

## Pantheon Report

Generated at 2017-09-22 09:27:56 (UTC).

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

Repeated the test of 13 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

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

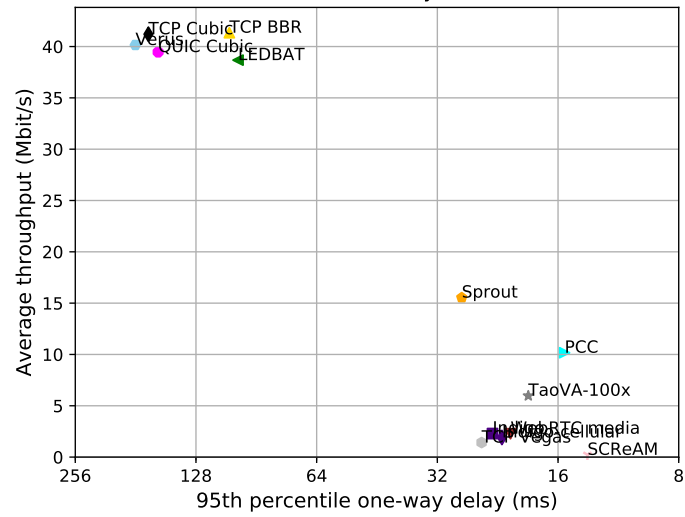
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo\_fast**).

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

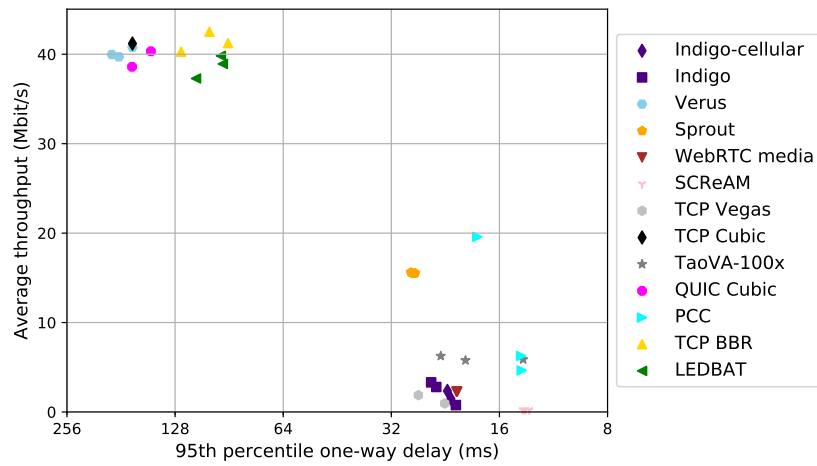
Git summary:

```
branch: indigos @ 46c7c812d4acb71eea4f5fb0b03b3657cea3062f
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fabb936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaaeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from AWS California 1 Ethernet to Stanford ppp0, 3 runs of 30s each per scheme  
(mean of all runs by scheme)



test from AWS California 1 Ethernet to Stanford ppp0, 3 runs of 30s each per scheme



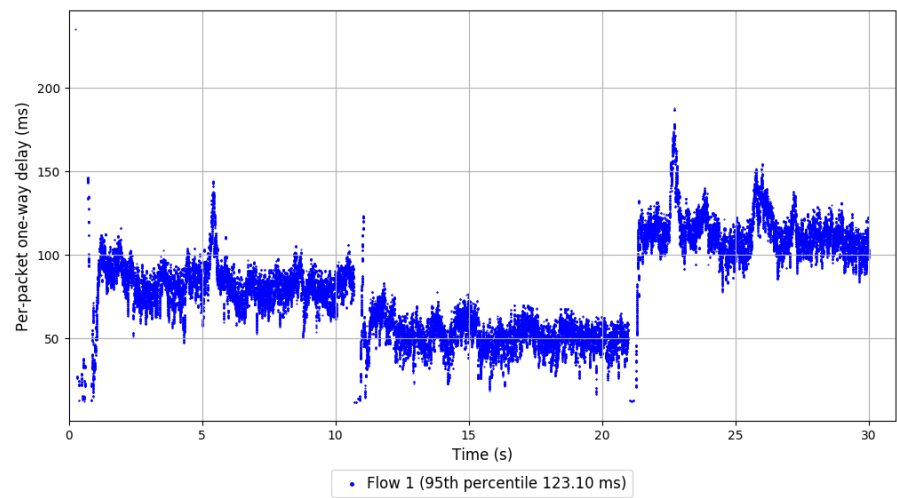
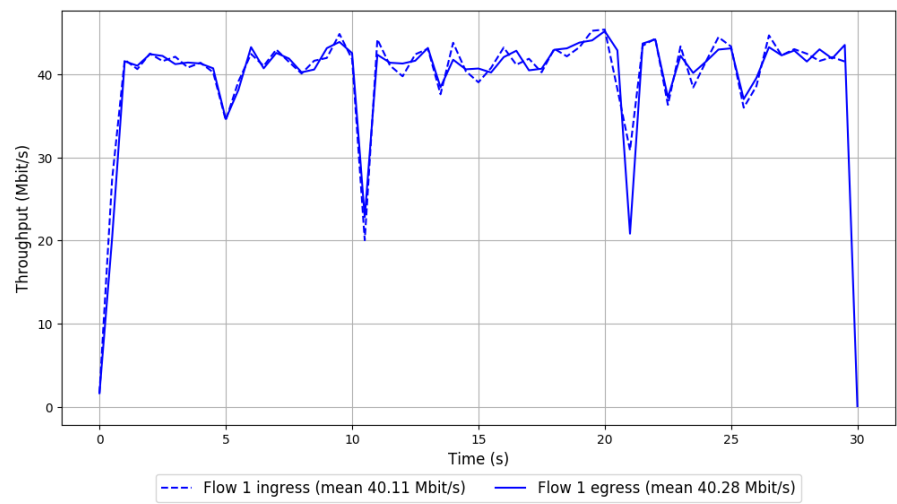
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	41.35	105.66	0.18
TCP Cubic	1	41.20	168.23	0.54
LEDBAT	3	38.68	100.54	0.27
PCC	3	10.17	15.41	0.00
QUIC Cubic	2	39.47	159.07	0.48
SCReAM	3	0.22	13.52	0.00
WebRTC media	3	2.27	21.02	0.00
Sprout	3	15.54	27.82	0.00
TaoVA-100x	3	5.97	18.98	0.00
TCP Vegas	2	1.42	24.82	0.00
Verus	3	40.15	181.25	3.93
Indigo	3	2.29	23.31	0.00
Indigo-cellular	2	1.92	22.08	0.03

Run 1: Statistics of TCP BBR

Start at: 2017-09-22 08:39:42  
End at: 2017-09-22 08:40:12  
Local clock offset: -1.473 ms  
Remote clock offset: -2.484 ms

# Below is generated by plot.py at 2017-09-22 09:27:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 40.28 Mbit/s  
95th percentile per-packet one-way delay: 123.104 ms  
Loss rate: 0.30%  
-- Flow 1:  
Average throughput: 40.28 Mbit/s  
95th percentile per-packet one-way delay: 123.104 ms  
Loss rate: 0.30%

Run 1: Report of TCP BBR — Data Link

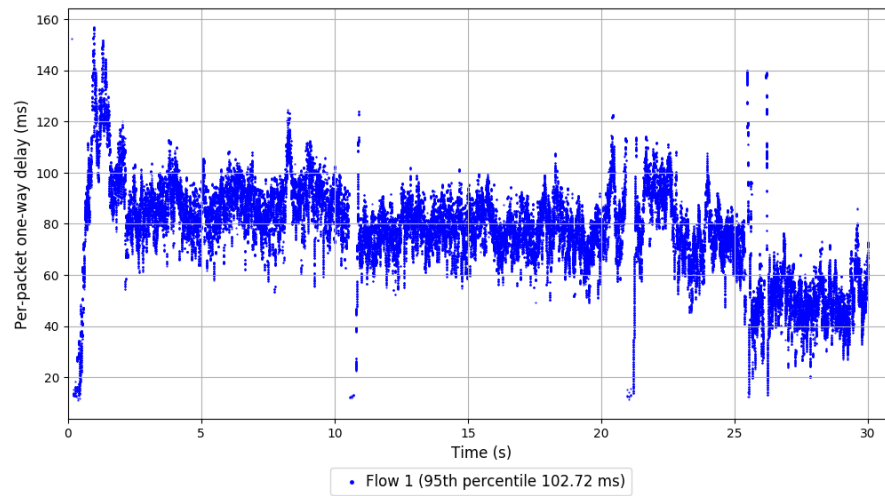
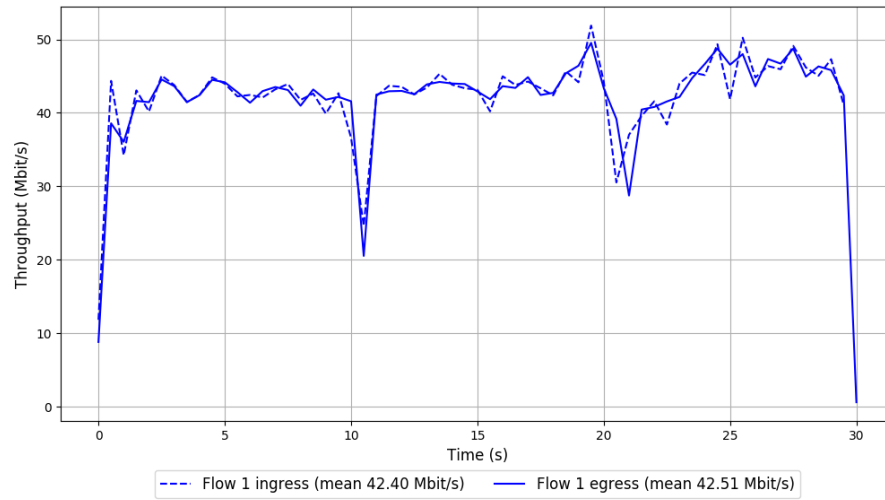


Run 2: Statistics of TCP BBR

Start at: 2017-09-22 08:55:04  
End at: 2017-09-22 08:55:34  
Local clock offset: -1.464 ms  
Remote clock offset: -2.507 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 42.51 Mbit/s  
95th percentile per-packet one-way delay: 102.719 ms  
Loss rate: 0.14%  
-- Flow 1:  
Average throughput: 42.51 Mbit/s  
95th percentile per-packet one-way delay: 102.719 ms  
Loss rate: 0.14%

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



Run 3: Statistics of TCP BBR

Start at: 2017-09-22 09:10:28

End at: 2017-09-22 09:10:58

Local clock offset: -1.469 ms

Remote clock offset: -2.377 ms

