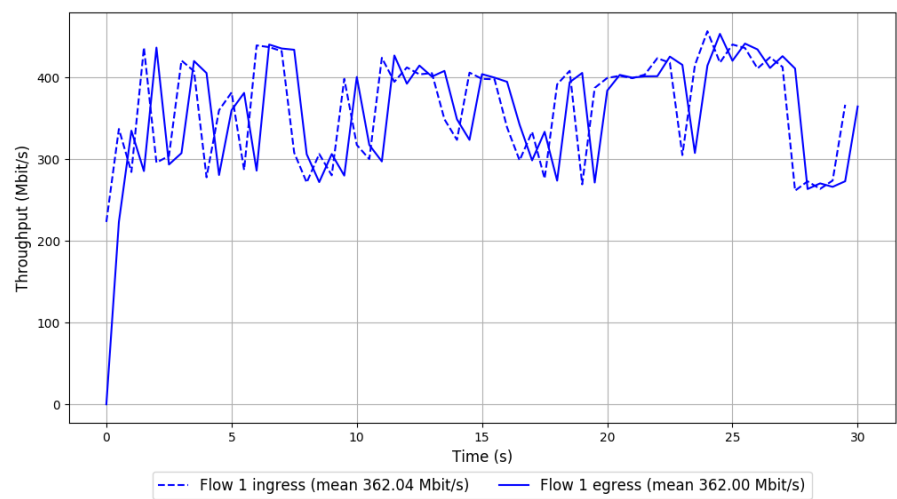


Run 2: Statistics of Verus

Start at: 2018-11-15 08:43:00
End at: 2018-11-15 08:43:30
Local clock offset: 5.174 ms
Remote clock offset: -1.688 ms

Below is generated by plot.py at 2018-11-15 11:01:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 362.00 Mbit/s
95th percentile per-packet one-way delay: 2.479 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 362.00 Mbit/s
95th percentile per-packet one-way delay: 2.479 ms
Loss rate: 0.01%

Run 2: Report of Verus — Data Link

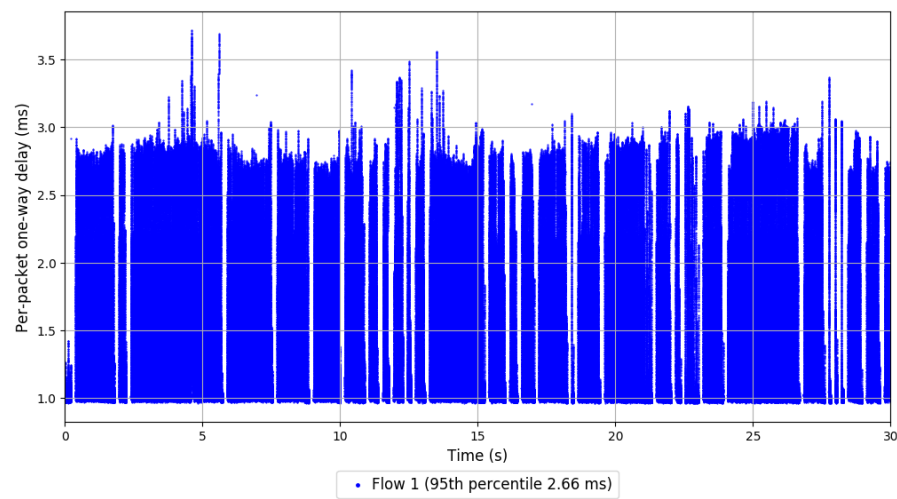
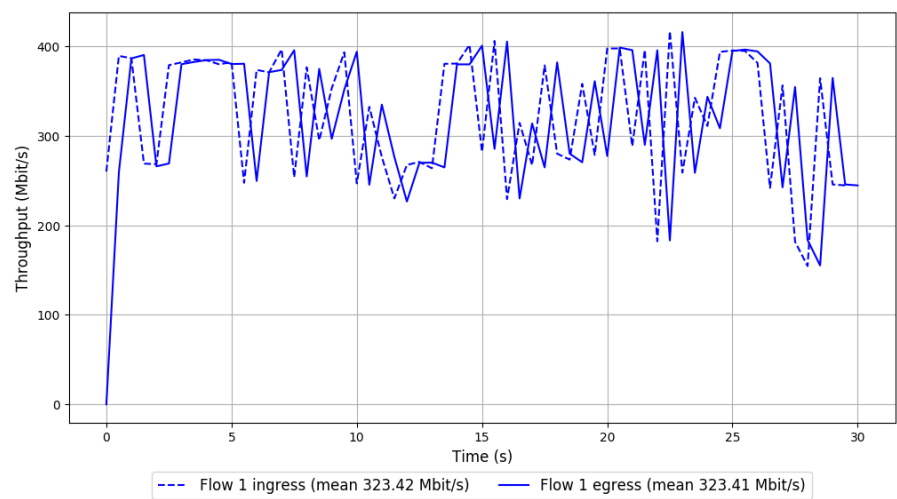


Run 3: Statistics of Verus

Start at: 2018-11-15 09:09:58
End at: 2018-11-15 09:10:28
Local clock offset: 4.661 ms
Remote clock offset: -1.214 ms

Below is generated by plot.py at 2018-11-15 11:01:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 323.41 Mbit/s
95th percentile per-packet one-way delay: 2.656 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 323.41 Mbit/s
95th percentile per-packet one-way delay: 2.656 ms
Loss rate: 0.00%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-11-15 09:36:57

