

Pantheon Report

Generated at 2018-09-06 07:06:44 (UTC).

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

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.google.com` and have been applied to correct the timestamps in logs.

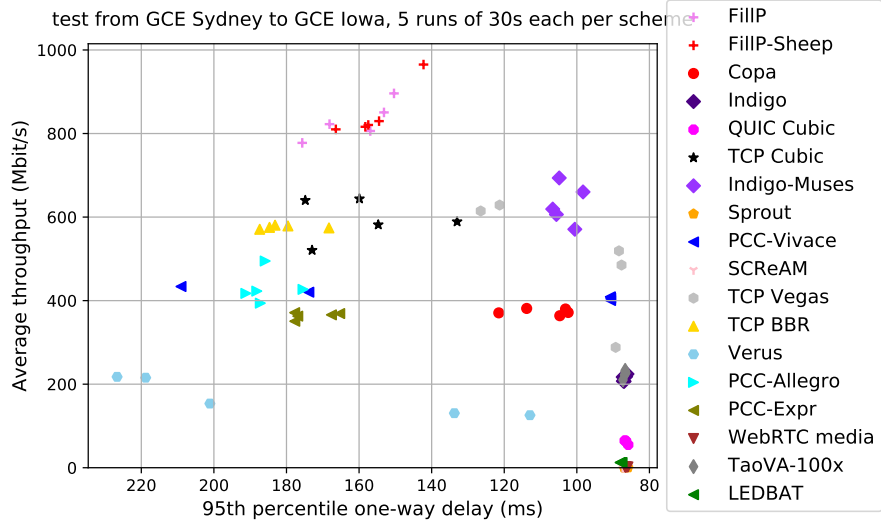
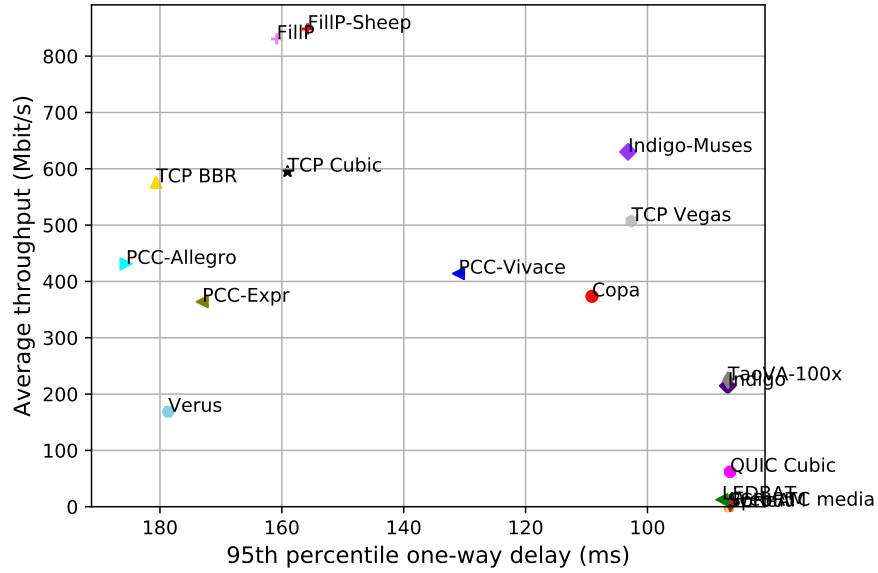
System info:

```
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
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 GCE Sydney to GCE Iowa, 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	575.96	180.62	1.53
Copa	5	373.48	109.11	0.00
TCP Cubic	5	595.00	159.07	0.16
FillP	5	830.54	160.84	4.73
FillP-Sheep	5	848.27	155.78	4.07
Indigo	5	214.71	86.82	0.00
LEDBAT	5	12.53	87.78	0.00
Indigo-Muses	5	629.99	103.19	0.00
PCC-Allegro	5	431.16	185.58	2.42
PCC-Expr	5	363.95	173.06	2.18
QUIC Cubic	4	62.08	86.44	0.00
SCReAM	5	0.22	86.88	0.00
Sprout	5	0.26	86.64	0.00
TaoVA-100x	5	224.45	86.80	0.00
TCP Vegas	5	507.14	102.63	0.03
Verus	5	168.62	178.65	4.47
PCC-Vivace	5	413.89	131.01	0.19
WebRTC media	5	1.82	86.40	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-09-06 03:37:28

End at: 2018-09-06 03:37:58

Local clock offset: 12.819 ms

Remote clock offset: 13.995 ms

Below is generated by plot.py at 2018-09-06 05:49:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 574.10 Mbit/s

95th percentile per-packet one-way delay: 168.295 ms

Loss rate: 0.64%

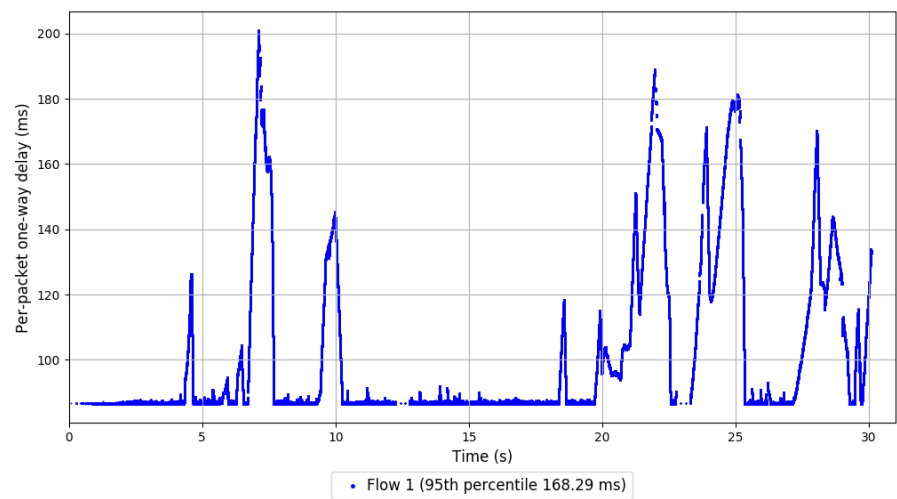
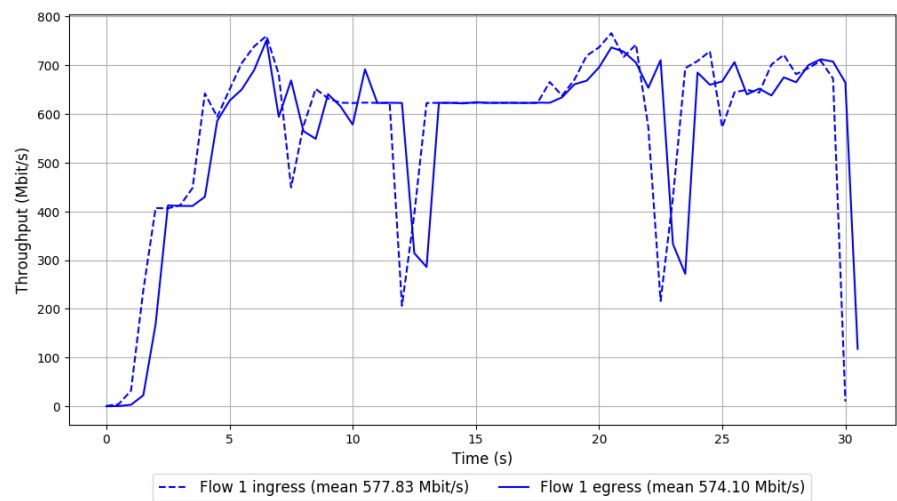
-- Flow 1:

Average throughput: 574.10 Mbit/s

95th percentile per-packet one-way delay: 168.295 ms

Loss rate: 0.64%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-06 04:04:12

End at: 2018-09-06 04:04:42

Local clock offset: 21.353 ms

Remote clock offset: 22.91 ms

Below is generated by plot.py at 2018-09-06 05:49:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 570.81 Mbit/s

95th percentile per-packet one-way delay: 187.378 ms

Loss rate: 2.63%

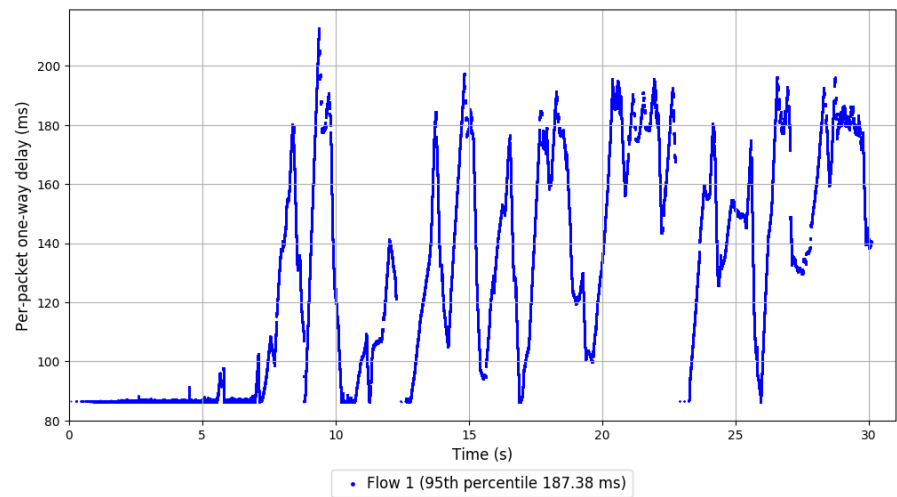
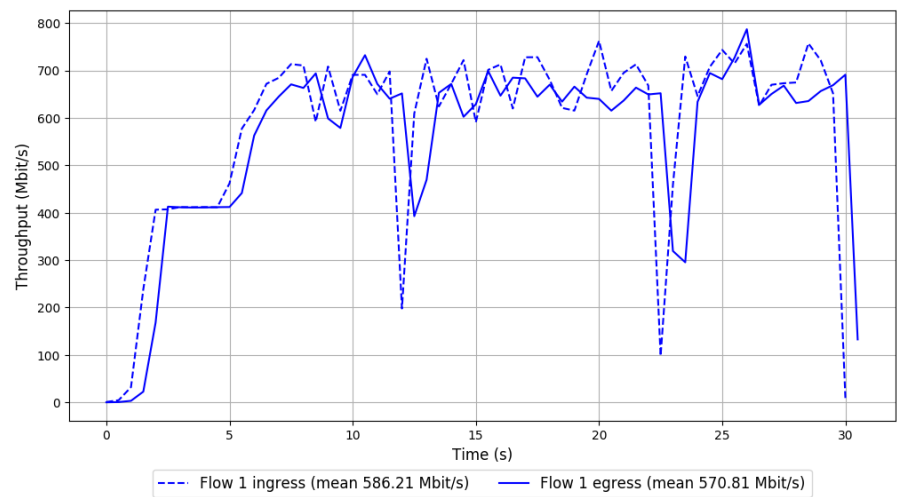
-- Flow 1:

Average throughput: 570.81 Mbit/s

95th percentile per-packet one-way delay: 187.378 ms

Loss rate: 2.63%

Run 2: Report of TCP BBR — Data Link

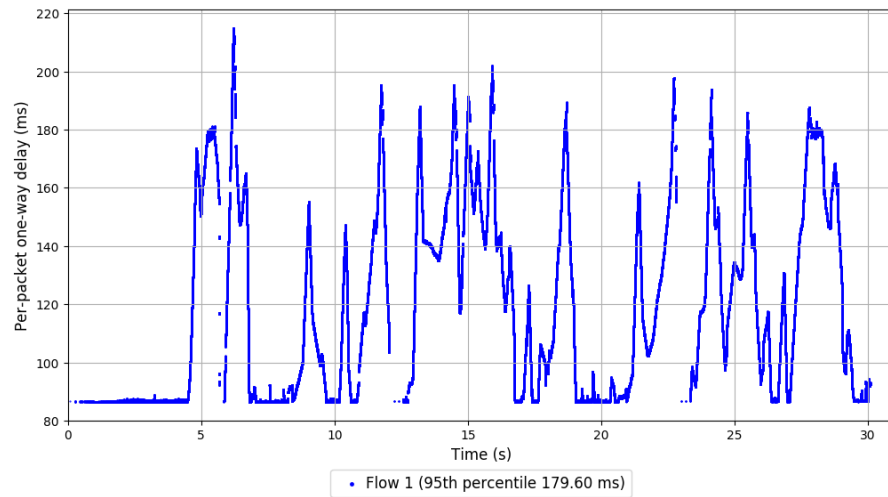
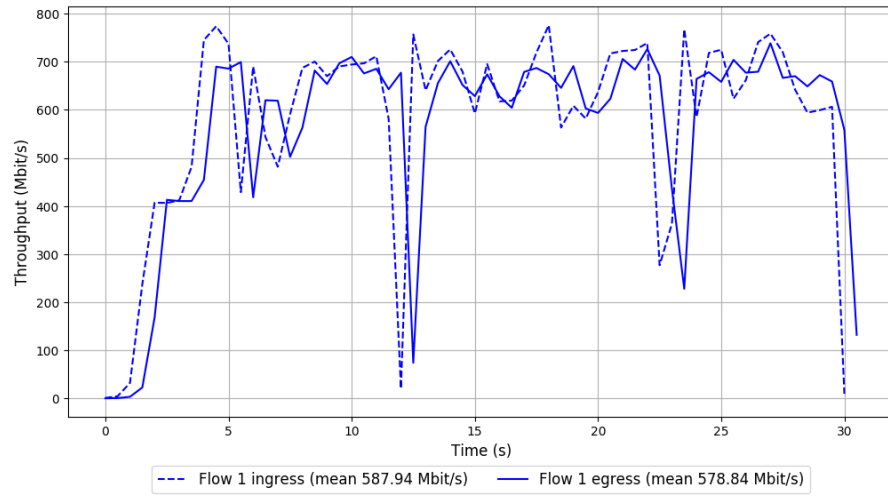


Run 3: Statistics of TCP BBR

Start at: 2018-09-06 04:30:48
End at: 2018-09-06 04:31:18
Local clock offset: 19.915 ms
Remote clock offset: 19.248 ms

Below is generated by plot.py at 2018-09-06 05:49:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 578.84 Mbit/s
95th percentile per-packet one-way delay: 179.598 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 578.84 Mbit/s
95th percentile per-packet one-way delay: 179.598 ms
Loss rate: 1.55%

Run 3: Report of TCP BBR — Data Link

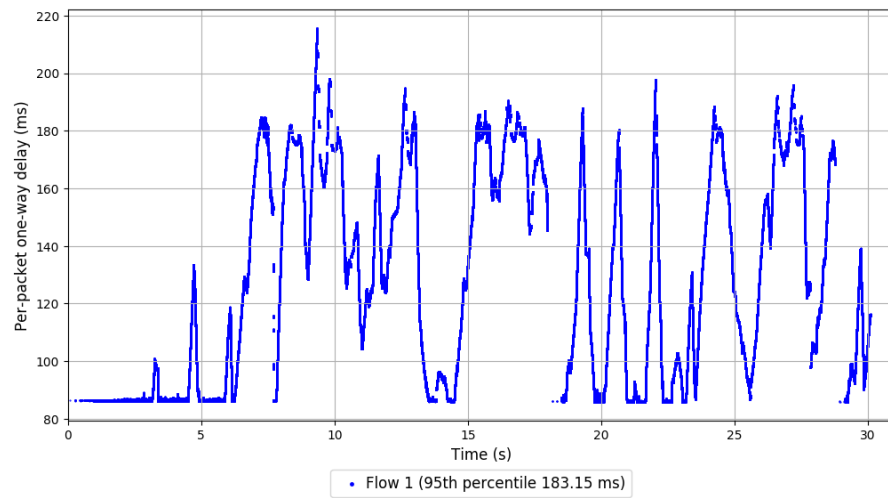
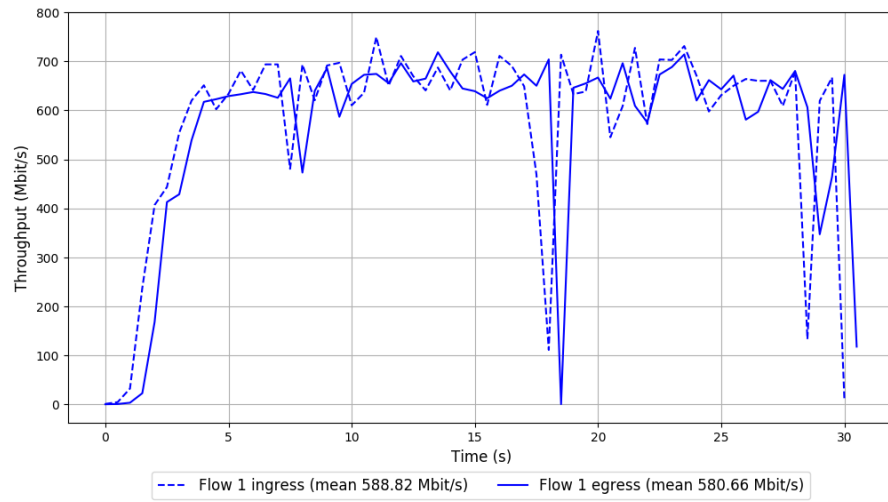


Run 4: Statistics of TCP BBR

Start at: 2018-09-06 04:57:15
End at: 2018-09-06 04:57:45
Local clock offset: 19.243 ms
Remote clock offset: 10.495 ms

Below is generated by plot.py at 2018-09-06 05:49:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 580.66 Mbit/s
95th percentile per-packet one-way delay: 183.146 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 580.66 Mbit/s
95th percentile per-packet one-way delay: 183.146 ms
Loss rate: 1.39%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-06 05:23:50

End at: 2018-09-06 05:24:20

Local clock offset: 7.883 ms

Remote clock offset: 3.967 ms

Below is generated by plot.py at 2018-09-06 05:49:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 575.40 Mbit/s

95th percentile per-packet one-way delay: 184.677 ms

Loss rate: 1.42%

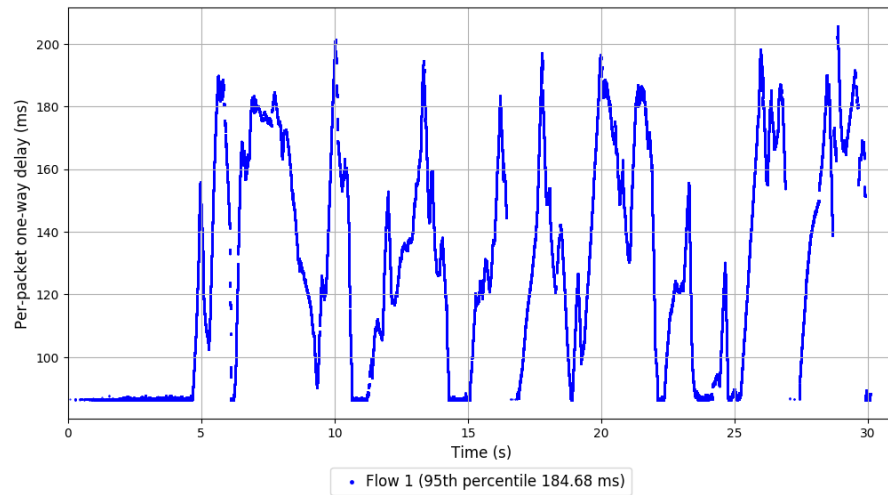
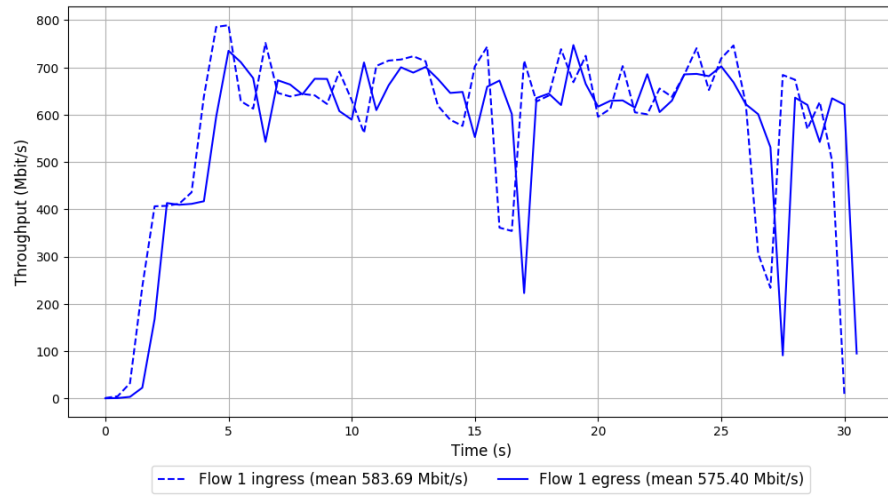
-- Flow 1:

Average throughput: 575.40 Mbit/s

95th percentile per-packet one-way delay: 184.677 ms

Loss rate: 1.42%

Run 5: Report of TCP BBR — Data Link

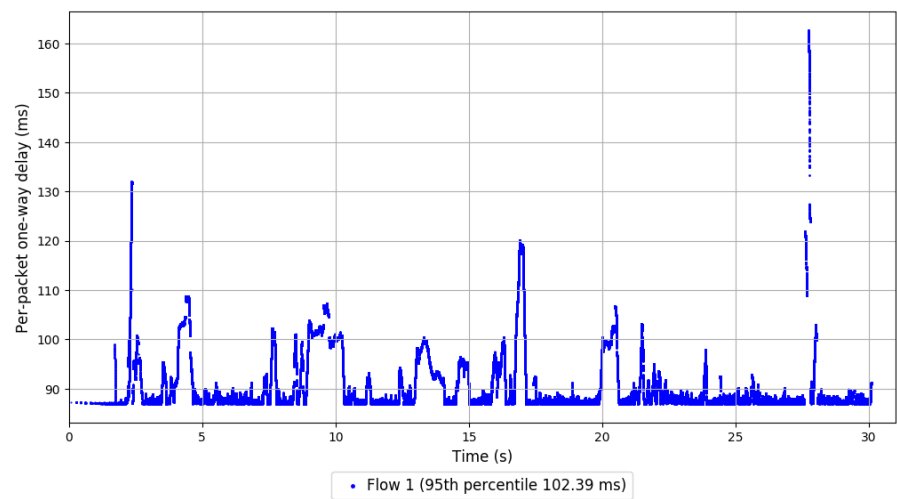
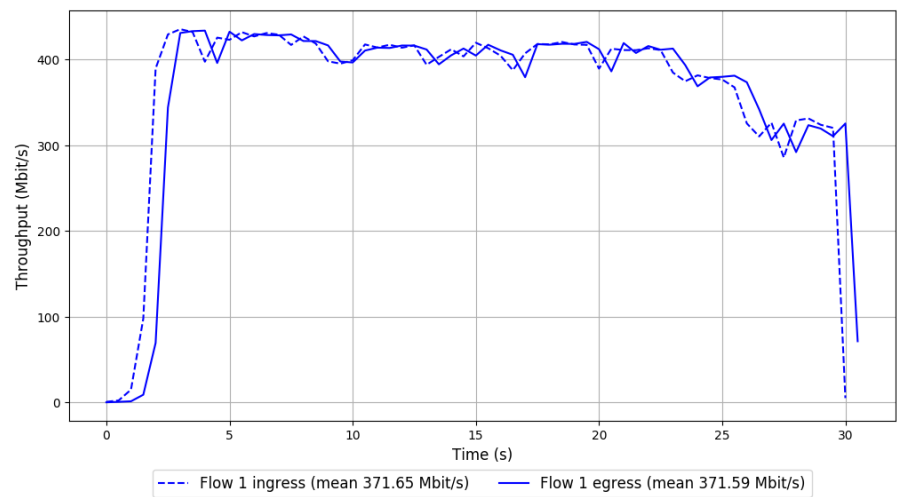


Run 1: Statistics of Copa

Start at: 2018-09-06 03:29:45
End at: 2018-09-06 03:30:16
Local clock offset: 12.674 ms
Remote clock offset: 14.619 ms

Below is generated by plot.py at 2018-09-06 05:50:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 371.59 Mbit/s
95th percentile per-packet one-way delay: 102.387 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 371.59 Mbit/s
95th percentile per-packet one-way delay: 102.387 ms
Loss rate: 0.01%

Run 1: Report of Copa — Data Link

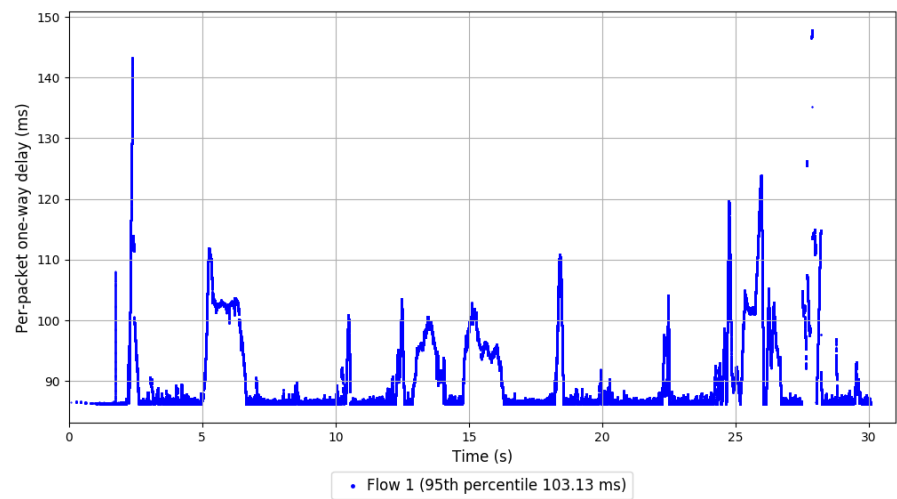
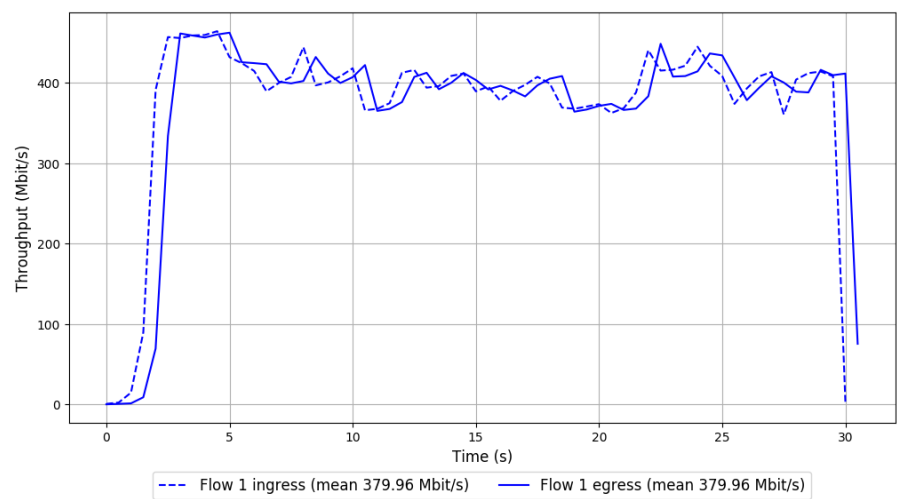


Run 2: Statistics of Copa

Start at: 2018-09-06 03:56:19
End at: 2018-09-06 03:56:49
Local clock offset: 19.15 ms
Remote clock offset: 20.538 ms

Below is generated by plot.py at 2018-09-06 05:50:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 379.96 Mbit/s
95th percentile per-packet one-way delay: 103.126 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 379.96 Mbit/s
95th percentile per-packet one-way delay: 103.126 ms
Loss rate: 0.00%

Run 2: Report of Copa — Data Link

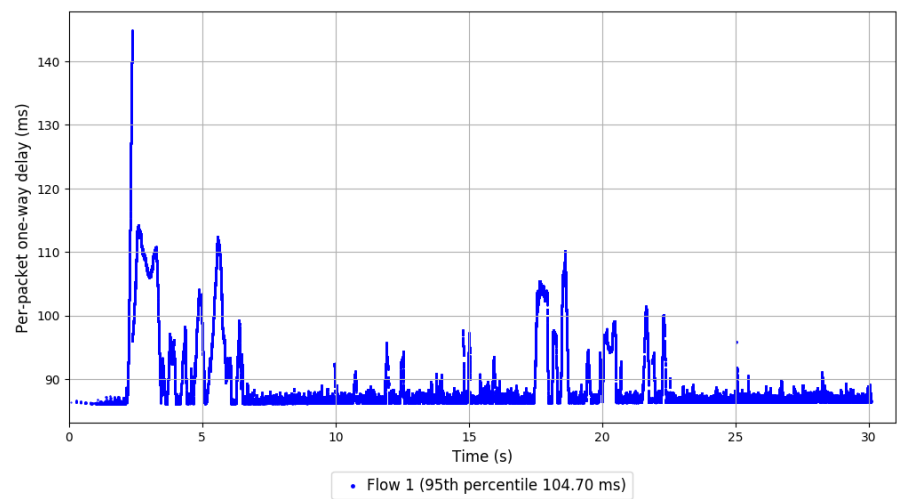
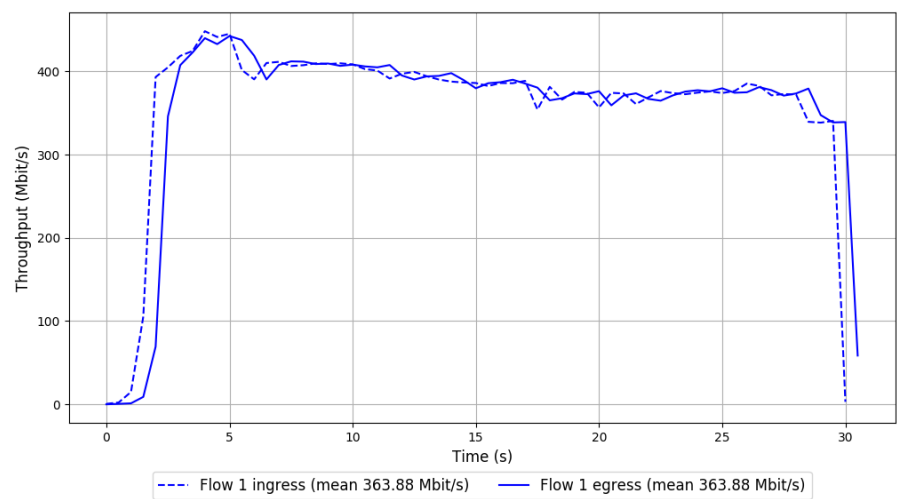


Run 3: Statistics of Copa

Start at: 2018-09-06 04:23:09
End at: 2018-09-06 04:23:40
Local clock offset: 38.4 ms
Remote clock offset: 41.484 ms

Below is generated by plot.py at 2018-09-06 05:50:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 363.88 Mbit/s
95th percentile per-packet one-way delay: 104.698 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 363.88 Mbit/s
95th percentile per-packet one-way delay: 104.698 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-06 04:49:33

End at: 2018-09-06 04:50:03

Local clock offset: 16.168 ms

Remote clock offset: 9.415 ms

Below is generated by plot.py at 2018-09-06 05:59:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 370.69 Mbit/s

95th percentile per-packet one-way delay: 121.504 ms

Loss rate: 0.00%

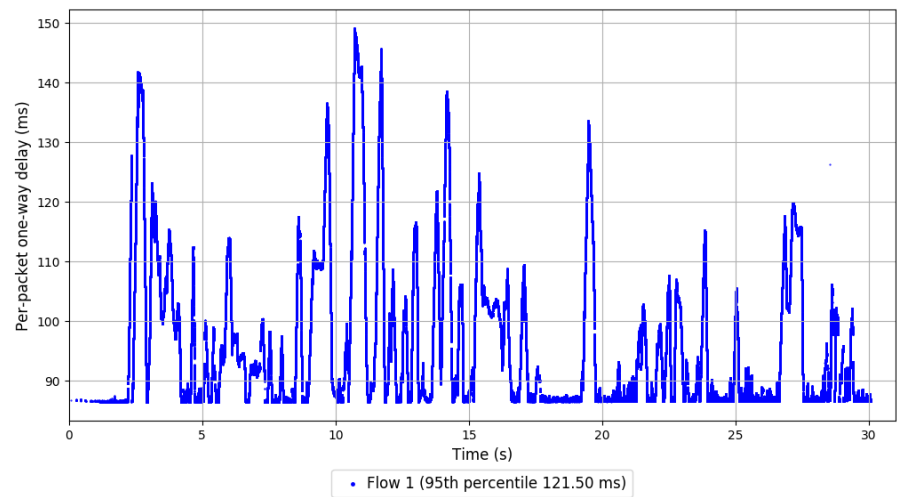
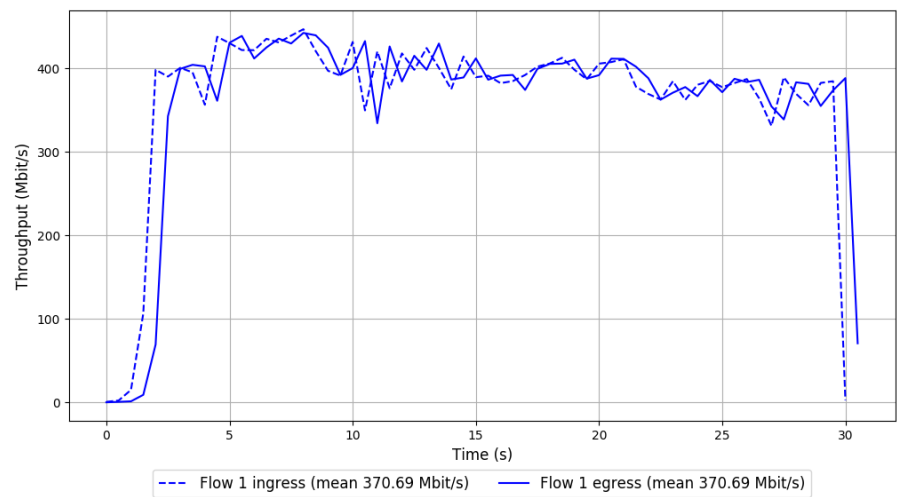
-- Flow 1:

Average throughput: 370.69 Mbit/s

95th percentile per-packet one-way delay: 121.504 ms

Loss rate: 0.00%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

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

End at: 2018-09-06 05:16:36

Local clock offset: 7.014 ms

Remote clock offset: 3.597 ms

Below is generated by plot.py at 2018-09-06 06:00:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 381.29 Mbit/s

95th percentile per-packet one-way delay: 113.822 ms

Loss rate: 0.00%

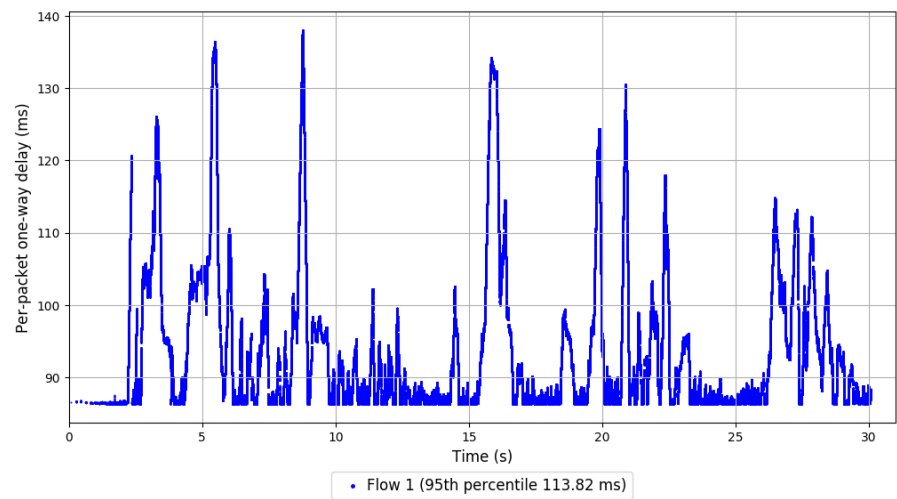
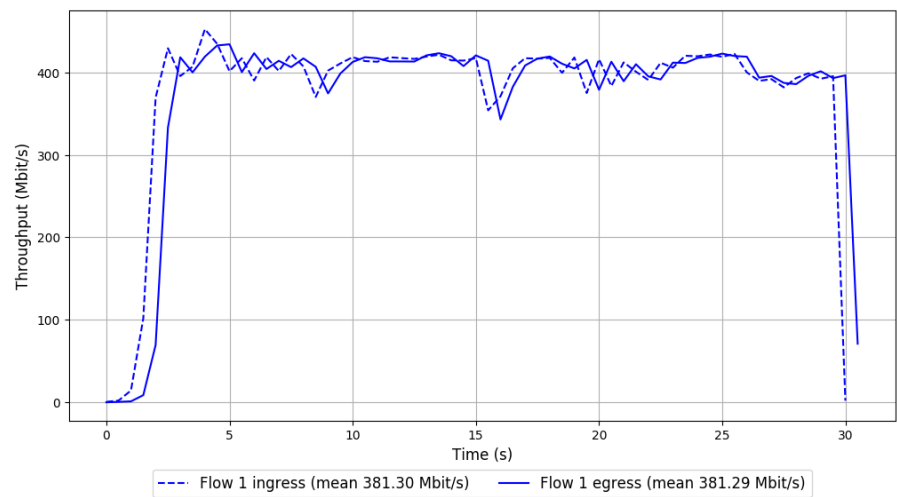
-- Flow 1:

Average throughput: 381.29 Mbit/s

95th percentile per-packet one-way delay: 113.822 ms

Loss rate: 0.00%

Run 5: Report of Copa — Data Link

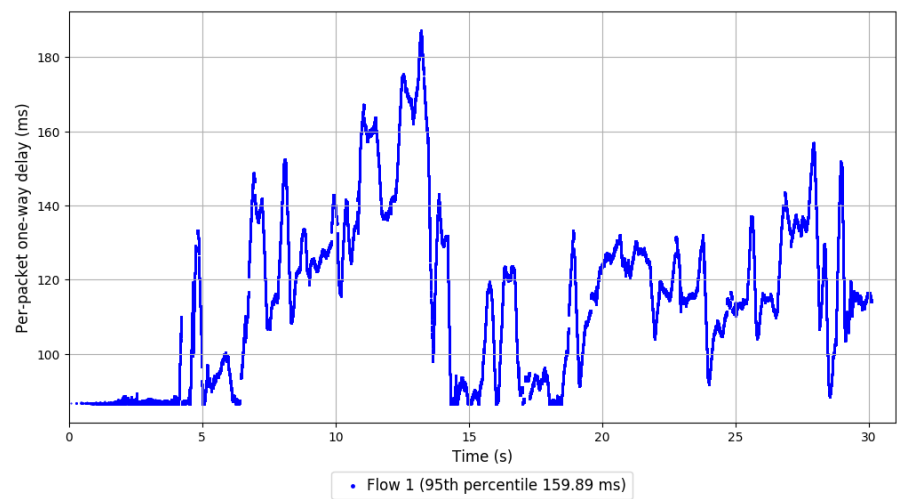
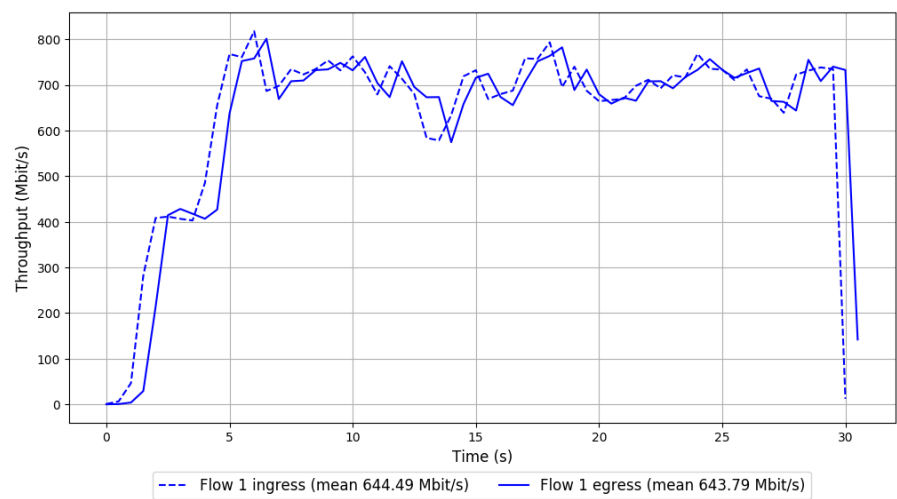


Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 03:28:05
End at: 2018-09-06 03:28:35
Local clock offset: 10.386 ms
Remote clock offset: 11.726 ms

Below is generated by plot.py at 2018-09-06 06:00:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 643.79 Mbit/s
95th percentile per-packet one-way delay: 159.894 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 643.79 Mbit/s
95th percentile per-packet one-way delay: 159.894 ms
Loss rate: 0.11%

Run 1: Report of TCP Cubic — Data Link

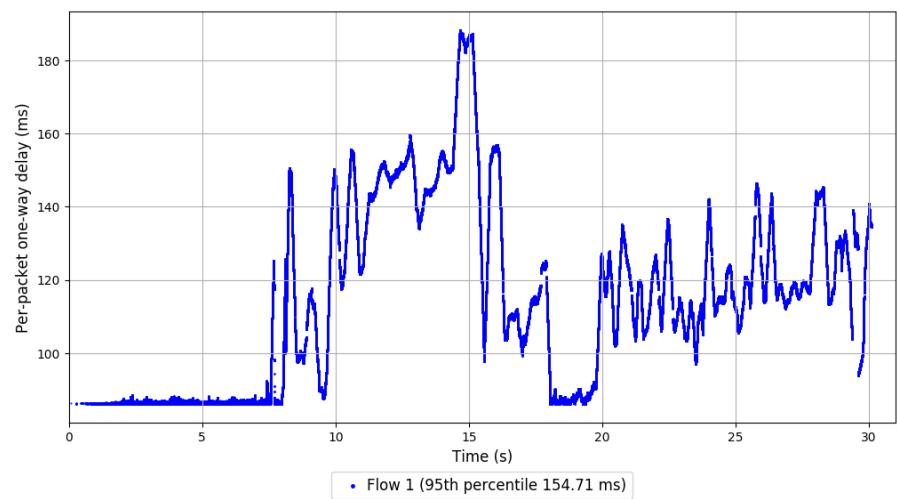
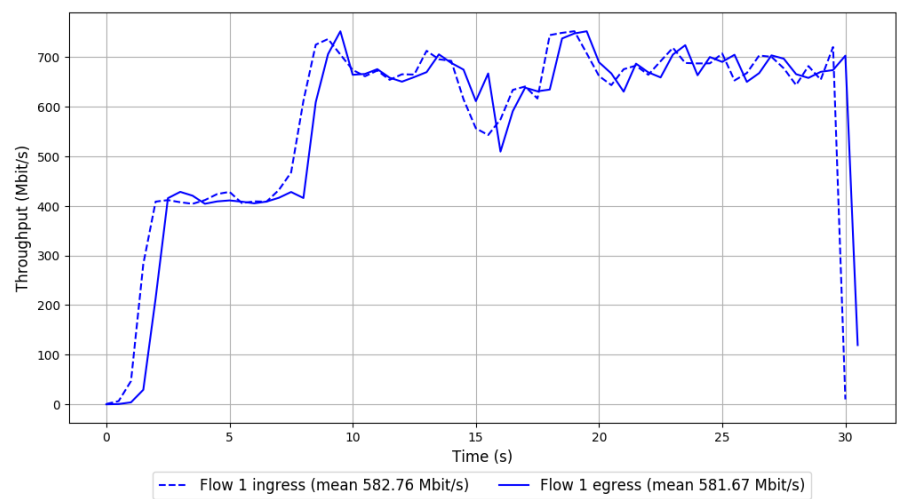


Run 2: Statistics of TCP Cubic

Start at: 2018-09-06 03:54:41
End at: 2018-09-06 03:55:11
Local clock offset: 19.38 ms
Remote clock offset: 21.085 ms

Below is generated by plot.py at 2018-09-06 06:00:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 581.67 Mbit/s