# Below is generated by plot.py at 2017-09-22 09:27:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 41.25 Mbit/s

95th percentile per-packet one-way delay: 91.159 ms

Loss rate: 0.10%

-- Flow 1:

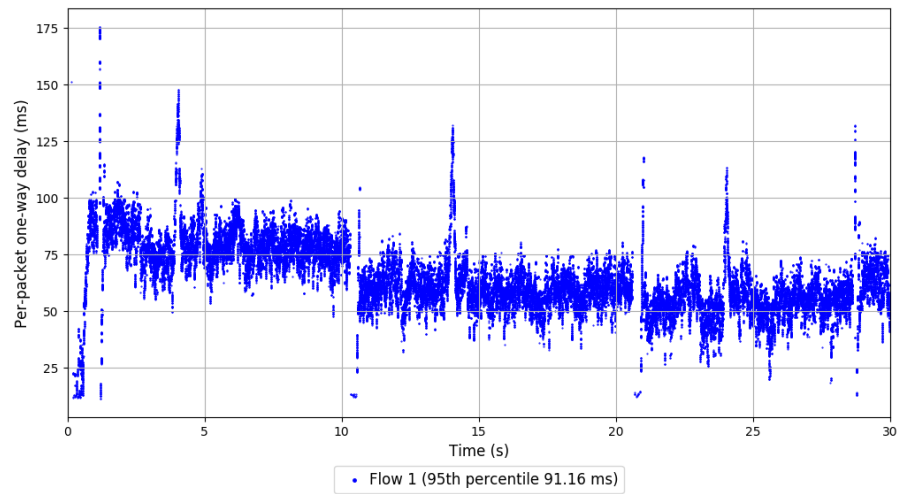
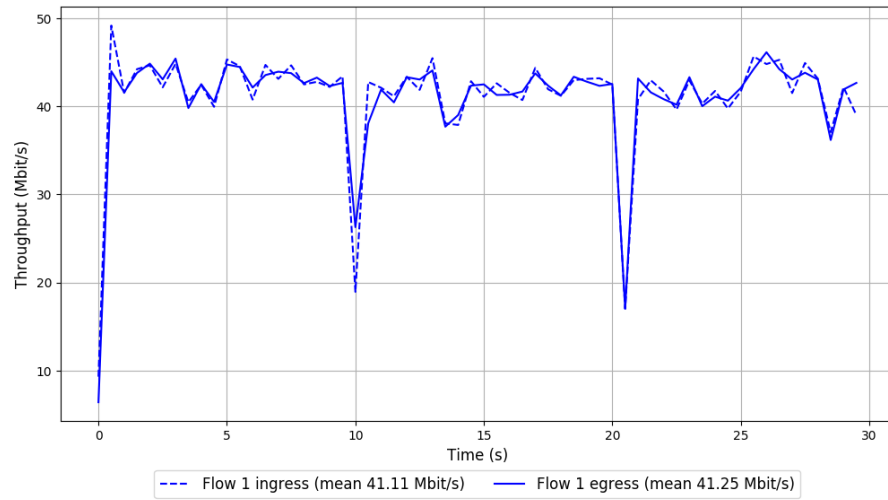
Average throughput: 41.25 Mbit/s

95th percentile per-packet one-way delay: 91.159 ms

Loss rate: 0.10%



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



Run 1: Statistics of TCP Cubic

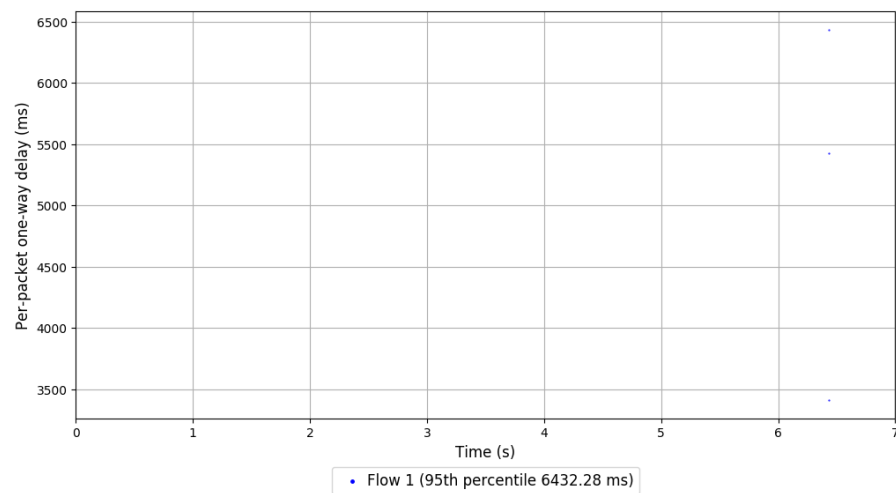
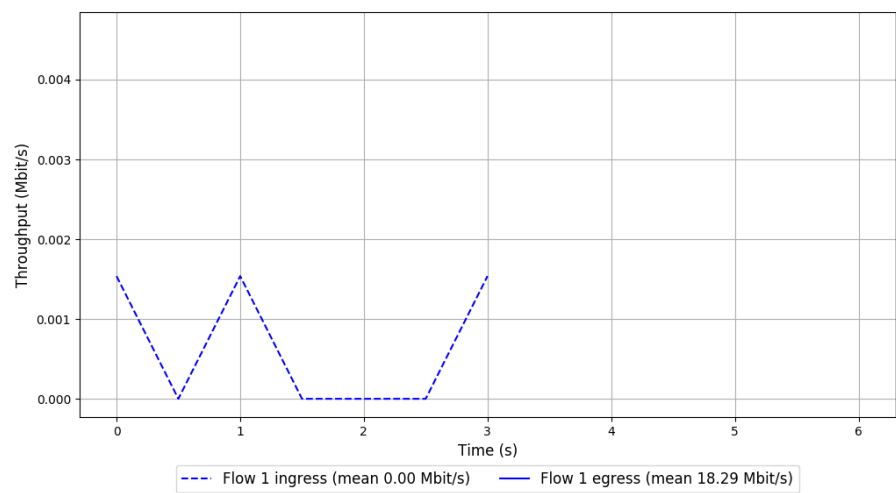
Start at: 2017-09-22 08:49:09

End at: 2017-09-22 08:49:39

Local clock offset: -1.454 ms

Remote clock offset: -2.553 ms

Run 1: Report of TCP Cubic — Data Link

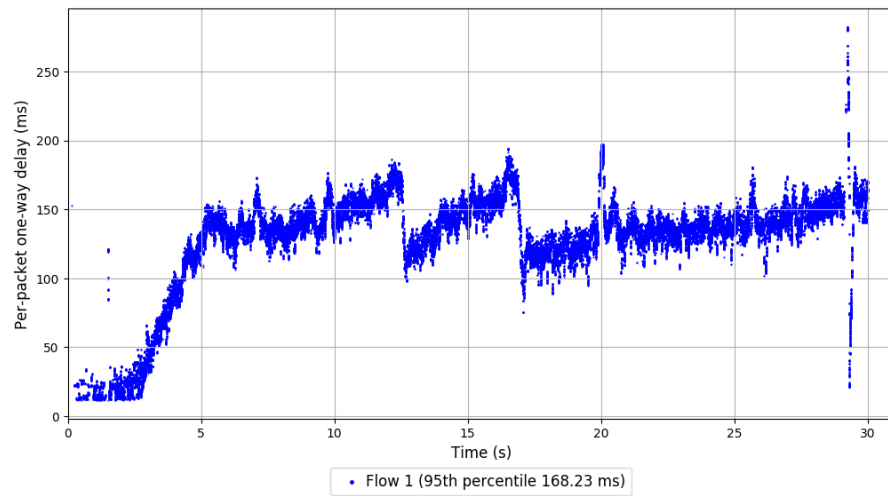
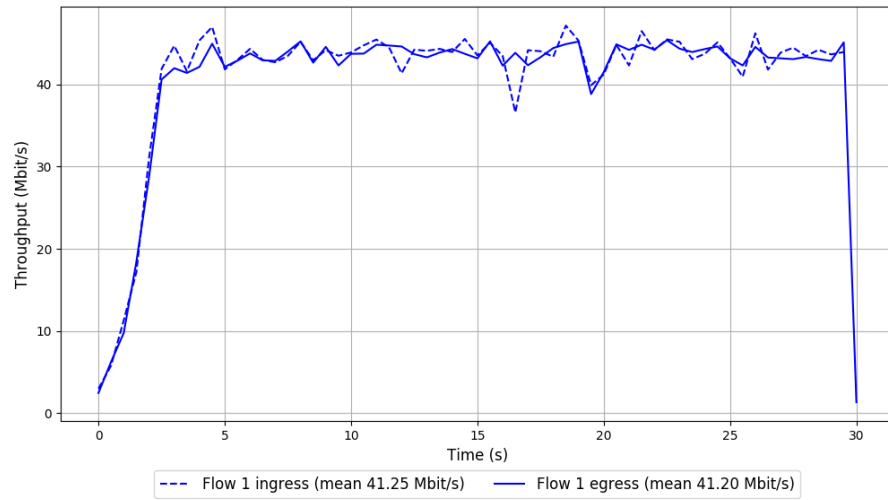


Run 2: Statistics of TCP Cubic

Start at: 2017-09-22 09:04:31  
End at: 2017-09-22 09:05:01  
Local clock offset: -1.45 ms  
Remote clock offset: -2.412 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 41.20 Mbit/s  
95th percentile per-packet one-way delay: 168.232 ms  
Loss rate: 0.54%  
-- Flow 1:  
Average throughput: 41.20 Mbit/s  
95th percentile per-packet one-way delay: 168.232 ms  
Loss rate: 0.54%

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



Run 3: Statistics of TCP Cubic

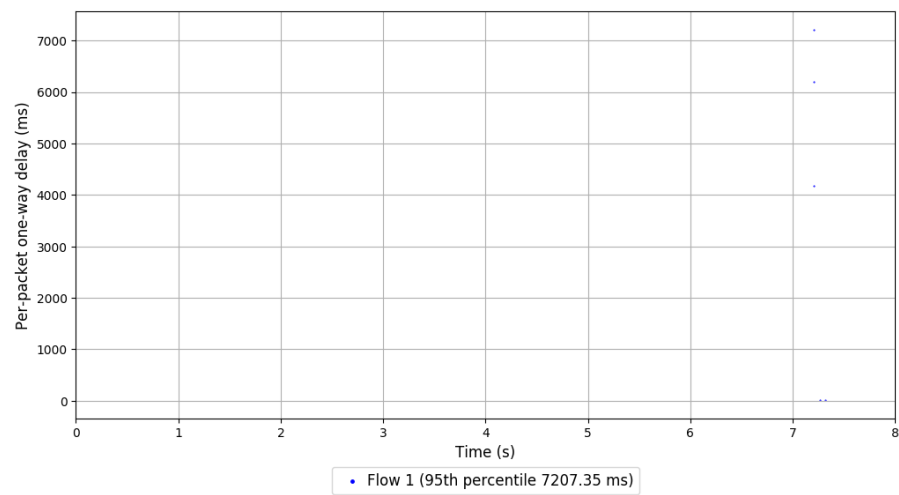
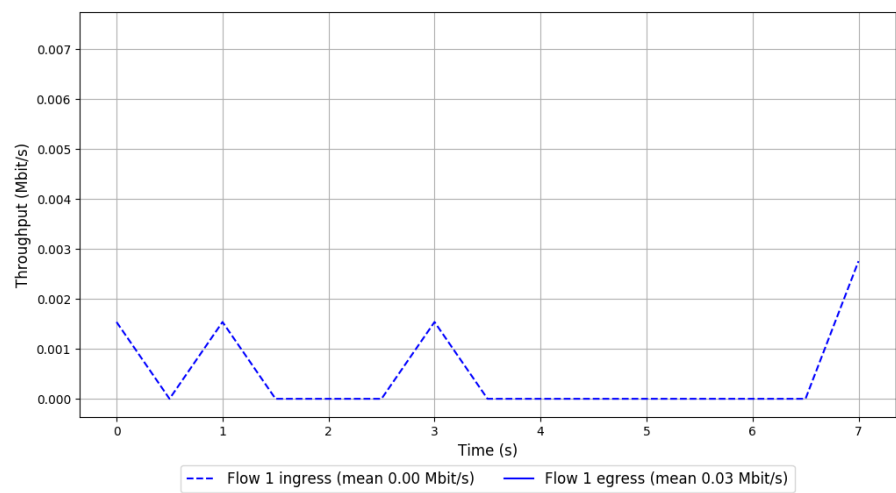
Start at: 2017-09-22 09:19:55

End at: 2017-09-22 09:20:25

Local clock offset: -1.462 ms

Remote clock offset: -2.32 ms

Run 3: Report of TCP Cubic — Data Link



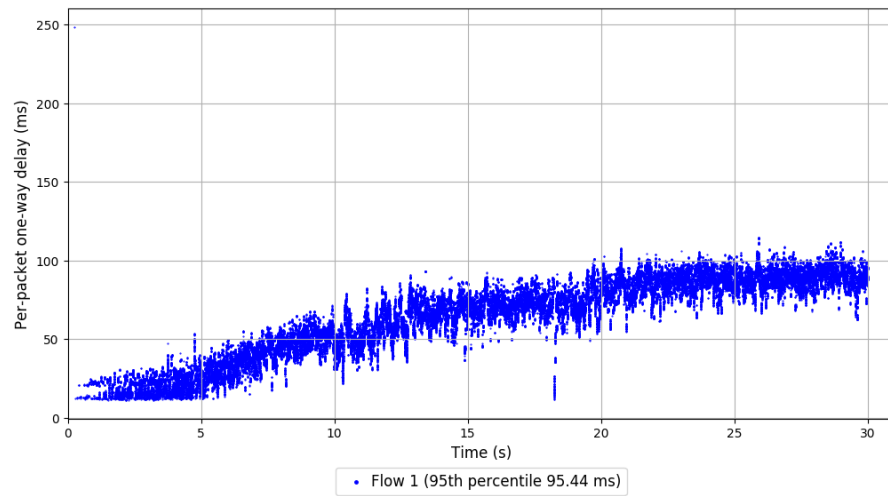
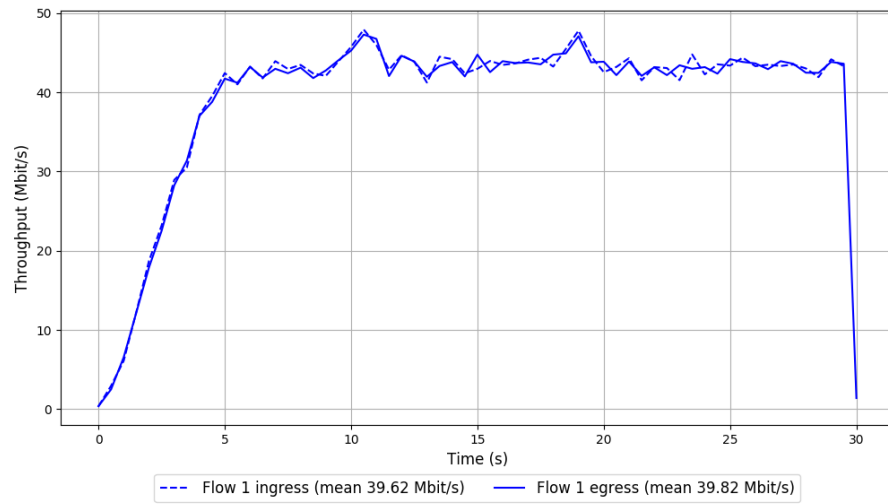
Run 1: Statistics of LEDBAT

Start at: 2017-09-22 08:40:54  
End at: 2017-09-22 08:41:24  
Local clock offset: -1.549 ms  
Remote clock offset: -2.581 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.82 Mbit/s  
95th percentile per-packet one-way delay: 95.445 ms  
Loss rate: 0.25%  
-- Flow 1:  
Average throughput: 39.82 Mbit/s  
95th percentile per-packet one-way delay: 95.445 ms  
Loss rate: 0.25%



# Run 1: Report of LEDBAT — Data Link

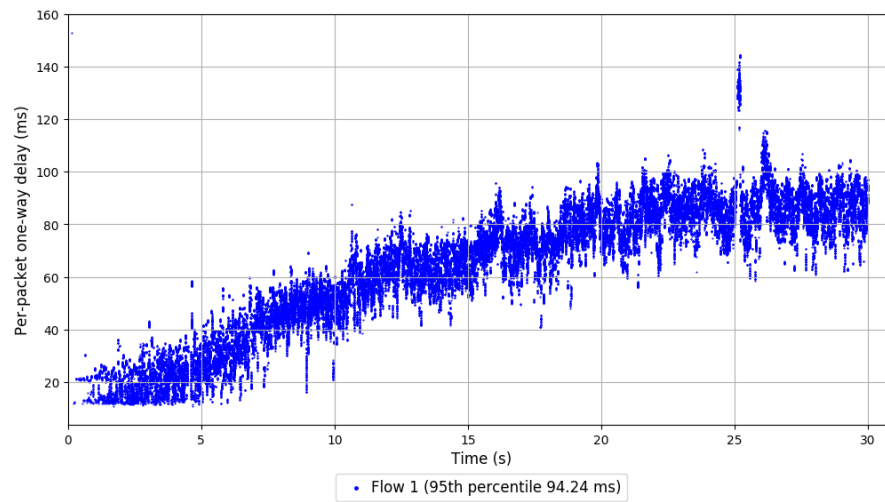
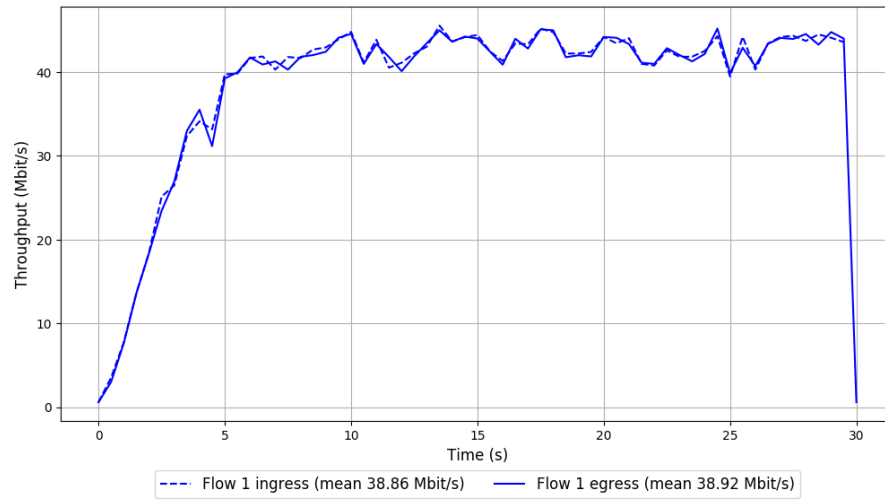


Run 2: Statistics of LEDBAT

Start at: 2017-09-22 08:56:16  
End at: 2017-09-22 08:56:46  
Local clock offset: -1.472 ms  
Remote clock offset: -2.552 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 38.92 Mbit/s  
95th percentile per-packet one-way delay: 94.242 ms  
Loss rate: 0.28%  
-- Flow 1:  
Average throughput: 38.92 Mbit/s  
95th percentile per-packet one-way delay: 94.242 ms  
Loss rate: 0.28%

## Run 2: Report of LEDBAT — Data Link

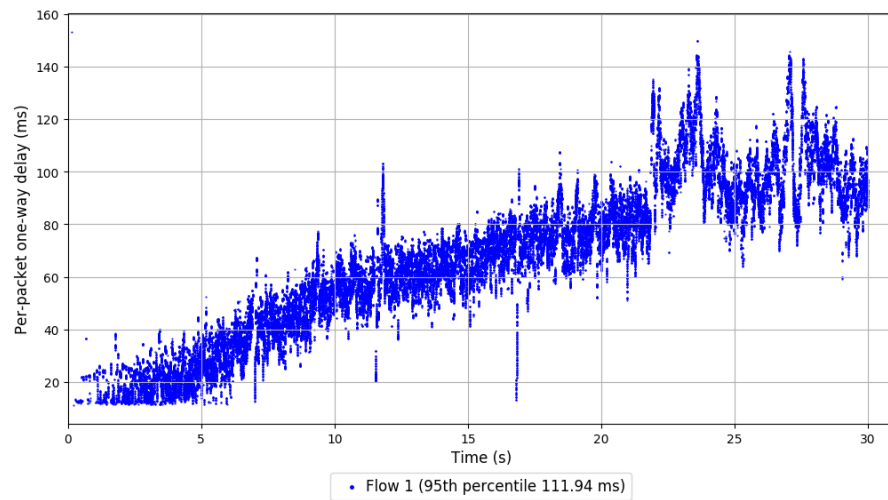
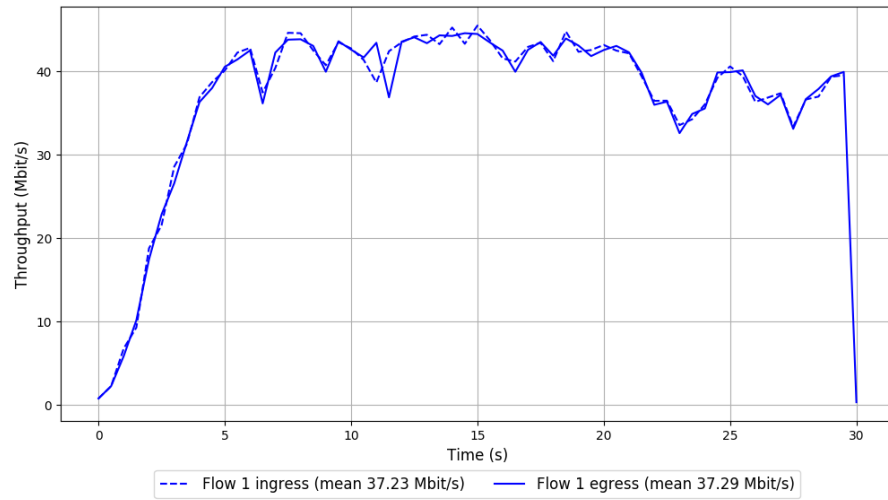