End at: 2018-11-15 09:37:28

Local clock offset: 4.339 ms

Remote clock offset: 2.71 ms

Below is generated by plot.py at 2018-11-15 11:01:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 227.94 Mbit/s

95th percentile per-packet one-way delay: 2.176 ms

Loss rate: 0.01%

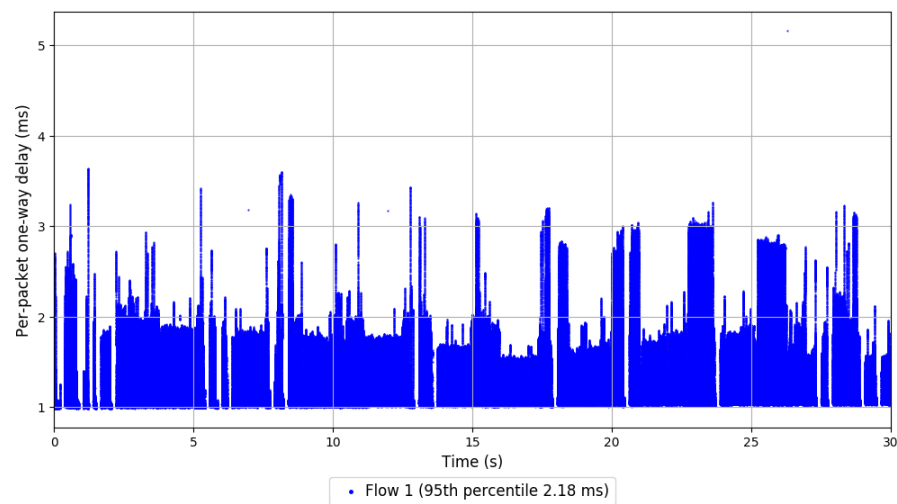
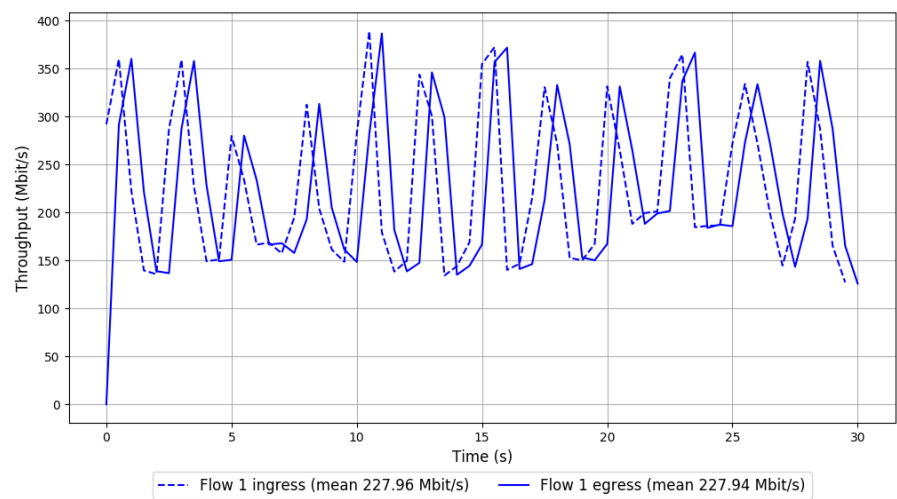
-- Flow 1:

Average throughput: 227.94 Mbit/s

95th percentile per-packet one-way delay: 2.176 ms

Loss rate: 0.01%

Run 4: Report of Verus — Data Link

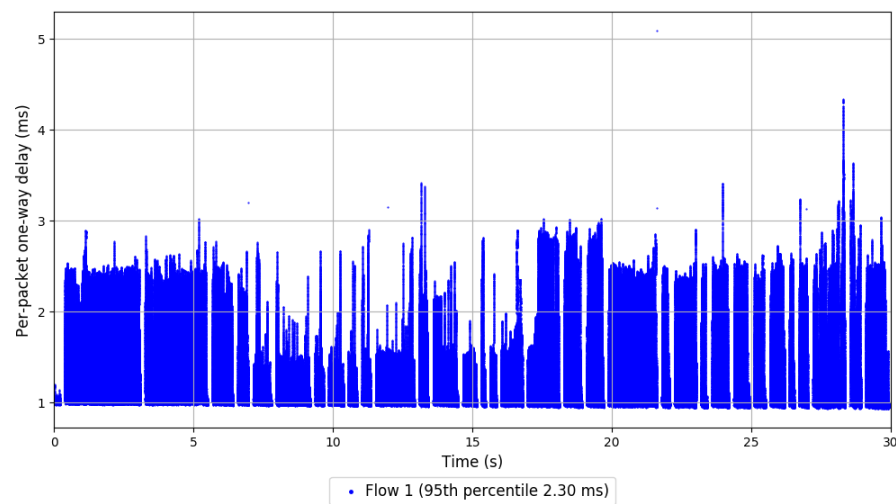
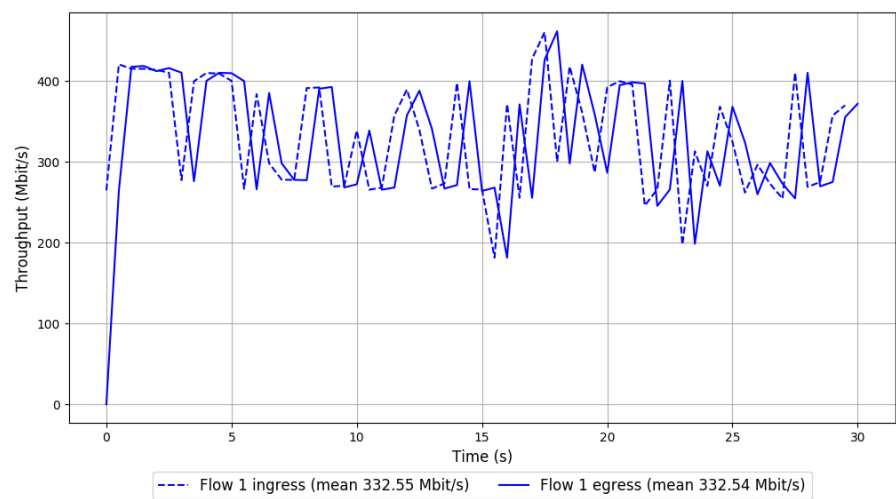