95th percentile per-packet one-way delay: 154.711 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 581.67 Mbit/s
95th percentile per-packet one-way delay: 154.711 ms
Loss rate: 0.18%

Run 2: Report of TCP Cubic — Data Link

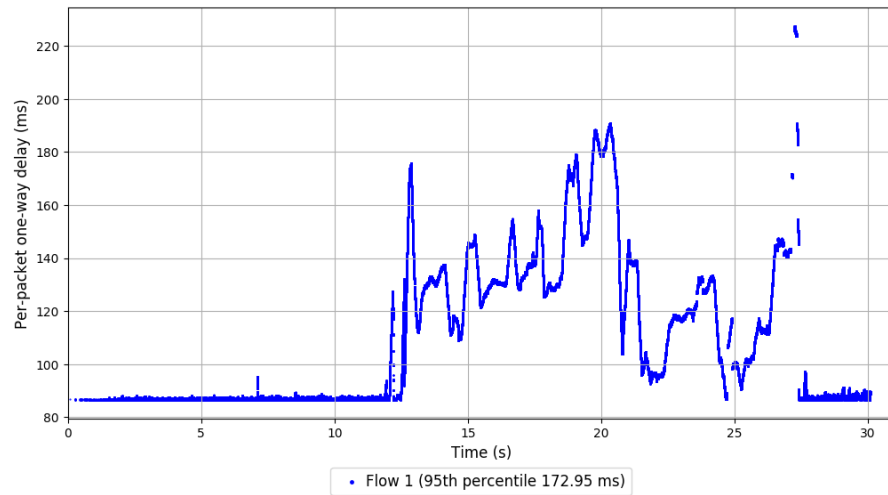
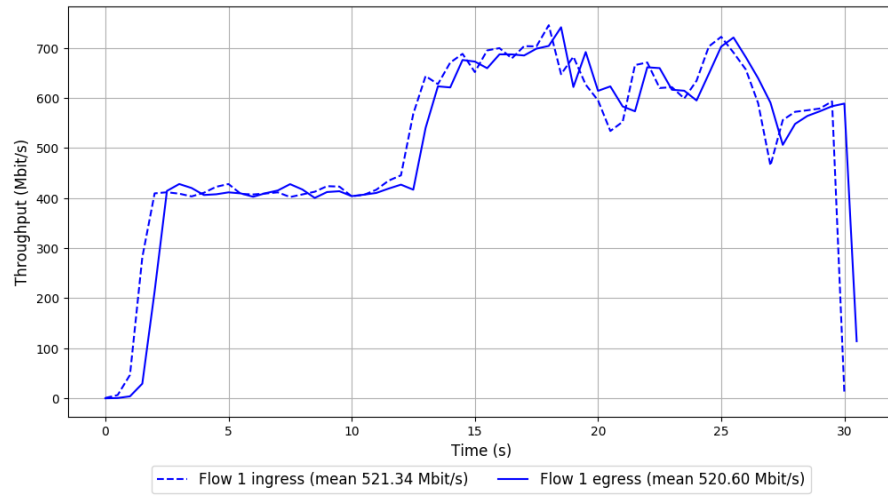


Run 3: Statistics of TCP Cubic

Start at: 2018-09-06 04:21:35
End at: 2018-09-06 04:22:05
Local clock offset: 36.489 ms
Remote clock offset: 39.746 ms

Below is generated by plot.py at 2018-09-06 06:00:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 520.60 Mbit/s
95th percentile per-packet one-way delay: 172.946 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 520.60 Mbit/s
95th percentile per-packet one-way delay: 172.946 ms
Loss rate: 0.14%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-09-06 04:47:53

End at: 2018-09-06 04:48:23

Local clock offset: 15.817 ms

Remote clock offset: 9.368 ms

Below is generated by plot.py at 2018-09-06 06:00:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 640.03 Mbit/s

95th percentile per-packet one-way delay: 174.817 ms

Loss rate: 0.21%

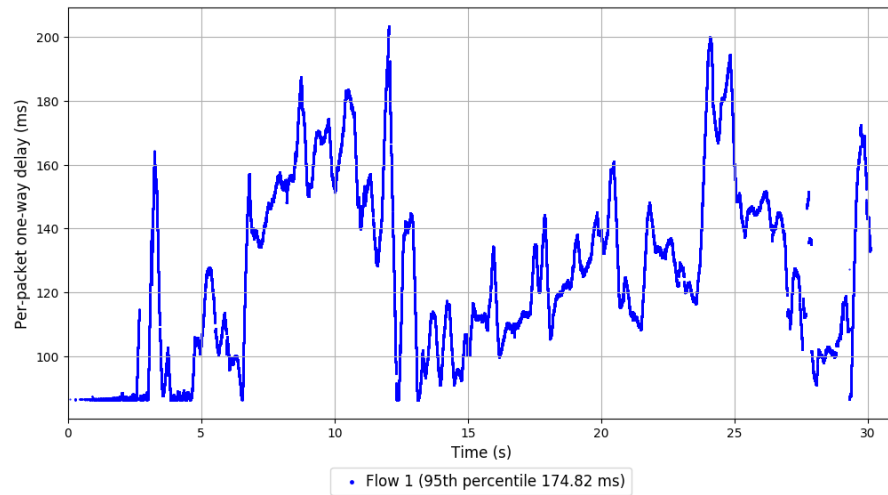
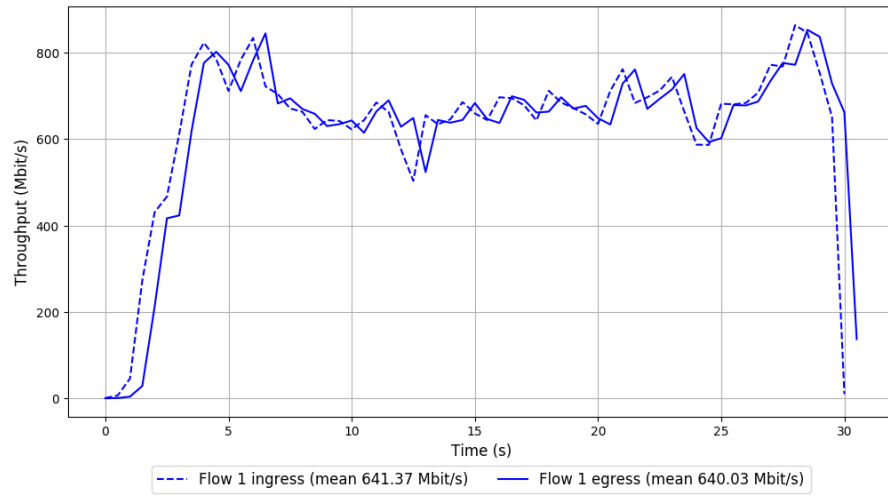
-- Flow 1:

Average throughput: 640.03 Mbit/s

95th percentile per-packet one-way delay: 174.817 ms

Loss rate: 0.21%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-09-06 05:14:27

End at: 2018-09-06 05:14:57

Local clock offset: 7.163 ms

Remote clock offset: 3.654 ms

Below is generated by plot.py at 2018-09-06 06:00:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 588.91 Mbit/s

95th percentile per-packet one-way delay: 132.994 ms

Loss rate: 0.16%

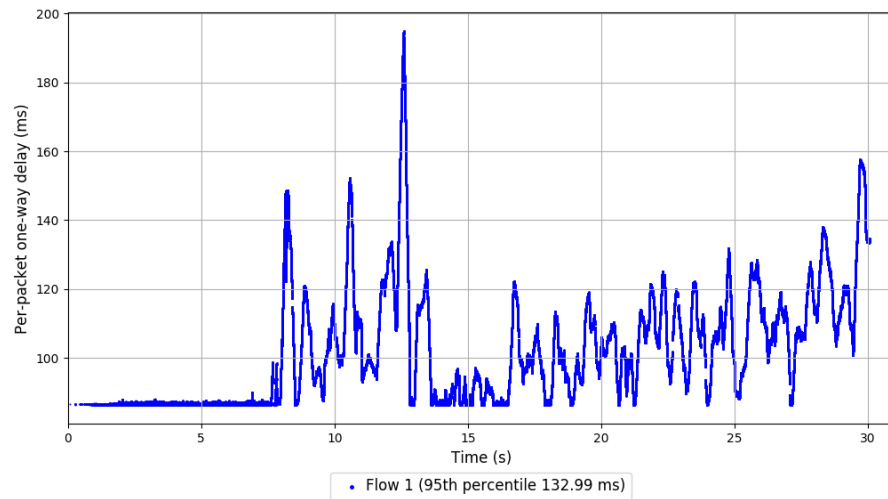
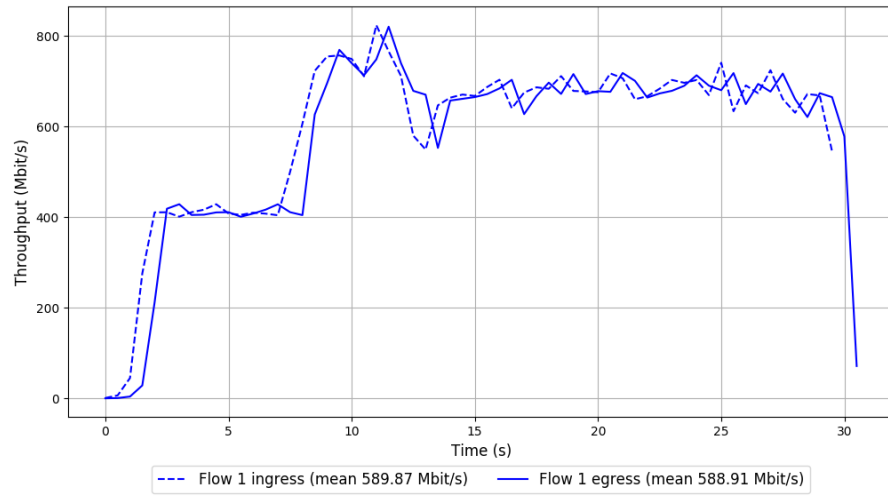
-- Flow 1:

Average throughput: 588.91 Mbit/s

95th percentile per-packet one-way delay: 132.994 ms

Loss rate: 0.16%

Run 5: Report of TCP Cubic — Data Link

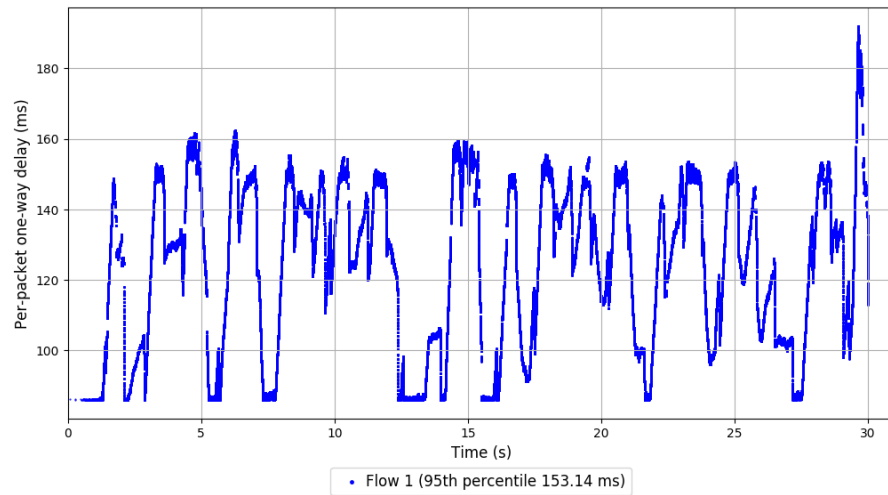
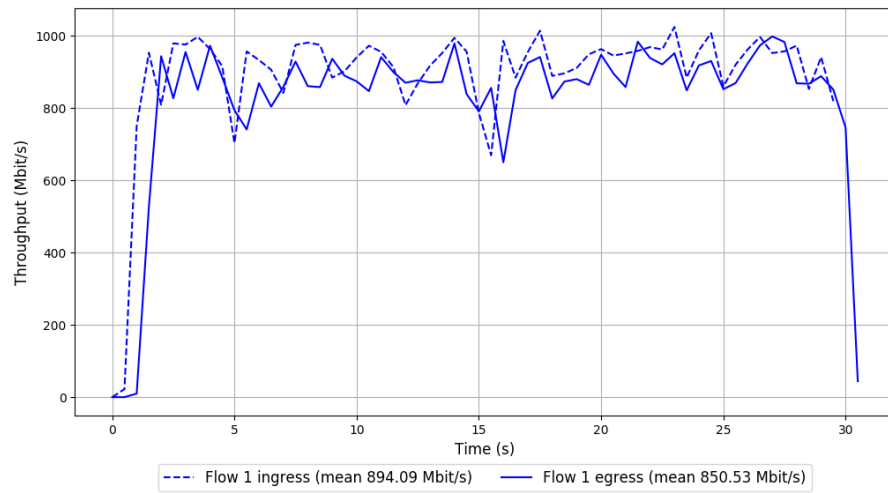


Run 1: Statistics of FillP

Start at: 2018-09-06 03:33:02
End at: 2018-09-06 03:33:32
Local clock offset: 15.376 ms
Remote clock offset: 16.451 ms

Below is generated by plot.py at 2018-09-06 06:06:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 850.53 Mbit/s
95th percentile per-packet one-way delay: 153.138 ms
Loss rate: 4.87%
-- Flow 1:
Average throughput: 850.53 Mbit/s
95th percentile per-packet one-way delay: 153.138 ms
Loss rate: 4.87%

Run 1: Report of FillP — Data Link

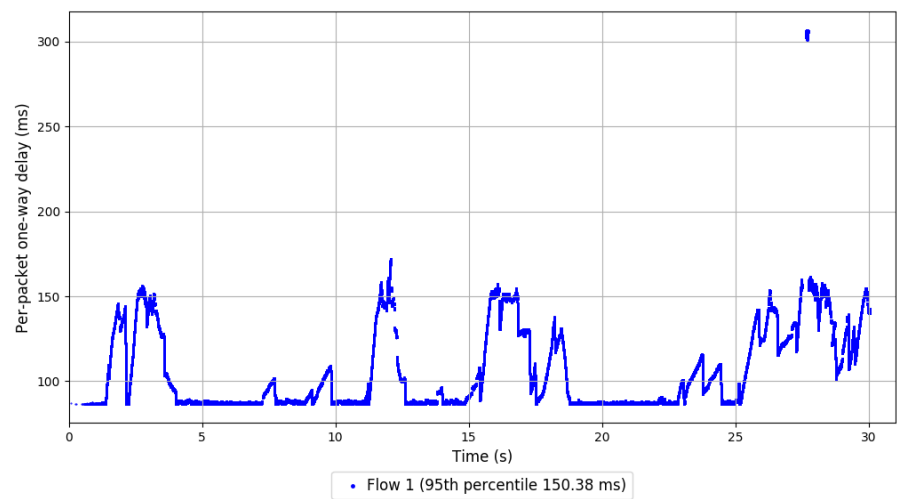
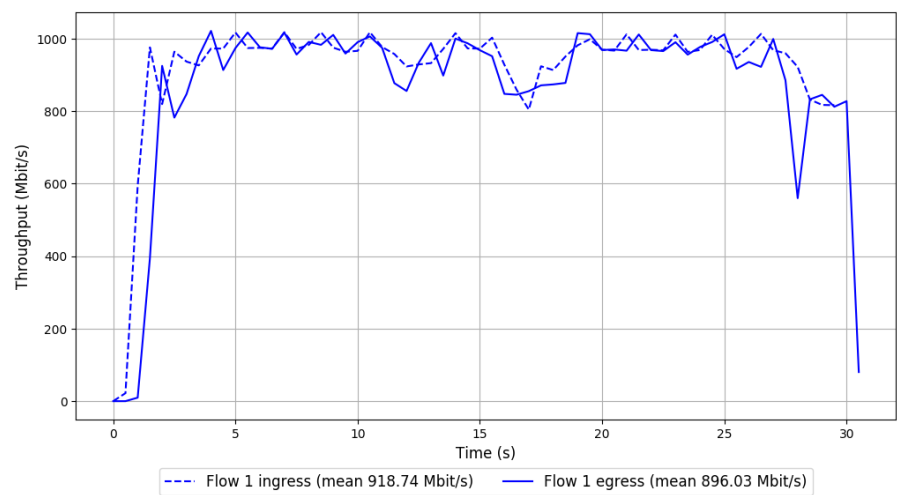


Run 2: Statistics of FillP

Start at: 2018-09-06 03:59:39
End at: 2018-09-06 04:00:09
Local clock offset: 19.183 ms
Remote clock offset: 20.738 ms

Below is generated by plot.py at 2018-09-06 06:16:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 896.03 Mbit/s
95th percentile per-packet one-way delay: 150.375 ms
Loss rate: 2.47%
-- Flow 1:
Average throughput: 896.03 Mbit/s
95th percentile per-packet one-way delay: 150.375 ms
Loss rate: 2.47%

Run 2: Report of FillP — Data Link

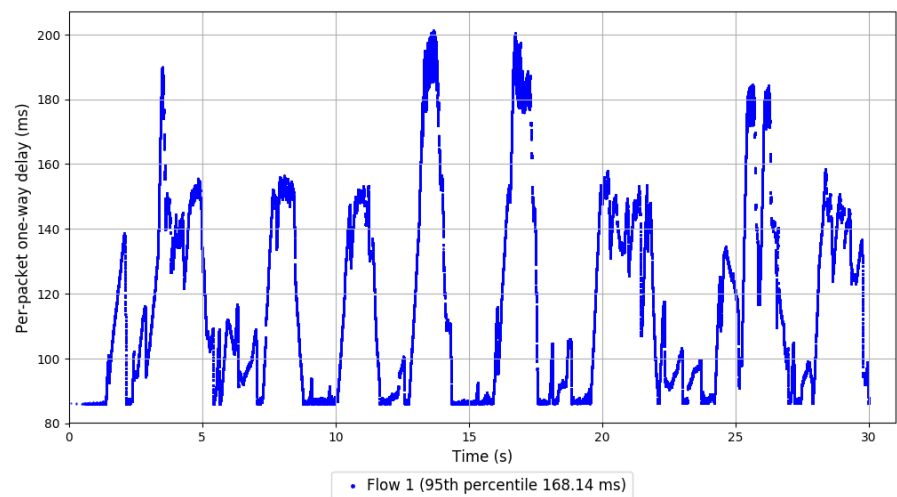
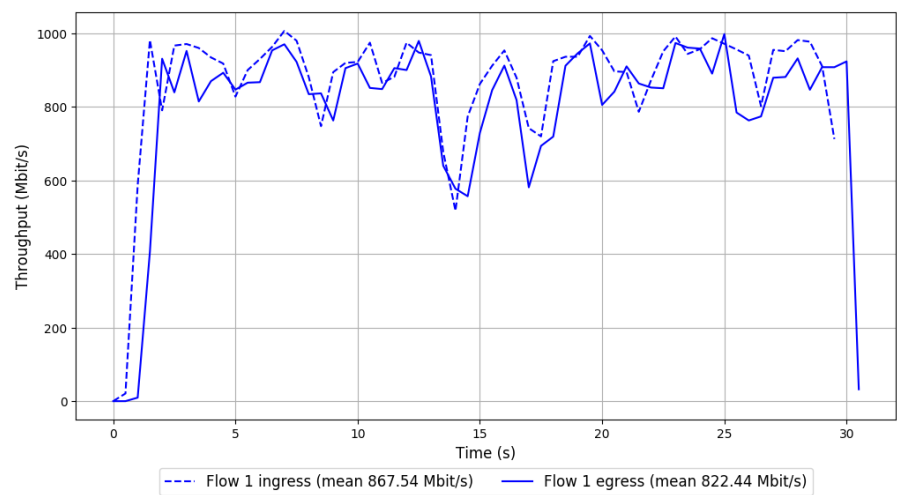


Run 3: Statistics of FillP

Start at: 2018-09-06 04:26:25
End at: 2018-09-06 04:26:55
Local clock offset: 28.233 ms
Remote clock offset: 29.494 ms

Below is generated by plot.py at 2018-09-06 06:16:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 822.44 Mbit/s
95th percentile per-packet one-way delay: 168.142 ms
Loss rate: 5.20%
-- Flow 1:
Average throughput: 822.44 Mbit/s
95th percentile per-packet one-way delay: 168.142 ms
Loss rate: 5.20%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-06 04:52:50

End at: 2018-09-06 04:53:20

Local clock offset: 17.278 ms

Remote clock offset: 9.801 ms

Below is generated by plot.py at 2018-09-06 06:16:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 777.60 Mbit/s

95th percentile per-packet one-way delay: 175.657 ms

Loss rate: 7.52%

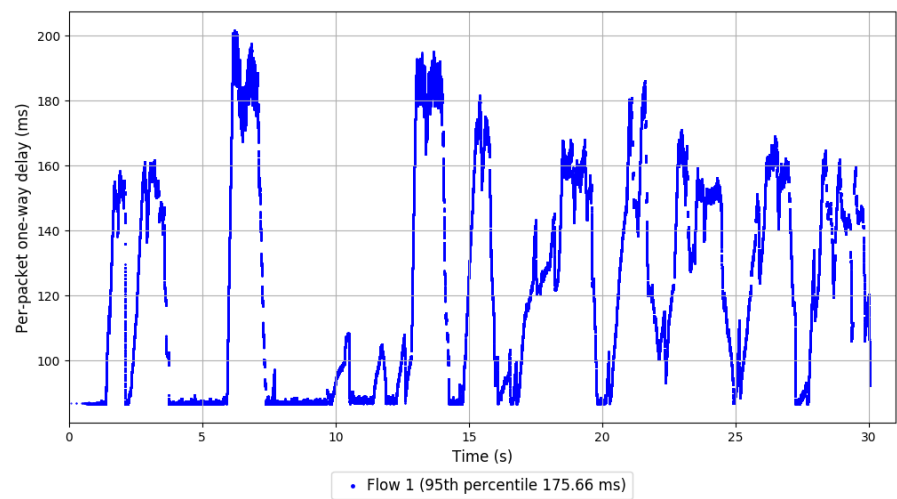
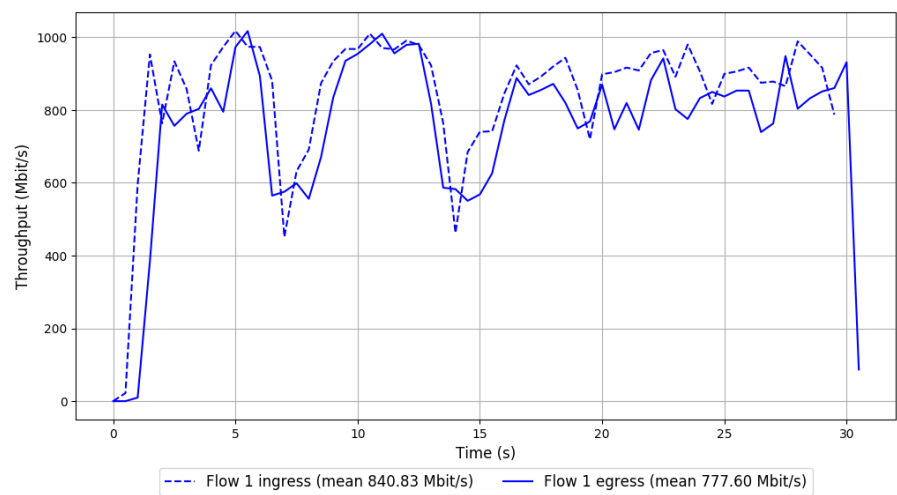
-- Flow 1:

Average throughput: 777.60 Mbit/s

95th percentile per-packet one-way delay: 175.657 ms

Loss rate: 7.52%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-06 05:19:25

End at: 2018-09-06 05:19:55

Local clock offset: 7.187 ms

Remote clock offset: 3.735 ms

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

Datalink statistics

-- Total of 1 flow:

Average throughput: 806.09 Mbit/s

95th percentile per-packet one-way delay: 156.913 ms

Loss rate: 3.57%

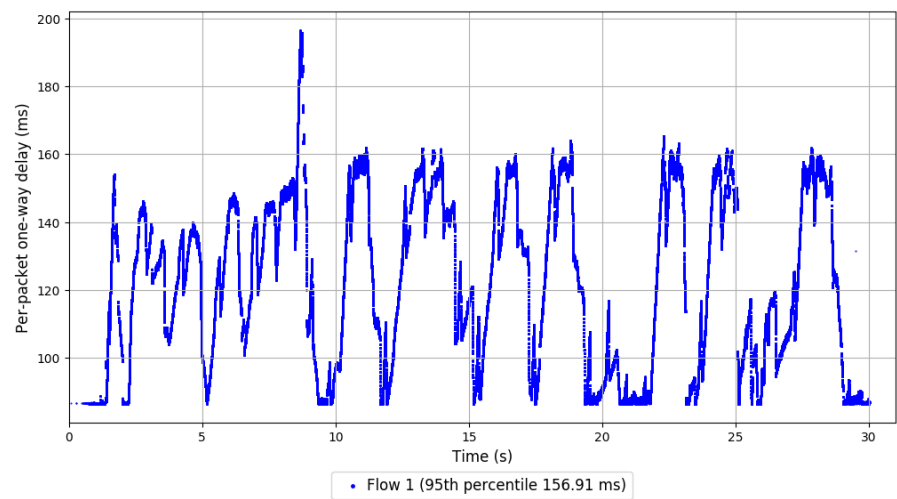
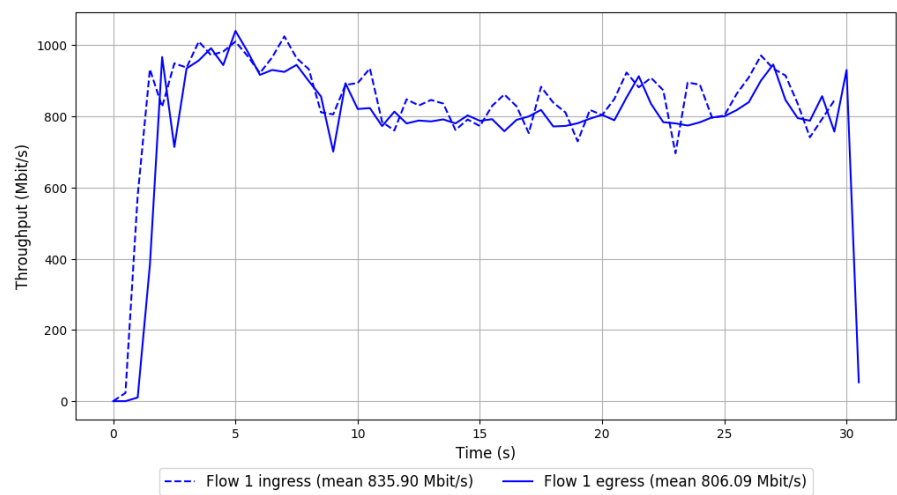
-- Flow 1:

Average throughput: 806.09 Mbit/s

95th percentile per-packet one-way delay: 156.913 ms

Loss rate: 3.57%

Run 5: Report of FillP — Data Link

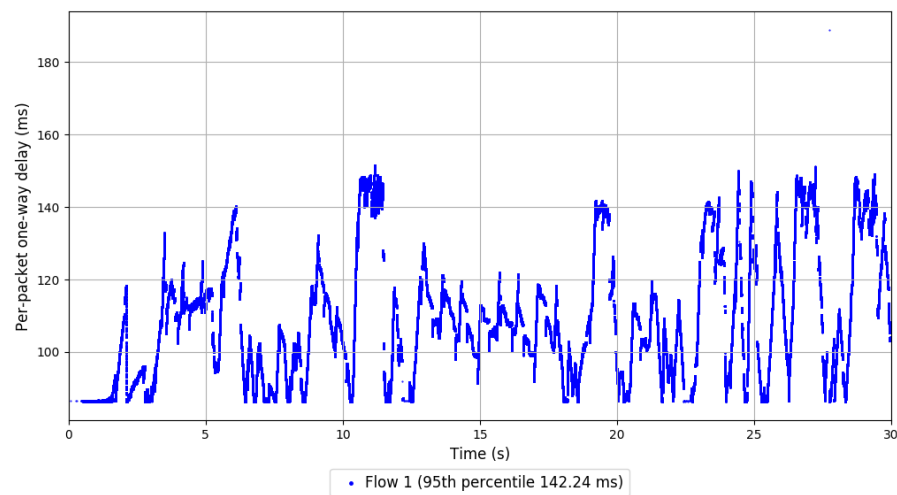
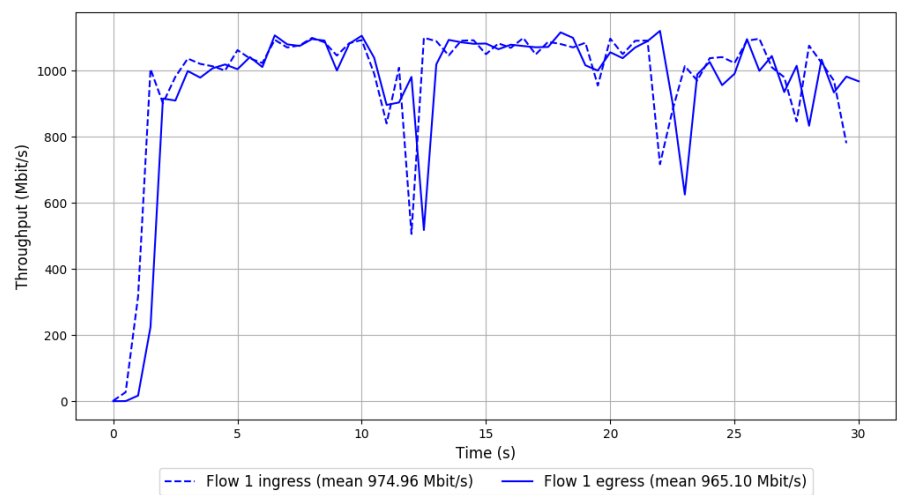


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-06 03:41:22
End at: 2018-09-06 03:41:52
Local clock offset: 15.814 ms
Remote clock offset: 17.258 ms

Below is generated by plot.py at 2018-09-06 06:19:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 965.10 Mbit/s
95th percentile per-packet one-way delay: 142.243 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 965.10 Mbit/s
95th percentile per-packet one-way delay: 142.243 ms
Loss rate: 1.01%

Run 1: Report of FillP-Sheep — Data Link

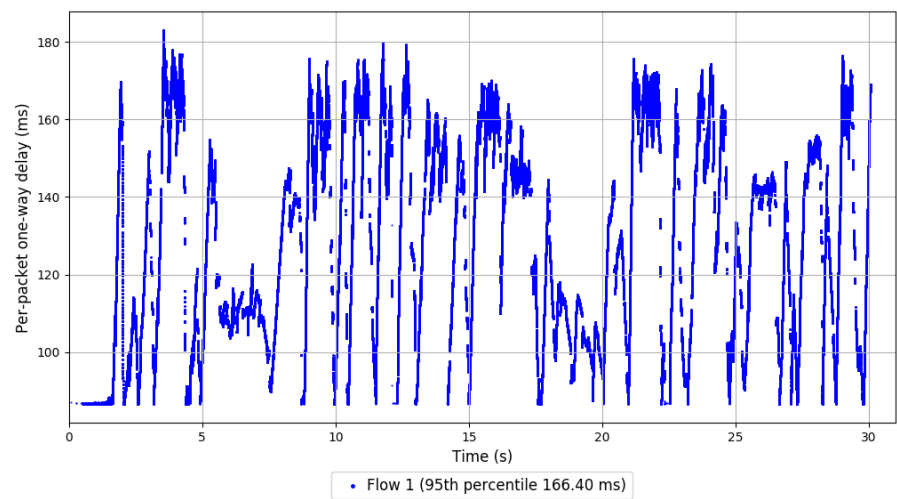
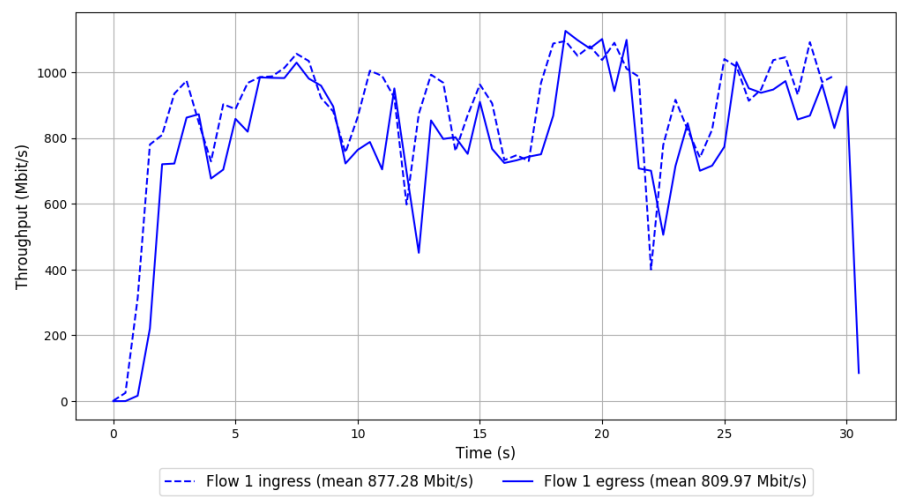


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-06 04:08:13
End at: 2018-09-06 04:08:43
Local clock offset: 23.864 ms
Remote clock offset: 25.977 ms

Below is generated by plot.py at 2018-09-06 06:19:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 809.97 Mbit/s
95th percentile per-packet one-way delay: 166.401 ms
Loss rate: 7.67%
-- Flow 1:
Average throughput: 809.97 Mbit/s
95th percentile per-packet one-way delay: 166.401 ms
Loss rate: 7.67%

Run 2: Report of FillP-Sheep — Data Link

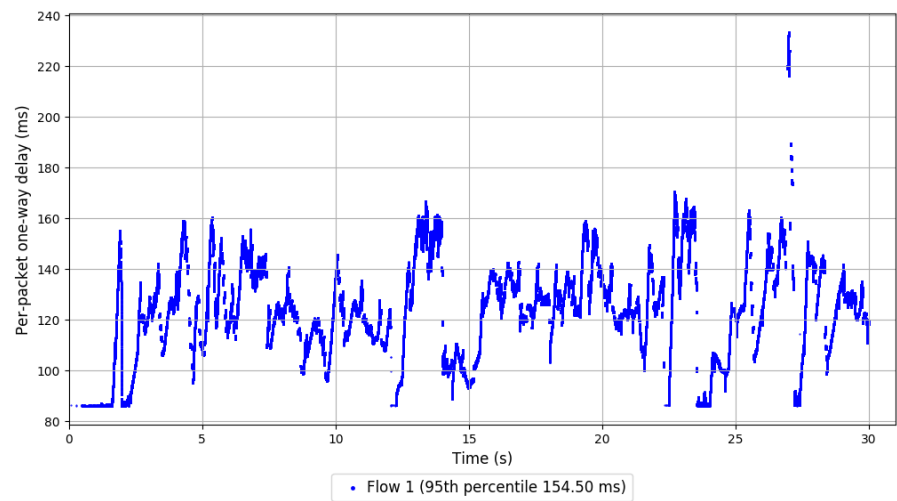
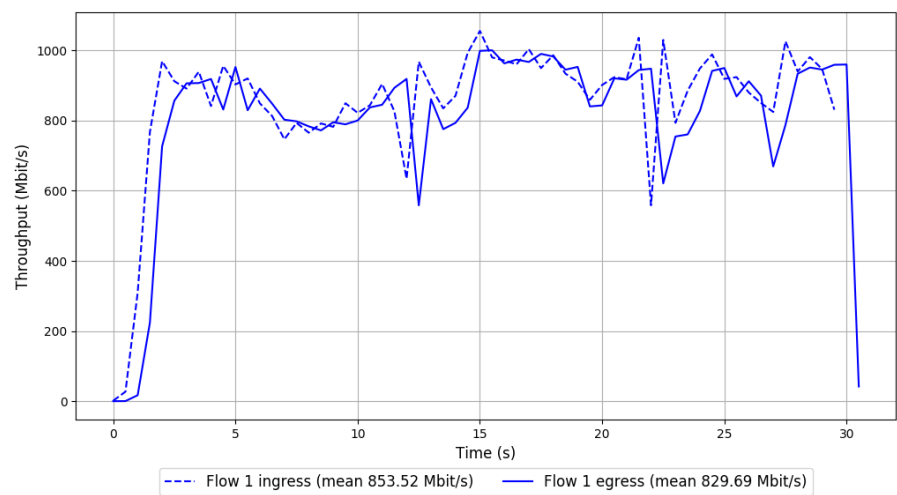


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-06 04:34:48
End at: 2018-09-06 04:35:18
Local clock offset: 16.24 ms
Remote clock offset: 14.014 ms

Below is generated by plot.py at 2018-09-06 06:19:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 829.69 Mbit/s
95th percentile per-packet one-way delay: 154.497 ms
Loss rate: 2.79%
-- Flow 1:
Average throughput: 829.69 Mbit/s
95th percentile per-packet one-way delay: 154.497 ms
Loss rate: 2.79%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-06 05:01:15

End at: 2018-09-06 05:01:46

Local clock offset: 13.267 ms

Remote clock offset: 7.081 ms

Below is generated by plot.py at 2018-09-06 06:25:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 820.47 Mbit/s

95th percentile per-packet one-way delay: 157.462 ms

Loss rate: 4.19%

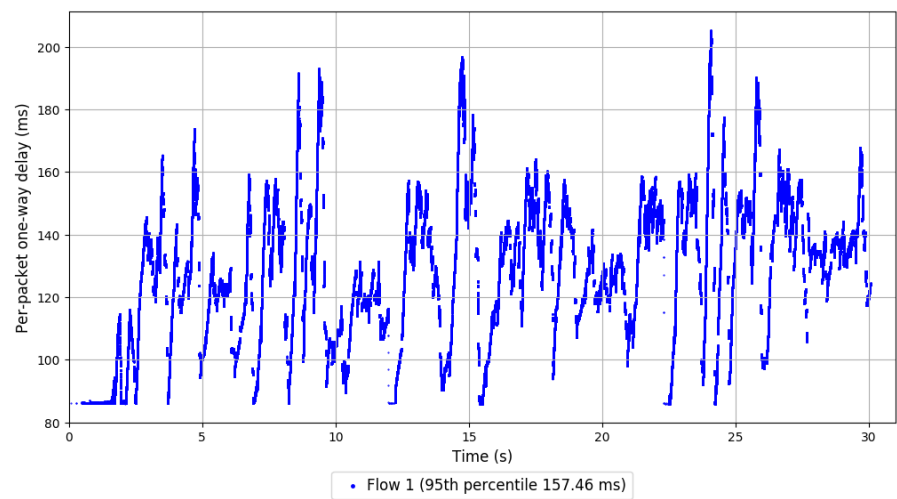
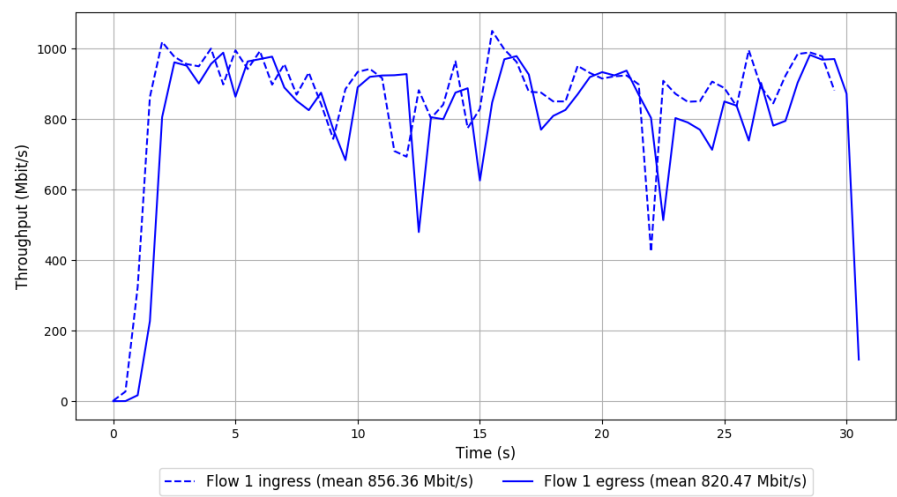
-- Flow 1:

Average throughput: 820.47 Mbit/s

95th percentile per-packet one-way delay: 157.462 ms

Loss rate: 4.19%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-06 05:27:49

End at: 2018-09-06 05:28:19

Local clock offset: 8.372 ms

Remote clock offset: 4.326 ms

Below is generated by plot.py at 2018-09-06 06:33:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 816.12 Mbit/s

95th percentile per-packet one-way delay: 158.277 ms

Loss rate: 4.68%

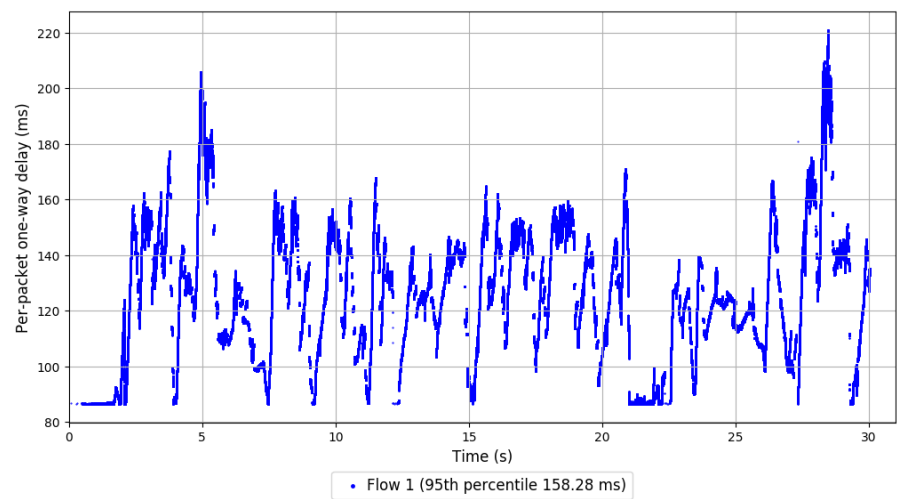
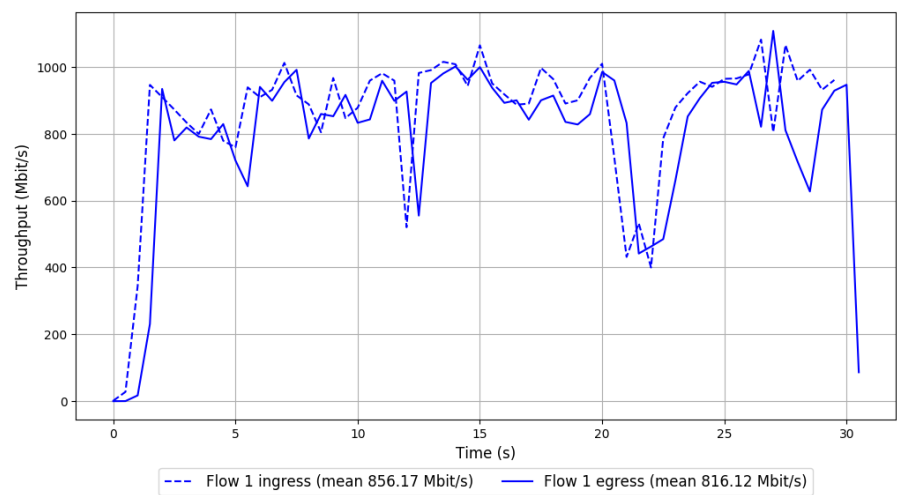
-- Flow 1:

Average throughput: 816.12 Mbit/s

95th percentile per-packet one-way delay: 158.277 ms

Loss rate: 4.68%

Run 5: Report of FillP-Sheep — Data Link

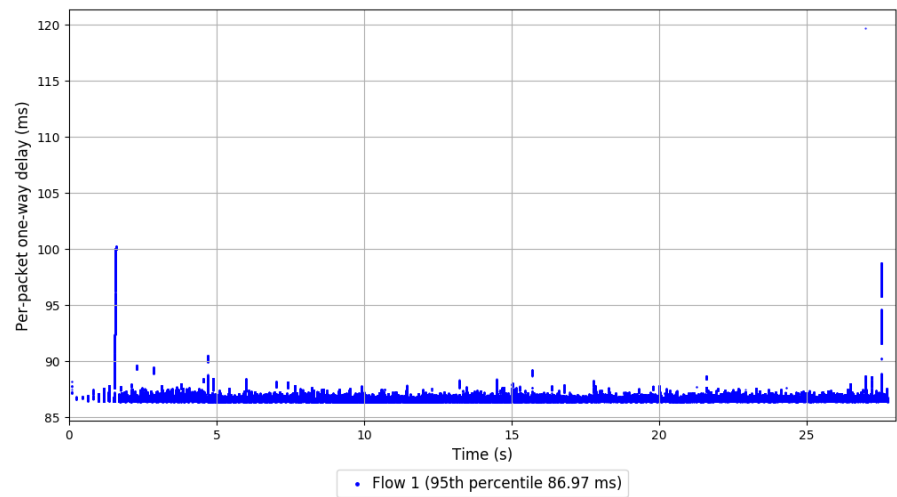
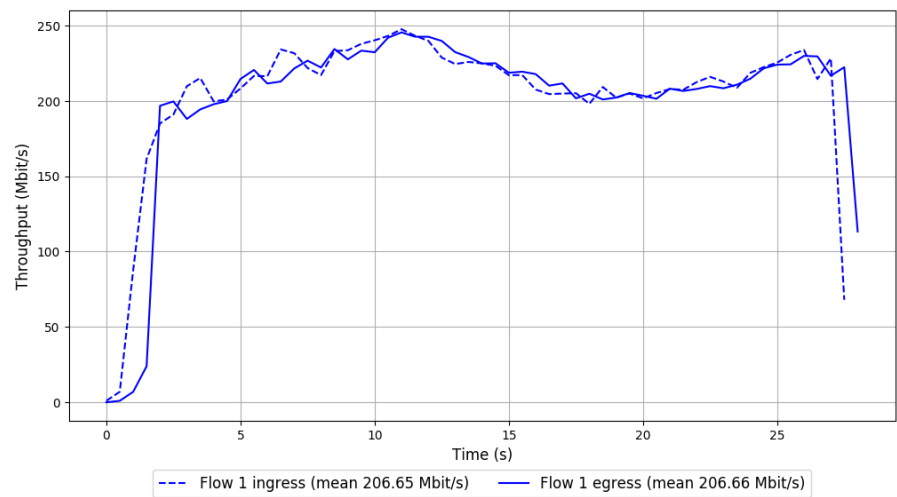


