

## Pantheon Report

Generated at 2017-09-22 09:39:04 (UTC).

Data path: AWS California 2 Ethernet (*local*) → Mexico 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).

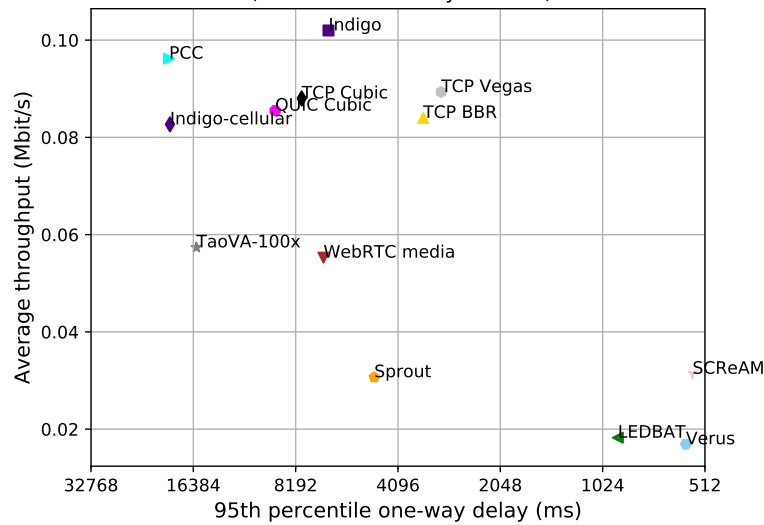
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo\_fast**).

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

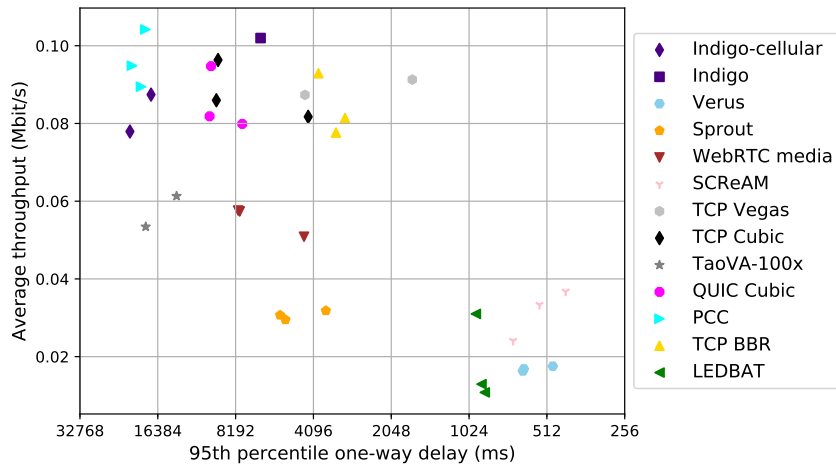
Git summary:

```
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 @ 03455460fd1a8ffbdad86fab936fdca204b80db
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 @ f1a14bffe749737437f61b1eaeeb30b267cde681
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 2 Ethernet to Mexico ppp0, 3 runs of 30s each per scheme  
(mean of all runs by scheme)



test from AWS California 2 Ethernet to Mexico ppp0, 3 runs of 30s each per scheme



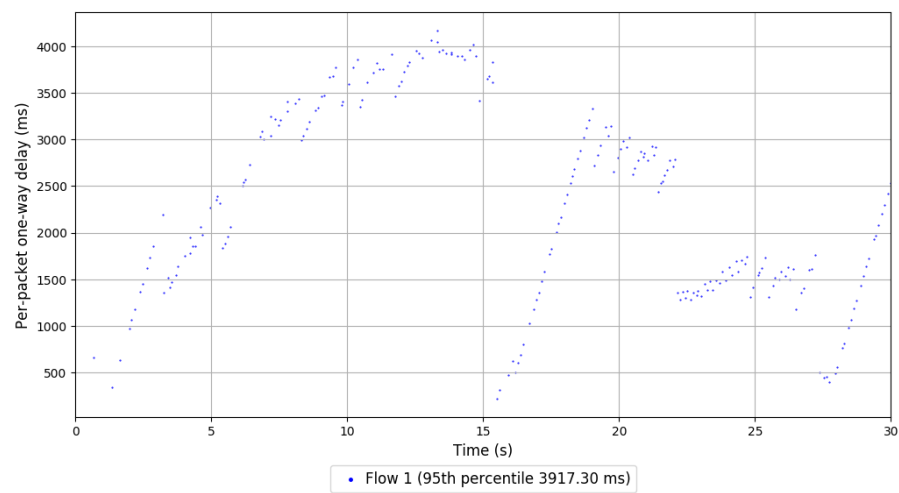
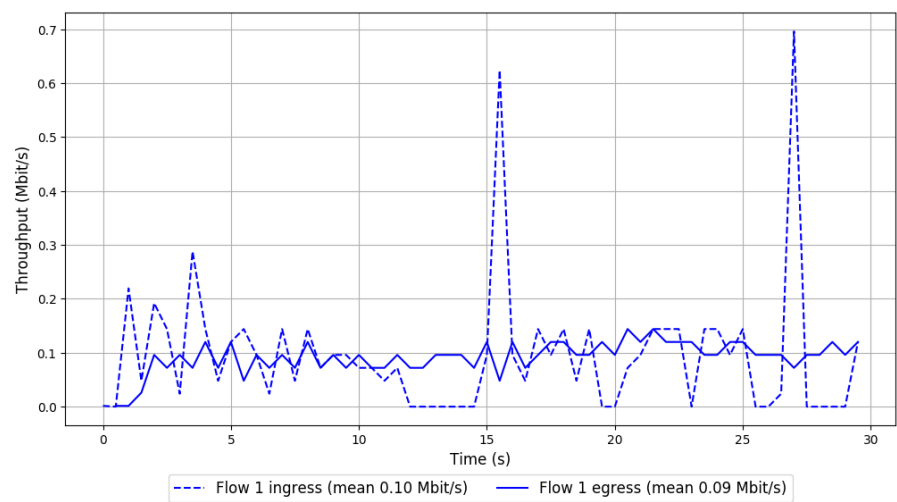
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.08	3453.26	6.62
TCP Cubic	3	0.09	7863.95	30.09
LEDBAT	3	0.02	923.87	1.67
PCC	3	0.09	19315.79	99.75
QUIC Cubic	3	0.08	9414.76	30.53
SCReAM	3	0.03	557.34	1.04
WebRTC media	3	0.06	6787.20	22.18
Sprout	3	0.03	4811.35	5.13
TaoVA-100x	2	0.06	16051.91	77.77
TCP Vegas	2	0.09	3057.61	2.02
Verus	3	0.02	582.70	2.36
Indigo	1	0.10	6558.77	18.94
Indigo-cellular	2	0.08	19195.52	61.30

Run 1: Statistics of TCP BBR

Start at: 2017-09-22 08:54:25  
End at: 2017-09-22 08:54:55  
Local clock offset: -0.266 ms  
Remote clock offset: -0.487 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 3917.295 ms  
Loss rate: 5.41%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 3917.295 ms  
Loss rate: 5.41%

Run 1: Report of TCP BBR — Data Link

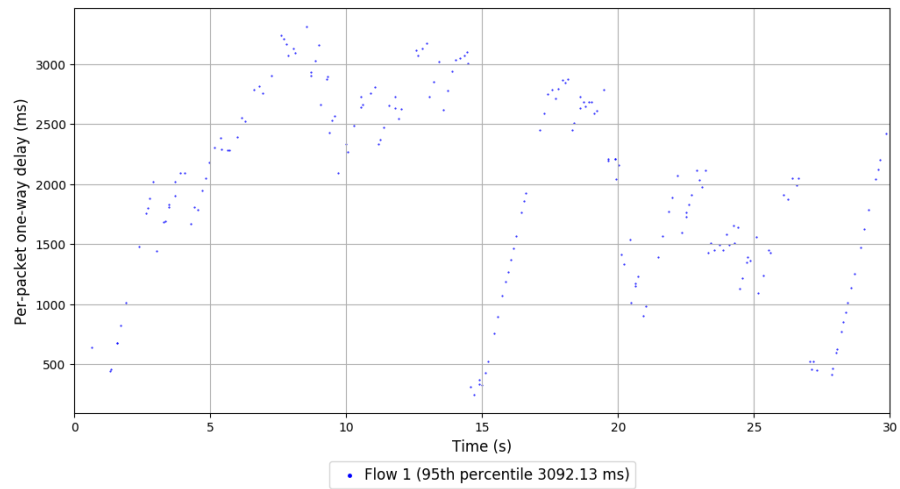
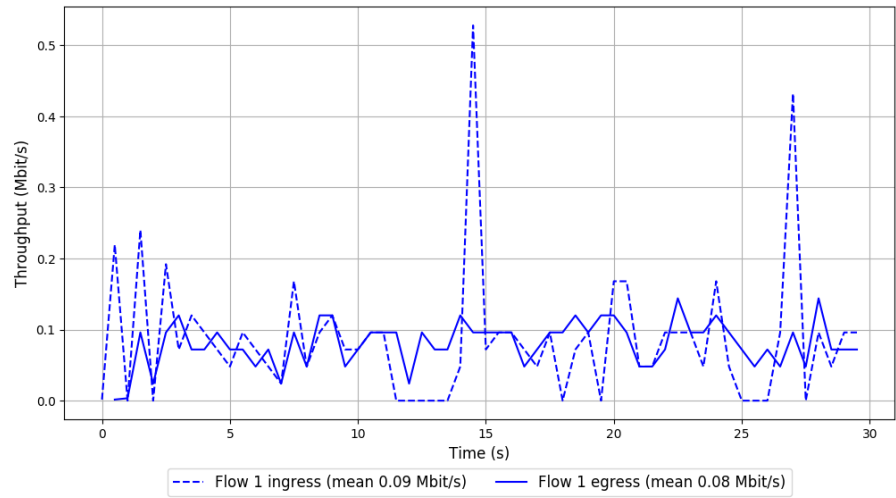


Run 2: Statistics of TCP BBR

Start at: 2017-09-22 09:11:23  
End at: 2017-09-22 09:11:53  
Local clock offset: -0.204 ms  
Remote clock offset: -0.457 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 3092.133 ms  
Loss rate: 7.47%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 3092.133 ms  
Loss rate: 7.47%

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



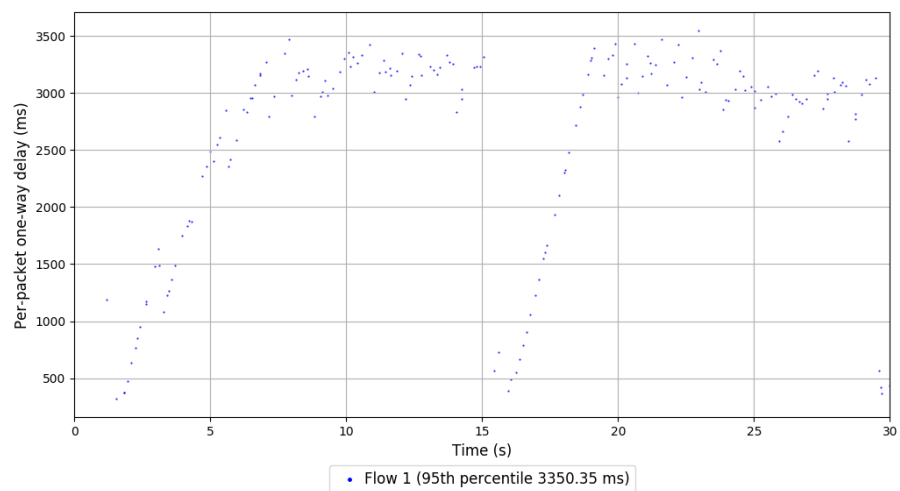
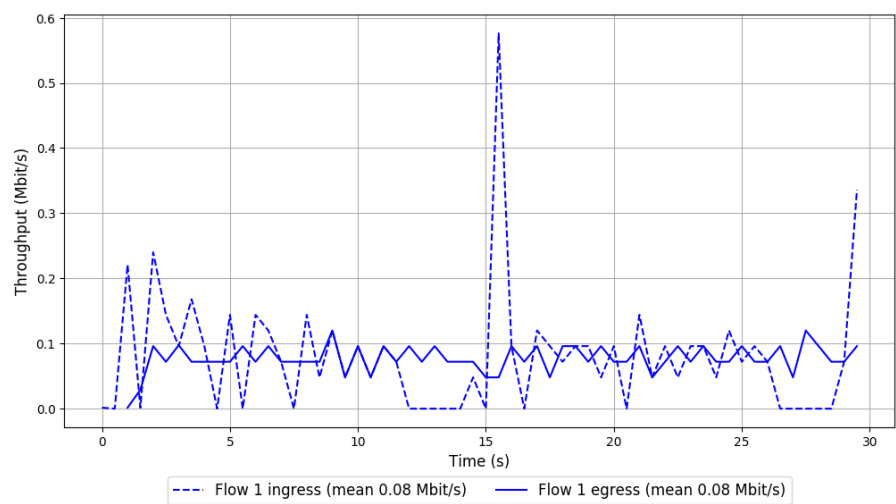
Run 3: Statistics of TCP BBR

Start at: 2017-09-22 09:28:26  
End at: 2017-09-22 09:28:56  
Local clock offset: -0.102 ms  
Remote clock offset: -2.632 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 3350.354 ms  