Run 5: Statistics of Verus

Start at: 2018-11-15 10:04:01
End at: 2018-11-15 10:04:31
Local clock offset: 3.979 ms
Remote clock offset: -0.098 ms

Below is generated by plot.py at 2018-11-15 11:02:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 332.54 Mbit/s
95th percentile per-packet one-way delay: 2.298 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 332.54 Mbit/s
95th percentile per-packet one-way delay: 2.298 ms
Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 08:19:33

End at: 2018-11-15 08:20:03

Local clock offset: 6.365 ms

Remote clock offset: -0.199 ms

Below is generated by plot.py at 2018-11-15 11:02:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 273.08 Mbit/s

95th percentile per-packet one-way delay: 0.888 ms

Loss rate: 0.01%

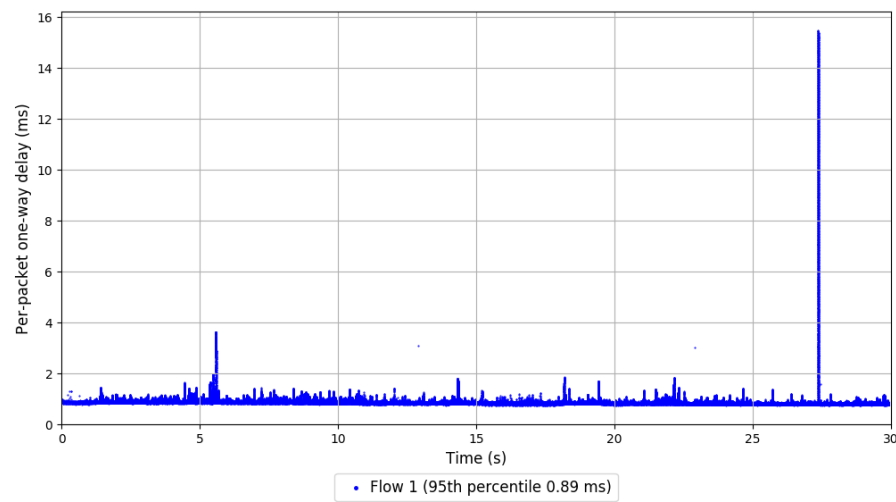
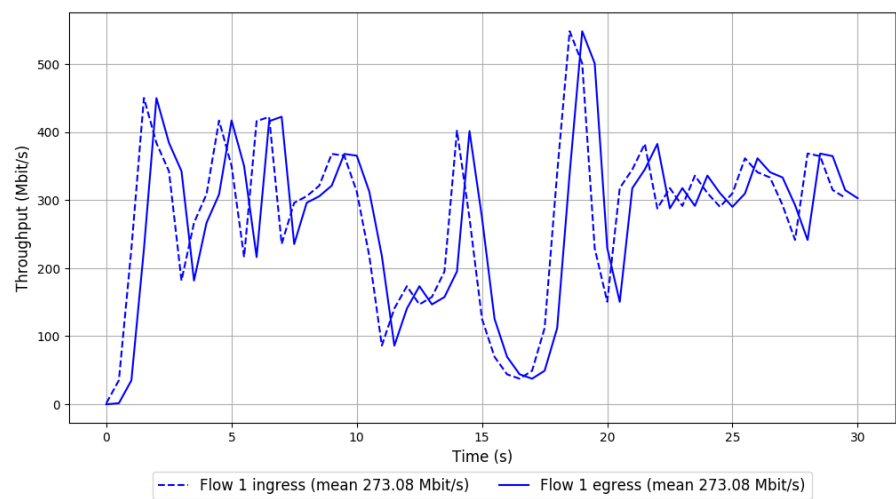
-- Flow 1:

Average throughput: 273.08 Mbit/s

95th percentile per-packet one-way delay: 0.888 ms

Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link

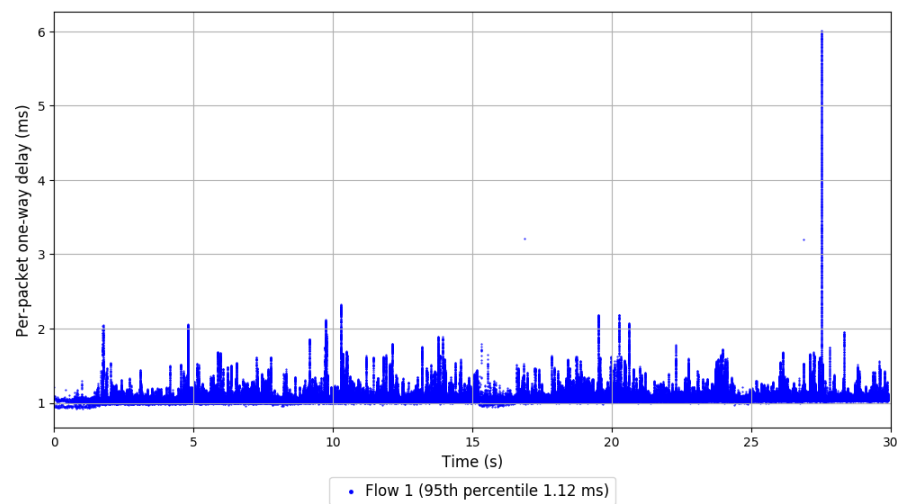
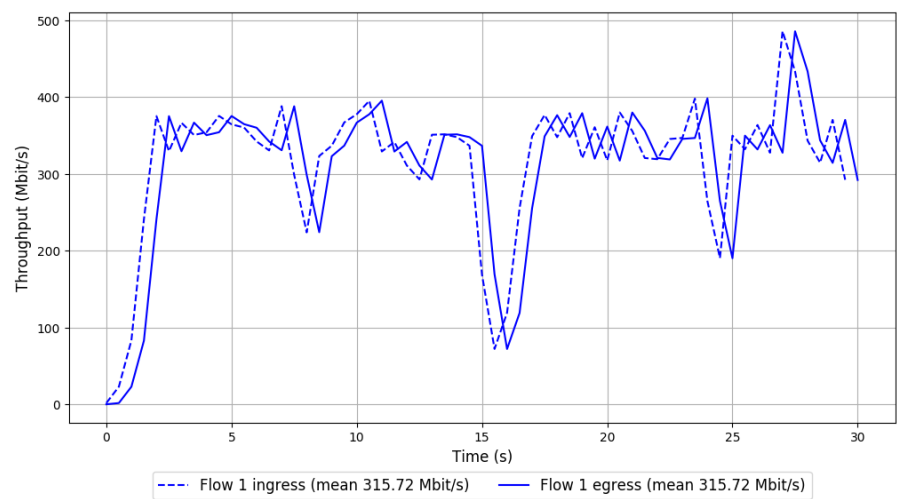


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 08:45:59
End at: 2018-11-15 08:46:29
Local clock offset: 5.072 ms
Remote clock offset: -1.446 ms

Below is generated by plot.py at 2018-11-15 11:02:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 315.72 Mbit/s
95th percentile per-packet one-way delay: 1.122 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 315.72 Mbit/s
95th percentile per-packet one-way delay: 1.122 ms
Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link

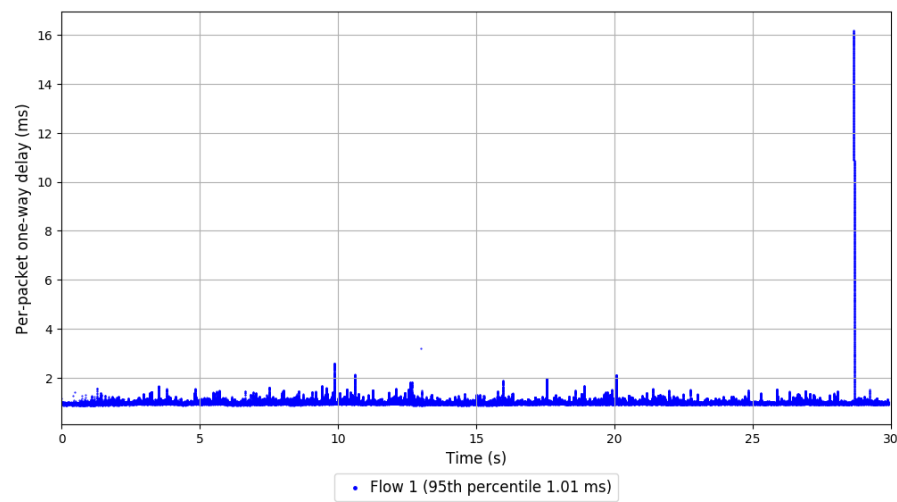
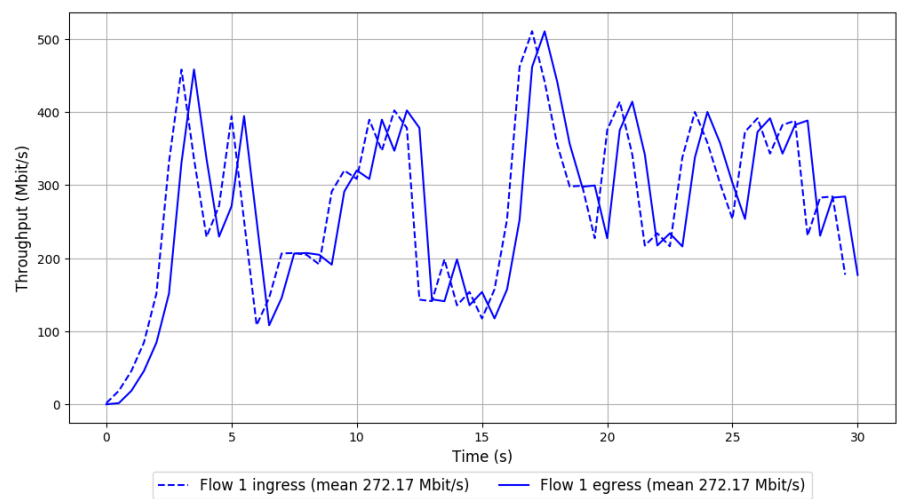