```
Run 1: Statistics of Indigo

Start at: 2018-09-06 03:25:06
End at: 2018-09-06 03:25:36
Local clock offset: 8.684 ms
Remote clock offset: 9.329 ms

# Below is generated by plot.py at 2018-09-06 06:33:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 206.66 Mbit/s
95th percentile per-packet one-way delay: 86.975 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 206.66 Mbit/s
95th percentile per-packet one-way delay: 86.975 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

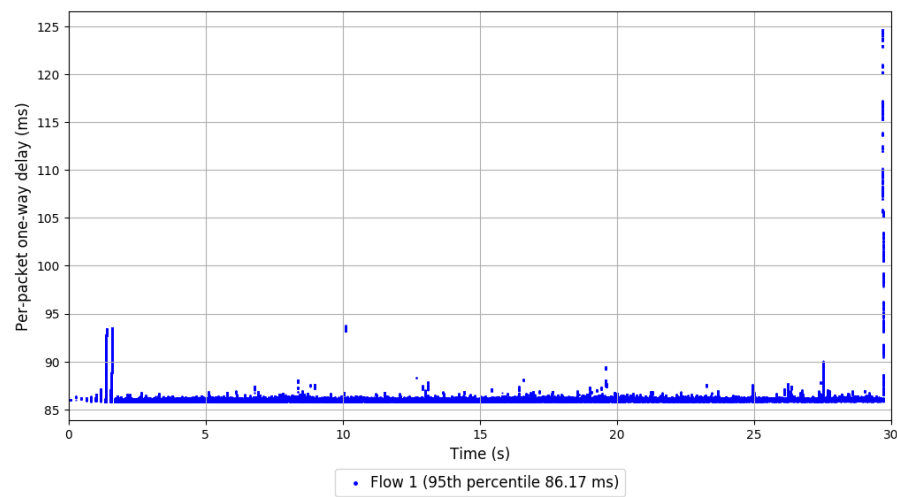
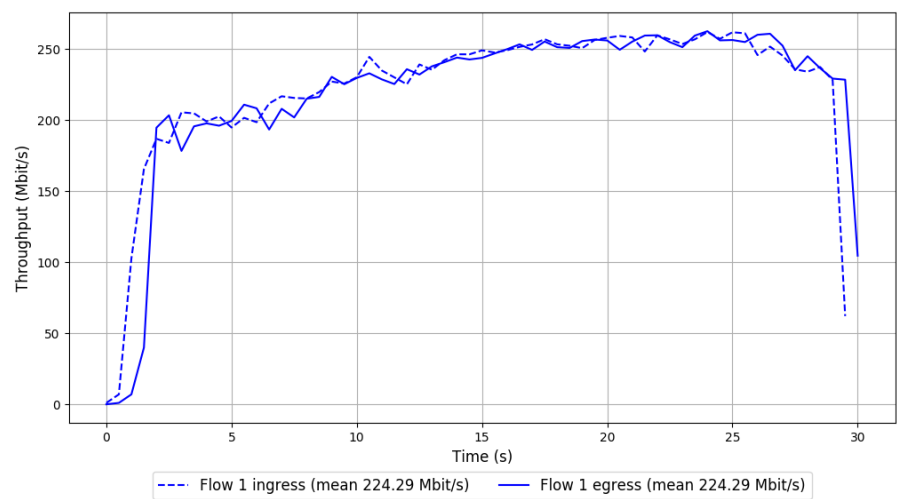


Run 2: Statistics of Indigo

Start at: 2018-09-06 03:51:34
End at: 2018-09-06 03:52:04
Local clock offset: 22.215 ms
Remote clock offset: 23.553 ms

Below is generated by plot.py at 2018-09-06 06:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 224.29 Mbit/s
95th percentile per-packet one-way delay: 86.175 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 224.29 Mbit/s
95th percentile per-packet one-way delay: 86.175 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link

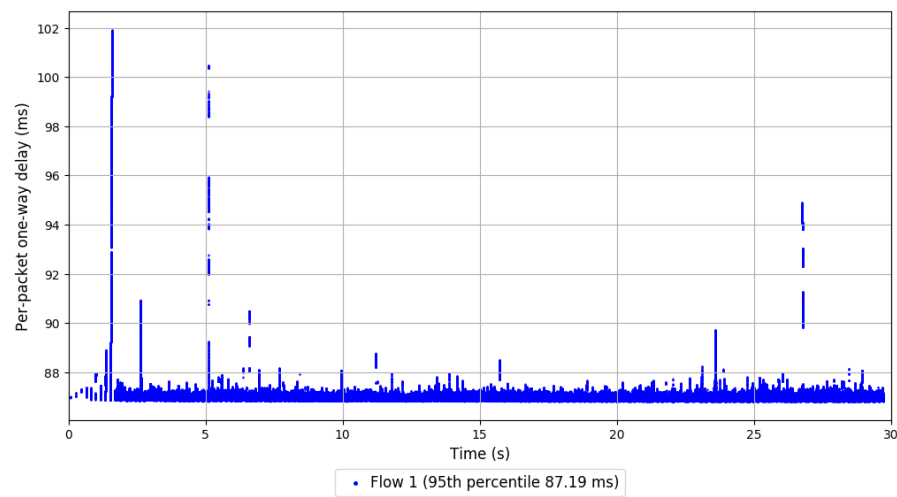
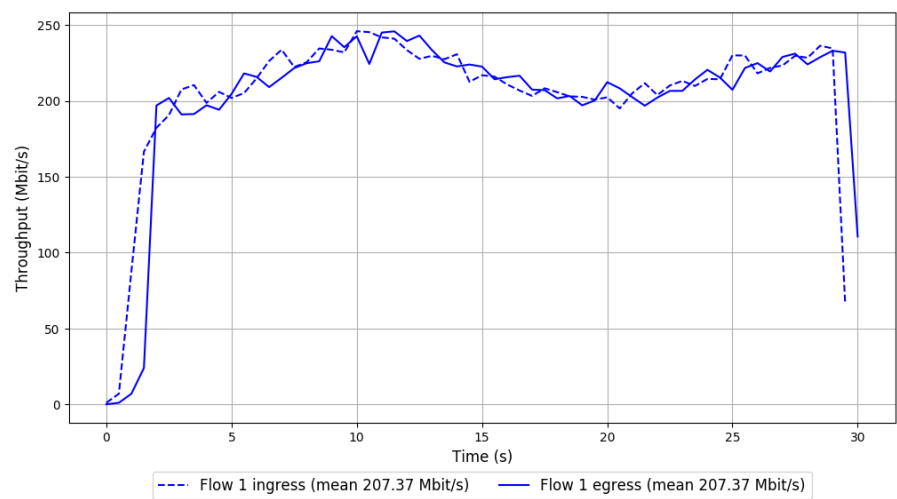


Run 3: Statistics of Indigo

Start at: 2018-09-06 04:18:29
End at: 2018-09-06 04:18:59
Local clock offset: 33.31 ms
Remote clock offset: 36.367 ms

Below is generated by plot.py at 2018-09-06 06:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 207.37 Mbit/s
95th percentile per-packet one-way delay: 87.189 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 207.37 Mbit/s
95th percentile per-packet one-way delay: 87.189 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-06 04:44:53

End at: 2018-09-06 04:45:23

Local clock offset: 14.765 ms

Remote clock offset: 9.45 ms

Below is generated by plot.py at 2018-09-06 06:33:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 217.11 Mbit/s

95th percentile per-packet one-way delay: 87.225 ms

Loss rate: 0.00%

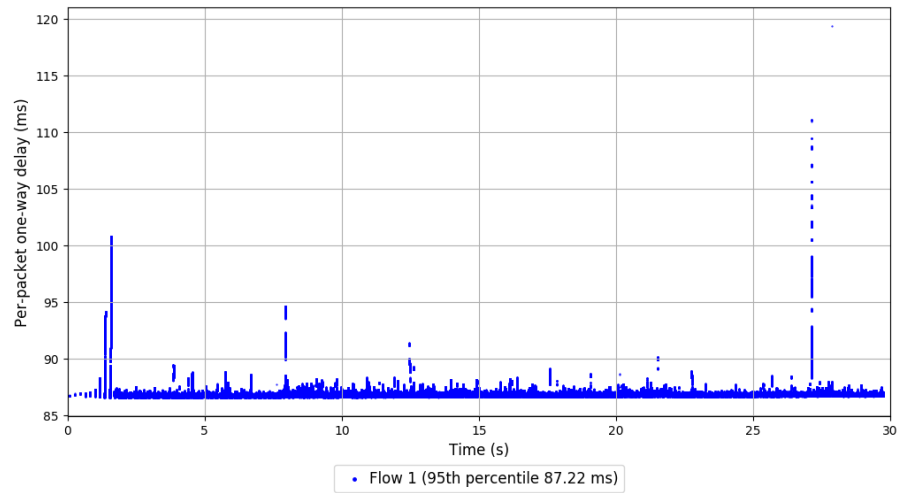
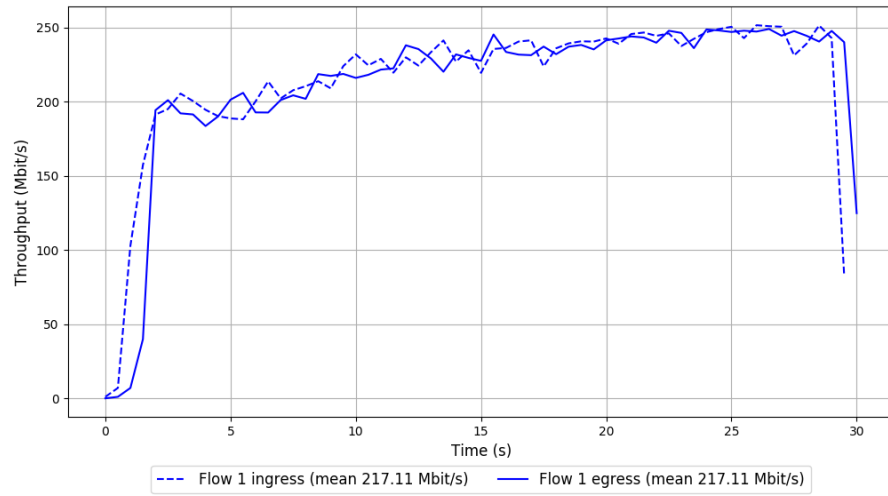
-- Flow 1:

Average throughput: 217.11 Mbit/s

95th percentile per-packet one-way delay: 87.225 ms

Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-06 05:11:36

End at: 2018-09-06 05:12:06

Local clock offset: 7.154 ms

Remote clock offset: 3.834 ms

Below is generated by plot.py at 2018-09-06 06:33:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 218.12 Mbit/s

95th percentile per-packet one-way delay: 86.548 ms

Loss rate: 0.00%

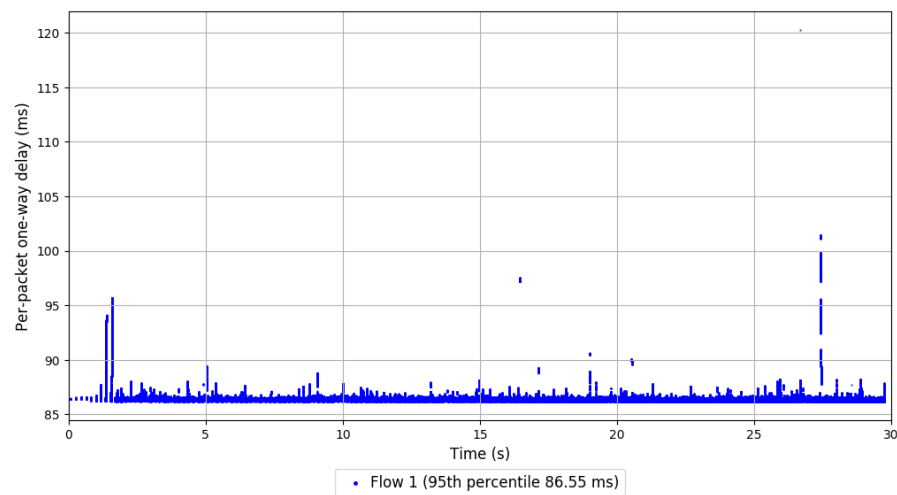
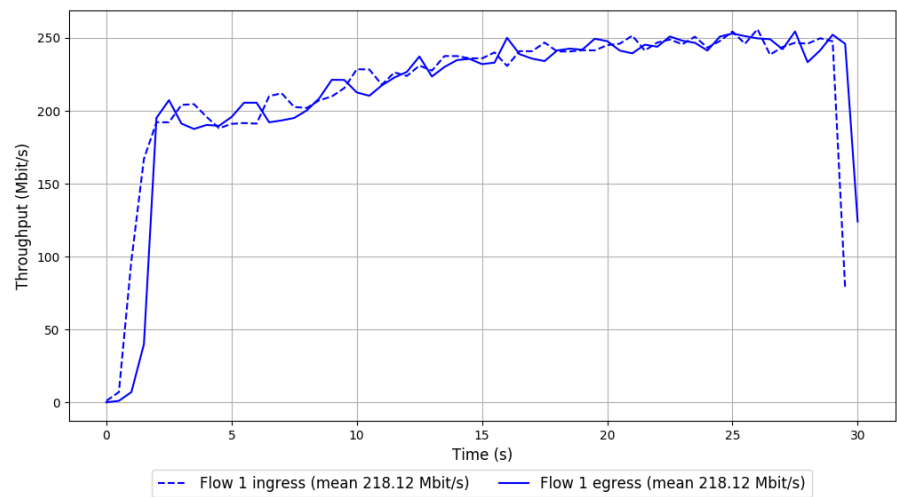
-- Flow 1:

Average throughput: 218.12 Mbit/s

95th percentile per-packet one-way delay: 86.548 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

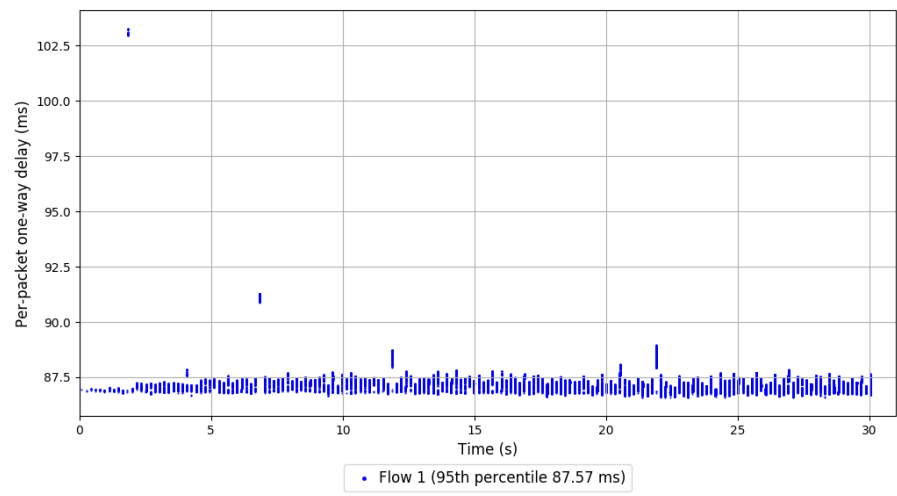
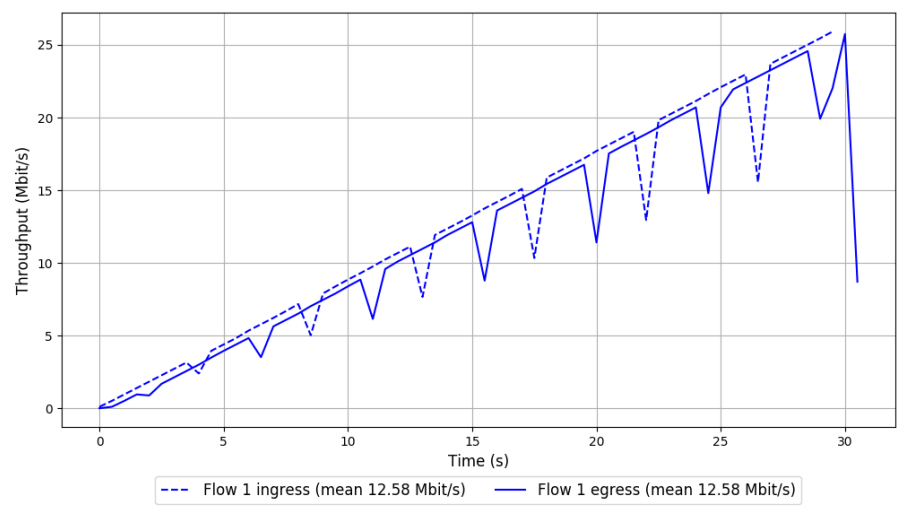


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 03:22:21
End at: 2018-09-06 03:22:51
Local clock offset: 8.253 ms
Remote clock offset: 9.478 ms

# Below is generated by plot.py at 2018-09-06 06:33:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.58 Mbit/s
95th percentile per-packet one-way delay: 87.568 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.58 Mbit/s
95th percentile per-packet one-way delay: 87.568 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

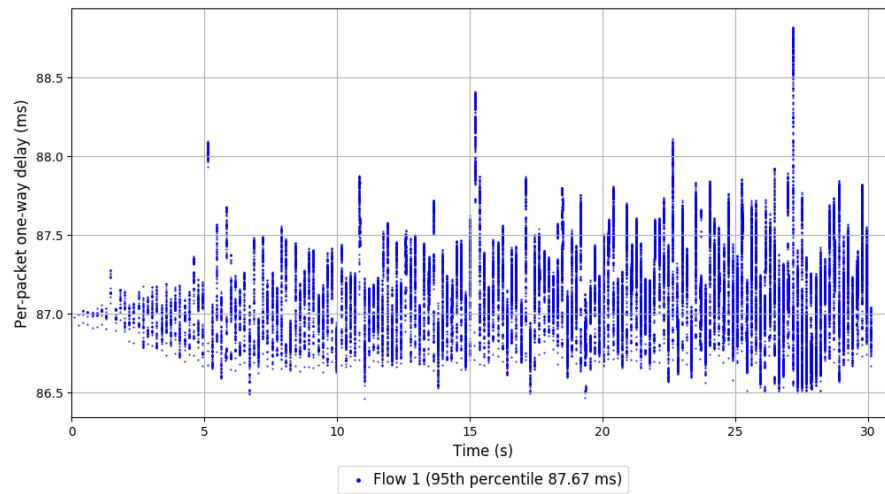
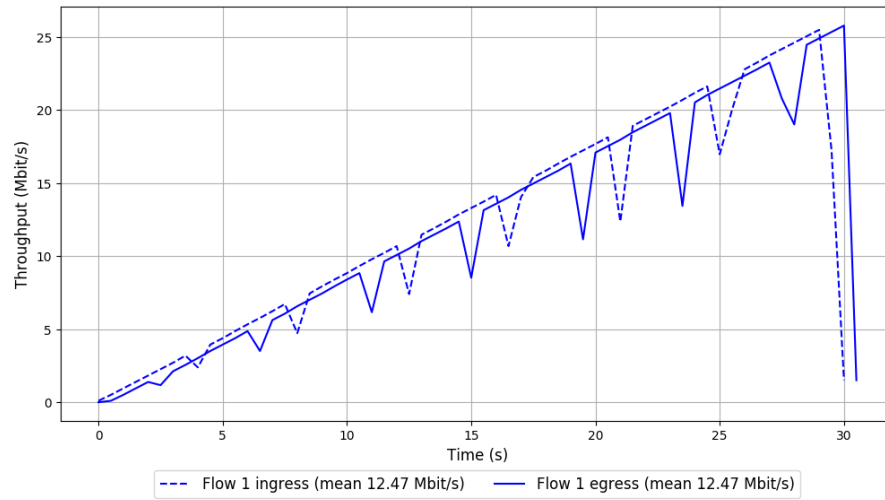


Run 2: Statistics of LEDBAT

Start at: 2018-09-06 03:48:46
End at: 2018-09-06 03:49:16
Local clock offset: 25.261 ms
Remote clock offset: 27.568 ms

Below is generated by plot.py at 2018-09-06 06:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 87.665 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 87.665 ms
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