Loss rate: 6.99%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 3350.354 ms  
Loss rate: 6.99%



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

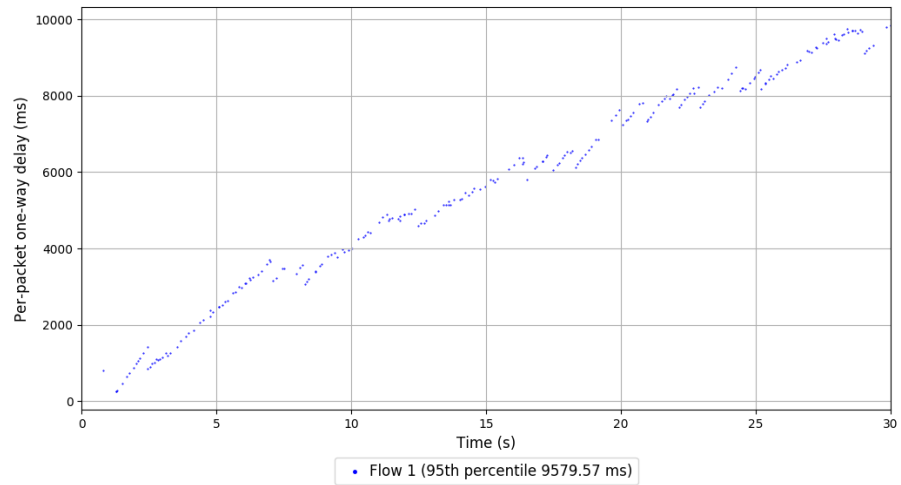
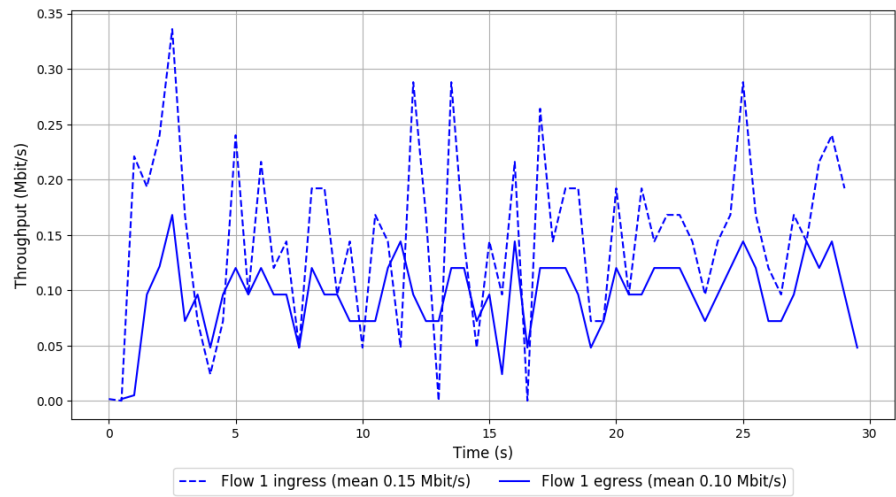


Run 1: Statistics of TCP Cubic

Start at: 2017-09-22 09:02:05  
End at: 2017-09-22 09:02:36  
Local clock offset: -0.152 ms  
Remote clock offset: -0.484 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.10 Mbit/s  
95th percentile per-packet one-way delay: 9579.571 ms  
Loss rate: 35.33%  
-- Flow 1:  
Average throughput: 0.10 Mbit/s  
95th percentile per-packet one-way delay: 9579.571 ms  
Loss rate: 35.33%

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

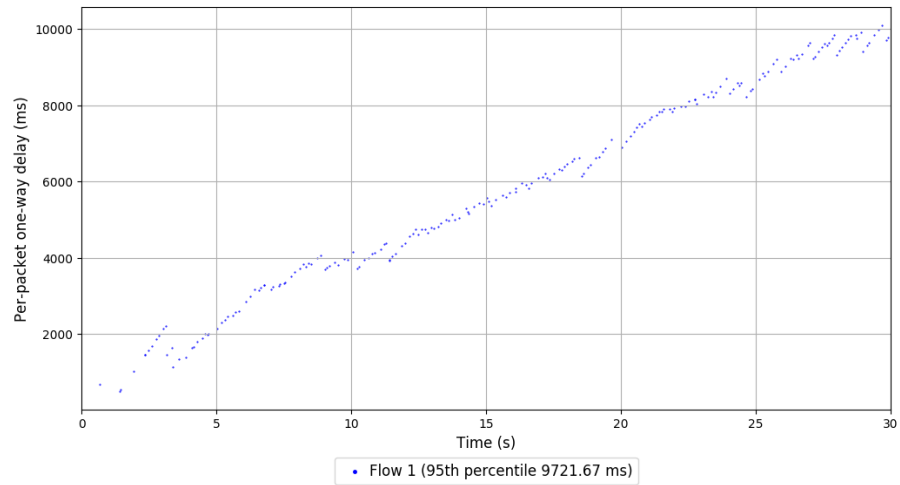
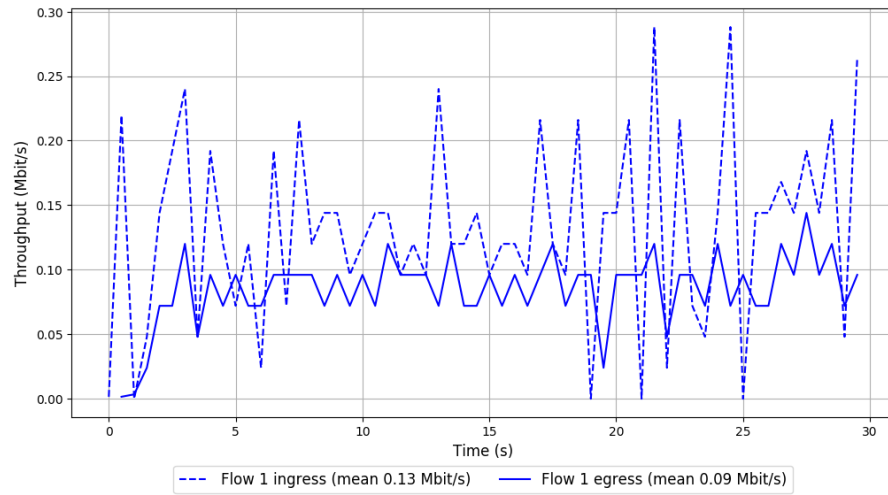


Run 2: Statistics of TCP Cubic

Start at: 2017-09-22 09:19:03  
End at: 2017-09-22 09:19:33  
Local clock offset: -0.108 ms  
Remote clock offset: -0.425 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 9721.665 ms  
Loss rate: 36.26%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 9721.665 ms  
Loss rate: 36.26%

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

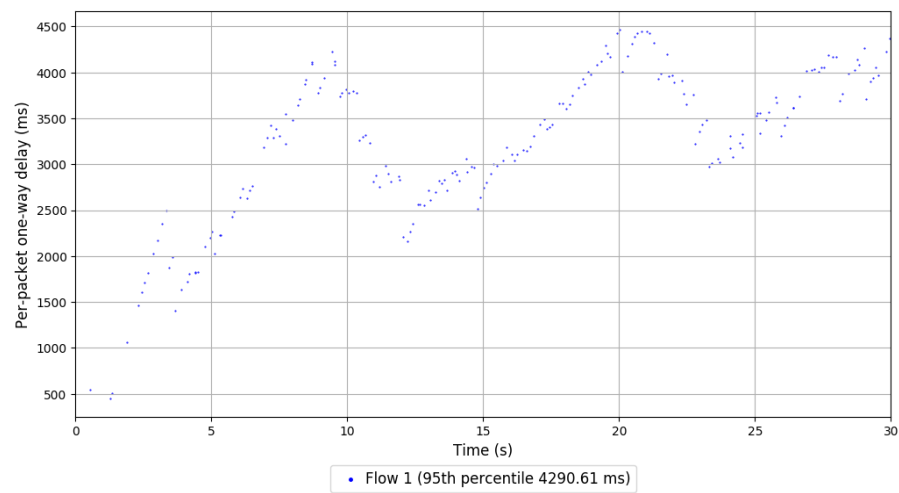
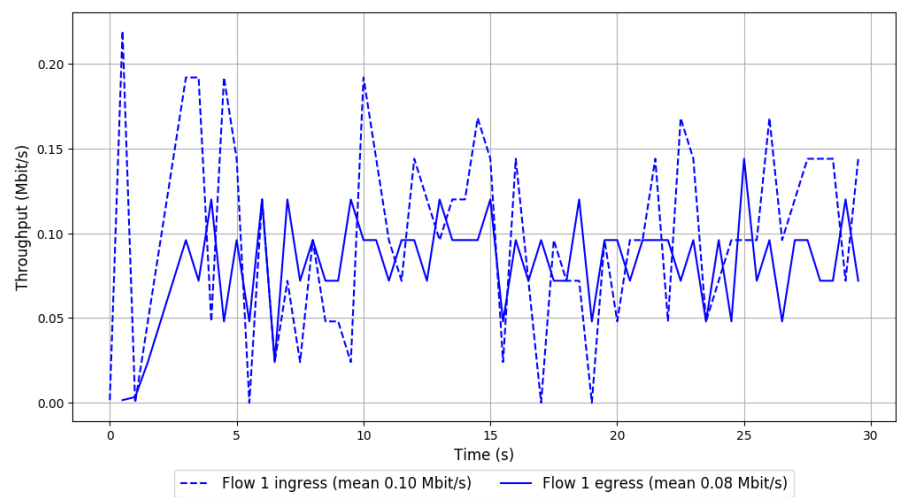


Run 3: Statistics of TCP Cubic

Start at: 2017-09-22 09:36:18  
End at: 2017-09-22 09:36:48  
Local clock offset: -0.076 ms  
Remote clock offset: -0.565 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 4290.612 ms  
Loss rate: 18.68%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 4290.612 ms  
Loss rate: 18.68%

Run 3: Report of TCP Cubic — Data Link



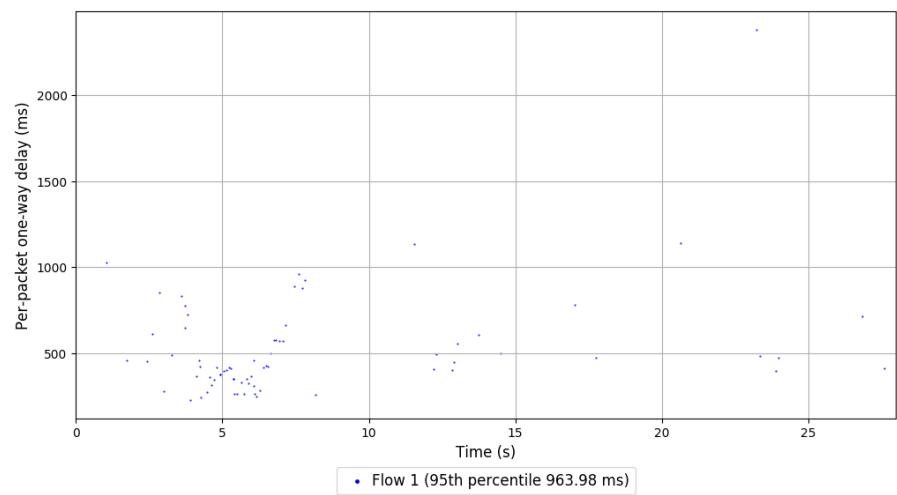
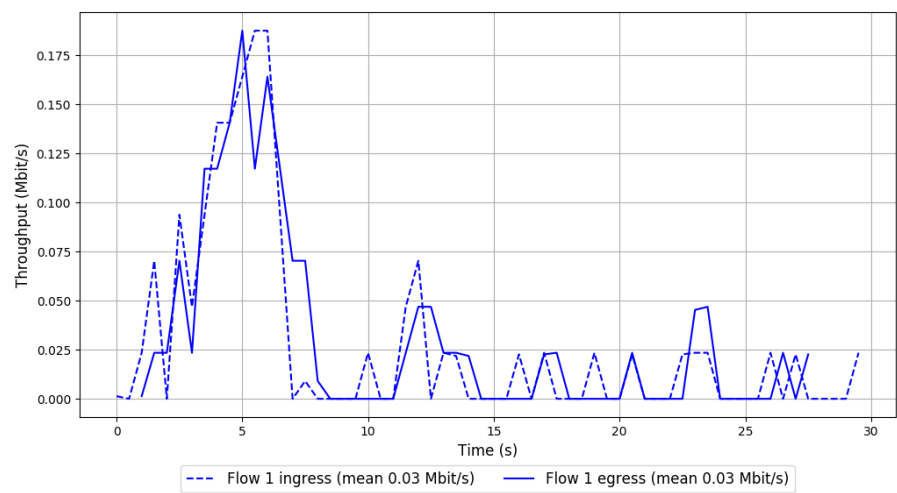
```
Run 1: Statistics of LEDBAT

Start at: 2017-09-22 09:00:49
End at: 2017-09-22 09:01:19
Local clock offset: -0.162 ms
Remote clock offset: 0.047 ms

# Below is generated by plot.py at 2017-09-22 09:38:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 963.980 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 963.980 ms
Loss rate: 1.40%
```



Run 1: Report of LEDBAT — Data Link

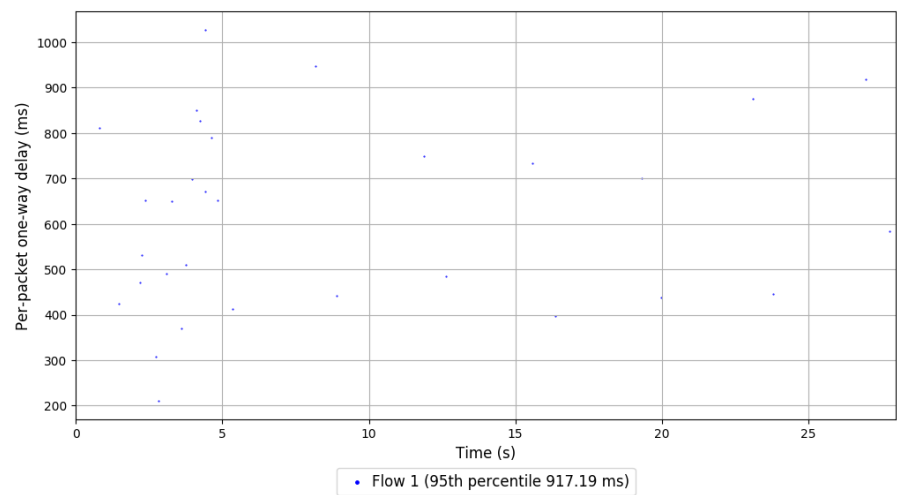
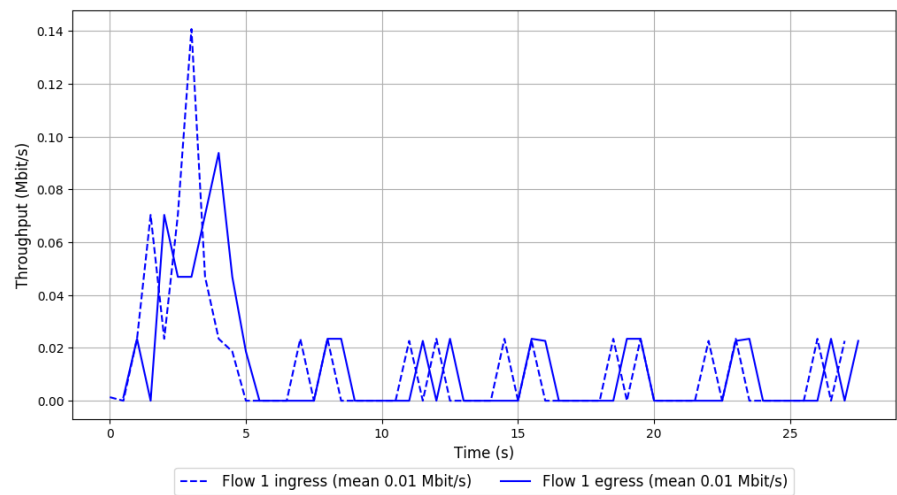


Run 2: Statistics of LEDBAT

Start at: 2017-09-22 09:17:47  
End at: 2017-09-22 09:18:17  
Local clock offset: -0.115 ms  
Remote clock offset: -2.527 ms