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 09:12:57
End at: 2018-11-15 09:13:27
Local clock offset: 4.61 ms
Remote clock offset: -1.255 ms

Below is generated by plot.py at 2018-11-15 11:02:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 272.17 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 272.17 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 09:39:51

End at: 2018-11-15 09:40:21

Local clock offset: 4.32 ms

Remote clock offset: 2.993 ms

Below is generated by plot.py at 2018-11-15 11:02:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 355.08 Mbit/s

95th percentile per-packet one-way delay: 1.032 ms

Loss rate: 0.01%

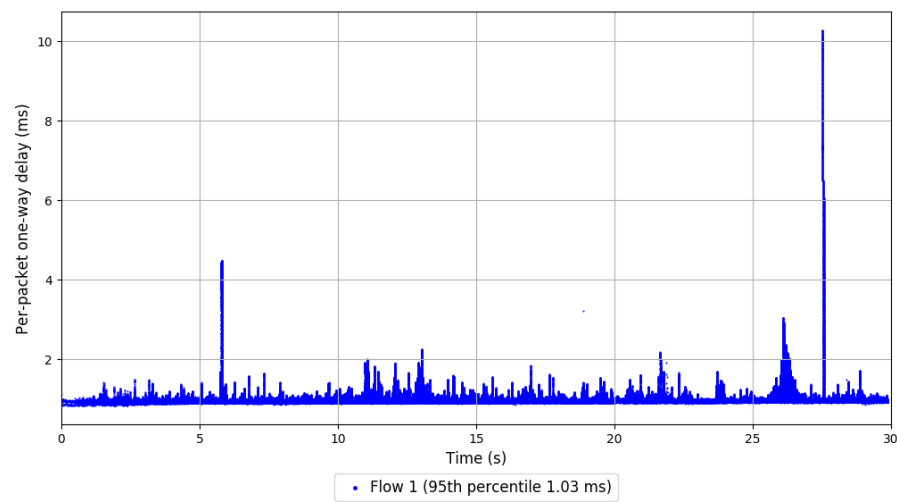
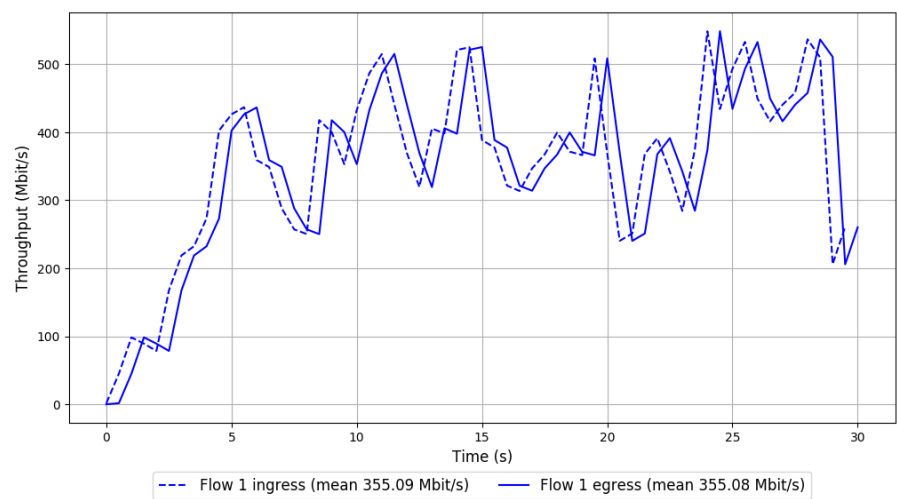
-- Flow 1:

Average throughput: 355.08 Mbit/s

95th percentile per-packet one-way delay: 1.032 ms

Loss rate: 0.01%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 10:07:00

End at: 2018-11-15 10:07:30

Local clock offset: 3.926 ms

Remote clock offset: -0.321 ms

Below is generated by plot.py at 2018-11-15 11:02:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 326.35 Mbit/s