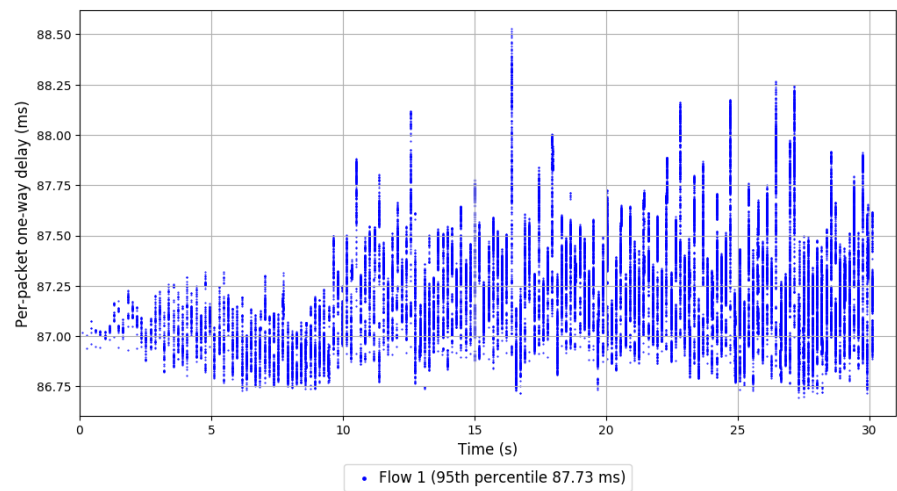
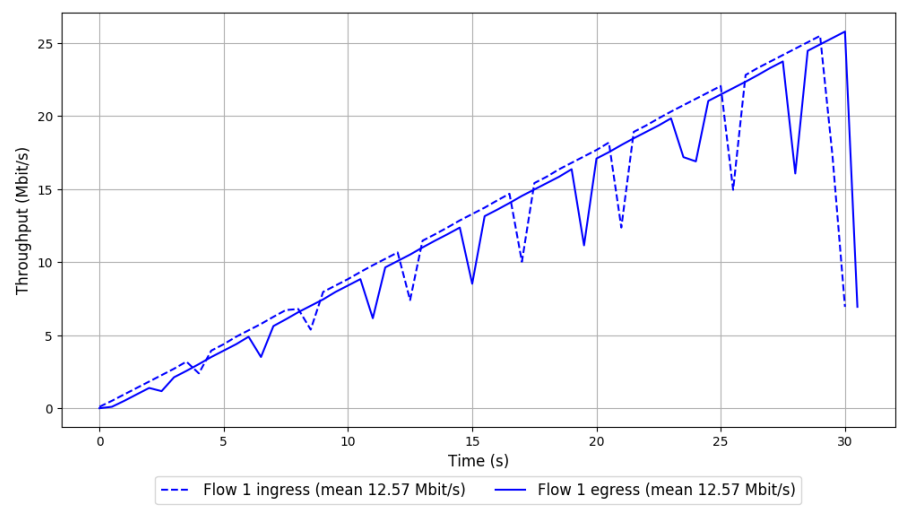


Run 3: Statistics of LEDBAT

Start at: 2018-09-06 04:15:40
End at: 2018-09-06 04:16:10
Local clock offset: 30.548 ms
Remote clock offset: 33.314 ms

Below is generated by plot.py at 2018-09-06 06:33:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.57 Mbit/s
95th percentile per-packet one-way delay: 87.733 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.57 Mbit/s
95th percentile per-packet one-way delay: 87.733 ms
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

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

End at: 2018-09-06 04:42:36

Local clock offset: 14.634 ms

Remote clock offset: 9.931 ms

Below is generated by plot.py at 2018-09-06 06:33:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.50 Mbit/s

95th percentile per-packet one-way delay: 88.089 ms

Loss rate: 0.00%

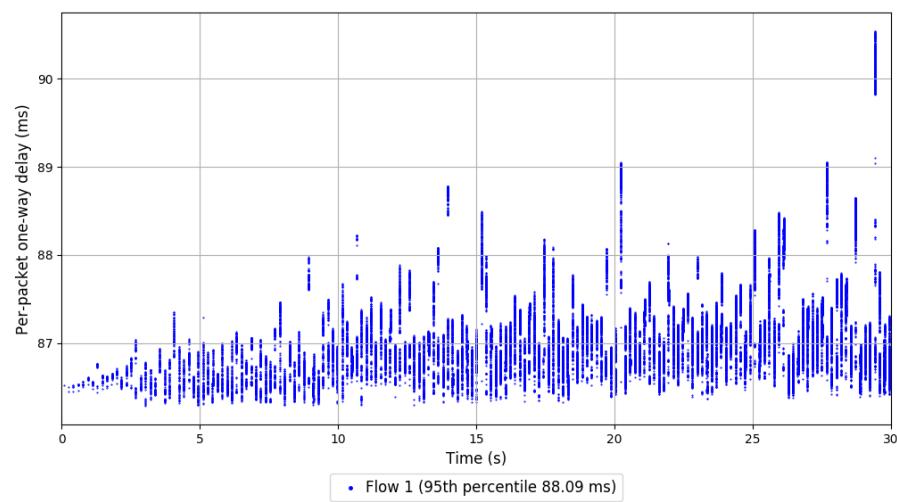
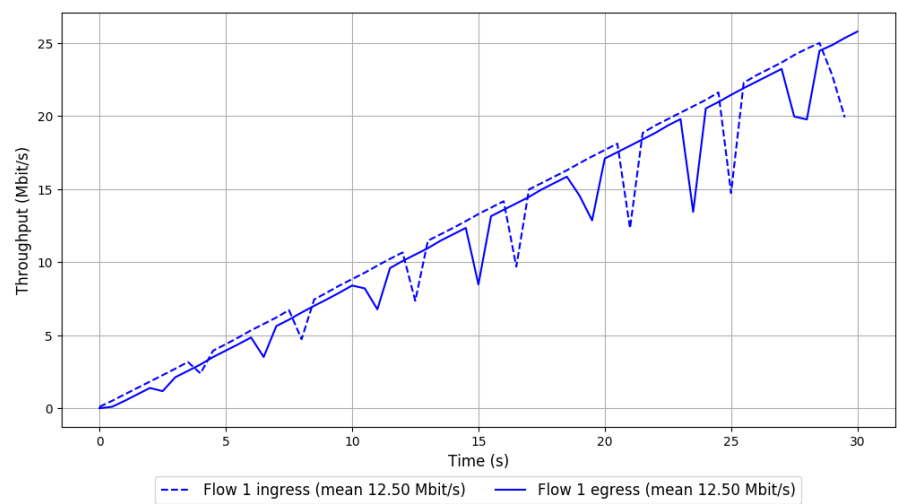
-- Flow 1:

Average throughput: 12.50 Mbit/s

95th percentile per-packet one-way delay: 88.089 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-06 05:08:44

End at: 2018-09-06 05:09:14

Local clock offset: 8.077 ms

Remote clock offset: 4.284 ms

Below is generated by plot.py at 2018-09-06 06:33:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.51 Mbit/s

95th percentile per-packet one-way delay: 87.867 ms

Loss rate: 0.00%

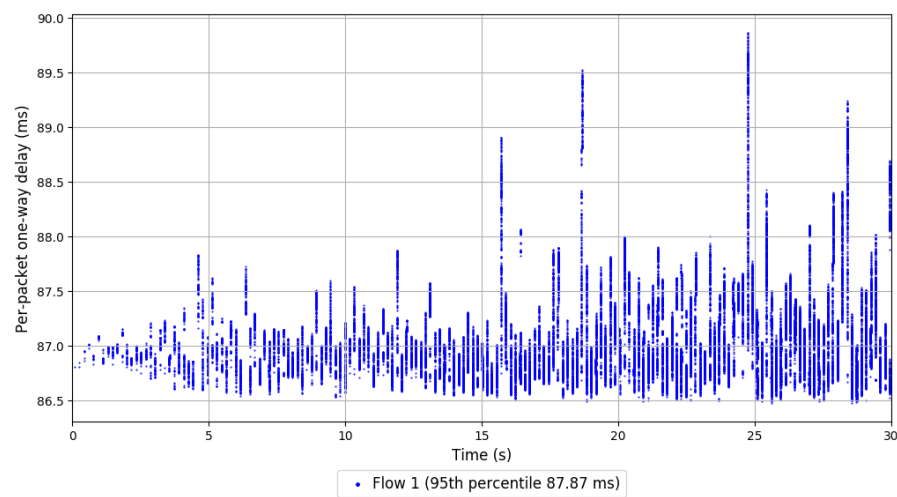
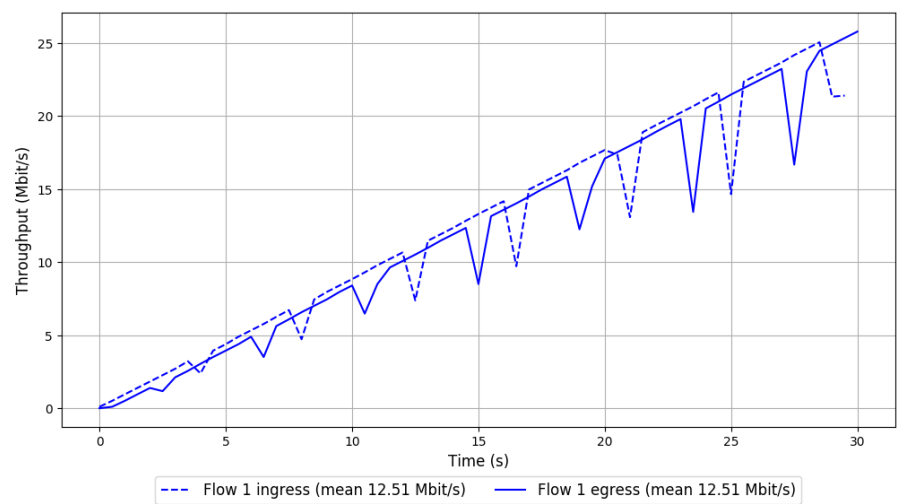
-- Flow 1:

Average throughput: 12.51 Mbit/s

95th percentile per-packet one-way delay: 87.867 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

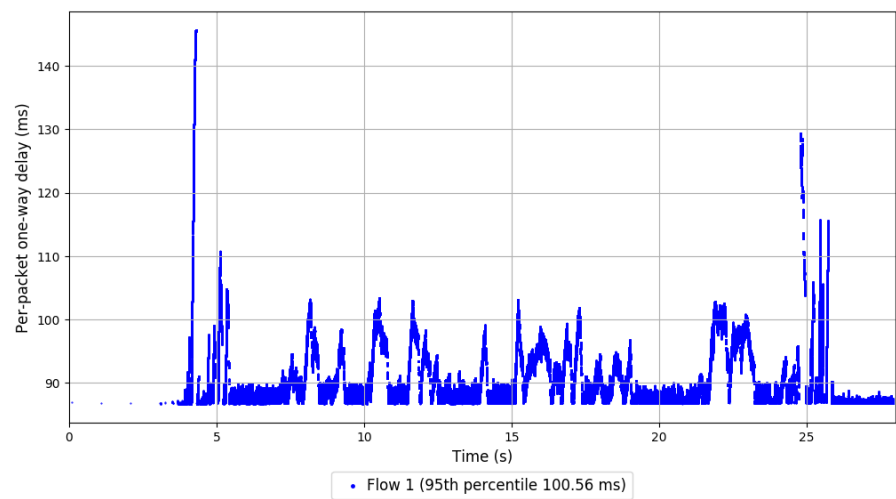
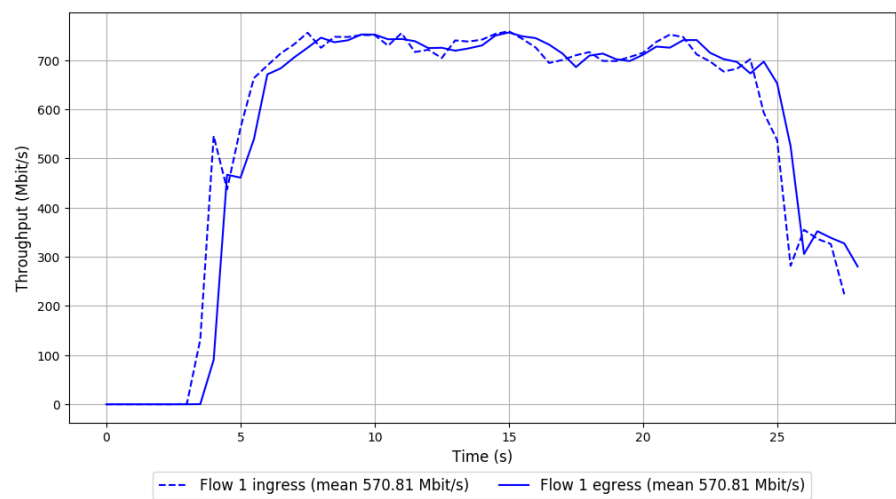


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-06 03:23:31
End at: 2018-09-06 03:24:01
Local clock offset: 11.152 ms
Remote clock offset: 12.398 ms

# Below is generated by plot.py at 2018-09-06 06:33:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 570.81 Mbit/s
95th percentile per-packet one-way delay: 100.557 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 570.81 Mbit/s
95th percentile per-packet one-way delay: 100.557 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-Muses — Data Link

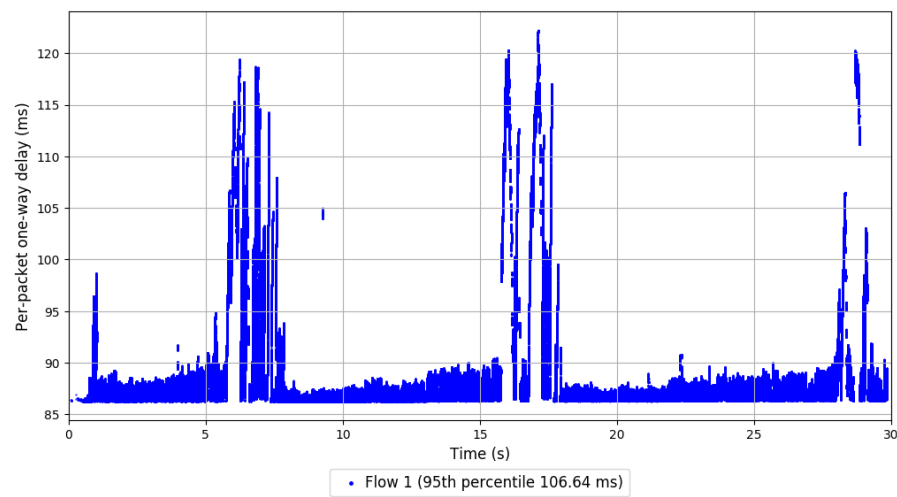
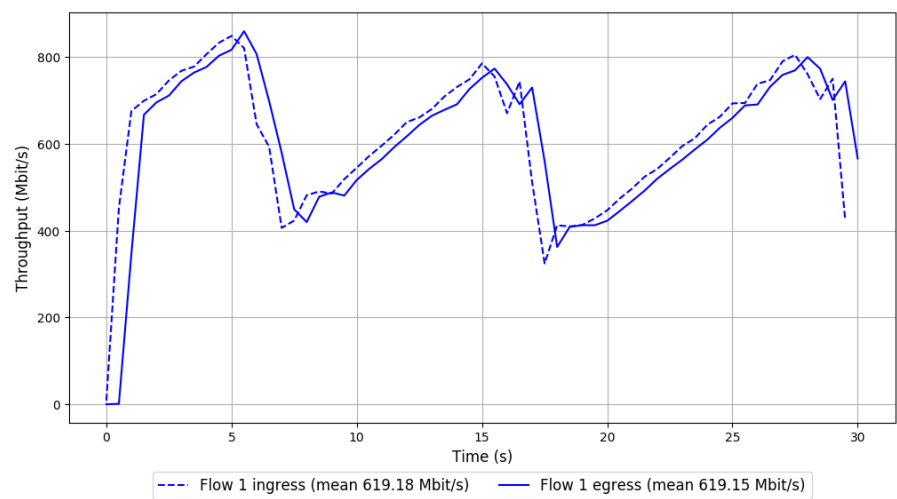


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-06 03:49:56
End at: 2018-09-06 03:50:26
Local clock offset: 24.263 ms
Remote clock offset: 26.184 ms

Below is generated by plot.py at 2018-09-06 06:33:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 619.15 Mbit/s
95th percentile per-packet one-way delay: 106.645 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 619.15 Mbit/s
95th percentile per-packet one-way delay: 106.645 ms
Loss rate: 0.00%

Run 2: Report of Indigo-Muses — Data Link

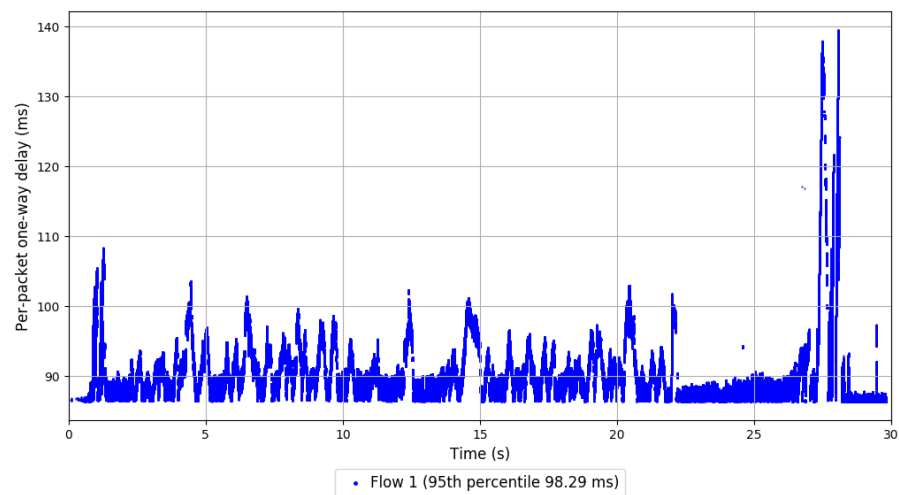
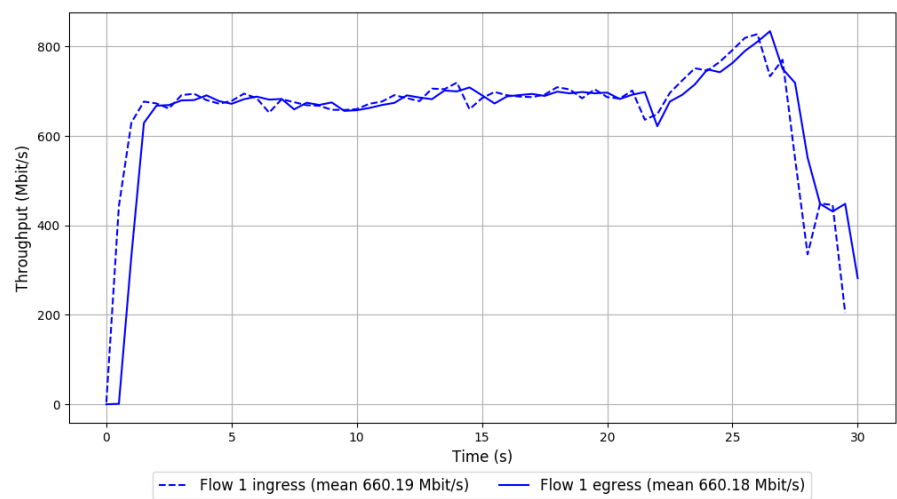


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-06 04:16:49
End at: 2018-09-06 04:17:19
Local clock offset: 31.742 ms
Remote clock offset: 34.364 ms

Below is generated by plot.py at 2018-09-06 06:34:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 660.18 Mbit/s
95th percentile per-packet one-way delay: 98.288 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 660.18 Mbit/s
95th percentile per-packet one-way delay: 98.288 ms
Loss rate: 0.00%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-06 04:43:15

End at: 2018-09-06 04:43:45

Local clock offset: 14.712 ms

Remote clock offset: 9.694 ms

Below is generated by plot.py at 2018-09-06 06:34:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 606.17 Mbit/s

95th percentile per-packet one-way delay: 105.632 ms

Loss rate: 0.01%

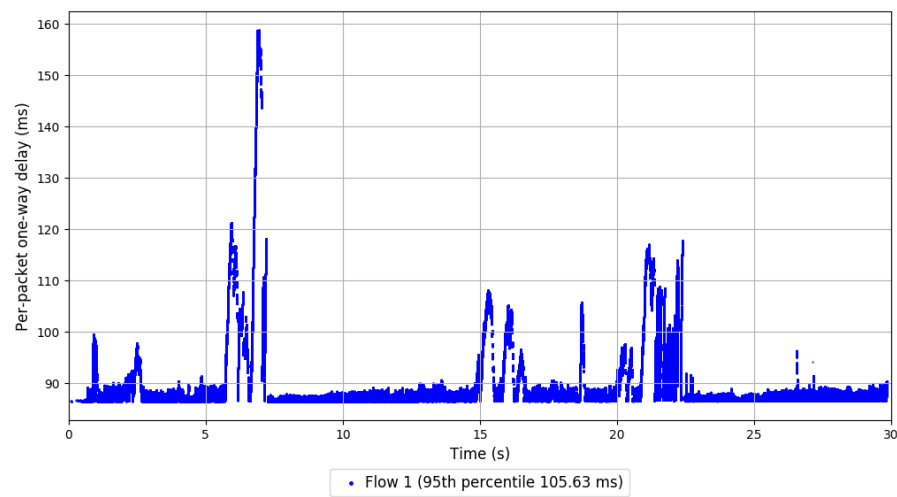
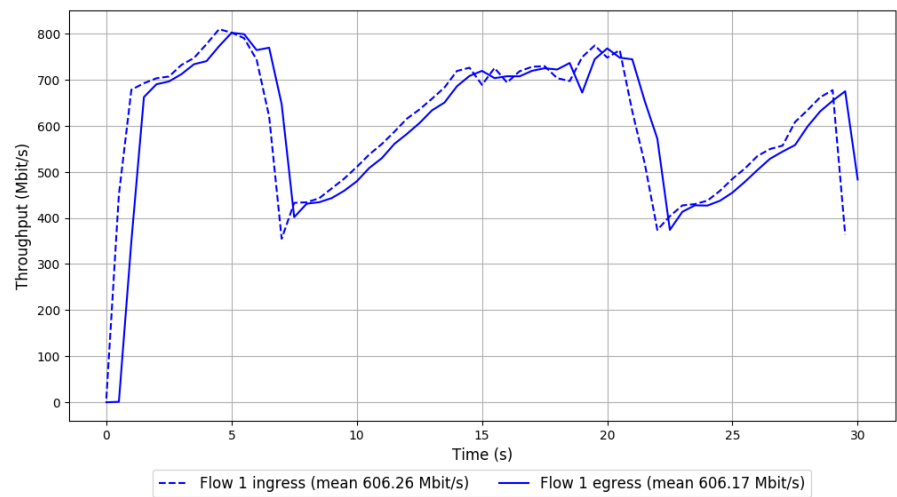
-- Flow 1:

Average throughput: 606.17 Mbit/s

95th percentile per-packet one-way delay: 105.632 ms

Loss rate: 0.01%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-06 05:09:54

End at: 2018-09-06 05:10:24

Local clock offset: 7.918 ms

Remote clock offset: 4.036 ms

Below is generated by plot.py at 2018-09-06 06:36:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 693.65 Mbit/s

95th percentile per-packet one-way delay: 104.847 ms

Loss rate: 0.00%

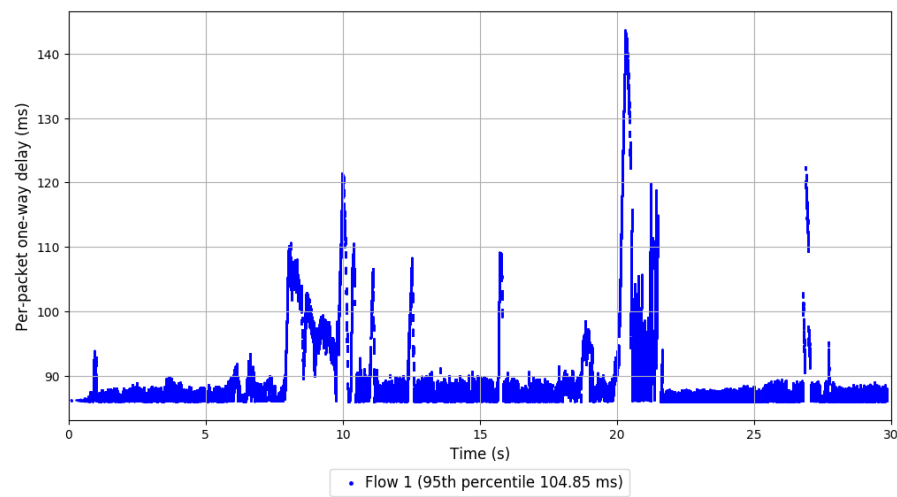
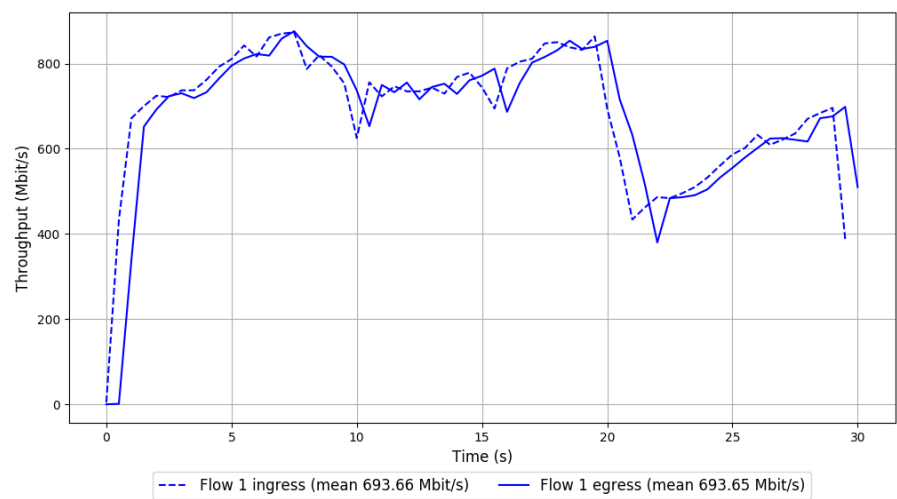
-- Flow 1:

Average throughput: 693.65 Mbit/s

95th percentile per-packet one-way delay: 104.847 ms

Loss rate: 0.00%

Run 5: Report of Indigo-Muses — Data Link

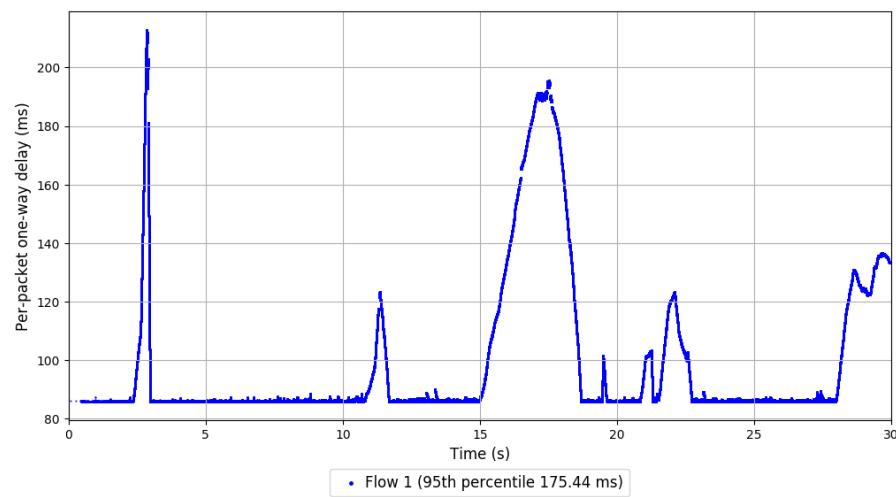
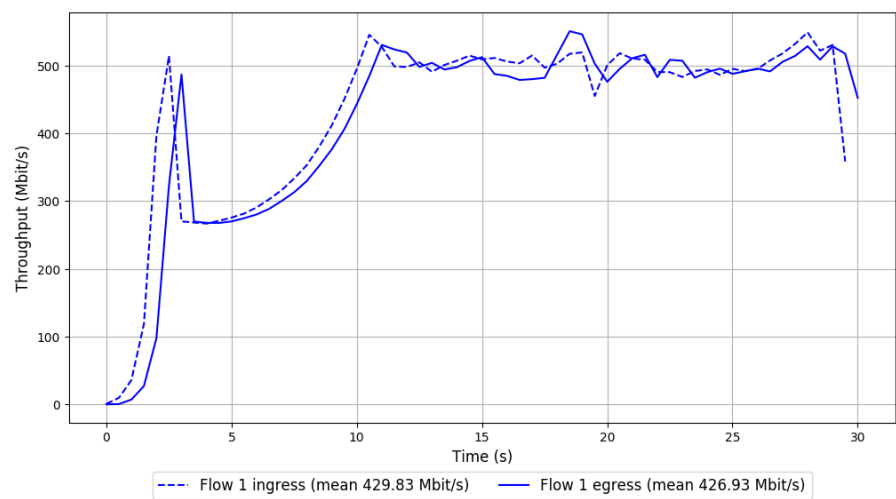


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 03:35:52
End at: 2018-09-06 03:36:22
Local clock offset: 12.808 ms
Remote clock offset: 13.788 ms

# Below is generated by plot.py at 2018-09-06 06:38:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 426.93 Mbit/s
95th percentile per-packet one-way delay: 175.439 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 426.93 Mbit/s
95th percentile per-packet one-way delay: 175.439 ms
Loss rate: 0.67%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-06 04:02:32

End at: 2018-09-06 04:03:02

Local clock offset: 20.339 ms

Remote clock offset: 21.919 ms

Below is generated by plot.py at 2018-09-06 06:42:19

Datalink statistics

-- Total of 1 flow:

Average throughput: 494.82 Mbit/s

95th percentile per-packet one-way delay: 185.862 ms

Loss rate: 3.31%

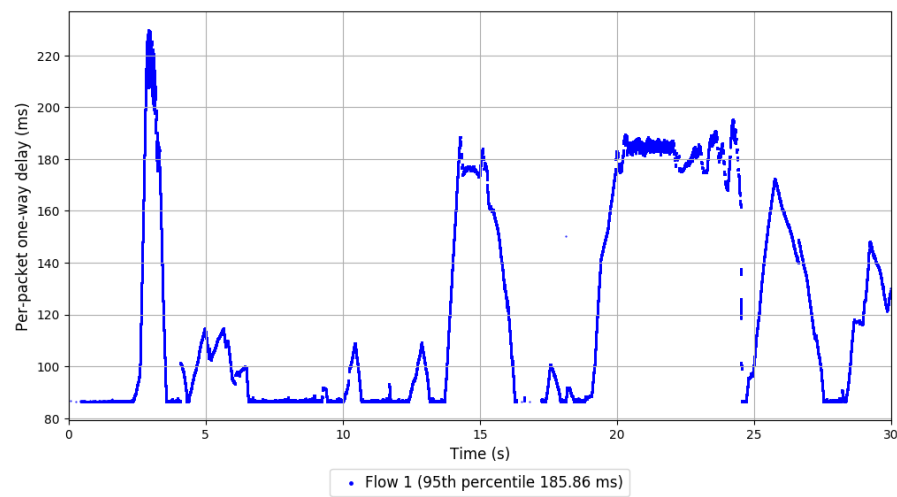
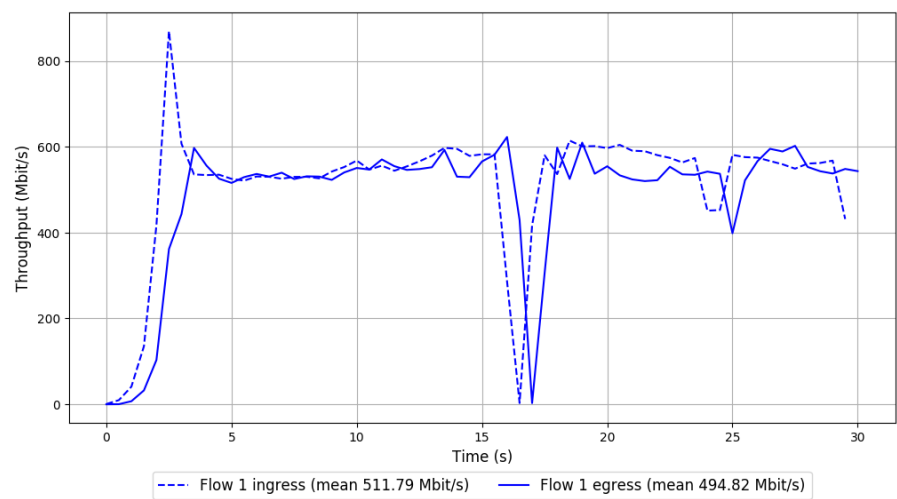
-- Flow 1:

Average throughput: 494.82 Mbit/s

95th percentile per-packet one-way delay: 185.862 ms

Loss rate: 3.31%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-06 04:29:14

End at: 2018-09-06 04:29:44

Local clock offset: 22.521 ms

Remote clock offset: 22.189 ms

Below is generated by plot.py at 2018-09-06 06:44:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 393.94 Mbit/s

95th percentile per-packet one-way delay: 187.207 ms

Loss rate: 2.28%

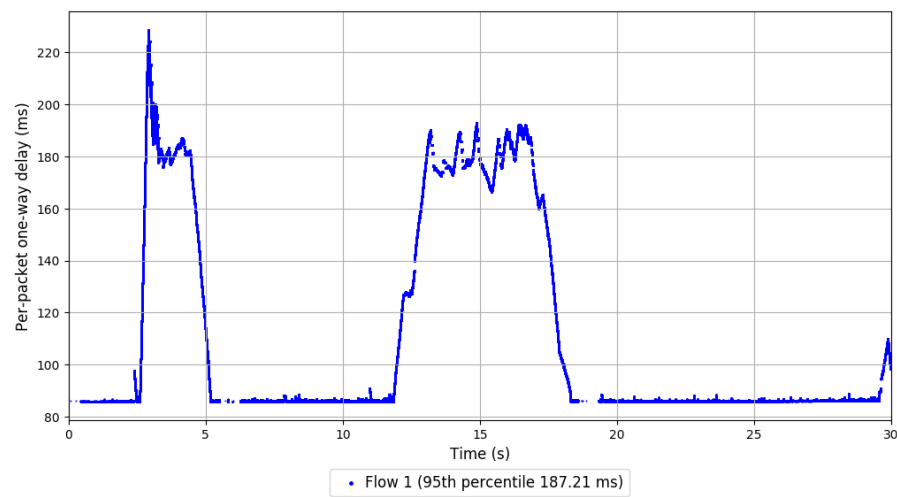
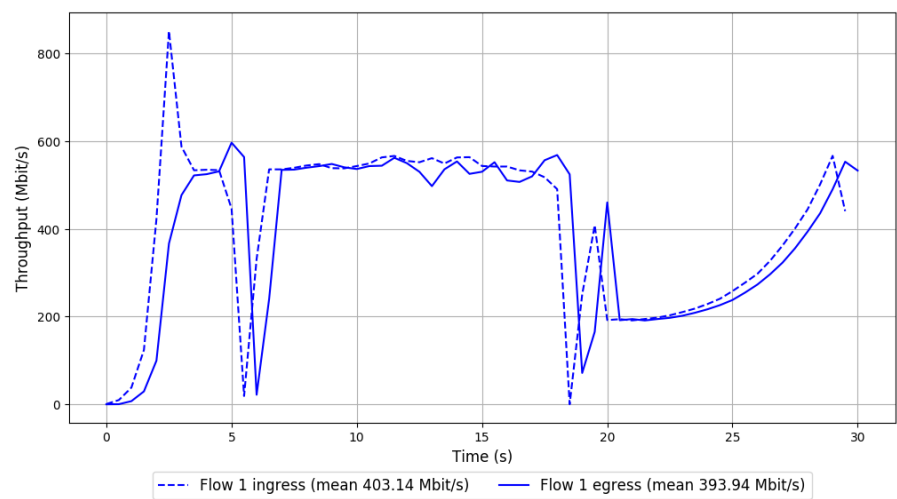
-- Flow 1:

Average throughput: 393.94 Mbit/s

95th percentile per-packet one-way delay: 187.207 ms

Loss rate: 2.28%

Run 3: Report of PCC-Allegro — Data Link

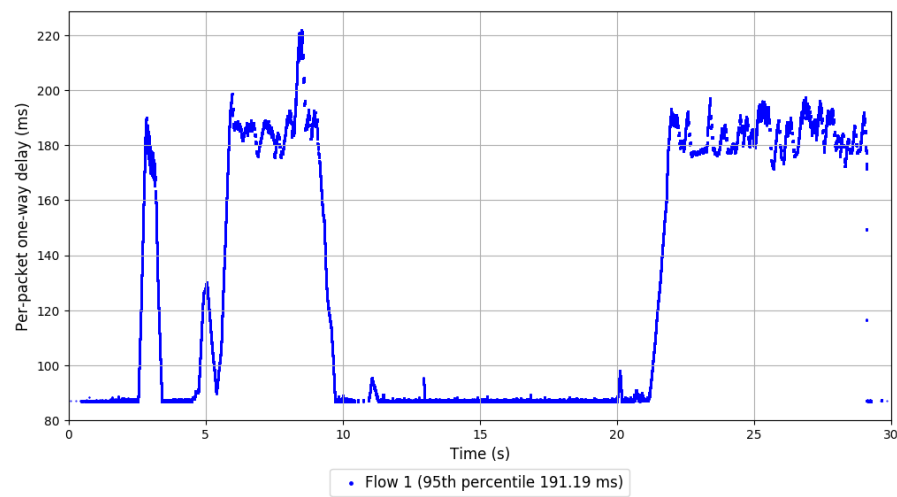
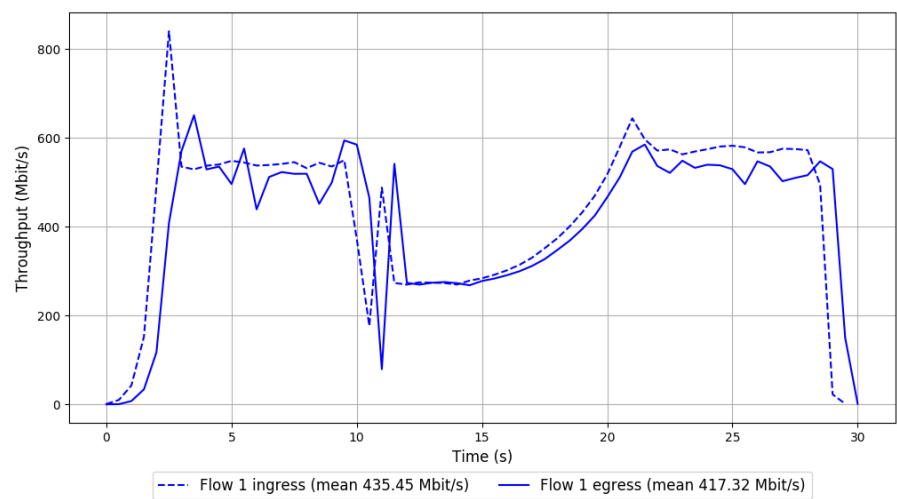