Run 3: Statistics of LEDBAT

Start at: 2017-09-22 09:11:40  
End at: 2017-09-22 09:12:10  
Local clock offset: -1.459 ms  
Remote clock offset: -2.372 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.29 Mbit/s  
95th percentile per-packet one-way delay: 111.944 ms  
Loss rate: 0.28%  
-- Flow 1:  
Average throughput: 37.29 Mbit/s  
95th percentile per-packet one-way delay: 111.944 ms  
Loss rate: 0.28%

### Run 3: Report of LEDBAT — Data Link

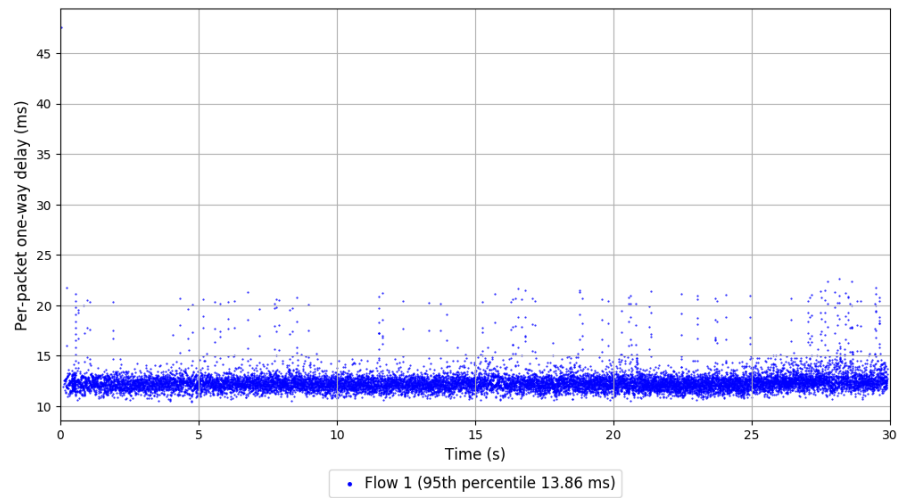
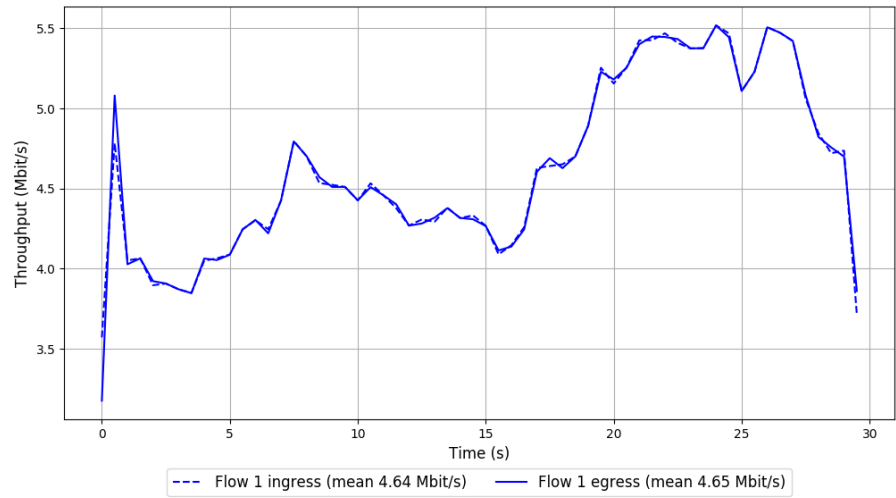


Run 1: Statistics of PCC

Start at: 2017-09-22 08:51:30  
End at: 2017-09-22 08:52:00  
Local clock offset: -1.457 ms  
Remote clock offset: -2.539 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.65 Mbit/s  
95th percentile per-packet one-way delay: 13.864 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 4.65 Mbit/s  
95th percentile per-packet one-way delay: 13.864 ms  
Loss rate: 0.00%

### Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

Start at: 2017-09-22 09:06:55

End at: 2017-09-22 09:07:25

Local clock offset: -1.477 ms

Remote clock offset: -2.43 ms

# Below is generated by plot.py at 2017-09-22 09:27:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.27 Mbit/s

95th percentile per-packet one-way delay: 13.922 ms

Loss rate: 0.00%

-- Flow 1:

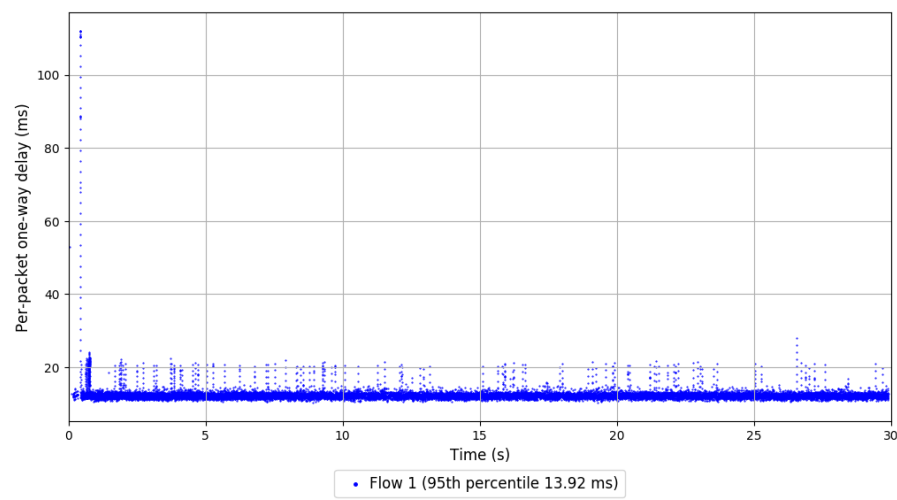
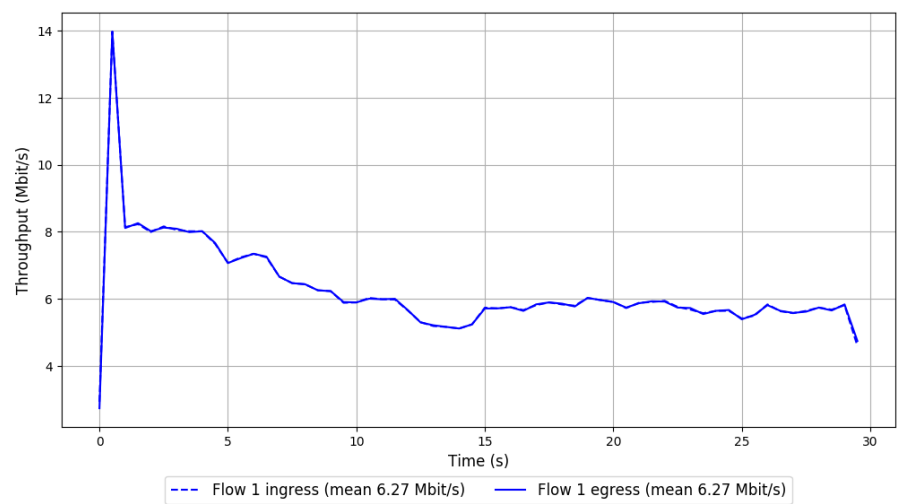
Average throughput: 6.27 Mbit/s

95th percentile per-packet one-way delay: 13.922 ms

Loss rate: 0.00%



Run 2: Report of PCC — Data Link

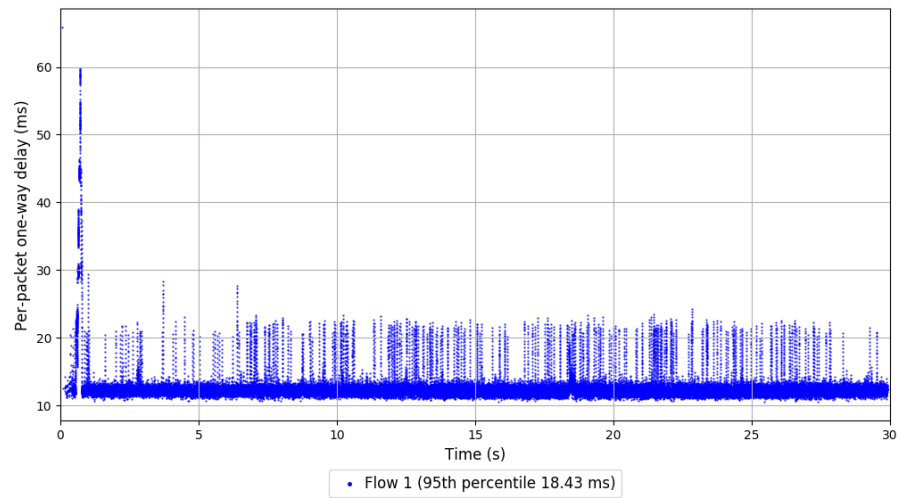
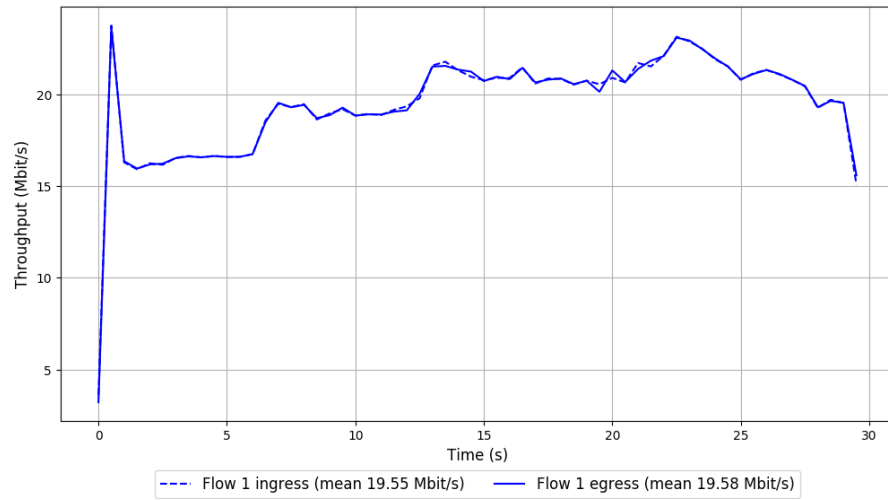


Run 3: Statistics of PCC

Start at: 2017-09-22 09:22:18  
End at: 2017-09-22 09:22:48  
Local clock offset: -1.327 ms  
Remote clock offset: -2.278 ms

# Below is generated by plot.py at 2017-09-22 09:27:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 19.58 Mbit/s  
95th percentile per-packet one-way delay: 18.435 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 19.58 Mbit/s  
95th percentile per-packet one-way delay: 18.435 ms  
Loss rate: 0.00%

### Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

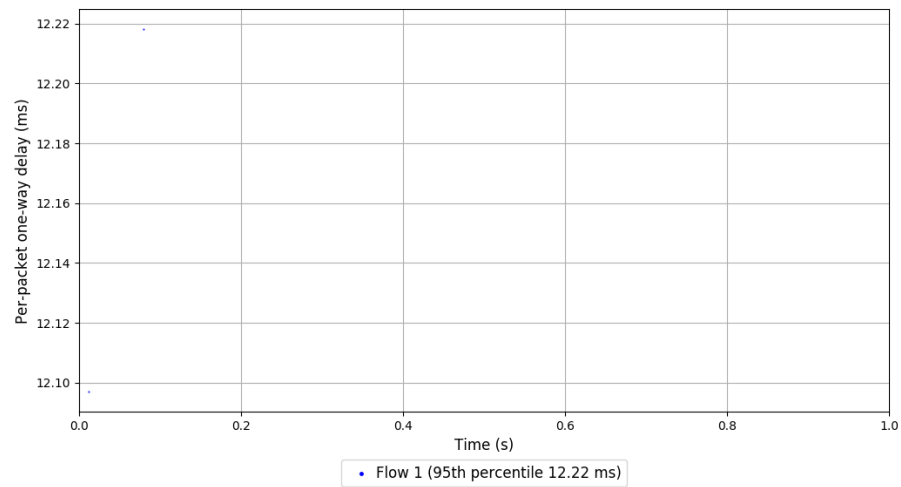
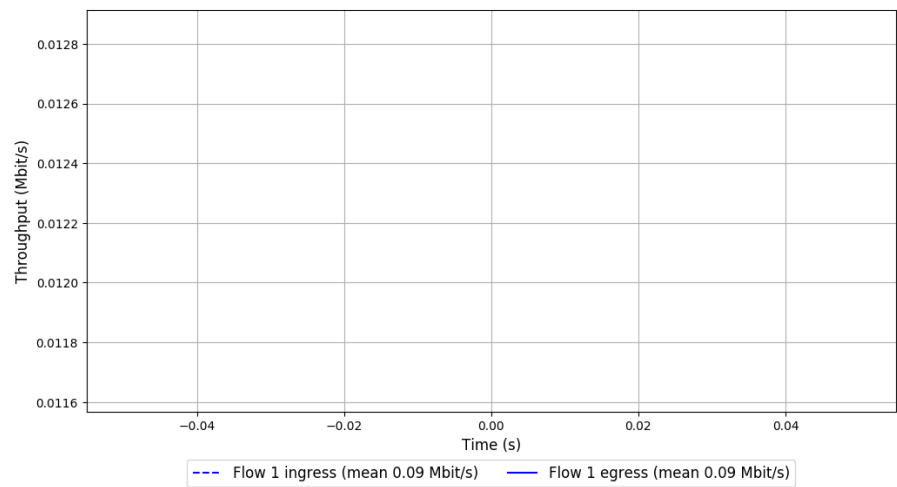
Start at: 2017-09-22 08:50:19

End at: 2017-09-22 08:50:49

Local clock offset: -1.465 ms

Remote clock offset: -2.54 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2017-09-22 09:05:43

End at: 2017-09-22 09:06:13

Local clock offset: -1.464 ms

Remote clock offset: -2.455 ms

# Below is generated by plot.py at 2017-09-22 09:27:45

# Datalink statistics

-- Total of 1 flow:

Average throughput: 40.33 Mbit/s