# Below is generated by plot.py at 2017-09-22 09:38:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.01 Mbit/s  
95th percentile per-packet one-way delay: 917.194 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.01 Mbit/s  
95th percentile per-packet one-way delay: 917.194 ms  
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

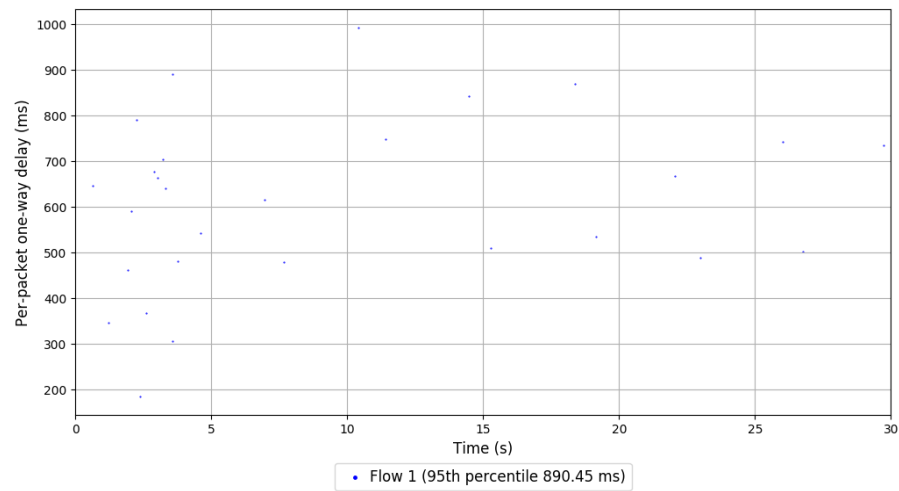
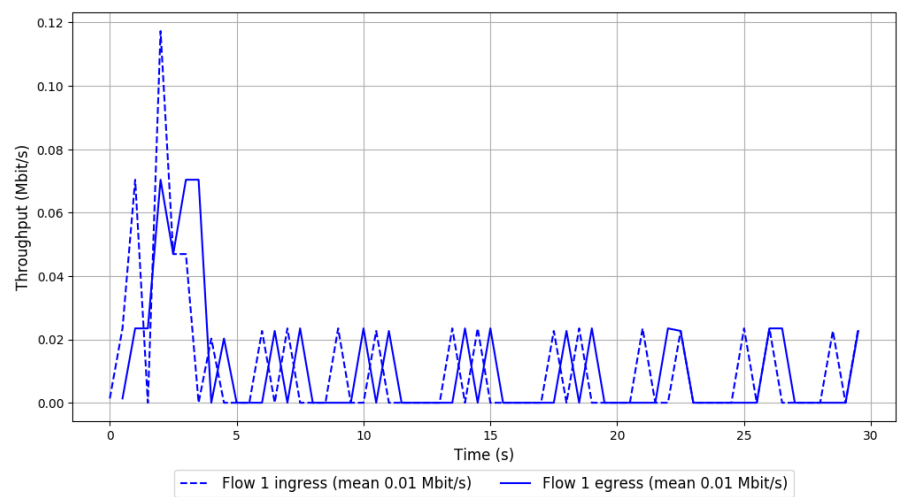


Run 3: Statistics of LEDBAT

Start at: 2017-09-22 09:35:01  
End at: 2017-09-22 09:35:31  
Local clock offset: -0.165 ms  
Remote clock offset: -2.744 ms

# Below is generated by plot.py at 2017-09-22 09:38:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.01 Mbit/s  
95th percentile per-packet one-way delay: 890.447 ms  
Loss rate: 3.60%  
-- Flow 1:  
Average throughput: 0.01 Mbit/s  
95th percentile per-packet one-way delay: 890.447 ms  
Loss rate: 3.60%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC

Start at: 2017-09-22 09:03:23

End at: 2017-09-22 09:03:53

Local clock offset: -0.148 ms

Remote clock offset: 0.085 ms

# Below is generated by plot.py at 2017-09-22 09:39:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 20620.196 ms

Loss rate: 99.73%

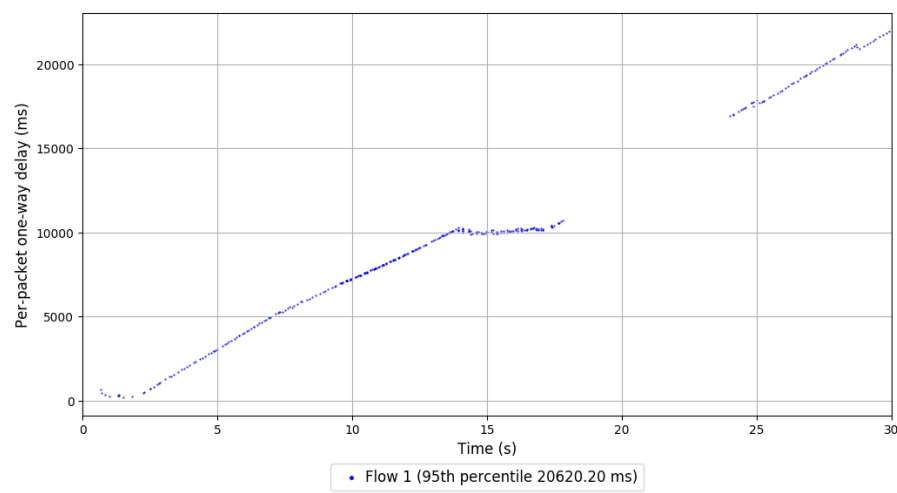
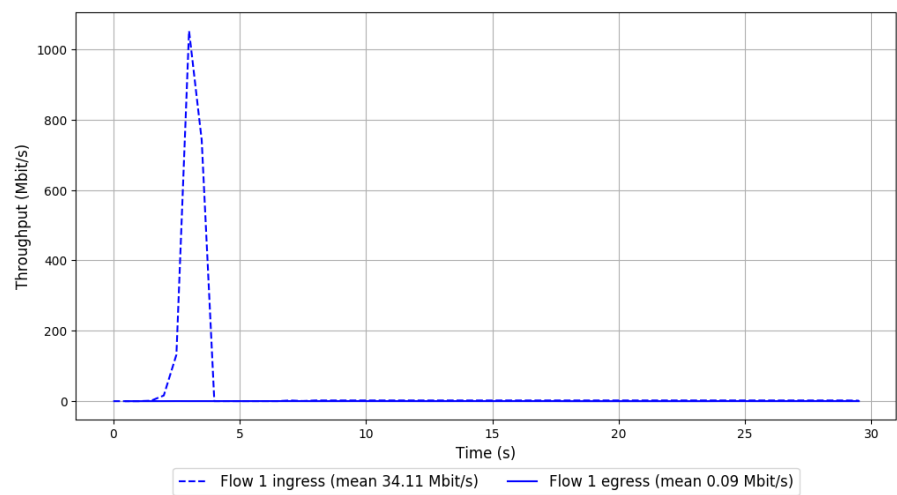
-- Flow 1:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 20620.196 ms

Loss rate: 99.73%

Run 1: Report of PCC — Data Link



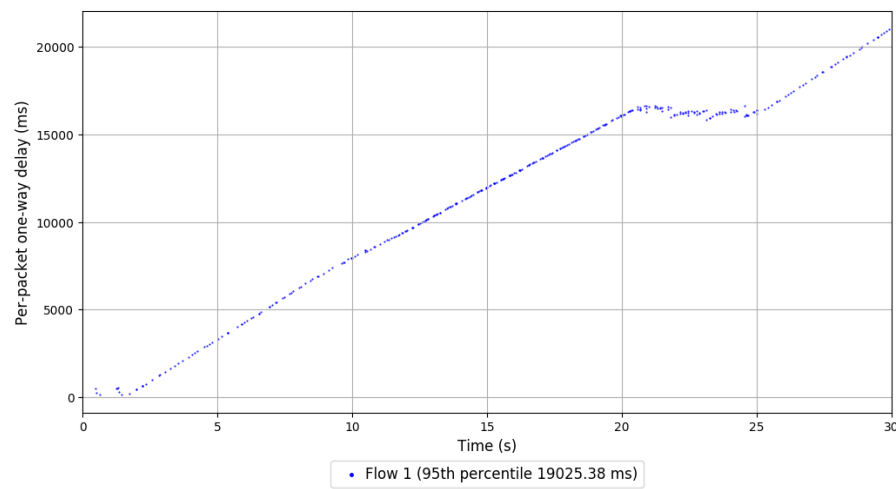
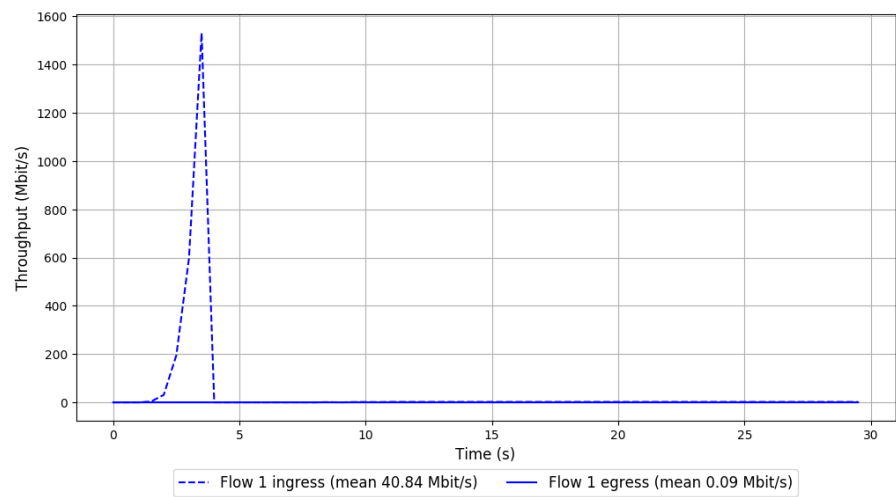
Run 2: Statistics of PCC

Start at: 2017-09-22 09:20:20  
End at: 2017-09-22 09:20:50  
Local clock offset: -0.19 ms  
Remote clock offset: -2.653 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 19025.375 ms  
Loss rate: 99.78%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 19025.375 ms  
Loss rate: 99.78%



Run 2: Report of PCC — Data Link

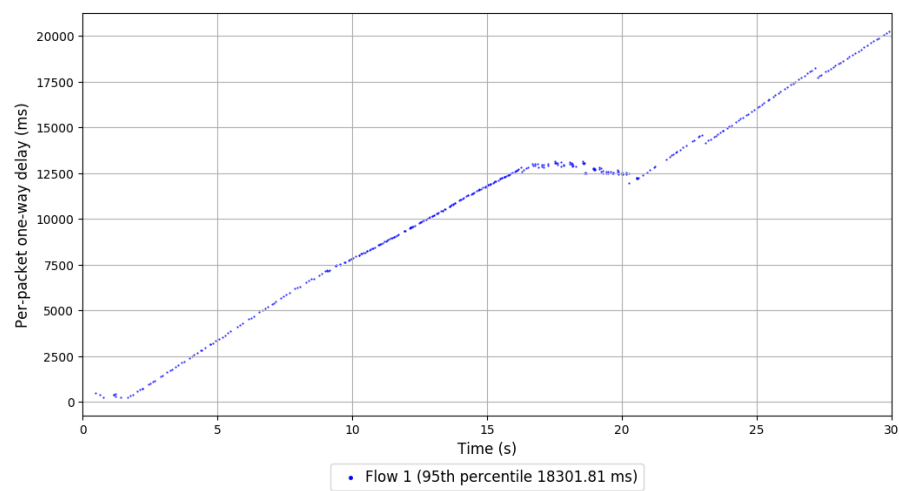
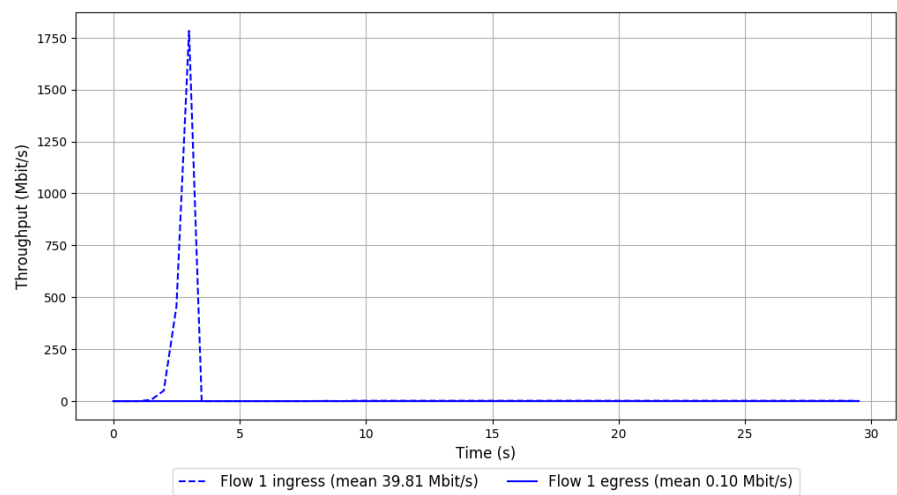


Run 3: Statistics of PCC

Start at: 2017-09-22 09:37:34  
End at: 2017-09-22 09:38:04  
Local clock offset: -0.069 ms  
Remote clock offset: -2.759 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.10 Mbit/s  
95th percentile per-packet one-way delay: 18301.808 ms  
Loss rate: 99.74%  
-- Flow 1:  
Average throughput: 0.10 Mbit/s  
95th percentile per-packet one-way delay: 18301.808 ms  
Loss rate: 99.74%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2017-09-22 08:55:42

End at: 2017-09-22 08:56:12