95th percentile per-packet one-way delay: 1.048 ms

Loss rate: 0.01%

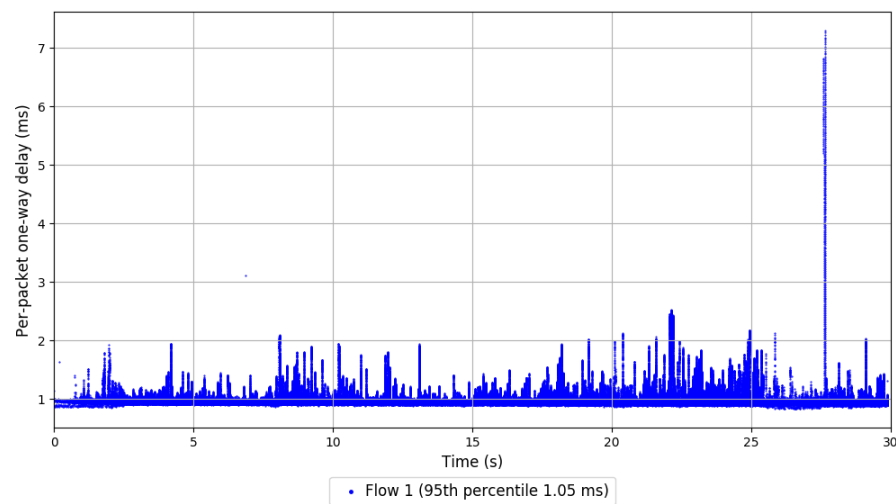
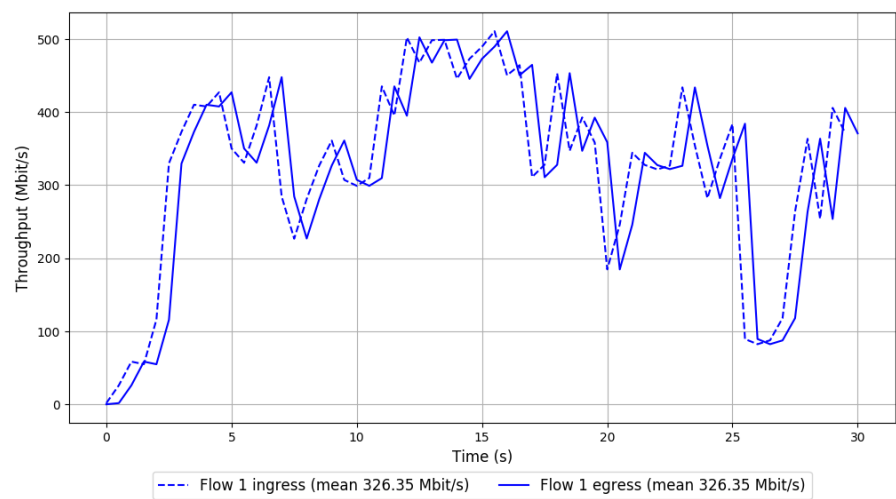
-- Flow 1:

Average throughput: 326.35 Mbit/s

95th percentile per-packet one-way delay: 1.048 ms

Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-11-15 08:03:06

End at: 2018-11-15 08:03:36

Local clock offset: 5.844 ms

Remote clock offset: 3.174 ms

Below is generated by plot.py at 2018-11-15 11:02:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 0.986 ms

Loss rate: 0.00%

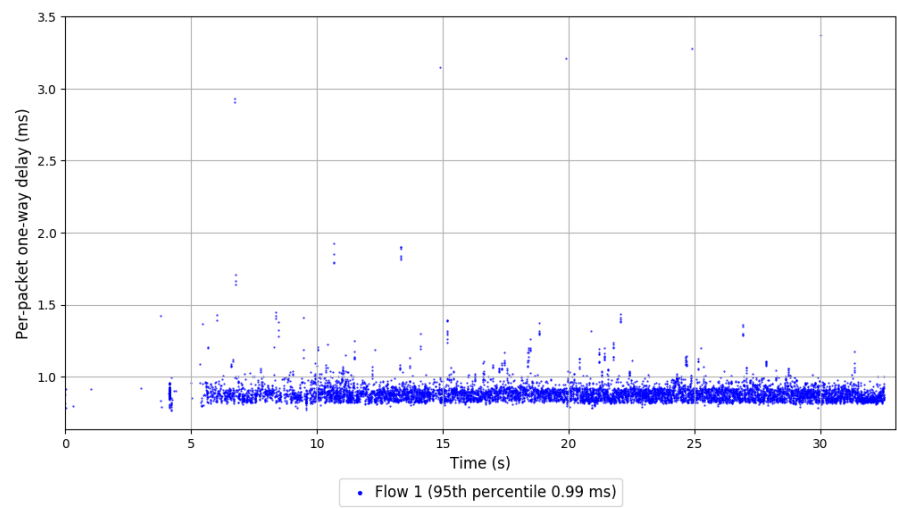
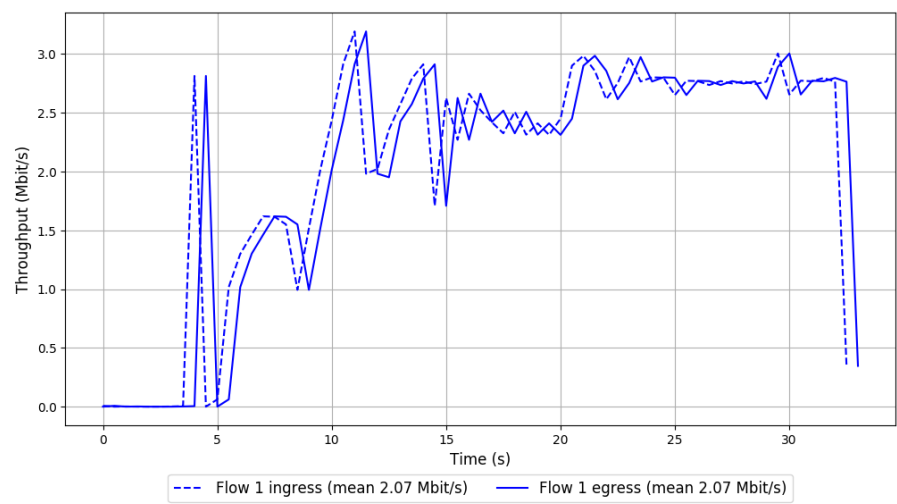
-- Flow 1:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 0.986 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

