

## Pantheon Report

Generated at 2018-11-02 19:58:48 (UTC).

Data path: AWS Brazil 2 on **ens5** (*local*) → Colombia on **p4p1** (*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 **gps.ntp.br** and have been applied to correct the timestamps in logs.

### System info:

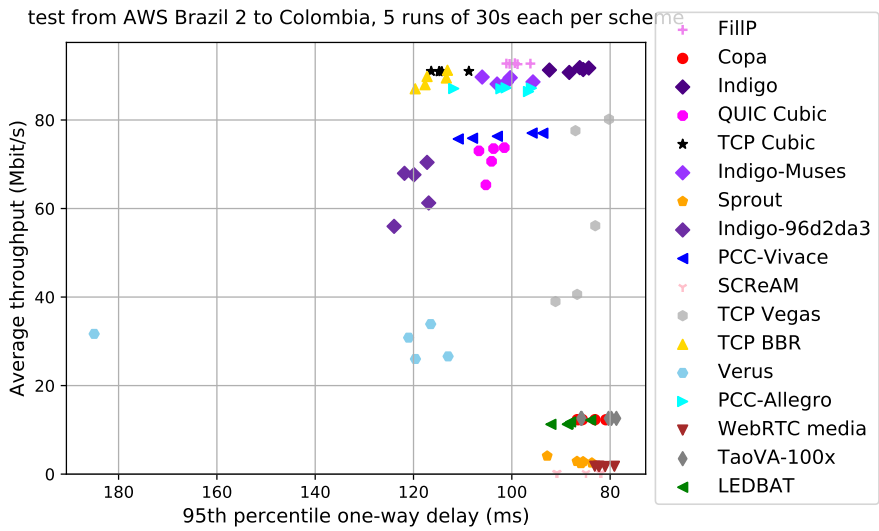
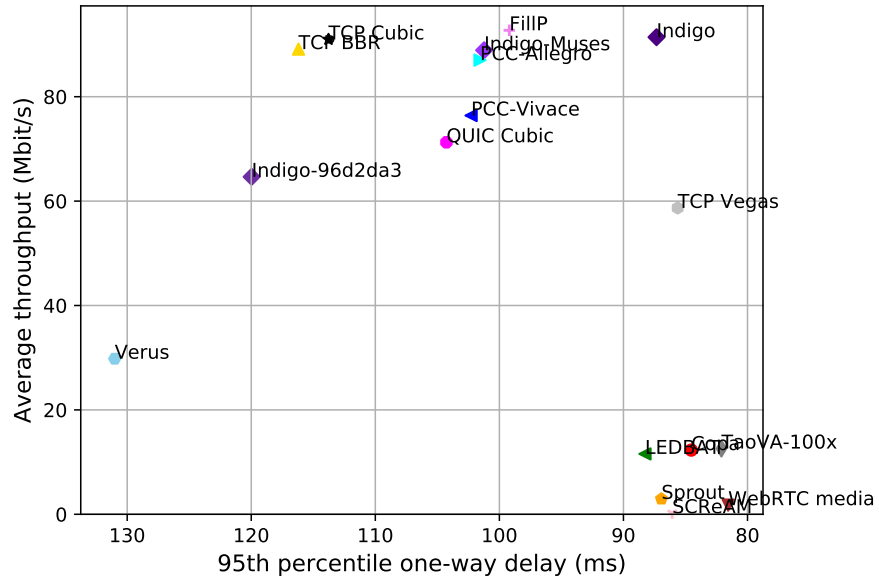
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### 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 AWS Brazil 2 to Colombia, 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	89.12	116.19	3.04
Copa	5	12.30	84.53	74.08
TCP Cubic	5	90.97	113.77	0.56
FillP	5	92.72	99.20	1.01
Indigo	5	91.40	87.34	0.87
Indigo-96d2da3	5	64.65	119.97	50.41
LEDBAT	5	11.57	88.27	0.01
Indigo-Muses	5	88.90	101.23	2.24
PCC-Allegro	5	87.01	101.56	1.50
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	5	71.27	104.27	0.35
SCReAM	5	0.22	86.07	0.00
Sprout	5	2.95	86.94	0.00
TaoVA-100x	5	12.59	82.10	26.78
TCP Vegas	5	58.69	85.63	1.00
Verus	5	29.80	131.01	31.69
PCC-Vivace	5	76.40	102.28	0.10
WebRTC media	5	1.75	81.56	0.03



Run 1: Statistics of TCP BBR

Start at: 2018-11-02 18:21:55

End at: 2018-11-02 18:22:25

Local clock offset: -3.456 ms

Remote clock offset: 2.476 ms

# Below is generated by plot.py at 2018-11-02 19:52:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.05 Mbit/s

95th percentile per-packet one-way delay: 119.655 ms

Loss rate: 3.17%

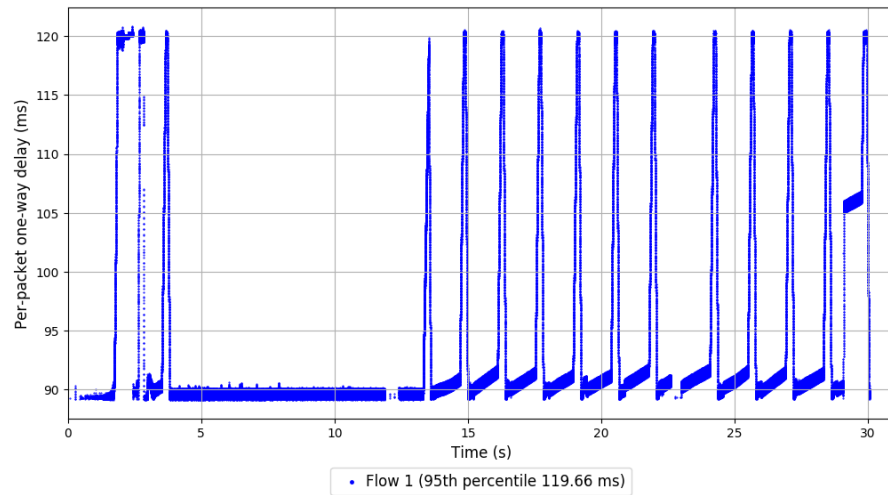
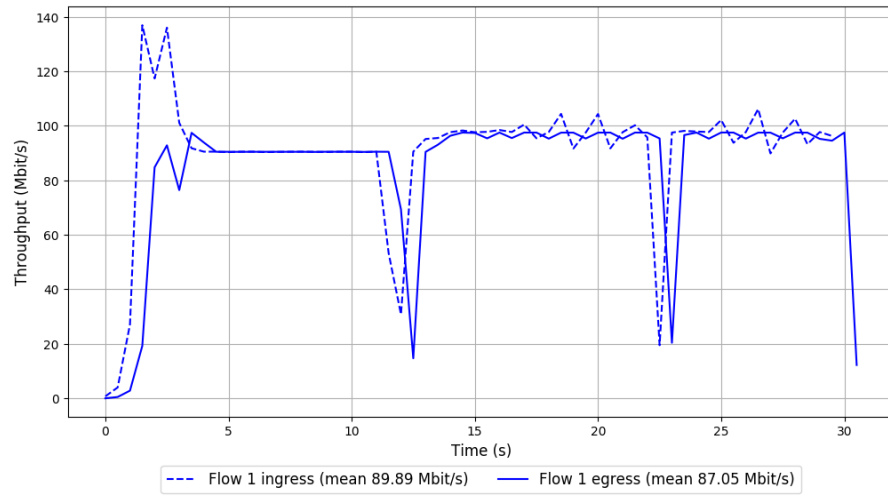
-- Flow 1:

Average throughput: 87.05 Mbit/s

95th percentile per-packet one-way delay: 119.655 ms

Loss rate: 3.17%

# Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-11-02 18:43:00

End at: 2018-11-02 18:43:30

Local clock offset: 0.928 ms

Remote clock offset: 0.097 ms

# Below is generated by plot.py at 2018-11-02 19:52:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.98 Mbit/s

95th percentile per-packet one-way delay: 117.647 ms

Loss rate: 3.56%

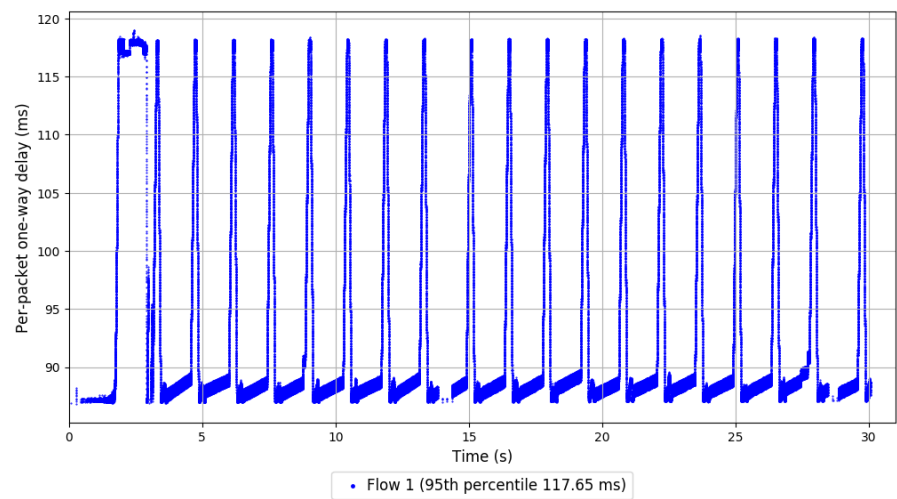
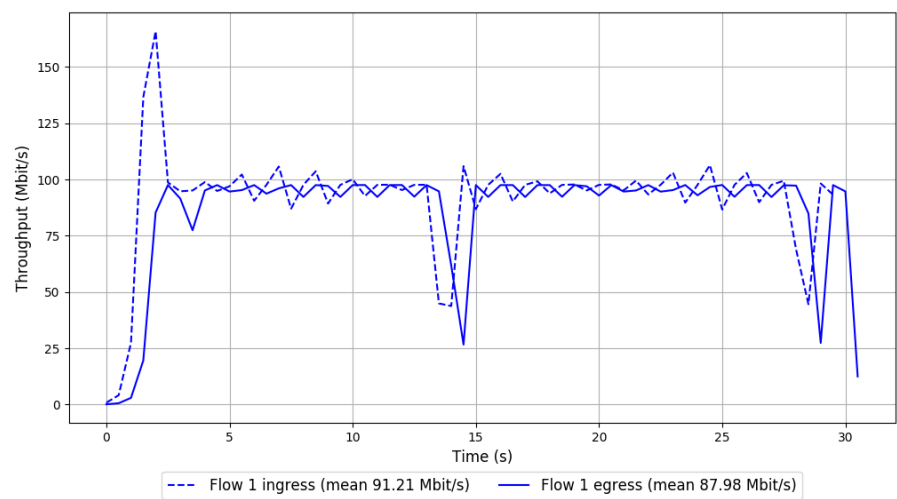
-- Flow 1:

Average throughput: 87.98 Mbit/s

95th percentile per-packet one-way delay: 117.647 ms

Loss rate: 3.56%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-11-02 19:04:03

End at: 2018-11-02 19:04:33

Local clock offset: 7.65 ms

Remote clock offset: 7.151 ms

# Below is generated by plot.py at 2018-11-02 19:52:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 89.83 Mbit/s

95th percentile per-packet one-way delay: 117.240 ms

Loss rate: 3.03%

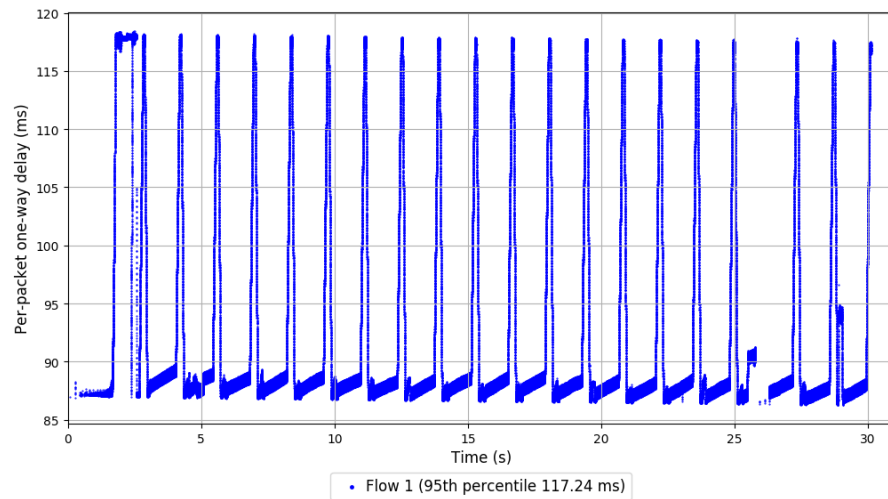
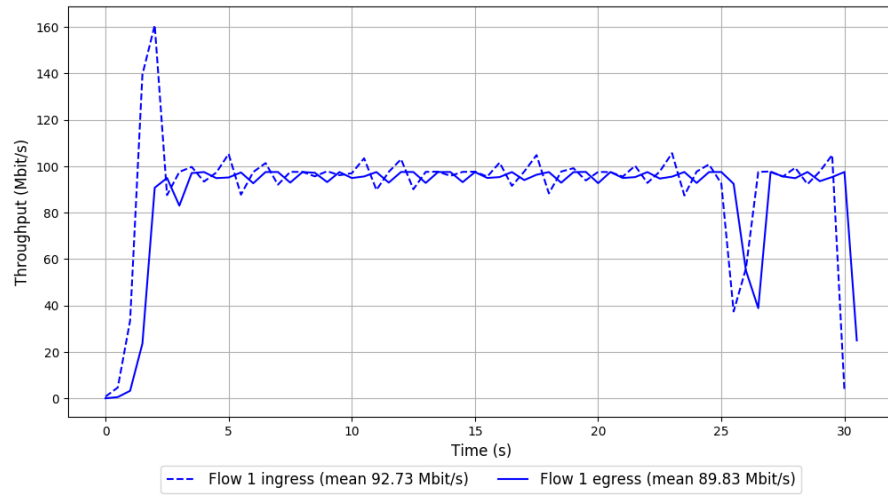
-- Flow 1:

Average throughput: 89.83 Mbit/s

95th percentile per-packet one-way delay: 117.240 ms

Loss rate: 3.03%

### Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-11-02 19:25:06

End at: 2018-11-02 19:25:36

Local clock offset: -3.522 ms

Remote clock offset: 5.497 ms

# Below is generated by plot.py at 2018-11-02 19:52:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 89.50 Mbit/s

95th percentile per-packet one-way delay: 113.324 ms

Loss rate: 3.01%

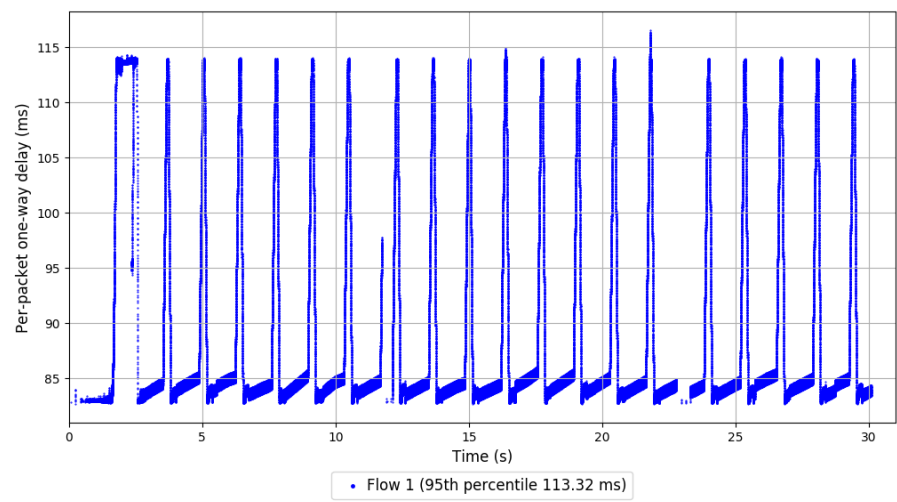
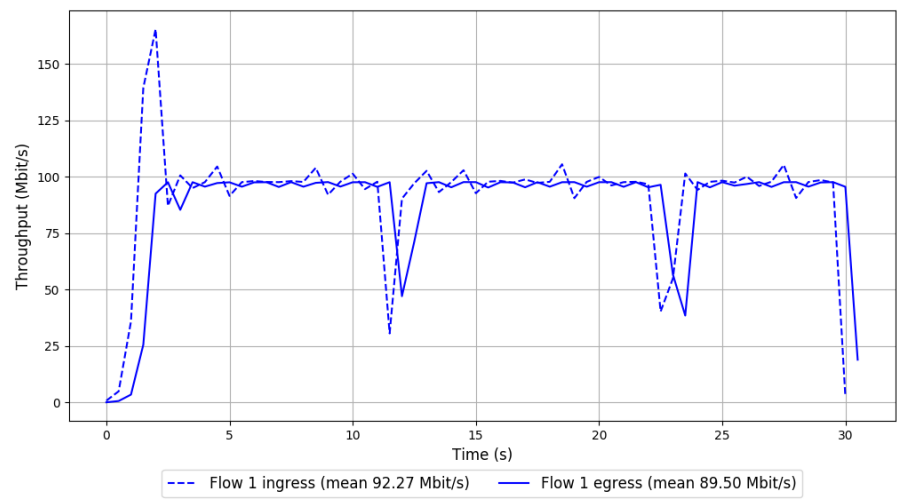
-- Flow 1:

Average throughput: 89.50 Mbit/s

95th percentile per-packet one-way delay: 113.324 ms

Loss rate: 3.01%

Run 4: Report of TCP BBR — Data Link





Run 5: Statistics of TCP BBR

Start at: 2018-11-02 19:46:10

End at: 2018-11-02 19:46:40

Local clock offset: -6.823 ms

Remote clock offset: 3.211 ms

# Below is generated by plot.py at 2018-11-02 19:52:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.24 Mbit/s

95th percentile per-packet one-way delay: 113.093 ms

Loss rate: 2.41%

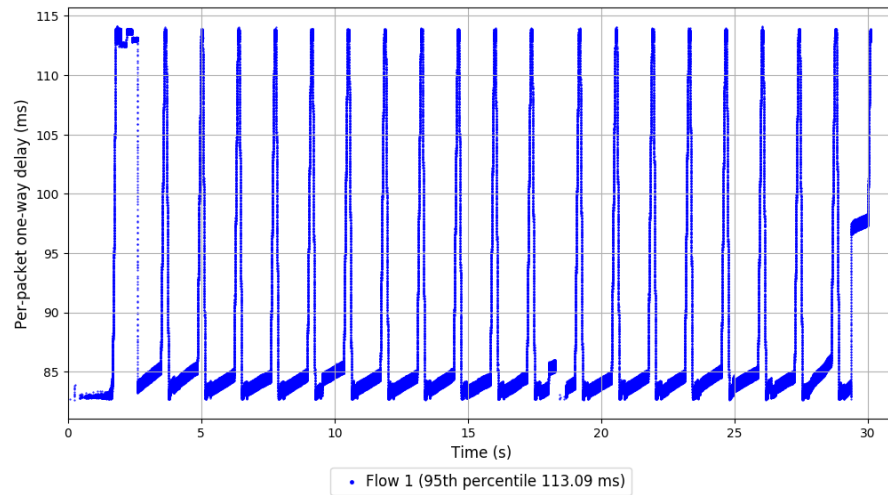
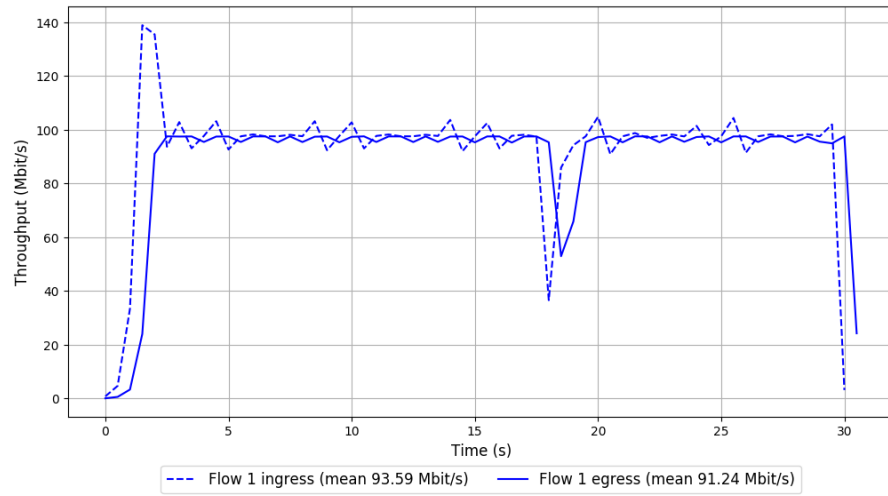
-- Flow 1:

Average throughput: 91.24 Mbit/s

95th percentile per-packet one-way delay: 113.093 ms

Loss rate: 2.41%

### Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-11-02 18:18:26

End at: 2018-11-02 18:18:56

Local clock offset: -5.849 ms

Remote clock offset: 3.354 ms

# Below is generated by plot.py at 2018-11-02 19:52:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.31 Mbit/s

95th percentile per-packet one-way delay: 86.368 ms

Loss rate: 74.23%

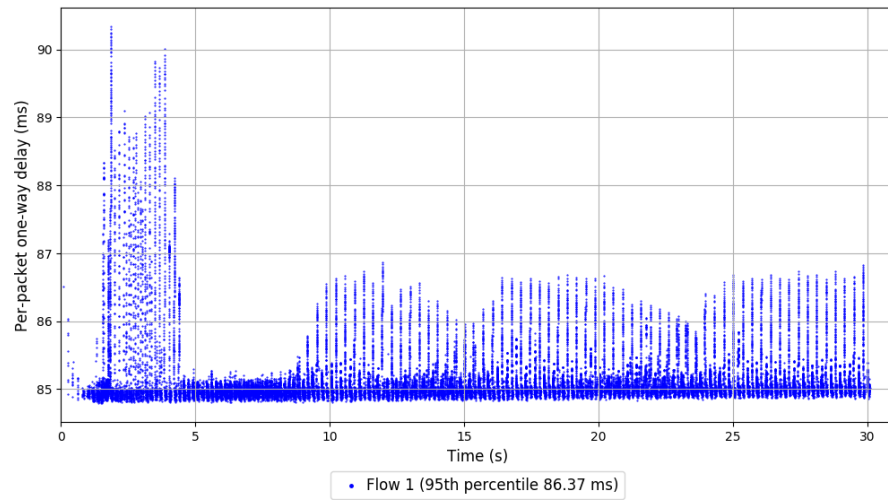
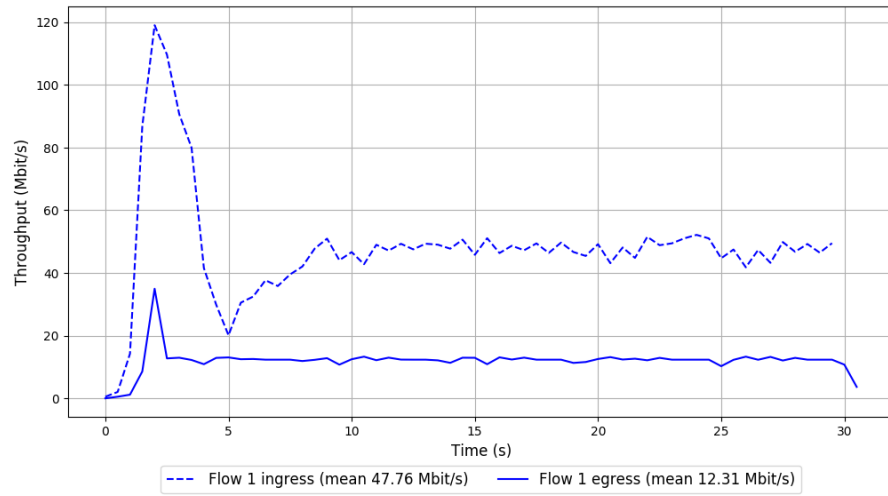
-- Flow 1:

Average throughput: 12.31 Mbit/s

95th percentile per-packet one-way delay: 86.368 ms

Loss rate: 74.23%

## Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-11-02 18:39:31

End at: 2018-11-02 18:40:01

Local clock offset: 1.537 ms

Remote clock offset: 0.96 ms

# Below is generated by plot.py at 2018-11-02 19:52:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.28 Mbit/s

95th percentile per-packet one-way delay: 80.875 ms

Loss rate: 73.96%

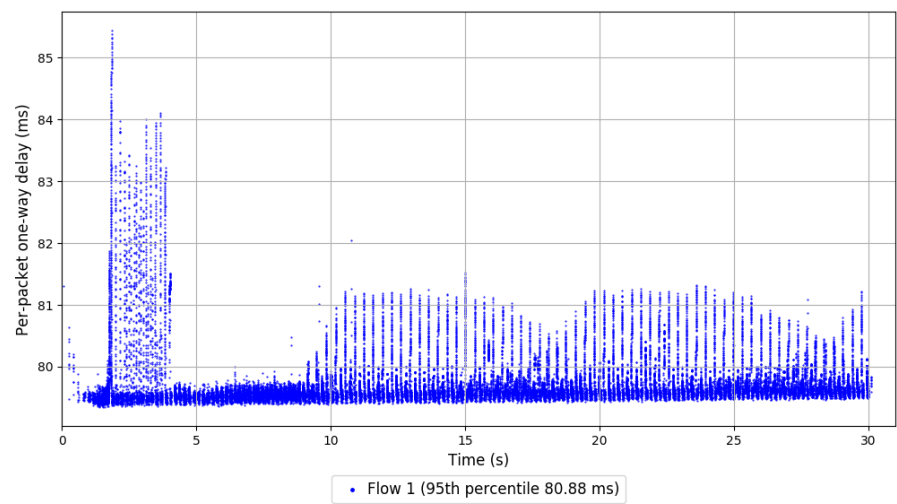
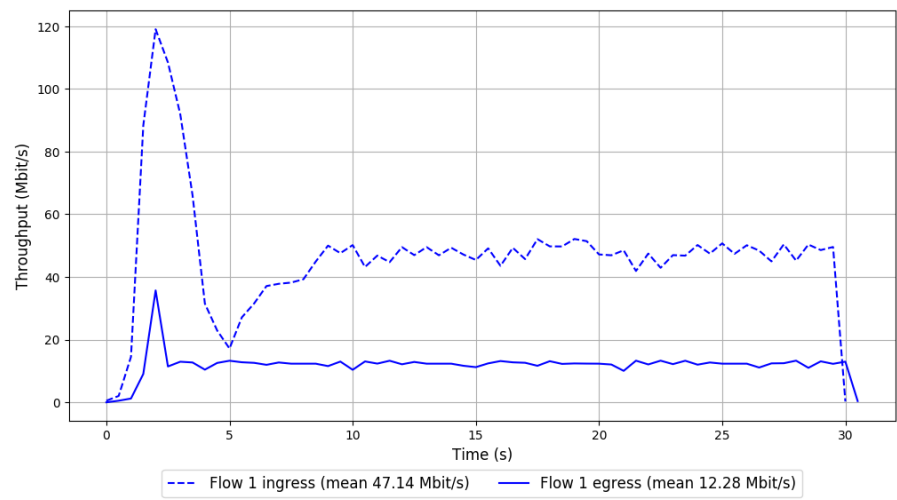
-- Flow 1:

Average throughput: 12.28 Mbit/s

95th percentile per-packet one-way delay: 80.875 ms

Loss rate: 73.96%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-11-02 19:00:33

End at: 2018-11-02 19:01:04

Local clock offset: 6.603 ms

Remote clock offset: 5.778 ms

# Below is generated by plot.py at 2018-11-02 19:52:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.31 Mbit/s

95th percentile per-packet one-way delay: 85.647 ms

Loss rate: 74.51%

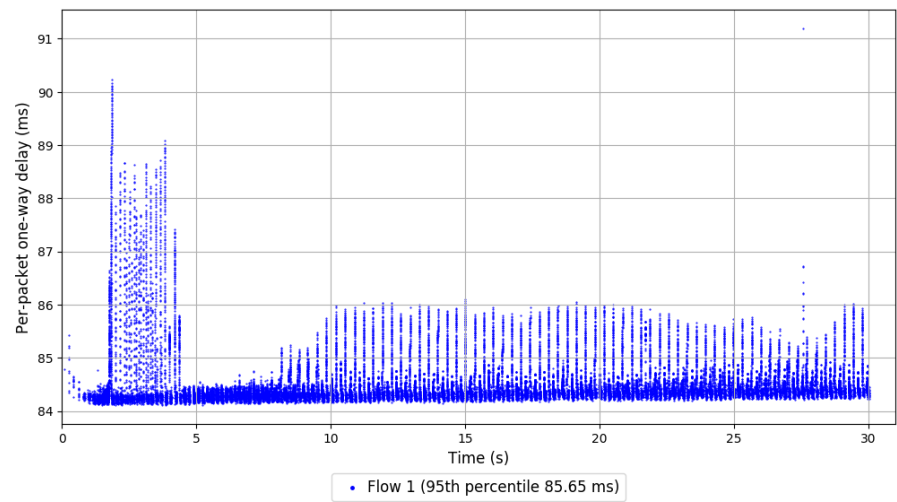
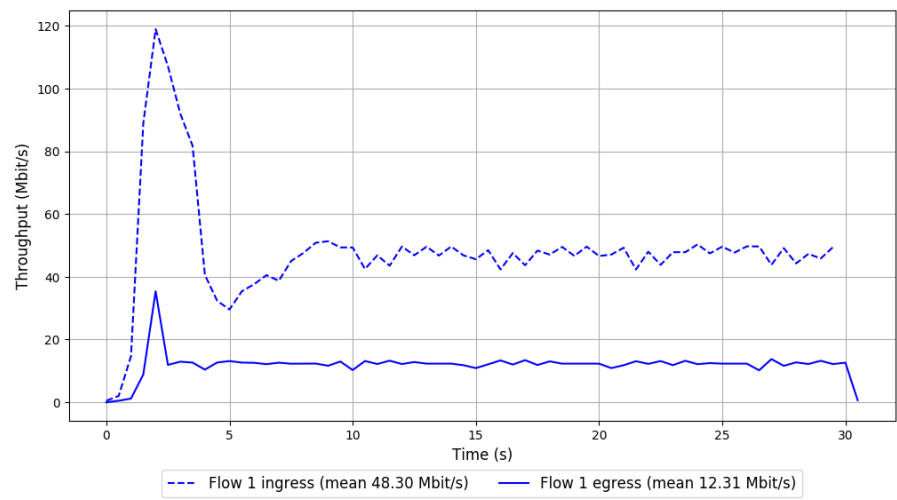
-- Flow 1:

Average throughput: 12.31 Mbit/s

95th percentile per-packet one-way delay: 85.647 ms

Loss rate: 74.51%

Run 3: Report of Copa — Data Link





Run 4: Statistics of Copa

Start at: 2018-11-02 19:21:37

End at: 2018-11-02 19:22:07

Local clock offset: -3.042 ms

Remote clock offset: 2.669 ms

# Below is generated by plot.py at 2018-11-02 19:52:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 83.086 ms

Loss rate: 73.65%

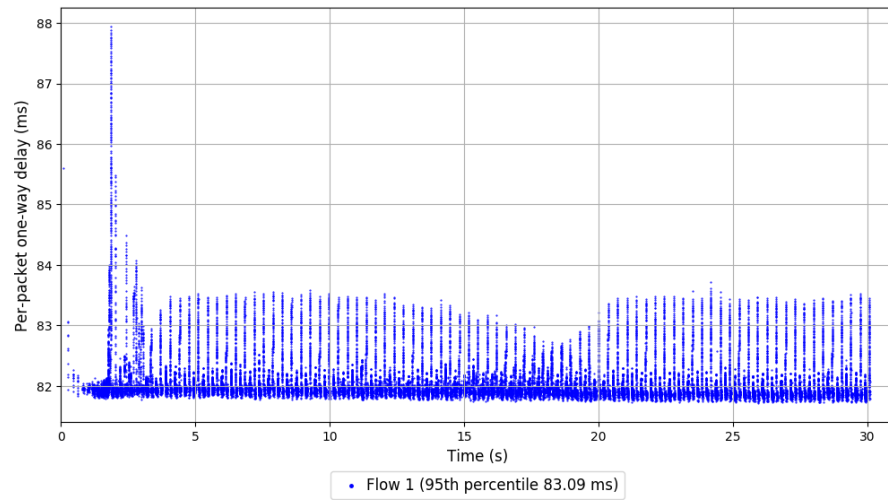
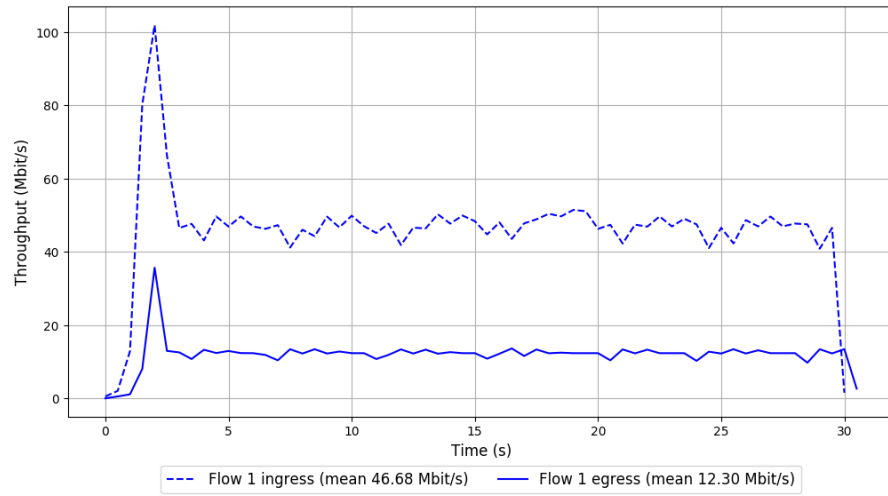
-- Flow 1:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 83.086 ms

Loss rate: 73.65%

#### Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-02 19:42:41

End at: 2018-11-02 19:43:11

Local clock offset: -6.453 ms

Remote clock offset: 5.918 ms

# Below is generated by plot.py at 2018-11-02 19:52:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 86.689 ms

Loss rate: 74.06%

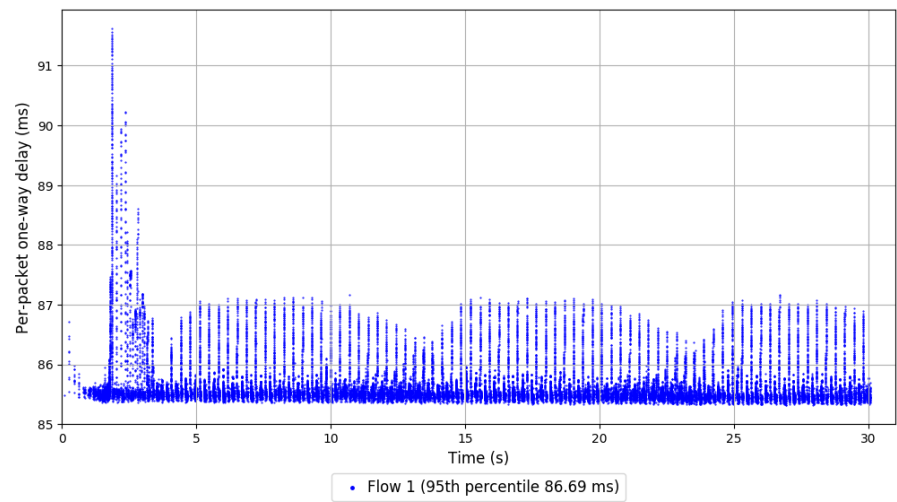
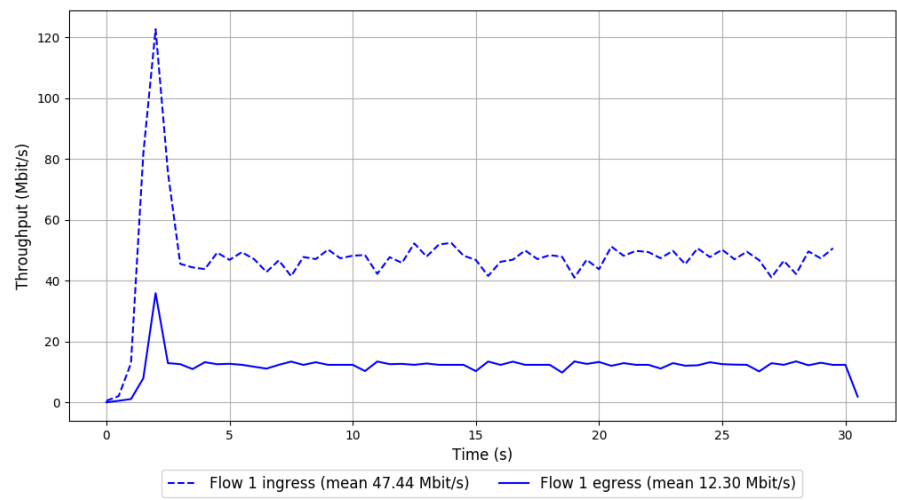
-- Flow 1:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 86.689 ms