Local clock offset: -0.181 ms

Remote clock offset: -0.416 ms

# Below is generated by plot.py at 2017-09-22 09:39:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 10197.261 ms

Loss rate: 38.46%

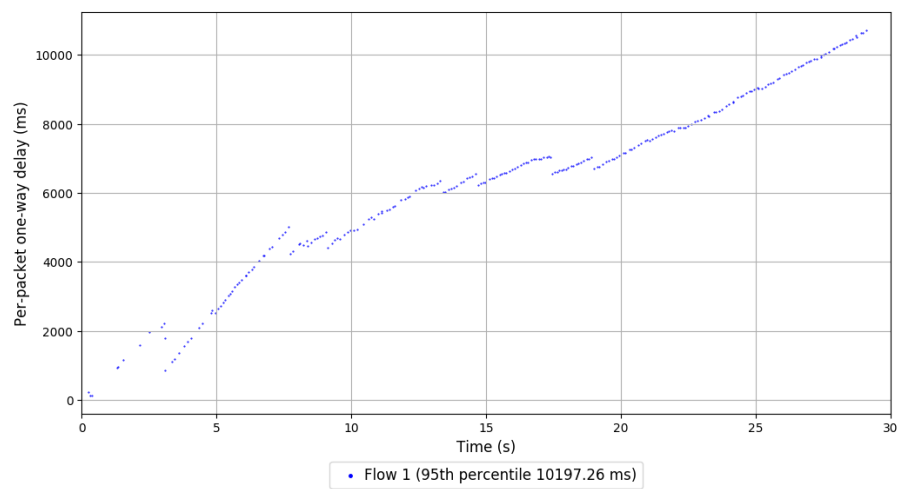
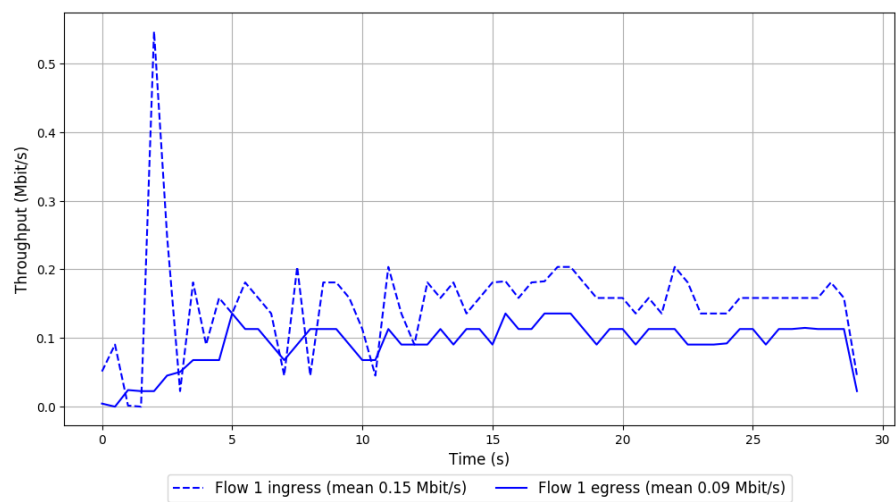
-- Flow 1:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 10197.261 ms

Loss rate: 38.46%

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



Run 2: Statistics of QUIC Cubic

Start at: 2017-09-22 09:12:40

End at: 2017-09-22 09:13:10

Local clock offset: -0.1 ms

Remote clock offset: -0.571 ms

# Below is generated by plot.py at 2017-09-22 09:39:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 7719.340 ms

Loss rate: 27.53%

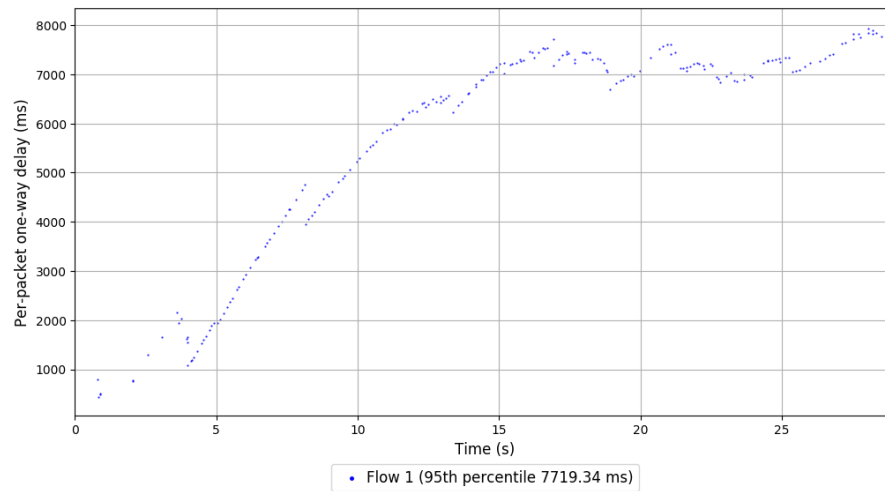
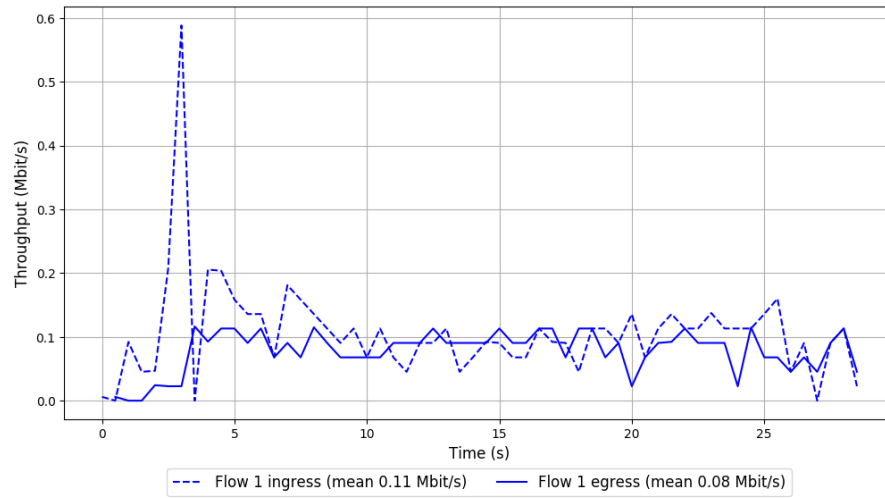
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 7719.340 ms

Loss rate: 27.53%

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



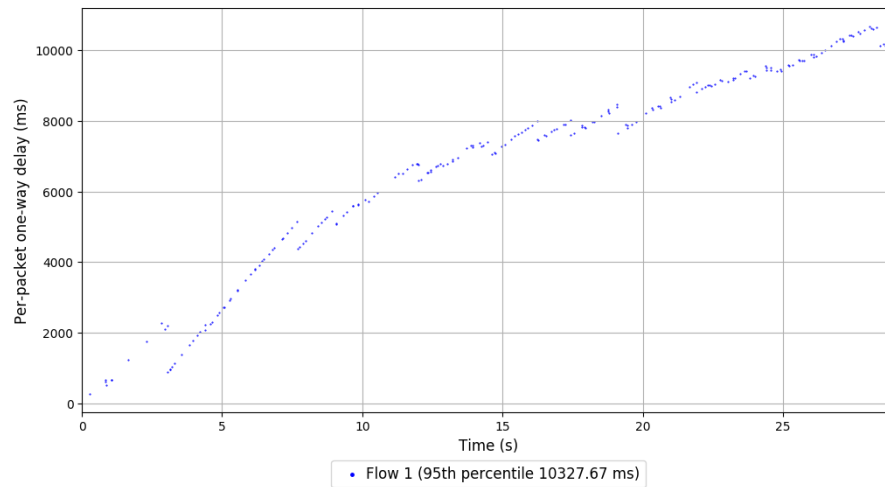
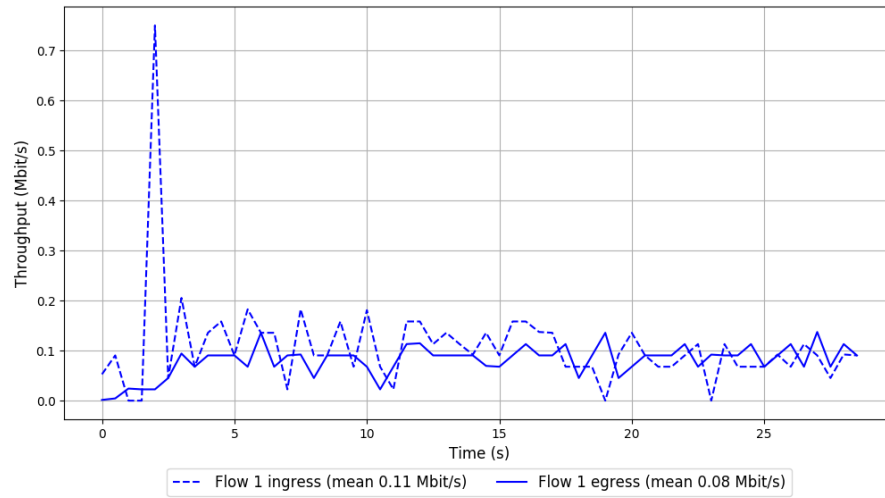
Run 3: Statistics of QUIC Cubic

Start at: 2017-09-22 09:29:43  
End at: 2017-09-22 09:30:13  
Local clock offset: -0.071 ms  
Remote clock offset: -0.483 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 10327.674 ms  
Loss rate: 25.61%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 10327.674 ms  
Loss rate: 25.61%



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

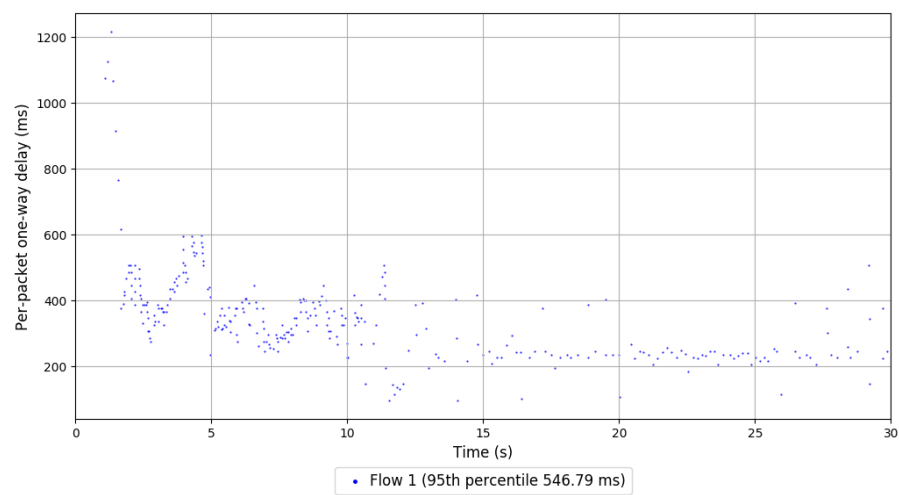
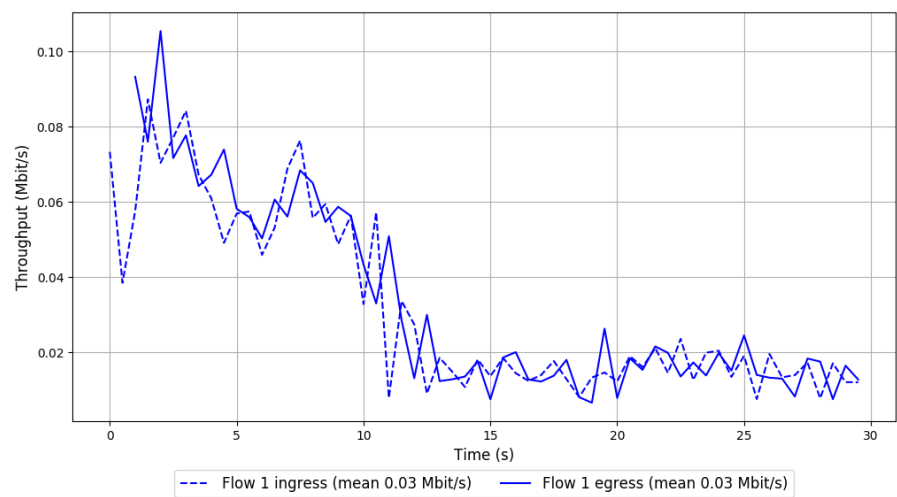


Run 1: Statistics of SCReAM

Start at: 2017-09-22 08:51:51  
End at: 2017-09-22 08:52:21  
Local clock offset: -0.259 ms  
Remote clock offset: -0.366 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.03 Mbit/s  
95th percentile per-packet one-way delay: 546.794 ms  
Loss rate: 0.31%  
-- Flow 1:  
Average throughput: 0.03 Mbit/s  
95th percentile per-packet one-way delay: 546.794 ms  
Loss rate: 0.31%

Run 1: Report of SReAM — Data Link

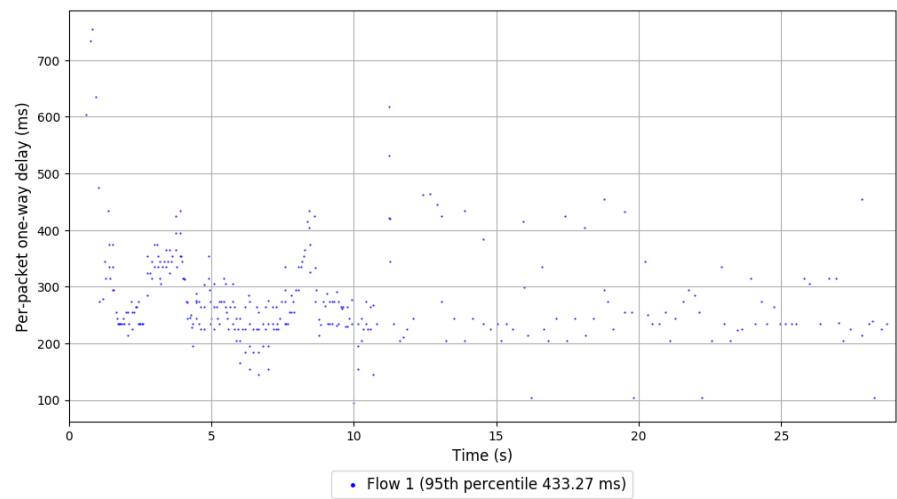
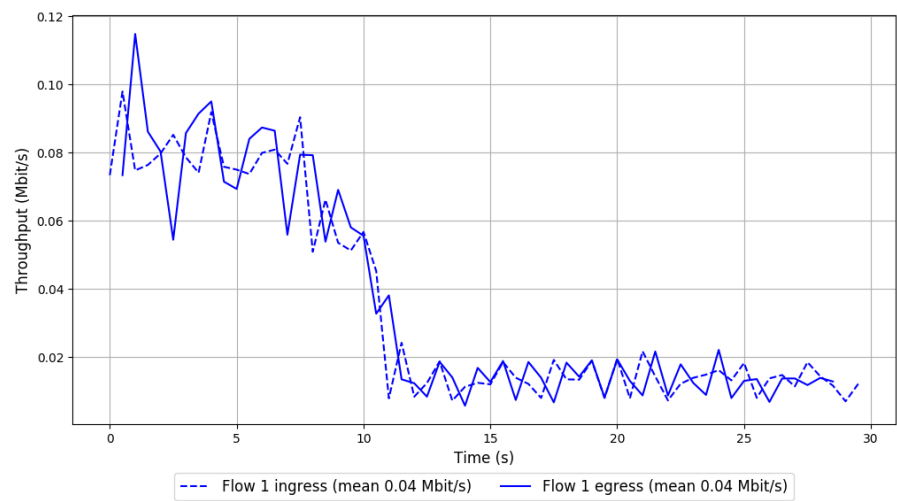


Run 2: Statistics of SCReAM

Start at: 2017-09-22 09:08:50  
End at: 2017-09-22 09:09:20  
Local clock offset: -0.208 ms  
Remote clock offset: -2.629 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.04 Mbit/s  
95th percentile per-packet one-way delay: 433.267 ms  
Loss rate: 2.36%  
-- Flow 1:  
Average throughput: 0.04 Mbit/s  