Run 4: Statistics of PCC-Allegro

Start at: 2018-09-06 04:55:39
End at: 2018-09-06 04:56:09
Local clock offset: 18.566 ms
Remote clock offset: 10.226 ms

Below is generated by plot.py at 2018-09-06 06:46:43
Datalink statistics
-- Total of 1 flow:
Average throughput: 417.32 Mbit/s
95th percentile per-packet one-way delay: 191.190 ms
Loss rate: 4.16%
-- Flow 1:
Average throughput: 417.32 Mbit/s
95th percentile per-packet one-way delay: 191.190 ms
Loss rate: 4.16%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-06 05:22:14

End at: 2018-09-06 05:22:44

Local clock offset: 7.495 ms

Remote clock offset: 3.864 ms

Below is generated by plot.py at 2018-09-06 06:47:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 422.77 Mbit/s

95th percentile per-packet one-way delay: 188.177 ms

Loss rate: 1.68%

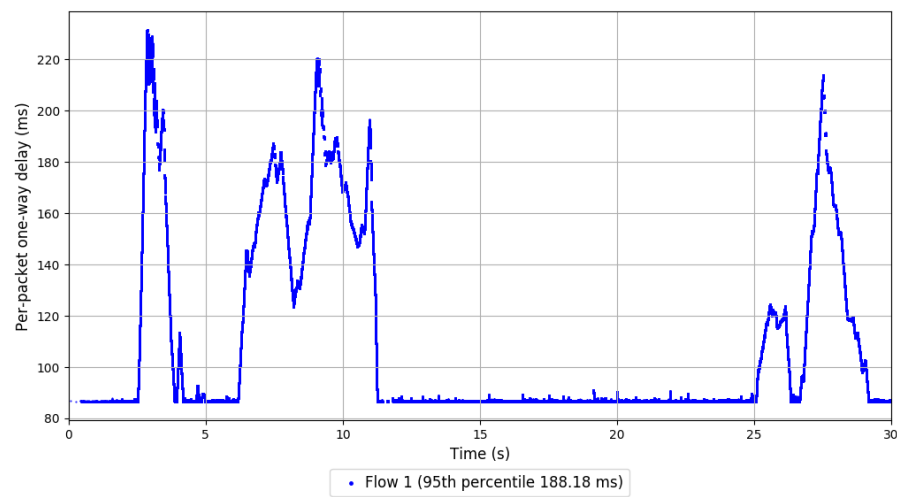
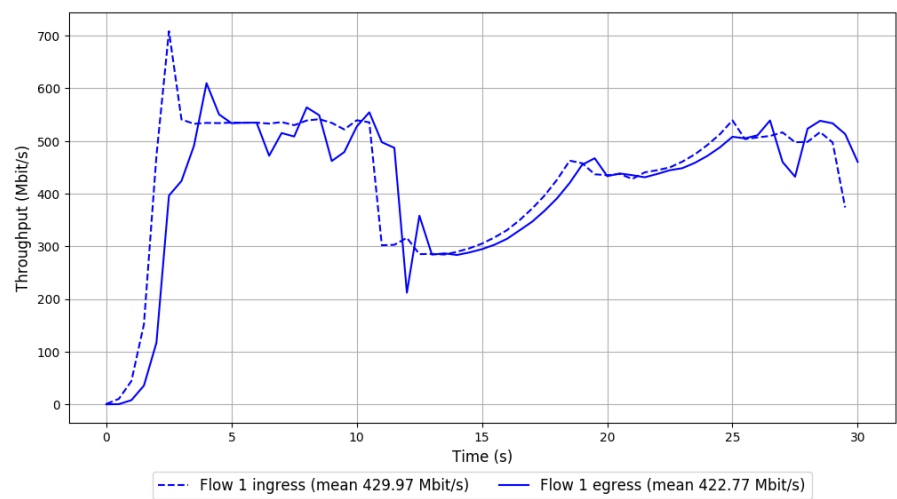
-- Flow 1:

Average throughput: 422.77 Mbit/s

95th percentile per-packet one-way delay: 188.177 ms

Loss rate: 1.68%

Run 5: Report of PCC-Allegro — Data Link

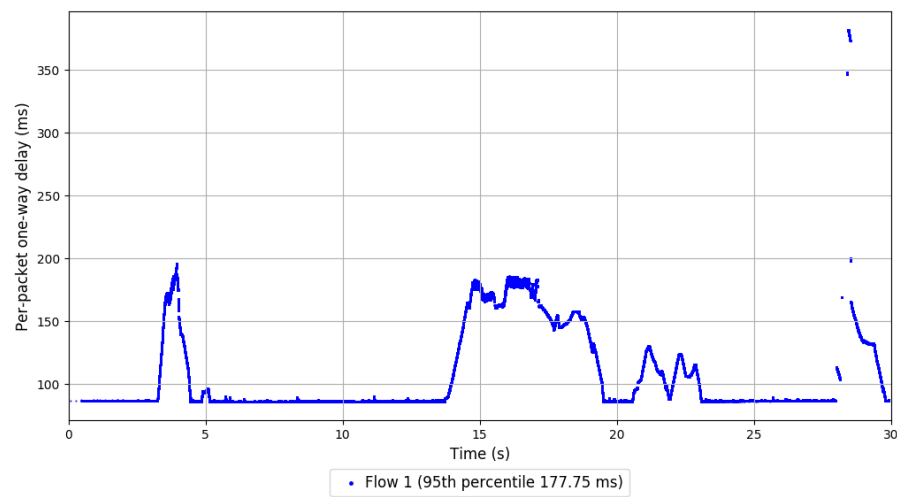
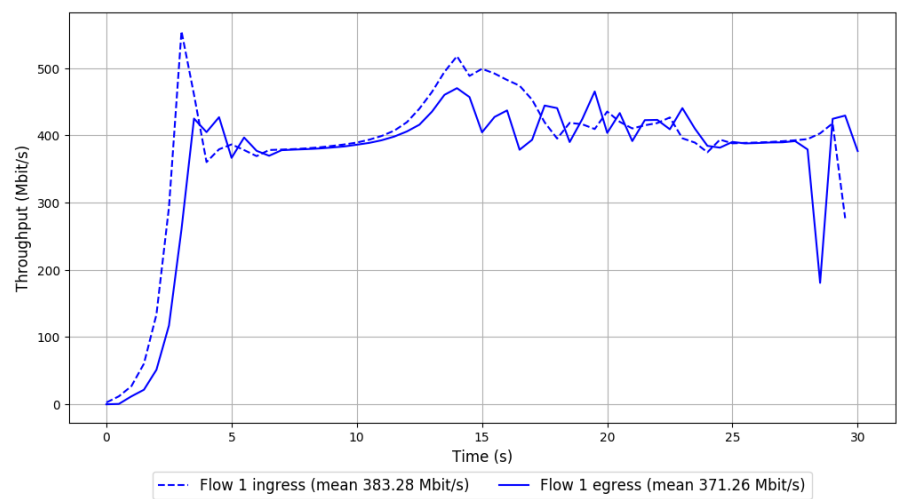


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-06 03:16:44
End at: 2018-09-06 03:17:14
Local clock offset: 3.171 ms
Remote clock offset: 3.944 ms

# Below is generated by plot.py at 2018-09-06 06:47:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 371.26 Mbit/s
95th percentile per-packet one-way delay: 177.748 ms
Loss rate: 3.14%
-- Flow 1:
Average throughput: 371.26 Mbit/s
95th percentile per-packet one-way delay: 177.748 ms
Loss rate: 3.14%
```

Run 1: Report of PCC-Expr — Data Link

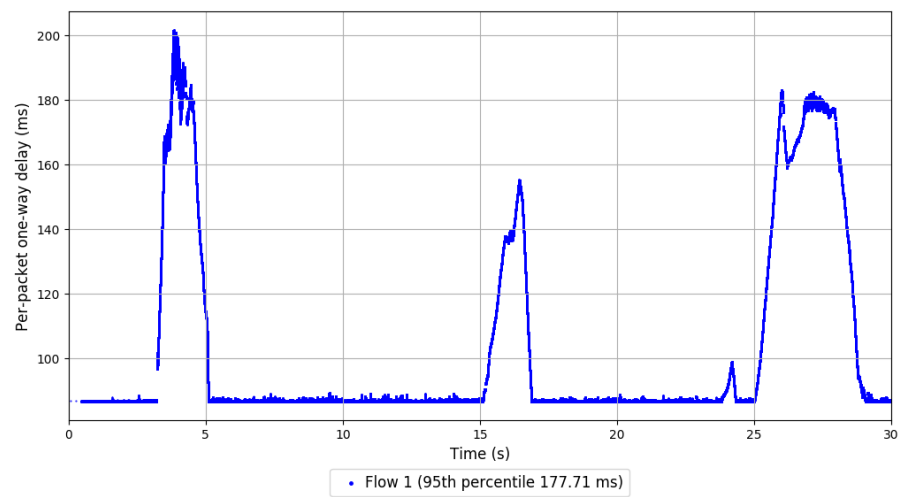
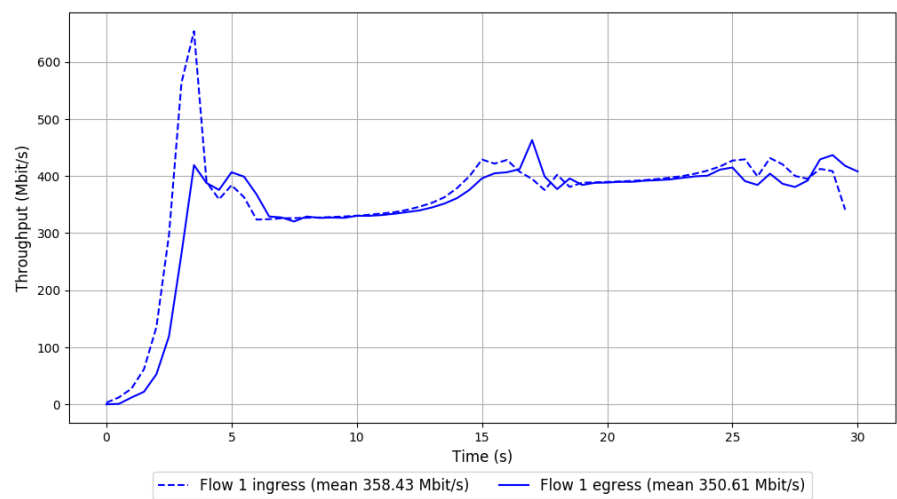


Run 2: Statistics of PCC-Expr

Start at: 2018-09-06 03:43:08
End at: 2018-09-06 03:43:38
Local clock offset: 17.772 ms
Remote clock offset: 19.357 ms

Below is generated by plot.py at 2018-09-06 06:47:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 350.61 Mbit/s
95th percentile per-packet one-way delay: 177.714 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 350.61 Mbit/s
95th percentile per-packet one-way delay: 177.714 ms
Loss rate: 2.18%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-06 04:09:54

End at: 2018-09-06 04:10:24

Local clock offset: 25.362 ms

Remote clock offset: 27.55 ms

Below is generated by plot.py at 2018-09-06 06:48:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 362.87 Mbit/s

95th percentile per-packet one-way delay: 176.899 ms

Loss rate: 2.01%

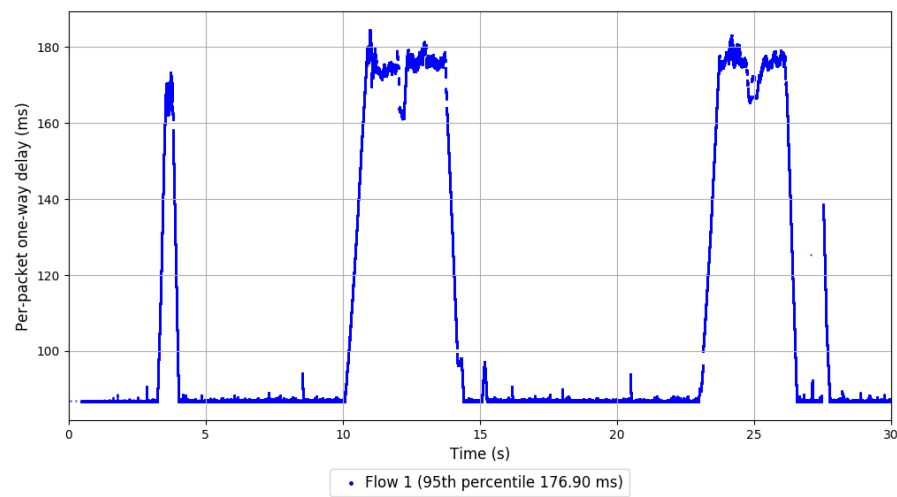
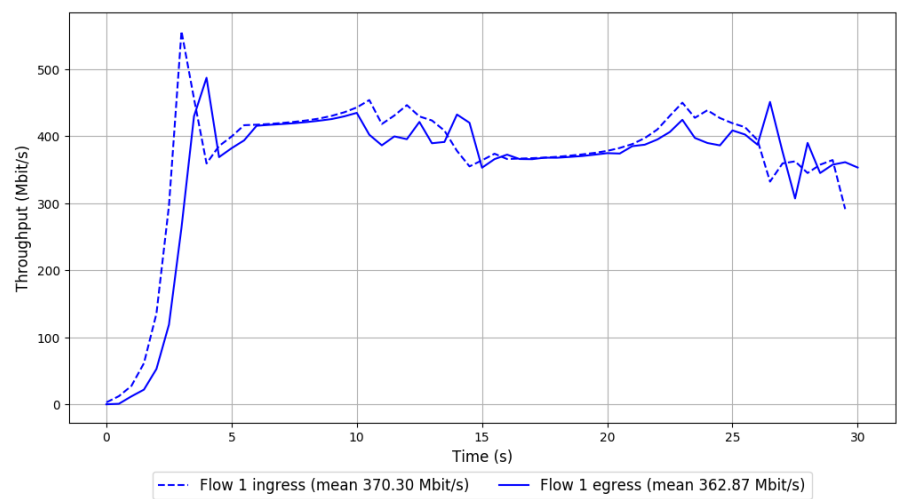
-- Flow 1:

Average throughput: 362.87 Mbit/s

95th percentile per-packet one-way delay: 176.899 ms

Loss rate: 2.01%

Run 3: Report of PCC-Expr — Data Link

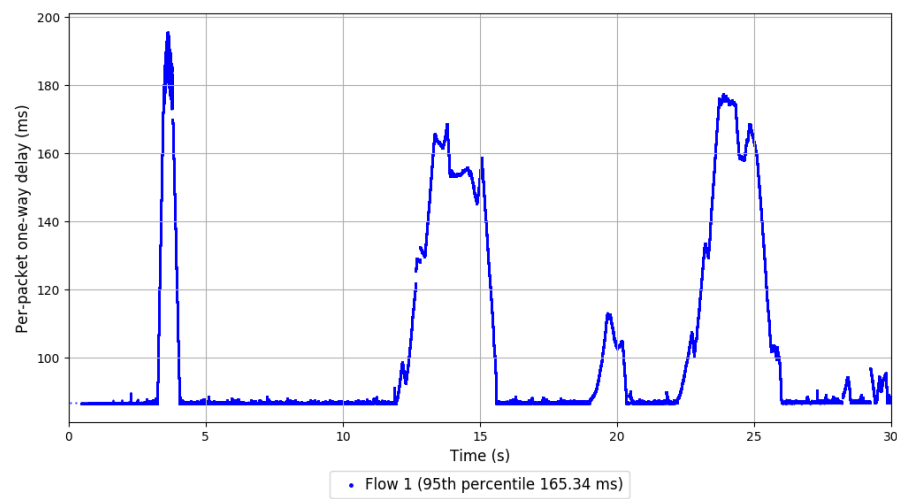
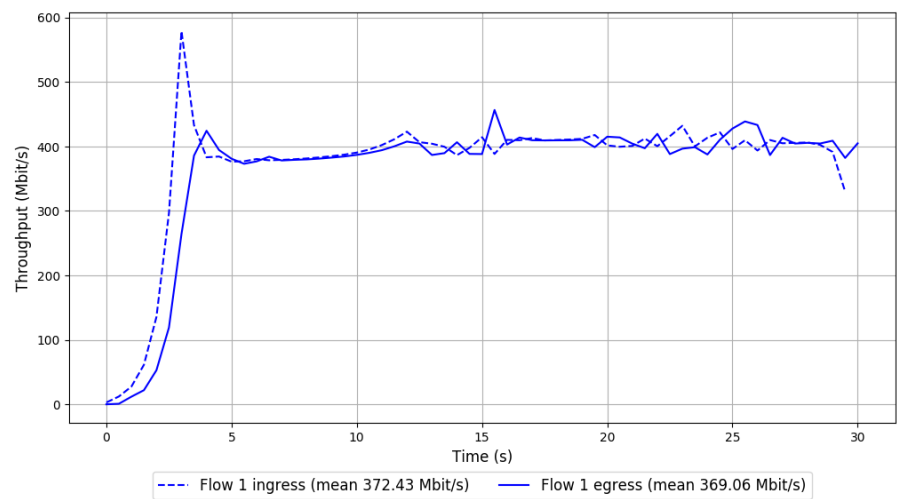


Run 4: Statistics of PCC-Expr

Start at: 2018-09-06 04:36:29
End at: 2018-09-06 04:36:59
Local clock offset: 15.354 ms
Remote clock offset: 12.532 ms

Below is generated by plot.py at 2018-09-06 06:51:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 369.06 Mbit/s
95th percentile per-packet one-way delay: 165.335 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 369.06 Mbit/s
95th percentile per-packet one-way delay: 165.335 ms
Loss rate: 0.90%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-06 05:02:57

End at: 2018-09-06 05:03:27

Local clock offset: 11.673 ms

Remote clock offset: 6.171 ms

Below is generated by plot.py at 2018-09-06 06:54:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 365.93 Mbit/s

95th percentile per-packet one-way delay: 167.621 ms

Loss rate: 2.68%

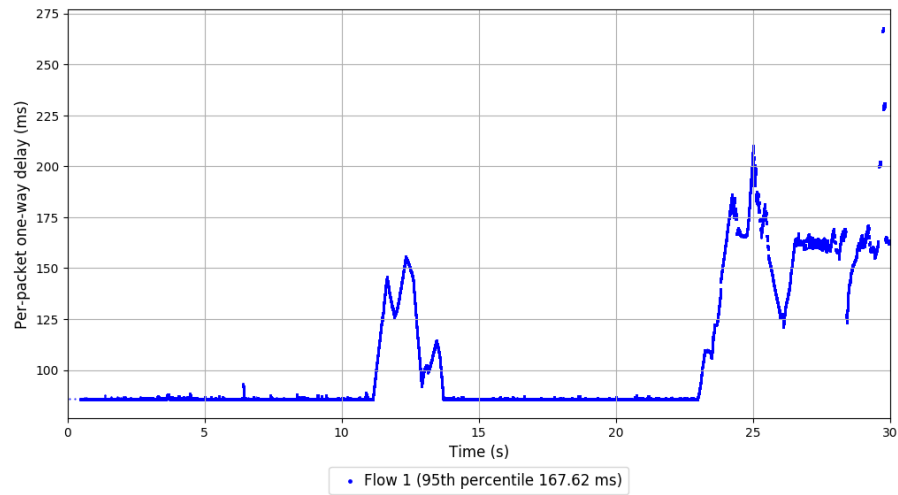
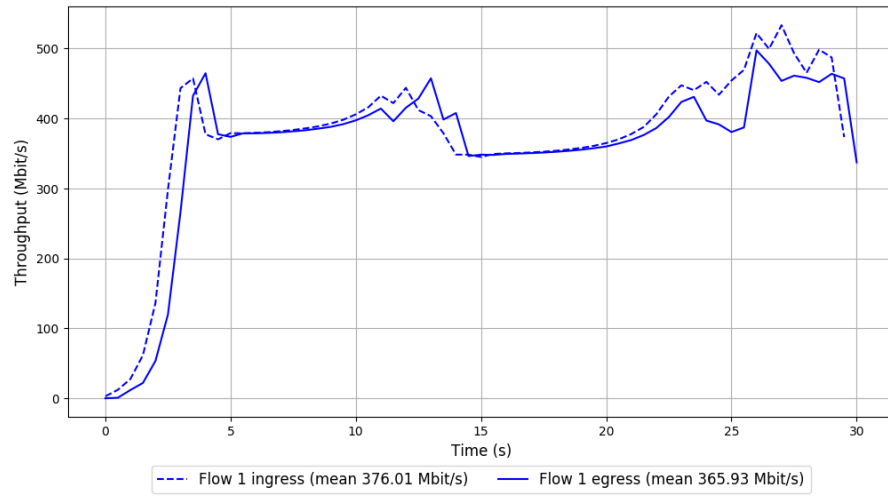
-- Flow 1:

Average throughput: 365.93 Mbit/s

95th percentile per-packet one-way delay: 167.621 ms

Loss rate: 2.68%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

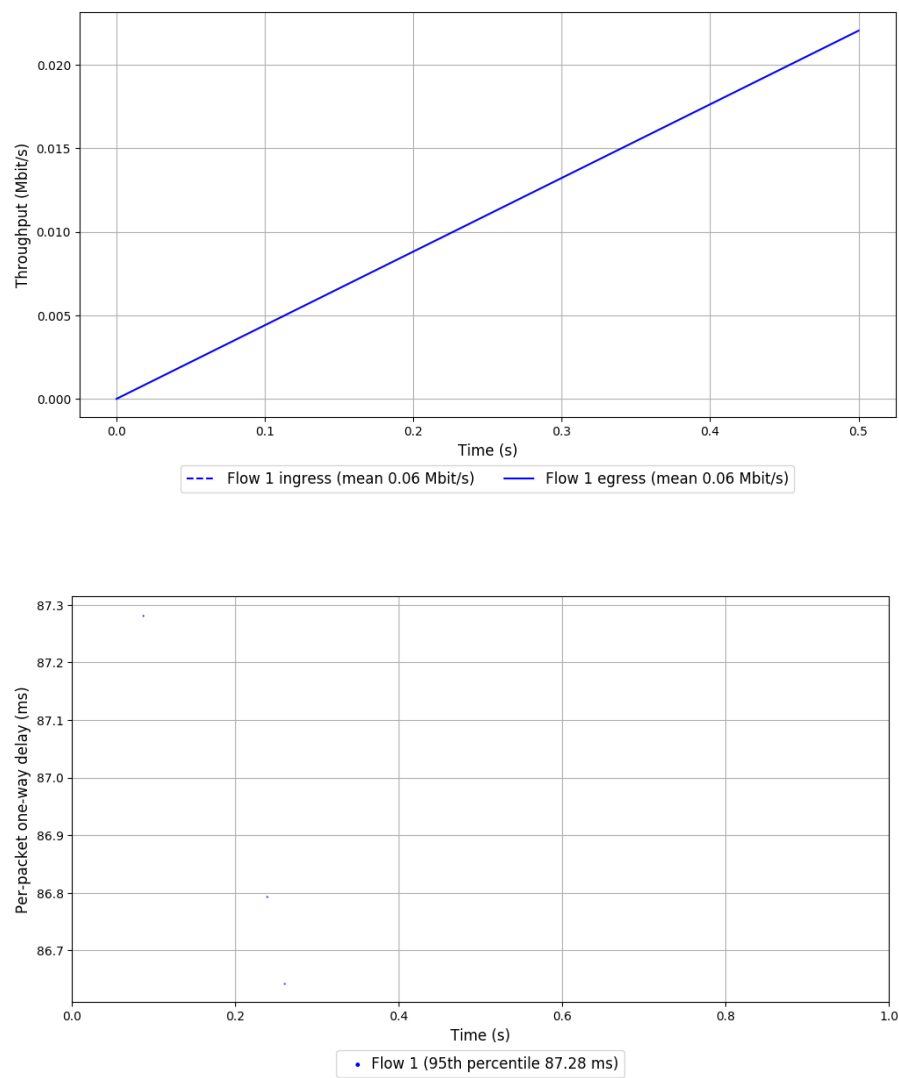
Start at: 2018-09-06 03:39:07

End at: 2018-09-06 03:39:37

Local clock offset: 13.587 ms

Remote clock offset: 14.995 ms

Run 1: Report of QUIC Cubic — Data Link

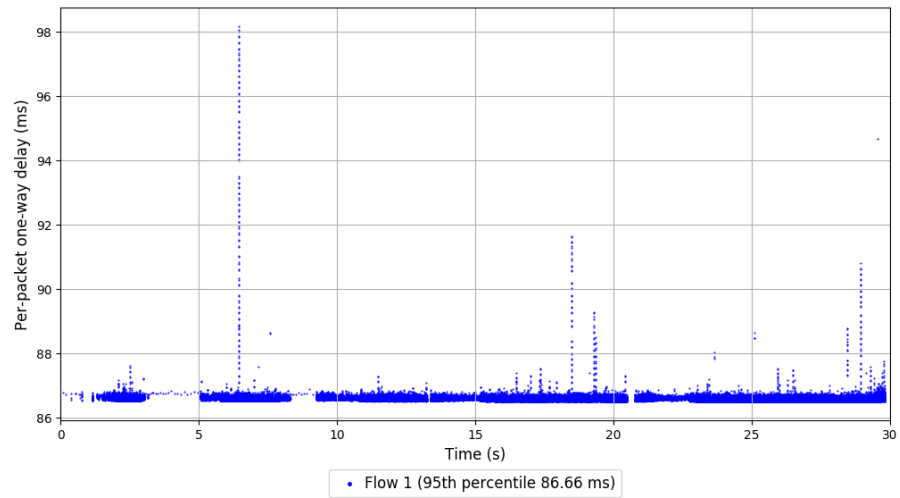
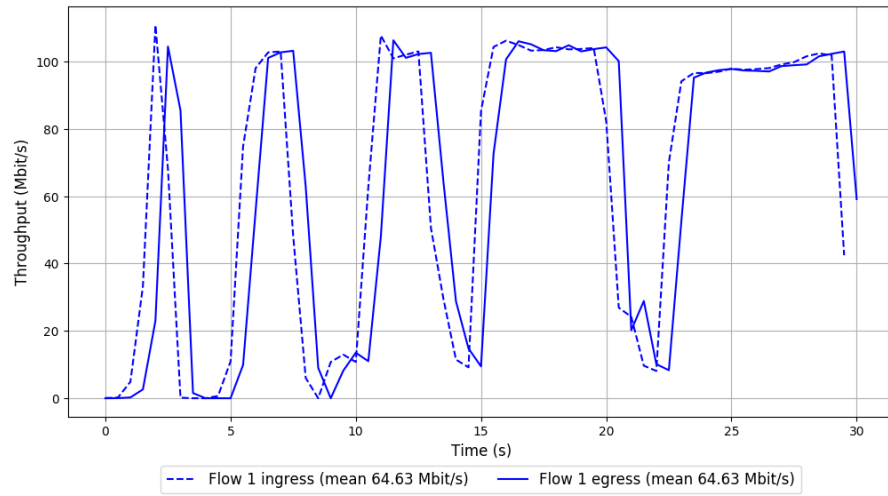


Run 2: Statistics of QUIC Cubic

Start at: 2018-09-06 04:05:53
End at: 2018-09-06 04:06:23
Local clock offset: 22.112 ms
Remote clock offset: 24.044 ms

Below is generated by plot.py at 2018-09-06 06:54:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 64.63 Mbit/s
95th percentile per-packet one-way delay: 86.663 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 64.63 Mbit/s
95th percentile per-packet one-way delay: 86.663 ms
Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-06 04:32:28

End at: 2018-09-06 04:32:58

Local clock offset: 18.152 ms

Remote clock offset: 16.629 ms

Below is generated by plot.py at 2018-09-06 06:54:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 63.99 Mbit/s

95th percentile per-packet one-way delay: 86.447 ms

Loss rate: 0.00%

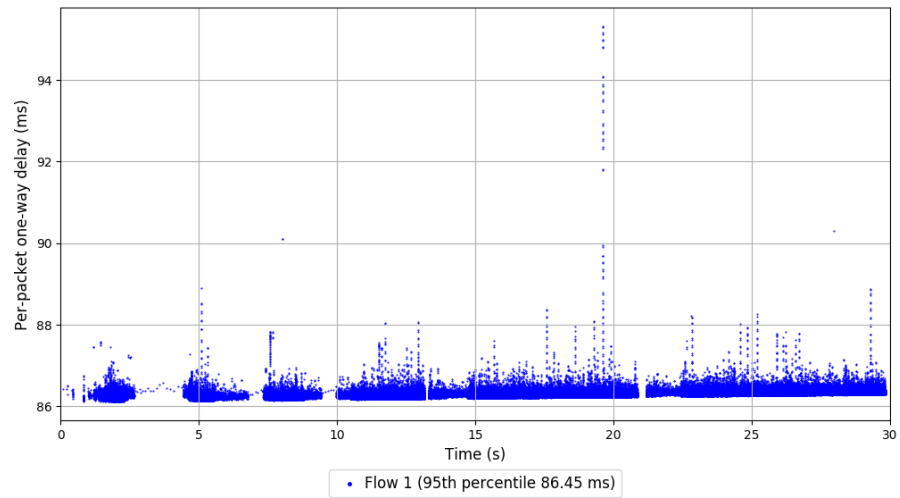
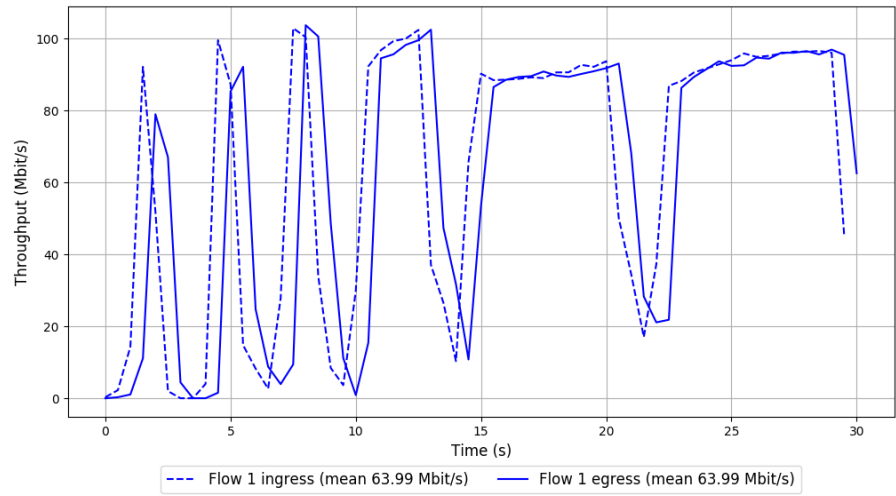
-- Flow 1:

Average throughput: 63.99 Mbit/s

95th percentile per-packet one-way delay: 86.447 ms

Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-06 04:58:57

End at: 2018-09-06 04:59:27

Local clock offset: 16.604 ms

Remote clock offset: 8.788 ms

Below is generated by plot.py at 2018-09-06 06:54:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 54.95 Mbit/s

95th percentile per-packet one-way delay: 85.844 ms

Loss rate: 0.00%

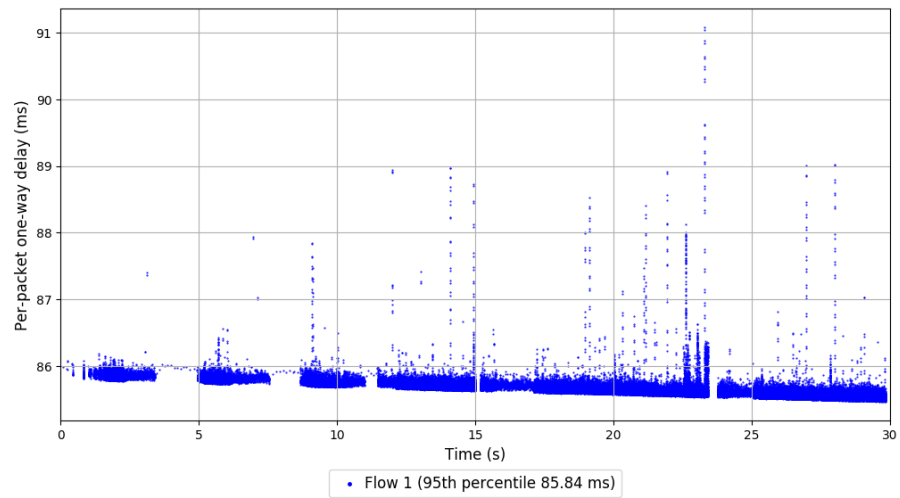
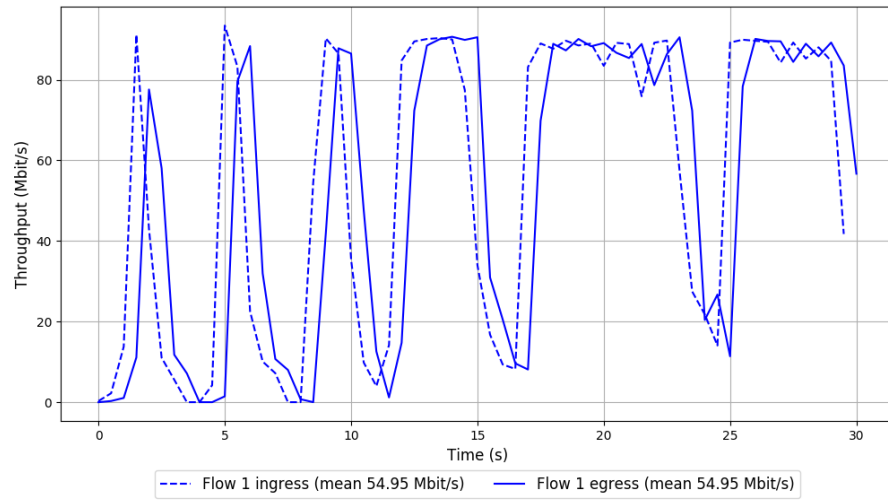
-- Flow 1:

Average throughput: 54.95 Mbit/s

95th percentile per-packet one-way delay: 85.844 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-06 05:25:30

End at: 2018-09-06 05:26:00

Local clock offset: 7.812 ms

Remote clock offset: 4.101 ms

Below is generated by plot.py at 2018-09-06 06:54:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.77 Mbit/s

95th percentile per-packet one-way delay: 86.804 ms

Loss rate: 0.00%

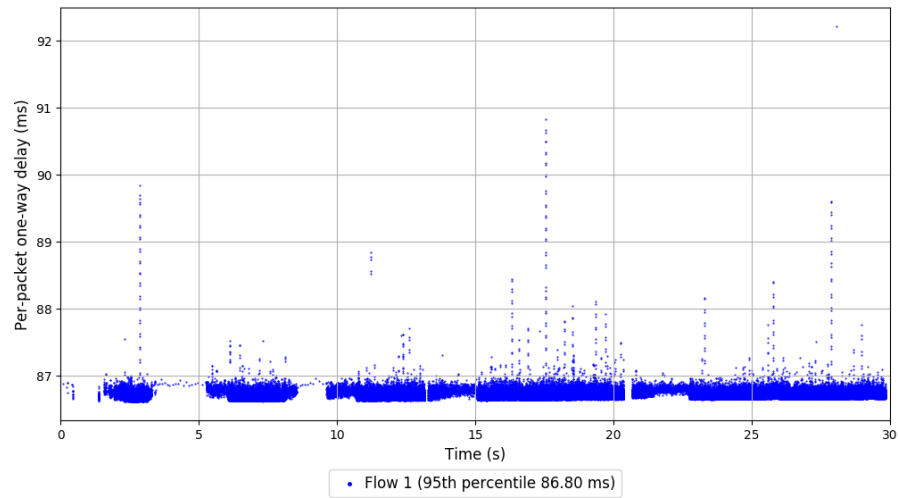
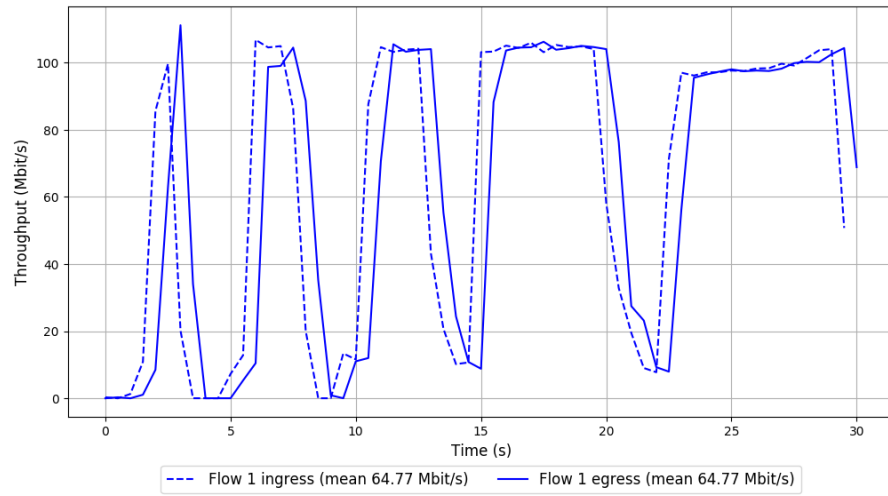
-- Flow 1:

Average throughput: 64.77 Mbit/s

95th percentile per-packet one-way delay: 86.804 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

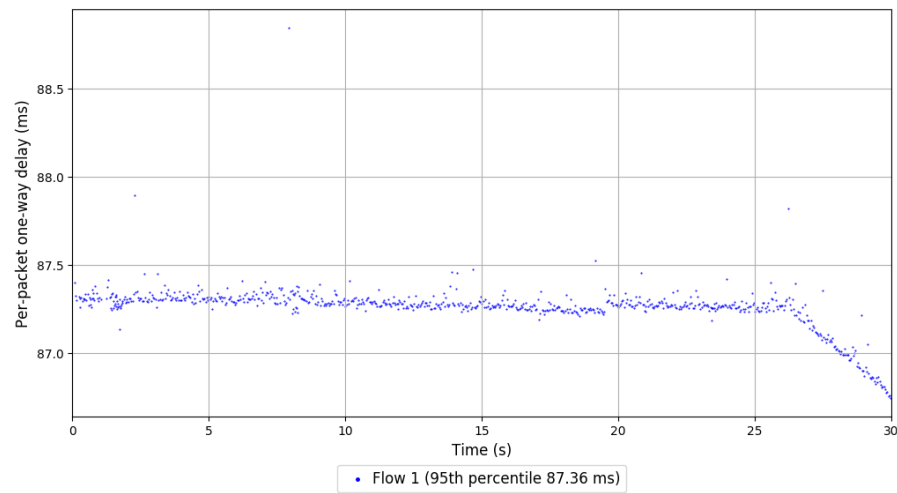
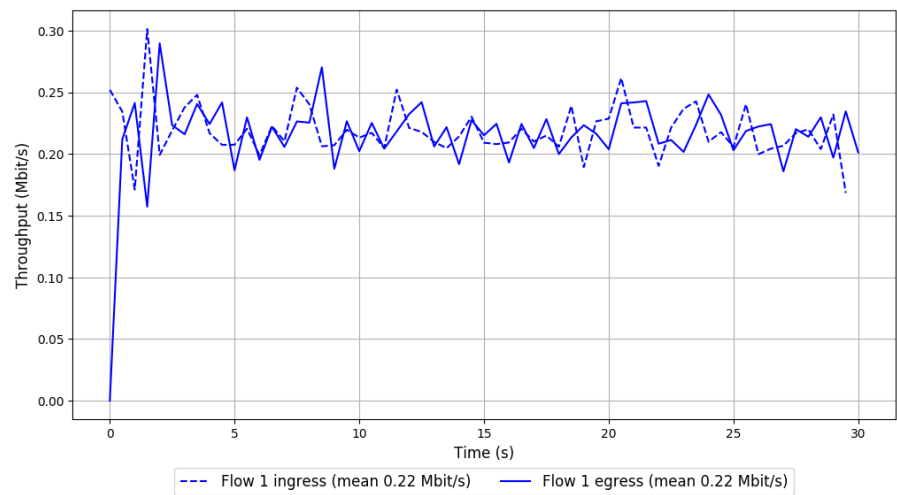