Loss rate: 74.06%

Run 5: Report of Copa — Data Link

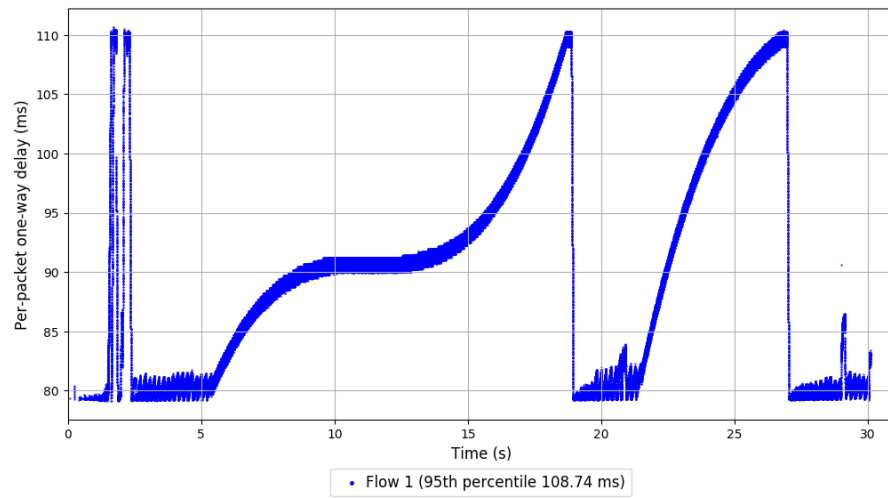
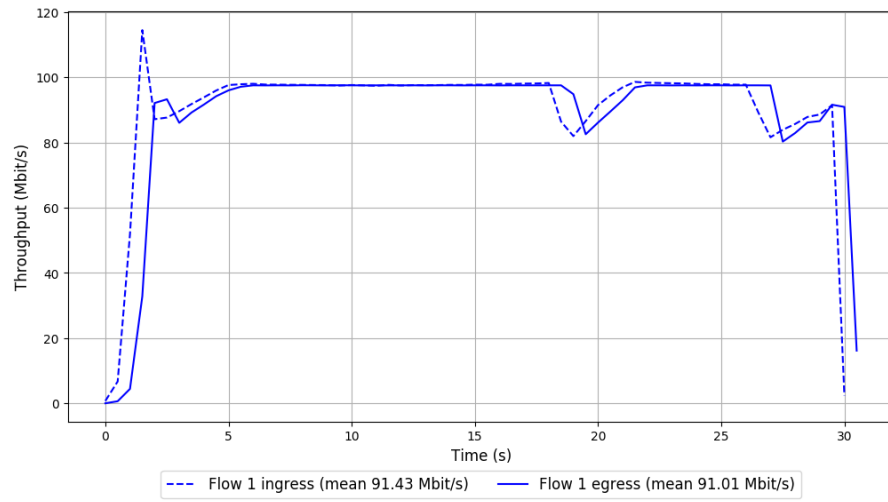


Run 1: Statistics of TCP Cubic

Start at: 2018-11-02 18:23:07  
End at: 2018-11-02 18:23:37  
Local clock offset: -3.887 ms  
Remote clock offset: -1.183 ms

# Below is generated by plot.py at 2018-11-02 19:52:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 91.01 Mbit/s  
95th percentile per-packet one-way delay: 108.742 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 91.01 Mbit/s  
95th percentile per-packet one-way delay: 108.742 ms  
Loss rate: 0.45%

### Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-11-02 18:44:12

End at: 2018-11-02 18:44:42

Local clock offset: 1.291 ms

Remote clock offset: 1.347 ms

# Below is generated by plot.py at 2018-11-02 19:52:53

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.01 Mbit/s

95th percentile per-packet one-way delay: 116.390 ms

Loss rate: 0.94%

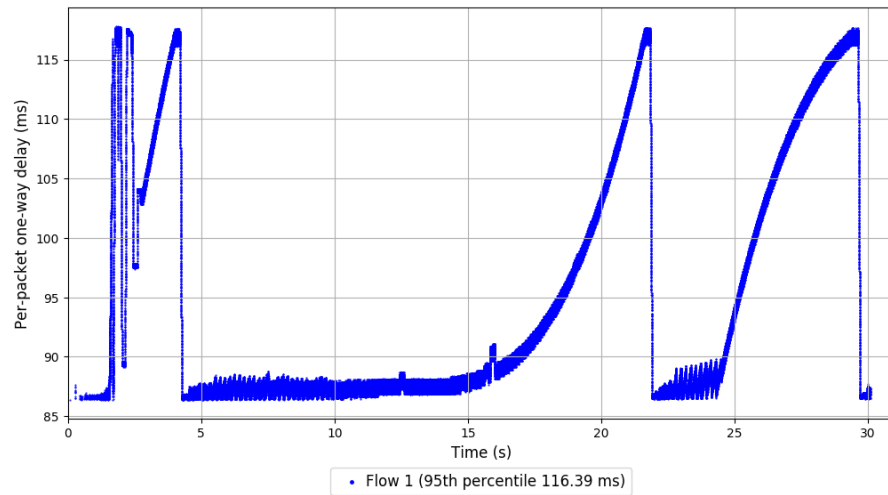
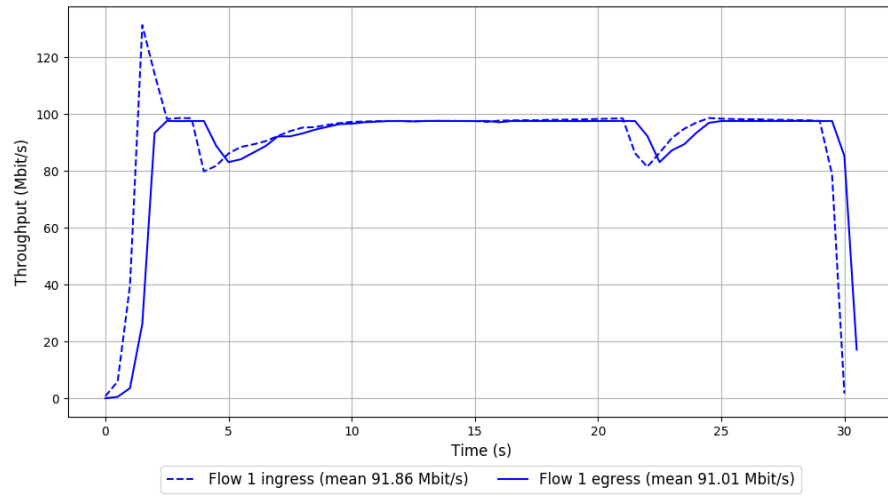
-- Flow 1:

Average throughput: 91.01 Mbit/s

95th percentile per-packet one-way delay: 116.390 ms

Loss rate: 0.94%

## Run 2: Report of TCP Cubic — Data Link





Run 3: Statistics of TCP Cubic

Start at: 2018-11-02 19:05:15

End at: 2018-11-02 19:05:45

Local clock offset: 7.556 ms

Remote clock offset: 7.08 ms

# Below is generated by plot.py at 2018-11-02 19:52:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 90.94 Mbit/s

95th percentile per-packet one-way delay: 114.226 ms

Loss rate: 0.47%

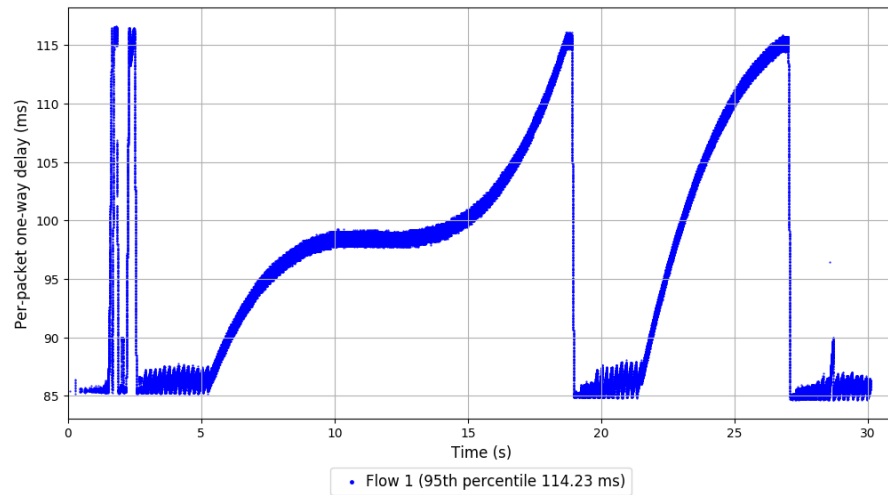
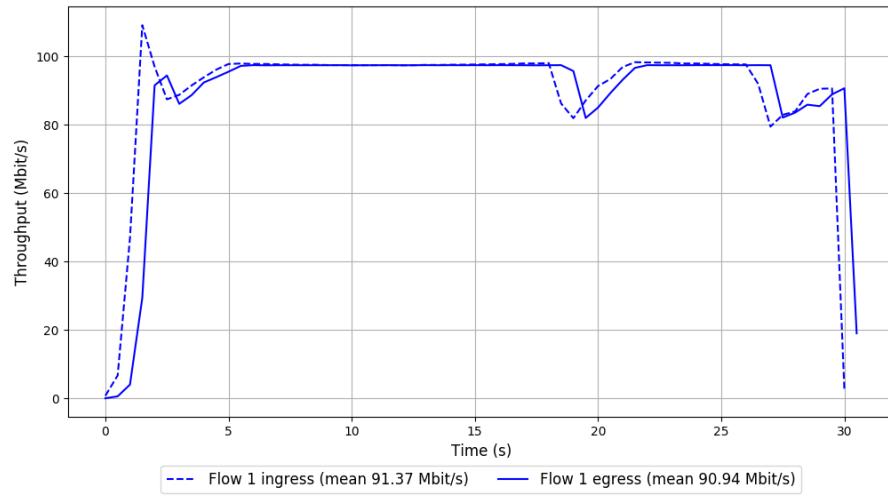
-- Flow 1:

Average throughput: 90.94 Mbit/s

95th percentile per-packet one-way delay: 114.226 ms

Loss rate: 0.47%

### Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-11-02 19:26:18

End at: 2018-11-02 19:26:48

Local clock offset: -4.391 ms

Remote clock offset: 5.509 ms

# Below is generated by plot.py at 2018-11-02 19:53:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 90.95 Mbit/s

95th percentile per-packet one-way delay: 114.706 ms

Loss rate: 0.47%

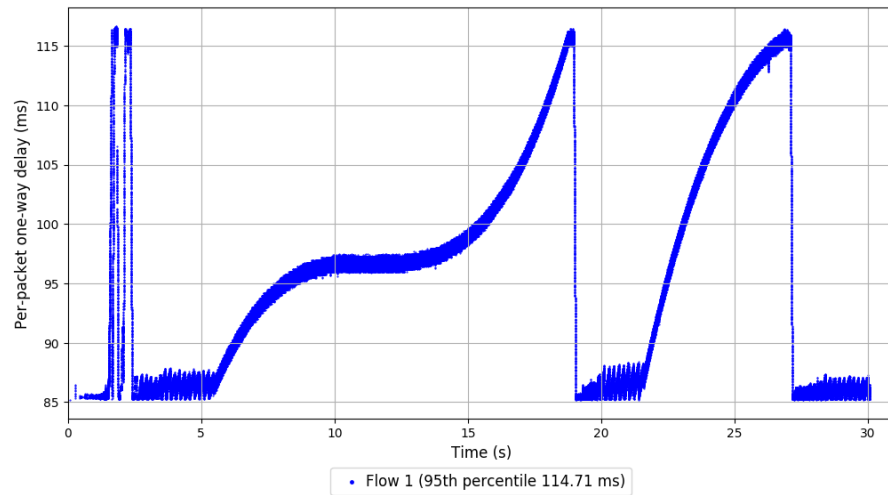
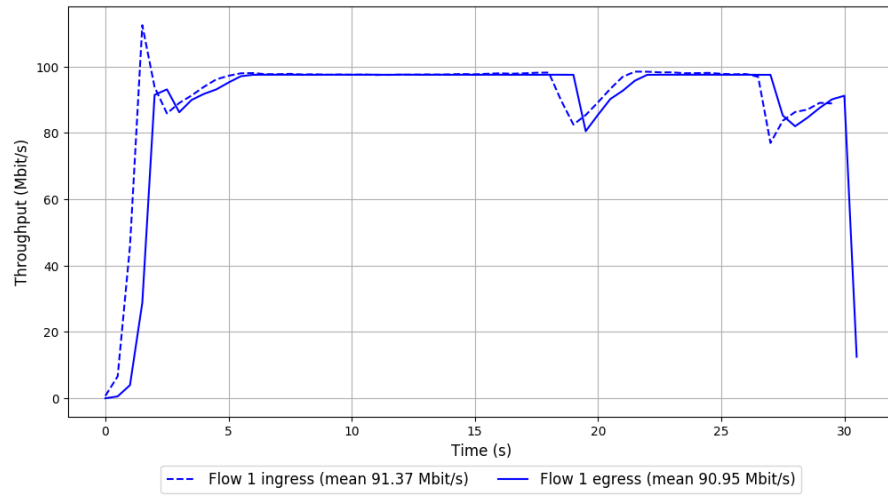
-- Flow 1:

Average throughput: 90.95 Mbit/s

95th percentile per-packet one-way delay: 114.706 ms

Loss rate: 0.47%

#### Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-11-02 19:47:22

End at: 2018-11-02 19:47:52

Local clock offset: -5.304 ms

Remote clock offset: 6.88 ms

# Below is generated by plot.py at 2018-11-02 19:53:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 90.94 Mbit/s

95th percentile per-packet one-way delay: 114.809 ms

Loss rate: 0.45%

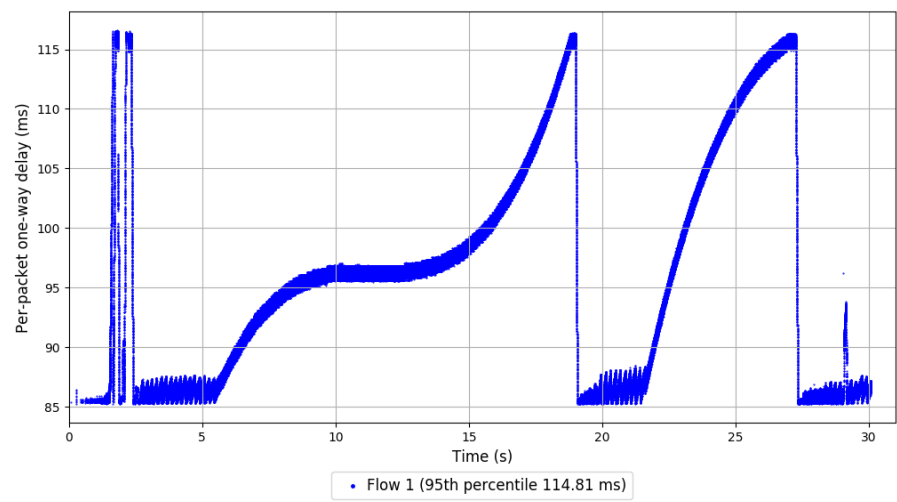
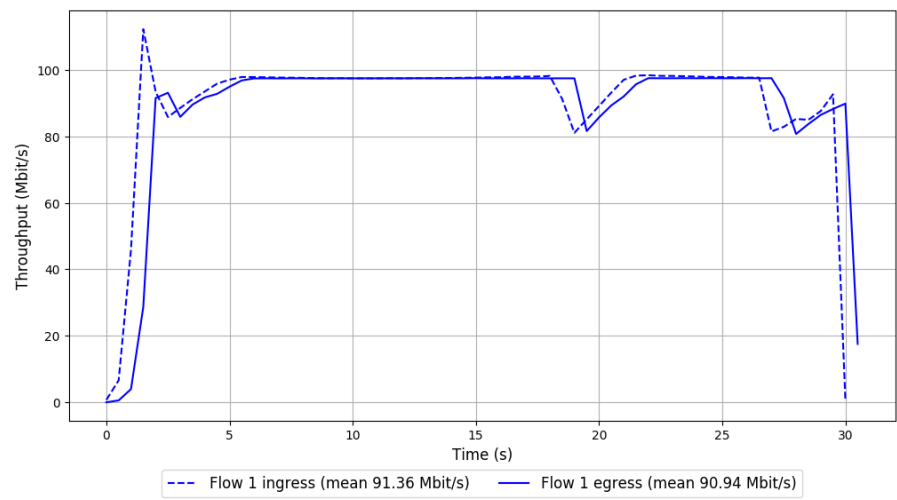
-- Flow 1:

Average throughput: 90.94 Mbit/s

95th percentile per-packet one-way delay: 114.809 ms

Loss rate: 0.45%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-11-02 18:13:50

End at: 2018-11-02 18:14:20

Local clock offset: -4.498 ms

Remote clock offset: 3.055 ms

# Below is generated by plot.py at 2018-11-02 19:53:45

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.68 Mbit/s

95th percentile per-packet one-way delay: 100.455 ms

Loss rate: 1.01%

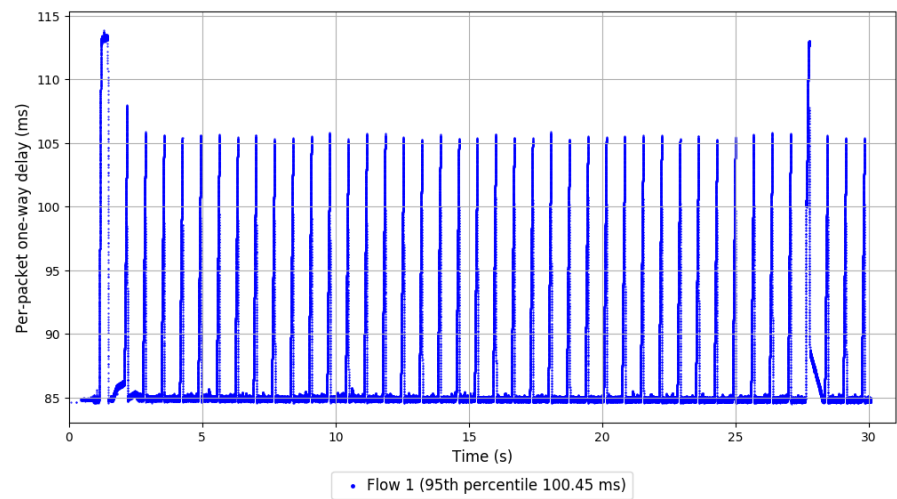
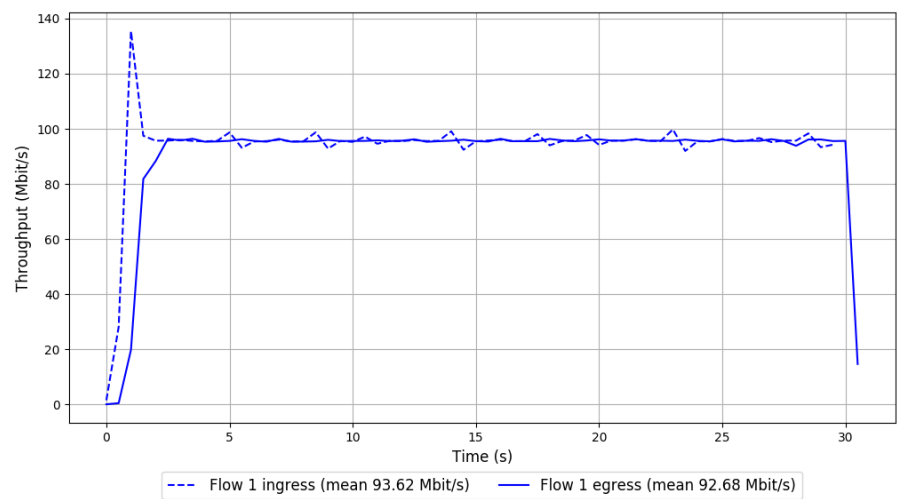
-- Flow 1:

Average throughput: 92.68 Mbit/s

95th percentile per-packet one-way delay: 100.455 ms

Loss rate: 1.01%

Run 1: Report of FillP — Data Link





Run 2: Statistics of FillP

Start at: 2018-11-02 18:34:53

End at: 2018-11-02 18:35:23

Local clock offset: -0.633 ms

Remote clock offset: -0.4 ms

# Below is generated by plot.py at 2018-11-02 19:53:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.74 Mbit/s

95th percentile per-packet one-way delay: 96.219 ms

Loss rate: 1.00%

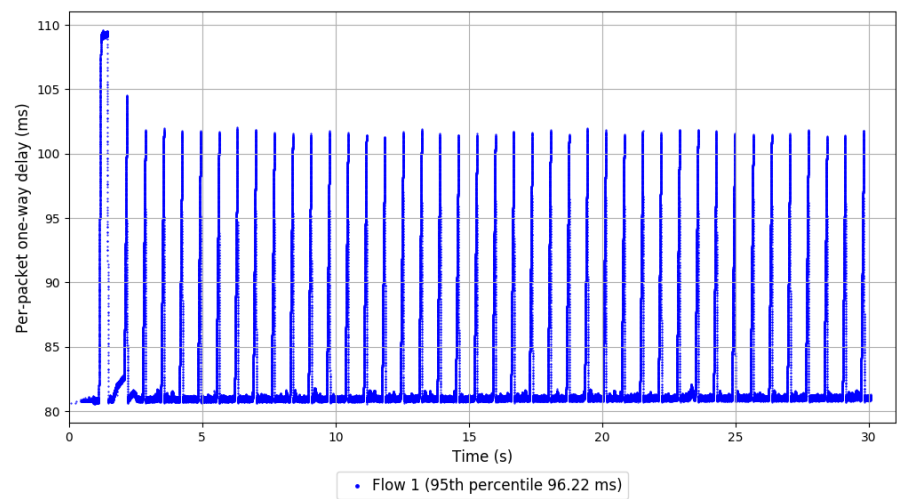
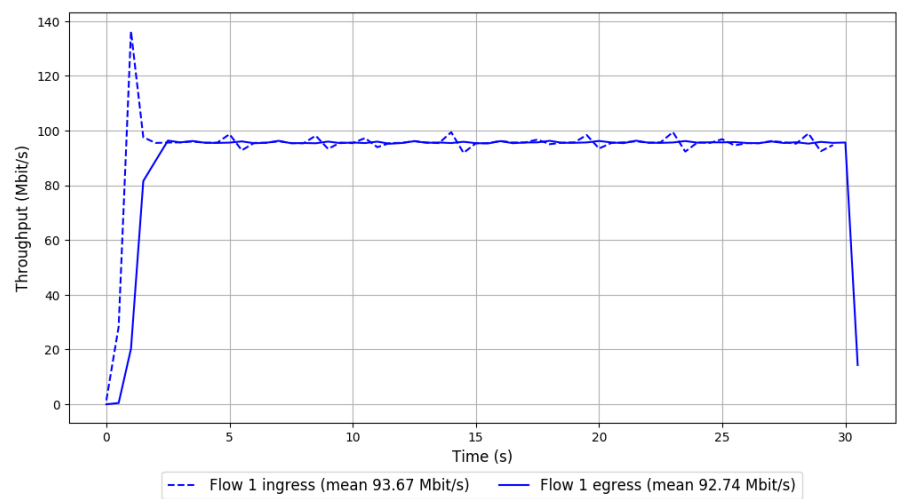
-- Flow 1:

Average throughput: 92.74 Mbit/s

95th percentile per-packet one-way delay: 96.219 ms

Loss rate: 1.00%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-11-02 18:55:57

End at: 2018-11-02 18:56:27

Local clock offset: 4.575 ms

Remote clock offset: 1.779 ms

# Below is generated by plot.py at 2018-11-02 19:53:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.61 Mbit/s

95th percentile per-packet one-way delay: 98.840 ms

Loss rate: 0.99%

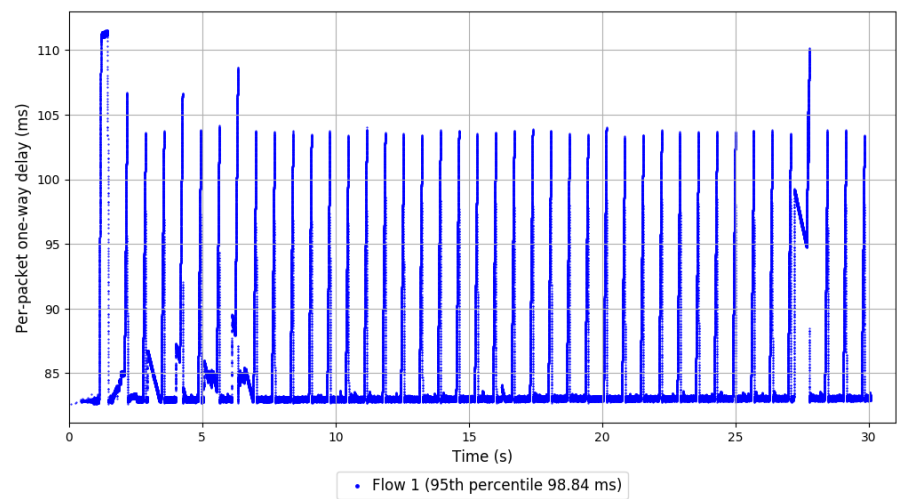
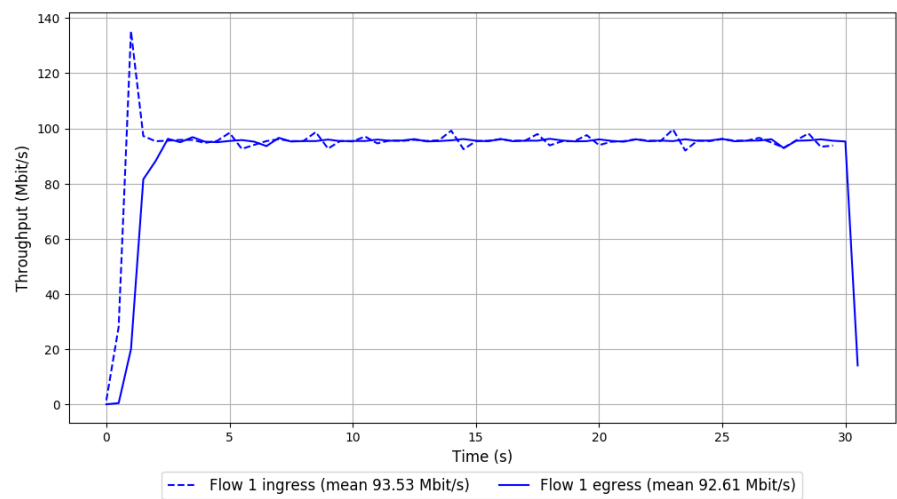
-- Flow 1:

Average throughput: 92.61 Mbit/s

95th percentile per-packet one-way delay: 98.840 ms

Loss rate: 0.99%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-11-02 19:17:02

End at: 2018-11-02 19:17:32

Local clock offset: -1.855 ms

Remote clock offset: 6.323 ms

# Below is generated by plot.py at 2018-11-02 19:54:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.75 Mbit/s

95th percentile per-packet one-way delay: 101.107 ms

Loss rate: 1.02%

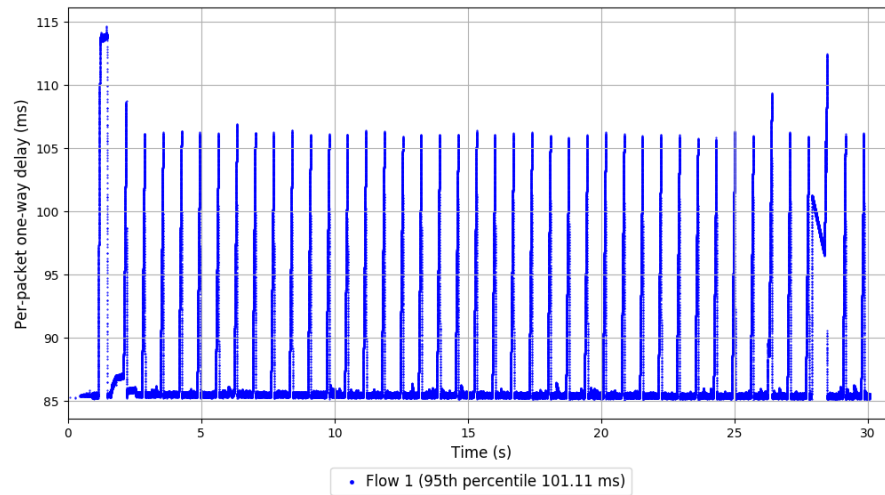
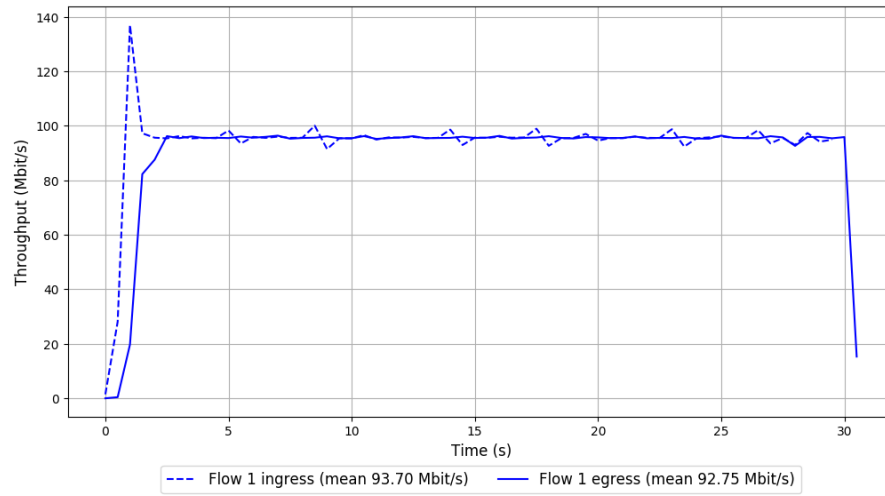
-- Flow 1:

Average throughput: 92.75 Mbit/s

95th percentile per-packet one-way delay: 101.107 ms

Loss rate: 1.02%

#### Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-11-02 19:38:05

End at: 2018-11-02 19:38:35

Local clock offset: -4.146 ms

Remote clock offset: 5.714 ms

# Below is generated by plot.py at 2018-11-02 19:54:17

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.83 Mbit/s

95th percentile per-packet one-way delay: 99.378 ms

Loss rate: 1.01%

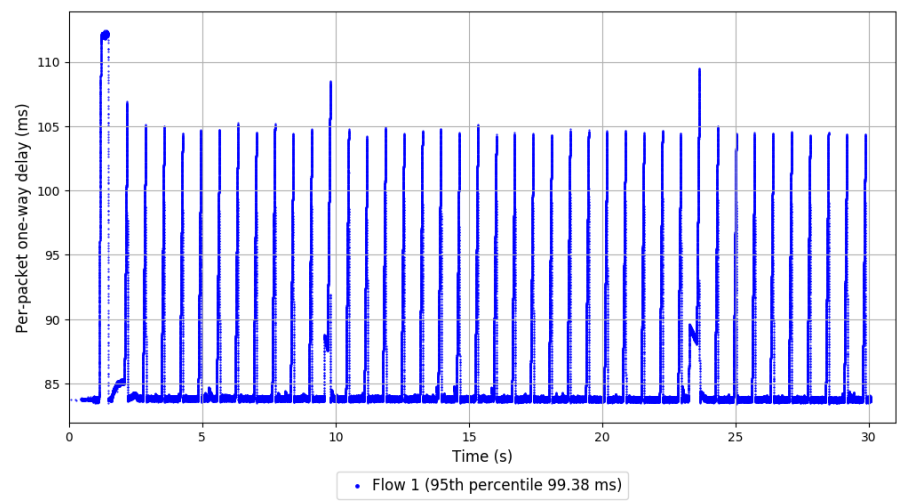
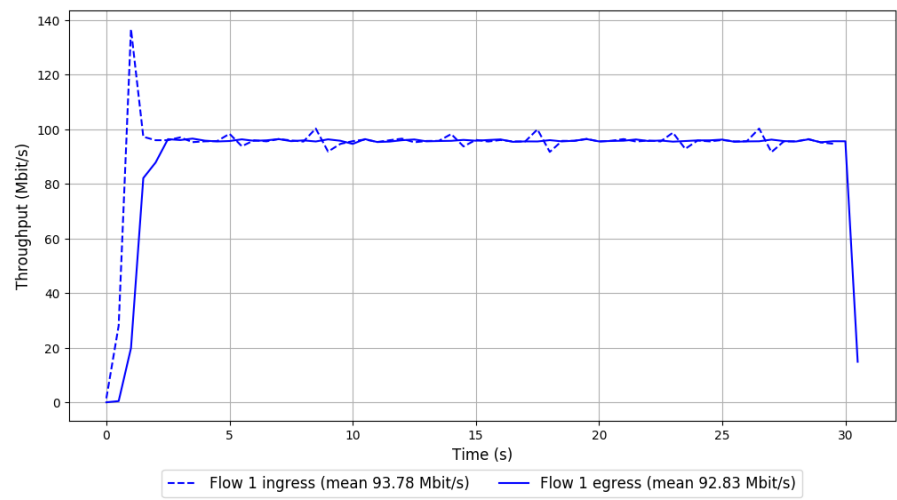
-- Flow 1:

Average throughput: 92.83 Mbit/s

95th percentile per-packet one-way delay: 99.378 ms

Loss rate: 1.01%

Run 5: Report of FillP — Data Link



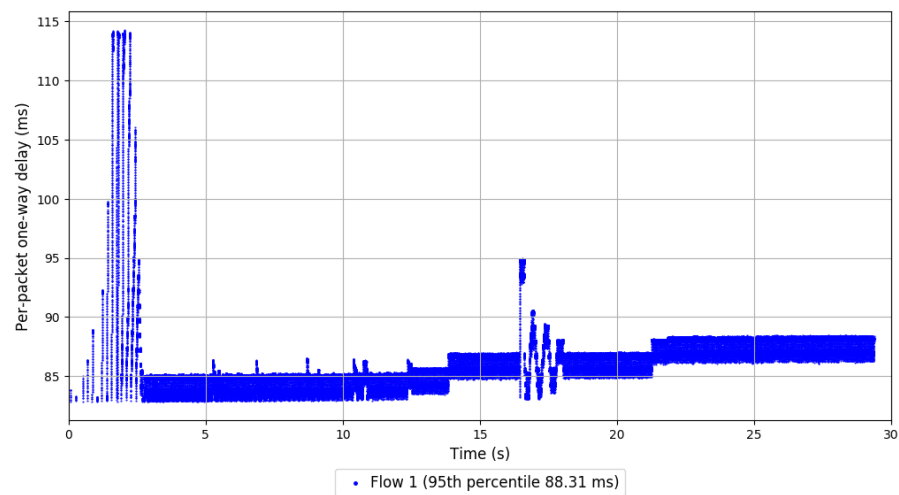
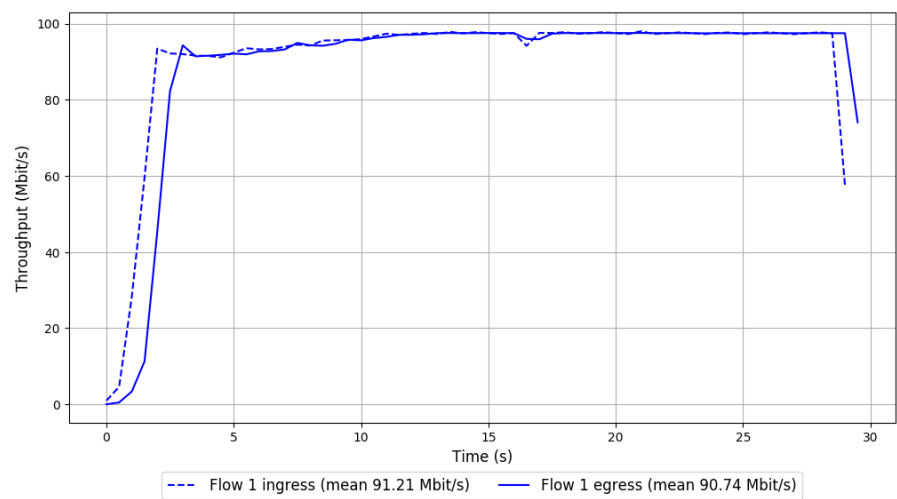


Run 1: Statistics of Indigo

Start at: 2018-11-02 18:05:38  
End at: 2018-11-02 18:06:08  
Local clock offset: -5.473 ms  
Remote clock offset: -2.491 ms

# Below is generated by plot.py at 2018-11-02 19:54:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 90.74 Mbit/s  
95th percentile per-packet one-way delay: 88.314 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 90.74 Mbit/s  
95th percentile per-packet one-way delay: 88.314 ms  
Loss rate: 0.51%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-11-02 18:26:39