95th percentile per-packet one-way delay: 433.267 ms  
Loss rate: 2.36%

Run 2: Report of SReAM — Data Link

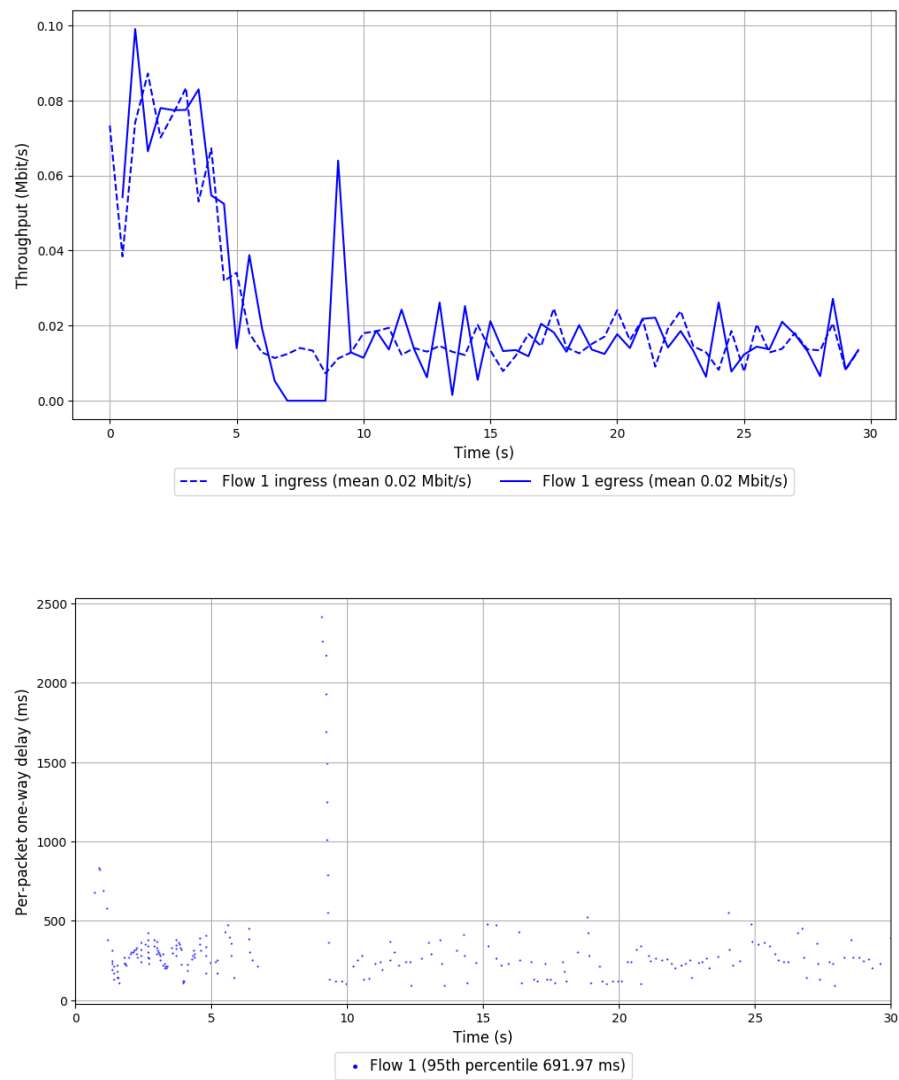


Run 3: Statistics of SCReAM

Start at: 2017-09-22 09:25:53  
End at: 2017-09-22 09:26:23  
Local clock offset: -0.095 ms  
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.02 Mbit/s  
95th percentile per-packet one-way delay: 691.970 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 0.02 Mbit/s  
95th percentile per-packet one-way delay: 691.970 ms  
Loss rate: 0.45%

Run 3: Report of SReAM — Data Link



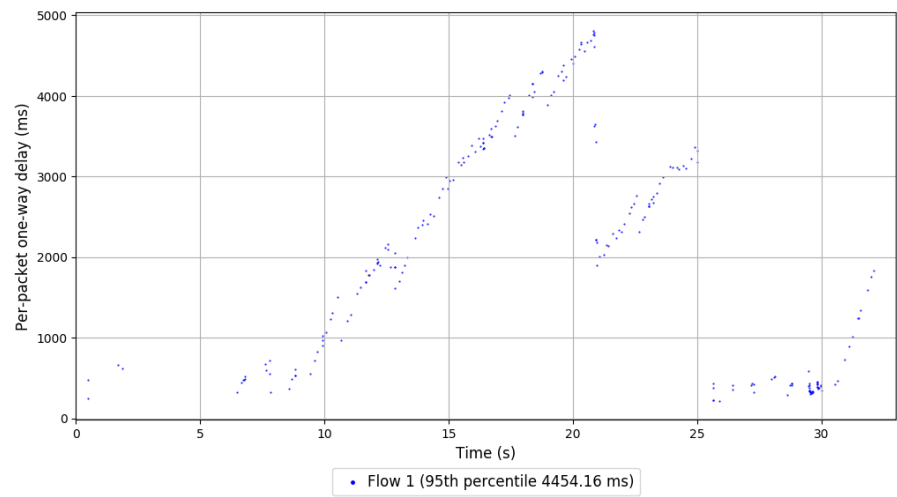
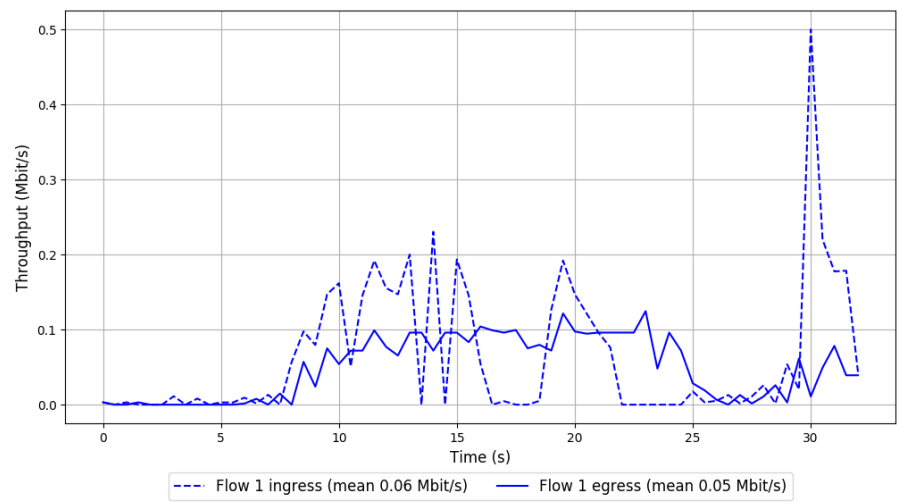
Run 1: Statistics of WebRTC media

Start at: 2017-09-22 08:53:08  
End at: 2017-09-22 08:53:38  
Local clock offset: -0.277 ms  
Remote clock offset: -2.479 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 4454.156 ms  
Loss rate: 22.60%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 4454.156 ms  
Loss rate: 22.60%



Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2017-09-22 09:10:06

End at: 2017-09-22 09:10:36

Local clock offset: -0.094 ms

Remote clock offset: 0.005 ms

# Below is generated by plot.py at 2017-09-22 09:39:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 8008.869 ms

Loss rate: 22.01%

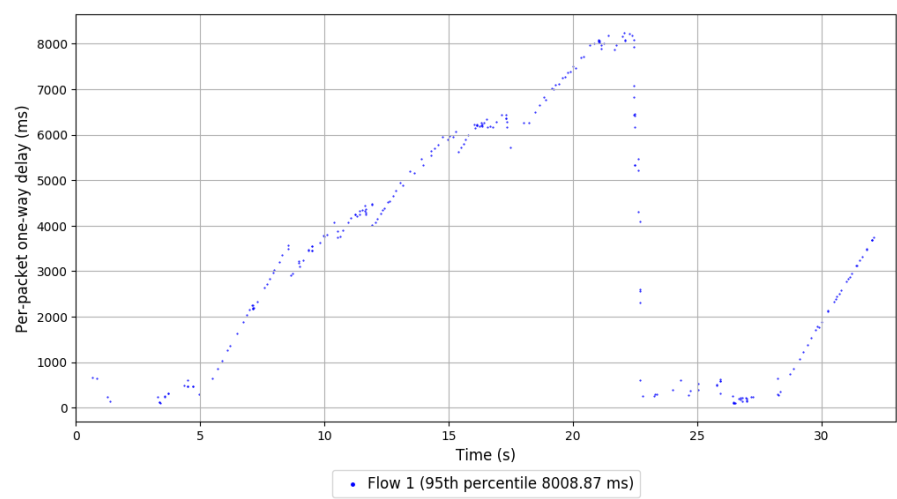
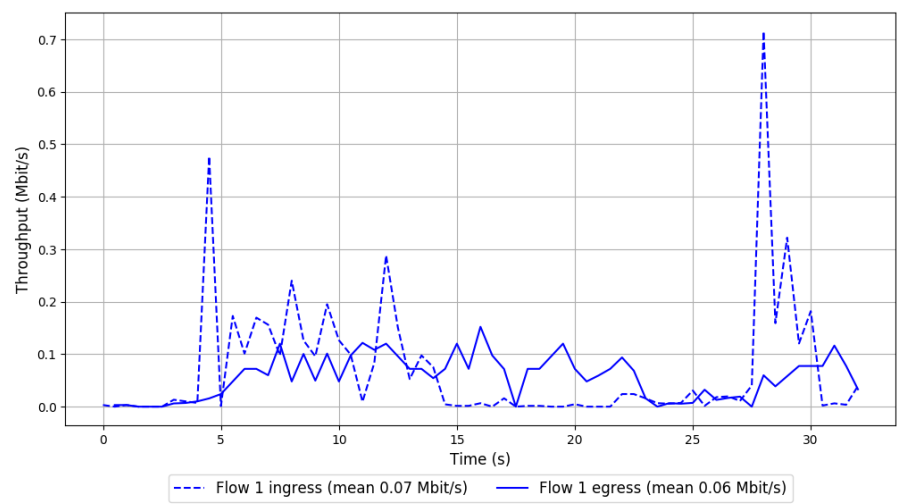
-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 8008.869 ms

Loss rate: 22.01%

Run 2: Report of WebRTC media — Data Link

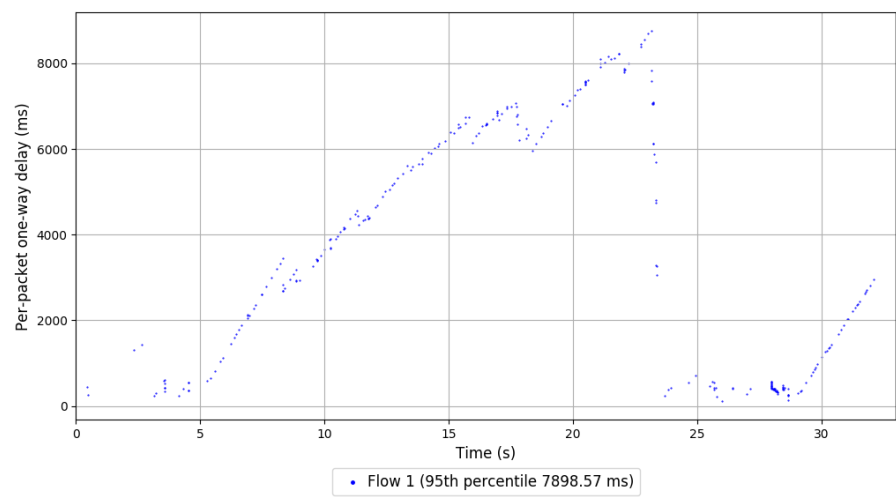
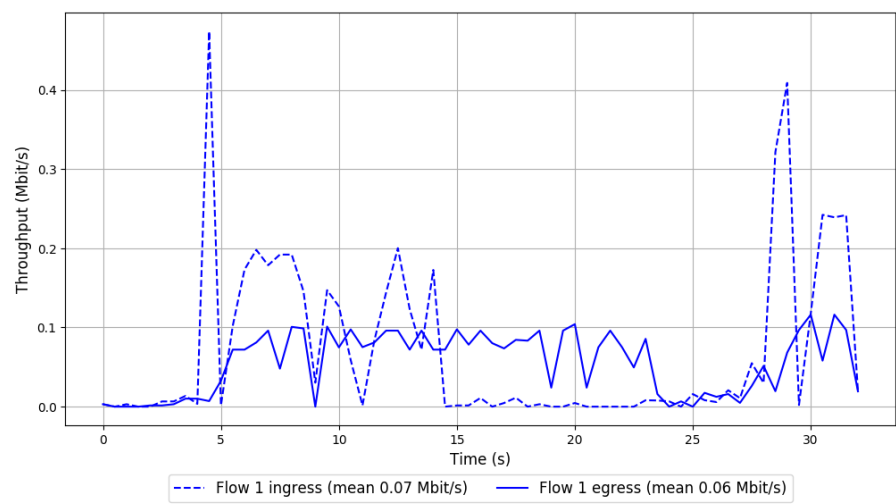


Run 3: Statistics of WebRTC media

Start at: 2017-09-22 09:27:10  
End at: 2017-09-22 09:27:40  
Local clock offset: -0.082 ms  
Remote clock offset: -2.684 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.06 Mbit/s  
95th percentile per-packet one-way delay: 7898.573 ms  
Loss rate: 21.92%  
-- Flow 1:  
Average throughput: 0.06 Mbit/s  
95th percentile per-packet one-way delay: 7898.573 ms  
Loss rate: 21.92%

Run 3: Report of WebRTC media — Data Link

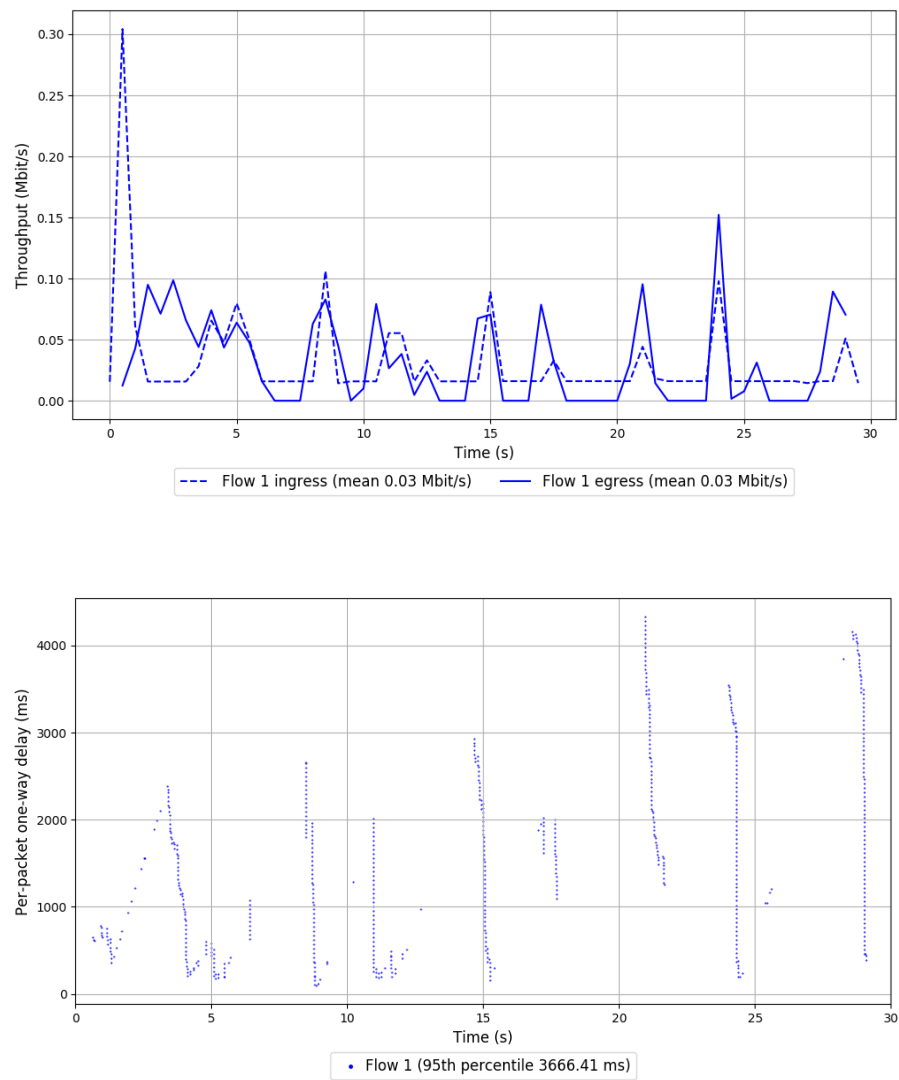


Run 1: Statistics of Sprout

Start at: 2017-09-22 08:56:59  
End at: 2017-09-22 08:57:29  
Local clock offset: -0.199 ms  
Remote clock offset: -0.531 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.03 Mbit/s  
95th percentile per-packet one-way delay: 3666.408 ms  
Loss rate: 4.56%  
-- Flow 1:  
Average throughput: 0.03 Mbit/s  