```
Run 1: Statistics of SCReAM

Start at: 2018-09-06 03:18:27
End at: 2018-09-06 03:18:57
Local clock offset: 4.815 ms
Remote clock offset: 6.235 ms

# Below is generated by plot.py at 2018-09-06 06:54:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.355 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.355 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

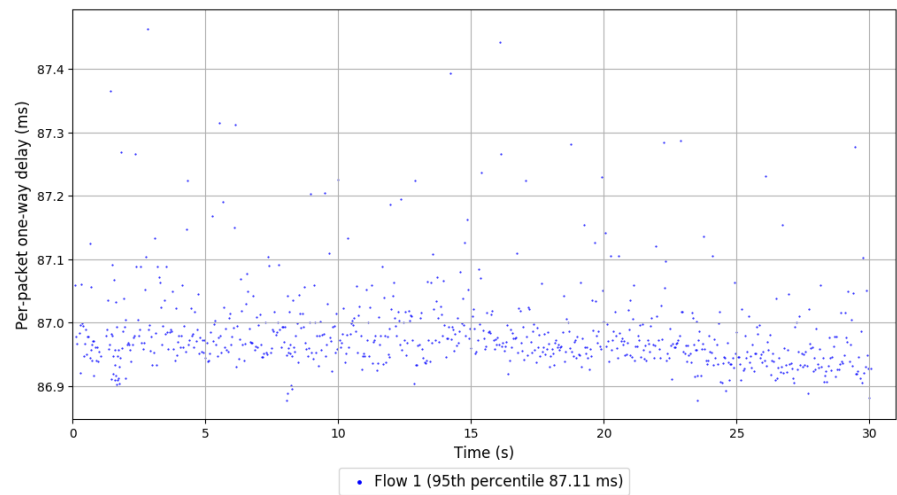
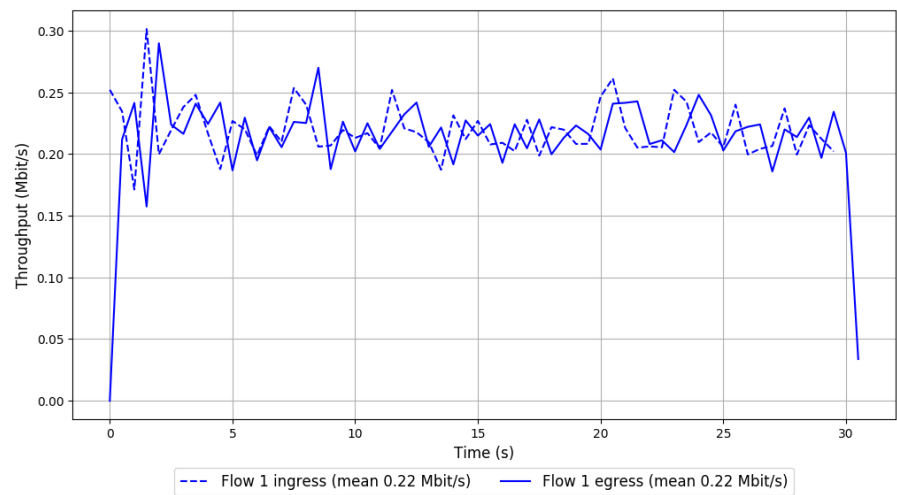


Run 2: Statistics of SCReAM

Start at: 2018-09-06 03:44:47
End at: 2018-09-06 03:45:17
Local clock offset: 19.688 ms
Remote clock offset: 21.469 ms

Below is generated by plot.py at 2018-09-06 06:54:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.109 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.109 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

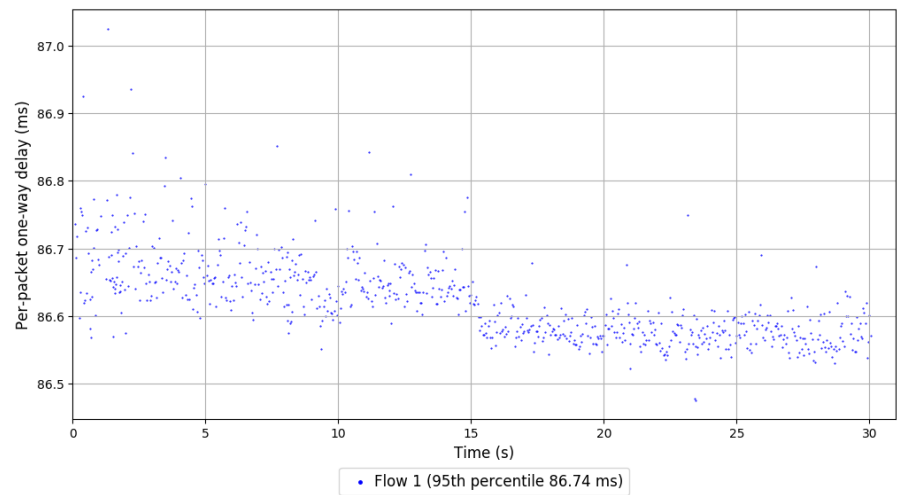
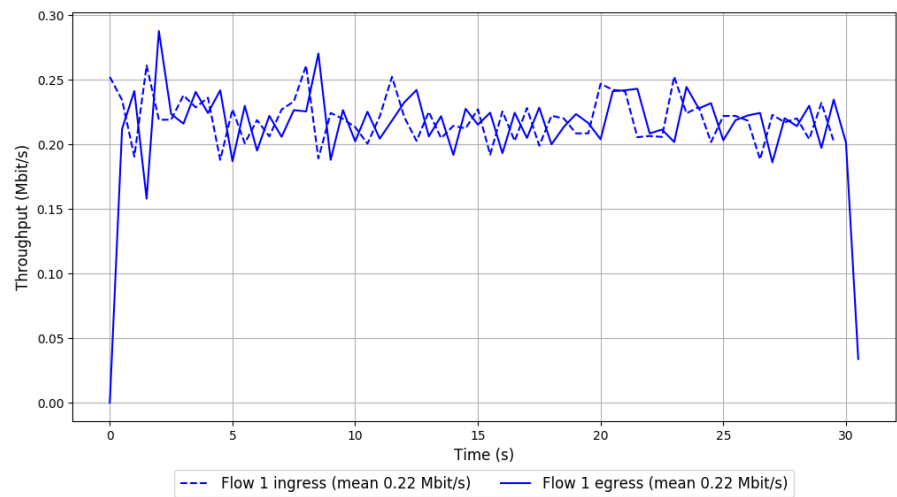


Run 3: Statistics of SCReAM

Start at: 2018-09-06 04:11:35
End at: 2018-09-06 04:12:05
Local clock offset: 26.856 ms
Remote clock offset: 28.964 ms

Below is generated by plot.py at 2018-09-06 06:54:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.736 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.736 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

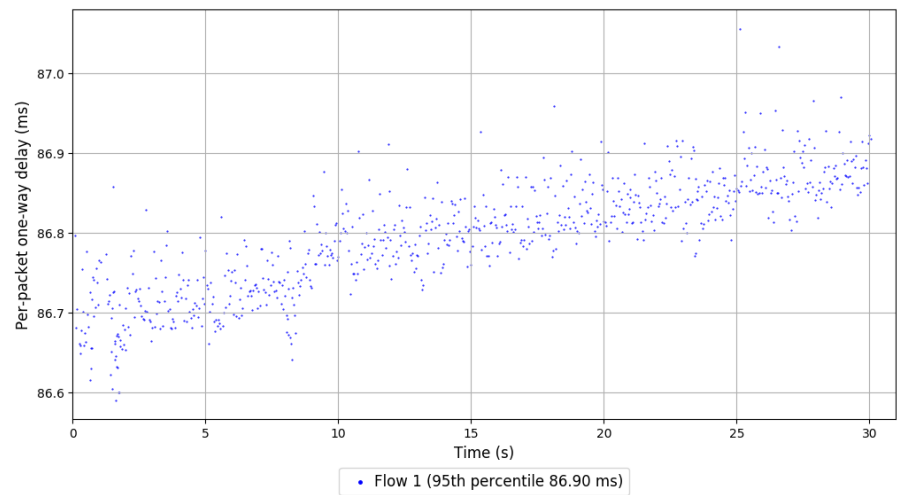
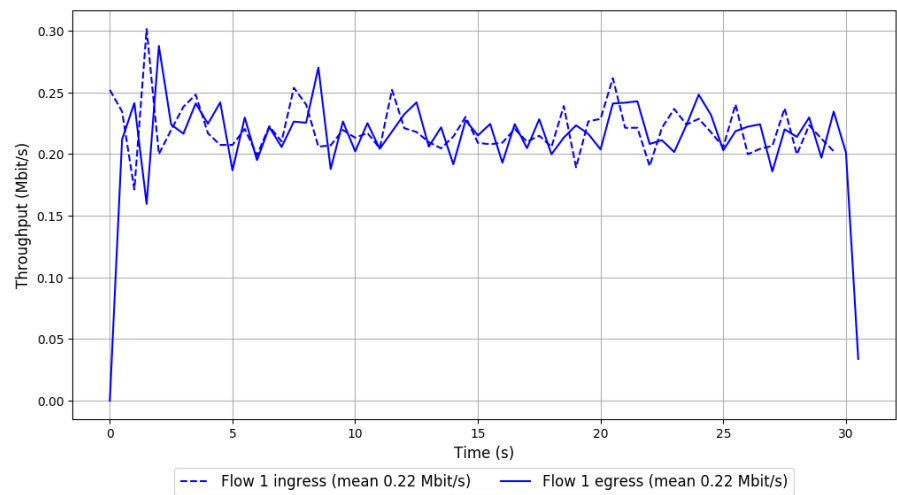


Run 4: Statistics of SCReAM

Start at: 2018-09-06 04:38:10
End at: 2018-09-06 04:38:40
Local clock offset: 14.818 ms
Remote clock offset: 11.516 ms

Below is generated by plot.py at 2018-09-06 06:54:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.901 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.901 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-06 05:04:38

End at: 2018-09-06 05:05:08

Local clock offset: 10.241 ms

Remote clock offset: 5.388 ms

Below is generated by plot.py at 2018-09-06 06:54:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 86.289 ms

Loss rate: 0.00%

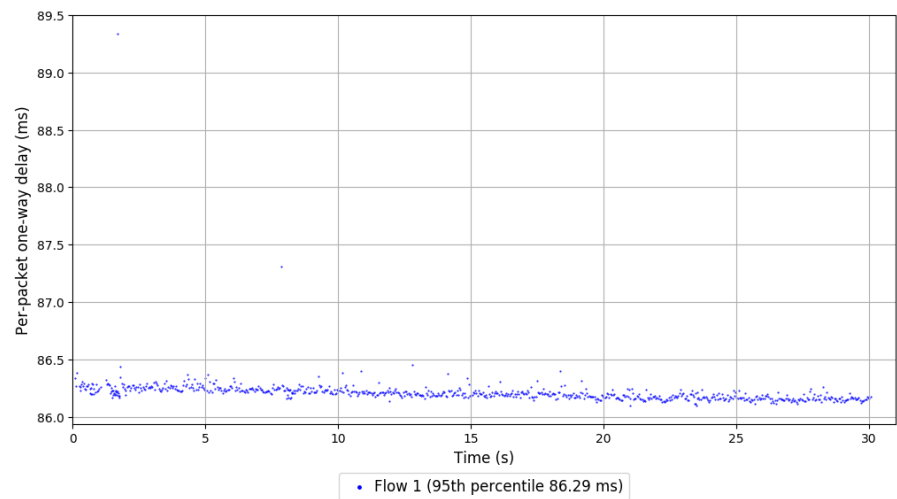
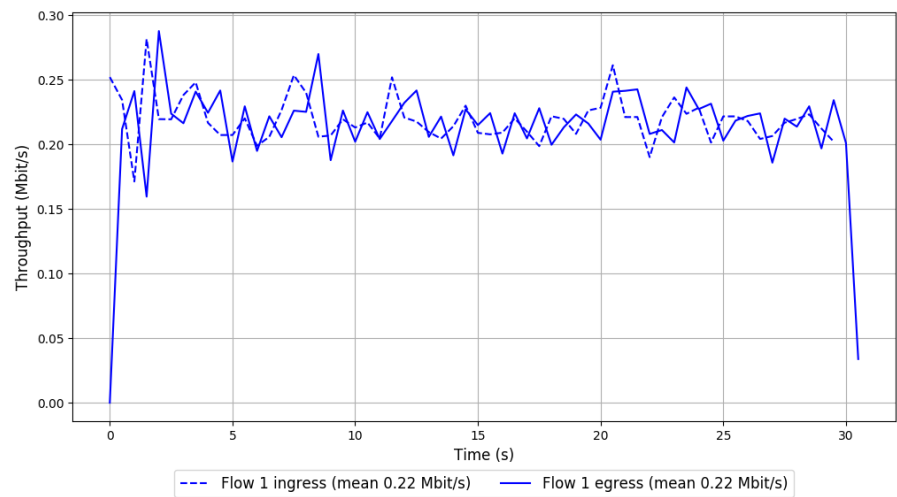
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 86.289 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

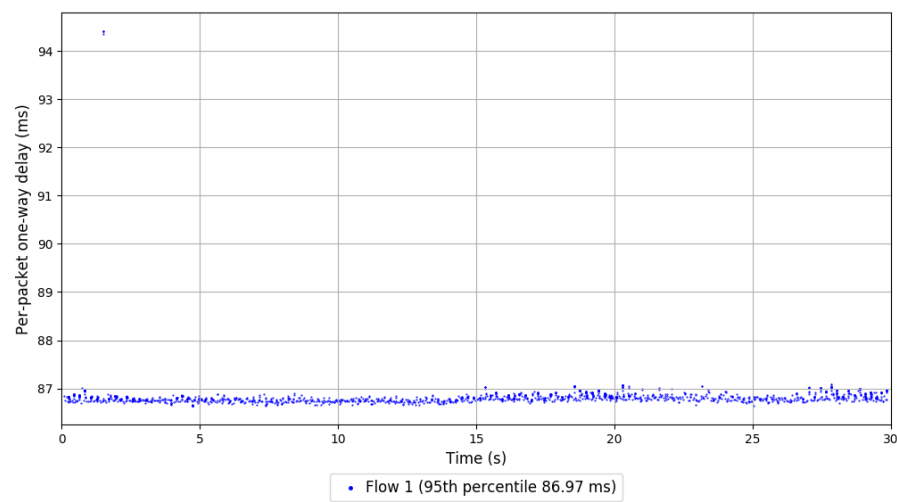
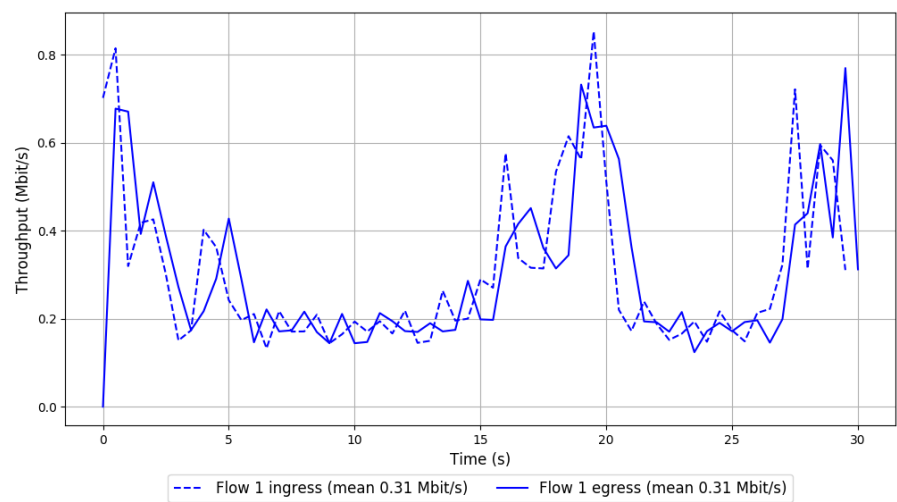


Run 1: Statistics of Sprout

Start at: 2018-09-06 03:40:14
End at: 2018-09-06 03:40:44
Local clock offset: 14.669 ms
Remote clock offset: 16.094 ms

Below is generated by plot.py at 2018-09-06 06:54:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 86.972 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 86.972 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

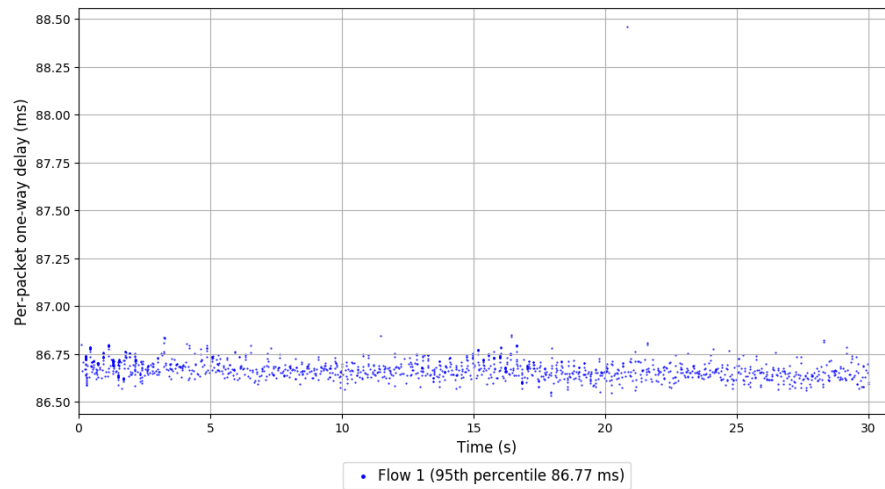
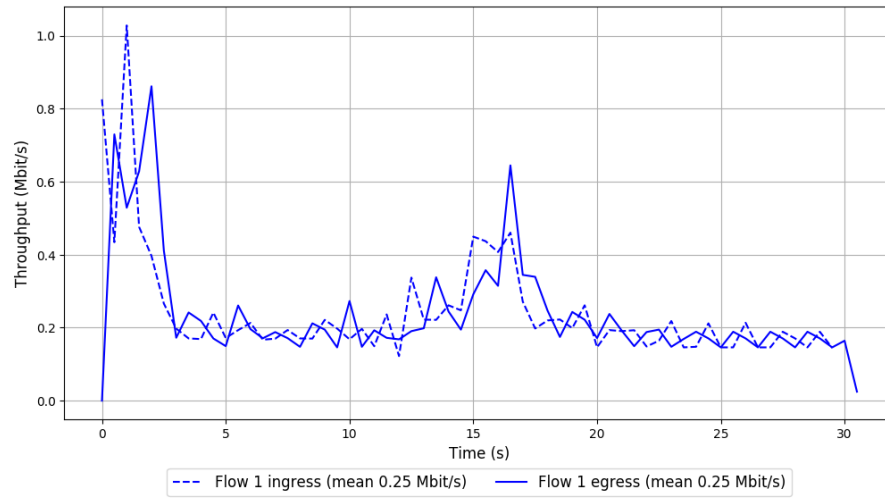


Run 2: Statistics of Sprout

Start at: 2018-09-06 04:07:05
End at: 2018-09-06 04:07:35
Local clock offset: 23.094 ms
Remote clock offset: 24.953 ms

Below is generated by plot.py at 2018-09-06 06:54:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 86.769 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 86.769 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

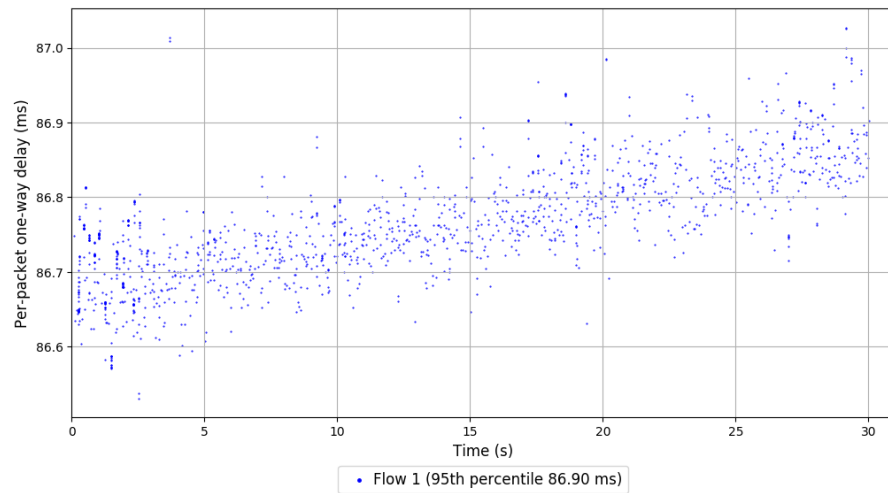
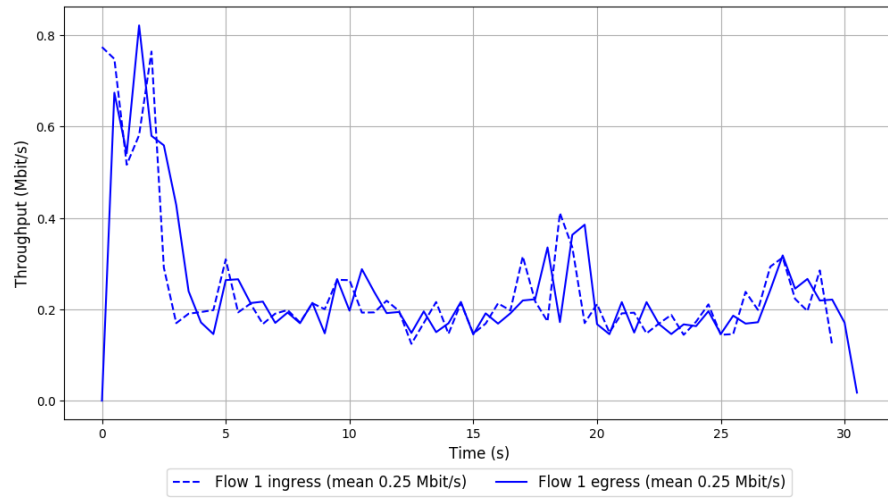


Run 3: Statistics of Sprout

Start at: 2018-09-06 04:33:40
End at: 2018-09-06 04:34:10
Local clock offset: 16.931 ms
Remote clock offset: 15.221 ms

Below is generated by plot.py at 2018-09-06 06:54:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 86.897 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 86.897 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-09-06 05:00:08

End at: 2018-09-06 05:00:38

Local clock offset: 15.032 ms

Remote clock offset: 7.84 ms

Below is generated by plot.py at 2018-09-06 06:54:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.24 Mbit/s

95th percentile per-packet one-way delay: 85.905 ms

Loss rate: 0.00%

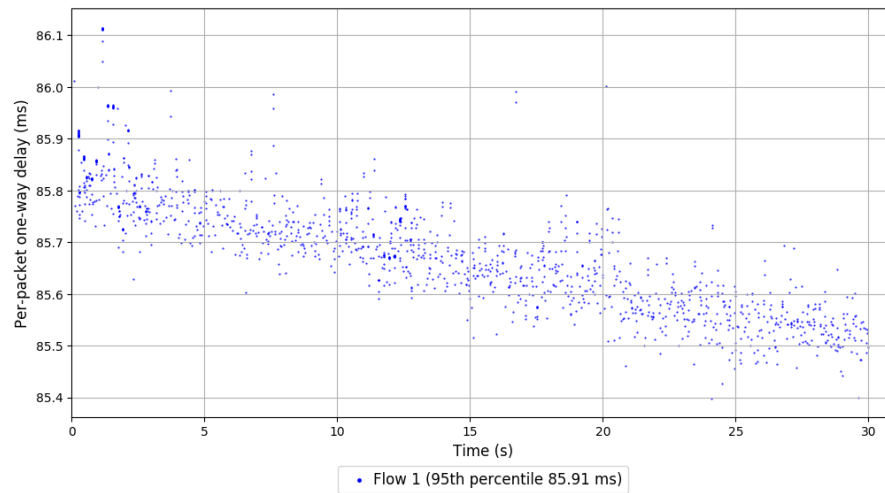
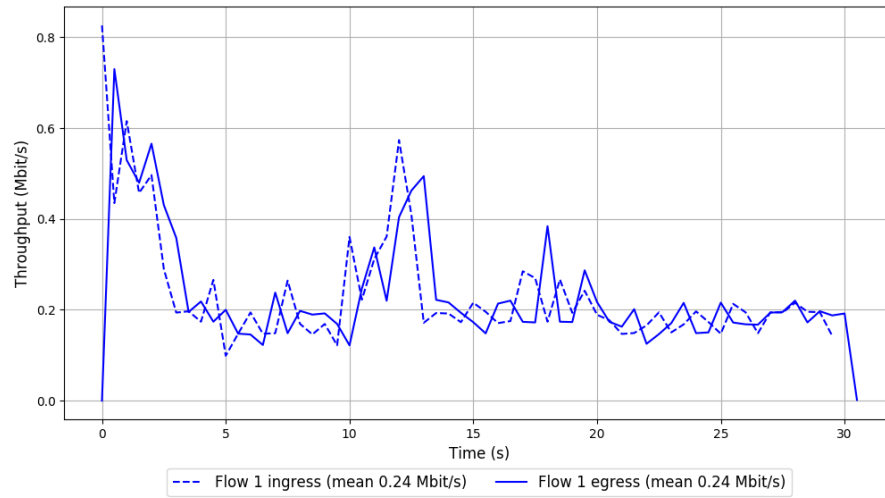
-- Flow 1:

Average throughput: 0.24 Mbit/s

95th percentile per-packet one-way delay: 85.905 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2018-09-06 05:26:42

End at: 2018-09-06 05:27:12

Local clock offset: 8.325 ms

Remote clock offset: 4.226 ms

Below is generated by plot.py at 2018-09-06 06:54:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.24 Mbit/s

95th percentile per-packet one-way delay: 86.633 ms

Loss rate: 0.00%

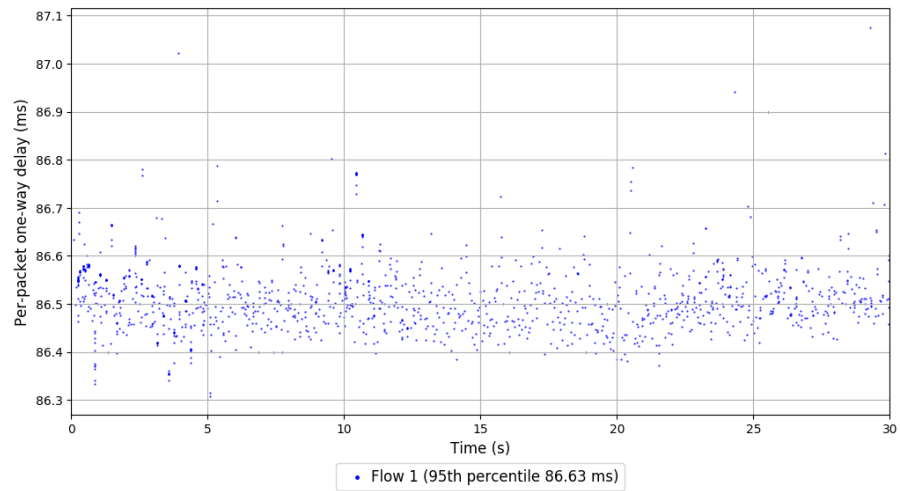
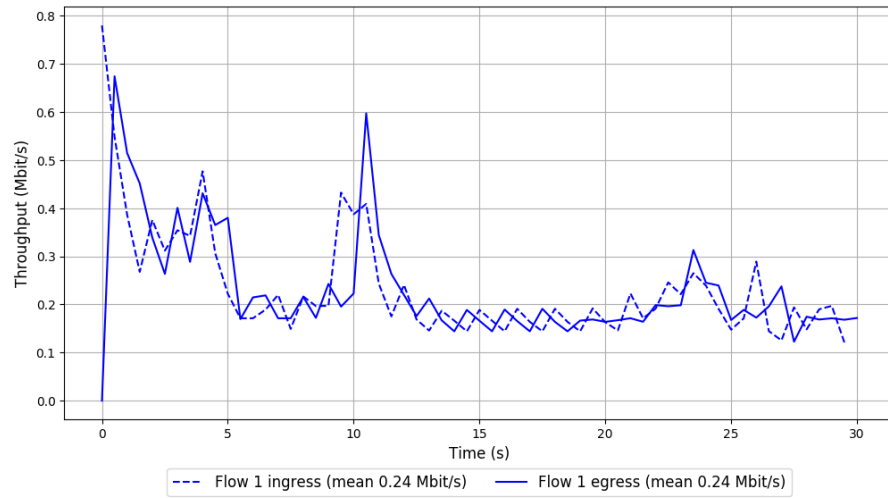
-- Flow 1:

Average throughput: 0.24 Mbit/s

95th percentile per-packet one-way delay: 86.633 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

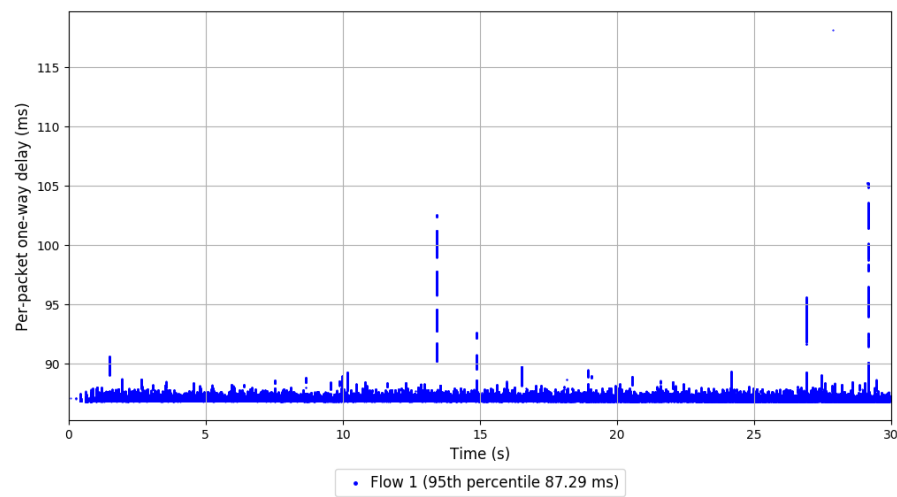
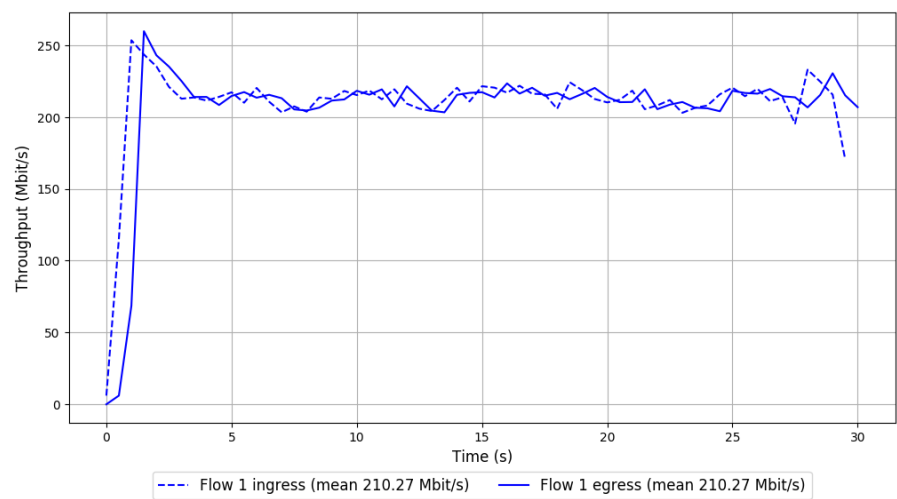


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-06 03:20:54
End at: 2018-09-06 03:21:24
Local clock offset: 5.79 ms
Remote clock offset: 6.557 ms