End at: 2018-11-02 18:27:09

Local clock offset: -2.891 ms

Remote clock offset: 0.24 ms

# Below is generated by plot.py at 2018-11-02 19:54:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.83 Mbit/s

95th percentile per-packet one-way delay: 86.180 ms

Loss rate: 1.09%

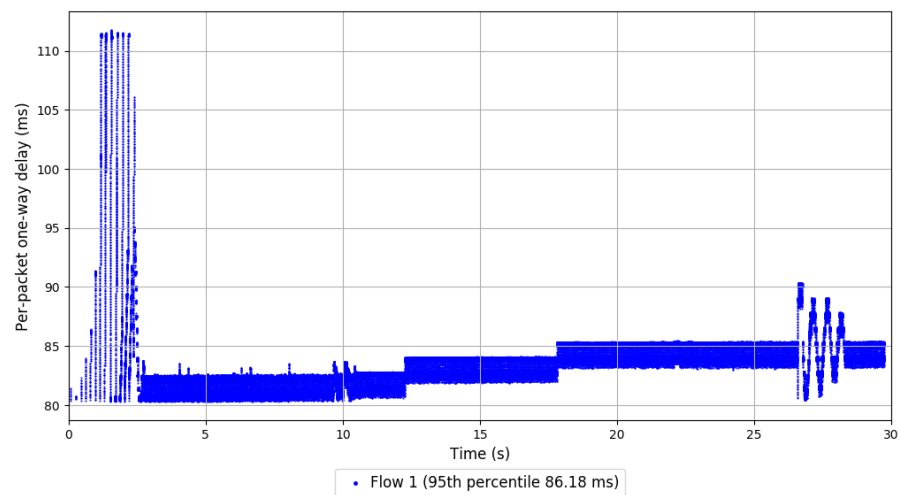
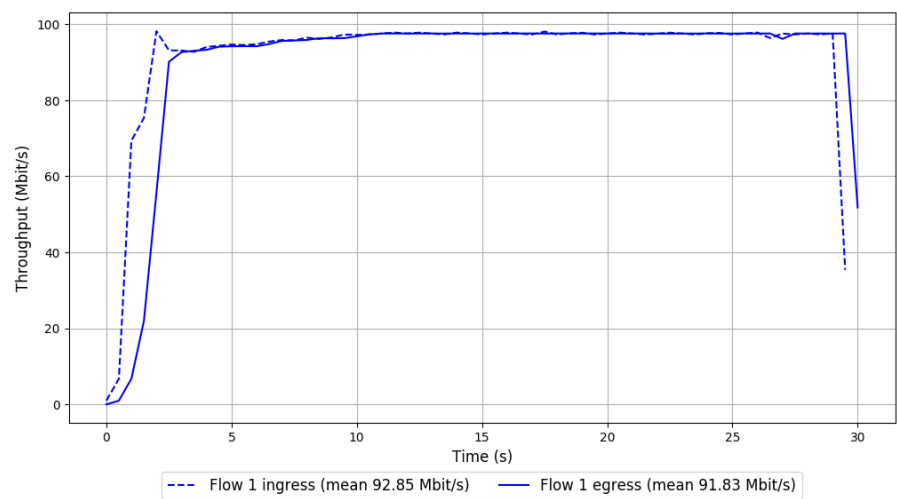
-- Flow 1:

Average throughput: 91.83 Mbit/s

95th percentile per-packet one-way delay: 86.180 ms

Loss rate: 1.09%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-11-02 18:47:44

End at: 2018-11-02 18:48:14

Local clock offset: 2.955 ms

Remote clock offset: 5.245 ms

# Below is generated by plot.py at 2018-11-02 19:54:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.29 Mbit/s

95th percentile per-packet one-way delay: 92.349 ms

Loss rate: 1.16%

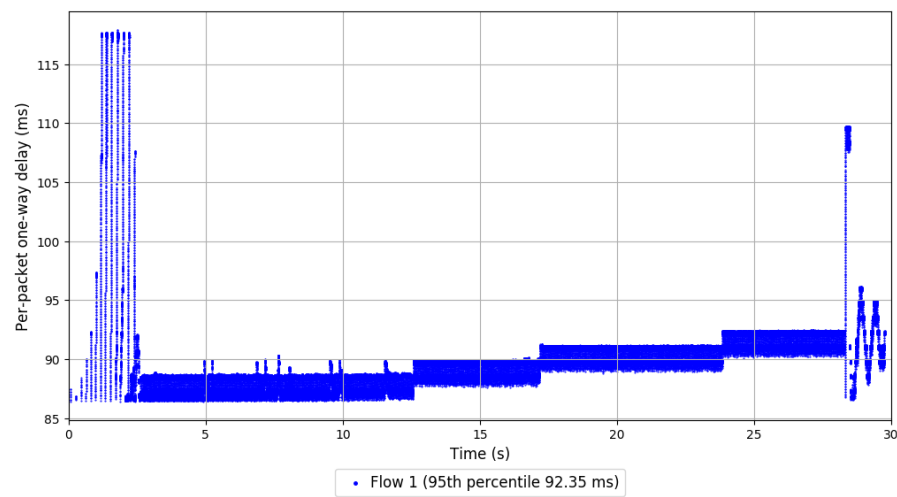
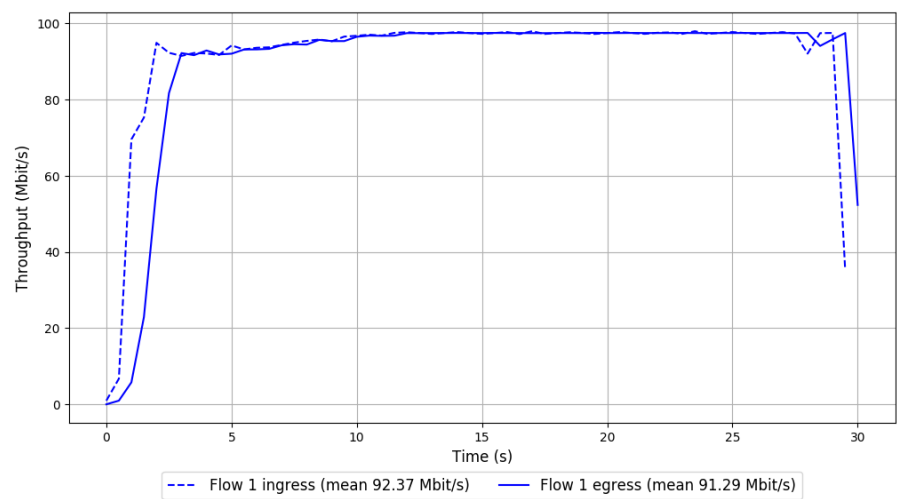
-- Flow 1:

Average throughput: 91.29 Mbit/s

95th percentile per-packet one-way delay: 92.349 ms

Loss rate: 1.16%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-02 19:08:47

End at: 2018-11-02 19:09:17

Local clock offset: 3.488 ms

Remote clock offset: 4.955 ms

# Below is generated by plot.py at 2018-11-02 19:54:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.40 Mbit/s

95th percentile per-packet one-way delay: 85.482 ms

Loss rate: 0.78%

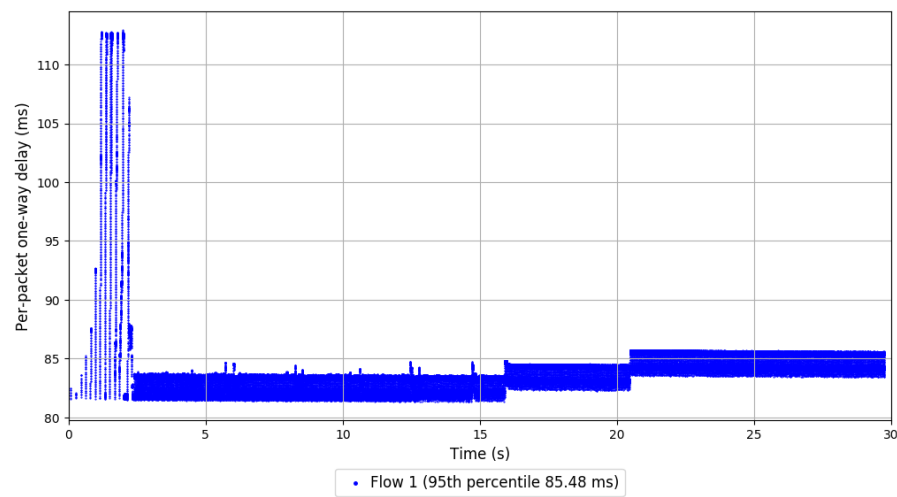
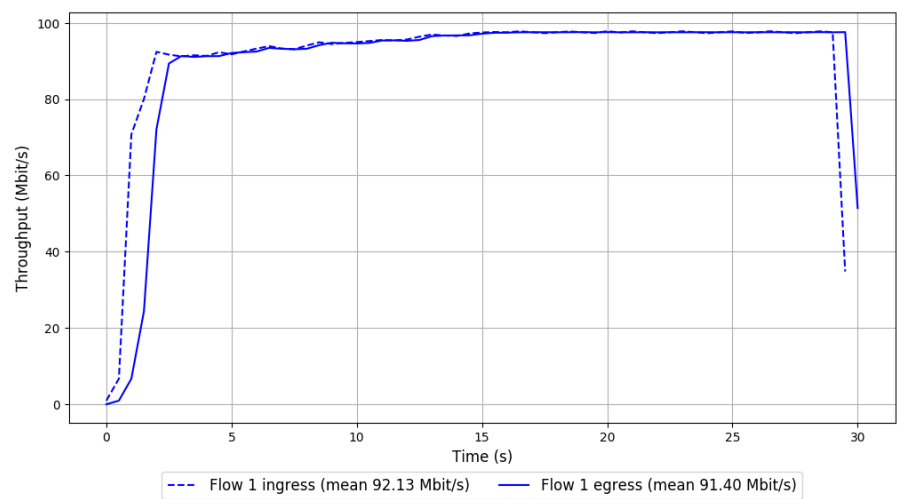
-- Flow 1:

Average throughput: 91.40 Mbit/s

95th percentile per-packet one-way delay: 85.482 ms

Loss rate: 0.78%

Run 4: Report of Indigo — Data Link





Run 5: Statistics of Indigo

Start at: 2018-11-02 19:29:50

End at: 2018-11-02 19:30:20

Local clock offset: -4.696 ms

Remote clock offset: 1.716 ms

# Below is generated by plot.py at 2018-11-02 19:54:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.75 Mbit/s

95th percentile per-packet one-way delay: 84.350 ms

Loss rate: 0.80%

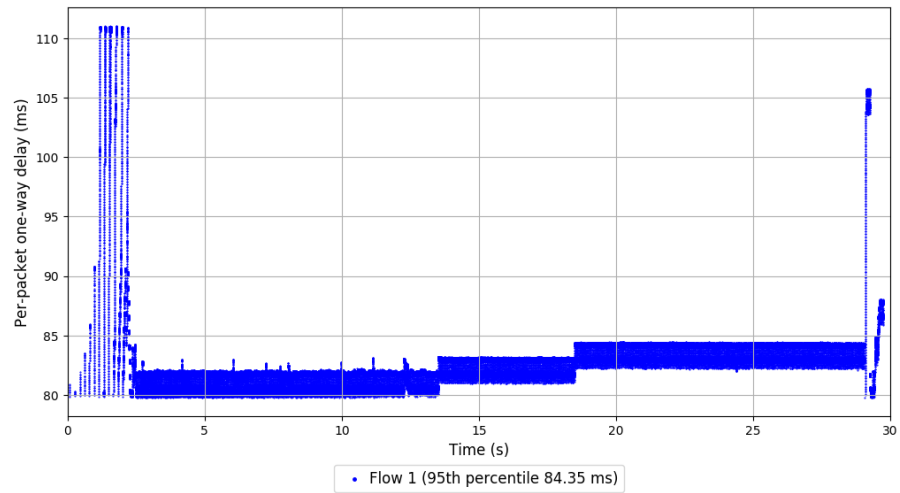
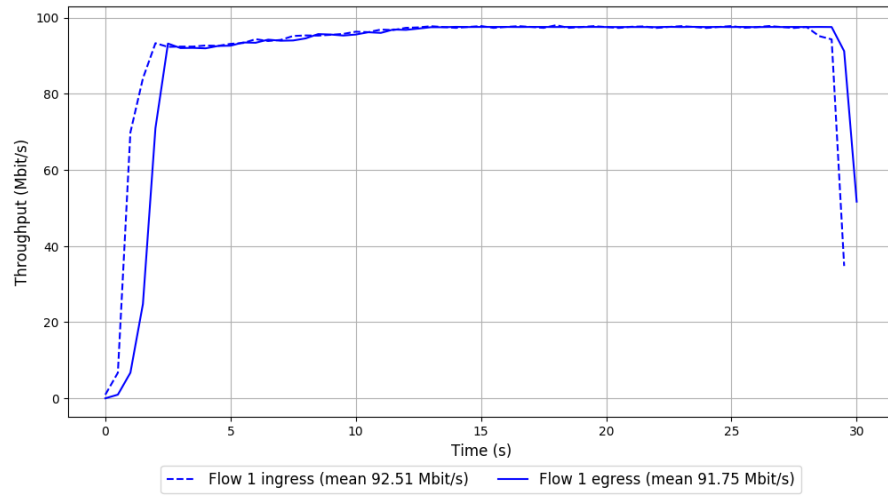
-- Flow 1:

Average throughput: 91.75 Mbit/s

95th percentile per-packet one-way delay: 84.350 ms

Loss rate: 0.80%

## Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-02 18:10:19

End at: 2018-11-02 18:10:49

Local clock offset: -6.315 ms

Remote clock offset: 1.635 ms

# Below is generated by plot.py at 2018-11-02 19:54:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 55.97 Mbit/s

95th percentile per-packet one-way delay: 123.951 ms

Loss rate: 48.34%

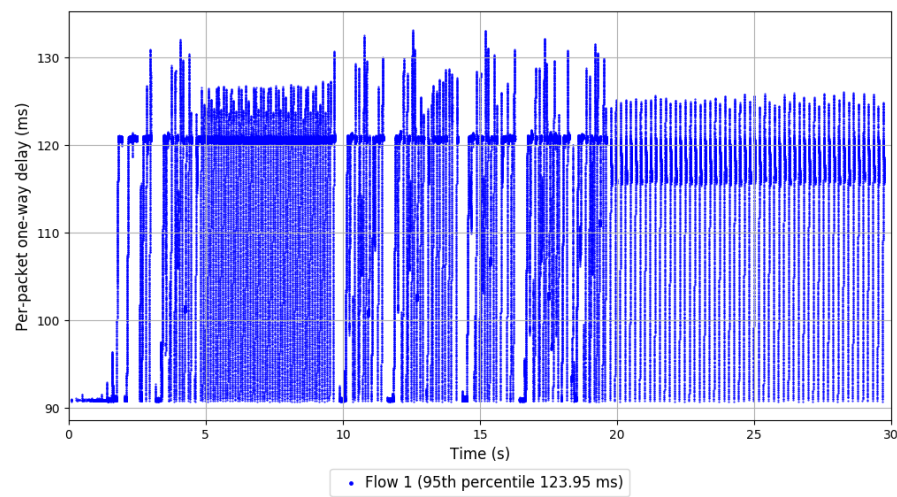
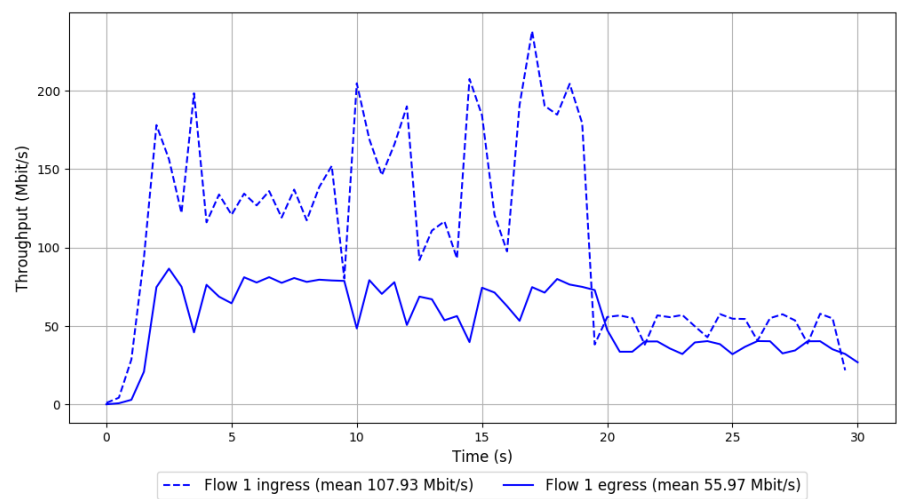
-- Flow 1:

Average throughput: 55.97 Mbit/s

95th percentile per-packet one-way delay: 123.951 ms

Loss rate: 48.34%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-02 18:31:22

End at: 2018-11-02 18:31:52

Local clock offset: -0.793 ms

Remote clock offset: 4.311 ms

# Below is generated by plot.py at 2018-11-02 19:55:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 61.26 Mbit/s

95th percentile per-packet one-way delay: 116.912 ms

Loss rate: 55.46%

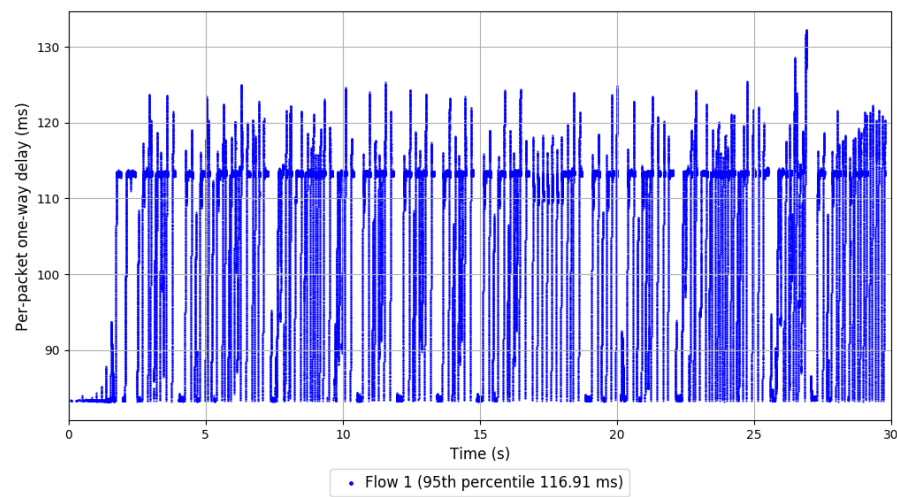
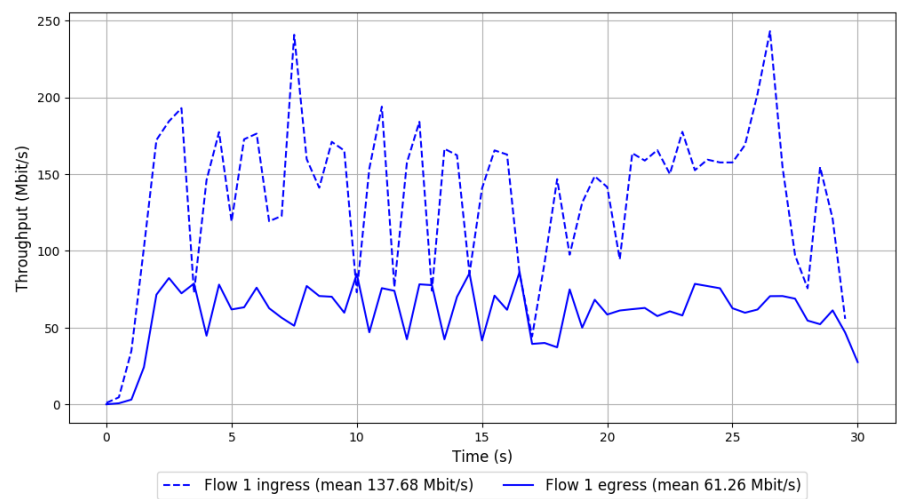
-- Flow 1:

Average throughput: 61.26 Mbit/s

95th percentile per-packet one-way delay: 116.912 ms

Loss rate: 55.46%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-02 18:52:25

End at: 2018-11-02 18:52:55

Local clock offset: 4.335 ms

Remote clock offset: 6.509 ms

# Below is generated by plot.py at 2018-11-02 19:55:07

# Datalink statistics

-- Total of 1 flow:

Average throughput: 67.64 Mbit/s

95th percentile per-packet one-way delay: 119.908 ms

Loss rate: 49.69%

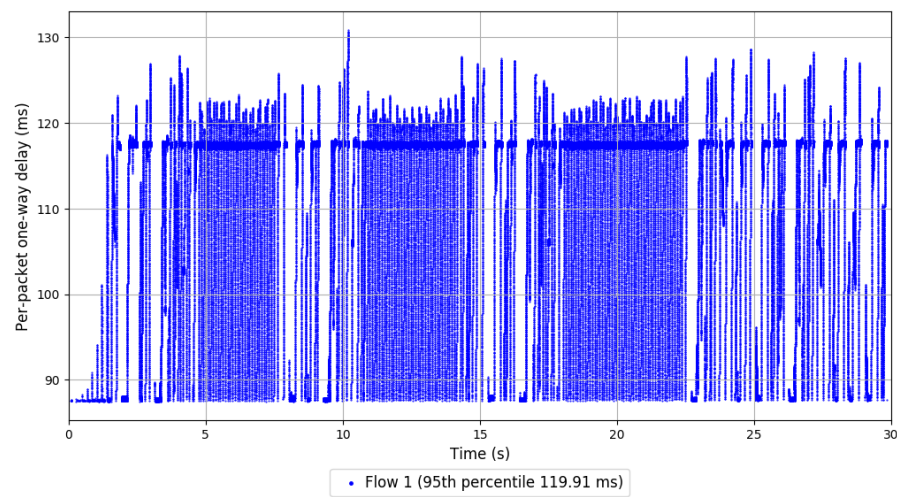
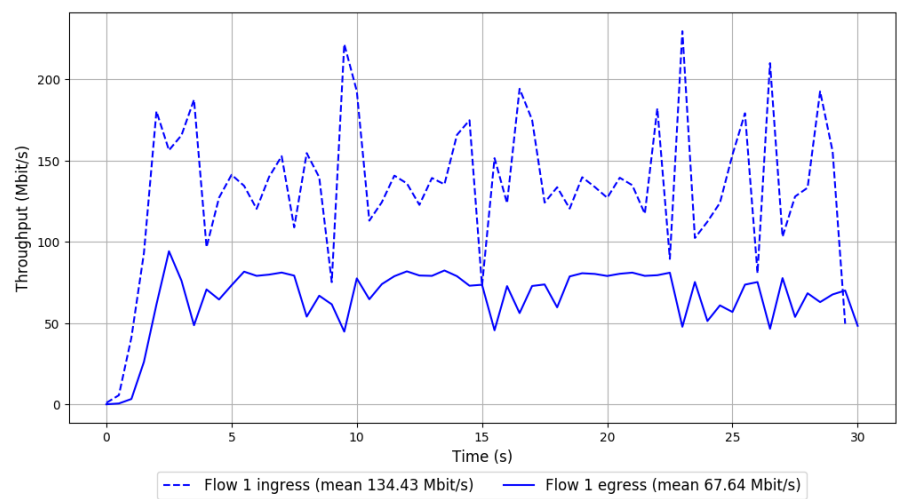
-- Flow 1:

Average throughput: 67.64 Mbit/s

95th percentile per-packet one-way delay: 119.908 ms

Loss rate: 49.69%

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





Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-02 19:13:30

End at: 2018-11-02 19:14:00

Local clock offset: -1.358 ms

Remote clock offset: 5.178 ms

# Below is generated by plot.py at 2018-11-02 19:55:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 67.95 Mbit/s

95th percentile per-packet one-way delay: 121.838 ms

Loss rate: 49.59%

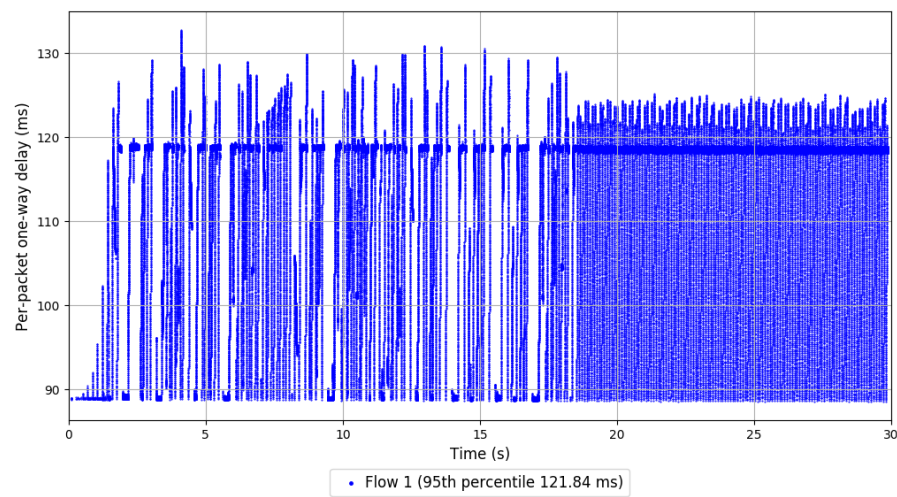
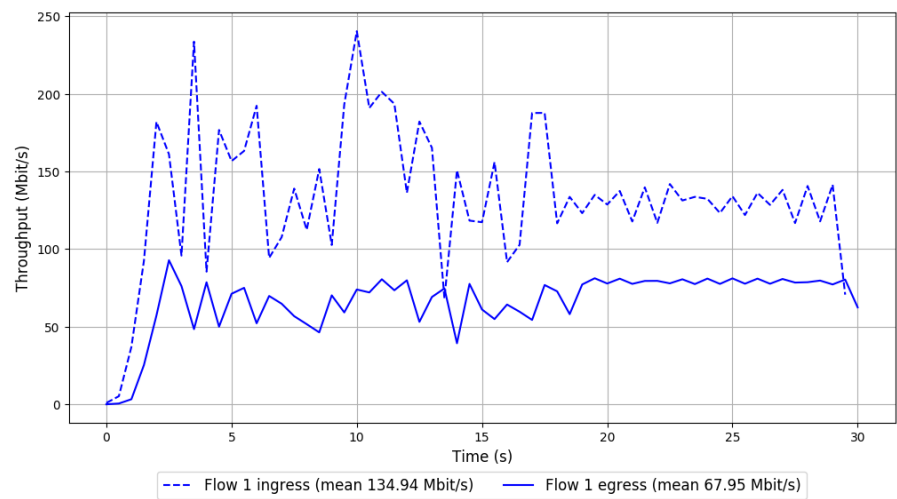
-- Flow 1:

Average throughput: 67.95 Mbit/s

95th percentile per-packet one-way delay: 121.838 ms

Loss rate: 49.59%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-02 19:34:33

End at: 2018-11-02 19:35:03

Local clock offset: -4.799 ms

Remote clock offset: 6.825 ms

# Below is generated by plot.py at 2018-11-02 19:55:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 70.43 Mbit/s

95th percentile per-packet one-way delay: 117.243 ms

Loss rate: 48.97%

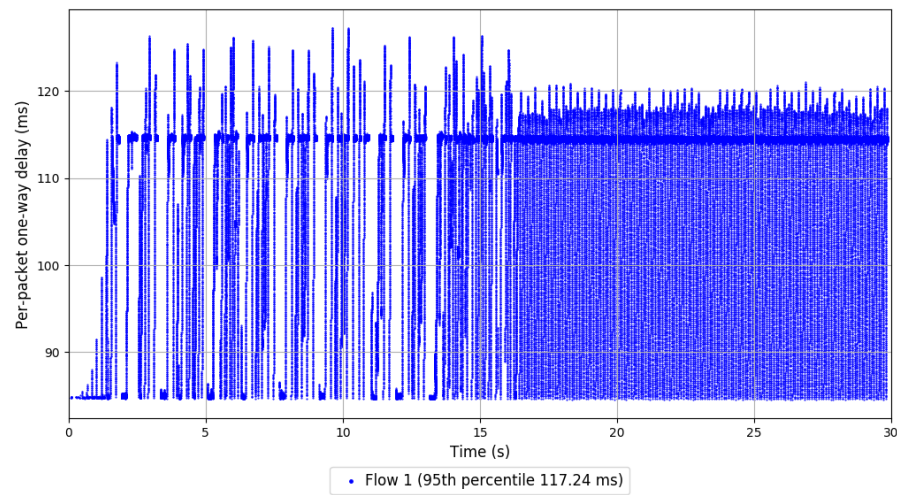
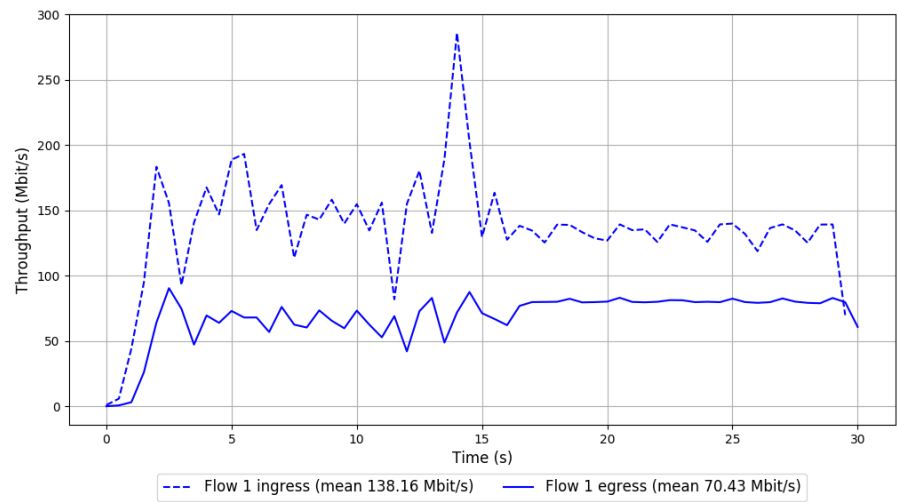
-- Flow 1:

Average throughput: 70.43 Mbit/s

95th percentile per-packet one-way delay: 117.243 ms

Loss rate: 48.97%

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



Run 1: Statistics of LEDBAT

Start at: 2018-11-02 18:24:19

End at: 2018-11-02 18:24:49

Local clock offset: -2.761 ms

Remote clock offset: 4.907 ms

# Below is generated by plot.py at 2018-11-02 19:55:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 11.24 Mbit/s

95th percentile per-packet one-way delay: 92.054 ms

Loss rate: 0.00%

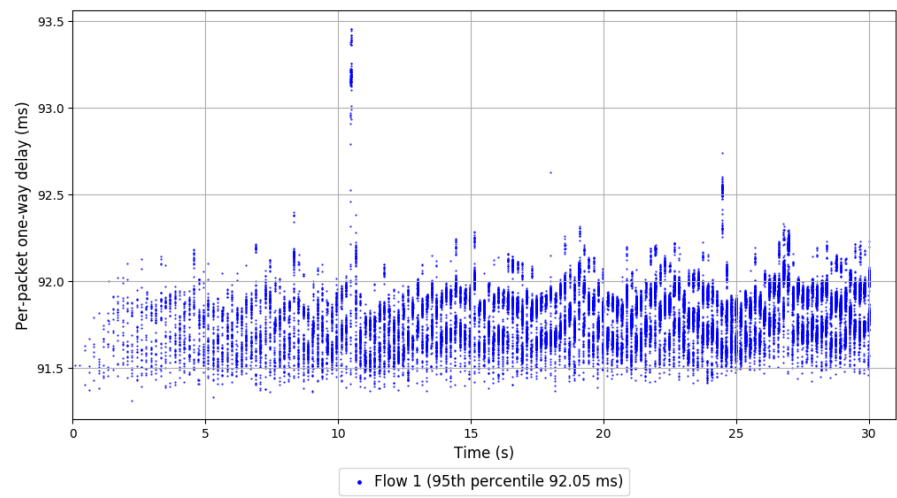
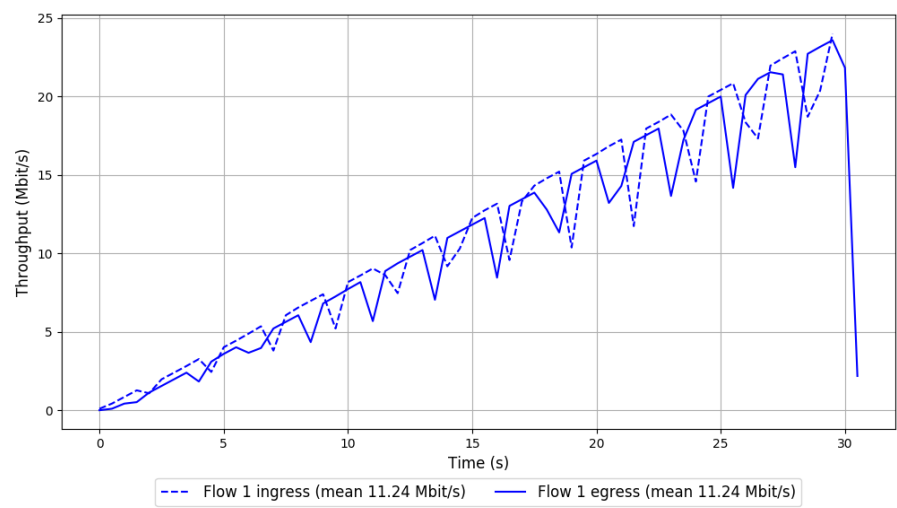
-- Flow 1:

Average throughput: 11.24 Mbit/s

95th percentile per-packet one-way delay: 92.054 ms

Loss rate: 0.00%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-11-02 18:45:24

End at: 2018-11-02 18:45:54

Local clock offset: 3.15 ms

Remote clock offset: 5.086 ms

# Below is generated by plot.py at 2018-11-02 19:55:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.20 Mbit/s

95th percentile per-packet one-way delay: 83.965 ms

Loss rate: 0.00%

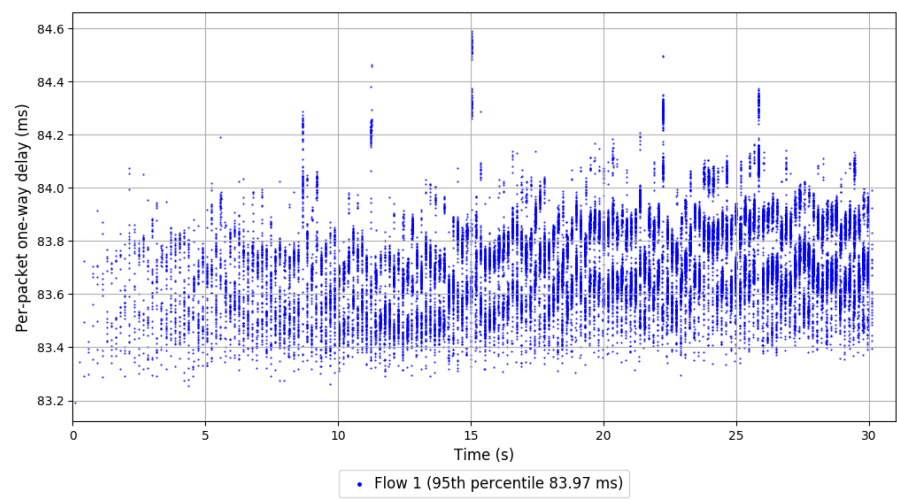
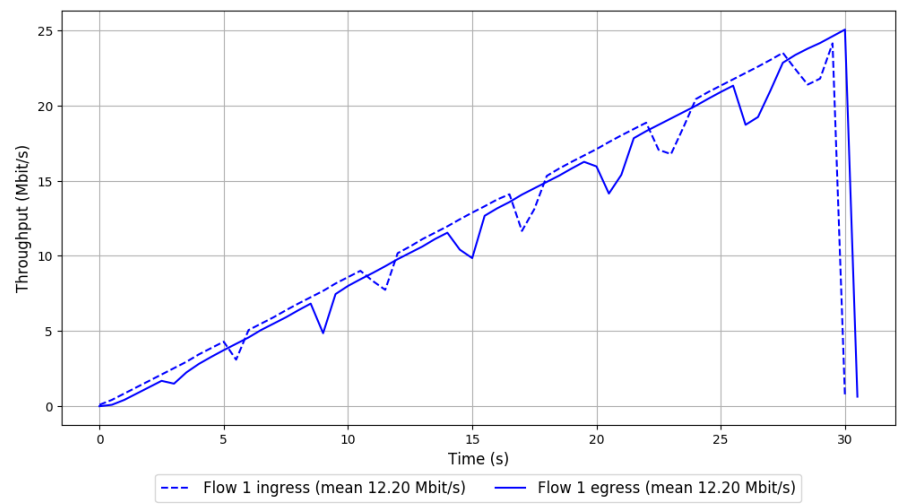
-- Flow 1:

Average throughput: 12.20 Mbit/s

95th percentile per-packet one-way delay: 83.965 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link





Run 3: Statistics of LEDBAT

Start at: 2018-11-02 19:06:27

End at: 2018-11-02 19:06:57

Local clock offset: 6.092 ms

Remote clock offset: 4.993 ms

# Below is generated by plot.py at 2018-11-02 19:55:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 11.25 Mbit/s

95th percentile per-packet one-way delay: 88.714 ms

Loss rate: 0.00%

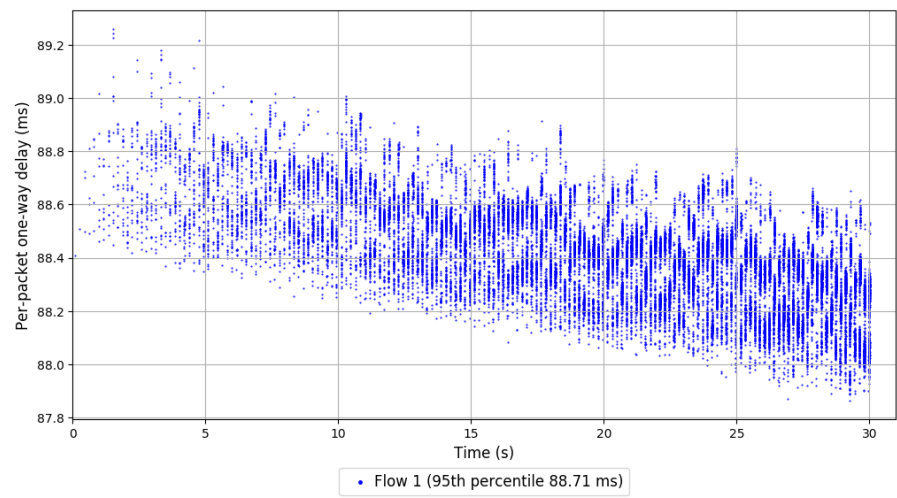
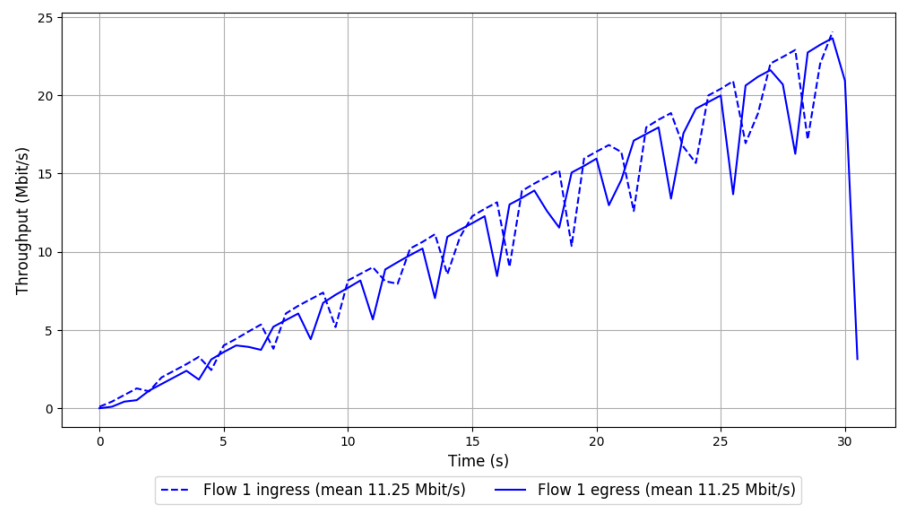
-- Flow 1:

Average throughput: 11.25 Mbit/s

95th percentile per-packet one-way delay: 88.714 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-11-02 19:27:30

End at: 2018-11-02 19:28:00

Local clock offset: -4.567 ms

Remote clock offset: 2.785 ms

# Below is generated by plot.py at 2018-11-02 19:55:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 11.36 Mbit/s

95th percentile per-packet one-way delay: 88.559 ms

Loss rate: 0.05%

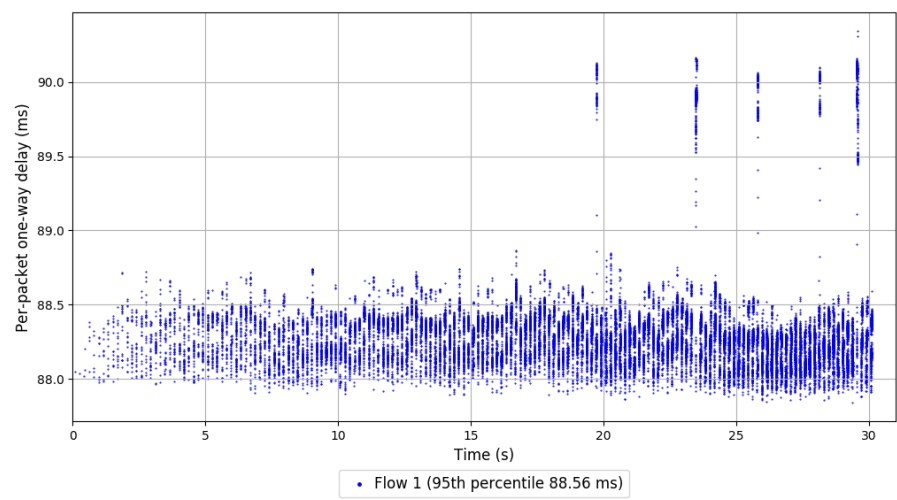
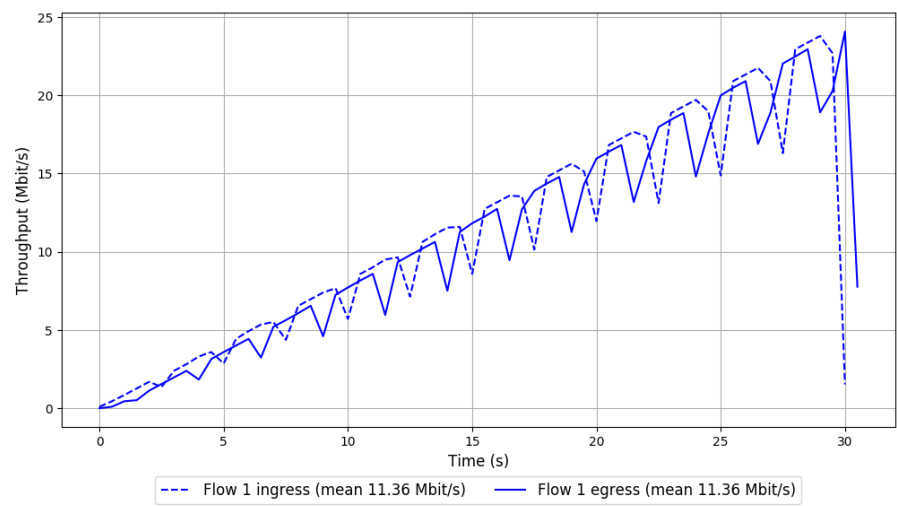
-- Flow 1:

Average throughput: 11.36 Mbit/s

95th percentile per-packet one-way delay: 88.559 ms

Loss rate: 0.05%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-11-02 19:48:34

End at: 2018-11-02 19:49:04

Local clock offset: -6.216 ms

Remote clock offset: 6.94 ms

# Below is generated by plot.py at 2018-11-02 19:55:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 11.79 Mbit/s

95th percentile per-packet one-way delay: 88.047 ms

Loss rate: 0.00%

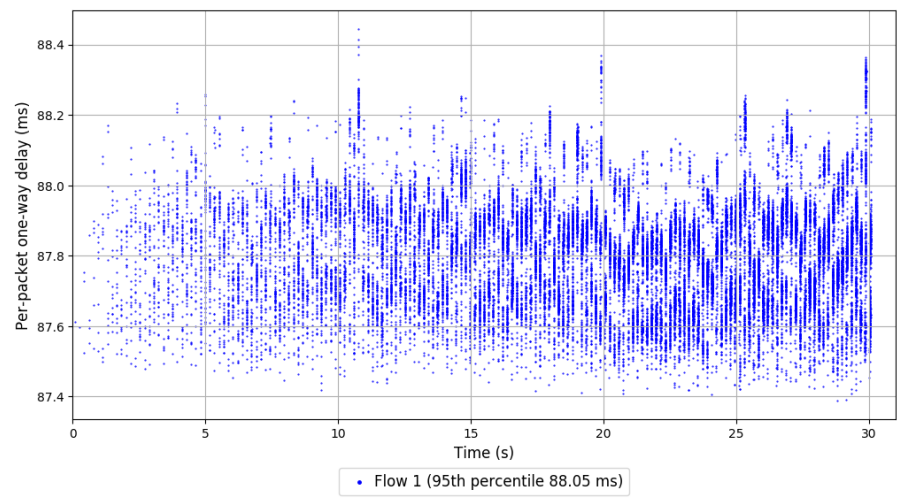
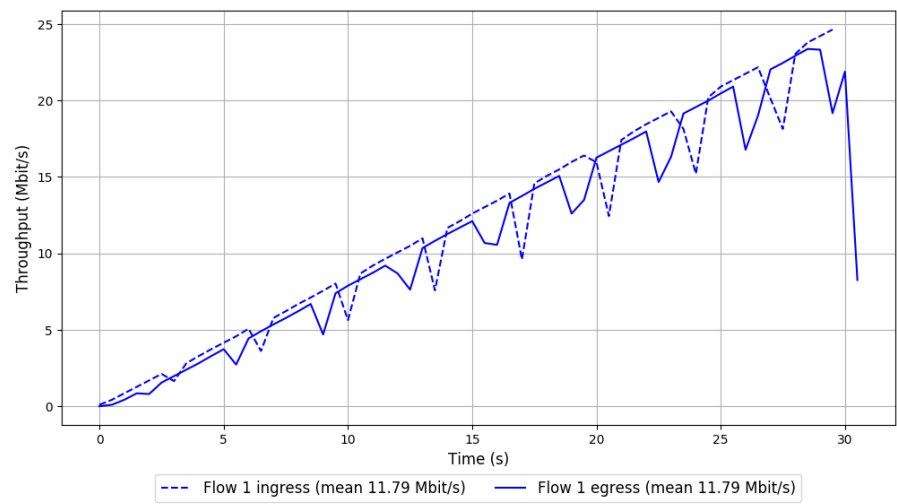
-- Flow 1:

Average throughput: 11.79 Mbit/s

95th percentile per-packet one-way delay: 88.047 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-11-02 18:25:28

End at: 2018-11-02 18:25:58

Local clock offset: -3.19 ms

Remote clock offset: 3.865 ms

# Below is generated by plot.py at 2018-11-02 19:55:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 89.70 Mbit/s

95th percentile per-packet one-way delay: 106.031 ms

Loss rate: 2.62%

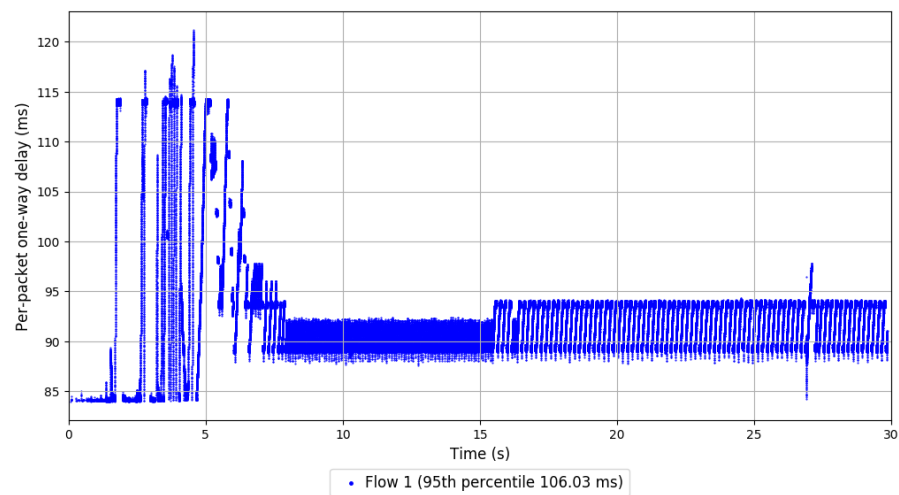
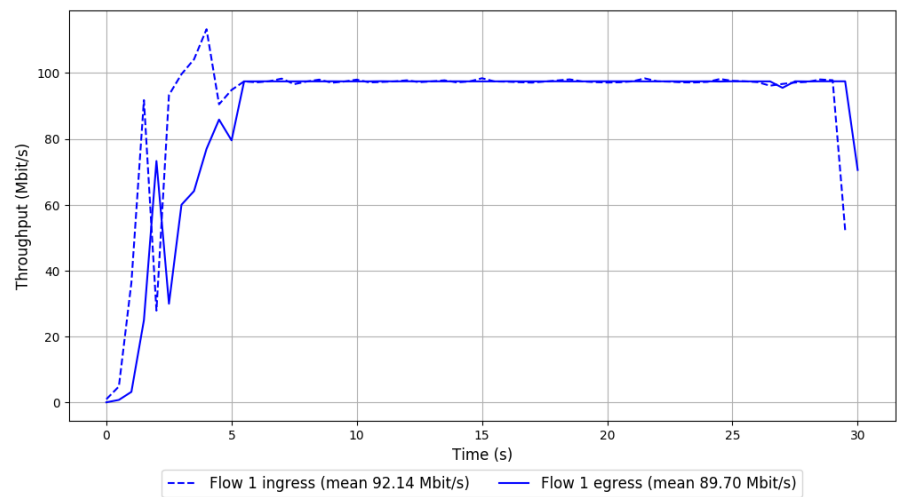
-- Flow 1:

Average throughput: 89.70 Mbit/s

95th percentile per-packet one-way delay: 106.031 ms

Loss rate: 2.62%

Run 1: Report of Indigo-Muses — Data Link





Run 2: Statistics of Indigo-Muses

Start at: 2018-11-02 18:46:33

End at: 2018-11-02 18:47:03

Local clock offset: 1.947 ms

Remote clock offset: 1.448 ms

# Below is generated by plot.py at 2018-11-02 19:55:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 88.60 Mbit/s

95th percentile per-packet one-way delay: 95.693 ms

Loss rate: 1.65%

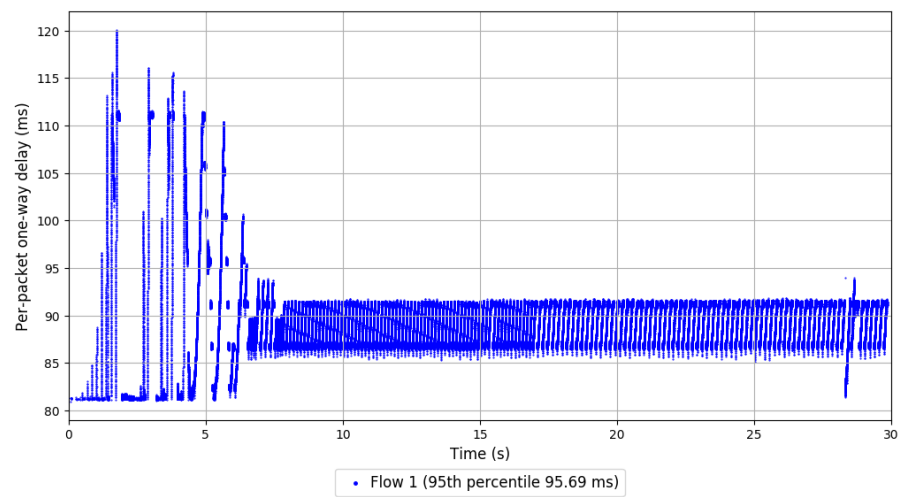
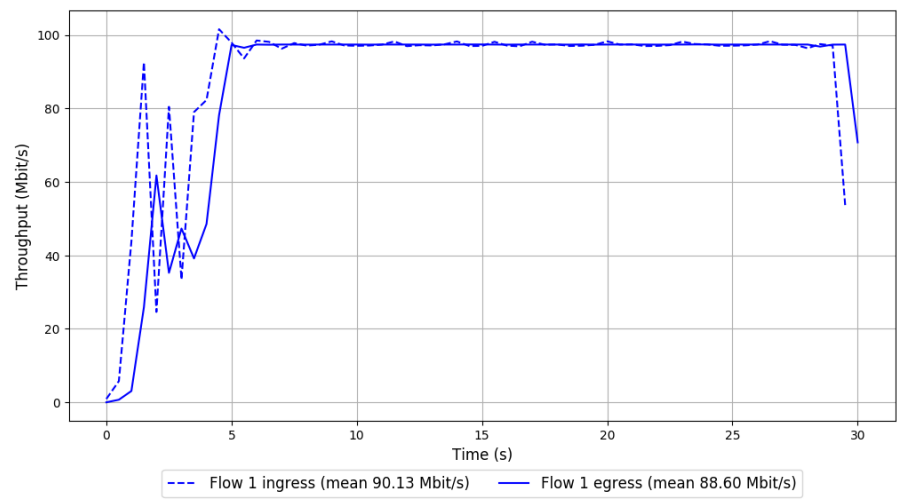
-- Flow 1:

Average throughput: 88.60 Mbit/s

95th percentile per-packet one-way delay: 95.693 ms

Loss rate: 1.65%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-11-02 19:07:35

End at: 2018-11-02 19:08:05

Local clock offset: 3.881 ms

Remote clock offset: 6.152 ms

# Below is generated by plot.py at 2018-11-02 19:56:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 89.56 Mbit/s

95th percentile per-packet one-way delay: 100.326 ms

Loss rate: 2.86%

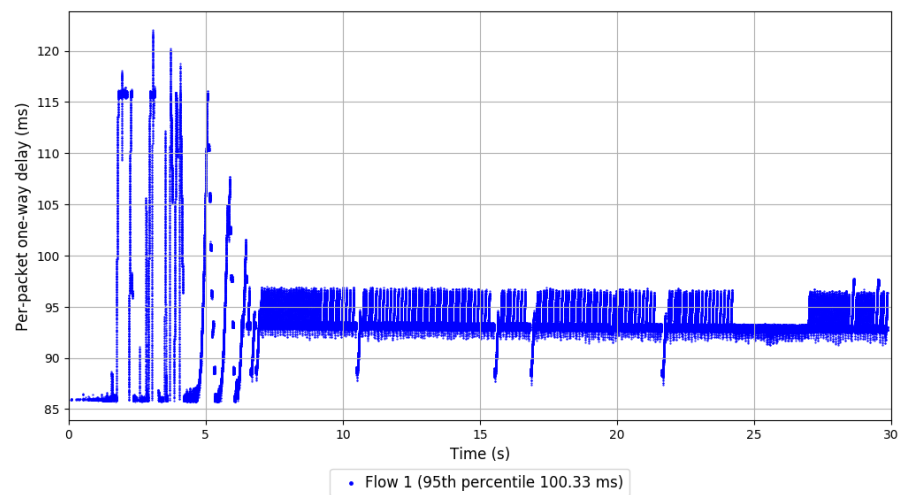
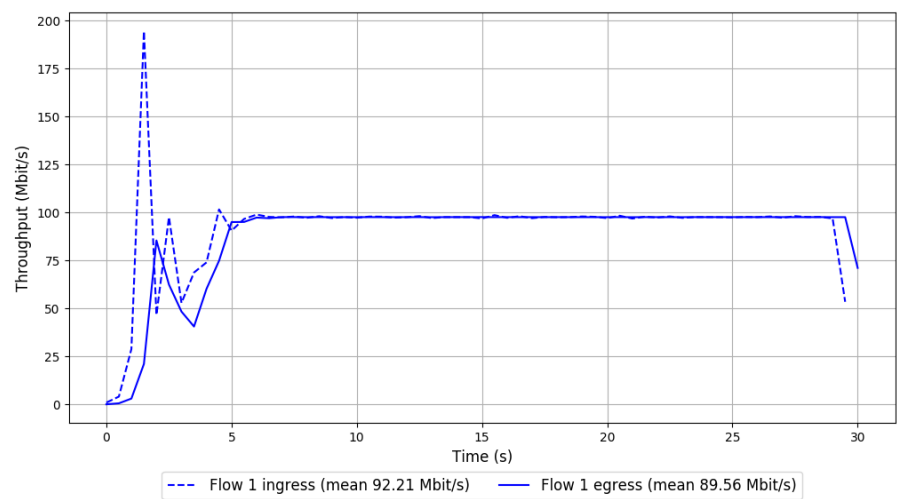
-- Flow 1:

Average throughput: 89.56 Mbit/s

95th percentile per-packet one-way delay: 100.326 ms

Loss rate: 2.86%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-11-02 19:28:38

End at: 2018-11-02 19:29:09

Local clock offset: -3.8 ms

Remote clock offset: 6.619 ms

# Below is generated by plot.py at 2018-11-02 19:56:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 88.51 Mbit/s

95th percentile per-packet one-way delay: 101.109 ms

Loss rate: 1.78%

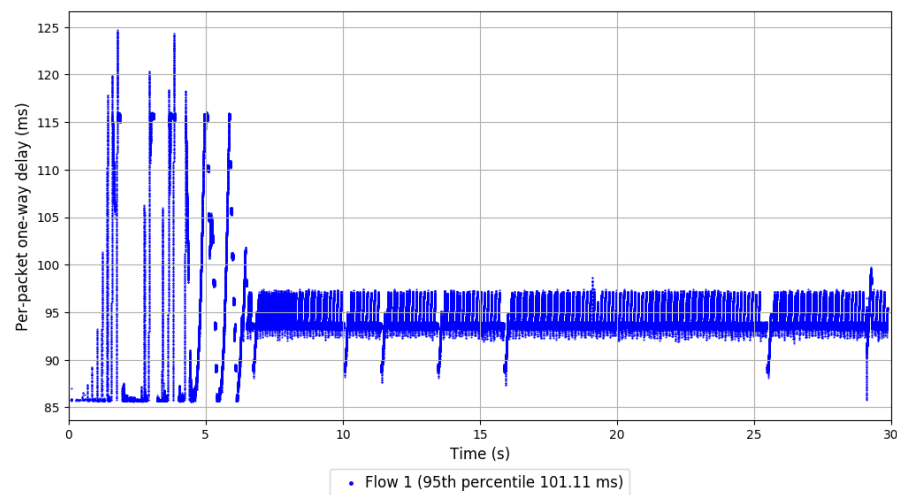
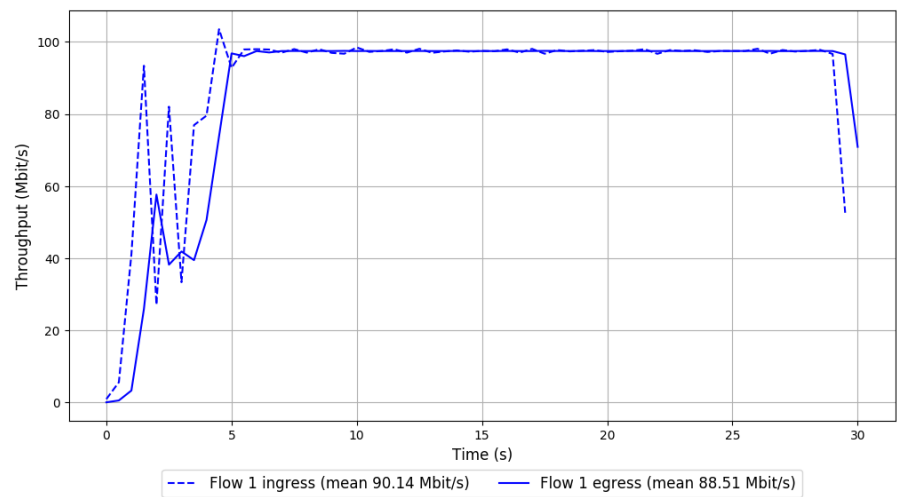
-- Flow 1:

Average throughput: 88.51 Mbit/s

95th percentile per-packet one-way delay: 101.109 ms

Loss rate: 1.78%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-11-02 19:49:42

End at: 2018-11-02 19:50:12

Local clock offset: -5.443 ms

Remote clock offset: 8.223 ms

# Below is generated by plot.py at 2018-11-02 19:56:13

# Datalink statistics

-- Total of 1 flow:

Average throughput: 88.13 Mbit/s

95th percentile per-packet one-way delay: 102.994 ms

Loss rate: 2.27%

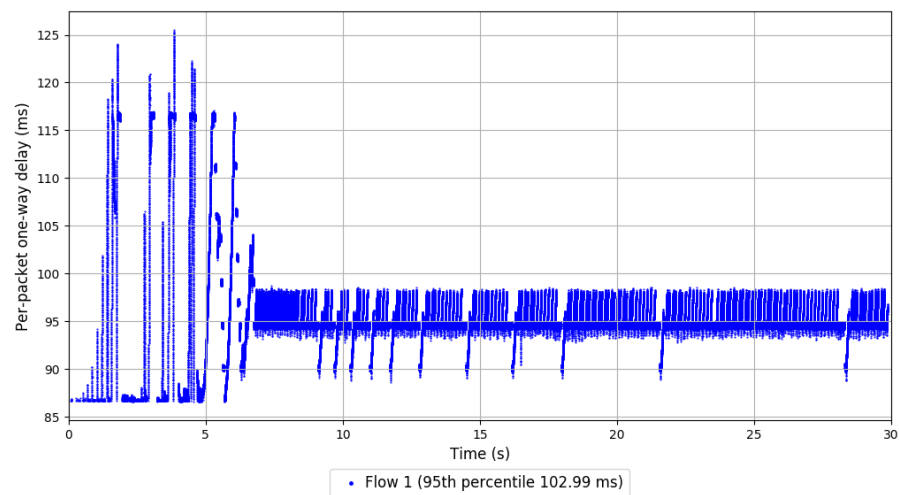
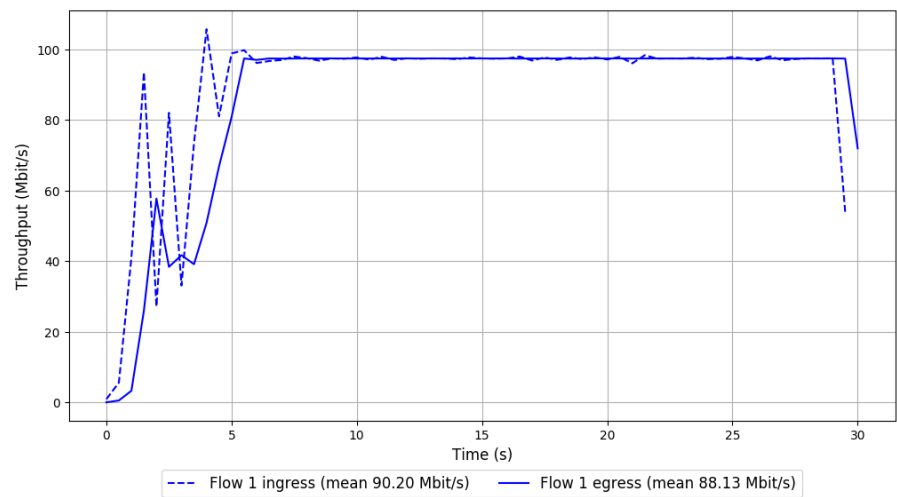
-- Flow 1:

Average throughput: 88.13 Mbit/s

95th percentile per-packet one-way delay: 102.994 ms

Loss rate: 2.27%

Run 5: Report of Indigo-Muses — Data Link



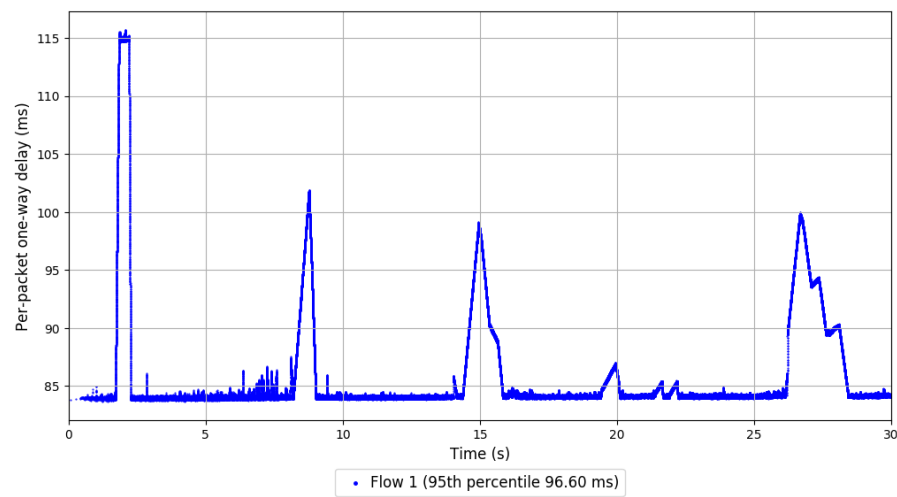
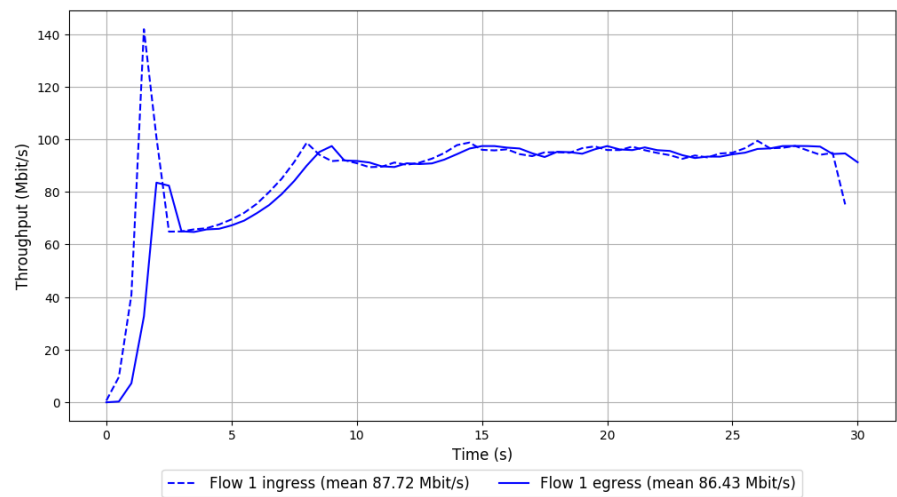


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-02 18:06:51
End at: 2018-11-02 18:07:21
Local clock offset: -4.794 ms
Remote clock offset: 2.584 ms

# Below is generated by plot.py at 2018-11-02 19:56:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.43 Mbit/s
95th percentile per-packet one-way delay: 96.602 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 86.43 Mbit/s
95th percentile per-packet one-way delay: 96.602 ms
Loss rate: 1.47%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-02 18:27:53

End at: 2018-11-02 18:28:23

Local clock offset: -1.763 ms

Remote clock offset: 3.964 ms

# Below is generated by plot.py at 2018-11-02 19:56:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.06 Mbit/s

95th percentile per-packet one-way delay: 102.212 ms

Loss rate: 1.51%

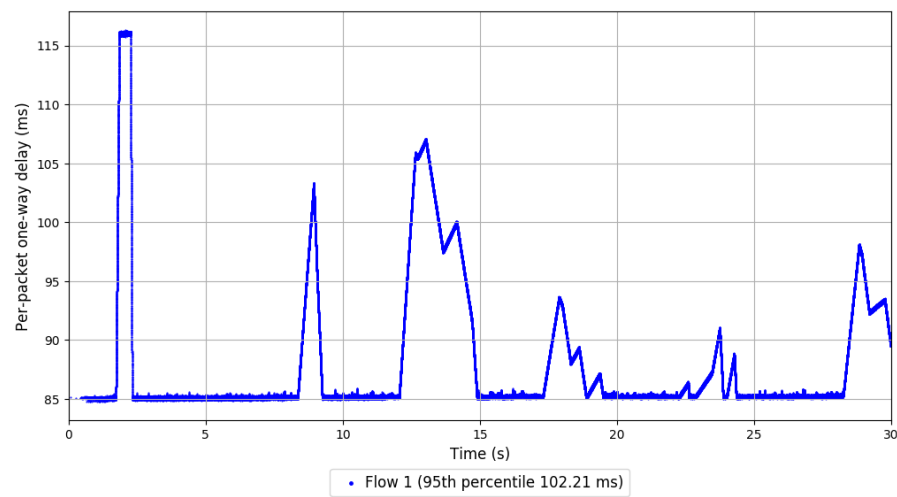
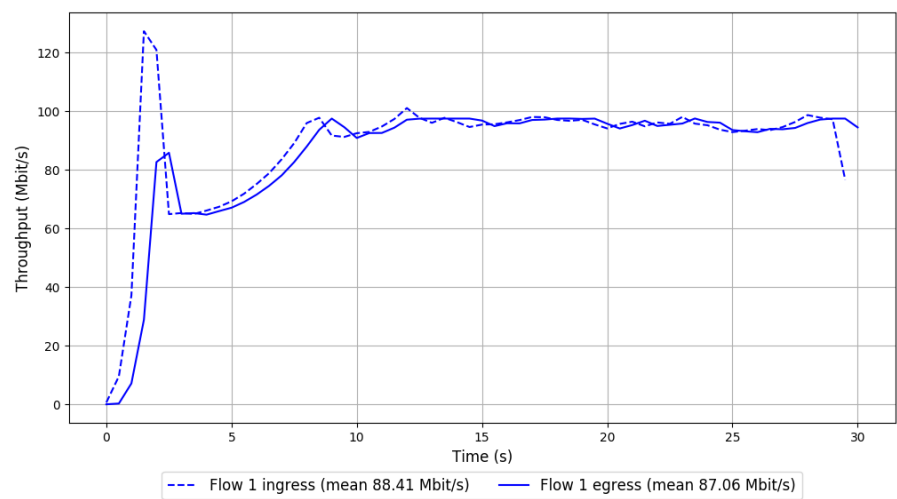
-- Flow 1:

Average throughput: 87.06 Mbit/s

95th percentile per-packet one-way delay: 102.212 ms

Loss rate: 1.51%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-11-02 18:48:57

End at: 2018-11-02 18:49:27

Local clock offset: 3.431 ms

Remote clock offset: 0.377 ms

# Below is generated by plot.py at 2018-11-02 19:56:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.10 Mbit/s

95th percentile per-packet one-way delay: 111.815 ms

Loss rate: 1.61%

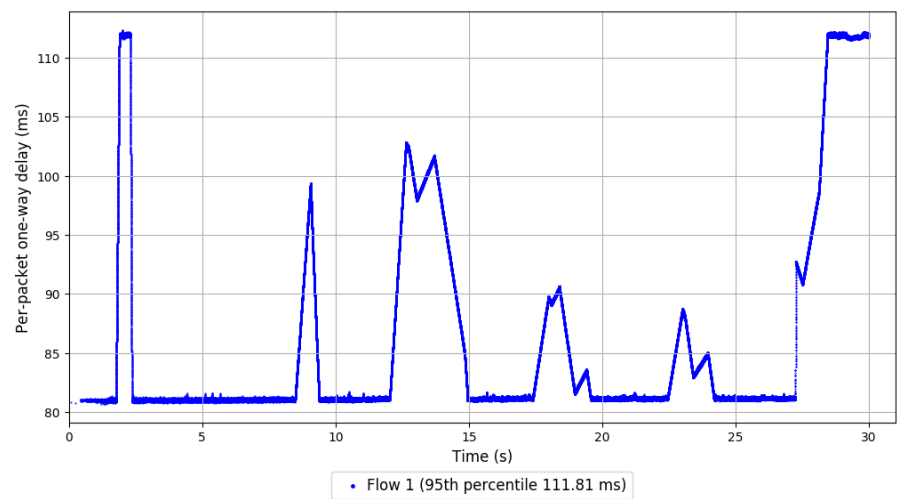
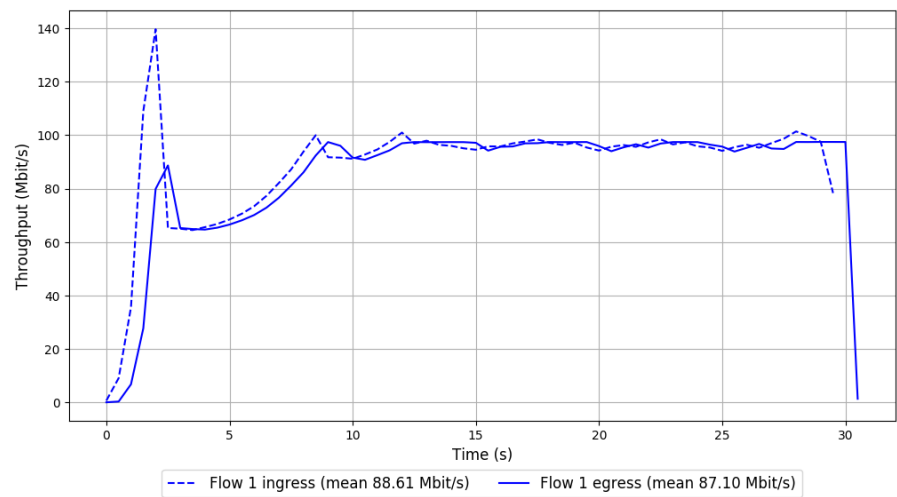
-- Flow 1:

Average throughput: 87.10 Mbit/s

95th percentile per-packet one-way delay: 111.815 ms

Loss rate: 1.61%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-02 19:10:00

End at: 2018-11-02 19:10:30

Local clock offset: 1.565 ms

Remote clock offset: 7.293 ms

# Below is generated by plot.py at 2018-11-02 19:57:08

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.27 Mbit/s

95th percentile per-packet one-way delay: 101.154 ms

Loss rate: 1.45%

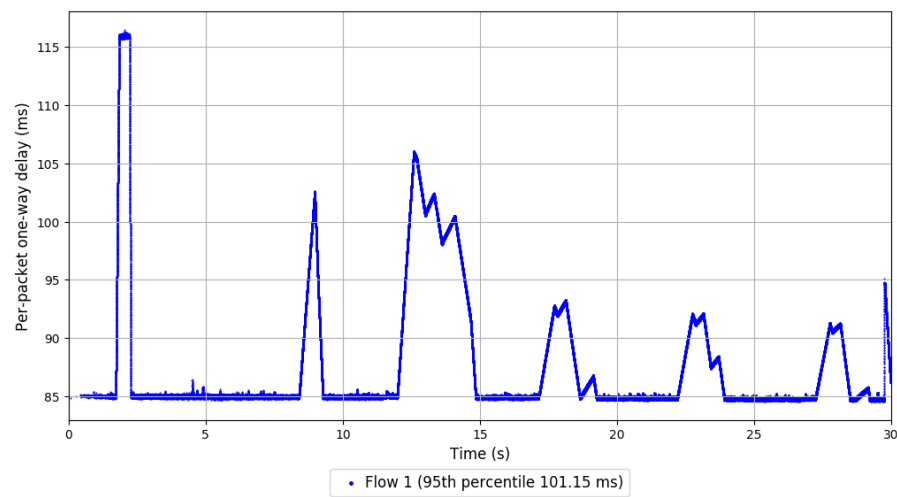
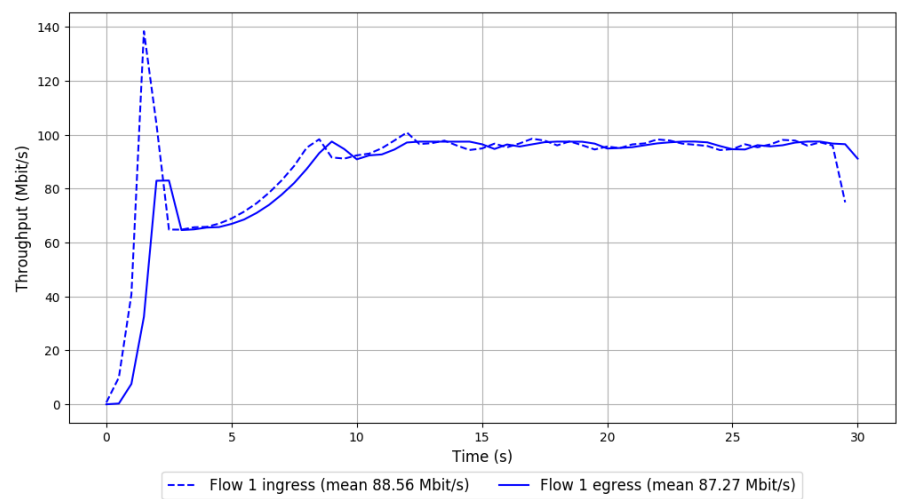
-- Flow 1:

Average throughput: 87.27 Mbit/s

95th percentile per-packet one-way delay: 101.154 ms

Loss rate: 1.45%

Run 4: Report of PCC-Allegro — Data Link





Run 5: Statistics of PCC-Allegro

Start at: 2018-11-02 19:31:03

End at: 2018-11-02 19:31:33

Local clock offset: -3.15 ms

Remote clock offset: 1.845 ms

# Below is generated by plot.py at 2018-11-02 19:57:09

# Datalink statistics

-- Total of 1 flow:

Average throughput: 87.20 Mbit/s

95th percentile per-packet one-way delay: 96.012 ms

Loss rate: 1.47%

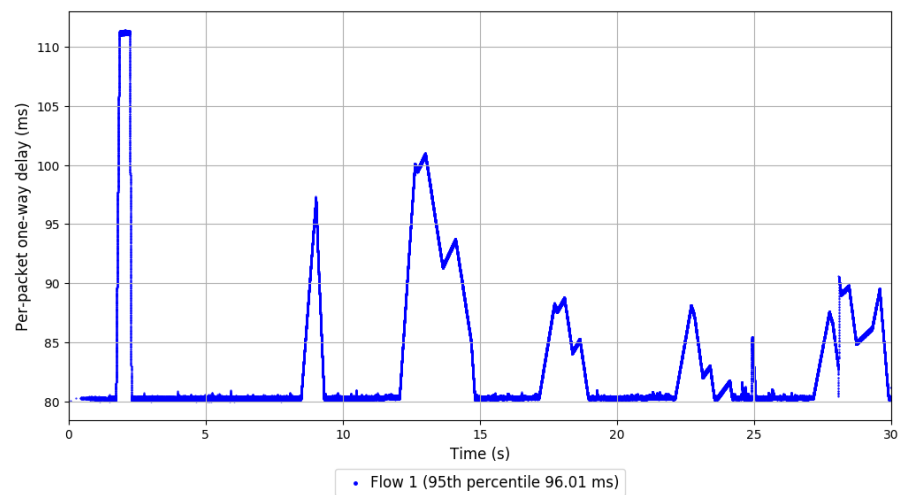
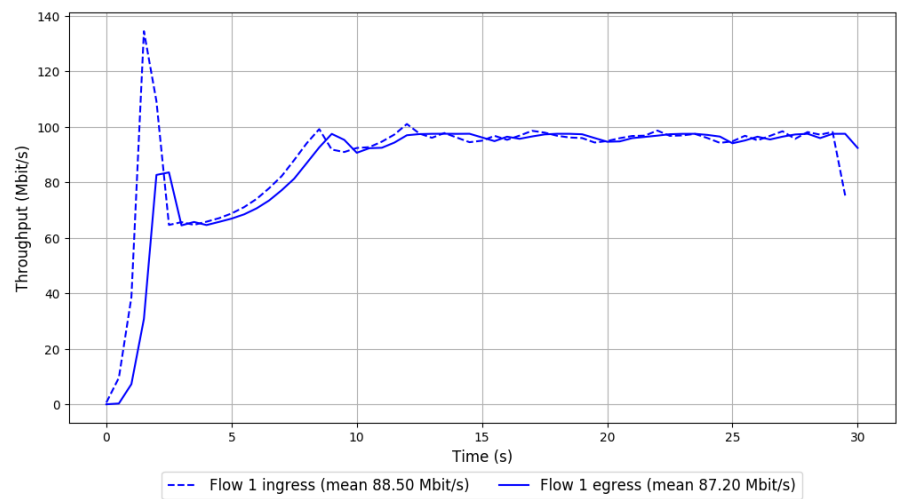
-- Flow 1:

Average throughput: 87.20 Mbit/s

95th percentile per-packet one-way delay: 96.012 ms

Loss rate: 1.47%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

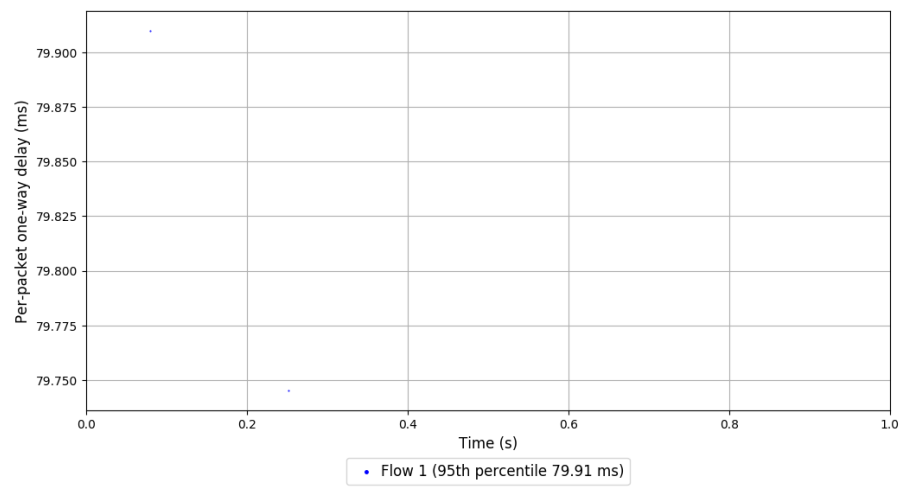
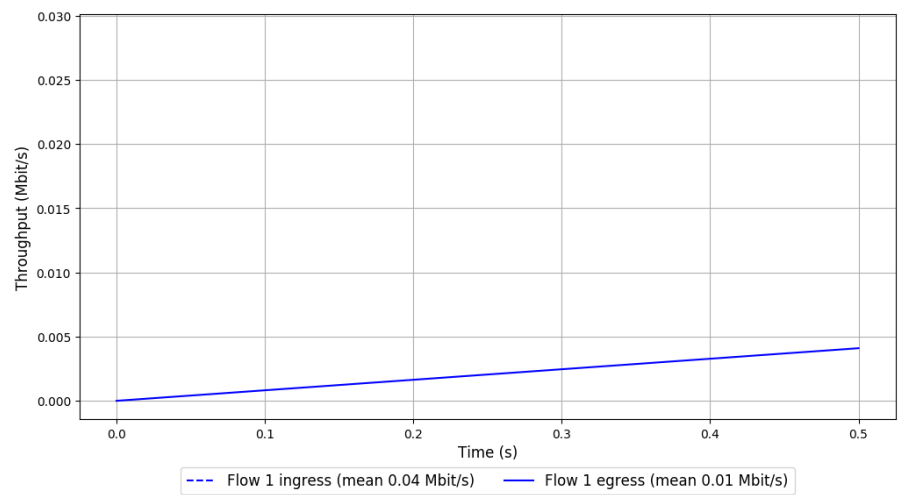
Start at: 2018-11-02 18:16:12

End at: 2018-11-02 18:16:42

Local clock offset: -6.262 ms

Remote clock offset: -1.777 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

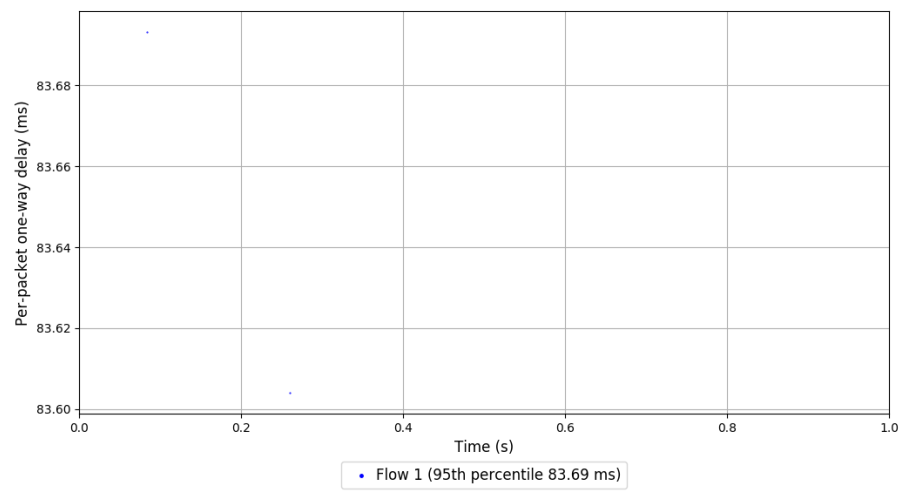
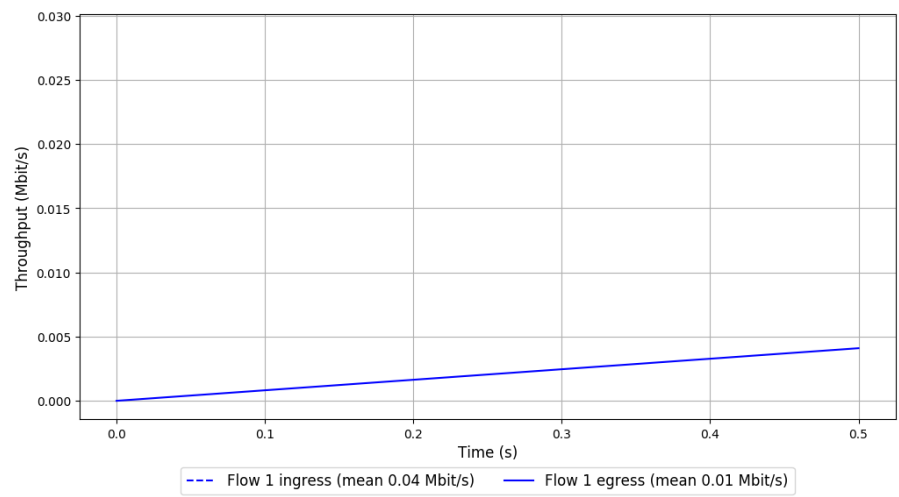
Start at: 2018-11-02 18:37:16

End at: 2018-11-02 18:37:46

Local clock offset: 0.856 ms

Remote clock offset: -0.265 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

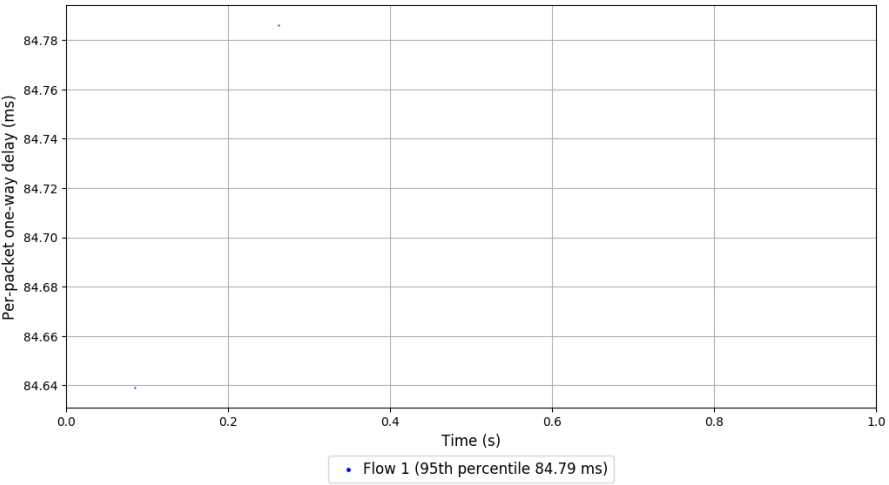
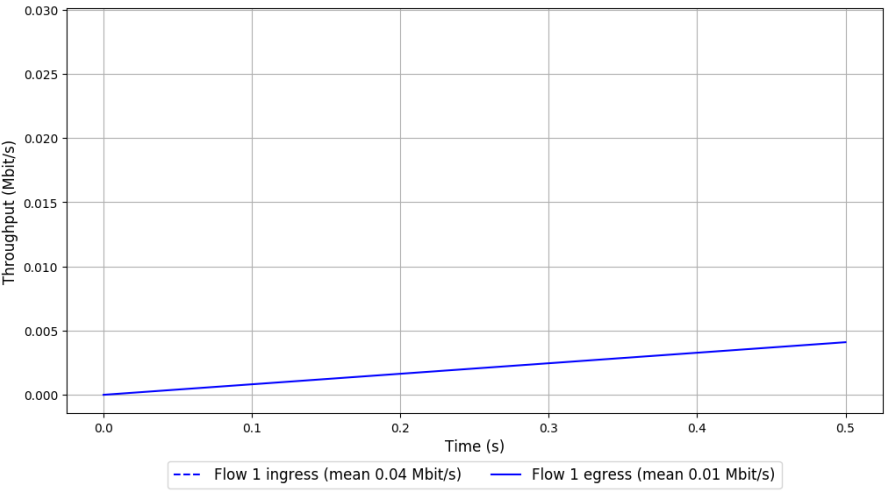
Start at: 2018-11-02 18:58:19

End at: 2018-11-02 18:58:49

Local clock offset: 6.84 ms

Remote clock offset: 1.83 ms

Run 3: Report of PCC-Expr — Data Link





Run 4: Statistics of PCC-Expr

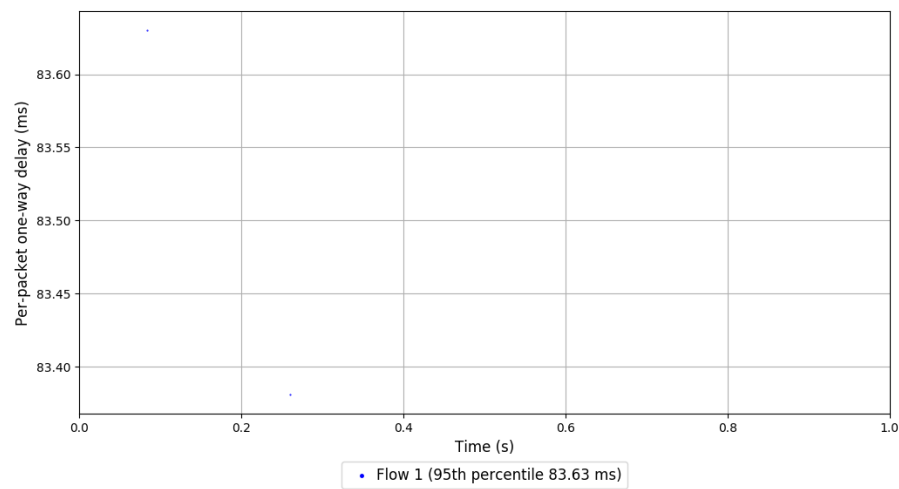
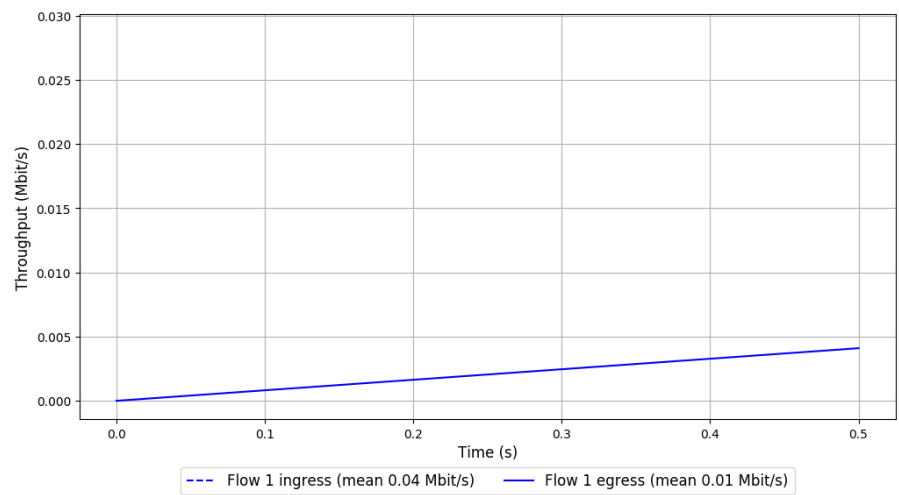
Start at: 2018-11-02 19:19:23

End at: 2018-11-02 19:19:53

Local clock offset: -1.803 ms

Remote clock offset: 1.429 ms

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

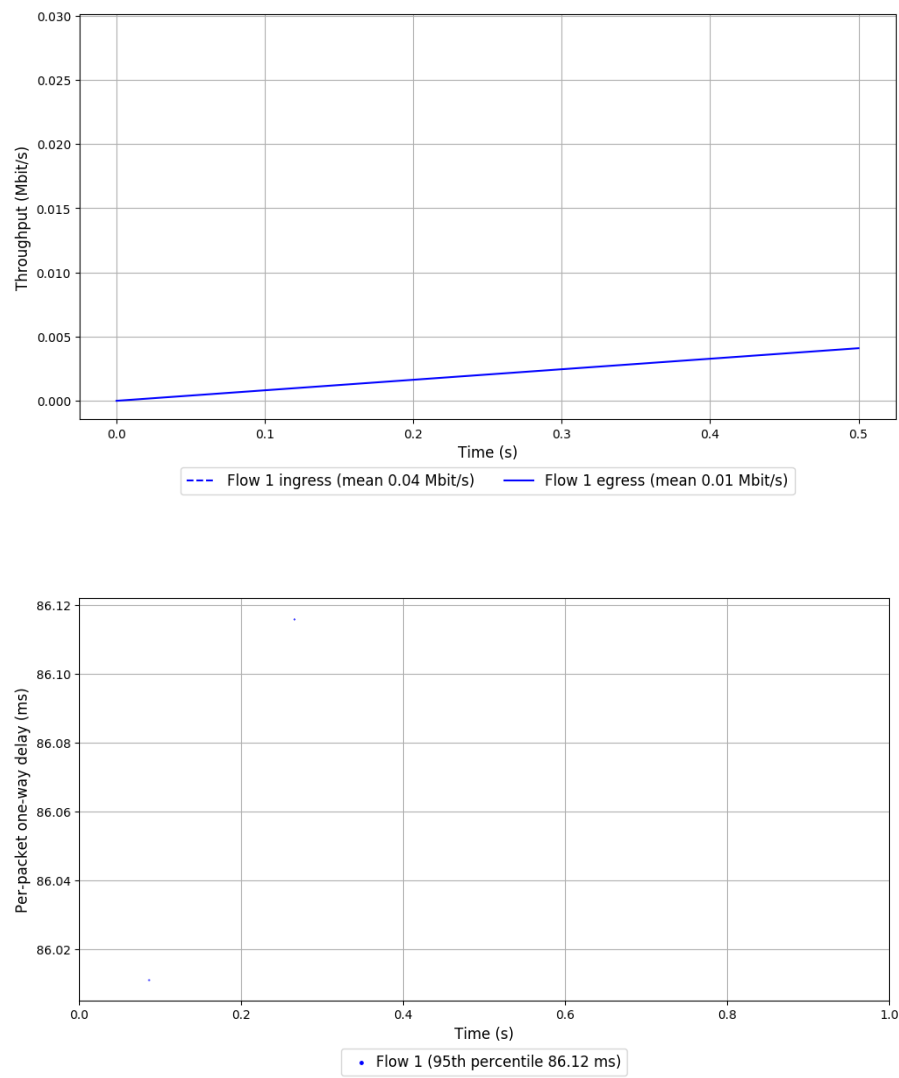
Start at: 2018-11-02 19:40:26

End at: 2018-11-02 19:40:56

Local clock offset: -5.319 ms

Remote clock offset: 1.987 ms

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-11-02 18:19:36

End at: 2018-11-02 18:20:06

Local clock offset: -4.838 ms

Remote clock offset: 3.406 ms

# Below is generated by plot.py at 2018-11-02 19:57:09

# Datalink statistics

-- Total of 1 flow:

Average throughput: 65.35 Mbit/s

95th percentile per-packet one-way delay: 105.278 ms

Loss rate: 0.38%

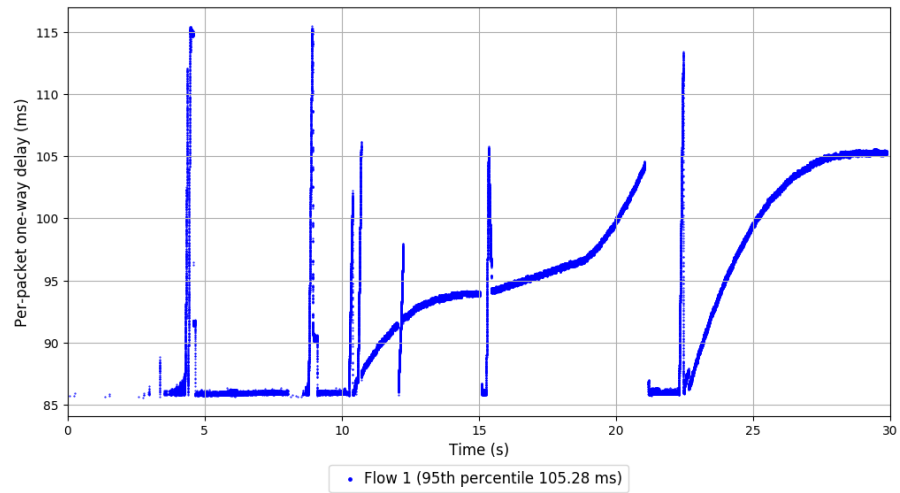
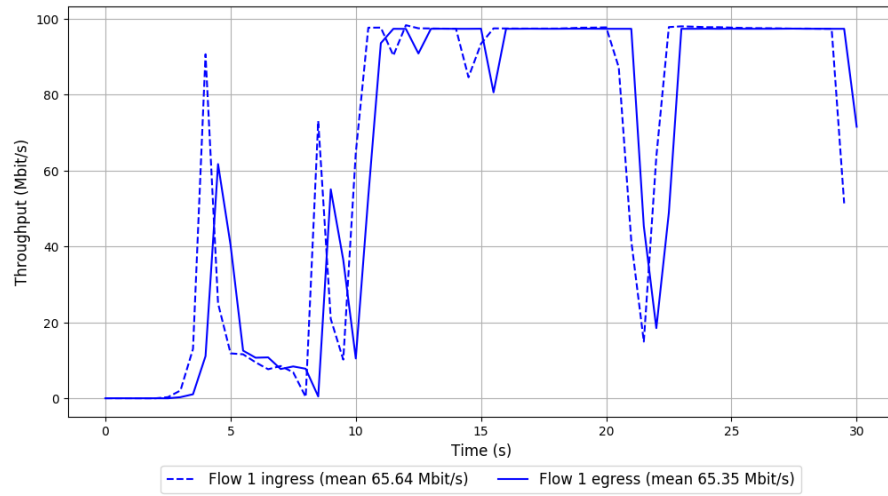
-- Flow 1:

Average throughput: 65.35 Mbit/s

95th percentile per-packet one-way delay: 105.278 ms

Loss rate: 0.38%

### Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-11-02 18:40:40

End at: 2018-11-02 18:41:10

Local clock offset: 0.965 ms

Remote clock offset: 1.112 ms

# Below is generated by plot.py at 2018-11-02 19:57:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 73.54 Mbit/s

95th percentile per-packet one-way delay: 103.720 ms

Loss rate: 0.34%

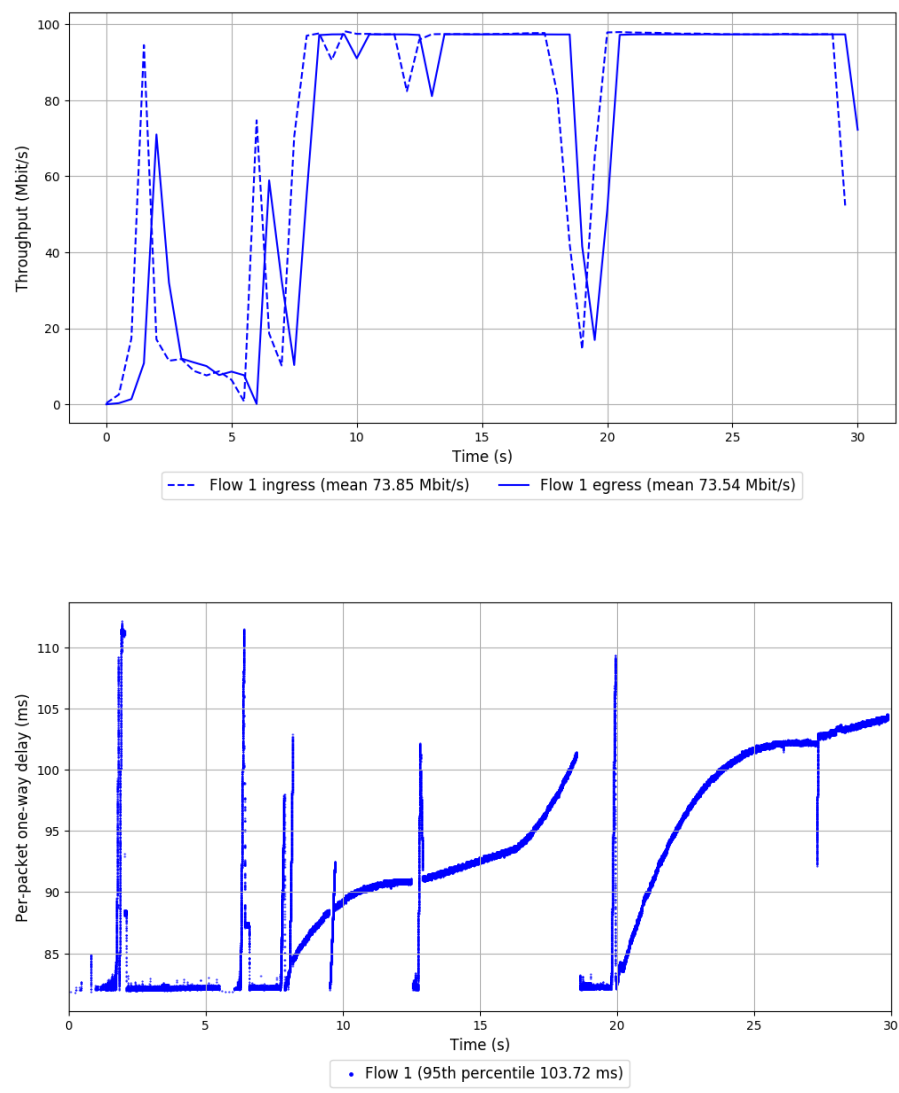
-- Flow 1:

Average throughput: 73.54 Mbit/s

95th percentile per-packet one-way delay: 103.720 ms

Loss rate: 0.34%

Run 2: Report of QUIC Cubic — Data Link





Run 3: Statistics of QUIC Cubic

Start at: 2018-11-02 19:01:43

End at: 2018-11-02 19:02:13

Local clock offset: 7.766 ms

Remote clock offset: 1.976 ms

# Below is generated by plot.py at 2018-11-02 19:57:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 70.66 Mbit/s

95th percentile per-packet one-way delay: 104.118 ms

Loss rate: 0.38%

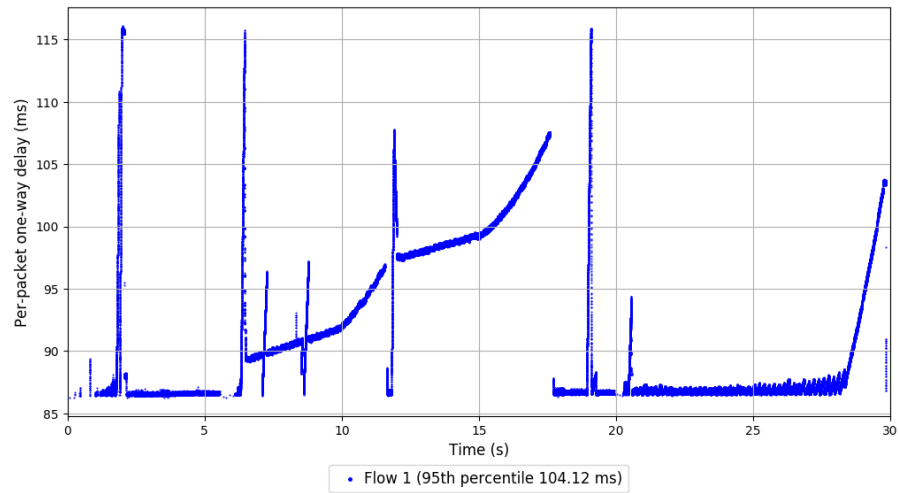
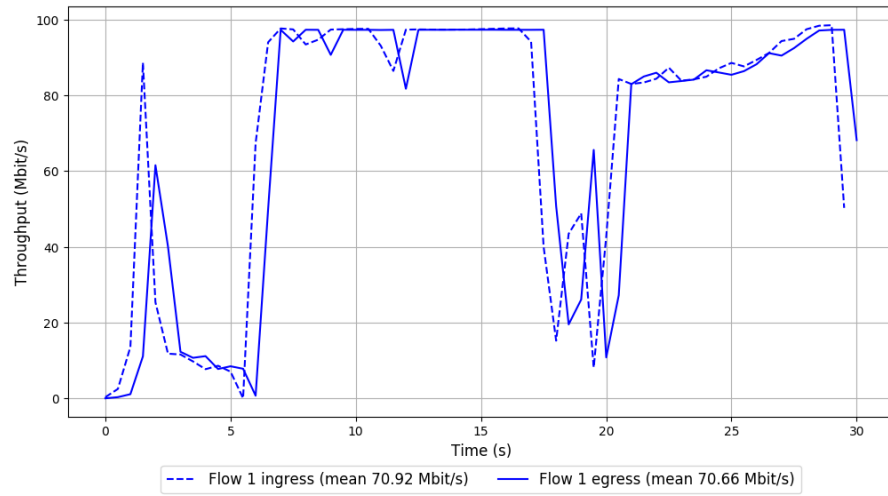
-- Flow 1:

Average throughput: 70.66 Mbit/s

95th percentile per-packet one-way delay: 104.118 ms

Loss rate: 0.38%

### Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-02 19:22:46

End at: 2018-11-02 19:23:16

Local clock offset: -3.195 ms

Remote clock offset: 6.436 ms

# Below is generated by plot.py at 2018-11-02 19:57:20

# Datalink statistics

-- Total of 1 flow:

Average throughput: 73.03 Mbit/s

95th percentile per-packet one-way delay: 106.690 ms

Loss rate: 0.33%

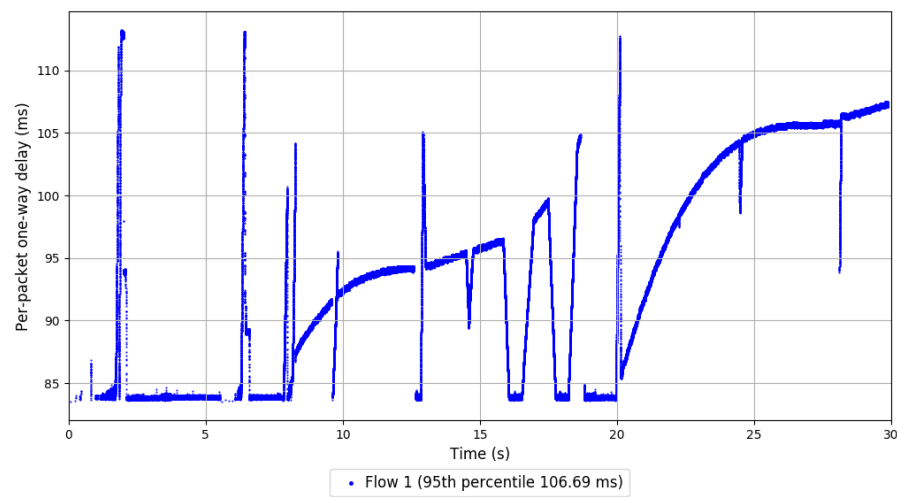
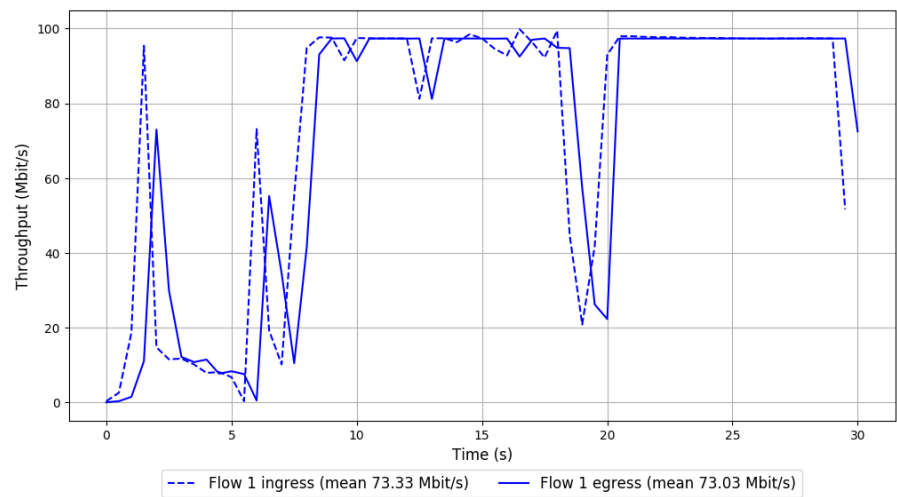
-- Flow 1:

Average throughput: 73.03 Mbit/s

95th percentile per-packet one-way delay: 106.690 ms

Loss rate: 0.33%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-11-02 19:43:50

End at: 2018-11-02 19:44:20

Local clock offset: -5.78 ms

Remote clock offset: 2.081 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 73.76 Mbit/s

95th percentile per-packet one-way delay: 101.526 ms

Loss rate: 0.34%

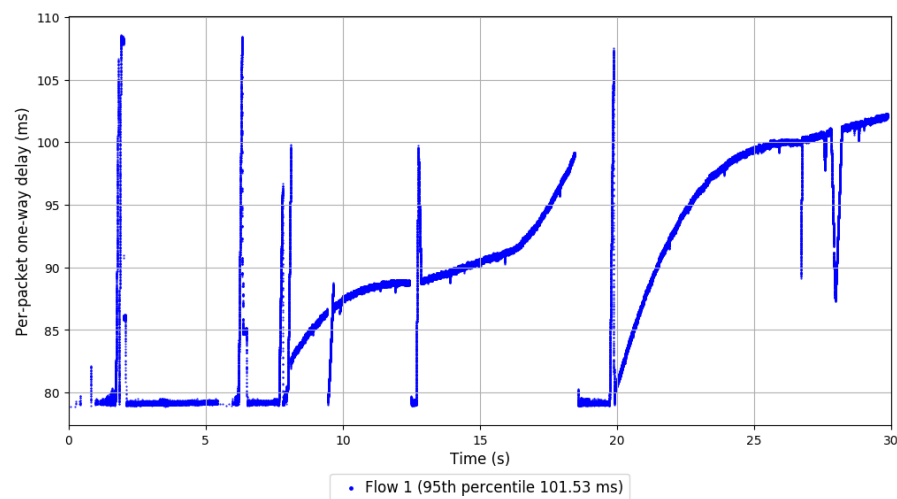
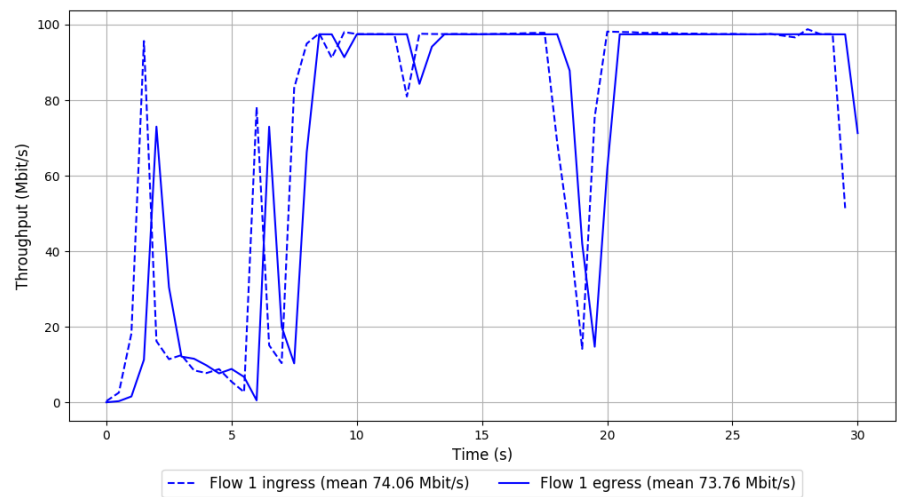
-- Flow 1:

Average throughput: 73.76 Mbit/s

95th percentile per-packet one-way delay: 101.526 ms

Loss rate: 0.34%

Run 5: Report of QUIC Cubic — Data Link

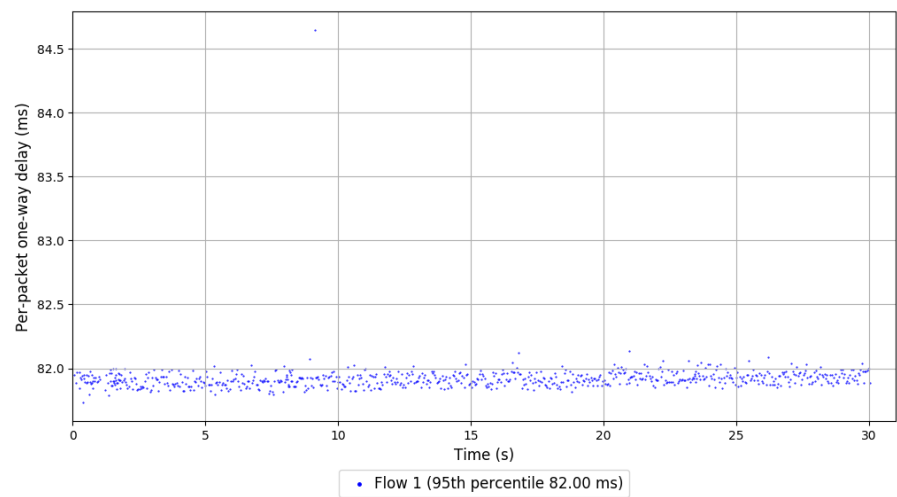
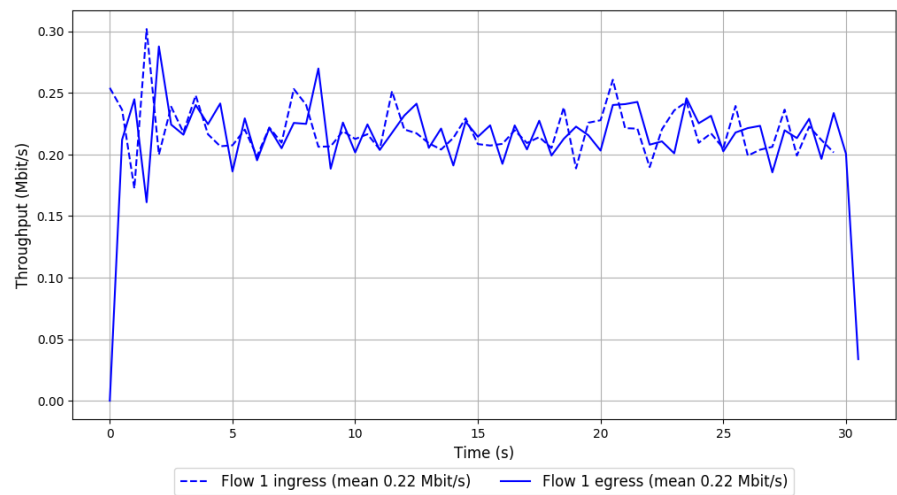


Run 1: Statistics of SCReAM

Start at: 2018-11-02 18:17:19  
End at: 2018-11-02 18:17:49  
Local clock offset: -4.497 ms  
Remote clock offset: -1.695 ms

# Below is generated by plot.py at 2018-11-02 19:57:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 81.998 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 81.998 ms  
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link





Run 2: Statistics of SCReAM

Start at: 2018-11-02 18:38:23

End at: 2018-11-02 18:38:53

Local clock offset: 0.343 ms

Remote clock offset: 3.678 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 84.915 ms

Loss rate: 0.00%

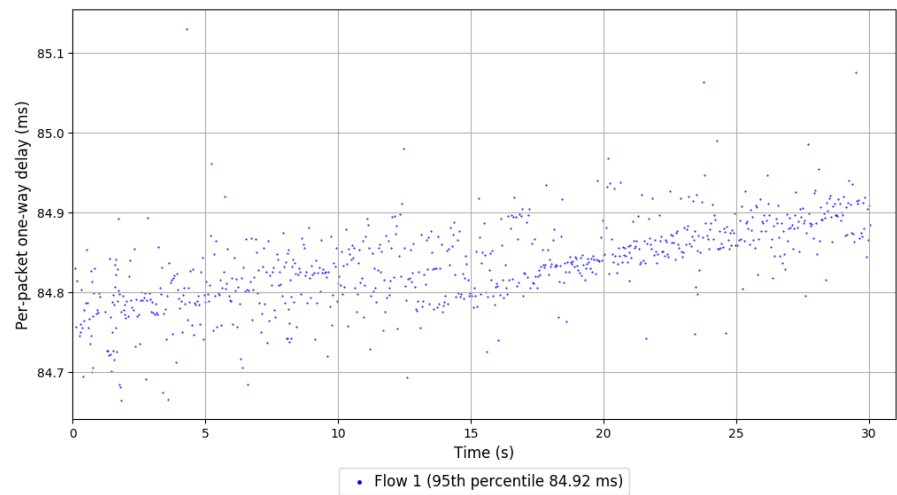
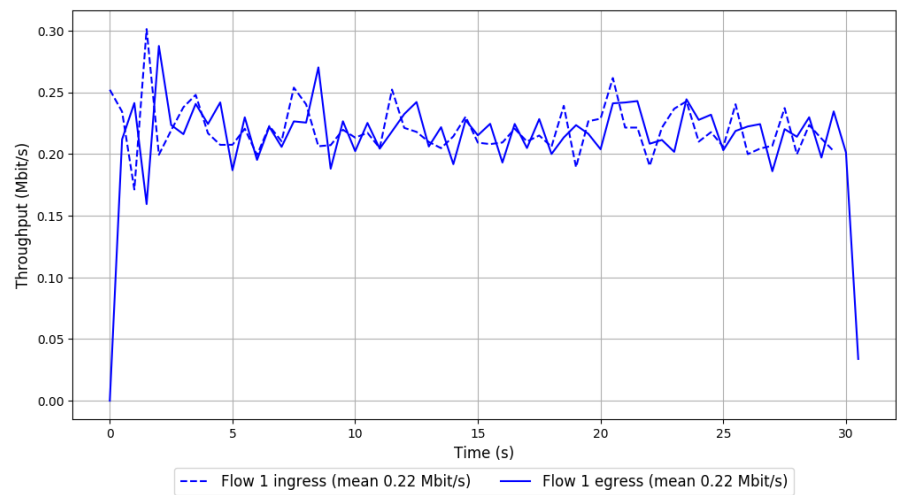
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 84.915 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-11-02 18:59:26

End at: 2018-11-02 18:59:56

Local clock offset: 6.376 ms

Remote clock offset: 6.904 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 90.732 ms

Loss rate: 0.00%

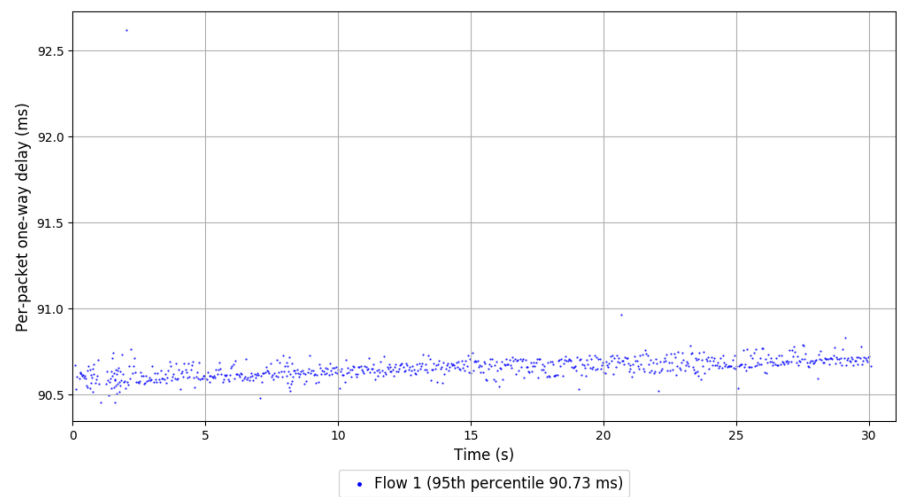
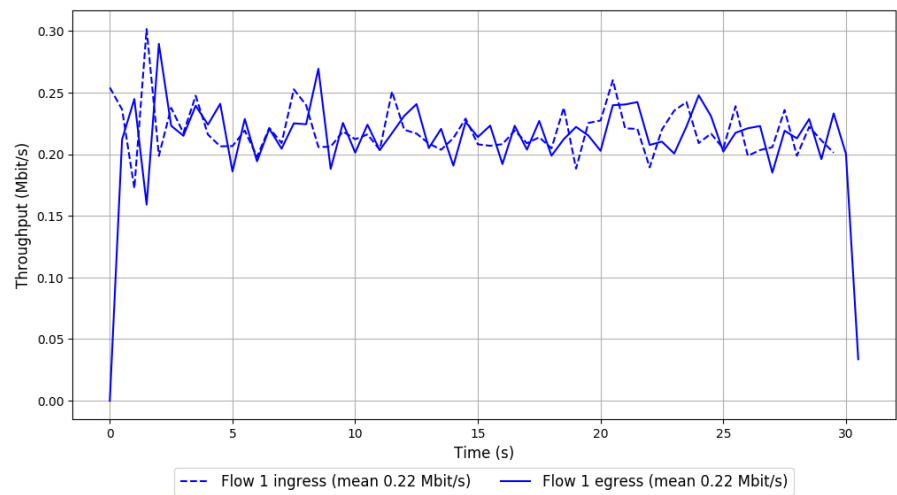
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 90.732 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2018-11-02 19:20:30

End at: 2018-11-02 19:21:00

Local clock offset: -2.027 ms

Remote clock offset: 1.48 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.784 ms

Loss rate: 0.00%

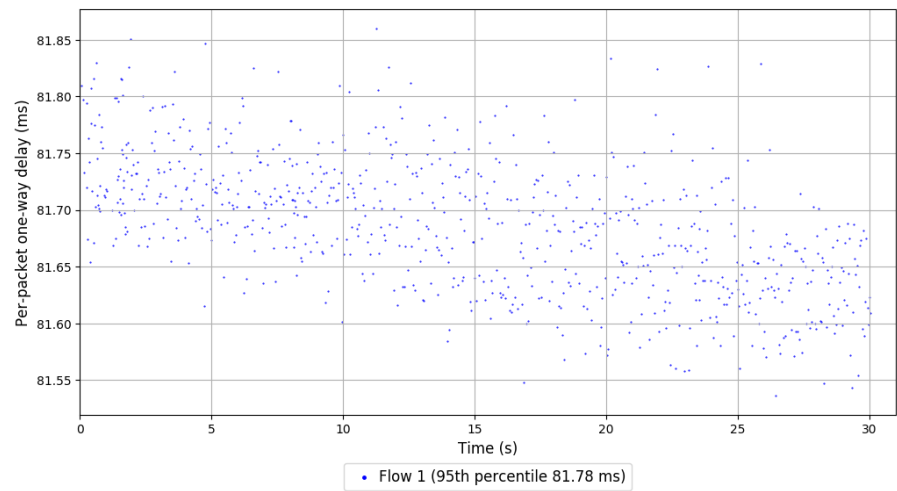
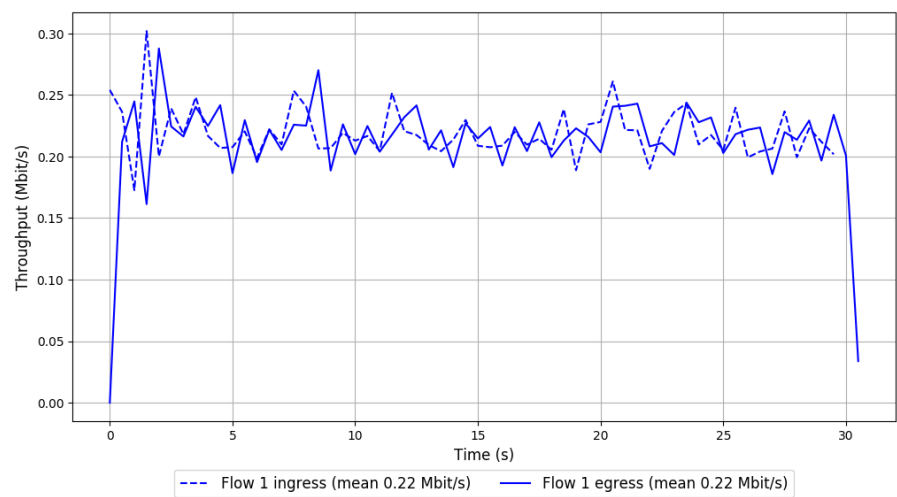
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.784 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-11-02 19:41:33

End at: 2018-11-02 19:42:03

Local clock offset: -5.503 ms

Remote clock offset: 6.814 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 90.929 ms

Loss rate: 0.00%

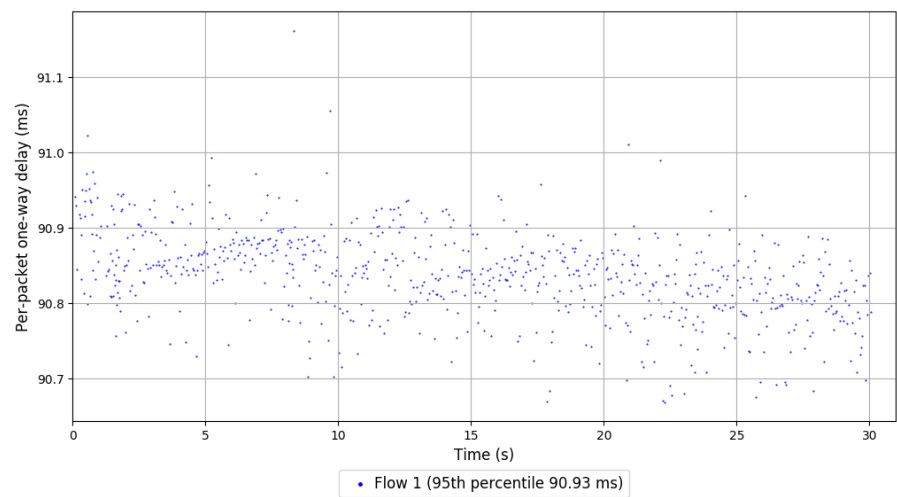
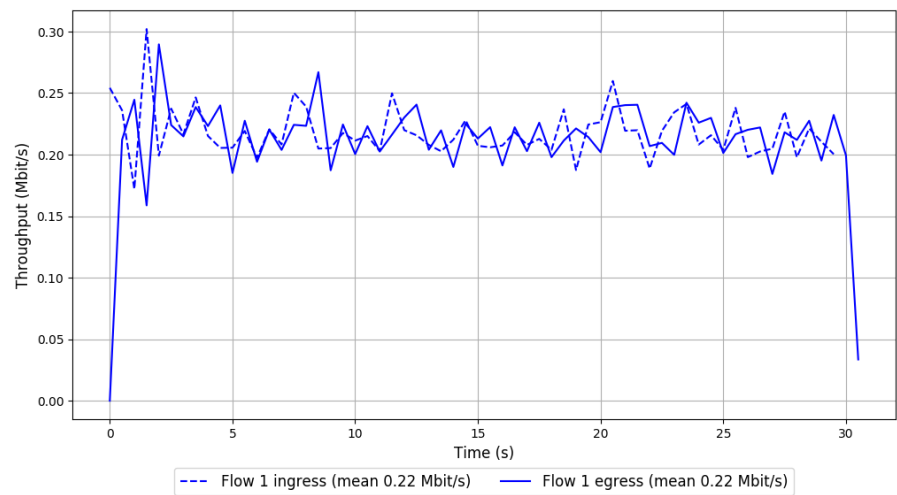
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 90.929 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



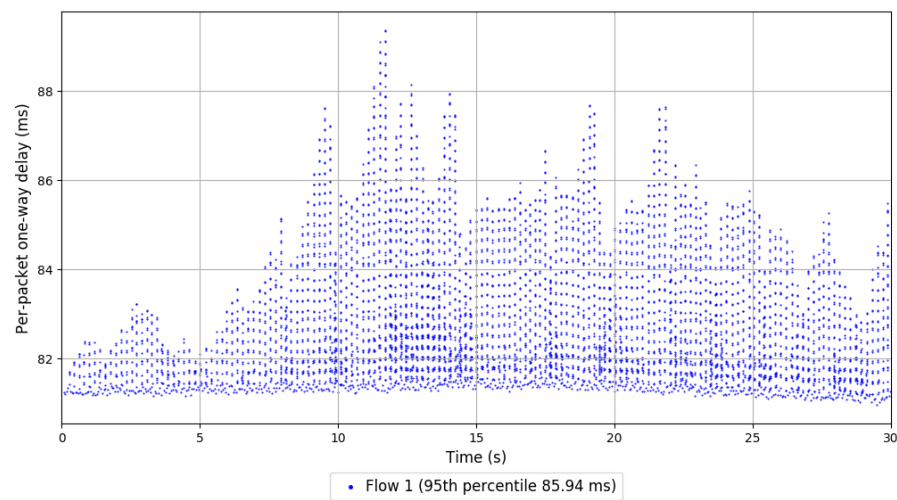
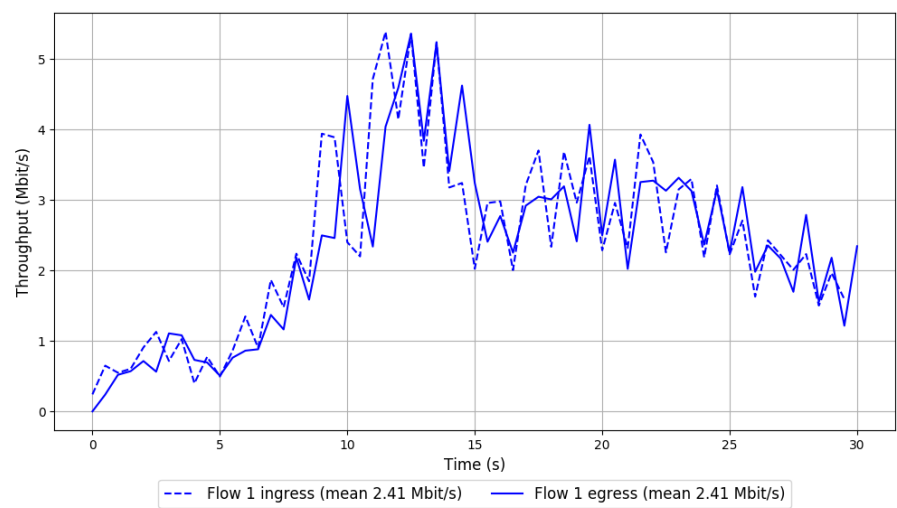


Run 1: Statistics of Sprout

Start at: 2018-11-02 18:08:01  
End at: 2018-11-02 18:08:31  
Local clock offset: -3.912 ms  
Remote clock offset: -1.223 ms

# Below is generated by plot.py at 2018-11-02 19:57:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.41 Mbit/s  
95th percentile per-packet one-way delay: 85.943 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.41 Mbit/s  
95th percentile per-packet one-way delay: 85.943 ms  
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

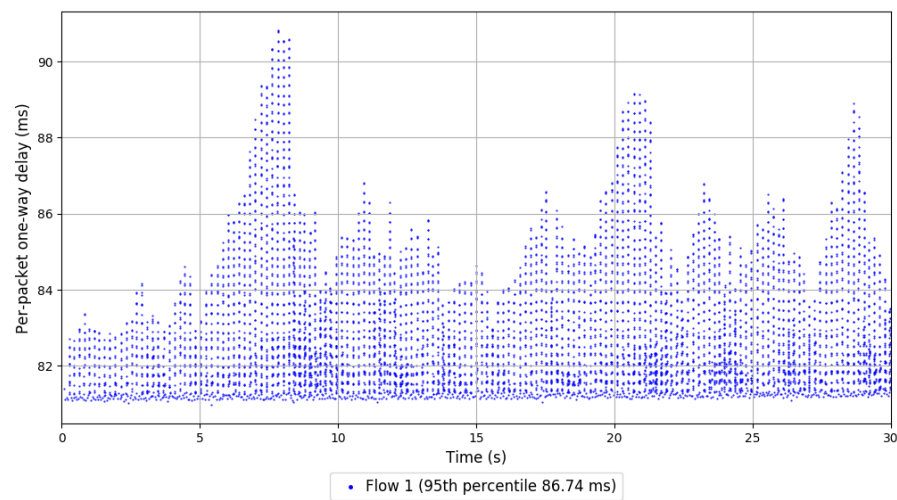
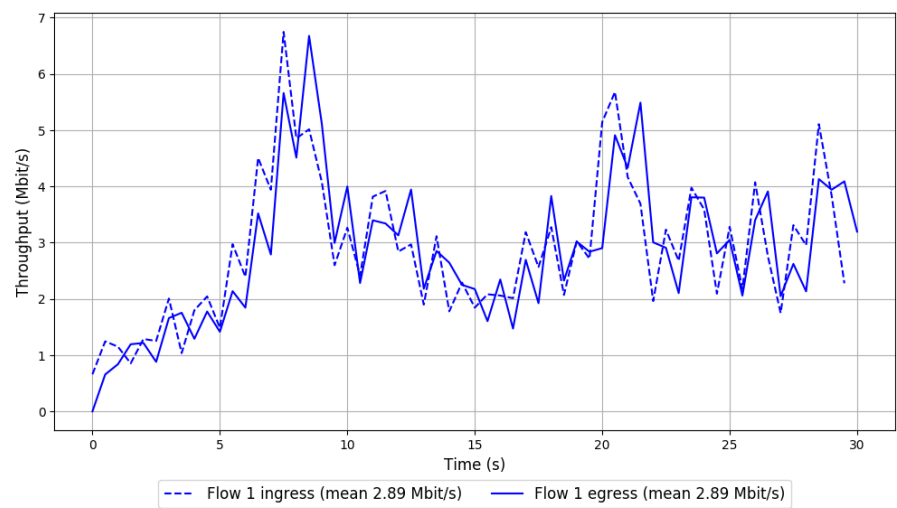


Run 2: Statistics of Sprout

Start at: 2018-11-02 18:29:04  
End at: 2018-11-02 18:29:34  
Local clock offset: -1.482 ms  
Remote clock offset: 0.397 ms

# Below is generated by plot.py at 2018-11-02 19:57:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.89 Mbit/s  
95th percentile per-packet one-way delay: 86.737 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.89 Mbit/s  
95th percentile per-packet one-way delay: 86.737 ms  
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-11-02 18:50:08

End at: 2018-11-02 18:50:38

Local clock offset: 3.734 ms

Remote clock offset: 0.49 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.54 Mbit/s

95th percentile per-packet one-way delay: 83.717 ms

Loss rate: 0.00%

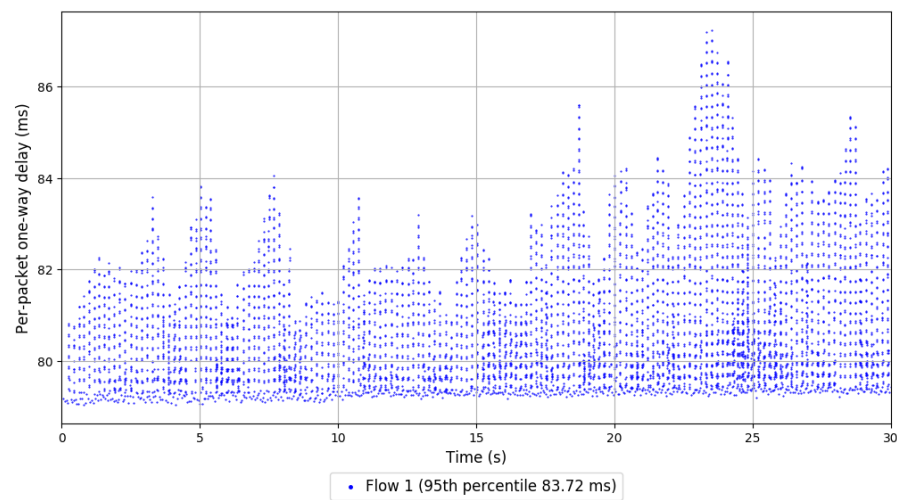
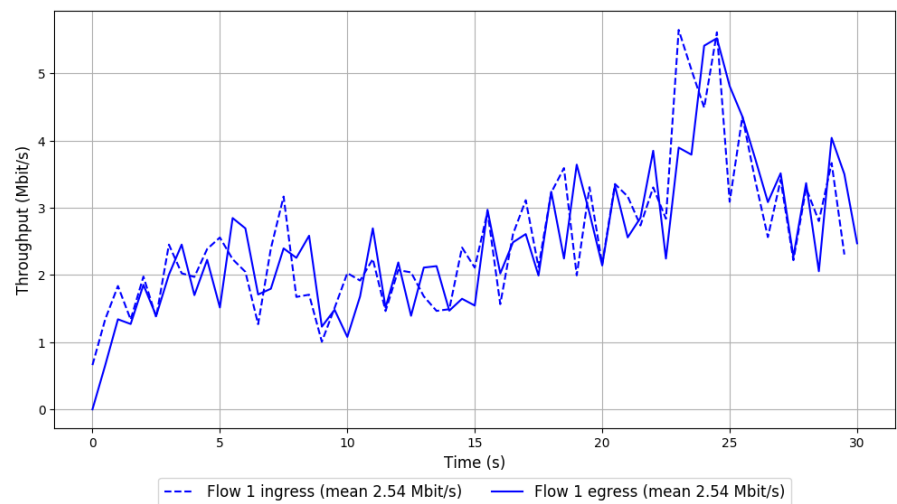
-- Flow 1:

Average throughput: 2.54 Mbit/s

95th percentile per-packet one-way delay: 83.717 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

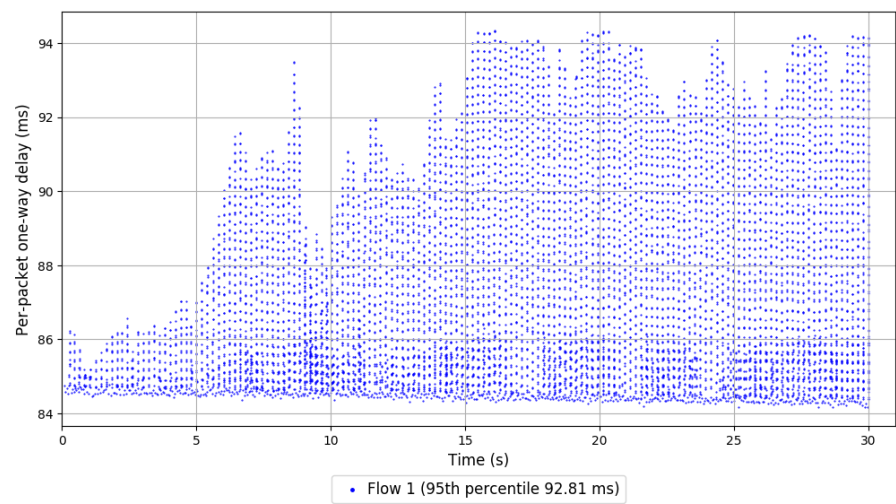
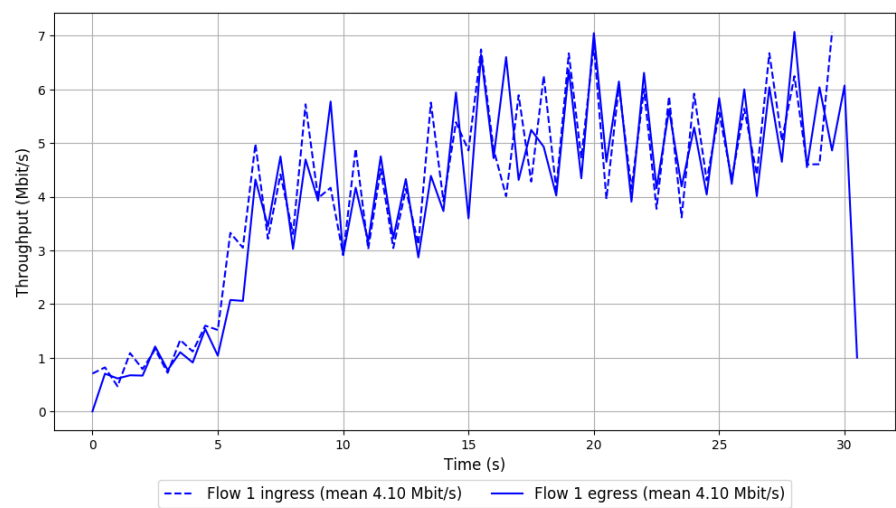


Run 4: Statistics of Sprout

Start at: 2018-11-02 19:11:11  
End at: 2018-11-02 19:11:41  
Local clock offset: 0.146 ms  
Remote clock offset: 1.15 ms

# Below is generated by plot.py at 2018-11-02 19:57:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.10 Mbit/s  
95th percentile per-packet one-way delay: 92.805 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 4.10 Mbit/s  
95th percentile per-packet one-way delay: 92.805 ms  
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link





Run 5: Statistics of Sprout

Start at: 2018-11-02 19:32:14

End at: 2018-11-02 19:32:44

Local clock offset: -4.799 ms

Remote clock offset: 2.87 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.82 Mbit/s

95th percentile per-packet one-way delay: 85.504 ms

Loss rate: 0.00%

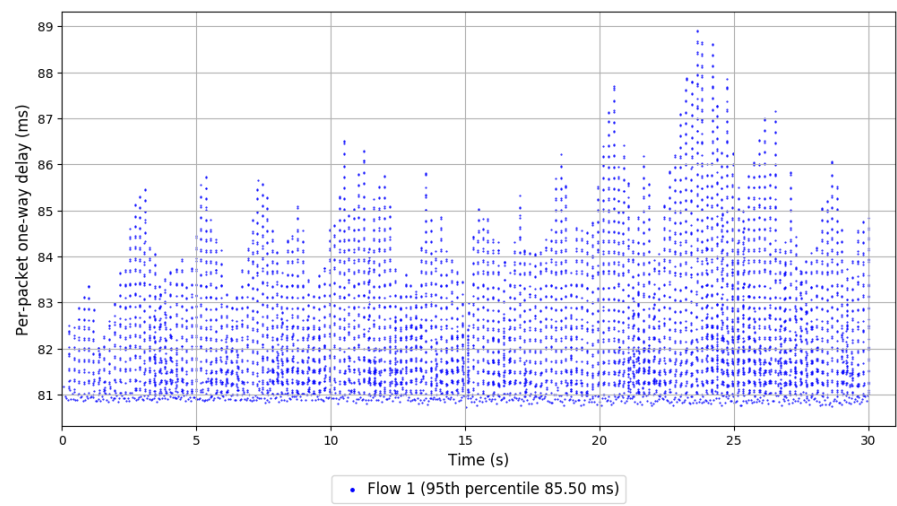
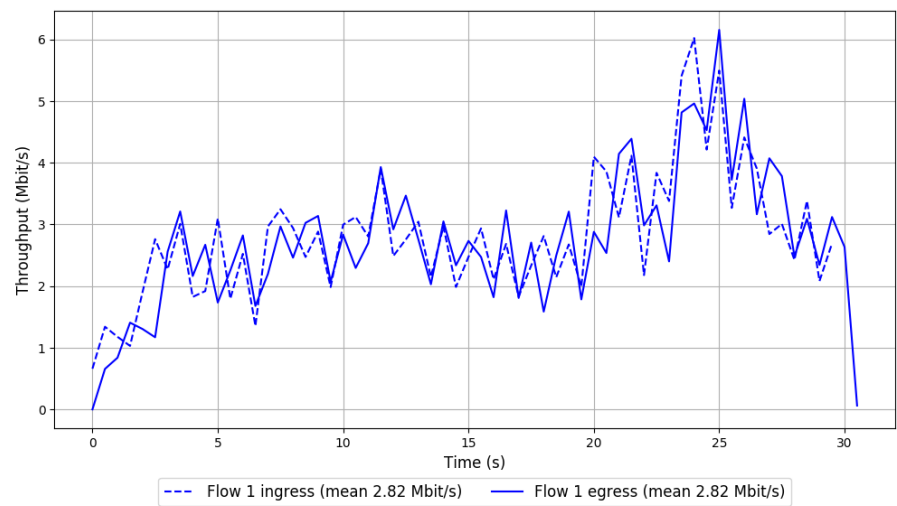
-- Flow 1:

Average throughput: 2.82 Mbit/s

95th percentile per-packet one-way delay: 85.504 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

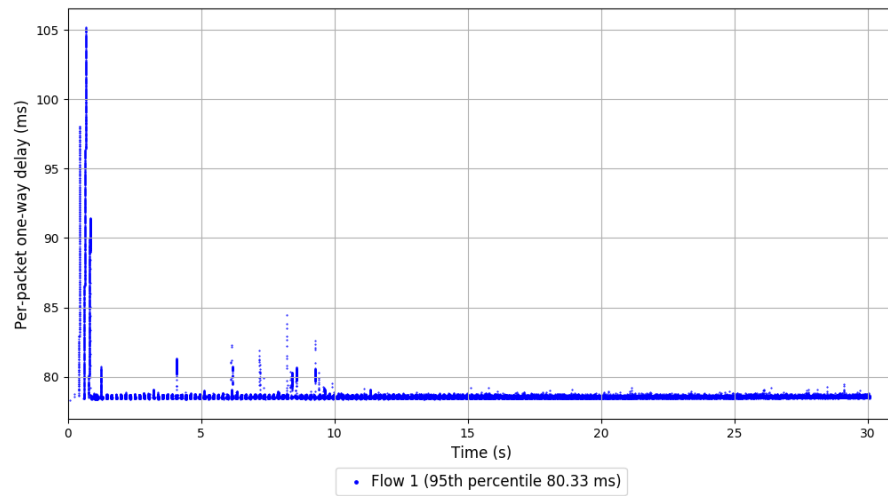
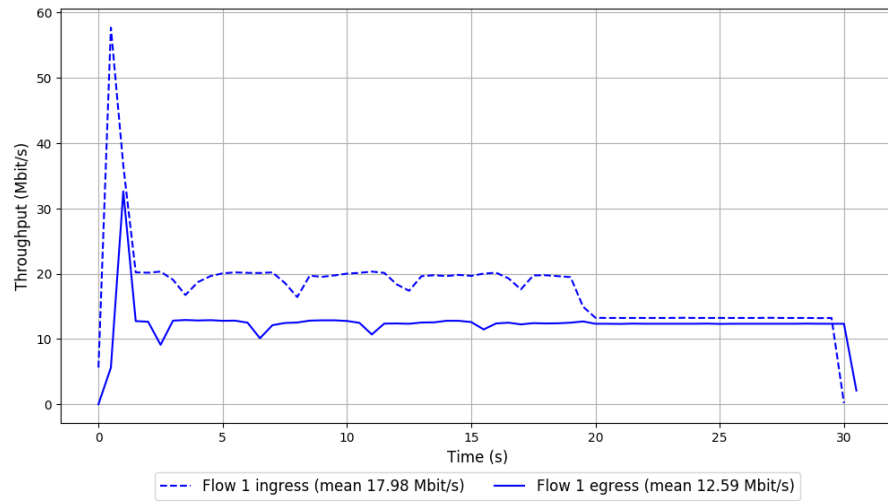


Run 1: Statistics of TaoVA-100x

Start at: 2018-11-02 18:20:47  
End at: 2018-11-02 18:21:17  
Local clock offset: -3.736 ms  
Remote clock offset: -1.352 ms

# Below is generated by plot.py at 2018-11-02 19:57:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 12.59 Mbit/s  
95th percentile per-packet one-way delay: 80.328 ms  
Loss rate: 29.95%  
-- Flow 1:  
Average throughput: 12.59 Mbit/s  
95th percentile per-packet one-way delay: 80.328 ms  
Loss rate: 29.95%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-02 18:41:52

End at: 2018-11-02 18:42:22

Local clock offset: 1.417 ms

Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 79.740 ms

Loss rate: 30.82%

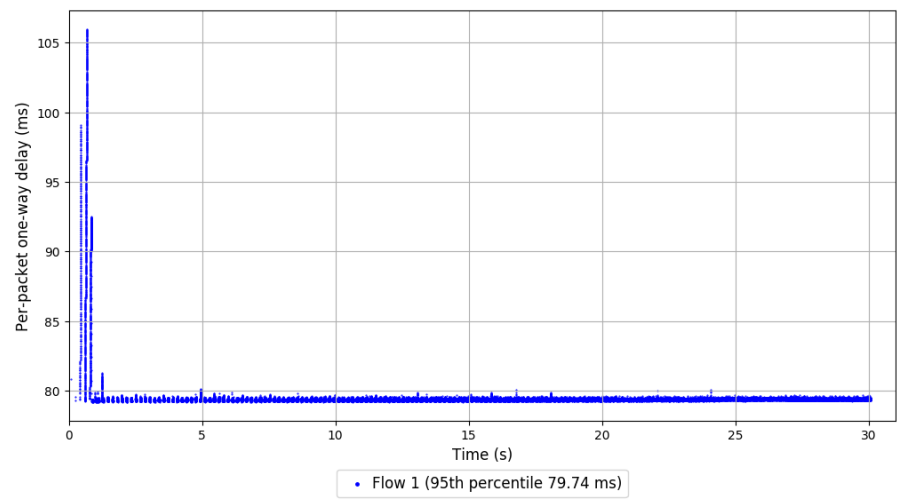
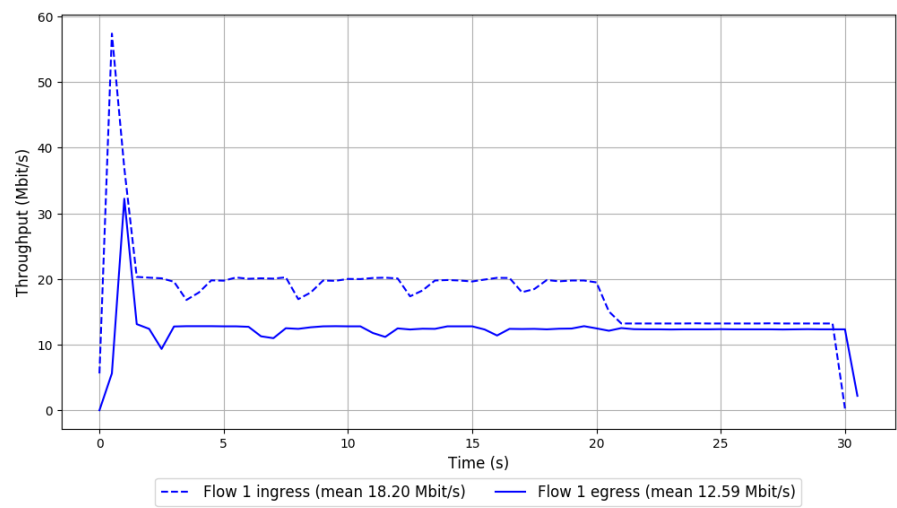
-- Flow 1:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 79.740 ms