95th percentile per-packet one-way delay: 149.469 ms

Loss rate: 0.47%

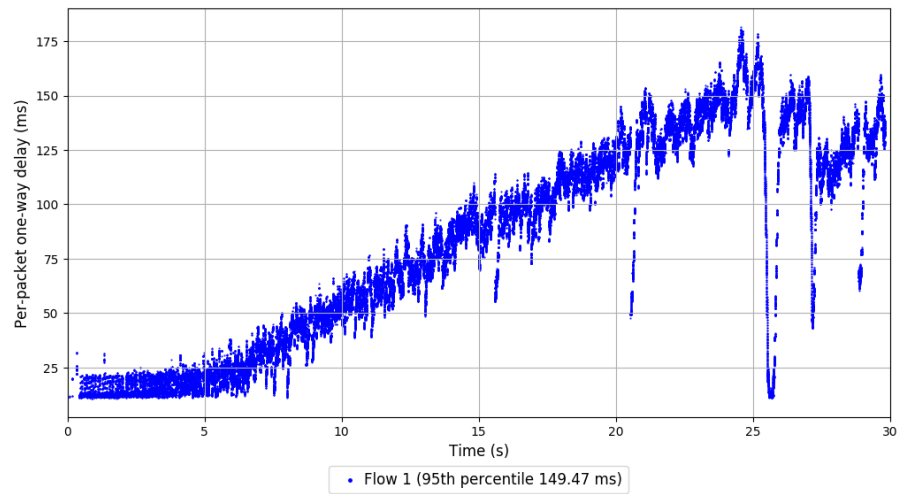
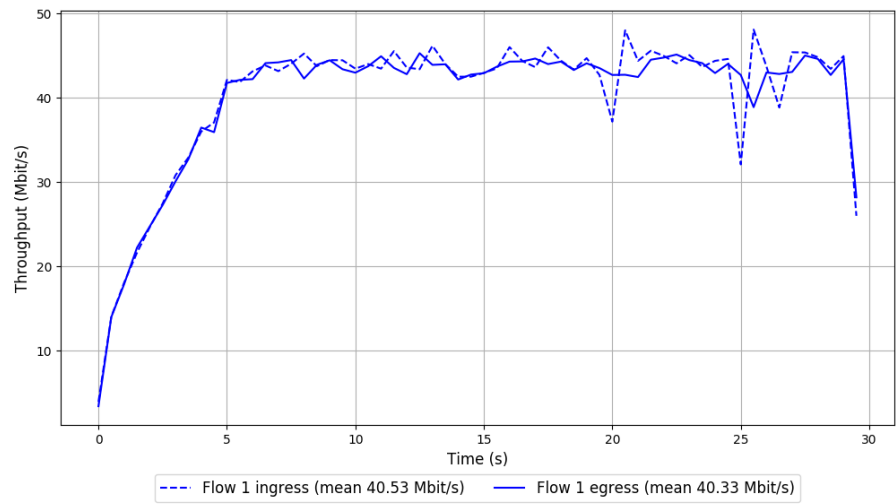
-- Flow 1:

Average throughput: 40.33 Mbit/s

95th percentile per-packet one-way delay: 149.469 ms

Loss rate: 0.47%

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



Run 3: Statistics of QUIC Cubic

Start at: 2017-09-22 09:21:06

End at: 2017-09-22 09:21:36

Local clock offset: -1.373 ms

Remote clock offset: -2.29 ms

# Below is generated by plot.py at 2017-09-22 09:27:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 38.60 Mbit/s

95th percentile per-packet one-way delay: 168.672 ms

Loss rate: 0.49%

-- Flow 1:

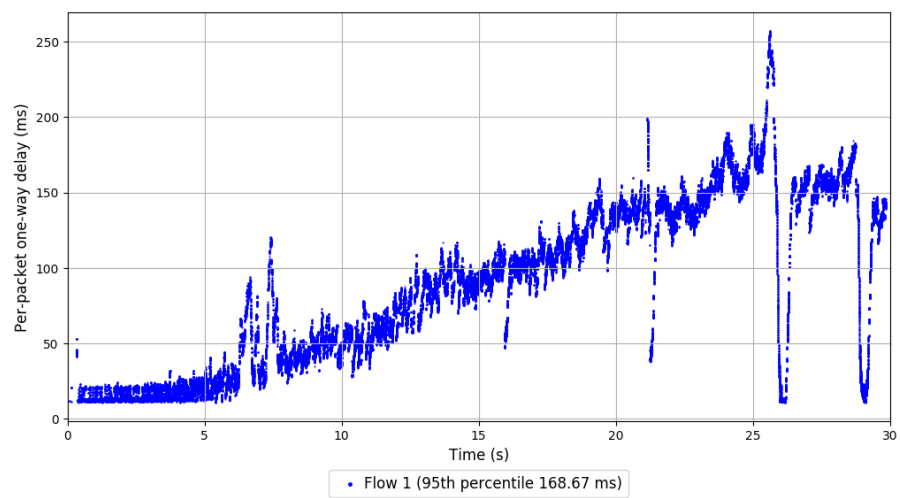
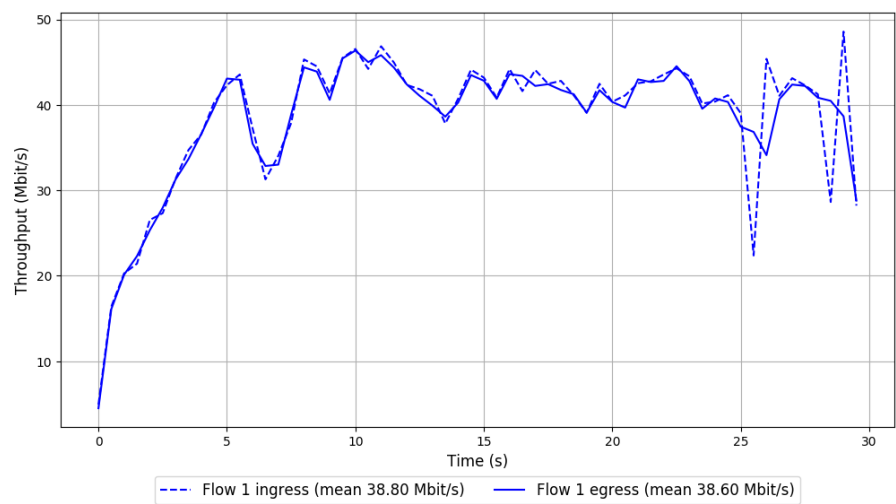
Average throughput: 38.60 Mbit/s

95th percentile per-packet one-way delay: 168.672 ms

Loss rate: 0.49%



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

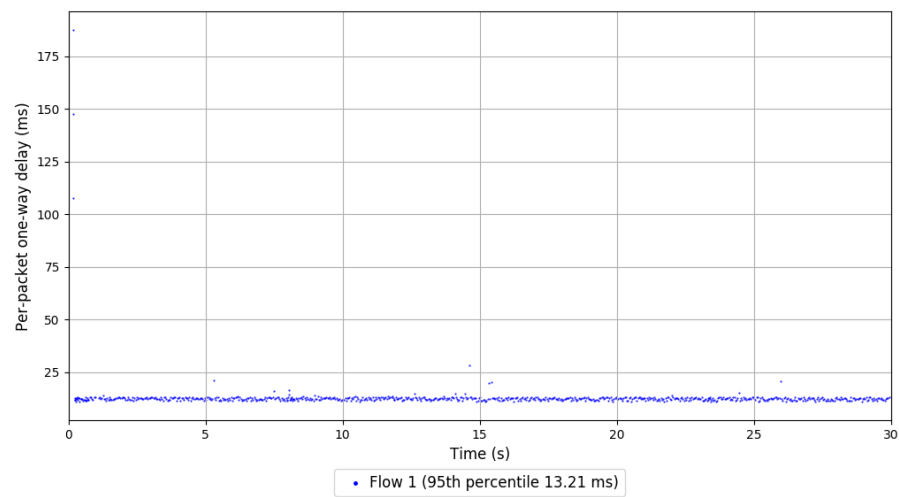
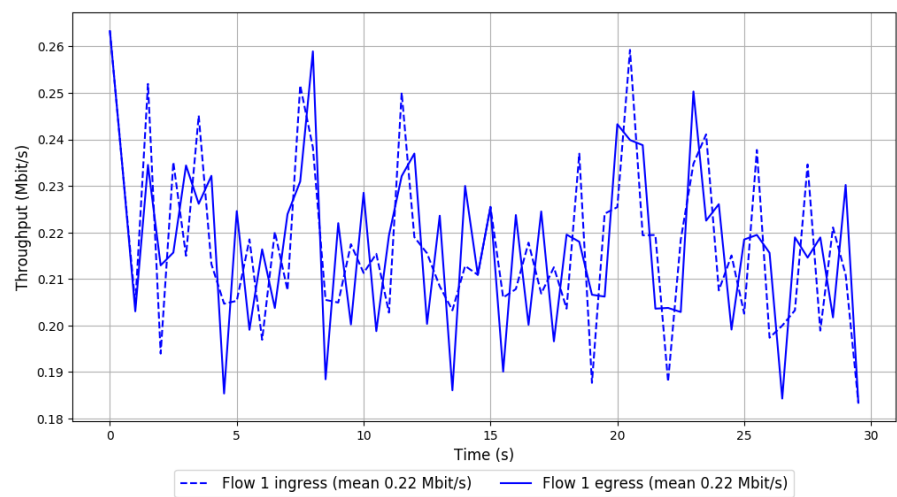


Run 1: Statistics of SCReAM

Start at: 2017-09-22 08:52:41  
End at: 2017-09-22 08:53:11  
Local clock offset: -1.458 ms  
Remote clock offset: -2.468 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 13.214 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 13.214 ms  
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2017-09-22 09:08:05

End at: 2017-09-22 09:08:35

Local clock offset: -1.54 ms

Remote clock offset: -2.38 ms

# Below is generated by plot.py at 2017-09-22 09:27:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 13.552 ms

Loss rate: 0.00%

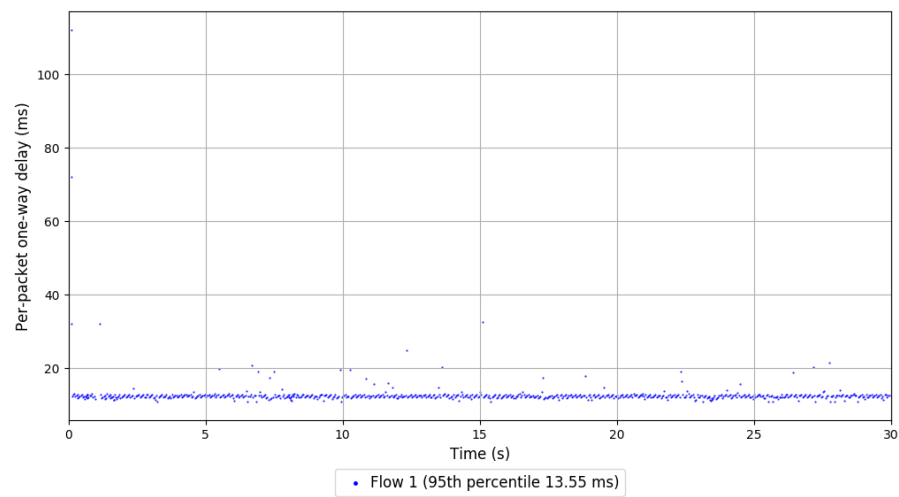
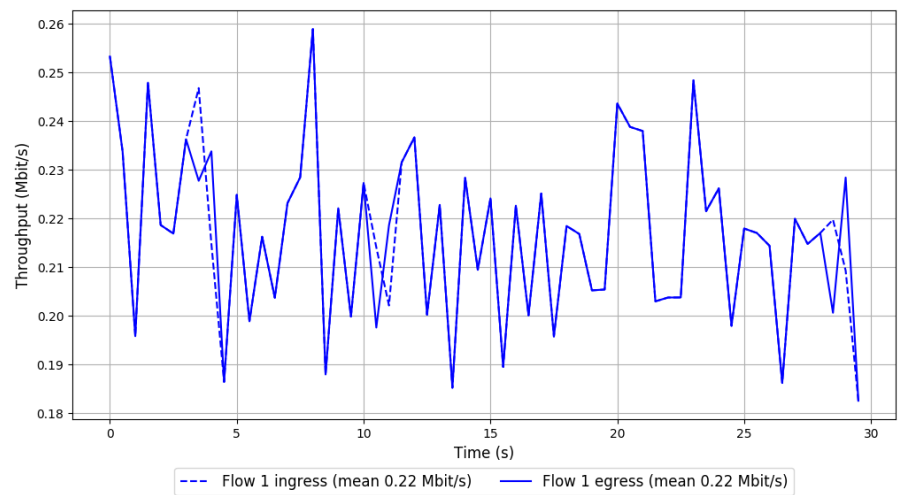
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 13.552 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

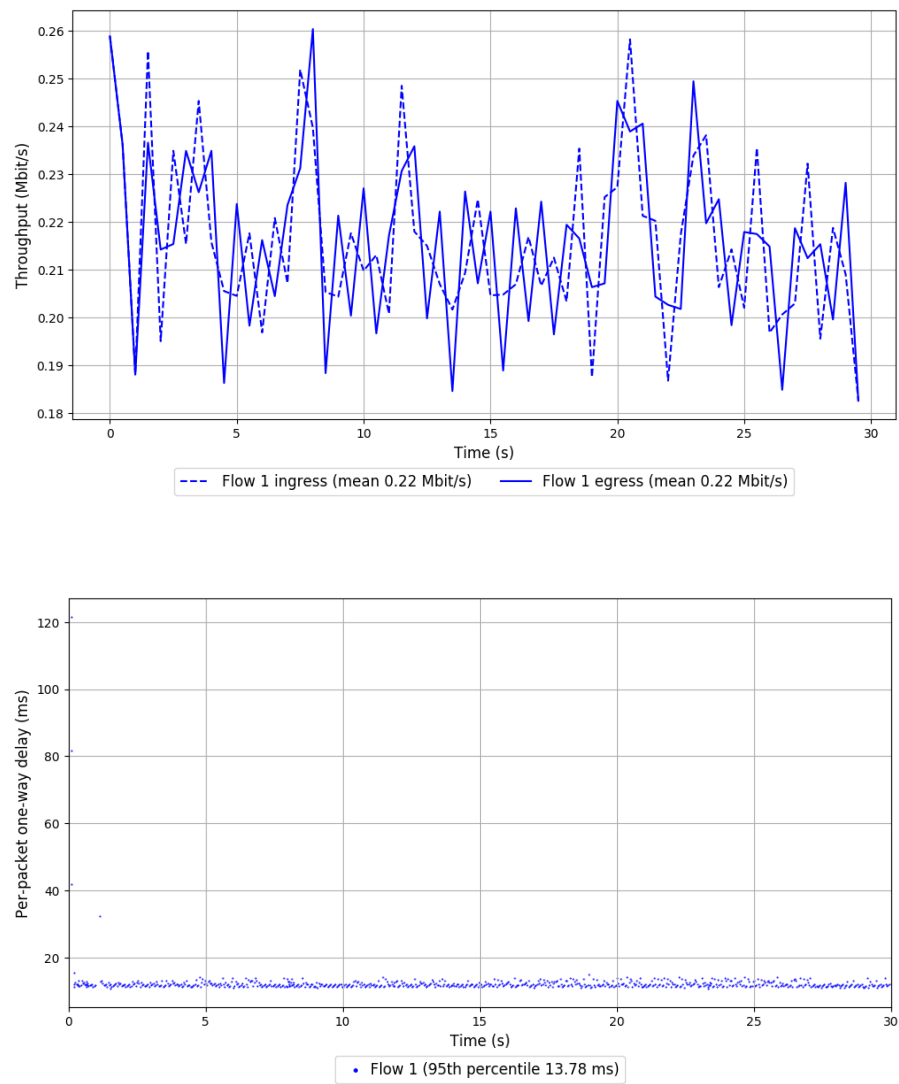


Run 3: Statistics of SCReAM

Start at: 2017-09-22 09:23:29  
End at: 2017-09-22 09:23:59  
Local clock offset: -1.321 ms  
Remote clock offset: -2.259 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 13.782 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 13.782 ms  
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



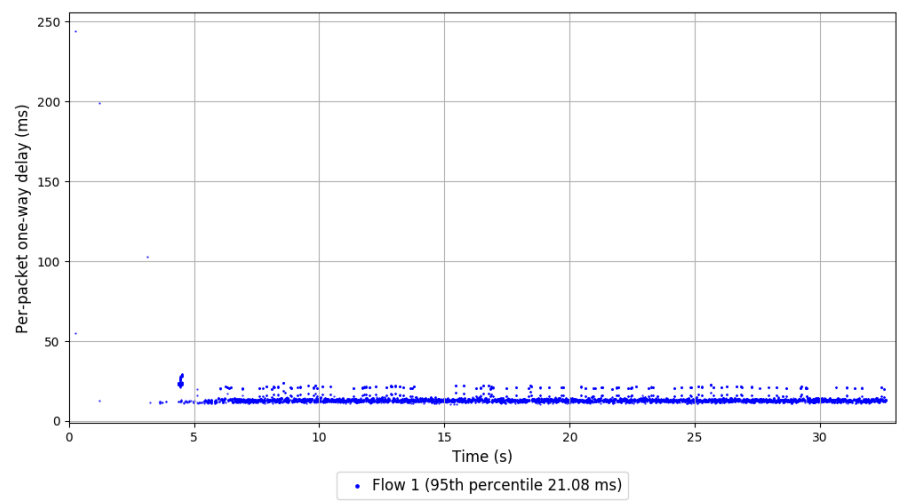
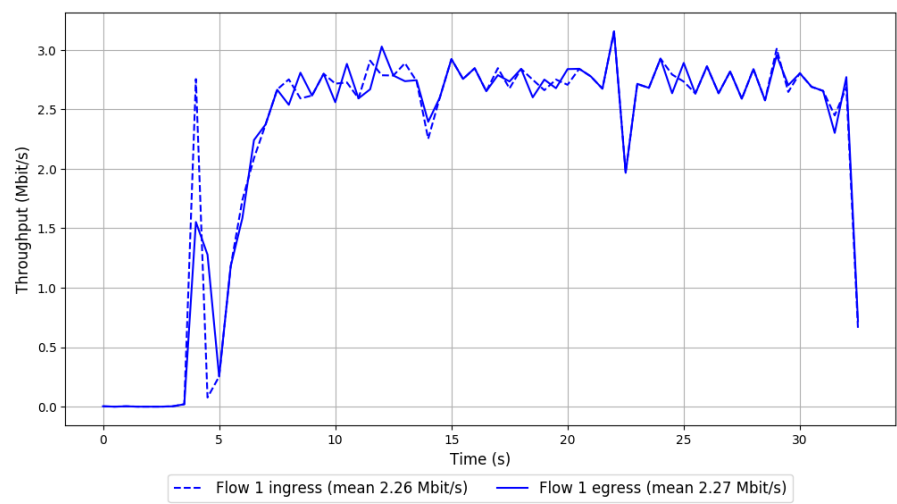
```
Run 1: Statistics of WebRTC media

Start at: 2017-09-22 08:46:48
End at: 2017-09-22 08:47:18
Local clock offset: -1.554 ms
Remote clock offset: -2.505 ms

# Below is generated by plot.py at 2017-09-22 09:27:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 21.079 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 21.079 ms
Loss rate: 0.00%
```



Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2017-09-22 09:02:10