95th percentile per-packet one-way delay: 3666.408 ms  
Loss rate: 4.56%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2017-09-22 09:13:57

End at: 2017-09-22 09:14:27

Local clock offset: -0.199 ms

Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2017-09-22 09:39:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.03 Mbit/s

95th percentile per-packet one-way delay: 5511.598 ms

Loss rate: 0.43%

-- Flow 1:

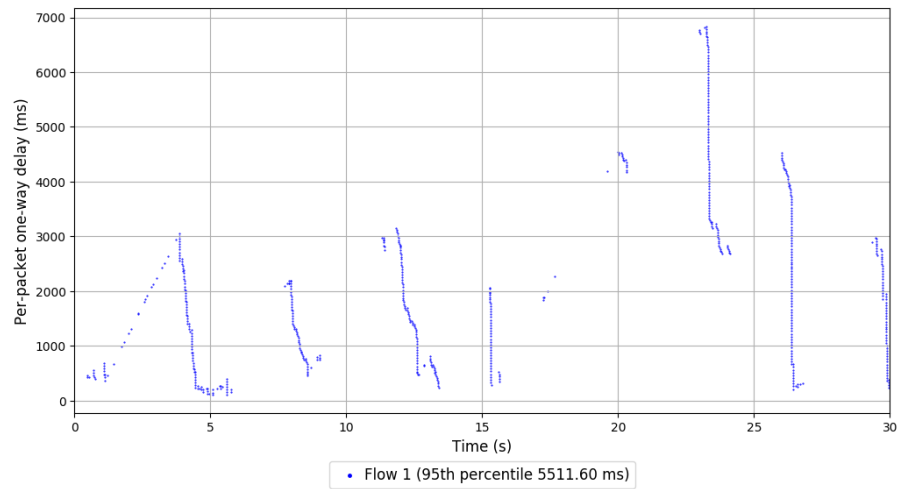
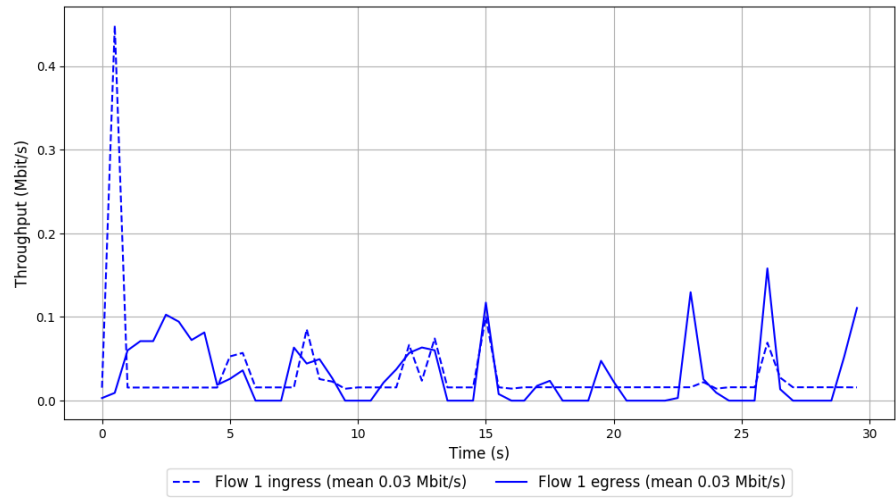
Average throughput: 0.03 Mbit/s

95th percentile per-packet one-way delay: 5511.598 ms

Loss rate: 0.43%



## Run 2: Report of Sprout — Data Link

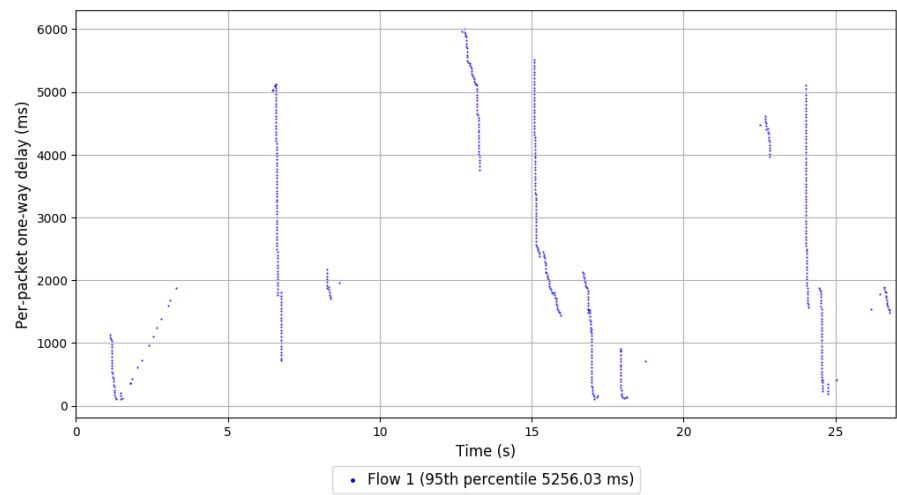
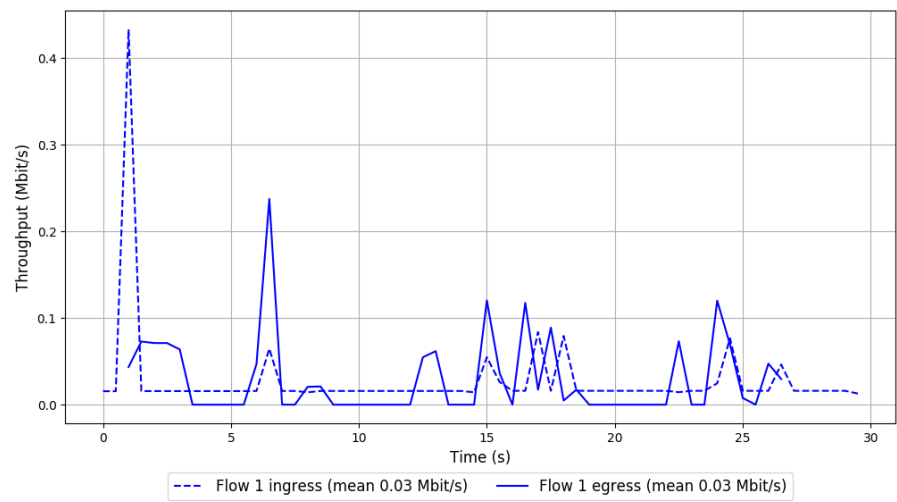


Run 3: Statistics of Sprout

Start at: 2017-09-22 09:31:05  
End at: 2017-09-22 09:31:35  
Local clock offset: -0.104 ms  
Remote clock offset: -0.594 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.03 Mbit/s  
95th percentile per-packet one-way delay: 5256.032 ms  
Loss rate: 10.41%  
-- Flow 1:  
Average throughput: 0.03 Mbit/s  
95th percentile per-packet one-way delay: 5256.032 ms  
Loss rate: 10.41%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

/home/ubuntu/pantheon\_data/2017-09-22T08-45-AWS-California-2-to-Mexico-ppp0-3-runs/taova\_sta

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

Figure is missing

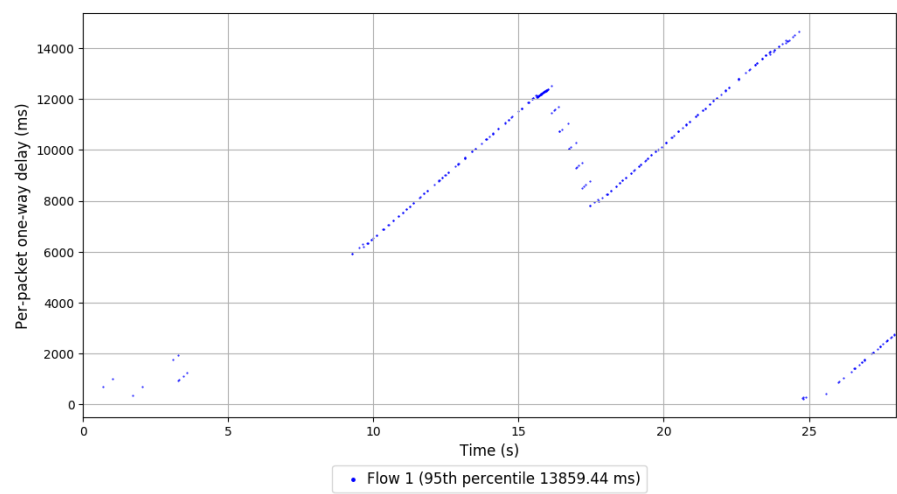
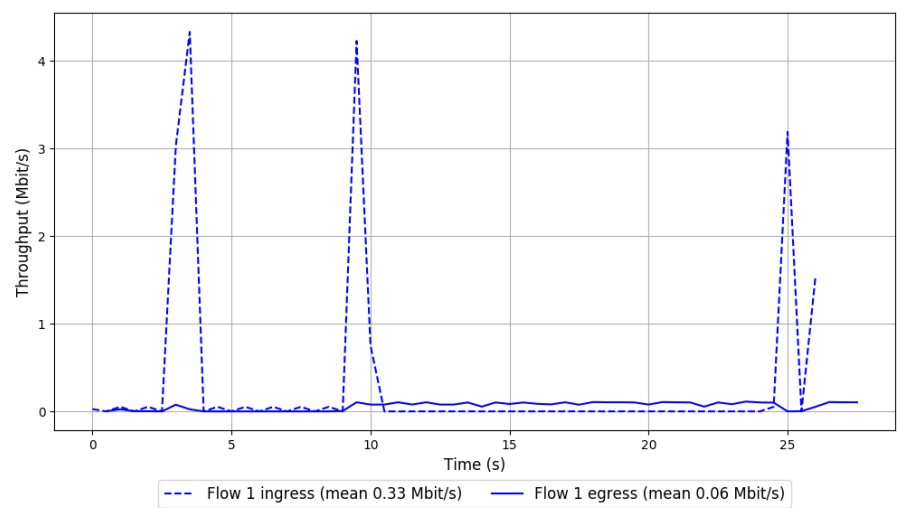
Figure is missing

Run 2: Statistics of TaoVA-100x

Start at: 2017-09-22 09:06:16  
End at: 2017-09-22 09:06:46  
Local clock offset: -0.121 ms  
Remote clock offset: -0.525 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.06 Mbit/s  
95th percentile per-packet one-way delay: 13859.442 ms  
Loss rate: 80.90%  
-- Flow 1:  
Average throughput: 0.06 Mbit/s  
95th percentile per-packet one-way delay: 13859.442 ms  
Loss rate: 80.90%

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



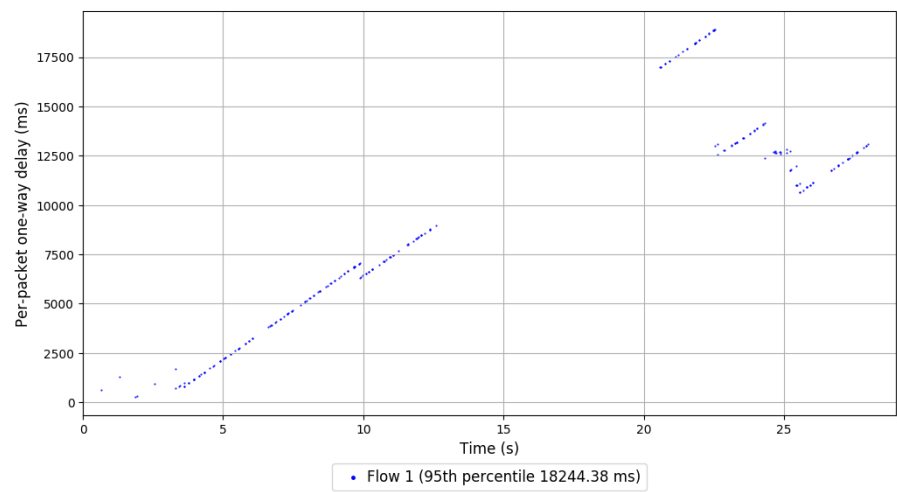
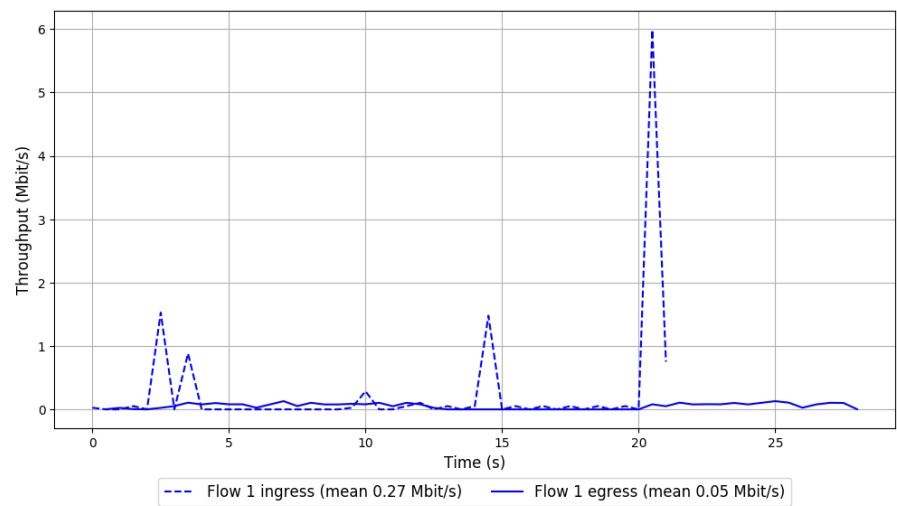
Run 3: Statistics of TaoVA-100x

Start at: 2017-09-22 09:23:19  
End at: 2017-09-22 09:23:49  
Local clock offset: -0.187 ms  
Remote clock offset: -0.582 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 18244.380 ms  
Loss rate: 74.64%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 18244.380 ms  
Loss rate: 74.64%



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