# Below is generated by plot.py at 2018-09-06 06:54:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 210.27 Mbit/s
95th percentile per-packet one-way delay: 87.287 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 210.27 Mbit/s
95th percentile per-packet one-way delay: 87.287 ms
Loss rate: 0.00%
```

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

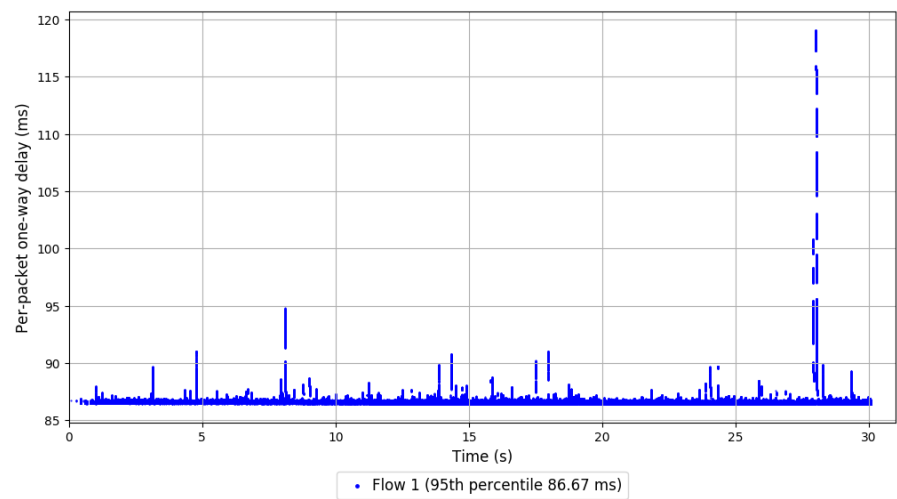
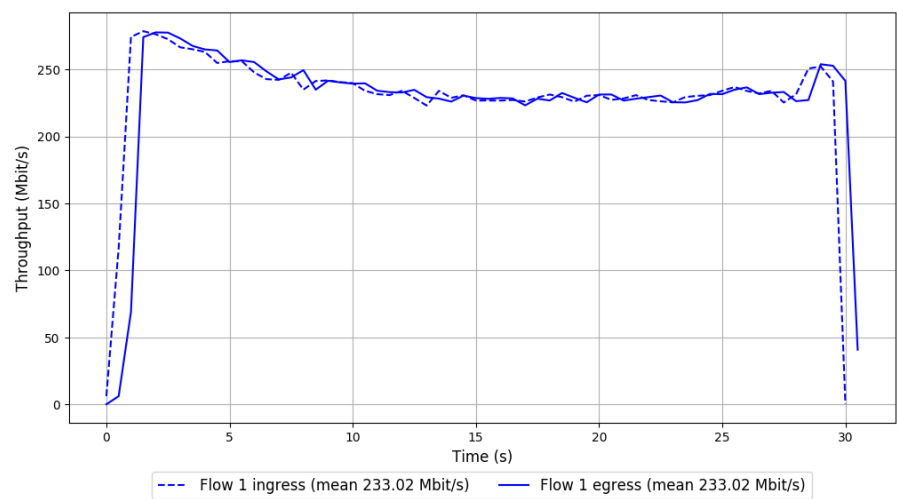


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-06 03:47:18
End at: 2018-09-06 03:47:48
Local clock offset: 23.051 ms
Remote clock offset: 25.336 ms

Below is generated by plot.py at 2018-09-06 06:54:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 233.02 Mbit/s
95th percentile per-packet one-way delay: 86.675 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 233.02 Mbit/s
95th percentile per-packet one-way delay: 86.675 ms
Loss rate: 0.00%

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

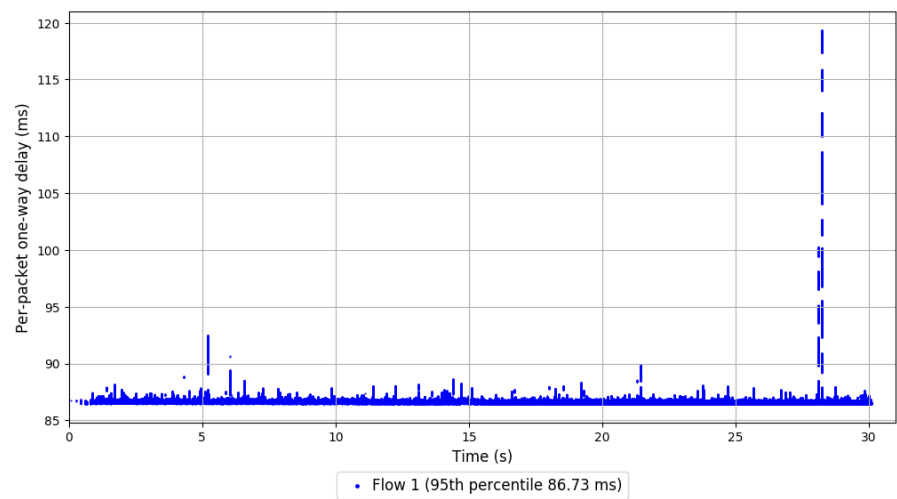
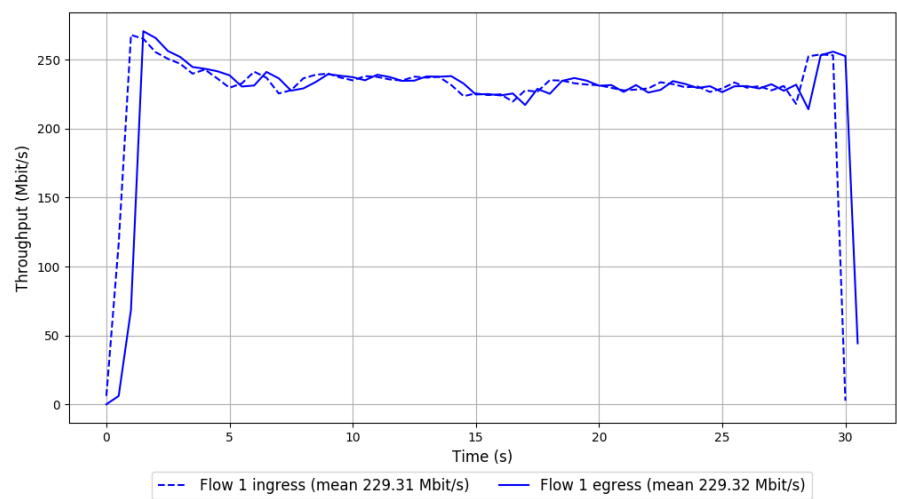


Run 3: Statistics of TaoVA-100x

Start at: 2018-09-06 04:14:11
End at: 2018-09-06 04:14:41
Local clock offset: 29.135 ms
Remote clock offset: 31.584 ms

Below is generated by plot.py at 2018-09-06 06:54:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 229.32 Mbit/s
95th percentile per-packet one-way delay: 86.727 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 229.32 Mbit/s
95th percentile per-packet one-way delay: 86.727 ms
Loss rate: 0.00%

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

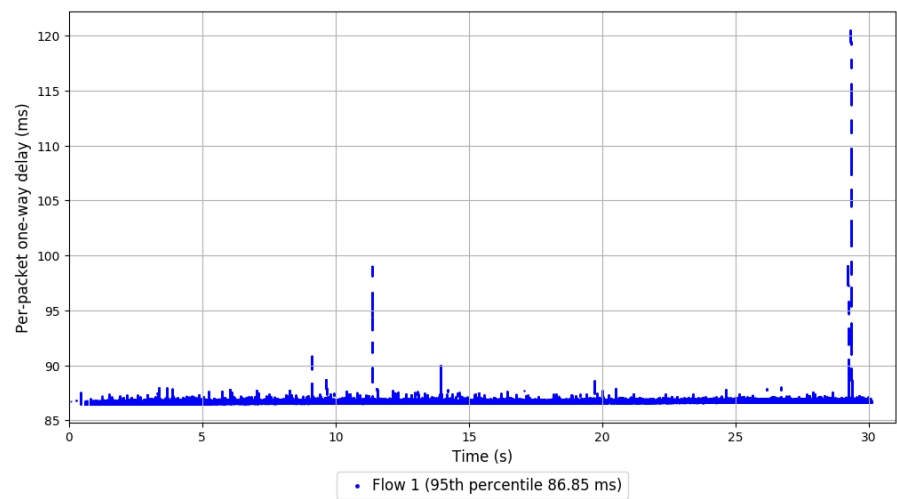
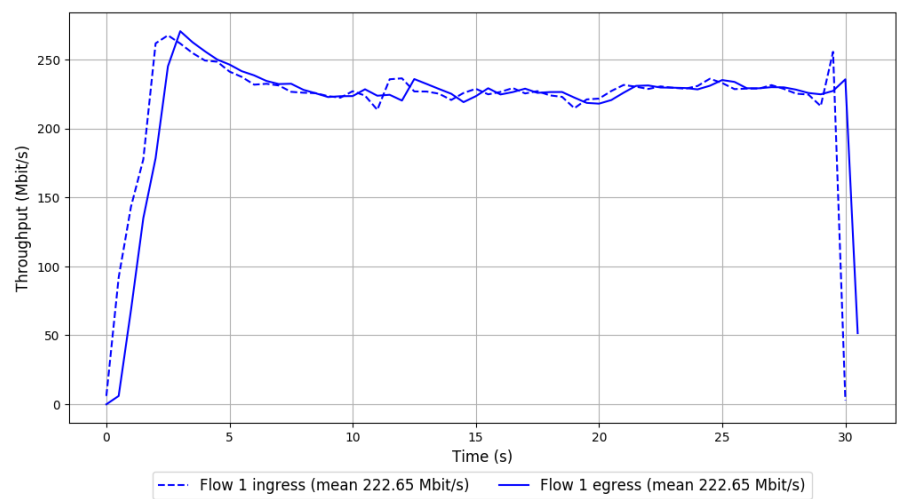


Run 4: Statistics of TaoVA-100x

Start at: 2018-09-06 04:40:38
End at: 2018-09-06 04:41:08
Local clock offset: 14.455 ms
Remote clock offset: 10.357 ms

Below is generated by plot.py at 2018-09-06 06:54:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 222.65 Mbit/s
95th percentile per-packet one-way delay: 86.853 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 222.65 Mbit/s
95th percentile per-packet one-way delay: 86.853 ms
Loss rate: 0.00%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-06 05:07:15

End at: 2018-09-06 05:07:45

Local clock offset: 8.621 ms

Remote clock offset: 4.559 ms

Below is generated by plot.py at 2018-09-06 06:54:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 226.99 Mbit/s

95th percentile per-packet one-way delay: 86.480 ms

Loss rate: 0.00%

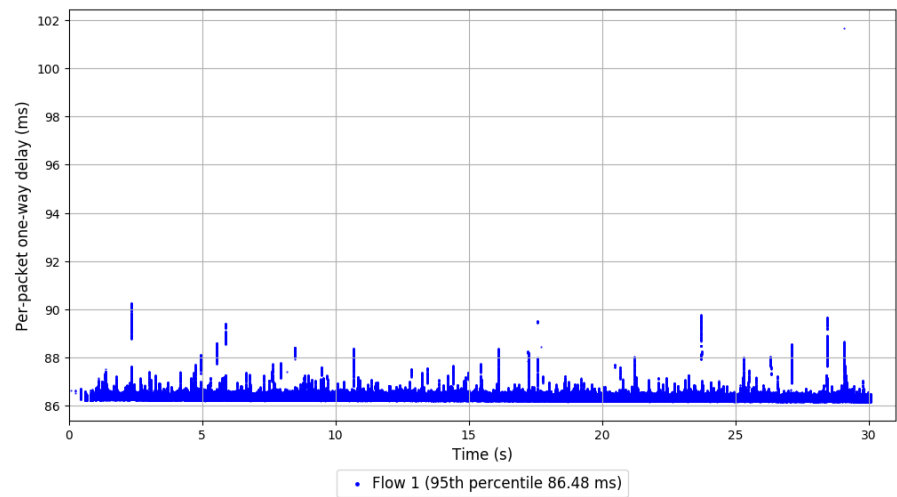
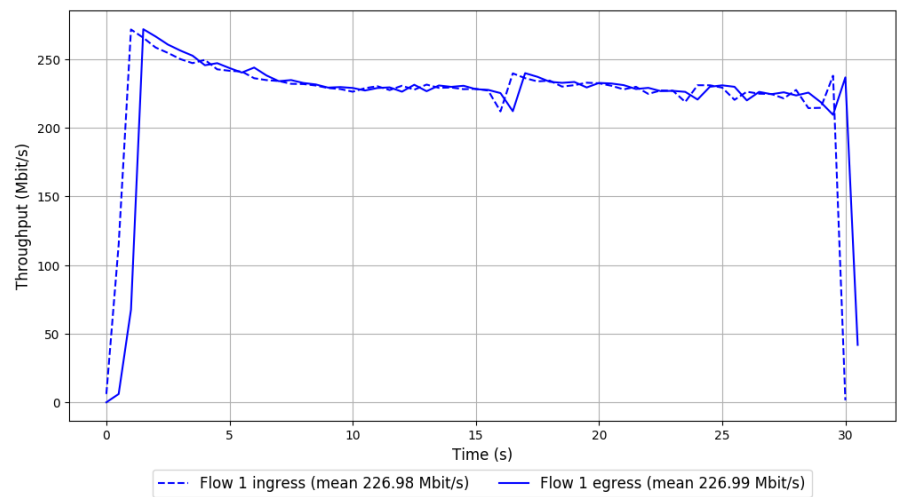
-- Flow 1:

Average throughput: 226.99 Mbit/s

95th percentile per-packet one-way delay: 86.480 ms

Loss rate: 0.00%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-09-06 03:26:31

End at: 2018-09-06 03:27:01

Local clock offset: 8.817 ms

Remote clock offset: 9.656 ms

Below is generated by plot.py at 2018-09-06 06:57:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 519.17 Mbit/s

95th percentile per-packet one-way delay: 88.395 ms

Loss rate: 0.00%

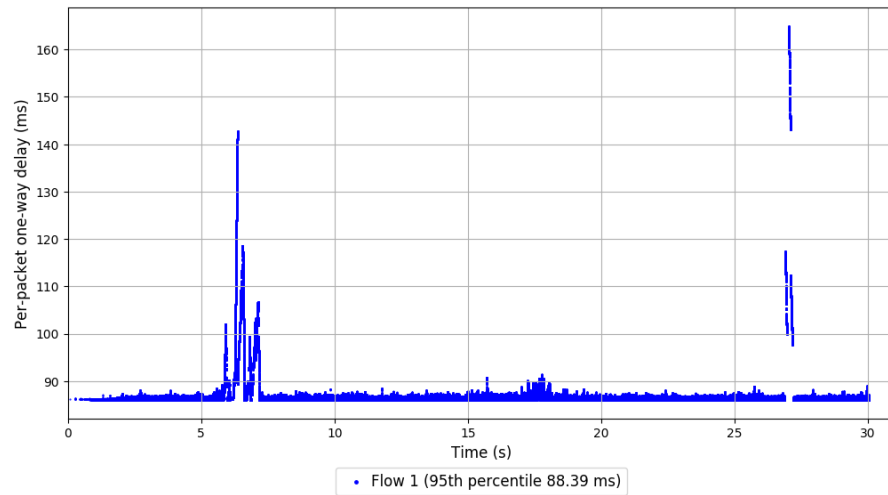
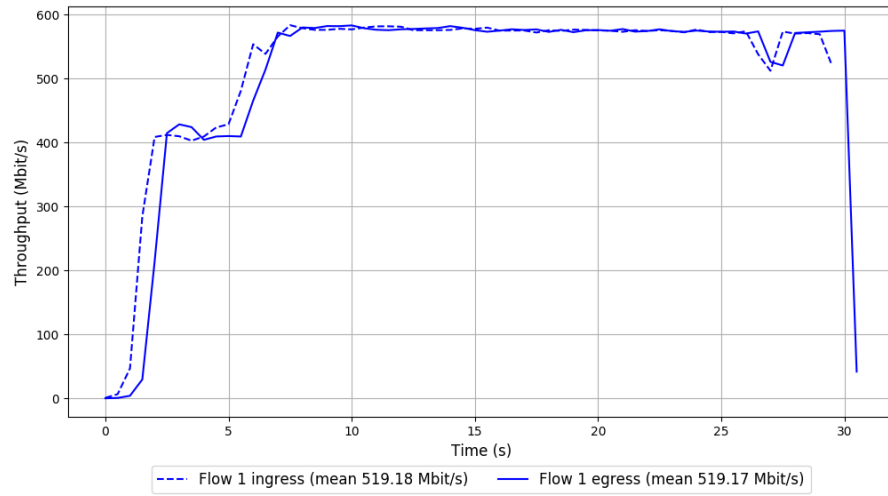
-- Flow 1:

Average throughput: 519.17 Mbit/s

95th percentile per-packet one-way delay: 88.395 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link

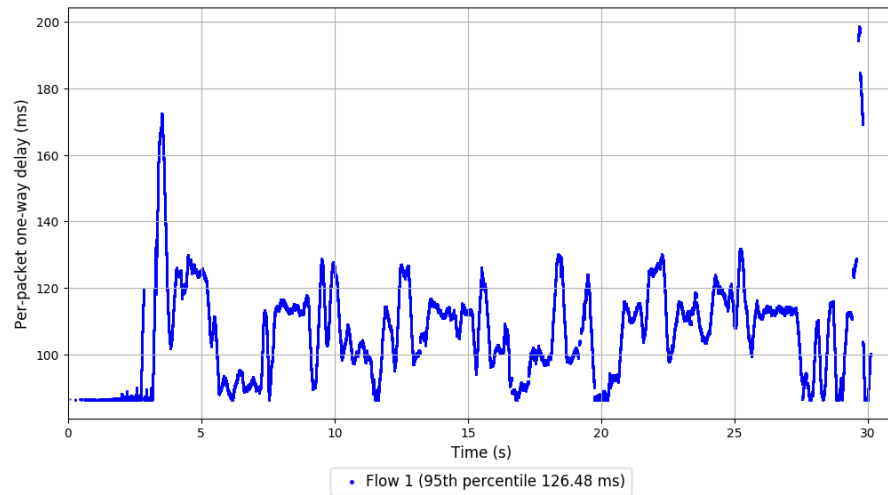
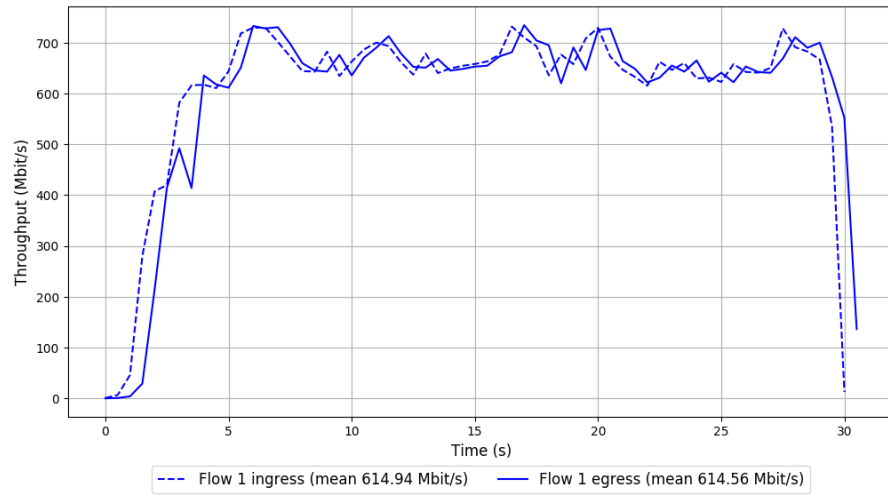


Run 2: Statistics of TCP Vegas

Start at: 2018-09-06 03:53:03
End at: 2018-09-06 03:53:33
Local clock offset: 20.558 ms
Remote clock offset: 22.228 ms

Below is generated by plot.py at 2018-09-06 07:02:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 614.56 Mbit/s
95th percentile per-packet one-way delay: 126.485 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 614.56 Mbit/s
95th percentile per-packet one-way delay: 126.485 ms
Loss rate: 0.06%

Run 2: Report of TCP Vegas — Data Link

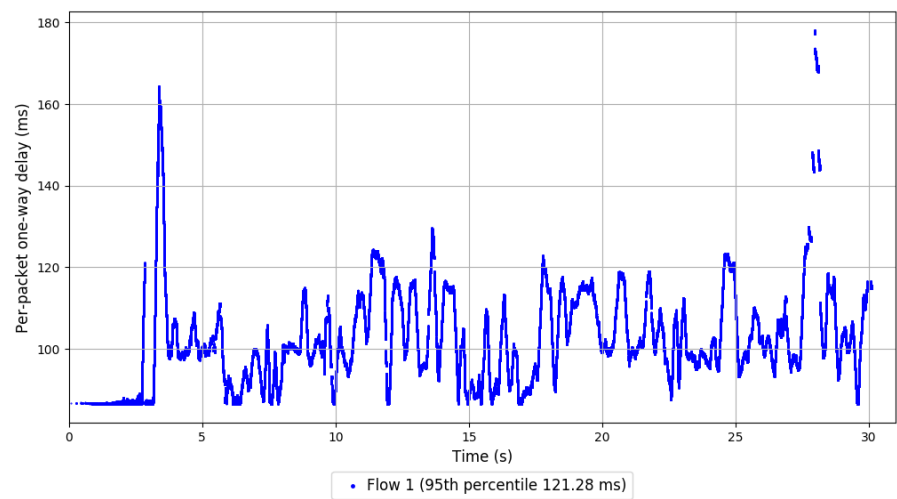
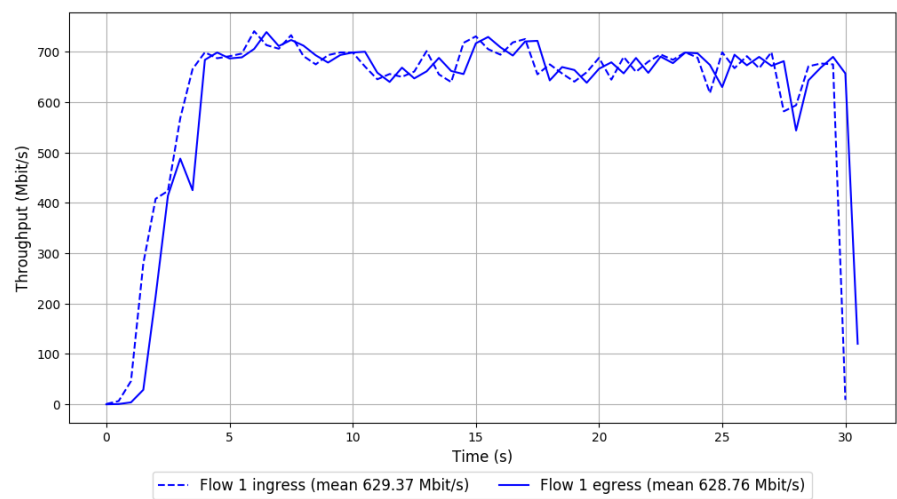


Run 3: Statistics of TCP Vegas

Start at: 2018-09-06 04:19:56
End at: 2018-09-06 04:20:26
Local clock offset: 34.843 ms
Remote clock offset: 37.784 ms

Below is generated by plot.py at 2018-09-06 07:04:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 628.76 Mbit/s
95th percentile per-packet one-way delay: 121.277 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 628.76 Mbit/s
95th percentile per-packet one-way delay: 121.277 ms
Loss rate: 0.09%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-06 04:46:21

End at: 2018-09-06 04:46:51

Local clock offset: 15.443 ms

Remote clock offset: 9.348 ms

Below is generated by plot.py at 2018-09-06 07:04:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 485.16 Mbit/s

95th percentile per-packet one-way delay: 87.686 ms

Loss rate: 0.00%

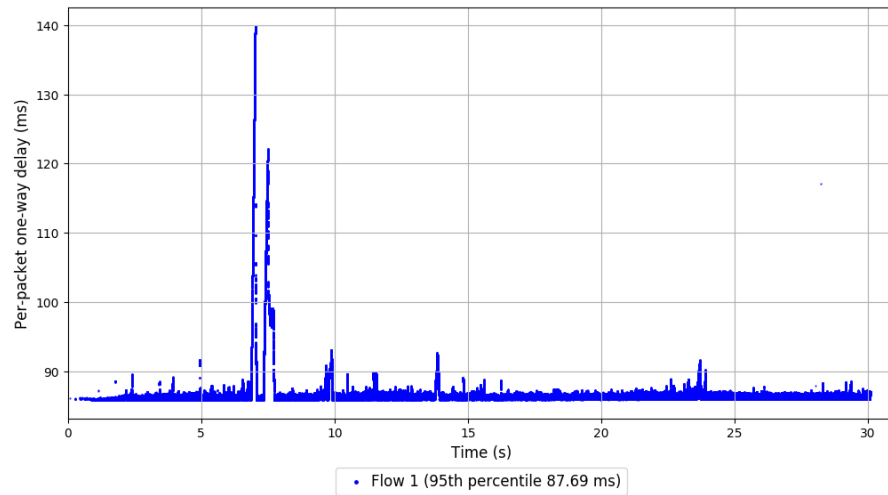
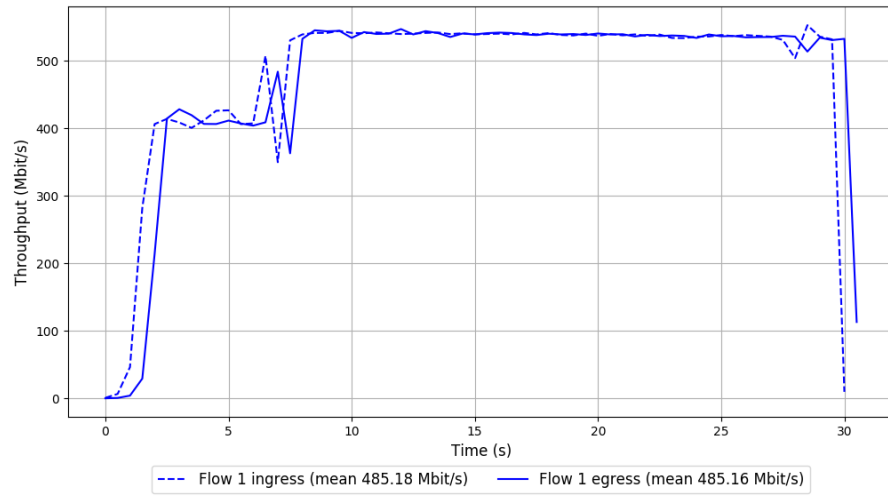
-- Flow 1:

Average throughput: 485.16 Mbit/s

95th percentile per-packet one-way delay: 87.686 ms

Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-06 05:13:04

End at: 2018-09-06 05:13:34

Local clock offset: 7.376 ms

Remote clock offset: 3.738 ms

Below is generated by plot.py at 2018-09-06 07:04:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 288.07 Mbit/s

95th percentile per-packet one-way delay: 89.304 ms

Loss rate: 0.00%

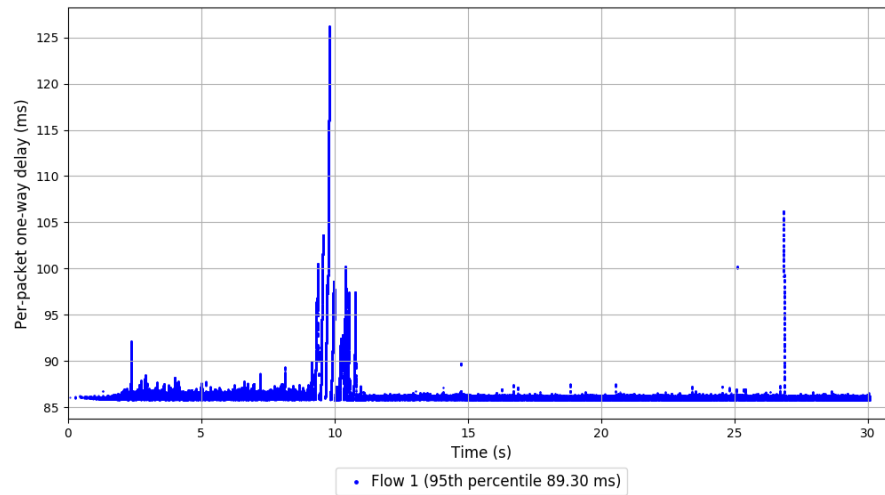
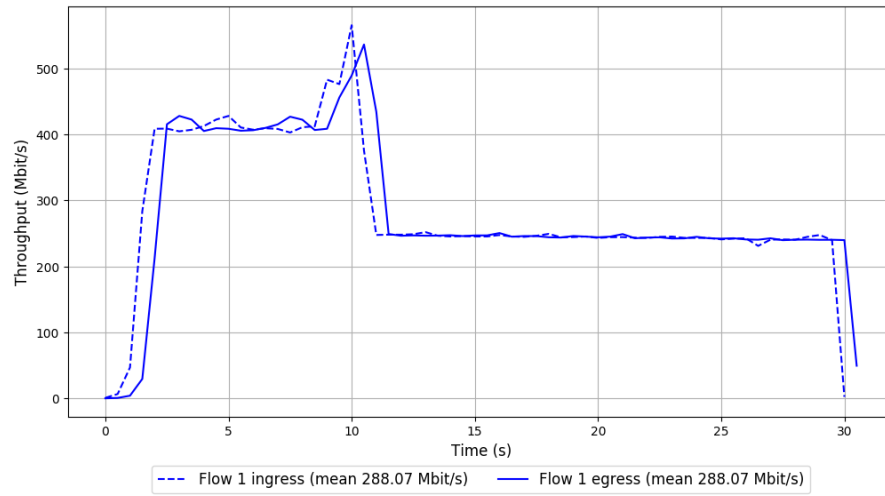
-- Flow 1:

Average throughput: 288.07 Mbit/s

95th percentile per-packet one-way delay: 89.304 ms

Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-06 03:19:35

End at: 2018-09-06 03:20:05

Local clock offset: 6.96 ms

Remote clock offset: 7.004 ms

Below is generated by plot.py at 2018-09-06 07:04:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 125.77 Mbit/s

95th percentile per-packet one-way delay: 112.912 ms

Loss rate: 0.12%

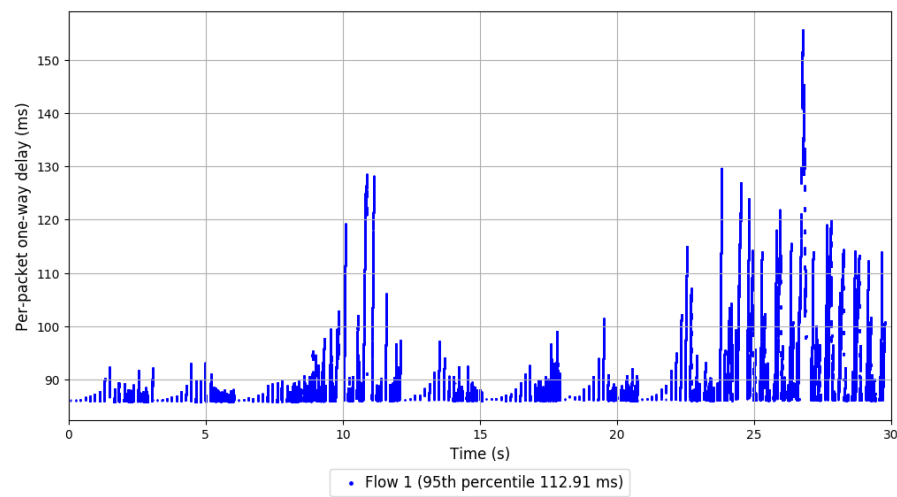
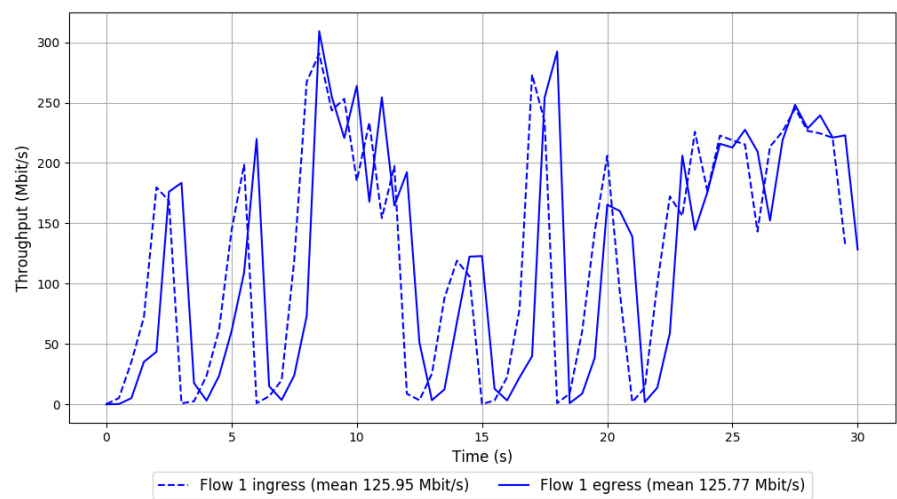
-- Flow 1:

Average throughput: 125.77 Mbit/s

95th percentile per-packet one-way delay: 112.912 ms

Loss rate: 0.12%

Run 1: Report of Verus — Data Link

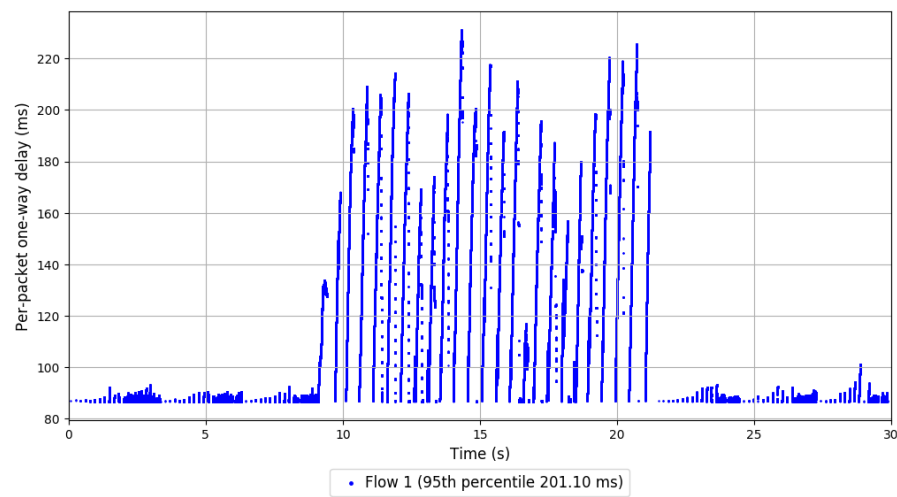
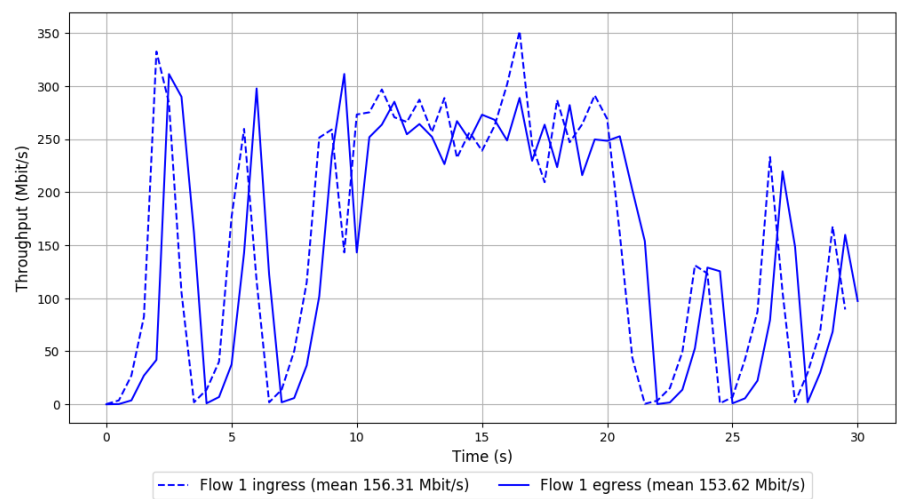


Run 2: Statistics of Verus

Start at: 2018-09-06 03:45:55
End at: 2018-09-06 03:46:25
Local clock offset: 21.214 ms
Remote clock offset: 23.182 ms

Below is generated by plot.py at 2018-09-06 07:04:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 153.62 Mbit/s
95th percentile per-packet one-way delay: 201.104 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 153.62 Mbit/s
95th percentile per-packet one-way delay: 201.104 ms
Loss rate: 1.72%

Run 2: Report of Verus — Data Link

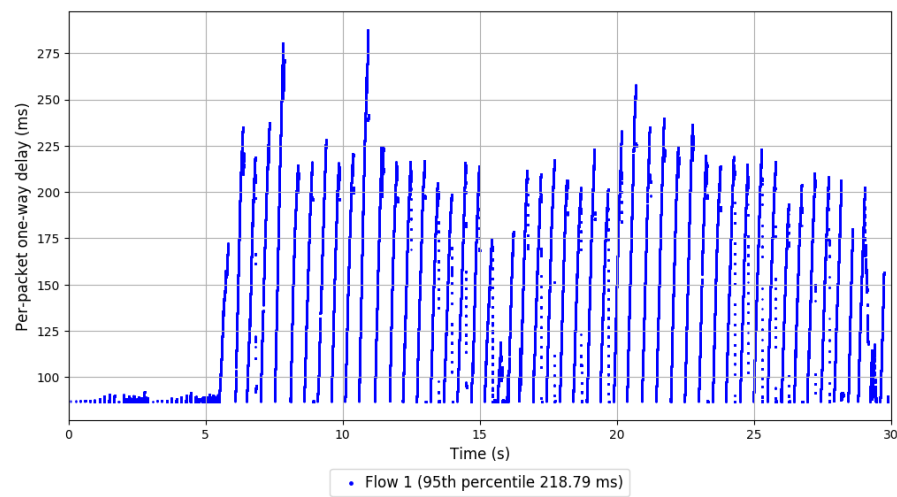
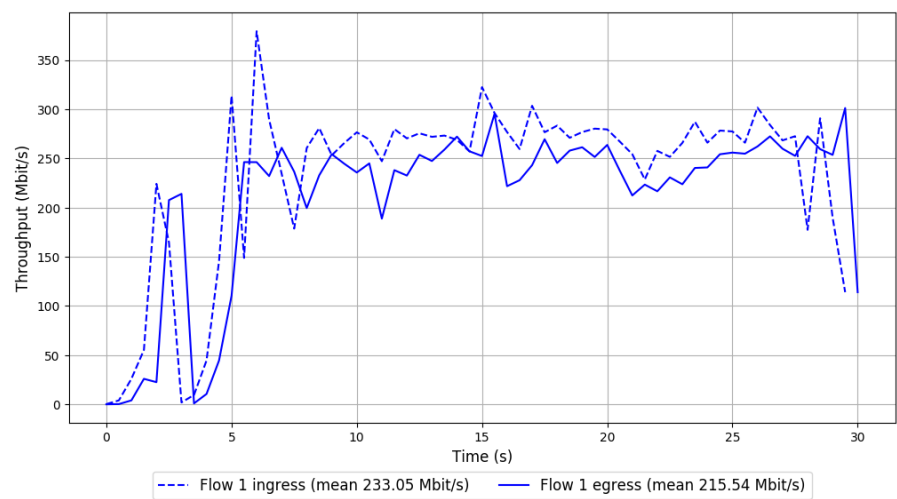


Run 3: Statistics of Verus

Start at: 2018-09-06 04:12:43