End at: 2017-09-22 09:02:40

Local clock offset: -1.47 ms

Remote clock offset: -2.489 ms

# Below is generated by plot.py at 2017-09-22 09:27:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 21.025 ms

Loss rate: 0.00%

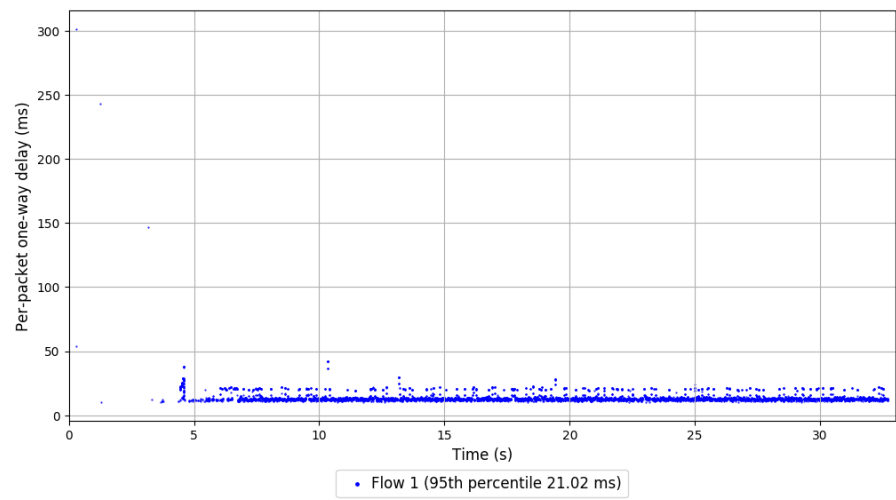
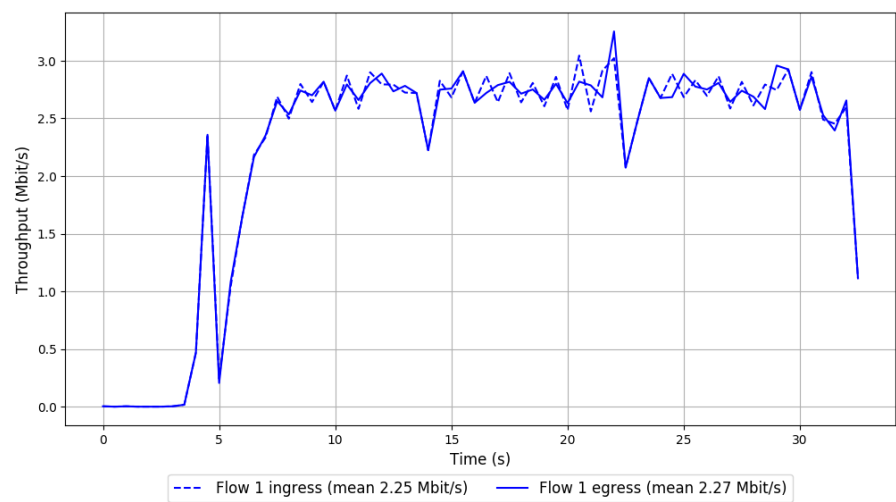
-- Flow 1:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 21.025 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

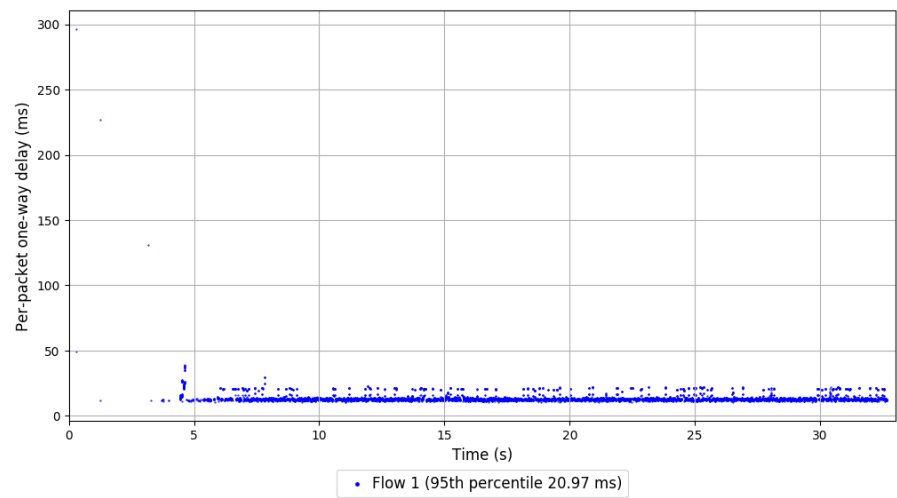
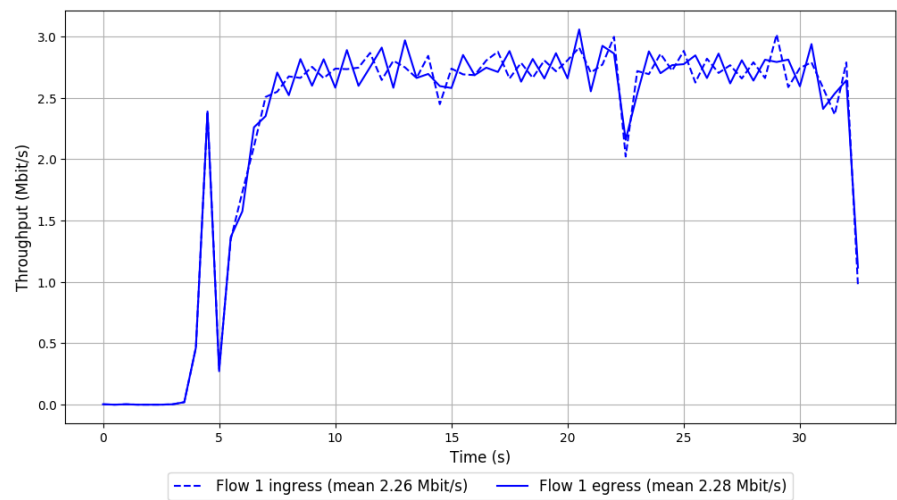


Run 3: Statistics of WebRTC media

Start at: 2017-09-22 09:17:35  
End at: 2017-09-22 09:18:05  
Local clock offset: -1.504 ms  
Remote clock offset: -2.329 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.28 Mbit/s  
95th percentile per-packet one-way delay: 20.970 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.28 Mbit/s  
95th percentile per-packet one-way delay: 20.970 ms  
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

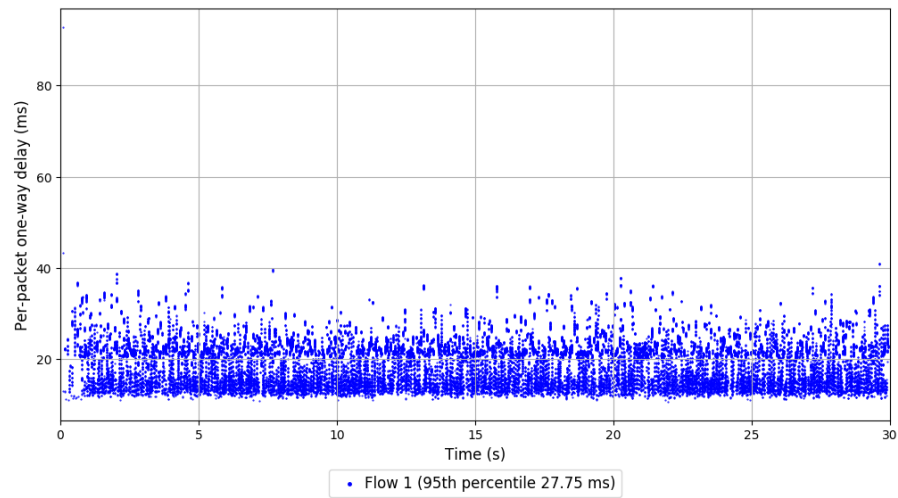
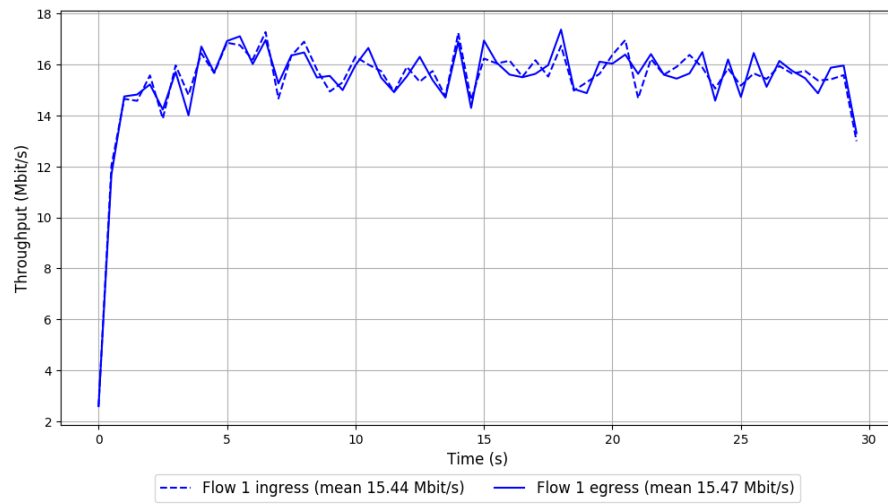


Run 1: Statistics of Sprout

Start at: 2017-09-22 08:45:38  
End at: 2017-09-22 08:46:08  
Local clock offset: -1.456 ms  
Remote clock offset: -2.569 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 15.47 Mbit/s  
95th percentile per-packet one-way delay: 27.751 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 15.47 Mbit/s  
95th percentile per-packet one-way delay: 27.751 ms  
Loss rate: 0.00%

## Run 1: Report of Sprout — Data Link



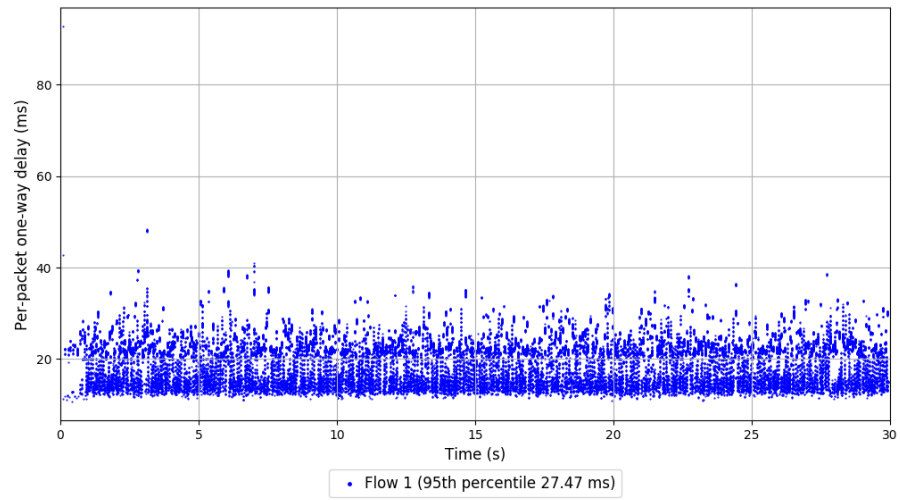
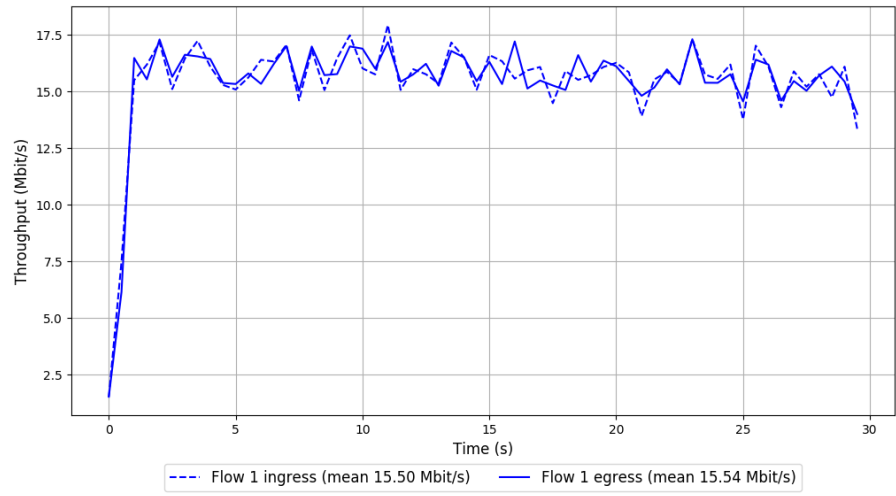
Run 2: Statistics of Sprout

Start at: 2017-09-22 09:01:00  
End at: 2017-09-22 09:01:30  
Local clock offset: -1.559 ms  
Remote clock offset: -2.511 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 15.54 Mbit/s  
95th percentile per-packet one-way delay: 27.468 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 15.54 Mbit/s  
95th percentile per-packet one-way delay: 27.468 ms  
Loss rate: 0.00%



## Run 2: Report of Sprout — Data Link

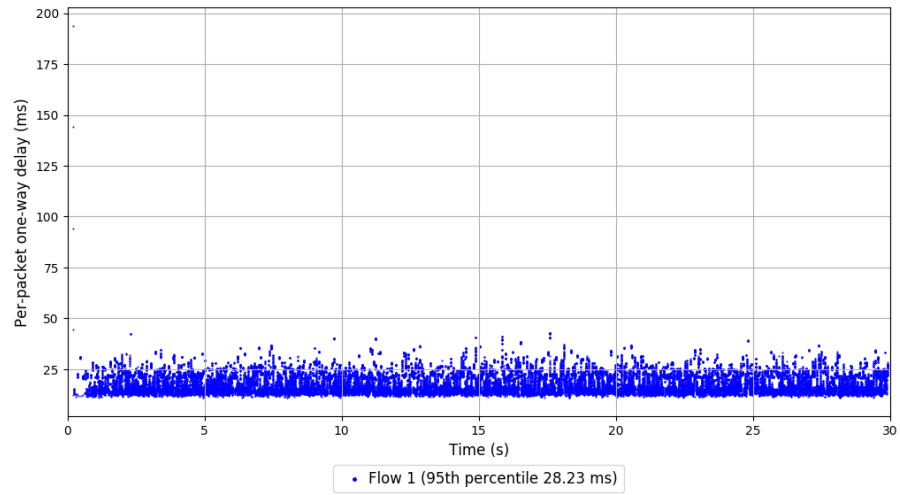
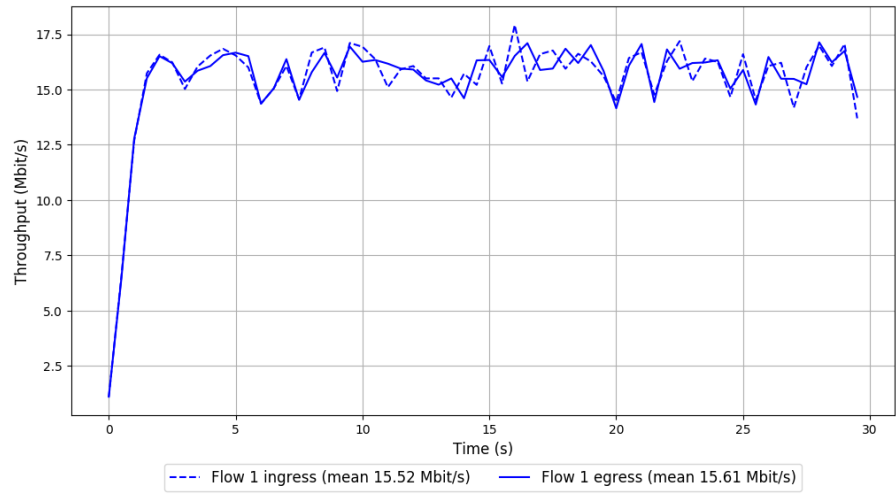


Run 3: Statistics of Sprout

Start at: 2017-09-22 09:16:24  
End at: 2017-09-22 09:16:54  
Local clock offset: -1.43 ms  
Remote clock offset: -2.348 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 15.61 Mbit/s  
95th percentile per-packet one-way delay: 28.234 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 15.61 Mbit/s  
95th percentile per-packet one-way delay: 28.234 ms  
Loss rate: 0.00%

### Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2017-09-22 08:42:06

End at: 2017-09-22 08:42:37