Run 1: Statistics of TCP Vegas

/home/ubuntu/pantheon\_data/2017-09-22T08-45-AWS-California-2-to-Mexico-ppp0-3-runs/vegas\_sta

Run 1: Report of TCP Vegas — Data Link

Figure is missing

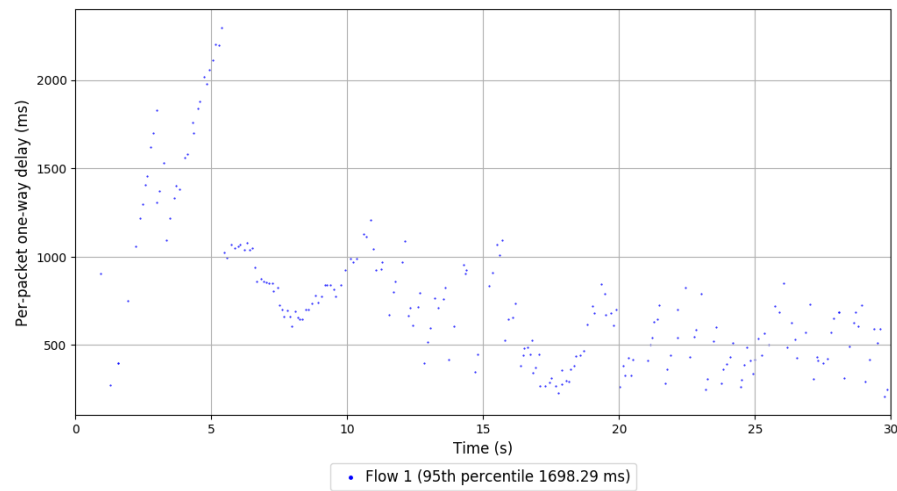
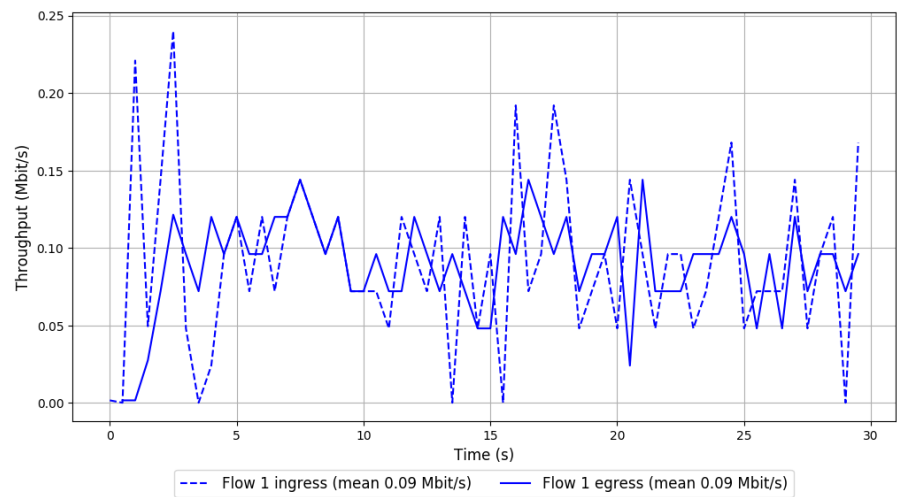
Figure is missing

Run 2: Statistics of TCP Vegas

Start at: 2017-09-22 09:07:33  
End at: 2017-09-22 09:08:03  
Local clock offset: -0.194 ms  
Remote clock offset: -0.564 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 1698.287 ms  
Loss rate: 2.65%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 1698.287 ms  
Loss rate: 2.65%

Run 2: Report of TCP Vegas — Data Link

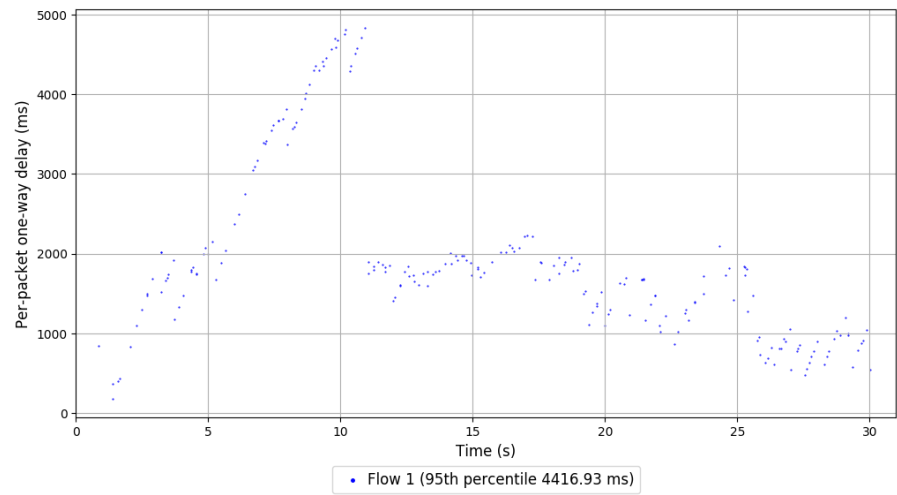
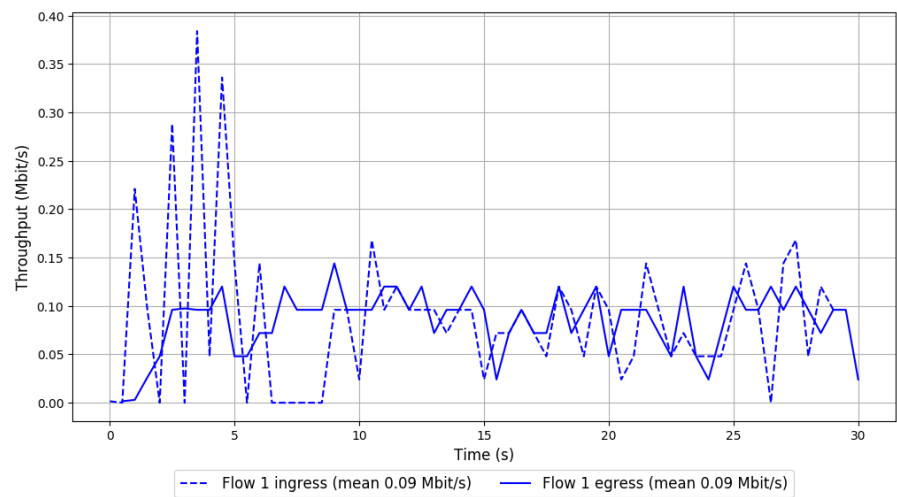


Run 3: Statistics of TCP Vegas

Start at: 2017-09-22 09:24:36  
End at: 2017-09-22 09:25:06  
Local clock offset: -0.168 ms  
Remote clock offset: -0.517 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 4416.930 ms  
Loss rate: 1.39%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 4416.930 ms  
Loss rate: 1.39%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2017-09-22 08:58:15

End at: 2017-09-22 08:58:45

Local clock offset: -0.257 ms

Remote clock offset: -0.51 ms

# Below is generated by plot.py at 2017-09-22 09:39:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.02 Mbit/s

95th percentile per-packet one-way delay: 485.685 ms

Loss rate: 0.00%

-- Flow 1:

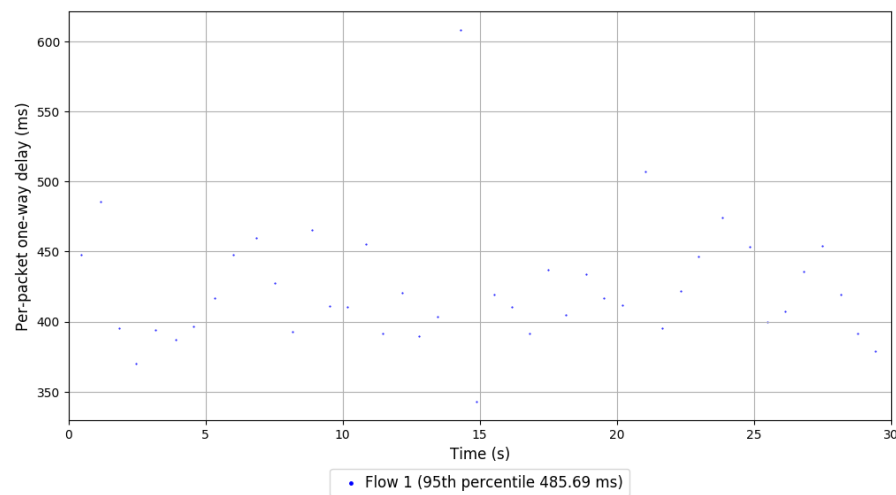
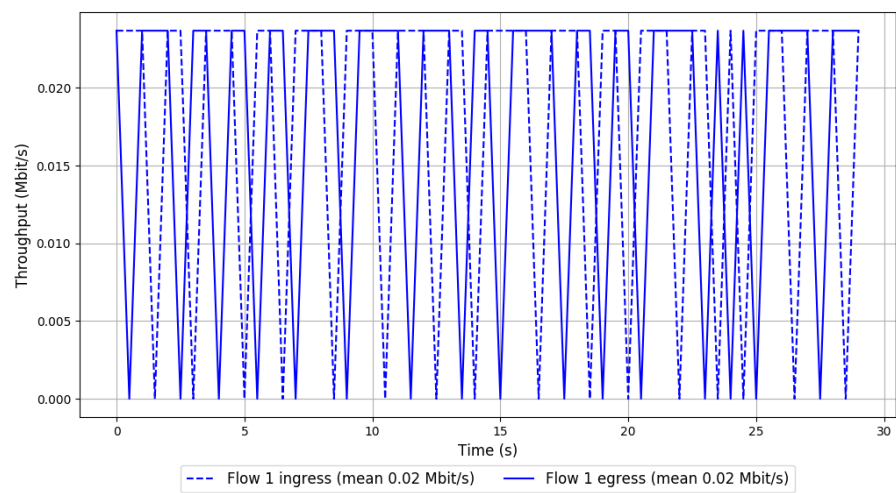
Average throughput: 0.02 Mbit/s

95th percentile per-packet one-way delay: 485.685 ms

Loss rate: 0.00%



Run 1: Report of Verus — Data Link

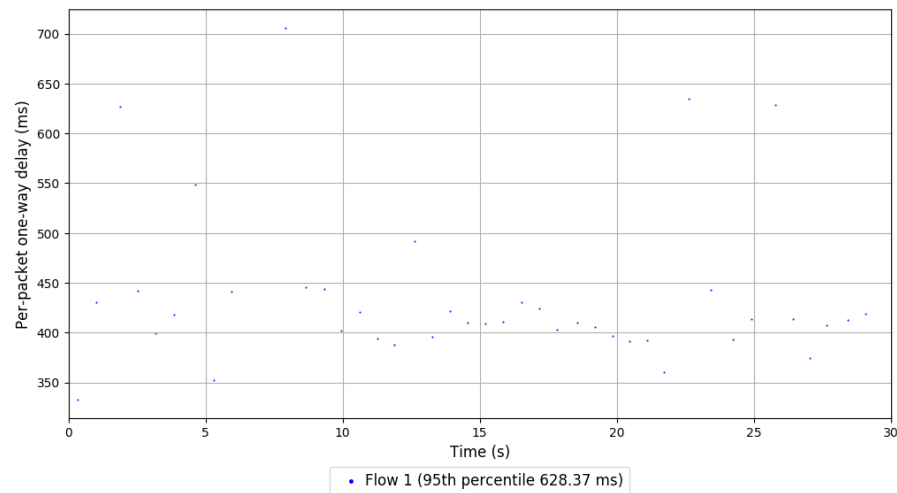
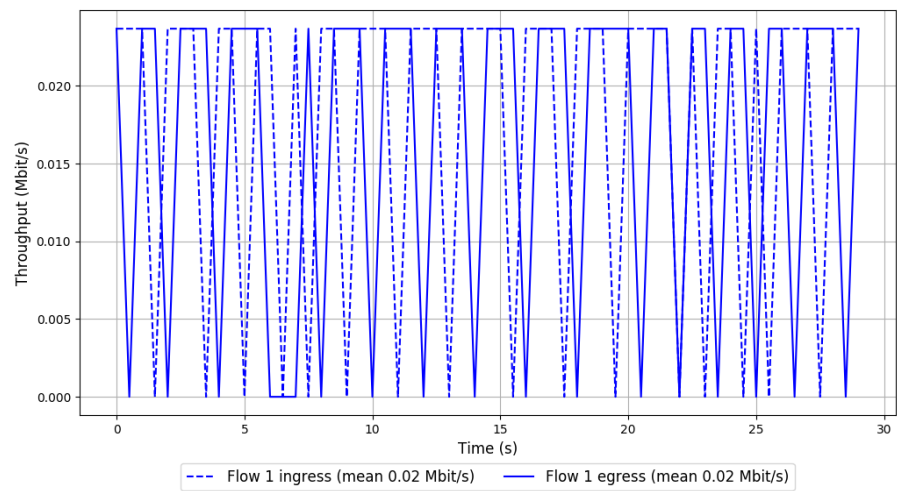


Run 2: Statistics of Verus

Start at: 2017-09-22 09:15:13  
End at: 2017-09-22 09:15:43  
Local clock offset: -0.204 ms  
Remote clock offset: -0.091 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.02 Mbit/s  
95th percentile per-packet one-way delay: 628.367 ms  
Loss rate: 4.65%  
-- Flow 1:  
Average throughput: 0.02 Mbit/s  
95th percentile per-packet one-way delay: 628.367 ms  
Loss rate: 4.65%

Run 2: Report of Verus — Data Link

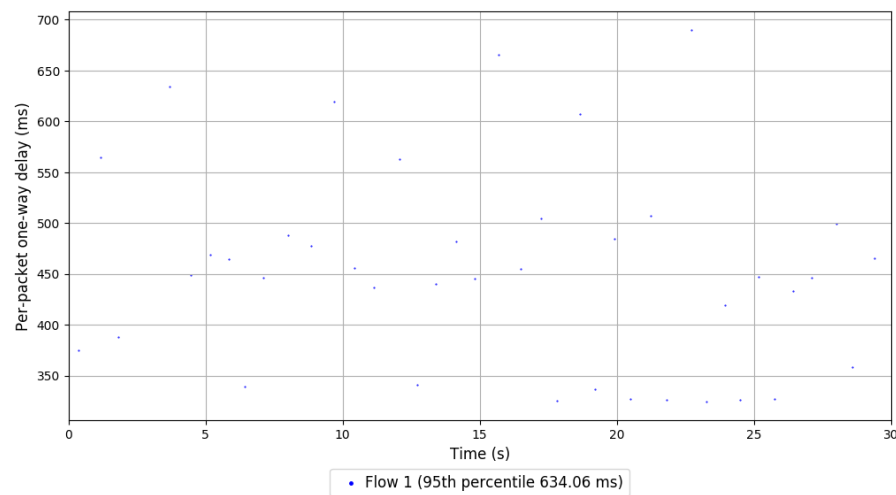
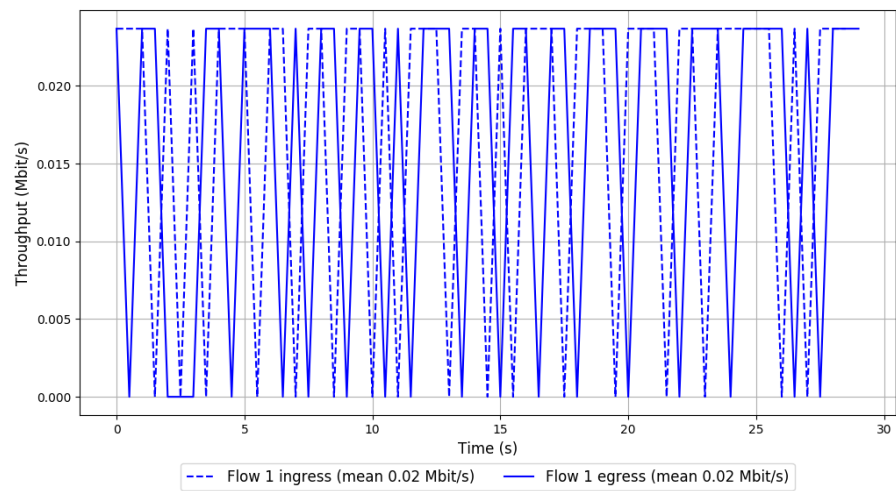


Run 3: Statistics of Verus

Start at: 2017-09-22 09:32:21  
End at: 2017-09-22 09:32:51  
Local clock offset: -0.093 ms  