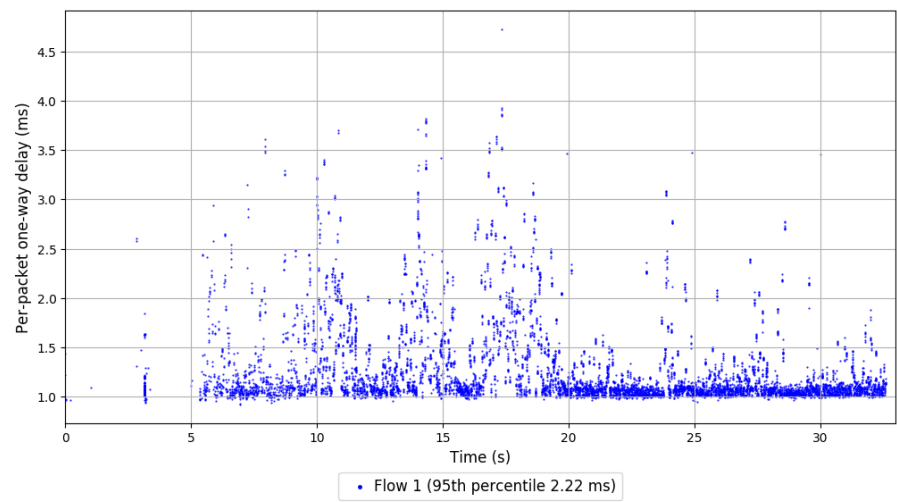
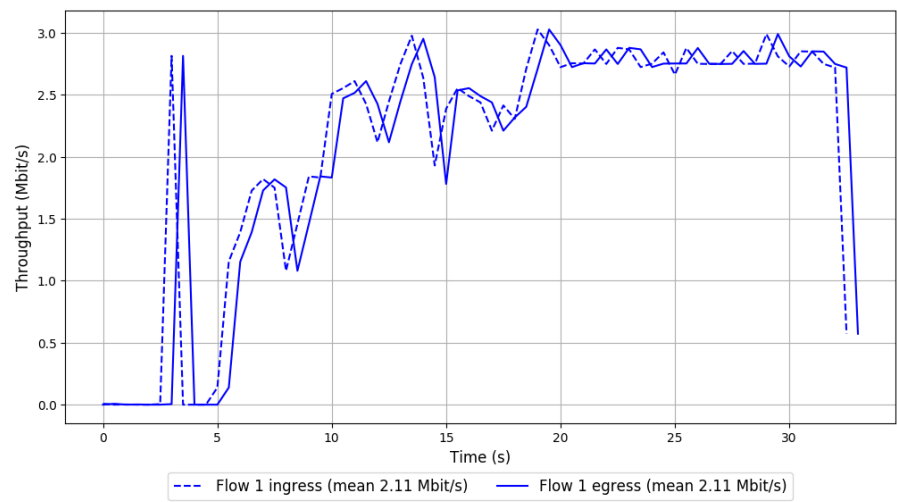


Run 2: Statistics of WebRTC media

Start at: 2018-11-15 08:29:53
End at: 2018-11-15 08:30:23
Local clock offset: 6.106 ms
Remote clock offset: -1.253 ms

Below is generated by plot.py at 2018-11-15 11:02:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 2.221 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 2.221 ms
Loss rate: 0.07%

Run 2: Report of WebRTC media — Data Link

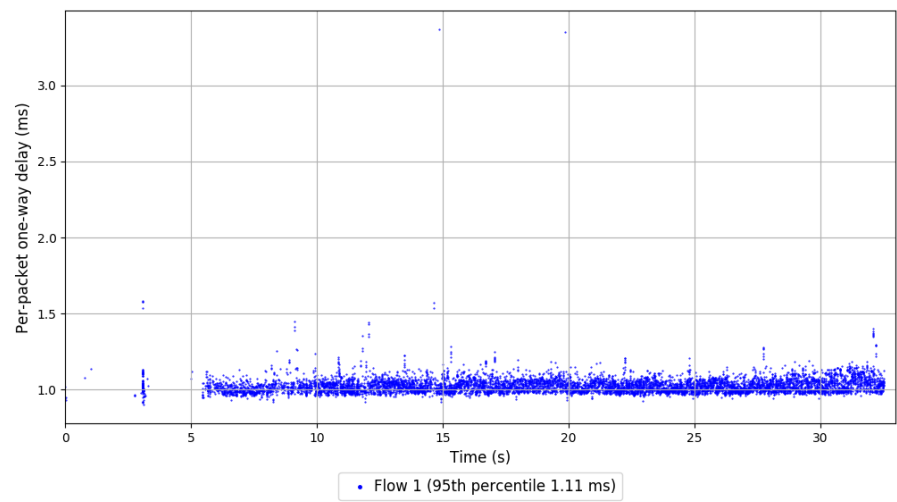
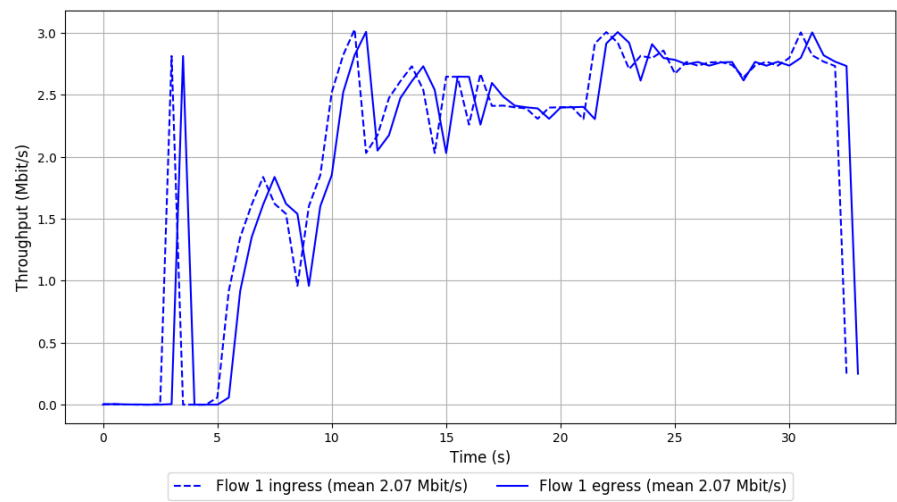