Local clock offset: -1.541 ms

Remote clock offset: -2.475 ms

# Below is generated by plot.py at 2017-09-22 09:27:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 5.78 Mbit/s

95th percentile per-packet one-way delay: 19.889 ms

Loss rate: 0.00%

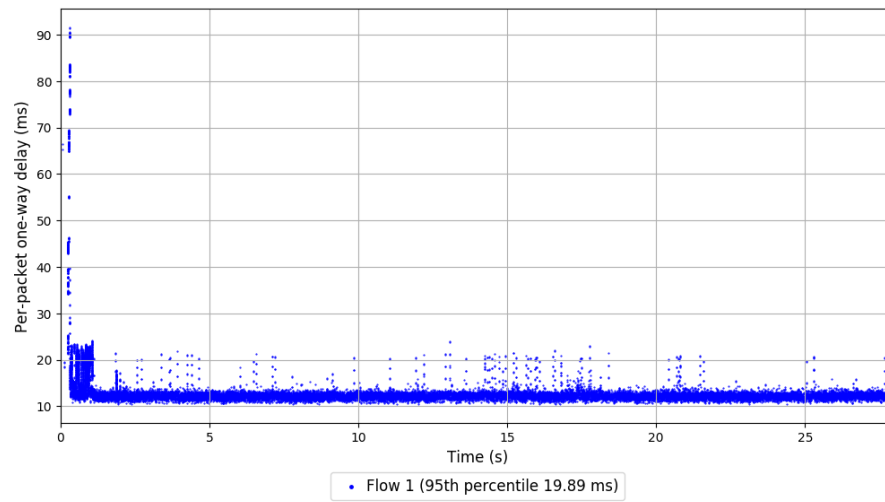
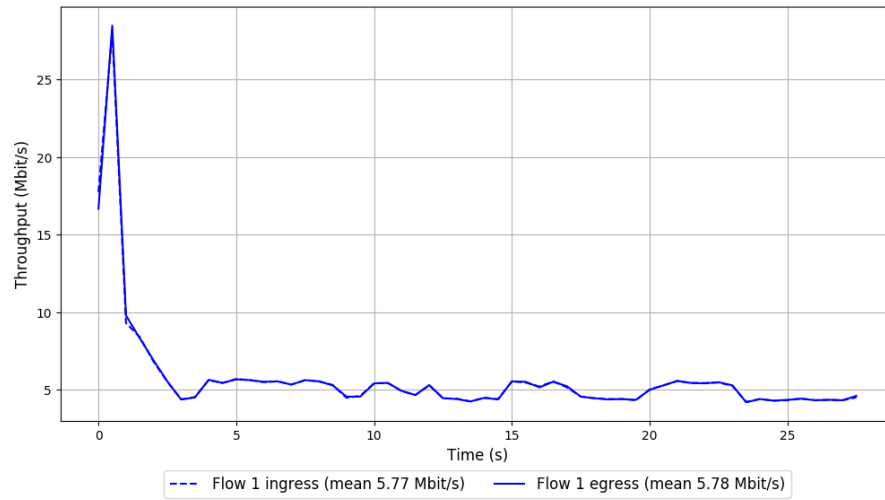
-- Flow 1:

Average throughput: 5.78 Mbit/s

95th percentile per-packet one-way delay: 19.889 ms

Loss rate: 0.00%

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



Run 2: Statistics of TaoVA-100x

Start at: 2017-09-22 08:57:28

End at: 2017-09-22 08:57:58

Local clock offset: -1.557 ms

Remote clock offset: -2.532 ms

# Below is generated by plot.py at 2017-09-22 09:27:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.26 Mbit/s

95th percentile per-packet one-way delay: 23.309 ms

Loss rate: 0.00%

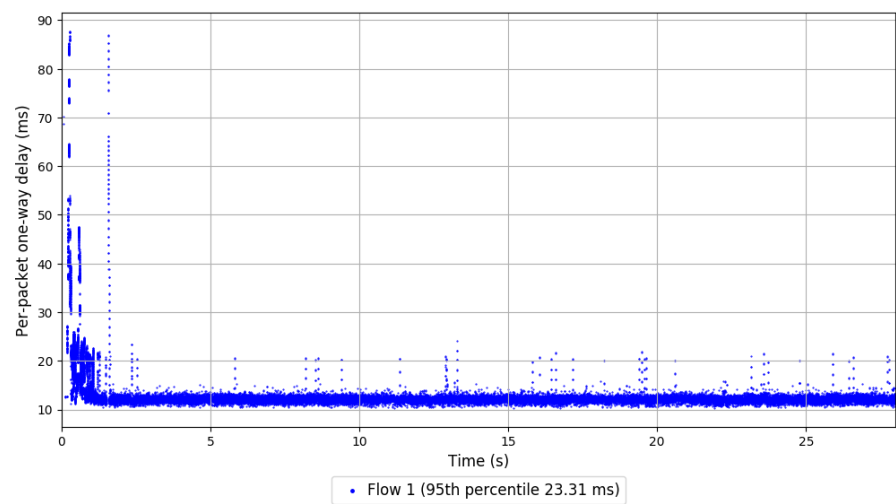
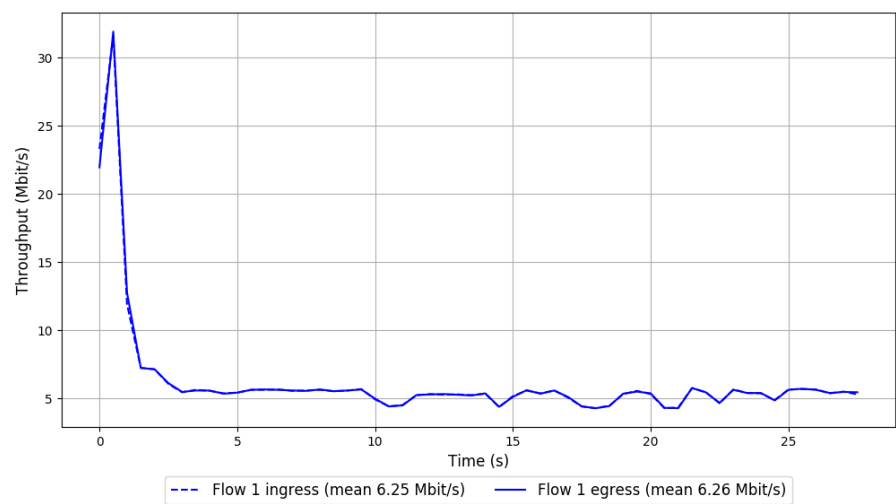
-- Flow 1:

Average throughput: 6.26 Mbit/s

95th percentile per-packet one-way delay: 23.309 ms

Loss rate: 0.00%

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



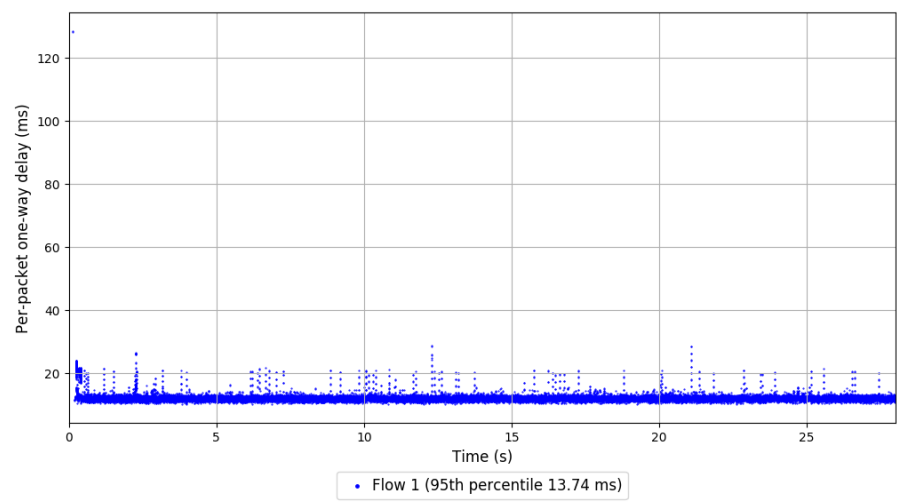
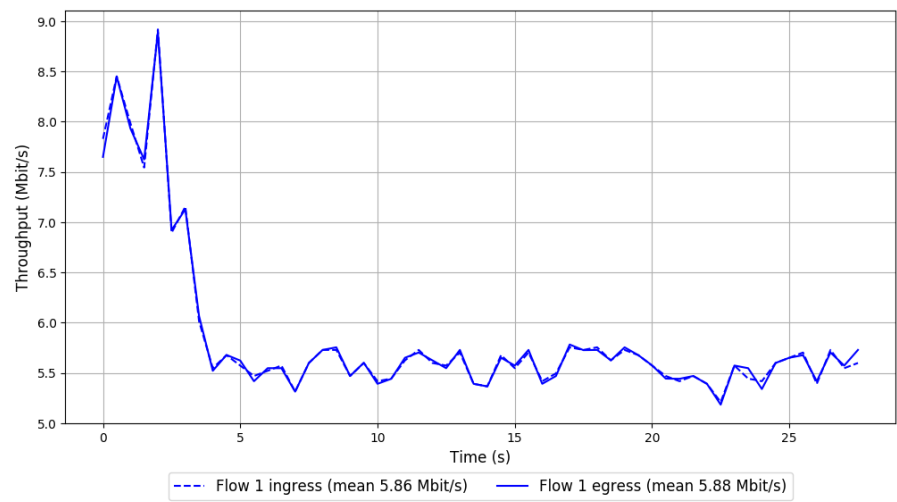
Run 3: Statistics of TaoVA-100x

Start at: 2017-09-22 09:12:53  
End at: 2017-09-22 09:13:23  
Local clock offset: -1.528 ms  
Remote clock offset: -2.377 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 5.88 Mbit/s  
95th percentile per-packet one-way delay: 13.744 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 5.88 Mbit/s  
95th percentile per-packet one-way delay: 13.744 ms  
Loss rate: 0.00%



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

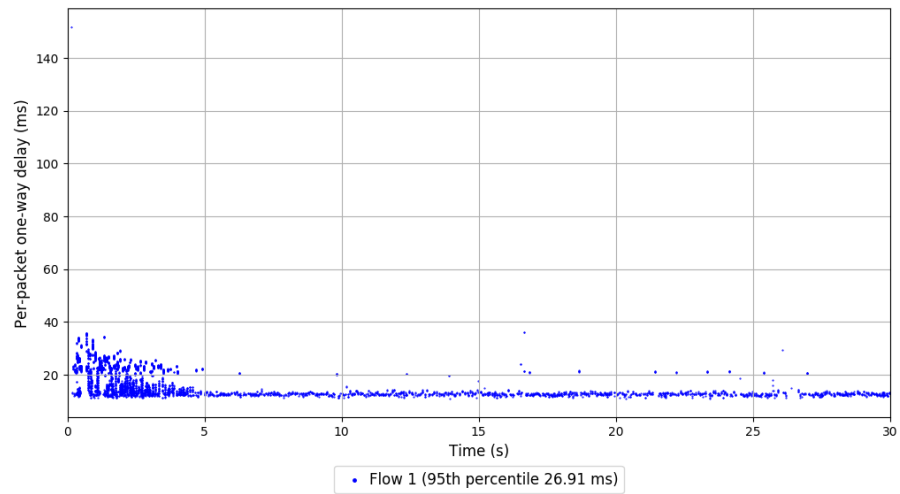
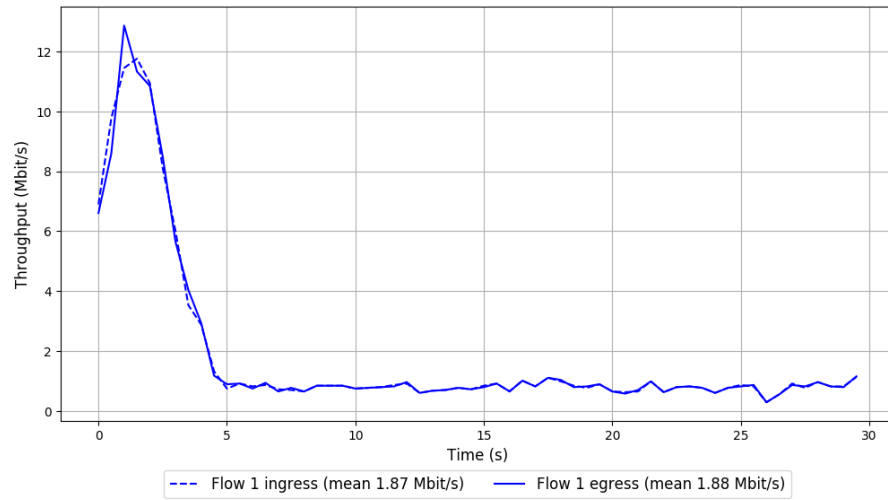


Run 1: Statistics of TCP Vegas

Start at: 2017-09-22 08:44:27  
End at: 2017-09-22 08:44:57  
Local clock offset: -1.545 ms  
Remote clock offset: -2.571 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.88 Mbit/s  
95th percentile per-packet one-way delay: 26.908 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.88 Mbit/s  
95th percentile per-packet one-way delay: 26.908 ms  
Loss rate: 0.00%

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



Run 2: Statistics of TCP Vegas

Start at: 2017-09-22 08:59:49

End at: 2017-09-22 09:00:19

Local clock offset: -1.466 ms

Remote clock offset: -2.502 ms

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

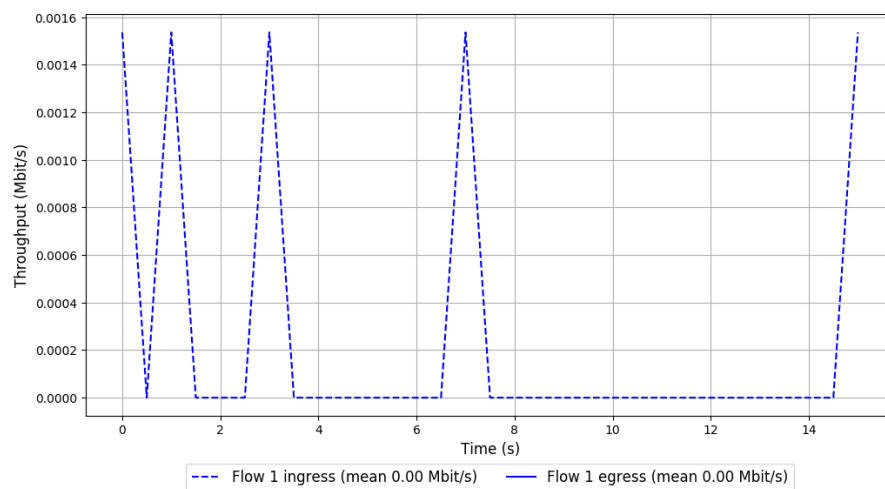


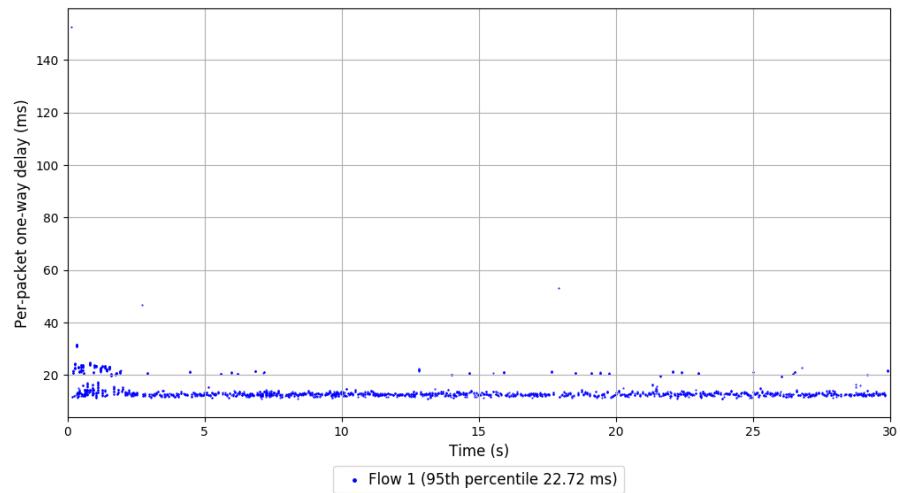
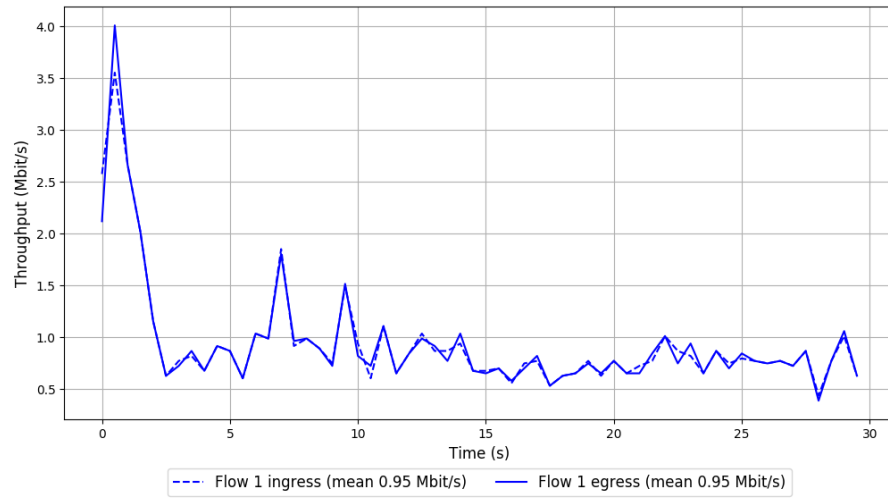
Figure is missing

Run 3: Statistics of TCP Vegas

Start at: 2017-09-22 09:15:14  
End at: 2017-09-22 09:15:44  
Local clock offset: -1.432 ms  