Loss rate: 30.82%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-02 19:02:54

End at: 2018-11-02 19:03:24

Local clock offset: 7.271 ms

Remote clock offset: 7.028 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 85.784 ms

Loss rate: 13.91%

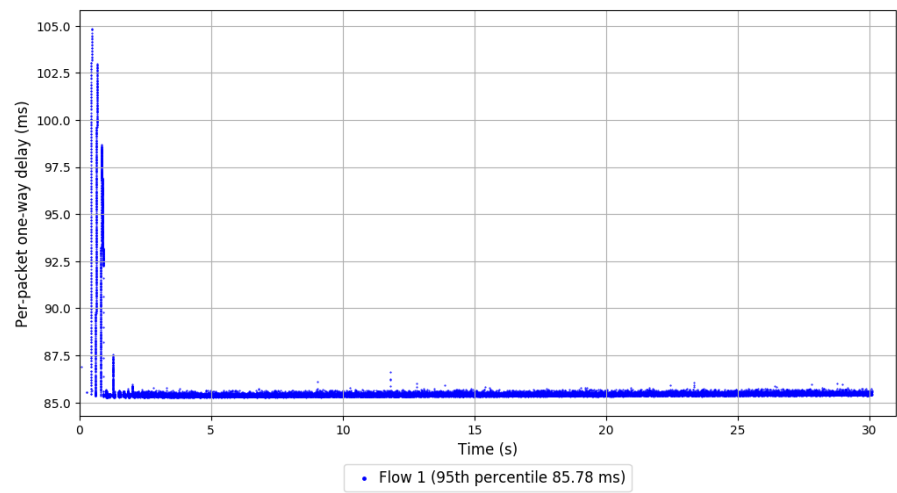
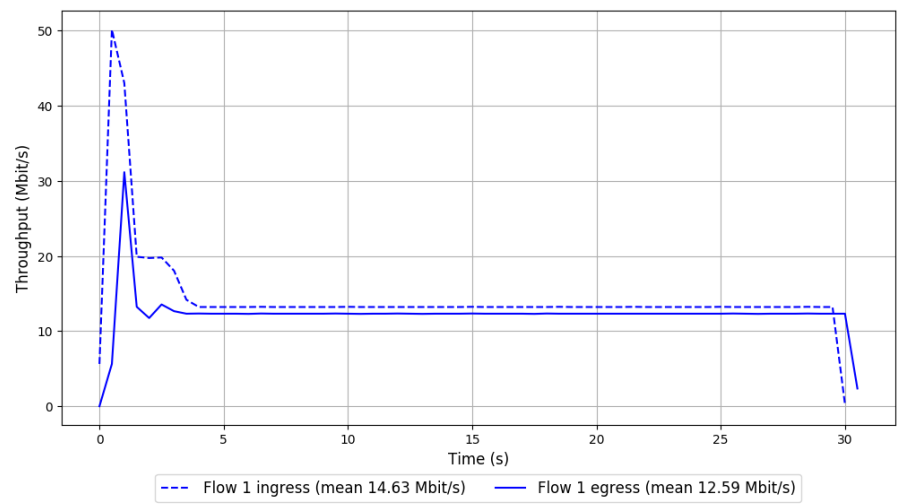
-- Flow 1:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 85.784 ms

Loss rate: 13.91%

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





Run 4: Statistics of TaoVA-100x

Start at: 2018-11-02 19:23:57

End at: 2018-11-02 19:24:27

Local clock offset: -4.115 ms

Remote clock offset: 6.534 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 85.926 ms

Loss rate: 29.46%

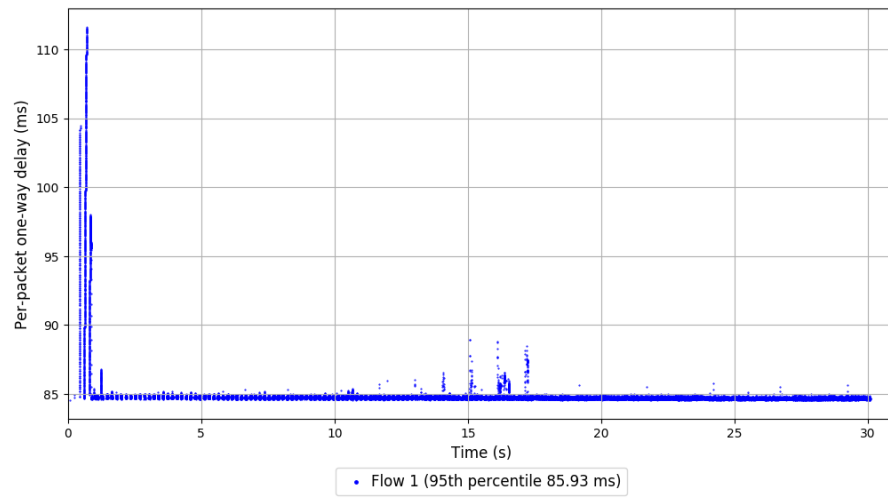
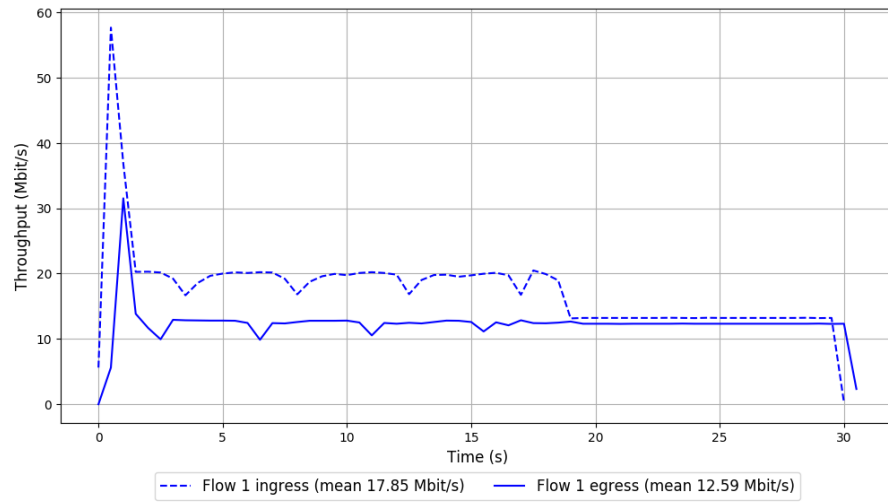
-- Flow 1:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 85.926 ms

Loss rate: 29.46%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-02 19:45:01

End at: 2018-11-02 19:45:31

Local clock offset: -5.118 ms

Remote clock offset: 2.077 ms

# Below is generated by plot.py at 2018-11-02 19:57:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 78.727 ms

Loss rate: 29.77%

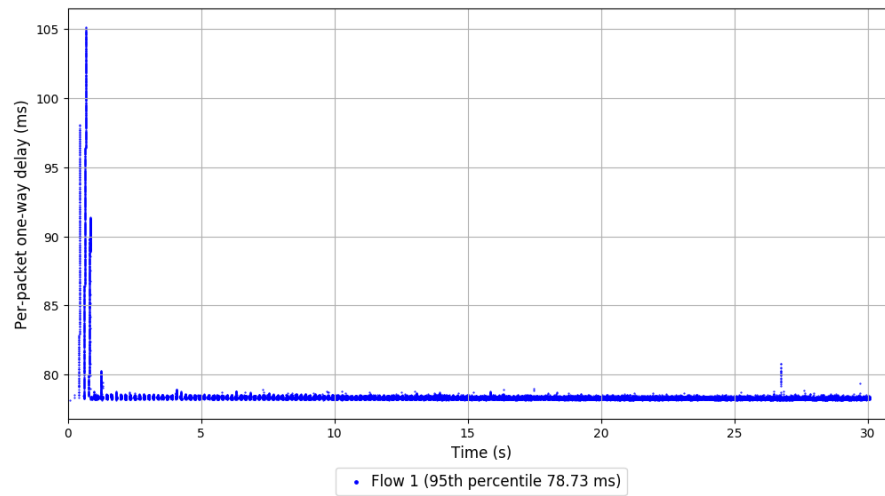
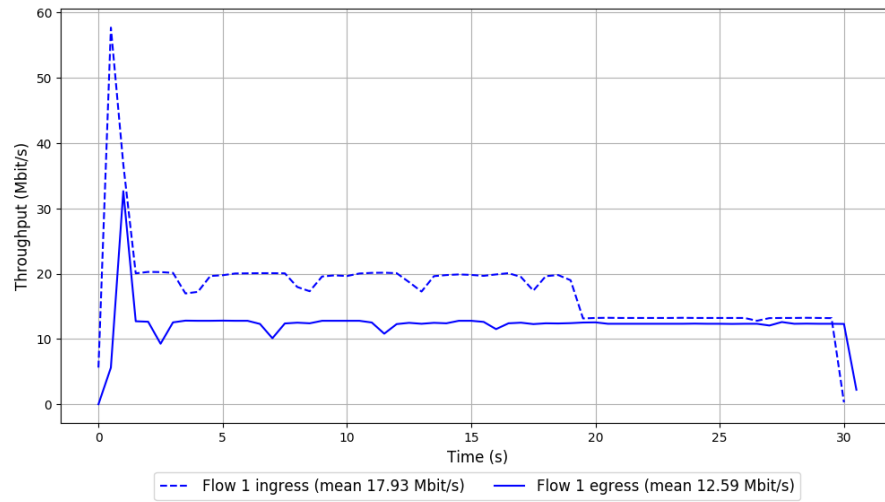
-- Flow 1:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 78.727 ms

Loss rate: 29.77%

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

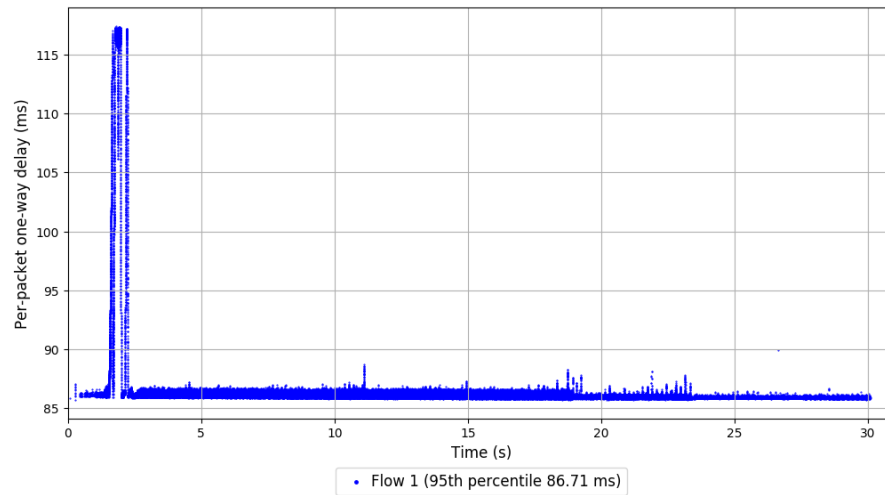
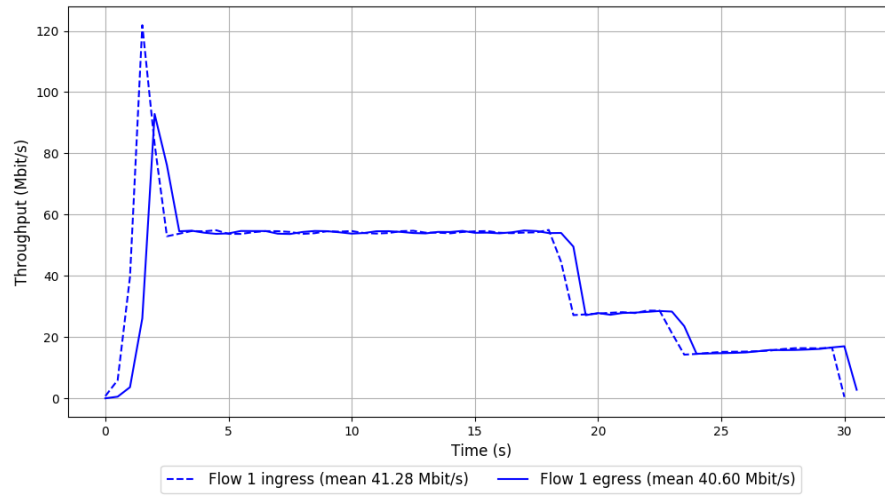


Run 1: Statistics of TCP Vegas

Start at: 2018-11-02 18:09:09  
End at: 2018-11-02 18:09:39  
Local clock offset: -5.777 ms  
Remote clock offset: -1.225 ms

# Below is generated by plot.py at 2018-11-02 19:57:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 40.60 Mbit/s  
95th percentile per-packet one-way delay: 86.709 ms  
Loss rate: 1.67%  
-- Flow 1:  
Average throughput: 40.60 Mbit/s  
95th percentile per-packet one-way delay: 86.709 ms  
Loss rate: 1.67%

### Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-11-02 18:30:11

End at: 2018-11-02 18:30:41

Local clock offset: -1.966 ms

Remote clock offset: 0.497 ms

# Below is generated by plot.py at 2018-11-02 19:57:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 56.11 Mbit/s

95th percentile per-packet one-way delay: 83.027 ms

Loss rate: 0.65%

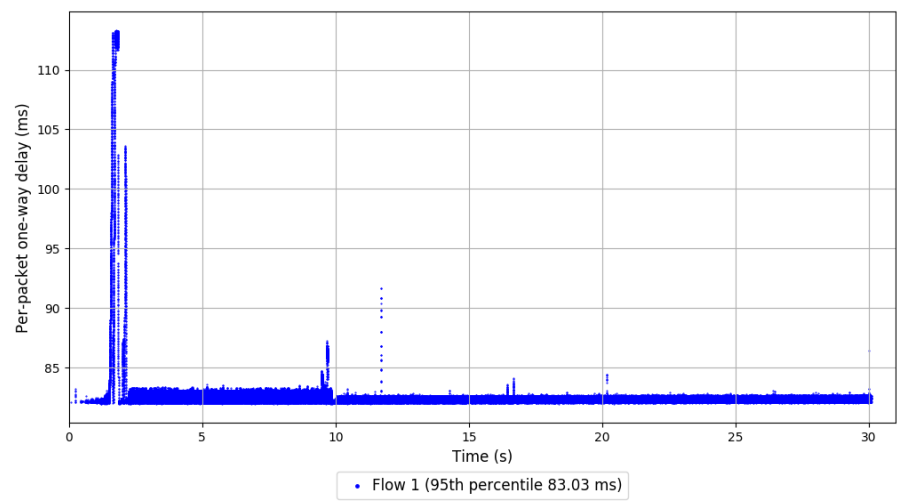
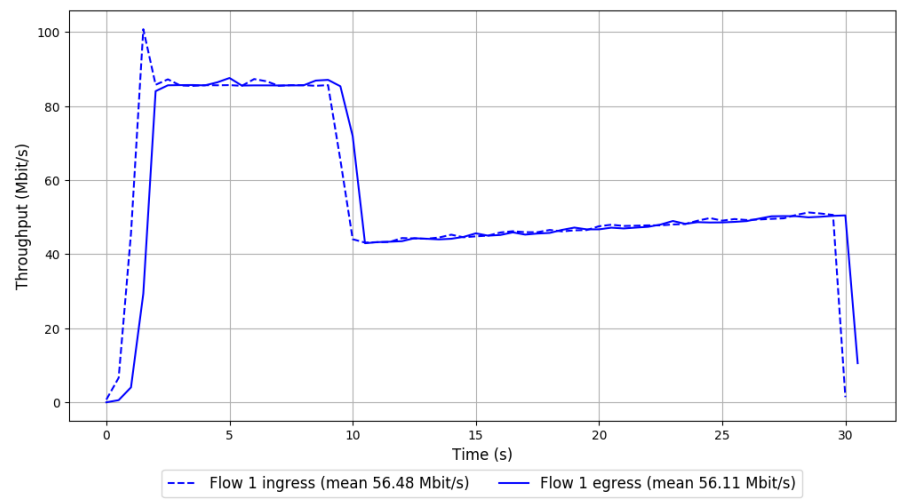
-- Flow 1:

Average throughput: 56.11 Mbit/s

95th percentile per-packet one-way delay: 83.027 ms

Loss rate: 0.65%

Run 2: Report of TCP Vegas — Data Link



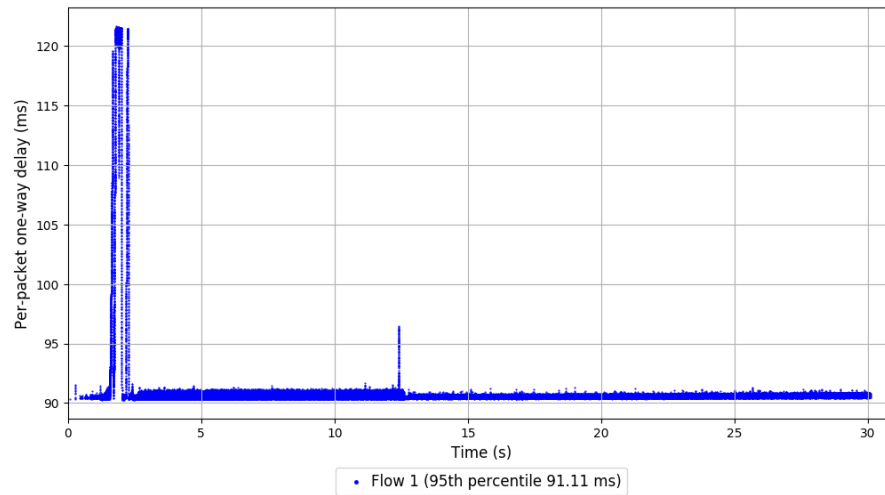
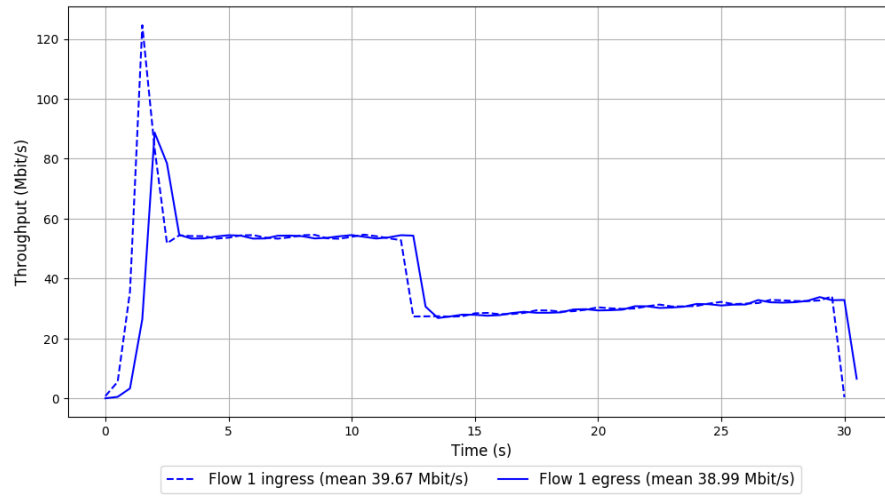


Run 3: Statistics of TCP Vegas

Start at: 2018-11-02 18:51:16  
End at: 2018-11-02 18:51:46  
Local clock offset: 4.836 ms  
Remote clock offset: 5.373 ms

# Below is generated by plot.py at 2018-11-02 19:57:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 38.99 Mbit/s  
95th percentile per-packet one-way delay: 91.115 ms  
Loss rate: 1.74%  
-- Flow 1:  
Average throughput: 38.99 Mbit/s  
95th percentile per-packet one-way delay: 91.115 ms  
Loss rate: 1.74%

### Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-11-02 19:12:19

End at: 2018-11-02 19:12:49

Local clock offset: -0.64 ms

Remote clock offset: 7.3 ms

# Below is generated by plot.py at 2018-11-02 19:58:15

# Datalink statistics

-- Total of 1 flow:

Average throughput: 77.59 Mbit/s

95th percentile per-packet one-way delay: 87.056 ms

Loss rate: 0.47%

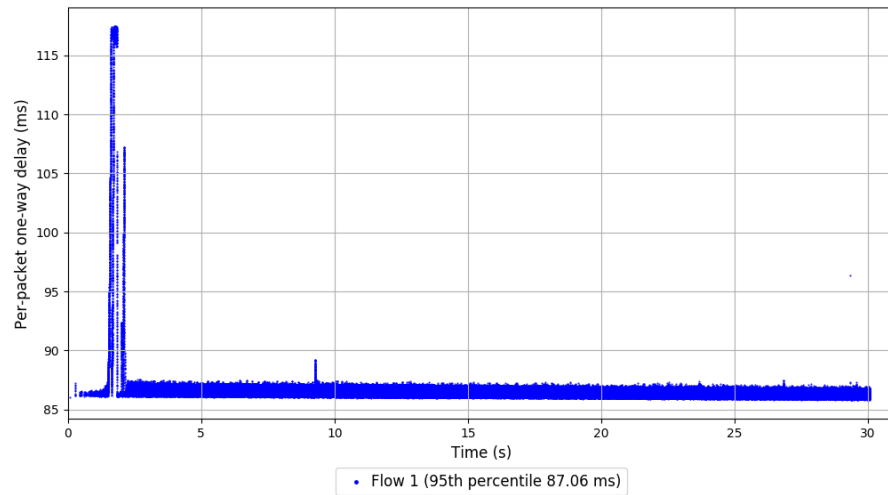
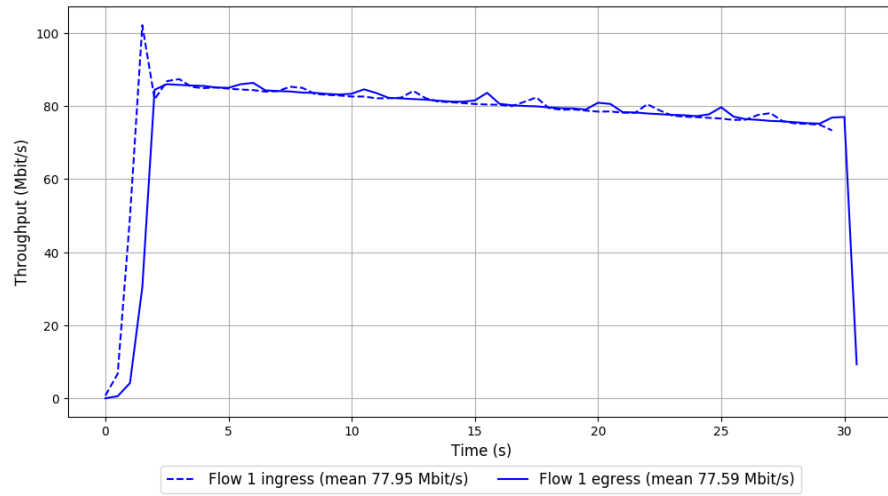
-- Flow 1:

Average throughput: 77.59 Mbit/s

95th percentile per-packet one-way delay: 87.056 ms

Loss rate: 0.47%

#### Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-11-02 19:33:22

End at: 2018-11-02 19:33:52

Local clock offset: -3.999 ms

Remote clock offset: 1.944 ms

# Below is generated by plot.py at 2018-11-02 19:58:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 80.17 Mbit/s

95th percentile per-packet one-way delay: 80.230 ms

Loss rate: 0.46%

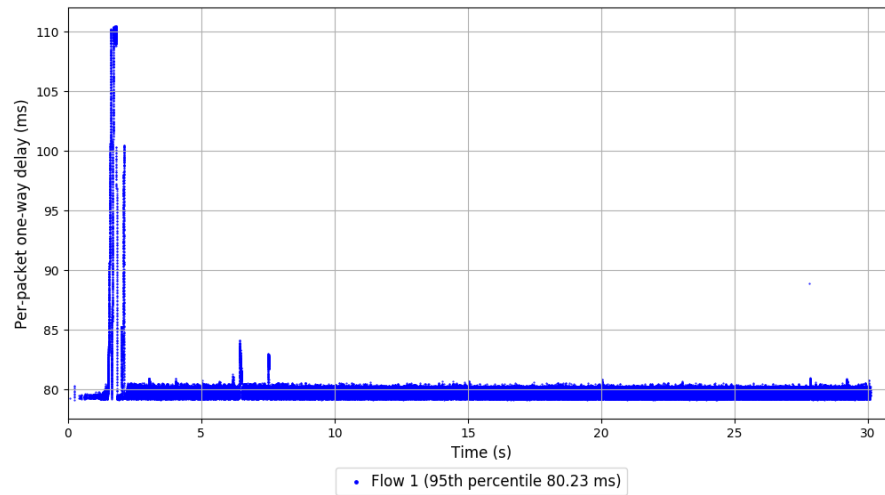
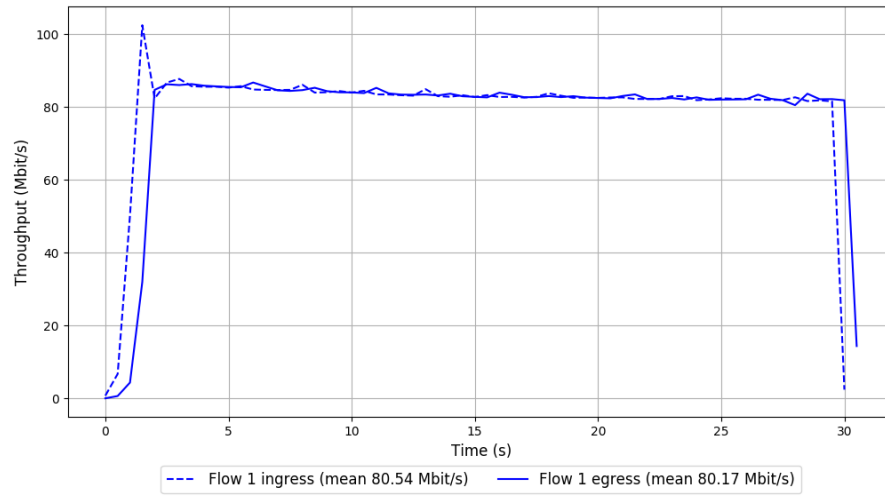
-- Flow 1:

Average throughput: 80.17 Mbit/s

95th percentile per-packet one-way delay: 80.230 ms

Loss rate: 0.46%

### Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-11-02 18:15:02

End at: 2018-11-02 18:15:32

Local clock offset: -5.444 ms

Remote clock offset: 3.089 ms

# Below is generated by plot.py at 2018-11-02 19:58:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 26.01 Mbit/s

95th percentile per-packet one-way delay: 119.606 ms

Loss rate: 8.97%

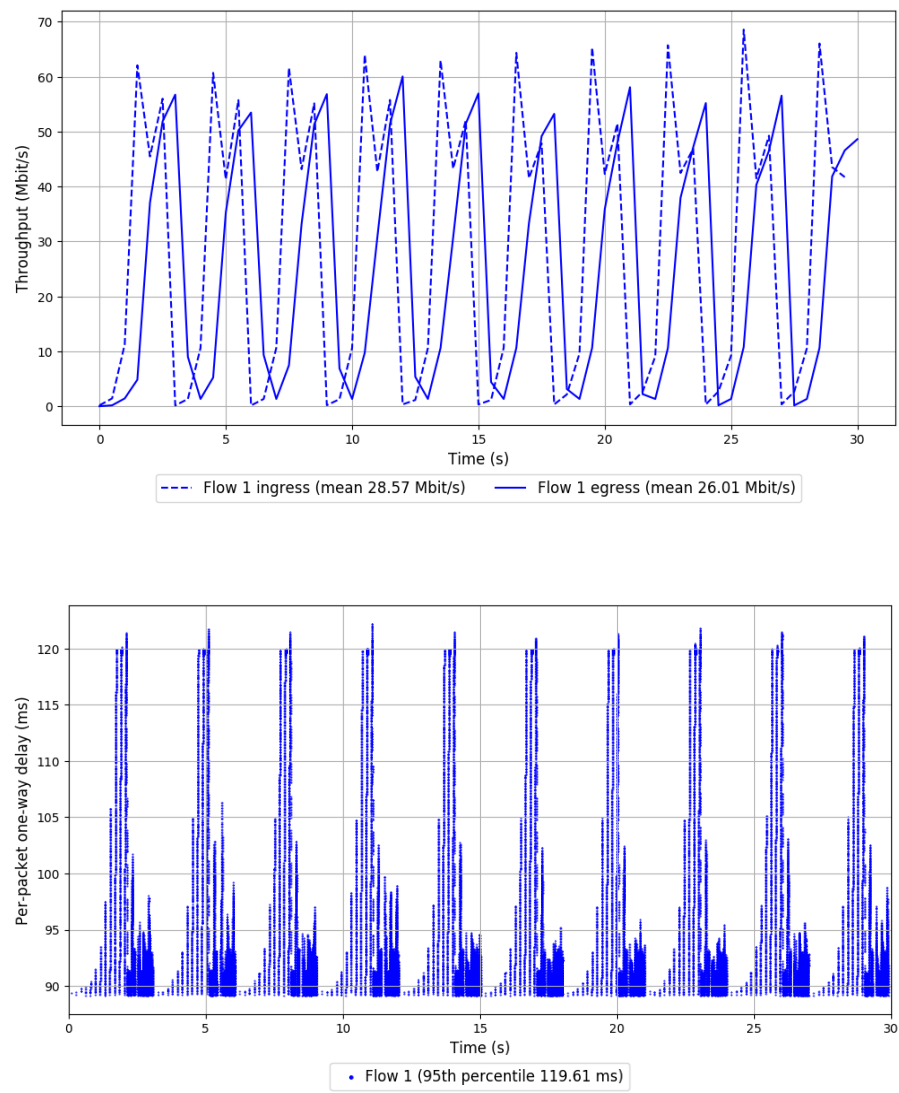
-- Flow 1:

Average throughput: 26.01 Mbit/s

95th percentile per-packet one-way delay: 119.606 ms

Loss rate: 8.97%

Run 1: Report of Verus — Data Link





Run 2: Statistics of Verus

Start at: 2018-11-02 18:36:05

End at: 2018-11-02 18:36:35

Local clock offset: 0.521 ms

Remote clock offset: 0.889 ms

# Below is generated by plot.py at 2018-11-02 19:58:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 31.68 Mbit/s

95th percentile per-packet one-way delay: 184.964 ms

Loss rate: 77.30%

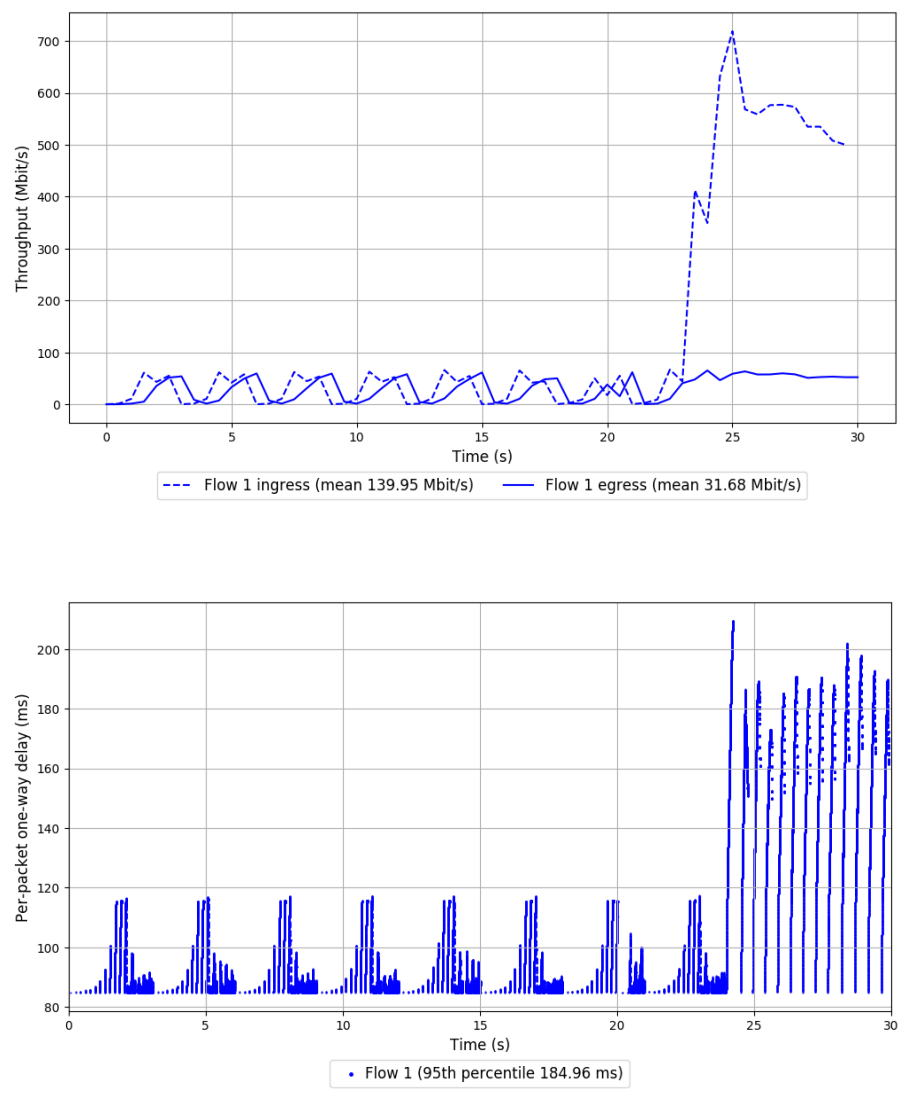
-- Flow 1:

Average throughput: 31.68 Mbit/s

95th percentile per-packet one-way delay: 184.964 ms

Loss rate: 77.30%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-11-02 18:57:09

End at: 2018-11-02 18:57:39

Local clock offset: 4.91 ms

Remote clock offset: 5.625 ms

# Below is generated by plot.py at 2018-11-02 19:58:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 30.83 Mbit/s

95th percentile per-packet one-way delay: 120.993 ms

Loss rate: 43.35%

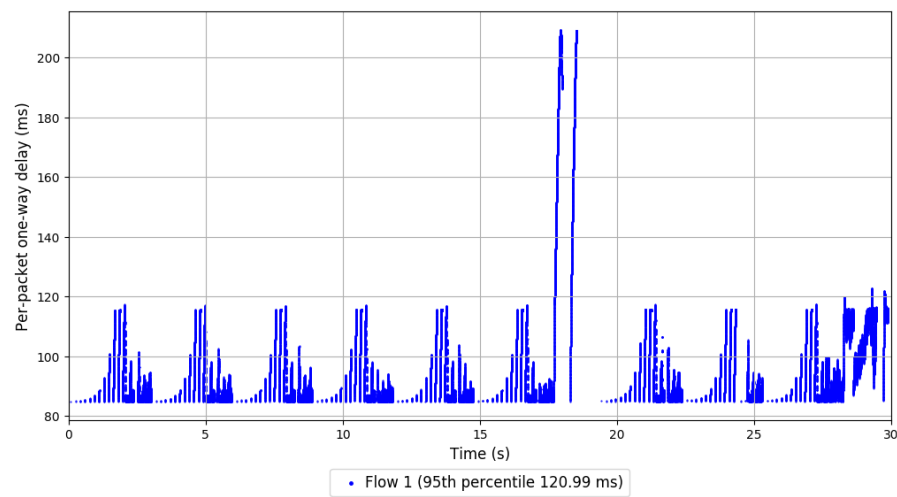
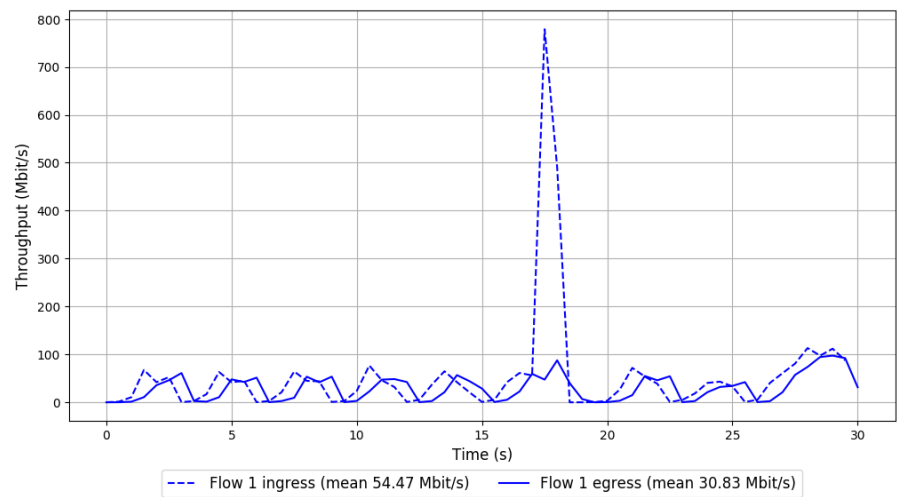
-- Flow 1:

Average throughput: 30.83 Mbit/s

95th percentile per-packet one-way delay: 120.993 ms

Loss rate: 43.35%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-11-02 19:18:13

End at: 2018-11-02 19:18:43

Local clock offset: -3.072 ms

Remote clock offset: 2.585 ms

# Below is generated by plot.py at 2018-11-02 19:58:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 26.60 Mbit/s

95th percentile per-packet one-way delay: 112.961 ms

Loss rate: 9.50%

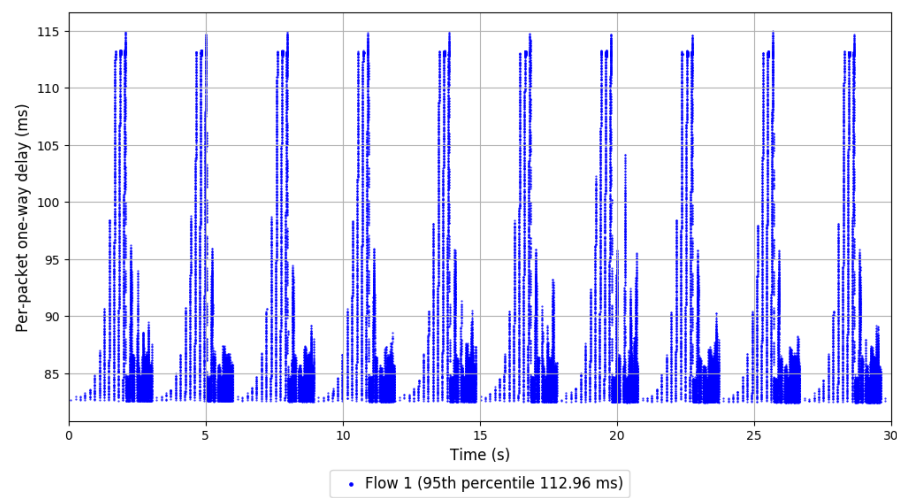
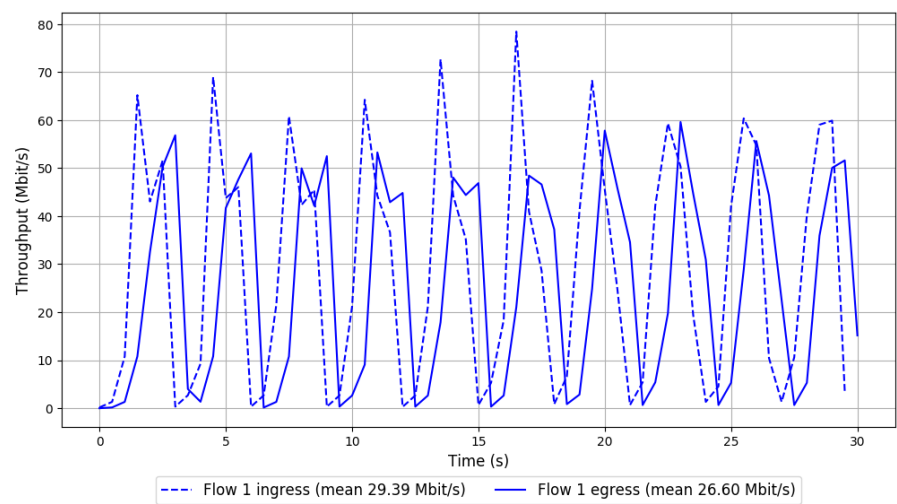
-- Flow 1:

Average throughput: 26.60 Mbit/s

95th percentile per-packet one-way delay: 112.961 ms

Loss rate: 9.50%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-11-02 19:39:16

End at: 2018-11-02 19:39:46

Local clock offset: -5.949 ms

Remote clock offset: 2.978 ms

# Below is generated by plot.py at 2018-11-02 19:58:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 33.89 Mbit/s

95th percentile per-packet one-way delay: 116.506 ms

Loss rate: 19.34%

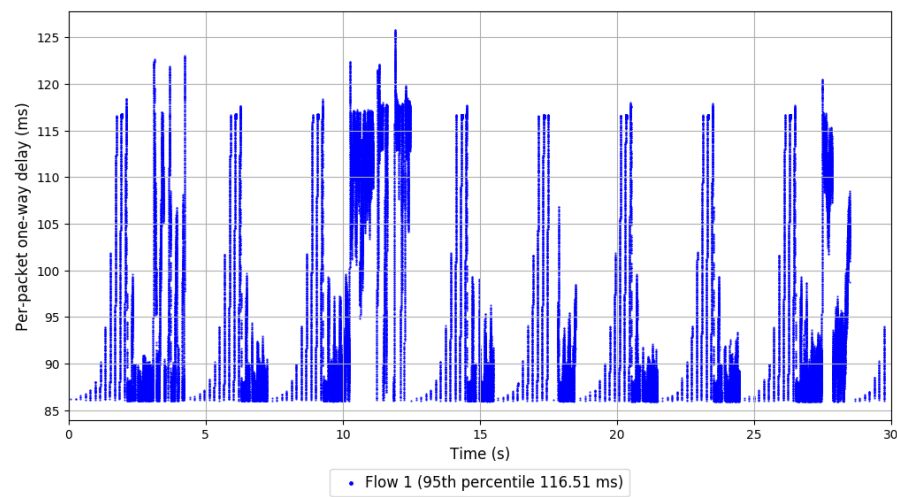
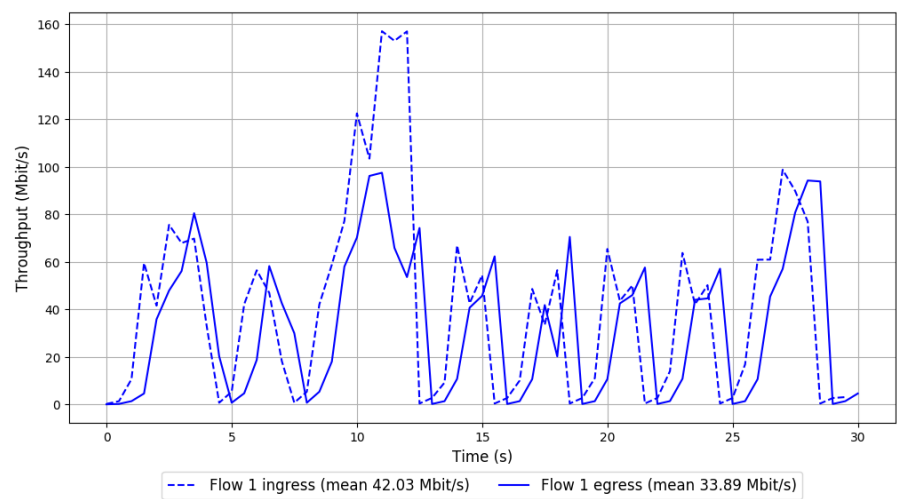
-- Flow 1:

Average throughput: 33.89 Mbit/s

95th percentile per-packet one-way delay: 116.506 ms

Loss rate: 19.34%

Run 5: Report of Verus — Data Link



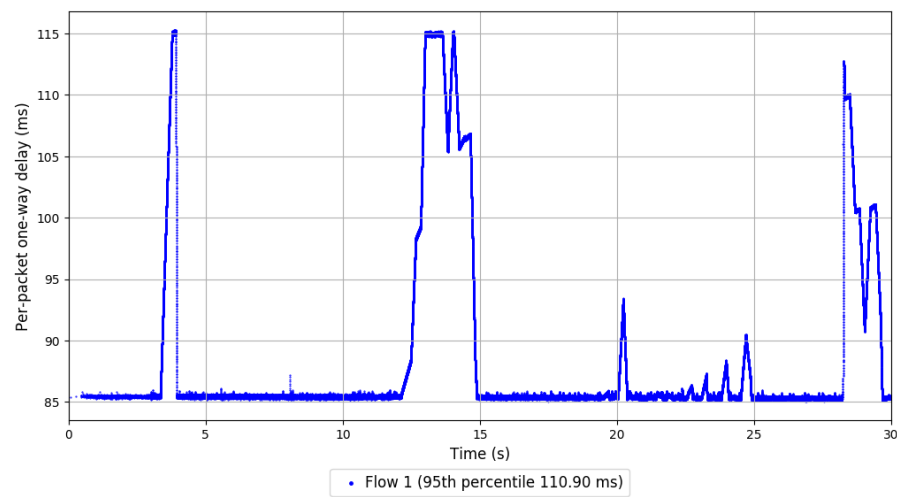
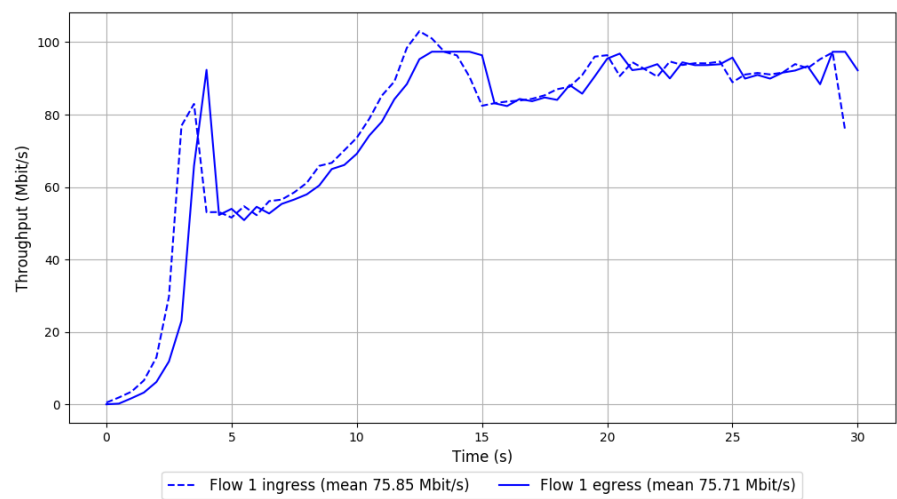


Run 1: Statistics of PCC-Vivace

Start at: 2018-11-02 18:12:38  
End at: 2018-11-02 18:13:08  
Local clock offset: -4.302 ms  
Remote clock offset: -2.034 ms

# Below is generated by plot.py at 2018-11-02 19:58:37  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 75.71 Mbit/s  
95th percentile per-packet one-way delay: 110.904 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 75.71 Mbit/s  
95th percentile per-packet one-way delay: 110.904 ms  
Loss rate: 0.20%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-11-02 18:33:41

End at: 2018-11-02 18:34:11

Local clock offset: -0.929 ms

Remote clock offset: 0.828 ms

# Below is generated by plot.py at 2018-11-02 19:58:45

# Datalink statistics

-- Total of 1 flow:

Average throughput: 77.02 Mbit/s

95th percentile per-packet one-way delay: 93.690 ms

Loss rate: 0.04%

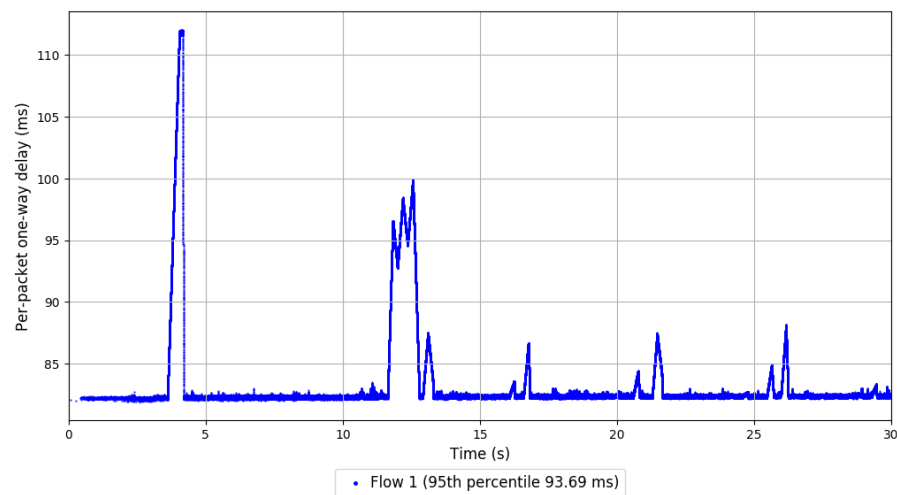
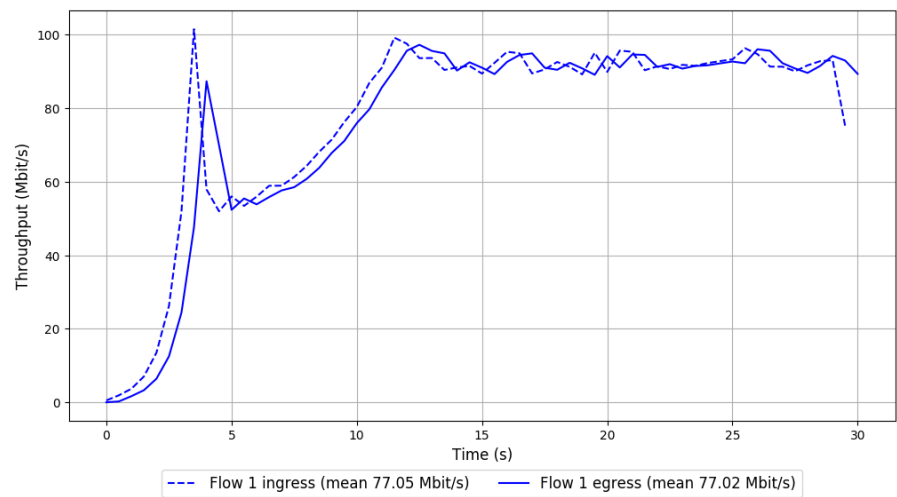
-- Flow 1:

Average throughput: 77.02 Mbit/s

95th percentile per-packet one-way delay: 93.690 ms

Loss rate: 0.04%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-11-02 18:54:45

End at: 2018-11-02 18:55:15

Local clock offset: 4.21 ms

Remote clock offset: 6.59 ms

# Below is generated by plot.py at 2018-11-02 19:58:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 77.05 Mbit/s

95th percentile per-packet one-way delay: 95.874 ms

Loss rate: 0.04%

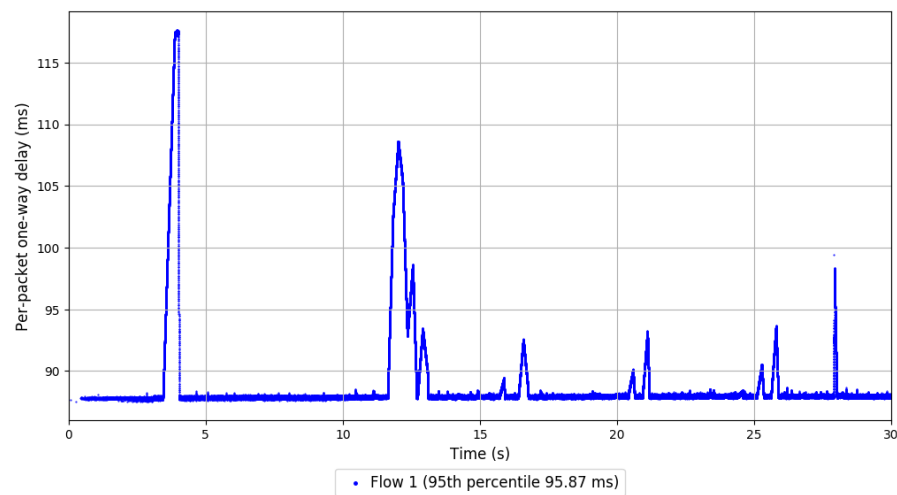
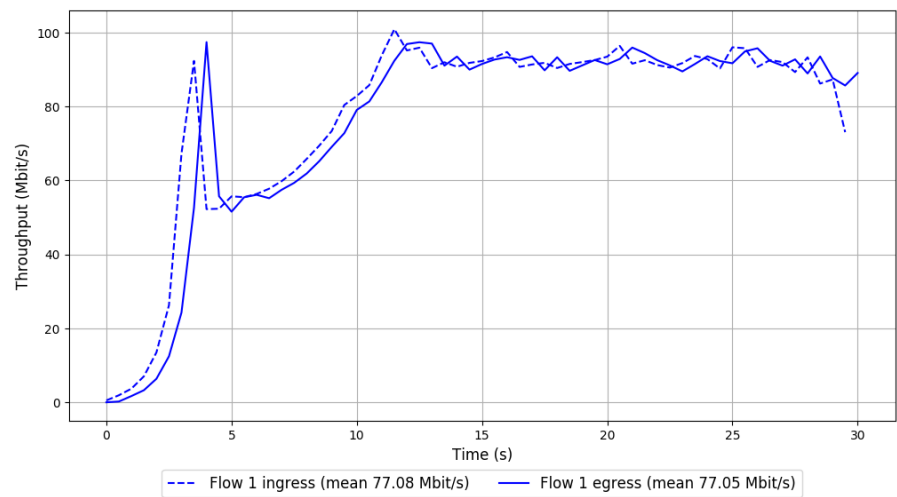
-- Flow 1:

Average throughput: 77.05 Mbit/s

95th percentile per-packet one-way delay: 95.874 ms

Loss rate: 0.04%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-11-02 19:15:49

End at: 2018-11-02 19:16:19

Local clock offset: -0.76 ms

Remote clock offset: 7.418 ms

# Below is generated by plot.py at 2018-11-02 19:58:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 76.32 Mbit/s

95th percentile per-packet one-way delay: 102.949 ms

Loss rate: 0.07%

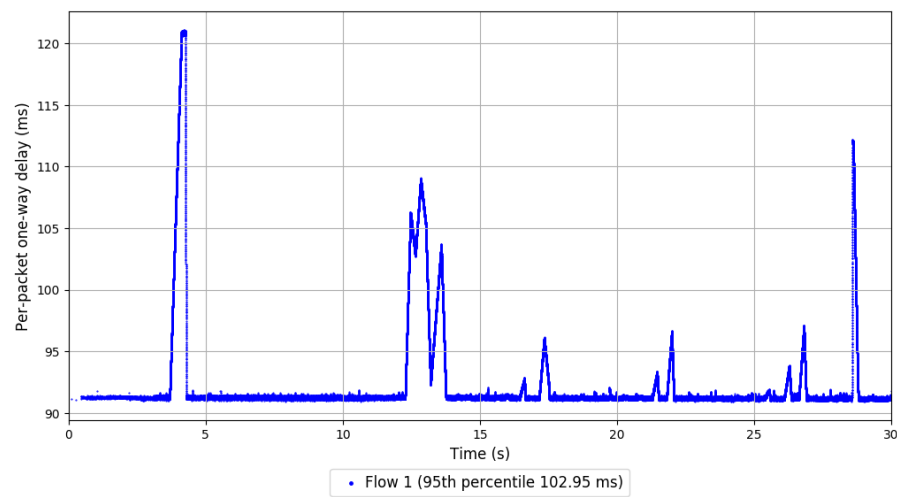
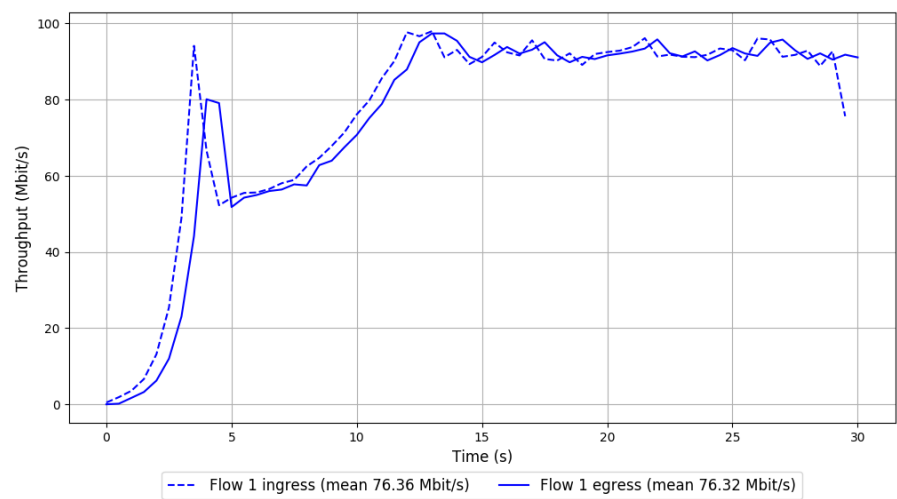
-- Flow 1:

Average throughput: 76.32 Mbit/s

95th percentile per-packet one-way delay: 102.949 ms

Loss rate: 0.07%

Run 4: Report of PCC-Vivace — Data Link





Run 5: Statistics of PCC-Vivace

Start at: 2018-11-02 19:36:52

End at: 2018-11-02 19:37:22

Local clock offset: -4.623 ms

Remote clock offset: 1.951 ms

# Below is generated by plot.py at 2018-11-02 19:58:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 75.88 Mbit/s

95th percentile per-packet one-way delay: 107.996 ms

Loss rate: 0.16%

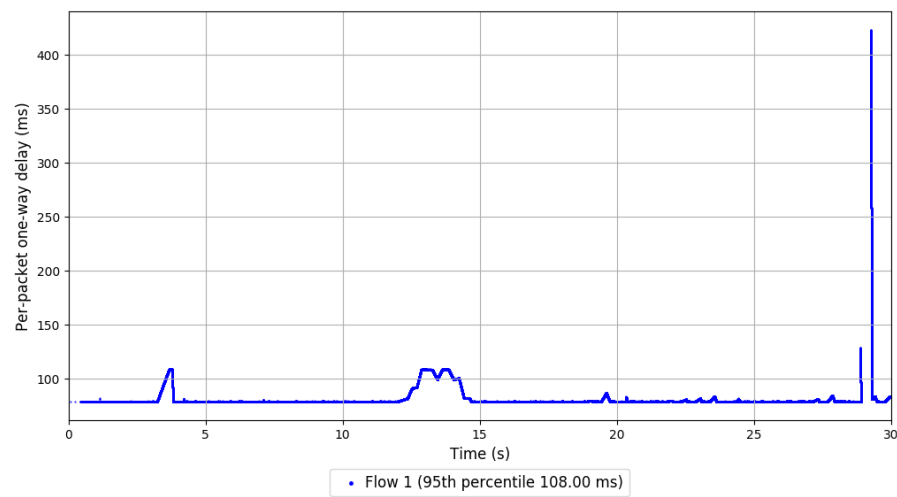
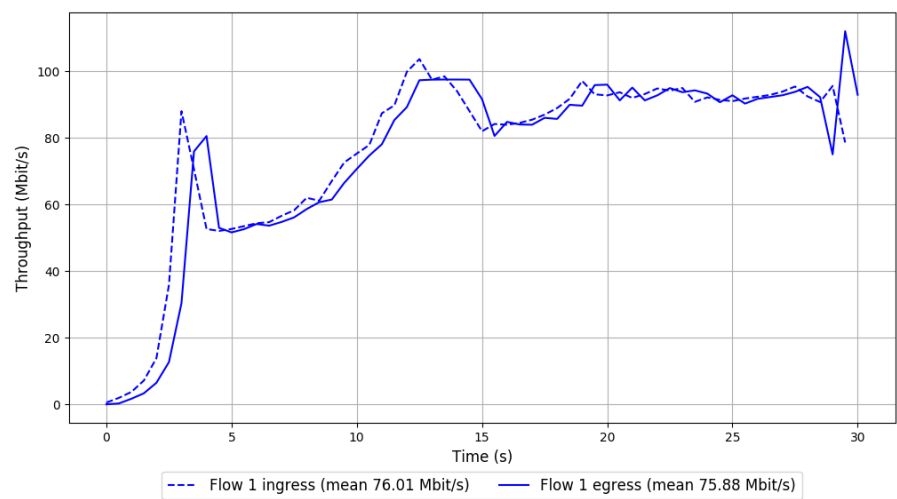
-- Flow 1:

Average throughput: 75.88 Mbit/s

95th percentile per-packet one-way delay: 107.996 ms

Loss rate: 0.16%

Run 5: Report of PCC-Vivace — Data Link

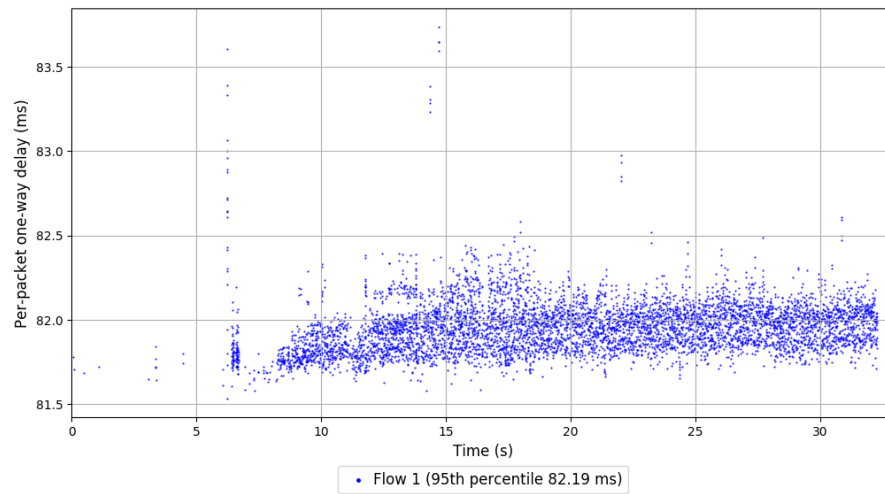
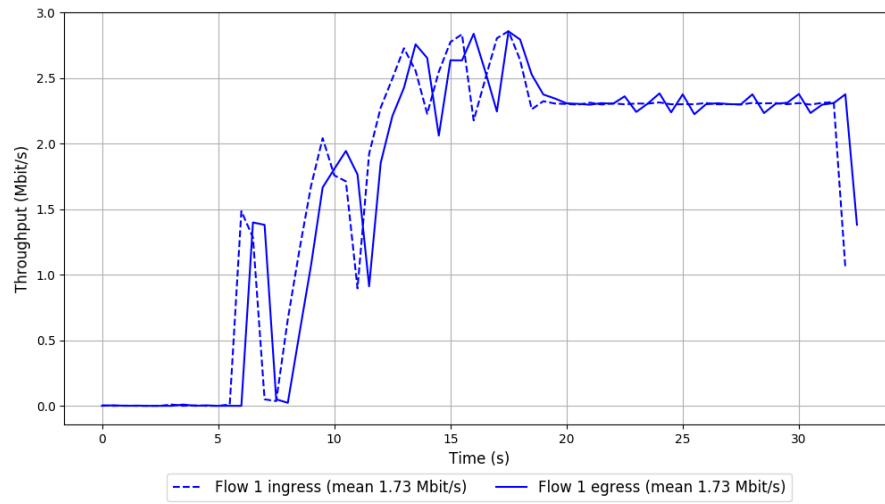


Run 1: Statistics of WebRTC media

Start at: 2018-11-02 18:11:30  
End at: 2018-11-02 18:12:00  
Local clock offset: -6.177 ms  
Remote clock offset: -2.125 ms

# Below is generated by plot.py at 2018-11-02 19:58:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.73 Mbit/s  
95th percentile per-packet one-way delay: 82.195 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.73 Mbit/s  
95th percentile per-packet one-way delay: 82.195 ms  
Loss rate: 0.00%

# Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-11-02 18:32:33

End at: 2018-11-02 18:33:03

Local clock offset: -0.482 ms

Remote clock offset: 0.706 ms

# Below is generated by plot.py at 2018-11-02 19:58:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.76 Mbit/s

95th percentile per-packet one-way delay: 82.352 ms

Loss rate: 0.07%

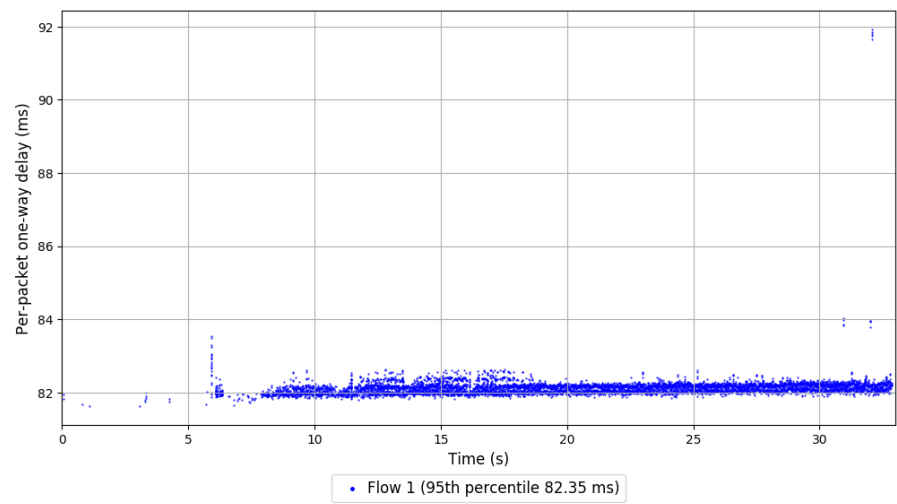
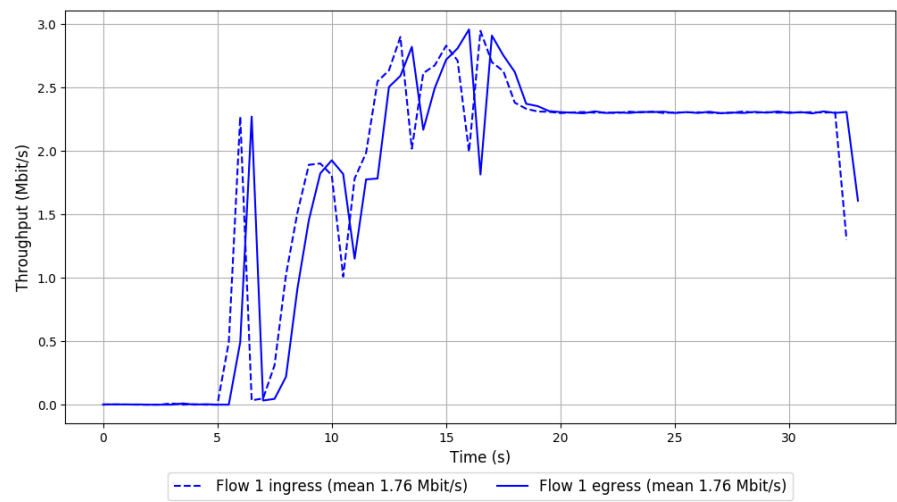
-- Flow 1:

Average throughput: 1.76 Mbit/s

95th percentile per-packet one-way delay: 82.352 ms

Loss rate: 0.07%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-11-02 18:53:37

End at: 2018-11-02 18:54:07

Local clock offset: 5.487 ms

Remote clock offset: 0.732 ms

# Below is generated by plot.py at 2018-11-02 19:58:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.77 Mbit/s

95th percentile per-packet one-way delay: 79.127 ms

Loss rate: 0.00%

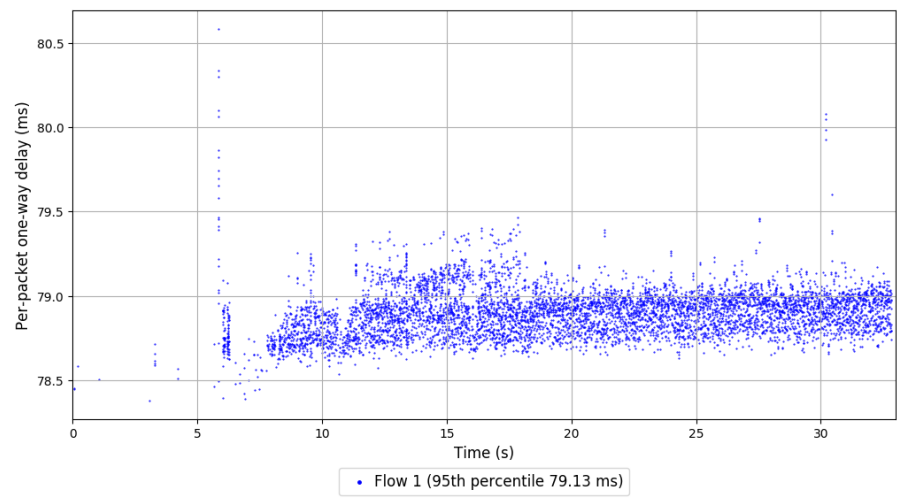
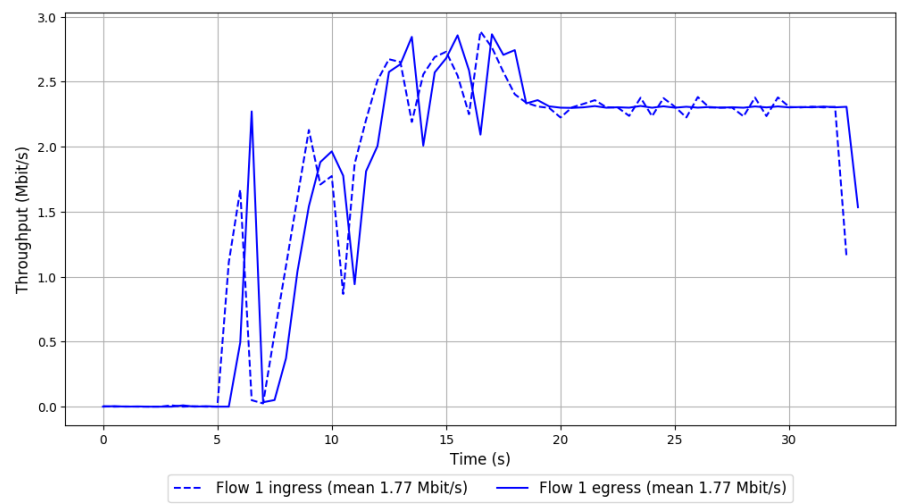
-- Flow 1:

Average throughput: 1.77 Mbit/s

95th percentile per-packet one-way delay: 79.127 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link





Run 4: Statistics of WebRTC media

Start at: 2018-11-02 19:14:42

End at: 2018-11-02 19:15:12

Local clock offset: -0.263 ms

Remote clock offset: 2.427 ms

# Below is generated by plot.py at 2018-11-02 19:58:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 83.122 ms

Loss rate: 0.07%

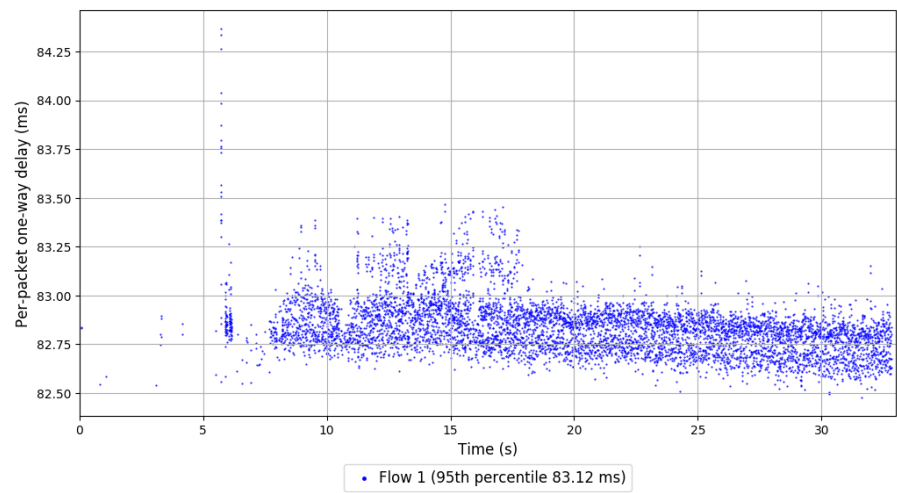
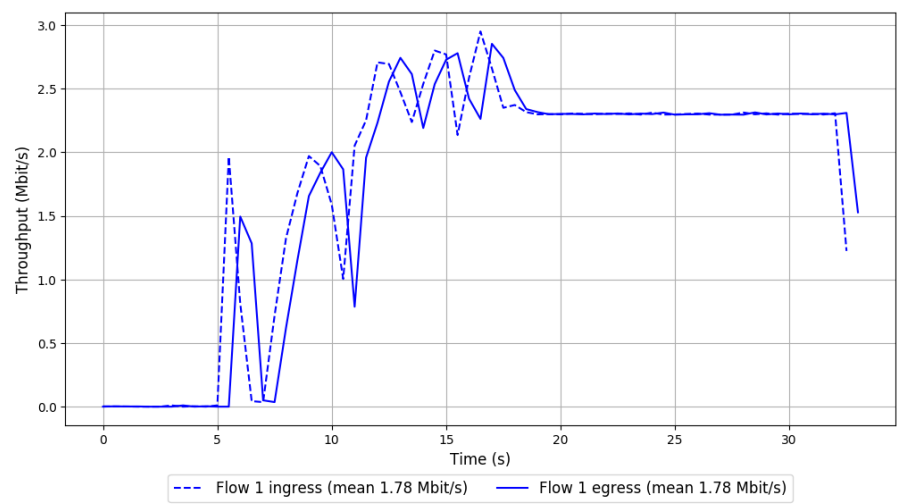
-- Flow 1:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 83.122 ms

Loss rate: 0.07%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-02 19:35:45

End at: 2018-11-02 19:36:15

Local clock offset: -4.4 ms

Remote clock offset: 1.834 ms

# Below is generated by plot.py at 2018-11-02 19:58:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.71 Mbit/s

95th percentile per-packet one-way delay: 81.010 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.71 Mbit/s

95th percentile per-packet one-way delay: 81.010 ms

Loss rate: 0.00%

## Run 5: Report of WebRTC media — Data Link