Remote clock offset: -0.201 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.02 Mbit/s  
95th percentile per-packet one-way delay: 634.063 ms  
Loss rate: 2.44%  
-- Flow 1:  
Average throughput: 0.02 Mbit/s  
95th percentile per-packet one-way delay: 634.063 ms  
Loss rate: 2.44%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Indigo

/home/ubuntu/pantheon\_data/2017-09-22T08-45-AWS-California-2-to-Mexico-ppp0-3-runs/indigo\_st

Run 1: Report of Indigo — Data Link

Figure is missing

Figure is missing

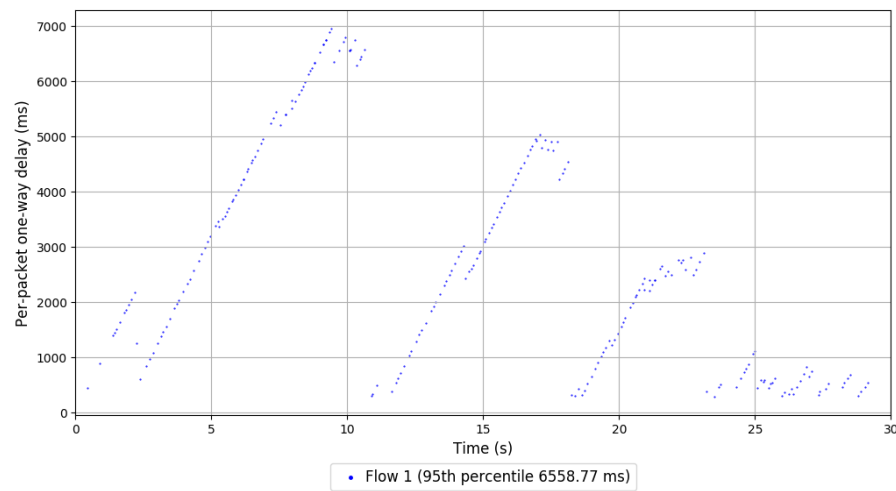
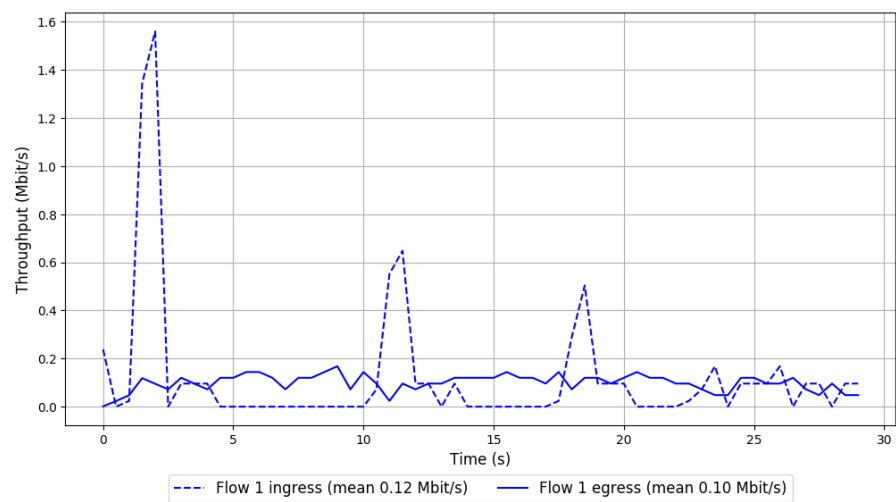
Run 2: Statistics of Indigo

Start at: 2017-09-22 09:04:59  
End at: 2017-09-22 09:05:29  
Local clock offset: -0.143 ms  
Remote clock offset: -2.567 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.10 Mbit/s  
95th percentile per-packet one-way delay: 6558.772 ms  
Loss rate: 18.94%  
-- Flow 1:  
Average throughput: 0.10 Mbit/s  
95th percentile per-packet one-way delay: 6558.772 ms  
Loss rate: 18.94%



Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

/home/ubuntu/pantheon\_data/2017-09-22T08-45-AWS-California-2-to-Mexico-ppp0-3-runs/indigo\_st

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

Figure is missing

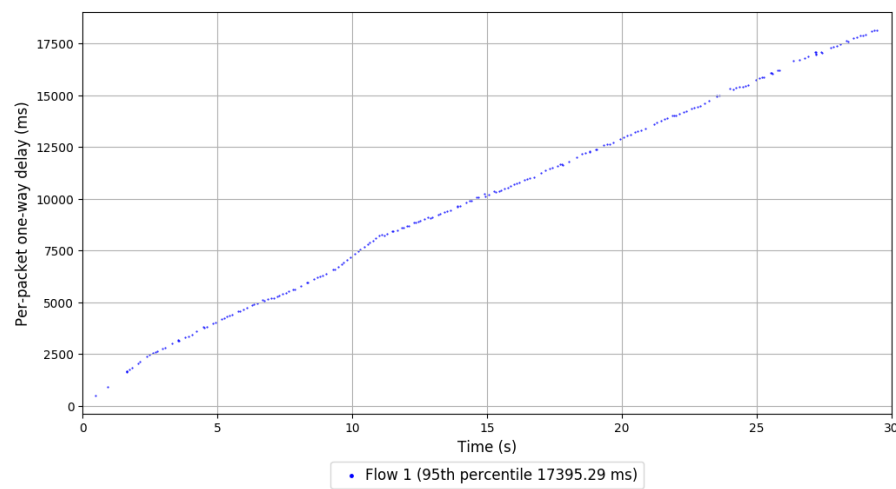
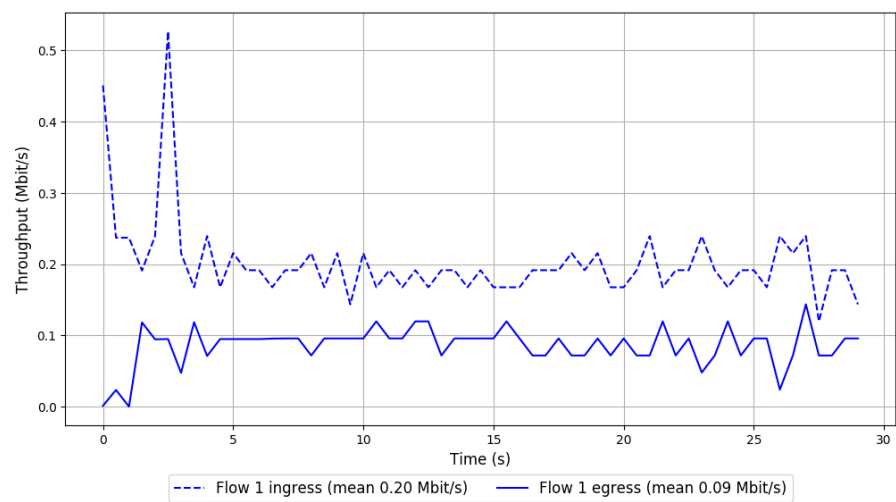
Figure is missing

Run 1: Statistics of Indigo-cellular

Start at: 2017-09-22 08:59:32  
End at: 2017-09-22 09:00:02  
Local clock offset: -0.258 ms  
Remote clock offset: -0.508 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 17395.292 ms  
Loss rate: 57.47%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 17395.292 ms  
Loss rate: 57.47%

Run 1: Report of Indigo-cellular — Data Link



Run 2: Statistics of Indigo-cellular

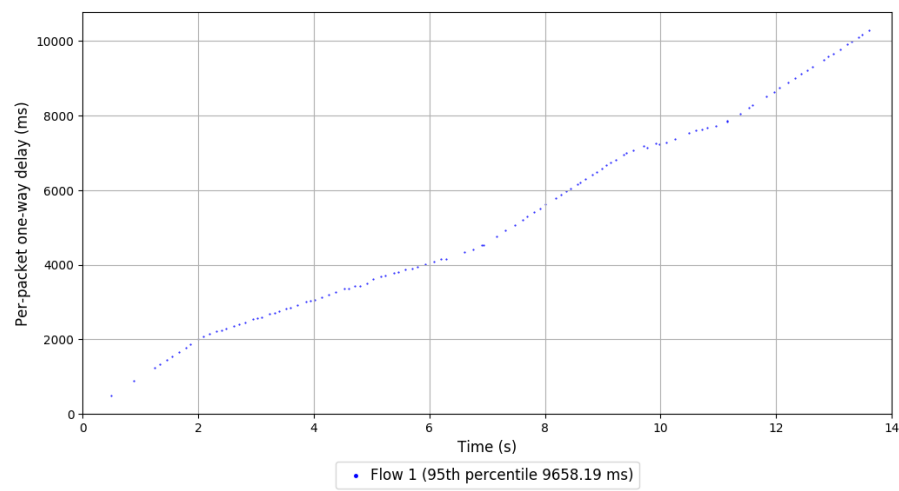
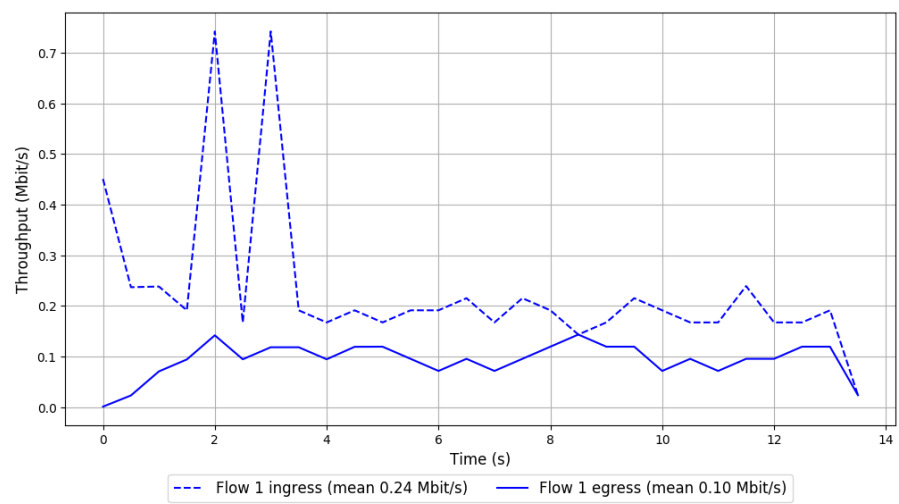
Start at: 2017-09-22 09:16:30

End at: 2017-09-22 09:17:00

Local clock offset: -0.203 ms

Remote clock offset: -0.506 ms

Run 2: Report of Indigo-cellular — Data Link



Run 3: Statistics of Indigo-cellular

Start at: 2017-09-22 09:33:38  
End at: 2017-09-22 09:34:08  
Local clock offset: -0.177 ms  
Remote clock offset: -2.767 ms

# Below is generated by plot.py at 2017-09-22 09:39:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 20995.741 ms  
Loss rate: 65.12%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 20995.741 ms  
Loss rate: 65.12%



Run 3: Report of Indigo-cellular — Data Link