Remote clock offset: -2.364 ms

# Below is generated by plot.py at 2017-09-22 09:27:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.95 Mbit/s  
95th percentile per-packet one-way delay: 22.724 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.95 Mbit/s  
95th percentile per-packet one-way delay: 22.724 ms  
Loss rate: 0.00%

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



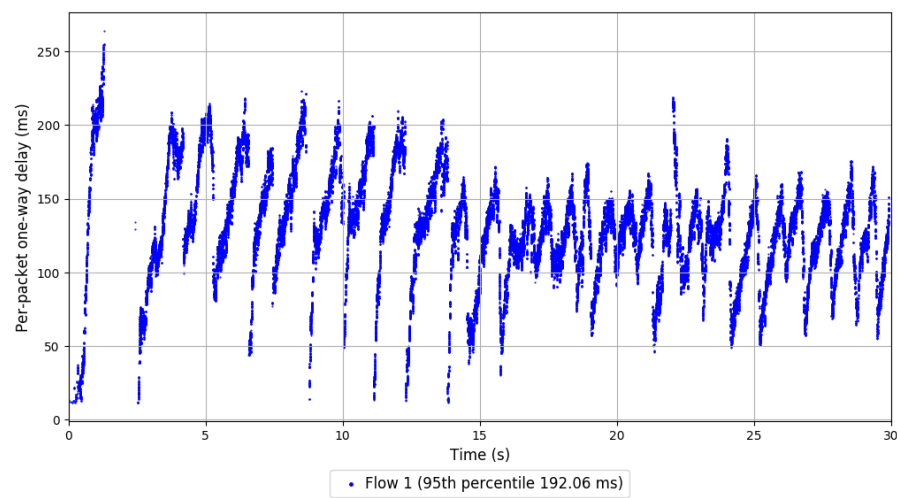
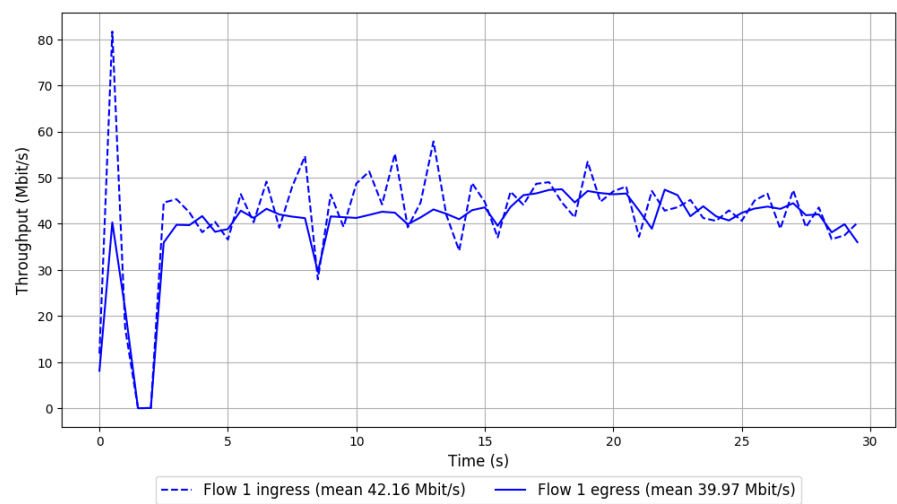
Run 1: Statistics of Verus

Start at: 2017-09-22 08:53:51  
End at: 2017-09-22 08:54:21  
Local clock offset: -1.455 ms  
Remote clock offset: -2.556 ms

# Below is generated by plot.py at 2017-09-22 09:27:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.97 Mbit/s  
95th percentile per-packet one-way delay: 192.063 ms  
Loss rate: 5.17%  
-- Flow 1:  
Average throughput: 39.97 Mbit/s  
95th percentile per-packet one-way delay: 192.063 ms  
Loss rate: 5.17%



Run 1: Report of Verus — Data Link

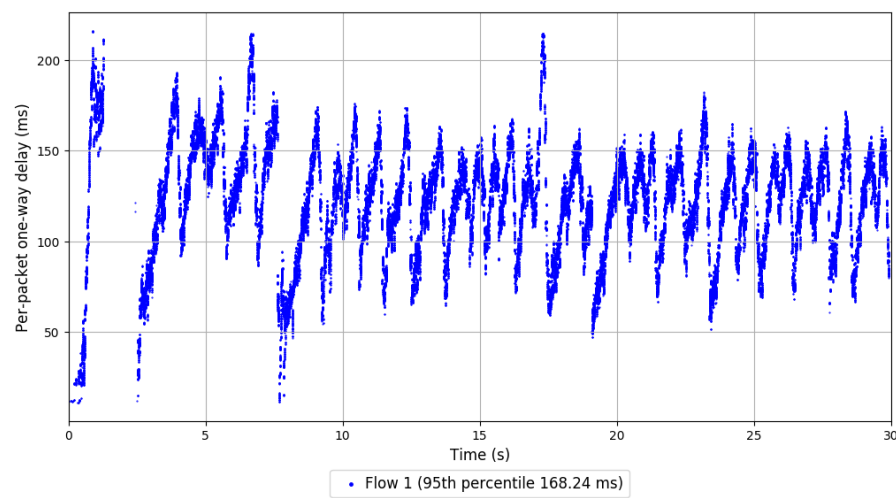
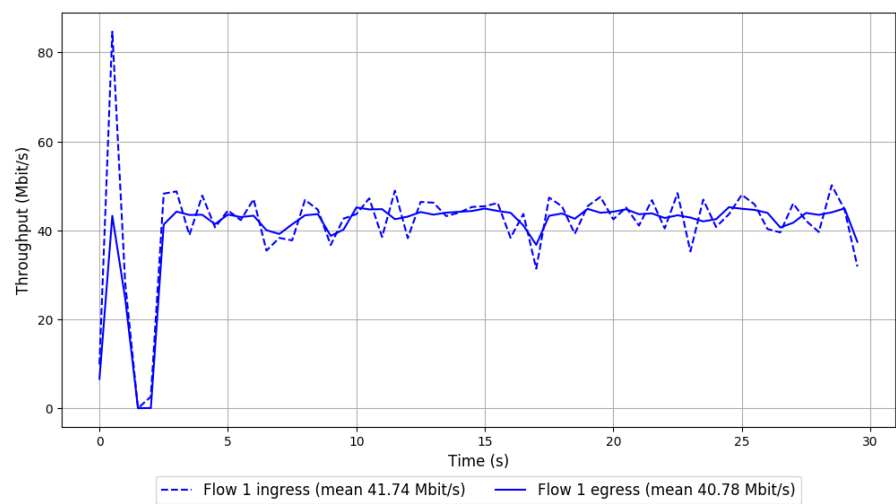


Run 2: Statistics of Verus

Start at: 2017-09-22 09:09:15  
End at: 2017-09-22 09:09:45  
Local clock offset: -1.557 ms  
Remote clock offset: -2.391 ms

# Below is generated by plot.py at 2017-09-22 09:27:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 40.78 Mbit/s  
95th percentile per-packet one-way delay: 168.241 ms  
Loss rate: 2.29%  
-- Flow 1:  
Average throughput: 40.78 Mbit/s  
95th percentile per-packet one-way delay: 168.241 ms  
Loss rate: 2.29%

Run 2: Report of Verus — Data Link

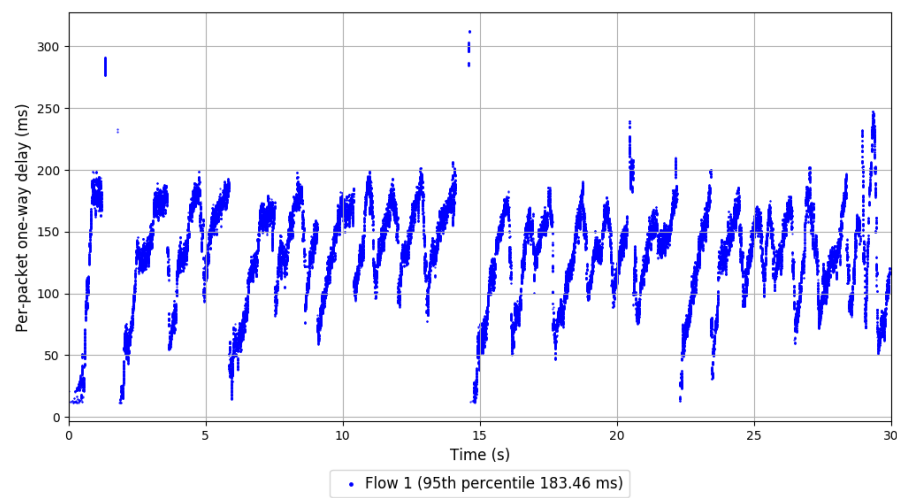
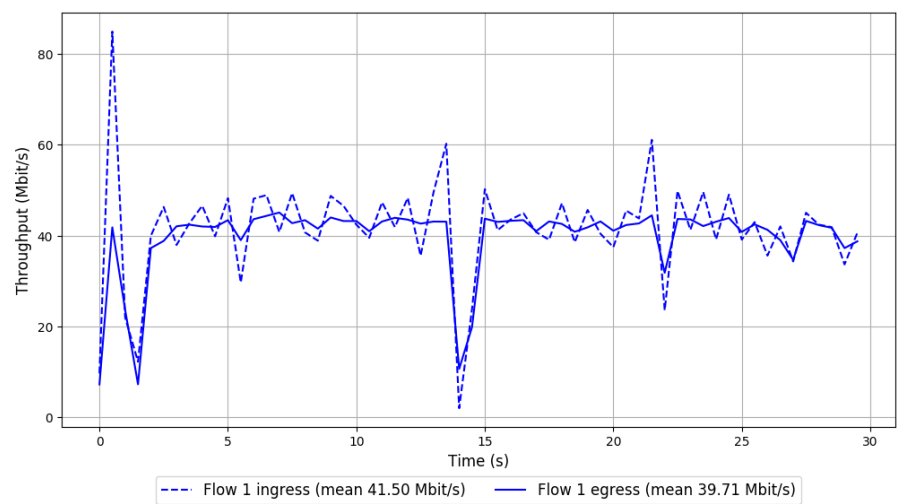


Run 3: Statistics of Verus

Start at: 2017-09-22 09:24:39  
End at: 2017-09-22 09:25:09  
Local clock offset: -1.403 ms  
Remote clock offset: -2.215 ms

# Below is generated by plot.py at 2017-09-22 09:27:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.71 Mbit/s  
95th percentile per-packet one-way delay: 183.457 ms  
Loss rate: 4.33%  
-- Flow 1:  
Average throughput: 39.71 Mbit/s  
95th percentile per-packet one-way delay: 183.457 ms  
Loss rate: 4.33%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Indigo

Start at: 2017-09-22 08:47:59

End at: 2017-09-22 08:48:29

Local clock offset: -1.553 ms

Remote clock offset: -2.555 ms

# Below is generated by plot.py at 2017-09-22 09:27:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 3.31 Mbit/s

95th percentile per-packet one-way delay: 24.790 ms

Loss rate: 0.00%

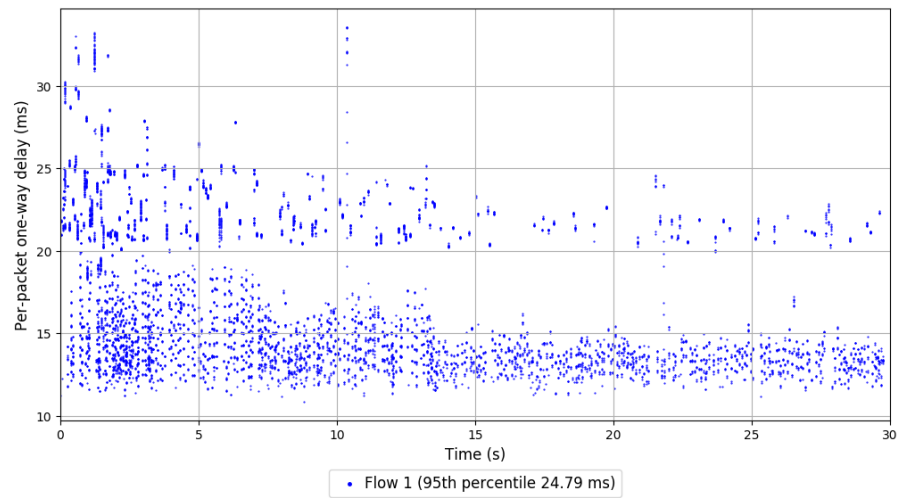
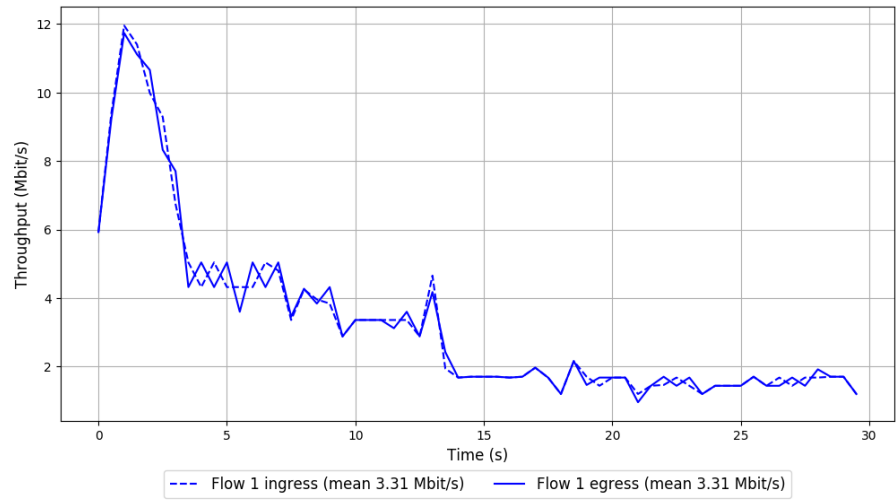
-- Flow 1:

Average throughput: 3.31 Mbit/s