End at: 2018-09-06 04:13:13
Local clock offset: 27.688 ms
Remote clock offset: 30.259 ms

Below is generated by plot.py at 2018-09-06 07:04:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 215.54 Mbit/s
95th percentile per-packet one-way delay: 218.794 ms
Loss rate: 7.51%
-- Flow 1:
Average throughput: 215.54 Mbit/s
95th percentile per-packet one-way delay: 218.794 ms
Loss rate: 7.51%

Run 3: Report of Verus — Data Link

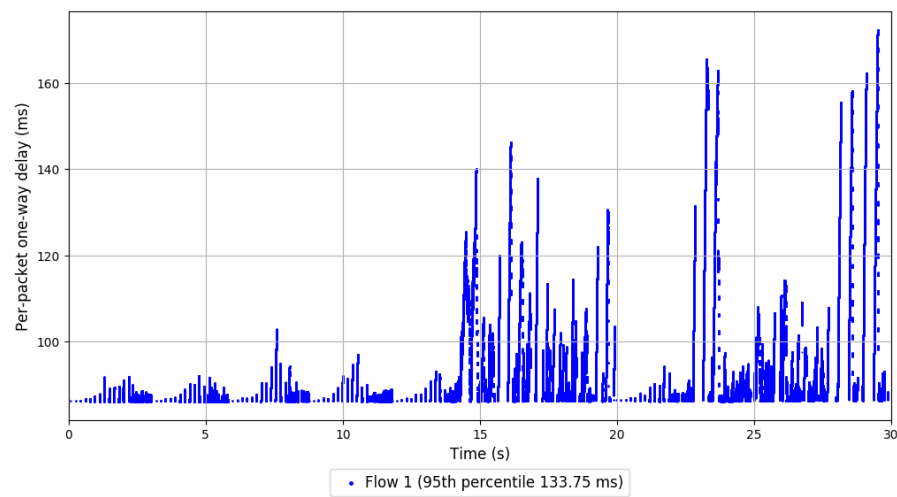
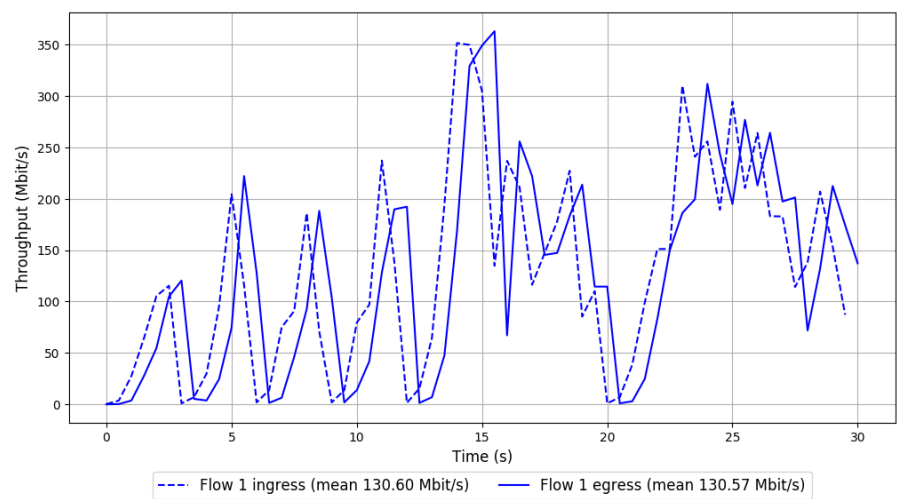


Run 4: Statistics of Verus

Start at: 2018-09-06 04:39:18
End at: 2018-09-06 04:39:48
Local clock offset: 14.64 ms
Remote clock offset: 10.857 ms

Below is generated by plot.py at 2018-09-06 07:04:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 130.57 Mbit/s
95th percentile per-packet one-way delay: 133.746 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 130.57 Mbit/s
95th percentile per-packet one-way delay: 133.746 ms
Loss rate: 0.02%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-06 05:05:46

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

Local clock offset: 9.585 ms

Remote clock offset: 5.051 ms

Below is generated by plot.py at 2018-09-06 07:05:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 217.58 Mbit/s

95th percentile per-packet one-way delay: 226.671 ms

Loss rate: 12.97%

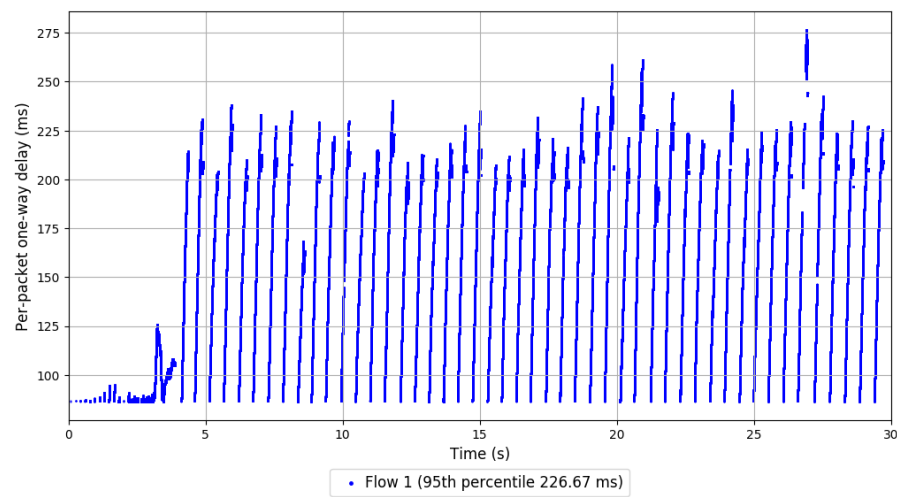
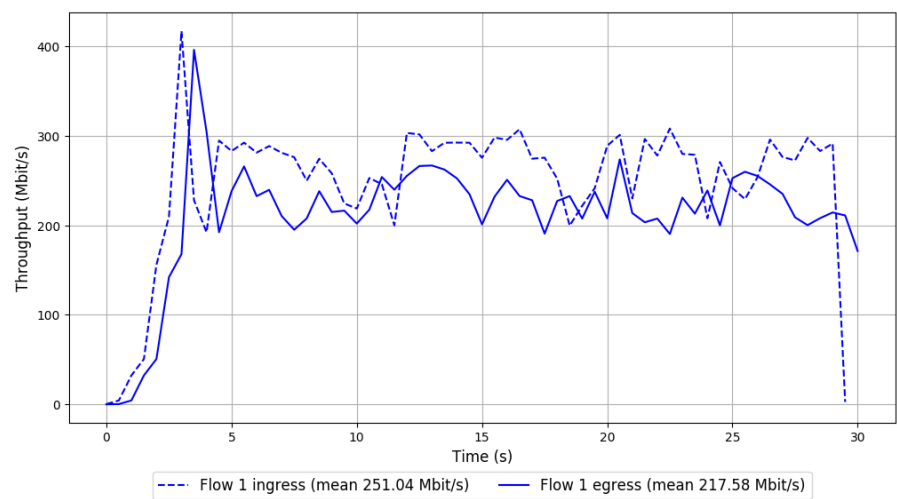
-- Flow 1:

Average throughput: 217.58 Mbit/s

95th percentile per-packet one-way delay: 226.671 ms

Loss rate: 12.97%

Run 5: Report of Verus — Data Link

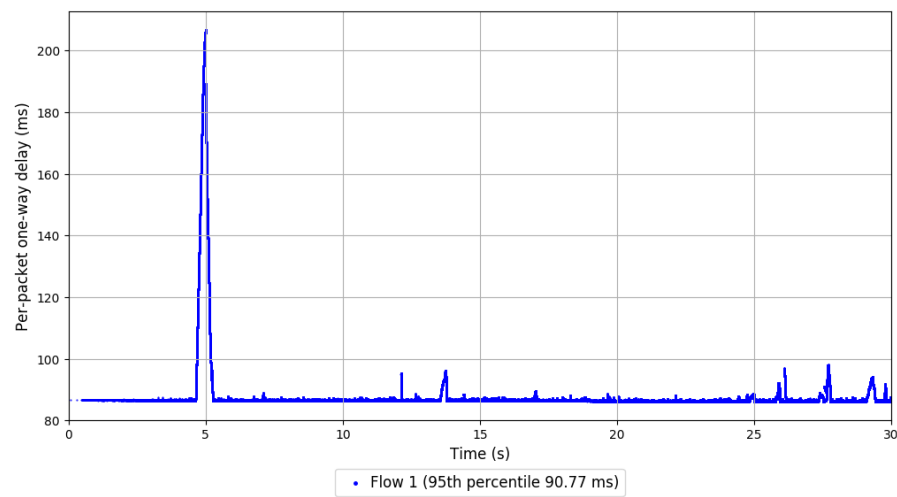
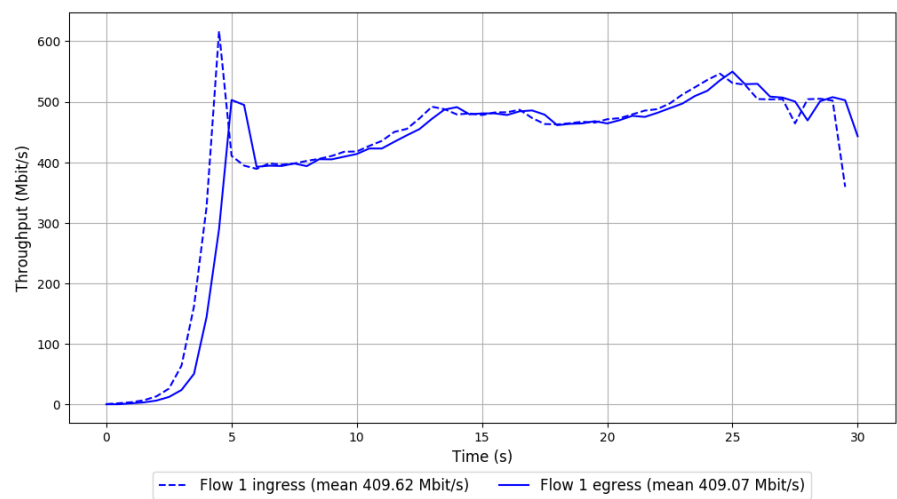


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-06 03:31:26
End at: 2018-09-06 03:31:56
Local clock offset: 16.112 ms
Remote clock offset: 17.691 ms

Below is generated by plot.py at 2018-09-06 07:05:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 409.07 Mbit/s
95th percentile per-packet one-way delay: 90.771 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 409.07 Mbit/s
95th percentile per-packet one-way delay: 90.771 ms
Loss rate: 0.13%

Run 1: Report of PCC-Vivace — Data Link

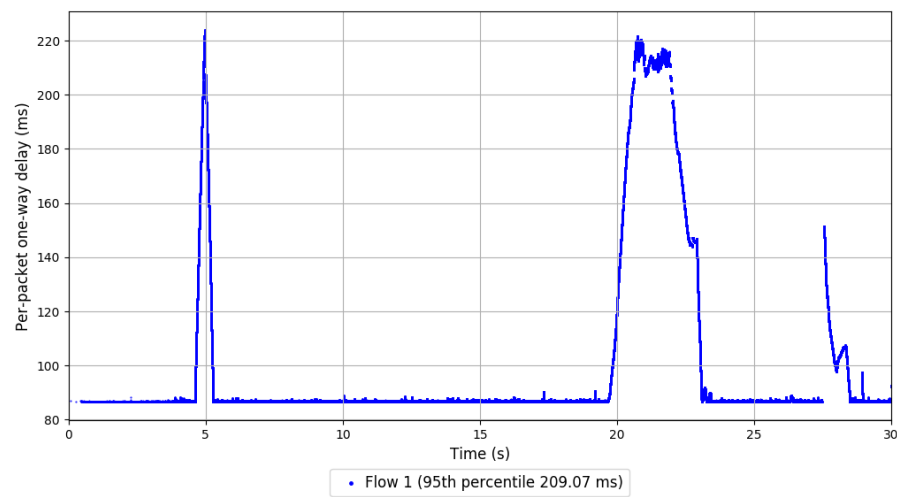
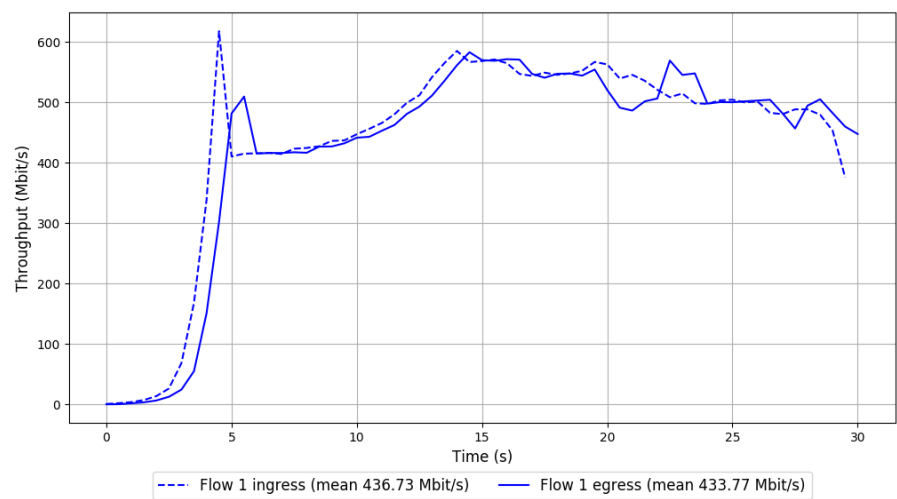


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-06 03:58:01
End at: 2018-09-06 03:58:31
Local clock offset: 18.764 ms
Remote clock offset: 20.467 ms

Below is generated by plot.py at 2018-09-06 07:05:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 433.77 Mbit/s
95th percentile per-packet one-way delay: 209.069 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 433.77 Mbit/s
95th percentile per-packet one-way delay: 209.069 ms
Loss rate: 0.67%

Run 2: Report of PCC-Vivace — Data Link

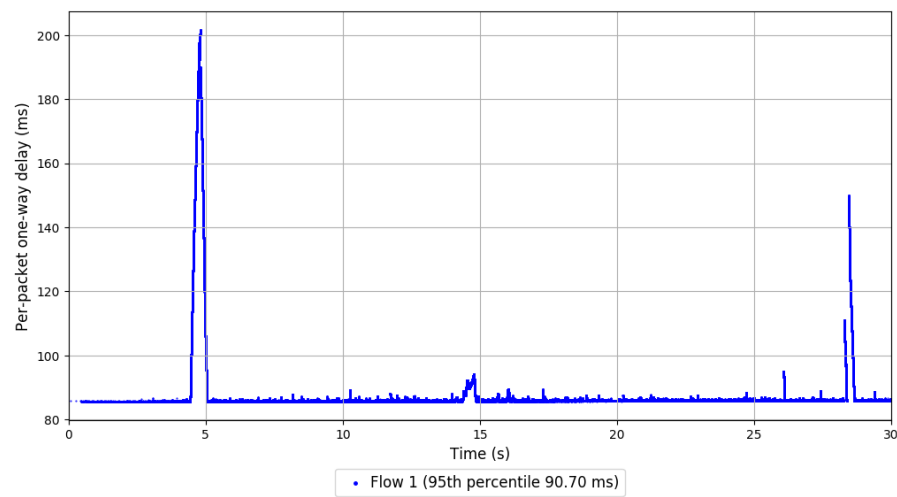
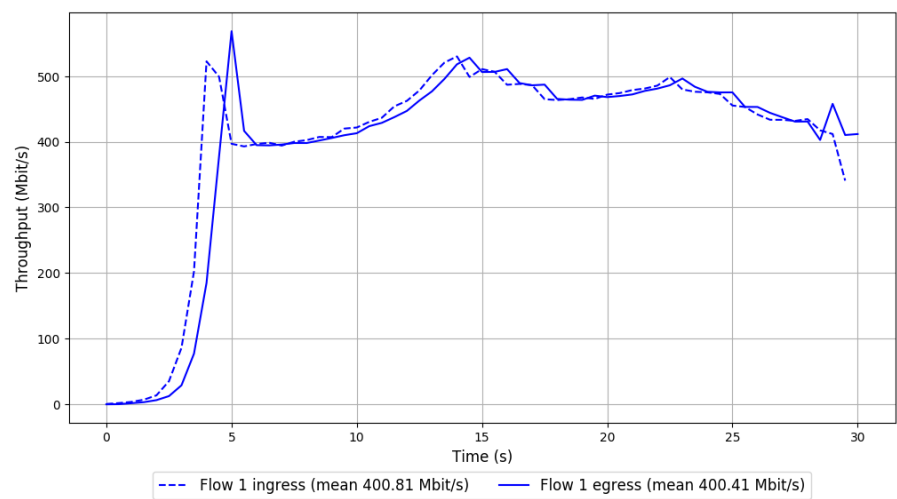


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-06 04:24:50
End at: 2018-09-06 04:25:20
Local clock offset: 33.09 ms
Remote clock offset: 34.558 ms

Below is generated by plot.py at 2018-09-06 07:06:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 400.41 Mbit/s
95th percentile per-packet one-way delay: 90.703 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 400.41 Mbit/s
95th percentile per-packet one-way delay: 90.703 ms
Loss rate: 0.10%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-06 04:51:14

End at: 2018-09-06 04:51:44

Local clock offset: 16.785 ms

Remote clock offset: 9.577 ms

Below is generated by plot.py at 2018-09-06 07:06:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 420.19 Mbit/s

95th percentile per-packet one-way delay: 173.845 ms

Loss rate: 0.03%

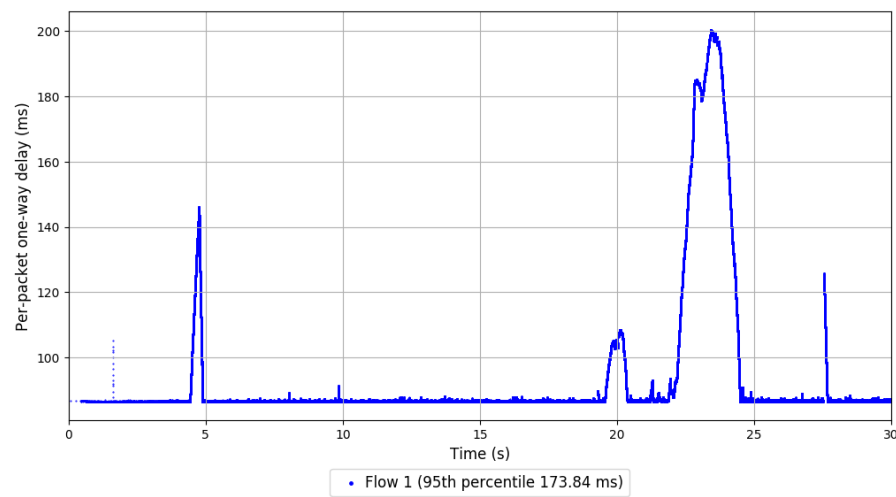
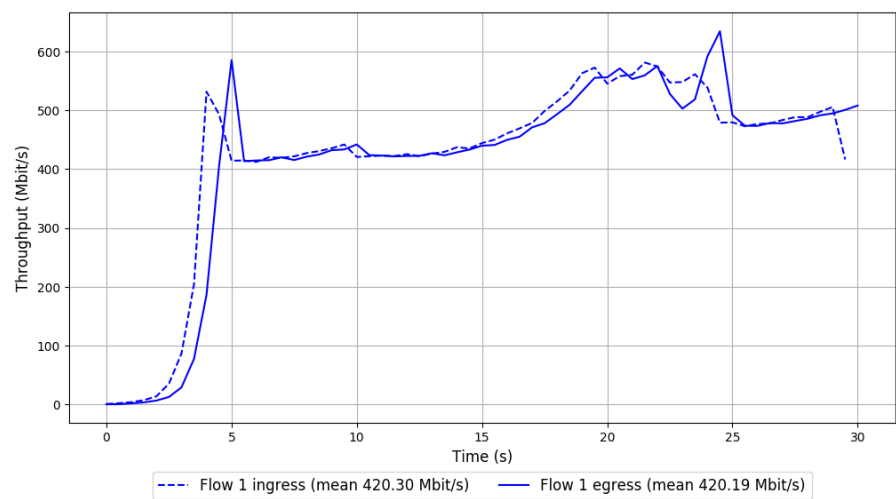
-- Flow 1:

Average throughput: 420.19 Mbit/s

95th percentile per-packet one-way delay: 173.845 ms

Loss rate: 0.03%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-06 05:17:49

End at: 2018-09-06 05:18:19

Local clock offset: 7.08 ms

Remote clock offset: 3.672 ms

Below is generated by plot.py at 2018-09-06 07:06:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 406.03 Mbit/s

95th percentile per-packet one-way delay: 90.671 ms

Loss rate: 0.00%

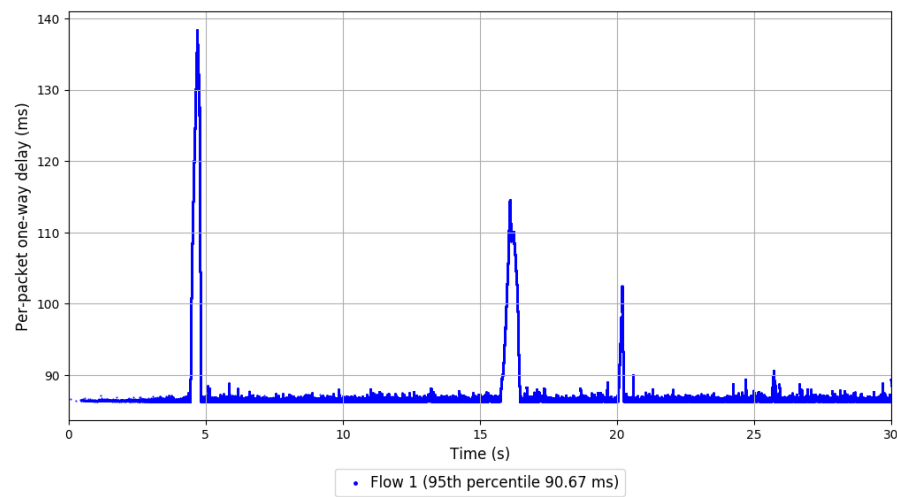
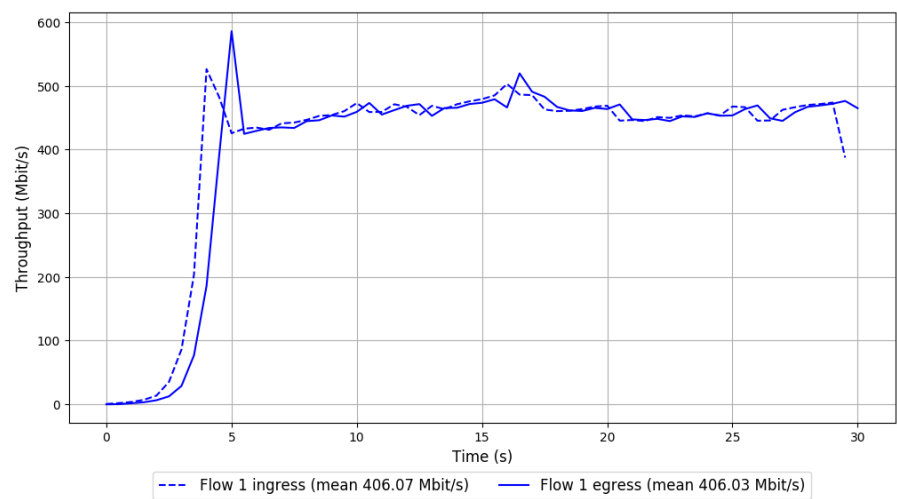
-- Flow 1:

Average throughput: 406.03 Mbit/s

95th percentile per-packet one-way delay: 90.671 ms

Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

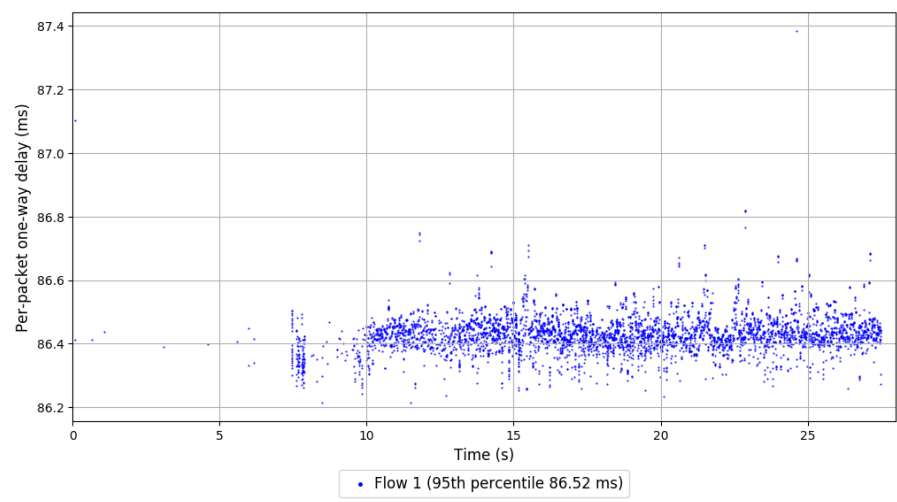
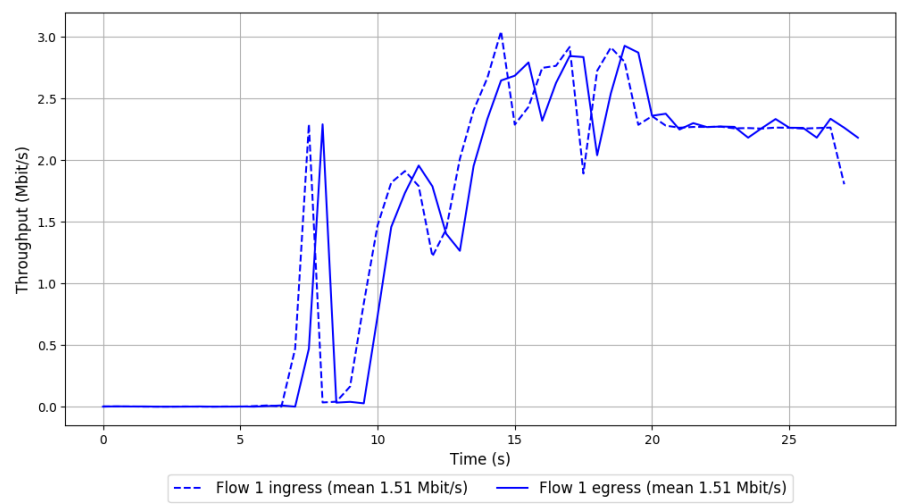


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-06 03:34:44
End at: 2018-09-06 03:35:14
Local clock offset: 13.179 ms
Remote clock offset: 14.192 ms

# Below is generated by plot.py at 2018-09-06 07:06:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 86.521 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 86.521 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

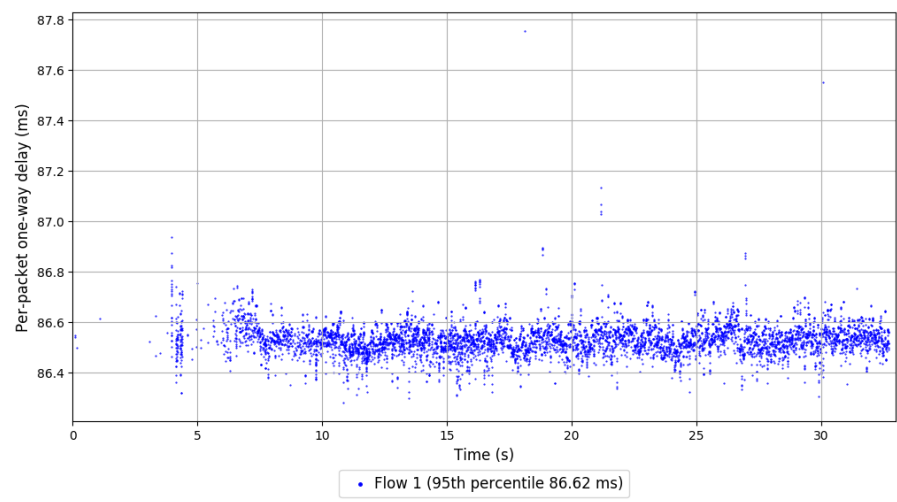
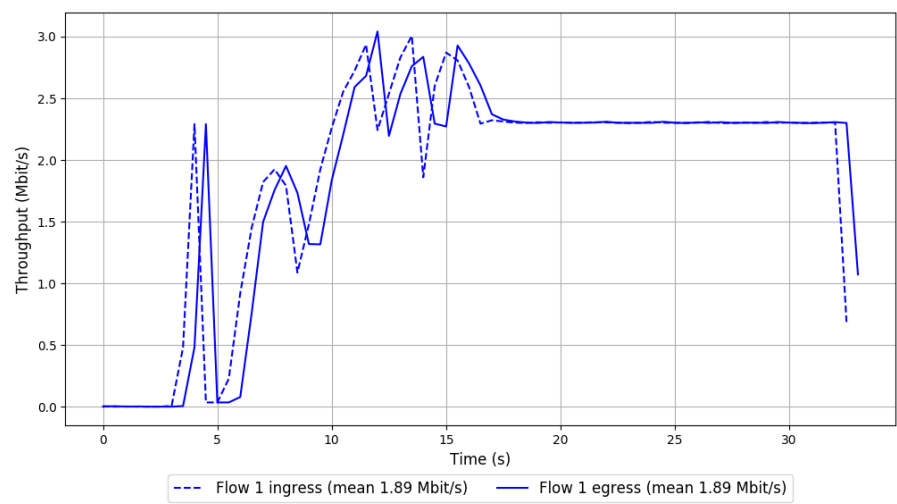


Run 2: Statistics of WebRTC media

Start at: 2018-09-06 04:01:24
End at: 2018-09-06 04:01:54
Local clock offset: 19.828 ms
Remote clock offset: 21.346 ms

Below is generated by plot.py at 2018-09-06 07:06:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 86.625 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 86.625 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

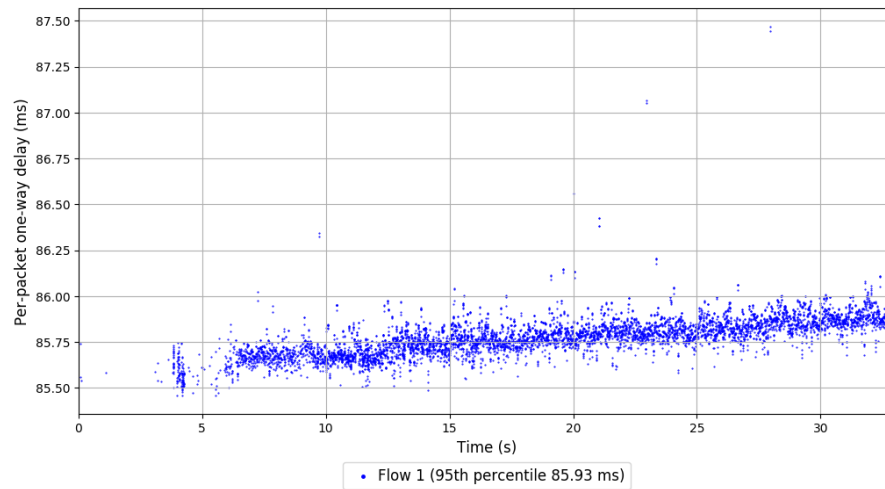
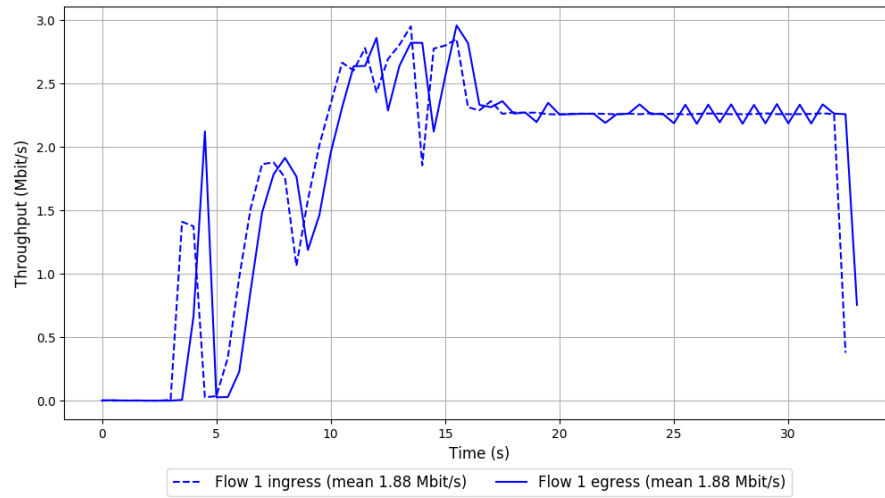


Run 3: Statistics of WebRTC media

Start at: 2018-09-06 04:28:06
End at: 2018-09-06 04:28:36
Local clock offset: 24.68 ms
Remote clock offset: 24.635 ms

Below is generated by plot.py at 2018-09-06 07:06:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 85.928 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 85.928 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

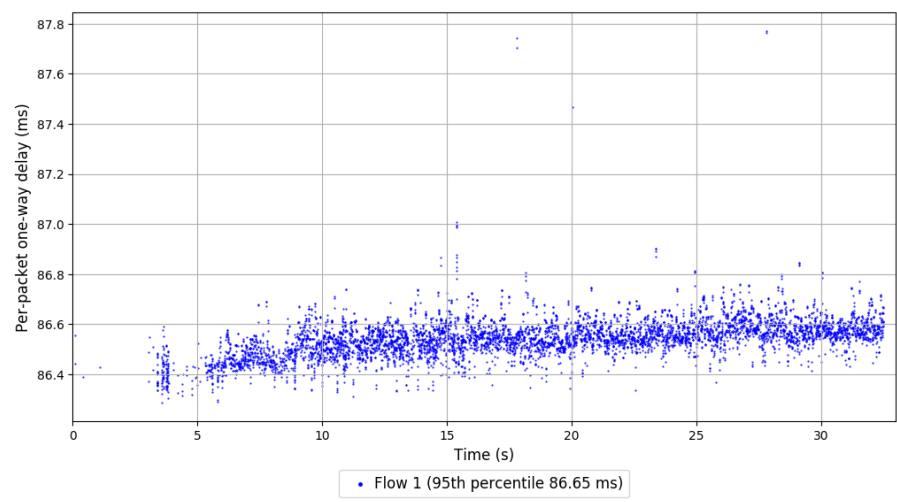
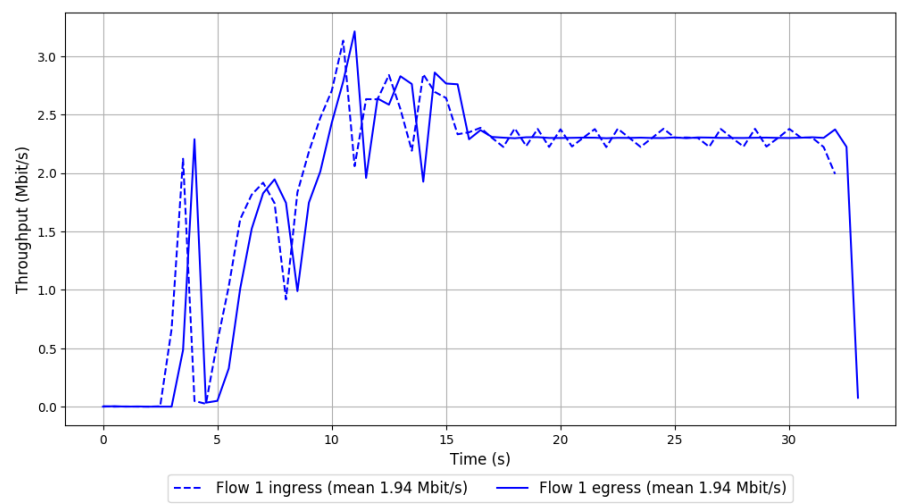


Run 4: Statistics of WebRTC media

Start at: 2018-09-06 04:54:31
End at: 2018-09-06 04:55:01
Local clock offset: 18.067 ms
Remote clock offset: 10.084 ms

Below is generated by plot.py at 2018-09-06 07:06:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 86.653 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 86.653 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-06 05:21:06

End at: 2018-09-06 05:21:36

Local clock offset: 7.496 ms

Remote clock offset: 3.812 ms

Below is generated by plot.py at 2018-09-06 07:06:42

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.86 Mbit/s

95th percentile per-packet one-way delay: 86.268 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.86 Mbit/s

95th percentile per-packet one-way delay: 86.268 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