Run 3: Statistics of WebRTC media

Start at: 2018-11-15 08:56:30
End at: 2018-11-15 08:57:00
Local clock offset: 4.905 ms
Remote clock offset: -1.115 ms

Below is generated by plot.py at 2018-11-15 11:02:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-11-15 09:23:29

End at: 2018-11-15 09:23:59

Local clock offset: 4.51 ms

Remote clock offset: 1.252 ms

Below is generated by plot.py at 2018-11-15 11:02:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.10 Mbit/s

95th percentile per-packet one-way delay: 1.173 ms

Loss rate: 0.06%

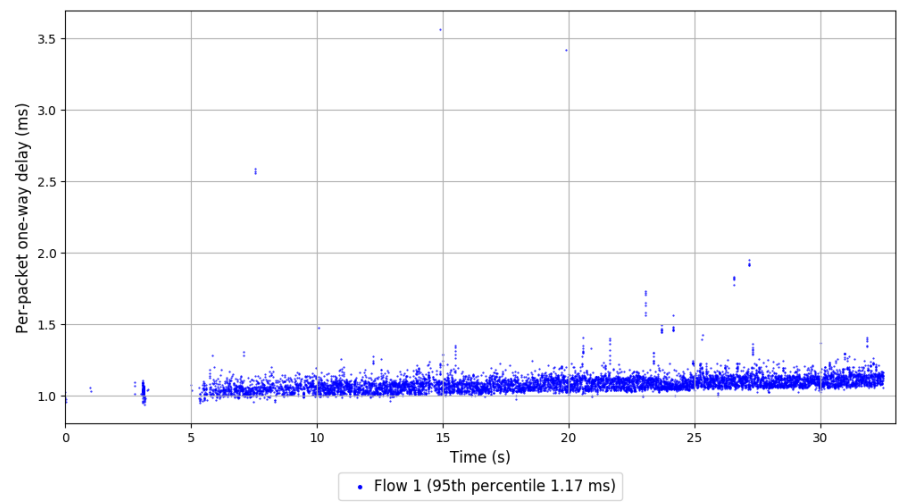
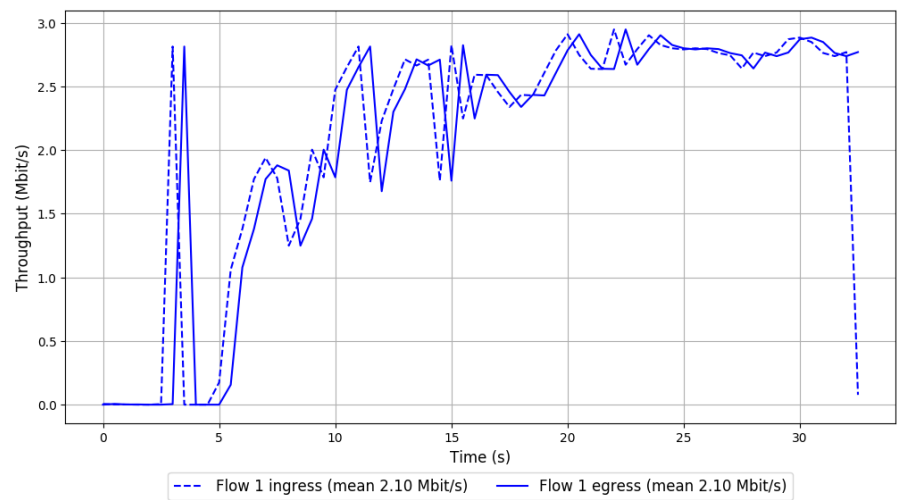
-- Flow 1:

Average throughput: 2.10 Mbit/s

95th percentile per-packet one-way delay: 1.173 ms

Loss rate: 0.06%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-15 09:50:32

End at: 2018-11-15 09:51:02

Local clock offset: 4.199 ms

Remote clock offset: 2.774 ms

Below is generated by plot.py at 2018-11-15 11:02:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 0.919 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 0.919 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