95th percentile per-packet one-way delay: 24.790 ms

Loss rate: 0.00%

### Run 1: Report of Indigo — Data Link



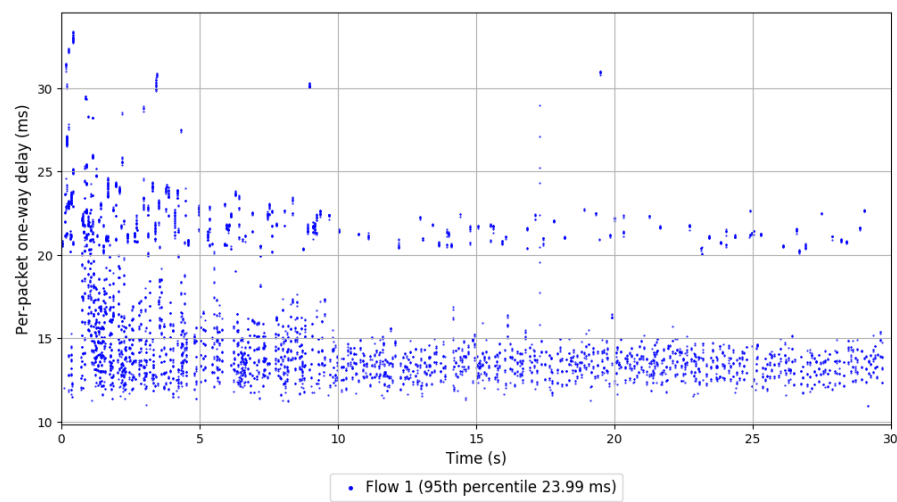
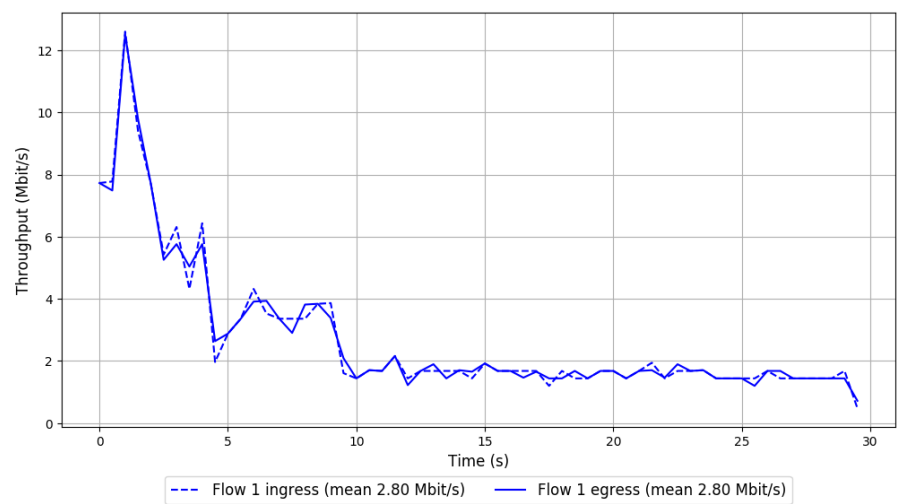
Run 2: Statistics of Indigo

Start at: 2017-09-22 09:03:20  
End at: 2017-09-22 09:03:50  
Local clock offset: -1.555 ms  
Remote clock offset: -2.434 ms

# Below is generated by plot.py at 2017-09-22 09:27:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.80 Mbit/s  
95th percentile per-packet one-way delay: 23.989 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.80 Mbit/s  
95th percentile per-packet one-way delay: 23.989 ms  
Loss rate: 0.00%



Run 2: Report of Indigo — Data Link

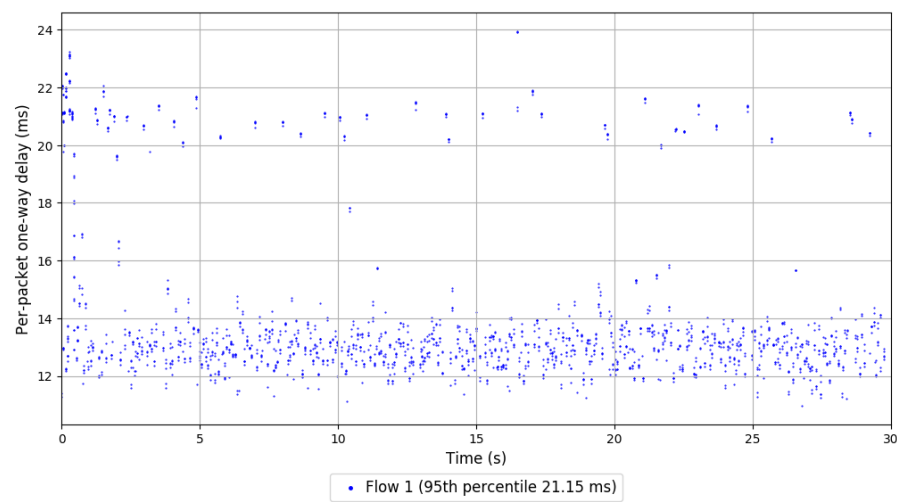
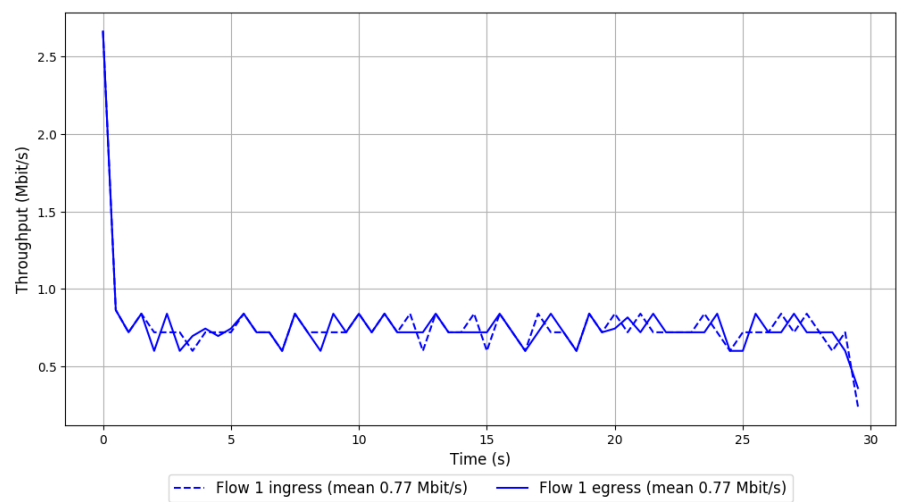


Run 3: Statistics of Indigo

Start at: 2017-09-22 09:18:45  
End at: 2017-09-22 09:19:15  
Local clock offset: -1.385 ms  
Remote clock offset: -2.328 ms

# Below is generated by plot.py at 2017-09-22 09:27:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.77 Mbit/s  
95th percentile per-packet one-way delay: 21.154 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.77 Mbit/s  
95th percentile per-packet one-way delay: 21.154 ms  
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 1: Statistics of Indigo-cellular

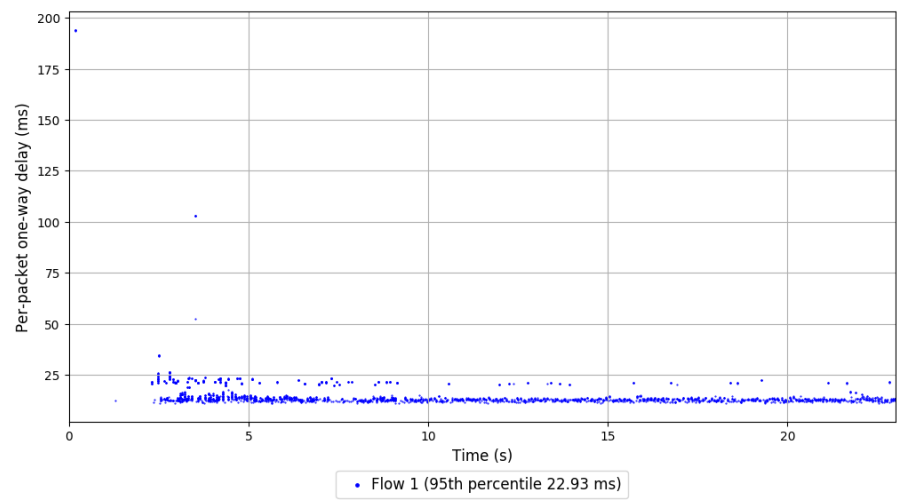
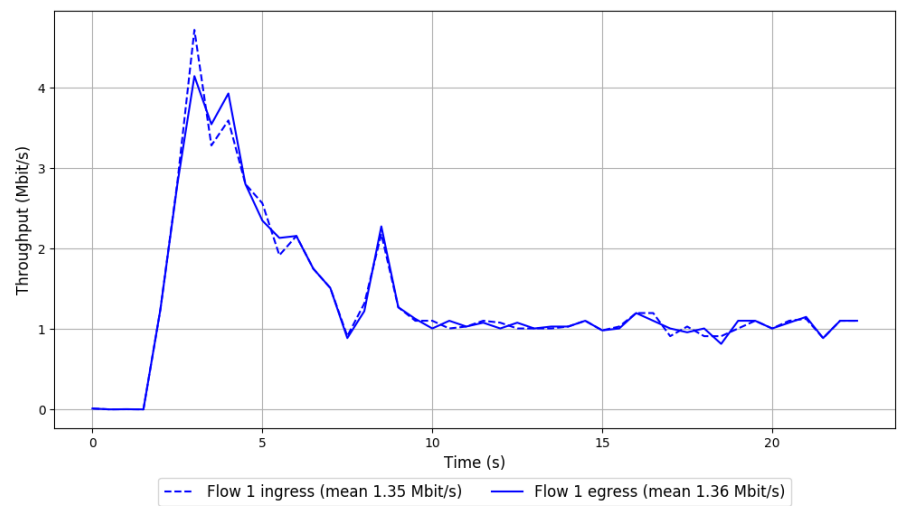
Start at: 2017-09-22 08:43:17

End at: 2017-09-22 08:43:47

Local clock offset: -1.459 ms

Remote clock offset: -2.504 ms

Run 1: Report of Indigo-cellular — Data Link

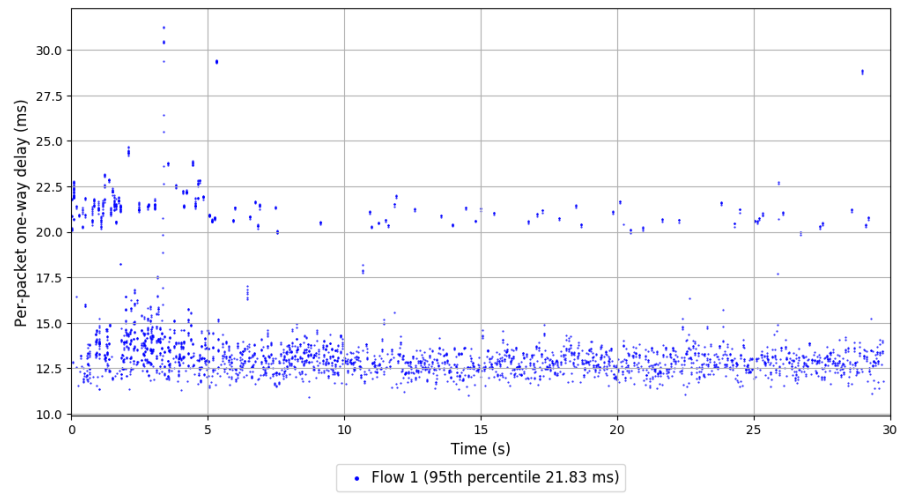
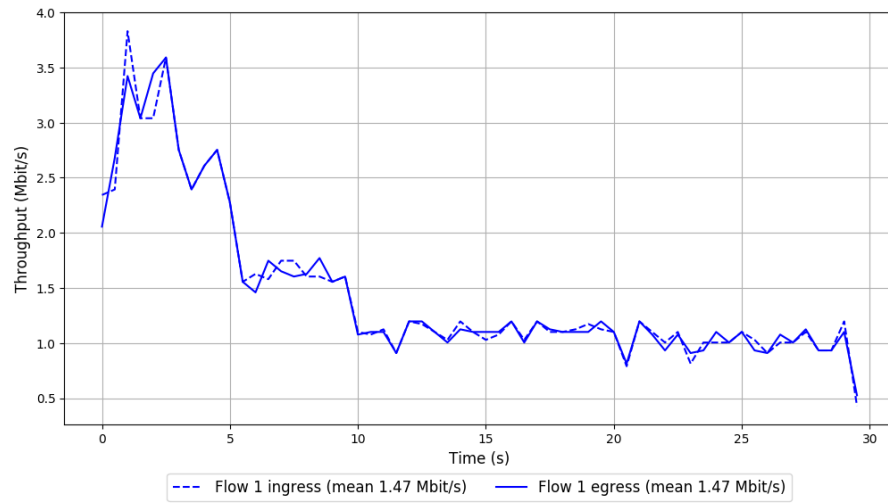


Run 2: Statistics of Indigo-cellular

Start at: 2017-09-22 08:58:39  
End at: 2017-09-22 08:59:09  
Local clock offset: -1.559 ms  
Remote clock offset: -2.525 ms

# Below is generated by plot.py at 2017-09-22 09:27:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.47 Mbit/s  
95th percentile per-packet one-way delay: 21.829 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 1.47 Mbit/s  
95th percentile per-packet one-way delay: 21.829 ms  
Loss rate: 0.05%

## Run 2: Report of Indigo-cellular — Data Link



Run 3: Statistics of Indigo-cellular

Start at: 2017-09-22 09:14:04  
End at: 2017-09-22 09:14:34  
Local clock offset: -1.527 ms  
Remote clock offset: -2.277 ms

# Below is generated by plot.py at 2017-09-22 09:27:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.36 Mbit/s  
95th percentile per-packet one-way delay: 22.338 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.36 Mbit/s  
95th percentile per-packet one-way delay: 22.338 ms  
Loss rate: 0.00%



### Run 3: Report of Indigo-cellular — Data Link

